

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

PROFILE	SURVEYED _____	BY _____	DATE _____
NOTE BOOK	PLOTTED _____		
NO.	GRADES CHECKED _____		
	R. H. S. NOTED _____		
	STRUCTURE NOTATIONS CHHD _____		

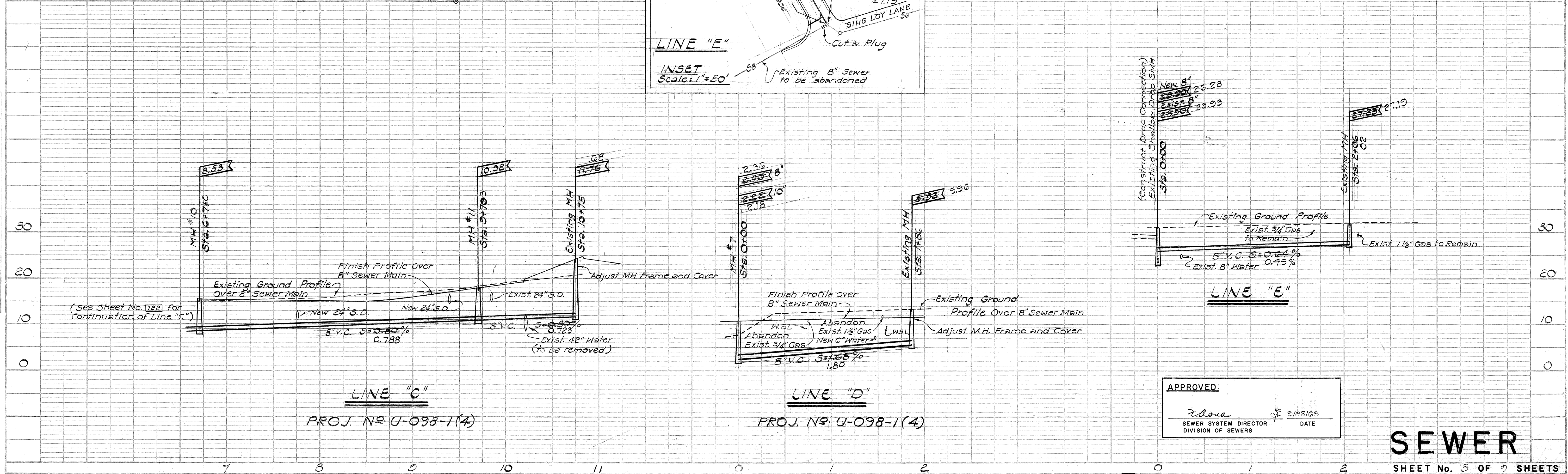
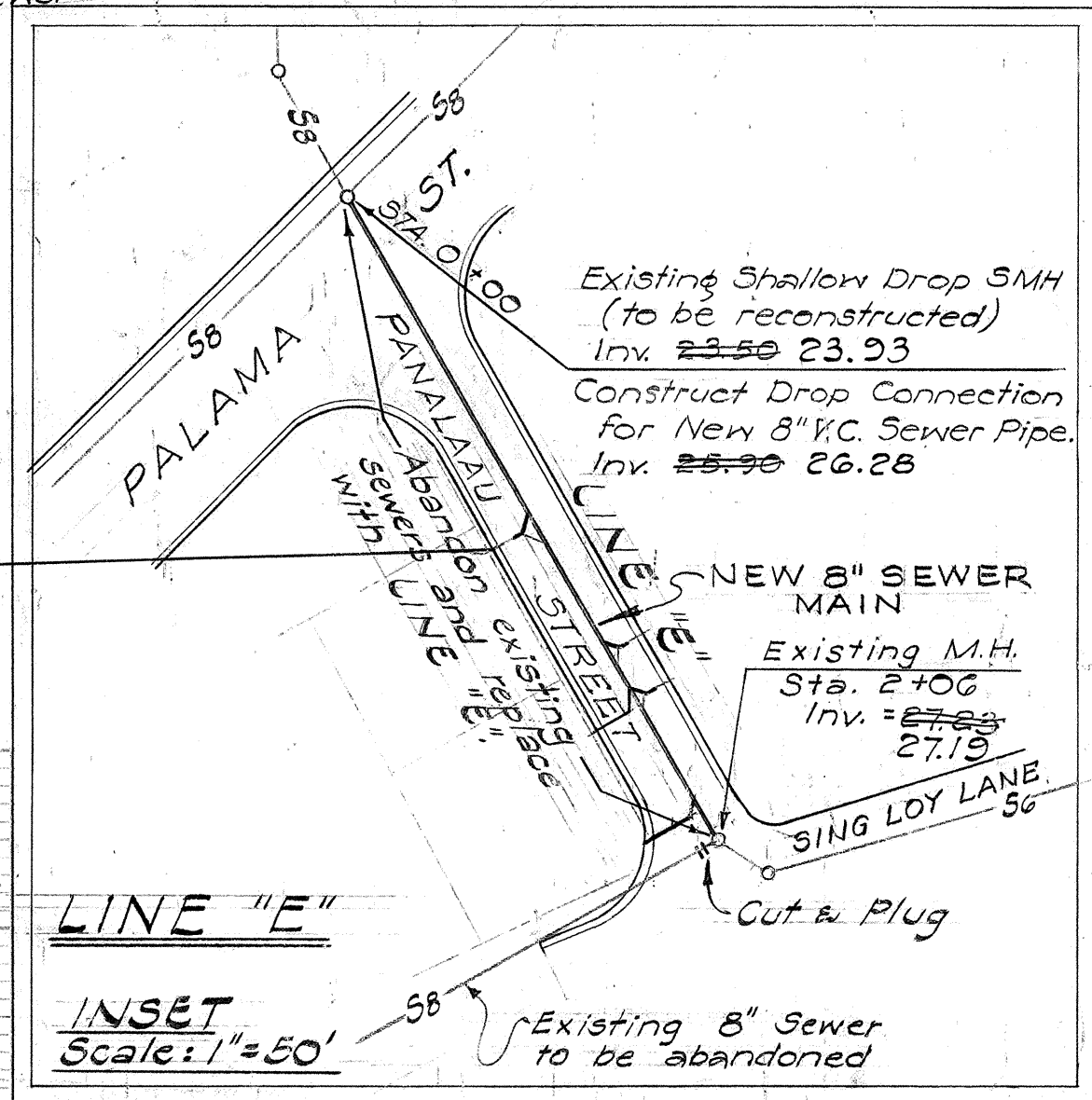
-
- to new sewer
lines shall be as
mains, connection
- Existing M.H.
Sta. 12+18
10' x 12' x 12'
- 4'-2" x 4' Box Culvert
- New 6" Gas
- 8" V.C. S = 3.80%
3.70%
- Reinforced Concrete Jacket
- M.H. #3
Sta. 10+76
- Existing Ground Profile over 8" Sewer Main
- 8" Stub
- N.S.L. Exist. 3/4" Gas
New 8" Water
New 12" Water
- Exist. 1 1/2" Gas
New 6" Water
N.S.L.
- 8" V.C. S = 1.17%
1.1675%
- New 20" Water (H.P.)
- M.H. #4 (Connect Exist. 6" Sewer)
Sta. 12+40
- Exist. 3/4" Gas
Exist. 6" Sewer
- N.S.L. Exist. 1" Gas
Exist. 3/4" Gas
N.S.L.
- 8" V.C. S = 1.17%
1.1246%
- M.H. #5
Sta. 15+60
- Finish Profile over 8" Sewer Main
- Exist. 3/4" Gas
- 8" V.C. S = 1.45%
- M.H. #6
Sta. 21+60
- Exist. 1" Gas
New 6" Water
Exist. 2" Gas
- New 8" Water
8" V.C. S = 1.55%
1.53
- New 6" Water
Exist. 42" Water
- Adjust M.H. Frame & Cover
- Existing 10" Sewer
- M.H. #7
Sta. 0+00
- New 8" Water
Exist. 3.87'
- NOTE:
In Line "A" Sewer Profile above, Existing 3/4", 1", 1 1/2" and 2" Gas Lines shown are to be Abandoned (See Gas Plans), and "N.S.L." indicates New Water Service Laterals.
- LINE "A"
- APPROVED:
Edona
SEWER SYSTEM DIRECTOR
DIVISION OF SEWERS
- 3/28/03
DATE
- SEWER
- SHEET No. 1 OF 2 SHEETS

E. Lona ¹⁰⁰
SEWER SYSTEM DIRECTOR 3/28/68
DIVISION OF SEWERS DATE

SHEET No. 1 OF 2 SHEETS

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

PROFILE		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	GRADES CHECKED		
	B. M.s NOTED		
	STRUCTURE NOTATIONS CHKD		

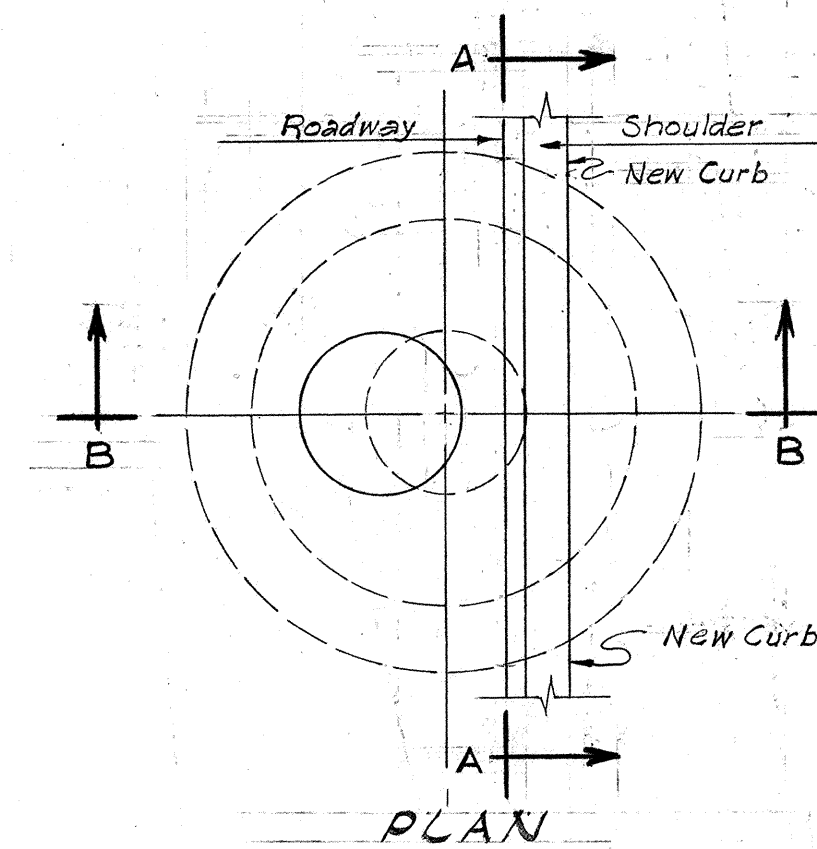
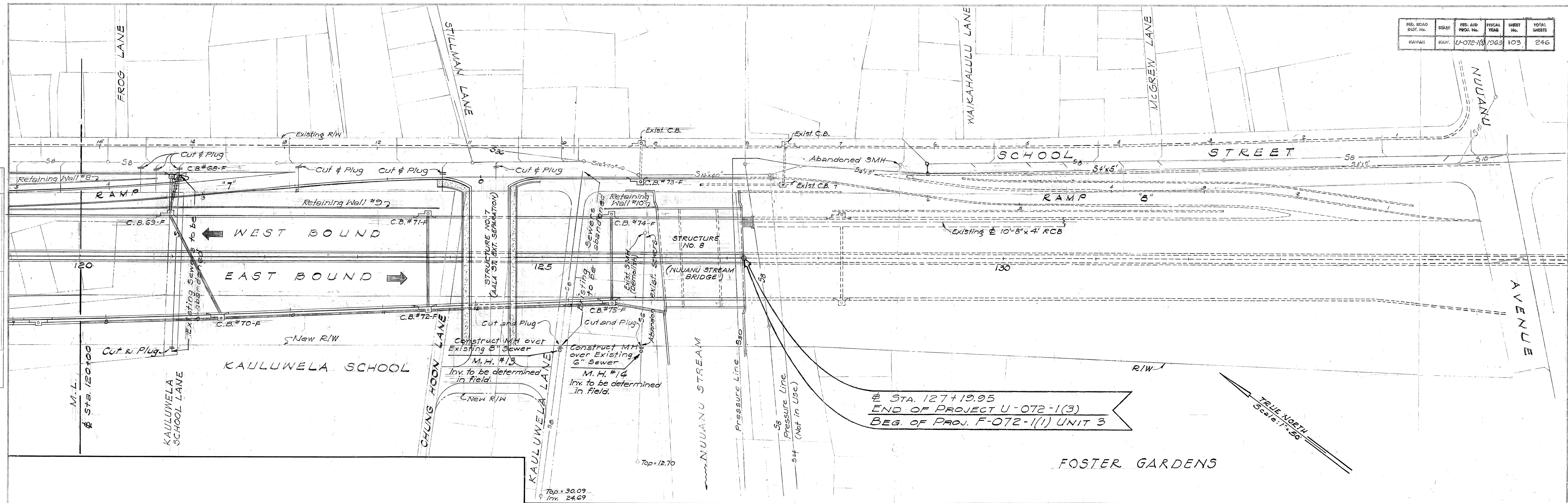


SEWER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
191	HI	U-072-1(3)	1963	103	246

