

**A. GENERAL**

- The stability of the slab on grade is dependent on the soil, which is supporting it. Some movement and cracking of the slab and other building components can be expected. The amount or frequency of movements cannot be accurately predicted due to unknown and/or uncontrollable factors.
- All dimensions shall be checked and verified prior to commencing construction.
- Confirm the location of all sub-grade services prior to commencing site work.
- Granular fill under slabs to be compacted to 98% standard proctor density unless noted otherwise.
- The structure 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 walls and structural members with roof deck are in place.
- All exterior back-fill to be placed only after main floor construction has been completed and basement floor slab cast.

**B. FOUNDATION - PRECAST DRIVEN PILES**

- All pre-cast driven piles are designed for maximum capacity as follows:  
12"ØØmm Hexagonal - 120 KIPB  
14"ØØmm Hexagonal - 140 KIPB  
16"ØØmm Hexagonal - 180 KIPB
- If any measurable up-heaving occurs to a pile during the driving of adjacent piles, the pile is to be re-driven to the original elevation and set.
- Piles shall be cut off square and rest for a minimum of 18 inches strand projection from the pile. Splicing or splitting of the top of the pile shall be cause for rejection.
- Cut of piles, defective or piles, which are damaged in handling or driving will not be accepted. Additional piles shall be substituted by the piling contractor at no extra cost to the owner.
- At time of driving, concrete shall be a minimum of 7 days old with a strength of 35 MPa.

**C. CONCRETE**

- All concrete work shall be in accordance with CAN3-A23.1 - concrete materials and methods of concrete construction.
- Concrete strengths:

Component	Cement Type	28 Day Strength MPa	Slump mm	Maximum Aggregate mm	Cover for Reinforcing Steel mm
Grade Beams	10 Normal Portland	30	40	20	50
Beams	10 Normal Portland	25	40	20	40
Slabs (on grade)	10 Normal Portland	25	40	20	40 Top
Slabs (structural)	10 Normal Portland	25	40	20	40 Top and bottom
Masonry Fill	10 Normal Portland	30	200	10	
Extr. Side-walk	10 Normal Portland	32	40	20	40 Top
Footings	50 Sulfate Resistant	32	40	20	75

- Air entrainment to conform to requirements of CAN3-A23.1.
- Construct form work, shoring and bracing to meet design and code requirements, accurately, so that resultant finished concrete conforms to shapes, lines and to dimensions indicated on the drawings.
- Void forms under slabs shall be wax coated void forms to thickness indicated, "WAXMATT" or approved equal, having a minimum compressive strength of 10 MPa and wrapped on all sides with polyethylene.
- Void forms under beams shall be low density polystyrene bead board.
- Construction joints, pour scheduling and work procedures shall be discussed with the consultant prior to commencing construction.
- For cold weather concreting all ice, snow and frost shall be removed from forms and the temperature of all contact surfaces shall be raised above 10°C for 24 hours prior to casting concrete. Concrete shall be not less than 10°C for 5 days and not less than 5°C for an additional 5 days.
- Notify the consultant, 24 hours prior to pouring concrete.
- Three concrete test cylinders and one slump test shall be taken for every 75 cubic meters or each day's concrete is placed, whichever is the greater. Testing shall be performed in accordance with CAN3-A23.2.

**D. REINFORCING STEEL**

- Perform concrete reinforcing work in accordance with CAN3-A23.3 - unless indicated otherwise.
- All reinforcing bars shall be high strength deformed bars with a minimum specified yield strength of 420 MPa or equal in accordance with CSA G30.2, except stirrups and ties which shall be intermediate grade deformed bars with a minimum specified yield strength of 300 MPa or equal in accordance with CSA G30.2. Welded wire fabric to be plain type, conforming to CSA G30.9.
- Locate reinforcing splices not indicated on drawings at points of minimum stress. Locations of splices to be approved by consultant.
- Before placing ensure reinforcing is clean, free of loose scale, dirt or other foreign coating which would reduce the bond to concrete.
- Shop drawings shall be submitted which clearly indicate bar sizes, spacings, locations and quantities of reinforcing steel and wire fabric, bending and cutting schedules, and supporting and spacing devices for rebar prior to fabrication of the reinforcing steel. Detail in accordance with the latest ACI detailing manual.
- All openings in cast-in place concrete shall be reinforced with 2 - 19 M bars, all sides. All openings not shown on structural drawings shall be approved by the engineer prior to construction.

