A. GENERAL NOTES

1. THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH, AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE NATIONAL BUILDING CODE OF CANADA 2005 AND ALL APPLICABLE LOCAL BYLAWS.
2. DO NOT SCALE DRAWING.
3. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED PRIOR TO COMMENCING CONSTRUCTION. DISCREPANCIES OR AMBIGUITIES ON THE DRAWINGS AND/OR THE SITE, SHALL BE REPORTED TO THE DESIGN ENGINEER.
4. MODIFICATIONS, ALTERATIONS OR SUBSTITUTIONS MUST BE AUTHORIZED IN WRITING BY THE DESIGN ENGINEER.
5. LOCATE ALL EXISTING SITE SERVICES PRIOR TO CONSTRUCTION.
6. FOR OPENINGS IN SLAB, FLOOR, WALLS, ROOF, ETC. REFER TO ARCHITECTURAL, MECHANICAL, AND/OR OTHER PERTINENT DRAWINGS.
7. LOCATION OF CONSTRUCTION JOINTS IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR BUT APPROVAL MUST BE OBTAINED FROM THE ENGINEER BEFORE PROCEEDING.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL NECESSARY SHORING, BRACING AND FORMWORK. FORM WORK FOR NEW CONSTRUCTION SHALL BE BRIDGED OVER EXISTING SERVICES. PROCEDURE MUST BE APPROVED BY THE DESIGN ENGINEER.
9. CONSTRUCTION SAFETY REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
10. THE GENERAL CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER AT LEAST 72 HOURS PRIOR TO ALL CONCRETE POURS TO ALLOW FOR SITE INSPECTIONS.
11. ANY DEFECTIVE OR UNACCEPTABLE WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND THE OWNER AT NO COST TO THE OWNER OR ENGINEER.
12. DESIGN LOAD
   - WIND – q (1/50) = 0.45 kN/m2
   - WIND LOAD IMPORTANCE FACTOR Iw = 1.25
   - SNOW – Ss = 1.9 kN/m2
     – Sr = 0.2 kN/m2
   - SNOW LOAD IMPORTANCE FACTOR = 1.25

B. EXCAVATION AND BACKFILLING

1. DEWATER SITE PRIOR TO, AND DURING CONSTRUCTION –SEE GEOTECHNICAL REPORT.
2. REMOVE ALL TOPSOIL, ORGANIC MATERIAL AND LOOSE OR UNSUITABLE FILL TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER.
3. PROVIDE BACKFILL MATERIAL AS NOTED IN SPECIFICATIONS SECTION CW–2030.
4. PLACE A MINIMUM OF 75mm THICK LEAN MIX CONCRETE IN BOTTOM OF CHAMBER.
5. PROVIDE BACKFILL AS FOLLOWS:

UNDER SLABS ON GRADE (MIN 200mm THICK)
– COMPACT NATIVE GRANULAR SUBGRADE TO 98% STANDARD PROCTOR.
– TO WITHIN 200MM (VOIDFORM) OF UNDERSIDE OF CONCRETE SLAB:
TYPE 2 MATERIAL COMPACTED TO 98% STANDARD PROCTOR

AGAINST PERIMETER BEAMS/WALL (OUTSIDE)
– TO WITHIN 300MM OF FINISHED GRADE:
CLASS 4 BACKFILL COMPACTED TO 95% STANDARD PROCTOR
– TO FINISHED GRADE:
TYPE 2 MATERIAL TO UNDERSIDE CONCRETE SLABS, TOPSOIL AT UNPAVED AREAS

6. ALL BACKFILL AT WALLS TO BE PLACED IN 150MM LIFTS. BACKFILL UNDER STRUCTURAL SLABS MAY BE PLACED IN 200 MM LIFTS.
7. SUBMIT AN EXCAVATION AND SHORING PLAN PREPARED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN MANITOBA.

C. REINFORCING STEEL

1. REINFORCING STEEL SHALL BE NEW BILLET, DEFORMED BARS IN ACCORDANCE WITH CSA STANDARDS G30.18 MINIMUM YIELD STRENGTH TO BE 400 MPa, EXCEPT 10M STIRRUPS MAY BE 300 MPa.
2. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST A.C.I. DETAILING MANUAL.

COVER TO REINFORCING STEEL:

PILES	75mm
UNDERSIDE OF BEAMS	50mm
TOPS AND SIDES OF BEAMS (DRY)	40mm
TOPS AND SIDES OF BEAMS (WET)	50mm
WALLS	50mm
UNDERSIDE OF STRUCTURAL SLABS (DRY)	25mm
UNDERSIDE OF STRUCTURAL SLABS (WET)	40mm
TOP OF STRUCTURAL SLABS	25mm
SLAB ON GRADE – TOP	60mm
SLAB ON GRADE – BOTTOM	50mm

3. LAP TOP BARS AT CENTRE SPAN AND BOTTOM BARS OVER SUPPORTS, UNLESS NOTED OTHERWISE.
4. ALL REINFORCING TO BE HELD IN PLACE AND TIES 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 TO BE BENT 600 mm AROUND CORNERS OR USE 900 x 900 CORNER BARS UNLESS NOTED OTHERWISE.
6. FRAME ALL OPENINGS IN CONCRETE, BEAMS, WALLS AND/OR SLABS WITH 2–20M BARS (EXTRA) EACH FACE, EACH SIDE, TOTAL 16. EXTEND BARS 600 mm BEYOND EDGES OF OPENING 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 DESIGN ENGINEER PRIOR TO FABRICATION OF THE REINFORCING STEEL.
8. HOUSEKEEPING PADS SHALL BE A MINIMUM OF 100 mm THICK AND REINFORCED WITH 10M @ 300 O/C EACH WAY AT CENTRE UNLESS OTHERWISE SHOWN. PROVIDE HATCHING DOWELS ALONG THE PERIMETER EMBEDDED MIN 125mm INTO CONCRETE SLAB.
9. PRIOR TO PLACING CONCRETE, ENSURE THAT ALL REINFORCING STEEL IS CLEAN, FREE OF LOOSE SCALE, RUST, MUD, OIL OR OTHER FOREIGN MATERIAL WHICH WOULD REDUCE BOND.
10. HEATING, QUENCHING AND BENDING OF REINFORCING STEEL ON THE SITE IS NOT ALLOWED.
11. WHERE NO SPLICE OR SPLICE TYPE IS INDICATED ON THESE DRAWINGS IT SHALL BE A TENSION SPLICE EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE (UNLESS DETAILED OTHERWISE):
SEE TABLE C.1
12. WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS INDICATED ON THESE DRAWINGS IT SHALL BE A TENSION EMBEDMENT EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.
SEE TABLE C.2

D. CAST–IN–PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO CSA STANDARD A23.1 AND A23.2 (LATEST).
2. PROPORTION NORMAL DENSITY CONCRETE IN ACCORDANCE WITH CAN3–A23.1 (LATEST) TO GIVE THE FOLLOWING PROPERTIES:

TABLE D.1

CONTROLLED CONCRETE

CONCRETE LOCATION	MAX. AGG. SIZE	28 DAY STRENGTH	EXPOSURE CLASS	AIR CONTENT	CEMENT TYPE
PILES	20 mm	35 MPa	S–1	4 – 7%	HS
GRADE BEAMS	20 mm	30 MPa	F–2	4 – 7%	GU
INTERIOR STRUCTURAL SLABS	20 mm	30 MPa	N	0%	GU
EXTERIOR SLABS ON GRADE	20 mm	30 MPa	S–1	4 – 7%	HS
CHAMBER WALLS, & FOUNDATIONS	20 mm	35 MPa	S–1	4 – 7%	HS
CHAMBER SLAB	20 mm	30 MPa	F–2	4 – 7%	GU
LEAN CONCRETE BELOW FOUNDATION	20 mm	15 MPa	S–1	4 – 7%	HS
FILL CONCRETE (BENCHING)/MASONR Y FILL	10–14 mm	20 MPa	N	0%	GU

3. THE USE OF ANY ADDITIVES WITHIN THE CONCRETE MIX SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
4. VIBRATE ALL CONCRETE WORK WITH APPROPRIATE INTERNAL VIBRATORS.
5. CONCRETE WORKING TIME, FROM BATCHING TO PLACEMENT AND CONSOLIDATION, SHALL NOT EXCEED 1–1/2 HOURS.
6. CURE CONCRETE IN ACCORDANCE WITH CSA STANDARD A23.1
7. PROVIDE HOT AND COLD WEATHER CONCRETING IN ACCORDANCE WITH CSA STANDARD A23.1.
8. CONCRETE TESTING BE PERFORMED BY AN INDEPENDENT TESTING COMPANY. THREE CONCRETE TEST CYLINDERS AND ONE SLUMP TEST SHALL BE TAKEN FOR EVERY 50 (OR LESS) CUBIC METERS, OR EACH DAY CONCRETE IS PLACED, WHICHEVER IS GREATER. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH CSA STANDARD A23.2 (LATEST), AND THE RESULTS SHALL BE FORWARDED TO THE DESIGN ENGINEER.
9. "VOID FORMS", AS DETAILED ON THE DRAWINGS SHALL BE CARDBOARD FORMS (MIN 150mm THICK) UNLESS OTHERWISE SPECIFIED.
10. PROVIDE WATERPROOFING TO UNDERGROUND STRUCTURES AS PER SPECIFICATION.

E. STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO CSA STANDARD G40.21–350W AND G40.21–350W FOR H.S.S. CLASS "C".
2. ALL STRUCTURAL STEEL CONNECTIONS SHALL BE IN ACCORDANCE WITH CSA G40.21 GRADE 300W.
3. FABRICATION AND ERECTION SHALL CONFORM TO CSA STANDARD S16 (LATEST).
4. 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.
5. SPLICING OF MEMBERS NOT PERMITTED UNLESS OTHERWISE NOTED.
6. ALL MEMBERS AND CONNECTIONS SHALL BE GALVANIZED AS PER CSA G164–M92.
7. SUPPLY AND INSTALL ALL TEMPORARY GUYING AND BRACING NECESSARY TO PROVIDE STABILITY FOR THE STRUCTURE AS A WHOLE. THESE SHALL REMAIN IN PLACE UNTIL PERMANENT BRACING IS INSTALLED.
8. STRUCTURAL STEEL SUPPLIER SHALL SUBMIT SHOP DRAWINGS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA SHOWING ALL DESIGN AND FABRICATION DETAILS OF CONNECTIONS TO THE ENGINEER FOR REVIEW PRIOR TO START OF FABRICATION.

