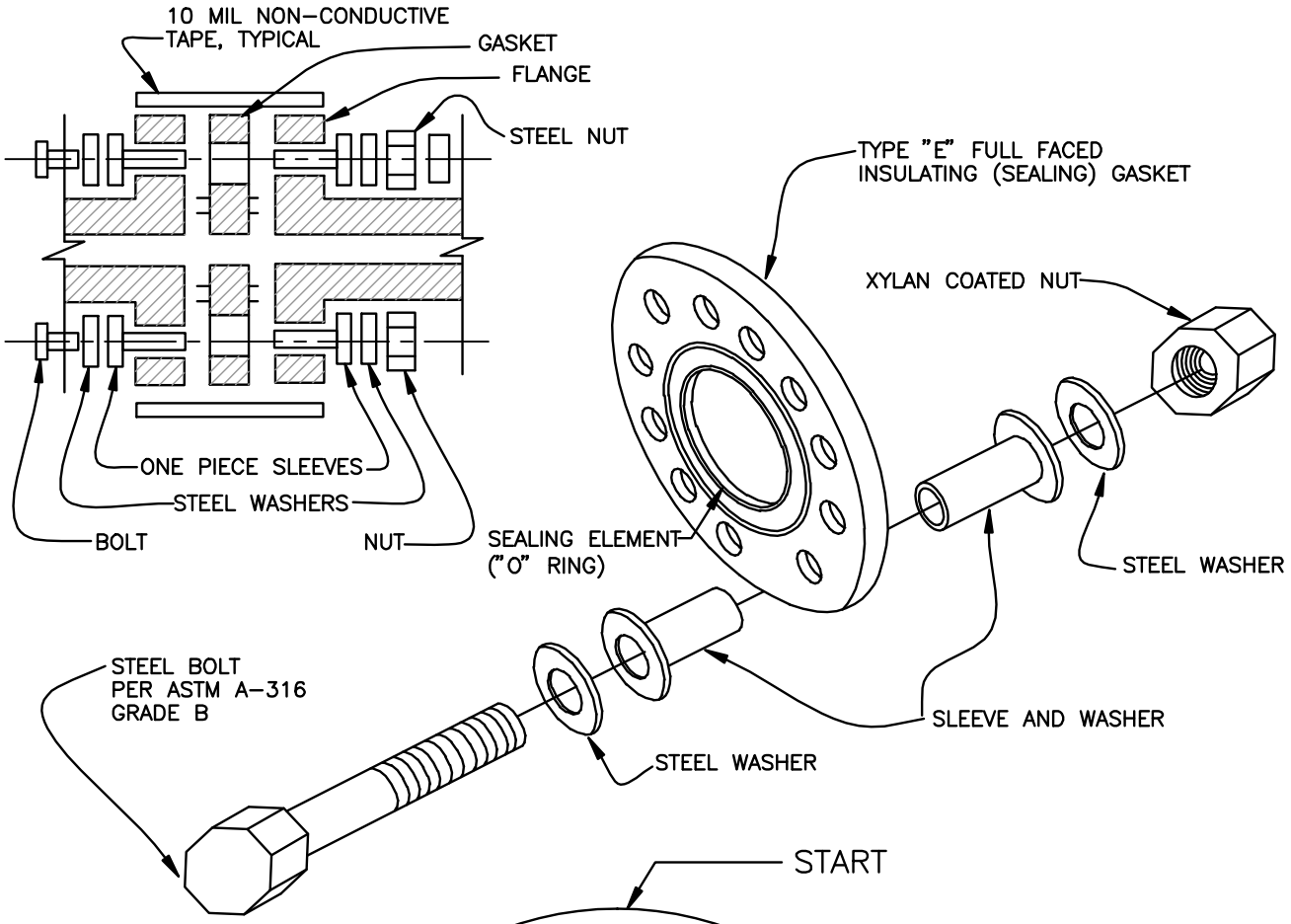

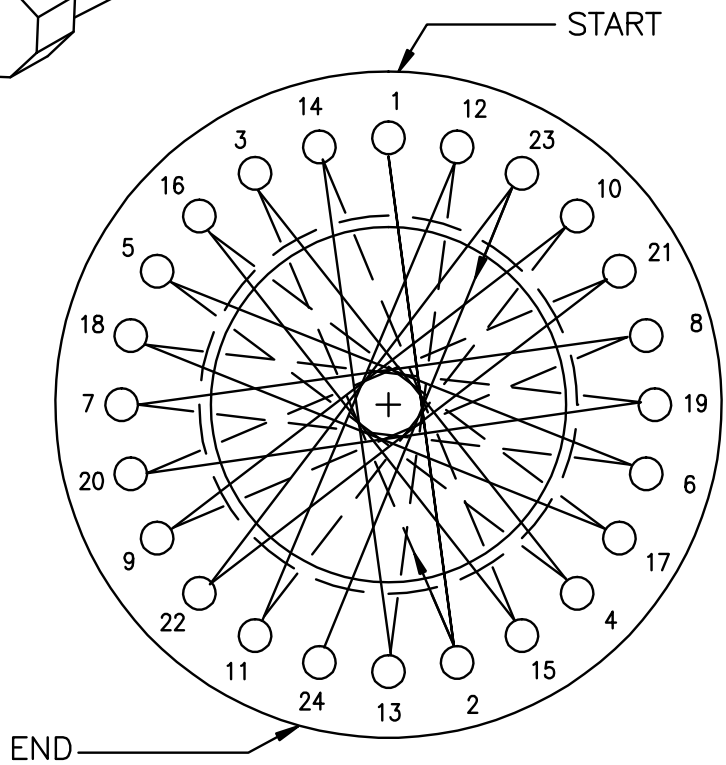

FLANGE BOLT TIGHTENING SEQUENCE

ISSUED:		STANDARD DETAIL		DETAIL NO.
6/97	TUCSON WATER	FLANGE INSULATING KIT	TUCSON WATER	SD-704
REVISED:				
10/08				SHEET 1 OF 2

FLANGE INSULATING KIT ASSEMBLY

NOTES:

1. CATHODIC PROTECTION MATERIALS ARE TO BE LEFT IN MANUFACTURERS BOXES, PACKAGES, ETC. UNTIL APPROVED BY TUCSON WATER CONSTRUCTION INSPECTOR.

2. MATERIALS SHALL BE AS SPECIFIED IN SD-700.

3. PLAIN PHENOLIC GASKETS W/OUT SEALING ELEMENTS ("O" RINGS) SHALL BE SANDWICHED BETWEEN TWO ⅛" STANDARD SERVICE GASKETS AND USED WITH APPROVAL OF ENGINEER.

4. IF REQUIRED, BOLT HOLES SHALL BE REAMED AFTER FITTING FLANGES TOGETHER, BUT PRIOR TO INSERTING MYLAR INSULATING SLEEVES.

5. BOLTS AND WASHERS SHALL BE TYPE 316 STAINLESS STEEL. NUTS SHALL BE TYPE 316 STAINLESS STEEL WITH A XYLAN COATING.

6. THE BOLT TORQUE REQUIREMENT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

7. TO PROVIDE EVEN SEALING ON A FLANGE GASKET THE CONTRACTOR SHALL HAND TIGHTEN THE BOLTS IN THE SEQUENCE SHOWN ON SD-704, SHEET 1 UNTIL THE FLANGE FACES ARE IN CONTACT WITH THE GASKET. AFTER THE FLANGE FACES ARE IN CONTACT WITH THE GASKET, THEY SHALL BE FIRMLY TIGHTENED IN THE SAME SEQUENCE, TO 30% AND THEN AGAIN TO 60% AND AGAIN TO 100% OF THE FINAL TORQUE VALUE.

