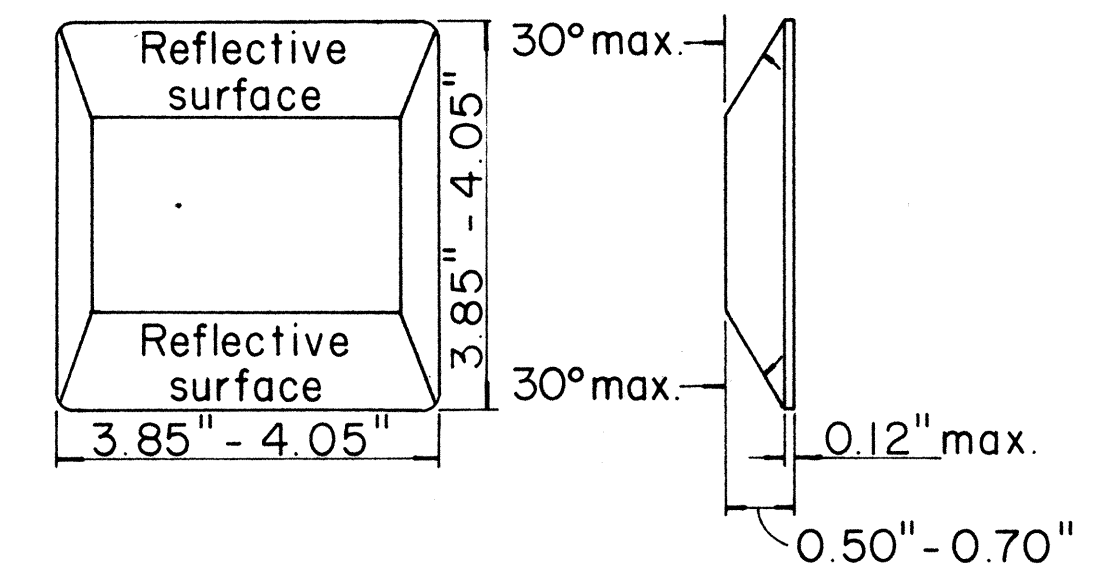
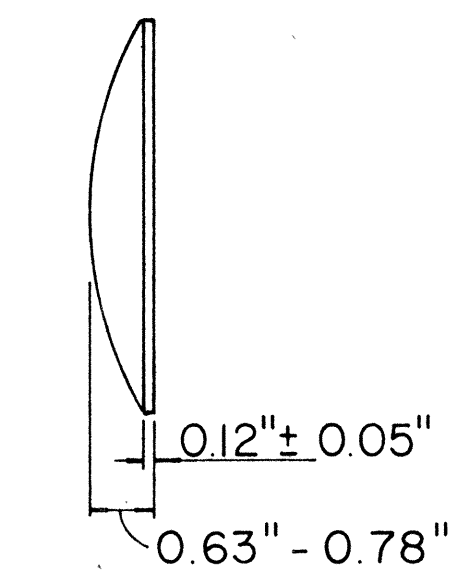
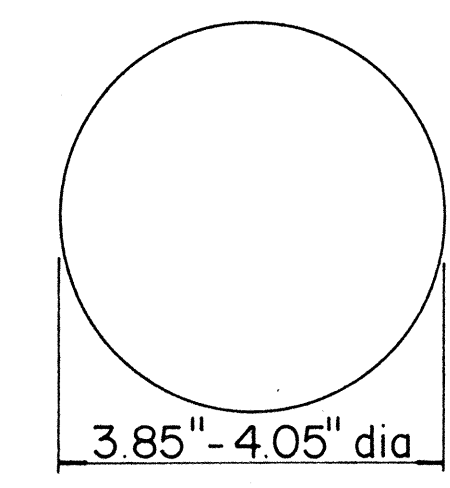
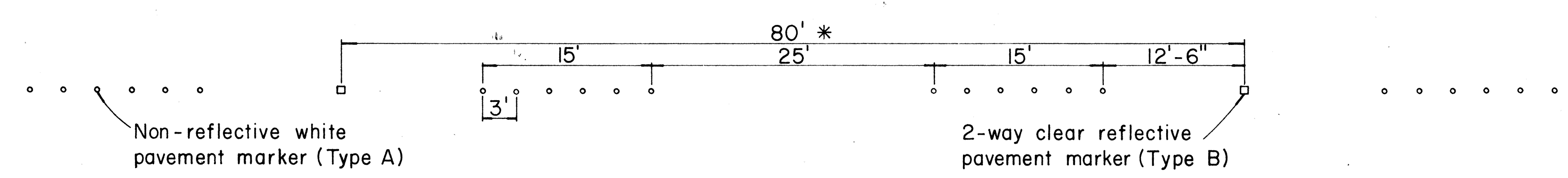


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(18) Unit 3	1966	65	35

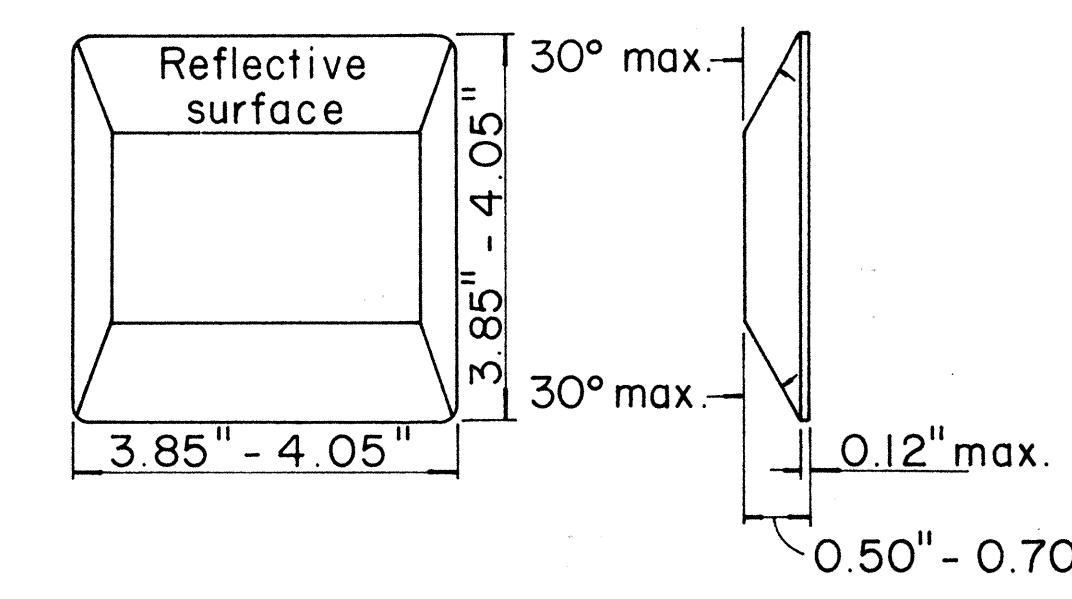
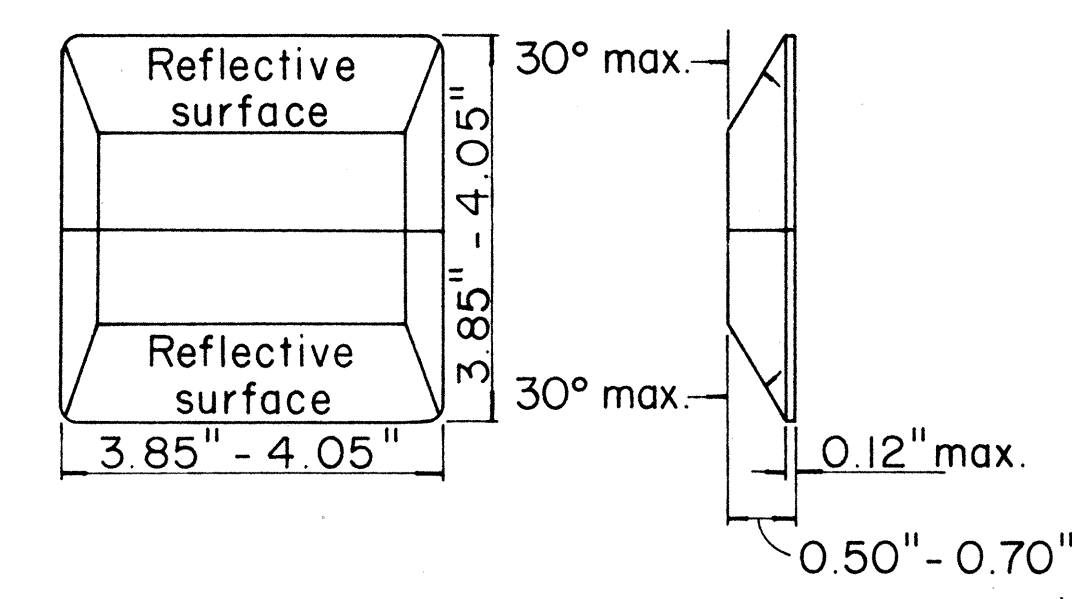
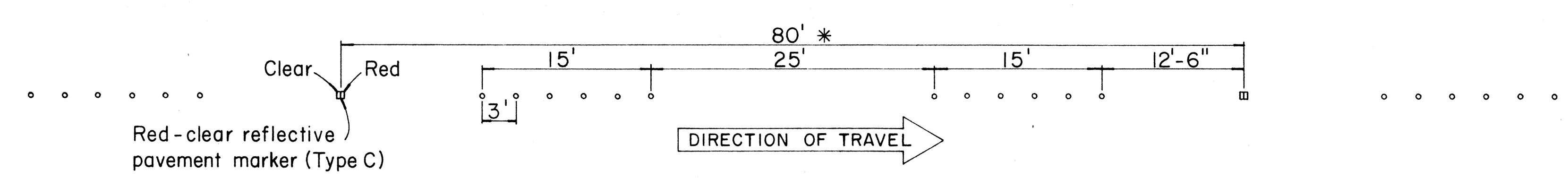
1 CENTER LINES ON TWO - LANE RURAL ROADS AND CITY STREETS



TYPE A
Non - reflective white marker

TYPE B
2 - way clear reflective surface

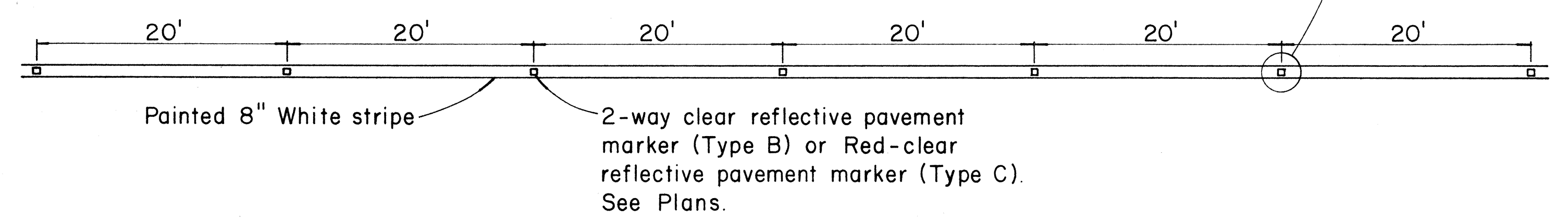
2 LANE LINES



TYPE C
Red - clear reflective surface

TYPE H
One - way yellow reflective surface

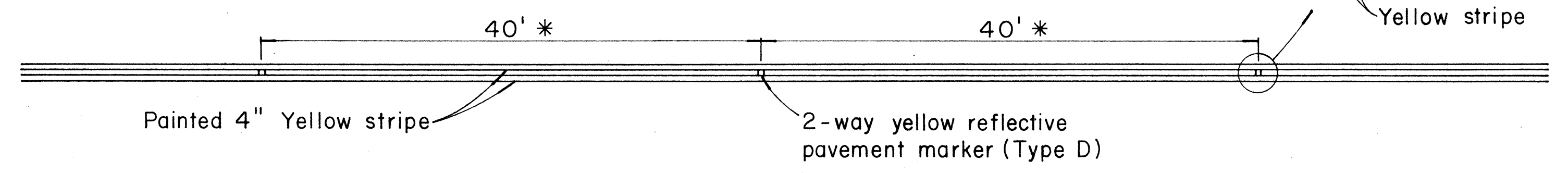
3 CHANNELIZING LINES



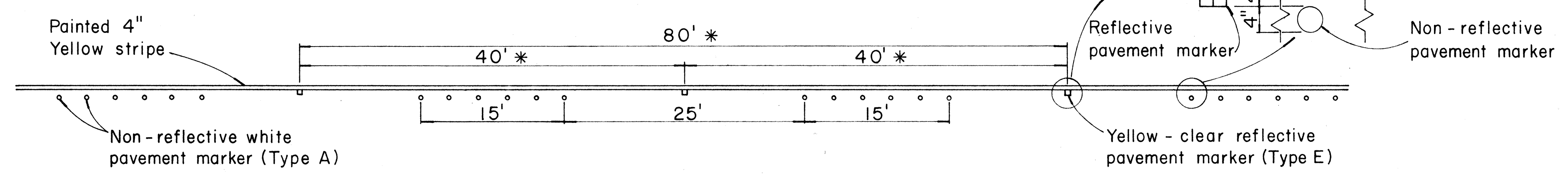
TYPE E
Yellow - clear reflective surface

TYPE G
One - way clear reflective surface

4 YELLOW DOUBLE CENTER LINES



5 NO PASSING - PASSING ZONES ON TWO - LANE ROADS



NOTE:
Painted stripes to be done by State forces
THIS SHEET IS A SUPPLEMENT TO THE CONTRACT PLAN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

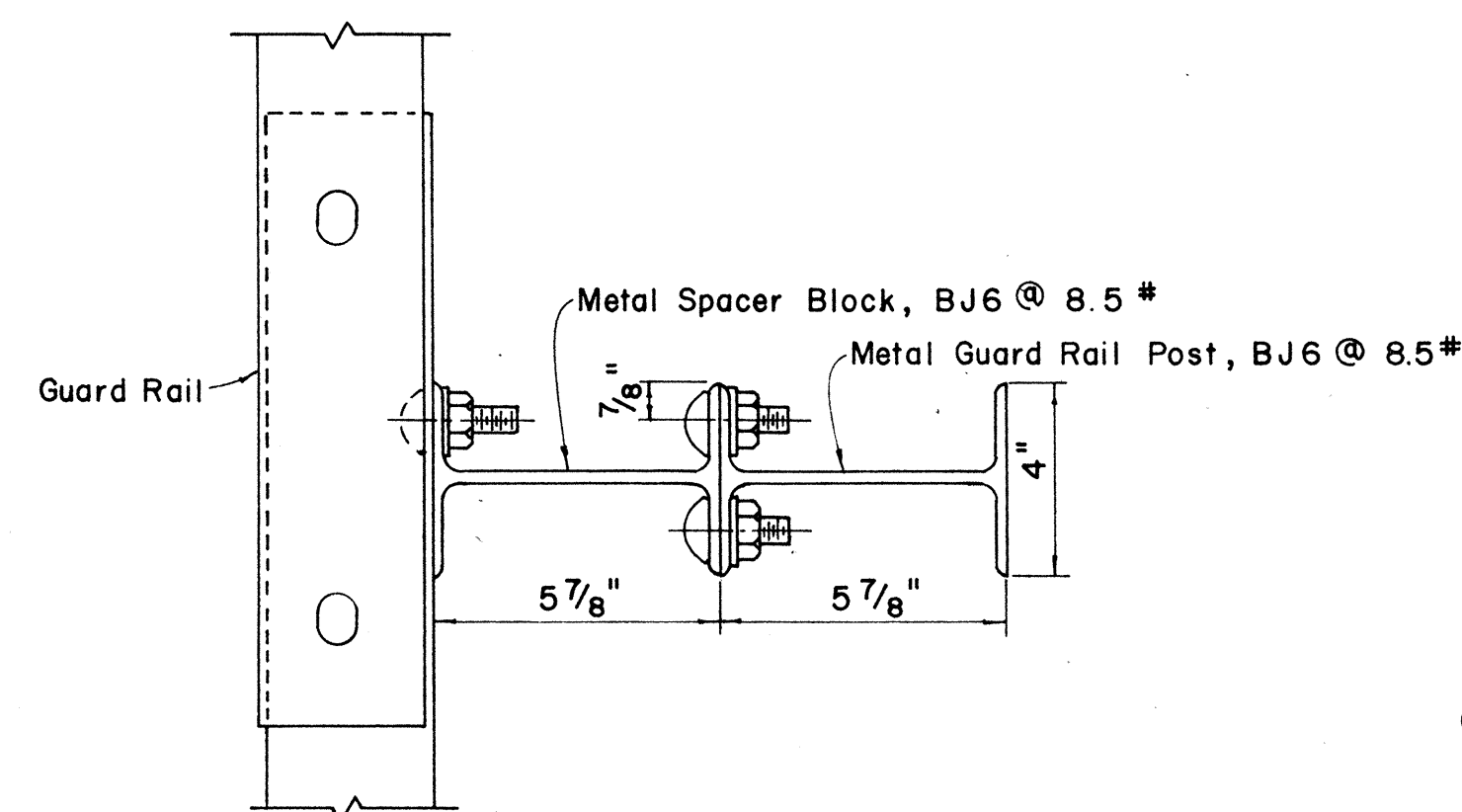
STANDARD DETAILS
RAISED PAVEMENT MARKERS

Not to Scale
SHEET No. OF SHEETS

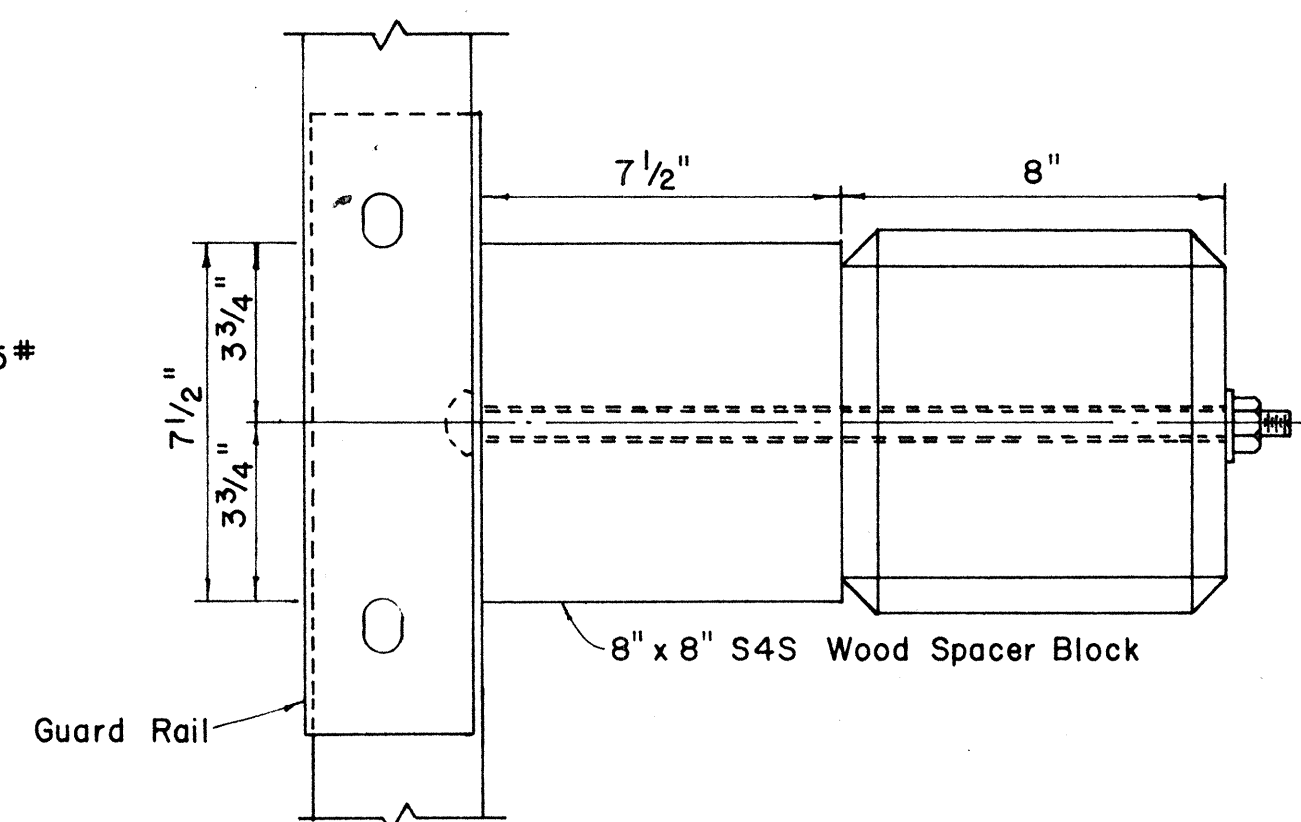
Sept., 1967

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
ORIGINAL PLAN	_____
NO.	_____

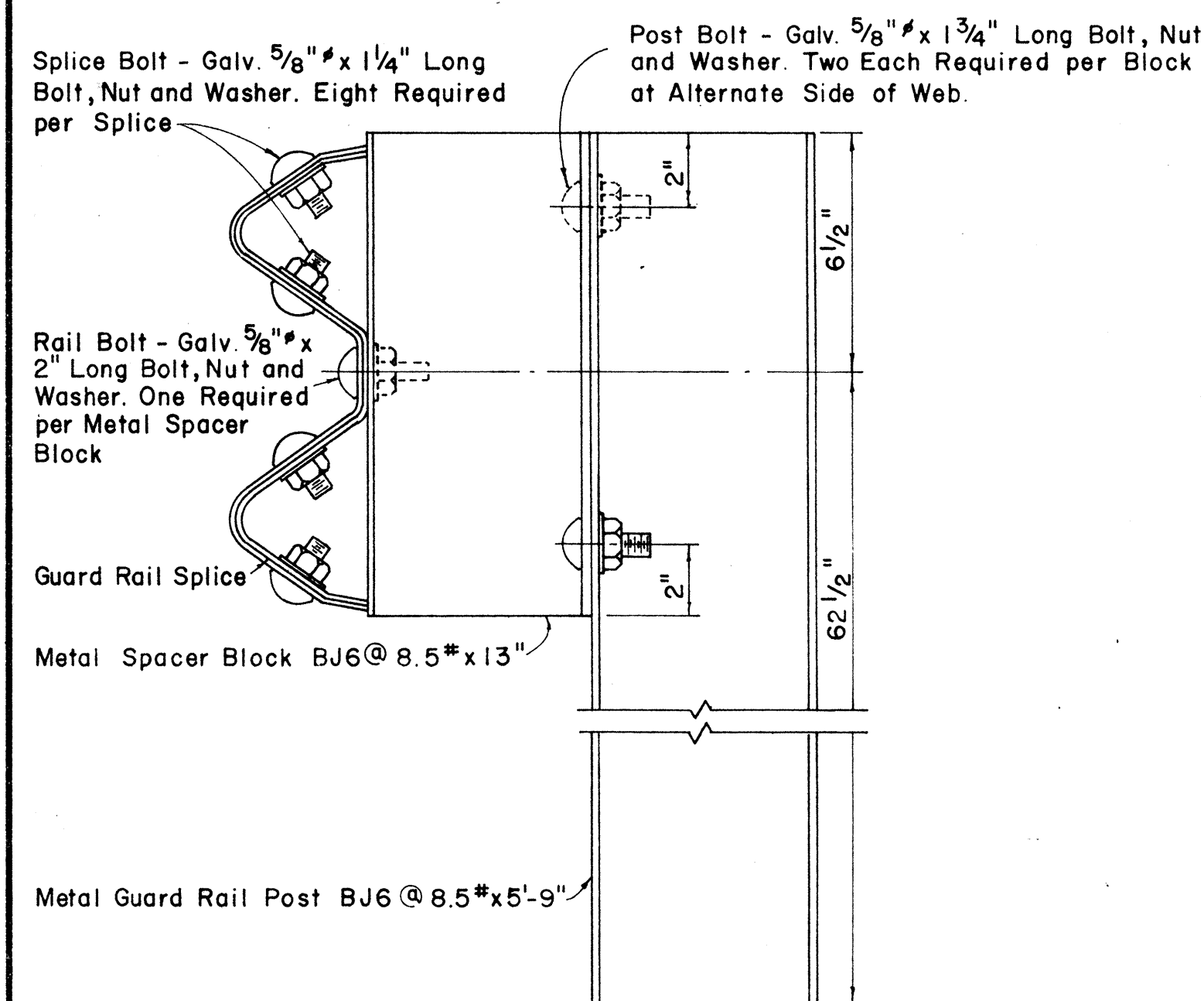
* For curves less than 1000' radius use one - half spacing



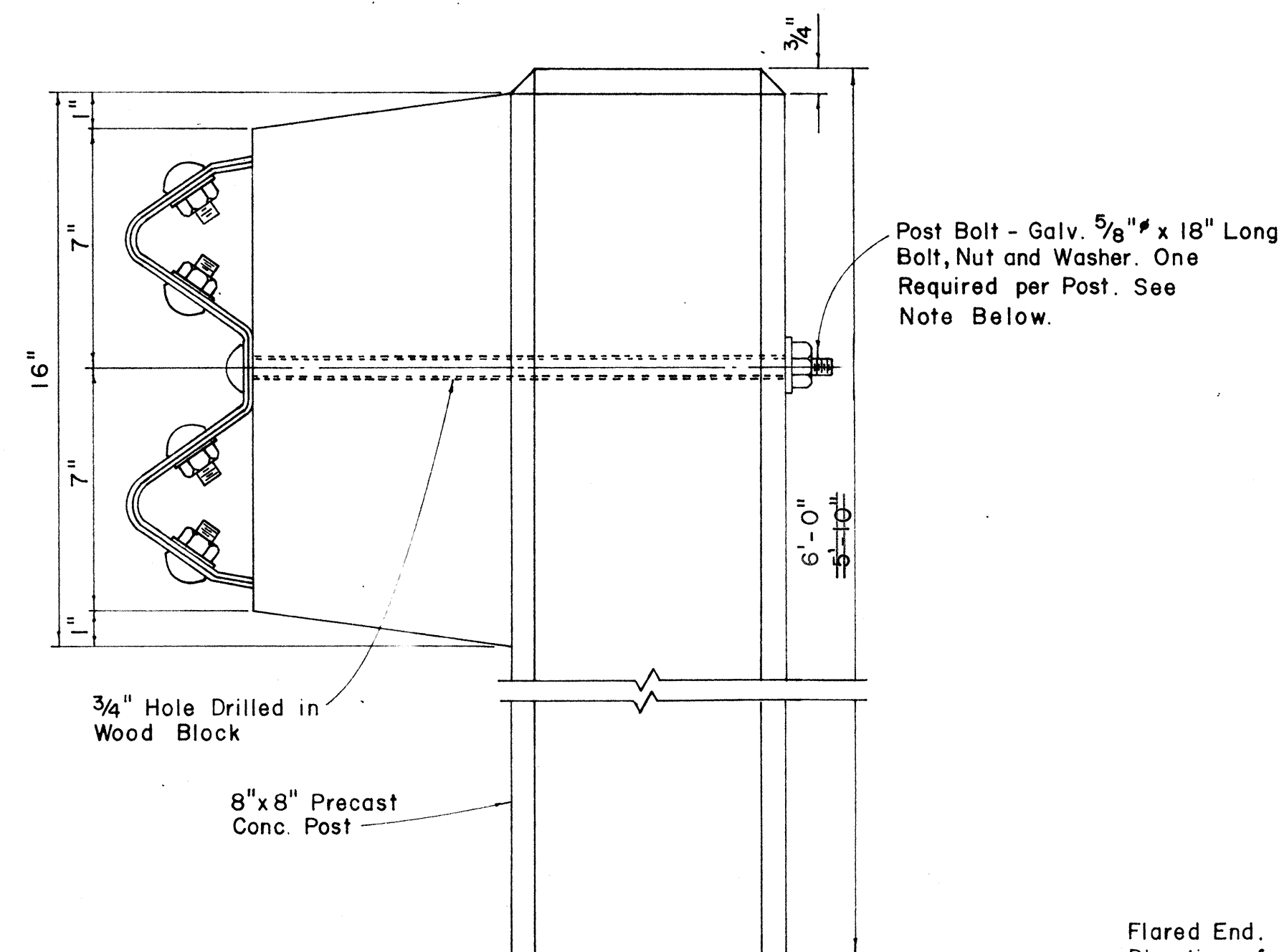
PLAN



PLAN

SINGLE GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK

Scale: 3" = 1' - 0"

SINGLE GUARD RAIL ON PRECAST
CONCRETE POST WITH WOOD SPACER BLOCK

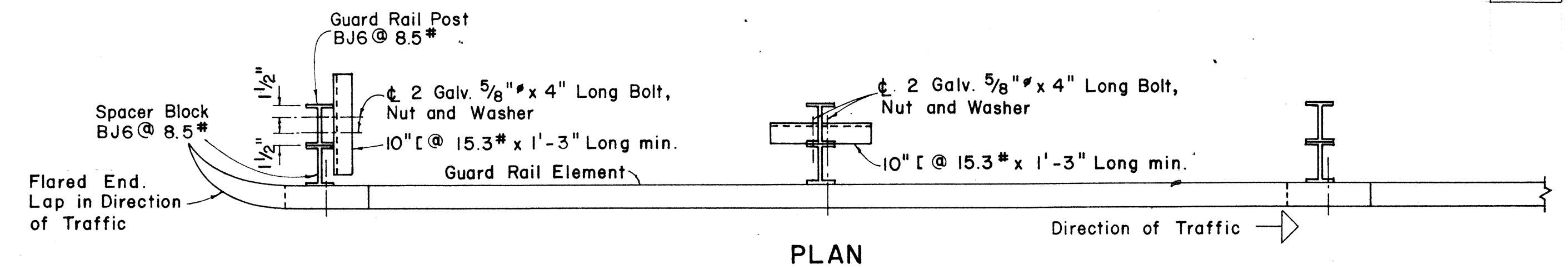
Scale: 3" = 1' - 0"

Wood Blocks shall be Douglas Fir, "Construction Grade - Posts and Timbers," #200c, Pressure Treated with Preservative as called for in the Special Provisions.

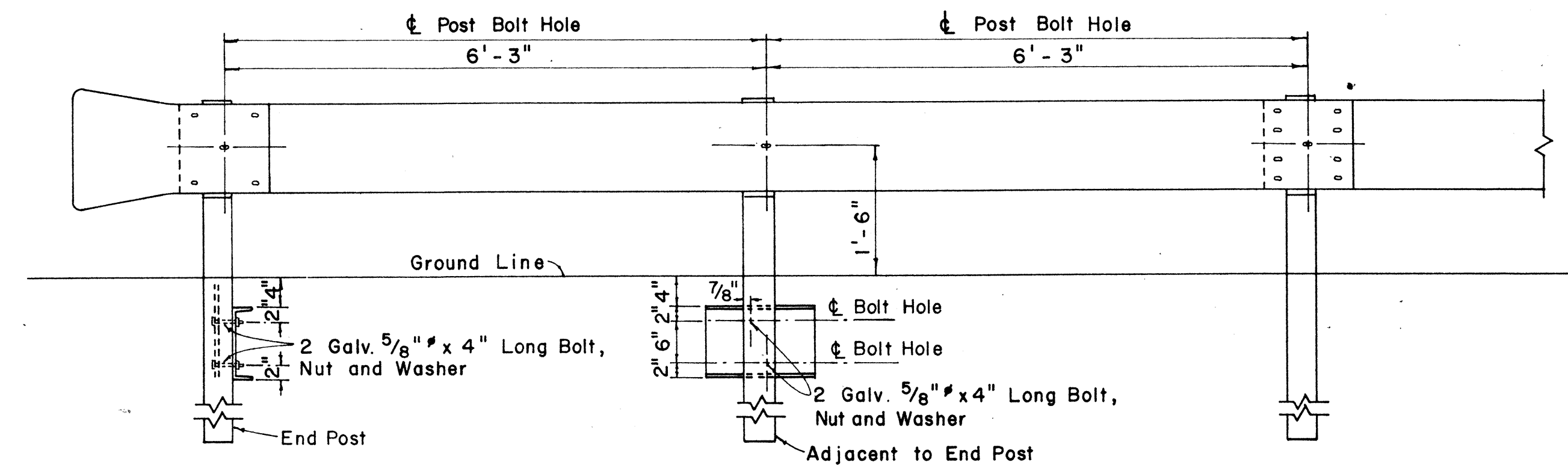
Wood Blocks shall be Redwood Dense Structure Grade Post and Timbers #450c painted with two (2) coats of paint conforming to the requirements of Subarticle 50.2(c)(1) of the Standard Specifications.

DETAILS FOR SINGLE GUARD RAIL

Scale: As Shown



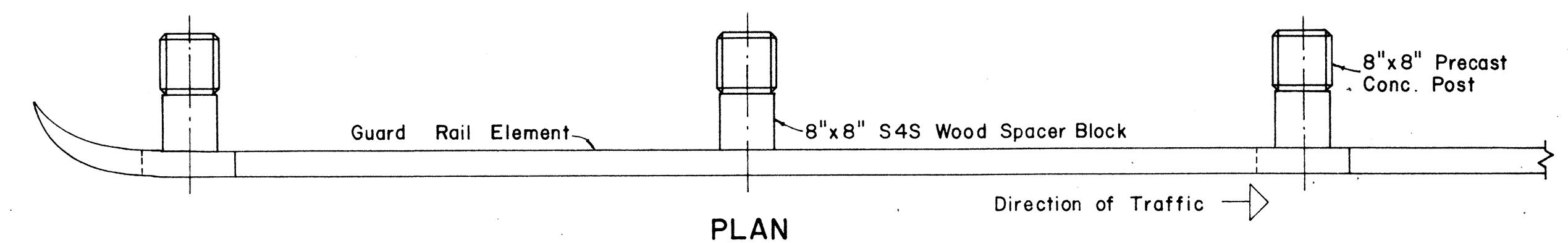
PLAN



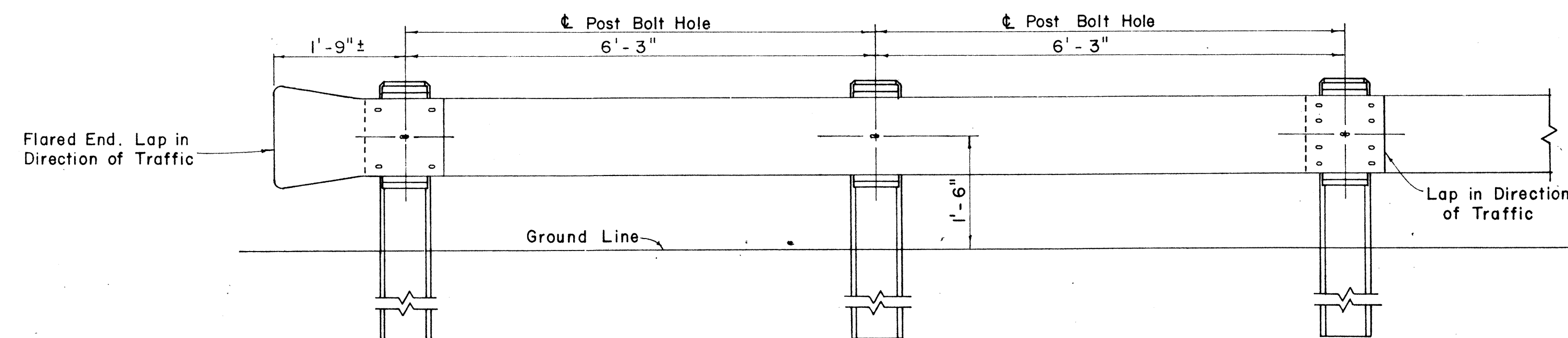
ELEVATION

METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



PLAN



ELEVATION

METAL GUARD RAIL ON CONCRETE POST WITH WOOD SPACER BLOCK

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISIONSTANDARD DETAILS
METAL GUARD RAIL

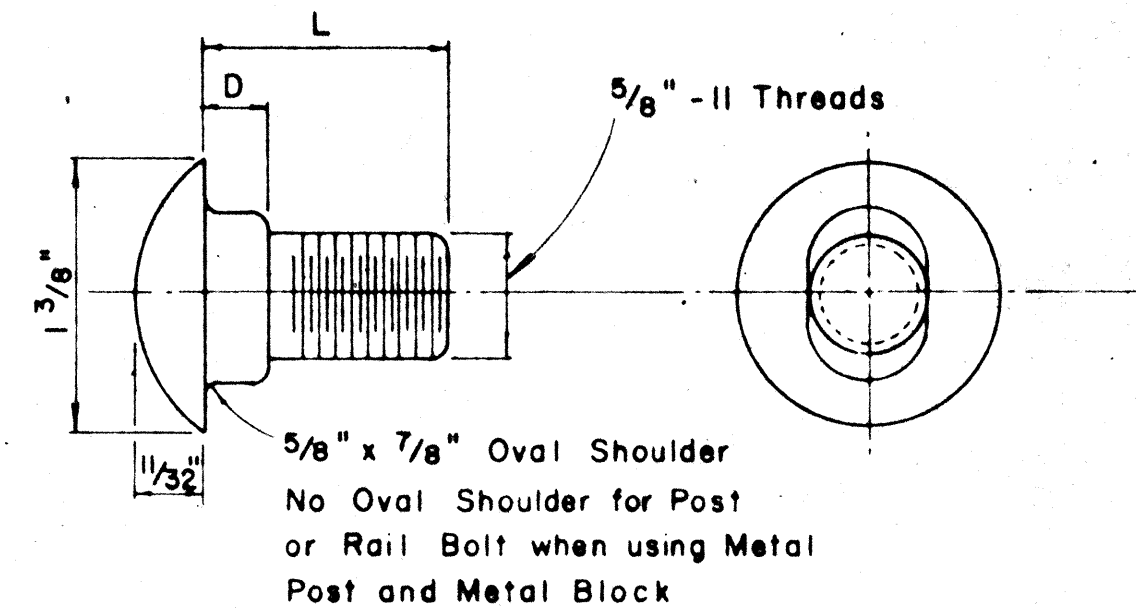
SHEET No. OF SHEETS

NOTE:

Single Guard Rails Shown. For Double Guard Rails Additional Spacer Blocks and Rail Elements Required on Opposite Side of Posts. See Bolt Schedule for Required Bolt Lengths.

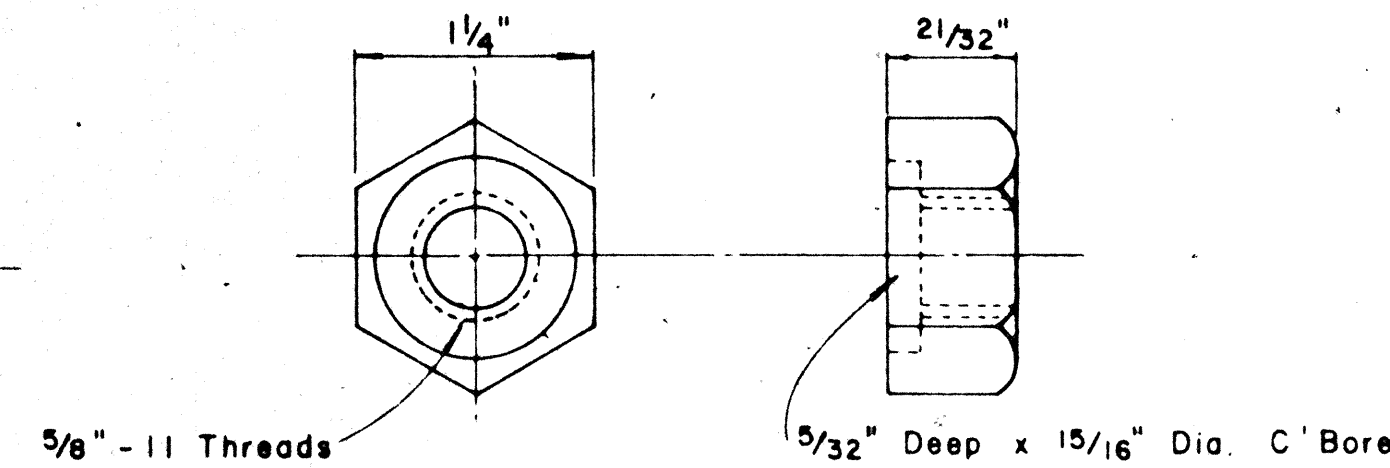
DATE	DESIGNED BY	CHECKED BY
PLAN	DESIGNED BY	CHECKED BY
NOTE BOOK	DESIGNED BY	CHECKED BY
No.	DESIGNED BY	CHECKED BY

BOLT DIMENSIONS		
TYPE BOLT	D	L
Splice Bolt	5/16"	1 1/4"
Post Bolt for Conc. Post w/Double Wood Blocks	3/32"	25"
Rail Bolt for Metal Block	3/32"	2"
Post Bolt for Metal Post w/Metal Block	0"	1 3/4"
Post Bolt for Conc. Post w/Single Wood Block	3/32"	18"



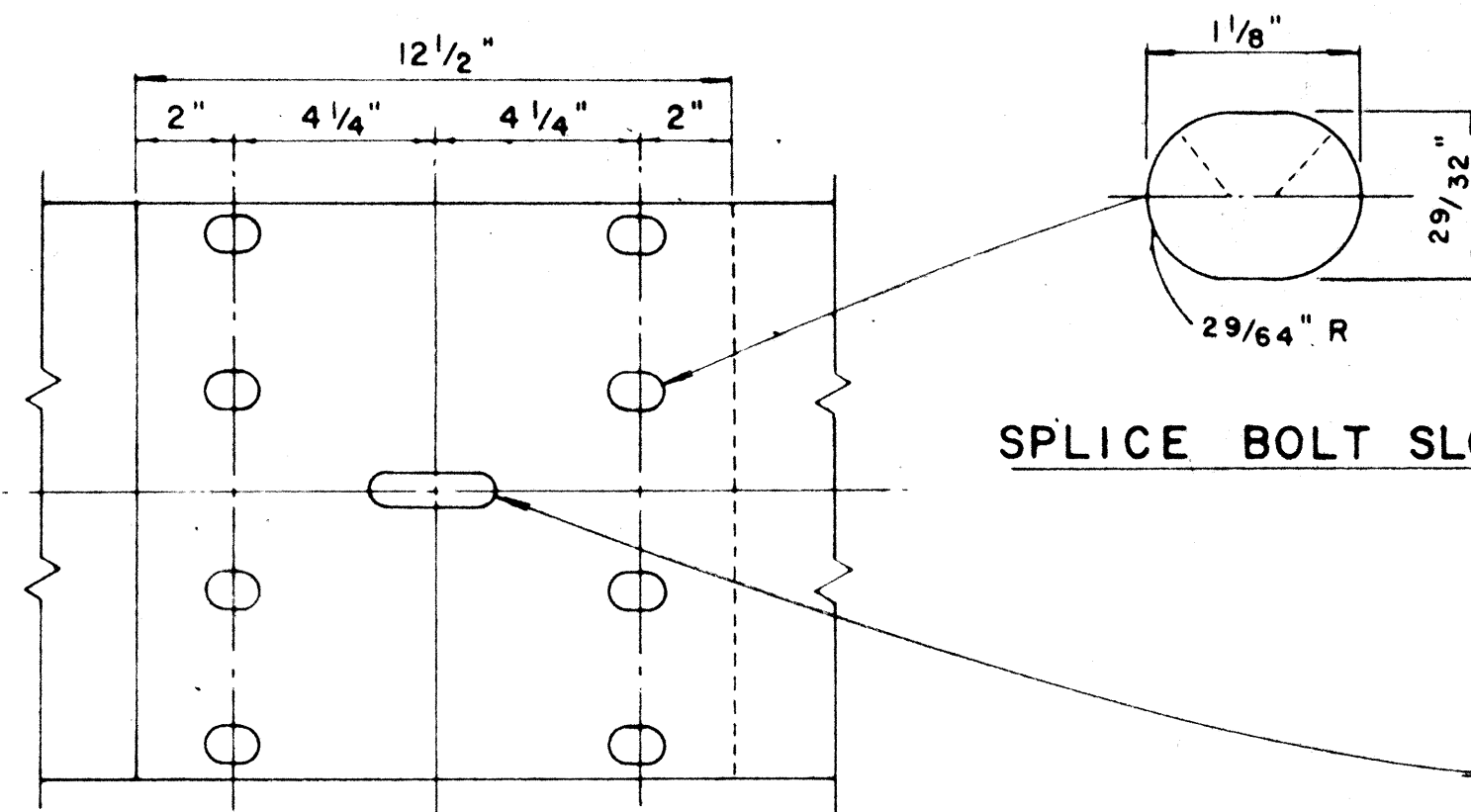
SPLICE RAIL AND POST BOLTS

Scale: Full Size



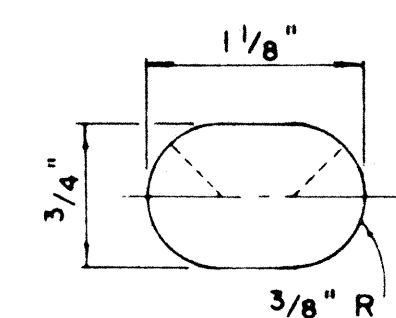
HEXAGON NUT

Scale: Full Size

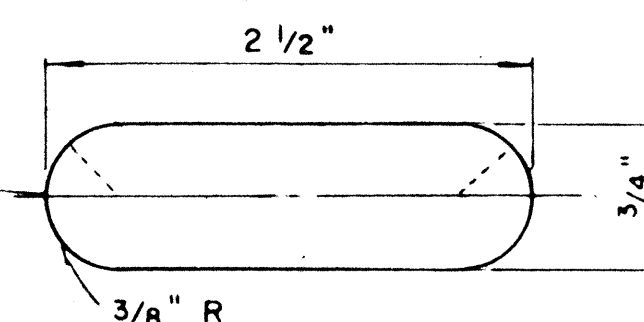


SPLICE BOLT SLOT

Scale: Full Size



SPLICE BOLT SLOT FOR ALL ENDS

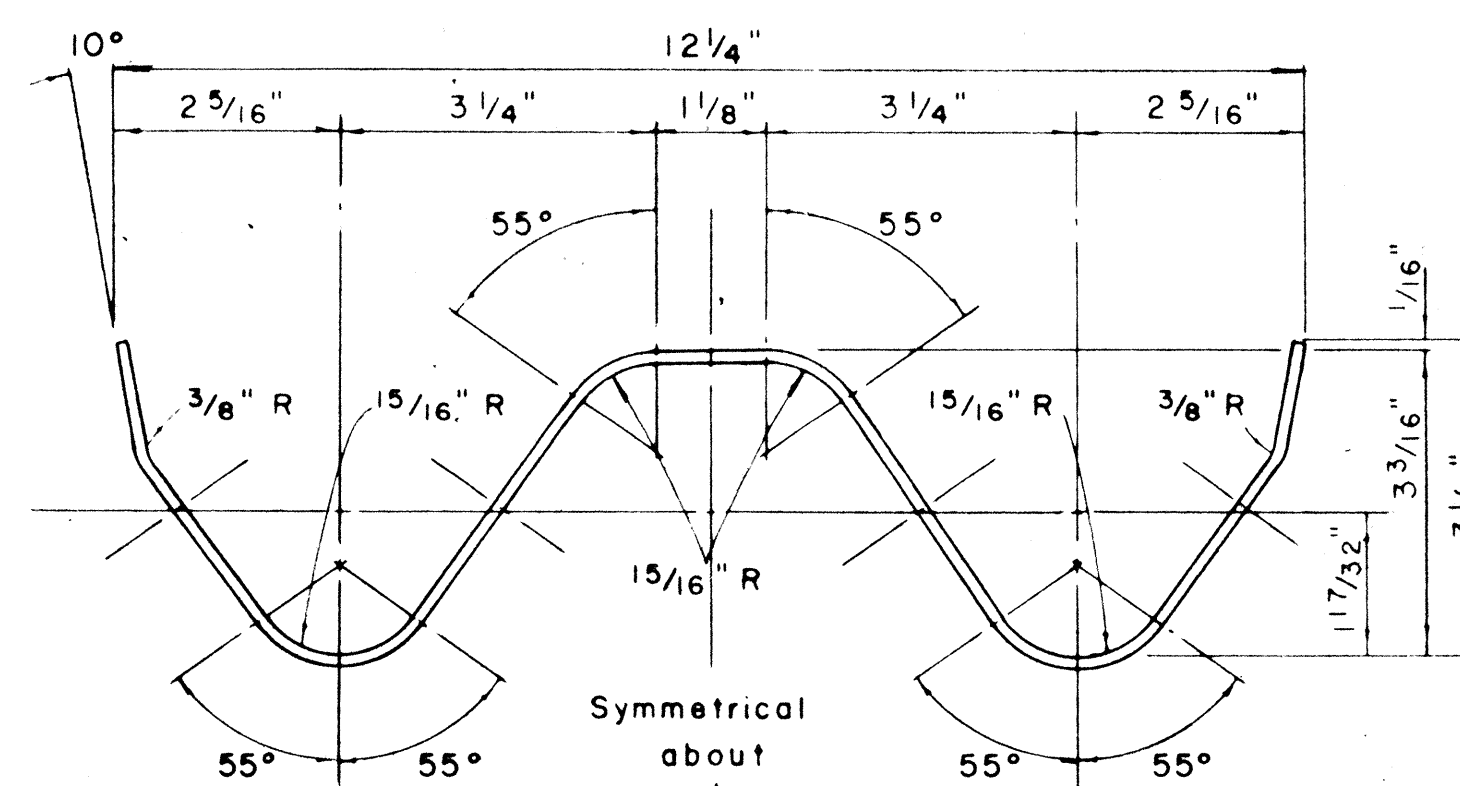


POST BOLT SLOT

Scale: Full Size

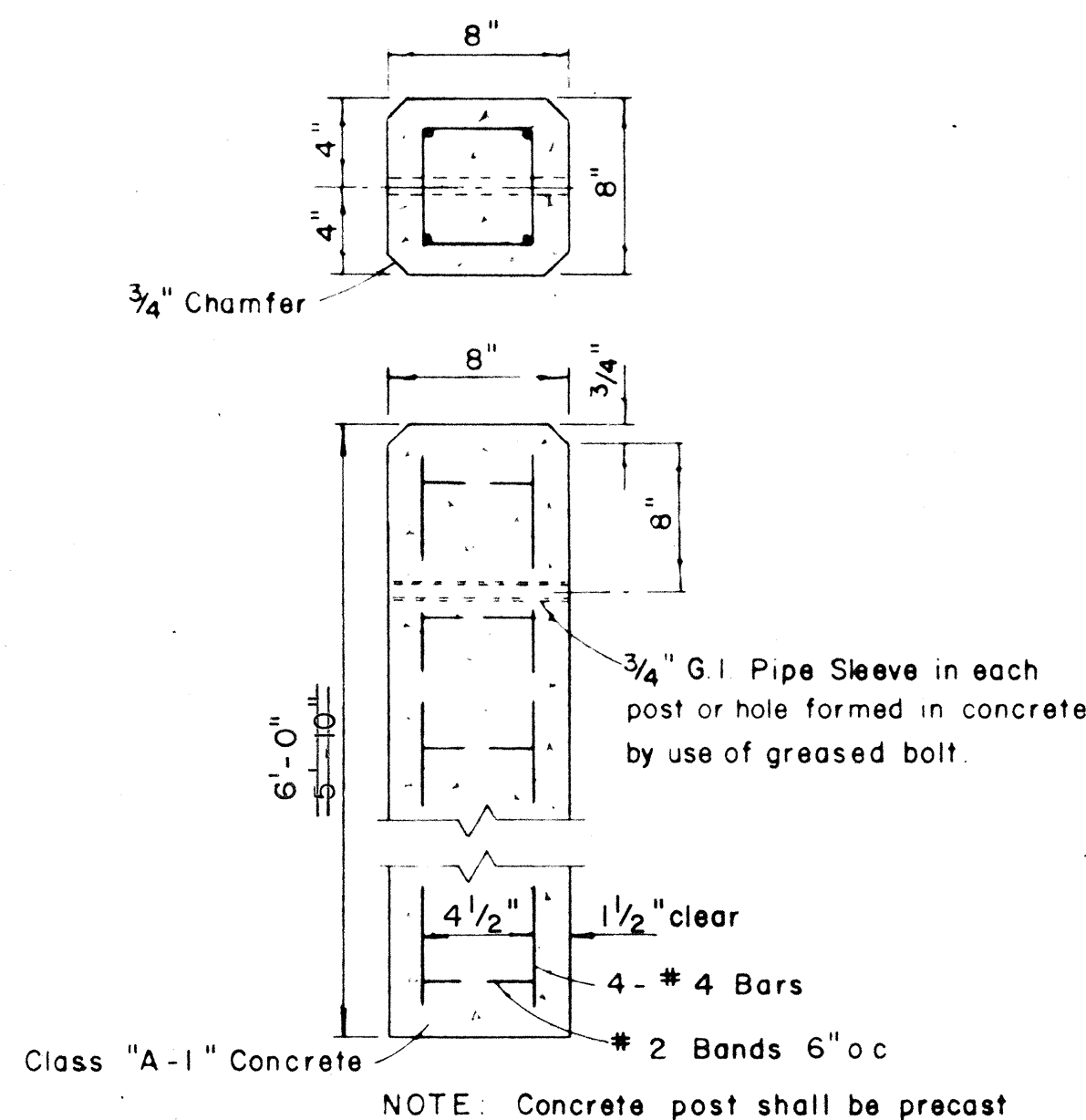
RAIL SPLICE

Scale: 3" = 1'-0"



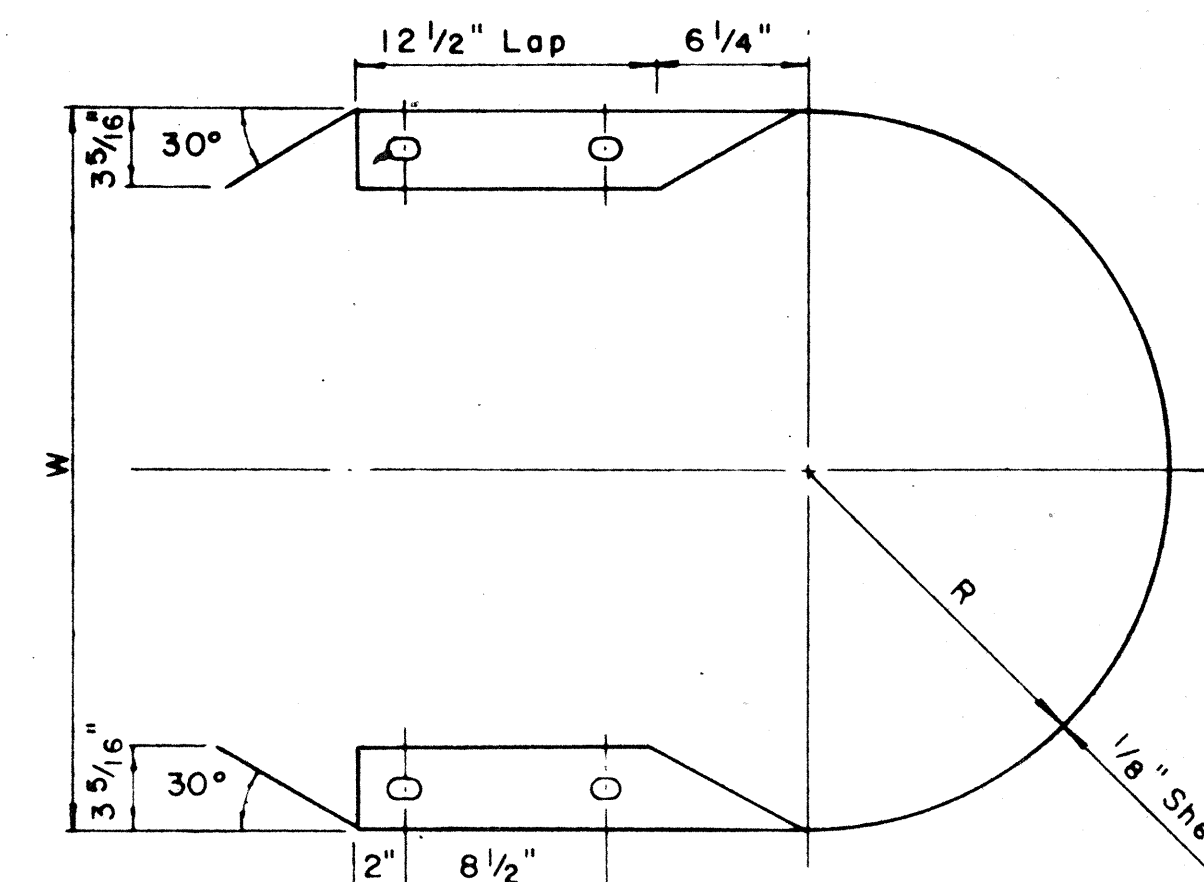
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"



DETAIL OF CONCRETE POST

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

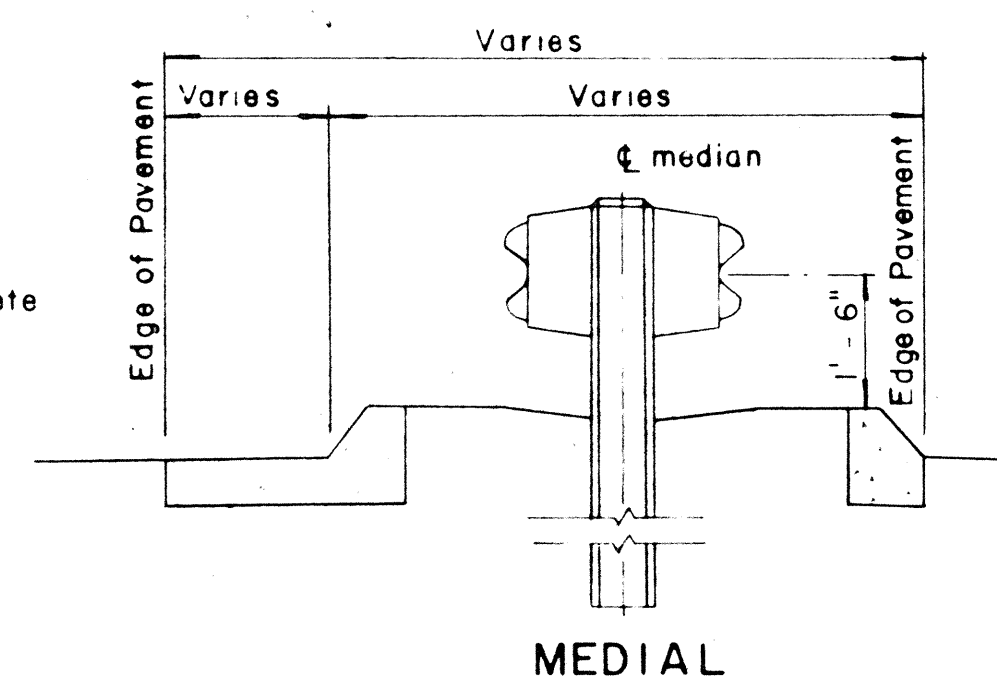


MEDIAN END

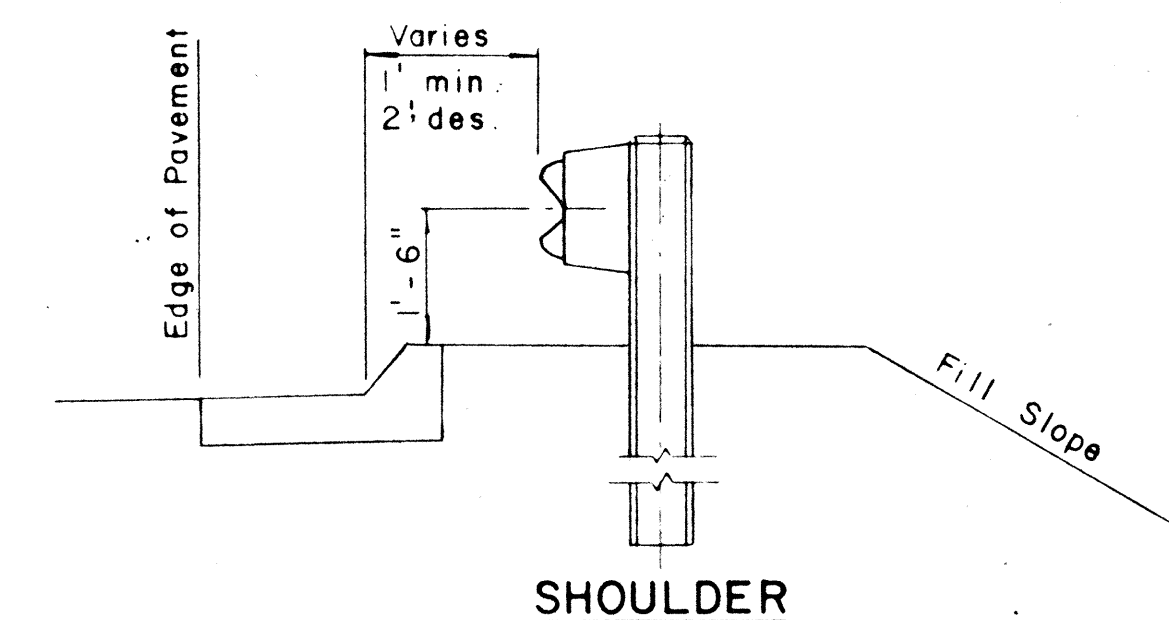
Scale: 1 1/2" = 1'-0"

MEDIAN END DIMENSIONS

TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Metal Post with Metal Blocks (B J 6)	24 3/4"	12 3/8"



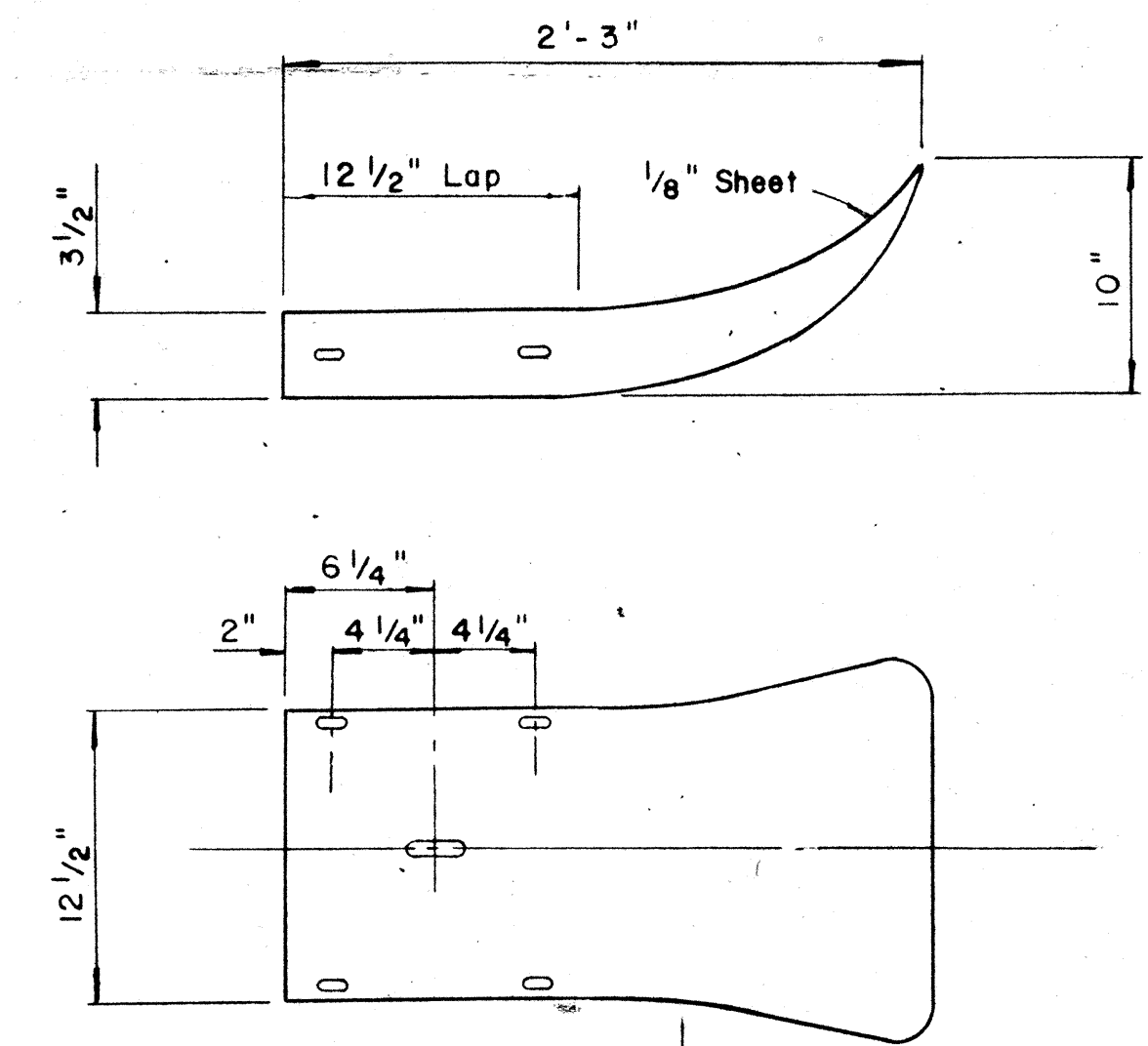
MEDIAL



SHOULDER

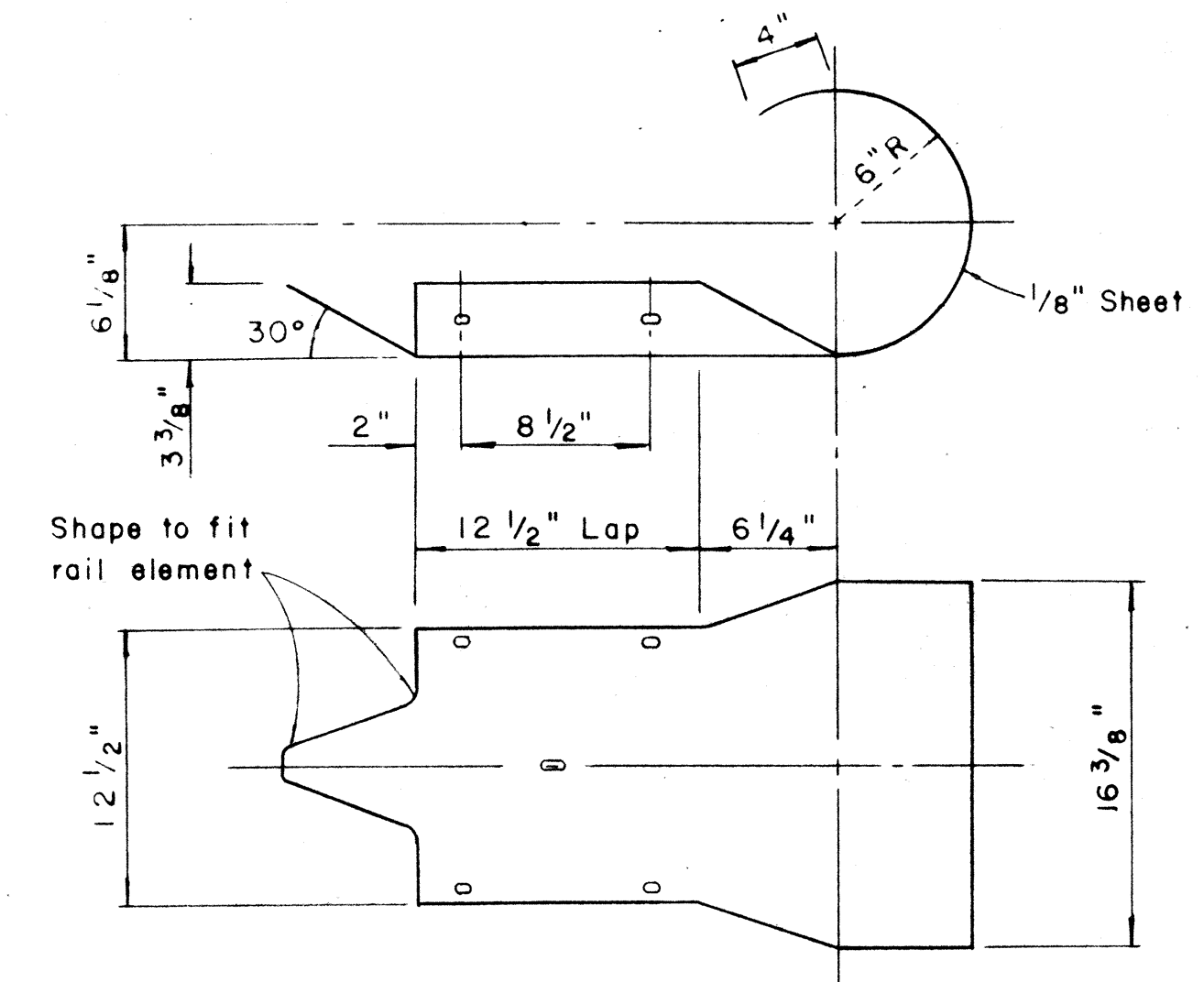
TYPICAL GUARD RAIL DETAIL

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



FLARED END

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



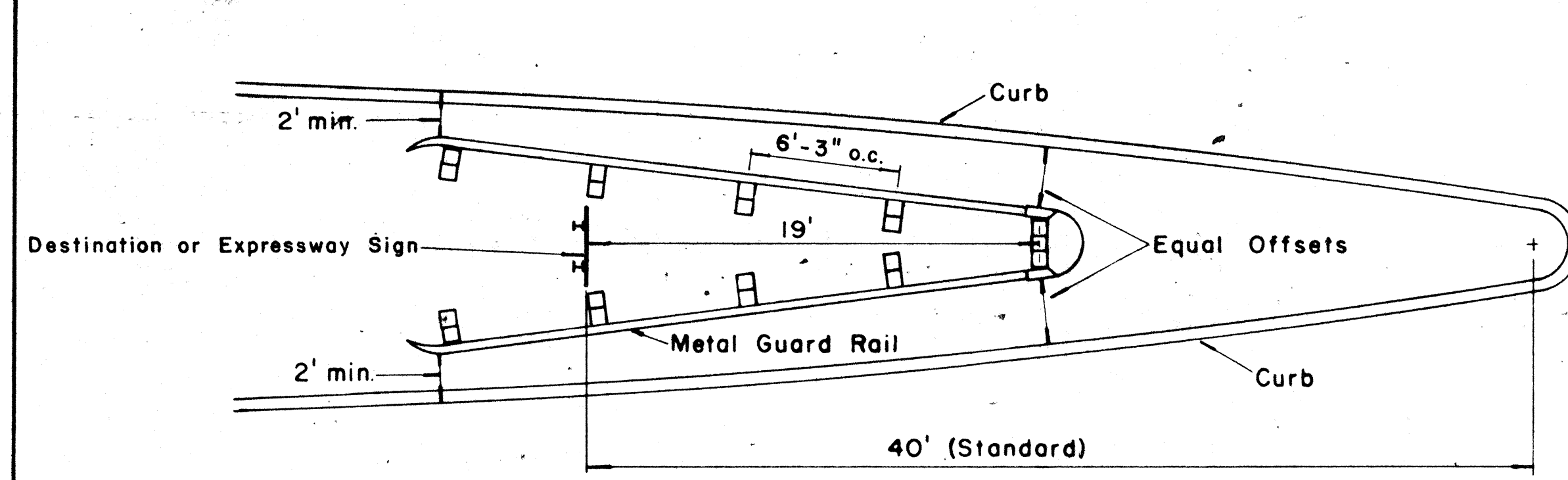
CURVED END

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

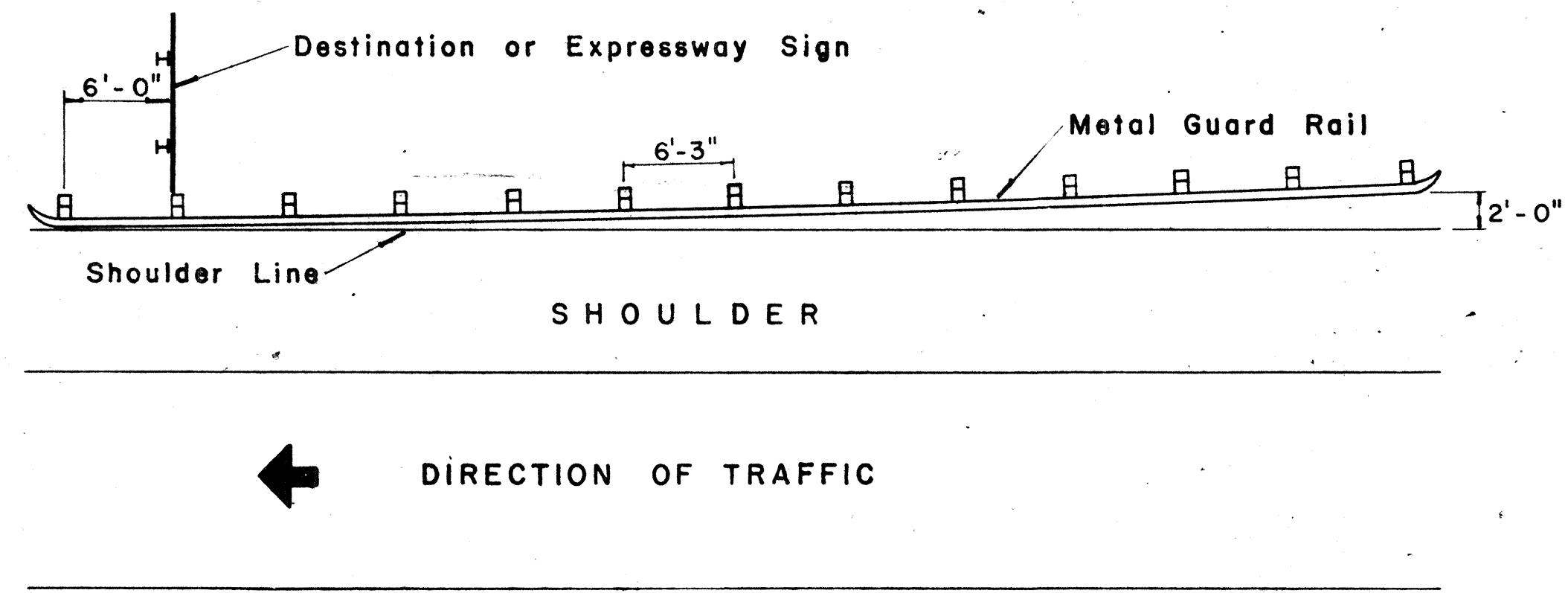
STANDARD DETAILS
METAL GUARD RAIL

SHEET No. OF SHEETS



GORE MOUNTED SIGN

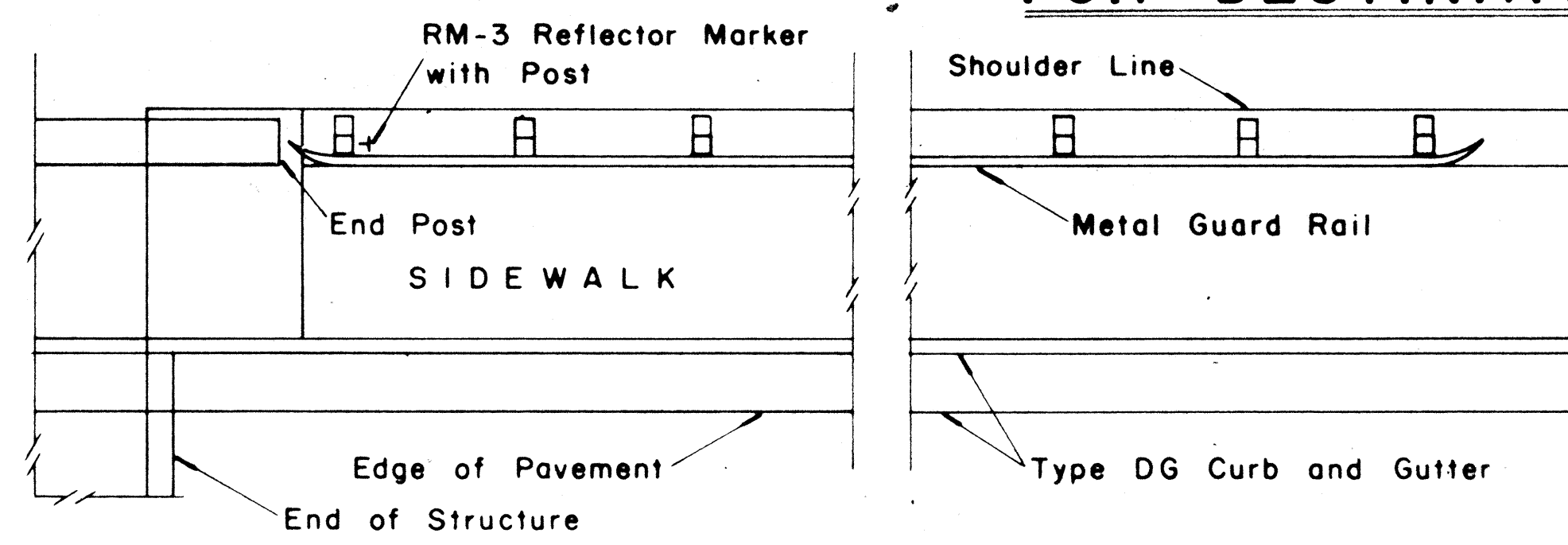
Scale: $\frac{3}{16}'' = 1' - 0''$



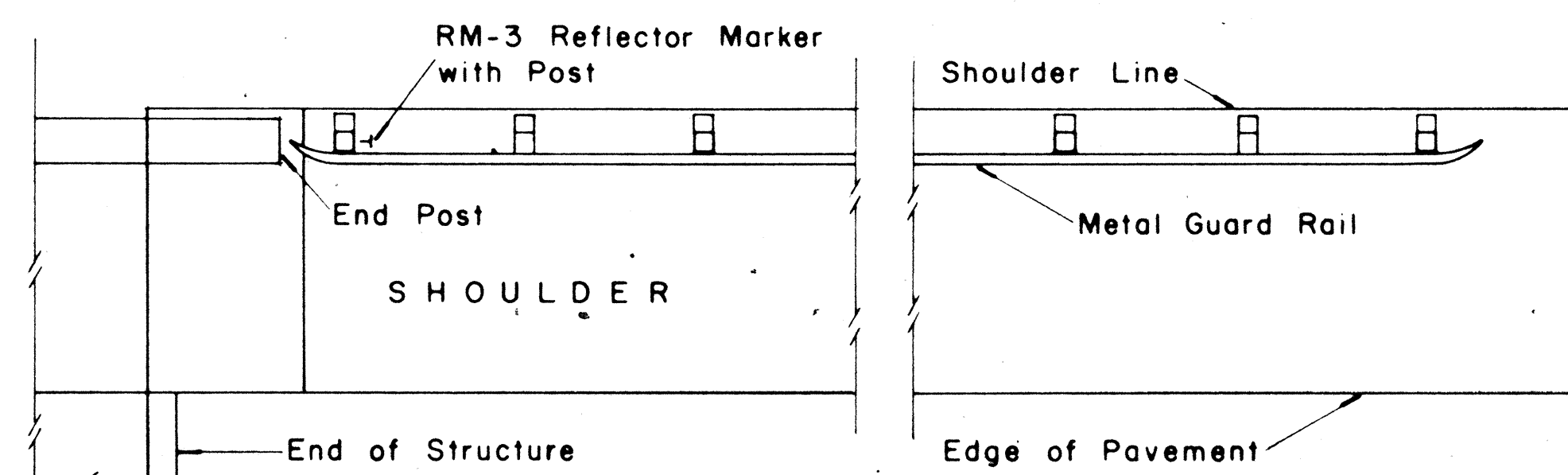
SHOULDER MOUNTED SIGN

Scale: $\frac{1}{8}'' = 1' - 0''$

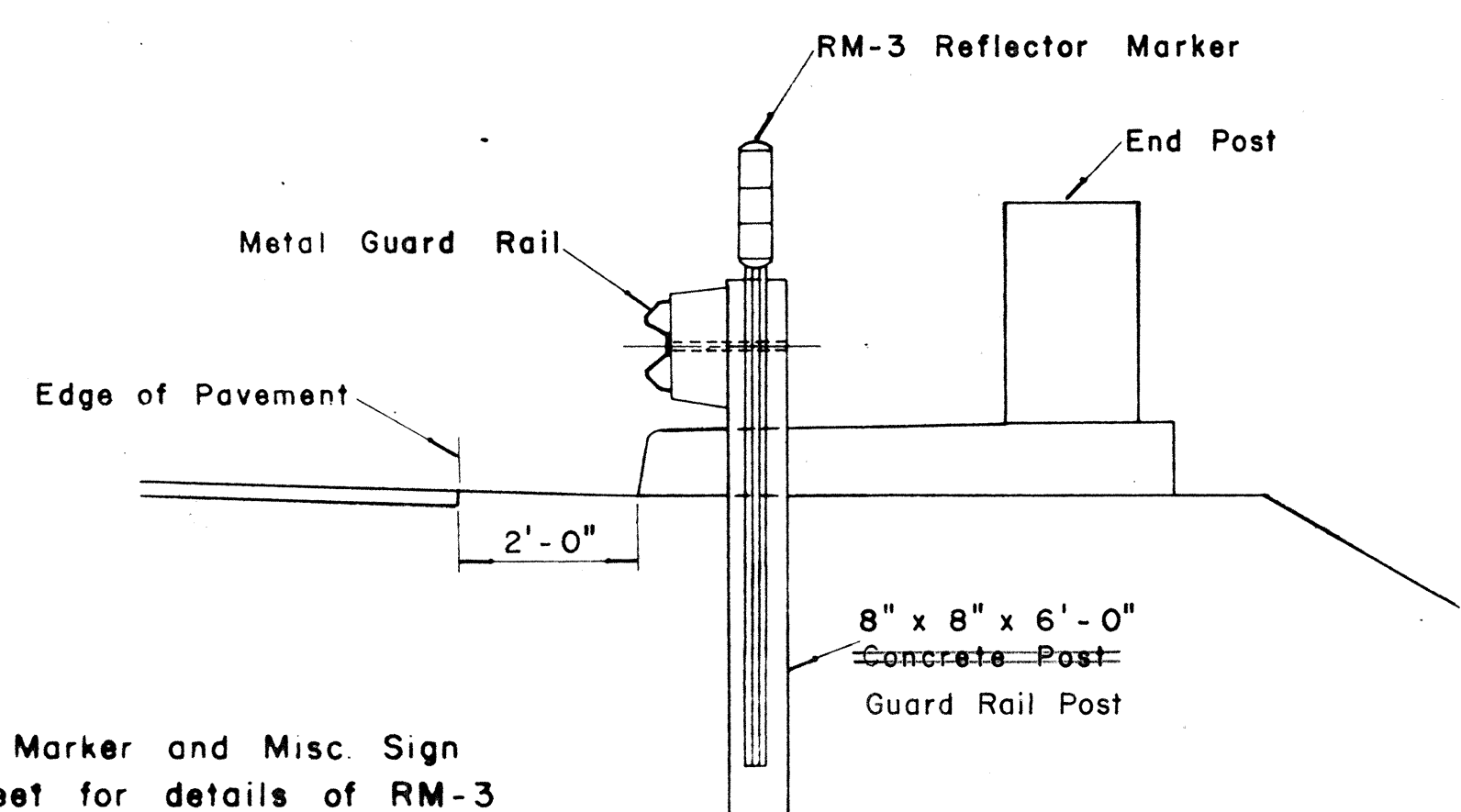
INSTALLATION OF METAL GUARD RAIL FOR DESTINATION AND EXPRESSWAY SIGNS



SIDEWALK CARRIED THROUGH STRUCTURE



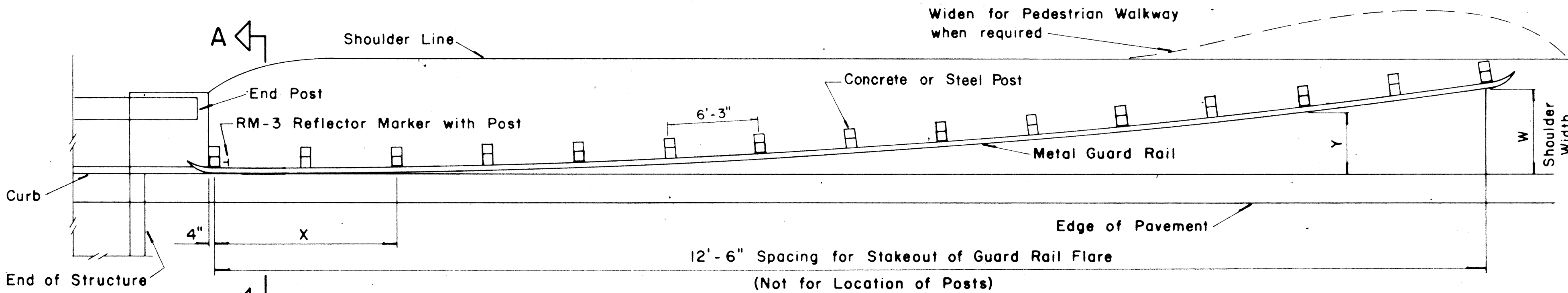
SHOULDER CARRIED THROUGH STRUCTURE



SECTION "A-A"

Scale: $\frac{1}{2}'' = 1' - 0''$

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



SHOULDER NOT CARRIED THROUGH STRUCTURE

INSTALLATION OF METAL GUARD RAIL FLARE AT STRUCTURES

Scale: $\frac{3}{16}'' = 1' - 0''$

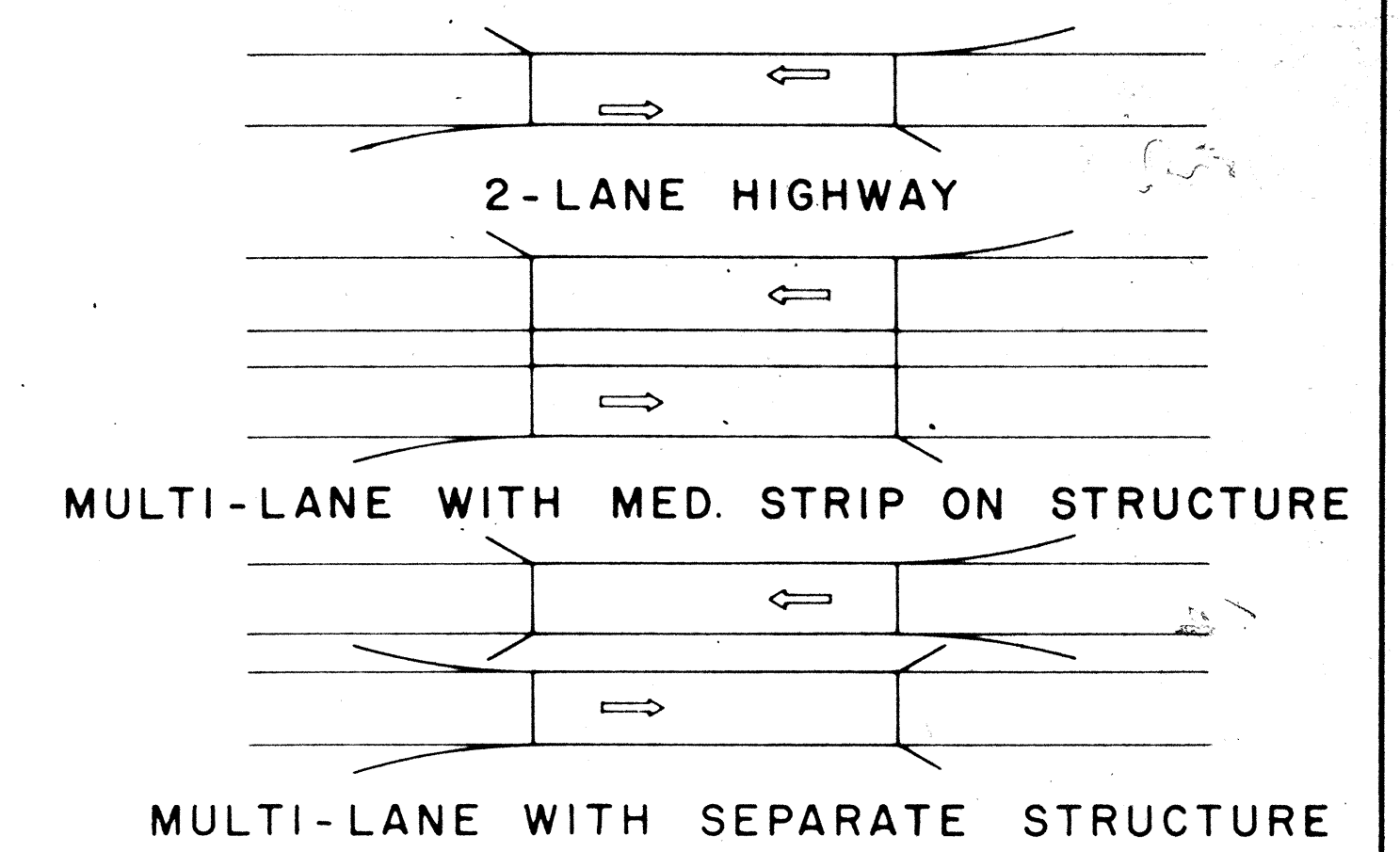
X	Y					
	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.85
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48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

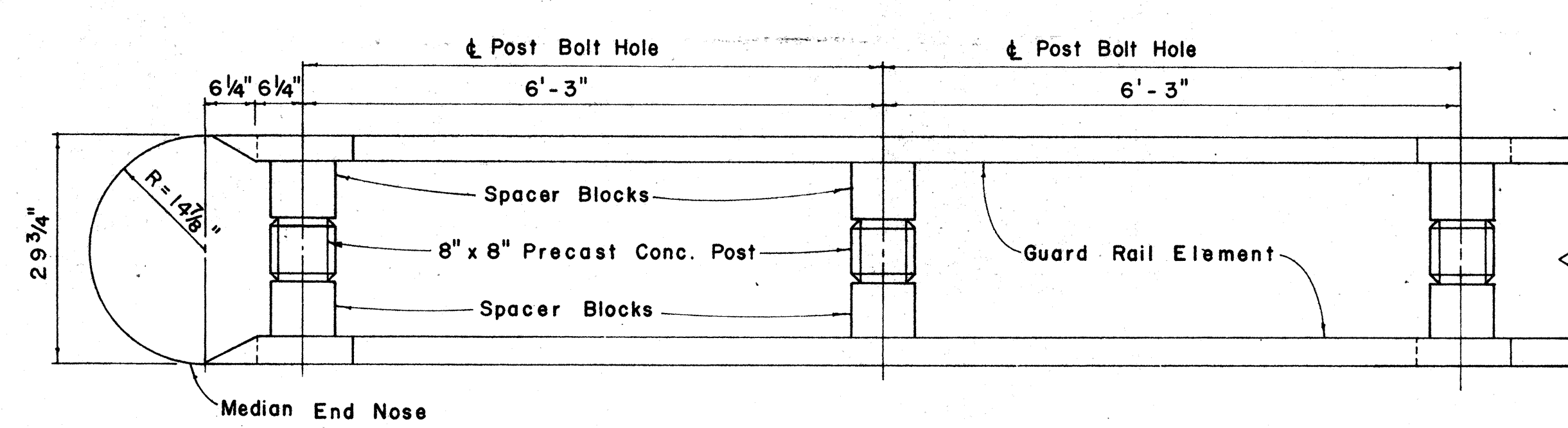
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAILS
AT
STRUCTURES & GUIDE SIGNS

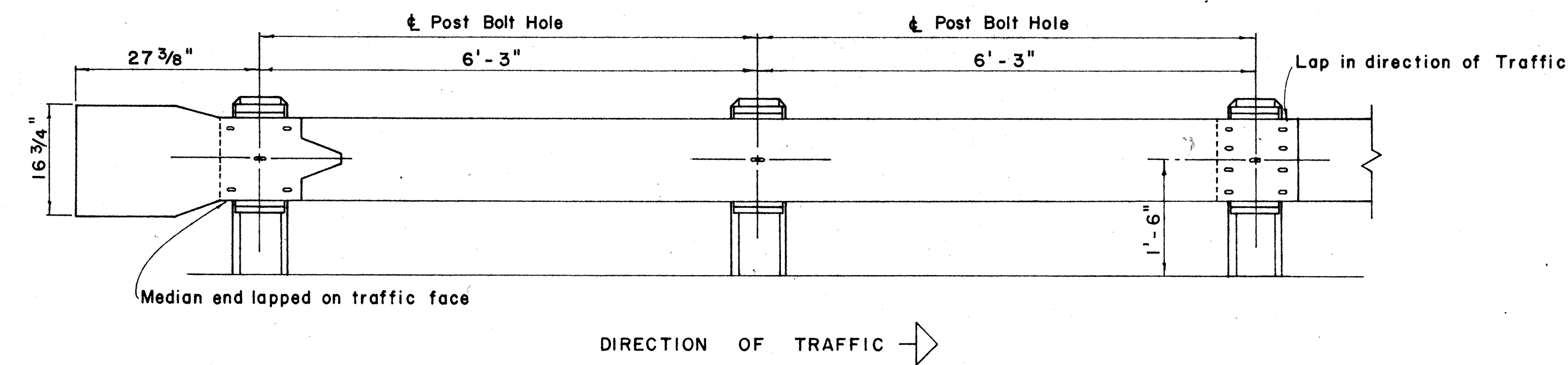
Scale: As Noted

SHEET No. OF SHEETS

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
CHECKED BY: _____
NOTE BOOK: _____
No. _____

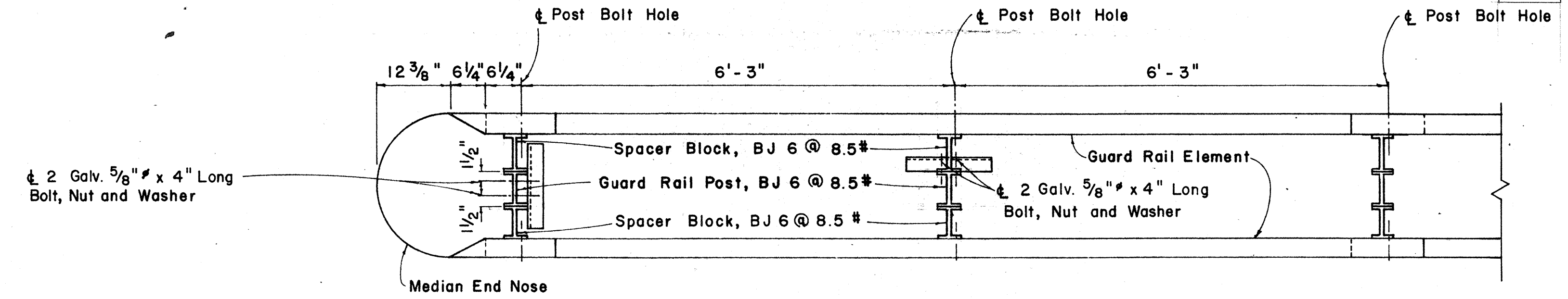


PLAN

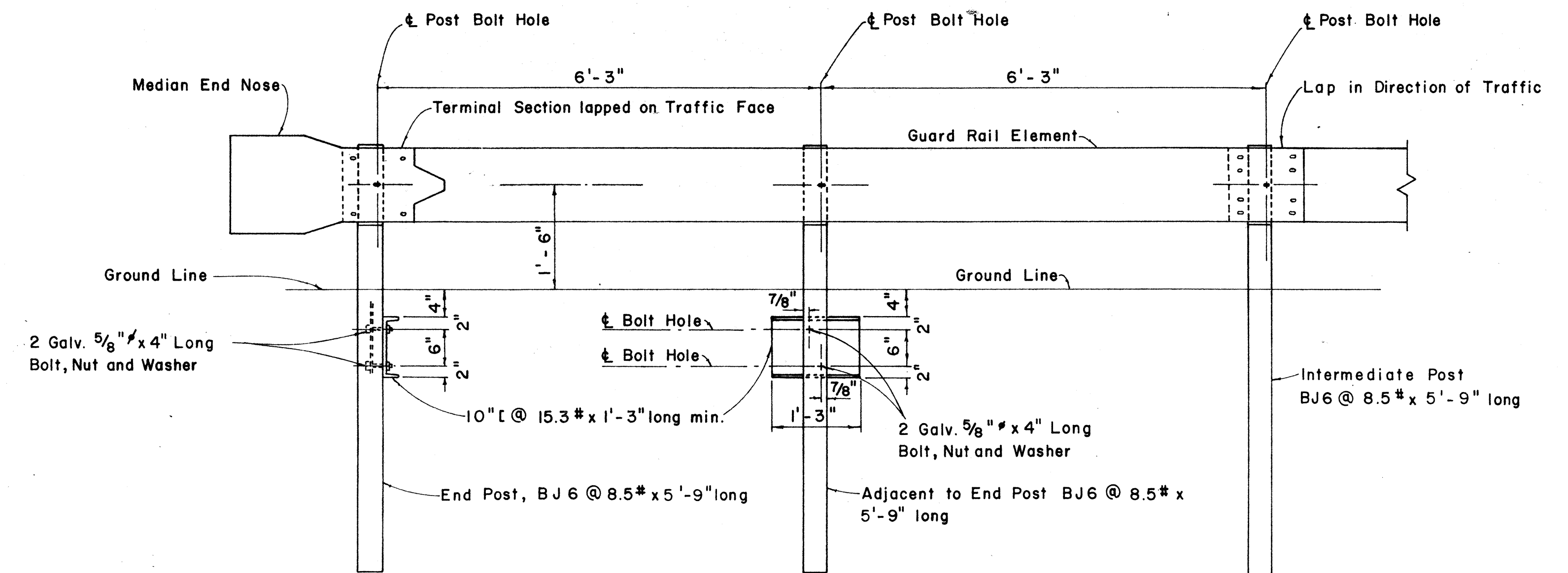
Scale: $\frac{3}{4}$ " = 1' - 0"


ELEVATION

METAL GUARD RAIL ON CONCRETE POSTS AND WOOD SPACER BLOCKS

Scale: $\frac{3}{4}$ " = 1' - 0"


PLAN

Scale: $\frac{3}{4}$ " = 1' - 0"


ELEVATION

METAL GUARD RAIL ON METAL POSTS AND METAL SPACER BLOCKS

Scale: $\frac{3}{4}$ " = 1' - 0"

DETAIL FOR DOUBLE METAL GUARD RAIL IN MEDIAN

Scale: As Shown

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

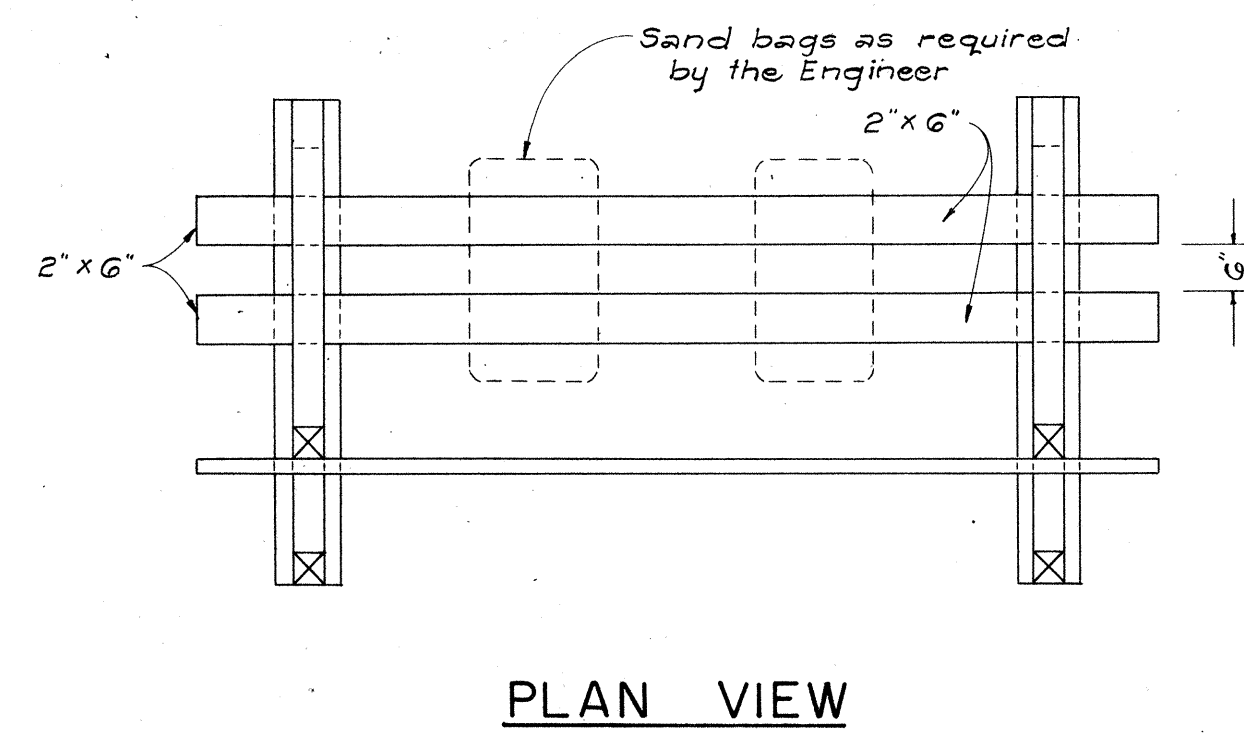
STANDARD DETAILS

METAL GUARD RAIL

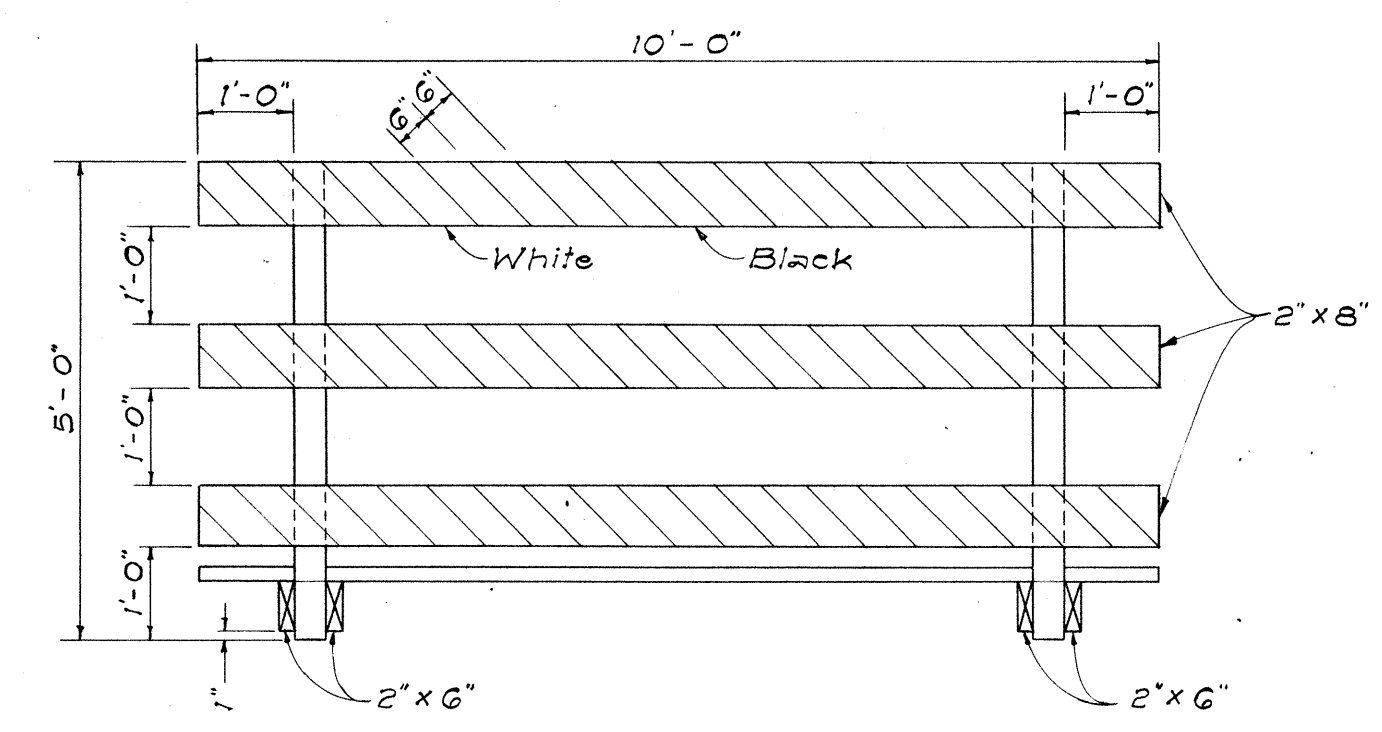
SHEET No. OF SHEETS

110

ORIGINAL	DATE
PLAN	
DESIGNED BY	
CHECKED BY	
NOTED BY	
NO.	

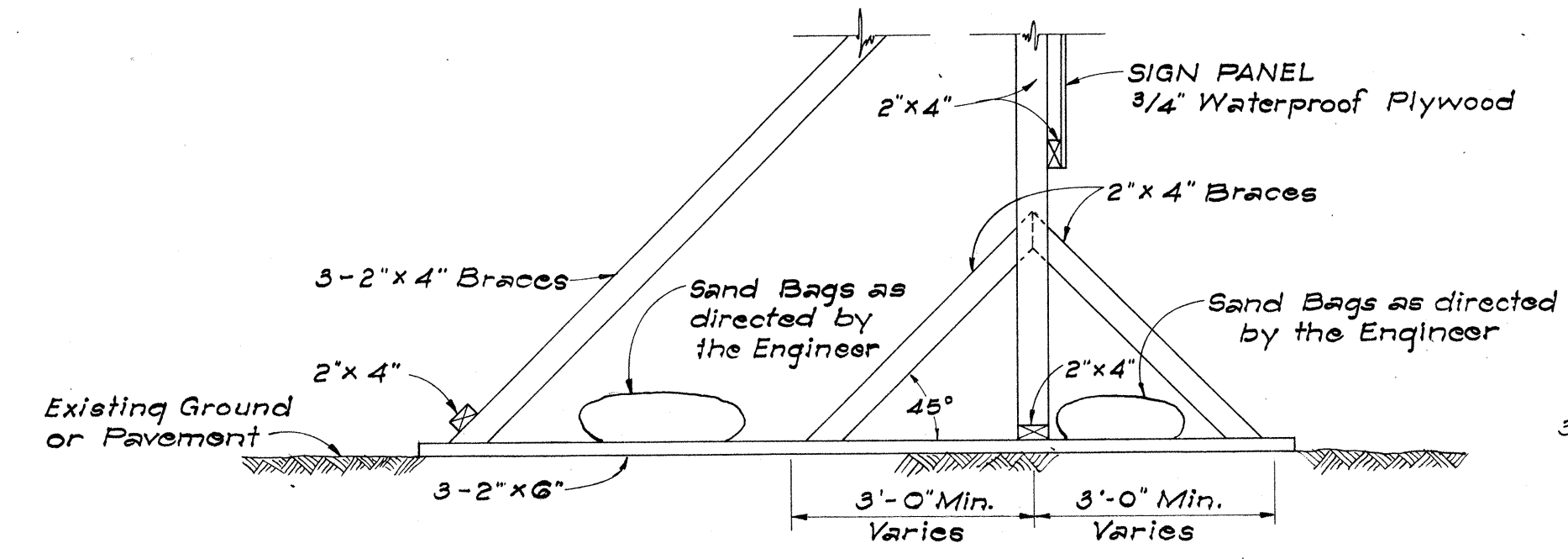


PLAN VIEW

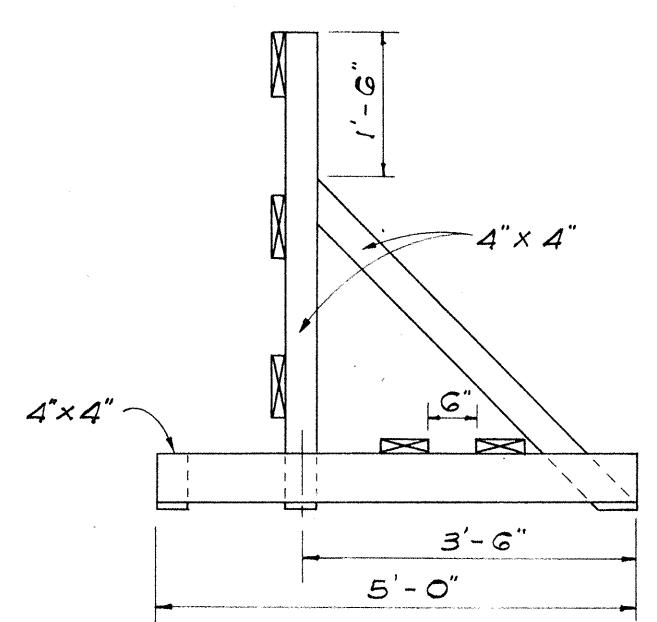


FRONT VIEW

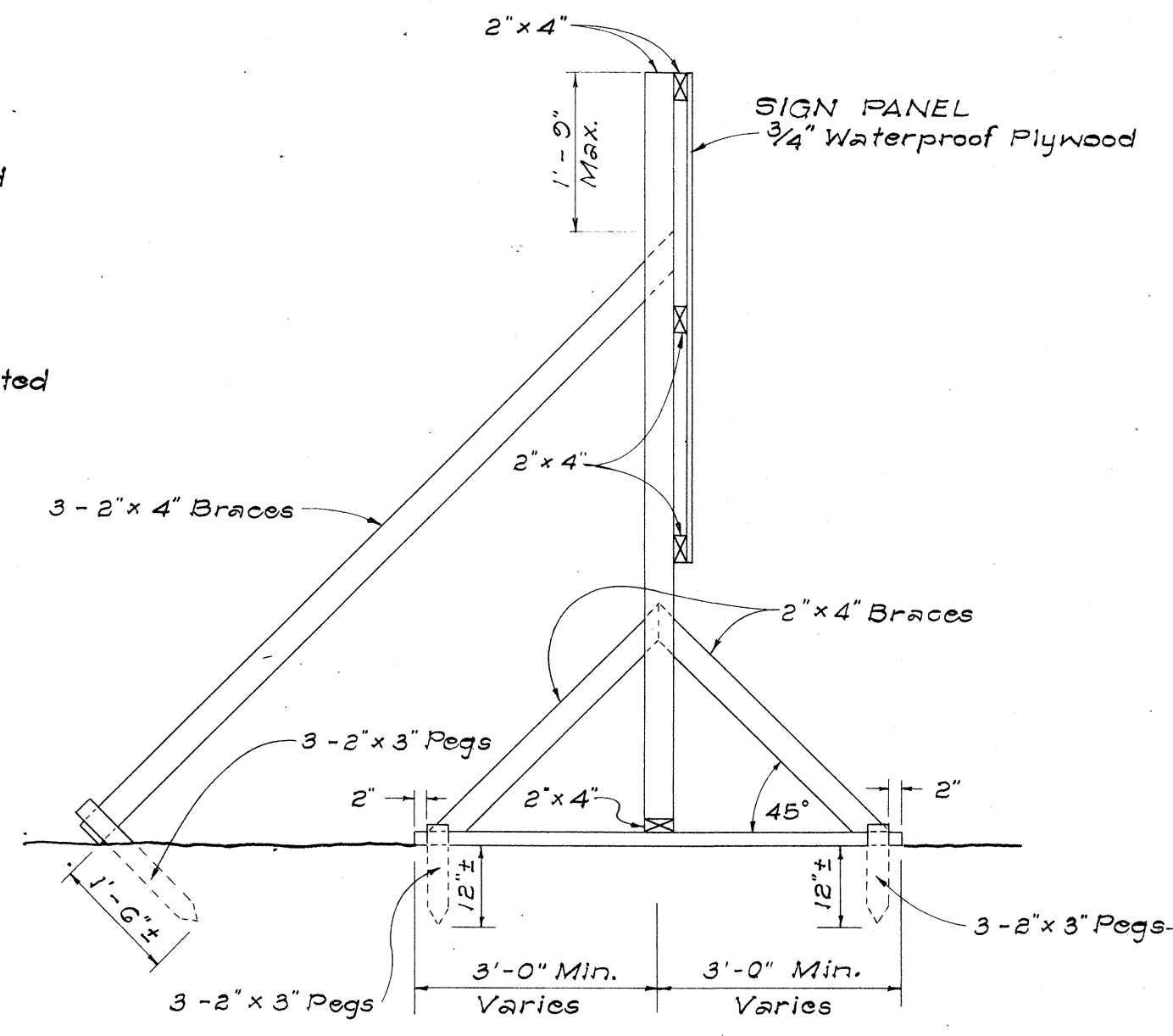
CLASS I BARRICADE



SIDE VIEW
(SIGN FRAME WEIGHTED DOWN)



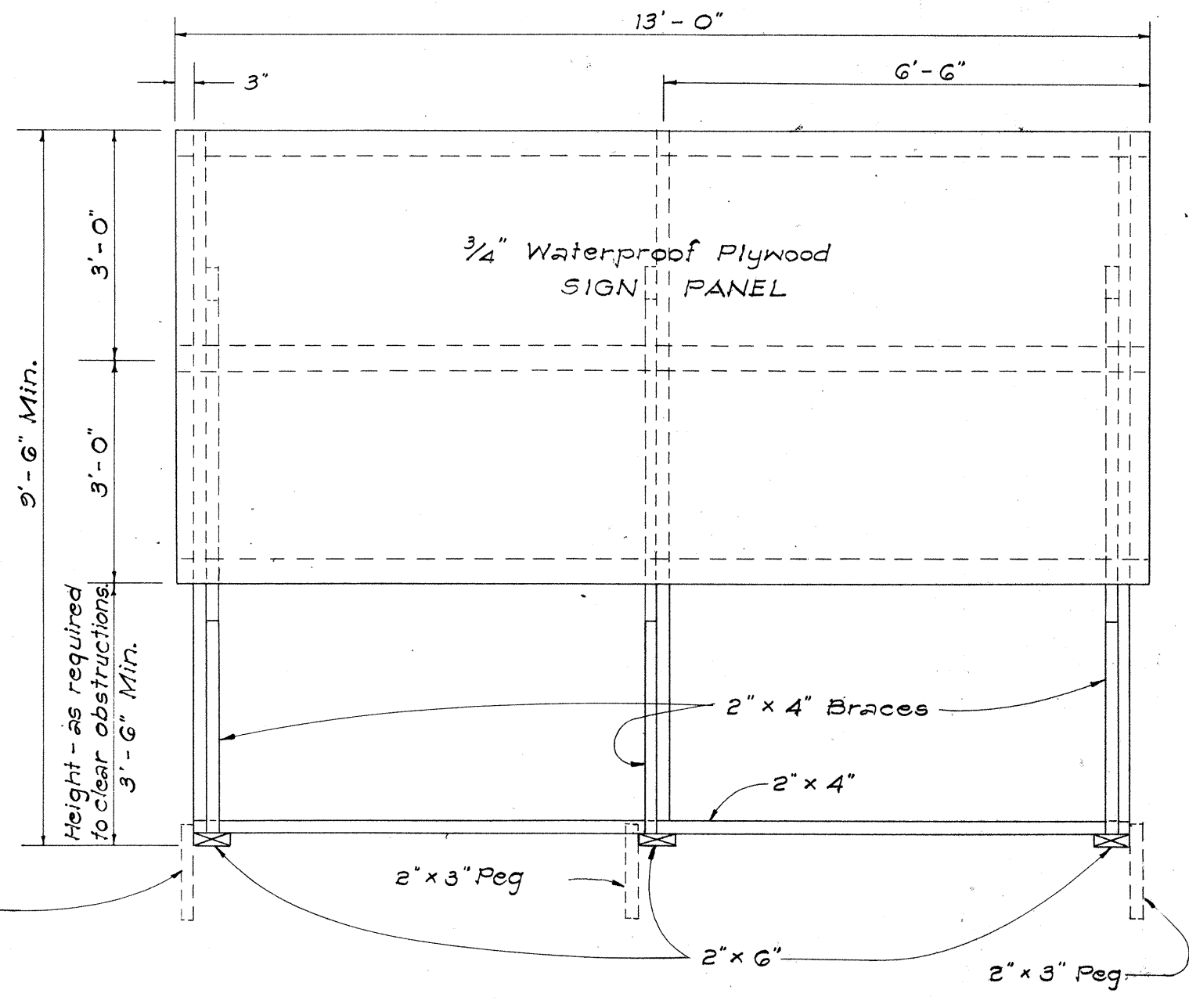
END VIEW



SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)

ELEVATIONS

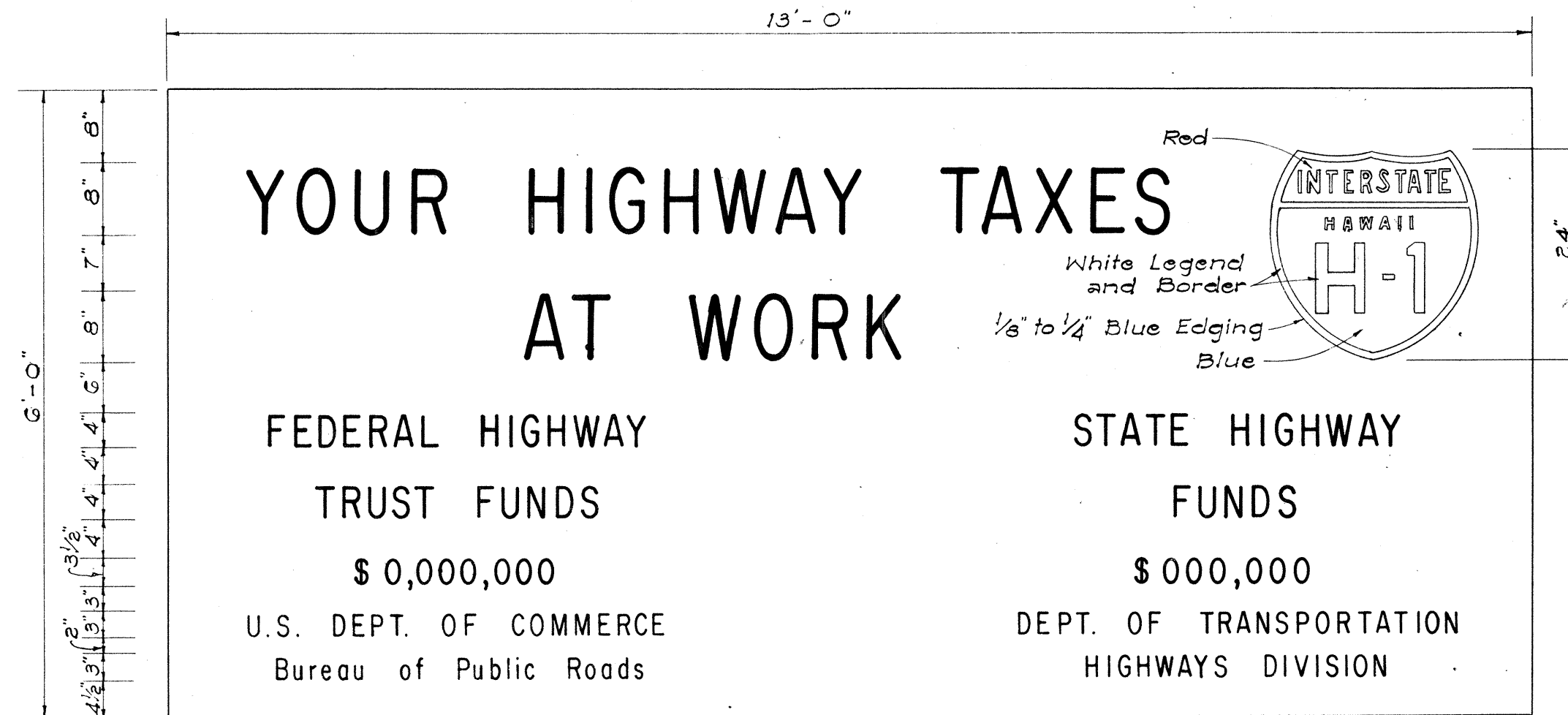
Scale: 1/2" = 1'-0"



FRONT VIEW

NOTES:

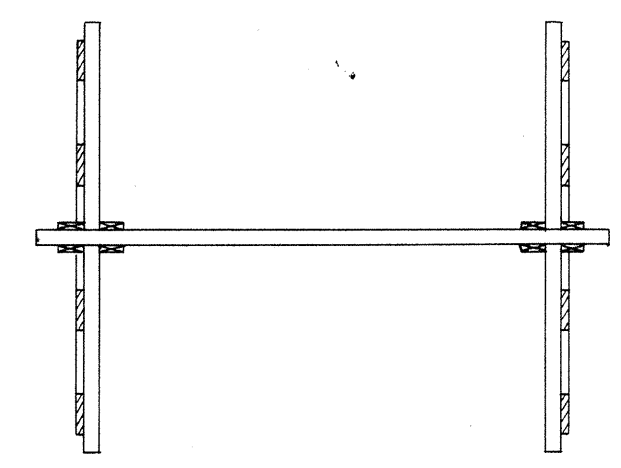
- A. CONSTRUCTION IDENTIFICATION SIGNS
1. The sign legend shall be black on white background except for the Interstate Route marker which shall be as shown on the plan.
 2. The Contractor shall construct, install and maintain the project signs at the locations shown on the Plans and as ordered by the Engineer.
 3. The signs shall be removed and stockpiled upon completion of the project as ordered by the Engineer and are to become State property.
 4. Letters shall be Series "C" of the sizes shown on the Plan and shall conform with the "Standard Alphabet for Highway Signs", Bureau of Public Roads, 1952.
 5. The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.



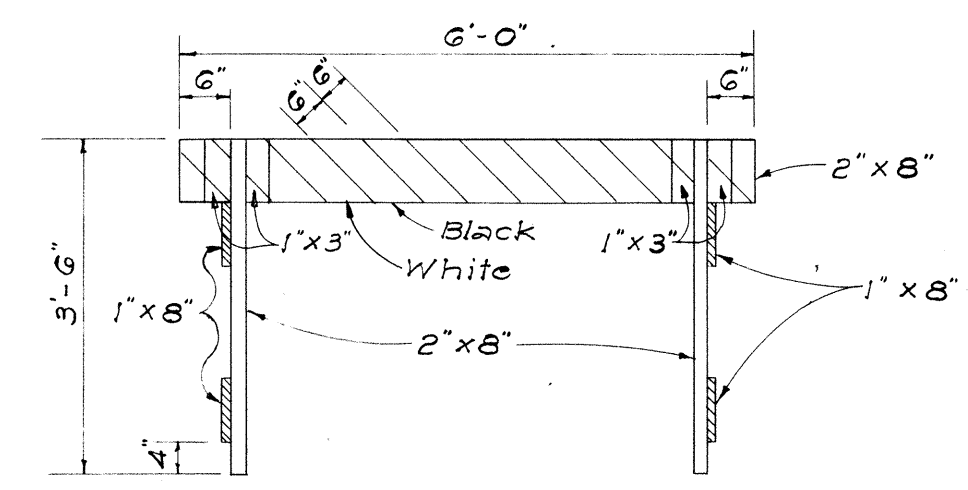
SIGN PANEL
Scale: 3/4" = 1'-0"

INTERSTATE SYSTEM
CONSTRUCTION IDENTIFICATION SIGN

Scale: As Shown



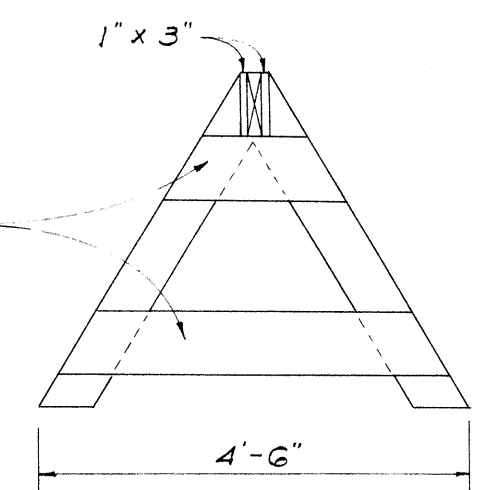
PLAN VIEW



FRONT VIEW

CLASS II BARRICADE

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



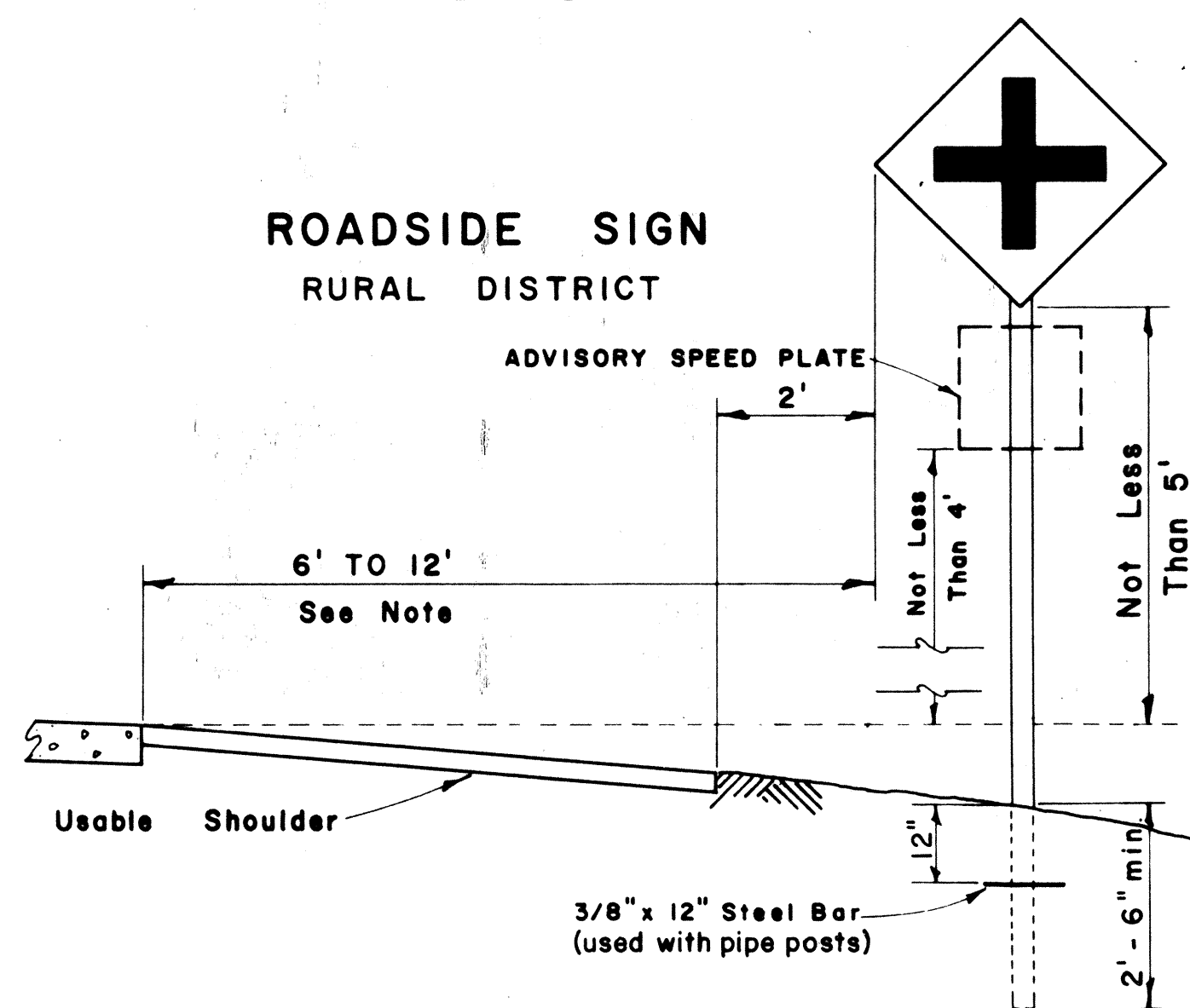
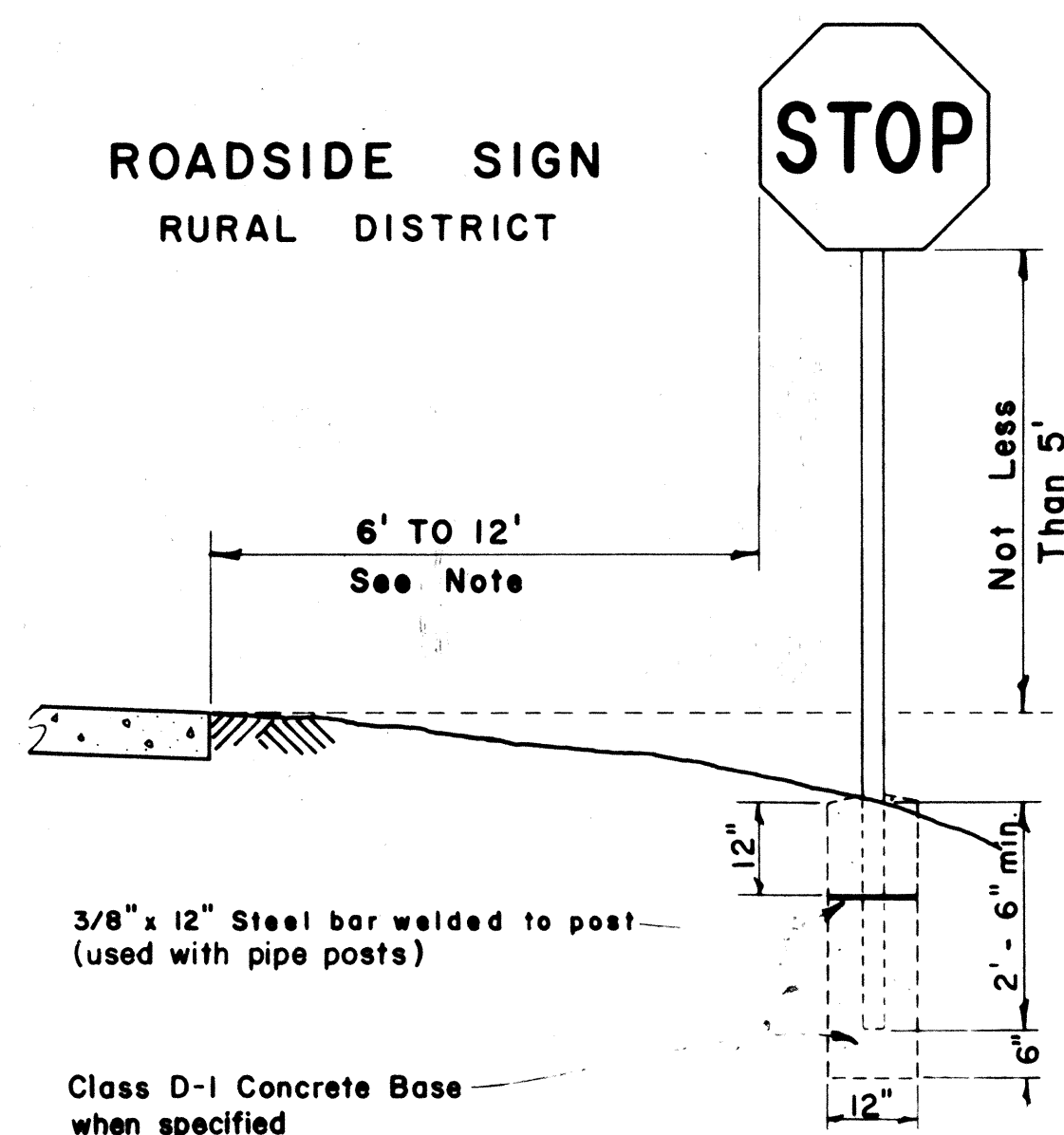
END VIEW

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

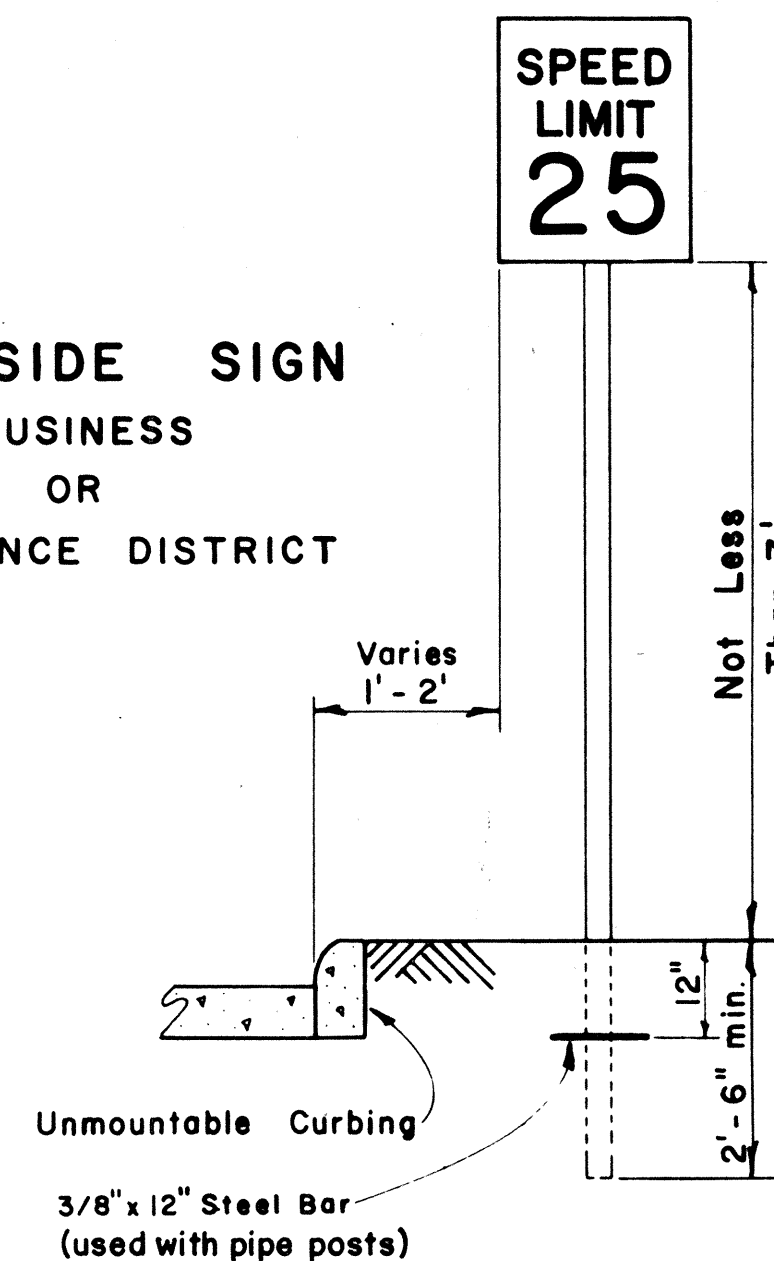
TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES

SCALE: As Shown DATE:

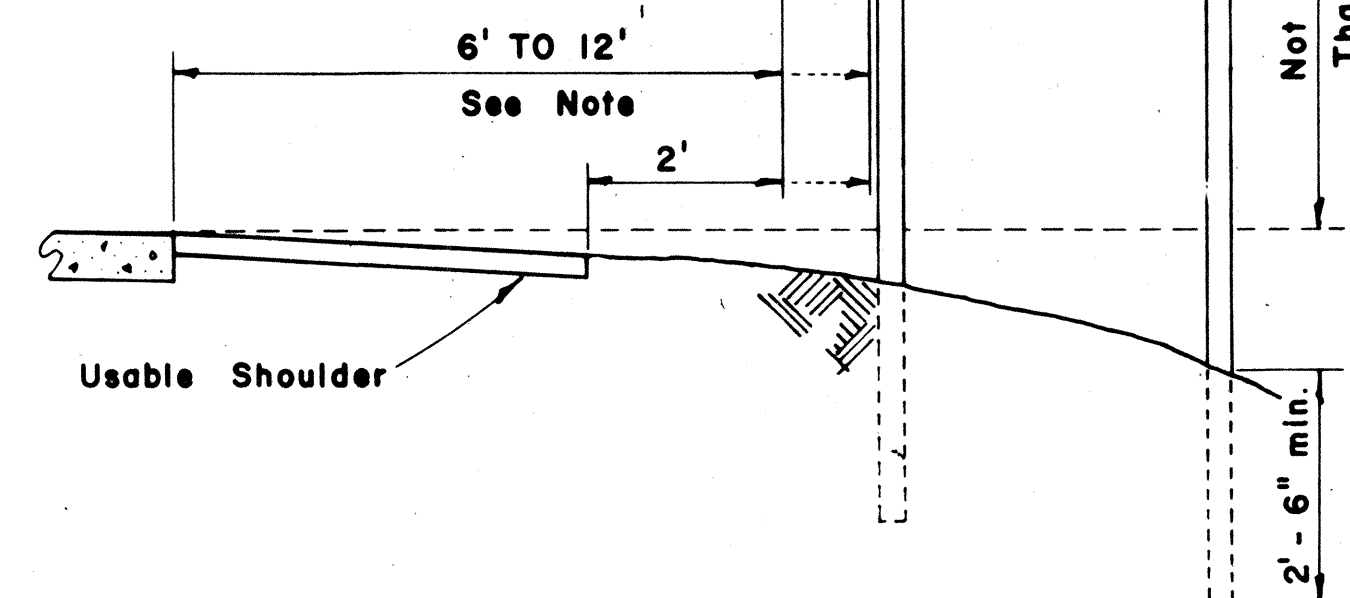
- NOTE:
- All signs and road delineators shall be placed 2' outside the usable roadway shoulder or 1' outside unmountable curbing present and within the limits shown below.
 - Except as noted below, sign posts shall be either 3" galv. std. pipe or 2 1/2" x 2 1/2" galv. square tube posts for signs larger 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.
 - Sign shall be attached to post with 5/16" galvanized bolts with nuts and 7/8" x 7/8" x .120" stainless-steel washers with neoprene rubber gasket.
 - 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.
 - 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.



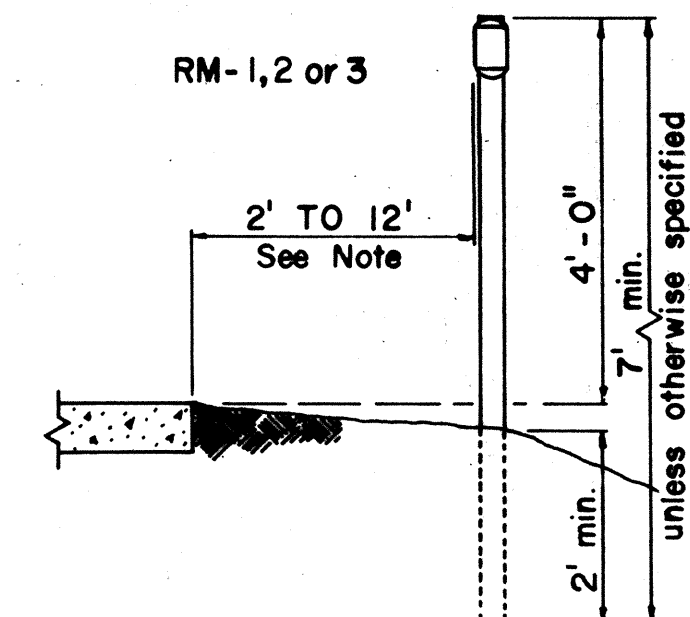
ROADSIDE SIGN
BUSINESS
OR
RESIDENCE DISTRICT



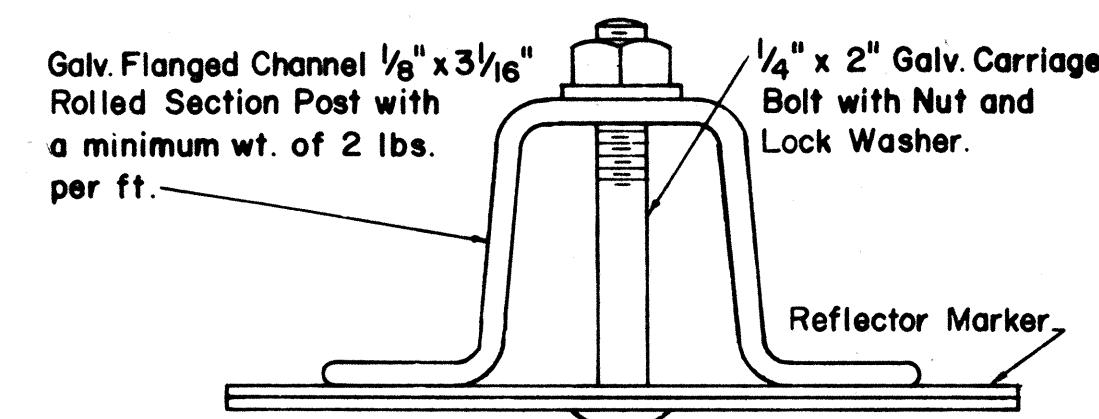
ROADSIDE SIGN
(DOUBLE POSTS)
EXPRESSWAY



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(18) Unit 3	1966	12	35

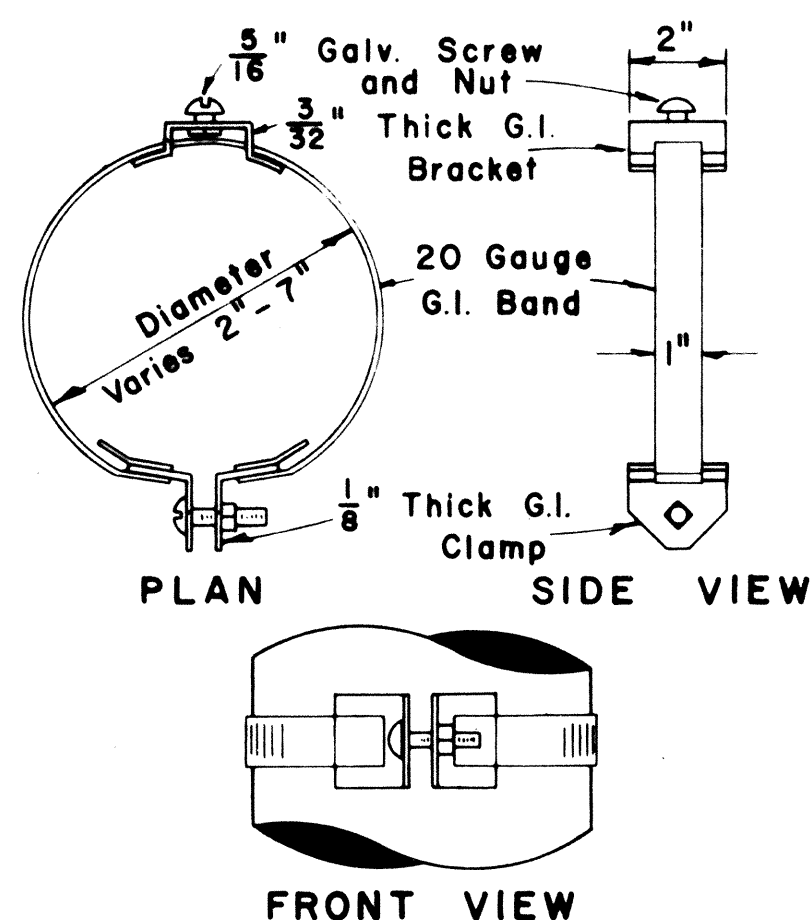
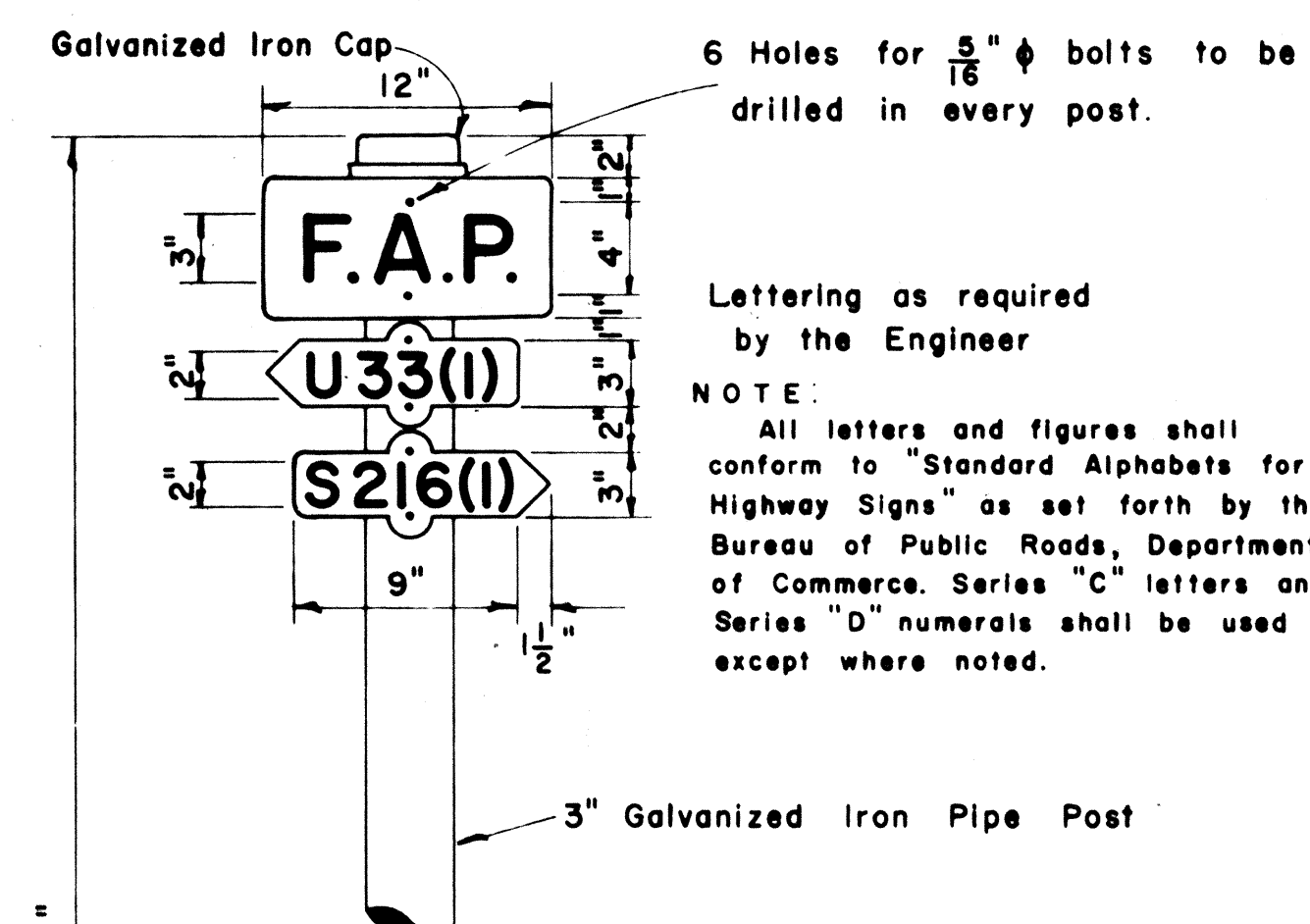


ROAD DELINEATOR
Scale: 1/2" = 1' - 0"

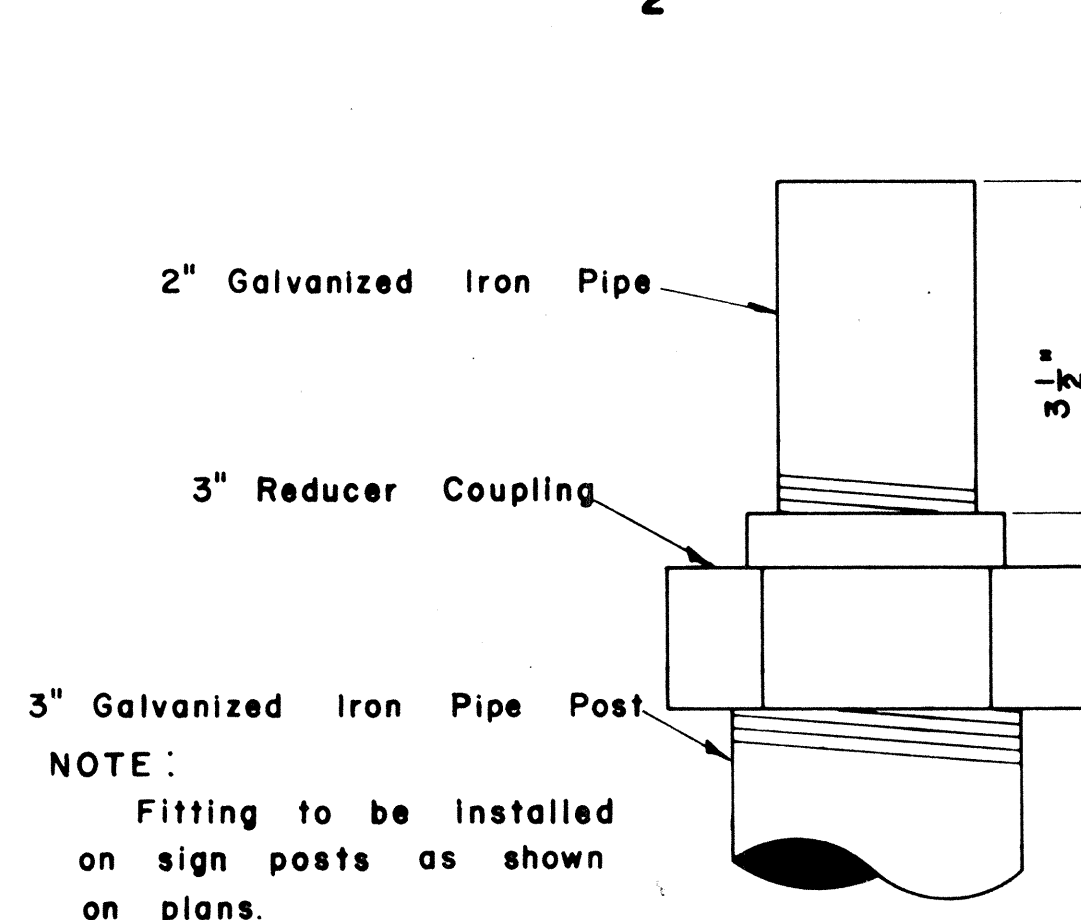


HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS

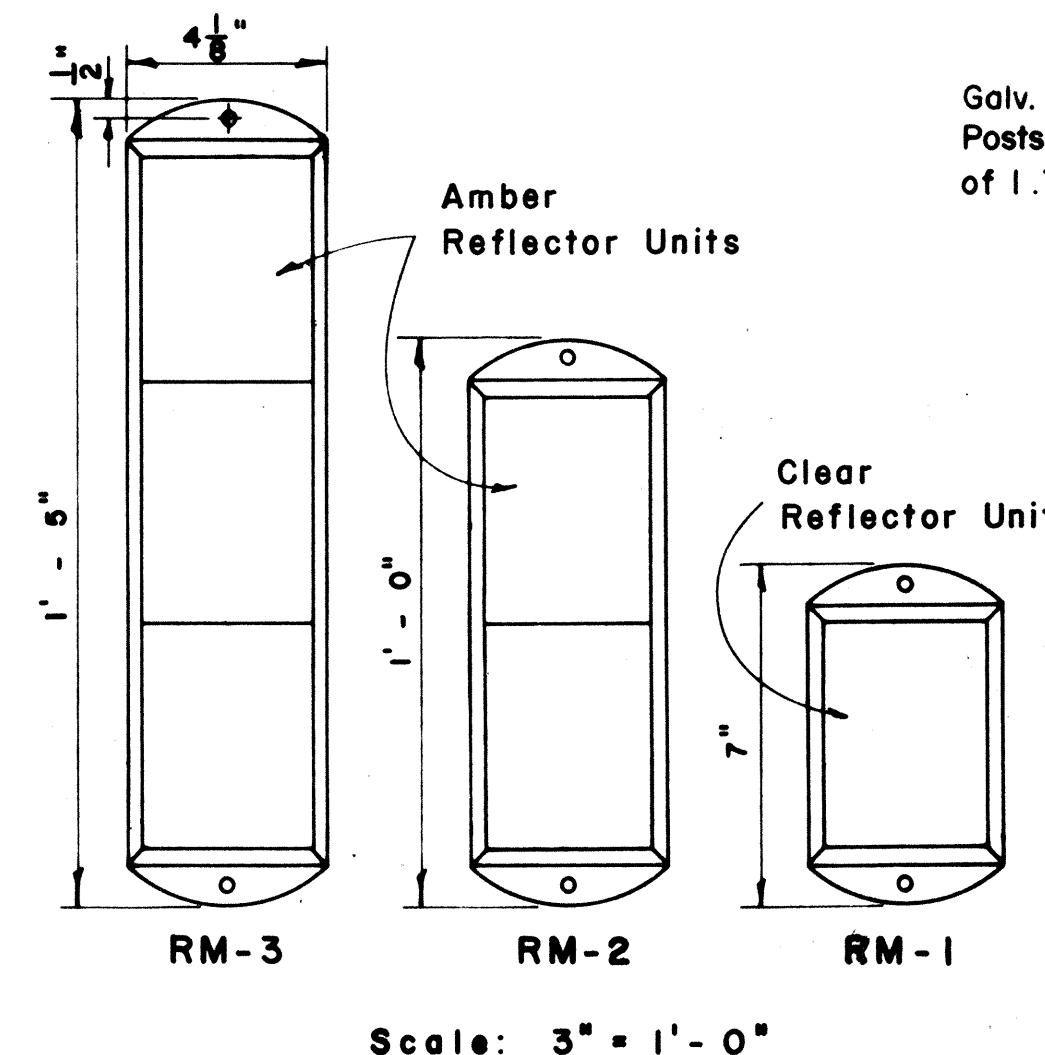
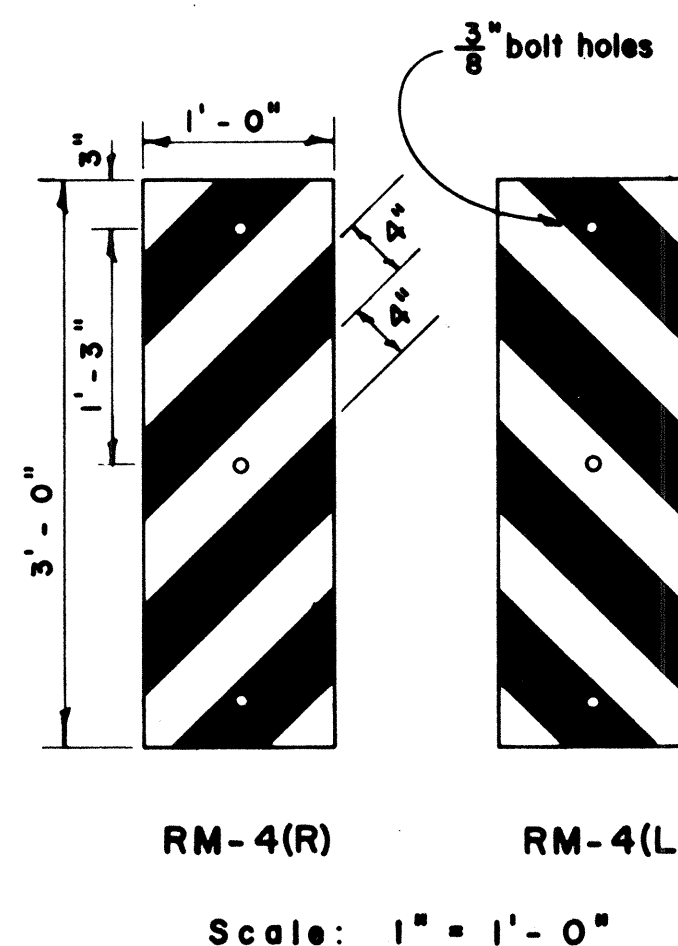
Scale: 1/2" = 1' - 0"



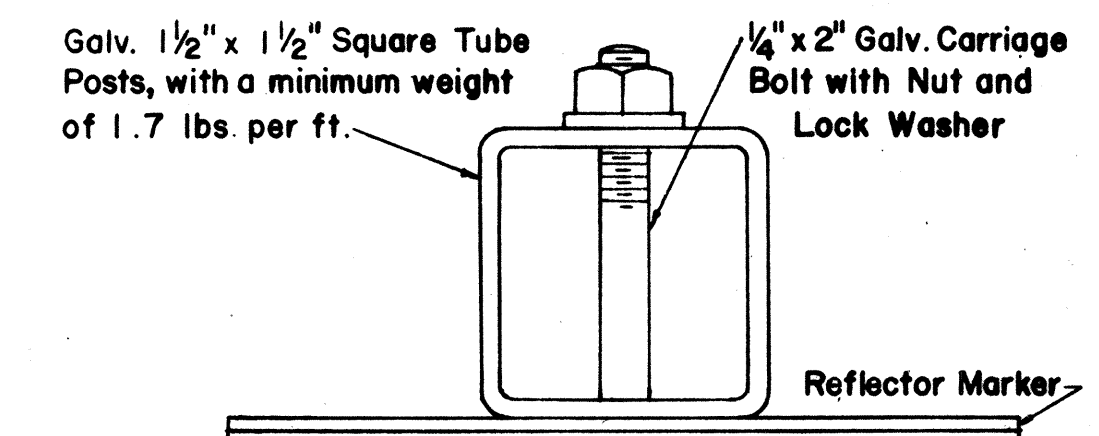
TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS
Scale: 3" = 1' - 0"



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

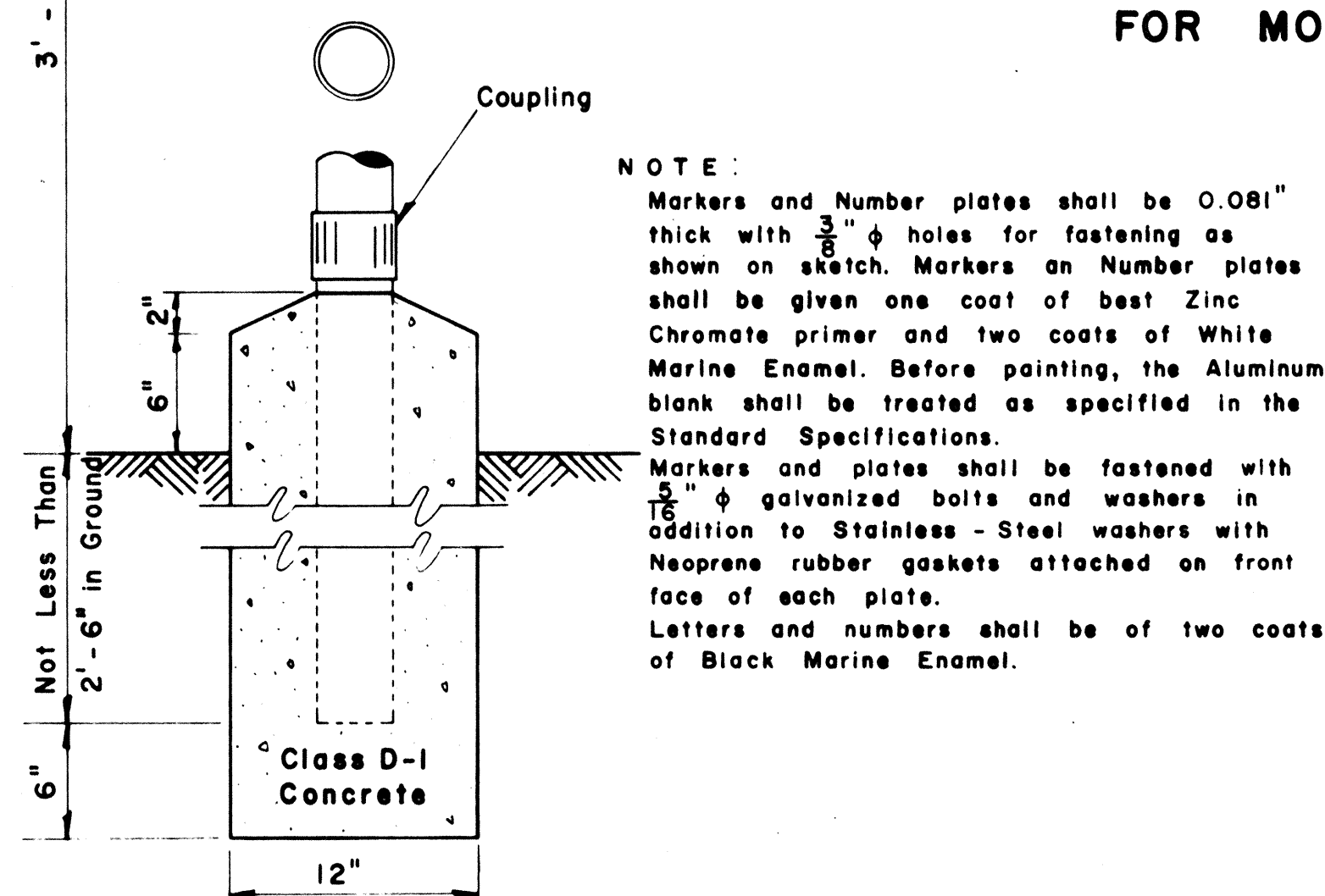


REFLECTOR MARKERS
Scale: As Shown

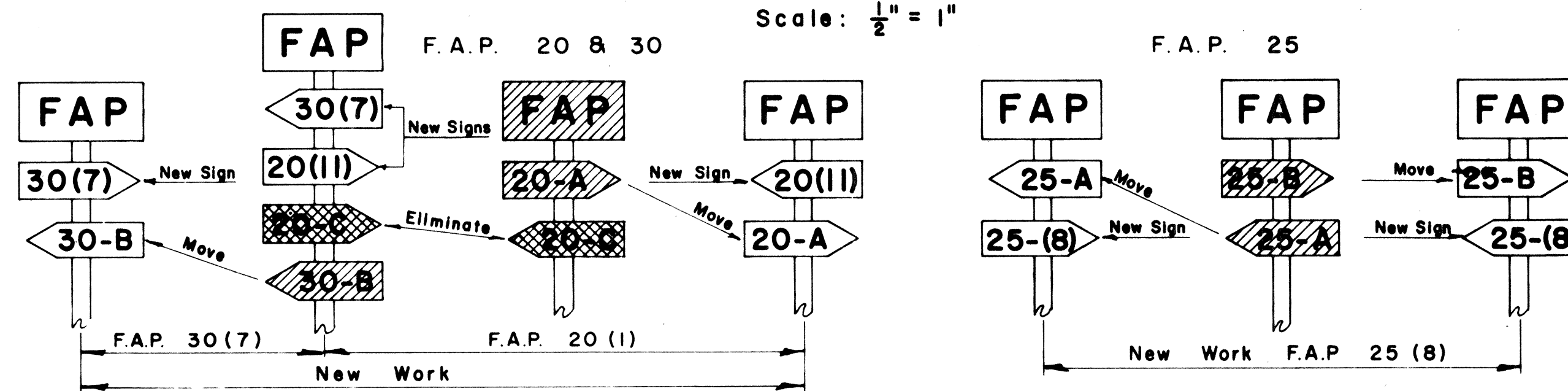


TYPICAL SECTION OF ROAD DELINEATOR
Full Size

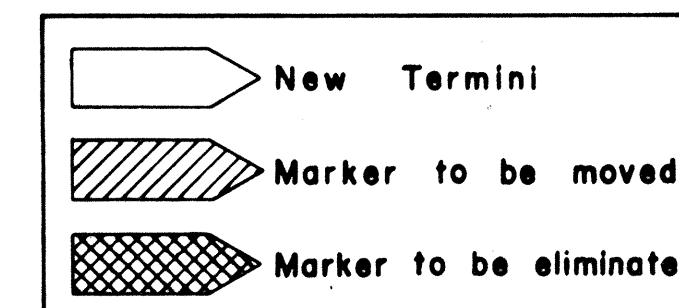
NOTE: Reflector Markers RM-1,2,3 shall be glass sphere reflector markers with 4" x 5" reflector units (as shown) or plastic prismatic reflector markers with 3" diameter reflector units.



FEDERAL AID MARKER
Scale: 1/2" = 1' - 0"



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

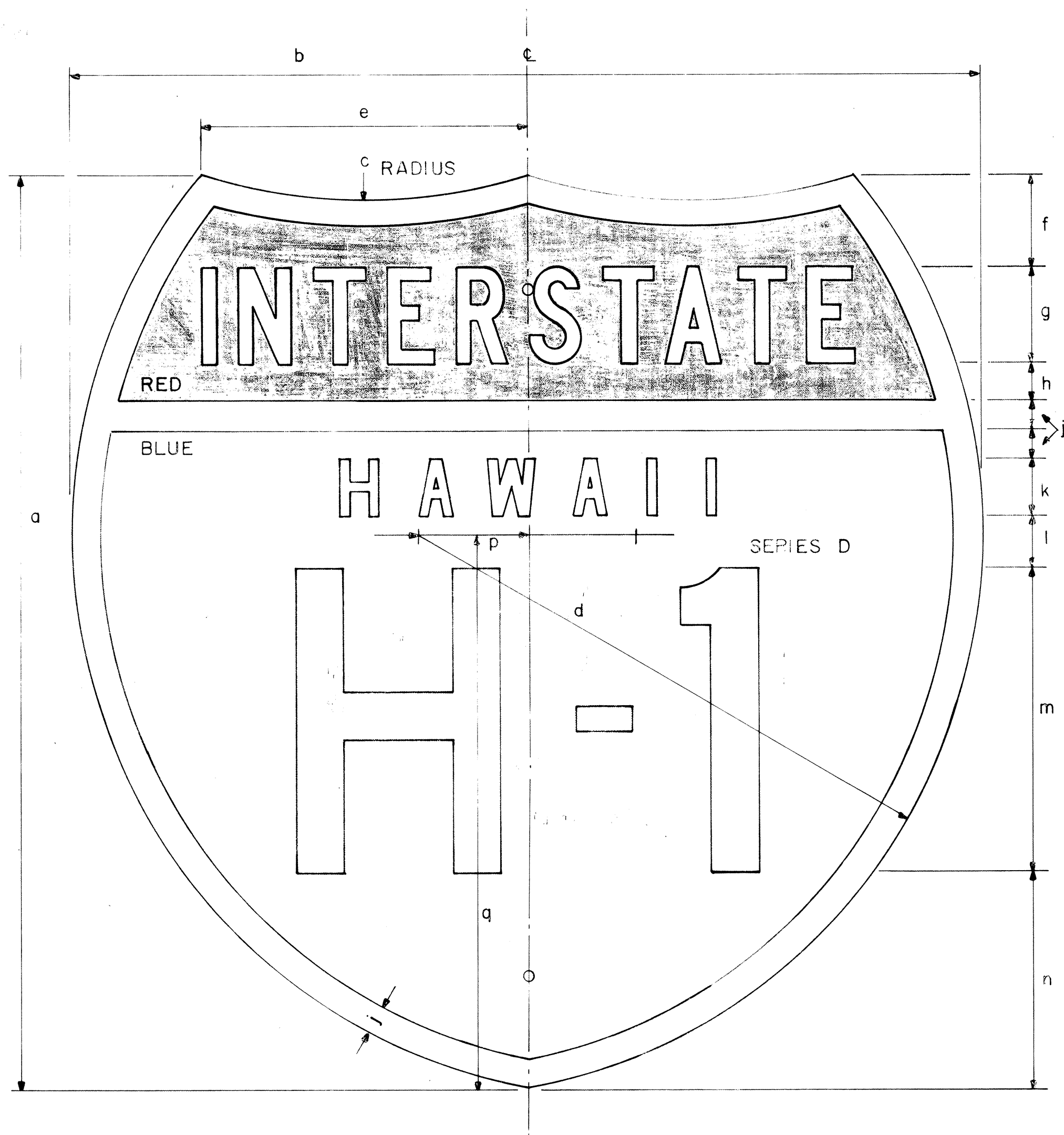


APPROVED: *[Signature]* DATE: 1/3/67
DIRECTOR OF TRANSPORTATION

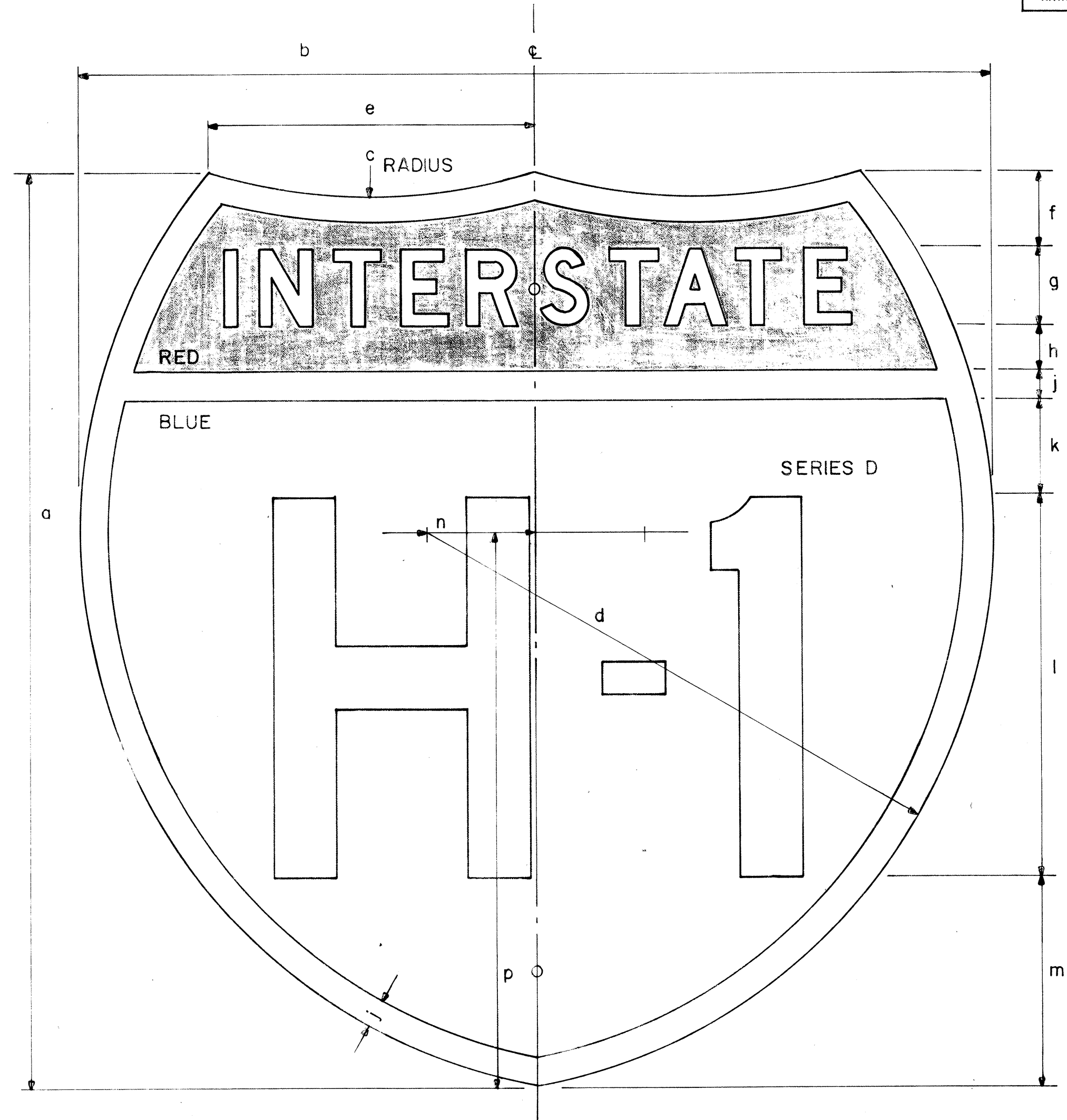
DECEMBER 8, 1964
REVISED: FEBRUARY 25, 1964

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

SHEET No. OF SHEETS



INTERSTATE ROUTE MARKER
IM-1 ()



INTERSTATE ROUTE MARKER
IM-2 ()

INTERSTATE SHIELDS - INDEPENDENT USE

()	a	b	c	d	e	f	g	h	j	k	l	m	n	p	q
1	18	21	13 1/8	12 9/16	9 3/16	1 25/32	1 7/8 C	3/4	9/16	1 1/8 D	1 1/32	6	4 5/16	2 1/16	12 7/16
2	24	24	15	14 7/8	8 5/8	2 3/8	2 1/2 C	1	3/4	1 1/2 D	1 3/8	8	5 3/4	2 7/8	14 5/8
3	36	36	22 1/2	22 5/16	12 15/16	3 9/16	3 3/4 C	1 1/2	1 1/8	2 1/4 D	2 1/16	12	8 5/8	4 5/16	21 15/16

INTERSTATE SHIELDS ON GUIDE SIGNS

()	a	b	c	d	e	f	g	h	j	k	l	m	n	p
2	24	24	15	14 7/8	8 5/8	2	2 D	1 3/16	3/4	2 9/16	10	5 1/2	2 7/8	14 5/8
3	36	36	22 1/2	22 5/16	12 15/16	3 7/16	3 C	1 5/16	1 1/8	3 1/8	15	9	4 5/16	21 15/16
4	48	48	30	29 3/4	17 1/4	4 3/4	5 C	2	1 1/2	4	18	12 3/4	5 3/4	29 1/4

GENERAL NOTES

- The shape, color, dimensions, symbols, wording, lettering and reflectorizing of all signs shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways," dated June 1961 and the BPR manual "Standard Highway Signs," dated September 1961, unless otherwise specified.
- All letters and figures shall conform to the manual "Standard Alphabets for Highway Signs," Dept. of Commerce, Bureau of Public Roads, 1952.
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have 3/8" bolt holes drilled at appropriate locations unless otherwise specified.
- The Interstate Route Marker shall be a cut-out shield, in a red, white and blue design as shown on the plans.

APPROVED:

DATE:

DIRECTOR OF TRANSPORTATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
INTERSTATE ROUTE MARKERS

No Scale

SHEET NO OF SHEETS