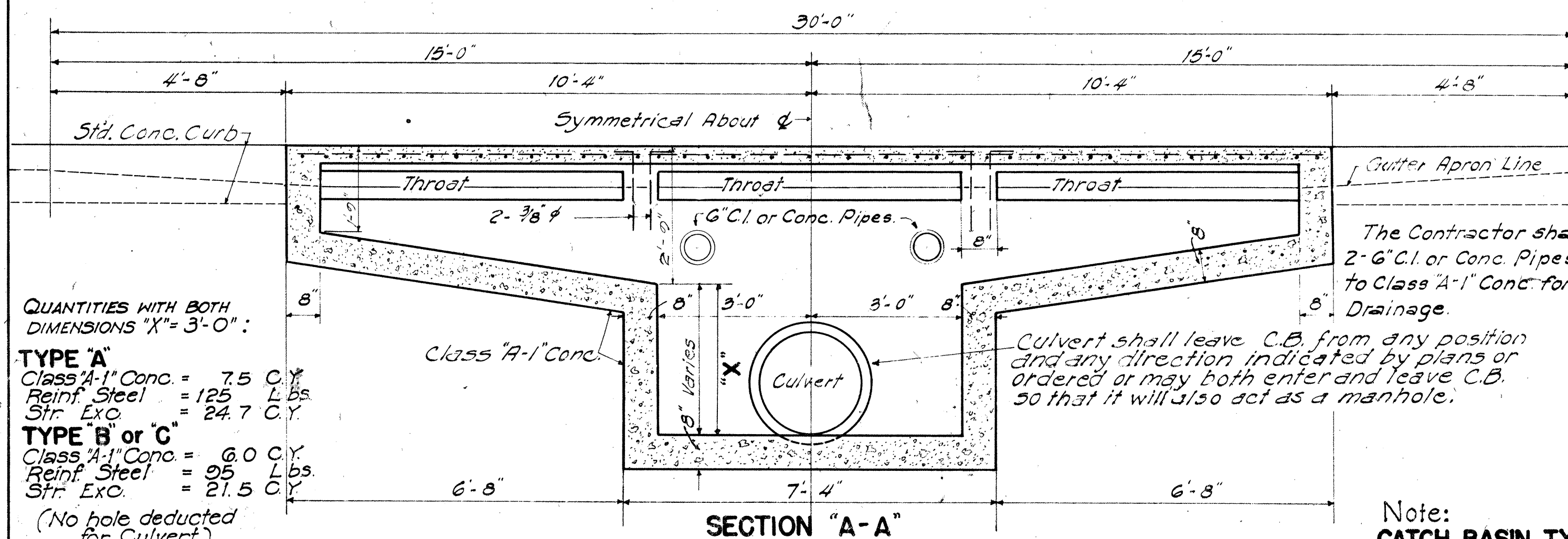




QUANTITIES WITH BOTH DIMENSIONS "X" = 3'-0":

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

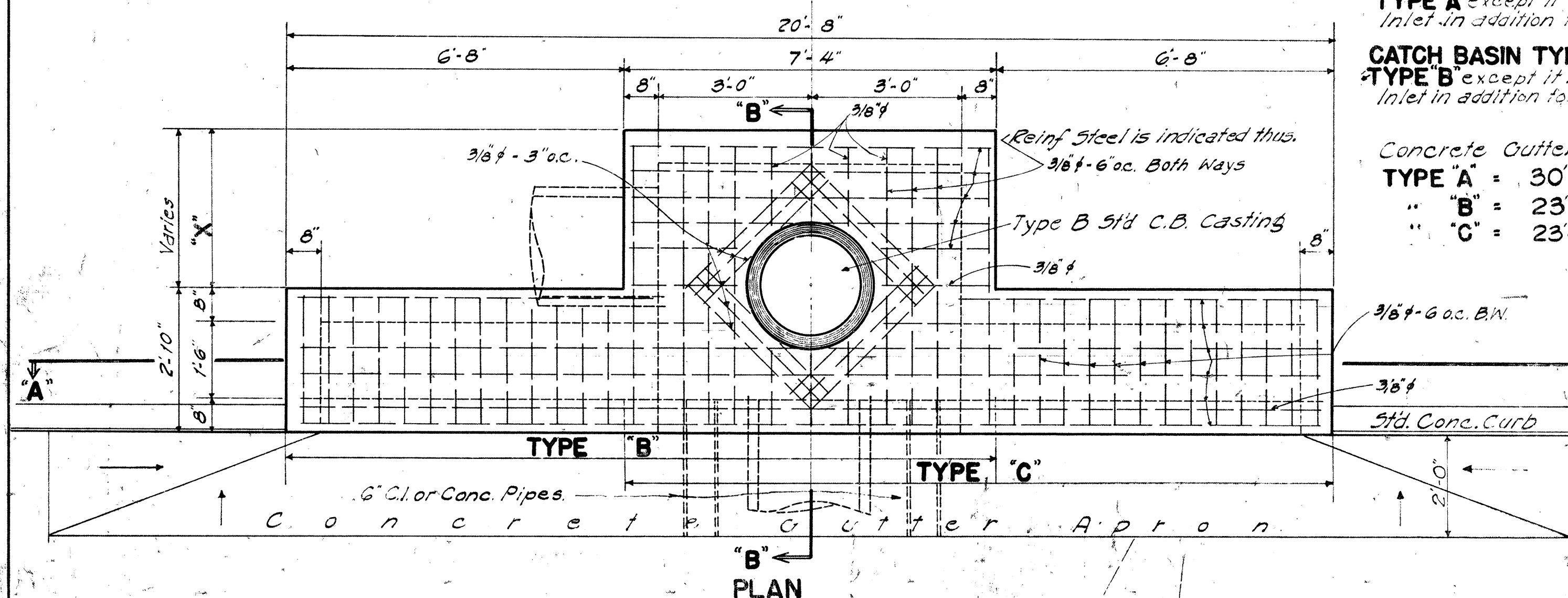
(No hole deducted for Culvert)

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

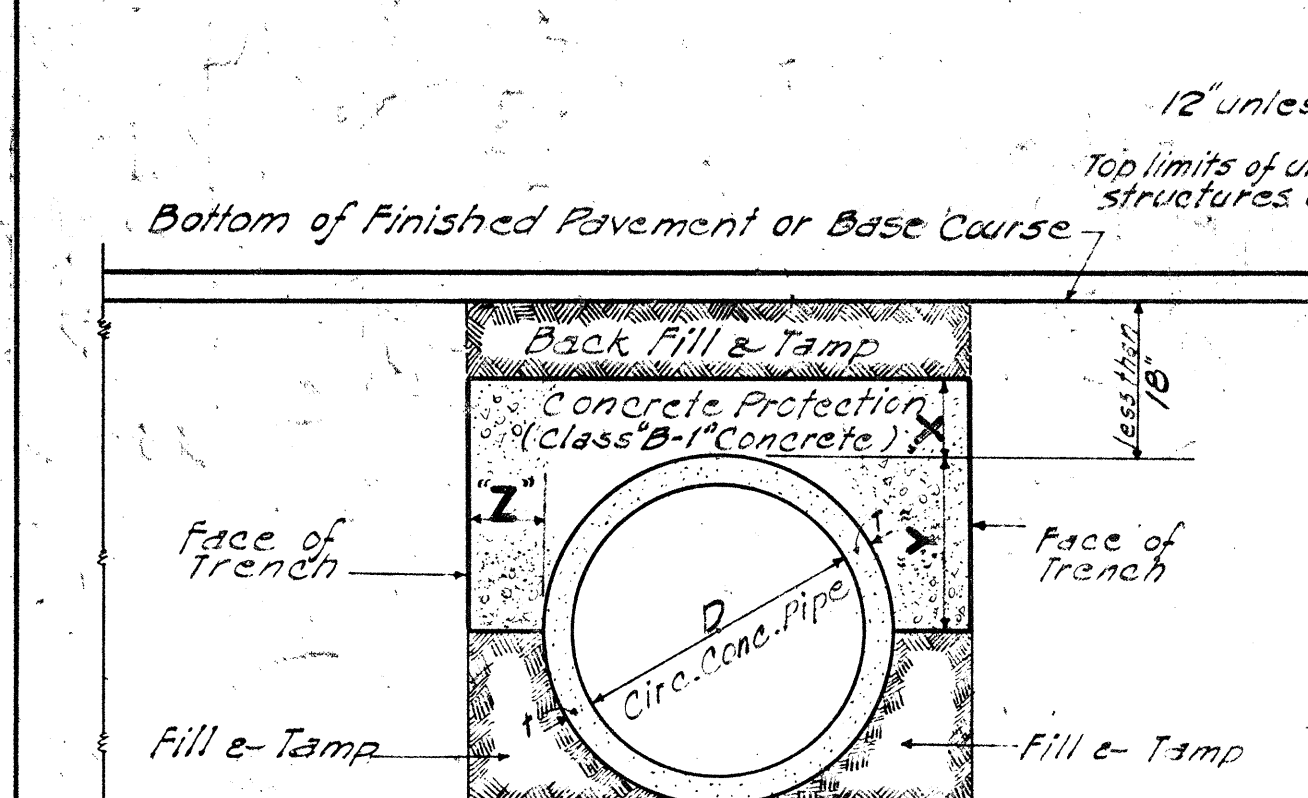
CATCH BASIN TYPE "C": similar to **TYPE B** except it has only Right Side Inlet in addition to the Main Box.

Concrete Gutter Apron Length:

TYPE A = 30'-0"
"B" = 23'-4"
"C" = 23'-4"



STANDARD CONCRETE CATCHBASIN



TYP. SECT. OF CULVERT WITH CONG. PROTECTION

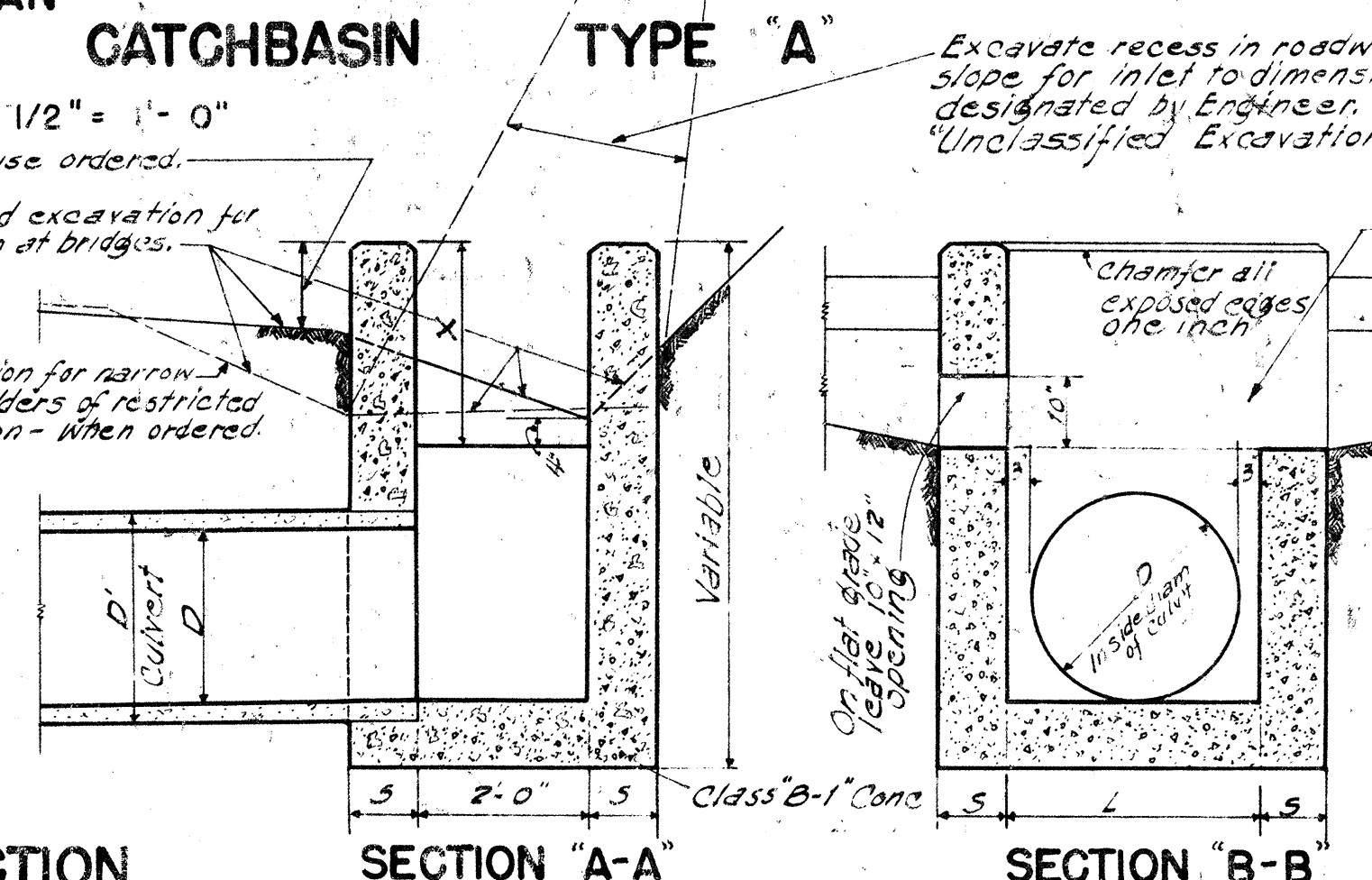
DATA: CONCRETE PROTECTION OVER CULVERTS		
X	Y	Z
6" for 18" D		
7" " 24" D		
8" " 30" D		
10" " 36" D		
11" " 42" D		
12" " 48" D		

Y = 2' + T

Z must be from pipe to face of trench

Minimum = X

Maximum pay quantity will be Z = 12"

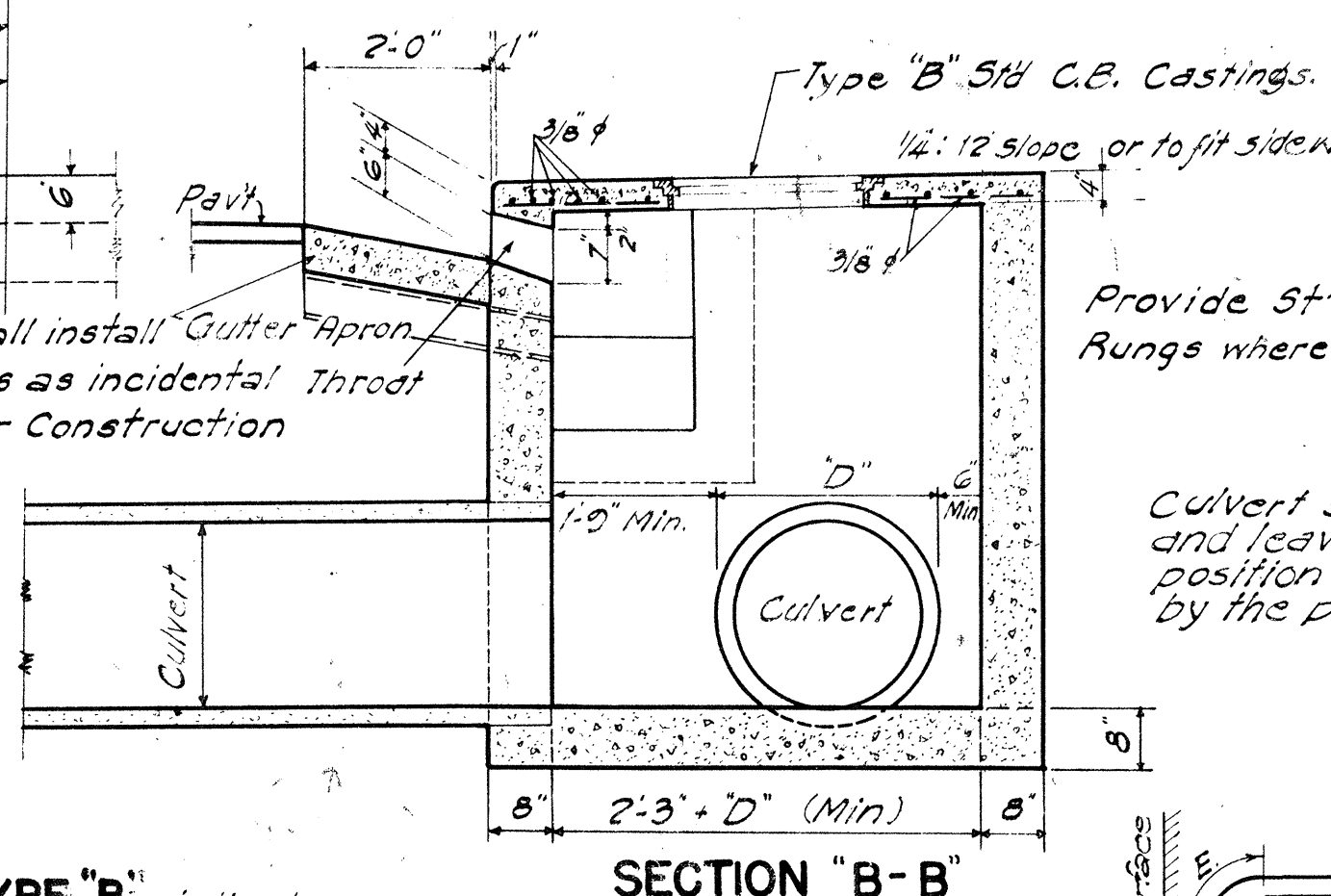


Data: Standard Drop Intake			
D'	D	L-D+6"	S
22"	18"	2'-0"	8"
24"	24"	2'-6"	8"
30"	30"	3'-0"	8"
36"	36"	3'-6"	8"
42"	42"	4'-0"	10"
48"	48"	4'-6"	10"

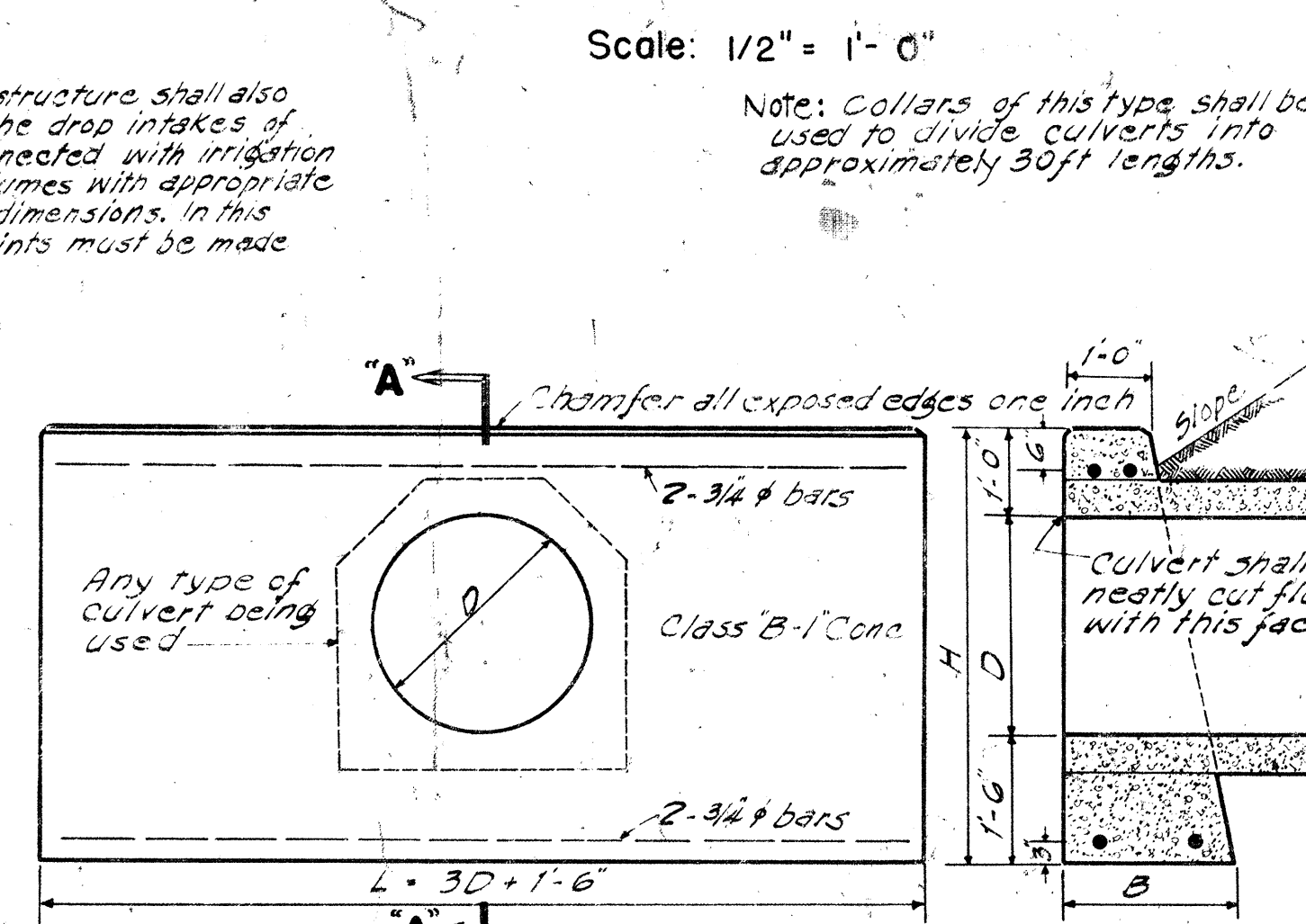
Note: Dimensions "X" is assumed as 2'-4" in figuring the above quantities.

