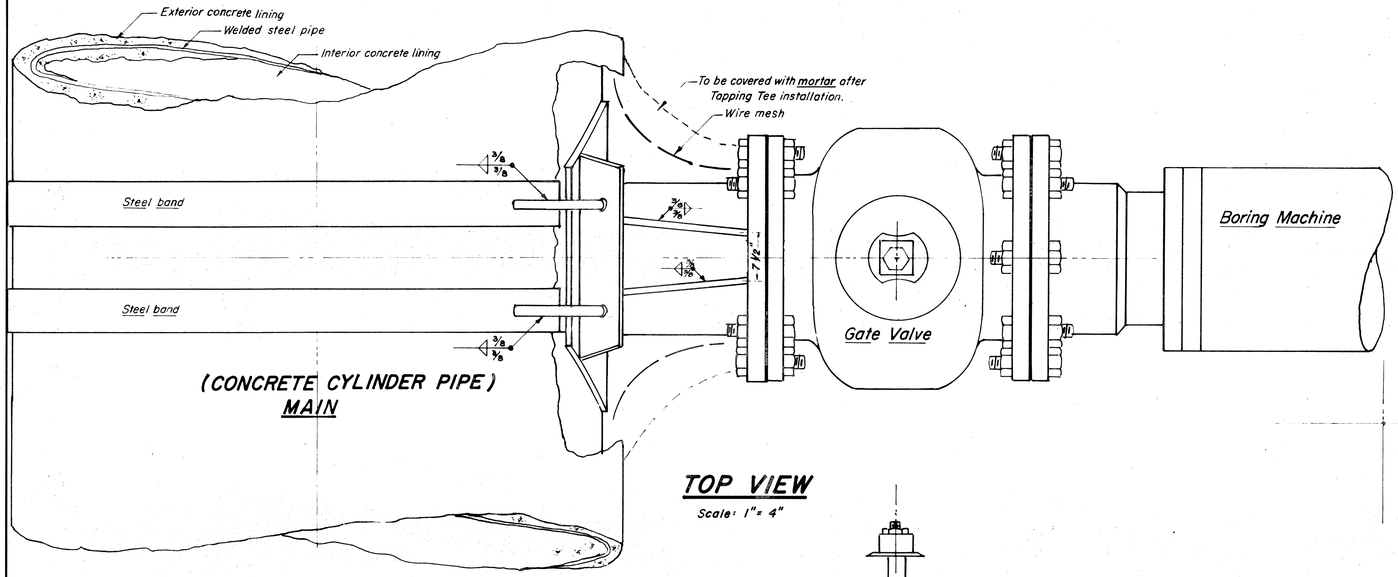
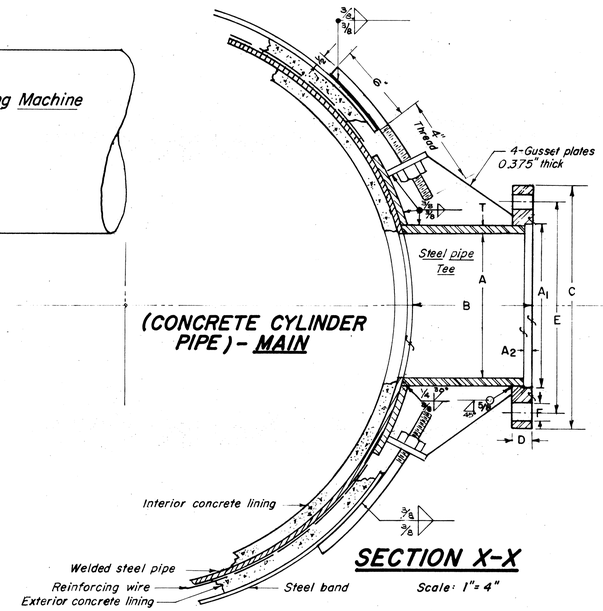


