

DO NOT SCALE - IF IN DOUBT, ASK

NOTES:

1. GENERAL

- 1.1. WATER LINE TO BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT PARTS OF SANS 1200L AND SANS 1200 L.
- 1.2. ALL TRENCHES ARE TO BE IN ACCORDANCE WITH SANS 1200 DB
- 1.3. ALL PIPE BEDDING IS TO BE IN ACCORDANCE WITH SANS 1200LB.

2. VALVES

- 2.1. GATE VALVES SHALL BE CAST IRON FLANGED RESILIENT SEAL TYPE, COMPLYING TO SANS 664 CLASS 16.
- 2.2. GATE VALVES SHALL BE CLOCKWISE CLOSING AND SHALL HAVE RISING SPINDLES.

3. FLANGES

- 3.1. ALL FLANGES SHALL COMPLY WITH SANS 1123 TABLE 15.
- 3.2. THE JOINTING MATERIAL USED ON FLANGE JOINTS SHALL BE A 3mm NEOPRENE RUBBER INSERTION.
- 3.3. FULL FACE GASKETS SHALL BE USED ON ALL JOINTS.
- 3.4. ALL BURIED FLANGED JOINTS SHALL BE COVERED WITH DENSO MASTIC AND WRAPPED WITH DENSO TAPE.
- 3.5. ANY BOLTS, NUTS, WASHERS & BACK UP RINGS USED ON FLANGES ARE TO BE STAINLESS STEEL GRADE 316 STAINLESS STEEL TO ASTM 240

4. FASTENERS

- 4.1. BOLTS, NUTS AND WASHERS USED ON PIPE SUPPORT FRAMES SHALL BE COATED WITH A ZINC COATING APPLIED BY THERMO DIFFUSION COATING (SHERARDIZING) IN ACCORDANCE WITH BS EN 13811:2003.

5. SUPPORT BRACKETS

- 5.1. ALL SUPPORT BRACKETS SHALL BE COATED WITH A ZINC COATING APPLIED BY THERMO DIFFUSION COATING (SHERARDIZING) IN ACCORDANCE WITH BS EN 13811:2003.

6. HDPE PIPES

- 6.1. HDPE PIPES ARE TO BE PE 100 CLASS 16 WITH A STANDARD DIAMETER RATIO OF 11 IN ACCORDANCE WITH ISO 4427.
- 6.2. HDPE PIPES ARE TO BE JOINED TOGETHER BY ELECTROFUSION COUPLING IN ACCORDANCE WITH SANS 10286 PART 2.
- 6.3. COUPLINGS MAY NOT HAVE A PRESSURE RATING LOWER THAN THAT OF THE PIPES BEING JOINED TOGETHER.

7. PRECAST PROTECTION SLABS

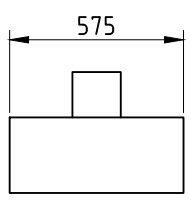
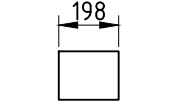
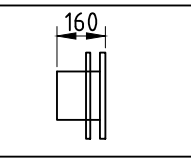
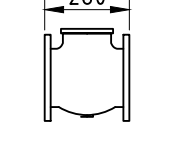
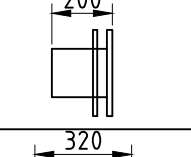
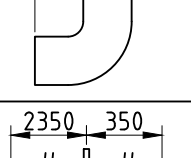
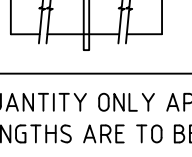
- 7.1. PRECAST PROTECTION SLABS ARE TO BE CONSTRUCTED WITH 35MPa CONCRETE.
- 7.2. PROTECTION SLABS ARE TO BE REINFORCED WITH ONE ROW OF Y8 WELDED MESH REINFORCING WITH A PITCH OF 200mm.
- 7.3. THE COVER TO REINFORCEMENT IS TO BE 60mm.

8. CONCRETE ENCASEMENT

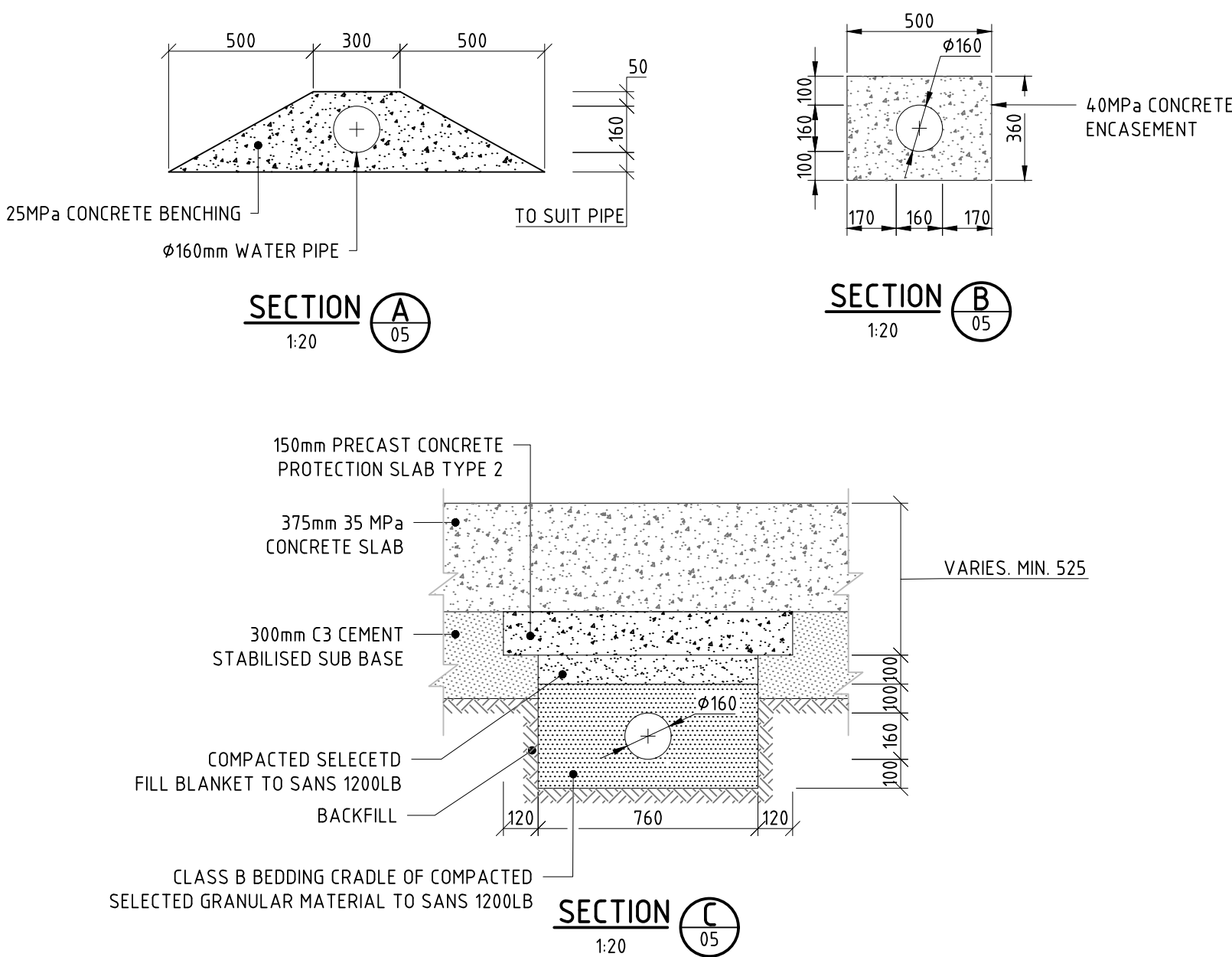
- 8.1. CONCRETE ENCASEMENT IS TO BE CONSTRUCTED WITH 40MPa CONCRETE.

9. GROUT

- 9.1. GROUT SHALL BE 40MPa NON SHRINK GROUT WITH A MAXIMUM AGGREGATE SIZE OF 10mm.

