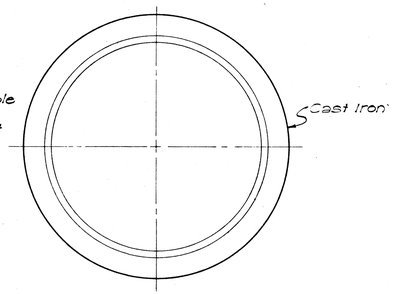
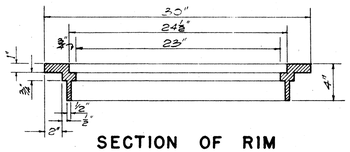
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw.	S8164(4)	1954	8	40

TOP VIEW OF COVER

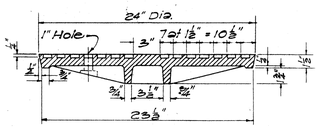
NOTE:
The Cover for Water Manhole shall be the same as for Sanitary Sewer except that the word "WATER" shall be substituted for "SANITARY SEWER". The frames for Sanitary Sewer and Water Covers shall be the same.



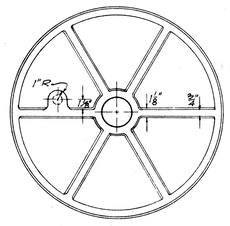
PLAN OF RIM



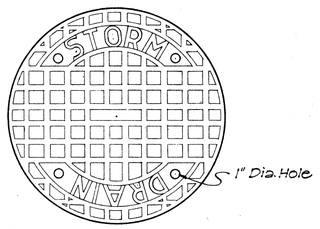
SECTION OF RIM



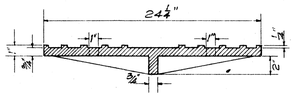
SECTION



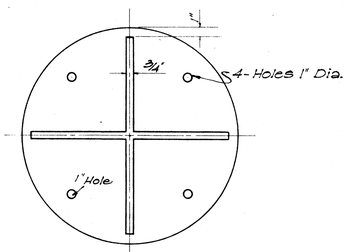
BOTTOM VIEW OF COVER



TOP VIEW OF COVER

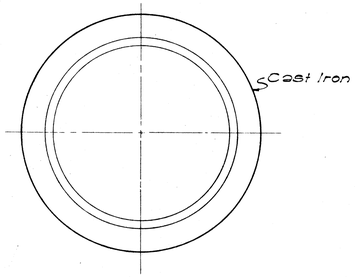


SECTION

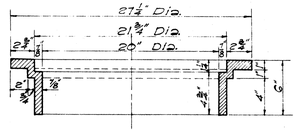


BOTTOM VIEW OF COVER

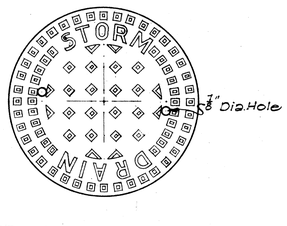
DETAILS OF TYPE "B"
CATCH BASIN CASTINGS
SCALE: 1-1/2" = 1'-0"



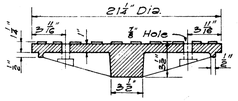
PLAN OF RIM



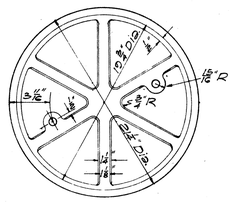
SECTION OF RIM



TOP VIEW OF COVER



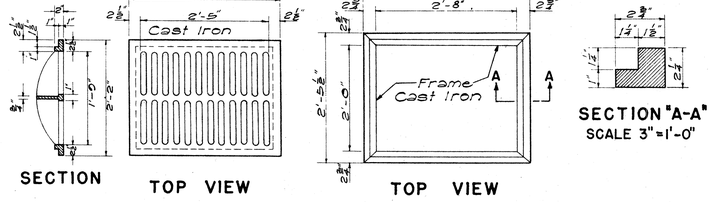
SECTION



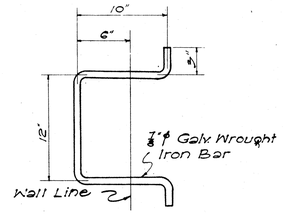
BOTTOM VIEW OF COVER

DETAILS OF TYPE "A"
MANHOLE CASTINGS
SCALE: 1-1/2" = 1'-0"

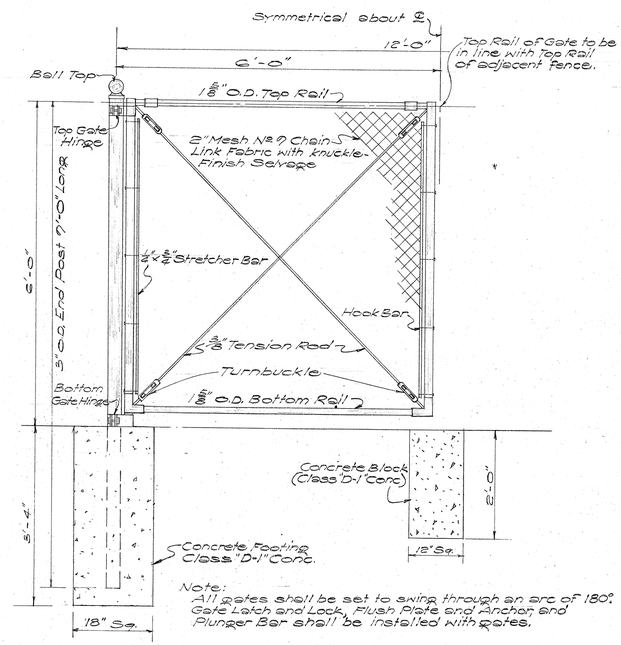
NOTE: Stock Pattern From Novelty Foundry ~ Honolulu



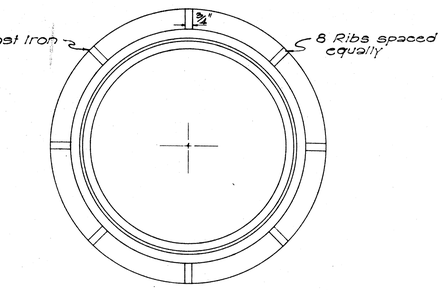
TYPE C C.I. FRAME AND GRATING
SCALE: 3/4" = 1'-0"



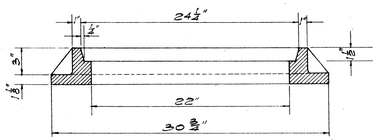
MANHOLE RUNG
SCALE: 1-1/2" = 1'-0"



ONE HALF ELEVATION
DETAIL OF CHAIN LINK GATE
SCALE: 3/4"=1'-0"



PLAN OF RIM



SECTION OF RIM

DETAILS OF TYPE "C"
MANHOLE CASTINGS
SCALE: 1-1/2" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY:	DATE:
	DESIGNED BY:	
	DRAWN BY: J. Calisto	
NOTE BOOK	QUANTITIES BY:	
No.	CHECKED BY:	

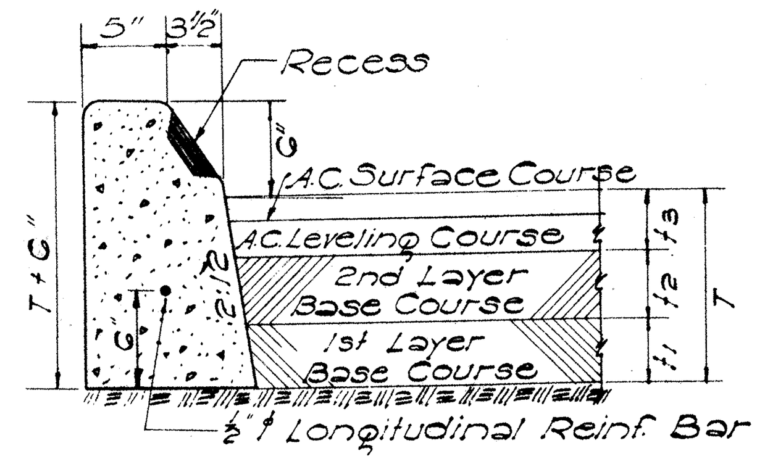
APPROVED: DATE 6-23-53

Ben E. Hunter
TERRITORIAL HIGHWAY ENGINEER

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

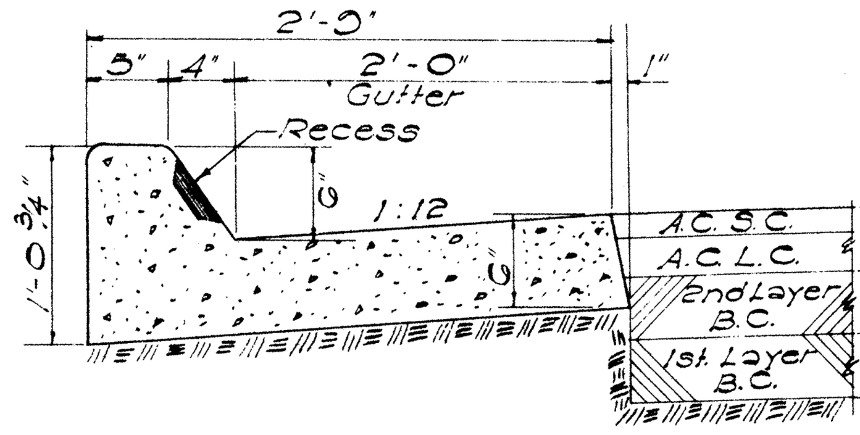
SHEET Nº 5 OF 64 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw.	S-216(4)	1954	9	40

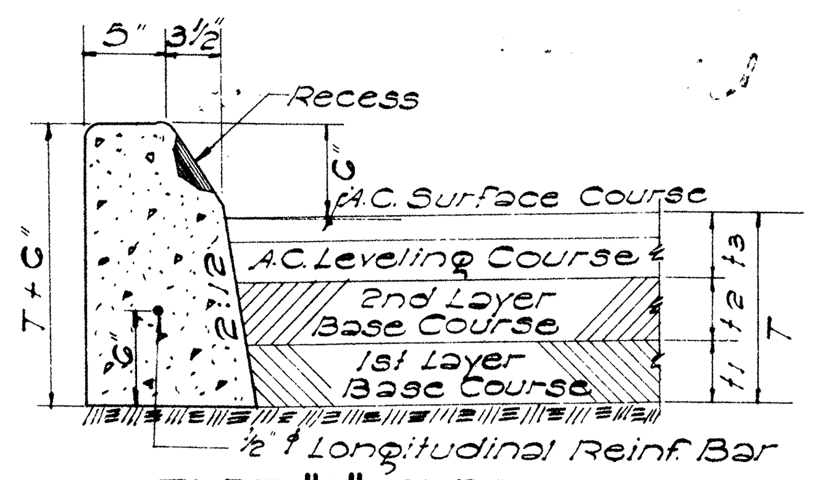


TYPE "A" & "B" CURB
SCALE: 1" = 1'-0"

