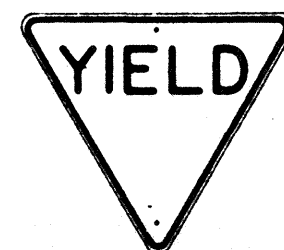
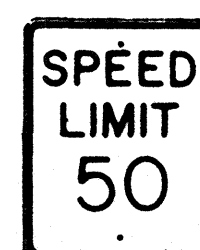


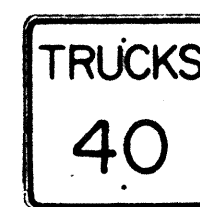
R1-1 30"x 30"



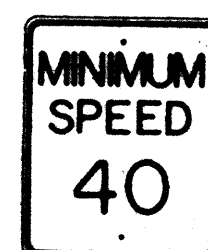
R1-2 36"x36"x36"
R1-2-E 48"x48"x48"
R1-2-I 60"x60"x60"



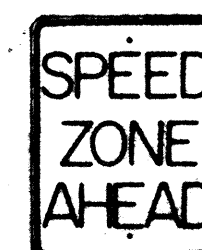
R2-1(50) 24"x30"
R2-1(50)-E 36"x48"
R2-1(50)-I 48"x60"



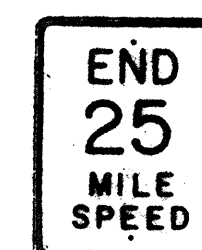
R2-2(40) 24"x24"
R2-2(40)-E 36"x36"
R2-2(40)-I 48"x48"



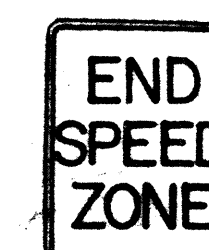
R2-4(40) 24"x30"
R2-4(40)-E 36"x48"
R2-4(40)-I 48"x60"



R2-5 24"x30"
R2-5-E 36"x48"
R2-5-I 48"x60"



R2-6(25) 24"x30"
R2-6(25)-E 36"x48"
R2-6(25)-I 48"x60"



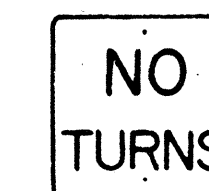
R2-7 24"x30"
R2-7-E 36"x48"
R2-7-I 48"x60"



R3-1 24"x30"
R3-1-E 36"x48"



R3-2 24"x30"
R3-2-E 36"x48"



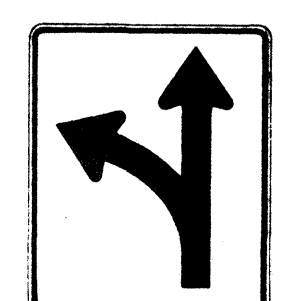
R3-3 24"x24"



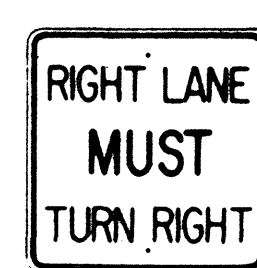
R3-4 24"x30"
R3-4-E 36"x48"
R3-4-I 48"x60"



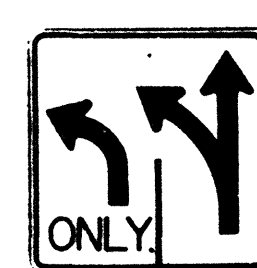
R3-5(L) 30"x36"



R3-6(L) 30"x36"



R3-7(R) 30"x30"



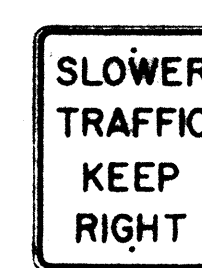
R3-8(L) 30"x30"



R4-1 24"x30"



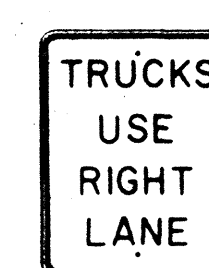
R4-2 24"x30"



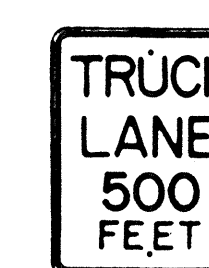
R4-3 24"x30"
R4-3-E 36"x48"
R4-3-I 48"x60"



R4-4 24"x30"
R4-4-E 36"x48"
R4-4-I 48"x60"



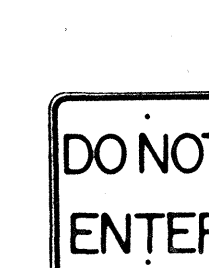
R4-5 24"x30"
R4-5-E 36"x48"



R4-6 24"x30"
R4-6-E 36"x48"



R4-7(R) 24"x30"
R4-7(R)-E 36"x48"



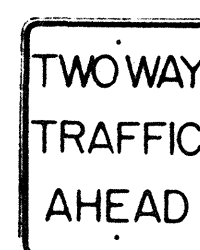
R5-1 24"x24"



R6-1(R) 36"x12"



R6-2(R) 18"x24"



R6-3 24"x30"



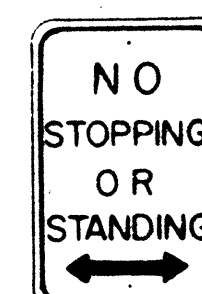
R6-4 24"x30"



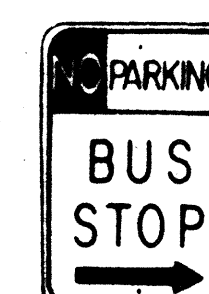
R6-5 24"x30"



R7-1 12"x18"



R7-4 12"x18"
R7-4-E 24"x30"



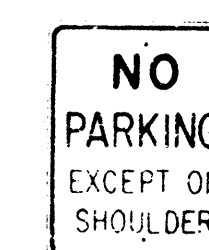
R7-107(R) 12"x18"



R7-201 12"x6"



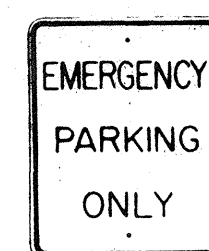
R8-1 24"x30"
R8-1-E 36"x48"
R8-1-I 48"x60"



R8-2 24"x30"
R8-2-E 36"x48"



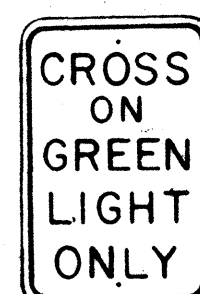
R8-3 24"x30"
R8-3-E 36"x48"



R8-4 24"x30"
R8-4-E 36"x48"
R8-4-I 48"x36"



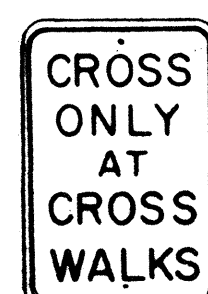
R9-1 18"x24"



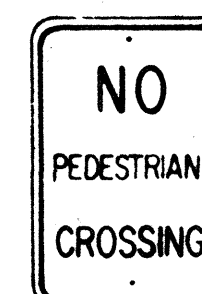
R9-2 12"x18"



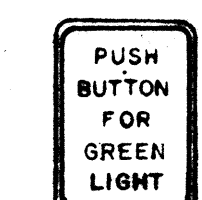
R9-3 12"x18"



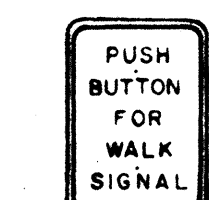
R9-4 12"x18"



R9-5 12"x18"



R9-6 9"x12"



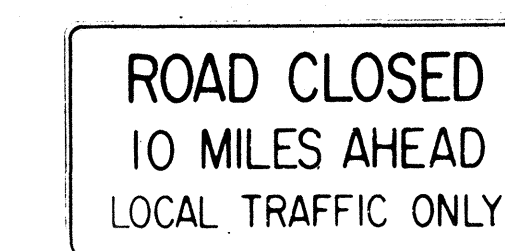
R9-7 9"x12"



R10-1 24"x30"
R10-1-E 36"x48"
R10-1-I 48"x60"



R10-2 48"x30"



R10-3(10) 60"x30"



R10-4(10) 18"x24"

NOTE:

- The shape, color, dimensions, symbols, wording, lettering and reflectorization 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 regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory signs shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations unless otherwise noted.
- The suffix "E" denotes Expressway signs and "I" denotes Interstate signs.
- For R2 signs, number in () indicates speed and shall be as shown on the plans.
- (R) or (L) indicates right or left and shall be as shown on the plans.
- For R10-4 sign, number in () indicates weight and shall be as shown on the plan.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

REGULATORY SIGNS
FARRINGTON HIGHWAY WIDENING
PROJECT B-900-01-64
NOT TO SCALE UNIT I

SHEET No. 1 OF 76 SHEETS

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



W7-2 48"x48"



W8-7 30"x30"



W14-1 30"x30"



W20-1a 48"x48"



W20-2d 48"x48"



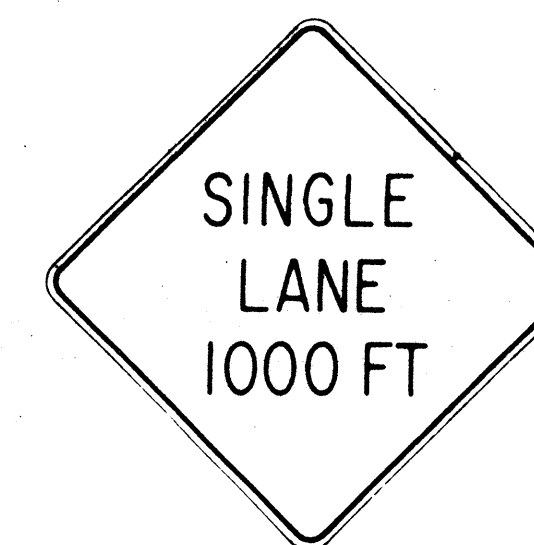
W20-3b 48"x48"



W20-4d 48"x48"



W20-5d(L) 48"x48"



W20-6b 48"x48"



W20-7c 48"x48"



W21-1 30"x30"



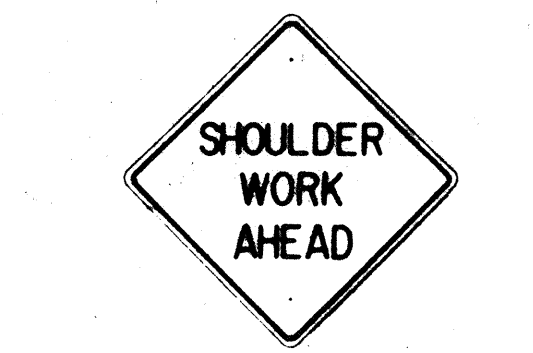
W21-2 24"x24"



W21-3 36"x36"



W21-4 30"x30"



W21-5 30"x30"



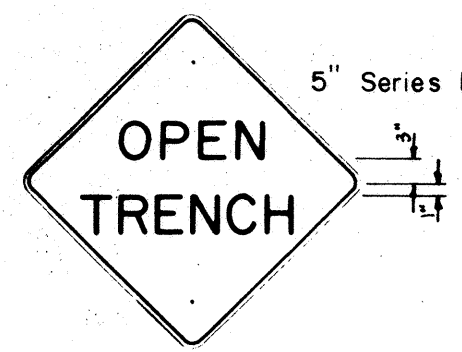
W21-6 30"x30"