MARK	COMPONENT	NO. OF	DESCRIPTION
B01		1	ø250x160x250mm HDPE REDUCING TEE.
B02		2 **	ø160mm HDPE ELECTROFUSION COUPLING.
B03		1	ø160mm HDPE SPOOL PIECE 160mm LONG WITH ø160mm SLIP ON METAL BACK UP RING. ONE END FLANGED. ONE END PLAIN.
B04		1	ø150mm CAST IRON STRAIGHT THROUGH GATE VALVE.
B05		1	ø160mm HDPE SPOOL PIECE 200mm LONG WITH ø160mm SLIP ON METAL BACK UP RING. ONE END FLANGED. ONE END PLAIN.
B06		1	ø160mm HDPE 90° ELBOW ELECTRO FUSION COUPLING.
B07		1	ø160mm HDPE PUDDLE PIPE. 2700 LONG. BOTH ENDS PLAIN.

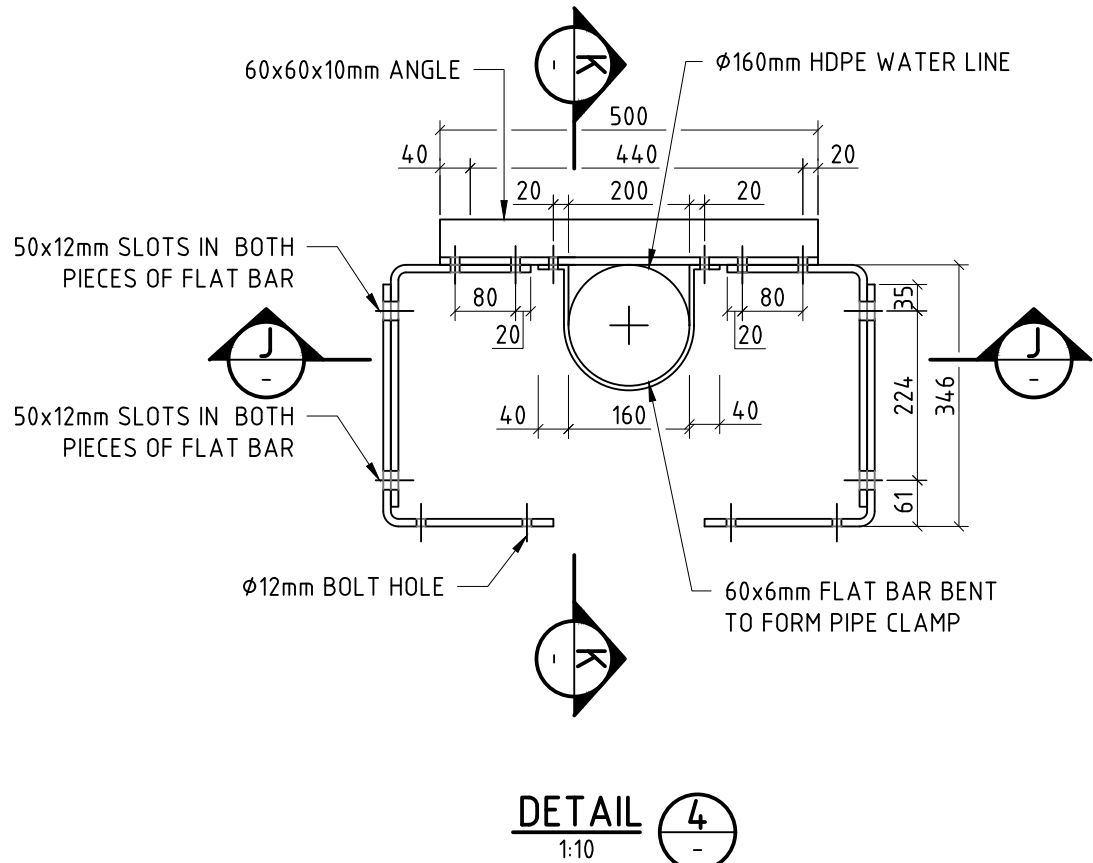
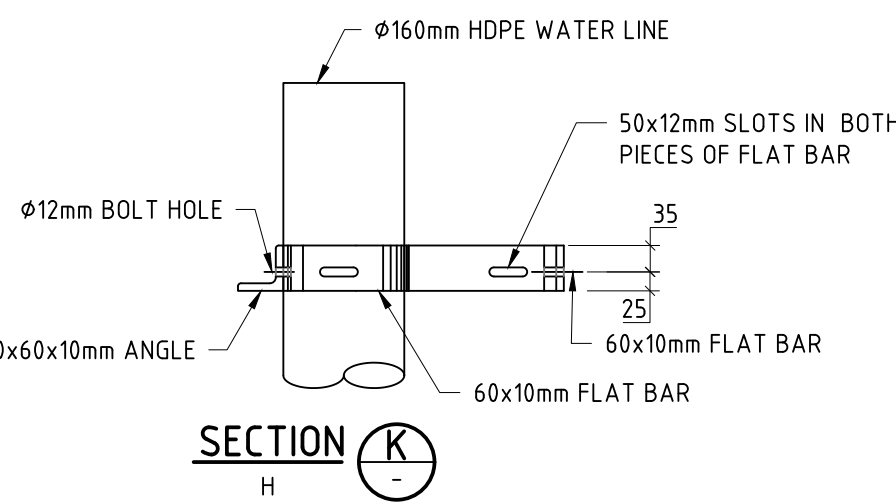
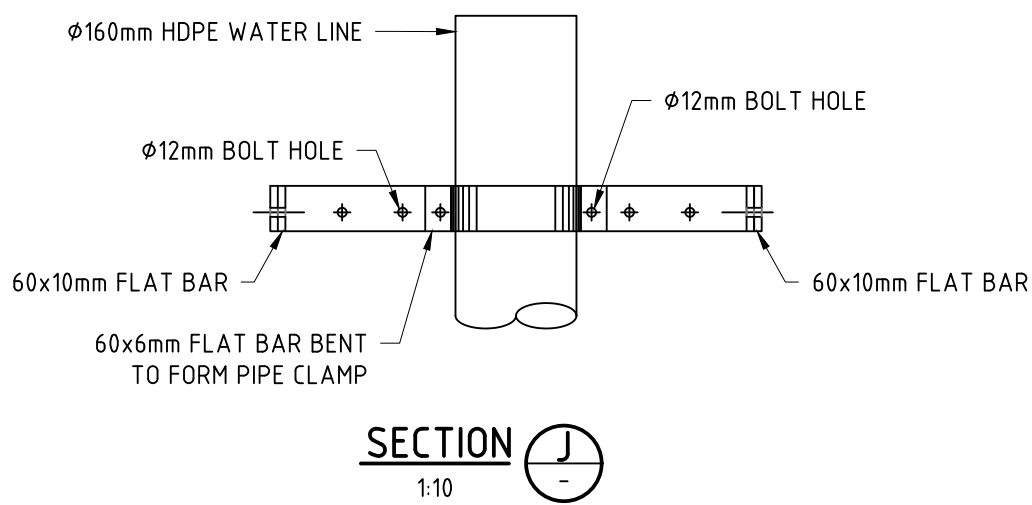
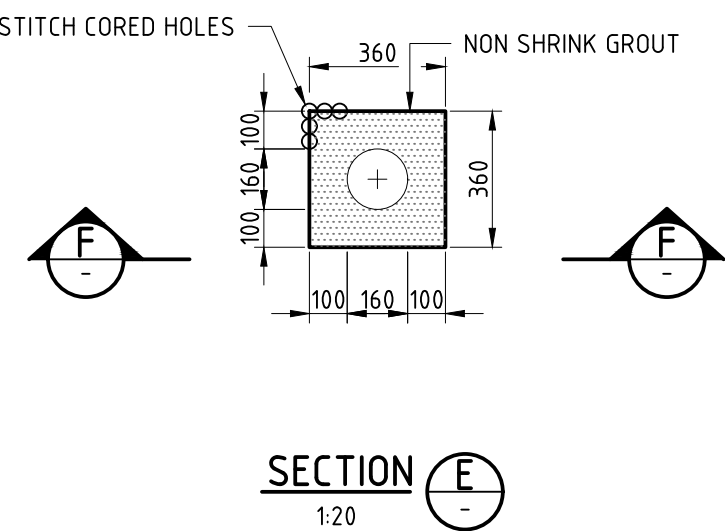
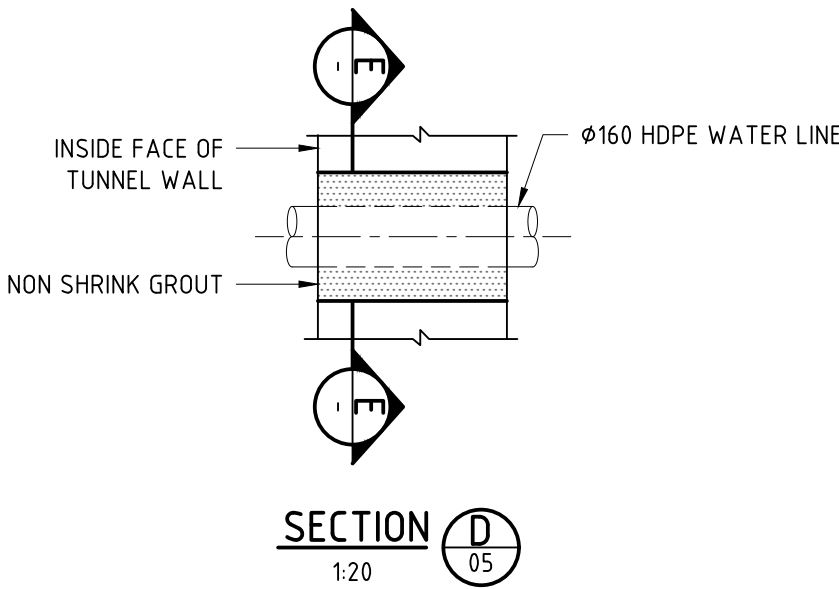
** QUANTITY ONLY APPLIES TO COUPLINGS FOR SPECIAL FITTINGS ONLY. STANDARD PIPE LENGTHS ARE TO BE SUPPLIED COMPLETE WITH COUPLINGS.



