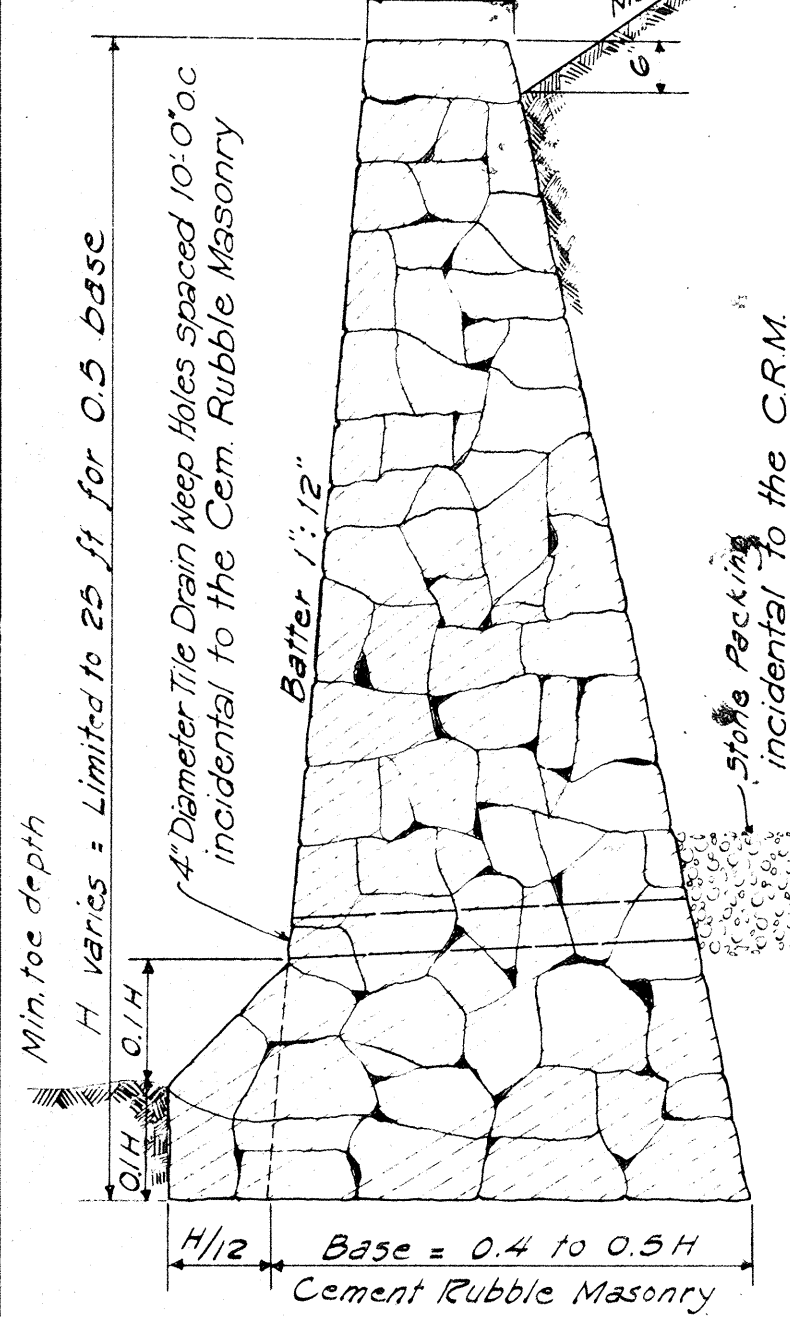


Note: TO RESIDENT ENGINEER
Consider economy of using conc. for high retaining walls which do not originate on plan layout.



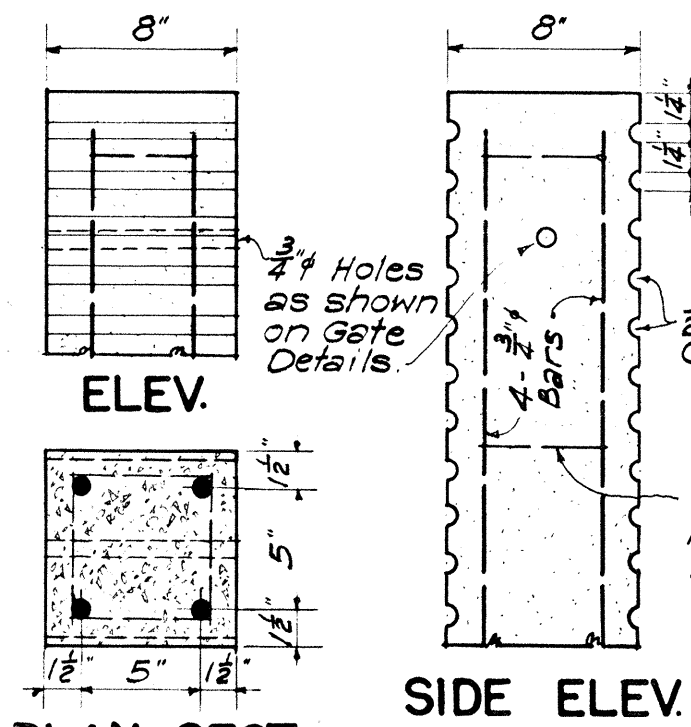
STANDARD SECTION OF HIGH CEMENT RUBBLE MASONRY RETAINING WALL OR SEAWALL

STANDARD SECTION OF LOW MASONRY RETAINING WALL OR SEAWALL

NOTE: Elevation of weep holes to be determined by Resident Engineer. Holes to be placed as close to the existing ground line as local conditions permit.

Data	Standard	Masonry	Drop	Intake	Where Variable Equals
22 1/2"	18"	2'-0"	2.41	4'-6"	
29"	24"	2'-6"	2.89	5'-0"	
35 1/2"	30"	3'-0"	3.38	5'-6"	
42"	36"	3'-6"	3.92	6'-0"	

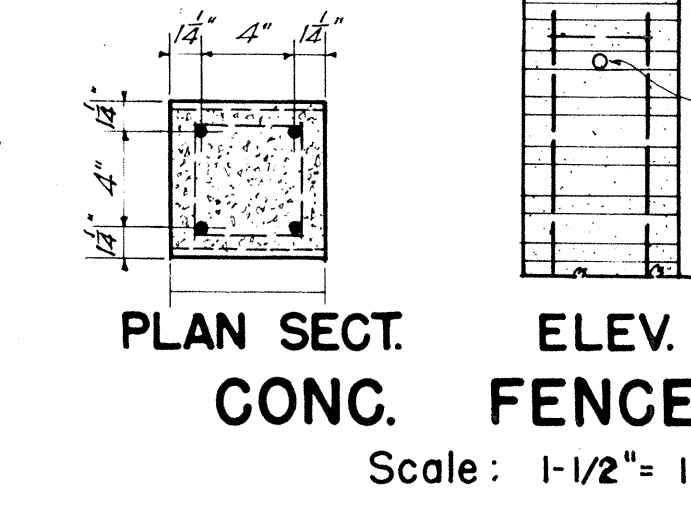
NOTE: Dimension "X" is assumed as 2'-4" in figuring the above quantities.



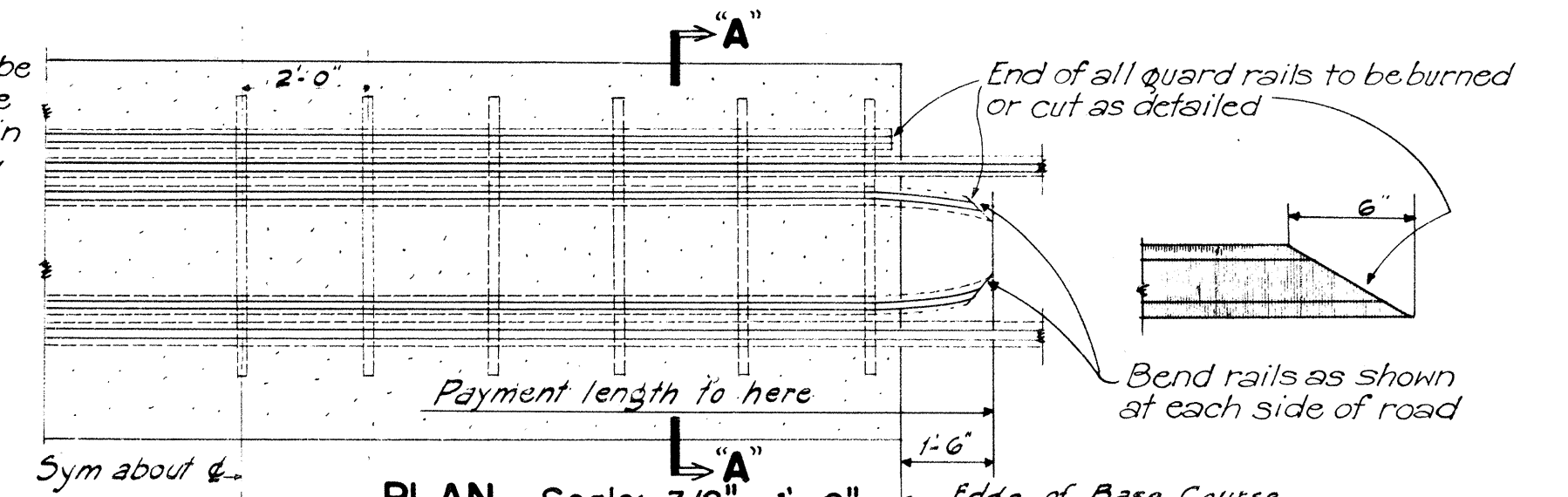
STANDARD MASONRY DROP INTAKE

NOTE: Guard rails are to be of the same shape and weight as main rails. Details may be varied to suit conditions in field.

NOTE: Contractor may either cast holes for fastening fence wire or cast post with 3/4 inch round grooves on 2 sides.



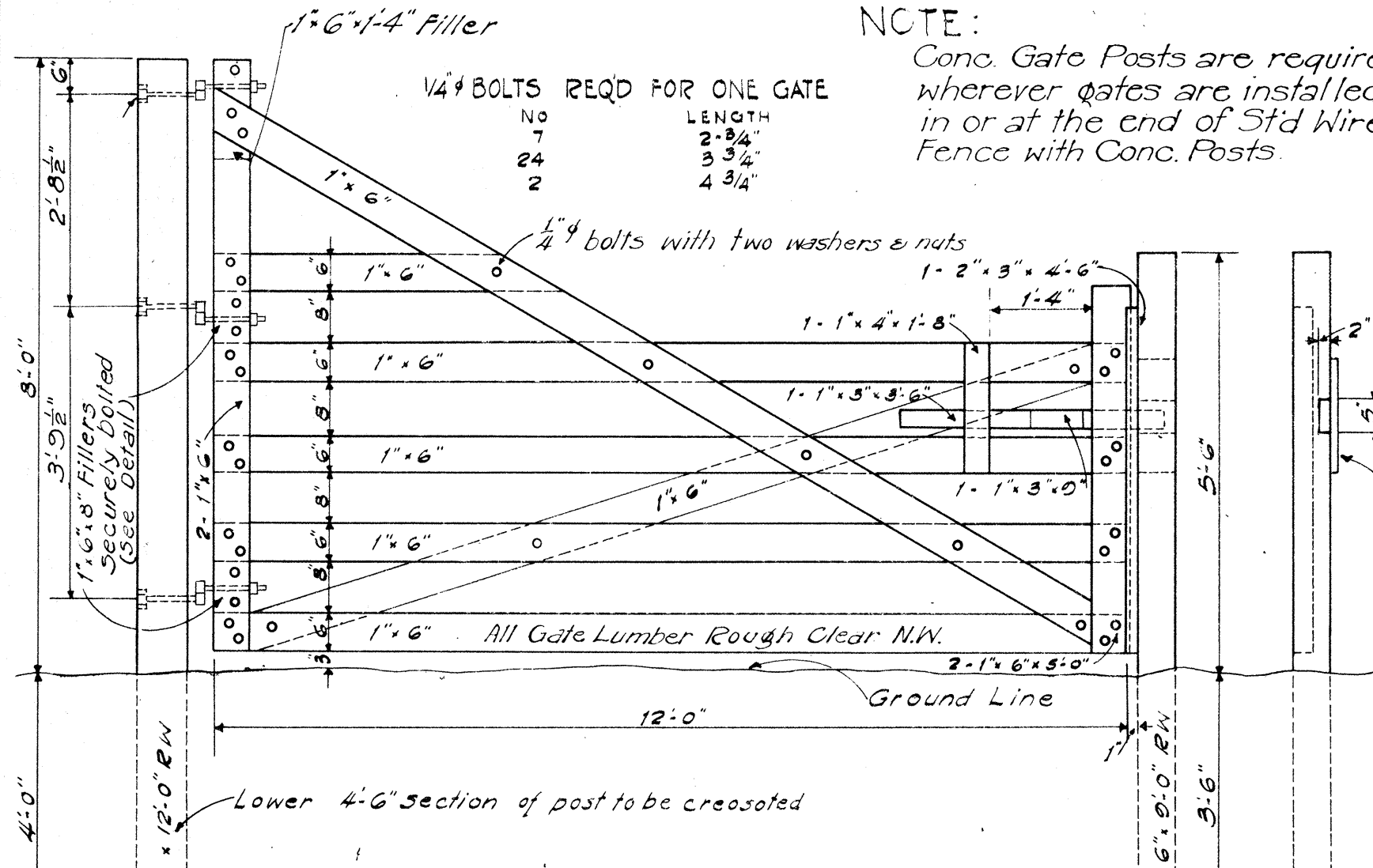
STANDARD GATE POST



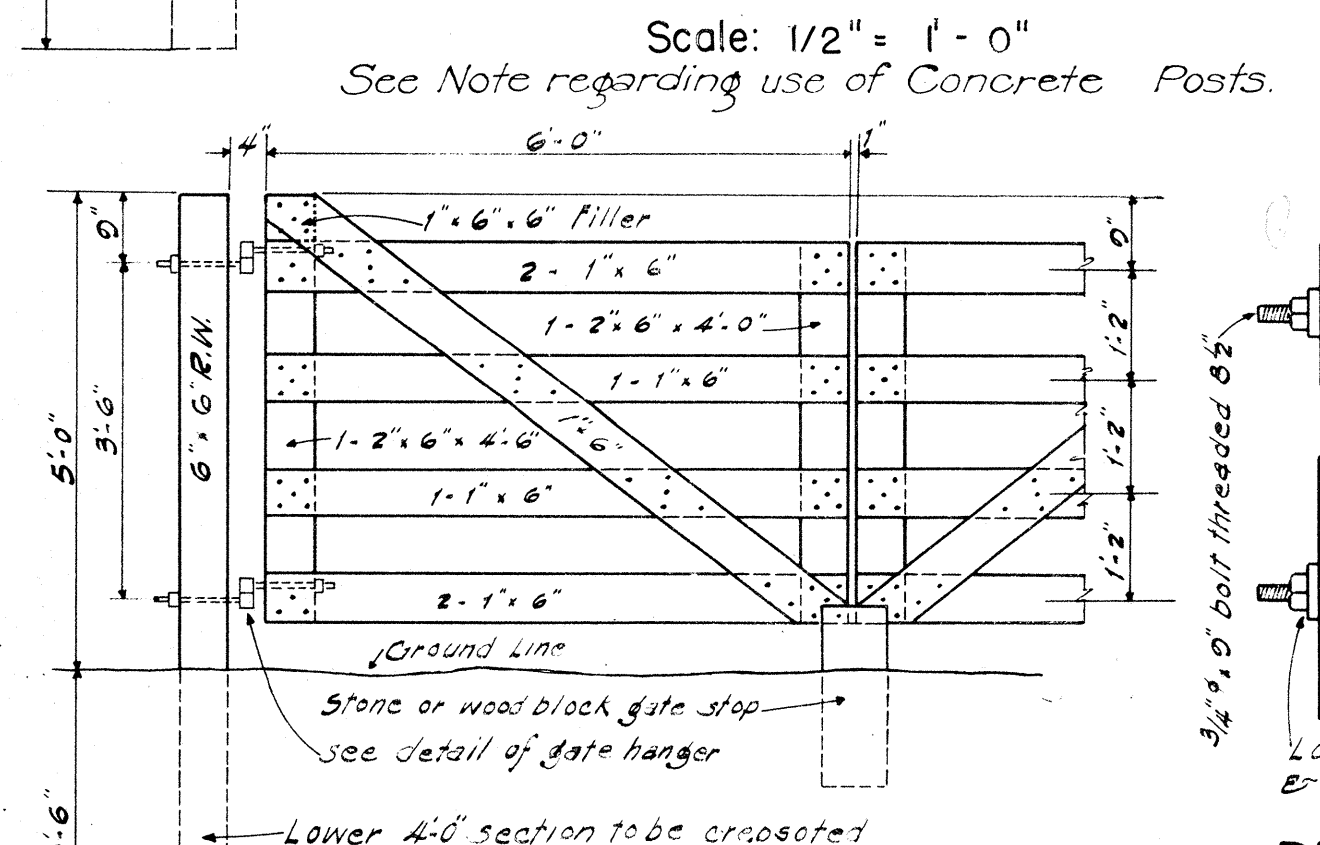
Cast-in-Place	Precast	Data-Standard	Rubble	Masonry H.W.	CX one H.W.
Cu. Yds.	Cu. Yds.	D	H	B	L
0.85	0.95	18"	3'-6"	1'-0"	6'-0"
1.23	1.45	24"	4'-0"	2'-0"	7'-6"
1.83	2.06	30"	4'-6"	2'-3"	9'-0"
2.49	2.84	36"	5'-0"	2'-6"	10'-6"

