

**DIVISION 2 SITEWORK**

02065 Selective Demolition 3

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PART 1 - GENERAL

- 1.1 Work Included .1 Generally, Selective Demolition consists of removal of existing materials, finishes and features, and cutting new openings and recesses, etc. to accommodate new Work and finishes.
- .2 Examine existing conditions to determine extent of Work as well as requirements for protection of adjacent Work.
- .3 Demolition Work indicated on Drawings is schematic only. Verify all conditions and dimensions on site.
- .4 Refer to all Drawings and coordinate with Work of other trades. Claims for extras to Contract will not be accepted due to failure of each Contractor to become fully aware of all Work required.
- .5 Patching and making good existing materials and finishes by trades whose Work is affected. Refer to related trade sections.

PART 2 - PRODUCTS

- 2.1 Existing Materials .1 At the front vestibule where the interior door is being removed, it may be necessary to leave portions of the existing framing in place to eliminate detailed matching repairs and refinishing.
- .2 Similarly, this may apply to the new location at the classroom. The intent is to reuse as much of the existing framing so as to maintain the continuity of the existing appearance in the new installation.
- .3 The reused door and frame material is to be restored as much as practically possible and re-stained.

PART 3 - EXECUTION

- 3.1 Workmanship .1 Perform Selective Demolition by specialists familiar with materials affected. Perform in a manner neither to damage nor endanger any portion of Work or existing building.
- .2 Do not damage or deface existing construction, equipment or finishes indicated to remain, or items indicated for salvage.
- .3 Dispose of demolished materials, debris, equipment and fixtures off site via designated access routes and as directed by the Contract Administrator.
- .4 Do not allow construction debris to accumulate within existing building or on site; remove debris at regular intervals.
- .5 Obtain Contract Administrator's approval before cutting, boring or sleeving structural or load-bearing members, including floor slabs. Mark out exact locations and dimensions to allow inspection.
- .6 Keep cutting to no more than 10% larger than outside dimensions of item penetrating another material.
- .7 Make cuts with clean, true, smooth edges to

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- minimize patchwork and to provide suitable surface for integration of new materials.
- .8 Use concrete saw for cutting concrete and masonry.
  - .9 Use diamond core drill for cutting small diameter openings in concrete and masonry.
  - .10 Do not use pneumatic hammers for demolition Work inside existing buildings.
  - .11 Repair adjacent surfaces affected by the Work, to their original condition.
- 3.2 Openings & Recesses
- .1 Cut openings through walls, floors, ceilings and roofs to accommodate pipes, ducts, service lines and other Work being installed by other trades which exceed 150mm/6" diameter. Penetrations smaller than 150mm/6" are responsibility of trade requiring access.
  - .2 Cut recesses for recessed items such as hose cabinets, panels, distribution boxes, etc. being installed by other trades which exceed 810mm x 810mm/32" x 32" size. Recesses smaller than 810mm x 810mm are responsibility of trade requiring recess.
- 3.3 Existing Ceilings
- .1 Remove or cut openings in existing wood, gypsum board, plaster ceilings indicated to accommodate new Work.
  - .2 Use care to protect existing wood ceilings to remain.
- 3.4 Existing Partitions
- .1 Remove or cut openings in existing partitions to accommodate new Work.
  - .2 When opening or demolishing load bearing walls, provide temporary structural support and bracing to protect structure from damage and to protect occupants, public and workers from injury.
- 3.5 Existing Floor Finishes
- .1 Where new finish flooring is indicated or scheduled, remove existing finish flooring entirely.
  - .2 Strip excess adhesives from substrate to provide suitable surface for new flooring. Use scrapers or heat; do not use grinders or volatile solvents to remove existing finish flooring or adhesive residues.
  - .3 Prior to applying floor patch or adhesives or any finish flooring component, review existing substrate with Contract Administrator and seek approval to proceed.
- 3.6 Existing Exterior Walls
- .1 Salvage existing siding / masonry being removed for repair to adjacent surfaces.
  - .2 Lap and caulk new and existing vapour barriers.
  - .3 Patch / repair drywall between new and existing with matching gauge material.

1. PART 1 - GENERAL
- 1.1 General .1 Work pertains generally to, but not limited to, the following items:  
i. misc. anchors, sleeves, lintels, etc.  
ii. vanity/counter support brackets
- 1.2 Related Work .1 Section 06100 Carpentry  
.2 Section 09900 Painting
- 1.3 References .1 Do welding to CSA W59, current edition  
.2 ASTM A53-90B (or current edition): specification for pipe, steel, black and hot dipped, zinc coated, welded and seamless.  
.3 ASTM A269-92 (or current edition: specification for seamless / welded stainless steel.  
.4 CAN/CSGB-1.40-M89 (or current edition: primer, structural; steel.  
.5 ASTM A307-92A (or current edition: specification for carbon steel bolts, studs.  
.6 CAN/CSA-G164-M92 (or current edition: Hot dipped galvanizing  
.7 CAN/CSA-S16.1(or current edition: limit states design of steel structures.
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Steel: CAN/CSA-G40.21, Grade 300W.  
.2 Welding materials: to CSA W59, latest edition.  
.3 Bolts: to ASTM A307.
- 2.2 Fabrication .1 Build items called for, square, true, straight and to accurate required size, with joints closely fitting and properly secured.  
.2 Use self tapping, shake-proof, flat heated screws unless indicated otherwise.  
.3 Where possible, fit and shop assemble Work, ready for erection.  
.4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.
- 2.3 Shop Painting .1 Apply one shop coat of primer to metal items, with the exception of stainless steel, aluminum and galvanized or concrete encased items.  
.2 Use unadulterated primer, as prepared by mfgr. Paint on dry surfaces. Do not paint when temperature is lower than 5C deg.  
.3 Clean surfaces to be field welded. Do not paint.
- PART 3 - EXECUTION  
Not used.

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 07900 Sealants  
.2 Section 06200 Finish Carpentry  
.3 Section 10800 Washroom Accessories  
.4 Section 10900 Miscellaneous Specialties  
.5 Divisions 7 & 8 as required
- 1.2 References .1 CSA B111-latest edition; Wires, nails, spikes and staples.  
.2 CAN/CSA-G164-latest edition; Hot dip galvanizing.  
.3 CSA-0121-latest edition; Douglas fir plywood.  
.4 CAN/CSA-01410latest edition; Softwood Lumber.  
.5 CSA-0151-latest edition; Softwood plywood.  
.6 National Lumber Grades Authority (NLGA) - standard grading rules for Canadian lumber - latest edition.
- 1.3 Quality Assurance .1 Lumber certification by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.  
.2 Plywood identification by grade mark in accordance with applicable CSA standards.
2. PART 2 - PRODUCTS
- 2.1 Lumber Materials .1 Softwood, S4S, moisture content not exceeding 19%;stamped 'S-Dry.'  
.2 Machine stressed-rated material is acceptable.  
.3 Framing and board lumber in conformance with Building Code in effect and local bi-laws, regulations.  
.4 Lumber, if not identified on the drawings to be a greater grade, shall meet the following minimum grades:  
a) Wood beams, joists, headers, lintels - #1 Douglas Fir  
b) Bridging - 2x2 cross bridging (1x3, 1x4 not acceptable)  
c) Sill, wall plate - #2 construction grade spruce  
d) Wall sheathing - #1 kiln-dried, construction grade spruce,3/8" standard sheathing grade spruce plywood, or 7/16" Oriented Strand Board (OSB)  
e) Floor sheathing - 5/8" T&G standard grade spruce plywood  
f) Subfloor adhesive - BF Goodrich PL400, or equal  
g) Floor underlay - 3/16" G1S fir plywood  
h) Roof sheathing - 1/2" sheathing grade spruce plywood  
i) Fascia - #2 spruce  
j) Plywood trim - 3/8" G1S crezone plywood  
k) Dimensional trim boards - #2 spruce  
l) Interior stairs - #1 Douglas Fir  
m) Exterior stairs - pressure treated #1 Douglas Fir
- 2.2 Panel Standards .1 Douglas fir plywood to CSA-0121-M(latest

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			edition).
		.2	Softwood plywood to CSA-0151-M(latest edition).
		.3	Wood particle board to CAN3-0188.1-M(latest edition).
		.4	Overlaid plywood - crezone or equal.
2.3	Sheathing Paper	.1	To CAN/CSGB-51.32-M(latest edition) - single ply impregnated building paper or 'Tyvec'.
2.4	Adhesives	.1	Subfloor adhesive to CSGB 71-GB-26M, latest edition; cartridge loaded.
2.5	Fasteners	.1	Nails, spikes & staples to CSA B111- latest edition.
		.2	Bolts; 1/2" diameter minimum, c/w nuts and washers.
		.3	Proprietary fasteners; toggle bolts, expansion shields, lag bolts, screws and lead or inorganic fibre plugs, explosive actuated devises; recommended for purpose by manufacturer.
		.4	Galvanizing; to CSA G164-M(latest edition); use galvanized fasteners for any/all exterior Work.
		.5	Joist hangers; min. 1mm thick sheet steel, galv. ZF001 coating designation.
		.6	Nailing discs; flat caps, min. 1" diameter, min. 4mm thick, sheet metal, fibre, formed to prevent dishing. Bell or dish shapes not acceptable.
		.7	Roof 'H' clips; formed 'H' shaped, thickness to suit plywood; extruded 6063-T6 aluminum alloy type, approved by structural engineer.
		.8	Preservative pressure-treated woods; any/all lumber in contact with grade and as indicated, shall be treated with preservatives in accordance with CSA Standard 080.15.
3.	PART 3 - EXECUTION		
3.1	Construction Codes	.1	Comply with requirements of the National Building Code, current edition and the Provincial Building Code, current edition and National Fire Prevention Act, current edition.
3.2	Air Vapour Membranes & Fire Ratings	.1	Install air vapour membrane and fire-rated gypsum drywall, continuous on ceilings, prior to interior non-load bearing partitions.
		.2	For wood door frames in fire-rated partitions, increase rough-opening dimension for UL drywall, prior to installation of wood door / window frames.
3.3	Framing Members	.1	Install members true to line, levels and elevations.
		.2	Construct contiguous members from pieces of longest practical lengths.
		.3	Install spanning members with crown-edge up.
		.4	Double all joists and rafters to form required

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- trimmer joists and provide double header joists at the following locations, unless noted otherwise; piping, stairs, dormers, shafts, vents, bulkheads, trapdoors, etc. Any header joist over 6'-0" /1800mm in length shall be tripled. All joists terminating at header and/or trimmer joists around openings must be supported by metal joist hangers.
- .5 Joists resting on wood sills or plates shall be toe-nailed to the bearing member with a minimum 3 1/2"/90mm nail per joist.
  - .6 Lay-out all floor joists to avoid coinciding with plumbing stacks, drains, vents, ducts, chimneys, etc.
  - .7 Provide x-bridging in all spans over 8'/2440mm in length. Bridging shall be not less than 7'/2100mm apart and shall be nailed with 2-1/4" nails or 2-2" power driven staples at each end.
- 3.4 Sheathing
- .1 Install sheathing in accordance with mfgr's specifications.
  - .2 Leave a 1/8"/3mm space between panels for expansion.
  - .3 Underlay is required under all resilient type flooring in wood frame structures.
  - .4 Underlay shall be glued as per mfgr's specifications, to subfloor or nailed with power driven staples of adequate length to allow for fastening. Fasten every 3"/75mm along edges and every 6"/150mm o.c. in centre.
- 3.5 Furring & Blocking
- .1 Install furring and blocking as required to space-out and support casework, cabinets, wall/ceiling finishes, facings, fascia, soffit, siding, misc. specialties, washroom accessories, etc, as required.
  - .2 Install furring to support siding applied vertically where there is no blocking and where sheathing is not suitable for direct nailing.
  - .3 Align and plumb faces of furring and blocking to a tolerance of 1:600.
- 3.6 Nailing Strips, Rough Bucks
- .1 Install rough bucks, nailers and liners to rough openings as required to provide backing for frames and other Work.
- 3.7 Cants, Curbs, Fascia Backing
- .1 Install wood cants, fascia backing, nailers, curbs and other wood supports as required; secure using galvanized steel fasteners.
- 3.8 Sleepers
- .1 Install sleepers as required.
- 3.9 Fasteners
- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
  - .2 Countersink bolts where necessary to provide clearance for other Work.