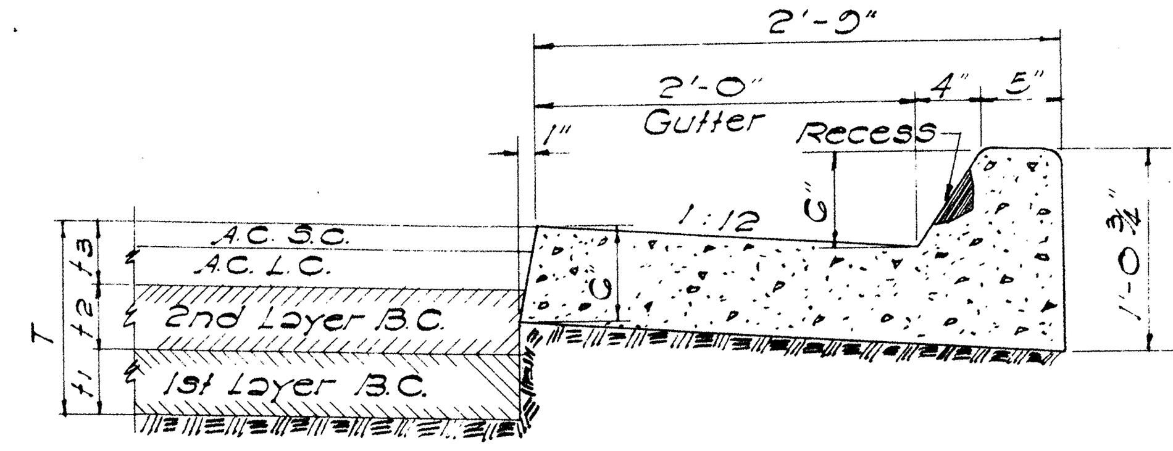
General Note Covering All Types of Curbs: Occasionally curb rests on first layer of base course. See typical sections.



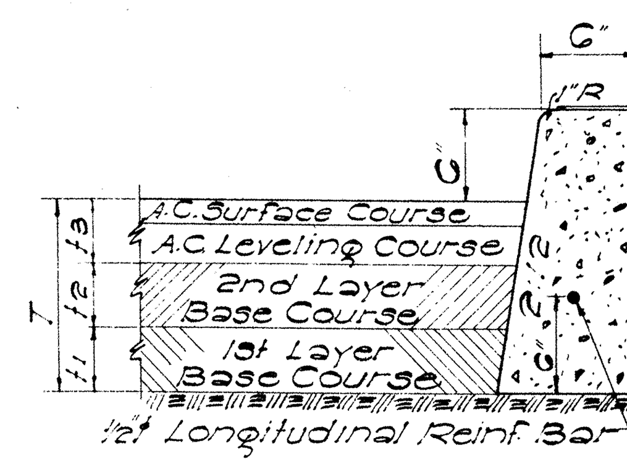
TYPE "AG" & "BG" CURB & GUTTER
SCALE: 1" = 1'-0"



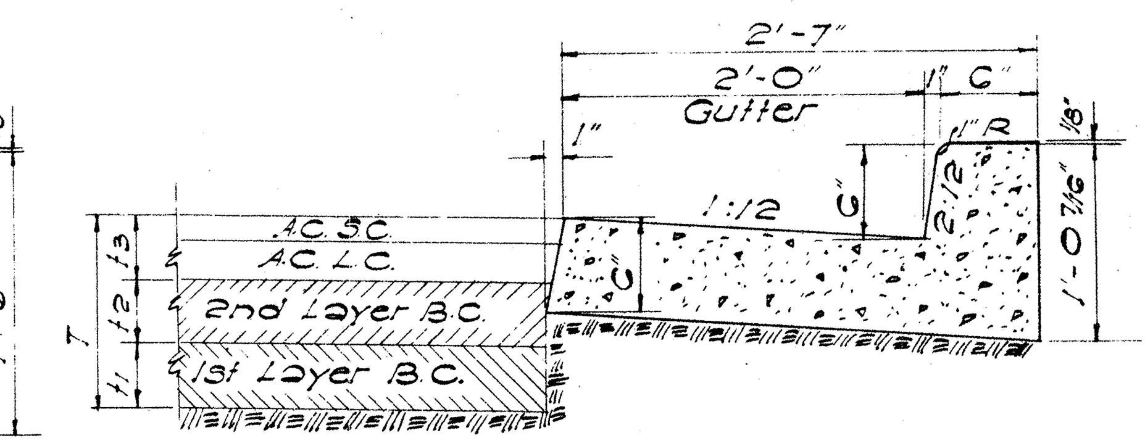
TYPE "C" CURB
SCALE: 1" = 1'-0"



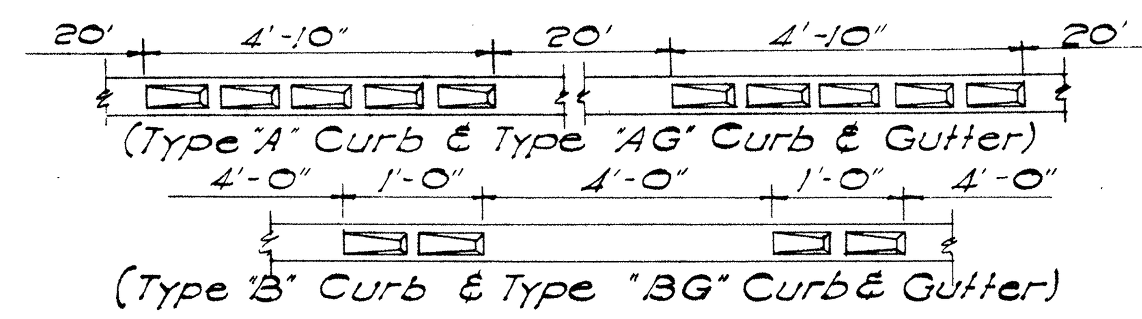
TYPE "CG" CURB & GUTTER
SCALE: 1" = 1'-0"



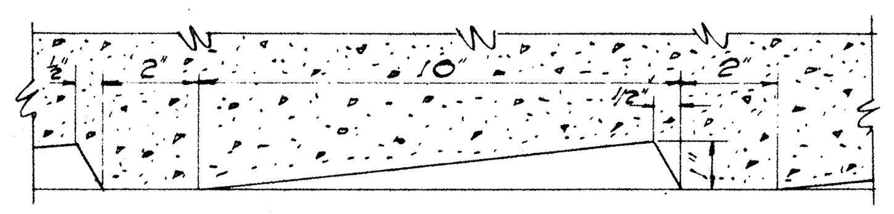
TYPE "D" CURB
SCALE: 1" = 1'-0"



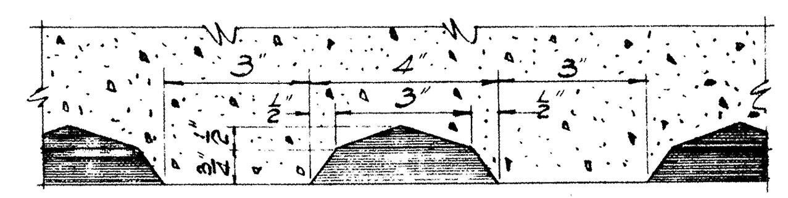
TYPE "DG" CURB & GUTTER
SCALE: 1'-1'-0"



TYPE AND SPACING OF RECESSES

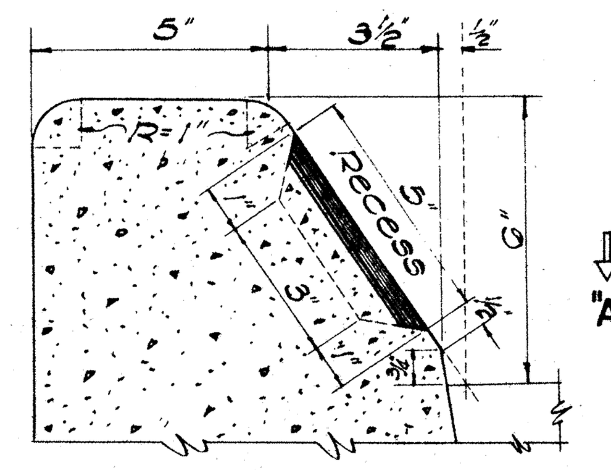


SECTION "A-A"

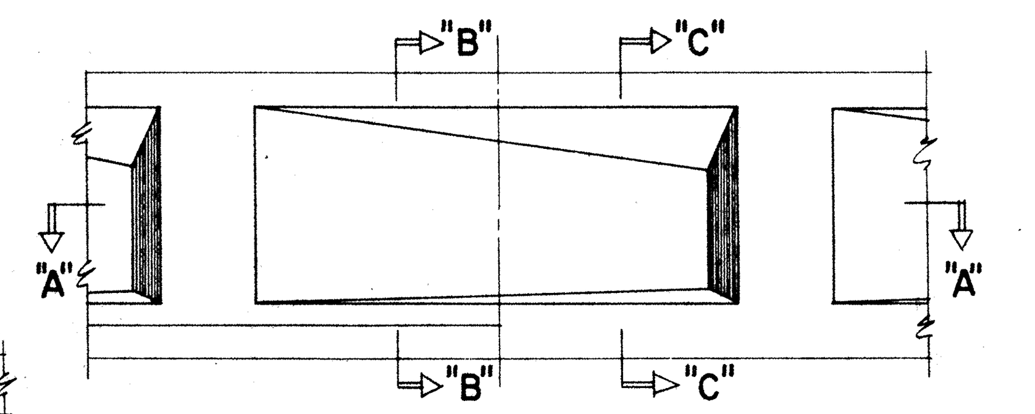


SECTION "X-X"

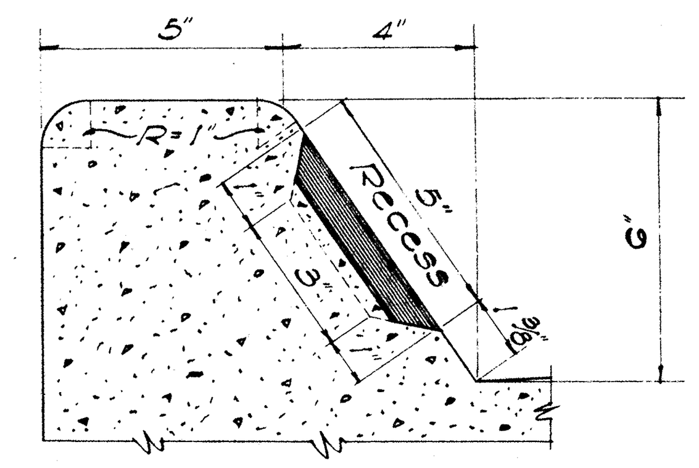
NOTES:
1.) Types 'AG', 'BG', 'CG', 'DG' and 'EG' Concrete Curbs and Gutters are to be poured monolithically.
2) Types 'A', 'B', and 'C' Curbs and Types 'AG', 'BG' and 'CG' Curbs and Gutters occur at Median Strips and Traffic Islands.
3) Shaded area in Curbs are to be painted with an approved white lacquer.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



