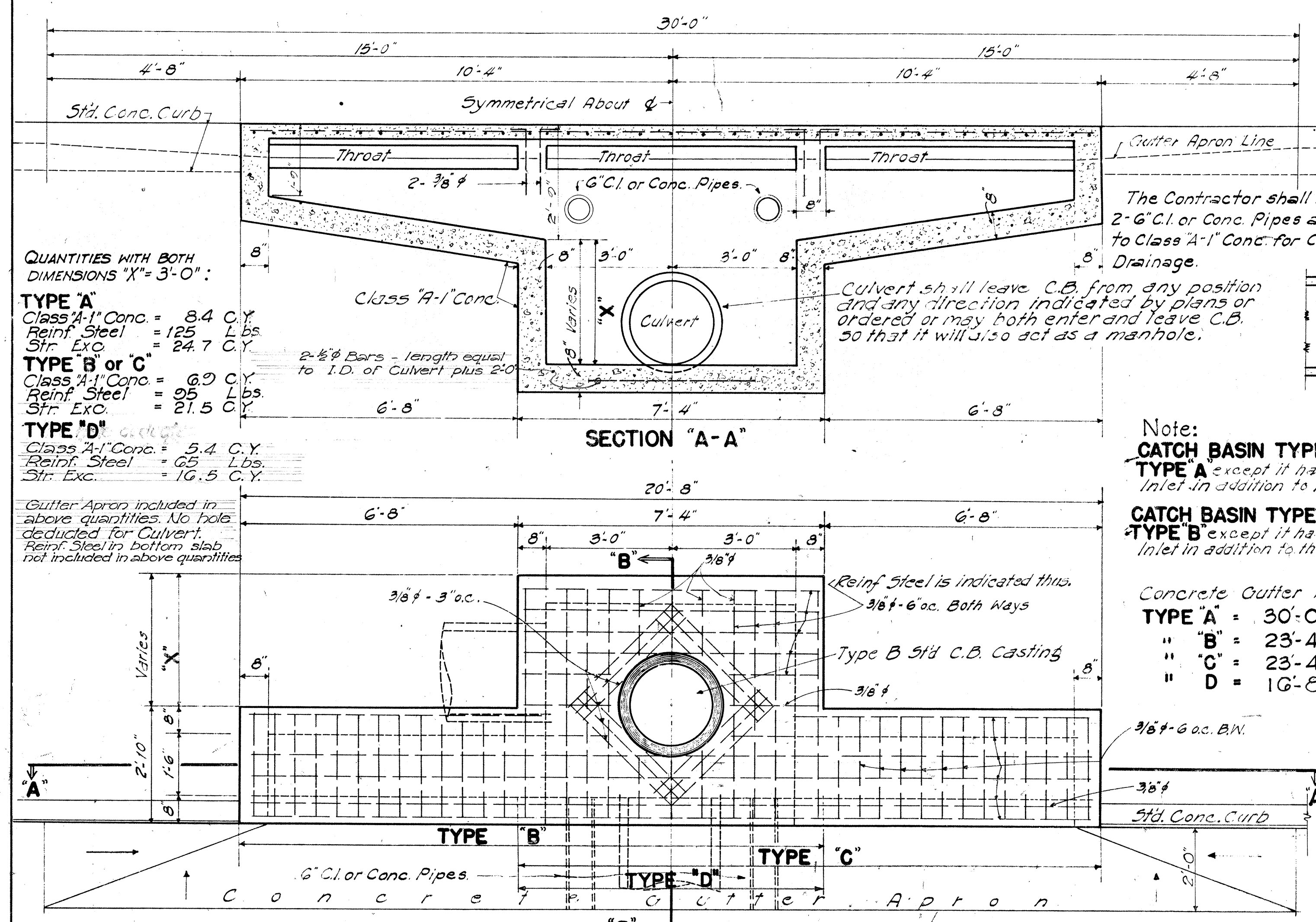


NOTE: For Throat details see Sheet No. 5596.4C



QUANTITIES WITH BOTH DIMENSIONS "X" = 3'-0":

TYPE 'A'
Class 'A-1' Conc. = 8.4 C.Y.
Reinf. Steel = 125 Lbs.
Str. Exc. = 24.7 C.Y.

TYPE 'B' or 'C'
Class 'A-1' Conc. = 6.0 C.Y.
Reinf. Steel = 95 Lbs.
Str. Exc. = 21.5 C.Y.

TYPE 'D'
Class 'A-1' Conc. = 5.4 C.Y.
Reinf. Steel = 65 Lbs.
Str. Exc. = 16.5 C.Y.

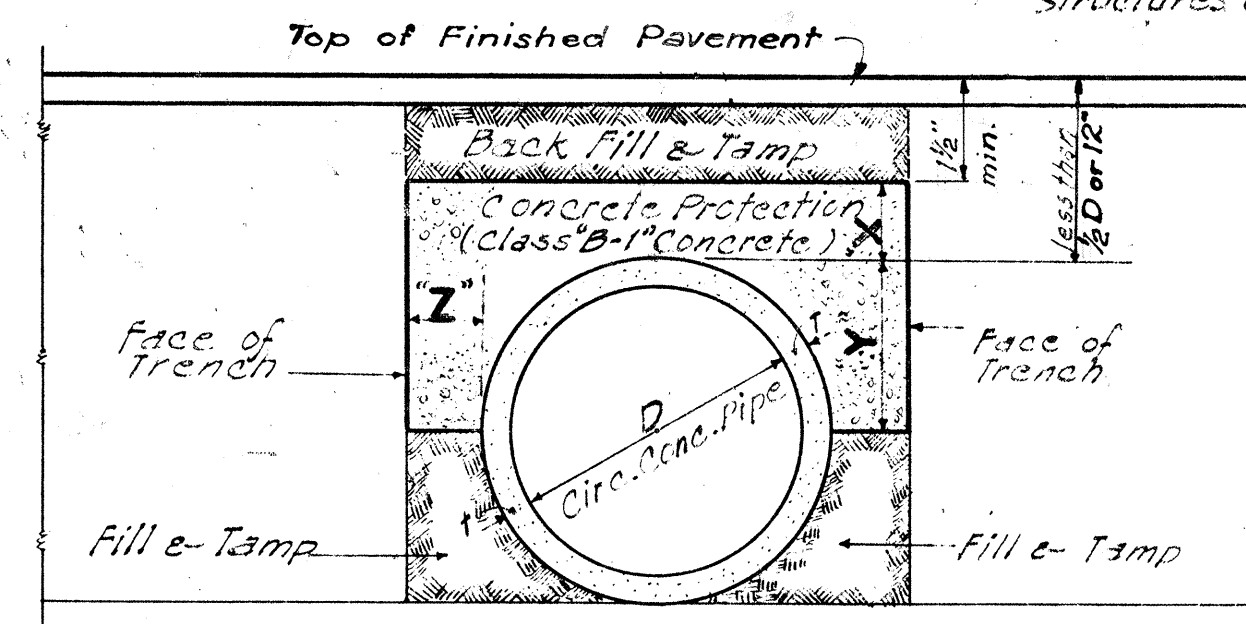
Gutter Apron included in above quantities. No hole deducted for Culvert.
Reinf. Steel in bottom slab not included in above quantities.

SECTION "A-A"

PLAN

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

STANDARD CONCRETE CATCHBASIN TYPE "A"



TYP. SECT. OF CULVERT WITH CONC. PROTECTION
(To be used when cover is less than 1/2 D or 12")

DATA: CONCRETE PROTECTION OVER CULVERTS		
X	Y	Z
6" for 18" D		Z must be from pipe to face of trench. Minimum = X Maximum pay quantity will be Z = 12"
7" " 24" D		
8" " 30" D		
9" " 36" D		
10" " 42" D		
11" " 48" D		
12" " 54" D		

SECTION "A-A"

SECTION "B-B"

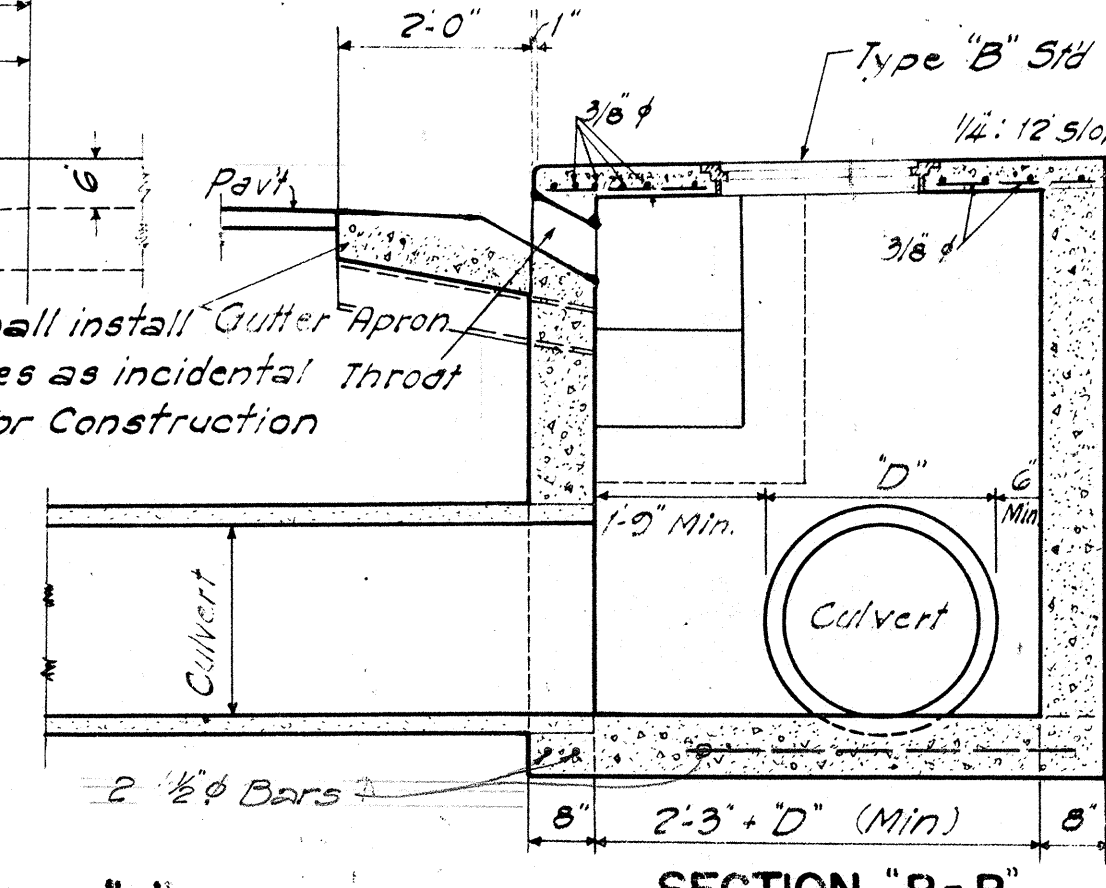
PLAN

Data: Standard Drop Intake				
D'	D	L-D-6"	S	Cu. Yds.
22 1/2	18	2'-0"	8"	1.10
24	24	2'-6"	8"	1.33
26 1/2	30	3'-0"	9"	1.79
42	36	3'-6"	9"	2.07
48 1/2	42	4'-0"	10"	2.90
55 1/2	48	4'-6"	10"	3.27

Note: Dimensions "X" is assumed as 2'-4" in figuring the above quantities.

Where drainage comes from both sides lower this wall to same elevation as shown for opposite wall.

ST'D. CONC. DROP INTAKE
Scale: 1/2" = 1'-0"



SECTION "B-B"

Note: **CATCH BASIN TYPE "B"** similar to **TYPE "A"** except it has only Left Side Inlet in addition to the Main Box.

CATCH BASIN TYPE "C" similar to **TYPE "B"** except it has only Right Side Inlet in addition to the Main Box.

Concrete Gutter Apron Length:
TYPE "A" = 30'-0"
" " "B" = 23'-4"
" " "C" = 23'-4"
" " "D" = 16'-0"

Provide Std. Ladder Rungs where necessary.

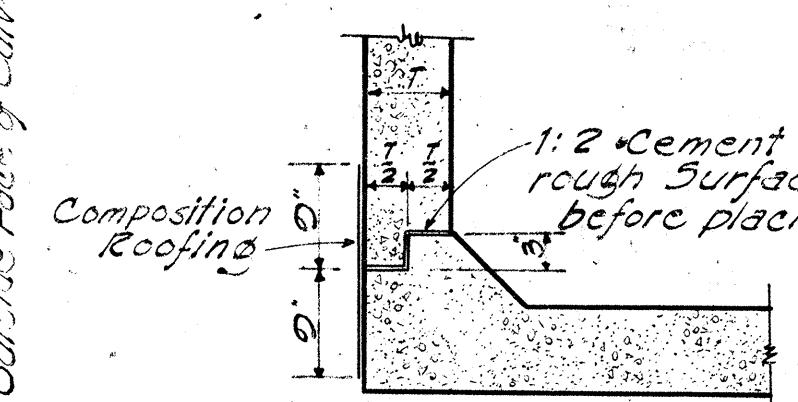
Culvert shall leave or both enter and leave this box from any position or direction indicated by the plans or order.