- .3 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.
- 3.10 Pressure-treated Wood
  - .1 When cutting pressure treated material, raw / exposed ends are to receive surface applied wood preservative, either of:
    - a) clear copper naphthenate
    - b) 5% pentachlorophenol solution
    - c) water repellent preservative
  - .2 The following requirement generally includes, but is not limited to:
    - a) wood cants, nailers, sleepers, etc.
    - b) wood furring on outside surface of concrete walls.
    - c) wood in crawl spaces and at exterior perimeter of building.
    - d) wood in roof blocking and roof curbs.
- 3.11 Service Backboards
  - .1 Provide and coordinate all 3/4"/18mm painted plywood required for telephone, electrical, controls, mechanical, etc.
  - .2 Provide 1x3 spacers at 16"/400mm o.c. behind boards, as required.
  - .3 Coordinate with requirements of the specific utility company.

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1. PART 1 - GENERAL
- 1.1 General .1 This section pertains to the supply and installation of finished wood products including baseboards, chair-rails, etc.
- .2 This section does not include items manufactured off-site such as casework, including shelving and/or millwork units.
- .3 This section does include items assembled on site such as wall mounted shelving on support brackets, wood railings, baseboards, etc.
- 1.2 Related Work .1 Section 06100 Rough Carpentry
- .2 Section 06400 Architectural Woodwork
- .3 Section 08210 Wood Doors
- 1.3 References .1 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
- .2 CSA-0115-(latest edition)- hardwood plywood
- .3 CSA-B111-M(latest edition)- nails & staples
- 1.4 Shop Drawings .1 Submit shop drawings as per Section 01300.
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Hardwood lumber (door/window casings, interior trim): to National Hardwood Lumber Association (NHLA) requirements; moisture content to 6-8% maximum; Birch species to AWMAC custom grade.
- .2 Shelving; where called for on drawings:
- i. plywood: sanded both sides, paint grade 19mm / 3/4", painted. Edges to be finished with 1/4" 6mm hardwood.
- ii. melamine: 19mm / 3/4", colour as selected.
- .3 Adjustable shelving brackets; K&V pilasters, #87 and slot brackets, #186. Maximum 36"/900mm shelf span between supports. Colour to be selected by Contract Administrator.  
AND 'slatwall' compatible shelving slot brackets. Colour to be selected.
- .4 Closet rod hanger: 1 1/4"/31.8mm x 16ga. Steel tube, chrome plated. Matching wall flanges. Acceptable product: "Roll-It #5090 with #1223 flanges."
- .5 Nails and staples: to galvanized for exterior Work, interior Work in highly humid areas and for treated lumber; plain finish elsewhere.
- .6 Exterior Wood Cladding: 1" x 6" (19mmx150mm) tongue and groove, clear grade, cedar siding.
3. PART 3 - EXECUTION
- 3.1 Interior Trim .1 Standing and running trim to be AWMAC custom grade construction.
- .2 Trim to be fir species, unless otherwise called for.
- .3 All corners, splices shall be 45 degree miter cut.

- 3.2 Erection
- .1 Set and secure materials and components in place, rigid, plumb and square.
  - .2 Provide heavy duty fixture attachments for wall mounted Work.
  - .3 Prepare external exposed and semi-exposed surfaces, ready for sealing, staining and varnishing or painting.
  - .4 Prepare internal non-exposed surfaces ready for sealing with varnish or shellac.

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 06100 Rough Carpentry, for adjacent installations  
.2 Division 15000 Mechanical, for plumbing.  
.3 Division 16000 Electrical, for lighting and power.  
.4 Section 05500 Metal Fabrications, for misc. brackets, etc.
- 1.2 References .1 'Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), most recent edition,  
.2 ANSI A208-1-1989 1-M-3 - particle board  
.3 commercial standards CS-251 - hard board
- 1.3 Work Includes .1 Fabrication and installation of laminate clad casework components of base cabinets, wall cabinets, tall cabinets, countertops and other Work as defined on the drawings.  
.2 See Section 06200 for coordination with Finish Carpentry products.
- 1.4 Coordination .1 Coordinate with mechanical and electrical sections for integration of items such as sinks, faucets, tail strainers, traps, piping, conduit, electrical outlets, etc.  
.2 Notwithstanding the dimensions shown on the drawings, all final dimensions shall be based on actual site measurements for coordination with actual site conditions.
- 1.5 Quality Assurance .1 Provide laminate clad casework and countertops furnished by the same supplier for single responsibility and integration with other building trades.  
.2 Any item not given a specific quality grade shall be 'Custom Grade' as defined in the latest edition of the AWMAC Quality Standards.
- 1.6 Submittals .1 Submit shop drawings in accordance with Section 01300. Show layout, elevations, ends, cross sections, service run spaces, anchors, etc. including, but not limited to:  
i. details of construction, profiles, jointing, fastening and other section related details.  
ii. finish materials and thicknesses  
iii. location of locks as required.  
.2 Include layout in relation to surrounding walls, doors, windows, and other building components.  
.3 Coordinate shop drawings with other Work involved.  
.4 Submit a sample of hardware to the Contract Administrator, including a typical hinge and drawer glide.
- 1.3 Protection .1 All cabinet Work, in storage or transit, shall be adequately protected by contractor until date

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- of substantial performance.
- .2 Protect cabinet Work from ground and atmospheric moisture, deformation, staining, etc.
  - .3 Advise the Contractor if conditions do not meet the requirements for safe storage of cabinets.
  - .4 The Contractor will be responsible to replace and make good any / all damage that occurs prior to substantial performance.
2. PART 2 - PRODUCTS
- 2.1 Core Materials
    - .1 Particle Board: minimum density 690-740 kg/sq.m. / 140-150 lb./sq.ft., western particle board of fir or pine.
    - .2 Hardboard: prefinished hardboard in 6mm / 1/4" thickness.
    - .3 Plywood: 9-ply hardwood plywood
    - .4 Plastic Laminates: General purpose, Type G48 or Type F39 where postforming is called for; matte finish.
    - .5 Laminate colour selection: to be selected from full range of Arborite, Formica, Wilson Art, Nevamar, Pionite or equal, up to two (2) colours.
    - .6 Melamine colour selection: to be selected from full range, up to two (2) colours.
    - .7 Wall Paneling: Panolam 'melamine' finishes on particle board, as distributed by McKillican. One colour to be selected from stocked colour range.
    - .8 Edging: Plastic laminate on doors and drawer faces receiving plastic laminate. 0.5mm PVC hot melt glue applied on all other edges.
    - .9 Adhesives: purpose made for specific application, including but not limited to:
      - i. high pressure laminate to particle board (faces and edging)
      - ii. melamine to particle board
      - iii. PVC edging to particle board
  - 2.2 Hardware
    - .1 Hinges: to be concealed, spring-loaded 'European' type; equal to Blum 91A6500.
      - i. Minimum 2 hinges per doors under 36"/917mm height
      - ii. 3 per door 36"/917mm and over.
    - .2 Door / Drawer pulls: extruded aluminum finger pulls, full width of door/drawer.
    - .3 Drawer Glides: nylon bearing slides, self-closing from 4"/100mm extension; zinc coated roll steel, 75lb. capacity; equal to Grant #338.
    - .4 Shelf Supports: self-locking nylon to fit in predrilled holes. Design to secure shelf from upward and/or pivoting motions.
    - .5 Grommets: purpose made, plastic inserts for countertop electrical cord holes; +/- 1/2" / 38mm diameter.
    - .6 Keyboard Trays: purpose made, slide-out, under-counter mounted hardware and 24"/610mm minimum width.

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- 2.3 Materials .1 Fabricate casework to dimensions, profiles and  
End Uses .2 details as shown on the drawings.  
Unless called for otherwise on the drawings,  
materials shall be:  
i. Doors/drawer fronts: 5/8"/15.8mm particle  
board with 0.75mm, general purpose plastic  
laminate on front faces and edges.  
Melamine finish on interior faces.  
ii. Casework 'boxes'; 5/8"/15.8mm particle  
board top, bottom, sides and back (where  
hardboard not shown), melamine finish on  
interior faces, 0.5mm PVC edging where not  
exposed. Exposed exterior faces and edges  
to be 0.75mm general purpose plastic  
laminate.  
iii. Shelving; 3/4" / 19mm particle board with  
melamine faces and 0.5mm PVC edging on  
front, rear and side edges.  
.3 Shelving spans shall not exceed 30"/760mm  
without intermediate supports.  
.4 There shall be no cabinet frame mounted style  
directly below a sink or vanity so as to impede  
access to plumbing. Style shall be door mounted  
so as to maintain aesthetic integrity.  
.5 All cabinets shall be screwed with screws and  
grommets in an orderly and symmetrical pattern.  
.6 All drawers & doors shall have minimum 2 rubber  
stops.  
.7 Double doors shall be used on cabinets exceeding  
24"/600mm in width.
- 2.3 Countertops .1 Plastic laminate countertops shall be warranted  
.2 for two (2) years for delaminating, warpage,  
etc.  
.3 Concealed plywood shall be select sheathing  
grade, fir, to CSA-01211-latest edition.  
.4 Install silicone caulking at all joints.  
.5 Countertops with sinks, shall have continuous  
'bull-nose' drip edge, unless indicated  
otherwise on the drawings.  
.6 Countertops shall have 4"/100mm backsplash and  
end-splash where abutting adjacent walls.
3. PART 3 - EXECUTION  
3.1 Site Inspection .1 Examine jobsite and  
conditions under which the Work under this  
section is to be performed. Notify the Contractor  
and Contract Administrator in writing of any  
unsatisfactory conditions and do not proceed  
until the situation is remedied.
- 3.2 Preparation .1 Condition laminate casework to the average  
prevailing humidity conditions in the areas  
prior to installation.  
.2 Install casework with factory-trained  
supervision authorized by the manufacturer,  
erecting casework plumb, level, true and  
straight, with no distortions.

