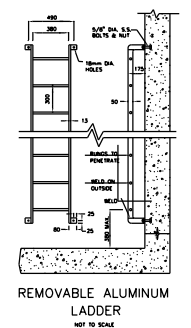
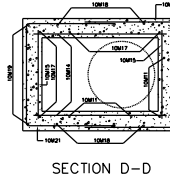
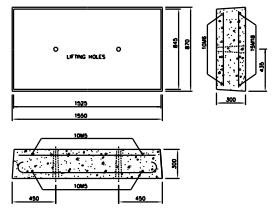
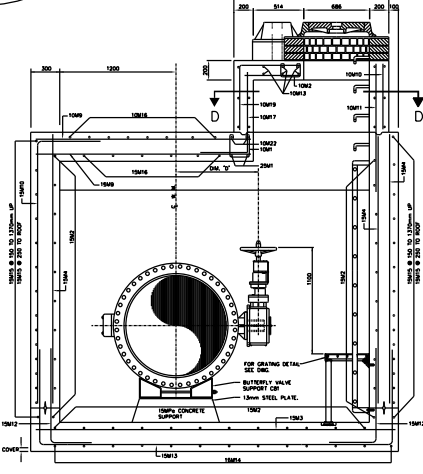
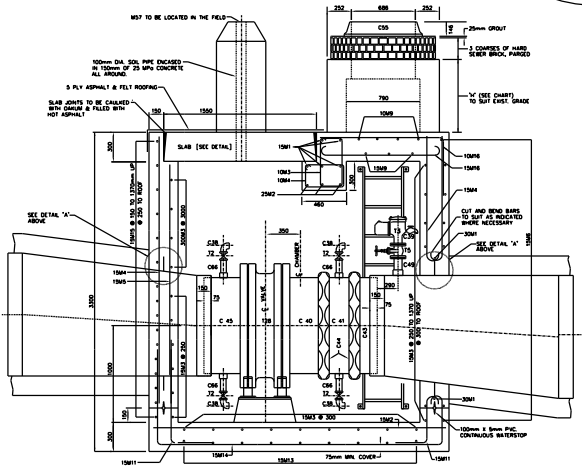
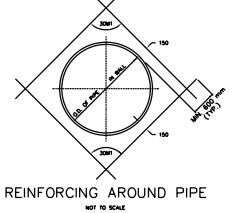
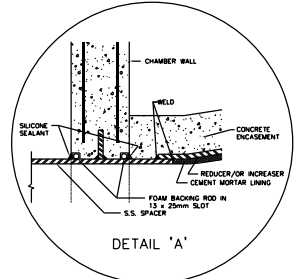


CHAMBER NO.	CHAM. 'X'	CHAM. 'Y'	CHAM. 'Z'	CHAM. 'W'	CHAM. 'V'



- NOTES:
- 25MPa CONCRETE TO BE USED EXCEPT AS NOTED.
 - MAXIMUM SIZE OF COARSE AGGREGATE TO BE 20mm.
 - COVER TO MAIN REINFORCEMENT TO BE 50mm OR AS INDICATED.
 - ALL BAR DIMENSIONS ARE OUT TO OUT.
 - BARS TO BE BENT COLD, MINIMUM INSIDE RADIUS TO 4 DIAMETERS.
 - ALL CROSSING BARS TO BE WELL WROD.
 - ALL REINFORCING STEEL TO BE DEFORMED BILLET-STEEL BARS GRADE 300, CONFORMING TO U.S.A. STANDARD A305/13M.
 - ALL LAPS IN REINFORCING STEEL TO BE AT LEAST 30 DIAMETERS IN LENGTH OR AS SHOWN, AND TO BE STAGGERED.
 - ALL BRICKWORK TO BE OF HIGH QUALITY HARD SEWER BRICK, LAID IN FULL MORTAR BED AND JOINTS, PARGED INSIDE AND OUT.
 - WATERSTOP (EVC) TO BE PROVIDED AT ALL CONSTRUCTION JOINTS.
 - WHERE NECESSARY ADJUST REINFORCING STEEL TO SUIT WATERSTOPS AND OPENINGS.
 - PROVIDE SLUMP PIT WITH GRATING AND SLOPE FLOOR TO SLUMP 10mm/METRE.
 - DRAIN GRATES TO BE LOCATED AT NEAREST POINT TO EXISTING SEWER. ELEVATION OF SEWER IS HIGHER THAN CHAMBER FLOOR THE DRAIN MAY BE CLAMPED TO THE WALL BY AN APPROVED METHOD. IF NO SEWER IS AVAILABLE DELETE DRAIN TYPE 'A' AND CONSTRUCT DRAIN TYPE 'B' AND INSTALL PIPE WITH STOPPER AS SHOWN ON DWG.
 - DRAIN CONNECTION TO SEWER TO BE MADE BY CONTRACTOR UNLESS OTHERWISE STATED IN THE GENERAL SPECIFICATIONS.
 - LADDERS, GRATINGS AND RAILINGS TO BE ALUMINUM AND OF REMOVABLE TYPE WITH STAINLESS STEEL BOLTS.
 - TWO TOP STEPS AND ANY ADDITIONAL STEPS IN THE CHIMNEY TO BE OF THE REMOVABLE TYPE.
 - CHAMBERS DEEPER THAN 1200mm FROM SURFACE ELEVATION TO TOP OF VALVE OPERATING SPINDLE SHALL HAVE EXTENSION SPINDLE AND GUIDE BRACKET.
 - ALL ALUMINUM SURFACES CONTACTING CONCRETE TO RECEIVE ONE COAT OF BITUMINOUS PAINT.
 - 'X' DIMENSIONS ON HEIGHT (H) & BARS SHALL BE COUNTED TO ENSURE THAT THE BOTTOM BAR IS LESS THAN 150mm ABOVE THE ROOF CHAMBER.

BENDING SCHEDULE

BAR NO.	BAR DIA.	TOTAL LENGTH	DIMENSIONS			#	SHAPE	O.C.	NO. REIN.
			a	b	c				
10M1	10	100	25	25	200	2		200	2
10M2	10	710	120	230	120	2		150	8
10M3	10	1040	500	230	230	2		200	18
10M4	10	1300	300	230	300	2		150	18
10M5	10	770	200	230	300	2		AS SHOWN	18
10M6	10	1420	1000	230	230	2		AS SHOWN	18
10M7	10	1860	1000	230	230	2		AS SHOWN	18
10M9	10	2200	1000	230	230	2		200	5
10M10	10	1100	1000	230	230	2		200	8
10M11	10	1100	1000	230	230	2		200	8
10M12	10	814	1000	230	230	2		200	4
10M13	10	1000	1000	230	230	2		200	6
10M14	10	1000	1000	230	230	2		200	4
10M15	10	1000	1000	230	230	2		200	4
10M16	10	1300	1000	230	230	2		200	4
10M17	10	1420	1000	230	230	2		200	6
10M18	10	1100	1000	230	230	2		200	6
10M19	10	1420	1000	230	230	2		200	6
10M20	10	2440	1870	500	500	2		200	7
10M21	10	2500	1000	230	230	2		200	12
10M22	10	4000	500	3000	500	2		AS SHOWN	2
10M1	10	3700	2000	230	230	2		AS SHOWN	5
10M2	10	2000	2000	230	230	2		200	20
10M3	10	2700	2000	230	230	2		200	29
10M4	10	2700	2000	230	230	2		200	29
10M5	10	2400	2000	230	230	2		200	6
10M6	10	1800	2000	230	230	2		200	22
10M7	10	1800	2000	230	230	2		200	2
10M8	10	2070	2700	900	900	2		200	12
10M11	10	1270	1000	300	300	2		200	22
10M12	10	1200	1000	300	300	2		200	18
10M13	10	3640	1000	3700	1000	2		200	9
10M14	10	2000	2000	230	230	2		200	2
10M15	10	2440	1000	1000	1000	2		200	12
10M16	10	1800	1300	230	230	2		200	6
10M17	10	2370	1810	230	230	2		200	13
10M18	10	1810	1430	230	230	2		200	6
10M19	10	2000	2000	230	230	2		200	6
10M20	10	2300	2300	230	230	2		200	2
10M21	10	2500	2500	230	230	2		200	12
10M22	10	30	0.0	0.0	600	2		AS SHOWN	8

FOR REINFORCING AT DRAIN REFER TO SUMP AND DRAIN DETAIL DWG.