STANDARD MASONRY HEADWALL

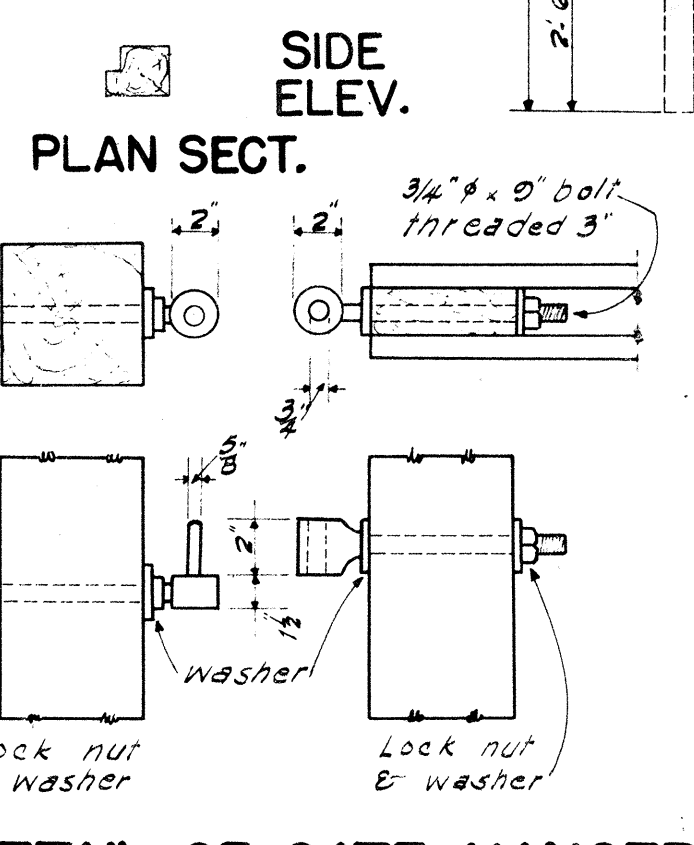
NOTE: Volume for one head wall is for corrugated pipe culvert.



DETAIL OF STANDARD CATTLE GATE

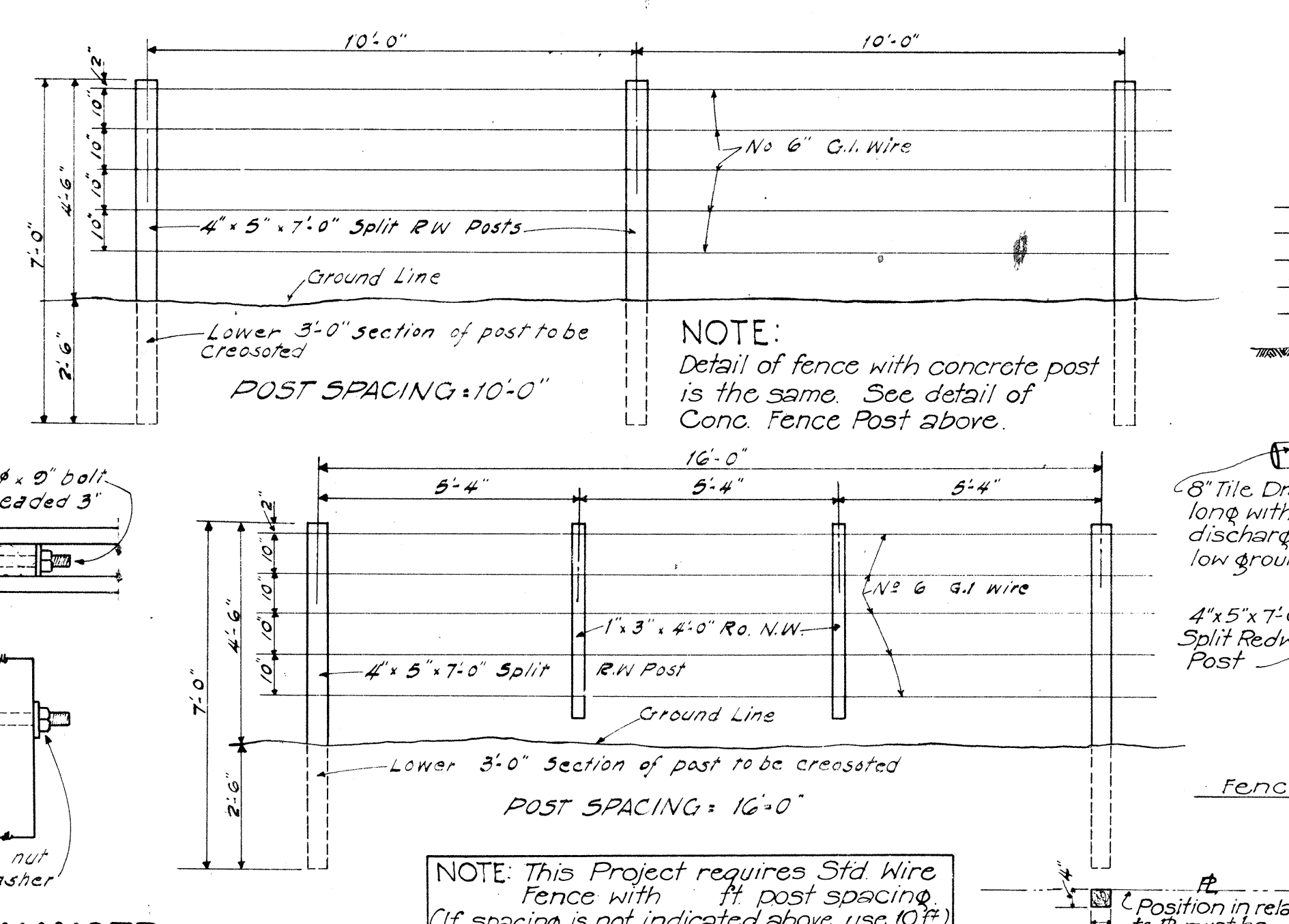


DOUBLE HUNG GATE

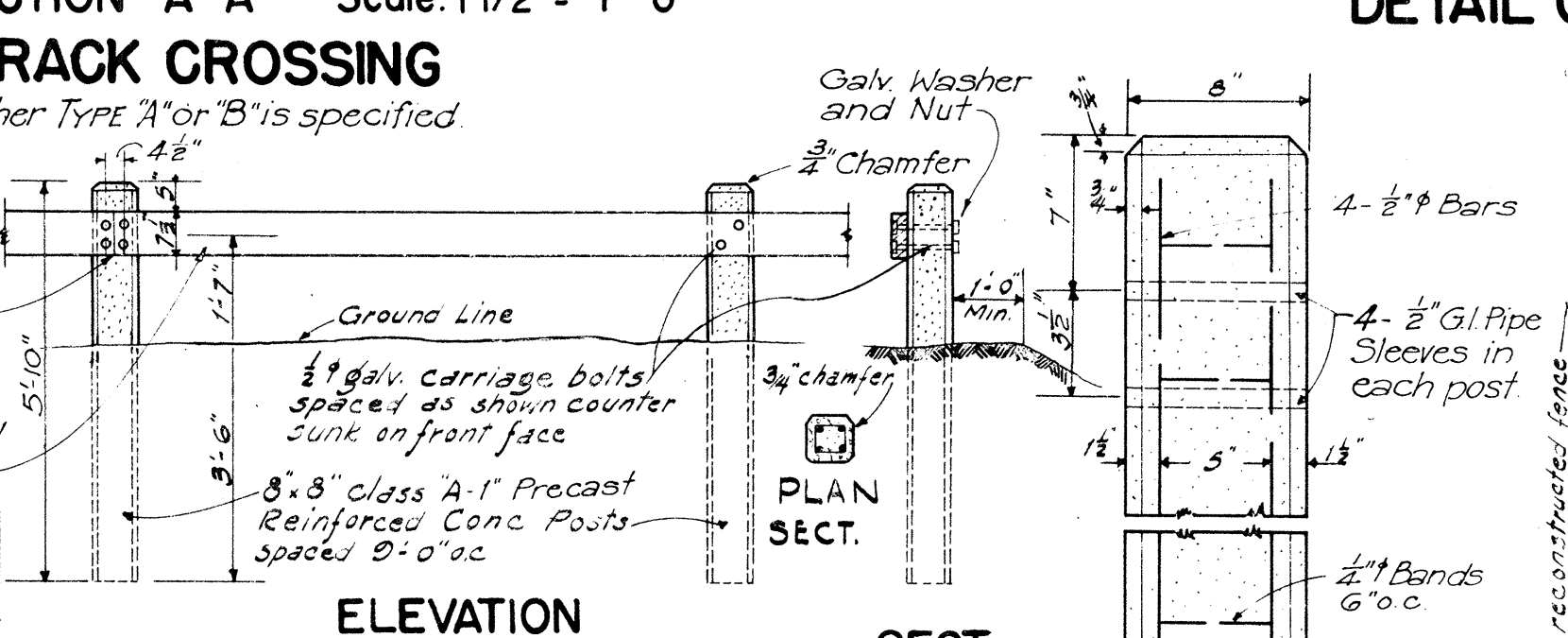


DETAIL OF GATE HANGER

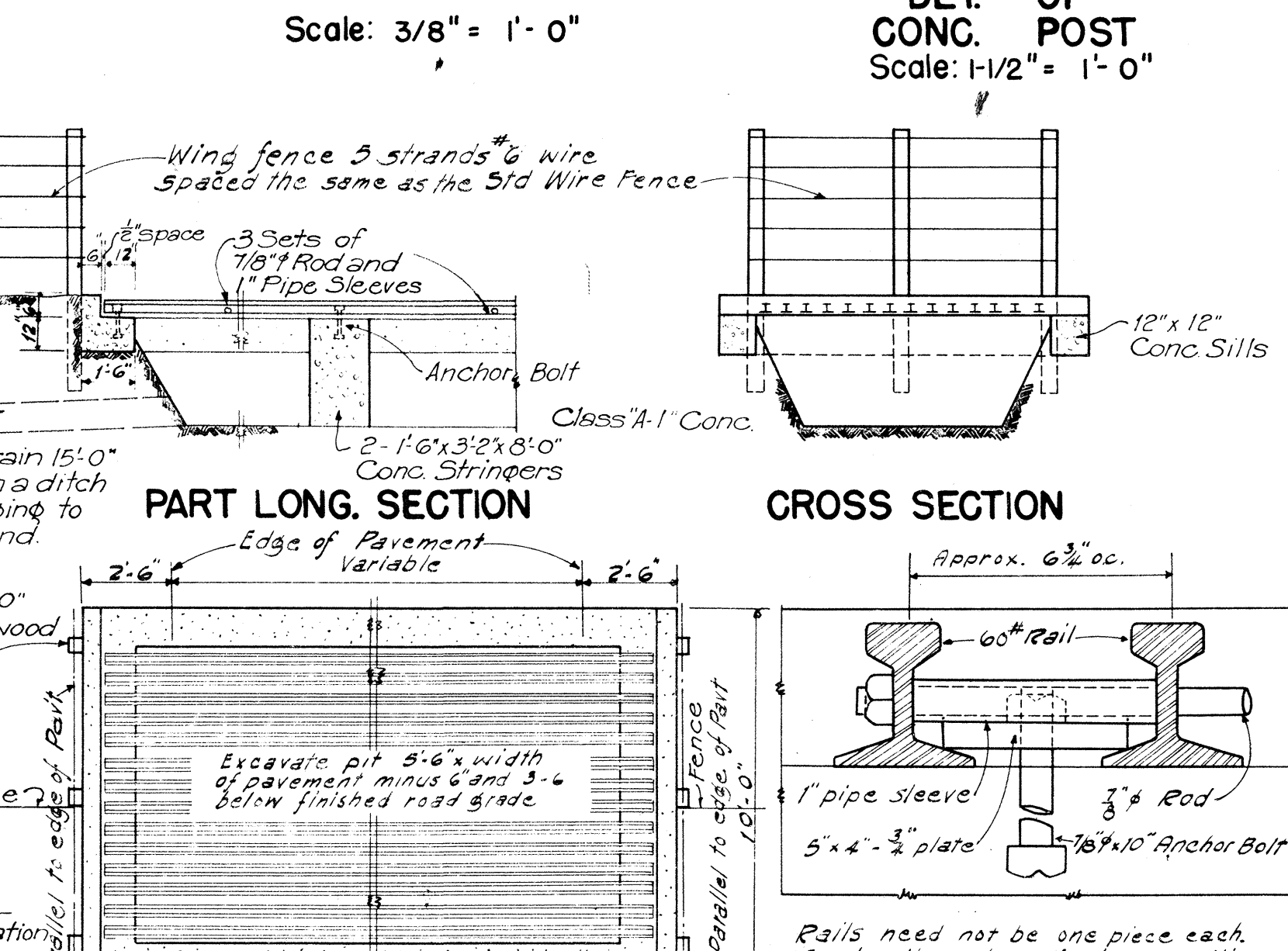
STANDARD GUIDE POSTS: 8"x8" Reinforced Conc. Posts same as those used for Std Wood Guard Rail spaced 16'-0" oc unless otherwise specified.



