FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	FG(17)	1952	29	104

4-23-53

LEGEND
BWS = C.&C. Board of Water Supply
T.H. = Territorial Highway Department

NOTE:
Where services cross "Concrete Lined Ditch," the contractor shall provide appropriate size sleeves in the bottom slab for the installation of services.

PROJ. No WPMH GJ ¢ Sta. 92+66.71 EQ
℄ P.C. Sta. 92+67.99
¢ EXIST. PAVT. P.C. Sta. 93+13.78
BEG. OF PROJ. No F G (17)
℄ Sta. 93+50
℄ PT Sta. 95+76.32
¢ EXIST. PAVT. P.T. Sta. 96+22.11
True North
Scale 1" = 50'
LOWER 12" MAIN
4-12" 1/16 Bends
4-Conc. Blocks
1-12" Sleeve
1-Conc. Jacket
B.W.S.-14'
16" WATER
12" WATER
24" WATER
Conc. Box Culv't "A"
℄ Sta. 95+58.38
Line "A" Sta. 0+00
Base Line 276° 05' 00"
¢ Outbound Lanes
¢ Inbound Lanes
New R/W Line
Existing R/W Line
T.H. - 2½" Pipe 50' long
B.W.S. - 2" Pipe 90' long
C.B. #1 Inv.=42.50
18" Culv't Pipe
D.I. #1
D.I. #2
C.B. #2 Inv.=40.00
B.W.S. 2" Pipe 100' long
T.H. 2½" Pipe 55' long
36" Culv't Pipe
42" Culv't Pipe
24" Culv't Pipe
SDMH #1 Inv.=39.30
C.B. #3-A Inv. 40.50
C.B. #3 Inv.=39.50
C.B. #4 Inv.=38.75
POULTRY FARM
AFUSO STORE
NAKAMURA FEED STORE
Chicken Wire Fence
LOWER 24" MAIN
4-24" 1/16 Bends
4-Conc. Blocks
1-24" Sleeve
1-Conc. Jacket
1-12"x6" Tee
1-12" Sleeve
1-6" Plug
Reuse {1-Hydrant, 1-6" G.V., 1-20" Frame & Cover}
50.0'-6" Cl. 250 Pipe
1-Type "C" M.H.
3-Conc. blocks
1-Reverse 12"x6" Tee
Reuse {1-Hydrant, 1-6" G.V., 1-20" Frame & Cover}
50.0'-6" Cl. 250 Pipe
1-Type "C" M.H.
2-Conc. blocks
HUNAKAI AVENUE
¢ LINE "A"
12" WATER
Relocate Hyds. Nos 1474-1475
(T.H.)
CUT
Relocate
250' V.C.
100' V.C.
BVC Sta. 90+00
EVC Sta. 92+50
CG Sta. 91+25
BVC Sta. 96+00
EVC Sta. 97+00
CG Sta. 96+50
BVC Sta. 99+00
EVC Sta. 100+00
CG Sta. 99+50
55.00
47.36
48.45
44.21
43.96
43.76
44.76
44.55
44.68
-2.080%
-0.20%
+0.40%
-0.5572%
Fin. Pavement at ¢ Inbound Lanes
Profile of Existing Ground at ¢ Inbound Lanes
Fin. Pavement at ¢ Outbound Lanes
Profile of Existing Pavement at ¢ Outbound Lanes
Bottom 18" Culv't Pipe
Bottom 36" Culv't Pipe
Bottom 42" Culv't Pipe
Conc. Box Culvert "A"
BEG. OF PROJ. No F G (17) Sta. 93+50
12" Water
Approx. Location 12" Water
Existing 24" Water
Existing 30" Conc. Culv't Pipe
24" Culv't Pipe
Existing 24" Conc. Culvert Pipe
51.0
43.4
42.5
42.0
40.0
39.0
37.0
36.5
36.0
55
50
45
40
35
90
91
92
93
94
95
96
97
98
99
100
101
102

NOTE:
See Grade Sheets No 5533.17 to 5533.20 for Finished Pav't elevations.

PLAN OF WATER SYSTEM

APPROVED: Yoshimura Ohta
MANAGER AND CHIEF ENGINEER, B.W.S.
DATE: ____________

NOTE:
PLAN AND PROFILE PREPARED BY THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU.

PLATE 1 – PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

WAIALAE AVE. – KALANIANAOLE HWY.

PROJECT No F 6 (17)

5533.28

SURVEYED
PLOTTED
NOTE BOOK
ALIGNMENT CHECKED
RT. OF WAY CHECKED
NO.

PLOTTED
CHECKED
NOTE BOOK
GRADES CHECKED
B.M.'S NOTED
NO.
STRUCTURE NOTAT'NS CH'KD.

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	FG(17)	1952	30	104

4-23-53

PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
B. M.S NOTED		
STRUCTURE NOTAT'NS CH'KD.		
NOTE BOOK NO.		

STAR OF THE SEA SCHOOL
STAR OF THE SEA
42" Culvert Pipe
Salvage - 1-6" 1/4 Bend
Reuse - Hydrant
50.0'-6" C.I. 250 Pipe
1-Conc. block
New R/W Line
ROAD
6'0"x3'6" Conc. Box Culvt
SDMH #2 Inv. El. = 36.87
C.B. #6 Inv. = 35.50
HRT Terminal
C.B. #7 Inv. = 35.20
6'0"x3'6" Conc. Box Culvt
P.I. Sta. 108+78.2
℄ Sta. 108+78.2
℄ Sta. 0+00
EQ.
Salvage - 2-6" 1/4 Bends
Reuse Hydrant
50.0'-6" C.I. 250 Pipe
1-Conc. block
6' Wide Conc. Lined Ditch "A"
3'0 Wide Conc. Lined Ditch "B"
True North
Scale 1" = 50'
STA. 7+10± (BWS)
8" C.I. LATERAL - LOCATION SUBJECT TO CHANGE
60.0'-8" C.I. Pipe Cl. 250
2 - 12" G.V. 150#
1 - 8" G.V. 150#
2 - Type "B" M.H.
1 - Type "C" M.H.
1 - 8" C.I. Removable Plug
1 - Conc. block
1 - Temporary wood block
1 - 12" C.I. Sleeve, Short Type
New R/W Line
CIB #1
℄ Inbound Lanes
Base Line
276°05'00"
24" Culvt. Pipe
C.B. #6-A Inv. 38.00
℄ Outbound Lanes
24" Culvt. Pipe
Joe Fats
℄ Sta. 100+89.14
Line C Sta. 0+00
P.I.
24" Culvt. Pipe
CUT
12" WATER
24" WATER
Shower Trees
KALANIANAOLE HIGHWAY
℄ Existing Pavement
New Bridge
Existing Concrete Bridge
276°30'00"
EXTEND
Existing R/W Line
WAIALAE MARKET
OKADA STORE
Paved Area
Warehouse
Existing C.B. Inv. = 32.25
KILAUEA AVENUE
℄ LINE C
℄ LINE D
KALAOLU AVE.
Serv. Station
C.B. #8 Inv. = 35.40
OILI
Relocate Hyd. No. 1476
Relocate Hyd. No. 1477
Relocate Hyd. No. 1662
1-Reverse 12"x6" Tee
Reuse 1-Hydrant, 1-6" G.V., 1-20" Frame & Cover
1-Type "C" M.H.
2-Conc. blocks
30.0'-6" C.I. 250 Pipe
Existing R/W Line
200' V.C.
Profile of Existing Ground at ℄ Inbound Lanes
Fin. Pavement at ℄ Inbound Lanes
-0.5578%
24" Culvt. Pipe
Bottom 42" Culvt. Pipe
SDMH #2 Inv. = 36.87
C.B. #6 Inv. = 35.50
24" Culvt. Pipe
Bottom 6'-0"x3'-6" Box Culvert
C.B. #7 Inv. = 35.20
Bottom of 6'-0"x3'-6" Box Culvert
39.76
39.76
℄ Sta. 108+78.2
℄ Sta. 0+00
CIB #1
24" Culvt. Pipe
C.G. Sta. 2+00
38.6
-0.391%
BVC Sta. 4+00
37.8
New Bridge
Bottom Conc. Lined Ditch
C.G. Sta. 5+00
37.50
EVC Sta. 6+00
38.00
+0.50%
Bottom Conc. Lined Ditch
39.44
39.47
NOTE
See Grade Sheets 5533.17 to 5533.20 for Finished Pav't elevations
Profile of Existing Pavement at ℄ Outbound Lanes
Fin. Pavement at ℄ Outbound Lanes
24" Culvt. Pipe
C.B. #6-A Inv. = 38.00
Existing 18" Conc. Culvert Pipe
(Approx. Location) 12" Water
Existing 30" Conc. Culvert Pipe
24" Culvt. Pipe
12" Water
Existing 24" Water
24" Culvt. Pipe
Exist. Bridge
Existing 8'-0"x6'-0" Conc. Box Culvert
35.0
34.0
33.5
32.0
30.9
25.0
25.0
26.9
27.5
40
35
30
25
101
102
103
104
105
106
107
108
0
1
2
3
4
5
6
7
8

NOTE:
PLAN AND PROFILE PREPARED BY THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU

PLAN OF WATER SYSTEM

APPROVED: Frederick Ohrt
MANAGER AND CHIEF ENGINEER, B.W.S.
DATE:

PLATE 1—PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

WAIALAE AVE. - KALANIANAOLE HWY. PROJECT NO F 6 (17)

