

Part 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 06 17 53 - Shop - Fabricated Wood Trusses.
- .2 Section 07 46 46 - Mineral Fibre Cement Siding.
- .3 Section 07 61 00 - Sheet Metal Roofing.
- .4 Section 09 21 16 - Gypsum Board Assemblies.
- .5 Section 10 28 10 - Toilet and Bath Accessories.

1.2 QUALITY ASSURANCE

- .1 Lumber Grading Agency: NLGA.
- .2 Plywood Grading Agency: CANPLY.
- .3 Wood Treatment: CSA O80M.

Part 2 PRODUCTS

2.1 LUMBER MATERIALS

- .1 Lumber Grading Rules: NLGA.
- .2 Framing, Blocking and Miscellaneous Lumber: Stud "Stud" grade, Structural Light Framing "No. 2" grade, Light Framing "Standard" grade, or better dimensional lumber; 19 percent maximum moisture content.
  - .1 Exterior deck joist and beams to be pressure treated.
  - .2 Exterior decking and railings materials to be #1 western red cedar.

2.2 PLYWOOD MATERIALS

- .1 Douglas fir plywood (DFP): to CSA O121, standard construction.
- .2 Canadian softwood plywood (CSP): to CSA O151, standard construction.
- .3 Mat-formed structural panelboards (OSB wafer): to CAN3-O437.0.

2.3 ACCESSORIES

- .1 Fasteners: Hot dipped galvanized steel for exterior, high humidity and treated wood locations, plain finish elsewhere.
- .2 Anchors: Toggle bolt type for anchorage to hollow masonry, expansion shield and lag bolt type for anchorage to solid masonry or concrete, bolts or ballistic fasteners for anchorages to steel.
- .3 Sealants: to Section 07 92 10.
- .4 General purpose adhesive: to CSA O112 Series.

- .5 Nails, spikes and staples: to CSA B111.
- .6 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.
- .7 Sill Gasket: Compressible Foam Gasket: sill plate gasket; polyethylene foam, minimum thickness 6 mm x full width of sill plate.
- .8 Supply and install all hot dipped galvanized expansion shields, bolts, nails, screws and all other connectors for use on exterior of building.
- .9 Embedded Anchor Rods: Galvanized threaded rod to CSA G40.20/G40.21, Grade 300W, complete with same-strength nuts and washers, size and locations as shown on Drawings.
- .10 Construction Adhesive: Liquid Nails.
- .11 Wall Mounted Steel Pipe Rails:
  - .1 Top rail: 38 mm OD pipe as indicated.
  - .2 13 mm diameter bent pipe support at 1200 mm o.c. maximum welded to 9 mm x 100 mm diameter plate complete with 3- 3.19 mm holes for fastening to wood stud partition.
  - .3 Cap and weld exposed ends of handrails.

## 2.4 WOOD TREATMENT

- .1 Wood Preservative (Pressure Treatment): CSA O80 preservative with 0.25 percent retention.
- .2 Wood Preservative (Site Application): Copper naphthenate, listed by CSA O80 for field-cut application, coloured.

## Part 3 EXECUTION

### 3.1 SITE APPLIED WOOD TREATMENT

- .1 Brush apply one coat of preservative treatment on site sawn ends of pressure preservative treated lumber.

### 3.2 FRAMING

- .1 Erect wood framing and blocking members level and plumb, unless indicated otherwise. Place horizontal members laid flat, crown side up. Construct members full length without splices.

### 3.3 OPENINGS

- .1 Frame and block openings for support of door and
- .2 window frames, and other equipment, as indicated.

3.4     SHEATHING

- .1   Secure sheathing to framing members to locations indicated.

3.5     BLOCKING, CURBS, AND CANTS

- .1   Provide solid blocking in walls where required for support of wall mounted fixtures and assemblies.

3.6     SCHEDULES

- .1   Roof sheathing:
  - .1   Plywood, DFP or CSP sheathing grade, T&G, 16 mm thick.
- .2   Exterior wall sheathing:
  - .1   Plywood, DFP or CSP sheathing grade square edge, 13mm thick.
- .3   Interior walls:
  - .1   Plywood, 16mm thick as indicated.
- .4   Electrical equipment mounting boards:
  - .1   Continuous around electrical room from floor to 2440 above floor, 19 X 38 mm furring around perimeter and at 400 mm on center with 19 mm T & G CSP plywood, good one side grade fire retardant painted.
- .5   Strapping:
  - .1   Lumber, 25mm x 50mm pressure treated, SPF.
- .6   Decks:
  - .1   All framing members to be pressure treated
  - .2   All decking, railings and any materials that comes into human contact to be western red cedar.