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| 3.3 | Cabinetry               | .1 | All millwork shall be built to field measurements.  |
|     |                         | .2 | Scribing shall be provided to make allowances for cabinets to fit adjacent walls.   |
|     |                         | .3 | Check and adjust all doors/drawers for smooth, easy operation.  |
|     |                         | .4 | All modules shall be screwed to walls as well as adjacent boxes.  |
|     |                         |    |   |
| 3.4 | Countertops             | .1 | Make allowances for countertops to fit tightly against all walls.   |
|     |                         | .2 | Install countertops in strict accordance with manufacturer's instructions. Utilize a two-part epoxy or silicone sealant to secure the counters and provide liquid proof butt joints.            |
|     |                         | .3 | Apply neat silicone (with fungicide) caulked joint between backsplashes and walls and at 45 degree angle seams.   |
|     |                         |    |   |
| 3.5 | Cleaning and Protection | .1 | Clean all surfaces, interior and exterior.  |
|     |                         | .2 | Where possible, repair minor damage per plastic laminate manufacturer's recommendations and to the satisfaction of the Contract Administrator. If not possible, replace damaged parts or units. |
|     |                         | .3 | Take whatever steps are required to protect the finished installation from damage, markings, etc.   |

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 06200 Rough Carpentry  
.2 Section 07900 Sealants  
.3 Section 09250 Gypsum Drywall  
.4 Division 16000 Electrical for moulded box vapour barriers
- 1.2 Site Review .1 Air vapour membranes shall not be covered over until an inspection has been carried out and approved by the Contract Administrator.  
.2 Allow 2 days notice to the Contract Administrator for a site review.
2. PART 2 - PRODUCTS
- 2.1 Sheet Vapour .1 Polyethylene film; to CAN2-51.34-M(latest edition), 10mil. thick minimum, as indicated on the drawings.
- 2.2 Accessories .1 Joint sealant tape; air resistant pressure sensitive adhesive tape, cloth fabric duct tape, type recommended by vapour barrier mfg.; 2"/50mm wide for lap joints and perimeter seals, 1"/25mm wide elsewhere.  
.2 Sealant; acoustical sealant to be Tremco, or equal.  
.3 Staples; minimum 1/4"/6mm length.
- 2.3 Water Flashing (at exterior floor) .1 Membrane: PERM-A-BARRIER, composite sheets comprised of rubberized asphalt integrally bonded to a film of high density cross laminated polyethylene, 1mm (40mil) thickness.  
.2 Tapes: 0.8mm (30 mil) thick  
.3 Primer: PERM-A-BARRIER primer, rubber based, dispersed in solvent, designed for use at min. ambient temperature of -10 deg. C (14 deg. F).
3. PART 3 - EXECUTION
- 3.1 Installation .1 Install sheet vapour membrane on warm side of exterior wall and ceiling assemblies as shown, prior to the installation of interior non-bearing walls, to form a continuous barrier.  
.2 Use sheets of largest practicable size, to minimize joints.  
.3 Inspect sheets for continuity. Repair punctures and tears with sealing tape prior to covering the Work.
- 3.2 Exterior Openings .1 Cut sheet vapour barrier to form openings and ensure material is lapped and sealed to frame.
- 3.3 Perimeter Seals .1 Seal perimeter of sheet vapour membranes as follows:  
i. Apply continuous bead of sealant to substrate at perimeter of sheets.  
ii. Lap sheet over sealant and press into sealant bead.  
iii. Install staples through lapped sheets at



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- iv. sealant bead into wood substrate.
  - iv. Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.
- 3.4 Lap Seal Joints .1 Seal lap joints of sheet vapour membranes as follows:
- i. Attach first sheet to substrate.
  - ii. Apply continuous bead of sealant over solid backing at joint.
  - iii. Lap adjoining sheet minimum 6"/150mm at walls, ceilings, floors; and press into sealant bead.
  - iv. Install staples through lapped sheets at sealant bead, into substrate.
  - v. Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.
- .2 Ensure caulked and sealed lap onto existing vapour barriers, where new and existing construction meet.
- 3.5 Penetrations .1 Where 'Vapour Barrier Boxes' are used, the wall VB shall be sealed to the edge of the box with acoustical sealant.
- .2 Where the vapour barrier is punctured by a wire or cable, the hole around same shall be plugged with 'J.M. Dux-Seal' acoustical sealant, or equal; or the wire shall be taped to the vapour barrier so as not to permit air leakage.
- .3 Where the vapour barrier is punctured by a pipe, the vapour barrier shall be connected by a polyethylene 'skirt'; taped to the pipe and sealed to the existing vapour barrier with acoustical sealant.

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 06200 Rough Carpentry
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Sheet air barriers: 'TYVEK' Spunbonded Olefin Air Infiltration Barrier as manufactured by DuPont Canada Inc. and applied to the exterior walls as indicated on the drawings.
- 2.2 Accessories .1 Joint sealant tape; No. Y-8086, 3M Contractor's Sheathing Tape or approved equal.  
.2 Sealant; Tremco Acoustical sealant.
3. PART 3 - EXECUTION
- 3.1 Installation .1 Ensure substrate materials are dry and clean, ready to receive Work of this section. Remove loose or foreign matter.  
.2 Install sheet vapour membrane on the exterior walls as indicated on the drawings and as per the manufacturer's instructions.  
.3 Use sheets of largest practicable size, to minimize joints and secure to substrate at 12" / 305mm on centre. Lap sheets minimum 6" / 150mm and secure to solid blocking with sealant.  
.4 Tape all joints with approved tape.  
.5 Inspect sheets for continuity. Repair punctures and tears with sealing tape prior to covering the Work.
- 3.2 Exterior Openings .1 Before installing window and door frames, install the barrier membrane as detailed on the drawings and ensuring full laps under frames, brick moulds, etc.

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1. PART 1 - GENERAL
- 1.1 General .1 Includes the furnishing of materials for the installation of the building board insulation as indicated on the drawings and specified herein.  
.2 Coordinate all Work with requirements for Section 07190 - Air Vapour Membrane.
- 1.1 Related Work .1 Section 02223 Excavating, trenching and backfilling  
.2 Section 03300 Cast-in-place Concrete  
.3 Section 07190 Vapour Retardant Membranes  
.4 Section 07195 Air Barrier Membranes
- 1.2 References .1 Do all Work in accordance with manufacturer's specifications and recommendations for the particular product.
2. PART 2 - PRODUCTS
- 2.1 Floor / Ceiling .1 Polyisocyanurate Foam Sheathing: to CAN/CSGB 51.26-M86, Type 1, Facing 2, foil faced, thickness - 1 1/2" , square edge, "AP Foil Faced" by Johns Manville.  
.2 R-10.8, minimum new .  
.3 Mechanically fastened on horizontal 'Z' girts with back-up construction adhesive.
- 2.2 Fastening System .1 Ceiling Fasteners: #12 &/or #14 Weather-guard screws of sufficient length, Senti corrosion resistant coated, by Dekfast. (as distributed by Anchor Products, Wpg.)  
.2 Flooring Fasteners: expansion anchor bolts, purpose made for concrete application.  
.3 Lock-plates: 2 1/2" diameter, recessed hex plate, by Dekfast
3. PART 3 - EXECUTION
- 3.1 Workmanship .1 Ensure building substrate materials are smooth, level, dry, clean, free from dust, dirt and other materials which may be detrimental to the installation.  
.2 Install insulation to maintain continuity of thermal protection to elements and spaces.  
.3 Cut and trim insulation neatly. Butt joints tightly. Avoid chipped or broken edges.  
.4 Fit insulation neatly around ties. Replace damaged insulation.  
.5 Place insulation in parallel courses with staggered joints in adjacent course.  
.6 Caulk all seams and edges abutting dissimilar materials.

- 1. PART 1 - GENERAL
  - 1.1 Related Work
    - .1 Section 06100 Carpentry
    - .2 Section 07212 Board Insulation
    - .3 Section 07190 Air Vapour Membrane
    - .4 Section 09250 Gypsum Drywall
  
- 2. PART 2 - PRODUCTS
  - 2.1 Insulation
    - .1 Batt and blanket insulation to CSA A101-M(latest edition).
    - .2 Thickness as indicated; 6" / 150mm = R-20, 3 1/2" / 89mm = R-12.
      - i. Blown-in insulation is acceptable for attic applications.
    - .3 Acoustic insulation; 3 1/2" / 89mm 'Acoustic' fiberglass batt insulation by Owens-Corning Canada, minimum.
  
- 3. PART 3 - EXECUTION
  - 3.1 Workmanship
    - .1 Install insulation to maintain continuity of thermal protection to building elements and space. No batt insulation shall be installed prior to the building being water and weather tight and until mechanical trades have installed, tested and received approval for their cover-in Work.
    - .2 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.
    - .3 Do not compress insulation to fit into space.
    - .4 Insulation shall be placed around all piping and plumbing, ducts, and around any other obstructions or voids.

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Division 15000 Mechanical  
.2 Division 16000 Electrical
- 1.2 References .1 CAN4-S115 (latest edition); Standard Method of  
Fire Tests of Firestop Systems.  
.2 ULC Guide No.40 U19.13 & U19.15- service  
penetrations
- 1.3 Submittals .1 Submit manufacturers' specification for systems  
to be utilized in fire stopping, in conformance  
with 01300 - Submittals, indicating the  
proposed systems conform with the fire rating  
requirements.
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Firestopping:
- i. Asbestos free materials and systems  
capable of maintaining an effective  
barrier against flame, smoke and gases,  
not exceeding the opening sizes for which  
they are intended.
  - ii. Firestopping system rating: 1 hour, 'F'  
rating.
  - iii. Fire walls (2 hour rating) shall receive a  
2 hour 'FT' rating.
- .2 Service penetration assemblies as per the above  
standard and listed under the label service of  
ULC.
- .3 Firestopping and smoke seals at openings  
intended for ease of re-entry such as cables;  
elastomeric seal.
- .4 Firestopping and smoke seals at openings around  
penetrations for pipes, ductwork and other  
mechanical items; elastomeric seal.
- .5 Primers; to mfg'r's recommendation for specific  
material, substrate and end use.
- .6 Water, where applicable, potable, clean and free  
from injurious amounts of deleterious  
substances.
- .7 Sealants for vertical joints to be non-sagging.
- .8 Mineral wool packing material to be minimum 3.5  
p.c.f.
- .9 Mineral wool insulation to be minimum 48 kg/m3.
- .10 Sealant for fire-resistance rated masonry,  
of varying wall types, floor systems, mechanical  
and electrical assemblies and rigid ducts  
greater than 129 cm2. Standard of acceptance: GE  
Pensil 100).
- .11 Sealant at edge of floor slab and at exterior  
walls standard of acceptance: Tremco ULC Dymeric
3. PART 3 - EXECUTION
- 3.1 Preparation .1 Examine sizes and conditions of voids to be  
filled to establish correct thicknesses and  
installation of materials. Ensure that substrate  
surfaces are clean, dry and frost-free.