5533.29

2

K & E Co. No. 346-1C
"IMPERIAL" TRACING CLOTH
45189

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	F6 (17)	1952	31	104

Star of the Sea
True North
Scale: 1"=50'
New R/W Line
Proposed 8" Water
96° 30' 00"
1-8" Cap Tapped for 2"
1-Reverse Bell-Conc. beam
1-8"x8" Tee
1-8"x4" Reducer S.E.B.
1-4" G.V.
1-Type "C" M.H.
380-lin.ft. 8" C.I. Pipe Cl. 250
1-4" Sleeve
1-16" Cap.
1-Reverse bell-Conc. beam
B.W.S.
1-16"x8" Tee
~~1-8" Sleeve~~
1-16" B.G.G.V.
1-8" G.V.
1-Type "A" M.H.-16" B.G.G.V.
1-Type "C" M.H.
1-Conc. block
Cesspool
Reuse Hydrant
50.0'-6" Cl. 250 Pipe
1-Conc. block
3'0" Wide Conc-Lined Ditch "C"
3'0" Wide Conc-Lined Ditch "D"
1-4" Cap Tapped for 2"
1-Conc. Block
4" WATER
Proposed 16" WATER
Proposed 8" WATER
℄ LINE "E" 186° 30' 00"
C.B #9 Inv = 34.00
24" Culv't Pipe
C.B #10 Inv. = 33.50
1-8" Cap Tapped for 2"
1-Reverse bell-Conc. beam
Conc. Gutter Type "A"
Reuse Hydrant
60.0'-6" Cl. 250 Pipe
1-Conc. block.
Open Gar. Corr Roof
Gar.
Board of Water Supply
DRM Wall
CRM Well
CRM Ditch
Mango
New R/W Line
℄ Inbound Lanes
New Bridge
10
Base Line
276° 30' 00"
Existing R/W Line
℄ Outbound Lanes
℄ Existing Pavement
Existing Conc Bridge
6'x11' Box Culvert
EXTEND
RELOCATE
CUT
℄ Sta. 14+68
Line E Sta. 0+00
SDMH #3
12" WATER
24" WATER
24" Culv't Pipe
20
12" Conc Pipe
24" Conc Pipe
18" Conc Pipe
Shower
Banyan
Future Road Connection
(T.H.)
B.W.S.
Relocate Hyd. No 1663
Relocate Hyd. No. 1768
Relocate Hyd. No 1664
Relocate Hyd. No 1665
B.W.S.
325 lin.ft. 16" C.I. Pipe-Cl. 150
1-24"x16" Tee
~~1-24"x16" Reducer S.E.B.~~
1-24" B.G.G.V.
1-16" B.G.G.V.
1-24" Sleeve
1-Type "A" M.H.-24" B.G.G.V. with 3" By Pass
1-Type "A" M.H.-16" B.G.G.V. with 3" By Pass
1-Conc. block
1-16" Offset 12" Drop B.S.
1-Reverse 12"x6" Tee
Reuse {1-Hydrant, 1-6" G.V., 1-20" M.H. Frame & Cover}
20.0'-6" Cl. 250 Pipe
1-Type "C" M.H.
2-Conc. blocks
B.W.S.
300 lin.ft. 8" C.I. Pipe-Cl. 250
1-12"x8" Tee
1-12" G.V.
1-8" G.V.
1-12" Sleeve
1-Type "B" M.H.
1-Type "C" M.H.
1-Conc. block
1-Reverse 12"x6" Tee
Reuse {1-Hydrant, 1-6" G.V., 1-20" M.H. Frame & Cover}
25.0'-6" Cl. 250 Pipe
1-Type "C" M.H.
2-Conc. blocks
40
35
30
25
20
+0.50%
0.50%
-3.0455%
Sta 10+00
C.G.
40.00
New Bridge
B.V.C. Sta 8+50
30.25
Bottom 3'-0" Wide Conc Lined Ditch
300 V.C.
E.V.C. Sta 11+50
30.25
Invert Excavated Open Ditch and Conc Lined Ditch
C.B #9 Inv. = 34.00
Bottom 24" Culv't Pipe
24" Culv't Pipe
C.B #10 Inv. = 33.50
Profile of Existing Ground at ℄ Inbound Lanes
Fin. Pavement at ℄ Inbound Lanes
B.V.C. Sta 17+00
30.50
C.G. Sta 19+50
35.25
Bottom Conc. Ditch
500 V.C.
E.V.C. Sta 22+00
27.04
Profile of Existing Pav't at ℄ Outbound Lanes
Fin. Pavement at ℄ Outbound Lanes
SDMH #3
Existing 24" Water
Approx. Location 12" Water
24" Culvert Pipe
Remove Existing 18" Culv't Pipe
Existing Bridge
27.5
27.5
31.5
32.0
29.0
32.0
29.0
30.5
28.0
16.0
NOTE:
See Grade Sheets No 5533.17 to 5533.20 for Finished Pav't elevations.
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

PLAN OF WATER SYSTEM

APPROVED: Frederick Ohrt
MANAGER AND CHIEF ENGINEER, B.W.S.
DATE:

NOTE:
PLAN AND PROFILE PREPARED BY THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU

PLATE 1–PLAN–PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

K & E Co. No. 346-1C
"IMPERIAL" TRACING CLOTH

WAIALAE AVE.- KALANIANAOLE HWY.

PROJECT No F 6 (17)

5533.30

PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE

PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
B. M.S NOTED
STRUCTURE NOTATNS CH.KD.
BY
DATE

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	FG (17)	1052	32	104

True North
Scale 1"=50'
To Waialae Reservoir
Lower 16" Main
2-16" 1/32 Bends
1-16" Sleeve
3-Conc. blocks
Salvage 6" 1/4 Bend
Reuse Hydrant
50.0'-6" Cl.250 Pipe
1-Conc. block
B.W.S.-90'
C.B# 11 Inv=13.00
T.H.-65'
36" Culv't Pipe
C.B# 12 Inv=12.75
C.B# 2 Inv=12.50
Sub-Station
New R/W Line
Inbound Lanes
Base Line
Outbound Lanes
24" Culv't Pipe
CB# 11-A Inv=17.00± (Exist'g)
Existing Pavement
24" WATER
12" WATER
Existing R/W Line
End CRM Ditch
Sta. 26+40.88
"Line F" Sta. 0+00
Chain Link Fence
Future Road Connection
KULA
Relocate Hyd. No 1665
Relocate Hyd. No 1666
Relocate Hyd. No 1667
Relocate Hyd. No 1668
5.0' Wide Conc-Lined Ditch "E"
6.0'x2.0' Conc Boxed Culv't "D"
7.0' Wide Conc-Lined Ditch "F"
4.0' Wide Conc-Lined Ditch G
1-2" Valve
1-2 1/2" Valves
2-Type "B" Cement Meter Boxes
Exist. 2" Water
CRM Wall
B.W.S.-80'
CD 1 Inv=11.00
10x5 Conc Box Culv't
Reuse Hydrant
50.0'-6" Cl.250 Pipe
1-Conc. block
T.H.-2 Pipe 25 long
Hawn. Electric Company Substation
Banyan
Reverse 12"x6" Tee
Reuse 1-Hydrant
1-6" G.V.
1-20" M.H. Frame & Cover
35.0'-6" Cl.250 Pipe
1-Type "C" M.H.
2 ~~3~~-Conc. blocks
P.C. Sta. 35+13.24
P.T. Sta. 37+41.06
℄ CURVE DATA
Δ = 4° 31' 00"
Δ/2 = 2° 15' 30"
R = 2890.00
T = 113.97
L = 227.82
C = 227.76
B.V.C. Sta. 22+50
26.11
E.V.C. Sta. 22+00
27.64
500 V.C.
-3.045%
E.V.C. Sta. 27+50
17.25
C.G. Sta. 25+00
18.50
Invert Excavated Open Ditch Type "B"
Profile of Existing Ground at ℄ Inbound Lanes
Fin. Pavement at ℄ Inbound Lanes
-0.50%
C.B# 11 Inv=13.00
C.B# 12 Inv=12.75
C.B# 2 Inv=12.50
36" Culv't Pipe
Bottom Conc-Lined Ditch and Conc Box Culv't
200 V.C.
B.V.C. Sta. 32+00
15.00
E.V.C. Sta. 34+00
15.20
+1.40%
C.G. Sta. 35+00
17.30
-0.85%
24" Culv't Pipe
10x5 Conc Box Culv't
C.G. Sta. 33+00
14.50
B.V.C. Sta. 34+00
15.20
200 V.C.
E.V.C. Sta. 36+00
16.45
Profile of Existing Pavement at ℄ Outbound Lanes
Fin. Pavement at ℄ Outbound Lanes
CB# 11-A Inv=17.00± (Exist'g)
12" Water
Existing 18" Culvert Pipe
24" Culv't Pipe
(Approx. Location 12" Water)
Existing 24" Water
Existing 24" Culv't Pipe
CD 1 Inv=11.00
Existing 10x5 Box Culv't
NOTE
See Grade Sheets 5533.17 to 5533.20 for Finished Pav't Elevations
25
20
15
10
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38

PLAN: SURVEYED / PLOTTED / ALIGNMENT CHECKED / NOTE BOOK / RT. OF WAY CHECKED / NO. / BY / DATE

PROFILE: SURVEYED / PLOTTED / GRADES CHECKED / NOTE BOOK / B.M.S NOTED / STRUCTURE NOTATIONS CH'KD. / NO. / BY / DATE

NOTE:
PLAN AND PROFILE PREPARED BY THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU

PLAN OF WATER SYSTEM

APPROVED Frederick Ohrt
MANAGER AND CHIEF ENGINEER, B.W.S.
DATE:

PLATE 1-PLAN-PROFILE O.P.R. & R.E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E Co. No. 346-1C

WAIALAE AVE. - KALANIANAOLE HWY.   PROJECT № F 6 (17)   5533.31

4

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	F 6 (17)	1952	33	104

PLAN
SURVEYED
PLOTTED
NOTE BOOK
ALIGNMENT CHECKED
RT. OF WAY CHECKED
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
GRADES CHECKED
B. M.S NOTED
NO.
STRUCTURE NOTAT'NS CH'KD.
BY
DATE