**END OF SECTION**

Part 1        General

1.1    REFERENCES

- .1    CSA International
  - .1    CAN/CSA O80 Series-15, Wood Preservation.
  - .2    CSA O86 Consolidation-09, Engineering Design in Wood.
  - .3    CSA O141-05, Softwood Lumber.
  - .4    CSA S347-14, Method of Test for Evaluation of Truss Plates Used in Lumber Joints.
  - .5    CSA W47.1-09, Certification of Companies for Fusion Welding of Steel.
- .2    National Lumber Grades Authority (NLGA)
  - .1    Standard Grading Rules for Canadian Lumber.
- .3    Truss Plate Institute of Canada (TPIC)
  - .1    TPIC - 2014, Truss Design Procedures and Specifications for Light Metal Plate Connected Wood Trusses (Limit States Design).

1.2    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 and data sheets for wood trusses and include product characteristics, performance criteria, physical size, finish and limitations.
- .3    Shop Drawings:
  - .1    Submit drawings stamped and signed by professional engineer registered or licensed in the Province of New Brunswick, Canada.
  - .2    Include on drawings:
    - .1    Each shop/erection drawing submission, showing connection details.
    - .2    Indicate special structural

- application and specification as according to local authorities having jurisdiction.
- .3 Indicate TPIC Truss Design Procedure and CSA 086 Engineering Design in Wood and specific CCMC Product Registry number of the truss plates
  - .4 Indicate species, sizes, and stress grades of lumber used as truss members. Show pitch, span, camber, configuration and spacing of trusses. Indicate connector types, thicknesses, sizes, locations and design value. Show bearing details. Indicate design load for members.
  - .5 Provide certification that trusses meet requirements of CSA S347.
  - .6 Indicate arrangement of webs or other members to accommodate ducts and other specialties.
  - .7 Show location of lateral bracing for compression members.
  - .8 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .9 Instructions: submit manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

.1 Qualifications:

- .1 Fabricator for trusses to show evidence of quality control program such as provided by regional wood truss associations, or equivalent.

1.4 DELIVERY, STORAGE  
AND HANDLING

.1 Deliver, store and handle materials in accordance with 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 off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .2 Store and protect wood trusses from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.
- .4 Provide bearing supports and bracings. Prevent bending, warping and overturning of trusses.

Part 2 Products

2.1 DESIGN  
REQUIREMENTS

- .1 Design light metal plate connected wood trusses in accordance with TPIC truss design procedures for wood truss chords and webs in accordance with engineering properties in CSA O86.
- .2 Design light metal plate connected wood trusses in accordance with TPIC truss design procedures for truss joint designs to test engineering properties in accordance with CSA S347 and listed in CCMC Registry of Product Evaluations.
- .3 Design trusses, bracing and bridging in

accordance with CSA O86.1 for loads indicated and based on building locality as ascertained by NBC, Climatic Information for Building Design in Canada, and minimum uniform and minimum concentrated loadings stipulated in NBC commentary.

- .4 Limit live load deflection to 1/360th of span.
- .5 Limit live load deflections to 1/240th of span unless otherwise specified or indicated.

## 2.2 MATERIALS

- .1 Lumber: Species to suit loading requirements; maximum moisture content of 19% at time of fabrication and to following standards:
  - .1 CSA O141.
  - .2 NLGA (National Lumber Grading Association), Standard Grading Rules for Canadian Lumber.
- .2 Fastenings: to CSA O86.
- .3 Preservative: n/a.
- .4 Fire retardant: n/a.

## 2.3 FABRICATION

- .1 Fabricate wood trusses in accordance with reviewed shop drawings.
- .2 Provide for design camber and roof slopes when positioning truss members.
- .3 Connect members using metal connector plates in accordance with manufacturer's recommendations.

## 2.4 SOURCE QUALITY CONTROL

- .1 Identify lumber by grade stamp of an agency certified by Canadian Lumber Standards Administration Board.