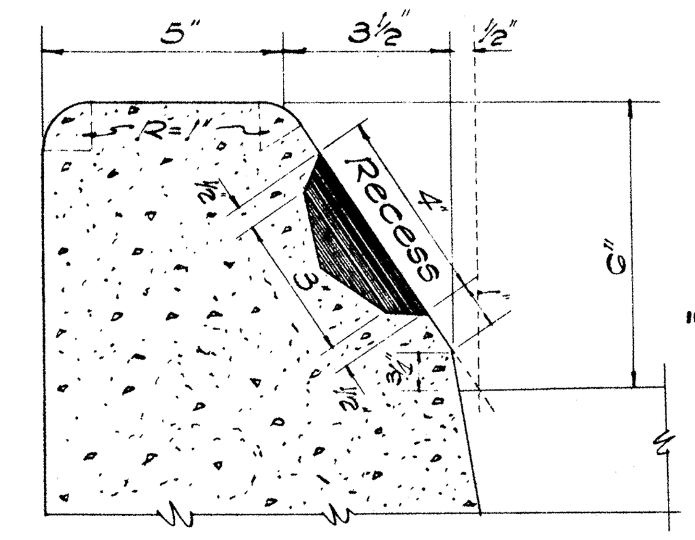
SECTION "B-B"
TYPE "A" & "B" CURB



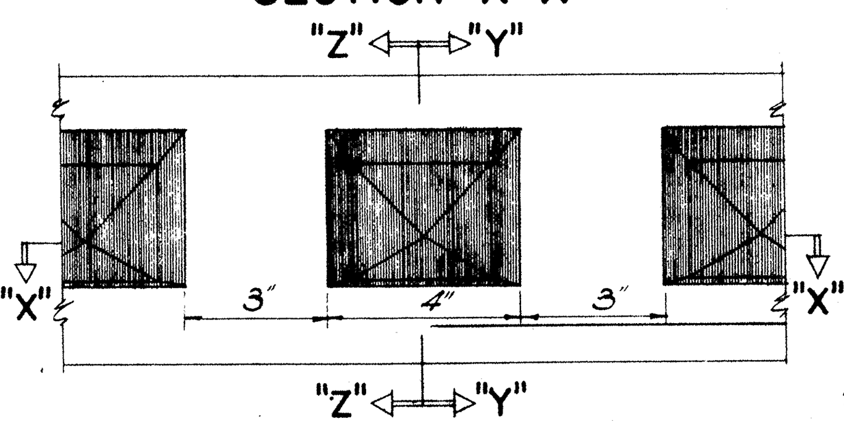
ELEVATION
SCALE: 3" = 1'-0"



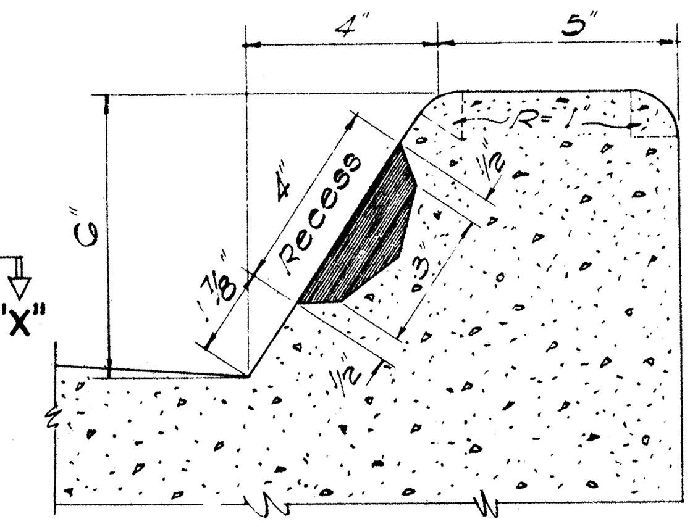
SECTION "C-C"
TYPE "AG" & "BG" CURB



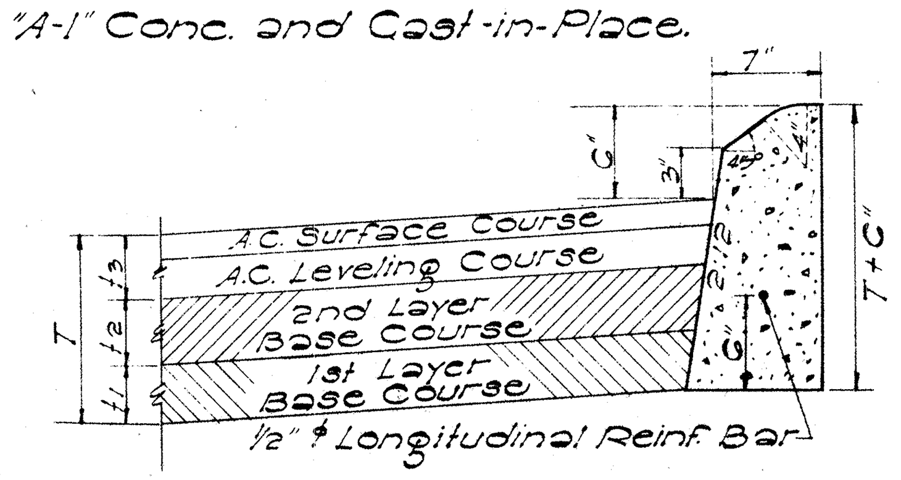
SECTION "Y-Y"
TYPE "C" CURB



ELEVATION
SCALE: 3" = 1'-0"

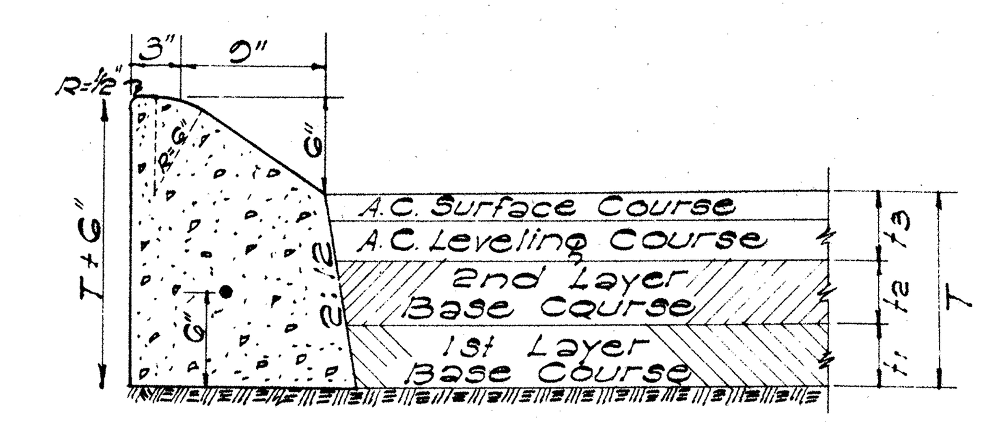


SECTION "Z-Z"
TYPE "CG" CURB

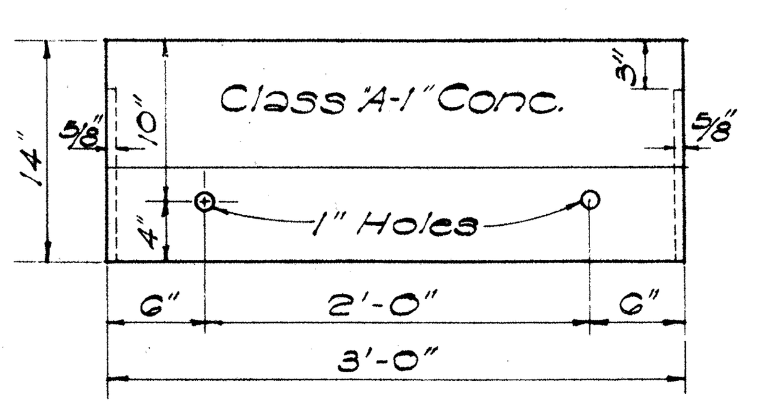


TYPE "F" CURB
SCALE: 1" = 1'-0"

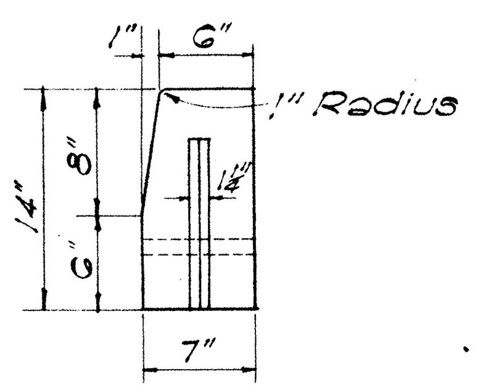
DETAILS OF CAST-IN-PLACE CONC. CURBS AND GUTTERS



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

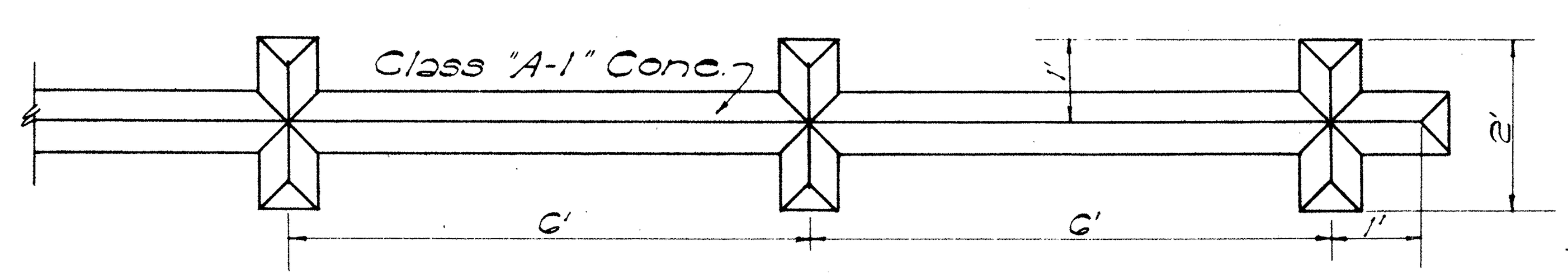


FRONT ELEV.

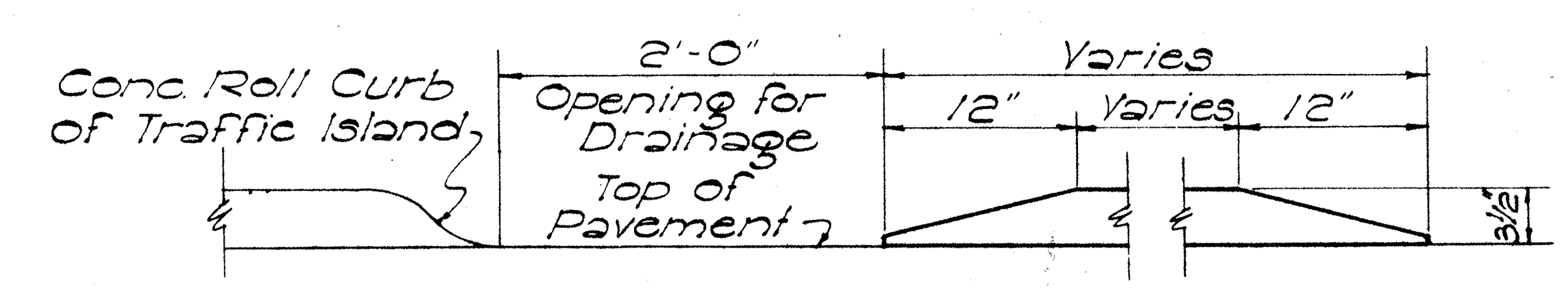


END ELEV.

