SECTION  – interior architectural woodwork

1. General
   1. SUMMARY

SPEC NOTE: Modify the following list to reflect what is indicated below and what is required on the Project. Remove items not required on the project and delete from Part 2 and Part 3 below.

* + 1. Section Includes:
       1. High pressure decorative laminate
       2. Hardwood base and trim.
       3. Panel materials.
       4. Cabinet hardware
       5. Upholstery work.
       6. Interior wood frames and jambs.
       7. Shop priming of interior architectural woodwork.
  1. Reference standards
     1. Architectural Woodwork Manufacturers' Association of Canada (AWMAC):
        1. Architectural Woodwork Standards (AWS), latest edition.
     2. American Society for Testing and Materials (ASTM):
        1. ASTM A307-04e1, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
        2. ASTM D6007-02, Standard Test Method for Determining Formaldehyde Concentration in Air from Wood Products Using a Small-Scale Chamber
        3. ASTM D6330-98(2003), Standard Practice for Determination of Volatile Organic Compounds (Excluding Formaldehyde) Emissions from Wood-Based Panels Using Small Environmental Chambers Under Defined Test Conditions
        4. ASTM E1333-96(2002), Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber
     3. Underwriters Laboratories of Canada (ULC):
        1. CAN/ULC S102-18, Standard Method of Test for Surface Burning Characteristics of building Materials and Assemblies
     4. Canadian Standards Association ([CSA](http://www.csa.ca/)):
        1. CSA B111‑1974 (R2003), Wire Nails, Spikes and Staples
        2. CSA G164‑M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles
        3. CAN/CSA O80 Series‑97 (R2002), Wood Preservation
        4. CSA O86‑01, Engineering Design in Wood
        5. CSA O112 Series‑M1977(R2001), Adhesives for Wood
        6. CSA O121‑M1978 (R2003), Douglas Fir Plywood
        7. CAN/CSA‑O141‑M91(R1999), Softwood Lumber.
        8. CSA O151‑M1978(R2003), Canadian Softwood Plywood.
        9. CSA O325.0‑92(R2003), Construction Sheathing
        10. CSA O437 Series 93 (R2003) OSB and Waferboard
        11. CSA O452 Series 94 (R2001), Design Rated OSB
     5. National Lumber Grading Association (NLGA):
        1. NLGA Canadian Lumber Grading Rules
  2. COORDINATION
     1. 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.
  3. ADMINISTRATIVE REQUIREMENTS
     1. Coordination: Coordinate sizes and locations of framing, blocking, furring, and reinforcements provided by work that is specified in other Sections is complete before starting work of this Section.
     2. Pre-Construction Meeting: Arrange a preconstruction meeting in accordance with   
        Section 01 31 19 – Project Meetings, attended by Contractor’s personnel, Consultant, finish carpentry Subcontractor to discuss:
        1. Installation requirements
        2. Special surface effects and finishing
        3. Coordination of work with adjacent finishes
        4. Protection of finishes
        5. Acceptability of substrates and quality of materials being used for the project.
  4. SUBMITTALS
     1. Product Data: For the following:
        1. Anchors.
        2. Adhesives.
        3. Shop finishing materials.
     2. Shop Drawings:
        1. Include the following:
           1. Dimensioned plans, elevations, and sections.
           2. Attachment details.
        2. Show large-scale details.
        3. Show locations and sizes of furring, blocking, and hanging strips, including blocking and reinforcement concealed by construction and specified in other Sections.
        4. Apply Architectural Woodwork Manufacturer's Association of Canada (AWMAC) Certification Program label to Shop Drawings.
     3. Samples: For each exposed product and for each shop-applied colour and finish specified.
        1. Size:
           1. Panel Products: 305mm x 305mm (12” x 12”).
           2. Lumber Products: Not less than 125mm (5”) wide by 305mm (12”) long, for each species and cut, finished on one side and one edge.
     4. Samples for Initial Selection: For each type of shop-applied exposed finish.
        1. Size:
           1. Panel Products: 305mm x 305mm (12” x 12”).
           2. Lumber Products: Not less than 125mm (5”) wide by 305mm (12”) long, for each species and cut, finished on one side and one edge.
