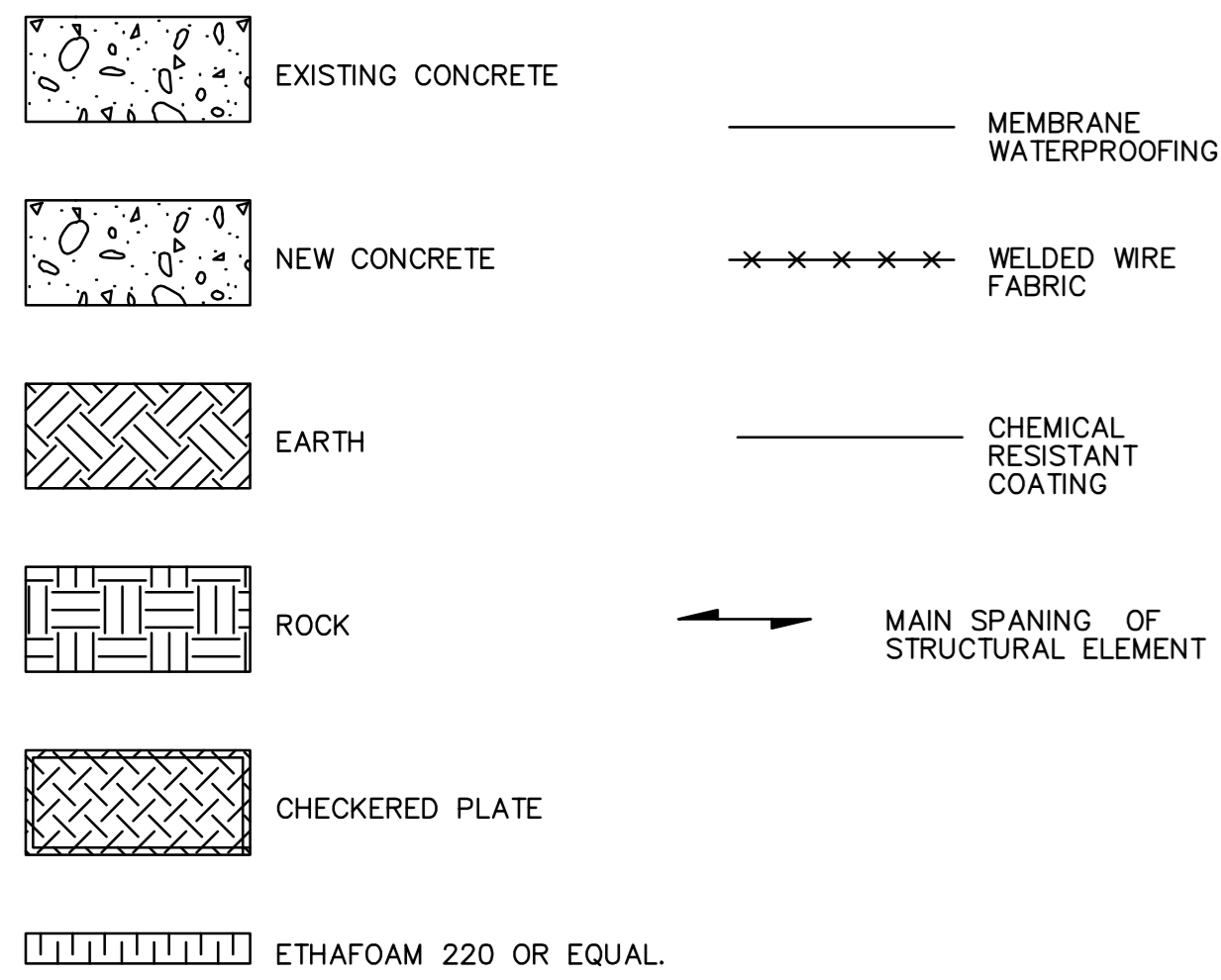


LEGEND



GENERAL NOTES

1. READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER PERTINENT CONTRACT DOCUMENTS.
2. DIMENSIONS IN MILLIMETRES. ELEVATIONS IN METRES.
3. DO NOT SCALE DRAWINGS.
4. 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 AND OTHER DESIGNS REQUIRED TO COMPLETE THE CONSTRUCTION.
5. CONSTRUCT FLOOR SLOPES IN STRUCTURAL SLAB, UNLESS NOTED OTHERWISE.
6. ALL PLANS AND SECTIONS SHALL BE READ IN CONJUNCTION WITH DESIGN DETAILS FROM DWG NO. WB-S0441 TO DWG NO. WB-S0448 AND THE CONTRACT DOCUMENTS UNLESS NOTED OTHERWISE. FOR REINFORCING LAP TABLE SEE DWG NO. WB-S0441
7. 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
8. REFER TO PROCESS MECHANICAL AND PLUMBING DRAWINGS FOR IDENTIFIED OPENINGS, EMBEDDED ITEMS AND UNDERSLAB ENCASED PIPING..
9. REFER TO THE "EMBEDMENT AND BLOCKOUT UNIT PRICE LIST" FOR BLOCKOUTS, INSERTS, SUPPORTS, ANCHORS, SMALL PIPE AND ELECTRICAL CONDUIT EMBEDMENT NOT IDENTIFIED ON THE DRAWINGS.
10. OTHER CONTRACTS WILL BE EXECUTED CONCURRENTLY WITH THIS CONTRACT. WORK ON THOSE CONTRACTS WILL AFFECT THIS CONTRACT. COORDINATE WITH OTHERS LOCATION OF ALL OPENINGS, EMBEDDED ITEMS, BLOCKOUTS, DOWELS, SLEEVES, AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.
11. WALLS AND SUPPORTING SLAB CONCRETE TO ATTAIN 80% OF SPECIFIED COMPRESSIVE STRENGTH PRIOR TO PLACING BACKFILL.
12. NO BACKFILL SHALL BE PLACED BEHIND CANTILEVERED, FREE TOP WALLS UNTIL THE CONCRETE HAS ATTAINED 100% OF ITS SPECIFIED STRENGTH.

DESIGN NOTES

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

1. CONCRETE 28-DAY COMPRESSIVE STRENGTH:
TYPE A 35MPa LIQUID HOLDING/CONTAINING STRUCTURES
TYPE B 30MPa MINIMUM, UNLESS NOTED OTHERWISE
TYPE C 15MPa FILL CONCRETE
2. REINFORCEMENT BARS: CAN/CSA-G30.18; GRADE 400R, 400W WHERE INDICATED.
3. ALUMINUM:
ASTM B221M; ALLOY 6061-T6, FOR STRUCTURAL EXTRUDED SHAPES, UNLESS NOTED OTHERWISE.
ANCHOR BOLTS:
ASTM A307; UNLESS NOTED OTHERWISE
4. BACKFILL:
UNIT WEIGHT 19.64 kN/m³
EARTH PRESSURE ACTIVE COEFFICIENT $K_a = 0.5$
5. MAXIMUM GROUNDWATER LEVEL ELEVATION 236.000
6. SNOW LOAD DATA:
GROUND SNOW LOADING $S_s = 1.7$ kPa
ASSOCIATED RAIN LOADING $S_r = 0.2$ kPa
7. WIND LOAD DATA:
1/30 YEAR PRESSURE (q_{30}) 0.42 kPa
8. SEISMIC DATA:
ACCELERATION-RELATED SEISMIC ZONE $Z_a = 0$
VELOCITY-RELATED SEISMIC ZONE $Z_v = 0$
ZONAL VELOCITY RATIO $v = 0$
9. REFERENCE CODES:
i) NATIONAL BUILDING CODE OF CANADA
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	MW	MEMBRANE WATERPROOFING
CL	CENTRE LINE		
CLJ	CONTROL JOINT	NF	NEAR FACE
CLSM	CONTROLLED LOW STRENGTH MATERIAL	NO.	NUMBER
		NTS	NOT TO SCALE
COL	COLUMN	OD	OUTSIDE DIAMETER
CONC	CONCRETE	O.F.	OUTSIDE FACE
CONT	CONTINUOUS	OPNG	OPENING
CW	CAPILLARY WATERPROOFING	OPP	OPPOSITE
		OWSJ	OPEN-WEB STEEL JOIST
DIA	DIAMETER		
DBS	DOWEL BAR SPLICER(S)	PCC	PRECAST CONCRETE
DIM	DIMENSION	PERF	PERFORATED
DL	DEAD LOAD	PL	PLATE
DN	DOWN	PVC	POLYVINYL CHLORIDE
DO.	DITTO		
DWG	DRAWING(S)	R	RISERS
DWL	DOWEL(S)	R	RADIUS
		REINF	REINFORCING STEEL BAR
EF	EACH FACE	REQD	REQUIRED
EL	ELEVATION		
EQL	EQUAL	SEP JT	SEPARATION JOINT
EQPT	EQUIPMENT	SIM	SIMILAR
ES	EACH SIDE	SPS	SPACES
EW	EACH WAY	SPEC	SPECIFICATION
EXST	EXISTING	SPMDD	STANDARD PROCTOR MAXIMUM DRY DENSITY
EXP JT	EXPANSION JOINT		
		SPDD	STANDARD PROCTOR DRY DENSITY
FD	FLOOR DRAIN	SQ	SQUARE
FF	FAR FACE	SST	STAINLESS STEEL
FNSH	FINISH	STD	STANDARD
FL	FLOOR	STGR	STAGGERED
FRP	FIBRE REINFORCED PLASTIC	STIF	STIFFENER
		STIRR	STIRRUP
FTG	FOOTING	SYMM	SYMMETRICAL
GALV	GALVANIZED	T	TREADS
GD	GUTTER DRAIN	T&B	TOP AND BOTTOM
GID	GROUTED-IN DOWEL	TJ	TIE JOIST
GRAN	GRANULAR	TLL	TOP LOWER LAYER
		TOC	TOP OF CONCRETE
HEF	HORIZONTAL EACH FACE	TOS	TOP OF STEEL
HORIZ	HORIZONTAL	TUL	TOP UPPER LAYER
HPT	HIGH POINT	TYP	TYPICAL
HSS	HOLLOW STRUCTURAL STEEL		
HWL	HIGH WATER LEVEL	U/S	UNDERSIDE
H	HIGH	UNO	UNLESS NOTED OTHERWISE
H & V	HORIZONTAL AND VERTICAL		
		VERT	VERTICAL
ID	INSIDE DIAMETER	VEF	VERTICAL EACH FACE
I.F.	INSIDE FACE	W	WIDE
INSUL	INSULATION	W/	WITH
INVT	INVERT	W/O	WITHOUT
		WS	WATER STOP
		WWF	WELDED WIRE FABRIC



NO.	ISSUED FOR TENDER	DATE	BY
00	ISSUED FOR TENDER	05/11/03	DK
	REVISIONS		

DESIGNED BY	DK	CHECKED BY	AP
DRAWN BY	MS	APPROVED BY	DJT
SCALE:	NTS	RELEASED FOR CONSTRUCTION BY:	R. SOROKOWSKI
DATE	2005/08/10	DATE	2005/11/07

ENGINEER'S SEAL	ORIGINAL SIGNED BY	D. KRUGER
		2005/11/03
	CONSULTANT DRAWING NO.	WM-S9001

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

WATER TREATMENT PLANT

FOUNDATIONS AND CONCRETE STRUCTURES 1

STRUCTURAL LEGEND
GENERAL NOTES AND ABBREVIATIONS

CITY FILE NUMBER
SHEET OF
CITY DRAWING NUMBER
1-060M-D-89001-001-000