FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(7):13 I-H3-1(2):8	1968	28	86

HAWAIIAN TELEPHONE NOTES

1. The contractor to stake out proposed pole and anchor locations and state to check locations prior to excavations.
2. Depth of poles and anchor holes are taken from finished grade.
3. Installation of and backfill for poles by H.T.CO.
4. Backfill of anchor holes by Contractor.
5. For pole setting depth, see Standard Details.

Bends A_1 & A_2 and B_1 & B_2 have been consolidated into one bend each. (CCO # 19 & Shop Drawings)

LEGEND (HTCO)

- Existing Pole
- Existing Pole with existing anchor
- Existing Pole to be removed (By others)
- New Pole
- New Pole with New anchor

℄ Sta. 633+45 - 82% L
1 - 24" 1/32 Bend (H.V.)
A_1 1 - Conc. Block

℄ Sta. 633+36 - 104'% L
* 1 - 24" 1/32 Bend
* 8 L.F. 24" C.I. Pipe ℄ P.C. Sta 633+844.62
* 1 - 24" Sleeve 14" Long
1 - Conc. Block w/Structural Strut (See Standard Details)

TEMP. FOR TESTING
1 - 24" Plug tapped for 2½" I.P.T.
1 - 2½" Cleanout
1 - Conc. Block

℄ Sta. 633+46-79'% L
1 - 24" 1/8 Bend (T.V.)
A_2 1 - Conc. Block

℄ Sta. 633+48 - 67% L
1 - 24" 1/16 Bend (B.V.)
B_1 1 - Conc. Block

℄ Sta. 633+49 - 62% L
1 - 24" 1/8 Bend (B.V.)
B_2 1 - Conc. Block

℄ Sta. 633+70 - 70% R
1 - 24" 1/8 Bend (Horiz)
1 - Conc. Block

℄ Sta. 633+64 - 80% R
* 1 - 24" 1/8 Bend
* 1 - 24" Sleeve 15" Long
* 16 L.F. 24" C.I. Pipe
1 - Conc. Block w/Structural Strut (See Standard Details)

TEMP. FOR TESTING
1 - 24" Plug tapped for 2½" I.P.T.
1 - 2½" Cleanout
1 - Conc. Block

90'
~~40'~~ Pole (HTCO)
Install: 2-1" Anchor L=15'
Installed By H.E. Co. - Pole and Anchors

MOKAPU SADDLE ROAD
TO KANEOHE
TO KAILUA
278° 41' 00"
45
W24"

308° 29' → 400.00'
219° 29' → 250.00'
38° 29' 250.00'
685'

25' Pole (H.T.CO.)
Install: 1-1" Anchor L=15'
Installed By H.E. Co. - Pole and Anchor.

2 MG KAPAA RESERVOIR
PROPOSED 2MG RESERVOIR

See PROFILE "B" Sheet No. 30.

~~30~~ Pole (HTCO)

55'
~~30~~ Pole (HTCO)
Install: 1-3/4" Anchor L=15'
Installed By H.E. Co. - Pole and Anchor.

Existing 24" Water
W24"
See PROFILE "A" Sheet No. 30

Concrete Jacket
W24"
W36"
Jacket
3
2
1

G.R.P. Cut Slope, See Composite Sht. No. 44

New 36" Conc. Cylinder Main
8000 N
40
W24"
Toe of fill
Existing 24" Water
New 24" Water Main See Sheet No. 29

45'
~~35~~ Pole (HTCO)

Pipeline Sta. 0+00
1 - 36" Plug Tapped for 4" I.P.T.
1 - 4" Cleanout
1 - Conc. BLock

Alt. Vault
℄ P.C. Sta. 31+47.44

G.R.P. Cut Slope, See Composite Sht. No. 44

309° 11' 30"

