SHEET: COW-A1 (05/2005)

GENERAL NOTES

1. THE GENERAL NOTES AND STRUCTURAL STANDARD DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE IN METRES AND ARE TO GEODETIC DATUM. THE CONTRACTOR SHALL VERIFY DIMENSIONS BEFORE BEGINNING CONSTRUCTION AND REPORT DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THE DRAWINGS.
3. THE DESIGN AND CONSTRUCTION IS 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.
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 CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH CONSTRUCTION
5. CONTRACTOR TO CONFIRM ALL OCCURRENCES OF INTERFERENCE BETWEEN NEW AND EXISTING. REPORT ALL DISCREPANCIES BETWEEN THAT SHOWN ON THE DRAWINGS AND THAT WHICH EXISTS TO THE CONTRACT ADMINISTRATOR, IMMEDIATELY UPON DISCOVERY. KEEP ACCURATE AS-BUILT RECORDS OF ALL NEW WORKS AND RELOCATED OR MODIFIED EXISTING FACILITIES.
6. CONSTRUCTION METHODS REQUIRING TEMPORARY SHORING, OR BRACING, SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR 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.

FOUNDATION NOTES

1. ALL FOUNDATION CONSTRUCTION SHALL BE PERFORMED TO THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT BY DYREGROV CONSULTANTS, DATED FEB. 2006 AND AMENDMENTS.
2. AN EXCAVATION PLAN SHALL BE PREPARED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA WITH EXPERIENCE IN GEOTECHNICAL ANALYSIS INCLUDING SLOPE STABILITY. SUBMIT EXCAVATION PLAN FOR REVIEW.
3. IF SHORING IS USED IN THE CONSTRUCTION, THE SHORING SHALL BE DESIGNED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA. SUBMIT SHORING PLAN AND DETAIL FOR REVIEW. THE PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR TO PROVIDE THE SHORING DESIGN SHALL INSPECT THE SHORING AT CRITICAL STAGES AND CERTIFY IN WRITING TO THE CONTRACT ADMINISTRATOR THAT IT MEETS THE REQUIREMENTS OF HIS DESIGN.
4. ALL FOUNDATIONS ARE DESIGNED AS DRIVEN, END BEARING, PRESTRESSED PRECAST CONCRETE PILES WITH THE FOLLOWING DESIGN CAPACITY:
   - .1 300mm HEX – ALLOWABLE LOAD CAPACITY = 445 kN
   - .2 350mm HEX – ALLOWABLE LOAD CAPACITY = 625 kN
   - .3 400mm HEX – ALLOWABLE LOAD CAPACITY = 800 kN
5. A MINIMUM OF 450 mm OF PRESTRESSING STRAND LENGTHS SHALL BE EXPOSED FOLLOWING THE PILE CUT-OFF.
6. SEE PILE SCHEDULE FOR PREBORING REQUIREMENTS

CONCRETE NOTES

1. PROVIDE CONCRETE AND PERFORM WORK TO CSA A23.1-00, TEST CONCRETE TO CSA A23.2-00. THE CONTRACTOR SHALL HAVE A COPY OF THESE STANDARDS ON SITE AT ALL TIMES.
2. ALL STRUCTURAL CONCRETE STRENGTH REFER TO SPECIFICATIONS.
3. 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 THE EVENT OF CONFLICT, THE MOST STRINGENT REQUIREMENT SHALL APPLY.
4. FORMWORK AND FALSEWORK DESIGN SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA. SUBMIT TO CONTRACT ADMINISTRATOR FOR REVIEW.
5. 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.
6. PROVIDE 20mm CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
7. CONSTRUCTION JOINTS : SURFACE PREPARATION SHALL BE BY SAND BLASTING TO EXPOSE FINE AGGREGATE. REINFORCING STEEL SHALL BE CLEANED BY SAND BLASTING METHOD AS WELL.
8. VOID FORM UNDER THE SBR BUILDING STRUCTURE SHALL BE GEOSPAN (SOLID FOAM MATERIAL). ALL OTHER VOIDFORM SHALL BE WAX COATED CARDBOARD TYPICAL.
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 SUPERPLASTI-SIZER.

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....

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/A/M WITH A MIN. UNIT STRENGTH OF 15MPa, UNLESS NOTED OTHERWISE.
3. ALL MORTAR SHALL CONFORM TO CSA A179 AND SHALL BE TYPE 'S'.
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 WALL REINFORCING.

REINFORCING STEEL NOTES:

1. DEFORMED BARS CONFORMING TO CSA G30.18 GRADE 400 PLAIN FINISH.
2. REINFORCING WORK SHALL BE IN ACCORDANCE WITH CSA-A23.1 AND CSA-A23.3.
3. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST REINFORCING STEEL INSTITUTE OF CANADA DETAILING MANUAL OF STANDARD PRACTICE.
4. PROVIDE CLEAR CONCRETE COVER OVER REBAR AS FOLLOWS:
   - a.) BEAM STIRRUPS: 40mm
   - b.) SLABS TOP: 65mm
   - c.) SLAB BOTTOM SUPPORT ON PILES: 100mm
   - d.) SLAB BOTTOM OTHER: 65mm
   - e.) SLAB SIDE: 65mm
   - f.) COLUMN TIES : 40mm
   - g.) WALLS : 50mm UNLESS NOTED OTHERWISE

STRUCTURAL & MISC. 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. STEEL PLATES AND SECTIONS: CONFORMING TO CSA G40.21; TYPE W WITH A MINIMUM YIELD STRENGTH OF 300 MPa.
4. HOLLOW STRUCTURAL SECTIONS: CONFORMING TO CSA G40.21; TYPE W WITH A MINIMUM YIELD STRENGTH OF 350 MPa.
5. ANCHOR BOLTS: CONFORMING TO ASTM A307.
6. WELDING MATERIALS: CONFORMING TO CSA W59.
7. WELDING OF ALL LOAD CARRYING ASSEMBLIES IS TO BE PERFORMED BY A FIRM CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1 IN DIVISION 2.
8. GROUT: NON-SHRINK, NON-METALLIC, 35 MPa AT 28 DAYS.
9. SUPPLY ALL COMPONENTS REQUIRED FOR PROPER ANCHORAGE OF MISCELLANEOUS METALS. FABRICATE ANCHORAGE AND RELATED COMPONENTS OF SAME MATERIAL AND FINISH AS METAL FABRICATIONS, UNLESS OTHERWISE SPECIFIED OR SHOWN.
10. GALVANIZING CONFORMING TO CSA G164.
11. CLEAN ALL STEEL PRIOR TO PRIMING TO SSPC SURFACE PREPARATION SPECIFICATION No. 7 "BRUSH-OFF BLAST CLEANING".
12. PRIME STEEL SURFACES WITH ONE COAT OF PRIMER TO CISC/CPMA 2-75.

MISCELLANEOUS METALS – ALUMINUM

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

STANDARD ABBREVIATIONS:

ADDITIONAL	ADD'L	SECTION	SECT.
AT	@	SHEET	SHT.
ANCHOR BOLT	A. BOLT	SIMILAR	SIM.
ALTERNATE	ALTER.	SCHEDULE	SCH.
ALUMINUM	ALUM.	SPECIFICATION	SPEC.
APPROXIMATE	APPROX.	STAINLESS STEEL	S.S.
ARCHITECTURAL	ARCH.	STANDARD	STD.
AVERAGE	AVG.	STIFFENER	STIFF.
BOTTOM	BOT.	STIRRUP	STIRR.
BETWEEN	BET.	STRUCTURAL	STRUCT.
BUILDING	BLDG.	SYMMETRICAL	SYM.
BENCH MARK	B.M.	TOP OF	T.O.
BEARING	BRG.	TYPICAL	TYP.
BY (Between dims)	x (lower case)	UNLESS NOTED	U/N
CENTERLINE	℄	VERTICAL	VERT.
CAST IN PLACE	C.I.P.	WIND LOAD	W.L.
CONCRETE MASONRY UNIT	C.M.U.		
CONSTRUCTION	CONST.		
CONSTRUCTION JOINT	C.J.		
COMPLETE WITH	C/W		
COLUMN	COL.		
CONCRETE	CONC.		
CONTINUOUS	CONT.		
DEAD LOAD	D.L.		
DIAMETER	DIA.		
DIMENSION	DIM.		
DOWN	DN.		
DOUBLE	DBL.		
DRAWING	DWG.		
DOWEL	DWL.		
EACH FACE	E.F.		
EACH	EA.		
EACH WAY	E.W.		
ELEVATION	EL.		
ELECTRICAL	ELEC.		
EQUAL	EQ.		
EXISTING	EXIST.		
EXPANSION JOINT	EXP. J.		
EXPANSION	EXP.		
EXTERIOR	EXT.		
FACE TO FACE	F. to F.		
FLOOR	FLR.		
FACE OF CONCRETE	F.O.C.		
FIBERGLASS REINFORCED PLASTIC	FRP.		
FOUNDATION	FDN.		
FOOTING	FTG.		
GALVANIZE	GALV.		
HANGER	HGR.		
HIGH WATER LEVEL	H.W.L.		
HORIZONTAL	HORIZ.		
HOLLOW STRUCTURAL STEEL	HSS		
HEIGHT	HT.		
HOLLOWCORE	H.C.		
INSIDE FACE	I.F.		
INSIDE DIAMETER	I.D.		
INTERIOR	INT.		
INVERT	INVT.		
KILONEWTON	kN		
K.O. MASONRY BLOCK	K.O.		
KILOPASCAL	kPa		
LIVE LOAD	L.L.		
LONG	LG.		
LOCATION	LOC.		
MATERIAL	MATL.		
MAXIMUM	MAX.		
MEGA PASCAL	MPa		
MECHANICAL	MECH.		
MILLIMETER	mm		
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	OPNG.		
OPEN WEB STEEL JOIST	OWSJ.		
OPPOSITE	OPP.		
ORIGINAL	ORIG.		
PLATE	PL.		
POLY VINYL COMPOSITE	PVC.		
PRELIMINARY	PRELIM.		
PROJECTION	PROJ.		
REINFORCE WITH	R/W		
REINFORCING	REINF.		
REQUIRED	REQ'D		
REVISION	REV.		

APEGM Certificate of Authorization
AECOM Canada Ltd. No. 4671 Date: 2006/05/15 (Original dated on:)

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
02	AS-CONSTRUCTED DRAWING	09/04/09	GLG
01	ISSUED FOR CONSTRUCTION	06/08/30	GLG
00	ISSUED FOR TENDER	06/05/15	WDB

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:		RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/04/03	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S0.01

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
GENERAL NOTES

CITY DRAWING NUMBER
1-0101C-S0001-001-02

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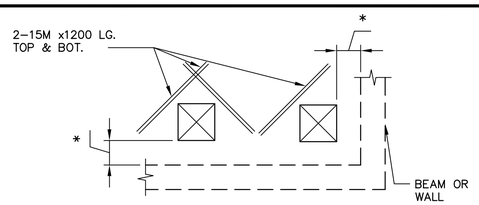
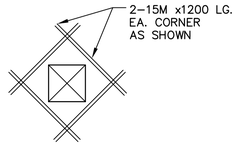
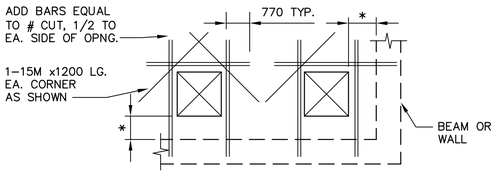
SHEET: COW-A1 (05/2005)



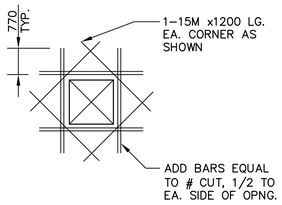
PLAN SHOWING EXTRA REINF.
AROUND OPENING 150 TO 280



WHEN OPENING IS MORE
THAN 300 FROM BEAM OR WALL



PLAN SHOWING EXTRA REINF.
AROUND OPENING 300 TO 760

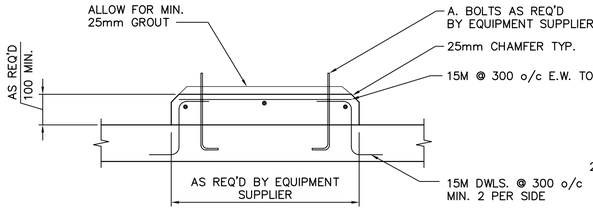


WHEN OPENING IS MORE
THAN 300 FROM BEAM OR WALL

TYPICAL REINFORCING AROUND OPENINGS IN CONCRETE SLAB OR WALL

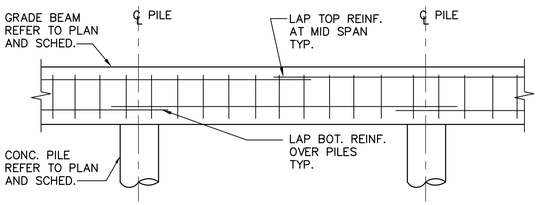
SCALE N.T.S.

1. NUMBER OF REINFORCING BARS TO BE CUT AT OPENING TO BE KEPT AT A MINIMUM. DEFLECT AS MANY BARS AS POSSIBLE AROUND OPENING.
2. REINFORCING BARS TO BE KEPT MINIMUM 50 CLEAR OF OPENING.
3. CIRCULAR OPENINGS TO BE TREATED IN SAME MANNER AS RECTANGULAR UNLESS OTHERWISE DETAILED.



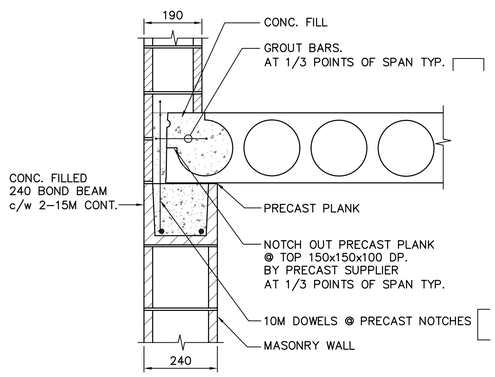
HOUSE KEEPING PADS FOR EQUIPMENT ON STRUCTURAL SLAB U/N OTHERWISE

SCALE N.T.S.



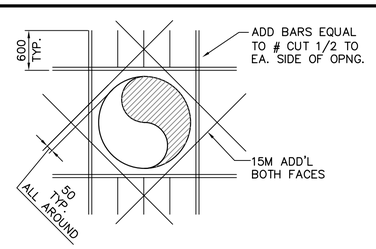
GRADE BEAM SPLICE DETAIL

SCALE N.T.S.



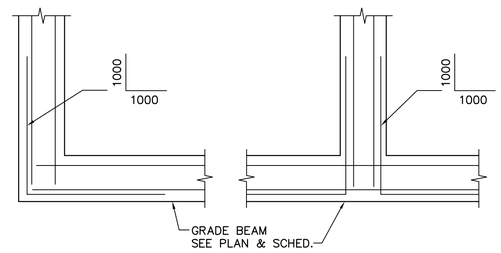
PRECAST PLANK PARALLEL TO MASONRY WALL DETAIL 1

SEE DWG S3.06 FOR MASONRY REINF.



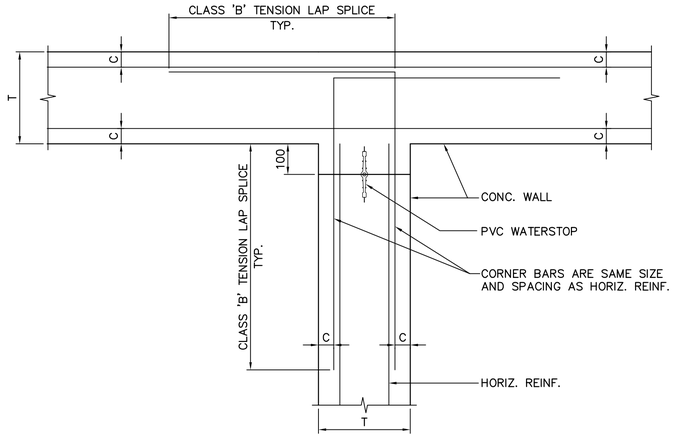
EXTRA REINFORCING AROUND PIPE UP TO 1250ø MAX. CAST IN WALL OR FLOOR SLAB

SCALE N.T.S.



TYPICAL GRADE BEAM CORNER REINFORCING

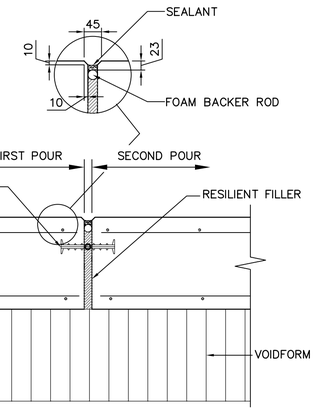
SCALE N.T.S.
CORNER BARS SAME SIZE AND SPACING AS HORIZONTAL REINFORCING



TYPICAL REINFORCING FOR WALL INTERSECTION

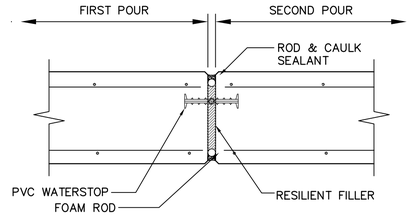
SCALE N.T.S.

VERTICAL REINFORCING NOT SHOWN FOR CLARITY.
C = CONC. COVER AS SPECIFIED
T = WALL THICKNESS, REFER TO SCHED.



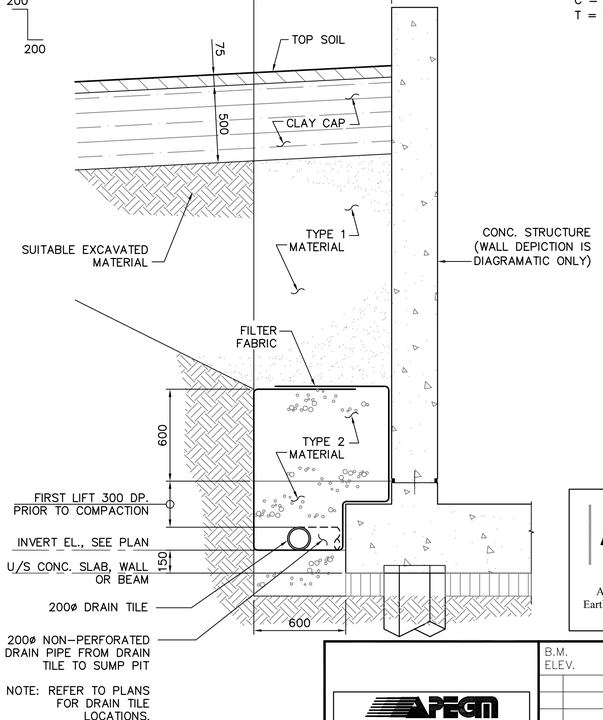
CONCRETE SLAB EXPANSION JOINT TYP.

SCALE N.T.S.



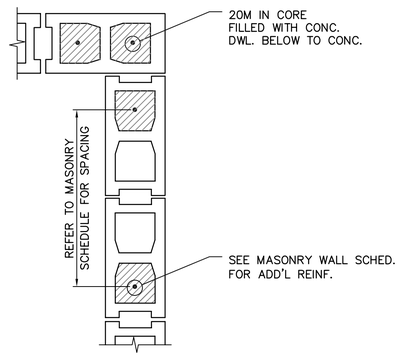
WALL EXPANSION JOINT TYP.

SCALE N.T.S.



TYPICAL BACKFILL WITH OR WITHOUT DRAIN TILE

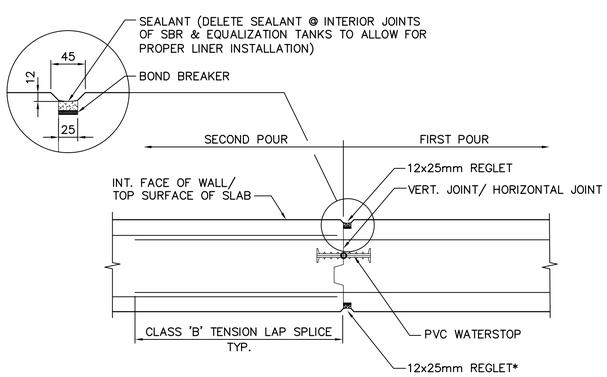
SCALE N.T.S.



TYPICAL VERTICAL REINFORCING DETAIL

SCALE N.T.S.

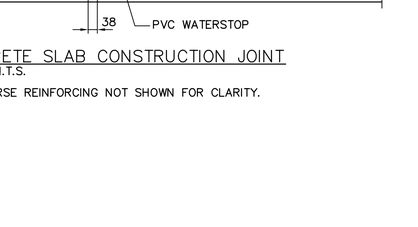
MASONRY WALL VERTICAL REINFORCING SHALL BE INSTALLED AT ALL CORNERS IN MASONRY WALLS & AT END OF MASONRY WALLS.



TYPICAL WALL CONSTRUCTION JOINT

SCALE N.T.S.

*NOT APPLICABLE FOR FLOOR SLABS
TRANSVERSE REINFORCING NOT SHOWN FOR CLARITY.



CONCRETE SLAB CONSTRUCTION JOINT

SCALE N.T.S.

TRANSVERSE REINFORCING NOT SHOWN FOR CLARITY.

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED
SIG..... DATE.....

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: 2006/05/15
Original dated on:

NO.	REVISIONS	DATE	BY
03	AS–CONSTRUCTED DRAWING	09/04/09	RJH
02	ISSUED FOR CONSTRUCTION	06/08/30	GLG
01	291–2006 ADDENDUM 6	06/07/26	CMF
00	ISSUED FOR TENDER	06/05/15	WDB

B.M.
ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/02/01	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S0.02

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

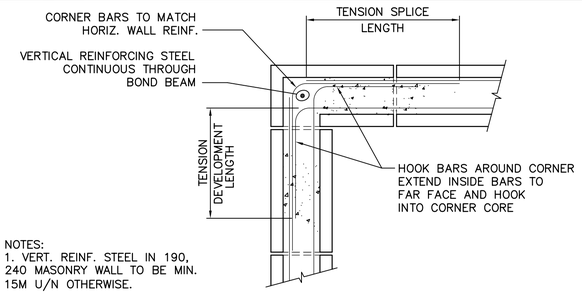
STRUCTURAL
SBR BUILDING
STANDARD DETAILS SHEET 1

CITY DRAWING NUMBER
1–0101C–S0002–001–03

Last Save: 2009–07–22 9:33 AM

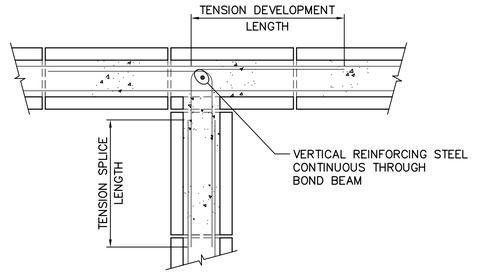
L:\WORK\66000\66303CEN\02A–CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS–CONSTRUCTED DWG\STRUCT\1–0101C–S0002–001–03D.DWG

SHEET: COW-A1 (05/2005)



NOTES:
1. VERT. REINF. STEEL IN 190, 240 MASONRY WALL TO BE MIN. 15M U/N OTHERWISE.

CORNER BOND BEAMS



INTERSECTING BOND BEAMS

TYPICAL BOND BEAM DETAILS
SCALE N.T.S.

PRE-CAST CONCRETE PILE SCHEDULE

MARK	DIAMETER	CUT-OFF	REMARKS	COMMENT
1 to 259	400	222.685	PRECAST PILE PROJECTED INTO FOOTING 75mm	
260 to 352	400	222.985	PRECAST PILE PROJECTED INTO FOOTING 75mm	NOS. 305a & 305b ADDED
353 to 477	400	223.385	PRECAST PILE PROJECTED INTO SLAB 75mm	NOS. 379 NOT USED
478 to 481	400	223.035	PRECAST PILE PROJECTED INTO SLAB 75mm	
482 to 538	400	223..385	PRECAST PILE PROJECTED INTO SLAB 75mm	NOS. 539 NOT USED NOS. 508a & 508b ADDED
540 & 541	400	223.385	PRECAST PILE PROJECTED INTO SLAB 75mm	
542 to 544	400	223.035	PRECAST PILE PROJECTED INTO SLAB 75mm	
545 to 549	400	223.385	PRECAST PILE PROJECTED INTO SLAB 75mm	
550 to 619	400	223.385	PRECAST PILE PROJECTED INTO SLAB 75mm	
620, 621, 622 624, 626, 627	400	229.045	PRECAST PILE PROJECTED INTO PILECAP 75mm PRE-BORE 10M	
623 & 625	400	229.745	PRECAST PILE PROJECTED INTO PILECAP 75mm PRE-BORE 10M	
628 & 629 631, 633, 635 638, 640, 642 644, 646, 647	400	229.675	PRECAST PILE PROJECTED INTO PILECAP 75mm PRE-BORE 10M	
630, 632 634, 636	400	230.375	PRECAST PILE PROJECTED INTO PILECAP 75mm PRE-BORE 10M	
637, 639, 641 643, 645, 679 680 to 683	400	231.575	PRECAST PILE PROJECTED INTO SLAB 75mm PRE-BORE 10M	
684 to 693	400	222.685	PRECAST PILE PROJECTED INTO FOOTING 75mm	
648	400	222.985	PRECAST PILE PROJECTED INTO FOOTING 75mm	
654 to 678	400	223.035	PRECAST PILE PROJECTED INTO SLAB 75mm	
684 to 693	400	222.685	PRECAST PILE PROJECTED INTO FOOTING 75mm	
694 to 699	400	223.035	PRECAST PILE PROJECTED INTO SLAB 75mm	
700 to 707	400	223.185	PRECAST PILE PROJECTED INTO SLAB 75mm	

NOTE:
K.O. TYPE BLOCKS MAY BE USED FOR LINTELS AT LOCATIONS WHERE UNDERSIDE OF BLOCK WILL NOT BE VISIBLE TO VIEW.

CONCRETE GRADE BEAM SCHEDULE

EQUALIZATION TANK, SBR 1, SBR 2, EXHAUST FAN BUILDING, BLOWER BUILDING

MARK	WIDTH	DEPTH	REINFORCING TOP	REINFORCING MIDDLE	REINFORCING BOTTOM	REINFORCING STIRRUPS	REINFORCING ADDITIONAL	REMARKS
GB-1	500	1500	6-25M	15M E.F. @ 300	6-25M	15M @ 175 o/c		300Wx500H UPSTAND CURB R/W 3-25M CONT. TOP, 1-15M MIDDLE E.F. c/w 10M U-BARS @ 175 o/c.
GB-2	500	1100	6-25M	15M E.F. @ 300	6-25M	15M @ 200 o/c		
GB-3	400	1100	4-25M	15M E.F. @ 300	4-25M	15M @ 200 o/c		
GB-4	500	1300	6-25M	15M E.F. @ 300	6-25M	15M @ 175 o/c		300Wx700H UPSTAND CURB R/W 3-25M CONT. TOP, 2-15M MIDDLE E.F. c/w 10M U-BARS @ 200 o/c.

CONCRETE BEAM SCHEDULE

EQUALIZATION TANK, SBR 1, SBR 2, EXHAUST FAN BUILDING, BLOWER BUILDING

MARK	WIDTH	DEPTH	REINFORCING TOP	REINFORCING MIDDLE	REINFORCING BOTTOM	REINFORCING STIRRUPS	REMARKS
CB-1	600	1200	6-30M	15M E.F. @ 300	6-30M	15M @ 250 o/c	300Wx1500H UPSTAND CURB R/W 3-25M CONT. TOP, 15M @ 300 o/c MIDDLE E.F. c/w 15M STIRRUPS @ 250 o/c FULL HT. (2.7m)
CB-2	350	1200	3-30M	15M E.F. @ 300	3-30M	15M @ 250 o/c	
CB-3	500	2000	12-25M 6-IN 2 ROWS	6 ROWS 1-20M E.F. @ 300	12-25M 6 IN 2 ROWS	15M @ 125 o/c	
CB-4	500	900	5-25M	15M E.F. @ 300	5-25M	15M @ 300 o/c	300Wx900H UPSTAND CURB R/W 3-25M CONT. TOP, 15M @ 300 o/c MIDDLE E.F. c/w 15M STIRRUPS @ 300 o/c FULL HT. (1.8m)

CONCRETE WALL SCHEDULE

EQUALIZATION TANK, SBR 1, SBR 2, EXHAUST FAN BUILDING, BLOWER BUILDING

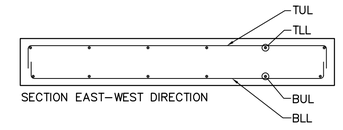
MARK	WIDTH	HEIGHT	REINFORCING VERTICAL	REINFORCING HORIZONTAL	REINFORCING ADDITIONAL	REMARKS
CW-1	500/1400	VARIES	25M @ 300 o/c E.F.	20M @ 200 o/c E.F.	25M DLS @ 150 o/c	SEE SECTION FOR UPSTAND
CW-2	500/1000	VARIES	25M @ 300 o/c E.F.	20M @ 200 o/c E.F.	30M DLS @ 150 o/c	SEE SECTION FOR UPSTAND
CW-3	350	VARIES	20M @ 200 o/c E.F.	20M @ 200 o/c E.F	20M DLS @ 200 o/c	
CW-4	500	VARIES	25M @ 200 o/c E.F.	20M @ 150 o/c E.F.	25M DLS @ 200 o/c	

CONCRETE SLAB SCHEDULE

EQUALIZATION TANK, SBR 1, SBR 2, EXHAUST FAN BUILDING, BLOWER BUILDING

MARK	DEPTH	REINFORCING TOP	REINFORCING BOTTOM	REINFORCING ADDITIONAL	REMARKS
SL-1	600	20M @ 200 o/c E.W.	20M @ 200 o/c E.W.		
SL-2	300	20M @ 180 o/c E.W.	20M @ 180 o/c E.W.	20M DOWELS @ 180 o/c	
SL-3	300	20M @ 180 o/c E.W.	20M @ 180 o/c E.W.	20M DOWELS @ 180 o/c	
SL-4	300	20M @ 200 o/c E.W.	20M @ 200 o/c E.W.	20M DOWELS @ 200 o/c	
SL-5	300	20M @ 200 o/c E.W.	20M @ 200 o/c E.W.	20M DOWELS @ 200 o/c	
SL-6	500	20M @ 180 o/c E.W.	20M @ 180 o/c E.W.		
SL-7	400	20M @ 200 o/c E.W.	20M @ 200 o/c E.W.		

LEGEND:
TUL - TOP UPPER LAYER
TLL - TOP LOWER LAYER
BUL - BOTTOM UPPERLAYER
BLL - BOTTOM LOWER LAYER



MASONRY WALL SCHEDULE

EQUALIZATION TANK, SBR 1, SBR 2, EXHAUST FAN BUILDING, BLOWER BUILDING

MARK	SIZE	REINFORCING	TYPE	CORE FILL	REMARKS
MW-1	240	20M VERT @ 800 o/c	CONCRETE	FILL ALL REINF CORES w/ 20MPA CONC	STRUCTURAL SOUND BLOCK
MW-2	190	15M VERT @ 800 o/c	CONCRETE	FILL ALL REINF CORES w/ 20MPA CONC	

CONCRETE COLUMN SCHEDULE

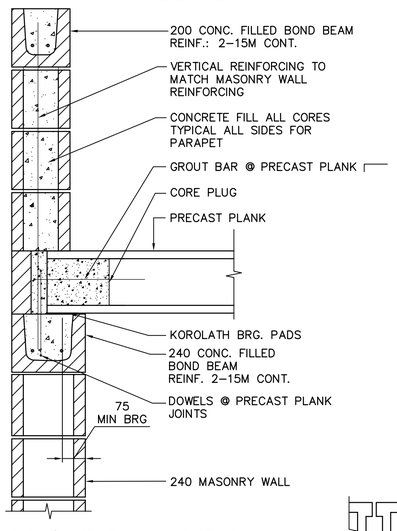
EQUALIZATION TANK, SBR 1, SBR 2, EXHAUST FAN BUILDING, BLOWER BUILDING

MARK	SIZE	REINFORCING VERT.	REINFORCING STIRRUPS	REINFORCING ADDITIONAL	REMARKS
CC-1	1000x600	30-25M	10M @ 300 o/c QUAD	25M DOWELS	SEE DETAIL
CC-2	700x500	24-25M	10M @ 300 o/c TRIPLES	25M DOWELS	SEE DETAIL

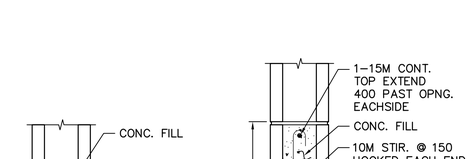
CONCRETE EQUIPMENT PEDESTAL SCHEDULE

EQUALIZATION TANK, SBR 1, SBR 2, EXHAUST FAN BUILDING, BLOWER BUILDING

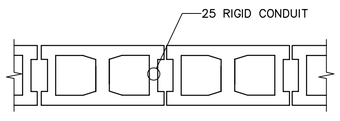
MARK	SIZE	REINFORCING VERT.	REINFORCING STIRRUPS	REINFORCING ADDITIONAL	REMARKS
EP-1	900x900	32-25M	15M @ 300 o/c TRIPLES	25M DOWELS	
EP-2	900x900	32-25M	15M @ 300 o/c TRIPLES	25M DOWELS	

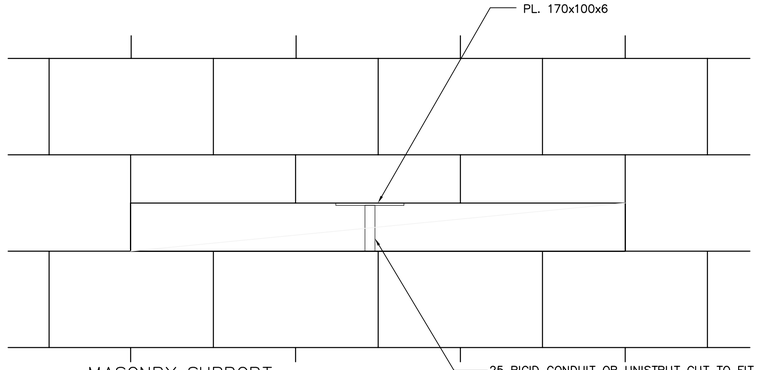


PRECAST PLANK BRG ON MASONRY WALL

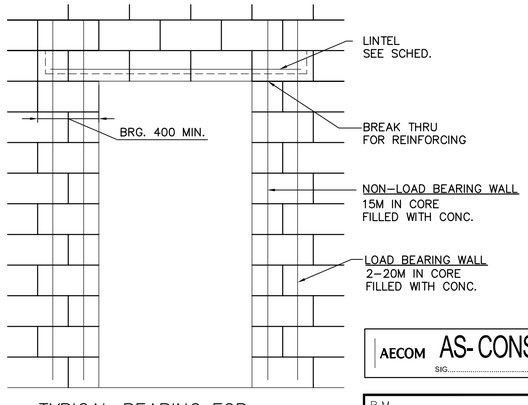


LINTEL TYPE ML-1 | LINTEL TYPE ML-2 | LINTEL TYPE ML-3 | LINTEL TYPE ML-4

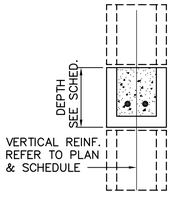




MASONRY SUPPORT AT CABLE TRAY OPENING
SCALE N.T.S.



TYPICAL BEARING FOR CONCRETE BLOCK LINTELS
SCALE N.T.S.



TYPICAL BOND BEAM

AECOM AS-CONSTRUCTED
SIG. DATE

AECOM
As of January 3, 2009, EarthTech became AECOM Canada Ltd.

Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: Original dated on: 2006/05/15

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
04	AS-CONSTRUCTED DRAWING	09/04/09	GLG
03	ISSUED FOR FI-O-030	07/12/04	CMF
02	ISSUED FOR CONSTRUCTION	06/08/30	GLG
01	291-2006 ADDENDUM 6	06/07/26	CMF
00	ISSUED FOR TENDER	06/05/15	WDB

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	N.T.S.	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/02/01	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S0.03

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
STANDARD DETAILS & SCHEDULES SHEET 2

CITY DRAWING NUMBER
1-0101C-S0002-002-04

Last Save: 2009-07-22 9:42 AM

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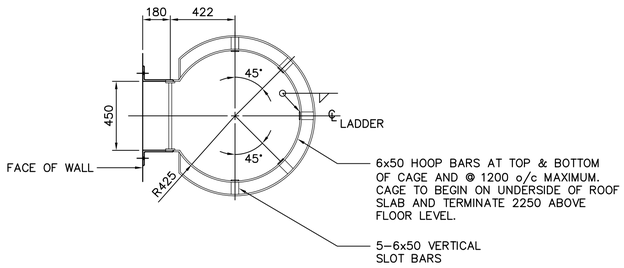
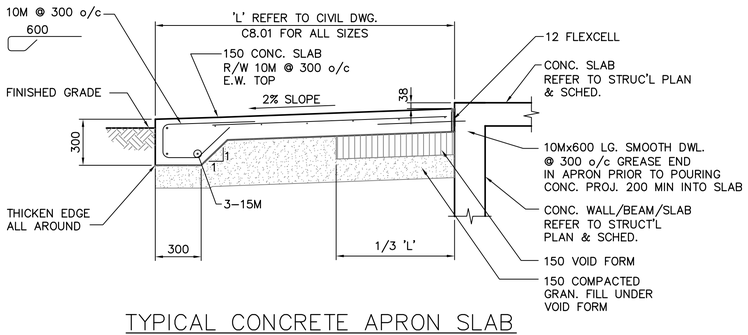
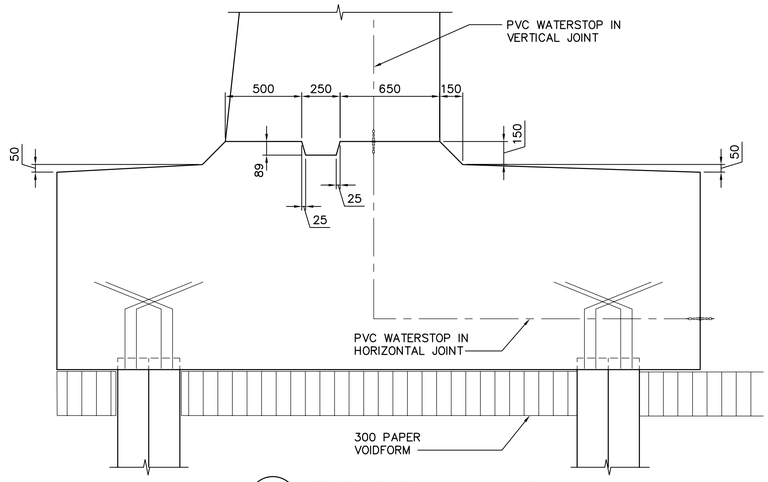




TYPICAL CONCRETE APRON SLAB

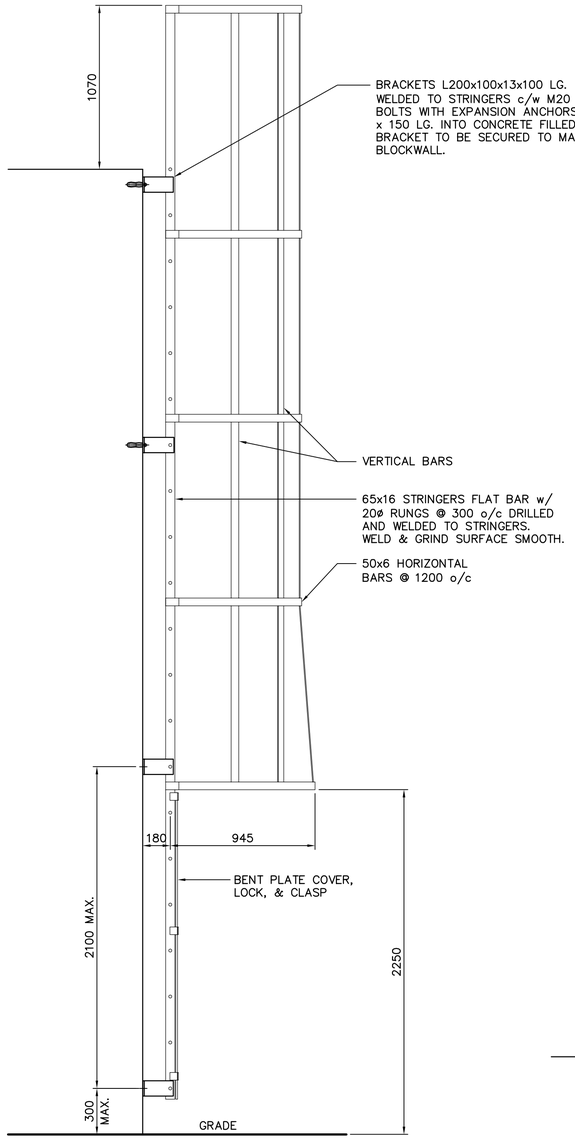
SCALE N.T.S.

SLAB & WALL/BEAM REINFORCING NOT SHOWN FOR CLARITY.



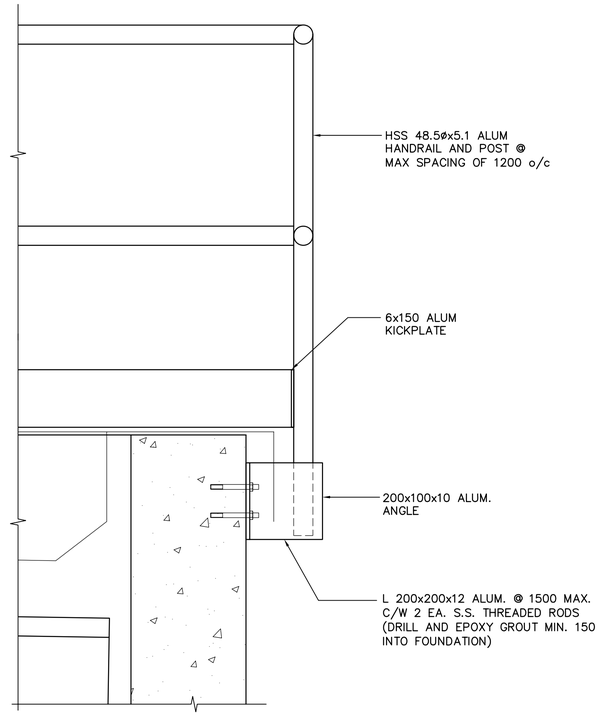
1 S0.03 FOOTING TO WALL JOINT

SCALE 1:20



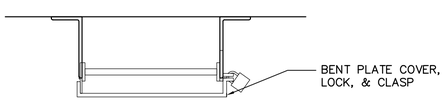
ALUMINUM LADDER AND CAGE DETAIL

SCALE N.T.S.



TYPICAL HANDRAIL POST CONNECTION

SCALE N.T.S.



TYPICAL LOCKABLE LADDER COVER

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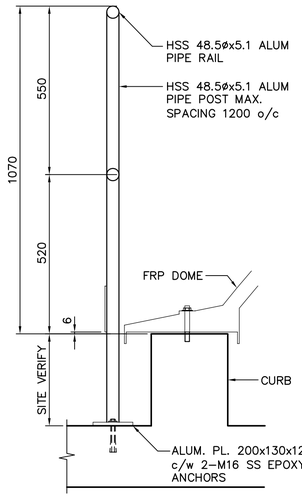
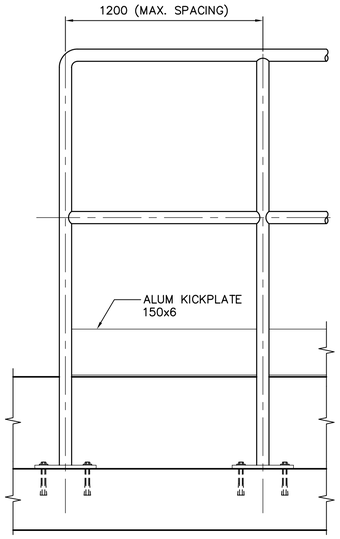


SECTION



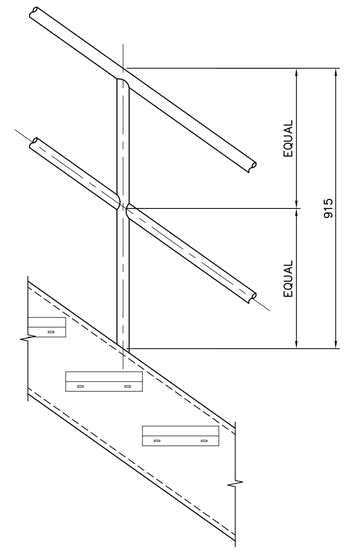
ELEVATION

TYPICAL ALUMINUM HANDRAIL @ DECANTOR OPENING

SCALE N.T.S.

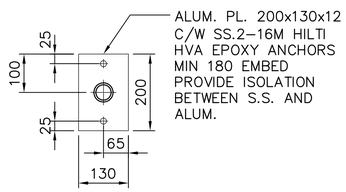
PAINT ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE WITH TWO COATS OF ALKALI-RESISTANT BITUMINOUS PAINT.

ALL MISCELLANEOUS METAL MATERIAL TO BE ALUMINUM UNLESS NOTED OTHERWISE.



ALUMINUM STAIR RAILING

(SEE STAIR DETAIL DWG S3.07)



TYP. HANDRAIL ALUM. PLATE

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....

APEGM Certificate of Authorization

AECOM Canada Ltd.

No. 4671 Original dated on: Date: 2006/05/15

NO.	REVISIONS	DATE	BY
02	AS-CONSTRUCTED DRAWING	09/04/09	RJH
01	ISSUED FOR CONSTRUCTION	06/08/30	GLG
00	ISSUED FOR TENDER	06/05/15	WDB

B.M. ELEV.

EarthTech — A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/04/05	DATE	2006/05/23

ENGINEER'S SEAL

ORIGINAL SIGNED BY

L.L. RIDING

2006/05/15

CONSULTANT DRAWING NO. S0.04

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

STRUCTURAL
SBR BUILDING
STANDARD DETAILS SHEET 3

CITY DRAWING NUMBER 1-0101C-S0002-003-02

Last Save: 2009-07-23 9:26 AM

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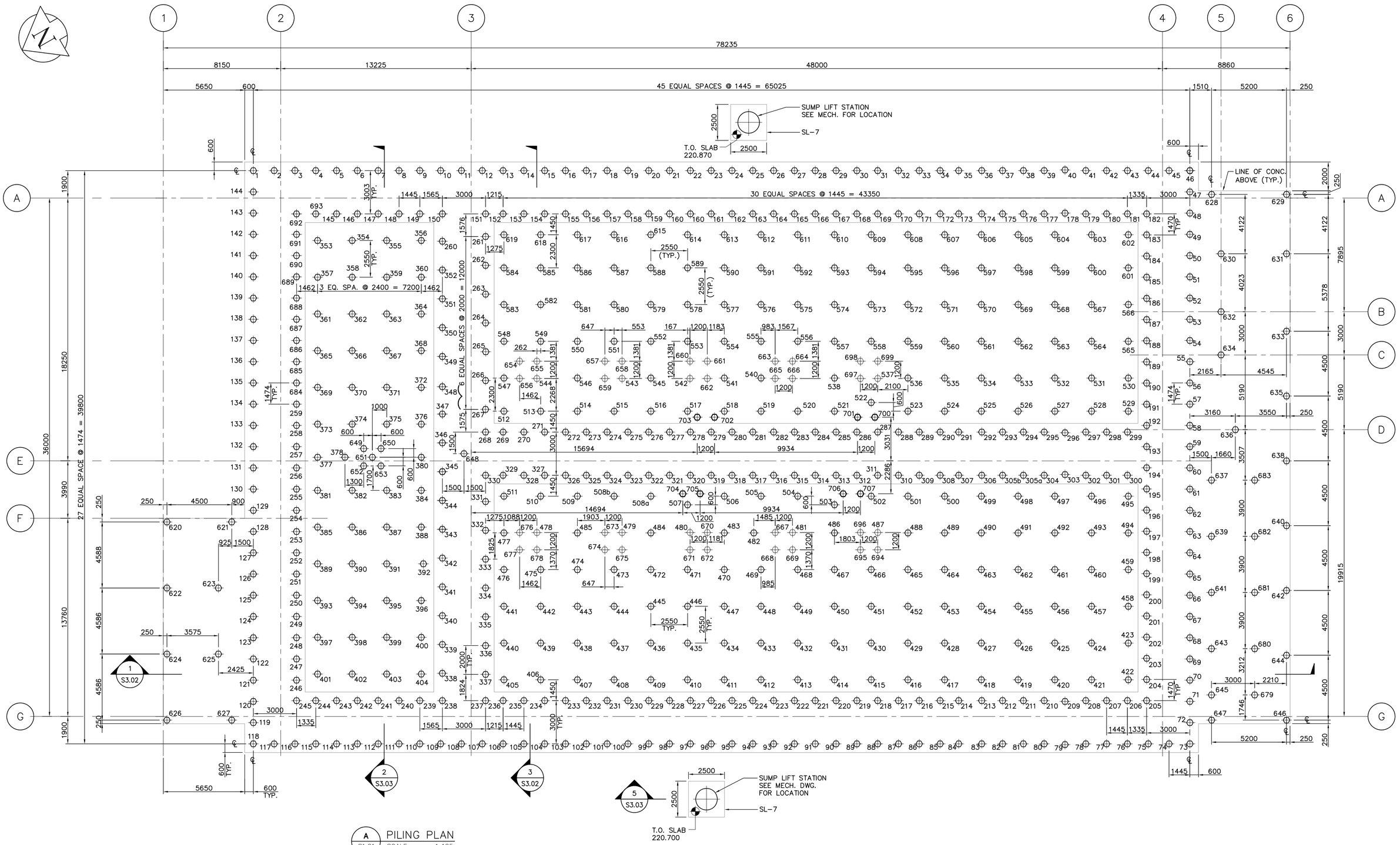
SHEET: COW-A1 (05/2005)



NOTES :

1. ALL PILES TO BE PRECAST 400 HEX
2. PILE NUMBERS 379, 539 NOT USED

REFER TO
Subterranean (Manitoba) Ltd
SHORING AS-BUILT
DRAWINGS

AECOM

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AECOM AS-CONSTRUCTED

SIG..... DATE.....

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: 2006/05/15
Original dated on:

NO.	REVISIONS	DATE	BY
03	AS-CONSTRUCTED DRAWING	09/04/09	RJH
02	ISSUED FOR CONSTRUCTION	06/08/30	GLG
01	291-2006 ADDENDUM 6	06/07/26	CMF
00	ISSUED FOR TENDER	06/05/15	WDB

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2005/11/23	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S1.01

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

STRUCTURAL
SBR BUILDING
PILING PLAN

CITY DRAWING NUMBER
1-0101C-S0005-001-03

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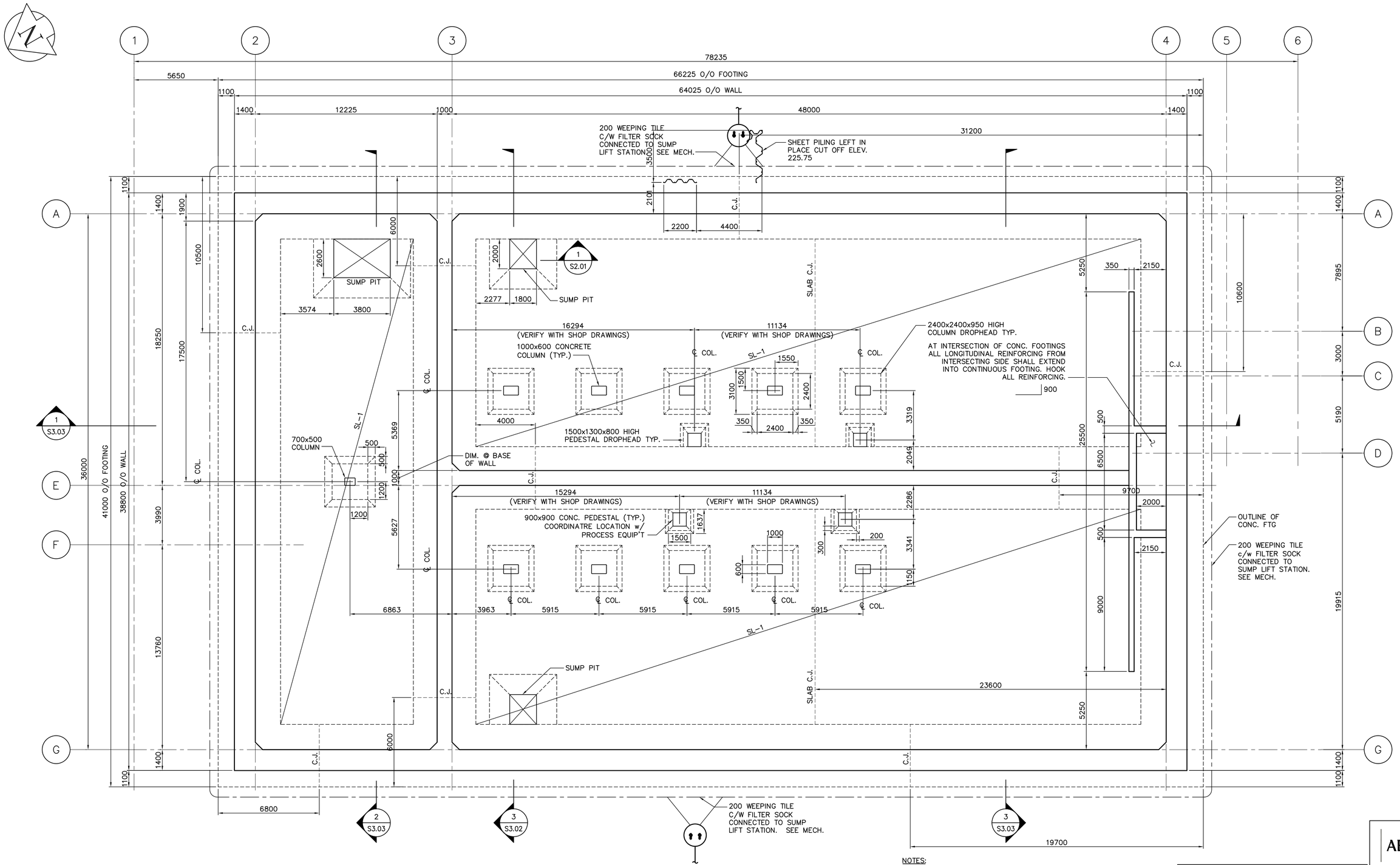

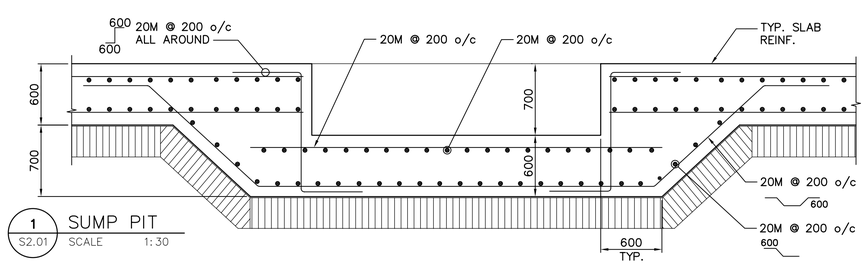

1 S2.01 SUMP PIT SCALE 1:30

B S2.01 FLOOR PLAN @ ELEV. 223.910 SCALE 1:125

NOTES:
1) ON LIQUID SIDE OF CAST-IN-PLACE CONCRETE FOR EQUALIZATION TANK, SBR-1 AND SBR-2 COATING FORMULA 10.
2) ALL CONSTRUCTION JOINTS SHOWN ARE FOR CONCRETE FOOTING AND SLAB ONLY. REFER TO S2.02 FOR WALL CONSTRUCTION JOINTS.

AECOM AS-CONSTRUCTED SIG..... DATE.....

AECOM
As of January 3, 2009, EarthTech became AECOM Canada Ltd.

APEGM Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: 2006/05/15 Original dated on:

NO.	REVISIONS	DATE	BY
04	AS-CONSTRUCTED DRAWING	09/04/09	GLG
03	ISSUED FOR FI-001	06/12/07	WDB
02	ISSUED FOR CONSTRUCTION	06/08/30	GLG
01	291-2006 ADDENDUM 6	06/07/26	CMF
00	ISSUED FOR TENDER	06/05/15	WDB

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2005/11/23	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S2.01

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

STRUCTURAL
SBR BUILDING
FLOOR PLAN @ ELEV. 223.910

CITY FILE NUMBER
SHEET OF
CITY DRAWING NUMBER
1-0101C-S0006-001-04

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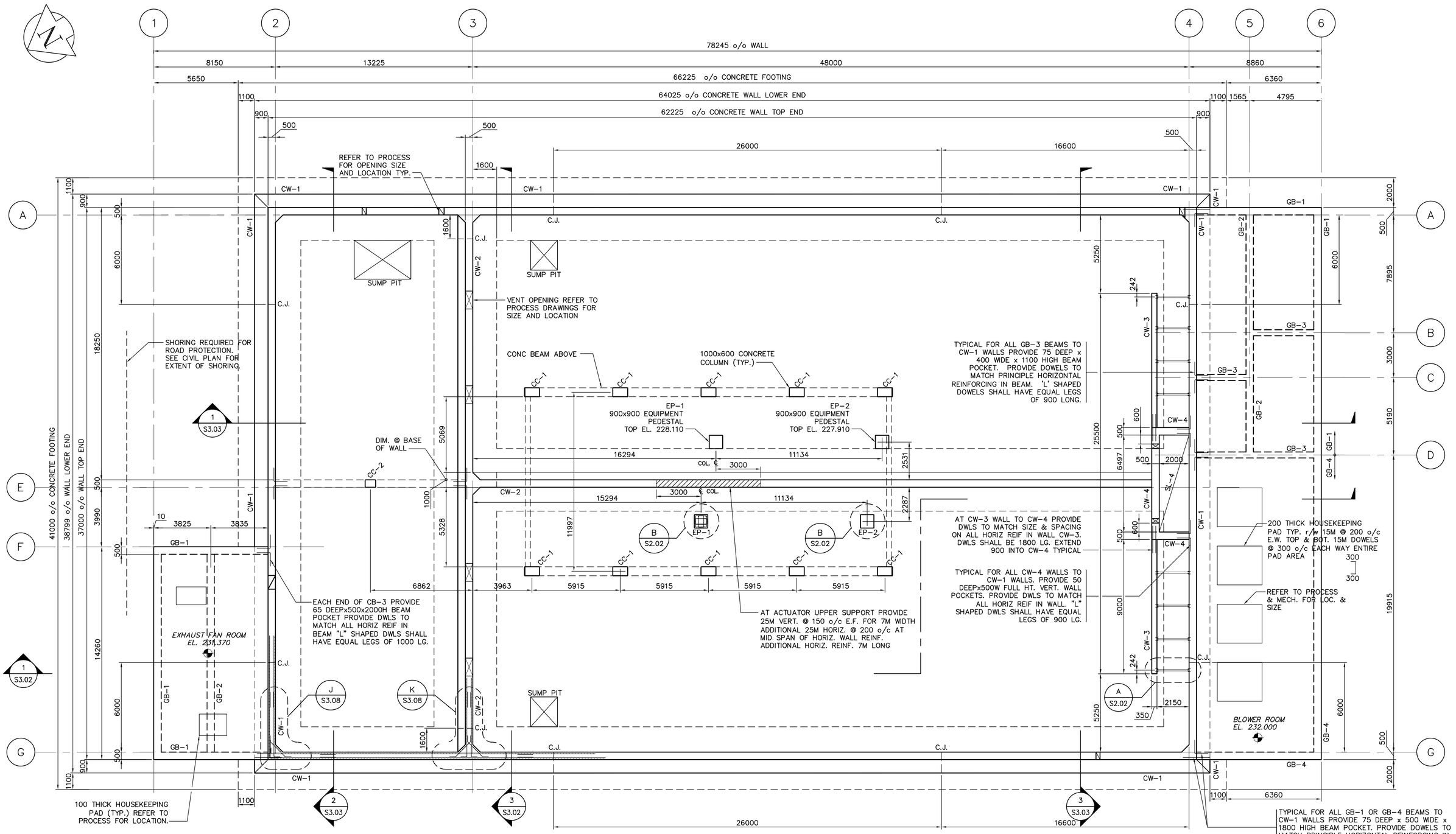
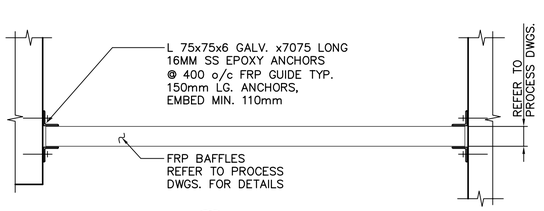
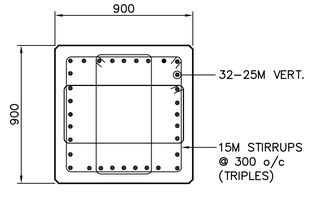
SHEET: COW-A1 (05/2005)





A S2.02 PLAN DETAIL
SCALE NTS



B S2.02 PLAN DETAIL EP-1 & EP-2
SCALE 1:20

C S2.02 FOUNDATION PLAN ABOVE EL. 230.000
SCALE 1:125

NOTE:
1. ON LIQUID SIDE OF CAST-IN-PLACE CONCRETE FOR EQUALIZATION TANK, SBR-1 AND SBR-2 COATING FORMULA 10

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02	ISSUED FOR CONSTRUCTION	06/08/30	GLG
01	291-2006 ADDENDUM 6	06/07/26	CMF
00	ISSUED FOR TENDER	06/05/15	WDB

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2005/11/23	DATE	2006/05/15

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2006/05/15

CONSULTANT DRAWING NO.
S2.02

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
FOUNDATION PLAN ABOVE EL. 230.000

CITY DRAWING NUMBER
1-0101C-S0007-001-04

L:\WORK\66000\66303CEN\02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\STRUCT\1-0101C-S0007-001-04D.DWG

SHEET: COW-A1 (05/2005)

PRECAST DOUBLE TEE NOTES:

1). PRECAST DOUBLE TEE SUPPLIER TO PROVIDE CALCULATIONS AND SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION, SHOP DRAWINGS SHALL INCLUDE DESIGN LOADS, OPENINGS, BEARING DETAILS AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.

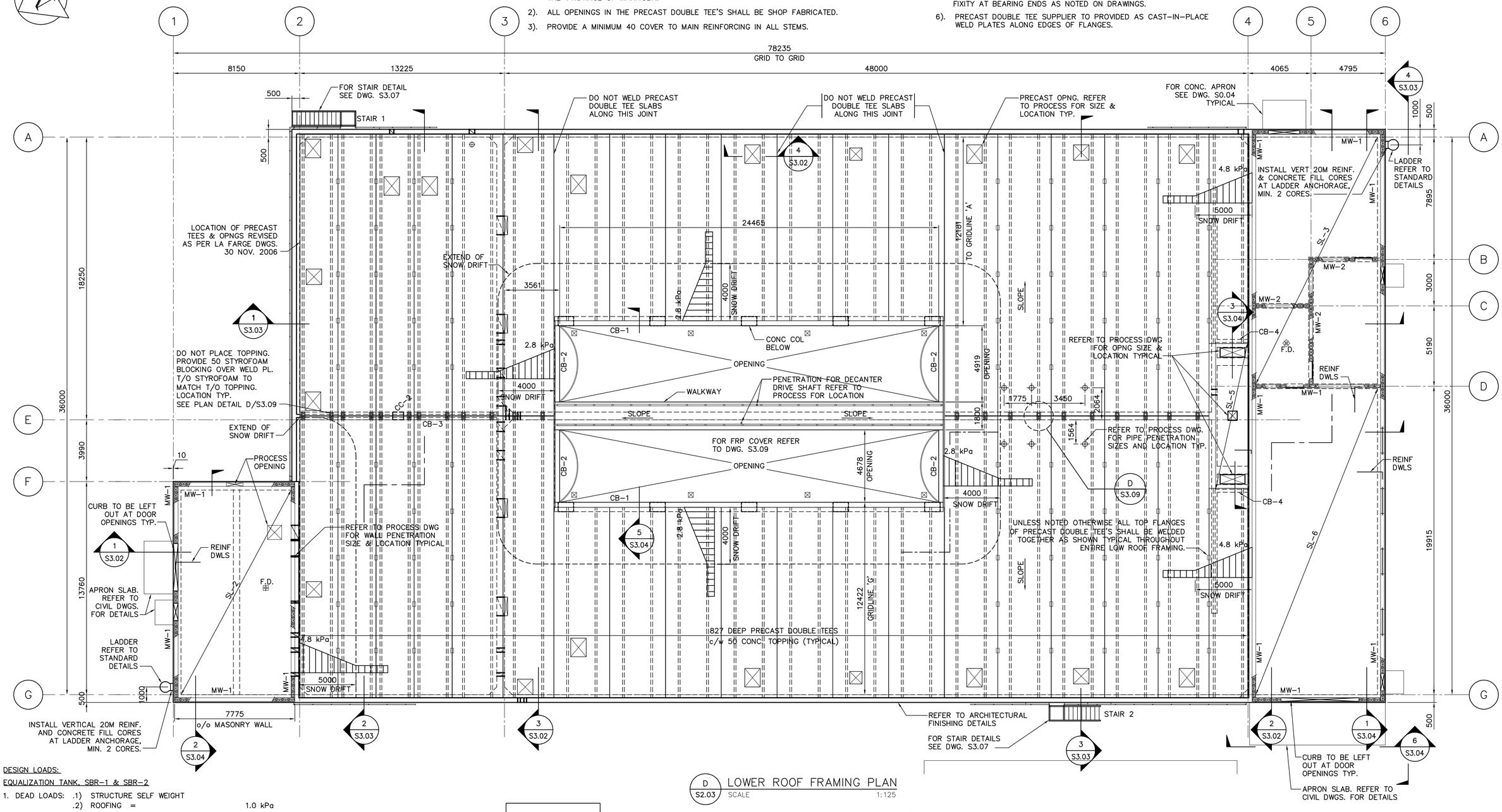
2). ALL OPENINGS IN THE PRECAST DOUBLE TEE'S SHALL BE SHOP FABRICATED.

3). PROVIDE A MINIMUM 40 COVER TO MAIN REINFORCING IN ALL STEMS.

4). ALL REINFORCING BARS AND MESH REINFORCING SHALL BE GALVANIZED.

5). PRECAST DOUBLE TEE SUPPLIER TO DESIGN & PROVIDE ALL CAST-IN PLATES, BEARING PLATES, SHOES AND WELD PLATES TO ENSURE PRECAST DBL TEE FIXITY AT BEARING ENDS AS NOTED ON DRAWINGS.

6). PRECAST DOUBLE TEE SUPPLIER TO PROVIDED AS CAST-IN-PLACE WELD PLATES ALONG EDGES OF FLANGES.



D S2.03 LOWER ROOF FRAMING PLAN
SCALE 1:125

DESIGN LOADS:

EQUALIZATION TANK, SBR-1 & SBR-2

1. DEAD LOADS:
   - .1) STRUCTURE SELF WEIGHT
   - .2) ROOFING = 1.0 kPa
   - .3) MECHANICAL LOAD 2.0 kPa
   - .4) MAX. CONCENTRATED LOAD SUSPENDED AT ANY STEM POINT U.O.N. ON STRUCT./MECH. DWG'S 1.8 kN
   - .5) MAX. CONCENTRATED LOAD TOPSIDE AT ANY STEM POINT U.O.N. ON (STRUCT./MECH.) DWG'S. SINGLE STEM MAY HAVE MORE THAN ONE POINT LOAD. POINT LOAD BASED ON MAX. SUPPORT SPACING OF 3.0 M 2.5 kN
   - .6) CONC. TOPPING 1.2 kPa
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) OCCUPANCY 2.4 kPa
   - .5) MAX. NEGATIVE PRESSURE 0.65 kPa
   - .6) MAX. POSITIVE PRESSURE 0.05 kPa
   - .7) EARTH PRESSURE (DRAINED) 17.5 kPa
   - .8) SURCHARGE 10 kPa

REFER TO LAFARGE AS-BUILT SHOP DRAWINGS

BLOWER BUILDING

A.) DEAD LOADS:
- .1) STRUCTURE SELF WEIGHT
- .2) SUPERIMPOSED = 12.0 kPa

B.) LIVE LOADS:
- .1) OCCUPANCY (ELECT., SAMPLE & CONTROL RMS) 4.8 kPa
- .2) OCCUPANCY (BLOWER RM.) 10.0 kPa

EXHAUST FAN BUILDING

A.) DEAD LOADS:
- .1) STRUCTURE SELF WEIGHT
- .2) SUPERIMPOSED = 12.0 kPa

B.) LIVE LOADS:
- .1) OCCUPANCY 7.2 kPa

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DRAWING NOTES:

1). REFER TO CIVIL DRAWINGS FOR ALL APRON SLAB SIZES

2). CONCRETE BONDED TOPPING OVER PRECAST DOUBLE TEE'S SHALL BE REINFORCED WITH GALVANIZED WELDED WIRE 152x152 MW13.3xMW13.3

3). THE CONCRETE BONDED TOPPING OVER PRECAST DOUBLE TEE'S SHALL PROVIDE A CONTROL JOINT OVER JOINT INDICATED THAT SHALL NOT HAVE FLANGES WELDED TOGETHER.

4). THE BONDED CONCRETE TOPPING OVER THE PRECAST DOUBLE TEE'S SHALL STOP AT THE CENTRE BEARING OF THE TEES TO PROVIDE A 40 GAP THE FULL LENGTH OF THE COVER.

5). DURING INSTALLATION OF ALL PRECAST DOUBLE TEE'S AND HOLLOWCORE ROOF PLANKS ALL LIFTING EQUIPMENT, TRUCKS, ETC. SHALL STAY A MINIMUM OF 9.0m AWAY FROM THE PERIMETER TANK WALLS OF THE SBR'S AND EQUALIZATION TANK.

6). THE BONDED CONCRETE TOPPING SHALL EXTEND OVER SLAB SL-5

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05	ISSUED FOR FI-O-014	07/07/31	AC
04	ISSUED FOR FI-001	06/12/07	WDB
03	ISSUED FOR CONSTRUCTION	06/08/30	GLG
02	291-2006 ADDENDUM 6	06/07/25	CMF
01	291-2006 ADDENDUM 4	06/07/19	WDB
00	ISSUED FOR TENDER	06/05/15	WDB

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/01/16	DATE	2006/05/15

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L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S2.03

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

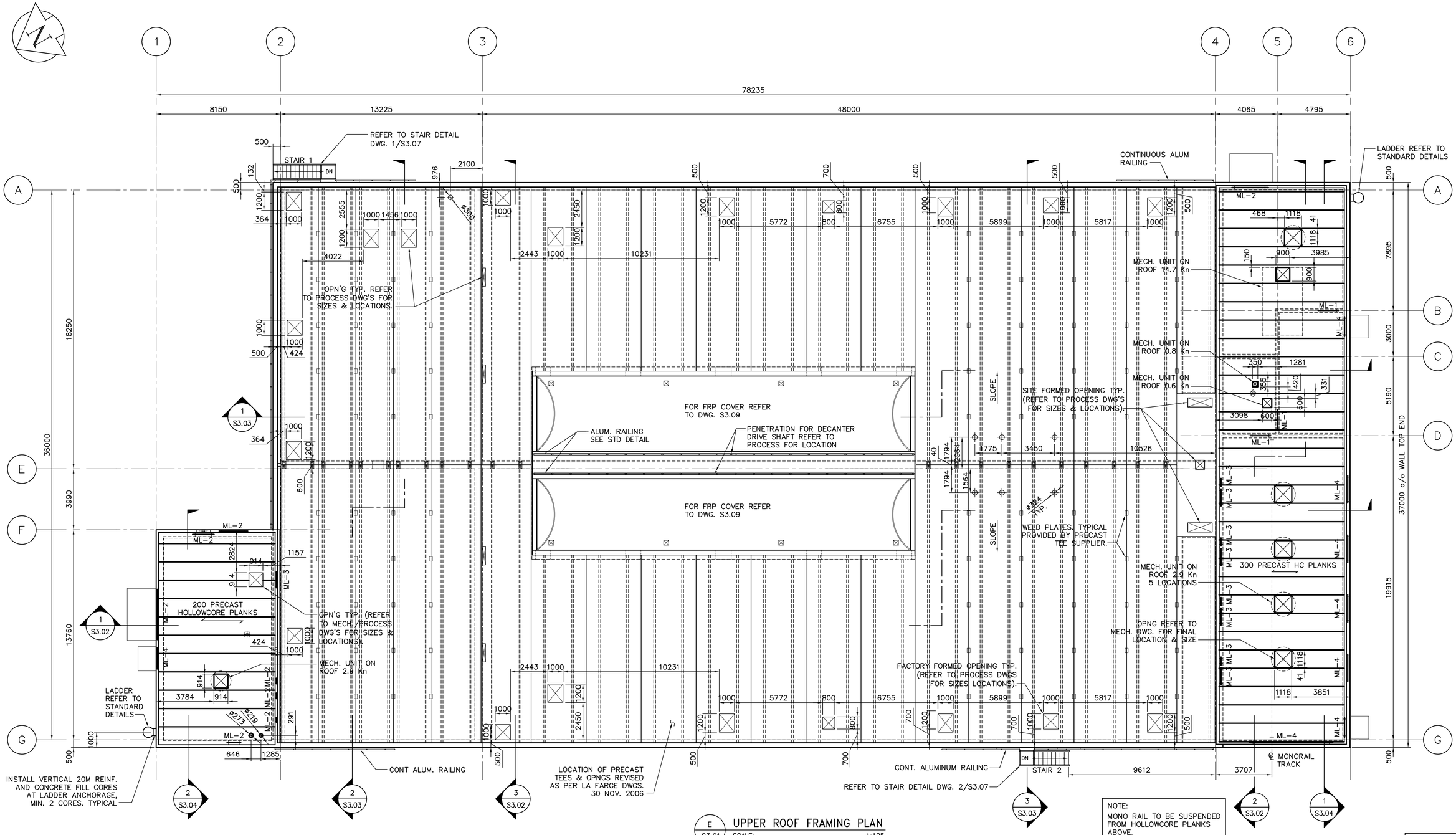
NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

STRUCTURAL
SBR BUILDING
LOWER ROOF FRAMING PLAN

CITY FILE NUMBER
SHEET OF
CITY DRAWING NUMBER
1-0101C-S0008-001-06

L:\WORK\66000\66303CEN\02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\STRUCT\1-0101C-S0008-001-06D.DWG

SHEET: COW-A1 (05/2005)



E S3.01 **UPPER ROOF FRAMING PLAN**
SCALE: 1:125

NOTE:
MONO RAIL TO BE SUSPENDED FROM HOLLOWCORE PLANKS ABOVE.

DESIGN LOADS: BLOWER BUILDING & EXHAUST FAN BUILDING

D.L. = STRUCTURE SELF WT.		L.L. SNOW	= 1.6 kPa
D.L. MONO-RAIL	= 12.0 kN	L.L. MONO RAIL	= 26.7 kN
D.L. MECH./PIPING	= 2.0 kPa	L.L. OCCUPANCY	= 2.4 kPa
D.L. ROOF CONST.	= 1.0 kPa		
D.L. MECH. UNITS	= AS INDICATED		

PRECAST HOLLOWCORE NOTES:

1.) HOLLOWCORE PLANK SUPPLIER TO PROVIDE DESIGN CALCULATIONS AND SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INCLUDE DESIGN LOADS, OPENINGS, AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.

