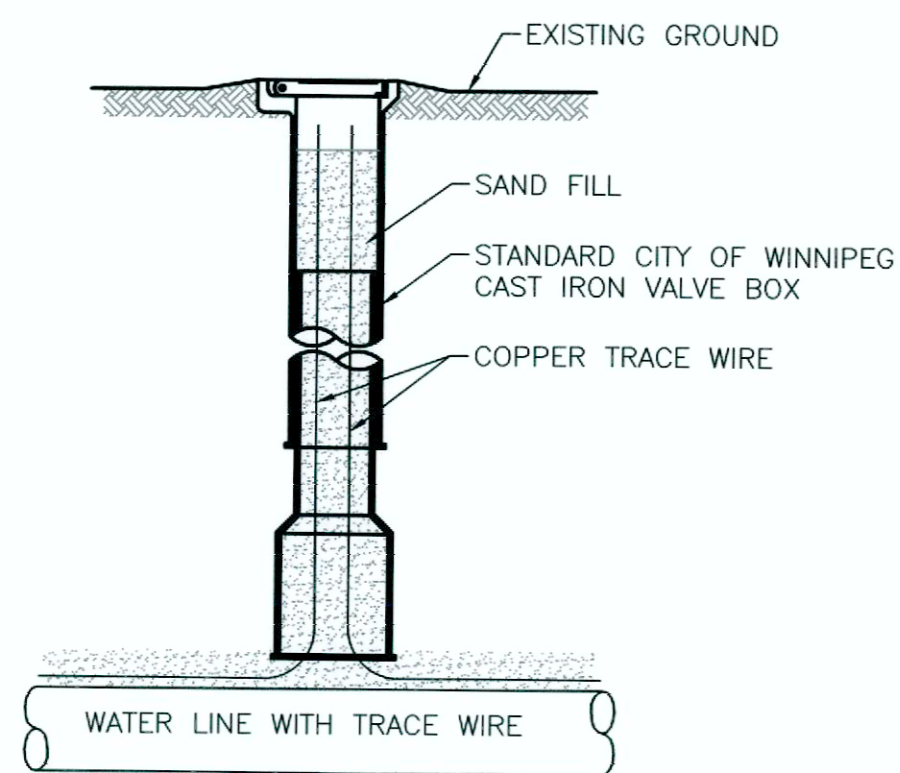


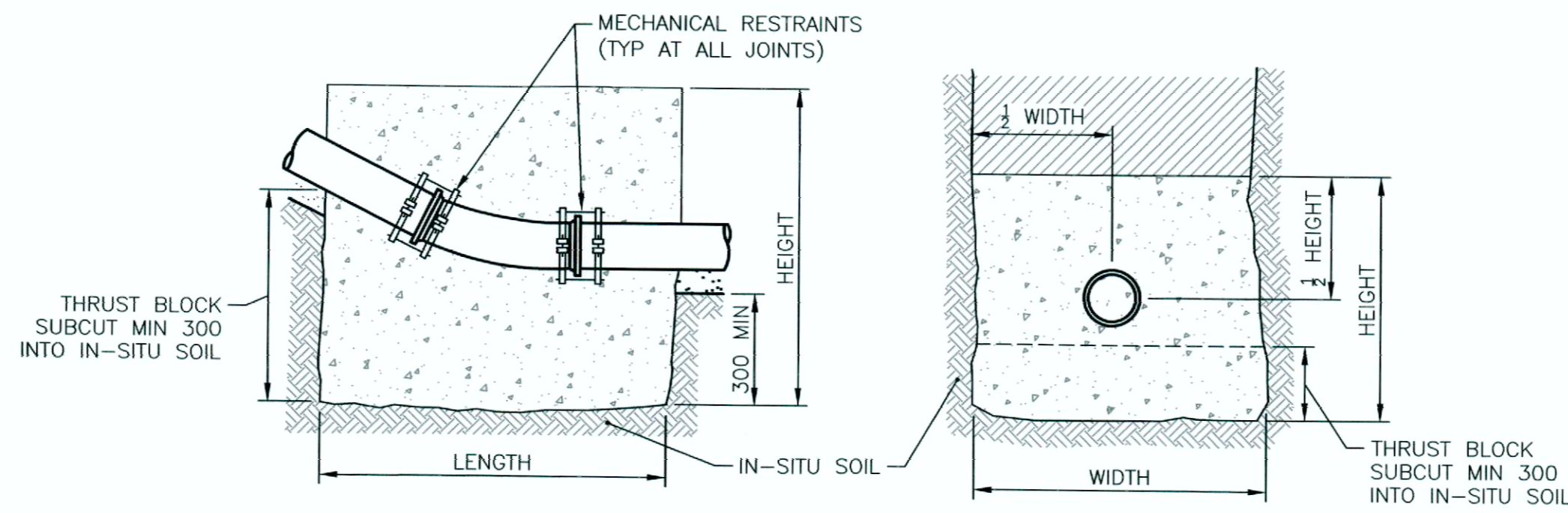
HORIZONTAL THRUST BLOCK DETAIL  
NTS

THRUST BLOCK DIMENSIONS - HORIZONTAL BEND				
PIPE DIAMETER (mm)	ANGLE OF BEND	BEARING AREA (m <sup>2</sup> )	HEIGHT (m)	WIDTH (m)
600	22.5	2.30	1.35	1.71
600	45	4.52	2.10	2.15
750	8.5	1.37	1.35	1.01
750	11.25	1.81	1.35	1.34
750	22.5	3.60	1.35	2.67
750	33	5.24	2.10	2.50
750	36	5.70	2.10	2.72
750	45	7.06	2.10	3.36

- NOTES:
- IF THE DIMENSIONS FOR A PARTICULAR SIDE OF THE THRUST BLOCK VARIES FROM THAT SHOWN, ADJUST REMAINING DIMENSIONS TO OBTAIN REQUIRED VOLUME.
  - REFER TO CITY OF WINNIPEG SD-004 FOR THRUST BLOCKS FOR PIPE SMALLER THAN 450ø.