TOP VIEW

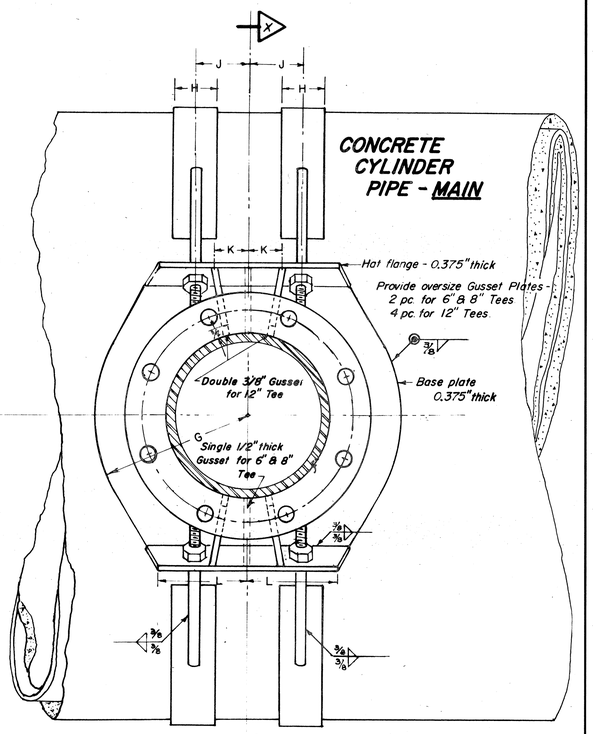
Scale: 1"= 4"



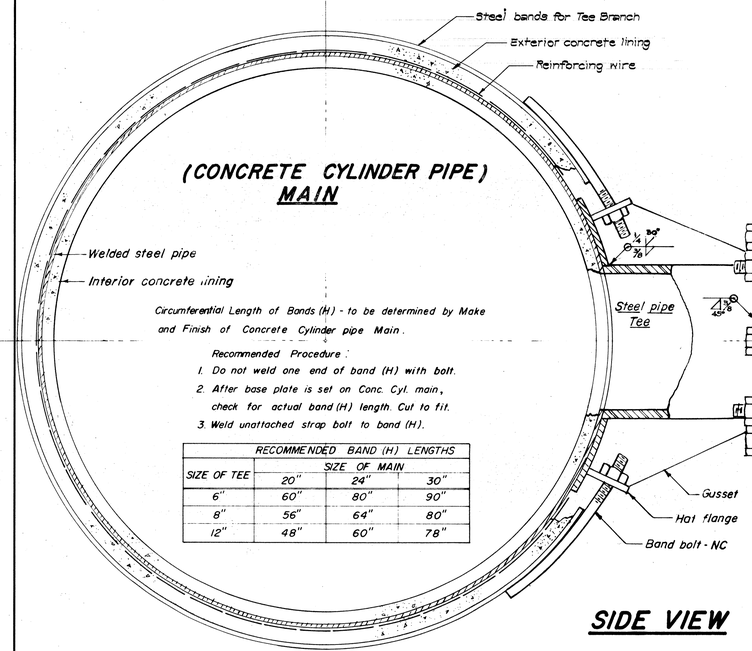
(CONCRETE CYLINDER PIPE) - MAIN

SECTION X-X

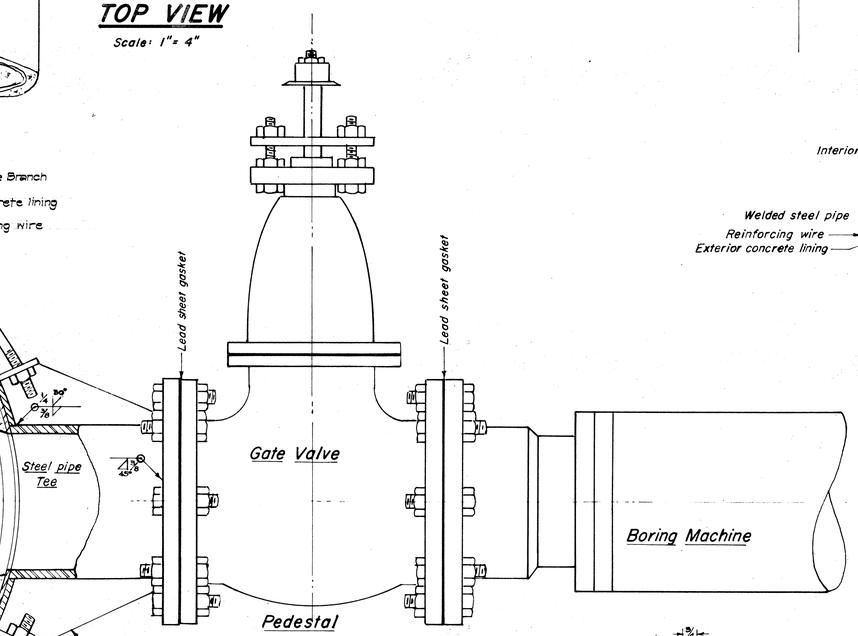
Scale: 1"= 4"



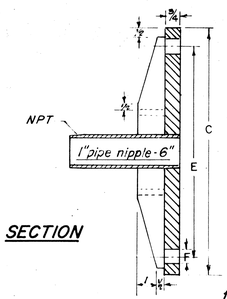
FRONT VIEW



SIZE OF TEE	RECOMMENDED BAND (H) LENGTHS — SIZE OF MAIN 20"	24"	30"
6"	60"	80"	90"
8"	56"	64"	80"
12"	48"	60"	78"



SIDE VIEW

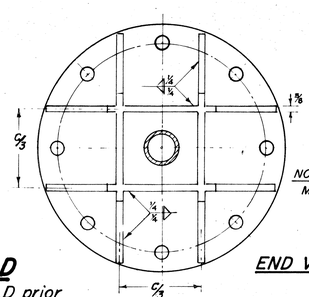


SECTION

BULKHEAD

for TESTING WELD prior to tapping into Conc. Cylinder Main

Scale: 1"= 4"



NOTE
Make one for each size Tee

END VIEW

SPECIFICATIONS - TEE BRANCH				
A	Actual Branch Size	6.25"	8.375"	12.375"
B	Length of Branch Tee	6.75	6.75	6.25
C	Machined flange diameter	11.125	13.63	19.
D	Flange thickness	1.00	1.125	1.25
E	Bolt circle diameter	9.50	11.75	17.00
	No. of bolt holes required	8	8	12
F	Size of bolt holes	0.875	0.875	1.00
G	Min. Radius of base plate	7.50	10.00	12.00
H	Size of steel bands	2.5 x .25	2.5 x .25	3.0 x .3125
J	Branch ℄ - Band ℄	3.75	5.0	7.0
K	Branch ℄ - Gusset ℄	Single 0.50 at ℄		6.00
L	Branch ℄ - Hat flange edge	5	6	9
T	Thickness of tee pipe (min.)	0.280	0.277	0.330
A_1	Major Dia. on Flange	6.60	8.73	12.85
A_2	Depth of Flange Offset	0.375	0.375	0.375

SPECIFICATION & NOTE:

1. Dimensions shall meet those on ASA B16.1 Class 125 Flanged Fittings
2. Steel used shall be AISI C1018
3. Welding electrodes shall be AWS E6010 classification.
4. Base plate-G-on tee shall be formed to fit closely the exterior surface of welded steel pipe on concrete cylinder pipe-main.
5. After tapping tee is built, one heavy coat of BWS approved corrosion resistant paint shall be applied on all exposed surface, including steel bands.
6. Length of steel bands shall be determined by size of concrete cylinder pipe and tapping tee used in connection.
7. Set machined flange holes in position so appropriate gate valve is in a perpendicular position.
8. Attach gussets on welded Tee before installation of Gate Valve.

REVISION	DATE	BRIEF	BY	APPR'D

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PROJECT NO. 72C-02-68

HAWAII-KAI MARINA BRIDGE & CHANNEL
MAUNALUA, OAHU, HAWAII.

WATER DETAILS

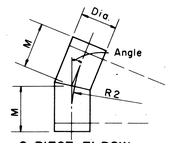
DRAWN BY _____ ENGINEER _____

APPROVED BY: [signature] 7/1/67
CHIEF, ENGR. DIVISION, B.W.S. DATE

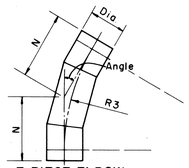
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

FILE	POCKET	FOLDER	NO.