2.) ALL OPENINGS IN HOLLOWCORE PLANKS SHALL BE SHOP FABRICATED. DESIGN AND SUPPLY OF ALL HANGERS AT OPENINGS ARE THE RESPONSIBILITY OF PRECAST HOLLOWCORE PLANK SUPPLIER.

3.) ALL NOTCHED OUT AREAS FOR GROUT BARS SHALL BE PROVIDED. ALL REQUIRED GROUT BARS & DOWELS TO BOND BEAMS SHALL BE PROVIDED BY PRECAST HOLLOWCORE PLANK SUPPLIER.

4.) PROVIDE ALL BEARING PADS AS REQUIRED.

NOTE:
1.) FOR SCHEDULE OF MASONRY LINTELS SEE DWG S0.03
2.) ALL OPENINGS INDICATED IN PRECAST DOUBLE TEES SHALL BE FACTORY FORMED.
3.) DURING INSTALLATION OF ALL PRECAST DOUBLE TEE'S AND HOLLOWCORE ROOF PLANKS ALL LIFTING EQUIPMENT, TRUCKS, ETC. SHALL STAY A MINIMUM OF 9.0m AWAY FROM THE PERIMETER TANK WALLS OF THE SBR'S AND EQUALIZATION TANK.

REFER TO LAFARGE SHOP DRAWINGS KGS MASONRY REPAIR AS-BUILTS

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00	ISSUED FOR TENDER	06/05/15	WDB

B.M. ELEV.

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DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2005/11/23	DATE	2006/05/15

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2006/05/15

CONSULTANT DRAWING NO.
S3.01

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

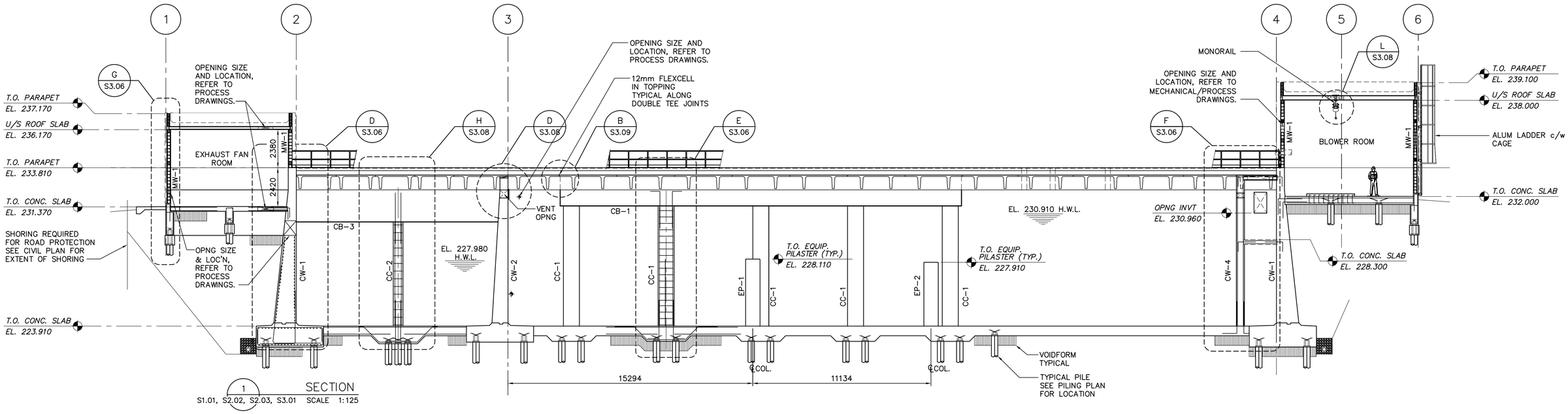
CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
UPPER ROOF FRAMING PLAN

CITY DRAWING NUMBER
1-0101C-S0009-001-04

02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\STRUCT\1-0101C-S0009-001-04D.DWG

SHEET: COW-A1 (05/2005)



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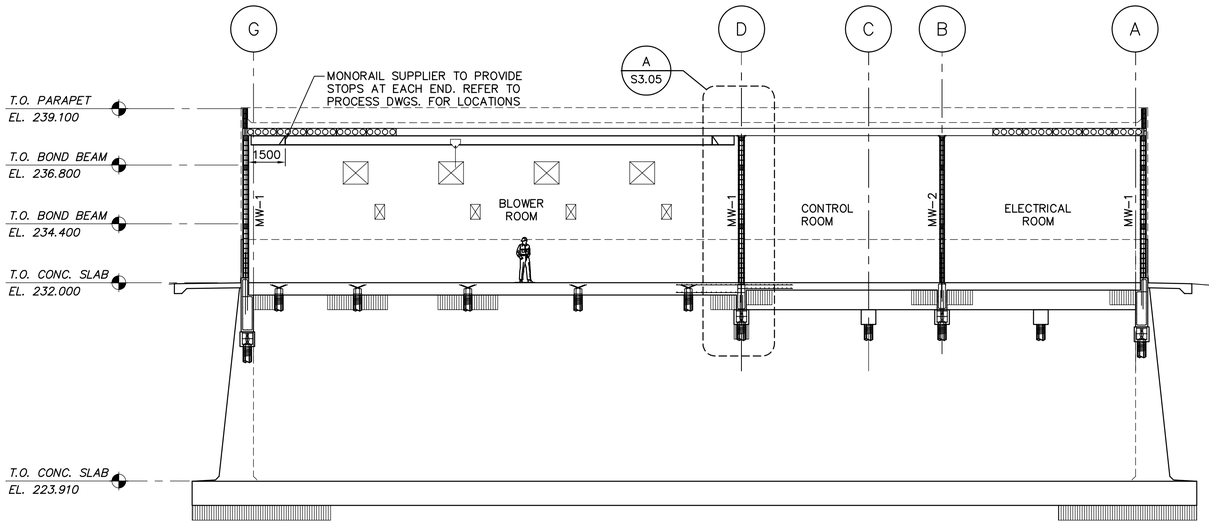
S1.01, S2.02, S2.03, S3.01 SCALE 1:125



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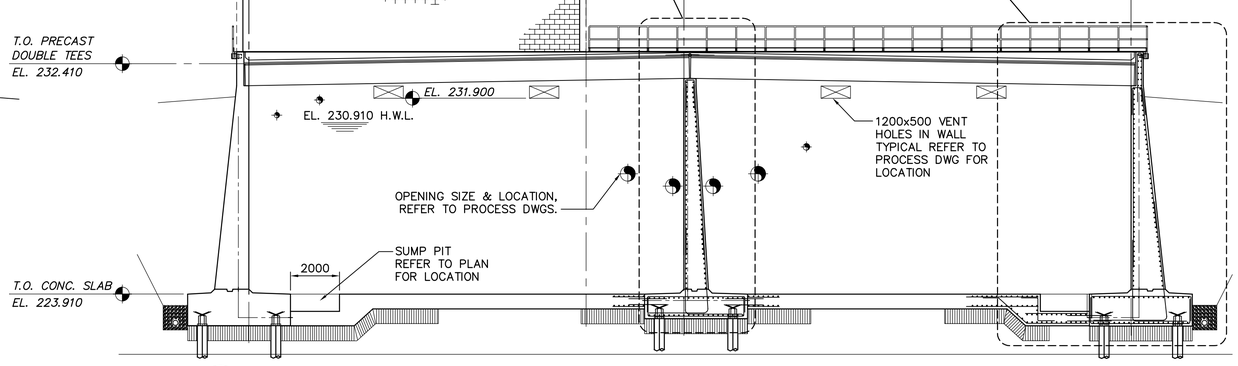

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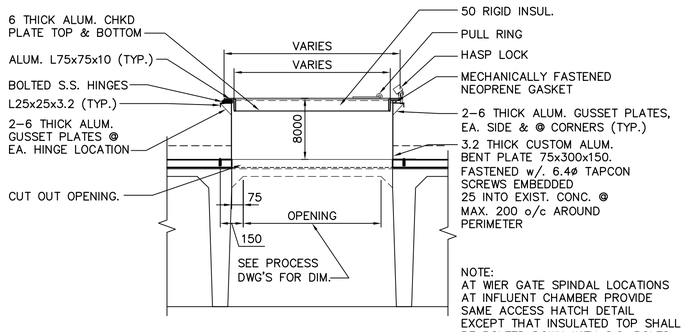
S1.01, S2.01, S2.02, S2.03 S3.01 SCALE 1:125



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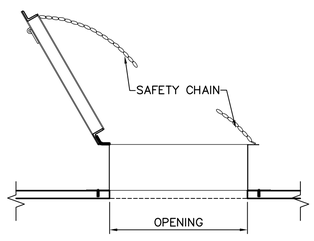

DETAIL – ACCESS HATCH
SCALE 1:20

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DESIGNED BY LLR | CHECKED BY GGP
DRAWN BY WDB | APPROVED BY JEH
SCALE: AS NOTED | RELEASED FOR CONSTRUCTION BY: K. MARTENS
DATE 2005/11/23 | DATE 2006/05/15

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L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S3.02

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
BUILDING SECTIONS

CITY DRAWING NUMBER
1-0101C-S0010-001-05

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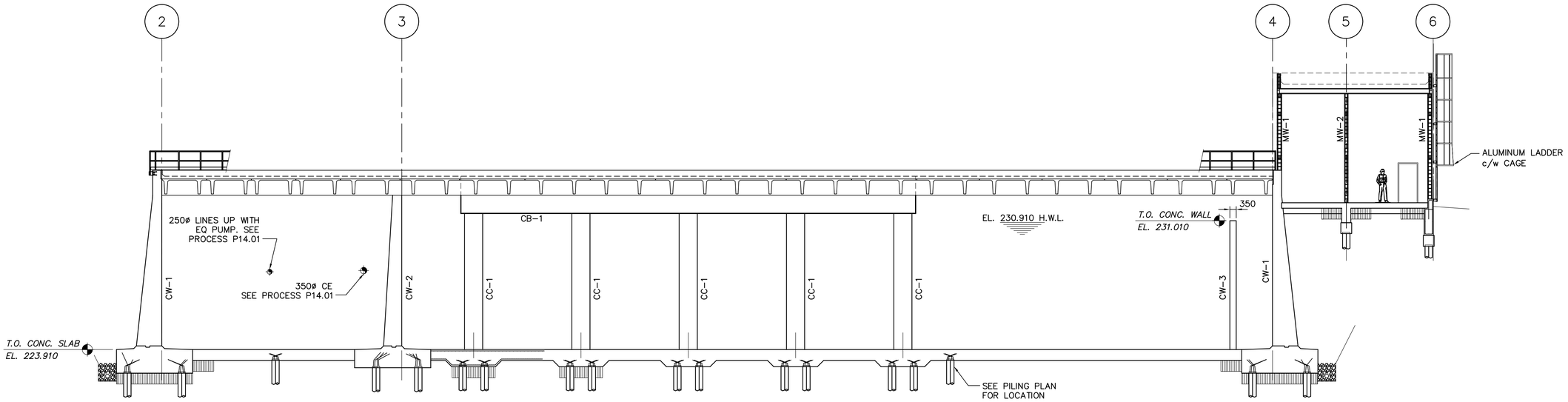
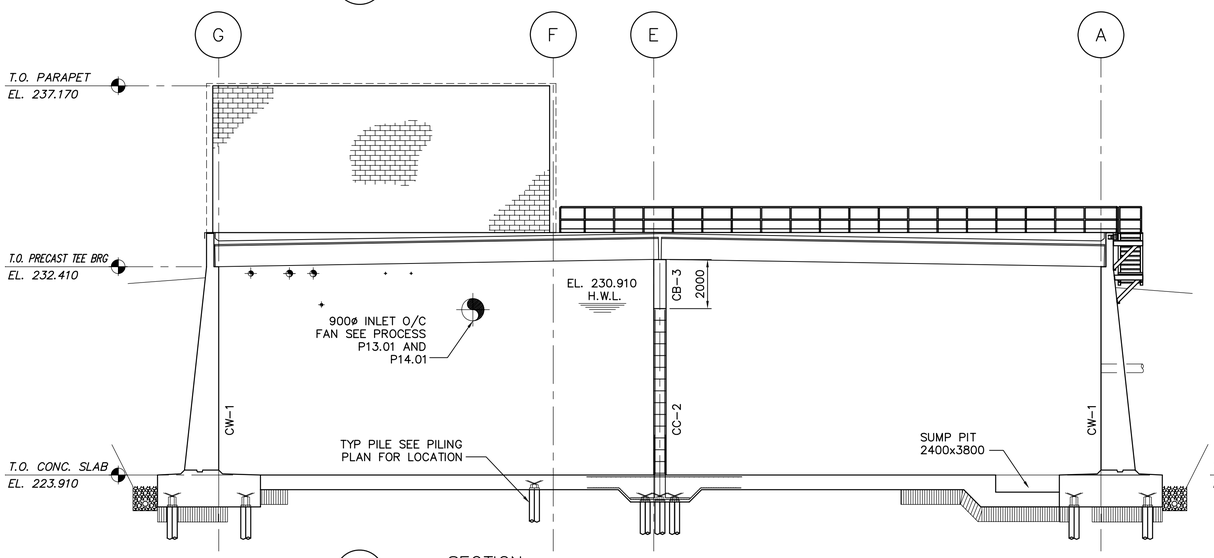
SHEET: COW-A1 (05/2005)



1 SECTION
S2.01, S2.02, S2.03, S3.01 SCALE 1:125



2 SECTION
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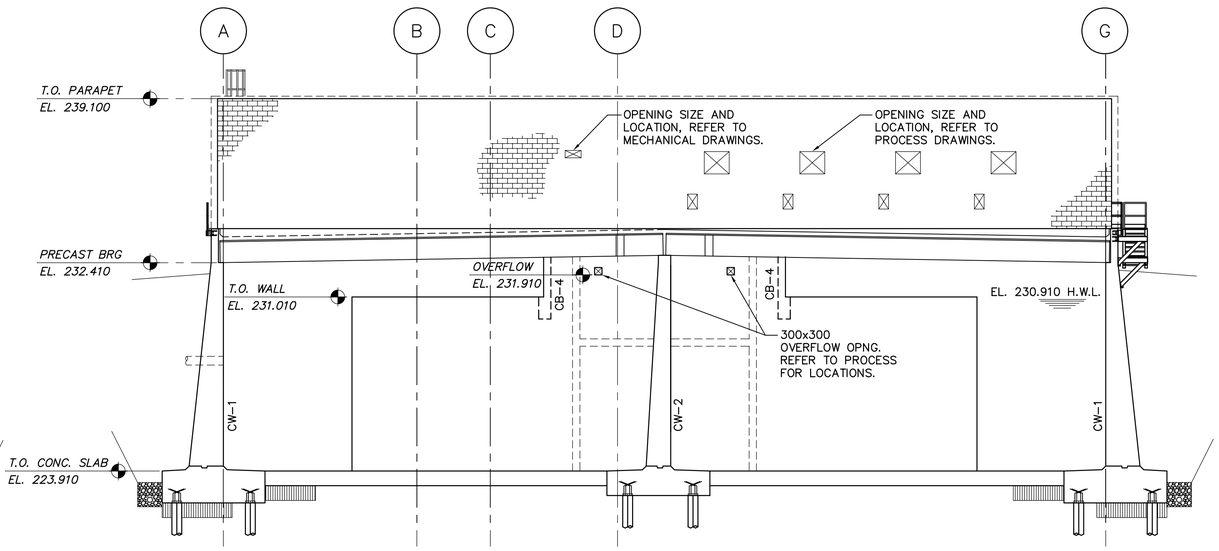
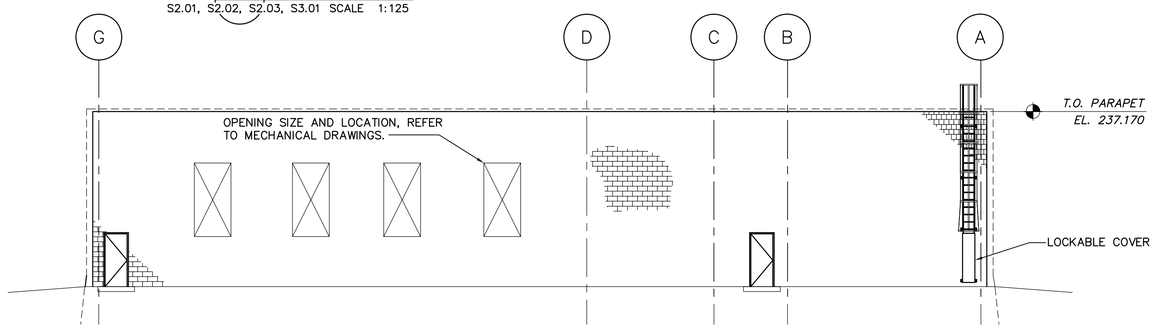
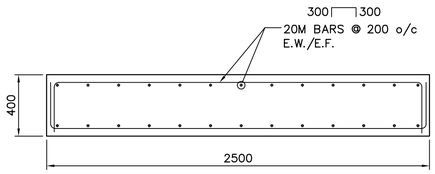


3 SECTION
S2.01, S2.02, S3.01 SCALE 1:125



4 WALL ELEVATION
S2.03 SCALE 1:125



5 SECTION
S1.01 SCALE 1:20

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DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2005/11/24	DATE	2006/05/15

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2006/05/15

CONSULTANT DRAWING NO.
S3.03

Winnipeg
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WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
BUILDING SECTIONS & ELEVATION SHEET 1

CITY DRAWING NUMBER
1-0101C-S0011-001-03

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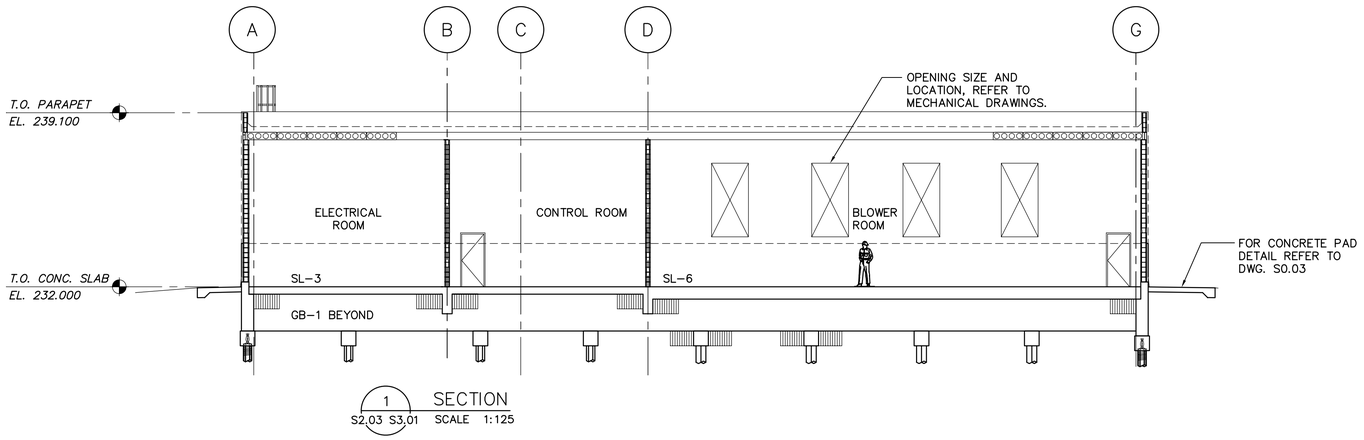
SHEET: COW-A1 (05/2005)



1 SECTION
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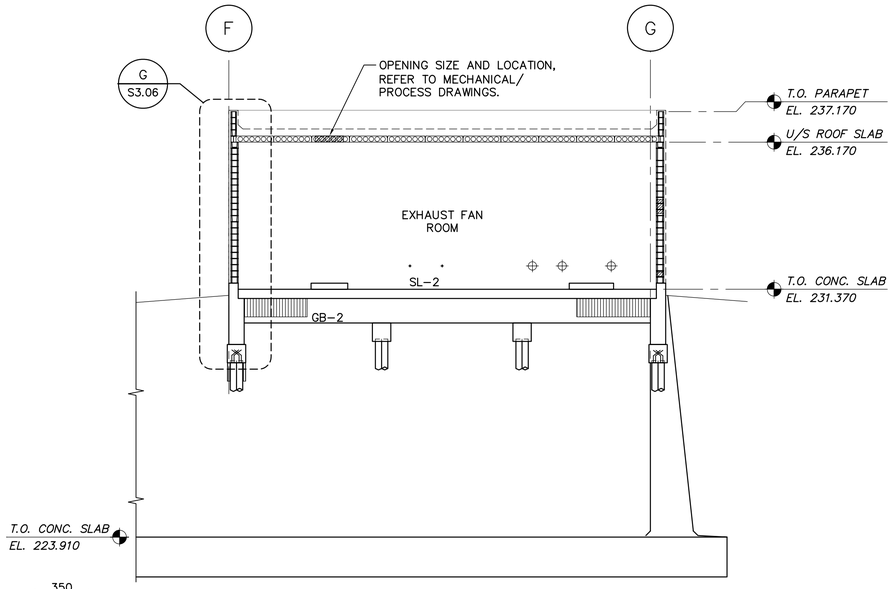

2 SECTION
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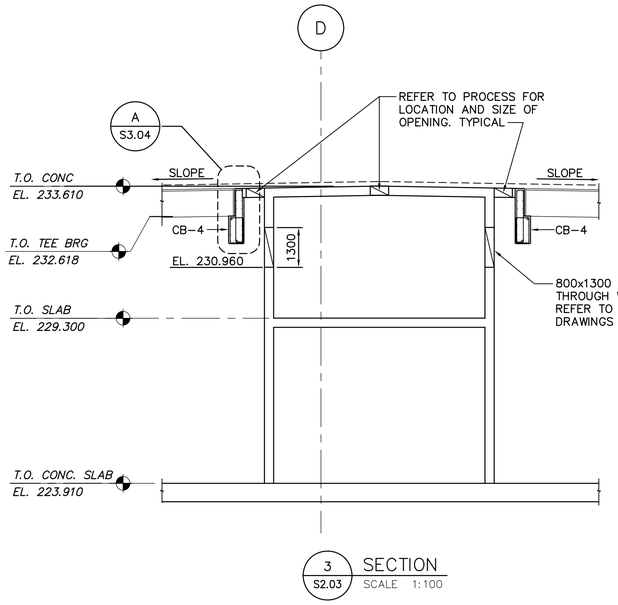

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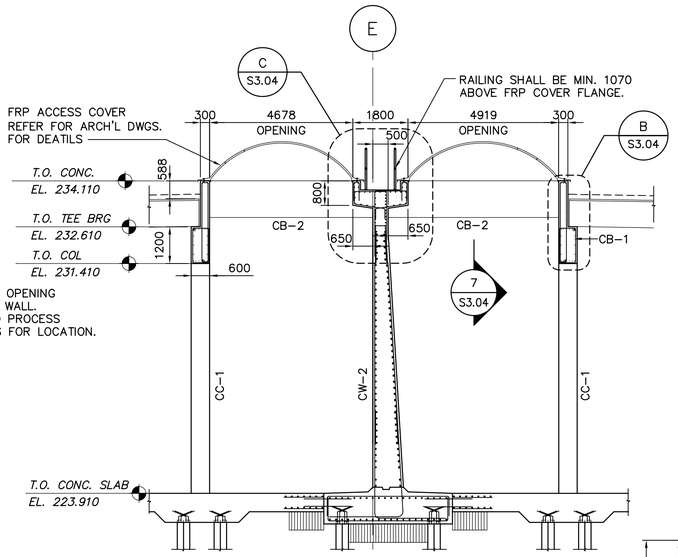

5 SECTION
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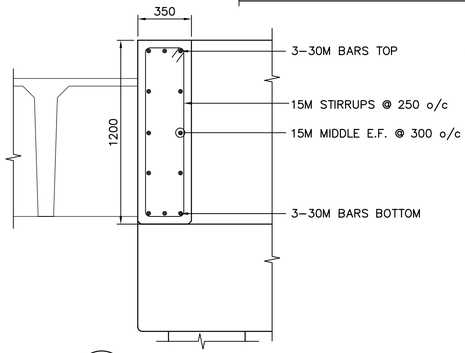

7 SECTION
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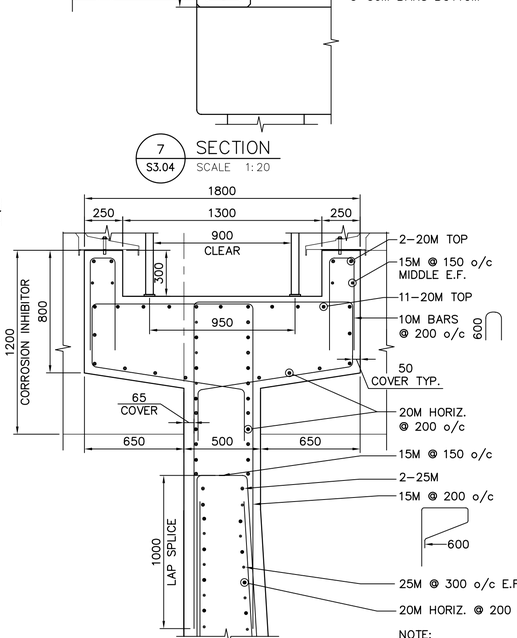
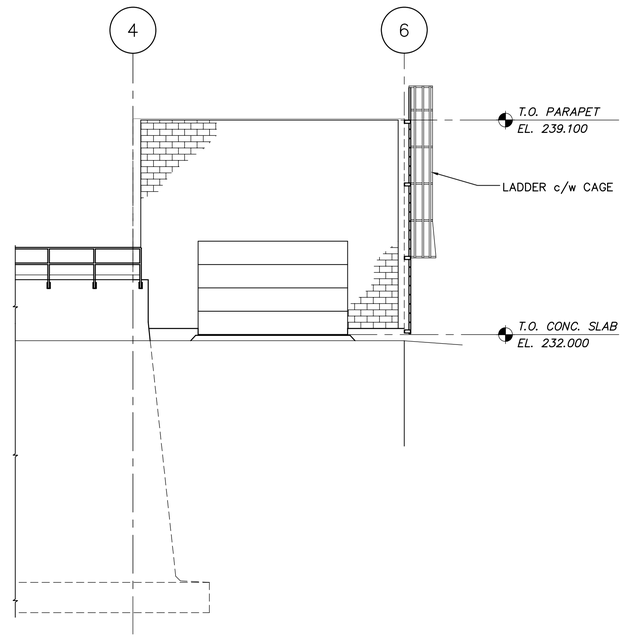
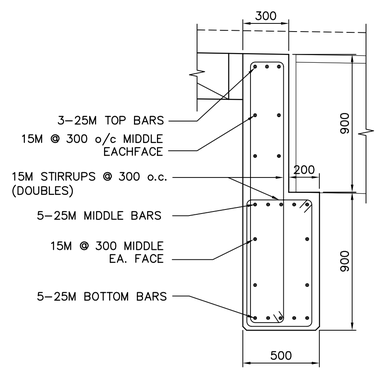


C DETAIL
S3.04 SCALE 1:20



6 PARTIAL ELEVATION
S2.03 SCALE 1:100



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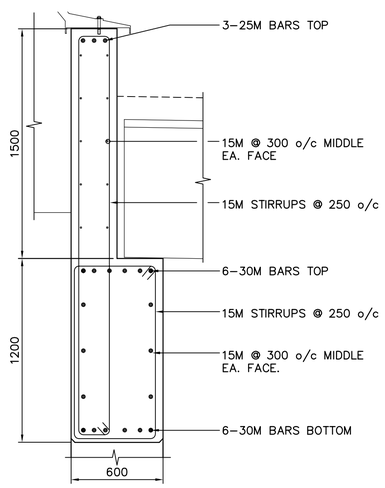

B DETAIL
S3.04 SCALE 1:20

NOTE:
AT ACTUATOR UPPER SUPPORT PROVIDE 25M VERT. @ 150 o/c E.F. FOR 7M WIDTH ADDITIONAL 25M HORIZ. @ 200 o/c AT MID SPAN OF HORIZ. WALL REINF. ADDITIONAL HORIZ. REINF. 7M LONG

AECOM AS-CONSTRUCTED
SIG..... DATE.....

AECOM

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APEGM
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AECOM Canada Ltd.
No. 4671 Date: Original dated on: 2006/05/15

NO.	REVISIONS	DATE	BY
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01	291-2006 ADDENDUM 6	06/07/26	CMF
00	ISSUED FOR TENDER	06/05/15	WDB

B.M.
ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/02/01	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S3.04

THE CITY OF WINNIPEG
Winnipeg
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

STRUCTURAL
SBR BUILDING
BUILDING SECTIONS & ELEVATION SHEET 2

CITY DRAWING NUMBER
1-0101C-S0011-002-03

Last Save: 2009-07-22 2:21 PM

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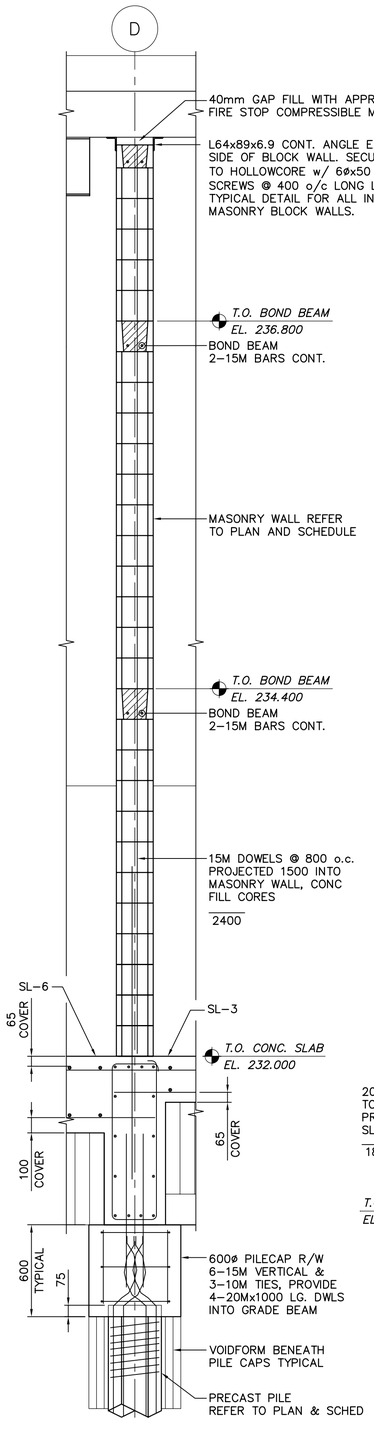
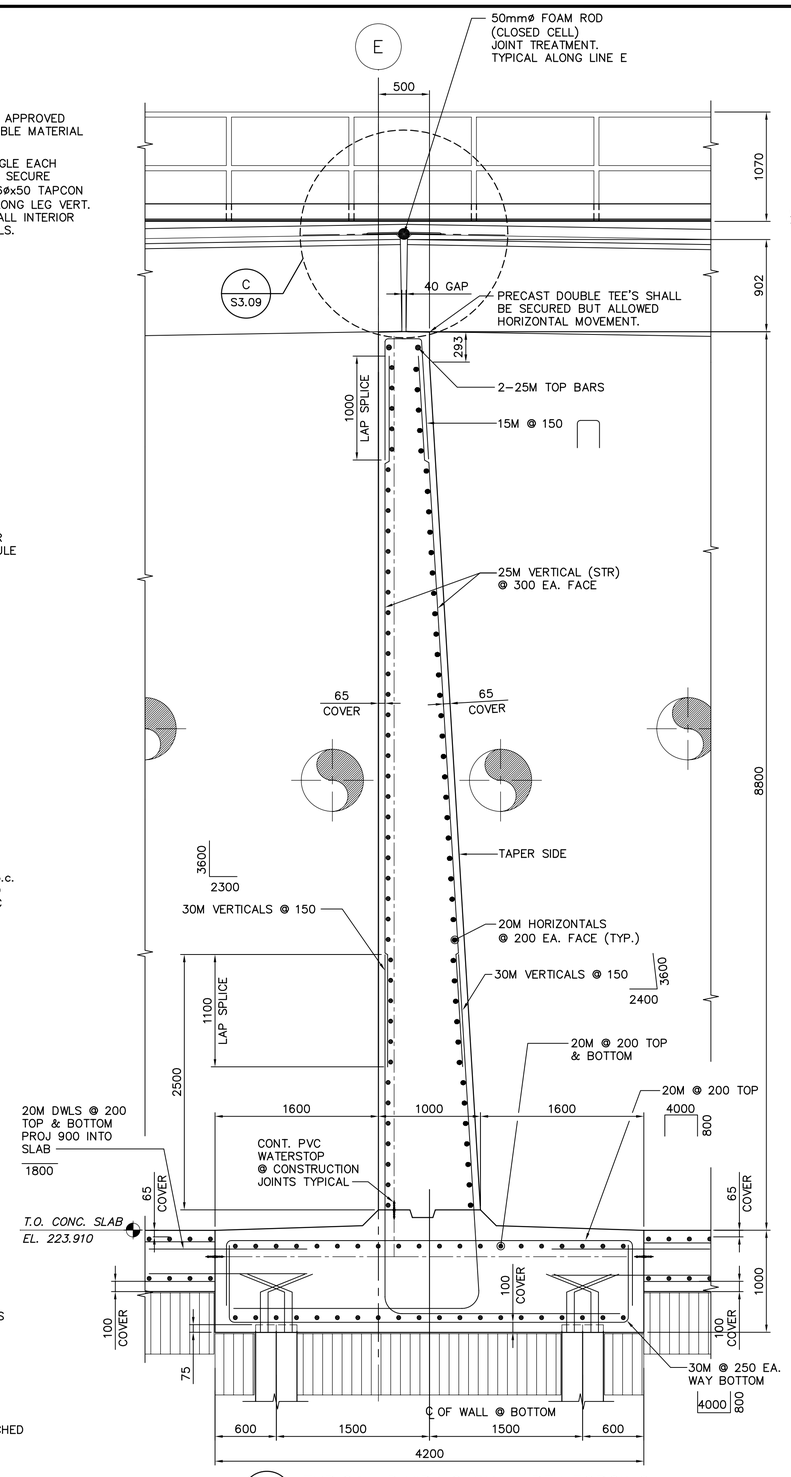
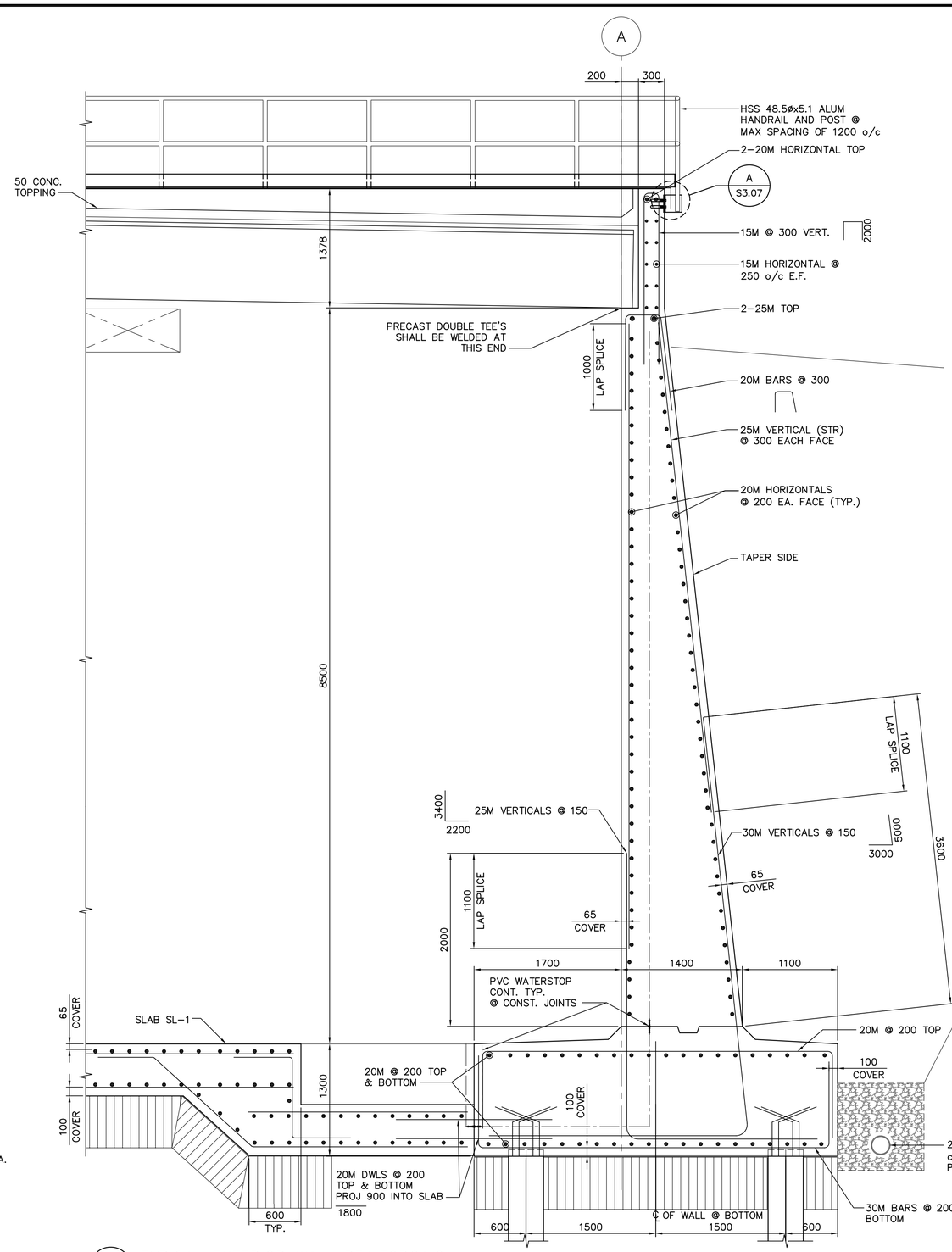
SHEET: COW-A1 (05/2005)







A S3.02 DETAIL
SCALE 1:20

B S3.02 TYPICAL DIVIDING WALL REINFORCING
SCALE 1:30

C S3.02 TYPICAL EXTERIOR WALL REINFORCING
SCALE 1:30

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED
SIG..... DATE.....

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: 2006/05/15
Original dated on:

NO.	REVISIONS	DATE	BY
03	AS-CONSTRUCTED DRAWING	09/04/13	GLG
02	ISSUED FOR FI-O-014	07/07/31	AC
01	ISSUED FOR CONSTRUCTION	06/08/30	GLG
00	ISSUED FOR TENDER	06/05/15	WDB

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/04/10	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S3.05

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

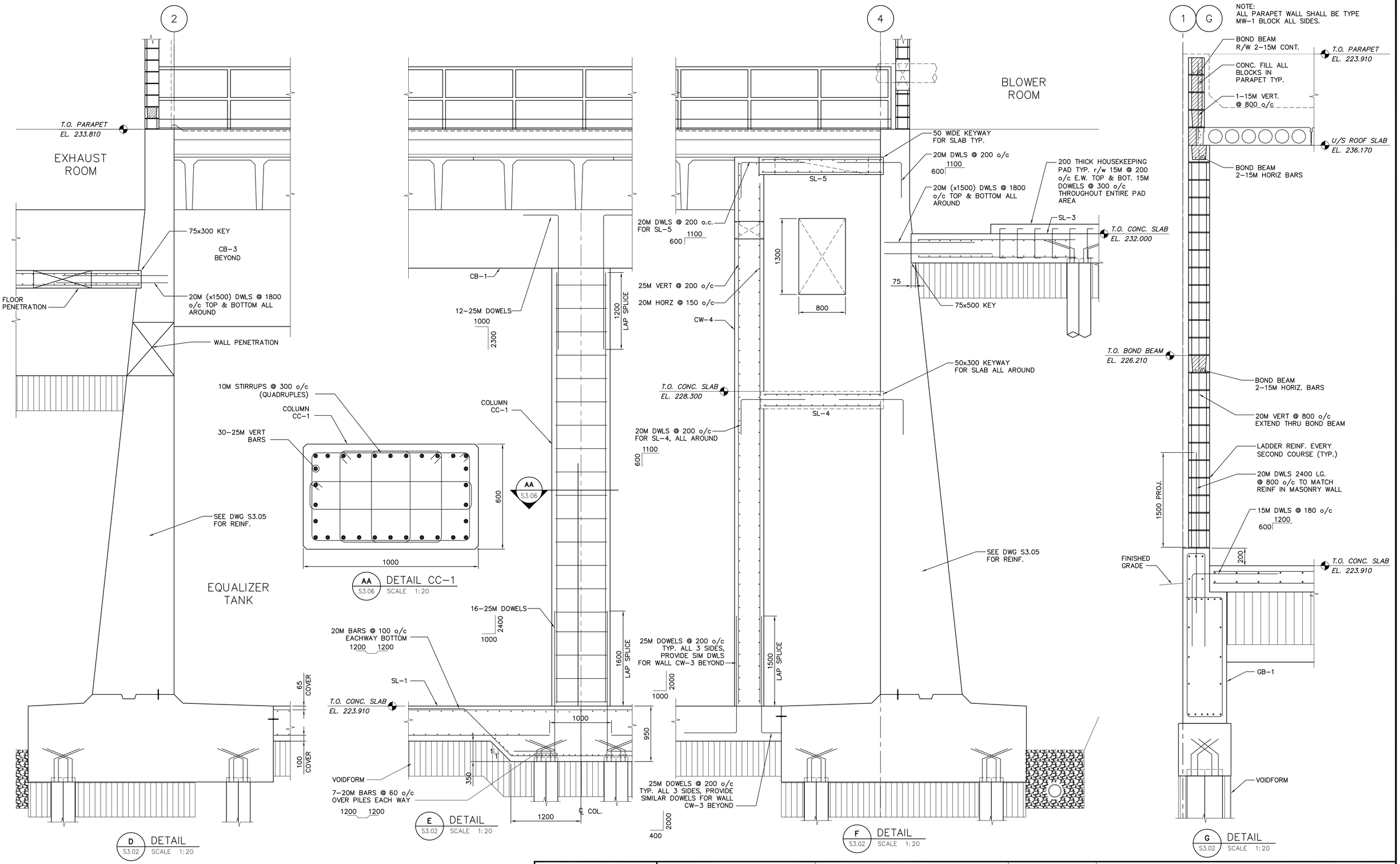
CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
BUILDING DETAILS SHEET 1

CITY DRAWING NUMBER
1-0101C-S0012-001-03

L:\WORK\66000\66303CEN\02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\STRUCT\1-0101C-S0012-001-03D.DWG

SHEET: COW-A1 (05/2005)



AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....

REFER TO
KGS MASONRY REPAIR
AS-BUILTS

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Original dated on: Date: 2006/05/15

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
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02	ISSUED FOR CONSTRUCTION	06/08/30	GLG
01	291-2006 ADDENDUM 6	06/07/26	CMF
00	ISSUED FOR TENDER	06/05/15	WDB

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/04/10	DATE	2006/05/15

ENGINEER'S SEAL

ORIGINAL
SIGNED BY

L.L. RIDING

2006/05/15

CONSULTANT DRAWING NO.
S3.06

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

STRUCTURAL
SBR BUILDING
BUILDING DETAILS SHEET 2

CITY DRAWING NUMBER
1-0101C-S0012-002-03

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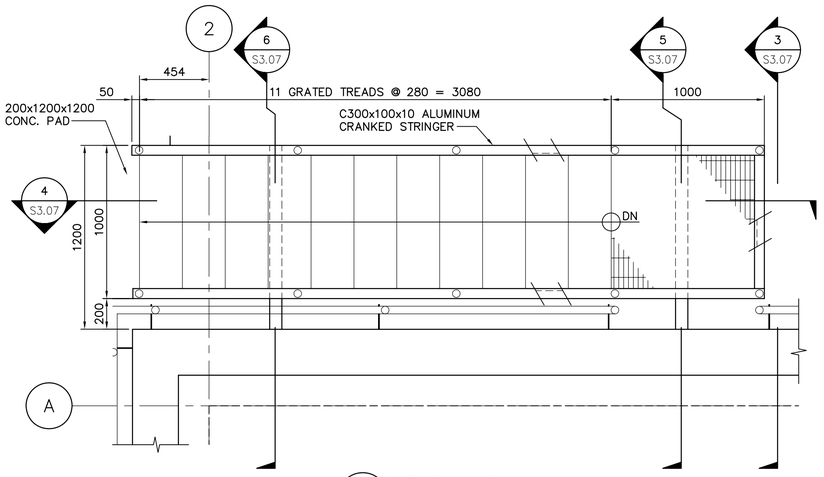
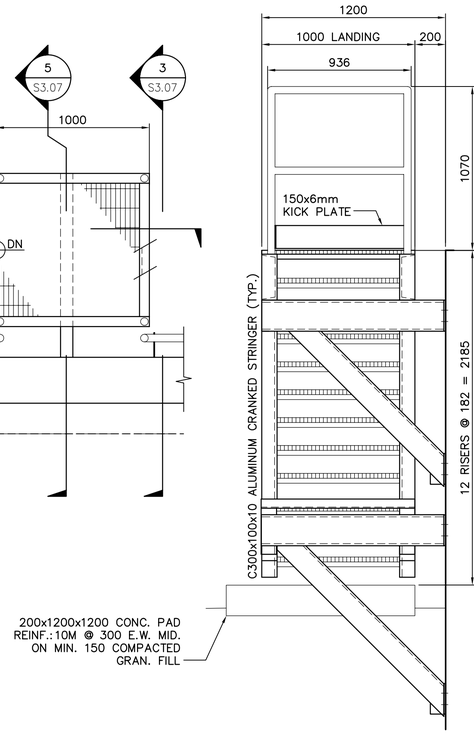


1 STAIR #1 PLAN
S2.03 S3.01 SCALE 1:125



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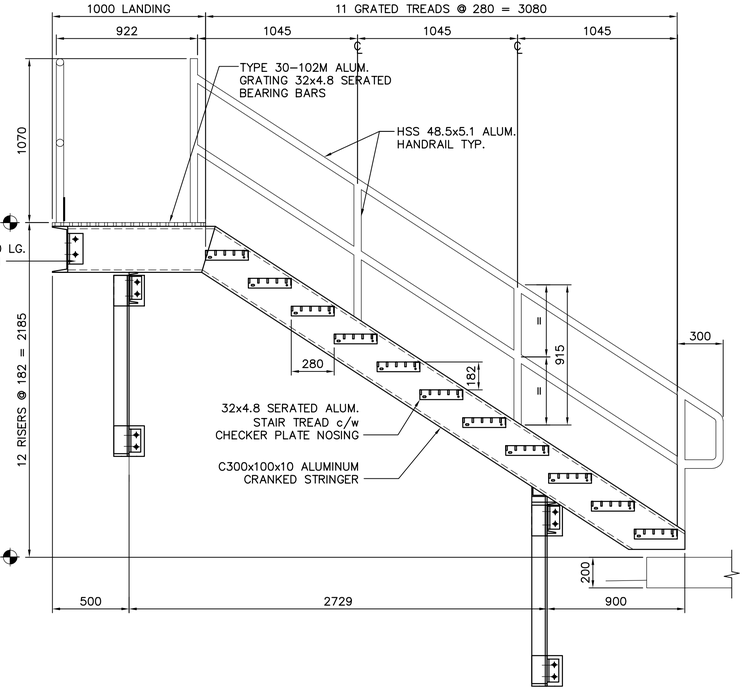
SCALE 1:20



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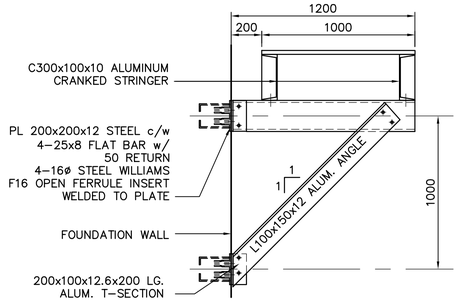

5 S3.07 TYP. UPPER SUPPORT SECTION
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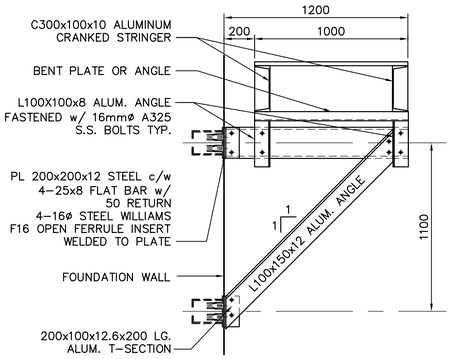

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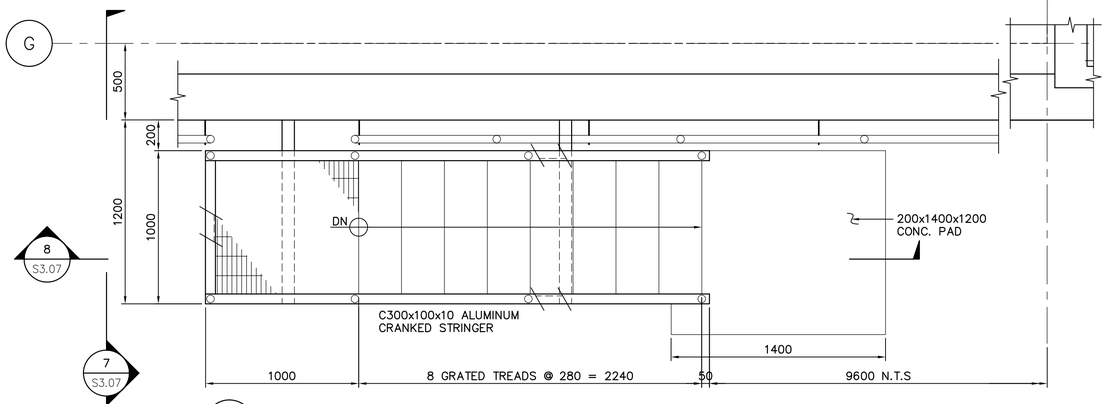
SCALE 1:20



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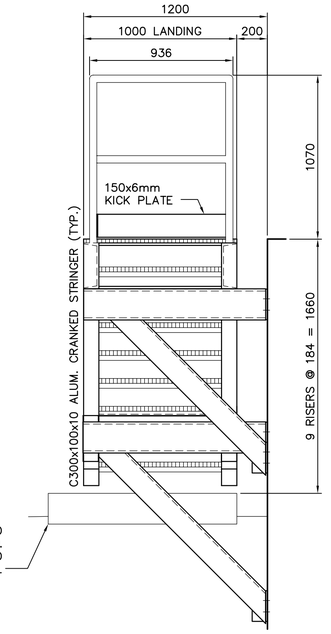

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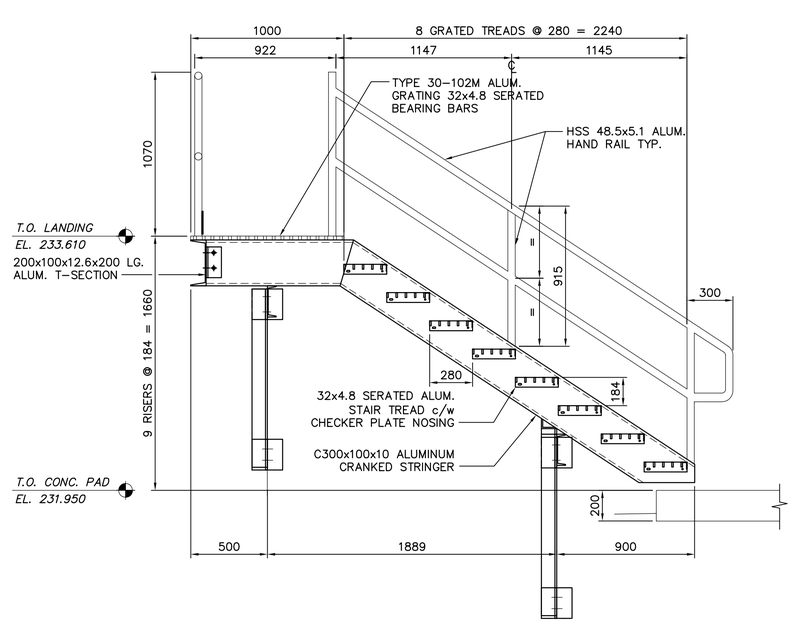

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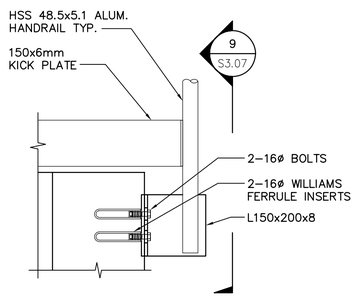

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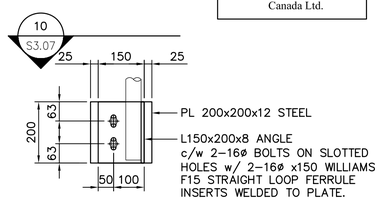

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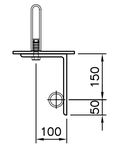
SCALE 1:10



10 S3.07 PLAN
SCALE 1:10

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED
SIG..... DATE.....

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: 2006/05/15
Original dated on:

NO.	REVISIONS	DATE	BY
03	AS-CONSTRUCTED DRAWING	09/04/13	GLG
02	ISSUED FOR FI-2	07/01/17	WDB
01	ISSUED FOR CONSTRUCTION	06/08/30	GLG
00	ISSUED FOR TENDER	06/05/15	WDB

B.M.
ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY: LLR
CHECKED BY: GGP
DRAWN BY: WDB/GGP
APPROVED BY: JEH
SCALE: AS NOTED
RELEASED FOR CONSTRUCTION BY: K. MARTENS
DATE: 2006/04/10
DATE: 2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S3.07

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

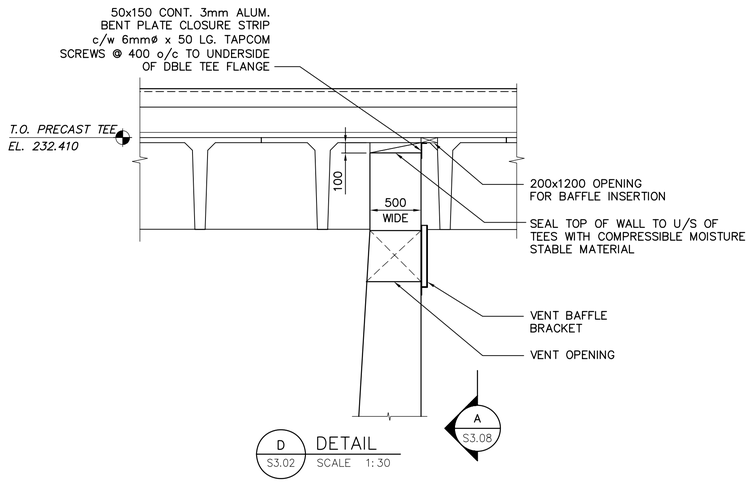
CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
STAIR PLANS, SECTIONS & DETAILS

CITY DRAWING NUMBER
1-0101C-S0013-001-03

L:\WORK\66000\66303CEN\02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\STRUCT\1-0101C-S0013-001-03D.DWG

SHEET: COW-A1 (05/2005)



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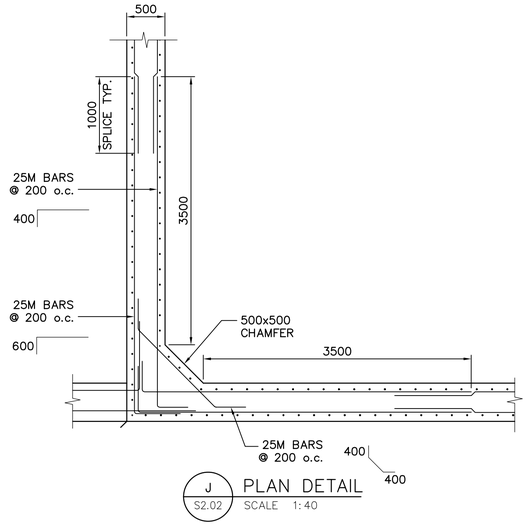

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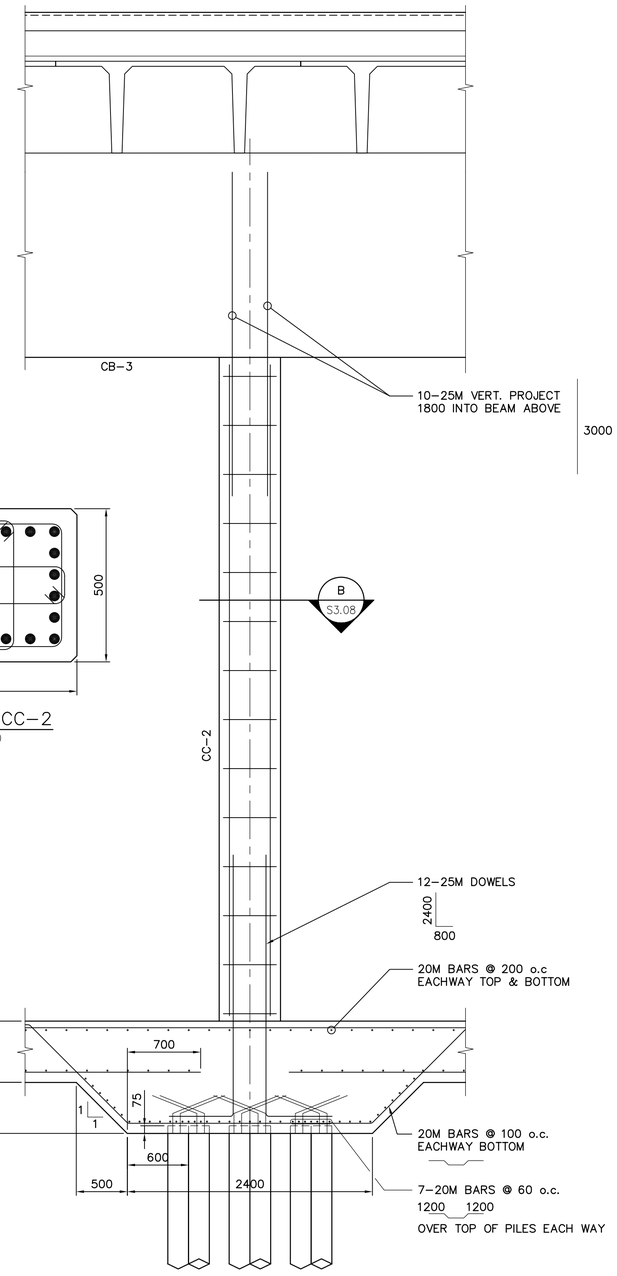

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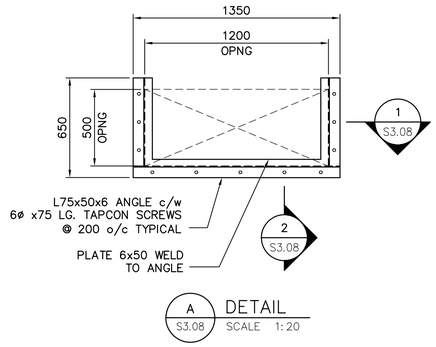

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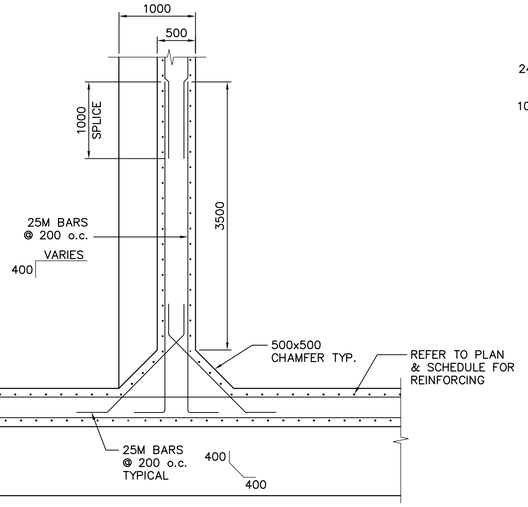

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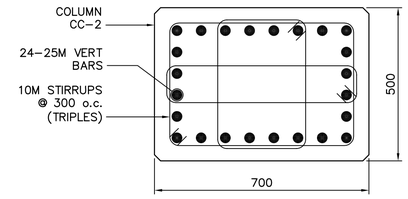

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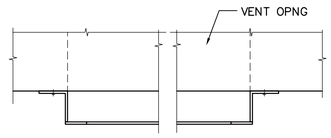
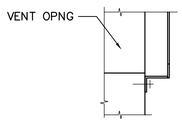
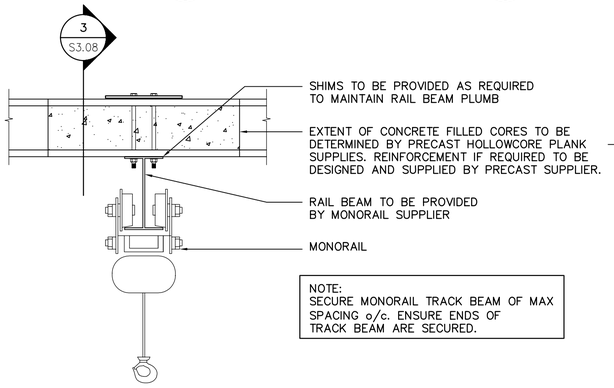


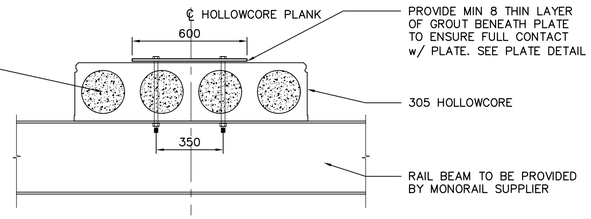
1 S3.08 SECTION SCALE 1:20



2 S3.08 SECTION SCALE 1:20



L S3.02 DETAIL SCALE N.T.S.



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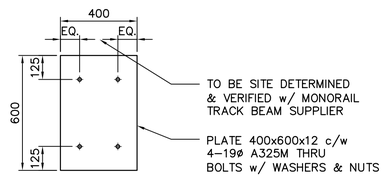


PLATE DETAIL
SCALE N.T.S.

AECOM

As of January 3, 2009,
EarthTech became AECOM
Canada Ltd.

AECOM AS-CONSTRUCTED
SIG:..... DATE.....

APEGM
Certificate of Authorization
AECOM Canada Ltd.
Original dated on:
No. 4671 Date: 2006/05/15

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
02	AS-CONSTRUCTED DRAWING	09/04/09	RJH
01	ISSUED FOR CONSTRUCTION	06/08/30	GLG
00	ISSUED FOR TENDER	06/05/15	WDB

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LLR	CHECKED BY	GGP
DRAWN BY	WDB	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/04/22	DATE	2006/05/15

ENGINEER'S SEAL

ORIGINAL
SIGNED BY
L.L. RIDING
2006/05/15

CONSULTANT DRAWING NO.
S3.08

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

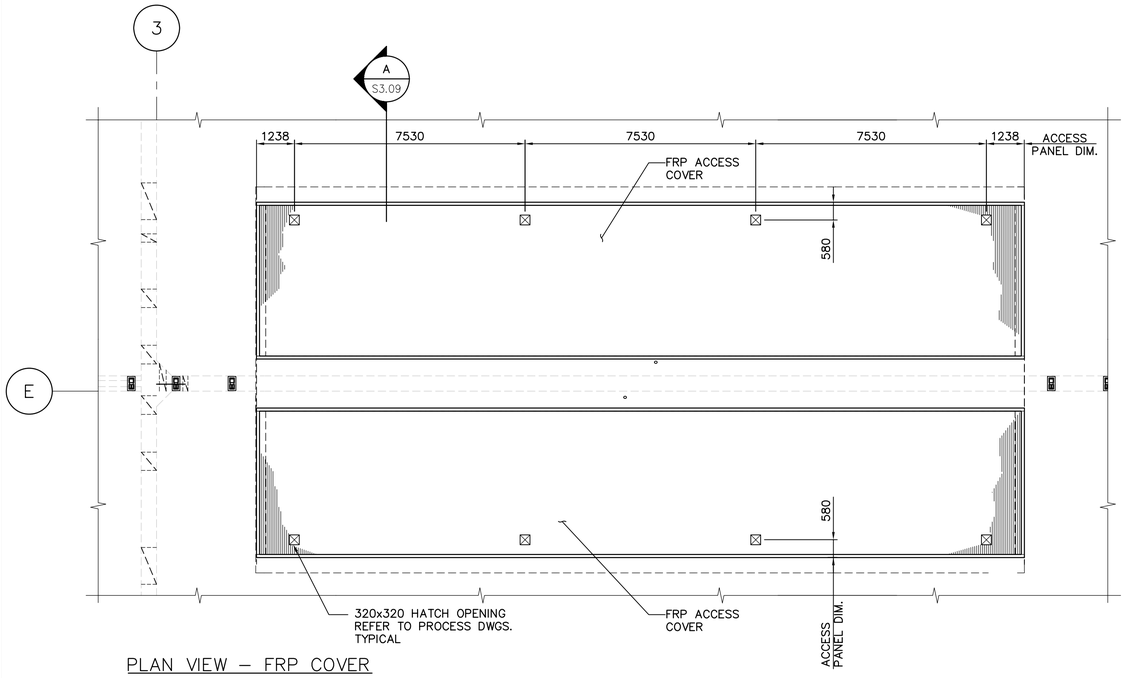
CITY FILE NUMBER
SHEET OF

STRUCTURAL
SBR BUILDING
BUILDING DETAILS & SECTIONS

CITY DRAWING NUMBER
1-0101C-S0014-001-02

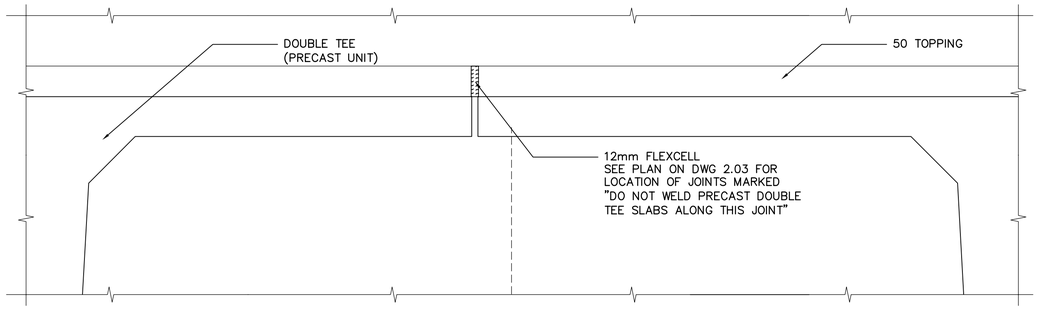
L:\WORK\66000\66303CEN\02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\STRUCT\1-0101C-S0014-001-02D.DWG

SHEET: COW-A1 (05/2005)



PLAN VIEW – FRP COVER

SCALE = 1:100



B S3.09 SECTION DETAIL

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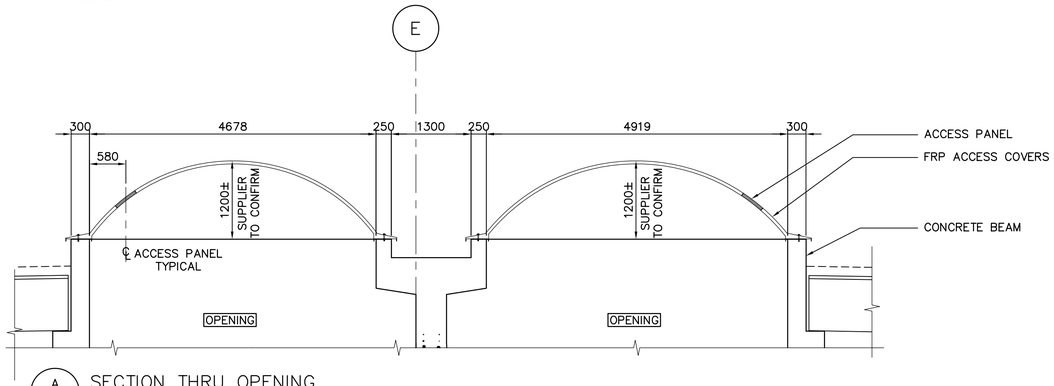
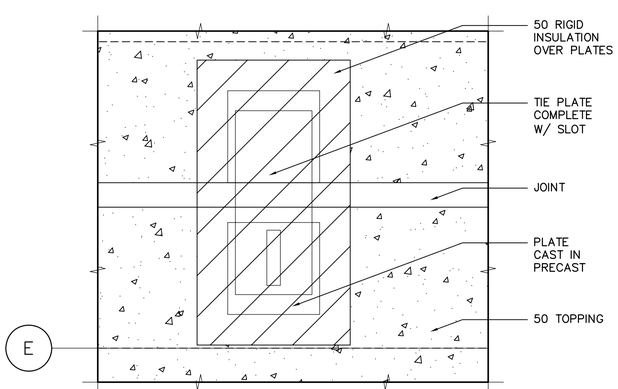


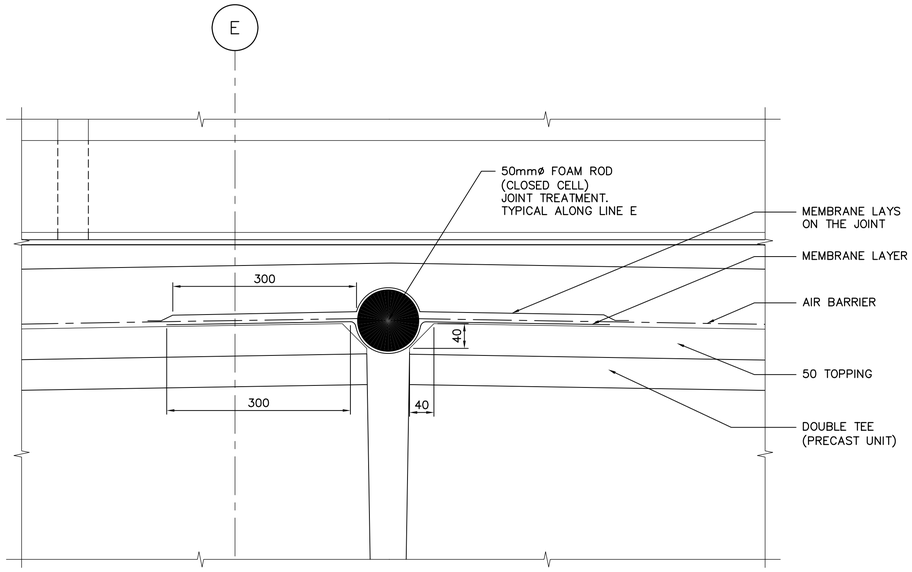
A S3.09 SECTION THRU OPENING

SCALE 1:50



D S2.03 PLAN DETAIL

SCALE 1:5



C S3.05 ROOF EXPANSION JOINT DETAIL

SCALE 1:5

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....

REFER TO NEMATO CORP. FRP AS-BUILT SHOP DRAWINGS

APEGM Certificate of Authorization

AECOM Canada Ltd.

No. 4671 Date: Original dated on: 2006/05/15

NO.	REVISIONS	DATE	BY
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01	291-2006 ADDENDUM 6	06/07/26	CMF
00	ISSUED FOR TENDER	06/05/15	WDB

B.M. ELEV.

EarthTech A Tyco International Ltd. Company

DESIGNED BY LLR | CHECKED BY GGP

DRAWN BY K.K | APPROVED BY JEH

SCALE: AS NOTED | RELEASED FOR CONSTRUCTION BY: K. MARTENS

DATE 2006/04/22 | DATE 2006/05/15

ENGINEER'S SEAL

ORIGINAL SIGNED BY

L.L. RIDING

2006/05/15

CONSULTANT DRAWING NO. S3.09

Winnipeg

THE CITY OF WINNIPEG

WATER AND WASTE DEPARTMENT

ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

STRUCTURAL

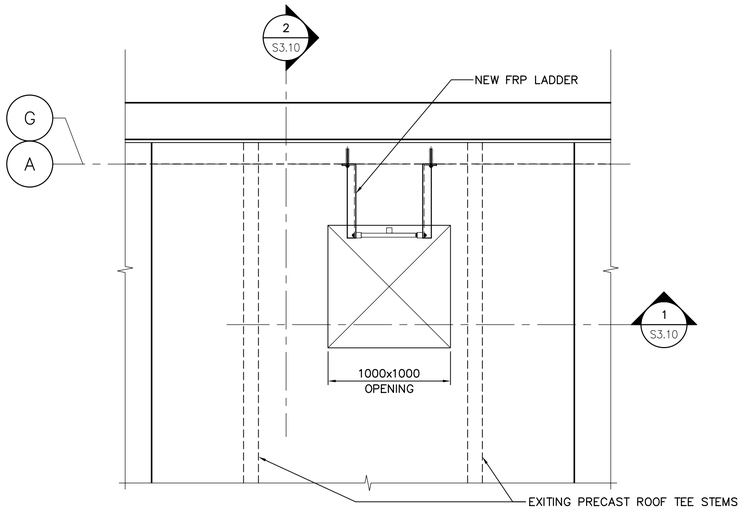
SBR BUILDING

FRP COVER PLAN, SECTIONS & DETAILS

CITY DRAWING NUMBER 1-0101C-S0015-001-04

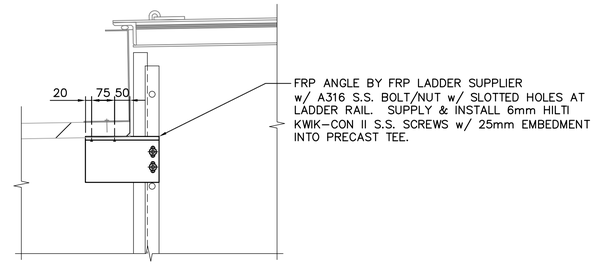
L:\WORK\66000\66303CEN\02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\STRUCT\1-0101C-S0015-001-04D.DWG

SHEET: COW-A1 (05/2005)



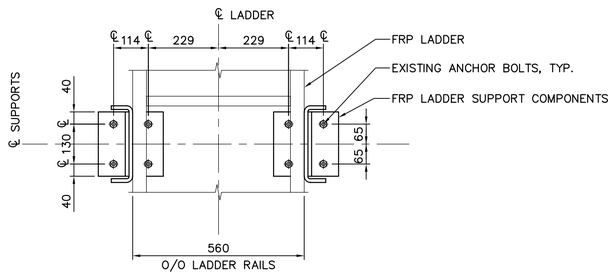
PLAN VIEW OF FRP LADDERS

SCALE = 1:25



A S3.10 DETAIL

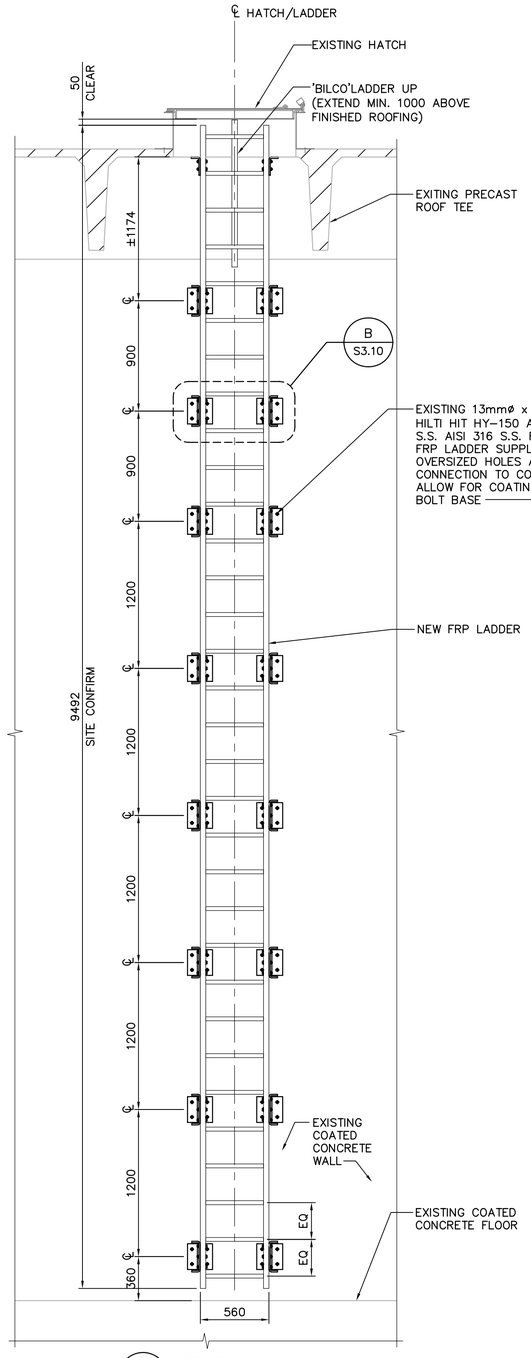
SCALE 1:10



B S3.10 DETAIL

SCALE 1:10

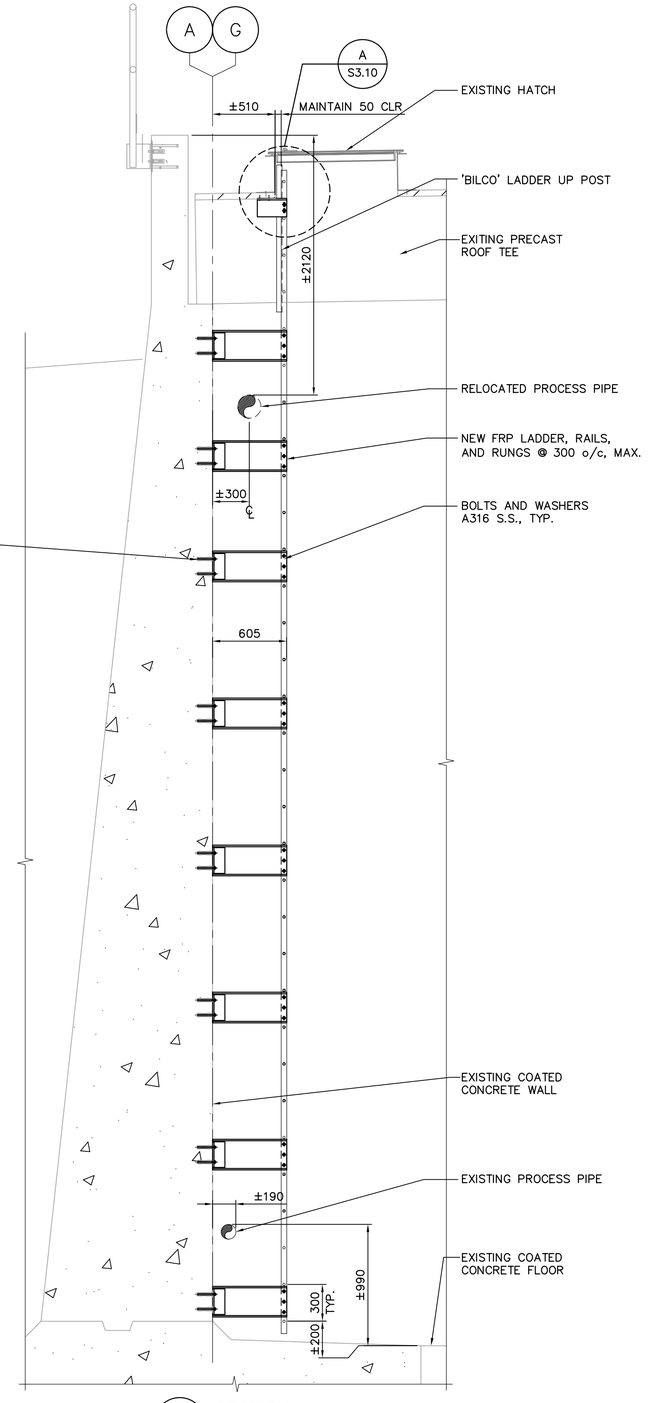
NOTE: SITE CONFIRM DIMENSIONS PRIOR TO FABRICATION



1 S3.10 SECTION

SCALE 1:25

NOTE: SITE CONFIRM DIMENSIONS PRIOR TO FABRICATION



2 S3.10 SECTION

SCALE 1:25

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....

APEGM Certificate of Authorization

AECOM Canada Ltd.

No. 4671 Date: 2006/05/15 Original dated on:

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
02	AS-CONSTRUCTED DRAWING	09/04/13	GLG
01	CCN 024	08/07/24	KK
00	F.O. #5	08/07/23	KK

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	ARA	CHECKED BY	MK
DRAWN BY	KK	APPROVED BY	DJT
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	
DATE	2008/07/22	DATE	2008/07/23

ENGINEER'S SEAL

ORIGINAL SIGNED BY

M. KLASSEN

2008/07/23

CONSULTANT DRAWING NO.

S3.10

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

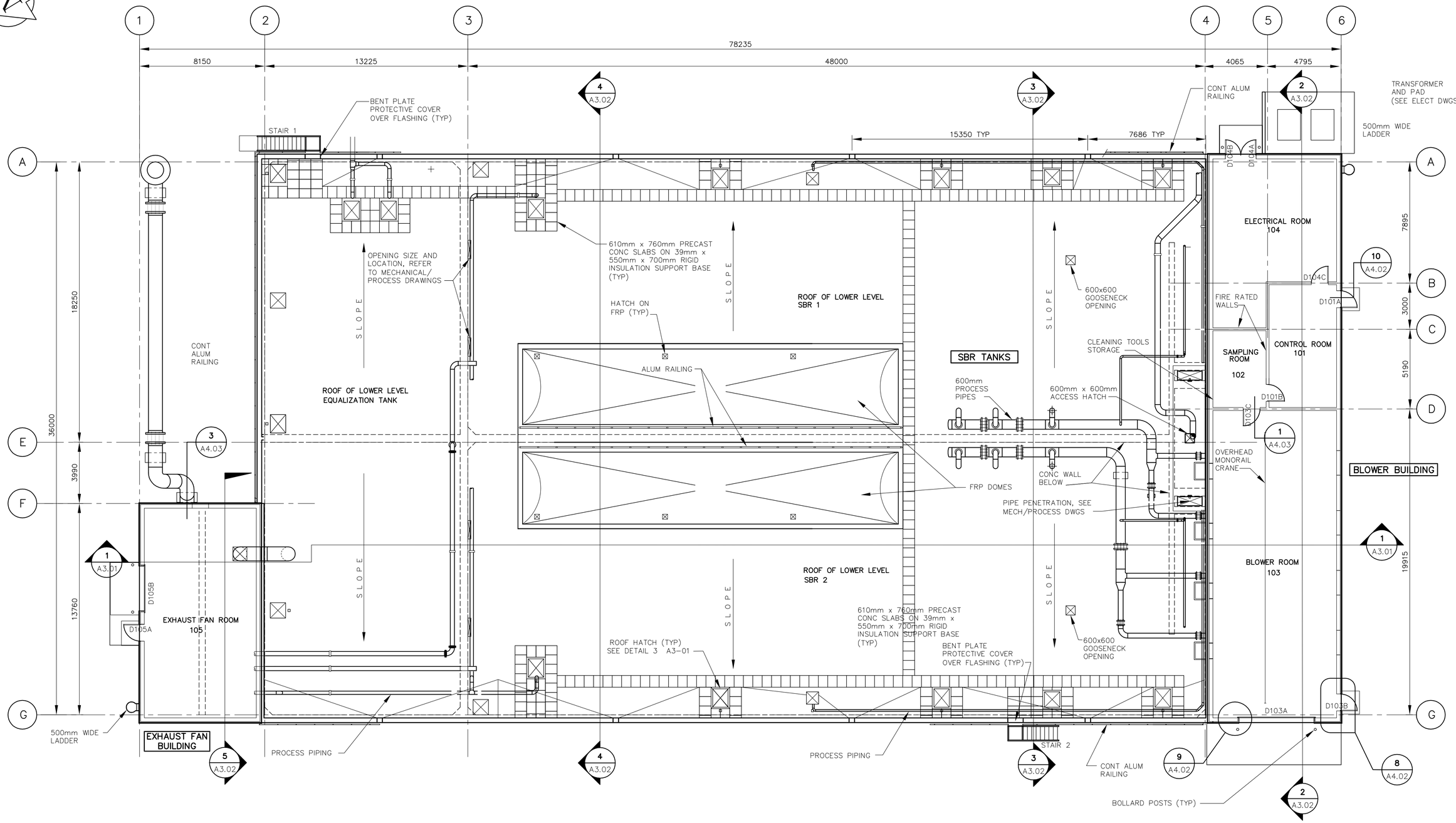
STRUCTURAL
SBR BUILDING
FRP LADDER SECTIONS & DETAILS

CITY DRAWING NUMBER

1-0101C-S0015-002-02

L:\WORK\66000\66303CEN\02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\STRUCT\1-0101C-S0015-002-04D.DWG

SHEET: COW-A1 (03/2005)



1 A1.02 **UPPER LEVEL PLAN**
1:125

AECOM

AECOM WINNIPEG
AS-CONSTRUCTED

PROVINCE OF MANITOBA
NEIL COOPER ARCHITECT INC.
No.090
APPROVED ARCHITECTURAL CORPORATION

B.M. ELEV.			
03	AS-CONSTRUCTED DRAWING	09/04/08	AL
02	ISSUED FOR CONSTRUCTION	06/08/29	AL
01	291-2006 ADDENDUM 6	06/07/26	AL
00	ISSUED FOR TENDER	06/05/15	AL
NO.	REVISIONS	DATE	BY

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	NC
CHECKED BY	LK
DRAWN BY	AL
APPROVED BY	JEH
HOR. SCALE: AS NOTED VERTICAL SCALE:	RELEASED FOR CONSTRUCTION BY: K. MARTENS
DATE 2006/03/21	DATE 2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
N. COOPER
2006/05/15

CONSULTANT DRAWING NO.
A1.02

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

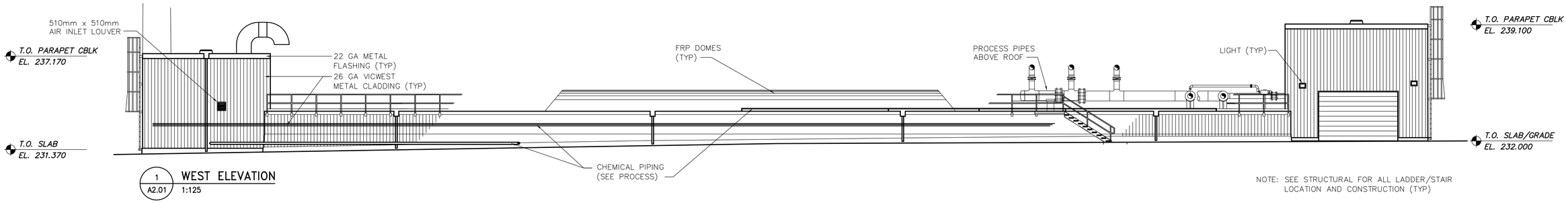
NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

ARCHITECTURAL
UPPER LEVEL PLAN

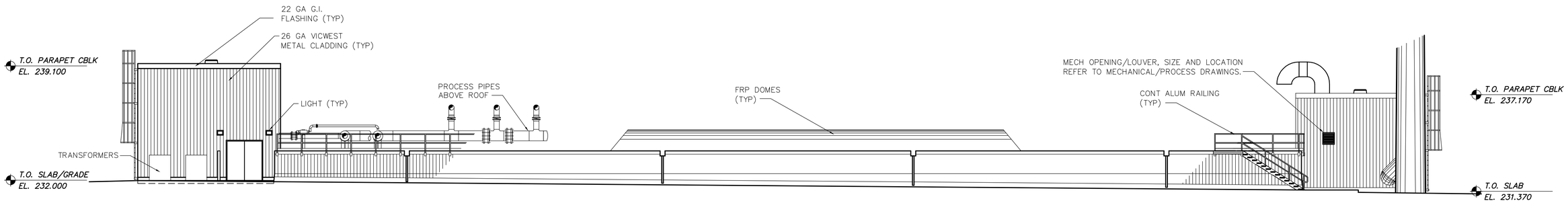
CITY DRAWING NUMBER
1-0101C-B0002-001-03

SHEET: COW-A1 (03/2005)

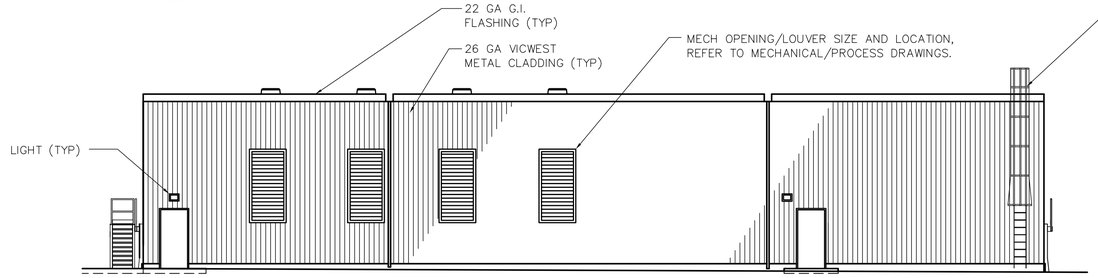


1 A2.01 **WEST ELEVATION** 1:125

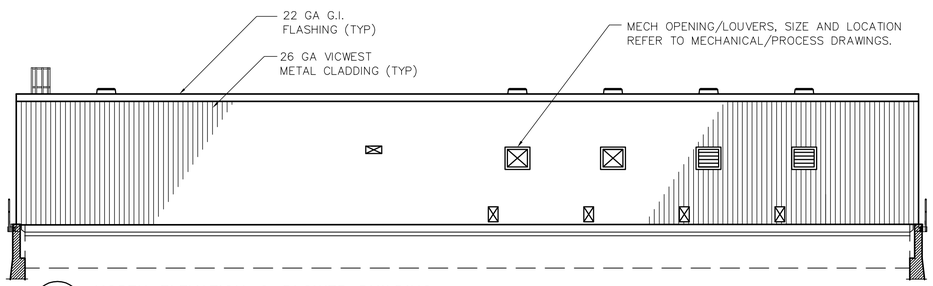
NOTE: SEE STRUCTURAL FOR ALL LADDER/STAIR LOCATION AND CONSTRUCTION (TYP)



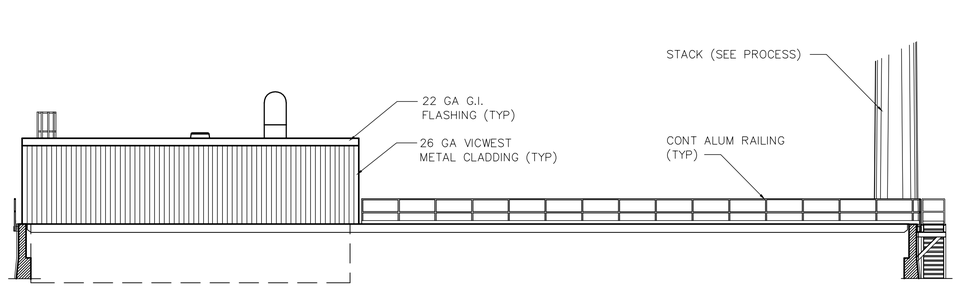
2 A2.01 **EAST ELEVATION** 1:125



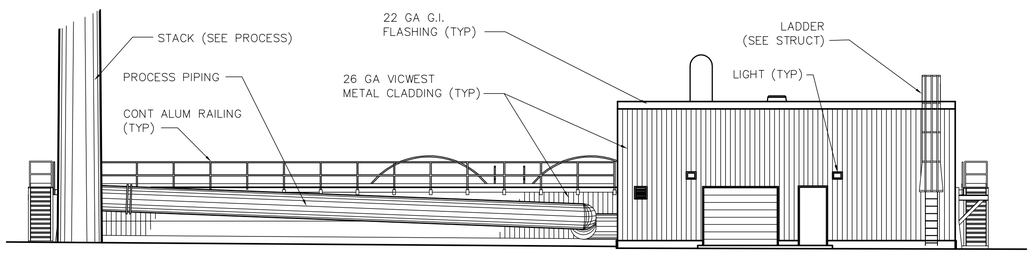
3 A2.01 **SOUTH ELEVATION @ BLOWER BUILDING** 1:125



4 A2.01 **NORTH ELEVATION @ BLOWER BUILDING** 1:125



5 A2.01 **SOUTH ELEVATION @ EXHAUST BUILDING** 1:125



6 A2.01 **NORTH ELEVATION @ EXHAUST BUILDING** 1:125

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
04	AS-CONSTRUCTED DRAWING	09/04/08	AL
03	ISSUED FOR CONSTRUCTION	06/08/29	AL
02	291-2006 ADDENDUM 6	06/07/26	AL
01	291-2006 ADDENDUM 3	06/07/12	AL
00	ISSUED FOR TENDER	06/05/15	AL

PROVINCE OF MANITOBA
NEIL COOPER
ARCHITECT
INC.
No.090
APPROVED ARCHITECTURAL CORPORATION

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	NC	CHECKED BY	LK
DRAWN BY	AL	APPROVED BY	JEH
HOR. SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
VERTICAL SCALE:			
DATE	2006/03/21	DATE	2006/05/15

ENGINEER'S SEAL

ORIGINAL
SIGNED BY

N. COOPER

2006/05/15

CONSULTANT DRAWING NO.
A2.01

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

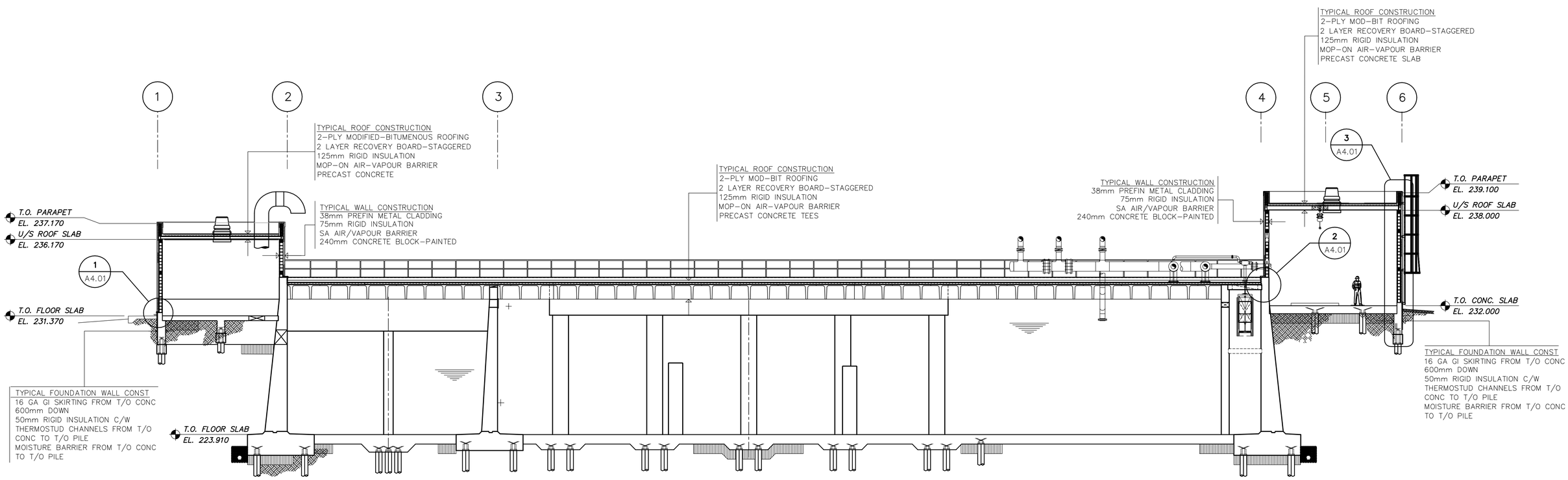
ARCHITECTURAL
EXTERIOR ELEVATIONS

CITY DRAWING NUMBER
1-0101C-B0005-001-04

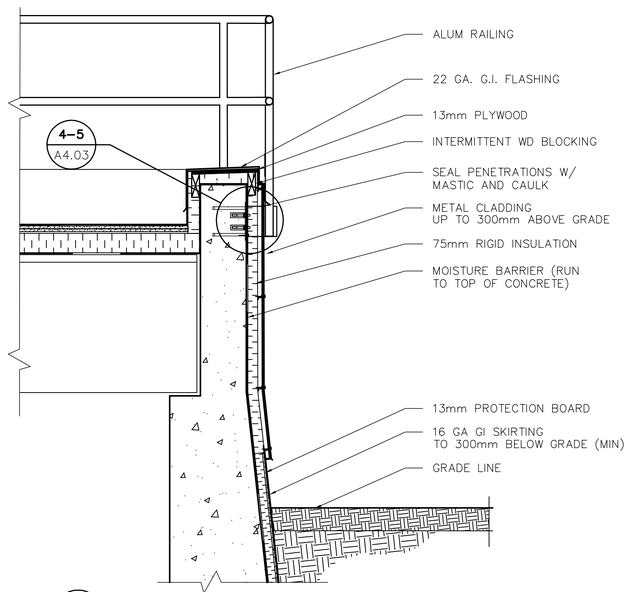
AECOM

AECOM WINNIPEG
AS-CONSTRUCTED

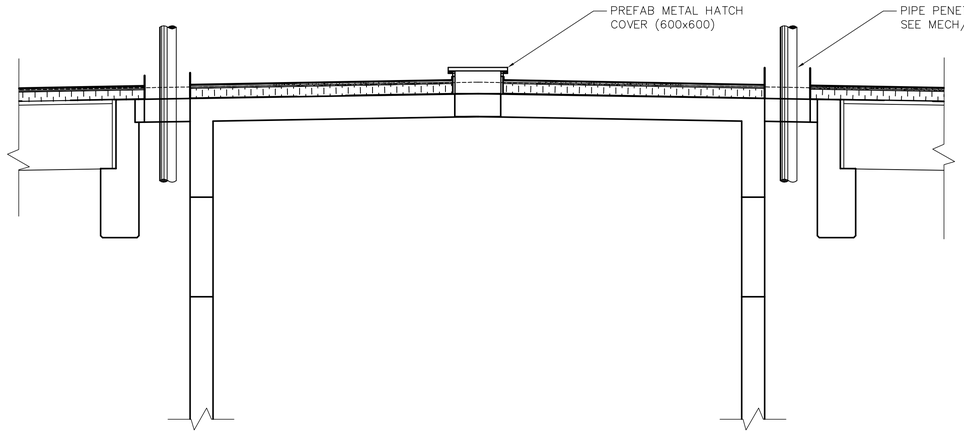
SHEET: COW-A1 (03/2005)



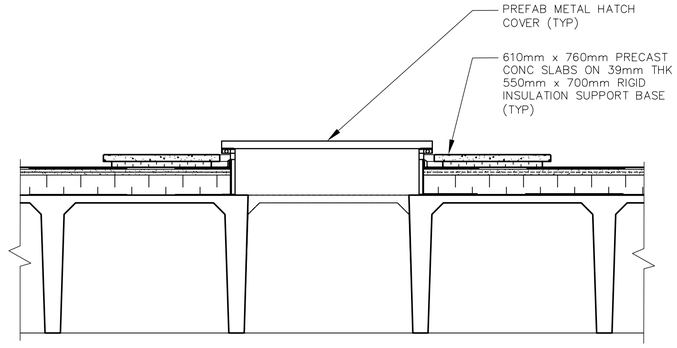
1 / A1.01 **BUILDING SECTION** 1:125



4 / A3-02 **SBR WALL DETAIL SECTION** 1:20



2 / A3.02 **DETAIL SECTION** 1:40



3 / A1.02 **ROOF HATCH DETAIL (TYP)** 1:20

AECOM

AECOM WINNIPEG
AS-CONSTRUCTED

PROVINCE OF MANITOBA
NEIL COOPER
ARCHITECT
INC.
No.090
APPROVED ARCHITECTURAL CORPORATION

NO.	REVISIONS	DATE	BY
05	AS-CONSTRUCTED DRAWING	09/04/08	AL
04	ISSUED FOR CONSTRUCTION	06/08/29	AL
03	291-2006 ADDENDUM 7	06/08/02	LK
02	291-2006 ADDENDUM 6	06/07/26	AL
01	291-2006 ADDENDUM 3	06/07/12	AL
00	ISSUED FOR TENDER	06/05/15	AL

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY: NC | CHECKED BY: LK
DRAWN BY: AL | APPROVED BY: JEH
HOR. SCALE: AS NOTED | RELEASED FOR CONSTRUCTION BY: K. MARTENS
VERTICAL SCALE:
DATE 2006/03/21 | DATE 2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
N. COOPER
2006/05/15

CONSULTANT DRAWING NO.
A3.01

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

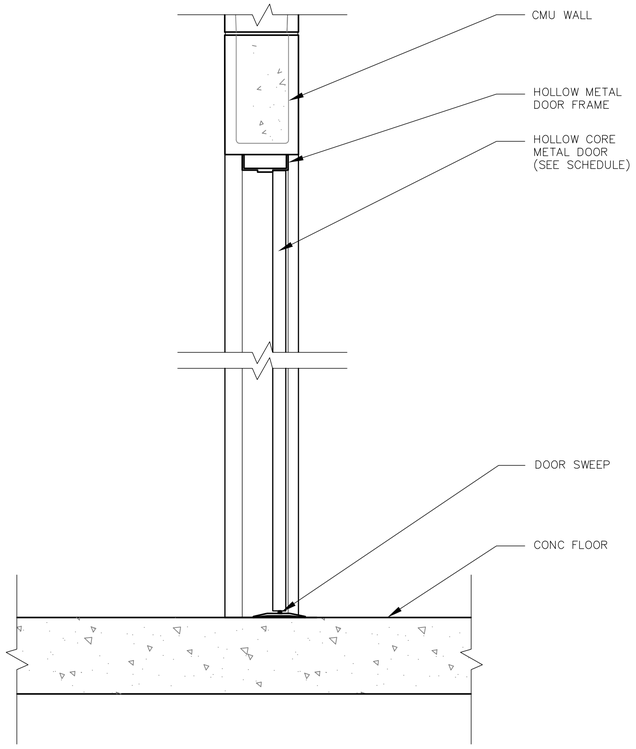
NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

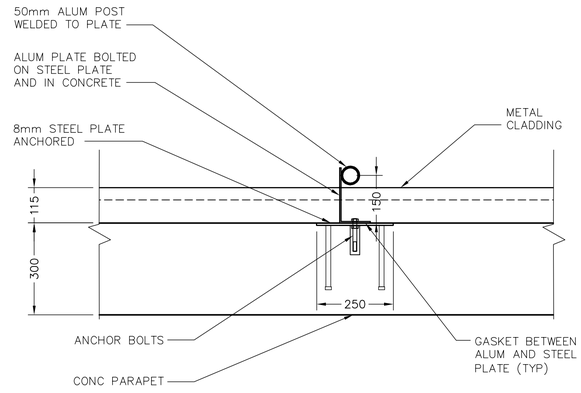
ARCHITECTURAL
BUILDING SECTION & DETAILS

CITY DRAWING NUMBER
1-0101C-B0006-001-05

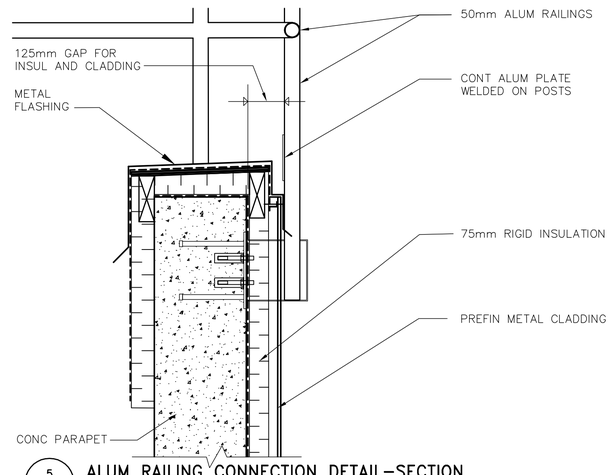
SHEET: COW-A1 (03/2005)



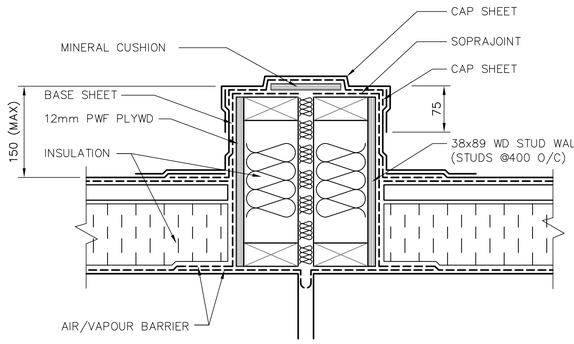
1 A1.02 **INTERIOR DOOR SECTION DETAIL**
1:10



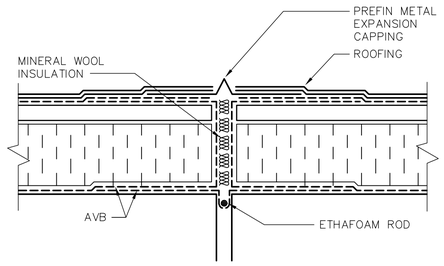
4 A3.01 **ALUM RAILING CONNECTION DETAIL–PLAN**
1:10



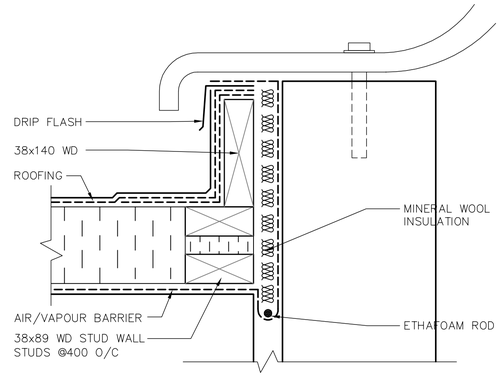
5 A3.01 **ALUM RAILING CONNECTION DETAIL–SECTION**
1:10



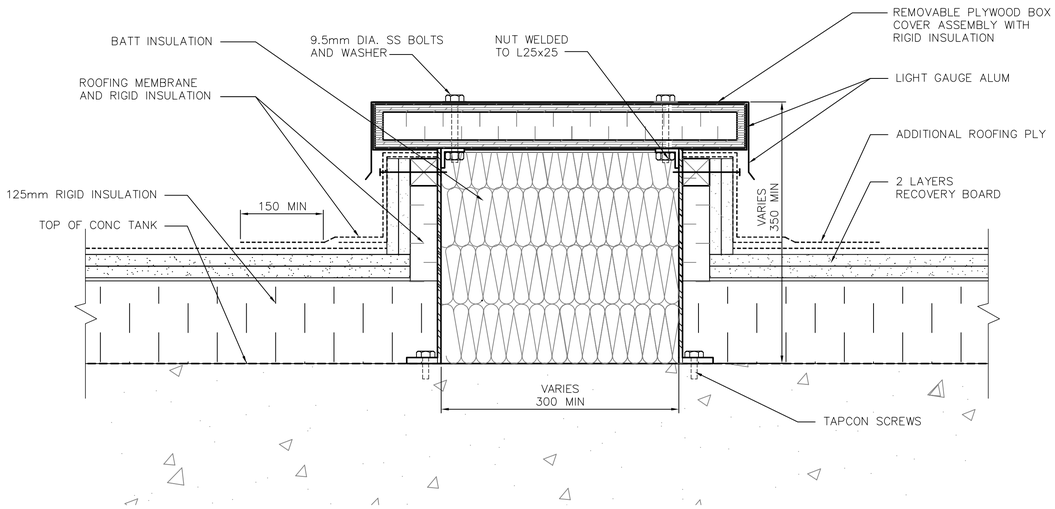
7 A1.01 **ROOF EXPANSION JOINT**
1:5



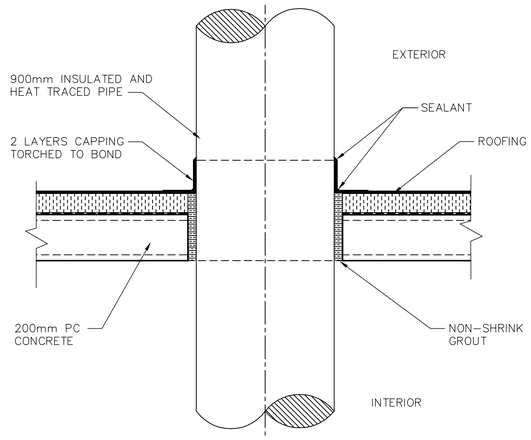
8 A1.01 **ROOF EXPANSION JOINT**
1:5



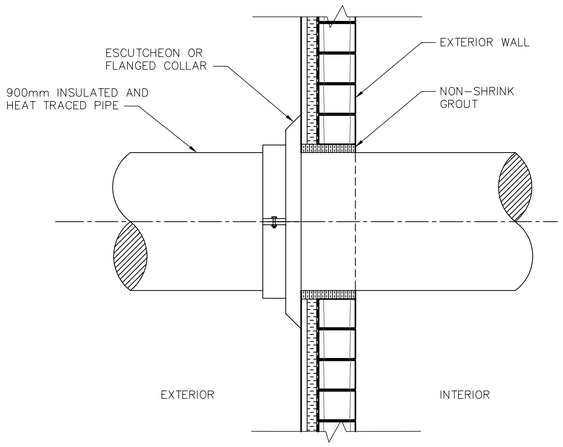
9 A1.01 **ROOF CURB**
1:5



6 – **TYPICAL DAVIT CRANE SLEEVE SECTION**
SCALE 1:5
NOTE: SEE PROCESS DRAWINGS FOR LOCATIONS AND DIMENSIONS REQUIRED FOR DAVIT CRANE SLEEVE



2 A3.02 **ROOF PIPE PENETRATION DETAIL (TYP)**
1:20



3 A1.01 **WALL PIPE PENETRATION DETAIL (TYP)**
1:20

AECOM

AECOM WINNIPEG
AS–CONSTRUCTED

PROVINCE OF MANITOBA
NEIL COOPER ARCHITECT INC.
No.090
APPROVED ARCHITECTURAL CORPORATION

NO.	REVISIONS	DATE	BY
03	AS–CONSTRUCTED DRAWING	09/04/16	AL
02	ISSUED FOR CONSTRUCTION	06/08/29	AL
01	291–2006 ADDENDUM 6	06/07/26	AL
00	ISSUED FOR TENDER	06/05/15	AL

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY: NC
CHECKED BY: LK
DRAWN BY: AL
APPROVED BY: JEH
HOR. SCALE: AS NOTED
VERTICAL SCALE:
RELEASED FOR CONSTRUCTION BY: K. MARTENS
DATE: 2006/03/21
DATE: 2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
N. COOPER
2006/05/15

CONSULTANT DRAWING NO.
A4.03

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

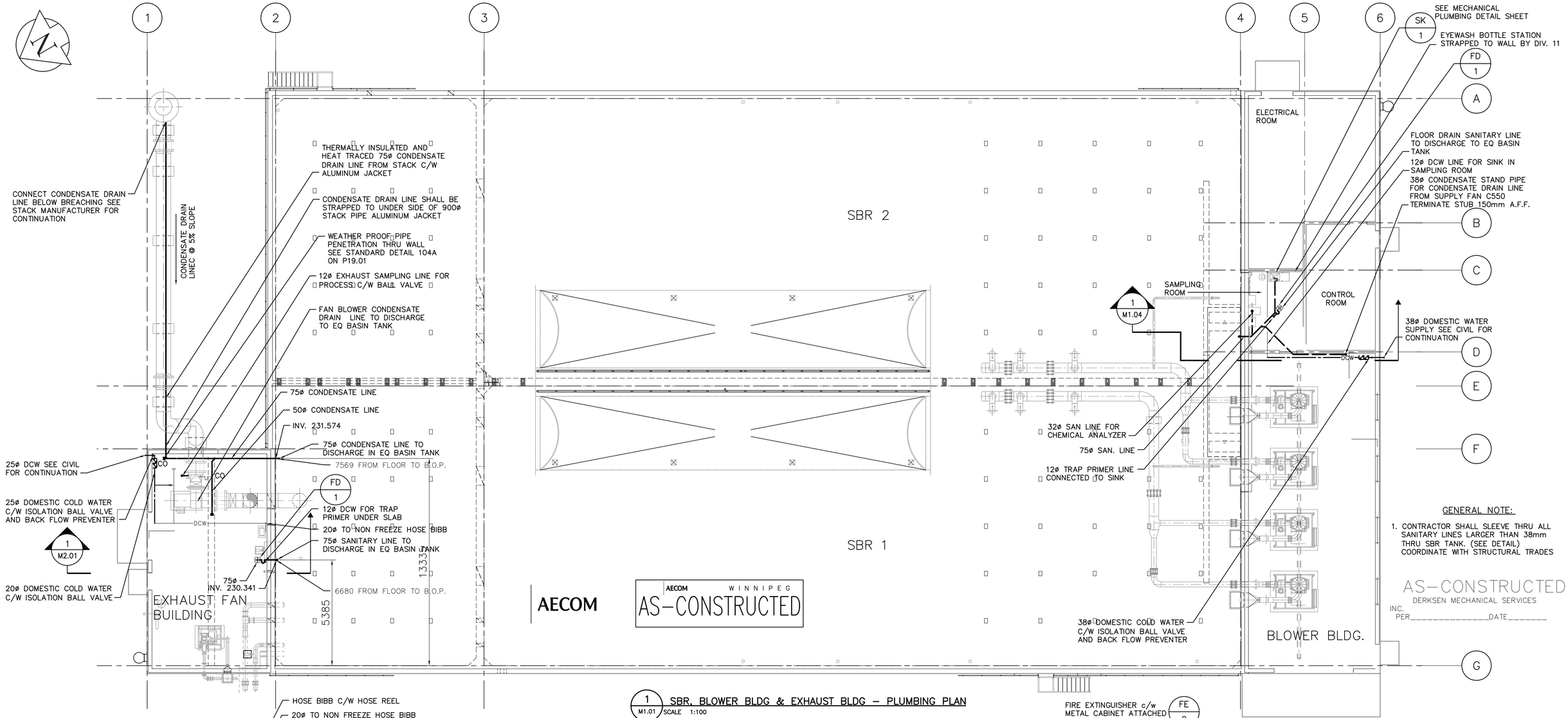
NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

