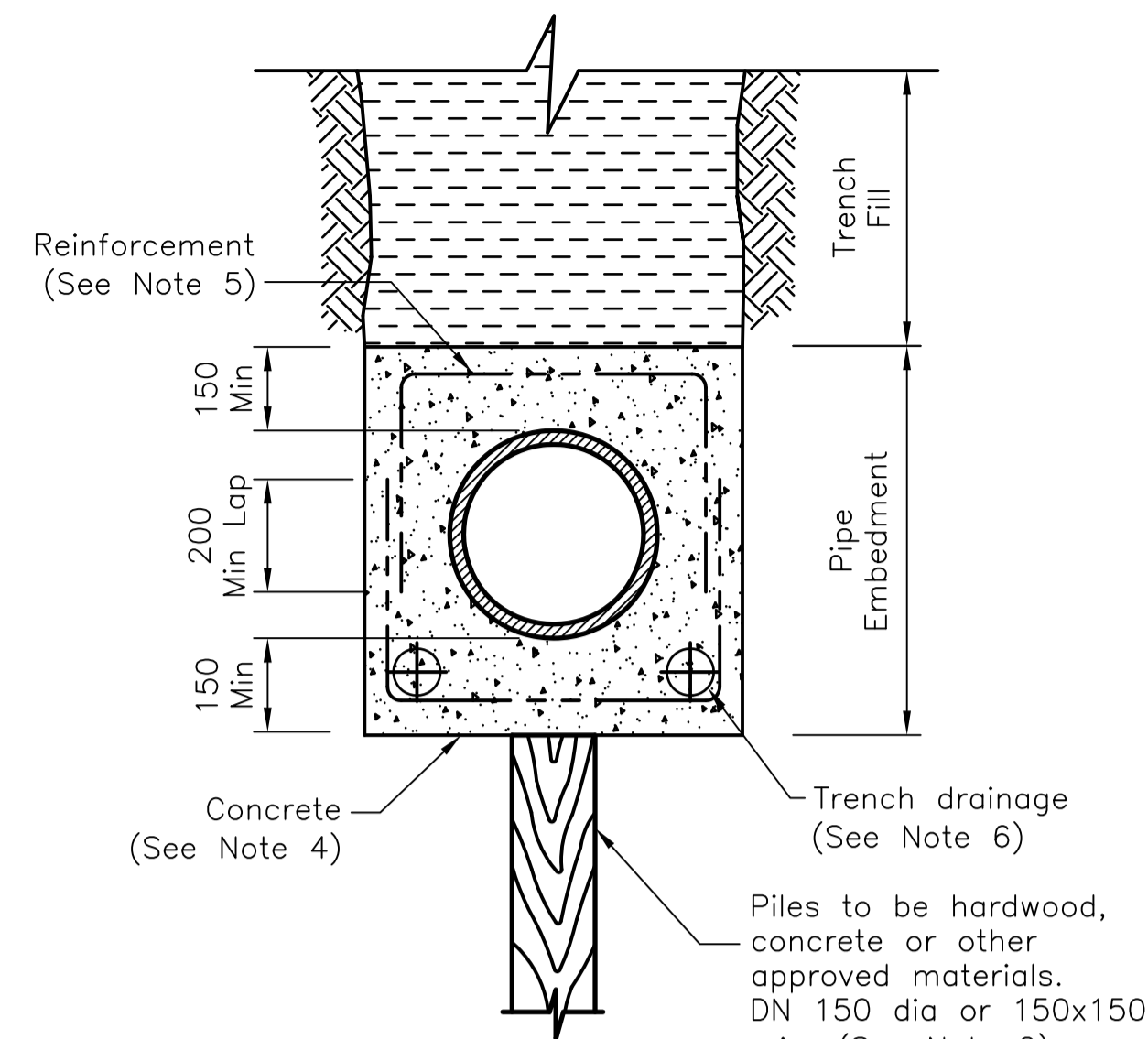


TYPE 9 SUPPORT

ALL PIPE TYPES (DI PREFERRED)

