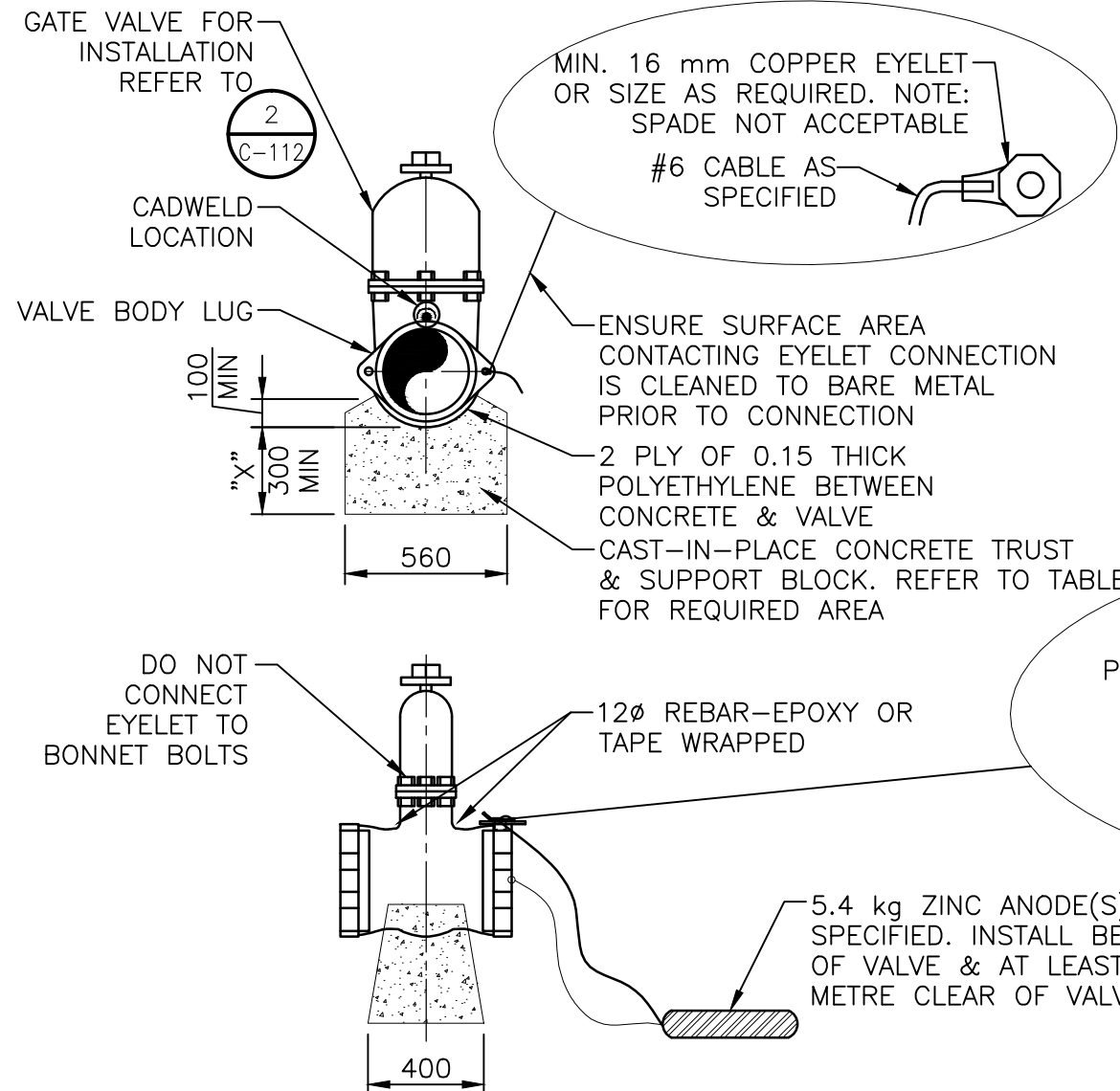
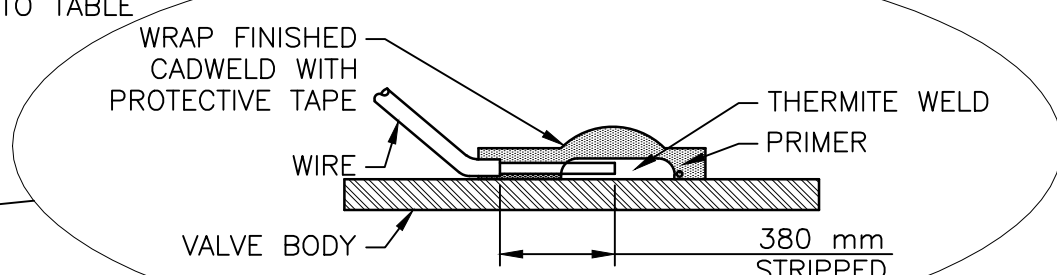