ARCHITECTURAL
MISCELLANEOUS DETAILS

CITY DRAWING NUMBER
1-0101C-B0009-001-03

SHEET: COW-A1 (05/2005)



AECOM

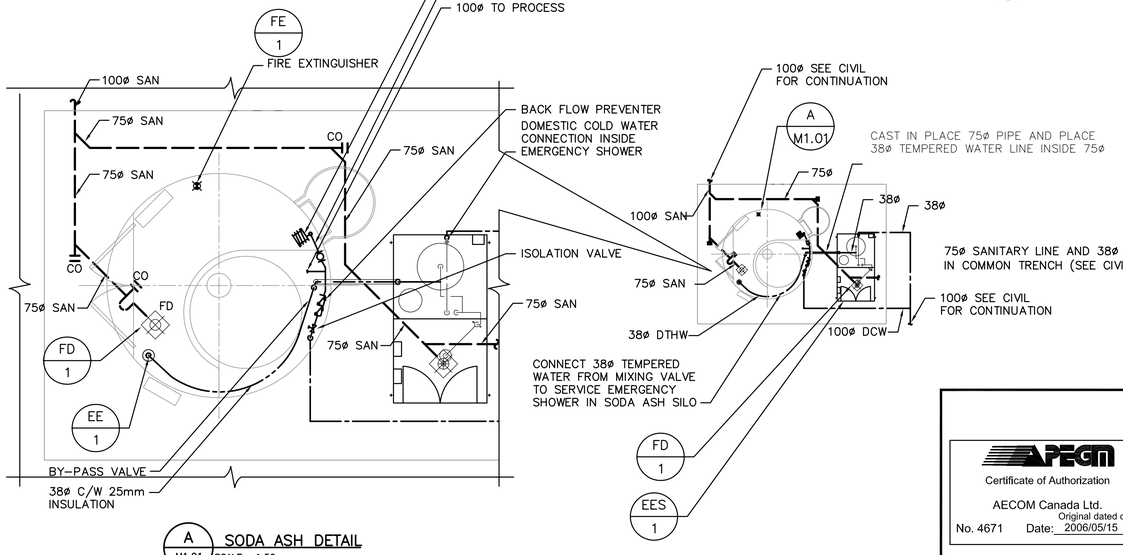
AECOM WINNIPEG
AS-CONSTRUCTED

GENERAL NOTE:

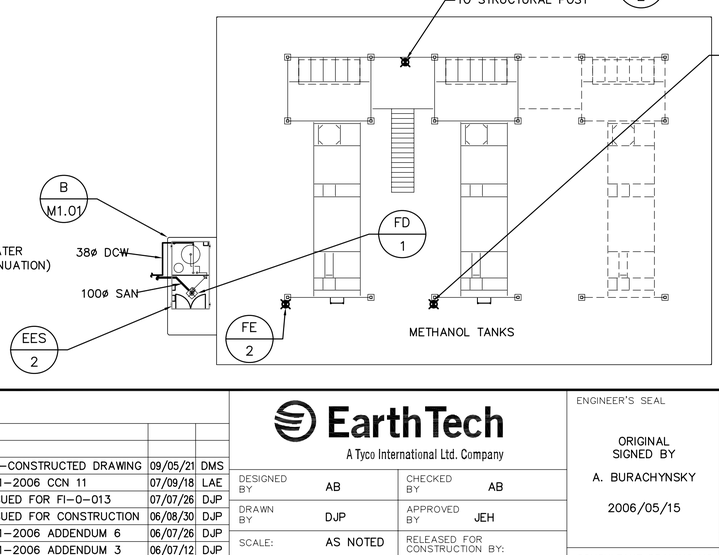
1. CONTRACTOR SHALL SLEEVE THRU ALL SANITARY LINES LARGER THAN 38mm THRU SBR TANK. (SEE DETAIL) COORDINATE WITH STRUCTURAL TRADES

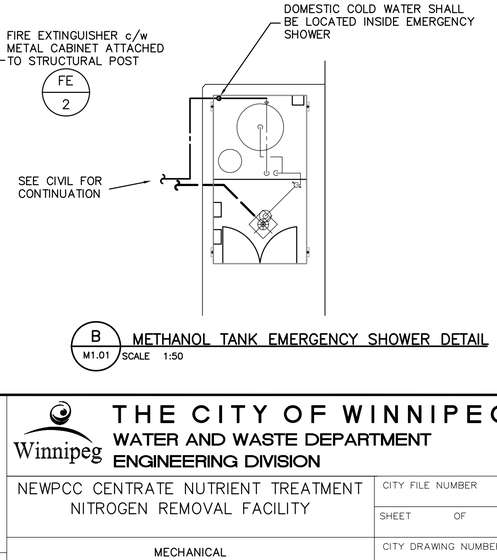
AS-CONSTRUCTED
DERKSEN MECHANICAL SERVICES INC.
PER_____DATE_____

1 M1.01 SCALE 1:100 SBR, BLOWER BLDG & EXHAUST BLDG – PLUMBING PLAN



A M1.01 SCALE 1:50 SODA ASH DETAIL





B M1.01 SCALE 1:50 METHANOL TANK EMERGENCY SHOWER DETAIL

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: Original dated on: 2006/05/15

NO.	REVISIONS	DATE	BY
06	AS-CONSTRUCTED DRAWING	09/05/21	DMS
05	291-2006 CCN 11	07/09/18	LAE
04	ISSUED FOR FI-0-013	07/07/26	DJP
03	ISSUED FOR CONSTRUCTION	06/08/30	DJP
02	291-2006 ADDENDUM 6	06/07/26	DJP
01	291-2006 ADDENDUM 3	06/07/12	DJP
00	ISSUED FOR TENDER	06/05/15	DJP

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	AB	CHECKED BY	AB
DRAWN BY	DJP	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/05/15	DATE	2006/05/23

ENGINEER'S SEAL
ORIGINAL SIGNED BY
A. BURACHYNSKY
2006/05/15

CONSULTANT DRAWING NO.
M1.01

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

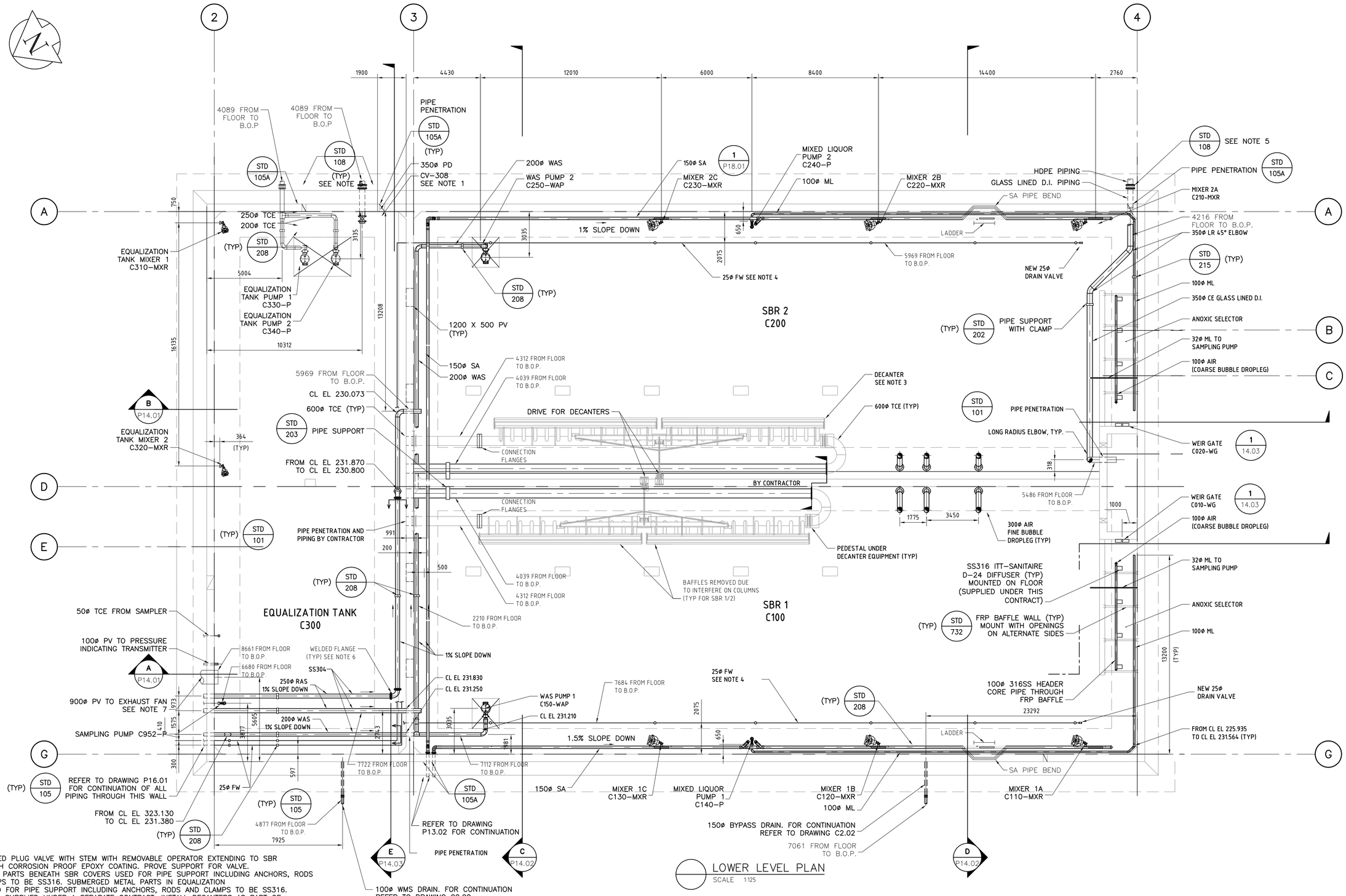
CITY FILE NUMBER
SHEET OF

MECHANICAL
BLOWER BUILDING,SODA ASH AND METHANOL TANKS – PLUMBING PLAN

CITY DRAWING NUMBER
1-0101C-M0002-001-06

_FldId 2127722960

SHEET: COW-A1 (05/2005)



LOWER LEVEL PLAN
SCALE 1:125

NOTES:

1. GLASS LINED PLUG VALVE WITH STEM WITH REMOVABLE OPERATOR EXTENDING TO SBR COVER WITH CORROSION PROOF EPOXY COATING. PROVE SUPPORT FOR VALVE.
2. ALL METAL PARTS BENEATH SBR COVERS USED FOR PIPE SUPPORT INCLUDING ANCHORS, RODS AND CLAMPS TO BE SS316. SUBMERGED METAL PARTS IN EQUALIZATION TANK USED FOR PIPE SUPPORT INCLUDING ANCHORS, RODS AND CLAMPS TO BE SS316.
3. DECANTERS SUPPLIED UNDER A SEPARATE CONTRACT. INSTALL DECANTERS AS PART OF THIS CONTRACT. COORDINATE EXACT DIMENSIONS WITH DECANTER SUPPLIER.
4. PROVIDE SIX WATER SPRINKLERS, EQUALLY SPACED. SPRINKLERS TO BE RAIN-BIRD 2045-PJ MAX BIRD 25 PSI.
5. FOR PIPING CONTINUATION OUTSIDE OF STRUCTURE REFER TO CIVIL DRAWINGS.
6. PROVIDE VICTAULIC FLANGES ON PIPES LOCATED ABOVE THE HIGH WATER LEVEL.
7. REFER TO DRAWING P14.03 FOR ELEVATIONS OF ALL PIPE PENETRATIONS THROUGH THIS WALL.

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM WINNIPEG
AS-CONSTRUCTED

AS-CONSTRUCTED
DERKSEN MECHANICAL SERVICES INC.
PER_____DATE_____

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: 2006/05/15
Original dated on:

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
05	AS-CONSTRUCTED DRAWING	09/02/18	CD
04	ISSUED FOR FI-0-21	07/10/10	LAE
03	ISSUED FOR CONSTRUCTION	06/08/30	GLG
02	291-2006 ADDENDUM 6	06/07/26	SRP
01	291-2006 ADDENDUM 3	06/07/12	LAE
00	ISSUED FOR TENDER	06/05/15	GLG

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	YL	CHECKED BY	SB
DRAWN BY	SRP	APPROVED BY	JEH
SCALE:	1:125	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/01/16	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
J.E. HUTCHISON
2006/05/15

CONSULTANT DRAWING NO.
P13.01

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

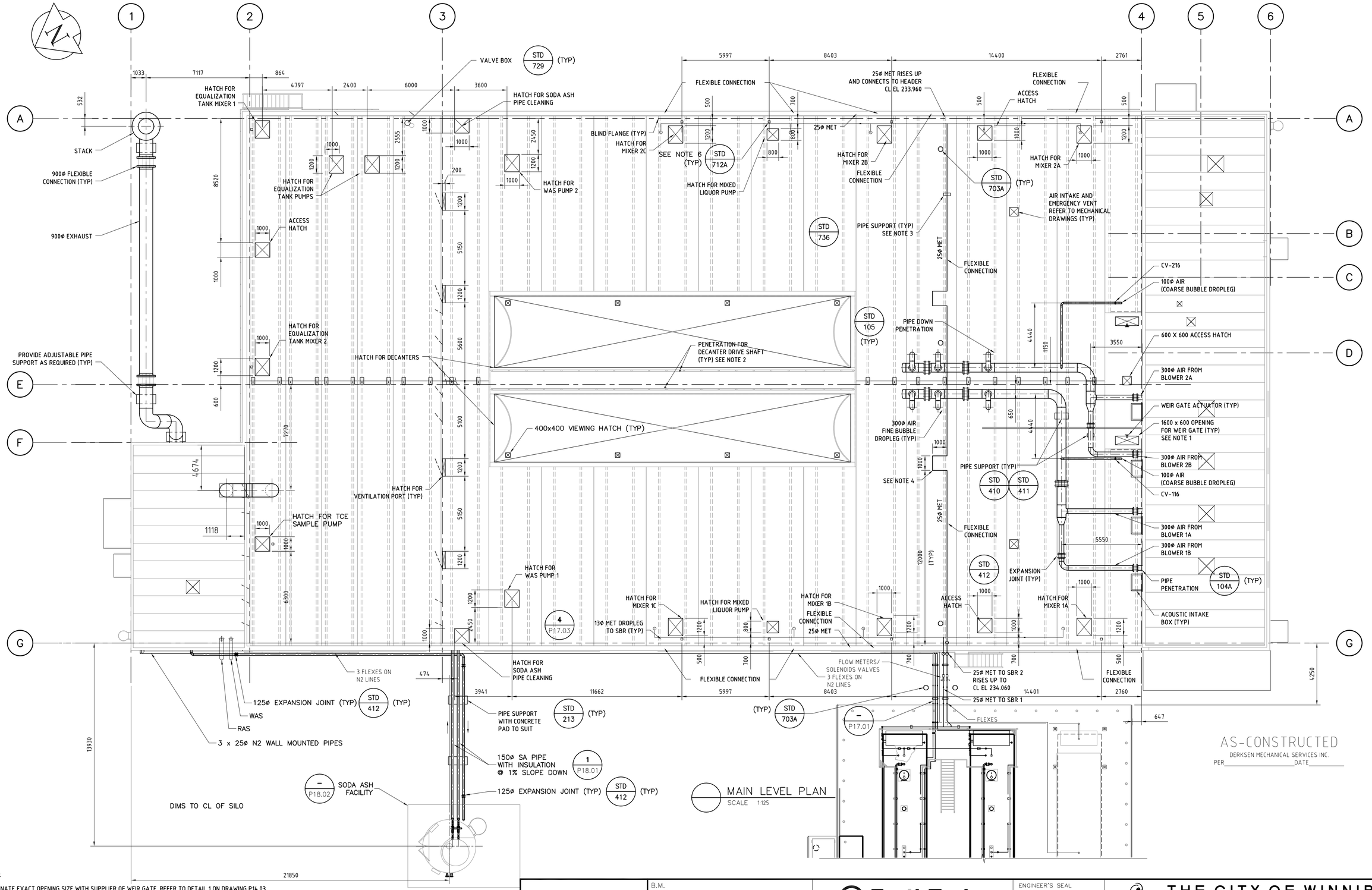
PROCESS
PROCESS TANKS
LOWER LEVEL PLAN

CITY DRAWING NUMBER
1-0101C-P0033-001-05

Last Save: 2009-06-05 11:44 AM

L:\WORK\66000\66303CEN\02A-CAD\ALL\SUBMISSION\RECORD\NITROGEN\AS-CONSTRUCTED DWG\PROCESS\1-0101C-P0033-001-05D.DWG

SHEET: COW-A1 (05/2005)



NOTES:

1. COORDINATE EXACT OPENING SIZE WITH SUPPLIER OF WEIR GATE. REFER TO DETAIL 1 ON DRAWING P14.03.
2. COORDINATE EXACT PENETRATION SIZE AND LOCATION WITH SUPPLIER OF DECANTERS. (PROVIDE SEAL TO SUIT)
3. ADJUST SUPPORT TO PROVIDE 100 TO 150 mm CLEAR SPACE BETWEEN MET PIPE AND FINISHED SBR ROOF.
4. PROVIDE FLEXIBLE CONNECTION ON EACH ELBOW.
5. REFER TO STRUCTURAL DRAWINGS FOR HATCH DETAILS.
6. COORDINATE EXACT LOCATION OF PEDESTAL IN THE FIELD.
7. COORDINATE LOCATION OF HATCHES WITH SUPPLIER AND CONTRACT ADMINISTRATOR.

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM WINNIPEG

AS-CONSTRUCTED

APEGM Certificate of Authorization

AECOM Canada Ltd. No. 4671 Original dated on: Date: 2006/05/15

NO.	REVISIONS	DATE	BY
05	AS-CONSTRUCTED DRAWING	09/02/18	CD
04	ISSUED FOR CLARIFICATION	06/11/08	JBC
03	ISSUED FOR RFI NO. HO-4	06/10/25	LW
02	ISSUED FOR CONSTRUCTION	06/08/30	GLG
01	291-2006 ADDEDNDUM 6	06/07/26	SRP
00	ISSUED FOR TENDER	06/05/15	GLG

B.M. ELEV.

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	YL	CHECKED BY	SB
DRAWN BY	SRP	APPROVED BY	JEH
SCALE:	1:125	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/01/16	DATE	2006/05/15

ENGINEER'S SEAL

ORIGINAL SIGNED BY

J.E. HUTCHISON

2006/05/15

CONSULTANT DRAWING NO.

P13.02

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

PROCESS
PROCESS TANKS
MAIN LEVEL PLAN

CITY FILE NUMBER

SHEET OF

CITY DRAWING NUMBER

1-0101C-P0034-001-05

Last Save: 2009-06-05 11:50 AM

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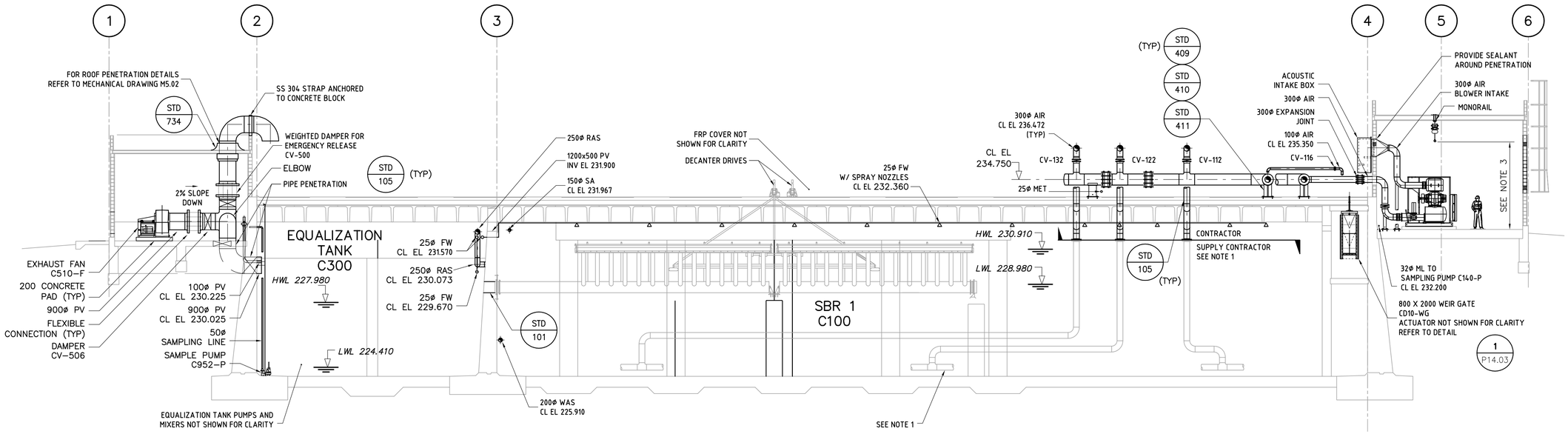
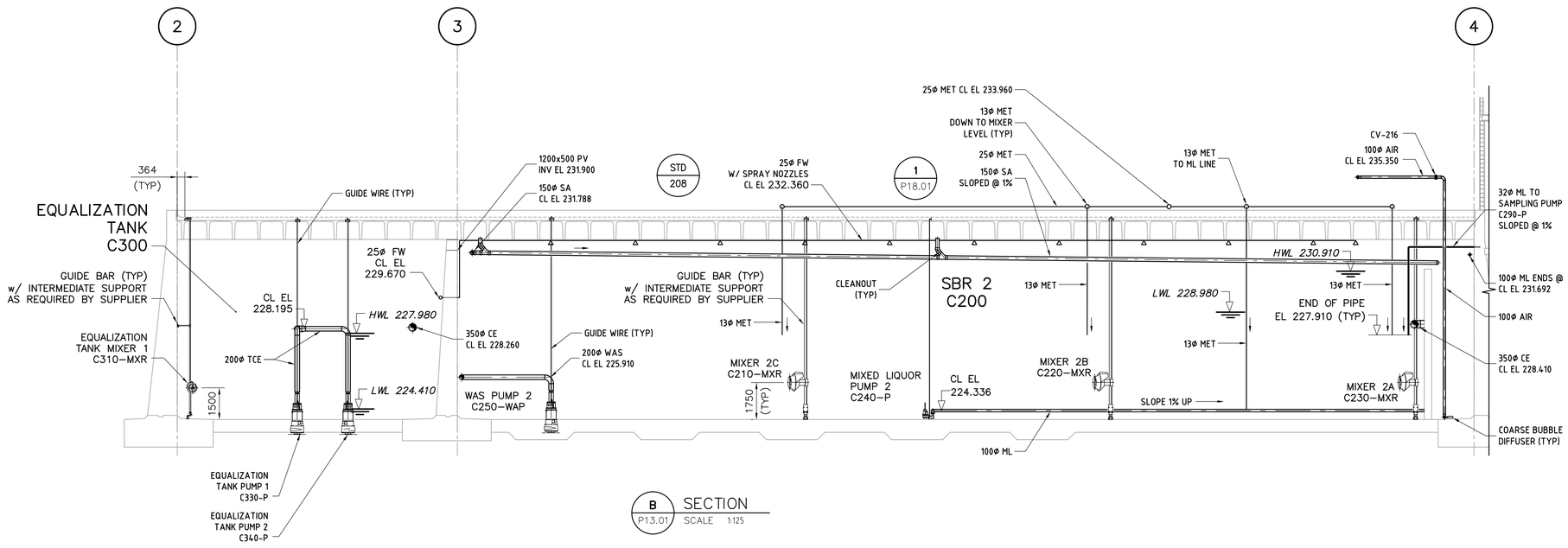
SHEET: COW-A1 (05/2005)



A P13.01 SECTION
SCALE 1:125



B P13.01 SECTION
SCALE 1:125

NOTES:

1. AERATION EQUIPMENT SUPPLIED UNDER SEPARATE CONTRACT. INSTALL AERATION EQUIPMENT AS PART OF THIS CONTRACT.
2. ALL METAL PARTS BENEATH SBR COVERS USED FOR PIPE SUPPORT INCLUDING ANCHORS, RODS AND CLAMPS TO BE SS316. SUBMERGED METAL PARTS IN EQUALIZATION TANK USED FOR PIPE SUPPORT INCLUDING ANCHORS, RODS AND CLAMPS TO BE SS316.
3. COORDINATE EXACT HEIGHT WITH SUPPLIER OF BLOWERS.

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM WINNIPEG

AS-CONSTRUCTED

APEGM Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: Original dated on: 2006/05/15

AS-CONSTRUCTED
DERKSEN MECHANICAL SERVICES INC.
PER_____DATE_____

B.M. ELEV.

NO.	REVISIONS	DATE	BY
03	AS-CONSTRUCTED DRAWING	09/02/18	CD
02	ISSUED FOR CONSTRUCTION	06/08/30	GLG
01	291-2006 ADDENDUM 6	06/07/26	SRP
00	ISSUED FOR TENDER	06/05/15	GLG

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	YL	CHECKED BY	SB
DRAWN BY	SRP	APPROVED BY	JEH
SCALE:	1:125	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/01/16	DATE	2006/05/15

ENGINEER'S SEAL
ORIGINAL SIGNED BY
J.E. HUTCHISON
2006/05/15

CONSULTANT DRAWING NO.
P14.01

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT
NITROGEN REMOVAL FACILITY

CITY FILE NUMBER
SHEET OF

PROCESS
PROCESS TANK SECTIONS
SHEET 1

CITY DRAWING NUMBER
1-0101C-P0035-001-03

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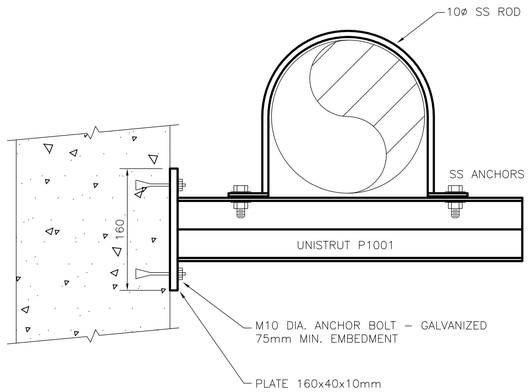
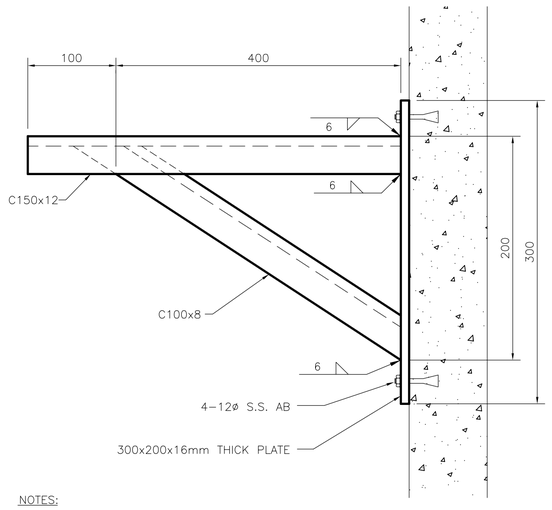
SHEET: COW-A1 (05/2005)



MAXIMUM LOAD OF BEAM LOADED @ CENTER (kg)	LENGTH OF SUPPORT L (mm)
440	760
740	450
1120	300

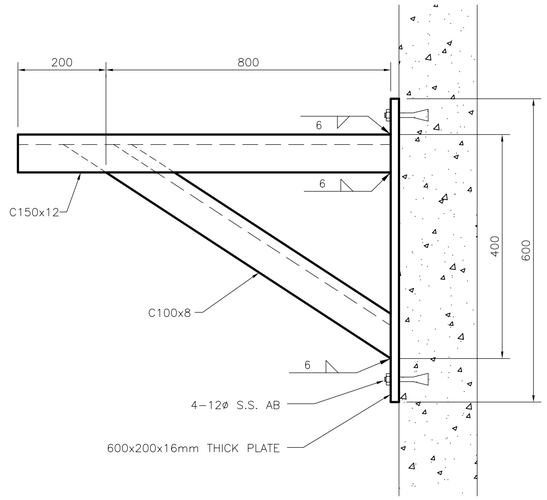
STD 201 TYPE 1 WALL MOUNTED PIPE SUPPORT



NOTES:

1. GALVANIZE EXTERIOR STEEL SUPPORTS.
2. PROVIDE SS 316 SUPPORTS FOR SUBMERGED APPLICATIONS.
3. PROVIDE 10ø SS 316 ROD FOR STRAP AND SS 316 ANCHORS.

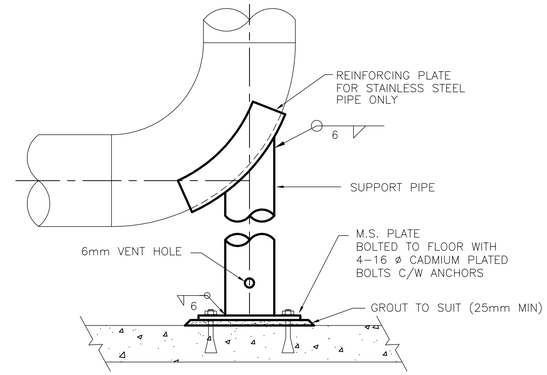
STD 202 TYPE 2 WALL MOUNTED PIPE SUPPORT



NOTES:

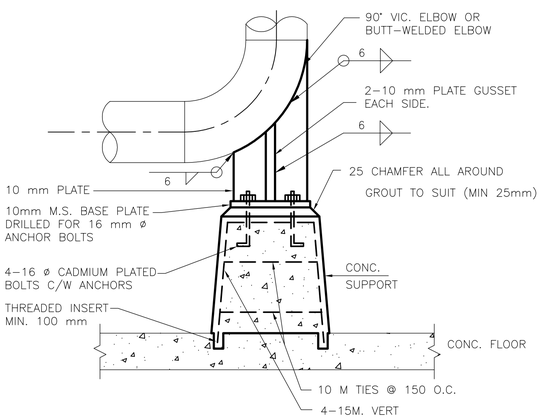
1. GALVANIZE EXTERIOR STEEL SUPPORTS.
2. PROVIDE SS 316 SUPPORTS FOR SUBMERGED APPLICATIONS.
3. PROVIDE 10ø SS 316 ROD FOR STRAP AND SS 316 ANCHORS.

STD 203 TYPE 3 WALL MOUNTED PIPE SUPPORT



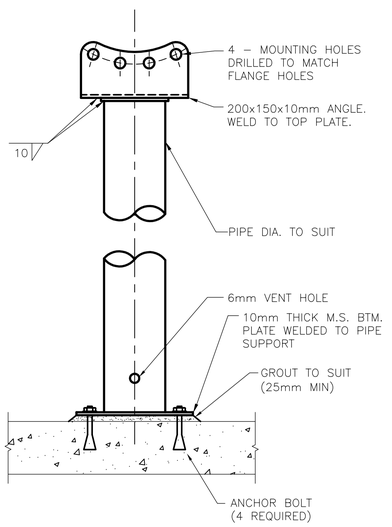
PIPE SIZE (mm)	SUPPORT PIPE (mm)	PLATE SIZE (mm)	MAXIMUM SUPPORT PIPE LENGTH (mm)
100	50 SCH 40	200 X 200 X 6	1525
150	50 SCH 40	200 X 200 X 6	1525
200	100 SCH 40	250 X 250 X 6	1625
250	100 SCH 40	250 X 250 X 6	1625
300	150 SCH 40	300 X 300 X 10	1830
350	200 SCH 40	350 X 350 X 10	1830
400	200 SCH 40	350 X 350 X 10	1830
500	200 SCH 40	350 X 350 X 10	1830
600	250 SCH 40	400 X 400 X 10	1830
750	300 SCH 40	450 X 450 X 10	1830
900	300 SCH 40	450 X 450 X 10	1830

STD 205 TYPE 1 BASE ELBOW SUPPORT FOR STEEL PIPE

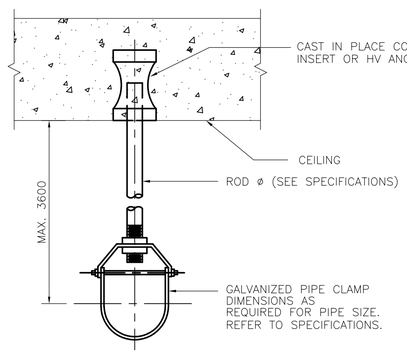


PIPE SIZE (mm)	PLATE SIZE (mm)
100	100 X 100 X 6
150	125 X 125 X 6
200	150 X 150 X 6
250	150 X 150 X 6
300	200 X 200 X 10
350	250 X 250 X 10
400	250 X 250 X 10
500	300 X 300 X 10
600	350 X 350 X 10

STD 206 TYPE 2 BASE ELBOW SUPPORT FOR STEEL PIPE



STD 207 FLANGED PIPE SUPPORT

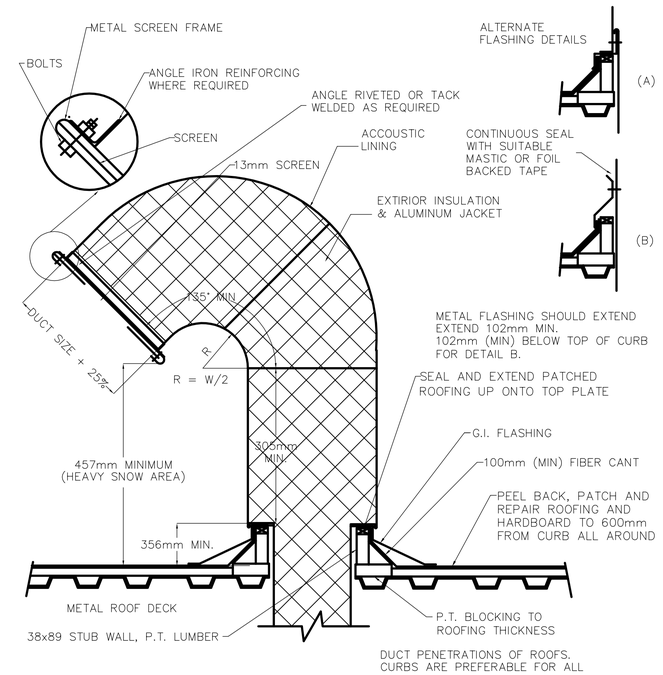


PIPE SIZE (mm)	ROD SIZE (mm)	MAX LOAD (kg)
25	9.4	280
50	9.4	280
75	12.0	510
100	16.0	800
150	20.0	1230
200	22.0	1710
250	25.0	2250
300	25.0	2250
350	25.0	2250
400	25.0	2250
450	25.0	2250
500	32.0	3630
600	32.0	3630

GRINNELL OR SIMILAR

SAFETY FACTOR = 5

STD 208 SINGLE PIPE HANGER



STD 211 TYPE GOOSENECK ROOF PENETRATION DETAIL

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM WINNIPEG

AS-CONSTRUCTED

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AECOM Canada Ltd.

No. 4671 Date: 2006/05/15 (Original dated on:)

B.M. ELEV.

NO.	REVISIONS	DATE	BY
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00	ISSUED FOR TENDER	06/05/15	GLG

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LW	CHECKED BY	SB
DRAWN BY	GLG	APPROVED BY	JEH
SCALE:	NONE	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/01/16	DATE	2006/05/23

ENGINEER'S SEAL

ORIGINAL SIGNED BY

J.E. HUTCHISON

2006/05/15

CONSULTANT DRAWING NO.

P19.02

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

PROCESS
STANDARD DETAILS
SHEET 2

CITY DRAWING NUMBER

1-0101C-P0042-002-02

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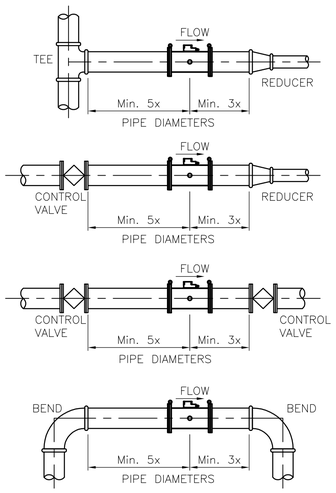
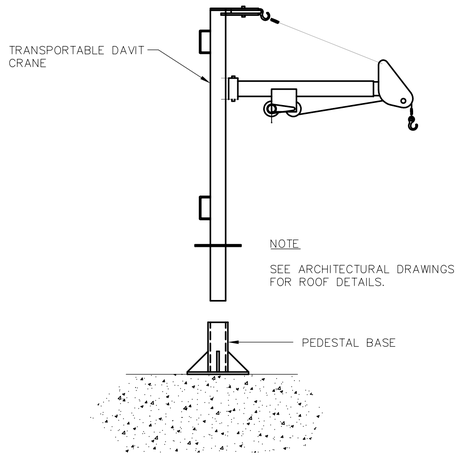
SHEET: COW-A1 (05/2005)

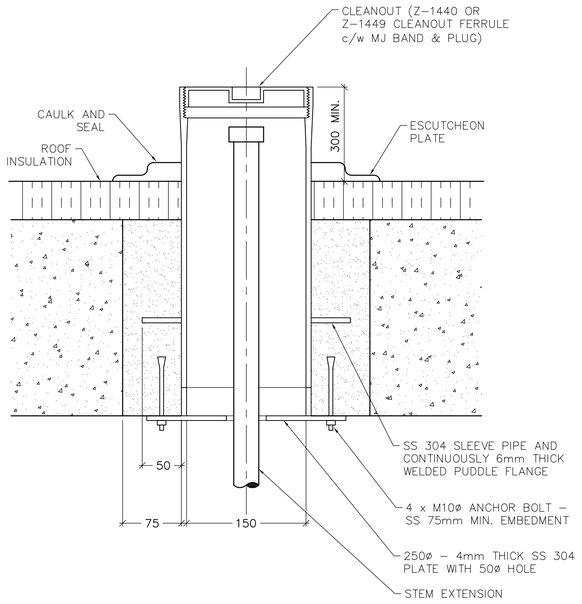


NOTES:
1. REFER TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS IN CONJUNCTION WITH THESE INSTALLATION RECOMMENDATIONS.
2. WHERE SPECIFIC INSTALLATION CONFLICTS ARISE THAT MIGHT PREVENT THESE INSTALLATION RECOMMENDATIONS FROM BEING COMPLIED WITH, CONSULT THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE INSTALLATION.
3. WHERE THE DRAWINGS INDICATE DIMENSIONS THAT DIFFER FROM THESE DETAILS, THE DRAWINGS SHALL TAKE PRIORITY.

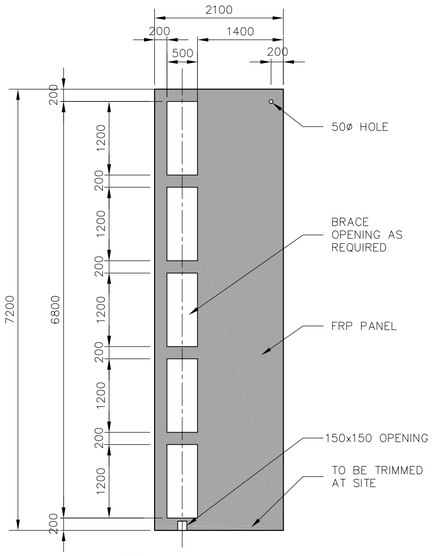
STD 707 — MAGNETIC FLOWMETER INSTALLATION CONFIGURATIONS



STD 712A — WINCH BASE AND SUPPORT DETAIL



STD 729 — VALVE BOX



STD 732 — FRP BAFFLE – SECTION

NOTES

BAFFLE SHOWN IS ILLUSTRATIVE ONLY; SUBMIT SHOP DRAWINGS AND CALCULATIONS CONFIRMING BAFFLE IS SUITABLE FOR SERVICE CONDITIONS:

BAFFLE TO BE 7200 MM X 2100 MM (TRIM TO FIT ANOXIC SELECTOR)

BAFFLE TO HAVE OPEN AREA EQUIVALENT TO 3.00m2 ALONG THE FULL HEIGHT OF THE BAFFLE.

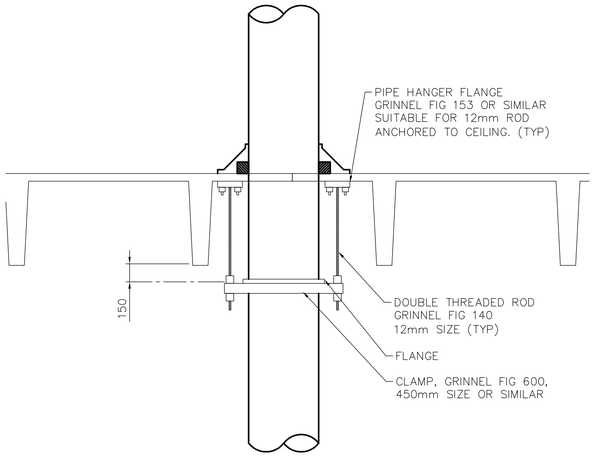
OPENINGS TO OCCUPY ONLY THE LAST ONE-THIRD OF THE BAFFLE WIDTH, THE FIRST TWO-THIRDS OF THE BAFFLE WIDTH MUST BE SOLID AS SHOWN

REINFORCE OPENINGS AS NECESSARY

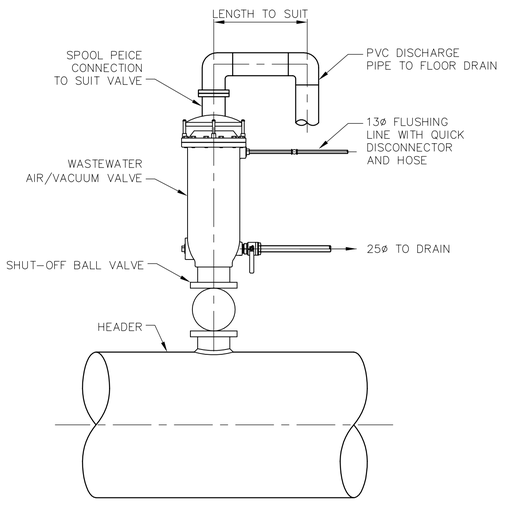
PROVIDE 150x150 OPENING AT BOTTOM OF BAFFLE TO FACILITATE TANK DRAINAGE

WATER DEPTH IN ANOXIC SELECTOR RANGES FROM 5.0m TO 7.0m

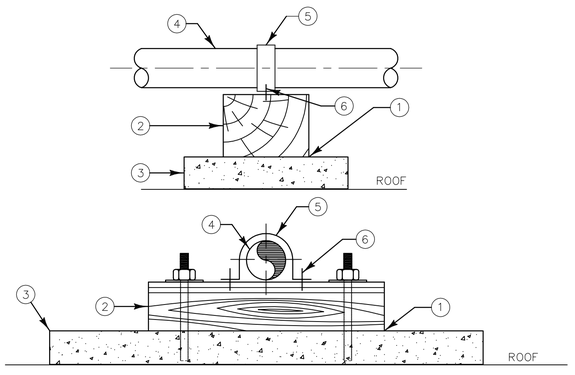
WATER LEVEL ON EACH SIDE OF THE BAFFLE WILL BE EQUAL UNDER ALL CONDITIONS. THE BAFFLES DO NOT HAVE TO WITHSTAND DIFFERENTIAL WATER LEVELS



STD 734 — ROOF PENETRATION HANGER DETAIL

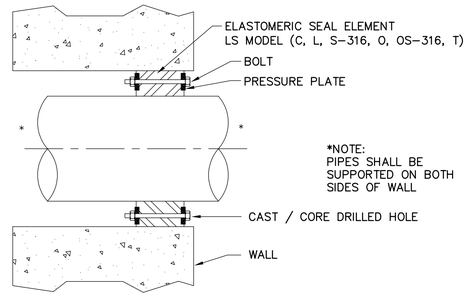


STD 735A — AIR VALVE – DETAIL



1. SHIMWOOD BLOCKING AS REQUIRED TO COMPENSATE FOR ROOF SLOPE.
2. 4"x4"x10"LONG(100mmx100mmx250mm) PRESSURE TREATED WOOD BOLTED TO CONCRETE SLAB
3. 610mmx760mm PRECAST CONCRETE SLAB, SAME AS USED FOR PATHWAY
4. STEEL PIPE.
5. SS 304 STRAPS GRINNELL FIG.2L2 (OR EQUAL) OVERSIZE (2 SIZES) TO ALLOW FOR PIPE MOVEMENT. PAINT PIPING WITH COLOUR AS PER SPECIFICATION.
6. STAINLESS STEEL NO.12 2"(50mm) LONG WOOD SCREWS.

STD 736 — PIPE SUPPORT DETAIL



APPLICATION NOTES:
1. CONCRETE WALL
2. PIPE MATERIAL: STEEL, STAINLESS STEEL, DUCTILE IRON, PVC OR FRP PIPE; NON-NSULATED.
3. CONDITION: a) DRY TO DRY
   b) WET TO DRY
   c) HORIZONTAL OR VERTICAL
   b) INTERIOR TO UNDERGROUND

LS Model	Seal Element	Bolts/Nuts	Pressure Plate
C	EPDM (Black)	Zinc Dichromate/Organic Coated Carbon Steel Bolt	Reinforced Nylon Polymer
L	EPDM (Blue)	Zinc Dichromate/Organic Coated Carbon Steel Bolt	Reinforced Nylon Polymer
O	Nitrile	Zinc Dichromate/Organic Coated Carbon Steel Bolt	Reinforced Nylon Polymer
T	Silicone	Zinc Dichromate/Organic Coated Carbon Steel Bolt	Steel Zinc Dichromate
(C,L,O)+S-316 (see model options)		316 Stainless Steel	Reinforced Nylon Polymer

Sleeve Model	Description	Material
CS	Century-Line Sleeve	HDPE
WS	Steel Wall Sleeve	Steel

STD 737 — LINK-SEAL MODULAR SEAL CORED WALL PENETRATION

AECOM

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AECOM WINNIPEG

AS-CONSTRUCTED

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AECOM Canada Ltd.
No. 4671 Date: Original dated on: 2006/05/15

B.M.
ELEV.

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01	291-2006 ADDENDUM 3	06/07/12	LAE
00	ISSUED FOR TENDER	06/05/15	GLG

EarthTech
A Tyco International Ltd. Company

DESIGNED BY	LW	CHECKED BY	SB
DRAWN BY	GLG	APPROVED BY	JEH
SCALE:	NONE	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/01/16	DATE	2006/05/23

ENGINEER'S SEAL
ORIGINAL SIGNED BY
J.E. HUTCHISON
2006/05/15

CONSULTANT DRAWING NO.
P19.06

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

SHEET OF

PROCESS
STANDARD DETAILS
SHEET 6

CITY DRAWING NUMBER
1-0101C-P0042-006-04

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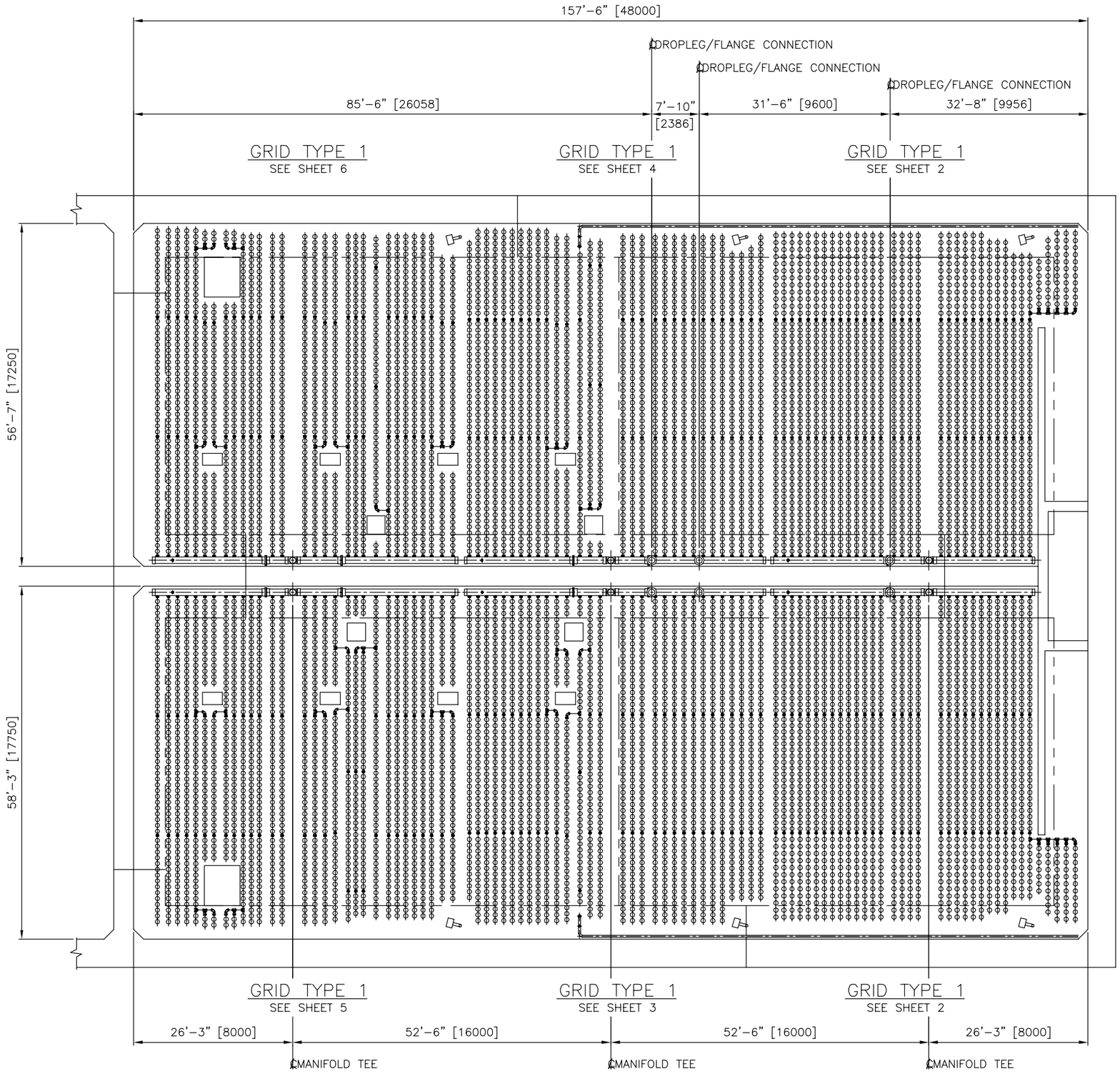


4/24

MEMBRANE DISC AERATION SYSTEM MATERIAL AND MANUFACTURING SPECIFICATIONS (316L, PVC)

ITEM	MATERIAL SPECIFICATION	MANUFACTURING SPECIFICATION	NOTES
DROPLEG	316L STAINLESS STEEL ASTM A240	FITTINGS: ASTM A774 TUBULAR PRODUCTS: ASTM A778 DIMENSIONS: ASTM A554	150# DRILLING FOR TERMINATION FLANGE CONNECTION. 12 GAUGE PIPE (0.109") WALL THICKNESS ON DROPLEG. *SEE BELOW
SUPPORTS	316L STAINLESS STL SHEETS & PLATES PER ASTM A240 THREADED RODS PER ASTM A276	———	"L" GRADE NOT REQUIRED FOR NON-WELDED PARTS
BOLTS, NUTS, WASHERS	316 STAINLESS STL	———	———
FIXED JOINT O-RING	NATURAL RUBBER/SBR	———	45 ± 5 DUROMETER SHORE A COMPRESSION SET 5% MAX
EXPANSION JOINT O-RING	NATURAL RUBBER/SBR	———	40 ± 5 DUROMETER SHORE A 0.45 COEFFICIENT OF FRICTION MAX.
LOWER DROPLEG & MANIFOLD	PVC, ASTM D1784 COMPOUND 12454-B	PIPE: ASTM D1785 FITTINGS: ASTM D2466	———
AIR DISTRIBUTORS	PVC, ASTM D3915 COMPOUND 124524	PIPE: ASTM D3034 FITTINGS: ASTM D3034	MINIMUM 2% TITANIUM DIOXIDE
DIFFUSER HOLDER SUBPLATE, RETAINING RING	PVC, ASTM D3915 COMPOUND 124524	———	MINIMUM 2% TITANIUM DIOXIDE
DIFFUSER ELEMENT	EPDM	———	———
PVC SOLVENT WELDING	ASTM D2564	ASTM D2855	———

*STAINLESS STEEL DROPLEG FABRICATION
FACTORY WELD ONLY WITH MIG, TIG, OR PLASMA-ARC WELDING INERT GAS PROCESSES, FULL PENETRATION BUTT WELDS, ER 316L FILLER WIRE. AFTER FABRICATION FINISH CLEAN ALL WELDED STAINLESS STEEL ASSEMBLIES BY FULL IMMERSION CLEANING TECHNIQUES IN ACCORDANCE TO 6.2.11 OF ASTM A380-88. THE ACID FOR USE DEFINED BY TABLE A2.1 OF ANNEX A2 OF ASTM A380. FINAL RINSE AND DRY IN ACCORDANCE TO SECTION 8.3 OF ASTM A380. ALL WELDED SURFACES TO CONFORM TO AISI NO. 2D FINISH.

SBR BASIN 2

SBR BASINS 1 & 2
(1) REQ'D AS SHOWN
KEY PLAN 1

VIEW, SECTION OR DETAIL NUMBER
2/3
SHEET NUMBER ON WHICH VIEW, SECTION OR DETAIL IS FOUND

SBR BASIN 1

NO.	DATE	REVISION	BY
4			
3			
2			
1			

WINNIPEG, MB

NORTH END WPCC

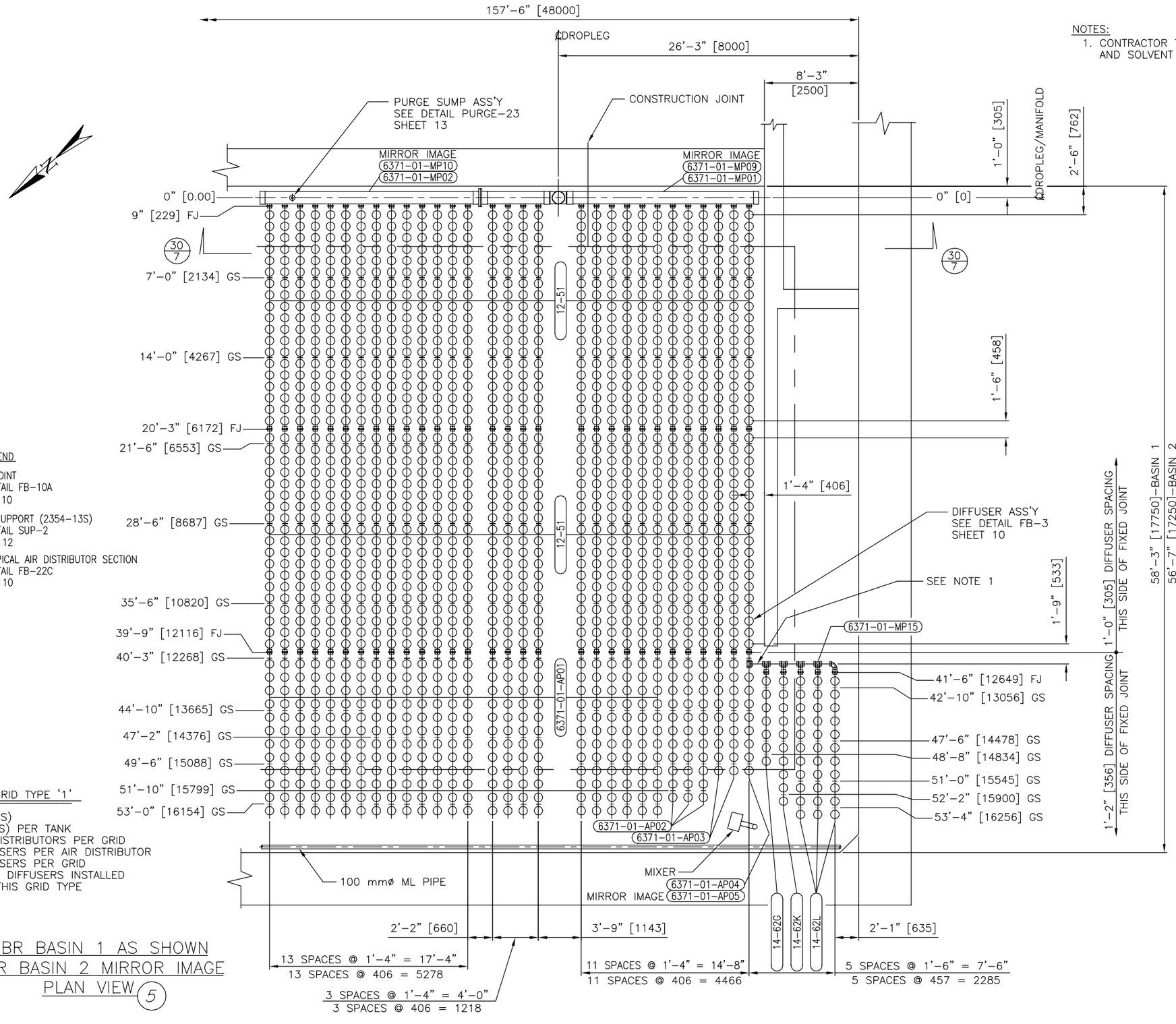
SBR BASINS 1 & 2

KEY PLAN

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	SHT. 1 OF 13
APPVD BY	DATE	SIZE D REV. A	DWG. E-1

NOTES:
1. CONTRACTOR TO CUT PIPE TO SUIT AND SOLVENT WELD AS REQ'D IN THE FIELD.



LEGEND

FJ – FIXED JOINT
SEE DETAIL FB-10A
SHEET- 10

– GS – GUIDE SUPPORT (2354-13S)
SEE DETAIL SUP-2
SHEET- 12

– FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22C
SHEET- 10

GRID TYPE '1'

2 –TANK(S)
1 –GRID(S) PER TANK
30 –AIR DISTRIBUTORS PER GRID
VARIES –DIFFUSERS PER AIR DISTRIBUTOR
1537 –DIFFUSERS PER GRID
3074 –TOTAL DIFFUSERS INSTALLED FOR THIS GRID TYPE

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

SBR BASIN 1 AS SHOWN
SBR BASIN 2 MIRROR IMAGE
PLAN VIEW (5)

NO.	DATE	REVISION	BY
4			
3			
2			
1			

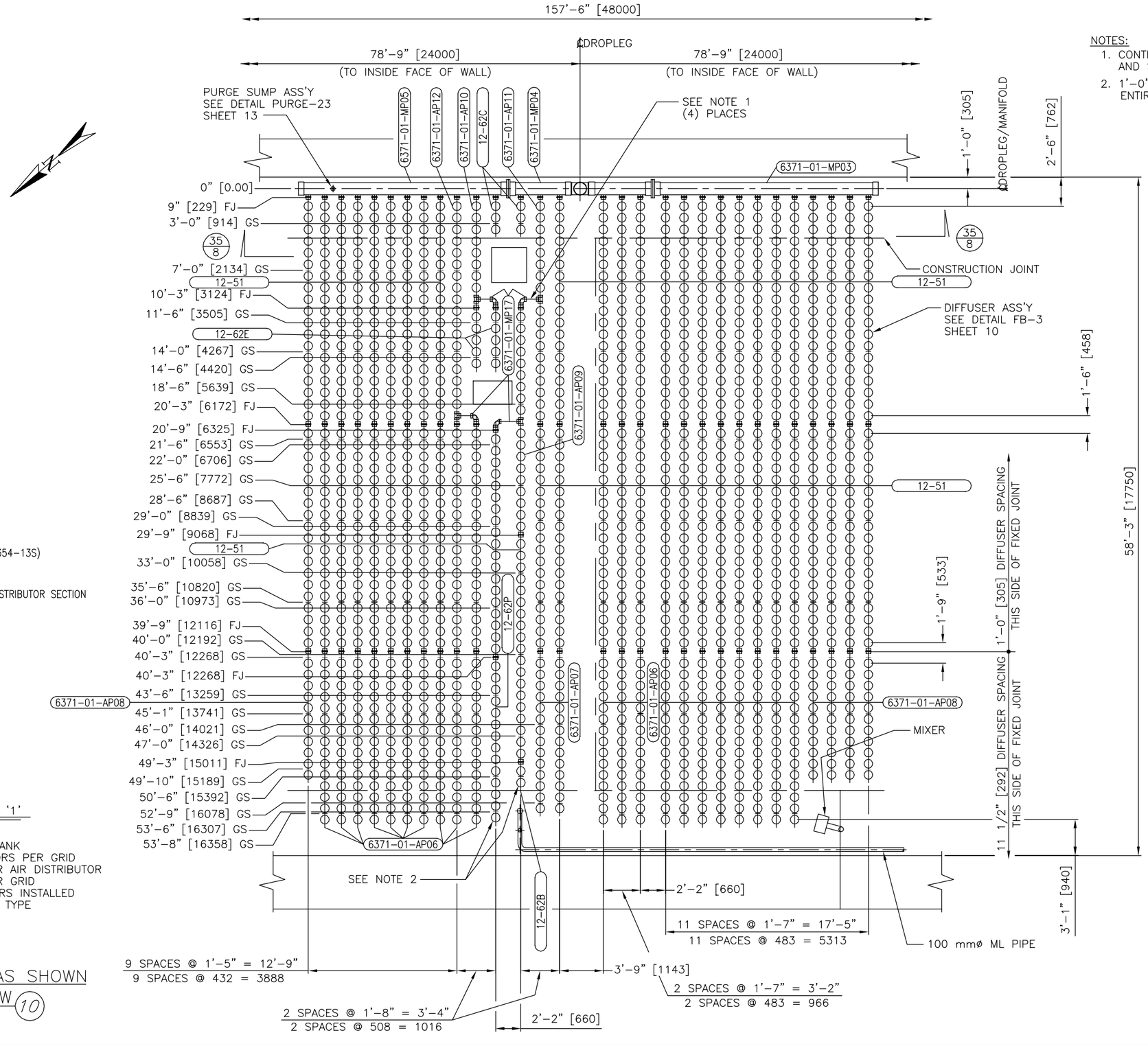
WINNIPEG, MB

NORTH END WPCC

SBR BASINS 1 & 2
GRID TYPE 1
PLAN VIEW

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	DWG. E-2
APPVD BY	DATE	SIZE D REV. A	SH. 2 OF 13



NOTES:

1. CONTRACTOR TO CUT PIPE TO SUIT AND SOLVENT WELD AS REQ'D IN THE FIELD.
2. 1'-0" TYP DIFFUSER SPACING ALONG ENTIRE LENGTH OF THIS DISTRIBUTOR.

LEGEND

FJ – FIXED JOINT
SEE DETAIL FB-10A
SHEET- 10

– GS – GUIDE SUPPORT (2354-13S)
SEE DETAIL SUP-2
SHEET- 12

– FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22C
SHEET- 10

GRID TYPE '1'

1 –TANK(S)
1 –GRID(S) PER TANK
30 –AIR DISTRIBUTORS PER GRID
VARIES –DIFFUSERS PER AIR DISTRIBUTOR
1537 –DIFFUSERS PER GRID
1537 –TOTAL DIFFUSERS INSTALLED FOR THIS GRID TYPE

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

SBR BASIN 1 AS SHOWN
PLAN VIEW (10)

NO.	DATE	REVISION	BY
4			
3			
2			
1			

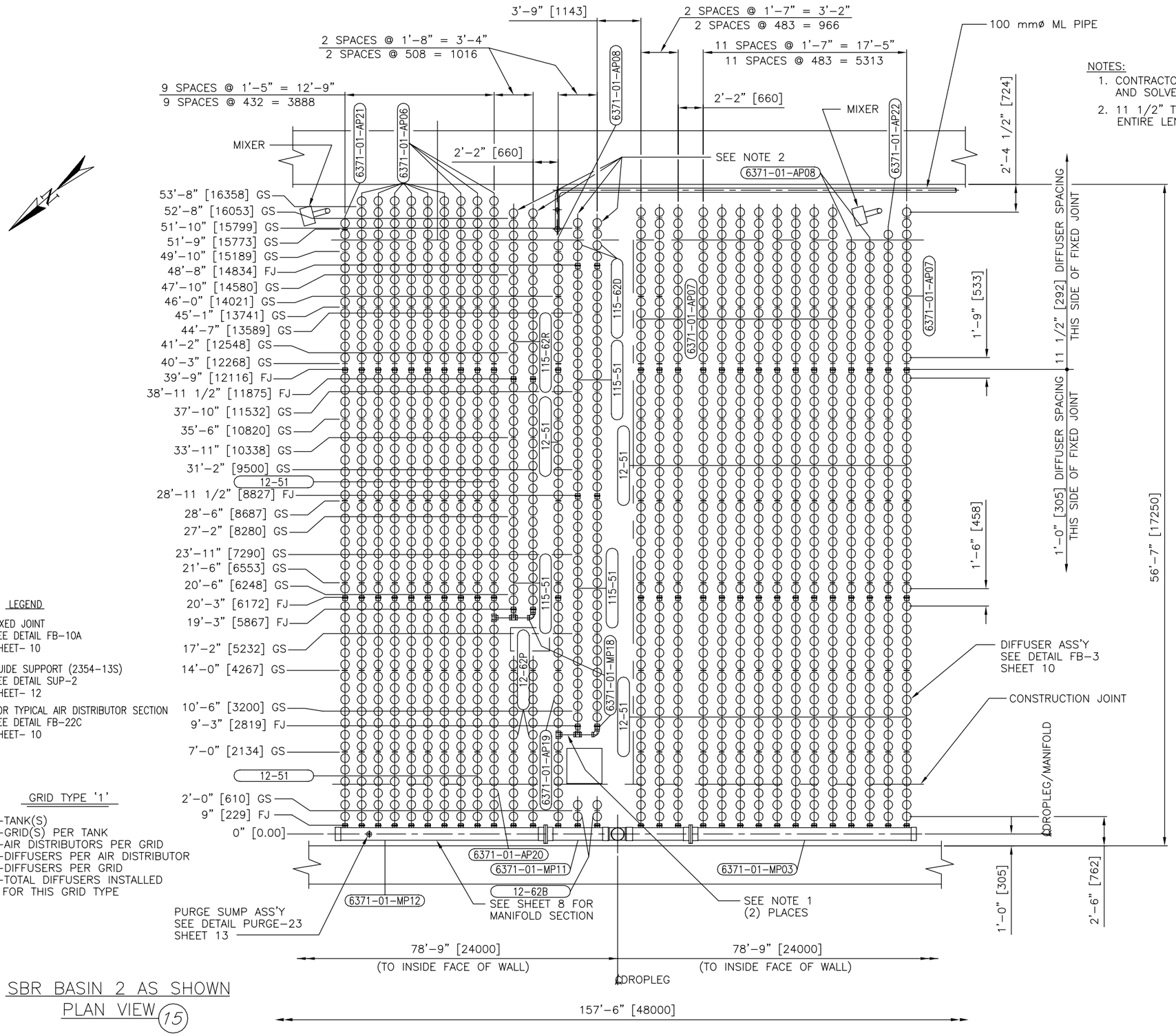
WINNIPEG, MB

NORTH END WPCC

SBR BASIN 1
GRID TYPE 1
PLAN VIEW

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	DWG. E-3
APPVD BY	DATE	SIZE D REV. A	SHT. 3 OF 13



NOTES:

1. CONTRACTOR TO CUT PIPE TO SUIT AND SOLVENT WELD AS REQ'D IN THE FIELD.
2. 11 1/2" TYP DIFFUSER SPACING ALONG ENTIRE LENGTH OF THIS DISTRIBUTOR.

LEGEND

FJ – FIXED JOINT
SEE DETAIL FB-10A
SHEET- 10

– GS – GUIDE SUPPORT (2354-13S)
SEE DETAIL SUP-2
SHEET- 12

– FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22C
SHEET- 10

GRID TYPE '1'

1 – TANK(S)
1 – GRID(S) PER TANK
30 – AIR DISTRIBUTORS PER GRID
VARIES – DIFFUSERS PER AIR DISTRIBUTOR
1537 – DIFFUSERS PER GRID
1537 – TOTAL DIFFUSERS INSTALLED FOR THIS GRID TYPE

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

SBR BASIN 2 AS SHOWN
PLAN VIEW (15)

NO.	DATE	REVISION	BY
4			
3			
2			
1			

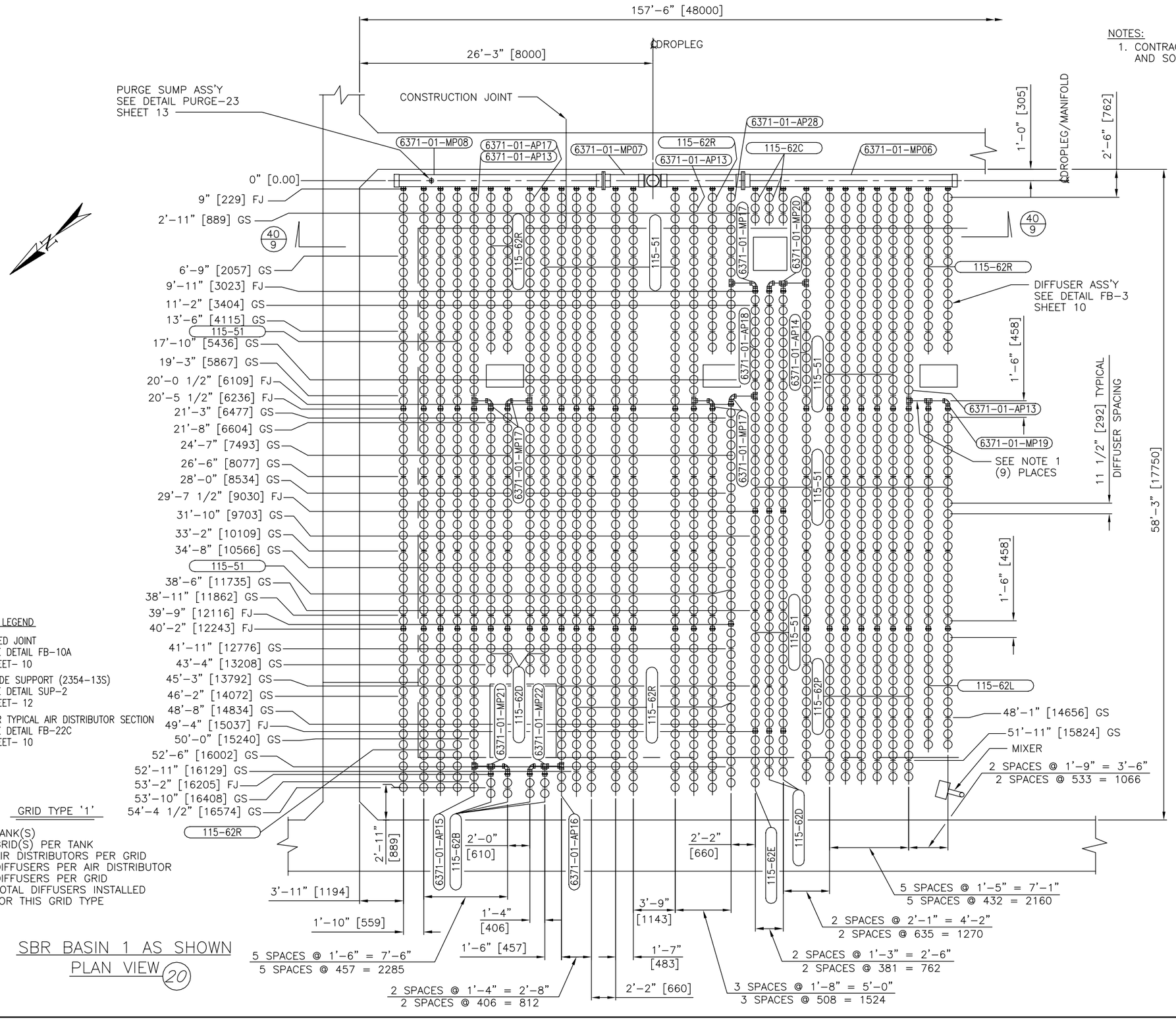
WINNIPEG, MB

NORTH END WPCC

SBR BASIN 2
GRID TYPE 1
PLAN VIEW

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	DWG. E-4
APPVD BY	DATE	SIZE D REV. A	SHT. 4 OF 13



NOTES:

1. CONTRACTOR TO CUT PIPE TO SUIT AND SOLVENT WELD AS REQ'D IN THE FIELD.

LEGEND

FJ – FIXED JOINT
SEE DETAIL FB-10A
SHEET- 10

GS – GUIDE SUPPORT (2354-13S)
SEE DETAIL SUP-2
SHEET- 12

– FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22C
SHEET- 10

GRID TYPE '1'

1 – TANK(S)
1 – GRID(S) PER TANK
30 – AIR DISTRIBUTORS PER GRID
VARIES – DIFFUSERS PER AIR DISTRIBUTOR
1537 – DIFFUSERS PER GRID
1537 – TOTAL DIFFUSERS INSTALLED FOR THIS GRID TYPE

SBR BASIN 1 AS SHOWN
PLAN VIEW (20)

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

NO.	DATE	REVISION	BY
4			
3			
2			
1			

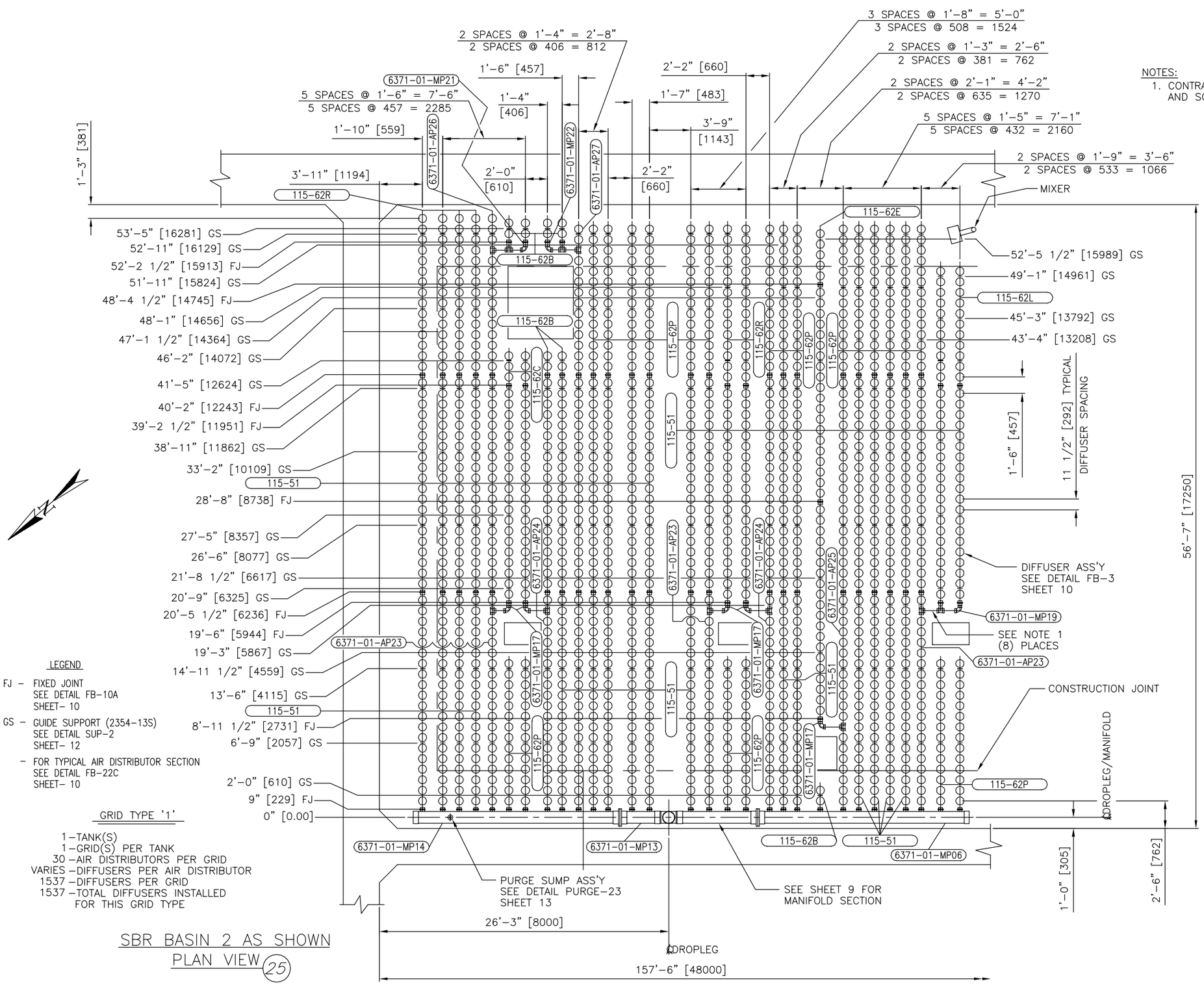
WINNIPEG, MB

NORTH END WPCC

SBR BASIN 1
GRID TYPE 1
PLAN VIEW

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	DWG. E-5
APP'VD BY	DATE	SIZE D REV. A	SHT. 5 OF 13



NOTES:

1. CONTRACTOR TO CUT PIPE TO SUIT AND SOLVENT WELD AS REQ'D IN THE FIELD.

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

LEGEND

FJ – FIXED JOINT
SEE DETAIL FB-10A
SHEET- 10

– GS – GUIDE SUPPORT (2354-13S)
SEE DETAIL SUP-2
SHEET- 12

– FOR TYPICAL AIR DISTRIBUTOR SECTION
SEE DETAIL FB-22C
SHEET- 10

GRID TYPE '1'

1 – TANK(S)
1 – GRID(S) PER TANK
30 – AIR DISTRIBUTORS PER GRID
VARIES – DIFFUSERS PER AIR DISTRIBUTOR
1537 – DIFFUSERS PER GRID
1537 – TOTAL DIFFUSERS INSTALLED FOR THIS GRID TYPE

SBR BASIN 2 AS SHOWN
PLAN VIEW (25)

NO.	DATE	REVISION	BY
4			
3			
2			
1			

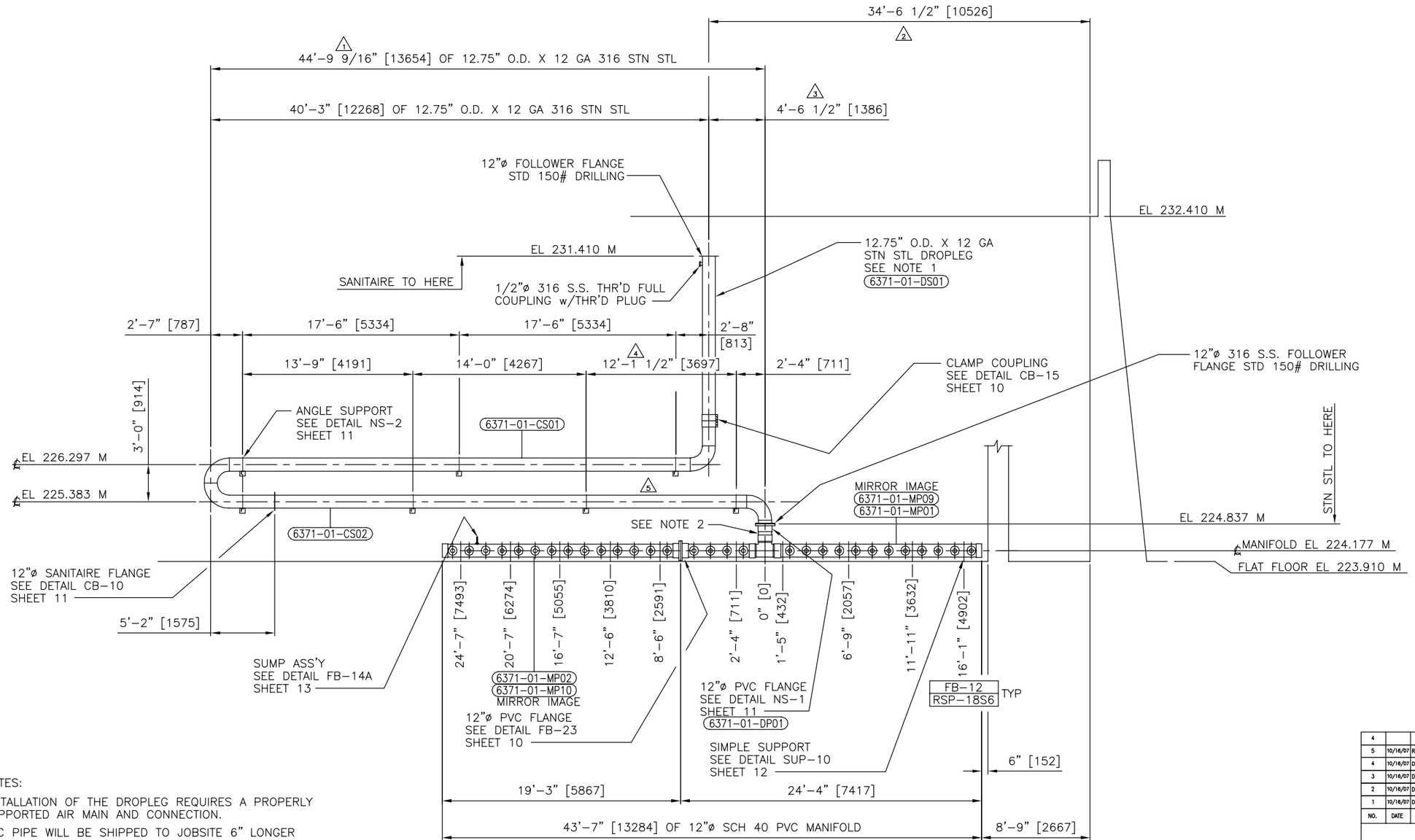
WINNIPEG, MB

NORTH END WPCC

SBR BASIN 2
GRID TYPE 1
PLAN VIEW

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	DWG. E-6
APPVD BY	DATE	SIZE D REV. A	SHT. 6 OF 13



NOTES:

1. INSTALLATION OF THE DROPLEG REQUIRES A PROPERLY SUPPORTED AIR MAIN AND CONNECTION.
2. PVC PIPE WILL BE SHIPPED TO JOBSITE 6" LONGER THAN REQUIRED, TO ACCOUNT FOR TANK VARIANCES. CONTRACTOR TO CUT TO SUIT AND SOLVENT WELD INTO MANIFOLD AS REQ'D IN THE FIELD.
3. FB-12 / RSP-18S6 — REFERS TO THE MANIFOLD SUPPORT SIZE AND CORRESPONDS TO THE TABLE SHOWN WITH THE SUPPORT DETAIL. INDICATES THE SUPPORT STAND PART NUMBER.

DROPLEG/COOLING LOOP/MANIFOLD
SBR BASIN 1 AS SHOWN
SBR BASIN 2 MIRROR IMAGE
SECTION 30

NO.	DATE	REVISION	BY
4			
5	10/16/07	REMOVED 570 mm FROM LOWER RUNG OF COOLING LOOP	AM
4	10/16/07	DIMENSION WAS 14'-0" (4267)	AM
3	10/16/07	DIMENSION WAS 6'-5" (1956)	AM
2	10/16/07	DIMENSION WAS 32'-8" (9956)	AM
1	10/16/07	DIMENSION WAS 46'-8" (14224)	AM

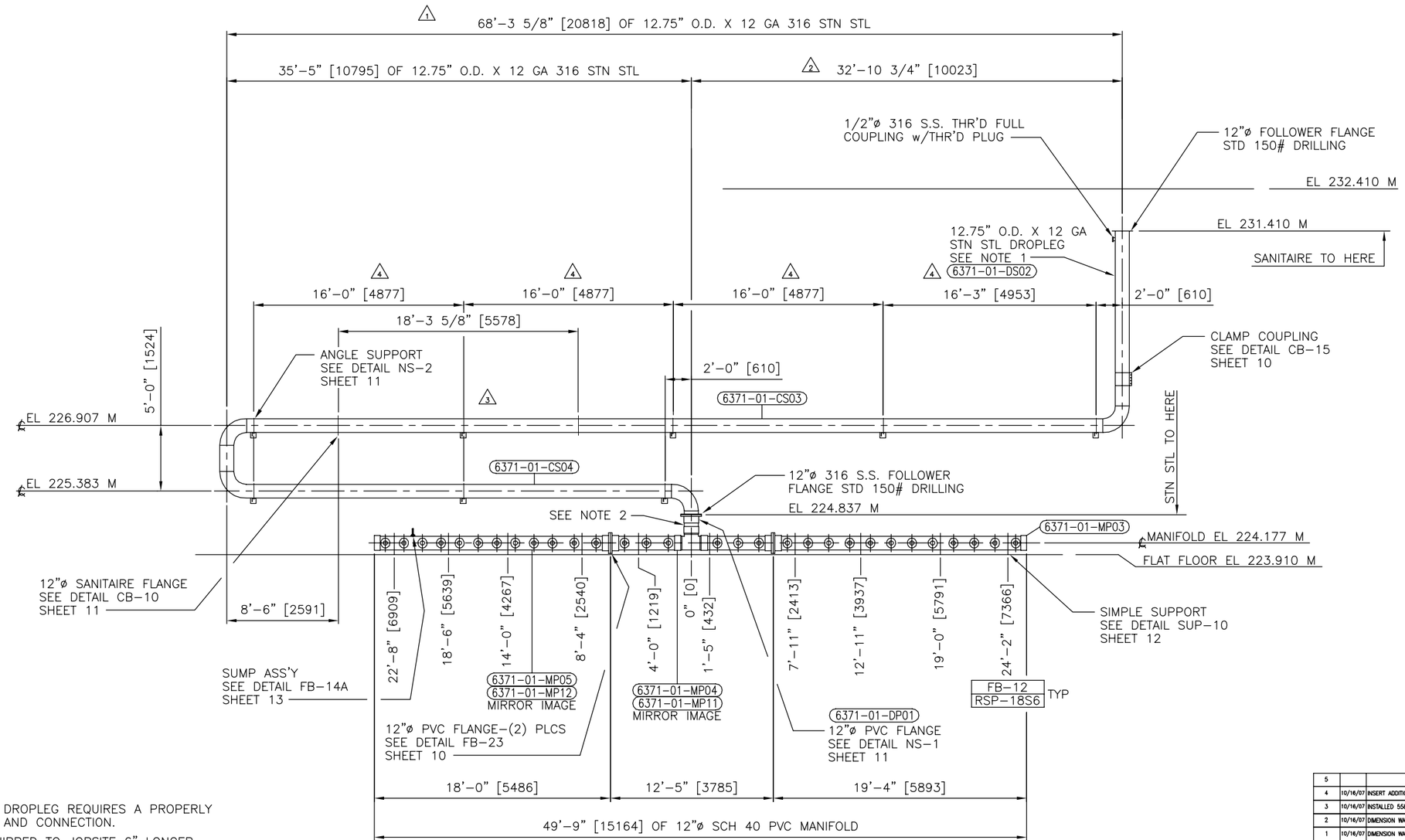
WINNIPEG, MB

NORTH END WPCC

SBR BASINS 1 & 2
GRID TYPE 1
DROPLEG/COOLING LOOP/MANIFOLD SECTION

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	DWG. E-7
APPVD BY	DATE	SIZE D REV. A	SHT. 7 OF 13



NOTES:

1. INSTALLATION OF THE DROPLEG REQUIRES A PROPERLY SUPPORTED AIR MAIN AND CONNECTION.
2. PVC PIPE WILL BE SHIPPED TO JOBSITE 6" LONGER THAN REQUIRED, TO ACCOUNT FOR TANK VARIANCES. CONTRACTOR TO CUT TO SUIT AND SOLVENT WELD INTO MANIFOLD AS REQ'D IN THE FIELD.
3. FB-12 / RSP-18S6 — REFERS TO THE MANIFOLD SUPPORT SIZE AND CORRESPONDS TO THE TABLE SHOWN WITH THE SUPPORT DETAIL. INDICATES THE SUPPORT STAND PART NUMBER.

DROPLEG/COOLING LOOP/MANIFOLD
SBR BASIN 1 AS SHOWN
SBR BASIN 2 MIRROR IMAGE
SECTION 35

NO.	DATE	REVISION	BY
5			
4	10/16/07	INSERT ADDITIONAL KNEE BRACE; RESPACED OTHER KNEE BRACES	AM
3	10/16/07	INSTALLED 5588mm FLANGED SPOOL PIECE	AM
2	10/16/07	DIMENSION WAS 14'-7" (4445)	AM
1	10/16/07	DIMENSION WAS 50'-0" (15240)	AM

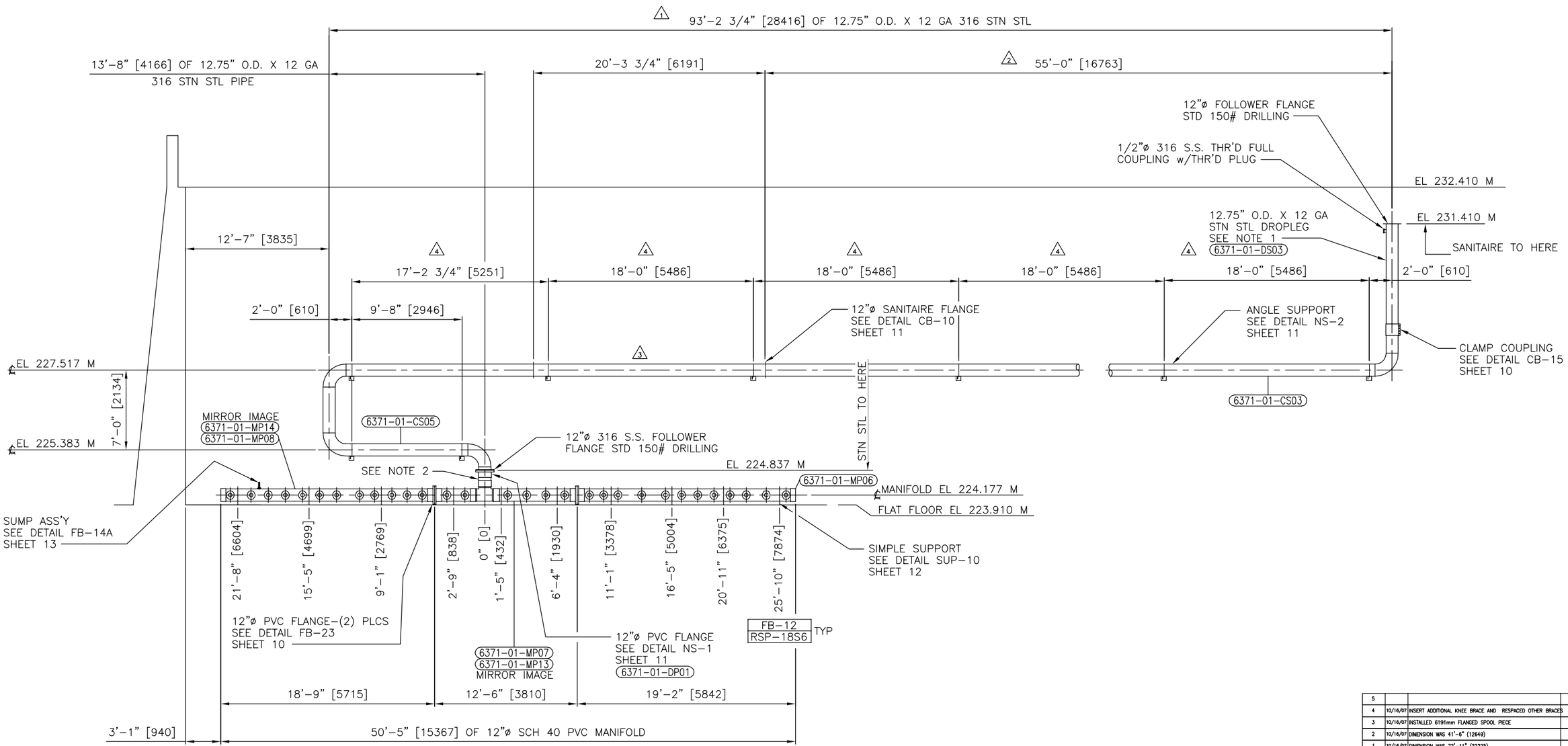
WINNIPEG, MB

NORTH END WPCC

SBR BASINS 1 & 2
GRID TYPE 1
DROPLEG/COOLING LOOP/MANIFOLD SECTION

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	DWG. E-8
APPVD BY	DATE	SIZE D REV. A	SHT. 8 OF 13



NOTES:

1. INSTALLATION OF THE DROPLEG REQUIRES A PROPERLY SUPPORTED AIR MAIN AND CONNECTION.
2. PVC PIPE WILL BE SHIPPED TO JOBSITE 6" LONGER THAN REQUIRED, TO ACCOUNT FOR TANK VARIANCES. CONTRACTOR TO CUT TO SUIT AND SOLVENT WELD INTO MANIFOLD AS REQ'D IN THE FIELD.
3. FB-12 / RSP-18S6 — REFERS TO THE MANIFOLD SUPPORT SIZE AND CORRESPONDS TO THE TABLE SHOWN WITH THE SUPPORT DETAIL. INDICATES THE SUPPORT STAND PART NUMBER.

DROPLEG/COOLING LOOP/MANIFOLD
SBR BASIN 1 AS SHOWN
SBR BASIN 2 MIRROR IMAGE
SECTION 40

NO.	DATE	REVISION	BY
5			
4	10/16/07	INSERT ADDITIONAL KNEE BRACE AND RESPACED OTHER BRACES	AM
3	10/16/07	INSTALLED 6191mm FLANGED SPOOL PIECE	AM
2	10/16/07	DIMENSION WAS 41'-6" (12649)	AM
1	10/16/07	DIMENSION WAS 72'-11" (22225)	AM

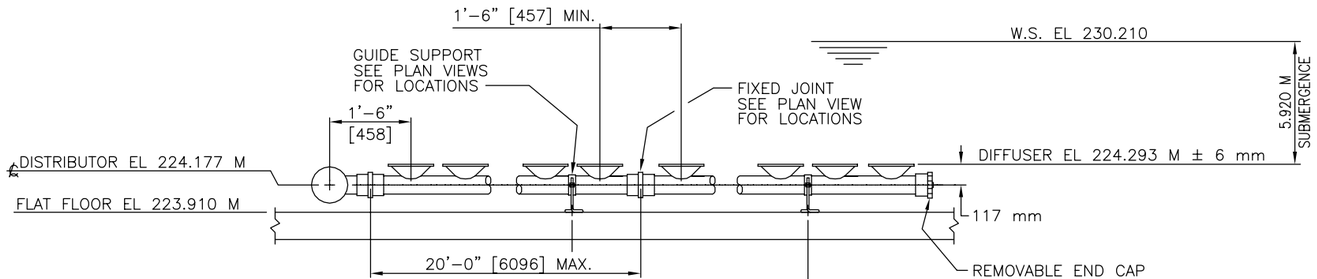
WINNIPEG, MB

NORTH END WPCC

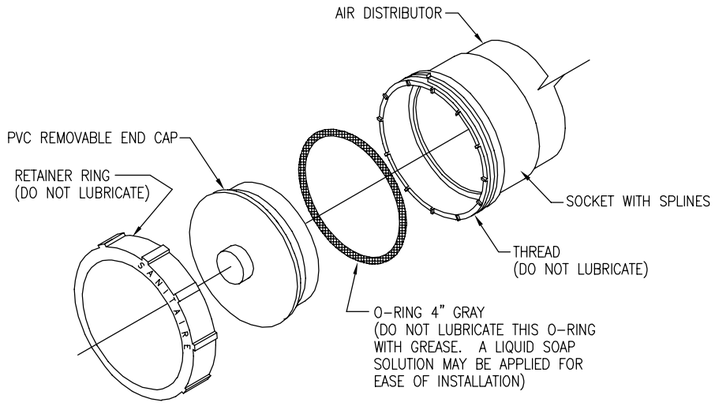
SBR BASINS 1 & 2
GRID TYPE 1
DROPLEG/COOLING LOOP/MANIFOLD SECTION

ITT
ADVANCED WATER TREATMENT

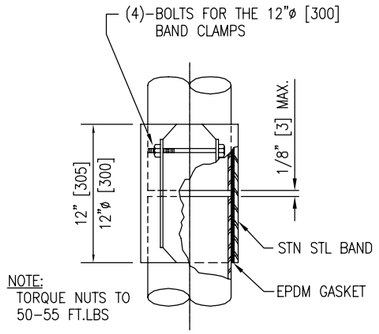
DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S	SHT. 9 OF 13
CHKD BY RH	DATE 11-29-06	STD.		
APPVD BY	DATE	SIZE D	REV. A	DWG. E-9	



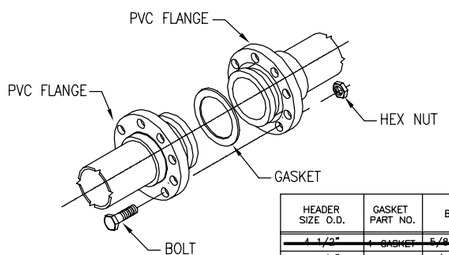
AIR DISTRIBUTOR
DETAIL FB-22C



PVC REMOVABLE END CAP
DETAIL FB-12A



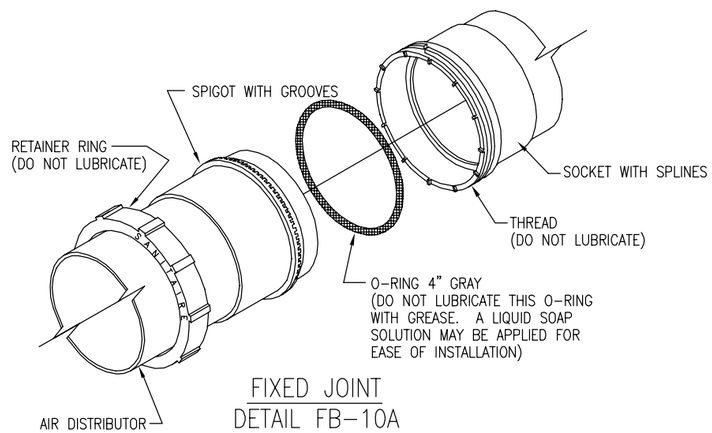
CLAMP COUPLING
DETAIL CB-15



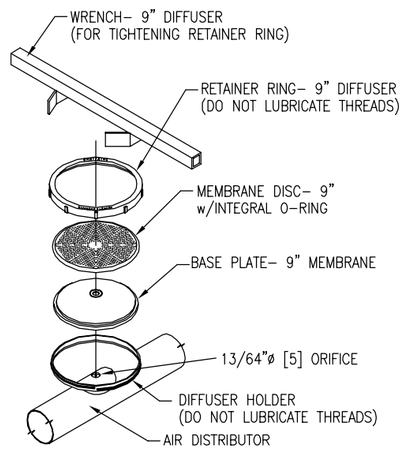
HEADER SIZE O.D.	GASKET PART NO.	BOLT SIZE	QUAN REQ'D PER FLANGE
~~4 1/2"~~	~~4 GASKET~~	~~5/8"ø X 3 1/2"~~	~~8~~
~~6 5/8"~~	~~6 GASKET~~	~~3/4"ø X 4"~~	~~8~~
~~8 5/8"~~	~~8 GASKET~~	~~3/4"ø X 4 1/2"~~	~~8~~
~~10 3/4"~~	~~10 GASKET~~	~~7/8"ø X 6"~~	~~12~~
12 3/4" [324]	12-GASKET	7/8"ø X 5"	12

PVC FLANGE
DETAIL FB-23

NOTE:
ALL HARDWARE TO BE 316 STN STL

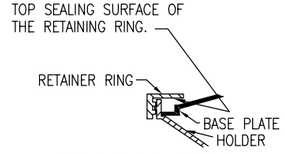


FIXED JOINT
DETAIL FB-10A



9"ø EPDM DIFFUSER ASSEMBLY
DETAIL FB-3

APPLY A VERY LIGHT COATING OF SILICONE BASED GREASE (SUPPLIED BY SANITAIRE) TO THE UNDERSIDE OF THE TOP SEALING SURFACE OF THE RETAINING RING.



LUBRICATION DETAIL

NO.	DATE	REVISION	BY
4			
3			
2			
1			

WINNIPEG, MB

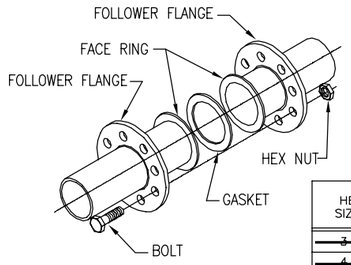
NORTH END WPCC

TYPICAL DISTRIBUTOR DETAIL
&
DETAILS

ITT
ADVANCED WATER TREATMENT

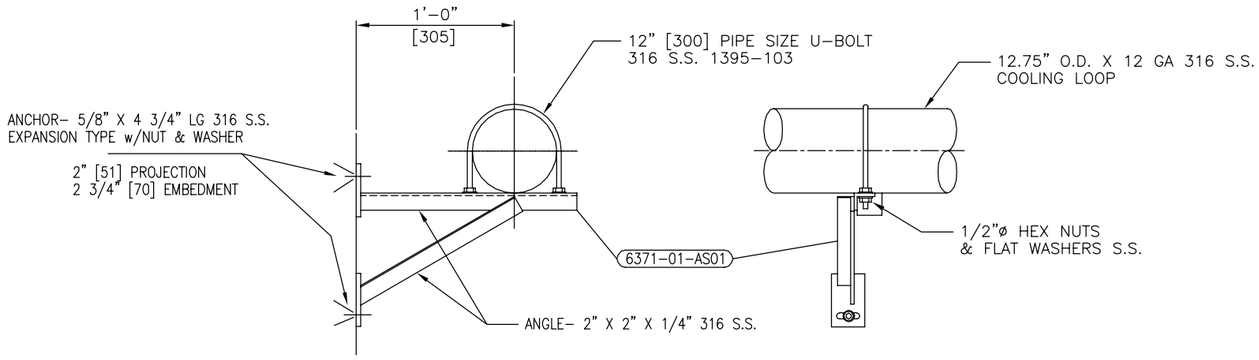
DRWN BY CK	DATE 11-27-06	EQUIP. MEM	
CHKD BY RH	DATE 11-29-06	STD.	
APPVD BY	DATE	SIZE D	REV. A

JOB. 06-6371S
DWG. E-10
SHT. 10 OF 13

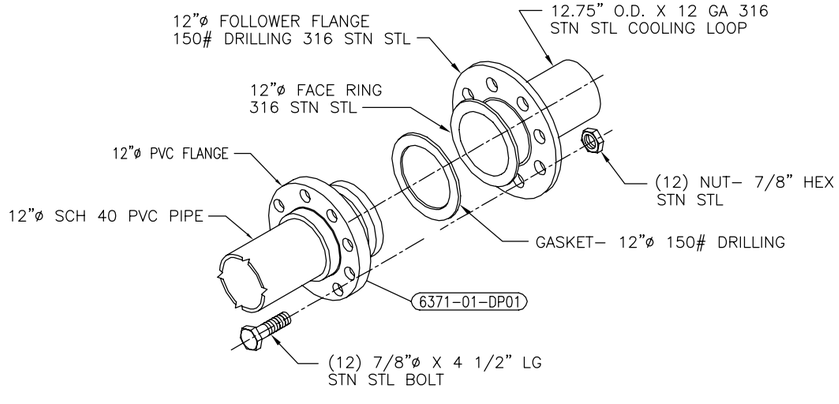


HEADER SIZE O.D.	GASKET PART NO.	BOLT SIZE	QUAN REQ'D PER FLANGE
~~3 1/2"~~	~~2234-1~~	~~1/2"ø X 1 1/2"~~	~~4~~
~~4 1/2"~~	~~2234-2~~	~~1/2"ø X 1 1/2"~~	~~8~~
~~6 5/8"~~	~~2234-3~~	~~1/2"ø X 1 1/2"~~	~~8~~
~~8 5/8"~~	~~2234-4~~	~~1/2"ø X 1 1/2"~~	~~8~~
~~10 3/4"~~	~~2234-5~~	~~1/2"ø X 2"~~	~~12~~
12 3/4" [324]	2234-6	1/2"ø X 2"	12

SANITAIRE FLANGE
DETAIL CB-10



DROPLEG SUPPORT
DETAIL NS-2



PVC TO STN STL FLANGE CONN
DETAIL NS-1

NOTE:
ALL HARDWARE TO BE
316 STN STL

NO.	DATE	REVISION	BY
4			
3			
2			
1			

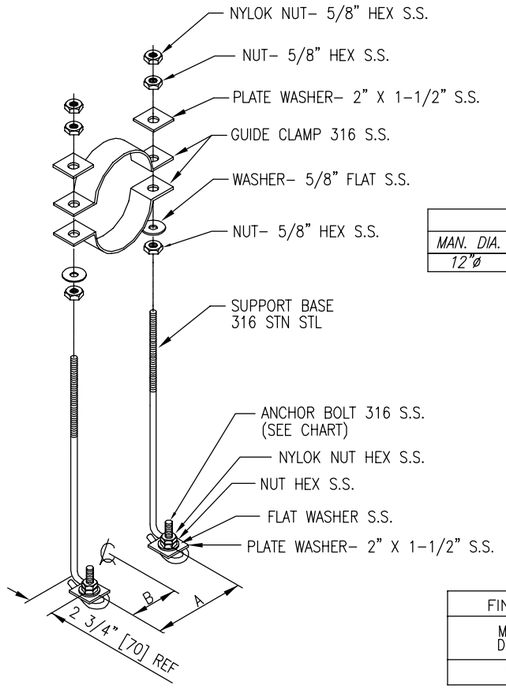
WINNIPEG, MB

NORTH END WPCC

DETAILS

ITT
ADVANCED WATER
TREATMENT

DRWN BY CK	DATE 11-27-06	EQUIP. MEM	JOB. 06-6371S
CHKD BY RH	DATE 11-29-06	STD.	DWG. E-11
APP'VD BY	DATE	SIZE D REV. A	SHT. 11 OF 13



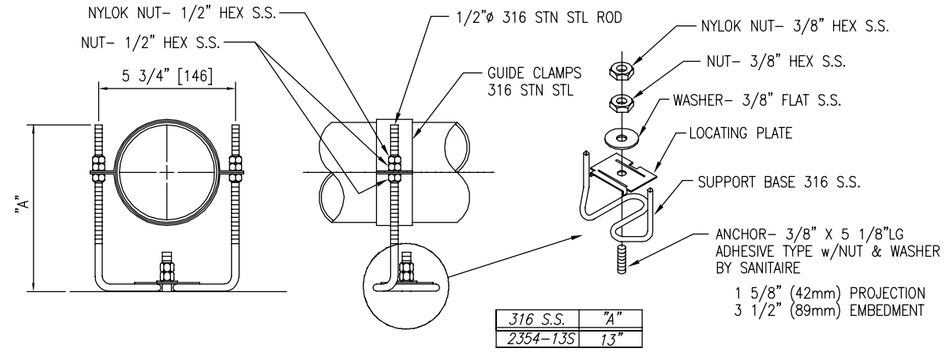
SIMPLE SUPPORT
DETAIL SUP–10

ANCHOR SPACING		
MAN. DIA.	A	B
12"ø	14 7/8" [378]	7 7/16" [189]

MAN. IDENT	MAN. DIA.	SUPPORT BASE	GUIDE STRAP		PLATE WASHER	
			~~304~~	316	~~304~~	316
~~FB–4~~	~~4"~~	SEE DRAWINGS	~~CG1500–4~~	CG1500–6	~~2278–1W4~~	2278–1W6
~~FB–6~~	~~6"~~		~~CG6625–4~~	CG6625–6	~~2278–1W4~~	2278–1W6
~~FB–8~~	~~8"~~		~~CG8625–4~~	CG8625–6	~~2278–1W4~~	2278–1W6
~~FB–10~~	~~10"~~		~~CG1075–4~~	CG1075–6	~~2278–1W4~~	2278–1W6
FB–12	12" [300]		~~CG1275–4~~	CG1275–6	~~2278–1W4~~	2278–1W6

FINE BUBBLE AERATION SYSTEM ADHESIVE ANCHOR CHART			
MANIFOLD OR DROPLEG DIA.	ANCHOR BOLT	PROJECTION HOLD	EMBEDMENT
12"ø (300)	5/8"ø X 7 1/2"	2 1/2" (64)	5" (127)

NOTE:
ALL HARDWARE TO BE 316 STN STL



316 S.S.	"A"
2354–13S	13"

GUIDE SUPPORT
DETAIL SUP–2

NO.	DATE	REVISION	BY
4			
3			
2			
1			

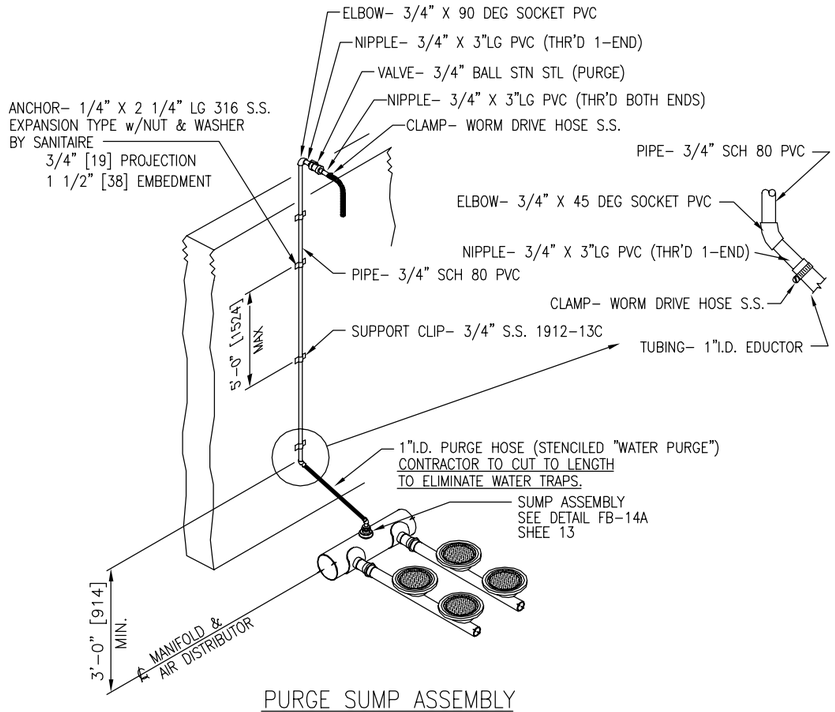
WINNIPEG, MB

NORTH END WPCC

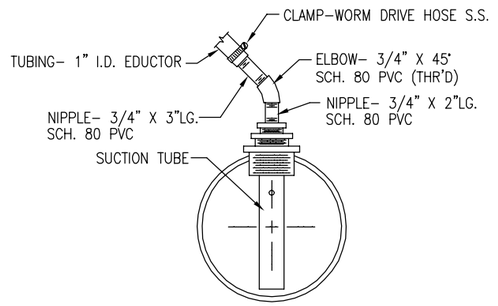
DETAILS

ITT
ADVANCED WATER TREATMENT

DRWN BY CK	DATE 11–27–06	EQUIP. MEM	JOB. 06–6371S	SHT. 12 OF 13
CHKD BY RH	DATE 11–29–06	STD.		
APPVD BY	DATE	SIZE D	REV. A	DWG. E–12	



PURGE SUMP ASSEMBLY
DETAIL PURGE–23



PURGE SUMP
DETAIL FB–14A

NO.	DATE	REVISION	BY
4			
3			
2			
1			

WINNIPEG, MB

NORTH END WPCC

DETAILS

ITT
ADVANCED WATER
TREATMENT

DRWN BY CK	DATE 11–27–06	EQUIP. WEM	JOB. 06–6371S	SHT. 13 OF 13
CHKD BY RH	DATE 11–29–06	STD.	DWG. E–13	
APPVD BY	DATE	SIZE D	REV. A	