## 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.
- .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 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.3 ERECTION

- .1 Erect wood trusses in accordance with reviewed shop drawings.
- .2 Handling, installation, erection, bracing and lifting in accordance with manufacturer's instructions.
- .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 decking are installed.
- .5 Install permanent bracing in accordance with reviewed shop drawings, prior to application of loads to trusses.
- .6 Do not cut or remove any truss material without approval of Manufacturer and Departmental Representative.

END OF SECTION



Part 1        General

1.1    REFERENCES

.1    ASTM International

- .1    ASTM A36/A36M-14, Standard Specification for Carbon Structural Steel.
- .2    ASTM A47/A47M-99, Standard Specification for Ferritic Malleable Iron Castings.
- .3    ASTM A123/A123M-15, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .4    ASTM A307-14, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .5    ASTM A653/A653M-15, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2    CSA International

- .1    CSA G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .2    CAN/CSA O80 Series-15, Wood Preservation.
- .3    CSA O86 Consolidation-09, Engineering Design in Wood.
- .4    CSA O112.10-08, Evaluation of Adhesives for Structural Wood Products (Limited Moisture Exposure).
- .5    CAN/CSA-O122-16, Structural Glued-Laminated Timber.
- .6    CSA O177-06, Qualification Code for Manufacturer's of Structural Glued-Laminated Timber.
- .7    CSA S16-14, Design of Steel Structures.

- .8 CSA W47.1-09, Certification of Companies for Fusion Welding of Steel Structures.
    - .9 CAN/CSA-Z809-08, Sustainable Forest Management.
  - .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
    - .1 Material Safety Data Sheets (MSDS).
  - .4 The Master Painters Institute (MPI)
    - .1 Architectural Painting Specification Manual - [current edition].
    - .2 MPI #79 Primer, Alkyd, Anti-Corrosive for Metal.
- 1.2 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 and data sheets for glued-laminated construction and include product characteristics, performance criteria, physical size, finish and limitations.
    - .2 Submit one copy of WHMIS MSDS for supplied products.
  - .3 Shop Drawings:
    - .1 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of New Brunswick, Canada.
    - .2 Submit erection drawings in accordance with CSA 086.
    - .3 Shop drawings for members: indicate stress grade, service grade and appearance grades, shop applied

finishes, camber, cuts,  
ledgers, holes and  
connection details.

- .4 Certifications: submit  
certificates signed by  
manufacturer certifying that  
materials comply with specified  
performance characteristics and  
physical properties.
  - .1 Submit manufacturer's plant  
certification to CSA O177,  
Appendix B at completion of  
fabrication.
- .5 Test and Evaluation Reports:  
submit certified test reports  
from approved independent testing  
laboratories, indicating  
compliance with specifications  
for specified performance  
characteristics and physical  
properties.
- .6 Manufacturer's Instructions:  
submit manufacturer's  
installation instructions and  
special handling criteria,  
installation sequence, cleaning  
procedures.
- .7 Manufacturers Reports:
  - .1 Manufacturer's Field  
Reports: submit  
manufacturer's written  
reports within 3 days of  
review, verifying compliance  
of Work, as described in  
Part 3 - FIELD QUALITY  
CONTROL.

### 1.3 QUALITY ASSURANCE

- .1 Qualifications:
  - .1 Manufacture structural  
glued-laminated members in  
plant certified by CSA as  
meeting requirements of CSA  
O177.
  - .2 Submit certificate in  
accordance with CSA O177,

Appendix B at completion of fabrication.

- .3 Place authorization labels on glued-laminated members indicating manufactured in CSA-certified plant.
- .4 Certification of material protective sealer.

1.4 DELIVERY, STORAGE  
AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements:
  - .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
  - .2 Apply protective sealer to glued-laminated units before shipping unless specified otherwise.
  - .3 Wrap commercial grade members prior to leaving plant with a moisture resistant wrapping.
  - .4 Use padded, non-marring slings for handling glued-laminated members.
  - .5 Protect corners with wood blocking.
  - .6 Make adequate provision for delivery and handling stresses.
- .3 Storage and Handling Requirements:
  - .1 Store materials off the ground and in accordance with manufacturer's recommendations in a clean, dry, well-ventilated area.
  - .2 Slit underside of membrane covering during storage at site without defacing

member.

