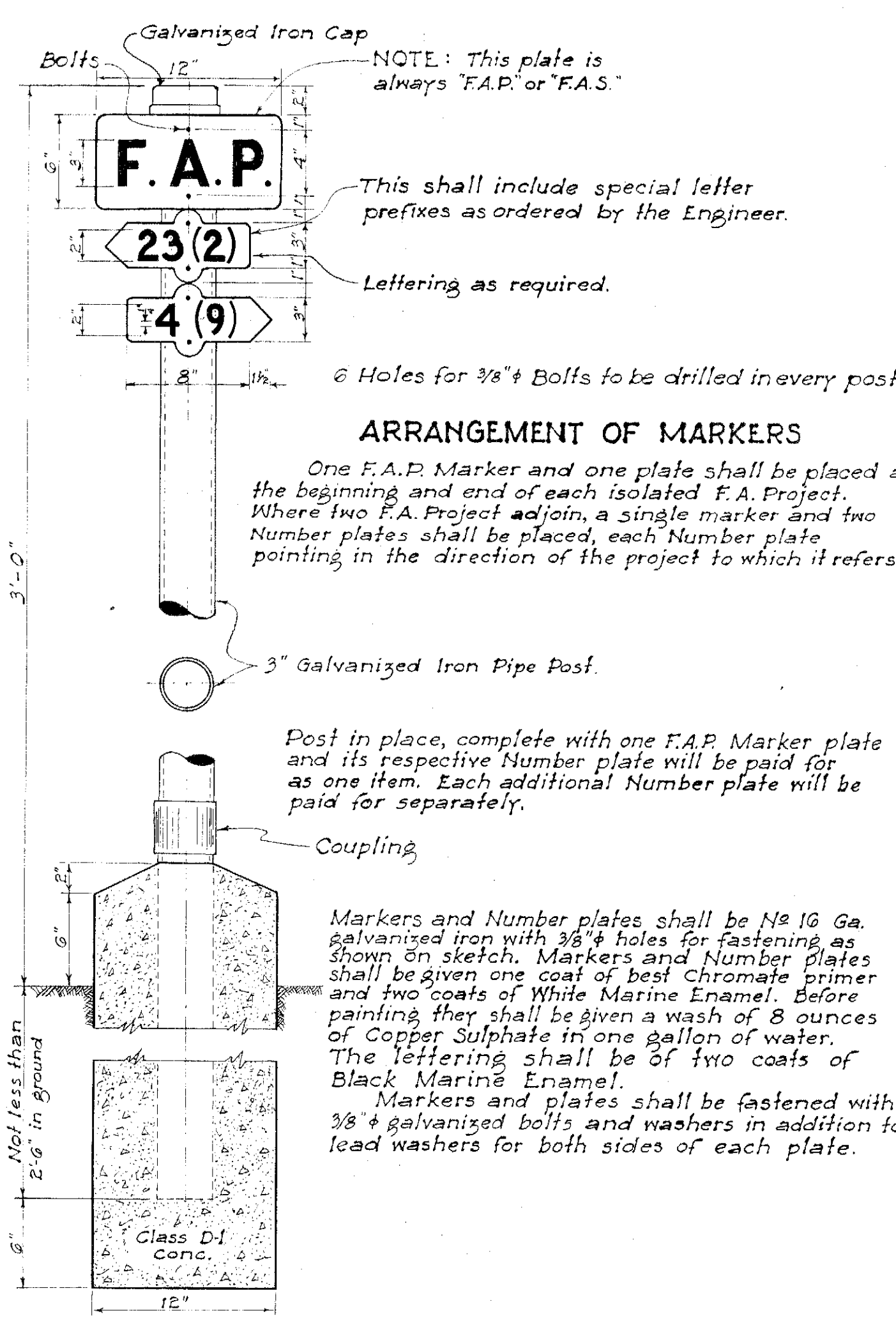


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1/8" raised letters

17



ARRANGEMENT OF MARKERS

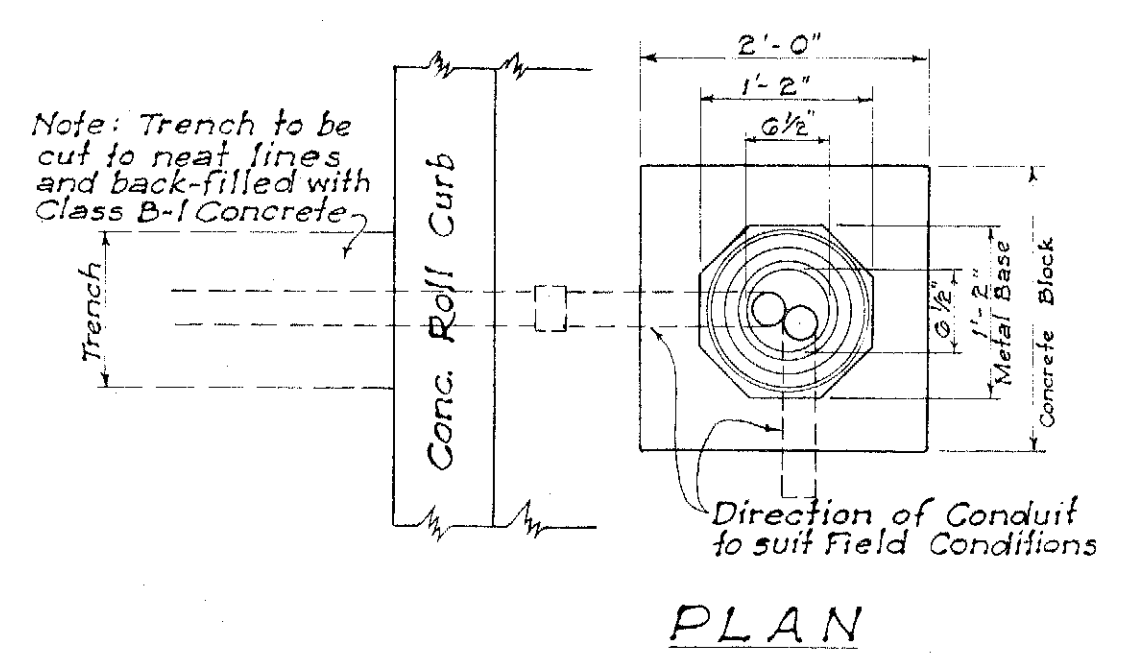
One F.A.P. Marker and one plate shall be placed at the beginning and end of each isolated F.A. Project. Where two F.A. Projects adjoin, a single marker and two Number plates shall be placed, each Number plate pointing in the direction of the project to which it refers.

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.

