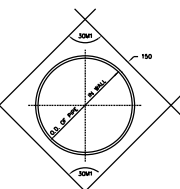


WALL SECTION

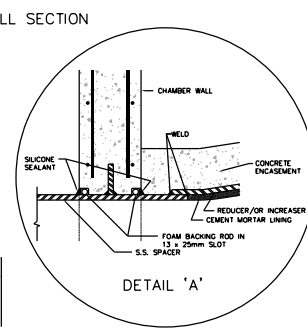
SECTION C

REMOVABLE SLAB (2 RECURS)

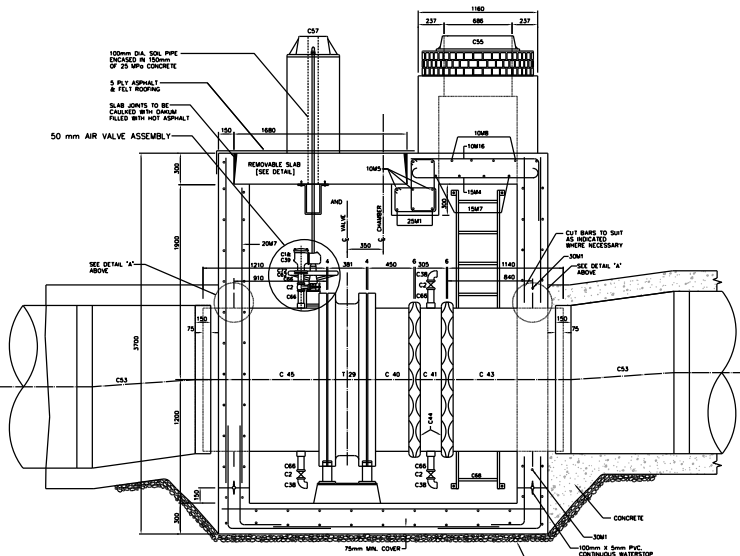
| CHAMBER No. | DM 'A' | DM 'B' | DM 'C' | DM 'D' | DM 'E' |
|-------------|--------|--------|--------|--------|--------|
| | | | | | |



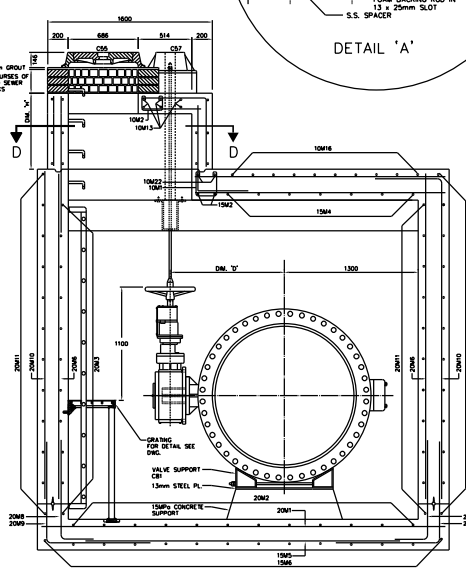
REINFORCING AROUND PIPE NOT TO SCALE



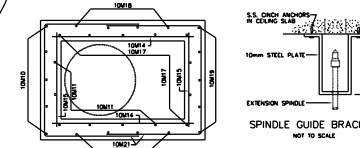
DETAIL 'A'



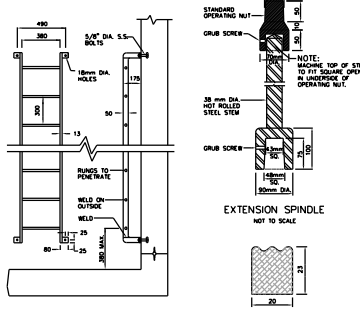
SECTION A



SECTION B



SECTION D-D



REMOVABLE ALUMINUM LADDER NOT TO SCALE

- NOTES**
- 25MPa 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 WIRED.
 - ALL REINFORCING STEEL TO BE DEFORMED BULLETT-SHAPED BARS GRADE 350, CONFORMING TO C.S.A. STANDARD C509.124.
 - 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, LAD 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.
 - 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.
 - "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 FLOOR.

