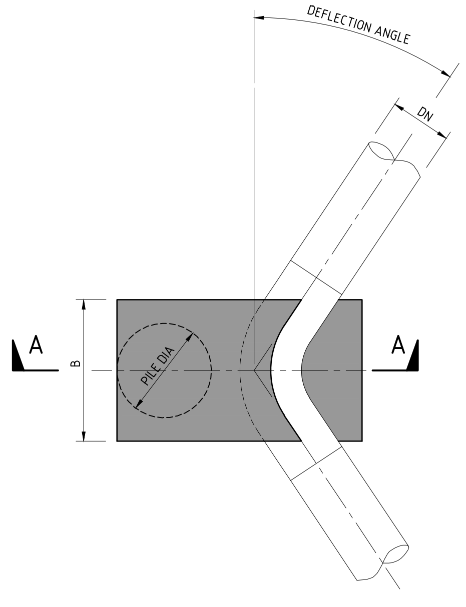

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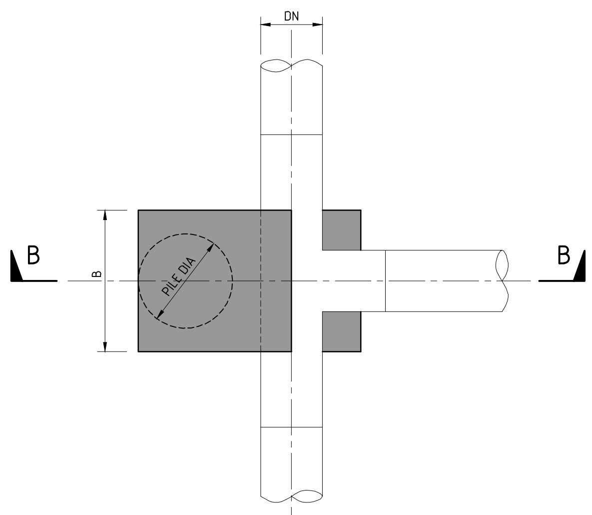

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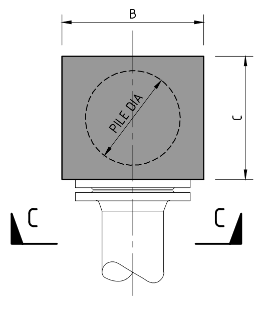

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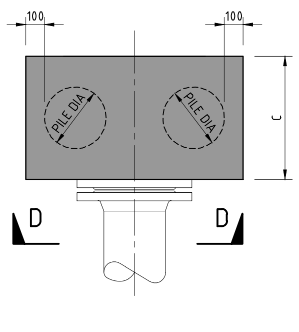

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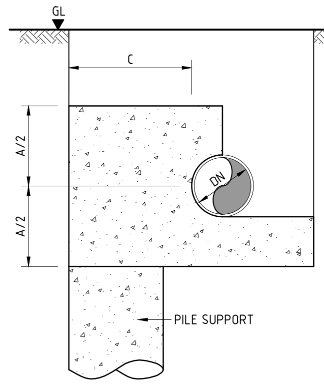
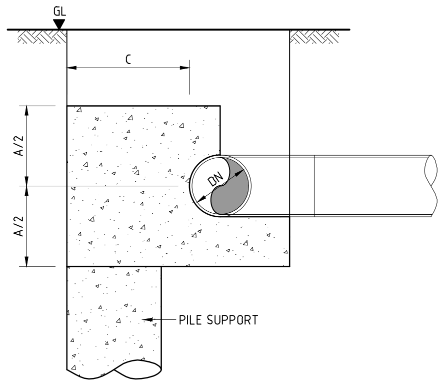
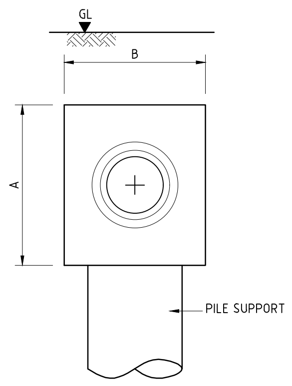


