

## Part 1 - General

### 1.1 REFERENCE STANDARDS

- .1 ASTM International:
  - .1 ASTM A653/A653M-17, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM C919-12(2017), Standard Practice for Use of Sealants in Acoustical Applications.
  - .3 ASTM E96/E96M-16, Standard Test Methods for Water Vapor Transmission of Materials.
  - .4 ASTM F1667-17, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- .2 Canadian General Standards Board (CGSB):
  - .1 CAN/CGSB-51.34-M86 AMEND, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .3 CSA International:
  - .1 CSA O112.9-10, Evaluation of Adhesives for Structural Wood Products (Exterior Exposure).
  - .2 CSA O121-17, Douglas Fir Plywood.
  - .3 CSA O141-05(R2014), Softwood Lumber.
- .4 National Lumber Grades Authority (NLGA):
  - .1 Standard Grading Rules for Canadian Lumber (2014 Edition).
- .5 Underwriters Laboratories of Canada (ULC).
  - .1 CAN/ULC-S741-08, Standard for Air Barrier Materials - Specification.

### 1.2 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials indoors in dry location off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store materials off ground with moisture barrier at both ground level and as a cover forming a well-ventilated enclosure, with drainage to prevent standing water.
  - .3 Replace defective or damaged materials with new.
  - .4 Store separated reusable wood waste convenient to cutting station and work areas.

## Part 2 - Products

### 2.1 STRUCTURAL FRAMING

- .1 Lumber: softwood, S4S, moisture content 19% (S-dry) or less in accordance with following standards:
  - .1 CSA O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.

### 2.2 FURRING AND BLOCKING

- .1 Furring, blocking, nailing strips, grounds, rough bucks, curbs, fascia backing and sleepers:
  - .1 Board sizes: "Standard" or better grade.

- .2 Dimension sizes: "Standard" light framing or better grade.

## **2.3 PANEL MATERIALS**

- .1 Douglas Fir plywood: to CSA O121; square edge, marine grade, veneer core with no voids, Grade A face plies.

## **2.4 LUMBER SIDING**

- .1 Lumber siding: board and batten type; of species and size to match existing.
- .2 Wall sheathing paper: to CAN/ULC-S741.

## **2.5 AIR AND VAPOUR CONTROL**

- .1 Air/vapour barrier: SBS modified asphalt with cross laminated polyethylene face, self-adhesive.
  - .1 Water vapour permeance: 2.8 ng/Pa.m<sup>2</sup>.s (0.05 perms) when tested in accordance with ASTM E96/E96M.
- .2 Vapour retarder: polyethylene film to CGSB-51.34-M.
  - .1 Tape as recommended by manufacturer.
  - .2 Sealant: acoustical type, to ASTM C919.
- .3 Sill Plate Gasket: Closed cell polyethylene foam gasket in width to match sill plate width, 6 mm thick.

## **2.6 ACCESSORIES**

- .1 General purpose adhesive: to CSA O112.9.
- .2 Nails, spikes and staples: to ASTM F1667.
- .3 Fastener Finishes:
  - .1 Exposed fasteners (including fasteners covered only by paint/clear coating), and fasteners for exterior use: galvanized, in accordance with ASTM A653/A653M.
    - .1 Alternative corrosion resistant finishes may be acceptable to Departmental Representative. Submit technical data on alternative finishes to Departmental Representative for review.
- .4 Concealed fasteners: no special coating required.

## **Part 3 - Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.2 SYSTEMS INTEGRATION**

- .1 Install and tie-in new air barrier and vapour retarder sheeting around framing members to ensure continuity of protection of existing exterior wall assemblies where existing barriers are present.
- .2 Install air barrier and vapour retarder around new window openings where indicated on drawings.

- .3 Install sill plate gasket in continuous lengths between concrete surfaces and wood framing.

### **3.3 FRAMING INSTALLATION**

- .1 Install members true to line, levels and elevations, square and plumb.
- .2 Construct continuous members from pieces of longest practical length.
- .3 Install spanning members with "crown-edge" up.
- .4 Select exposed framing for appearance. Install panel lumber materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.
- .5 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .6 Countersink bolts where necessary to provide clearance for other work.