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- .2 Prepare surfaces in contact with firestopping materials and smoke separations to mfg's instructions.
  - .3 Maintain insulation around pipes and ducts penetrating fire separations.
  - .4 Mask where necessary, to avoid spillage and overcoating onto adjacent materials; remove, clean any stains from adjacent materials.
  - .5 Seal holes to ensure continuity and integrity of fire separations.
- 3.2 Inspection
- .1 Notify Contract Administrator when ready for review and prior to concealing or enclosing firestopping materials and service penetrations.
- 3.3 Duct Fire Stopping
- .1 Fire stopping at ducts to consist of bead of firestop between retaining angle and fire separation and between retaining angle and duct, on both sides of the separation.
  - .2 Provide backer rods, packing material, etc. as required to support or supplement sealants listed above per mfg's written instructions.
- 3.4 Clean-up
- .1 Remove excess materials and debris and clean adjacent surfaces immediately after application.
  - .2 Remove temporary dams after initial set-up of firestopping and smoke seal materials.

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1. PART 1 - GENERAL
- 1.1 Work Included .1 Generally this section includes any/all metal flashing and trim not specified elsewhere.
- 1.2 Related Work .1 Section 06100 Rough Carpentry  
.2 Section 07900 Sealants
2. PART 2 - PRODUCTS
- 2.1 Sheet Metal Materials .1 Items not exposed to view; galvanized steel sheet, commercial quality to ASTM A525-(latest edition) (or Dofasco Galvalume). Thickness 0.80/22 gauge unless noted otherwise.
- .2 Items exposed to view; prefinished galvanized steel sheet with factory applied coating to ASTM A446-(latest edition), in Standard 5000 series and in accordance with CSSBI Bulletin #5, latest edition.
- i. Thickness 0.80mm/22 gauge unless noted otherwise.
- ii. Colours, unless indicated on the drawings, to be selected from complete Dofasco 'standard' range.
- .3 Vic-West considered equal.
- 2.2 Accessories .1 Isolation coating - alkali resistant bituminous paint.
- .2 Plastic cement - to CGSB 37-GP-5M.
- .3 Sealants - to Section 07900, colour to match adjacent material.
- .4 Cleats - of same material and temper as sheet steel, minimum 50mm/2" wide, same thickness as sheet steel.
- .5 Fasteners - of same material as sheet steel, to CSA B111-(latest edition), flat head roofing nails of length and thickness suitable for metal flashing application.
- .6 Washers - of same material as sheet metal, 1mm thick with rubber backing.
- .7 Solder - to ASTM 832-76, 50% tin & 50% lead.
- .8 Flux - rosin, cut muriatic acid, or commercial preparation suitable for materials to be soldered.
- 2.3 Fabrication .1 Fabricate metal flashings and other sheet metal Work to applicable CRCA 'FL' series

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- specifications and as detailed.
- .2 Form pieces in 8'/2400mm lengths, with allowances for expansion at joints.
  - .3 Hem exposed edges on underside 1/2"/12mm. Miter and seal corners with sealant.
  - .4 Form sections square, true, and accurate to size, free from distortion and other defects detrimental to appearance or performance.
  - .5 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.
- 2.4 Metal Flashings .1 Form flashings to profiles indicated of minimum 0.80mm thick galvanized steel, unless otherwise indicated.
3. PART 3 - EXECUTION
- 3.1 Installation .1 Install sheet metal Work as detailed.
- .2 Use concealed fastenings except where approved by the Contract Administrator, prior to installation.
  - .3 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using standing seams forming tight fit over hook strips, except where otherwise shown.
  - .4 Lock end joints and caulk with sealant.



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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 07620 Metal Flashing and Trim  
.2 Section 08210 Wood Doors  
.3 Section 08620 PVC Windows  
.4 Section 07190 Air Vapour Membranes  
.5 Section 09250 Gypsum Drywall  
.6 Section 06400 Architectural Woodwork
- 1.2 Environmental Conditions .1 Sealant and substrate materials to be minimum 5 deg. C.  
.2 Should it become necessary to apply sealants below 5 deg. C, consult sealant manufacturer for recommendations.
- 1.3 Warranty .1 Contractor hereby warrants that caulking Work will not leak, crack, crumble, melt, shrink, run, lose adhesion or stain adjacent surfaces in accordance with terms of the Contract, but for five (5) years.
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Primers: as recommended by sealant manufacturer.  
.2 Joint fillers:  
i. General: to be compatible with primers and sealants, oversized 30-50% greater than width of joint.  
ii. Polyethylene, urethane, neoprene or vinyl: extruded closed cell foam. Shore A, hardness 20, tensile strength 140-200kPa.  
iii. Neoprene or butyl rubber: round solid rod, Shore A, hardness 70.  
iv. Polyvinyl chloride or neoprene: extruded tubing with 1/4"/6mm minimum thick walls.  
.3 Exterior Wall Sill Plates: all exterior wall sill plates to receive polyethylene foam gaskets 1/4" x 5 1/2" / 6mm x 138mm, continuous.  
.4 Bond breaker: pressure sensitive plastic tape, which will not bond to sealants.  
.5 Sealants:  
i. Sealants for vertical & horizontal non-traffic bearing joints, to Table 1, CSGB 19-GP-23:  
INTERIOR ONLY: normal temperature range, dry conditions, movement range to 10%:  
- sealant to be painted or left clear; CSGB 19 BP17M, clear or white.  
- sealant for use at counter tops and other areas requiring a sanitary sealant, shall be one-part silicone, equal to Dow Corning 999.  
INTERIOR ONLY: normal temperature range, dry conditions, movement range to 25%; to CSGB 19-GP-13M. Equal to Vulkem 116.  
EXTERIOR ONLY: low temperature range, wet conditions, movement range 25%: CSGB 19-GP-M80. Equal to Vulkem 116.  
.6 Colour of sealants to be selected by Contract Administrator.

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- .7 Joint cleaner: xylol, methylethyleketon or non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.
3. PART 3 - EXECUTION
- 3.1 Preparation
- .1 Remove dust, paint, loose mortar and other foreign matter.
  - .2 Remove rust mill scale and coatings from ferrous metals.
  - .3 Remove oil, grease and other coatings from non-ferrous metals.
  - .4 Examine joint sizes and correct to achieve depth ratio 1/2 of joint width with minimum width and depth of 1/4"/6mm, max width 1"/25mm.
  - .5 Install joint filler to achieve correct joint depth.
  - .6 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
  - .7 Apply bond breaker tape where required to manufacturer's instructions.
  - .8 Prime sides of joints in accordance with sealant manufacturer's instructions, immediately prior to caulking.
- 3.2 Application
- .1 Apply sealants primers joint fillers bond breakers to manufacturer's instructions. Apply sealant using gun with proper nozzle size. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.
  - .2 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities. Neatly tool surface to a slight concave joint.
  - .3 Apply sealant to joints between window/door frames to adjacent building components, around perimeter of external openings and as indicated.
  - .4 Clean adjacent surfaces immediately and leave Work neat and clean. Remove excess sealant and droppings using recommended cleaners as Work progresses. Remove masking after tooling of joints
  - .5 Under exterior stud walls, cut sill seal to proper length for installation, making sure that it will not leave any gaps. Overlap joints 2"/50mm. Where extremely rough or wide joints are to be filled, use multiple layers of sill sealer. The sill seal should also be compressed when installed.
  - .6 All excess caulking shall be removed immediately from adjoining Work.

END OF SECTION - 07900 - SEALANTS

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 08710 Finish Hardware  
.2 Section 09900 Painting  
.3 Section 06100 Carpentry
- 1.2 Warranty .1 Contractor hereby agrees to warrant the wood doors against warping, twisting, show core lines, split, delaminate, or sag in accordance with the General Conditions, for two (2) years.
- 1.3 Protection .1 Protect doors from dampness and high humidity.  
.2 Wrap doors and protect from scratches or other damage.
- 1.4 References .1 Architectural Woodwork Mfgr's Assoc. of Canada (AWMAC).
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Door materials to CSA 0132.2-77.  
.2 Door Type / Finish:  
i. D110: 2 - Solid core wood; paint grade masonite faces, 2'-6" x 7'-0"  
ii. D101: Existing door to be relocated.
- 2.2 Fabrication .1 Fabricate doors to CSA 0132.2-77.  
.2 Provide 1/2"/12mm min. thick vertical edge strips of clear grade pine for hardboard doors.  
.3 Include UL label where shown as called for on solid core doors.
3. PART 3 - EXECUTION
- 3.1 Installation .1 Install doors and hardware in accordance with manufacturer's specifications / instructions.  
.2 Adjust hardware for correct functioning.
- 3.2 Adjustment .1 Re-adjust doors and hardware just prior to completion of the building, to function freely and properly.
- 3.3 Existing Door .1 Re-finish existing wood door to match original condition.

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1. GENERAL
- 1.1 Related Work
- .1 Section 07900 Sealants
  - .2 Section 06100 Rough Carpentry
  - .3 Section 07190 Vapour Retardant Membranes
  - .4 Section 07195 Air Barrier Membranes
  - .5 Note that glazing for exterior windows is included in this section.
- 1.2 Shop Drawings
- .1 Submit shop drawings in accordance with Section 1300: Submittals.
  - .2 Indicate materials and details in scale, for head, jamb, sill, and components, as well as unit elevations (keyed to drawings), anchorage details, location of isolation coating, description of related components, exposed finishes, fasteners and caulking.
  - .3 Adjust all rough openings for units proposed.
- 1.3 Maintenance Data
- .1 Provide maintenance and operation data for windows for incorporation into operations manual.
- 1.4 Warranty
- .1 Contractor hereby agrees to warrant windows against leakage, defects and malfunction under normal usage for one (1) year.
  - .2 Hermetically sealed units warranty shall be five (5) years.
- 1.5 Power-Smart Program
- .1 Window units must meet or exceed the required specifications to qualify for financial support from Manitoba Hydro's Power-Smart Program.
2. PRODUCTS
- 2.1 Materials
- .1 Frames shall be 'Ener-smart / ES2000' as manufactured by Jeld-Wen or equal.
  - .2 Frame construction to be equal to extruded, multi-chambered high impact resistant, rigid PVC, with fusion welded corners; base configuration with integral, prepunched nailing fin and brick-mold. Frames shall have minimum 150mm/6", 6mil poly, mechanically fastened, perimeter strip. Frames shall be sized for exterior wall construction as detailed.
  - .3 Sash construction to be equal to extruded, multi-chambered high impact resistant, rigid PVC, with fusion welded, mitred corners;
  - .4 Handles to be crank type handles integral to sash member, but located minimum 34" above finished floor. For larger picture units, install cranks in centre mullion.
  - .5 Insect screens to CGSB 79-GP-1M, Type 1, Class A, Style 2 black colour, 18x16 wire mesh (nylon not acceptable), removable from interior.
  - .6 Window types to include:
    - .i Combination fixed with awnings

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- .ii Fixed units
  - .7 Glass and glazing to be factory installed with dual adhesive tape and vinyl snap-on stops.
  - .8 Sealants: MONO, as manufactured by Tremco.
  - .9 Bedding compound to CGSB 19-GP-14M.
  - .10 Opening Hardware to be Crank type.
- 2.2 Fabrication
- .1 Fabricate units square and true with maximum tolerance of +/- 1.5mm 1/16" for units with diagonal measurement of 1.8m (6'-0") or less and +/-3mm/ 1/8" for units with diagonal measurement over 1.8m (6'-0").
  - .2 Make allowance for deflection of structure. Ensure that structural loads are not transmitted to windows.
  - .3 Manufacturer's nameplates on windows are not acceptable. Place nameplates, if at all, in semi-concealed locations.
- 2.3 Colour
- .1 Colour to be selected from full range, not including white or brown.
- 2.4 Glazing
- .1 Triple pane, meeting CSA Standard-A440-00 'Windows' and certified test ratings not less than A3, B3 and C3 for air tightness, water tightness and wind load resistance, respectively.
  - .2 Glazing to be hermetically sealed triple pane, insulating glass with "solar shield Low 'e'", argon gas filled and 1/2" 'super-spacer'.
    - i. overall U-value shall not exceed 1.37 W/m<sup>2</sup>.degC / .24 W/sq.ft..degF
  - .3 Glass gauge as per manufacturer's specification for area required.
  - .4 Coordinate frames and sash to accommodate glass and glazing.
- 2.5 Hardware
- .1 Equip all units with locks.
3. EXECUTION
- 3.1 Window Installation
- .1 Install in accordance with CGSB 63-GP-3M. Site confirm all dimensions.
  - .2 Install in accordance with instructions as defined by one of three methods defined by the Manitoba Hydro's Power-Smart program requirement.
- 3.2 Caulking
- .1 Seal joints between windows and sills with sealant. Bed sill expansion joint cover plates and drip deflectors in bedding compound. Caulk between sill upstand and window frame. Caulk butt joints in continuous sills.
  - .2 Apply sealant in accordance with Section

7900: Sealants. Conceal sealant within window units, except where exposed use is permitted.