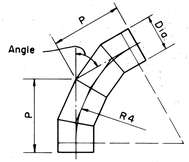
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS



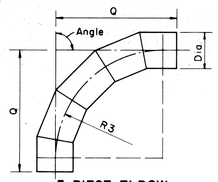
2 PIECE ELBOW
0° to 22 1/2° Inclusive



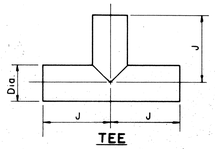
3 PIECE ELBOW
Over 22 1/2° to 45° Inclusive



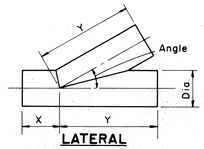
4 PIECE ELBOW
Over 45° to 67 1/2° Inclusive



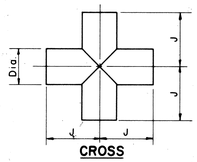
5 PIECE ELBOW
Over 67 1/2° to 90° Inclusive



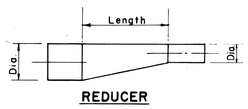
TEE



LATERAL
30° Minimum - 75° Maximum



CROSS



REDUCER

STANDARD FITTING DIMENSIONS

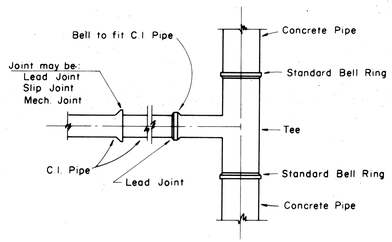
DIAMETER	TEE Run J+J	TEE Outlet J	CROSS (Both Ways) J+J	LATERAL (30° to 75°) Run X+Y	LATERAL (30° to 75°) Outlet Y	ELBOWS (Center to End) 2 Piece (up to 22 1/2°) M	2 Piece R2	3 Piece (22 1/2° to 45°) N	3 Piece R3	4 Piece (45° to 67 1/2°) P	4 Piece R4	5 Piece (67 1/2° to 90°)
16"	34"	17"	34"	62"	52"	12"	60"	18"	44"	26"	39"	34"
18"	36"	18"	36"	66"	56"	12"	60"	19"	47"	27"	41"	36"
20"	38"	19"	38"	72"	60"	13"	65"	20"	49"	28"	42"	39"
22"	40"	20"	40"	78"	66"	13"	65"	21"	51"	30"	45"	41"
24"	42"	21"	42"	84"	72"	14"	70"	22"	54"	32"	48"	44"
30"	60"	30"	60"	96"	84"	15"	75"	25"	61"	37"	51"	51"
36"	66"	33"	66"	110"	96"	16"	80"	27"	66"	40"	60"	56"

DIMENSIONS FOR ECCENTRIC REDUCER REDUCING SECTION

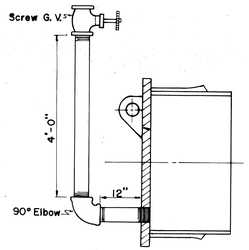
36" X 30" Eccentric Reducer - Length 66"
30" X 24" Eccentric Reducer - Length 66"
24" X 20" Eccentric Reducer - Length 26"
20" X 16" Eccentric Reducer - Length 26"

NOTE:

All dimensions shown are laying lengths.
All fittings and specials shall be fabricated independent from pipe sections and in accordance with the dimensions shown.
All fittings and specials shall be all bell unless otherwise noted.
All tees, wyes, crosses and reducers 16-inch in diameter and larger shall be reinforced with steel ribs or steel crotch plates welded continuously to the cylinder or by other methods to withstand the longitudinal crushing effect caused by the test pressure as called for in the plans.

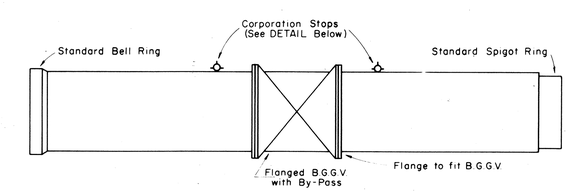


TYPICAL CAST IRON PIPE CONNECTION TO CONCRETE CYLINDER PIPE

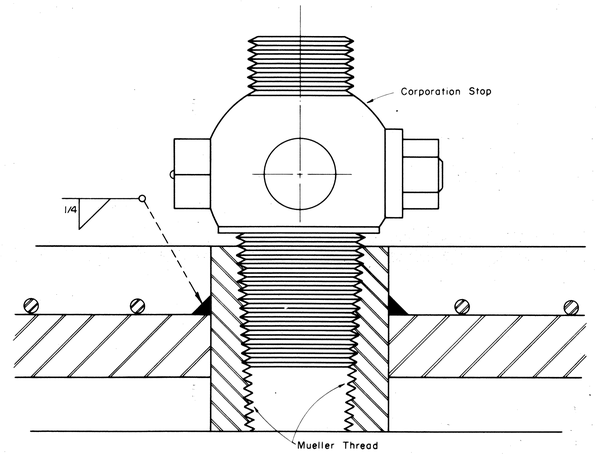


NOTE
For Pipe Sizes 12" And Below - 2 1/2" Cleanout
For Pipe Sizes 16" And Above - 4" Cleanout

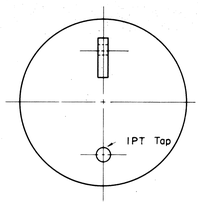
TYPICAL SECTION OF TEMPORARY CLEANOUT



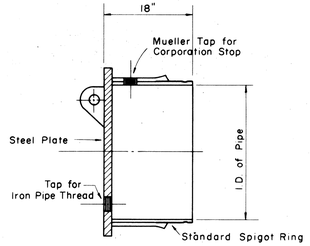
ELEVATION



TYPICAL SECTION THRU CONCRETE PIPE AT CORPORATION STOP

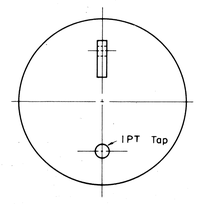


PLAN OF STEEL PLATE

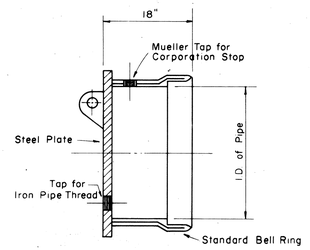


SECTION

DETAIL OF PLUG

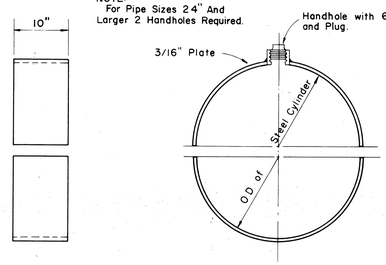


PLAN OF STEEL PLATE

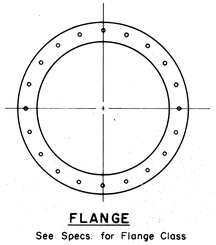


SECTION

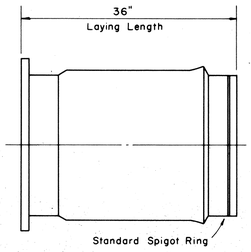
DETAIL OF CAP

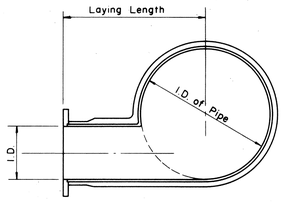


DETAIL OF SPLIT BUTT STRAP

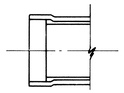


FLANGE
See Specs. for Flange Class

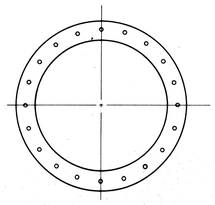




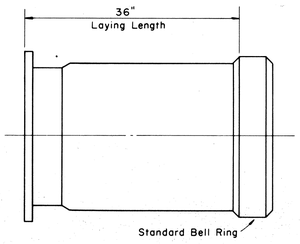
SECTION



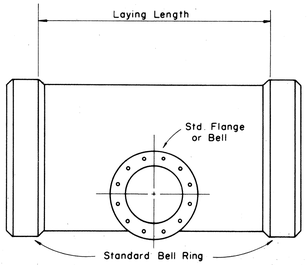
BELL SECTION



FLANGE
See Specs. for Flange Class



TYPICAL DETAIL OF ADAPTER



TYPICAL DETAIL OF BLOW-OFF TEE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

REVISION	DATE	BRIEF	BY	APPR'D

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PROJECT NO. 72C-02-68

HAWAII-KAI MARINA BRIDGE & CHANNEL
MAUNALUA, OAHU, HAWAII.

WATER DETAILS

DRAWN BY _____ ENGINEER _____

APPROVED BY: _____ CHIEF, ENGR. DIVISION, B.W.S. 7/21/67 DATE

FILE	POCKET	FOLDER	NO.

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS