

NATIONAL GALLERY OF
CANADA

380 SUSSEX DRIVE, OTTAWA, ONTARIO

**RETAIL STORE
RENOVATION-
CONSTRUCTION**

SPECIFICATIONS – VOLUME 1

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Retail Store Renovation - Construction

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Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 06 40 00 Architectural Woodwork, Section 08 14 16 Flush Wood Doors, Section 09 91 99 - Painting for Minor Works.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A208.2-09, Medium Density Fibreboard (MDF) for Interior Applications.
 - .2 ANSI/HPVA HP-1-10, American National Standard for Hardwood and Decorative Plywood.
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards, 1st edition, 2009.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-11.3-M87, Hardboard.
- .4 CSA International
 - .1 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O121-08, Douglas Fir Plywood.
 - .3 CSA O141-05(R2009), Softwood Lumber.
- .5 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for MDF and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 43 - Environmental Procedures.
- .3 Shop Drawings:
 - .1 Indicate details of construction, profiles, jointing, fastening and other related details.



- .2 Indicate materials, thicknesses, finishes and hardware.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Submit duplicate 300 x 300 mm samples of hardwood door frame, wood trims, and routed MDF panels..

1.4 QUALITY ASSURANCE

- .1 Lumber by grade stamp of agency certified by Canadian Lumber Standards Accreditation Board (CLSAB).
- .2 Sustainable Standards Certification:
 - .1 Certified Wood: submit listing of wood products and materials used in accordance with CAN/CSA-Z809 or FSC or SFI.
- .3 Plywood, particleboard, OSB and wood based composite panels to CSA and ANSI standards.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect wood products from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 MATERIALS

- .1 Softwood lumber: S4S, moisture content 19% or less in accordance with following standards:
 - .1 CSA O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber.
 - .3 AWMAC premium grade, moisture content as specified.
 - .4 Hardwood lumber: moisture content 5 to 7%% or less in accordance:



- .1 National Hardwood Lumber Association (NHLA).
 - .2 AWMAC custom grade, moisture content as specified.
 - .3 White Maple (Hard Maple) and White Oak
- .2 Panel Material: urea-formaldehyde free
- .1 CAN/CSA-Z809 or FSC or SFI certified.
 - .2 Douglas fir plywood (DFP): to CSA O121, standard construction.
 - .3 Hardwood plywood: to ANSI/HPVA HP-1., and CSA O115, maple-faced hardwood plywood, good sequence matched, select White.
 - .4 Medium density fibreboard (MDF): to ANSI A208.2, density 640-800 kg/m³.

2.2 ACCESSORIES

- .1 Nails and staples: to CSA B111; galvanized to ASTM A123/A123M for exterior work, interior humid areas and for treated lumber; plain finish elsewhere.
- .2 Wood screws: steel, type and size to suit application.
- .3 Splines: wood.
- .4 Adhesive and Sealants: in accordance with Section 07 92 00 - Joint Sealants.
 - .1 VOC limit 30 g/L maximum to SCAQMD Rule 1168.

2.3 TIMBER SLATS

- .1 Type No.1: 20 mm x 70mm maple wood slats fixed to 4mm x 35mm stainless steel plates at top and bottom creating timber slat panels. Timber slat panels to be secured in place using concealed fasteners.
- .2 Type No.2(at Cash & Wrap Desk): 20 mm x 80mm maple wood slats complete with 2mm thick stainless steel bands at top and bottom creating timber slat panels. Timber slat panels to be secured in place using concealed fasteners.

2.4 MDF PANELLING

- .1 18mm thick routed MDF wall panelling, grooves to be 12mm wide x 3mm deep complete with radius groove edges, spacing of grooves as indicated. Routed MDF panels are to be secured in place using concealed fasteners as detailed. Routed MDF panels are to receive a sprayed applied paint finish.



Part 3 Execution

3.1 EXAMINATION

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

3.2 INSTALLATION

- .1 Do finish carpentry to Quality Standards of (AWMAC).
- .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.

3.3 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 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 degrees scarf type joint.
- .4 Install door and window trim in single lengths without splicing.
- .3 Interior and exterior frames:
 - .1 Set frames with plumb sides level heads and sills and secure.
- .4 Panelling:
 - .1 Secure panelling and perimeter trim using adhesive recommended for purpose by manufacturer. Fill nail holes caused by temporary fixing with filler matching wood in colour.
 - .2 Secure panelling and perimeter trim using concealed fasteners.
 - .3 Secure panelling and perimeter trim using counter sunk screws plugged with matching wood plugs.
- .5 Hardware:
 - .1 Install hardware, locations as indicated or required .

3.4 INSTALLATION OF TRIM

- .1 Standing and running trim:
 - .1 Interior:
 - .1 Grade: FAS.
 - .2 Solid stock: Hard Maple species.
 - .3 Size: 100mm x 25mm thick.

3.5 INSTALLATION OF FRAMES

- .1 Interior frames:
 - .1 Grade: FAS.
 - .2 Frames to be solid wood Hard Maple and White Oak, refer to drawings for location of each types species.
 - .3 Construction:
 - .1 Profile:AWMAC Design Single Rebate Detail, Type as detailed , size as dimensioned .
 - .2 Corner:AWMAC Design Detail , Type 1 Rabbet .

3.6 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.



3.7 PROTECTION

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

END OF SECTION



Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 06 20 00 - Finish Carpentry.
- .2 Section 06 47 00 - Plastic Laminate

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A208.1-09, Particleboard.
 - .2 ANSI A208.2-09, Medium Density Fiberboard (MDF) for Interior Applications.
 - .3 ANSI/HPVA HP-1-10, Standard for Hardwood and Decorative Plywood.
- .2 ASTM International
 - .1 ASTM D2832-92(R2011), Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.
- .3 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
 - .1 Architectural Woodwork Quality Standards Illustrated, 8th edition, Version 1.0 (2009).
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .5 CSA International
 - .1 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O121-08, Douglas Fir Plywood.
 - .3 CSA O141-05(R2009), Softwood Lumber.
 - .4 CSA O151-09, Canadian Softwood Plywood.
- .6 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .7 National Hardwood Lumber Association (NHLA)
 - .1 Rules for the Measurement and Inspection of Hardwood and Cypress 2011.
- .8 National Lumber Grades Authority (NLGA)



- .1 Standard Grading Rules for Canadian Lumber 2010.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for architectural woodwork and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 43 - Environmental Procedures.
- .3 Shop Drawings:
 - .1 Indicate details of construction, profiles, jointing, fastening and other related details.
 - .1 Scales: profiles full size, details quarter full size.
 - .2 Indicate materials, thicknesses, finishes and hardware.
 - .3 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate samples of hardwood: sample size 300 x 300 mm or 600mm long.
 - .4 Submit duplicate samples of laminated plastic for colour selection.
 - .5 Submit duplicate samples of laminated plastic joints, edging, cutouts and postformed profiles.
- .5 Certifications: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

1.4 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Sustainable Standards Certification:
 - .1 Certified Wood: submit listing of wood products and materials used in accordance with CAN/CSA-Z809 or FSC or SFI.



- .3 Plywood, particleboard, OSB and wood based composite panels to CSA and ANSI standards.
- .4 Mock-ups:
 - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
 - .1 Shop prepare one counter top, complete with hardware shop applied finishes, and install where directed by Consultant
 - .2 Allow 24 hours for inspection of mock-up by Consultant before proceeding with Work.
 - .3 When accepted, mock-up will demonstrate minimum standard for Work.
 - .4 Do not proceed with work prior to receipt of written acceptance of mock-up by Consultant.
 - .5 Mock-up may not remain as part of finished work.
- .5 Qualifications:
 - .1 The architectural woodwork fabricator shall be an established firm, experienced in the field of custom retail millwork fabrication.
 - .2 The fabricator and installer of the architectural woodwork shall have a minimum of ten (10) years experiences in the field of fabricating and installing custom retail millwork and have worked on at least five (5) projects of similar size, type and complexity.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 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.
 - .1 Protect millwork against dampness and damage during and after delivery.
 - .2 Store millwork in ventilated areas, protected from extreme changes of temperature or humidity.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect architectural woodwork from nicks, scratches, and blemishes.



- .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 MATERIALS

- .1 Softwood lumber: unless specified otherwise, S4S, moisture content 15 % or less in accordance with following standards:
 - .1 CSA O141.
 - .2 CAN/CSA-Z809 or FSC or SFI certified.
 - .3 NLGA Standard Grading Rules for Canadian Lumber.
 - .4 AWMAC custom grade, moisture content as specified.
- .2 Machine stress-rated lumber is acceptable for all purposes.
- .3 Hardwood lumber: moisture content 7 % or less in accordance with following standards:
 - .1 National Hardwood Lumber Association (NHLA).
 - .2 CAN/CSA-Z809 or FSC or SFI certified.
 - .3 AWMAC premium grade, moisture content as specified.
- .4 Hardwood plywood: to ANSI/HPVA HP-1, CAN/CSA-Z809 or FSC or SFI certified.
 - .1 Plywood resin to contain no added urea-formaldehyde.
- .5 Hardboard:
 - .1 To CAN/CGSB-11.3, CAN/CSA-Z809 or FSC or SFI certified.
 - .2 Hardboard resin to contain no added urea-formaldehyde.
- .6 MDF (medium density fibreboard) core: to ANSI A208.2, Premium Grade, 13mm, 18mm, & 35mm thick, density 769 kg/m², CAN/CSA-Z809 or FSC or SFI certified.
 - .1 Medium density fibreboard performance requirements to: ANSI A208.2.
 - .2 MDF resin to contain no added urea-formaldehyde.
- .7 Nails and staples: to CSA B111.
- .8 Wood screws: copper, type and size to suit application.
- .9 Splines: wood.
- .10 Sealant: in accordance with Section 07 92 00 - Joint Sealants.
 - .1 Sealants: VOC limit 250 g/L maximum to SCAQMD Rule 1168.
- .11 Metal Veneer: 2mm thick folded metal with powder coat finish.



- .12 Stainless Steel Veneer and Edging: 2mm thick stainless steel, formed to shapes indicated and adhered to outer surfaces of shelves and cabinet edges where indicated.
- .13 Lighting: LED concealed lighting fixtures, length and profile to suit conditions indicated.

2.2 MANUFACTURED UNITS

- .1 Casework:
 - .1 Fabricate caseworks to AWMAC custom quality grade.
 - .2 Furring, blocking, nailing strips, grounds and rough bucks and sleepers.
 - .1 S2S is acceptable for concealed blocking.
 - .2 Board sizes: "standard" or better grade.
 - .3 Dimension sizes: "standard" light framing or better grade.
 - .4 Urea-formaldehyde free.
 - .3 Framing: hardwood species, NLGA grade.
 - .4 Case bodies (ends, divisions and bottoms).
 - .1 MDF (medium density fibreboard), premium grade, square edge, 18 mm thick unless noted otherwise. Bottoms of tables to be 35mm thick.
 - .2 Solid wood (for blocking): hardwood species, S2S grade, 19mm minimum thickness.
 - .5 Backs:
 - .1 MDF (medium density fibreboard), premium grade, square edge, 18 mm thick unless noted otherwise.
 - .6 Shelving:
 - .1 MDF (medium density fibreboard), premium grade, square edge, 35 mm thick unless noted otherwise.
- .2 Drawers:
 - .1 Fabricate drawers to AWMAC custom grade supplemented as follows:
 - .2 Sides and Backs.
 - .1 MDF (medium density fibreboard), premium grade, square edge, 12 mm thick.
 - .3 Bottoms:
 - .1 MDF (medium density fibreboard), premium grade, square edge, 12 mm thick.



- .4 Fronts:
 - .1 MDF (medium density fibreboard), premium grade, square edge, 18 mm thick.
- .3 Casework Doors:
 - .1 Fabricate doors to AWMAC premium grade supplemented as follows:
 - .2 MDF (medium density fibreboard), painted, premium grade, square edge, 18 mm thick.

2.3 FABRICATION

- .1 Set nails and countersink screws apply stained 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 cutouts 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 and Section 06 47 00. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 3000 mm. Keep joints 600 mm from sink cutouts.
- .9 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.
- .10 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .11 Apply laminated plastic liner sheet where indicated.
- .12 Apply metal veneer and stainless steel veneer and edging where indicated, shaped to profiles indicated. Provide suitable adhesive for application.



- .13 Install concealed continuous LED lighting fixtures within the millwork units where indicated, to CSA and all applicable Codes. Coordinate with the electrical trade.

2.4 FINISHING

- .1 Finish in accordance with Section 09 91 23 – Painting for Minor Works.

Part 3 Execution

3.1 EXAMINATION

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

3.2 INSTALLATION

- .1 Do architectural woodwork to Quality Standards of AWMAC.
- .2 Install prefinished millwork at locations shown on drawings.
 - .1 Position accurately, level, plumb straight.
- .3 Fasten and anchor millwork securely.
 - .1 Supply and install 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 in accordance with Section 07 92 00 - Joint Sealants.
- .7 Apply 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 Site apply laminated plastic to units as indicated.
 - .1 Adhere laminated plastic over entire surface.
 - .2 Make corners with hairline joints.
 - .3 Use full sized laminate sheets.
 - .4 Make joints only where indicated on shop drawings and reviewed by Consultant.
 - .5 Slightly bevel arises.
- .10 For site application, offset joints in plastic laminate facing from joints in core.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
 - .1 Clean millwork.
 - .2 Remove excess glue from surfaces.

3.4 PROTECTION

- .1 Protect cabinet work from damage until final inspection.
- .2 Protect installed products and components from damage during construction.
- .3 Repair damage to adjacent materials caused by architectural woodwork installation.

END OF SECTION



Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.9-2003, Cabinet Hardware.
 - .2 ANSI/BHMA A156.11- 2004, Cabinet Locks.
 - .3 ANSI/BHMA A156.18-2006, Materials and Finishes.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for cabinet hardware and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for cabinet hardware for incorporation into manual.

1.4 QUALITY ASSURANCE

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 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 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .4 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 cabinet hardware from nicks, scratches, and blemishes.
 - .3 Protect prefinished surfaces with strippable coating.



- .4 Replace defective or damaged materials with new.

Part 2 Products

2.1 CABINET HARDWARE

- .1 Cabinet hardware: to ANSI/BHMA A156.9, designated by letter B and numeral identifiers listed in Hardware Schedule.
 - .1 Hinges: concealed hinge, 110 degree opening, soft-closing, finish to satin chrome .
 - .2 Latches: Magnetic one touch latch. Acceptable product: Lee Valley Long Latch 00S33.41 or approved equivalent.
 - .3 Shelf rests and standards: recessed steel standards with slotted shelf connectors at 25 mm intervals. Provided with a minum 4 open shelf rests per shelf.
 - .4 Drawer slides: side mounted and bottom edge mounted drawer slides as required for application, 34 kg weight capacity, full extension, soft-closing, zinc finish.
 - .5 Grommets: black plastic, diameter to suit cutout size indicated, flange depth to suit substrate.
 - .6 Piano hinge: nickel plated, concealed ball bearing.
 - .7 Hinges and locks for glazed doors: nickel plated or brushed stainless steel as indicated. Top and bottom pivot hinges. Hinges and locks to suit application and glass thickness and weight.
 - .8 Door bumpers: clear neoprene with adhesive backing.
 - .9 Poster display system: Multi-panel swinging panels wall display x 20 panels. Poster frame standard size 30" x 40" by Swingpanels.com or approved equivalent.
 - .10 Castors: 108 mm diameter, medium industrial bolt hole castor with brake. 70 kg capacity. 4000 Series from Ross Handling or approved equivalent. Black finish.
 - .11 Cupped magnet sets: magnet latches, 32 mm diameter. Acceptable product: Lee Valley #99K39.09.
 - .12 Showcase lights: Aktiva Showcase - Twig Lighting. Height: 170 mm. Matt silver finish..
 - .13 B-Line lights: Aktiva 39W B-Line/Fluor/Display. Height: 350 mm. Length: 1000 mm. Powder coated - RAL 7010.
 - .14 Finger pull handle: acceptable product: Hafele flush ring pull handle, 52 x 38 mm, item code #901.03.804.
- .2 Cabinet locks: to ANSI/BHMA A156.11, designated by letter E and numeral identifiers as listed below.



- .1 Door or drawer locks: half mortised into back of door or drawer, nickel plated finish.
- .2 Cylinders: key into keying system as directed.

2.2 FASTENINGS

- .1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .2 Exposed fastening devices to match finish of hardware.
- .3 Use fasteners compatible with material through which they pass.

2.3 KEYING

- .1 Cabinet locks to be great grand master keyed. Submit keying schedule for approval.
- .2 Supply keys in duplicate for every lock in this Contract.
- .3 Supply 3 master keys for each master key or grand master key group.
- .4 Stamp keying code numbers on keys and cylinders.
- .5 Install key cabinet where indicated.

Part 3 Execution

3.1 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Install hardware to standard hardware location dimensions in accordance with manufacturer's recommendations and to project design requirements.
- .3 Install key control cabinet and establish key control set-up.

3.2 ADJUSTING

- .1 Adjust cabinet hardware for optimum, smooth operating condition.
- .2 Lubricate hardware and other moving parts.
- .3 Adjust cabinet door hardware to ensure tight fit at contact points with frames.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer's instructions.
 - .3 Remove protective material from hardware items where present.



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

3.4 DEMONSTRATION

- .1 Keying System Setup and Cabinet:
 - .1 Set up key control system with file key tags, duplicate key tags, numerical index, alphabetical index and key change index, label shields, control book and key receipt cards.
 - .2 Place file keys and duplicate keys in key cabinet on their respective hooks.
 - .3 Lock key cabinet and turn over key to Consultant.
- .2 Maintenance Staff Briefing:
 - .1 Brief maintenance staff regarding:
 - .1 Proper care, cleaning, and general maintenance of projects complete hardware.
 - .2 Description, use, handling, and storage of keys.
 - .3 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.5 PROTECTION

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

3.6 SCHEDULE

- .1 Install recessed shelf standards in each millwork unit with doors where indicated for full height of unit. Provide 2 standards per side.
- .2 Install millwork doors with hinges.
- .3 Install millwork drawers with slides.
- .4 Install grommets at all penetrations as indicated.
- .5 Install cabinet locks at each door and drawer as indicated.
- .6 Installer lights as indicated.
- .7 Install other items as indicated.

END OF SECTION



Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 08 11 00 – Metal Doors and Frames.
- .2 Section 08 14 16 – Flush Wood Doors

1.2 REFERENCES

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.1-2000, American National Standard for Butts and Hinges.
 - .2 ANSI/BHMA A156.2-2003, Bored and Preassembled Locks and Latches.
 - .3 ANSI/BHMA A156.3-2001, Exit Devices.
 - .4 ANSI/BHMA A156.4-2000, Door Controls - Closers.
 - .5 ANSI/BHMA A156.5-2001, Auxiliary Locks and Associated Products.
 - .6 ANSI/BHMA A156.6-2005, Architectural Door Trim.
 - .7 ANSI/BHMA A156.8-2005, Door Controls - Overhead Stops and Holders.
 - .8 ANSI/BHMA A156.13-2002, Mortise Locks and Latches Series 1000.
 - .9 ANSI/BHMA A156.16-2002, Auxiliary Hardware.
 - .10 ANSI/BHMA A156.18-2006, Materials and Finishes.
- .2 Canadian Steel Door and Frame Manufacturers' Association (CSDMA)
 - .1 CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit for review and acceptance of each unit.



- .2 Samples will be returned for inclusion into work.
- .3 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
- .4 After approval samples will be returned for incorporation in Work.
- .4 Hardware List:
 - .1 Submit contract hardware list.
 - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .5 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for door hardware for incorporation into manual.

1.5 MAINTENANCE MATERIALS SUBMITTALS

- .1 Extra Stock Materials:
 - .1 Supply maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
 - .2 Tools:
 - .1 Supply 2 sets of wrenches for door closers.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements:
 - .1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 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 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .4 Storage and Handling Requirements:
 - .1 Store materials indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect door hardware from nicks, scratches, and blemishes.
 - .3 Protect prefinished surfaces with strippable coating.
 - .4 Replace defective or damaged materials with new.

Part 2 Products

2.1 HARDWARE ITEMS

- .1 Use one manufacturer's products only for similar items.

2.2 DOOR HARDWARE

- .1 Locks and latches:
 - Mortice deadlock, profile cylinder, stainless steel finish. Functions as specified. Provide dust boxes behind all strikes. Acceptable product: Hafele Model 911.22.550
 - .1 Knob: Lever handle, 20 mm diameter, Hafele model 904.21.501
 - .2 Roses : round.
 - .3 Normal strikes: box type, lip projection not beyond jamb.
 - .4 Cylinders: key into keying system as required by Client.
- .2 Butts and hinges:
 - .1 Butts and hinges: to ANSI/BHMA A156.1, stainless steel 2BB butt hinge, 102 x 76mm.
 - .2 Supply 1-1/2 pair per door leaf for doors up to 2285mm in height. Supply one additional hinge for each additional 762mm of height or fraction thereof.
 - .3 Acceptable product: Hafele model 926.90.131
- .3 Concealed hinges:
 - .1 SOSS concealed hinges, bright nickel plated, complete with SOSS concealed door closer kit. Acceptable product: Hafele 927.50.207. Required for door DR-01.