### **3.4 FURRING AND BLOCKING**

- .1 Install furring and blocking as required to space-out and support casework, cabinets, and other work as required.
- .2 Install furring to support siding applied vertically where there is no blocking and where sheathing is not suitable for direct nailing.
  - .1 Align and plumb faces of furring and blocking to tolerance of 1:600.
- .3 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .4 Install wood backing, nailers, curbs and other wood supports as required and secure using galvanized steel fasteners.

### **3.5 PANEL INSTALLATION**

- .1 Install specified panel product for each application.
- .2 Install interior wood wall panels with panel end-joints located on solid bearing, and joints (vertical and horizontal) located as shown on drawings or as directed by Departmental Representative.
- .3 In addition to mechanical fasteners, secure wall panels using glue and screws in pattern and location as directed by Departmental Representative. Place continuous adhesive bead in accordance with manufacturer's instructions, single-bead on each stud and double-bead on studs where panel ends butt.

### **3.6 SIDING INSTALLATION**

- .1 Install sheathing paper lapping edges 100 mm.
- .2 Install sill flashings, wood starter strips, inside corner flashings, edgings and flashings over openings.
- .3 Fasten wood siding in straight, aligned lengths. Seal cut surfaces. Apply battens over vertical joints.

### **3.7 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

**3.8 WASTE MANAGEMENT**

- .1 Separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
- .2 Re-use scrap lumber to the greatest extent possible. Separate scrap lumber for use on site as accessory components, including: shims, bracing, and blocking.
- .3 Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill. Prevent saw dust and wood shavings from entering the storm drainage system.

**3.9 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by rough carpentry installation.

**END OF SECTION**

## Part 1 - General

### 1.1 RELATED REQUIREMENTS

- .1 Section 06 10 53 - Miscellaneous Rough Carpentry.
- .2 Section 08 14 16 - Flush Wood Doors.
- .3 Section 08 71 00 - Door Hardware.
- .4 Section 09 91 23 - Painting.

### 1.2 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI):
  - .1 ASME B18.6.1-1981 (R2016), Wood Screws (Inch Series).
- .2 ASTM International (ASTM).
  - .1 ASTM F1667-17, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- .3 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI):
  - .1 North American Architectural Woodwork Standards (NAAWS) - Edition 3.1, 2017.
- .4 CSA International:
  - .1 CSA O121-17, Douglas Fir Plywood.

### 1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature, data sheets and catalogue pages for specified products. Include product characteristics, performance criteria, dimensions and profiles, finish and limitations on use.
- .3 Shop Drawings:
  - .1 Prepare and submit shop drawings in general accordance with AWMAC NAAWS manual.
  - .2 Indicate profiles and dimensions, assembly techniques, jointing, methods of fastening, terminations and other related details.
  - .3 Indicate materials, thicknesses, finishes and hardware.
  - .4 Include schedule or key plan.
  - .5 Show profiles, elevations and details at scales recommended by AWMAC NAAWS.
  - .6 Where necessary, show location and type of blocking and backing required within supporting assemblies.
- .4 Samples:
  - .1 Submit triplicate 300 mm long representative samples of each typical item of finish carpentry.
    - .1 Standing and running trim: 300 mm long.
    - .2 Panel materials: 300 mm x 300 mm.
  - .2 Shop applied coating samples:
    - .1 For transparent finish, submit triplicate samples of each species and cut of wood to be used, finished to match project sample.
    - .2 For semi-opaque finish, submit triplicate samples for each colour selection, finished to match project sample.
  - .3 Decorative overlaid composite panels, complete with applied edge treatment and corner treatment, minimum 300 mm x 300 mm.

- .4 Samples for site applied finish:
  - .1 Furnish four (4) samples of each finish carpentry item and composite panel material to Contractor for preparation of field applied finish samples.
- .5 Submit duplicate samples of each hardware item to be left exposed in final construction. Samples will be returned for incorporation into the work.

#### **1.4 QUALITY ASSURANCE**

- .1 Perform Work of this Section by finish carpentry contractor with minimum five (5) years of current experience.
- .2 Mock-ups:
  - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
  - .2 Shop prepare one (1) typical example of each specified item of standing and running trim, wall paneling, complete with shop applied finishes, and install where directed by Departmental Representative.
  - .3 Allow 72 hours for inspection of mock-up by Departmental Representative before proceeding with Work.
  - .4 When accepted, mock-up will demonstrate minimum standard for Work.
  - .5 Do not proceed with work prior to receipt of written acceptance of mock-up by Departmental Representative.
  - .6 Accepted mock-up may remain as part of finished work.

#### **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with NAAWS recommendations and as follows.
- .2 Deliver finish carpentry materials only when area of work is enclosed, plaster and concrete work is dry, area is broom clean and site environmental conditions are acceptable for installation.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Maintain indoor temperature and humidity within range recommended by NAAWS for location of the Work.
  - .3 Store products on site as specified for minimum 72 hours prior to installation.
  - .4 Store and protect finish carpentry products from moisture, nicks, scratches, and blemishes.
  - .5 Replace defective or damaged materials with new.
- .4 Waste Management: for packaging and materials, in accordance with Section 01 74 19 - Waste Management and Disposal.

### **Part 2 - Products**

#### **2.1 QUALITY GRADE**

- .1 Provide all materials and perform all work of this Section in accordance with AWMAC NAAWS Custom Grade, except as follows:
  - .1 Premium Grade: wood wall panels is to be exposed in raw or stained finish.
- .2 In case of conflict between Contract Documents and AWMAC NAAWS grade requirements, Contract Documents govern.

#### **2.2 MATERIALS**

- .1 Softwood and hardwood lumber: Sound lumber to specified AWS grade requirements, kiln-dried to moisture content recommended for location of the Work.
  - .1 Machine stress-rated lumber is acceptable for all purposes.

- .2 Marine Grade Douglas fir plywood (DFP): to CSA O121, square edge, thickness as indicated on drawings; balance matched veneer on exposed surfaces to receive clear or stained finish.
  - .1 Use for all standard construction of interior wall cladding, casework, countertop substrates, etc.
  - .2 Finish varies; refer to Finish Schedule and Architectural drawings. Finishes to be coordinated with Departmental Representative.

## **2.3 PLYWOOD PANELLING**

- .1 Douglas Fir plywood: to CSA O121; marine grade, veneer core with no voids, Grade A face plies, square edge.
  - .1 Align wood grain across consecutive panels on all interior wall cladding applications in coordination with Departmental Representative.
  - .2 Surfaces to be free of rough faces.
  - .3 Mitre edges at all corners and sand edge to soften corner.

## **2.4 PLANK DOORS**

- .1 Plank doors: Custom interior doors, design as indicated on Drawings.
  - .1 Materials: Tongue and groove solid pine planks, grade II on frame of same material. Square edge lumber.
  - .2 Finish: to be selected by Departmental Representative.
  - .3 Sanding: Doors to be free of sharp edges and rough faces. Planks to be sanded before and after fabrication.

## **2.5 MANUFACTURED TRIM**

- .1 Interior trims:
  - .1 Material to match existing heritage trim material.
    - .1 Profile: to match existing heritage trim profile and size.
    - .2 Finish: to match existing heritage trim material.

## **2.6 MANUFACTURED SHELVING AND CASEWORK**

- .1 Marine Grade Douglas Fir plywood, good both sides, thickness as indicated on Drawings.
  - .1 Align wood grain across consecutive door/ drawer fronts on all casework applications in coordination with Departmental Representative.

## **2.7 SOLID SURFACING**

- .1 Solid surface material manufactured from acrylic/polyester resins.
  - .1 Colour: as selected by Departmental Representative from manufacturer's complete colour range.
  - .2 Thickness: 12 mm, unless noted otherwise.
- .2 Fabrication:
  - .1 Installation to be completed per Manufacturers instructions.
  - .2 Provide silicone movement joints per Manufacturers installation instructions.
  - .3 Provide hard seamed, thermoformed radiused inside corners in all shower and wet room applications unless noted otherwise.
  - .4 Bottom of panels to have dado edge to accept cove base.

## **2.8 FASTENINGS**

- .1 Provide screws, bolts, expansion shields and other fastening devices required for satisfactory installation.
- .2 All fasteners to be of non-ferrous composition.
- .3 Nails and staples: to ASTM F1667, solid brass.

- .4 Wood screws: to ASME B18.6.1, countersunk flush type unless indicated otherwise, in sizes to suit application, solid brass.
- .5 Wood plugs: species and colour to match; plugs to have face grain. End grain plugs (dowels) are not permitted.
- .6 Splines: wood.
- .7 Panel adhesive: Water-resistant type; to suit application.

## 2.9 HARDWARE

- .1 Use one (1) manufacturer's product for all similar items.
  - .1 Door/drawer pull: contemporary design, lap-over edge style with screw flange on inside face of door/drawer, metal construction.
    - .1 Size: 38 mm L x 36 mm projection; 25 mm centre to centre of fasteners.
    - .2 Material/finish/colour: as selected by Departmental Representative from manufacturer's complete material/colour/finish range.
  - .2 Drawer Slides: side mounted, heavy duty, full extension, stainless steel construction, 45 kg capacity, soft close.
  - .3 Cabinet Hinges: European style, zero clearance, stainless steel construction, with integral soft close.
- .2 Hardware fastenings:
  - .1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation of hardware.
  - .2 Use fasteners compatible with material through which they pass.

## 2.10 FACTORY FINISHING

- .1 Provide the following items with factory finish as follows:
  - .1 Plywood Panelling: to be selected by Departmental Representative in coordination with Finish Schedule.
  - .2 Solid Plank Doors: to be selected by Departmental Representative.
  - .3 Manufactured Trim: Where in replacement of existing heritage trims or planks boards, finish to match existing and in accordance with submittal procedures. Finish of all other trims to be selected by Departmental Representative.
  - .4 Manufactured Shelving and Casework: to be selected by Departmental Representative.
- .2 Finishing requirements to suit quality grade requirements of product being finished.

## Part 3 - Execution

### 3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for wood products installation in accordance with AWS tolerances and requirements of Contract Documents.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### 3.2 PREPARATION

- .1 Back prime woodwork before installation, in accordance with NAAWS.

### 3.3 INSTALLATION

- .1 Install items of finish carpentry in accordance with AWMAC NAAWS grade specified for respective items.
- .2 In case of conflict between Contract Documents and NAAWS grade requirements, Contract Documents govern.
- .3 Install items of finish carpentry at locations shown on drawings.
  - .1 Position accurately, level, plumb straight.
  - .2 Fasten and anchor securely.
- .4 Install solid surfacing in accordance with manufacturer's instructions. Provide silicone movement joints in accordance with manufacturer's installation instructions.
- .5 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects.
- .6 Form joints to conceal shrinkage.

### 3.4 CONSTRUCTION

- .1 Fastening:
  - .1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.
  - .2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.
  - .3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round smooth cut hole and plug with wood plug to match material being secured.
  - .4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.
  - .5 Align all exposed fasteners and connectors horizontally and vertically across interior plywood panelling.
- .2 Standing and running trim:
  - .1 Butt and cope internal joints of baseboards to make snug, tight, joint to match existing. Cut right angle joints of casing and base with mitred joints.
  - .2 Fit backs of baseboards and casing snugly to wall surfaces to eliminate cracks at junction of base and casing with walls.
  - .3 Install door and window trim in single lengths without splicing.
  - .4 Secure all reinstated and new trims to existing heritage building fabric with mechanical fasteners only. No adhesives will be accepted. Fill nail holes caused by temporary fixing with filler matching wood in colour.
- .3 Plywood Panelling:
  - .1 Secure all panelling and trims to existing heritage building fabric with mechanical fasteners only. No adhesives will be accepted. Fill nail holes caused by temporary fixing with filler matching wood in colour.
  - .2 Align all exposed fasteners and connectors horizontally and vertically across interior plywood panelling.
  - .3 Secure panelling with countersunk screws plugged with matching wood plugs.

### 3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .3 Waste Management: separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

- .4 Fill and retouch all nicks, chips and scratches in factory finishes and substrate materials in accordance with NAAWS standards. Replace damaged items that cannot be repaired to NAAWS standards.
- .5 Protect installed products and components from damage during construction.
- .6 Repair damage to adjacent materials caused by finish carpentry installation.
- .7 Leave work to be site finished ready for finishing by Section 09 91 23 - Painting.

**END OF SECTION**