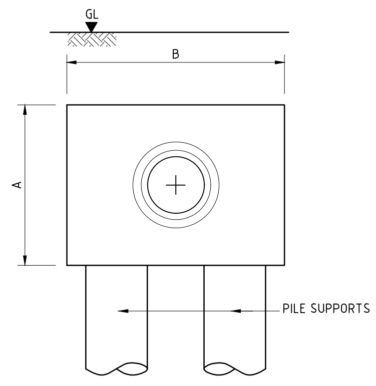
SECTION A-A TYPICAL BEND
(HORIZONTAL THRUST)
SCALE 1:20



SECTION B-B TYPICAL TEE
(HORIZONTAL THRUST)
SCALE 1:20



SECTION C - C

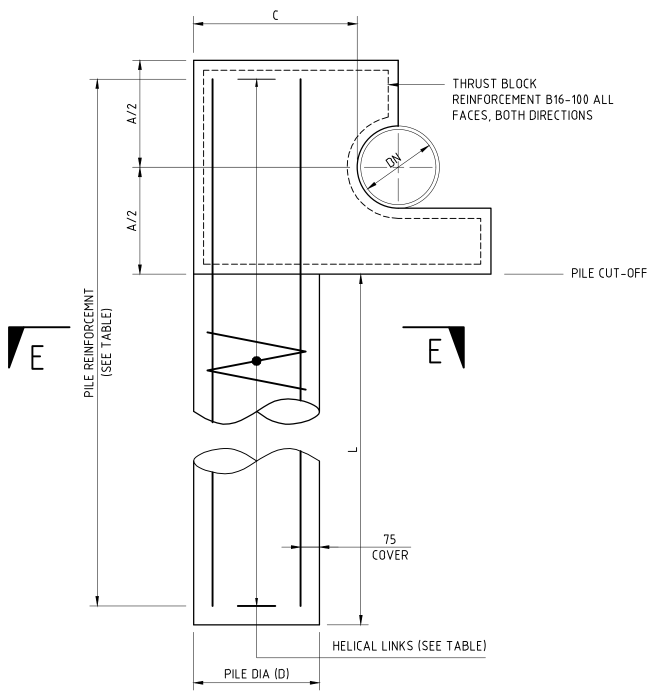


SECTION D - D
TWO PILE OPTION

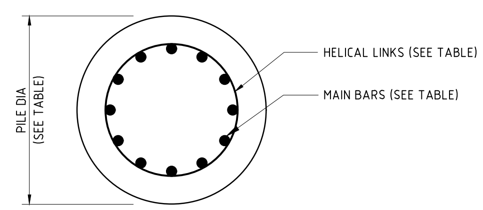
ELEVATION TYPICAL BLANK END
(HORIZONTAL THRUST)
SCALE 1:20

PIPE DIA	DIMENSION (mm)			DEFLECTION ANGLE	PILE DIA	PILE LENGTH	PILE REINFORCEMENT	
DN (mm)	A	B	C	FOR BENDS	mm	(L) mm	MAIN BARS	LINKS
100	350	500	450	ALL BENDS + TEE + BLANK END	300	2300	5T16	T10-200
150	500	550	450	ALL BENDS + TEE + BLANK END	300	3400	5T25	T12-200
200	600	650	550	ALL BENDS + TEE + BLANK END	400	3900	5T25	T12-200
250	700	700	550	ALL BENDS + TEE + BLANK END	400	4900	12T25 OR 7T32	T12-200
300	850	750	650	ALL BENDS + TEE + BLANK END	500	5200	12T25 OR 8T32	T12-200
350	950	850	750	ALL BENDS + TEE + BLANK END	600	5600	13T25 OR 8T32	T12-200
400	1000	900	750	11.25° TO 45° INCLUSIVE	600	4800	8T25	T12-200
400	1000	900	750	56.25° TO 90° + TEE + BLANK END	600	6300	14T32	T12-200
400	1000	1700	750	56.25° TO 90° + TEE + BLANK END	2x600	4600	8T25	T12-200
450	1100	1000	750	11.25° TO 45° INCLUSIVE	600	5300	12T25 OR 8T32	T12-200
450	1100	1800	750	56.25° TO 90° + TEE + BLANK END	2x600	5200	11T25 OR 7T32	T12-200
500	1200	1100	750	11.25° TO 45° INCLUSIVE	600	5900	11T32	T12-200
500	1200	1900	750	11.25° TO 45° INCLUSIVE	2x600	4300	6T25	T12-200
500	1200	1900	750	56.25° TO 90° + TEE & BLANK END	2x600	5700	15T25 OR 9T32	T12-200

NOTE: ALL THRUST BLOCKS ARE DESIGNED FOR A MAXIMUM TEST PRESSURE OF 8 BAR (QCS SECTION 8-4.6.3.1), & AN ALLOWABLE GROUND BEARING PRESSURE OF 200Kn/m^2 . IF TEST PRESSURE IS HIGHER OR ALLOWABLE GROUND BEARING PRESSURE LOWER THEN THIS DRAWING IS NOT APPLICABLE.



PILE REINFORCEMENT DETAIL
SCALE 1:10



SECTION E - E
SCALE 1:10

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT Q.C.S. UNLESS OTHERWISE AGREED WITH THE ENGINEER.
3. ALL CONCRETE TO BE GRADE SRC 20 MANUFACTURED FROM SULPHATE RESISTING CEMENT.
4. MINIMUM COVER TO ALL REINFORCEMENT TO BE 75mm.
5. SPIGOT AND SOCKET JOINTS MUST NOT BE CAST INTO CONCRETE.
6. THUST BLOCKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ABOVE DETAILS AND THE QCS SECTION 8 PART 4.5.5.
7. PIPES AND FITTINGS SHALL BE COVERED WITH PROTECTIVE MEMBRANE OF PVC, RUBBER OR FELT.
8. CONCRETE ENCASEMENT TO ALLOW FOR FUTURE REMOVAL OF PIPE FITTING.
9. IN DEVELOPED AREAS WHERE EXCAVATION ADJACENT TO PIPE BENDS ARE POSSIBLE, THE USE OF RESTRICTED JOINT PIPE OR PILE SUPPORTED THRUST BLOCKING SHOULD BE USED FOR PIPE RESTRAINT DESIGN.
10. RESTRAINED JOINTS SHOULD NOT BE USED WHERE THERE IS A RISK OF EXCAVATION ON OR AROUND THE PIPELINE WHILE IN SERVICE.
11. THRUST BLOCK SHOWN FOR DI PIPES. DETAILS FOR OTHER MATERIALS, EG, GRP,HDPE, PVC-U SIMILAR BUT WITHOUT NEED FOR ROCKER PIPES.
12. THE MINIMUM TEST PRESSURE FOR TSE PIPELINES SHALL BE IN ACCORDANCE WITH PWA DESIGN MANUAL VOLUME 4, CLAUSE 2.7.3.

LEGEND:

GL GROUND LEVEL

Rev.	Date	Revision Details	Appd.
3	APR 19	ISSUED FOR USE	
2	01 MAR 19	REVALIDATED ISSUE	
1	23NOV15	ISSUED FOR USE	
0	15SEP13	ISSUED FOR USE	

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PA
PROJECTS AFFAIRS

QCS Section:
Section 8 - Drainage Works
Part 4 - Pipeline Installation

Drawing Title:
PILE SUPPORTED THRUST BLOCK DETAILS (MAX. TEST PRESSURE 8 BAR)

Approved:
Sheet No: 1 OF 1
Date: APRIL 2019
Scale: AS SHOWN
Drawing Number: SD 8-4-102
Revision: 3