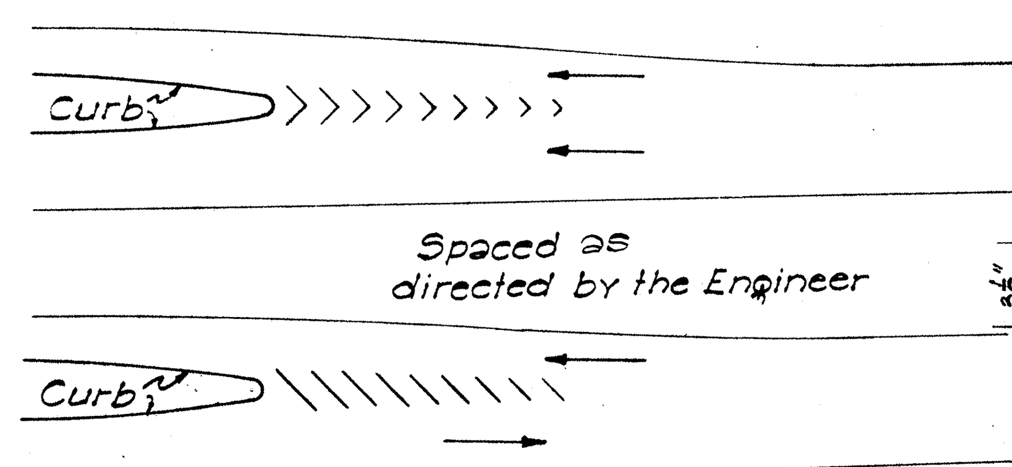
PRECAST CONC. CURB
SCALE: 1" = 1'-0"



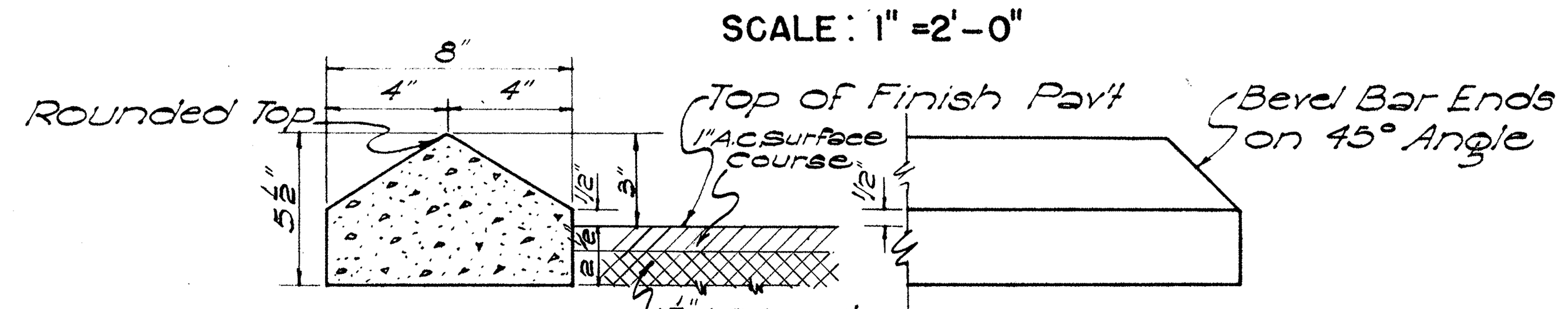
PLAN
SCALE: 1" = 2'-0"



ELEVATION

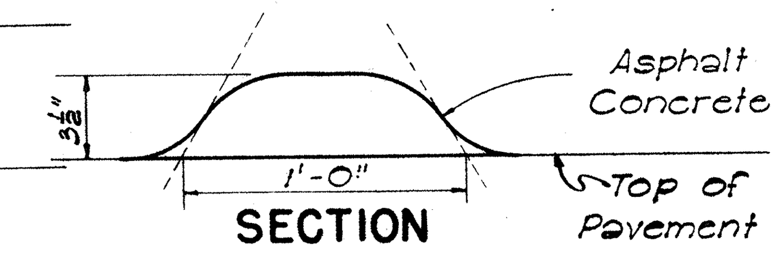


AT CURBED ISLAND



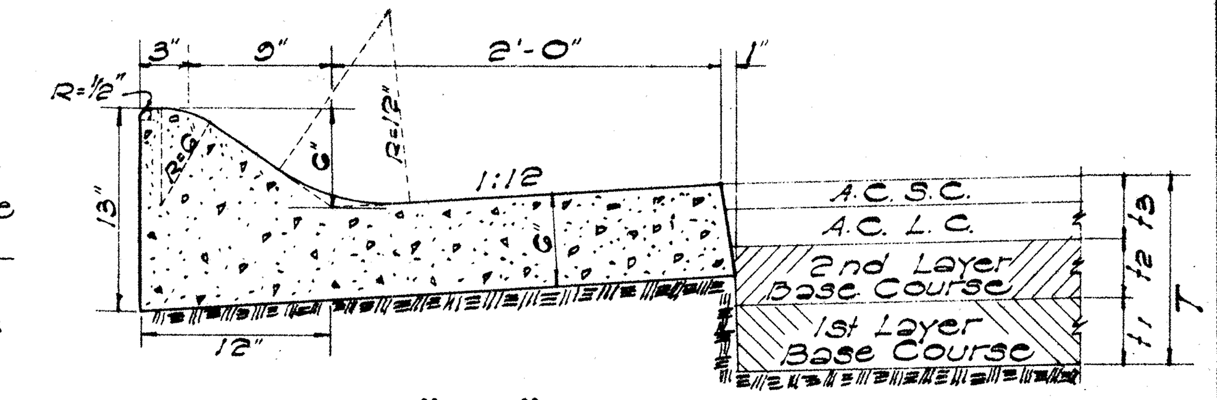
SECTION　　ELEVATION

RAISED TRAFFIC BARS
SCALE: 1" = 6"

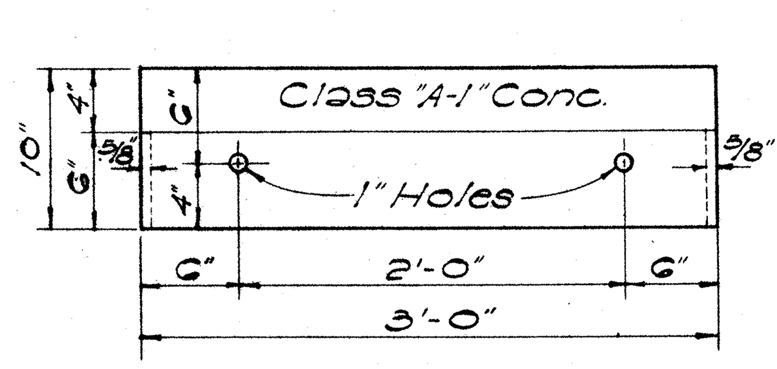


SECTION

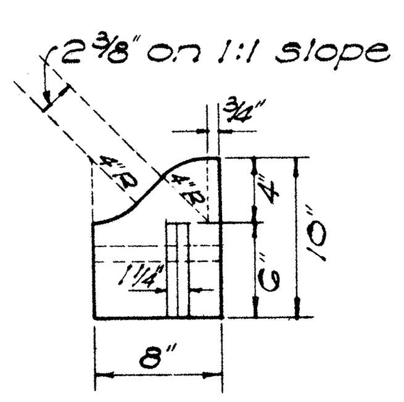
A.C. ROLL CURB
NOT TO SCALE



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

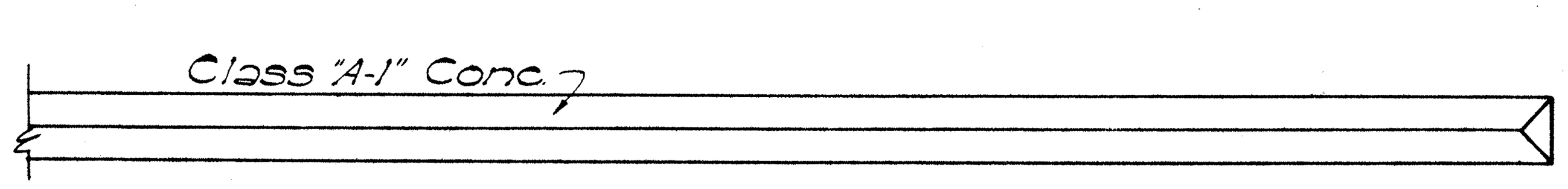


FRONT ELEV.



END ELEV.

PRECAST CONC. ROLL CURB
SCALE: 1" = 1'-0"

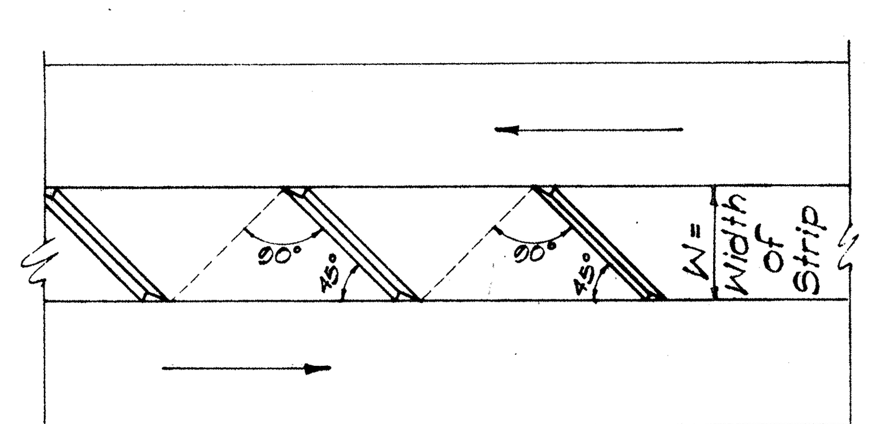


PLAN

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

RAISED JIGGLE BARS
SCALE: 1" = 2'-0"

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



MEDIAN STRIP

LAYOUT OF JIGGLE BARS
NOT TO SCALE

APPROVED: DATE 6-23-53

Ben E. Nutter
TERRITORIAL HIGHWAY ENGINEER

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
CONCRETE CURBS,
CONCRETE CURBS & GUTTERS
SCALES AS NOTED
SHEET № OF SHEETS

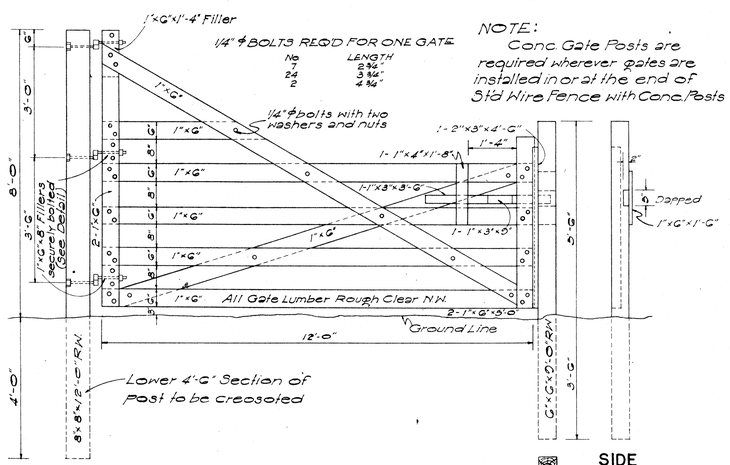
ORIGINAL PLAN	SURVEY PLOTTED BY / DESIGNED BY / DRAWN BY L. Callstro / TRACED BY / QUANTITIES BY / QUANTITIES CHECKED BY / CHECKED BY	DATE
NOTE BOOK No.		

5648.9

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	HAW.	S216(4)11754	10	40	

DETAIL OF CATTLE GATE

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

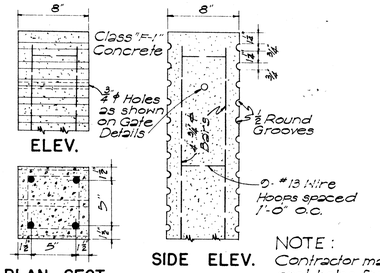


SIDE ELEV.

PLAN SECT.

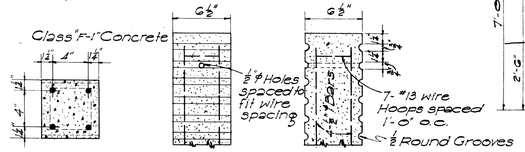
CONC. GATE POST

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

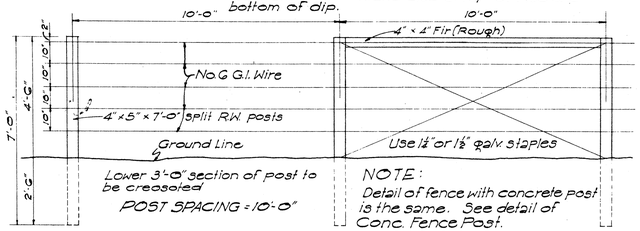


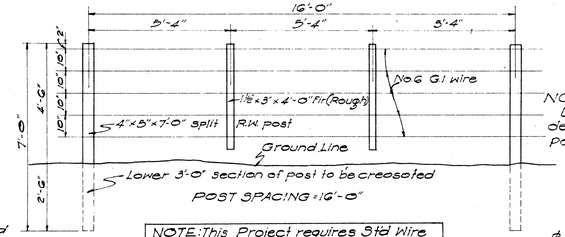
CONC. FENCE POST

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



Note: Fence must be anchored against pull at least every 500ft and also at top of rise and bottom of dip.





NOTE: This Project requires Std Wire Fence with ___ ft. post spacing (If spacing is not indicated above use 10ft)

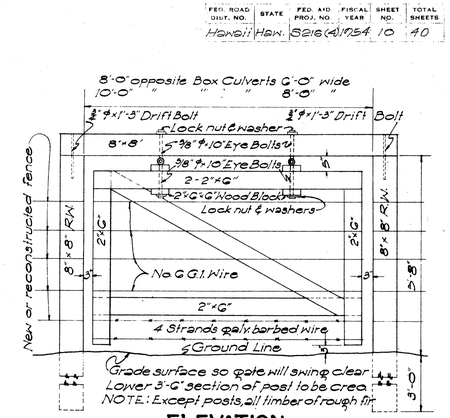
NOTE: Use above detail for end post.

DETAILS OF STANDARD WIRE FENCE WITH WOOD POSTS

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

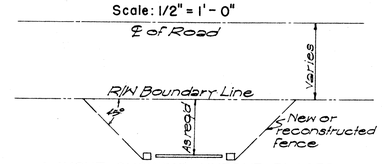
Position in relation to R/W in front of each separate property must be secured from the Engineer.

Note to Engineer: Fence must be on Road R/W to participate in Federal Aid. Consult office if uncertain what to do.



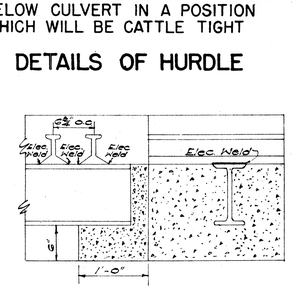
ELEVATION

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



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

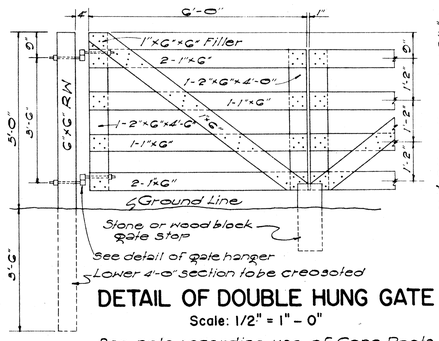
DETAILS OF HURDLE

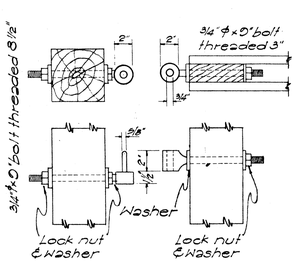


DETAIL OF DOUBLE HUNG GATE

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

See note regarding use of Conc. Posts



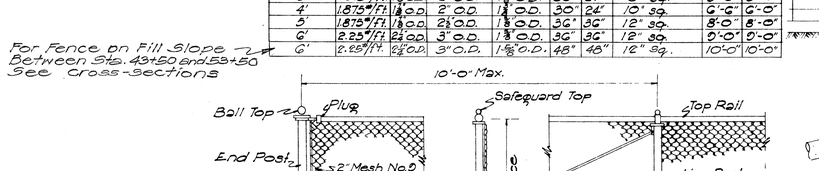


DETAIL OF GATE HANGER

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

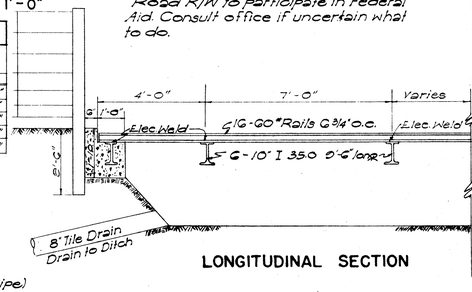
Note: Use 3/4"x11" bolts for Cattle Gate

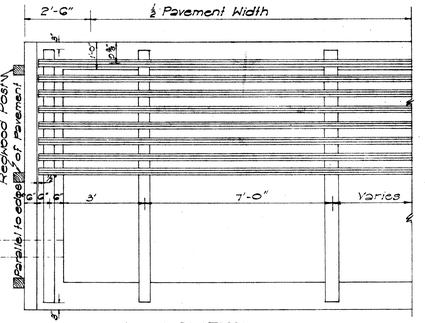
For Fence on Fill Slope Between Sta. 43+50 and 53+50 See Cross-sections



DETAIL OF CHAIN LINK FENCE

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





HALF SECTION

SECTION

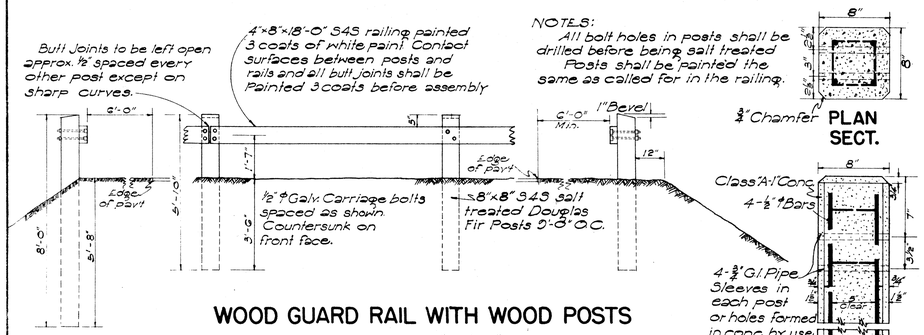
DETAIL OF CATTLE GUARD

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

WOOD GUARD RAIL WITH WOOD POSTS

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

NOTE: For Conc. Post see detail at right



NOTES: All bolt holes in posts shall be drilled before being salt treated. Posts shall be painted the same as called for in the railing.

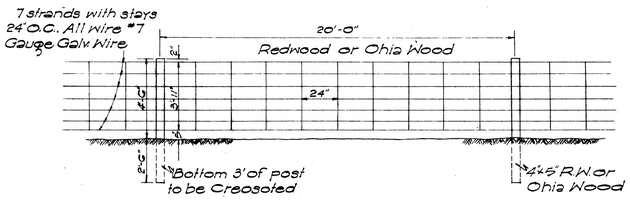
GUIDE POSTS: Wood or Conc. Guide Posts are the same as those used for Wood Guard Rail spaced as shown on plans.

DETAIL OF CONC. POST

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

DETAIL OF WOVEN WIRE FENCE

Scale: 1/4" = 1'-0"



SCHEDULE FOR CHAIN LINK FENCE									
Height of Fence	Line Post H column		End Post	Top Rail	Depth of Footing		Top of Footing Size	Length of Posts	
		Pipe	Pipe	Pipe	End	Line		End	Line
3'	1.875#/ft	1⅜ O.D.	2" O.D.	1⅝ O.D.	30"	24"	8" sq.	5'-6"	5'-0"
4'	1.875#/ft	1⅜ O.D.	2" O.D.	1⅝ O.D.	30"	24"	10" sq.	6'-6"	6'-0"
5'	1.875#/ft	1⅜ O.D.	2½ O.D.	1⅝ O.D.	36"	36"	12" sq.	8'-0"	8'-0"
6'	2.25#/ft	2½ O.D.	3" O.D.	1⅝ O.D.	36"	36"	12" sq.	9'-0"	9'-0"
6'	2.25#/ft	2½ O.D.	3" O.D.	1-⅝ O.D.	48"	48"	12" sq.	10'-0"	10'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY	
	TRACED BY L. Calistro	
NOTE BOOK	QUANTITIES BY	
	QUANTITIES CHECKED BY	
No.	CHECKED BY	

APPROVED: DATE C-23-58

TERRITORIAL HIGHWAY ENGINEER

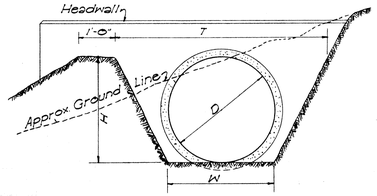
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
STANDARD DETAILS
FENCES, GATES, GUARD RAILS, GUIDE POSTS, CATTLE GUARD
SCALES AS NOTED

SHEET No. 10 OF SHEETS

5645.10

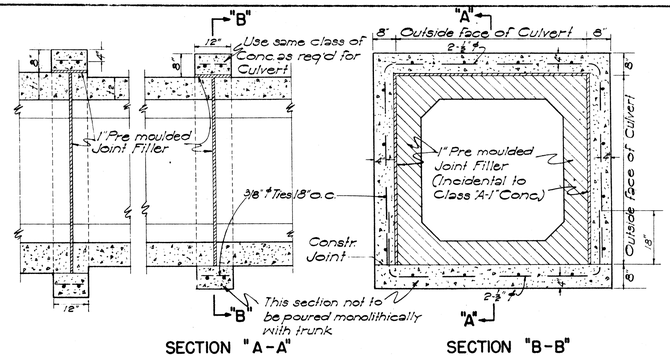
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw.	S216(4)1764	11	40	

DATA FOR OUTLET DITCH			
D	W	H	T=W+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"
42"	42"	3'-6"	7'-0"
48"	48"	4'-0"	8'-0"
54"	54"	4'-6"	9'-0"
60"	60"	5'-0"	10'-0"



DETAIL OF OUTLET DITCH

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



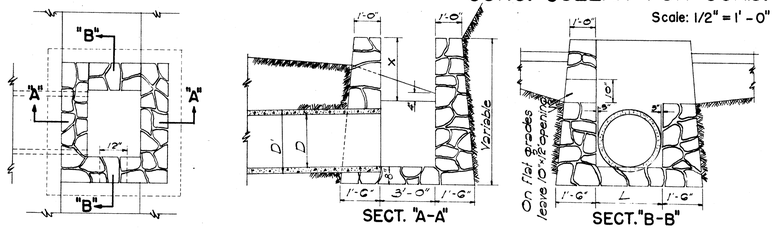
SECTION "A-A" SECTION "B-B"

CONC. COLLAR FOR CONC. BOX CULVERT

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

DATA FOR MASONRY DROP INTAKE				Where Variables Equal
D'	D	L=D'+6"	Cu Yds.	
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"

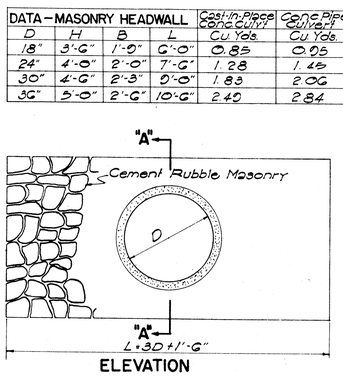
NOTE:
Dimension "X" is assumed as 2'-4" in figuring the above quantities.



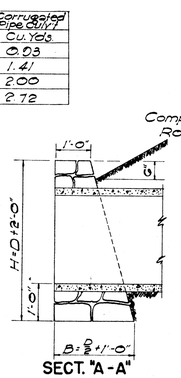
DETAIL OF MASONRY DROP INTAKE

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

DATA - MASONRY HEADWALL				Cast-in-Place Conc Culvert	Conc Pipe Culvert	Corrugated Pipe Culvert
D	H	B	L	Cu Yds.	Cu Yds.	Cu Yds.
18"	3'-6"	1'-0"	6'-0"	0.85	0.95	0.93
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



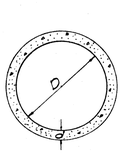
ELEVATION



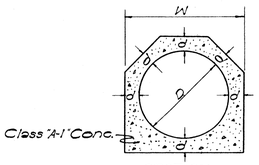
SECT. "A-A"

DETAIL OF MASONRY HEADWALL

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



SECTION



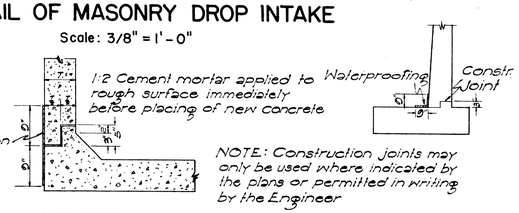
SECTION

CONC. PIPE CULVERT

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

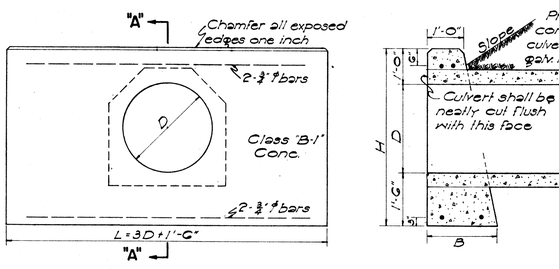
DATA - CAST-IN-PLACE CONC. CULV'T			
D	d	W	Cu Yd. per Ft.
18"	4"	2'-2"	0.11
24"	4½"	2'-9"	0.14
30"	5"	3'-4"	0.19
36"	5½"	3'-11"	0.26

CAST-IN-PLACE CONC. CULVERT



CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING
(1) Mop surface either side of joint as required with asphalt 50-100 penetration (A.S.T.M. Desig. D 5-25) 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.)
The above work is incidental to concrete and will not be paid for separately.



ELEVATION

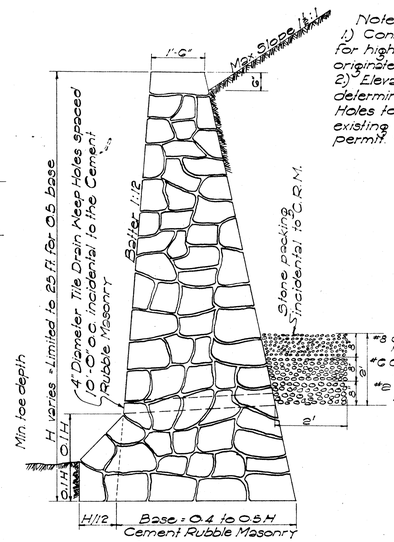
SECTION "A-A"

DATA FOR CONC. HEADWALL				Cast-in-Place Conc Culvert	Conc Pipe Culvert	Steel For One Headwall			
D	B	L	H	Cu Yd.	Cu Yd.	No. of Bars	Size	Length	Lbs.
18"	1'-6"	6'-0"	4'-0"	0.82	1.00	4	¾"	5'-6"	33
24"	1'-6"	7'-6"	4'-6"	1.25	1.88	4	¾"	7'-0"	42
30"	2'-0"	9'-0"	5'-0"	1.05	2.17	4	⅞"	8'-6"	51
36"	2'-0"	10'-6"	5'-6"	2.45	2.74	4	⅞"	10'-0"	60
42"	2'-6"	12'-0"	6'-0"		3.87	4	1"	11'-6"	69
48"	2'-6"	13'-6"	6'-6"		4.66	4	1"	13'-0"	78
54"	3'-0"	15'-0"	7'-0"		6.02	4	1⅛"	14'-6"	87
60"	3'-0"	16'-6"	7'-6"		7.08	4	1¼"	16'-0"	96

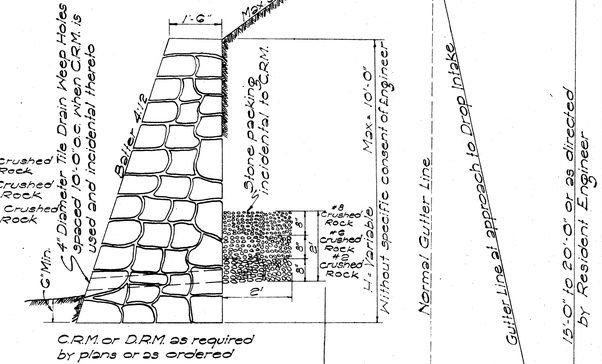
DETAIL OF CONCRETE HEADWALL

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

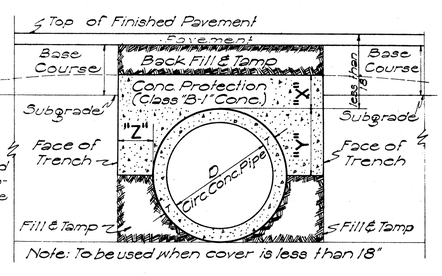
Note: To Resident Engineer
1.) Consider economy of reinf. conc. for high retaining walls which did not originate on plan layout.
2.) Elevation of weep holes to be determined by Resident Engineer. Holes to be placed as close to the existing ground line as local conditions permit.



SECTION OF HIGH CEMENT RUBBLE MASONRY RETAINING WALL OR SEAWALL



SECTION OF LOW MASONRY RETAINING WALL OR SEAWALL



Note:
When subgrade is below top of jacket, it shall be fully compacted to this line and then re-excavated (struc. exc.) to proper subgrade. This surface shall be rolled again.

Note: To be used when cover is less than 18"

DATA FOR CONCRETE PROTECTION OVER CULVERTS		
X	Y	Z
6" for 18" D	D/2 + T	Z must be from pipe to face of trench
7" " 24" D		
8" " 30" D		Minimum = X
9" " 36" D		
10" " 42" D		Maximum pay quantity will be Z = 12"
11" " 48" D		
12" " 54" D		

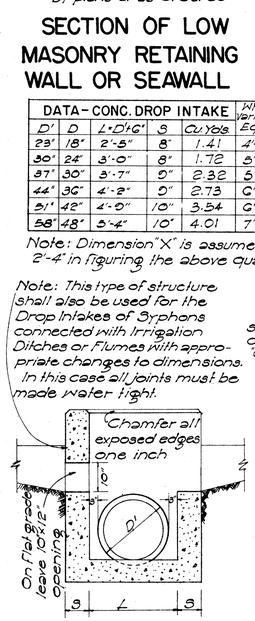
SECT. OF CULVERT WITH CONC. PROTECTION

Scale: 1" = 1'-0"

DATA - CONC. DROP INTAKE					Where Variable Equals
D'	D	L=D'+6"	S	Cu Yds.	
23"	18"	2'-5"	8"	1.41	4'-6"
30"	24"	3'-0"	8"	1.72	5'-0"
37"	30"	3'-7"	0"	2.32	5'-6"
44"	36"	4'-2"	0"	2.73	6'-0"
51"	42"	4'-0"	10"	3.54	6'-6"
58"	48"	5'-4"	10"	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 Syphons 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"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	TRACED BY	
	DRAWN BY	L. Cavisio
NOTE BOOK	QUANTITIES BY	
No.	QUANTITIES CHECKED BY	
	CHECKED BY	

APPROVED: DATE 6-29-53

E. E. Mueller
TERRITORIAL HIGHWAY ENGINEER

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

DROP INTAKES, RETAINING WALLS, HEADWALLS, CONSTRUCTION JOINTS

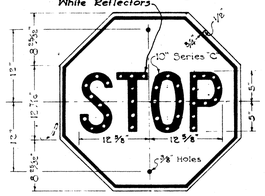
SCALES AS NOTED

SHEET NO. 5 OF SHEETS

5 6 4 S . 11

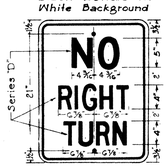
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	S816(4)	1954	12	40

Black Letters on "Highway Yellow" Background White Reflectors

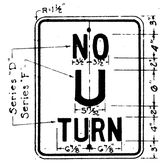


R-1
30" x 30"

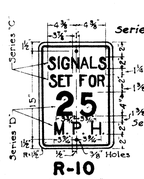
Black Letters on White Background



R-6
18" x 24"

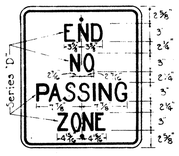


R-8
18" x 24"

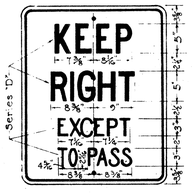


R-10
12" x 18"

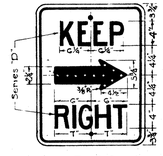
R-11
20" x 24"



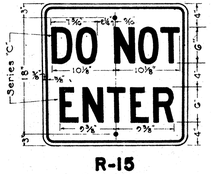
R-12
20" x 24"



R-13
24" x 30"



R-14
18" x 24"



R-15
24" x 24"

Black letters, White Arrows on Black background, White Border and White Reflectors.
4" Series "D" Letters

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

Red Letters & Border on White Background

R-18
12" x 18"

Red Letters & Border on White Background

R-26
12" x 18"

Red Letters & Border on White Background
White Reflectors

R-29
24" x 30"

White Letters on Highway Yellow Background
Red Letters
White Background

R-41-S
24" x 24"

Red Letters & Border on White Background

R-42-S
12" x 18"

Black Letters on White Background

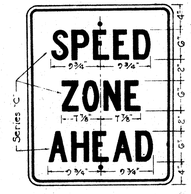
R-43-S
12" x 18"

R-44-S
12" x 18"

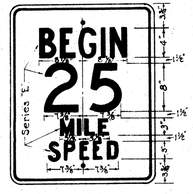
R-102-A
24" x 30"

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"

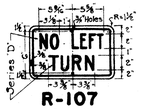
R-105-D
24" x 30"

R-105-E
24" x 30"

R-105-F
24" x 30"

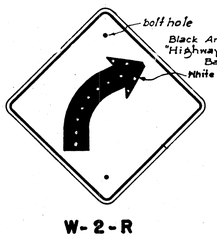
R-106
24" x 30"

R-107-A
24" x 30"

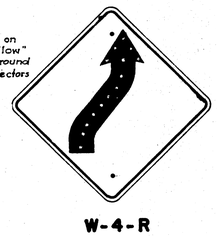


R-107
14" x 9"

bolt hole
Black Arrow on "Highway Yellow" Background White Reflectors

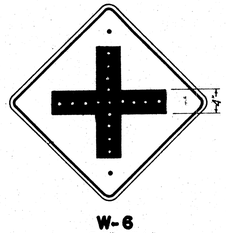


W-2-R
***W-2-L**
24" x 24"

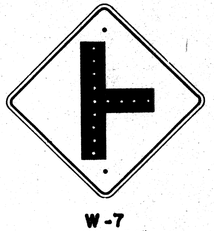


W-4-R
***W-4-L**
24" x 24"

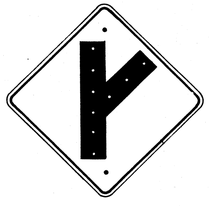
W-5-R
***W-5-L**
24" x 24"



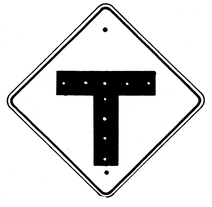
W-6
24" x 24"



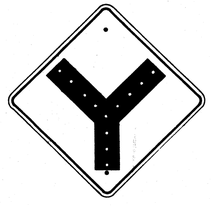
W-7
24" x 24"



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'
JUNE 23, 1953
APPROVED: Ben E. Hutter
TERRITORIAL HIGHWAY ENGINEER

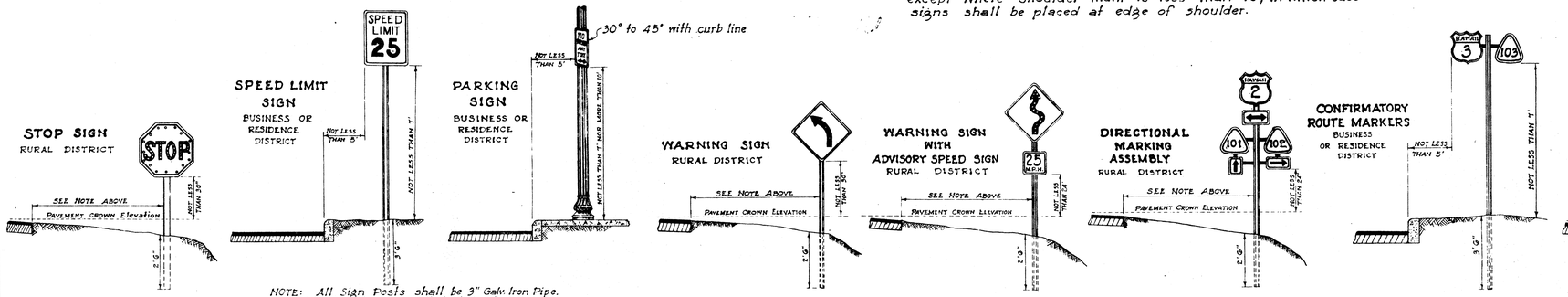
SHEET Nº OF SHEETS

FAS. 12

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY T. Tokunaga	
	TRACED BY	
	QUANTITIES BY	
NOTE BOOK	QUANTITIES CHECKED BY	
No.	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Hon.	S-216(4)	1954	13	40

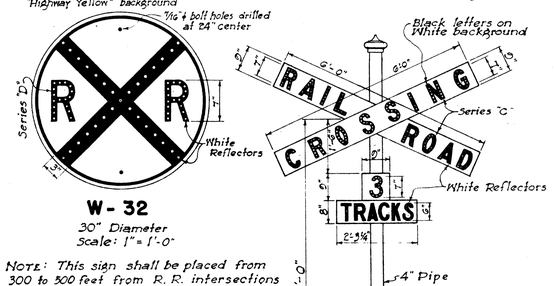
NOTE: All signs shall be placed 10' from edge of pavement except where shoulder width is less than 10', in which case signs shall be placed at edge of shoulder.



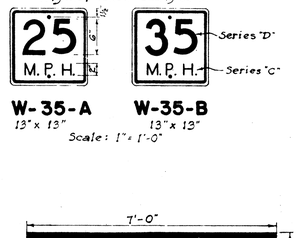
NOTE: All Sign Posts shall be 3" Galv. Iron Pipe. Two (2) 7/16"ϕ bolt holes drilled at location shown. Two (2) 3/8"ϕ bolts with leather washers against face and back of metal sign.

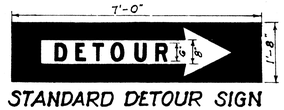
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS

Scale: 1" = 3'-0"

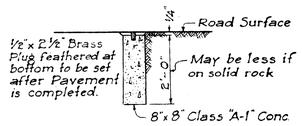


NOTE: This sign shall be placed from 300 to 500 feet from R. R. intersections in rural areas and a minimum distance of 100 feet from R.R. intersections in Residence or Business districts.

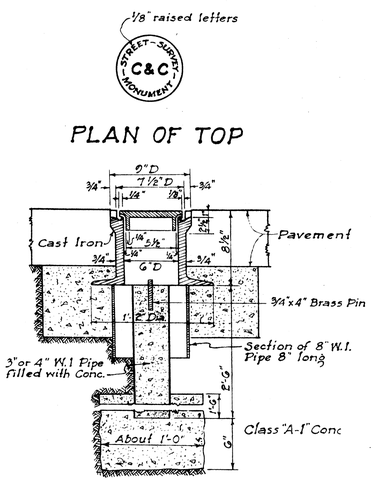




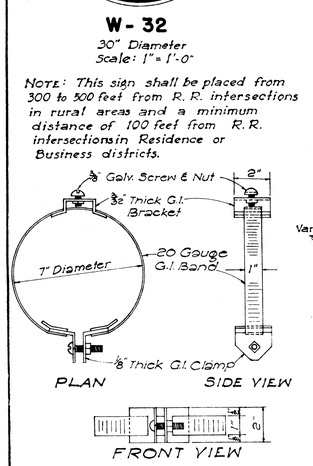
STANDARD DETOUR SIGN



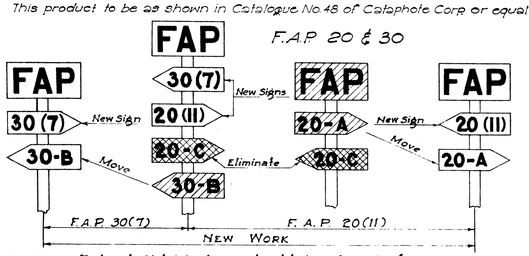
CENTER LINE MONUMENT
Scale: 1/2" = 1'-0"



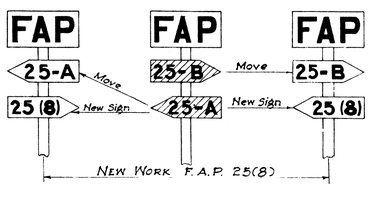
STANDARD C&C STREET SURVEY MONUMENT



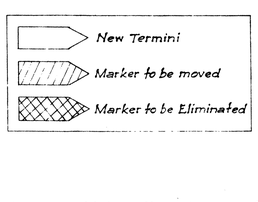
ADJUSTABLE BAND BRACKET FOR SUPPORTING TRAFFIC SIGNS ON MONOTUBE LIGHTING STANDARDS
Scale: 3"=1'-0"
This product to be as shown in Catalogue No. 48 of Calophote Corp or equal.



F.A.P. 20 & 30

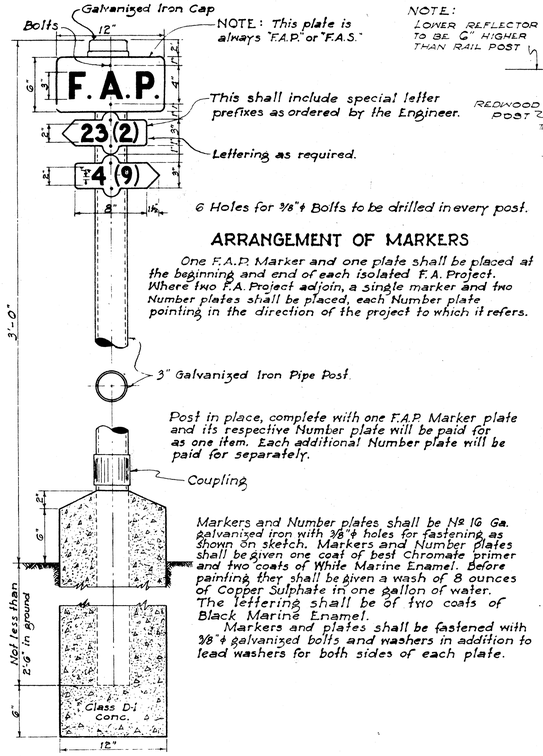


F.A.P. 25



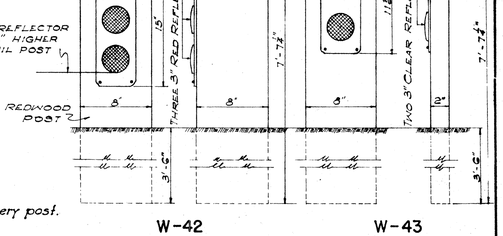
NOTE: Federal Aid Markers should be placed at the termini of suffix designated sections. Intermediate letter designated markers of adjacent sections located within the limits of new improvements should be moved to the termini of the new work. The same procedure would be followed on each successive improvement until all markers for letter designated sections are eventually eliminated.

