

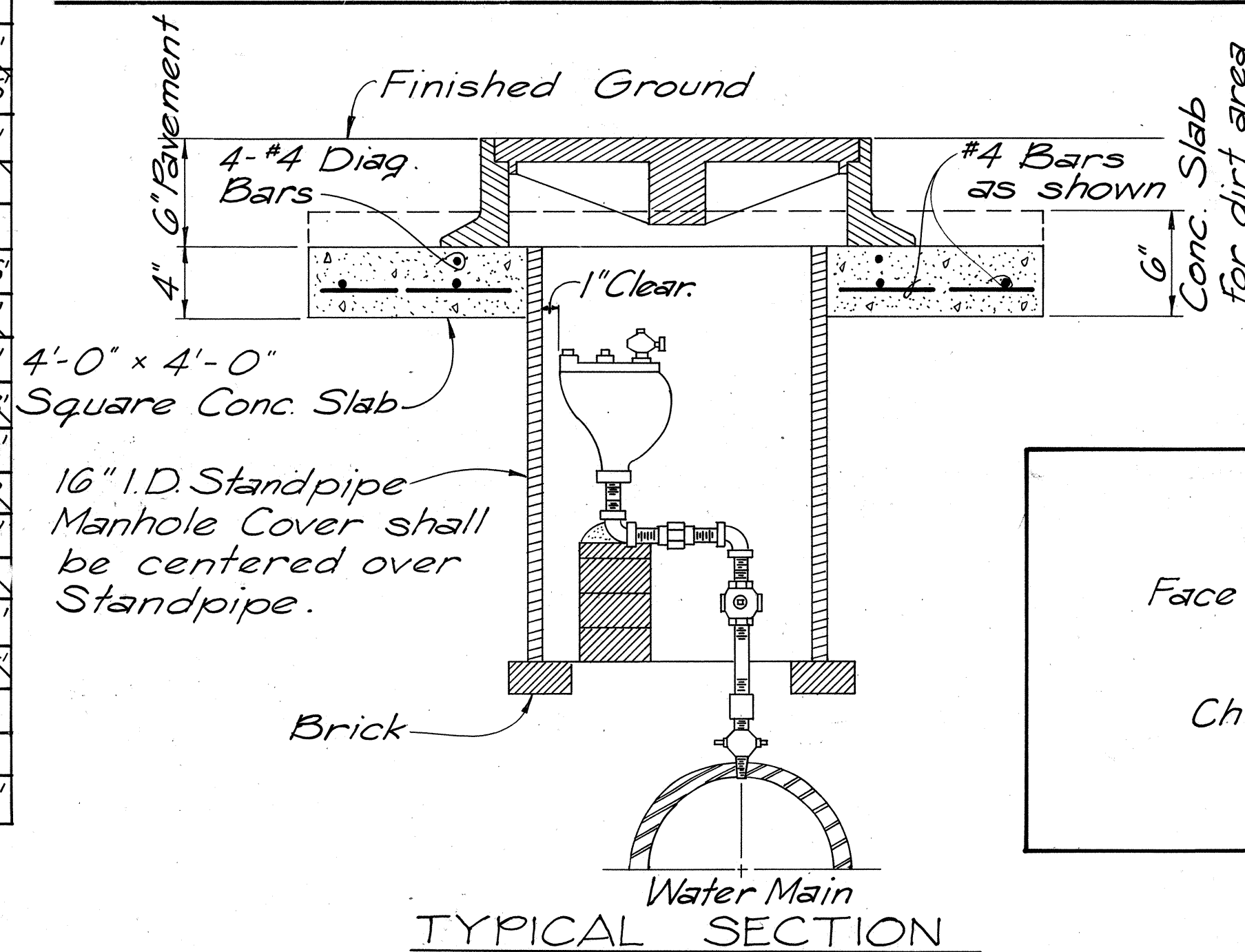
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156):16	1979	85	236

MANHOLE AND VALVE BOX ADJUSTMENTS						
NO.	ITEM	STATION	Q %s ±	Fin. EL.	REMARKS	X ±
1	Navy Air Valve Box	115+10	100' Lt.	26.0'		
2	Elec. Manhole	115+20	173' Rt.	27.8'	See Note #1	6.6'
3	Air Valve Box	115+35	19' Lt.	28.0'		
4	Navy Water Manholes	115+40	123' Rt.	27.0'	See Note #8	
5	Comm. Manhole	117+60	75' Rt.	24.9'		1.5'
6	Comm. Manhole	118+65	33' Rt.	26.0'		2.5'
7	Comm. Manhole	118+89	42' Rt.	25.3'		1.4'
8	Elec. Manhole	120+50	40' Rt.	25.9'	Construct Conc. Neck	1.8'
9	Air Valve Box	122+25	37' Lt.	24.7'		
10	Comm. Manhole	122+80	21' Rt.	25.6'		3.4'
11	Comm. Manhole	125+35	31.8' Rt.	25.0'		1.2'
12	Elec. Manhole	125+53	38.3' Rt.	25.1'		1.3'
13	Comm. Manhole	127+02	18' Rt.	24.6'		0.8'
14	Air Valve Box	130+15	37' Lt.	25.9'		
15	Comm. Manhole	131+51	31.8' Rt.	25.4'		1.7'
16	Comm. Manhole	131+55	18' Rt.	25.9'		1.5'
17	Elec. Manhole	131+69	38.3' Rt.	25.4'		1.6'
18	Comm. Manhole	134+55	18' Rt.	26.2'		1.5'
19	Elec. Manhole	137+80	38.3' Rt.	26.7'		1.6'
20	Comm. Manhole	137+98	31.8' Rt.	26.8'		2.1'
21	Comm. Manhole	138+07	18' Rt.	27.3'		2.1'
22	Comm. Manhole	138+25	23' Rt.	27.5'		2.6'
23	BWS Water Manhole	138+80	15' Lt.	28.0'	Type 'A' Manhole	
24	Comm. Manhole	140+00	31.5' Rt.	27.3'		1.9'
25	Comm. Manhole	141+57	18' Rt.	29.0'	Grade around M.H.	3.0'
26	Navy Water Valve Box	142+61	152' Rt.	24.5'		
27	Navy Air Valve Box	142+71	111' Rt.	25.5'		
28	Elec. Manhole	143+90	39.5' Rt.	28.0'	Construct Conc. Neck	3.0'
29	Gas Test Box	145+40	99' Lt.	29.1'		
30	Gas Test Box	147+00	22' Lt.	29.6'		
31	Comm. Manhole	147+18	19' Rt.	28.9'		2.4'
32	Comm. Manhole	147+19	31.5' Rt.	28.8'		2.1'
33	Gas Test Box	156+00	100' Lt.	27.6'		
34	Elec. Manhole	150+00	39.5' Rt.	28.3'	Construct Conc. Neck	1.9'
35	Comm. Manhole	150+21	19' Rt.	28.6'		2.5'
36	Comm. Manhole	152+71	18' Rt.	28.0'		2.1'
37	Gas Valve Box	154+30	10' Lt.	28.0'		
38	Gas Test Box	133+00	22' Lt.	26.9'		
39	Comm. Manhole	154+71	20' Rt.	27.5'		0.6'
40	Comm. Manhole	154+73	33.5' Rt.	27.3'		1.5'
41	Elec. Manhole	156+00	41.5' Rt.	26.8'		1.5'
42	Comm. Manhole	156+06	18' Rt.	27.6'		2.3'
43	Comm. Manhole	157+88	133' Rt.	24.3'	No Adjustment req'd.	1.5'
44	Comm. Manhole	159+27	19' Rt.	26.8'		2.8'
45	Comm. Manhole	160+20	133' Rt.	23.0'	No Adjustment Req'd.	1.5'
46	Comm. Manhole	160+36	115' Rt.	22.2'	See Details, Sht. U7	
47	Comm. Manhole	160+37	33' Rt.	26.4'		1.9'
48	Comm. Manhole	160+37	129' Lt.	26.2'		1.7'
49	Gas Test Box	123+75	90' Lt.	24.5'		
50	Gas Test Box	127+00	22' Lt.	25.3'		
51	Comm. Manhole	154+61	133' Rt.	25.0'		1.7'