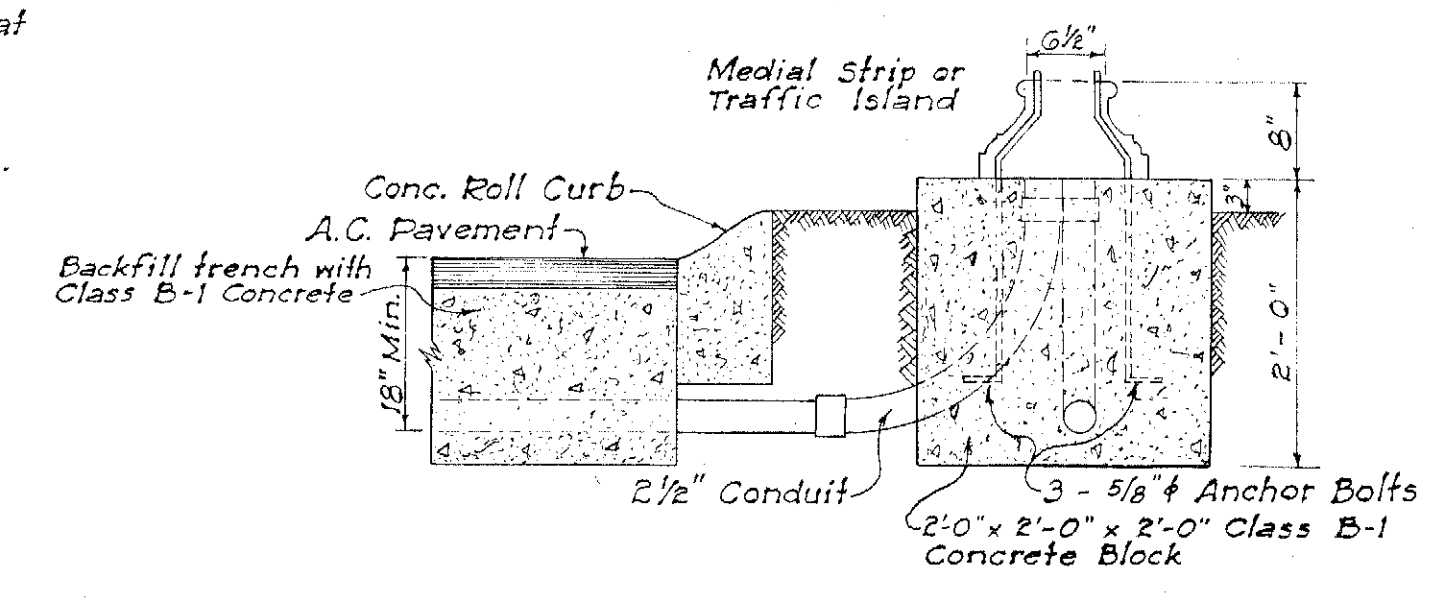
Markers and Number plates shall be No. 16 Ga. galvanized iron with 3/8" holes for fastening as shown on sketch. Markers and Number plates shall be given one coat of best Chromate primer and two coats of White Marine Enamel. Before painting they shall be given a wash of 8 ounces of Copper Sulphate in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

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

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



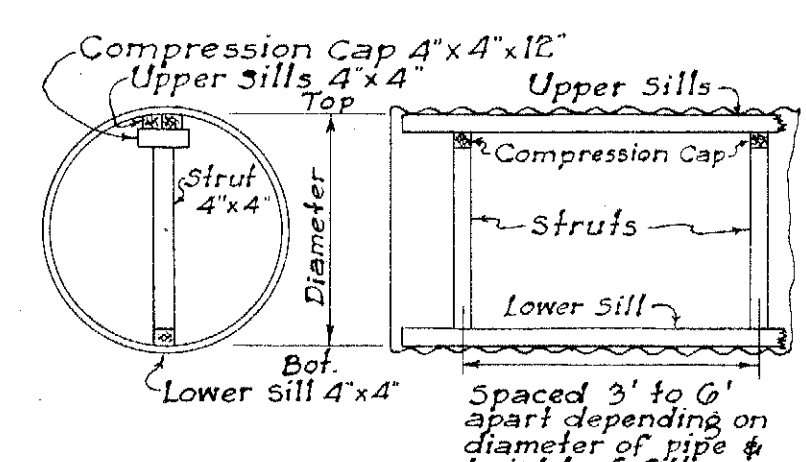
PLAN



SECTION

NOTE: Unless otherwise specified, all concrete for base for Traffic Standards, Pull Boxes, Concrete Jackets for Transite Ducts shall be Class B-1 Concrete.

DETAIL OF BASE FOR TRAFFIC STANDARD AND DISPATCHER PEDESTAL

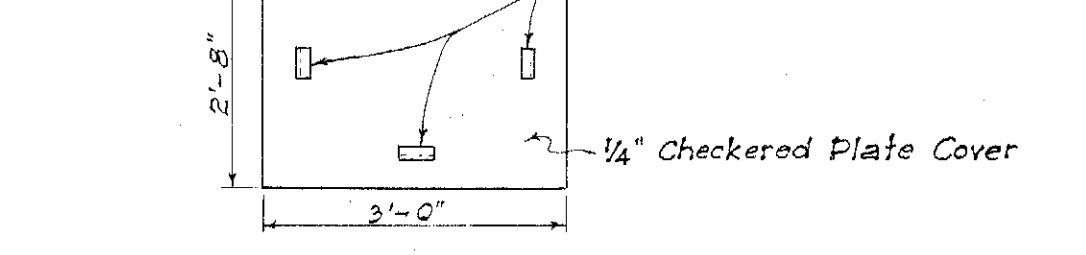


END VIEW LONGITUDINAL SECTION

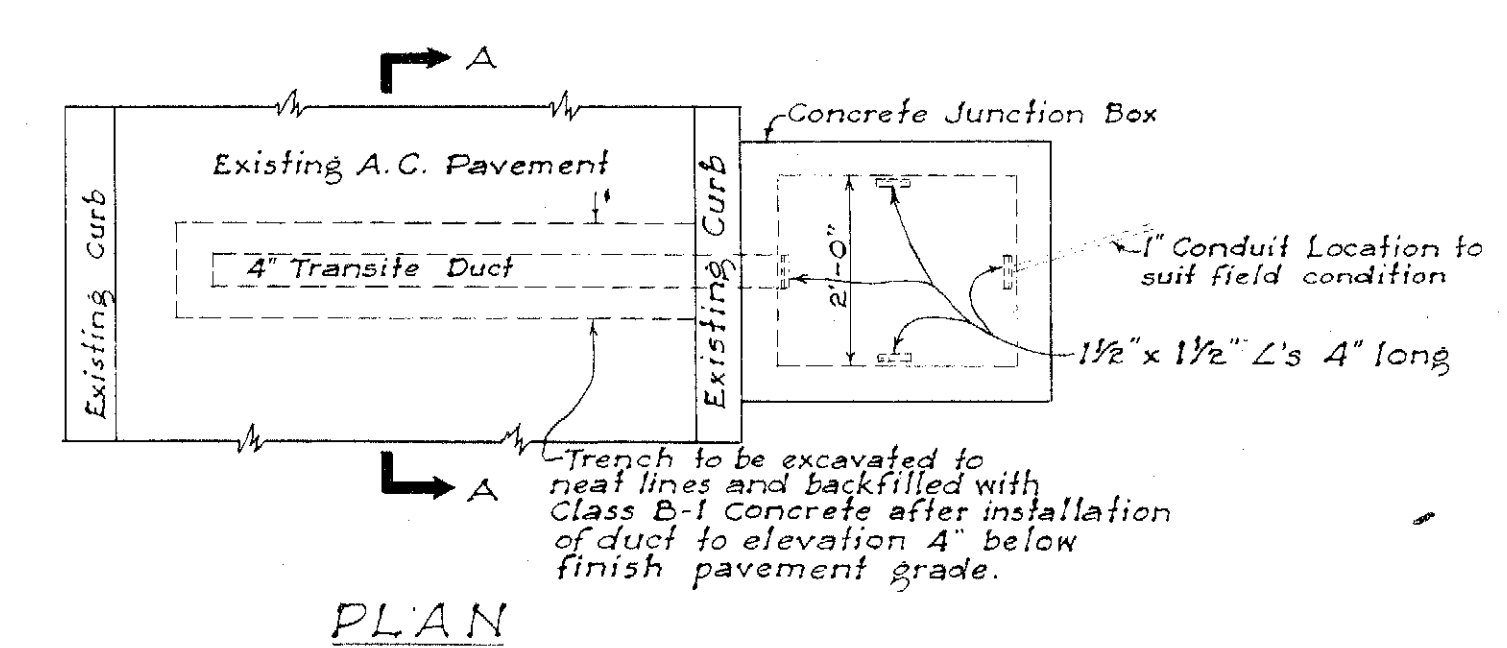
Diameter of Pipe in inches	Length of Struts in inches	Spacing of Struts in ft. for Various Heights
48	38 3/8	FILL 1' to 5' 1' to 10' 10' to 20' 20' to 30' Over 30'
54	44 3/8	FILL 1' to 5' 1' to 10' 10' to 20' 20' to 30' Over 30'
60	51	FILL 1' to 5' 1' to 10' 10' to 20' 20' to 30' Over 30'
66	57 1/4	FILL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