- 1. PART 1 - GENERAL
    - 1.1 Related Work
      - .1 Section 16000 Electrical
      - .2 Section 06100 Carpentry
    - 1.2 References
      - .1 Standard hardware location dimensions to Canadian Metric Guide for Steel Doors and Frames, prepared by the Canadian Steel Door & Frame Manufacturer's Association, unless indicated.
      - .2 Utilize ULC listed/labeled hardware for fire-rated doors.
    - 1.3 Delivery & Storage
      - .1 Store finish hardware in locked, clean/dry area.
      - .2 Package each item including fastenings, separately or in like groups; label each package as to identify item and location.
  - 2. PART 2 - PRODUCTS
    - 2.1 Hardware Items
      - .1 Use one manufacturer's products for all alike items.
    - 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 Provide three (3) keys for every lock and master key in Contract.
  - 3. PART 3 - EXECUTION
    - 3.1 Installation
      - .1 Furnish door and frame manufacturers with complete instructions and templates for preparation of their Work, to receive hardware. Include instructions for proper installation of each component.
      - .2 Install hardware to standard hardware location dimensions and in accordance with the current edition of the Manitoba and National Building Code.
    - 3.2 Schedules
      - .1 See Door Schedule and drawings for materials and locations.
    - 3.4 Hardware Groups
- D110 - Bi-pass closet doors (1 3/8")
- |   |                          |      |        |     |
|---|--------------------------|------|--------|-----|
| 1 | C-400 TRACK & HANGER SET |      |        | KNC |
| 1 | GUIDE SET                | C914 | X C913 | KNC |
| 2 | FLUSH PULLS              | H402 | 628    | STD |
| 1 | PLUNGER LOCK             | 209  | CHR    | CAN |

D101 - Relocated interior vestibule door

- Re-install existing hinges for new door swing.
- maintain existing stainless steel push plate.
- install new stainless steel push plate to replace existing pull handle.  
Size to match existing push plate being re-used. Use 'double-headed'  
screw/socket and grommets to finish existing holes.
- remove existing door closer and patch holes in wood.
- supply and install new door handle: D70 PD SPA 626
- relocate existing floor stop.



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1. PART 1 - GENERAL
- 1.1 Glass Specified Elsewhere .1 .2 See Section 08620 for glass in exterior windows.  
See Section 10800 for washroom mirrors.
- 1.2 Related Work .1 Section 07900 Sealants
- 1.3 References .1 ANSI/ASTM E330-90 Test method for structural performance.  
.2 ASTM C542-90 specification for lock-strip gaskets.  
.3 ASTM D2240-91 Test for rubbery property / durometer hardness.  
.4 CAN/CSGB-12.1-M90 tempered or laminated safety glass.  
.5 CAN/CSGB-12.11-M90 wired safety glass.  
.6 Flat Glass Mfgr's Association (FGMA) Glazing Manual.  
.7 Laminators Safety Glass Association Standards Manual.
- 1.4 Shop Drawings .1 Submit shop drawings in accordance with Section 01300.  
.2 Provide maintenance data, cleaning instructions, etc. for operations and maintenance manuals.
- 1.5 Delivery, Storage & Handling .1 All glass and related materials shall arrive properly packaged, marked to agree with shop drawings and bearing factory labels on each pane. Labels shall not be removed until after the final inspection.
- 1.6 Environmental Requirements .1 Install glazing when ambient temperature is 10C deg. or better.  
.2 Maintain temperature for minimum 24 hours before, during and after installation, including glazing compounds.
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Interior glass for non-ratings - 1/4" / 6mm, single paned, tempered.  
Location: sidelite for D101 @ classroom.
- 2.2 Accessories .1 Sealing compound - one component acrylic, to CAN/CSGB 19-GP-5M, gun grade, colour to match adjacent material.  
.2 Glazing Tape - Tremco 800 preformed tape (Tremco Poly Shim may be used where leg of outer stop returns more than 4.5mm.)  
.3 Setting Blocks - neoprene, Shore A, durometer hardness 80, 100mm/4" long x 10mm/7/16" thick x 6mm/1/4" high.  
.4 Glazing spines - neoprene or polyvinyl-chloride, manufacturer's standard dry glazing splines to suit hollow metal frames.  
.5 Primer sealers & cleaners - to glass mfgr's

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specification.

- 3. PART 3 - EXECUTION
- 3.1 General .1 Protect glass from damage during handling and shipping, installation and subsequent operation of glazed components. During installation, discard units with significant edge damage or other imperfections.
- 3.2 Examination .1 Verify that openings for glazing are correctly sized and within tolerance.  
.2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions and ready to receive glazing.
- 3.3 Preparation .1 Clean contact surfaces with solvent and wipe dry.  
.2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.  
.3 Prime surfaces scheduled to receive sealant.
- 3.4 Installation .1 As per manufacturer's written specification.
- 3.5 Cleaning .1 Remove glazing materials from finished surfaces.  
.2 Remove labels after final inspection.  
.3 Clean glass.  
.4 Remove sealant and compound droppings.

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 09900 Painting  
.2 Section 15000 Mechanical  
.3 Section 16000 Electrical  
.4 Section 07190 Vapour Retarder Membranes
- 1.2 Existing Conditions .1 Prior to commencing the Work, examine surfaces and conditions affecting the installation of the drywall. Make certain all anchors, blocking, mechanical and electrical Work, to be installed behind the drywall, has been installed and approved.  
.2 Do not commence the drywall application until all conditions are satisfactory and the vapour barrier installation has been inspected.
- 1.3 References .1 Do Work in accordance with CSA A82.31-M(latest edition).
2. PART 2 - PRODUCTS
- 2.1 Gypsum Board .1 Types: plain, type X - UL drywall, moisture resistant drywall.  
.2 Gauges: 1/2", 5/8"  
.3 Sizes: 4'-0"/1200mm X maximum practical length; square ends, tapered edges.
- 2.2 Metal Furring & Suspension Systems .1 Metal furring runners, hangers, tie wires, inserts, anchors to CSA A82.30-M(latest edition).  
.2 Drywall furring channels: 0.5mm core thickness, galvanized steel channels for screw attachment of gypsum board.  
.3 Resilient clip drywall furring: 0.5mm base steel thickness, galvanized steel for resilient attachment of gypsum board.
- 2.3 Fastenings & Adhesives .1 Nails, screws and staples to CSA A82.31-M(latest edition).  
.2 Rigid insulation adhesive.
- 2.4 Accessories .1 Casing beads, corner beads; 0.5mm base thickness commercial grade sheet steel with zinc Z275 finish to ASTM A525M-(latest edition), perforated flanges; one piece length per location.  
.2 Corner beads to be screwed; 'crimping' not permitted.  
.3 Acoustic sealant: to CSGB 19-GP-21M, (latest edition).  
.4 Polyethylene: to CAN/CSGB-51.33-M(latest edition)-type 2.  
.5 Joint Compound: to CSA A82.31-M(latest edition).
3. PART 3 - EXECUTION
- 3.1 Vapour Barriers & Fire Ratings .1 All vapour barriers and fire ratings to run continuously on walls / ceilings where indicated, prior to installation of non-rated interior partitions.

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- 3.2 Suspended & Furred Ceilings .1 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with CSA A82.31-M(latest edition).
- .2 Support light fixtures by providing additional suspension hangers within 6"/150mm of each corner and 2'/600mm at perimeter of fixture.
- .3 Fame with furring channels, perimeter of openings for access panels, light fixtures, diffusers & grills.
- .4 Fur for gypsum board faced vertical bulkheads within and at terminations of ceilings.
- 3.3 Gypsum Board Application .1 Do not apply gypsum board until all bucks, anchors, blocking, electrical, mechanical and vapour barriers have been installed and approved.
- .2 Apply single or double layer gypsum board to wood or metal furring or framing using screw fasteners for first layer and then for second layer. Maximum spacing of screws to be 16"/400mm.
- .3 Apply moisture resistant drywall at any washrooms with bathtubs, showers, mechanical room, laundry areas and as indicated.
- .4 Apply 1/4"/6mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board-structure where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts and in partitions where perimeter is sealed, with acoustic sealant.
- .5 Carefully lay out Work to minimize joints.
- .6 Stagger sheets so that joints on opposite side of partition do not occur on the same stud.
- 3.4 Accessories .1 Erect accessories straight, plumb, level, rigid and at proper plane. Use full length pieces where practicable. Make joints tight, accurately aligned and rigidly secured. Miter and fit corners accurately and free from rough edges. Secure at 6"/150mm o.c. using full contact adhesive for full length.
- .2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- 3.5 Control Joints .1 Construct control joints of preformed units with two back to back casing beads set in gypsum board facing and supported independently on both sides of the joint.
- .2 Provide continuous polyethylene dust barrier behind and across control joints.
- .3 Locate control joints where indicated and/or at changes in substrate construction at approximately 10m/32' spacing and 15m/50' at ceilings.
- .4 Install control joints true and straight.

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- 3.6 Expansion Joints .1 Construct expansion joints as detailed, at building expansion and control joints. Provide continuous dust barrier.  
.2 Install expansion joints straight and true.
- 3.7 Access Doors .1 Install access doors to electrical and mechanical fixtures specified in respective sections.  
.2 Rigidly secure frames to furring/framing systems.
- 3.8 Taping & Filling .1 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound, installed in accordance to manufacturer's instructions and feathered out onto panel faces.  
.2 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.  
.3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum drywall, so as to be invisible after surface finish is completed.  
.4 Sand lightly to remove burred edges and imperfections. Avoid sanding adjacent surface of board.  
.5 Completed installation to be smooth, level, plumb; free from waves and other defects and ready for surface finish.  
.6 Caulk and neatly seal around and behind fixtures, outlet boxes, pipes, conduits, etc. passing through gypsum partitions, using acoustical sealant.
- 3.9 Warranty .1 Contractor shall be responsible for repairing all cracks, damage, etc. as may be resultant from construction, i.e. shrinkage, immediately after the warranty inspection.

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 6100 - Rough Carpentry
- 1.2 Maintenance Data .1 Provide maintenance data for resilient flooring for incorporation into Manuals, as per Section 01300 - Submittals.
- 1.3 Environmental Conditions .1 Maintain air temperature and structural base temperature at flooring installation area above 20C deg. for 48 hours prior to, during and 48 hours after installation.
- 1.4 Quality Assurance .1 All Work to applicable standards published by CSA, CGSB, ASTM, trade associations or manufacturers.  
.2 All Work to be performed by qualified tradesmen, fully experienced in all aspects of the floor covering installation specified herein.  
.3 All Work to be installed in accordance with manufacturers' specifications for the type and conditions of the Work. This supercedes the requirements of this section.  
.4 If floor surfaces vary more than 3mm / 1/8" in any 3m/10' dimension, report such defects to the Contract Administrator and wait for remedial action.  
.5 All materials of a particular colour shall be from the same production run.
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Sheet vinyl:  
a) Marmoleum, 2.5mm  
b) Colour (one) to be selected from full range and may be used in combination for borders or simple patterning.
- .2 Primers / Adhesives: waterproof, of types recommended by flooring manufacturer for specific product on applicable substrate.
- .3 Sub-floor filler and leveller: trowellable, non-shrink, water-resistant, cementitious underlayment. Minimum compressive stress 4200psi/29Mpa after 28 day cure. Approved products E.P. ParaPatch & E.P. ParaPatch Additive.
- .4 Metal Edge Strips: aluminum extruded, smooth, with lip to extend under floor finish, shoulder flush with top of adjacent flooring: low profile shape (maximum 1/8"/3mm level change.) Submit sample for approval. Locate at all flooring changes in material.
- .5 Sealer & Wax: type recommended by manufacturer for material and location.
- .6 Cove cap & former: CV - Cove adjacent floor

covering 4" up wall, coved base to receive Johnsonite Vinyl Cove Cap #SCCXXA, colour - to be selected.

- .7 Rubber Cove Base: top set, rubber, min. 12'/3.5m length, 4"/100mm height. Include all pre-molded end stops and external corners. colour - Johnsonite, to be selected from full range.

3. PART 3 - EXECUTION

- 3.1 Inspection
  - .1 Ensure floors are dry by using test methods recommended by floor manufacturer.
  - .2 Flooring Contractor shall inspect substrate prior to installation and should any deficiencies be found, report to the Contract Administrator, in writing and await remedial action. Do not commence installation until defects are corrected and the Contract Administrator has approved commencement.
  - .3 Subfloors shall be fully cured, dry, smooth, level, structurally sound and free from moisture. They shall be free of alkali, dust, solvents, paint, wax, oil, grease, asphalt, adhesives, sealing compounds and any other deleterious foreign materials.
- 3.2 Substrate Treatment
  - .1 Remove subfloor ridges, bumps. Fill low spots, cracks, joints, holes and other defects with filler.
  - .2 Clean floor and apply filler; trowel and float smooth to a flat hard surface. Prohibit traffic until fully cured and dry.
  - .3 Prime, seal subfloor to manufacturer's printed specifications.
  - .4 Follow manufacturer's and as may be augmented by distributors' recommendations, instructions per applications.
- 3.3 Sheet Flooring Application
  - .1 Apply adhesive uniformly using recommended trowel. Do not spread more adhesive than can be covered by flooring, before initial set takes place.
  - .2 Lay flooring with seams parallel to building lines to produce minimum number of seams. Border widths with minimum 1/3 of full material.
  - .3 As installation progresses, and after installation, roll flooring with 45 kg minimum roller to ensure full adhesion.
  - .4 Cut flooring neatly around fixed objects and seal with Gunseal Epoxy sealant compound. Make water-tight.
  - .5 Terminate flooring at centreline of door in openings where floor finish or colour is dissimilar.
  - .6 Install metal edge strips at unprotected or exposed edges where flooring terminates.

- 3.4 Cleaning & Waxing
  - .1 Remove excess adhesive from flooring, base and wall surfaces without damage.
  - .2 Clean, seal and wax floor and base to flooring manufacturers' specification.
  
- 3.5 Protection of Finished Work
  - .1 Protect new floors from time of final set of adhesive until final inspection.
  - .2 Prohibit traffic on new flooring for 48 hours after installation.
  
- 3.6 Base Application
  - .1 Lay out base to maintain a minimum number of joints.
  - .2 Set base in adhesive tightly by using a 3kg hand roller, against wall and floor surfaces.
  - .3 Install straight and level to variation of 1:1000.
  - .4 Scribe and fit to door frames and other obstructions.
  - .5 Cope internal corners. Use pre-molded external corners for right angle external corners. Use formed straight base material for angled corners.



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1. PART 1 - GENERAL
- 1.1 Related Work
- .1 Section 05500 Metal Fabrications
  - .2 Section 09250 Gypsum Drywall
  - .3 Section 08100 Hollow Metal Doors and Frames
  - .4 Section 08210 Wood Doors
  - .5 Section 06200 Finish Carpentry
- 1.2 Responsibility
- .1 This section includes all painting of any/all items, surfaces not already prefinished.
  - .2 Contractor's acceptance of surfaces to be painted assumes his responsibility for quality of final finish.
- 1.3 Environmental Conditions
- .1 Do not paint in areas where dust is being generated.
  - .2 Store material in well vented area, between 7C-30C deg.
  - .3 Remove oily rags, waste materials, etc. subject to spontaneous combustion, in ULC approved containers and removed off-site on a daily basis.
  - .4 Handle, store, use and dispose of flammable / combustible materials in accordance with the National Fire Code of Canada.
  - .5 Adhere to all mfgrs' instructions for storage and application of paint and associated products.
  - .6 Maintain min. 270 lux lighting level on surfaces being painted.
- 1.4 Extra Materials
- .1 Submit one 4 litre can of each type and colour of paint, primer used in the Work.
  - .2 Identify colour and paint type in relation to colour schedule, plans and finish formula. Store where directed.
- 1.5 Submissions
- .1 Submit proof of specified paint delivered for usage on site.
2. PART 2 - PRODUCTS
- 2.1 Materials
- .1 Paint materials to CSGB standards listed herein.
  - .2 Paint materials for each formula to be by a single mfgr.
- 2.2 Acceptable Products
- .1 General Paint Environguard 15-030, OR 2 coats Glidden Life Master 2000
  - .2 Submit labels of supplied product.
  - .3 Others may apply for approved equal.
- 2.3 Colour Selection
- .1 Interior colours may include up to four (4) selections.
3. PART 3 - EXECUTION
- 3.1 Preparation of Surfaces
- .1 Prepare wood surfaces to CSGB 85-GP-1M.
    - i. Use CGSB 1-GP-126M (latest edition) for vinyl sealer over knots in resinous areas.
    - ii. Apply wood paste filler to nail holes and cracks.
    - iii. Tint filler to match stains for stained

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- woodwork.
  - .2 Touch up shop primer on steel to CGSB 1-GP-40M and to CSGB 85-GP-14M.
  - .3 Prepare galvanized steel and zinc coated surfaces to CGSB 85-GP-16M.
  - .4 Prepare plaster and wallboard surfaces to CGSB 85-GP-33M. Fill minor cracks with plaster patching compound.
  - .5 Prepare copper piping and accessories to CGSB 85-GP-20M.
- 3.2 Application
- .1 Sand and dust between each coat to remove defects visible from a distance of 5'/1500mm.
  - .2 Finish bottoms, edges, tops and cut-outs of doors after fitting for door surfaces.
  - .3 Finish tops of cabinets and projecting ledges, both above and below sight lines, as specified for surrounding surfaces.
  - .4 Finish closets and alcoves as specified for adjacent rooms.
  - .5 Painting coats are intended to cover surfaces perfectly. If not properly covered, apply additional coats as required.
  - .6 Paint back face of exterior wood with exterior primer to prevent warping.
  - .7 Spray application is acceptable, but only if followed immediately by rolling entire area of sprayed surface. Overspray onto adjacent surfaces, items must be cleaned to the acceptance of Contract Administrator.
- 3.3 Mechanical & Electrical Equipment
- .1 Paint exposed conduits, pipes, hangers, etc. occurring in finished areas, as well as inside millwork, shelving, etc.
  - .2 Paint plywood backboards for equipment / panels, etc. prior to their installation.
  - .3 Where occurring, keep sprinkler heads free of paint.
  - .4 Paint duct interiors where visible with one coat of primer and black matte finish coat.
  - .5 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- 3.4 Interior Finishes
- .1 Formula # 1 Concrete, exposed surfaces
    - 1 coat, clear sealer.
  - .2 Formula #2 Gypsum drywall - walls
    - 1 coat PVA primer / sealer
    - 2 coats, General Paint Eggshell Latex Coating, each 6 mils Wet, 2 mils dry OR 2 coats Enviroguard 15-030, OR 2 coats Glidden Life Master 2000, each 3.5 mils wet, 2 mils dry.
  - .3 Formula #4 Gypsum Drywall - ceilings
    - 1 coat PVA primer sealer
    - 2 coats latex - flat finish

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|-----|------------------------|--|--|
|     | .4                     | Formula #5 Wood doors, trim, etc.        | - 1 coat enamel underlay<br>- 1 coat enamel - semi-gloss   |
|     | .5                     | Formula #6 Natural wood millwork         | - 1 coat stain<br>- 1 coat alkyd sanding sealer<br>- 1 coat satin varnish  |
|     | .6                     | Formula #7 ferrous metal                 | - 1 coat primer, if not shop primed<br>- 2 coats alkyd enamel, semi-gloss  |
|     | .7                     | Formula #8 galvanized, zinc coated metal | - wash primer 1:10 vinegar and water<br>- 1 coat steel primer<br>- 1 coat latex enamel   |
| 3.5 | Exterior Finishes      | .1                                       | Formula #10 wood trim, fences, rails, etc.<br>- 2 coats, solid colour stain  |
|     |                        | .2                                       | Formula #11 hm doors, ps frames<br>- 1 coat exterior enamel<br>- 2 coats exterior enamel, alkyd, semi-gloss  |
|     |                        | .3                                       | Formula #12 unprimed ferrous metals<br>- 1 coat metal primer<br>- 1 coat exterior enamel, alkyd, semi-gloss  |
|     |                        | .4                                       | Formula #13 galvanized, zinc coated metals<br>- wash primer 1:10 vinegar and water<br>- 1 coat steel primer<br>- 1 coat exterior enamel, alkyd, semi-gloss           |
|     |                        | .5                                       | Formula #14 exterior concrete<br>- 1 coat latex block filler<br>- 2 coats '70-line' breeze exterior flat latex<br>(per General Paint, or equivalent)                 |
| 3.6 | Warranty               | .1                                       | Contractor shall be responsible for repairing cracks, damage, etc. as may be resultant from construction (i.e. shrinkage) immediately after the warranty inspection. |
| 3.7 | Stain / Sealer Colours | .1                                       | SLR-1 Concrete Floor Sealer: colour - clear  |
|     |                        | .2                                       | ST-1 Wood Stain: Olympic; colour - to be selected  |