- .3 Store glued-laminated units and protect from weather, block off ground and separate with stripping, so air may circulate around faces of members.
- .4 Cover glued-laminated units with opaque moisture resistant membrane if stored outside.
- .5 Store and protect from nicks, scratches, and blemishes.
- .6 Replace defective or damaged materials with new.

## Part 2 Products

### 2.1 MATERIALS

- .1 Laminating stock: to CAN/CSA-0122.
  - .1 CAN/CSA-Z809 or FSC or SFI certified.
- .2 Adhesive: to CSA 0112.10, to grade of service required in accordance with CAN/CSA-0122.
  - .1 Urea-formaldehyde free.
- .3 Sealer for glued-laminated members: penetrating type, clear, non-yellowing liquid.
  - .1 Coatings: VOC limit 550 g/L maximum.
- .4 Fastenings:
  - .1 Truss plates: light gauge galvanized sheet steel to ASTM A653, grade A, yield point 230 MPa.
- .5 Shop coat primer for steel connections: to MPI #18.
- .6 Galvanizing: to ASTM A123/A123M, hot dipped, minimum zinc coating of 610 g/m<sup>2</sup>.

## 2.2 FABRICATION

- .1 Fabricate members to following classifications:
  - .1 Stress grade: to CSA O86.
  - .2 Service grade: interior.
  - .3 Appearance grade: commercial.
- .2 Mark laminated members for identification during erection. Marks not to be visible in final assembly.
- .3 Do not apply sealer to areas which are to receive stained finish or preservative treatment.
- .4 Design connections to CSA O86, and CSA S16 unless specifically detailed, to resist shears, moments and forces indicated.

## Part 3 Execution

### 3.1 EXAMINATION

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

### 3.2 ERECTION

- .1 Protect protective sealer from damage before erection.
  - .1 Touch up damaged areas on

site with specified sealer.

- .2 Erect glued-laminated members in accordance with reviewed erection drawings.
- .3 Brace and anchor members until permanently secured by structure.
- .4 Make adequate provisions for erection stresses.
- .5 Splice and join only at locations indicated on erection drawings.
- .6 Do not field cut or alter members without Manufacturer's approval. If approved, seal cut ends.

### 3.3 PROTECTION

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

END OF SECTION

1 GENERAL

1.1 RELATED SECTIONS

- .1 06 10 00 - Rough Carpentry.
- .2 06 20 00 - Finish Carpentry.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI).
  - .1 BHMA A156.9-2015, Cabinet Hardware.
  - .2 NPA A208.1-2009, Particleboard.
  - .3 NPA A208.2-2009, Medium Density Fiberboard (MDF) for Interior Applications.
- .2 American Society for Testing and Materials (ASTM)
  - .1 ASTM A653/A653M-15e1, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .2 ASTM A924/A924M-16ae1, Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
  - .3 ASTM F1667-15, Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- .3 Architectural Woodwork Manufacturers Association of Canada (AWMAC)
  - .1 Architectural Woodwork Standards Second Edition, 2014.
- .4 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
- .5 Canadian Standards Association (CSA)
  - .1 CSA O115-M1982 (R2001), Hardwood and Decorative Plywood.
  - .2 CSA O141-05 (R2014), Softwood Lumber.
  - .3 CSA O153-13, Poplar Plywood.
- .6 National Electrical Manufacturers Association (NEMA)
  - .1 LD 3-2005, High-Pressure Decorative Laminates.
- .7 National Lumber Grades Authority (NLGA)



- .1 Standard Grading Rules for Canadian Lumber 2014.

### 1.3 SUBMITTALS

- .1 Submit in accordance with 01 33 00 - Submittals.
- .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.
  - .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.
- .4 Closeout submittals:
  - .1 Provide maintenance data for plastic laminate work for incorporation into manual.

### 1.4 QUALITY STANDARDS

- .1 The Architectural Woodwork Quality Standards Illustrated 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 wood casework 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 AWMAC Architectural Woodwork Quality Standards Illustrated manual shall be made readily available for reference purposes.