           3. High pressure decorative laminate for finishing of millwork.
           4. Exposed Fasteners, Hardware, and Accessories: One unit for each type and finish.
     5. Samples for Verification: For the following:
        1. Lumber for Transparent Finish: Not less than 125mm (5”) wide by 305mm (12”) long, for each species and cut, finished on one side and one edge.
        2. Veneer Leaves: Representative of and selected from flitches to be used for transparent-finished interior architectural woodwork.
        3. Lumber and Panel Products with Shop-Applied Opaque Finish: 125mm (5”) wide by 305mm (12”) long for lumber and 305mm x 305mm (12” x 12”) for panels, for each finish system and colour.
  5. CLOSEOUT SUBMITTALS
     1. Quality Standard Compliance Certificates: AWMAC Certification Program certificates.
  6. QUALITY ASSURANCE
     1. Manufacturer's Qualifications: 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.
     2. Contractor executing work of this section shall have a minimum of five (5) years continuous experience in successful manufacture/fabrication and installation of work of type and quality shown and specified. Submit proof of experience upon Consultant's request.
     3. Follow applicable requirements of The Architectural Woodwork Manufacturer's Association of Canada (AWMAC), Architectural Woodwork Standards (AWS), latest edition, including supplements and modifications.
        1. Unless otherwise indicated on drawings, all millwork shall be Premium Grade, in accordance with (AWS).
     4. Supplements and modifications to the above standards as indicated on the drawings or as specified herein shall govern work of this section.
  7. DELIVERY, STORAGE, AND HANDLING
     1. Comply with the Architectural Woodwork Standards.
     2. Do not deliver interior architectural woodwork until painting and similar finish operations that might damage woodwork have been completed in installation areas.
     3. Store woodwork in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.
        1. Handle and store fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions.
     4. Coordinate deliveries to comply with construction schedules and arrange ahead for under cover storage location.
     5. Materials shall be carefully checked, unloaded, stored, and handled to prevent damage. Protect material with suitable non-staining waterproof coverings.
     6. Store material in original, undamaged containers or wrappings.
     7. Unsatisfactory materials shall be promptly removed from the site.
     8. Adequately protect the structure and work of other sections during delivery, storage, handling and execution of the work of this section.
     9. Provide tools, plant and other equipment required for the proper execution of the work of this section.
  8. SITE CONDITIONS
     1. Site Measurements: Verify dimensions by site measurements before fabrication and indicate measurements on Shop Drawings where casework is indicated to fit walls and other construction; coordinate fabrication schedule with construction progress to avoid delaying the Work; locate concealed framing, blocking, and reinforcements that support woodwork by site measurements before being enclosed and indicate measurements on Shop Drawings.
     2. Established Dimensions: Establish dimensions and proceed with fabricating casework without confirmed site measurements where site measurements cannot be made without delaying the Work; coordinate with the construction to ensure that actual dimensions correspond to established dimensions; allow for trimming and fitting.
     3. Ambient Conditions: Maintain area or room in which casework is being installed at a uniform temperature and humidity for 24 hours prior to, during and after installation in accordance with (AWS) for relative humidity and moisture content; provide additional lighting to maintain a minimum of 430 lx on surfaces and areas where casework is being installed.
  9. WARRANTY
     1. Warrant plastic laminate work of this Section against defects in materials and workmanship in accordance with General Conditions but for an extended period of two (2) years.
     2. Agree to repair or replace faulty materials or work which appears during warranty period, without cost to the Owner/Tenant. Defects shall include but not be limited to, opening of joints, cracking, shrinkage, warpage, delamination of plastic laminate.

