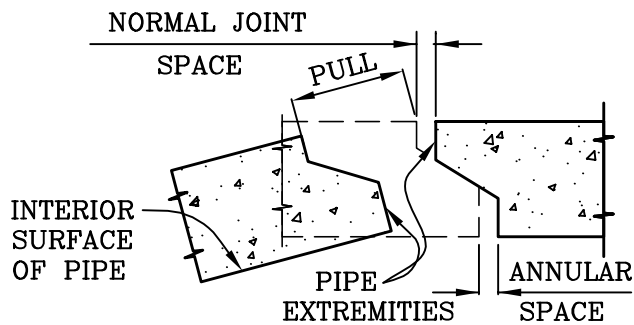
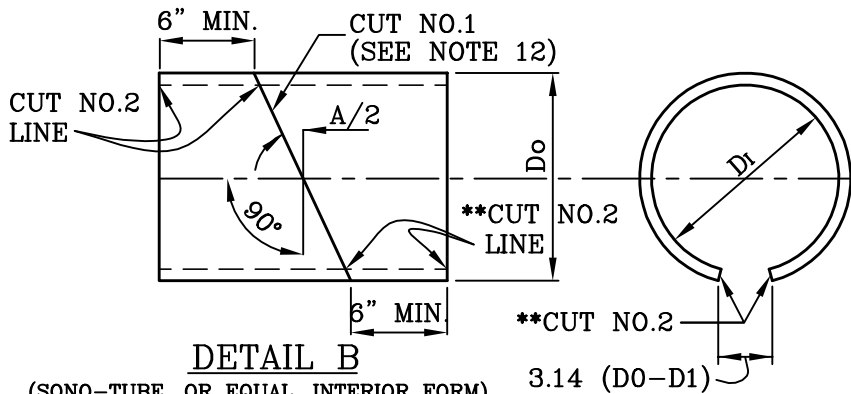


* SEE NOTE 4 ON SHT.2
 ** SEE NOTE 13 ON SHT. 2



DETAIL A

TYPICAL JOINT FOR REINFORCED CONCRETE PIPE



DETAIL B

(SONO-TUBE, OR EQUAL, INTERIOR FORM)

3.14 (D₀-D₁)

| D(IN.) | L(IN.) | T(IN.) | PERMITTED DEFLECTION ANGLE |
|--------|--------|--------|----------------------------|
| 12 | 12 | 4 | 2° 14' |
| 15 | 12 | 4 | 1° 55' |
| 18 | 12 | 5 | 1° 40' |
| 21 | 12 | 5 | 1° 29' |
| 24 | 12 | 6 | 1° 20' |
| 27 | 12 | 7 | 1° 13' |
| 30 | 12 | 7 | 1° 07' |
| 33 | 18 | 8 | 1° 01' |
| 36 | 18 | 9 | 1° 01' |
| 39 | 18 | 9 | 1° 09' |
| 42 | 18 | 9 | 1° 05' |
| 45 | 18 | 10 | 1° 01' |
| 48 | 18 | 10 | 0° 58' |
| 51 | 18 | 10 | 0° 55' |
| 54 | 18 | 10 | 0° 52' |
| 57 | 18 | 10 | 0° 49' |
| 60 | 21 | 11 | 0° 45' |
| 66 | 21 | 11 | 0° 43' |

CITY OF MISSION VIEJO



CONCRETE COLLAR

STANDARD PLAN NO.

414

Robert Anderson

9-23-03

APPROVED

RCE 30190

DATE

SHT 1 OF 2

NOTES:

1. A CONCRETE COLLAR IS REQUIRED WHENEVER D1 IS UNEQUAL TO D2 OR THE PERMITTED DEFLECTION AT A PIPE JOINT IS EXCEEDED; THAT IS WHEN ANGLE "A" IS GREATER THAN THE PERMITTED DEFLECTION ANGLE (SEE TABLE ON SHEET 1).
2. CONCRETE COLLAR SHALL NOT BE CONSTRUCTED ON MAIN LINE STORM DRAINS UNLESS SHOWN ON THE PLANS OR OTHERWISE REQUIRED BY THE CITY ENGINEER.
3. REINFORCING SHALL BE USED WHERE THE PIPE DIAMETER IS GREATER THAN 21 INCHES AND ON ALL PIPES WHERE THE PULL BETWEEN THE EXTREMITIES (SEE DETAIL ON SHEET 1) IS 2 1/2 INCHES OR LARGER.
4. CIRCULAR TIES:

| PIPE DIAMETER | SPACE BETWEEN PIPE EXTREMITIES | NO. OF CIRCULAR TIES |
|---------------|--------------------------------|----------------------|
| 21" OR LESS | 2-1/2" | 3 |
| 24" TO 30" | 2-1/2" OR LESS | 3 |
| 33" TO 57" | 2-1/2" OR LESS | 4 |
| 60" TO 66" | 2-1/2" OR LESS | 5 |

WHERE THE SPACE BETWEEN THE PIPE EXTREMITIES EXCEEDS 2 1/2 INCHES, THE NUMBER OF CIRCULAR TIES SHALL BE INCREASED TO MAINTAIN A MAXIMUM SPACING OF 6 INCHES CENTER TO CENTER. CIRCULAR TIES SHALL HAVE A DIAMETER 5 INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE LARGER PIPE.

5. FOR PIPES LARGER THAN 66 INCHES IN DIAMETER, A SPECIAL COLLAR DETAIL SHALL BE DELINEATED ON THE PROJECT PLANS.
6. WHERE THE PIPE IS 21 INCHES OR LESS IN DIAMETER, AN INTERIOR FORM OF UNSEALED SONO-TUBE, OR EQUAL (SEE DETAIL B ON SHEET 1), SHALL BE USED TO PROVIDE A SMOOTH INTERIOR JOINT. THE PAPER FORM MAY BE LEFT IN PLACE. WHEN THE PIPE IS INCHES OR LARGER, A REMOVABLE INTERIOR FORM SHALL BE USED OR THE INTERIOR JOINT SHALL BE COMPLETELY FILLED WITH MORTAR AND NEATLY POINTED.
7. WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR, L SHALL BE THAT OF THE LARGER PIPE AND THE EXTERNAL DIAMETER OF THE COLLAR SHALL BE EQUAL TO THE OUTSIDE DIAMETER OF LARGER PIPE PLUS 2T FOR THE LARGER PIPE. A CONCRETE COLLAR SHALL NOT BE CONSTRUCTED CONNECTING A LARGER DIAMETER PIPE DOWN STREAM UNLESS SHOWN ON THE IMPROVEMENT PLANS OR REQUIRED BY THE CITY ENGINEER.
8. THE VALUE OF ANGLE "A" SHALL BE SHOWN ON THE IMPROVEMENT PLANS.
9. WHERE THE SLOPE OF THE UPSTREAM PIPE IS GREATER THAN THE SLOPE OF THE DOWNSTREAM PIPE, JOIN SOFFITS. WHERE THE SLOPE OF THE UPSTREAM PIPE IS LESS THAN THE SLOPE OF THE DOWNSTREAM PIPE, JOIN INVERTS.
10. BEVELED PIPE MAY BE USED IN LIEU OF A CONCRETE COLLAR IF APPROVED BY THE CITY ENGINEER.
11. FOR PIPE SIZES NOT LISTED IN THE TABLE, USE VALUES L, T, & A FOR THE NEXT LARGER SIZE LISTED.
12. CUT NO. 1: SAW THE TUBE AT AN ANGLE OF A/2 WITH THE TRAVERSE PLANE. REVERSE ONE SECTION AND TAPE BOTH SECTIONS TOGETHER, FORMING THE DEFLECTION ANGLE "A".
13. CUT NO. 2: SAW THE TUBE LONGITUDINALLY, REMOVING A STRIP 3.14 (Do-Di) INCHES WIDE ON THE SIDE OPPOSITE THE OPEN JOINT. BEND THE ENDS OF THE CUT TOGETHER AND INSERT THE TUBE IN THE PIPE.

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