True North
Scale 1" = 50'
Hawn Electric Company Substation
Chicken Coop
Hot House
Future Road Connection
New R/W Line
CB#13 Inv. = 8.50
℄ Inbound Lanes
Base Line
28° 01' 00"
℄ Outbound Lanes
℄ Existing Pavement
Banyan
Existing R/W Line
Ditch
Future Road Connection
P.T. Sta. 37+4.06
EXTEND
(T.H.)
40
℄ Sta. 40+59.88
6'0" x 2'0" Conc. Box Culvt
24" Culvt. Pipe
45
CDI #2
Inv. 7.90
6'0" Wide Conc. Lined Ditch with exceptions
Reuse Hydrant
50.0' - 6" Cl. 250 Pipe
1 - Conc. block
6'0" x 3'0" Conc. Box Culvt
6'0" x 3'0" Conc. Box Culvt
6'0" x 4'0" Conc. Box Culvts
CDI #3
Inv. 8.20 ± (Exstg.)
50
12" WATER
24" WATER
Relocate
Existing R/W Line
Cable
Relocate Hyds. Nos. 1670-1671
Reverse 12" x 6" Tee
Reuse 1 - Hydrant
1 - 6" G.V.
1 - 20" M.H. Frame & Cover
20.0' - 6" Cl. 250 Pipe
1 - Type "C" M.H.
2 - Conc. blocks
200' V.C.
11.35
11.00
BVC Sta. 42+00
EVC Sta. 44+00
Fin. Pavement at ℄ Inbound Lanes
Profile of Existing Ground at ℄ Inbound Lanes
-0.85%
+0.50%
-0.4545%
24" Culvt Pipe
CB #18 Inv. = 8.44
CB #19 Inv. = 8.31
Bottom 18" Culvt Pipe
C.G. Sta. 43+00
10.50
24" Culvt. Pipe
Bottom 6'-0" Wide Conc.-Lined Ditch
C.G. Sta. 49+00
BVC Sta. 47+50
EVC Sta. 50+50
12.75
12.86
300' V.C.
NOTE:
See Grade Sheets 5533.17 to 5533.20 for Finished Pav't. elevations
Profile of Existing Pavement at ℄ Outbound Lanes
Fin. Pavement at ℄ Outbound Lanes
CB 17 Inv. = 9.00
Existing 3' x 10' Conc. Box Culvert
24" Culvt. Pipe
CDI #2 Inv. = 7.90
CDI #3 Inv. 8.20 ± (Exstg.)
Existing 18" Culv't Pipe
(Approx. Location 12" Water
Existing 24" Water
6.6
3.4
2.2
2.2
15
10
5
0
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53

PLAN OF WATER SYSTEM

APPROVED: Frederick Ohrt
MANAGER AND CHIEF ENGINEER, B.W.S.
DATE:

NOTE:
PLAN AND PROFILE PREPARED BY THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU

PLATE 1 - PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E Co. No. 346-1C
"IMPERIAL" TRACING CLOTH

WAIALAE AVE. - KALANIANAOLE HWY. PROJECT Nº F 6 (17)

5533.32

15

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	F6 (17)	1952	34	104

PLAN		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
NO.	ALIGNMENT CHECKED		
	RT. OF WAY CHECKED		

PROFILE		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	GRADES CHECKED		
NO.	B. M.S NOTED		
	STRUCTURE NOTAT'NS CH'KD.		

℄ CURVE DATA
Δ 13° 05' 10"
½Δ 9° 32' 35"
R 1885.00
T 316.90
L 627.38
C 625.02
New R/W Line
6'0" x 4'0" Conc. Box Culv't
Future Road Connection
P.C. Sta. 57+9.21
P.T. Sta. 64+19.13
1-Reverse 12"x6" Tee
Reuse { 1-Hydrant 1-6" G.V. 1-20" M.H. Frame & Cover
100.0'-6" Cl. 250 Pipe
1-Type "C" M.H.
2-Conc. blocks
6'0" Wide Conc-Lined Ditch
6'0"x4'0" Conc Box Culv'ts
Inv. 5.00
4-0' Wide Conc Lined Ditch
4-9"x 2-9" Conc Box Culv'ts
Reuse Hydrant
1-6" 1/32 Bend
50.0'-6" Cl. 250 Pipe
2-Conc. blocks
49" x 2'6" Conc Box Culv't
CB 15 Inv. 5.00
CB 15-A Inv. 4.25
℄ Inbound Lanes
Base Line
℄ Outbound Lanes
℄ Existing Pavement
Existing 30' Wide Pavement
281° 01' 00"
291° 55' 50"
EXTEND
℄ Sta. 56+99.88
60'
24" WATER
12" WATER
8'0"x3'6" Box Culv't
SDMH #4
Existing R/W Line
Banyan Trees
True North
Scale 1" = 50'
(T.H.)
Relocate Hyds. Nos. 1671-1672
Future Road Connection
Board of Water Supply
Fountain
M.H.#1 Inv. 3.22
LOWER 12" MAIN
4-12" 1/16 Bends
4-Conc. Blocks
1-Conc. Jacket
1-12" Sleeve
LOWER 24" MAIN
4-24" 1/32 Bends
4-Conc. Blocks
1-Conc. Jacket
1-24" Sleeve
Relocate Hyd No 1674
200' V.C.
BVC Sta 53+50
11.45
EVC Sta 55+50
11.40
CG Sta 54+50
11.00
BVC Sta 56+00
12.40
CG Sta 59+50
13.00
EVC Sta 61+00
12.25
300' V.C.
200' V.C.
BVC Sta 66+50
9.50
CG Sta 67+50
9.00
CB#15
-0.4545%
+0.40%
-0.50%
Profile of Existing Ground at ℄ Inbound Lanes
Fin. Pavement at ℄ Inbound Lanes
Bottom 6'0"x4'0" Conc. Box Culv't and 6'0" Wide Conc Lined Ditch
24" Culv't Pipe
Double Barrel 36" Culv't Pipe
Bottom Conc Lined Ditch
Existing 24" Water
8'0"x3'0" Conc Box Culv't
NOTE:
See Grade Sheets No 5533.17 to 5533.20 for Finished Pav't elevations
Profile of Existing Pavement at ℄ Outbound Lanes
Fin. Pavement at ℄ Outbound Lanes
Existing 24" Conc Pipe Culvert
Approx Location 12" Water
Existing 24" Water
Existing 30" Conc Pipe Culv't
Existing 12" Water
8'0"x3'6" Conc Box Culvert
C.B.# 14 Inv. 7.00
CB 15-A
Existing 30" Conc Pipe Culvert
5.3
4.3
3.8
2.7
3.0
3.7
2.0
3.0
15
10
5
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68

NOTE:
PLAN AND PROFILE PREPARED BY THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU

PLAN OF WATER SYSTEM

APPROVED: Jackson [illegible]
MANAGER AND CHIEF ENGINEER, B.W.S.
DATE: ____

PLATE 1-PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E Co. No. 346-1C
"IMPERIAL" TRACING CLOTH

WAIALAE AVE.- KALANIANAOLE HWY. PROJECT Nº F 6 (17)

5533.33

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	F 6(17)	1952	35	104

4'9"x2'6" Conc Box Culv't
30" Culv't Pipe
Excavated Open Ditch
24" Culv't Pipe
Future Road Connection
CB#15 Inv = 5.00
New R/W Line
Inbound Lanes
Base Line
Outbound Lanes
Existing Pavement
SOMH #4 Inv = 3.50
Existing R/W Line
24" WATER
12" WATER
Sta 69+99.88
Reuse Hydrant 40.0'-6" Cl. 250 Pipe 1-Conc. block
Salvage-6" 1/4 Bend Reuse Hydrant 40.0'-6" Cl. 250 Pipe 1-Conc. block
4'-0" Wide Conc-Lined Ditch with exceptions
4'9"x2'9" Conc Box Culv't
4'9"x2'6" Conc Box Culv'ts
Inv El = 6.00
Inv = 3.50
END OF PROJ. No F 6 (17) Sta. 78+00
E.P. CURVE DATA
Δ = 17° 44' 40"
R = 320.41
T = 50.00
L = 99.20
98.83
FH # 2570
F.H. # 2571
Kindergarten
Relocate Hyd. No. 1675
Relocate Hyd No 2569
Double-barrel 30" Culv't Pipe
High Water Line
Inv = 0.00
WAILUPE RADIO STATION
LOWER 24" MAIN 4-24" 1/32 Bends 4-Conc. Blocks 1-24" Sleeve
LOWER 12" MAIN 2-12" offsets 18" Drop 2-Conc. Blocks 1-12" Sleeve, Short Type
True North Scale 1"=50'
Pacific Ocean
200' V.C.
300' V.C.
+0.50%
-0.5385%
+0.325%
Profile of Existing Ground at ℄ Inbound Lanes
Fin. Pavement at ℄ Inbound Lanes
Existing 24" Water
Bottom 4'-0" wide Conc. Lined Ditch
CB #15 Inv = 5.00
Bottom Culv't Pipe
Double-barrel 30" Culvert Pipe
Fin Pavement at ℄ Outbound Lanes
Profile of Existing Pavement at ℄ Outbound Lanes
C.B. #15-A Inv. = 4.25
Existing 24" Culv't Pipe
Existing 12" Main
Existing 36" Culv't Pipe
C.B. #4 Inv. = 4.50 (Exist.)
Existing 18" Culv't Pipe
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83

NOTE
See Grade Sheets № 5533.17 to 5533.20 for Finished Pav't elevations

NOTE:

PLAN AND PROFILE PREPARED BY THE BOARD OF WATER SUPPLY, CITY & COUNTY OF HONOLULU

PLAN OF WATER SYSTEM

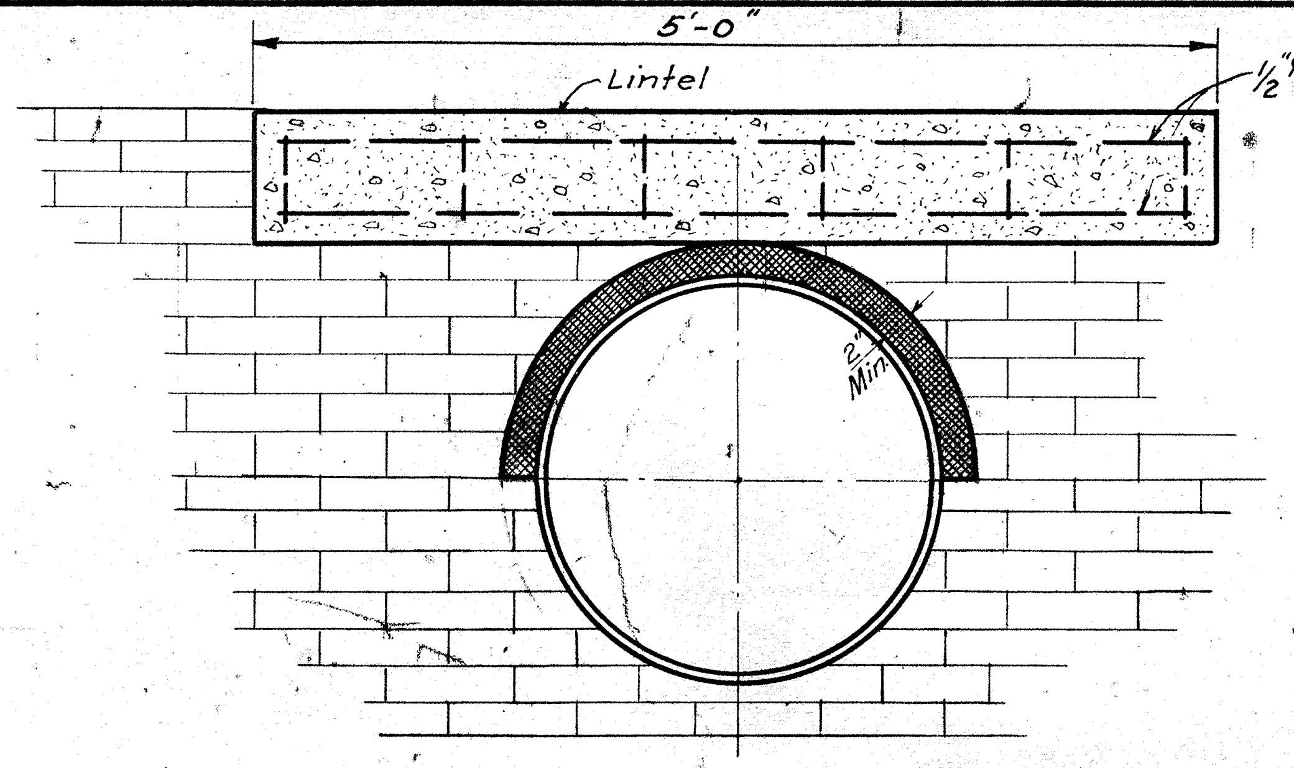
APPROVED: Fredrick Ohrt
MANAGER AND CHIEF ENGINEER, B.W.S.
DATE:

PLATE 1-PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E Co. No. 148-1C
"IMPERIAL" TRACING CLOTH

WAIALAE AVE.-KALANIANAOLE HWY. **PROJECT № F 6 (17)**

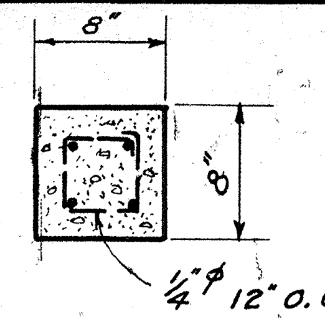
5533.34

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	F 6 (17)	1952	36	104

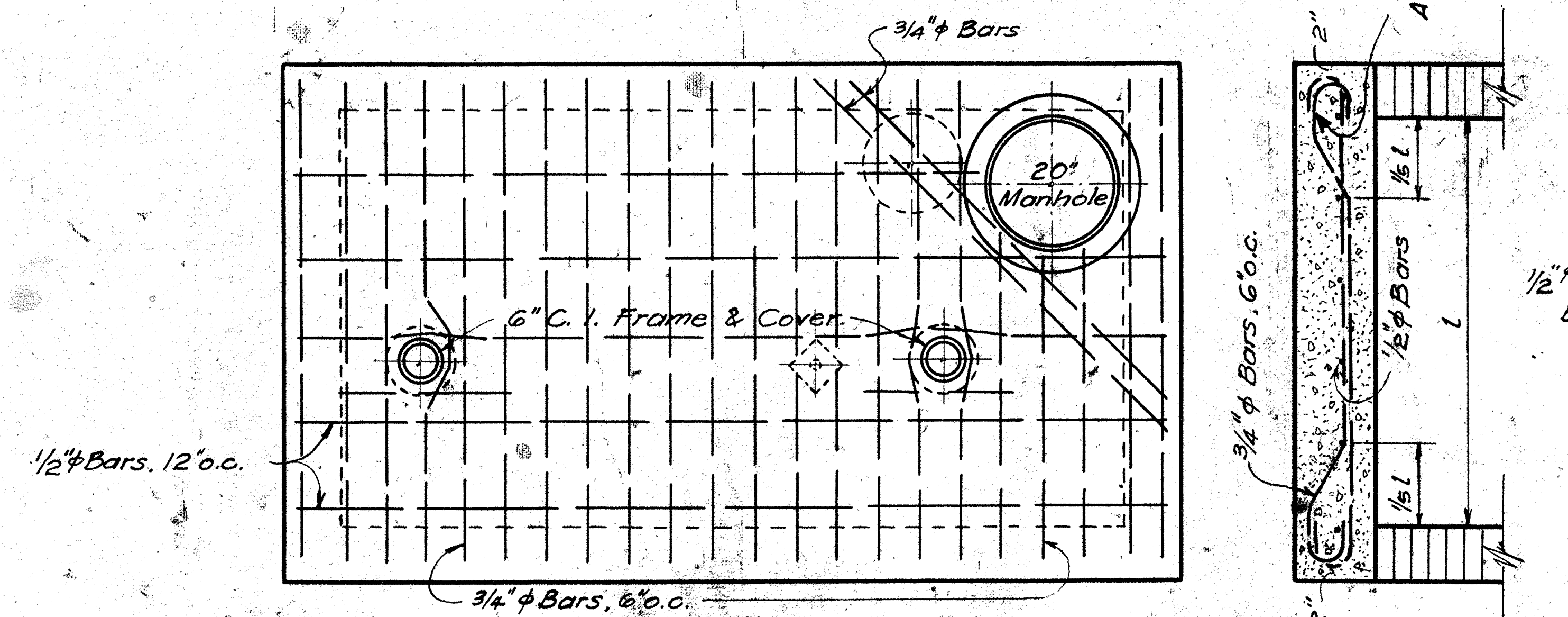

5'-0"
Lintel
½"φ
2" Min

DETAIL OF LINTEL & ASPHALT FILLER

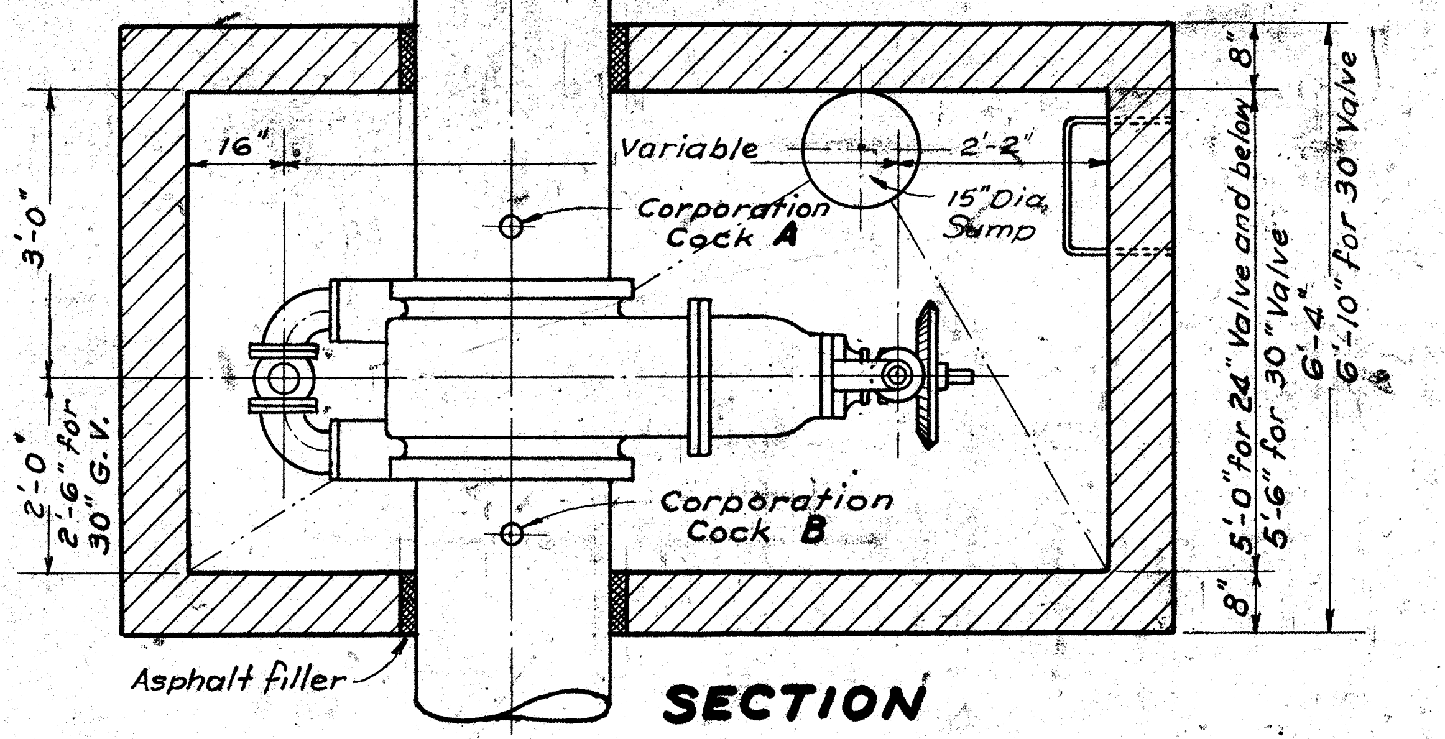
Scale: 1" = 1'-0"



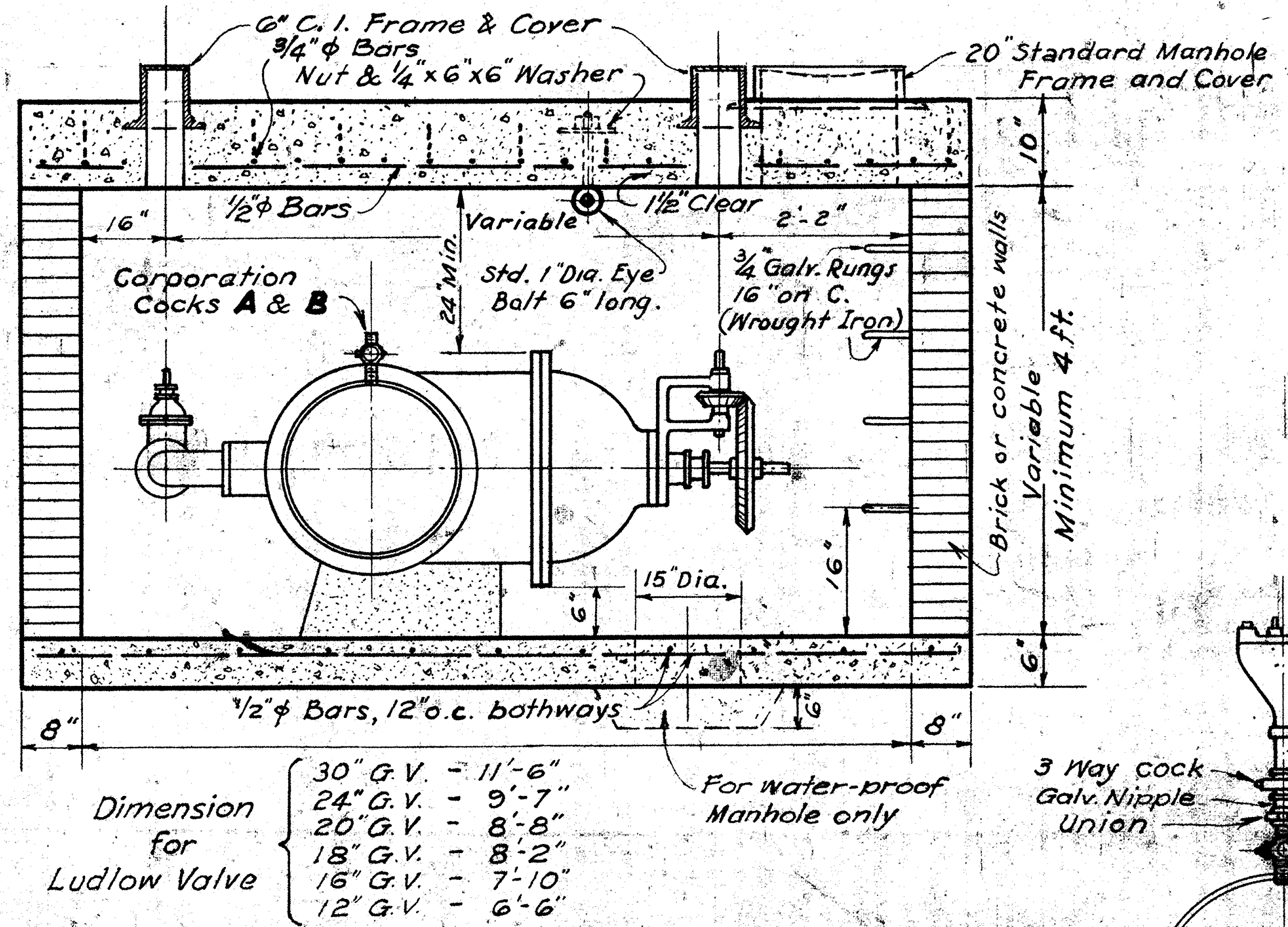
SECTION THRU LINTEL


¾"φ Bars
20" Manhole
6" C.I. Frame & Cover
½"φ Bars, 12" o.c.
¾"φ Bars, 6" o.c.
Bent Ends Alternately placed
2"
½"φ Bars
¾"φ Bars, 6" o.c.
2"

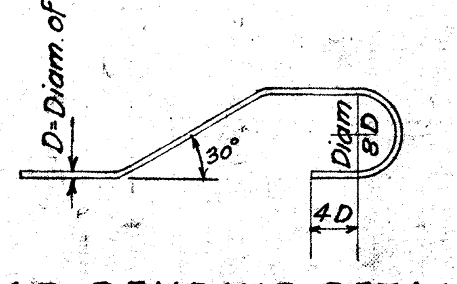
PLAN OF TOP


16"
Variable
2'-2"
Corporation Cock A
15" Dia. Sump
Corporation Cock B
3'-0"
2'-0"
2'-6" for 30" G.V.
8"
5'-0" for 24" Valve and below
5'-6" for 30" Valve
6'-4"
6'-10" for 30" Valve
8"
Asphalt filler

SECTION


6" C.I. Frame & Cover
¾"φ Bars
Nut & ¼"×6"×6" Washer
20" Standard Manhole Frame and Cover
10"
16"
½"φ Bars
Variable
1½" Clear
2'-2"
24" Min.
Corporation Cocks A & B
Std. 1" Dia. Eye Bolt 6" long.
¾" Galv. Rungs 16" on C. (Wrought Iron)
Brick or concrete walls
Variable Minimum 4 ft.
15" Dia.
6"
16"
6"
½"φ Bars, 12" o.c. bothways
6"
8"
8"
For water-proof Manhole only
Dimension for Ludlow Valve
30" G.V. - 11'-6"
24" G.V. - 9'-7"
20" G.V. - 8'-8"
18" G.V. - 8'-2"
16" G.V. - 7'-10"
12" G.V. - 6'-6"

SECTION

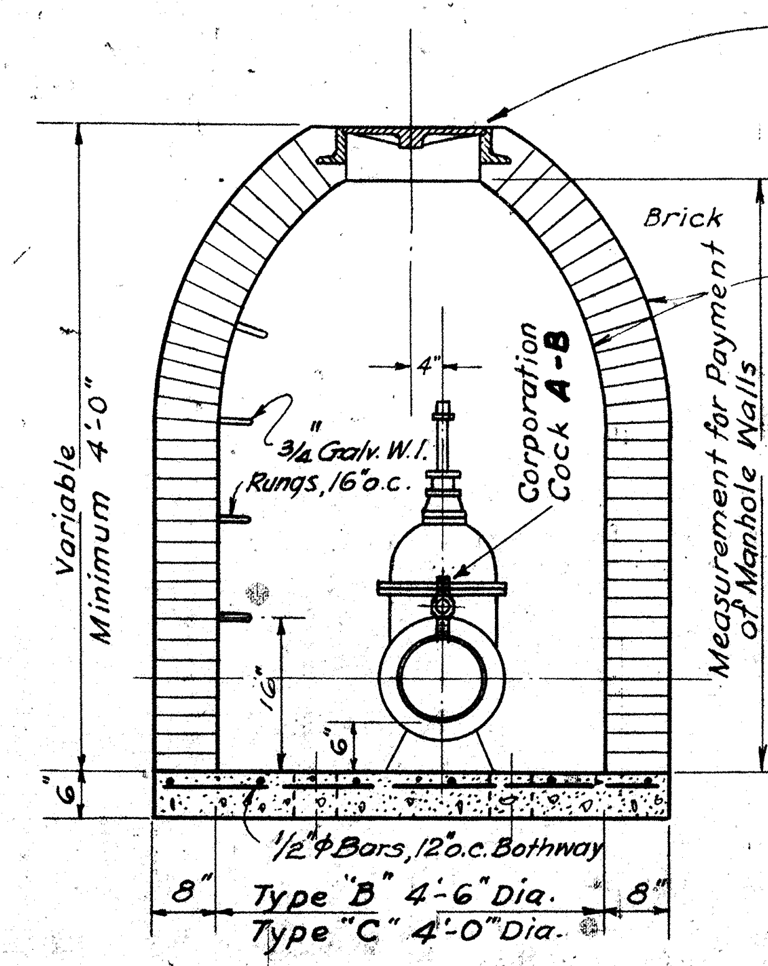

D-Diam of Bar
30°
Diam 8D
4D

BAR BENDING DETAIL

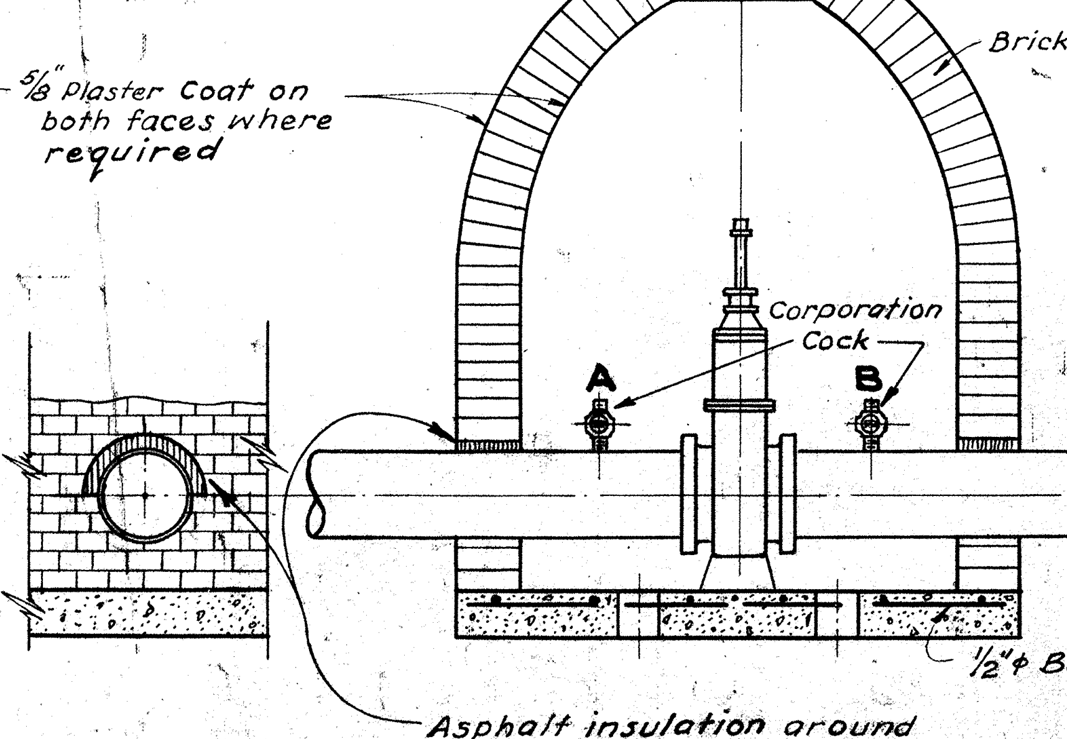
TYPE "A" MANHOLE
FOR BEVEL GEARED GATE VALVES

Scale: ½" = 1'-0"

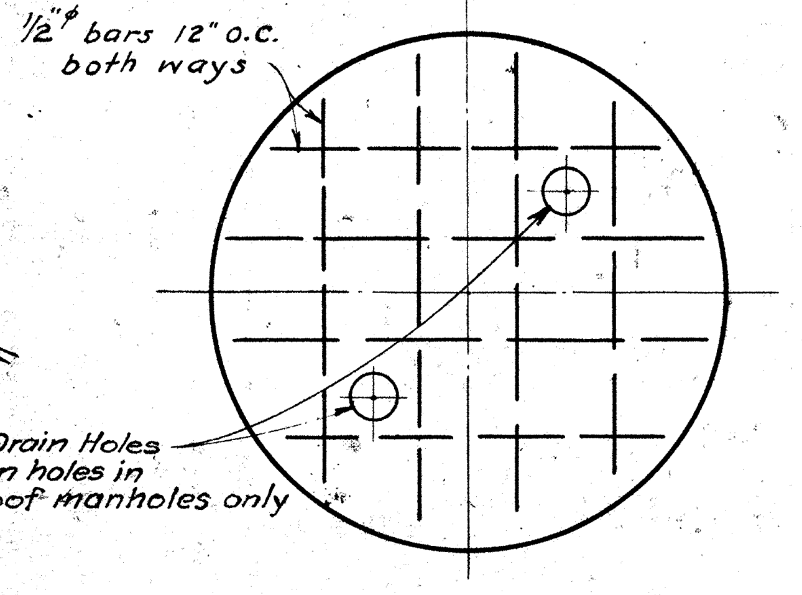
NOTE: All valves 16" and larger without Spur or Bevel Gears to be installed in Type "A" Manholes for Spur-Geared Gate Valves.


20" Standard Manhole Frame & Cover
Brick
Variable Minimum 4'-0"
¾ Galv. W.I. Rungs, 16" o.c.
Corporation Cock A-B
Measurement for Payment of Manhole Walls
12"
6"
6"
½"φ Bars, 12" o.c. Bothway
8"
8"
Type "B" 4'-6" Dia.
Type "C" 4'-0" Dia.

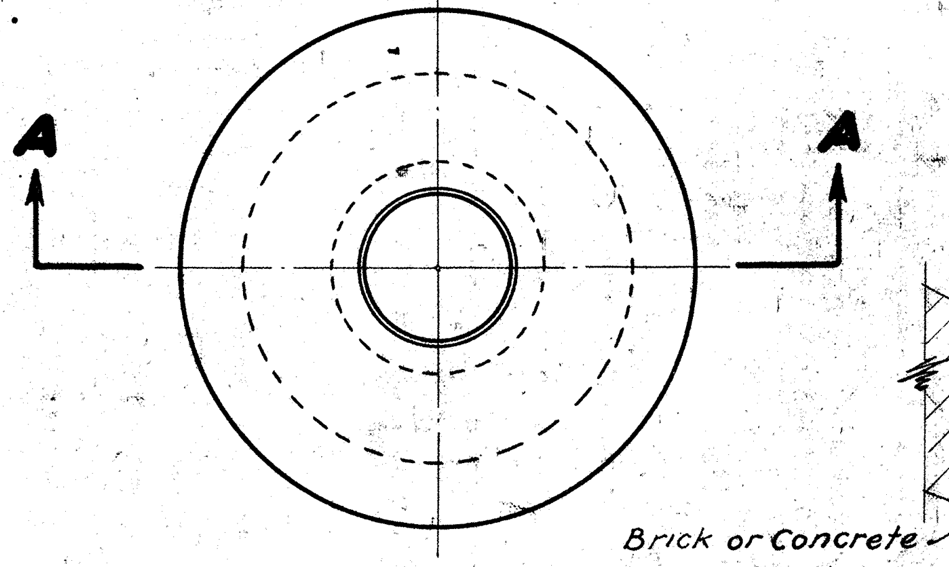
SECTION A-A


⅝ Plaster Coat on both faces where required
Brick
Corporation Cock
A
B
½"φ Bars
Asphalt insulation around upper Half of Pipe Barrel.

DETAIL OF ASPHALT FILLER


½"φ bars 12" o.c. both ways
6" Drain Holes
Omit drain holes in water proof manholes only

STEEL DETAIL IN BOTTOM SLAB



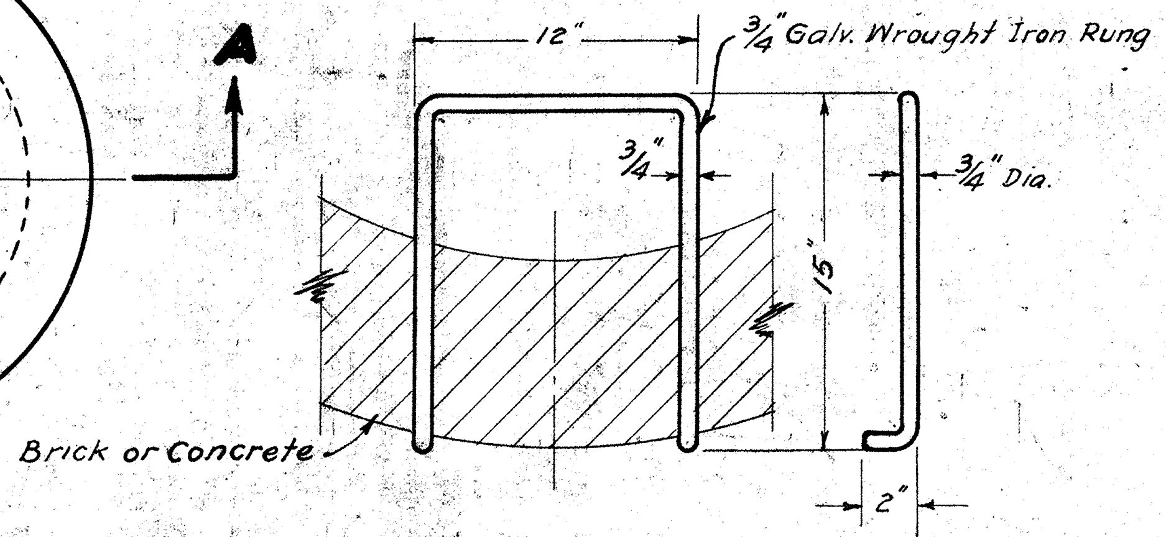
PLAN
TYPES "B" AND "C" MANHOLES

TYPE "B" 4'-6" DIA. (For 12" Valve)
TYPE "C" 4'-0" DIA. (For 6" & 8" Valves)

Scale: ½" = 1'-0"

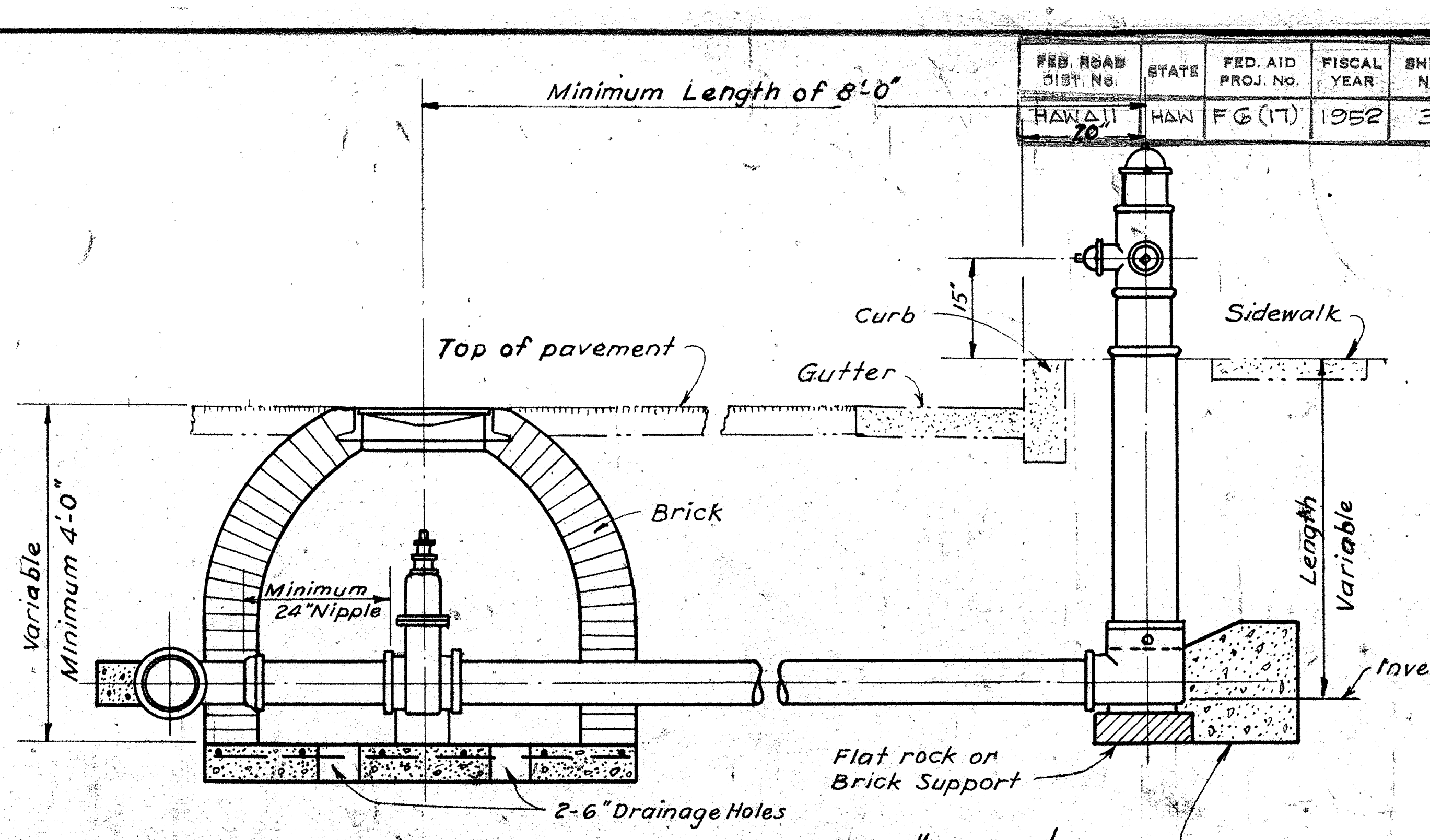
TABLE "A"
REQUIRED CORPORATION COCK SIZES

