Part 1 General

1.1 Related Sections

.1 Section 01 29 83 - Payment Procedures: Testing Laboratory Services.

.2 Section 01 33 00 - Submittal Procedures.

.3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.4 Section 03 48 00 – Precast Architectural Specialties.

.5 Section 06 10 00 – Rough Carpentry.

1.2 References

.1 American Wood-Preservers' Association (AWPA)

.1 AWPA M2-00, Standard Inspection of Treated Wood Products.

.2 AWPA M4-01, Standard for the Care of Preservative-Treated Wood Products.

.2 Canadian Standards Association (CSA)

.1 CSA O80 Series-97, Wood Preservation.

.2 CSA O80.20-M89, Fire-Retardant Treatment of Lumbering Pressure Processes. This Standard applies to the fire-retardant treatment of lumber by pressure processes. Fire-Retardant Treatment of Lumber by Pressure Processes. This is not a stand alone specification.

.3 CSA O80.27-M89, Fire-Retardant Treatment of Plywood by Pressure Processes. This Standard covers the fire-retardant treatment of Douglas Fir, hardwood, softwood, and Poplar plywood by pressure processes. Fire-Retardant Treatment of Plywood by Pressure Processes. This not a stand alone specification.

.4 CSA O80.201-M89, Standard for Hydrocarbon Solvents for Preservatives. This Standard covers hydrocarbon solvents for preparing solutions of preservatives.- This is not stand alone specification

.5 CSA O322-1976(R1999), Procedure for Certification of Pressure-Treated Wood Materials for Use in Preserved Wood Foundations.

1.3 Quality Assurance

.1 Plant inspection of products treated with preservative and fire-retardant by pressure impregnation will be carried out by designated testing laboratory to AWPA M2, and revisions specified in CSA O80 Series, Supplementary Requirements to AWPA M2.

.2 Each piece of lumber and plywood for preserved wood foundations to be identified by CSA O322 certified stamp.

.3 Inspection and testing of insert materials may be carried out by a Testing Laboratory designated by Contract Administrator.

.4 City of Winnipeg will pay for costs of tests as specified in Section 01 29 83 - Payment Procedures: Testing Laboratory Services.

1.4 Regulatory Requirements

.1 Each board or bundle of fire-retardant treated material panel to bear ULC label indicating Flame Spread Classification (FSC), and smoke developed.

1.5 Certificates

.1 Submit certificates in accordance with Section 01 33 00 - Submittal Procedures.

.2 For products treated with preservative fire-retardant by pressure impregnation submit following information certified by authorized signing officer of treatment plant:

.1 Information listed in AWPA M2 and revisions specified in CSA O80 Series, Supplementary Requirement to AWPA M2 applicable to specified treatment.

.2 Moisture content after drying following treatment with water-borne preservative fire-retardant.

.3 Acceptable types of paint, stain, and clear finishes that may be used over treated materials to be finished after treatment.

1.6 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Do not dispose of preservative treated wood through incineration.

.3 Do not dispose of preservative treated wood with other materials destined for recycling or reuse.

.4 Dispose of treated wood, end pieces, wood scraps and sawdust at sanitary landfill approved by Contract Administrator.

.5 Dispose of unused wood preservative material at official hazardous material collections site approved by Contract Administrator.

.6 Do not dispose of unused preservative material into sewer system, into streams, lakes, onto ground or in other location where they will pose health or environmental hazard.

Part 2 Products

2.1 Materials

.1 Preservative: to CSA-O80 Series, for clear finish.

.2 Solvent: to CSA-O80.201, Type 1.

Part 3 Execution

3.1 Application: Preservative

.1 Treat indicate material to CSA O80 Series to U1, T1, P5 and M4 using ACA, ACZA, or CCA preservative to obtain minimum net retention of:

.1 Above ground: 4.0 kg/$m^3$of wood.

.2 Wood Bollards: Chromated Copper Arsenate to AWPA C16 (2001) 6.4 kg/$m^3$of wood.

.3 Cedar - exterior concrete and cedar benches: to CSA 080.2a.

.4 Plywood - parapet and scuppers: to CSA 080.9.

.5 Wood blocking – roof hatch and roof units: to CSA 080.2a

3.2 Application: Field Treatment

.1 Comply with AWPA M4 and revisions specified in CSA O80 Series, Supplementary Requirements to AWPA M2.

.2 Remove chemical deposits on treated wood to receive applied finish.

END OF SECTION

Part 1 General

1.1 Related Sections

.1 Section 01 33 00 – Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.3 Section 06 05 73 - Treated Wood.

.4 Section 06 20 00 – Finish Carpentry.

.5 Section 07 21 16 - Blanket Insulation.

.6 Section 07 21 13 – Board Insulation.

.7 Refer to Structural Drawings and Specification Section.

1.2 References

.1 American National Standards Institute (ANSI)

.1 ANSI A208.1-1999, Particleboard, Mat Formed Wood.

.2 American Society for Testing and Materials (ASTM)

.1 ASTM A653/A653M-01a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealled) by the Hot-Dip Process.

.2 ASTM C36/C36M-01, Specification for Gypsum Wallboard.

.3 ASTM C578-01, Specification for Rigid, Cellular Polystyrene Thermal Insulation.

.4 ASTM C1289-01, Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.

.5 ASTM D1761-00, Standard Test Methods for Mechanical Fasteners in Wood.

.6 ASTM D5055-00, Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.

.7 ASTM D5456-01ae1, Specification for Evaluation of Structural Composite Lumber Products.

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-11.3-M87, Hardboard.

.2 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.

.3 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

.4 CAN/CGSB-71.26-M88, Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems.

.4 Canadian Standards Association (CSA)

.1 CSA A123.2-M1979(R1999), Asphalt Coated Roofing Sheets.

.2 CAN/CSA-A247-M86, Insulating Fiberboard.

.3 CSA B111-1974, Wire Nails, Spikes and Staples.

.4 CAN/CSA-G164-M92, Hot Dip Galvanizing of Irregularly Shaped Articles.