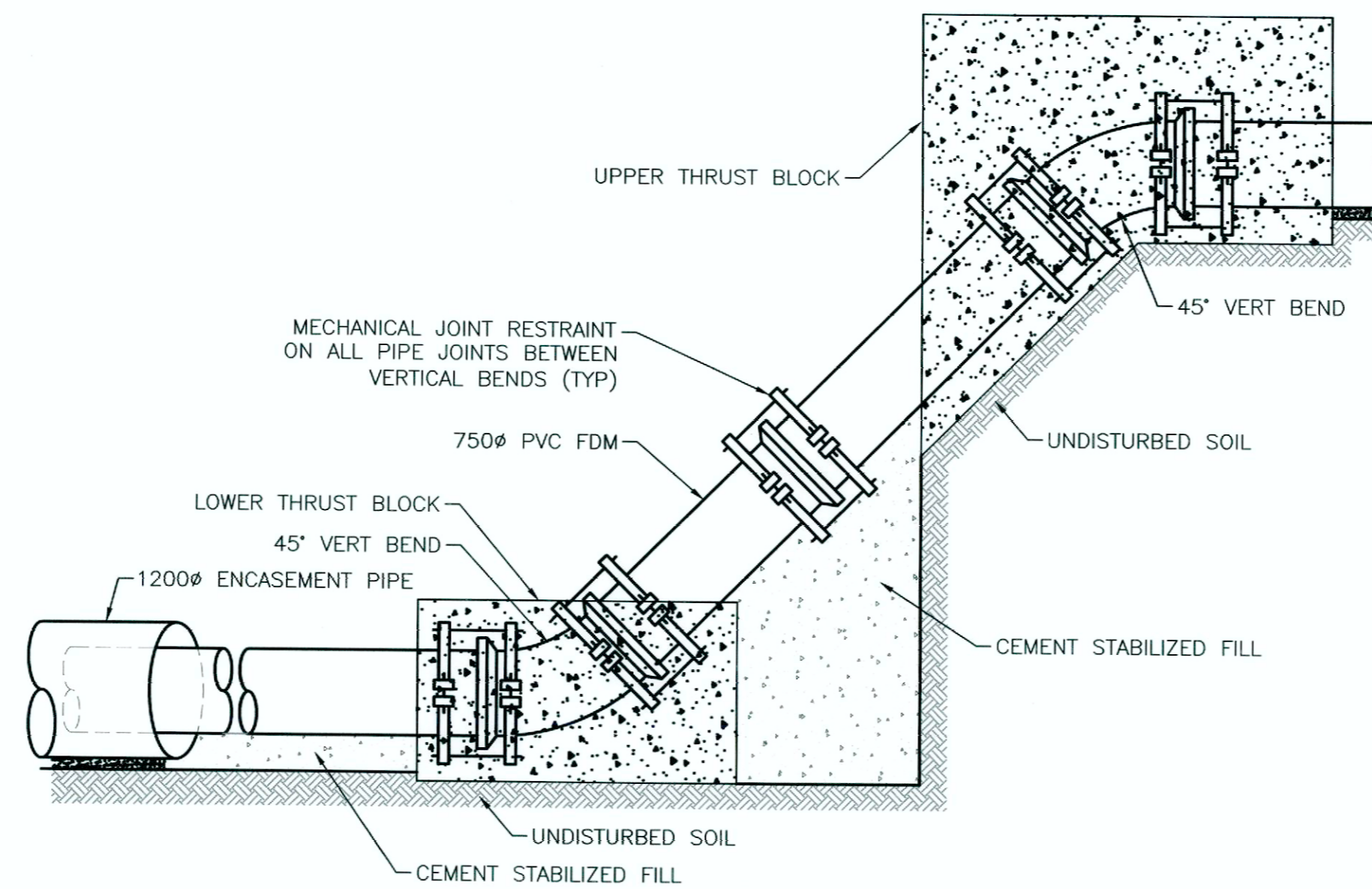
TRACE WIRE ACCESS PORT DETAIL  
NTS



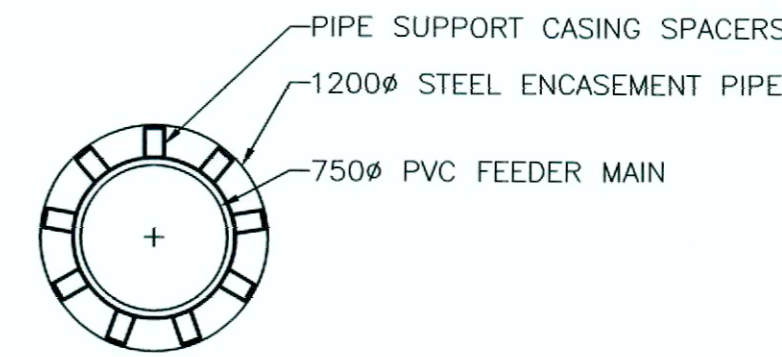
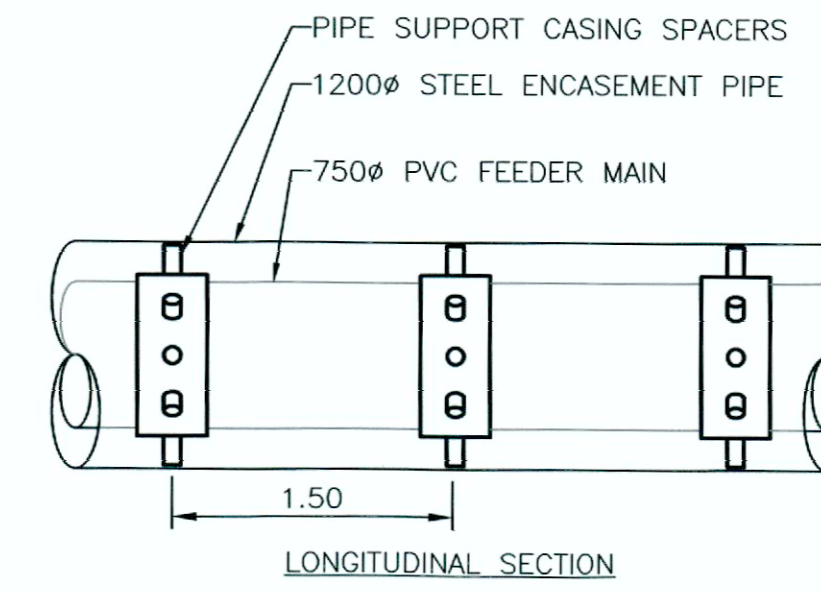
VERTICAL THRUST BLOCK DETAIL  
NTS

THRUST BLOCK DIMENSIONS - VERTICAL BEND					
PIPE DIAMETER (mm)	ANGLE OF BEND	VOLUME OF CONCRETE (m <sup>3</sup> )	DIMENSIONS FOR CONCRETE THRUST BLOCKS (m)		
			LENGTH	WIDTH	HEIGHT
750	UPPER 45	21.60	3.60	3.00	2.00
750	LOWER 45	11.30	2.80	2.50	1.60

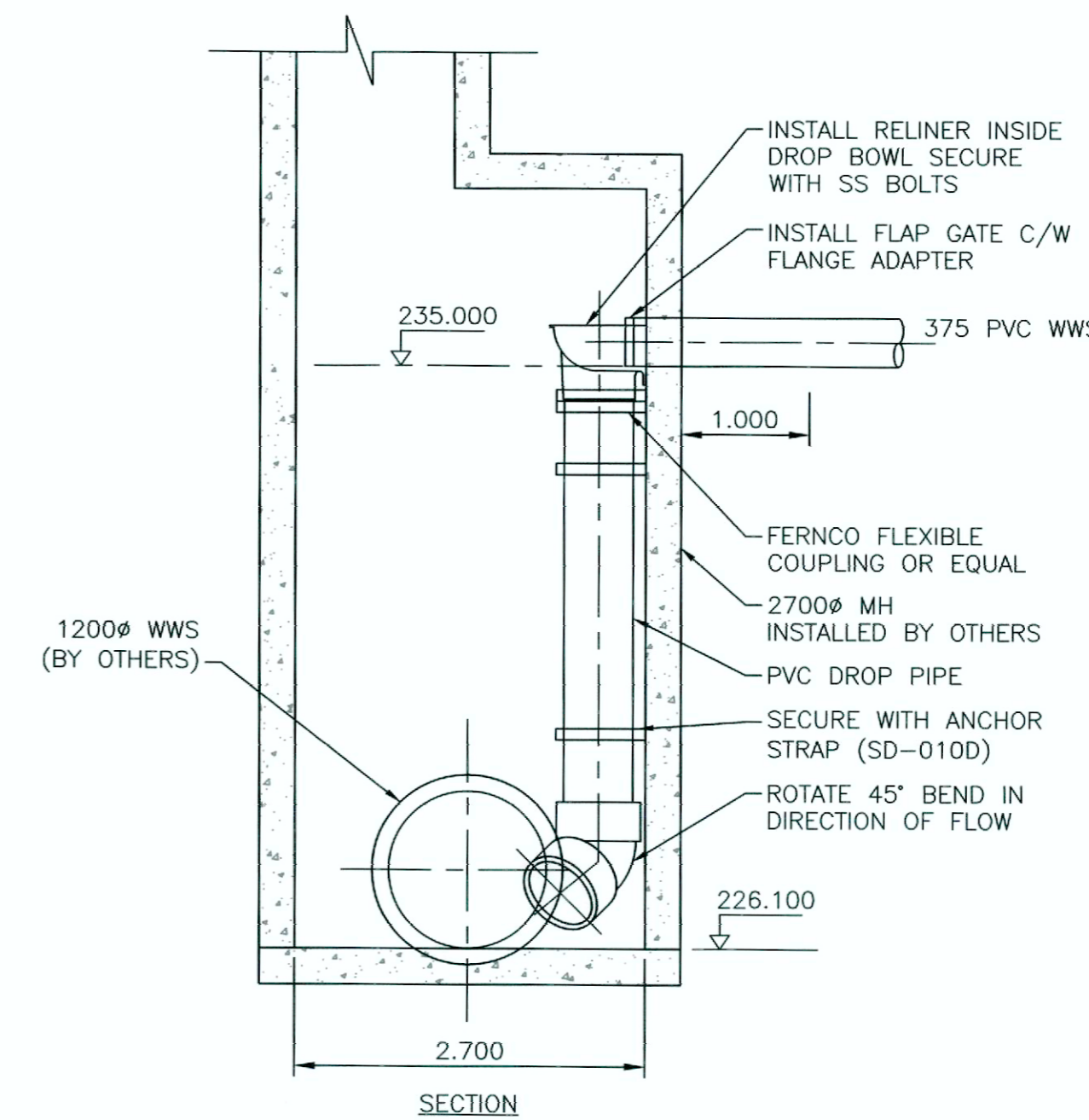
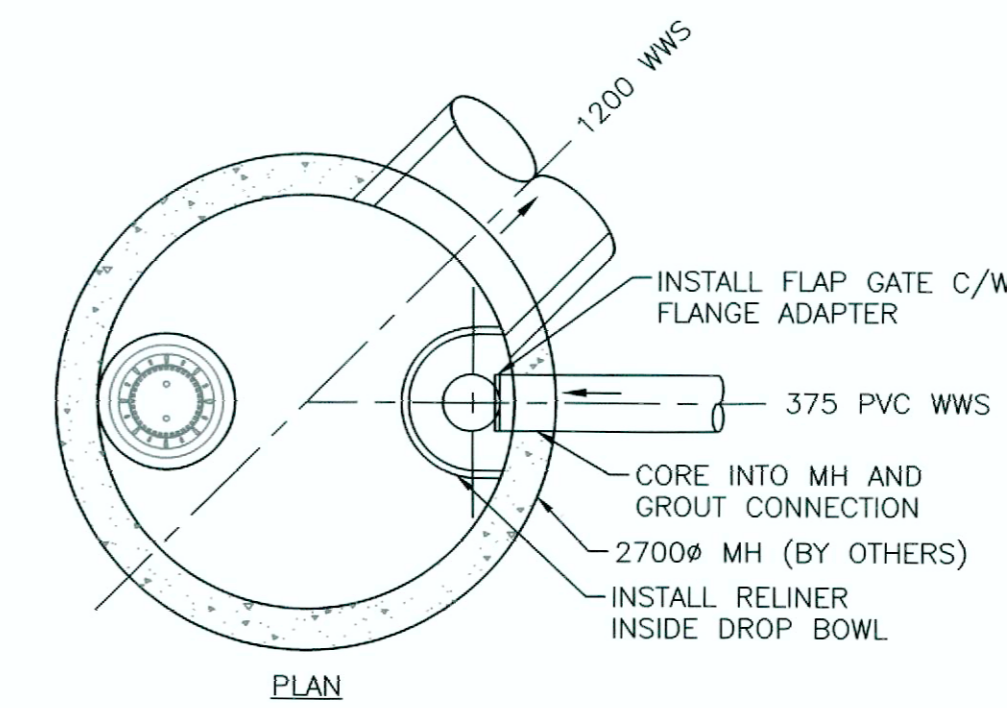
- NOTES:
- IF THE DIMENSIONS FOR A PARTICULAR SIDE OF THE THRUST BLOCK VARIES FROM THAT SHOWN, ADJUST REMAINING DIMENSIONS TO OBTAIN REQUIRED VOLUME.
  - REFER TO CITY OF WINNIPEG SD-004 FOR THRUST BLOCKS FOR PIPE SMALLER THAN 450ø.



45° BENDS WITH MECHANICAL JOINTS & CEMENT STABILIZED FILL DETAIL  
NTS



ENCASEMENT PIPE DETAIL  
1:15



PROVISIONAL - MH-04 CONNECTION DETAIL  
NTS

ISSUED FOR TENDER  
NOT TO BE USED FOR CONSTRUCTION

FOR INDEX SEE  
1-0798F-D002-001

METRIC  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

ENGINEERS  
GEOSCIENTISTS  
MANITOBA  
Certificate of Authorization  
KGS Group  
No. 245

**WARNING**  
IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:  
1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.  
2) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.  
SEE PROVINCIAL REGULATION 210/72 FOR DETAILS

**LOCATION APPROVED**  
UNDERGROUND STRUCTURES  
SUPV. U/G STRUCTURES COMMITTEE DATE  
NOTE:  
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

VERTICAL DATUM: CGVD28 (HT2.0 Geoid)  
HORIZONTAL DATUM: NAD83 (June 1990), Zone 14

NO.	REVISIONS	DATE (YYYY/MM/DD)	BY
1	ISSUED WITH ADDENDUM 2	24/05/13	GTH
0	ISSUED FOR TENDER	24/04/26	GTH

**KGS GROUP**  
DESIGNED BY: GTH  
CHECKED BY: KBO  
DRAWN BY: GTH  
APPROVED BY: KBO  
SCALE: HORIZONTAL AS NOTED  
VERTICAL  
DATE: 2024 05 13  
PLOT DATE: 2024 05 13

ENGINEER'S SEAL  
PROVINCE OF MANITOBA  
HEINRICHS  
Member  
38162  
REGISTERED PROFESSIONAL ENGINEER  
CONSULTANT DRAWING NUMBER  
C-4A-125

THE CITY OF WINNIPEG  
WATER AND WASTE DEPARTMENT  
ENGINEERING DIVISION  
CENTREPORT SOUTH REGIONAL WATER AND WASTEWATER  
SERVICING - PHASE 1A CONTRACT 4A - FEEDER MAIN  
MISCELLANEOUS PIPE DETAILS  
SHEET 28 OF 34  
CITY DRAWING NUMBER  
1-0798F-C0021-001