#### 1.5 MOCK-UPS

- .1 Submit full size mock-up of wall and base cabinet complete with door, drawer and hardware. Materials shall be of those specified for this project. Include work top.
- .2 Allow 24 hours for review of mock-up by Department Representative.
- .3 Any work which does not comply with the mock-up will be rejected. Make revisions to mock-ups as directed by Department Representative.
- .4 Department Representative's decision as to compliance with the mock-up will be final.
- .5 After acceptance, mock-ups will demonstrate minimum standard for this work. Cabinet mock-ups may be incorporated into work.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials of this section in accordance with Division 1.
- .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.

1.7 ENVIRONMENTAL CONDITIONS

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

2 PRODUCTS

2.1 LUMBER MATERIALS

- .1 Softwood lumber: to CSA O141, sound, dry and stable; of species selected by architectural woodwork manufacturer.
- .2 Hardwood lumber: to National Hardwood Lumber Association (NHLA) requirements, to AWMAC custom grade; maple.

2.2 SHEET MATERIALS

- .1 Adhesive used in panel products shall be formaldehyde free.
- .2 Hardwood plywood: to CSA O115-M; maple veneer, grade and core as indicated. Use Type II bond.
- .3 Poplar plywood (PP): to CSA O153, standard construction.
- .4 Medium Density Fibreboard (MDF) substrate: to ANSI A208.2, EPP certified, no added formaldehyde, manufactured from 100% pre-consumer recycled wood fibre.
  - .1 Standard of acceptance:
    - .1 Skyblend MDF by Roseburg Forest Products.
    - .2 Vesta MDF by Flakeboard.
    - .3 Arresis by SierraPine.
    - .4 PureKor MDF Plus by Panel Source International.
- .5 Particleboard: to ANSI A208.1, Grade M3, EPP certified, no added formaldehyde,

manufactured from 100% pre-consumer recycled wood fibre.

- .1 Standard of acceptance:
  - .1 Ultrablend by Roseburg Forest Products.
  - .2 Vesta M3 by Flakeboard.
  - .3 Encore by SierraPine.
  - .4 PureKor Platinum Particleboard by Panel Source International.

## 2.3 PLASTIC LAMINATE

- .1 Plastic laminate: to NEMA LD 3, grades as specified. Only use laminate from one manufacturer unless approved by Department Representative.
- .2 General purpose grade: Standard grade (HGS); 1.2 mm thick; based on printed pattern colour range with satin finish.
- .3 Backing grade: of same thickness and colour as face laminate. Sanded one side.
- .4 Liner sheet: 0.75 mm thick, white colour.
- .5 Plastic laminate adhesive: Low VOC type.

## 2.4 HARDWARE

- .1 Drawer slides:
  - .1 Bottom mounted: "European" style, capacity as indicated, epoxy coated steel runners, nylon rollers, positive stop, lift-out disconnect, full extension, 34 kg capacity.
  - .2 Side mounted: heavy duty side mounted; ball-bearing action, full extension, 90 kg capacity, zinc finish.
- .2 Hinge: to ANSI/BHMA A156.9.
  - .1 Concealed type: Type B01601, 120° opening, (170° where indicated) self-closing, removable arm, mounting plate to suit conditions, nickel finish.
    - .1 Standard of acceptance: Clip System by Blum, Series 4000 by Hettich.
  - .2 Edge/face mounted: Concealed type, 110° opening, self-closing, mounting plate face or edge mounted, nickel finish.

- .1 Standard of acceptance:  
Compact by Blum, Optimat Plus  
by Hettich.
- .3 Cable Entry Plugs (Grommets): circular,  
with sliding cover, 60 mm diameter unless  
indicated otherwise. Black colour.
- .4 Securement for removable panels:  
removable without the use of tools:
  - .1 Acceptable materials are Model "Kedu  
AD double partition Fasteners for 19  
mm" cavity by Hafele Canada, or  
approved equal.
- .5 Lock:
  - .1 Utility: die cast cylinder, with  
key removable in locked or unlocked  
position, cam of style to suit,  
satin nickel/chrome finish. Provide  
four different key systems as  
follows:
    - .1 Locks on outside doors of  
cabinets: separate key system  
and keyed alike.
    - .2 Provide two keys per lock.
  - .2 Elbow catch: to ANSI/BHMA A156.9,  
Type B03023, cast brass or bronze.
- .6 Pull:
  - .1 Pulls: approximately 128 mm long for  
drawers 192 and 298 mm long for  
doors brushed nickel finish.
    - .1 Standard of Acceptance: Model  
"305128195", "305192195" and  
"305298195" as manufactured by  
Richelieu.
- .7 Shelf hardware:
  - .1 Cabinets:
    - .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 Shelf support pin: plastic;  
design to lock shelf in place  
to prevent tipping; colour as  
selected by Department  
Representative.

2.5        MISCELLANEOUS ITEMS

- .1    Fasteners:
  - .1    Nails and staples: to CSA B111.
  - .2    Wood screws: type and size to suit application.
- .2    Bumpers: clear silicone; self adhesive application.
- .3    Levellers: ABS construction, consisting of screw attached head and 48 mm diameter leveller; 150 kg load capacity.
  - .1    Standard of acceptance: Model 451-Series by Richelieu with 841-Series head.
- .4    Sealant: Mildew resistant silicone; CAN/CGSB-19.22-M; colour as selected by Department Representative.

2.6        CASEWORK

- .1    Casework:
  - .1    Fabricate caseworks to AWMAC custom quality grade.
- .2    All case bodies, cabinet interiors, cabinet doors and drawer fronts, semi-exposed surfaces such as interior of case bodies, shelves behind doors except where noted otherwise shall be fabricated from 0.76 mm vertical grade plastic laminate laminated to 19 mm thick 20.4 kg. Density particleboard substrate. Particleboard to conform to requirements of CSA CAN3-0188.0 and CSA CAN3-0188.1. Doors and Drawers to be edged with 3 mm PVC edging and 0.5 mm PVC edging on case bodies, matching face material of doors, drawers and bodies as selected by Department Representative.
- .3    Drawers:
  - .1    Fabricate drawers to AWMAC custom grade supplemented as follows:
  - .2    Sides and Backs.
    - .1    Poplar plywood square edge, 13 mm thick, clear verathane finish with dove tail jointing.
  - .3    Bottoms.
    - .1    Poplar plywood square edge, 9 mm thick, clear verathane finish.
- .4    Backs:

- .1 Poplar plywood square edge, 6 mm thick clear verathane finish.
- .4 Shelving.
  - .1 Within cabinets with doors plastic laminate for vertical surfaces on all surfaces and edges
  - .2 Exposed shelving, poplar plywood solid two sides, square edge, 16 mm thick, up to 915 mm wide and 19 mm thick over 915 mm wide laminated both sides and all edges with laminated plastic for vertical surfaces.
- .5 Fabricate all base and wall cabinets as per plan cabinet sections, of plastic laminate components.
- .6 Fabricate cabinets with recessed toe space to heights and depths as shown on drawings. The base of the cabinet, forming the toe space is to be fabricated of Douglas fir plywood, and finished with rubber base or ceramic tile as noted.
- .7 Fabricate all units in modular sections, rigid, self supporting, with demountable fastening for ease of relocation.
- .8 All shelves shall be adjustable and shall extend full depth of cabinets to within 12 mm of the face of the supporting gables. All faces, edges and ends of shelving are to be finished with plastic laminate.
- .9 Handles on doors are to be mounted vertically.
- .10 Provide and install all valance and filler panels to match cabinetwork, as shown on drawings. Removable panels where indicated on drawings to be fully finished panels on all sides and edges, secured with removable fasteners as specified in hardware. All openings on top of cabinets behind filler panels to be closed with matching materials to match filler panels.
- .11 Provide end, divider and privacy screens where indicated.
- .12 Provide and install locks on doors and drawers indicated. All doors within any one room are to be keyed alike.

2.7

COUNTERTOPS

- .1 Solid surface and laminated plastic for countertops to section 06 47 00.

- .2 Core materials to be used in all countertops to be poplar plywood conforming to the requirements of CSA O153.
- .3 Backing sheets are to be applied to the reverse side of all countertops in accordance with AWMAC Standards.
- .4 Formed backsplashes shall extend 100 mm above counter surface. All joints to be sealed with watertight cement to ensure protection from liquids entering the substrate
- .5 All plastic laminate countertops shall be factory fabricated in as long sections as possible to dimensions that have been site verified. Where joints are necessary, they shall be level and true, splined and fully secured with mechanical fasteners recessed into substrate, three per joint, forming permanent watertight joints.
- .6 On all countertops specified above, plastic laminate is to be applied to the vertical edges before plastic laminate is applied to the horizontal top of the counter.
- .7 All countertops shall have 3 mm PVC Edgebanding shop bonded to core using a hot melt edgebanding machine.
- .8 All hidden edges of countertops where the core material is exposed, are to be sealed to prevent moisture entry.
- .9 **MELAMINE PRODUCTS NOT PERMITTED.**

2.8

FABRICATION - GENERAL

- .1 Start fabrication only after shop drawings have been reviewed and when related submittals and samples have been accepted by Department 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.
- .10 Ensure adjacent parts of continuous laminate work match in colour and pattern.

2.9 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 Department 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.

2.10 HARDWARE INSTALLATION

- .1 Factory install hardware wherever possible.
- .2 Mortise cabinet shelf standards so face is flush with panel.
- .3 Hardware schedule:
  - .1 Drawers:
    - .1 File drawers: equip with side-mounted drawer slides, pull and lock.

- .2 Remainder: equip with bottom-mounted drawer slides and pull; lock where indicated.
- .2 Swinging doors:
  - .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 Wardrobe doors: use 170E hinges.
  - .5 Provide two (2) bumpers per door leaf.
- .3 Locking:
  - .1 Use magnetic lock where indicated; utility locks elsewhere.
  - .2 Where pairs of doors are indicated to be locked, and there is no centre divider to lock both doors to, install elbow catch on inactive door.
- .4 Other hardware as required or indicated.

### 3 EXECUTION

#### 3.1 JOB CONDITIONS

- .1 Job conditions for installation of wood casework shall be as specified under Part 6, Item 3 of AWMAC Quality Standards.

#### 3.2 INSTALLATION

- .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 Department 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 plastic laminate counter back splash and adjacent wall finish, apply small bead of sealant.

### 3.3 ADJUST AND CLEAN

- .1 Upon completion, clean surfaces of dirt, dust and contamination, and leave casework ready for finishing.
  - .1 Clean insides of cabinets and drawers as well as exterior surfaces.
- .2 Inspect work, and make good, repair and replace unsatisfactory or damaged work and materials as directed by Department Representative at no additional cost.
- .3 Adjust drawers, doors and hardware at completion of work, and leave in full working condition.

### 3.4 PROTECTION

- .1 Protect items from damage until final inspection.

**END OF SECTION**

Part 1      GENERAL

1.1      RELATED SECTIONS

- .1      Section 01 33 00 - Submittal Procedures.
- .2      Section 01 78 00 - Closeout Submittals.
- .3      Section 06 40 00 - Architectural  
Woodwork.

1.2      REFERENCES

- .1      American National Standards Institute  
(ANSI)
  - .1      ANSI 208.1, Particleboard.
  - .2      ANSI A208.2, Medium Density  
Fibreboard (MDF) for Interior  
Applications.
- .2      American Society for Testing and  
Materials International, (ASTM)
  - .1      ASTM D2832, Standard Guide for  
Determining Volatile and Nonvolatile  
Content of Paint and Related  
Coatings.
  - .2      ASTM D5116, Standard Guide For  
Small-Scale Environmental Chamber  
Determinations of Organic Emissions  
From Indoor Materials/Products.
- .3      Canadian General Standards Board (CGSB)
  - .1      CAN/CGSB-71.20, Adhesive, Contact,  
Brushable.
- .4      Canadian Standards Association (CSA  
International)
  - .1      CSA O112, Standards for Wood  
Adhesives.
  - .2      CSA O121, Douglas Fir Plywood.
  - .3      CAN/CSA O141, Softwood Lumber.
  - .4      CSA O151, Canadian Softwood Plywood.
  - .5      CSA O153, Poplar Plywood.
- .5      Health Canada/Workplace Hazardous  
Materials Information System (WHMIS)
  - .1      Material Safety Data Sheets  
(MSDS).National Electrical  
Manufacturers Association (NEMA)
  - .2      ANSI/NEMA LD-3-05, High Pressure  
Decorative Laminates (HPDL).

1.3      SUBMITTALS

- .1      Product Data:
  - .1      Submit manufacturer's printed  
product literature, specifications  
and data sheet in accordance with

Section 01 33 00 - Submittal Procedures.

