

## **PART 1 – GENERAL**

### **1.1 GENERAL REQUIREMENTS**

- .1 Comply with requirements of Division 1.

### **1.2 RELATED SECTIONS**

- .1 Section 05 50 00: Metal Fabrications.
- .2 Section 06 10 00: Rough Carpentry.
- .3 Section 06 47 00: Plastic Laminates.
- .4 Section 07 92 00: Joint Sealing.
- .5 Section 09 91 00: Painting.
- .6 Section 12 35 53.12 – Steel Laboratory Casework.

### **1.3 REFERENCES**

- .1 ANSI/NPA A208.1-2009, Particleboard.
- .2 ANSI/NPA A208.2-2009, Medium Density Fiberboard (MDF) for Interior Applications.
- .3 ASTM A240 / A240M-15a, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and General Applications.
- .4 ANSI/HPVA HP-1-2009, Standard for Hardwood and Decorative Plywood.
- .5 ASTM E1333-14, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber.
- .6 ASTM D5116-10, Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.
- .7 Architectural Woodwork Standards, Edition 2 (2014) – Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI).
- .8 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .9 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
- .10 CSA O112-M Series 1977 (R2006), Standards for Wood Adhesives.
- .11 CSA O121-08(R2013), Douglas Fir Plywood.

### 1.3 REFERENCES (continued)

- .12 CSA O141-05(R2014), Soft Lumber.
- .13 CSA O151-09(R2014), Canadian Softwood Plywood.
- .14 CSA O153-13, Poplar Plywood.
- .15 ANSI/NEMA LD 3-2005, High Pressure Decorative Laminates.
- .16 National Lumber Grades Authority (NLGA): Standard Grading Rules for Canadian Lumber, 2010.

### 1.4 SUBMITTALS

- .1 Provide Submittal submissions: in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Shop Drawings Submittals: Provide Shop Drawings in accordance with Section 01 33 00 – Submittal Procedures.
  - .1 Indicate details of construction, profiles, jointing, fastening and other related details.
    - .1 Scale: Elevations 1:20  
Sections: 1:10  
Details: 1:2
  - .2 Indicate materials, thicknesses, finishes and hardware.
  - .3 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.
- .3 Quality assurance submittals:
  - .1 Manufacturer's Instructions: manufacturer's installation instructions.

### 1.5 QUALITY ASSURANCE

- .1 Do architectural woodwork to "Architectural Woodwork Standards" of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), latest edition, except where specified otherwise.
- .2 Where modifications to the AWMAC "Architectural Woodwork Standards" are included in this specification, such modifications shall govern in case of conflict.
- .3 Any reference to Custom or Premium grade in this Section shall be as defined in the AWMAC Architectural Woodwork Standards.
- .4 Any item not given a specific quality grade shall be custom grade as defined by AWMAC Architectural Woodwork Standards: the middle or normal grade in both material and workmanship is intended for high quality conventional work.
- .5 The casework fabricator is responsible for all field dimensions on site that will affect his work. Contractor is to coordinate the installation of all casework.

### 1.5 QUALITY ASSURANCE (continued)

- .6 If requested by the Departmental Representative, the architectural casework manufacturer is to provide a list of completed projects of equal or more value than this project completed in the last two years.
- .7 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .8 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.

### 1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 – Common Product Requirements.
  - .1 Protect millwork against dampness and damage during and after delivery.
  - .2 Store millwork in ventilated areas, protected from extreme changes of temperature or humidity.

### 1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard and packaging material in appropriate on site bins for recycling in accordance with Waste Management Plan.
- .4 Fold up metal banding, flatten and place in designated area for recycling.

## PART 2 - PRODUCTS

### 2.1 LUMBER MATERIALS

- .1 Unless otherwise indicated provide AWMAC Custom Grade.
- .2 All wood materials shall be new, straight and clean, free of sap, knots, pitch, and other defects, except as permitted by applicable grading rules. Machine stress-rated lumber is acceptable.
- .3 Softwood lumber: unless specified otherwise, S4S, moisture content 19% or less, dressed all sides, used in concealed locations only, in accordance with following standards:
  - .1 CAN.CSA O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.
  - .3 AWMAC custom grade, moisture content as specified.
  - .4 All lumber to be Grade S-P-F No. 1 /No. 2 unless noted otherwise.

## 2.1 LUMBER MATERIALS (continued)

- .4 Hardwood lumber: moisture content 6% or less in accordance with following standards:
  - .1 National Hardwood Lumber Association (NHLA).
  - .2 AWMAC custom grade, moisture content as specified.
  - .3 Species: Solid maple.

## 2.2 PANEL AND SURFACE MATERIALS

- .1 Douglas fir plywood (DFP): to CSA O121, standard construction. Urea-formaldehyde free.
- .2 Canadian softwood plywood (CSP): to CSA O151, standard construction. Urea-formaldehyde free.
- .3 Hardwood plywood: to ANSI/HPVA HP-1. Urea-formaldehyde free.
- .4 Poplar plywood (PP): to CSA O153, standard construction. Urea-formaldehyde free.
- .5 Particleboard: to ANSI A208.1. Urea-formaldehyde free.
- .6 Birch plywood: to AWMAC Select White. Urea-formaldehyde free.
- .7 Hardboard:
  - .1 To CAN/CGSB-11.3.
  - .2 Urea-formaldehyde free.
- .8 MDF (medium density fibreboard) core: to ANSI A208.2, density 769 kg/m<sup>2</sup>.
  - .3 Medium density fibreboard must:
  - .4 Meet the performance requirements of ANSI A208.2.
  - .5 Urea-formaldehyde free.
- .9 Plastic Laminate: as specified in Section 06 47 00 – Plastic Laminates.
- .10 Tempered hardboard pegboard: 1210 mm x 2440 mm. x 6 mm. thickness, pegboard.
  - .1 Install continuous pegboard panels, c/w hardwood trim pieces, wall-mounted in space below upper cabinets and work bench countertops as indicated on drawings.

## 2.3 FASTENERS

- .1 Nails and staples: to CSA B111.
- .2 Wood screws: to CSA B35.4, type and size to suit application

## 2.4 SEALANT AND ADHESIVE

- .1 Sealant in accordance with Section 07 92 00 – Joint Sealing.
- .2 Adhesives for wood: to CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable

## 2.4 SEALANT AND ADHESIVE (continued)

- .3 Plastic laminate adhesive: as specified in Section 06 47 00 Plastic Laminates.

## 2.5 CASEWORK

- .1 Fabricate caseworks to AWMAC custom quality grade.
- .2 Furring, blocking, nailing strips, grounds and rough bucks and sleepers.
  - .1 Board sizes: "Standard" or better grade.
  - .2 Dimension sizes: "Standard" light framing or better grade.
  - .3 Urea-formaldehyde free.
- .3 Framing: pine species, NLGA.
- .4 Case bodies (gables, ends, divisions and bottoms).
  - .1 Particle board, grade R, 19 mm thick.
  - .2 Plastic laminate - refer to Section 06 47 00 – Plastic Laminates:
  - .3 Facing: PVC edging as per Section 06 47 00 – Plastic Laminates.
- .5 Backs.
  - .1 Particleboard, grade R, 19 mm thick in exposed locations, 12 mm in non-exposed areas.
  - .2 Plastic laminate - refer to Section 06 47 00 – Plastic Laminates.
- .6 Shelving.
  - .1 Particleboard, grade R, to the following thicknesses:
    - .1 19 mm for up to 915 mm of unsupported length.
    - .2 25 mm for unsupported lengths between 915 mm and 1066 mm.
  - .2 Plastic laminate: refer to Section 06 47 00 – Plastic Laminates.
  - .3 Shelf edging: PVC edging as per Section 06 47 00 – Plastic Laminates.

## 2.6 COUNTER TOPS AND BACK SPLASH

- .1 Laminated hardwood countertop: solid "butcher block" construction, custom grade, maple:
  - .1 countertop 610 mm wide x length as shown on drawings; solid maple lengths, each piece 50 mm. wide x 40 mm. thick x length of countertop; lengths laid out in single direction running the length of the countertop; laminated together to finished dimensions and details shown on drawings.
  - .2 Hardwood back splash:
    - .1 Maple; 100 mm. high x 19 mm. thick, to suit length of countertop, as shown on drawings.
  - .3 Adhesive: low VOC, urea –formaldehyde free.
  - .4 Finish: clear urethane as specified in Section 09 91 00 – Painting.
- .2 Bent Steel plate countertop in Maintenance Work Shop (A124) – as specified in Section 05 50 00 – Metal Fabrications.
- .3 Steel support frame for Laminated Hardwood countertop: as specified in Section 12 35 53.12 – Steel Laboratory Casework.

**2.6 COUNTER TOPS AND SPLASHBACK** (continued)

- .4 Heavy duty welded table frame for bent steel plate countertop: as specified Section 12 35 53.12 – Steel Laboratory Casework.

**2.7 HARDWARE**

- .1 Adjustable shelving pilaster standards to GSB-69-SM, lengths as required:
  - .1 Acceptable products: Knapt and Vogt KV-255 c/w KV-256 supports, or approved equal.

**2.8 EDGE BANDING**

- .1 Edge banding: PVC as specified in Section 06 47 00 – Plastic Laminates.

**2.9 FABRICATION**

- .1 Details shall conform to flush overlay design as described by AWMAC Architectural Woodwork Standards.
- .2 Assembly of casework with wood screws, nails or staples is not acceptable unless used in conjunction with at least one other of the accepted AWMAC methods of joinery.
- .3 Case body core material in contact with floor to be edge-banded or sealed to prevent absorption of water / moisture.
- .4 Apply backer sheet to reverse side of all countertops in accordance with AWMAC standards and recommendations.
- .5 Shop bond all edge banding PVC to core material using hot melt edge banding machine.
- .6 Set nails and countersink screws, apply plain wood filler to indentations, sand smooth and leave ready to receive finish.
- .7 Shop install cabinet hardware for adjustable shelves. Recess shelf standards unless noted otherwise.
- .8 Shelving to cabinetwork to be adjustable unless otherwise noted.
- .9 Provide cutouts for plumbing fixtures, inserts, outlet boxes and other fixtures.
- .10 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.
- .11 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
- .12 Ensure adjacent parts of continuous laminate work match in colour and pattern.

**2.9 FABRICATION** (continued)

- .13 Veneer laminated plastic to core material in accordance with Section 06 47 00 – Plastic Laminates. Form shaped to profiles and bends as indicated.
- .14 For casework and shelves: apply edging width to suit core material, for flatwork to cover exposed edge of core material in accordance with Section 06 47 00 – Plastic Laminates.
- .15 Laminated Hardwood Countertop and back splash:
  - .1 Fabricate countertop as shown on drawings and details.
  - .2 Fabricate countertop and back splash sections in as long a lengths as practicable.
  - .3 Ensure all joints are tight and remove all adhesive residue from exposed surfaces.
  - .4 Cut openings for fittings, accessories and equipment. Machine radius exposed edges and corners of cutouts.

**2.10 FINISHING**

- .1 Finish hardwood and metal countertops and splashbacks in accordance with Section 09 91 00 – Painting.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- .1 Do architectural woodwork to Architectural Woodwork Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
- .2 Install prefinished millwork at locations shown on drawings. Position accurately, level, plumb straight.
- .3 Install countertops in a single plane, true and level to 1 mm in 3 m, ends abutting at hairline joints and with no raised edges.
- .5 Fasten and anchor millwork securely. Provide heavy duty fixture attachments for wall mounted cabinets.
- .6 Fasten counter tops to table frames using appropriate fasteners and/or adhesives as recommended by manufacturer. Seal abutting ends in accordance with manufacturer's instructions.
- .7 Scribe and cut as required to fit abutting walls and to fit properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects.
- .8 At junction of countertop and back splash and adjacent wall finish, apply small bead of sealant.
- .9 Apply water resistant building paper bituminous coating over wood framing members in contact with masonry or cementitious construction.

**3.1 INSTALLATION** (continued)

- .10 Fit hardware accurately and securely in accordance with manufacturer's directions.

**3.2 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 – Cleaning.
- .2 Clean millwork and cabinet work, inside cupboards and drawers and outside surfaces.
- .3 Remove excess glue from surfaces.

**3.3 PROTECTION**

- .1 Protect millwork and cabinet work from damage until final inspection.

**3.4 SCHEDULES**

- .1 Provide the following items as indicated and detailed:
  - .1 Millwork units in spaces as noted on drawings.
  - .2 other items as noted on drawings and details.

**END OF SECTION**