

A GEOTECHNICAL INVESTIGATION MUST BE UNDERTAKEN PRIOR TO UNDERTAKING THE WORKS TO DETERMINE SUB-SURFACE CONDITIONS INCLUDING GROUNDWATER AND TO CONFIRM THE SUITABILITY OF THE PROPOSED TRENCHLESS INSTALLATION.

TYPICAL RESTRICTED ACCESS CROSSING - TYPE 4  
DIRECTIONAL DRILLING PE PIPE

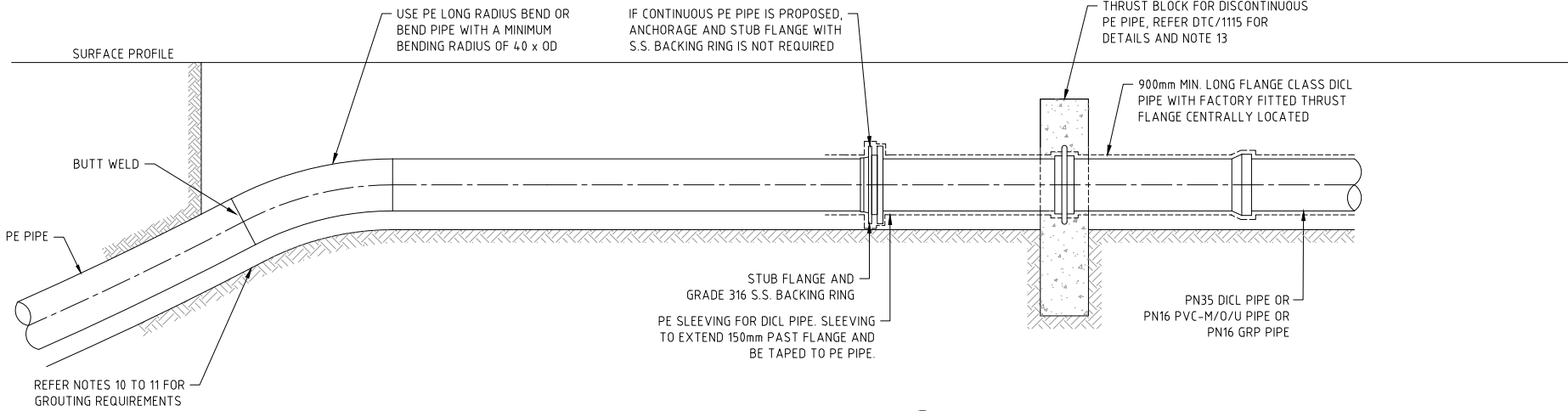
SCALE 1:50

NOTES:

- THIS DRAWING MUST BE READ IN CONJUNCTION WITH DTC/1100.
- TYPE 4 CROSSING TO BE DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
- SHOW GEOMETRY OF CROSSING ON DESIGN AND WORK AS CONSTRUCTED DRAWINGS. DRILL COORDINATES (X,Y,Z) TO BE RECORDED EVERY 10m. COORDINATES TO BE RECORDED ON WORK AS CONSTRUCTED DRAWINGS.
- NATIVE SOIL MODULUS MUST BE 1 MPa OR GREATER.
- PE PIPE MUST BE BUTT WELDED.
- THE DESIGNER MUST LOCATE ALL EXISTING AND PROPOSED SERVICES AND RECORD DETAILS ON THE DESIGN DRAWINGS.
- THE CONSTRUCTOR MUST CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION OF THE CROSSING.
- HORIZONTAL DIRECTIONAL DRILL (HDD) DESIGN MUST BE CHECKED AND CONFIRMED BY A HDD SPECIALIST FOR INSTALLATION CONDITIONS INCLUDING TEMPORARY LOADS AND APPROPRIATE DOCUMENTATION SUBMITTED TO SYDNEY WATER FOR ACCEPTANCE PRIOR TO COMMENCEMENT OF WORKS.
- $P_{MAX}$  IS THE MAXIMUM ALLOWABLE DOWNHOLE DRILLING MUD PRESSURE.  $P_{MAX}$  MUST BE CALCULATED BY APPLYING A FACTOR OF SAFETY OF AT LEAST 2 TO THE THEORETICAL MAXIMUM DOWNHOLE MUD PRESSURE BEFORE HYDROFRACTURE OCCURS.
- OUTER ANNULUS MUST BE GROUTED. A CEMENTITIOUS GROUT MUST BE USED AND THE GROUTING PRESSURE MUST NOT EXCEED THE  $P_{MAX}$  AND ANY PRESSURE LIMITATION OF THE CARRIER PIPE.
- GROUT TO HAVE A MINIMUM COMPRESSIVE STRENGTH 0.3 MPa AND MAXIMUM 1.5 MPa AT 7 DAYS. TESTING TO BE IN ACCORDANCE WITH AS 1012.9:2014.
- DEPTH OF PROPERTY SERVICES CONNECTIONS MUST NOT EXCEED 2.5 m.
- THRUST BLOCK SELECTION FROM DTC/1115 TO BE FOR THE THRUST FORCE EQUAL TO OR GREATER THAN:
  - 36.2 kN FOR OD125-180 SDR 11 PE100 MAINS
  - 62.2 kN FOR OD200-250 SDR11 PE100 MAINS

REFERENCE DRAWINGS:

DTC/1115 ANCHORAGE DETAILS-DICL AND PVC WATER MAINS  $\leq$  DN300-STOP VALVES



DETAIL  
SCALE 1:20

Sydney  
WATER

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APPROVED

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ENGINEERING & TECHNICAL SUPPORT

B	GENERAL UPDATE	NS	31/07/24
A	ORIGINAL ISSUE	PJG	31/01/12
LETTER	DETAILS OF ISSUE / AMENDMENT		APP'D DATE

DEEMED TO COMPLY DRAWINGS

CROSSINGS UNDER OBSTRUCTIONS  
OD125 - OD250 PE WATER MAINS  
TYPE 4 - TRENCHLESS PE MAIN CROSSING

DTC

1127

ISSUE DATE

B

31/07/24