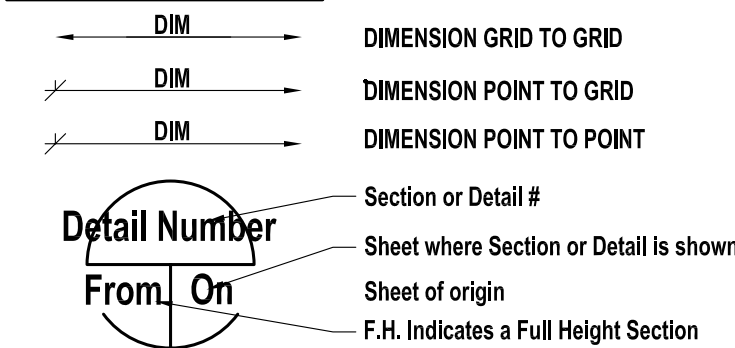


#### GENERAL NOTES

- DO NOT SCALE DRAWINGS.
- Design live loads shall not be exceeded at any time during construction. For concrete structures, design live loads may only be applied after concrete reaches its design strength.
- Construction loads must not be imposed on structure in excess of specified design live load. Design live loads may only be applied after concrete reached its design strength. The Contractor is to verify dimensions, elevations, slopes, details, conditions and other data noted on the structural drawings with conditions on the site, co-ordinate all dimensions with the architectural drawings prior to construction or fabrication of any building component, and is held responsible for reporting any discrepancies that effect structural framing to the engineer before proceeding with the work. Variations and modifications to work shown on the structural drawings shall not be carried out without written permission from the Contract Administrator.
- Modifications, alterations or substitutions must be authorized in writing by the Contract Administrator.
- The Contractor shall locate all existing site services prior to construction.
- For openings in slabs, floor, walls, roof, etc. refer to architectural, mechanical, structural and or other pertinent drawings.
- Location of construction joints not indicated on plans is the responsibility of the Contractor but approval must be obtained from the Contract Administrator before proceeding.
- The Contractor shall be responsible for the design and installation of all necessary shoring, bracing and form work. Form work for new construction shall be bridged over existing services.
- The structure and grade beams shall be braced in all directions to safely withstand all lateral forces which may be encountered during erection. The bracing shall remain in place until all permanent bracing, framing, cladding and backfill are in place.
- All codes referenced in these notes shall be of the latest applicable revision.
- All beams, angles and miscellaneous metals indicated on architectural drawings but not shown on structural drawings, shall be included in the tender price. The Contractor is responsible for confirming sizes and locations of these members with Contract Administrator prior to bid closing.
- Do not cut or drill any openings into structural members without obtaining written permission from the Contract Administrator.

#### DIMENSIONS & SYMBOLS



#### DESIGN SPECIFICATIONS

- The building is designed in accordance with the National Building Code of Canada, Current Edition.
  - Snow (Roof) 0.8(Ss) + (Sr) = 1.88 kPa
  - Importance factor = 1.15
  - Wind q(150) - 0.45 kPa

#### EXISTING STRUCTURE NOTES

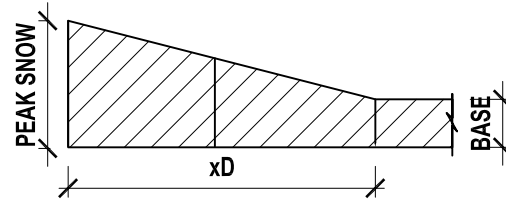
- The structural design is based upon information shown on the record drawings for the existing building and on limited visual observations on site.
- Confirm all dimensions and elevations of existing structures prior to shop drawing production and construction on-site.
- Report to the Contract Administrator discrepancies that have the potential to affect the work and obtain instruction prior to proceeding.

#### MAIN FLOOR FRAMING NOTES

- design live load = 4.8 kpa

#### MEZZANINE

- design live load = 7.2 kpa



#### EXCAVATION AND BACKFILL

- Grade beams or walls shall be backfilled with granular material.
- Excavation, sub-grade preparation and backfill for slabs on grade shall be provided in accordance with the geotechnical report included with the specifications.
- For excavation, backfill and compaction, refer to Geotechnical Engineers recommendation and geotechnical report.
- Excavation, backfill and compaction is to be supervised by a Geotechnical Engineer.
- All compaction test results are to be forwarded to Contract Administrator.

#### FRICTION PILES

- The Contractor shall confirm the location of sub-grade services prior to commencing drilling for piles.
- Piles shall be cast-in-place concrete friction piles to diameters and lengths indicated on the plan.
- Piles have been designed on the basis of shaft adhesion values shown below. Variance in soil conditions from the above shall be reported to the Contract Administrator before proceeding.
- Pile reinforcing for piles located in unheated areas shall extend the full length of the pile. The upper 8'-0" (2.5m) of all piles shall be consolidated with a mechanical vibrator.
- Pile installation shall be provided under the full time inspection of a qualified professional geotechnical engineer selected by the Contract Administrator.
- Maintain accurate record of each pile. Submit a copy of this record to the Contract Administrator.
- A copy of geotechnical Investigation report is available and included in the project specification.
- Full-length steel sleeves should be maintained on site and utilized as required during construction to maintain pile holes in a clean dry state.

ALLOWABLE SKIN FRICTION VALUES
0m (ft) to 2.5m (8 ft) - 0 kPa (PSF)
2.5m (8 ft) to 15m (50 ft) - 17kPa (355 PSF)

#### CONCRETE

- Concrete, as specified in A23-04 table-2, shall have the following properties.
  - CONCRETE PIERS & C.I.P. PILES.
    - Exposure Class: S-1
  - GRADE BEAMS AND PILE CAPS
    - 30 MPa
    - Type GU Cement
    - Max. Slump 90mm
    - Max. Aggregate 20mm
    - Air Entrainment 4% - 6%
  - STRUCTURAL SLABS
    - 30 MPa
    - Type GU Cement
    - Max. Slump 90mm
    - Max. Aggregate 20mm
  - ENTRANCE SLABS, EXTERIOR PAVING, PARKING SLABS.
    - Exposure Class C-2
- Construction joints shall be made and located so as not to significantly impair the strength of the structure. The location of construction joints shall be approved by the Contract Administrator. Slab and beam construction joint details shall be approved by the Contract Administrator.
- Provide 6" (150mm) plastic wrapped cardboard void form below all beams, walls, structural slabs and pile caps.
- Place concrete as a continuous operation stopping only at construction joints. Construction joints shall be adequately dowelled and keyed. If not provided as part of this drawing set, details and locations of construction joints shall be provided by the Contractor and reviewed by the Contract Administrator.
- Reinforcing steel must be reviewed by the Contract Administrator prior to placing concrete. The Contractor shall notify the Contract Administrator at least 48 hours (72 hours for out-of-town projects) prior to all concrete pours.
- Fins on concrete surfaces shall be removed. Honeycombed or otherwise defected concrete shall be removed sufficiently to expose sound concrete and shall be repaired as directed by the Contract Administrator.
- Timing for removal of form work to be based on strength of concrete, as determined by the testing of field cured concrete cylinders. Do not remove form work from footings before concrete has reached 50% of its design strength. For walls and columns not supporting load, remove at 60% of design strength. For suspended structural slabs, form work may be removed at 80% of design strength, provided the slab is re-shored until full strength is reached.
- Unless noted otherwise, Contractor to test concrete for each day's concreting and/or every 40 cubic meters each day concreting. Forward test results to the Contract Administrator.
- All freshly placed, consolidated concrete shall be cured & suitably protected during the curing period against damage from adverse weather conditions such as winds, precipitation and extreme temperatures in accordance with CSA standard A23.1, latest edition.

#### STRUCTURAL STEEL

- Fabricate & erect structural steel to CSA Standard CAN/CSA-S16.1
- Structural steel shapes and plates shall conform to CSA Standard CAN/CSA-G40.21, Grade 350W and CAN/CSA-G40.21, Grade 350W for H.S.S., Class C.
- All welding shall be performed by qualified welders fully approved for structural welding by the Canadian Welding Bureau in accordance with CSA Specifications W47 and W59.
- Unless shown otherwise on the Drawings, connect all flexural members (beams, channels, etc...) at each end for one half of the total uniformly distributed factored load of the laterally supported beam, in addition to the transfer of factored moments, where shown on the Drawings.
- Splicing of members not permitted unless otherwise noted.
- Where beams are continuous over supports, no holes permitted in top flange. Provide 2-3/8" (10mm) welded web stiffener plates each side of beam, aligned with column walls.
- Column base and cap plates shall be welded to columns. Provide 3/4" (20mm) thick cap plate c/w 4-3/4"Ø (20mm) bolts for all columns supporting cantilevered beams.
- Structural steel erector shall supply and install all temporary guying and bracing necessary to provide stability for the structure as a whole. These shall remain in place until floor slabs are well cured, steel roof deck is fully welded and/or permanent bracing is installed.
- Steel stairs, handrails, guardrails shall be designed by others. Fabricator shall submit shop drawings under the seal of a Professional Engineer registered in the project Province, to the Contract Administrator for approval prior to fabrication.
- Structural Steel supplier shall submit shop drawings bearing the seal of a Professional Engineer in the project Province showing all design and fabrication details of connections to the Contract Administrator for review prior to fabrication.
- Pipe sections to ASTM A53, minimum yield point 241 MPa (35 ksi).
- Bolts, nuts, and washers to ASTM A325, minimum bolt diameter 3/4" (20mm).
- Anchor bolts to ASTM A307.
- Welding of reinforcing bars to CSA W186-M1990.
- Primer to conform to the requirements of CGSB or CISC/CPMA standards.
- Grout bed under base plates to be 35 MPa non shrink grout.
- All bolted connections shall have a minimum of two bolts in each connected piece and be designed with bearing-type connections with threads included in shear plane, unless noted otherwise.
- Unless noted otherwise on plans provide 3x3x3/8" (75x75x10) angle frame from joist to joist on each side of all steel deck openings over 16" (450mm), and C8x11.5 (C200x17) frame at all mechanical and electrical units that sit on or hang from the roof or floors.
- Provide 6"x6"x1/2" (150x150x13) clip angles x 12" (300mm) long at hollow core column openings. Co-ordinate with hollow Contractor to ensure adequate bearing.
- All steel shall receive a shop coat of primer except surfaces to be concreted, welded, light zinc coated or galvanized.
- Clean all field welds after erection and touch up all unpainted surfaces with one coat of primer paint to match shop coat.
- There shall be no cutting of the structural steel members for the work of other trades without prior written approval of the Contract Administrator.
- Professional Engineer whose seal is on shop drawings shall review construction and provide a letter certifying that connections have been installed in accordance with the approved shop drawings.
- All exposed steel to be galvanized.

#### REINFORCING STEEL

- Reinforcing steel shall be new billet, deformed bars in accordance with drawings and CSA Standard CAN/CSA-G30.18 minimum yield strength to be 400 MPa, except 10W bars for stirrups and column ties may be 300 MPa.
- Reinforcing steel shall be detailed in accordance with the latest RSIC Reinforcing Steel Manual of Standard Practice.
- Lap top bars at centre span and bottom bars over supports.
- All reinforcing to be held in place and tied by the use of proper accessories such as hi-chairs, spacers, etc., to be supplied by the reinforcing steel fabricator.
- Reinforcing in concrete beams/walls and masonry bond beams to be bent 24" (600mm) around corners or use 3'-0" x 3'-0" (900mm x 900mm) corner bars.
- Frame all openings in concrete beams, walls and/or slabs with 2-20M bars (extra) all four sides. Extend bars 24" (600 mm) beyond edges of openings except as noted.
- Submit shop drawings which clearly indicate bar sizes, grade, spacing, hooks, bends, and supporting/spacing devices, etc., for review to the Contract Administrator prior to fabrication of the reinforcing steel.
- Pit Walls/Slabs shall be 8" (200mm) thick reinforced with 15M @ 12" (300mm) o.c. each way at center unless otherwise shown.
- Housekeeping pads shall be a minimum of 4" (100mm) thick and reinforced with 10M @ 12" (300mm) o.c. each way at centre unless otherwise shown.
- Prior to placing concrete, ensure all reinforcing steel is clean, free of loose scale, rust, mud, oil or other foreign material which would reduce bond.
- Heating, quenching and bending of reinforcing steel on the site is not allowed.
- Splices at points of maximum tensile stress shall be avoided wherever possible. Such splices, where used, shall be approved by the Contract Administrator, the minimum lap shall be 48 bar diameters.
- Continuous and temperature reinforcing bars shall be lapped 24 bar diameters, or 18" (450mm) minimum at splice or at corners. Terminate continuous bar at non-continuous ends with standard hook.
- Minimum clear distance between parallel bars shall be greater than the largest of the following:
  - 1.4 times bar diameter.
  - 1.4 times maximum size of aggregates.
  - 1 3/16" (30mm) minimum.
- Minimum concrete cover for reinforcing:

Exposure Condition	Exposure Class	
	N	F-1, F-2, S-1, S-2
PILES, FOOTING, RETAINING WALL, AND CONCRETE CAST AGAINST AND/OR PERMANENTLY EXPOSED TO EARTH.	--	75mm
BEAMS, GIRDERS, COLUMNS.	30mm	40mm
SLABS, WALLS, JOISTS, SHELLS AND FOLDED PLATES	20mm	40mm

#### STEEL DECK

- Unless otherwise noted, Steel Deck shall be 1 1/2" X 22 ga. (38mmx 22 ga.) thick - non-cellular, flutes at 6" (150mm) o.c. (minimum). Floor deck to have deformed webs for composite action.
- Provide Zinc-iron alloy (ZF) coated sheet steel to ASTM/A653/A653M Structural quality grade Z30 with ZF75 coating. Z275 where galvanized steel deck is specified on drawings.
- Supply all closures, cover plates and accessories.
- Design fabrication & installation of the steel deck to conform to CSA Standard S136 and the CSSBI Code of Practice.
- Welding Shall Conform to CSA Standard W59.
- Erector to be Certified to division 1 or 2.1 of CSA Standard W47.1.
- Mechanically clinch side laps at 12" (300mm) o.c. maximum. Lap end joints minimum 2" (50mm) Provide 3/4" (20mm) diameter fusion welds at 12" (300mm) o.c. at all supports. Minimum bearing on supports to be 1 1/4" (30mm). Spot prime welds immediately after welding.
- Steel deck supplier shall submit shop drawings bearing the seal of a Professional Engineer in the project province indicating
  - a) deck plan, profile, dimensions, base steel thickness, metallic coating designation, connections to supports and spacings, projections, openings, reinforcement details and accessories.
  - b) details of shoring of steel deck, such as location, time and duration of placement and removal of shoring for concrete fill decks.
- Install deck continuous over at least three spans except where otherwise pre-approved by the Contract Administrator.
- Paint all welds with an approved zinc-rich paint.
- Deck gauges shown on plan are suggested only. Supplier to provide deck gauge appropriate for the loadings shown. Deck gauge is to be increased at drift load and other high load areas as required.
- Provide steel wedges in deck flutes over joists for mechanical roof top units with wood sleepers.

#### PRECAST CONCRETE HOLLOW CORE SLABS

- The precast hollow core supplier shall coordinate with mechanical and electrical subtrades for floor openings. Openings shall be shown on precast concrete shop drawings.
- Hollow core shall be aligned and leveled before grouting keys and joints with 3:1 sand/cement. It shall then topped with 1" (25mm) concrete.
- Hollow core slabs shall be designed for the design live load in plans & general notes.
- Concrete for hollow core slabs shall have a minimum curing time of 30 days prior to installation.
- All dowels to be supplied by the precast subContractor. All dowels shall be placed by the precast subContractor unless required to be cast with cast in place concrete.
- Bearing for precast slabs shall be 4" (104mm) minimum with a tolerance of 1/2" (13mm).
- Submit shop drawings indicating panel design and details, panel layout and anchors, and panel erection details. Shop drawings shall be sealed by a Professional Engineer licensed to practice in the project Province.
- Drill drainage hole in each core of hollow core panels after installation. Patch and make good.
- Concrete topping shall have the following properties:

type _ cement	
- nominal size of coarse aggregate	10mm
- minimum compressive strength @ 28 days	25 MPa
- water/cement ratio	0.45
- slump at time and point of discharge	90-110mm
- air content	less than 3%
- Chemical admixture: in accordance with ASTM C494

#### OPEN-WEB STEEL JOISTS (O.W.S.J.)

- Design and fabricate steel joists in accordance with drawings and CSA Standards CAN/CSA-S16.1 & S136. Verify all drawings/site dimensions and conditions prior to fabrication.
- Joist members shall be fabricated using structural steel conforming to CSA Standard CAN/CSA-G40.21, Grade 300W (minimum).
- Bridging, bearing plates and angles shall be of structural steel conforming to CSA Standard CAN/CSA-G40.21 Grade 300W (minimum) unless noted otherwise.
- Welding shall be performed by qualified welders fully approved for structural welding by the Canadian Welding Bureau in accordance with CSA Standard W47.1 and W59.
- Minimum bearing length of joists to be 2 1/2" (64mm) on steel beams, 4" (102mm) on other materiel
- Strut top and bottom chords of joists at all columns.
- Weld bridging to joists, steel beams and steel plates fastened to walls.
- Unless noted otherwise on plans provide 3x3x3/8" (75x75x10) angle frame from joist to joist on each side of all steel deck openings over 16" (450mm), and C8x11.5 (C200x17) frame at all mechanical and electrical units that sit on or hang from the roof or floors.
- Provide minimum 3 1/2"x3 1/2"x5/16" (90x90x8mm) angles at top chord for support and suspension of mechanical equipment unless otherwise shown.
- Joist supplier to refer to mechanical and all other pertinent drawings for locations and weights of equipment supported by joists.
- Joist deflection due to live load shall not exceed 1/360 of the span.
- Fabricate all joists with camber to offset the deflections due to dead load.
- Submit shop drawings which clearly indicate joist spacing, depth, loading, camber, bearing, anchorage details, framed openings, accessories, etc., under the seal of a Professional Engineer registered in the project Province, to the Contract Administrator for approval prior to fabrication.
- Design joists to accommodate mechanical ducts which are located within the joist space.
- Provide Ceiling extensions where required by Architect.
- Do not connect any members to chords of joist between panel points unless chords have been designed for extra stress or an additional diagonal has been inserted at the point of connection.
- Joist to be designed for dead load of masonry walls as indicated on Arch. dwgs. Use minimum line load of 8.2 kN/m for walls up to 12" (3600mm) high. Calculate dead load of wall over 12", (3600mm).
- Professional Engineer whose seal is on shop drawings shall review construction and provide a letter certifying that connections have been provided in accordance with the approved shop drawings.
- All OWSJ to have 4" (102mm) nominal seat typical. Confirm with joist supplier.
- All OWSJ to be pre-cambered for dead load.
- All OWSJ to be designed for uplift. As per National Building Code.
- T.J. denotes tie joists. Extend top and bottom chord where indicated.

#### MASONRY

- Masonry work shall conform to CSA Standards S304.1 and A371.
- Masonry work shall comply with S304-84 masonry design for buildings (limit states design) including design testing and workmanship. Refer to S304.1 for material specifications.
- All concrete masonry shall be standard block for all walls, U/N on drawings. Unit compressive strength to be 15 MPa (Design value for grouted masonry is 7.5 MPa). Mortar shall be Type S. Provide durawall or equal every second course.
- Provide a minimum 1" (25 mm) joint at the top of masonry partition walls to allow for floor/roof deflection unless noted otherwise.
- Provide 1 1/2"x8"x1/8" (40mmx200mmx3mm) masonry strap anchors @ 16" (400mm) o.c. vertical at all columns that are within masonry walls.
- Provide block wall control joint at location shown on architects drawings. Maximum spacing to be at 20' (6000mm). Reinforce one cell on either side of joint with 2-15M vertical and fill with concrete.
- Vertical core fills to be cast in lifts of 4'-0" (1200mm) maximum. Vertical reinforcing to have a maximum length of 6'-0" (2000mm) without splicing. Lap splice 10M bars: 18" (450mm), 15M bars: 26" (650mm), 20M bars: 36" (900mm).
- Refer to architectural drawings for specialty blocks/bricks e.g. acoustic blocks/giant bricks etc.
- Contractor to be responsible for temporary bracing of all masonry components until all masonry is self supporting or necessary structural elements are in place.
- For vertical core fills and reinforcement see plans. Unless otherwise noted on plans provide 1 void core fill complete with 1-15M vertical @ 32" (800mm) o/c. Provide minimum of 2 void core fill with 1-15M each void at all ends of wall, each side of wall openings and every corner of walls. Provide minimum of 2 void core fill at W360 or smaller beam, 3 void core fill at W410 and W460 beams, 4 void core fills at W530 beams and 5 void core fill at W610 beams U.N.O. provide 2-15M vertical each void. Provide 3 void core fills, 2-15M each void at wall openings of 72" (1800mm) to 96" (2400mm) and provide 4 core fills, 2-15M each void at wall openings of 96" (2400mm) to 120" (3000mm) U.N.O. on the drawings. Provide matching dowels x 36" (900mm) long at foundation, project 18" (450) above concrete.
- Fully grout bottom three courses and top two courses.
- At top of all walls and below roof & floors, provide 2 course bond beam with 1-15M horizontal c/w knockout blocks UNO. Fill with concrete.
- MASONRY REINFORCED BLOCK LINTEL SCHEDULE U.N.O. ON THE DRAWINGS:
  - Span up to 36" (915mm), 1 course 8" (200) high, 1-10M top & bottom
  - Span 36" (915mm) to 78" (1980mm), 2 course 16" (400mm) high, 2-20M bottom 1-15M top, Extend reinforcing cage at least 16" (400mm) (2 voids) past openings. Provide minimum 20mm cover to reinforcing. Provide Min. 8" (200mm) bearing each side of opening.
- LOOSE LINTEL ANGLES FOR 3 1/2" (90) BRICK:
  - Span L1 clear span - 0 to 52" (1300mm): L 3 1/2"x 3 1/2"x 1/4" (L 90mmx90mmx6.4)
  - Span L2 clear span - 52" (1300mm) to 72" (1800mm): L5"x 3 1/2"x 5/16" (127mmx90mmx7.9mm)
  - Span L3 clear span - 72" (1800mm) to 84" (2100mm): L6"x 3 1/2"x 3/8" (152mmx90mmx10mm)
- Extend loose lintel angle 8" (200mm) past openings, typical.
- Fully grout behind anchors and wall penetrations
- Dowel horizontal bars at wall corners

THE CONTRACTOR IS TO VERIFY DIMENSIONS AND DATA NOTED ON THE STRUCTURAL DRAWINGS WITH CONDITIONS ON THE SITE. CO-ORDINATE ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS, AND IS HELD RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

THIS DRAWING IS NOT TO BE SCALED.

ALL BEAMS, ANGLES AND MISCELLANEOUS METALS INDICATED ON ARCHITECTURAL, MECHANICAL AND/OR ELECTRICAL DRAWINGS BUT NOT SHOWN OR NOTED ON STRUCTURAL DRAWINGS, SHALL BE INCLUDED IN THE TENDER PRICE. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING SIZES AND LOCATIONS OF THESE MEMBERS WITH BOTH THE ARCHITECT AND THE ENGINEER PRIOR TO TENDER CLOSING.

0	ISSUED FOR TENDER	2010.05.13	MM
NO.	REVISION	DATE	BY

THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND CAN BE REPRODUCED ONLY WITH THE PERMISSION OF THE ARCHITECT. IN WHICH CASE THE REPRODUCTION MUST BEAR THE NAME OF THE ARCHITECT.

THIS DRAWING SHALL NOT BE SCALED. FOLLOW GIVEN DIMENSIONS ONLY.

THE CONTRACTOR SHALL SATISFY HIMSELF THAT ALL DIMENSIONS AND INFORMATION SHOWN ARE CORRECT.

PRIOR TO COMMENCEMENT OF WORK REPORT ANY DISCREPANCIES TO THE ARCHITECT.

VARIATIONS AND MODIFICATIONS TO WORK SHOWN WILL NOT BE ALLOWED WITHOUT WRITTEN PERMISSION OF THE ARCHITECT.

#### CONSULTANT



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[Project # 9132]

SEAL





**APEGM**  
Certificate of Authorization  
Lavergne Draward & Associates Inc.  
No. 1912 Date: MAY 13, 2010



**CALNITSKY ASSOCIATES ARCHITECTS**

CALNITSKY ASSOCIATES ARCHITECTS INC.

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#### PROJECT TITLE

ADDITION & RENOVATION  
OF WINAKWA COMMUNITY  
CENTRE

980 WINAKWA RD, WINNIPEG

#### SHEET TITLE

#### GENERAL NOTES

DRAWN BY	SCALE	SHEET NUMBER
AP / KB / JN	AS SHOWN	S1.1
CHECKED BY	DATE	
JL / MM	2010.05.13	
PROJECT NO.	REV. DATE	REV. NO.
09-012		0