<DN 375 SINGLE PILE

>DN 375 TWIN PILE



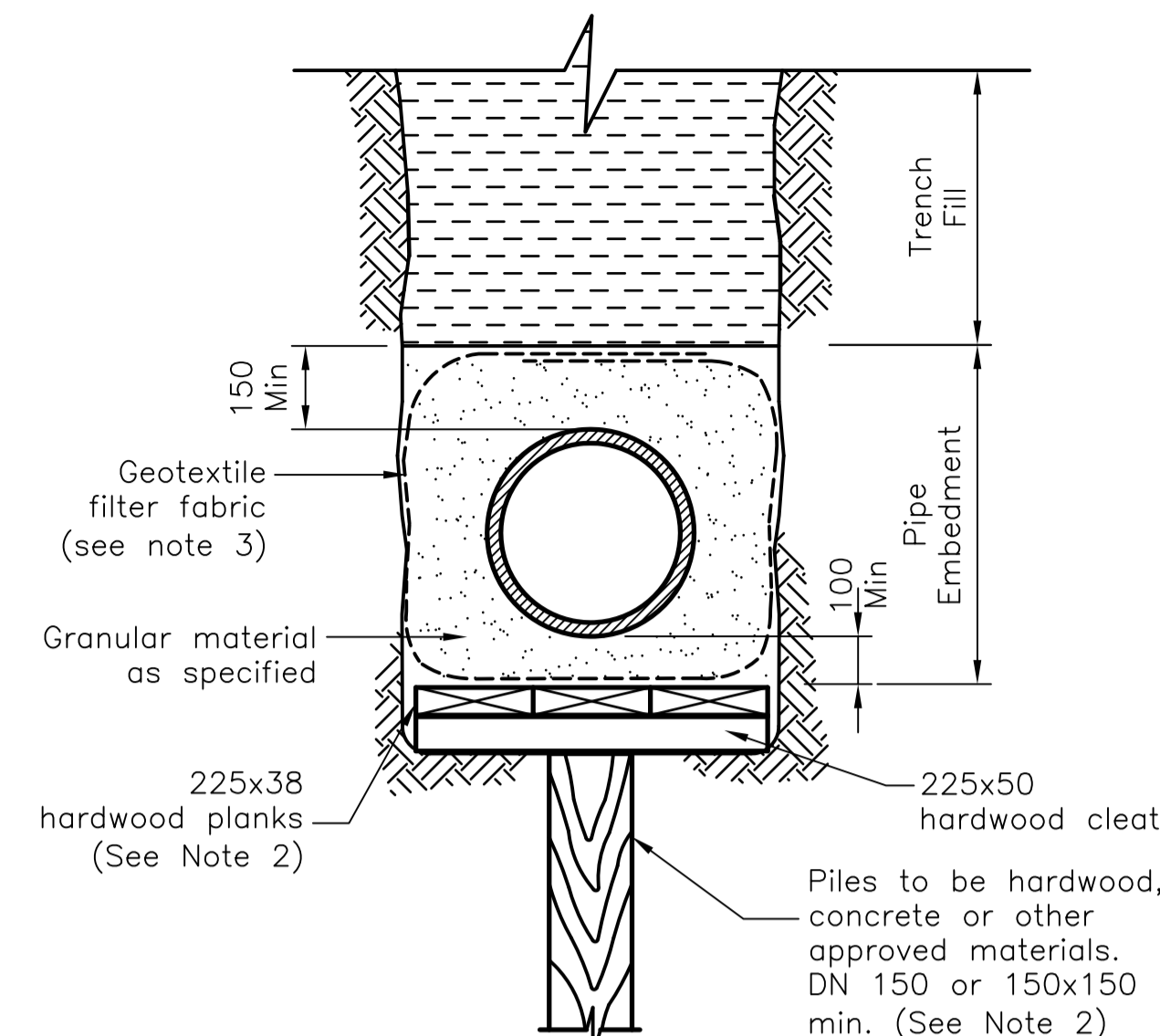
TYPE 10 SUPPORT

(ALL PIPE TYPES)