P:\2008\352\06_Water_Dist_Serv\Working_Dwg\100_Civil\110_STANDARD_DETAILS.dwg
DATE: 03/07/2014 11:18:52 AM, CHERRY, GUY



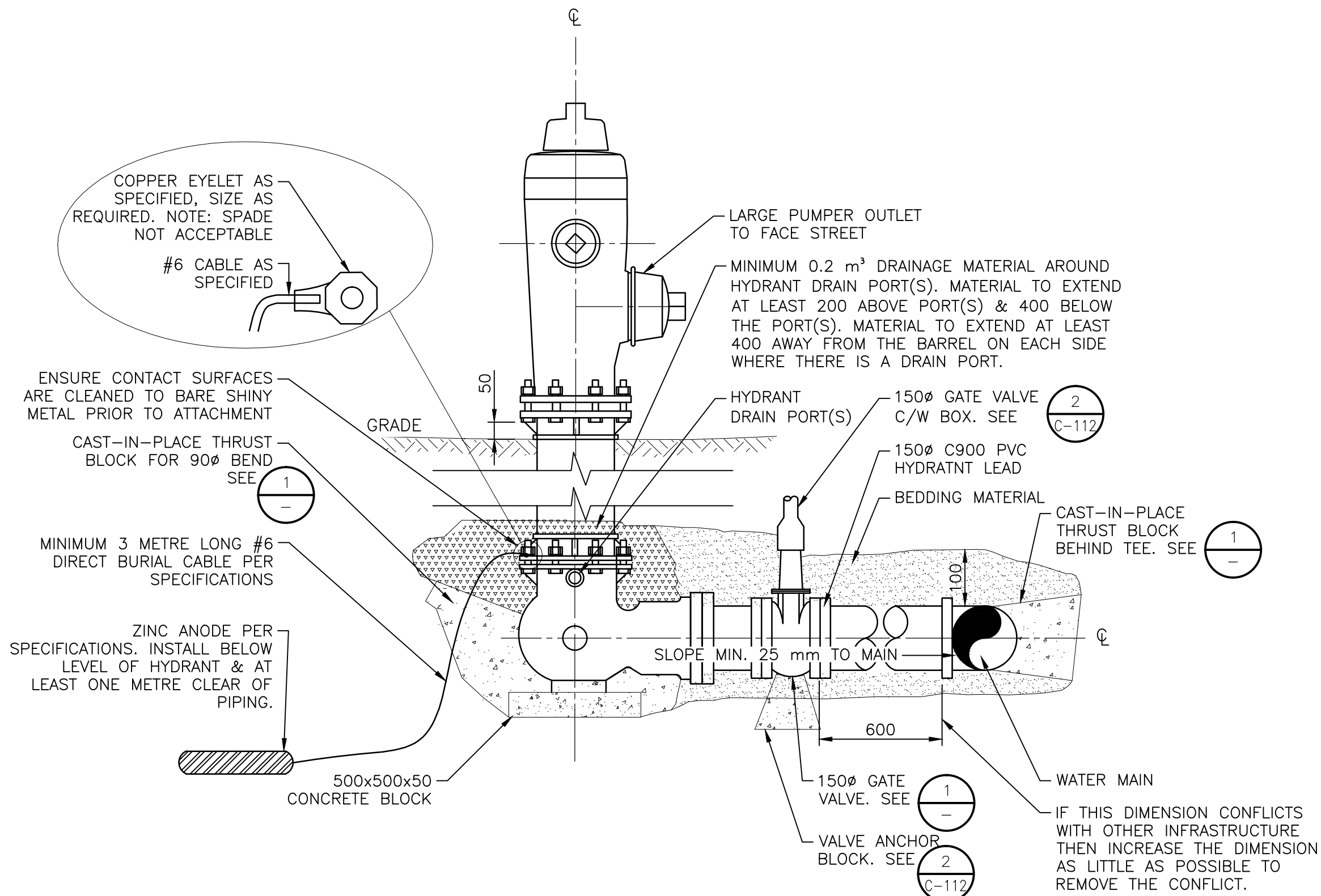
VALVE SIZE (mm)	REQUIRED AREA - SQ. M "x" "x" "y" = AREA 1000
100	0.09
150	0.18
200	0.31
250	0.47
300	0.67
350	0.97
400	1.25
450	1.56
500	1.93
600	2.73
750	4.20
900	6.03



