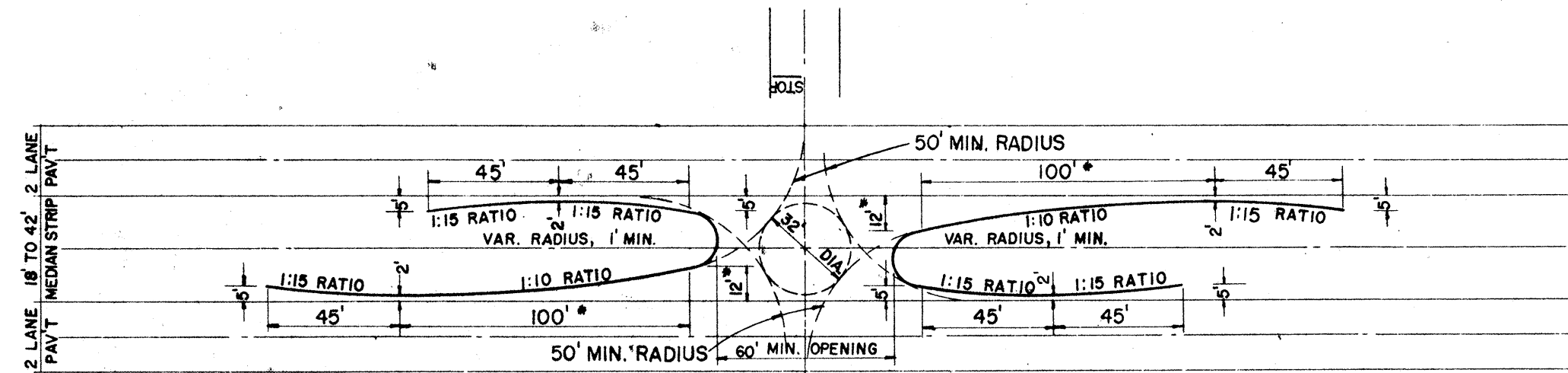
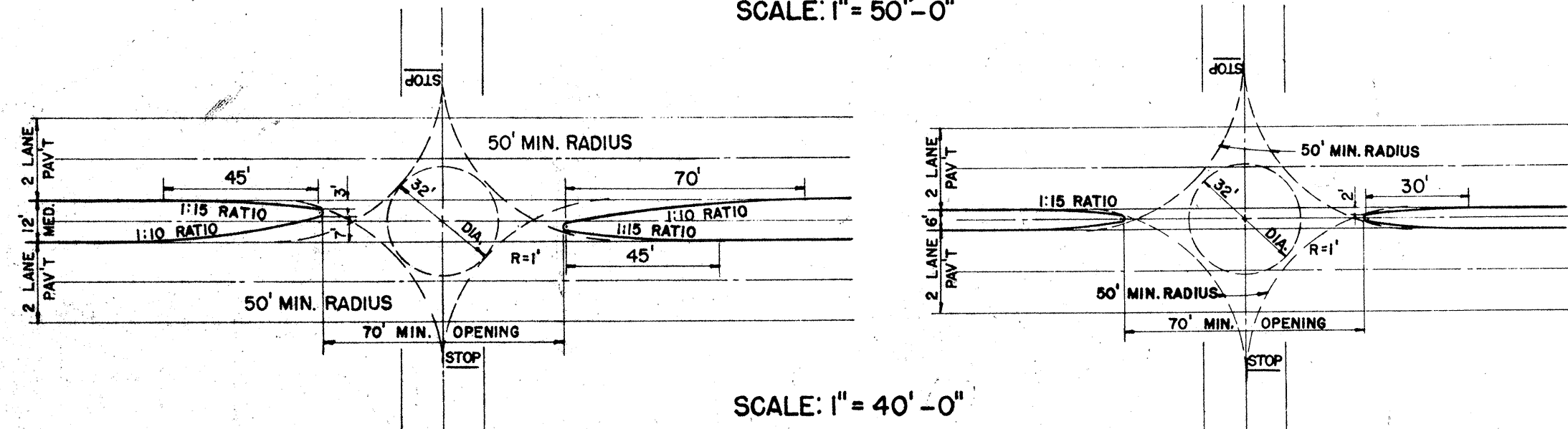




NOTE:
* WITH AN 18' MEDIAN STRIP, THE OFFSET MUST BE REDUCED TO 11", WHICH IN TURN REDUCES THE 1:10 FLARE TO 90'.

SCALE: 1" = 50'-0"



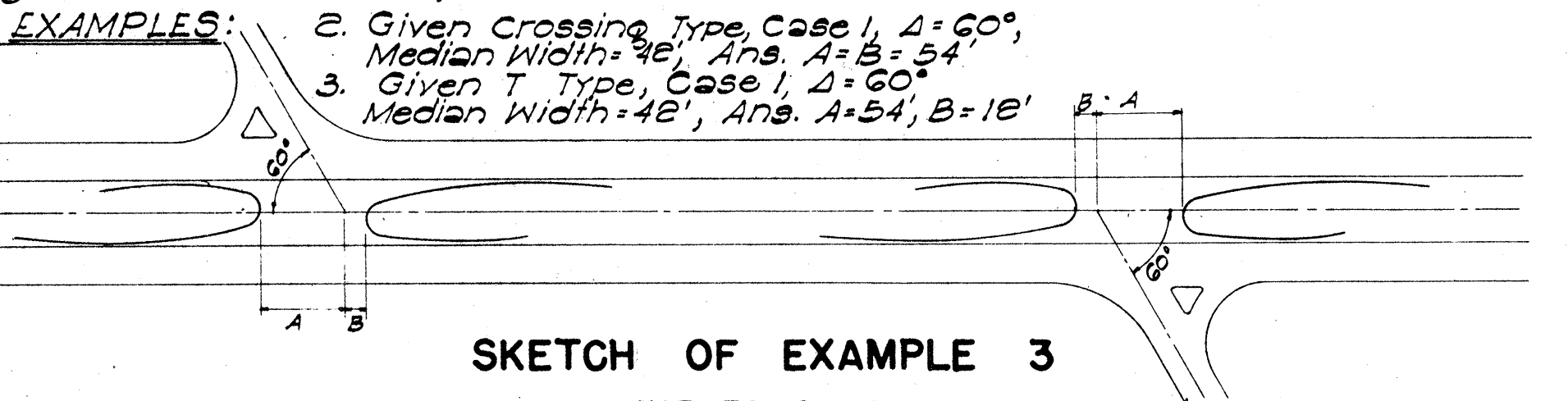
SCALE: 1" = 40'-0"

DETAILS OF MEDIAN STRIP OPENINGS

4 ANGLE OF INTER.	WIDTH OF MEDIAN STRIP																			
	42'				30'				24'				18'				12'		6'	
	Case 1		Case 2		Case 1		Case 2		Case 1		Case 2		Case 1		Case 2		Case 1		Case 2	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
60°	54	12	58	14	58	14	62	14	64	14	66	14	68	14	70	16	64	18	70	18
65°	48	14	52	16	52	16	56	16	60	16	62	16	62	18	62	18	58	20	62	20
70°	42	18	46	18	46	18	50	18	54	18	54	18	54	18	55	20	54	20	56	20
75°	36	24	40	20	40	20	44	20	44	20	48	20	48	20	50	24	46	24	50	24
80°	32	28	36	24	36	24	38	24	38	24	42	24	42	24	42	28	40	30	44	30
85°	30	30	32	28	32	28	34	28	34	28	36	28	36	30	36	30	36	34	38	32
90°	30	30	30	30	30	30	30	30	34	34	30	30	32	32	30	30	36	35	35	35
95°	30	30	28	32	30	30	28	34	30	30	30	30	32	30	30	32	34	36	32	38
100°	30	30	24	36	30	30	24	38	28	32	26	42	24	36	28	44	28	36	28	44
105°	30	30	20	40	28	32	20	44	24	36	22	48	20	42	24	50	24	40	24	50
110°	28	32	18	46	24	36	18	50	20	40	18	54	18	46	20	56	20	46	20	56
115°	22	38	16	52	18	42	14	56	16	46	16	60	16	52	18	62	18	52	18	62
120°	16	44	14	58	12	48	12	62	14	54	14	66	14	58	16	70	16	60	16	70

CASE 1	R=12 1/2					CASE 2
	12	12	12	12	12	
CASE 2	12	12	12	12	12	Angle of Intersection is measured clockwise
	12	12	12	12	12	
	12	12	12	12	12	
	12	12	12	12	12	
	12	12	12	12	12	

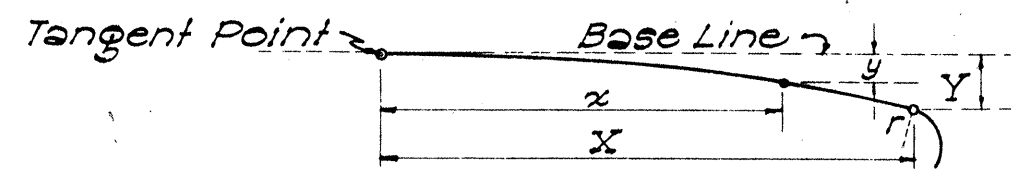
NOTES:
1) A & B = Distance in feet from Island Nose to Centerline of Intersection.
2) In a Crossing Intersection A & B are both equal to the larger distance.
3) In a T Intersection A & B must be measured as shown below. The larger distance is always on the same side with the acute angle.
4) The minimum radius of 50 ft. should always be scribed on a large scale drawing so that no misinterpretation of the tabulated values is made.



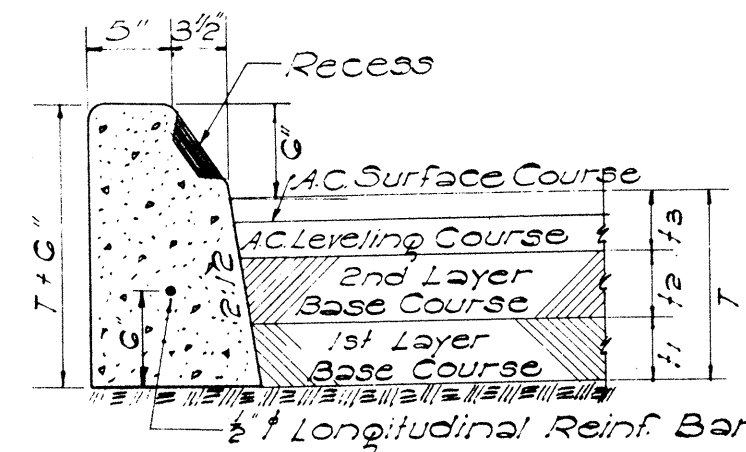
SKETCH OF EXAMPLE 3
NOT TO SCALE

These Curves are based upon the following formula:
 $y = \frac{Y^2}{2X}$

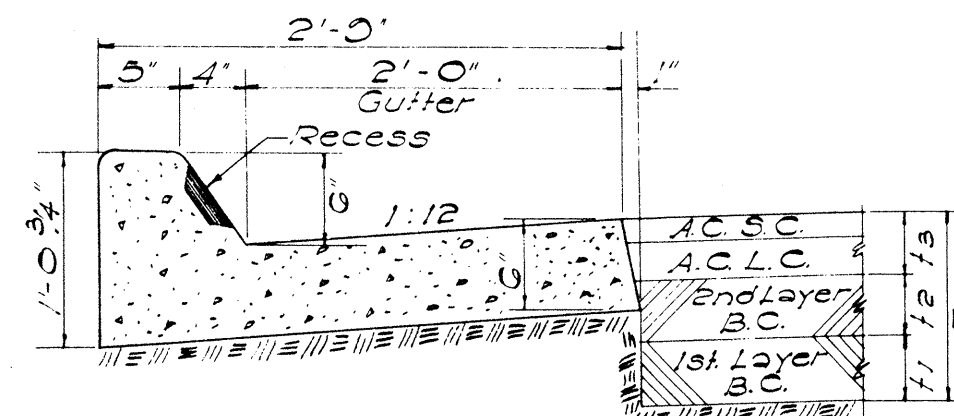
where: y = any offset, x = its tangent dist.
X = maximum tangent distance
Y = maximum offset



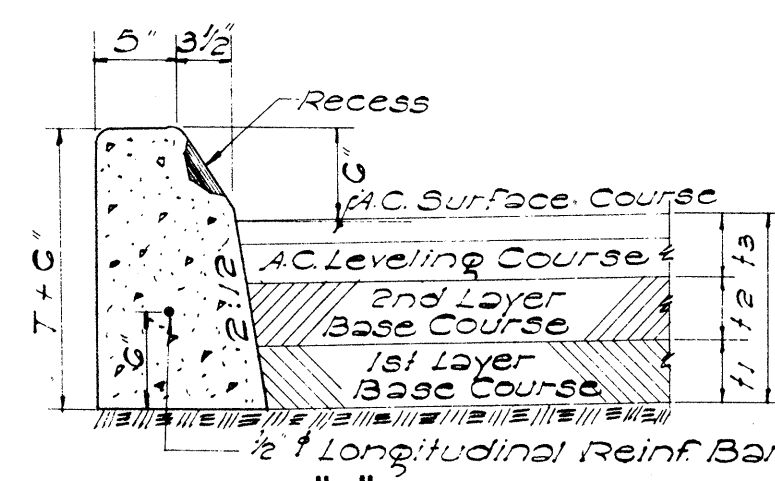
RATIO CURVE DATA				
Dist. (ft.)	Offset in Feet (y)			
10	0.22	0.15	0.20	0.14
20	0.82	0.80	0.57	0.41
30	2.00	1.33	1.20	1.00
40	2.37	1.80	2.20	1.78
50		3.00	3.57	2.50
60			5.14	4.00
70			7.00	5.44
80				7.11
90				9.00
100				10.00