See Sht. U2 for additional Items.

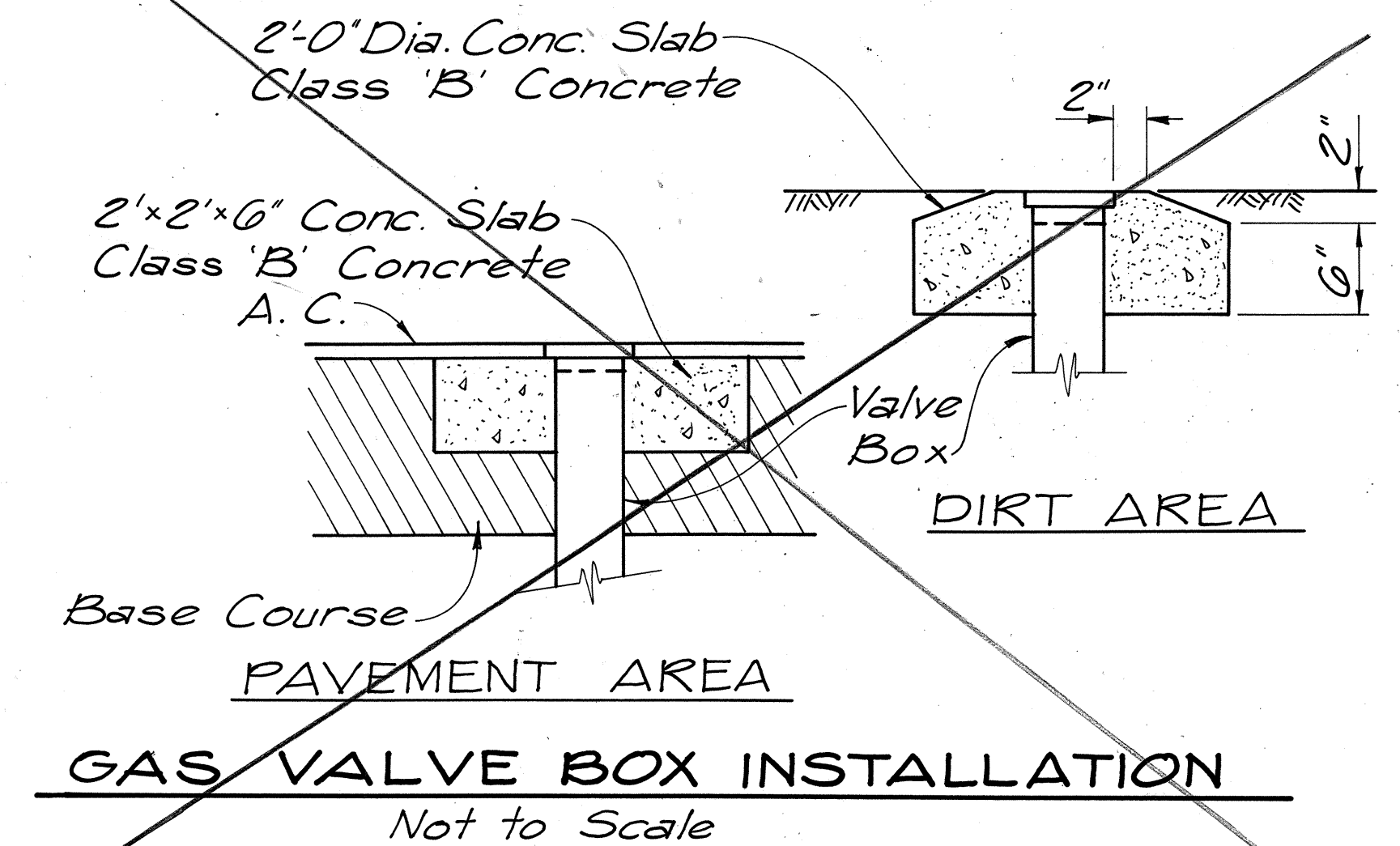
GENERAL NOTES:

- The Contractor shall stake out the new roadway edge of pavement prior to adjusting the manhole frame. If the frame encroaches into the new curb, the Contractor shall alter the manhole neck as directed by the Engineer and with the Approval of HECO. The existing neck shall be demolished and reconstructed as shown on Sht. U3.
- ~~Gas boxes not included in the schedule shall be adjusted by GASCO.~~ The Contractor shall contact GASCO ten (10) days prior to adjustment of boxes.
- Notify all Utility Companies, the Board of Water Supply, the Division of Sewers and the U.S. Navy 48 hours prior to adjusting manhole and valve boxes.
- All electric and communication manholes shall be adjusted by adding or removing bricks from the existing neck with the exception of items #2 & #8.
- Items not included in the schedule are not to be assumed abandoned. The Contractor shall verify abandoned items with the Engineer prior to demolishing such items.
- ~~The roof of the existing communication manhole @ Sta. 154+61 Rt. shall be reconstructed as shown in Detail X. (See Sht. 2)~~
- ~~The existing roof of the communication manhole @ Sta. 160+36 115' Rt. (Item #46) shall be demolished and replaced with covers as shown on Sht. U7.~~
- The existing 5' x 5' Navy water manhole @ Sta. 115+40 Rt. shall be adjusted to the finished elevation by casting in-place the required wall height and reinstalling the manhole covers. Resetting the covers and appurtenances shall be considered incidental work. The two existing 3' x 3' valve boxes shall be replaced with type B water manholes with top finished elevations at 27.0'.



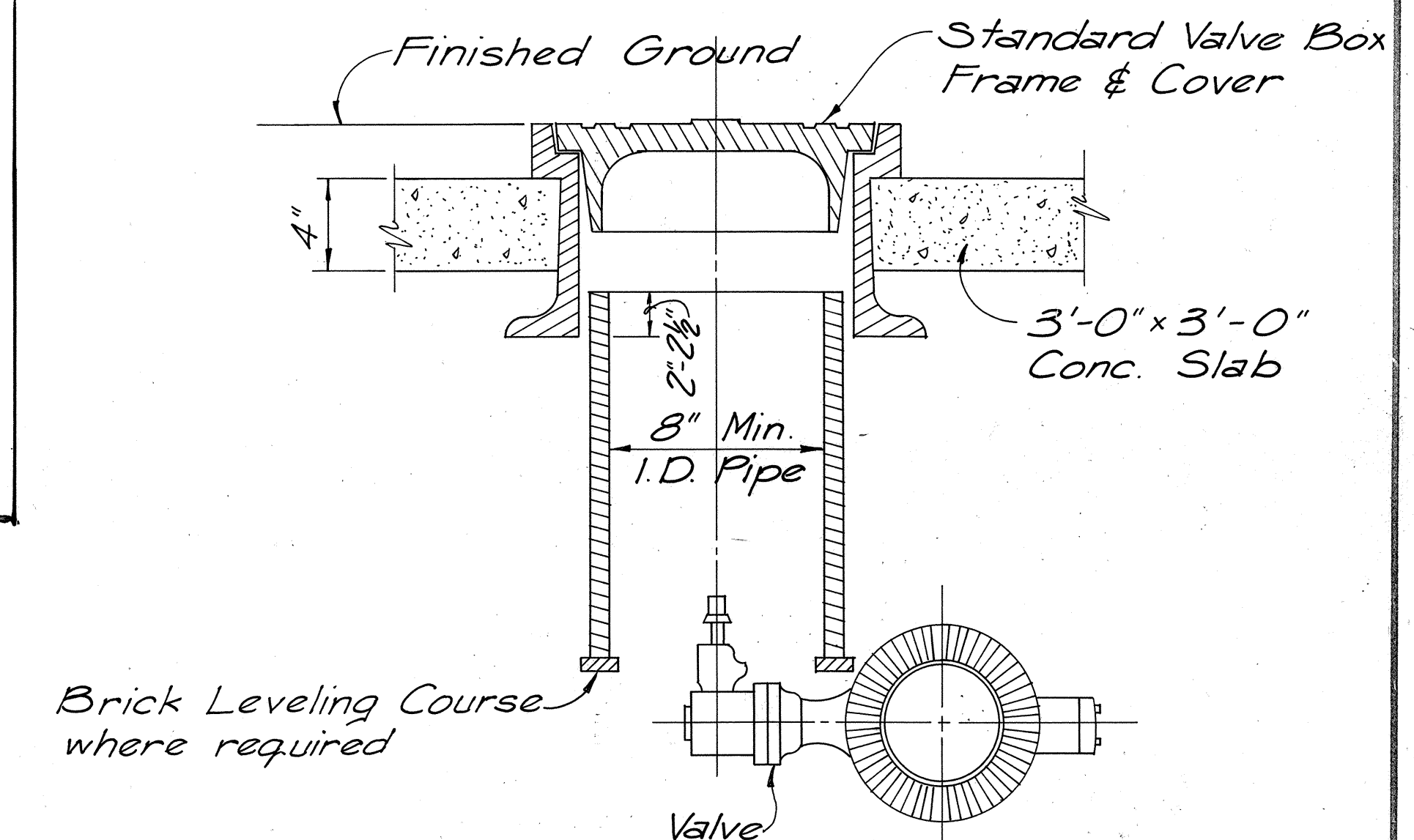
AIR VALVE BOX INSTALLATION

Not to Scale



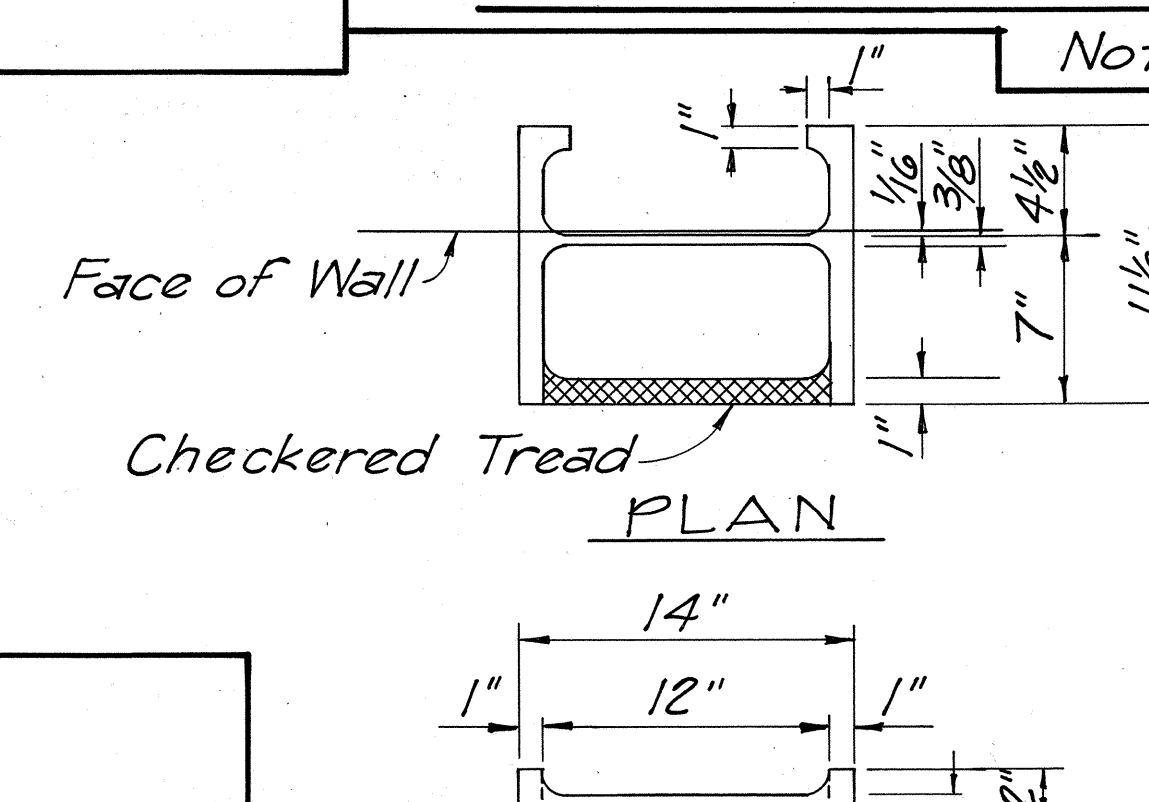
GAS VALVE BOX INSTALLATION

Not to Scale



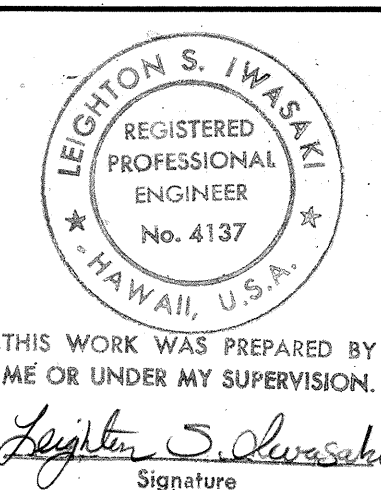
WATER VALVE BOX INSTALLATION

Not to Scale



RING DETAIL

Scale: 3/8" = 0'-1"