KAILUA 38 OVERPASS
214° 00' 00"
℄ Interstate Route H-3
INBOUND
OUTBOUND
3000 S

RAMP K-2
RAMP K-1 10

Pipeline Sta. 3+95
1 - 36" 43° Bend (B.V.)
1 - Conc. Block

Pipeline Sta. 3+70
1 - 36" 34° Bend (H.V.)
1 - Conc. Block

Pipeline Sta. 2+97
1 - 36" 22° Bend
1 - Conc. Block

Pipeline Sta. 2+40
1 - 36" 15° Bend (T.V.)
1 - Conc. Block

Pipeline Sta. 0+35
1 - 36" 12° Bend
1 - Conc. Block

Pipeline Sta. 0+62
1 - 36" 48° Bend (T.V.)
1 - Conc. BLock

Pipeline Sta. 0+80
1 - 36" 60° Bend (B.V.)
1 - Conc. BLock

Pipeline Sta. 5+50
1 - 36" 10° Bend
1 - Conc. Block

Pipeline Sta. 6+60
1 - 36" 23° Bend (T.V.)
1 - Conc. Block

Pipeline Sta. 7+05
1 - 36" 17° Bend (B.V.)
1 - Conc. Block

Pipeline Sta. 7+20
1 - 36" Plug Tapped for 4" I.P.T.
1 - 4" Cleanout
1 - Conc. Block

H.E. Pole 44
Install: 2-3/4" Anchors L=15'
Install By H.E. Co. - Pole and Anchors.

WATER NOTES

1. The Contractor shall notify the Board of Water Supply in writing one week prior to commencing work on the water system.
2. Items indicated as "relocate" on the plans shall be removed, cleaned, painted and reinstalled at the new location by the Contractor unless otherwise specified.
3. Asterisk (*) indicates work to be performed by BWS. Materials to be furnished by the Contractor unless specified as "relocate".
4. All excavation and backfill shall be done by the Contractor, including excavation for the relocation and lowering of existing main and excavation for meter to house service connections.
5. The minimum clearance between fire hydrants and utility poles or light standards shall be 3.0 feet.
6. See sheet No. 29 for additional Notes.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

WALLACE S. MIYASHIRA REGISTERED PROFESSIONAL ENGINEER No. 1513 HAWAII, U.S.A.

This work was prepared by me or under my supervision.

APPROVED:
for CHIEF, ENGINEERING DIVISION, B.W.S. — DATE 1-15-68
OUTSIDE PLANT ENGINEER HTCO LTD. — DATE 1-19-68

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RELOCATION PLAN
24" AND 36" WATER MAIN
& HTCO POLES

F.A.I. Proj. No. I-H3-1(7):13, I-H3-1(2):8
Scale: 1" = 50' Date: Jan. 1968

SHEET No. U-1 OF 4 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

28. 111

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(7):13 I-H3-1(2):8	1968	29	80

WATER NOTES

6. The locations of existing water mains and appurtenances shown on the plans are approximate only. Any adjustments to the water mains and appurtenances whether shown on the construction plans or not shall be made and paid for by the project.
7. The Contractor shall plug the ends of abandoned water mains with class "C-1" concrete. Payment for class "C-1" concrete used as plugs shall be considered incidental to various contract items for the Water System.
8. Prior to final inspection, all fire hydrants shall be cleaned of all oil, grease, dirt or other loose material and given one coat of an approved red lead and one coat of an approved aluminum hydrant paint.
9. Access to the reservoir shall be available to the Board of Water Supply at all times for the maintenance of the Reservoir and Pipeline.
10. The 30-inch Concrete Cylinder Pipe shall be filled with water after chlorination and flushing.

℄ Sta. 39+00 (Mokapu Saddle Rd) =
Pipeline Sta. 0+00 76' 0/S L
*1 - 24" 1/16 Bend
*1 - 24" Sleeve, 15" Long
*14 L.F. 24" C.I. Pipe
1 - Conc. Block w/ Structural Strut, See Standard Details.

TEMP. FOR TESTING
1 - 24" Plug (reuse from previous test)
1 - 2½" Cleanout
1 - Conc. Block.

℄ Sta. 42+99 (Mokapu Saddle Rd) =
Pipeline Sta. 5+05 218' 0/S R
1 - 24" 1/16 Bend
1 - Conc. Block

℄ Sta. 43+55 (Mokapu Saddle Rd) =
Pipeline Sta. 5+60 216' 0/S R
1 - 24" 1/32 Bend (B.V.)
1 - Conc. Block

℄ Sta. 45+54 (Mokapu Saddle Rd) =
Pipeline Sta. 7+60 210' 0/S R
1 - 24" 1/32 Bend
1 - Conc. Block

(Poles HTCO) See Sheet No. 28.

Existing 24" Main

New 30" Conc. Cylinder Main See Sheet No. 28.

INBOUND — Interstate Route H-3 — OUTBOUND

KAILUA OVERPASS

RAMP K-1

← TO KANEOHE 278° 41' 00"

TO KAILUA →

MOKAPU SADDLE ROAD

NOTE: FOR THIS WATER LINE, SEE SHEET 118A.

Exist G.V. Relocate

New 24" Water Main See Profile "C", Sheet No. 30.

Toe of fill

Poles, See Sht. No. 28

℄ Sta. 42+48 (Mokapu Saddle Rd) =
Pipeline Sta. 4+50 199' 0/S R
1 - 24" 1/32 Bend (H.V.)
1 - Conc. Block

℄ Sta. 41+40 (Mokapu Saddle Rd) =
Pipeline Sta. 3+35 157' 0/S R
1 - 24" 1/16 Bend
1 - Conc. Block

℄ Sta. 40+97 (Mokapu Saddle Rd) =
Pipeline Sta. 2+75 115' R
1 - 24" 1/16 Bend (T.V.)
1 - Conc. Block

℄ Sta. 47+04 (Mokapu Saddle Rd.) =
Pipeline Sta. 9+15 163' 0/S R
1 - 24" 1/32 Bend (T.V.)
1 - Conc. Block

℄ Sta. 46+35 (Mokapu Saddle Rd) =
Pipeline Sta. 8+45 170' 0/S R
1 - 24" 1/32 Bend (B.V.)
1 - Conc. Block

Existing 24" Main

℄ Sta. 47+29 Mokapu Saddle Rd
Pipeline Sta. 9+40 167' 0/S R
*1 - 24" 1/32 Bend
*1 - 24" Sleeve 15" long
*12 - L.F. 24" C.I. Pipe Class 150
*1 - 20" B.G.G.V. (relocate)
*2 - 24"x 20" Reducer L.E.M.J (relocate)
1 - 20" M.H. Frame & Cover (relocate)
2 - 6" M.H. Frame & Cover (relocate)
1 - Type "A" M.H. 7.0' deep
1 - Conc. Block w/ Structural Strut See Standard Details.

TEMP. FOR TESTING
1 - 24" Plug reuse from previous test
1 - 2½" Cleanout
1 - Conc. Block

WALLACE S. MIYAHIRA REGISTERED PROFESSIONAL ENGINEER No. 1513 HAWAII, U.S.A.

This work was prepared by me or under my supervision.
Wallace Miyahira

NOTE:
Items with asterisk (*) shall be installed by BOARD of WATER SUPPLY but paid for by Contractor.

APPROVED:
RK Nagata 1-15-68
CHIEF, ENGINEERING DIVISION, B.W.S. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RELOCATION PLAN 24" WATER MAIN

