

**SECTION 064023 ARCHITECTURAL WOODWORK**

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the architectural woodwork as shown on the drawings and/or specified herein, including, but not limited to, the following:
  - 1. Wood paneling.
  - 2. Wood trim, moldings, base and frames.
  - 3. Wood millwork and counters with wood veneers.
  - 4. Wood millwork and counters with plastic laminate finish.
  - 5. Hardware for architectural woodwork.
  - 6. Wood shelving.
  - 7. Solid surfacing material countertops.
  - 8. Wood framing and rough lumber as required for work of this Section.
  - 9. Wood grounds, blocking, nailers, furring as required for work of this Section.
  - 10. All rough hardware and fastenings for work of this Section.
  - 11. Drilling concrete and masonry, drilling and/or tapping metal work, as required, for the installation of work of this Section.
  - 12. Back painting as specified herein.
  - 13. Shop finish of work of this Section, except items indicated herein to be shop primed only.

1.3 RELATED SECTIONS

- A. Carpentry - Section 062000.
- B. Caulking between architectural woodwork and any wall, floor, or ceiling joints - Section 079200.
- C. Wood Doors - Section 081416.
- D. Field finishing of architectural woodwork - Section 099000.

1.4 QUALITY STANDARDS

- A. The quality standards of the Architectural Woodwork Institute, "Architectural Woodwork Standards" (AWS), 2nd Edition, dated July 1, 2016, shall apply to all workmanship, including materials and installation, for architectural woodwork, and by reference are made a part of this specification. All work shall conform to "Premium" grade requirements of the AWS unless otherwise modified herein.
- B. In the event of a dispute as to the quality grade (or grades), the Contractor shall call upon the Architectural Woodwork Institute for an inspection under AWI's Quality Certification Program

which shall include a QCP Inspection and Report. The Contractor agrees to abide by the decision of this Report. The cost of said inspection and report shall be borne by the Contractor.

- C. Employ only tradesmen experienced in the fabrication and installation of architectural woodwork.
- D. Woodworking firm must be accredited by the AWI Quality Certification Program (QCP).

#### 1.5 SUBMITTALS

##### A. Shop Drawings

1. Submit shop drawings of all woodwork specified and indicated on the drawings. Shop drawings shall indicate room plans and elevations at 3/4" equals 1'-0" scale and typical construction details at 3" equals 1'-0" scale. Shop drawings shall indicate all materials, thicknesses and finishes.
2. Shop drawings shall show all finish hardware, anchors, fastenings and accessories.
3. Shop drawings shall show all jointing, joint treatment and butt jointing in veneers and plastic laminate.
4. Shop drawings for wood paneling must show complete elevations of rooms to receive paneling as well as panel matching required by these specifications.
5. Shop drawings for cabinet work must show centerline height and horizontal location of all required internal wall blocking.
6. Where architectural woodwork deviates from AWI standards noted herein, shop drawings must identify these deviations.

##### B. Samples: Submit samples of each of the following items:

1. Plastic laminate, twelve (12) inches square, including a section of outside corner.
2. Transparent finish for each species of wood veneer laminated to particleboard, twelve (12) inches square, for each finish specified or shown.
3. Opaque finish wood veneer laminated to particleboard, twelve (12) inches square for each color, gloss and finish specified or shown.
4. Each finish type of wood panel, 24" wide x 36" high.
5. Each type and finish of each type of wood cornice, trim, molding, etc., eight (8) inches long, finish as specified.
6. Cabinet hardware.

#### 1.6 QUALIFICATIONS

- A. The work of this Section shall be provided by a firm having a minimum of five (5) years' experience on projects of similar size and quality to that specified and shown.

#### 1.7 COORDINATION

- A. Coordinate the work of this Section with other appropriate Sections of the specifications to insure proper scheduling for fabrication and installation of the work specified herein.
- B. Coordinate with partition and finish trades to insure that proper provisions are made for the installation of the work specified herein.
- C. Verify all dimensions in the field prior to fabrication of all Architectural Woodwork to assure proper fit.

**1.8 PRODUCT HANDLING**

- A. All materials and work of this Section shall be protected from damage from time of shipment from shop to final acceptance of work. Cover, ventilate, and protect work of this Section from damage caused by weather, moisture, heat, staining, dirt, abrasions, any other causes which may adversely affect appearance or use, or which may cause deterioration of finish, warping, distortion, twisting, opening of joints and seams, delamination, loosening, etc., of work of this Section.
- B. Keep all finish carpentry, millwork, and cabinet work under cover both in transit and at the premises. Do not deliver any finish carpentry, millwork or cabinet work before it is required for installation. Protect such work to avoid damage in transit, during erection and after erection until acceptance of the building; use all such methods to provide the proper protection. Remove such protection when directed by the Architect.
- C. Deliver finish carpentry, millwork, and cabinet work in a dry stable condition; protect same against injury and dampness. Do not store or install finish carpentry, millwork or cabinet work until after the concrete, masonry and plaster work are thoroughly dry.
- D. Damaged or defective items of work of this Section are subject to rejection and replacement with new by Contractor, at no cost to Owner.

**1.9 JOB CONDITIONS**

- A. Humidity Controls: The ambient relative humidity at the site, including both the storage and the installation areas, shall be maintained between 25% and 55% prior to delivery and through the life of the installation.
- B. Determine equilibrium moisture content and maintain required temperature and relative humidity as required for a tolerance of plus or minus one (1) percent of the specified optimum moisture content until woodwork receives specified finishes. Refer to "Guide to Wood Species Selection," AWI, for method of determining equilibrium moisture content values.
- C. Examination of Substrate and Conditions: The installer must examine the substrate and the conditions under which the work of this Section is to be performed, and notify the Contractor in writing of unsatisfactory conditions. Do not proceed with work under this Section until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- D. Areas to receive architectural woodwork must be fully enclosed with windows and/or curtain wall installed and glazed, exterior doors in place, HVAC systems operational, and temporary openings closed. Any plaster, wet grinding and concrete work shall be fully dry.
- E. Architectural woodwork shall be allowed to come to equilibrium on site for 7 days prior to installation.

**PART 2 - PRODUCTS**

**2.1 BASIC REQUIREMENTS**

- A. Wood Moisture Content: Provide kiln-dried (KD) lumber with an average moisture content range of nine (9) to twelve (12) percent for exterior work and six (6) to eleven (11) percent for interior work.

- B. Measurements: Before proceeding with woodwork required to be fitted to other construction, obtain field measurements and verify all dimensions of shop drawing details as required for accurate fit.
- C. Compatibility of Grain and Color: Architect reserves the right to select materials for best compatibility between visually related members and veneers.
- D. Machine and sand woodwork to comply with requirements of Standards for specified grade.
- E. Fabricate woodwork to dimensions, profiles and details shown. Rout or groove back of flat trim members, kerf backs of other wide flat members except plywood or veneered members.
- F. Miter joints by joining, splining and gluing to comply with requirements for the specified grade.
- G. Inspect each piece of lumber and plywood or each unit of woodwork after drying; do not use twisted, warped, bowed or otherwise damaged or defective wood.

## 2.2 GENERAL - MATERIALS

- A. Softwood lumber shall conform to the requirements of the latest edition of American Lumber Standards Simplified Practice Recommendation R-16. Grades shall conform to the grading rules of the Association having jurisdiction, and shall bear the official grade and trademark of the Inspection Bureau of the Association and a mark of mill identification.
- B. Framing and Rough Lumber: No. 1 KD grade Southern Pine or Dense Construction grade Douglas Fir, having extreme fiber in bending stress of at least 1700 psi, surfaced four sides (S4S). Provide fire retardant treatment meeting requirements of Section 062000.
- C. Grounds, Blocking, Nailers, Furring: Southern Pine, Douglas Fir or Sitka Spruce, grade to suit particular purpose and to be straight, square edged, straight grained, surfaced four sides (S4S), and which will retain nails and screws without splitting. Provide fire retardant treatment.
- D. Wood Veneers and Lumber: Provide AWI Premium Grade materials and workmanship. For species not listed in the AWS comply with the following:
  - 1. Provide AWS Lumber Grade Premium and AWS Grade AA Veneer, book- matched, minimum 6 inch face veneer width. Kiln dry to 6-8 percent moisture content. Components shall be free of defects and sapwood. Match adjacent pieces for color and grain pattern.
  - 2. Single-Source Requirement for Wood Veneers and Solids: Intent is to provide wood which matches as closely as possible throughout the project. Provide wood veneers and solids from the same distributor, and from the same flitches and solids sources to the greatest extent possible.
- E. Lumber: AWS Section 3 with the following requirements:
  - 1. Hardwood for Transparent Finish: Premium Grade, select species and cut to match adjoining veneers, unless otherwise shown or specified, and free from cat's eyes, bird's eyes, burls, curls or cross grains.
  - 2. Hardwood for Opaque Finish: Any hardwood which, when finished, will not show any grain, imperfection or other surface defects when used with the opaque finish specified.

- F. Plywood: AWS Section 4; veneer core, particleboard or plywood core unless otherwise specified, and with the following requirements:
  - 1. Hardwood: Premium Grade, face veneers as shown or specified.
  - 2. Particleboard: Premium Grade, fire retardant for wall paneling only equal to Duraflake FR and Duraflake for cabinets. Particleboard shall be certified to meet EPP CPA 3-08 formaldehyde emission limit of 0.18 ppm, and contain no added formaldehyde resins.
  - 3. Medium-Density Fiberboard (MDF): Conforming to ANSI A208.2, Grade 130 and ANSI MR10 moisture-resistant properties on 5/8" or thicker board. MDF shall be certified to meet EPP CPA 3-08 formaldehyde emission limit of 0.21 ppm, and contain no added formaldehyde resins.
  - 4. Edges: Banded with hardwood in accordance with Premium Grade Standards.
- G. Wood Species and Cut for Transparent Finish: Quarter sliced/sawn, species as selected by the Architect.
  - 1. Architect's control samples for transparent finish, veneer grain and figure characteristics are available for review at the office of the Architect.
- H. Veneer Matching Requirements:
  - 1. Matching Between Adjacent Veneer Leaves: Book match and architectural end match.
  - 2. Matching Within Individual Panel Faces: Balance and Center Match.
  - 3. Method of Matching Panels: Blueprint-matched panels and components.
- I. Finishing (Wood)
  - 1. Transparent Finish
    - a. AWI Factory Finish System "Conversion Varnish, System 5, Transparent."
    - b. AWI Premium Grade.
    - c. Stain: As selected by the Architect.
    - d. Degree of Sheen: Dull satin.
  - 2. Opaque Finish
    - a. AWI Factory Finish System "Conversion Varnish, System 5, Opaque."
    - b. AWI Premium Grade.
    - c. Degree of Sheen: Satin.
    - d. No grain to show.

## 2.3 PLASTIC LAMINATE

- A. Face Sheets: NEMA Publication LD3, Grade GP50, Type I, 0.05" thick, as manufactured by Formica, Nevamar, WilsonArt or approved equal. Color, pattern and finish as selected by the Architect.
- B. Backing Sheets: Non-decorative, high-pressure plastic laminate, NEMA LD3, Grade BK20, 0.02" thick.
- C. Edges: Finish with plastic laminate to match face and applied before face sheets are applied, unless otherwise shown or specified.

2.4 METAL

A. Steel

1. Structural Steel Shapes and Plates: ASTM A 36.
2. Hot-Rolled Carbon Steel Sheets: Commercial quality, ASTM A 569, may be used for concealed parts only.

B. Primer for Unexposed Metal: Zinc chromate primer.

2.5 MISCELLANEOUS PRODUCTS

A. Fasteners

1. Wood Screws: FS FF-S-111, type, size, material and finish as required for the condition of use.
2. Nails: FS FF-N-105, type, size, material and finish as required for the condition of use.
3. Anchors: Type, size, material and finish as required for the condition of use.
4. Staples: Upholstery type staples of sufficient strength to hold fabric taut in place without sagging.

B. Adhesives

1. For Laminating Plastic Laminate Surfaces: Urea resin, Type II, as recommended by fabricator.
2. For All Other Uses: Polyvinyl acetate resin emulsion or other type as recommended by the fabricator.

2.6 CABINETS WITH PLASTIC LAMINATE FINISH

A. General

1. Fabricate all cabinetry and millwork to the "Premium Grade" standards of the AWS, Section 10.
2. Face construction of cabinets shall be "Flush Overlay."
3. Provide 3/4" thick doors, drawer fronts and fixed panels (including thickness of plastic) except where required to be thicker by Standards; and provide flush units.
4. Provide dust panels of 1/4" thick plywood or tempered hardboard above compartments and drawers, except where located directly below countertops.
5. Exposed Edges: Plastic laminate matching exposed panel surfaces. Ease exposed edge of overlap sheet.

B. Plastic Laminate

1. Plastic Laminate for Horizontal Surfaces: 0.050" thick, general purpose type (high pressure).
2. Plastic Laminate for External Vertical Surfaces: 0.028" thick, general purpose type (high pressure).
3. Plastic Laminate for Post Forming: 0.042" thick, post forming (high pressure).
4. Plastic Laminate for Cabinet Linings: 0.020" thick, cabinet liner (high pressure).
5. Plastic Laminate for Concealed Panel Backing: 0.020" thick, backer type (high pressure).
6. Plastic Laminate Colors and Patterns: As selected by the Architect from manufacturer's standard satin finish products.

- C. Shop Assembly: All work shall be shop assembled. Work that is too large for entrance into the use area shall be fabricated in attachable sections with provisions for reconnection in the using space.
- D. Material Thicknesses: See drawings for general material thicknesses. Minimum thickness of solid lumber for web frames, trim, bases, etc., shall be 3/4". Minimum thickness of plywood and particleboard shall be 3/4".
- E. Sizes: See drawings for woodwork sizes required. The manufacturer shall check field dimensions and verify all openings and actual field conditions prior to fabrication of work.
- F. Manufacturer is responsible for rigidity and structural stability.

## 2.7 PLASTIC LAMINATE COUNTERTOPS AND VANITIES

- A. Grade: Same as AWI grade required for cabinet work; plastic laminate finish.
- B. Construction
  - 1. Provide back-splash and end-splash, where detailed; top-mounted square butt joint, fully covered with matching plastic laminate, eased edges.
  - 2. Exposed Counter Edges: Plastic laminate matching surface, except as otherwise indicated. Ease exposed edges of overlap sheet.
  - 3. Cut openings for equipment to be installed. Comply with equipment manufacturer's requirements but provide internal corners of 1/8" minimum radius. Smooth saw cut and ease edges.
  - 4. Seal cut edges of counter at openings for sinks and other "wet" equipment, using waterproofing compound recommended by plastic manufacturer and compatible with laminating adhesive.

## 2.8 BUILT-IN CABINETS, WOODWORK WITH WOOD VENEER FINISH

- A. Construction: Details of cabinet and woodwork construction shall conform to design as detailed on the drawings and shall be constructed in accordance with AWS Section 10, Premium Grade.
- B. Finishing: All work shall be factory pre-finished. No field finishing will be permitted, except minor retouching that is necessary after installation to leave work in perfect condition. Field touch-up shall be accomplished using the same finishes as originally applied at the factory. All finishes shall be free from runs, sags and other visual defects. All wood shall be thoroughly hand smoothed and hand sanded to remove all traces of machine and tool marks. All steel or other metal components shall be deburred, thoroughly cleaned and degreased prior to finishing. Requirements for surface preparation shall be in accordance with AWI Standards specified. Surfaces shall be finished as follows:
  - 1. Wood Species and Cut for Exposed Surfaces: As specified hereinabove.
    - a. Grain Direction: Vertically for drawer fronts, doors, and fixed panels.
    - b. Matching of Veneer Leaves: Book match.
    - c. Vertical Matching of Veneer Leaves: End match.
    - d. Veneer Matching within Panel Face: Running match.
    - e. Veneer Matching within Room: Provide casework veneers in each room or other space from a single flitch with doors, drawer fronts, and other surfaces matched in

a sequenced set with continuous match where veneers are interrupted perpendicular to the grain.

2. Semi-Exposed Surfaces: Provide surface materials indicated below:
  - a. Surfaces Other Than Drawer Bodies: Compatible species to that indicated for exposed surfaces, stained to match.
  - b. Drawer Sides and Backs: Solid-hardwood lumber, stained to match species indicated for exposed surfaces.
  - c. Drawer Bottoms: Hardwood plywood.
3. All wood veneer surfaces shall be given transparent finish as specified herein.
4. Backing Veneer: Provide backing veneer, of same thickness and strength as face veneer for balanced construction, where plywood surface not exposed, not semi- exposed, or not to be finished. Note that interior surface of cabinets, closets, are to be finished.

- C. Edge Banding: All visible edges of case and body members fabricated from plywood shall be banded. Transparent finished wood veneer panels shall be banded with wood species to match face veneers.

## 2.9 HARDWARE

- A. Architectural Woodwork Hardware: Provide the following items, or their approved equal, as required:
  1. Hinges: Fully concealed European self-closing hinges, fir flush overlay doors 170 degree opening, BHMA A156.9, B01521.
  2. Catches: Magnetic top and bottom; BHMA A156.9, B03141.
  3. Drawer Slides: Side-mounted, full-extension zinc-plated steel drawer slides with steel ball bearings; BHMA A156.9, B05091; rated for the following loads:
    - a. Box Drawer Slides: 100 lb. capacity.
    - b. File Drawer Slides: 200 lb. capacity.
    - c. Keyboard Slides: 75 lb. capacity.
  4. Door Locks: As directed by the Architect; BHMA A156.11, E07121.
  5. Drawer Locks: As directed by the Architect; BHMA A156.11, B07041.
  6. Cabinet Door and Drawer Pulls: Provide the following:
    - a. Square Pulls, Cabinet Doors
      - Manufacturer: Mockett Industries or approved equal.
      - Series: DP175, flat pull.
      - Model No.: DP175A.
      - Length: 3-15/16". 5).
      - Finish: Satin nickel.
    - b. Square Pulls, Cabinet Drawers
      - Manufacturer: Mockett Industries or approved equal.
      - Series: DP175, flat pull.
      - Model No.: DP175B.
      - Length: 10-1/4".
      - Finish: Satin nickel.

7. Furniture Legs: Provide the following:
    - a. Manufacturer: Mockett Industries or approved equal.
    - b. Series: Furniture Legs and Casters; round and rectangular legs.
    - c. Product: 28-1/2" high table leg, 4" diameter with plate leveler.
    - d. Model No.: TL28P-4.
    - e. Finish: As selected by the Architect.
  
  8. Grommets for Cable Passage through Countertop
    - a. Open Work Area
      - Manufacturer: Mockett Industries or approved equal.
      - Series: Grommets and Wire Management.
      - Product: "The Max" small square grommet.
      - Model No.: MAX2-A94.
      - Finish: As selected by the Architect.
    - b. Exam and Procedure Room
      - Manufacturer: Mockett Industries or approved equal.
      - Series: Grommets and Wire Management.
      - Product: Square Brava grommet.
      - Model No.: BRV2/SQ.
      - Finish: As selected by the Architect.
  
  9. Undercounter Wall Brackets: Sized appropriately by the Millworker, based on span and weight of work surface, according to the following:
    - a. Manufacturer: A & M Hardware or approved equal.
    - b. Series: Work Station Brackets.
    - c. Product: 304 stainless steel brackets.
    - d. Finish: As selected by the Architect.
  
  10. Finishes: For exposed hardware not otherwise specified, provide finish complying with BHMA A156.18 for BHMA finish number indicated.
    - a. 12.1 Satin Chrome Plated: BHMA 652 for steel base.
    - b. 12.2 Satin Stainless Steel: BHMA 630.
  
  - B. Closet Hardware: Oval wardrobe rails, chrome-plated steel with center bracket and wall-support brackets made by Hafele, or approved equal.
- 2.10 WOOD FOR TRIM, BASES, MOLDINGS AND FRAMES
- A. Quality Standard: For the following types of interior architectural woodwork, comply with indicated standards as applicable.
    1. Standing and Running Trim: AWS Section 6.
    2. Miscellaneous Millwork: AWS Section 6.
  
  - B. Woodwork for Transparent Finish: Except as otherwise indicated, comply with the following:
    1. Grade: Premium.

2. Species of Solid Wood: Quarter Sawn Species as noted on drawings.
- C. Woodwork for Paint Finish: Except as otherwise indicated, comply with the following:
  1. Grade: Premium.
  2. Species of Solid Wood: Solid, paint grade, sound clear Poplar or Birch.

#### 2.11 HARDWOOD VENEERED PLYWOOD PANELS

- A. Type: Interior grade, hot press laminated with waterproof adhesive, pre-finished, with face veneers and core construction as specified herein, meeting AWS Section 8 standards.
- B. Core Construction: Shall be fire retardant treated, meeting requirements of Section 062000; type at fabricator's option.
  1. Where the core is free of urea formaldehyde, provide a layer of veneer over the substrate prior to application of finish veneer to prevent telegraphing of patterns of the adhesive.
- C. Thickness: 3/4" thick.
- D. Face Veneers: Panels shall be flitch matched, sequence matched, book matched, end matched, center balanced, rift sliced, vertical grain, and shall be matched for color. Wood species shall be as indicated. Use this veneer in all other areas where wood paneling is required. All panels shall be matched one to the other using "blueprint" matching method. Veneer shall be minimum 1/28" thick.
- E. Finish: Veneers shall be finely sanded and clear factory pre-finished using AWI System noted herein.
- F. Panel Sizes: See drawings for panel sizes required.
- G. Exposed edges of panels shall be solid sections matching face veneer.
- H. Where wood doors are set in veneered wood paneling, veneer on door shall be sequenced to fit veneer pattern; doors to meet the requirements of Section 081416.

#### 2.12 SOLID SURFACING MATERIAL COUNTERTOPS

- A. Provide 1/2" thick "Corian" countertops, with integral bowls where indicated, as manufactured by E.I. Du Pont or approved equal made by Avonite, WilsonArt, or Gibraltar meeting standards specified herein. Countertops shall be of color as selected by the Architect.
- B. Material: Cast, filled, acrylic; not coated, laminated or of composite construction, meeting ANSI Z124-1980, Type Six, and ISS FA-2.01 "Classification and Standards Publication of Solid Surfacing Material" as published by the International Solid Surface Fabricators Association (ISSFA).
- C. Countertops shall be adhesively joined with no exposed seams, having edge details shown on drawings.
- D. Material shall conform to the published performance characteristics of ISSFA-2-01.

- E. Joint Adhesive: Manufacturer's standard two-part adhesive kit to create inconspicuous, non-porous joints.
- F. Sealant: Manufacturer's standard mildew-resistant, FDA/UL recognized silicone sealant in colors matching components.
- G. Fabrication
  - 1. Fabricator must be approved by the solid surface manufacturer.
  - 2. Factory fabricate components to custom sizes and shapes indicated, in accordance with approved shop drawings.
  - 3. Form joints between components using manufacturer's standard joint adhesive; without conspicuous joints.
  - 4. Provide factory cutouts for plumbing fittings and accessories as indicated on the drawings.
  - 5. Cut and finish component edges with clean, sharp returns. Route radii and contours to template. Repair or reject defective and inaccurate work.
- H. Warranty: The manufacturer shall warrant to the Owner that the manufacturer will repair or replace (at his/her option), without charge, such product that fails because of a manufacturing defect during the first 10 years after initial installation. This includes all labor charges needed to repair or replace the product covered hereunder.