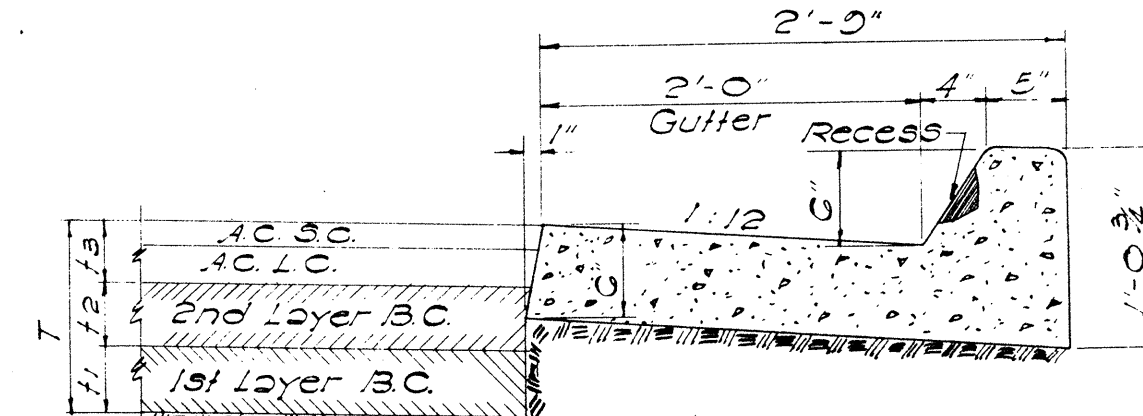
TYPE "A" & "B" CURB
SCALE: 1" = 1'-0"



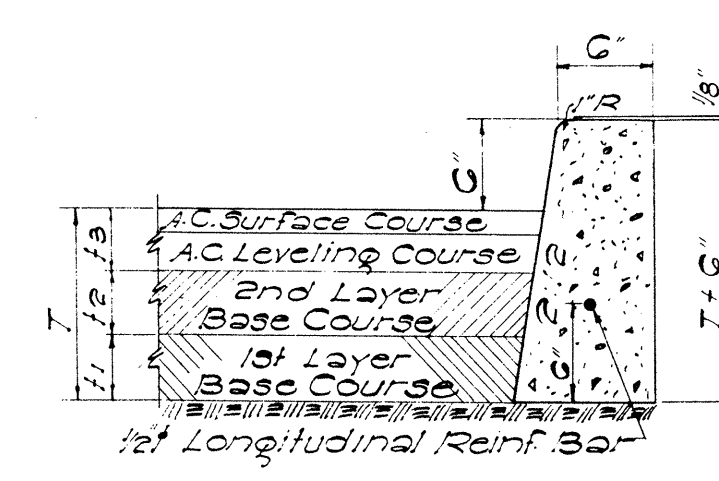
TYPE "AG" & "BG" CURB & GUTTER
SCALE: 1" = 1'-0"



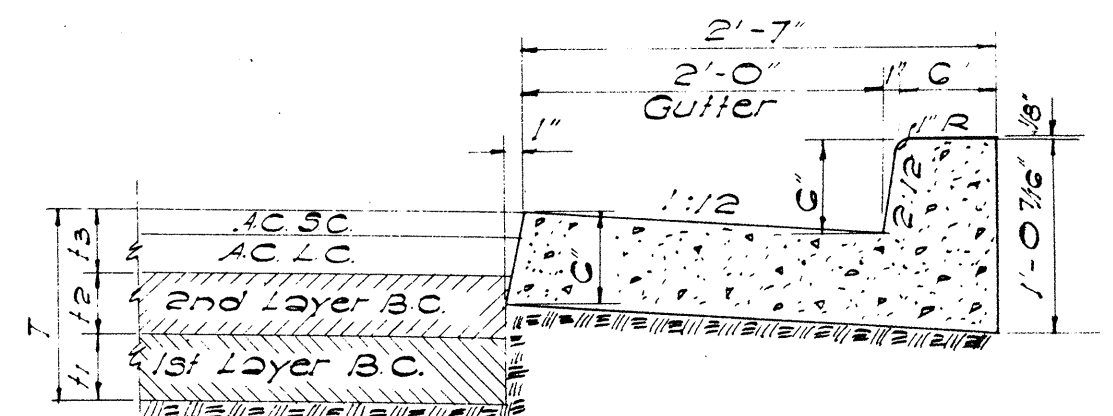
TYPE "C" CURB
SCALE: 1" = 1'-0"



TYPE "CG" CURB & GUTTER
SCALE: 1" = 1'-0"

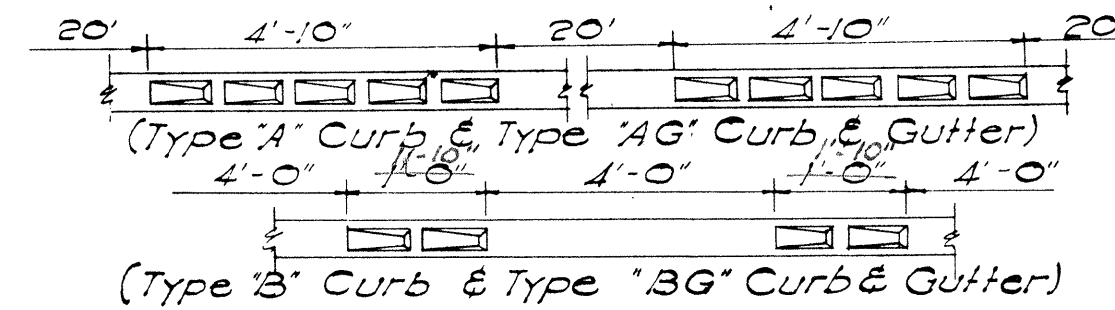


TYPE "D" CURB
SCALE: 1" = 1'-0"

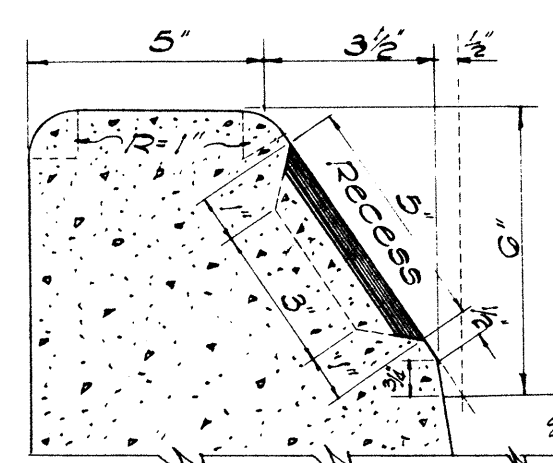


TYPE "DG" CURB & GUTTER
SCALE: 1" = 1'-0"

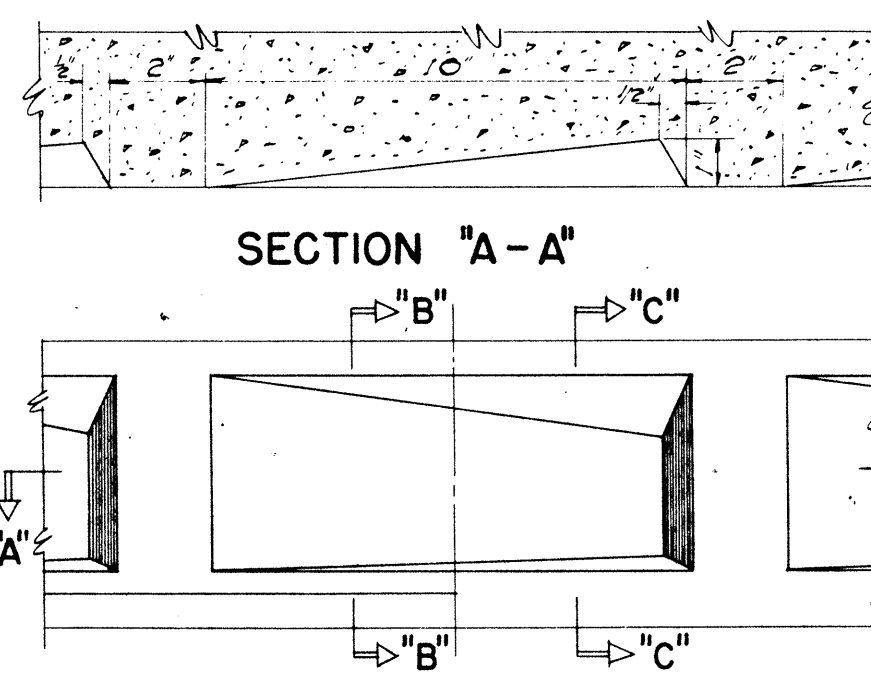
General Note Covering All Types of Curbs:
Occasionally curb rests on first layer of base course. See typical sections.



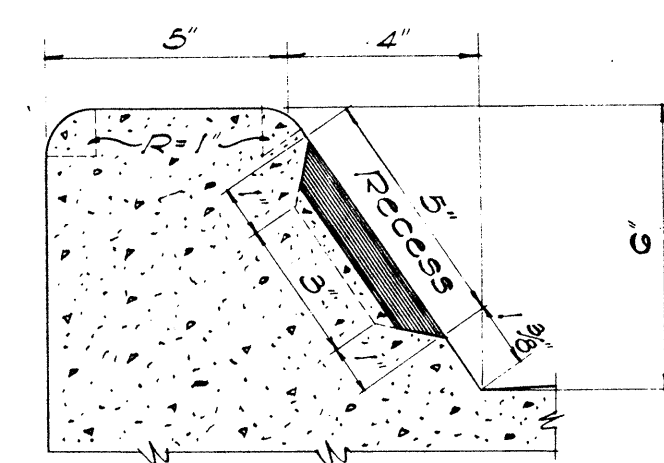
TYPE AND SPACING OF RECESSES



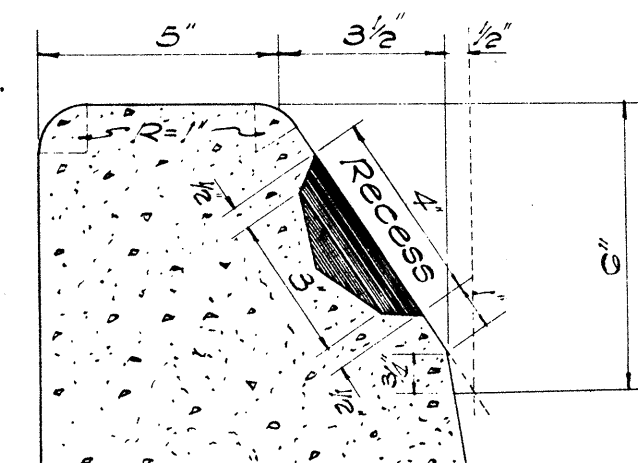
SECTION "B-B"
TYPE "A" & "B" CURB



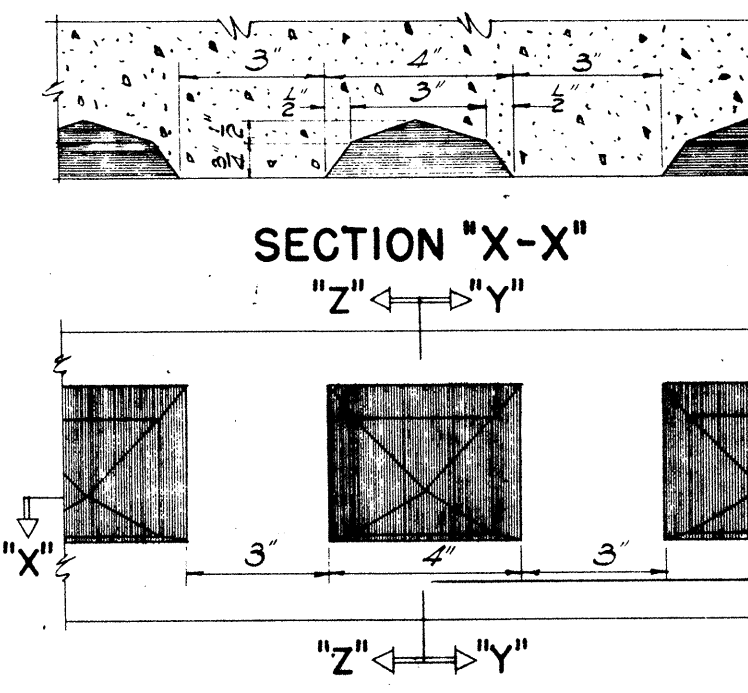
ELEVATION
SCALE: 3" = 1'-0"



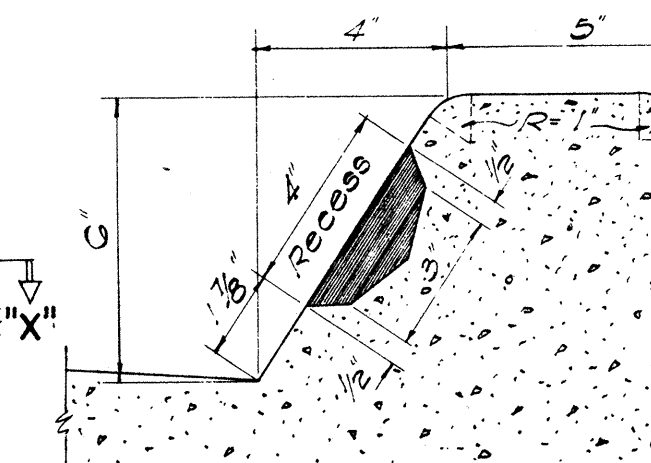
SECTION "C-C"
TYPE "AG" & "BG" CURB



SECTION "Y-Y"
TYPE "C" CURB

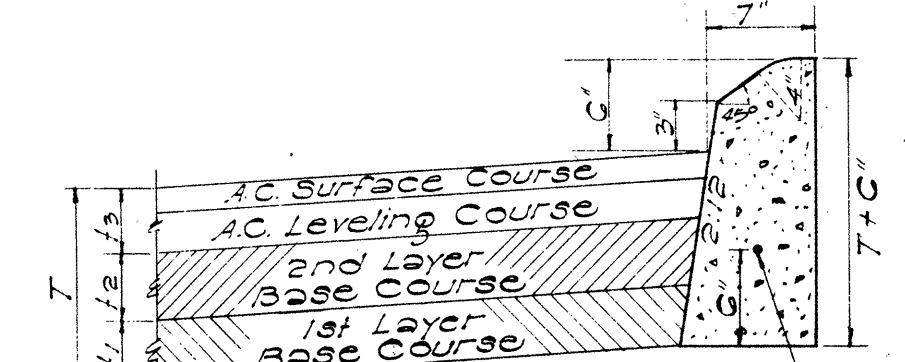


ELEVATION
SCALE: 3" = 1'-0"



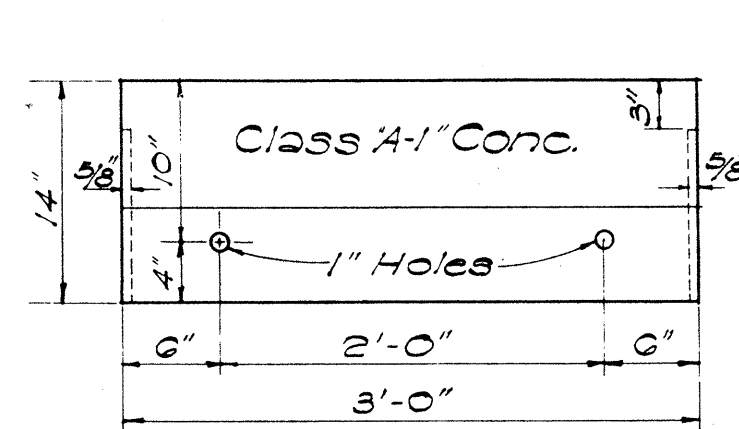
SECTION "Z-Z"
TYPE "CG" CURB

NOTES:
1) Types "AG", "BG", "CG", "DG" and "EG" Concrete Curbs and Gutters are to be poured monolithically.
2) Types "A", "B", and "C" Curbs and Types "AG", "BG" and "CG" Curbs and Gutters occur at Median Strips and Traffic Islands.
3) Shaded area in Curbs are to be painted with an approved white lacquer. (One Coat)
4) All Conc Curbs and Gutters shown herein are to be of Class "A-1" Conc. and Cast-in-Place.



