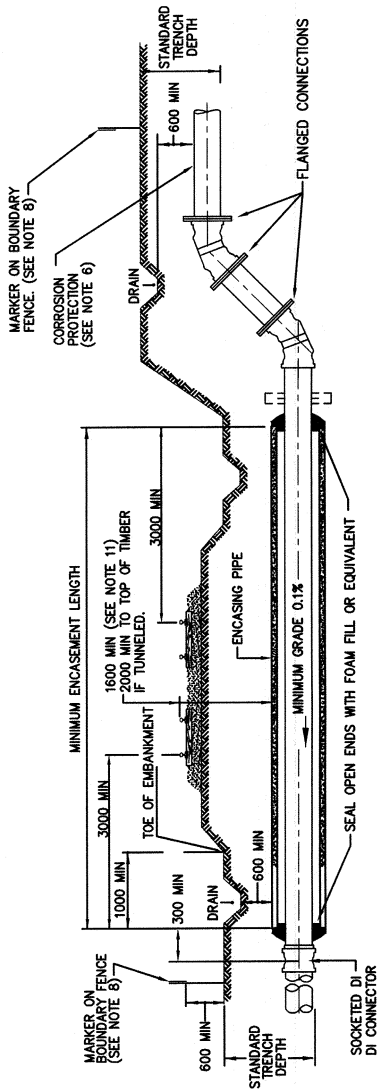
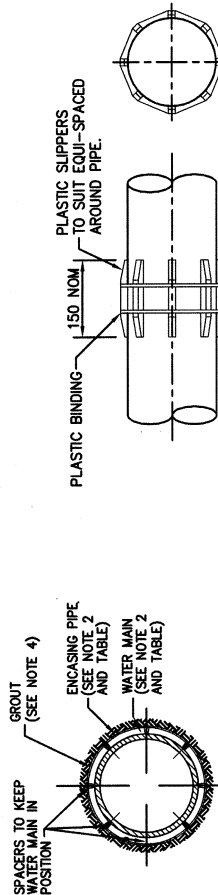


**NOTES**

- ALL DIMENSIONS IN MILLIMETRES.
- HORIZONTAL BORING.**
  - ENCASING PIPE
  - REINFORCED CONCRETE CLASS 4 BUTT JOINTED WITH STEEL LOCATING BAND, STEEL OR GRP.
  - WATER MAIN
  - WELDED STEEL CEMENT LINED WITH FUSION BONDED PE COATING OR CONTINUOUS PE.
- JACKING.**
  - ENCASING PIPE
  - REINFORCED CONCRETE CLASS 4 BUTT JOINTED WITH STEEL LOCATING BAND, STEEL OR GRP.
  - WATER MAIN
  - STEEL CEMENT LINED WITH FUSION BONDED PE COATING
  - DICL CLASS K9
  - PVC CLASS 16
- STEEL PIPE JOINTS TO BE EITHER PLAIN OR PLAIN ENDS WITH WELDED COLLAR OR BUTT WELDED OR SLIP-IN TYPE WELDED JOINT. NO EXTERNAL COATING REQUIRED.
- FILL VOID OUTSIDE OF ENCASING PIPE WITH PRESSURE GROUT.
- LOCATE VALVE ACCESS CHAMBERS (IF REQUIRED) AT LEAST 6 000 FROM TOE OF EMBANKMENT OR TOP OF CUT.
- FOR DICL MAINS, PROTECT ALL PIPES AND FITTINGS WITH PE SLEEVING.
- FULLY WRAP UNCOATED SCL PIPE USING BITUMASTIC WRAPPING TAPE SYSTEM EXTENDING FROM FACE OF CONCRETE ENCASEMENT TO FIRST POINT OF FULL PIPE PROTECTION.
- PLACE MARKERS ABOVE BURIED PIPELINE AT THE POINTS WHERE IT ENTERS AND LEAVES THE PROPERTY.
- PROVIDE ADDITIONAL STRAY CURRENT PROTECTION AS DIRECTED BY RAILWAY AUTHORITY.
- ELECTRICAL CONTINUITY AND INSULATION TO BE AS SPECIFIED IN DESIGN DRAWINGS.
- DESIGN TO BE IN ACCORDANCE WITH AS 4799.
  - MINIMUM COVER FOR ALL PIPELINES BELOW RAILWAY LINES
    - NOT LESS THAN 1600 BELOW RAIL LEVEL;
    - NOT LESS THAN 600 BELOW FORMATION LEVEL;
    - NOT LESS THAN 300 BELOW RAIL LEVEL FOR RAILWAY BALLAST.
    - NOT LESS THAN 500 BELOW RAIL LEVEL TO TOP OF TIMBER FOR TUNNELS.
- JACKED ENCASING PIPE SIZED TO PERMIT PERSON ENTRY TO SUIT WATER MAIN JOINTING METHOD.
- FLANGED BENDS PREFERRED IN THIS SITUATION.





**BORED OR JACKED ENCASING PIPE METHOD**



**ENCASING PIPE & WATER MAIN**  
(PREFERRED INSTALLATION OPTION)

DESIGNS TO BE ACCORDING TO QUEENSLAND RAIL REQUIREMENTS

WATER MAIN PIPE (DN)	100	150	200	250	300	400	500	550	650	800
BORED ENCASING PIPE (DN) MIN	300	375	450	525	600	700	750	825	1000	
JACKED ENCASING PIPE (DN)	N/A									1200 MIN (SEE NOTE 12)

<b>C 5/9 AMEND MCR SKN. JC</b>		<b>DRAWING FILE NAME</b> M:\Engineering Services\Technical Services\Design\Projects\Standard drawings\Mackay Water\WSAA MRC\WAT CODE\A3-042898		<b>COMMERCIAL SERVICES</b>		<b>Mackay REGIONAL COUNCIL</b>	
B	MAY08	MODIFIED TO MRC STD	SLR	SURVEY N/A	EXECUTIVE MANAGER MACKAY WATER & WASTE RPEQ 7506	STANDARD DRAWING BURIED CROSSINGS RAILWAYS WATER MAINS	
A	OCT07	T'SFER TO MRC TBLOCK	SLR	DATE OF LAST EDIT May 21, 2009	 27 MAY09 DATE	DRAWING No. A3-04289	
0		WSAA ORIG.		WSAA NO. <b>WAT-1213</b>  WATER SERVICES ASSOCIATION of Australia		AMEND. <b>C</b>	
NO.	DATE	DESCRIPTION	APPVD.	MERIDIAN	MCA-55	JOB No	SHEET 1 OF 1

MRC STANDARD DRAWINGS SUPERCEDES WSAA STANDARD DRAWINGS