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 06100 Carpentry  
.2 Section 06410 Millwork  
.3 Section 09250 Gypsum Drywall
- 1.2 Shop Drawings .1 Submit shop drawings in accordance with Section 01300 - Submittals.  
.2 Clearly indicate connection and anchorage details, plans, elevations, reinforcement for accessories, colour selection, hardware and installation details.
- 1.3 Quality Assurance .1 All grab bars shall comply to the Manitoba and National Building Code, current edition.
- 1.4 Product Source .1 All accessories shall be of matching design and all from a single manufacturer. All grab bars shall be concealed mounting type.  
.2 Products shall be shipped and stored in mfgr's original, un-opened cartons. Store items in locked, secure area prior to installation.  
.3 BOBRYK specified.
- 1.5 Application .1 Confirm all final locations with Contract Administrator prior to installation.  
.2 Ensure wood blocking as required, for all items.
2. PART 2 - PRODUCTS
- 2.1 Materials .1 Hand Dryers: B-705 CUB Hand Dryer  
Color to be selected.  
Two units: Foyer 108
- 2.2 Fabrication .1 Weld and grind joints flush and smooth. Use mechanical fasteners only as approved.  
.2 Where possible, form exposed surfaces from 1 sheet of stock.  
.3 Brake form sheet metal with 1.5mm bends.  
.4 Form flat surfaces without distortion, scratches or dents.  
.5 Back paint components to prevent contact with dissimilar metals.  
.6 Galvanized ferrous metal materials to CSA G164-latest edition.  
.7 Provide steel anchors and components for installation as required.
3. PART 3 - EXECUTION
- 3.2 Installation .1 Install and secure fixtures rigidly in place as follows:  
a) Stud walls: install steel back plate to wood blocking prior to drywall finish. Provide plate with threaded studs or plugs.  
b) Toilet partitions: use male / female through bolts.  
.2 Install grab bars on built-in anchors provided by mfgr. Supply templates, details &

instructions for building in anchors.

- .3 Use tamperproof screws / bolts for fasteners.
- .4 Fill units with necessary supplies before building completion.
- .5 Mounting heights and locations as shown or as per Contract Administrator.

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1. PART 1 - GENERAL
- 1.1 Related Work .1 Section 06100 Rough Carpentry  
.2 Section 06400 Architectural Woodwork  
.3 Section 09250 Gypsum Drywall
- 1.2 Shop Drawings .1 Submit shop drawings in accordance with Section 01300.  
.2 Clearly indicate connection and anchorage details, plans, elevations, reinforcement for accessories, colour selection, hardware and installation details.
- 1.3 Product Source .1 All accessories of matching design to be from a single mfr.  
.2 Products shall be shipped and stored in mfr's original, un-opened cartons. Store items in locked, secure area prior to installation.
- 1.4 Application .1 Confirm all final locations with Contract Administrator prior to installation.  
.2 Ensure wood blocking as required, for all items.
2. PART 2 - PRODUCTS
- 2.1 Coat Hooks .1 Supply and install Model 916, 7" high x 1" wide  
Foyer 108 x 4 ¼" projecting coat hooks, black in colour, as distributed by Allmar Distributors. Quantity as indicated on the drawings.
- 2.2 Egg-crate Lens .1 Supply and install continuous suspended ceiling  
Supports system 'angles' around the perimeter of the ceiling valence lighting on the north and west walls. Coordinate with electrical for supply of the egg-crate lenses.

- 1.1 General
- .1 Drawings indicate approximate location of existing mechanical equipment and services. Verify exact locations of existing mechanical equipment and services and allow for necessary relocating of noted services (or reconnection to existing services) to suit new construction.
  - .2 All Work shall conform to Manitoba Building Code and local authorities. Apply for, obtain and pay for all necessary permits.
  - .3 Coordinate installation with all related trades, Architectural drawings and reflected ceiling plans. Verify all dimensions and locations of existing equipment and services prior to proceeding with Work.
  - .4 Submit shop drawings for all equipment to Contract Administrator.
  - .5 Provide one year guarantee for all equipment.
  - .6 All connections to existing building mechanical services shall be coordinated with the Contract Administrator.
  - .7 All necessary cutting and patching shall be performed by competent sub-trades employed by Mechanical Contractor to satisfaction of Contract Administrator.
  - .8 Refer to Instructions to Bidders for requirements regarding project phasing, working hours, shut-down procedures, access, etc.
  - .9 Provide separate prices as indicated on drawings.
  - .10 Provide Milcor access doors in ceilings and walls for access to mechanical equipment. Minimum size 24" x 18".
  - .11 Prior to drilling holes and/or openings in existing structure, Contractor shall retain services of National Testing Laboratories Limited to locate and mark all structural reinforcing steel located in area where cutting or drilling is proposed. At no time shall reinforcing steel be cut without prior written approval from structural engineer qualified and licensed to practice in Province of Manitoba. No holes or openings will be permitted within area of structural drop panels located at columns.
  - .12 All interior space power hammering, drilling and other noisy Work shall be performed between hours of 6:00 p.m. and 8:00 a.m.
  - .13 Furnish to the City three (3) complete sets of manufacturer's operating and maintenance instructions for all equipment requiring maintenance. Review instructions with Contract Administrator to ensure a thorough understanding of the equipment and its operation.
  - .14 Provide a mark-up of the Contract drawings for record "As-Built" drawings, revised as required to show any changes from that originally shown.

revised as required to show any changes from that originally shown.

- .15 Provide as-built drawing on Autocad, complete with disk paid for by Contractor.
  - .16 All ductwork and piping to be installed straight, parallel to the building walls.
  - .17 Where pipes or ducts go through a roof or wall, they should be boxed-in, flashed and waterproofed. Allow for expansion and contraction of pipe.
  - .18 Pipe hangers shall be Grinnell Fig. 65 for steel pipe and Fig. CT65 for copper pipe, all with Fig. 140 threaded rod attached to Fig. 117 expansion case set in holes drilled in concrete, or attached to Fig. 225 or 227 clamp attached to joists or beams.
  - .19 Installation of Work shall be coordinated with the Contractor and shall be scheduled so as not to endanger or disturb the City or users of the building. Shutdown of existing building systems shall be coordinated with the Contract Administrator.
  - .20 All wiring for equipment specified herein shall be by the Electrical Contractor, unless otherwise noted.
  - .21 Contractor shall review all equipment requiring electrical hook-up with Electrical Contractor and electrical drawings prior to ordering equipment. Ensure proper electrical characteristics are determined for all affected and related Work.
  - .22 Where mechanical services are concealed within walls, floors or ceilings and cannot be visually identified, provide electronic scanning devices or other approved means to locate and identify concealed services prior to Work start. Make good any damage to existing mechanical services at no cost to the Contract.
- 1.2 Insulation
- .1 Insulate all domestic water piping with 1/2" Fiberglas 7 lb. density, pipe insulation with ASJ as per mfg. recommendations. Seal all breaks, joints with ASJ tape.
  - .2 All cold piping insulation shall be c/w with vapour barrier.
- 1.3 Plumbing
- .1 Provide labour, material, equipment and services necessary for and incidental to supply and installation of systems shown on drawings. Generally this shall include:
    - .1 Drainage System
    - .2 Water Supply System
  - .2 Drainage Systems



- . 1 Provide complete systems of drainage and venting to serve all fixtures, equipment, etc. as noted on drawings and in accordance with local codes.
- . 2 All drainage piping to W.C.'s shall be 4" diam. min.
- . 3 Cleanouts:
  - . 1 Install cleanouts at all changes of direction, at intervals of not over fifty feet (50) in horizontal runs, at all points where obstructions might be formed and at all points required by plumbing regulations or shown on drawings.
- . 4 Water Supply
  - . 1 Provide complete system of water supply piping as noted on drawings.
  - . 2 Grade horizontal runs of piping to drain through risers.
  - . 3 Install drain valves in mains for complete drainage.
  - . 4 Install dielectric insulating couplings between all pipes constructed of dissimilar metals.
  - . 5 Install backflow prevention devices in accordance with City of Winnipeg Backflow Prevention By-Law.
- . 5 Drain and Vent Piping
  - . 1 Pipe and fittings shall conform to standards listed in applicable Building Code (latest revision).
  - . 2 All cast iron soil pipe shall be class 4000.
  - . 3 No plastic, asbestos or aluminum pipe will be accepted unless specifically called for.
- . 6 Water Piping
  - . 1 Pipe - Type 'L' Third Party Certified hard copper tube.
  - . 2 Fittings - Wrot or cast solder joint.
- . 7 Ball Valves
  - . 1 Toyo Fig. 5049A.
- . 8 Cleanouts
  - . 1 Cleanouts in cast iron soil pipe shall consist of cast iron ferrule with brass plug having raised head.
  - . 2 Cleanouts in copper drainage tube shall be brass screwed plugs with raised head.
- . 9 Cleanout Access Cover
  - . 1 Zurn ZANB-1460-13-7" diam. polished nickel bronze frame and cover. Cleanout access covers in areas having floor finish such as V.A. Tile, Terrazzo, or carpet, shall be selected to suit finish. cooperate with appropriate trades to apply finish to cleanout covers so that they will be flush with floor, inconspicuous, and accessible.
  - . 2 Cleanouts in walls shall be located adjacent to an access door, or shall have suitably finished access cover flush with wall so as to present neat finished appearance and leave cleanout easily

accessible.

- .10 Jointing
  - .1 Make all joints in accordance with manufacturer's recommendations.
  - .2 Brace fittings necessary to prevent joints from coming apart under pressure.
  - .3 Make joints in domestic water and drainage systems with solder containing no lead. Solder material shall be Silverbrite 100 or equal consisting of combination of tin, copper and silver.
  
- .11 Cleaning and Flushing
  - .1 On completion, flush out piping system to remove any foreign material in piping.
  
- .12 Testing
  - .1 Pressure test all piping systems as follows:
    - .1 Plumbing System - in accordance with local regulations.
    - .2 Water supply piping - test with water to 100 psig at highest point of system. Maintain pressure without loss for 4 hours.
    - .3 Contract Administrator's representative shall witness tests. Give 48 hours notice in advance of tests.
  
- .13 Hangers
  - .1 Water - Grinnell CT65 plated clevis.
  - .2 Drainage - Grinnell 260 clevis.
  - .3 Install hangers 6 ft. on centre for pipes up to 1", 8 ft. on centre for pipes 1 1/4" and larger.
  
- .14 Fixtures
  - .1 S1 - Stainless Steel Sink - Kindred QSL-1515/6, 16" x 15" s.s. sink, crumb cup strainer, Waltec 27W431 gooseneck faucet, 1-1/2" 'P' trap with c.o. plug r.b. stops under counter.
  - .2 DF1 – Drinking Fountain (Barrier Free)
    - .1 Halsey Taylor - Model HAC-4FS-Q wall mounted refrigerated unit, all stainless steel enclosure, stainless steel receptor, self closing touch control, water bars front and side, automatic stream height regulator, CSA approved, vandalproof screws.
    - .2 Powers Crane P-4001 c.p. cast brass adjustable 'P' trap. Cambridge 33T301 equal.
    - .3 Speedway - c.p. flexible supply with screwdriver stop, inlet extension tube and escutcheon plate.
    - .4 Wiring by Div. 16.
  - .3 WF1 – Wash Fountain (Barrier Free)
    - .1 Bradley Terreon deep bowl wash fountain, model #TDB3103
    - .2 30" juvenile rim height, infrared controls, thermostatic mixing valve, metal clad liquid soap dispenser.
    - .3 Contractor to coordinate bowl color with City's

representative prior to ordering.  
. 4 Wiring by Div. 16.