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

STD. CONG. DROP INTAKE

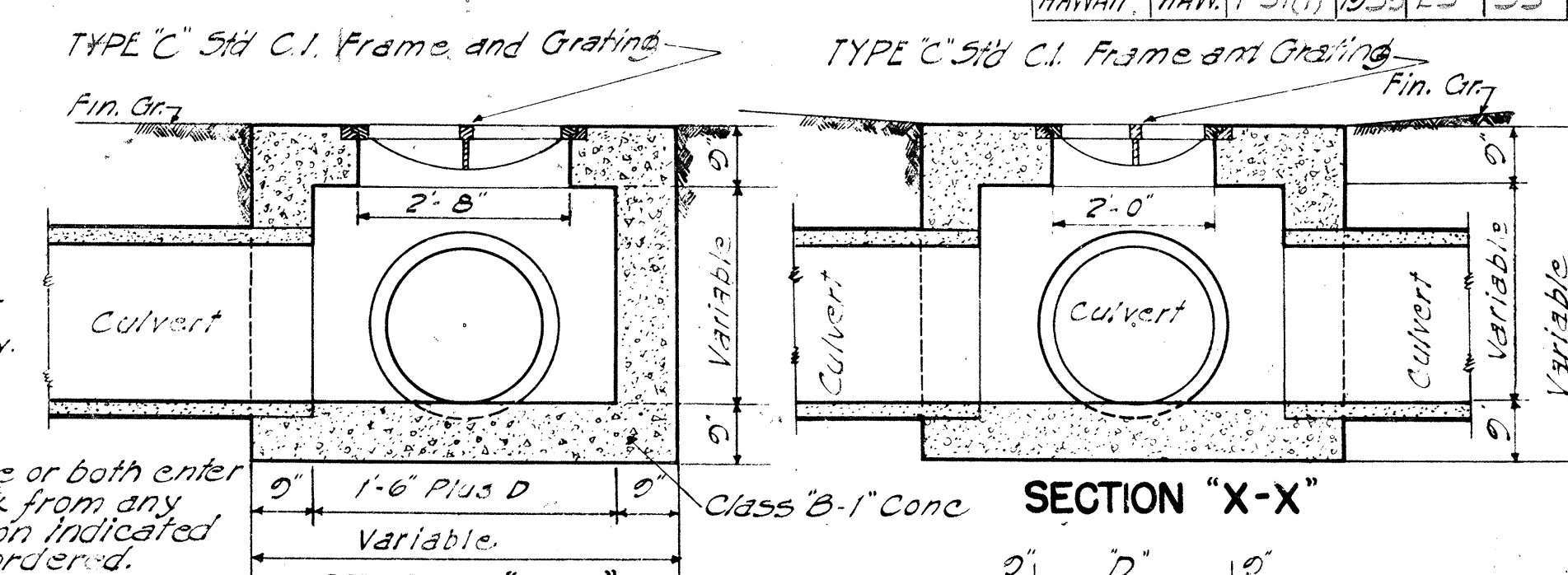


CONC. COLLAR FOR CONG. BOX CULVERT



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 "
1.99	30"	2'-0"	9'-0"	5'-0"	217 "
2.43	36"	2'-0"	10'-6"	5'-6"	274 "

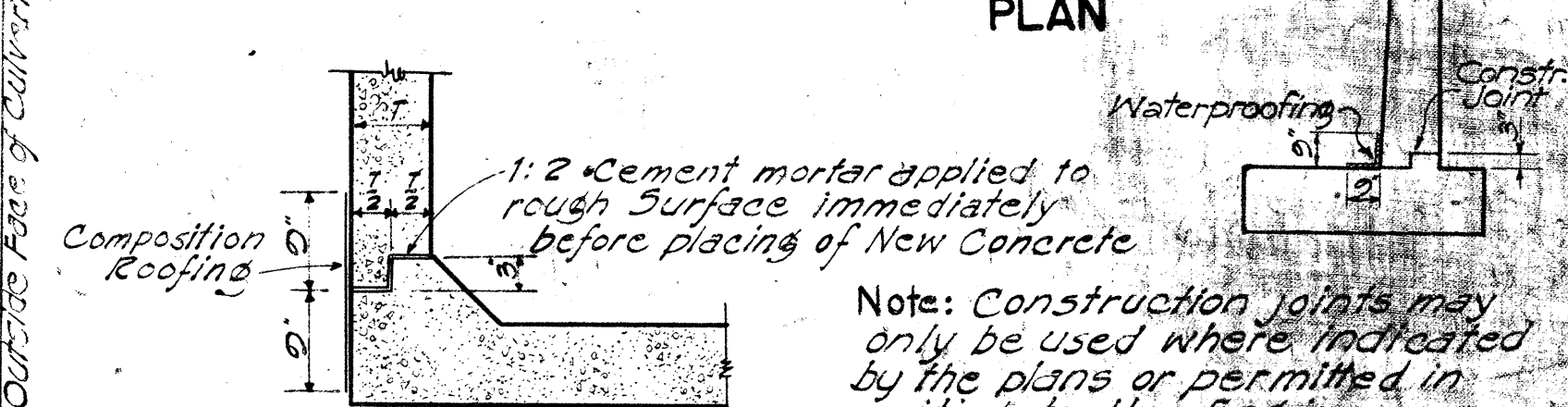
STANDARD CONCRETE HEADWALL



CONC. DROP INTAKE IN MEDIAL STRIPS

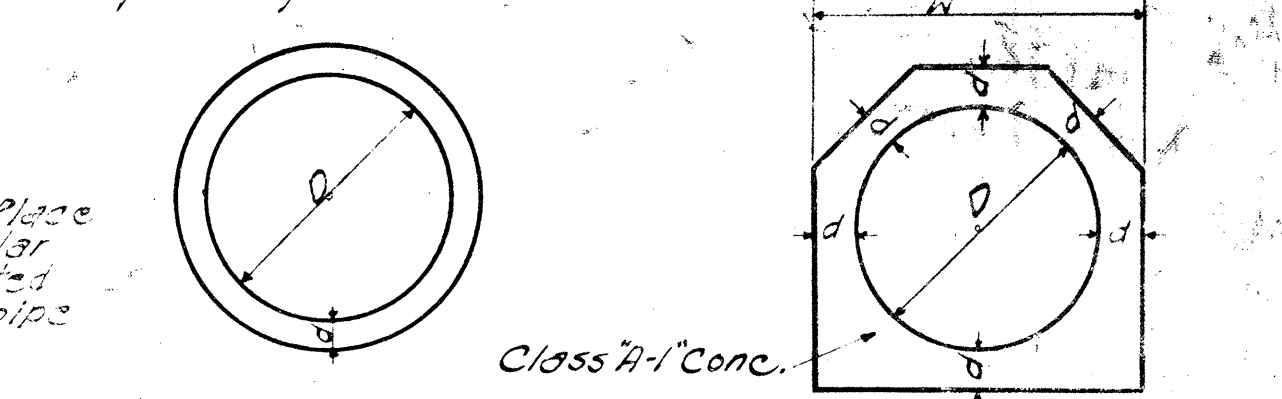
MARK	SIZE	D	J	J ₂	E
300	3/8"	2	2 1/2	1 1/2	6
400	1/2"	2 1/2	3 1/2	1 3/4	8
500	3/8"	3 1/2	4 1/2	2 1/4	10
600	3/2"	5 1/2	7	3 1/4	12
700	7/8"	6 1/2	8 1/2	4 1/8	17
800	1"	7	9	4 1/2	18
900	1 1/8"	8	10 1/2	5 1/8	21
1000	1 1/2"	9	11 1/2	5 3/4	23

HOOK AND BEND DETAIL



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 20-30 penetration.
- The above work is incidental to concrete and will not be paid for separately.

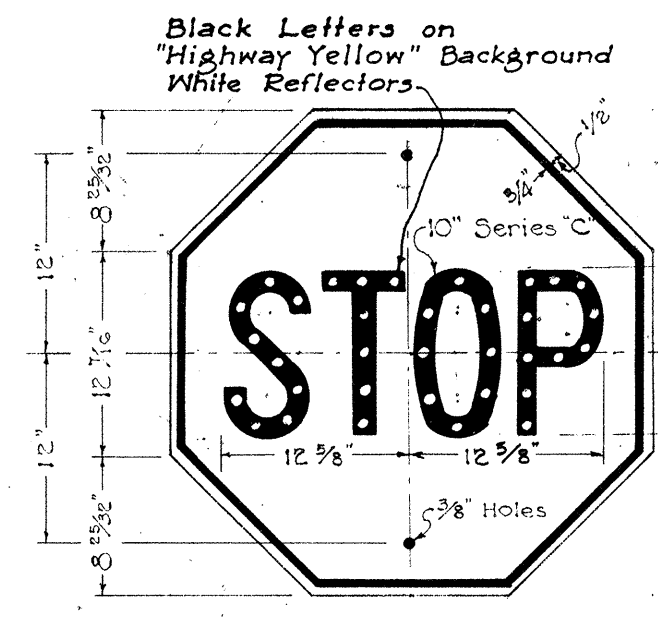


CONC. PIPE CULVERT

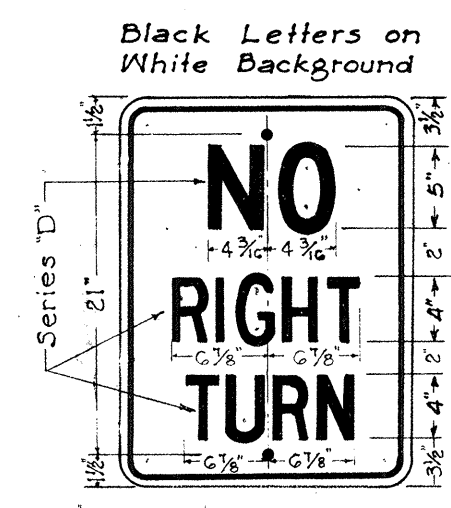
Data: Cast-in-Place Conc. Culvert			
D	d	W	Cu. Yds. per ft.
18"	4"	2'-2"	0.11
24"	4 1/2"	2'-0"	0.14
30"	5	3'-4"	0.10
36"	5 1/2"	3'-11"	0.26

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

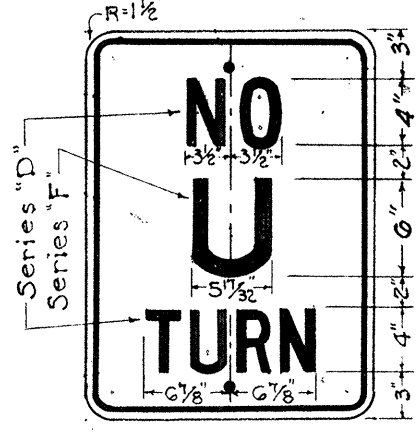
CAST-IN-PLACE CONG. CULVERT



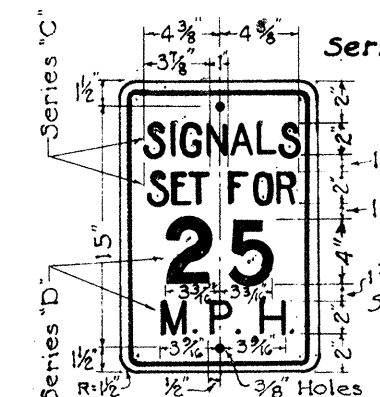
R-1
30" x 30"



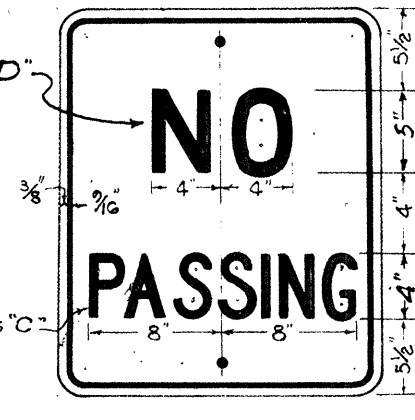
R-6
18" x 24"



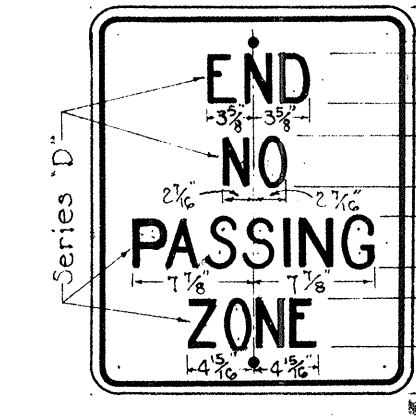
R-8
18" x 24"



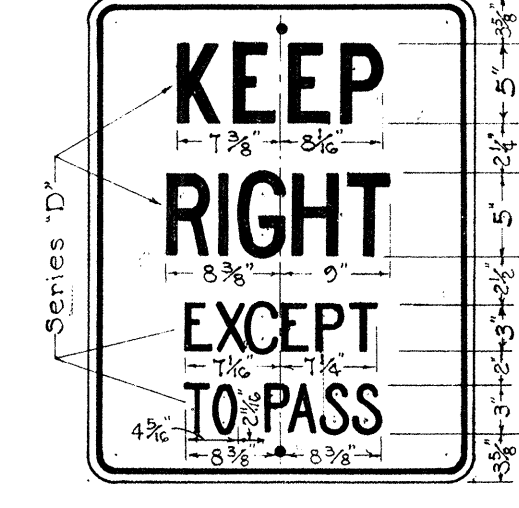
R-10
12" x 18"



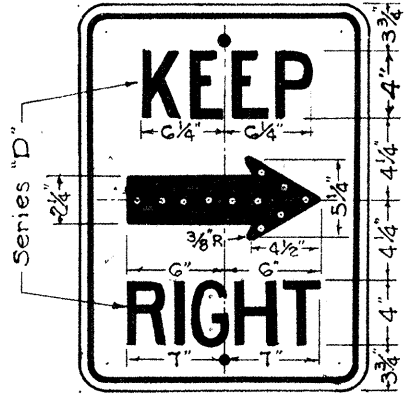
R-11
20" x 24"



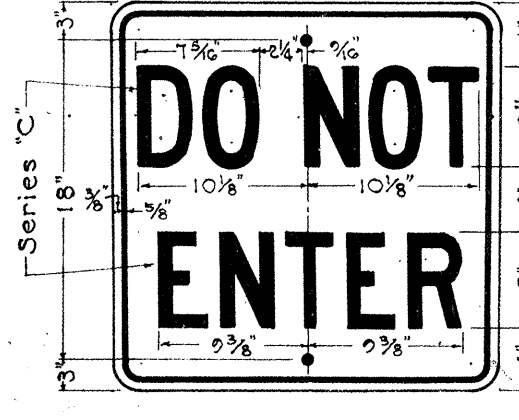
R-12
20" x 24"



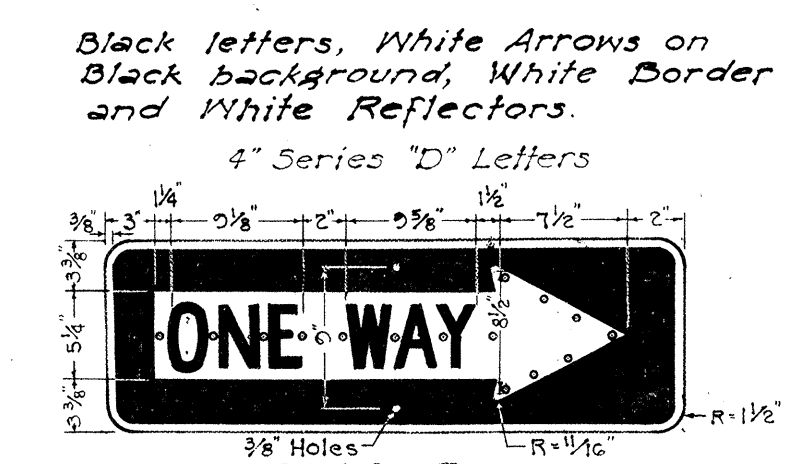
R-13
24" x 30"



R-14
18" x 24"



R-15
24" x 24"



R-16-R
*R-16-L
36" x 12"



R-18
12" x 18"



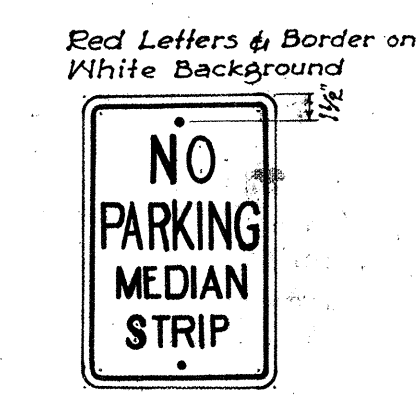
R-26
12" x 18"



R-29
24" x 30"



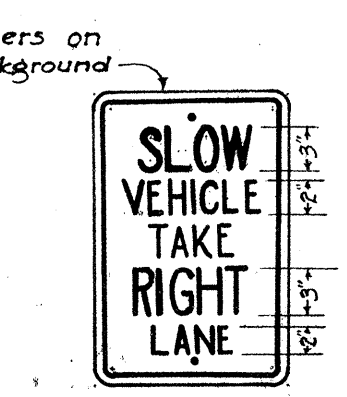
R-41-S
24" x 24"



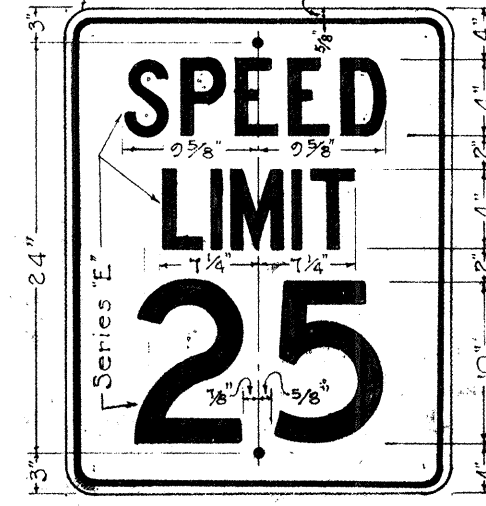
R-42-S
12" x 18"



R-43-S
12" x 18"



R-44-S
12" x 18"



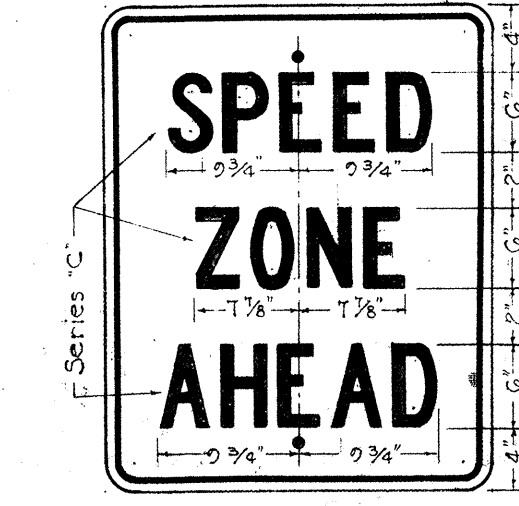
R-102-A
24" x 30"



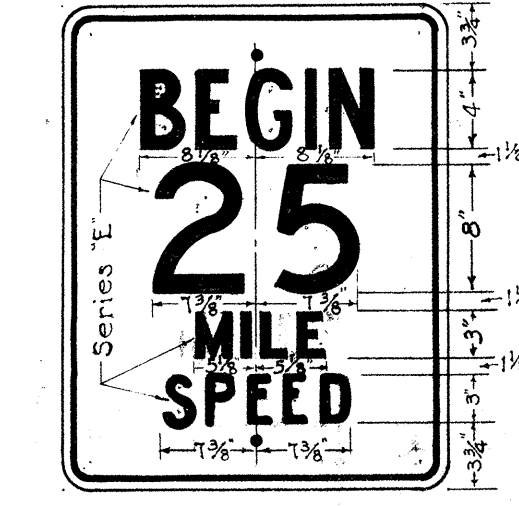
R-102-B
24" x 30"



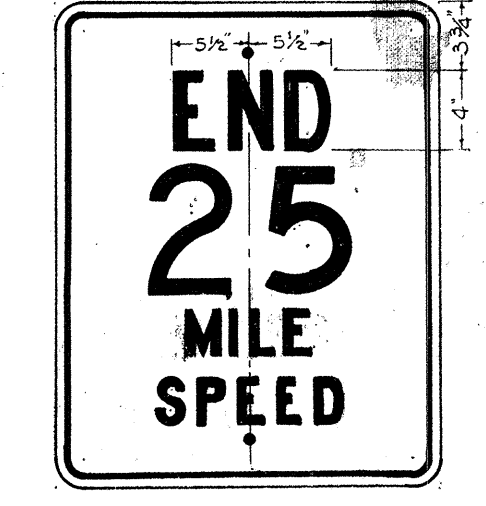
R-102-C
24" x 30"



R-104
24" x 30"



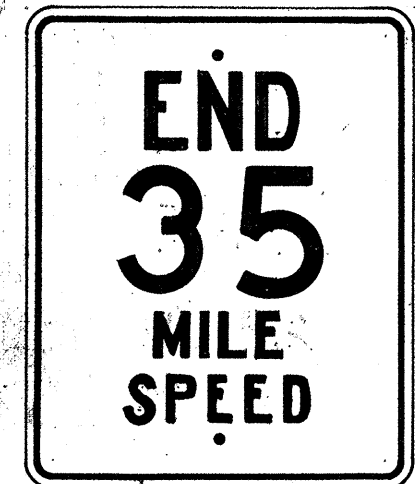
R-105-A
24" x 30"



R-105-B
24" x 30"



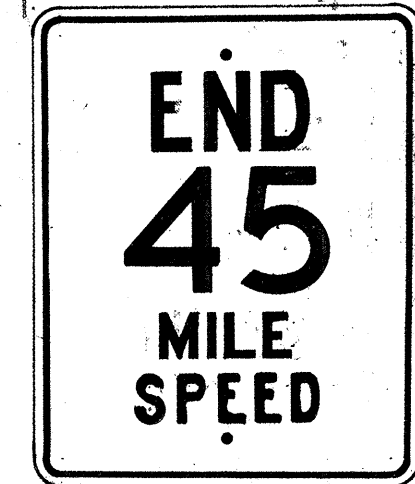
R-105-C
24" x 30"



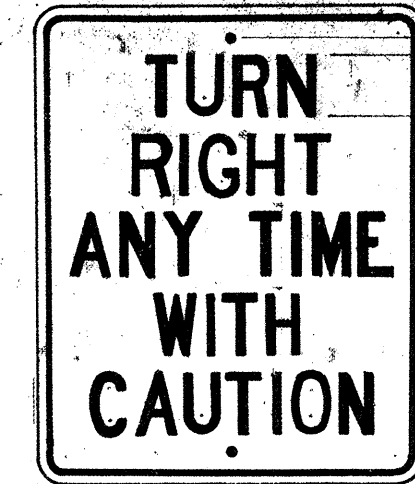
R-105-D
24" x 30"



R-105-E
24" x 30"



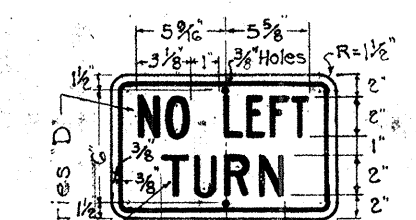
R-105-F
24" x 30"



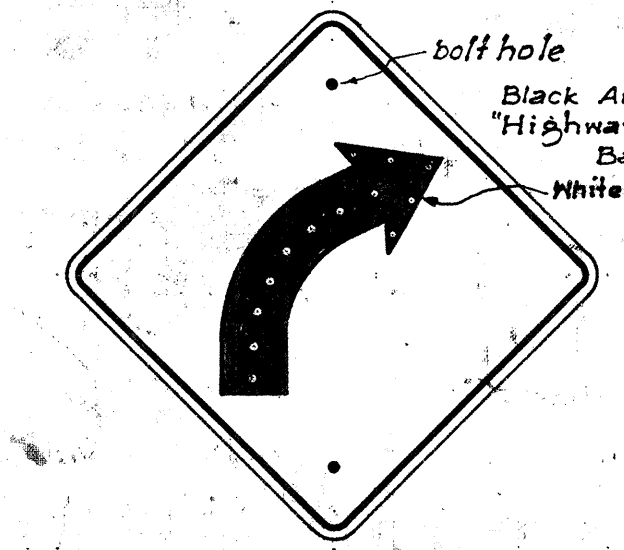
R-106
24" x 30"



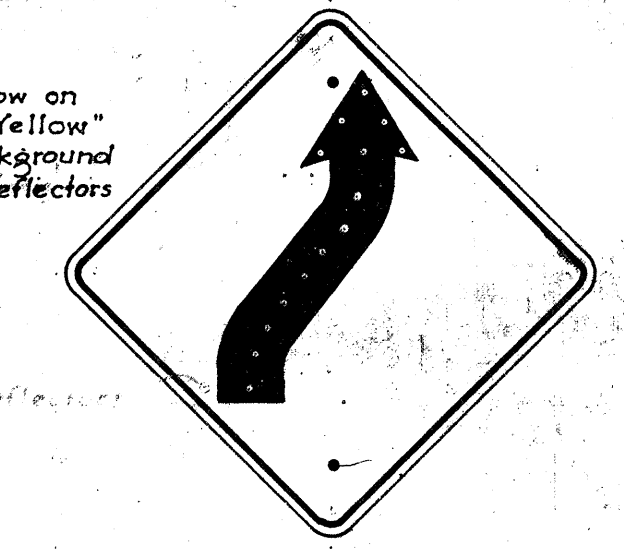
R-107-A
24" x 30"



R-107
14" x 9"



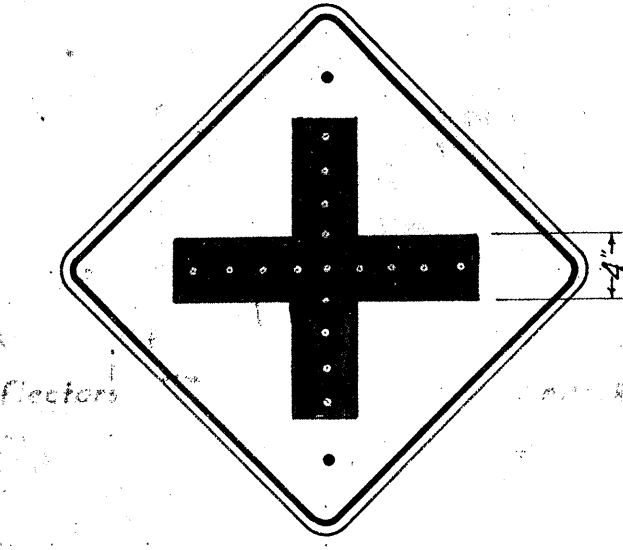
W-2-R
*W-2-L
24" x 24"



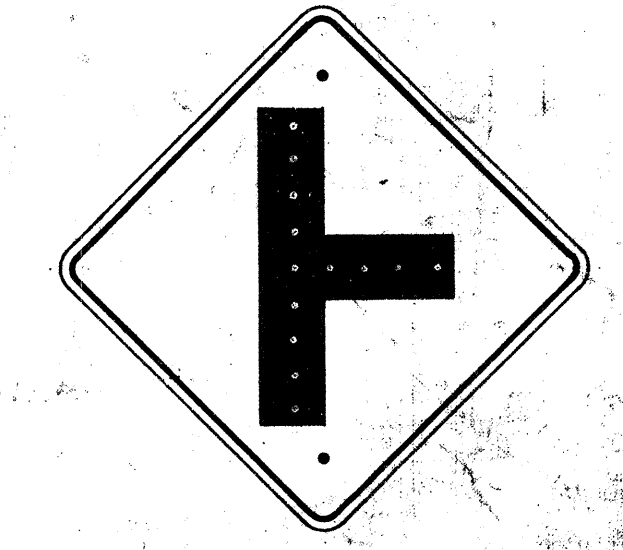
W-4-R
*W-4-L
24" x 24"



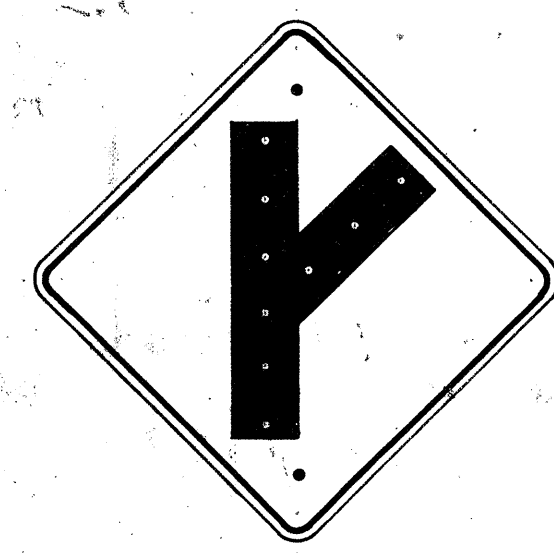
W-5-R
*W-5-L
24" x 24"



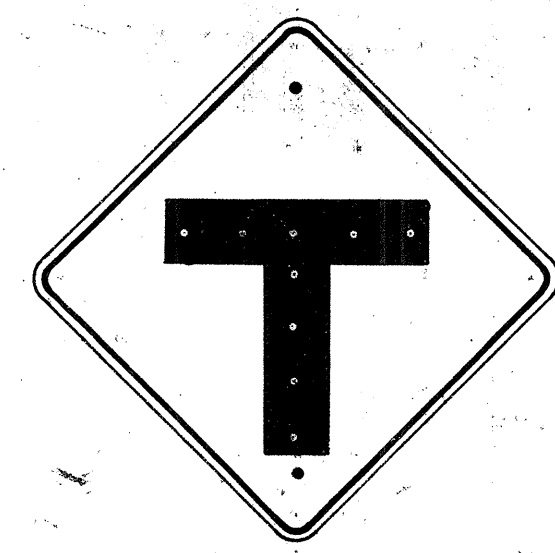
W-6
24" x 24"



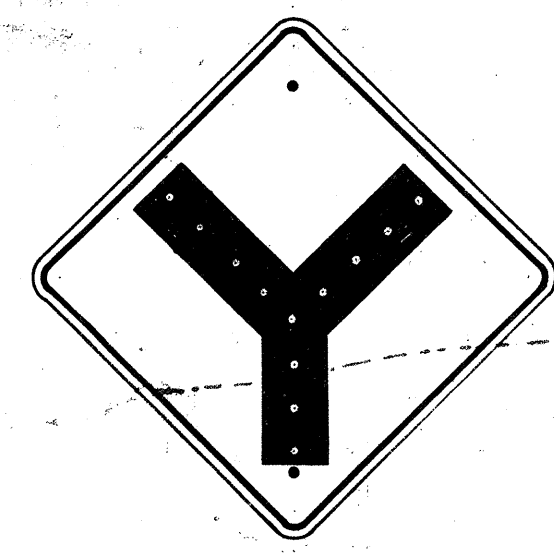
W-7
24" x 24"



W-8-R
*W-8-L
24" x 24"



W-9
24" x 24"



W-10
24" x 24"



W-13
24" x 24"



W-14
24" x 24"



W-14-A
24" x 24"



W-19
30" x 30"



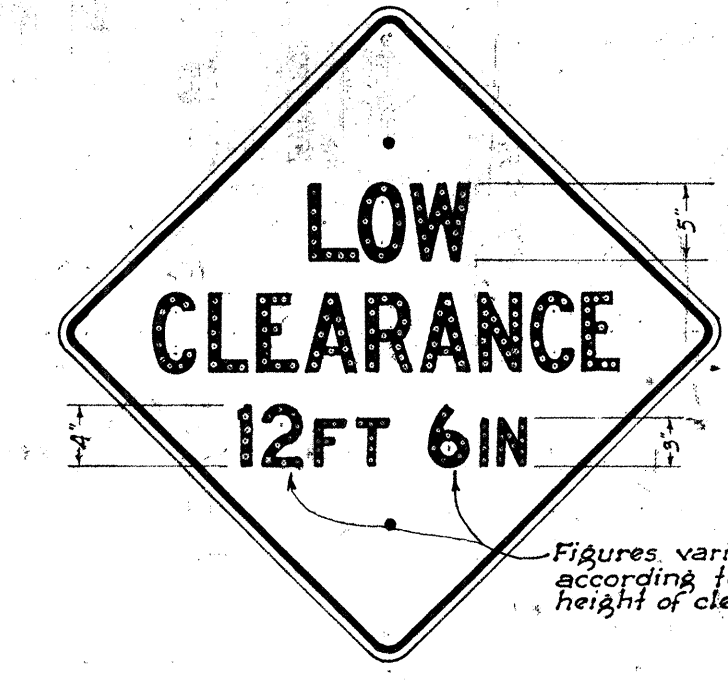
W-20
30" x 30"



W-21
30" x 30"



W-22
24" x 24"



W-24
30" x 30"



W-25
24" x 24"



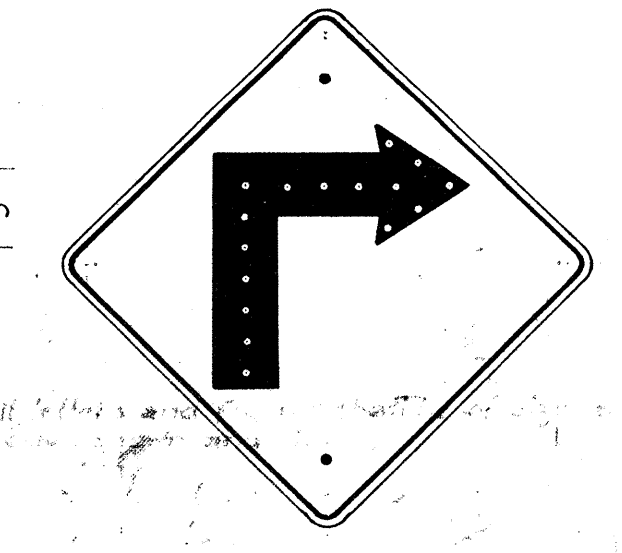
W-29
24" x 24"



W-38
24" x 24"



W-39
24" x 24"



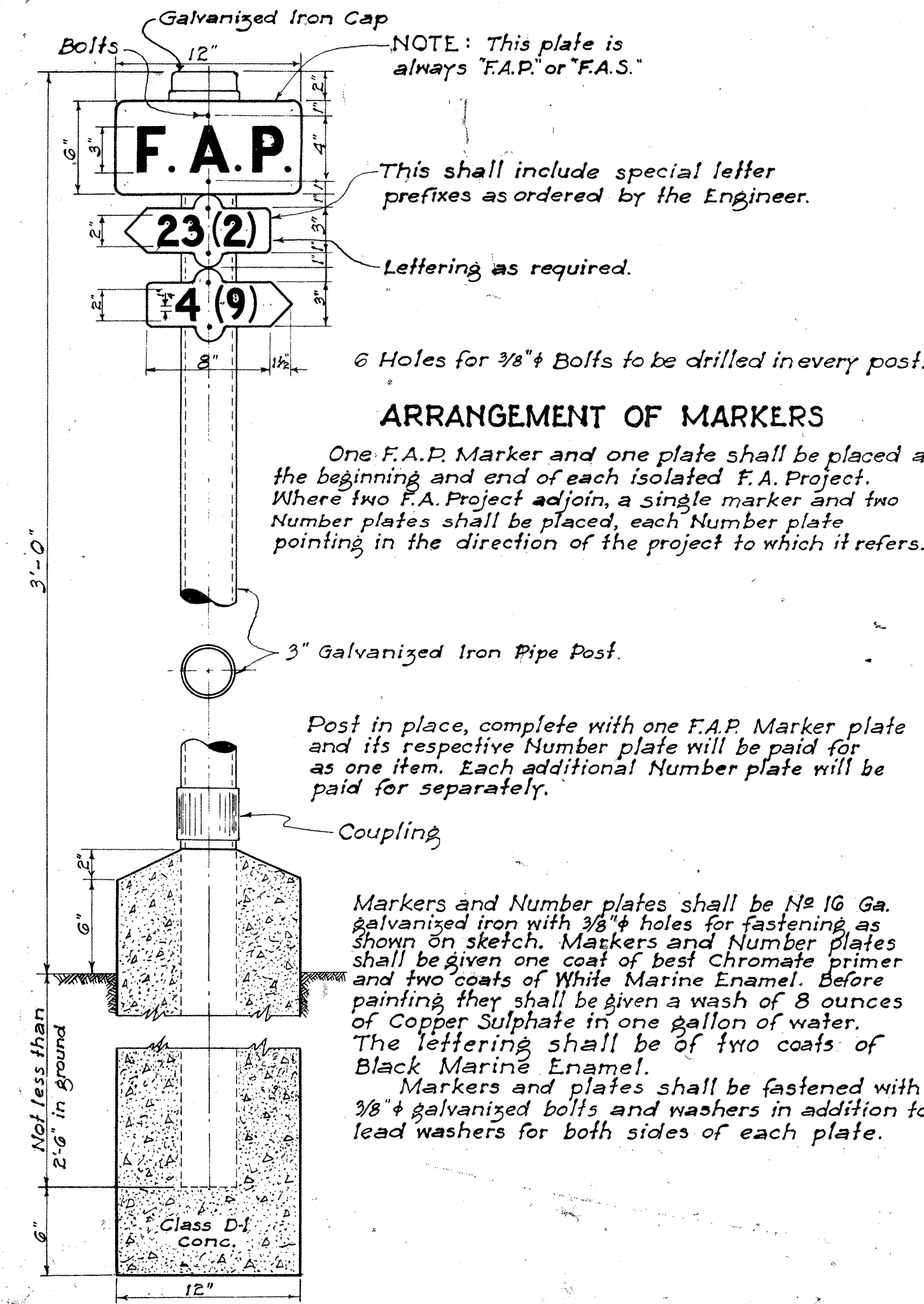
W-1-R
*W-1-L
24" x 24"

All letters and figures shall be of size and design shown and shall conform with "Standard Alphabets for Highway Signs" as set forth by the Public Roads Administration, Federal Works Agency. Series 'C' letters and Series 'D' numerals shall be used except where noted.

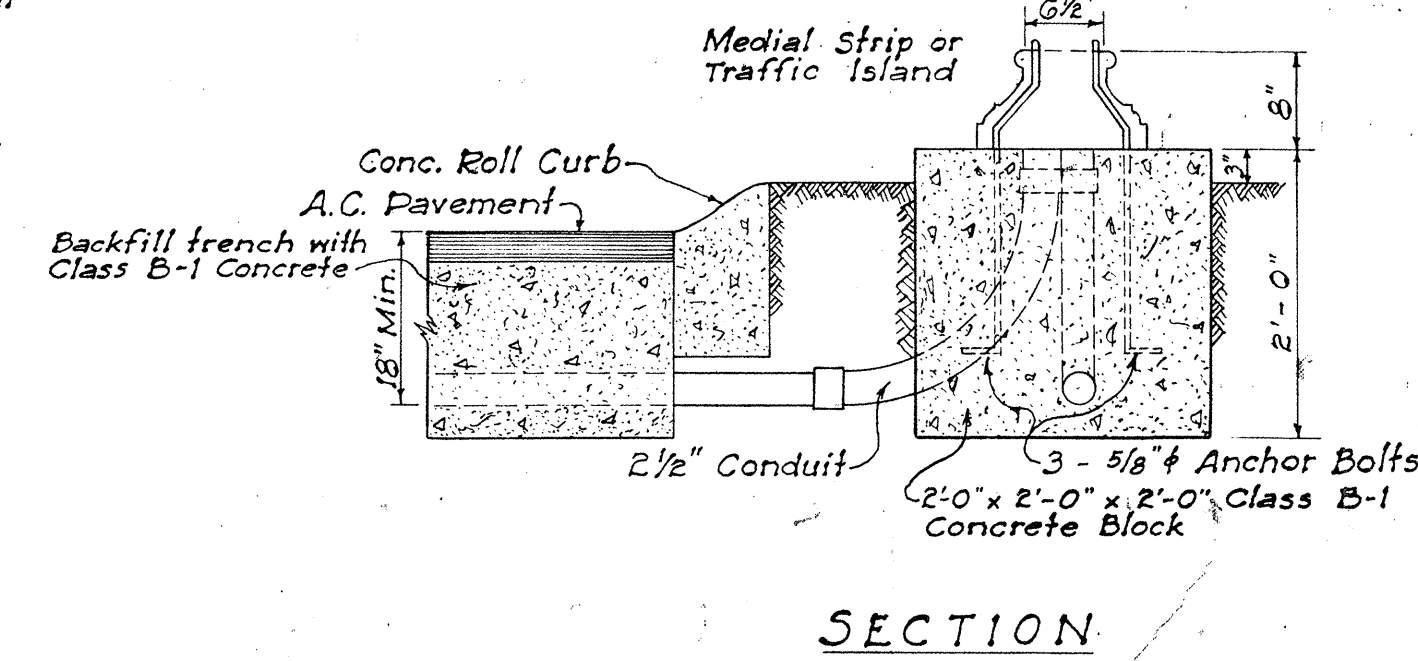
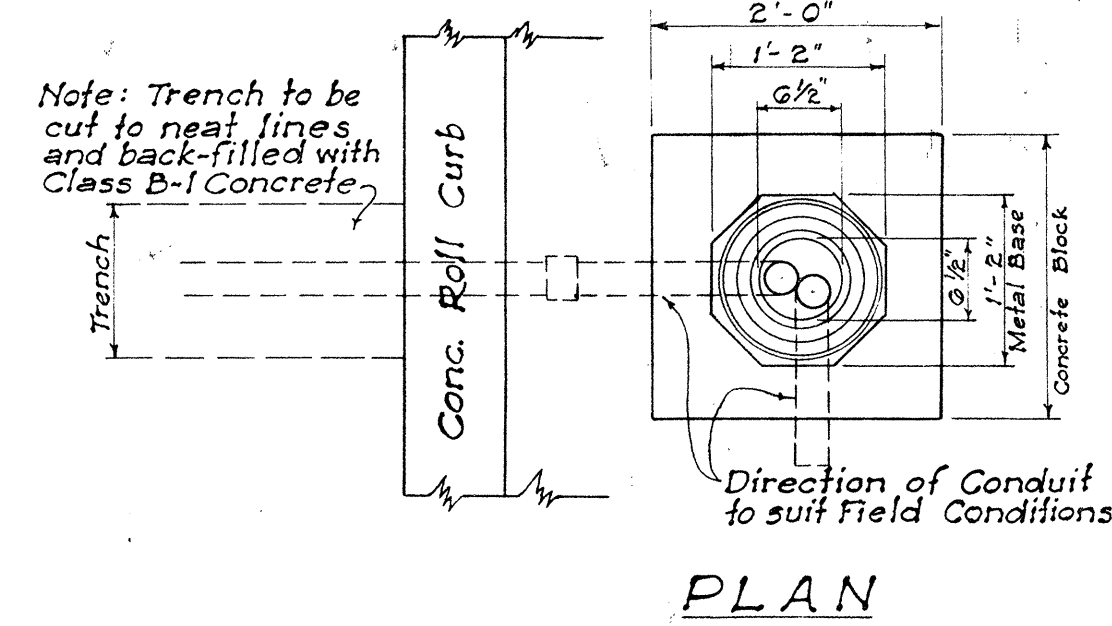
Note: All Regulatory (R) signs shall have black letters on a white background except where noted. All Warning (W) signs shall have black letters or figures on a "Highway Yellow" background. *Signs shall be similar but opposite in direction. See Specifications for Materials and Finish.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
REGULATORY & WARNING SIGNS
Scale: 1" = 1'
APPROVED: *[Signature]* May 31, 1949
TERRITORIAL HIGHWAY ENGINEER

