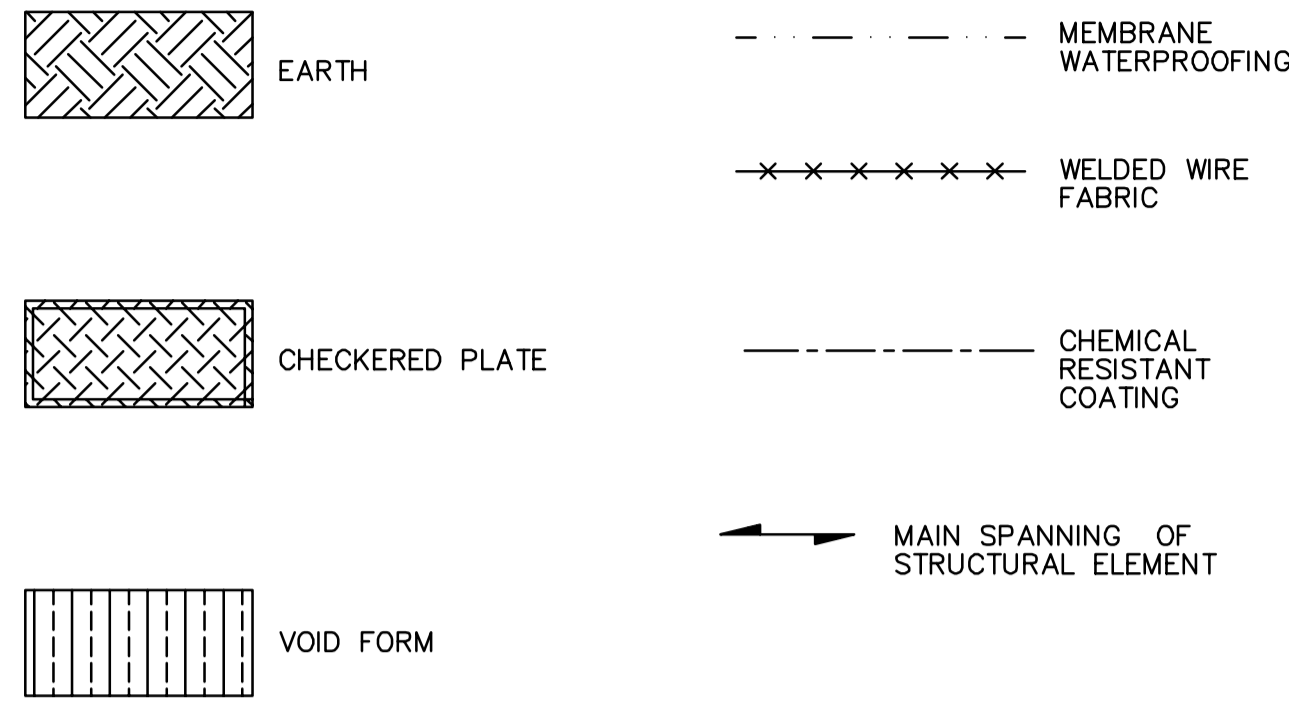


LEGEND



GENERAL NOTES

- READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER PERTINENT CONTRACT DOCUMENTS.
- DIMENSIONS IN MILLIMETRES. ELEVATIONS IN METRES.
- DO NOT SCALE DRAWINGS.
- CONSTRUCTION METHODS REQUIRING TEMPORARY SHORING OR BRACING SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR 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 AND OTHER DESIGNS REQUIRED TO COMPLETE THE CONSTRUCTION.
- CONSTRUCT FLOOR SLOPES IN STRUCTURAL SLAB, UNLESS NOTED OTHERWISE.
- ALL PLANS AND SECTIONS SHALL BE READ IN CONJUNCTION WITH STANDARD DESIGN DETAILS SHOWN ON DRAWINGS FROM WB-S0451 TO WB-S0462, WB-S0464, WB-S0472, WB-S0501 AND THE CONTRACT DOCUMENTS UNLESS NOTED OTHERWISE. FOR REINFORCING LAP TABLE SEE DWG NO. WB-S0451.
- THE MINIMUM REINFORCING FOR ALL CONCRETE WALLS AND SLABS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE.

THICKNESS	REINF EACH WAY	LOCATION
150mm	15M@ 300	CENTRED, EACH WAY
200mm	15M@ 200	EACH WAY, EACH FACE
250mm	20M@ 300	EACH WAY, EACH FACE
300mm	20M@ 300	EACH WAY, EACH FACE
400mm & GREATER	25M@ 300	EACH WAY, EACH FACE
- REFER TO PROCESS MECHANICAL AND PLUMBING DRAWINGS IN THIS CONTRACT FOR IDENTIFIED OPENINGS, EMBEDDED ITEMS AND UNDERSLAB ENCASED PIPING.
- REFER TO THE "EMBEDMENT AND BLOCKOUT LIST" (SEE E16) FOR BLOCKOUTS, INSERTS, SUPPORTS, ANCHORS, SMALL PIPE, DOWELS AND ELECTRICAL CONDUIT EMBEDMENT NOT IDENTIFIED ON THE DRAWINGS.
- OTHER CONTRACTS WILL BE EXECUTED CONCURRENTLY WITH THIS CONTRACT. WORK ON THOSE CONTRACTS WILL AFFECT THIS CONTRACT. COORDINATE WITH CONTRACT ADMINISTRATOR LOCATION OF ALL OPENINGS, EMBEDDED ITEMS, BLOCKOUTS, DOWELS, SLEEVES, AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.
- WALLS AND SUPPORTING SLAB CONCRETE TO ATTAIN 100% OF SPECIFIED COMPRESSIVE STRENGTH PRIOR TO PLACING BACKFILL.
- NO BACKFILL SHALL BE PLACED BEHIND CANTILEVERED, FREE TOP WALLS UNTIL THE CONCRETE HAS ATTAINED 100% OF ITS SPECIFIED STRENGTH.
- EXTERIOR WALL CLADDING (NIC) WILL BE SUPPORTED AS SHOWN IN DETAIL COORDINATE WITH CONTRACT ADMINISTRATOR LOCATION OF PLATES EMBEDDED IN THIS CONTRACT. 3 WB-S0464

DESIGN NOTES

(NOTE: THIS INFORMATION IS FOR REFERENCE PURPOSES ONLY. CONTRACTOR TO REFER TO SPECIFICATIONS.)

- CONCRETE 28-DAY COMPRESSIVE STRENGTH:

TYPE A	35MPa	LIQUID HOLDING/CONTAINING STRUCTURES
TYPE B	30MPa	MINIMUM, UNLESS NOTED OTHERWISE
TYPE C	15MPa	FILL CONCRETE
- REINFORCEMENT BARS: CAN/CSA-G30.18; GRADE 400R, 400W WHERE INDICATED.
- ALUMINUM:
 - ASTM B221M; ALLOY 6061-T6, FOR STRUCTURAL EXTRUDED SHAPES, UNLESS NOTED OTHERWISE.
 - ANCHOR BOLTS:
 - ASTM A307; UNLESS NOTED OTHERWISE
- BACKFILL:

UNIT WEIGHT	19.64 kN/m ³
EARTH PRESSURE ACTIVE COEFFICIENT	K _a = 0.5
- MAXIMUM ALLOWABLE SPECIFIED LOAD FOR DRIVEN END BEARING PRECAST CONCRETE 400Ø HEX PILES: 800kN. ANTICIPATED APPROXIMATE REFUSAL DEPTH ELEVATION ON DENSE GLACIAL TILL OR BEDROCK: 216.000(±).
- MAXIMUM GROUNDWATER LEVEL ELEVATION: 236.000
- SNOW LOAD DATA:

GROUND SNOW LOADING	S _s = 1.7 kPa
ASSOCIATED RAIN LOADING	S _r = 0.2 kPa
- WIND LOAD DATA:

1/100 YEAR PRESSURE (q ₁₀₀)	0.49 kPa
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- SEISMIC DATA:

ACCELERATION-RELATED SEISMIC ZONE	Z _a = 0
VELOCITY-RELATED SEISMIC ZONE	Z _v = 0
ZONAL VELOCITY RATIO	v = 0
- REFERENCE CODES:
 - i) NATIONAL BUILDING CODE OF CANADA 1995 (R2003) WITH THE 1999 MANITOBA AMENDMENTS.
 - ii) CONCRETE AND REINFORCEMENT: CSA A23.1-00, CSA A23.2-00 AND CSA A23.3-94, FOR LIQUID RETAINING STRUCTURES ACI 350-01, ACI 350.1-01 AND ACI 350.3-01
 - iii) ALUMINUM: CAN3-S157-M83 (R 2001)