- 1 . 4 Controls
- . 1 Provide all labour, material, plant, tools, equipment, and services necessary and reasonably incidental to completion of temperature controls systems as noted herein and/or shown on drawings.
  - . 2 All new Work related to new and existing controls shall be performed by a qualified Controls Sub-Contractor.
  - . 3 Provide new thermostat to control electric baseboard heaters as indicated on drawings.
  - . 4 Contractor shall supply and install all conduit, wire, electric relays, connections and other devices required for control circuit wiring for systems as specified herein whether line or low voltage. Electrical wiring shall be installed in conformance with CSA, ULC, Manitoba Building Code and Division 16 electrical requirements.

END OF SECTION – 15000 – MECHANICAL SPECIFICATION

PART 1 - GENERAL

1.1 General

- .1 Provide all materials, labour, plant and equipment necessary to make a complete installation as described and shown. This installation shall be left complete and ready for operation.
- .2 The entire installation shall be guaranteed for one year from date of final acceptance by the City. Replace at no additional cost any Work or material which may fail or prove defective during the guarantee period.
- .3 The installation shall conform in every respect to the rules and regulations of the latest edition of the Canadian Electrical Code and all local codes. All Work shall be uniform and high quality. All equipment supplied under this Contract shall be new and built in accordance with EEMAC standards and shall be CSA and locally approved. Provide inspection certificate upon completion of the Work.
- .4 Carefully examine all plans and specifications pertaining to this Contract and visit site to determine all factors affecting costs and include same in tender. Notify engineer of discrepancies or conflicts with any regulation before submitting price. Failing such notification, this Contractor shall meet all such requirements without extra cost to the City.
- .5 Obtain all necessary permits, pay all necessary fees, give all necessary notices and obtain approval of the electrical authorities having jurisdiction.

1.2 Shop Drawings

- .1 Submit six (6) copies of shop drawings for all equipment.
- .2 Equipment proposed shall meet the same standards of performance, quality and workmanship as that specified.

1.3 As-builts

- .1 Provide two copies of "as-built" drawings.

1.4 Operation And Maintenance Manuals

- .1 Provide data for incorporation into maintenance manual. Manual shall include instructions for all equipment supplied, copy of reviewed shop drawings and technical data such as parts lists, operating instructions, maintenance instructions, etc. Three (3) hard cover copies of maintenance manuals are to be submitted.

## 1.5 Removals

- .1 Remove all unnecessary existing electrical equipment, wiring and fixtures in those portions of the existing building which are being remodelled or demolished. The equipment may be reused on this project if, in the opinion of the Contract Administrator, such equipment is in satisfactory condition and meets the standards established. The City may select from the materials and/or equipment remaining which he wishes to retain and the remainder shall be removed from the site.
- .2 Any electrical equipment in remodelled sections or in structures removed or altered, adjacent to new Work, necessary for the operation of the existing building, shall be relocated as necessary.
- .3 All existing equipment reused shall be made good and guaranteed.
- .4 Power interruptions shall be kept to a minimum and shall be a time suitable to the building occupant(s).

## 1.6 Work in Existing Building

- .1 Co-ordination
  - .1 The building shall remain open and in normal operation during the construction period.
  - .2 Where existing services such as electrical power, fire alarm system, sound system, etc. are required to be disrupted and/or shut down, co-ordinate the shutdowns with the City and carry out the Work at a time and in a manner acceptable to them. Carefully schedule all disruption and/or shut-downs and ensure that the duration of same is kept to the absolute minimum. Submit for approval a written, concise schedule of each disruption at least 120 hours in advance of performing Work and obtain City's written consent prior to implementing.
  - .3 Should any temporary connections be required to maintain services during Work in the existing building, supply and install all necessary material and equipment and provide all labour at no extra cost. Should any existing system be damaged, make full repairs without extra cost, and to the satisfaction of the City and Contract Administrator.
  - .4 If existing equipment shown on drawings is defective it should be brought to the Contract Administrator and City's attention prior to Work completion.
- .2 Installation
  - .1 Install boxes, conduit and wiring through existing areas as required for the new installation.
  - .2 Add modules, switches, etc. in existing control panels, as required, to extend existing systems to new or renovated areas.
  - .3 Patch and repair walls and ceilings in existing areas that have been damaged or cut open due to the new electrical installation.

- .4 Where new cables or conduits have been installed through existing fire rated walls, seal opening around cables and conduit to maintain fire rating.
- .3 All existing equipment reused shall be made good and guaranteed.
- .4 Power interruptions shall be kept to a minimum and shall be a time suitable to the building occupant(s).

## PART 1 - GENERAL

### 1.1 Wiring Method

- .1 For general purpose wiring: RW90 conductors in EMT conduit. Use AC90 for fixture drops and in metal stud walls.
- .2 For connection to motors and miscellaneous mechanical equipment use liquidtight flexible conduit.
- .3 Run all conduit and cable concealed, parallel and perpendicular to building lines, stapled and/or clipped in a neat workmanlike manner.
- .4 All conductors shall be copper. Minimum conductor size shall be #12 AWG except as noted.

### 1.2 Grounding

- .1 The entire installation shall be grounded in conformance to the latest edition of the Canadian Electrical Code.
- .2 All conduit to have a separate insulated ground conductor.

### 1.3 Boxes

- .1 Outlet, junction and switch boxes shall be galvanized steel and sized according to the electrical code and to suit each application.
- .2 Provide moulded box vapour barrier: factory moulded polyethylene box for use with recessed electric boxes in exterior walls.

### 1.4 Wiring Devices

- .1 Provide wiring devices for all outlets as required and indicated. Colour and mounting to match existing.
- .2 Standard of acceptance for devices shall be as follows:
  - .1 Single pole, 2-pole, 3-way and 4-way wall mounted general purpose switches shall be premium specification toggle type 15A 125VAC. To be series Hubbell #1201, Arrow Hart #1891, Bryant #4801, Smith & Stone #4801 or Leviton #1201.
  - .2 Nema 5-15R 15A 125VAC receptacles shall be u-ground parallel slot side wired as follows:
    - .1 General purpose duplex and simplex to be series Hubbell #5262, Arrow Hart #5262, Bryant #5262, CGE #4065 or Leviton #5262.
- .3 Coverplates for devices shall be stainless steel.

### 1.5 Lighting System – General

- .1 Provide fixtures equal to those specified with lamps, suspension hardware, lenses and all other accessories required to complete the installation.
- .2 Fluorescent fixture ballasts shall be T-8 electronic type. Ballast must be listed by Manitoba Hydro as acceptable by their Power Smart rebate program.

### 1.6 Wall Box Dimmers and Speed Controllers

- .1 Wall box dimmers and speed controllers shall be supplied and installed by the Electrical Contractor. They shall be as manufactured by Lutron or approved equal and as follows:
  - .1 Dimmers (Incandescent):
    - .1 Nova NT-1000/1000 Watt
    - .2 Nova NT-1500/1500 Watt
  - .2 Unless specified otherwise all dimmers shall be 1000 Watt type. Supply dimmers to suit circuit loading.
- .2 Provide a separate neutral wire for each dimmer circuit.

### 1.7 Power Distribution System

- .1 Provide all breakers, conduit, disconnects, conductors and accessories required for the installation of panelboards as indicated on the drawing and in this specification.
- .2 Submit shop drawings in accordance with Section 16010.
- .3 Drawings to include electrical detail of panel, branch breaker type, quantity, ampacity and enclosure dimension.
- .4 In addition to CSA requirements, manufacturer's nameplate must show fault current that panel including breakers has been built to withstand.
- .5 Panelboards: to CSA C-22.2 No. 29.
- .6 Panelboards: product of one manufacturer.
- .7 250V branch circuit panelboards: bus and breakers rated for 10kA (symmetrical) interrupting capacity minimum or as indicated.
- .8 Sequence phase bussing such that circuit breakers will be numbered in consecutive order, with each breaker identified by permanent number identification as to circuit number and phase.



- .9 Panelboards: mains, number of circuits, and number and size of branch circuit breakers as indicated.
- .10 Provide panel covers for all panelboards and supply two keys for each panelboard and key panelboards alike.
- .11 Aluminum bus with neutral of same ampere rating as mains.
- .12 Mains: suitable for bolt-on 25mm wide breakers.
- .13 Multi-pole breakers shall be of one piece construction with common trip.
- .14 Provide breakers as indicated in the panel schedule and as indicated on the drawing.
- .15 All new breakers shall match panel voltage unless indicated otherwise. Circuit breakers shall be thermal magnetic type.
- .16 Nameplate for each panelboard 20 x 90mm engraved as indicated.
- .17 Complete circuit directory with typewritten legend showing location and load of each circuit.
- .18 Acceptable Manufacturers: Cutler Hammer (Westinghouse), Schneider (FPE), Square D and Siemens.
- .19 Locate panelboards as indicated and mount securely, plumb, true and square, to adjoining surfaces.
- .20 Wiring in panelboards shall be neat and set in as if laced. All neutral conductors shall be identified in the panel with their associated circuit numbers by means of Brady Markers.
- .21 All panelboards throughout the building shall be phased together such that the left-hand, centre and right-hand panelboard busses represent phases A, B and C respectively. All indicating meters shall be identified to this sequence.
- .22 Interrupting capacity of new breakers in existing panels shall match existing.

#### 1.8 Electric Heating System

- .1 Provide electric heaters equal to those specified with mounting hardware and all other accessories required to complete the installation.
- .2 Provide thermostats as specified.

### 1.9 Mounting Heights

- .1 Mounting height is centerline of equipment above finished floor. If mounting height is not indicated verify before proceeding with installation. Mount same height as existing if different from that shown here unless indicated otherwise on drawing.
- .2 Mounting heights are as follows:
  - .1 Local switches 54 inches (1350mm)
  - .2 Wall receptacles:
    - .1 general 14 inches (350mm)
    - .2 above heater 8 inches (200mm)
    - .3 above counter 7 inches (175mm)  
or splashback
    - .4 in service rooms 54 inches (1350mm)
  - .3 Computer outlets:
    - .1 general 14 inches (350mm)
    - .2 wall mounted 48 inches (1200mm)

### 1.10 Conduits and Cable

- .1 Drawings do not indicate all conduit and cable runs. Those indicated are in diagrammatic form only.
- .2 Minimum conduit size shall be  $\frac{3}{4}$ " unless indicated otherwise.
- .3 All conduits shall have a separate insulated green ground conductor.

### 1.11 Conduits, Fastenings and Fittings

- .1 One hole steel straps to secure surface conduits 50mm and smaller.
- .2 Fittings for raceways: to CSA C22.2 No. 18
- .3 Fittings: Manufactured for use with conduit specified coating same as conduit.
- .4 Factory "ELLS" where 90 degree bends are required for 25mm and larger conduits.
- .5 Steel set screw connectors and couplings. Insulated throat liners on connections.