**E. JOISTS**

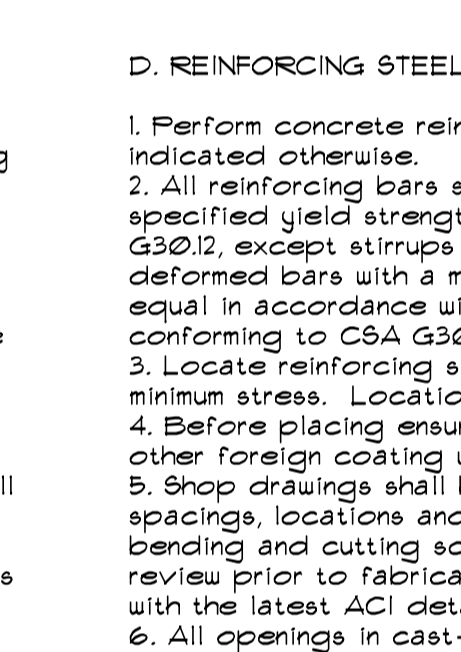
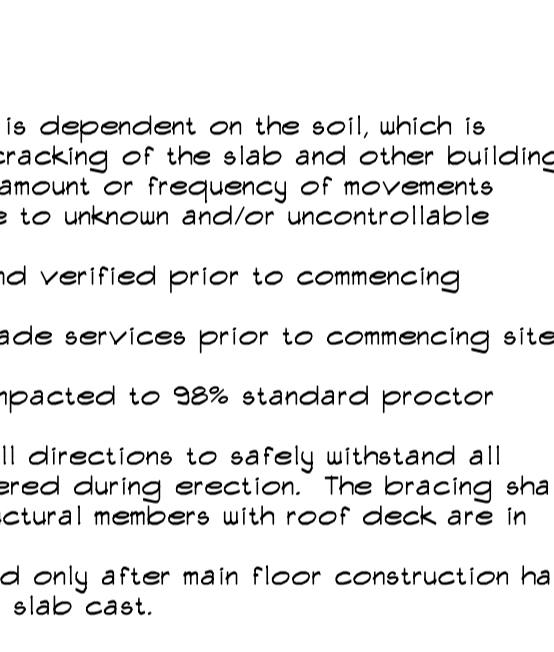
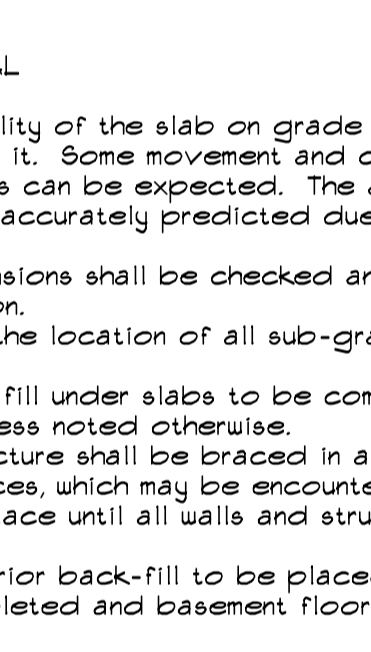
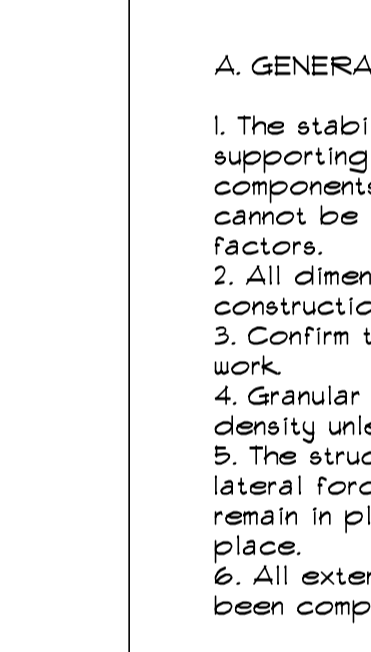
- Design and fabricate steel joists in accordance with drawings and CSA Standard S16 (latest), verify all drawings/size dimensions and conditions prior to fabrication.
- Joist members shall be fabricated using structural steel conforming to CSA Standard G40.21-300U (minimum).
- Bridging, bearing plates and angles shall be of structural steel conforming to CSA Standard G40.21-300U (minimum).
- Welding shall be performed by qualified welders fully approved for structural welding by the Canadian Welding Bureau in accordance with CSA Standards W47 and W59.
- Minimum bearing length of joists to be 64 mm on steel beams and 100 mm on masonry walls.
- Brut top and bottom chords of joists at all columns.
- Use bridging to joists, steel beams and steel plates fastened to walls.
- Install 15 x 15 mm angle framing around all roof openings greater than 450 mm. Refer to mechanical drawings for location and extent of openings required.
- Provide minimum 90 x 90 x 8 mm 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 plus 1/2 live load.
- Supply all components with 1 coat of shop primer conforming to C.I.S.C./P.M.A. 1-73A or equivalent unless noted otherwise.
- Submit shop drawings which clearly indicate joist splicing, depth loading, camber, bearing, anchorage details, framed openings, accessories, etc., under the seal of a professional engineer registered in the project province, to the architect 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.

**F. STEEL DECK**

- ROOF DECK - 1 1/2" x 230 inches non-cellular deck with flutes at 6 inches O.C. Provide standard wiped coat ZF015.
- FLOOR DECK - 1 1/2 inches x 230 inches non-cellular high bond deck with flutes at 6" O.C. Provide at 6" O.C. Provide standard galvanized coating Z75.
- Supply all closures, cover plates and accessories.
- Mechanically clinch side caps at 6 inches maximum. Provide 3/4 inch diameter fusion welds at 2 inches O.C. at all supports. Minimum bearing on supports to be 1 1/2". Spot prime welds immediately after welding.
- Welds to conform to C985 Code of Practice, latest edition.
- Eractor to be certified to division 1 or 2 of CSA W47.1.

**G. MASONRY**

- Masonry mortar shall be type S based on property and proportion specifications of CSA M115 or a 28 day strength of 1800 psi.
- Materials used in concrete masonry shall conform to CSA A163.
- Provide continuous bond beams with 2 - 19M bars in 20 MPa concrete at the top of masonry walls and as indicated on the drawings.
- Provide concrete filled masonry lintel blocks for openings as per masonry lintel schedule on drawings.
- At lintel locations fill block two courses deep with 20 MPa concrete at bearing ends and unless otherwise indicated.
- Concrete strength to be 20 MPa at 28 days, type 10 cement for all concrete fill unless otherwise noted.
- Masonry block reinforcing - provide "DUR-O-WALL" or "BLOCK-LOK" ladder type, standard 3/16" side rods and cross bars, welded to ASTM A62 for cold drawn steel. Use reinforcing at maximum spacing of 16".
- Masonry reinforcement and tying shall be in accordance with CAN3-5324-M78.



**WIND GIRTS SCHEDULE**

MARK	MEMBER SIZE	REMARKS
①	102 x 102 x 4.8 H86	
②	102 x 102 x 8.0 H86	
③	121 x 121 x 6.4 H86	
④	102 x 82 x 6.4 H86	
⑤	102 x 82 x 9.5 H86	
⑥	203 x 152 x 11.0 H86	LONG DIMENSION VERTICAL
⑦	203 x 152 x 13 H86	LONG DIMENSION VERTICAL

**THE CITY OF WINNIPEG**

OFFICE ADDITION AND RENOVATION  
1155 PACIFIC AVENUE  
WINNIPEG, MANITOBA

**FRIESEN TOKAR ARCHITECTS**

EXTERIOR GIRTS ELEVATIONS AND DETAILS  
GENERAL NOTES

**S4.1**

**APEGM**  
Certificate of Authorization  
Kowalchuk Consulting Engineers Ltd.  
No. 1777 Expiry April 30, 2005

**Kowalchuk**  
Consulting Engineers Ltd.

Drawings and specifications are the property of the architect. No reproduction may be made without the permission of the architect and when made must bear his name. All prices to be returned to the architect. The contractor shall verify dimensions and data meet herein with conditions on the site and is not responsible for reporting any discrepancy to the architect for adjustment. This drawing shall not be used for building purposes unless countersigned by:

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