TYPE "F" CURB
SCALE: 1" = 1'-0"

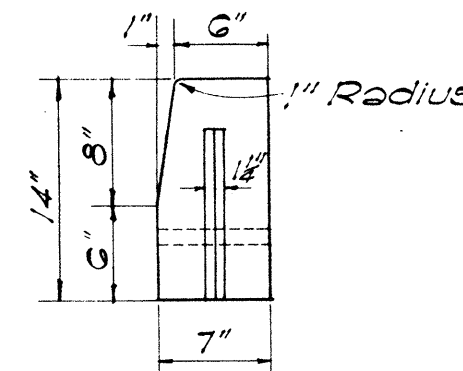
DETAILS OF CAST-IN-PLACE CONC. CURBS AND GUTTERS



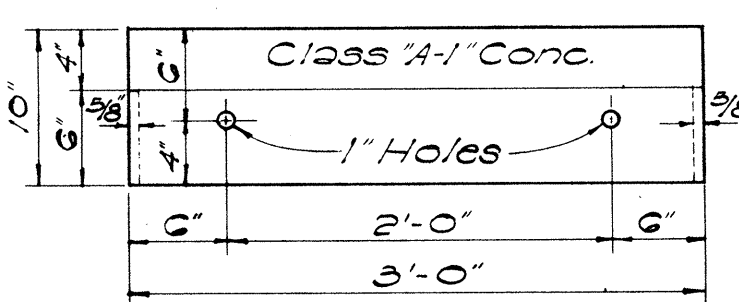
FRONT ELEV.

PRECAST CONC. CURB

SCALE: 1" = 1'-0"



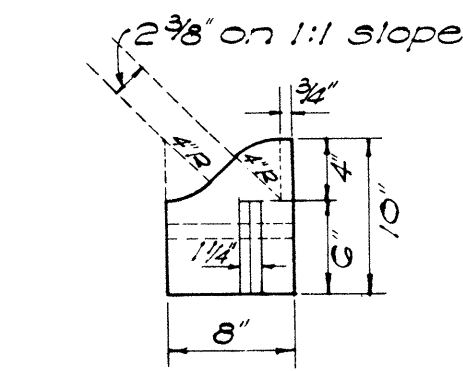
END ELEV.



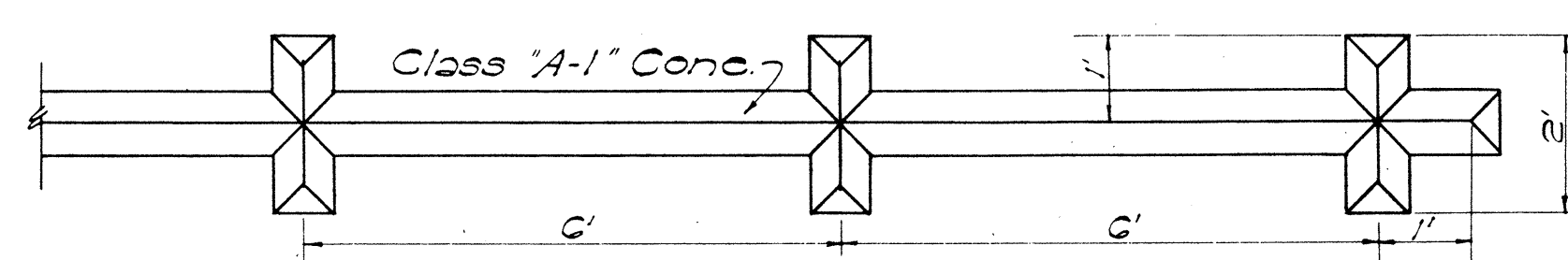
FRONT ELEV.

PRECAST CONC. ROLL CURB

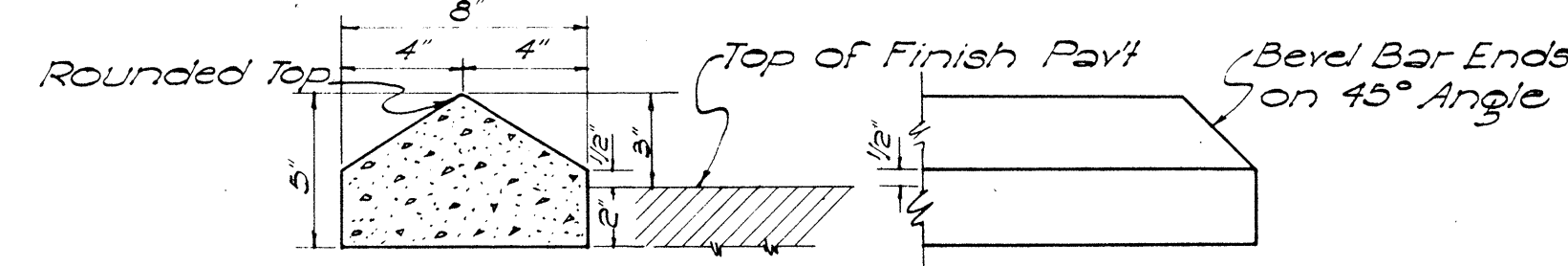
SCALE: 1" = 1'-0"



END ELEV.



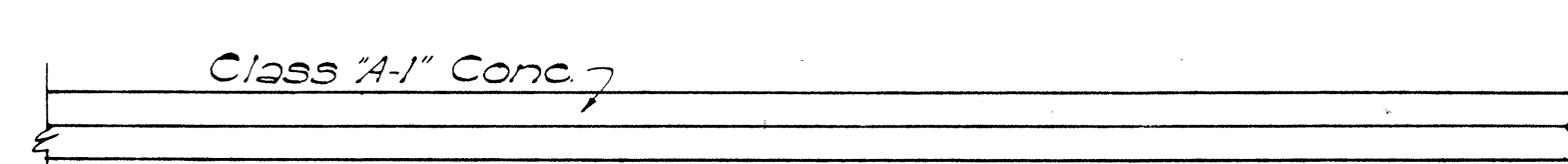
PLAN
SCALE: 1" = 2'-0"



SECTION

RAISED TRAFFIC BARS

SCALE: 1" = 6"



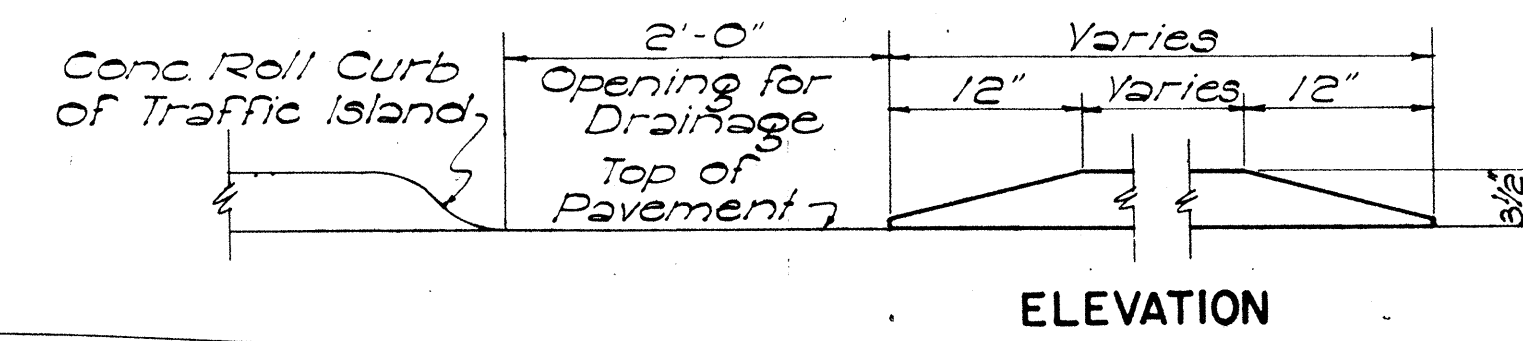
PLAN

RAISED JIGGLE BARS

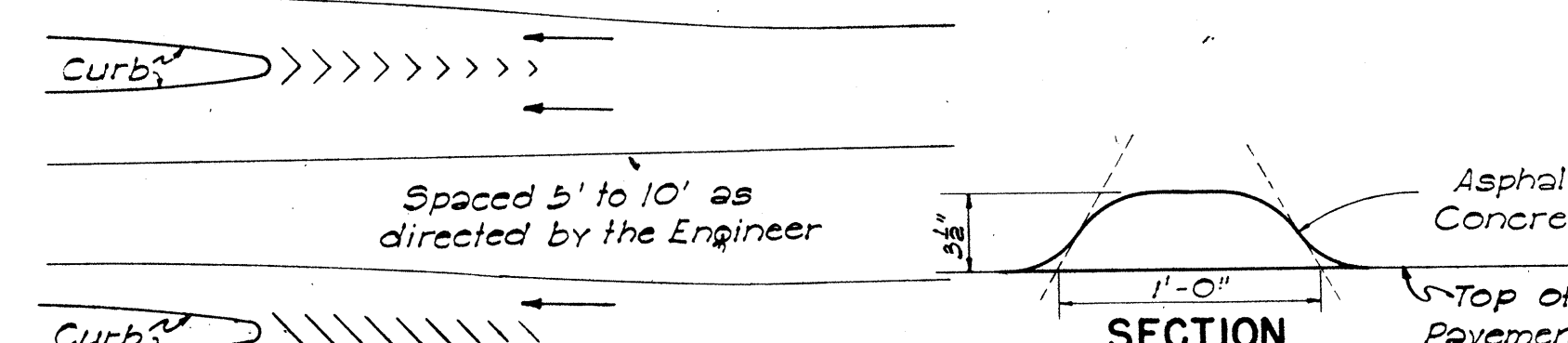
SCALE: 1" = 2'-0"

NOTE:
Section and Elevation for Jiggle Bars are same as the Traffic Bars.

NOTE:
Paint all exposed surfaces of bars with beaded white traffic lacquer.



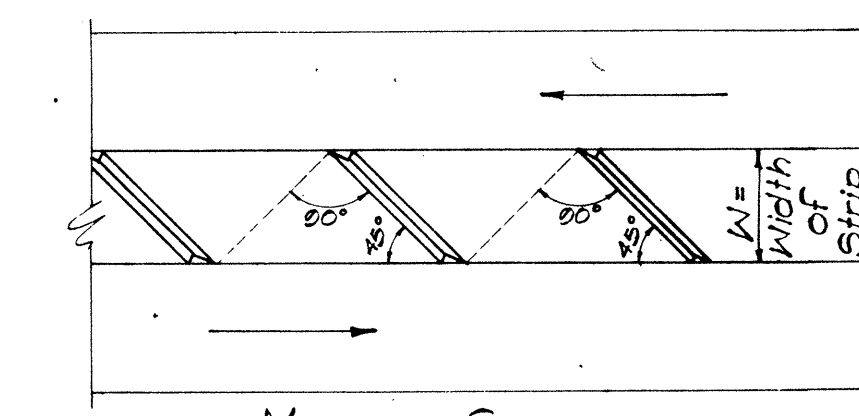
ELEVATION



SECTION

A.C. ROLL CURB

NOT TO SCALE



AT CURBED ISLAND

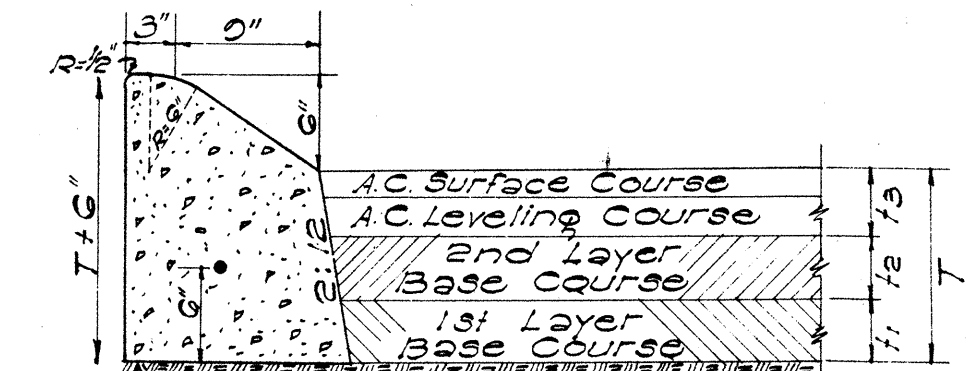
MEDIAN STRIP

LAYOUT OF JIGGLE BARS

NOT TO SCALE

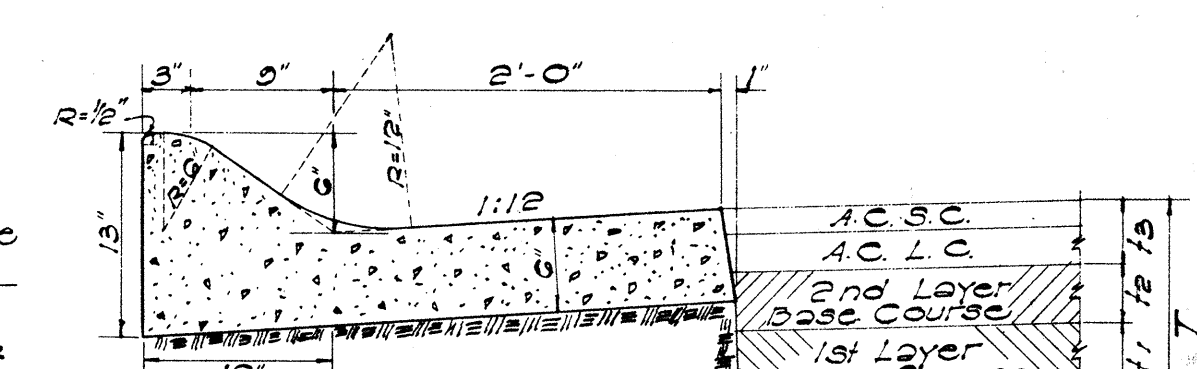
APPROVED: DATE: 9-22-56

B. E. Hutton
TERRITORIAL HIGHWAY ENGINEER



TYPE "E" CAST-IN-PLACE
CONCRETE CURB

SCALE: 1" = 1'-0"



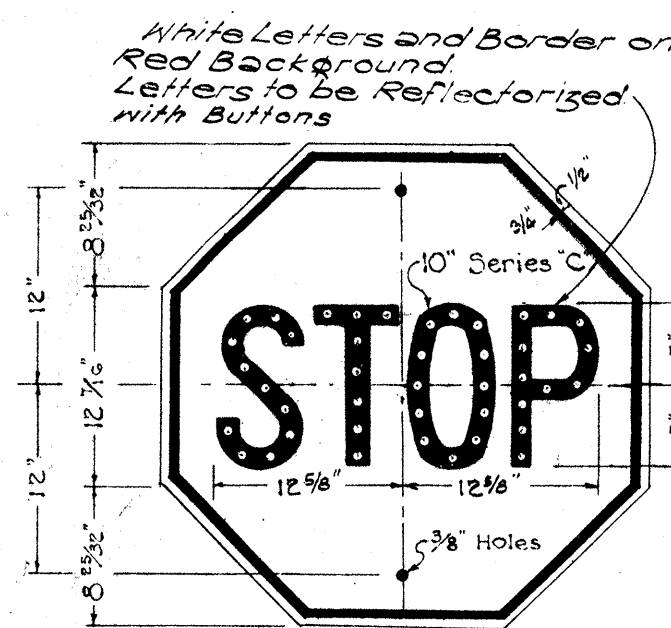
TYPE "EG" CAST-IN-PLACE
CONC. CURB & GUTTER

SCALE: 1" = 1'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
CONCRETE CURBS,
CONCRETE CURBS & GUTTERS
SCALES AS NOTED

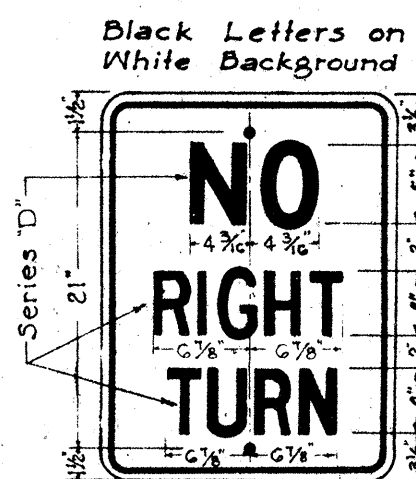
SHEET No 2 OF 6 SHEETS

5595.14



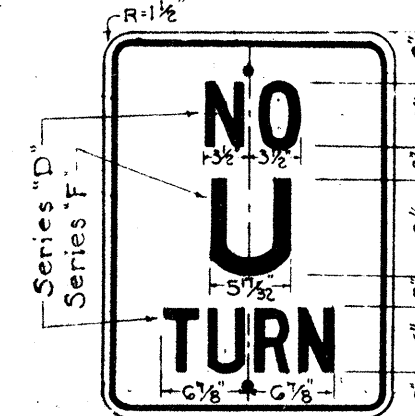
R-1

30" x 30"
Red Letters & Border on White Background



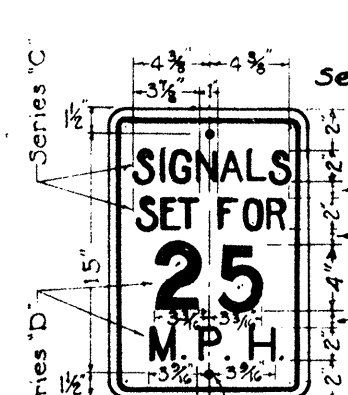
R-6

18" x 24"



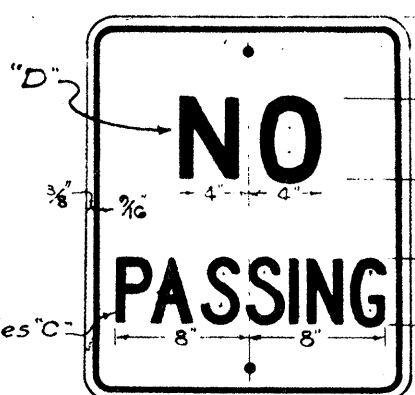
R-8

18" x 24"



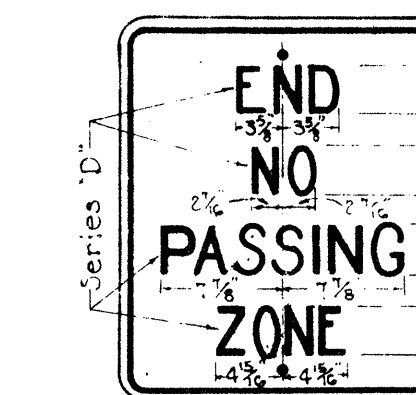
R-10

12" x 18"



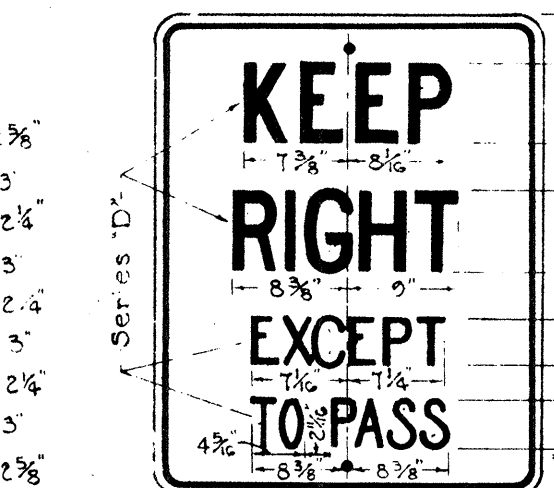
R-11

20" x 24"



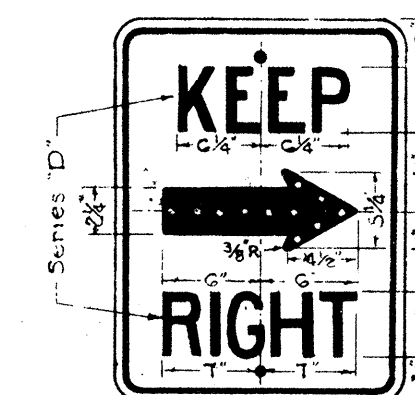
R-12

20" x 24"



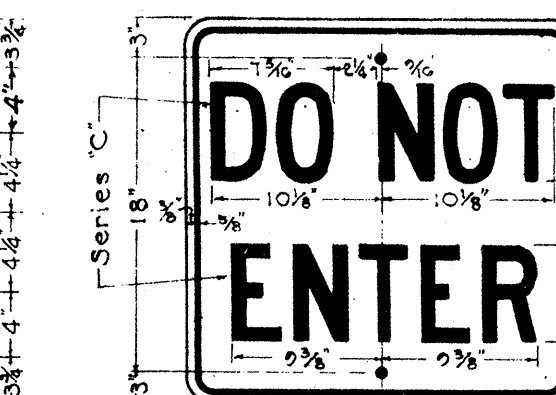
R-13

24" x 30"



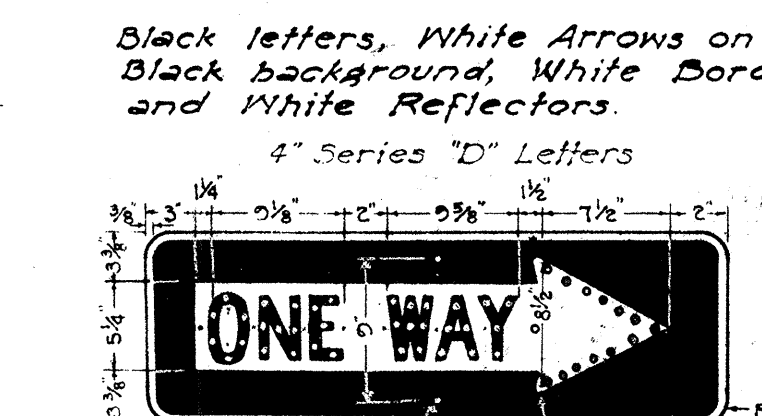
R-14

18" x 24"



R-15

24" x 24"



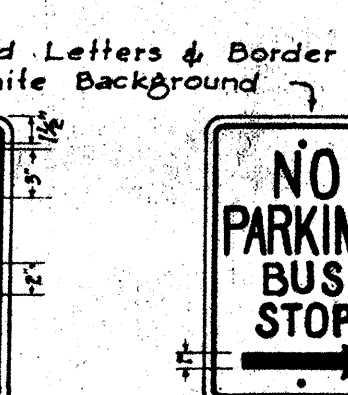
R-16-R

R-16-L
36" x 12"



R-18

12" x 18"



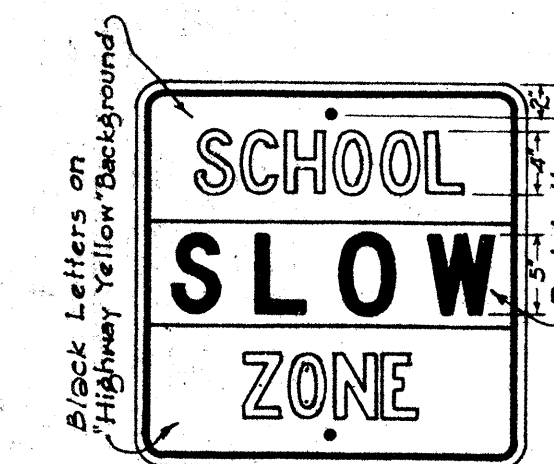
R-26

12" x 18"



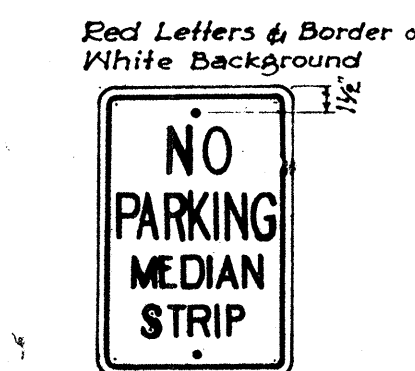
R-29

24" x 30"



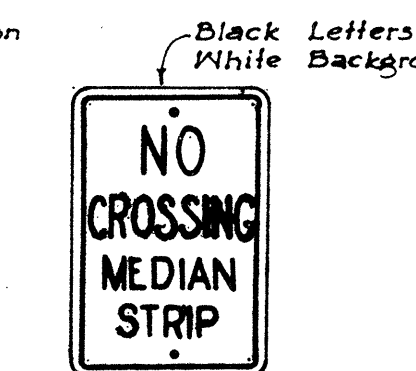
R-41-S

24" x 24"



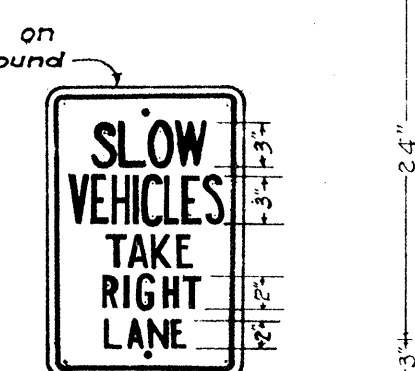
R-42-S

12" x 18"



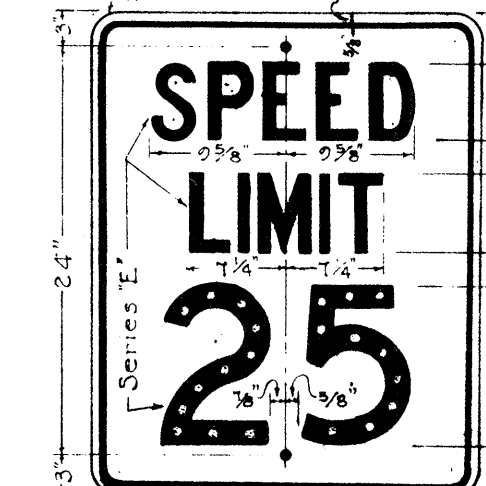
R-43-S

12" x 18"



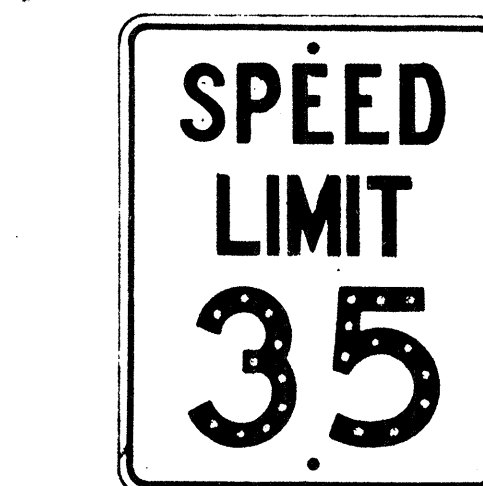
R-44-S

12" x 18"



R-102-A

24" x 30"



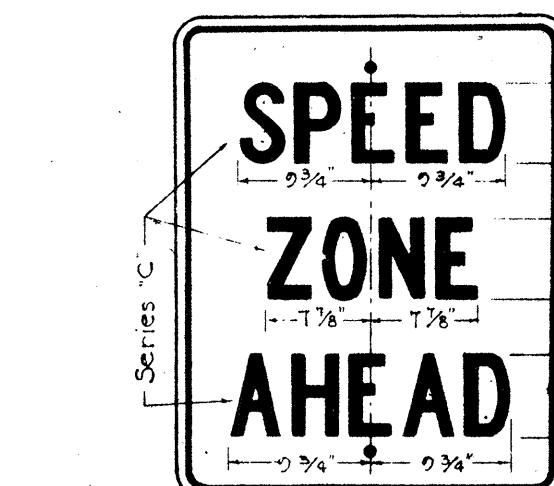
R-102-B

24" x 30"



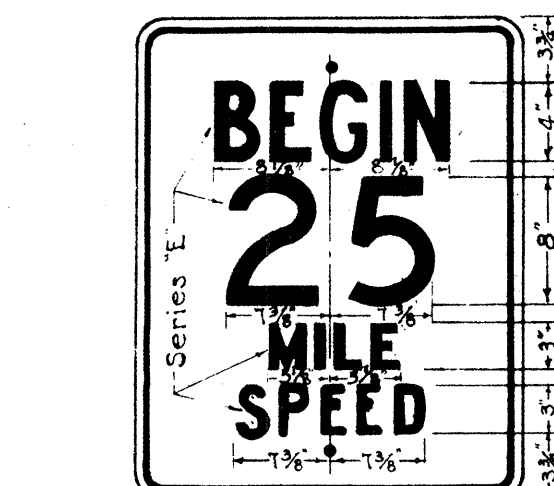
R-102-C

24" x 30"



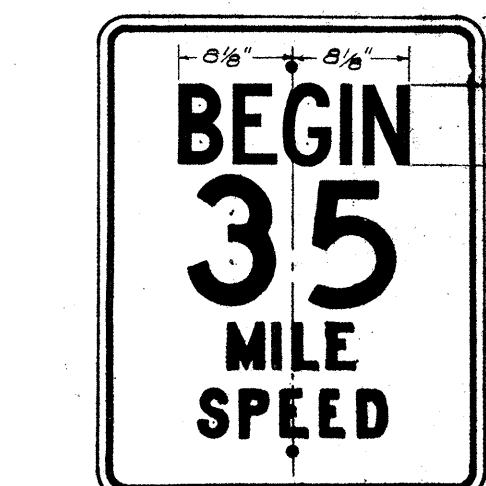
R-104

24" x 30"



R-105-A

24" x 30"



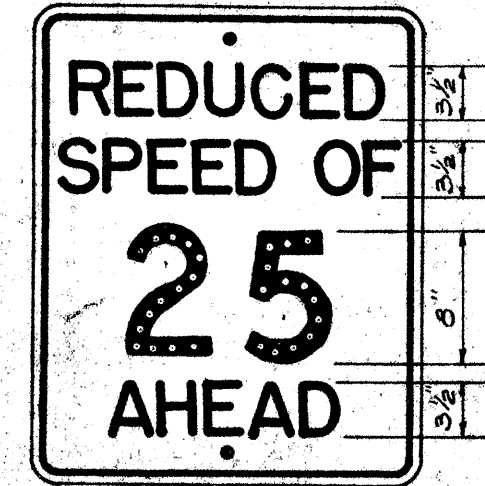
R-105-B

24" x 30"



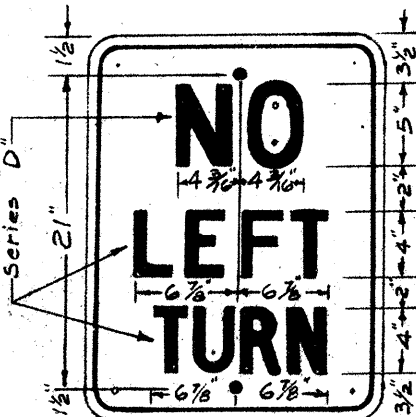
R-105-C

24" x 30"



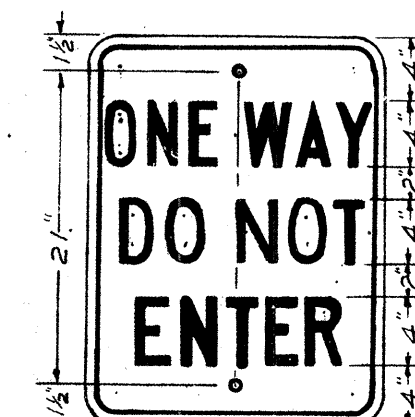
R-104-A

24" x 30"



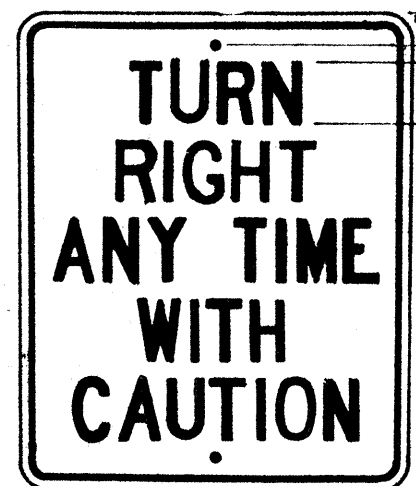
R-7

18" x 24"



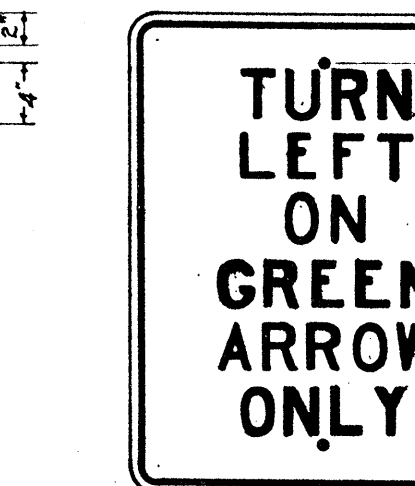
R-66

18" x 24"



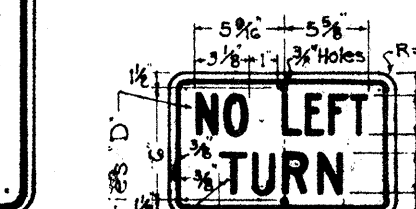
R-106

24" x 30"



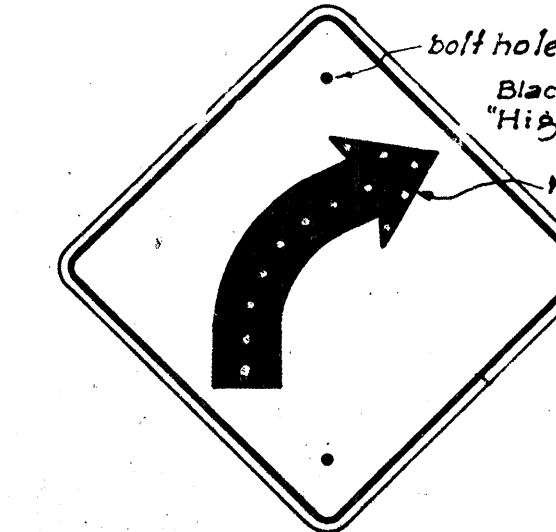
R-107-A

24" x 30"



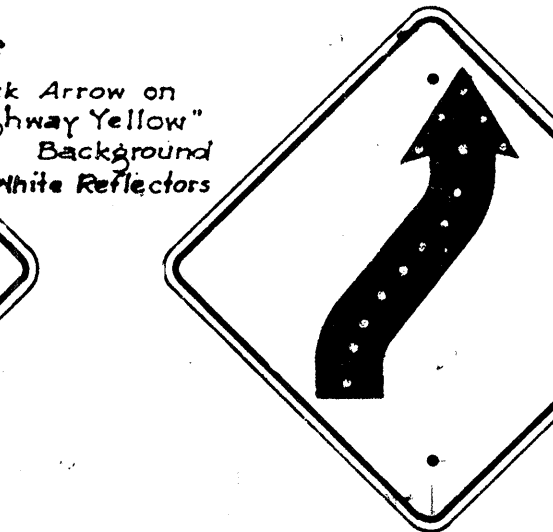
R-107

14" x 9"



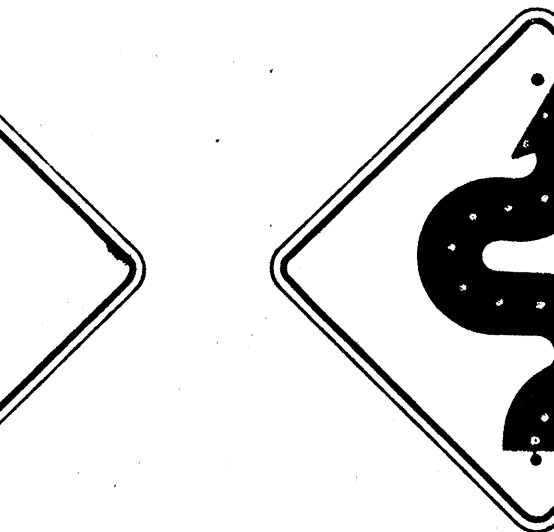
W-2-R

*W-2-L
24" x 24"



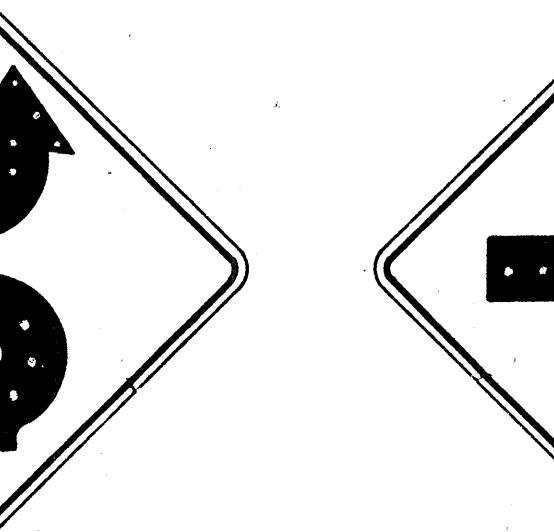
W-4-R

*W-4-L
24" x 24"



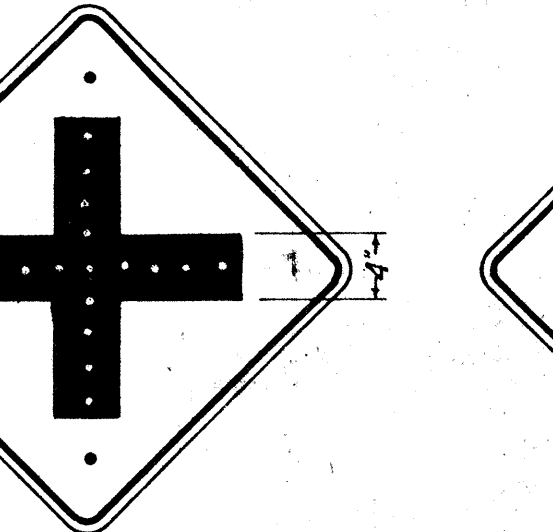
W-5-R

*W-5-L
24" x 24"



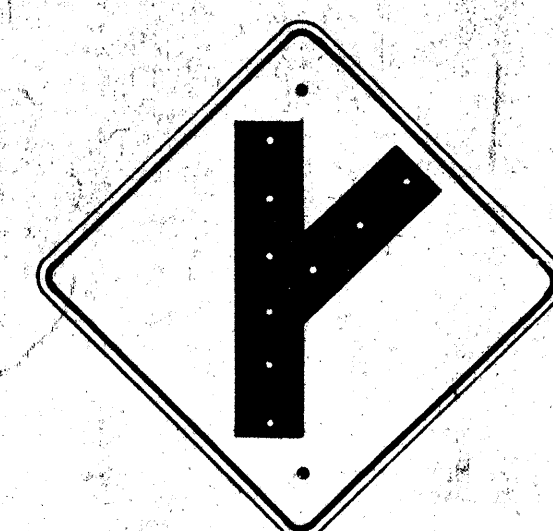
W-6

24" x 24"



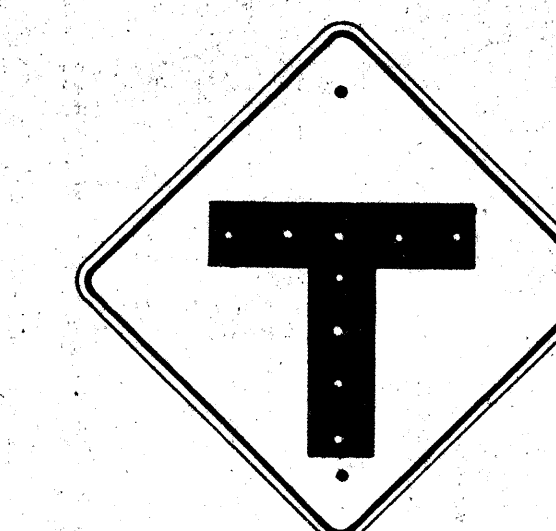
W-7

24" x 24"



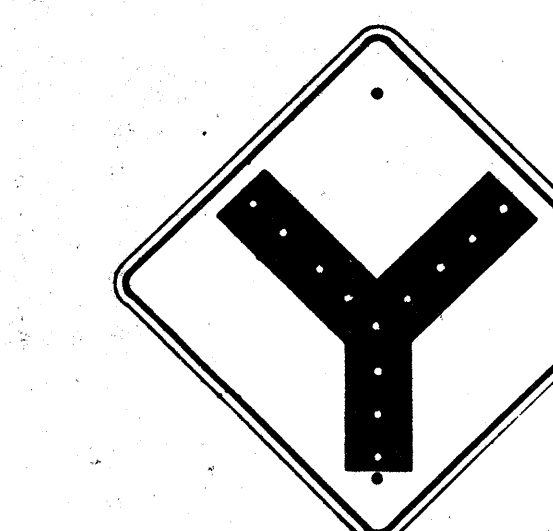
W-8-R

*W-8-L
24" x 24"



W-9

24" x 24"



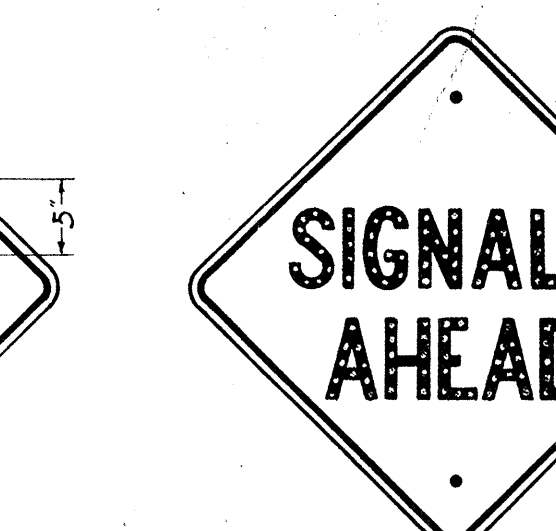
W-10

24" x 24"



W-13

24" x 24"



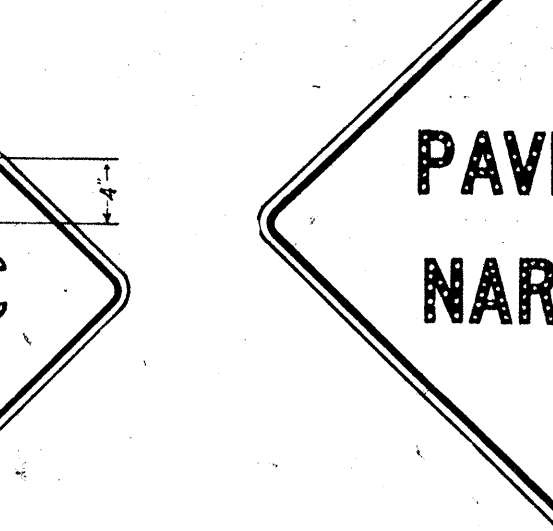
W-14

24" x 24"



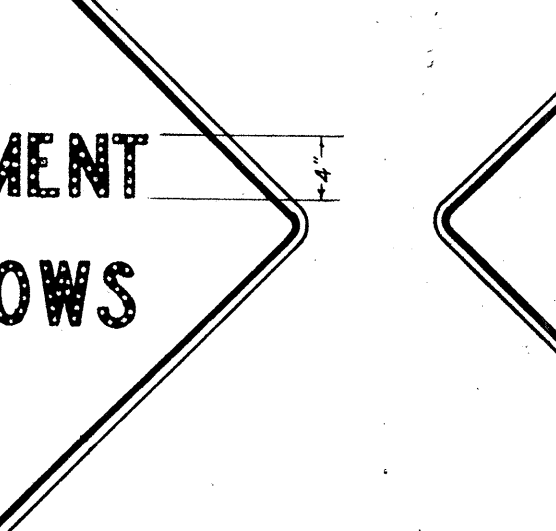
W-14-A

24" x 24"



W-19

30" x 30"



W-20

30" x 30"



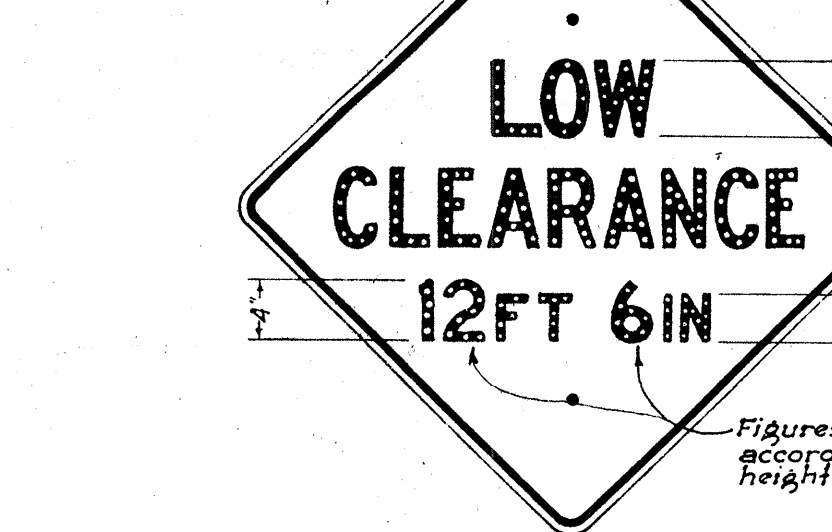
W-21

30" x 30"



W-22

24" x 24"



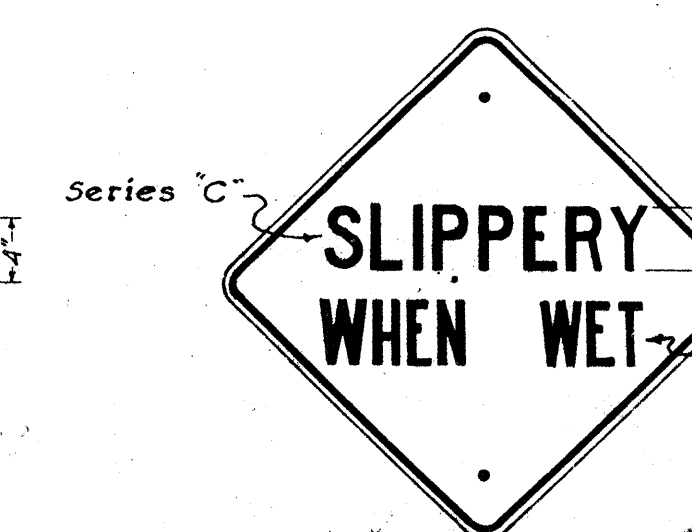
W-24

30" x 30"



W-25

24" x 24"



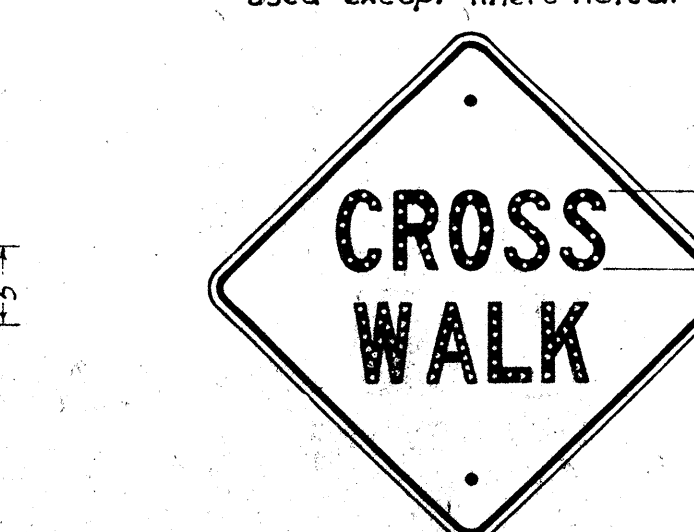
W-29

24" x 24"



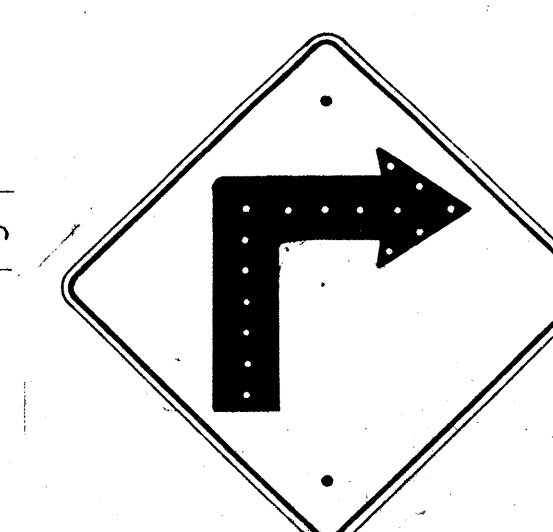
W-59

24" x 24"



W-39

24" x 24"



W-1-R

*W-1-L
24" x 24"

Unless otherwise specified, all signs shall conform with requirements of "Manual on Uniform Traffic Control Devices for Streets and Highways."

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: *Ben E. Kuttler*
TERRITORIAL HIGHWAY ENGINEER
JUNE 23, 1953

SHEET No 3 OF 6 SHEETS

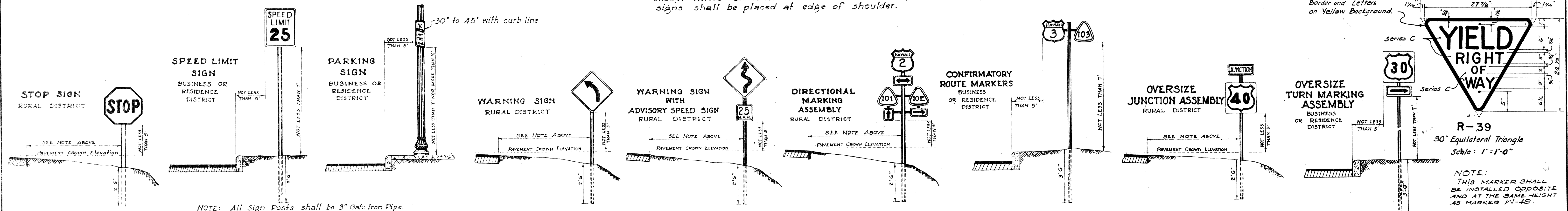
5795.15

1570: Stop sign has been revised 12/10/54 6/9/55

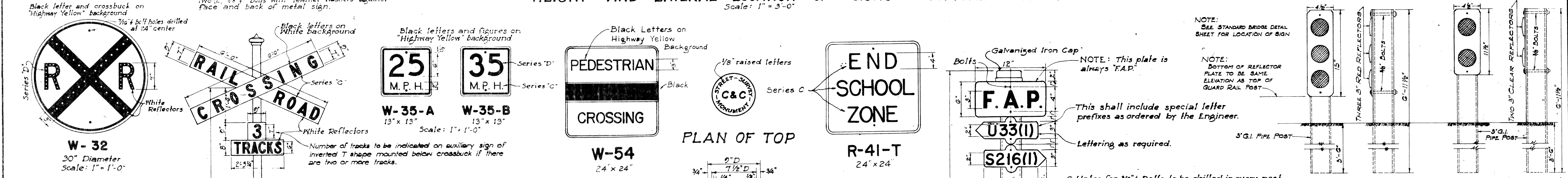
DATE
SURVEY PLOTTED BY
ORIGINAL PLAN
DRAWN BY
NOTED BY
CHECKED BY
T. Tokunaga

Note: All signs shall be placed 10' from edge of pavement except where shoulder width is less than 10', in which case signs shall be placed at edge of shoulder.

Note: For R-39, Black Border and Letters on Yellow Background.



HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS
Scale: 1"=3'-0"



PLAN OF TOP

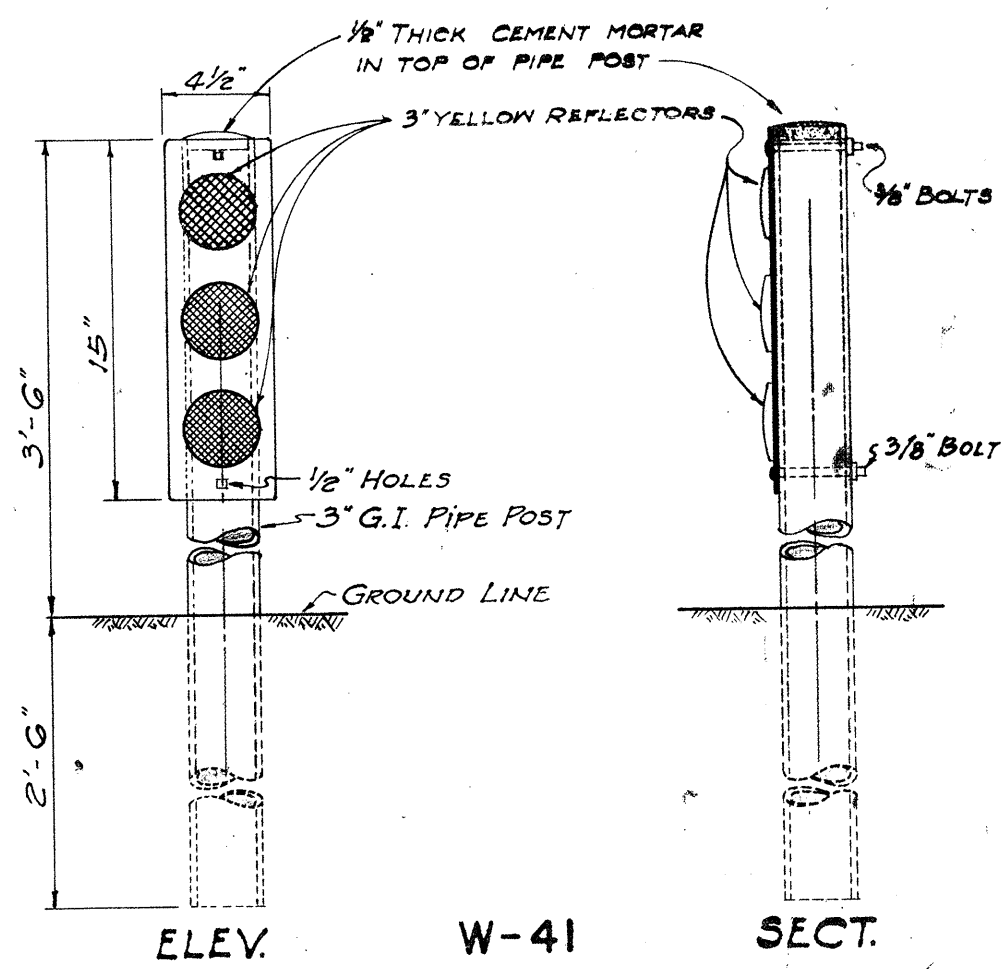
ARRANGEMENT OF MARKERS

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. Project 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.

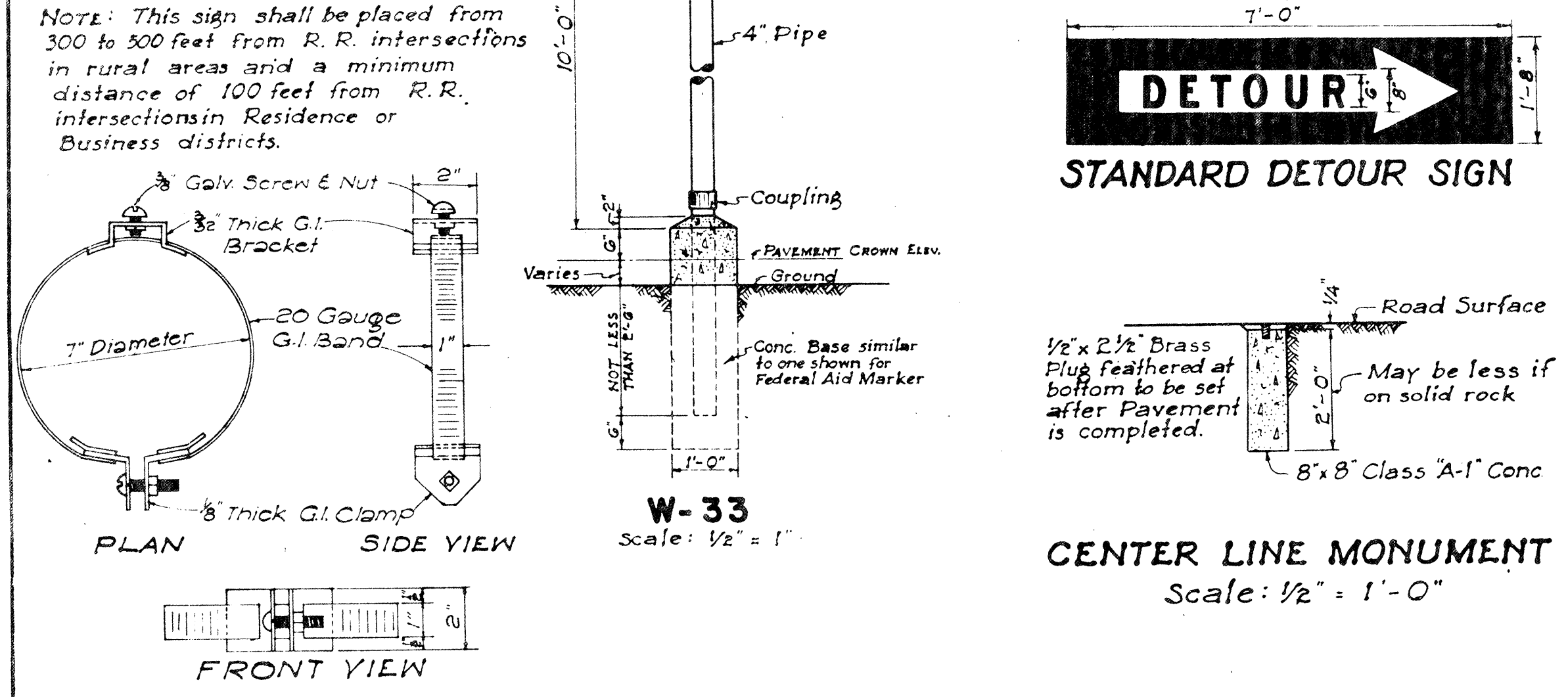
Markers and Number plates shall be 1/2" 16 Ga. galvanized iron with 3/8" holes for fastening as shown on sketch. Markers and Number plates shall be given one coat of best Chromate primer and two coats of White Marine Enamel. Before painting they shall be given a wash of 8 ounces of Copper Sulphate in 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.

W-42 W-43



DETAIL OF SIGNS

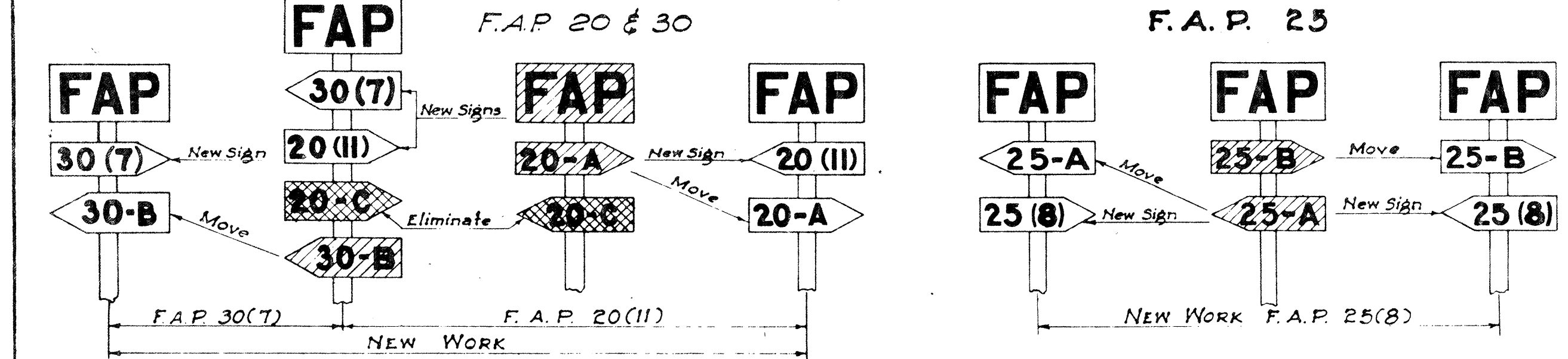
SCALE: 1 1/2"=1'-0"



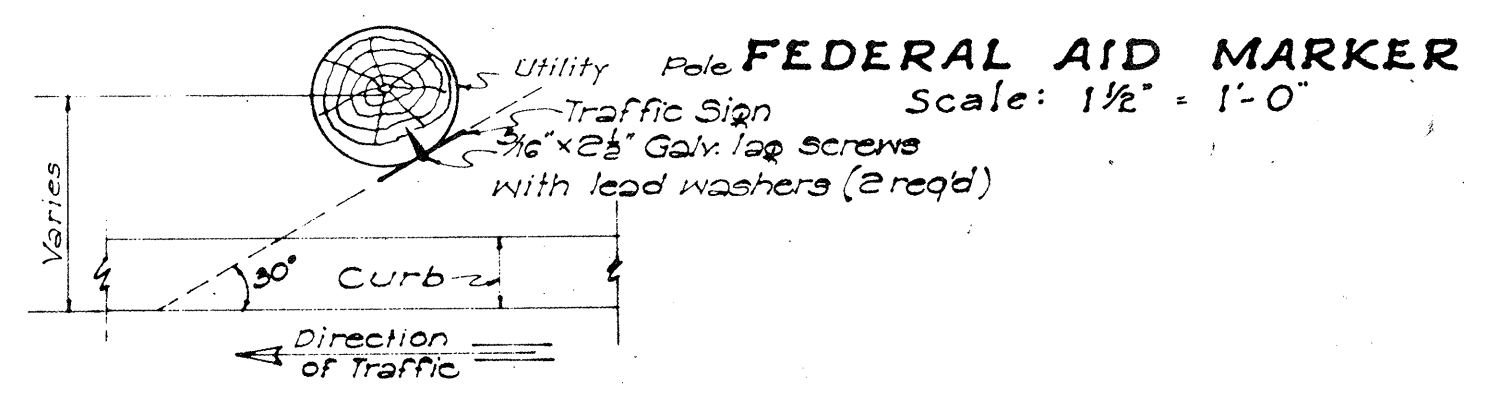
STANDARD C&C STREET SURVEY MONUMENT

ADJUSTABLE BAND BRACKET FOR SUPPORTING TRAFFIC SIGNS ON MONOTUBE LIGHTING STANDARDS
Scale: 3/4"=1'-0"

This product to be as shown in Catalogue No 48 of Cataphote Corp or equal.



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



DETAIL SHOWING ANGLE OF TRAFFIC SIGNS AND CURB LINE
Scale: 1"=1'-0"

APPROVED: *Ben E. Nutter*
TERRITORIAL HIGHWAY ENGINEER

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
F.A. MARKERS, MONUMENTS
SIGNS & LOCATION OF SIGNS
SCALES AS NOTED

D	W	H	T=H+H
18"	24"	2'-0"	4'-0"
24"	30"	2'-0"	4'-6"
30"	30"	2'-6"	5'-0"
36"	36"	3'-0"	6'-0"

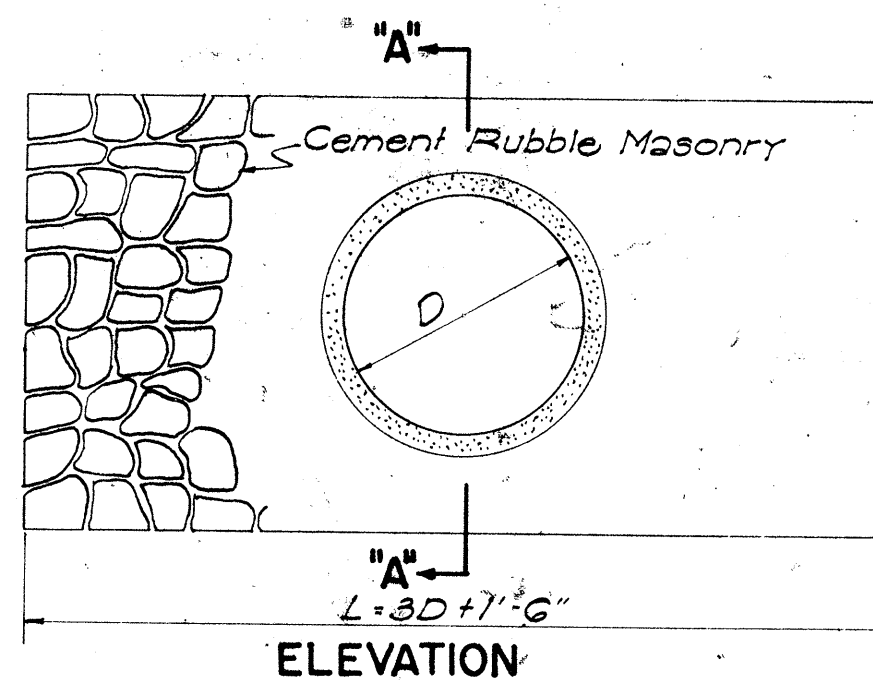
DETAIL OF OUTLET DITCH

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

D	D	L=D+G	Cu Yds.	Where Variables Equal
23"	18"	2'-5"	3.02	4'-6"
30"	24"	3'-0"	3.61	5'-0"
37"	30"	3'-7"	4.21	5'-6"
44"	36"	4'-2"	4.85	6'-0"

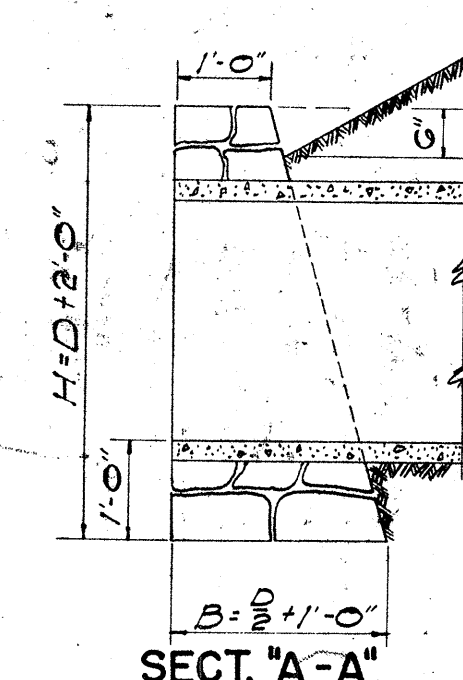
NOTE: Dimension "X" is assumed as 2'-4" in figuring the above quantities.

D	H	B	L	Cast-in-Place Conc. Culvert Cu Yds.	Conc. Pipe Culvert Cu Yds.	Corrugated Pipe Culvert Cu Yds.
18"	3'-6"	1'-0"	6'-0"	0.85	0.05	0.03
24"	4'-0"	2'-0"	7'-6"	1.28	1.45	1.41
30"	4'-6"	2'-3"	9'-0"	1.83	2.06	2.00
36"	5'-0"	2'-6"	10'-6"	2.40	2.84	2.72

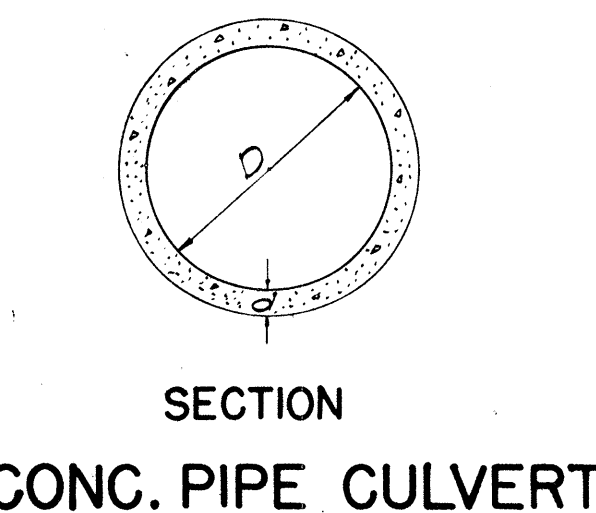


DETAIL OF MASONRY HEADWALL

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

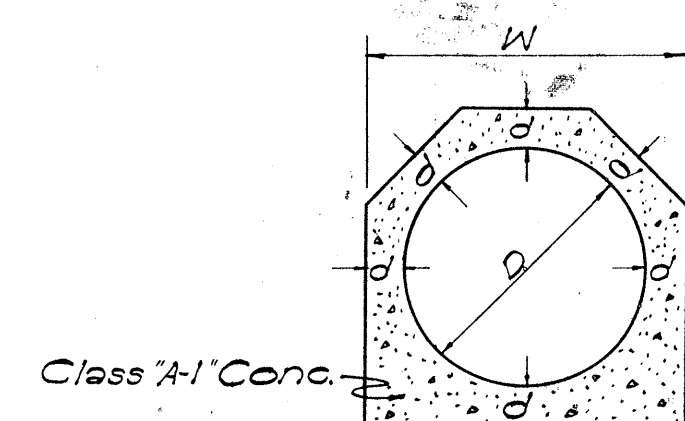


SECTION "A-A"



CONC. PIPE CULVERT

NOTE: Thickness 'd', reinforcing, and concrete used, are to conform with the approved design as provided by the Specifications.



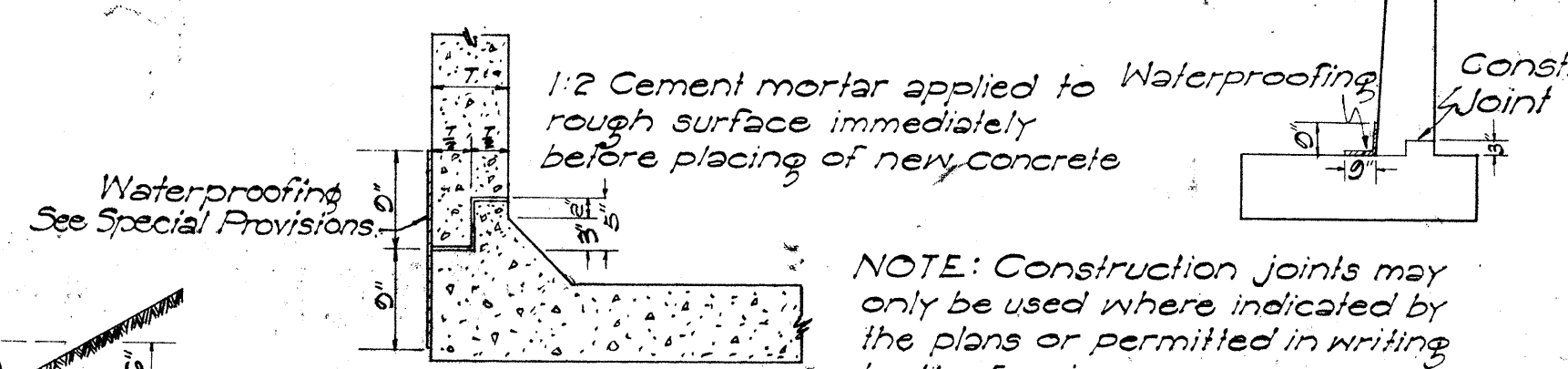
SECTION

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"	0.19
36"	5 1/2"	3'-11"	0.26

CAST-IN-PLACE CONC. CULVERT

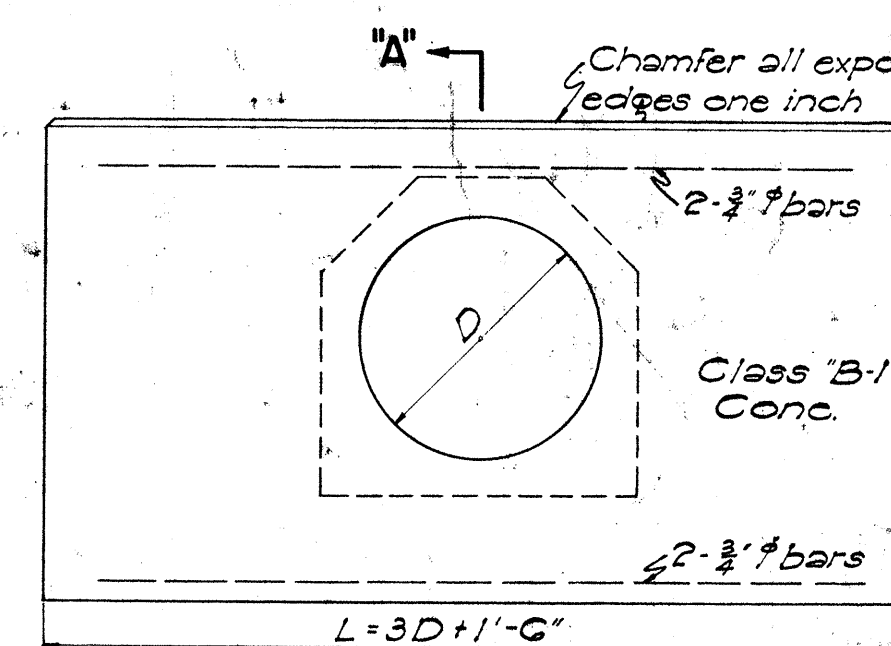
DETAIL OF MASONRY DROP INTAKE

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

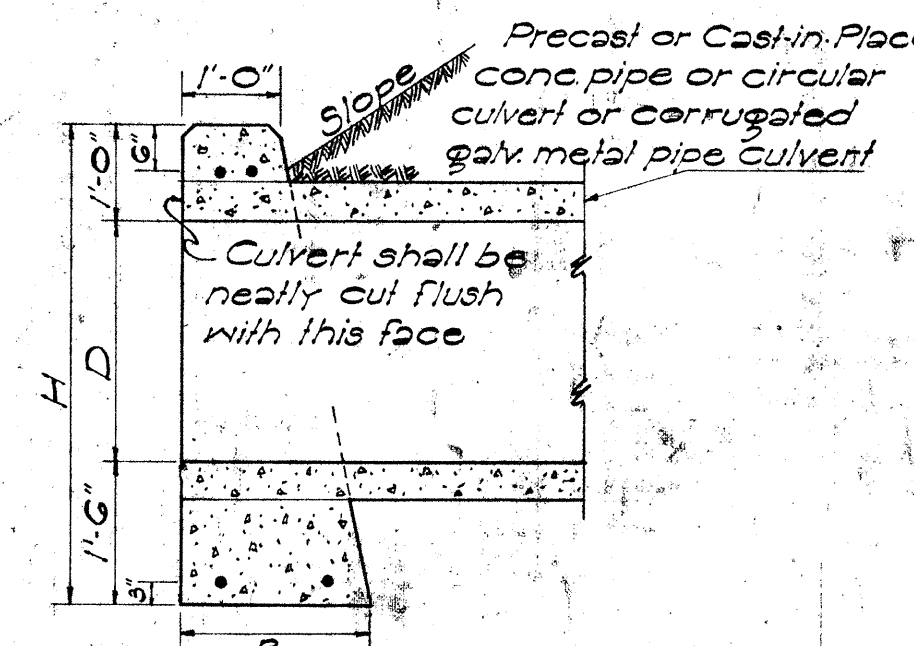


CONSTR. JOINT DETAILS

NOTE: Construction joints may only be used where indicated by the plans or permitted in writing by the Engineer.



ELEVATION

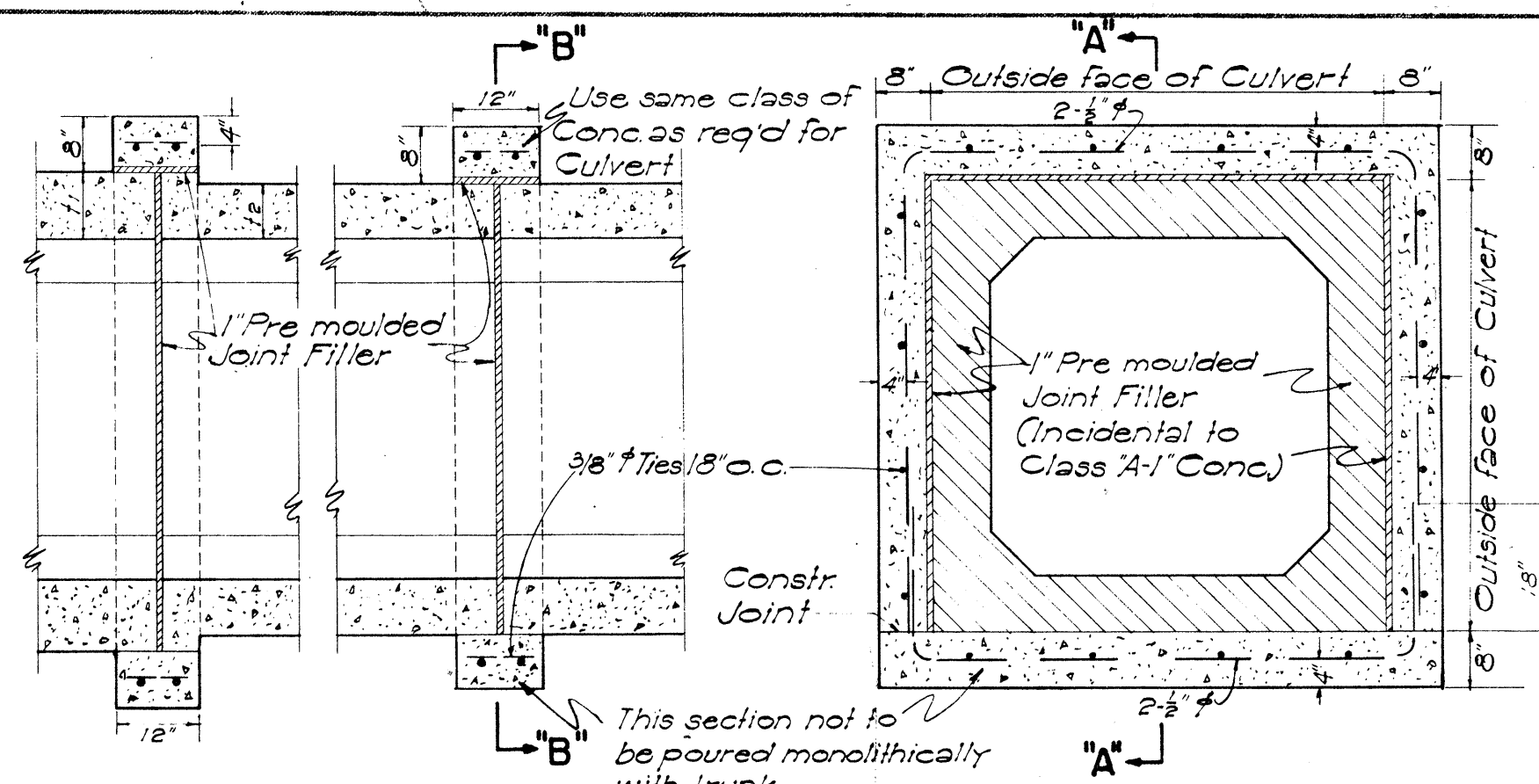


SECTION "A-A"

D	B	L	H	Cast-in-Place Conc. Culvert Cu Yds.	Conc. Pipe Culvert Cu Yds.	Steel For One Headwall No. of Bars Size Length Lbs.
18"	1'-6"	6'-0"	4'-0"	0.02	1.00	4 #4 8'-0" 33
24"	1'-6"	7'-6"	4'-6"	1.25	1.38	4 #4 7'-0" 42
30"	2'-0"	9'-0"	5'-0"	1.25	2.17	4 #4 8'-6" 51
36"	2'-0"	10'-6"	5'-6"	2.45	2.74	4 #4 10'-0" 60
42"	2'-6"	12'-0"	6'-0"	3.87	3.87	4 #4 11'-6" 60
48"	2'-6"	13'-6"	6'-6"	4.66	4.66	4 #4 13'-0" 78

DETAIL OF CONCRETE HEADWALL

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



SECTION "A-A" CONC. COLLAR FOR CONC. BOX CULVERT

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

REINFORCING BARS

All reinforcing bars for concrete shall be Billet Steel bars, ASTM A15, intermediate grade. Steel shall be made by the open-hearth process. All bars shall be deformed type conforming to ASTM A-305.

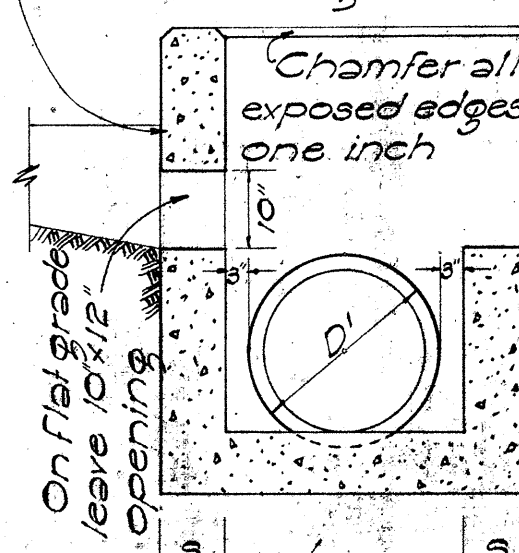
SECTION OF HIGH CEMENT RUBBLE MASONRY RETAINING WALL OR SEAWALL

SECTION OF LOW MASONRY RETAINING WALL OR SEAWALL

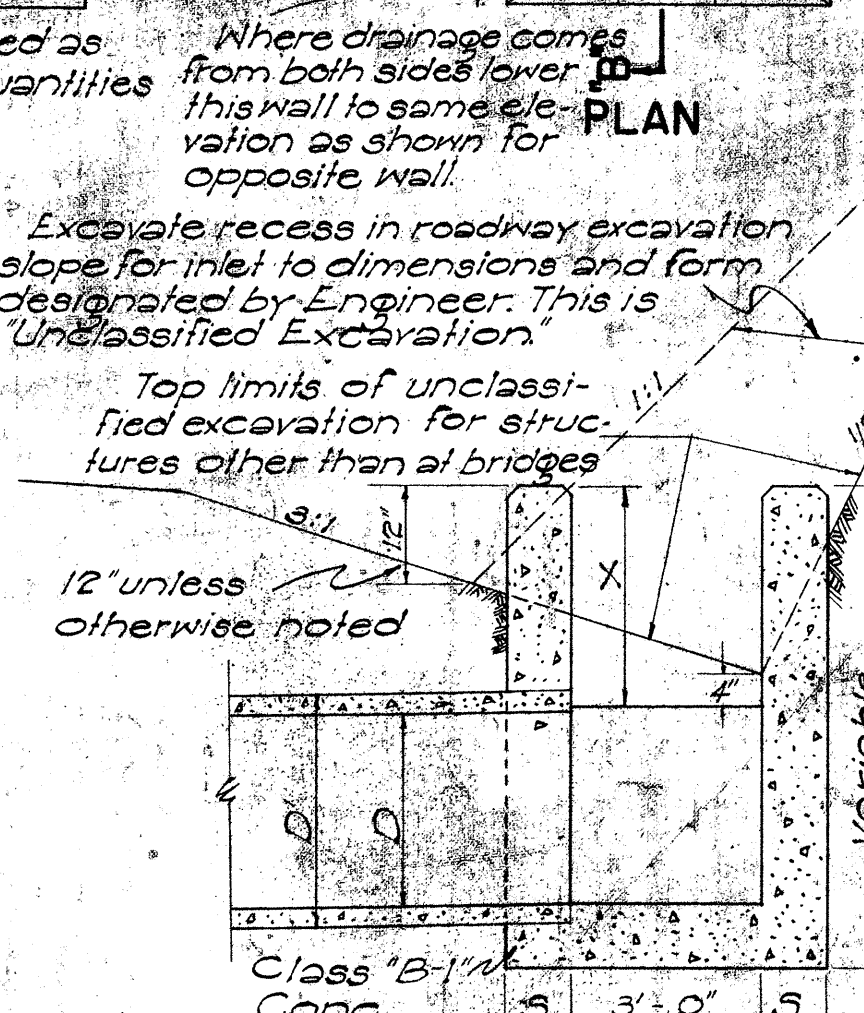
D	D	L=D+G	Cu Yds.	Where Variables Equal
23"	18"	2'-5"	1.41	4'-6"
30"	24"	3'-0"	1.72	5'-0"
37"	30"	3'-7"	2.32	5'-6"
44"	36"	4'-2"	2.73	6'-0"
51"	42"	4'-9"	3.54	6'-6"
58"	48"	5'-6"	4.01	7'-0"

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

Note: This type of structure shall also be used for the Drop Intakes of Siphons connected with Irrigation Ditches or Flumes with appropriate changes to dimensions. In this case all joints must be made water tight.



SECTION "B-B"



SECTION "A-A"

DETAIL OF CONCRETE DROP INTAKE

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

SECT. OF CULVERT WITH CONC. PROTECTION

Scale: 1" = 1'-0"

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	D/2 + T	Minimum = X
10" " 42" D		Maximum pay quantity will be Z = 12"
11" " 48" D		
12" " 54" D		

APPROVED: *Ben. C. Muttar*
TERRITORIAL HIGHWAY ENGINEER

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
DROP INTAKES, RETAINING WALLS,
HEADWALLS, CONSTRUCTION JOINTS
SCALES AS NOTED

SHEET NO 5 OF 6 SHEETS

5505.17

