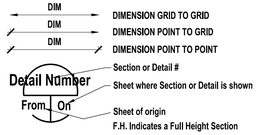
GENERAL NOTES

1. DO NOT SCALE DRAWINGS.
2. 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.
3. 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.
4. 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 Contract Administrator 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.
5. Modifications, alterations or substitutions must be authorized in accordance with B7.
6. The Contractor shall locate all existing Site services prior to construction.
7. For openings in slabs, floor, walls, roof, etc. refer to architectural, mechanical, structural and or other pertinent drawings.
8. 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.
9. The Contractor shall be responsible for the design and installation of all necessary shoring, bracing and formwork. Formwork for new construction shall be bridged over existing services.
10. 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.
11. All codes referenced in these notes shall be of the latest applicable revision.
12. All beams, angles and miscellaneous metals indicated on architectural drawings but not shown on structural drawings, shall be included in Bid price. The Contractor is responsible for confirming sizes and locations of these members with the Contract Administrator.
13. Do not cut or drill any openings into structural members without written permission from the Contract Administrator.
14. The Contractor shall retain a manufacturer's representative to provide onsite anchor installation training for all of their products specified. The structural engineer of record must receive documented confirmation that the Contractors personnel are trained prior to the commencement of installing anchors.

DIMENSIONS & SYMBOLS



DESIGN SPECIFICATIONS

1. The building is designed in accordance with the 2011 edition of the Manitoba Building Code of Canada,
   - Snow (Roof) 0.8(Ss) + (Sr) = 1.72 kPa (35.9 psf)
   - Wind q(1/50) - 0.45 kPa (9.4 psf)

CONCRETE

1. Concrete, as specified in A23.1-09, shall have the following properties.

CONCRETE STRENGTH AND MIX SPECIFICATIONS

USE	EXPOSURE CLASS	CEMENT TYPE	MINIMUM COMPRESSIVE STRENGTH	MAXIMUM WATER TO CEMENT RATIO	AIR CONTENT (%)	SLUMP	MAXIMUM AGGREGATE SIZE
PILES	S-2	HS	32 MPa AT 28 DAYS	0.45	4 - 7	90 mm	20 mm
SLABS (STRUCTURAL OR ON GRADE)	N	GU	25 MPa AT 28 DAYS	0.55	NONE	90 mm	20 mm
MASONRY GROUT / CORE INFILL	N	GU	20 MPa AT 28 DAYS	N/A	NONE	150 mm	10 mm

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.
3. Provide 6" (150mm) plastic wrapped cardboard void form below all beams,walls and pile caps.
4. 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.
5. Reinforcing steel must be reviewed by the Contract Administrator prior to placing concrete.
6. The Contractor shall notify the Contract Administrator at least 48 hours (72 hours for out-of-town projects) prior to all concrete pours.
7. 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.
8. Timing for removal of formwork to be based on strength of concrete, as determined by the testing of field cured concrete cylinders. Do not remove formwork 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, formwork may be removed at 80% of design strength, provided the slab is re-shored until full strength is reached.
9. 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.
10. All freshly placed and consolidated concrete shall be cured in accordance with CSA standard A23.1, latest edition.
11. All freshly placed, consolidated concrete shall be 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.

REINFORCING STEEL

1. Reinforcing steel shall be new billet, deformed bars in accordance with CSA Standard CAN/CSA-G30.18-M92 minimum yield strength to be 400 MPa, except 10M bars for stirrups and column ties may be 300 MPa.
2. Reinforcing steel shall be detailed in accordance with the latest RSIC Reinforcing Steel Manual of Standard Practice.
3. Lap top bars at centre span and bottom bars over supports.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. Heating, quenching and bending of reinforcing steel on the Site is not allowed.
10. 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.
11. 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.
12. Minimum clear distance between parallel bars shall be greater than the largest of the following:
    a) 1.4 times bar diameter.
    b) 1.4 times maximum size of aggregates.
    c) 1 3/16" (30mm) minimum.
13. Minimum concrete cover for reinforcing:

Exposure Condition	Exposure Class		
	N	F-1, F-2, S-1, S-2	C-1, C-2, C-3, A-1, A-2, A-3
PILES, FOOTING AND CONCRETE CAST AGAINST AND/OR PERMANENTLY EXPOSED TO EARTH.	--	75mm	75mm
SLABS	20mm	40mm	60mm

CAST IN PLACE FRICTION PILES

1. The Contractor shall confirm the location of sub-grade services prior to commencing drilling for piles.
2. Piles shall be cast-in-place concrete friction piles to diameters and lengths indicated on the plan.
3. 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.
4. Pile reinforcing for piles located in unheated areas shall extend the full length of the pile.
5. The upper 10'-0" (3000mm) of all piles shall be consolidated with a mechanical vibrator.
6. Pile installation shall be provided under the full time inspection of a qualified professional geotechnical engineer selected by the Contract Administrator.
7. Maintain accurate record of each pile. Submit a copy of this record to the Contract Administrator.
8. A copy of the geotechnical Investigation report is available and included in the project specifications.
9. Full-length steel sleeves should be maintained on Site and utilized as required during construction to maintain pile holes in a clean dry state.
10. Sonotube to be installed to a depth of 8 feet.

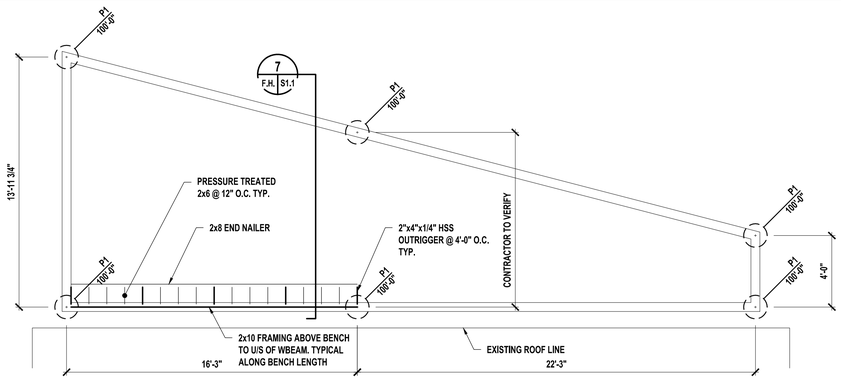
FACTORED GEOTECHNICAL RESISTANCE @ ULS VALUES
0 ft to 10ft - 0 PSF
10ft to 25ft - 250 PSF

WOOD FRAMING

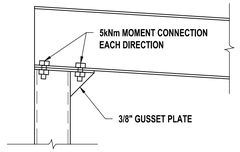
1. Sawn lumber for stud walls and lintels shall be Species Group D, Spruce Pine Fir Grade No.1/No.2 or better unless otherwise noted.
2. Joist supplier shall submit engineered shop drawings bearing the seal of a Professional Engineer in the projects Province covering the design of the wood joists prior to fabrication.
3. Truss and joists shop drawings shall indicate all metal hangers, squash blocking, bridging/blocking and web stiffeners.

STRUCTURAL STEEL

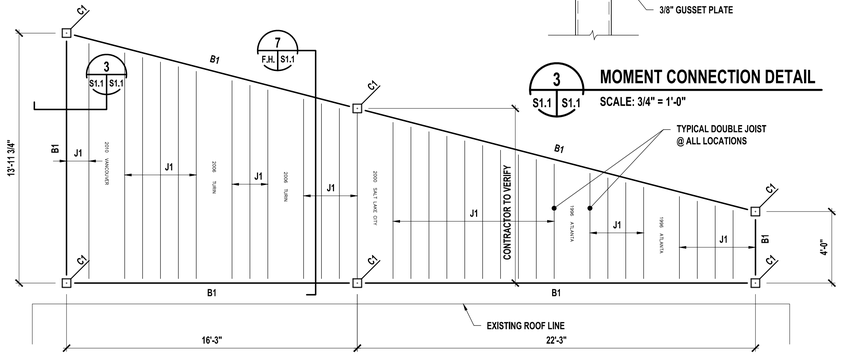
1. Fabricate & erect structural steel to CSA Standard CAN/CSA-S16-09
2. Structural steel shapes and plates shall conform to CSA Standard CAN/CSA-G40.21, Grade 350W and CAN/CSA-G40.21, Grade 350W for H.S.S., Class C.
3. All welding shall be performed by qualified welders fully approved for structural welding by the Canadian Welding Bureau in accordance with CSA Specifications W47 and W59.
4. 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.
5. Splicing of members not permitted unless otherwise noted.
6. 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.
7. 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.
8. 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.
9. 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 Architect for approval prior to fabrication.
10. 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 Architect for review prior to fabrication.
11. Bolts, nuts, and washers to ASTM A325, minimum bolt diameter 3/4" (20mm).
12. Anchor bolts to ASTM A307.
13. Welding of reinforcing bars to CSA W186-M1990.
14. Primer to conform to the requirements of CGSB or CISC/CPMA standards.
15. Grout bed under base plates to be 35 MPa non shrink grout.
16. 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.
17. All steel shall receive a shop coat of primer except surfaces to be concreted, welded, light zinc coated or galvanized.
18. Clean all field welds after erection and touch up all unpainted surfaces with one coat of primer paint to match shop coat.
19. There shall be no cutting of the structural steel members for the Work of other trades without prior written approval of the Contract Administrator.
20. 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.
21. All exposed steel to be galvanized.



1 CANOPY FOUNDATION PLAN
S1.1 | S1.1 — SCALE: 1/4" = 1'-0"



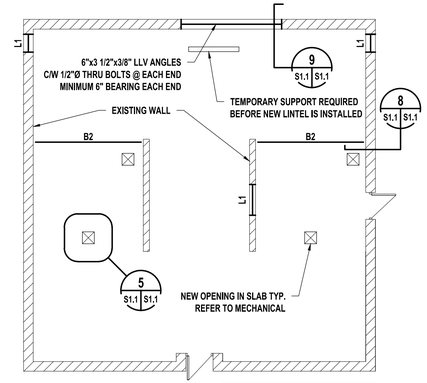
3 MOMENT CONNECTION DETAIL
S1.1 | S1.1 — SCALE: 3/4" = 1'-0"



2 CANOPY ROOF FRAMING PLAN
S1.1 | S1.1 — SCALE: 1/4" = 1'-0"

SNOW LOAD: 36 psf
DEAD LOAD: 0.72 psf

NOTE:
- ALL EXPOSED STEEL TO BE GALVANIZED
- ALL COLUMN TO BEAM CONNECTIONS TO BE DESIGNED FOR 5kNm MOMENT EACH DIRECTION



4 FLOOR PLAN
S1.1 | S1.1 — SCALE: 1/8" = 1'-0"

CONTRACTOR TO ALLOW UP TO 8 OPENINGS IN STRUCTURAL SLAB FOR NEW PLUMBING LINES.

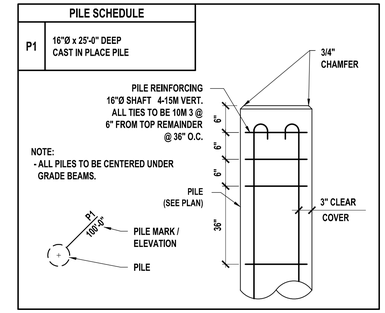
COLUMN SCHEDULE	
C1	6"x6"x1/4" HSS COLUMN

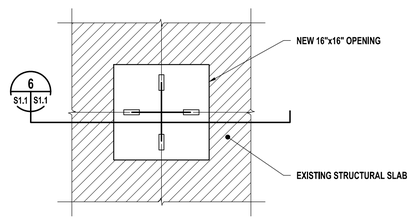
BEAM SCHEDULE	
B1	W250x33 FLUSH FRAMED
B2	3 PLY 2x8 @ U/S OF STUD WALL

JOIST SCHEDULE	
J1	2x8 @ 12" O.C. ALONG LENGTH SEE ARCHITECTURAL FOR LOCATIONS OF ALUMINUM PANELS

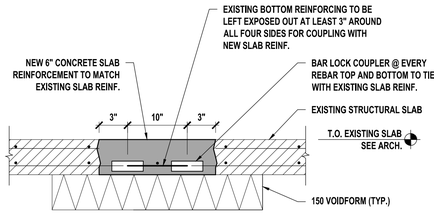
LINTEL SCHEDULE	
L1	5"x3 1/2"x3/8" LLV ANGLES C/W 1/2"Ø THRU BOLTS @ EACH END MINIMUM 6" BEARING EACH END

PILE SCHEDULE	
P1	16"Ø x 25'-0" DEEP CAST IN PLACE PILE

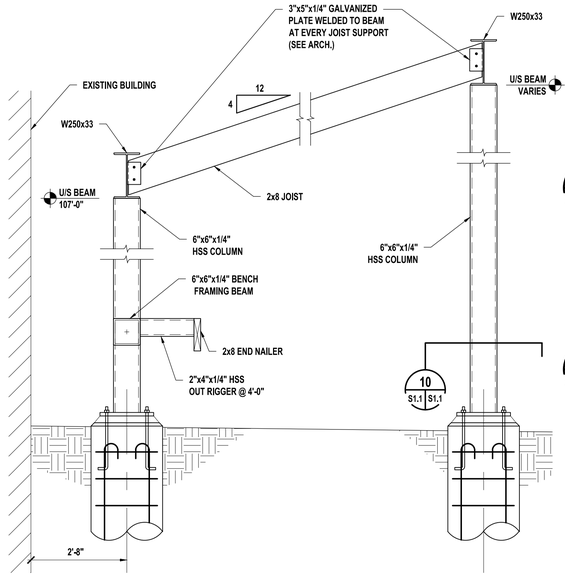




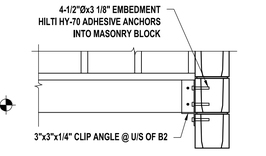
5 TYPICAL SLAB CUT
S1.1 | S1.1 — SCALE: 1"=1'-0"



6 TYPICAL NEW SLAB SECTION
S1.1 | S1.1 — SCALE: 1"=1'-0"

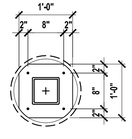


7 FULL HEIGHT SECTION
F.H. | S1.1 — SCALE: 3/4" = 1'-0"



8 TYPICAL BEAM TO MASONRY CONNECTION
S1.1 | S1.1 — SCALE: 3/4" = 1'-0"

9 LINTEL DETAIL
S1.1 | S1.1 — SCALE: 3/4" = 1'-0"



10 TYPICAL BASE PLATE DETAIL
S1.1 | S1.1 — SCALE: 3/4" = 1'-0"

APEGM
Certificate of Authorization
Lavergne Draward & Associates Inc.
No. 1912 Date: MARCH 14, 2014

No.	DATE	REVISION / ISSUANCE
1	14. 03. 14	ISSUED FOR CONSTRUCTION

Seal

PROVINCE OF MANITOBA — JULIEN LAVERGNE — MARCH 14, 2014 — REGISTERED PROFESSIONAL ENGINEER

Architect

| x | architecture inc.
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Engineer

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Project Number: 13039

BID OPPORTUNITY 180 - 2014

Project

CLARA HUGHES PARK
FACILITY REDEVLOPMENT
281 HENDERSON HIGHWAY

Sheet Title

GENERAL NOTES, PLANS & SECTIONS

Project No. 1251

Date MARCH 14. 2014

Sheet **S1.1**