DETAILS OF STANDARD WIRE FENCE WITH WOODEN POSTS

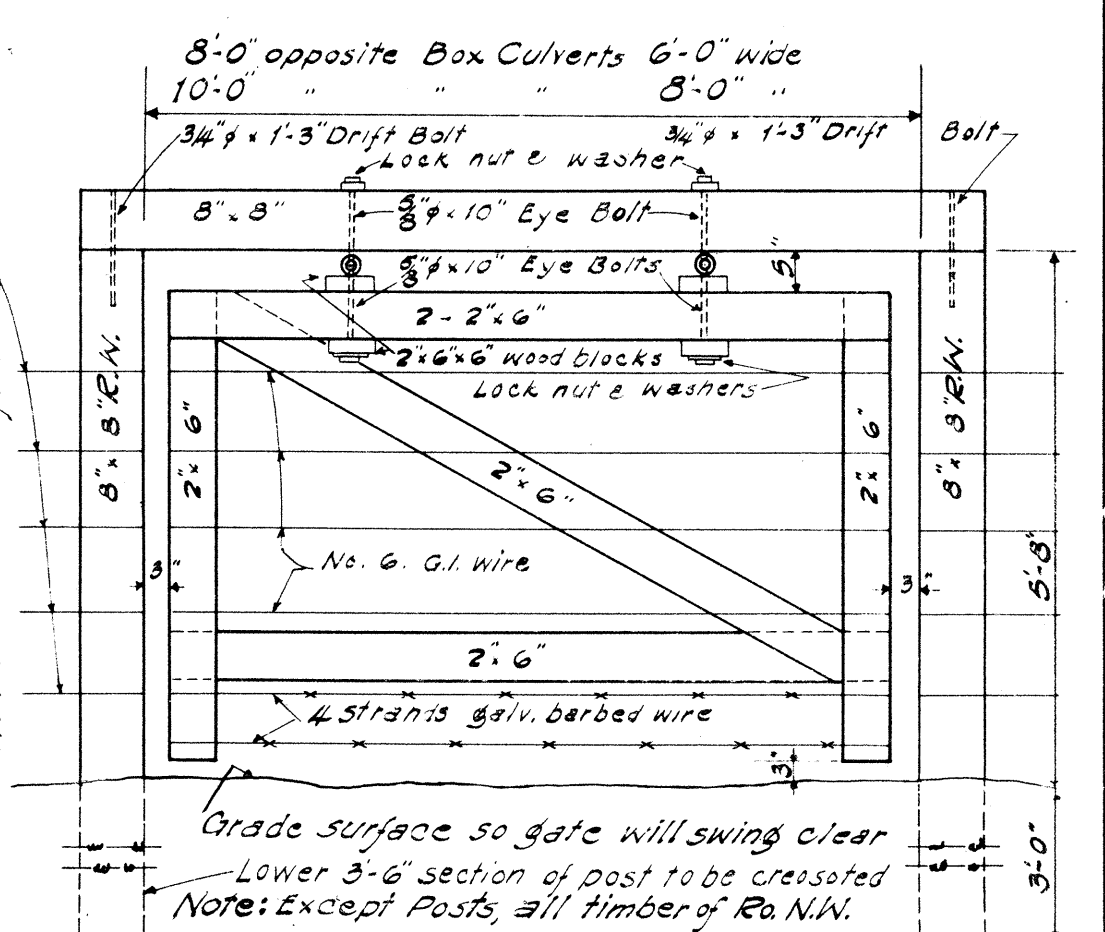


STANDARD WOOD GUARD RAIL

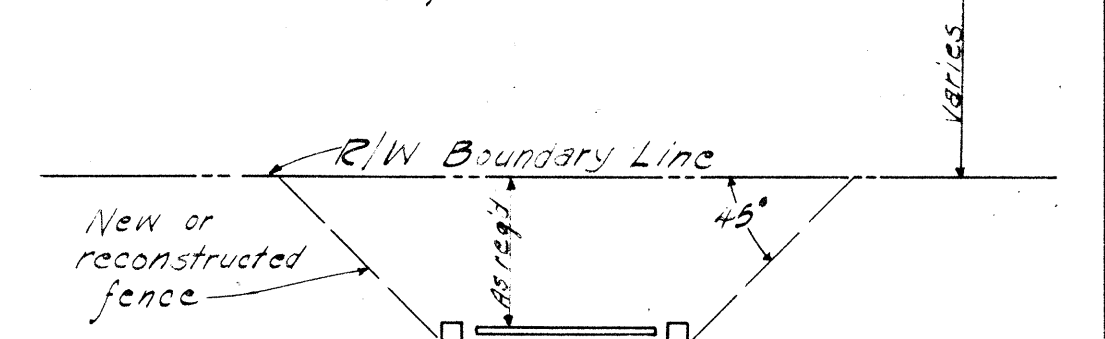


DETAILS OF CATTLE GUARD

DETAIL OF STANDARD OUTLET DITCH



ELEVATION



LAYOUT SHOWING HURDLE PLACED BELOW CULVERT IN A POSITION WHICH WILL BE CATTLE TIGHT

DETAILS OF HURDLE

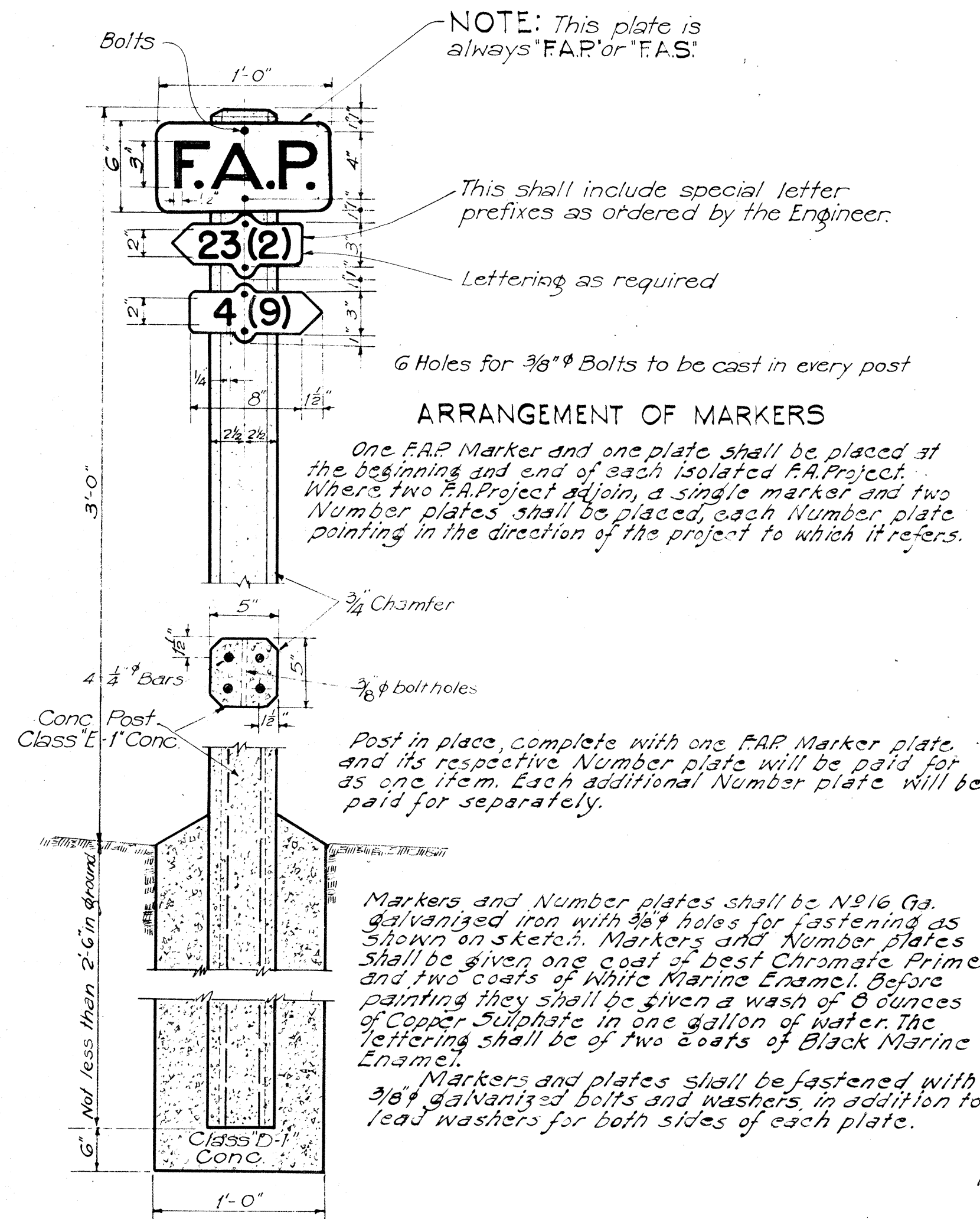
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

SCALES AS NOTED Sept. 5, 1946

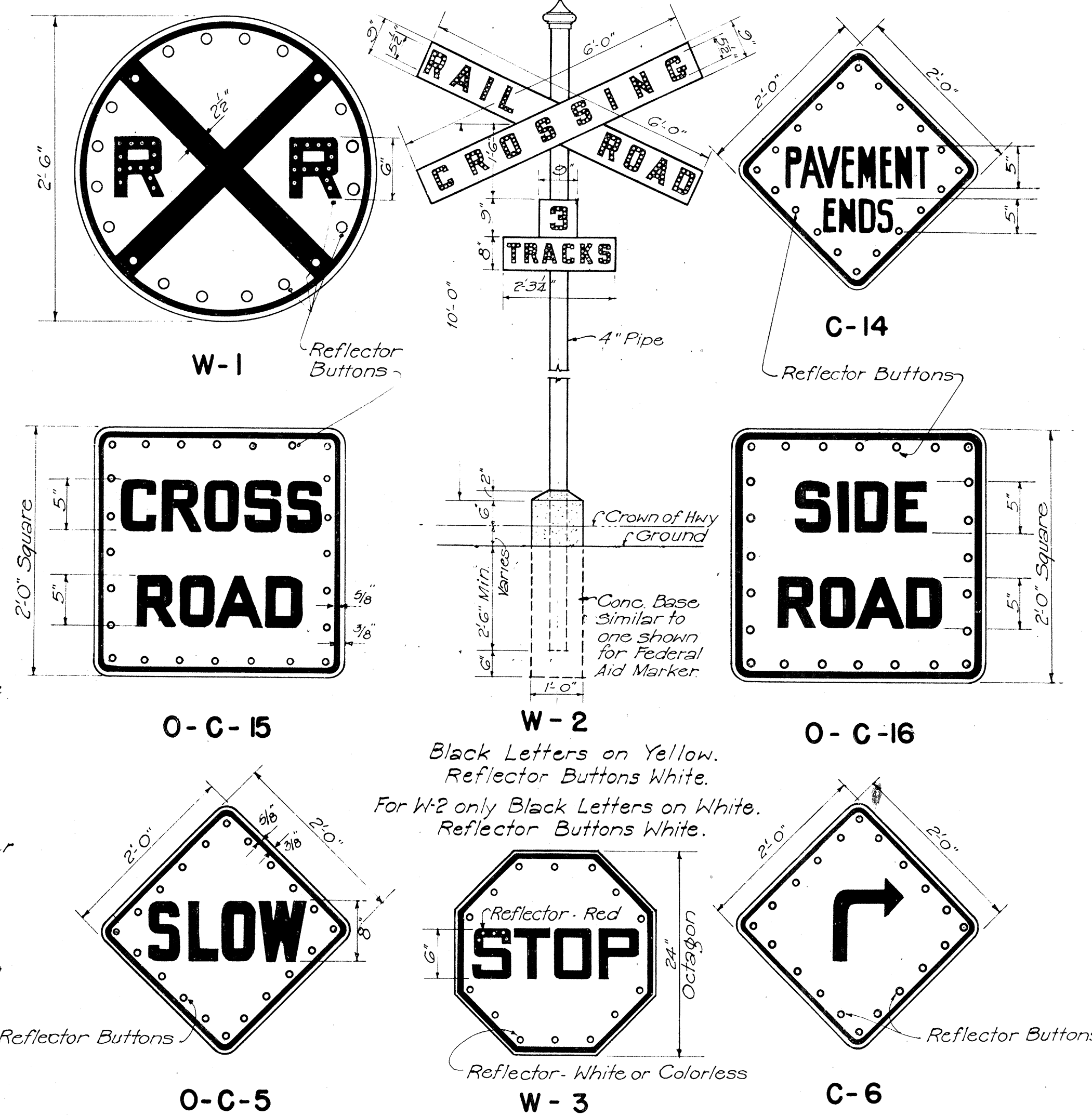
APPROVED: *B. F. Runk*
Territorial Highway Engineer

SHEET No 1 OF 4 SHEETS



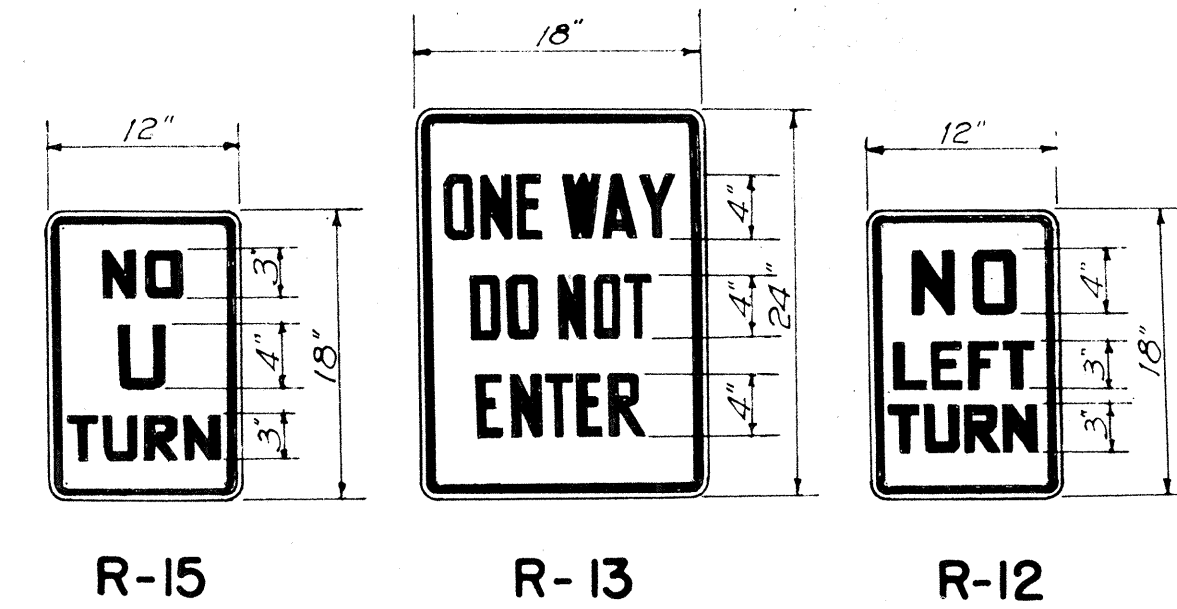
FEDERAL AID MARKER

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

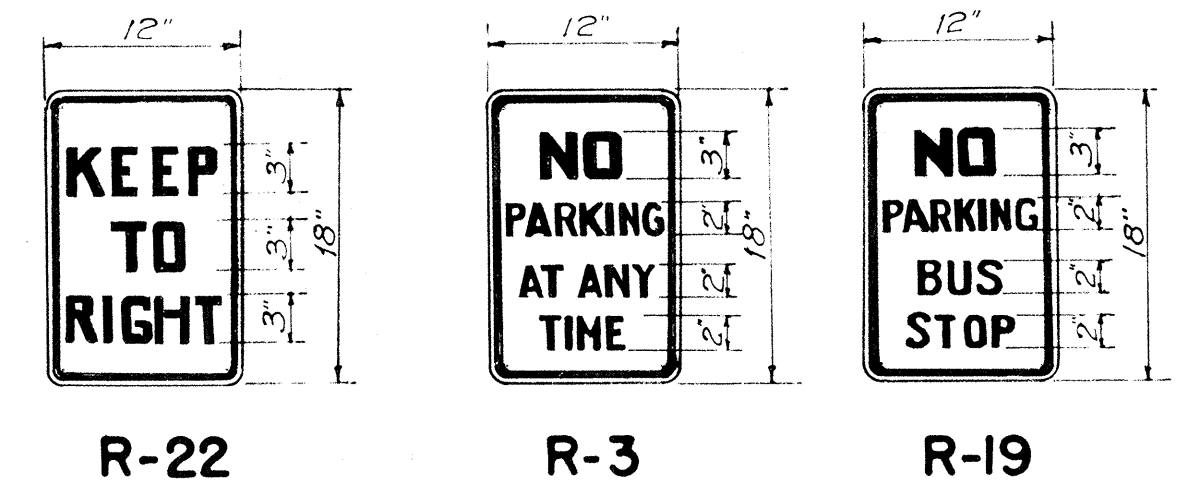


WARNING AND CAUTION SIGNS

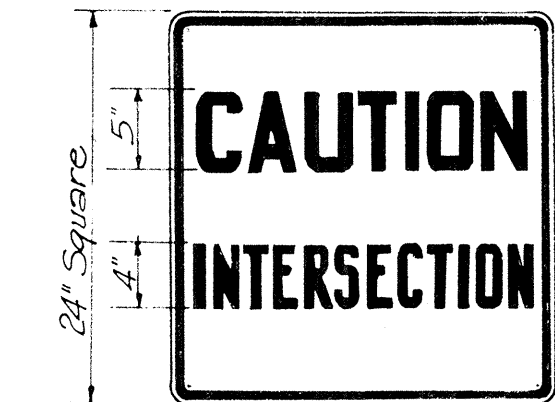
NOTE: Each sign, except W-2, is to be mounted on 3" Galv. Pipe in the same manner as detailed for Regulatory Sign.



For R-15, R-13, R-12, R-22, R-3, and R-19: Black Letters and Borders on White Background

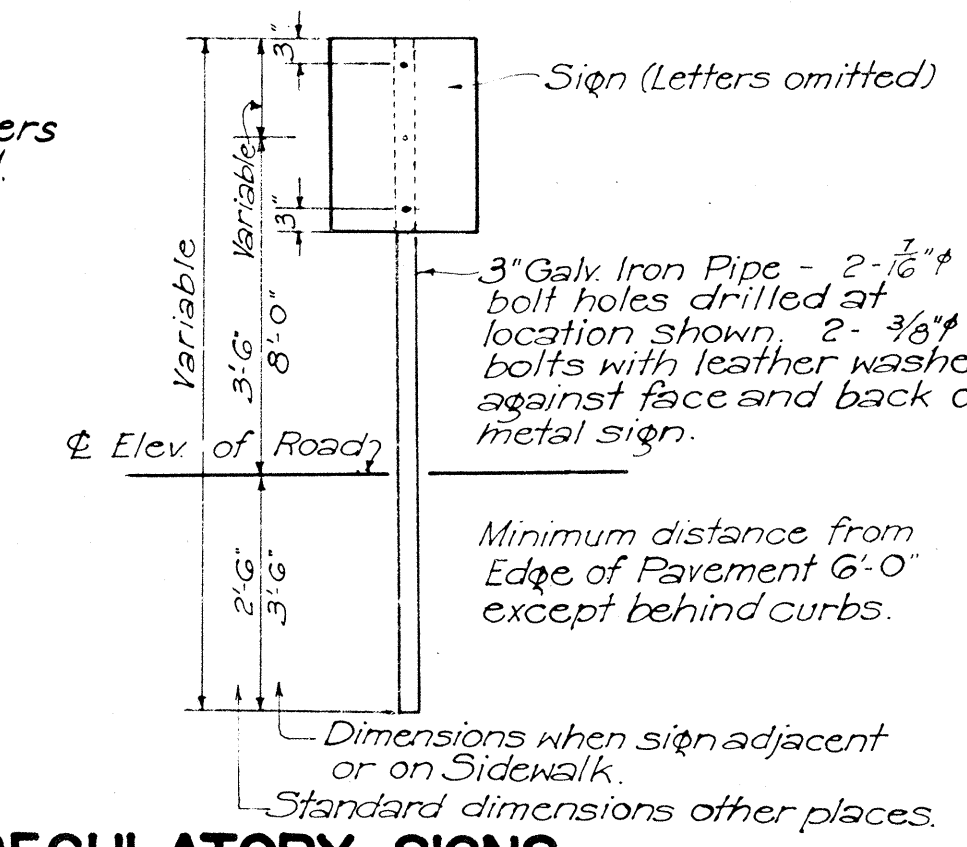


For NS-R33: Black Letters and Borders on Yellow Background.

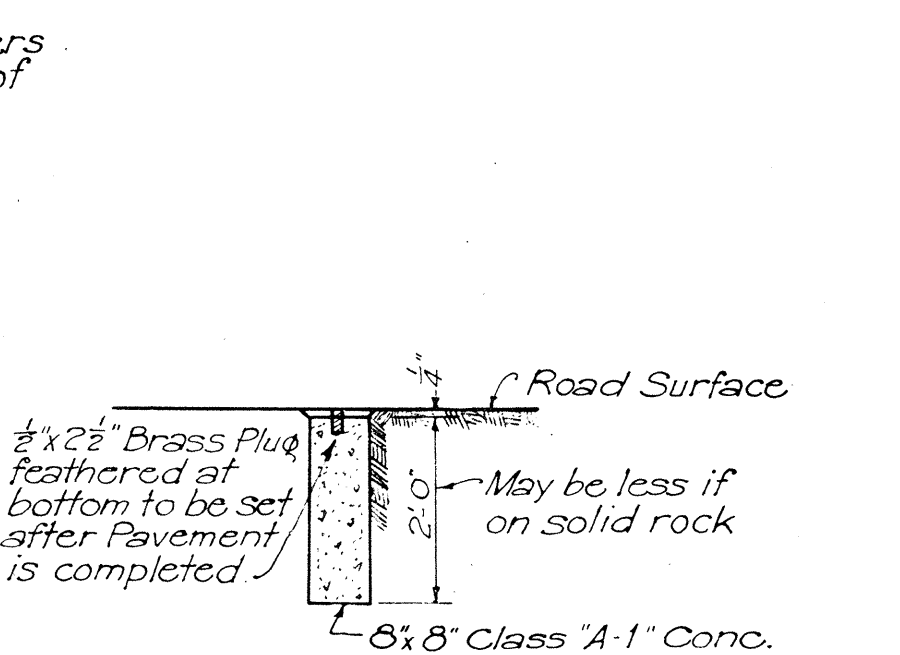


NS-R33

DETAILS OF REGULATORY SIGNS



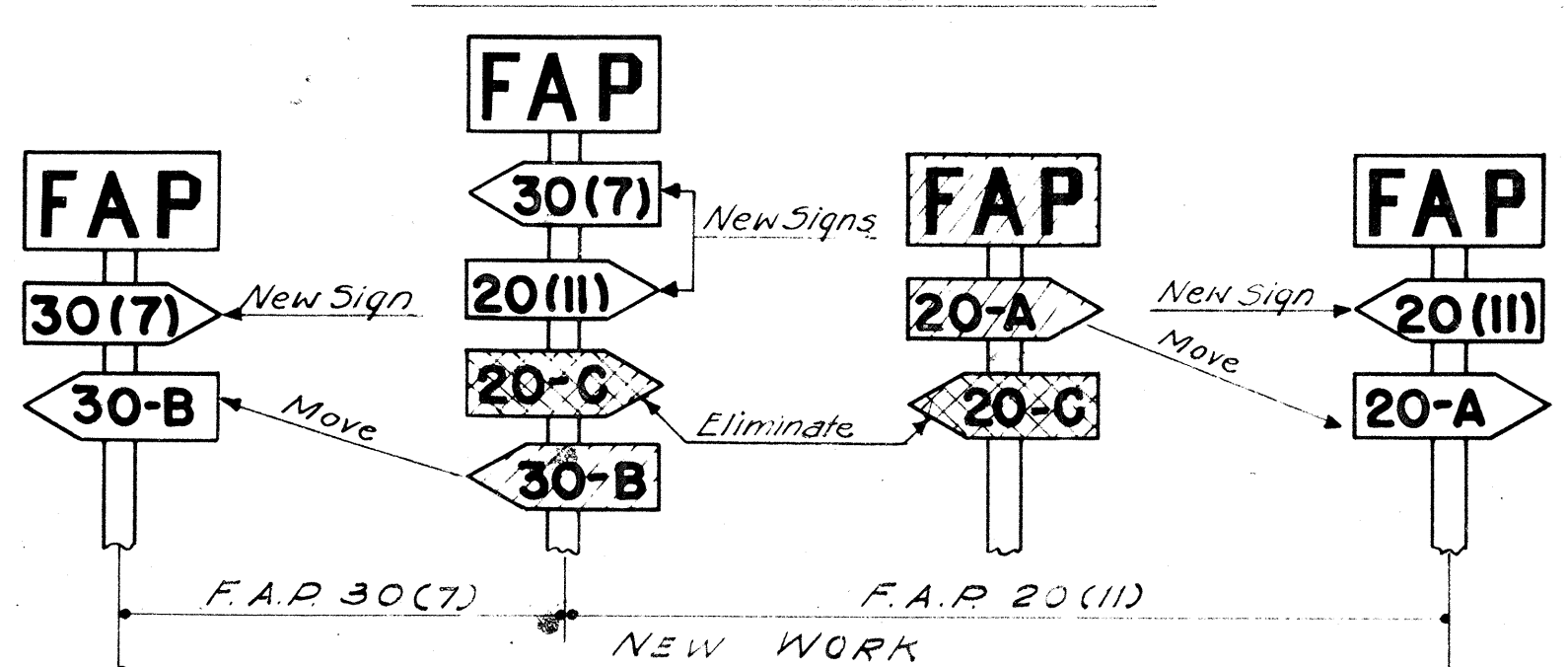
STD. C&C STREET SURVEY MONUMENT



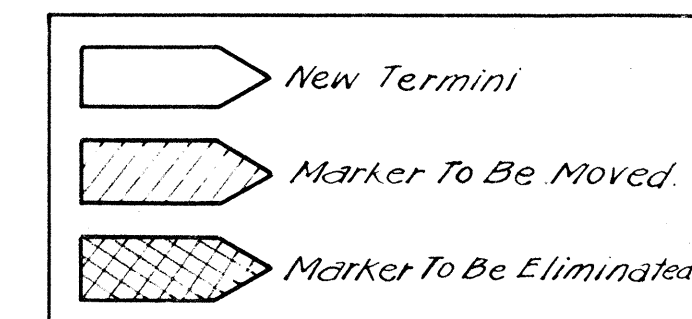
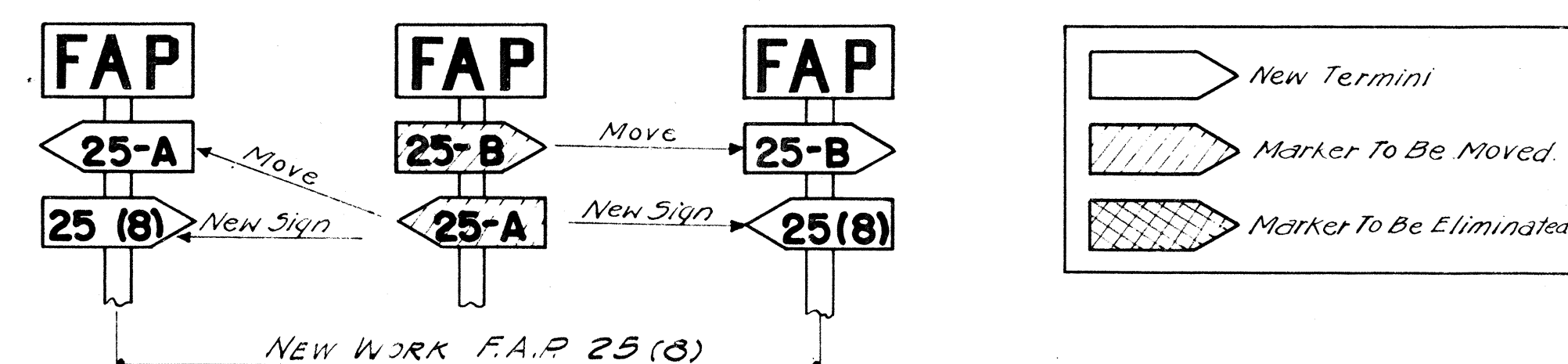
CENTER LINE MONUMENT

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

F.A.P. 20 & 30

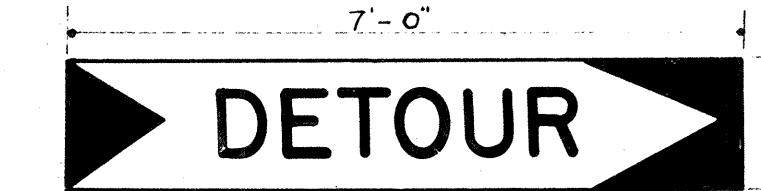


F.A.P. 25



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

Note: Letters to be 12" high and 1/2" thick. Secondary detour and direction signs necessary to be at least 1/2 the above size. Detour signs shall be placed at the location ordered by the Engineer.



STANDARD DETOUR SIGN

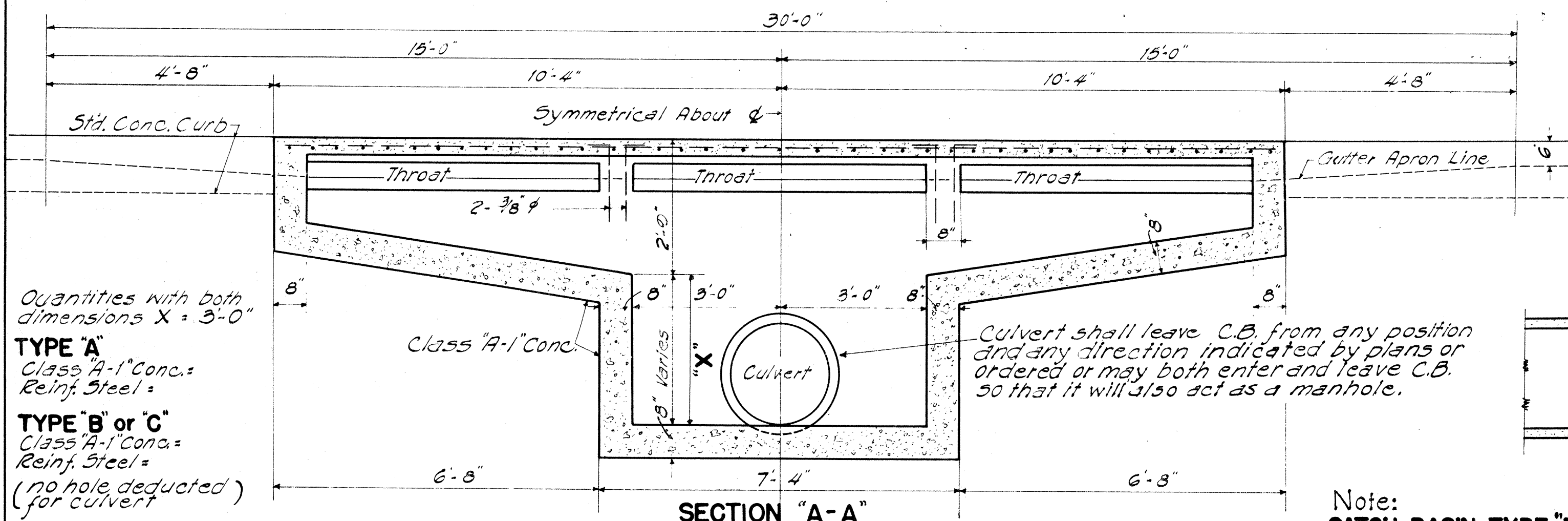
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

SCALES AS NOTED Sept. 5, 1946

APPROVED: *B. F. Rush*
Territorial Highway Engineer

SHEET NO. 2 OF 4 SHEETS



Quantities with both dimensions X = 3'-0"

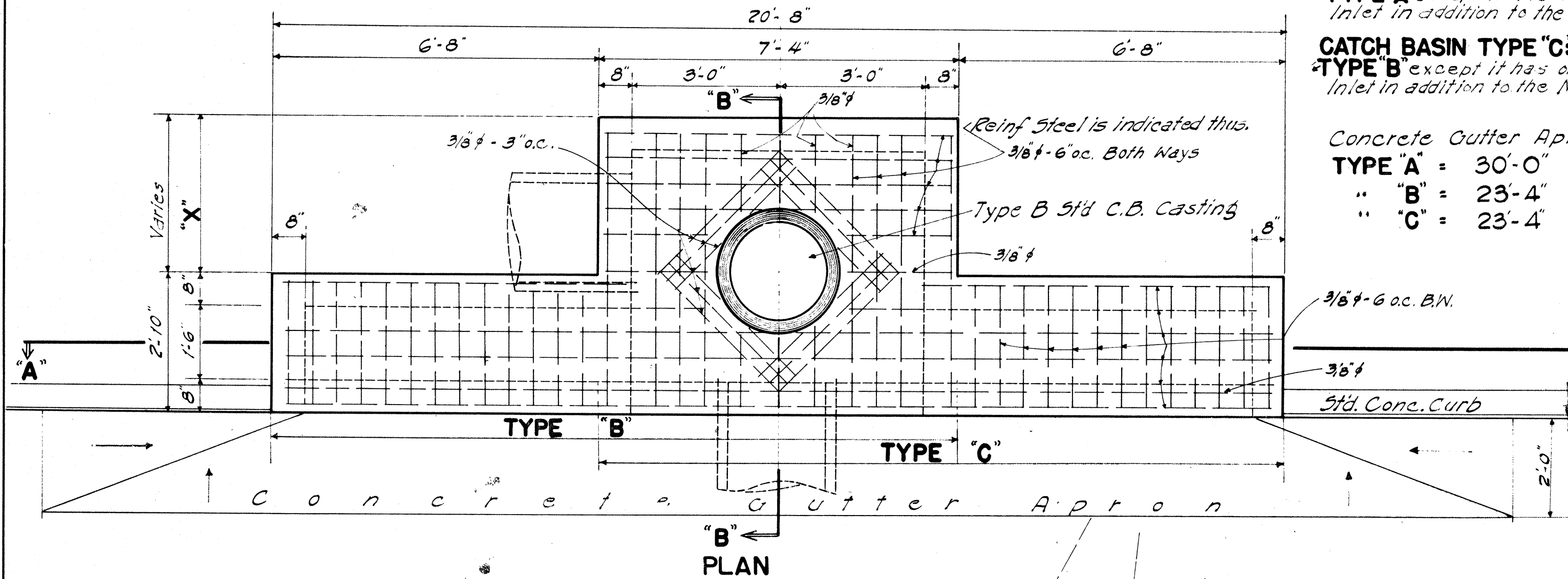
TYPE "A"
Class A-1 Conc.
Reinf. Steel =

TYPE "B" or "C"
Class A-1 Conc.
Reinf. Steel =
(no hole deducted)
for culvert

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

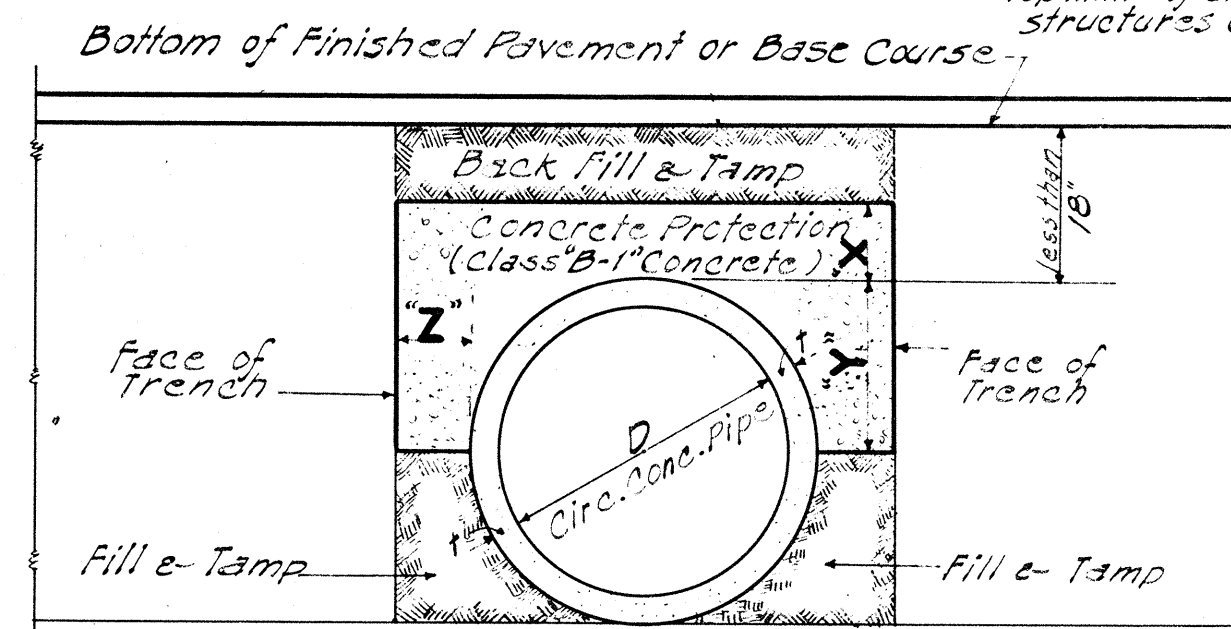
CATCH BASIN TYPE "C" similar to **TYPE "B"** except it has only Right Side Inlet in addition to the Main Box.

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



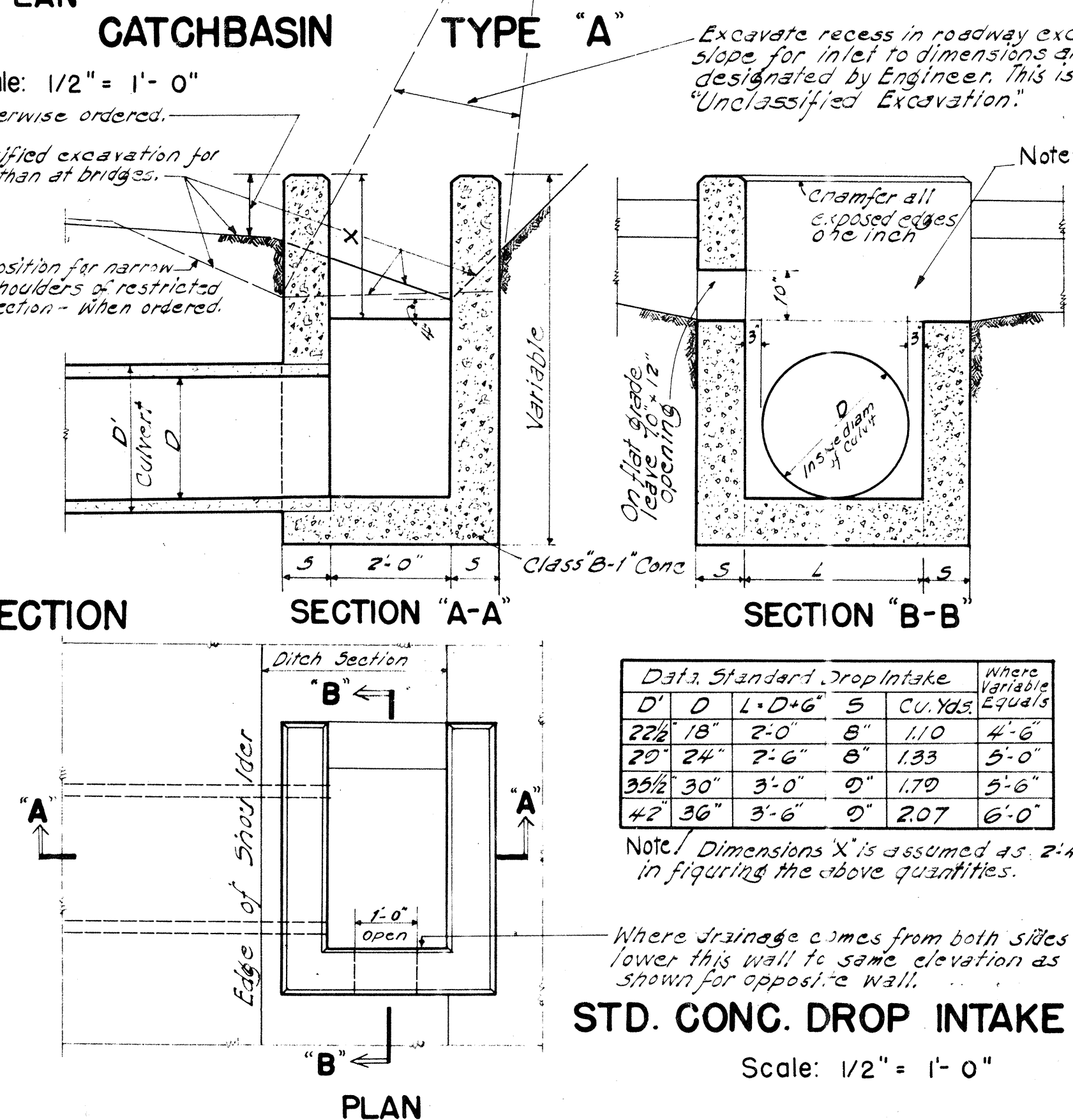
STANDARD CONCRETE CATCHBASIN

Scale: 1/2" = 1'-0"
12" unless otherwise ordered.



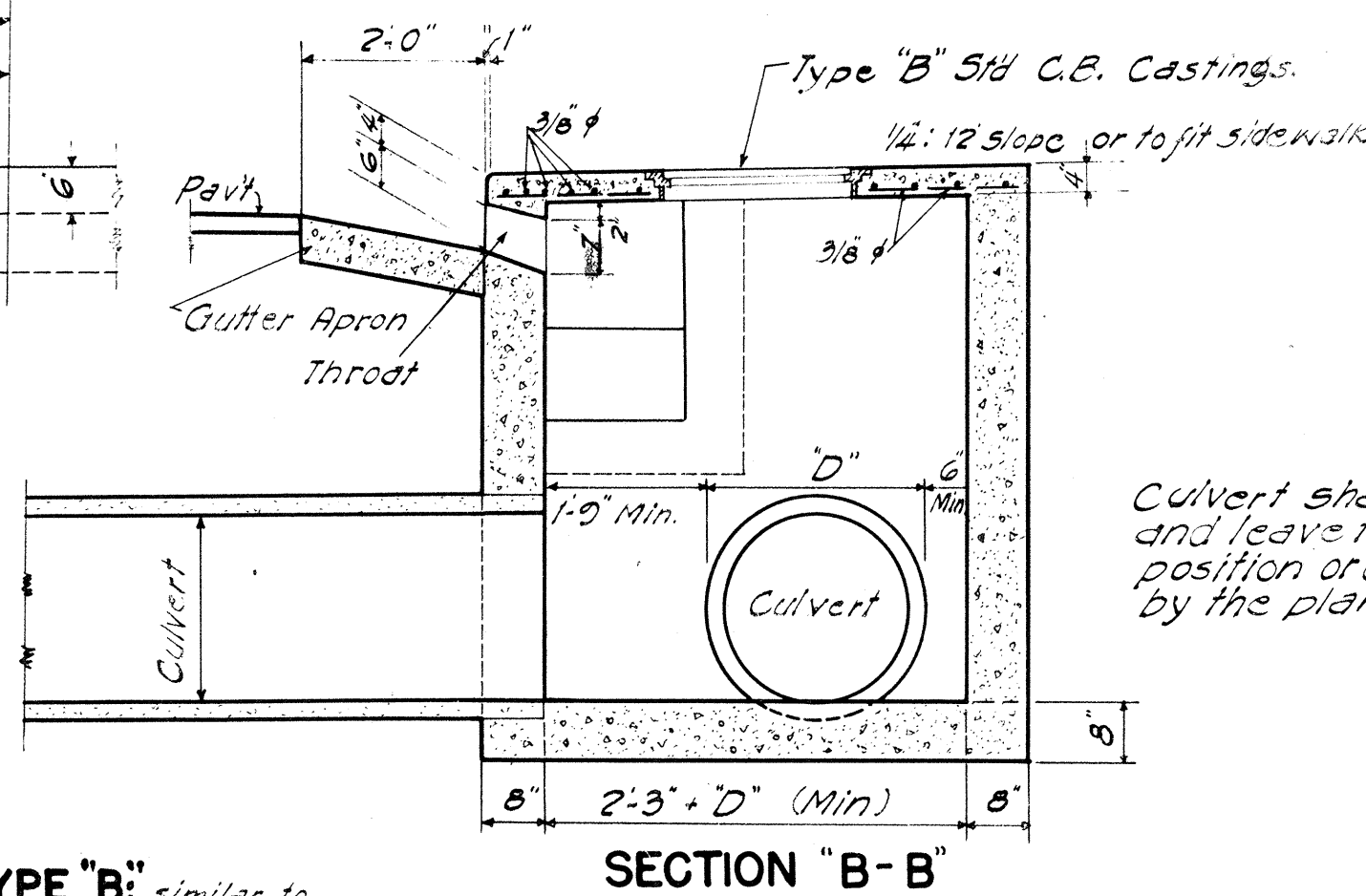
TYP. SECT. OF CULVERT WITH CONC PROTECTION
(To be used when cover is less than 18")

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	$\frac{D}{2} + T$	Minimum = X
11" " 48" D		Maximum pay quantity will be Z = 12"
12" " 54" D		



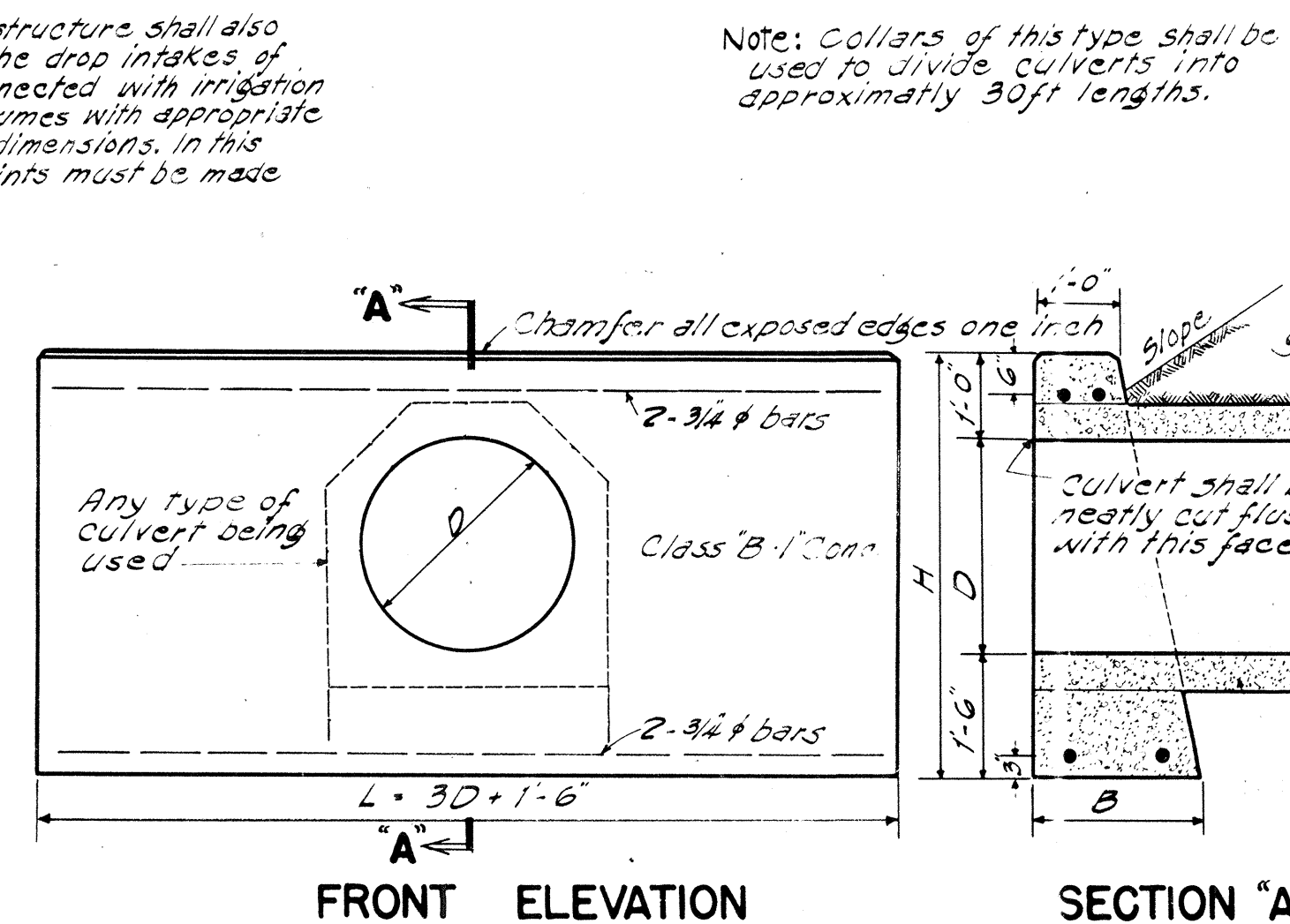
STD. CONC. DROP INTAKE

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



CONC. COLLAR FOR CONC. BOX CULVERT

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



FRONT ELEVATION

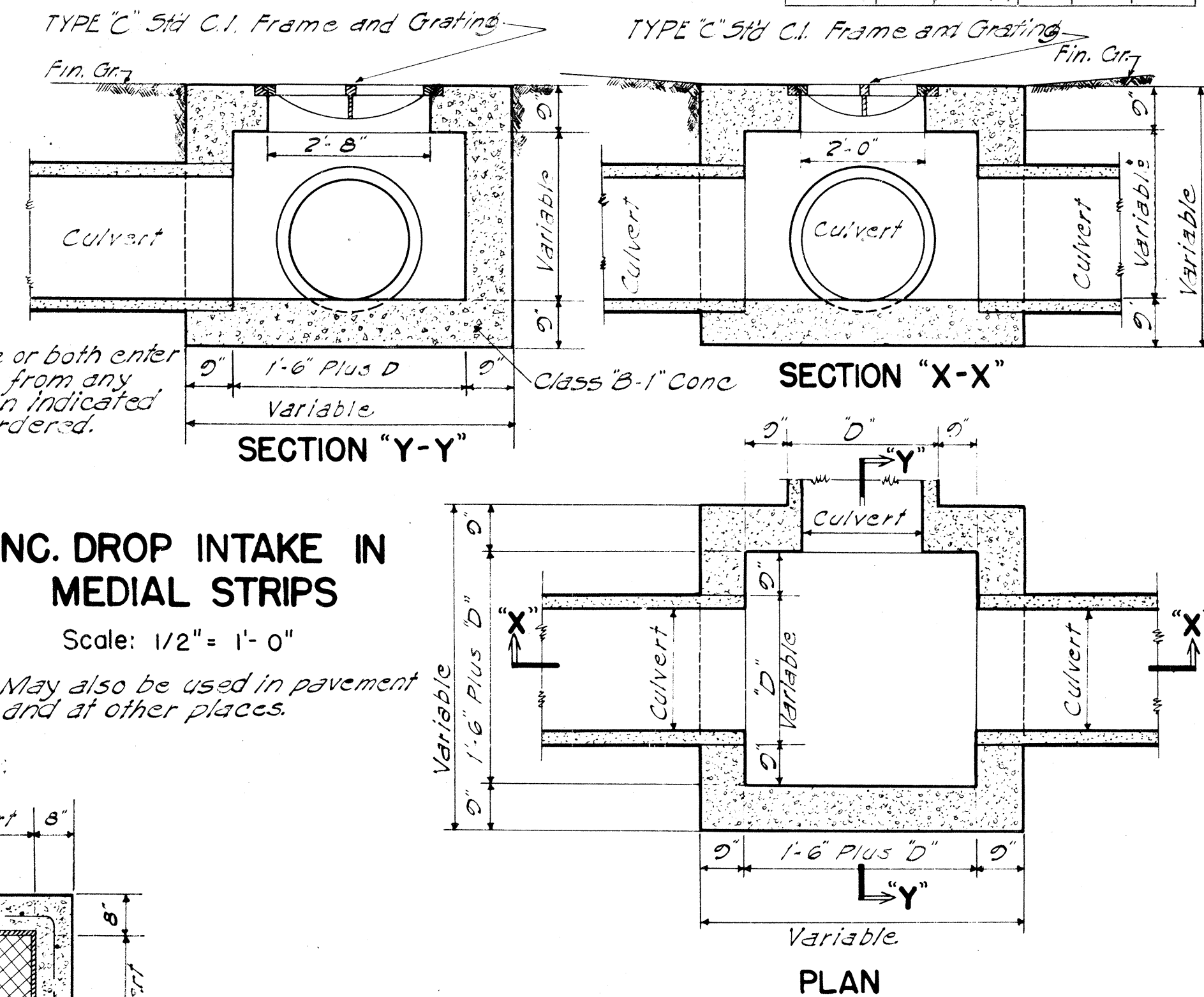
SECTION "A-A"

Cast-in-Place		Data: Standard Concrete Headwall		Steel One Headwall	
Cu. Yds.	D	B	H	Conc. one H.W.	No. of Bars
0.02	18"	1'-6"	6'-0"	4'-0"	4
1.23	"	2'-0"	7'-6"	4'-6"	4
1.93	"	3'-0"	9'-0"	5'-0"	4
2.43	"	3'-6"	10'-6"	5'-6"	4

STANDARD CONCRETE

HEADWALL

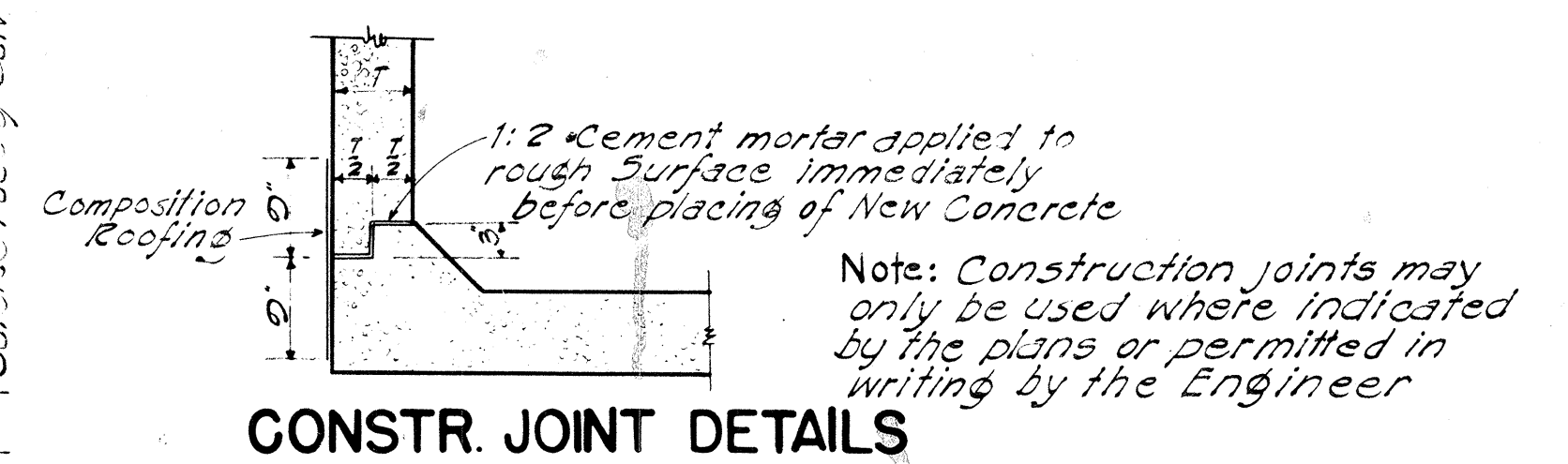
Scale: 1/2" = 1'-0"



CONC. DROP INTAKE IN MEDIAL STRIPS

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

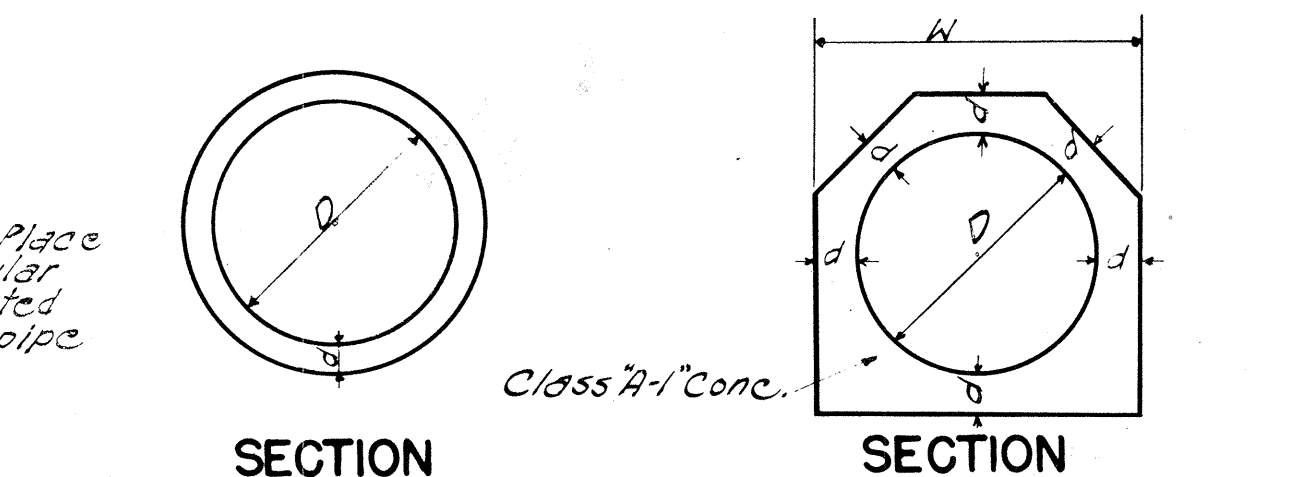
Note: May also be used in pavement and at other places.



CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING

- (1) Mop 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) Mop surface of composition roofing and 3" beyond all around with thick coat of asphalt as specified under (1).



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	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 CONC. CULVERT

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

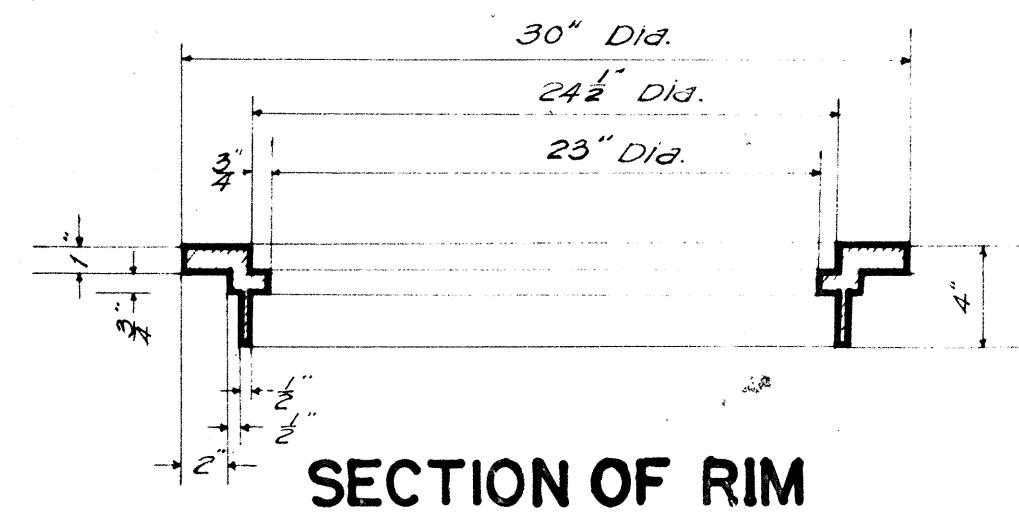
SCALES AS NOTED Sept. 5, 1946

APPROVED: *B. F. Rush*
Territorial Highway Engineer

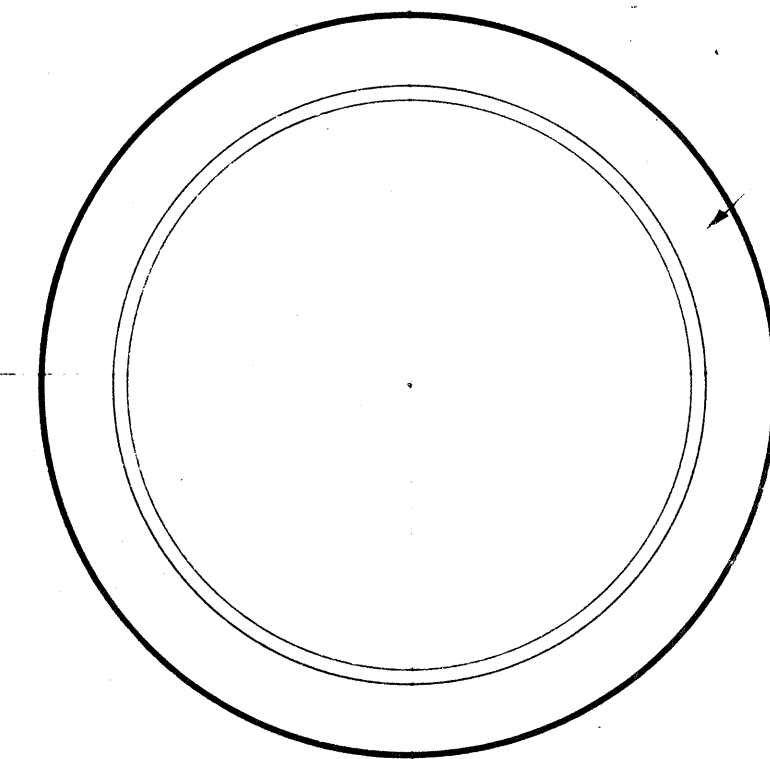
SHEET NO. 3 OF 4 SHEETS

5185.13

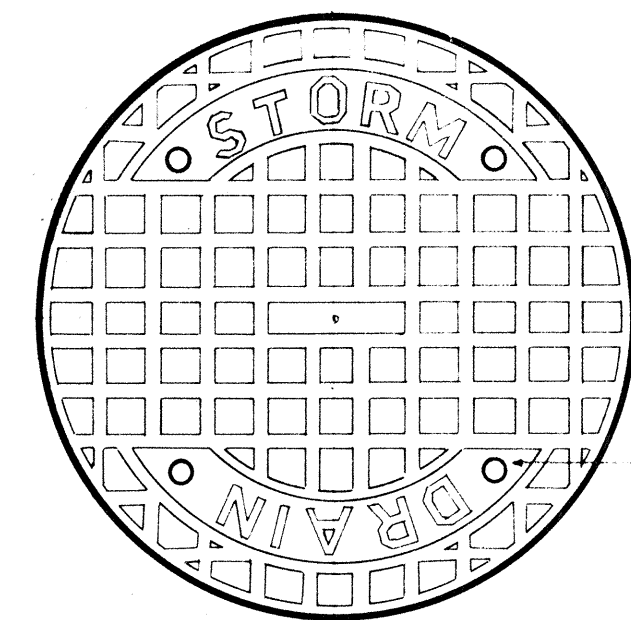
NOTE: The pattern for water manhole covers shall be the same as for sanitary sewer except that the word "Water" shall be substituted for Sanitary Sewer.



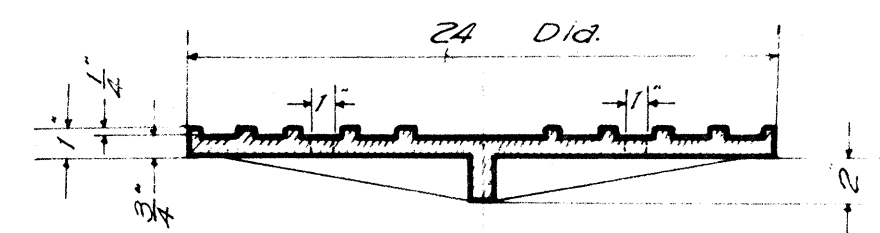
SECTION OF RIM



PLAN OF RIM

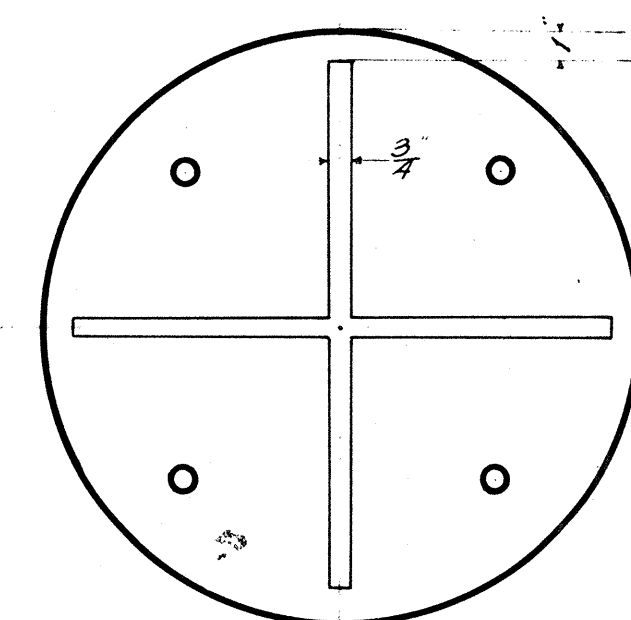


PLAN OF COVER TOP



SECTION OF COVER

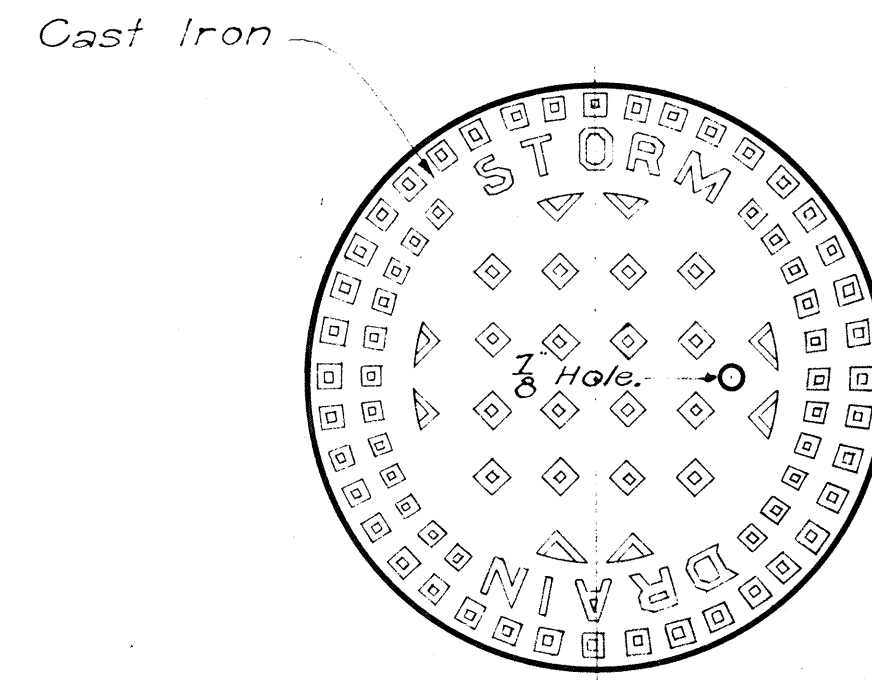
NOTE: A unit includes both Rim and Cover



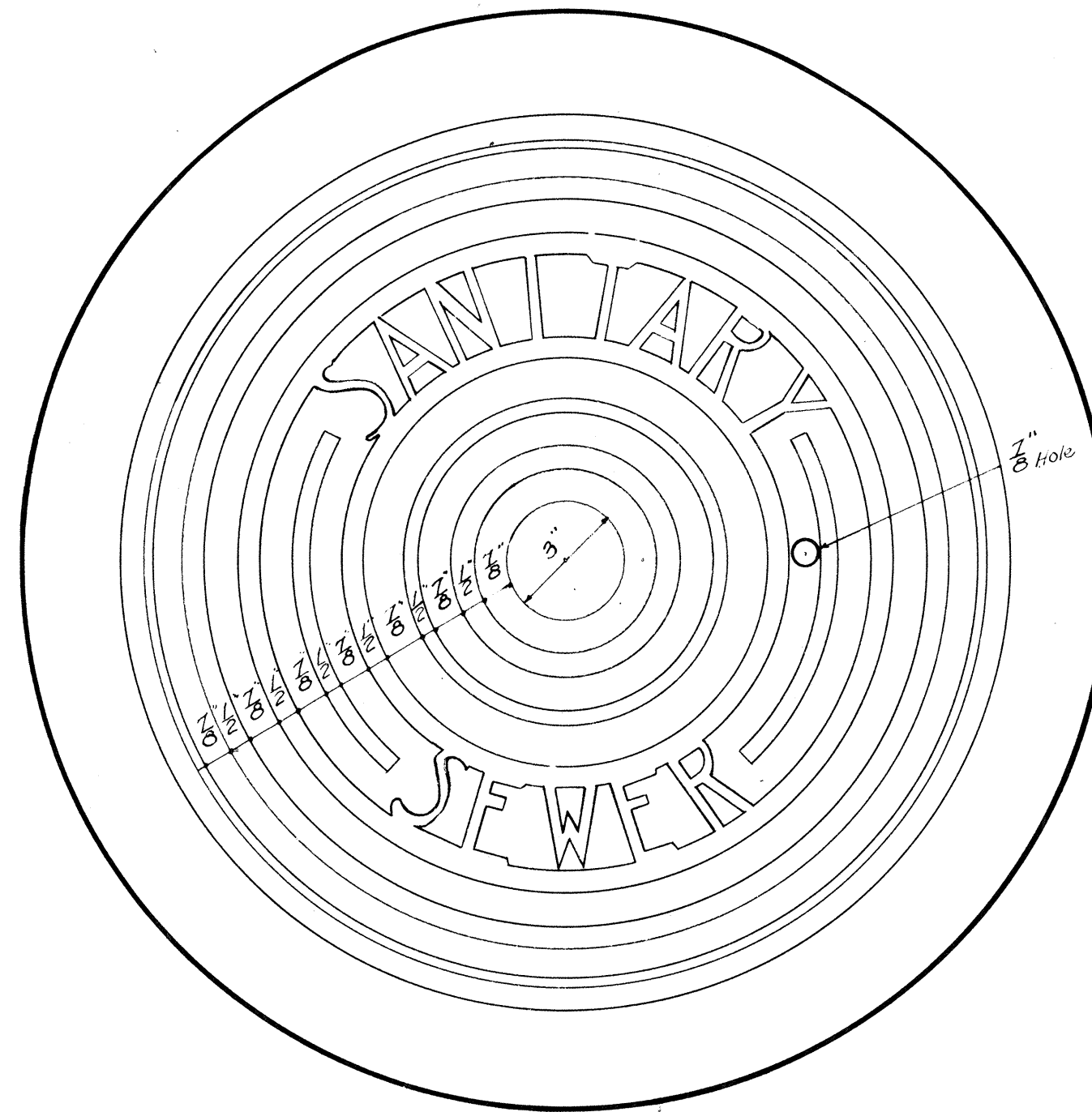
BOTTOM VIEW OF COVER TYPE "B"

STANDARD CATCH BASIN CASTINGS

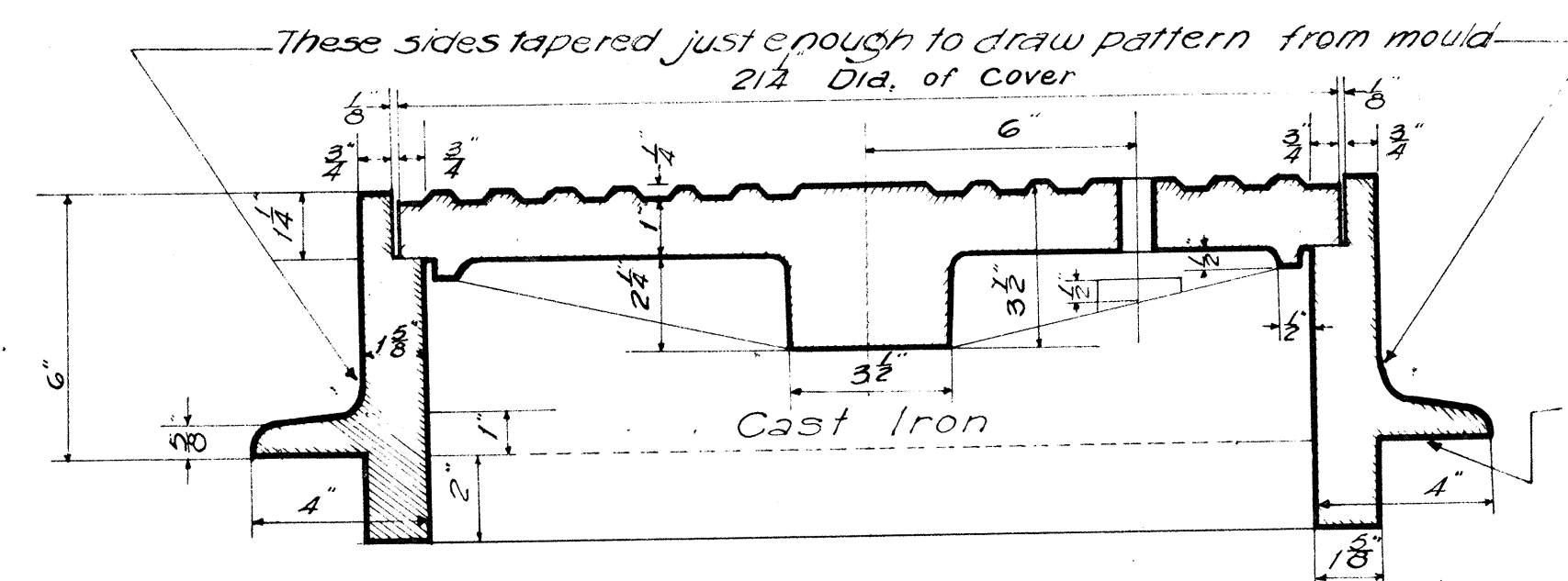
Scale: 1-1/2" = 1'-0"



PATTERN FOR STORM DRAIN MANHOLE COVER

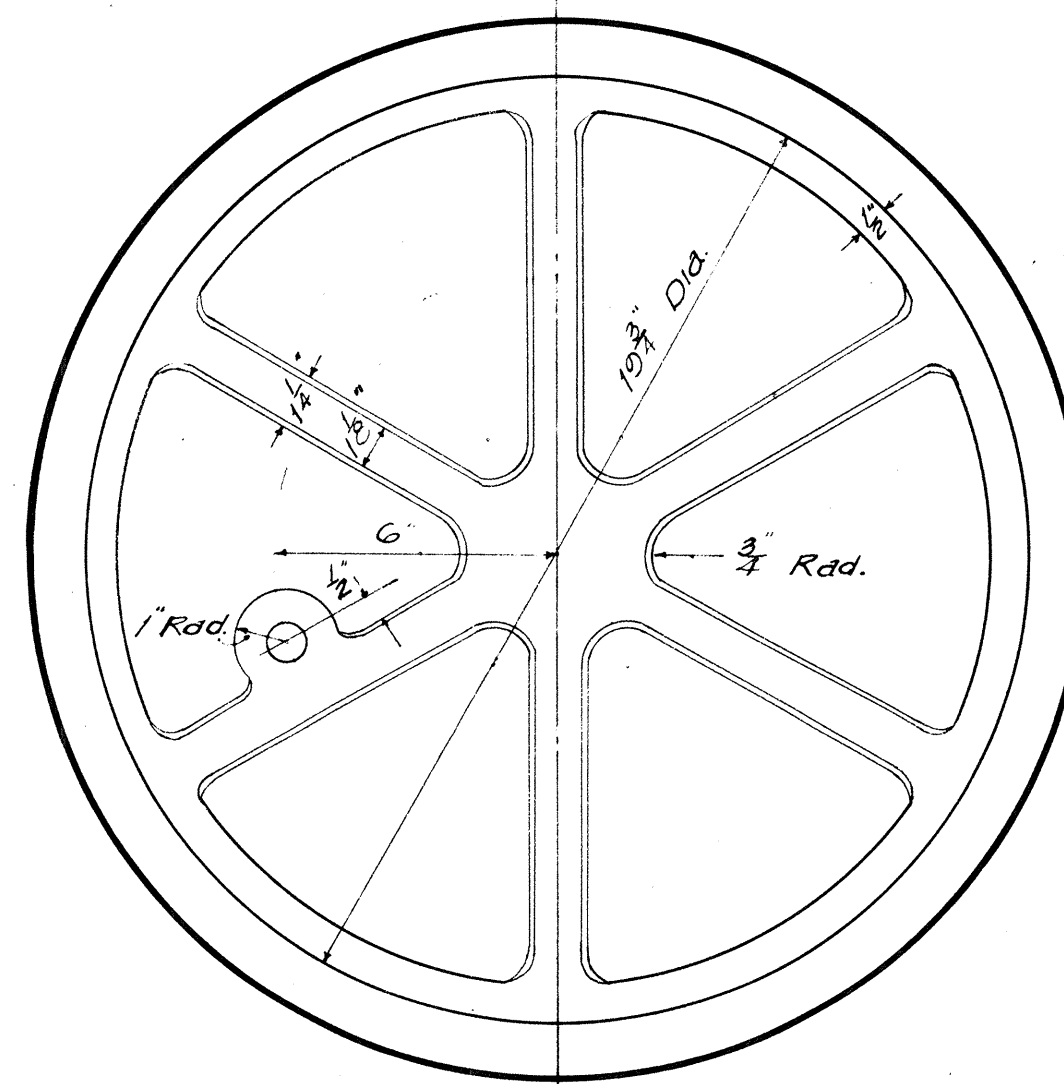


PATTERN FOR SEWER MANHOLE COVER



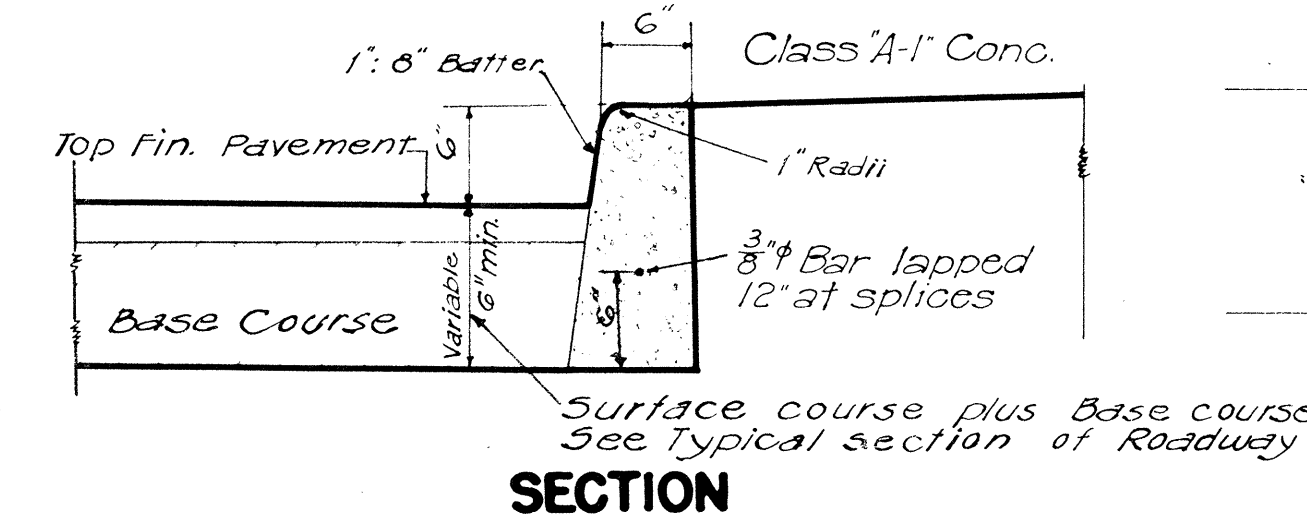
SECTION

NOTE: A unit includes both Frame and Cover



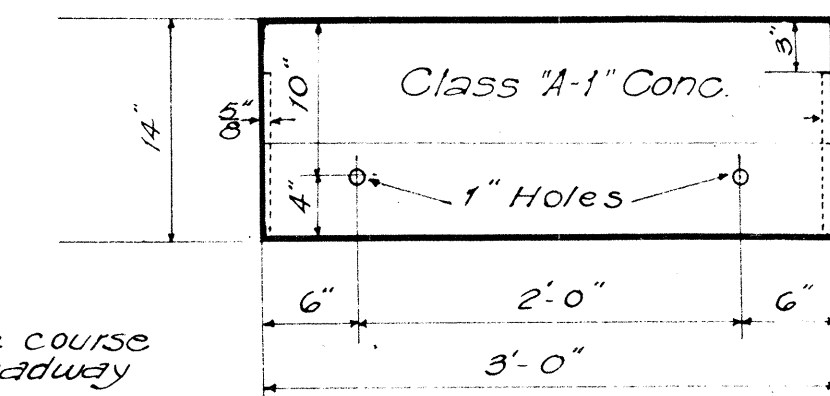
BOTTOM VIEW OF COVER TYPE "A" STANDARD MANHOLE CASTINGS

Scale: 3" = 1'-0"