1. Products
   1. ARCHITECTURAL WOODWORK, GENERAL
      1. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.
         1. Provide labels and certificates from AWMAC certification program indicating that woodwork and installation complies with requirements of grades specified.
   2. FRAMING LUMBER
      1. Lumber for structural components shall be of species and grade specified, well seasoned, and processed and stamped at same mill with appropriate grade markings. Conform to requirements of standard grading rule for Canadian lumber of Nation Lumber Grades Authority (NLGA) latest issue, approved by Canadian Lumber Standards Administrative Board, as follows:
         1. Rough Carpentry for built-in work: No. 2 select grade Ontario white pine.
         2. Blocking, Ground, Furring and Strapping, Bucks and Nailing Strips: C.L.A. No. 1 grade pine, kiln dried stock.
         3. Non-Exposed Softwood: Fabricator’s option, meeting requirements of CAN/CSA O141-05(R2009), kiln dried for interior use to a moisture content of 4% to 8%, and 7% to 10% for exterior use; Surface 4 sides (S4S).
   3. PLASTIC LAMINATE COVERED COMPONENTS

SPEC NOTE: Update the following paragraph to match the PL# in the Product and Finish Schedule.

* + 1. Plastic laminate face sheets (PL-#): High pressure, paper based, melamine surfaced, laminated plastic sheets, conforming to CAN/CSA-A172, with thickness tolerances in accordance with Table 1 of CAN/CSA-A172 and plastic laminate grades as follows:
       1. General Purpose Grade (GP): Minimum 1.27mm (0.050") thick.
       2. Post-forming Grade (PF): Minimum 1.06mm (0.042") thick.
    2. Plastic laminate face sheet colour, gloss and texture: As indicated in   
       Section 09 06 05 – Product and Finish Schedule.

SPEC NOTE: Update the following paragraph to match the PL# in the Product and Finish Schedule.

* + 1. Plastic laminate backing and liner sheets (PL-#): High pressure, paper based, melamine surfaced, laminated plastic backing sheets, conforming to CAN/CSA-A172, backing grade (BK), minimum 0.5mm (0.020") thick.
       1. Colour: As indicated in Section 09 06 05 – Product and Finish Schedule.
    2. Cores: Unless otherwise indicated, 19mm (3/4”) thick core.
    3. Laminating Adhesive: CSA-0112, water resistant type.
    4. Draw Bolt Fasteners: 'K&V 516' by Knape & Vogt Canada. No substitutions allowed.
  1. Cabinet Hardware
     1. All cabinet hardware shall in general, conform to CAN/CGSB-9.25, ANSI/BHMA A156.9-1982 and shall be as follows, unless otherwise indicated in the equipment schedule on the Drawings:
        1. Acceptable manufacturers supplying cabinet hardware:
           1. Stanley Hardware
           2. Knape & Vogt Canada
           3. Hafele Canada Inc.
           4. Richelieu Hardware

SPEC NOTE: Update the following paragraphs to match the MT# listed in the Product and Finish Schedule.

* + - 1. Door/Drawer Pulls (MT-#): As indicated in Section 09 06 05 – Product and Finish Schedule.
      2. Hinges: Standard Door Fronts: 95 deg opening, self-closing, concealed casework type hinges for overlay doors, having dual adjustable with heat tempered steel working parts with bright nickel finish (US14).
      3. Silencers: Round vinyl, self-adhering type silencers. Provide 2 per door.
      4. Drawer Slides: Full extension, soft-close, side mounting, zinc coated, steel ball bearing, medium duty rated.
      5. Cabinet Locks: Single and double door cabinet cylinder locks to suit conditions by Best Lock Corporation. Co-ordinate keying with the Owner/Tenant.
      6. Magnetic Catches: Cast aluminum type.
      7. Cable Entry Plugs: 3" diameter, two-component, plastic type cable entry plugs with spring-loaded top closure; Colour: Black.

SPEC NOTE: Update the following paragraph to match the MT# listed in the Product and Finish Schedule.