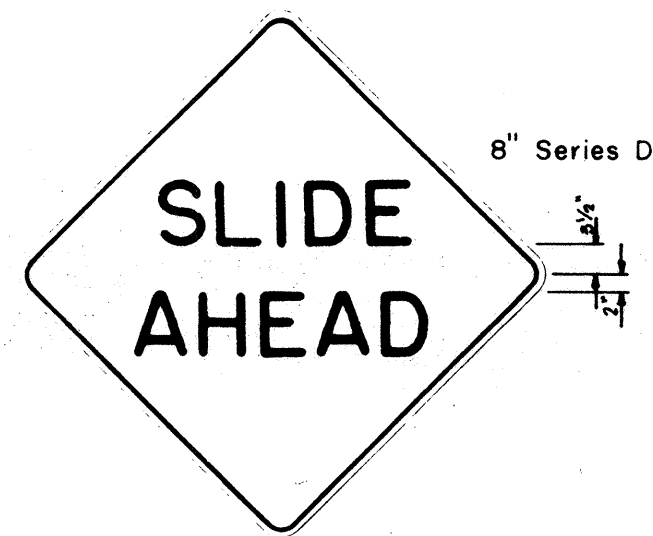
W22-1 30"x30"



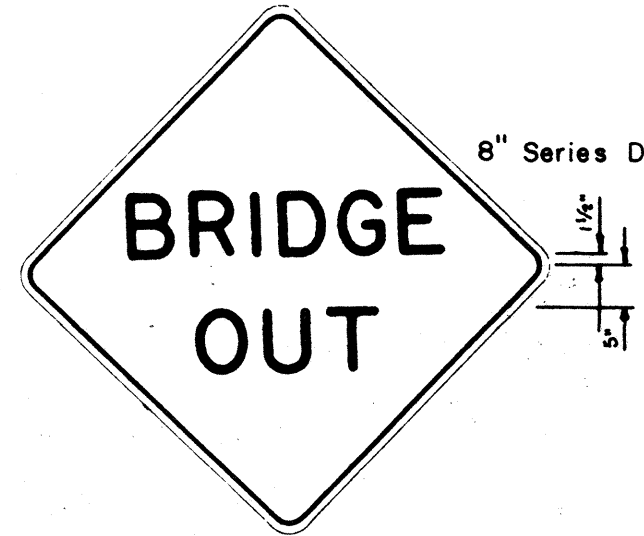
W22-2 30"x30"



W22-3 30"x30"



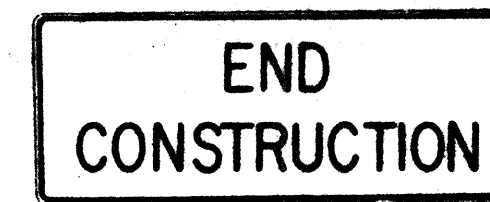
W22-4 48"x48"



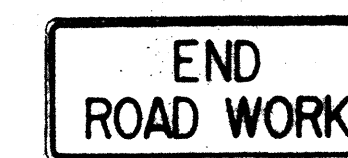
W22-5 48"x48"



G20-1(5) 60"x36"



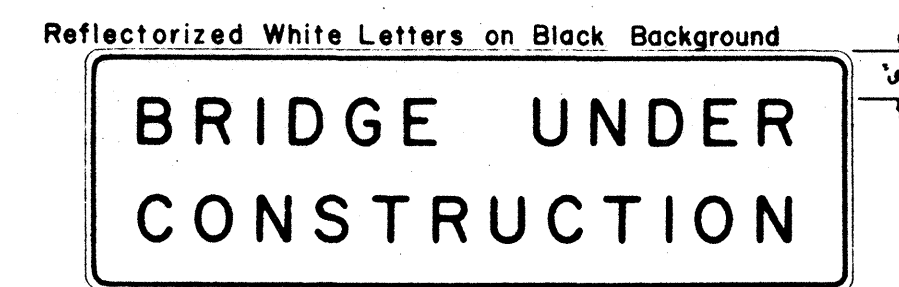
G20-2 60"x24"



G20-3 42"x18"



M5-7(L) 48"x18"



CW-1 96"x30"

NOTE:

- The shape, color, dimensions, symbols, wording, lettering and reflectorization 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 signs shall be reflectorized unless otherwise specified.
- All signs shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations unless otherwise noted.
- For W20 series signs, suffixes a,b,c and d are as follows a 1500 FT, b 1000 FT, c 500 FT and d AHEAD.
- (R) or (L) indicates right or left and shall be as shown on the plans.
- Number in () indicates miles and shall be as shown on the plans.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

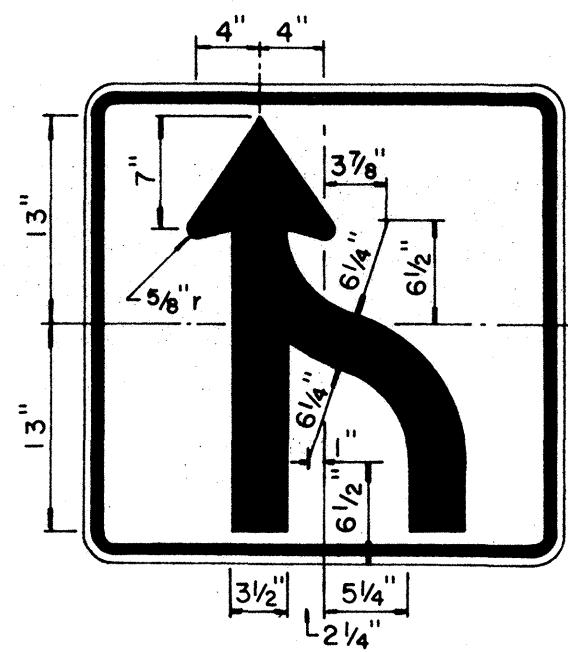
CONSTRUCTION SIGNS

FARRINGTON HIGHWAY WIDENING
PROJECT B-900-01-64
NOT TO SCALE UNIT I

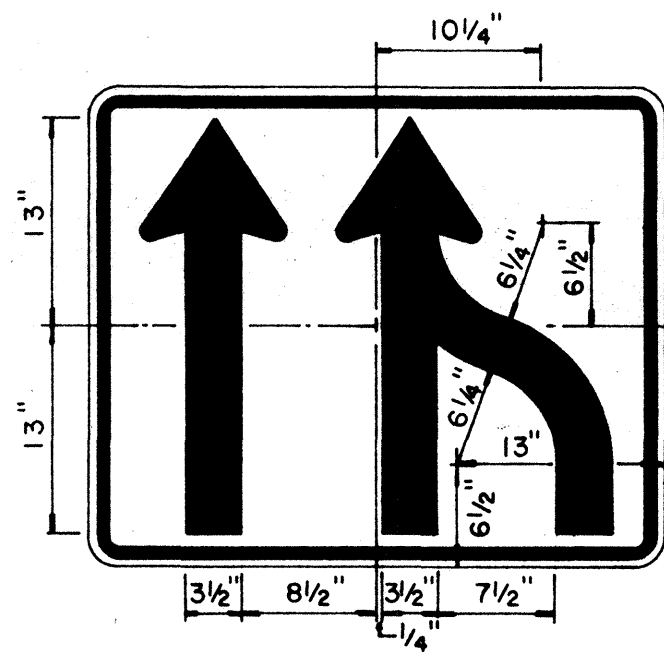
ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DESIGNED BY	
NOTE BOOK	QUANTITIES BY	
	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID YEAR	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1967	25	76

PROJECT NO. B-900-01-64 UNIT I



R3-9 30" x 30"



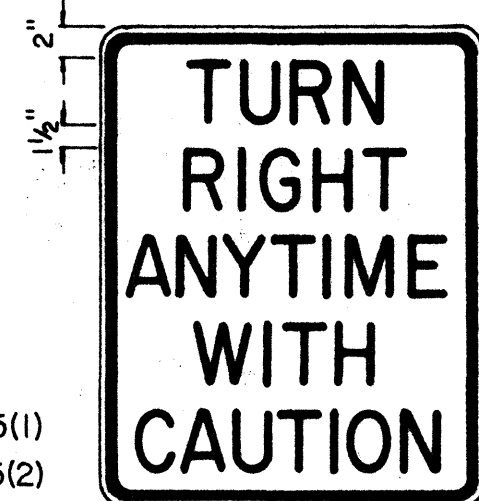
R3-10 36" x 30"



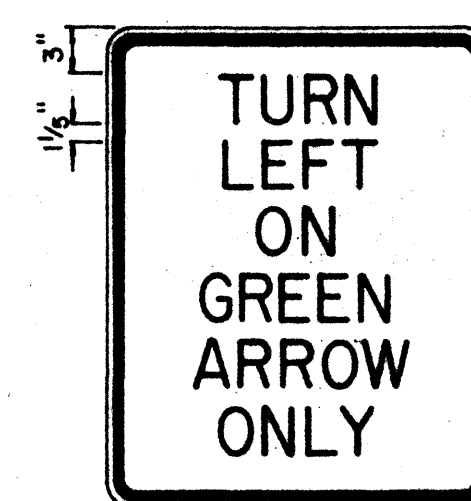
R5-5(1) 24" x 18"

R5-5(2) 36" x 24"

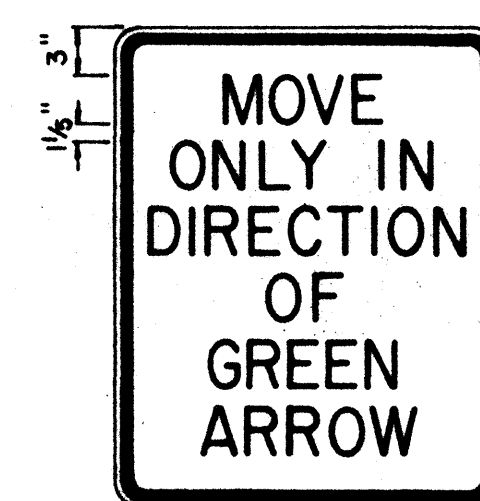
NOTE:
White legend and border
on Red background.



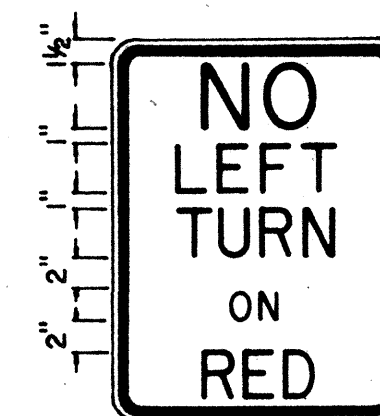
R15-1 24" x 30"



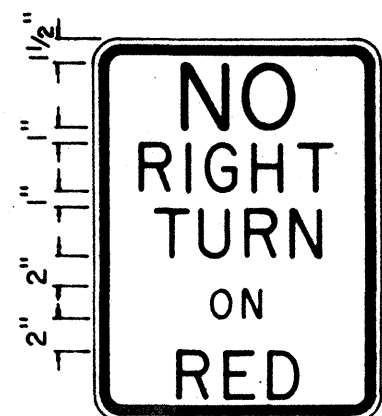
R16-1 24" x 30"



R16-2 24" x 30"



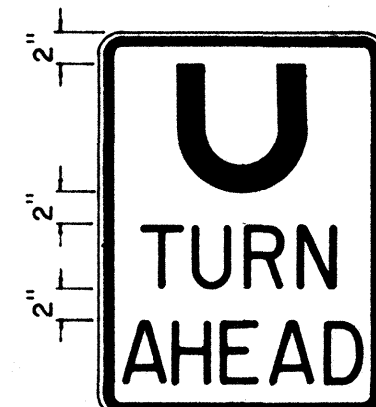
R17-1 18" x 24"



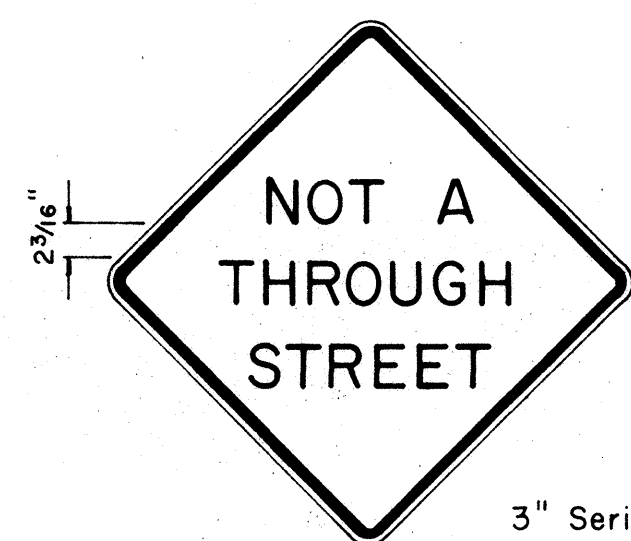
R17-2 18" x 24"



