

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 06 20 00 – Finish Carpentry.
- .2 Section 09 21 16 – Gypsum Board Assemblies

1.02 REFERENCES

- .1 American National Standards Institute / National Particleboard Association (ANSI/NPA)
 - .1 ANSI/NPA A208.1-[2009], Particleboard.
- .2 ASTM International
 - .1 ASTM A 123/A 123M-[09], Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - .2 ASTM A 653/A 653M-[09a], Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.
 - .3 ASTM C 578-10, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 - .4 ASTM C 1289-10, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - .5 ASTM C 1396/C 1396M-[09a], Standard Specification for Gypsum Board.
 - .6 ASTM D 1761-06, Standard Test Methods for Mechanical Fasteners in Wood.
 - .7 ASTM D 5055-10, Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.
 - .8 ASTM D 5456-10, Standard Specification for Evaluation of Structural Composite Lumber Products.
- .3 Canada Green Building Council (CaGBC)
 - .1 LEED Canada NC 2009, LEED: Green Building Rating System Reference Package for New Construction and Major Renovations (including Addendum).
- .4 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 and amendment.
 - .4 CAN/CGSB-71.26-M88, Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems.
- .5 CSA International
 - .1 CAN/CSA-A123.2-03(R2008), Asphalt Coated Roofing Sheets.
 - .2 CAN/CSA-A247-M86(R1996), Insulating Fiberboard.
 - .3 CSA B111-[1974(R2003)], Wire Nails, Spikes and Staples.
 - .4 CSA O112 Series-M1977(R2006), CSA Standards for Wood Adhesives.
 - .5 CSA O121-08, Douglas Fir Plywood.
 - .6 CAN/CSA O122-06, Structural Glued-Laminated Timber.
 - .7 CSA O141-05(R2009), Softwood Lumber.
 - .8 CSA O151-09, Canadian Softwood Plywood.
 - .9 CSA O153-M1980(R2008), Poplar Plywood.
 - .10 CSA O325-07] Construction Sheathing.
 - .11 CSA O437 Series-93(R2006), Standards on OSB and Waferboard.

- .6 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
 - .2 FSC-STD-20-002-2004, Structure and Content of Forest Stewardship Standards V2-1
 - .3 FSC Accredited Certified Bodies.
- .7 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2007.
- .8 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI.
Source Specific Standards
 - .1 SCAQMD Rule 1113-A2007, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .9 The Truss Plate Institute of Canada
 - .1 Truss Design Procedures and Specifications for Light Metal Plate Connected Wood Trusses 2007.
- .10 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S706-09, Standard for Wood Fiber Insulating Boards for Buildings.

1.03 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Co-ordinate submittal requirements and provide submittals required by Section 01 35 20 – LEED Sustainable Requirements.

1.04 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.

1.05 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding and packaging materials as specified in Section 01 35 20 LEED Sustainable Requirements and 01 74 19 Waste Management and Disposal.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect materials from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

1.06 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 35 20 – LEED

Sustainable Requirements and Section 01 74 19 – Waste Management and Disposal.

2 PRODUCTS

2.01 MATERIALS

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

- .1 CSA O141.
- .2 NLGA Standard Grading Rules for Canadian Lumber.

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

.3 Furring, blocking, nailing strips, grounds, rough bucks, [cants,] curbs, fascia backing and sleepers:

- .1 S2S is acceptable for all work.
- .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.

.4 Plywood, OSB and wood based composite panels: to CSA O325.

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

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

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

.8 Gypsum sheathing: to ASTM C36/C36M.

.9 All wall mounted fixtures backing boards:

- .1 ¾" Plywood G1S, DFP or CSP grade, square edge.

.10 Electrical equipment mounting boards:

- .1 ¾" Plywood G1S, DFP or CSP grade, square edge.

.11 Site carpentry:

- .1 Pressure treated timbers: to CSA 080, pressure treated pine or fir to National Lumber Grades Authority, select grade 2 and better, all dried to a maximum moisture content of 20% prior to treating. Non-incised, CCA treatment to minimum retention of 4.0 kg/m³ for above ground use and 6.4 kg/m³ for ground contact. Colour: Cedar Tone Green.
- .2 Preservative: Green, End Cut Wood Preservative type to CSAO80.

2.02 ACCESSORIES

.1 General purpose adhesive: to CSA O112 Series.

.2 Sill Gasket Air seal: closed cell polyurethane or polyethylene.