ST'D. CAST IN PLACE CONC. CURB

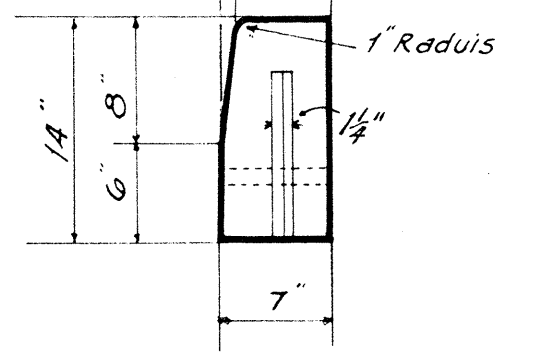
Scale: 1" = 1'-0"



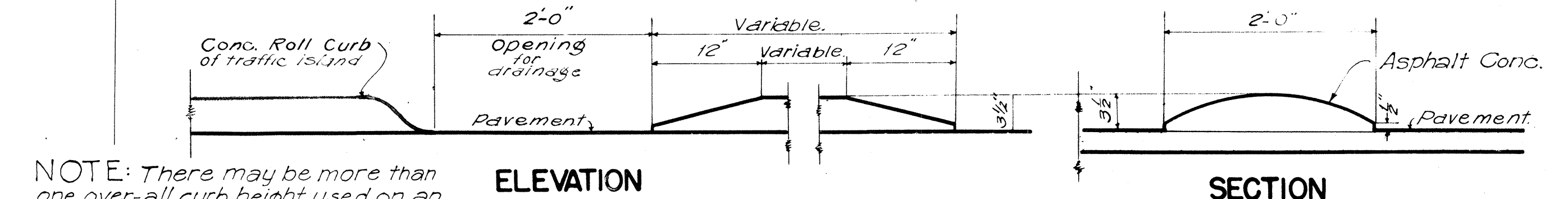
FRONT ELEV

ST'D. PRECAST CONC. CURB

Scale: 1" = 1'-0"



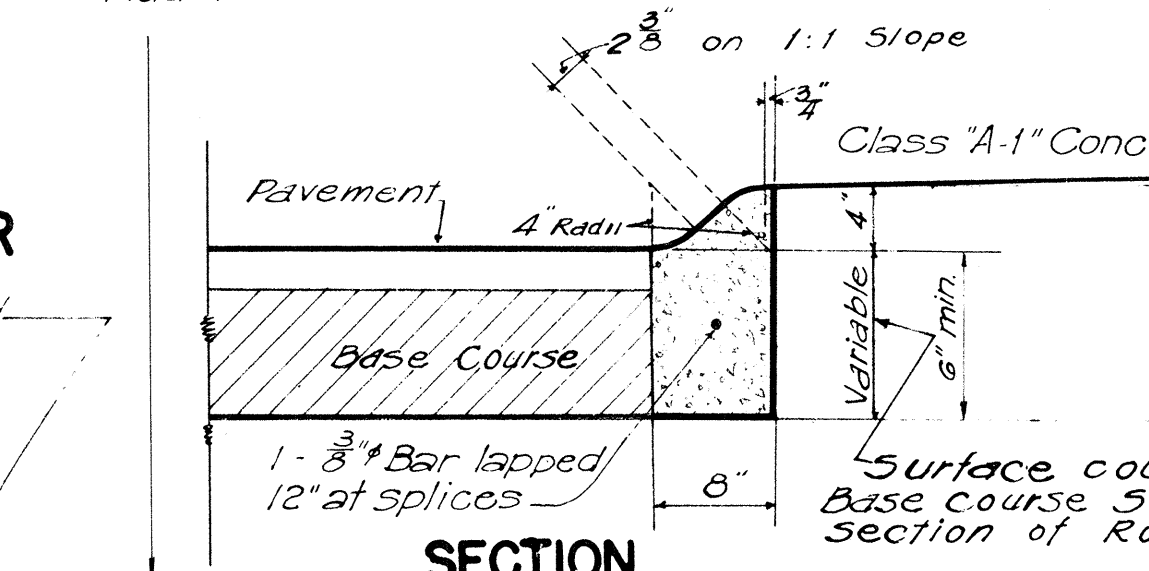
END ELEV



ELEVATION

DETAIL OF A. C. ROLL

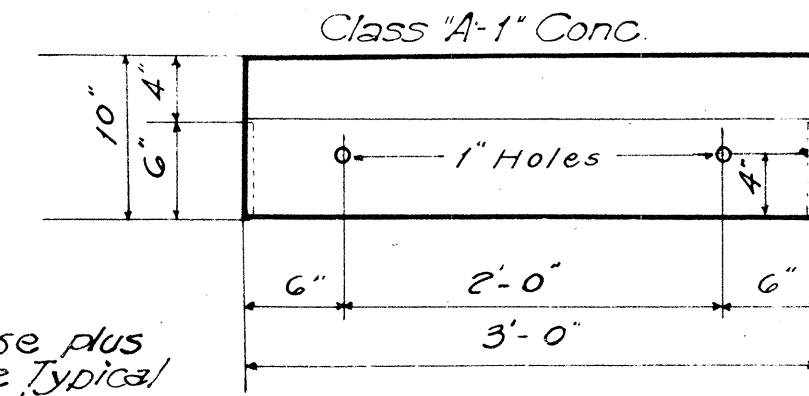
Scale: 1" = 1'-0"



SECTION

ST'D. CAST IN PLACE CONC. ROLL CURB

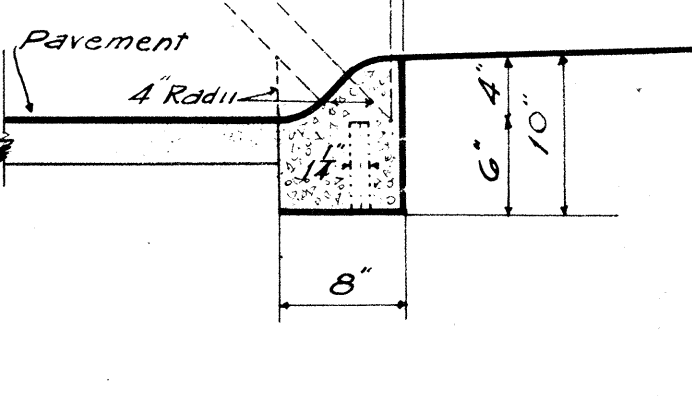
Scale: 1" = 1'-0"



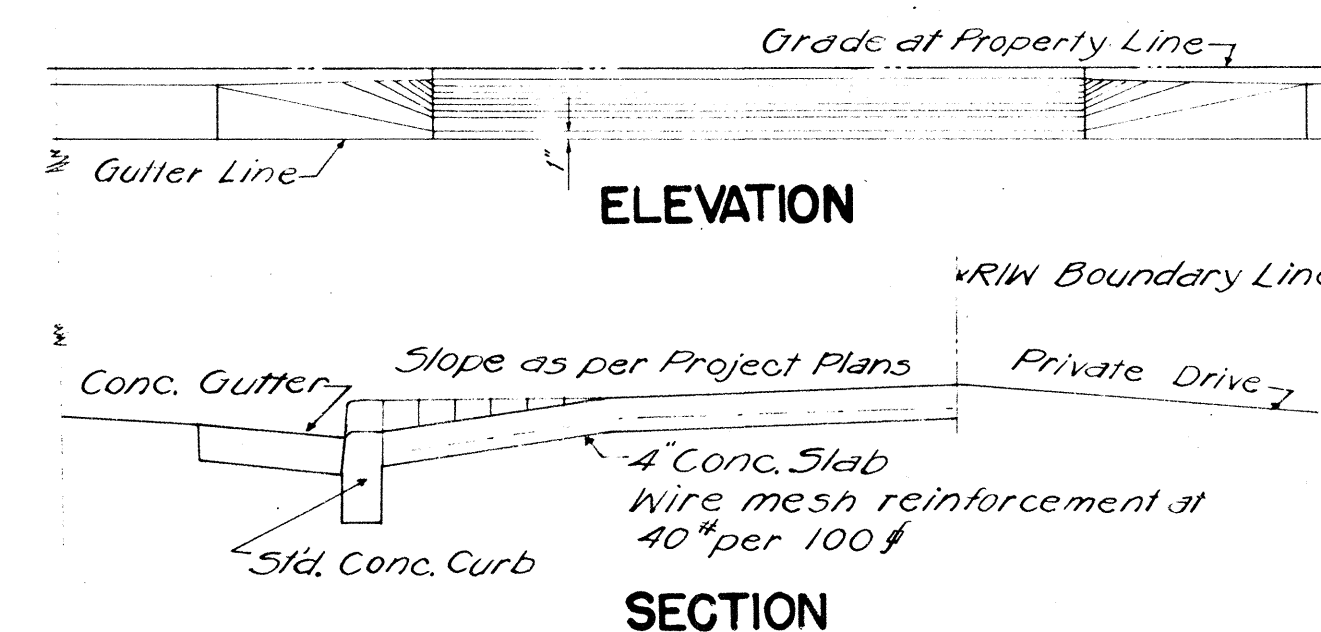
FRONT ELEV

ST'D. PRECAST CONC. ROLL CURB

Scale: 1" = 1'-0"

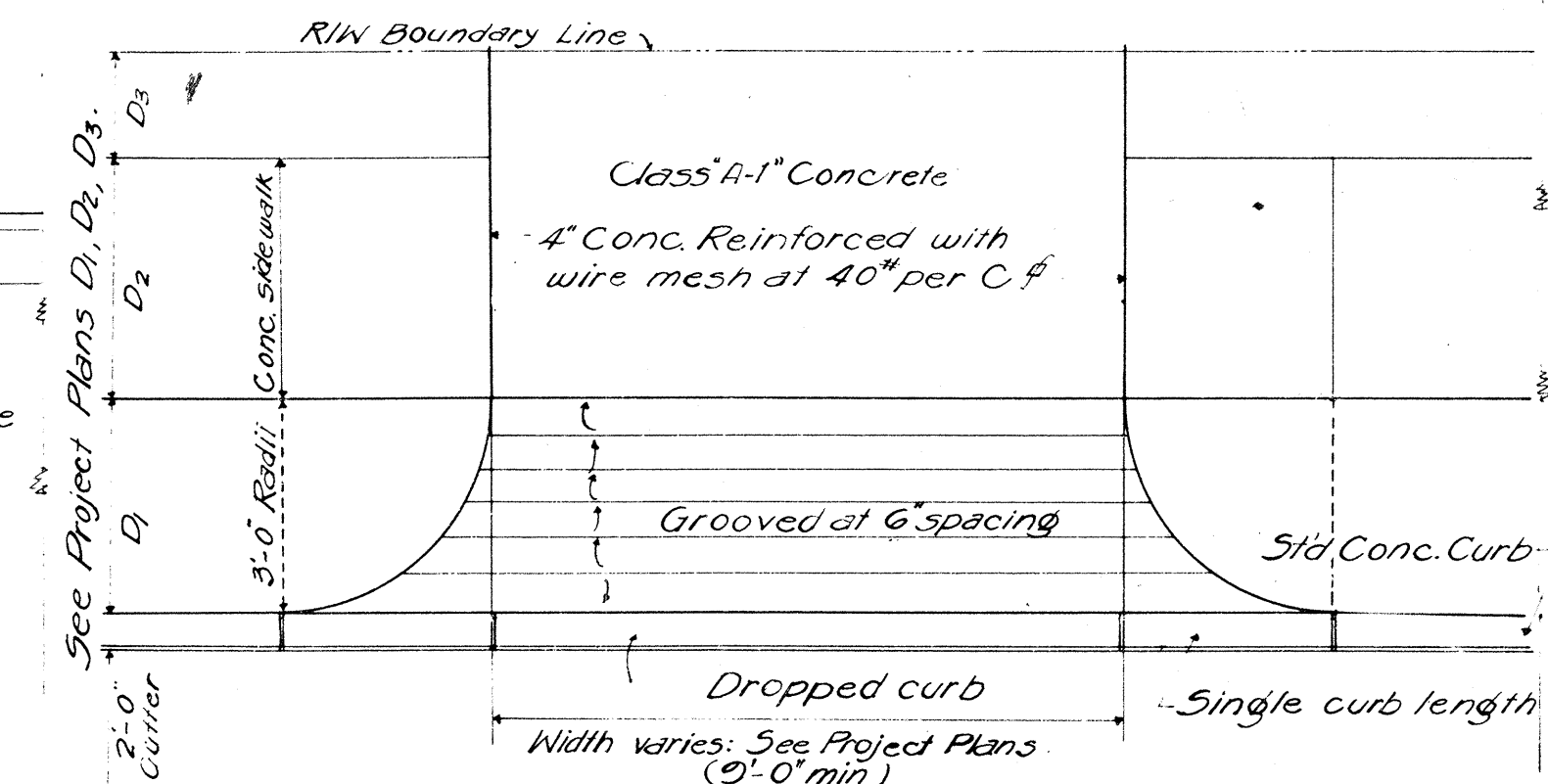


SECTION



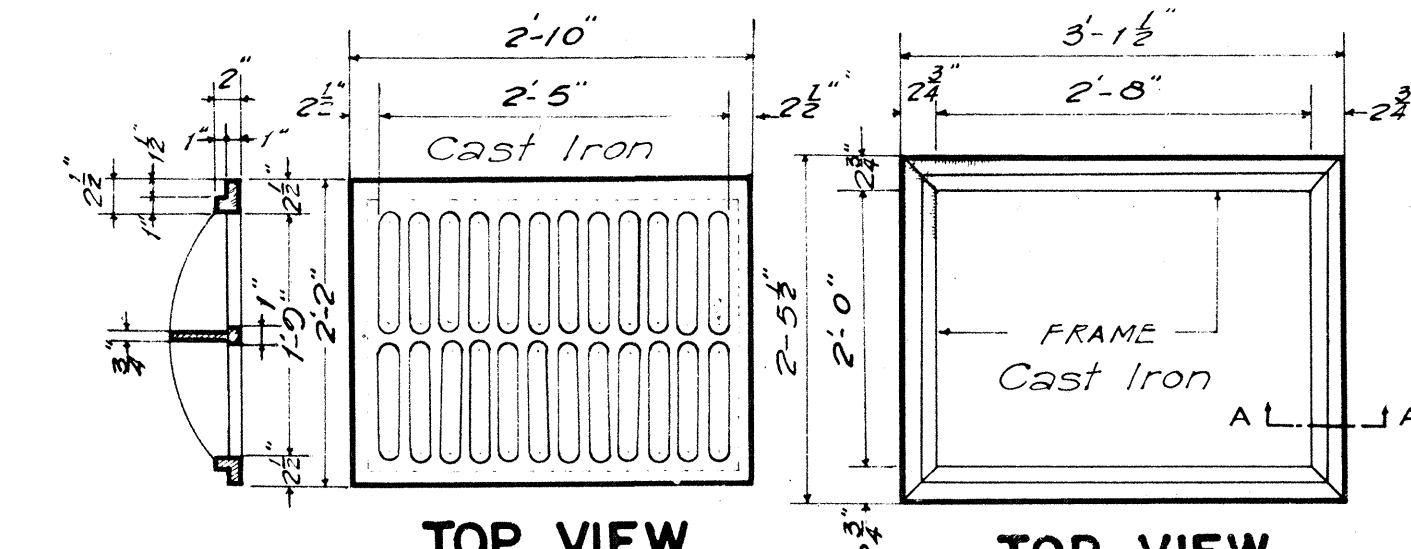
ELEVATION

SECTION



PLAN

DETAILS OF DROPPED DRIVEWAY



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"