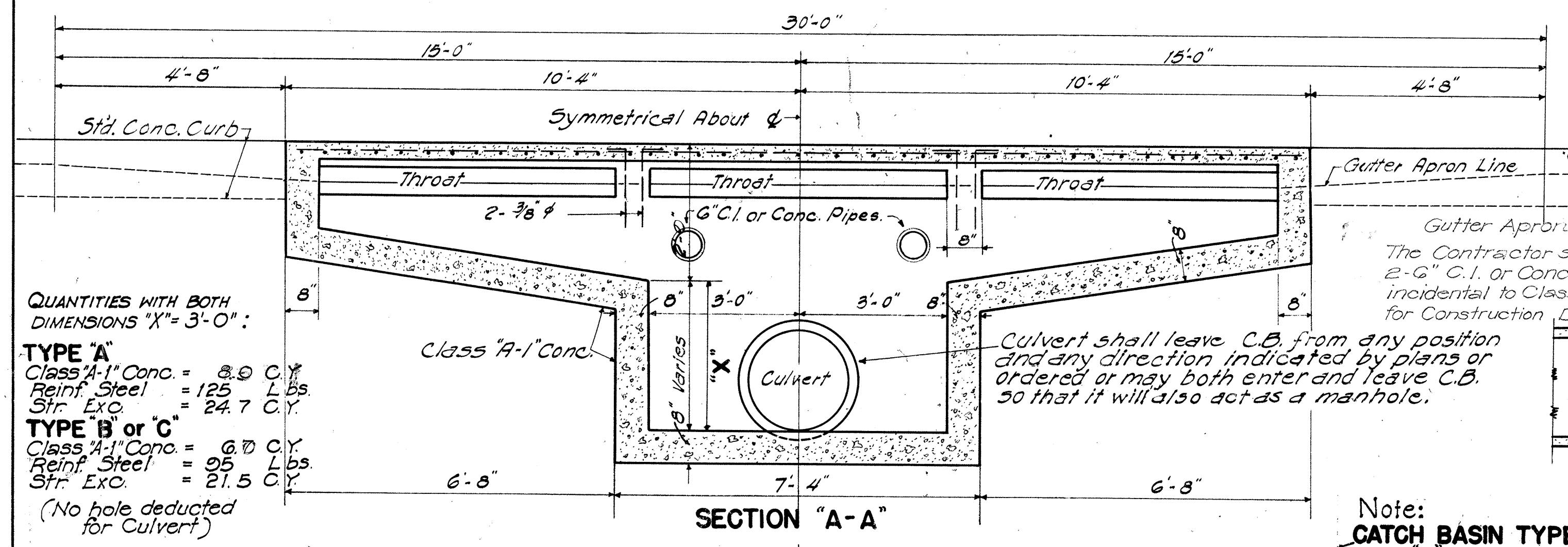




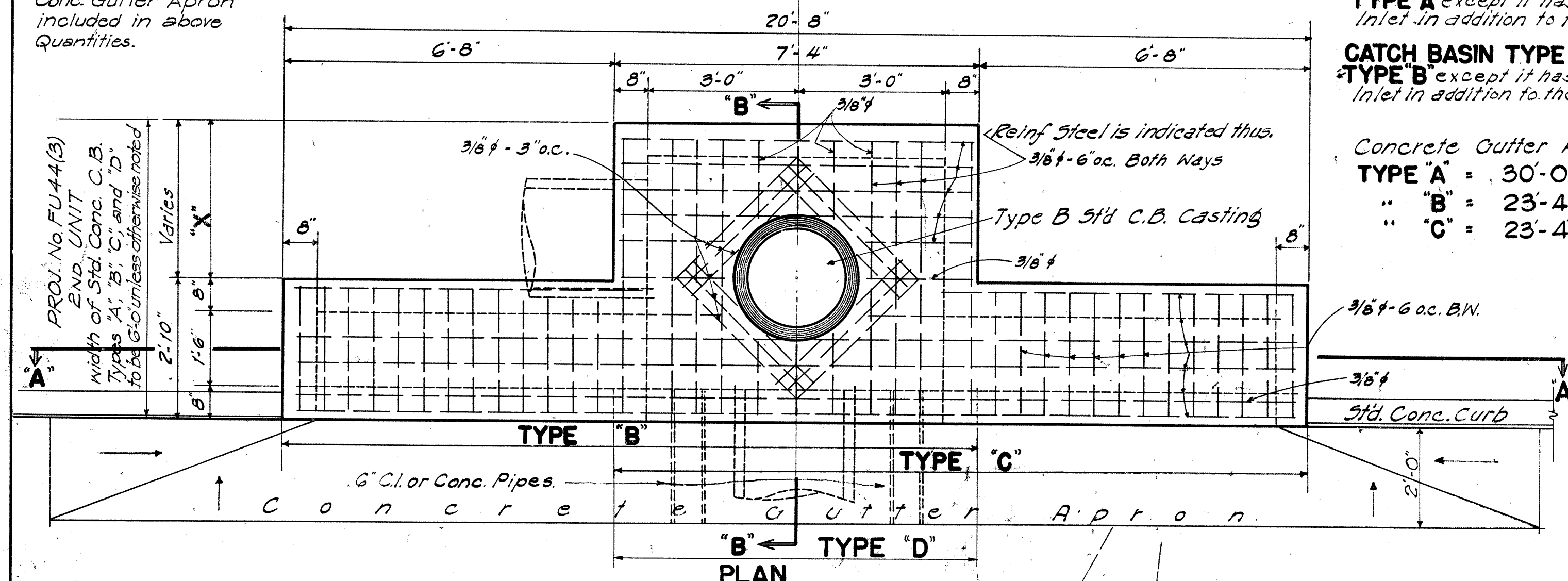
QUANTITIES WITH BOTH DIMENSIONS 'X' = 3'-0":

TYPE 'A'
 Class 'A-1' Conc. = 3.0 C.Y.
 Reinf. Steel = 125 LBS
 Str. Exc. = 24.7 C.Y.

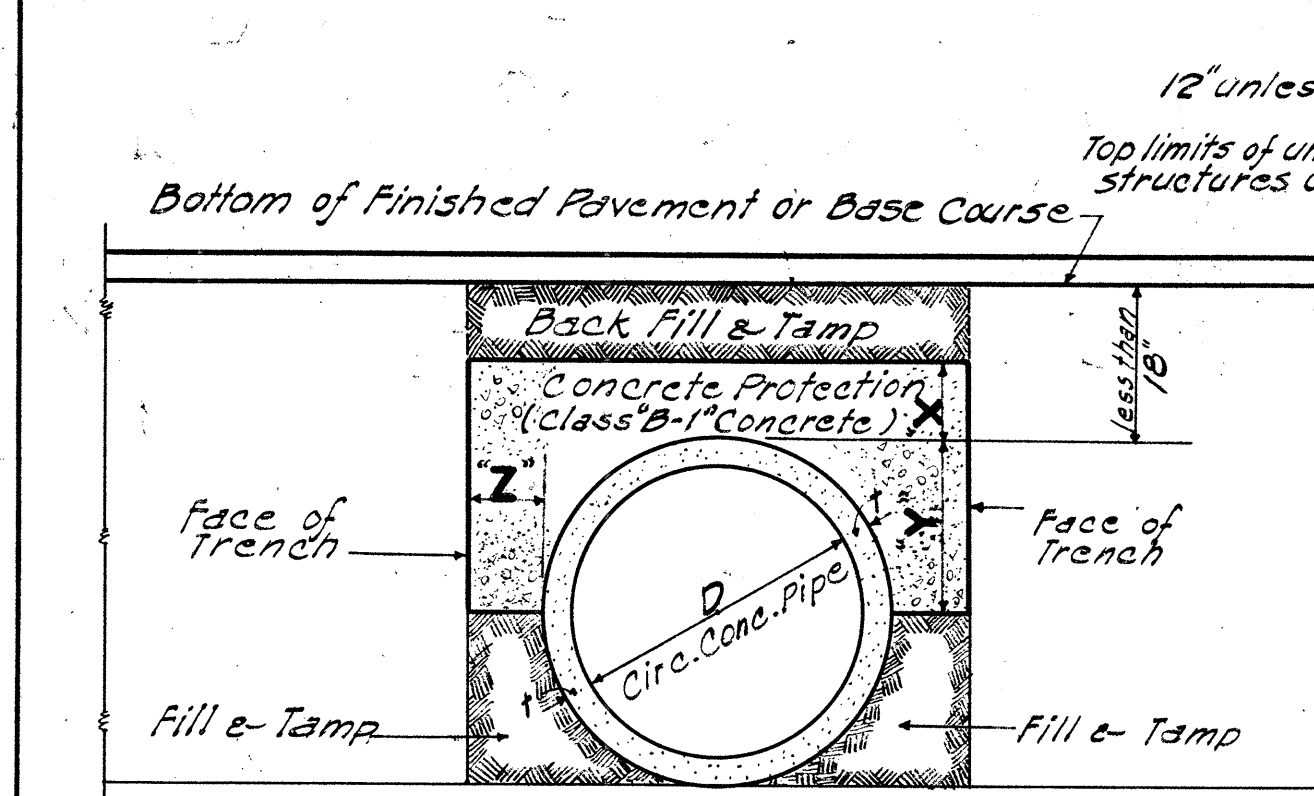
TYPE 'B' or 'C'
 Class 'A-1' Conc. = 6.0 C.Y.
 Reinf. Steel = 95 LBS
 Str. Exc. = 21.5 C.Y.

(No hole deducted for Culvert)

Conc. Gutter Apron included in above quantities.

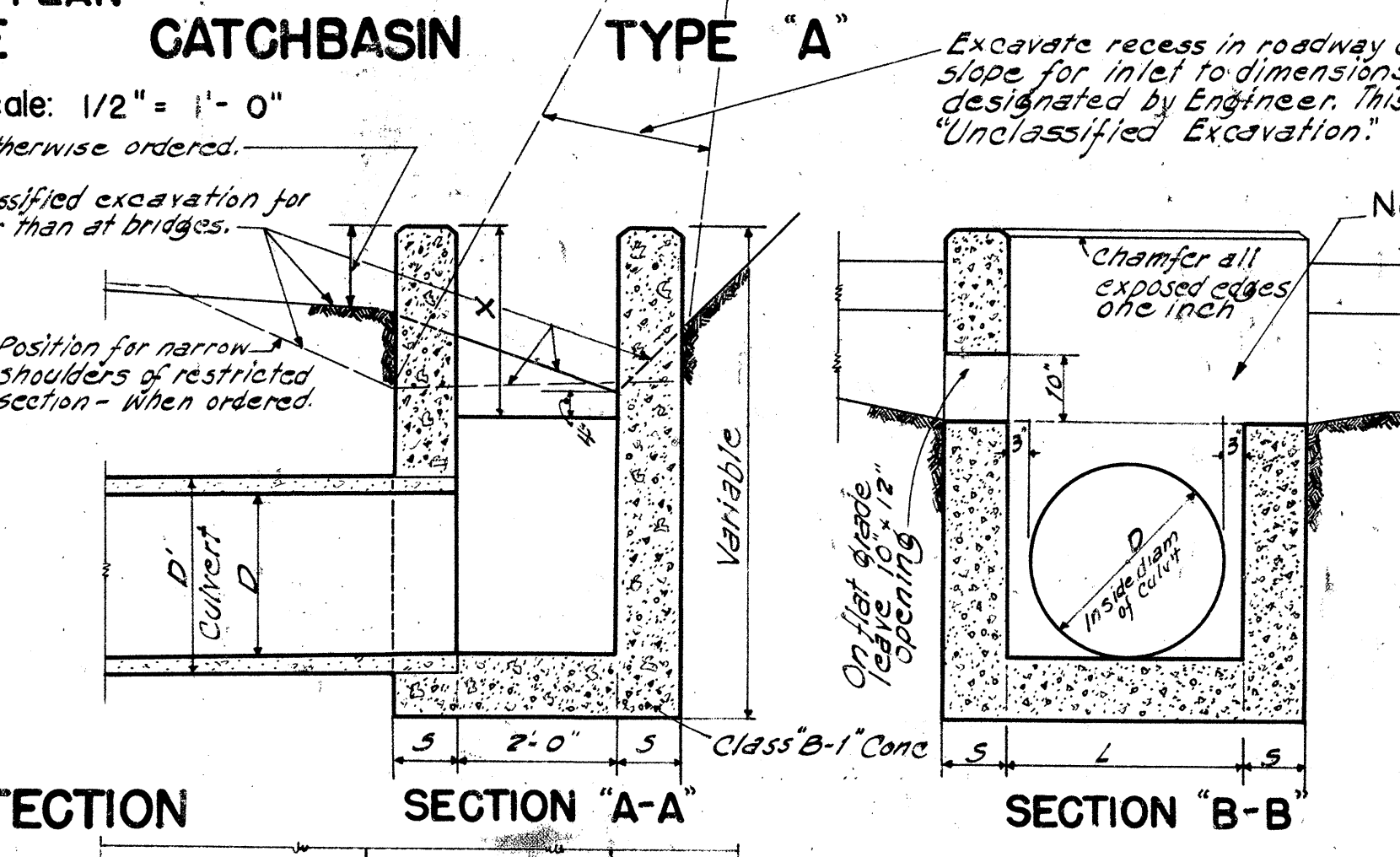


STANDARD CONCRETE CATCHBASIN



TYP. SECT. OF CULVERT WITH CONG. PROTECTION
 (To be used when cover is less than 18")