.5 CSA O112 Series-M1977, CSA Standards for Wood Adhesives.

.6 CSA O121-M1978, Douglas Fir Plywood.

.7 CAN/CSA-O122-M89, Structural Glued-Laminated Timber.

.8 CAN/CSA-O141-91, Softwood Lumber.

.9 CSA O151-M1978, Canadian Softwood Plywood.

.10 CSA O153-M1980, Poplar Plywood.

.11 CAN/CSA-O325.0-92(R1988), Construction Sheathing.

.12 CAN3-O437 Series-93, Standards on OSB and Waferboard.

.5 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2000.

.6 Truss Design and Procedures for Light Metal Connected Wood Trusses, Truss Plate Institute of Canada.

1.3 Quality Assurance

.1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.

1.4 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management to the maximum extent economically possible.

.2 Separate wood waste in accordance with Section 01 74 21 - Construction/Demolition Waste Management and place in designated areas in the following categories for recycling: Solid wood/softwood/hardwood, treated, painted, or contaminated wood.

.3 Separate wood waste in accordance with Section 01 74 21 - Construction/Demolition Waste Management and place in designated areas in the following categories for re-use on site wherever possible.

.4 Set aside damaged wood and dimensional lumber off-cuts for approved alternative uses (e.g. bracing, blocking, cripples, bridging). Store this separated reusable wood waste convenient to cutting station and area of work.

.5 Separate metal, plastic, wood and corrugated cardboard-packaging in accordance with Section 01 74 21 - Construction/Demolition Waste Management and place in designated areas for recycling.

.6 Do not burn scrap at the project site.

.7 Fold up metal banding, flatten, and place in designated area for recycling.

Part 2 Products

2.1 Framing and Structural Materials

.1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% (S-dry) or less in accordance with following standards:

.1 CAN/CSA-O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

.2 Glulam in accordance with Structural Glued-Laminated Timber CAN/CSA-O122.

.3 Wood I-joists in accordance with Prefabricated Wood I-Joists ASTM D5055.

.4 Engineer Wood Floor Joists – Refer to Structural Drawings.

.5 Light-frame trusses in accordance with "Truss Design and Procedures for Light Metal Connected Wood Trusses", Truss Plate Institute of Canada.

.6 Structural Composite Lumber (SCL) in accordance with ASTM D5456.

.7 Framing and board lumber: in accordance with NBC.

.8 Furring, blocking, nailing strips, grounds, rough bucks, curbs, fascia backing and sleepers:

.1 S2S.

.2 Board sizes: "Standard" or better grade.

.3 Dimension sizes: "Standard" light framing or better grade.

.4 Post and timbers sizes: "Standard" or better grade.

2.2 Panel Materials

.1 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.0.

.2 Douglas fir plywood (DFP): to CSA O121, standard construction.

.3 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.4 Poplar plywood (PP): to CSA O153, standard construction.

.5 Interior mat-formed wood particleboard: to ANSI 208.1.

.6 Mat-formed structural panelboards (OSB wafer): to CAN3-O437.0.

.7 Insulating fiberboard sheathing: to CAN/CSA-A247.

.8 Glass fibre board sheathing: non-structural, rigid, faced, fiberglass, insulating exterior sheathing board.

.9 Isocyanurate sheathing: to ASTM C1289, unfaced.

.10 Expanded polystyrene sheathing: to ASTM C578.

.11 Gypsum sheathing: to ASTM C36/C36M.

2.3 Wood Bollards

.1 190 – 203mm diameter rough posts treated with Chromated Copper Arsenate to AWPA C16 (2001) 6.4 kg/m^3 of wood. Earth mound around post to 100mm.

2.4 Light Proof Fence – Refer to Drawing 9/ A – 2.

.1 89 x 89mm square spruce posts; pressure treated; located at 3050mm O.C; to be stained.

.2 19 x 89mm spruce pickets; pressure treated; to be stained.

.3 38 x 89mm horizontal spruce; pressure treated; to be stained.

.4 Construction nailed to posts.

2.5 Light Proof Barrier Fence – Refer to Drawing 10/ A – 2.

.1 184 x 184mm square spruce posts; pressure treated; located at 2500mm O.C.

.2 38 x 235mm spruce bumper guards; pressure treated.

.3 Construction bolt, washer and nut to posts.

2.6 Accessories

.1 Exterior wall sheathing paper: to CAN/CGSB-51.32 spunbonded olefin type as indicated.

.2 Polyethylene film: to CAN/CGSB-51.34, Type 1, 0.15 mm thick.

.3 Roll roofing: to CSA A123.2, Type S.

.4 Air seal: closed cell polyurethane or polyethylene.

.5 Sealants: Section 07 92 10 – Joint Sealing.

.6 Subflooring adhesive: to CGSB-71.26, cartridge loaded.

.7 General purpose adhesive: to CSA O112 Series.

.8 Nails, spikes and staples: to CSA B111.

.9 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.

.10 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.

.11 Joist hangers: minimum 1 mm thick sheet steel, galvanized ZF001 coating designation.

.12 Nailing discs: flat caps, minimum 25 mm diameter, minimum 0.4 mm thick, sheet metal, formed to prevent dishing. Bell or cup shapes not acceptable.

.13 Roof sheathing H-Clips: formed "H" shape, thickness to suit panel material, extruded 6063-T6 aluminum alloy type approved by Contract Administrator.

2.7 Fastener Finishes

.1 Galvanizing: to CAN/CSA-G164, use galvanized fasteners for exterior work, interior highly humid areas.

2.8 Wood Preservative

.1 Refer to Section 06 05 73 – Wood Treatment.

.2 As recommended by Manufacturer.

Part 3 Execution

3.1 Preparation

.1 Store wood products.

3.2 Installation

.1 Comply with requirements of NBC 1995 Part 9 supplemented by following paragraphs.

.2 Install members true to line, levels and elevations, square and plumb.

.3 Construct continuous members from pieces of longest practical length.

.4 Install spanning members with "crown-edge" up.

.5 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.