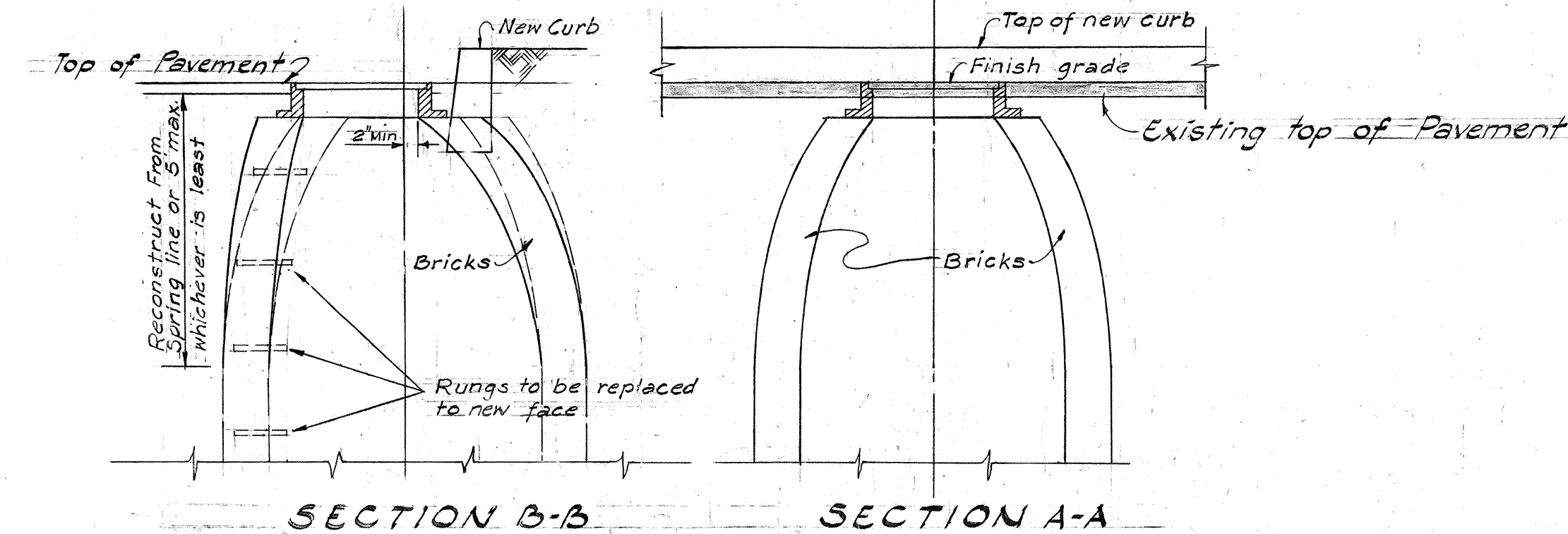
PLAN	DATE	BY
SURVEYED		
PLOTTED		
NOTE BOOK		
ALIGNMENT CHECKED		
ST. OF WAY CHECKED		
NO.		

PROFILE	DATE	BY
SURVEYED		
PLOTTED		
NOTE BOOK		
GRADES CHECKED		
STRUCTURE NOTATIONS CHKD.		
NO.		



NOTE:

1. The contractor shall first verify the relative position of all existing manholes to be offset with respect to the new curb before proceeding with construction. Should the existing Manhole be located directly in line with the new curb, offset shall be toward the shoulder.
2. Offsetting of M.H. Frame and Cover will be paid for under Item No. 99(1b) Adjusting Sewer M.H. Frame and Cover. Brick Wall will be paid for under Item No. 99(3b) Brick Wall for Reconstructed Sewer Manhole.



TYPICAL DETAIL OF OFFSET COVER MH
Scale: 1/2"=1'-0"

APPROVED:
[Signature]
SEWER SYSTEM DIRECTOR
DIVISION OF SEWERS
DATE: 3/28/63

SEWER

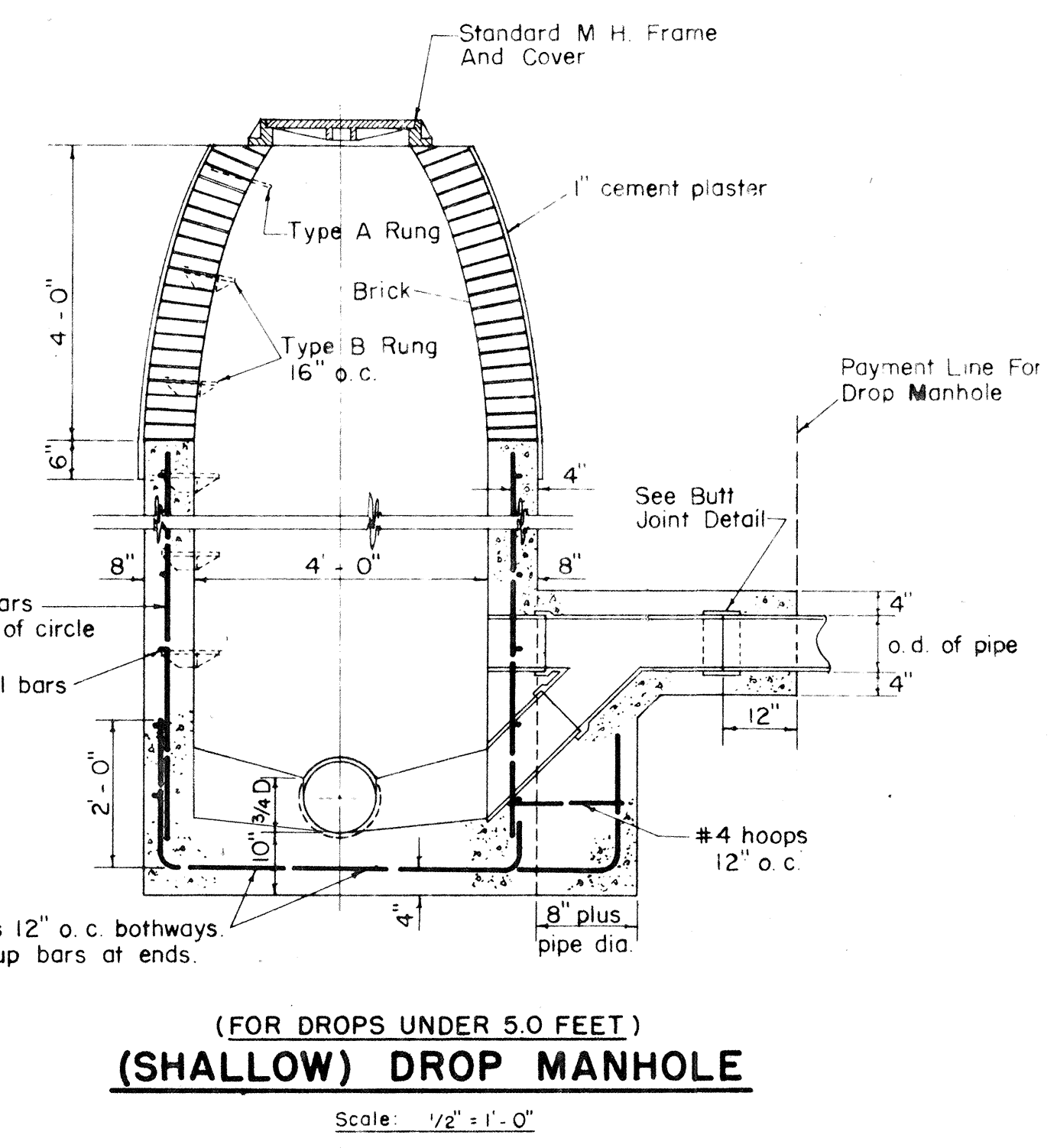
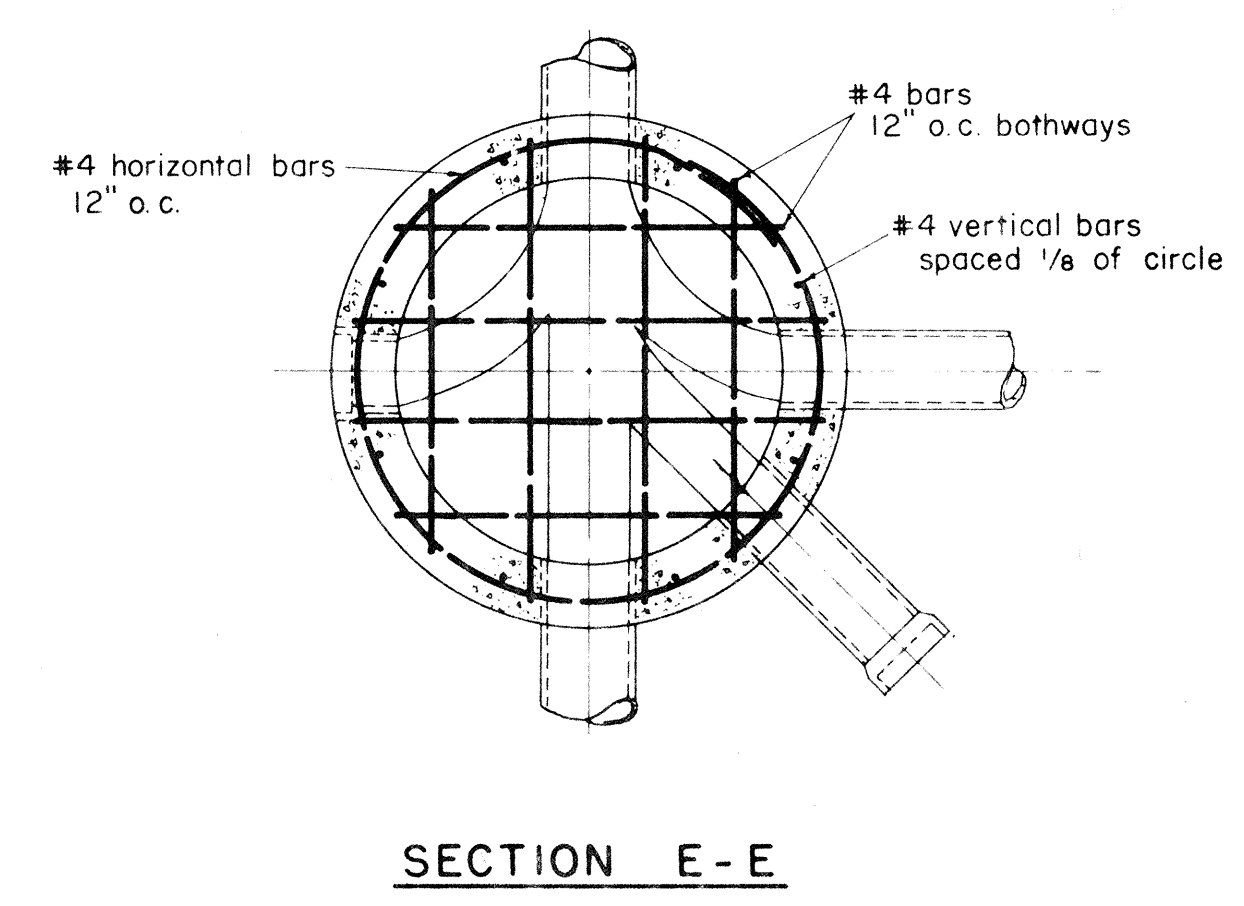
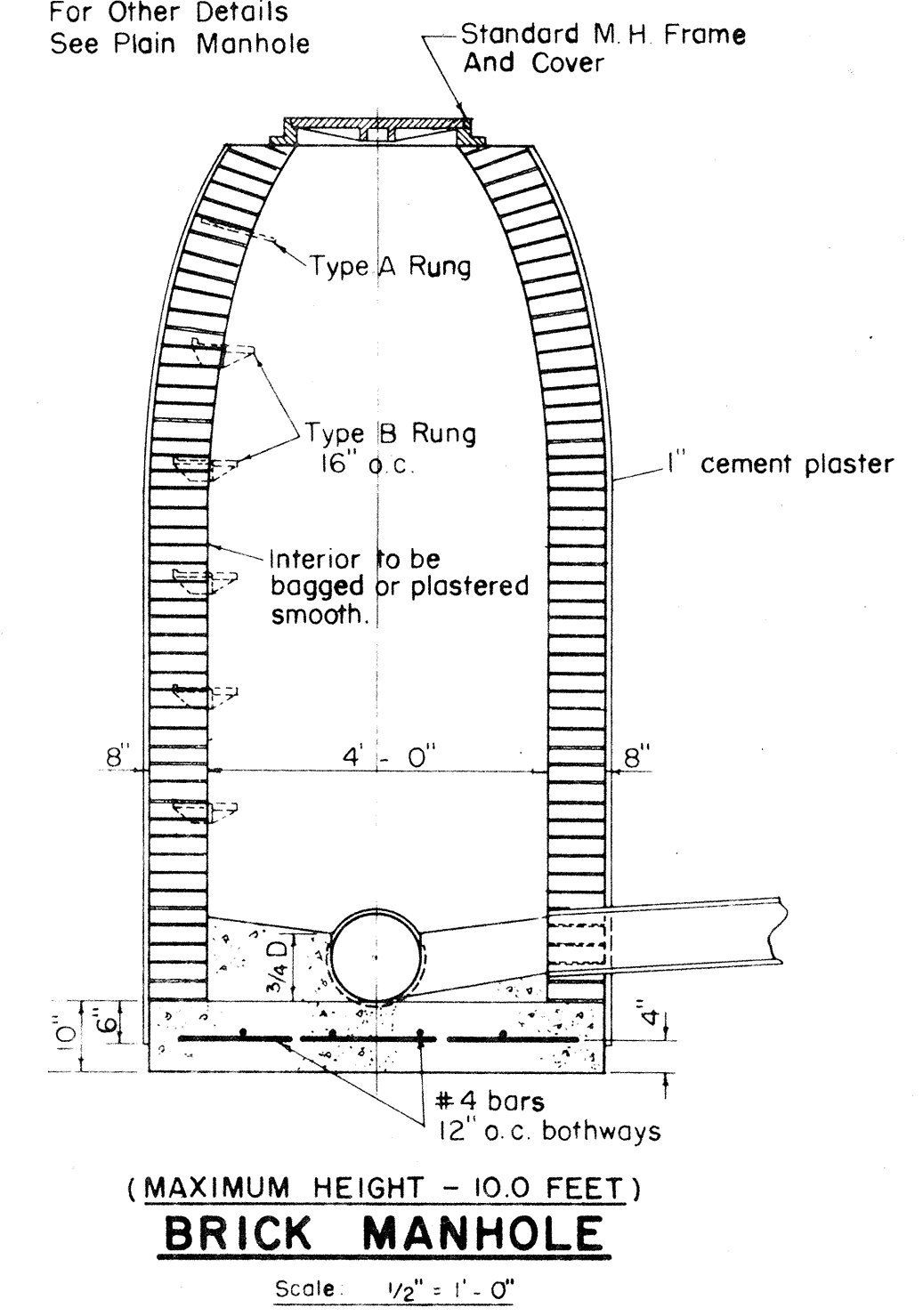
SHEET No. 5 OF 7 SHEETS