CONC. DROP INTAKE IN MEDIAL STRIPS

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

MARK	SIZE	D	J	J ₂	E
300	3/8"	2	2 1/2	1 1/2	6
400	1/2"	2 1/2	3 1/2	1 1/2	8
500	5/8"	3 1/2	4 1/2	2 1/2	10
600	3/4"	4 1/2	5 1/2	3 1/2	12
700	7/8"	5 1/2	6 1/2	4 1/2	14
800	1"	6 1/2	7 1/2	5 1/2	16
900	1 1/8"	7 1/2	8 1/2	6 1/2	18
1000	1 1/4"	8 1/2	9 1/2	7 1/2	20

HOOK AND BEND DETAIL



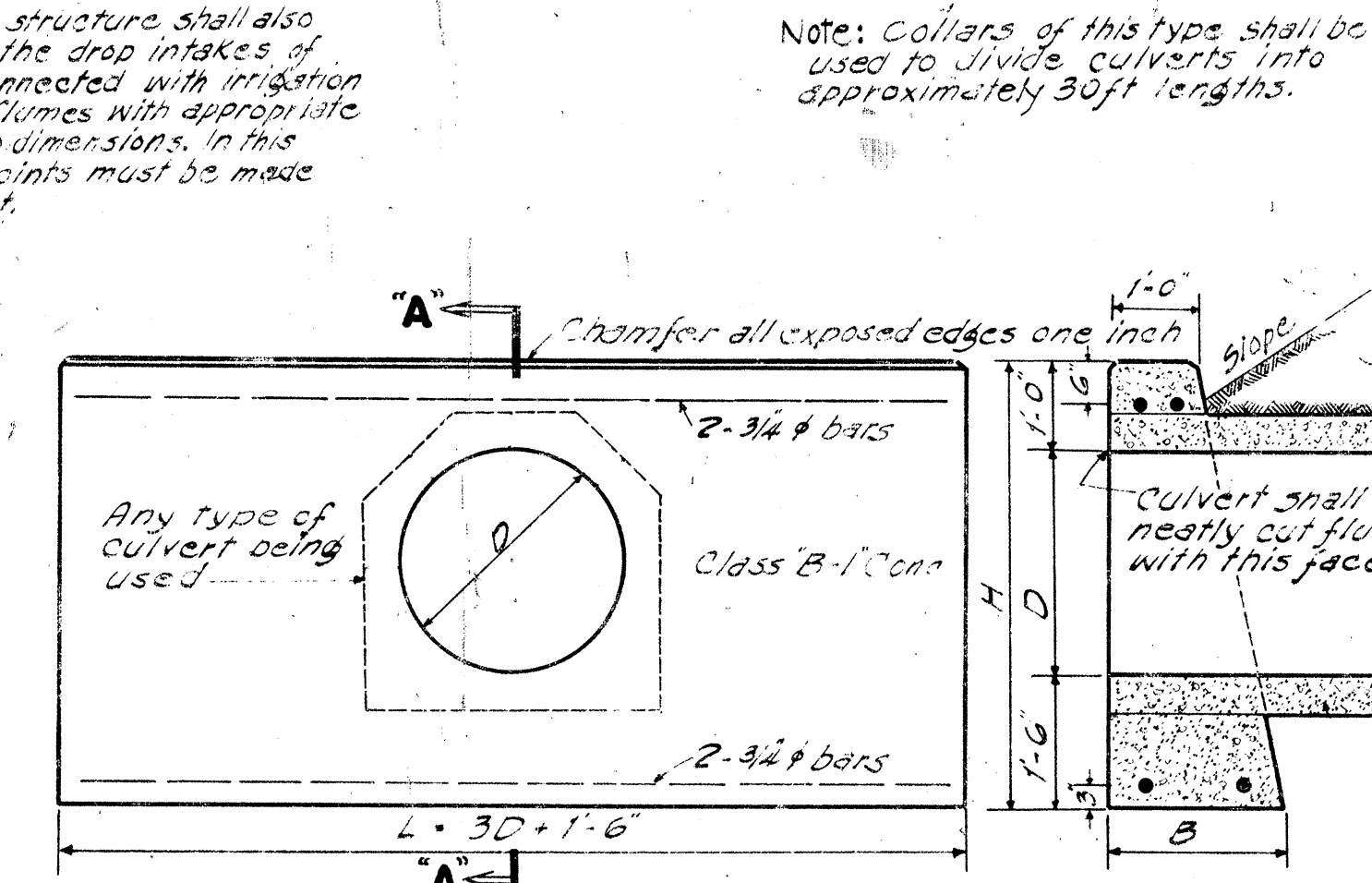
CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING

- (1) Map surface either side of joint as required with asphalt 50-100 penetration (A.S.T.M. Design D 5-25) applied at 200°F.
 - (2) Apply one layer of 55-lb composition roofing to hot asphalt.
 - (3) Map surface of composition roofing and 3" beyond all around with thick coat of asphalt (A.S.T.M. Design D 5-25).
- The above work is incidental to concrete and will not be paid for separately.

CONC. COLLAR FOR CONC. BOX CULVERT

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



FRONT ELEVATION

SECTION "A-A"

Cast-in-Place		Data: Standard Concrete Headwall		Steel One Headwall	
Cu. Yds.	D	B	L	H	Conc. one H.W.
0.02 Cu. Yds.	18"	1'-6"	6'-0"	4'-0"	100 Cu. Yds.
1.25	24"	1'-6"	7'-6"	4'-6"	138 "
1.25	30"	2'-0"	9'-0"	5'-0"	217 "
2.45	36"	2'-0"	10'-6"	5'-6"	274 "

CONC. PIPE CULVERT

Note: Thickness "d" reinforcing and concrete used are to conform with the approved design as provided by the specifications.

Data: Cast-in-Place Conc. Culvert			
D	d	W	Culvert per ft.
18"	4"	2'-2"	0.11
24"	4 1/2"	2'-0"	0.14
30"	5"	3'-4"	0.10
36"	5 1/2"	3'-11"	0.26

CAST-IN-PLACE CONC. CULVERT

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

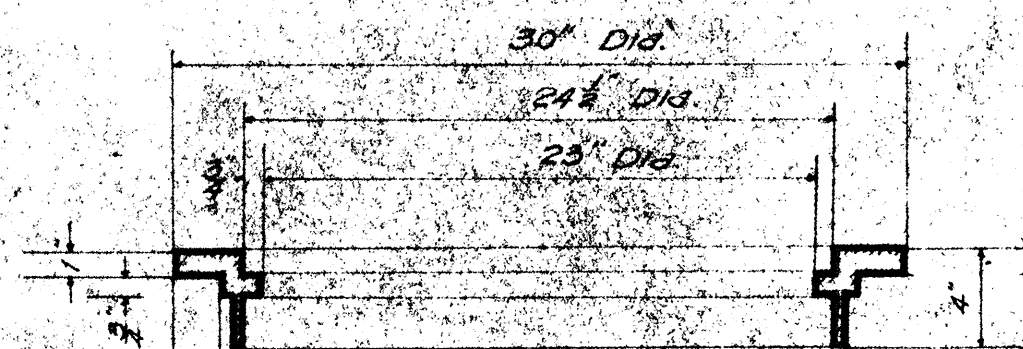
STANDARD DETAILS

SCALES AS NOTED

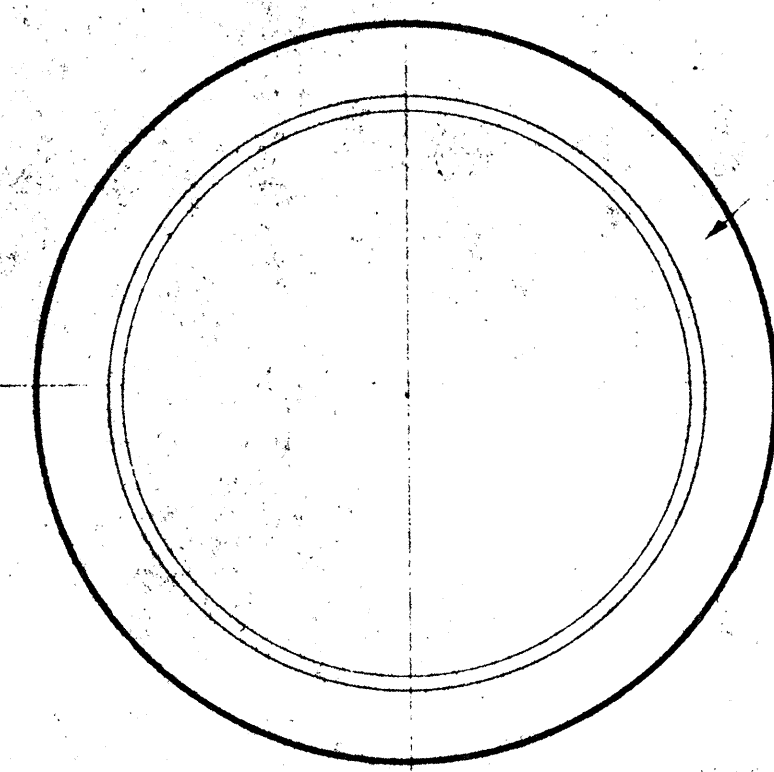
APPROVED: *[Signature]*

Territorial Highway Engineer

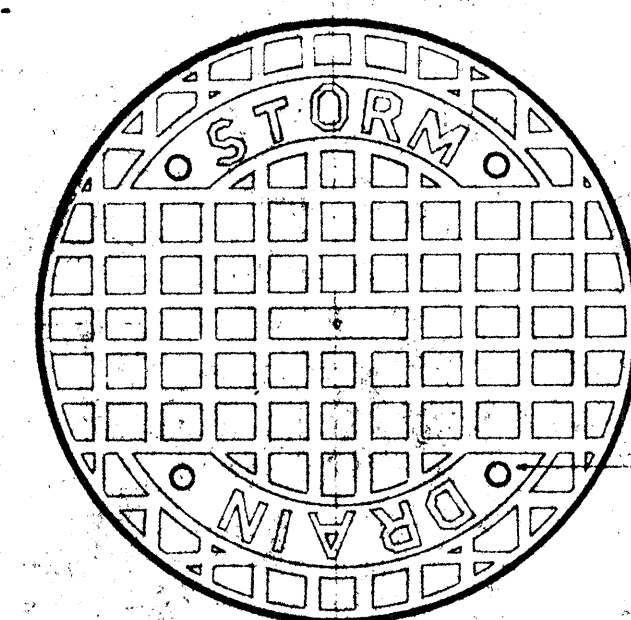
SHEET No. 1 OF 4 SHEETS



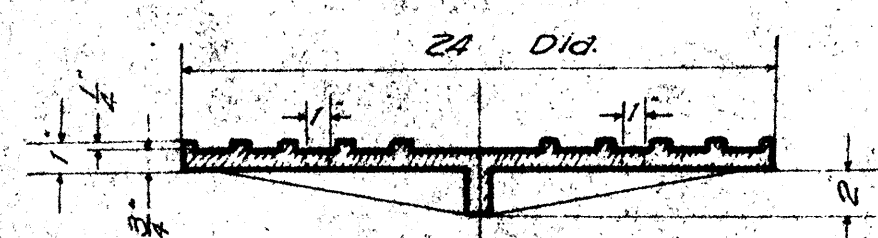
SECTION OF RIM



PLAN OF RIM

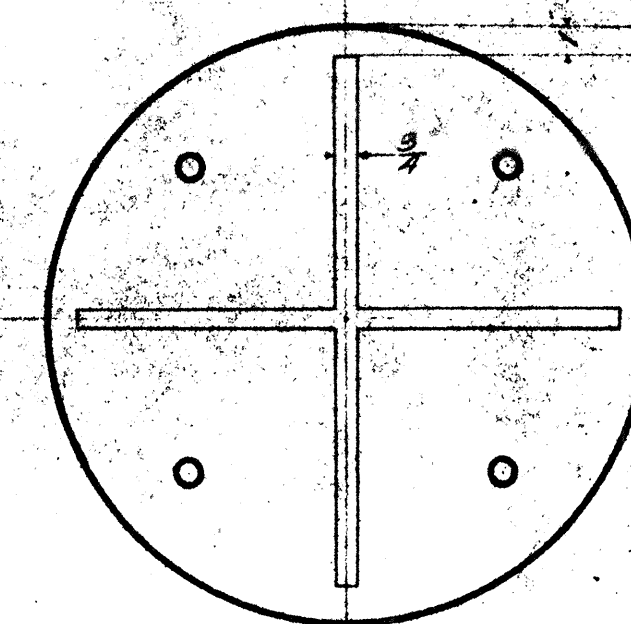


PLAN OF COVER TOP



SECTION OF COVER

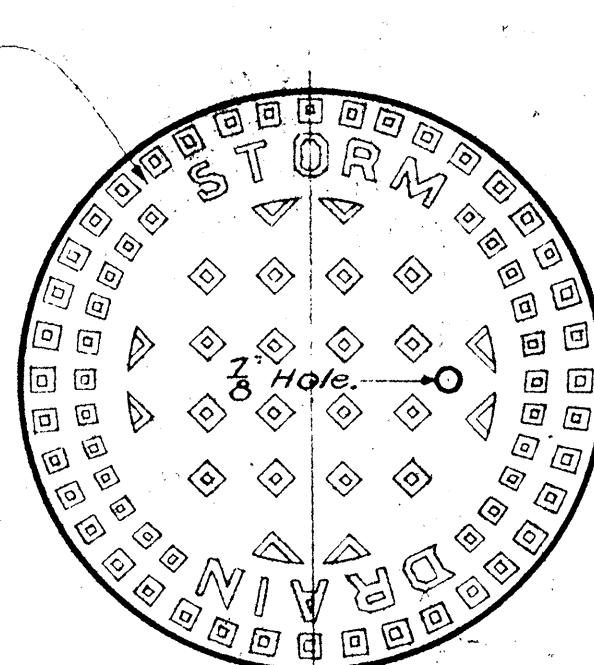
NOTE: A unit includes both Rim and Cover



BOTTOM VIEW OF COVER

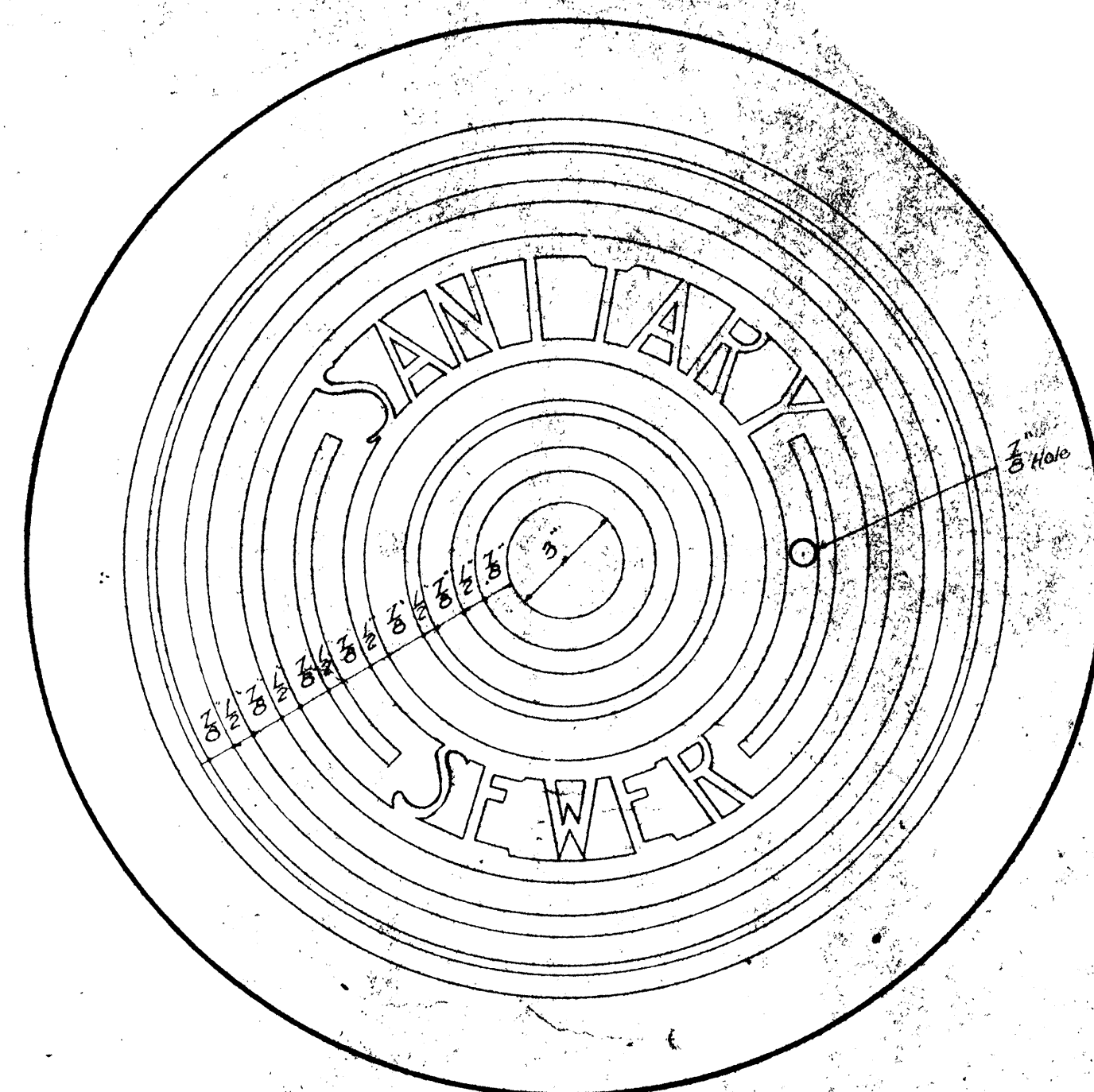
TYPE "B" STANDARD CATCH BASIN CASTINGS

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

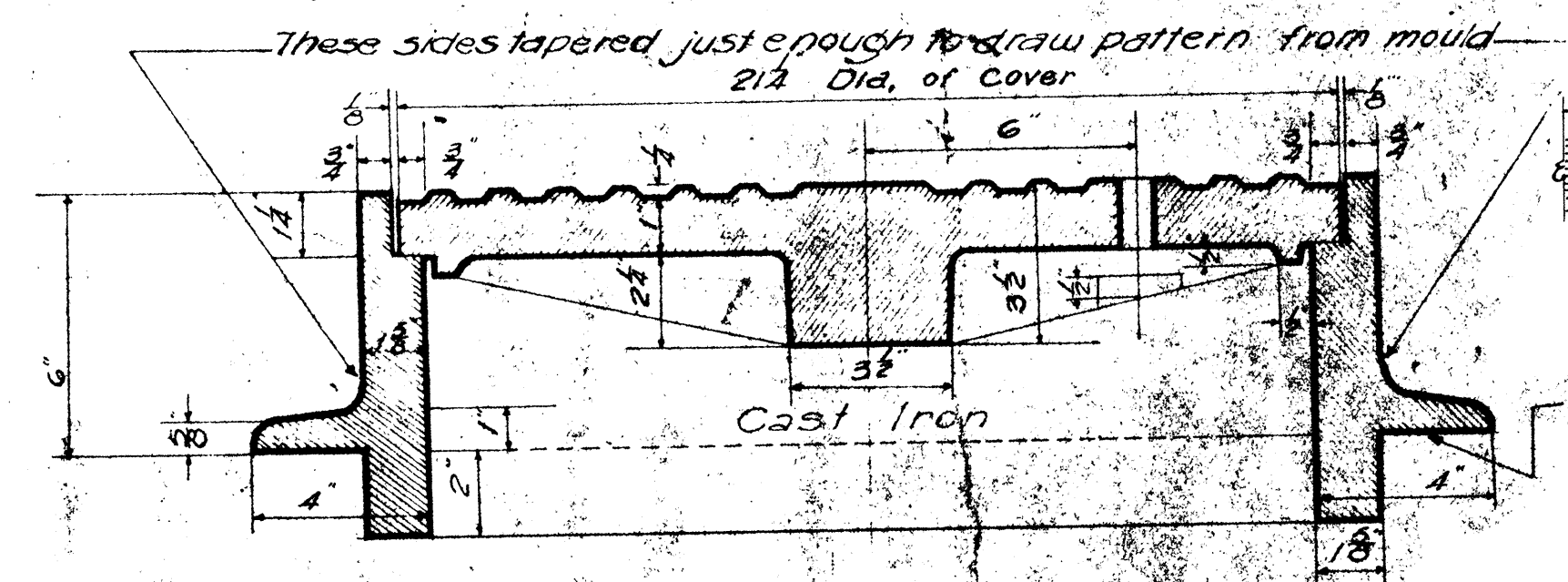


PATTERN FOR STORM DRAIN MANHOLE COVER

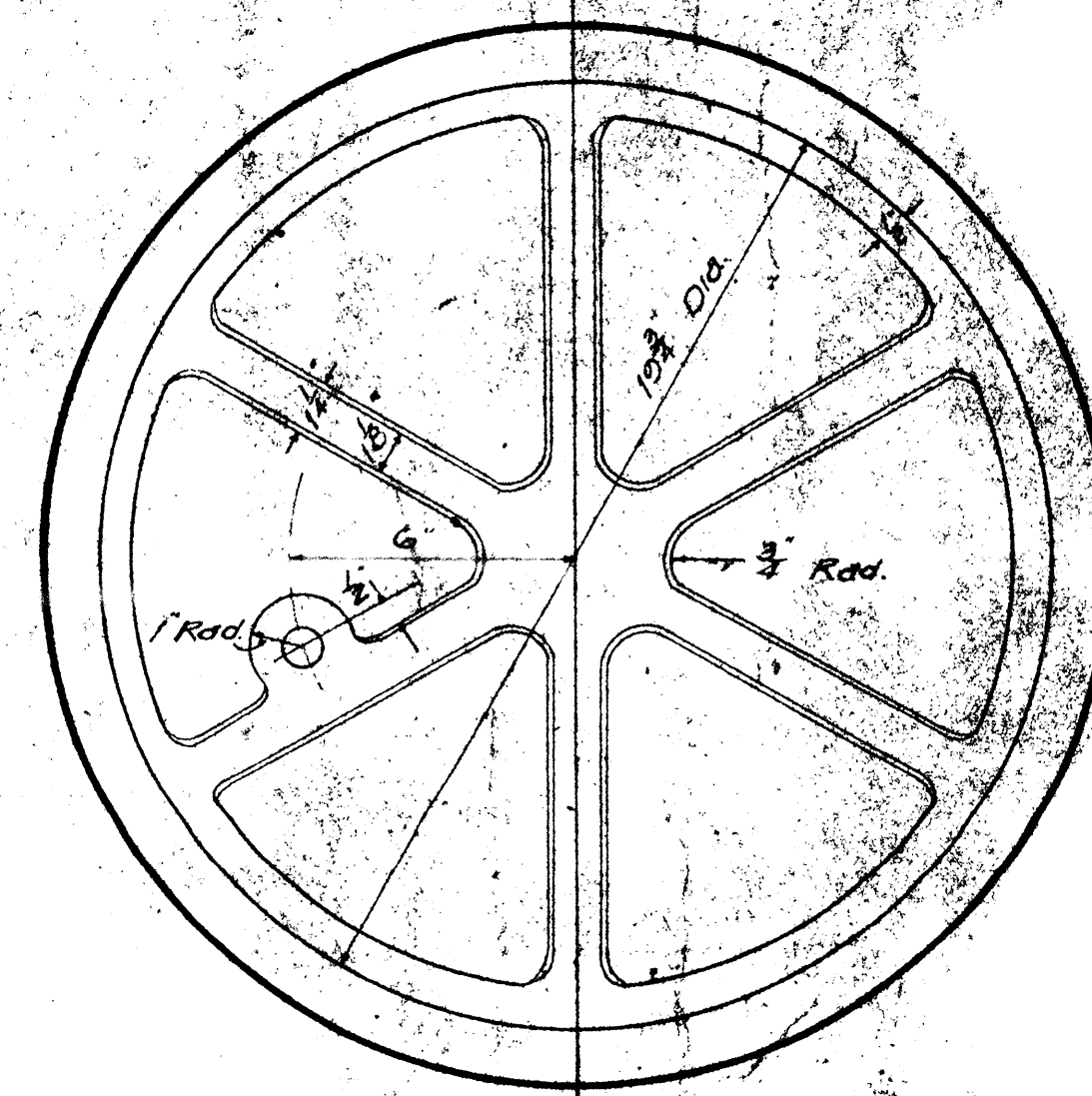
NOTE: The pattern for water manhole covers shall be the same as for sanitary sewer except that the word 'Water' shall be substituted for 'Sanitary Sewer'



PATTERN FOR SEWER MANHOLE COVER

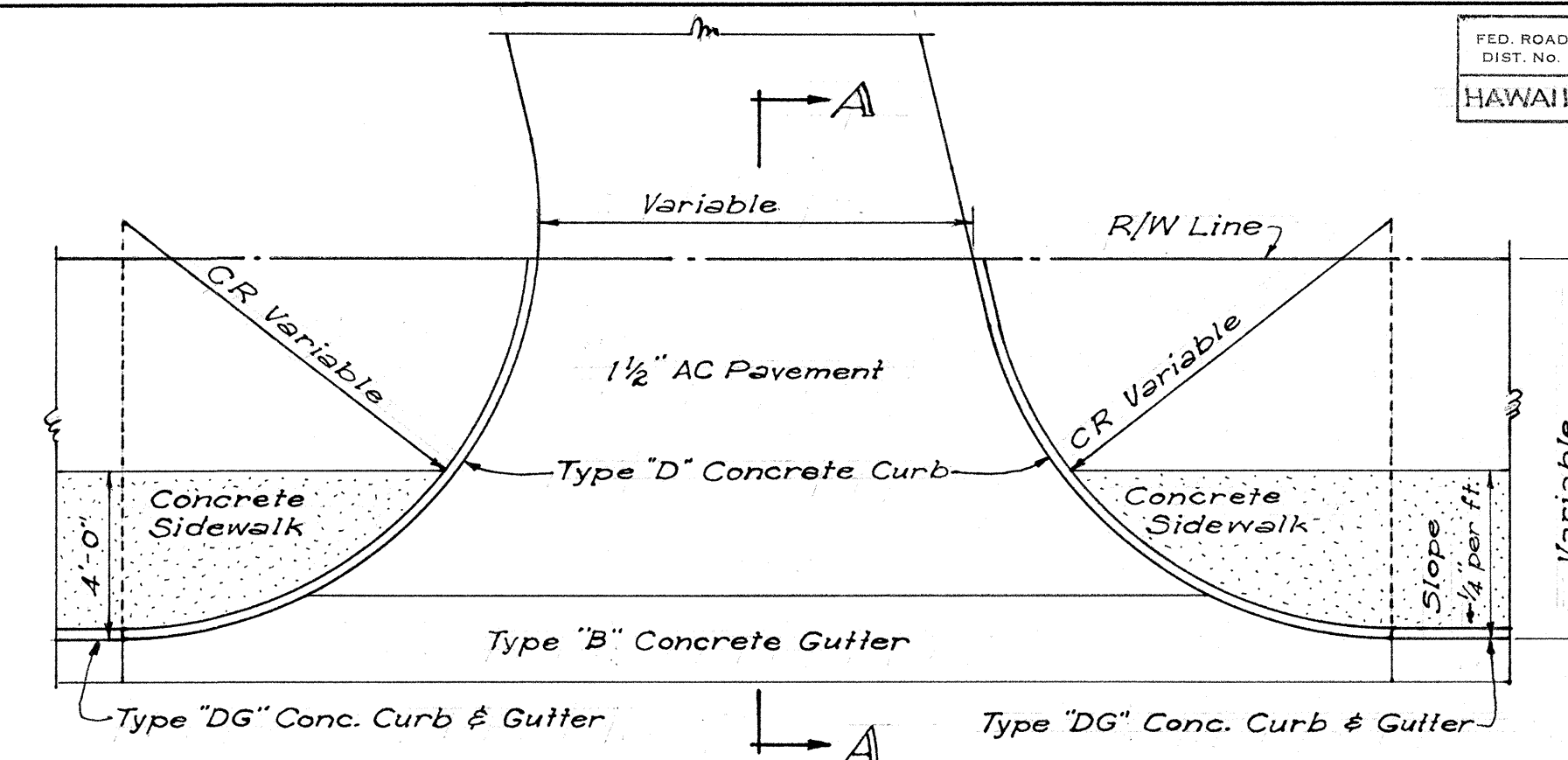


NOTE: A unit includes both Frame and Cover

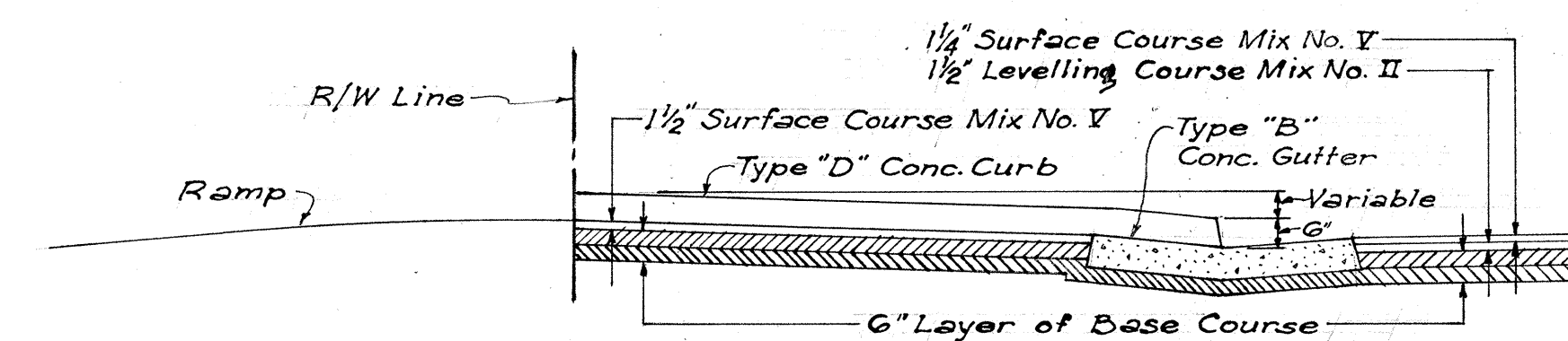


BOTTOM VIEW OF COVER
TYPE "A" STANDARD MANHOLE CASTINGS

Scale: 3" = 1'-0"

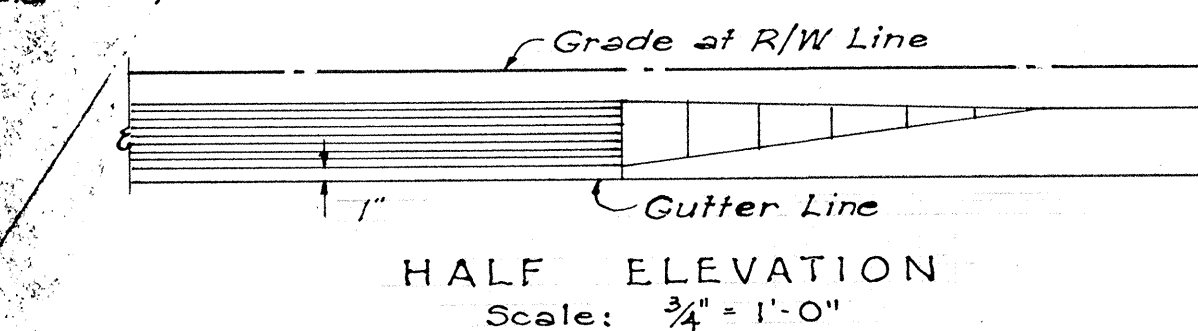


PLAN
Scale: 1/8" = 1'-0"

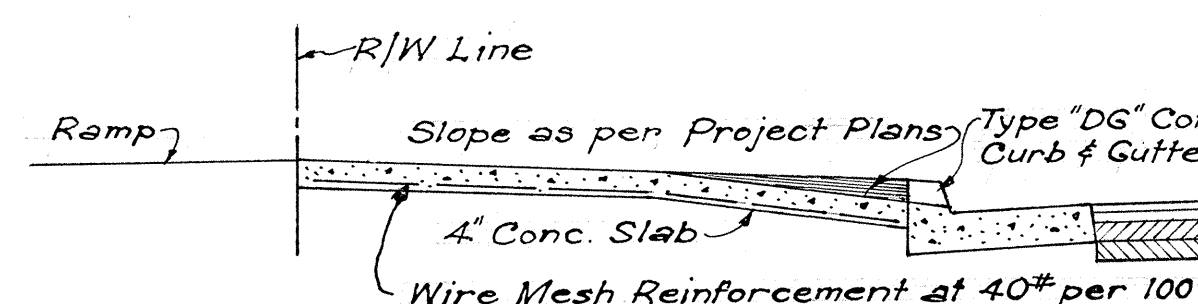


SECTION "A-A"
Scale: 3/8" = 1'-0"

DETAIL OF ACCESS DRIVEWAY

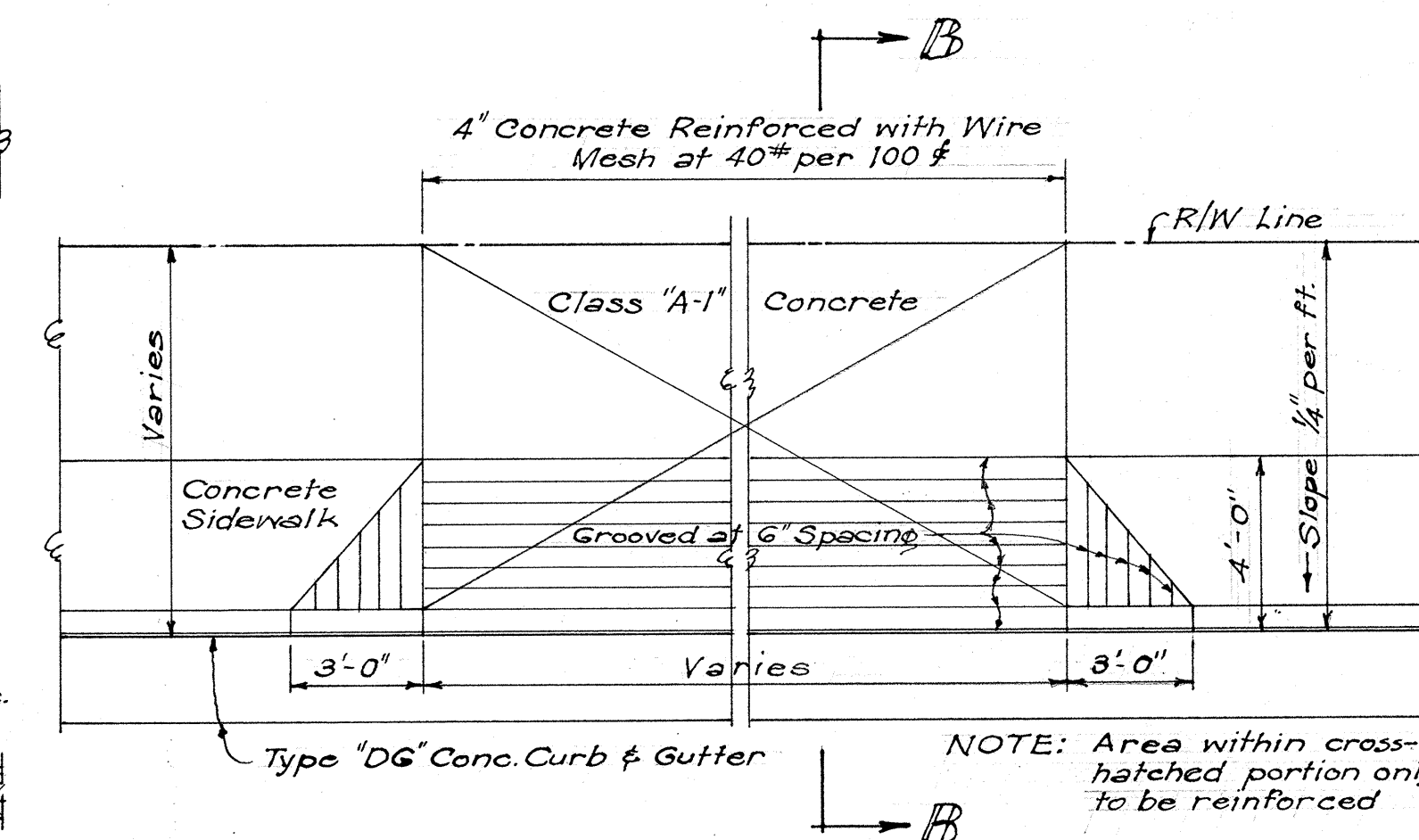


HALF ELEVATION
Scale: 3/4" = 1'-0"



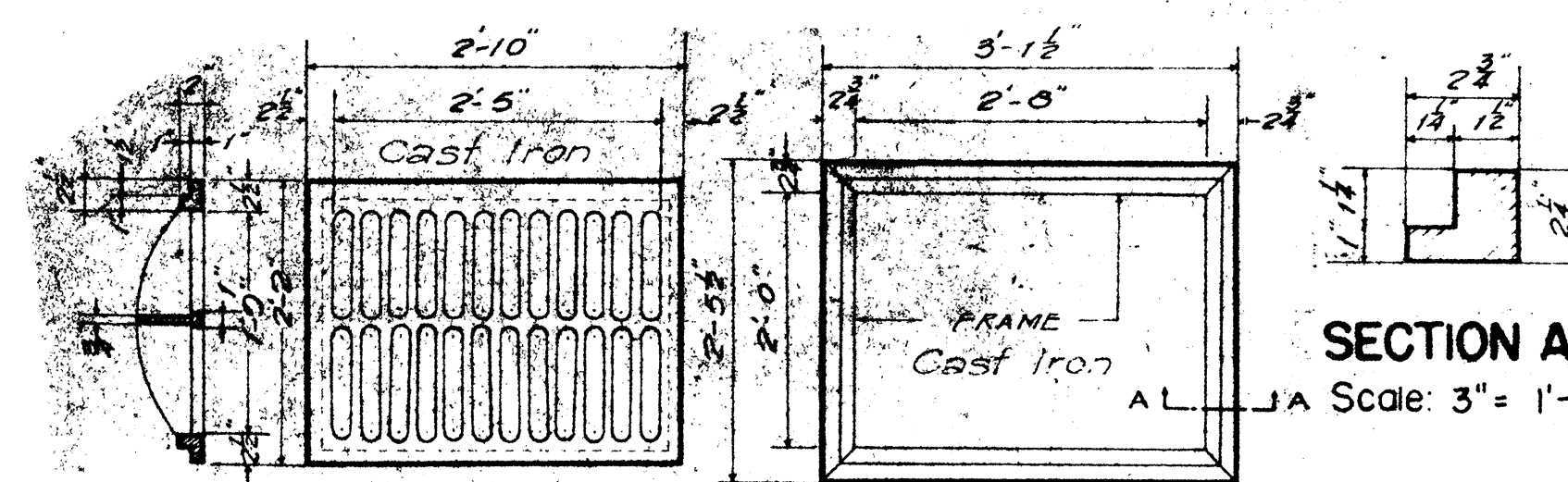
SECTION "B-B"
Scale: 3/8" = 1'-0"

DETAIL OF REINFORCED CONCRETE DRIVEWAY



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

NOTE: Area within cross-hatched portion only to be reinforced



TOP VIEW

TOP VIEW

STANDARD C. I. FRAME AND GRATE TYPE "C"