F.A.I. Proj. No. I-H3-1(7):13, I-H3-1(2):8
Scale: 1" = 50' Date: Jan. 1968

SHEET No. U-2 OF 4 SHEETS

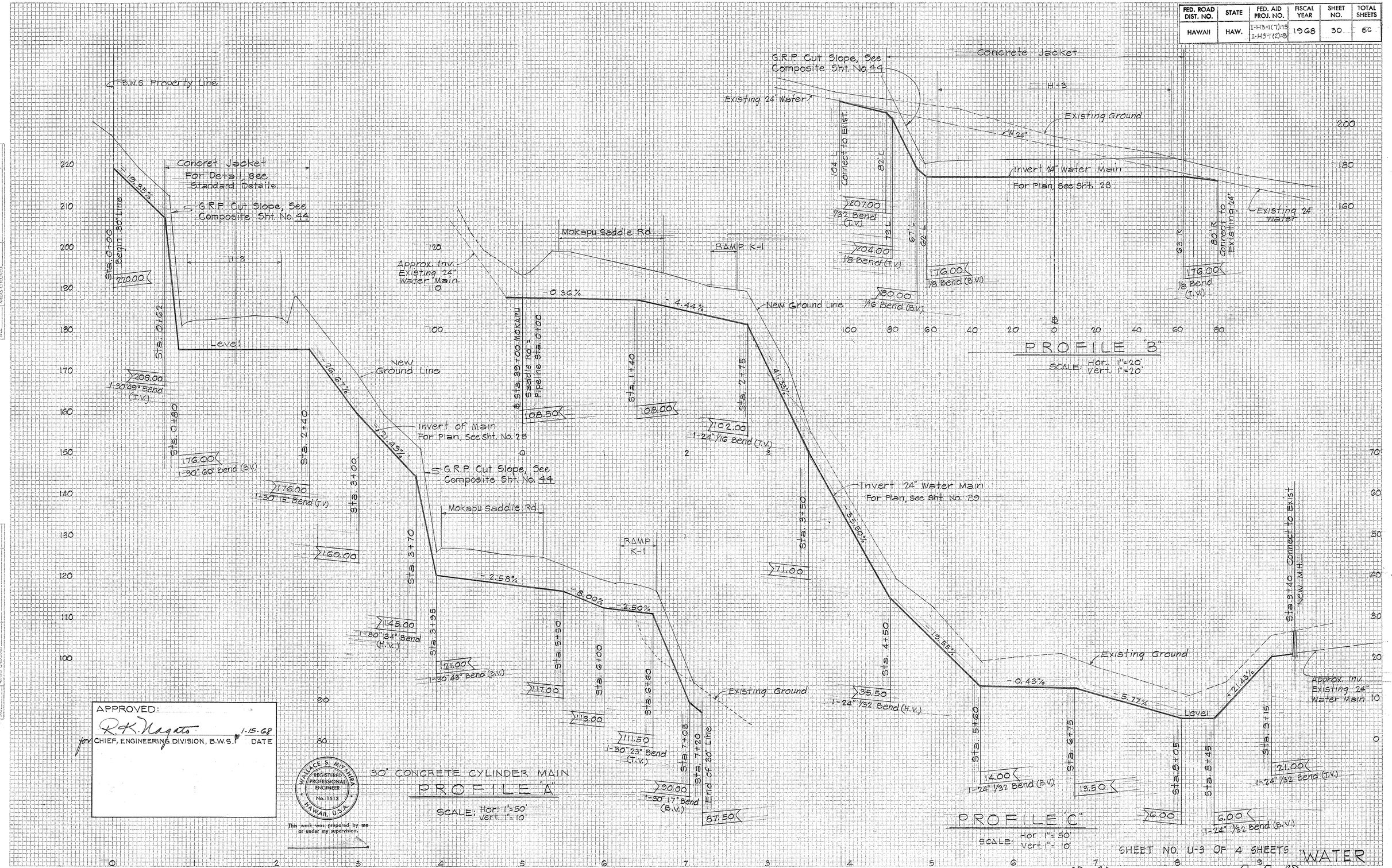
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

PRINTED ON NO. 1000H CLEARPRINT

29. 112

29. 112

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(7):13 I-H3-1(12):8	1968	30	80



APPROVED:

R.K. Nagata 1-15-68

for CHIEF, ENGINEERING DIVISION, B.W.S. DATE

WALLACE S. MIYASHIRA
REGISTERED PROFESSIONAL ENGINEER
No. 1513
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

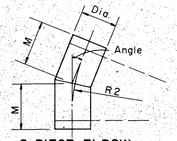
SHEET NO. U-3 OF 4 SHEETS

WATER

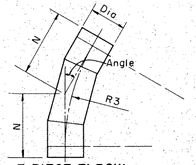
30. 113

PLATE 3-CROSS SECTION, P. & S.
CLEARPRINT PAPER CO., S. F. CAL. NO. 1000N-S

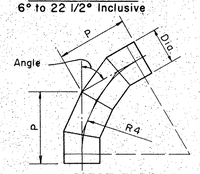
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RHS-1(13)8 F-HS-1(16)8	1968	31	66



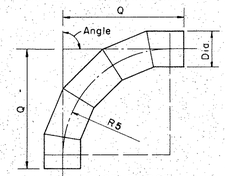
2 PIECE ELBOW
6° to 22 1/2° Inclusive



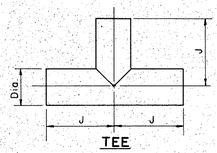
3 PIECE ELBOW
Over 22 1/2° to 45° Inclusive



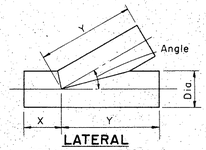
4 PIECE ELBOW
Over 45° to 67 1/2° Inclusive



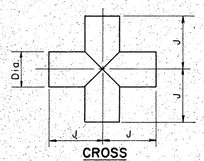
5 PIECE ELBOW
Over 67 1/2° to 90° Inclusive