NOTE: THIS METHOD ALSO RESTRICTS PIPE FLOTATION

<DN 300 SINGLE PILE

>DN 300 TWIN PILE

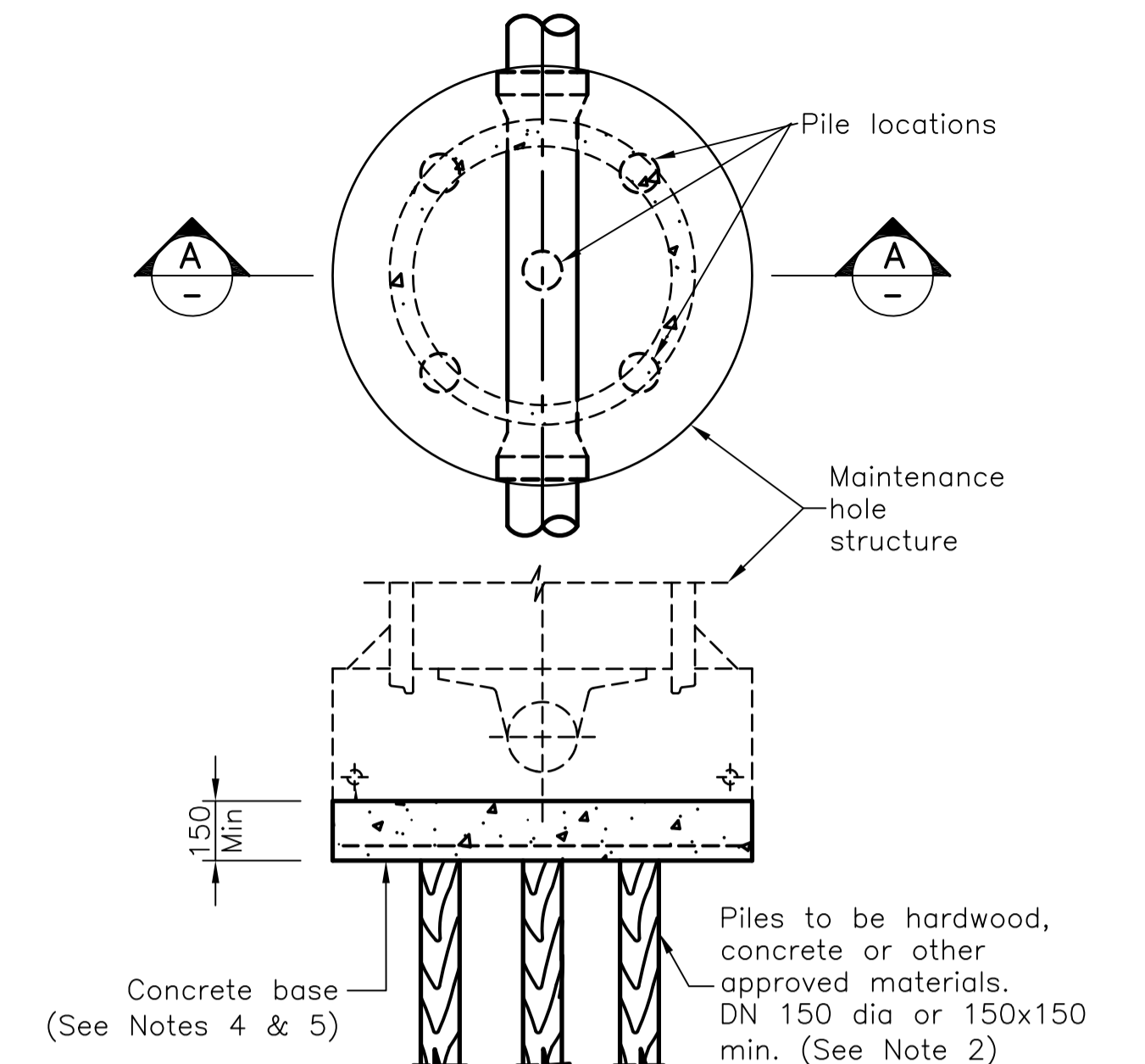


TYPE 11 SUPPORT

(ALL PIPE TYPES)

