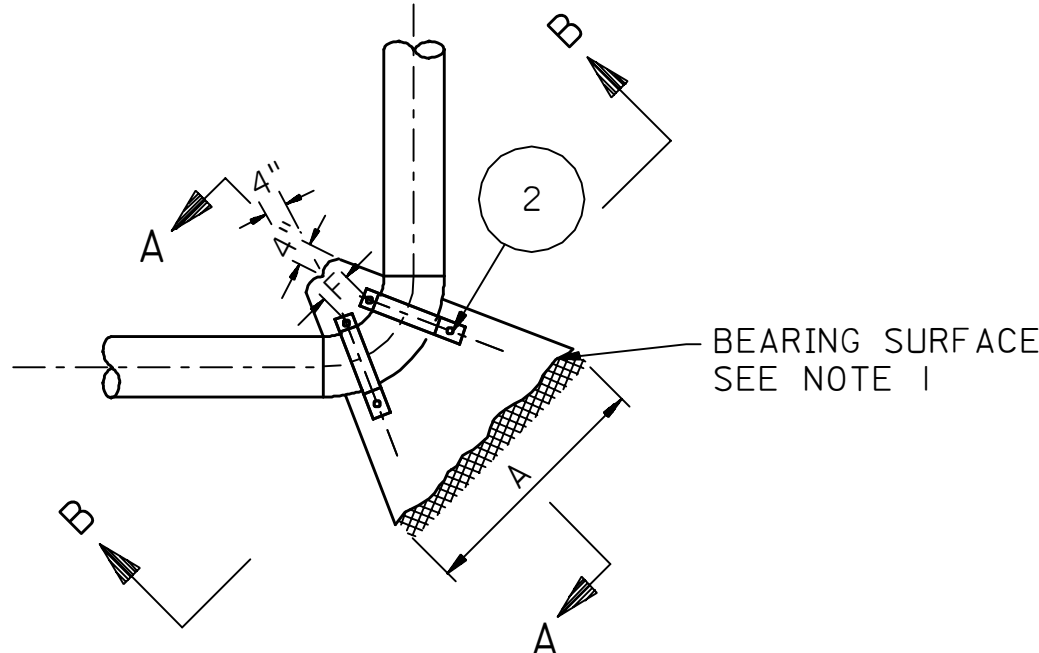
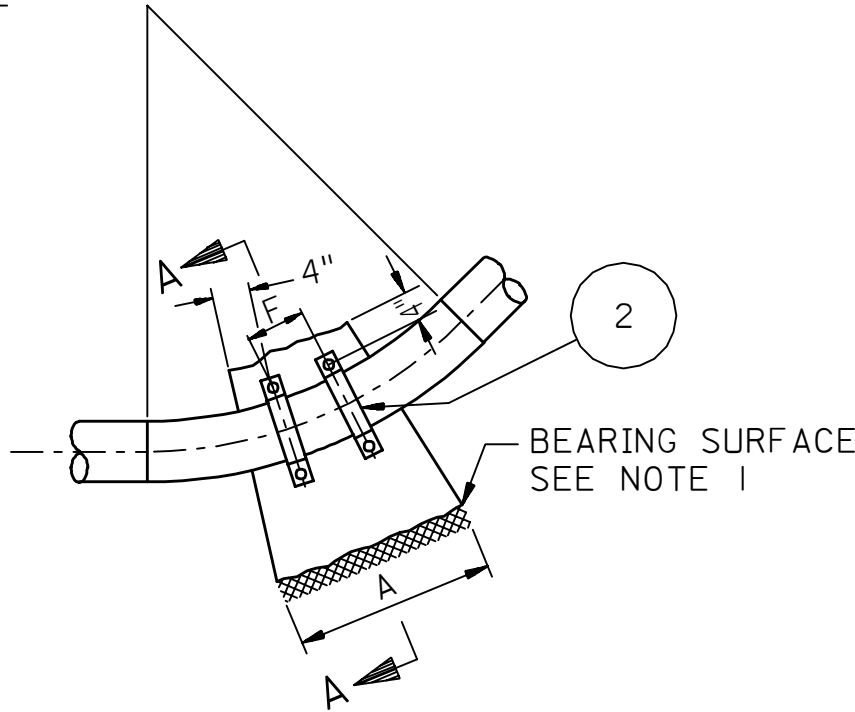


20	100	821930-8B	7	066
REV. NO.	SHT. NO.	DRAWING NUMBER	INDEX	PLANT NO.

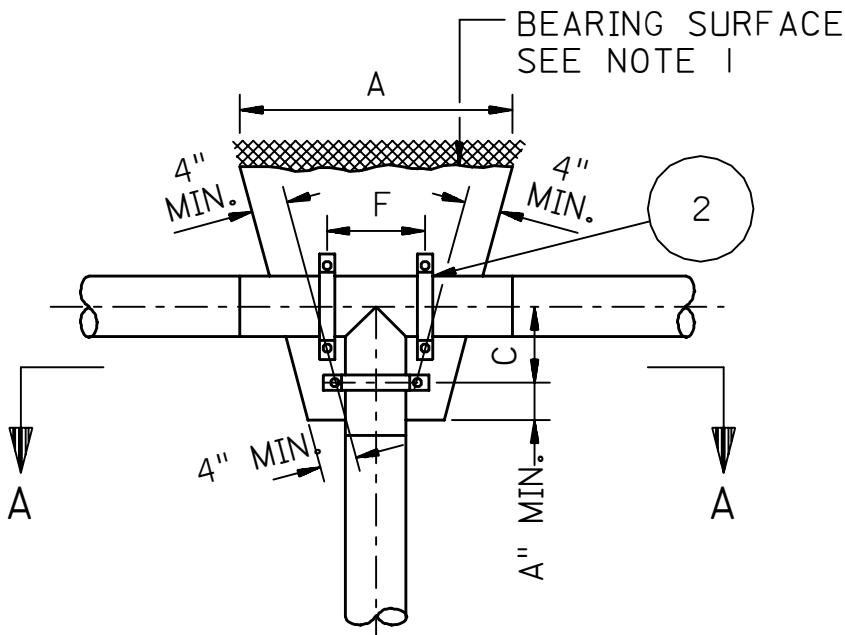
PIPE ANCHORING DETAILS[‡]



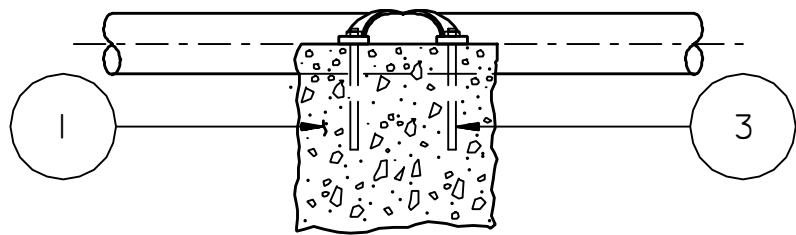
TYP. ANCHORING FOR 90° BEND



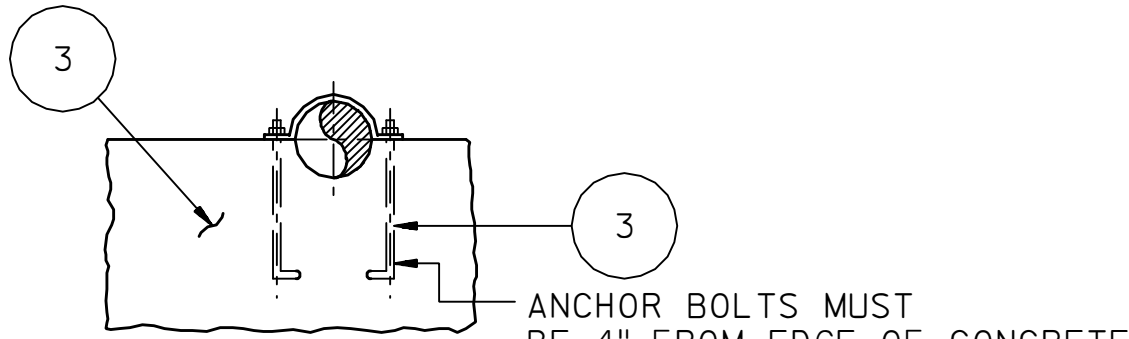
TYP. ANCHORING FOR 45° BEND



TYPICAL ANCHORING FOR TEE CONNECTION



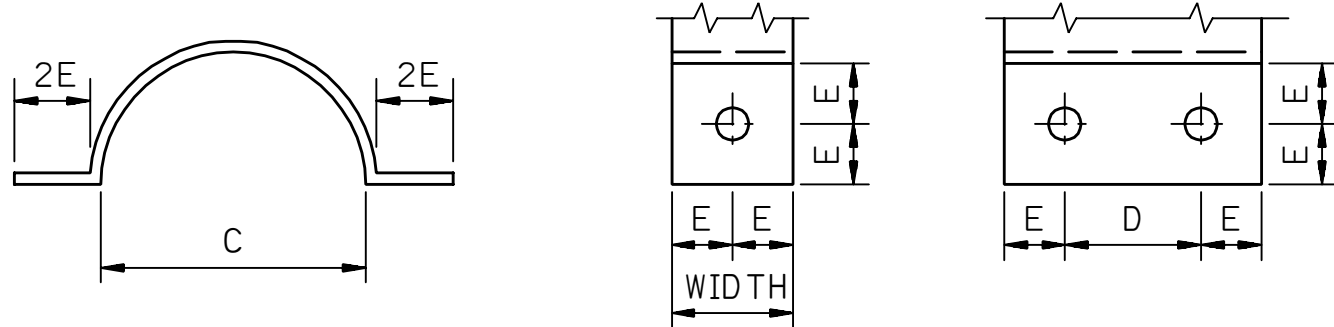
SECTION B-B



SECTION A-A

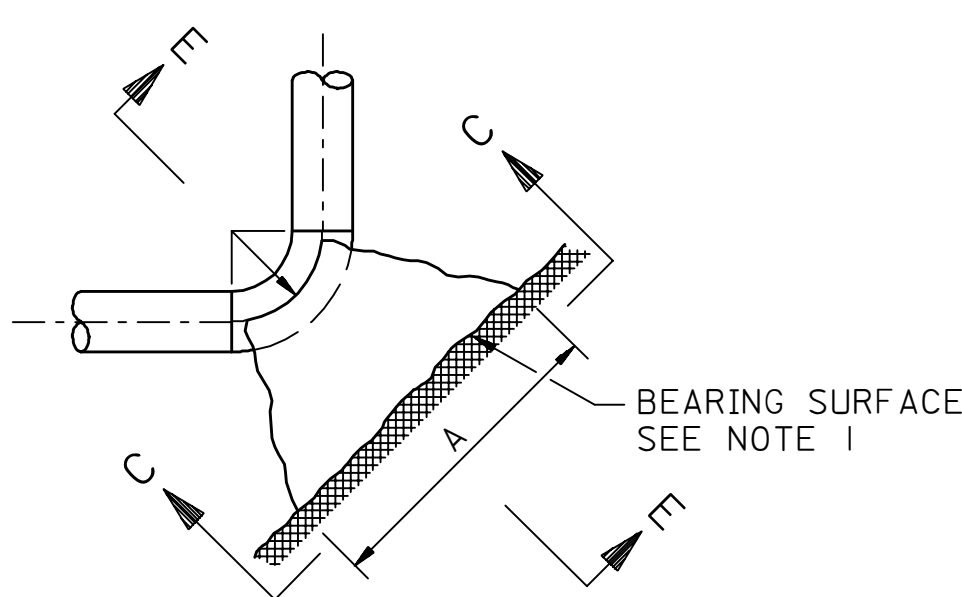
TABLE OF DIMENSIONS											
PIPE SIZE	MIN. A	B	CLAMPS FOR ANCHORS								STRAP THICKNESS
			C	NO. BOLTS	D	DIA. BOLT	WIDTH	E	MIN. F	STRAP LENGTH	
THRUST BLOCKS AND ANCHOR BLOCKS FOR 90° BENDS											
8"	2'-8"	2'-8"	9 7/8	4		3/4	3"	1 1/4	43 1/2	"21"	1/4"
10"	3'-6"	2'-10"	12 1/16	4		7/8	3"	1 1/2	4"	2'-1 7/16	1/4"
12"	4'-2"	3'-0"	14 7/16	4		1"	4"	2"	5"	2'-7 3/16	1/4"
14"	4'-10"	3'-4"	16 13/16	"	3"	7/8	6"	1 1/2	7"	2'-8 7/8	1/4"
16"	5'-6"	3'-4"	19 1/8	8	3"	1"	6 1/2	3/4	11 1/2	2'-3'-1 1/2	"1/4"
20"	6'-4"	3'-8"	24 7/16	8	3 3/4	1 1/4	9"	2 1/4	14 3/4	11 7/8	"1/4"
24"	7'-0"	4'-0"	29 3/16	12	3 3/4	1 1/4	12"	1 1/2	12"	24'-7 5/16	1/4"
THRUST BLOCKS AND ANCHOR BLOCKS FOR 45° BENDS											
8"	1'-6"	2'-8"	9 7/8	4		3/4	2 1/2	1 1/4	48 1/2	"21"	1/4"
10"	2'-0"	2'-10"	12 1/16	4		3/4	2 1/2	1 1/4	48 1/2	22'-0 7/16	1/4"
12"	2'-4"	3'-0"	14 7/16	4		3/4	2 1/2	1 1/4	48 1/2	22'-4 3/16	1/4"
14"	2'-8"	3'-2"	16 13/16	"		7/8	3"	1 1/2	9"	2'-8 7/8	1/4"
16"	3'-0"	3'-4"	19 1/8	4		1"	4"	2"	9 1/2	3'-1 1/2	"1/4"
20"	3'-6"	3'-8"	24 7/16	8	3"	7/8	6"	1 1/2	11"	5'-8 3/8	7/8 "1/4"
24"	3'-10"	4'-0"	29 3/16	8	3"	1"	6 1/2	3/4	12"	5'-24"-5 5/16	1/4"
THRUST BLOCKS AND ANCHOR BLOCKS FOR TEE CON. & BLIND FLANGES											
8"	1'-10"	2'-8"	9 7/8	4		3/4	2 1/2	1 1/4	13"	21"	1/4"
10"	2'-6"	2'-10"	12 1/16	4		3/4	2 1/2	1 1/4	15"	22"-0 7/16	1/4"
12"	3'-0"	3'-0"	14 7/16	4		7/8	3"	1 1/2	18"	2'-5 3/16	1/4"
14"	3'-6"	3'-2"	16 13/16	"		1"	4"	2"	21"	2'-10 7/8	1/4"
16"	3'-10"	3'-4"	19 1/8	4		1 1/4	4"	2"	24"	3'-2 1/2	"1/4"
20"	4'-8"	3'-8"	24 7/16	8	3"	1"	6 1/2	3/4	31"	3'-9 7/8	"1/4"
24"	5'-0"	4'-0"	29 3/16	8	3 3/4	1 1/4	7 3/4	1 1/4	37"	4'-7 5/16	1/4"

NOTE: * DIMENSION "C" IS APPROXIMATE. CHECK O. D. OF PIPE AND ADD 1/4 "

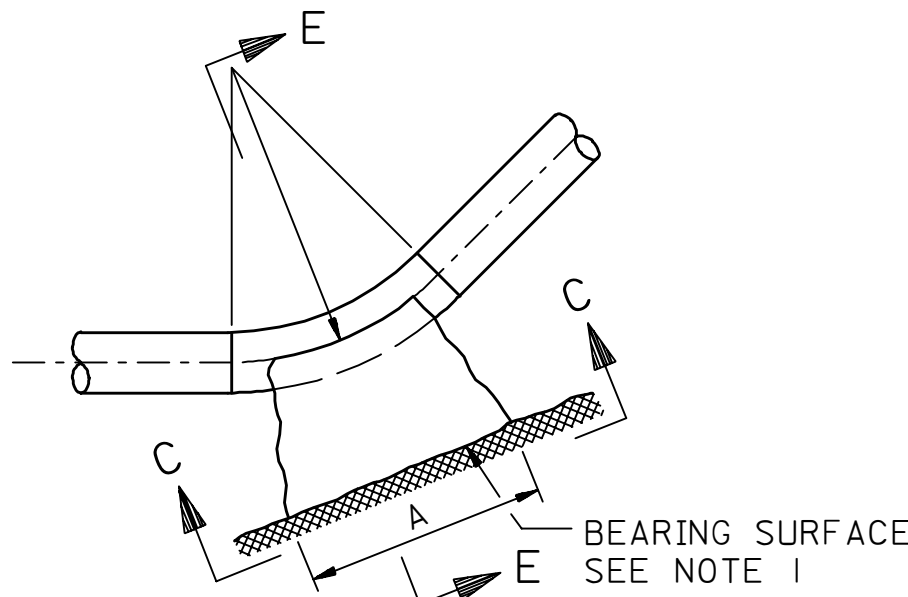


TYP. DETAILS OF STRAP

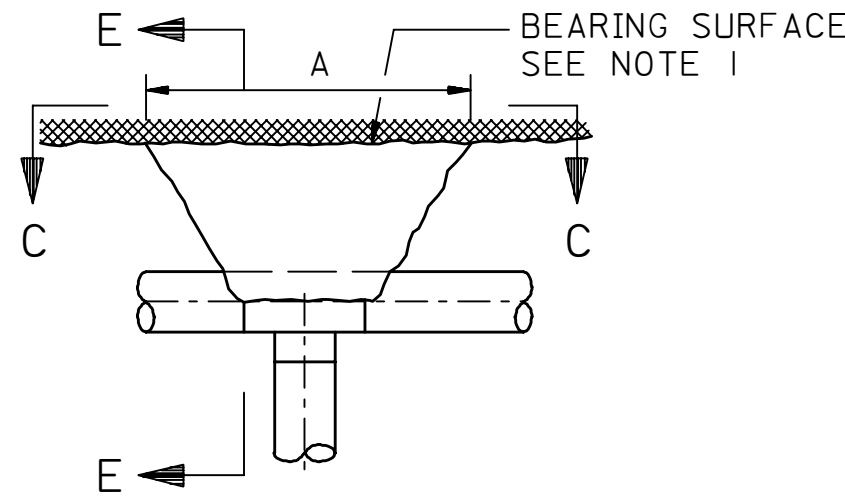
PIPE THRUST BLOCK DETAILS



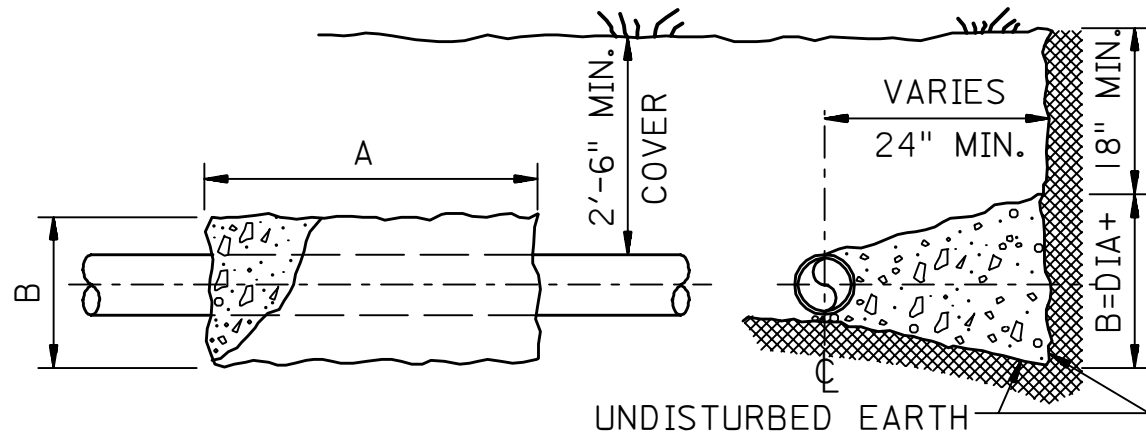
TYP. THRUST BLOCK FOR 90° BEND



TYP. THRUST BLOCK FOR 45° BEND

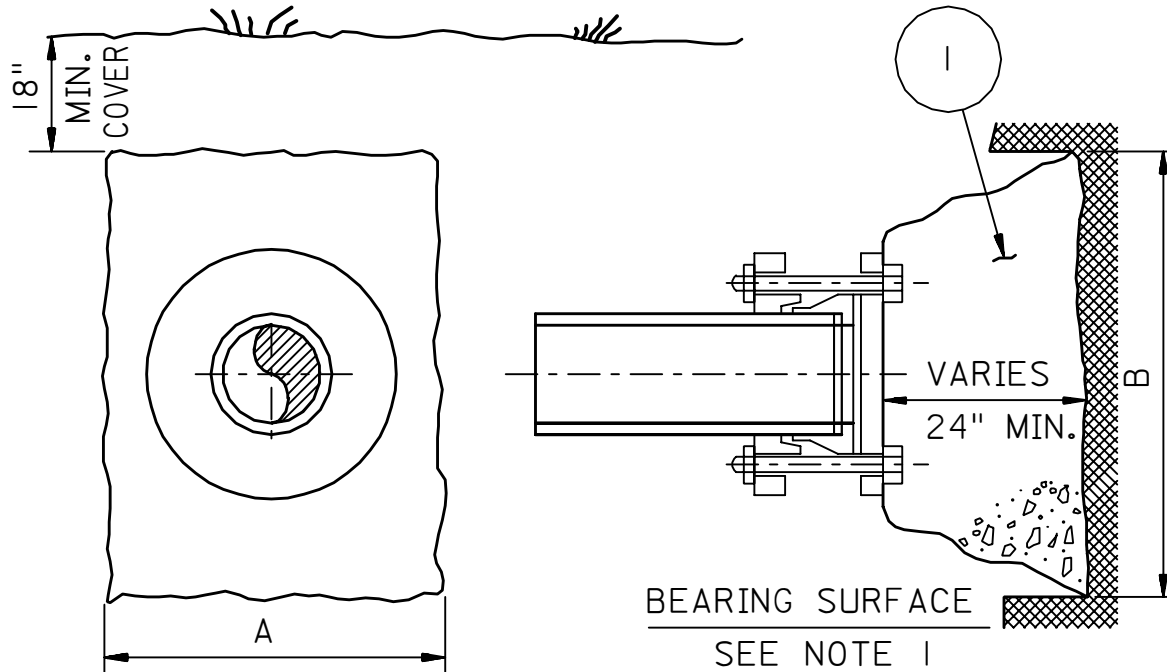


TYP. THRUST BLOCK FOR TEE CONNECTION



SECTION C-C

SECTION E-E



TYP. THRUST BLOCK FOR BLIND FLANGE

MATERIAL CODE

CODE	A. M. S. NO.	CODE NO.	A. M. S. NO.
1	09-240-188	3	10-004-171
2	12-335-262		10-004-175
	12-335-274		10-004-179
	12-335-290		10-004-450
	12-065-059		

