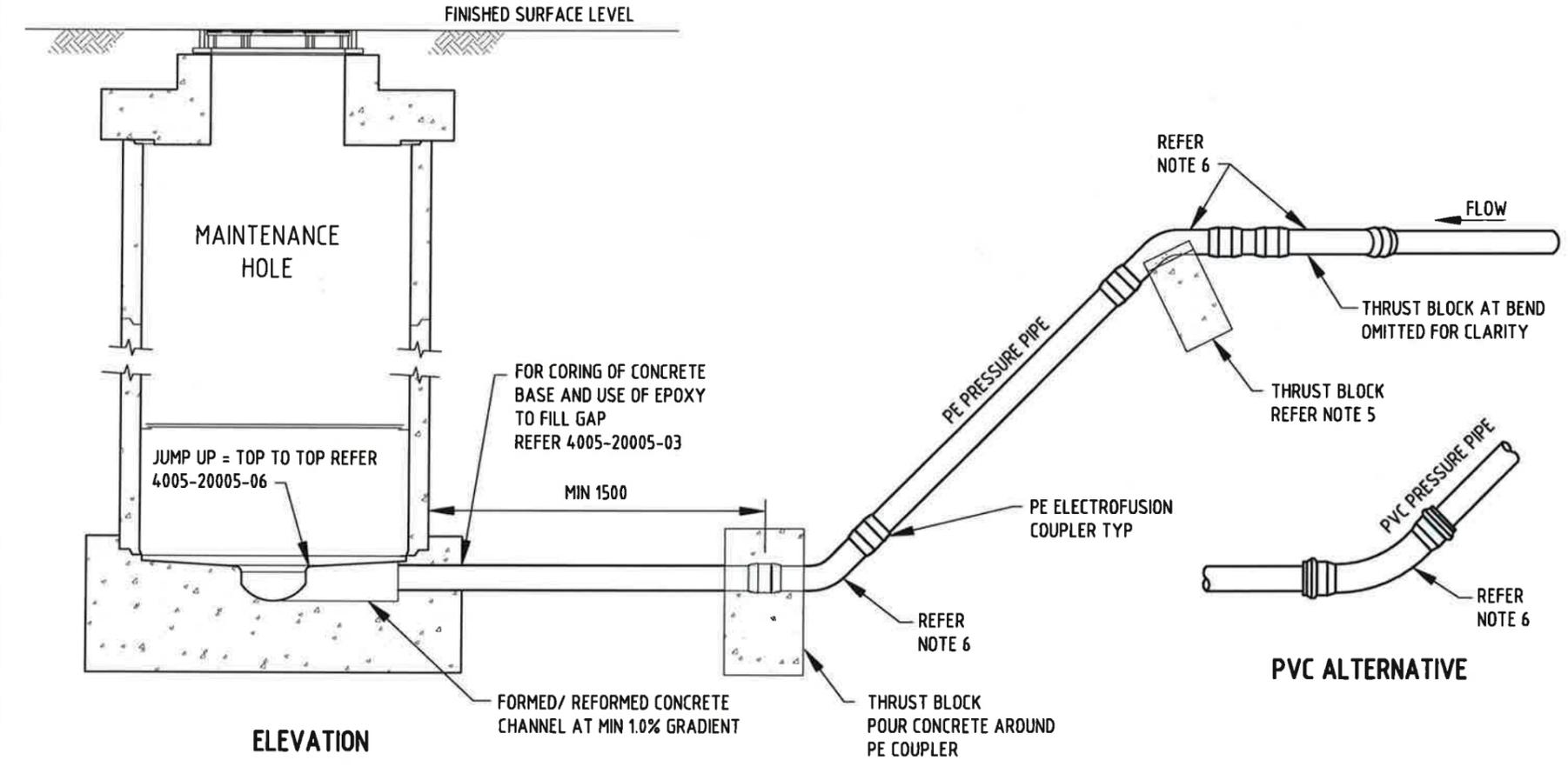


PLAN



ELEVATION

NOTES:

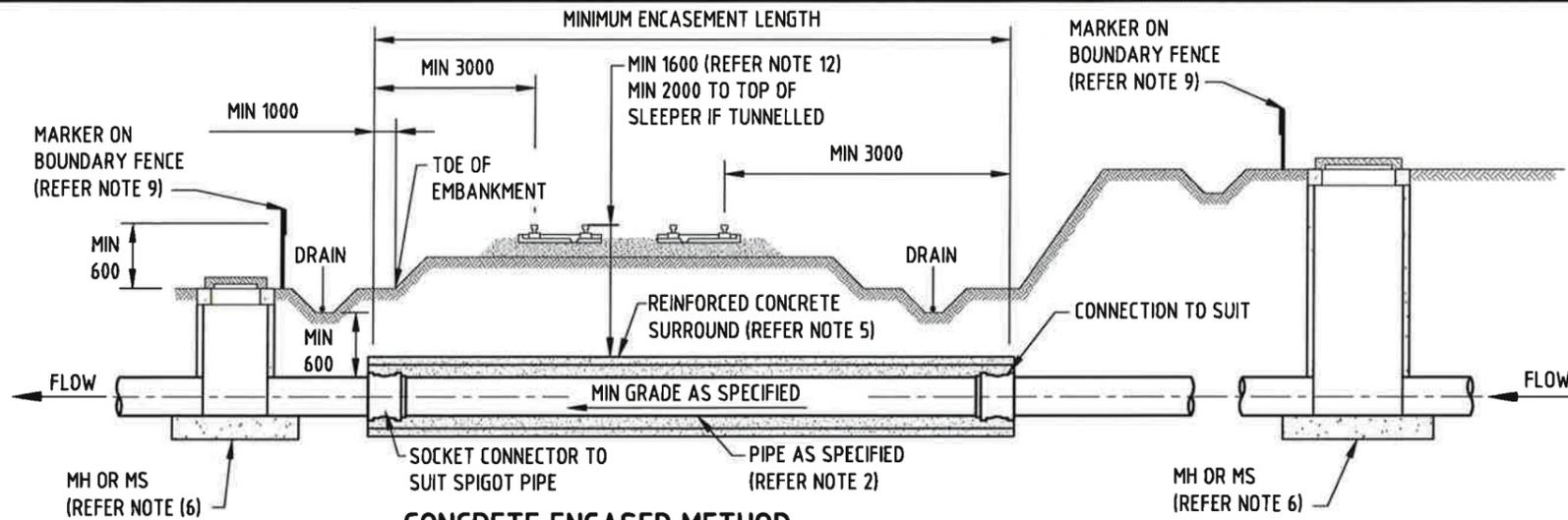
1. REFER 4005-20002-01 AND 4005-20003-02 FOR GENERAL NOTES.
2. APPROVED PIPE MATERIAL FOR PUMPING MAIN SHALL BE PE, UPVC OR DICL. FITTINGS SHALL BE AS REQUIRED FOR THE SELECTED PIPE TYPE. (PE PIPE & FITTINGS DISPLAYED).
3. PUMPING MAIN DISCHARGE RATE: THE PUMPING MAIN DISCHARGE RATE SHALL NOT EXCEED THE RESIDUAL CAPACITY OF THE RECIPIENT SEWER.
4. BRANCH CHANNELS SHALL BE:
 - Ø150 FOR DN80 AND DN100 PUMPING MAINS,
 - Ø225 FOR DN150 PUMPING MAINS.
 REFER 4005-20005-07. FOR LARGER DIAMETER PUMPING MAINS, DIRECTION SHALL BE SOUGHT FROM THE SA WATER REPRESENTATIVE.
5. REFER WCM, SECTION 3 FOR THRUST BLOCK REQUIREMENTS.
6. ALL BENDS SHALL BE LONG RADIUS BENDS.
7. REFER SCM, SECTION 5 FOR MAINTENANCE HOLE DETAILS.
8. REFER SCM, SECTION 8 FOR PUMPING MAIN GRADING AND DESIGN CONSIDERATIONS.
9. CORROSION IN DICL PUMPING MAINS: PORTION OF THE PUMPING MAIN AT THE DISCHARGE END, (FROM THE MAINTENANCE HOLE TO THE 'HIGH POINT' IN THE PUMPING MAIN) WHICH DRAINS EMPTY FOLLOWING EACH PUMPING CYCLE, SHALL BE CONSTRUCTED IN PVC OR PE. INCLUDING FITTINGS.