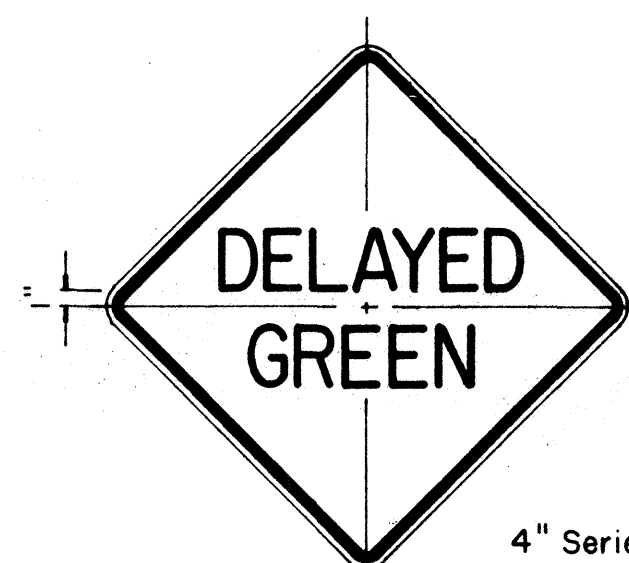
R18-1 36" x 30"



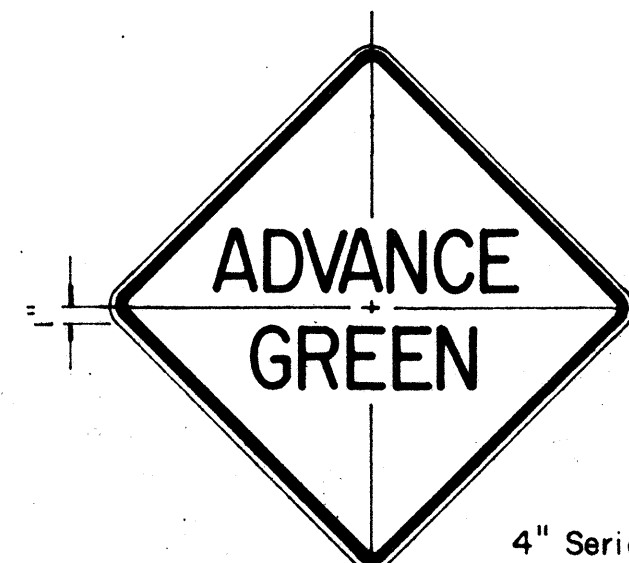
R19-1 18" x 24"



W13-4 24" x 24"



W15-1 24" x 24"



W15-2 24" x 24"

NOTE:

1. The shape, color, plate details, lettering and reflectorization of Regulatory signs (Prefix R) and Warning signs (Prefix W) 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.
2. All regulatory and warning signs shall be reflectorized unless otherwise specified.
3. All regulatory and warning signs shall have 3/8" bolt holes drilled at appropriate locations unless otherwise specified.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

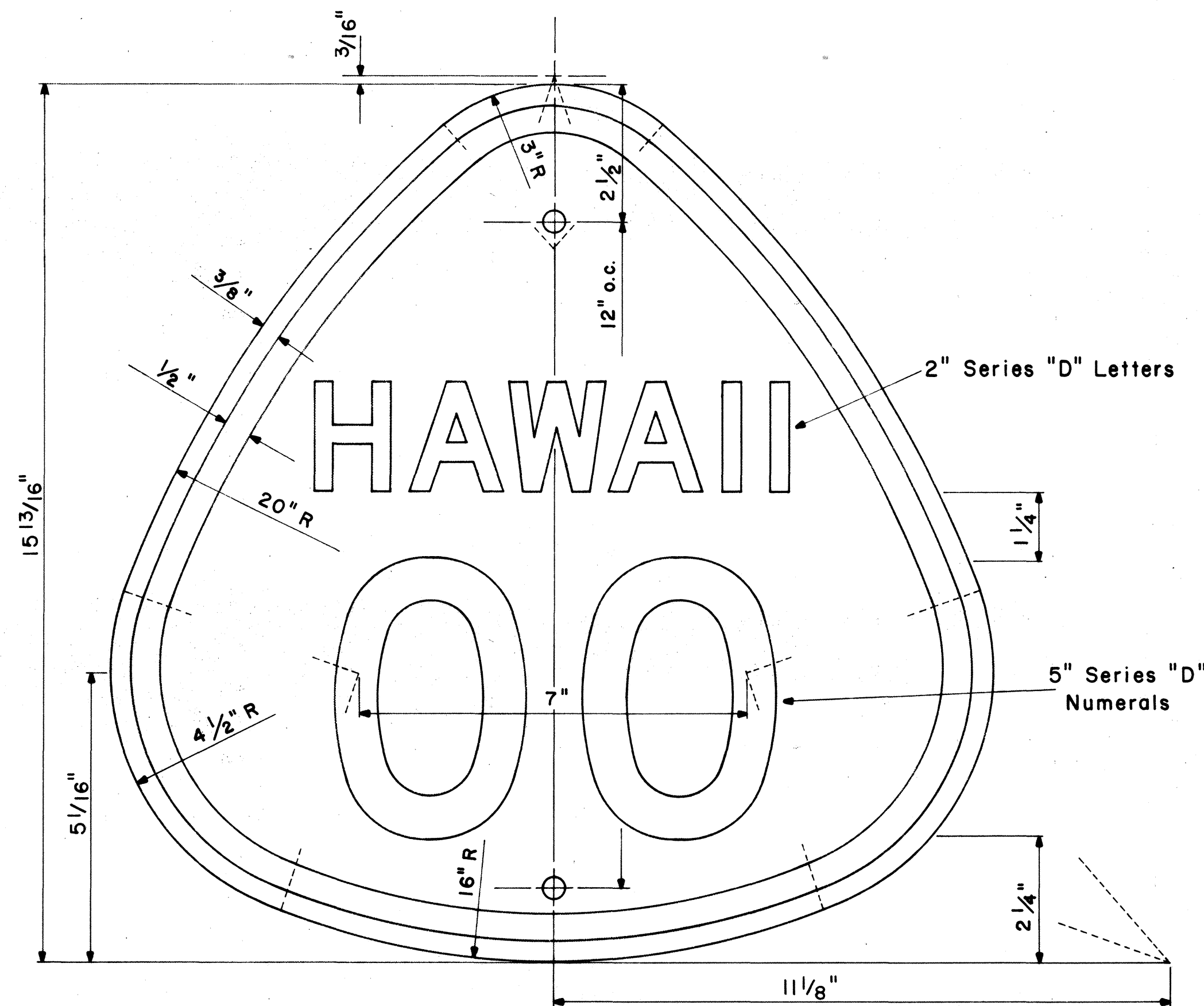
STANDARD DETAILS

MISCELLANEOUS

REGULATORY & WARNING SIGNS

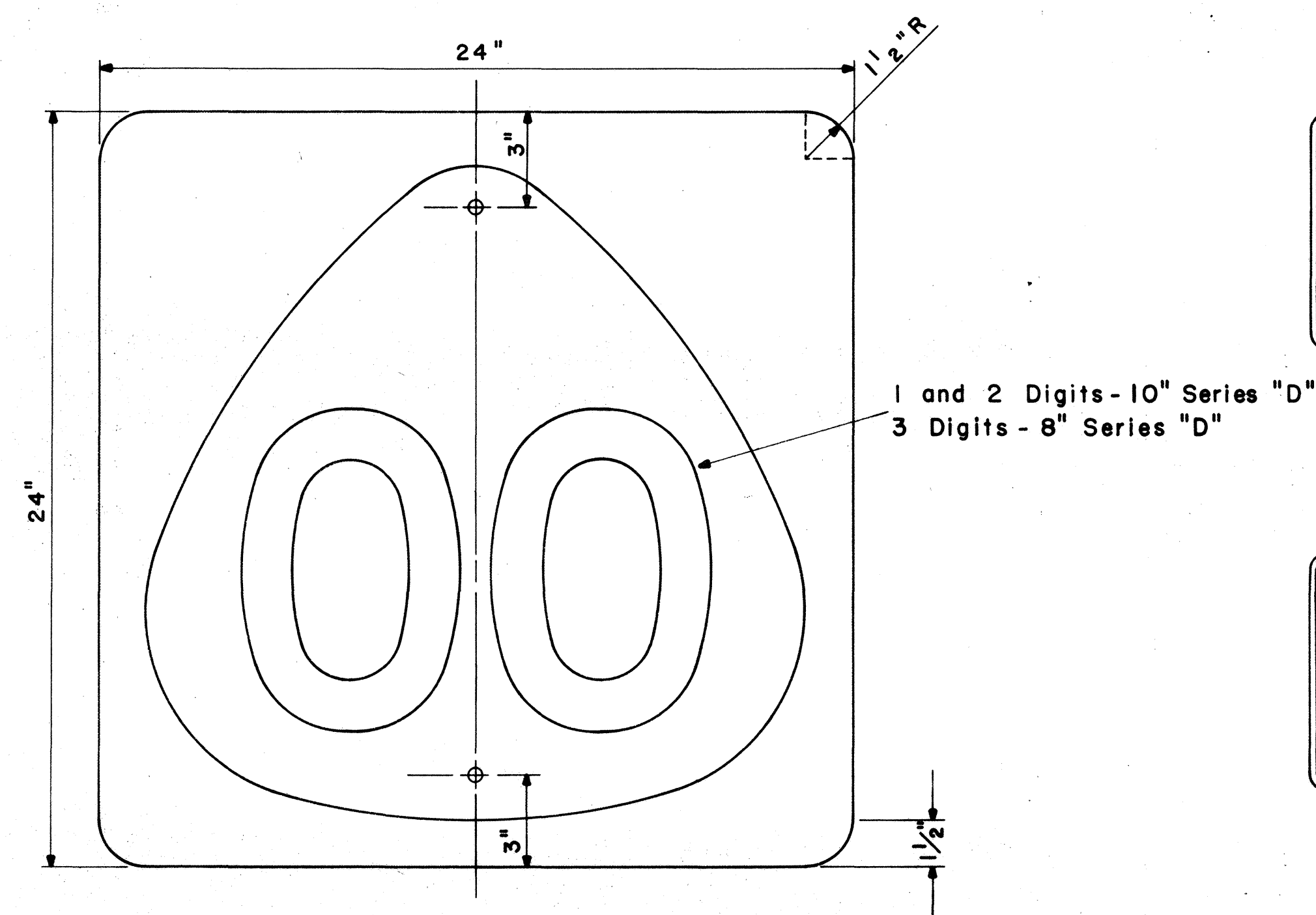
FARRINGTON HIGHWAY WIDENING
PROJECT B-900-01-64
Scale: 1" = 1'-0" UNIT I

SHEET No. 3 OF 11 SHEETS



STATE ROUTE MARKER
M1-3(OO)

Scale: 1/2" = 1"

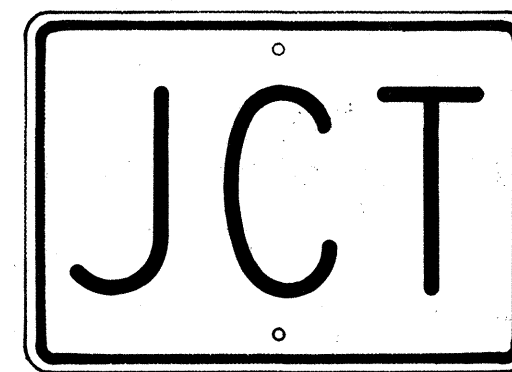


STATE ROUTE MARKER
M1-4(OO)

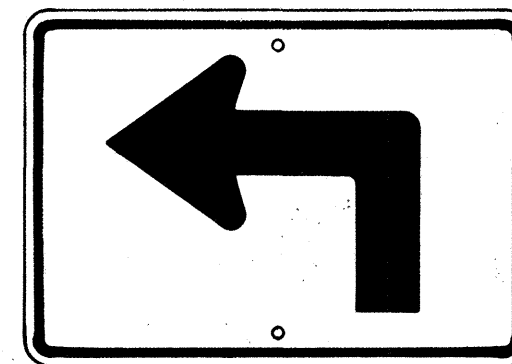
Scale: 1/4" = 1"

NOTE:

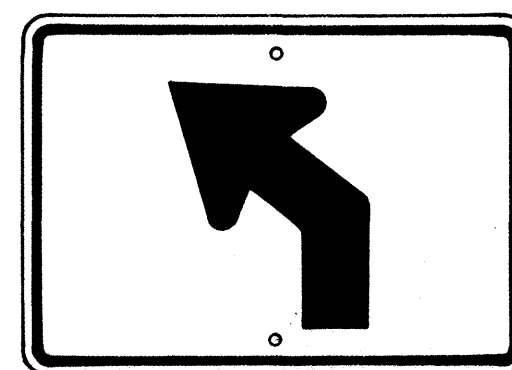
Multiply all dimensions of State Route Marker M1-3 by 1.3 for the dimensions of the shield for M1-4.