ABBREVIATIONS

AB	ANCHOR BOLT	JT	JOINT
AL	ALUMINUM	LG	LONG
ADD	ADDITIONAL	LL	LIVE LOAD
ALT	ALTERNATE	LLH	LONG LEG HORIZONTAL
ARCH	ARCHITECTURAL	LLV	LONG LEG VERTICAL
		LPT	LOW POINT
BLDG	BUILDING	LSSJ	LONG SPAN STEEL JOIST
BLL	BOTTOM LOWER LAYER		
BM	BEAM	MAX	MAXIMUM
BOT	BOTTOM	MC	MOMENT CONNECTION
B PL	BASE OR BEARING PLATE	MECH	MECHANICAL
BUL	BOTTOM UPPER LAYER	MEZZ	MEZZANINE
		MH	MANHOLE
C TO C	CENTRE TO CENTRE	MID	MIDDLE
CB	CATCH BASIN	MIN	MINIMUM
CHKD PL	CHECKERED PLATE	MISC	MISCELLANEOUS
CJ	CONSTRUCTION JOINT	MPDD	MODIFIED PROCTOR DRY DENSITY
CL	CENTRE LINE		
CLJ	CONTROL JOINT	MW	MEMBRANE WATERPROOFING
CLSM	CONTROLLED LOW STRENGTH MATERIAL		
COL	COLUMN	NF	NEAR FACE
CONC	CONCRETE	NIC	NOT IN CONTRACT NUMBER
CONT	CONTINUOUS	NO.	NUMBER
CW	CAPILLARY WATERPROOFING	NTS	NOT TO SCALE
		OD	OUTSIDE DIAMETER
DIA	DIAMETER	O.F.	OUTSIDE FACE
DBS	DOWEL BAR SPLICER(S)	OPNG	OPENING
DIM	DIMENSION	OPP	OPPOSITE
DL	DEAD LOAD	OWSJ	OPEN-WEB STEEL JOIST
DN	DOWN		
DO.	DITTO	PCC	PRECAST CONCRETE
DWG	DRAWING(S)	PERF	PERFORATED
DWL	DOWEL(S)	PL	PLATE
		PS	PIPE SUPPORT
EF	EACH FACE	PVC	POLYVINYL CHLORIDE
EL	ELEVATION		
EQL	EQUAL	R	RISERS
EQPT	EQUIPMENT	R	RADIUS
ES	EACH SIDE	REINF	REINFORCING STEEL BAR
EW	EACH WAY	REQD	REQUIRED
EXST	EXISTING	SEP JT	SEPARATION JOINT
EXP JT	EXPANSION JOINT	SIM	SIMILAR
		SPS	SPACES
FD	FLOOR DRAIN	SPEC	SPECIFICATION
FF	FAR FACE	SPDD	STANDARD PROCTOR DRY DENSITY
FNSH	FINISH		
FL	FLOOR	SQ	SQUARE
FRP	FIBRE REINFORCED PLASTIC	SST	STAINLESS STEEL
FTG	FOOTING	STD	STANDARD
		STGR	STAGGERED
GALV	GALVANIZED	STIF	STIFFENER
GL	GRID LINE	STIRR	STIRRUP
GD	GUTTER DRAIN	SYMM	SYMMETRICAL
GID	GROUTED-IN DOWEL		
GRAN	GRANULAR	T	TREADS
		T&B	TOP AND BOTTOM
HEF	HORIZONTAL EACH FACE	TJ	TIE JOIST
HORIZ	HORIZONTAL	TLL	TOP LOWER LAYER
HPT	HIGH POINT	TOC	TOP OF CONCRETE
HSS	HOLLOW STRUCTURAL STEEL	TOS	TOP OF STEEL
HWL	HIGH WATER LEVEL	TUL	TOP UPPER LAYER
H	HIGH	TYP	TYPICAL
H & V	HORIZONTAL AND VERTICAL		
		U/S	UNDERSIDE
ID	INSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE
I.F.	INSIDE FACE		
INSUL	INSULATION	VERT	VERTICAL
INVT	INVERT	VEF	VERTICAL EACH FACE
		W	WIDE
		W/	WITH
		W/O	WITHOUT
		WS	WATER STOP
		WWF	WELDED WIRE FABRIC

 Certificate of Authorization CH2M HILL Canada Ltd. No. 1441 Expiry: April 30, 2006	 Frederickson Cooper ARCHITECTS	 A Web International Ltd. Company	ENGINEER'S SEAL ORIGINAL SIGNED BY D. KRUGER 2006/02/06	 THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION WATER TREATMENT PLANT MAIN BUILDING FOUNDATIONS AND CONCRETE STRUCTURES STRUCTURAL LEGEND GENERAL NOTES AND ABBREVIATIONS	CITY FILE NUMBER SHEET OF CITY DRAWING NUMBER 1-060M-D-S9002-001-00D
	DESIGNED BY: DK CHECKED BY: AP DRAWN BY: MS APPROVED BY: DJT SCALE: NTS RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI		CONSULTANT DRAWING NO. WM-S9002		
	NO. REVISIONS DATE BY	DATE 2005/08/10	DATE 2006/02/08		