* + - 1. Trash Grommet (MT-#): As indicated in Section 09 06 05 – Product and Finish Schedule.
      2. Adjustable Cabinet Shelf Rests: Nickel plated brass or steel, or stainless steel to BHMA A156.9, 6mm minimum diameter shelf support pegs in sockets; Adjustable on 13mm (1/2") centres.
  1. Wall Mounted Standards and Brackets – for wall hung open shelving
     1. Basis of Design Manufacturer: Knape & Vogt Canada.
     2. Wall Mounted Standards: 22mm (7/8") wide x 17.5mm (11/16") high 12-gauge heavy-duty wall mounted standards with 50mm (2") slot adjustment, 914mm (3') long and capable of supporting 65 lbs./100 sq.ft.
     3. Brackets: 305mm (12") heavy-duty steel brackets with single, moulded nylon cam lock lever.
     4. Shelf Rests: Provide end, centre, and front type shelf rests, complete with rubber cushions as required and for joining 2 shelves on one bracket.
  2. Accessories
     1. Garment Hooks: 133mm (5-1/4") high with 75mm (3") projection, institutional type garment hooks with bright chrome finish complete with mounting screws, '2038 CHR' by Knape & Vogt Canada.
     2. Closet Rods: Extension type zinc coated steel closet rods with zinc coated forged steel end brackets and 2 centre supports, 1524mm to 2438mm (60" to 96") extension type, complete with mounting screws, 'KV2 ZC' by Knape & Vogt Canada.
  3. WOOD panel core MATERIALS
     1. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of the Architectural Woodwork Standards for each type of interior architectural woodwork and quality grade specified unless otherwise indicated.
        1. Plywood: Douglas Fir veneer core plywood, 19mm (3/4") thick or thickness as indicated on drawings, Select Sheathing-Tight Face, good two sides, sanded "B" faces and conforms to CSA 0121.
        2. Particleboard: ANSI A208.1, 700 kg/m³ density.
        3. Medium density fibreboard (MDF): ANSI A208.2, density minimum 750 kg/m³, moisture resistant.
           1. Basis of Design Materials: Premier Plus MR MDF by Flakeboard.
        4. Fire-Rated (FR) Medium density fibreboard (MDF): ANSI A208.2, meeting CAN/ULC S102, FSC certified; Modulus of Rupture (MOR): 4000 psi, with face screw hold of 250lbs.
           1. Basis of Design Materials: TRUPAN Fire-Rated (FR) MDF by Arauco.
  4. solid wood panel
     1. Tambour Wood (WD-#): White Oak, conforming to requirements of AWMAC Custom Grade and NHLA Select Grade.
        1. Referred to section 09 06 05 – Product and Finish Schedule and to the architectural drawings.
        2. Basis of design: Solid Wood Tambour – T458 by Surfacing Solutions.
  5. wood venEer

SPEC NOTE: Update the following paragraphs to match the WD# listed in the Product and Finish Schedule.

* + 1. Wood Veneer (WD-#): White Oak, conforming to requirements of AWMAC Custom Grade and NHLA Select Grade.
       1. Finish:

SPEC NOTE: The following are examples of what can be found on an interiors project. Edit accordingly and remove the items that are not required.

* + - * 1. WD-#: Natural stain finish
        2. WD-#A: Black, to match PT-#, as indicated in Section 09 06 05 – Product and Finish Schedule.
      1. Detail WD-#A: Notch every 125mm (5”) with 2mm deep x 2mm wide notch, as indicated on Drawing A08.02
         1. Alternate quarter cut and flat cut veneer for WD-1A, as indicated.
      2. Core: Fire-rated MDF
  1. INTERIOR STANDING AND RUNNING TRIM FOR OPAQUE FINISH
     1. Architectural Woodwork Standards (AWS) Grade: Premium.
        1. Wood Species: Any closed-grain hardwood.
        2. Wood Moisture Content: 5 to 10 percent.

SPEC NOTE: Update the following paragraph to match the WB# listed in the Product and Finish Schedule.

* + 1. Hardwood Baseboards (WB-#): As indicated in Section 09 06 05 – Product and Finish Schedule.

SPEC NOTE: Delete the following if there is no Upholstery Work on the Project.

* 1. upholstery work
     1. Cushion Material: Manufactured to the Standards of the Polyurethane Foam Association and meeting the requirements of ASTM D5672 for indentation resistance, combustion modified high resiliency flexible polyurethane foam with the following properties:
        1. Seat Cushion:
           1. Core: High Resiliency Foam, 50 mm thickness having nominal density of 40 kg/m3 +5%, having a nominal 45 IFD at 36 kg/m2 and 25% CFD with a minimum 2.5 CM.
           2. Overlay: Filled Conventional Foam, 25 mm thickness having nominal density of 29 kg/m3 +5%, having a nominal 30 IFD at 36 kg/m2 and 25% CFD with a minimum 2.0 CM.
           3. Compression Set: After Humid Aging in accordance with ASTM D3574, Procedure J.1; and Compression Set in accordance with ASTM D3574 except samples shall be deflected 75% of the original sample height; Compression Set calculations shall be done in accordance with ASTM D3574 Section 42.1.1, as follows:

Filled Conventional Foam: 10% maximum compression set, after humid aging.