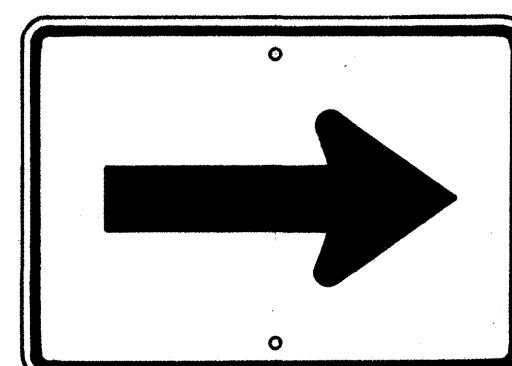
M2-1
21" x 15"



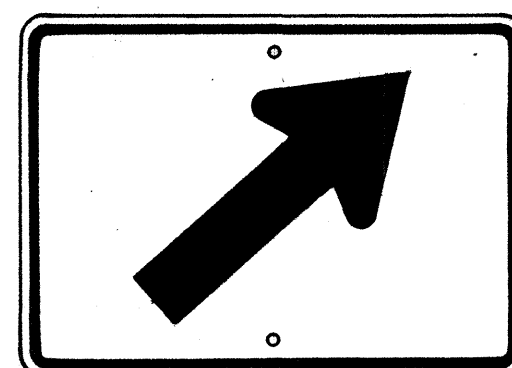
M3-1-L
* M3-1-R
21" x 15"



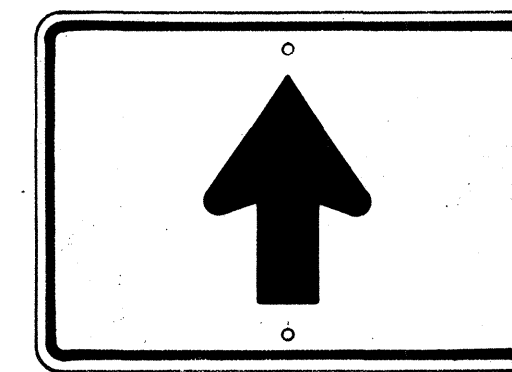
M3-2-L
* M3-2-R
21" x 15"



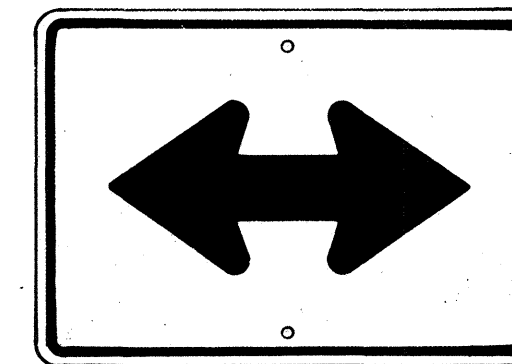
M4-1
21" x 15"



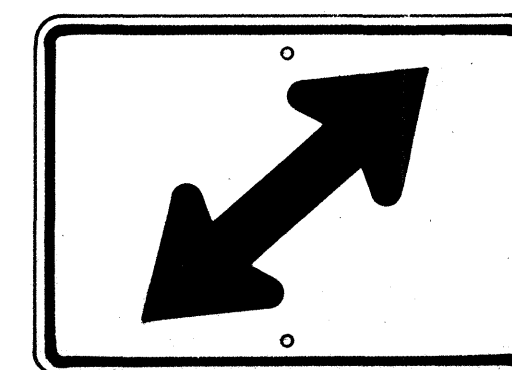
M4-2-R
* M4-2-L
21" x 15"



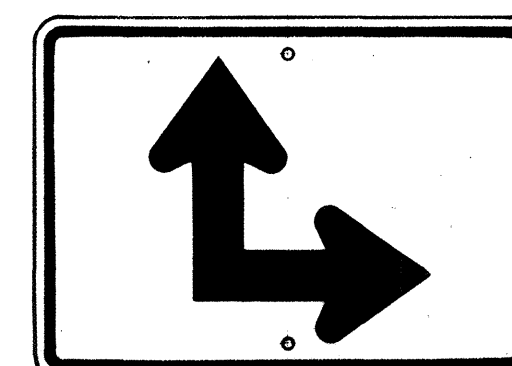
M4-3
21" x 15"



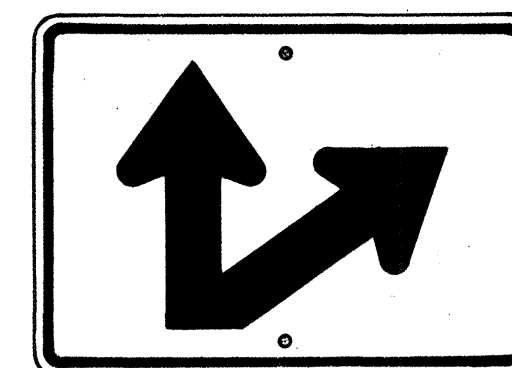
M4-4
21" x 15"



M4-5-R
* M4-5-L
21" x 15"



M4-6-R
* M4-6-L
21" x 15"



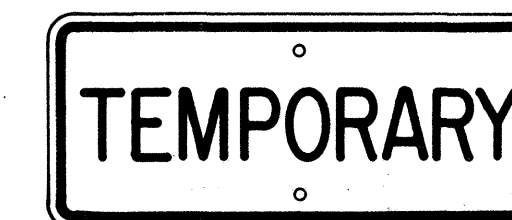
M4-7-R
* M4-7-L
21" x 15"

AUXILIARY MARKERS

Scale: 1/8" = 1"

* NOTE:

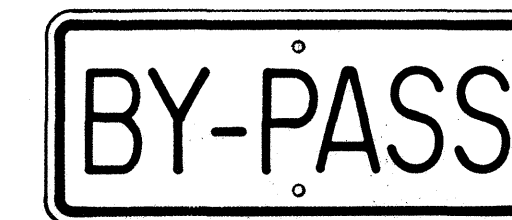
Signs shall be similar but opposite in direction.



M5-1
21" x 9"



M5-2
21" x 9"



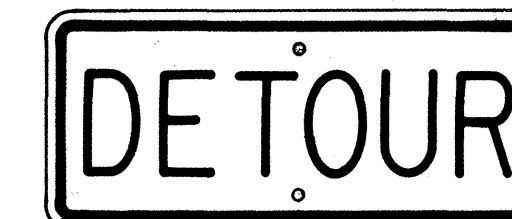
M5-3
21" x 9"



M5-4
21" x 9"



M5-5
21" x 9"



M5-6
21" x 9"



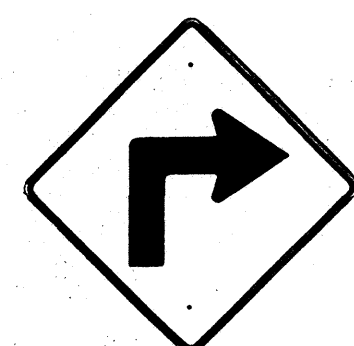
M6-1-N
21" x 9"
(See Note 6)



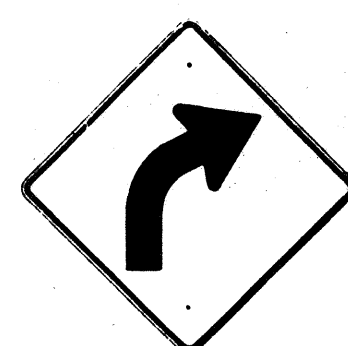
M7-1
18" x 12"

GENERAL NOTES

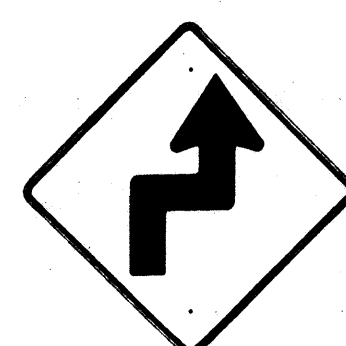
- The shape, color, dimensions, symbols, wording, lettering and reflectorizing of all signs shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways," dated June 1961 and the BPR manual "Standard Highway Signs," dated September 1961, unless otherwise specified.
- 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.
- All markers shall have a black legend on a white background unless otherwise specified.
- Sign message of Cardinal Direction Marker (M6-1) shall be denoted by the following suffixes:
M6-1-N : NORTH
M6-1-E : EAST
M6-1-S : SOUTH
M6-1-W : WEST
- Auxiliary markers denoted with the suffix "I": (M4-1-I) shall have a white legend on a blue background.
- Cardinal Direction Marker (M6-1) with suffix I (3) shall have a white legend on a blue background and shall be 30" x 15" in size.
- For M1-3 and M1-4 signs, number in () indicates route number and shall be as shown on the plan.



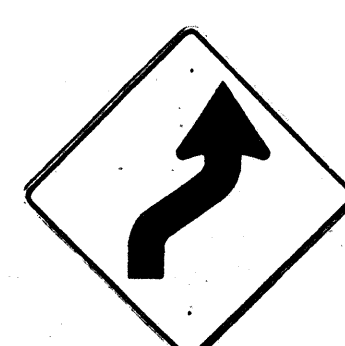
W1-1(R) 30" x 30"



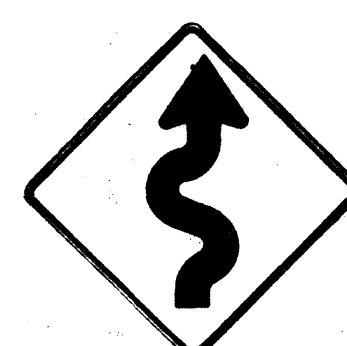
W1-2(R) 30" x 30"



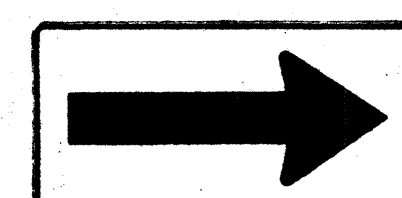
W1-3(R) 30" x 30"



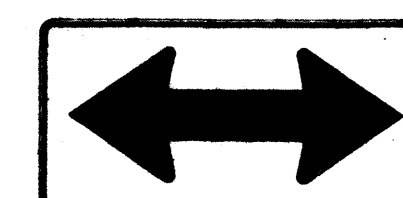
W1-4(R) 30" x 30"



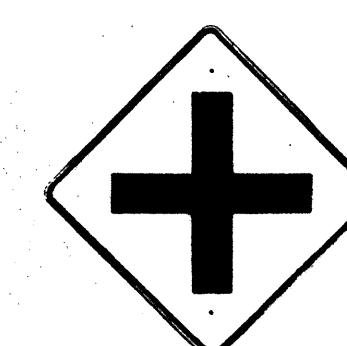
W1-5(R) 30" x 30"