DIA. OF MAIN INCHES	INLET SIZE CORR COCK	
	A	B
6	1"	1"
8	1"	1"
12	1"	1"
16	1"	1"
20	1"	1"
24	1½"	1"
36	1½"	1"
42	1½"	1"

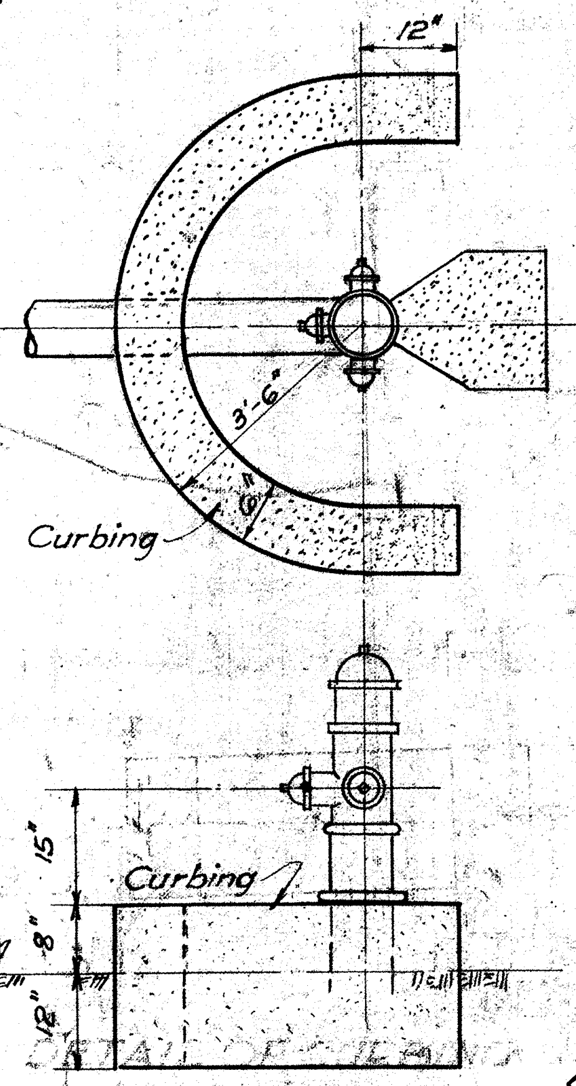

12"
¾" Galv. Wrought Iron Rung
¾"
¾" Dia.
15"
Brick or Concrete
2"

DETAIL OF RUNG

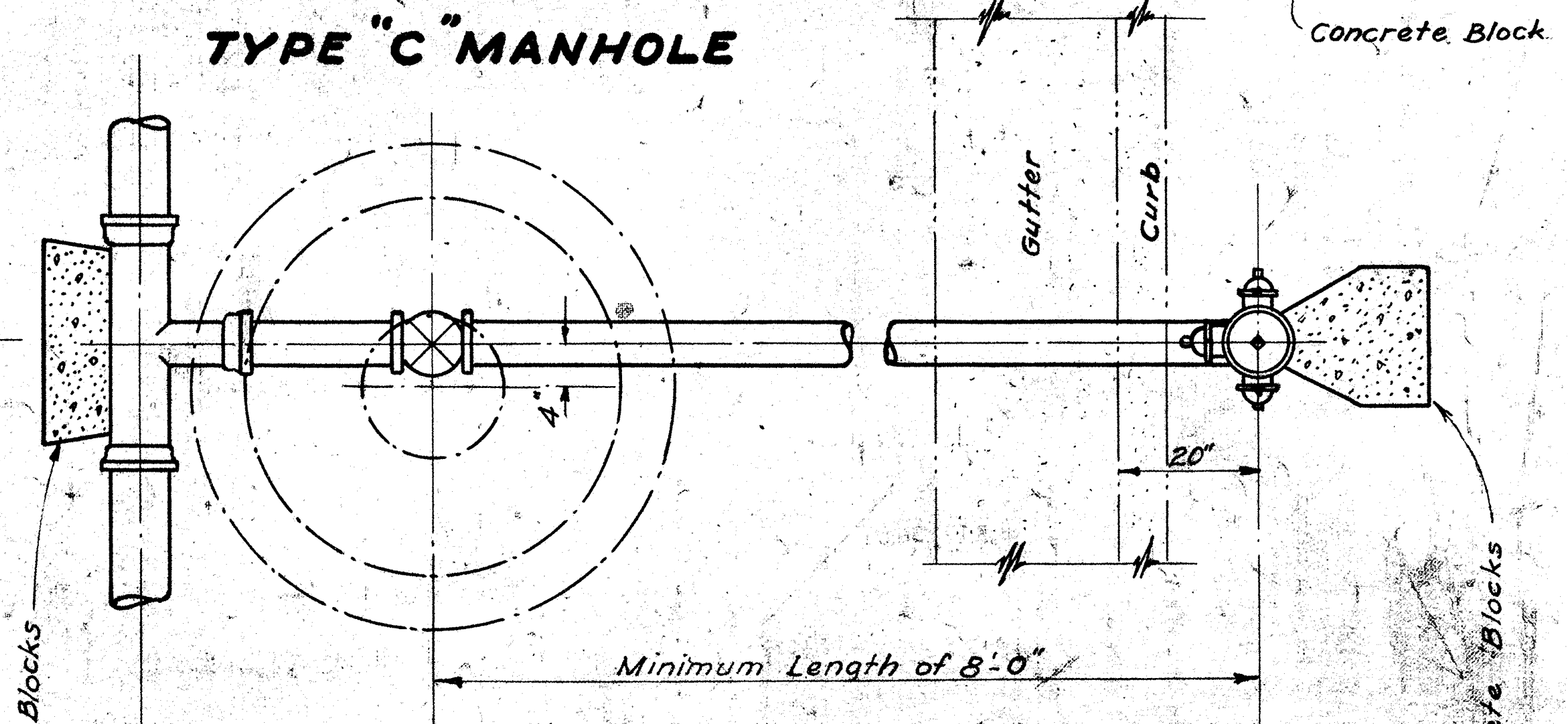
Scale 1½" = 1'-0"


Minimum Length of 8'-0"
20"
15'
Curb
Sidewalk
Top of pavement
Gutter
Brick
Variable Minimum 4'-0"
Minimum 24" Nipple
Length
Invert
Flat rock or Brick Support
2-6" Drainage Holes
Concrete Block

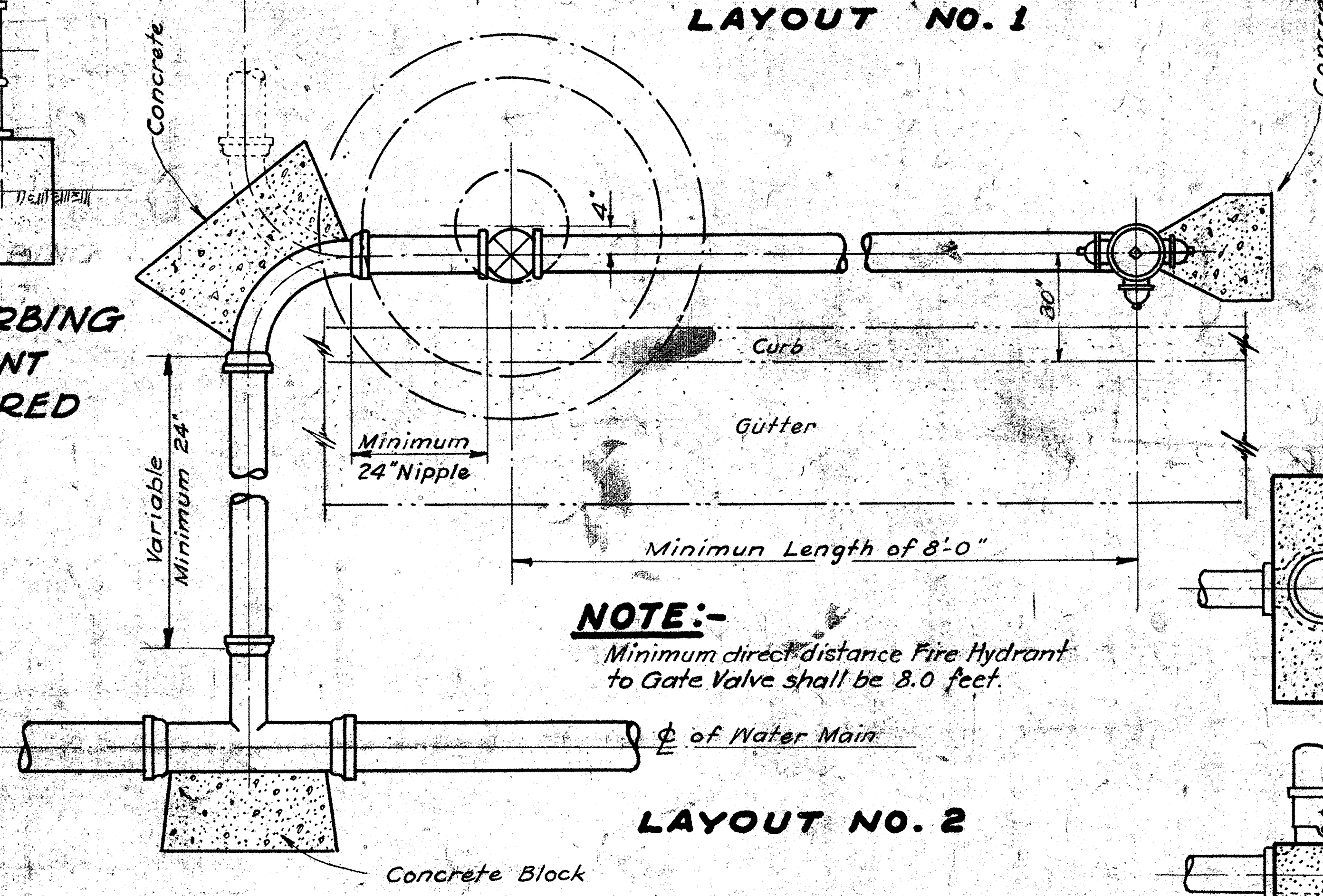
TYPE "C" MANHOLE


12"
Curbing
Curbing
Ground Line
15"
8"
12"

DETAIL OF CURBING AT HYDRANT WHERE REQUIRED

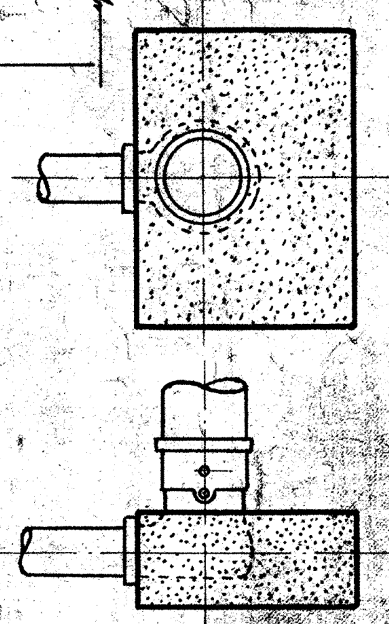

4"
Gutter
Curb
20"
Minimum Length of 8'-0"

LAYOUT NO. 1


Concrete Blocks
Concrete Blocks
4"
30"
Curb
Gutter
Minimum 24" Nipple
Variable Minimum 24"
Minimum Length of 8'-0"
℄ of Water Main
Concrete Block

NOTE:- Minimum direct distance Fire Hydrant to Gate Valve shall be 8.0 feet.

LAYOUT NO. 2

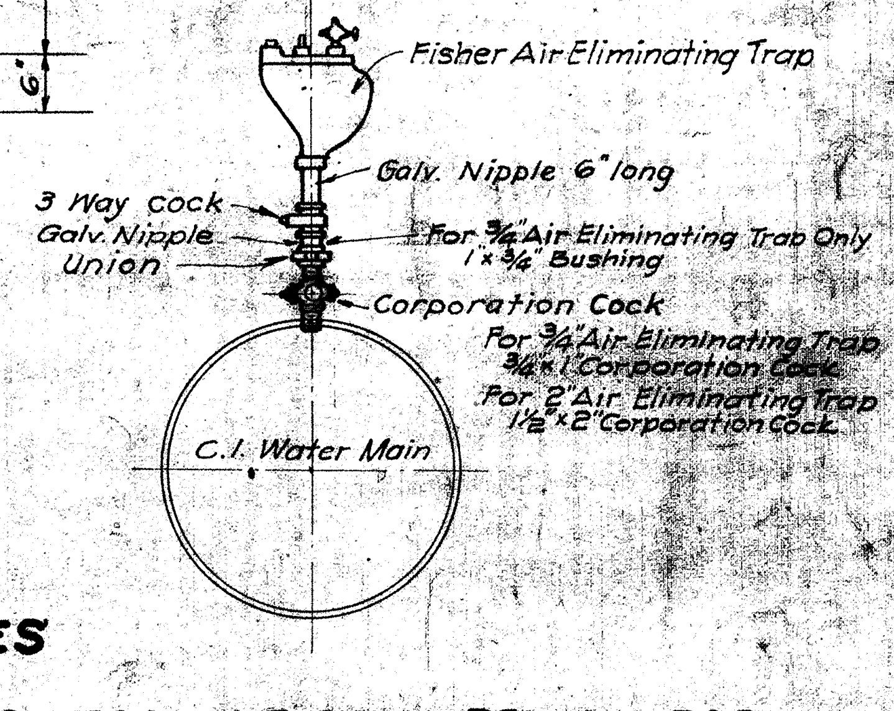


CONCRETE BLOCK FOR MATHEWS HYDRANT ONLY

STANDARD FIRE HYDRANT LAYOUT

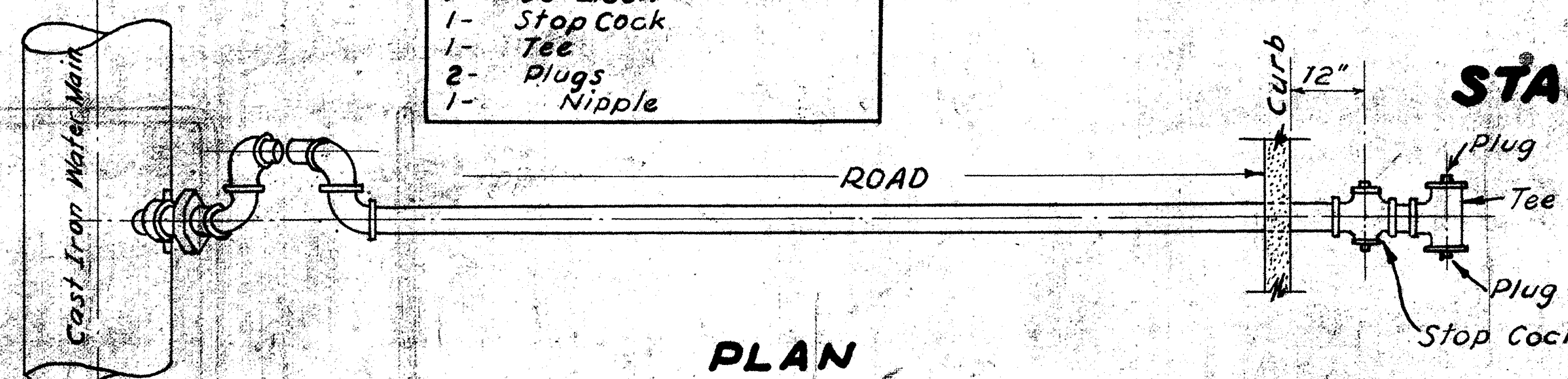
Scale: ½" = 1'-0"

NOTE: These details were prepared in the office of the Board of Water Supply, City & County of Honolulu.

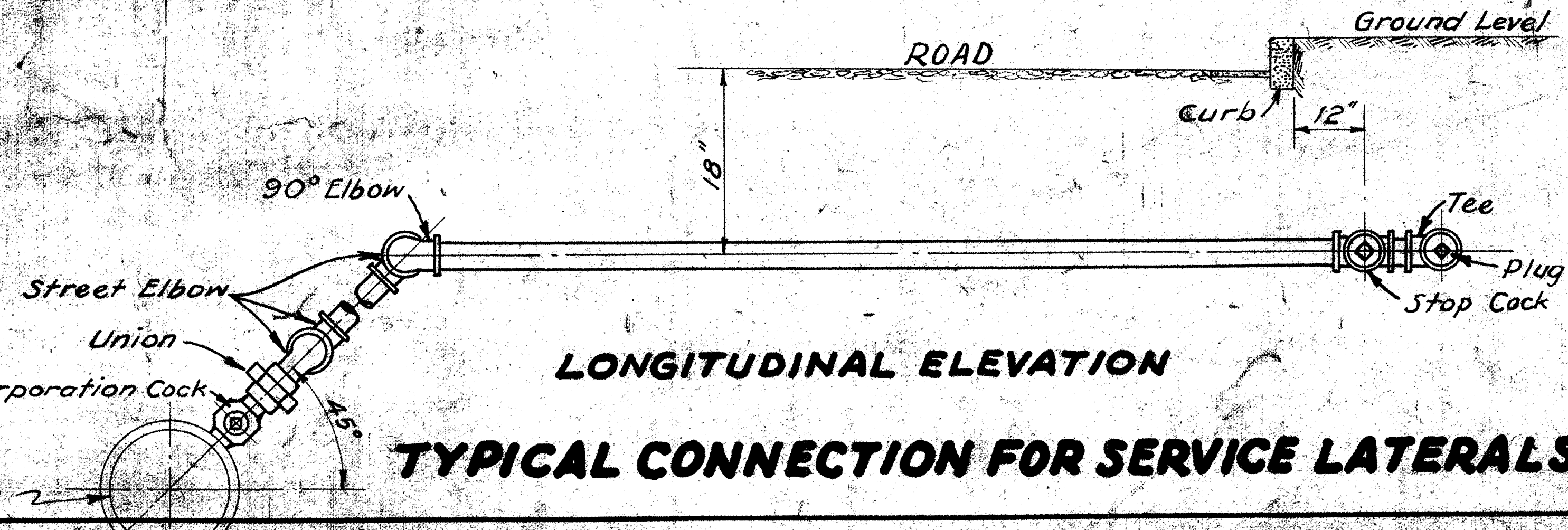

Fisher Air Eliminating Trap
Galv. Nipple 6" long
3 Way cock
Galv. Nipple
Union
For ¾" Air Eliminating Trap Only 1×¾" Bushing
Corporation Cock
For ¾" Air Eliminating Trap ¾×1" Corporation Cock
For 2" Air Eliminating Trap 1½"×2" Corporation Cock
C.I. Water Main

DETAIL OF CONNECTION FOR FISHER AIR ELIMINATING TRAP

SCHEDULE OF FITTINGS	
1-	Corporation Cock
1-	Union
3-	Street Elbows
1-	90° Elbow
1-	Stop Cock
1-	Tee
2-	Plugs
1-	Nipple


Cast Iron Water Main
ROAD
Curb
12"
Plug
Tee
Plug
Stop Cock

PLAN


Ground Level
ROAD
Curb
12"
18"
90° Elbow
Tee
Plug
Stop Cock
Street Elbow
Union
Corporation Cock
45°
Cast Iron Water Main

LONGITUDINAL ELEVATION

TYPICAL CONNECTION FOR SERVICE LATERALS

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BOARD OF WATER SUPPLY STANDARD DETAILS

WAIALAE AVE.- KALANIANAOLE HWY.
PROJECT Nº F 6 (17)

Scale: As Noted
Nov. 1951

SHEET Nº OF SHEETS

5533.35