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MANHOLE AND VALVE BOX
ADJUSTMENT DETAILS

AIRPORT INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(156):16

SCALE: AS SHOWN DATE: SEP 5, 1978

SHEET No. U-1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(156)-10	1979	86	236

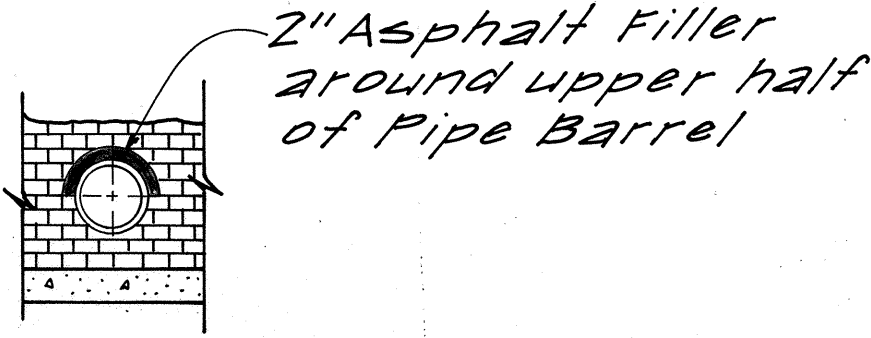
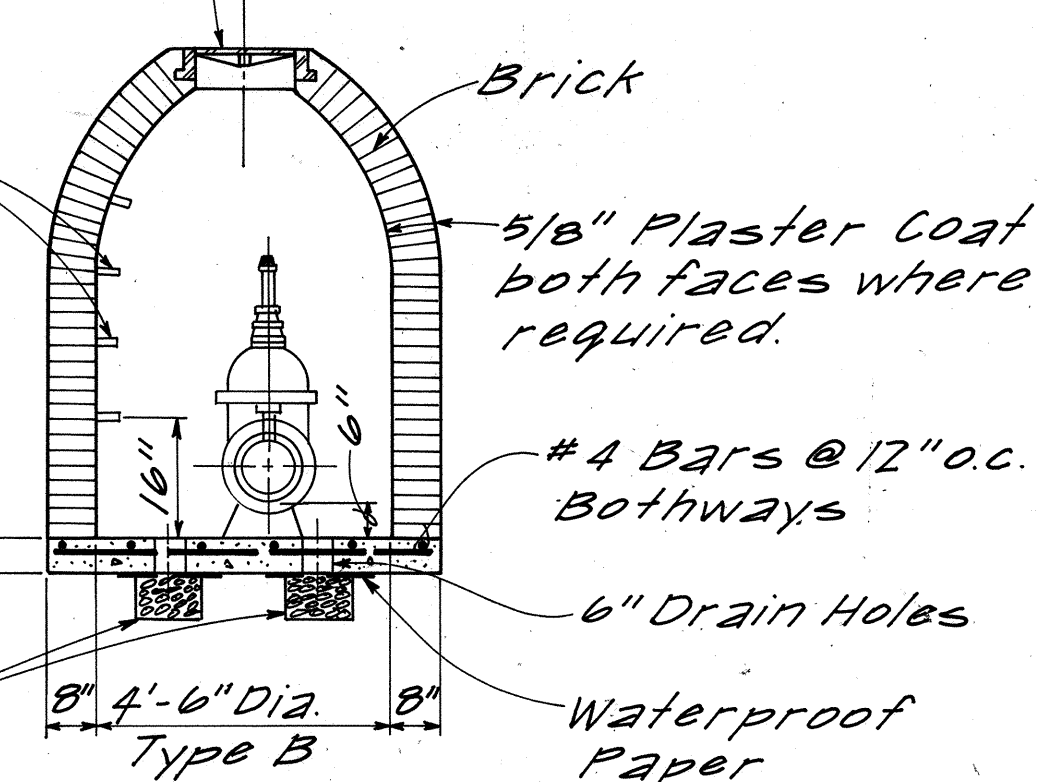
MANHOLE AND VALVE BOX ADJUSTMENTS					
NO.	ITEM	STATION	±	FIN. ELEV.	REMARKS
52	Sewer Manhole	143+41	146.6' Rt.	26.0'	
53	Sewer Manhole	146+40	146.9' Rt.	26.0'	
54	Air Valve Box	126+65	37' Lt.	25.0'	No adjustment req'd.
55	Air Valve Box	133+65	37' Lt.	26.8'	No adjustment req'd.
56	Gas Test Box	135+00	99' Lt.	27.1'	
57	Air Valve Box	137+15	37' Lt.	27.6'	No adjustment req'd.
58	Water Valve Box	138+10	37' Lt.	27.8'	
59	Water Valve Box	138+80	45' Lt.	27.8'	No adjustment req'd.
60	BWS Water Manhole	138+90	37' Lt.	28.0'	No adjustment req'd.
61	BWS Water Manhole	139+85	42.5' Lt.	28.1'	No adjustment req'd.
62	Navy Water Manhole	124+44	160' Rt.	25.6'	
63	BWS Water Manhole	142+60	42.5' Lt.	28.7'	No adjustment req'd.
64	BWS Water Manhole	146+85	42.5' Lt.	29.1'	No adjustment req'd.
65	BWS Water Manhole	152+00	37' Lt.	28.4'	No adjustment req'd.
66	BWS Water Manhole	154+05	42.5' Lt.	27.9'	No adjustment req'd.
67	BWS Water Manhole	158+75	42.5' Lt.	27.5'	No adjustment req'd.
68	Electric Handhole	118+41	240' Rt.	21.7'	See Sht. U-4 for Details
69	Electric Handhole	132+93	203' Rt.	24.5'	No adjustment req'd.
70	Electric Handhole	137+70	134' Rt.	24.0'	No adjustment req'd.
71	Communication Handhole	147+20	120' Lt.	28.1'	No adjustment req'd.
72	Air Valve Box	139+20	43.1' Lt.	27.9'	No adjustment req'd.
73	Air Valve Box	142+40	45' Lt.	28.6'	
74	Air Valve Box	149+53	45' Lt.	28.8'	No adjustment req'd.
75	Air Valve Box	151+85	45' Lt.	28.3'	No adjustment req'd.
76	Air Valve Box	157+15	45' Lt.	27.4'	No adjustment req'd.
77	Navy Valve Box (Water)	118+21	189' Rt.	21.3'	Replace w/ New Valve Box
78	Navy Valve Box (Water)	118+32	189' Rt.	22.9'	Replace w/ New Valve Box
79	Navy Valve Box (Water)	118+26	199' Rt.	21.3'	Replace w/ New Valve Box
80	Navy Valve Box (Water)	118+22	194' Rt.	21.3'	Replace w/ New Valve Box
81	Navy Water Manhole	131+81	153' Rt.	24.5'	No adjustment req'd.
82	Navy Water Manhole	131+91	155' Rt.	24.5'	No adjustment req'd.

GENERAL NOTES (Continuation)

- See underground utility sheets for location of items to be adjusted.
- Gas test boxes are 8-inch diameter concrete boxes for off-roadway areas and metal boxes for roadway stress. Concrete boxes damaged during the adjustment work will be replaced with a new box at the Contractor's expense.
- The Contractor shall verify locations and finished elevations of all items prior to doing any adjustment work.
- All stationings are off the H-1 Centerline
- Payment for excavation for the items shall be incidental to the adjustment work.

Manhole Frame & Cover
(See Detail Sht. U-5)

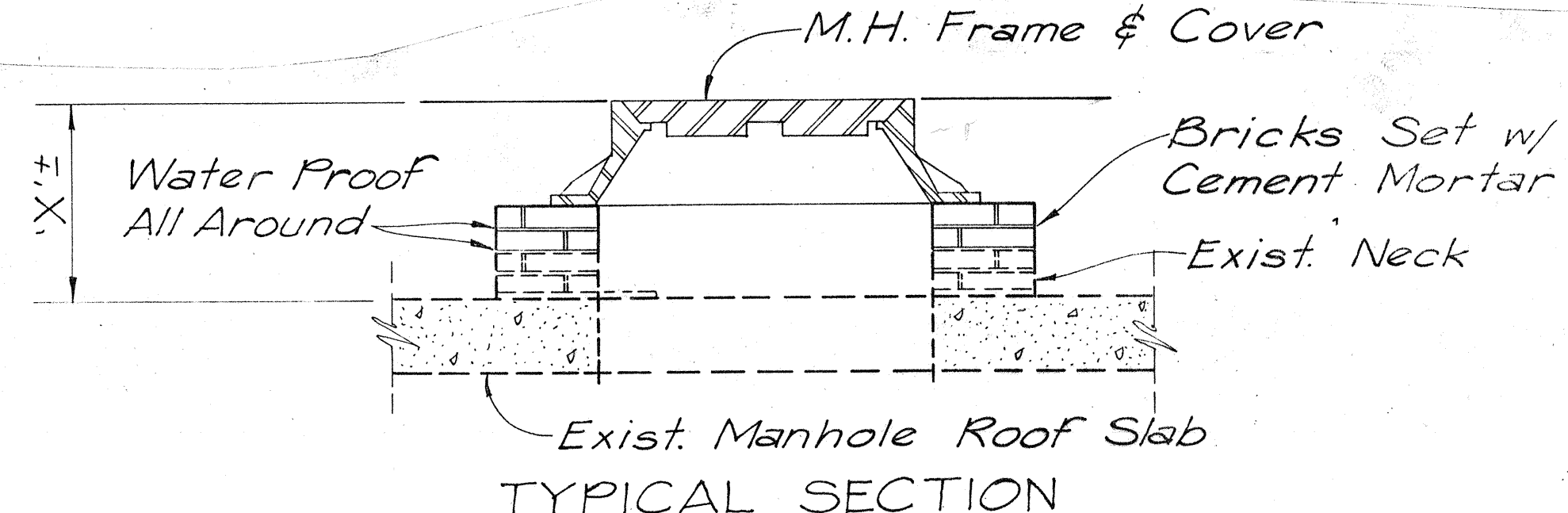
Rungs @ 12" o.c.
(See Sht. U-1 for Details)



FILLER DETAIL

- Notes:
- Concrete shall be Class B
 - Omit Drain Holes and Crushed Rock for Waterproofed Manholes.

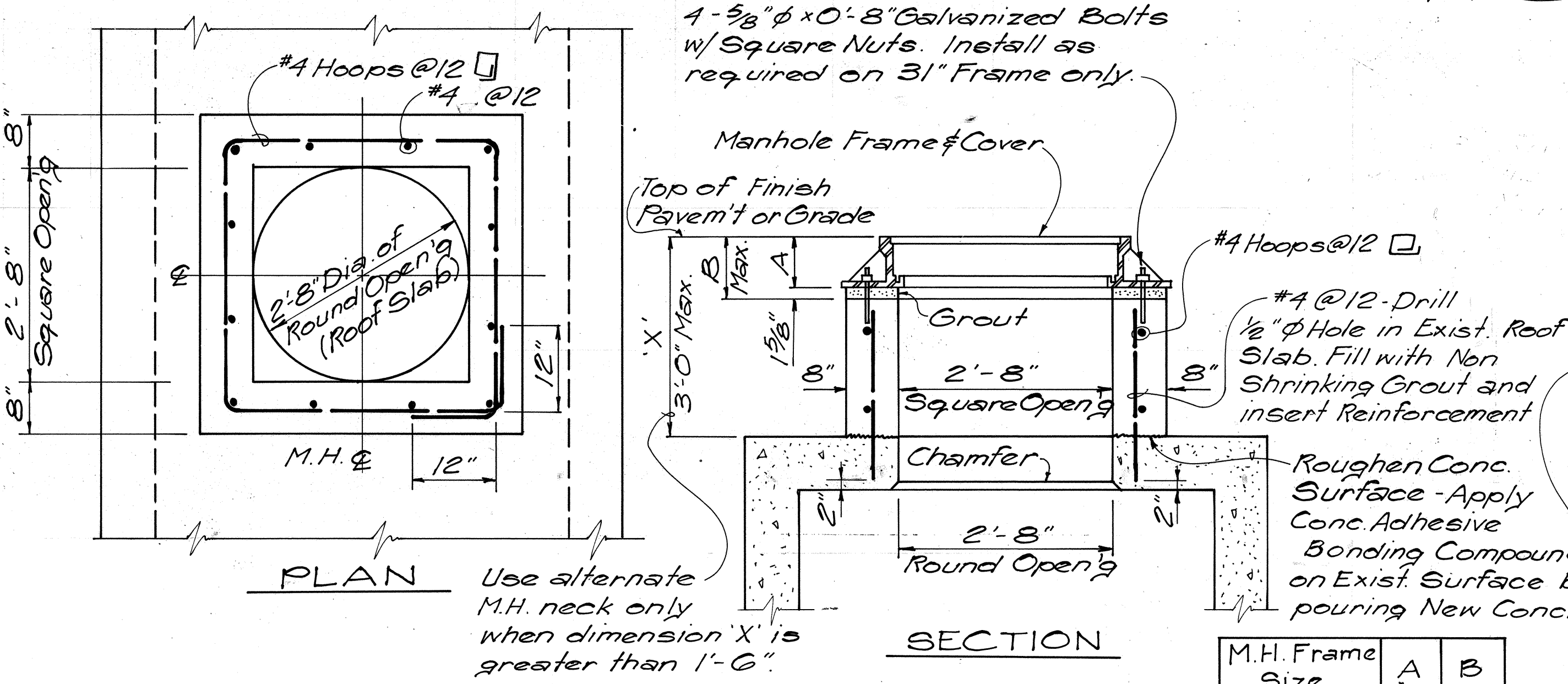
TYPE B MANHOLE
Not to scale



COMMUNICATION MANHOLE NECK DETAIL

Scale: 3/4" = 1'-0"

Note:
For 'X' dimension, see Schedule, Sht. U-1



ALTERNATE MANHOLE NECK

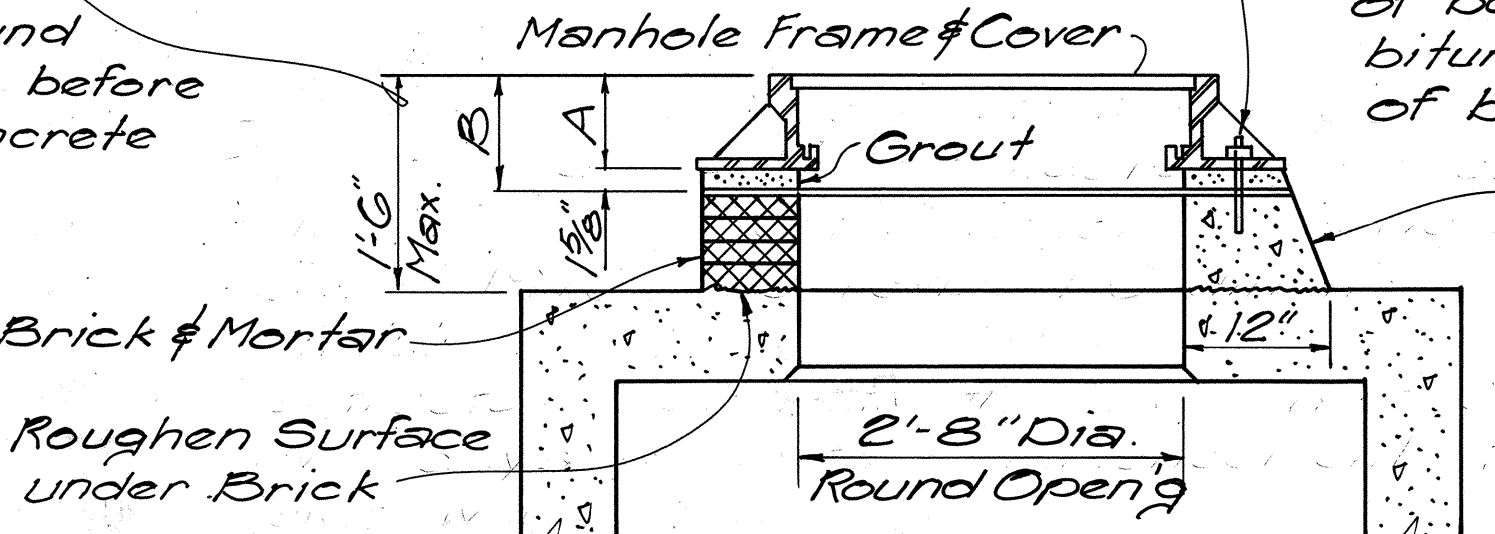
Scale: 3/4" = 1'-0"

M.H. Frame Size	A	B
31" φ	4"	5 5/8"
28" φ	7 3/8"	9"

Variable to suit conditions in the field. Minimum 1'-0" to provide for future adjustments. When dimension is greater than 1'-6", use alternate manhole neck.

Provide 4 - 3/8" φ x 0'-8" galvanized anchor bolts w/eq. nuts & washers (project 2 1/2") for 31" φ Manhole frame when installing in heavy traffic areas. See HECO drawing No. 011328 for location of bolts. Apply generous coat of bitumastic paint on exposed surface of bolts.

Use concrete in lieu of bricks when anchor bolts are required.

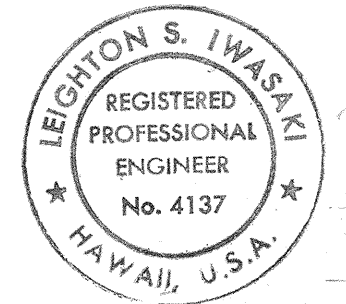


31" φ & 28" φ MANHOLE FRAME NECK DETAIL

Scale: 3/4" = 1'-0"

Note: See table alternate manhole neck detail for dimension A and B.

APPROVED: *[Signature]* 7/5/77
 CHIEF, PLANNING & ENGINEERING
 BOARD OF WATER SUPPLY



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
[Signature]
Signature

APPROVED: <i>[Signature]</i>	8/19/77
GASCO.	DATE
APPROVED: <i>[Signature]</i>	9/14/77
CHIEF, DIVISION OF SEWERS	DATE
APPROVED: <i>[Signature]</i>	9.23.77
HAWAIIAN ELECTRIC CO., INC.	DATE
APPROVED: <i>[Signature]</i>	10-18-77
HAWAIIAN TELEPHONE CO.	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES
MANHOLE AND VALVE BOX
ADJUSTMENT DETAILS

AIRPORT INTERCHANGE
F.A.I. PROJ. NO. I-H-1-(156)-10

SCALE: AS SHOWN DATE: SEP 5, 1978

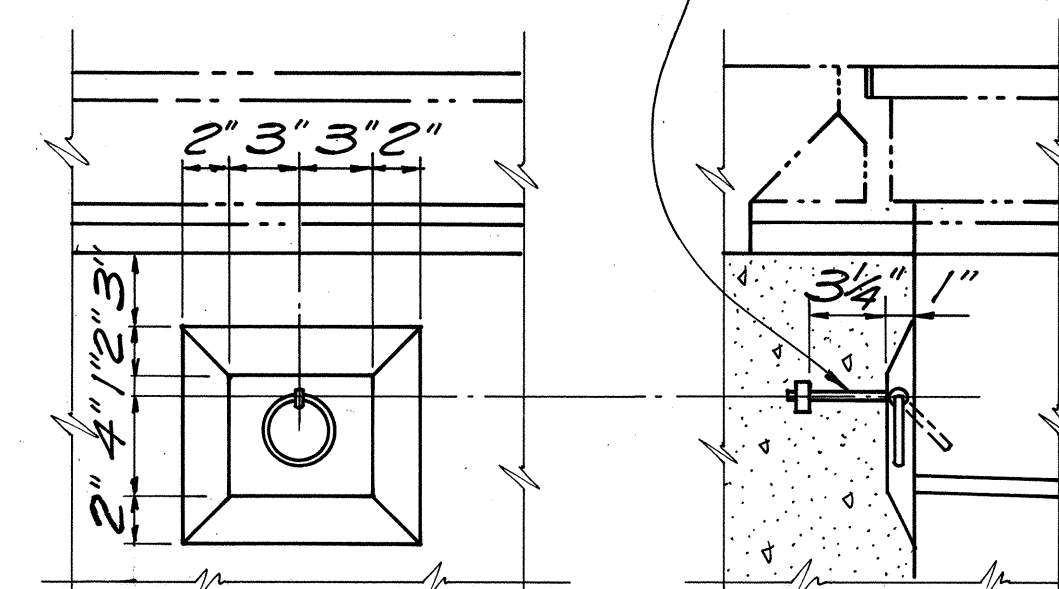
SHEET No. 4-2 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)-16	1979	87	236