8. THE CONTRACTOR SHALL CHECK ALL BOLTS AFTER OPERATING TEMPERATURE HAS BEEN REACHED, PREFERABLY AT ZERO LINE PRESSURE AND AMBIENT TEMPERATURE AND RE-TIGHTEN IF LOOSE. THE SYSTEM SHALL NOT BE ALLOWED TO RETURN TO OPERATING TEMPERATURE AFTER THE INITIAL CYCLING AT AMBIENT TEMPERATURE WITHOUT CHECKING AND RE-TIGHTENING BOLTS AS NECESSARY.

9. ALTHOUGH, SD-704 SHEET 1 SHOWS 24 BOLT HOLES, THE SAME BASIC PROCEDURE SHALL BE USED WITH FLANGES HAVING MORE OR LESS BOLT HOLES.

10. THE INSULATED FLANGE SHALL BE WRAPPED WITH A 10 MIL 2" OR 4" NON-CONDUCTIVE TAPE. SEE SD-704, SHEET 3.

11. UPON COMPLETION AND TWENTY-FOUR HOURS PRIOR TO BURIAL THE CONTRACTOR'S NACE TECHNICIAN/TECHNOLOGIST SHALL VERIFY BOTH THE EFFECTIVENESS OF THE FLANGE INSULATING KIT. VERIFICATION AND/OR TEST RESULTS SHALL BE INCLUDED IN THE FINAL CORROSION TEST REPORT.

12. DURING BACKFILLING, THE CONTRACTOR SHALL USE CAUTION TO PREVENT DISPLACEMENT OF ALL STRANDED COOPER CONDUCTORS AND BONDING CONDUCTORS. ANY DAMAGE TO THE BONDING CONDUCTORS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.