U 0 7 2 1 0 3 0 0 . 1 0 3

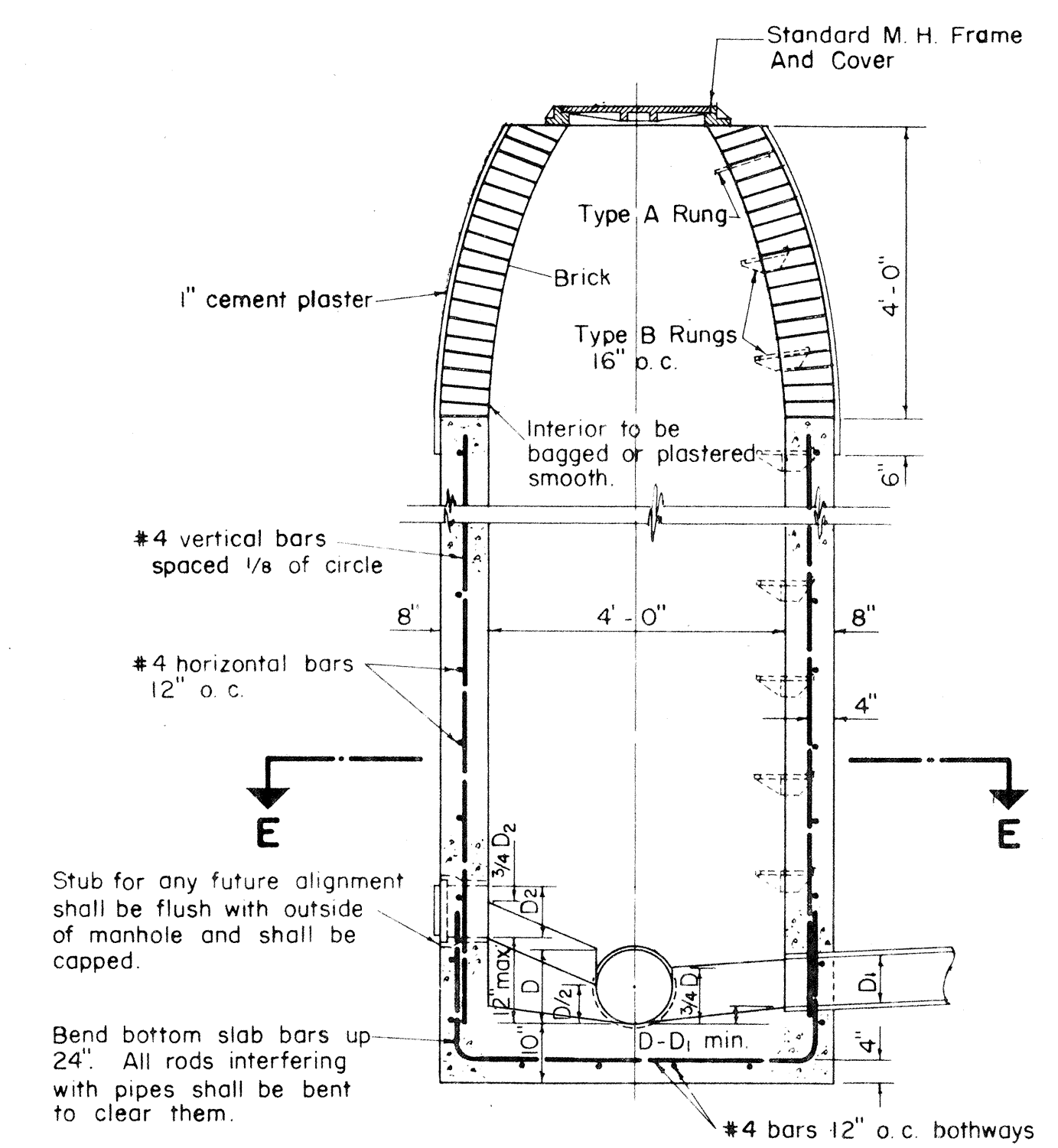
125

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(3)	1963	104	246
		U-098-1(4)	1963	45	88
		F-090-1(2)	1963	43	93

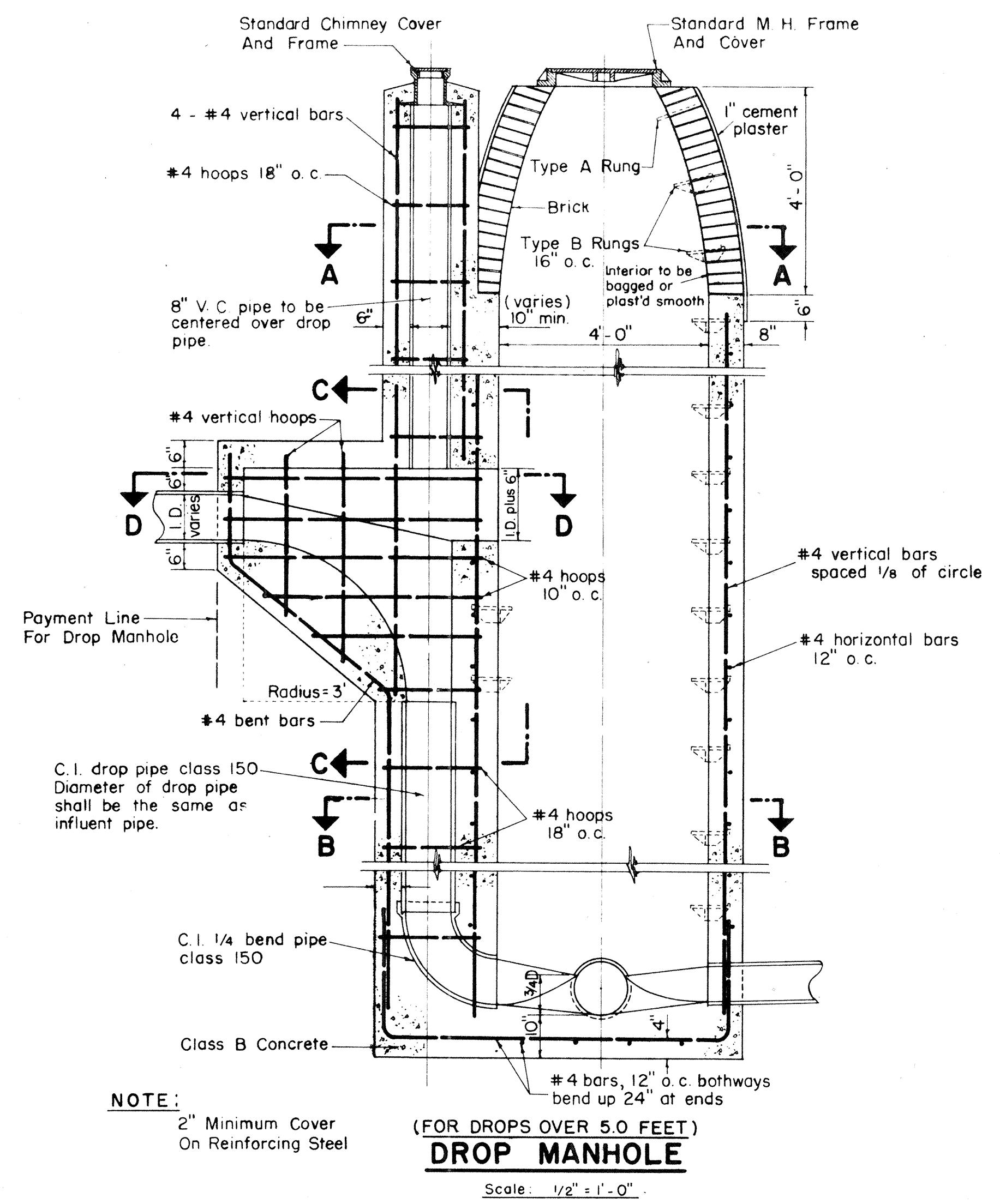
NOTE:
For Other Details
See Plain Manhole



- NOTE:
- Manhole rungs shall not be aligned above any flow line.
 - No rungs shall be installed in manholes less than 3' high.
 - When not otherwise noted, manhole stubs shall be sloped as follows:
- | Pipe Size | Rise Per Foot |
|-----------|---------------|
| 6" | 1/8" |
| 8" | 3/32" |
| 10" | 1/16" |
| 12" | 1/16" |
- All reinforcing rods interfering with pipes shall be bent to clear them.
 - Bar laps to be 40 diameters in length.
 - Data for special manholes not shown shall be similar to that for plain manholes.
 - Size of drop pipe in all Drop Manholes shall be same as influent line.
 - Manhole wall to be of reinforced concrete to height 1' above normal ground water table.

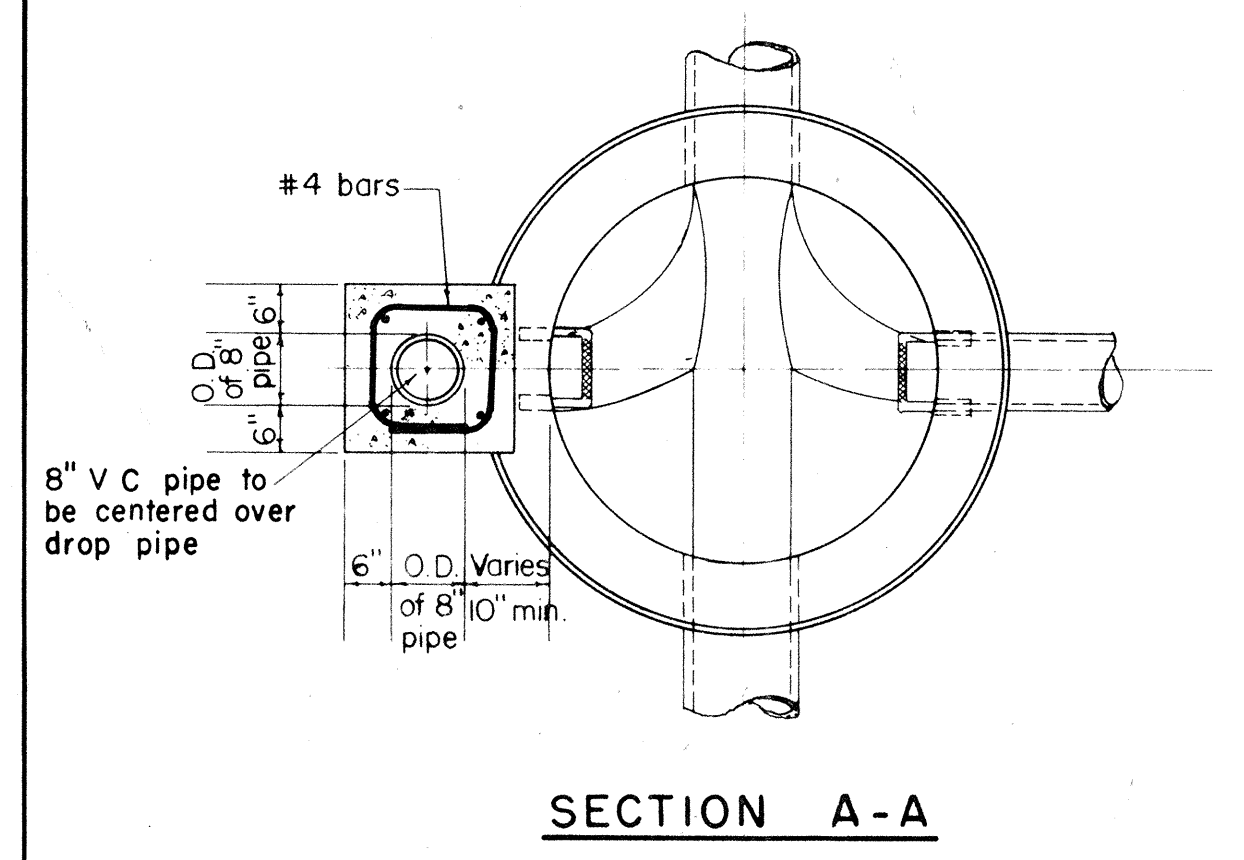


PLAIN MANHOLE

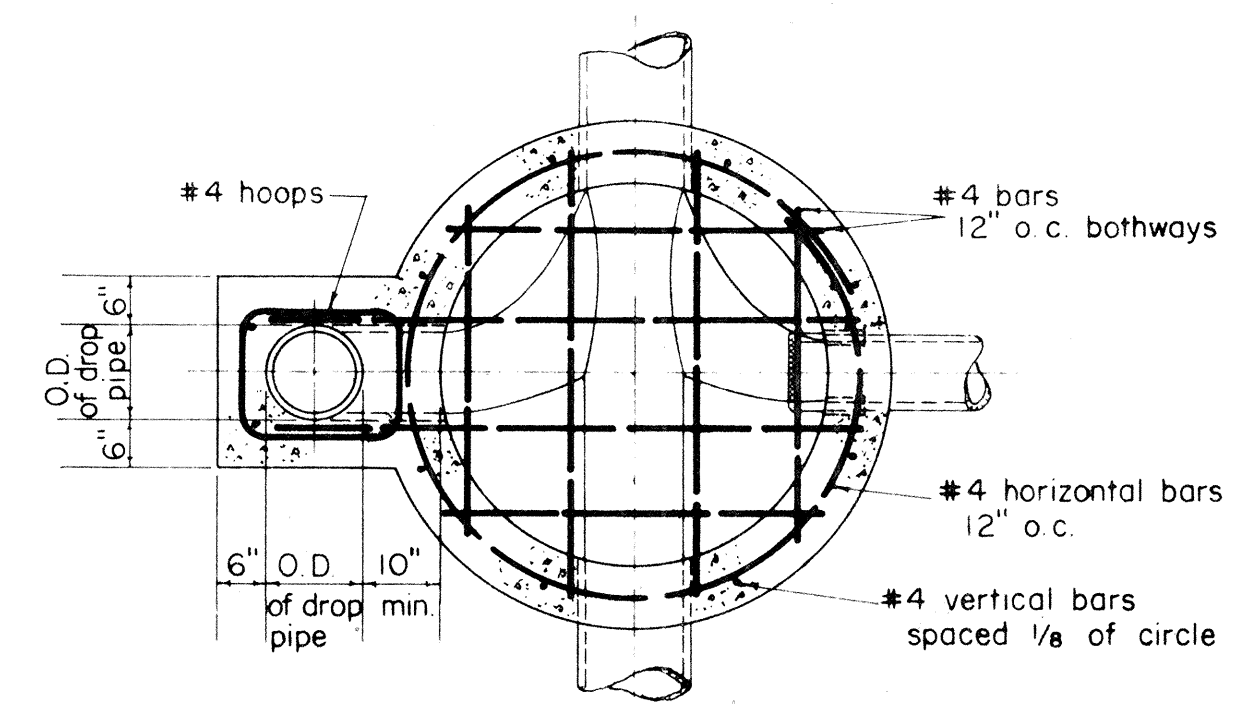


DROP MANHOLE

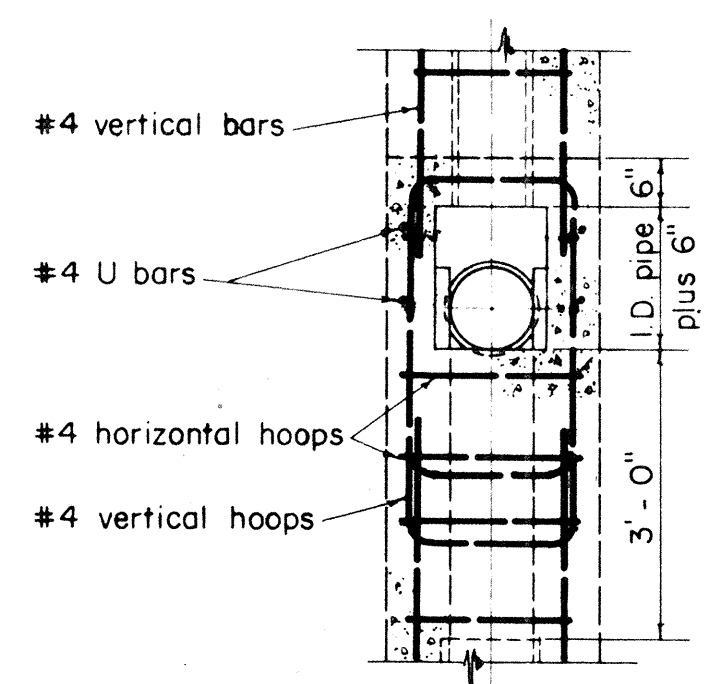
NOTE:
2" Minimum Cover
On Reinforcing Steel



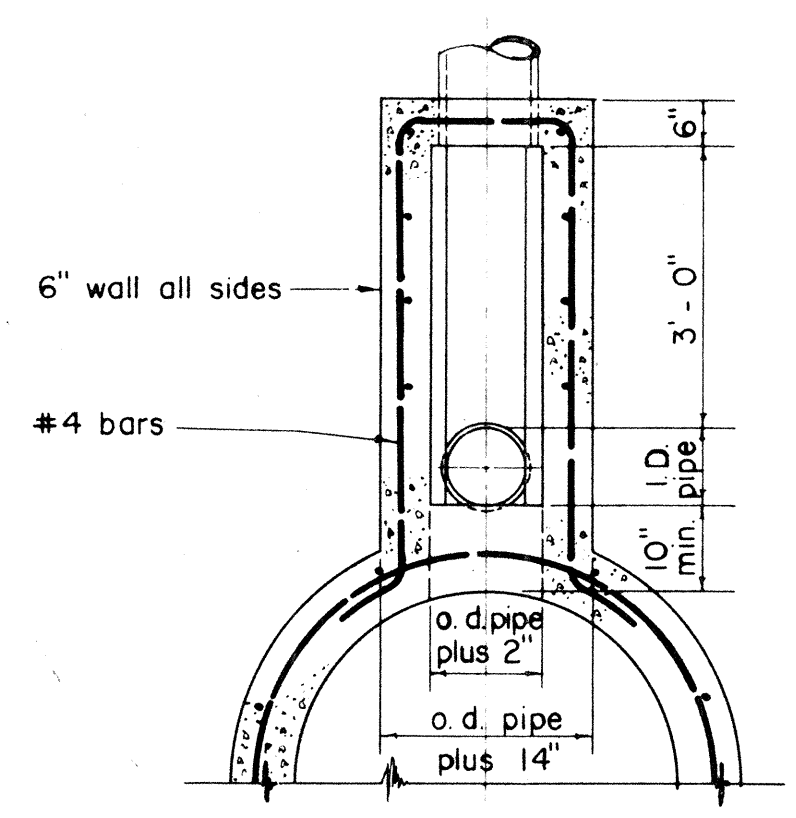
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
DIVISION OF SEWERS

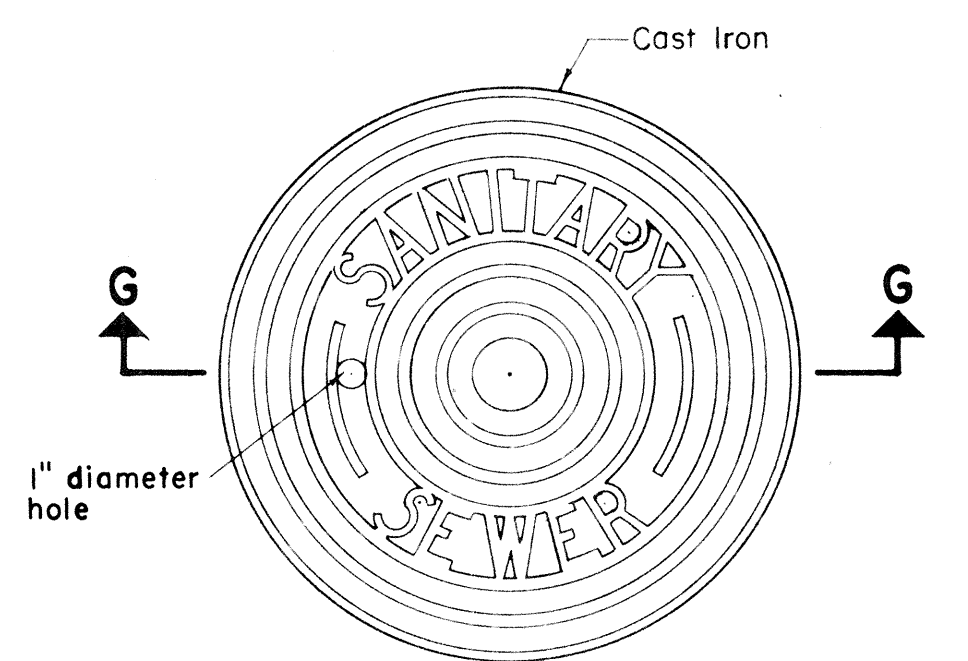
REVISED
STANDARD DETAILS
(SUPERSEDES STANDARD DATED 11-1-54)

ENGINEER: *[Signature]*
DRAFTSMAN: *[Signature]*
SCALE: 1/2" = 1'-0"
APPROVED: *[Signature]*
CHIEF ENGINEER

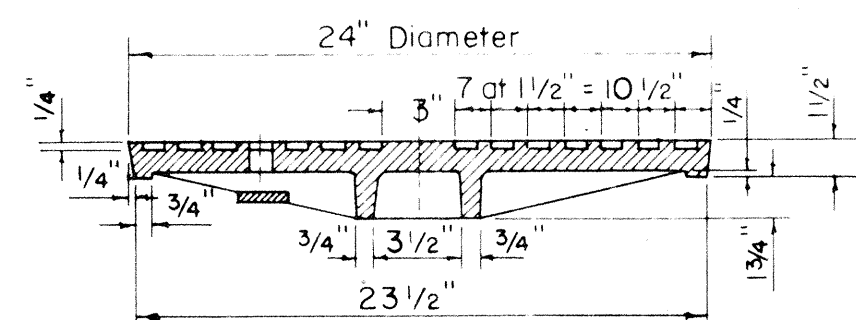
DATE: October 4, 1957
CHECKED BY: *[Signature]*
TRACER: *[Signature]*
APPROVED: *[Signature]*
DIVISION ENGINEER

W. B. _____
CR. SEC. _____
F. W. BY: _____
S. BY: _____

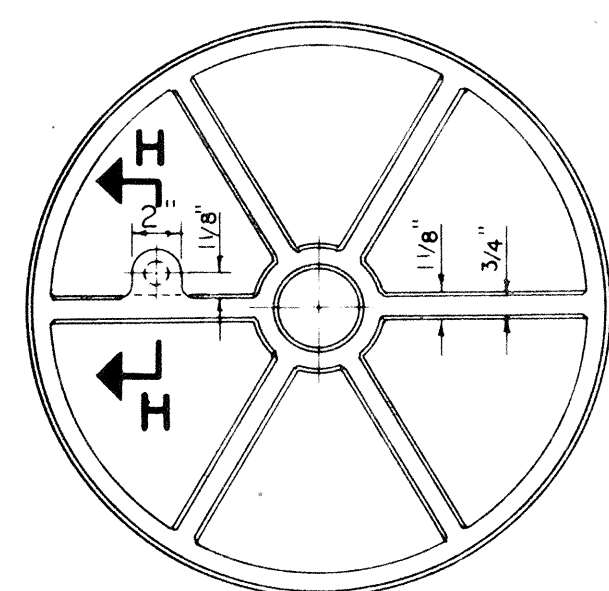
PROFILE _____
S. B. _____
S. BY: _____



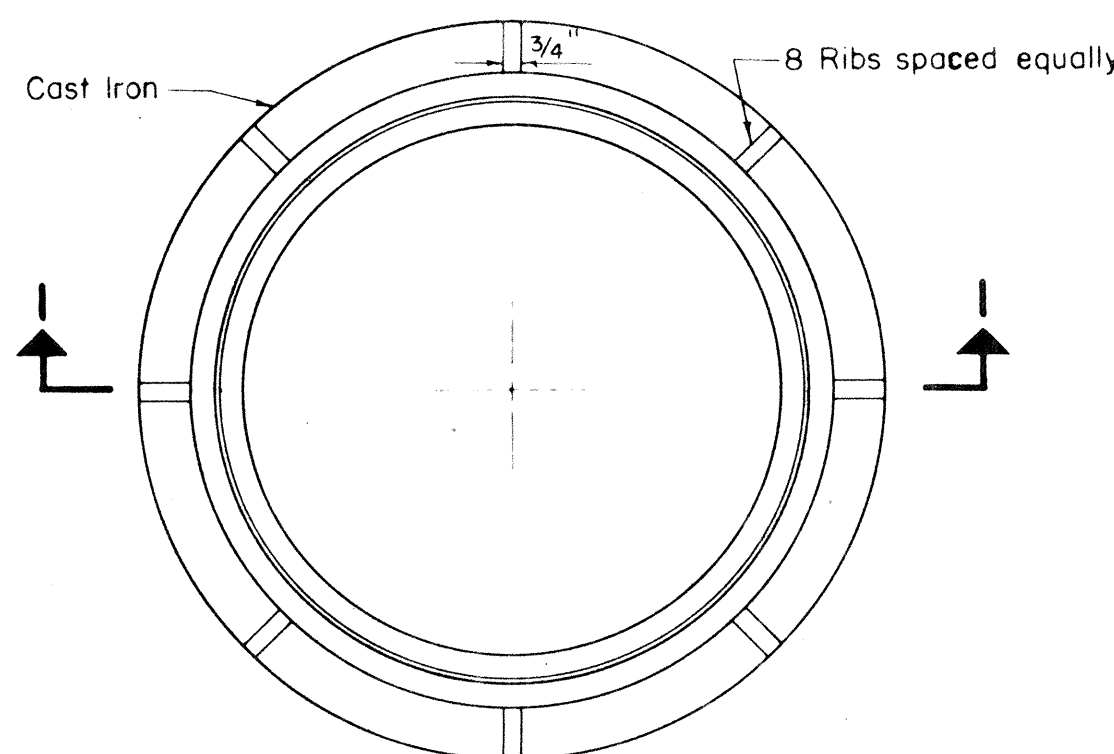
PLAN OF MANHOLE COVER
Scale: 1 1/2" = 1'-0"



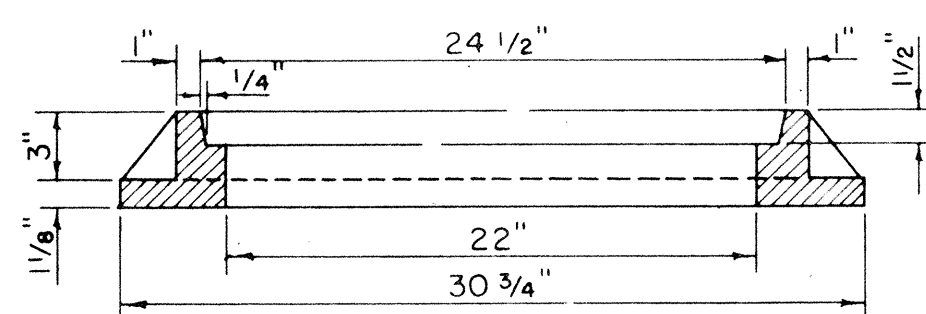
SECTION G-G



BOTTOM VIEW OF COVER
Scale: 1 1/2" = 1'-0"



