

GENERAL NOTES

1. READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER PERTINENT CONTRACT DOCUMENTS.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VERIFY DIMENSIONS BEFORE BEGINNING CONSTRUCTION AND REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS.
3. THE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA 1995, ITS SUPPLEMENTS AND THE LATEST EDITIONS OF REFERENCED CODES AND STANDARDS THEREIN, UNLESS NOTED OTHERWISE.
4. NOTIFY THE ENGINEER A MINIMUM 48 HOURS IN ADVANCE FOR REVIEWS.
5. DRAWINGS SHOW COMPLETED STRUCTURE ONLY. PROVIDE TEMPORARY BRACING FOR CONSTRUCTION LOADING CONDITIONS AND STABILITY OF THE STRUCTURE DURING CONSTRUCTION. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LOADS.
6. CONSTRUCTION METHODS REQUIRING TEMPORARY SHORING, OR BRACING, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER, EXPERIENCED AND REGISTERED IN THE PROVINCE OF MANITOBA, TO PERFORM AND TAKE RESPONSIBILITY FOR ANY SHORING OR OTHER DESIGNS REQUIRED TO COMPLETE THE CONSTRUCTION.
7. VERIFY LOCATION OF ALL UNDERGROUND SERVICES PRIOR TO COMMENCING CONSTRUCTION AND BE RESPONSIBLE FOR DISRUPTIONS.
8. PROTECT AS REQUIRED ANY AND ALL EXISTING STRUCTURES, PIPES ETC. ABOVE AND BELOW GRADE FROM DAMAGE.

DESIGN LOADS:

1. DEAD LOADS: SELF WEIGHT
2. LIVE LOADS: .1) GROUND SNOW LOAD - $S_s = 1.7 \text{ kPa}$
 $S_r = 0.2 \text{ kPa}$
MODIFY FOR EXPOSURE AND DRIFT AS PER NBC 1995.
.2) UNIFORM WALKWAY LOADS = 4.8 kPa
3. LATERAL LOAD:
 1. SOIL: UNIT WEIGHT = 19.64 kN/m³
 $K_A = 0.5$
 2. WATER SIDE: WATER PRESSURE TO OPERATING ELEVATIONS. (SEE PROCESS DWGS.)
 3. SURCHARGE : 15.6 kPa

FOUNDATION NOTES

1. CAST-IN-PLACE CONCRETE PILE FOUNDATION NOTES.
2. PILES ARE DESIGNED AS FRICTION MEMBERS WITH A DESIGN RESISTANCE OF 14.4 kPa.

REINFORCING STEEL NOTES

1. DEFORMED BARS CONFORMING TO CSA-G30.18, GRADE 400. TIES AND STIRRUPS TO CSA-G30.18 MINIMUM GRADE 300.
2. REINFORCING WORK SHALL BE IN ACCORDANCE WITH CSA-23.1-00 AND CSA-23.3.
3. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE RISC "REINFORCING STEEL MANUAL OF STANDARD PRACTICE".

EXCAVATION, BACKFILLING & COMPACTION NOTES

1. EXCAVATE TO LINES AND LEVELS NECESSARY TO PROPERLY COMPLETE THE WORK AND IN ACCORDANCE WITH THE SOILS, GEOTECHNICAL REPORT. SEE SPECIFICATION E2. CONSTRUCT SLOPES IN BOTTOM OF EXCAVATION FOR DRAINAGE AS REQUIRED.
2. EXCAVATION BETWEEN PILES SHALL BE DONE WITH SUITABLE EQUIPMENT AND CARE SO AS NOT TO DAMAGE PILES.
3. DO NOT PLACE BACKFILL ON FROZEN GROUND, NOR USE FROZEN MATERIAL.
4. DEWATERING SYSTEMS SHALL BE DESIGNED TO EXPEDITIOUSLY REMOVE WATER FROM THE EXCAVATION UNTIL BACKFILLING IS COMPLETED.
5. BACKFILLING MATERIAL AND COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02661.

CONCRETE NOTES

1. PROVIDE CONCRETE AND PERFORM WORK TO CSA-A23.1-00 UNLESS SPECIFIED HEREIN. THE CONTRACTOR SHALL HAVE A COPY OF THIS STANDARD ON SITE AT ALL TIMES. IN A EVENT OF CONFLICT, THE MOST STRINGENT REQUIREMENT SHALL APPLY.
2. FORMWORK AND FALSEWORK DESIGN SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA. SUBMIT TO ENGINEER FOR REVIEW.
3. TEST CONCRETE IN ACCORDANCE WITH CSA-A23.2-00 TEST RESULTS WILL BE ISSUED TO CONTRACTOR, CONTRACT ADMINISTRATOR AND CITY.
4. SPECIFIED SLUMPS ARE PRIOR TO THE ADDITION OF ANY ACCEPTED PLASTICIZING ADMIXTURE. WHEN CONCRETE IS PLACED BY PUMPING, THE LISTED SLUMPS SHALL BE AT DISCHARGE. ALL CONCRETE SHALL BE NORMAL WEIGHT 2400 kg/CUBIC METER UNLESS NOTED OTHERWISE.
5. PROVIDE 20mm CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
6. CONSTRUCTION JOINTS : SURFACE PREPARATION SHALL BE BY SAND BLASTING TO EXPOSE FINE AGGREGATE. REINFORCING STEEL SHALL BE CLEANED BY SAND BLASTING METHOD AS WELL.
7. GROUT: NON-SHRINK, NON-METALLIC GROUT WITH MINIMUM STRENGTH AT THREE DAYS OF 20 MPa AND MINIMUM STRENGTH AT 28 DAYS OF 50 MPa.
8. VOID FORM UNDER THE LIFT STATION AND DECANTOR STRUCTURES SHALL BE GEOSPAN (SOLID FOAM MATERIAL). VOID FORM ELSEWHERE SHALL BE MOISTURE RESISTENT TREATED PAPER.
9. THE CONTRACTOR SHALL NOTIFY THE INSPECTION AND TESTING FIRM, IN AMPLE TIME TO PERMIT SCHEDULING, PRIOR TO ANY CONCRETE POUR. IF AMPLE TIME IS NOT ALLOWED, ALTERNATE CONCRETE TESTS WILL BE PERFORMED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AND PAID FOR BY THE CONTRACTOR.
10. AT LEAST THREE CONCRETE CYLINDERS WILL BE TAKEN FOR EVERY 75 CUBIC METERS OR LESS OF EACH CLASS OF CONCRETE PLACED. ADDITIONAL FIELD CYLINDERS MAY BE TAKEN AS DIRECTED BY THE CONTRACT ADMINISTRATOR TO EXPEDITE CONSTRUCTION. AIR AND SLUMP TESTS MAY BE TAKEN ON EVERY CONCRETE LOAD. SLUMP TESTS WILL BE TAKEN PRIOR TO ADDITION OF SUPERPLASTISIZER.

11. CONCRETE REQUIREMENTS:

TYPE LOCATION	28-DAY STRENGTH f_c' (MPa)	CEMENT TYPE	AGGREG. MAX. (mm)	SLUMP (mm)	TOTAL AIR %	MAX. W/C RATIO	EXPOSURE CLASS
1. BASE SLAB	35	50	20	75	4-7	0.40	C1, S1
2. CONCRETE FOR WATER RETAINING OR IN CONTACT WITH SOIL	35	50	20	S.P.	5-8	0.40	C1, S1
3. LEAN MIX FILL	10	50	20	100	N/A	0.55	N

NOTE: S.P. - SUPER PLASTICISER

12. PROVIDE CLEAR CONCRETE COVER OVER REBAR AS NOTED ON DRAWINGS AND FOLLOWS:

1. BASE SLAB BOTTOM 75 mm
2. ALL OTHER LOCATIONS 50 mm

13. CONCRETE CONSTRUCTION TOLERANCES:

1. CROSS SECTIONAL DIMENSIONS
 - 300mm OR LESS ± 6 mm
 - 300mm TO 1000mm ± 12 mm
 - 1000mm OR GREATER ± 20 mm
2. PLUMBNESS OF WALLS SHALL BE 1:500, BUT TOTAL SUM OF THE DEVIATION (±) FROM A PLUMB LINE SHALL NOT EXCEED 14mm FOR THE HEIGHT OF THE STRUCTURE.
3. VARIATION FROM HORIZONTAL AND VERTICAL REFERENCE SYSTEM AND GENERAL DIMENSIONS:
 - A) HORIZONTAL
 - PILING ± 100 mm
 - BASE SLABS ± 20 mm
 - WALLS ± 6 mm
 - B) VERTICAL
 - PILE CUT OFF ± 25 mm
 - BASE SLABS ± 25 mm
 - WALLS ± 8 mm
 - BEAMS ± 4 mm
 - C) FLATNESS
 - GENERAL SURFACES - MODERATELY FLAT (6mm GAP ALONG 3000mm STRAIGHT EDGE)

14. CONCRETE CURING, PROTECTION, AND FINISHING UNLESS SPECIFIED HEREIN:

1. CURING - TO CSA-A23.1-00 CLAUSE 21 AS FOLLOWS:
 - A) VERTICAL SURFACES - SPECIFIED CURING SEALER
 - B) HORIZONTAL SURFACES - WALL FOOTINGS MAY BE SPECIFIED CURING SEALER OR WET BURLAP.
2. WALL SURFACES THAT WILL RETAIN WATER SHALL USE FORM LINER AS PER SPECIFICATION SECTION 03100.
3. SURFACE FINISHES TO CSA-A23.1-00 CLAUSE 22 AND SPECIFIED HEREIN:
 - BASE SLAB STEEL TROWEL FINISH
 - SURFACES EXPOSED TO VIEW SMOOTH-FORM FINISH
 - SURFACES NOT EXPOSED TO VIEW ROUGH-FORM FINISH





15. ANY DISCREPANCIES BETWEEN CSA STANDARDS AND CONSTRUCTION DOCUMENTS, THE MOST STRINGENT SHALL APPLY, AND AS DIRECTED BY THE CONTRACT ADMINISTRATOR.

MISCELLANEOUS METALS - ALUMINUM

1. ALUMINUM: CONFORMING TO ALUMINUM ASSOCIATION ALLOY AND TEMPER DESIGNATION 6061-T6 OR 6351-T6.
2. PERFORM WELDING OF ALUMINUM IN ACCORDANCE WITH REQUIREMENTS OF CSA W59.2; COMPANY CERTIFICATION TO CSA W47.2.
3. BOLTS AND ANCHOR BOLTS: CONFORMING TO STAINLESS STEEL ASTM 316 C/W ISOLATION WASHERS.
4. BITUMINOUS PAINT: TO CAN/CGSB-1.108.
5. ISOLATE ALUMINUM FROM FOLLOWING COMPONENTS, BY MEANS OF BITUMINOUS PAINT: 2 COATS
 1. DISSIMILAR METALS EXCEPT STAINLESS STEEL, ZINC, OR WHITE BRONZE OF SMALL AREA.
 2. CONCRETE AND GROUT.

STANDARD ABBREVIATIONS:

ADDITIONAL AT	ADDL	INSIDE DIAMETER	I.D.
ANCHOR BOLT	A. BOLT	INSULATION	INSUL
ALTERNATE ALUMINUM	ALTER.	INTERIOR	INT
APPROXIMATELY ARCHITECTURAL	APPROX	KILONEWTON	kN
AVERAGE	AVG.	LIVE LOAD	L.L.
BALANCE	BOT	LOCATION	LOC'N
BOTTOM	BAL	LONG	LG
BOTTOM LOWER LAYER	BLL	LONG LEG HORIZONTAL	LLH
BOTTOM UPPER LAYER	BUL	LONG LEG VERTICAL	LLV
BETWEEN	BTWN	MATERIAL	MATL
BUILDING	BLDG	MECHANICAL	MECH
BENCH MARK	B.M.	MEZZANINE	MEZZ
BEARING	BRG	MINIMUM	MIN
BY (Between dims)	x (lower case)	MISCELLANEOUS	MISC
CENTERLINE	C	NEAR SIDE	N.S.
CENTER TO CENTER	C/C	NELSON STUD	N.STUD
CAST IN PLACE	C.I.P.	NUMBER	No.
CONCRETE MASONRY UNIT	C.M.U.	NOT TO SCALE	N.T.S.
CONSTRUCTION JOINT	C.J.	ON CENTER	o/c (lower case)
COMPLETE WITH COLUMN	C/W	OUTSIDE FACE	O.F.
CONCRETE	CONC	OUT TO OUT	O/O
CONTINUOUS	CONT	OUTSIDE DIAMETER	O.D.
DEAD LOAD	D.L.	OPENING	OPNG
DIAMETER	DIA	OPPOSITE	OPP
DOWN	DN	ORIGINAL	ORIG
DRAWING	DWG	OPEN WEB STEEL JOIST	OWSJ
DOWEL	DWL	PERIMETER	PERIM
EACH FACE	E.F.	PERPENDICULAR	PERP
EXPANSION JOINT	E.J.	PLATE	PL
EACH END	E.E.	PRECAST	P/C
EACH SIDE	E.S.	PRELIMINARY	PRELIM.
EACH WAY	E.W.	PROJECTION	PROJ
ELEVATION	EL.	REINFORCE WITH	R/W
ELECTRICAL	ELECT	REINFORCING	REINF
EQUAL	EQ	REQUIRED	REQD
EQUAL SPACES	EQ SP	REVISION	REV.
EXISTING	EXIST	ROOF DRAIN	R.D.
EXPANSION	EXP.	SECTION	SECT.
EXTERIOR	EXT	SHEET	SHT
FAR SIDE	F.S.	SIMILAR	SIM
FACE TO FACE	F/F	SPECIFICATION	SPEC
FACE OF CONCRETE	F.O.C.	STAINLESS STEEL	S.S.
FOUNDATION	FDN	STANDARD	STD
FOOTING	FTG	STIFFENER	STIFF
FULL TENSION SPLICE	F.T.S.	STIRRUP	STIRR
GALVANIZE	GALV	STRUCTURAL	STRUCT
GAUGE	GA	SYMMETRICAL	SYM
HANGER	HGR	TOP LOWER LAYER	TLL
HORIZONTAL	HORIZ	TOP OF	T.O.
HOLLOW STRUCTURAL STEEL	HSS	TOP UPPER LAYER	T.U.L.
HEIGHT	HT	TYPICAL	TYP
INSIDE FACE	I.F.	UNLESS NOTED OTHERWISE	U/N
		UNDERSIDE	U/S
		VERTICAL	VERT
		WIND LOAD	W.L.

 Certificate of Authorization Earth Tech Canada Inc. No. 730 Expiry: April 30, 2006	B.M. ELEV.	 Frederickson Cooper ARCHITECTS	 A Tech International Ltd. Company	ENGINEER'S SEAL	 THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION	
			DESIGNED BY GGP	CHECKED BY MK	ORIGINAL SIGNED BY	CITY FILE NUMBER
			DRAWN BY WDB	APPROVED BY DJT	M. KLASSEN	SHEET OF
			SCALE: NTS	RELEASED FOR CONSTRUCTION BY: RON SOROKOWSKI	2006/03/07	CITY DRAWING NUMBER
	00 ISSUED FOR TENDER 06/03/08 GLG	NO. REVISIONS	DATE	DATE	1-0601L-A-S0105-001-000	
		DATE	2006/03/04	DATE	2006/03/07	
				CONSULTANT DRAWING NO. WL-S0105	STRUCTURAL GENERAL NOTES	