F. MASONRY

1. MASONRY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH CSA STANDARD CAN3–A371, UNLESS NOTED.
2. CONCRETE BLOCKS SHALL CONFORM TO CSA A165.1.
3. MORTAR SHALL CONFORM TO CSA A179M (TYPE S), 13 MPa AT 28 DAYS.
4. INSTALL NO. 9 A.S.W.G. "DUR–O–WALL" TRUSS TYPE JOINT REINFORCING OR EQUIVALENT WITHIN EVERY SECOND MORTAR JOINT (400 O/S MAX.) UNLESS NOTED.
5. PROVIDE CLEAN–OUTS AT BOTTOM OF ALL FILLED CORES. REMOVE ALL MORTAR FLASH AND DEBRIS FROM WITHIN CORE PRIOR TO FILLING.
6. PROVIDE MATCHING DOWELS EXTENDING FROM CONCRETE FOUNDATION INTO MASONRY WALLS AT ALL REINFORCED CORES.
7. ALL REINFORCED CORES AND BLOCK COURSES SHALL BE FILLED WITH CONCRETE. VIBRATE WITH AN INTERNAL "PENCIL" TYPE VIBRATOR.
8. CONCRETE LIFTS SHALL NOT EXCEED 2400 MM.
9. LAP ALL REINFORCING 600 MM MINIMUM UNLESS NOTED. DETAIL TO SUIT CONCRETE LIFT CRITERIA WHERE APPLICABLE.
10. WHERE MASONRY, CONCRETE OR STEEL LINTELS BEAR ON A MASONRY WALL, FILL TWO COURSES (400 MIN.) BELOW AND TWO CORES (400 MIN.) WIDE WITH CONCRETE UNLESS SHOWN OTHERWISE.
11. FILL ONE CORE EACH SIDE OF WALL OPENINGS WITH CONCRETE AND REINFORCE 1–15M VERTICAL (FULL HEIGHT), TYPICAL UNLESS SHOWN OTHERWISE. EXTEND VERTICAL REINFORCING INTO LINTEL.
12. BOND BEAMS SHALL BE A 200 DEEP U–BLOCK, FILLED WITH 20 MPa CONCRETE AND REINFORCED WITH 2–15M CONTINUOUS, TYPICAL UNLESS SHOWN OTHERWISE. PROVIDE A CONTINUOUS BOND BEAM AT THE TOP COURSE OF ALL WALLS UNLESS SHOWN OTHERWISE.
13. CONTROL JOINT SPACING TO BE 7000 MM (MAXIMUM) ALONG EXTERIOR WALLS AND 9000 MM (MAXIMUM) ALONG INTERIOR WALLS.
14. INTERLOCK ALL WALL INTERSECTIONS OR PROVIDE MECHANICAL TIES @ 400 O/C UNLESS NOTED.
15. FILL CORES WITH CONCRETE WHERE REQUIRED TO SUPPORT EMBEDDED OR DRILLED ANCHORS, INSERTS, SERVICES, ETC.
16. TEMPORARY BRACING SHALL BE PROVIDED FOR ALL WALLS UNTIL STRUCTURE IS CLOSED IN, AND PERMANENT SUPPORT IS PROVIDED. SUBMIT BRACING DETAILS UNDER THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT PROVINCE, TO THE DESIGN ENGINEER PRIOR TO THE START OF CONSTRUCTION.
17. MORTAR TEST SHALL BE TAKEN IN ACCORDANCE WITH CSA STANDARD A304 AND A COPY OF RESULTS SHALL BE SUBMITTED TO THE DESIGN ENGINEER.
18. COLD–WEATHER REQUIREMENTS IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA (LATEST) SHALL BE IMPLEMENTED WHEN NECESSARY. NO "TORCHING TECHNIQUES" OR MORTAR ADMIXTURES SHALL BE ALLOWED.
19. CAVITY WALL BRICK TIES – PROVIDE TIES AS MANUFACTURED BY FERO HOLDINGS LTD. OR APPROVED EQUAL. MAXIMUM SPACING OF 400 MM VERTICALLY AND 800 MM HORIZONTALLY. U.N.O.
20. PROVIDE CONCRETE FILLED MASONRY LINTEL BLOCKS FOR OPENINGS IN NON–BEARING WALLS AS FOLLOWS UNLESS OTHERWISE INDICATED:
   - OPENINGS UP TO 1200 – 200 DEEP LINTEL BLOCK 2–15M.
   - OPENINGS UP TO 2400 – 400 DEEP LINTEL BLOCK 4–15M–2T&2B.
   - OPENINGS UP TO 3600 – 600 DEEP LINTEL BLOCK 4–15M–2T&2B.

G. DRILLED CONCRETE PILING

1. PLACE CAST–IN–PLACE FRICTION PILE TO A DEPTH AS MENTIONED IN PILE SCHEDULE. USE TEMPORARY CASING AS REQUIRED DURING BORE HOLE CONSTRUCTION.
2. INSTALL CONCRETE IN CLEAN, DRY HOLES IMMEDIATELY AFTER DRILLING AND INSPECTION OF THE PILE HOLE TO REDUCE SLOUGHING AND GROUNDWATER SEEPAGE. A DRY HOLE CONTAINS NO MORE THAN 50mm OF WATER WHEN CONCRETE IS PLACED. USE A TREMIE OR CONCRETE PUMP TO INSTALL CONCRETE IF A HOLE CANNOT BE MAINTAINED DRY.
3. IN ALL CASES INSTALL CONCRETE WITHIN 2 HOURS OF DRILLING HOLES. DO NOT LEAVE HOLES OVER–NIGHT.

CONC WALL REINF SCHEDULE

MARK	WALL THICKNESS (mm)	REINFORCEMENT (UNLESS NOTED OTHERWISE)
W1	300	25M VERT. BARS @ 250 o/c IF, (FULL HEIGHT) 20M VERT. BARS @ 250 o/c OF, (FULL HEIGHT) 20M HORIZ. BARS @ 150 o/c EF (INNER BARS @ BOTTOM 4 METERS) 20M HORIZ. BARS @ 200 o/c EF (INNER BARS @ REMAINING TOP) 25M DOWELS @ 250 o/c EF (BOTTOM OF WALL) 25M CORNER BARS @ 150 o/c EF (BOTTOM 4 METERS) 20M CORNER BARS @ 200 o/c EF (REMAINING TOP)
W2	300	20M BARS @ 300 o/c EF, EW 20M DOWELS @ 300 o/c EF (BOTTOM OF WALL)
W3	300	20M BARS @ 250 o/c EF, EW 20M DOWELS @ 250 o/c (BOTTOM OF WALL) 20M CORNER BARS @ 250 o/c EF
W4	300	15M BARS @ 250 o/c EF, EW 20M DOWELS @ 250 o/c EF (BOTTOM OF WALL)
W5	300	20M BARS @ 250 o/c EF, EW 20M DOWELS @ 250 o/c EF (BOTTOM OF WALL) 20M CORNER BARS @ 250 o/c EF
W6	300	20M BARS @ 250 o/c EF, EW 20M DOWELS @ 125 o/c EF 20M CORNER BARS @ 250 o/c EF
W7	300	20M BARS @ 250 o/c EF, EW 20M DOWELS @ 125 o/c EF (BOTH SIDES OF PIPE)

NOTES:

CAST–IN PLACE PILE SCHEDULE

TYPE	SHAFT ø (mm)	REINFORCEMENT: VERTS	REINFORCEMENT: TIES	PILE BASE ELEV.
P1	400	6–15M	3–10M RING TIES @ 75 o/c TOP & BOT REMAINDER – 10M RING TIES @ 240 o/c	218.50

GRADE BEAM SCHEDULE

MARK	WIDTH (mm)	DEPTH (mm)	REINFORCEMENT	STIRRUPS
GB1	250	700	2–20M TOP & BOT CONT.	10M STIRR @ 250 o/c
GB2	250	700	2–25M TOP & BOT CONT.	10M STIRR @ 250 o/c
GB3	250	400	2–20M TOP & BOT CONT.	10M STIRR @ 250 o/c

CONCRETE BEAM SCHEDULE

BEAM MARK WIDTH X DEPTH	#	SIZE	LOCN	0.3 SPAN	0.2 SPAN	0.125 SPAN	LEFT SUPPORT	CLEAR SPAN 0.125 SPAN	0.2 SPAN	0.3 SPAN		0.3 SPAN	0.2 SPAN	0.125 SPAN	RIGHT SUPPORT	0.125 SPAN	0.2 SPAN	0.3 SPAN	STIRRUPS SIZE	TYPE	SPACING	LOCN	REMARKS
B1	2	25M	T																10M	C	300	T	
300 x 800	3	30M	B																				

ABBREVIATION LEGEND

T = TOP
M = MIDDLE
B = BOTTOM
UL = UPPER LAYER
LL = LOWER LAYER

L = LEFT END
R = RIGHT END
D = DOUBLE
REM = REMAINING
T = THROUGHOUT
C = CLOSED
O = OPEN

TABLE C.1

READ IN CONJUNCTION WITH DESIGN NOTES SECTION C. STEEL REINFORCING

REINFORCEMENT SPLICES (UNLESS NOTED OTHERWISE)

BAR DESIGNATION	REINFORCEMENT GRADE (MPa)	COMPRESSION SPLICE	REGULAR TENSION SPLICE (CLASS B) (BASED ON CONCRETE STRENGTH MPa) (SEE NOTE 1) 20 MPa	25 MPa	30 MPa	35 MPa	40 MPa
10M	400	330	490	430	400	390	390
15M	400	470	690	610	570	520	480
20M	400	570	840	740	690	640	590
25M	400	740	1350	1180	1090	1020	950
30M	400	880	1600	1400	1290	1210	1130
35M	400	1050	1910	1680	1540	1440	1350

NOTE 1: TOP BAR TENSION SPLICES ARE 1.3 TIMES REGULAR SPLICES. TOP SPLICE LENGTHS APPLY TO HORIZONTAL REINFORCEMENT CAST WITHIN 300 mm OR MORE OF CONCRETE BELOW THE BAR.

NOTE 2: FOR EPOXY REINFORCEMENT INCREASE THESE LENGTHS BY 1.5. INCREASE THESE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

TABLE C.2

READ IN CONJUNCTION WITH DESIGN NOTES SECTION C. STEEL REINFORCING

EMBEDMENT OF DOWELS

BAR DESIGNATION	REINFORCEMENT GRADE (MPa)	COMPRESSION EMBEDMENT (BASED ON CONCRETE STRENGTH MPa) 20 MPa	25 MPa	30 MPa AND OVER	REGULAR TENSION EMBEDMENT (BASED ON CONCRETE STRENGTH MPa) (SEE NOTE 1) 20 MPa	25 MPa	30 MPa	35 MPa	40 MPa
10M	400	250	225	200	325	300	300	300	300
15M	400	350	300	275	490	440	400	380	380
20M	400	430	385	350	650	580	530	490	450
25M	400	540	480	440	1010	900	825	760	710
30M	400	645	580	530	1210	1080	990	910	840
35M	400	760	680	620	1690	1520	1400	1270	1200

NOTE 1: TOP EMBEDMENT VALUES ARE 1.3 TIMES REGULAR EMBEDMENT VALUES. TOP EMBEDMENT APPLIES TO HORIZONTAL REINFORCEMENT CAST WITHIN 300 mm OR MORE OF CONCRETE BELOW THE BAR.

NOTE 2: FOR EPOXY REINFORCEMENT INCREASE THESE LENGTHS BY 1.5. INCREASE THESE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

SLAB REINFORCEMENT SCHEDULE

MARK	THICKNESS	DESCRIPTION/ ASSEMBLY	REINFORCEMENT	DIRECTION	T/O SLAB ELEVATION
SL1	400	ONE WAY	25M @ 250 o/c TUL, BLL 20M @ 300 o/c BUL, TLL	SEE BELOW	SEE PLAN
SL2	300	ONE WAY	25M @ 200 o/c TUL, TLL, BUL, BLL	SEE BELOW	SEE PLAN
SL3	250	ONE WAY	15M @ 250 o/c TUL, BLL 15M @ 300 o/c BUL, TLL	SEE BELOW	SEE PLAN
SL4	400	ONE WAY	20M @ 250 o/c TUL, TLL, BUL, BLL	SEE BELOW	SEE PLAN
SL5	200	TWO WAY	15M @ 250 o/c TUL, TLL, BUL, BLL	SEE BELOW	SEE PLAN

SLAB REINFORCEMENT NOTES:

NOTE 1. REFER TO DRAWINGS FOR ALL SLOPES AND ALL EXTERIOR ENTRANCE SLAB SIZES AND LOCATIONS

BAR PLACING ORDER:

MAIN REINF = ARROW DIRECTION ON PLAN	TOP UPPER LAYER (TUL)
	BOTTOM LOWER LAYER (BLL)
TRANVERSE REINF	TOP LOWER LAYER (TLL)
	BOTTOM UPPER LAYER (BUL)

83R066 – N. side Frobisher Rd., 0.25km W. of St. Mary's Rd., Tblt. on top of 0.05m dia. x 1.2m iron pipe (near conc. gate chamber), 7.1m Nly. of N. side & 9.8m Wly. of W. side of conc. gate chamber 0.25km W. of St. Mary's Rd.

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

APEGM
Certificate of Authorization
Stantec Consulting Ltd.
No. 1301 Expiry: April 30, 2010

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES COMMITTEE   DATE

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M. 81–007
ELEV. 230.438

NO.	REVISIONS	DATE	BY
A	ISSUED FOR TENDER	09.10.13	

Stantec Consulting Ltd.
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Tel 204–489–5900 Fax 204–453–9012

DESIGNED BY	M.H.	CHECKED BY	T.D.
DRAWN BY	M.F.	APPROVED BY	C.M.
HOR. SCALE: VERTICAL:	AS NOTED	RELEASED FOR CONSTRUCTION:	
DATE	09.09.21	DATE	

ENGINEER'S SEAL
ORIGINALLY SEALED BY:
MOHAMMAD HOQUE
OCT. 13, 2009

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE
INSTALLATION OF OUTFALL PIPE
EFFLUENT SAMPLING FACILITY AND ASSOCIATED WORKS
GENERAL NOTES & SCHEDULES

BID OPPORTUNITY NO. 709–2009
CITY DRAWING NUMBER 1–0102A–S0001–001
SHEET 1 OF 1

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