BENDING SCHEDULE

| BAR NO. | DIA. | TOTAL LENGTH | DIMENSIONS | | | | SHAPE | O.C. | No. REQS. |
|---------|-------|--------------|------------|------|-----|-----|----------|----------|-----------|
| | | | a | b | c | d | | | |
| 10M10 | 10 | 800 | 220 | 220 | 220 | 220 | 1 | 200 | |
| 10M2 | 710 | 120 | 230 | 120 | | | 1 | 200 | |
| 10M3 | 1640 | 500 | 230 | 500 | 230 | | 1 | 200 | |
| 10M4 | 1340 | 300 | 220 | 300 | 220 | | 1 | 200 | |
| 10M5 | 3900 | | | | | | AS SHOWN | 5 | |
| 10M6 | 900 | | | | | | 200 | 8 | |
| 10M7 | 1580 | | | | | | 200 | 4 | |
| 10M8 | 2400 | | | | | | 200 | 8 | |
| 10M9 | 1600 | | | | | | 200 | 8 | |
| 10M10 | H=100 | | | | | | 200 | 5 | |
| 10M11 | H=600 | | | | | | 200 | 6 | |
| 10M12 | 614 | | | | | | 200 | 4 | |
| 10M13 | 1080 | | | | | | 200 | 6 | |
| 10M14 | 1900 | | | | | | 200 | 12 | |
| 10M15 | 1060 | | | | | | 200 | 12 | |
| 10M16 | 1850 | 1270 | 600 | | | | 200 | 10 | |
| 10M17 | H=830 | H=200 | 450 | | | | 200 | 8 | |
| 10M18 | H=180 | H=100 | 300 | | | | 200 | 8 | |
| 10M19 | H=494 | H=100 | 614 | | | | 200 | 5 | |
| 10M20 | 2625 | 2040 | 600 | | | | 200 | 5 | |
| 10M21 | 2820 | 900 | 1060 | 900 | | | 200 | 12 | |
| 10M22 | 4260 | 600 | 3100 | 600 | | | AS SHOWN | 2 | |
| 12M | 15 | 1940 | 1500 | | | | 200 | 8 | |
| 12M2 | 15 | 2400 | 3100 | | | | AS SHOWN | 2 | |
| 12M3 | 15 | 2400 | 2040 | | | | 200 | 6 | |
| 12M4 | 15 | 1630 | 1270 | | | | 200 | 7 | |
| 12M5 | 15 | 3000 | | | | | 200 | 11 | |
| 12M6 | 15 | 2200 | | | | | 200 | 14 | |
| 12M7 | 15 | 2400 | | | | | 200 | 7 | |
| 12M8 | 15 | 1600 | | | | | 200 | 7 | |
| 20M | 20 | 3900 | | | | | 200 | 9 | |
| 20M2 | 20 | 3100 | | | | | 200 | 12 | |
| 20M3 | 20 | 3100 | | | | | 200 | 22 | |
| 20M4 | 20 | 2000 | | | | | 200 | 24 | |
| 20M5 | 20 | 3000 | | | | | 200 | 7 | |
| 20M6 | 20 | 3100 | | | | | 200 | 7 | |
| 20M7 | 20 | 2850 | | | | | 200 | 7 | |
| 20M8 | 20 | 1310 | 1050 | 300 | | | 200 | 42 | |
| 20M9 | 20 | 2050 | 1050 | 1000 | | | 200 | 46 | |
| 20M10 | 20 | 2710 | 1310 | 600 | | | 200 | 10 | |
| 20M11 | 20 | 6120 | 1550 | 1550 | | | 200 | 24 | |
| 25M | 25 | 4460 | 3900 | | | | AS SHOWN | 3 | |
| 30M | 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 | C40 | 1-1200mm FABRICATED S.S. FL-VCT CONNECTION |
| C41 | 1-1200mm FABRICATED S.S. VCT-VCT SPACER | C43 | 1-1200mm FABRICATED S.S. VCT-VCT CONNECTION |
| C42 | 2-1200mm VCT COUPLING STYLE 44 SHOULDERED | C44 | 1-1200mm FABRICATED S.S. FLANGE ASSEMBLY |
| C45 | 2-1500mm TO 1200mm ECCENTRIC REDUCERS | C50 | 1-CCT W/OUT SQUARE FRAME WITH CIRCULAR COVER AND PLUG FOR VALVE CHAMBERS AS PER O&D-100 |
| C46 | 80-840 x 216mm S.S. BOLTS & NUTS | C51 | 6-CRCH ANCHORS WITH M8 S.S. BOLTS & NUTS |
| C47 | 1-50mm GASKET (FULL FACE, ONE PIECE) | C52 | 2-1200mm DIA. CLOTH RESEALER RUBBER GASKETS [FULL FACE, ONE PIECE] |
| C48 | 50mm EXTRA STRONG BRASS NUTS | C53 | 1-CCT W/OUT SQUARE FRAME WITH CIRCULAR COVER AND PLUG FOR VALVE CHAMBERS AS PER O&D-100 |
| C49 | 1-1200mm DIA. PVC FRAMING | C54 | 1-1200mm DIA. PVC FRAMING |
| C50 | 1-1200mm DIA. PVC FRAMING | C55 | 1-SUMP FRAME AND GRATING |
| C51 | 1-1200mm DIA. PVC FRAMING | C56 | 1-STANDARD ALUMINUM LADDER AND STEPS |
| C52 | 1-1200mm DIA. PVC FRAMING | C57 | 1-STEEL PLATE, 240mm x 900mm x 6mm |
| C53 | 1-1200mm DIA. PVC FRAMING | C58 | 2-STANDARD BUTTERFLY VALVE SUPPORTS |

CHAMBERS

| CHAMBER No. | CHANGE | DATE | BY | REMARKS |
|-------------|--------|------|----|---------|
| | | | | |



Toronto Engineering & Construction Services

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

| DESIGN | | DRAWN | | CHECKED | | CONTRACT No. X-X | |
|--------|-------|-------|------|----------------|-------------|------------------|--|
| | | | | | | | |
| SCALE | SCALE | DATE | DATE | DRAWING NUMBER | T-1110.11-2 | | |
| | | | | | | | |

| No. | DATE | REVISIONS | INITIAL | SIGNED |
|-----|------|-----------|---------|--------|
| | | | | |

Title
 Subtitle1
 Subtitle2

1200 mm HORIZONTAL BUTTERFLY VALVE CHAMBER (Position B)

CONTRACT No. X-X

SHEET X OF X