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



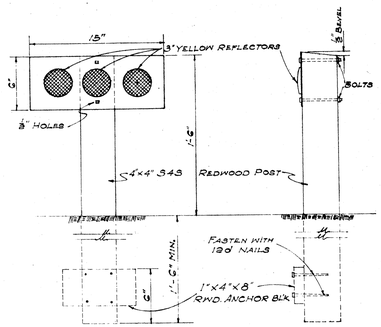
ARRANGEMENT OF MARKERS

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.

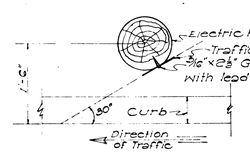


NOTE: THIS POST TO REPLACE METAL GUARD RAIL POST ADJACENT TO BRIDGES WHERE SHOWN ON PLANS

NOTE: THIS MARKER SHALL BE INSTALLED OPPOSITE AND AT THE SAME HEIGHT AS MARKER W-42



DETAIL OF SIGNS
SCALE: 1 1/2" = 1'-0"



DETAIL SHOWING ANGLE OF TRAFFIC SIGNS AND CURB LINE
Scale: 1"=1'-0"
Above detail applies to "R-18" and "R-18A" only.

APPROVED: DATE 6-23-58
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

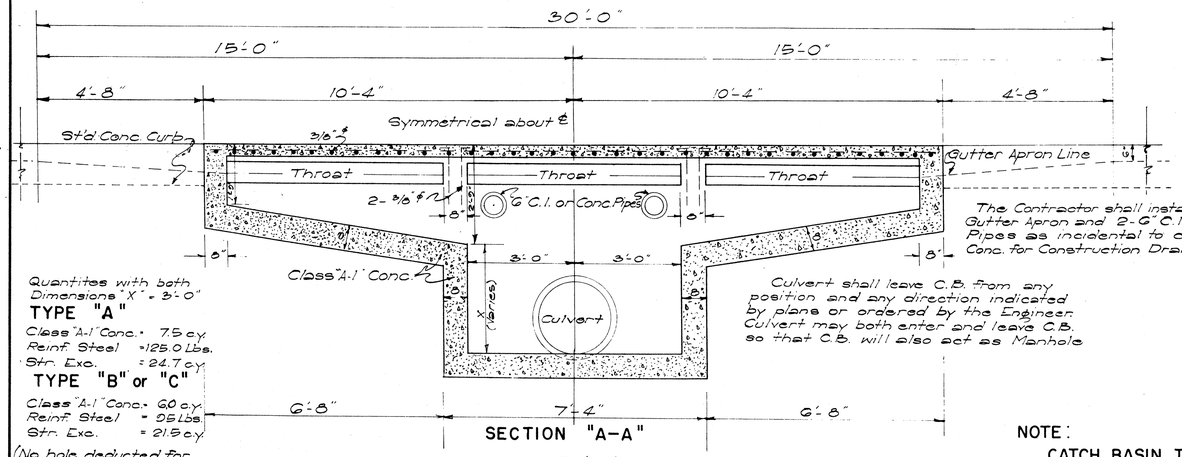
SHEET NO. 7 OF SHEETS

564 S. 13

ORIGINAL PLAN

SURVEY PLOTTED BY
DESIGNED BY
DRAWN BY T. Tokunaga
TRACED BY
QUANTITIES BY
QUANTITIES CHECKED BY
UNIT BOOK No.
DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Hawaii	S-210(4)	1954	14	40



SECTION "A-A"

Quantities with both Dimensions "X" = 3'-0"

TYPE "A"

Class "A-1" Conc. = 7.5 c.y.
Reinf. Steel = 125.0 Lbs.
Str. Exc. = 24.7 c.y.

TYPE "B" or "C"

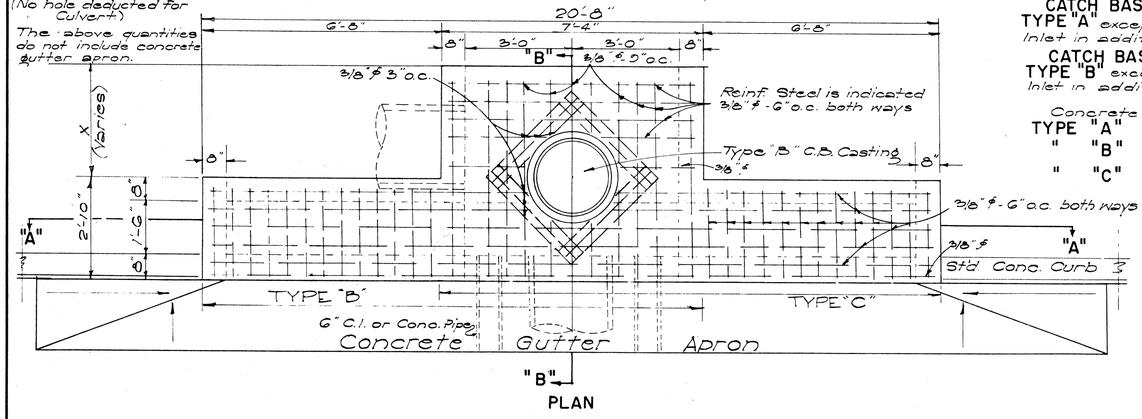
Class "A-1" Conc. = 6.0 c.y.
Reinf. Steel = 95 Lbs.
Str. Exc. = 21.5 c.y.

(No hole deducted for Culvert)

The above quantities do not include concrete gutter apron.

The Contractor shall install Gutter Apron and 2-6" C.I. or Conc. Pipes as incidental to class "A-1" Conc. for Construction Drainage

Culvert shall leave C.B. from any position and any direction indicated by plans or ordered by the Engineer. Culvert may both enter and leave C.B. so that C.B. will also act as Manhole



PLAN

DETAIL OF CONCRETE CATCH BASIN TYPE "A"

SCALE: 1/2 = 1'-0"

NOTE:

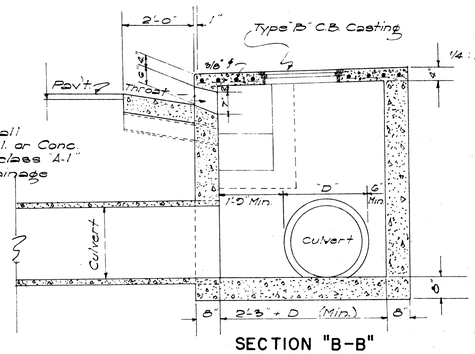
CATCH BASIN TYPE "B" similar to **TYPE "A"** except it has only Left Side Inlet in addition to the Main Box.

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

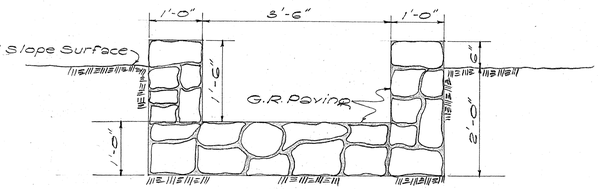
Concrete Gutter Length:

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

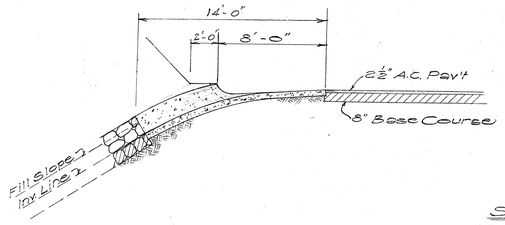
NOTE:
Provide Manhole Rungs where necessary.



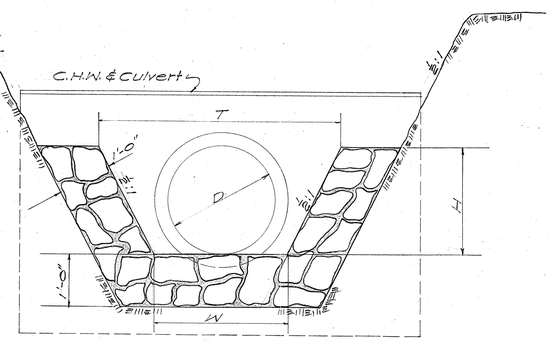
SECTION "B-B"



SECTION OF SPILLWAY
Scale: 3/4" = 1'-0"

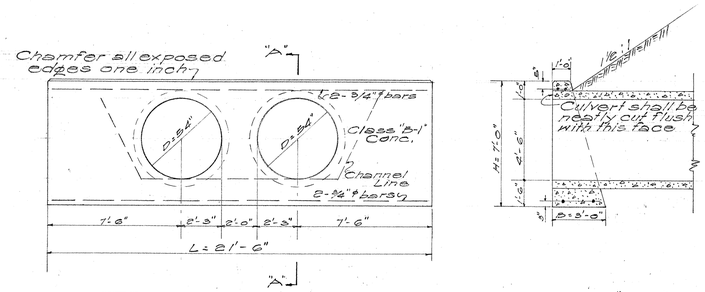


SECTION "A-A"
Scale: 3/16" = 1'-0"



NOTE:
For Data For Outlet Ditch See Sheet No. 5648.11

SECTION OF CHANNEL WITH G.R. PAVING
Scale: 3/4" = 1'-0"

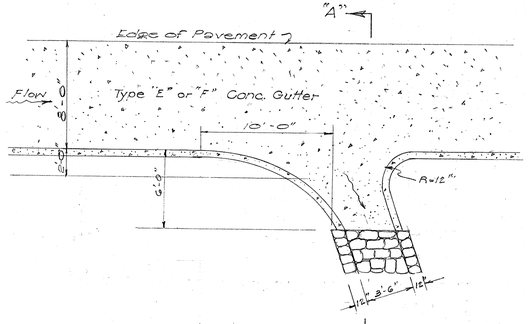


ELEVATION

SECTION "A-A"

DATA FOR CONC. HEADWALL				CONC.	STEEL FOR ONE HEADWALL			
D	B	L	H	Cu. Yd	No. of Bars	Size	Length	Lbs
54"	3'-0"	21'-6"	7'-0"	7.73	4	3/4"ϕ	21'-0"	186

DETAIL OF CONCRETE HEADWALL FOR TWIN 54" CONCRETE CULVERT
Scale: 1/2" = 1'-0"



DETAIL PLAN OF SPILLWAY
Scale: 3/16" = 1'-0"

APPROVED: DATE 6-23-53

Buw E. Hutter
TERRITORIAL HIGHWAY ENGINEER

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

CATCH BASINS

SCALES AS NOTED

SHEET No. 5648.14 OF SHEETS

ORIGINAL PLAN
SURVEY PLOTTED BY: DATE:
DESIGN BY:
DRAWN BY:
NOTE BOOK TRACED BY:
No. QUANTITIES BY:
CHECKED BY: