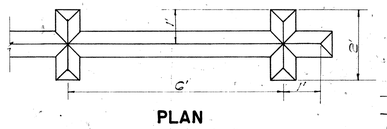
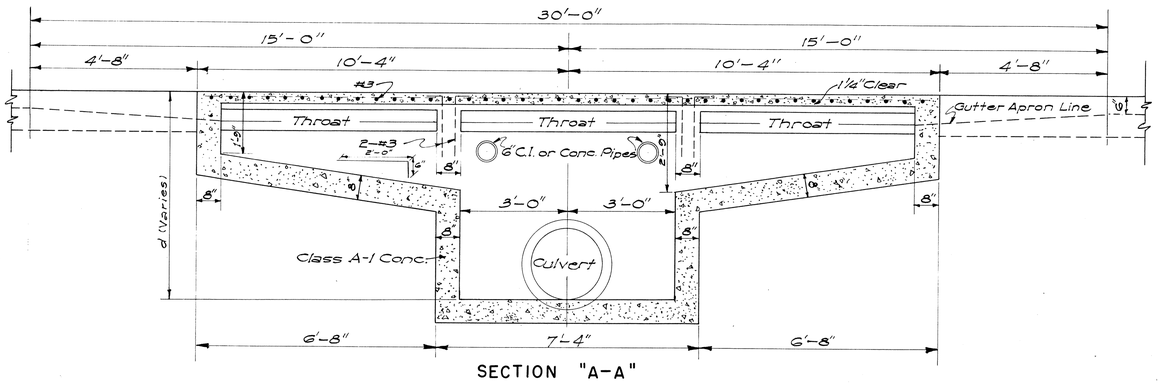
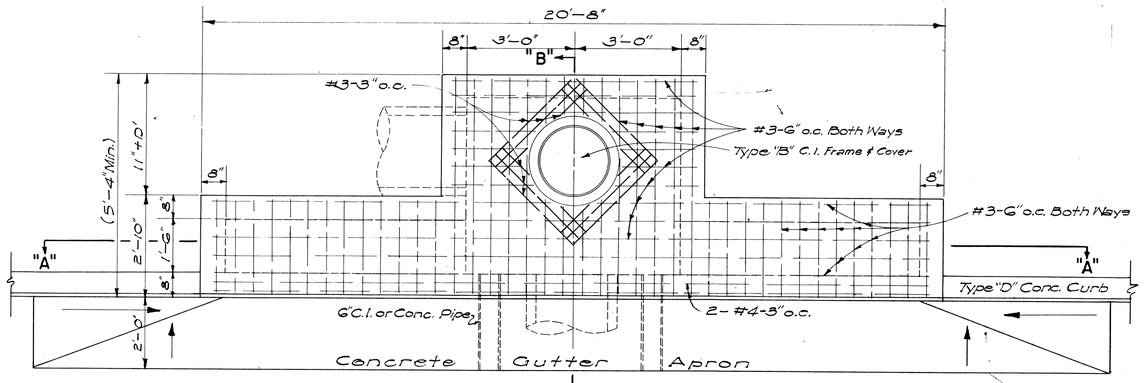
2/17/59
9/22/61
FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS
HAWAII | HAW. | F-030-1(6) | 1964 | 9 | 38
AUG. 1957
NOTE:
Modified Curbs and Gutters are similar to Standard Curbs and Gutters, except the Gutter slope shall follow the superelevation of the road.
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"
Recess
A.C. Surface Course
A.C. Leveling Course
2nd Layer Base Course
1st Layer Base Course
5/8" Longitudinal Reinf. Bar
General Note Covering All Types of Curbs: Occasionally curb rests on first layer of base course. See typical sections.
(Type 'A' Curb & Type 'AG' Curb & Gutter)
(Type 'B' Curb & Type 'BG' Curb & Gutter)
TYPE AND SPACING OF RECESSES
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 "A-A"
SECTION "X-X"
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 "G" GUTTER
SCALE: 1" = 1'-0"
DETAILS OF CAST-IN-PLACE CONC. CURBS AND GUTTERS
TYPE "E" CAST-IN-PLACE CONCRETE CURB
SCALE: 1" = 1'-0"
Class 'A-1' Conc.
1" Holes
FRONT ELEV.
END ELEV.
PRECAST CONC. CURB
SCALE: 1" = 1'-0"
TYPE "F" GUTTER FOR PRECAST CURB
Precast Curb
PLAN
SCALE: 1/2" = 1'-0"
Conc. Roll Curb of Traffic Island
Opening for Drainage
Top of Pavement
ELEVATION
Top of Finish Pav't.
Bevel Bar Ends on 45° Angle
SECTION
ELEVATION
RAISED TRAFFIC BARS
SCALE: 2" = 1'-0"
Spaced 5' to 10' as directed by the Engineer
Asphalt Concrete
Top of Pavement
SECTION
A.C. TRAFFIC ROLL
NOT TO SCALE
TYPE "EG" CAST-IN-PLACE CONC. CURB & GUTTER
SCALE: 1" = 1'-0"
2 3/8" on 1:1 slope
FRONT ELEV.
END ELEV.
PRECAST CONC. ROLL CURB
SCALE: 1" = 1'-0"
Class 'A-1' Conc.
PLAN
NOTE: Section and Elevation for Jiggle Bars are same as the Traffic Bars.
RAISED JIGGLE BARS
SCALE: 1/2" = 1'-0"
NOTE: Paint all exposed surfaces of bars with beaded white traffic lacquer.
AT CURBED ISLAND
MEDIAN STRIP
Stripping by others
LAYOUT OF JIGGLE BARS
NOT TO SCALE
APPROVED:
DATE Aug. 26, 1959
STATE HIGHWAY ENGINEER
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CONCRETE CURBS, CONCRETE CURBS & GUTTERS
SCALES: AS NOTED
SHEET No. 1 OF 6 SHEETS
"E" and "EG" Curbs have been revised 7-26-57
"G" and "F" Gutters have been added 9-22-61
ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DESIGNED BY
DRAWN BY L. Calistro
TRACED BY
QUANTITIES BY
QUANTITIES CHECKED BY
CHECKED BY
DATE

2/17/59

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-010-1(10)	1964	10	58



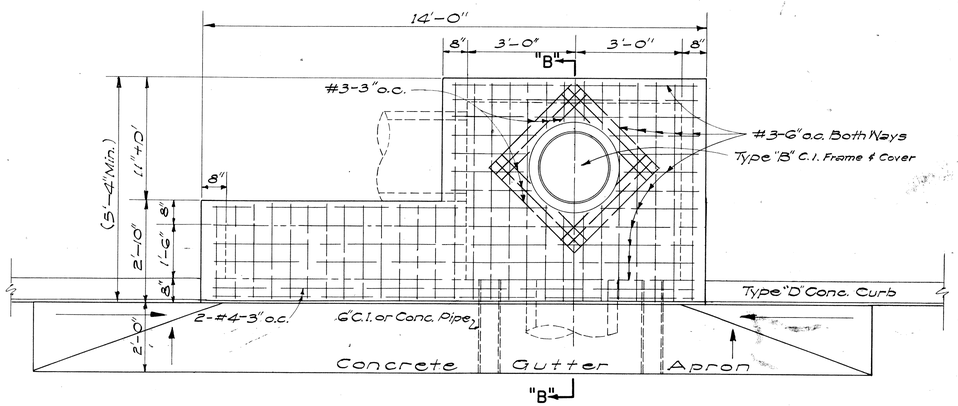
SECTION "A-A"



PLAN

DETAIL OF TYPE "A" CATCH BASIN

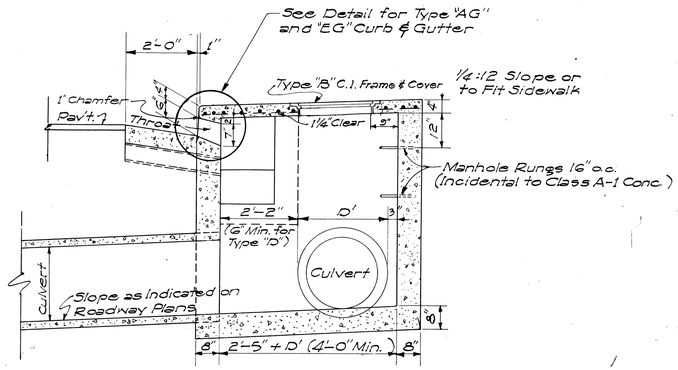
SCALE: 1/2" = 1'-0"



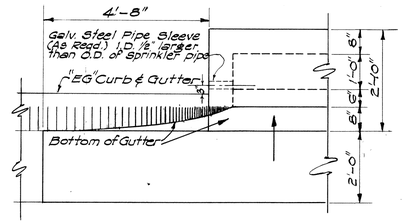
DETAIL OF TYPE "B" CATCH BASIN

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

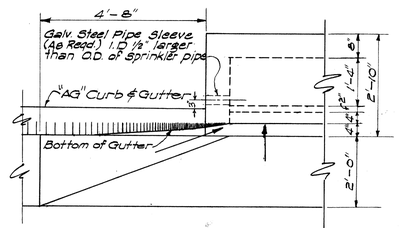
NOTE: TYPE "C" C.B. SIMILAR BUT OPPOSITE HAND



SECTION "B-B"

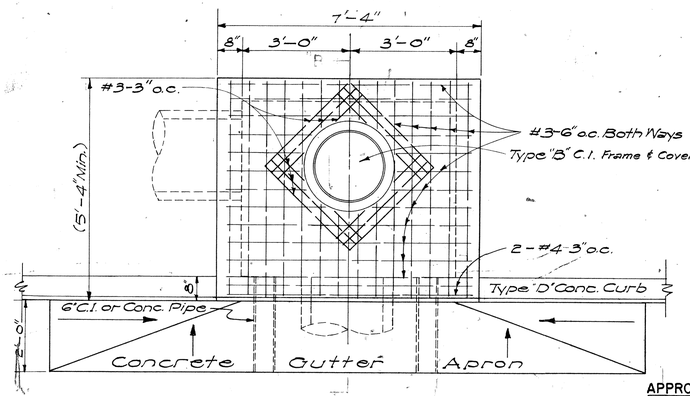


DETAIL OF CATCH BASIN WITH TYPE "EG" CURB & GUTTER



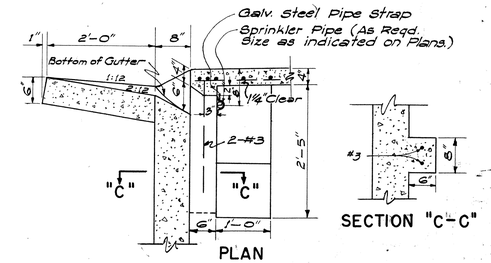
DETAIL OF CATCH BASIN WITH TYPE "AG" CURB & GUTTER

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



DETAIL OF TYPE "D" CATCH BASIN

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

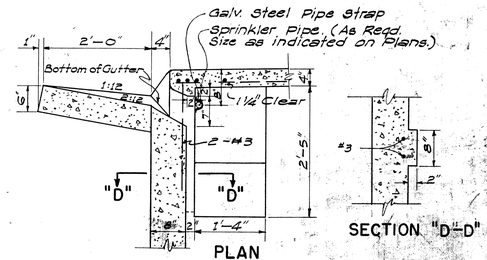


PLAN

SECTION "C-C"

THROAT DETAIL FOR TYPE "EG" CURB & GUTTER

SCALE: 3/4" = 1'-0"



PLAN

SECTION "D-D"

THROAT DETAIL FOR TYPE "AG" CURB & GUTTER

SCALE: 3/4" = 1'-0"

ESTIMATED QUANTITIES

Type	Class A-1 Conc.	Struct. Exc.	Reinf. Steel	Gutter Length
"A"	7.5 c.y.	24.7 c.y.	145 lb.	30'-0"
"B"	6.0 c.y.	21.5 c.y.	108 lb.	23'-4"
"C"	6.0 c.y.	21.5 c.y.	108 lb.	23'-4"
"D"	4.0 c.y.	16.5 c.y.	77 lb.	16'-8"

NOTES:

1. Quantities based on d' = 5.75' and D' = 3.0'.
2. Quantities do not include concrete for Gutter Apron.
3. The Contractor shall install two 6" Cast Iron or Concrete Pipes as incidental to Class A-1 Concrete for Construction Drainage.
4. 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).
5. The Contractor shall install Galvanized Steel Pipe Sleeves and Straps as incidental to Sprinkler System.

ORIGINAL PLAN	SURVEY PLOTTED BY:	DATE:
	DESIGNED BY: C.Y.	
	DRAWN BY: C.Y.	
NOTE BOOK	TRACED BY:	
No.	QUANTITIES BY:	
	CHECKED BY:	

APPROVED: DATE Aug. 28, 1963

STATE HIGHWAY ENGINEER

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS

CONCRETE CATCH BASINS

SCALES AS NOTED.

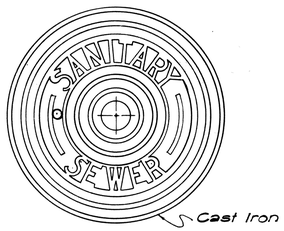
SHEET No. 2 OF 6 SHEETS

10

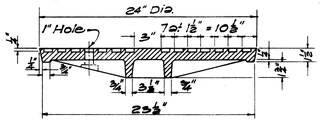
2/17/59
8:14:50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-090-1(10)	1964	11	58

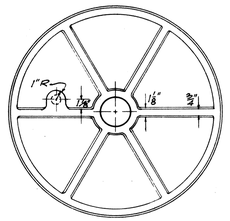
August 1957



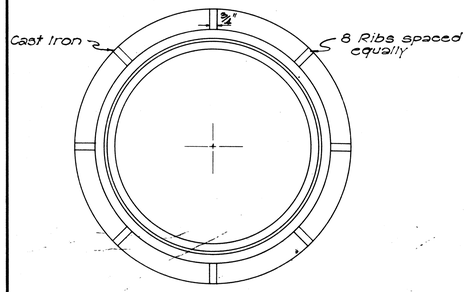
TOP VIEW OF COVER



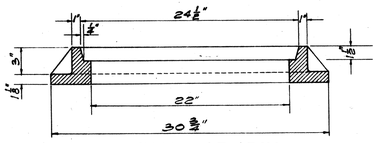
SECTION



BOTTOM VIEW OF COVER



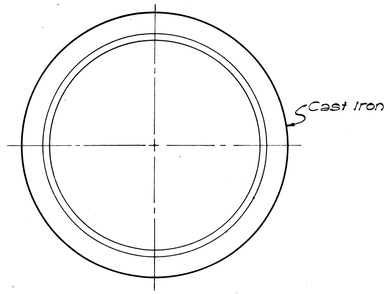
PLAN OF RIM



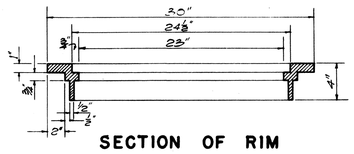
SECTION OF RIM

DETAILS OF TYPE "S" CAST IRON FRAME AND COVER

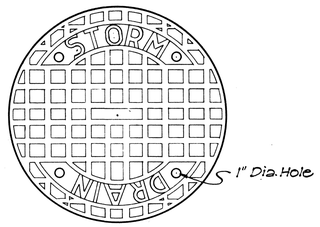
SCALE: 1-1/2" = 1'-0"



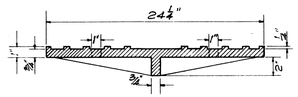
PLAN OF RIM



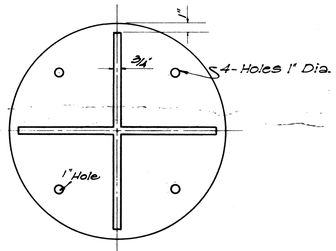
SECTION OF RIM



TOP VIEW OF COVER



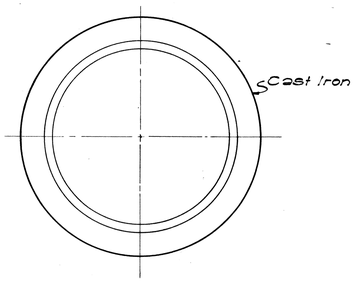
SECTION



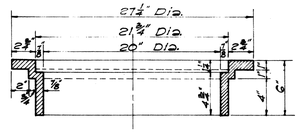
BOTTOM VIEW OF COVER

DETAILS OF TYPE "B" CAST IRON FRAME AND COVER

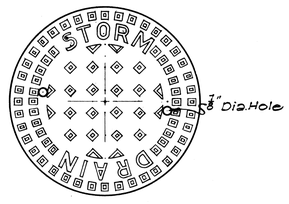
SCALE: 1-1/2" = 1'-0"



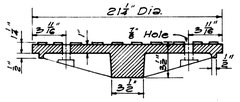
PLAN OF RIM



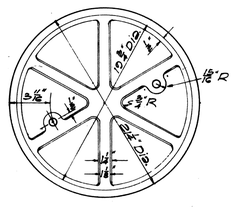
SECTION OF RIM



TOP VIEW OF COVER



SECTION

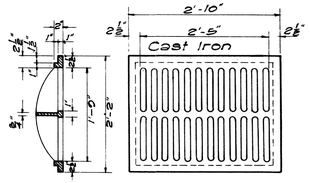


BOTTOM VIEW OF COVER

DETAILS OF TYPE "A" CAST IRON FRAME AND COVER

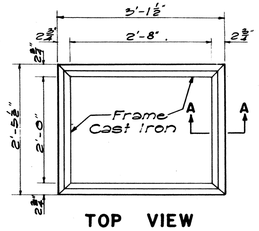
SCALE: 1-1/2" = 1'-0"

NOTE: Stock Pattern From Novelty Foundry ~ Honolulu

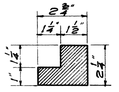


SECTION

TOP VIEW



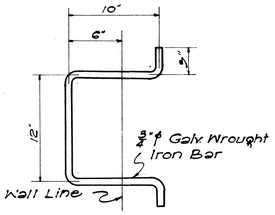
TOP VIEW



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

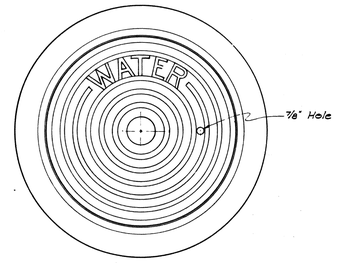
TYPE C C.I. FRAME AND GRATING

SCALE: 3/4" = 1'-0"

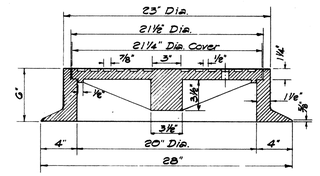


MANHOLE RUNG

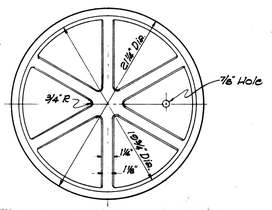
SCALE: 1-1/2" = 1'-0"



PLAN OF FRAME AND COVER



SECTION OF FRAME AND COVER



BOTTOM VIEW OF COVER

DETAILS OF TYPE "W" CAST IRON FRAME AND COVER

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

NOTE:

THE TYPE "S" CAST IRON FRAME AND COVER SHOWN ON THIS SHEET IS EQUIVALENT TO THE CITY AND COUNTY OF HONOLULU, DIVISION OF SEWERS' TYPE "A" CAST IRON MANHOLE FRAME AND COVER.

THE TYPE "W" CAST IRON FRAME AND COVER SHOWN ON THIS SHEET IS EQUIVALENT TO THE CITY AND COUNTY OF HONOLULU, BOARD OF WATER SUPPLY'S CAST IRON MANHOLE FRAME AND COVER, 20" SIZE.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

CATCH BASIN AND MANHOLE CASTINGS

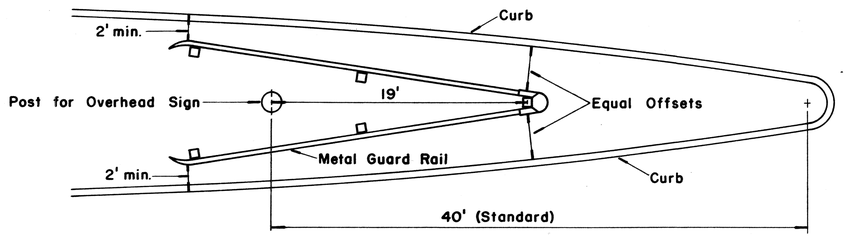
SCALES AS NOTED

SHEET Nº 3 OF 6 SHEETS

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

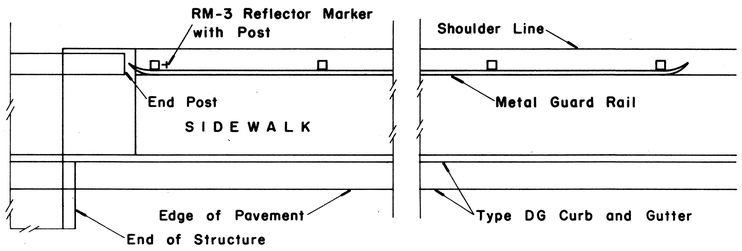
K&E TRACING CLOTH 334
KEUFFEL & ESSER CO., N. Y.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-070-1(10)	1964	12	58

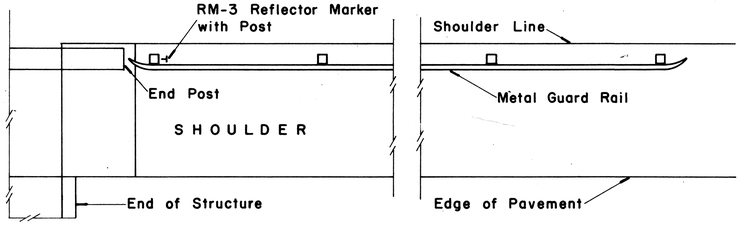


INSTALLATION OF METAL GUARD RAIL FOR OVERHEAD SIGNS

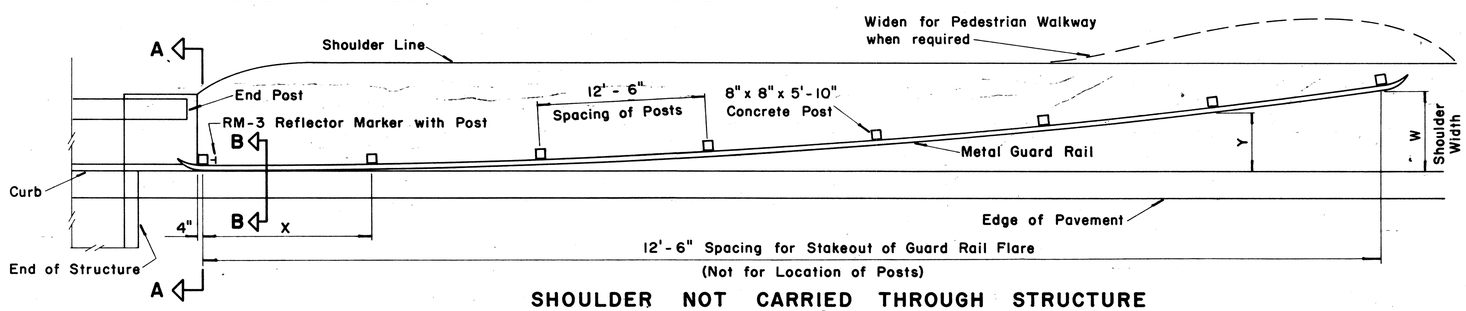
Scale: 3/16" = 1'-0"



SIDEWALK CARRIED THROUGH STRUCTURE



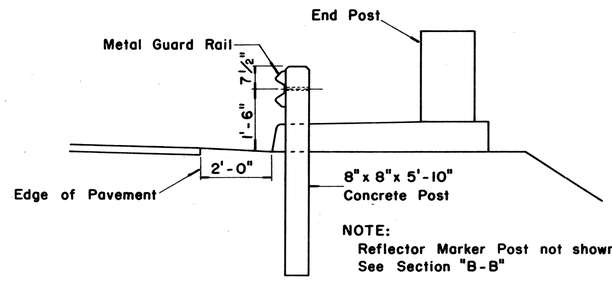
SHOULDER CARRIED THROUGH STRUCTURE



SHOULDER NOT CARRIED THROUGH STRUCTURE

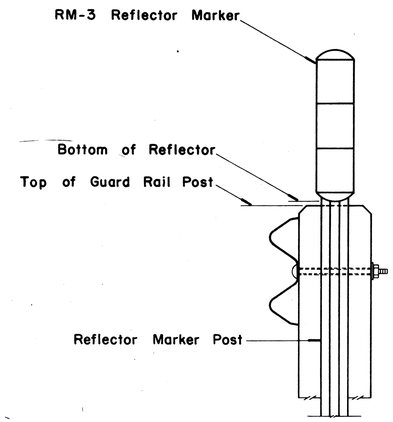
INSTALLATION OF METAL GUARD RAIL FLARE AT STRUCTURES

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



SECTION "A-A"

Scale: ½" = 1'-0"



NOTE:
See F.A. Marker and Misc. Sign Detail sheet for details of RM-3 Reflector Marker with Post.

SECTION "B-B"

Scale: 1½" = 1'-0"

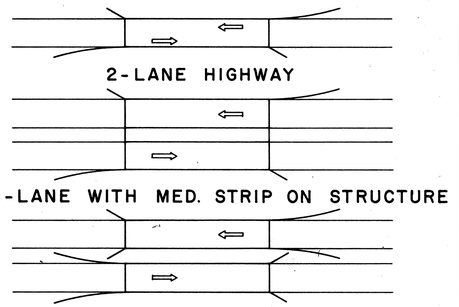
X	Y					
	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.85
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48
125.0						8.00

W = GUARD RAIL FLARE

X = DISTANCE FROM POST AT BRIDGE TO OFFSET POINTS

Y = GUARD RAIL FLARE OFFSET

GUARD RAIL OFFSET



TYPICAL GUARD RAIL FLARES AT STRUCTURE APPROACHES

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS
METAL GUARD RAILS AT STRUCTURES & OVERHEAD SIGNS

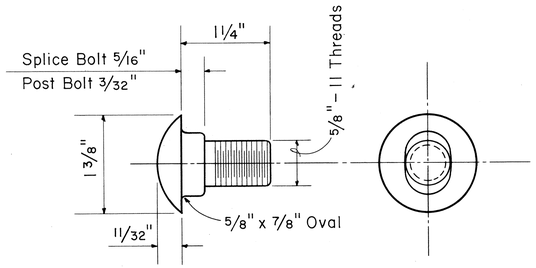
Scale: As Noted

SHEET No. 4 OF 6 SHEETS

PRINTED ON CLEARPRINT 1000-H

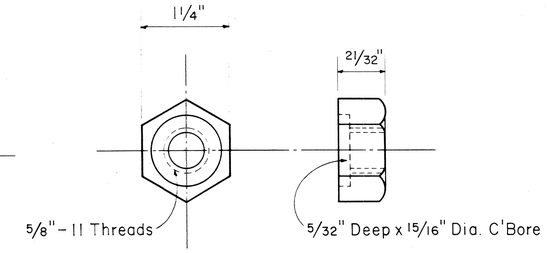
12

FED. AID DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	F-090-1(10)	1964	13	58



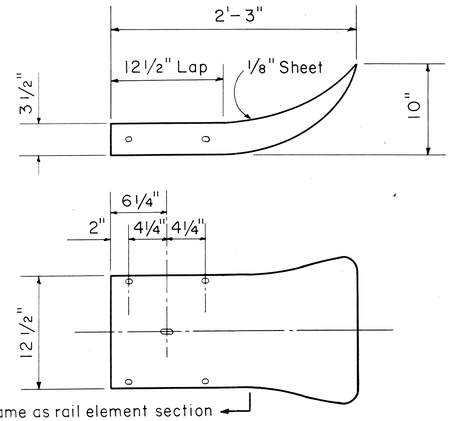
SPLICE BOLT
POST BOLT (Same except for length)

Scale: Full Size



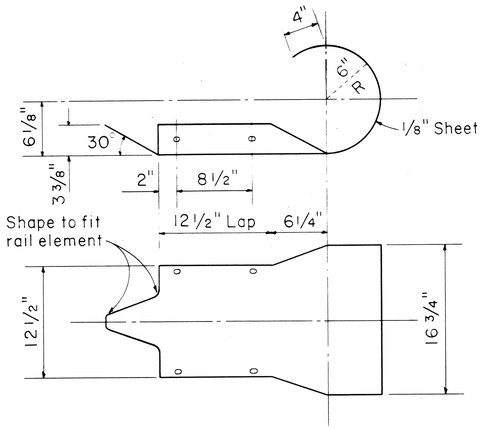
HEXAGON NUT

Scale: Full Size



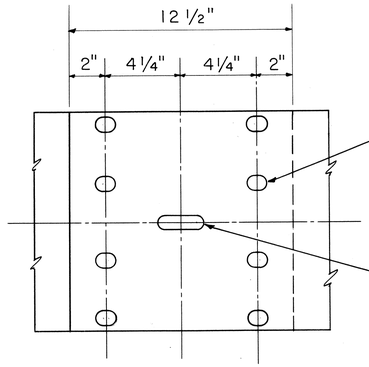
FLARED END

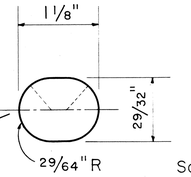
Scale: 1 1/2" = 1'-0"



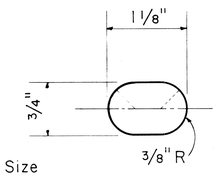
CURVED END

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





SPLICE BOLT SLOT

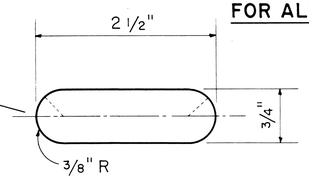


Scales: Full Size

SPLICE BOLT SLOT FOR ALL ENDS

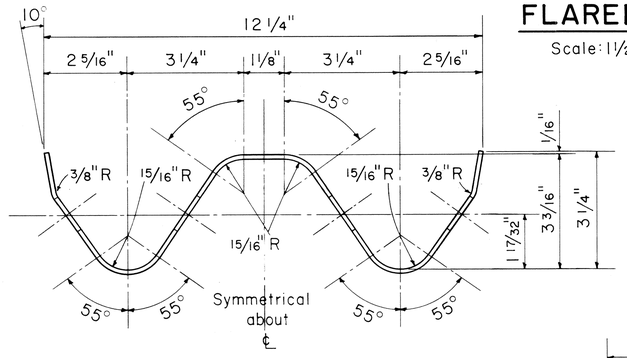
RAIL SPLICE

Scale: 3" = 1'-0"



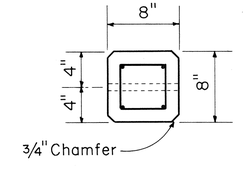
POST BOLT SLOT

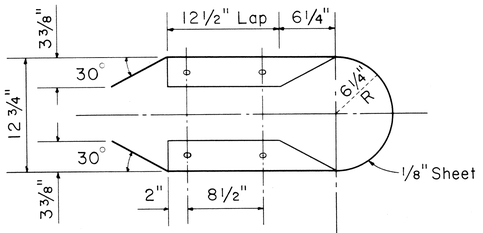
Scale: Full Size



RAIL ELEMENT SECTION

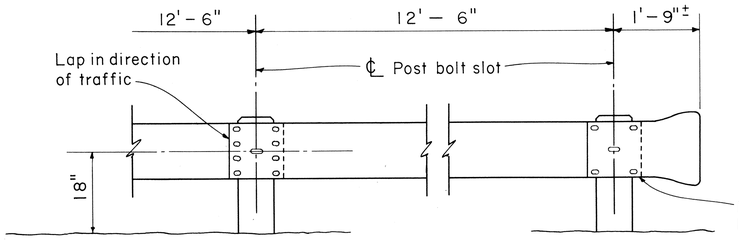
Scale: Half Full Size





MEDIAN END

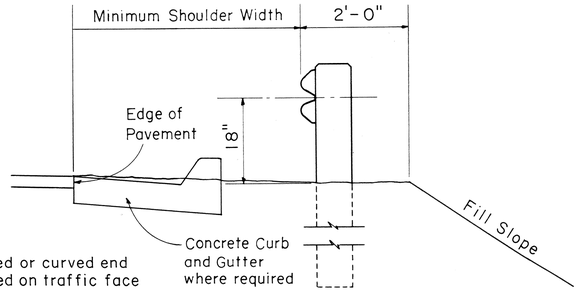
Scale: 1 1/2" = 1'-0"



← Direction of Traffic

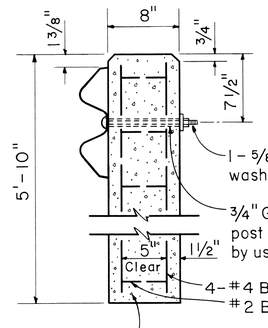
METAL GUARD RAIL

Scale: 3/4" = 1'-0"



ELEVATION

Scale: 3/4" = 1'-0"



NOTE:
All concrete posts shall be precast.

DETAIL OF CONCRETE POST

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

APPROVED:

DIRECTOR OF TRANSPORTATION DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAIL

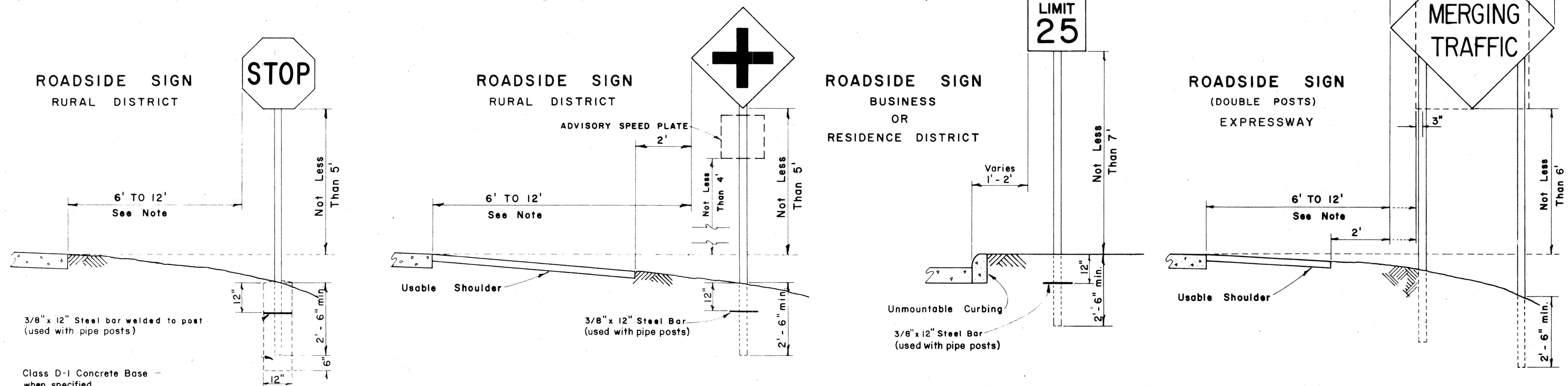
Scales: As Noted. Date Mar. 1964

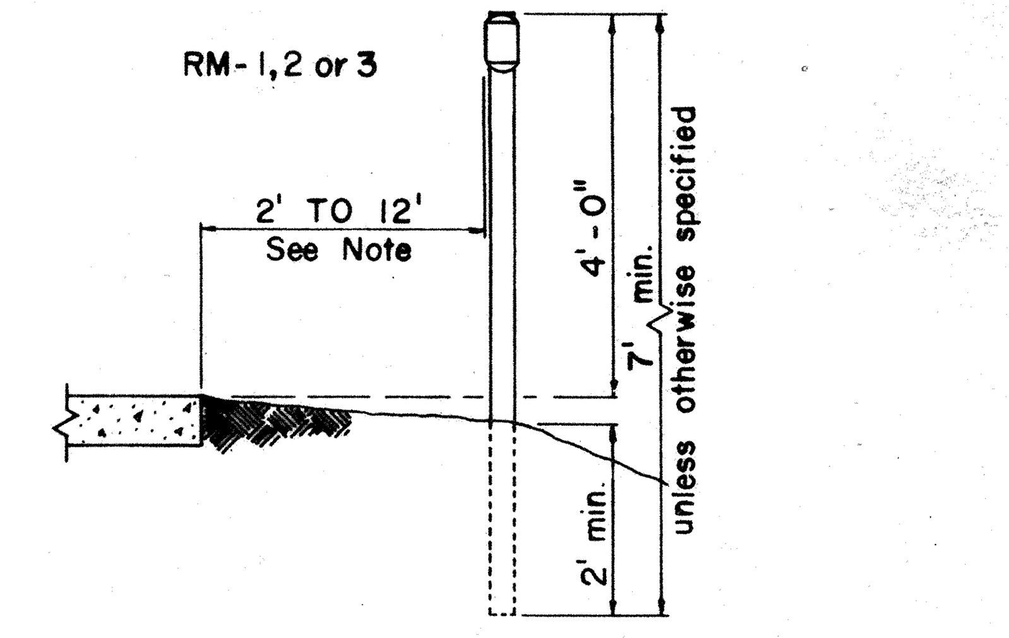
SHEET NO. 5 OF 6 SHEETS

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

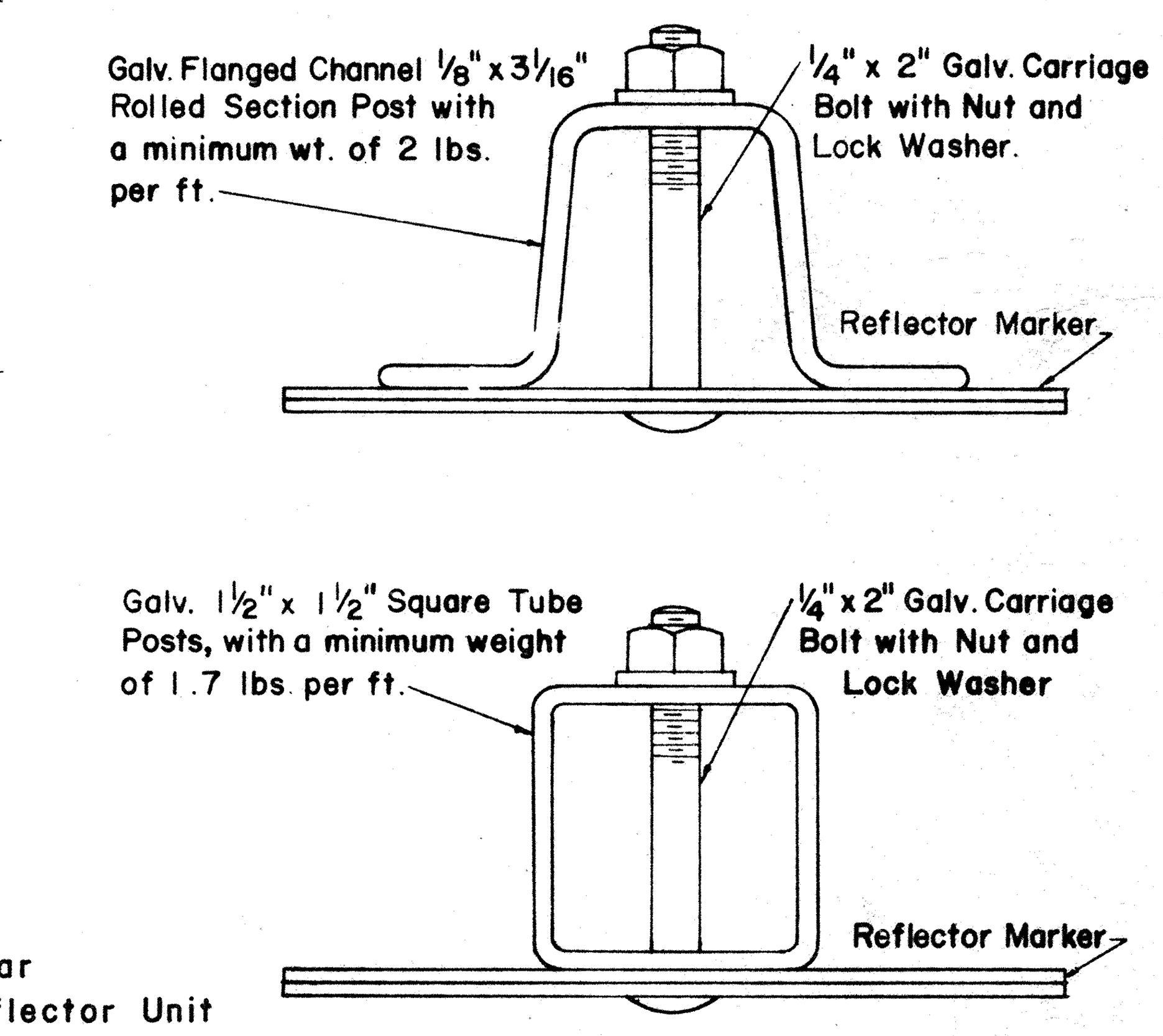
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-070-1(10)	1964	14	58

NOTE
1. All signs and road delineators shall be placed 2' outside the usable roadway shoulder or 1' outside unmountable curbing present and within the limits shown below.
2. Except as noted below, sign posts shall be either 3" galv. std. pipe or 2 1/2" x 2 1/2" galv. square tube posts for signs larger than 24" in any dimension; 2" galv. std. pipe or 2" x 2" galv. square tube posts for signs 24" or less in any dimension.
3. Sign shall be attached to post with 5/16" galv. carriage bolts with nuts and 7/8" x 7/8" x .120" stainless-steel washers with neoprene rubber gasket.
4. Clearance Markers (RM-3, RM-4) shall be installed with the inside edge of the marker in line with the inner edge of the obstruction.
5. Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two 3" galv. std. pipe or two 2 1/2" x 2 1/2" galv. square tube posts.





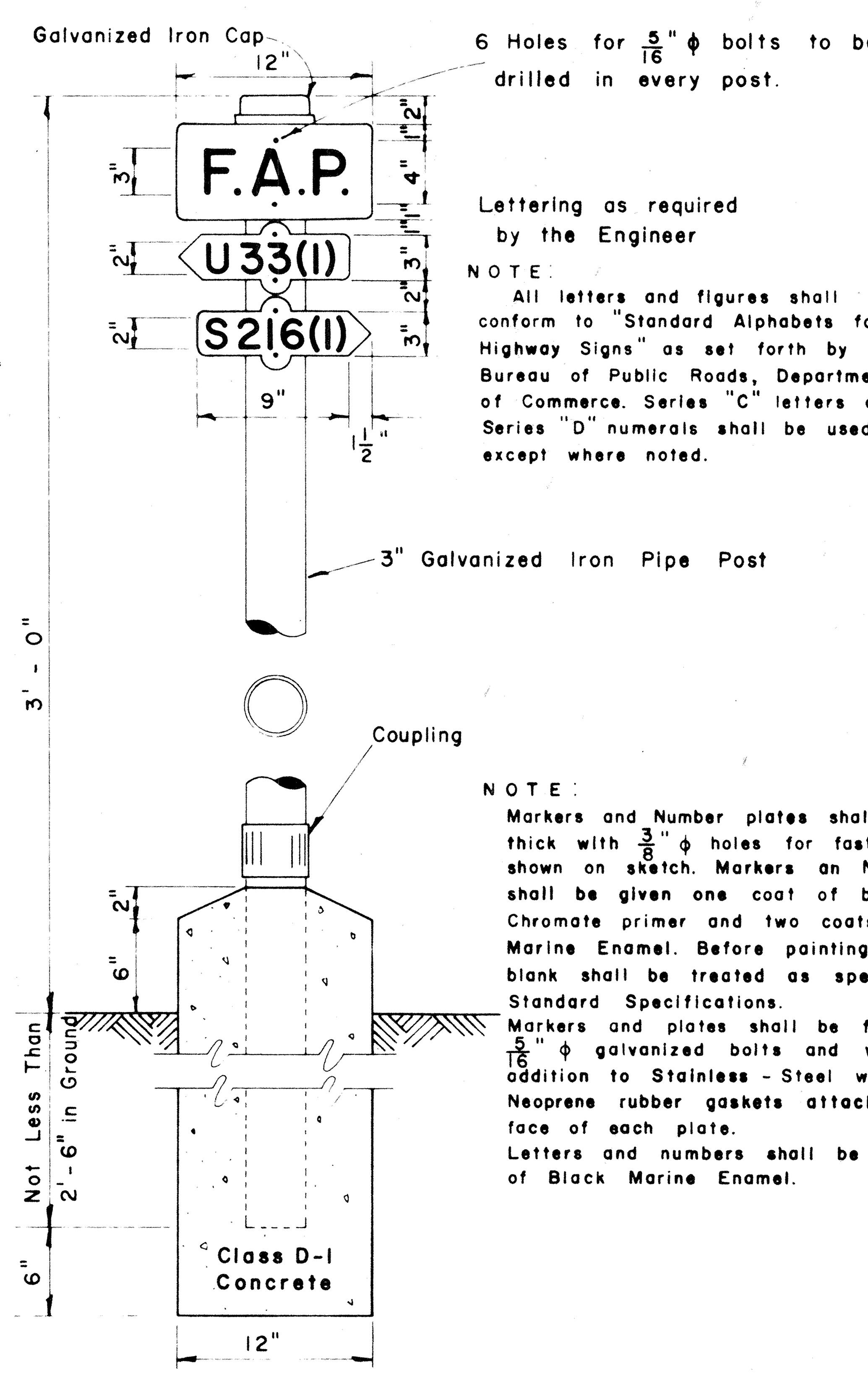
ROAD DELINEATOR
Scale: 1/2" = 1'-0"



HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS

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

TYPICAL SECTION OF ROAD DELINEATOR
Full Size

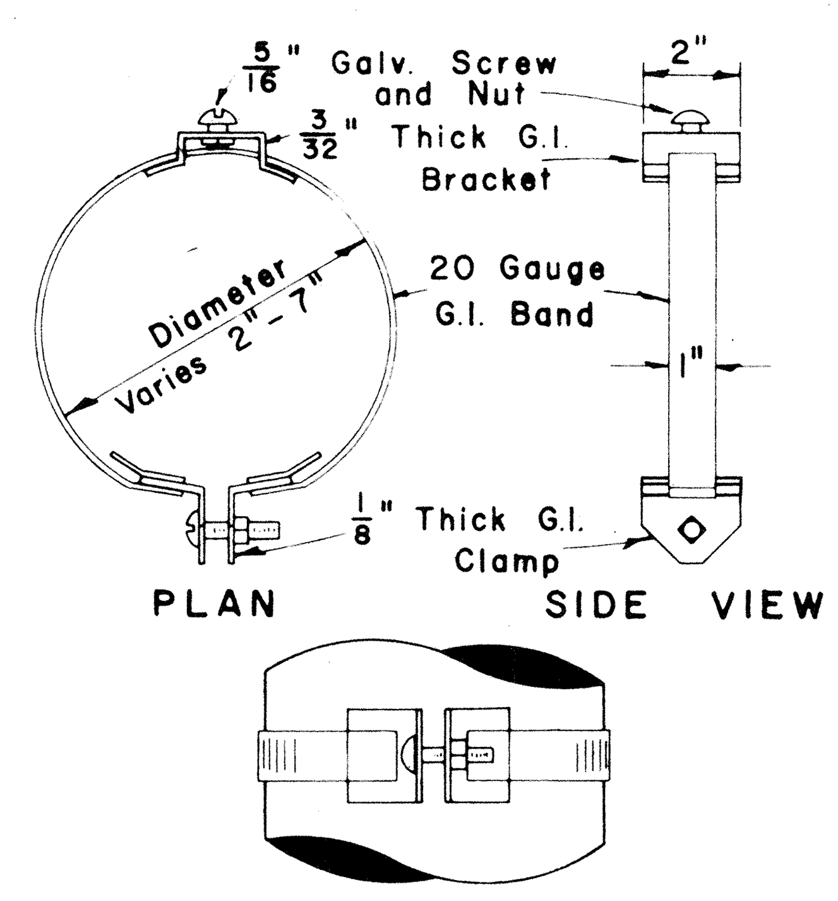


NOTE: All letters and figures shall conform to "Standard Alphabets for Highway Signs" as set forth by the Bureau of Public Roads, Department of Commerce. Series "C" letters and Series "D" numerals shall be used except where noted.

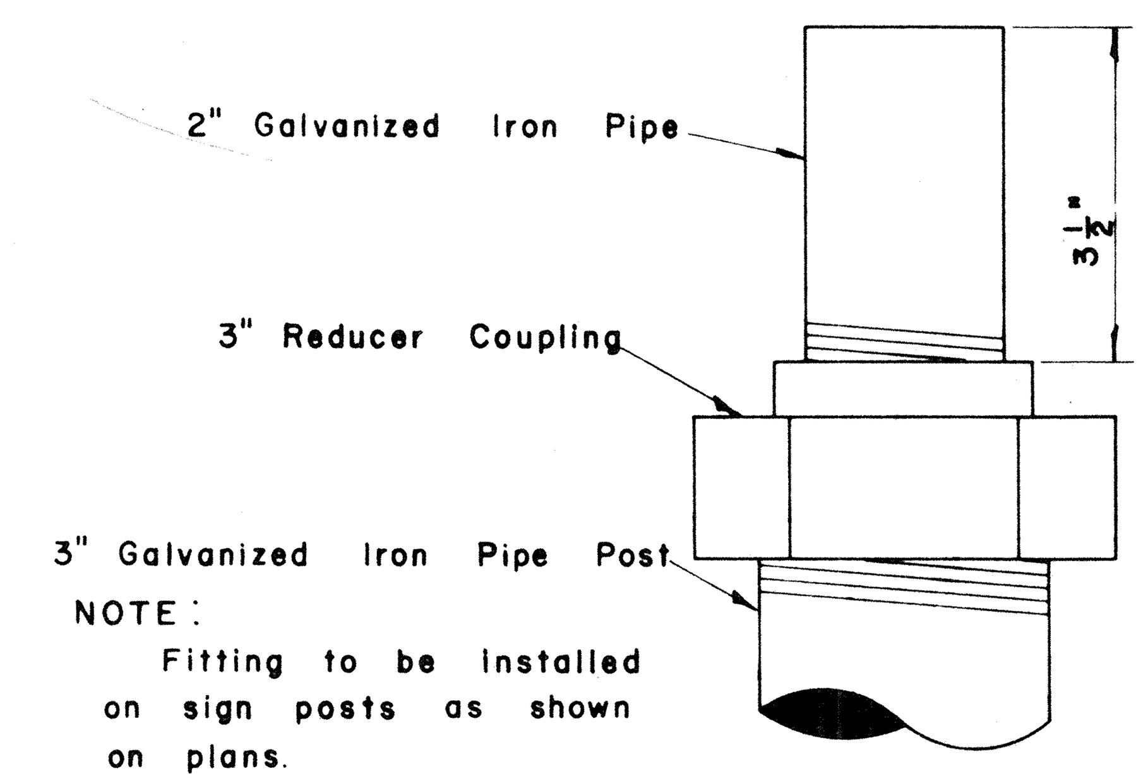
NOTE: Markers and Number plates shall be 0.081" thick with 3/8" φ holes for fastening as shown on sketch. Markers an Number plates shall be given one coat of best Zinc Chromate primer and two coats of White Marine Enamel. Before painting, the Aluminum blank shall be treated as specified in the Standard Specifications. Markers and plates shall be fastened with 5/16" φ galvanized bolts and washers in addition to Stainless - Steel washers with Neoprene rubber gaskets attached on front face of each plate. Letters and numbers shall be of two coats of Black Marine Enamel.

FEDERAL AID MARKER

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

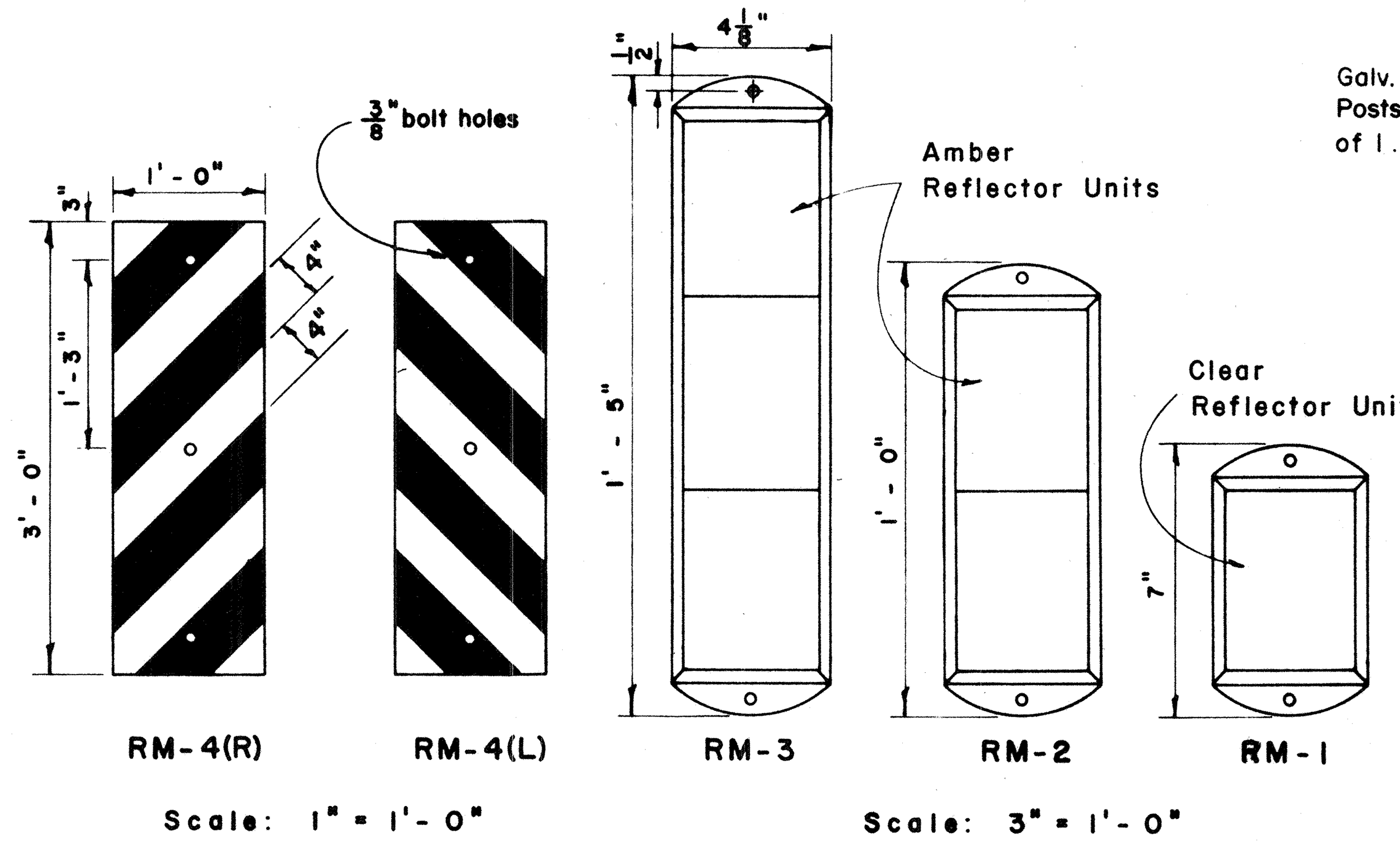


TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS
Scale: 3" = 1'-0"



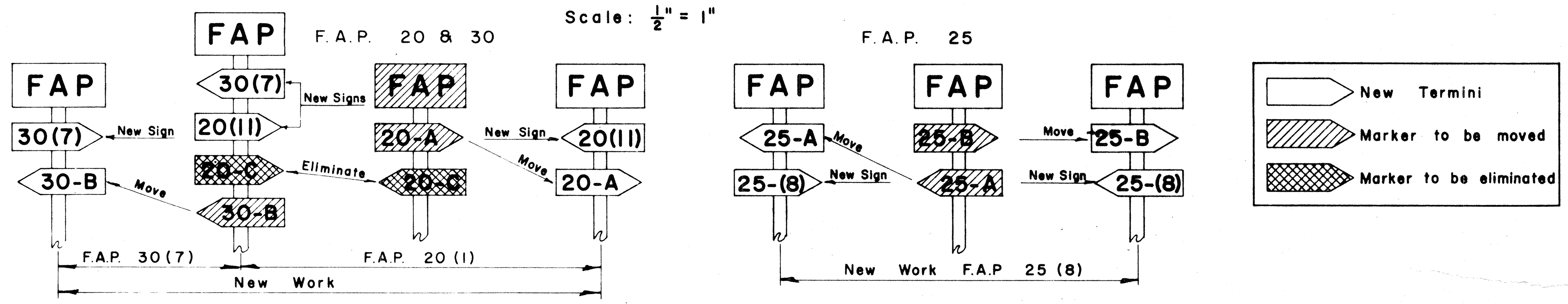
NOTE: Fitting to be installed on sign posts as shown on plans.

DETAIL OF SIGN POST FITTING FOR CITY & COUNTY STREET NAME SIGNS
Scale: 1/2" = 1"



REFLECTOR MARKERS
Scale: As Shown

NOTE: Reflector Markers RM-1,2,3 shall be glass sphere reflector markers with 4" x 5" reflector units (as shown) or plastic prismatic reflector markers with 3" diameter reflector units.



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 should 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)

DECEMBER 8, 1964
REVISED: FEBRUARY 25, 1964

APPROVED: DATE: 1/22/62

DIRECTOR OF TRANSPORTATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
F. A. MARKER AND MISCELLANEOUS SIGN DETAILS
Scale: As Shown