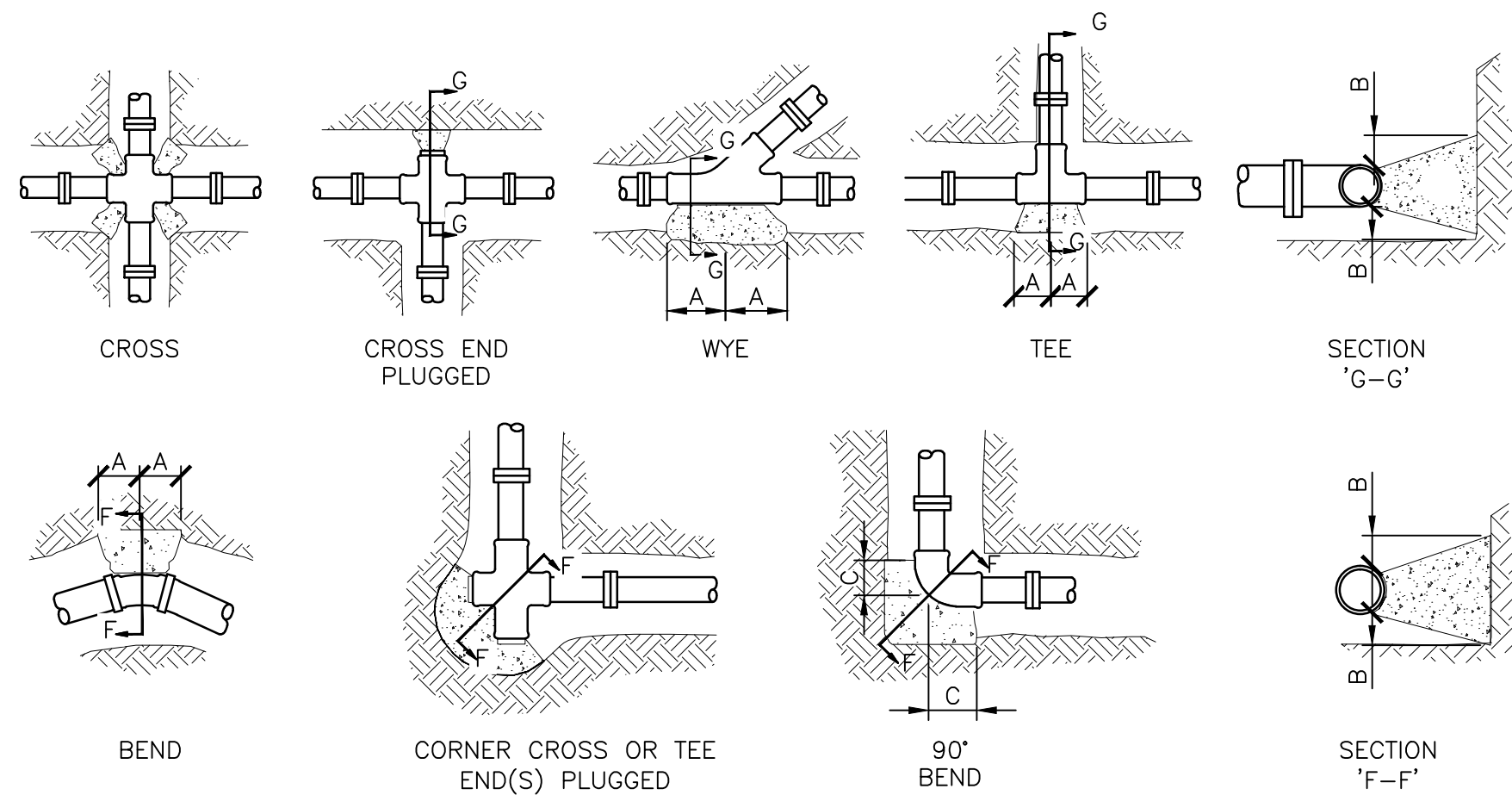
NOTES:

- VALVES 300 mm AND SMALLER REQUIRE A SINGLE ANODE. VALVES 350 mm AND LARGER REQUIRE TWO (2) ANODES WHICH MUST BE LOCATED AS DESCRIBED AND ALSO SPACED AT LEAST ONE METRE APART.
- ANODE LEAD ATTACHMENT TO THE VALVE MAY BE MADE BY EITHER EYELET OR CADWELD. BOTH OPTIONS ARE DEPICTED ON THIS DRAWING.
- FOR VALVES 350 mm AND LARGER THE ANODE LEADS MAY BE CONNECTED TO A SINGLE POINT IF EYELET CONNECTION IS USED. IF CADWELD IS USED THEN A CADWELD CONNECTION MUST BE PROVIDED FOR EACH LEAD.
- DIMENSIONS OF BLOCK AND REQUIRED BEARING AREA ARE BASED UPON A MAXIMUM TEST/OPERATING PRESSURE OF 690 kPa (100 psi) AGAINST SOIL WHICH HAS A SAFE LOAD BEARING CAPACITY OF 70 kPa (10 psi) MINIMUM. FOR ANY CONDITION WHICH VARIES FROM THESE, CONFIRM REQUIRED AREA WITH THE ENGINEER.
- FOR CONCRETE REQUIREMENTS REFER TO SPECIFICATIONS SECTION 03 30 00.01 - CAST-IN-PLACE CONCRETE
- ANY VALVE WHICH HAS EITHER 'TYTON' OR 'MJ' STYLE END CONNECTIONS MUST BE ANCHORED AS SHOWN. THIS INCLUDES GATE VALVES AND BUTTERFLY VALVES.
- ENSURE SURFACE AREA OF CADWELD IS CLEANED TO BARE METAL AND DRY PRIOR TO CADWELDING.