High Resiliency Foam: 30% maximum compression set.

* + - * 1. Profile seat cushion to full wrap, bevels and profiles indicated on Drawing.
      1. Seat Backs:
         1. Core: Filled Conventional Foam, 32 mm thickness, having nominal density of 29 kg/m3 +5%, having a nominal 30 IFD at 36 kg/m2 and 25% CFD loading with a minimum 2.0 CM.
         2. Profile seat back cushion to full wrap, bevels and profiles indicated on Drawing.
      2. Covering Materials:
         1. Ticking: Fire retardant treated separation sheet to prevent foam catching on material and to provide a moisture resistant separation between foam and fabric:

Basis-of-Design Materials: Gore-Tex

SPEC NOTE: Update the following paragraph to match the UP# listed in the Product and Finish Schedule.

* + - * 1. Fabric (UP-#): Material, Colour and Manufacturer: As indicated in   
           Section 09 06 05 – Product and Finish Schedule.
      1. Fastening Devices: Woven nylon hook and loop fastener tape, high use rated with stitched and fastened to fabricated seat cushions, backs and base, 50 mm width by maximum possible length, colour black.
      2. Fabricate upholstery items so that seams are stitched watertight, cushions and backs held in place by hook and loop tapes, padding can be removed from cushions using a concealed zipper, and box work completed similar to casework specified below.
  1. INTERIOR FRAMES AND JAMBS FOR OPAQUE FINISH
     1. Architectural Woodwork Standards (AWS) Grade: Premium.
     2. Wood Species: Any closed-grain hardwood.
        1. Do not use plain-sawn softwood lumber with exposed, flat surfaces more than 3” (76 mm) wide.
        2. Wood Moisture Content: 5 to 10 percent.
  2. MISCELLANEOUS MATERIALS
     1. Glue: CSA 0112; Water-resistant urea-formaldehyde free resin glue.
     2. Furring, Blocking, Shims, and Nailers: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.
     3. Provide self-drilling screws for metal-framing supports, as recommended by metal-framing manufacturer.
     4. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage.
        1. Provide metal expansion sleeves or expansion bolts for post-installed anchors.
        2. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

SPEC NOTE: List millwork supports in Section 05 70 00, within the schedule at the end of 05 70 00 – Decorative Metal.

* + 1. Millwork Supports: As indicated in Section 05 70 00 – Decorative Metal.
    2. Installation Adhesive: Product recommended by fabricator for each substrate for secure anchorage.
  1. FABRICATION
     1. Work shall be executed by skilled carpenters under the supervision of a competent carpentry foreman. All items shall be shop assembled, insofar as is practical.
     2. Unless indicated otherwise comply with the Architectural Woodwork Standards (AWS), published by AWMAC; “Premium Grade” requirements.
     3. Make thorough examination of drawings and details, check anchorage, interfacing with work of other sections and other factors influencing the installation of the work, and be fully cognizant of requirements.
     4. Finished woodwork shall be free from bruises, blemishes, mineral marks, knots, shakes and other defects and shall be selected for uniformity of colour, grain, and texture.
     5. Fabricate interior architectural woodwork to dimensions, profiles, and details indicated.
        1. Ease edges to radius indicated for the following:
           1. Edges of Solid-Wood (Lumber) Members: 1.5mm (1/16”) unless otherwise indicated.
     6. Complete fabrication, including assembly, 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 allowance for scribing, trimming, and fitting.
        3. Notify Consultant seven days in advance of the dates and times interior architectural woodwork fabrication will be complete.
        4. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled.
           1. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting.
           2. Verify that parts fit as intended, and check measurements of assemblies against field measurements indicated on approved Shop Drawings before disassembling for shipment.
     7. Be responsible for methods of construction and for ensuring that materials are rigidly and securely attached and will not be loosened by the work of other sections.
     8. Fabricate the work in a manner which will permit expansion and contraction of the materials without visible open joints.
     9. Mitre exposed corners: no end grain shall be visible in completed installation.
     10. Provide solid wood edging at exposed plywood edges.
     11. Jointing of shop assembled work shall be by means of mortise and tenons, dowels, stub tenons, dovetails, dadoes, lock joints as applicable for the jointing condition.
     12. Accurately cut, mitre, fit and framework together to produce tight hairline joints, rigidly secured together in a permanent manner using glue, blind screw fixing or nails. Use concealed glue blocks for additional strength where possible.
     13. Finished woodwork shall be in one piece wherever possible and all trim shall be in long lengths. Where jointing is necessary in the length, the joints between pieces shall be scarfed, glued, and properly fastened. The material being jointed shall match reasonably well for grain and colour where natural finish is specified. Joints between lengths where paint finish is to be applied may be finger jointed in lieu of scarfing. Trim shall be accurately cut and mitred at all corners, glued, and properly fastened.
     14. Machine dressed work shall be properly machine using sharp cutters, the finished work shall be free from drag, feathers, slivers, or roughness of any kind. Remove machine marks by sanding.
     15. Finished woodwork shall be carefully hand sanded after installation to remove roughness and planer marks. Sanding shall be done with the grain of the wood and finished with fine grit paper to leave a smooth scratch-free surface suitable to receive the paint or natural finishes to be applied over as specified in Section 09 91 23.
     16. Nail heads in the finished surfaces shall be set with straight shank nail sets. Screw and bolt heads in finished surfaces shall be let into the work and capped with edge grain wood caps dressed and finished flush.
     17. Provide cutouts for sinks, fixtures, fittings, inserts, outlet boxes, services, other mechanical and electrical items, and appliances. Round corners, and chamfer edges. Where items for cutouts butt to underside or back of finished surface, finish exposed edge to match face. Where item covers cutout, and at all concealed cut edges of core material, apply uniform coating of seal to cut edges.
     18. The finished work shall be of a high quality, with all corners having exact angles to ensure no swerve or twisting. All bends, crimps or angle parts shall be produced by professional equipment and tools for this purpose and if long runs or repeats are required, such shall be produced in the shop, or have proper equipment on site.
     19. Counters, Cabinets and Fitments:
         1. Provide and install counters, cabinets, and fitments as indicated on drawings.
         2. Shop fabricates and finish countertops and cabinet work in as large a size as practical. Verify field dimensions and conditions prior to fabrication.
         3. Make each unit rigid and self-supporting, suitable for individual removal. Assemble components with dovetail connections, mortise and tenon or blind dado joints, and adequately glued and secured with screws.
         4. Construct cabinets of solid lumber framing, with 19mm (3/4") MDF. Provide 19mm (3/4") MDF bottoms. Provide minimum 6mm (1/4") thick MDF full width backs having joints concealed behind framing. Backs which support shelves, equipment, or other loads, shall be 19mm (3/4") thick MDF. Route backs into end gables.
         5. Fabricate cabinet base in wood, separately in height indicated or, if not indicated, to match flooring base.
         6. Fabricate cabinet doors of flush panels from 19mm (3/4") thick MDF framed with hardwood edging.
         7. Make drawer fronts of 19mm (3/4") finished MDF, and wide enough to cover slide space. Provide 13mm (1/2") drawer backs, 16mm (5/8") sides, 6mm (1/4") dividers, and 6mm (1/4") bottoms, all of finished MDF. Fasten sides to fronts with dovetail joints and grooved and glued joints for backs. Groove and glue bottoms into fronts and sides.
         8. Drawers shall be supported and guided with side extension drawer slides, complete with self-closing hardware.
         9. Where a locking drawer is located below another drawer, provide 6mm (1/4") thick plywood diaphragm in framing immediately above locking drawer.
         10. Fabricate shelving of 19mm (3/4") finished MDF. Route cabinet gables to receive fixed shelving where indicated and to receive recessed metal shelf standards flush with adjacent surfaces for adjustable shelving.
         11. Fabricate countertops to details shown of 3/4" plywood, unless otherwise indicated on the Drawings.
             1. Provide exterior grade waterproof Douglas Fir plywood for countertops to receive sinks. Fit corners and edges of countertops with solid stock. Extend side and backsplashes to heights indicated. Provide side returns to match backsplashes at all abutting fixed vertical surfaces.
         12. Support counters without cabinets below on solid wood framing, and MDF gables.
         13. Provide MDF shelf units with finished plywood cleats for shelving and coat rod installations. Provide closet rods with end flanges and intermediate supports.
     20. Plastic Laminate Covered Components:
         1. Meet requirements of CAN/CSA-A172, Appendix A, and Architectural Woodwork Standards (AWS) Grade: Premium, for plastic laminate covered components.
         2. Bond plastic laminate to core with adhesive using pressure. Provide balanced construction with plastic laminate face sheet on exposed sides of core and backer/liner sheet. Finish drawers with liner sheet on both sides of core for balanced construction.
         3. Unless otherwise detailed, provide 19mm (3/4") thick MDF core.
         4. Apply plastic laminate to core material in accordance with adhesive manufacturer's instructions. Provide same core and laminate profiles to provide continuous support and bond over entire surface.
         5. Use continuous lengths up to 2439mm (8'). Keep joints 610mm (2') from cutouts and in locations indicated on reviewed shop drawings.
         6. Locate joints, where required at 2439mm to 3048mm (8' to 10') O.C. At L-shaped corners mitre plastic laminate, to the outside corner. Accurately fit members together to provide tight and flush butt joints, in true planes. Provide 6mm (1/4") blind spline and approved type draw bolts; one draw bolt for widths up to 150mm (6") at maximum 457mm (18") centres for widths exceeding 150mm (6"). Colour-match adjoining units.
         7. Form shaped profiles and bends using postforming grade laminate to laminate manufacturer's instructions.
         8. Where curved or bent surfaces are required for counters, backsplashes, and other areas, use postforming laminate.
         9. Self-edge straight-line-edging with general purpose laminate and radius corners with postforming laminate, of same colour and finish as facing sheet, to cover exposed edges of core material. Apply with same adhesive as facing sheet. Chamfer edges uniformly at approximately 20 deg using machine router. Do not mitre laminate edges.
         10. Fabricate horizontal wearing surfaces including counters, shelves, both sides of removable shelves, cabinet doors and drawer fronts, of general-purpose laminate except where postforming is required.
         11. Use general purpose laminate for exposed vertical surfaces except where otherwise specified or indicated.
         12. Apply plastic laminate backing sheet to reverse side of core of plastic laminate finished work including under counter tops and concealed portions of plastic laminate faced work. Provide backing sheet of specified minimum thickness, increased as required to compensate stresses caused by facing sheet.
         13. Apply laminated plastic liner sheet to interior of cabinetry unless indicated otherwise.
         14. Where cutouts are required in countertops for items that butt to underside of top only, trim edges of opening with postforming laminate. Use radiused corners and chamfer edges around cutouts to avoid chipping laminate. Where item covers cutout, apply uniform coating of sealer to cut edges.
         15. Assemble work, true and square. Arrange adjacent parts of continuous laminate work to match in colour and pattern.
  2. SHOP PRIMING
     1. Preparations for Finishing: Comply with the Architectural Woodwork Standards for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing interior architectural woodwork, as applicable to each unit of work.
     2. Interior Architectural Woodwork for Opaque Finish: Shop prime with one coat of wood primer as specified in Section 09 91 23 – Interior Painting.
        1. Backpriming: Apply one coat of primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.
     3. Interior Architectural Woodwork for Transparent Finish: Shop-seal concealed surfaces with required pretreatments and first coat of finish as specified in Section 09 06 05 – Product and Finish Schedule.
        1. Backpriming: Apply one coat of sealer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.
  3. SHOP FINISHING
     1. Finish interior architectural woodwork as indicated in Section 09 06 05 – Product and Finish Schedule, and as indicated on Drawings at fabrication shop. Defer only final touch-up, cleaning, and polishing until after installation.
     2. Preparation for Finishing: Comply with Architectural Woodwork Standards, Section 5 for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing interior architectural woodwork, as applicable to each unit of work.
        1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of interior architectural woodwork. Apply two coats to end-grain surfaces.
     3. Transparent Finish:
        1. Architectural Woodwork Standards (AWS) Grade: Premium.
        2. Filled Finish for Open-Grain Woods: After staining, apply wash-coat sealer and allow to dry. Apply paste wood filler and wipe off excess. Tint filler to match stained wood.
        3. Sheen: As indicated in Section 09 06 05 – Product and Finish Schedule.
     4. Opaque Finish:
        1. Architectural Woodwork Standards (AWS) Grade: Premium.
        2. Colour and Sheen: As indicated in Section 09 06 05 – Product and Finish Schedule.

1. Execution
   1. PREPARATION
      1. Before installation, condition interior architectural woodwork to humidity conditions in installation areas for not less than 72 hours prior to beginning of installation.
      2. Before installing interior architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming of concealed surfaces.
   2. INSTALLATION
      1. Grade: Install interior architectural woodwork to comply with Architectural Woodwork Standards (AWS) Grade: Premium.
      2. Assemble interior architectural woodwork and complete fabrication at Project site to the extent that it was not completed during shop fabrication.
      3. Install interior architectural woodwork level, plumb, true in line, and without distortion.
         1. Shim as required with concealed shims.
         2. Install level and plumb to a tolerance of 3mm in 2400mm (1/8” in 96”).
      4. Scribe and cut interior architectural woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
      5. Fire-Retardant-Treated Wood: Install fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.
      6. Refer to drawings and coordinate with drywall, the painting and floor covering sections to establish sequence of installation or execution of each others' work. Pay particular attention to areas where materials are supplied by others and installed under this Contract.
      7. All nails where their use is permitted, shall be long enough so that at least half their length penetrates into the second member. Splitting of wood members shall be minimized by staggering the nails in the direction of the grain and by keeping nails well in from edges.
      8. Unless otherwise permitted by Consultant, fasten finish carpentry components in concealed manner.
      9. Plastic laminate work shall be free of cracks and chipped or broken edges. Replace damaged components.
      10. Anchor interior architectural woodwork to anchors or blocking built in or directly attached to substrates.
          1. Secure with countersunk, concealed fasteners and blind nailing.
          2. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with interior architectural woodwork.
          3. For shop-finished items, use filler matching finish of items being installed.
      11. 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 905mm (36”) long, except where shorter single-length pieces are necessary.
          3. Scarf running joints and stagger in adjacent and related members.
          4. Fill gaps, if any, between top of base and wall with plastic wood filler; sand smooth; and finish same as wood base if finished.
          5. Install standing and running trim with no more variation from a straight line than 3mm in 2400 mm (1/8” in 96”).
   3. INSTALLATION - CABINET HARDWARE
      1. Install cabinet hardware in shop wherever possible.
      2. Install cabinet hardware secure, plumb, level, true to line, and in accordance with hardware manufacturers' instructions.
      3. Cut and fit to finish carpentry and millwork for proper installation and operation of cabinet hardware. Size cutouts so that hardware item completely covers cutouts.
      4. Adjust and lubricate cabinet hardware as required for smooth and efficient operation without binding.
   4. INSTALLATION - FINISHING HARDWARE
      1. Take delivery of all finishing hardware and install. Check each item as received.
      2. Set, fit and adjust hardware according to manufacturer's directions at heights directed by Consultant. Hardware shall operate freely. Protect installed hardware from damage and paint spotting.
      3. Install all hardware for hollow metal doors including hinges. Prepare wood doors for installation with required bevels, clearances, and mortices for hardware. Install wood doors, door grilles and all applicable hardware.
      4. Pre-drill kickplates and doors before attachment of plates. Apply with water-resistant adhesive and countersunk stainless-steel screws.
   5. FIELD QUALITY CONTROL
      1. Inspections: Provide inspection of installed Work through AWMAC Certification Program certifying that woodwork, including installation, complies with requirements of the Architectural Woodwork Standards for the specified grade.
         1. Inspection entity shall prepare and submit report of inspection.
   6. REPAIR
      1. Repair damaged and defective interior architectural woodwork, where possible, to eliminate functional and visual defects and to result in interior architectural woodwork being in compliance with requirements of Architectural Woodwork Standards for the specified grade.
      2. Where not possible to repair, replace defective woodwork.
      3. Shop Finish: Touch up finishing work specified in this Section after installation of interior architectural woodwork.
         1. Fill nail holes with matching filler where exposed. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats are shop applied.
      4. Field Finish: See Section 09 91 23 – Interior Painting, for final finishing of installed interior architectural woodwork not indicated to be shop finished.
   7. CLEANING
      1. Clean interior architectural woodwork on exposed and semi-exposed surfaces.

end of section