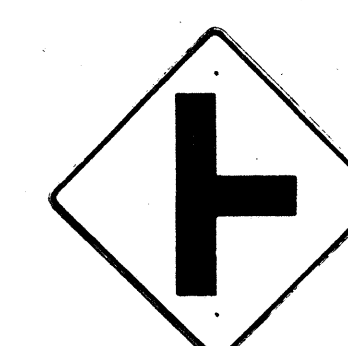
W1-6 48" x 24"



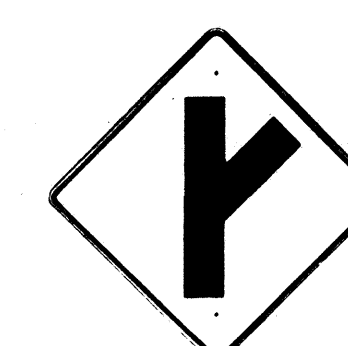
W1-7 48" x 24"



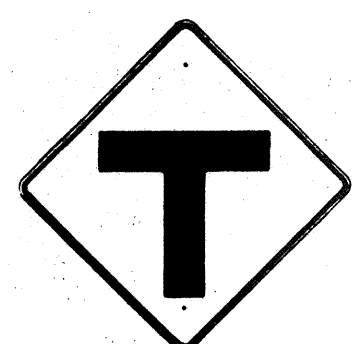
W2-1 30" x 30"



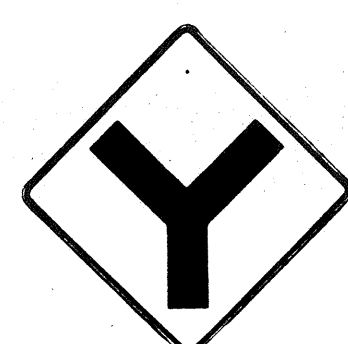
W2-2 30" x 30"



W2-3(R) 30" x 30"



W2-4 30" x 30"



W2-5 30" x 30"



W3-1 30" x 30"



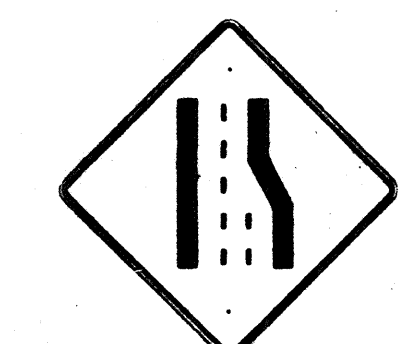
W3-2 30" x 30"



W3-3 36" x 36"



W4-1 30" x 30"
W4-1-E 36" x 36"
W4-1-I 48" x 48"



W4-2 30" x 30"
W4-2-E 36" x 36"



W5-1 30" x 30"
W5-1-E 36" x 36"



W5-2 30" x 30"



W5-3 30" x 30"



W6-1 36" x 36"



W6-2 36" x 36"



W7-1 30" x 30"



W8-1 30" x 30"



W8-2 30" x 30"



W8-3 30" x 30"



W8-4 30" x 30"



W8-5 30" x 30"



W9-1 30" x 30"



W9-2 30" x 30"



W10-1 36" DIAMETER



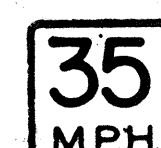
W11-1 30" x 30"



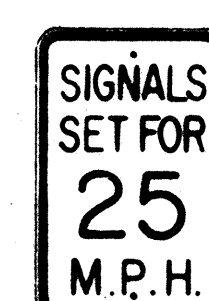
W11-5 30" x 30"



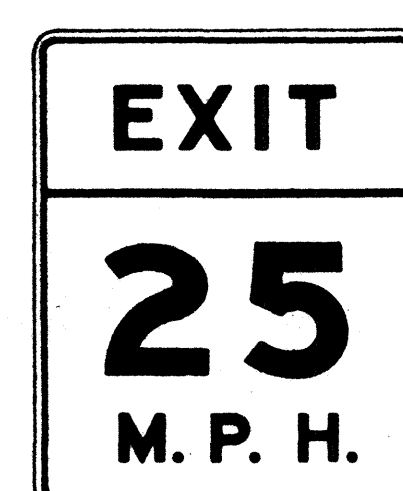
W12-2 36" x 36"



W13-1(35) 18" x 18"



W13-2(25) 12" x 18"

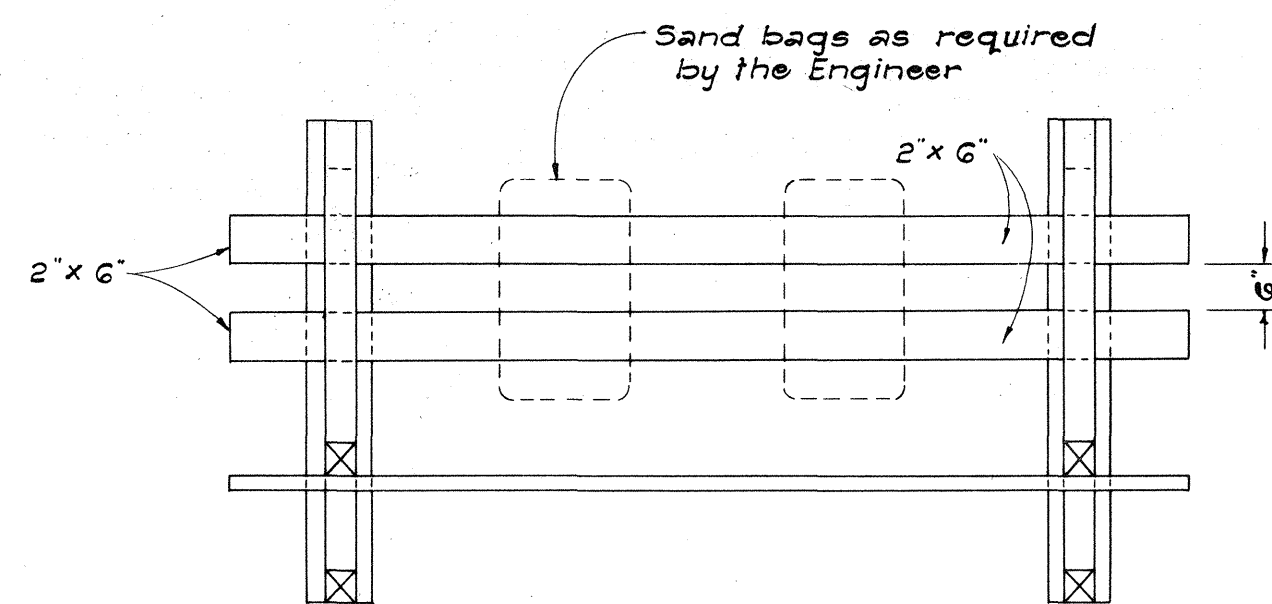


W13-3(25) 48" x 60"

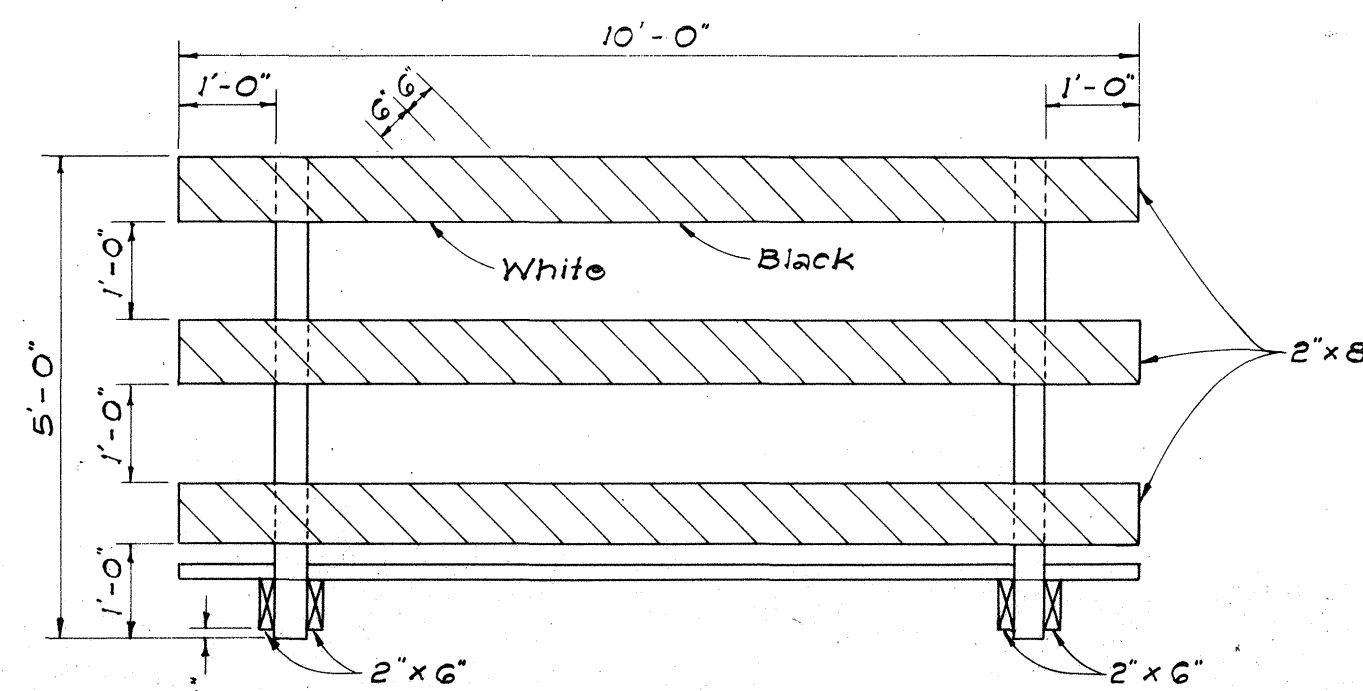
NOTE:

1. The shape, color, dimensions, symbols, wording, lettering and reflectorization 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.
2. All warning signs shall be reflectorized unless otherwise specified.
3. All warning signs shall have 3/8" bolt holes drilled at appropriate locations unless otherwise noted.
4. (R) or (L) indicates right or left and shall be as shown on the plan.
5. The suffix "E" denotes Expressway signs and "I" denotes Interstate signs.
6. For W13 sign, number in () indicates speed and shall be as shown on the plans.