#### 2.13 FABRICATION - GENERAL

- A. Provide lumber framing for architectural woodwork, complete with all bracing and fastening devices as required for a rigid installation, and as required to sustain the imposed loads.
- B. Do all fabrication from field measurement with provision for scribing as required to meet built-in conditions.
- C. Coordinate the work of this Section with the work of other trades.
- D. Fabricate units in largest practicable sections. Assemble in the shop for trial fit, disassemble for shipment and reassemble with concealed fasteners.
- E. Maintain relative humidity and temperature during fabrication, storage and finishing operations matching that of the areas of installation.
- F. Details indicate the required type and quality of construction. Modifications to conform to manufacturer's standards will be considered provided that they comply with the Contract Documents and maintain the profiles shown, subject to acceptance by the Architect.
- G. Reinforcing shown is minimum. Provide additional reinforcing as required to ensure a rigid assembly. Exposed surfaces shall be free from dents, tool marks, warpage, buckle, glue and open joints, or other defects affecting serviceability or appearance. Accurately fit all joints, corners and miters. Conceal all fasteners. Make threaded connections up tight so that threads are entirely concealed.
- H. Factory finish all items where possible. Defer final touch-up, cleaning and polishing until after delivery and installation.

- I. Comply with AWI, Premium Grade, for sanding, filling countersunk fasteners, back priming and similar preparations for the finishing of architectural woodwork, as applicable to each unit of work.
- J. Prepare all countersunk wood screw attachments for wood plugs. Wood plugs shall match surrounding species and grain direction; putty filling is not acceptable.

## 2.14 FABRICATION - SPECIFIC ITEMS

### A. Millwork

- 1. Include all preparations for mechanical, electrical, telephone and plumbing work required.
- 2. Provide cabinet hardware for millwork as shown.
- 3. Provide dust panels in body webs and between drawer units.
- 4. Provide wood veneers for exposed surfaces as specified herein before.
- 5. Hollow core doors will not be permitted.
- 6. Provide matching veneers for edge treatments of case body members where transparent finishes are indicated or specified.
- 7. Provide drawers with slides as specified. Drawers shall not rest on web body frames.
- 8. Provide wood veneers for transparent finish, of matching and continuing grain, for drawer and door edges.

### B. Paneling

#### 1. General Paneling Requirements

- a. Panel type shall be AWI, Premium Grade construction.
- b. Panel joints shall be flush type unless otherwise shown.
- c. Provide concealed wood blocking and framing, anchors, clips, splines, supporting and attaching devices.
- d. Provide cut-outs to receive attachments, mechanical and electrical work as required.

#### 2. Wood Veneer Paneling

- a. Comply with AWI Section 8.
- b. Provide veneers as specified and as shown, including all matching requirements. Run veneer in the direction shown.

#### 3. Stile and Rail Paneling

- a. Comply with AWI Section 8.
- b. All exposed edges of panel cores shall be edge banded.
- c. Grain direction shall be as shown.

### C. Closet and Storage Shelving

- 1. Provide closet and storage shelving in accordance with AWI, Custom Grade, unless otherwise shown or specified.
- 2. Exposed edges shall have hardwood edge bands.

- D. Standing and Running Trim: Provide standing and running trim of the sizes, profiles, species and finish as specified or shown and complying with AWI Section 6, Premium Grade.

### PART 3 - EXECUTION

#### 3.1 INSPECTION

- A. Examine the areas and conditions where architectural woodwork is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

#### 3.2 FRAMING

- A. Use specified framing lumber, sizes and spacing as indicated on drawings and as required to support loads.
- B. Framing shall be cut square on bearings, closely fitted, accurately set to required lines and levels, rigidly secured in place at bearings and connection with nails, lag screws and/or bolts as required by conditions.

#### 3.3 GROUNDS, BLOCKING, NAILERS AND FURRING

- A. Provide all wood grounds, blocking, nailers, furring, and the like for work of this Section, where shown and where required, dressed to size indicated or required to suit the condition. Install grounds, blocking, nailers, furring, etc., rigidly, in proper alignment, trued with a long straight edge.