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

NOTE: Stock Pattern from Novelty Foundry-Honolulu

SECTION A-A
Scale: 3" = 1'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

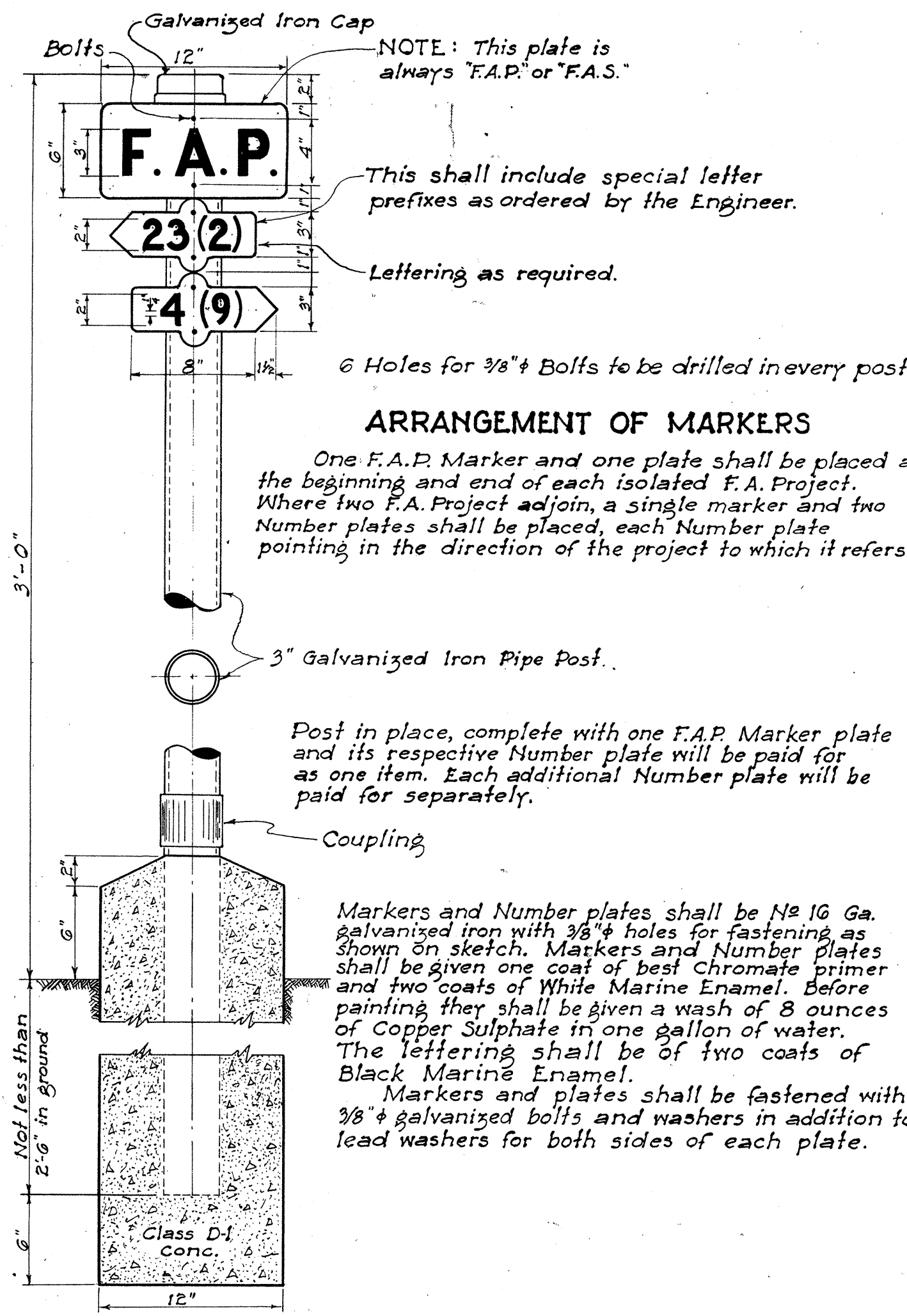
STANDARD DETAILS

SCALES AS NOTED Apr. 15, 1948

APPROVED: *[Signature]*
Territorial Highway Engineer

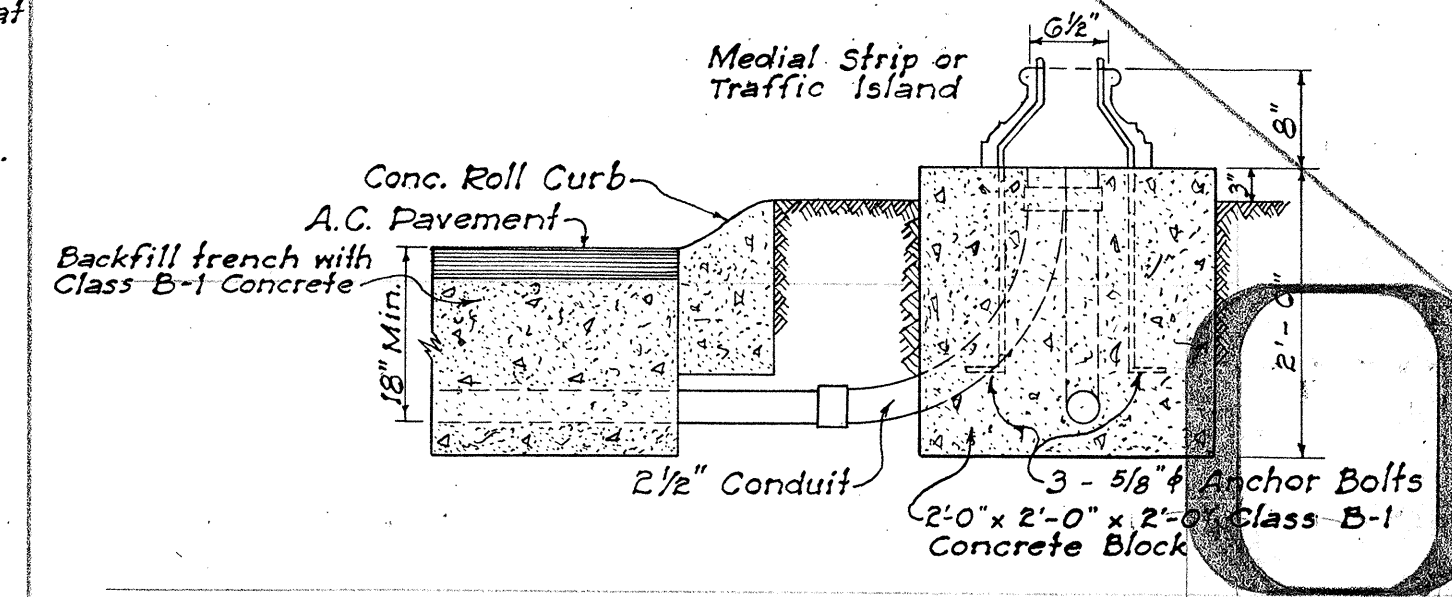
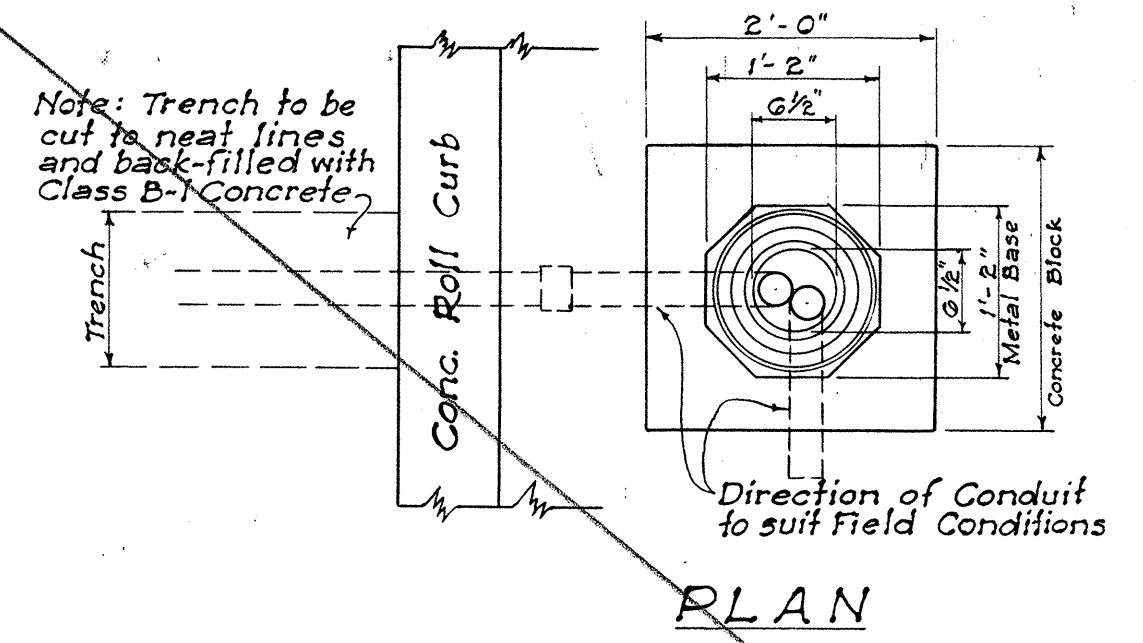
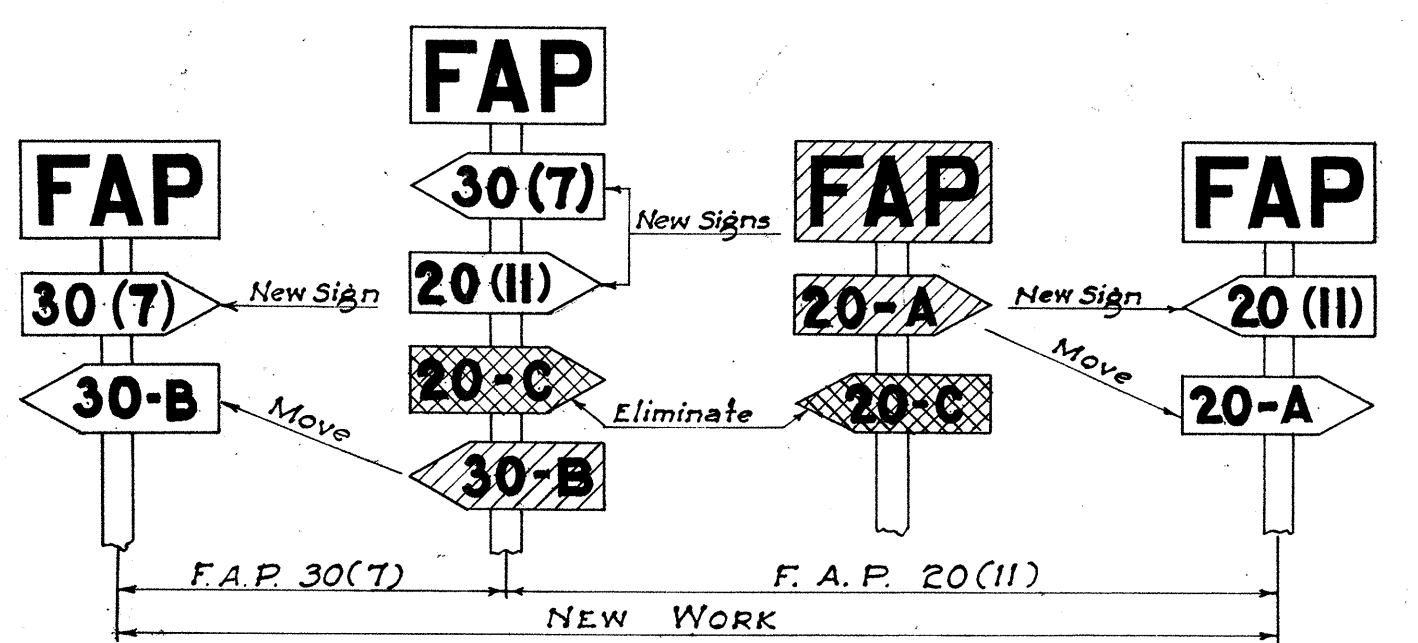
SHEET NO 2 OF 4 SHEETS

5596.48

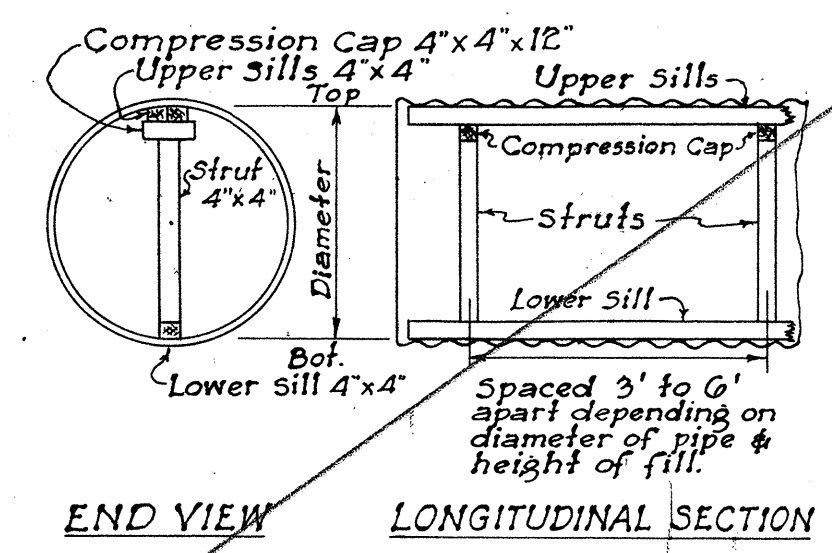


FEDERAL AID MARKER
Scale: 1 1/2" = 1'-0"

F.A.P. 20 & 30



DETAIL OF BASE FOR TRAFFIC STANDARD AND DISPATCHER PEDESTAL

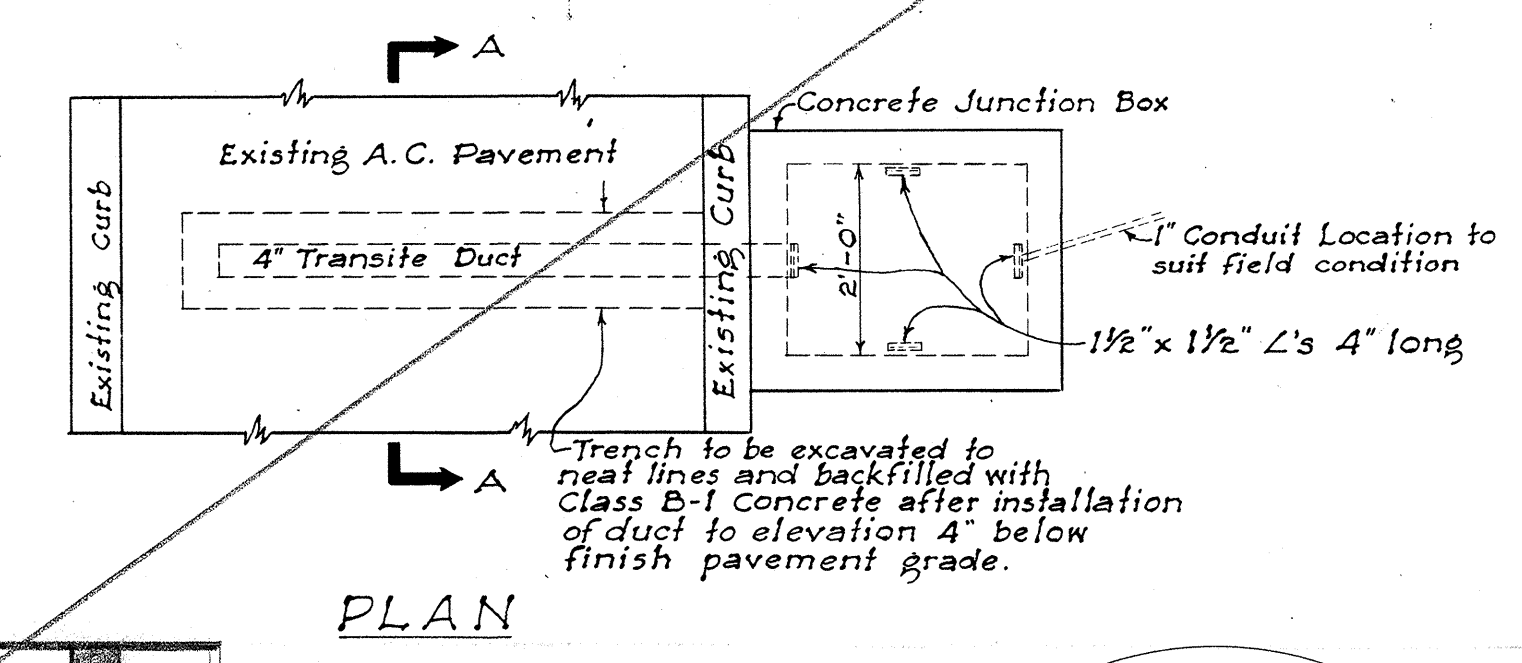
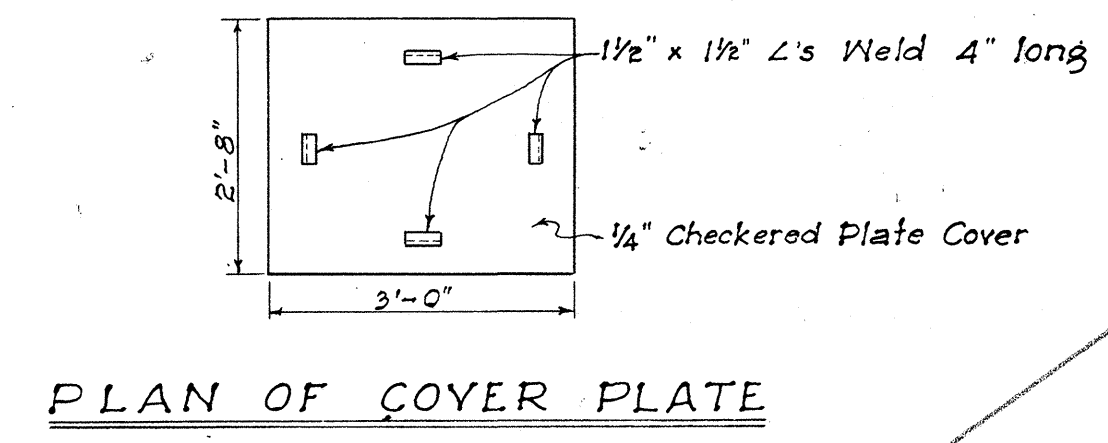


STRUTTING DIAGRAM & TABLE FOR CORRUGATED METAL PIPE CULVERT

Diameter of Pipe in inches	Length of Struts in inches	Spacing of Struts in Ft. for Various Heights				
		FILL 1' to 5'	FILL 5' to 10'	FILL 10 to 20'	FILL 20 to 30'	FILL Over 30'
48	38 3/8	—	—	—	6	4
54	44 3/4	6	6	6	6	4
60	51	6	6	6	6	4
66	57 1/4	6	6	6	6	4
72	63 3/8	6	6	6	5	3.5
78	69 1/8	6	6	6	4.5	3.5
84	76 1/4	6	6	6	4	3

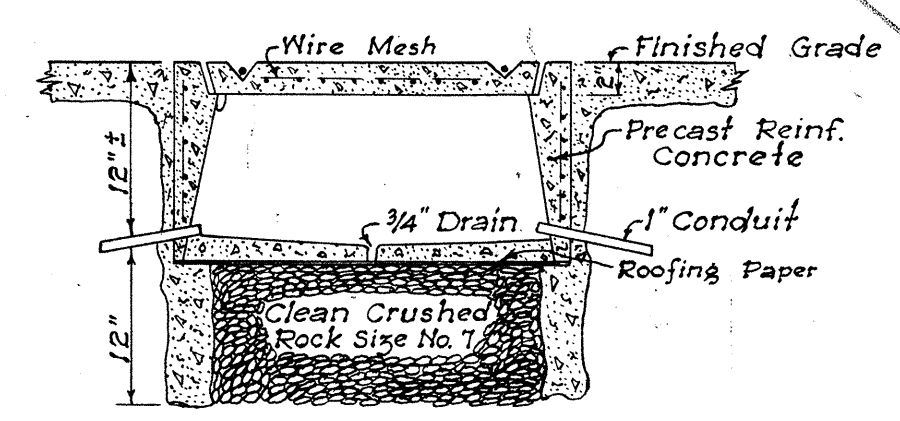
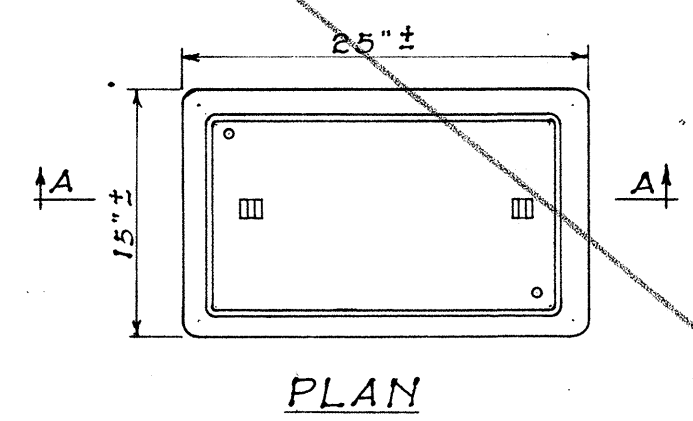
NOTE: Length of Struts are based on 4"x4" timbers which is the minimum size recommended. If larger sills or compression caps are used, length of struts should be changed accordingly.

NOTE: Length of Struts are based on 4"x4" timbers which is the minimum size recommended. If larger sills or compression caps are used, length of struts should be changed accordingly.

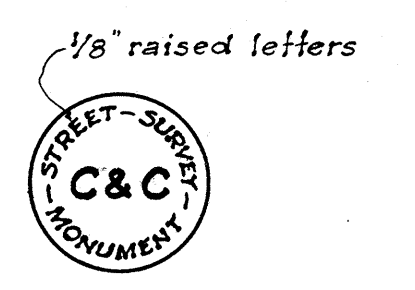


SECTION "A-A"

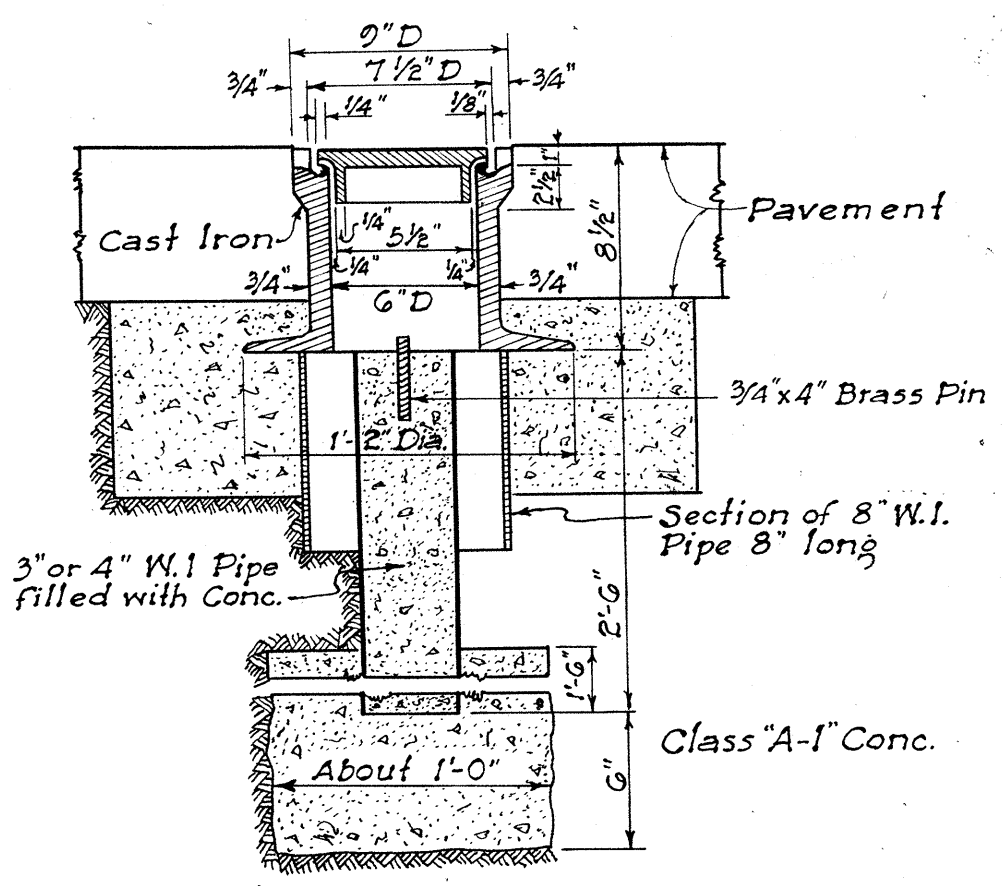
TYPICAL ROAD SECTION SHOWING TRAFFIC DETECTOR JUNCTION BOX AND DUCT



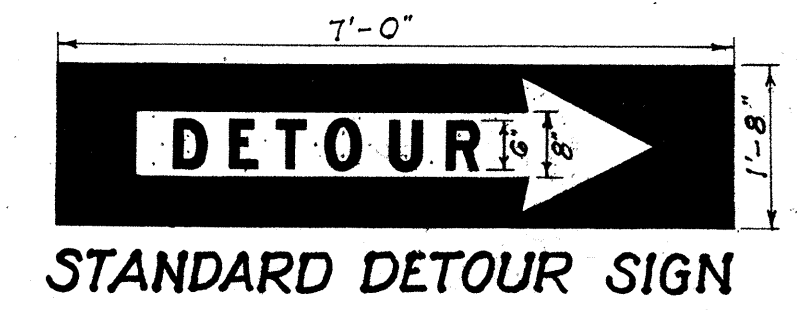
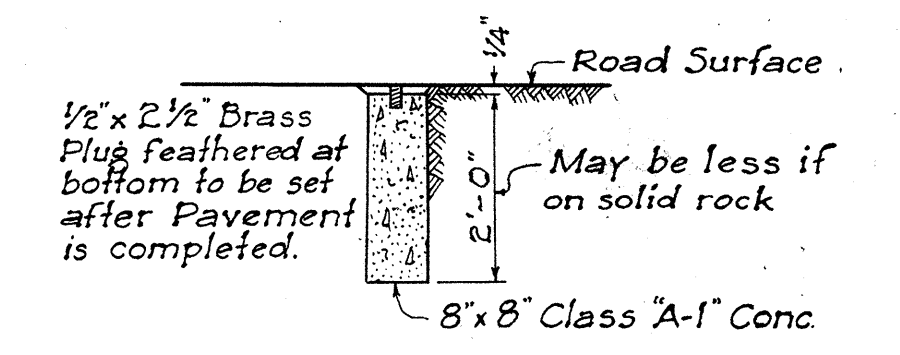
DETAIL OF PULL BOX
Scale: 1" = 1'-0"



PLAN OF TOP

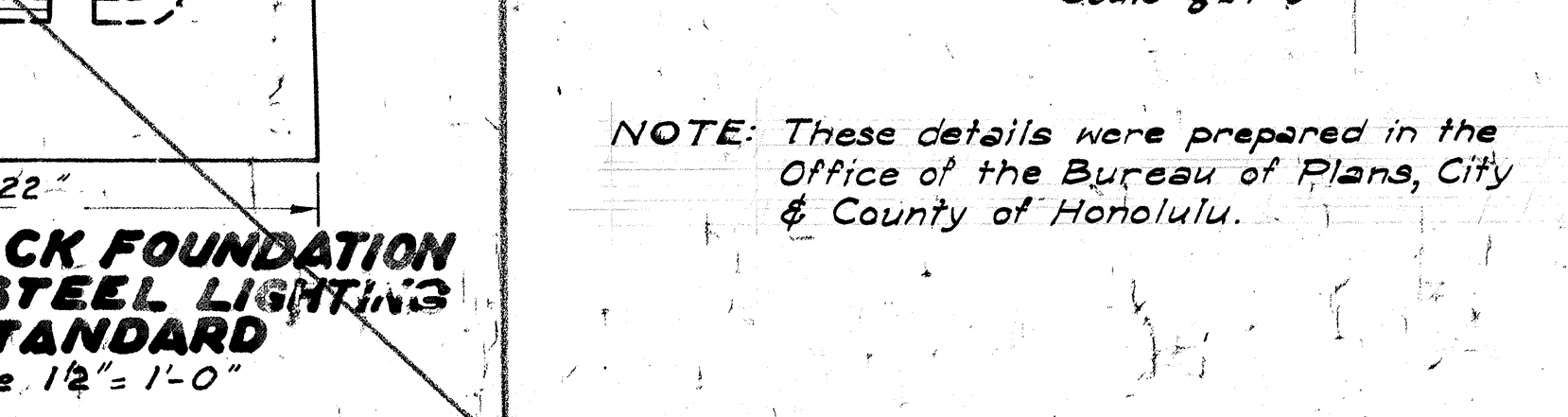
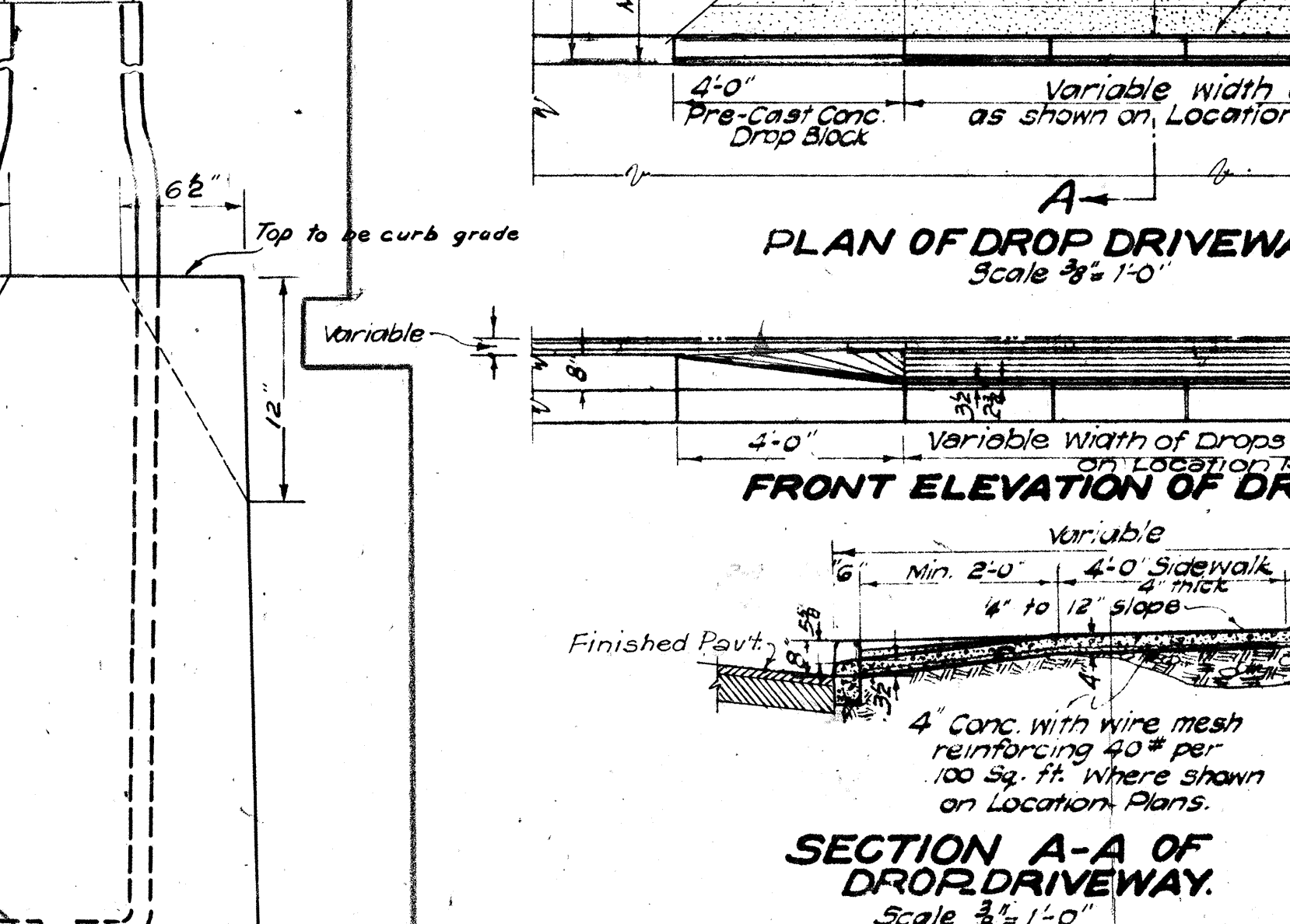
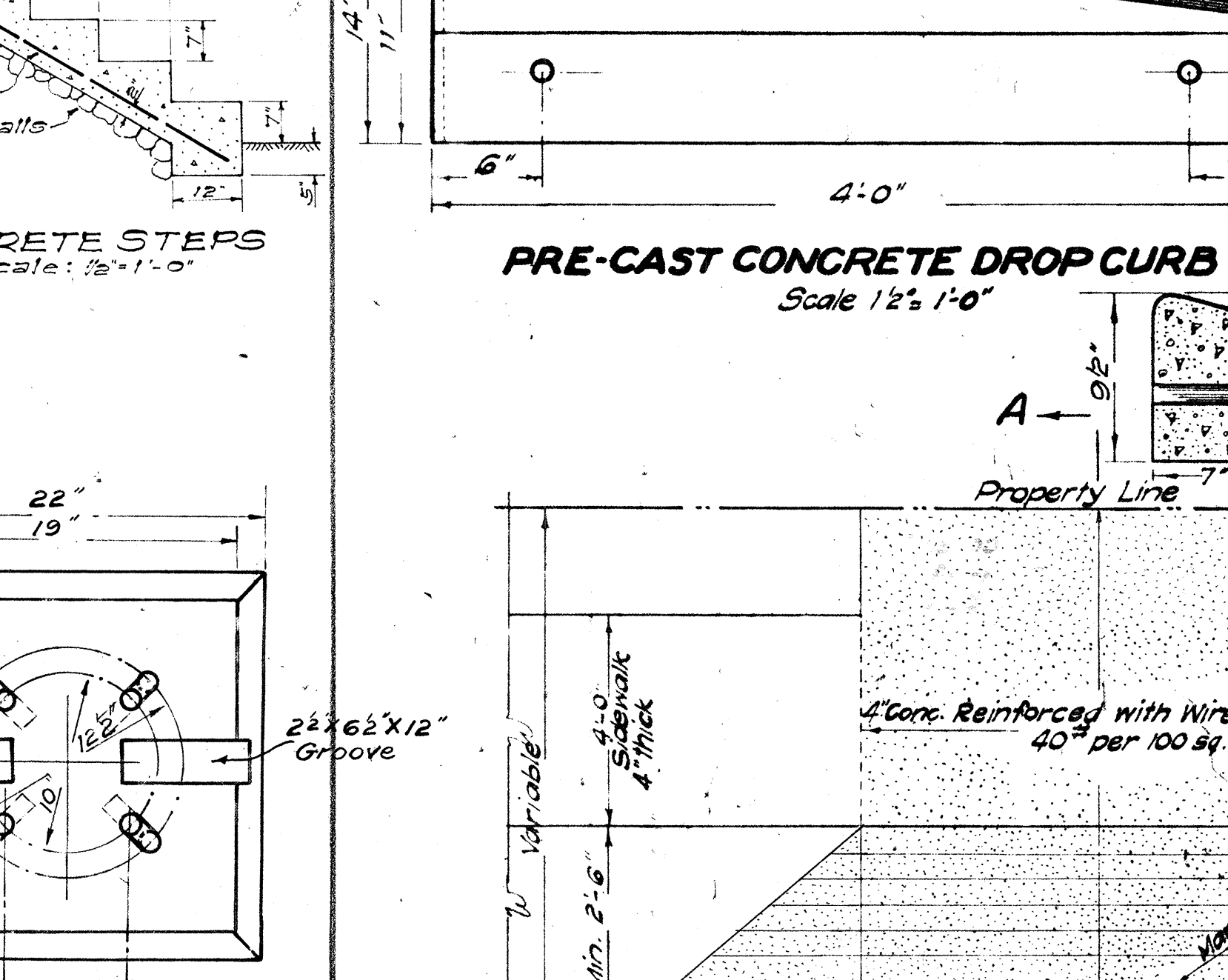
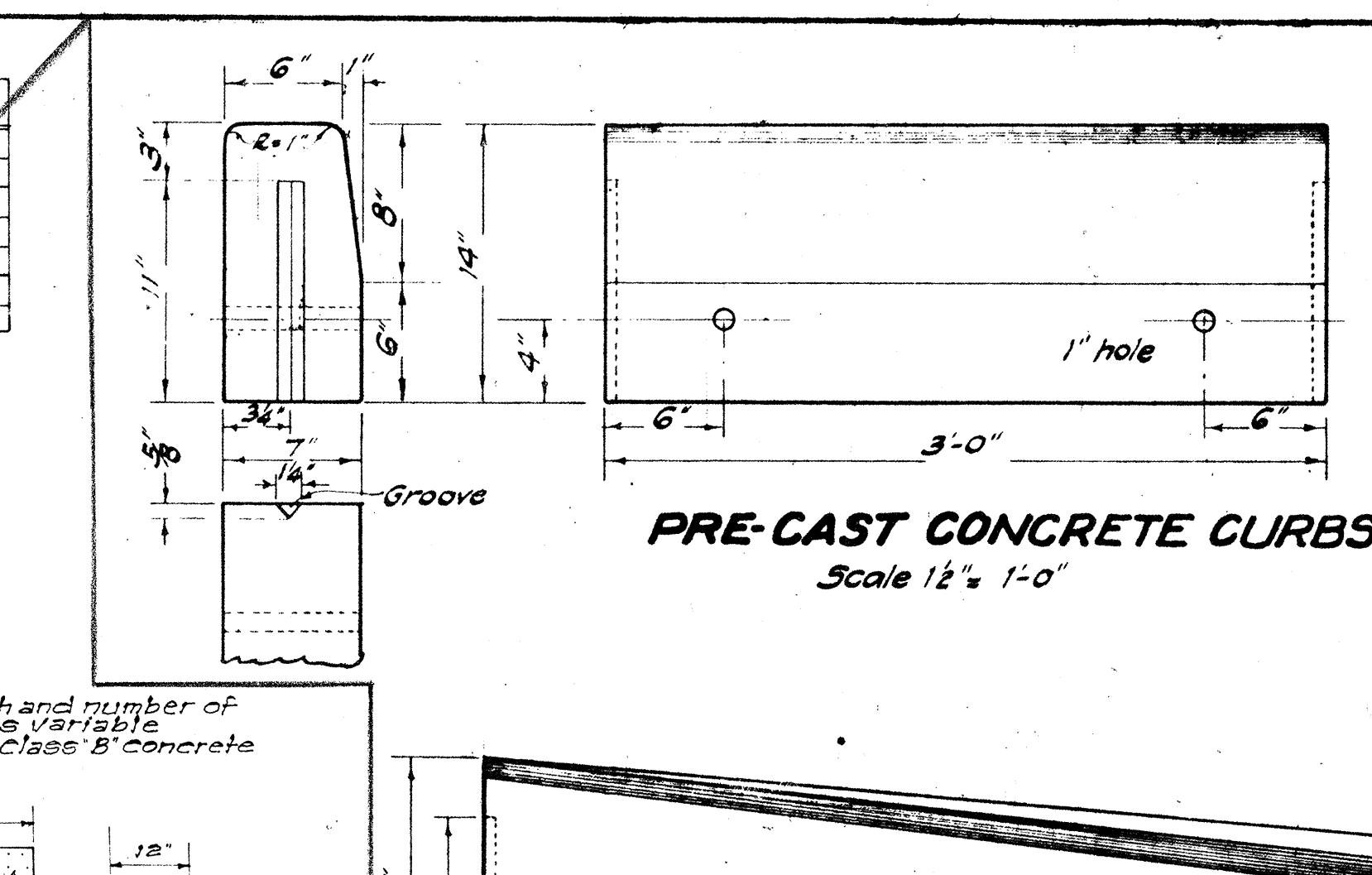
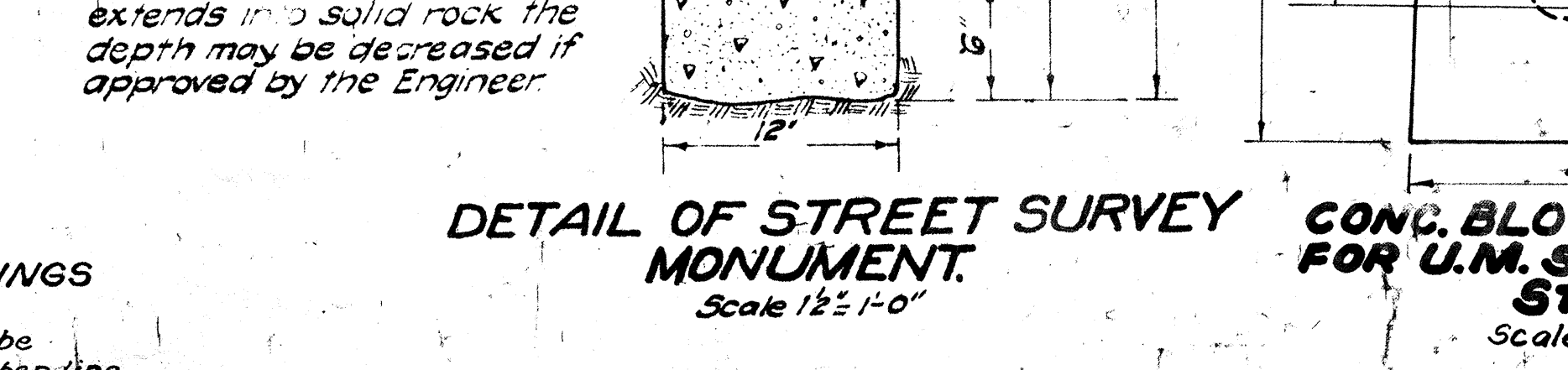
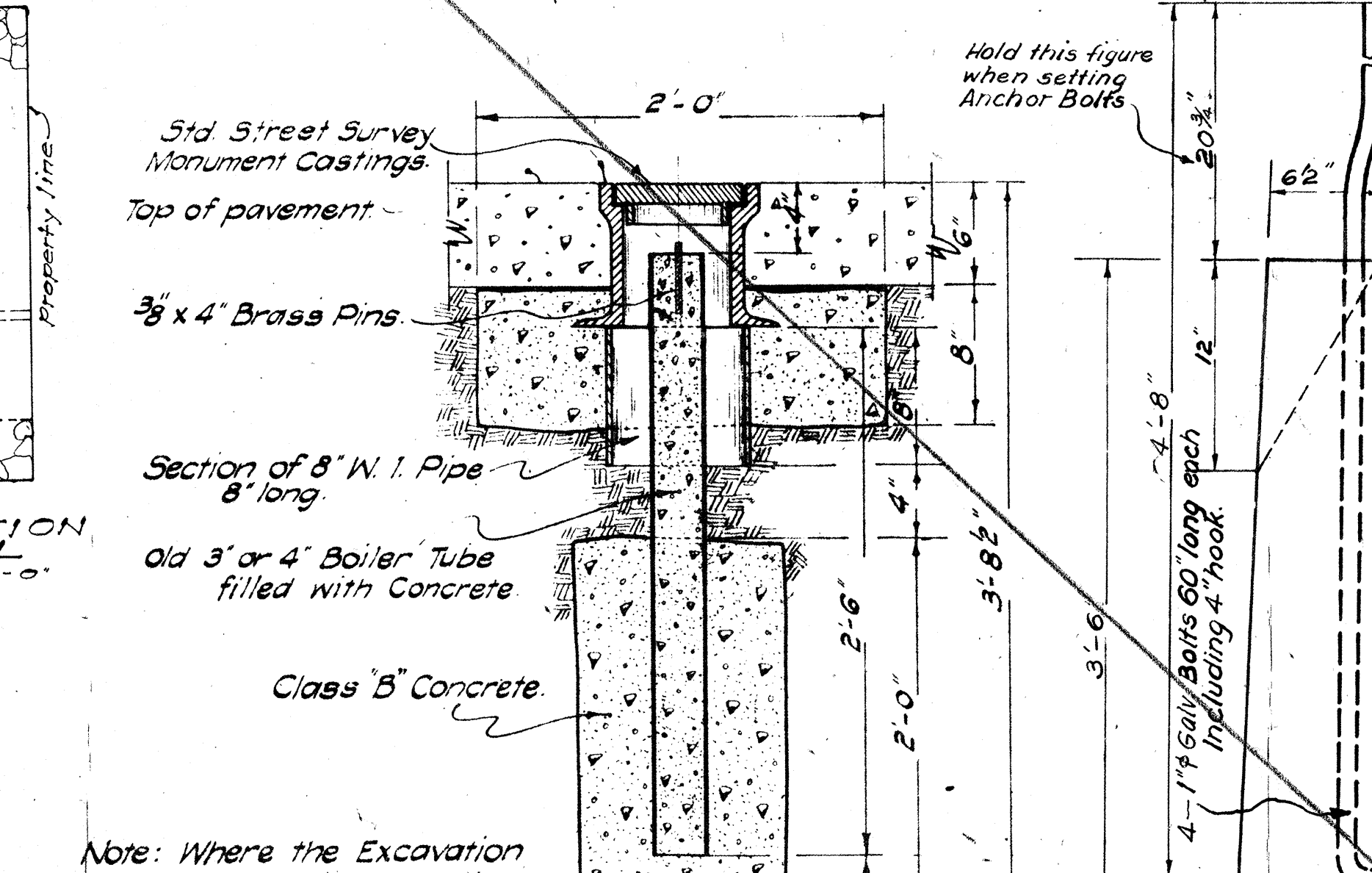
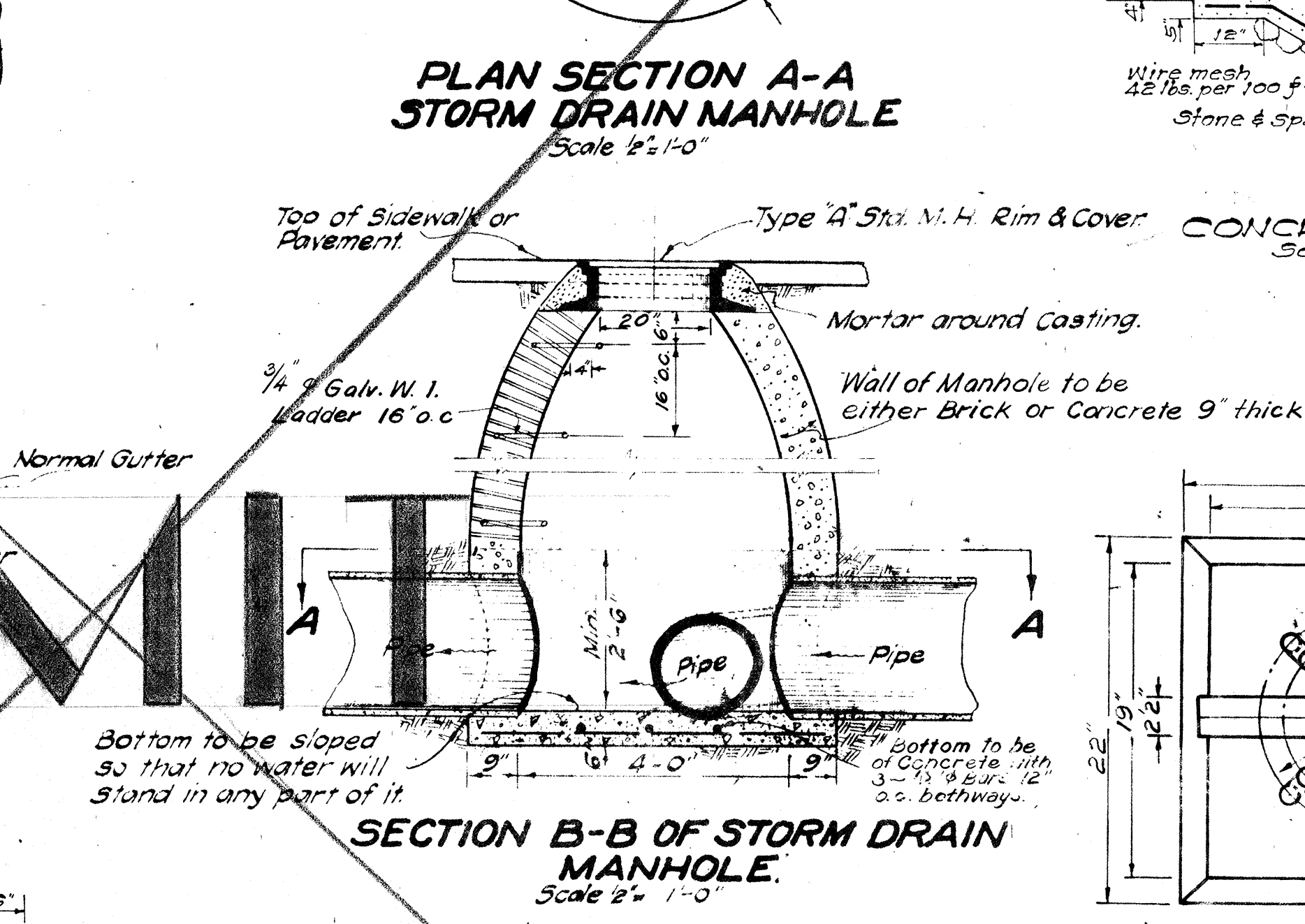
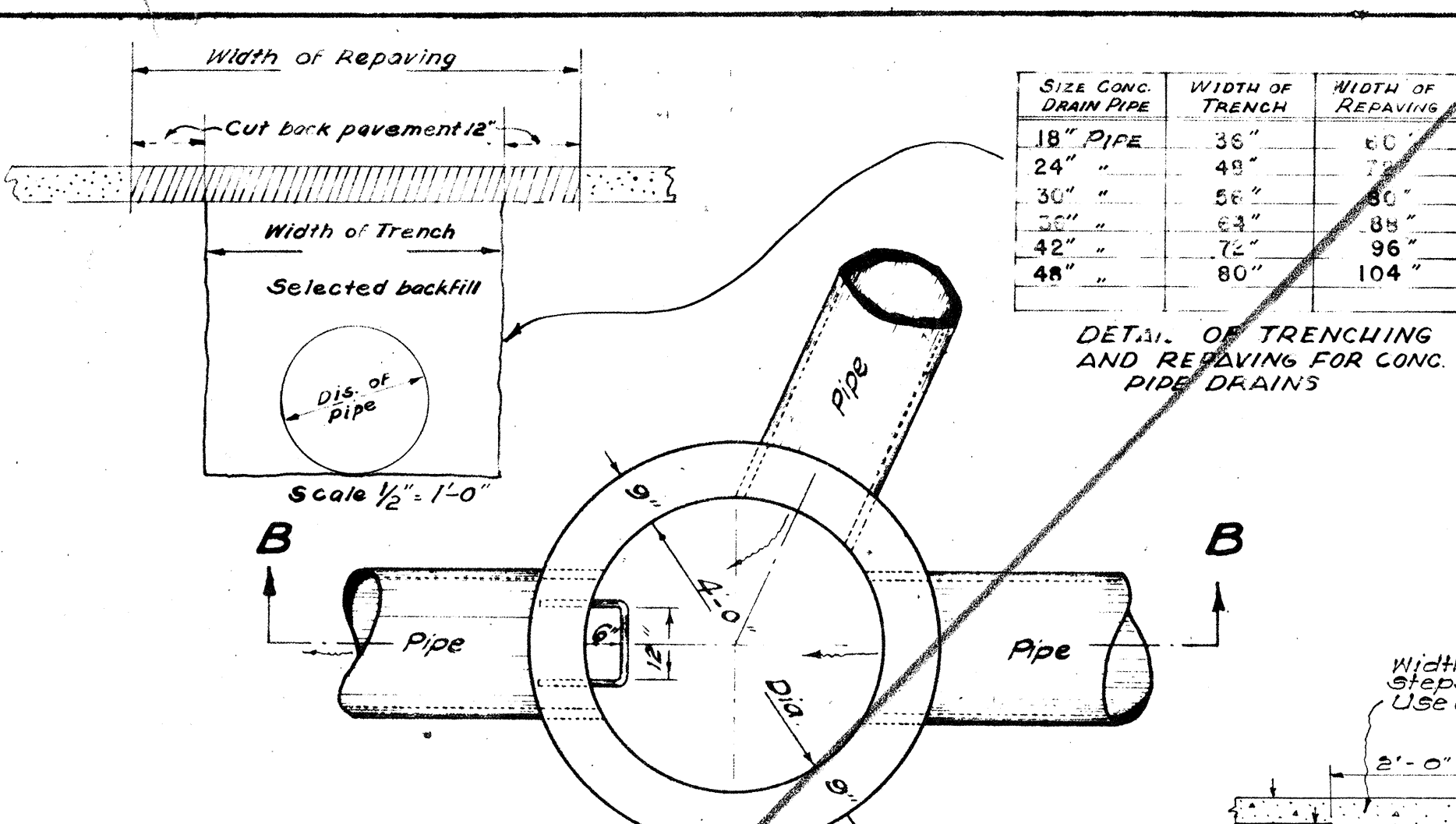
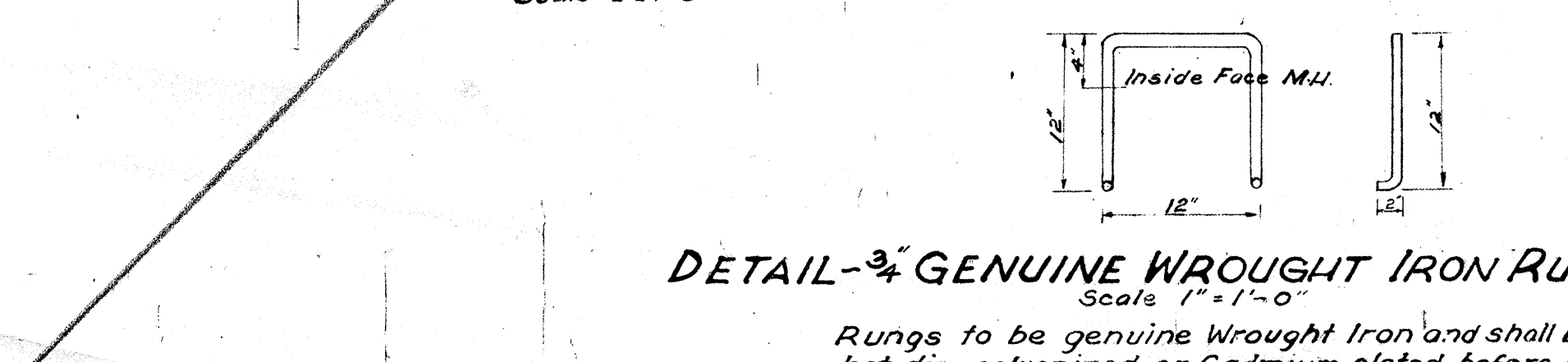
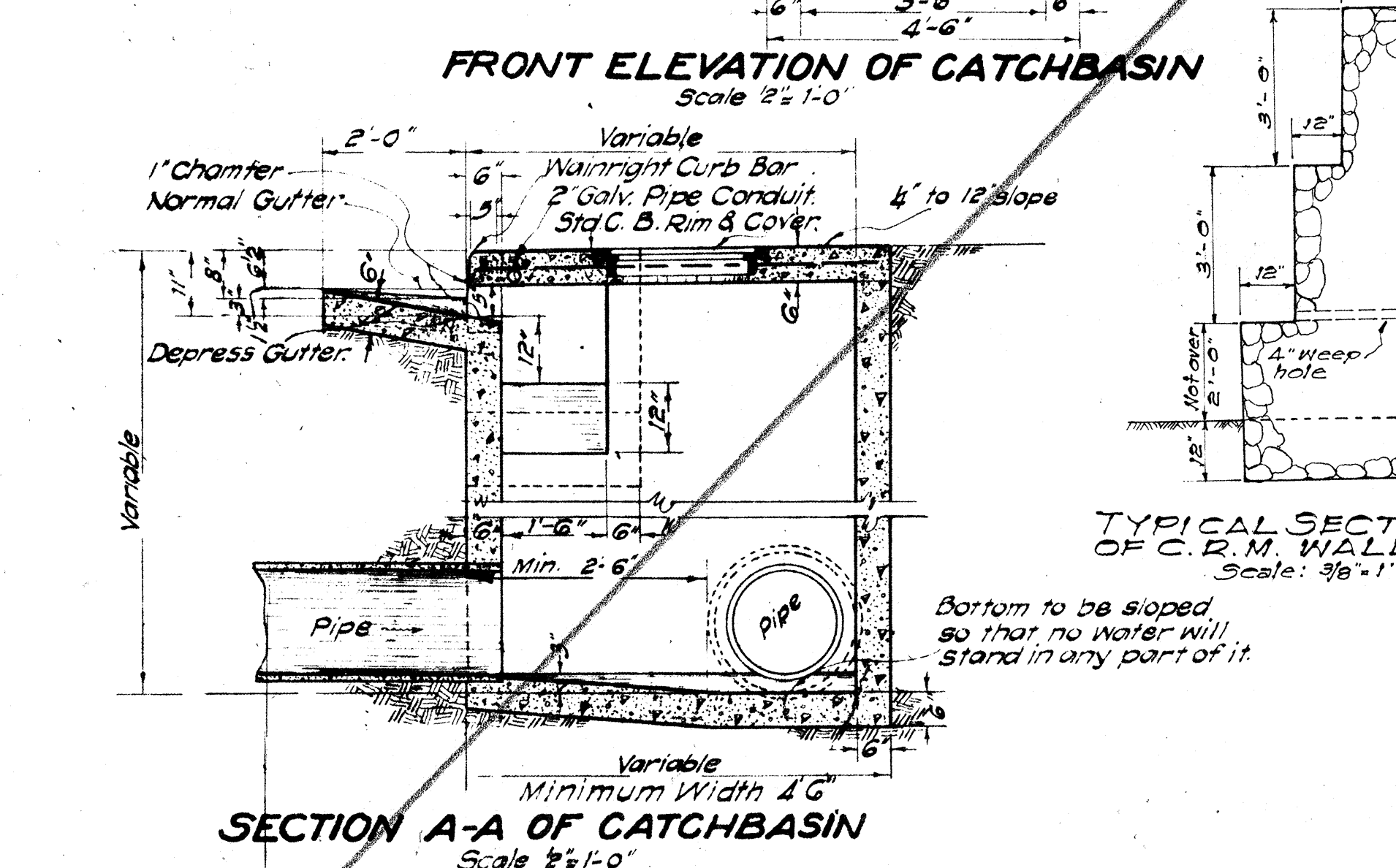
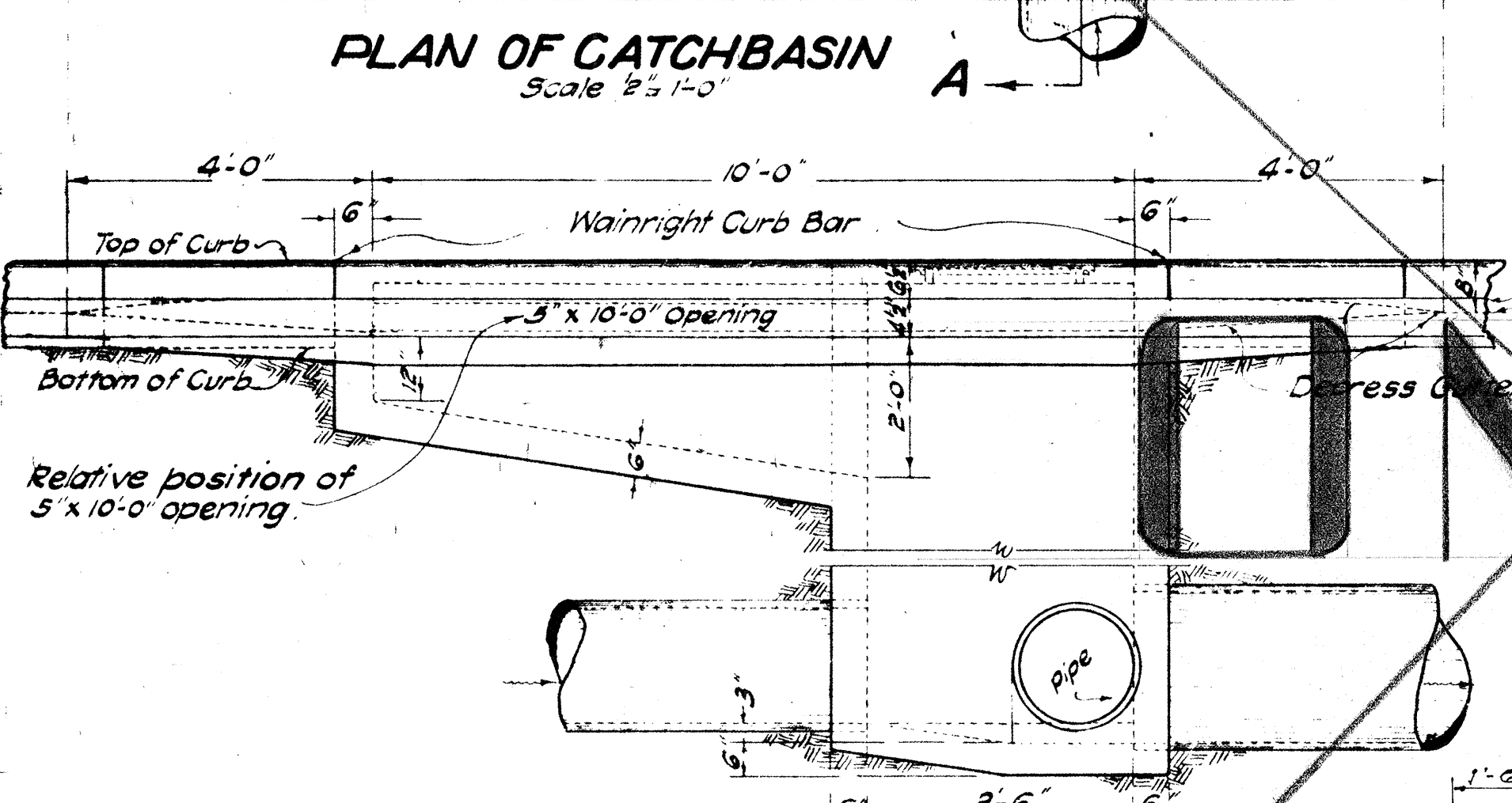
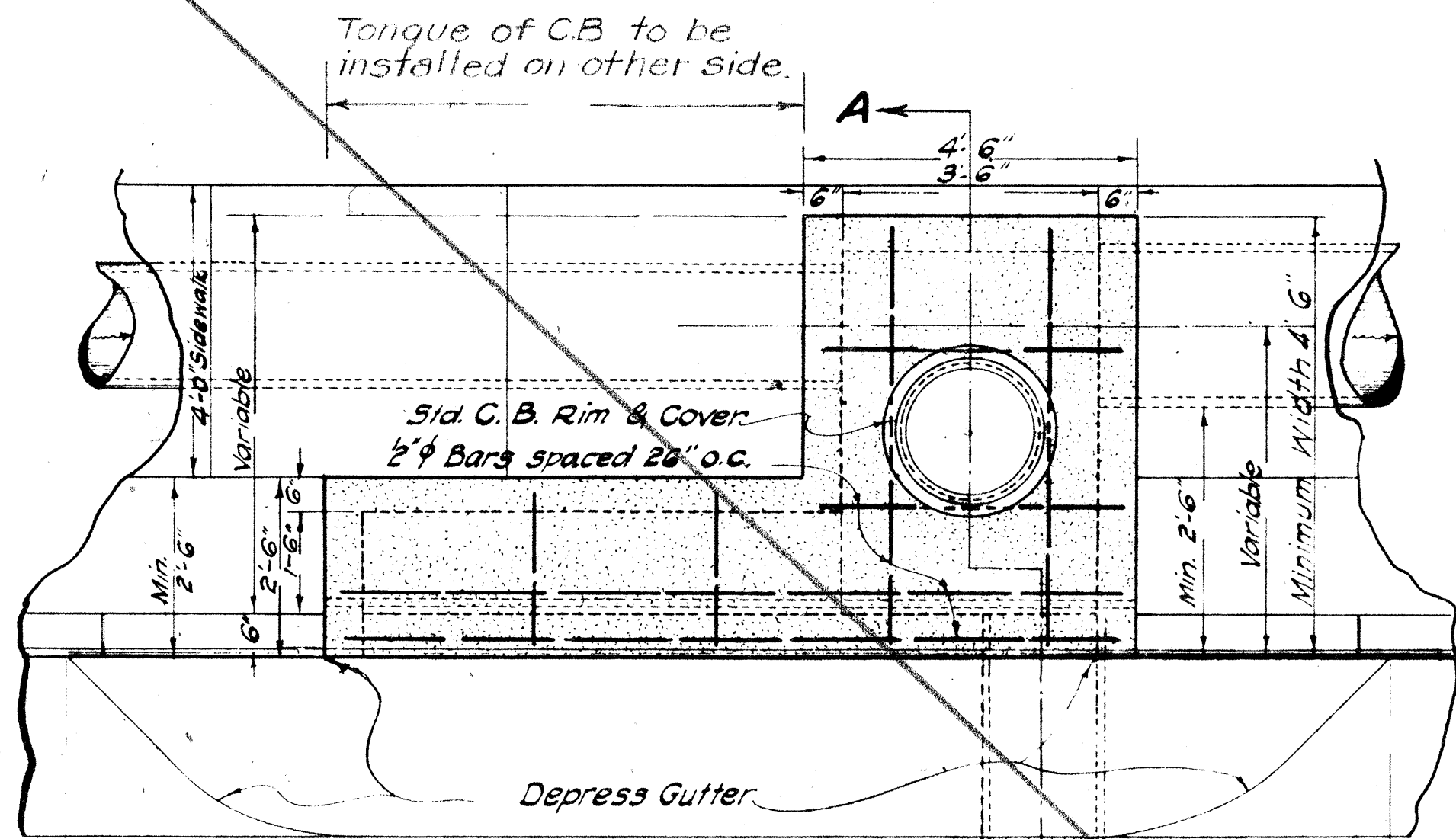


STANDARD C&C STREET SURVEY MONUMENT



METHOD OF MARKING F.A. PROJECTS AT OVERLAPS (USING NUMBER SUFFIX ON NEW WORK)

NOTE: Federal Aid Markers should be placed at the termini of suffix designated sections. Intermediate letter designated markers of adjacent sections located within the limits of new improvements should be moved to the termini of the new work. The same procedure would be followed on each successive improvement until all markers for letter designated sections are eventually eliminated.



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
BUREAU OF PLANS
STANDARD DETAILS
MAUKA ARTERIAL
ALEXANDER ST. TO ISENBERG ST.
PROJECT No. F 59 (4)
Scale: As Noted
August 1952
SHEET No. 4 OF 4 SHEETS

NOTE: These details were prepared in the Office of the Bureau of Plans, City & County of Honolulu.