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

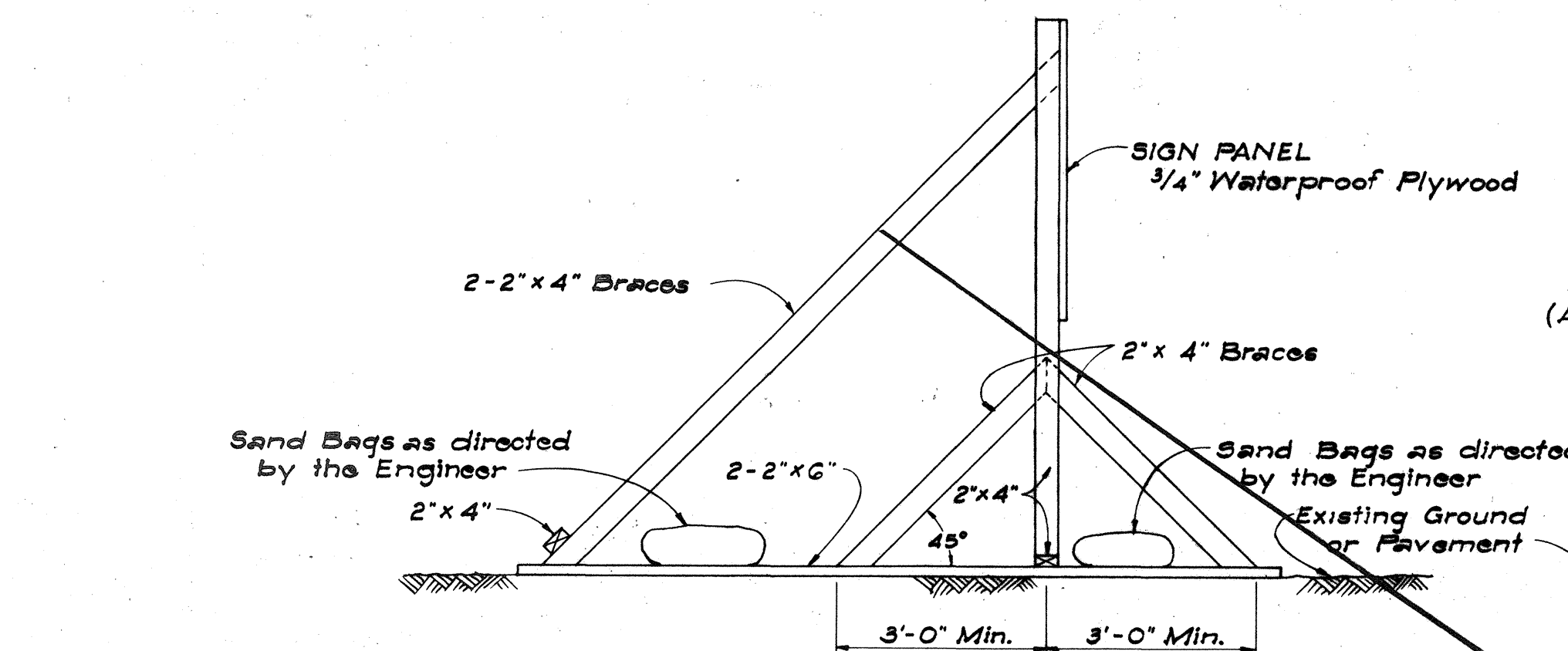


PLAN VIEW

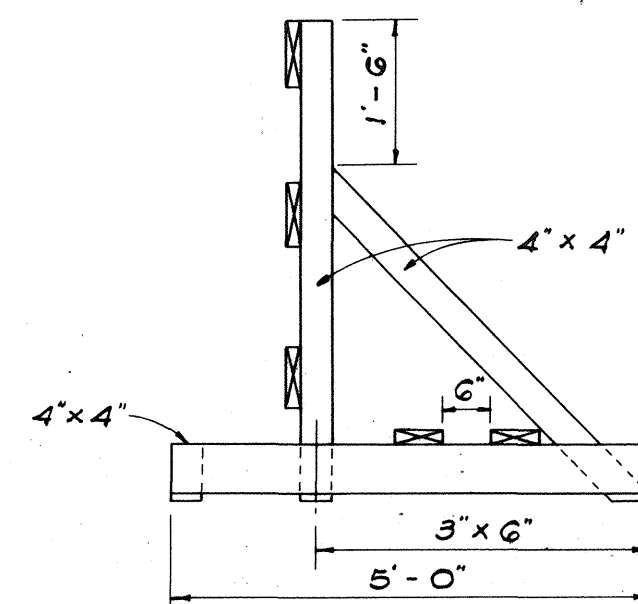


FRONT VIEW

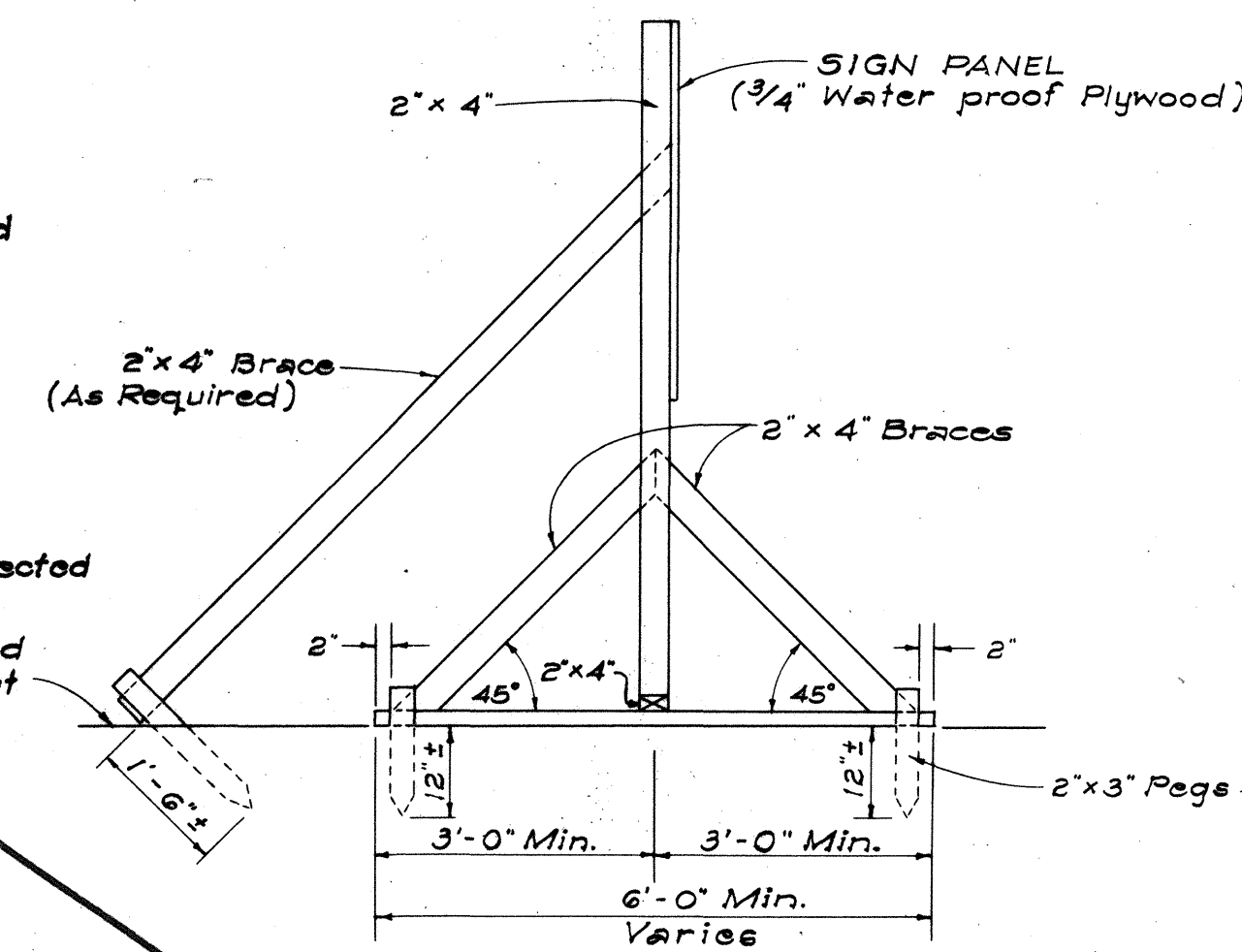
CLASS I BARRICADE



SIDE VIEW
(SIGN FRAME WEIGHTED DOWN)