#### 3.4 ROUGH HARDWARE

- A. Provide all rough hardware, such as nails, screws, bolts, anchors, hangers, clips and similar items. Hardware shall be of the proper size and kind to adequately secure the work together and in place, in a rigid and substantial manner. Use galvanized hardware at exterior walls, and at other locations where subject to moisture or where water will be present.
- B. Secure wood to concrete and to solid masonry with countersunk bolts in expansion sleeves or other approved manner, to steel with countersunk bolts, to hollow masonry and to drywall with heavy duty countersunk toggle bolts. Space fastenings not more than sixteen (16) inches apart. Hardened cut nails, power-driven fastenings, or other suitable devices may be used where approved by the Architect.
- C. Connections and fastenings shall be made in such manner as will compensate for swelling and shrinkage and shall permit the work to remain permanently in place without any splitting or opening of joints.

#### 3.5 INSTALLATION OF CABINET FINISH HARDWARE

- A. All items of finish hardware furnished under this Section shall be carefully fitted and secured in place as part of the work of this Section. Locations and positioning of hardware shall be subject to the Architect's approval. Care shall be taken not to mar or damage hardware, or other work. Install doors plumb and true. Hardware shall be fitted to assure operation without forcing.

- B. After preliminary fitting of hardware, the Contractor shall remove trim for painting and finishing work; after which he shall reinstall the hardware in a permanent manner.
- C. Upon completion of the work, before final acceptance of the building by the Owner, the Contractor shall, in the presence of the Architect, show that all hardware is in satisfactory working order; fit all keys in their respective locks and, upon acceptance of the work, shall tag and deliver all keys to the Architect and Owner.
- D. When directed by the Owner, at any time during the first year after the completion of the Contract, the Contractor shall return to the building and adjust and refit the work and hardware, and leave such items in satisfactory working order.

### 3.6 GENERAL INSTALLATION

- A. Wall anchorage and general installation procedures for cabinetry work shall conform to AWS Section 10, Article entitled "EXECUTION," Sub-Article 6.1, with all related sub- paragraphs.
- B. Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level (including countertops), and with 1/16" maximum offset in flush adjoining surfaces, 1/8" maximum offset in revealed adjoining surfaces.
- C. Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.
- D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation.

### 3.7 TRIM, MOLDINGS, ETC.

- A. Install with minimum number of joints possible, using full-length pieces for each run. Stagger joints in adjacent and related members. Cope at returns, miter corner.
- B. Joints of all trim and/or moldings shall be set tight, miter exterior angles and cope interior angles. Joints, except end joints less than twelve (12) feet apart, will not be permitted in straight runs of trim and/or moldings and rails.
- C. Secure all trim and/or moldings with glue and blind nail with finishing nails. Set exposed nail heads in finished work and putty. Sand all work to remove any tool marks and irregularities.
- D. Wood shall receive finish as specified in Section 099000, "Painting and Finishing."

### 3.8 VENEERED WOOD PANELS

- A. Provide a system of concealed panel hanger clips, shims and corresponding wall clips to support the panel system. Face nailing shall not be permitted.
- B. Hang the panels in the designated locations. Panels shall be straight, level, flat and flush with adjoining panels.
- C. Where reveals are indicated, keep panels spaced so that reveals are parallel and of widths shown.

3.9 CLOSET AND STORAGE SHELVING

- A. Provide closet and storage shelving at the locations shown. Provide hang rods where shown. Set adjustable center hangers.

3.10 CABINET WORK AND MILLWORK

A. General

1. Materials and workmanship shall conform to the Quality Standards of the Architectural Woodwork Institute specified herein and to the drawings.
2. Cabinet work and millwork shall be performed by an experienced cabinet work and millwork company, having craftsmen skilled in their trade.
3. Fabricate all cabinet work and millwork completely in the shop, in complete and/or as large units as practical, leaving only fitting, assembly, installation and a minimum of fabrication and finishing to be done at the building. Assembled work shall be rigidly secured and permanently fastened together with concealed fasteners.
4. Afford Architect every facility for inspection of work at shop or mill at such times as the Architect may select.
5. As far as practicable, use concealed fastenings for joining and assembling the work. Where this is impossible, the means of securing shall be placed in inconspicuous places and methods of joining and assembling submitted for Architect's approval prior to fabrication.
6. Mill all finish wood accurately to detail, with clean cut moldings, profiles and lines, machined, sanded smooth, housed, jointed, blocked, put together in the best manner, with provision for swelling and shrinkage, and to assure the work remaining in place without warping, splitting or opening of joints.
7. Cut trim to dimensions and profiles shown, from solid stock.
8. Make all trim and the like in single lengths wherever possible; joints mitered, glued and splined. Continuous members shall have tight flush joints, doweled or splined and glued.
9. Make all joints hairline tight, fitted accurately and joined with hardwood splines or dowels, glued together, or by other method approved by Architect. Use screws, not nails, for fastenings.
10. Gluing shall, where practicable, be by the hot plate press method and glued surfaces shall be in close contact throughout. Glue stains on finished work will not be permitted.
11. Cover surface fastenings, where permitted, with matching wood plugs or wood putty. Finish exposed edges of plywood with matching solid stock. Lock miter external corners; tongue and groove internal corners to allow for contraction and expansion.
12. Machine sand with grain, finish with hand sanding, leave exposed surfaces free from machine or tool marks that will show through the finish.
13. Work which adjoins drywall, concrete, or other finish shall be fitted and scribed in a careful manner and ample allowance shall be given for cutting and scribing.
14. Erect work true to lines, levels and dimensions, square, aligned and plumb, securely and rigidly fastened in place.