REVISION PANEL				
REV	DATE	DRN	DETAILS	APR
1	31/03/16	MS	2016 STANDARDS REVIEW	TG

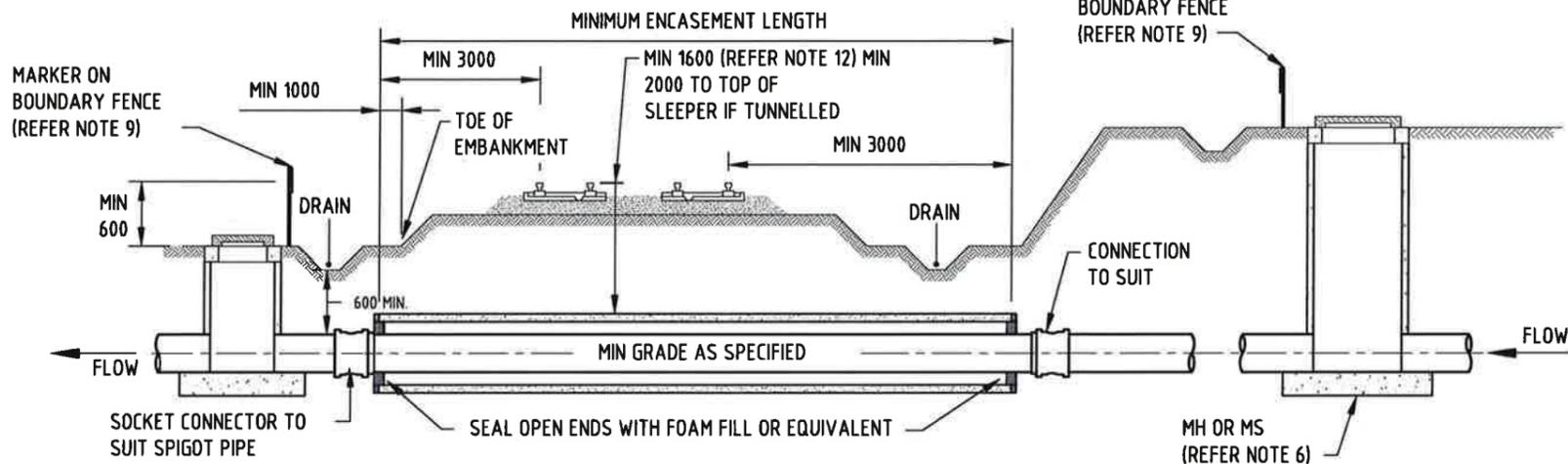
DESIGN PANEL	
DESIGNED: 03/08/15	AUTHORISED: 31/03/16
RJP	T.GALEK
DRAWN: 25/09/15	SIGNATURE:
MS	<i>T. Galek</i>
REVIEWED: 21/03/16	
TG	

SA WATER STANDARD DRAWINGS
SEWER CONSTRUCTION MANUAL
PUMPING MAIN DISCHARGE
INTO MAINTENANCE HOLE

A3	1
SHT SIZE	REVISION
TOTAL SHEETS:	
SUPERSEDES: 96-0059-02 (H2)	
DRAWING NUMBER	
4005-20008-01	
PREFIX	NUMBER SHEET

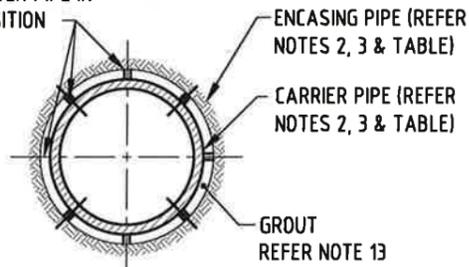


CONCRETE ENCASED METHOD
FOR INSTALLATIONS AFTER TO TRACK CONSTRUCTION



BORED OR JACKED ENCASED PIPE METHOD
FOR INSTALLATIONS AFTER TRACK CONSTRUCTION (REFER SEW-14.15)

SPACERS TO KEEP
SEWER PIPE IN
POSITION



**TYPICAL SECTION
ENCASING PIPE & SEWER ARRANGEMENTS**

BORED & JACKED ENCASED/SEWER PIPE SIZES										
SEWER PIPE (DN)	100	150	225	300	375	400	500	550	650	800
BORED ENCASED PIPE MIN (DN)	300	375	425	500	575	600	700	750	850	1000
JACKED ENCASED PIPE (DN)	N/A					MIN. 1200				

NOTES:

- DESIGN OF THE PIPE CROSSING SHALL BE ON ACCORDANCE WITH AS4799.
- SEWER PIPE**
 - STEEL CEMENT LINED WITH FUSION BONDED PE COATING
 - DI CLASS K9 WITH POLYMERIC LINING
 - PVC CLASS SN8
 - PE CLASS PN12.5
 - GRP CLASS SN5000 MIN.
- HORIZONTAL BORING ENCASED PIPE**
 - REINFORCED CONCRETE CLASS 4 BUTT JOINTED WITH STEEL LOCATING BAND OR MILD STEEL OR GRP PIPE.
- JACKING ENCASED PIPE**
 - REINFORCED CONCRETE CLASS 4 BUTT JOINTED WITH STEEL LOCATING BAND OR GRP JACKING PIPE.
- CONCRETE ENCASED**
 - NO SERVICE CONNECTIONS SHALL BE MADE ALONG ENCASED SECTION OF PIPELINE.
- MH OR MS SHALL BE LOCATED AT LEAST 6000 FROM THE TOE OF EMBANKMENT OR TOP OF CUT.
- FOR DI MAINS, ALL FITTINGS SHALL BE FUSION BOND COATED.
- SEWER PIPE <DN150 CAN BE DIRECTIONALLY BORED USING PE PIPE WITHIN AN ENCASEMENT PIPE WHICH MAY ALSO BE PE.
- MARKERS ABOVE PIPELINE SHALL BE PLACED AT THE POINTS WHERE IT ENTERS AND LEAVES THE PROPERTY.
- PROVIDE CATHODIC PROTECTION AS DIRECTED BY RAILWAY AUTHORITY. PROVIDE ELECTRICAL CONTINUITY AND INSULATION AS SPECIFIED IN DESIGN DRAWINGS.
- MINIMUM COVER FOR ALL PIPELINES BELOW RAILWAY LINES:
 - NOT LESS THAN 1600 BELOW RAIL LEVEL
 - NOT LESS THAN 600 BELOW FORMATION LEVEL
 - ie THE GROUND LEVEL IMMEDIATELY BELOW THE RAILWAY BALLAST
 - NOT LESS THAN 2000 BELOW RAIL LEVEL TO TOP OF TIMBER FOR TUNNELS.
- FOR ELECTRIFIED RAILWAY SYSTEMS PREFERENCE SHALL BE FOR THE USE OF NON-METALLIC PIPES.
- GROUTING MIX RATIO TO BE SAND:CEMENT:WATER (1:1:0.5) BY WEIGHT, USING FINE WELL ROUNDED SAND. PLASTICISERS MAY BE USED.
- ALL DIMENSIONS IN MILLIMETRES.

REVISION PANEL				
REV	DATE	DRN	DETAILS	APR
1	31/03/16	MS	2016 STANDARDS REVIEW	TG

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SA WATER STANDARD DRAWINGS
SEWER CONSTRUCTION MANUAL
RAILWAY CROSSING
TYPICAL DETAILS

A3	1
SHT SIZE	REVISION
TOTAL SHEETS:	
SUPERSEDES: 02-0288-01 (H3)	
DRAWING NUMBER	
4005	20008-02
PREFIX	NUMBER SHEET