DATE: _____
DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
NOTE BOOK: _____
QUANTITIES CHECKED BY: _____

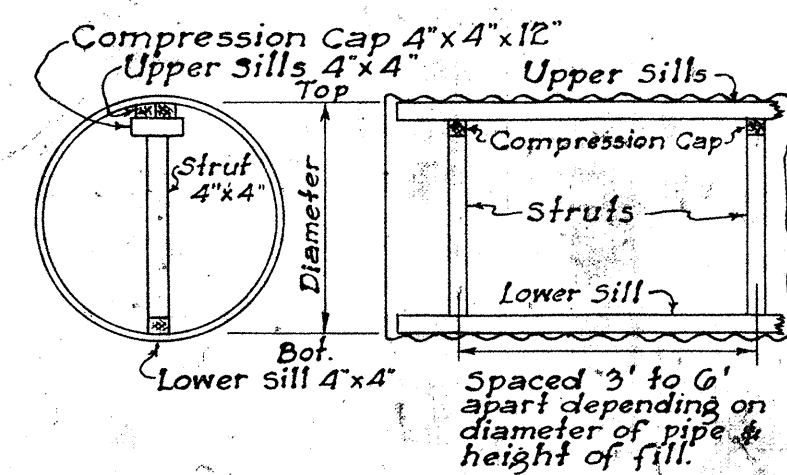


FEDERAL AID MARKER
Scale: $\frac{1}{2}$ " = 1'-0"



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

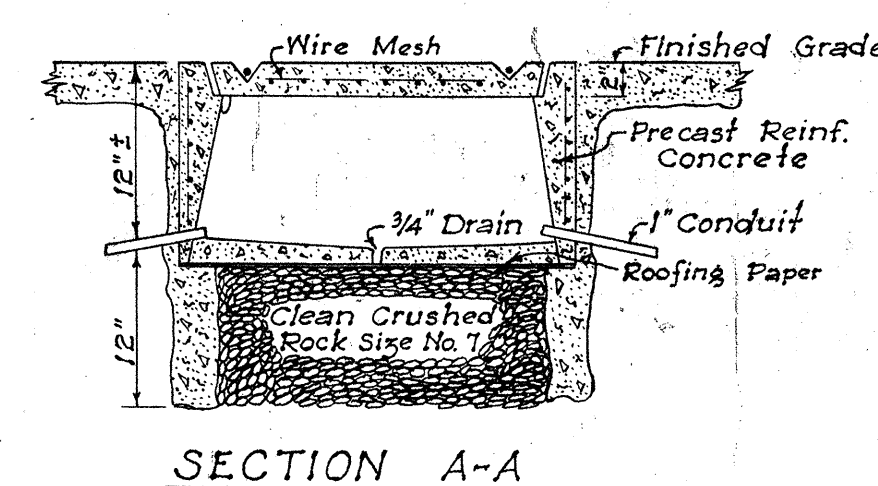
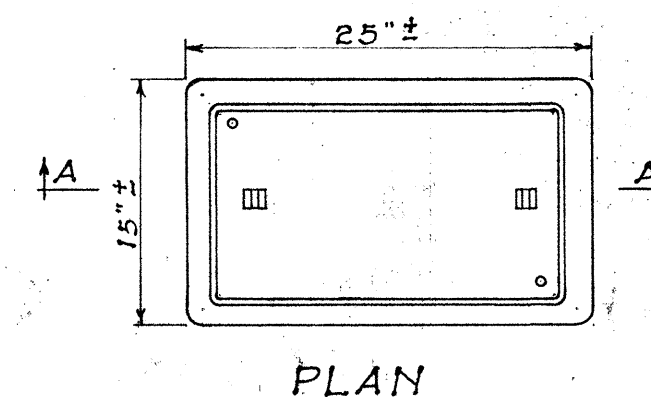
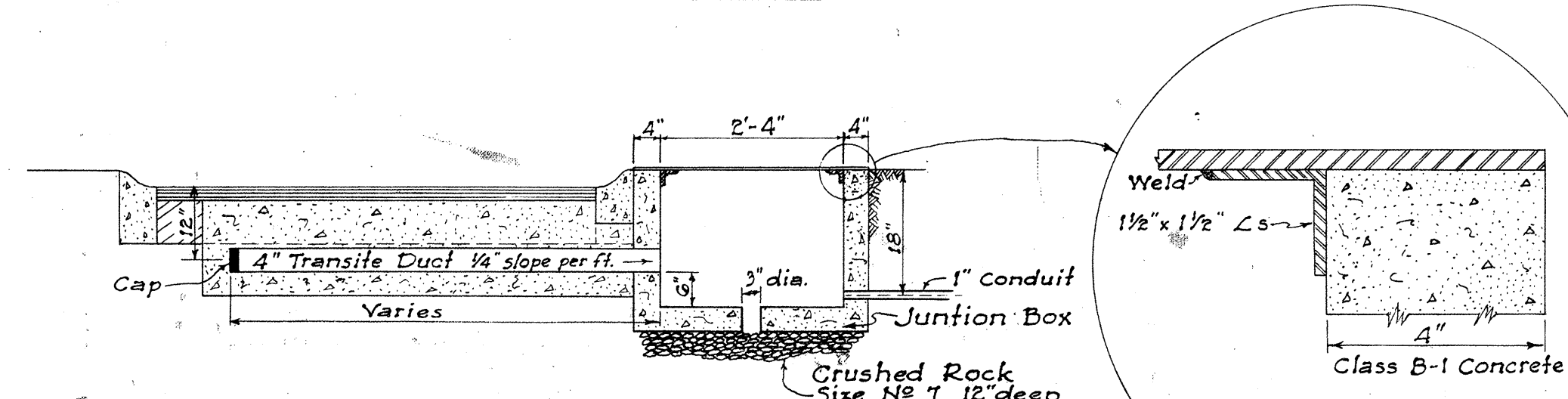
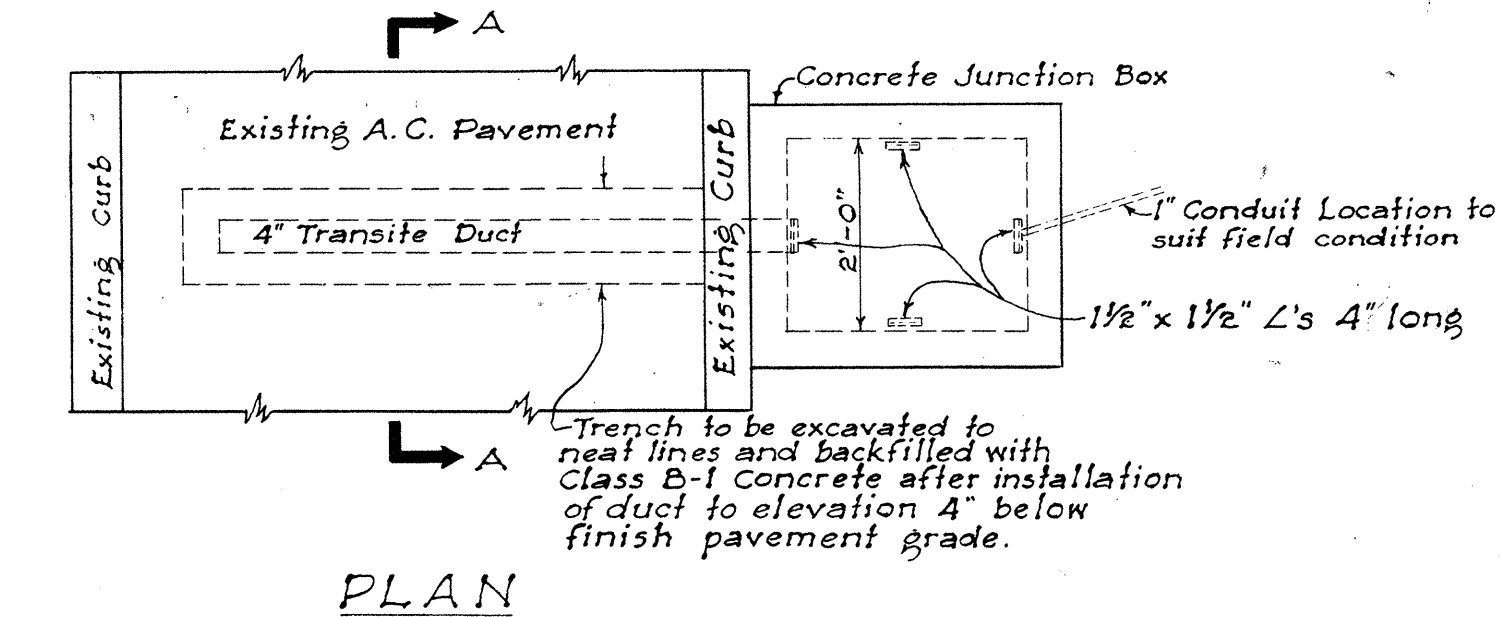
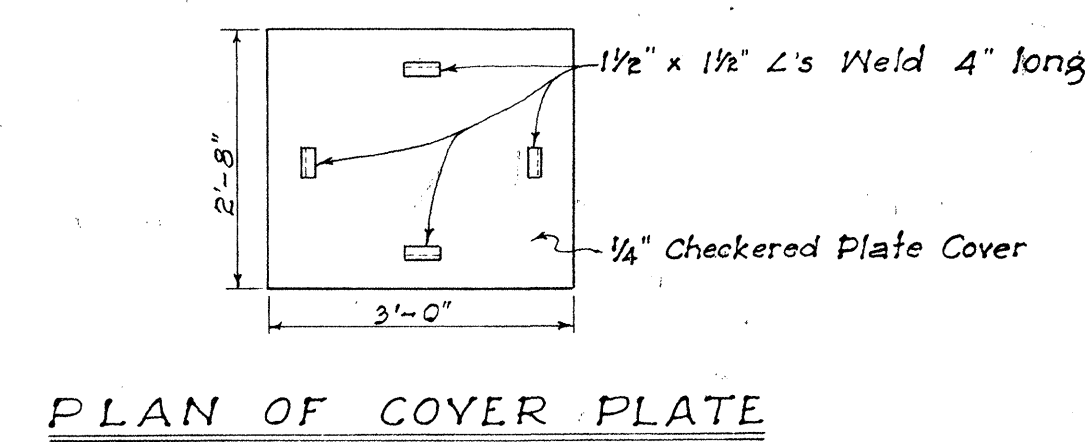
DETAIL OF BASE FOR TRAFFIC STANDARD AND DISPATCHER PEDESTAL



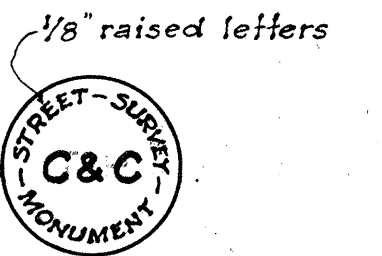
STRUTTING DIAGRAM & TABLE FOR CORRUGATED METAL PIPE CULVERT

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

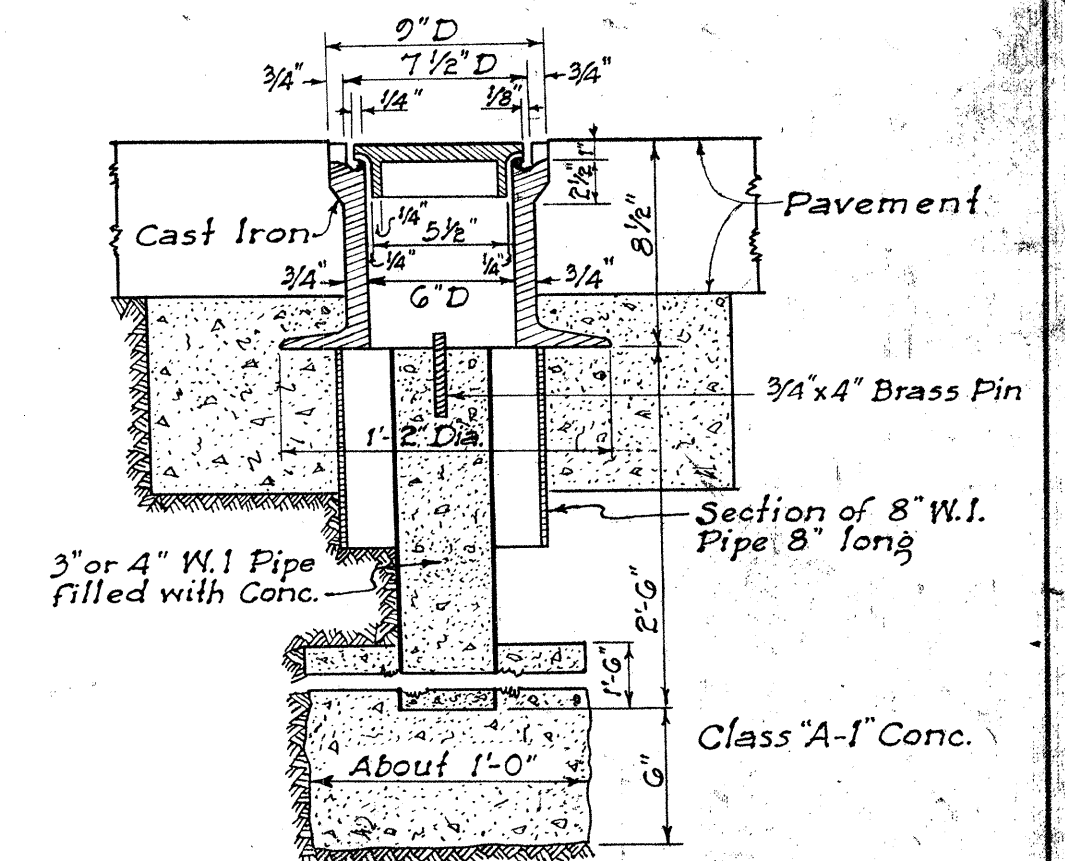
NOTE: Length of Struts are based on 4" x 4" timbers which is the minimum size recommended. If larger sills or compression caps are used, length of struts should be changed accordingly.



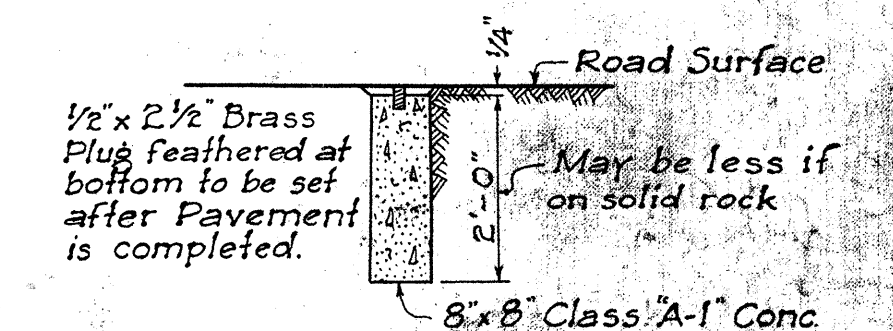
DETAIL OF PULL BOX
Scale: 1" = 1'-0"



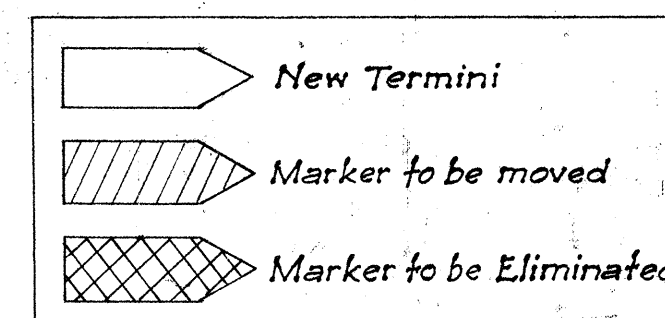
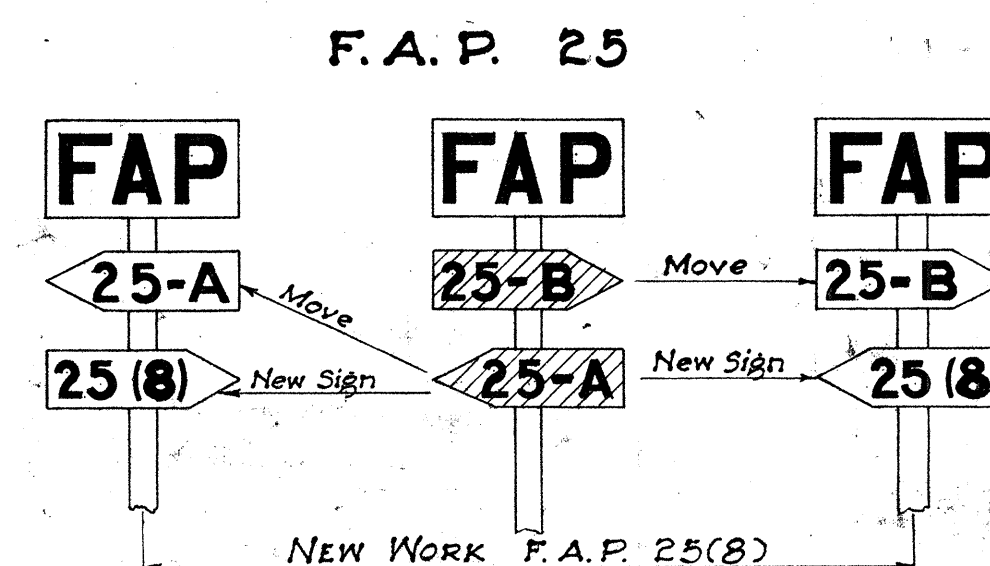
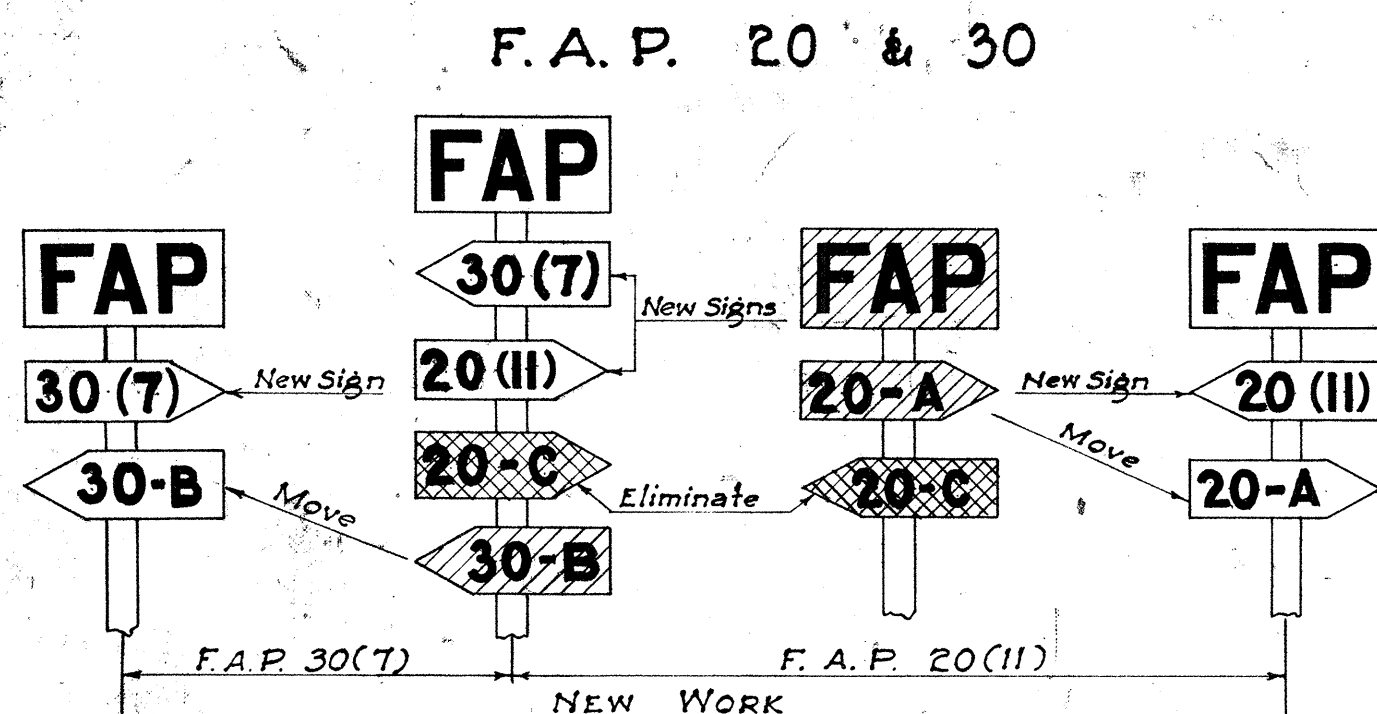
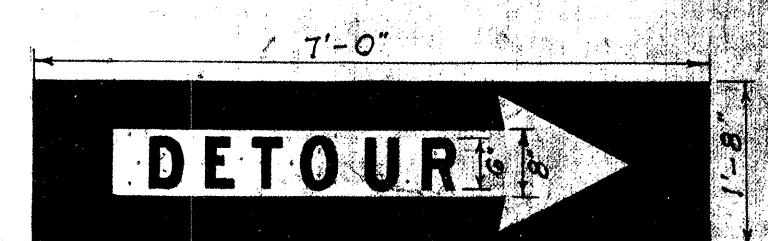
PLAN OF TOP



STANDARD C&C STREET SURVEY MONUMENT



STANDARD DETOUR SIGN



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.

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. 4 OF 4 SHEETS