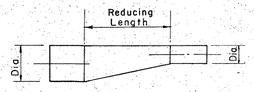
TEE



LATERAL
30° Minimum - 75° Maximum



CROSS



REDUCER

STANDARD FITTING DIMENSIONS

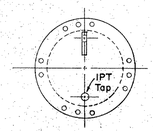
DIAMETER	TEE Run J+J	TEE Outlet J	CROSS (Both Ways) J+J	LATERAL (30° to 75°) Run X+Y	LATERAL (30° to 75°) Outlet Y	ELBOWS (Center to End) 2 Piece (up to 22 1/2°) M	R2	3 Piece (22 1/2° to 45°) N	R3	4 Piece (45° to 67 1/2°) P	R4	5 Piece (67 1/2° to 90°) Q	R5
16"	34"	17"	34"	62"	52"	12"	60"	18"	44"	26"	39"	44"	40"
18"	36"	18"	36"	66"	56"	12"	60"	19"	47"	27"	41"	36"	32"
20"	38"	19"	38"	72"	60"	13"	65"	20"	49"	28"	42"	54"	50"
22"	40"	20"	40"	78"	66"	13"	65"	21"	51"	30"	45"	41"	37"
24"	42"	21"	42"	84"	72"	14"	70"	22"	54"	32"	48"	64"	60"
30"	60"	30"	60"	96"	84"	15"	75"	25"	61"	37"	51"	79"	75"
36"	66"	33"	66"	110"	96"	16"	80"	27"	66"	40"	60"	94"	90"

DIMENSIONS FOR ECCENTRIC REDUCER REDUCING LENGTH

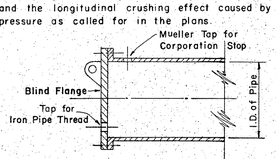
36" X 30" Eccentric Reducer – Length 66"
30" X 24" Eccentric Reducer – Length 66"
24" X 20" Eccentric Reducer – Length 26"
20" X 16" Eccentric Reducer – Length 26"

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.

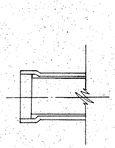


ELEV. OF BLIND FLANGE

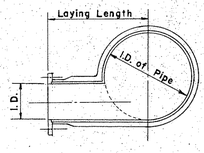


SECTION

DETAIL OF BLIND FLANGE



BELL SECTION



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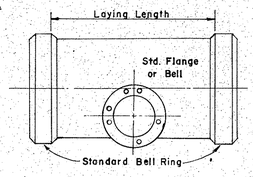
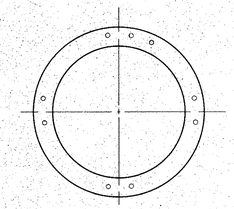
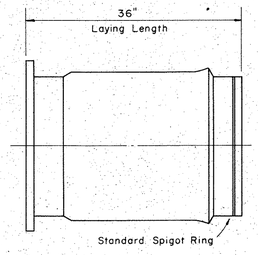


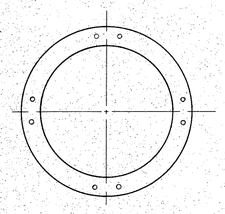
ELEVATION

TYPICAL DETAIL OF BLOW-OFF TEE

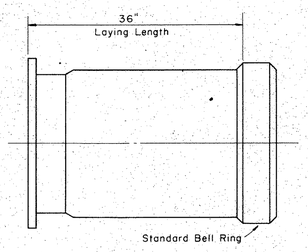


FLANGE
See Specs. for Flange Class

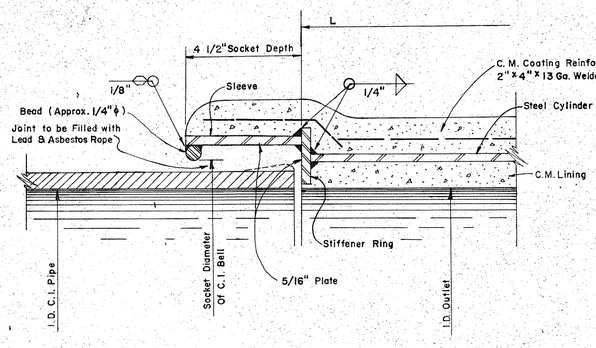




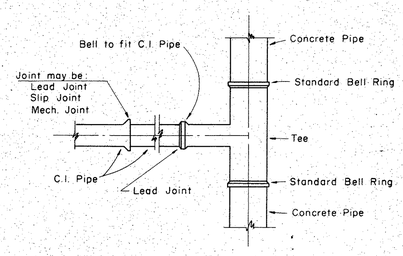
FLANGE
See Specs. for Flange Class



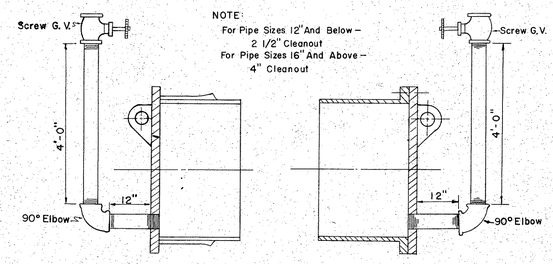
TYPICAL DETAIL OF ADAPTER



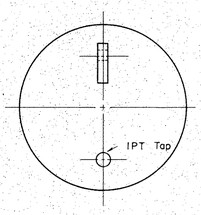
DETAIL OF C.I. ADAPTER



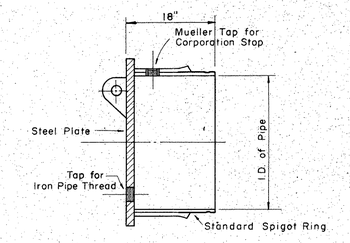
TYPICAL CAST IRON PIPE CONNECTION TO CONCRETE CYLINDER PIPE



TYPICAL SECTION OF TEMPORARY CLEANOUT

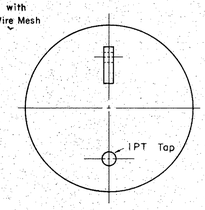


ELEV. OF STEEL PLATE

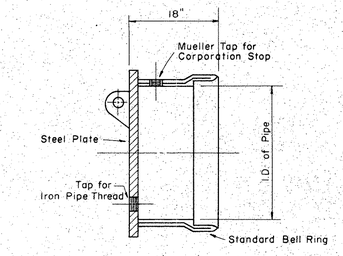


SECTION

DETAIL OF PLUG

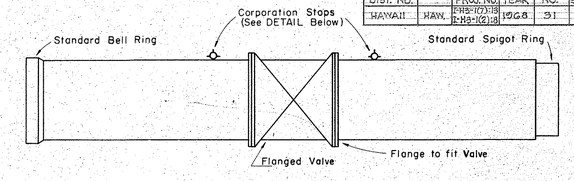


ELEV. OF STEEL PLATE

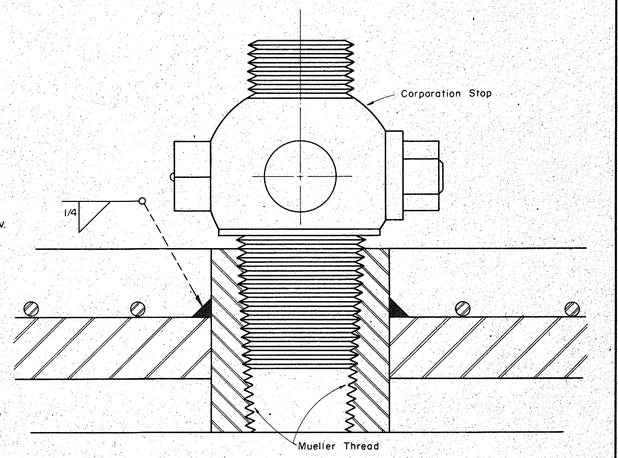


SECTION

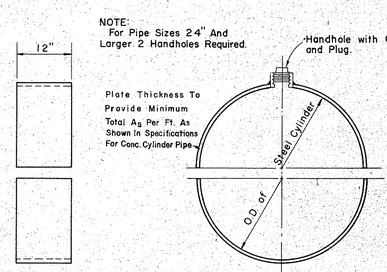
DETAIL OF CAP



ELEVATION



TYPICAL SECTION THRU CONCRETE PIPE AT CORPORATION STOP



DETAIL OF SPLIT BUTT STRAP

CONCRETE CYLINDER PIPE
MISCELLANEOUS DETAILS

SURVEYED BY:
DRAWN BY: L.K.
TRACED BY: L.K.
ENGINEER: D.C.
CHECKED BY: R.N.

APPROVED: [signature] CHIEF, ENGINEERING DIVISION
FILE: POCKET | FOLDER | NO.
SCALE: No Scale | DATE: JAN. 1968

BOARD OF WATER SUPPLY
HONOLULU, HAWAII

SHEET U-4 OF 4 SHEETS | FIELD BOOK NO.

83 1. 1 1 4
31. 114