.6 Install subflooring and combined subfloor and underlay with panel end-joints located on solid bearing, staggered at least 800 mm.

.1 In addition to mechanical fasteners, floor panels secure floor subflooring to floor joists using glue and screws. Place continuous adhesive bead in accordance with manufacturer's instructions, single-bead on each joist and double-bead on joists where panel ends butt.

.7 Install wall sheathing in accordance with manufacturer's printed instructions.

.8 Install roof sheathing in accordance with requirements of NBC.

.9 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding electrical equipment mounting boards, and other work as required.

.10 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

.11 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized fasteners.

.12 Install sleepers as indicated.

.13 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.

3.3 Erection

.1 Engineer Wood Floor Joists – Refer to Structural Drawings.

.1 Acceptable Product: TJI or approved equal in accordance with B6.

.2 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.3 Countersink bolts where necessary to provide clearance for other work.

.4 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

3.4 Schedules

.1 Roof sheathing:

.1 Plywood, DFP or CSP sheathing grade or PP standard sheathing grade, square edge, 13 mm thick.

.2 OSB panel, square edge, 11mm thick.

.3 OSB panel, square edge 19mm thick.

.4 Construction sheathing product: end use mark W24.

.5 Refer to Drawings.

.2 Thermal Barrier

.1 13mm Fibreboard.

.2 Refer to Drawings.

.3 Exterior wall sheathing:

.1 Plywood, DFP or CSP sheathing grade or PP standard sheathing grade, square edge, 13 mm thick.

.2 Construction sheathing product: end use mark W24.

.3 Refer to Drawings.

.4 Interior Backing Board:

.1 Plywood, DFP or CSP sheathing grade or PP standard sheathing grade, square edge, 13 mm thick.
.2 Construction sheathing product: end use mark W24.
.3 Locate at Handrails, Grab Bars, Wall Mounted Fixtures, etc.
.4 Refer to Drawings.

.5 Plywood floors:

.1 Plywood, as indicated in the Drawings.
.2 Gymnasium, Lobby, Vestibule and as indicated in the Drawings.

.6 Wood Blocking:

.1 Construction Spruce.
.2 38mm or as indicated.
.3 Refer to drawings.
.4 Treated as indicated.

.7 Parapet:

.1 2 – 19mm treated Plywood.
.2 Treated blocking as indicated.
.3 Refer to Drawings.

.8 Scupper:

.1 16mm treated Plywood.
.2 Refer to Drawings.

.9 Interior Wall Panelling typical:

.1 Medium density fibreboard (MDF): to ANSI A208.2, density 640-800 kg/m^3.
.2 Bevelled as indicated.
.3 1220 x 2438mm and other sizes as indicated.
.4 Refer to Wall Types on Drawing A – 1.

.10 Electrical equipment mounting boards:

.1 Plywood, DFP or CSP grade, or PP grade, square edge 19 mm thick.

.11 Wood Bollards

.1 190 – 203mm diameter rough posts with 50mm bevelled top.
.2 Refer to Detail 5/ A – 2.

.12 Light Fence Construction

.1 Refer to Drawings.

END OF SECTION

Part 1 General

1.1 Summary

.1 Section Includes:

.1 Material and installation for prefabricated wood trusses.

.2 Related Sections:

.1 Section 01 33 00 - Submittal Procedures.
.2 Section 01 35 30 - Health and Safety Requirements.
.3 Section 01 61 00 - Common Product Requirements.
.4 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
.5 Section 02 61 33 - Hazardous Materials.

1.2 References

.1 Canadian Standards Association (CSA International)

.1 CSA O80 Series-97(R2002), Wood Preservation.
.2 CAN/CSA-O86-01, Engineering Design in Wood.
.3 CAN/CSA-O141-91(R1999), Softwood Lumber.
.4 CSA S307-M1980(R2001), Load Test Procedure for Wood Roof Trusses for Houses and Small Buildings.
.5 CSA S347-99(R2004), Method of Test for Evaluation of Truss Plates Used in Lumber Joints.
.6 CSA W47.1-03, Certification of Companies for Fusion Welding of Steel.

.2 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.3 National Lumber Grades Authority (NLGA)

.1 NLGA-03, Standard Grading Rules for Canadian Lumber.

.4 National Research Council (NRC)/Institute for Research in Construction (IRC) - Canadian Construction Materials Centre (CCMC)

.1 CCMC-2002, Registry of Product Evaluations.

.5 Truss Plate Institute of Canada (TPIC)

.1 TPIC - 1996 (R2001), Truss Design Procedures and Specifications for Light Metal Plate Connected Wood Trusses (Limit States Design).

1.3 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 CAN/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 CAN/CSA-O86.1 for loads indicated.

.4 Limit live load deflection to 1/360th of span where gypsum board ceilings are hung directly from trusses.

.1 One layer of 16 'X'.

.5 Provide camber for trusses as required.

1.4 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.

.2 Fabricator for welded steel connections to be certified in accordance with CSA W47.1.

.2 Pre-Installation Meeting:

.1 Convene pre-installation meeting one week prior to beginning work of this Section and on-site installations in accordance with Section 01 32 17 - Construction Progress Schedule - Critical Path Method (CPM) and Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.

.1 Verify project requirements.

.2 Review installation and substrate conditions.

.3 Co-ordination with other building subtrades.

.4 Review manufacturer's installation instructions and warranty requirements.

.3 Health and Safety:

.1 Do construction occupational health and safety in accordance with Section 01 35 30 - Health and Safety Requirements.

1.5 Submittals

.1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit two copies of Workplace Hazardous Materials Information System WHMIS MSDS in accordance with Section 02 61 33 - Hazardous Materials. Indicate VOCs during application and curing.

.3 Shop Drawings:

.4 Each shop erection drawing submission, showing connection details to be signed and stamped by professional engineer registered or licensed in the Province of Manitoba, Canada.

.5 Indicate special structural application and specification as according to local authorities having jurisdiction.

