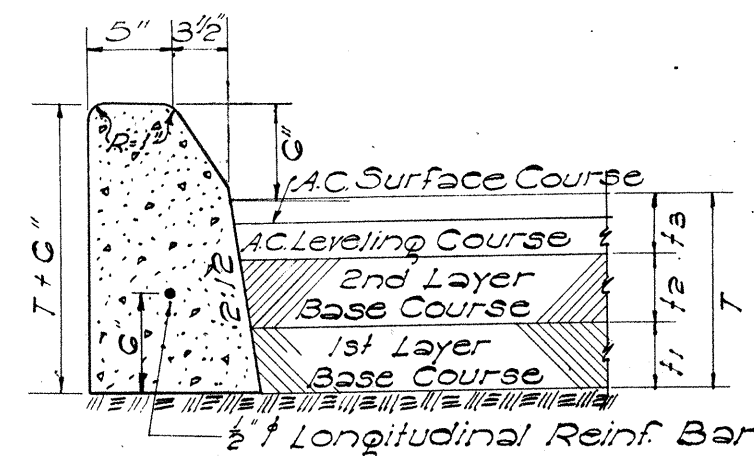
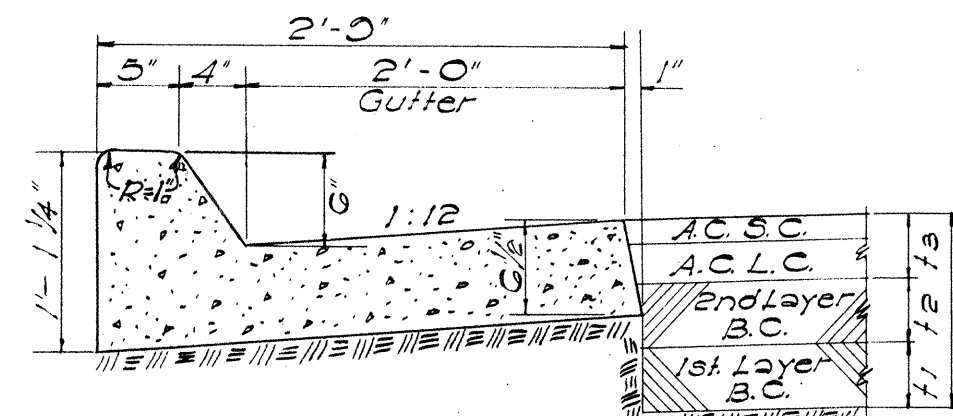
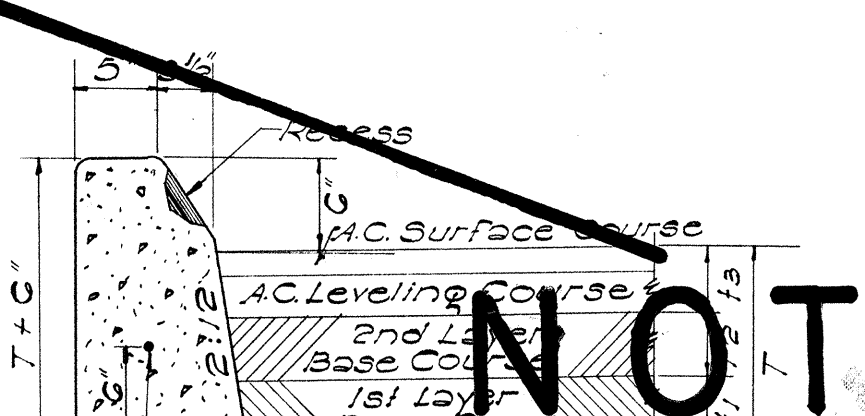




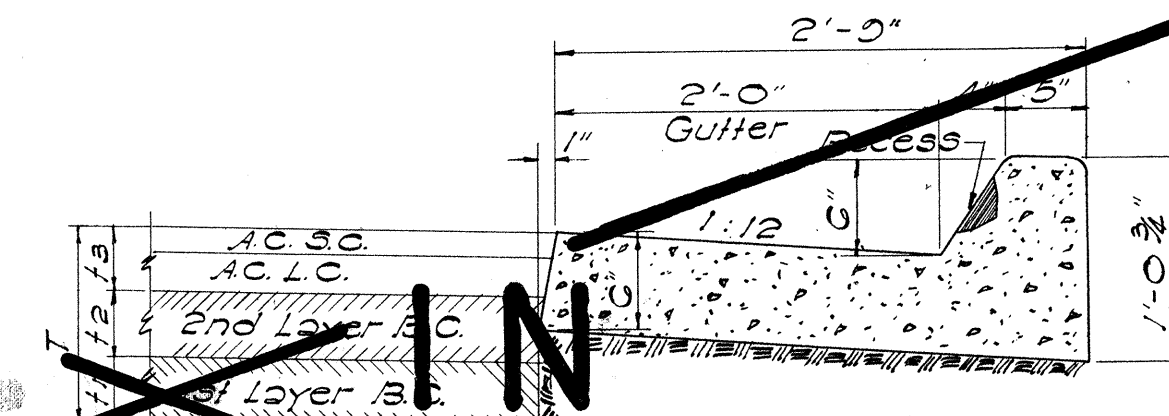
TYPE "A" & "B" CURB
SCALE: 1" = 1'-0"



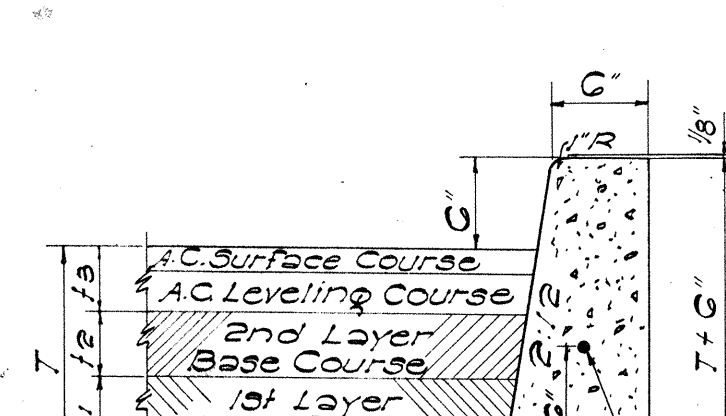
TYPE "AG" & "BG" CURB & GUTTER
SCALE: 1" = 1'-0"



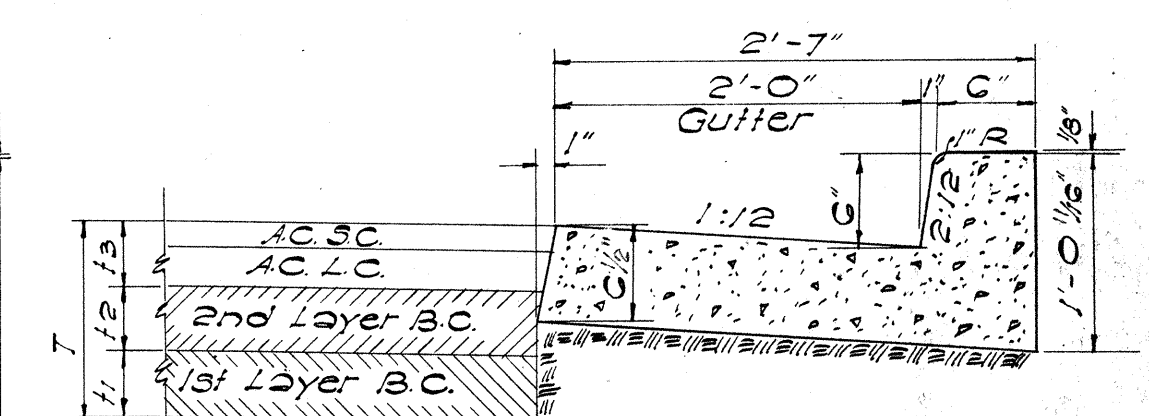
TYPE "C" CURB
SCALE: 1" = 1'-0"



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



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

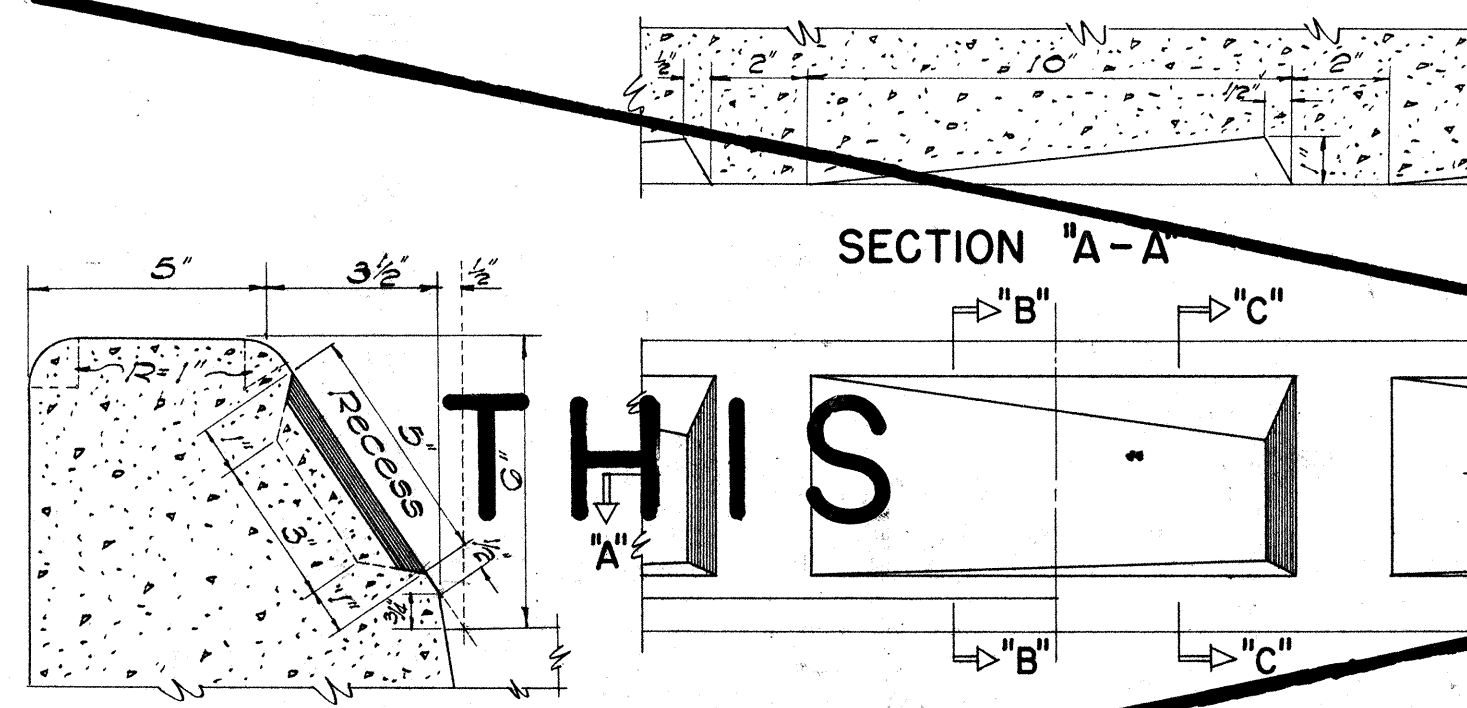


TYPE "DG" CURB & GUTTER
SCALE: 1" = 1'-0"

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

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.

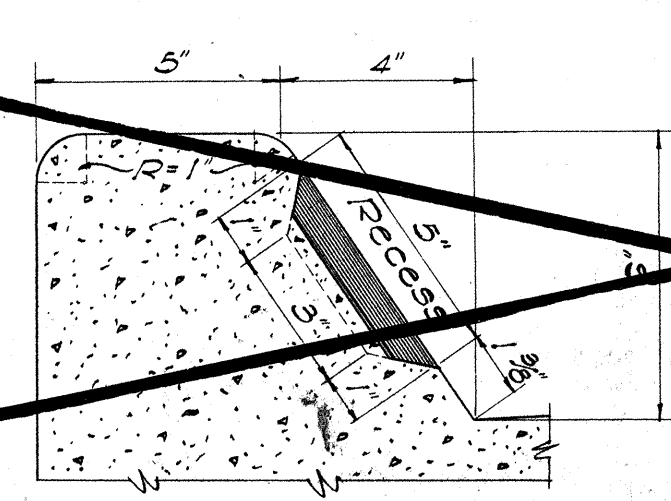
3) All Concrete Curbs and Gutters shown herein are to be of Class "A-1" Conc. and Cast-in-Place.



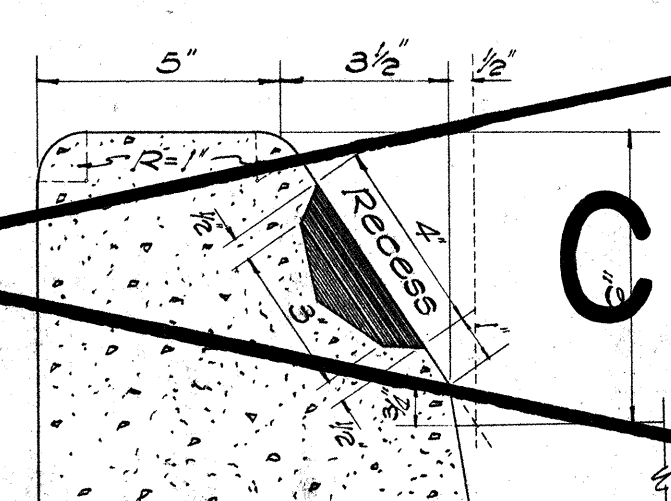
SECTION "B-B"
TYPE "A" & "B" CURB

SECTION "A-A"

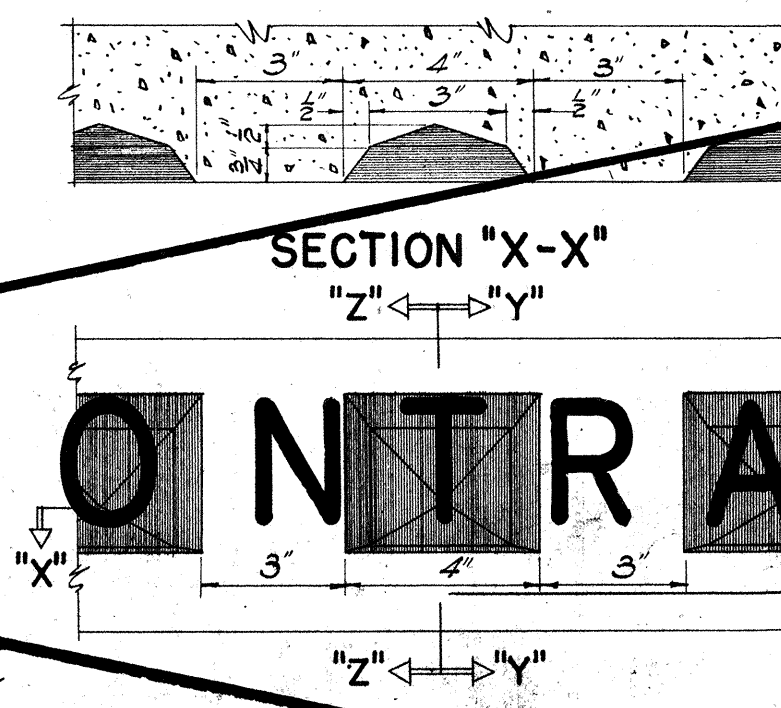
ELEVATION
SCALE: 3" = 1'-0"



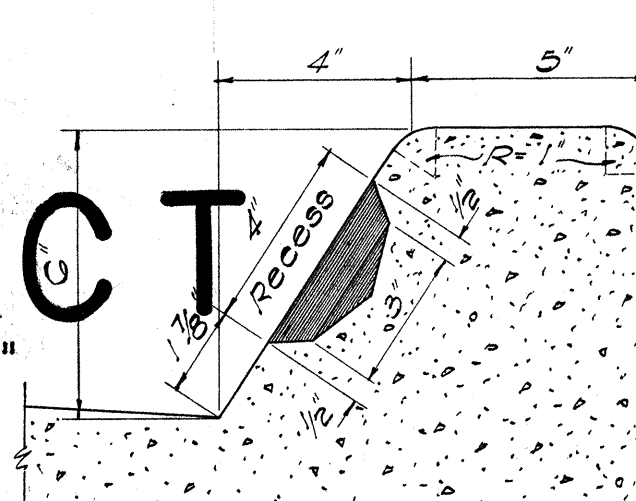
SECTION "C-C"
TYPE "AG" & "BG" CURB



SECTION "Y-Y"
TYPE "C" CURB



ELEVATION
SCALE: 3" = 1'-0"

