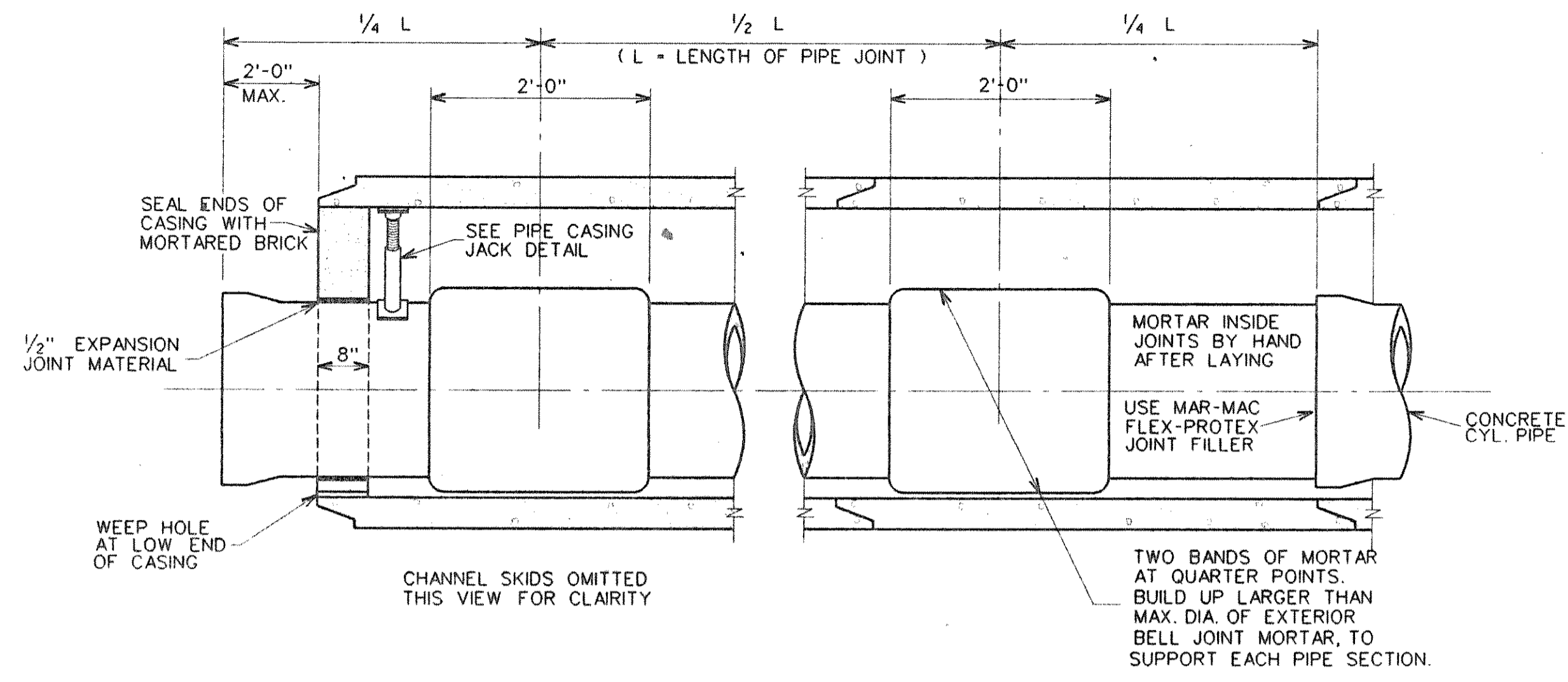


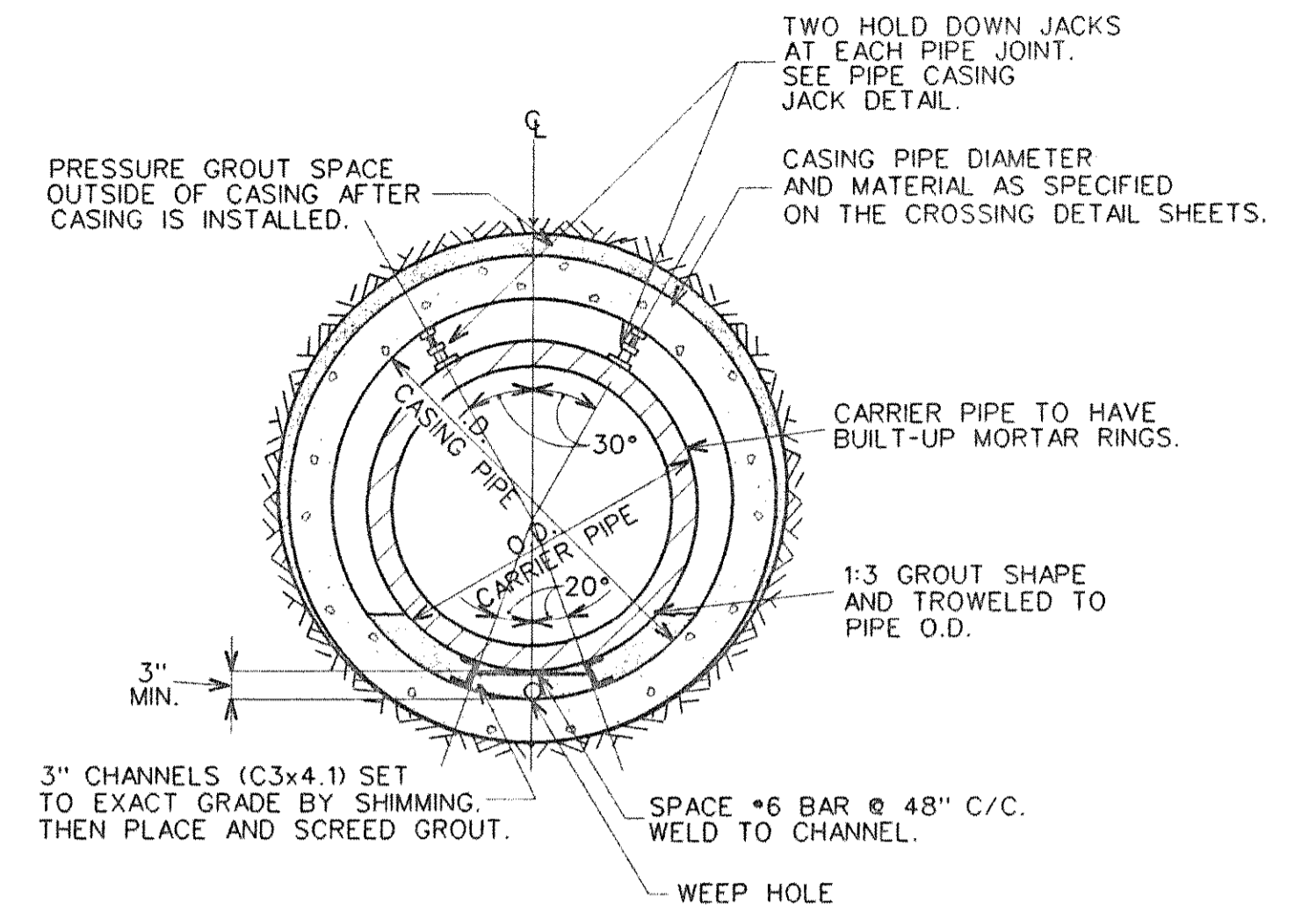
PIPE CASING JACK DETAIL
NOT TO SCALE

NOTES:
CARRIER PIPE TO BE PLACED IN CASING PIPE ONE JOINT AT A TIME. AS A JOINT OF CARRIER PIPE IS INSTALLED, JACKS SHALL BE INSTALLED AT EACH JOINT TIGHTENED FLUSH WITH LINER PLATE.