- .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's for adhesives, solvents and cleaners.

.2 Samples:

- .1 Submit samples in accordance with Section 01 33 00- Submittal Procedures.
- .2 Submit duplicate samples of joints, edging, cutouts and postformed profiles.
- .3 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.
- .4 Closeout Submittals:
  - .1 Provide maintenance data for laminate work for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 QUALITY ASSURANCE

- .1 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 and with 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 off ground, indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area, maintain relative humidity between

25 and 60% at 22 degrees C during storage and installation.

- .2 Store and protect laminate, adhesive, and core materials from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan related to Work of this Section.

Part 2 PRODUCTS

2.1 MATERIALS

- .1 Laminated plastic for flatwork: to NEMA LD 3.
  - .1 Type: General purpose.
  - .2 Grade: HGS.
  - .3 Size: 1.6 mm thick.
  - .4 Colour: multilayered.
  - .5 Pattern: solid, woodgrain or printed.
  - .6 Finish: satin.
- .2 Laminated plastic for postforming work: to NEMA LD 3.
  - .1 Type: Postforming.
  - .2 Grade: HGP.
  - .3 Size: 0.76 mm thick.
  - .4 Colour: multilayered.
  - .5 Pattern: solid, woodgrain or printed.
  - .6 Finish: satin.
- .3 Laminated plastic for backing sheet: to NEMA LD 3.
  - .1 Type: Backer.
  - .2 Grade: BKH.
  - .3 Size: not less than 0.75 mm thick or same thickness as face laminate.
  - .4 Colour: to match face laminate.
- .4 Laminated plastic for liner: to NEMA LD 3.
  - .1 Type: Cabinet Liner.
  - .2 Grade: CLS.
  - .3 Size: 0.75 mm thick
  - .4 Colour: to match face laminate.
- .5 Standard of Acceptance: Formica, or an approved alternate
- .6 Plywood core: to CSA O153 solid two sides, Grade, 19 mm thick.
- .7 Particleboard core: to ANSI 208.1, sanded faces, of thickness indicated.

- .8 Laminated plastic adhesive: urea resin adhesive to CSA O112.5, contact adhesive to CAN/CGSB-71.20, resorcinol resin adhesive to CSA O112.7, polyvinyl adhesive to CSA O112.4, two component epoxy thermosetting adhesive.
  - .1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.
- .9 Sealer: water resistant sealer or glue acceptable to laminate manufacturer.
  - .1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.
- .10 Sealants: Silicone based material to CGSB 19-GP-22M.
  - .1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.
- .11 Draw bolts and splines: as recommended by fabricator.

## 2.2 FABRICATION

- .1 Comply with NEMA LD 3, Annex A.
- .2 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
- .3 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .4 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 3000 mm. Keep joints 600 mm from sink cutouts.
- .5 Form shaped profiles and bends as indicated, using postforming grade laminate to laminate manufacturer's instructions.
- .6 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
- .7 Apply laminate backing sheet to reverse side of core of plastic laminate work.

- .8 Apply laminated plastic liner sheet to interior of cabinetry.

Part 3 EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for laminate, adhesive, and core materials installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Department Representative.
  - .2 Inform Department 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 Department Representative.

3.2 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.3 INSTALLATION

- .1 Install work plumb, true and square, neatly scribed to adjoining surfaces.
- .2 Make allowances around perimeter where fixed objects pass through or project into laminated plastic work to permit normal movement without restriction.
- .3 Use draw bolts and splines in countertop joints. Maximum spacing 450 mm on centre, 75 mm from edge. Make flush hairline joints.
- .4 Provide cutouts for inserts, grilles, appliances, outlet boxes and other penetrations. Round internal corners, chamfer edges and seal exposed core.
- .5 At junction of laminated plastic counter back splash and adjacent wall finish, apply small bead of sealant.



3.4        PROTECTION

- .1      Cover finished laminated plastic veneered surfaces with heavy kraft paper or put in cartons during shipment. Protect installed laminated surfaces by approved means. Do not remove until immediately before final inspection.

3.5        CLEANING

- .1      Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2      Perform care and cleaning with NEMA LD 3, Annex B.
- .3      Remove traces of primer, caulking, epoxy and filler materials; clean doors and frames.

END OF SECTION