

PART 1 - GENERAL

1.1 Related Requirements	.1	Section 06 20 00 - Finish Carpentry.
	.2	Section 06 40 00 - Architectural Woodwork.
1.2 References	.1	ASTM International (ASTM).
	.1	ASTM A123/A123M-17, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
	.2	ASTM A653/A653M-17, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
	.3	ASTM F1667-17, Standard Specification for Driven Fasteners: Nails, Spikes and Staples.
	.2	American Wood Protection Association (AWPA)
	.1	AWPA M2-16, Inspection of Treated Wood Products.
	.2	AWPA M4-15, Care of Preservative-Treated Wood Products.
	.3	Canadian Standards Association (CSA)
	.1	CAN/CSA-O80 Series-15, Wood Preservation.
	.2	CSA O112.9-10 (R2014), Evaluation of Adhesives for Structural Wood Products (Exterior Exposure).
	.3	CSA O121-08(R2017), Douglas Fir Plywood.
	.4	CSA O141-05(R2014), Softwood Lumber.
	.5	CSA O151-09(R2017), Canadian Softwood Plywood.
	.4	National Lumber Grades Authority (NLGA)
	.1	Standard Grading Rules for Canadian Lumber [2017].
1.3 Quality Control	.1	Lumber identification: by grade stamp in accordance with the regulation of the Maritime Lumber Bureau grading rules.

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- .2 Plywood identification: by grade stamp in accordance with applicable CSA standard.
 - .3 For products treated with preservative by pressure impregnation submit following information certified by authorized signing officer of treatment plant:
 - .1 Information listed in AWPA M2 and revisions specified in CAN/CSA-080 Series, Supplementary Requirement to AWPA M2 applicable to specified treatment.
 - .2 Moisture content after drying following treatment with water-borne preservative.
 - .3 Acceptable types of paint, stain, and clear finishes that may be used over treated materials to be finished after treatment.
- 1.4 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 Store materials on site in such a way as to prevent damage, deterioration or the loss or impairment of their structural and other essential properties. Replace defective or damaged materials with new.
- 1.5 Job Conditions
- .1 Check job dimensions governing required openings, curb heights, blocking, roughing-in, and fabrication of shop-made components.
 - .2 Examine site conditions and surfaces for defects of work which may adversely affect the quality of workmanship of this section.
 - .3 Commencement of work shall imply acceptance of surfaces.

- .4 Be responsible for obtaining all required field dimensions.

PART 2 - PRODUCTS

2.1 Lumber and Plywood

- .1 Lumber: to CSA 0141No. 2 or better, SPF species group, S4S, S-dry.
- .2 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.
- .3 Douglas Fir plywood: to CSA 0121; square edge unless noted otherwise.
 - .1 G1S where exposed to view.
 - .2 Sheathing grade elsewhere.
- .4 Softwood plywood: to CSA 0151; square edge unless noted otherwise.
 - .1 Select grade for roof curbs/parapets.
 - .2 Sheathing grade elsewhere.
- .5 Wood railings and decking: to NLGA standard Grading Rules for Canadian Lumber select grade Western Red Cedar. Kiln dried to 15% maximum moisture content.
- .6 Ensure materials are seasoned to a maximum moisture content of 19%.

2.2 Accessories

- .1 Surface-applied wood preservative: copper naphthenate, green coloured, water repellent preservative.
- .2 Fasteners:
 - .1 Nails, spikes and staples: to ASTM F1667.
 - .2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.