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

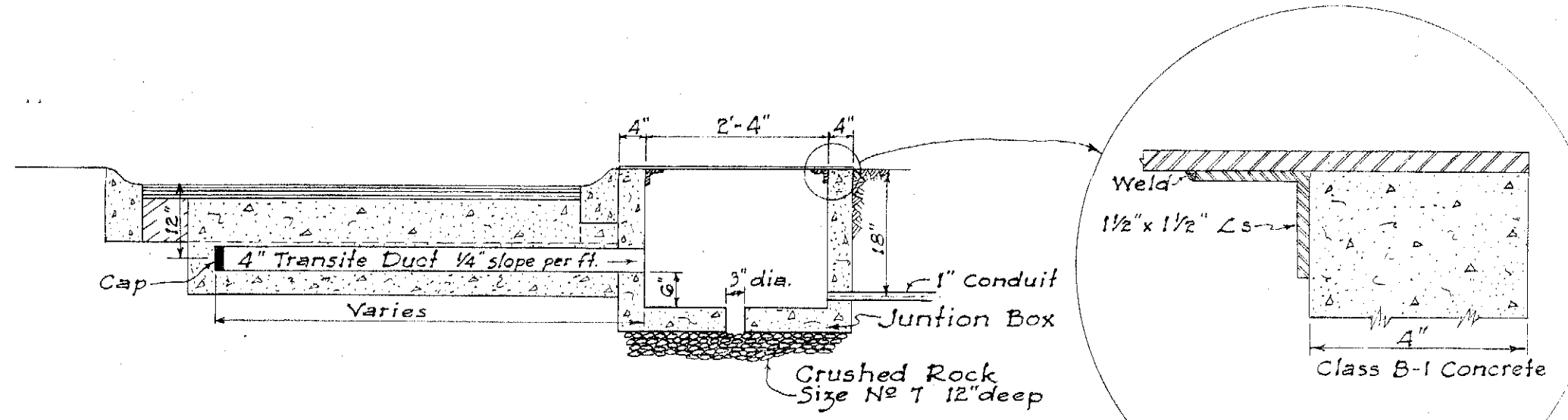
STRUTTING DIAGRAM & TABLE FOR CORRUGATED METAL PIPE CULVERT



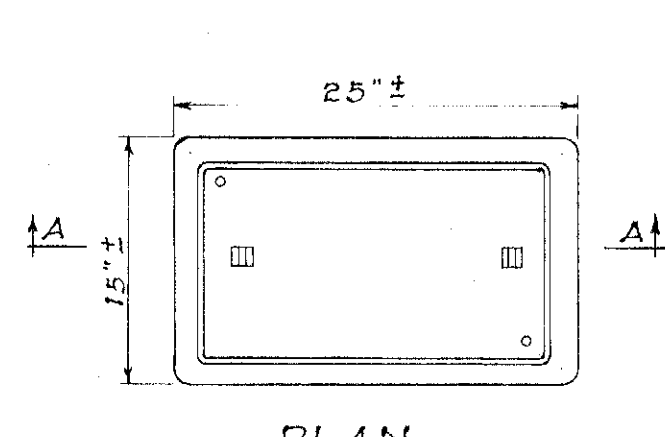
PLAN OF COVER PLATE



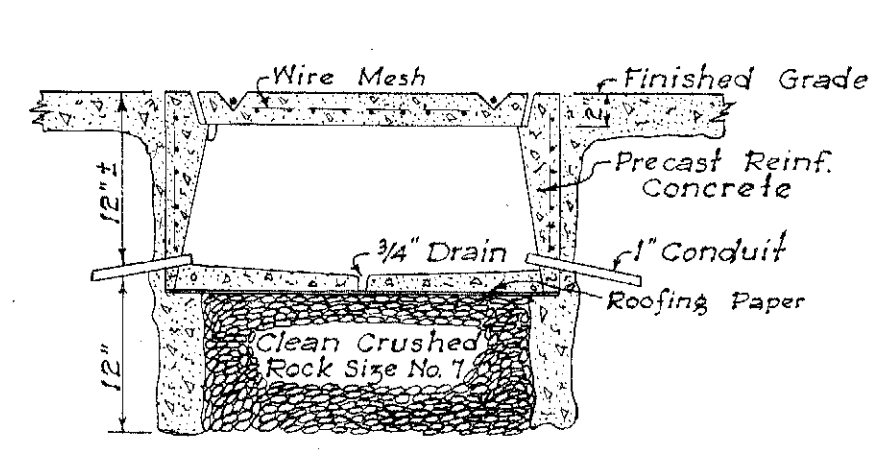
PLAN



TYPICAL ROAD SECTION SHOWING TRAFFIC DETECTOR JUNCTION BOX AND DUCT

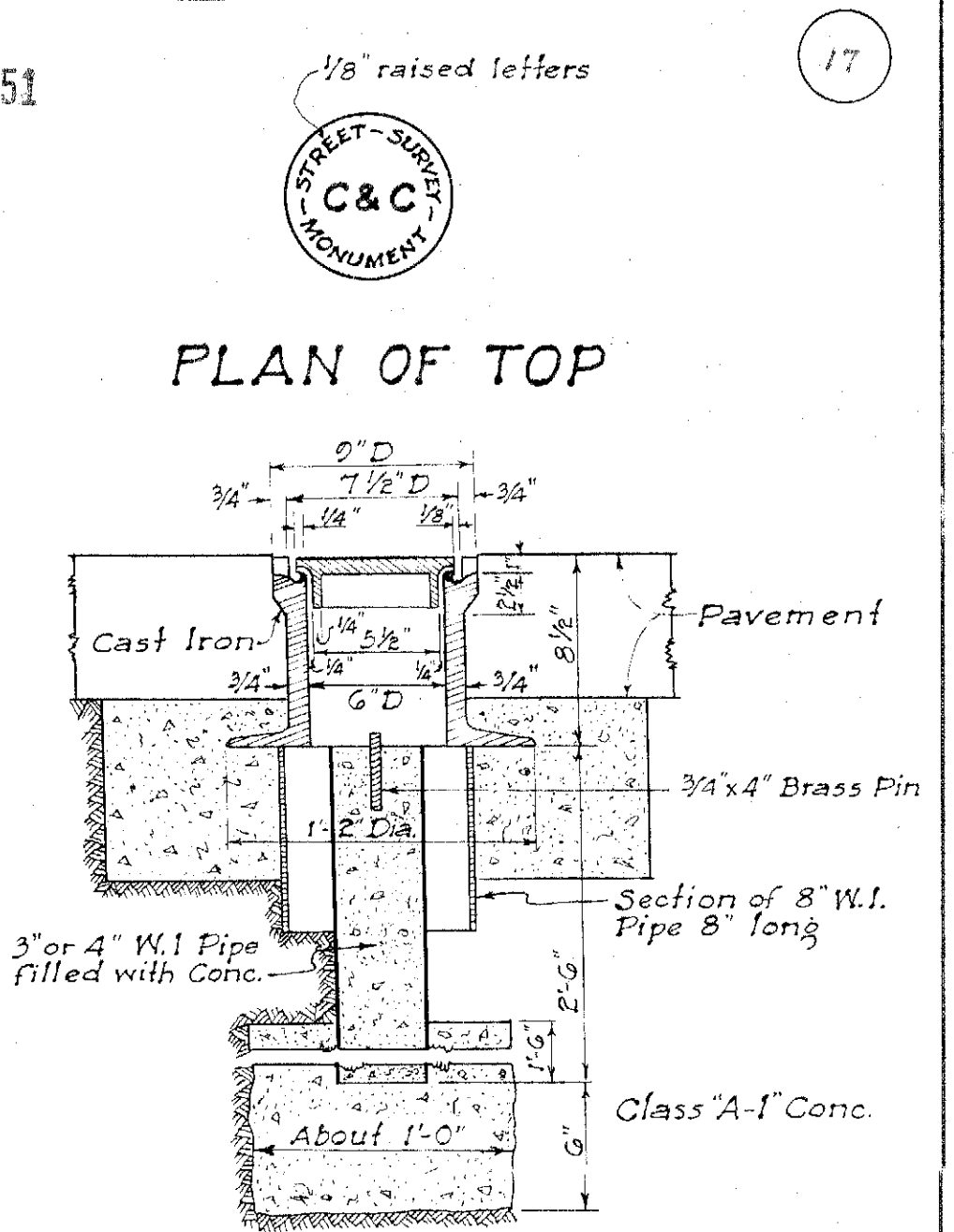


PLAN

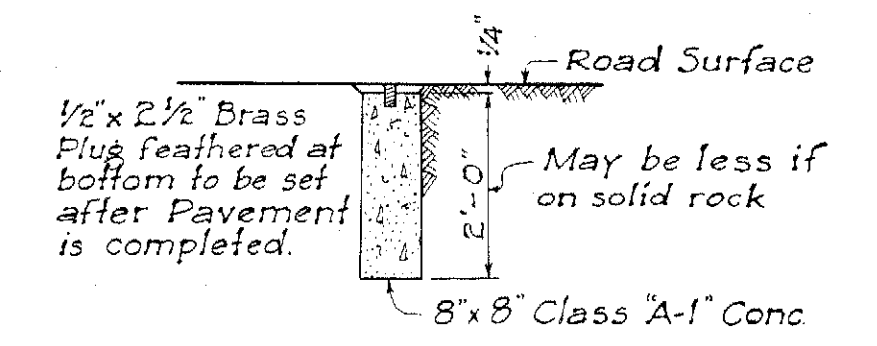


SECTION A-A

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

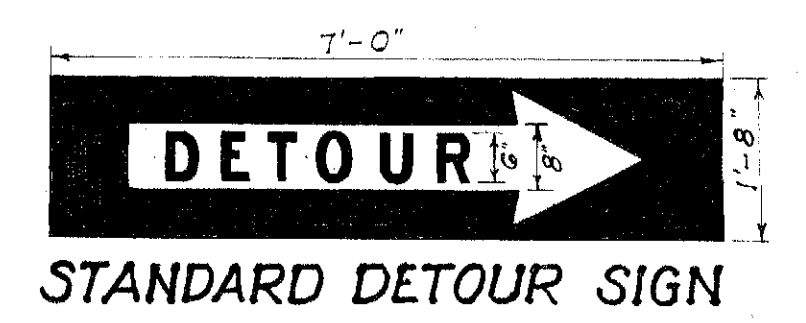


STANDARD C&C STREET SURVEY MONUMENT

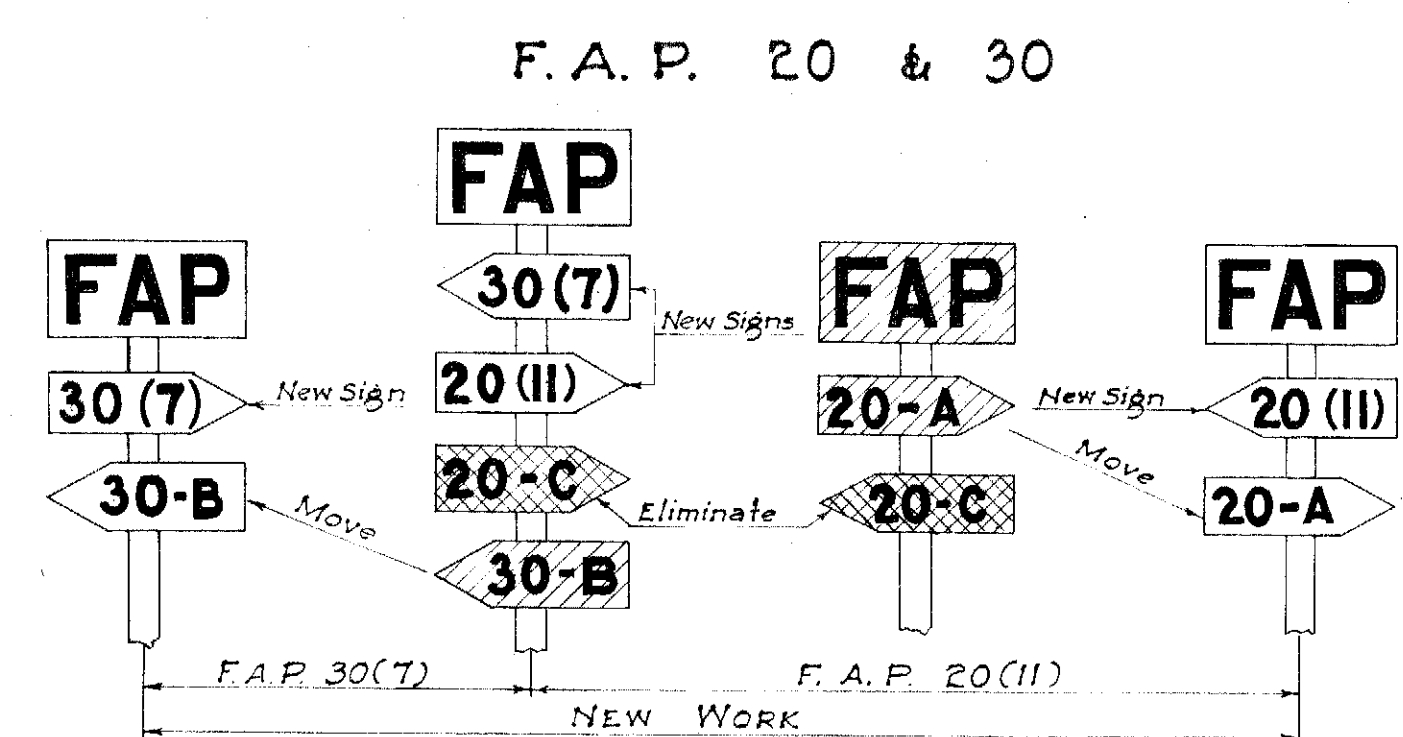


CENTER LINE MONUMENT

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



STANDARD DETOUR SIGN

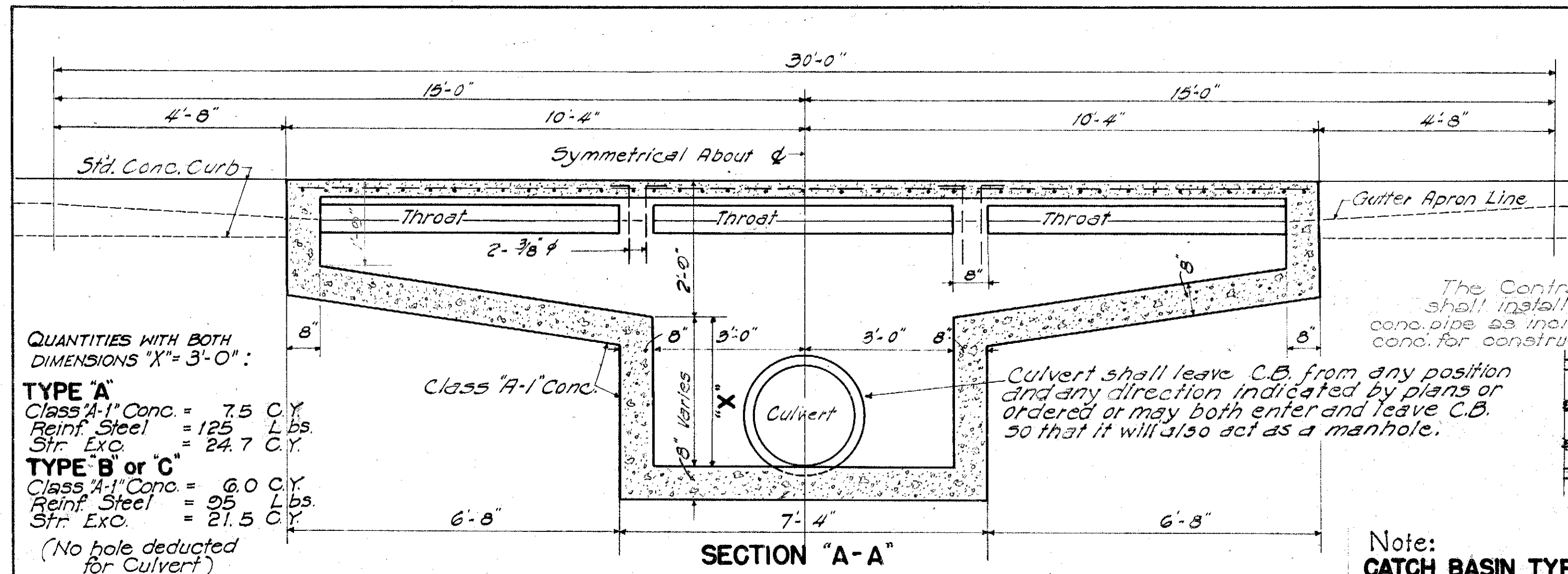


METHOD OF MARKING F.A. PROJECTS AT OVERLAPS (USING NUMBER SUFFIX ON NEW WORK)

The same procedure would be followed on each successive improvement until all markers for letter designated sections are eventually eliminated.

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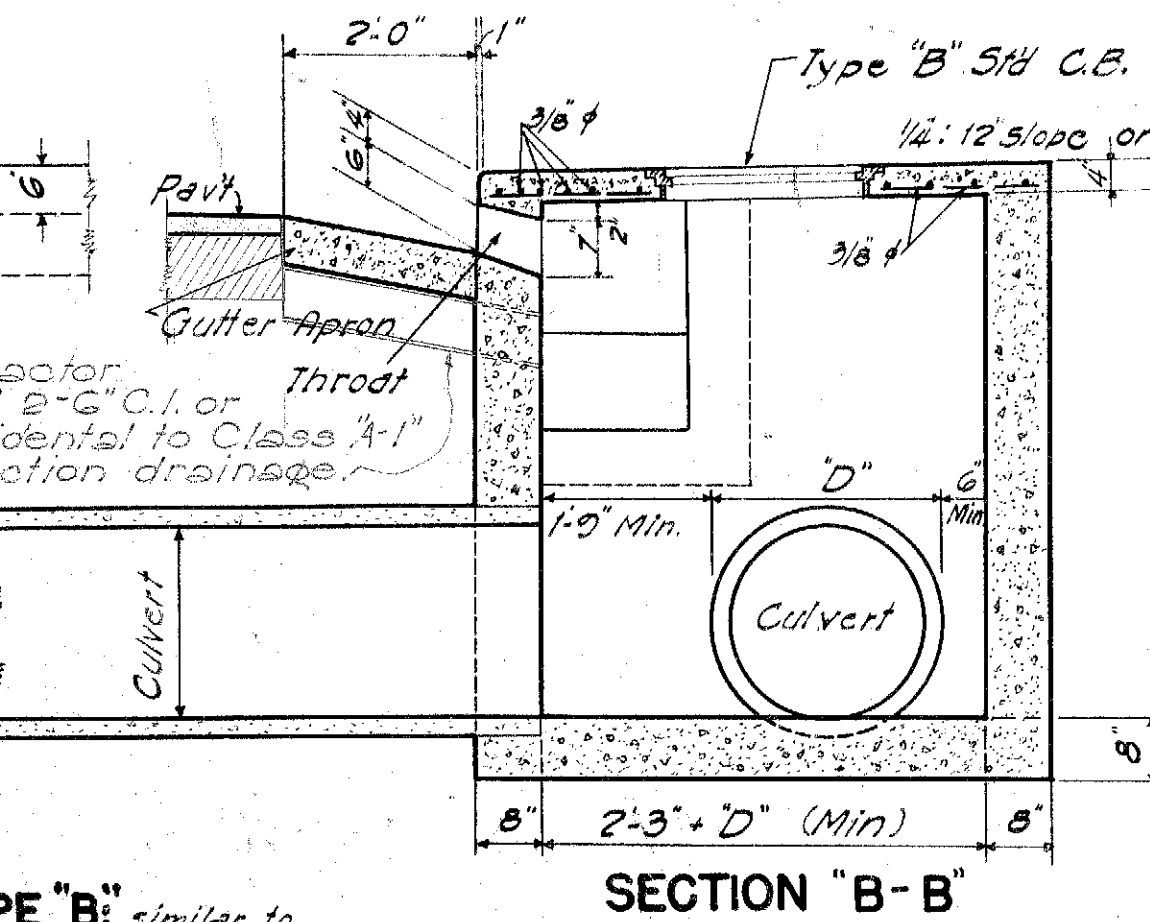
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U33(1)	52	13	13	HAWAII	HAW.	52	50	13	37



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

TYPE 'A'
Class 'A-1' Conc. = 7.5 CY
Reinf. Steel = 125 Lbs
Str. Exc. = 24.7 CY

TYPE 'B' or 'C'
Class 'A-1' Conc. = 6.0 CY
Reinf. Steel = 95 Lbs
Str. Exc. = 21.5 CY
(No hole deducted for Culvert)

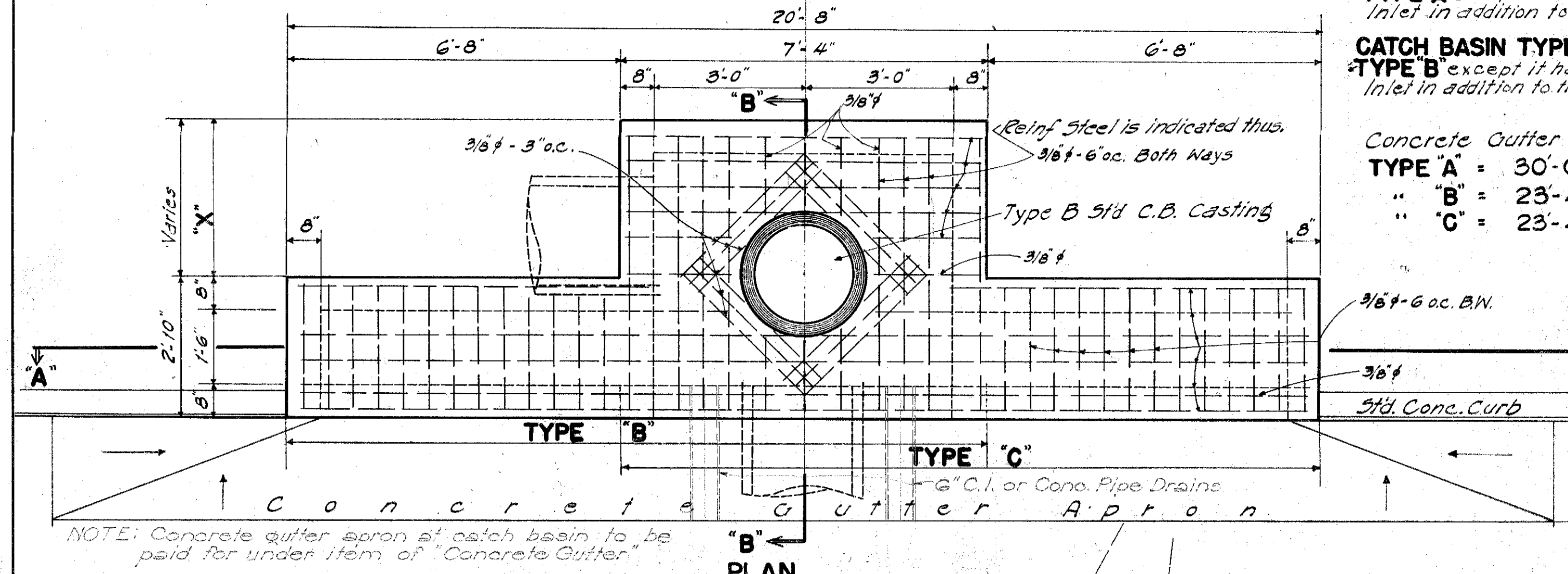
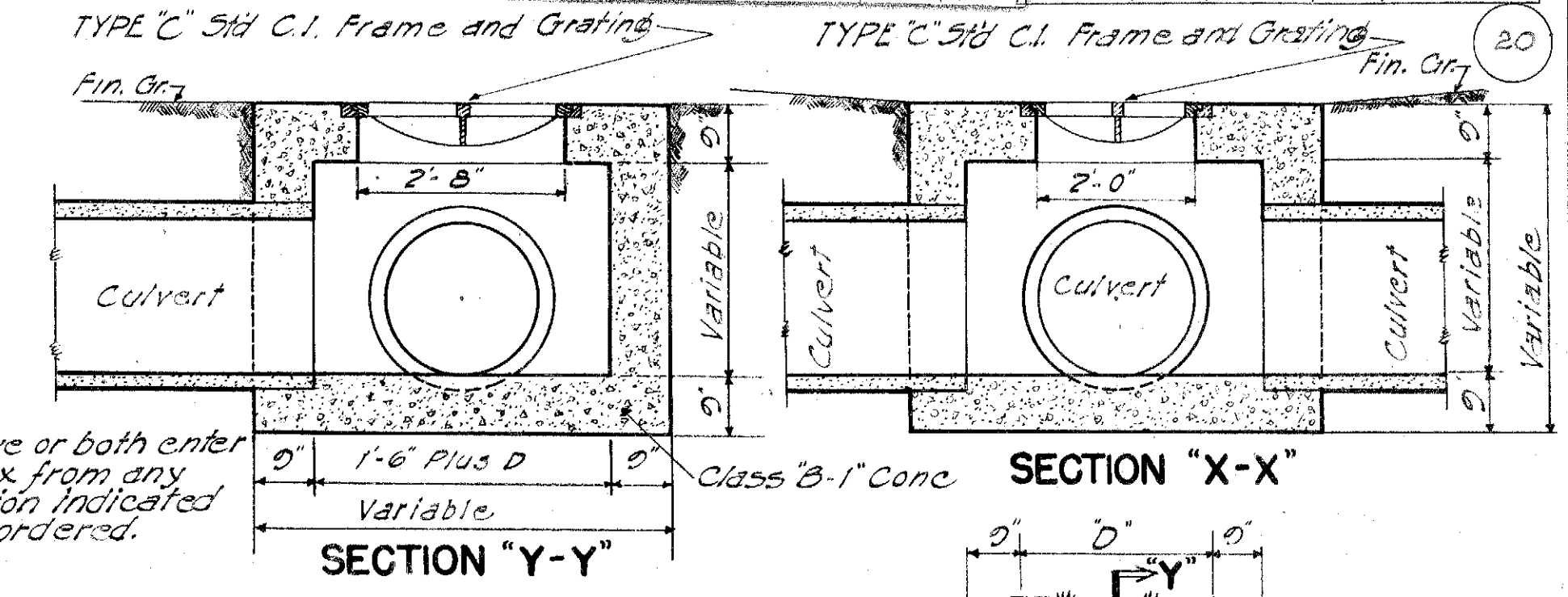


Culvert shall leave or both enter and leave this box from any position or direction indicated by the plans or ordered.

CONC. DROP INTAKE IN MEDIAL STRIPS

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

Note: May also be used in pavement and at other places.



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

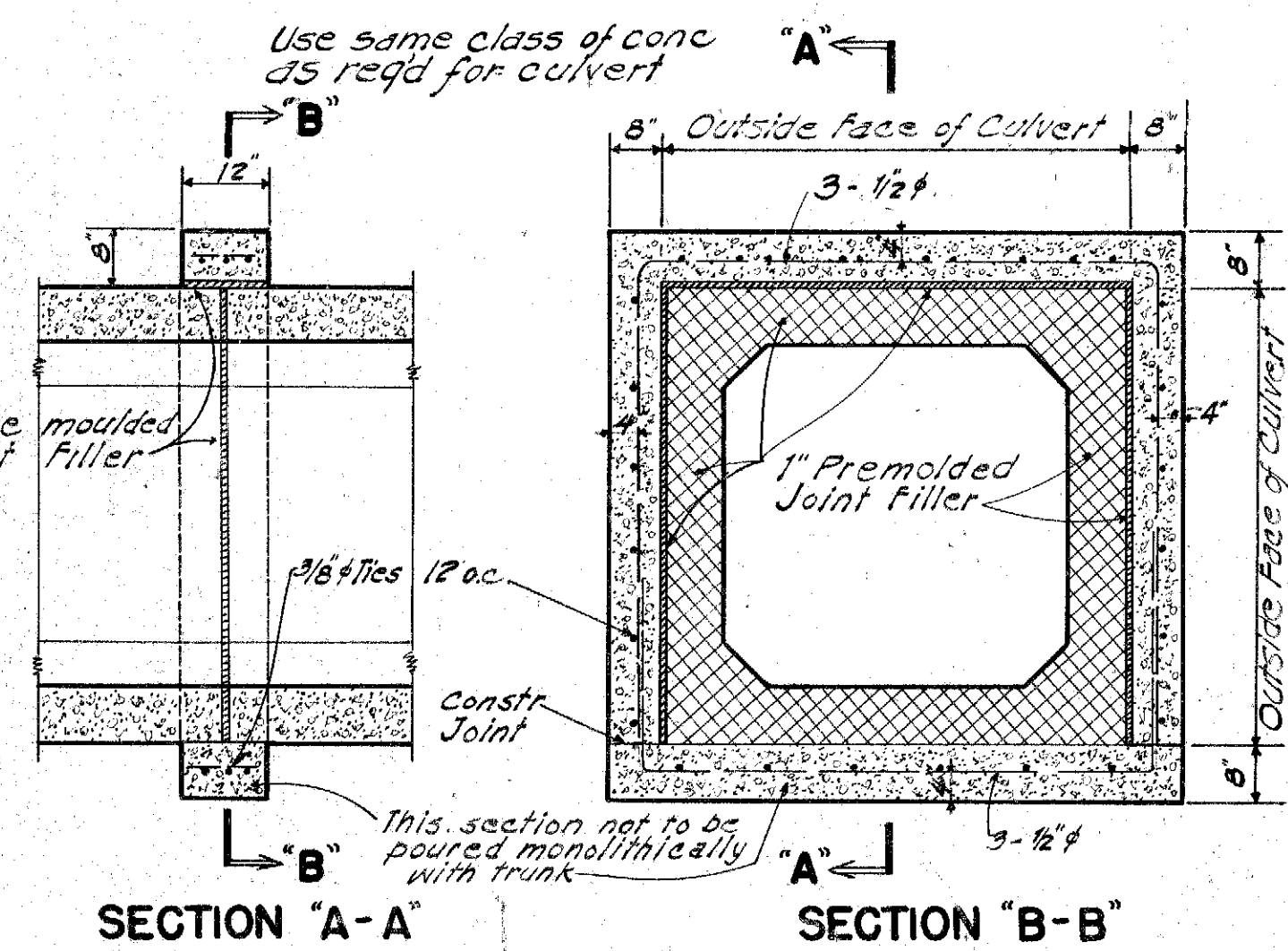
CATCH BASIN TYPE 'C' similar to **TYPE 'B'** except it has only Right Side Inlet in addition to the Main Box.