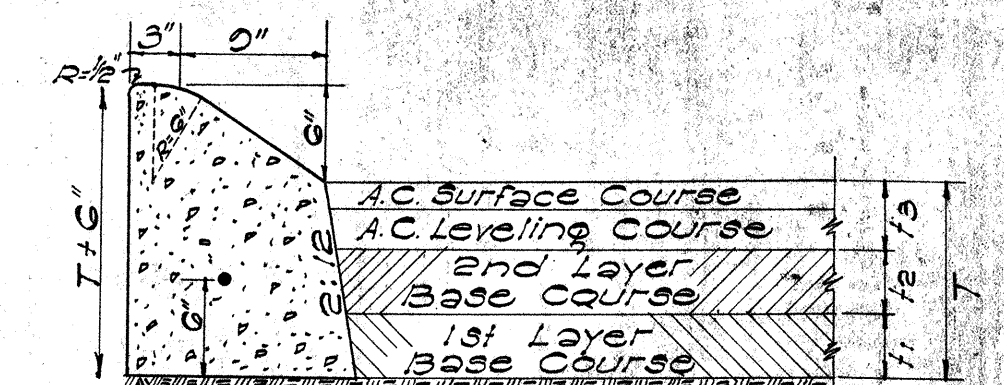


SECTION "Z-Z"
TYPE "CG" CURB

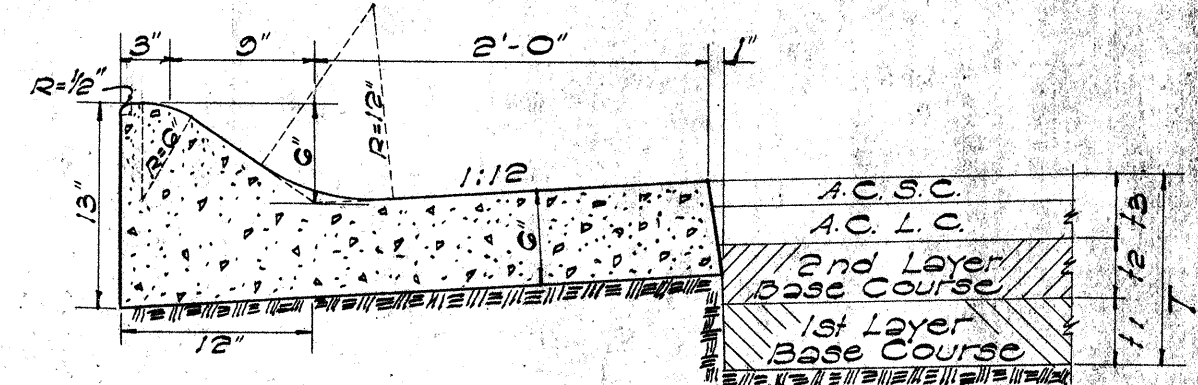
TYPE AND SPACING OF RECESSES

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

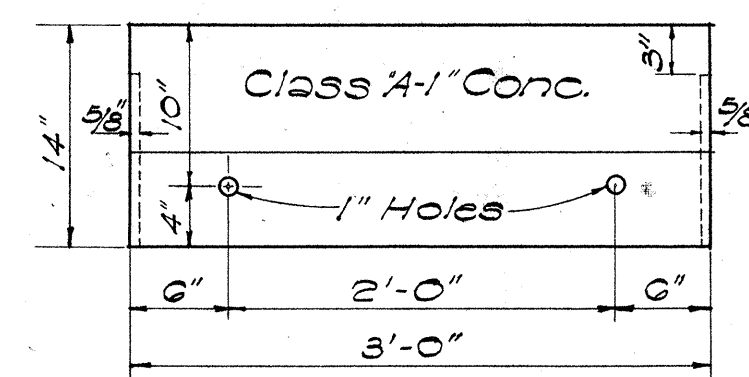
TYPE "A" CONCRETE GUTTER
Scale: 3/4" = 1'-0"



TYPE "E" CAST-IN-PLACE CONCRETE CURB
SCALE: 1" = 1'-0"



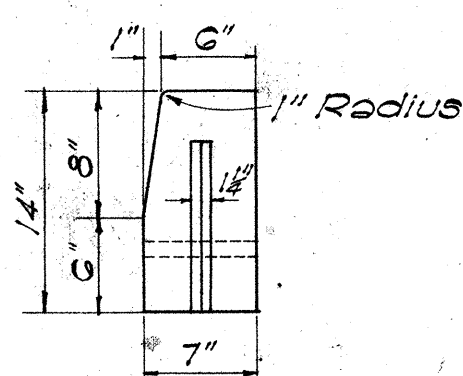
TYPE "EG" CAST-IN-PLACE CONC. CURB & GUTTER
SCALE: 1" = 1'-0"



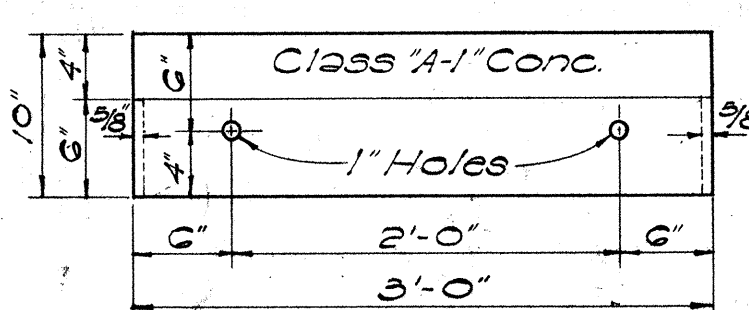
FRONT ELEV.

PRECAST CONC. CURB

SCALE: 1" = 1'-0"



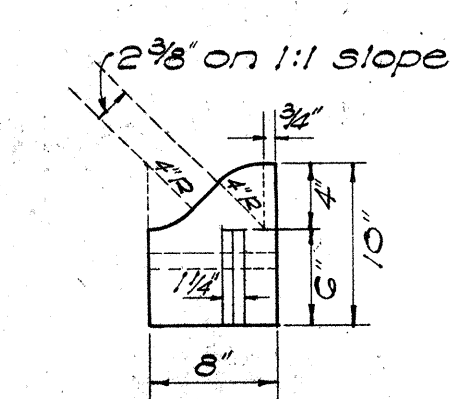
END ELEV.



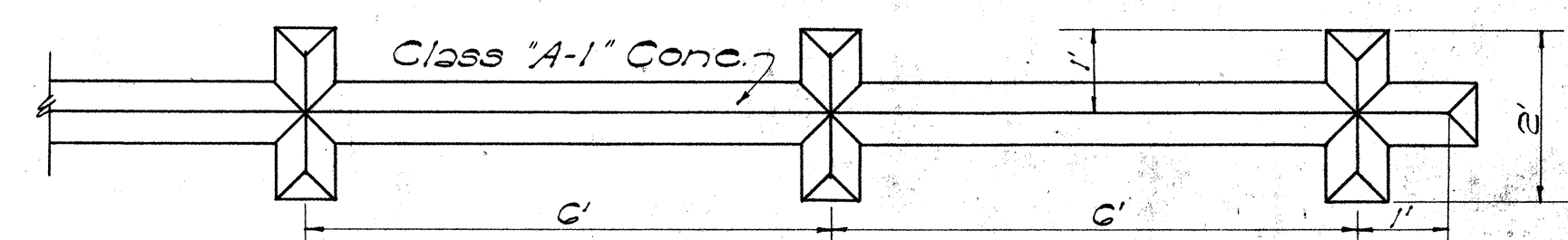
FRONT ELEV.

PRECAST CONC. ROLL CURB

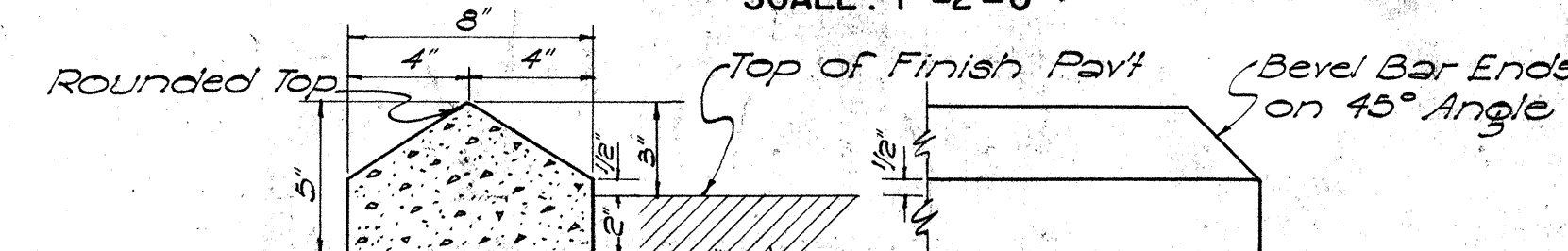
SCALE: 1" = 1'-0"



END ELEV.

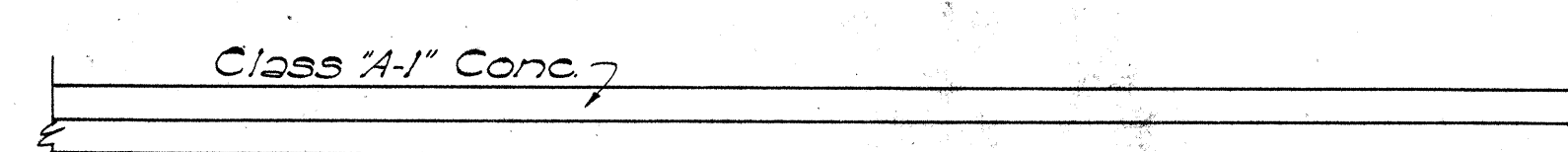


PLAN
SCALE: 1" = 2'-0"



SECTION
RAISED TRAFFIC BARS

SCALE: 1" = 6"



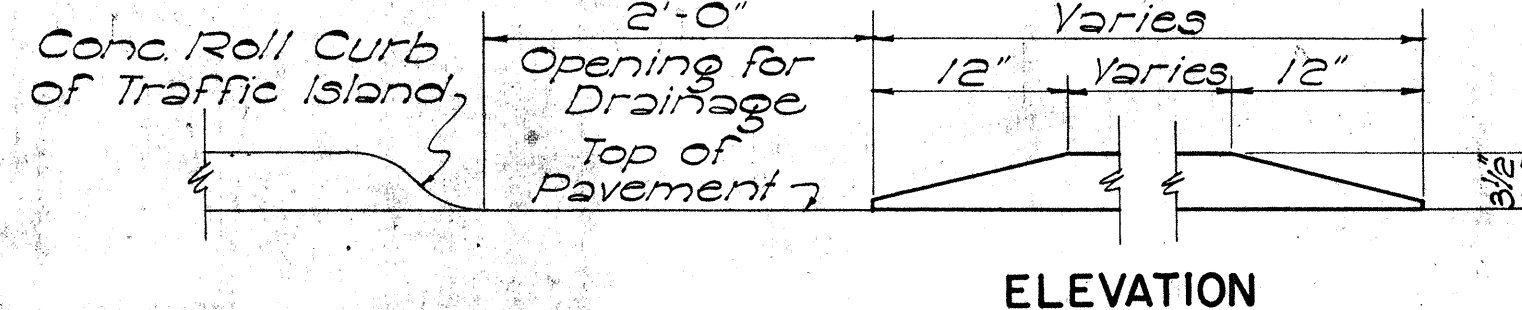
PLAN

RAISED JIGGLE BARS

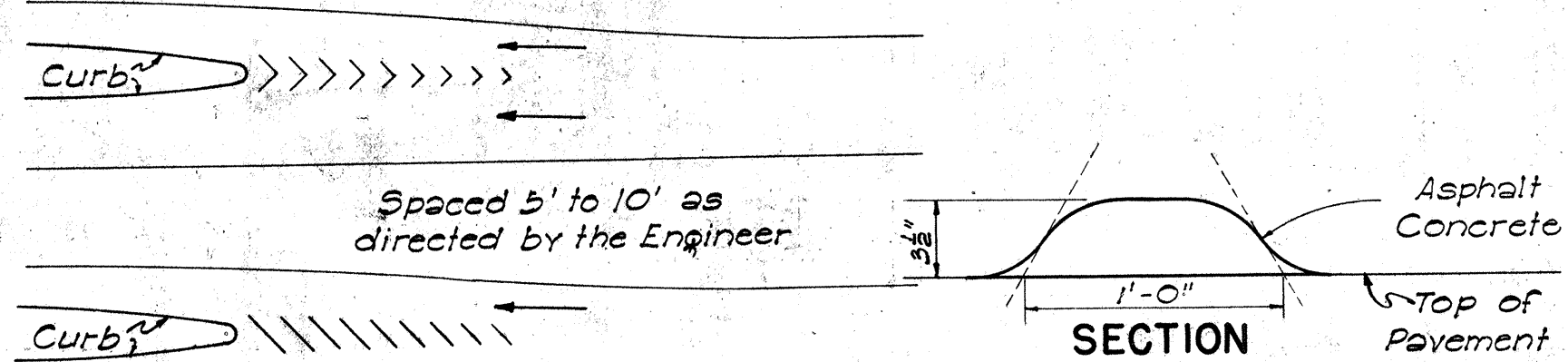
SCALE: 1" = 2'-0"

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.

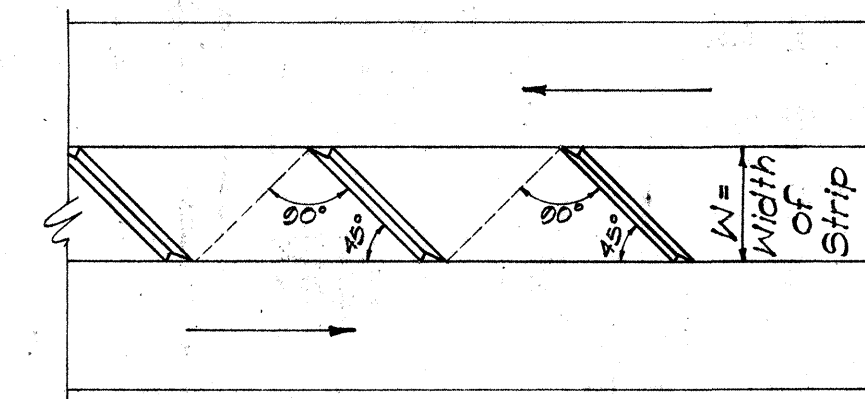


ELEVATION



SECTION

A.C. ROLL CURB
NOT TO SCALE



AT CURBED ISLAND

MEDIAN STRIP
LAYOUT OF JIGGLE BARS
NOT TO SCALE

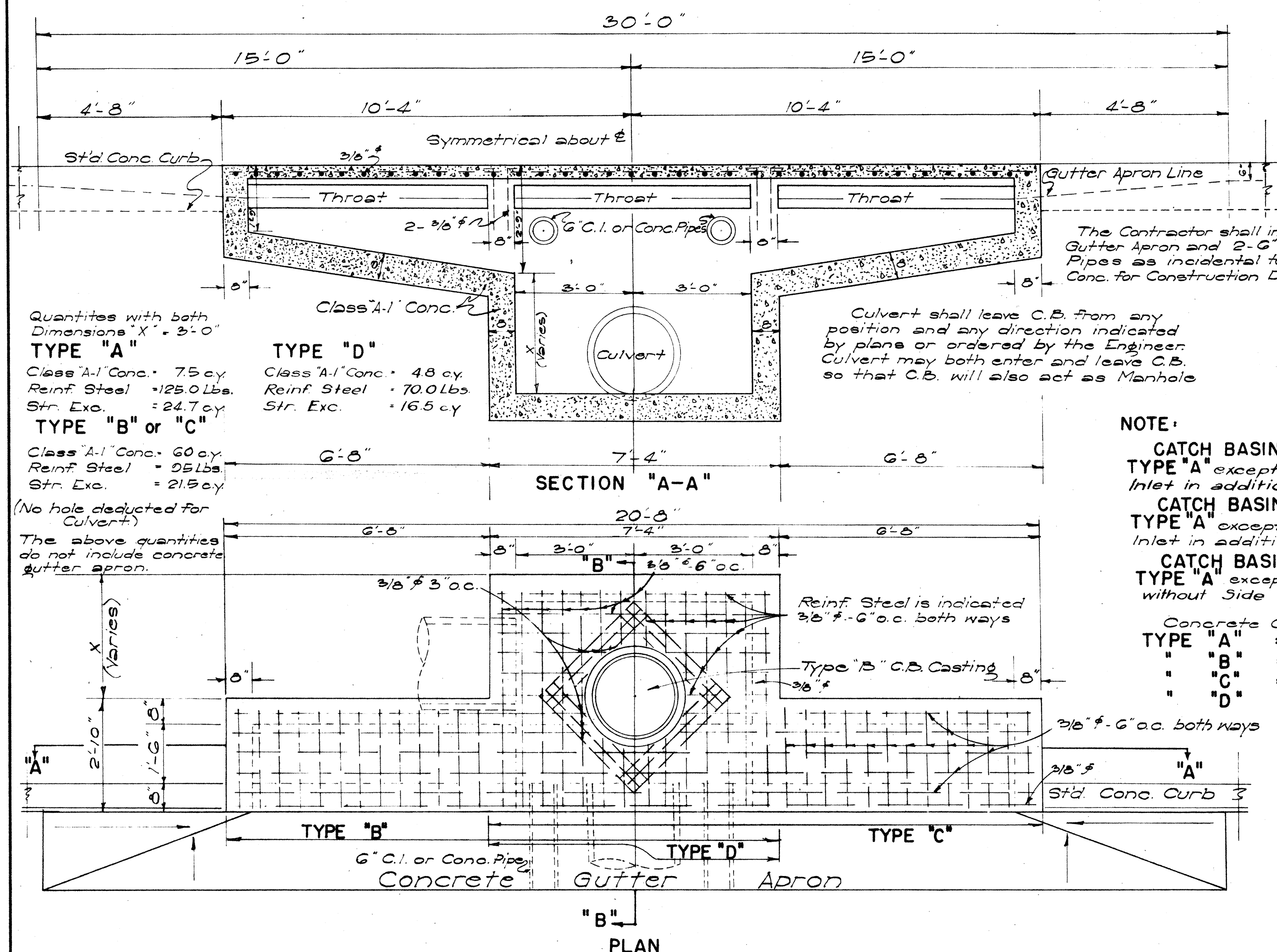
APPROVED: DATE: 9-23-53
TERRITORIAL HIGHWAY ENGINEER

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

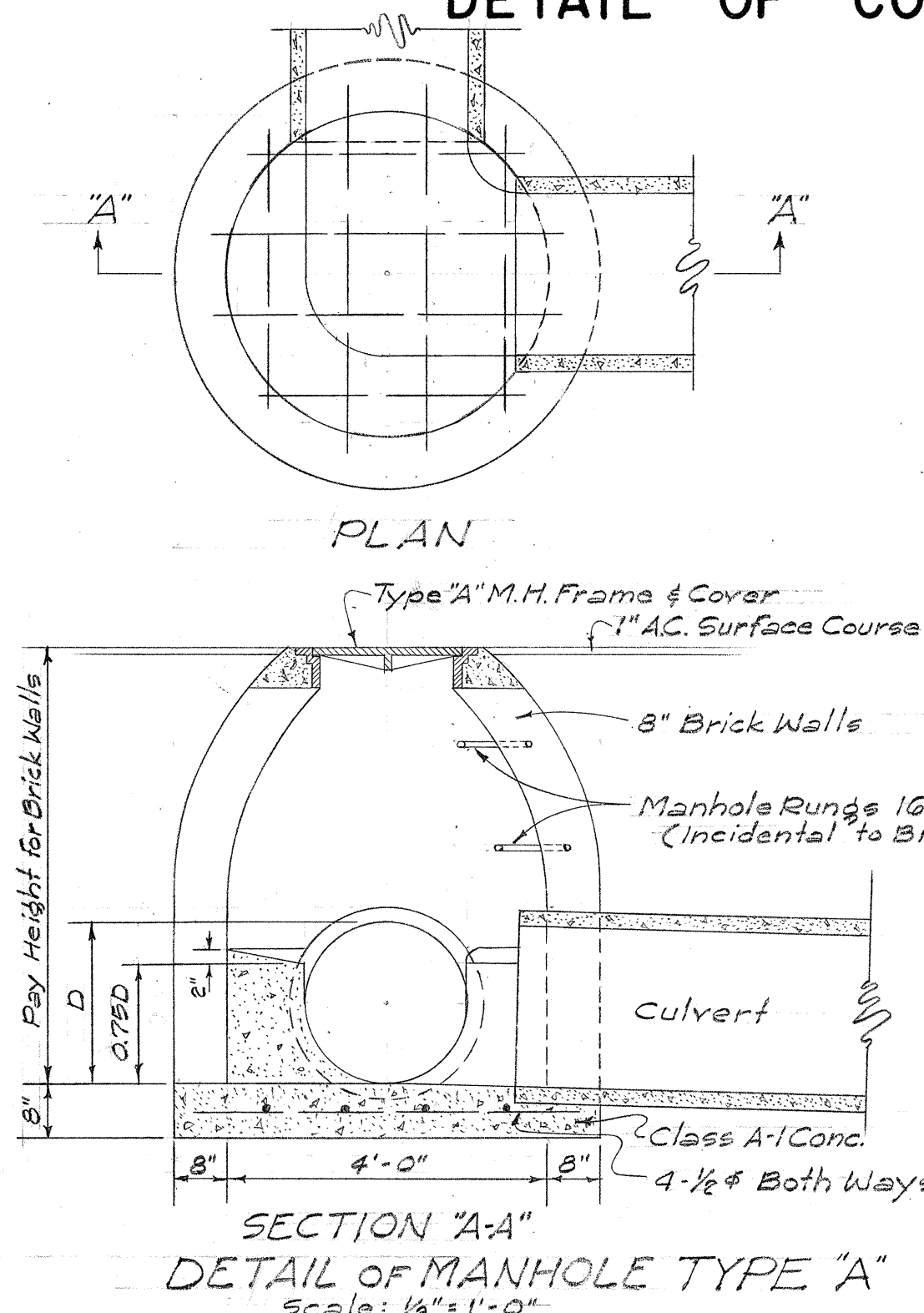
SHEET No 1 OF 6 SHEETS

5819.22

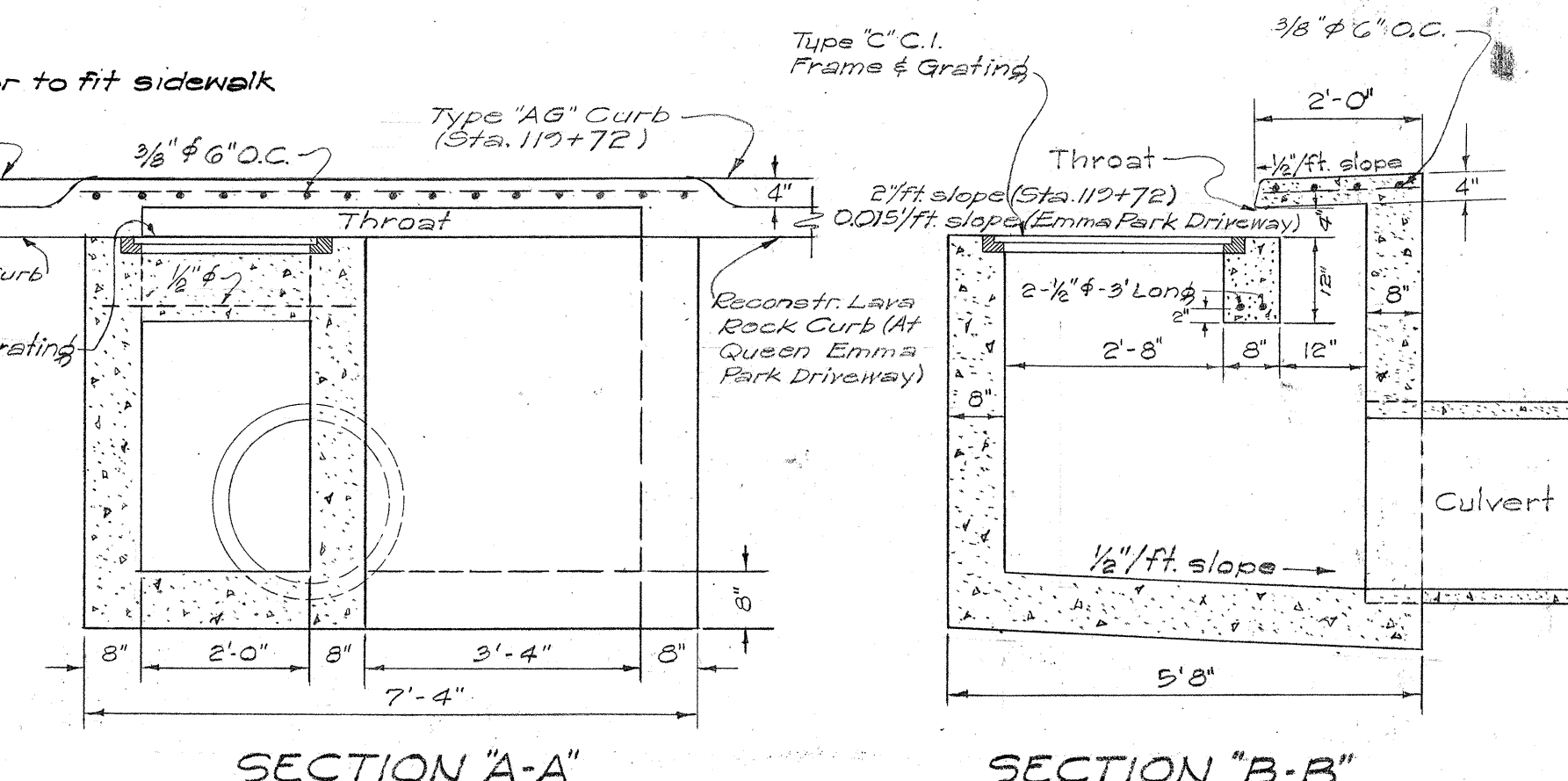
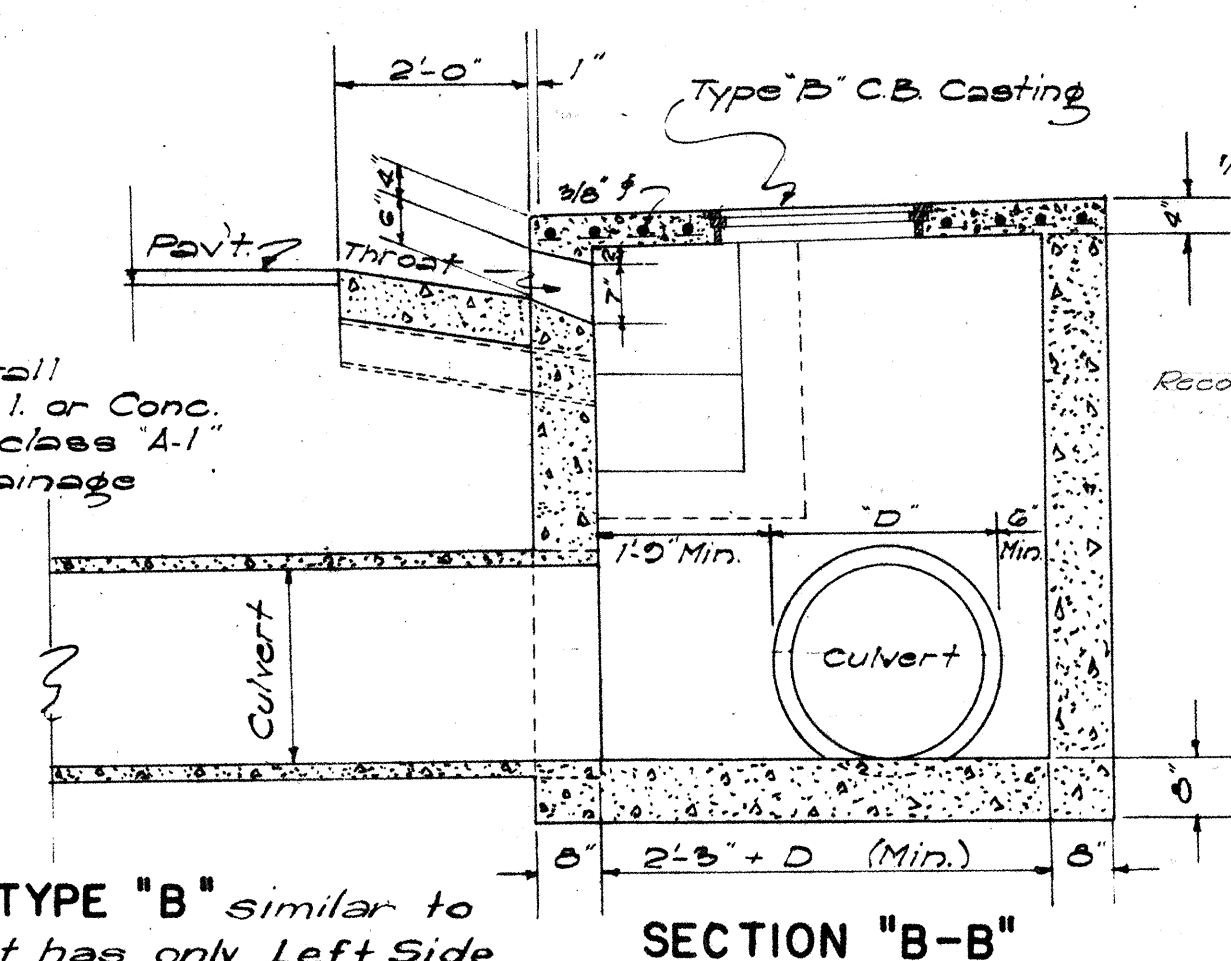
ORIGINAL PLAN
DATE
DRAWN BY
CHECKED BY
NOTES
QUANTITIES CHECKED BY
No.



DETAIL OF CONCRETE CATCH BASIN TYPE "A"
SCALE: 1/2" = 1'-0"



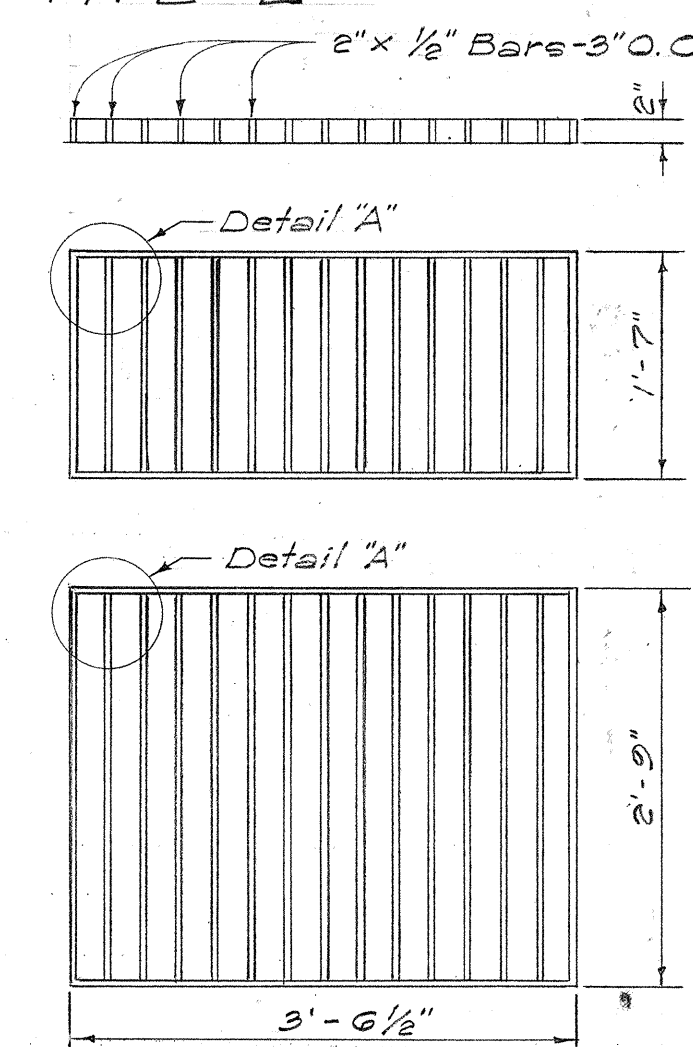
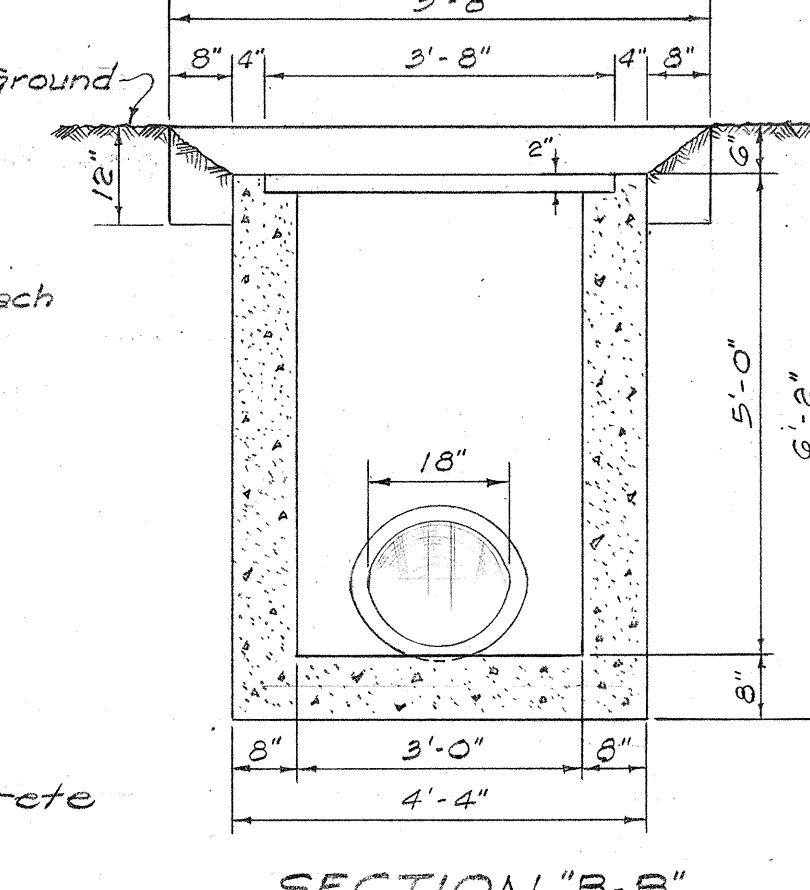
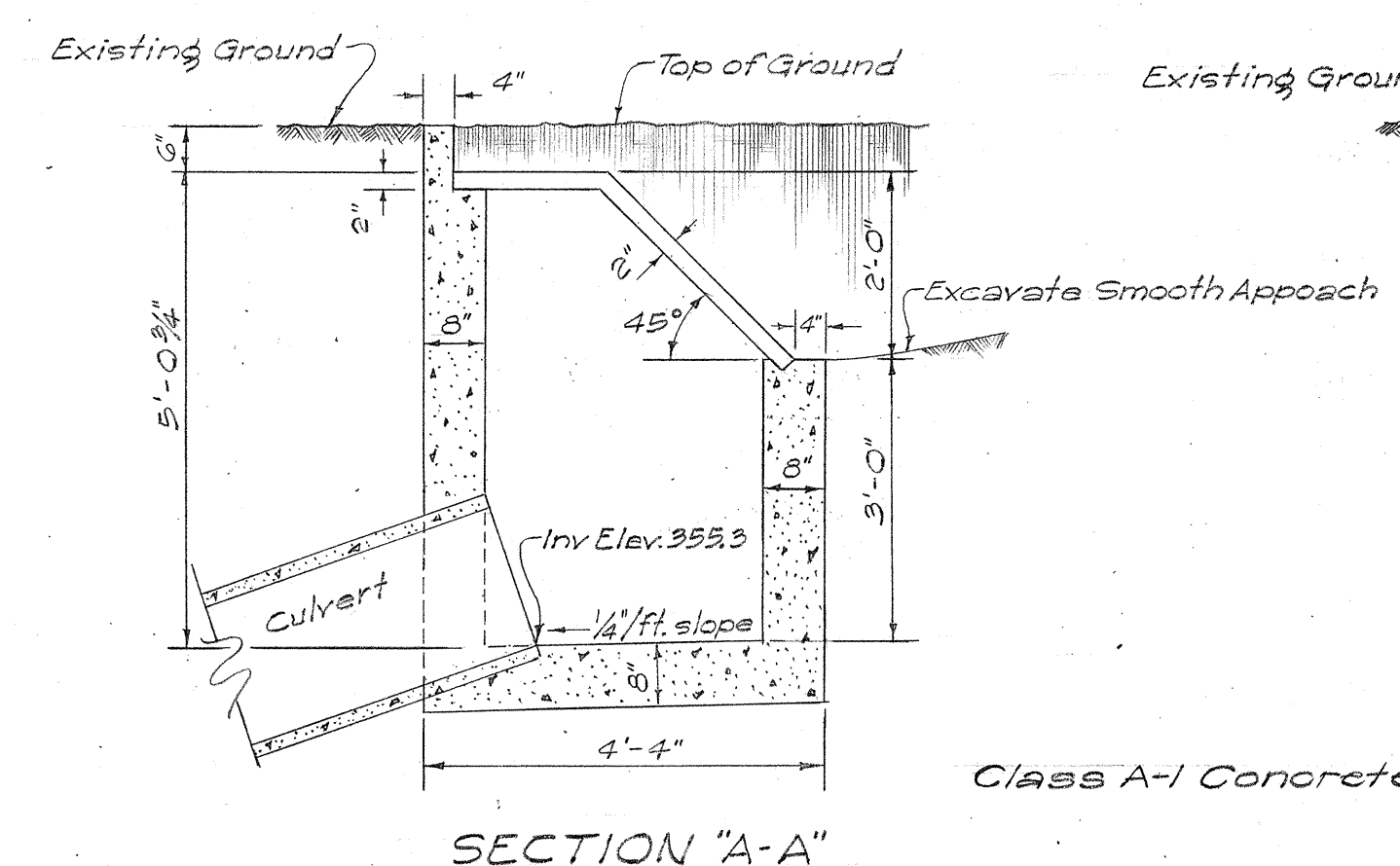
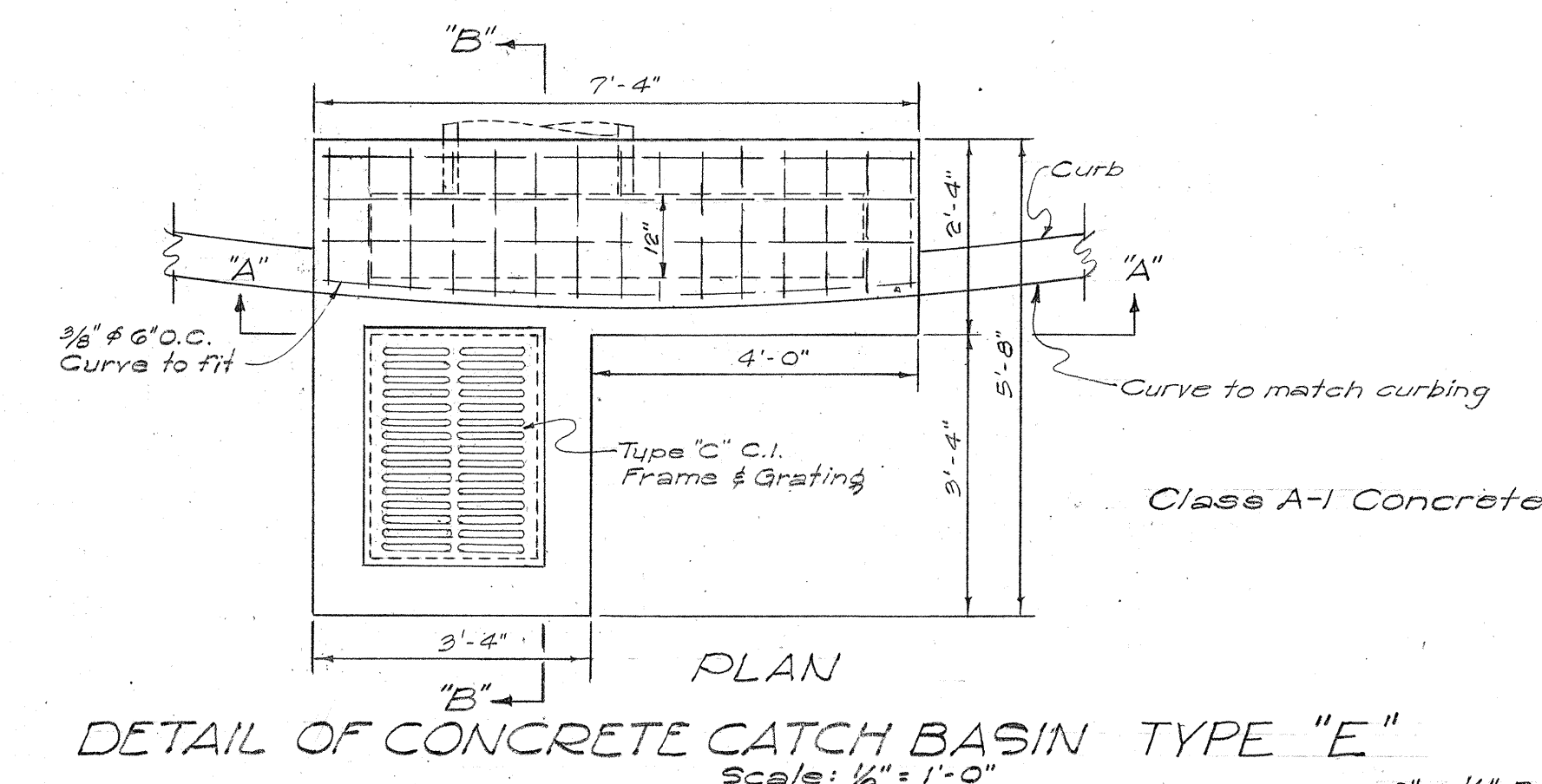
NOTE:
Provide Manhole Runge where necessary.



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 "A" except it has only Right Side Inlet in addition to the Main Box.
CATCH BASIN TYPE "D" similar to TYPE "A" except it has only Main Box without Side Inlets.

Concrete Gutter Length:

TYPE "A"	= 30'-0"
"B"	= 23'-4"
"C"	= 23'-4"
"D"	= 16'-8"



DETAIL OF GRATING FOR DROP INTAKE
Scale: 3/4" = 1'-0"

DETAIL OF DROP INTAKE FOR AUWAI-STA. 116+91
Scale: 1/2" = 1'-0"

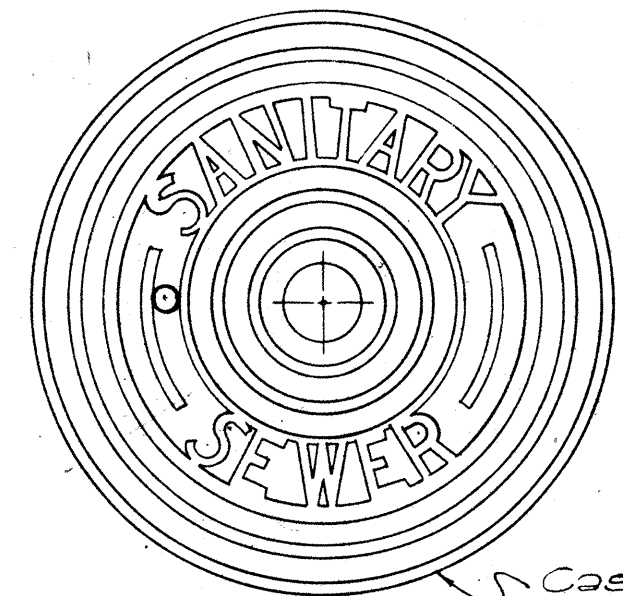
APPROVED: DATE 6-23-53
Territorial Highway Engineer

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
CATCH BASINS

SCALES AS NOTED

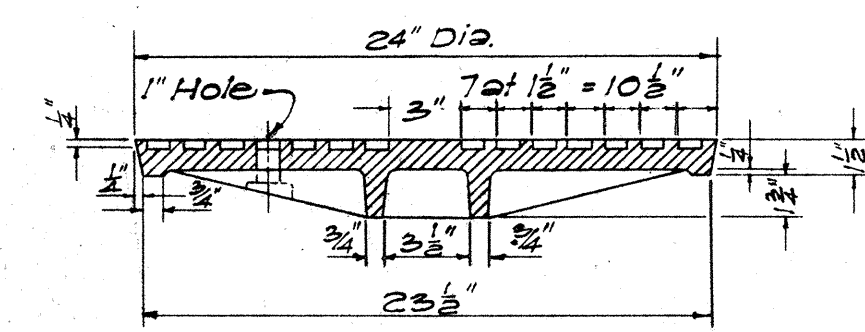
SHEET NO. 2 OF 6 SHEETS

5819.23

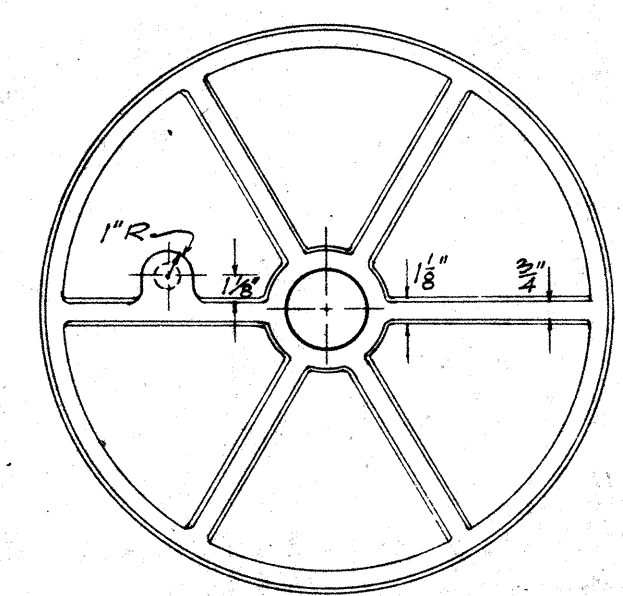


NOTE:
The Cover for Water Manhole shall be the same as for Sanitary Sewer except that the word "WATER" shall be substituted for "SANITARY SEWER". The frames for Sanitary Sewer and Water Covers shall be the same.

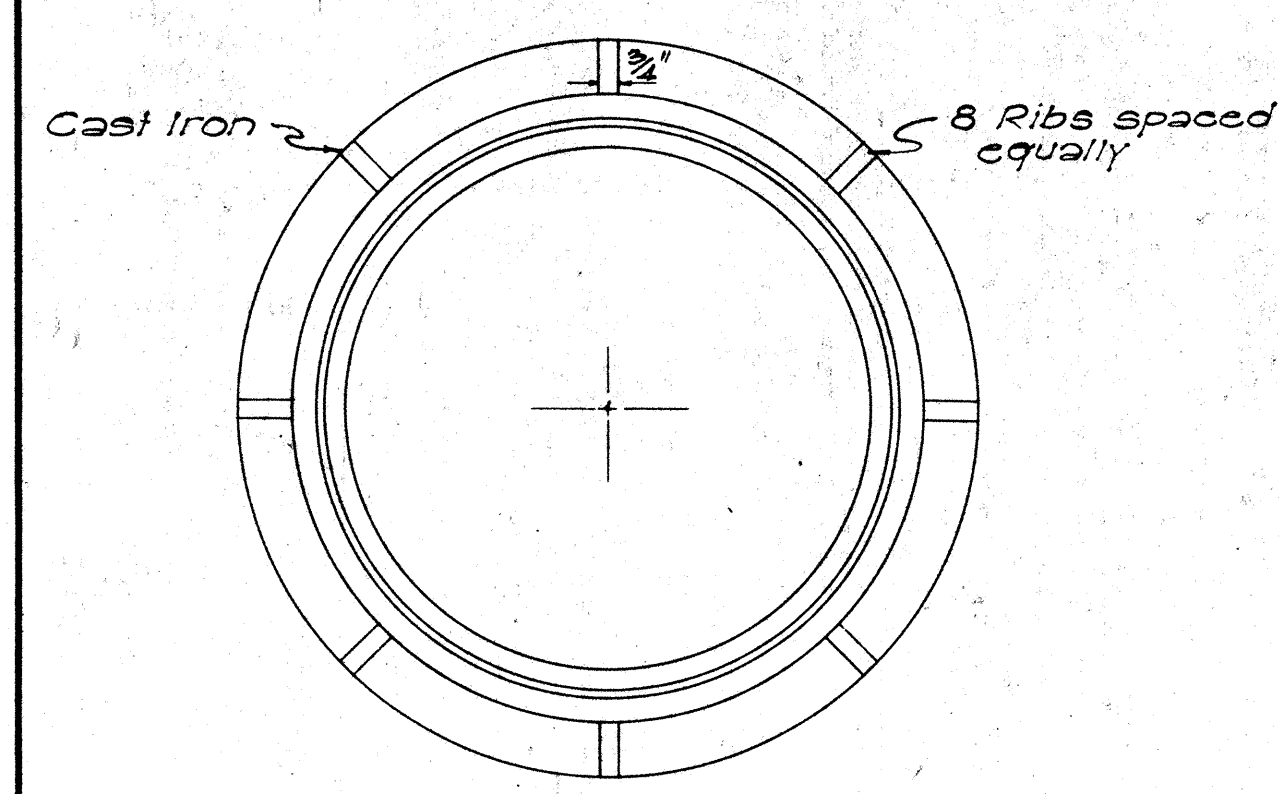
TOP VIEW OF COVER



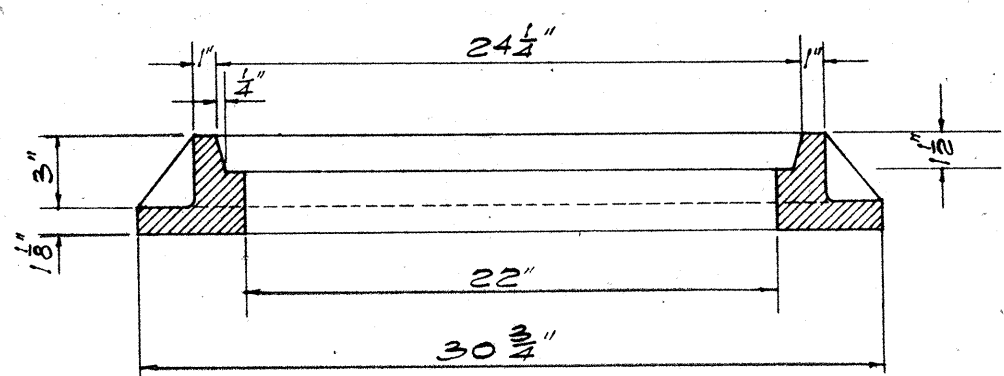
SECTION



BOTTOM VIEW OF COVER

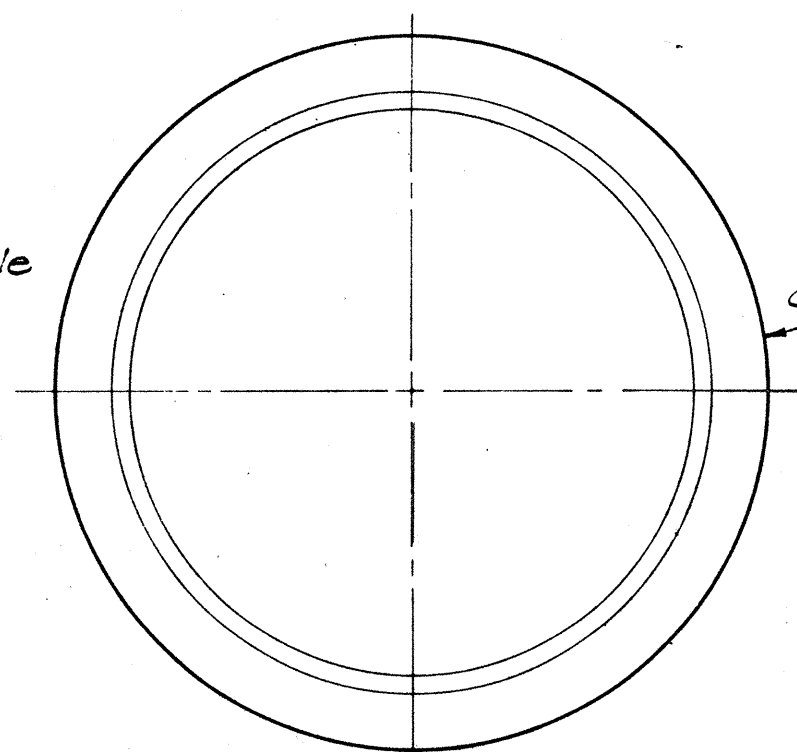


PLAN OF RIM

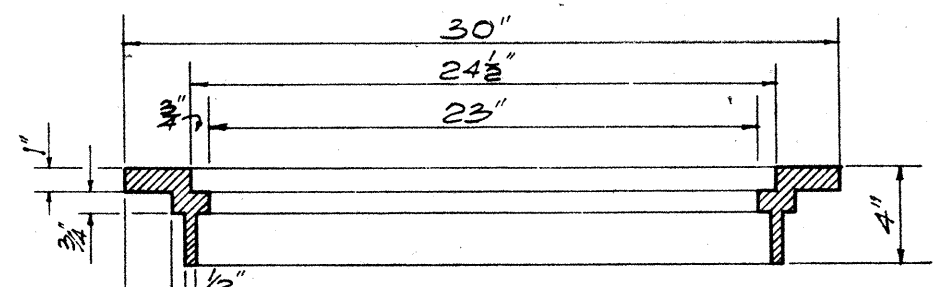


SECTION OF RIM
DETAILS OF TYPE "C"
MANHOLE CASTINGS

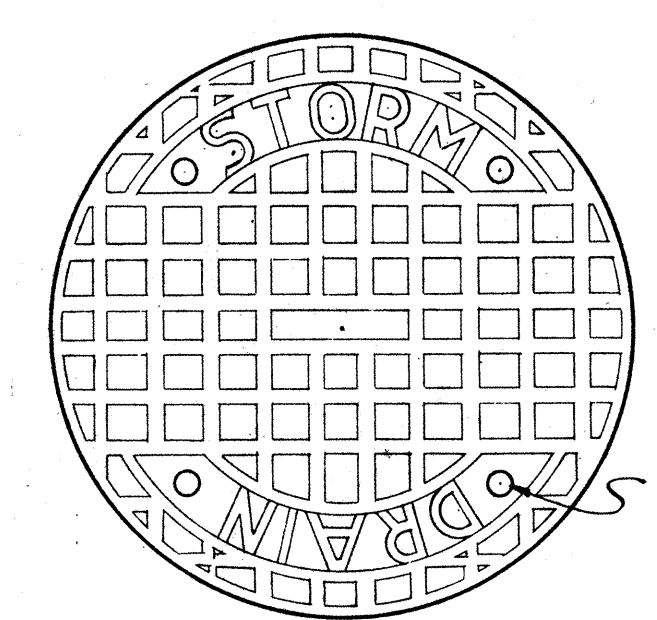
SCALE: 1-1/2" = 1'-0"



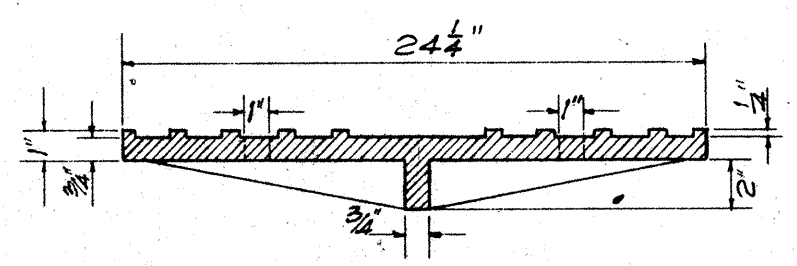
PLAN OF RIM



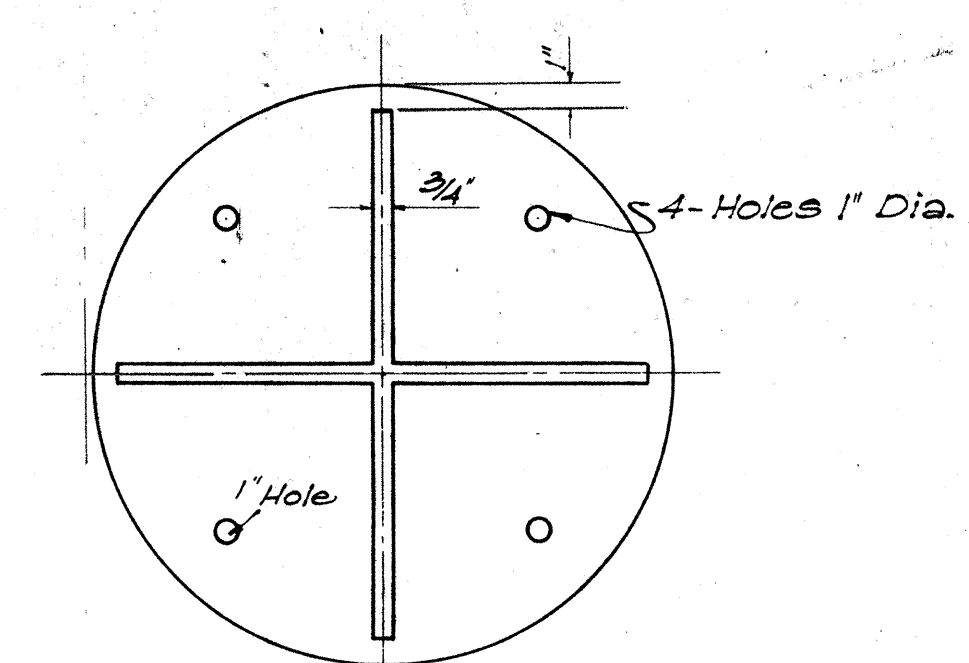
SECTION OF RIM



TOP VIEW OF COVER



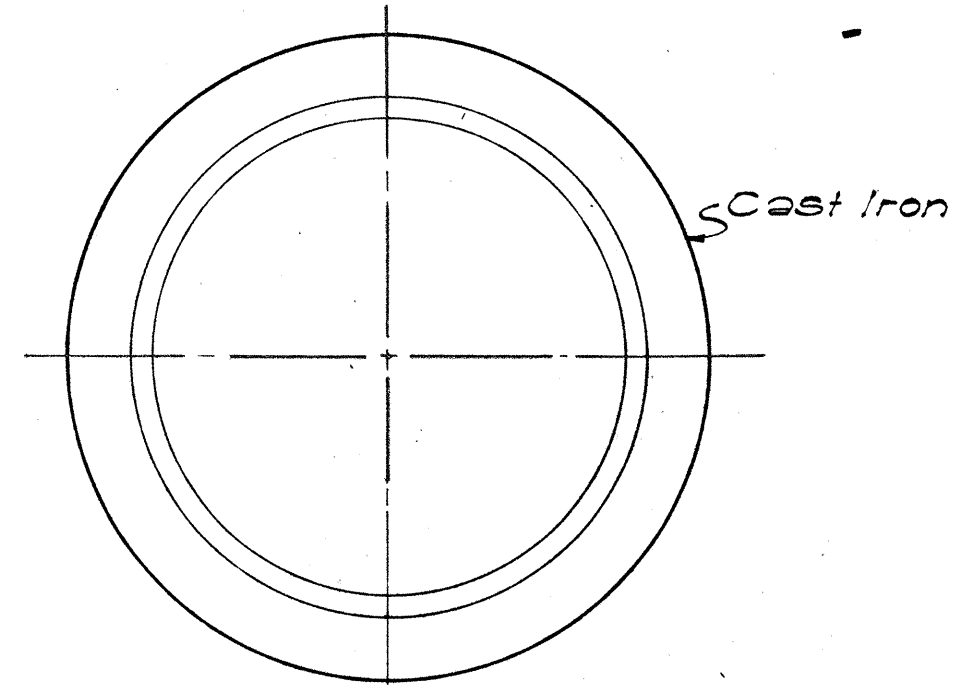
SECTION



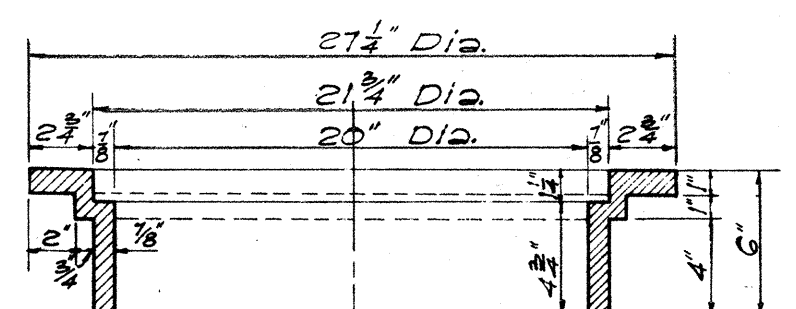
BOTTOM VIEW OF COVER

DETAILS OF TYPE "B"
CATCH BASIN CASTINGS

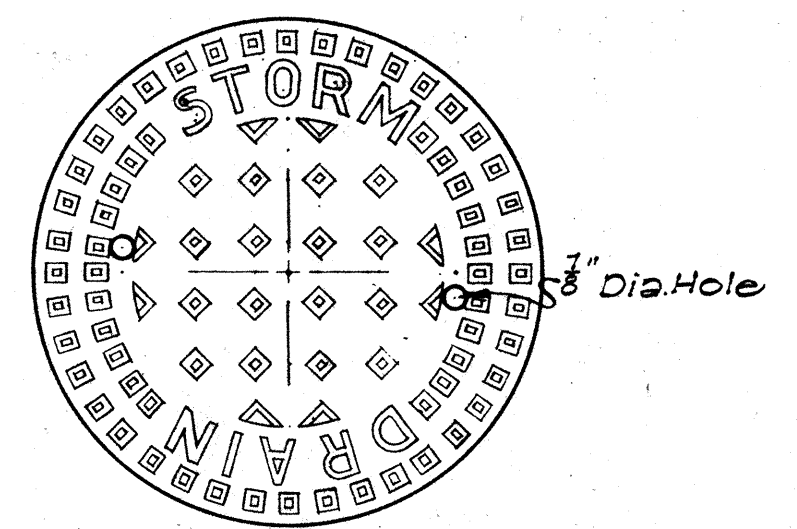
SCALE: 1-1/2" = 1'-0"



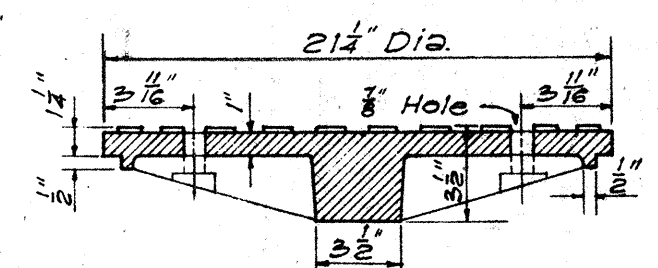
PLAN OF RIM



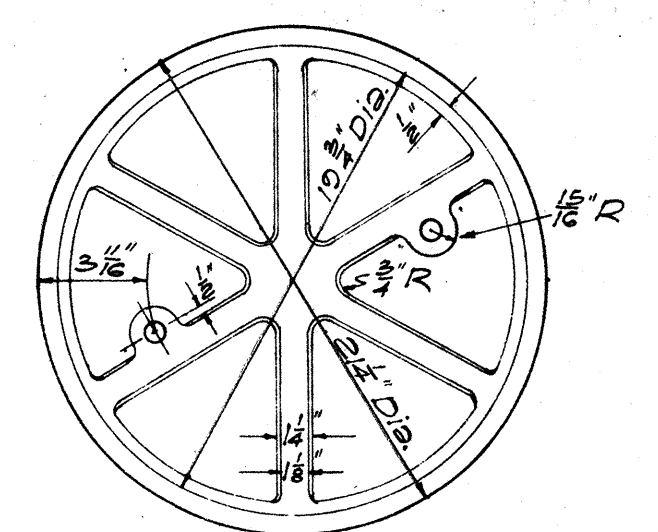
SECTION OF RIM



TOP VIEW OF COVER



SECTION

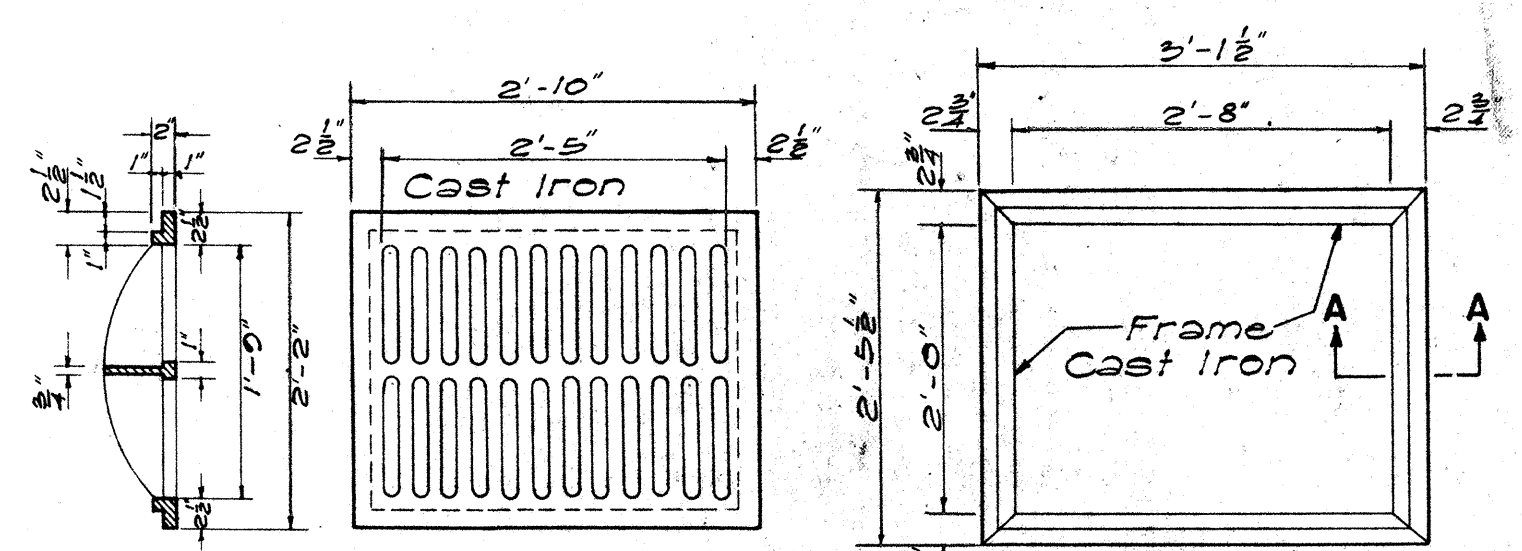


BOTTOM VIEW OF COVER

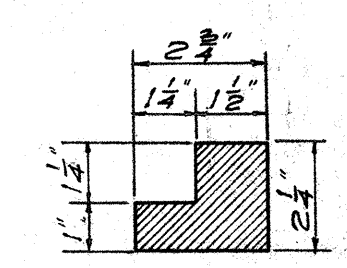
DETAILS OF TYPE "A"
MANHOLE CASTINGS

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

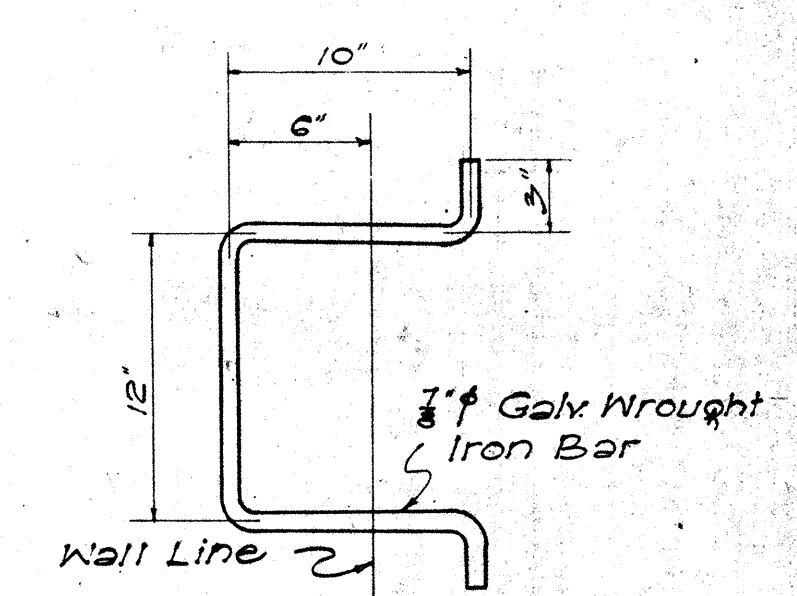
NOTE: Stock Pattern From Novelty Foundry ~ Honolulu



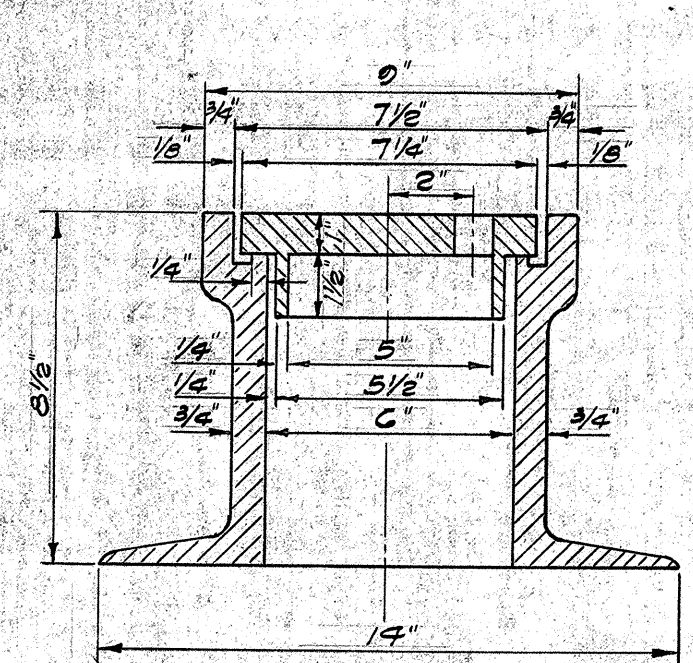
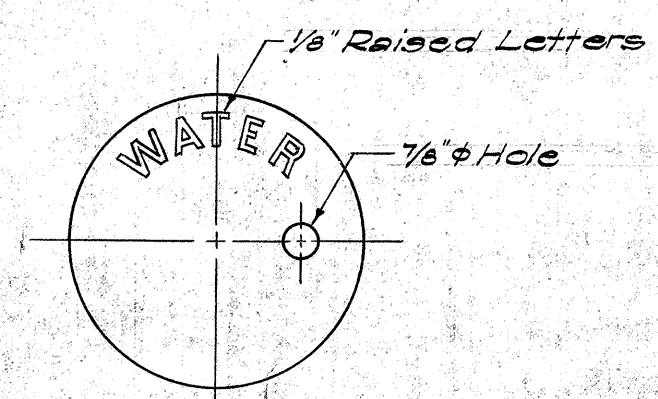
SECTION TOP VIEW TOP VIEW
TYPE C C.I. FRAME AND GRATING
SCALE: 3/4" = 1'-0"



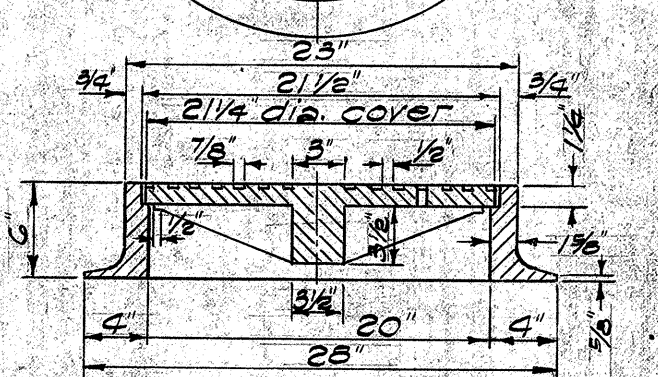
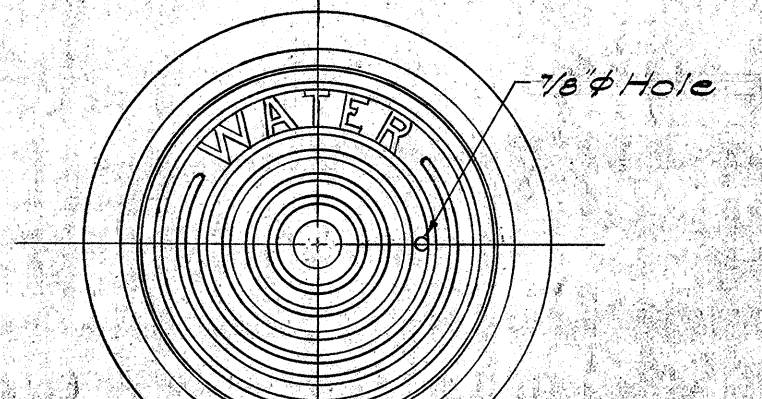
SECTION "A-A"
SCALE 3" = 1'-0"



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



G" SIZE



20" SIZE

DETAIL OF WATER MANHOLE
FRAME AND COVER
Not to scale

NOTE:
Surface shall be true and flat. After setting, the cover shall be tested for rattling.

APPROVED: DATE: 6-22-53
TERRITORIAL HIGHWAY ENGINEER

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
CATCH BASIN AND
MANHOLE CASTINGS
SCALES AS NOTED

SHEET NO 24 OF 6 SHEETS

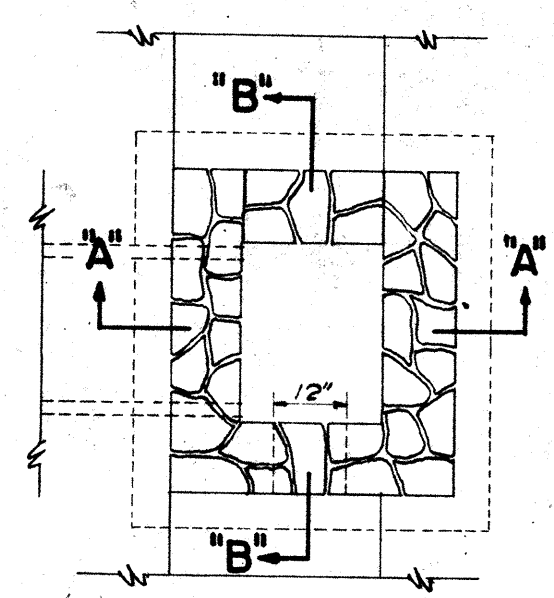
5819.24

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

DETAIL OF OUTLET DITCH
Scale: 1/2" = 1'-0"

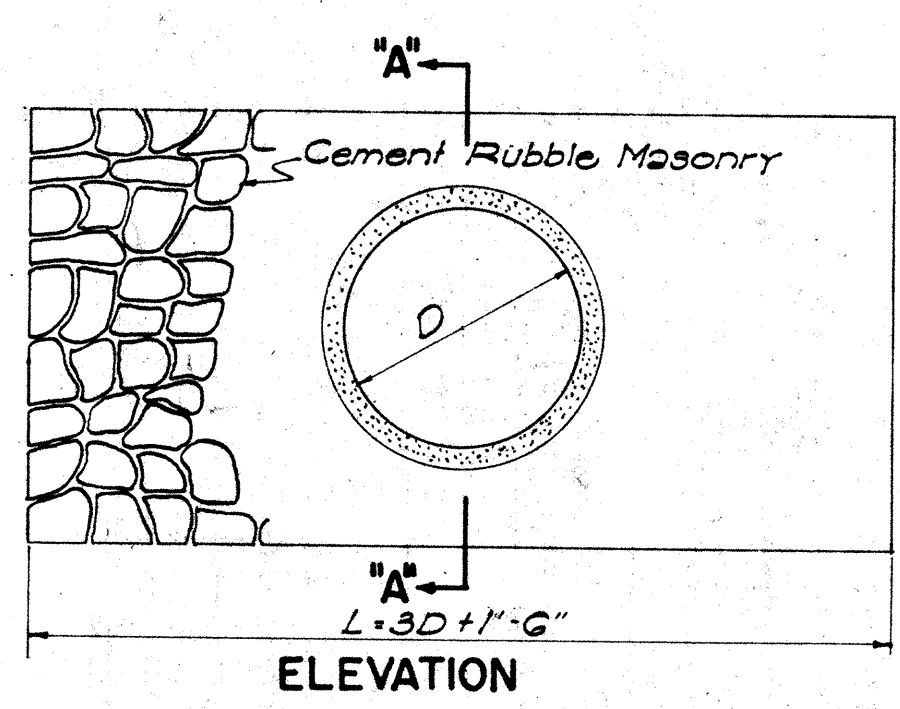
D	D	L=D+G	Cu Yds.	Where Variables Equal
23"	18"	2'-5"	3.02	4'-6"
30"	24"	3'-0"	3.61	5'-0"
37"	30"	3'-7"	4.21	5'-6"
44"	36"	4'-2"	4.85	6'-0"

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

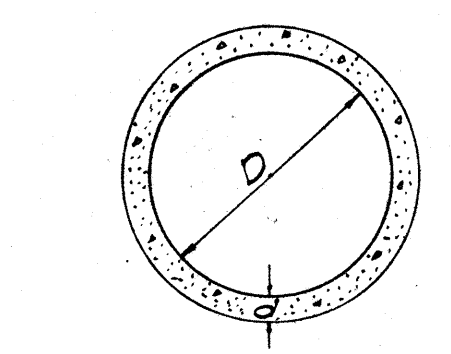


DETAIL OF MASONRY DROP INTAKE
Scale: 3/8" = 1'-0"

D	H	B	L	Cu Yds.	Cu Yds.	Cu Yds.
18"	3'-6"	1'-0"	6'-0"	0.85	0.05	0.03
24"	4'-0"	2'-0"	7'-0"	1.28	1.45	1.41
30"	4'-6"	2'-3"	8'-0"	1.83	2.06	2.00
36"	5'-0"	2'-6"	10'-0"	2.40	2.84	2.72



DETAIL OF MASONRY HEADWALL
Scale: 1/2" = 1'-0"

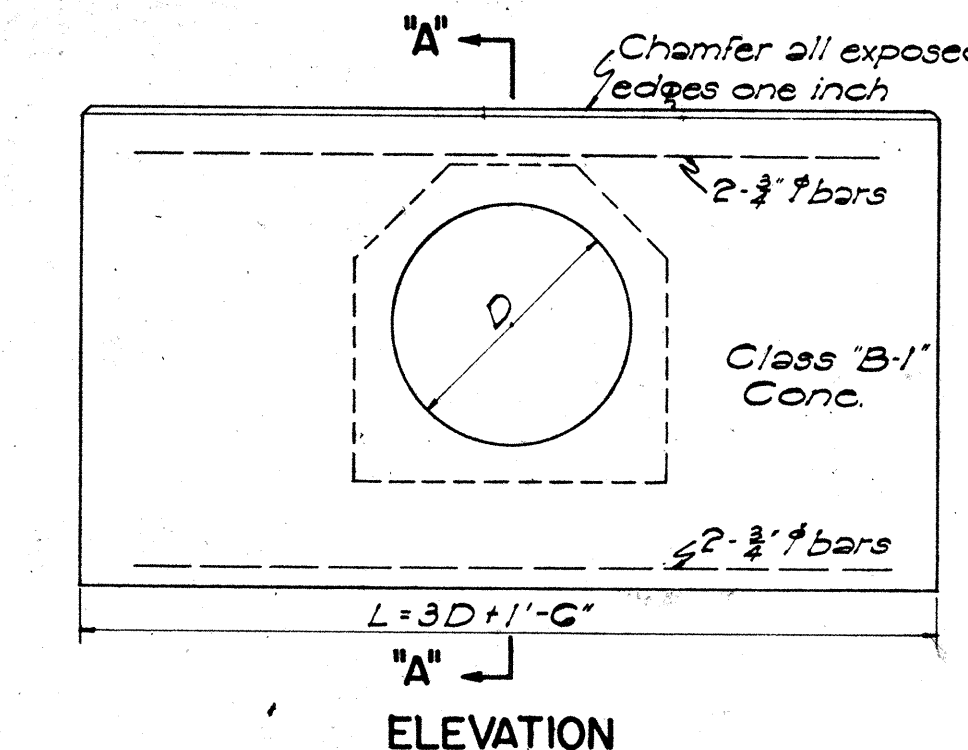


SECTION CONC. PIPE CULVERT

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

D	d	W	Cu Yd 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

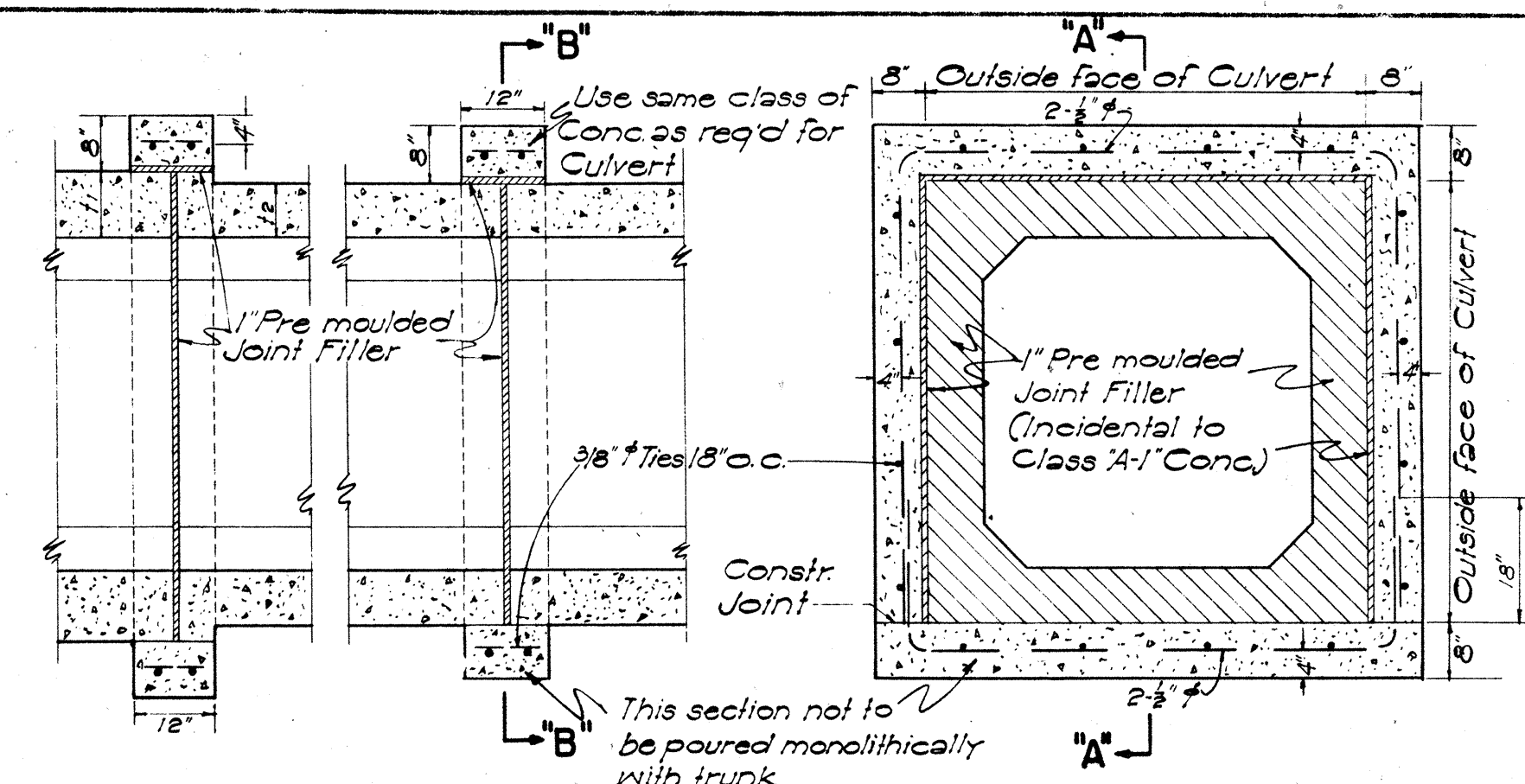
CAST-IN-PLACE CONC. CULVERT



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

D	B	L	H	Cu Yd.	Cu Yd.	No. of Bars	Length	Lbs.
18"	1'-6"	6'-0"	4'-0"	0.02	1.00	4	3/4"	33
24"	1'-6"	7'-0"	4'-0"	1.25	1.38	4	3/4"	42
30"	2'-0"	8'-0"	5'-0"	1.05	2.17	4	3/4"	51
36"	2'-0"	10'-0"	5'-0"	2.45	2.74	4	3/4"	60
42"	2'-6"	12'-0"	6'-0"		3.87	4	3/4"	69
48"	2'-6"	13'-6"	6'-0"		4.66	4	3/4"	78

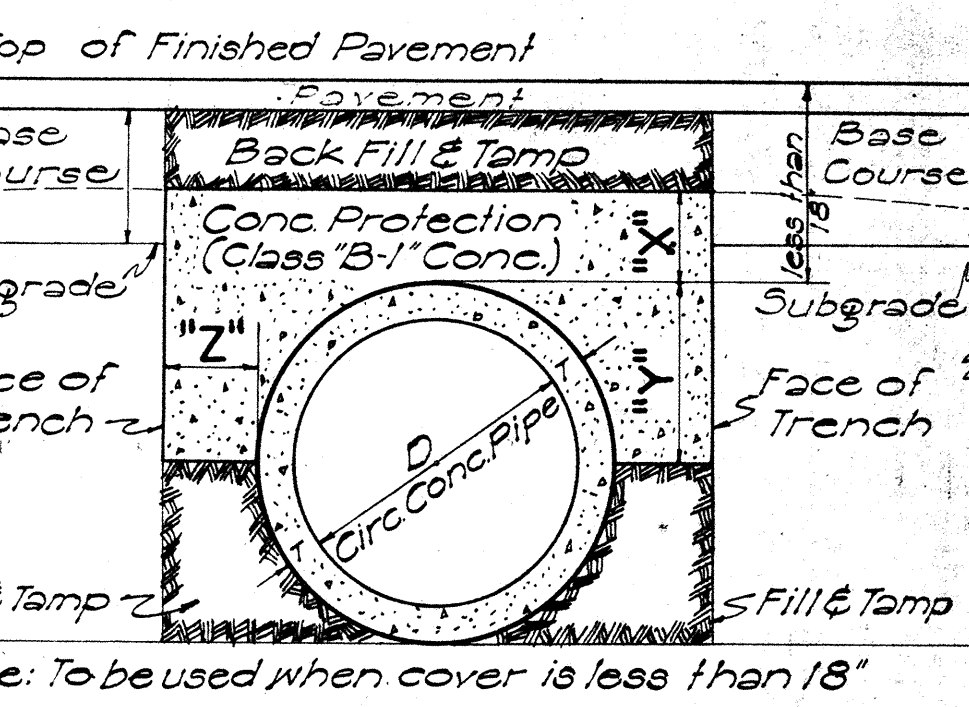
DETAIL OF CONCRETE HEADWALL
Scale: 1/2" = 1'-0"



SECTION "A-A" SECTION "B-B" 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



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		

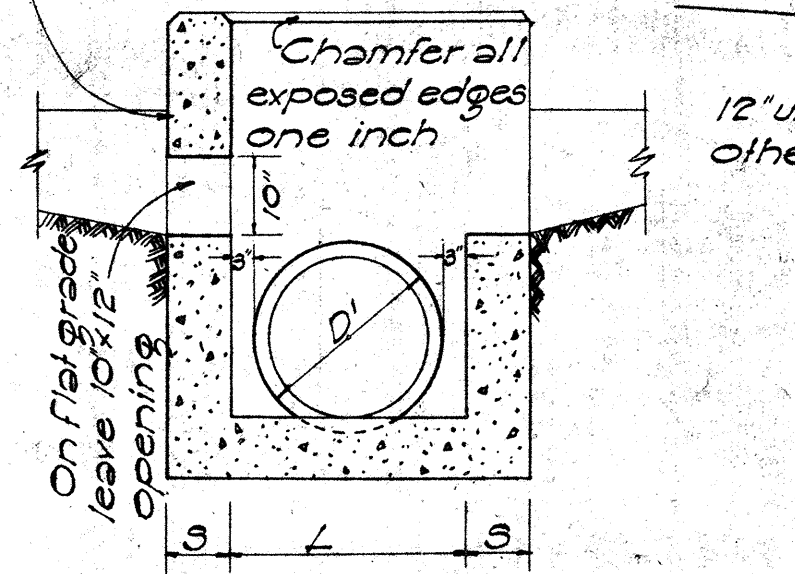
SECT. OF CULVERT WITH CONC. PROTECTION
Scale: 1" = 1'-0"

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'-4"	4.01	7'-0"

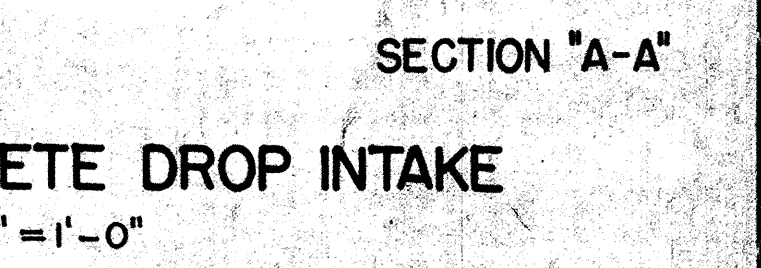
Note: Dimension "X" is assumed as 2'-4" in figuring the above quantities.

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"

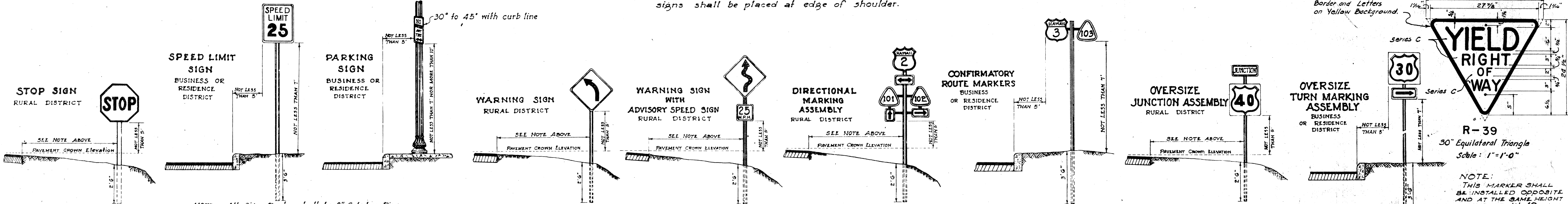
DETAIL OF CONCRETE DROP INTAKE
Scale: 1/2" = 1'-0"



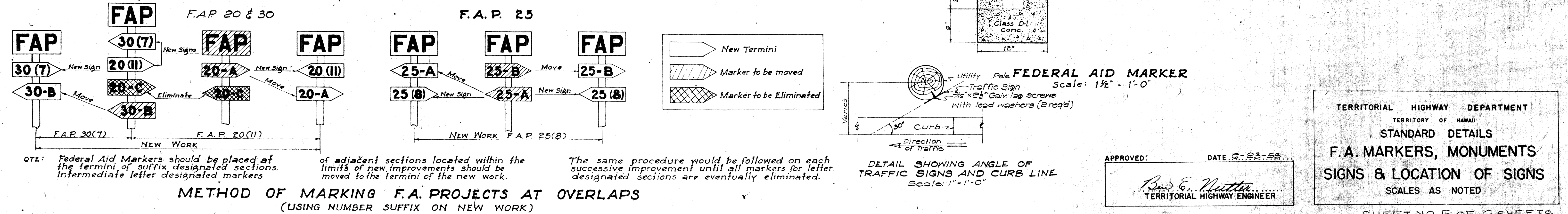
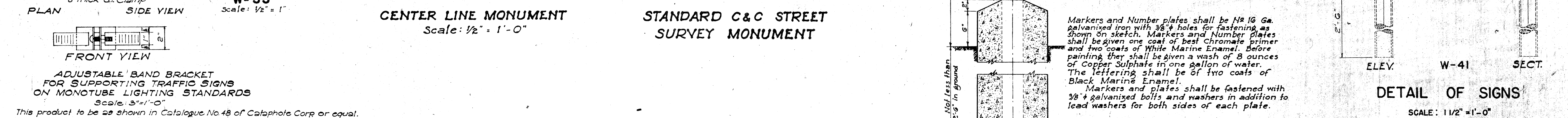
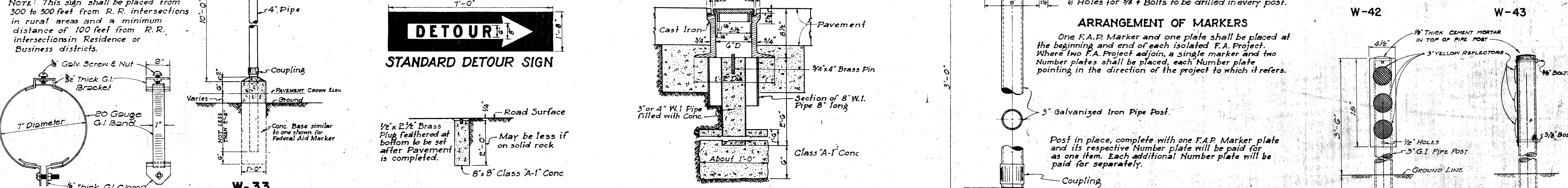
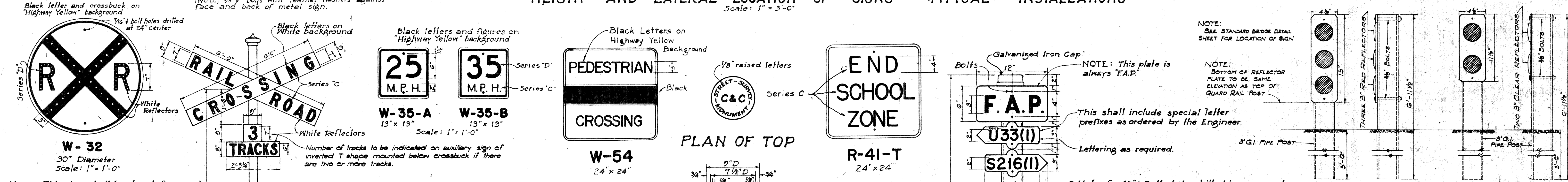
SECTION "A-A"

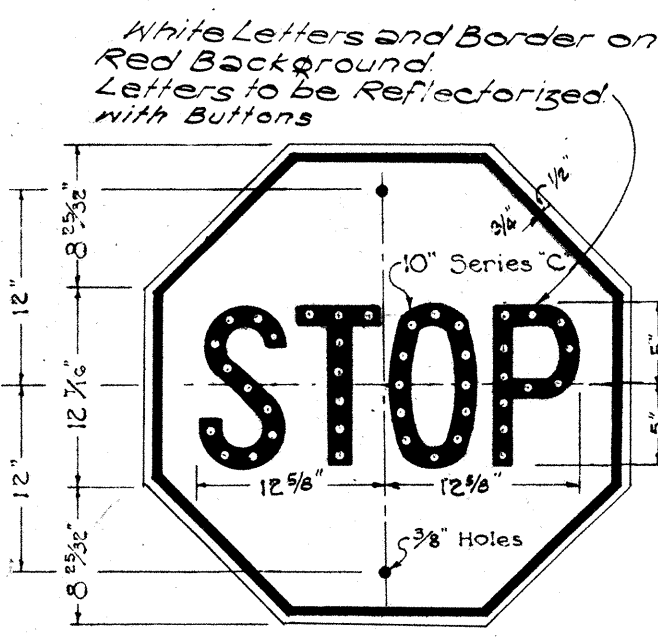
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
DROP INTAKES, RETAINING WALLS, HEADWALLS, CONSTRUCTION JOINTS
SCALES AS NOTED

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.

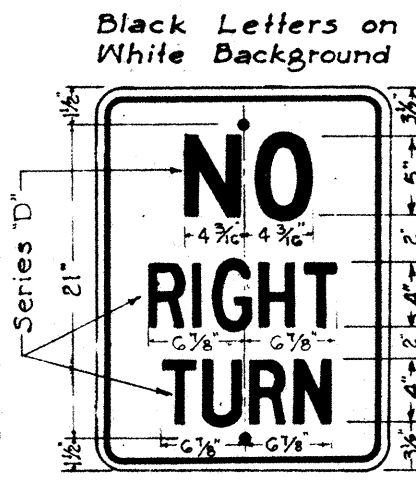


HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS
Scale: 1" = 3'-0"

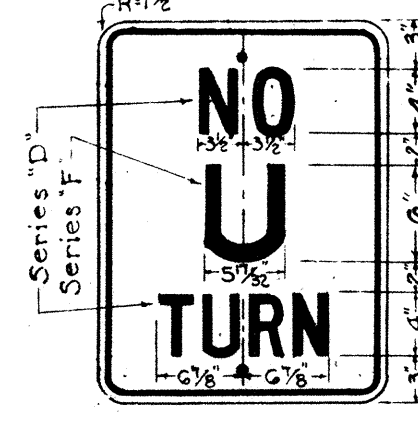




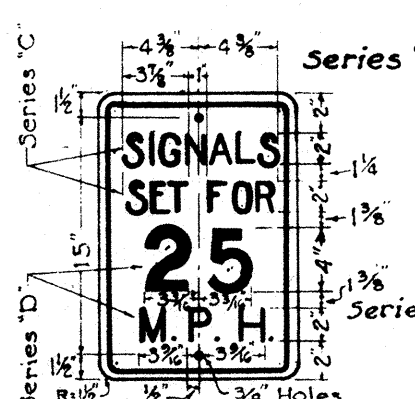
R-1
30" x 30"



R-6
18" x 24"



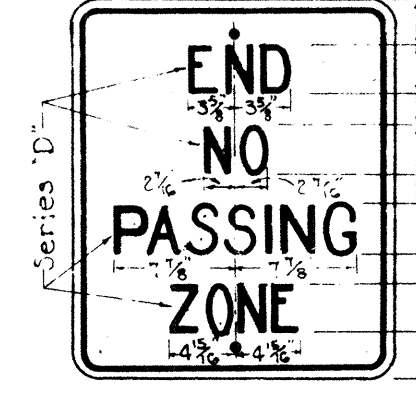
R-8
18" x 24"



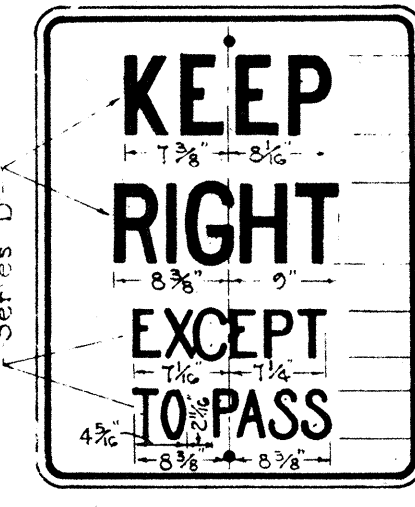
R-10
12" x 18"



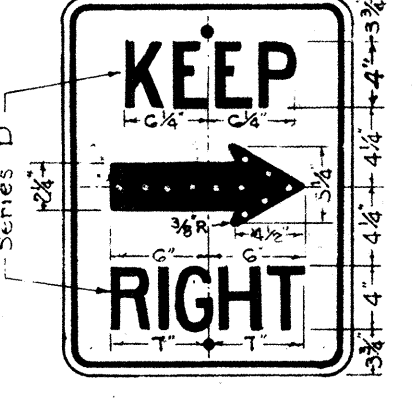
R-11
20" x 24"



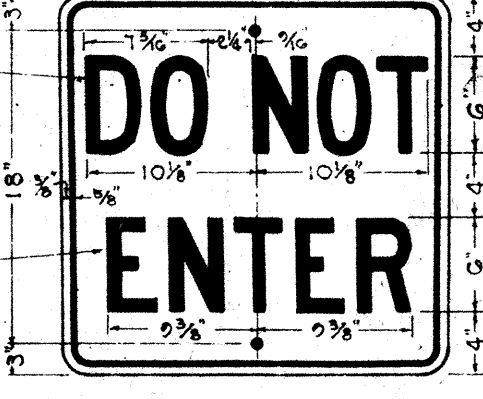
R-12
20" x 24"



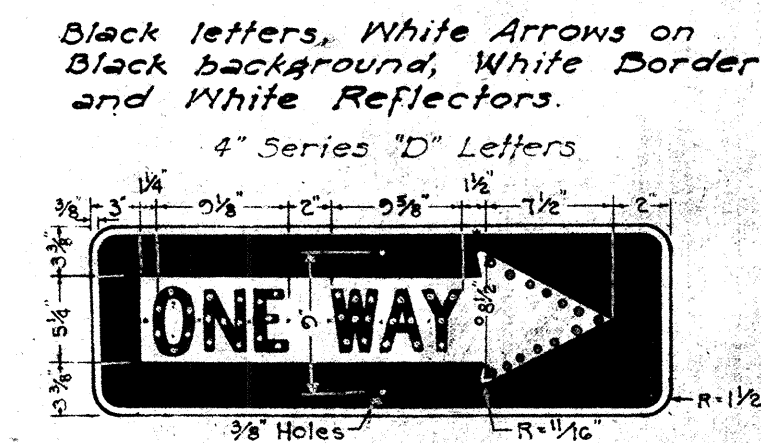
R-13
24" x 30"



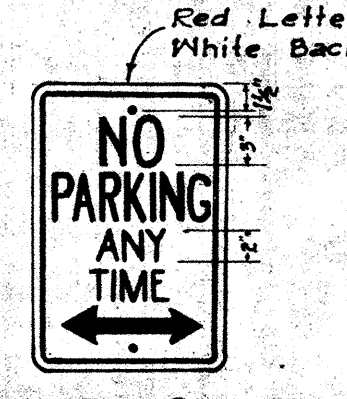
R-14
18" x 24"



R-15
24" x 24"



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



R-18
12" x 18"



R-26
12" x 18"



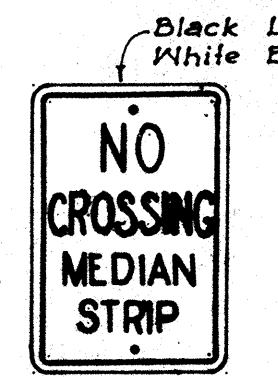
R-29
24" x 30"



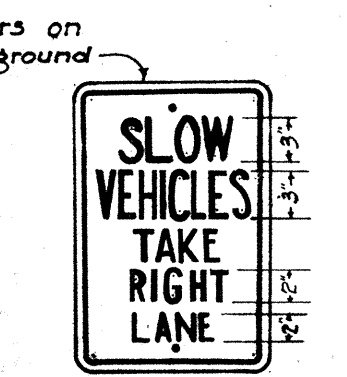
R-41-S
24" x 24"



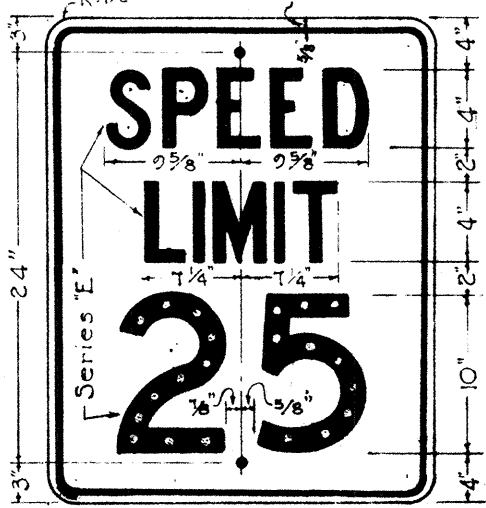
R-42-S
12" x 18"



R-43-S
12" x 18"



R-44-S
12" x 18"



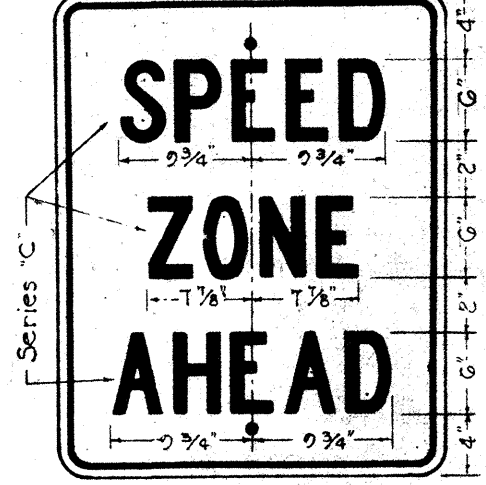
R-102-A
24" x 30"



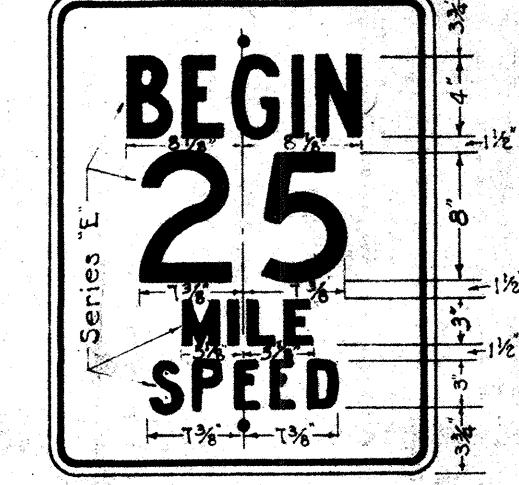
R-102-B
24" x 30"



R-102-C
24" x 30"



R-104
24" x 30"



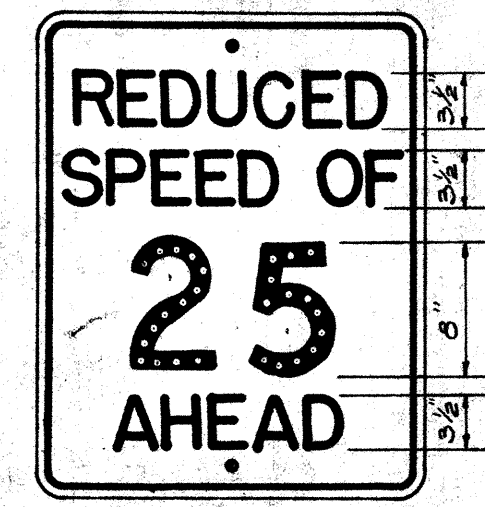
R-105-A
24" x 30"



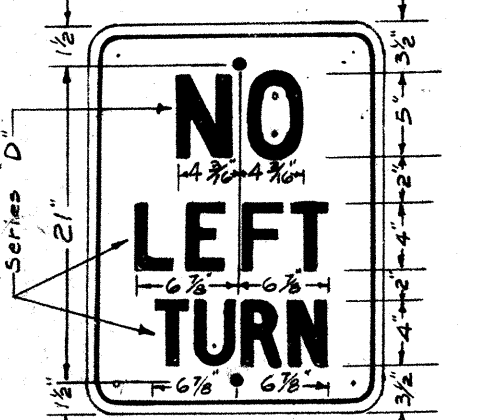
R-105-B
24" x 30"



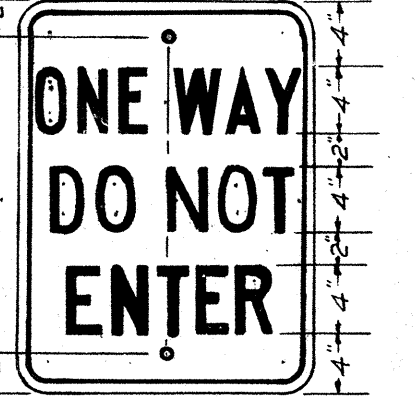
R-105-C
24" x 30"



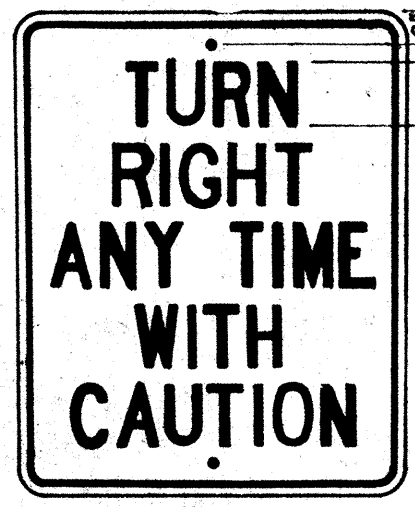
R-104-A
24" x 30"



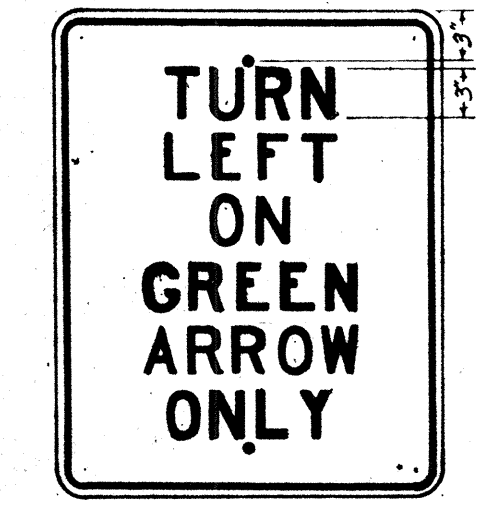
R-7
18" x 24"



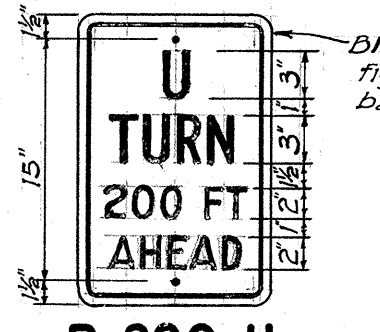
R-66
18" x 24"



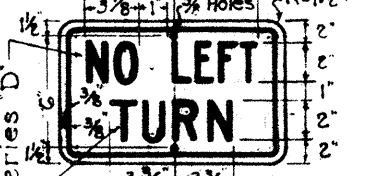
R-106
24" x 30"



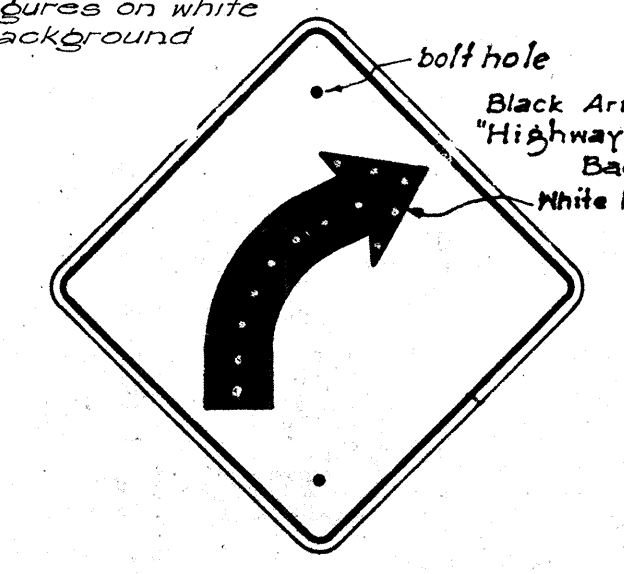
R-107-A
24" x 30"



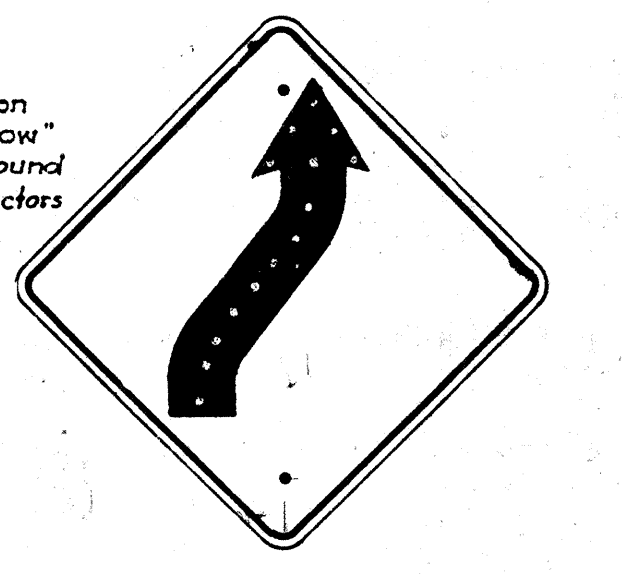
R-200-U
12" x 18"



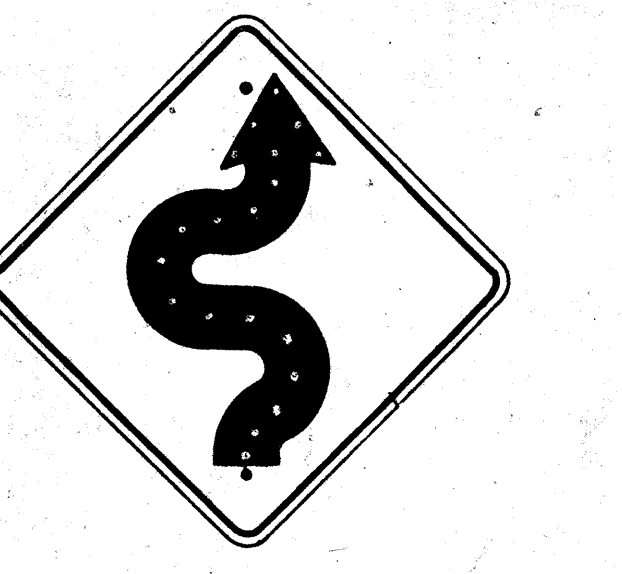
R-107
14" x 0"



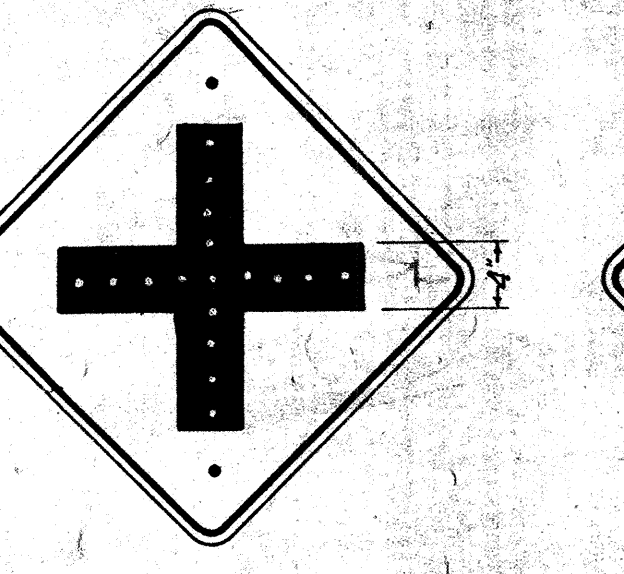
W-2-R
*W-2-L
24" x 24"



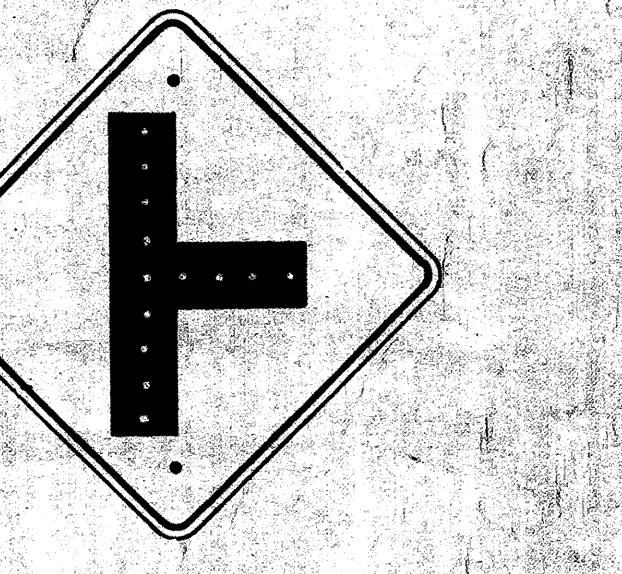
W-4-R
*W-4-L
24" x 24"



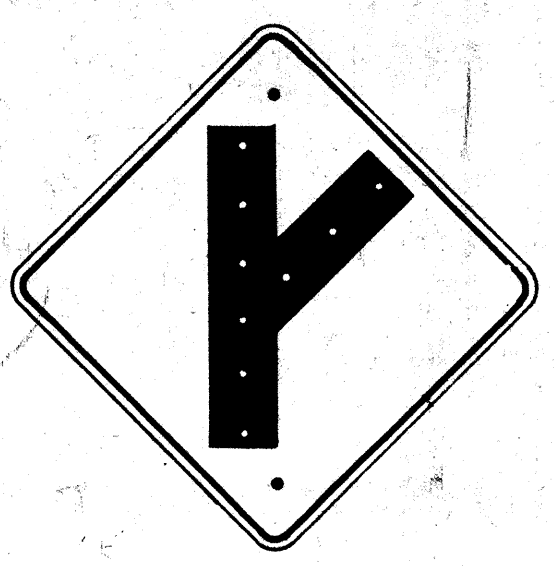
W-5-R
*W-5-L
24" x 24"



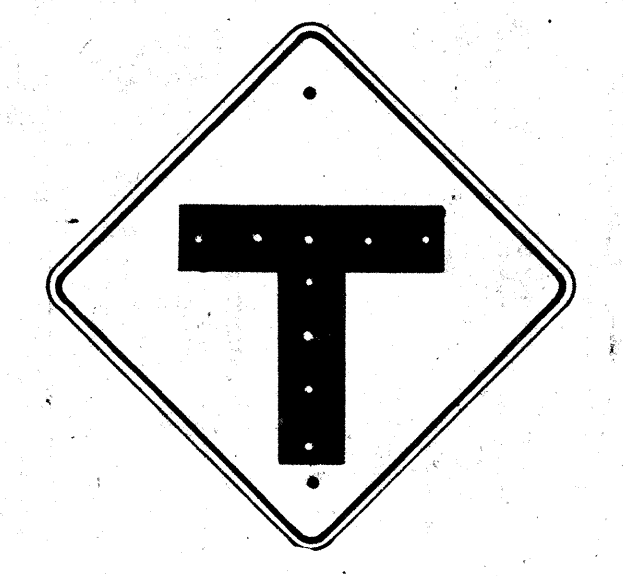
W-6
24" x 24"



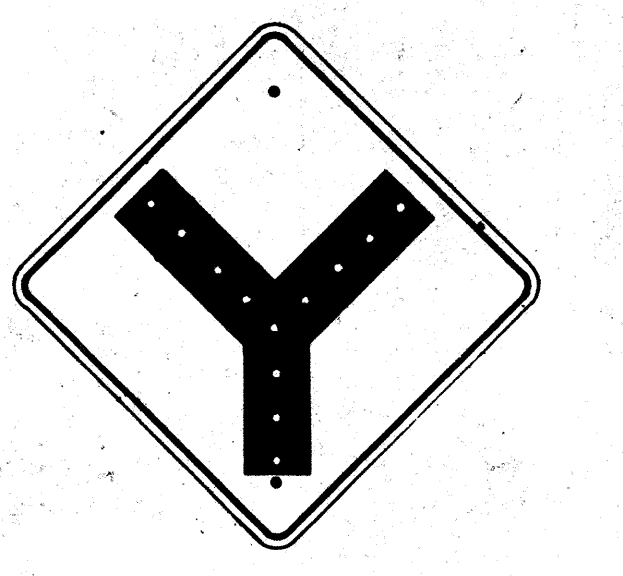
W-7
24" x 24"



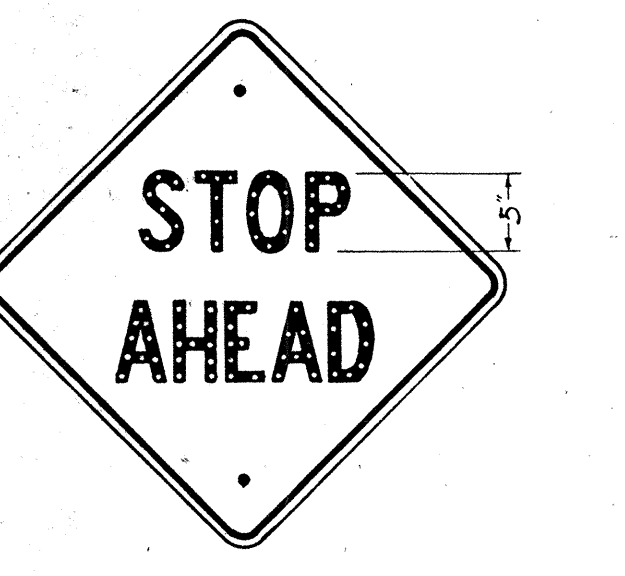
W-8-R
*W-8-L
24" x 24"



W-9
24" x 24"



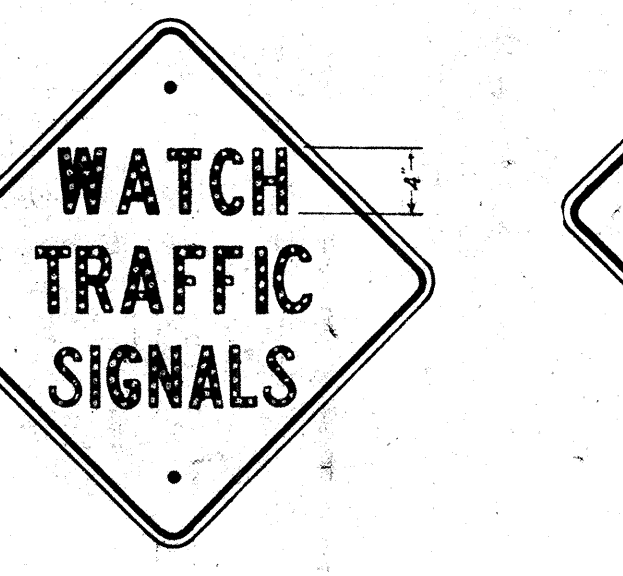
W-10
24" x 24"



W-13
24" x 24"



W-14
24" x 24"



W-14-A
24" x 24"



W-19
30" x 30"



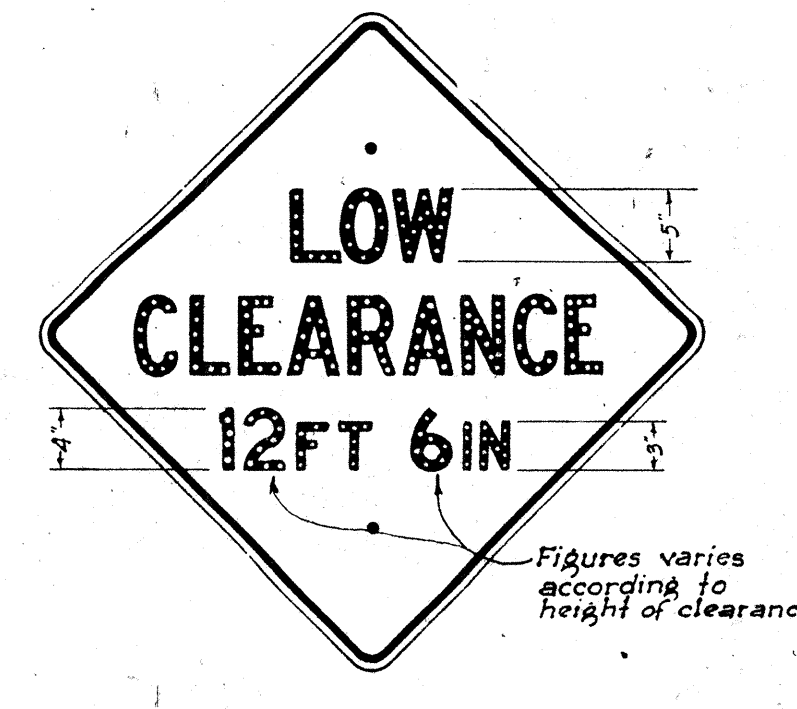
W-20
30" x 30"



W-21
30" x 30"



W-22
24" x 24"



W-24
30" x 30"



W-25
24" x 24"



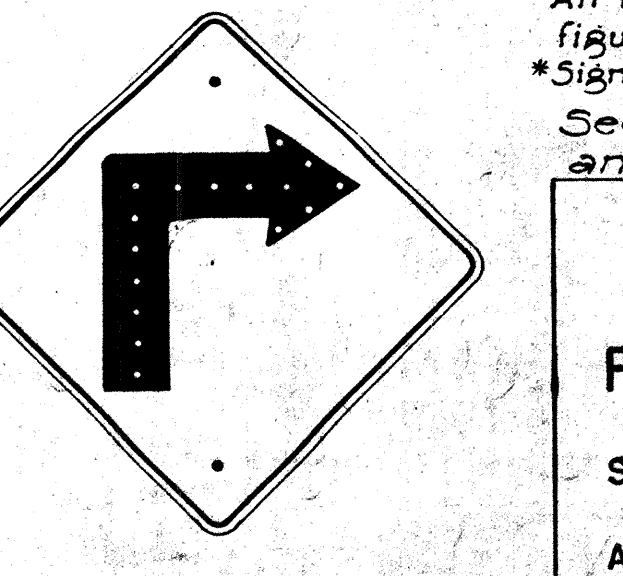
W-29
24" x 24"



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. 6 OF 6 SHEETS

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

DATE: 6/29/54
SURVEY PLOTTED BY: T. Tokunaga
DESIGNED BY: T. Tokunaga
QUANTITIES BY: T. Tokunaga
CHECKED BY: T. Tokunaga