SHEET: CSW-A1-WMO (1/2002)

GENERAL NOTES

1. READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER PERTINENT CONTRACT DOCUMENTS. IN THE EVENT OF A CONFLICT, THE SPECIFICATIONS SHALL GOVERN.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. DO NOT SCALE DRAWINGS. ALL INFORMATION CONCERNING EXISTING STRUCTURES HAVE BEEN TAKEN FROM ORIGINAL DRAWINGS AND SITE MEASUREMENTS. CONTRACTOR TO CONFIRM ON SITE ALL EXISTING DIMENSIONS, ELEVATIONS AND DETAILS PRIOR TO COMMENCING WORK. SHOULD INFORMATION DIFFER SIGNIFICANTLY FROM THAT SHOWN, CONTACT ENGINEER PRIOR TO PROCEEDING.
3. THE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA 1995, ITS SUPPLEMENTS AND THE LATEST EDITIONS (UNLESS OTHERWISE NOTED) OF REFERENCED CODES AND STANDARDS THEREIN. WATER RETAINING STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH ACI 350-01.
4. REFER TO THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, SLEEVES AND OTHER BUILDING COMPONENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
5. NOTIFY THE ENGINEER A MINIMUM 48 HOURS IN ADVANCE FOR REVIEWS.
6. CONSTRUCTION METHODS REQUIRING TEMPORARY SHORING, OR BRACING, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER, 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.

DESIGN LOADS:

1. DEAD LOADS:
   - .1) STRUCTURE SELF WEIGHT
   - .2) ROOFING = 1.0 kPa
   - .3) MECHANICAL LOAD (SUSPENDED FROM JOIST) 1.2 kPa
     MAX. CONCENTRATED LOAD AT ANY PANEL POINTS UNLESS OTHERWISE NOTED ON STRUCT./MECH. DWG'S 1.3 kN
   - .4) BELOW GRADE ROOF SLABS: SOIL UNIT WEIGHT 17.5 kN/m³ SEE GEOTECHNICAL REPORT
2. LIVE LOADS
   - .1) GROUND SNOW LOAD – Ss = 1.7 kPa, Sr = 0.2 kPa MODIFY FOR EXPOSURE AND DRIFT AS PER NBC 1995.
   - .2) RAIN LOAD: 0.0 kPa AT PARAPETS VARYING UNIFORMLY TO 0.5 kPa AT DRAINS
   - .3) WIND q(1/30) = 0.42 kPa
   - .4) MAIN FLOOR U/N = 9.6 kPa
   - .5) MEZZANINE U/N = 4.8 kPa
   - .6) FLOOR HATCH COVER = 2.4 kPa
   - .7) SAMPLING BUILDING FLOOR = 4.8 kPa

FOUNDATION NOTES

1. GENERAL
   - .1 ALL FOUNDATION CONSTRUCTION TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT BY DYREGROV CONSULTANTS, DATED DECEMBER 15, 2004.
   - .2 THE CONTRACTOR IS RESPONSIBLE FOR SHORING AND UNDERPINNING. DOCUMENTS RELATING TO THE WORK SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
2. PRECAST PILE FOUNDATION NOTES:
   - .1 BUILDING FOUNDATIONS ARE DESIGNED AS DRIVEN, END BEARING, PRESTRESSED PRECAST CONCRETE PILES WITH THE FOLLOWING DESIGN LOADS:
     300 DIAMETER = 445kN
     350 DIAMETER = 625kN
     400 DIAMETER = 800kN

CONCRETE NOTES

1. PROVIDE CONCRETE AND PERFORM WORK TO CSA A23.1-00, TEST CONCRETE TO CSA A23.2-00. THE CONTRACTOR SHALL HAVE COPIES OF THESE STANDARD ON SITE AT ALL TIMES. TEST RESULTS WILL BE ISSUED TO ENGINEER AND OWNER.
2. PROVIDE CLEAR CONCRETE COVER OVER REBAR AS FOLLOWS:
   - A) SURFACE POURED AGAINST GROUND 75 mm
   - B) FORMED SURFACES EXPOSED TO GROUND OR WEATHER: 50 mm
   - C) FORMED SURFACES NOT EXPOSED TO GROUND OR WEATHER:
     BEAMS, COLUMNS (TO STIRRUPS OR TIES) 40 mm
     WALLS 25 mm
     SLABS 25 mm
3. PROVIDE 20mm CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
4. ALL STRUCTURAL CONCRETE TO BE MINIMUM 30 MPa
5. CONSTRUCTION JOINTS MAXIMUM SPACING IS TO BE 14m. MINIMUM 2m FROM WALL CORNERS AND INTERSECTIONS.

MASONRY NOTES

1. ALL MASONRY WORK SHALL CONFORM TO CSA S304.1, A371 AND TO DETAILS SHOWN ON DRAWINGS.
2. MASONRY BLOCK UNITS SHALL CONFORM TO CSA A165. CLASSIFICATION H/15/C/M WITH A MINIMUM UNIT STRENGTH OF 15 MPa, UNLESS NOTED OTHERWISE. (COMPRESSIVE STRENGTH IS BASED ON LOST AREA)
3. ALL MORTAR SHALL CONFORM TO CSA A179 AND SHALL BE TYPE 'S', MORTAR WITH MINIMUM STRENGTH OF 12 MPa AT 28 DAYS.
4. ALL LINTELS, BOND BEAMS, AND PILASTERS SHALL BE FILLED WITH CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 20 MPa.
5. PROVIDE DOWELS FROM CONCRETE BEAMS OR WALLS TO MATCH MASONRY REINFORCING.

STRUCTURAL STEEL NOTES

1. FABRICATE AND ERECT STRUCTURAL STEEL TO CSA-S16.1.
2. PROVIDE STRUCTURAL STEEL SHAPES AND PLATES TO CSA-G40.21, GRADE 350W.
3. WELD TO CSA-W59 BY FABRICATORS CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA-W47.1, IN DIVISION 1 OR DIVISION 2.1.

STEEL JOIST SCHEDULE

MARK	DEPTH	SPACING	FINISH	REMARKS
J-1	500	1600 o/c MAX.		
J-2	600	1600 o/c MAX.		
J-3	1100	1700 o/c MAX. U/N		

OPEN WEB STEEL JOIST NOTES

1. DESIGN AND FABRICATE OPEN WEB STEEL JOISTS TO CSA S16.1 FOR DEPTHS, DETAILS, AND LOADING SHOWN ON THE DRAWINGS. REFER TO MECHANICAL DRAWINGS FOR WEIGHT AND LOCATION OF EQUIPMENT AND CONFIRM WITH MECHANICAL CONTRACTOR. DESIGN AND SUPPLY STEEL FRAMING FOR EQUIPMENT SUPPORT.
2. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL BE SEALED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA. SHOP DRAWINGS SHALL SHOW DETAILS, MATERIALS, UNIFORM AND CONCENTRATED DESIGN LOADS, BRIDGING AND ACCESSORIES.
3. CAMBER REQUIREMENTS AND DEFLECTION LIMITATIONS TO CSA S16 UNLESS NOTED ON DRAWINGS.
4. PROVIDE PERMANENT BRIDGING FOR ALL JOISTS IN ACCORDANCE WITH CSA S16, UNLESS NOTED OTHERWISE.

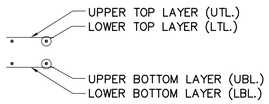
STEEL DECKING NOTES

1. DESIGN, FABRICATE AND INSTALL STEEL DECK TO CSA-S136 (LATEST EDITION) AND THE CANADIAN SHEET STEEL BUILDING INSTITUTE STANDARDS.
2. DECKING PROFILE: 38mm DEEP, MINIMUM 0.76mm (22Ga), OR AS SHOWN ON THE DRAWINGS, ZINC COATED STEEL CONFORMING TO ASTM A446. ZINC COATING TO ASTM A525 WIPE COAT 75 g/square meter FOR INTERIOR EXPOSURE OR 275 g/square meter FOR EXTERIOR EXPOSURE.
3. WELD DECK TO SUPPORTING STEEL WITH 20mm DIAMETER FUSION WELDS USING WELD WASHERS WHERE NECESSARY. SIDE LAPS FASTENED BY BUTTON PUNCHING @ 600 o/c. CLINCHING, TRANSVERSE WELDS, LONGITUDINAL WELDS AND PERIMETER WELDS @ 300 o/c.
5. INSTALL STEEL DECK CONTINUOUS OVER MINIMUM 3 SPANS EXCEPT WHERE OTHERWISE ACCEPTED. THE MINIMUM BEARING IS EQUAL TO THE DEPTH OF THE STEEL DECK, LAP JOINTS 75mm AT STRUCTURAL SUPPORTS.

MISCELLANEOUS METALS – ALUMINUM

1. DESIGN, FABRICATION AN INSTALLATION IN ACCORDANCE WITH CSA S157-M83 (R2002)
2. PERFORM WELDING OF ALUMINUM IN ACCORDANCE WITH REQUIREMENTS OF CSA W59.2.
3. ALUMINUM: CONFORMING TO ALUMINUM ASSOCIATION ALLOY AND TEMPER DESIGNATION 6061-T6 OR 6351-T6.
4. BOLTS AND ANCHOR BOLTS: CONFORMING TO STAINLESS STEEL C/W ISOLATION WASHERS.
5. BITUMINOUS PAINT: TO CAN/CGSB-1.108.
6. ISOLATE ALUMINUM FROM FOLLOWING COMPONENTS, BY MEANS OF BITUMINOUS PAINT:
   - .1 DISSIMILAR METALS EXCEPT STAINLESS STEEL, ZINC, OR WHITE BRONZE OF SMALL AREA.
   - .2 CONCRETE, MORTAR AND MASONRY.

REINFORCING LEGEND:



STANDARD ABBREVIATIONS:

ADDITIONAL	ADD'L
AT	@
ANCHOR BOLT	A. BOLT
ALTERNATE	ALTER.
ALUMINUM	ALUM.
APPROXIMATE	APPROX.
ARCHITECTURAL	ARCH.
AVERAGE	AVG.
BOTTOM	BOT.
BETWEEN	BET.
BUILDING	BLDG.
BENCH MARK	B.M.
BEARING	BRG.
BY (Between dims)	x (lower case)
CENTERLINE	℄
CAST IN PLACE	C.I.P.
CONSTRUCTION JOINT	C.J.
COMPLETE WITH	C/W
COLUMN	COL.
CONCRETE	CONC.
CONTINUOUS	CONT.
DEAD LOAD	D.L.
DOWN	DN.
DRAWING	DWG.
DOWEL	DWL.
EACH FACE	E.F.
EXPANSION JOINT	EXP. J.
EACH WAY	E.W.
ELEVATION	EL.
ELECTRICAL	ELEC.
EQUAL	EQ.
EXISTING	EXIST.
EXPANSION	EXP.
EXTERIOR	EXT.
FACE TO FACE	F. to F.
FACE OF CONCRETE	F.O.C.
FOUNDATION	FDN.
FOOTING	FTG.
GALVANIZE	GALV.
HANGER	HGR.
HORIZONTAL	HORIZ.
HOLLOW STRUCTURAL STEEL	HSS
HEIGHT	HT.
INSIDE FACE	I.F.
INSIDE DIAMETER	I.D.
INTERIOR	INT.
KILONEWTON	kN
LIVE LOAD	L.L.
MATERIAL	MATL.
MAXIMUM	MAX.
MECHANICAL	MECH.
MINIMUM	MIN.
MISCELLANEOUS	MISC.
NUMBER	No.
NOT TO SCALE	N.T.S.
ON CENTER	o/c (lower case)
OUTSIDE FACE	O.F.
OUT TO OUT	O/O
OUTSIDE DIAMETER	O.D.
OPENING	OPG.
OPPOSITE	OPP.
ORIGINAL	ORIG.
PLATE	PL.
PRELIMINARY	PRELIM.
PROJECTION	PROJ.
REINFORCE WITH	R/W
REINFORCING	REINF.
REQUIRED	REQ'D
REVISION	REV.
SECTION	SECT.
SHEET	SHT.
SIMILAR	SIM.
SPECIFICATION	SPEC.
STAINLESS STEEL	S.S.
STANDARD	STD.
STIFFENER	STIFF.
STIRRUP	STIRR.
STRUCTURAL	STRUCT.
SYMMETRICAL	SYM.
TOP OF	T.O.
TYPICAL	TYP.
UNLESS NOTED	U/N
VERTICAL	VERT.
WIND LOAD	W.L.

CONCRETE WALL SCHEDULE

MARK	WIDTH	HEIGHT	REINFORCING VERTICAL	REINFORCING HORIZONTAL	REINFORCING ADDITIONAL	REMARKS
CW-1	300	VARIES	20M @ 200 o/c E.F.	15M @ 250 o/c E.F.		
CW-2	350	VARIES	20M @ 200 o/c E.F.	15M @ 200 o/c E.F.		
CW-3	450	VARIES	20M @ 150 o/c E.F.	15M @ 200 o/c E.F		
CW-4	500	VARIES	25M @ 200 o/c E.F.	15M @ 150 o/c E.F.		
CW-5	200	VARIES	15M @ 300 o/c E.F.	15M @ 200 o/c E.F.		SEE DETAIL J & K ON DWG. CS.12
CW-6	350	VARIES	20M @ 150 o/c E.F.	15M @ 200 o/c E.F.		
CW-7	500	VARIES	20M @ 200 o/c E.F.	15M @ 150 o/c E.F.		
CW-8	300	VARIES	20M @ 150 o/c E.F.	15M @ 250 o/c E.F.		

CONCRETE SLAB SCHEDULE

MARK	DEPTH	REINFORCING TOP	REINFORCING BOTTOM	REINFORCING ADDITIONAL	REMARKS
S-1	200	15M @ 200 o/c E.W.	15M @ 200 o/c E.W.		
S-2	300	20M @ 200 o/c UTL. 15M @ 250 o/c LTL	15M @ 250 o/c UBL 20M @ 200 o/c LBL		
S-3	350	20M @ 200 o/c UTL 15M @ 200 o/c LTL	15M @ 200 o/c UBL 20M @ 200 o/c LBL		SEE SECTION 3 ON DWG. CS3.02
S-4	450	20M @ 150 o/c UTL 15M @ 200 o/c LTL	15M @ 200 o/c UBL 20M @ 150 o/c LBL		SEE SECTION 3 ON DWG. CS3.02
S-5	500	25M @ 200 o/c UTL 15M @ 150 o/c LTL	15M @ 150 o/c UBL 25M @ 200 o/c LBL		SEE SECTION 1 ON DWG. CS3.01
S-6	250	20M @ 200 o/c UTL. 15M @ 200 o/c LTL.	15M @ 200 o/c UBL. 20M @ 200 o/c LBL.		SEE SECTION 6 ON DWG. CS3.02
S-7	200	15M @ 300 o/c E.W.	15M @ 300 o/c E.W.		
S-8	350	20M @ 150 o/c UTL 20M @ 150 o/c LTL	15M @ 200 o/c UBL 15M @ 200 o/c LBL		
S-9	300	20M @ 150 o/c E.W.	20M @ 150 o/c E.W.		
S-10	300	15M @ 150 o/c UTL 15M @ 150 o/c LTL	15M @ 200 o/c UBL 15M @ 200 o/c LBL		
S-11	200	15M @ 250 o/c E.W.	15M @ 250 o/c E.W.		SEE SECTION 1 ON DWG. CS5.02

CONCRETE GRADE BEAM SCHEDULE

MARK	WIDTH	DEPTH	REINFORCING TOP	REINFORCING MIDDLE	REINFORCING BOTTOM	REINFORCING STIRRUPS	REINFORCING ADDITIONAL	REMARKS
GB-1	200	800	4-20M	2-15M	4-20M	10M @ 300 o/c		
GB-2	350	800	4-20M	2-15M	4-20M	10M @ 300 o/c		

CONCRETE BEAM SCHEDULE

MARK	WIDTH	DEPTH	REINFORCING TOP	REINFORCING MIDDLE	REINFORCING BOTTOM	REINFORCING STIRRUPS	REINFORCING ADDITIONAL	REMARKS
CB-1	300	250	4-20M		4-20M	10M @ 250 o/c		
CB-2	300	300	3-25M		3-25M	10M @ 250 o/c		
CB-3	300	300	3-20M		3-20M	10M @ 250 o/c		
CB-4	350	250	3-20M		3-20M	10M @ 250 o/c		

CONCRETE COLUMN SCHEDULE

MARK	SIZE	REINFORCING VERT.	REINFORCING TIES	REINFORCING ADDITIONAL	REMARKS
CC-1	300x300	4-20M	10M @ 300 o/c		REINFORCING FROM EL. 225.478
CC-2	350x350	4-20M	10M @ 300 o/c		REINFORCING FROM EL. 225.478

MASONRY WALL SCHEDULE

MARK	SIZE	REINFORCING	TYPE	REMARKS
MW-1	200	20M @ 600 o/c		
MW-2	250	20M @ 600 o/c		
MW-3	150	20M @ 600 o/c		

APEGM
Certificate of Authorization
Earth Tech Canada Inc.
No. 730 Expiry: April 30, 2005

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	05/02/18	JEH

EARTH TECH
Earth Tech (Canada) Inc. Winnipeg, Manitoba 204.477.5381

DESIGNED BY	RE, MK	CHECKED BY	GGP
DRAWN BY	C.T.	APPROVED BY	DT
HOR. SCALE: AS NOTED VERTICAL SCALE: AS NOTED		RELEASED FOR CONSTRUCTION BY:	T. KJARTANSON
DATE	2004/11/04	DATE	2005-02-18

ENGINEER'S SEAL
ORIGINAL SIGNED BY
R.B. ERIC
FEB. 18/05

CONSULTANT DRAWING NO.
66303D-CS1.01

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NEWPCC - SECONDARY EFFLUENT UV DISINFECTION FACILITY

STRUCTURAL
GENERAL NOTES AND SCHEDULES

CITY FILE NUMBER

SHEET 1 OF 18

CITY DRAWING NUMBER

Feb 21, 2005 – 12:49pm PLOTTED BY: jorge.ducharme LAYOUT:Layout1 FILE:L:\work\66000\66303da\02a-CAD\ALL\SUBMISSION\TENDER-PDF\CS1-01.dwg