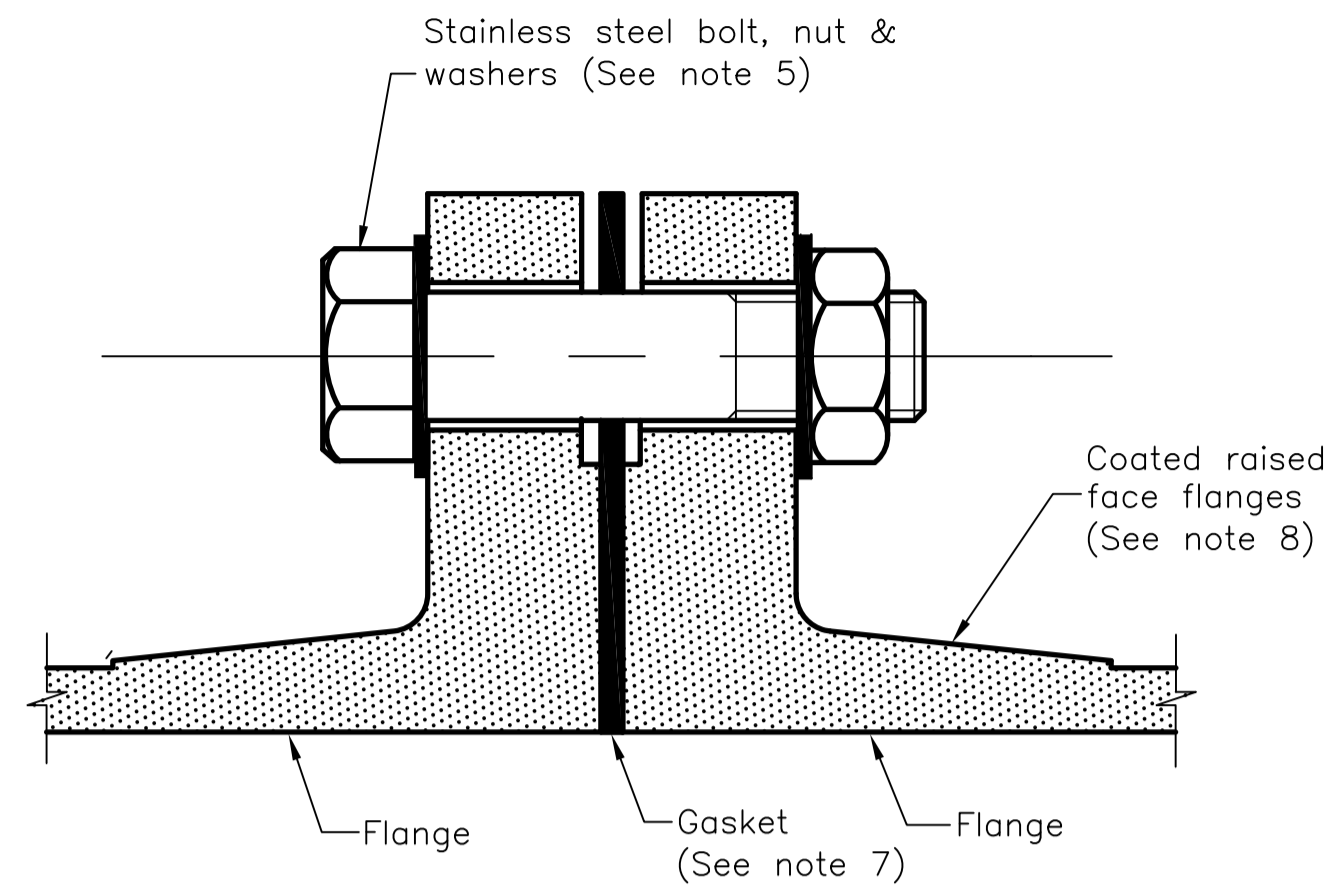
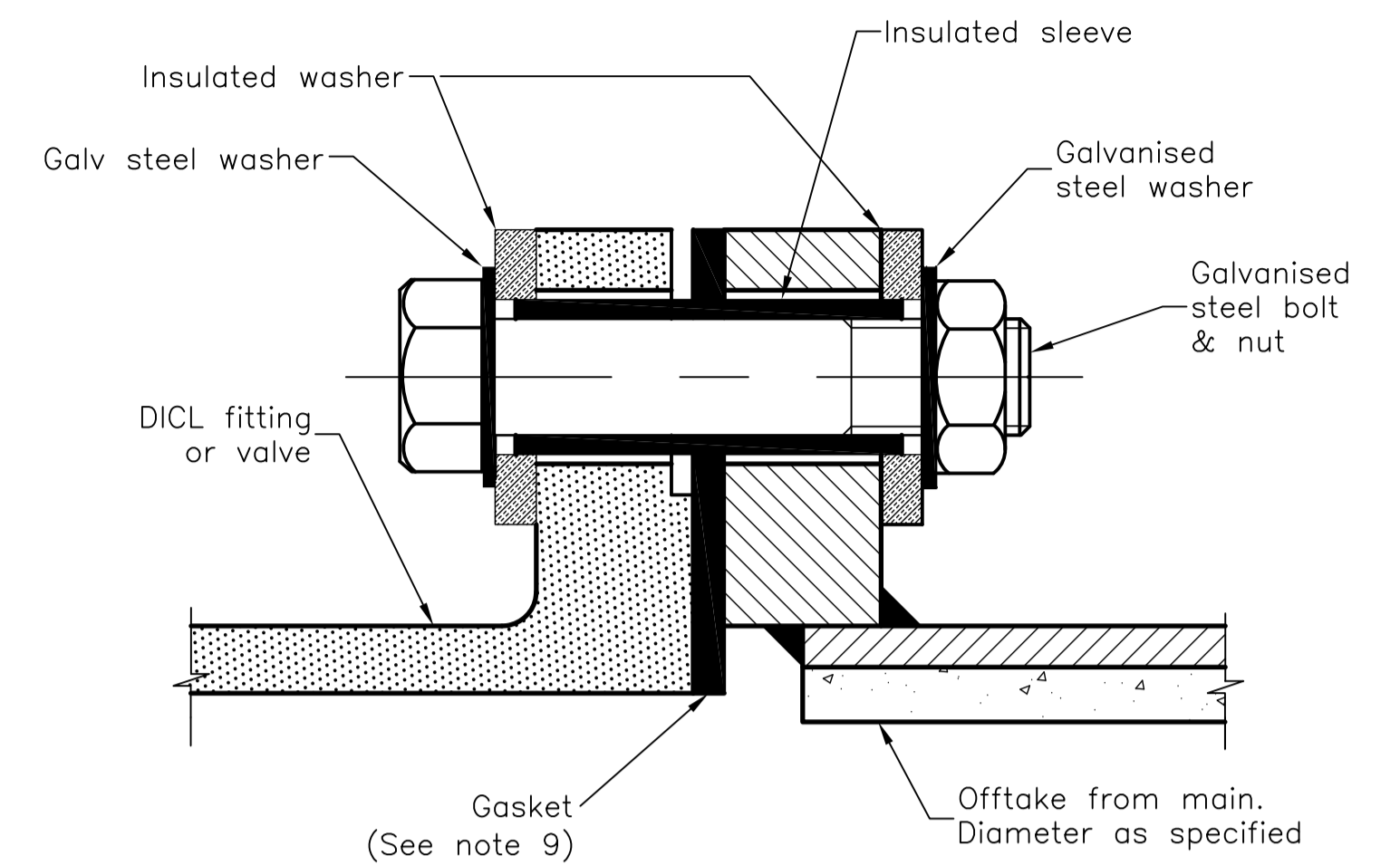


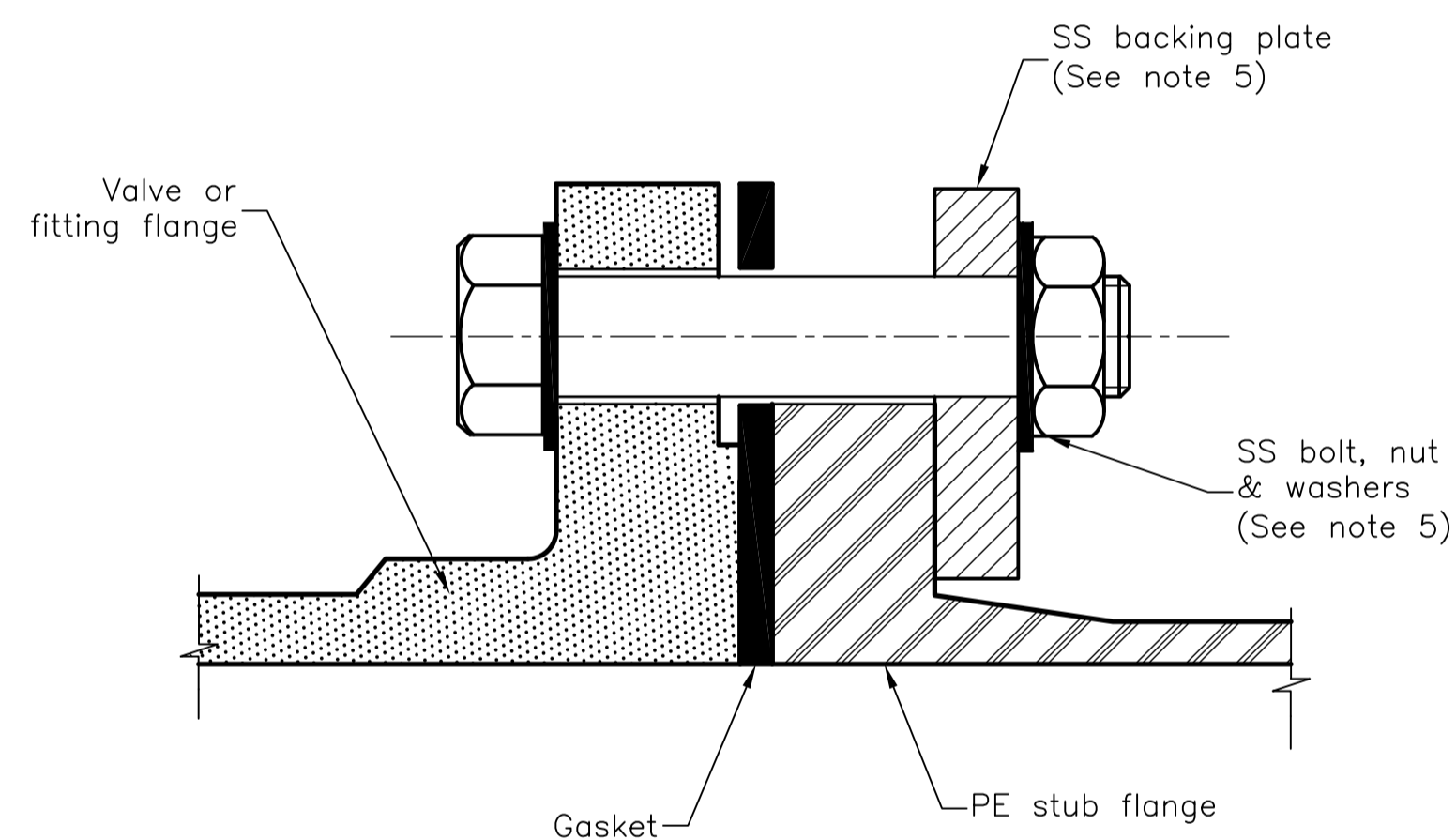
(RAISED FACE FLANGES SHOWN)
**CORROSION PROTECTION PROCEDURE FOR BURIED
 DUCTILE IRON FLANGES WITH GALVANISED BOLTS**
 (SEE NOTE 2)