MATERIAL LIST

MAINS	SUPPLIED BY CONTRACTOR	MAINS	SUPPLIED BY CONTRACTOR
12	4-50mm DIA. VLV. 55 BODY/VAL. W/VAL. SEAL	C40	1-800mm FABRICATED S.S. FL-VEL CONNECTION
13	1-100mm VENT/MAT. AIR VALVE (PLUG)	C41	1-800mm FABRICATED S.S. VCL. TO VCL. SPACER
14	1-100mm GATE VALVE (FLANGED)	C42	1-800mm FABRICATED S.S. METALLIC CONNECTION
15	1-100mm BACHEMETER CHECK VALVE	C43	2-800mm VCL. COUPLING, STEEL SHOULDERED
16	CENTRE PLUG FOR CHAMBER COVER	C44	2-800mm VCL. COUPLING, STEEL SHOULDERED
17	1-100mm BUTTERFLY VALVE JAMB. COU.	C45	1-800mm FABRICATED S.S. FLANGE ASSEMBLY
18	1-SMALL ROUND TOP	C46	2-100mm BUTTERFLY VALVE JAMB. COU.
		C47	1-CIRCULAR COVER WITH FRAME AS PER METHOD/ATTN TORONTO AREA STANDARD DRABARS No. 410 AND 411 (BATCH CENTRE PLUG)
		C48	1-100mm BUTTERFLY VALVE SUPPORT
		C49	1-800mm FABRICATED S.S. FLANGE ASSEMBLY
		C50	1-100mm BUTTERFLY VALVE JAMB. COU.
		C51	1-100mm BUTTERFLY VALVE JAMB. COU.
		C52	1-100mm BUTTERFLY VALVE JAMB. COU.
		C53	1-100mm BUTTERFLY VALVE JAMB. COU.
		C54	1-100mm BUTTERFLY VALVE JAMB. COU.
		C55	1-100mm BUTTERFLY VALVE JAMB. COU.
		C56	1-100mm BUTTERFLY VALVE JAMB. COU.
		C57	1-100mm BUTTERFLY VALVE JAMB. COU.
		C58	1-100mm BUTTERFLY VALVE JAMB. COU.
		C59	1-100mm BUTTERFLY VALVE JAMB. COU.
		C60	1-100mm BUTTERFLY VALVE JAMB. COU.
		C61	1-100mm BUTTERFLY VALVE JAMB. COU.
		C62	1-100mm BUTTERFLY VALVE JAMB. COU.
		C63	1-100mm BUTTERFLY VALVE JAMB. COU.
		C64	1-100mm BUTTERFLY VALVE JAMB. COU.
		C65	1-100mm BUTTERFLY VALVE JAMB. COU.
		C66	1-100mm BUTTERFLY VALVE JAMB. COU.
		C67	1-100mm BUTTERFLY VALVE JAMB. COU.
		C68	1-100mm BUTTERFLY VALVE JAMB. COU.
		C69	1-100mm BUTTERFLY VALVE JAMB. COU.
		C70	1-100mm BUTTERFLY VALVE JAMB. COU.

CHAMBERS

CHAMBER NO.	CHAMBER (m)	INTERIOR H. ELEV. (m)	SURFACE ELEV. (m)	DIFFERENCE IN ELEV. (m)	COVER LOCATION	DRAIN TYPE	DRAIN DIRECTION	FOR LOCATION REFER TO PLAN NO.	REMARKS

ALL DIMENSIONS SHOWN HERE ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

Toronto Water Engineering & Construction Services

Title: Subtitle1, Subtitle2

900 mm HORIZONTAL BUTTERFLY VALVE CHAMBER (POSITION 'A')

DESIGN: Design, DRAWN: Drawn, CHECKED: Checked, CONTRACT No. X-X

SCALE: SCALE, DATE: DATE, DRAWING NUMBER: T-1110.09-1, SHEET X OF X

No.	DATE	REVISIONS	INITIAL	SIGNED

GENERAL MANAGER, TORONTO WATER
 EXECUTIVE DIRECTOR, Engineering & Construction Services
 DIRECTOR, Design and Construction Linear Underground Infrastructure
 MANAGER, Design and Construction Linear Underground Infrastructure