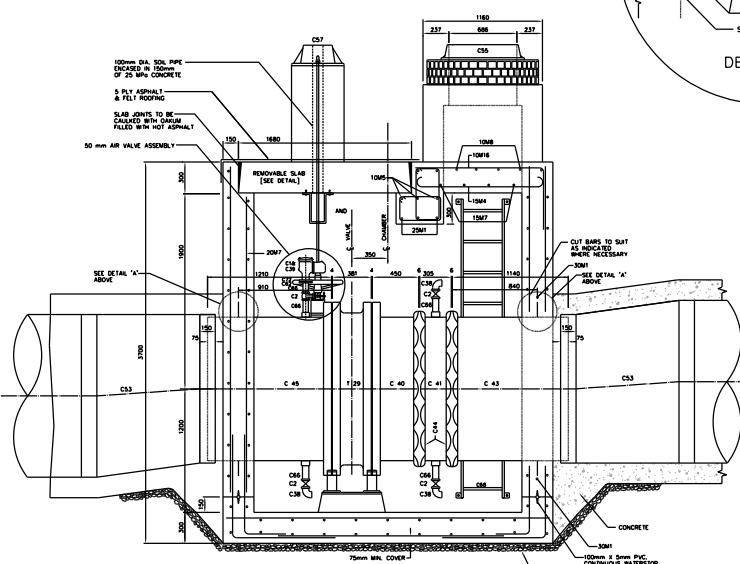
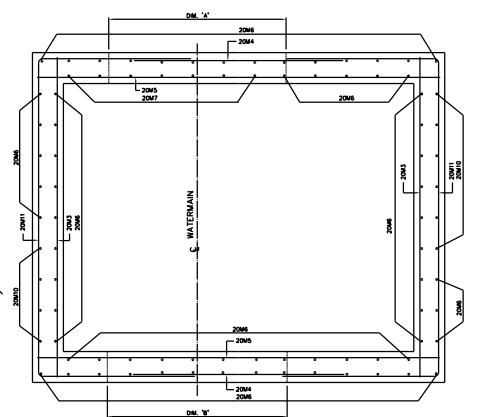


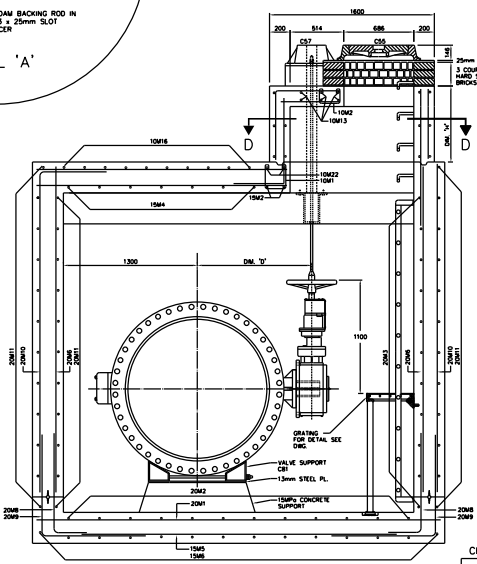
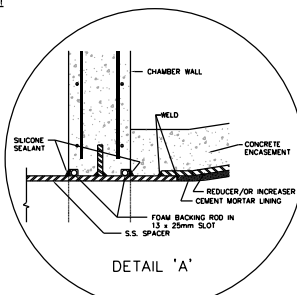
CHAMBER No.	DM. 'X'	DM. 'Y'	DM. 'C'	DM. 'V'	DM. 'W'



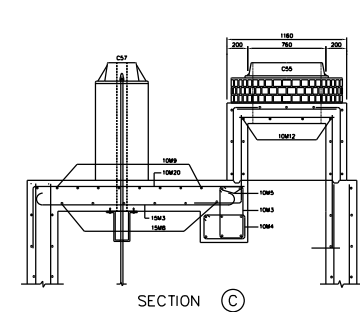
SECTION A



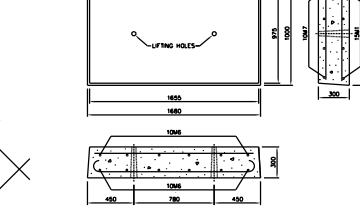
WALL SECTION



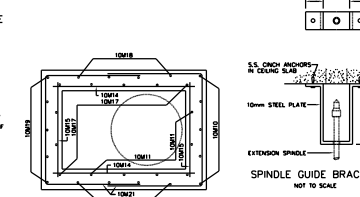
SECTION B



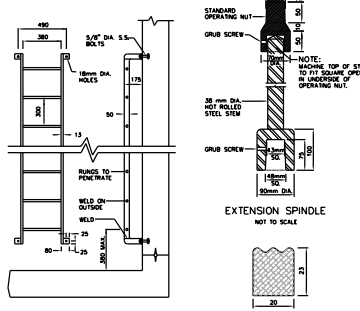
SECTION C



REMOVABLE SLAB



SECTION D-D



REMOVABLE ALUMINUM LADDER

CHAMBERS	CHAMBER No.	CHARGE	INTERIOR E. ELEV.	SURFACE ELEV.	DIFFERENCE IN ELEV.	COVER LOCATION	DRAIN TYPE/OUTLET DIM.	FOR LOCATION REFER TO PLAN No.	REMARKS

- NOTES**
- 25MPH CONCRETE TO BE USED EXCEPT AS NOTED.
  - MAXIMUM SIZE OF COARSE AGGREGATE TO BE 20mm.
  - COVER TO MAIN REINFORCING 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 350, CONFORMING TO C.S.A. STANDARD C30.12M.
  - 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 OUTSIDE.
  - WATERSTOP [P.V.C.] 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 OUTLET TO BE LOCATED AT NEAREST POINT TO EXISTING SEWER.
  - DRAIN CONNECTION TO SEWER TO BE MADE BY CONTRACTOR UNLESS OTHERWISE NOTED IN THE GENERAL SPECIFICATIONS.
  - LOADERS, 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.
  - 'X' DEPENDS ON HEIGHT OF CHIMNEY [DM.'H'] AND BARS SHALL BE COUNTED TO ENSURE THAT THE BOTTOM BAR IS LESS THAN 150mm ABOVE THE CHAMBER ROOF.

BENDING SCHEDULE									
BAR No.	DM.	TOTAL LENGTH	a	b	c	d	SHAPE	S.C.	No. REQD.
10M10	10	800	230	230	230			200	7
10M12	10	710	130	230	130			150	8
10M13	10	1840	520	230	520	230		200	20
10M14	10	1340	380	230	380	230		200	20
10M15	10	3000					AS SHOWN	5	
10M16	10	900					200	24	
10M17	10	1680					200	8	
10M18	10	2400					200	4	
10M19	10	1600					200	8	
10M20	10	H+100					200	5	
10M11	10	H+600					200	6	
10M12	10	614					200	4	
10M13	10	1060					200	6	
10M14	10	1500					200	7	
10M15	10	1060					200	7	
10M16	10	1880	1270	600			200	10	
10M17	10	H+830	H+200	450			200	7	
10M18	10	H+180	H+100	300			200	8	
10M19	10	H+934	H+100	614			200	5	
10M20	10	2630	2040	600			200	6	
10M21	10	2820	900	1060	900		200	7	
10M22	10	4280	600	3100	600		AS SHOWN	2	
15M1	15	1940	1580				AS SHOWN	8	
15M2	15	5460	2100				AS SHOWN	2	
15M3	15	2400	2040				200	6	
15M4	15	1830	1270				200	7	
15M5	15	3000					200	11	
15M6	15	2200					200	14	
15M7	15	2400					200	4	
15M8	15	1600					200	7	
20M1	20	3900					200	9	
20M2	20	3100					200	12	
20M3	20	3100					200	22	
20M4	20	2000					200	24	
20M5	20	3900					200	22	
20M6	20	3150					200	71	
20M7	20	3850					200	7	
20M8	20	1310	1050	300			200	42	
20M9	20	2080	1050	1050			200	48	
20M10	20	3710	2150	600			200	10	
20M11	20	6120	1550	3100	1550		200	24	
25M1	25	4480	3800				AS SHOWN	3	
30M1	30	O.D.+600					STRAIGHT	AS SHOWN	8

MATERIAL LIST									
MARK: SUPPLIED BY CITY OF TORONTO					MARK: SUPPLIED BY CONTRACTOR				
129 1-1200mm HORIZONTAL BUTTERFLY VALVE					C30 1-1200mm FABRICATED S.S. FL.-VCT CONNECTION				
					C41 1-1200mm FABRICATED S.S. VCT.-VCT. SPACER				
					C43 1-1200mm FABRICATED S.S. METALLIC CONNECTION				
					C44 2-1200mm VCT. COUPLINGS, STYLE 44 SHOULDERED				
					C45 1-1200mm FABRICATED S.S. FLANGE ASSEMBLY				
					C46 2-1300mm to 1000mm ECCENTRIC REDUCERS				
					C47 1-CUT WREN SQUARE FRAME WITH CIRCULAR COVER AND PLUG FOR VALVE CHAMBERS AS PER SPECIFICATIONS				
					C48 1-1200mm DIA. PVC RINGS				
					C49 1-1200mm DIA. PVC RINGS				
					C50 1-1200mm DIA. PVC RINGS				
					C51 1-1200mm DIA. PVC RINGS				
					C52 1-1200mm DIA. PVC RINGS				
					C53 1-1200mm DIA. PVC RINGS				
					C54 1-1200mm DIA. PVC RINGS				
					C55 1-1200mm DIA. PVC RINGS				
					C56 1-1200mm DIA. PVC RINGS				
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					C60 1-1200mm DIA. PVC RINGS				
					C61 1-1200mm DIA. PVC RINGS				
					C62 1-1200mm DIA. PVC RINGS				
					C63 1-1200mm DIA. PVC RINGS				
					C64 1-1200mm DIA. PVC RINGS				
					C65 1-1200mm DIA. PVC RINGS				
					C66 1-1200mm DIA. PVC RINGS				
					C67 1-1200mm DIA. PVC RINGS				
					C68 1-1200mm DIA. PVC RINGS				
					C69 1-1200mm DIA. PVC RINGS				
					C70 1-1200mm DIA. PVC RINGS				

**Toronto Engineering & Construction Services**

**Title**  
SubTitle1  
SubTitle2

**1200 mm HORIZONTAL BUTTERFLY VALVE CHAMBER (Position A)**

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

SCALE: SCALE DRAWING NUMBER: T-1110.11-1 SHEET X OF X

DATE: DATE

GENERAL MANAGER, TORONTO WATER

DIRECTOR, Design and Construction Linear Underground Infrastructure

EXECUTIVE DIRECTOR, Engineering & Construction Services Design and Construction Linear Underground Infrastructure

MANAGER, Design and Construction Linear Underground Infrastructure

No. DATE REVISIONS INITIAL SIGNED