GENERAL NOTES:

- Contractor shall demolish Cross-Hatched Portion of Manhole Walls and Ceiling Slabs in the presence of HECO Standby Man.
- Special Note: The Cables in Existing HECO Manholes are energized. These energized insulated Cables are to remain in place during construction. Only HECO Men are to handle these cables and erect temporary guards to protect these cables from damage. Contractor to exercise due care and precautions to avoid disturbance of energized cables and temporary guards and shall work cautiously to avoid accidents.
- Bend and extend Existing Reinforcing Steel 12" (Min.) into new work.
- Verify all dimensions in the field before proceeding with the work.
- Demolishing of Existing Manhole Neck shall be considered incidental to the construction of the New Manhole Neck.
- Notify the HECO, Contracting and Inspection Division, 24 hours before pouring any concrete. All concrete pouring shall be done in the presence of a HECO Engineer or Inspector.
- Forms shall be made of good sound lumber of sufficient strength, water tight and conforming to shape and dimensions as indicated.
- All work shall be subject to inspection by the HECO and the State's Engineer.

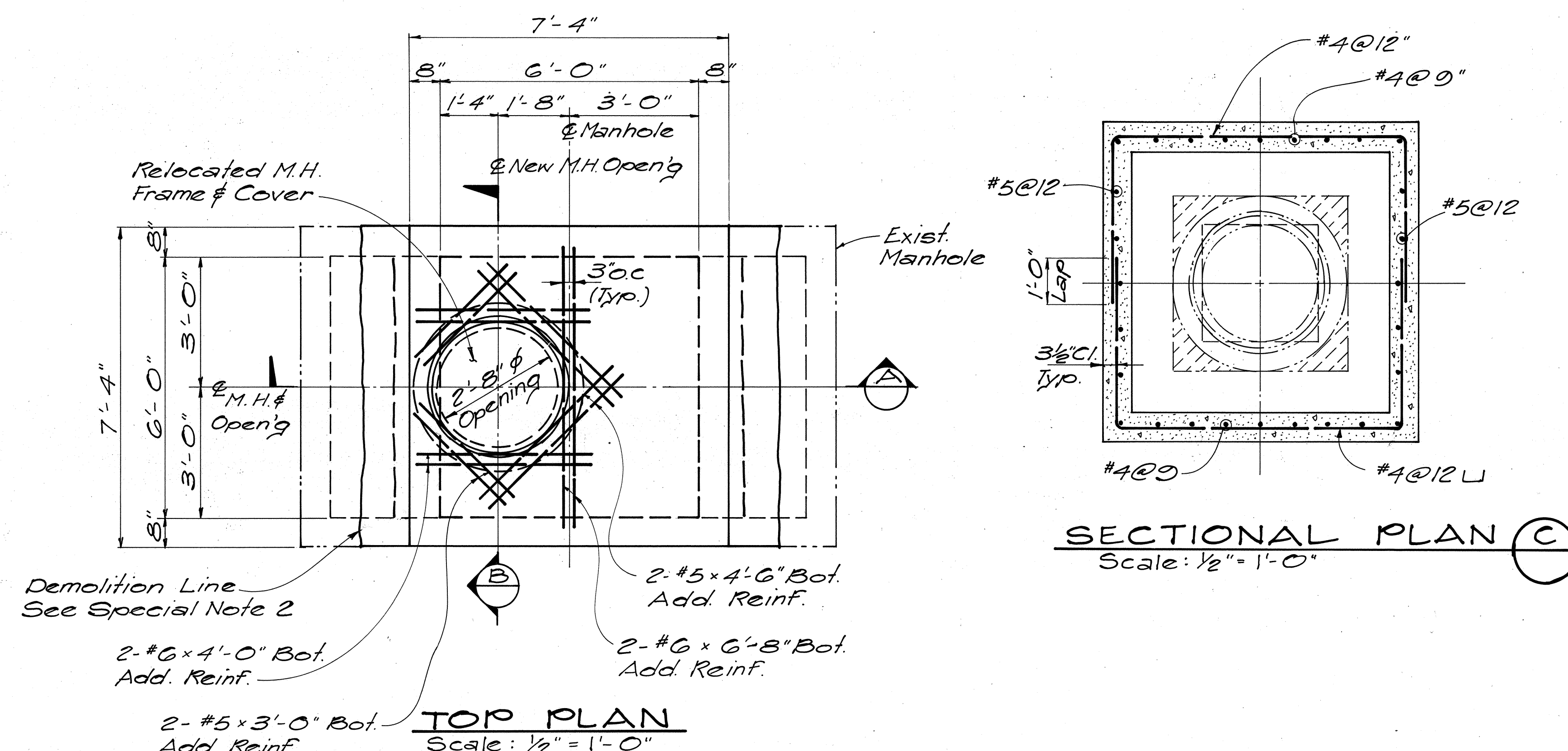
Galvanized Nut Ring (Shank Dia. = $\frac{1}{2}$ ", Shank Length = $3\frac{1}{4}$ ", Ring I.D. = $2\frac{1}{2}$ ")