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		

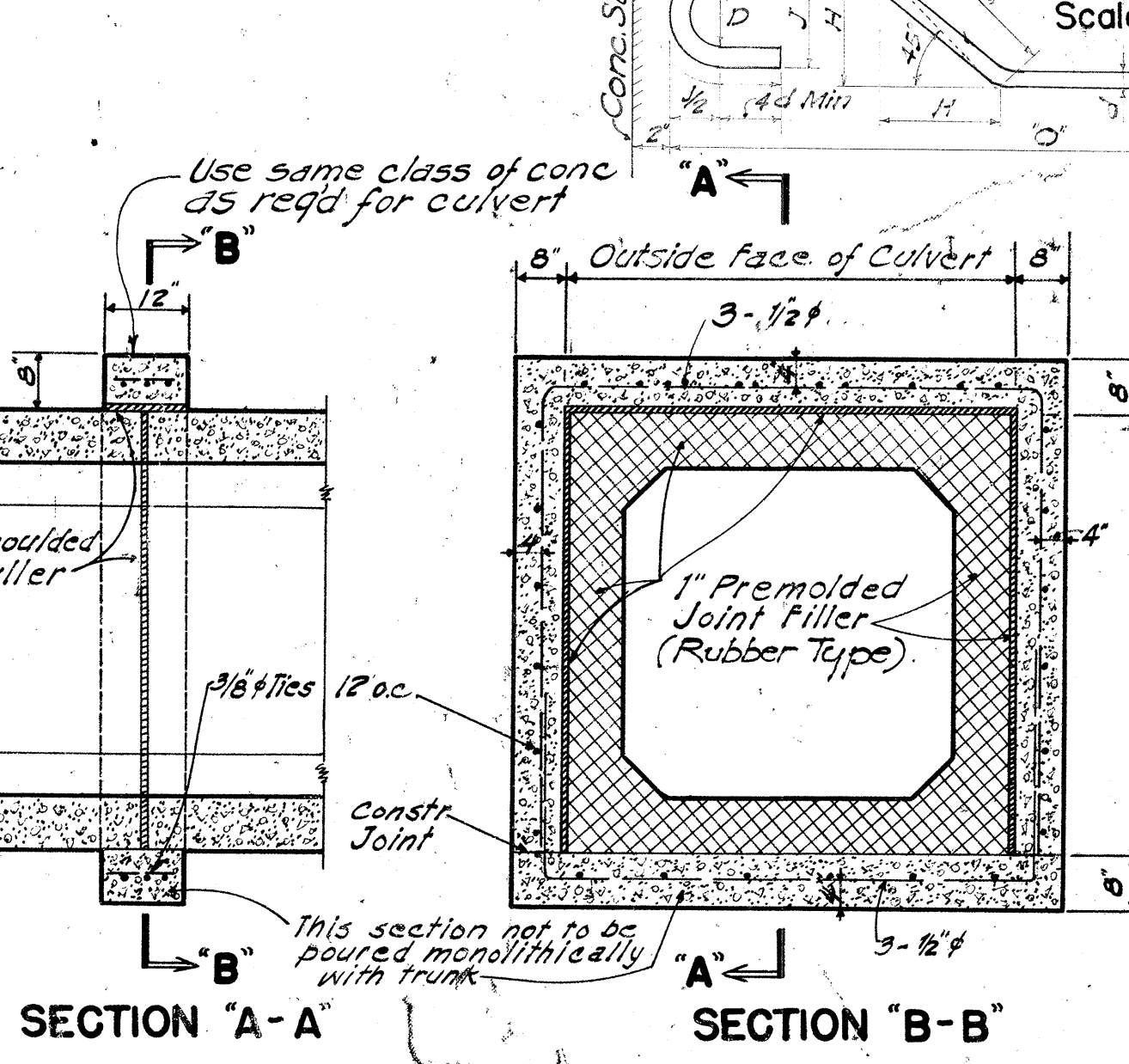
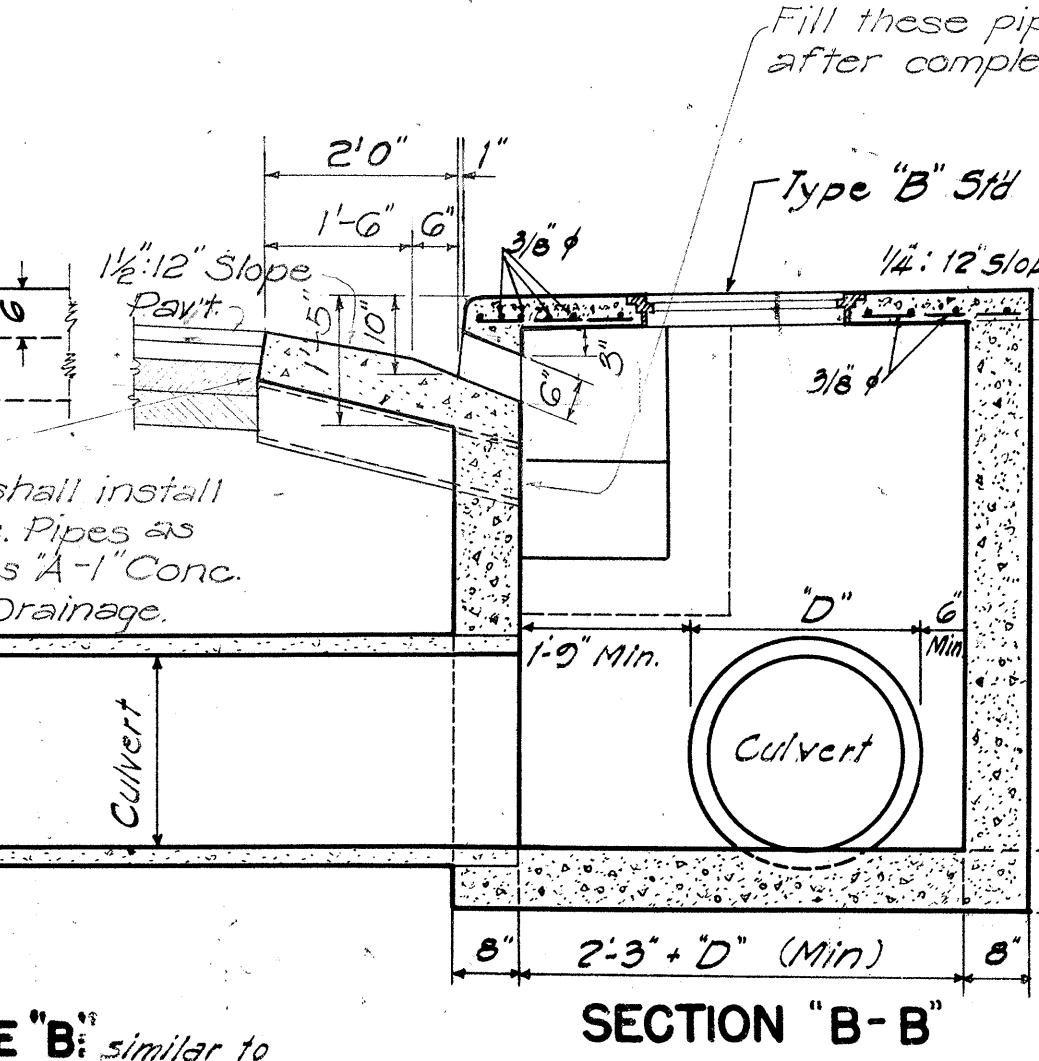


Data Standard Drop Intake					Where Vertical Equals
D	L	H	S	Cu. Yds.	
22"	18"	2'-0"	8"	1.10	4'-6"
24"	24"	2'-6"	8"	1.33	5'-0"
30"	30"	3'-0"	8"	1.79	5'-6"
36"	36"	3'-6"	8"	2.07	6'-0"
42"	42"	4'-0"	10"	2.90	6'-6"
48"	48"	4'-6"	10"	3.27	7'-0"

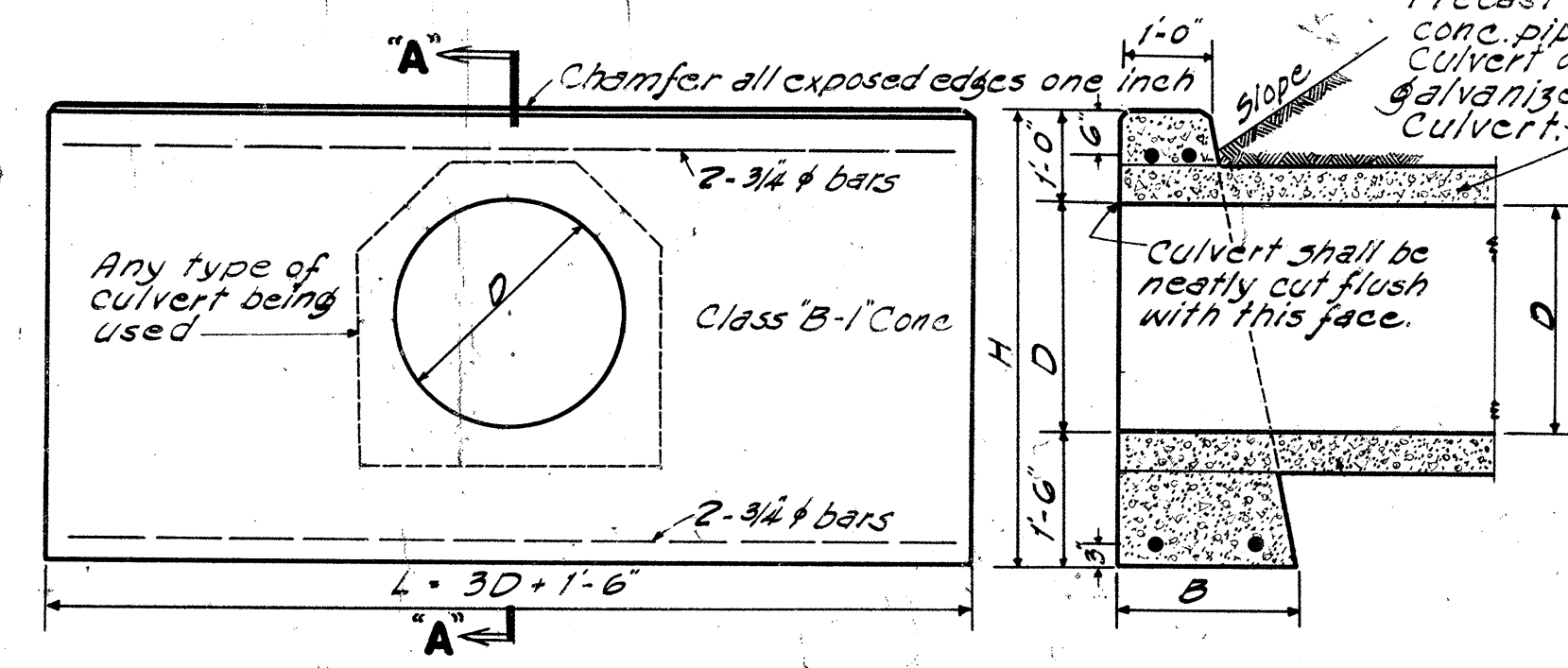
Note: Dimensions 'X' is assumed as 2'-4" in figuring the above quantities.

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

STD. CONG. DROP INTAKE
 Scale: 1/2" = 1'-0"

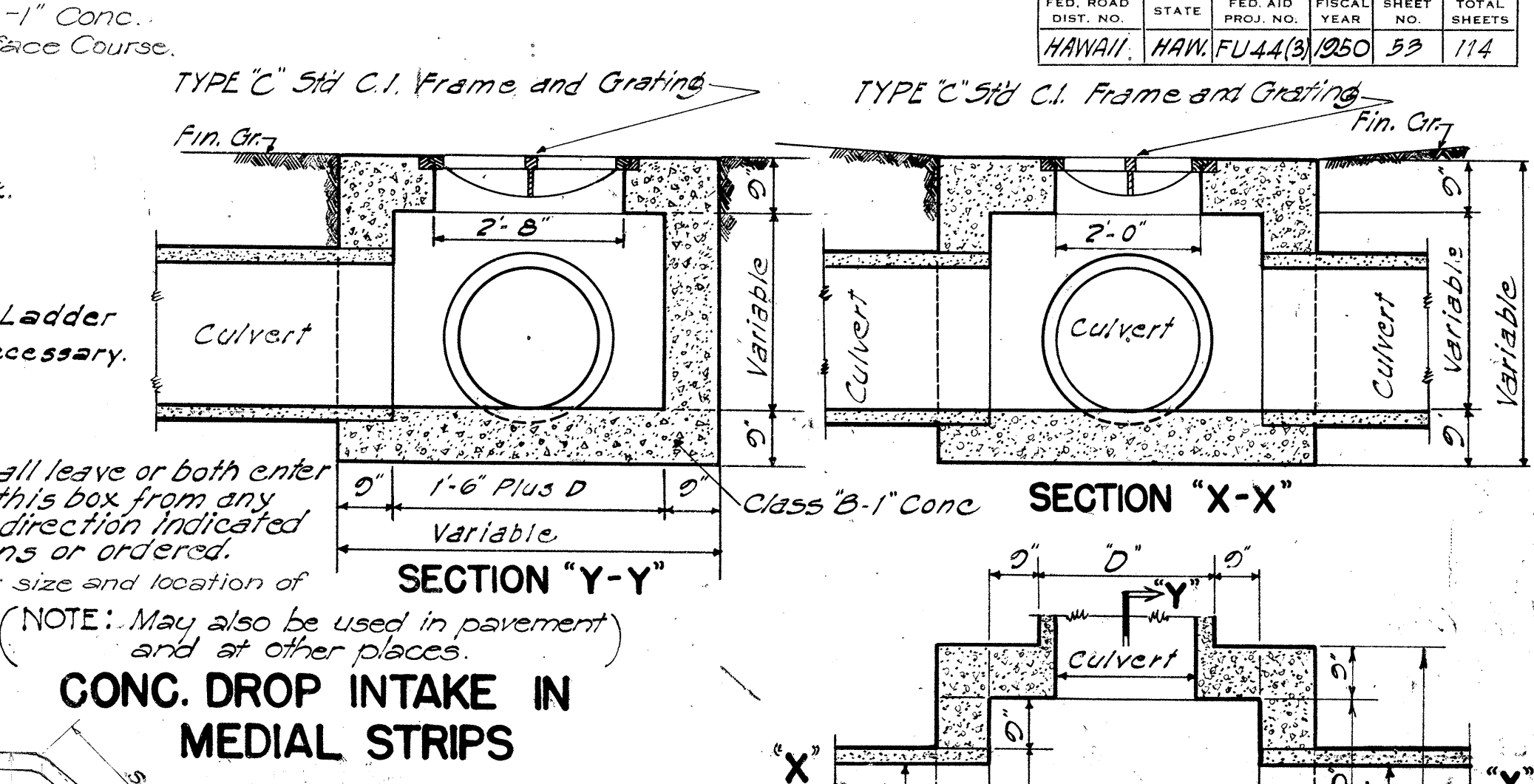


CONC. COLLAR FOR CONG. BOX CULVERT



Cast-in-Place		Data: Standard Concrete Headwall		Steel One Headwall	
Cu. Yds.	D	B	L	H	Conc. one H.W.
0.02	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"	8'-0"	5'-0"	217
2.45	36"	2'-0"	10'-6"	5'-6"	274

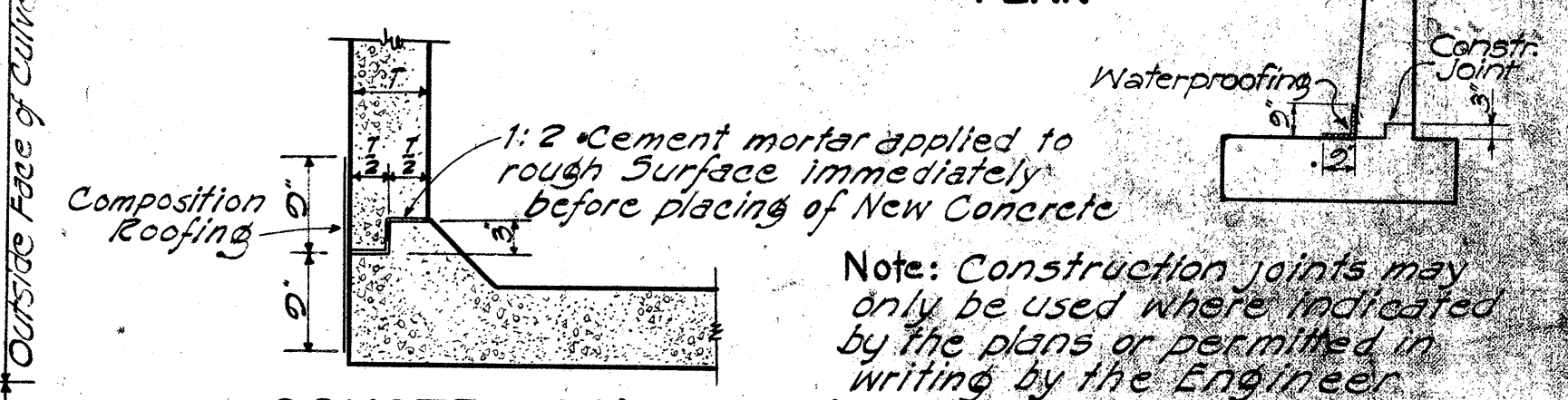
STANDARD CONCRETE HEADWALL
 Scale: 1/2" = 1'-0"



CONC. DROP INTAKE IN MEDIAL STRIPS

MARK	SIZE	D	J	1/2"	E
300	3/4"	2	2 1/2	1 1/2	6
400	1"	2 1/2	3 1/2	1 1/2	8
500	1 1/4"	3 1/2	4 1/2	2 1/2	10
600	1 3/4"	4 1/2	5 1/2	3 1/2	14
700	2"	5 1/2	6 1/2	4 1/2	17
800	2 1/4"	6 1/2	7 1/2	4 1/2	18
900	2 3/4"	7 1/2	8 1/2	4 1/2	18
1000	3"	8 1/2	9 1/2	5 1/2	21
1100	3 1/4"	9 1/2	10 1/2	5 1/2	23

HOOK AND BEND DETAIL



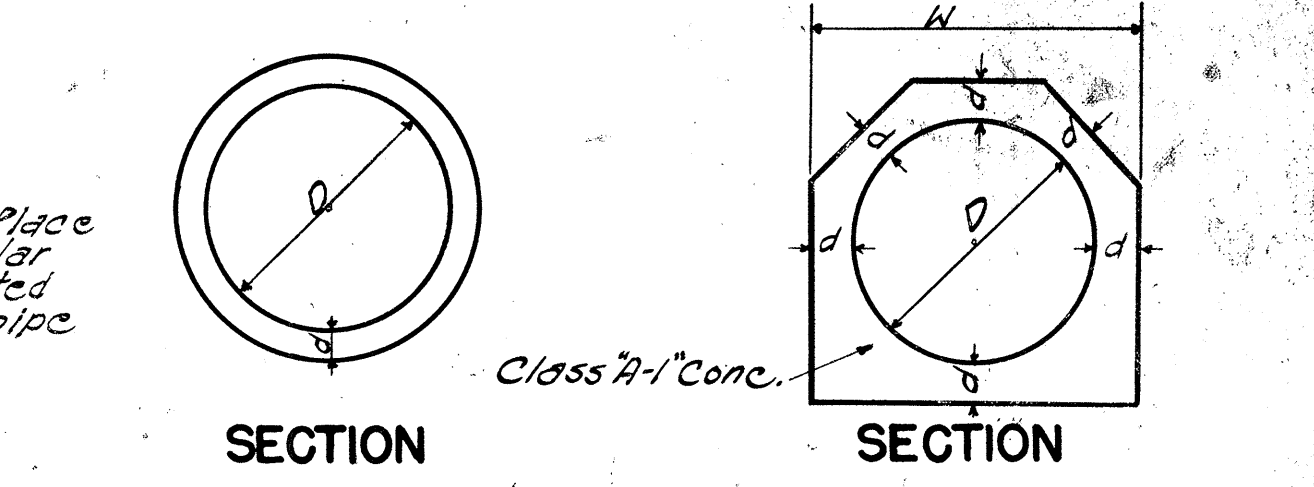
CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING

(1) Map surface either side of joint as required with asphalt 50-100 penetration (A.S.T.M. Desig. 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 as specified under (1)



Data Cast-in-Place Conc. Culvert			
D	d	W	Cu. Yds. 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 CONG. CULVERT

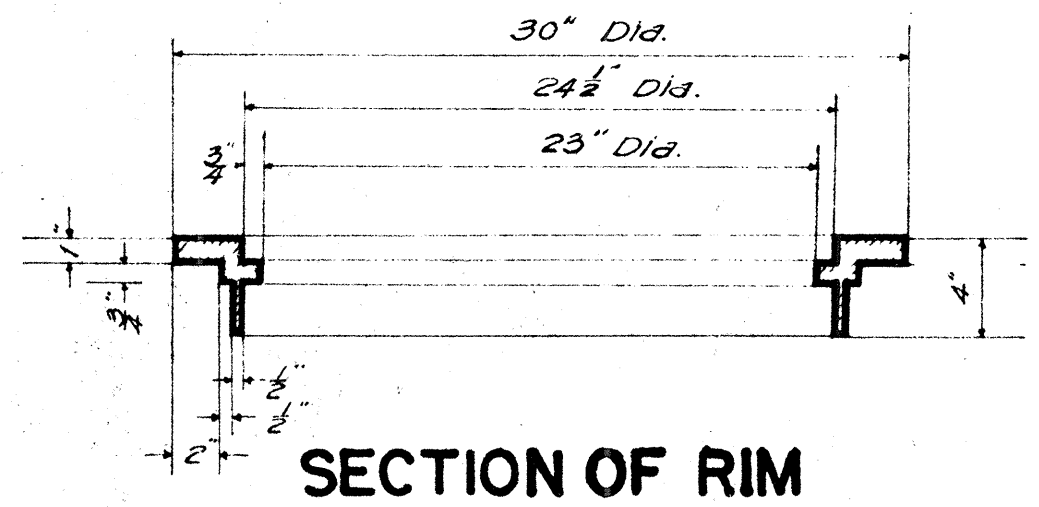
TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII

STANDARD DETAILS

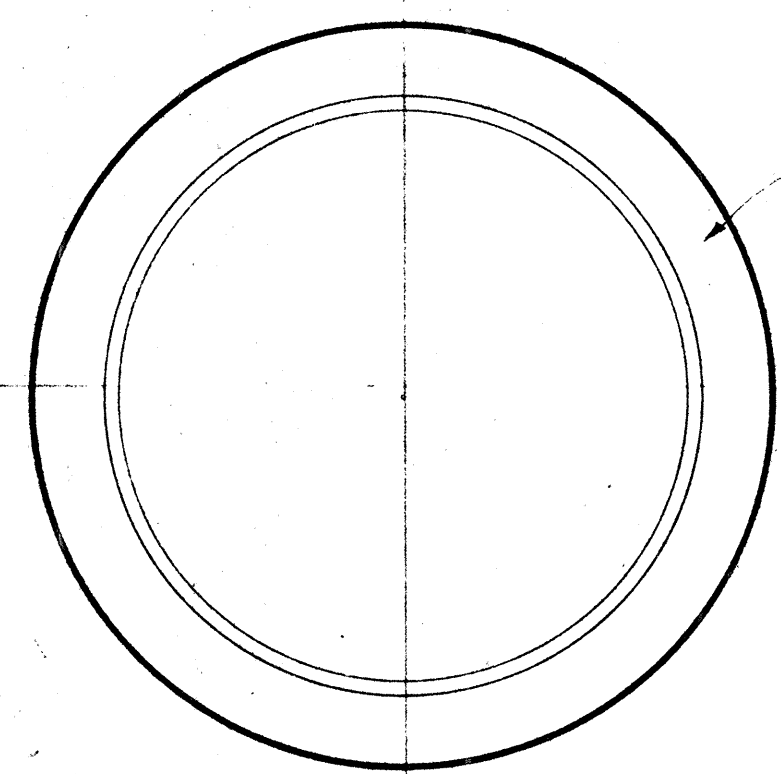
SCALES AS NOTED
 Apr. 15, 1948

APPROVED: *[Signature]*
 Territorial Highway Engineer

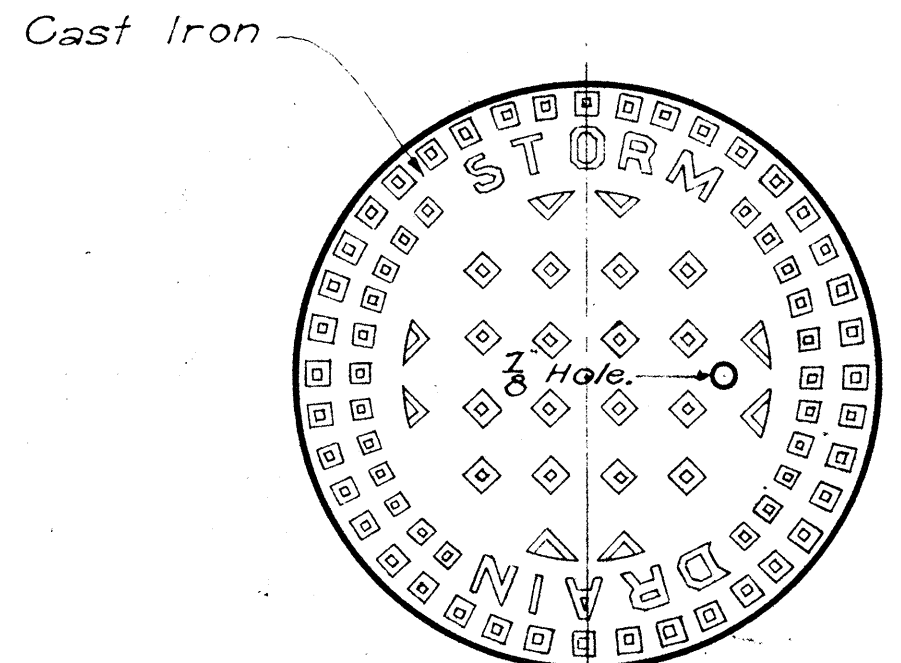
SHEET NO. 53 OF 3 SHEETS



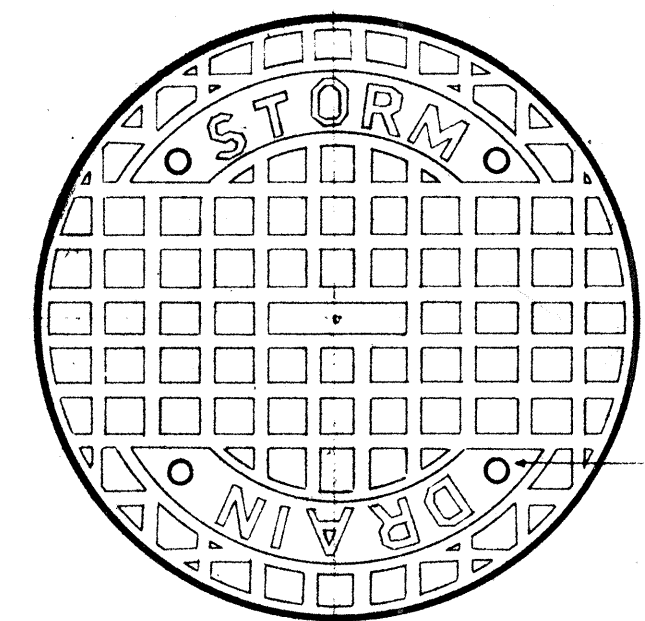
SECTION OF RIM



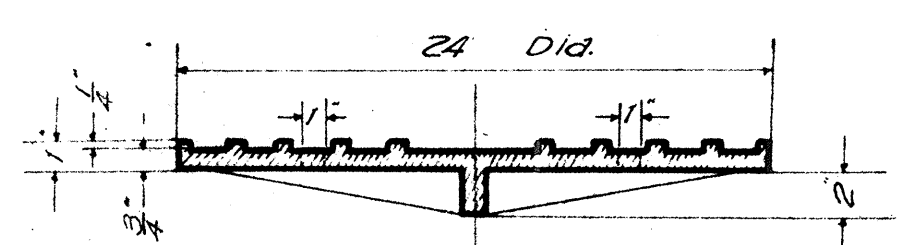
PLAN OF RIM



PATTERN FOR STORM DRAIN MANHOLE COVER

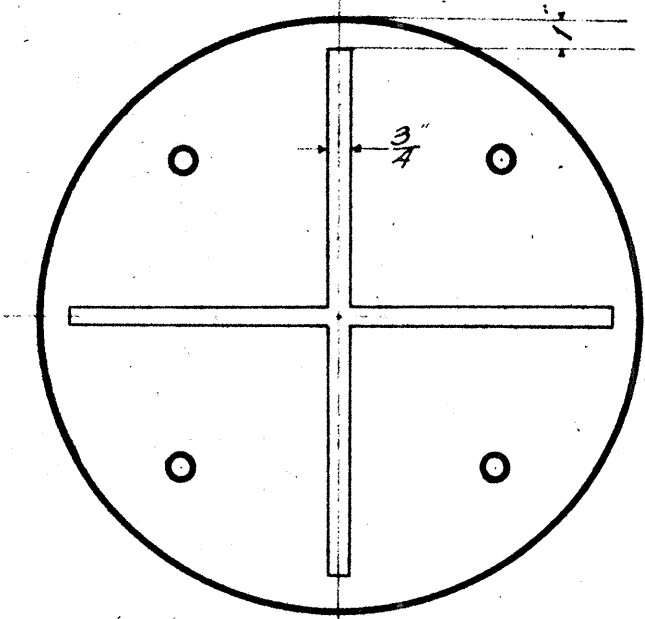


PLAN OF COVER TOP



SECTION OF COVER

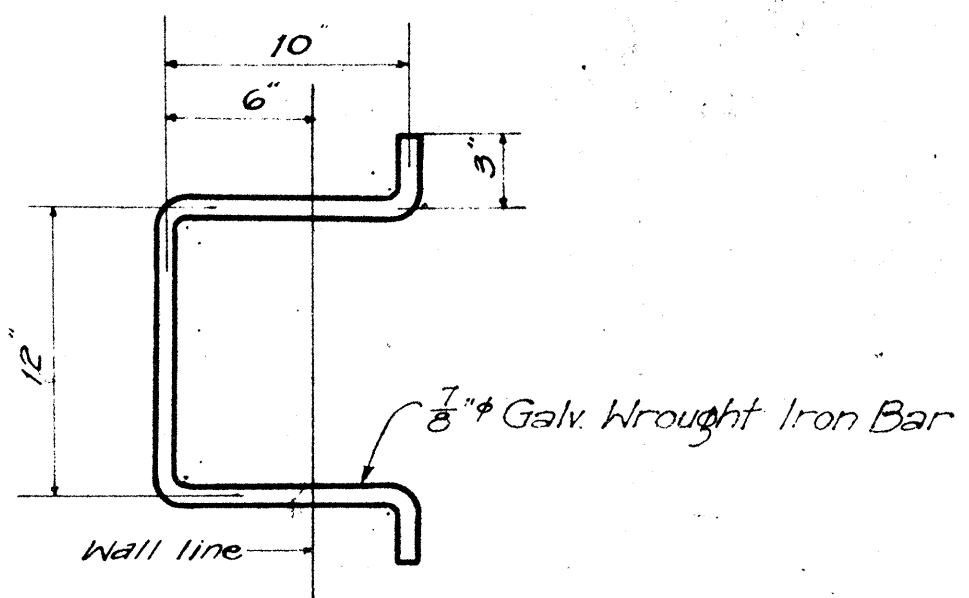
NOTE: A unit includes both Rim and Cover



BOTTOM VIEW OF COVER TYPE "B"

STANDARD CATCH BASIN CASTINGS

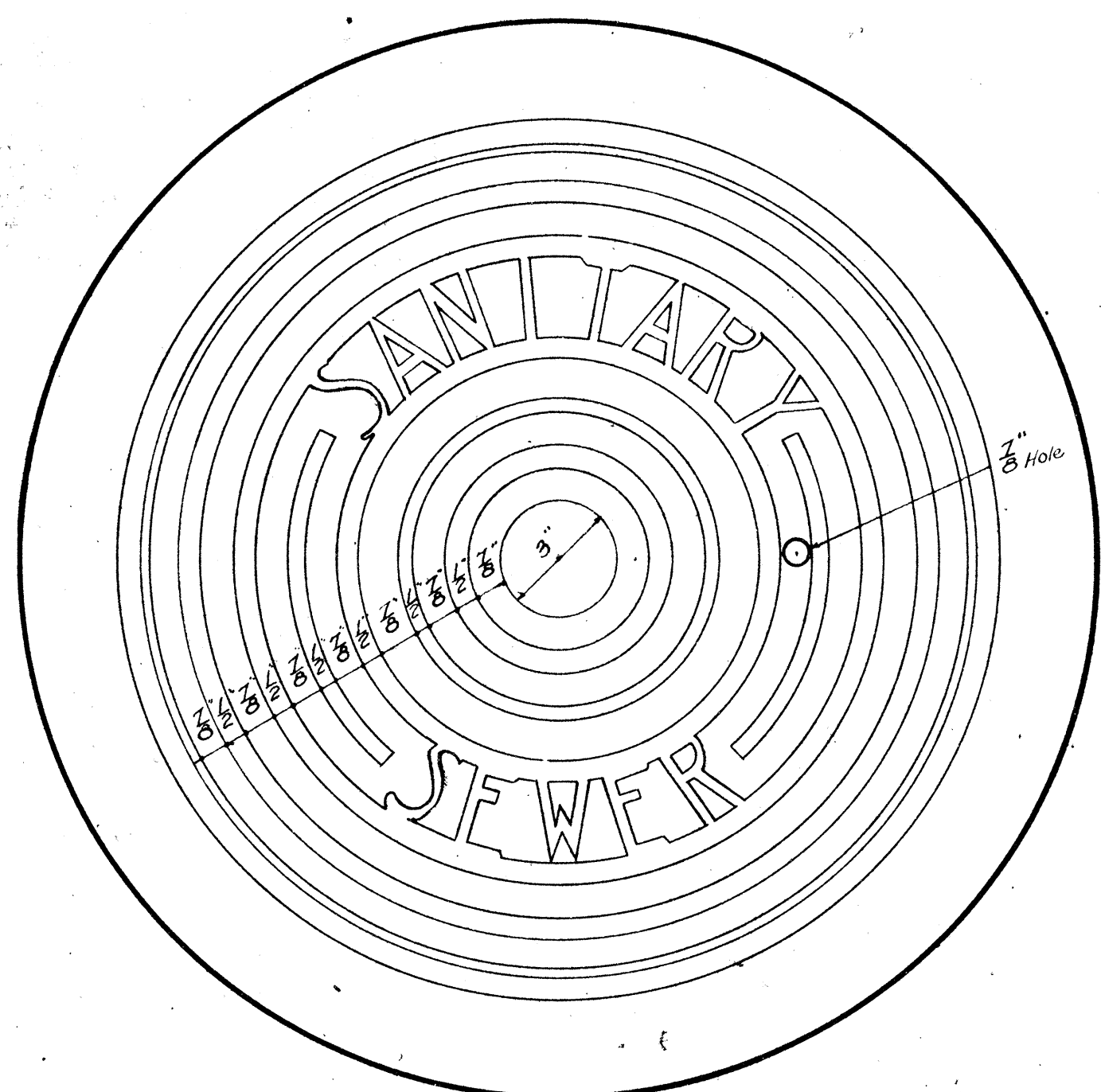
Scale: 1-1/2" = 1'-0"



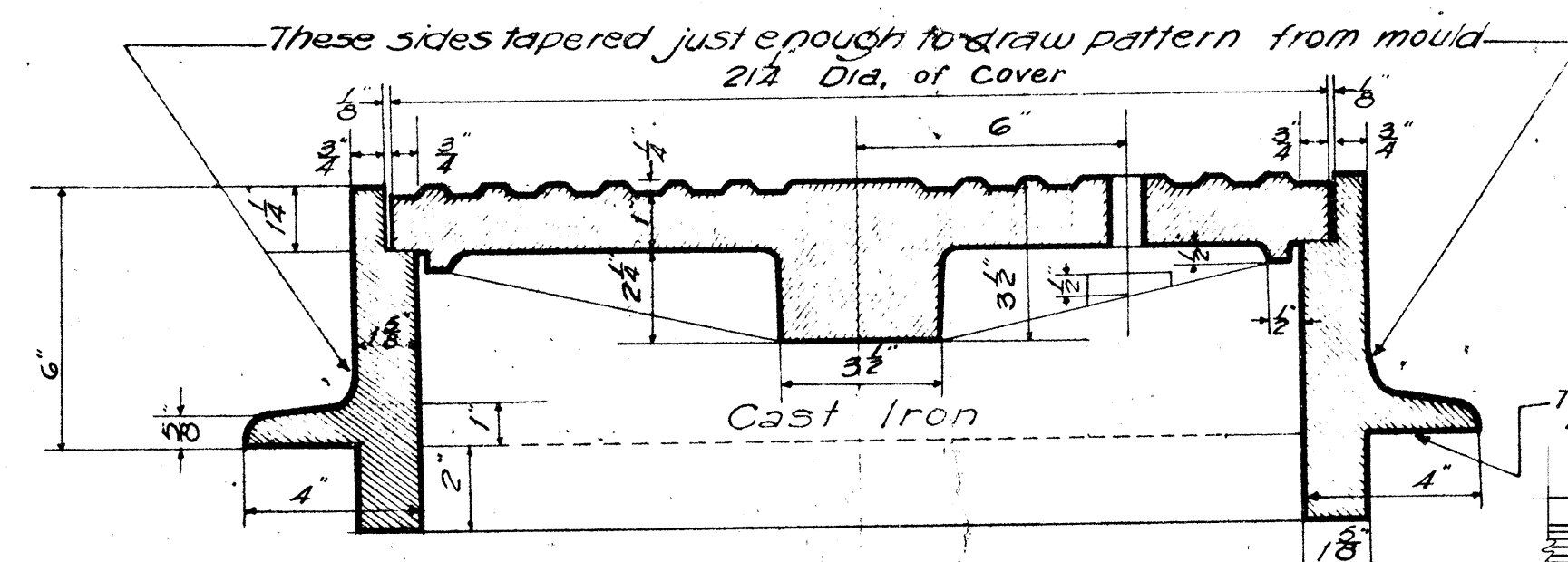
DETAIL OF MANHOLE RUNG

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

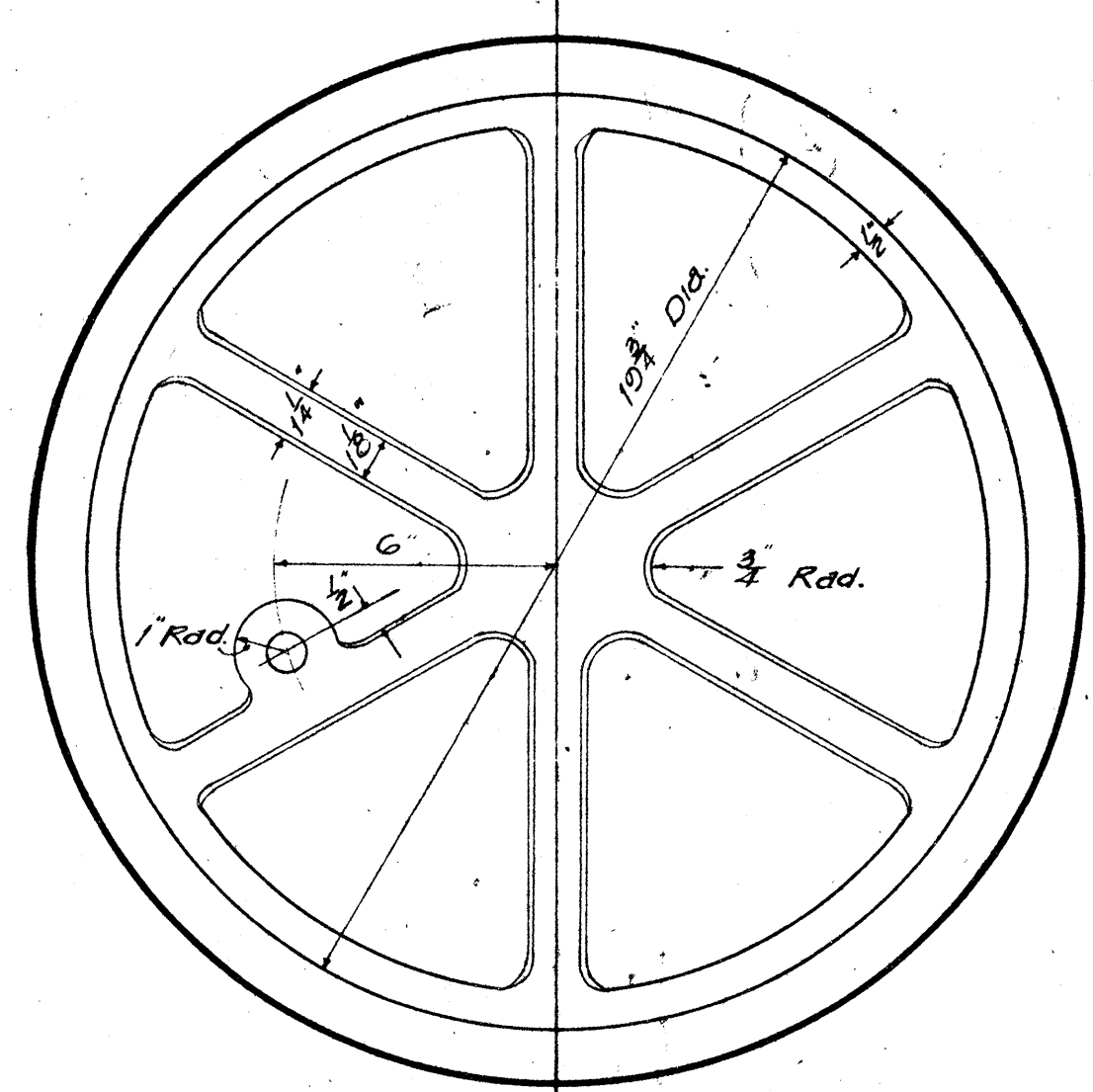
NOTE: The pattern for water manhole covers shall be the same as for sanitary sewer except that the word "Water" shall be substituted for "Sanitary Sewer."



PATTERN FOR SEWER MANHOLE COVER

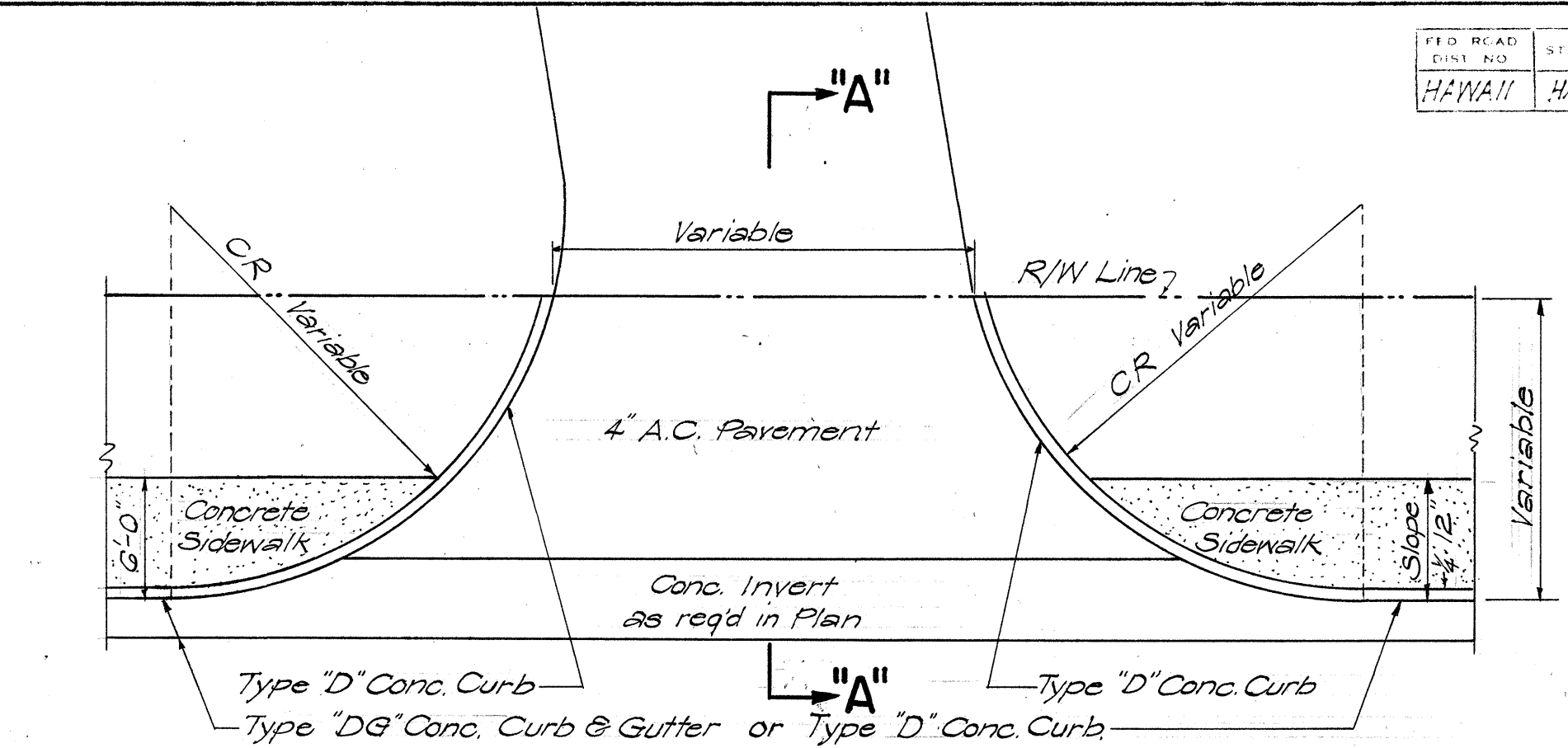


NOTE: A unit includes both Frame and Cover

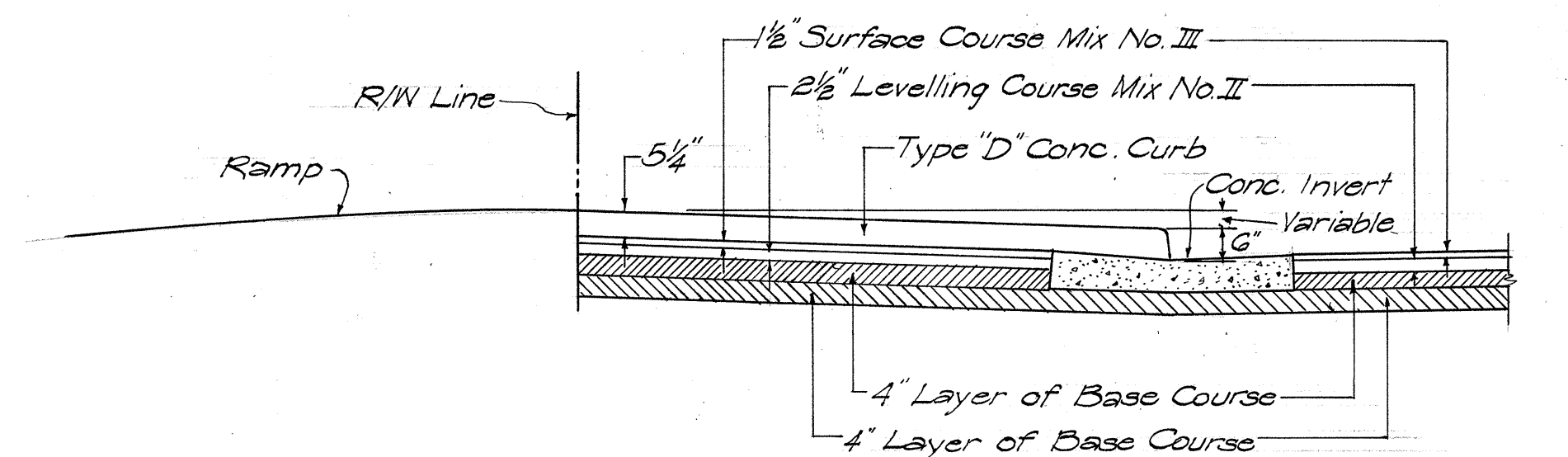


BOTTOM VIEW OF COVER TYPE "A" STANDARD MANHOLE CASTINGS

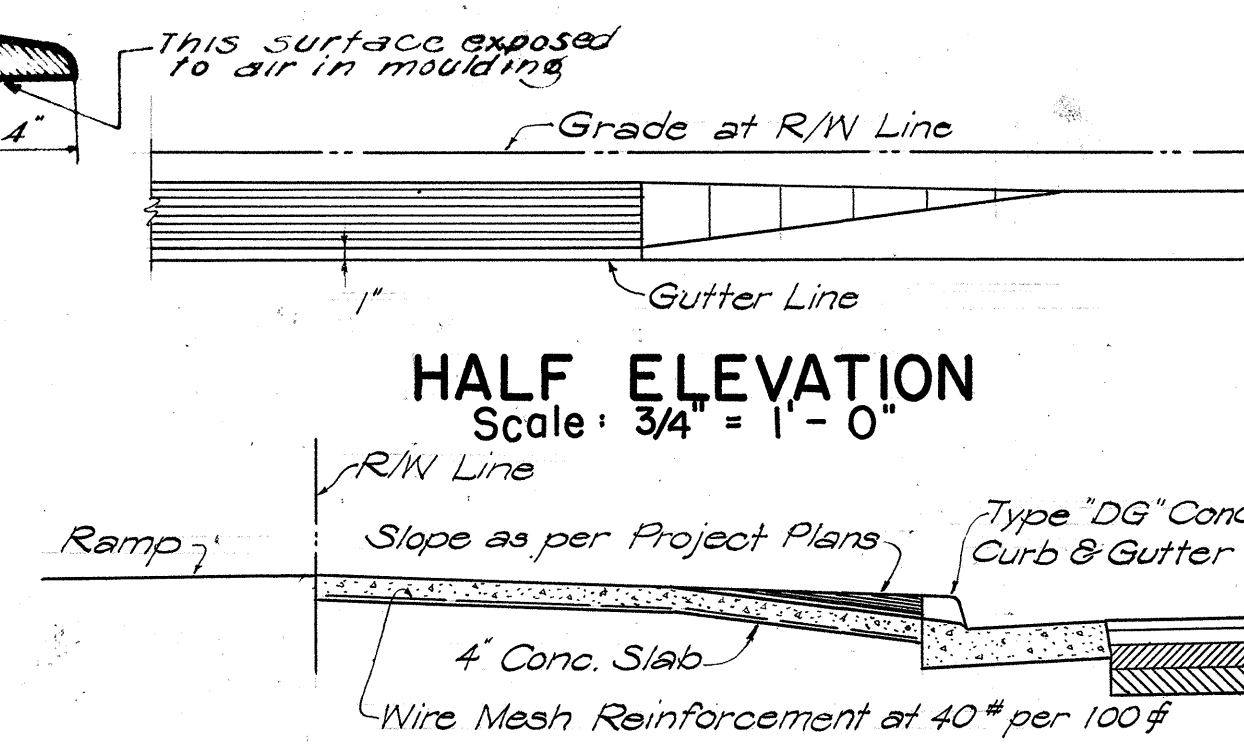
Scale: 3" = 1'-0"



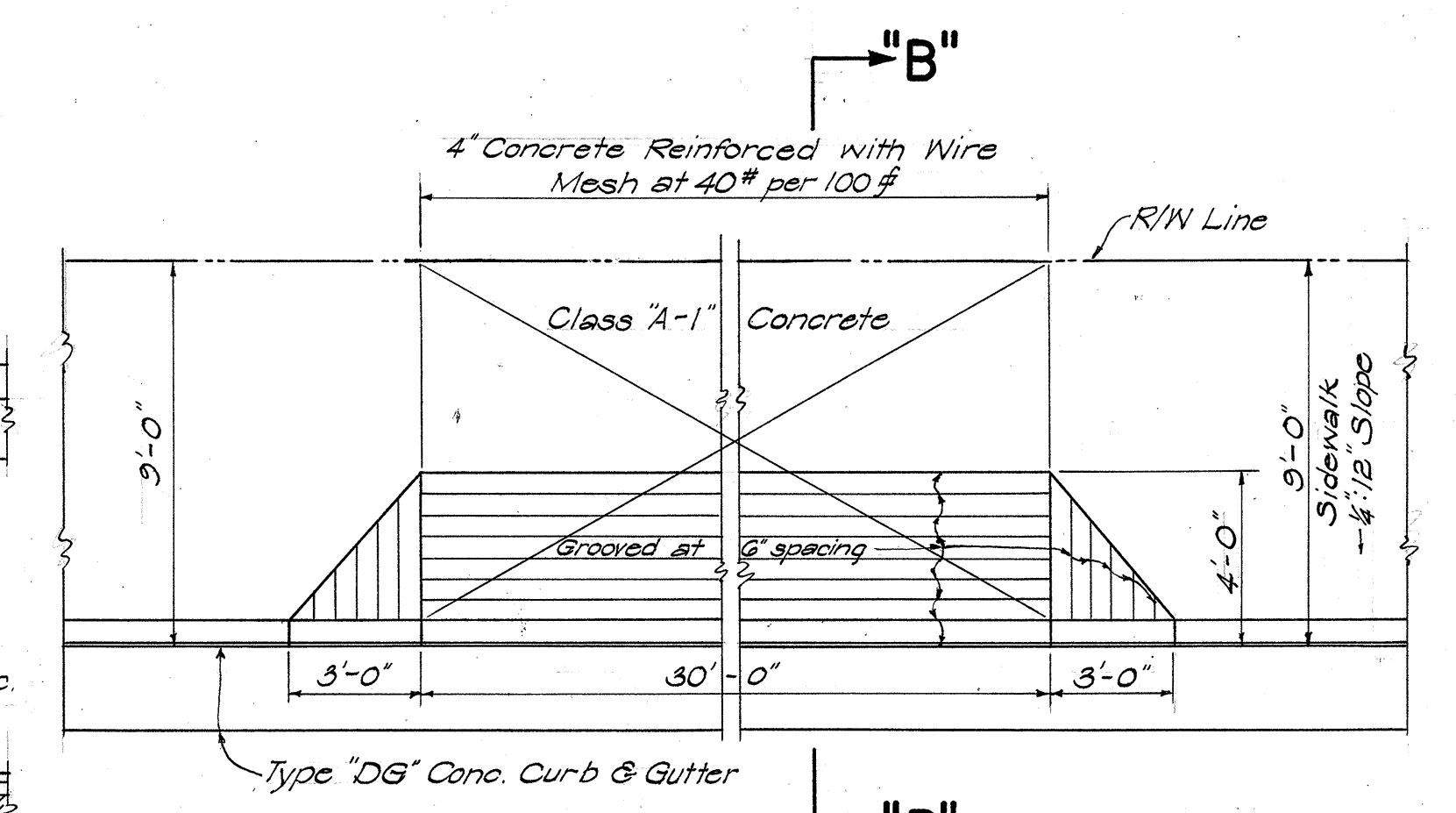
PLAN Scale: 3/8" = 1'-0"



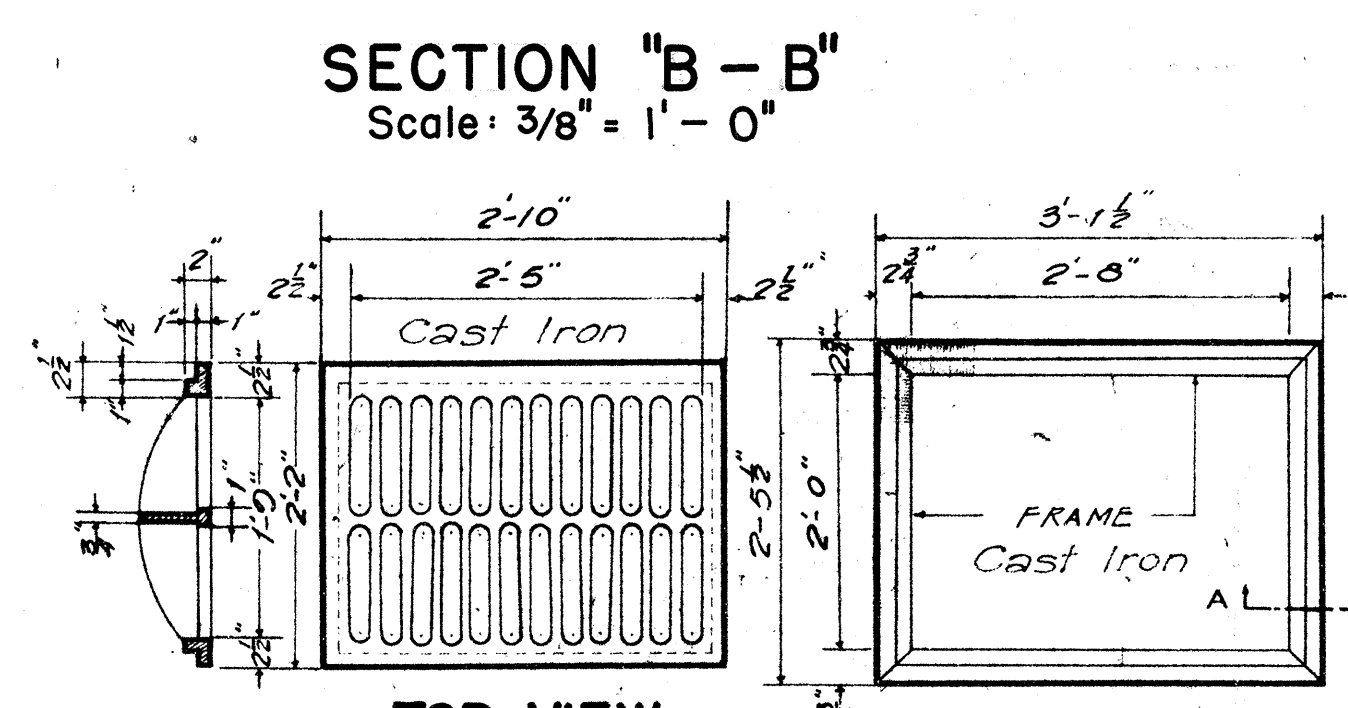
SECTION "A-A" TYPICAL DETAIL OF ACCESS DRIVEWAY Scale: 3/8" = 1'-0"



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



PLAN DETAILS OF DROPPED DRIVEWAY Scale: 1/4" = 1'-0"



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

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

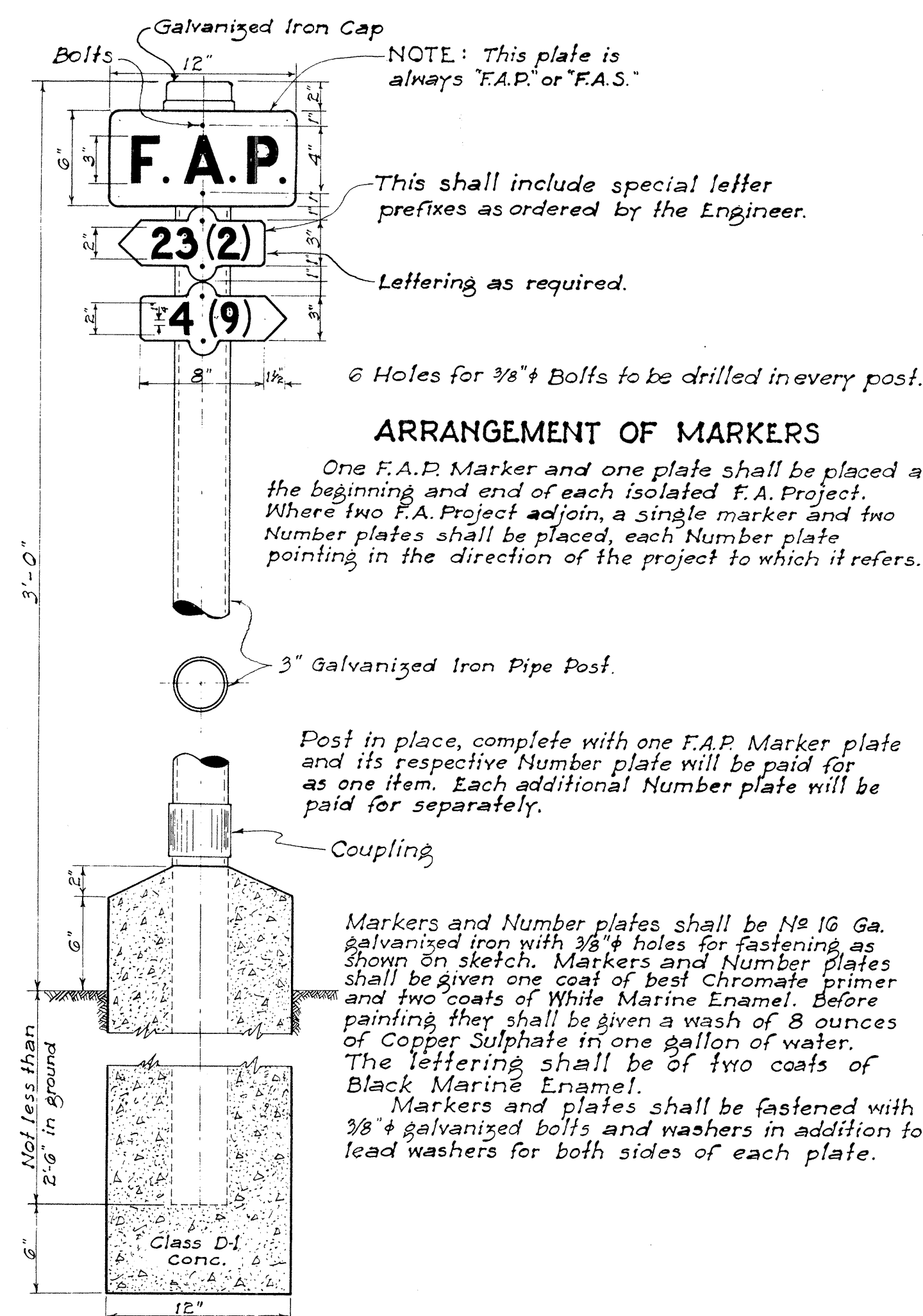
STANDARD DETAILS

SCALES AS NOTED

APPROVED: *[Signature]* Apr 15, 1948

Territorial Highway Engineer

SHEET No 2 OF 3 SHEETS



ARRANGEMENT OF MARKERS

One F.A.P. Marker and one plate shall be placed at the beginning and end of each isolated F.A. Project. Where two F.A. Projects adjoin, a single marker and two Number plates shall be placed, each Number plate pointing in the direction of the project to which it refers.

3" Galvanized Iron Pipe Post.

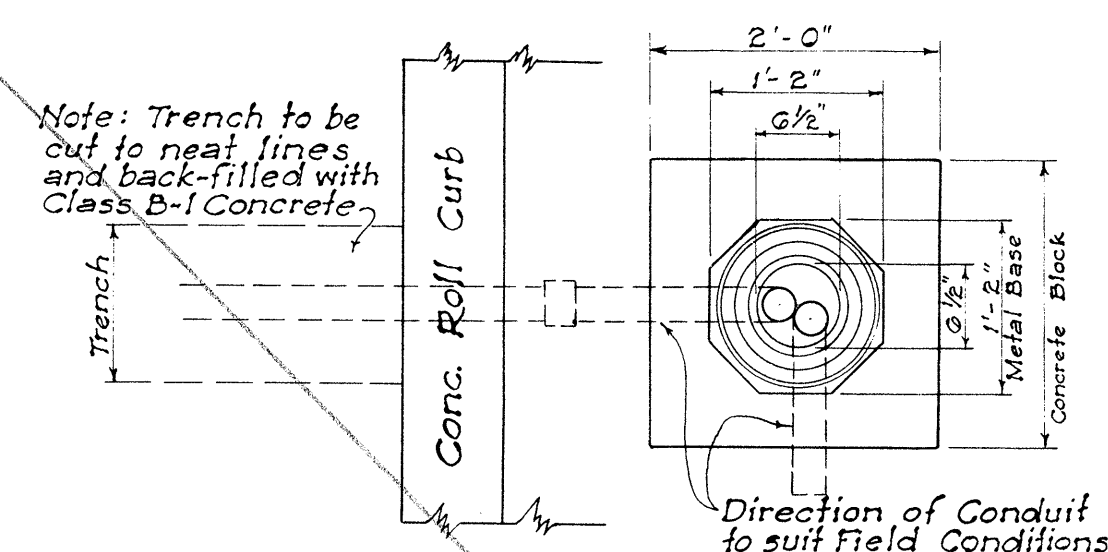
Post in place, complete with one F.A.P. Marker plate and its respective Number plate will be paid for as one item. Each additional Number plate will be paid for separately.

Coupling

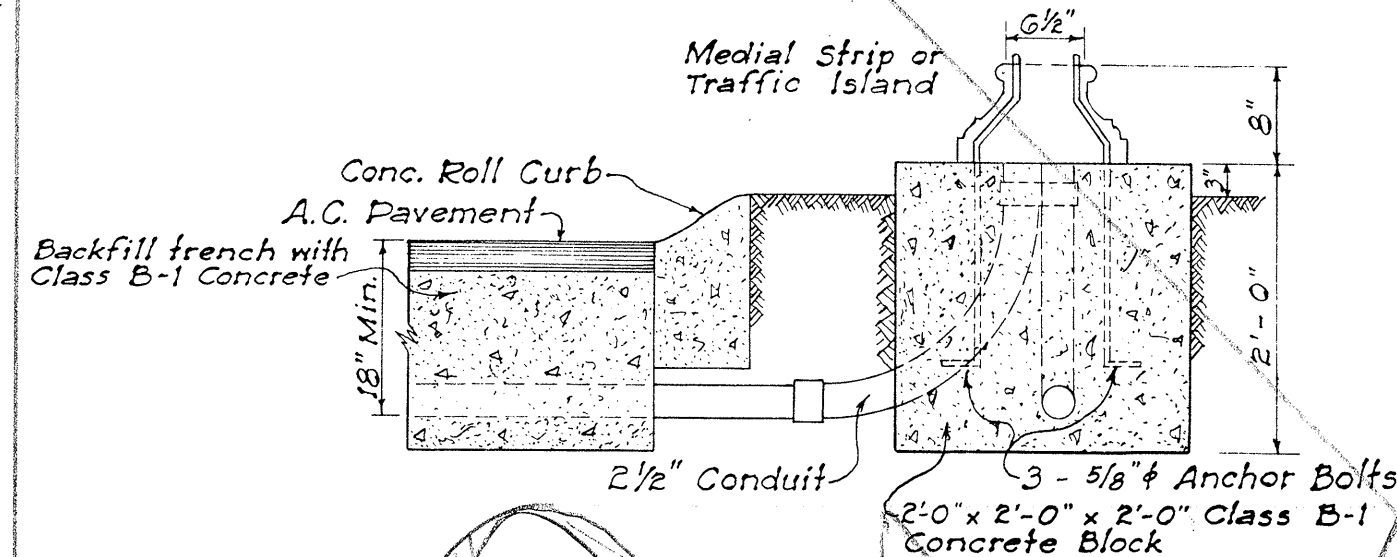
Markers and Number plates shall be No. 16 Ga. Galvanized iron with 3/8 inch holes for fastening as shown on sketch. Markers and Number plates shall be given one coat of best Chromate primer and two coats of White Marine Enamel. Before painting they shall be given a wash of 8 ounces of Copper Sulphate in one gallon of water. The lettering shall be of two coats of Black Marine Enamel.

Markers and plates shall be fastened with 3/8 inch galvanized bolts and washers in addition to lead washers for both sides of each plate.

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

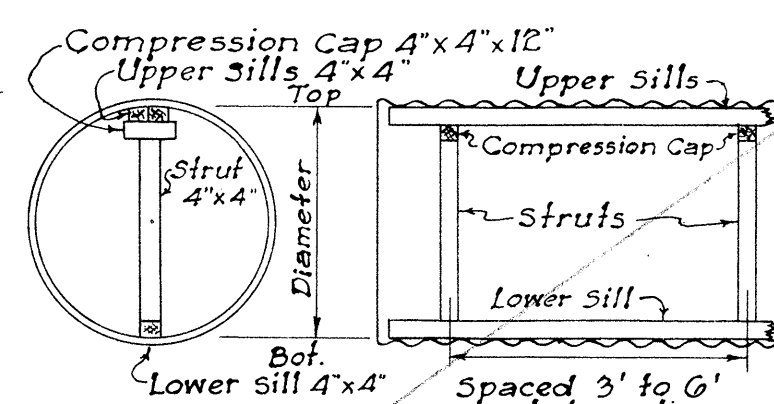


PLAN



SECTION

DETAIL OF BASE FOR TRAFFIC STANDARD AND DISPATCHER PEDESTAL



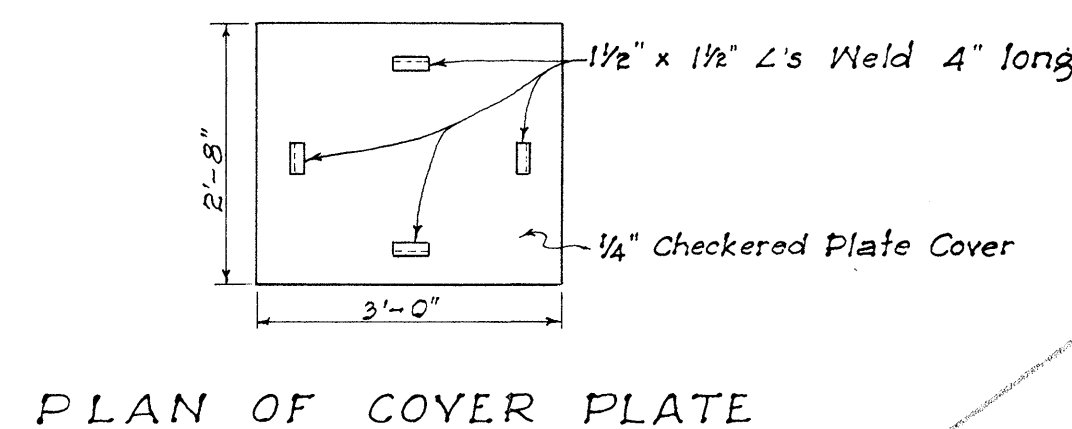
END VIEW

LONGITUDINAL SECTION

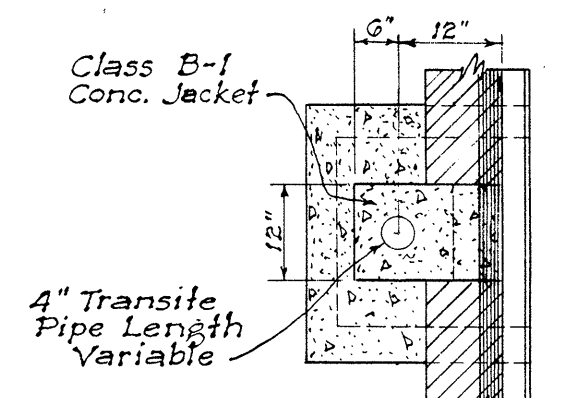
STRUTTING DIAGRAM & TABLE FOR CORRUGATED METAL PIPE CULVERT

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	G	G	G	6	4	
60	51	G	G	G	6	4	
66	57 1/4	G	G	G	6	4	
72	63 3/8	G	G	G	5	3.5	
78	69 7/8	G	G	G	4.5	3.5	
84	76 1/4	G	G	G	4	3	

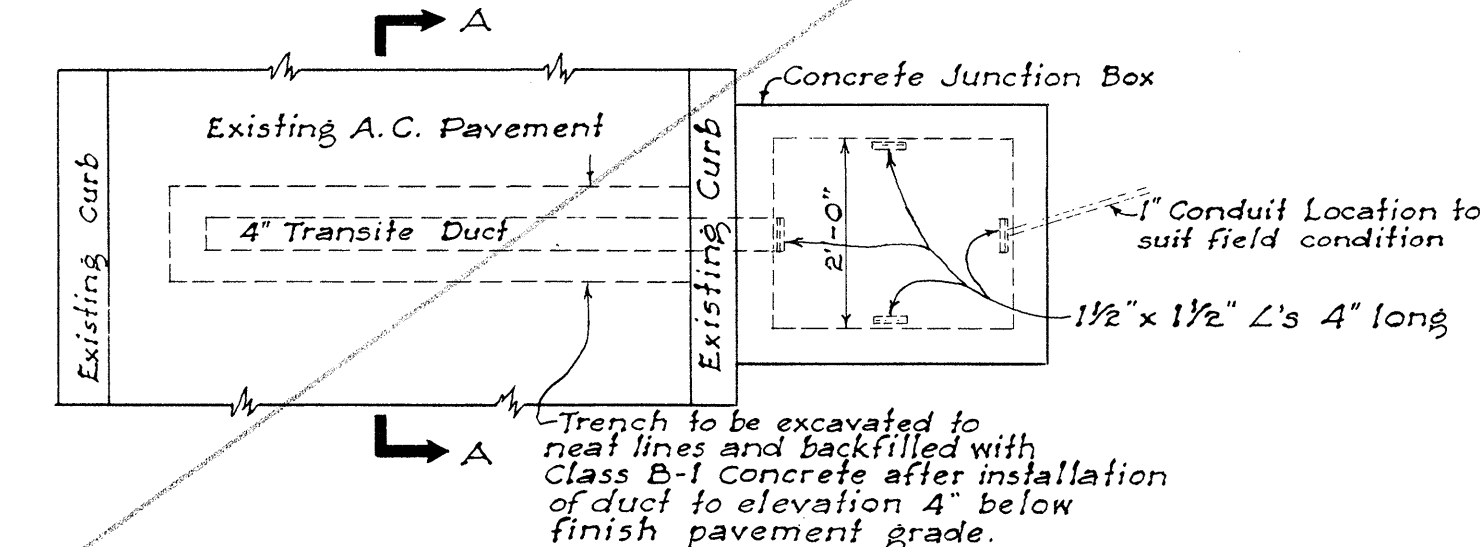
NOTE: Length of Struts are based on 4x4 inch timbers which is the minimum size recommended. If larger sills or compression caps are used, length of struts should be changed accordingly.



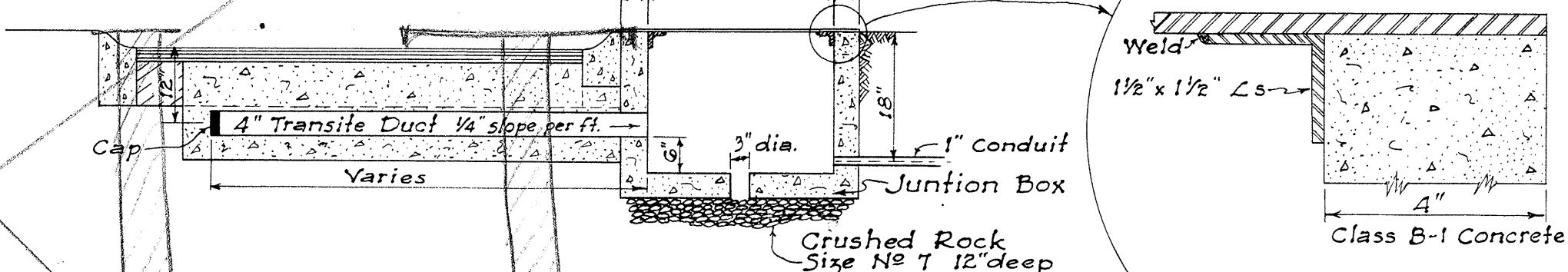
PLAN OF COVER PLATE



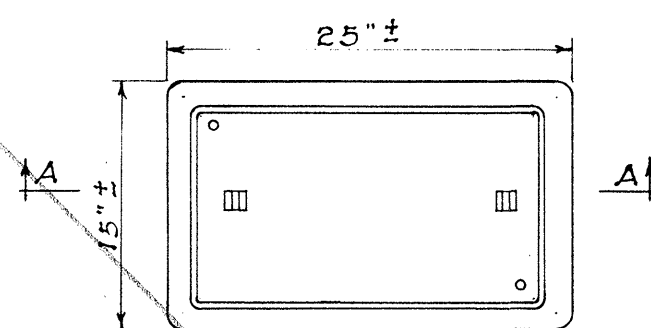
SECTION 'A-A'



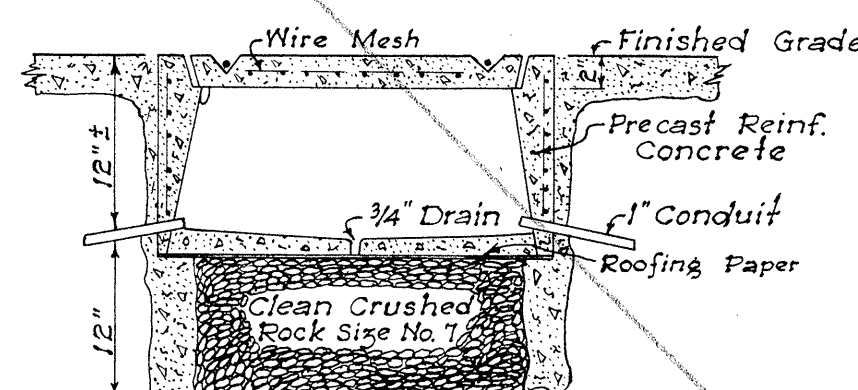
PLAN



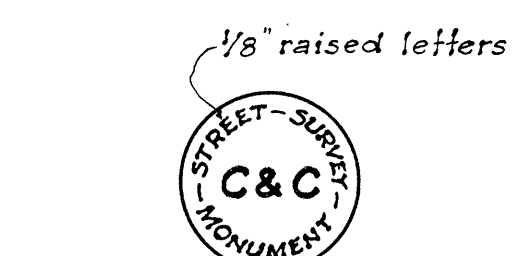
TYPICAL ROAD SECTION SHOWING TRAFFIC DETECTOR JUNCTION BOX AND DUCT



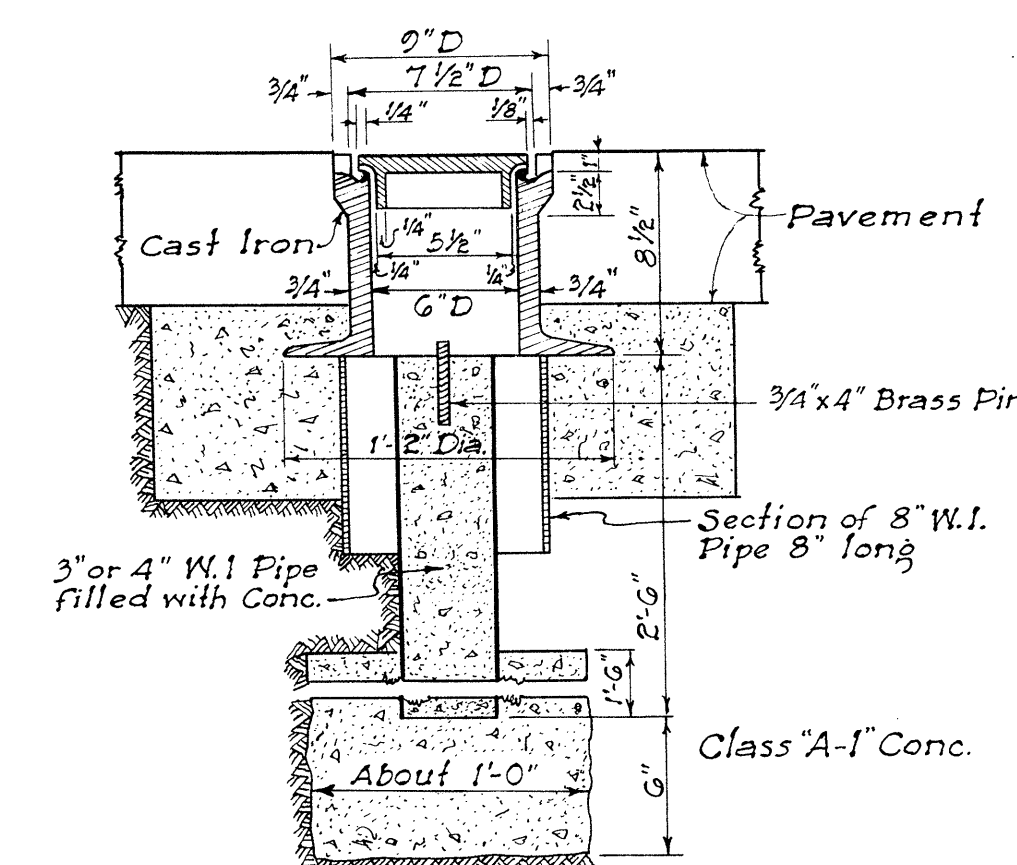
PLAN



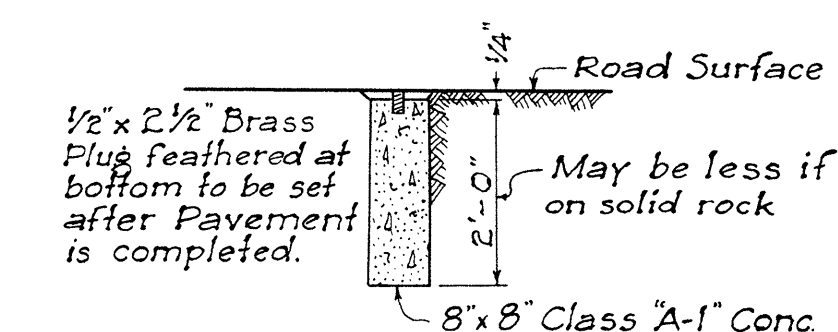
SECTION A-A
DETAIL OF PULL BOX
Scale: 1" = 1'-0"



PLAN OF TOP

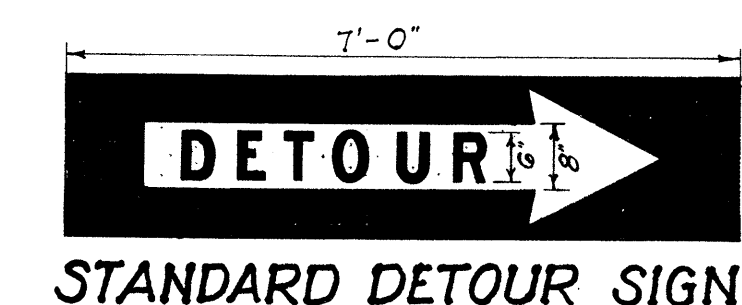


STANDARD C&C STREET SURVEY MONUMENT

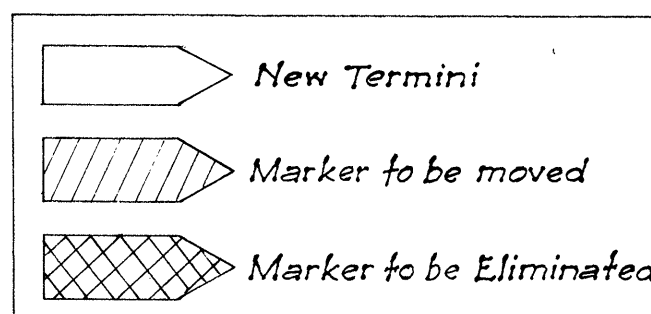
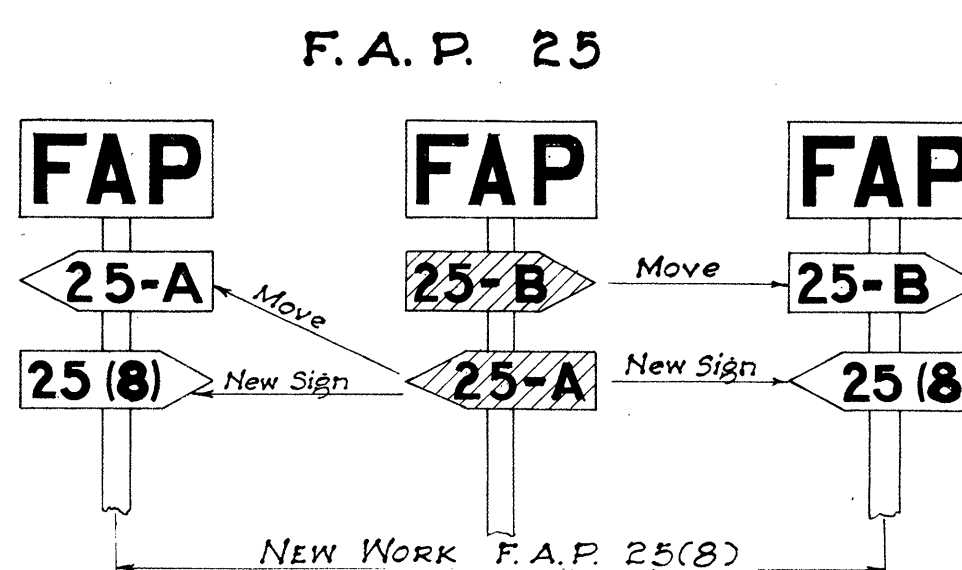
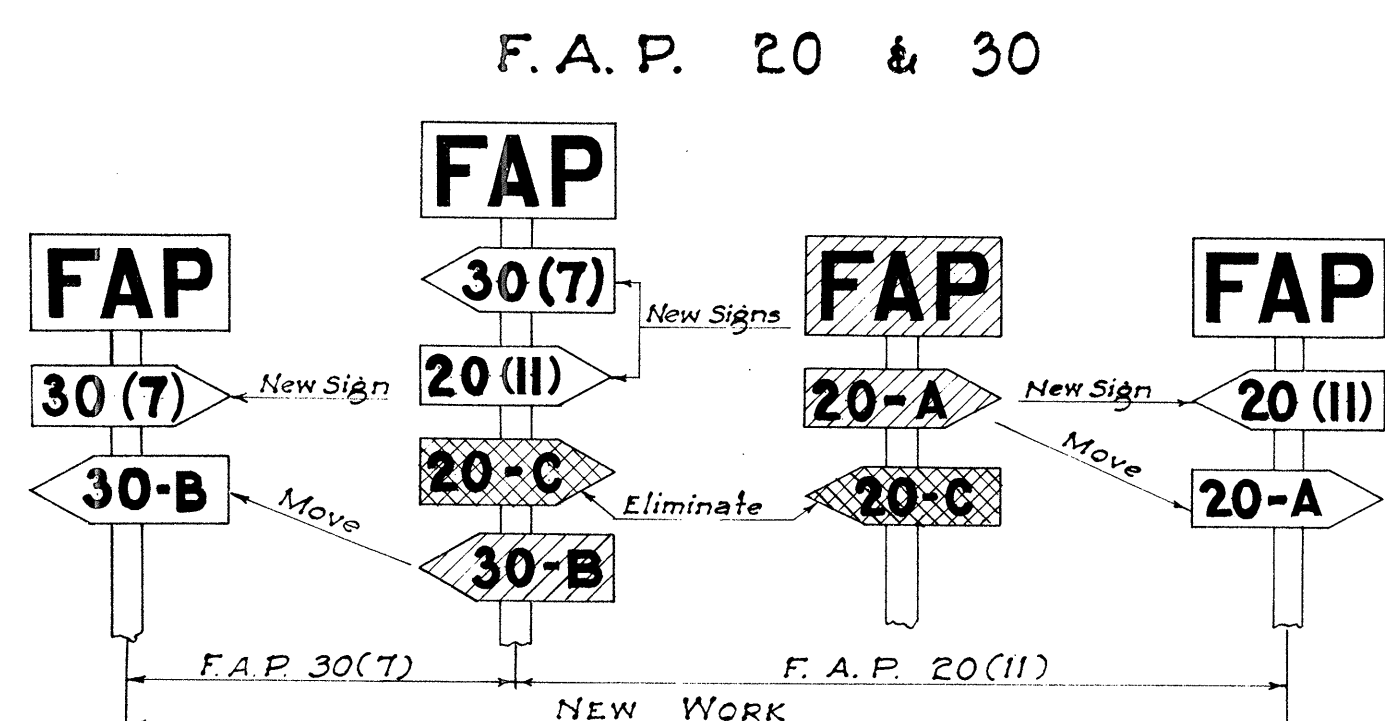


CENTER LINE MONUMENT

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



STANDARD DETOUR SIGN



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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

SCALES: AS NOTED May 31, 1949

APPROVED: *[Signature]*
Territorial Highway Engineer

SHEET No. 3 OF 3 SHEETS

5484.55