B. Cabinet Work: Provide all items of cabinet work indicated on drawings and as herein specified.

1. Tops, sides, backs, bottoms, dividers, shelves, fronts, doors and drawer fronts shall be of plywood or flakeboard core, with the specified wood veneer or plastic laminate as indicated on drawings.
2. Drawer sides and backs shall be 1/2" thick solid clear selected white birch, suitable for clear finish. Drawer bottom shall be 3/8" thick plywood with clear selected white birch veneers, suitable for clear finish.

3. Cabinet doors and drawers shall be flush mounted.
4. Adjustable shelves in cabinets shall have grommets spaced 2" o.c.
5. Fixed shelves shall be dadoed into side supports and glued.
6. Shelves shall be 3/4" thick for spans up to 30"; for spans in excess of 30" to 48" shelves shall be 1" thick.
7. All cabinets shall have closed top, sides, bottom, and back with veneers to match face work. Cabinets to fit accurately into indicated locations; scribe moldings permitted only where indicated.
8. Countertops, counters, counter fronts, shelves, etc., indicated on drawings to have plastic laminate, shall have plastic laminate shop applied to 3/4" thick core, with plastic laminate backing sheet on underside or back of countertops, counters and shelves. Plastic laminate shall be pressure laminated to core with laminate at external corners. Provide concealed wood framing to support plastic laminate counters, securely fastened to wall and to underside of counters.

- C. Countertops shall be installed to support a minimum concentrated live load of 150 lbs. acting downward at mid span at outer edge of counter without causing deformation and damage.

### 3.11 WOOD BASES

- A. Provide plywood backing, toggle bolted to substrate, if substrate not suitable for securing wood base.
- B. Machine wood bases from specified wood, to profiles indicated on drawings.
- C. Set base level and plumb. Where indicated on drawings, face of wood base shall be flush with wall above. Glue wood base to substrate or to plywood backing, and screw or nail wood base to substrate or to plywood backing with countersunk wood screws or with finishing nails, recess wood screw heads, and spackle with wood putty, set and spackle nails with wood putty. Do not nail or fasten wood base to floor. Ends of wood base shall be either splined or ship lapped.
- D. Where no wood backing occurs, screw apply base at each stud with screw countersunk and wood putty applied and sanded smooth and flush with base.

### 3.12 WOOD DOOR FRAMES

- A. Where indicated on drawings, provide wood frames and bucks for wood doors. Bucks shall be braced, set straight and plumb and have anchors for building into adjoining construction; space anchors not over two (2) feet apart (one foot from corners). Machine wood frames from specified solid wood to profiles indicated on drawings. Set frames plumb, level, square; securely attached to adjoining construction. Wood frames, bucks and trim shall conform to details.

### 3.13 PAINTING AND FINISHING

- A. General: All painting and finishing work of this Section shall be shop applied, unless otherwise noted, as specified below. All painting and finishing shall match approved samples. Field finish painting, where specified below, shall be by painting Subcontractor, as specified for in Painting Section.
- B. Back-Painting: All work of this Section in contact with concrete or masonry or other moisture areas and all concealed surfaces of cabinet and millwork, shall be back-painted with one (1) coat of oil-based paint prior to installation, shop applied where practicable.

- C. Field Touch-Up: Field touch-up shall be the responsibility of the installing Subcontractor and shall include the filling and touch-up of exposed job made nail or screw holes, refinishing of raw surfaces resulting from job fitting, repair of job inflicted scratches and mars, and final cleaning up of the finished surfaces.

3.14 CLEAN UP AND PROTECTION

- A. Clean Up: At regular intervals during the course of the work, all debris and excess material shall be cleaned up and removed from the site. Upon completion of installation, clean all spaces of debris caused by woodwork installation.
- B. Protection: Protect all woodwork from marring, defacement of other damage until final completion and acceptance of the project by the Owner. Repair or replace all defective units prior to final inspection as directed by the Architect. Any units that cannot be satisfactorily repaired in the opinion of the Architect shall be replaced with new units of same original design, at no additional cost to the Owner.

END OF SECTION 064023