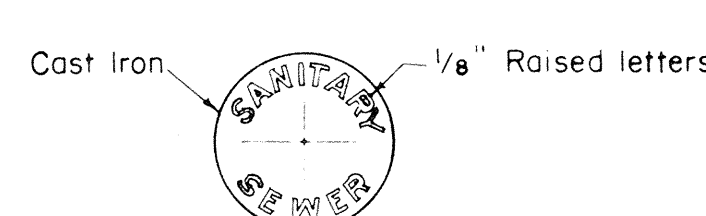
PLAN OF MANHOLE FRAME
Scale: 1 1/2" = 1'-0"



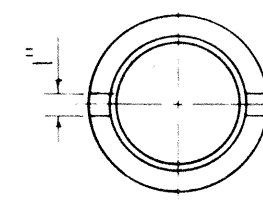
SECTION I-I

DETAILS OF STANDARD MANHOLE CASTINGS

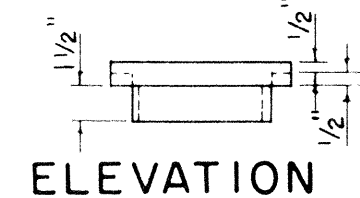
Scale: 1 1/2" = 1'-0"



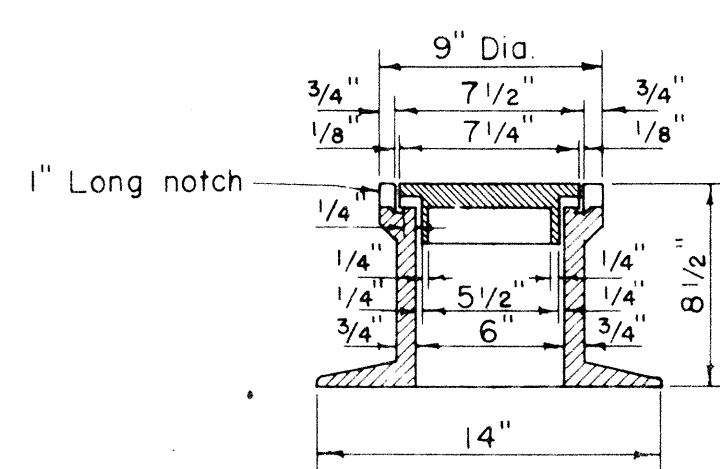
PLAN OF COVER
Scale: 1 1/2" = 1'-0"



BOTTOM OF COVER



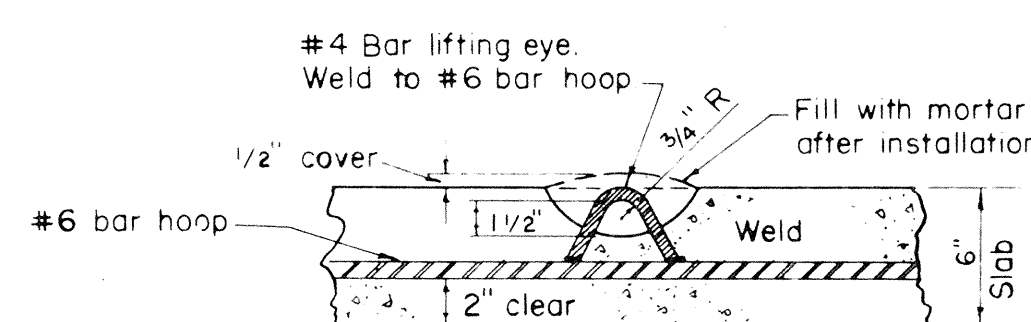
ELEVATION



SECTION

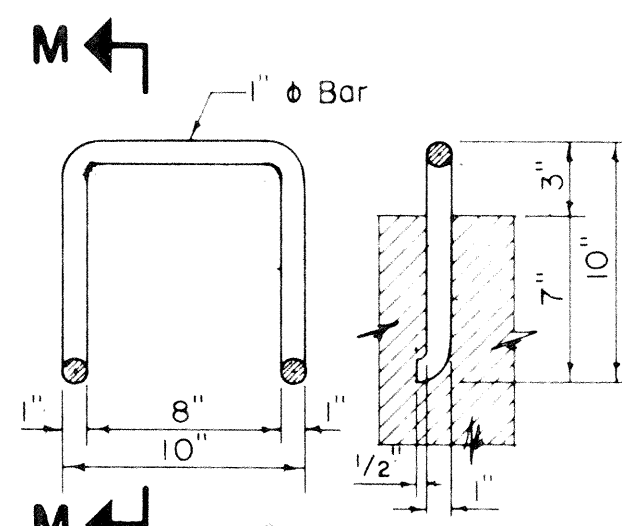
DROP MANHOLE CHIMNEY CASTINGS

Scale: 1 1/2" = 1'-0"



SECTION OF LIFTING EYE

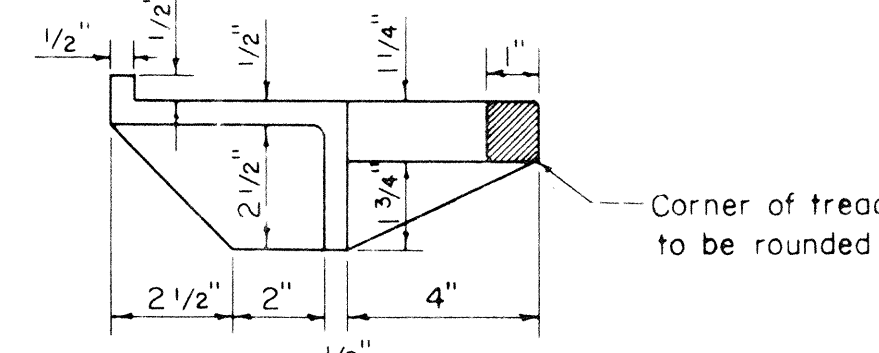
Scale: 1 1/2" = 1'-0"



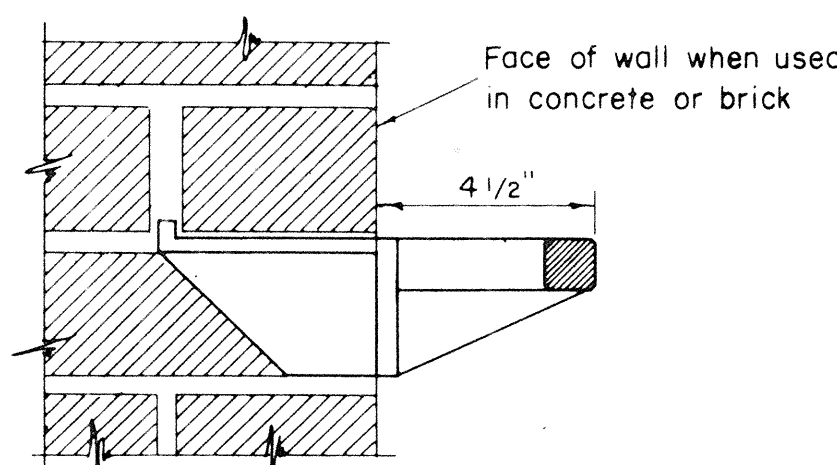
PLAN SECTION M-M

TYPE A MANHOLE RUNGS WROUGHT IRON

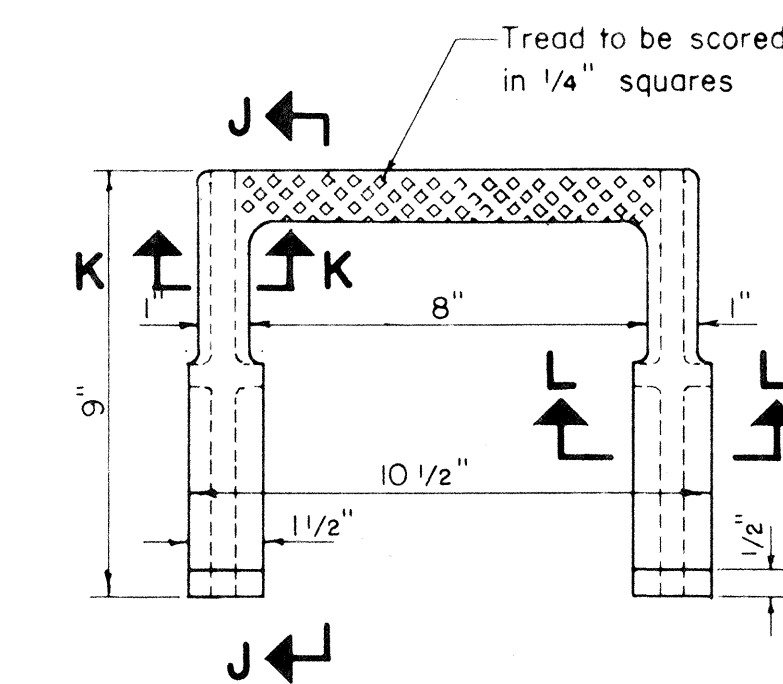
Scale: 1 1/2" = 1'-0"



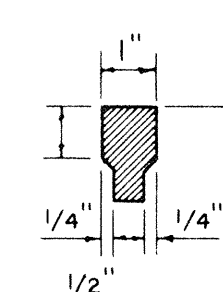
SECTION J-J



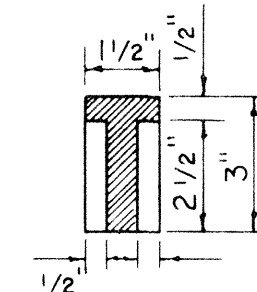
METHOD OF INSTALLATION



PLAN



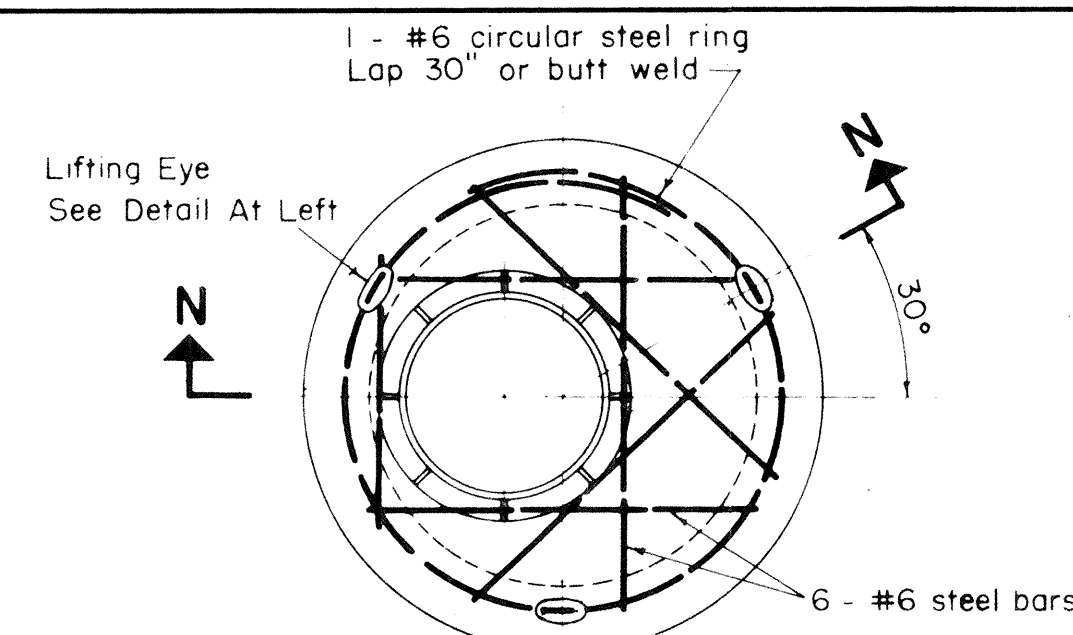
SECTION K-K



SECTION L-L

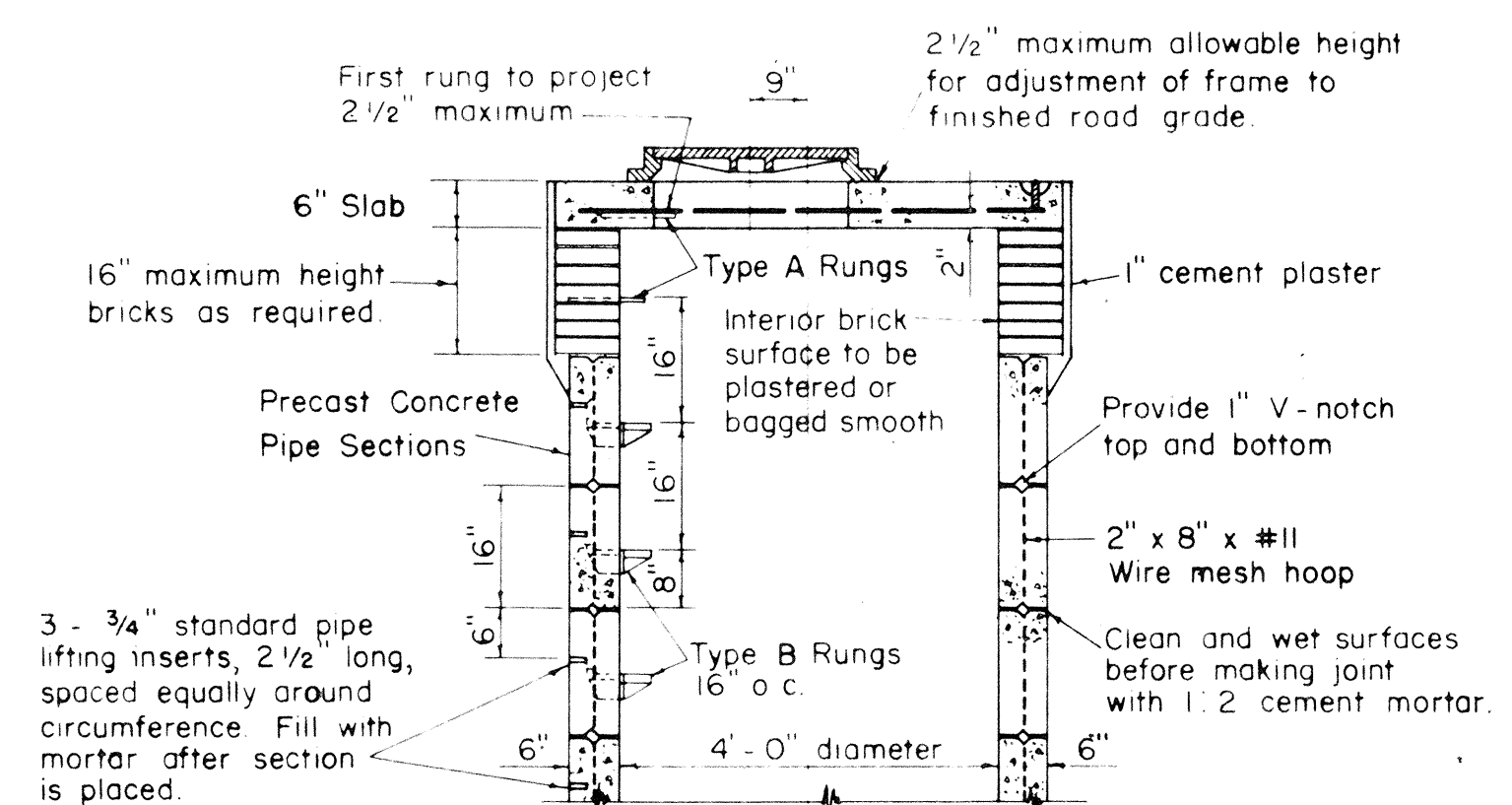
TYPE B MANHOLE RUNGS (CAST IRON)

Scale: 3" = 1'-0"

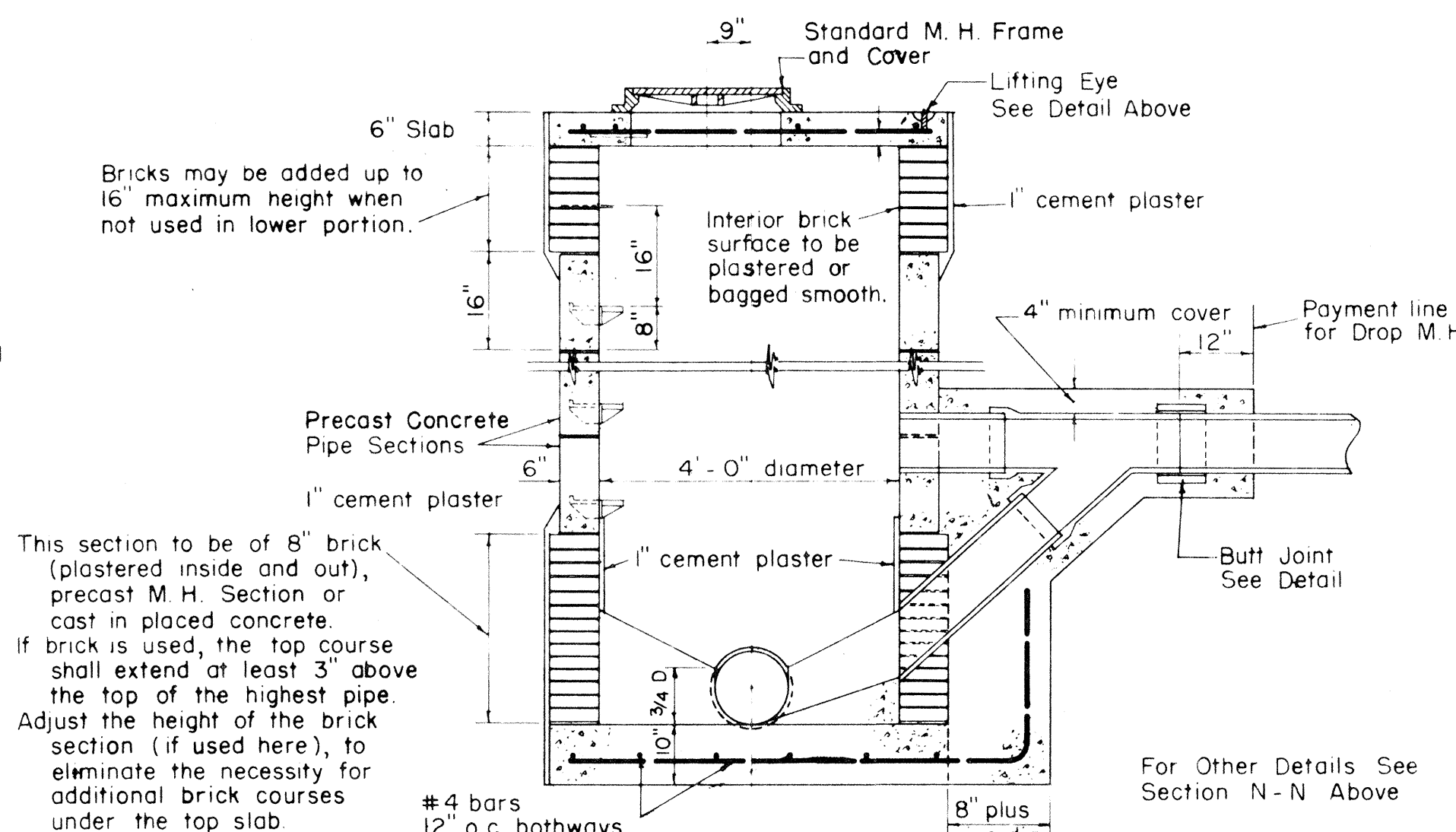


PLAN PRECAST MANHOLE

Scale: 1 1/2" = 1'-0"



SECTION N-N



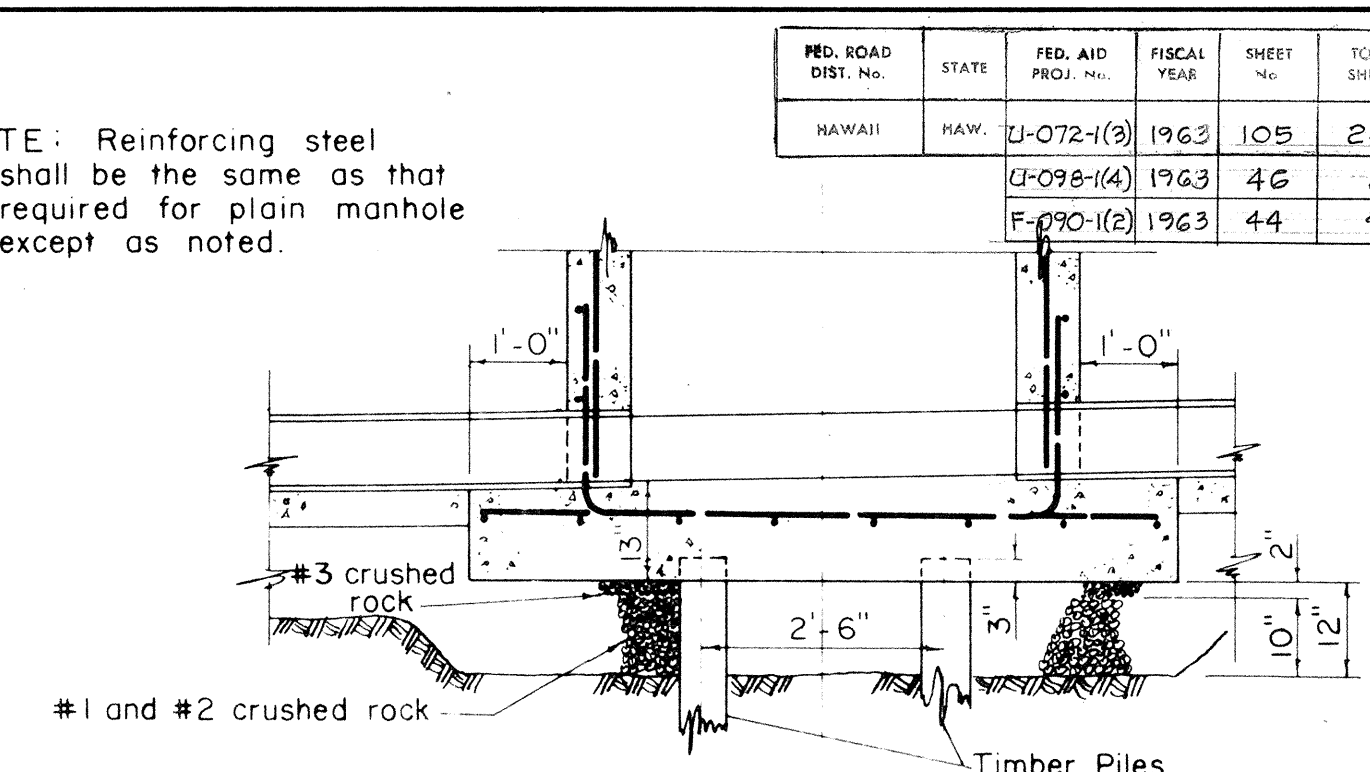
SHALLOW DROP MANHOLE USING PRECAST CONCRETE PIPE SECTIONS

Scale: 1 1/2" = 1'-0"

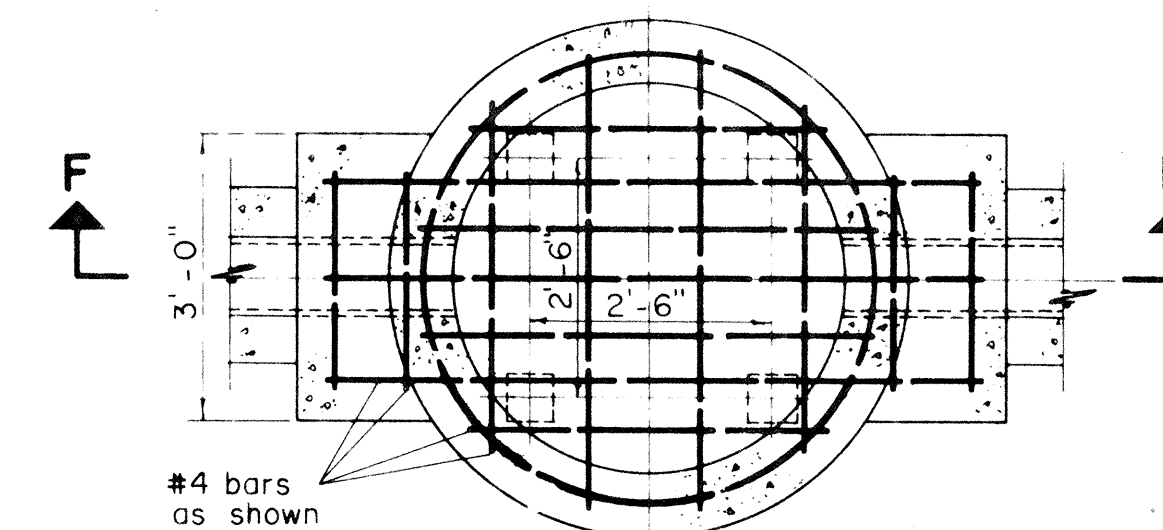
NOTE:

- When backfilling around Precast Manhole, material shall be deposited in such a manner that the difference in elevation on one side of the manhole shall not exceed the elevation on the other side by more than 5 feet.
- Pipe Sections may be made in heights other than 16 inches if desired.
- Size of drop pipe shall be same as influent pipe.

NOTE: Reinforcing steel shall be the same as that required for plain manhole except as noted.



SECTION F-F



DETAIL OF PILES UNDER MANHOLES

Scale: 1 1/2" = 1'-0"

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

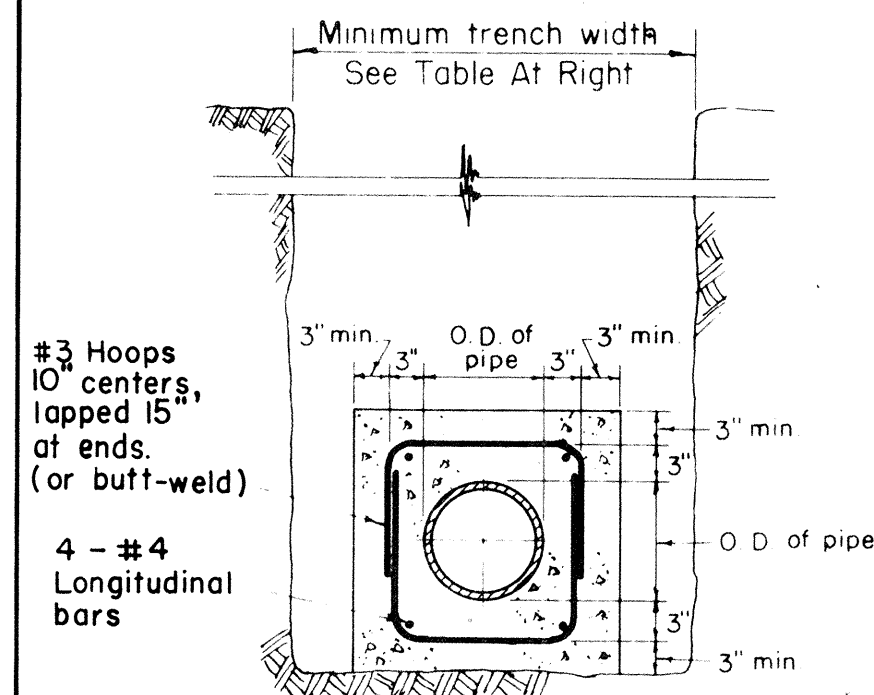
DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU DIVISION OF SEWERS

REVISED STANDARD DETAILS (SUPERSEDES STANDARD DATED 11-1-54)

ENGINEER: *A. T. Tamm* DATE: October 4, 1957
DRAFTSMAN: *J. M. M.* CHECKED BY: *J. M. M.*
SCALE: As Shown TRACER: *J. M. M.*
APPROVED: *J. M. M.* DIVISION ENGINEER

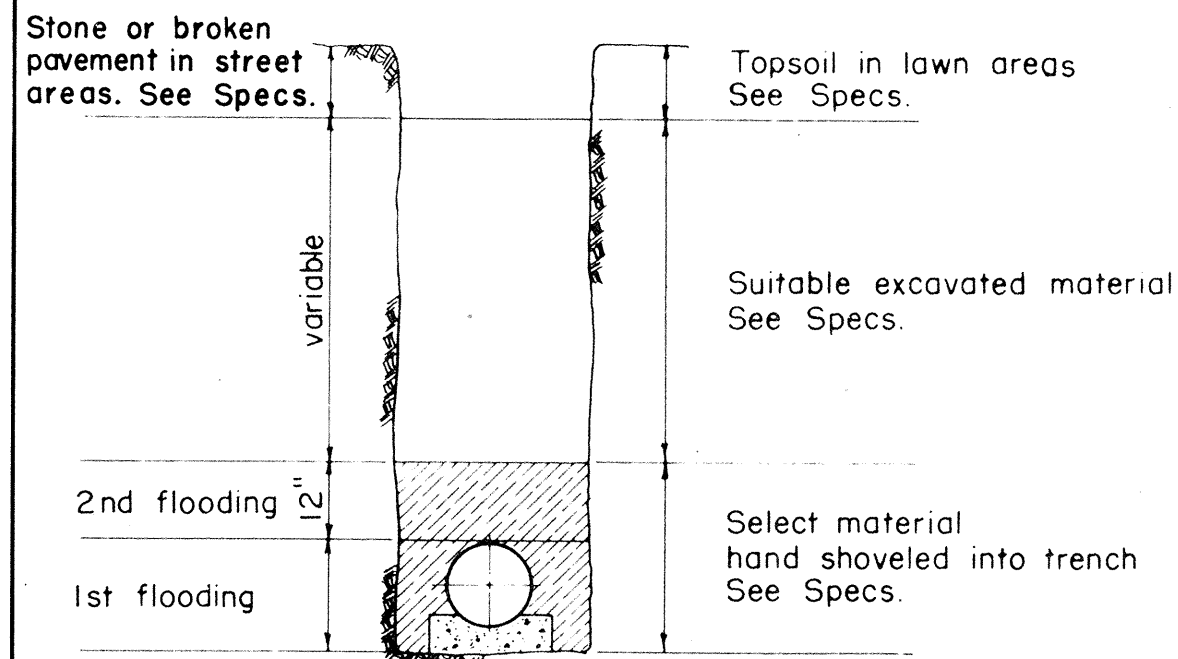
W. B. CR. REC. F. B. S. B. W. M. BY: F. W. BY: S. BY:

SHEET NO. 8 OF 2 SHEETS



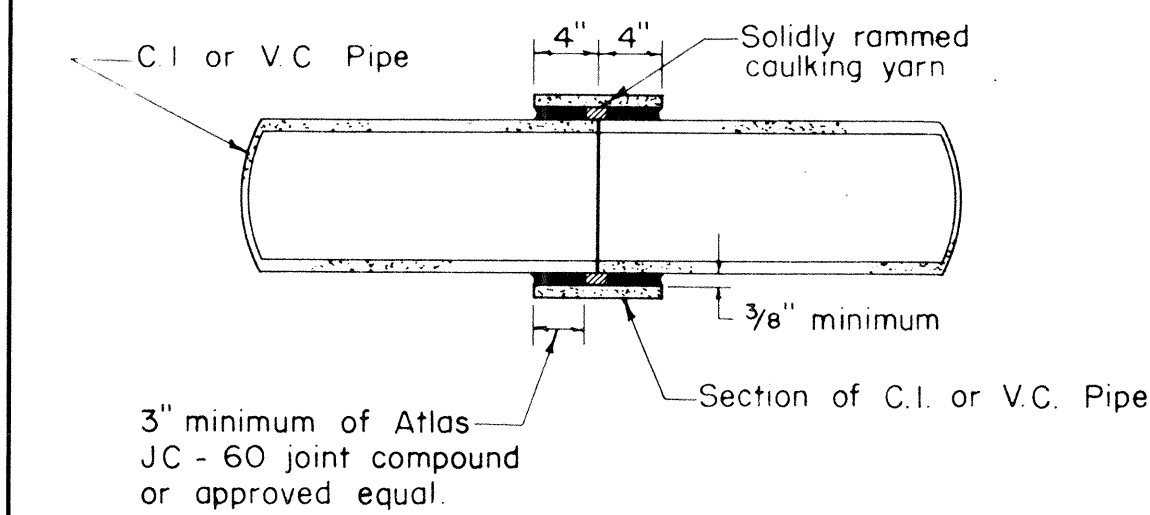
DETAIL OF CONCRETE JACKET

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



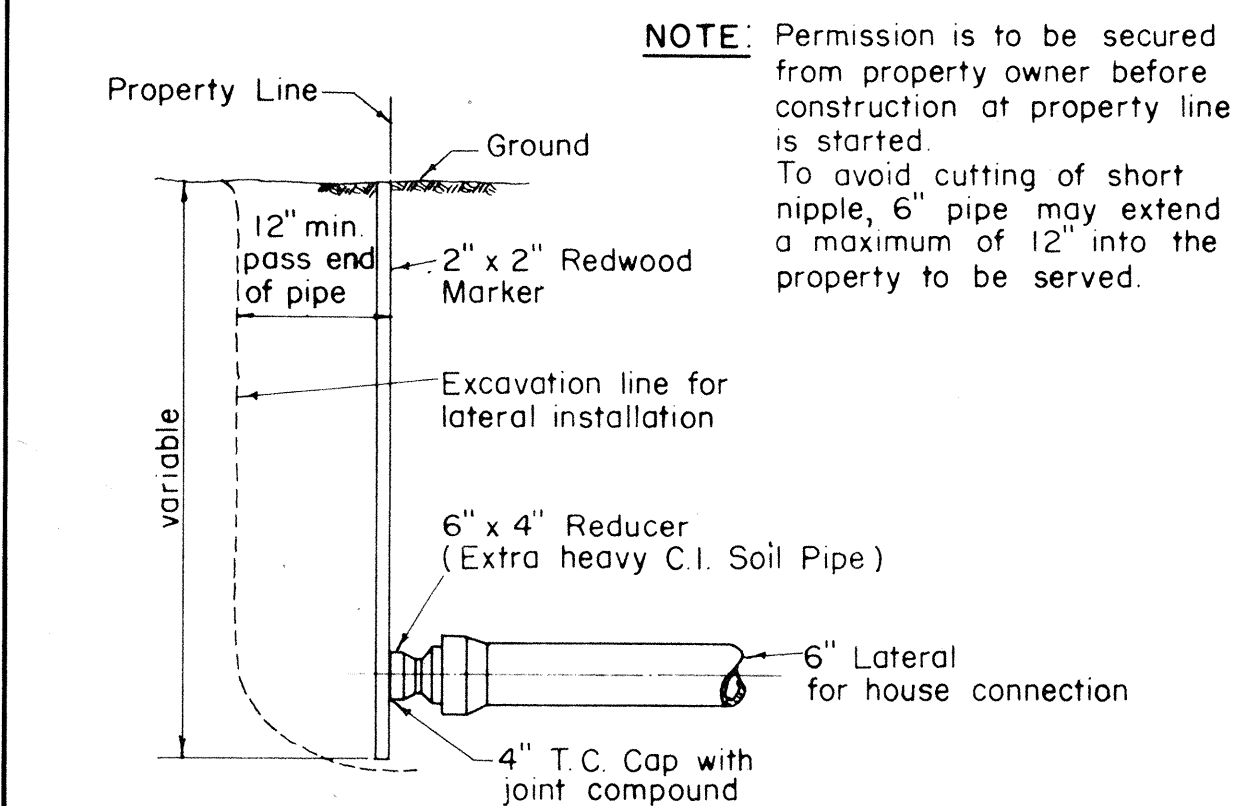
METHOD OF BACKFILL

Not To Scale



BUTT JOINT DETAIL

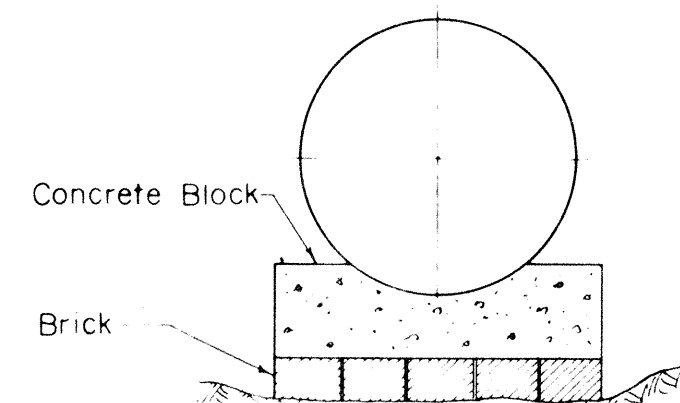
Scale: 1" = 1'-0"



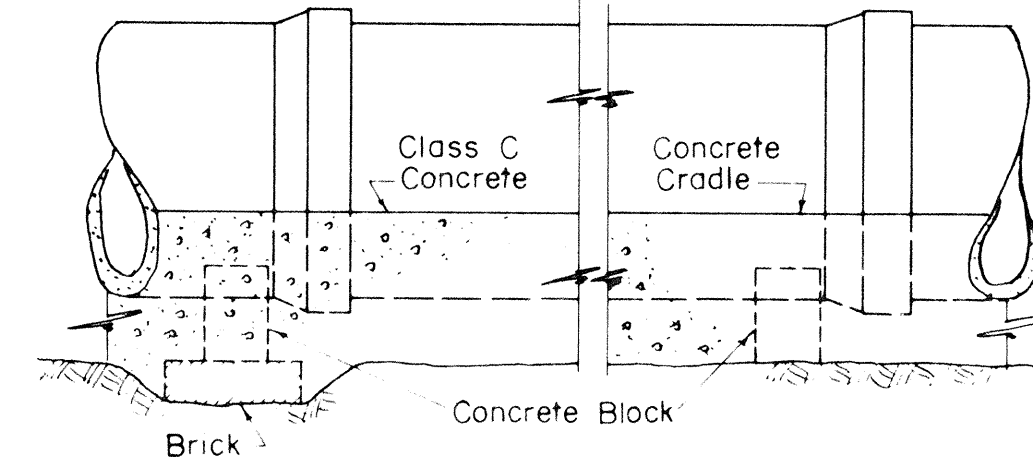
DETAIL AT PROPERTYLINE

CONSTRUCTION OF LATERALS

Not To Scale



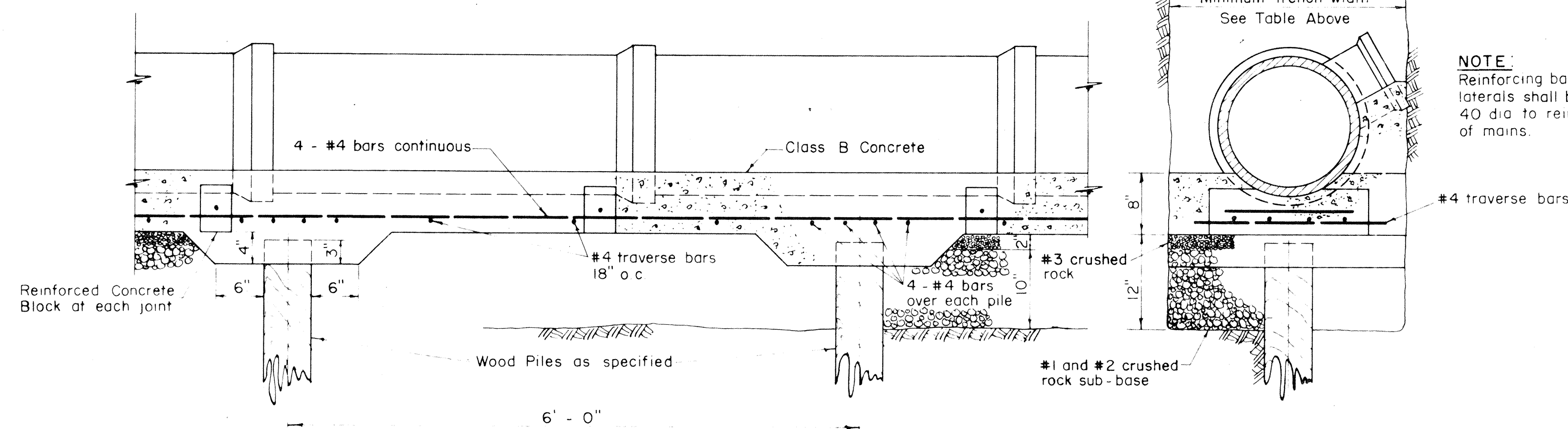
METHOD OF USING BRICKS UNDER CONCRETE BLOCKS



ELEVATION SHOWING METHOD OF LAYING PIPE

Not To Scale

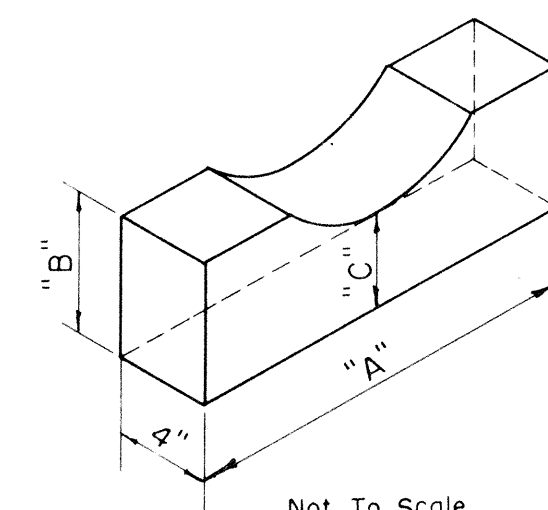
Contractor shall set Concrete Blocks on undisturbed ground. Where ground is too low, the contractor shall not heap up dirt under the Concrete Block but use Concrete Bricks to take up the deficiency, scraping away beneath Concrete Block to give sufficient room for Brick.



DETAIL OF REINFORCED CONCRETE CRADLE ON WOOD PILES (FOR 6, 8, 10, & 12 IN. V.C. PIPE)

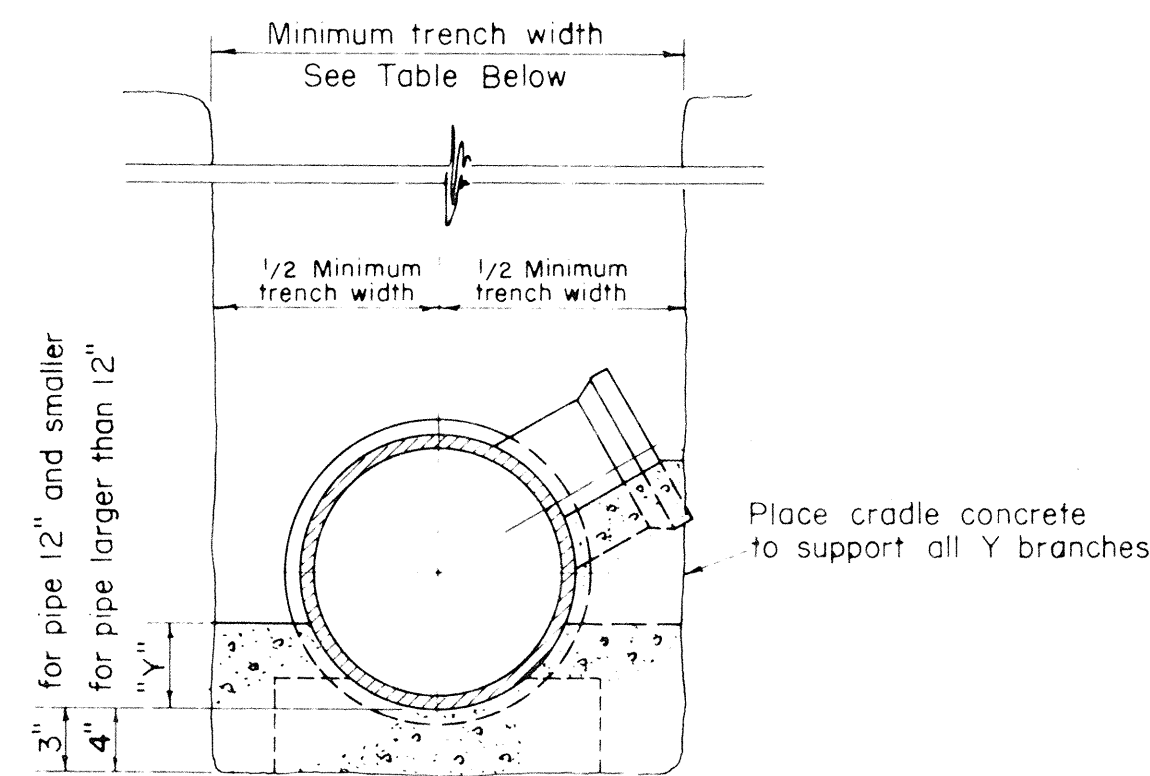
Scale: 1" = 1'-0"

DETAIL OF REINFORCED CONCRETE CRADLE WITHOUT PILES SIMILAR EXCEPT FOR WOOD PILES AND PILE CAPS



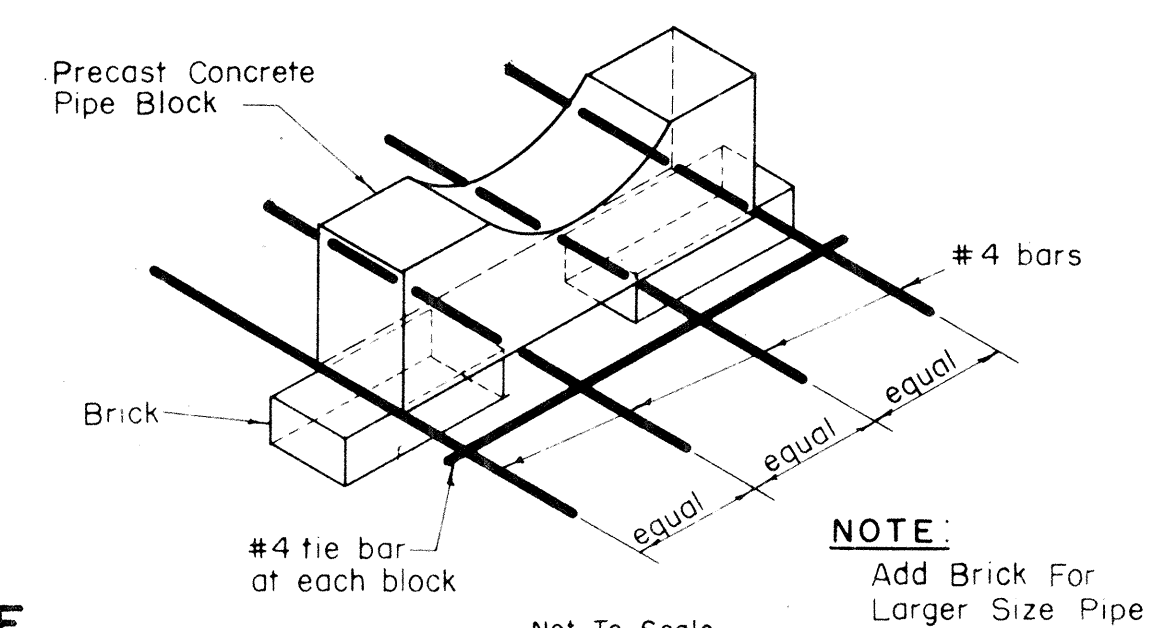
DETAIL OF PRECAST CONCRETE PIPE BLOCK

CONCRETE BLOCK DIMENSIONS			
Pipe Size	"A"	"B"	"C"
6"	1' - 2"	6"	3"
8"	1' - 5"	6"	3"
10"	1' - 7"	6"	3"
12"	1' - 7"	6"	3"
15"	1' - 8"	6"	4"
18"	1' - 9"	6"	4"
21"	1' - 10"	6"	4"
24"	1' - 11"	6"	4"
27"	2' - 0"	6"	4"
30"	2' - 3"	6"	4"



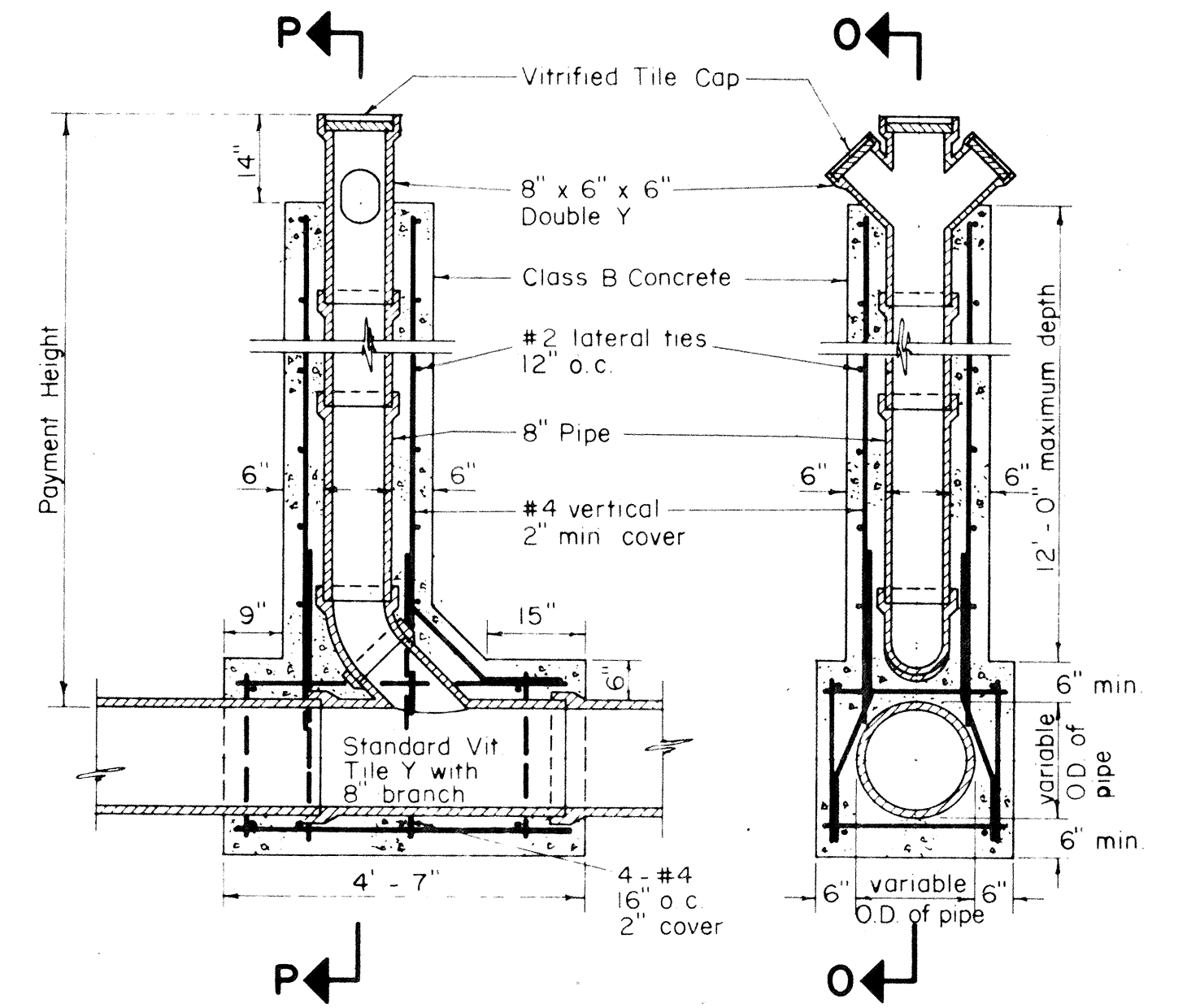
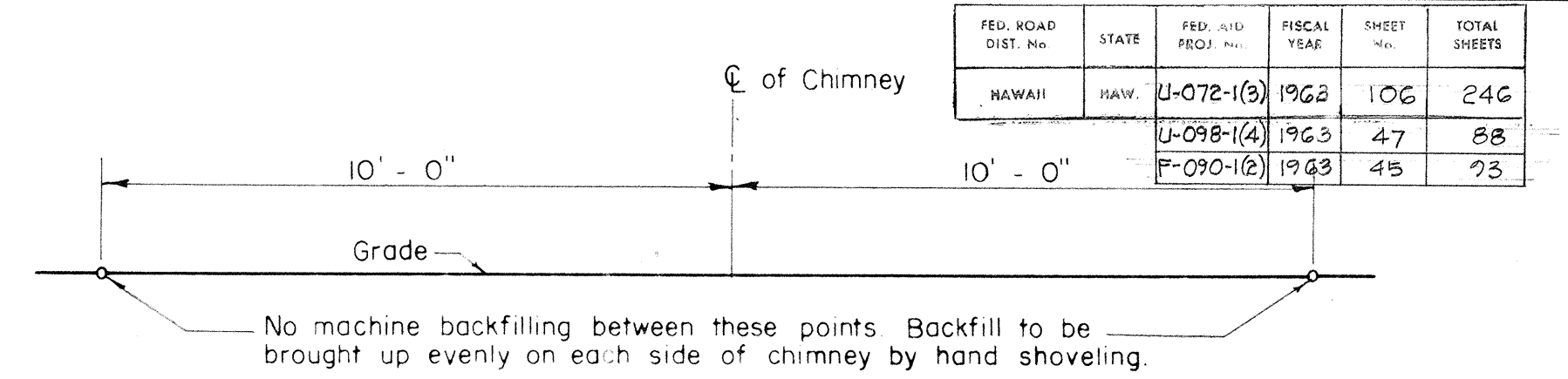
DETAIL OF CONC. PIPE BLOCK FOR REINF. CRADLE

DIM. OF REINF. CONCRETE BLOCK			
Pipe Size	"A"	"B"	"C"
6"	1' - 6"	6"	3"
8"	1' - 6"	6"	3"
10"	1' - 8"	6"	3"
12"	1' - 8"	6"	3"
15"	1' - 10"	6"	4"
18"	1' - 10"	6"	4"
21"	1' - 10"	6"	4"
24"	2' - 0"	6"	4"
27"	2' - 0"	6"	4"
30"	2' - 0"	6"	4"



ALTERNATE DETAIL OF CONC. PIPE BLOCK FOR REINF. CRADLE

NOTE: Add Brick For Larger Size Pipe



SECTION O-O SECTION P-P DETAILS OF CHIMNEY

Scale: 1/2" = 1'-0"

NOTE: All Reinforcing Rods #4 Except Lateral Ties. Laps - 40 Diameters

Payment quantities for trench excavation, crushed rock fill, crushed rock cradle, and crushed rock sub-base shall be computed using minimum trench widths as shown in the table of "Trench Widths". No payment shall be made for excess quantities resulting from trench widths greater than the minimum shown.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION			
DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU DIVISION OF SEWERS			
REVISED STANDARD DETAILS (SUPERSEDES STANDARD DATED 11-1-54)			
ENGINEER: <i>A. J. J.</i>	DATE: October 4, 1957	CHECKED BY: <i>A. J. J.</i>	TRACER: <i>A. J. J.</i>
SCALE: As Shown	APPROVED: <i>A. J. J.</i>	CHIEF ENGINEER	DIVISION ENGINEER
W. S. BY: <i>A. J. J.</i>	PROFILE: <i>A. J. J.</i>	C. S. BY: <i>A. J. J.</i>	S. S. BY: <i>A. J. J.</i>
W. M. BY: <i>A. J. J.</i>	F. W. BY: <i>A. J. J.</i>	S. BY: <i>A. J. J.</i>	

SHEET NO. 2 OF 2 SHEETS