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

- .4 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .5 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fiber plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.
- .6 Joist hangers: minimum 1mm thick sheet steel, galvanized ZF001 coating designation.
- .7 Roof sheathing H-Clips: formed “H” shape, thickness to suit panel material, type approved by Contract Administrator.
- .8 Fastener Finishes:
 - .1 Galvanizing: to CAN/CSA-G164, use galvanized fasteners for exterior work, pressure-preservative, fire-retardant, treated lumber.

3 EXECUTION

3.01 INSTALLATION

- .1 Install members true to line, levels and elevations, square and plumb.
- .2 All wood to be free of defects. Any warped, checked or bent materials shall be rejected and not be used.
- .3 Construct continuous members from pieces of longest practical length.
- .4 Select exposed framing for appearance. Install panel materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.
- .5 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.
- .6 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .7 Install sleepers as indicated.
- .8 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.
- .9 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .10 Countersink bolts where necessary to provide clearance for other work.
- .11 Site carpentry treated timber:
 - .1 Handle and use treated material in a manner which will avoid damage or field fabrication causing alteration in original treatment.
 - .2 Treat in field, cuts and damages to surface of treated material with an appropriate, topical, end-cut preservative as described in CSA 080.1974. Ensure that damaged areas such as abrasions, nail and spike holes, are thoroughly saturated with field treatment solutions as per CSA 080.1974.

3.02 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.

3.03 PROTECTION

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

END OF SECTION.

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 06 10 00 – Rough Carpentry
- .2 Section 07 21 13 – Board Insulation
- .3 Section 07 84 00 – Firestopping
- .4 Section 09 22 16 – Non-Structural Metal Framing

1.02 REFERENCES

- .1 ASTM International
 - .1 ASTM C 297, Standard Test Method for Flatwise Tensile Strength of Sandwich constructions.
 - .2 ASTM C 473, Standard Test Methods for Physical Testing of Gypsum Panel Products.
 - .3 ASTM C 518, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - .4 ASTM C 1002, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - .5 ASTM C1177, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - .6 ASTM C1396, Standard Specification for Gypsum Board.
 - .7 ASTM C1280, Standard Specification for Application of Gypsum Sheathing.
 - .8 ASTM D3273, Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
 - .9 ASTM D6329, Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers.
 - .10 ASTM E72, Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.
 - .11 ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - .12 ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials.
 - .13 ASTM E 119, Test Method for Fire Tests of Building Construction and Materials.
 - .14 ASTM E 1677, Standard Specification for an Air Retarder (AR) Material or System for Low-Rise Framed Building Walls.
- .2 Canada Green Building Council (CaGBC)
 - .1 LEED Canada NC 2009, LEED: Green Building Rating System Reference Package for New Construction and Major Renovations (including Addendum).
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34-[M86(R1988)], Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
 - .2 CAN/CGSB-71.25-[M88], Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .4 Gypsum Association (GA): GA-253 Application of Gypsum Sheathing.
- .5 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S101, Fire Endurance Tests of Building Construction and Materials.
 - .2 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.

- .3 CAN/ULC-S114, Standard Method of Test for Determination of Non-Combustibility in Building Materials.
- .6 Canadian Standards Association (CSA)
 - .1 CAN/CSA-A82.27: Gypsum Board
 - .2 CAN/CSA-A82.31: Gypsum Board Application

1.03 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements 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 in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect materials from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding and packaging materials as specified in Section 01 35 20 LEED Sustainable Requirements and 01 74 19 Waste Management and Disposal.

1.04 SUBMITTALS

- .1 Submit Submittal submissions: in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Product Data: Manufacturer's specifications and installation instructions for each product specified.
- .3 Co-ordinate submittal requirements and provide submittals required by Section 01 35 20 – LEED Sustainable Requirements.

1.05 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 35 20 – LEED Sustainable Requirements and Section 01 74 19 – Waste Management and Disposal.

1.06 WARRANTY

- .1 Provide products that offer twelve months of coverage against in-place exposure damage (delamination, deterioration and decay).
- .2 Manufacturer's Warranty:
 - .1 Five years against manufacturing defects.

2 PRODUCTS

2.01 MANUFACTURERS AND PRODUCTS

- .1 Georgia-Pacific Gypsum LLC:
 - .1 Fiberglass-Mat Faced Gypsum Sheathing: DensGlass Sheathing,
 - .2 Fire-Rated Fiberglass-Mat Faced Gypsum sheathing, Type X for Fire Rated Designs: DensGlass Fireguard Sheathing.

2.02 MATERIALS

- .1 Fiberglass-Mat Faced Gypsum Sheathing: ASTM C1177, Type X:
 - .1 Thickness: 1/2 inch.
 - .2 Width: 4 feet.
 - .3 Length: Maximum practical length
 - .4 Weight: 1.9 lbs/sq. ft.
 - .5 Edge: Square.
 - .6 Surfacing: Fiberglass mat on face, back, and long edges.
 - .7 Racking Strength (Ultimate, not design value) (ASTM E72): Not less than 540 pounds per square foot dry.
 - .8 Flexural Strength, Parallel (ASTM C1177): 80 lbf, parallel.
 - .9 Humidified Deflection (ASTM C1177): Not more than 1/4 inch.
 - .10 Permeance (ASTM E96): Not less than 23 perms.
 - .11 R-Value (ASTM C518): 0.56.
 - .12 Mold Resistance (ASTM D3273): 10, in a test as manufactured.
 - .13 Microbial Resistance (ASTM D6329, GREENGUARD 3-week protocol): Will not support microbial growth.
 - .14 Acceptable Products:
 - .1 1/2" DensGlass Sheathing by Georgia-Pacific Gypsum (or approved equal in accordance with B7)
- .2 Fire-Rated Fiberglass-Mat Faced Gypsum Sheathing: ASTM C1177, Type X:
 - .1 Thickness: 5/8 inch.
 - .2 Width: 4 feet.
 - .3 Length: Maximum practical length
 - .4 Weight: 2.5 lbs/sq. ft.
 - .5 Edge: Square.
 - .6 Surfacing: Fiberglass mat on face, back, and long edges.
 - .7 Racking Strength (Ultimate, not design value) (ASTM E72): Not less than 654 pounds per square foot dry.
 - .8 Flexural Strength, Parallel (ASTM C1177): 100 lbf, parallel.
 - .9 Humidified Deflection (ASTM C1177): Not more than 1/8 inch.
 - .10 Permeance (ASTM E96): Not less than 17 perms.
 - .11 R-Value (ASTM C518): 0.67.
 - .12 Mold Resistance (ASTM D3273): 10, in a test as manufactured.
 - .13 Microbial Resistance (ASTM D6329, GREENGUARD 3-week protocol): Will not support microbial growth.
 - .14 Acceptable Products:
 - .1 5/8" DensGlass Fireguard Sheathing by Georgia-Pacific Gypsum (or approved equal)

2.03 ACCESSORIES

- .1 Screws: ASTM C1002, corrosion resistant treated.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions:
 - .1 Inspection: Verify that project conditions and substrates are acceptable, to the installer, to begin installation of work of this section.

3.02 INSTALLATION

- .1 General: In accordance with GA-253, ASTM C1280 and the manufacturer's recommendations.

3.03 PROTECTION

- .1 Protect gypsum board installations from damage and deterioration until date of Substantial Completion.

END OF SECTION.

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 03 30 00 – Cast-in-Place Concrete
- .2 Section 06 10 00 – Rough Carpentry
- .3 Section 07 21 13 – Board Insulation

1.02 REFERENCES

- .1 ASTM International
 - .1 ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - .2 ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials.
 - .3 ASTM E 119, Test Method for Fire Tests of Building Construction and Materials.
- .2 Canada Green Building Council (CaGBC)
 - .1 LEED Canada NC 2009, LEED: Green Building Rating System Reference Package for New Construction and Major Renovations (including Addendum).
- .3 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.
 - .2 CAN/ULC-S114, Standard Method of Test for Determination of Non-Combustibility in Building Materials.

1.03 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements 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 in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect materials from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding and packaging materials as specified in Section 01 35 20 LEED Sustainable Requirements and 01 74 19 Waste Management and Disposal.

1.04 SUBMITTALS

- .1 Submit Submittal submissions: in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Product Data: Manufacturer's specifications and installation instructions for each product specified.
- .3 Co-ordinate submittal requirements and provide submittals required by Section 01 35 20 – LEED Sustainable Requirements.

1.05 QUALITY ASSURANCE

.1 Fire Resistance Rated Assembly Characteristics: Provide materials and construction identical to those tested in accordance to ASTM E 119 by an independent testing and inspection agency acceptable to authorities having jurisdiction.

.1 Fire Resistance Ratings: Indicated by design designations from UL Fire Resistance Directory.

1.06 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 35 20 – LEED Sustainable Requirements and Section 01 74 19 – Waste Management and Disposal.

1.07 WARRANTY

.1 Manufacturer's Warranty:

.1 Lifetime warranty against manufacturing defects, deterioration and decay.

2 PRODUCTS

2.01 MANUFACTURERS AND PRODUCTS

.1 Cementitious Fiber-Mat Reinforced Sheathing: ASTM C 1325, ANSI A118.9, cementitious backer.

.1 Product: Subject to compliance with requirements, provide DUROCK Brand Cement Board by United States Gypsum Company (or approved equal in accordance with B7)

.2 Thickness: 1/2" thick.

.3 Size: 48"x96" sheet.

2.02 ACCESSORIES

.1 Fasteners: ASTM C1002, corrosion resistant treated. As per manufactures specifications.

3 EXECUTION

3.01 EXAMINATION

.1 Verification of Conditions:

.1 Inspection: Verify that project conditions and substrates are acceptable, to the installer, to begin installation of work of this section.

3.02 INSTALLATION

.1 General: In accordance with manufactures specifications.

.1 Mechanically fasten sheathing to substrate.

.2 Space fasteners in accordance with manufactures specifications.

.2 Erect straight, plumb, and level. Use full-length pieces where practical. Make joints tight, accurately aligned and rigidly secured.

.3 Cut panels at penetrations, edges and other obstructions of Work; fit tightly against abutting

construction, unless otherwise indicated.

.4 Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

.5 Completed installation to be smooth level or plumb, free from waves and other defects and ready for surface finish.

3.03 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 – Cleaning.

.2 Leave work area clean at end of each day.

.3 Final Cleaning: upon completion remove surplus materials, rubbish, tools, and equipment in accordance with Section 01 74 11 – Cleaning.

END OF SECTION.

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 08 70 05 – Cabinet Hardware
- .2 Section 09 21 16 – Gypsum Board Assemblies
- .3 Section 09 22 16 – Non-Structural Metal Framing
- .4 Section 09 91 00 – Painting

1.02 REFERENCES

- .1 ASTM International
 - .1 ASTM E 1333-[96(2002)], Standard Test Method for Determining Formaldehyde Concentrations in Air and Emissions Rates from Wood Products Using a Large Chamber.
- .2 Canada Green Building Council (CaGBC)
 - .1 LEED Canada NC 2009, LEED: Green Building Rating System Reference Package for New Construction and Major Renovations (including Addendum).
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-11.3-[M87], Hardboard.
- .4 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN4-S104-[80(R1985)], Standard Method for Fire Tests of Door Assemblies.
 - .2 CAN4-S105-[85(R1992)], Standard Specification for Fire Door Frames, meeting the Performance Required by CAN4-S104.
- .5 Canadian Standards Association (CSA)
 - .1 CSA B111-[74(R2003)], Wire Nails, Spikes and Staples.
 - .2 CAN/CSA-G164-[M92(R2003)], Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA O121-[M89(R2003)], Douglas Fir Plywood.
 - .4 CAN/CSA O141-[91(R1999)], Softwood Lumber.
 - .5 CSA O151-[04], Canadian Softwood Plywood.
 - .6 CSA O153-[M1980(R2003)], Poplar Plywood.
- .6 American National Standards Institute (ANSI)
 - .1 ANSI A208.2-[02], Medium Density Fiberboard (MDF).
 - .2 ANSI/HPVA HP-1-[2004], Standard for Hardwood and Decorative Plywood.
- .7 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards Illustrated, 8th edition, Version 1.0 [2003].
- .8 Canadian Plywood Association (CanPly)
 - .1 The Plywood Handbook [2005]
- .9 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.
- .10 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress [1998]

- .11 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber [2005]

1.03 SUBMITTALS

- .1 Shop Drawing Submittals: in accordance with Section 01 33 00 – Submittal Procedures.
 - .1 Indicate details of Construction, profiles, jointing, fastening and other related details
 - .2 Indicate materials, thickness, finishes and hardware.
- .2 Co-ordinate submittal requirements and provide submittals required by Section 01 35 20 – LEED Sustainable Requirements.

1.04 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Wood Products: Comply with the following
 - .1 Medium Density Fiberboard: ANSI A208.2, Grade MD-Exterior Glue.

1.05 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect materials from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
 - .4 Protect from extreme changes of temperature or humidity.

1.06 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 35 20 – LEED Sustainable Requirements and Section 01 74 19 – Waste Management and Disposal.

2 PRODUCTS

2.01 MATERIALS

- .1 Interior Shelving and Closet Specialties:
 - .1 Shelving: 3/4" Medium Density Fiberboard (MDF). White melamine.
 - .1 Adjustable shelves where specified on architectural drawings.
 - .2 Shelving and Rod Bracket: Chrome plated steel in accordance with Section 08 70 05 – Cabinet Hardware
 - .3 Closet Rods: Chrome plated steel in accordance with Section 08 70 05 – Cabinet Hardware
 - .4 Shelf Ledger: Provide 1" shelf ledger for all closets that are not standard 24" depth and separate chrome plated steel rod brackets.

2.02 ACCESSORIES

- .1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior Work, interior humid areas and for treated lumber; plain finish elsewhere.
- .2 Wood screws: electroplated, type and size to suit application.
- .3 Adhesive: recommended by manufacturer.
 - .1 Maximum VOC limit 30g/L.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions:
 - .1 Inspection: Verify that project conditions and substrates are acceptable, to the installer, to begin installation of work of this section.

3.02 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.
- .4 Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

3.03 CONSTRUCTION

- .1 Fastening
 - .1 Position items of finished carpentry Work accurately, level, plumb, true and fasten or anchor securely.
 - .2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.
 - .3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round smooth cut hole and plug with wood plug to match material being secured.
 - .4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.
- .2 Shelving
 - .1 Install shelving on shelf brackets, where indicated.
- .3 Hardware
 - .1 Install cabinet and miscellaneous hardware as indicated.

END OF SECTION.

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 08 70 05 – Cabinet Hardware
- .2 Section 09 21 16 – Gypsum Board Assemblies
- .3 Section 09 22 16 – Non-Structural Metal Framing.
- .4 Section 09 91 00 – Painting
- .5 Section 11 31 00 – Appliances

1.02 REFERENCES

- .1 ASTM International
 - .1 ASTM E 1333, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emissions Rates from Wood Products Using a Large Chamber.
- .2 Canada Green Building Council (CaGBC)
 - .1 LEED Canada NC 2009, LEED: Green Building Rating System Reference Package for New Construction and Major Renovations (including Addendum).
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.20 Adhesive, Contact, Brushable.
- .4 Canadian Standards Association (CSA)
 - .1 CSA B111, Wire Nails, Spikes and Staples.
 - .2 CSA O112.4, Standards for Wood Adhesives.
 - .3 CSA O121, Douglas Fir Plywood.
 - .4 CAN/CSA O141, Softwood Lumber.
 - .5 CSA O151, Canadian Softwood Plywood.
 - .6 CSA O153, Poplar Plywood.
- .5 American National Standards Institute (ANSI)
 - .1 ANSI A208.1, Particleboard.
 - .2 ANSI A208.2, Medium Density Fiberboard (MDF).
 - .3 ANSI/HPVA HP-1, Standard for Hardwood and Decorative Plywood.
- .6 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards Illustrated.
- .7 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress.
- .8 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber.

1.03 SUBMITTALS

- .1 Shop Drawing Submittals: in accordance with Section 01 33 00 – Submittal Procedures.
 - .1 Indicate details of Construction, profiles, jointing, fastening and other related details
 - .2 Indicate materials, thickness, finishes and hardware.
 - .3 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed

- .2 Submit samples of casework's exterior finish.
- .3 Co-ordinate submittal requirements and provide submittals required by Section 01 35 20 – LEED Sustainable Requirements.

1.04 QUALITY ASSURANCE

- .1 Provide Certificate of Quality Compliance upon completion of Fabrication, in accordance with Architectural Woodwork Manufacturer's Association of Canada (AWMAC) quality standards.
- .2 Provide Certificate of Quality Compliance upon satisfactory completion of installation.
- .3 Work shall be in accordance with the Grade or Grades specified of the Architectural Woodwork Standards.
- .4 Qualification:
 - .1 Firm (woodwork manufacturer) with no less than 5 years of production experience similar to a specific project, whose qualifications indicate the ability to comply with the requirements of this Section.

1.05 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Deliver materials only when the project is ready for installation and the contractor has provided a clean storage area.
 - .1 Delivery of architectural millwork shall be made only when the area of operation is enclosed, all plaster and concrete work is dry and the area broom clean.
 - .2 Maintain indoor temperature and humidity within the range recommended by the Architectural Woodwork Standards for the location of the project.

1.06 SCHEDULING

- .1 Coordinate fabrication, delivery, and installation with the Contractor and other applicable trades.

1.07 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 35 20 – LEED Sustainable Requirements and Section 01 74 19 – Waste Management and Disposal.

2 PRODUCTS

2.01 MATERIALS

- .1 Softwood lumber: unless otherwise specified, S4S, moisture content 19% or less in accordance with the following standards:
 - .1 CAN/CSA-O141
 - .2 NLGA Standard Grading Rules for Canadian Lumber
 - .3 AWMAC premium grade, moisture content as specified.
- .2

2.02 MANUFACTURED UNITS

- .1 Kitchen and Desk Casework: Fabricated caseworks to AWMAC custom quality grade.
 - .1 Casework bodies (ends, divisions, and bottoms):
 - .1 Melamine (MCP): 3/4" thick, white
 - .2 Edge band: Melamine (mcp) all exposed edges.
 - .2 Backs:
 - .1 Typical: 1/4" thick painted hardboard, white
 - .2 Front desk: 3/4" thick G1S birch plywood backing for solid surface cladding
 - .3 Interior Shelving:
 - .1 Melamine (MCP): 3/4" thick, white
 - .2 Edge band: Melamine (mcp) all exposed edges.
 - .4 Base:
 - .1 3/4" fir plywood marine base, finished with wall base.
- .2 Drawers: Fabricated drawers to AWMAC custom grade supplemented as follows:
 - .1 Sides and Backs:
 - .1 Melamine (MCP): 3/4" thick, white
 - .2 Edge band: Melamine (mcp) all exposed edges.
 - .2 Bottoms:
 - .1 Melamine (MCP): 1/2" thick, white
 - .3 Fronts:
 - .1 Melamine (MCP): 3/4" thick, white.
 - .2 Style: Flush overlay
 - .3 Edge band: Melamine (mcp) all exposed edges.
- .3 Doors: Fabricated drawers to AWMAC custom grade supplemented as follows:
 - .1 Melamine (MCP): 3/4" thick, white.
 - .2 Style: Flush overlay
 - .3 Edge band: Melamine (mcp) all exposed edges.

2.03 ACCESSORIES

- .1 Adhesive: recommended by manufacturer.
- .2 Hardware: in accordance with Section 08 70 05 – Cabinet Hardware
- .3 Cabinet Accessories: include one (1) in kitchen to be supplied by casework manufacturer
 - .1 Drawer Cutlery tray
 - .2 Under counter refuse holder

2.04 FABRICATION

- .1 Shelving in cabinetwork to be adjustable unless otherwise noted.
- .2 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.
- .3 Shop assembled work for delivery to site in size easily handled and to ensure passage through building openings.
- .4 Obtain governing dimensions before fabricating items that are to accommodate or abut appliances, equipment and other materials.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions:
 - .1 Verify the adequacy and proper location of any required backing or support framing.
 - .2 Verify that Mechanical, Electrical, Plumbing, and other building components affecting Work in this Section are in place.

3.02 INSTALLATION

- .1 Do architectural woodwork to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
 - .1 Installation shall conform to the AWS Grade of the items being installed.
- .2 Install prefinished millwork at locations shown on drawings. Position accurately and secure in place, level plumb and square.
- .3 Fasten and anchor millwork securely. Provide heavy-duty fixture attachments for all mounted cabinets.
- .4 Fit hardware accurately and securely in accordance with manufacturer's written instructions.

3.03 ADJUSTING & TOUCH UP

- .1 Before completion of the installation, the installer shall adjust all moving and operating parts to function smoothly and correctly.
- .2 All nicks, chips, and scratches in the finish shall be filled and retouched. Damaged items that cannot be repaired shall be replaced.

3.04 CLEANING

- .1 Clean millwork and cabinetwork inside cupboards and drawers, and outside surfaces.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 35 20 – LEED Sustainable Requirements and Section 01 74 19 – Waste Management and Disposal.

3.05 Protection

- .1 Protect millwork and cabinetwork from damage until final inspection.

END OF SECTION.