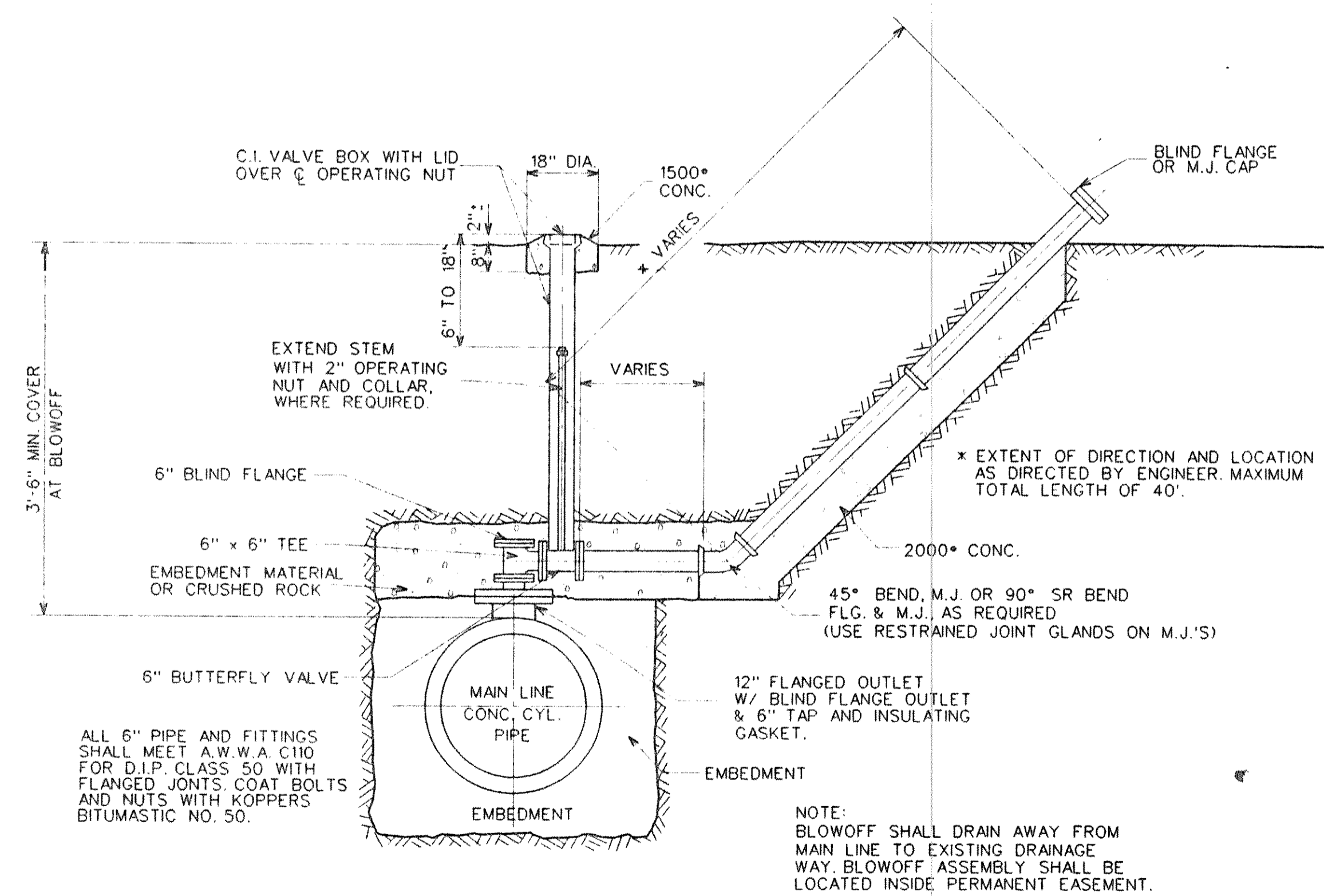
OUTSIDE PIPE JOINTS INSIDE OF CASING SHALL BE FILLED WITH "FLEX PROTEX JOINT FILLER".



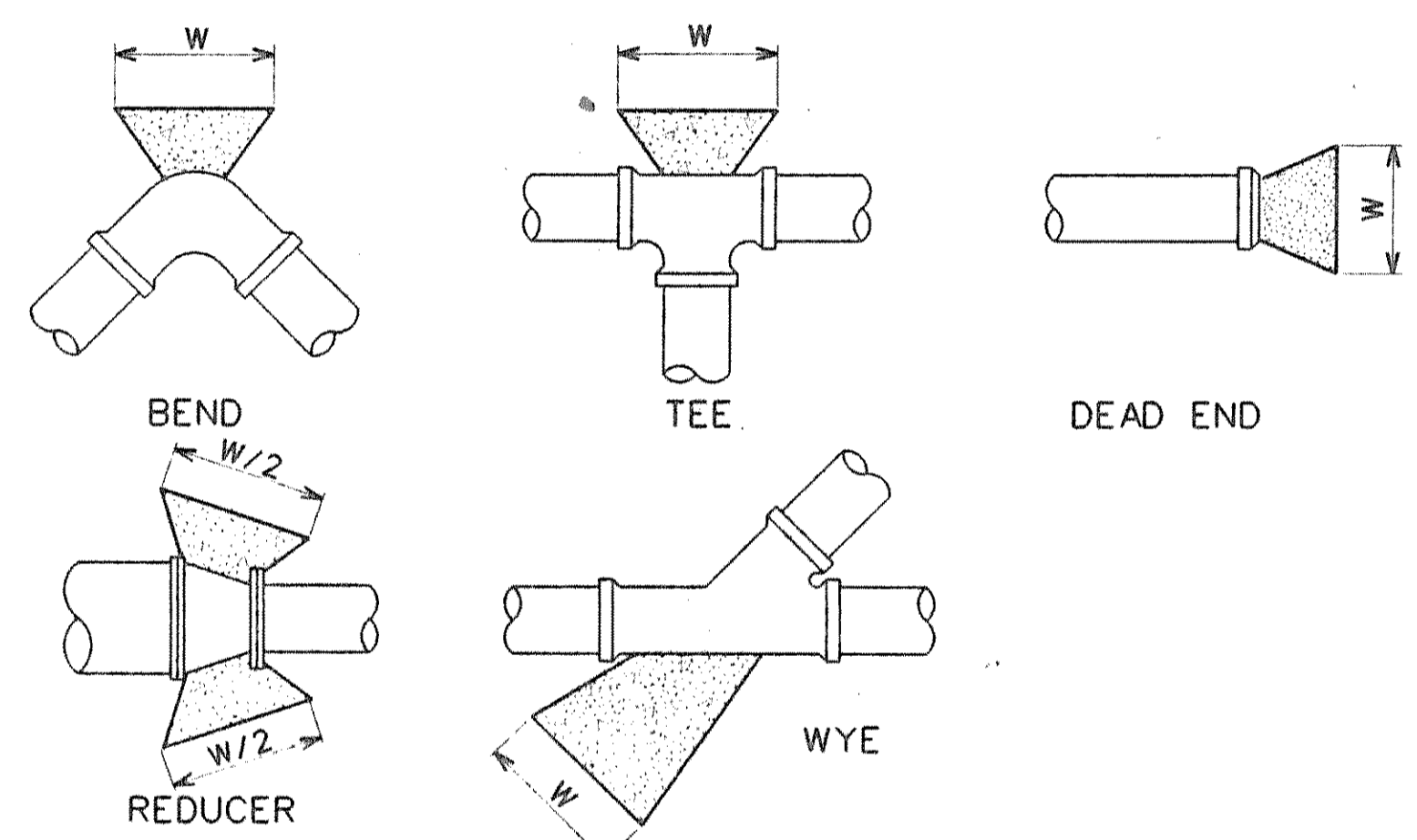
SIDE VIEW - TYPICAL INSTALLATION IN R.C.P. CASING
NOT TO SCALE



END VIEW - TYPICAL INSTALLATION IN R.C.P. CASING
NOT TO SCALE

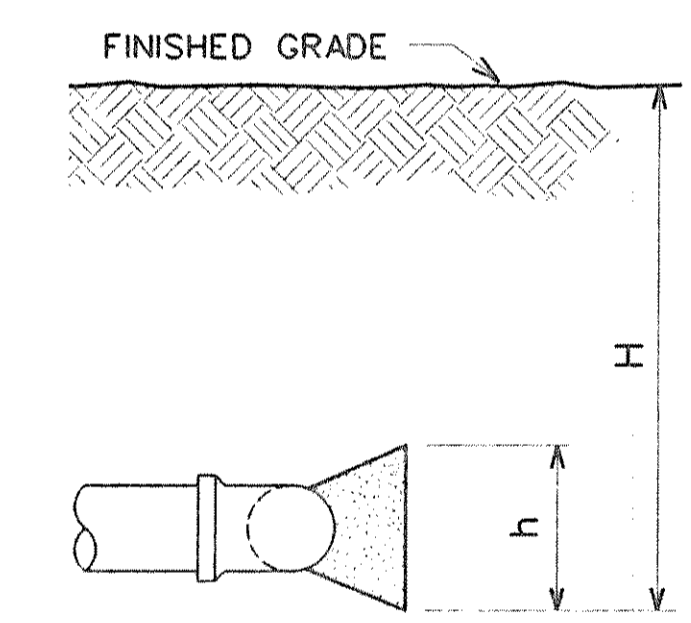


BLOWOFF VALVE WITHOUT ACCESS MANHOLE
NOT TO SCALE



FITTING DIAMETER	5 5/8" BEND	11 1/4" BEND	22 1/2" BEND	45° BEND	90° BEND	TEES, WYES DEAD ENDS
6"	0.5	1.0	2.1	4.1	7.5	5.3
8"	0.9	1.9	3.7	7.2	13.4	9.5
10"	1.5	2.9	5.8	11.3	20.9	14.8
12"	2.1	4.2	8.3	16.3	30.1	21.3
14"	2.8	5.7	11.3	22.2	40.9	28.9
16"	3.7	7.4	14.8	28.9	53.5	37.8
18"	4.7	9.3	18.7	36.6	67.7	47.8
20"	5.8	11.6	23.1	45.2	83.5	59.1
24"	8.3	16.7	33.2	65.1	120.3	85.1
30"	13.0	26.1	51.9	101.7	187.9	132.9
36"	18.8	37.5	74.7	146.5	270.6	191.4
42"	25.6	51.1	101.6	199.4	368.3	260.5

HORIZONTAL THRUST BLOCKING TABLE
THRUST BLOCK BEARING AREA IN SQUARE FEET
NOT TO SCALE

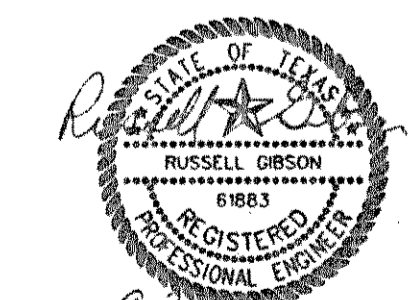