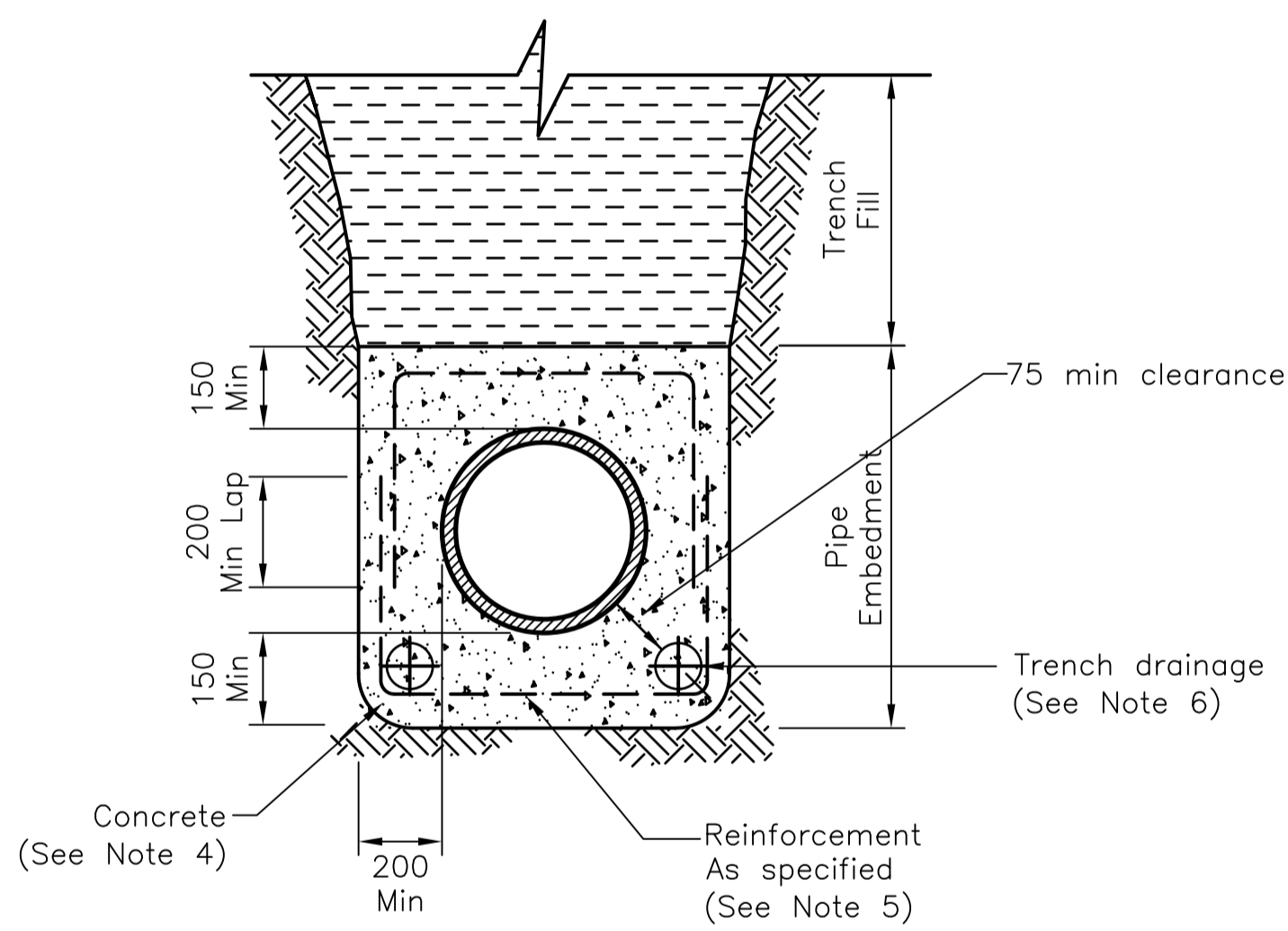
<DN 375 SINGLE PILE

>DN 375 TWIN PILE



SECTION A-A

PILE FOUNDATION FOR MAINTENANCE HOLES

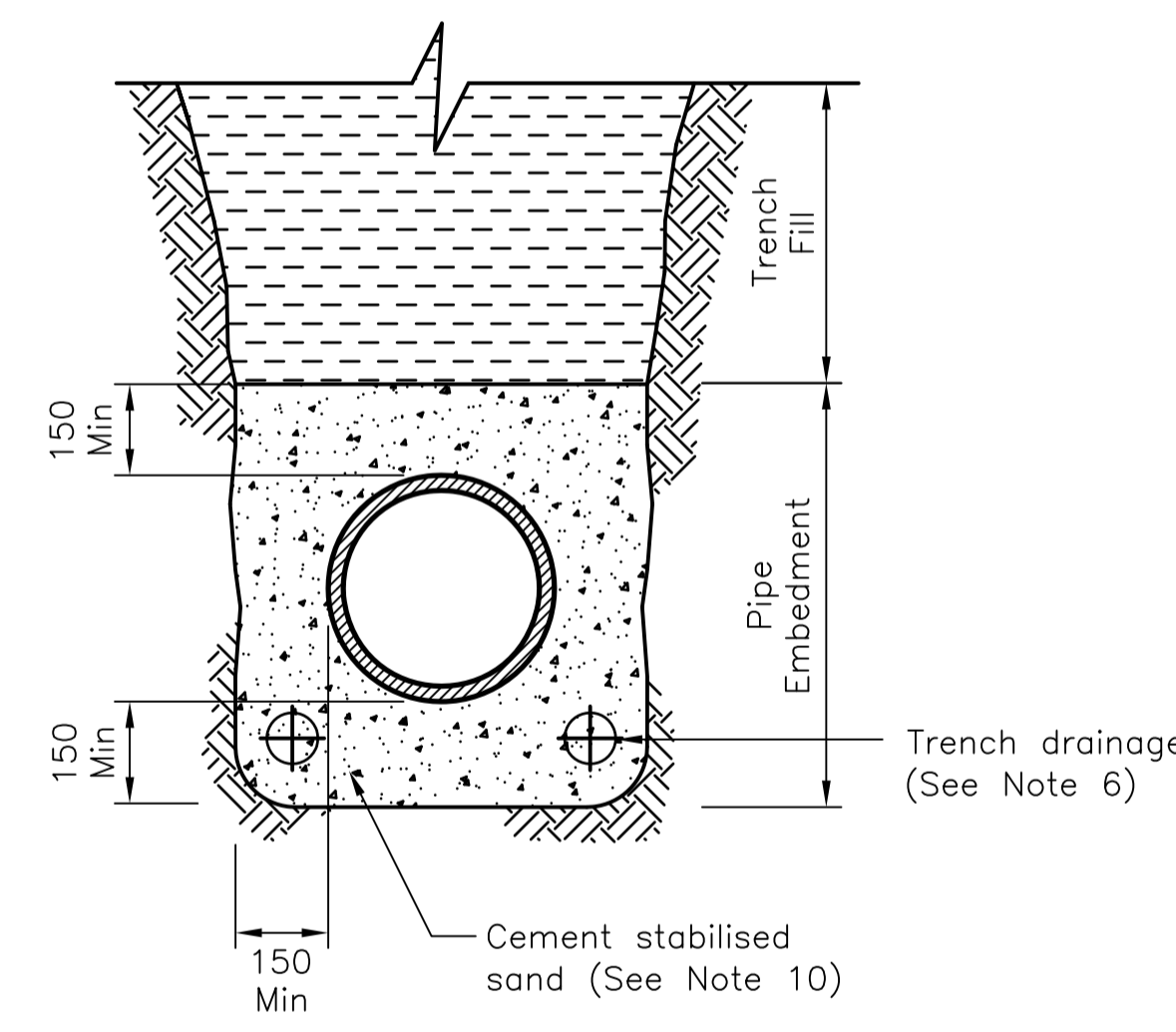


TYPE 12 SUPPORT

UTILISING CONCRETE EMBEDMENT

(RIGID & FLEXIBLE PIPES)

