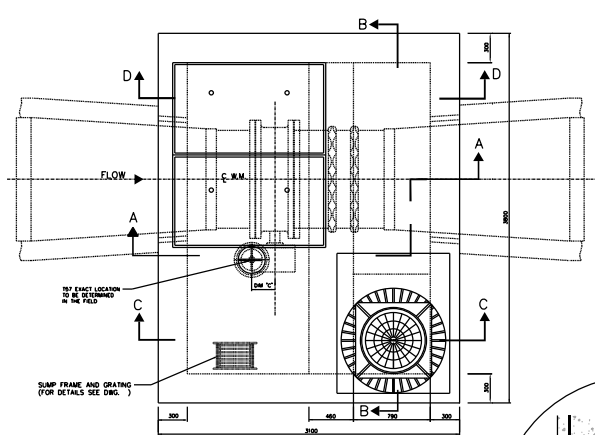
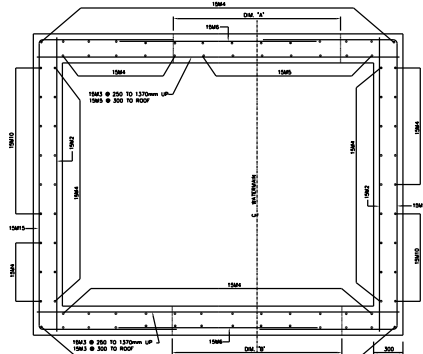


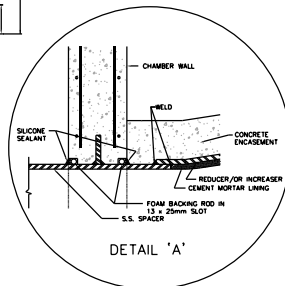


PLAN

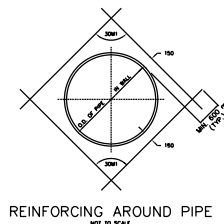
CHAMBER No.	Dim. 'A'	Dim. 'B'	Dim. 'C'	Dim. 'D'	Dim. 'E'



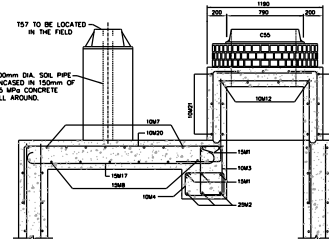
WALL SECTION



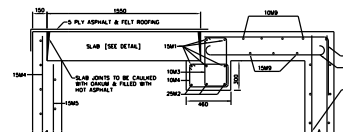
DETAIL 'A'