NOTES:

- W x h SHALL BE GREATER THAN THE MINIMUM VALUES LISTED IN THE HORIZONTAL THRUST BLOCKING TABLE.
- h SHALL BE GREATER THAN H/2.
- AREAS IN THE TABLE ARE BASED ON 250 P.S.I. PRESSURE AND 2000 P.S.F. SOIL BEARING CAPACITY. CONTRACTOR SHALL VERIFY SOIL BEARING CAPACITY AND ADJUST THRUST BLOCKING AREAS ACCORDINGLY.

HORIZONTAL BLOCKING AND VERTICAL DOWNWARD BLOCKING DETAIL
NOT TO SCALE

RECORD DRAW
Date: 11/24/90



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RUSSELL GIBSON, TEXAS P.E. NO. 61883 ON SEPTEMBER 24, 1990

DESIGNED - R.L.G.
DRAWN - D.A.N.
TRACED - J.W.G.
CHECKED - J.W.G.

JOB NO. NTD88047
DATE SEP. 1990
SCALE H. 1"=20'
V. 1"=20'

FREESE AND NICHOLS INC.
CONSULTING ENGINEERS
FORT WORTH - ARLINGTON - AUSTIN, TEXAS

NORTH TEXAS MUNICIPAL WATER DISTRICT
WYLIE - ROCKWALL - FARMERSVILLE PIPELINE

PIPELINE APPURTENANCES

CF 88-3

SH. 26
OF 28