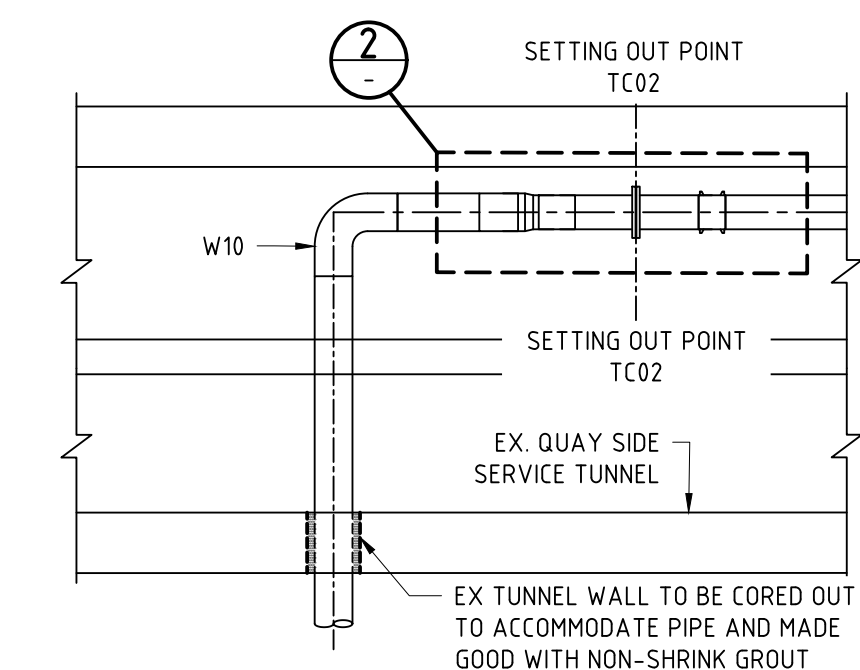
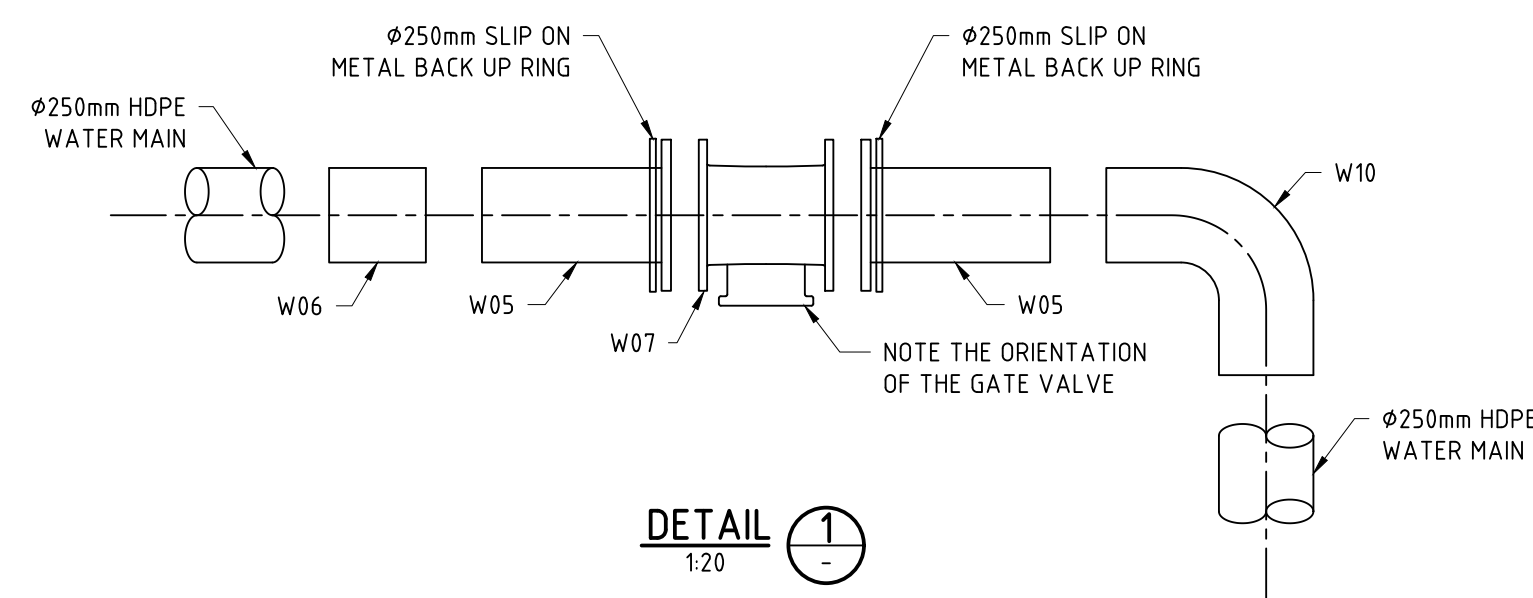


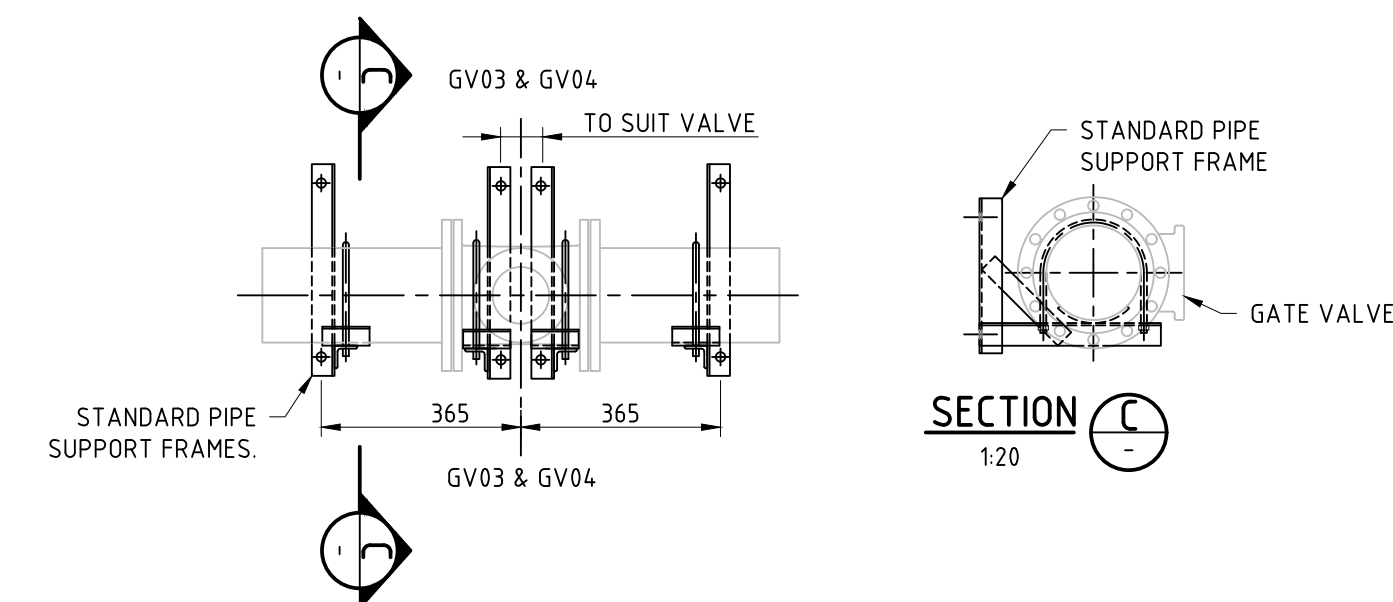
TEMPORARY WATER PIPE LAYOUT IN CROSS TUNNELS (2 NO AT GV03 & GV04)



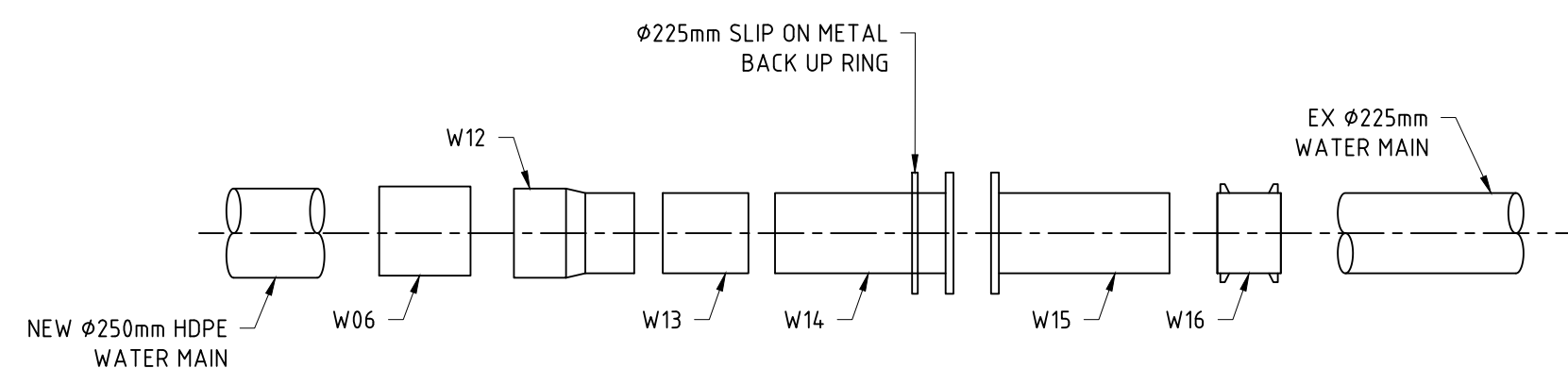
### TEMPORARY WATER PIPE CONNECTION AT TC02



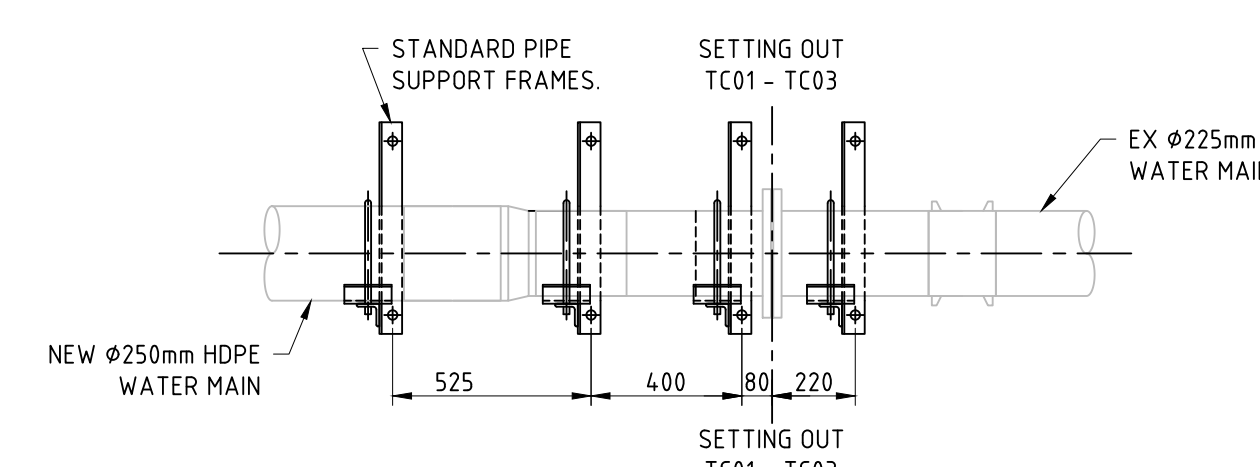
DETAIL 1:20 



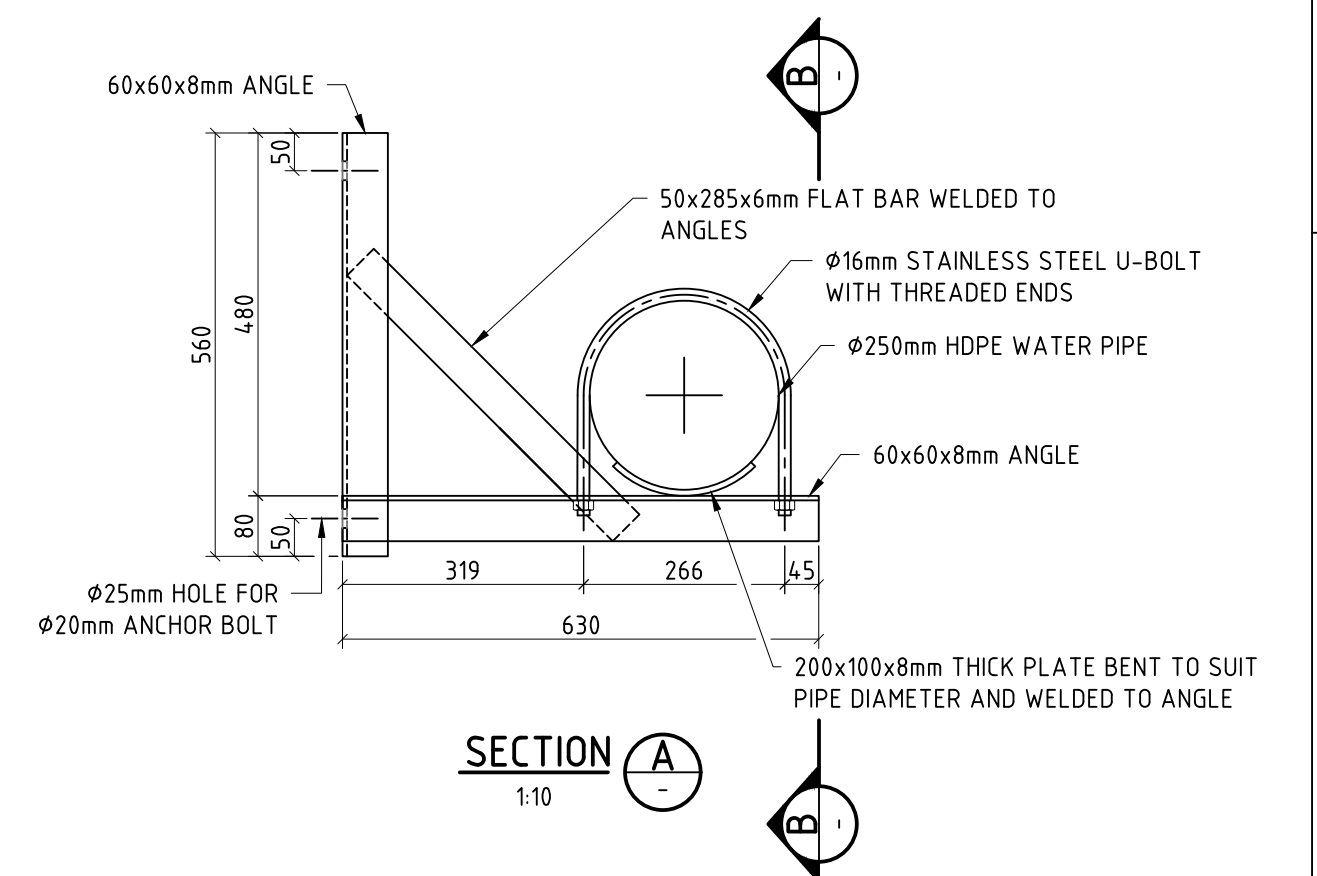
PIPE SUPPORT BRACKET LAYOUT AT GV03 & GV04



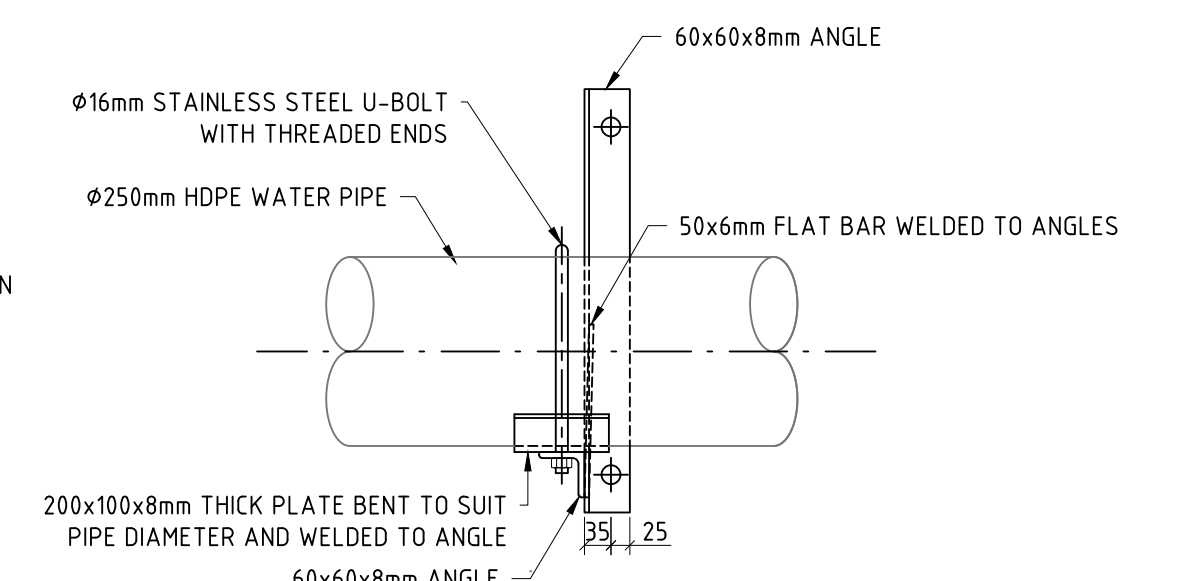
DETAIL 1:20 (2)