PRECAST PROTECTION SLABS DIMENSIONS				
TYPE 2	LENGTH (mm)	WIDTH (mm)	DEPTH (mm)	NO OFF
	1500	1000	150	55

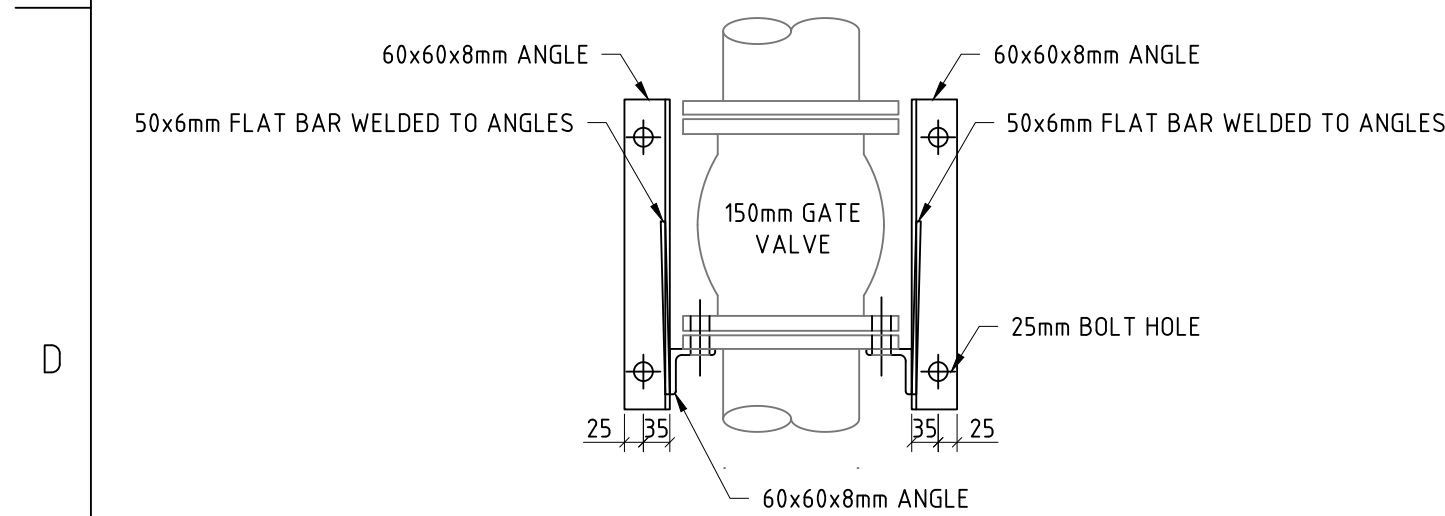
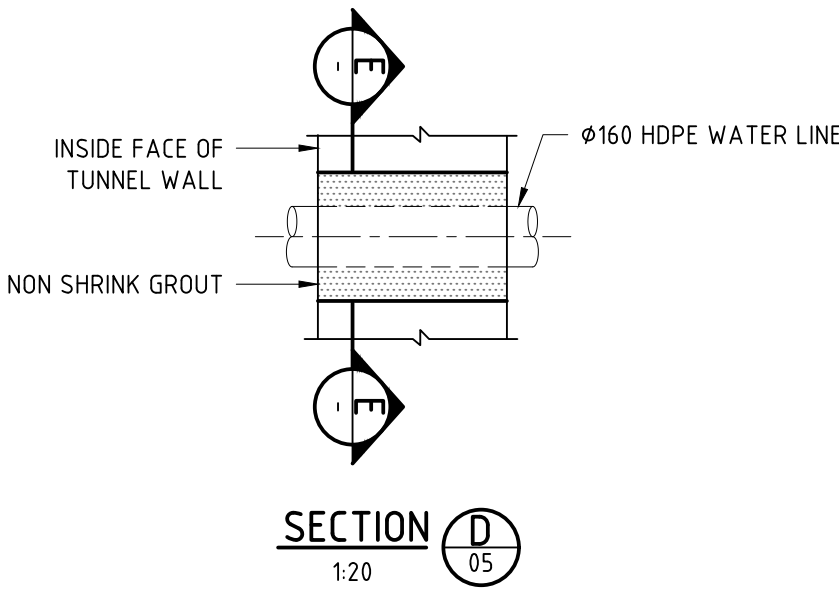
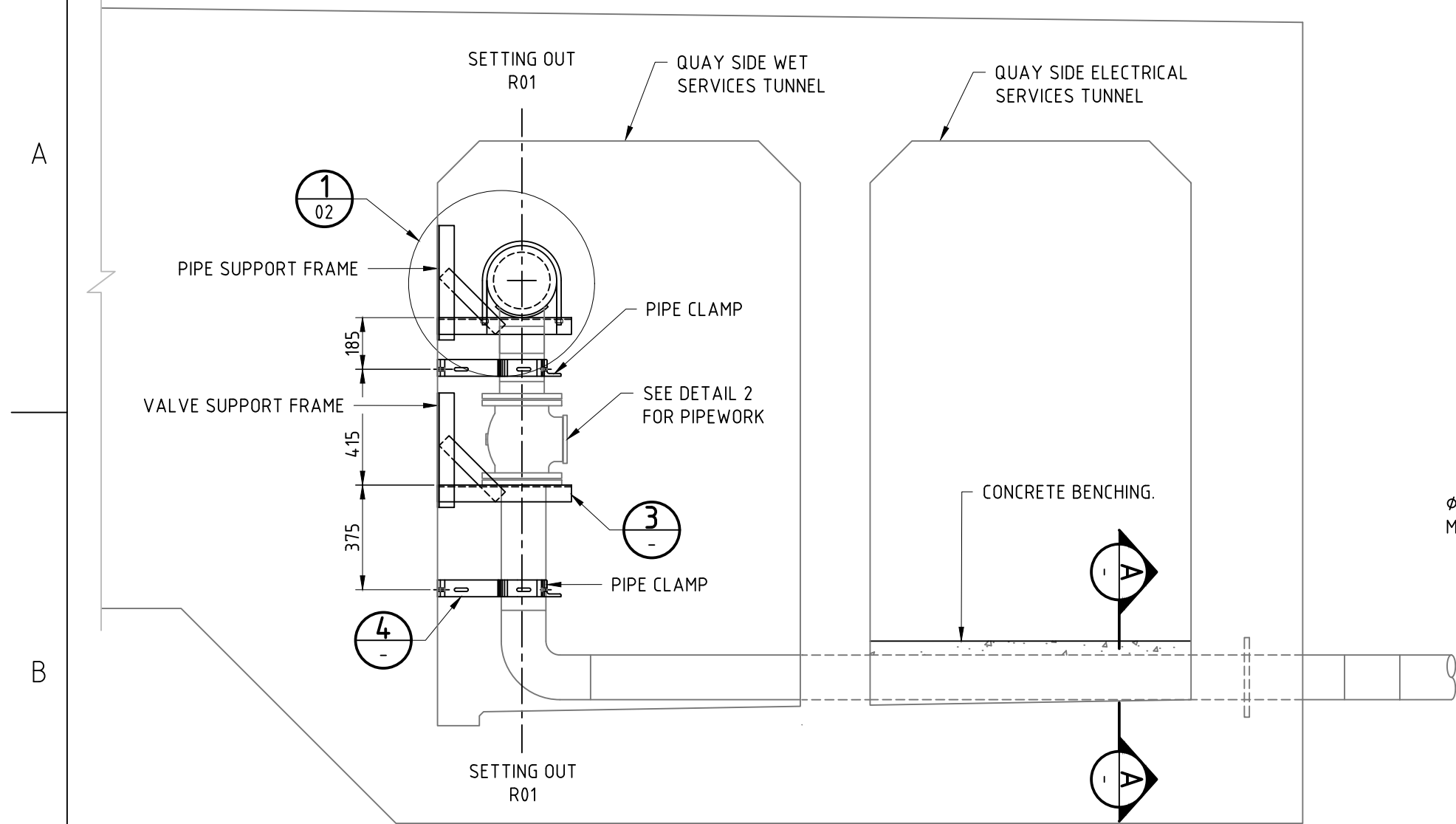
DUCT INSTALLATION SEQUENCE:

1. CUT INITIAL 360x360mm HOLE BY STITCH-CORING AS SHOWN IN SECTION E.
2. INSTALL 1 NO. ø160 DUCT.
3. MAKE GOOD BY GROUTING AROUND DUCTS USING 40MPa NON-SHRINK GROUT WITH A MAXIMUM AGGREGATE SIZE OF 10mm

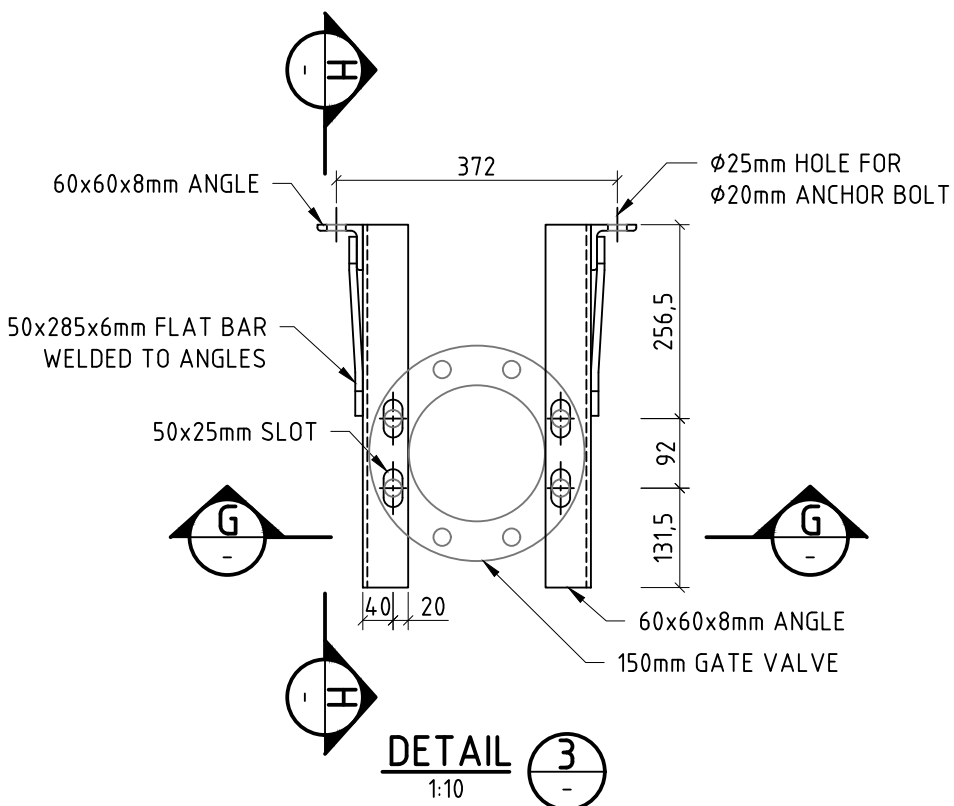


ø160mm WATER PIPE EXIT FROM QUAY SIDE SERVICE TUNNEL

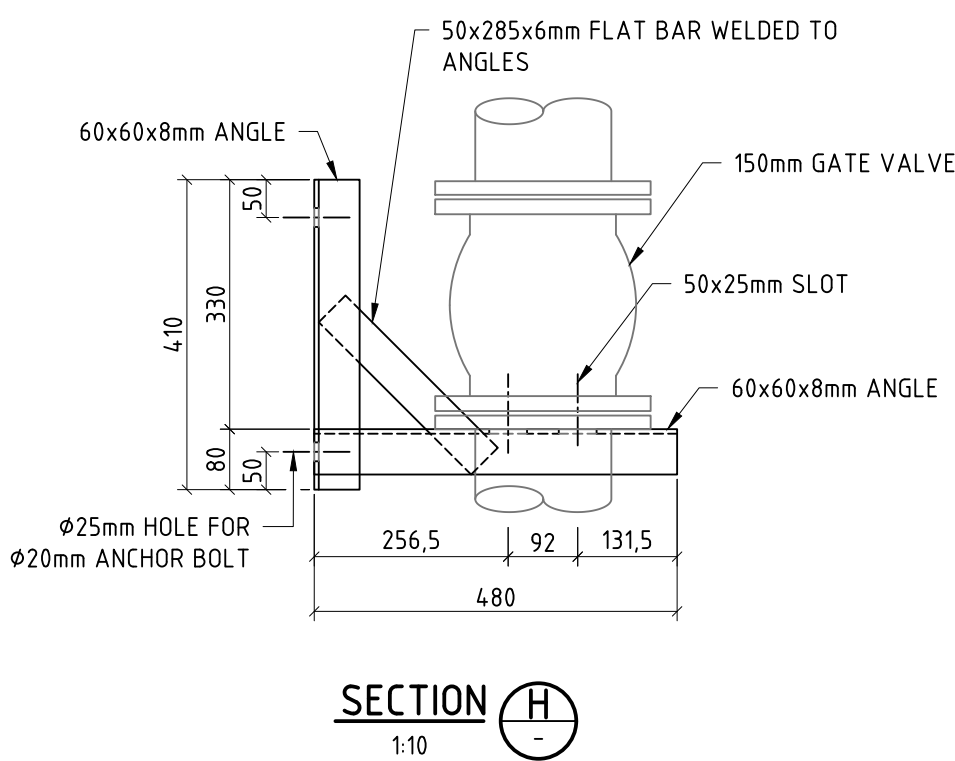
DETAIL 2





SECTION G



DETAIL 3



SECTION H

		Engineers				31 Melkhout Crescent Hout Bay 7806 Tel: +27(21) 791 9100 Fax: +27(21) 790 4470 E-Mail: zaaepna@zaaepna.com		EPCM CONSULTANT: TNPA		ORIGINATOR: ZAA		Transnet National Ports Authority 237 MAHATMA GANDHI ROAD DURBAN P.O. BOX 31683, DURBAN TEL: 031 361 8852			
								TITLE		TITLE		DATE			
								LEAD DES. ENG.		DRAWN		19 07 26			
								ENG. COORD.		CHECKED		19 07 26			
								ENG. MANAGER		ENG. COORD.					
								AREA MANAGER		DISCIP. ENG.					
								PROJECT MGR.		ENG. MANAGER					
								DIVISION		AREA MANAGER					
								NO.		PR.ENG. / PR.TECH.		DATE			
								DESCRIPTION		NAME		J. ZIETSMAN			
								BY		SIGNATURE		19 07 26			
								CHK'D		DATE					
								APP'D							
								DATE							
								REVISIONS / ISSUE AUTHORIZATION							
								This Document including all design and information therein is Confidential Intellectual Property of ZAA Engineering Projects and Naval Architecture (Pty) Ltd. Copyright and all other rights are reserved by ZAA. This Document may only be used for its intended purpose.							
								OR AS NOTED		A1					
								REG. NUMBER		760293					
								SCALE :							
								PROJECT NUMBER		DV		FBS		DIS	
								TYPE		DRG. NO.		SHT.		REV.	
								1		7		8		3	
								0		1		0		6	
								1		0		0		1	
								0		6		0		A	
								0		A					
								1		7		8		5	
								C		O		1		2	
								0		C		D		W	
								G		0		0		0	
								2		0		6		T	
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A					
								0		A</					