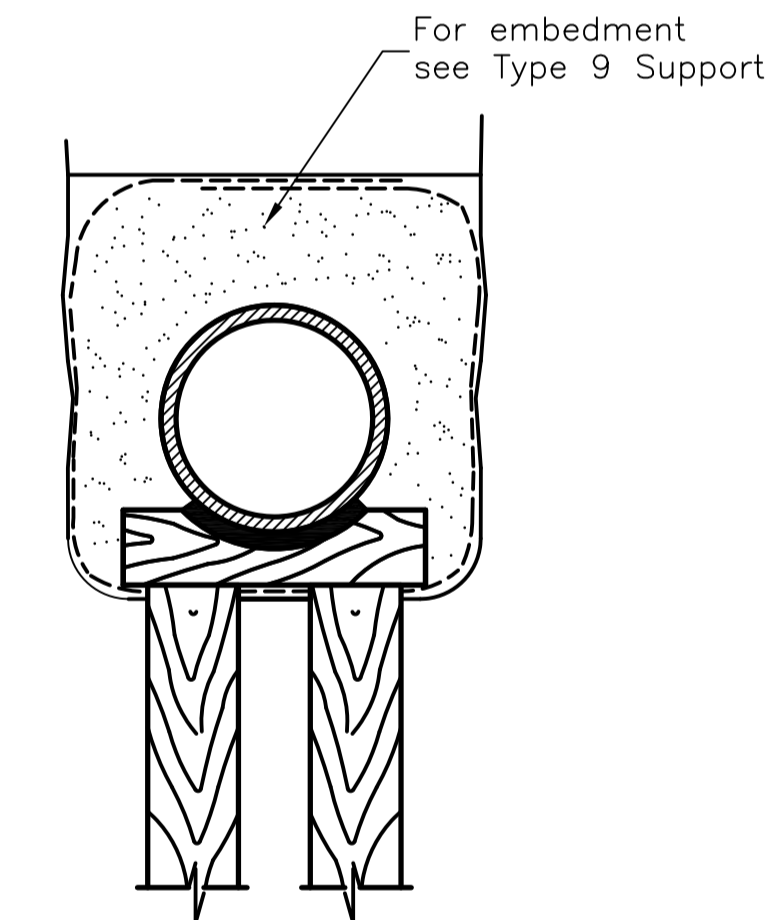
(TOWNSVILLE WATER APPROVAL REQUIRED)