CONSTRUCTION NOTES

1. BEARING SURFACES OF THRUST BLOCKING SHOULD BE PUT TO UNDISTURBED EARTH AGAINST SIDE OF TRENCH AND WHERE NOT POSSIBLE THE PIPES SHOULD BE ANCHORED. SEE THRUST BLK. DESIGN INFO.
2. WHERE THE MOVEMENT OF THE COUPLINGS, MAY BE RESTRICTED BY CONCRETE, WRAP COUPLINGS WITH SACKING AND REMOVE SACKING WHEN CONCRETE IS DRY. ONLY THE PIPES SHOULD BEAR ON CONCRETE.
3. PAINT BOLTS AND ANCHOR STRAPS WITH BITUMASTIC 50.
4. ALL BOLT HOLES 1/8 " LARGER THAN BOLT DIA.
5. FOR PIPE DIA. OF 4" AND 6", THE CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING AND 3 SQUARE FEET OF BEARING AREA AGAINST UNDISTURBED SOIL.

THRUST BLOCK DESIGN INFORMATION

PIPE DIA. IN INCHES	DESIGN SOIL PRESSURE	WIDTH MULTIPLIER FOR LOOSE SAND (A)	WIDTH MULTIPLIER FOR 200 PSI TEST PRESSURE (B)	WIDTH MULTIPLIER A+B
4, 6, 8 & 10	1000 P.S.F. (1)	1.25	2.0	2.5
12, 14 & 16	1500 P.S.F. (2)	1.5	2.0	3.0 (4)
20 AND 24	2000 P.S.F. (2)	2.0 (5)	2.0 (5)	— (3)

- * THE SYSTEM MAXIMUM TEST PRESSURE 100 PSI FOR THE INFORMATION GIVEN IN THE TABLE OF DIMENSIONS.
- (1) VALUE FOR A SAND TRENCH.
- (2) VERIFY THIS VALUE BY SOIL TEST OR HYDRAULIC TEST.
- (3) REQUIRES SPECIALLY DESIGNED ANCHORS.
- (4) REINFORCE HORIZONTALLY WITH #4 @ 12' O. C. COVERED 3" FROM THE SOIL BEARING SURFACE.
- ‡ ANCHORING IS RECOMMENDED FOR 100 PSI TEST PRESSURE USES ONLY, AND WHERE THE SOIL IS HARD MARL, ANCHORS REQUIRE TWICE THE DESIGN SOIL PRESSURE LISTED ABOVE FOR THRUST BLOCKS.

02	MAY92	ESSD CMC	DRAWING DIGITIZED INTO CADD DATABASE WITHOUT CHANGES			
REV. NO.	DATE	BY	JO/EWO	DESCRIPTION	CHKD.	CERT. APPD.

SAUDI ARABIAN OIL COMPANY

DRAWN BY	V. D. STER	CHECKED BY	NEW	SCALE	NONE
DATE STARTED	09-14-96	DATE COMPLETED			
OPR'G. DEPT.		ENG. DEPT.	ORIGINAL	SIGNED	

APP'D FOR CONSTR.	
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED	CERTIFIED BY DATE

STANDARD DETAILS

CONCRETE ANCHORS & THRUST BLOCKS FOR ASBESTOS CEMENT PIPE STD. DWG.

PLANT NO.	INDEX	DRAWING NUMBER	SHT. NO.	REV. NO.
990	L	AB-036738	001	02