

FOUNDATION

- CENTER PILES ON GRADE BEAM UNLESS OTHERWISE NOTED.
- CAST-IN-PLACE PILES TO BE A CLASS S-2 EXPOSURE (32 MPa @56d). (SEE TABLE 1, A23.1-04)
- A GEOTECHNICAL ENGINEER IN EMPLOY OF THE OWNER SHALL INSPECT THE PILE INSTALLATIONS.
- DESIGN SKIN FRICTION BASED ON VALUE: 14.4 KPa. (300 PSF)

CONCRETE

- ALL CONCRETE CONSTRUCTION, COLD WEATHER CONSTRUCTION & CONCRETE TESTING TO BE IN ACCORDANCE WITH THE LATEST EDITION OF CSA STANDARDS A23.1 AND A23.2.
- ALL CONCRETE TO BE NORMAL WEIGHT HARD ROCK CONCRETE WITH A MINIMUM 28 DAY, OR 56 DAY COMPRESSIVE STRENGTH AS NOTED IN TABLE 2, A23.1-04.
- CONCRETE CLASSES OF EXPOSURE (REFER TO TABLE 1, A23.1-04):

A. PILE CAPS.....CLASS S-2 EXPOSURE (32 MPa @56d)

- CONCRETE SLUMP TO BE COORDINATED BETWEEN CONTRACTOR AND CONCRETE SUPPLIER CONSIDERING THE PERFORMANCE CRITERIA AND THE CONTRACTOR'S CRITERIA FOR CONSTRUCTION AND PLACEMENT.
- MISCELLANEOUS CONCRETE ELEMENTS (PITS, TRENCHES, ETC.) TO BE MINIMUM 6" (150mm) THICK REINFORCED WITH 10M @ 12" (300mm) O/C EACH WAY UNLESS NOTED OTHERWISE.

REINFORCING

- REINFORCING STEEL SHALL BE GRADE 400 DEFORMED NEW BILLET STOCK CONFORMING TO LATEST CSA SPECIFICATION G30.18-M92 (R2002). WELDED WIRE MESH SHALL CONFORM TO CSA G30.5-M1983, (R1991). GRADE 300 STEEL MAY BE USED FOR ALL STIRRUPS AND TEMPERATURE STEEL.
- CONCRETE COVER TO BE AS FOLLOWS:
 - CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 75mm (3").
 - EXPOSED TO EARTH OR WEATHER 50mm (2").
 - NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
 - SLABS 20mm (3/4")
 - BEAMS 40mm (1 1/2")
 - CONCRETE COLUMNS 50mm (2")
- TOP STEEL IN GRADE BEAMS TO BE SPLICED AT CENTER SPAN AND BOTTOM STEEL TO BE SPLICED OVER SUPPORTS. SPLICE LENGTHS:
 - TENSION ZONE SPLICE TO BE AVOIDED WHEREVER POSSIBLE, BUT IF REQUIRED, LENGTH SHOULD BE SPECIFIED BY THE DESIGN ENGINEER.
 - COMPRESSION ZONE SPLICE SHOULD NOT BE LESS THAN 30 BAR DIAMETERS.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL ROLLED SECTIONS AND STRUCTURAL PLATES SHALL CONFORM TO THE LATEST EDITION OF CSA STANDARDS G40.21-M 350W. ALL HOLLOW STRUCTURAL SECTION SHALL CONFORM TO THE LATEST EDITION OF CSA STANDARD G40.21-M 350W.
- ALL ANCHOR BOLTS SHALL CONFORM TO THE LATEST EDITION OF ASTM A307 UNLESS OTHERWISE NOTED. BOLTED CONNECTION SHALL BE TORQUE-TESTED IN ACCORDANCE WITH THE LATEST EDITION OF CSA S16.1. ANCHOR BOLTS TO BE 3/4"Ø x18" C/W 3" HOOK.
- ALL WELDERS AND WELDING PROCEDURES TO BE CERTIFIED BY CANADIAN WELDING BUREAU.

ROOF DECK

- ROOF DECK TO BE 1 1/2" DEEP (22 Ga.), ZINC COATED Z375, TRANSVERSE WELDS AT 12" O/C. SIDE LAP BUTTON PUNCH AT 24" O/C. UNLESS OTHERWISE NOTED ON DRAWINGS OR IN SPECIFICATIONS.
- STEEL ROOF DECK TO COVER THREE SPANS MINIMUM AND TO ACT AS A STRUCTURAL DIAPHRAGM.
- ALL ROOF DECK OPENINGS 400mm x 400mm OR LARGER TO BE REINFORCED.

ITEMS EMBEDDED IN CONCRETE

SEE ALSO CSA-A23.1 - CLAUSE 12.5
EXCEPT WHEN APPROVED BY THE STRUCTURAL ENGINEER, PIPES, CONDUITS, AND SLEEVES EMBEDDED IN CONCRETE SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:

- GENERAL
 - NOT WITHSTANDING THE SATISFYING OF THESE GUIDELINES, THE CONDUIT, SLEEVES, PIPES ETC. SHALL NOT IMPAIR THE STRUCTURAL STRENGTH AND SHALL BE MOVED IF SO DIRECTED BY THE STRUCTURAL ENGINEER.
 - CENTERLINE SPACING TO BE NOT LESS THAN 3 DIAMETERS.
 - CENTERLINE SPACING BETWEEN PARALLEL CONDUIT AND REINFORCING BARS TO BE 3 DIAMETERS.
 - ADD REINFORCING AT POINTS OF CONGESTION AS DIRECTED BY THE STRUCTURAL ENGINEER.
- FOR SLABS - CONDUITS IN THE PLANE OF THE SLAB:
 - LOCATE BETWEEN TOP AND BOTTOM REINFORCING. (WHERE APPLICABLE)
 - MAXIMUM SIZE IN ONE LAYER TO BE NOT MORE THAN 1/4 OF CONCRETE THICKNESS.
 - THREE LAYERS OR MORE CROSSING WILL NOT BE PERMITTED.
- FOR WALLS - CONDUIT/ PIPES NOT ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

NON-STRUCTURAL ELEMENTS

- "NON-STRUCTURAL" OR "SECONDARY STRUCTURAL" ELEMENTS ARE NOT THE RESPONSIBILITY OF TOWER ENGINEERING GROUP. THEY ARE DESIGNED, DETAILED AND REVIEWED IN THE FIELD BY OTHERS. THEY APPEAR ON DRAWINGS OTHER THAN THOSE OF TOWER ENGINEERING GROUP WHERE STRUCTURAL ENGINEERING RESPONSIBILITY IS REQUIRED FOR THESE ELEMENTS. THIS SHALL BE PROVIDED BY SPECIALTY STRUCTURAL ENGINEERS, WHO SHALL ALSO PROVIDE ANY LETTERS REQUIRED BY BUILDING PERMIT AUTHORITIES.
- EXAMPLES OF NON-STRUCTURAL ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
 - ARCHITECTURAL COMPONENTS SUCH AS GUARDRAILS, HANDRAILS, CEILINGS, MILLWORK ETC.
 - LANDSCAPE ELEMENTS SUCH AS BENCHES, LIGHT POSTS, PLANTERS, ETC.
 - CLADDING, GLAZING, WINDOW MULLIONS, INTERIOR STUD WALLS AND EXTERIOR STUD WALLS.
 - ARCHITECTURAL PRECAST, PRECAST CLADDING.
 - MECHANICAL AND ELECTRICAL EQUIPMENT, COMPONENTS, AND THEIR ATTACHMENT DETAILS.
 - ELEVATORS AND CONVEYING SYSTEMS.
 - BRICK OR BLOCK VENEERS AND THEIR ATTACHMENTS.
 - NON-LOAD BEARING MASONRY.
 - NON-STRUCTURAL CONCRETE TOPPING
 - ALUMINUM SKYLIGHTS.
- SHOP DRAWINGS FOR NON-STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO TOWER ENGINEERING GROUP THESE DRAWINGS WILL BE REVIEWED ONLY FOR THE EFFECT ON THE PRIMARY STRUCTURAL SYSTEM.

DESIGN LOADS

SNOW LOAD	S _s = 39.7 PSF	S _r = 4.2 PSF		
WIND LOAD	9.4 PSF (q50)	7.3 PSF (q10)		
SEISMIC LOADS	PGA = 0.12	So(0.5) = 0.056	So(1.0) = 0.023	So(2.0) = 0.006
	PGA = 0.059			

FLOOR LOADS N/A
CONTRACTOR TO ENSURE THAT CONSTRUCTION LOADS DO NOT EXCEED DESIGN LOADS.

ABBREVIATIONS

ALT.----- ALTERNATE	N.T.S.----- NOT TO SCALE
BOT.----- BOTTOM	O/C----- ON CENTER
B.W.----- BOTH WAYS	R/W----- REINFORCED WITH
C/W----- COMPLETE WITH	S.D.L.----- SUPERIMPOSED DEAD LOAD
D.L.----- DEAD LOAD	SIM.----- SIMILAR
E.E.----- EACH END	S.O.G.----- SLAB ON GRADE
E.F.----- EACH FACE	STAG.----- STAGGER
E.S.----- EACH SIDE	S.J.----- STRUT JOIST
E.W.----- EACH WAY	TYP.----- TYPICAL
H.1E----- HOOK ONE END	T/O----- TOP OF
H.2E----- HOOK TWO ENDS	TIE----- TIE ONE END
H & V----- HORIZONTAL AND VERTICAL	T & B----- TOP AND BOTTOM
HORIZ.----- HORIZONTAL	T & C----- TENSION AND COMPRESSION
L.L.----- LIVE LOAD	U.N.O.----- UNLESS NOTED OTHERWISE
MAX.----- MAXIMUM	VERT.----- VERTICAL
MIN.----- MINIMUM	

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ALL DRAWINGS, PLANS, MODELS, DESIGNS, SPECIFICATIONS AND OTHER DOCUMENTS PREPARED BY THE CONTRACT ADMINISTRATOR AND USED IN CONNECTION WITH THE PROJECT ARE INSTRUMENTS OF SERVICE FOR THE EXECUTION OF THE PROJECT, AND ARE AND REMAIN THE PROPERTY OF THE CONTRACT ADMINISTRATOR, WHETHER THE PROJECT IS EXECUTED OR NOT, AND THE CONTRACT ADMINISTRATOR RESERVES THE COPYRIGHT THEREIN AND IN THE WORK EXECUTED THEREFROM. SHALL NOT BE USED FOR ANY OTHER PROJECT, EXCEPT ONLY FOR GENERAL REFERENCE PURPOSES FOR ADDITION OF ALTERATION TO THE WORK SHOWN IN THEM, AND SINCE SUCH DOCUMENTS ARE "DESIGN" DOCUMENTS ONLY AND MAY NOT REPRESENT THE ACTUAL PROJECT "AS CONSTRUCTED", USE OF THESE DOCUMENTS FOR GENERAL REFERENCE PURPOSES IS AT THE SOLE RISK OF THE PARTY USING THEM; SHALL NOT BE COPIED WITHOUT THE WRITTEN CONSENT OF AN AUTHORIZED REPRESENTATIVE OF THE CONTRACT ADMINISTRATOR.

FIELD REVIEW BY THE CONTRACT ADMINISTRATOR

THE CONTRACT ADMINISTRATOR PROVIDES FIELD REVIEW ONLY FOR THE WORK SHOWN ON THESE STRUCTURAL DRAWINGS. THIS REVIEW IS NOT A "FULL TIME" REVIEW BUT IS A PERIODIC REVIEW AT THE SOLE DISCRETION OF THE CONTRACT ADMINISTRATOR'S ENGINEERS IN ORDER TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS PREPARED BY THE CONTRACT ADMINISTRATOR. FIELD REVIEW BY THE CONTRACT ADMINISTRATOR IS NOT CARRIED OUT FOR THE CONTRACTOR'S BENEFIT, NOR DOES IT MAKE THE CONTRACT ADMINISTRATOR GUARANTORS OF THE CONTRACTORS WORK. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACT ADMINISTRATOR SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OF FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

THE CONTRACT ADMINISTRATOR WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON THE CONTRACT ADMINISTRATOR'S DRAWINGS. THE EXTENT OF THIS REVIEW IS AT THE SOLE DISCRETION OF THE CONTRACT ADMINISTRATOR'S ENGINEER AND IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMANCE WITH THE STRUCTURAL DESIGN CONCEPT. THE REVIEW IS NOT AN APPROVAL OF THE DESIGN, DETAILS AND DIMENSIONS INHERENT IN THE SHOP DRAWINGS. RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OF FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.

GENERAL NOTES

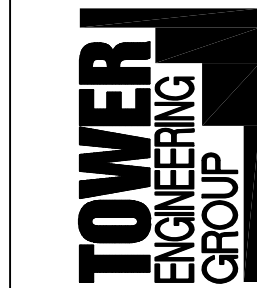
- THIS SET OF DRAWINGS SHOWS THE COMPLETED PROJECT. THEY DO NOT INCLUDE COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORM WORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.
- THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" OR "ISSUED FOR TENDER" IN THE REVISION'S COLUMN BY THE CONTRACT ADMINISTRATOR.
- THE INFORMATION ON THIS DRAWING SHALL NOT BE USED FOR ANY OTHER THAN THE SPECIFIED WORKS OR PART OF THE WORKS FOR WHICH IT HAS BEEN AUTHORIZED BY THE CONTRACT ADMINISTRATOR.
- SECTION MARKER SHOWN THUS  MEANS SECTION # SHOWN ON DRAWING SHEET S-#.
- SEE ARCHITECTURAL DRAWINGS FOR FLOOR AND ROOF ELEVATIONS, RECESSED, DRAINAGE SLOPES, DETAILED DIMENSIONS FOR DOORS, WINDOWS AND OTHER OPENINGS ETC.
- SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, NAILERS, INSERTS, ETC. TO BE ENCASED IN CONCRETE.
- THE CONTRACTOR SHALL REVIEW ALL THE DRAWINGS AND CHECK DIMENSIONS BEFORE CONSTRUCTION. REPORT DISCREPANCIES BETWEEN STRUCTURAL AND OTHER DISCIPLINES DRAWINGS FOR CLARIFICATION.
- DO NOT CUT OR DRILL ANY OPENINGS IN STRUCTURAL MEMBERS WITHOUT THE WRITTEN PERMISSION OF THE CONTRACT ADMINISTRATOR. CONTRACTOR TO PROVIDE APPROPRIATE ATTACHMENTS AND CONNECTIONS FOR MECHANICAL, ELECTRICAL, AND OTHER SERVICES WITHOUT CUTTING OR DRILLING.
- REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND LANDSCAPE DRAWINGS FOR LOCATIONS, CONFIGURATIONS, EXTENT, AND SIZES OF ALL CURBS, UPSTANDS, DOWNTURNS: AND FOR OPENINGS THROUGH FLOORS AND WALLS FOR DUCTS.
- FIRE RESISTANCE RATINGS:
SEE ARCHITECTURAL DRAWINGS AND SPECIFICATION FOR PRECISE LOCATION OF REQUIRED FIRE RESISTANCE RATINGS.
- THE CONTRACTOR SHALL PROVIDE REASONABLE NOTICE TO THE CONTRACT ADMINISTRATOR PRIOR TO POURING CONCRETE OR CONCEALING ANY STRUCTURAL COMPONENTS. THE PURPOSE OF THIS NOTICE IS TO ENABLE THE CONTRACT ADMINISTRATOR TO CONDUCT ANY REQUIRED FIELD REVIEWS.
- THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE CONTENT AND RECOMMENDATIONS OF THE GEOTECHNICAL REPORTS.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL COMPONENTS TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS TO INCLUDE SEAL AND SIGNATURE OF A PROFESSIONAL ENGINEER FOR DESIGN OF COMPONENTS AND/ OR CONNECTIONS AS REQUIRED.

ORIGINAL STAMPED BY: N. MARTINEZ, P. ENG.
DATE: 2009.09.10

3.	ISSUED FOR TENDER AND CONSTRUCTION	09/10/09	LZ
2.	ISSUED FOR OWNERS REVIEW	08/05/09	LZ
1.	ISSUED FOR REVIEW	08/04/09	LZ
NO.	REVISIONS	DATE	BY

CONSULTANT

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PROJECT
TRAILHEAD SHELTER WINNIPEG, MB

DRAWING
GENERAL NOTES

DESIGNED: LZ	DRAWING NO. S1.0 REVISION
DRAWN: LZ	
CHECKED: MN	
SCALE: AS NOTED	
DATE: 08/04/09	
PROJECT NO.: 9200	



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