Concrete Gutter Apron Length:

TYPE 'A' = 30'-0"

TYPE 'B' = 23'-4"

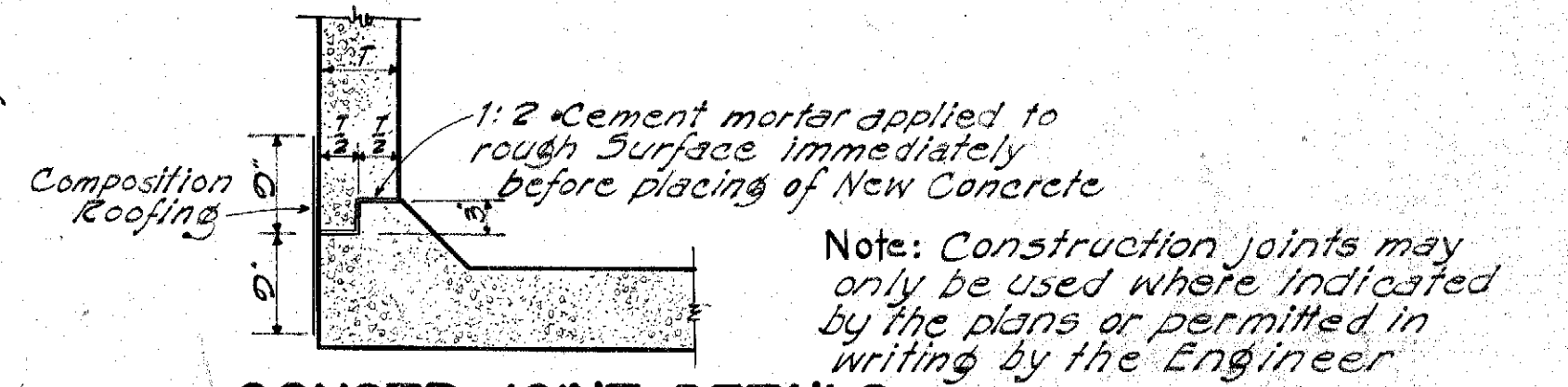
TYPE 'C' = 23'-4"



CONC. COLLAR FOR CONC. BOX CULVERT

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

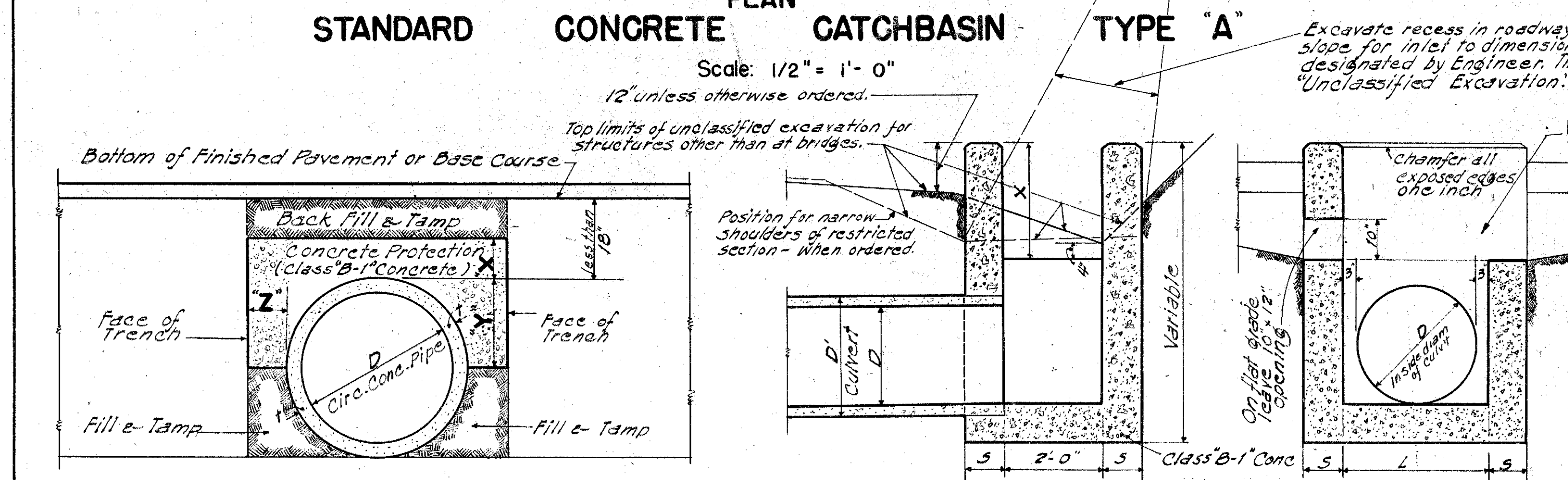
Note: Collars of this type shall be used to divide culverts into approximately 30ft lengths.



CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING

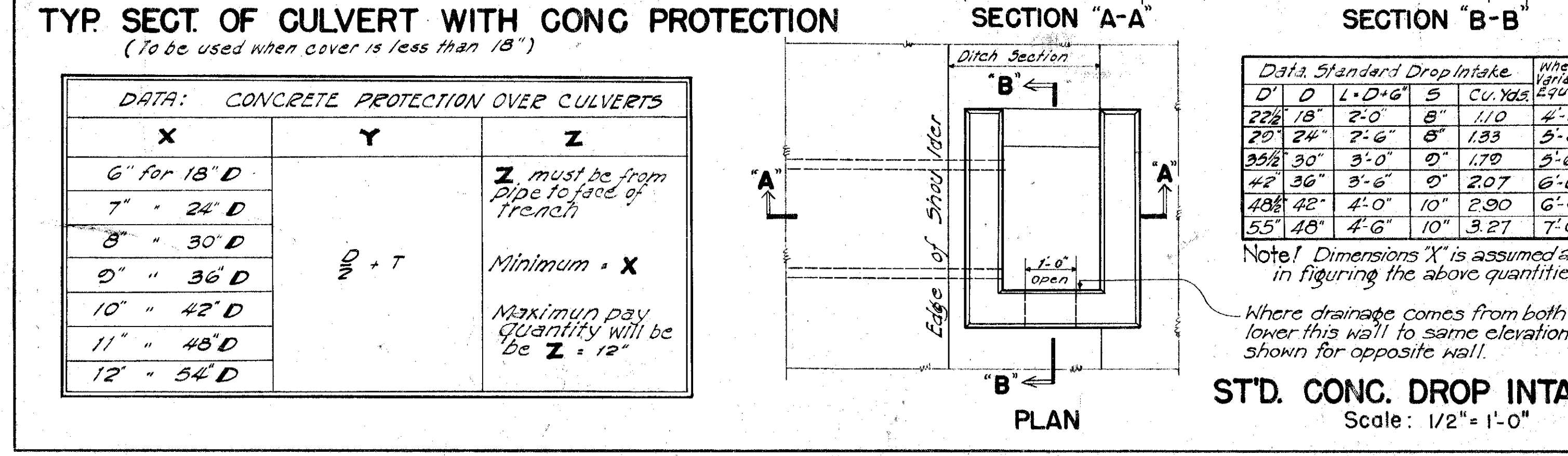
- (1) Map surface either side of joint as required with asphalt 85-100 penetration applied at 200°F.
- (2) Apply one layer of 55-lb composition roofing to hot asphalt.
- (3) Map surface of composition roofing and 3" beyond all around with thick coat of asphalt as specified under (1).



STANDARD CONCRETE CATCHBASIN

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

Top limits of unclassified excavation for structures other than at bridges.



TYP. SECT. OF CULVERT WITH CONC 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
7" " 24" D		
8" " 30" D		
9" " 36" D		
10" " 42" D		
11" " 48" D		
12" " 54" D		

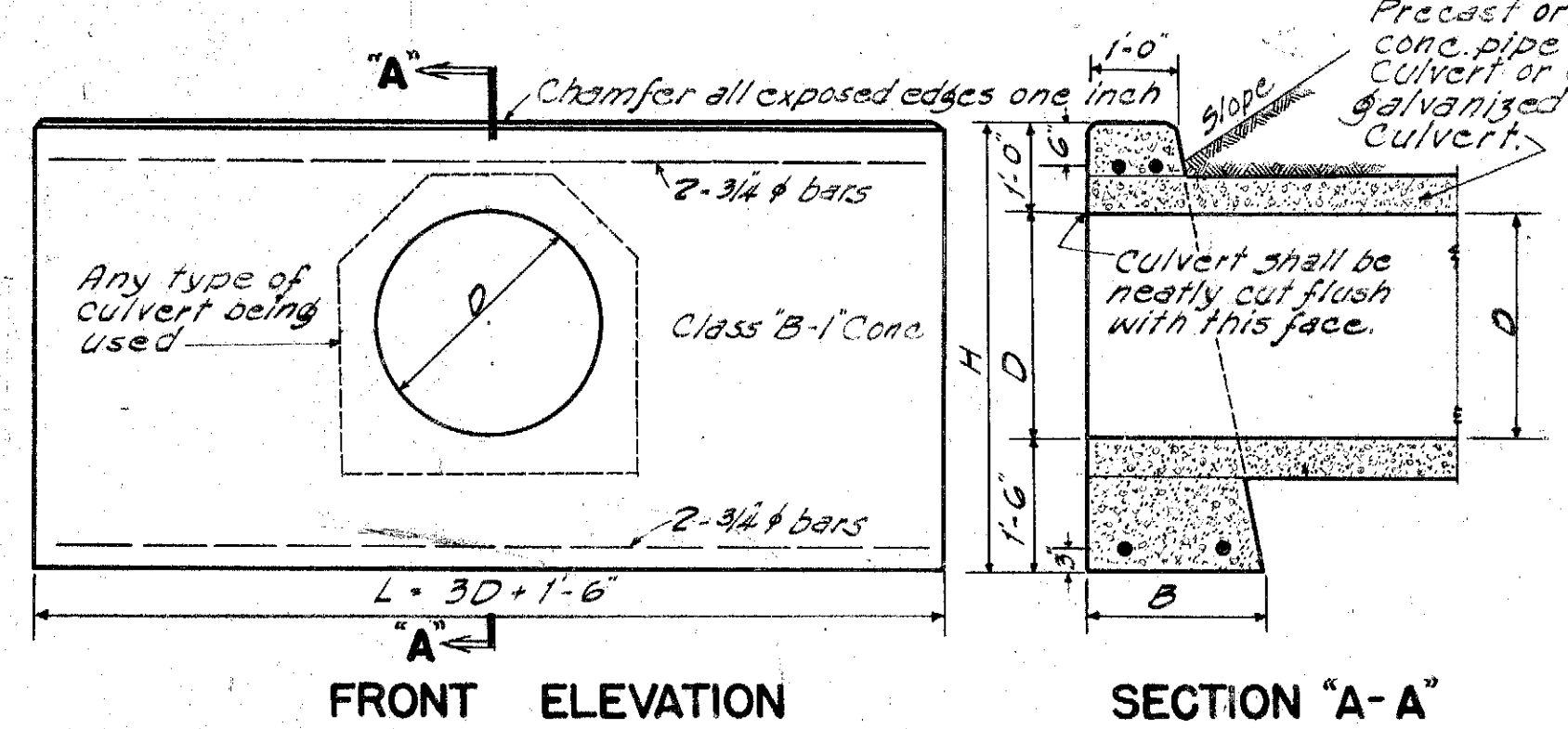
Data Standard Drop Intake				
D'	D	L-D+6"	S	Cu. Yds.
22 1/2	18	2'-0"	8"	1.10
24	24	2'-6"	8"	1.33
30 1/2	30	3'-0"	9"	1.70
42	36	3'-6"	9"	2.07
48 1/2	42	4'-0"	10"	2.90
55	48	4'-6"	10"	3.27

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"



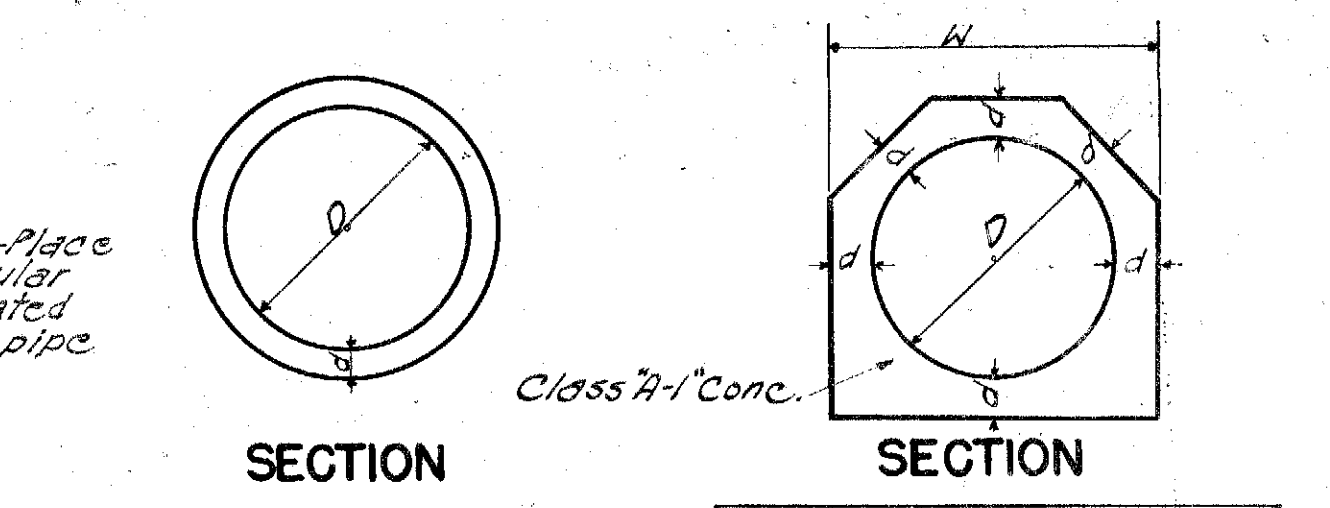
FRONT ELEVATION

SECTION 'A-A'

Cast-in-Place		Data: Standard Concrete Headwall		Steel One Headwall	
Cu. Yds.	D	B	L	H	No. of Bars
0.02	18"	1'-6"	6'-0"	4'-0"	100
125	24"	1'-6"	7'-6"	4'-6"	138
129	30"	2'-0"	9'-0"	5'-0"	217
245	36"	2'-0"	10'-6"	5'-6"	274

STANDARD CONCRETE HEADWALL

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



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	Size	Cu. Yds. per ft.
18"	4"	2'-2"	3/4"	0.11
24"	4 1/2"	2'-9"	3/4"	0.14
30"	5"	3'-4"	3/4"	0.19
36"	5 1/2"	3'-11"	3/4"	0.26

CAST-IN-PLACE CONC. CULVERT

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

SCALES AS NOTED
APPROVED: *[Signature]*
Territorial Highway Engineer

APR 15, 1948
SHEET NO. 3 OF 4 SHEETS