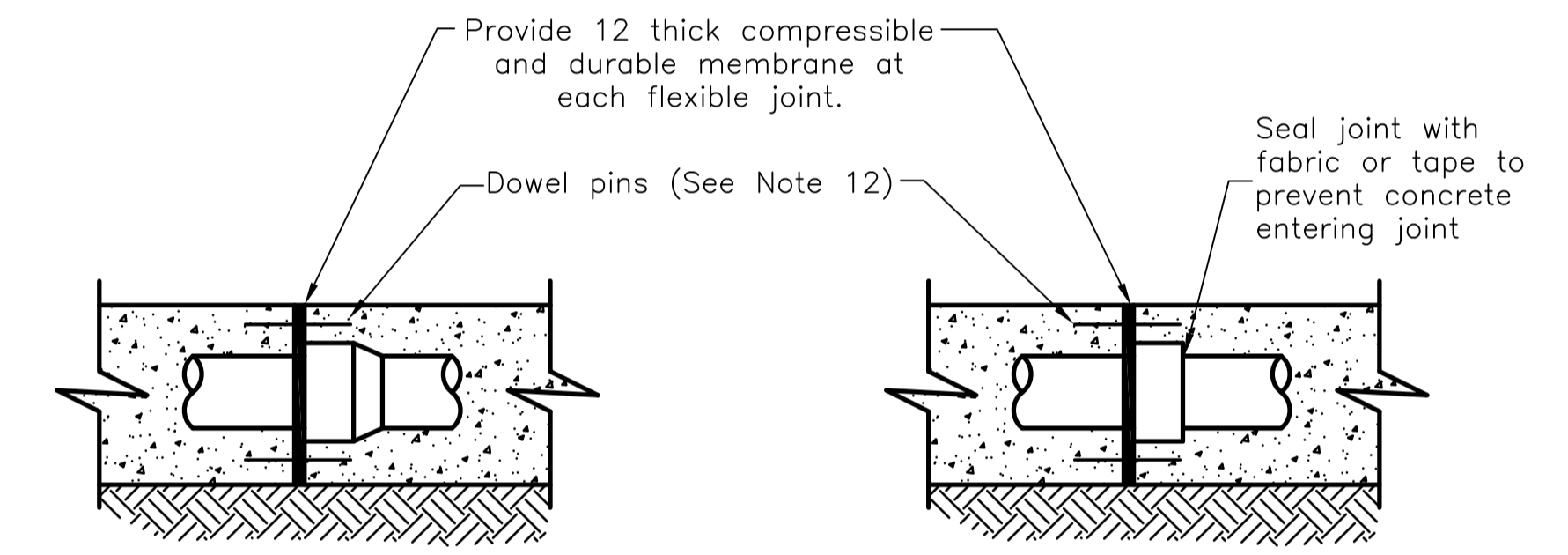
TYPE 13 SUPPORT

UTILISING CEMENT STABILISED EMBEDMENT

(RIGID & FLEXIBLE PIPES)



TWIN PILE ARRANGEMENT



SPIGOT/SOCKET JOINT

SLEEVED COUPLING

CONCRETE ENCASMENT JOINT DETAILS

(TOWNSVILLE WATER APPROVAL REQUIRED)

NOTES:

- All dimensions are in millimetres unless noted otherwise.
- Use these support types where specified by designer and only with written approval of Townsville Water. Pile details and spacings to be as shown in design drawings.
- Lay geotextile filter fabric against the trench floor and wall such that it fully encases the embedment. Provide minimum 250 lap at all filter fabric joints.
- Use unreinforced concrete class N20 min and reinforced concrete N25 min. For aggressive conditions use special class concrete.
- Minimum steel reinforcement of 0.4% of concrete cross section placed centrally and with 65 minimum cover to external face. specify reinforcement for the applicable loading in design drawings.
- See SD-483 if continuous trench drainage required.
- see WSA 02 Part 1 for tables detailing soil characteristics, pipe details and loads.
- Design piles in accordance with AS2159.
- Embedment material to be in accordance with design drawings, job specification and AS2566.2, Table G1, G2 and G3.
- Cement stabilised sand or well graded crushed rock to be 25:1 Sand:Cement (placed dry).
- During the encasement process pipes will require a restraint system to prevent pipe movement and/or flotation.
- Provide dowel pins, as detailed in design drawings at each concrete encasement joint to prevent pipe damage.

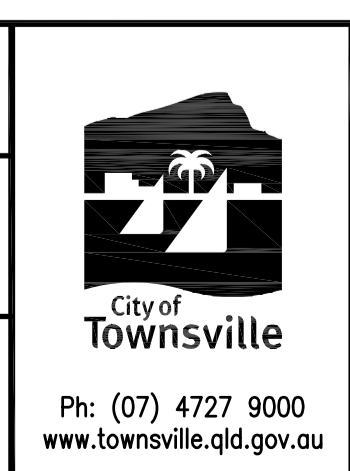
EMBEDMENT TYPES TO BE SPECIFIED IN DESIGN DRAWINGS

No.	DATE	DESCRIPTION	AP'D
B		NOTES AMENDED	
A		ORIGINAL ISSUE	
REVISIONS			

NOTES : BASED ON FORMER WSA A DRAWING SEW-1204

Full Size A1
Not to Scale

DRAWN: DESIGN OFFICE
CHECKED: D. MOSELEY
Design Engineer Approved: Original signed by P. TURL
Date: 26/07/2012
Manager Approved: Original signed by P. MENDIOLEA
Date: 26/07/2012



SPECIAL EMBEDMENT PILES, CONCRETE AND STABILISED SUPPORTS

STANDARD DRAWING SEWERAGE
SD-463 B