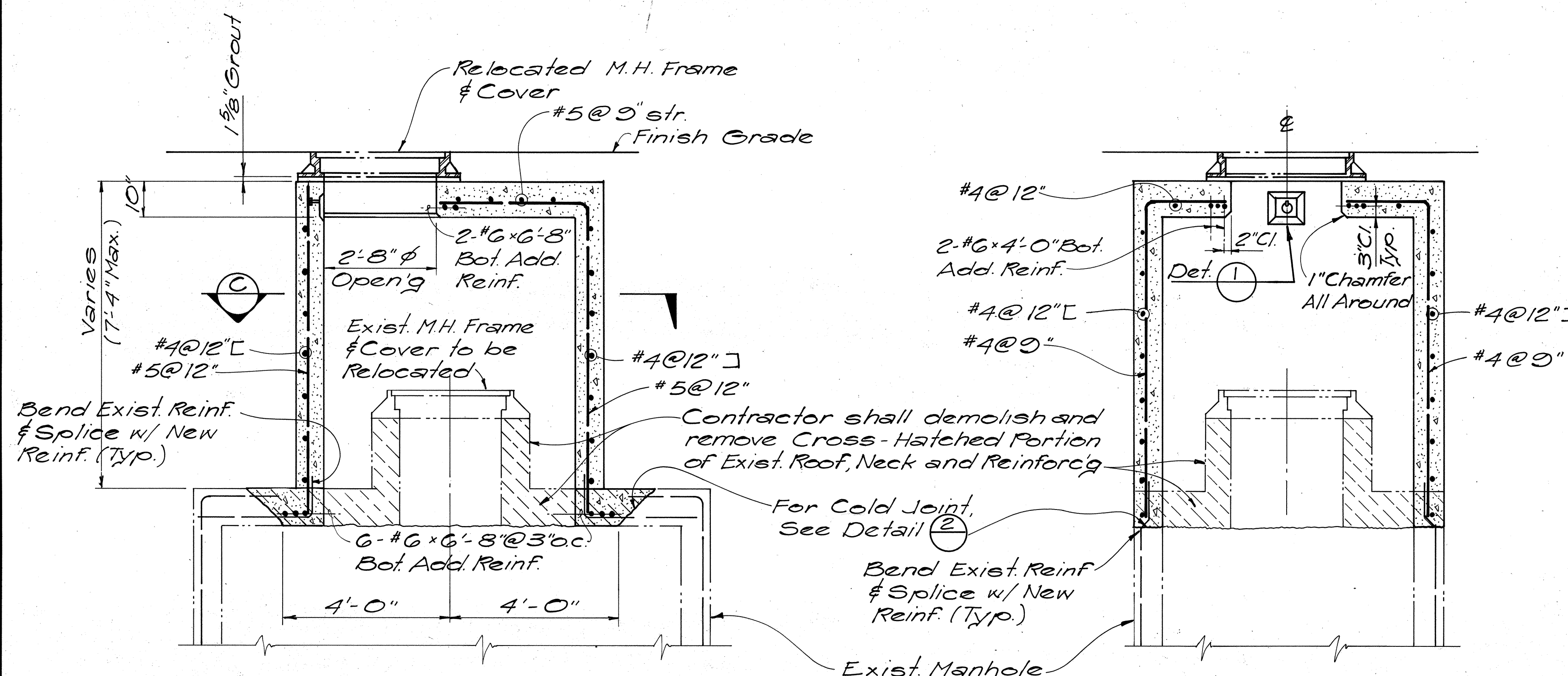
ELEV. SECT.

Note: The Nut Ring Bolt is to be used for securing Portable Ladders.

DETAIL (1)
Scale: $\frac{1}{2}$ " = 1'-0"

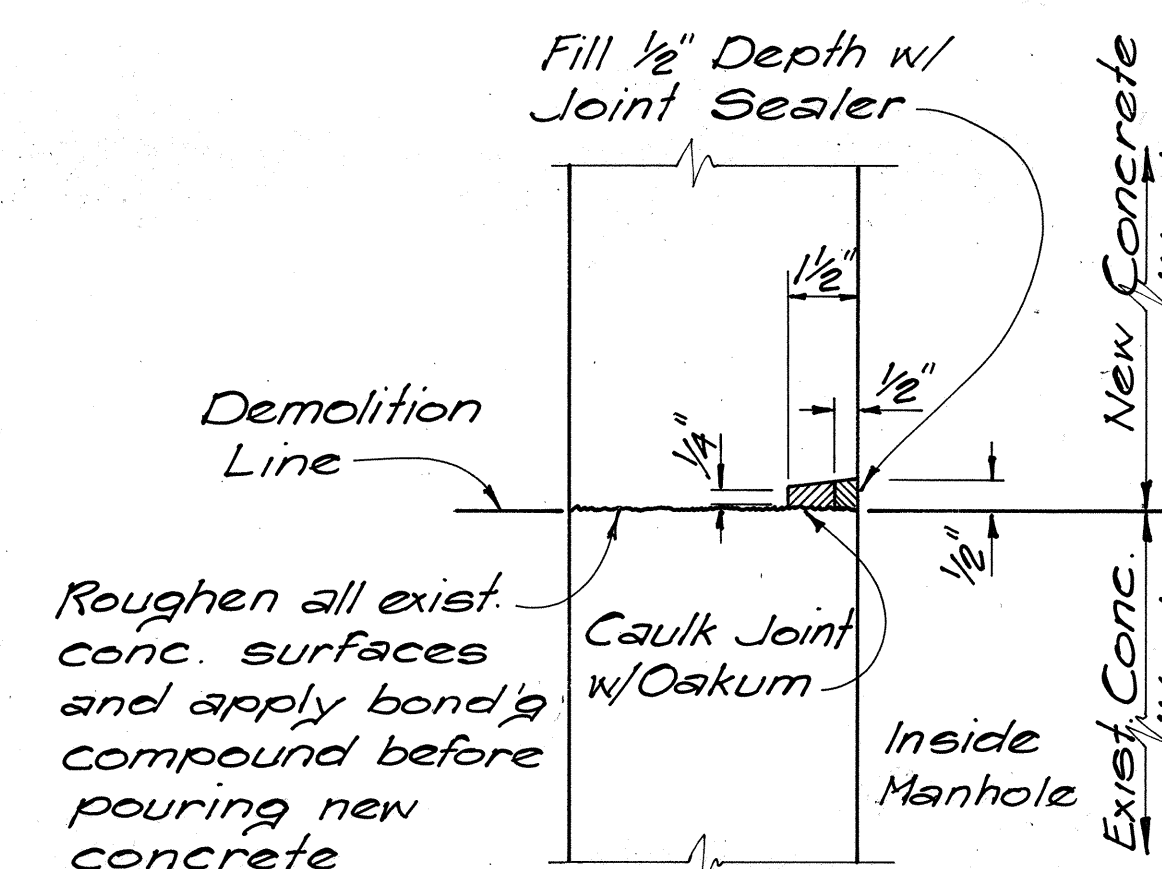


TOP PLAN
Scale: $\frac{1}{2}$ " = 1'-0"

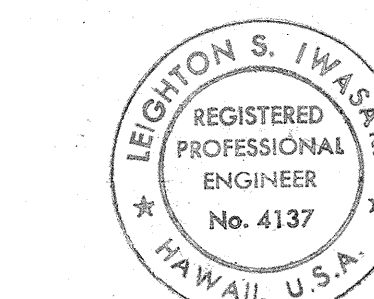


SECTION (A)
Scale: $\frac{1}{2}$ " = 1'-0"

SECTION (B)
Scale: $\frac{1}{2}$ " = 1'-0"



DETAIL, COLD JOINT (2)
Scale: 3" = 1'-0"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: *Leighton S. Iwasaki*

APPROVED:	DATE:
<i>Mr. J. Karimols</i>	9-23-77
HAWAIIAN ELECTRIC CO.	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
MANHOLE NECK ADJUSTMENT H.E. MANHOLE 'H' - STA. 115+20-173RT.	
AIRPORT INTERCHANGE F.A.I. PROJ. NO. I-HI-1(156)-16	
SCALE: AS SHOWN	DATE:
SHEET No. 13 OF 7 SHEETS	