1 DETAIL
VALVE N.T.S.



2 DETAIL
HYDRANT N.T.S.

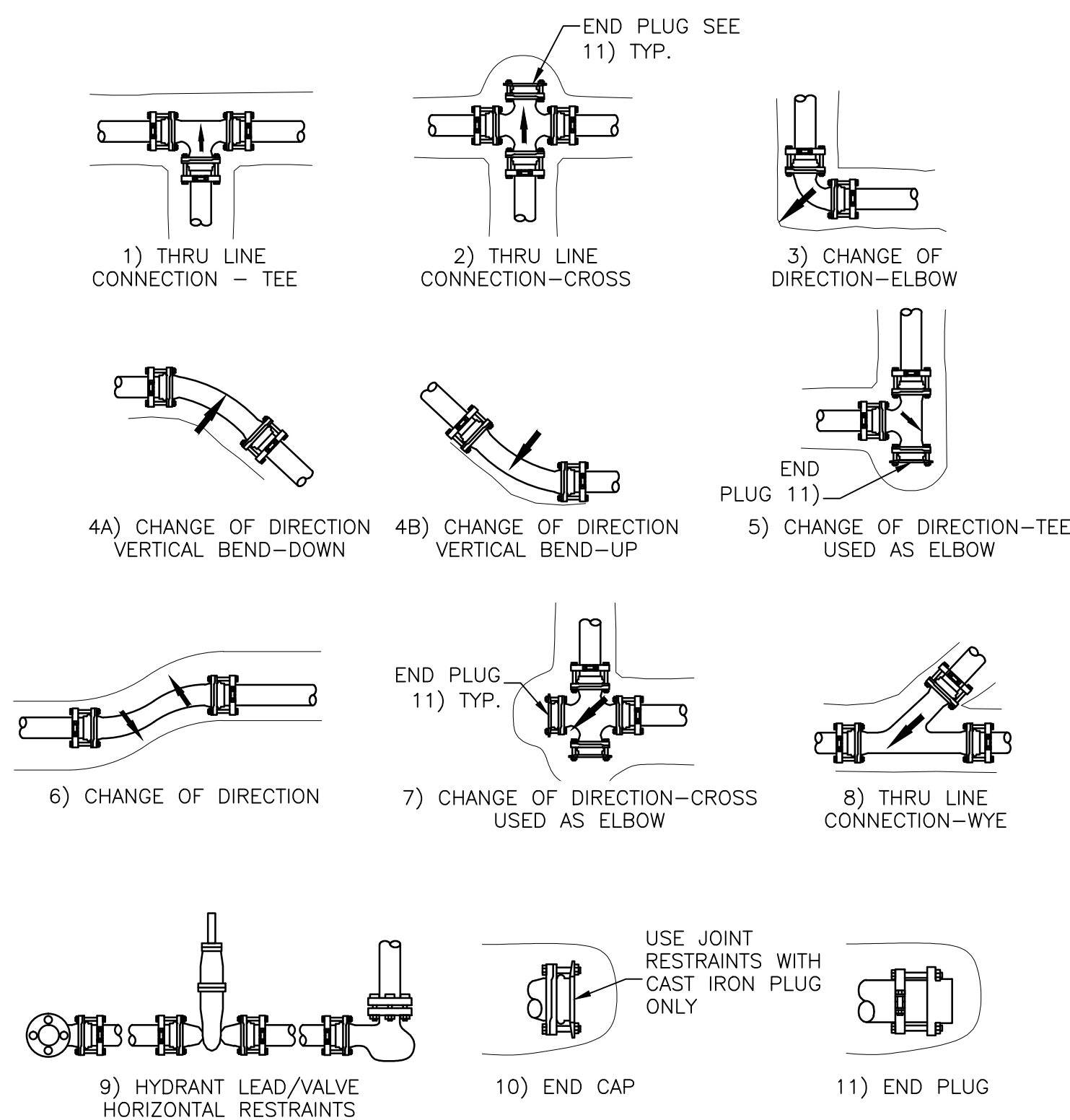


NOTES:

- DIMENSIONS OF THRUST BLOCKS AND REQUIRED BEARING AREAS SHOWN ARE BASED ON A MAXIMUM TEST/OPERATING PRESSURE OF 689 kPa (100 psi) AGAINST SOIL WHICH HAS A SAFE LOAD BEARING CAPACITY OF 70 kPa (10 psi) MINIMUM. FOR ANY CONDITIONS WHICH VARY FROM THESE, THE DIMENSIONS/AREAS MUST BE ADJUSTED ACCORDINGLY
- REFER TO SPECIFICATIONS SECTION 03 30 00.01 - CAST-IN-PLACE CONCRETE FOR CONCRETE REQUIREMENTS

PIPE Ø (mm)	90° BEND			45° BEND			TEE, PLUGS, WYES			22.5° & 11.25° BENDS		
	B (mm)	C (mm)	AREA (sq.m)	A (mm)	B (mm)	AREA (sq.m)	A (mm)	B (mm)	AREA (sq.m)	A (mm)	B (mm)	AREA (sq.m)
100	170	200	0.16	160	110	0.09	190	140	0.11	110	60	0.04
150	250	300	0.33	240	160	0.18	270	190	0.23	160	90	0.08
200	320	350	0.56	310	210	0.30	350	250	0.40	210	110	0.14
250	390	400	0.85	380	250	0.46	430	310	0.60	260	140	0.22
300	460	450	1.20	450	300	0.65	520	370	0.85	310	160	0.31

3 DETAIL
THRUST BLOCK N.T.S.



NOTES:

- RESTRAINED LENGTHS IN TABLE ARE FOR MAXIMUM TEST PRESSURE OF 690 kPa (100 psi) WITH PIPE FULLY BEDDED IN GRANULAR MATERIAL. IF SITE CONDITIONS VARY FROM THESE - CONTACT THE ENGINEER.
- THE FIRST NUMBER IN THIS TABLE IS THE RECOMMENDED RESTRAINED LENGTH OF PIPE ON EACH SIDE OF A VERTICAL BEND WHERE THE THRUST IS ACTING GENERALLY UPWARDS TOWARDS THE GROUND SURFACE. SEE FIGURE 4A.
- THE SECOND NUMBER IN THIS TABLE IS THE RECOMMENDED RESTRAINED LENGTH OF PIPE ON EACH SIDE OF A VERTICAL BEND WHERE THE THRUST IS ACTING GENERALLY DOWNWARDS AWAY FROM THE GROUND SURFACE. SEE FIGURE 4B.
- WHERE RECOMMENDED RESTRAINTS LENGTHS OVERLAP BETWEEN FITTINGS RESTRAIN ALL JOINTS BETWEEN THEM.

	NOMINAL PIPE SIZE				
TYPE	100	150	200	250	300
45° VERTICAL OFFSET	1.2m/0.6m	1.8m/0.9m	2.4m/1.2m	2.7m/1.5m	3.4m/1.8m
22.5° VERTICAL OFFSET	0.6m/0.3m	0.9m/0.6m	1.2m/0.6m	1.5m/0.9m	1.5m/0.9m

	NOMINAL PIPE SIZE				
TYPE	100	150	200	250	300
90° BEND	1.5 m	2.1 m	2.7 m	3.4 m	4.0 m
45° BEND	0.6 m	0.9 m	1.2 m	1.5 m	1.8 m
22.5° BEND	0.3 m	0.6 m	0.6 m	0.6 m	0.9 m
11.25° BEND	0.3 m	0.3 m	0.3 m	0.3 m	0.6 m
SIZE ON SIZE TEE	Br. only	Br. only	Br. only	Br. only	Br. only
PLUGS & VALVES	3.0 m	4.3 m	5.5 m	6.7 m	7.9 m

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS AND DECIMALS THERE OF, UNLESS SPECIFIED OTHERWISE.

4 DETAIL
RESTRAINED LENGTH N.T.S.

PRELIMINARY NOT FOR CONSTRUCTION

ASSOCIATION OF PROFESSIONAL ENGINEERS
AND GEOSCIENTISTS OF SASKATCHEWAN
CERTIFICATE OF AUTHORIZATION
ASSOCIATED ENGINEERING (SASK.) LTD.

NUMBER
C116
Discipline Sask. Reg. No. Signature

Municipal 09862



DO NOT SCALE DRAWINGS

0	ISSUED FOR TENDER	14/07/03
Revision/Revision	Description/Description	Date/Date

Client/client

Project title/Titre du projet

CORE WATER SYSTEM UPGRADES (PHASE I)

Approved by/Approuvé par
C. WIHLIDAL

Designed by/Conçu par
C. REESE

Drawn by/Dessiné par
C. GEIGER

PWSC Project Manager/Administrateur de Projets TPSC
L. OATWAY

PWSC, Architectural and Engineering Resources Manager/
Ressources Architectural et de Directeur d'Ingénierie, TPSC

Client/client
PUBLIC WORKS & GOVERNMENT SERVICES CANADA

Drawing title/Titre du dessin

STANDARD DETAILS

Project No./No. du projet
R. 015492.001

Sheet/Feuille
C-110

Revision no./La Révision no.
0

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