- .4 Exit devices: to ANSI/BHMA A156.3, type Von Duprin "98" series flat bar type.
- .5 Door Closers and Accessories:
 - .1 Door controls (closers): to ANSI/BHMA A156.4, satin nickel plated finish. Hafele Model 931.82.606
- .6 Architectural door trim: to ANSI/BHMA A156.6.
 - .1 Door protection plates: kick plate type and mid rail plate, 1.27 mm thick, 304 stainless steel, size: 700mm length. Hafele model 987.18.300
 - .2 Push plates: 300 x 75mm x 1.27 mm thick, 304 stainless steel push plate. Hafele model 987.14.831
 - .3 Push/Pull units: 19 mm diameter pull handle, 225-425mm hole centres, bolt through fixing. Hafele model 903.01.352
 - .4 Flush ring pull handle: 52 x 38mm flush ring pull handle, Hafele model 901.03.804
- .7 Privacy Set Release hardware: emergency release indicator and inside turn, Hafele Model 902.53.870, required at washroom door.

2.3 FASTENINGS

- .1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.
- .2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .3 Exposed fastening devices to match finish of hardware.
- .4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.
- .5 Use fasteners compatible with material through which they pass.

2.4 KEYING

- .1 Doors, and cabinet locks to be as noted in Door Schedule and drawings. Prepare detailed keying schedule in conjunction with Consultant.
- .2 Supply keys in duplicate for every lock in this Contract.
- .3 Supply 3 master keys for each master key or grand master key group.
- .4 Stamp keying code numbers on keys and cylinders.
- .5 Supply construction cores.



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- .6 Hand over permanent cores and keys to Consultant.

Part 3 Execution

3.1 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Supply metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Supply manufacturers' instructions for proper installation of each hardware component.
- .4 Install hardware to standard hardware location dimensions in accordance with CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction).
- .5 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .6 Use only manufacturer's supplied fasteners.
 - .1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .7 Remove construction locks when directed by Consultant.
 - .1 Install permanent cores and ensure locks operate correctly.

3.2 ADJUSTING

- .1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to ensure tight fit at contact points with frames.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer's instructions.
 - .3 Remove protective material from hardware items where present.



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

3.4 DEMONSTRATION

- .1 Keying System Setup and Cabinet:
 - .1 Set up key control system with file key tags, duplicate key tags, numerical index, alphabetical index and key change index, label shields, control book and key receipt cards.
 - .2 Place file keys and duplicate keys in key cabinet on their respective hooks.
 - .3 Lock key cabinet and turn over key to DCC Representative.
- .2 Maintenance Staff Briefing:
 - .1 Brief maintenance staff regarding:
 - .1 Proper care, cleaning, and general maintenance of projects complete hardware.
 - .2 Description, use, handling, and storage of keys.
 - .3 Use, application and storage of wrenches for locksets.
 - .3 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.5 PROTECTION

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

3.6 SCHEDULE

- .1 Provide and install all hardware as noted in the Door & Hardware Schedule listed on the drawings.

END OF SECTION



Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 09 21 99 - Partitions for Minor Works.

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM C28-00(2005), Standard Specification for Gypsum Plasters.
 - .2 ASTM C35-01(2009), Standard Specification for Inorganic Aggregates for Use in Gypsum Plaster.
 - .3 ASTM C206-03, Standard Specification for Finishing Hydrated Lime.
 - .4 ASTM C587-04, Standard Specification for Gypsum Veneer Plaster.
 - .5 ASTM C631-09, Standard Specification for Bonding Compounds for Interior Gypsum Plastering.
 - .6 ASTM C842-05, Standard Specification for Application of Interior Gypsum Plaster.
 - .7 ASTM C843-99(2006), Standard Specification for Application of Gypsum Veneer Plaster.
 - .8 ASTM C844-04, Standard Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster.
 - .9 ASTM C1396/C1396M-09a, Standard Specification for Gypsum Wallboard.
- .2 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for polished plaster concrete materials and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.



- .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate 300 x 300 mm samples of polished plaster concrete honed plaster finishes.
- .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .5 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.

1.4 QUALITY ASSURANCE

- .1 Certifications: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 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.
 - .1 Ensure materials remain in original wrapping and containers until used.
 - .2 Deliver polished plaster concrete products to job site just prior to application.
 - .3 Deliver fresh plaster as needed to job site.
- .3 Storage and Handling Requirements:
 - .1 Store gypsum plastering materials in dry location away from heavy traffic areas and in accordance with manufacturer's recommendations.
 - .2 Store and protect bagged goods from direct contact with rain, snow, splashing water, wet or damp surfaces, condensation and absorption from the atmosphere.
 - .3 Stack plaster bags on planks or platforms away from damp floors and walls.
 - .4 Replace defective or damaged materials with new.

1.6 SITE CONDITIONS

- .1 Site Requirements:



- .1 Safety: Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of materials.
- .2 Ambient Conditions:
 - .1 Ventilation:
 - .1 Provide free circulation of air to carry off excess moisture.
 - .2 Mechanically remove moisture laden air in areas lacking normal ventilation.
 - .3 Protect plaster from vent drafts, heaters or windows, to avoid uneven drying.
 - .4 Avoid excessive ventilation or air movement to allow plaster to properly set.
 - .5 Screen exterior openings in building.
 - .6 Maintain minimal ventilation.
 - .2 Temperature:
 - .1 Do not apply plaster to surfaces containing frost.
 - .2 Maintain temperature above 13 degrees C for 48 hours prior to erection of gypsum plaster base, prior to and during application of plaster, and for 48 hours following installation of plaster or until plaster is dry.
 - .3 Distribute heat well to areas.
 - .4 Prevent irregular heat on plaster near source by providing deflection or protective screens.

Part 2 Products

2.1 MATERIALS

- .1 Reinforcing Basecoat:
 - .1 Special reinforcing system that greatly reduces the risk of cracks appearing from weak substrates. Acceptable product: Anti-Crack System by Surfaceform or acceptable equivalent. Reinforcing coat to be 1.25mm minimum.
- .2 Polished plaster Concrete:



- .1 A matt decorative polished plaster used for interior decoration. Lime based plaster with over 40% marble powder content. Low VOC content of 0g/L uncoloured and 20 g/L coloured. Thickness of 0.75 - 1.75mm. Finish: honed. Acceptable product: Polished Plaster Concrete by Surfaceform or approved equivalent. Colours: from full Manufacturer colour range and as indicated on drawings, allow for more than one colour.
- .3 Water:
 - .1 Clean, fresh, potable.
 - .2 Free from mineral and organic substances which affect plaster set.
 - .3 Minimum required for plaster of workable consistency.
 - .4 20 degrees C.
- .4 Bonding agent: as recommended by the Manufacturer.
- .5 Accessories: as recommended by the Manufacturer..

2.2 MIXES

- .1 Mix plasters to Manufacturer's written instructions..

Part 3 Execution

3.1 EXAMINATION

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

3.2 PREPARATION

- .1 Prepare surfaces to receive plaster to ASTM C1396/C1396M.
- .2 Ensure outlets are properly plugged, capped or covered before starting work.
- .3 Where plaster butts exposed masonry walls, insert 1 m wide strip of polyethylene before applying plaster to protect masonry. Cut polyethylene neatly at junction with plaster when plastering is completed.



- .4 Do not plaster adjacent to aluminum or finished work until such work is masked.

3.3 APPLICATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Do plastering work to ASTM C587.
- .3 Apply plaster finish level and plumb.
- .4 Use 3 - 5 coats plaster in specify area depending on desired finish.
- .5 Form small vee groove where plaster finish is flush with bases, window frames, glazed wall tiles or similar construction.
- .6 Reinforcing Basecoat Plaster:
 - .1 1.75 mm thick.
 - .2 Mix by hand, following manufacturer's directions.
 - .3 Apply initial reinforcing basecoat application (scratch coat) to gypsum and/or concrete substrate, by hand using hand held tools such as trowels, spatulas, brushes, and rollers with sufficient material and pressure to form good bond to base and to cover well.
 - .4 Leave surface ready to receive the polished plaster concrete finish.
- .7 Finishing Plaster/polished plaster concrete:
 - .1 Mix in accordance with applicable bag mixing instructions.
 - .2 Application:
 - .1 Apply 0.75 - 1.75 mm finish coat.
 - .2 Applied and finished using hand held tools, such as trowels, spatulas, brushes and rollers. 3-5 coats to achieve dense, hard, smooth surface with a honed finish to the colours specified.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.



3.5 PROTECTION

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

END OF SECTION