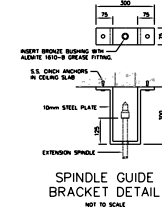
REINFORCING AROUND PIPE



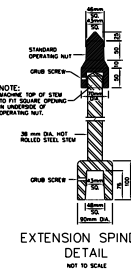
SECTION C-C



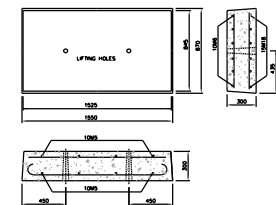
SECTION D-D



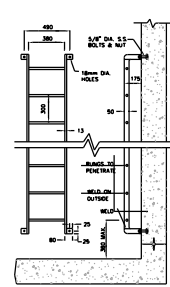
SPINDLE GUIDE BRACKET DETAIL



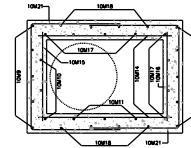
EXTENSION SPINDLE DETAIL



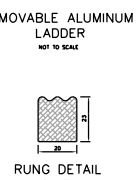
SLAB DETAIL



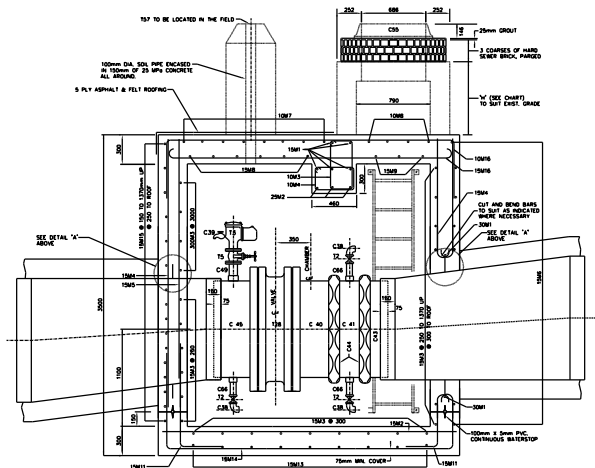
REMOVABLE ALUMINUM LADDER



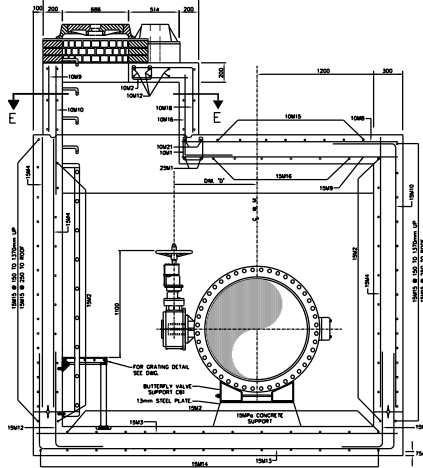
SECTION E-E



RUNG DETAIL



SECTION A-A



SECTION B-B

CHAMBER No.	Dim. 'A'	Dim. 'B'	Dim. 'C'	Dim. 'D'	Dim. 'E'

CHAMBERS

ALL DIMENSIONS SHOWN HERE ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

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 WIRED.
- ALL REINFORCING STEEL TO BE DEFORMED BUILT-UP STEEL BARS GRADE 350, CONFORMING TO C.S.A. STANDARD G30.21M.
- 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 (PVC) TO BE PROVIDED AT ALL CONSTRUCTION JOINTS.
- WHERE NECESSARY ADJUST REINFORCING STEEL TO SUIT WATERSTOPS AND OPENINGS.
- PROVIDE SUMP PUMP WITH GRATING AND SLOPE FLOOR TO SUMP 10mm/METRE.
- DRAIN OUTLET TO BE LOCATED AT NEAREST POINT TO EXISTING SEWER. IF 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 DRG.
- 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.
- TOP TWO 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.
- 'A' DEPENDS 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.	SHAPE	LENGTH	QUANTITY	REMARKS
1001	10	200	200	200
1002	10	200	200	200
1003	10	200	200	200
1004	10	200	200	200
1005	10	200	200	200
1006	10	200	200	200
1007	10	200	200	200
1008	10	200	200	200
1009	10	200	200	200
1010	10	200	200	200
1011	10	200	200	200
1012	10	200	200	200
1013	10	200	200	200
1014	10	200	200	200
1015	10	200	200	200
1016	10	200	200	200
1017	10	200	200	200
1018	10	200	200	200
1019	10	200	200	200
1020	10	200	200	200
1021	10	200	200	200
1022	10	200	200	200
1023	10	200	200	200
1024	10	200	200	200
1025	10	200	200	200
1026	10	200	200	200
1027	10	200	200	200
1028	10	200	200	200
1029	10	200	200	200
1030	10	200	200	200
1031	10	200	200	200
1032	10	200	200	200
1033	10	200	200	200
1034	10	200	200	200
1035	10	200	200	200
1036	10	200	200	200
1037	10	200	200	200
1038	10	200	200	200
1039	10	200	200	200
1040	10	200	200	200
1041	10	200	200	200
1042	10	200	200	200
1043	10	200	200	200
1044	10	200	200	200
1045	10	200	200	200
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1061	10	200	200	200
1062	10	200	200	200
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1066	10	200	200	200
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1069	10	200	200	200
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1076	10	200	200	200
1077	10	200	200	200
1078	10	200	200	200
1079	10	200	200	200
1080	10	200	200	200
1081	10	200	200	200
1082	10	200	200	200
1083	10	200	200	200
1084	10	200	200	200
1085	10	200	200	200
1086	10	200	200	200
1087	10	200	200	200
1088	10	200	200	200
1089	10	200	200	200
1090	10	200	200	200
1091	10	200	200	200
1092	10	200	200	200
1093	10	200	200	200
1094	10	200	200	200
1095	10	200	200	200
1096	10	200	200	200
1097	10	200	200	200
1098	10	200	200	200
1099	10	200	200	200
1100	10	200	200	200

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

MATERIAL LIST

MARK	SUPPLIED BY CONTRACTOR	MARK	SUPPLIED BY CONTRACTOR
10	4-10mm BALK VV 15 mm PAVEL, 10mm SEAL	C40	1-100mm FABRICATED S.S. PLATE W/ VCT. CONNECTION
11	1-100mm VENTILATOR RIB STEEL AIR VALVE PLUG	C41	1-100mm FABRICATED S.S. VCT. JOINT SPACER
12	1-100mm GATE VALVE W/ 8mm CHOP (FLANGED)	C42	1-100mm FABRICATED S.S. VCT. JOINT CONNECTION
13	1-100mm BACKWATER CHECK VALVE	C43	1-100mm VCT. COUPLER, STEEL/AL. INSULATED
14	CENTRE PLUG FOR CHAMBER COVER	C44	1-100mm FABRICATED S.S. FLANGE ASSEMBLY
15	1-100mm HOR. BUTTERFLY VALVE	C45	2-100mm TO 150mm REDUCERS
16	1-100mm HOR. BUTTERFLY VALVE	C46	1-100mm HOR. BUTTERFLY VALVE
17	1-100mm HOR. BUTTERFLY VALVE	C47	1-100mm HOR. BUTTERFLY VALVE
18	1-100mm HOR. BUTTERFLY VALVE	C48	1-100mm HOR. BUTTERFLY VALVE
19	1-100mm HOR. BUTTERFLY VALVE	C49	1-100mm HOR. BUTTERFLY VALVE
20	1-100mm HOR. BUTTERFLY VALVE	C50	1-100mm HOR. BUTTERFLY VALVE
21	1-100mm HOR. BUTTERFLY VALVE	C51	1-100mm HOR. BUTTERFLY VALVE
22	1-100mm HOR. BUTTERFLY VALVE	C52	1-100mm HOR. BUTTERFLY VALVE
23	1-100mm HOR. BUTTERFLY VALVE	C53	1-100mm HOR. BUTTERFLY VALVE
24	1-100mm HOR. BUTTERFLY VALVE	C54	1-100mm HOR. BUTTERFLY VALVE
25	1-100mm HOR. BUTTERFLY VALVE	C55	1-100mm HOR. BUTTERFLY VALVE
26	1-100mm HOR. BUTTERFLY VALVE	C56	1-100mm HOR. BUTTERFLY VALVE
27	1-100mm HOR. BUTTERFLY VALVE	C57	1-100mm HOR. BUTTERFLY VALVE
28	1-100mm HOR. BUTTERFLY VALVE	C58	1-100mm HOR. BUTTERFLY VALVE
29	1-100mm HOR. BUTTERFLY VALVE	C59	1-100mm HOR. BUTTERFLY VALVE
30	1-100mm HOR. BUTTERFLY VALVE	C60	1-100mm HOR. BUTTERFLY VALVE
31	1-100mm HOR. BUTTERFLY VALVE	C61	1-100mm HOR. BUTTERFLY VALVE
32	1-100mm HOR. BUTTERFLY VALVE	C62	1-100mm HOR. BUTTERFLY VALVE
33	1-100mm HOR. BUTTERFLY VALVE	C63	1-100mm HOR. BUTTERFLY VALVE
34	1-100mm HOR. BUTTERFLY VALVE	C64	1-100mm HOR. BUTTERFLY VALVE
35	1-100mm HOR. BUTTERFLY VALVE	C65	1-100mm HOR. BUTTERFLY VALVE
36	1-100mm HOR. BUTTERFLY VALVE	C66	1-100mm HOR. BUTTERFLY VALVE
37	1-100mm HOR. BUTTERFLY VALVE	C67	1-100mm HOR. BUTTERFLY VALVE
38	1-100mm HOR. BUTTERFLY VALVE	C68	1-100mm HOR. BUTTERFLY VALVE
39	1-100mm HOR. BUTTERFLY VALVE	C69	1-100mm HOR. BUTTERFLY VALVE
40	1-100mm HOR. BUTTERFLY VALVE	C70	1-100mm HOR. BUTTERFLY VALVE
41	1-100mm HOR. BUTTERFLY VALVE	C71	1-100mm HOR. BUTTERFLY VALVE
42	1-100mm HOR. BUTTERFLY VALVE	C72	1-100mm HOR. BUTTERFLY VALVE
43	1-100mm HOR. BUTTERFLY VALVE	C73	1-100mm HOR. BUTTERFLY VALVE
44	1-100mm HOR. BUTTERFLY VALVE	C74	1-100mm HOR. BUTTERFLY VALVE
45	1-100mm HOR. BUTTERFLY VALVE	C75	1-100mm HOR. BUTTERFLY VALVE
46	1-100mm HOR. BUTTERFLY VALVE	C76	1-100mm HOR. BUTTERFLY VALVE
47	1-100mm HOR. BUTTERFLY VALVE	C77	1-100mm HOR. BUTTERFLY VALVE
48	1-100mm HOR. BUTTERFLY VALVE	C78	1-100mm HOR. BUTTERFLY VALVE
49	1-100mm HOR. BUTTERFLY VALVE	C79	1-100mm HOR. BUTTERFLY VALVE
50	1-100mm HOR. BUTTERFLY VALVE	C80	1-100mm HOR. BUTTERFLY VALVE
51	1-100mm HOR. BUTTERFLY VALVE	C81	1-100mm HOR. BUTTERFLY VALVE
52	1-100mm HOR. BUTTERFLY VALVE	C82	1-100mm HOR. BUTTERFLY VALVE
53	1-100mm HOR. BUTTERFLY VALVE	C83	1-100mm HOR. BUTTERFLY VALVE
54	1-100mm HOR. BUTTERFLY VALVE	C84	1-100mm HOR. BUTTERFLY VALVE
55	1-100mm HOR. BUTTERFLY VALVE	C85	1-100mm HOR. BUTTERFLY VALVE
56	1-100mm HOR. BUTTERFLY VALVE	C86	1-100mm HOR. BUTTERFLY VALVE
57	1-100mm HOR. BUTTERFLY VALVE	C87	1-100mm HOR. BUTTERFLY VALVE
58	1-100mm HOR. BUTTERFLY VALVE	C88	1-100mm HOR. BUTTERFLY VALVE
59	1-100mm HOR. BUTTERFLY VALVE	C89	1-100mm HOR. BUTTERFLY VALVE
60	1-100mm HOR. BUTTERFLY VALVE	C90	1-100mm HOR. BUTTERFLY VALVE
61	1-100mm HOR. BUTTERFLY VALVE	C91	1-100mm HOR. BUTTERFLY VALVE
62	1-100mm HOR. BUTTERFLY VALVE	C92	1-100mm HOR. BUTTERFLY VALVE
63	1-100mm HOR. BUTTERFLY VALVE	C93	1-100mm HOR. BUTTERFLY VALVE
64	1-100mm HOR. BUTTERFLY VALVE	C94	1-100mm HOR. BUTTERFLY VALVE
65	1-100mm HOR. BUTTERFLY VALVE	C95	1-100mm HOR. BUTTERFLY VALVE
66	1-100mm HOR. BUTTERFLY VALVE	C96	1-100mm HOR. BUTTERFLY VALVE
67	1-100mm HOR. BUTTERFLY VALVE	C97	1-100mm HOR. BUTTERFLY VALVE
68	1-100mm HOR. BUTTERFLY VALVE	C98	1-100mm HOR. BUTTERFLY VALVE
69	1-100mm HOR. BUTTERFLY VALVE	C99	1-100mm HOR. BUTTERFLY VALVE
70	1-100mm HOR. BUTTERFLY VALVE	C100	1-100mm HOR. BUTTERFLY VALVE

0 FOR DRAIN TYPE 'A' AND 'C' ONLY
1 FOR DRAIN TYPE 'B' ONLY



Engineering & Construction Services

Title
Subtitle1
Subtitle2

1050 mm HORIZONTAL BUTTERFLY VALVE CHAMBER (POSITION 'B')

DESIGN	Design	DRAWN	Drawn	CHECKED	Checked	CONTRACT No. X-X
SCALE	SCALE	SCALE	SCALE	SCALE	SCALE	DRAWING NUMBER
DATE	DATE	DATE	DATE	DATE	DATE	T-1110.10-2

SHEET X OF X

No.	DATE	REVISIONS	INITIAL	SIGNED

GENERAL MANAGER,
TORONTO WATER

DIRECTOR,
Design and Construction
Linear Underground Infrastructure

CHIEF ENGINEER AND
EXECUTIVE DIRECTOR,
Engineering & Construction
Services

MANAGER,
Design and Construction
Linear Underground Infrastructure