.6 Indicate TPIC Truss Design Procedure and CSA O86 Engineering Design in Wood and specific CCMC Product Registry number of the truss plates

.7 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.

.8 Submit stress diagram or print-out of computer design indicating design load for truss members. Indicate allowable load and stress increase.

.9 Do load testing on representative trusses selected by Contract Administrator. Provide certification that trusses meet requirements of CSA S307 and CSA S347.

.10 Indicate arrangement of webs or other members to accommodate ducts and other specialties.

.11 Show location of lateral bracing for compression members.

.12 Test reports: submit certified test reports for prefabricated wood trusses from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.

.13 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.14 Instructions: submit manufacturer's installation instructions.

1.6 Delivery, Storage and Handling

.1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements.

.2 Storage and Protection:

.1 Store trusses on job site in accordance with manufacturer's instructions. Provide bearing supports and bracings. Prevent bending, warping and overturning of trusses.

.3 Waste Management and Disposal:

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal packaging material for recycling in accordance with Waste Management Plan (WMP).

.4 Separate for reuse and recycling and place in designated containers for Steel, Metal and Plastic waste in accordance with Waste Management Plan (WMP).

.5 Fold up metal and plastic banding, flatten and place in designated area for recycling.

Part 2 Products

2.1 Materials

.1 Lumber: Structural grade, softwood, S4S, with maximum moisture content of 19% at time of fabrication and to following standards:

.1 CAN/CSA-O141.

.2 NLGA (National Lumber Grading Association), Standard Grading Rules for Canadian Lumber.

.2 Fastenings: to CAN/CSA-O86.

2.2 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.

2.3 Source Quality Control

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

Part 3 Execution

3.1 Manufacture's Instructions

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

3.2 Erection

.1 Erect wood trusses as indicated in accordance with reviewed shop drawings.

.2 Handling, installation, erection, bracing and lifting in accordance with manufacturers instructions.

.3 Make adequate provisions for handling and erection stresses.

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

.5 Install temporary horizontal and cross bracing to hold trusses plumb and in safe condition until permanent bracing and decking are installed.

.6 Install permanent bracing in accordance with reviewed shop drawings, prior to application of loads to trusses.

.7 Do not cut or remove any truss material without approval of Contract Administrator.

3.3 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.

.3 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 Twice during progress of work at 25% and 60% complete.

.2 Upon completion of work, after cleaning is carried out.

.3 Obtain reports within three days of review and submit immediately to Contract Administrator.

.4 Contractor's Verification, include:

.1 Materials and resources.

.2 Storage and collection of recyclables.

.3 Construction waste management.

.4 Resource reuse.

.5 Recycled content.

.6 Local/regional materials.

.7 Certified Wood.

.8 Low-emitting materials.

3.4 Cleaning

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

END OF SECTION

Part 1 General

1.1 Section Includes

.1 Standing and running trim.

.2 Shelving.

1.2 Related Sections

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.3 Section 01 61 00 - Common Product Requirements.

.4 Section 06 10 00 – Rough Carpentry.

.5 Section 06 40 00 - Architectural Woodwork.

.6 Section 06 47 00 – Plastic Laminate Finishing.

.7 Section 09 91 23 - Painting: Painting and finishing.

1.3 References

.1 American National Standards Institute (ANSI)

.1 ANSI A208.1-99, Particleboard.

.2 ANSI A208.2-94, Medium Density Fibreboard (MDF).

.2 American Society for Testing and Materials (ASTM)

.1 ASTM E1333-96, Test Method for Determining Formaldehyde Concentrations in Air and Emissions Rates from Wood Products Using a Large Chamber.

.3 Architectural Woodwork Manufacturers Association of Canada (AWMAC)

.1 AWMAC Quality Standards for Architectural Woodwork 1994.

.4 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-11.3-M87, Hardboard.

.5 Canadian Standards Association (CSA)

.1 CAN/CSA-A247-M86(R1996), Insulating Fibreboard.

.2 CSA B111-74(R1998), Wire Nails, Spikes and Staples.

.3 CAN/CSA-G164-M92(R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.

.4 CSA O115-M82(R2001), Hardwood and Decorative Plywood.

.5 CSA O121-M78(R1998), Douglas Fir Plywood.

.6 CAN/CSA O141-91(R1999), Softwood Lumber.

.7 CSA O151-M78 (R1998), Canadian Softwood Plywood.

.8 CSA O153-M80 (R1998), Poplar Plywood.

.9 CSA Z760-94, Life Cycle Assessment.

.6 International Organization for Standardization (ISO)

.1 ISO 14040-97, Environmental Management-Life Cycle Assessment - Principles and Framework.

.2 ISO 14041-98, Environmental Management-Life Cycle Assessment - Goal and Scope Definition and Inventory Analysis.

.7 National Hardwood Lumber Association (NHLA)

.1 Rules for the Measurement and Inspection of Hardwood and Cypress January 1996.

.8 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2000.

.9 Underwriters Laboratories of Canada (ULC)

.1 CAN4-S104-80(R1985), Fire Tests of Door Assemblies.

.2 CAN4-S105-85(R1992), Fire Door Frames, meeting the Performance Required by CAN4-S104.

1.4 Shop Drawings

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate details of construction, profiles, jointing, fastening and other related details.

.3 Indicate materials, thicknesses, finishes and hardware.

1.5 Samples

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit duplicate samples: sample size 38 x 140 mm or 300 mm long unless specified otherwise of materials.

1.6 Regulatory Requirements

.1 Wood fire rated frames and panels: listed and labelled by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 and CAN4-S105 for ratings specified or indicated.

1.7 Delivery, Storage, and Handling

.1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements.

.2 Protect materials against dampness during and after delivery.

.3 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

1.8 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management to maximum extent economically possible.

.2 Separate wood waste in accordance with Section 01 74 21 - Construction/Demolition Waste Management and place in designated areas in categories as follows for recycling: Solid wood/softwood/hardwood, composite wood, etc.

.3 Separate wood waste in accordance with Section 01 74 21 - Construction/Demolition Waste Management and place in designated areas in categories as follows for re-use on site: sheet materials larger than 600mm, framing members larger than 600mm, multiple offcuts of any size larger than 600mm.

.4 Set aside damaged wood for acceptable alternative uses (e.g. bracing, blocking, cripples, bridging, finger-joining, or ties). Store separated reusable wood waste convenient to cutting station and area of work.

.5 Separate corrugated cardboard in accordance with Section 01 74 21 - Construction/Demolition Waste Management and place in designated areas for recycling.

.6 Do not burn scrap at project site.

.7 Fold up metal banding, flatten, and place in designated area for recycling.

Part 2 Products

2.1 Lumber Material

.1 Softwood lumber: unless specified otherwise, S4S, moisture content 19% or less in accordance with following standards:

.1 CAN/CSA-O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

.3 AWMAC custom premium grade, moisture content as specified.

.2 Machine stress-rated lumber is acceptable.

.3 Hardwood lumber: moisture content 6 % or less in accordance with following standards:

.1 National Hardwood Lumber Association (NHLA).

.2 AWMAC premium grade, moisture content as specified.

.4 Manufacturing process must adhere to Lifecycle Assessment (LCA) Standards as per ISO 14040/14041 LCA Standards, CSA Z760 LCA Standards.

2.2 Panel Material

.1 Douglas fir plywood (DFP): to CSA O121, standard construction.

.2 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.3 Hardwood plywood: to CSA O115.

.4 Poplar plywood (PP): to CSA O153, standard construction.

.5 Particleboard: to ANSI A208.1.

.6 Hardboard: to CAN/CGSB-11.3.

.7 Medium density fibreboard (MDF): to ANSI A208.2, density 640-800 kg/m^3.

.1 Medium density fibreboard must:

.1 Be manufactured such that formaldehyde emissions do not exceed 0.30 ppm (0.260 m^2/m^3) when tested in accordance with ASTM E1333.

.8 Low density fibreboard: to CSA-A247M.

.1 Ensure fibreboard is not manufactured with binders, coatings or adhesives which contain resins or other compounds that have potential to release formaldehyde during final product's use.

.9 Manufacturing process must adhere to Lifecycle Assessment Standards as ISO 14040/14041 LCA Standards, CSA Z760 LCA Standards.

2.3 Accessories

.1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior work, interior humid areas and for treated lumber; plain stainless steel finish elsewhere.

.2 Wood screws: plain steel, type and size to suit application.

.3 Splines: wood.

.4 Adhesive: recommended by manufacturer.

.5 Use least toxic sealants, adhesives, sealers, and finishes necessary to comply with requirements of this section.

Part 3 Execution

3.1 Installation

.1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.

.2 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.

.3 Form joints to conceal shrinkage.

3.2 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 cleanly 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.

.2 Standing and running trim.

.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^{o} scarf type joint.

.4 Install trim in single lengths without splicing.

.3 Hardboard Trim

.1 9 x 89mm MDF.

.2 Paint finish.

.3 Refer to Drawings.

.4 Benches: Corridor 103/ Lobby 102

.1 Size.

.2 Finish.

.3 Refer to Drawings.

.5 Medium density fibreboard (MDF): to ANSI A208.2, density 640-800 kg/m^3.

.1 Bevelled as indicated.

.6 Shelving.

.1 Install shelving on cleat shelf brackets.

.2 Coordinate with Section 06 40 00 - Architectural Woodwork.

.3 Coordinate with Section 06 47 00 – Plastic Laminate Finishing.

3.3 Schedules

.1 Shelving.

.1 Gymnasium Storage Room 111.

.2 Janitor Room 114A

.2 Hardboard Trim

.1 Refer to drawings.

.3 Benches

.1 Corridor 103.

.2 Lobby 102.

END OF SECTION

Part 1 General

1.1 Related Sections

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.3 Section 01 61 00 - Common Product Requirements.

.4 Section 01 45 00 - Quality Control.

.5 Section 06 20 00 – Finish Carpentry.

.6 Section 06 47 00 – Plastic Laminates.

.7 Section 07 92 10 - Joint Sealing.

1.2 References

.1 American National Standards Institute (ANSI)

.1 ANSI A208.1-99, Particleboard.

.2 ANSI A208.2-94, Medium Density Fiberboard (MDF).

.2 American Society for Testing and Materials (ASTM)

.1 ASTM E1333-96, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber.

.2 ASTM D2832-92(R1999), Standard Guide for Determining Volatile and Non-volatile Content of Paint and Related Coatings.

.3 ASTM D5116-97, Standard Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.

.3 Architectural Woodwork Manufacturers Association of Canada (AWMAC)

.1 AWMAC Quality Standards for Architectural Woodwork, 1994.

.4 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.

.5 Canadian Standards Association (CSA)

.1 CSA B111-74(R1998), Wire Nails, Spikes and Staples.

.2 CSA O112.4-M1977(R1999), Standards for Wood Adhesives.

.3 CSA O112.5-Series-M-1977(R1999), Urea Resin Adhesives for Wood (Room- and High-Temperature Curing).

.4 CSA O112.7-Series M-1977(R1999), Resorcinol and Phenol-Resorcinol Resin Adhesives for Wood (Room- and Intermediate-Temperature Curing).

.5 CSA O115-M1982(R2001), Hardwood and Decorative Plywood.

.6 CSA O121-M89(R1998), Douglas Fir Plywood.

.7 CAN/CSA O141-91R1999, Softwood Lumber.

.8 CSA O151-M1978(R1998), Softwood Plywood.

.9 CSA O153-M1980(R1998), Poplar Plywood.

.10 CSA Z760-94, Life Cycle Assessment.

.6 Environmental Choice Program (EPC)

.1 ECP-44-92, Adhesives.

.2 ECP-45-92, Sealants and Caulking Compounds.

.3 ECP-76-98, Surface Coatings.

.7 International Organization for Standardization (ISO)

.1 ISO 14040-97, Environmental Management-Life Cycle Assessment - Principles and Framework.

.2 ISO 14041-98, Environmental Management-Life Cycle Assessment - Goal and Scope Definition and Inventory Analysis.

.8 National Electrical Manufacturers Association (NEMA)

.1 NEMA LD-3-95.

.9 National Hardwood Lumber Association (NHLA)

.1 Rules for the Measurement and Inspection of Hardwood and Cypress, January 1996.

.10 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber, 2000.

1.3 Shop Drawings

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.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.

1.4 Samples

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit duplicate samples: sample size 300 x 300 mm or mm long unless specified otherwise.

.3 Submit duplicate colour samples of laminated plastic for colour selection.

.4 Submit duplicate samples of laminated plastic joints, edging, cutouts and postformed profiles.

1.5 Mock-ups

.1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control as directed by Contract Administrator.

.2 Shop prepare one base cabinet unit wall cabinet counter top shelving unit convector cabinet, complete with hardware and shop applied finishes, and install on project in designated location.

.3 Allow 24 hours for inspection of mock-up by Contract Administrator before proceeding with this work.

.4 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may not remain as part of finished work.

1.6 Delivery, Storage, and Handling

.1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 - Common Product Requirements.

.2 Protect millwork against dampness and damage during and after delivery.

.3 Store millwork in ventilated areas, protected from extreme changes of temperature or humidity.

1.7 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal to the maximum extent economically possible.

.2 Separate wood waste in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and place in designated areas in the following categories for recycling: Solid wood/softwood/hardwood, composite wood, treated, painted, or contaminated wood.

.3 Separate wood waste in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and place in designated areas in the following categories for re-use on site.

.4 Set aside damaged wood for acceptable alternative uses (e.g. bracing, blocking, cripples, bridging, finger-joining, or ties). Store this separated reusable wood waste convenient to cutting station and area of work.

.5 Separate corrugated cardboard in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and place in designated areas for recycling.

.6 Do not burn scrap at the project site.

.7 Fold up metal banding, flatten, and place in designated area for recycling.

Part 2 Products

2.1 Materials

.1 Softwood lumber: unless specified otherwise, S4S, moisture content 15 % or less in accordance with following standards:

- .1 CAN/CSA-O141.
- .2 NLGA Standard Grading Rules for Canadian Lumber.
- .3 AWMAC custom and premium grades, moisture content as specified.

.2 Machine stress-rated lumber is acceptable for all purposes.

.3 The manufacturing process must adhere to Lifecycle Assessment (LCA) Standards as per ISO 14040/14041 LCA Standards, CSA Z760 94 Life Cycle Assessment.

.4 Hardwood lumber: moisture content 6 % or less in accordance with following standards:

- .1 National Hardwood Lumber Association (NHLA).
- .2 AWMAC custom premium grade, moisture content as specified.

.5 Douglas fir plywood (DFP): to CSA O121, standard construction.

.6 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.7 Hardwood plywood: to CSA O115.

.8 Poplar plywood (PP): to CSA O153, standard construction.

.9 Interior mat-formed wood particleboard: to ANSI A208.1.

.10 Hardboard

- .1 To CAN/CGSB-11.3.
- .2 Manufactured such that formaldehyde emissions do not exceed 0.15 ppm (180 microg/m3) when tested in accordance with ASTM E1333.
- .3 If manufactured using a wet process:
  - .1 Be made by a process that does not release matter in the undiluted product plant effluent generating a BOD5 in excess of 50 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment;
  - .2 Be made by a process that does not release TSS in excess of 60 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment;
- .4 Contain at least 50 % recycled materials.

.11 Laminated plastic for flatwork: to NEMA LD3, 2000, 1.0 mm thick; based on solid matt finish.

.12 Laminated plastic for postforming work: to NEMA LD3, 2000, 1.0 mm thick, based on solid matt finish.

.13 Laminated plastic backing sheet: Grade BK, Type HD, not less than 0.5 mm thick or same thickness and colour as face laminate.

.14 Laminated plastic liner sheet: Grade GP, Type HD S LD, white colour.

.15 Thermofused Melamine: to NEMA LD3, Grade 2000.

.1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).

.16 Nails and staples: to CSA B111.

.17 Wood screws: stainless steel, type and size to suit application.

.18 Splines: wood.

.19 Sealant: 07 92 10 Joint Sealing.

.20 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.

.2 Acceptable materials: ECP-44.

2.2 Manufactured Standards

.1 Casework.

.1 Fabricate caseworks to AWMAC premium grade quality.

.2 Furring, blocking, nailing strips, grounds and rough bucks and sleepers.

.1 S2S is acceptable for.

.2 Board sizes: "Standard" or better grade.

.3 Dimension sizes: "Standard" light framing or better grade.

.3 Framing fir or spruce species, NLGA NHLA custom grade, para .

.4 Case bodies (ends, divisions and bottoms).

.1 Softwood and poplar plywood DFP or CSP or PP custom grade, square edge, 19 mm thick.

.2 Particleboard, grade R, 19 mm thick.

.3 Solid wood: fir or spruce species, custom grade, 19mm thick or as required.

.5 Backs.

.1 Softwood and poplar plywood DFP or CSP or PP custom grade, square edge, 13 mm thick.

.2 Particleboard, grade R, 6 mm thick.

.3 Fibreboard, Medium Density Fibreboard 6 mm thick.

.4 Solid wood: spruce species, custom grade, 19mm thick.

.6 Shelving.

.1 Softwood and poplar plywood DFP or CSP or PP, G2G grade, square edge, 16 and 19 mm thick. Finishes as indicated: melamine or plastic laminate.

.2 Hardwood plywood (varnish finish):

.1 Thickness: 19 mm.

.2 Number of plies: 5.

.3 Face veneer: hard maple species, architectural grade, rotarycut, book matching.

.4 Back veneer: hard maple species, architectural grade, rotarycut, book matching.

.5 Core: veneer.

.6 Bond: Type II.

.7 Sanding: regular sanding.

.8 Grain direction vertical or in the long direction.

.3 Particleboard, laminated with thermofused melamine HPL grade 2000, 16 and 19 mm thick.

.4 Solid wood: hard maple species, premium grade.

.5 Edge banding: provide 10 mm thick solid matching wood strip on plywood edges 10 mm or thicker, exposed in final assembly. Strips same width as plywood.

.2 Drawers

.1 Fabricate drawers to AWMAC premium grade supplemented as follows:

.2 Sides and Backs.

.1 Softwood and poplar plywood DFP or CSP or PP, G2G grade, square edge, 13 mm thick.

.2 Fibreboard, Medium Density Fibreboard 13 mm thick.

.3 Thermofused Melamine: 13 mm thick.

.3 Bottoms.

.1 Softwood and poplar plywood DFP or CSP or PP ,G2G grade, square edge, mm thick.

.2 Hardboard, Type 1, 6 mm thick.

.4 Fronts.

.1 Softwood and poplar plywood DFP or CSP or PP, G2G grade, square edge, 19 mm thick.

.2 Particleboard, laminated with Thermofused Melamine HPL grade 2000, 16 mm thick.

.5 Finishes: as indicated.

.3 Casework Doors

.1 Fabricate doors to AWMAC custom grade supplemented as follows:

.2 Softwood and poplar plywood DFP or CSP or PP, G2G grade, square edge, 19 mm thick. Applied finish as indicated.

.3 Particleboard, laminated with Thermofused Melamine HPL grade 2000, 16 and 19 mm thick.

.4 Medium Density Fibreboard, laminated with TFM.

2.3 Manufactured Units

.1 Kitchen (109): Note: Existing cabinet to be relocated as shown with the addition of new components as indicated on the drawing:

.1 Construction: Construction Standard: AWMAC. To custom commercial grade including casework and drawers.

.2 16mm melamine faced plywood, particleboard core.

.3 All drawers to have slides as specified as specified or equal in accordance with B6.

.4 Shelving: adjustable.

.5 Counter Top: Preformed Plastic Lam top with full 180 deg. wrap at front of counter and 100mm backsplash. Colour as selected.

.6 Side fillers as required.

.7 Modules to accommodate sinks and other hook-ups as shown by Mechanical.

.8 Self-closing hinges, door silencers, door and drawer pulls.

.9 Toe space: Rubber base.

.10 Appliances (spacing) to be considered: 21 cu. ft. Refrigerator, stoves, standard double sink, 2 microwave shelves.

.11 Service Counter Shelving:

.1 Countertop:

.1 New Preformed Plastic Lam top with full 180 deg. wrap at front of counter throughout Kitchen. Colour as selected.

.2 Shelving:

.1 Construction: AWMAC. Commercial Grade.

.2 19mm plywood, particleboard core shelf with bracket.

.12 Kitchen Pass-Through shelf:

.1 Plastic Laminate finish.

.2 Backerboard if required.

.3 See detail as shown.

.2 Washroom Vanities (Main Floor Boy's and Girl's):

.1 Construction: To AWMAC standards, commercial grade.

.2 Materials: 19mm plywood (veneer core), plastic laminate finish on all surfaces as shown.

.3 Bond: Type II.

.4 Sealant: clear silicone sealant.

.5 Laminate: Colour as selected.

.6 See Detail as shown.

.3 Storage Room Shelving: (111):

.1 Open Shelving:

.1 Construction: AWMAC. Commercial Grade.

.2 19mm melamine faced plywood, particleboard core shelves and gables.

.3 6mm hardboard white back

.4 100mm toe space: Rubber base.

.5 See drawing shown.

.4 Plastic Laminate Window Sills:

.1 Locations: all exterior window (basement windows not included).

.2 Plastic lam finish as selected on 19mm plywood, veneer core, 5 layers, u/s backerboard.

.3 Edging: Plastic Lam.

.4 Fastening: concealed fasteners.

.5 Plastic Lam: Section 06 47 00.

.5 Drink Dispenser Recessed Shelf:

.1 Similar to Kitchen Pass-Through Shelf

.2 Backerboard if required.

.3 See detail as shown.

.6 Hardware: (Manufacturer as listed or approved alternatives in accordance with B6)

.1 Hinges: concealed, self-closing, 125 degrees, sized to suite door

.1 Acceptable product: Blum.

.2 Door and Drawer Pulls:

.1 Hafele, Stainless Steel, cat. no. 117.50.620, or

.2 Hafele, Chrome plated matt, cat. no. 116.39.464.

.3 Drawer Slides: Full extension, epoxy coated, bottom mount, nylon rollers, 75lb. rated, white. (Drawers to have rebate corners).

.1 Acceptable product: Blum, Hafele or Richelie.

.4 Locks: suitable for drawer lock.

.1 Acceptable: Illicco-Uican, model 988-14 or approved equal in accordance with B6.

.1 Locations: melamine finished cabinets.

.2 Acceptable: Amma, item no. 138, brass.finish.

.1 Location: Varnish finished wood.

.3 Acceptable: Hefele, cam locks for both wood and melamine, 16 or 19mm, brass or chrome plated.

.4 Acceptable: Hefele, drawer lock for both wood and melamine, 19mm, brass 235.14.821 or chrome plated, 235.14.221.

.5 Locks: suitable for door lock.

.1 Acceptable: Illicco-Uican, model 980-14 or approved equal in accordance with B6.

.1 Location: laminate or melamine finishes.

.2 Acceptable: Amma, item no. 103, brass finish.

.3 Acceptable: Hefele, cam locks for both wood and melamine, 16 or 19mm, brass or chrome plated.

.1 Location: laminate or melamine finishes.

.7 Catches: Purpose made.

.1 Acceptable product: #989 SPR BR Knape and Vogt.

.8 Adjustable Supports: Nickel-plated.

.1 Acceptable product: #256 Knape or Vogt. (To be used with #256).

.9 Adjustable Supports: Nickel-plated.

.1 Acceptable product: #256 Knape or Vogt.

.10 Silencers: Apply to all doors and drawers.

.11 Bracket: KV #185 Double Brackets.