	.3	Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, powder actuated fastening devices, recommended for purpose by manufacturer.
	.3	Insect screen: fibreglass mesh screen.
	.4	Air baffle: polystyrene, 1200 mm long x 400 mm wide.
	.5	Sill gasket: polyethylene foam, width to suit.
<u>2.3 Finishes</u>	.1	Galvanizing: .1 To ASTM A123/A123M, G90 for exterior work. .2 To ASTM A653/A653M, G185 designation for pressure-preservative treated material fire-retardant treated material.
<u>2.4 Pressure-Preservative Treatment</u>	.1	Treat lumber and plywood in accordance with CAN/CSA-080 Series, using Copper-Azole (CA-C) or Alkaline Copper Quaternary (ACQ) preservative for use category as follows: .1 UC3B - Above Ground Exposed: strapping behind siding; decking and supports.
	.2	Following preservative treatment, dry material to maximum moisture content of 19%. Affix label indicating end-use application.
	.3	End-cut preservative: as recommended by pressure treating company.
<u>PART 3 - EXECUTION</u>		
<u>3.1 Installation</u>	.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 lumber and panel materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.
- .5 Supply fastening and anchoring devices for installation into concrete or masonry, for fastening materials specified in this section. Installation of fastening devices into concrete or masonry shall be by trade concerned.
- .6 Install furring, strapping and blocking to space-out and support wall and ceiling finishes, facings, facia, electrical equipment mounting boards, and other work. in addition to above, install furring, strapping and blocking required by product manufacturer's installation instructions or warranty requirements, so as to maintain warranty eligibility.
- .7 Install rough bucks, blocking, nailers and linings for attachment of all items such as finished carpentry work, handrails, windows, specialties, washroom accessories and miscellaneous accessories. in addition to above, install rough bucks, blocking, nailers and linings required by product manufacturer's installation instructions or warranty requirements, so as to maintain warranty eligibility.
- .8 Do wood deck work to CSA 086 except where specified otherwise.

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| 3.2 Erection | .1 | Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity. |
| | .2 | Countersink bolts where necessary to provide clearance for other work. |
| 3.3 Surface-Applied
Preservative
Treatment | .1 | Treat surfaces of material with wood preservative, before installation. |
| | .2 | Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3-minute soak on lumber and one minute soak on plywood. |
| | .3 | Retreat surfaces exposed by cutting, trimming, boring, etc. with liberal brush application of preservative before installation. |
| | .4 | Treat wood members in contact with masonry or concrete. |
| 3.4 Pressure-
Preservative
Treatment | .1 | Use pressure-preservative treated wood for the following:
.1 Deck materials.
.2 Strapping behind siding.
.3 Other materials indicated. |
| | .2 | Retreat surfaces exposed by cutting, trimming, boring, etc. with end-cut preservative, in accordance with pressure treating company's instructions. |
| 3.5 Miscellaneous
Carpentry | .1 | Assemble, erect and make complete, installation of all miscellaneous items of rough carpentry indicated on drawings. |
| | .2 | Install miscellaneous specialties normally installed by the carpenters. |
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END OF SECTION

PART 1 - GENERAL

<u>1.1 Related Requirements</u>		.1	Section 06 10 00 - Rough Carpentry.
<u>1.2 References</u>		.1	CAN/CSA-O80-Series-97 (R2002) Wood Preservation.
		.2	CSA-O86-01 - Engineering Design in Wood.
		.3	CSA S307-M1980 (R2001) - Load Test Procedure for Wood Roof Trusses.
		.4	CAN/CSA-O141-05 - Softwood Lumber.
		.5	CSA S347-14 - Method of Test for Evaluation of Truss Plates Used in Lumber Joints.
		.6	CSA W47.1-09 (R2014) Certification of Companies for Fusion Welding of Steel Structures.
		.7	NLGA-2003 - Standard Grading Rules for Canadian Lumber.
		.8	TPIC 2014 - Truss Design Procedures and Specifications For Light Metal Plate Connected Wood Trusses
		.9	Truss Plate Institute of Canada Handling, Erection and Bracing of Wood Trusses.
		.10	National Building Code of Canada 2015 (NBCC)
<u>1.3 Design Criteria</u>		.1	Design wood trusses, wind uplift anchorage, bracing, bridging and connectors in accordance with Part 4 of NBCC, TPIC 2014 and CSA-O86 for the loads indicated on drawings, including snow and wind uplift loads, as well as minimum uniform and minimum concentrated loadings stipulated in NBC commentary. Design special trusses for additional bottom chord concentrated load indicated.

- .2 Limit live load deflection to 1/360th of span.
- .3 Design selected trusses in unheated bay to support bottom chord concentrated load.
- .4 Truss webs.
 - .1 Webs are to be designed to keep the number of continuous lateral bracing (CLB) required by design to a minimum. This provision shall be strictly enforced. Utilize tension webs where possible to meet this requirement.
 - .2 Minimum web size: 38 x 89 mm.
 - .3 Design cycle of webs shall be as follows: 38 x 89 mm no brace, 38 x 114 mm no brace, 38 x 140 mm no brace, 38 x 184 mm no brace; 38 x 89 one brace, 38 x 114 mm one brace, 38 x 140 mm one brace, 38 x 184 mm one brace; 38 x 89 mm two brace, 38 x 114 mm two brace, etc..
 - .4 Adjacent trusses which are not similar and have webs that require bracing shall be braced using 'T' braces.
 - .5 Arrange webs to accommodate ducts and other specialties. Refer to all drawings for additional details.
- .5 Maximum truss member stress level: 95%.
- .6 Review all mechanical as well as structural drawings, to determine all structural materials and structural requirements as shown on these drawings. Accommodate all mechanical equipment shown on drawings that are within the truss space.
- .7 Provide truss bearing enhancers or other acceptable means as required so that wall bearing plates are not overstressed in compression perpendicular to grain. This is the sole responsibility of the truss fabricator.
- .8 Design and supply of truss to truss and truss to beam hangers is the responsibility of the truss fabricator.

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| | .9 | Make provisions for hoist weight as indicated. |
| | .10 | Design and supply hold-down clips for truss to top plate connection. |
| 1.4 Source Quality Control | .1 | Identify lumber by grade stamp of an agency certified by Canadian Lumber Standards Administration Board. |
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| 1.5 Shop Drawings | .1 | Submit shop drawings, samples, product data in accordance with 01 33 00 - Submittal Procedures. |
| | .2 | Shop drawings shall consist of layout (erection) drawings and truss shop detail drawings, and all components necessary to frame the roof. |
| | .3 | Submit stress diagrams or print out of computer design indicating design load for truss members and include bottom chord loadings including concentrated load from hand hoist system. |
| | .4 | Submit layout drawings and truss shop detail drawings for review prior to fabrication. Submit catalogue data for all fabricator designed hangers, hold-down clips, etc. Fabricator is responsible for design and supply of all truss to truss connections and hold-down clips. |
| | .5 | Each layout drawing and truss shop detail drawing shall bear the signature and stamp of professional engineer licensed to practice in the province of Nova Scotia. It shall be understood that in so stamping the drawings and details, the fabricator's engineer is not accepting responsibility for design other than his own. |
| | .6 | Erection drawings shall indicate principle dimensions of the structure, piece marks, spacing, bearing details, and all other information necessary for assembly of the structure. |

- .7 Truss shop detail drawings shall indicate:
 - .1 Species, sizes, and stress grades of lumber used as truss members. Show pitch, span, camber, configuration and spacing of trusses. Show bearing details. Indicate design loads and stress increase.
 - .2 Indicate permanent lateral web bracing for compression members. Where there are un-identical adjacent trusses requiring web bracing, provide a "T-brace", or other acceptable detail in lieu of continuous horizontal bracing.
 - .3 Indicate arrangement of webs or other members to accommodate ducts and other specialties.
 - .4 Show lifting points for storage, handling and erection.
 - .5 Submit truss layout plan.
- .8 Light metal hangers, uplift anchors, straps, etc.: submit manufacturer's catalogue information for review.
- .9 Instructions: Submit manufacturer's installation instructions.

1.6 Delivery and Storage

- .1 Store trusses on job site in accordance with manufacturer's instructions. Provide bearing supports and bracings. Prevent bending, warping and overturning of trusses.
- .2 Offload trusses in a manner which will not damage trusses or cause connector plates to pull out.

PART 2 - PRODUCTS

2.1 Materials

- .1 Lumber: SPF, No. 1 grade or better, softwood, S4S, S-Dry, 38 x 89 mm minimum nominal size for webs. Maximum moisture content - 19% at time of fabrication and to the following standards:
 - .1 CAN/CSA-0141.
 - .2 NLGA (National Lumber Grading Association), Standard Grading Rules for Canadian Lumber.

.3 Fastenings to CAN/CSA 086 and TPIC 2014.

.2 Truss connector plates: to CAN/CSA-086.

.3 Truss uplift anchors, hangers and strap ties: as manufactured by Simpson Strong-Tie Canada. Model numbers as required and as designed for factored loads.

.4 Permanent truss bracing: as specified in .1 above. Size in accordance with truss fabricator's reviewed shop drawings, minimum size - 38 x 89 mm.

.5 Temporary bracing: shall be responsibility of Contractor and shall be adequate for the project and shall at a minimum comply with "TPIC - Handling, Erection and Bracing of Wood Trusses Guidelines".

2.2 Fabrication

.1 Fabricate wood trusses in accordance with reviewed shop drawings.

.2 Cut truss members to accurate length, angle, and size to assure tight joints for finished trusses.

.3 Assemble truss members to design configuration.

.4 Connect members using metal connector plates.

.5 Connect girder trusses in accordance with TPIC recommendations.

PART 3 - EXECUTION

3.1 Erection

.1 Erect wood trusses in accordance with reviewed erection drawings, TPIC guide "Handling, Erection and Bracing of Wood Trusses and truss manufacturer's written instructions.

.2 Indicate lifting points to be used to hoist trusses into position.

.3 Exercise care to prevent out-of-plane bending of trusses.

- .4 Install temporary horizontal and cross bracing to hold trusses plumb and in safe condition until permanent bracing and sheathing are installed. Design of temporary bracing is the responsibility of the Contractor.
- .5 Install permanent bracing in accordance with reviewed truss shop detail drawings and as detailed on structural drawings prior to application of loads to trusses.
- .6 Restrict construction loads to below design loads to prevent overstressing of truss.
- .7 Install gable end bracing as required.
- .8 Install hangers, tie-downs, strap ties, etc. in accordance with manufacturer's written instructions. Use manufacturer supplied or recommended nails for connections.
- .9 Do not cut or remove any truss material without approval of Department Representative.
- .10 Do not hang or support any items unless specifically detailed on drawings or approved in writing by Department Representative.
- .11 Remove chemical and other surface deposits on treated wood, in preparation for applied finishes.
- .12 Report damage to Department Representative. Correct damage to satisfaction of Truss Manufacturer and Department Representative.

3.2 Important Note:

- .1 Where power driven nails (i.e. clipped-head air nails) are used increase number of fasteners by 50% or decrease spacing by 1/3.

3.3 Review of Work

- .1 Contractor shall inspect roof truss and bracing installation prior to final review by Department Representative, and submit written report all outstanding items and action to be taken prior to final review.
- .2 Provide a minimum 48 hours' notice prior to final review by Departmental Representative.
- .3 All work, including installation of all bracing, is to be complete prior to final review. Any further inspection costs will be charged to the Contractor.

3.4 Field Quality Control

- .1 Manufacturer's Field Services:
 - .1 Have manufacturer of products supplied under this Section review work involved in handling, installation/application, protection and cleaning of its products, and submit written reports, in acceptable format, to verify compliance of work with Contract.
 - .2 Manufacturer's field services: provide manufacturer's field services, consisting of product use recommendations and periodic site visits for inspection of product installation, in accordance with manufacturer's instructions.
- .2 Schedule site visits to review work at stages listed:
 - .1 After delivery and storage of products, and when preparatory work on which work of this Section depends is complete, but before installation begins.
 - .2 Two times during progress of work, at 60% and when complete.
- .3 Obtain reports within three days of review and submit immediately to Departmental Representative.

3.5 Cleaning

- .1 Remove surplus materials, excess materials, rubbish, tools and equipment on completion of installation.

END OF SECTION

PART 1 - GENERAL

<u>1.1 Related Requirements</u>	.1	Section 06 10 00 Rough Carpentry
<u>1.2 References</u>	.1	ASTM D2559-12a (2018), Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions.
	.2	CSA 0112 Series, CSA Standards for Wood Adhesives
	.3	CSA-086-01, Engineering Design in Wood. CAN/CSA 0177, Qualification Code for Manufacturer's of Structural Glue - Laminated Timber.
	.4	National Building Code of Canada 2015 (NBCC).
<u>1.3 Quality Assurance</u>	.1	Stamp each piece with identification indicating: .1 Name and plant number of manufacturer. .2 Grade. .3 National Research Board report number. .4 Quality control agency.
	.2	Submit copy of CCMC certifications.
	.3	Metal plate connected or metal web joists are not permitted.
<u>1.4 Shop Drawings</u>	.1	Shop drawings shall consist of laminated strand lumber (LSL) beams and prefabricated joists detail drawings and joist erection drawings.
	.2	Submit shop, erection and detail drawings in accordance with Section 01 00 00, General Instructions.
	.3	Shop drawings to indicate applied loads, moments, shears, stress grade, service grade and appearance grade, camber, cuts, ledgers, anchors, holes and connection details.

- .4 Shop drawings shall bear signature and stamp of P. Eng.
- .5 Detail drawings for members to indicate the following:
 - .1 Physical properties such as LSL and prefabricated joist grade, critical dimensions for determining fit and placement in building, cuts, and connection/bearing details.
 - .2 Structural properties such as allowable stresses, loading, and modulus of elasticity.
 - .3 Fastener type, size and pattern for multi-ply beams and joists.
- .6 Erection drawings shall be general arrangement drawings showing principle size of the structure, piece marks, member sizes, installation requirements, member elevations, bearing details, bridging and/or bracing details and all other relevant information necessary for the assembly of the structure.
- .7 Detail drawings and erection drawings shall be signed by a Professional Engineer licensed to practice in the province of Nova Scotia. It shall be understood that in so, stamping the drawings, the fabricator's Engineer is not accepting responsibility for design other than their own.

1.5 Design Criteria

- .1 LSL Members: design loads: refer to drawings.

1.6 Delivery, Storage and Handling

- .1 Deliver, handle and store and protect materials in accordance with manufacturer's recommendations.
- .2 Wrap and protect members from the weather during shipping, storage and handling.
- .3 Use padded non-marring slings and take care during handling to prevent damage to beams.

- .4 Replace damaged beams and joists as directed by Departmental Representative. Construction Manager shall have final decision as to the beams and joists to be replaced.

PART 2 - PRODUCTS

2.1 Laminated Strand Lumber

- .1 Laminated strand lumber (LSL): Aspen or Poplar, veneer glued in continuous process with all grain parallel with length of member.
- .2 Grade: 1.55E minimum.
- .3 Adhesive: waterproof, to ASTM D2559, uniformly applied to the veneer at required spread rate.
- .4 LSL product to have evaluation and listing by Canadian Construction Materials Centre. Copy of evaluation to be submitted to the Departmental Representative.

PART 3 - EXECUTION

3.1 Erection

- .1 Erect LVL beams in accordance with reviewed erection drawings and contract drawings.
- .2 Supply and install permanent bracing/bridging and reinforcing as detailed on reviewed erection drawings and shop detail drawings.
- .3 Temporary construction loads beyond limits indicated thereon are not permitted.
- .4 Do not make holes, cuts or notches, unless previously approved by the Departmental Representative
- .5 Laminate multiple ply beams as per reviewed shop detail drawings or as detailed on drawings to the more stringent requirement.

END OF SECTION

PART 1 - GENERAL

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| <u>1.1 Related Requirements</u> | .1 | Section 06 40 00 - Architectural Woodwork. |
| | .2 | Section 09 91 23 - Painting. |
| <u>1.2 Samples</u> | .1 | Submit samples in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Submit duplicate samples: sample size 300 mm long unless specified otherwise of the following materials:
.1 Baseboard.
.2 Window casing and trim. |
| <u>1.3 Delivery and Storage</u> | .1 | Store materials on site in such a way as to prevent damage, deterioration or the loss or impairment of their structural and other essential properties. |
| | .2 | Keep in a well-ventilated place at uniform temperature of 20°C and relative humidity of not more than 50%. |
| <u>1.4 Job Conditions</u> | .1 | Check job dimensions governing required openings, and fabrication of shop-made components. |
| | .2 | Examine site conditions and surfaces for defects of work which may adversely affect the quality of workmanship of this section. |
| | .3 | Commencement of work shall imply acceptance of surfaces. |
| | .4 | Be responsible for obtaining all required field dimensions. |

PART 2 - PRODUCTS

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| <u>2.1 Lumber Materials</u> | .1 | Hardwood lumber: white oak species, moisture content 8% to 12% |
| | .2 | Ensure materials are kiln-dried to a moisture content ranging from 8%-12% in accordance with following standards:
.1 North American Architectural Woodwork Standards. |

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| 2.2 <u>Fasteners</u> | .1 | Provide all rough or builders hardware such as nails, spikes, grounds, bolts, iron works, washers, anchors, etc., herein specified or as may be required for proper completion of the work. |
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PART 3 - EXECUTION

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| 3.1 <u>Installation</u> | .1 | Do finish carpentry in accordance with North American Architectural Woodwork Standards, except where specified otherwise. |
| | .2 | Scribe and cut as required to fit abutting walls, and surfaces, to fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects. |
| | .3 | Form joints to conceal shrinkage. |
| 3.2 <u>Construction</u> | .1 | Fastening. <ul style="list-style-type: none">.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 cleanly cut hole and plug with wood plug to match material being secured. Plugs to have face grain; end grain plugs (dowels) are not permitted..4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises. |
| | .2 | Standing and running trim. <ul style="list-style-type: none">.1 Butt and cope internal joints of baseboards to make snug, tight, joint. 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 Make joints in baseboard, where necessary, using a 45° scarf type joint for solid wood.
 - .4 Install door and window trim in single lengths without splicing.
 - .3 Assemble, erect and make complete, installation of all items of miscellaneous wood finish and trim indicated or specified.
- 3.3 Adjust and Clean
 - .1 Upon completion, clean all surfaces of dirt, dust and contamination.
 - .2 Inspect work, and make good, repair and replace unsatisfactory or damaged work and materials as directed by the Departmental Representative at no increase in Contract Price.

END OF SECTION

PART 1 - GENERAL

<u>1.1 Related Requirements</u>	.1	Section 06 10 00 - Rough Carpentry.
	.2	Section 06 20 00 - Finish Carpentry.
	.3	Section 22 42 00 - Commercial Plumbing Fixtures.
<u>1.2 References</u>	.1	American National Standards Institute (ANSI).
	.1	ANSI/BHMA A156.9-2003, Cabinet Hardware.
	.2	ANSI A208.1, Standard for Particleboard.
	.2	ASTM International (ASTM).
	.1	ASTM F1667-11, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
	.2	ASTM C920-18, Elastomeric Joint Sealants.
	.3	Architectural Woodwork Manufacturers Association of Canada (AWMAC)
	.1	North American Architectural Woodwork Standards - Edition 3.1, 2017.
	.4	Canadian Standards Association (CSA)
	.1	CSA O141-05, Softwood Lumber.
	.5	National Electrical Manufacturers Association (NEMA)
	.1	LD 3-2005, High-Pressure Decorative Laminates.
<u>1.3 Action and Informational Submittals</u>	.1	Submit in accordance with Section 01 33 00 - Submittal Procedures.
	.2	Shop drawings:
	.1	Indicate plans and elevations; cross-reference to applicable room number.
	.2	Indicate details of construction, profiles, jointing, fastening and other related details.
	.1	Scales: profiles full size, details 1/2 full size.

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- .3 Indicate materials, thicknesses, finishes and hardware.
 - .4 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.
 - .5 Indicate required field dimension.
- .3 Samples:
 - .1 Provide duplicate samples of the following.
 - .1 Shop finish materials, showing each type of finish and colour.
 - .2 Panel products: 300 mm x 300 mm size.
 - .3 Solid wood products: 300 mm long.
 - .4 Materials not included on mock-up: 200 mm x 200 mm.
 - .5 Submit one of each type of hardware not included on mock-up.
 - .2 Submit duplicate samples of complete colour range for each type of plastic laminate.
 - .3 Submit samples of complete colour range of solid surfacing.
 - .4 Closeout submittals:
 - .1 Provide maintenance data for plastic laminate work for incorporation into manual.
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- 1.4 Quality Assurance
- .1 Manufacturer's Qualifications:
 - .1 Manufacturer shall:
 - .1 Be a current Member in Good Standing, for Manufacturer Member, with AWMAC.
 - .1 Provide proof of membership.

.2 Quality Standards:

- .1 The North American Architectural Woodwork Standards manual by the Architectural Woodwork Manufacturers Association of Canada, hereafter referred to as the Manual, together with authorized additions and amendments, shall be used as a reference standard and shall form part of this specification.
- .2 Construct to requirements for Custom Grade work as specified in the Manual.
- .3 Any reference to Custom Grade in this section shall be as defined in the Manual.
- .4 A copy of the Manual shall be made readily available for reference purposes.

1.5 Delivery,
Storage, and Handling

- .1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver and store in ventilated areas, protected from extreme changes of temperature or humidity.
- .3 Ship in largest practical sections.
- .4 Protect during shipment to prevent damage. Cover finished plastic laminate surfaces with heavy kraft paper or put in cartons during shipment.
- .5 Deliver into building; uncrate and place in proper location.
- .6 Protect installed units by covering with an opaque covering that does not allow light penetration. Covering shall allow air circulation. Do not remove until immediately before final inspection.

1.6 Environmental
Conditions

- .1 Store and install materials in areas where relative humidity is not less than 25% or greater than 55% at 21°C.

PART 2 - PRODUCTS

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| <u>2.1 Lumber Materials</u> | .1 | Softwood lumber: to CSA 0141, sound, dry and stable; of species selected by architectural woodwork manufacturer. |
| <u>2.2 Sheet Materials</u> | .1 | Adhesive used in construction of panel products shall have no added urea-formaldehyde. |
| | .2 | Particleboard: to ANSI A208.1, Grade M2, EPP certified, no added formaldehyde, manufactured from 100% pre-consumer recycled wood fibre. |
| | .3 | Melamine panels (MCP): consisting of particleboard substrate as above, with factory applied melamine surfaces front, back and edges, satin finish.
.1 Colour: white for semi-exposed surfaces. |
| <u>2.3 Plastic Laminate</u> | .1 | Plastic laminate: to NEMA LD 3, grades as specified. Only use laminate from one manufacturer unless approved by Departmental Representative. |
| | .2 | General purpose grade:
.1 Horizontal application: Standard grade (HGS); 1.2 mm thick; based on printed pattern colour range with satin finish.
.2 Vertical application: Standard grade (VGS); 0.7 mm thick; based on printed pattern colour range with satin finish. |
| | .3 | Backing type: of same thickness and colour as face laminate. Sanded one side. |
| | .4 | Plastic laminate adhesive: Low VOC type, and have no added urea-formaldehyde. |
| <u>2.4 Hardware</u> | .1 | Drawer slides: Side mounted; heavy duty side mounted; ball-bearing action, full extension, 45 kg capacity, zinc finish; soft-close feature. |

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- .2 Hinge: to ANSI/BHMA A156.9; Type B01601, 120° opening, self-closing, removable arm, mounting plate to suit conditions, nickel finish; soft-close feature.
 - .3 Pull: Back-mounted "D" type; to ANSI/BHMA A156.9, Type B02011, 100 mm centres, satin chrome finish.
 - .4 Shelf hardware:
 - .1 Shelf standards and rests: to ANSI/BHMA A156.9, steel, nickel finish
 - .1 Standard: Type B04071, mortise application, adjustable on 13 mm centres.
 - .2 Shelf rest: Type B04091.
- 2.5 Miscellaneous Items
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- .1 Fasteners:
 - .1 Nails and staples: to ASTM F1667.
 - .2 Wood screws: type and size to suit application.
 - .2 Bumpers: clear silicone; self-adhesive application.
 - .3 Closet rod: one-piece length, 25 mm diameter, closed flanges at each end; bright chrome finish.
 - .4 Sealant: Mildew resistant, ASTM C920, Type S, Grade NS, Class 25; Uses NT, A and O: single component with fungicide; colour to match adjacent surfaces.
- 2.6 Casework
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- .1 AWMAC Quality Grade: custom.
 - .2 Casework shall conform to AWMAC Design Details for flush overlay construction.
 - .3 Case bodies: fabricated from 19 mm MCP.
 - .4 Drawer:
 - .1 Applied front: 19 mm particleboard with plastic laminate finish. Edge band all four edges.
 - .2 Box sides, front, back and bottom: 16 mm MCP. Edge band semi-exposed edges.

2.7 Fabrication -
General

- .5 Door: 19 mm particleboard with plastic laminate finish. Edge band all four edges.
- .6 Shelf: 19 mm thick MCP. Edge band all four edges of adjustable shelves.
- .7 Edge banding: 3 mm thick PVC to match face. Edge banding shall be shop applied using hot-melt edge banding machine.
- .1 Start fabrication only after shop drawings have been reviewed and when related submittals and samples have been accepted by Departmental Representative.
- .2 Factory-assemble casework in accordance with AWMAC Custom Grade.
- .3 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
- .4 Verify field dimensions prior to construction.
- .5 Make allowance in fabrication of casework for proper fitting to areas in which they are to be installed.
- .6 Securely glue and mechanically fasten joints. Set nails and countersink screws in exposed surfaces. Install filler/plug to indentations, sand smooth and leave ready to receive finish. Keep fasteners in exposed surfaces to a minimum.
- .7 Fabricate fillers to size as required. Provide fillers at cabinet faces, tops, bottoms and corners.
- .8 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.
- .9 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.

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| | .10 | Ensure adjacent parts of continuous laminate work match in colour and pattern. |
| 2.8 Casework
Fabrication | .1 | Fabricate cases with backs and ends. Open ends or skeleton frames against walls are not permitted. |
| | .2 | Attach tops with concealed screws, metal clips or other fastening system approved by Departmental Representative. |
| | .3 | Provide 13 mm concealed wood nailing strips at case backs; not required for backs 13 mm and thicker. |
| | .4 | Fabricate base of casework using lumber or plywood. |
| 2.9 Hardware
Installation | .1 | Factory install hardware wherever possible. |
| | .2 | Mortise cabinet shelf standards so face is flush with panel. |
| | .3 | Hardware schedule: <ul style="list-style-type: none">.1 Drawers: equip with side-mounted drawer slides, pull and lock..2 Swinging doors:<ul style="list-style-type: none">.1 Up to 900 mm high: equip with two (2) concealed hinges, and surface pull..2 901 mm to 1600 mm high: equip with three (3) concealed hinges, and surface pull..3 1601 mm to 2000 mm high: equip with four (4) concealed hinges, and surface pull..4 Provide two (2) bumpers per door leaf..3 Other hardware as required or indicated. |

PART 3 - EXECUTION

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| <u>3.1 Job Conditions</u> | .1 | Job conditions for installation of wood casework shall be as specified in the Manual. |
| <u>3.2 Installation</u> | .1 | Install architectural woodwork in close cooperation with other trades. Provide cutouts through this work as required by other trades. |
| | .2 | Install work using qualified workmen under the supervision of a full-time trained supervisor. |
| | .3 | Securely anchor casework to walls and other finished work using concealed anchors or fasteners. Fasten into stud backup. |
| | .4 | Install square, level and plumb. |
| | .5 | Carefully fit work, and scribe to walls and other finished work so as not to damage surface. Make good walls and other work that has become needlessly damaged or disturbed, to approval of Departmental Representative. |
| | .6 | Install filler panels, back panels, trim and scribe moulding to make a complete and finished installation. |
| | .7 | Installation shall include handling and placing of units in proper locations and disassembling and reassembling, where required, to move them through doorways, etc., without damage to finish work of other trades. |
| | .8 | At junction of counter back splash and adjacent wall finish, apply small bead of sealant. |
| <u>3.3 Adjust and Clean</u> | .1 | Upon completion, clean surfaces of dirt, dust and contamination, and leave architectural woodwork ready for finishing. |
| | .1 | Clean insides of cabinets and drawers as well as exterior surfaces. |

.2 Clean and polish glass and mirror surfaces.

.2 Inspect work, and make good, repair and replace unsatisfactory or damaged work and materials as directed by Departmental Representative at no additional cost.

.3 Adjust drawers, doors and hardware at completion of work, and leave in full working condition.

<u>3.4 Protection</u>	.1 Protect items from damage until final inspection.
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END OF SECTION