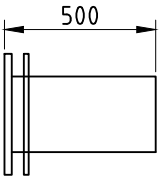

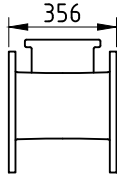
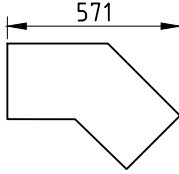
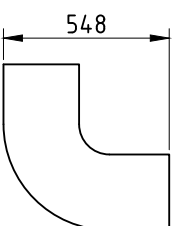
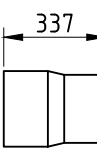
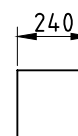
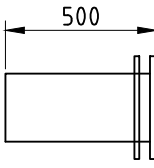
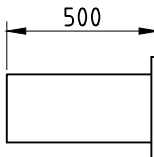

PIPE SUPPORT BRACKET LAYOUT AT TC02 - TC04



SECTION A



SECTION (B)

MARK	COMPONENT	NO. OF	DESCRIPTION
W05		2	Ø250mm HDPE SPOOL PIECE WITH Ø250mm SLIP ON BACK UP RING. ONE END FLANGED.
W06		3 **	Ø250mm HDPE ELECTROFUSION COUPLING.
W07		1	Ø250mm CAST IRON STRAIGHT THROUGH GATE VALVE.
W09		2	Ø250mm HDPE 45° ELBOW ELECTROFUSION COUPLING.
W10		3	Ø250mm HDPE 90° ELBOW ELECTROFUSION COUPLING.
W12		2	Ø250mm TO Ø225mm HDPE REDUCER. BOTH ENDS PLAIN.
W13		1**	Ø225mm HDPE ELECTROFUSION COUPLING.
W14		2	Ø225mm HDPE SPOOL PIECE ITH Ø225mm SLIP ON BACK UP RING. ONE END FLANGED.
W15		2	Ø225mm STEEL SPOOL PIECE. ONE END FLANGED.
W16		2	Ø225mm KLAMFLEX VARIPLUS RC RANGER COUPLING.

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

NOTES:

1. GENERAL
- 1.1. WATER LINE TO BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT PARTS OF SANS 1200L.
- 1.2. ALL PIPING, TEMPORARY CONNECTION FITTINGS, & PIPE SUPPORT FRAMES USED AT THE PHASE 1 CROSS TUNNEL ARE TO BE RE-USED AT THE PHASE 2 CROSS TUNNEL
- 1.1. GATE VALVES SHALL BE CAST IRON FLANGED RESILIENT SEAL TYPE, COMPLYING TO SANS 664 CLASS 16.
- 1.2. GATE VALVES SHALL BE CLOCKWISE CLOSING AND SHALL HAVE RISING SPINDLES.
2. FLANGES
- 2.1. ALL FLANGES SHALL COMPLY WITH SANS 1123 TABLE 15.
- 2.2. THE JOINTING MATERIAL USED ON FLANGE JOINTS SHALL BE A 3mm NEOPRENE RUBBER INSERTION.
- 2.3. FULL FACE GASKETS SHALL BE USED ON JOINTS.
3. 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. PIPE SUPPORT FRAMES AND HYDRANT SUPPORT BRACKETS
- 5.1. PIPE SUPPORT FRAMES ARE TO BE SPACED AT 3.5m INTERVALS.
- 5.2. SHALL BE COATED WITH A ZINC COATING APPLIED BY THERMO DIFFUSION COATING (SHERARDIZING) IN ACCORDANCE WITH BS EN 13811:2003.
6. HOPE PIPES
- 6.1. HOPE WATER PIPES ARE TO BE PE 100 CLASS 16 WITH A STANDARD DIAMETER RATIO OF 11 IN ACCORDANCE WITH ISO 4427.
- 6.2. HOPE WATER 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.
- 6.4. HOPE SLEEVES ARE TO BE PE80 CLASS 6 WITH A STANDARD DIAMETER RATIO OF 11 IN ACCORDANCE WITH ISO 4427.
7. GROUT
- 7.1. GROUT SHALL BE 40MPa NON SHRINK GROUT WITH A MAXIMUM AGGREGATE SIZE OF 10mm.