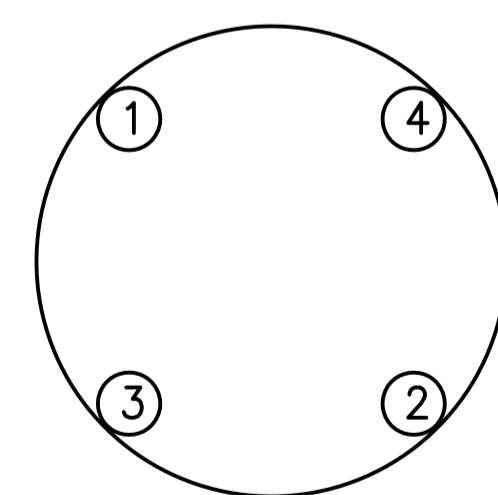
(RAISED FACE FLANGES SHOWN)
**CORROSION PROTECTION PROCEDURE FOR FUSION
 BONDED COATED DUCTILE IRON FLANGES WITH
 STAINLESS STEEL BOLTS**
 (SEE NOTE 3)



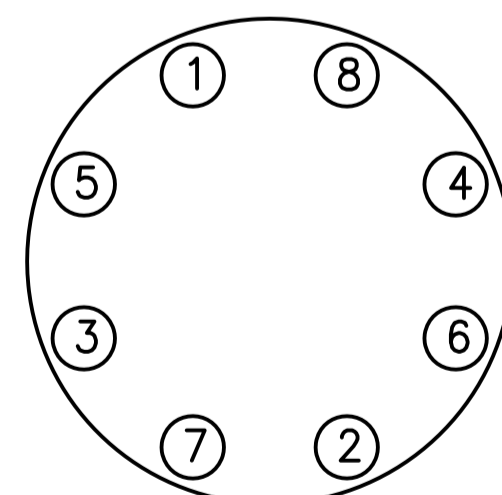
INSULATED FLANGED JOINT FOR STEEL MAINS
 (SEE NOTE 6)



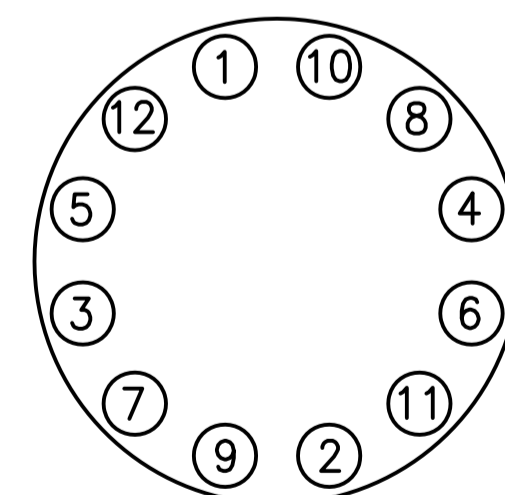
PE BOLTED CONNECTION DETAIL



4 BOLTS



8 BOLTS



12 BOLTS

TIGHTENING SEQUENCE

NOTES

1. All dimensions in millimetres.
 2. Sleeve uncoated ductile iron flanges. Use galvanised bolts (See note 4). Apply two layers of sleeving over all buried bitumen coated ductile iron flanges.
 3. Where flanges are coated with fusion bonded epoxy or nylon they do not require sleeving, use only stainless steel bolts (See note 5). Take care to prevent damage to the flanges' protective coating.
 4. Galvanised bolt system.
 - (i) All bolts, nuts and washers to be hot dipped galvanised. After galvanising, and prior to assembly, liberally coat all nuts, bolts & washers with a corrosion prevention priming paste.
 - (ii) After assembly, cover all bolt heads and nuts with sealing caps filled with corrosion prevention priming paste.
 - (iii) Wrap the assembly with petrolatum tape or with PE sleeving and taped.
- Take special care when backfilling, to ensure that caps are not dislodged.

5. Stainless steel bolt system. All stainless steel bolts, nuts, washers and backing plates to be manufactured from 316 grade material. Coat the threaded sections of all stainless steel bolts with an anti-sieze lubricant recommended by the bolt manufacturer.
6. Verify the integrity of each insulated flanged joint after assembly.
7. Use special high resistivity (low conductivity) gasket material. Not all elastomers are non conductive.
8. Roughen coated raised face flange surfaces before assembly. Perforation of the coating does not matter on the contact flange faces.
9. Gasket materials to comply with WSA109.
10. Tightening sequence shown for AS4087 flanges <DN450, larger sizes to follow similar principle.

NOTES : BASED ON FORMER WSA A DRAWING
 WAT-1313

Full Size A1

Not to Scale

DRAWN:

CHECKED: D Moseley

Design Engineer Approved: P Turl

Date: 24-07-2012

Manager Approved: M Harvey

Date: 24-07-2012



Ph: (07) 4727 9000
 www.townsville.qld.gov.au

**FLANGED JOINTS
 BOLTING DETAILS**

**STANDARD
 DRAWING**

WATER

SD-377

A

No.	DATE	DESCRIPTION	AP'D
A		ORIGINAL ISSUE	
REVISIONS			