.12 Double Slotted Standards: KV #85 (to be used with #185).

2.4 Fabrication

.1 Set nails and countersink screws apply stained plain wood filler to indentations, sand smooth and leave ready to receive finish.

.2 Shop install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.

.3 Shelving to cabinetwork to be adjustable unless otherwise noted.

.4 Provide cut outs for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.

.5 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.

.6 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.

.7 Ensure adjacent parts of continuous laminate work match in colour and pattern.

.8 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 2400 3000 mm. Keep joints 600 mm (minimum) from sink cut outs.

.9 Form shaped profiles and bends as indicated, using post-forming grade laminate to laminate manufacturer's instructions.

.10 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.

.11 Apply laminate backing sheet to reverse side of core of plastic laminate work.

.12 Apply laminated plastic liner sheet to interior of cabinetry where indicated.

2.5 Installation

.1 Do architectural woodwork to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.

.2 Install prefinished millwork at locations shown on drawings. Position accurately, level, plumb straight.

.3 Fasten and anchor millwork securely. Provide heavy-duty fixture attachments for wall mounted cabinets.

.4 Use draw bolts in countertop joints.

.5 Scribe and cut as required to fit abutting walls and to fit properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects.

.6 At junction of plastic laminate counter back splash and adjacent wall finish, apply small bead of sealant.

.7 Apply water-resistant building paper bituminous coating over wood framing members in contact with masonry or cementitious construction.

.8 Fit hardware accurately and securely in accordance with manufacturer's written instructions.

.9 Install in referenced location.

.10 Site apply laminated plastic to units as indicated. Adhere laminated plastic over entire surface. Make corners with hairline joints. Use full sized laminate sheets. Make joints only where indicated approved. Slightly bevel arises.

.11 For site application, offset joints in plastic laminate facing from joints in core.

2.6 Cleaning

.1 Clean millwork and cabinet work, inside cupboards and drawers and outside surfaces.

.2 Remove excess glue from surfaces.

2.7 Protection

.1 Protect millwork and cabinet work 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 61 00 – Common Product Requirements.

.3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.4 Section 01 78 00 - Closeout Submittals.

.5 Section 06 10 00 – Finish Carpentry.

.6 Section 06 40 00 - Architectural Woodwork.

1.2 References

.1 American National Standards Institute (ANSI)

- .1 ANSI 208.1-99, Particleboard.
- .2 ANSI A208.2-02, Medium Density Fibreboard (MDF) for Interior Applications.

.2 American Society for Testing and Materials International, (ASTM)

- .1 ASTM D2832-92(R1999), Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.
- .2 ASTM D5116-97, 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-M88, Adhesive, Contact, Brushable.

.4 Canadian Standards Association (CSA International)

- .1 CSA O112-M1977(R2001, Standards for Wood Adhesives.
- .2 CSA O112.5-1.1-Series-M-1977(R2001), Urea Resin Adhesives for Wood (Room- and High-Temperature Curing).
- .3 CSA O112.7-1.1-Series M-1977(R2001), Resorcinol and Phenol-Resorcinol Resin Adhesives for Wood (Room- and Intermediate-Temperature Curing).
- .4 CSA O121-M1978(R1998), Douglas Fir Plywood.
- .5 CAN/CSA O141-91(R1999), Softwood Lumber.
- .6 CSA O151-M1978(R1998), Canadian Softwood Plywood.
- .7 CSA O153-M1980(R1998), Poplar Plywood.

.5 Environmental Choice Program (EPC)

- .1 CCD-044-95, Adhesives.
- .2 CCD-045-95, Sealants and Caulking Compounds.
- .3 CCD-048-95, Surface Coatings Recycled Water-borne.

.6 National Electrical Manufacturers Association (NEMA)

.1 NEMA LD3-2000, High Pressure Decorative Laminates.

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.

.3 Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

1.5 Delivery, Storage, and Handling

.1 Storage and Protection:

.1 Deliver, handle, store and protect materials of this section in accordance with Section 01 61 00 - Common Product Requirements.

.2 Maintain relative humidity between 25 and 60% at 22 degrees C during storage and installation.

1.6 Waste Management and Disposal

.1 Divert wood cut-offs from landfill by disposal into on-site wood recycling bin at nearest wood recycling facility.

.2 Divert reusable materials for reuse at nearest used building materials facility or similar type facility.

.3 Divert unused caulking, sealants, surface coatings and adhesive materials from landfill through disposal at a special wastes depot.

Part 2 Products

2.1 Materials

.1 Laminated plastic for postforming work: to NEMA LD 3.

.1 Type: Postforming.
.2 Grade: HGP.
.3 Size: 1.016 mm thick.
.4 Colour: Integral colour throughout.
.5 Pattern: Solid.
.6 Finish: Matte.

.2 Laminated plastic for backing sheet: to NEMA LD 3.

.1 Type: Backer.
.2 Grade: BKH.
.3 Size: not less then 0.5 mm thick or same thickness as face laminate.
.4 Colour: same colour as face laminate.

.3 Plywood core: to CSA O121 solid two sides, Grade custom, 19 mm thick.

.4 Particleboard core: to ANSI 208.1, Grade R, sanded faces, of thickness indicated.

.5 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.

.6 Sealer: water resistant sealer or glue acceptable to laminate manufacturer.

.1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.

.7 Sealants: 07 92 10 – Joint Sealing.

.1 Test for acceptable VOC emissions in accordance with ASTM D2369 and ASTM D2832.

.8 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 that 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 2400 mm 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 where indicated.

Part 3 Execution

3.1 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.

3.2 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.

.6 Site apply laminated plastic to units as indicated. Adhere laminated plastic over entire surface. Make corners with hairline joints. Use full sized laminate sheets. Make joints only where approved. Slightly bevel arrises.

.7 For site application, offset joints in plastic laminate facing from joints in core.

3.3 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.

3.4 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.

3.5 Schedule

.1 Kitchen 109.

.2 Washrooms 104 & 105.

.3 Storage 002.

END OF SECTION