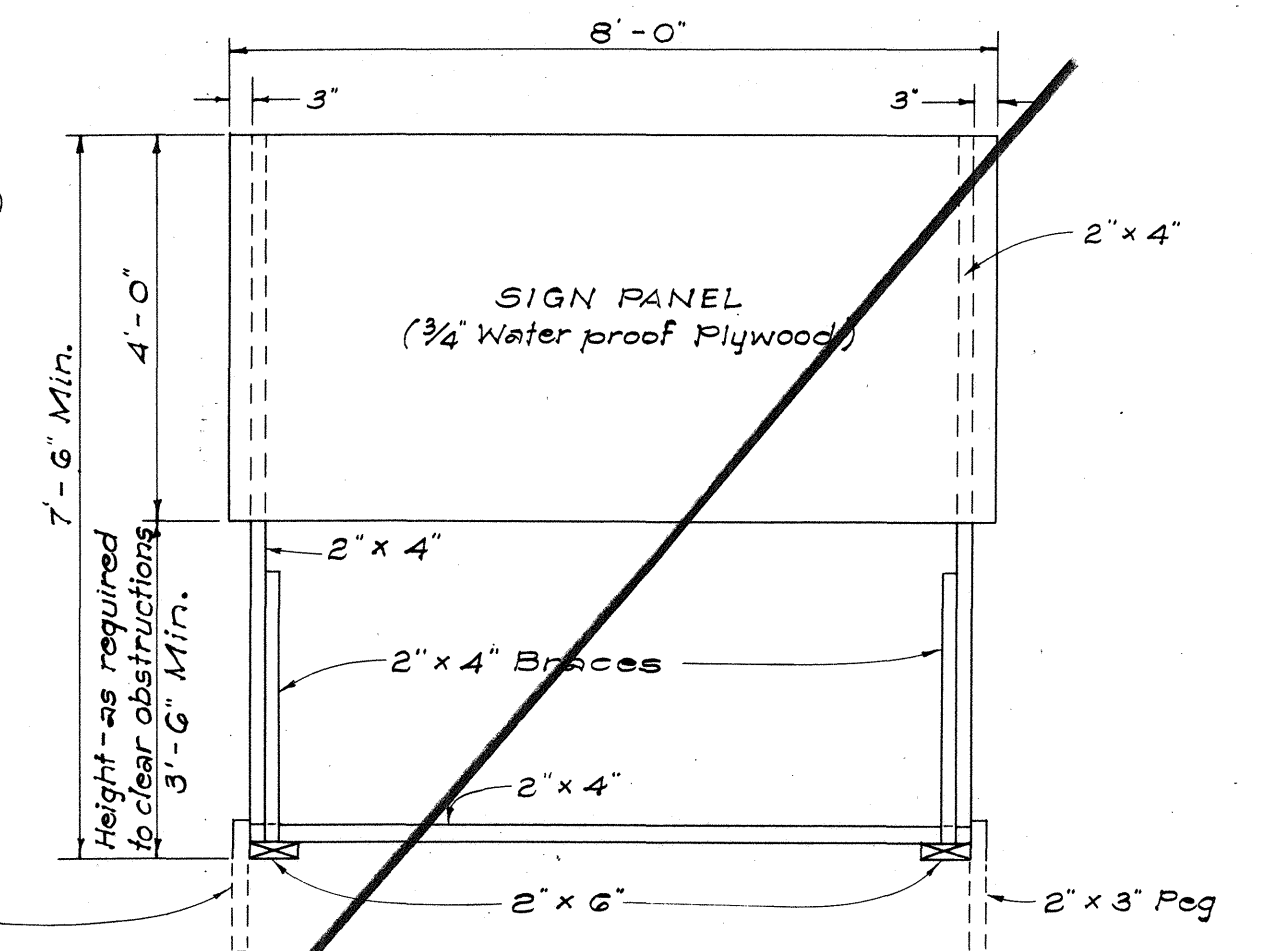
END VIEW



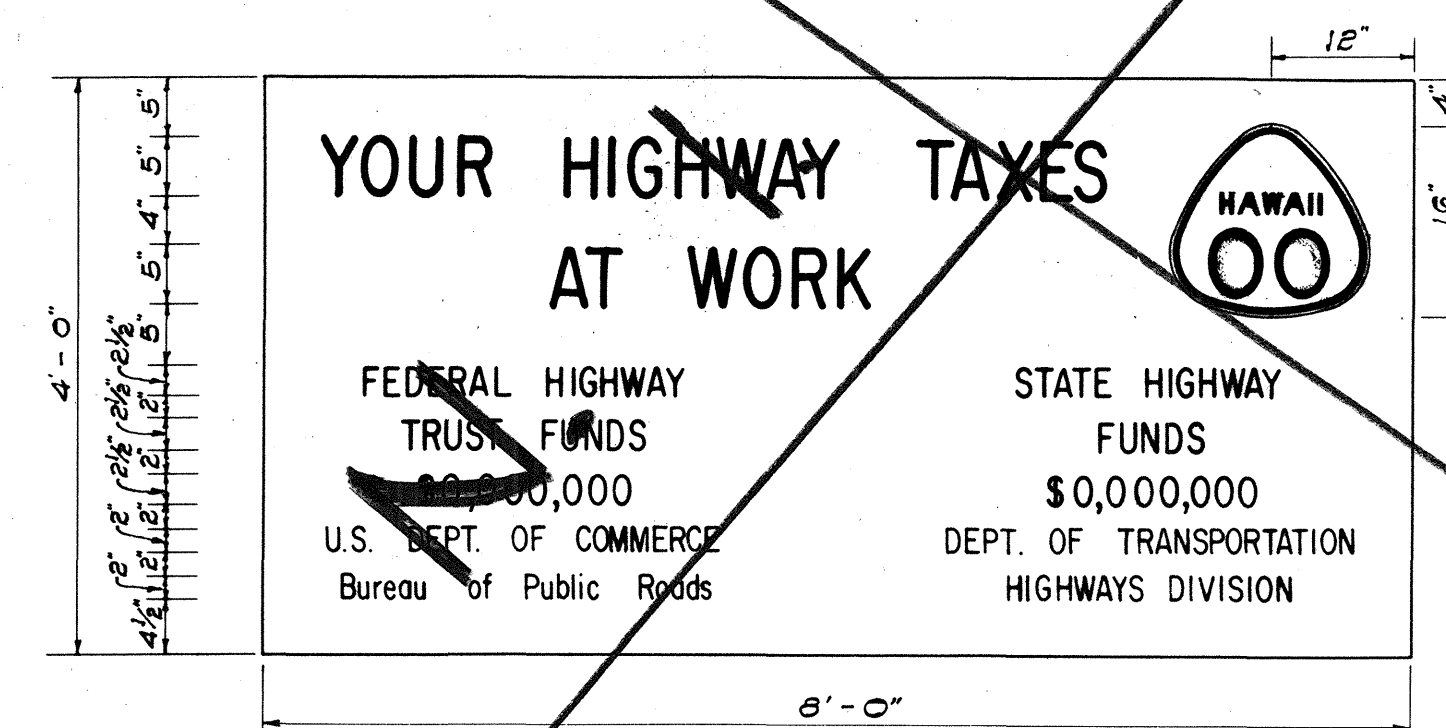
SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)

ELEVATIONS

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



FRONT VIEW



SIGN PANEL

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

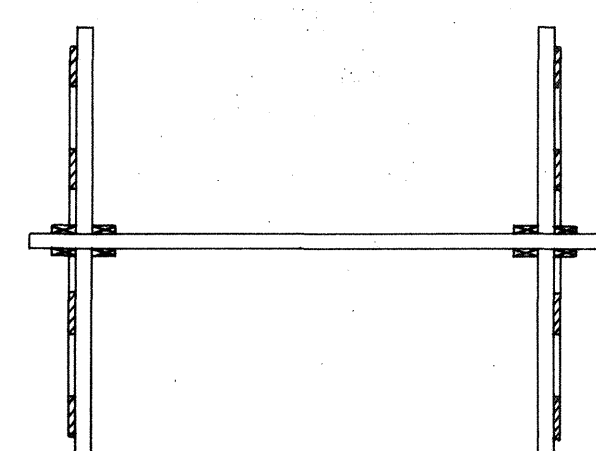
PRIMARY AND SECONDARY SYSTEMS
CONSTRUCTION IDENTIFICATION SIGN

Scale: As Shown

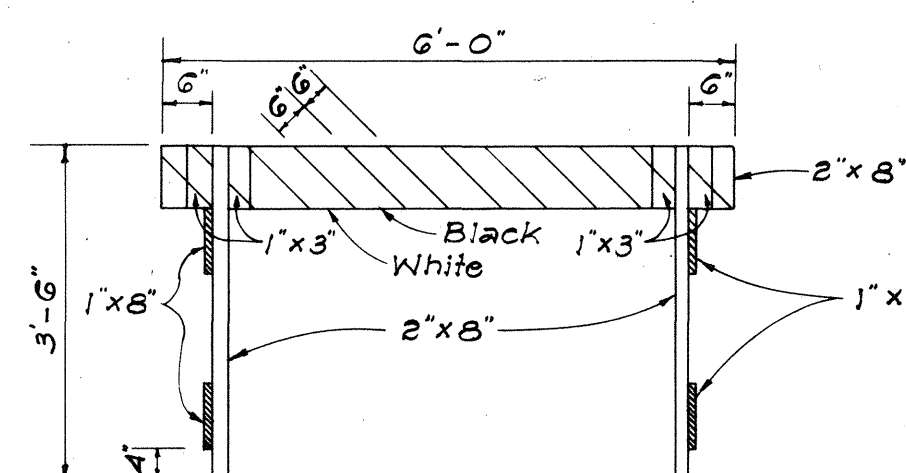
NOTES:

- A. CONSTRUCTION IDENTIFICATION SIGNS
1. The sign legend shall be black on white background.
 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.

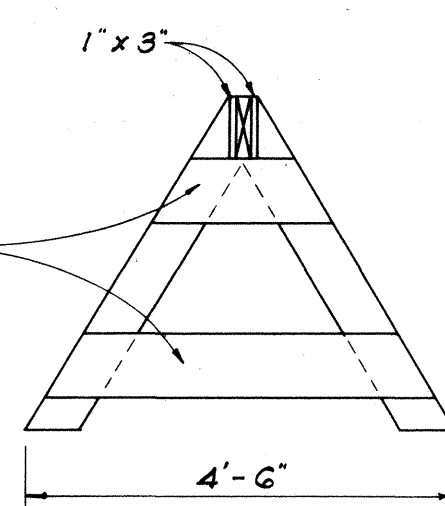
- B. WOOD BARRICADES
1. The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
 2. The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.



PLAN VIEW



FRONT VIEW



END VIEW

CLASS II BARRICADE

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

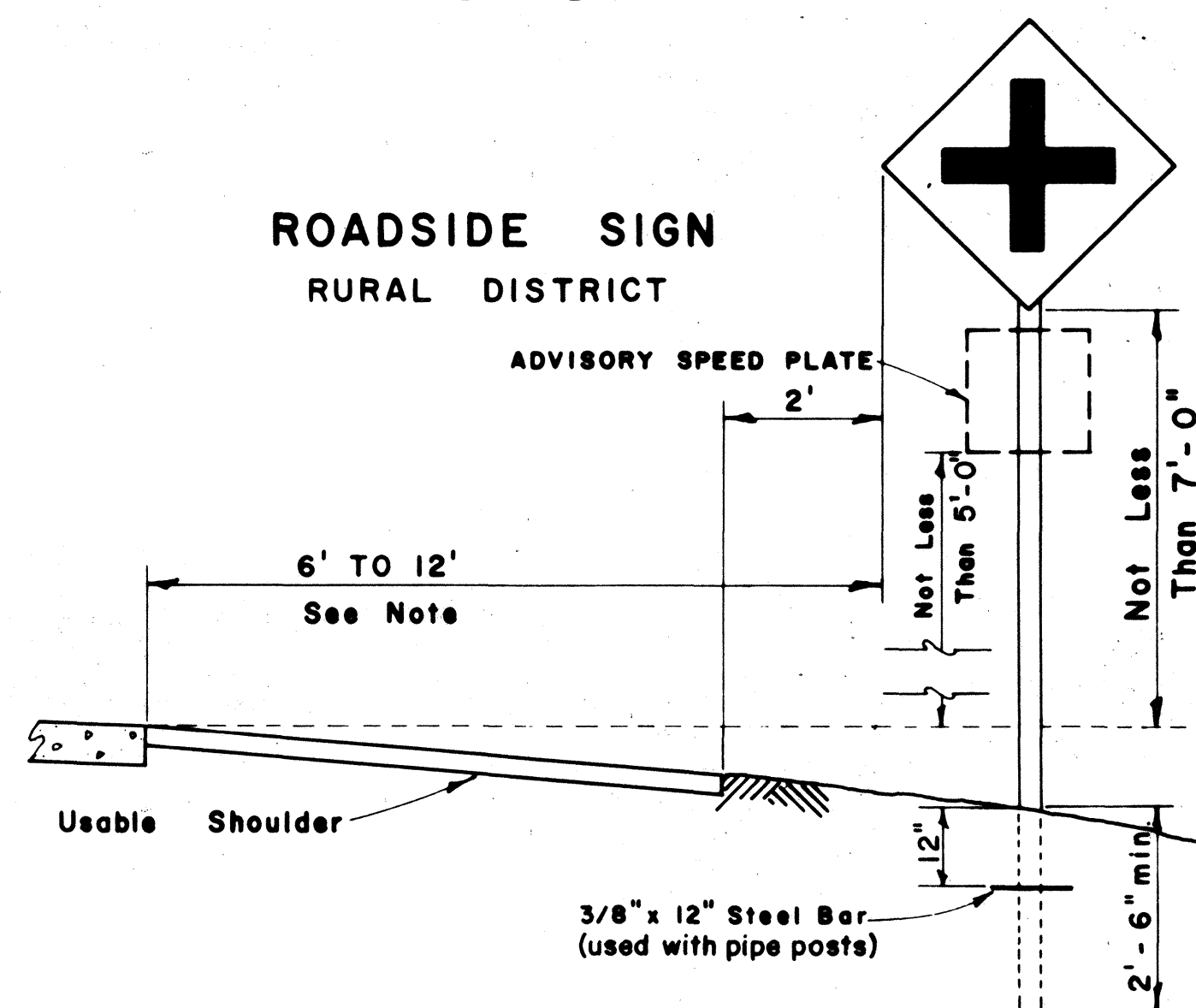
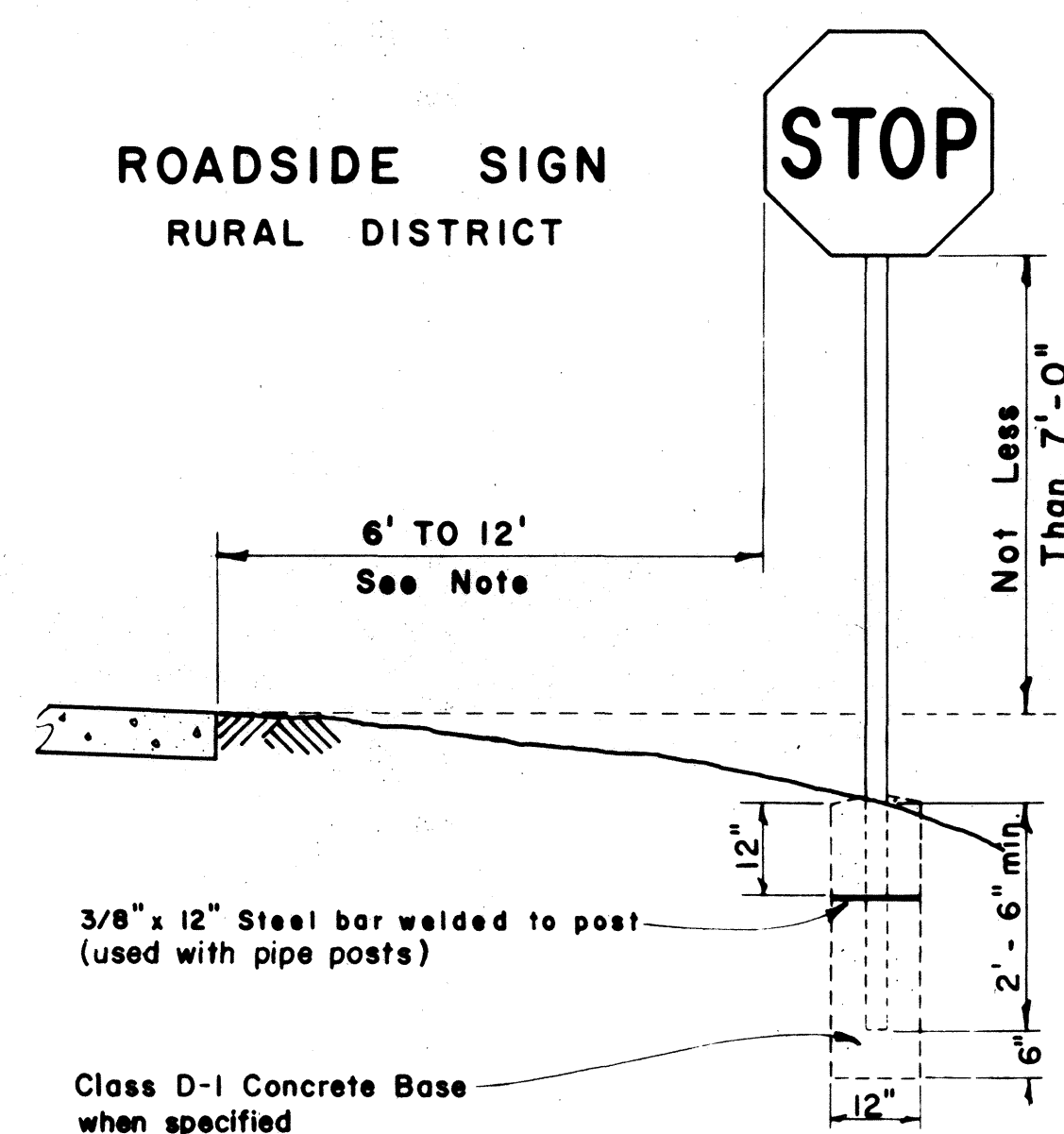
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES

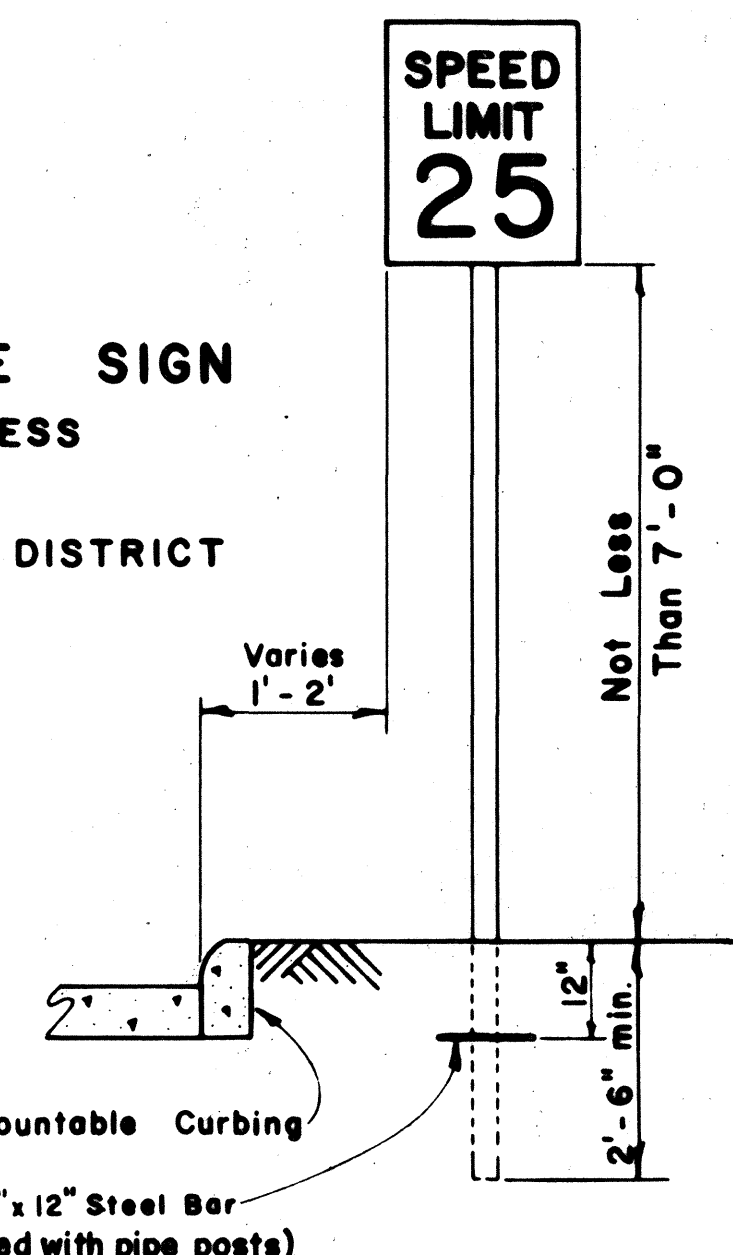
SCALE: As Shown DATE:

SHEET No. 6 OF 11 SHEETS

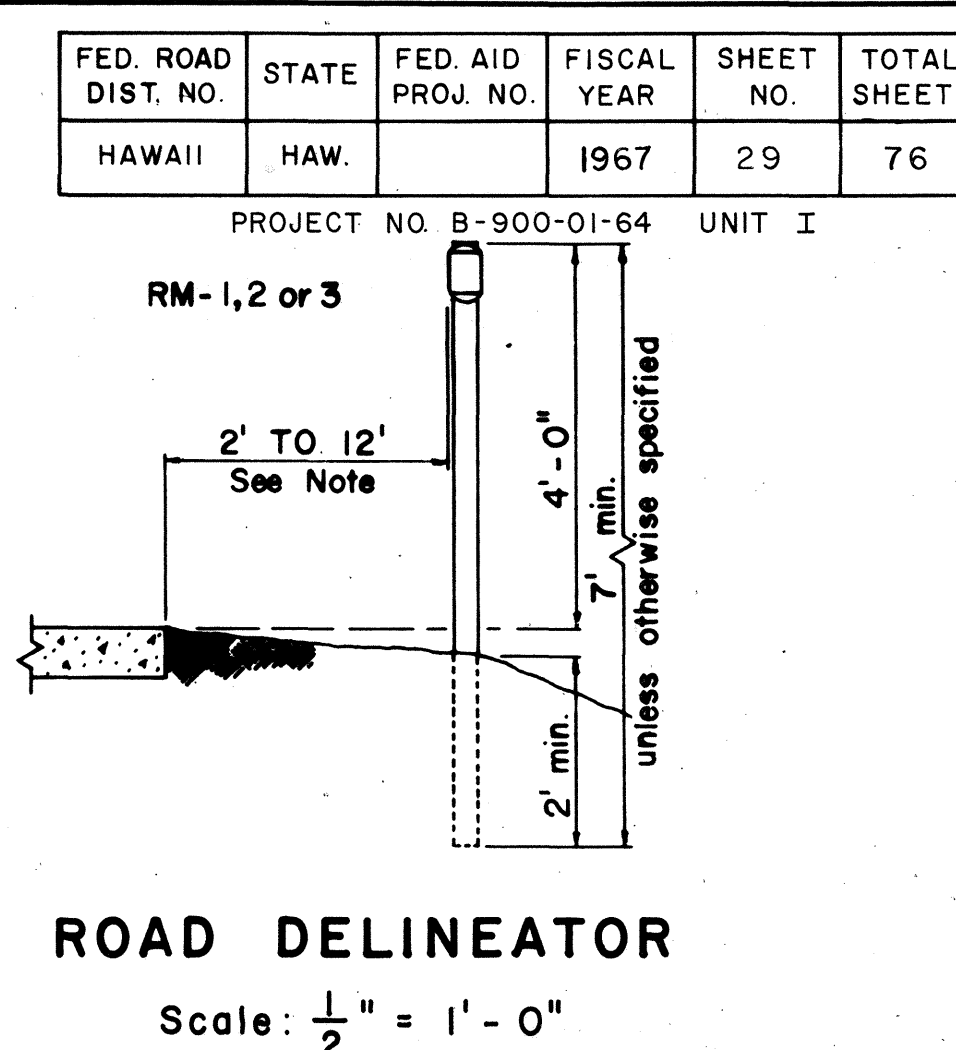
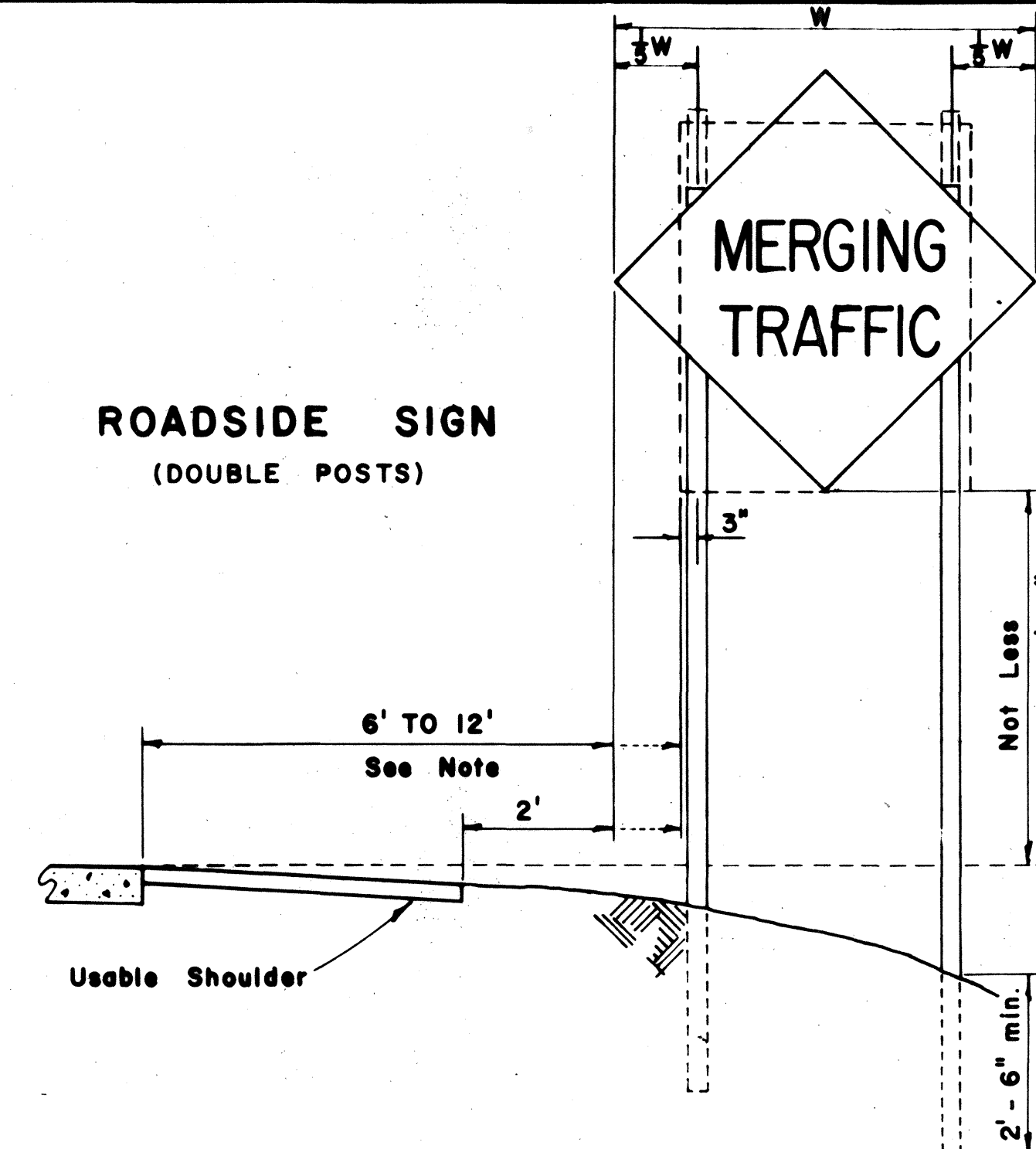
- NOTE:
1. All signs and road delineators shall be placed 2' outside the usable roadway shoulder or 1' outside unmountable curbing present and within the limits shown below.
 2. Except as noted below, sign posts shall be either 3" galv. std. pipe or 2 1/2" x 2 1/2" galv. square tube posts for signs larger 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" galvanized 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.



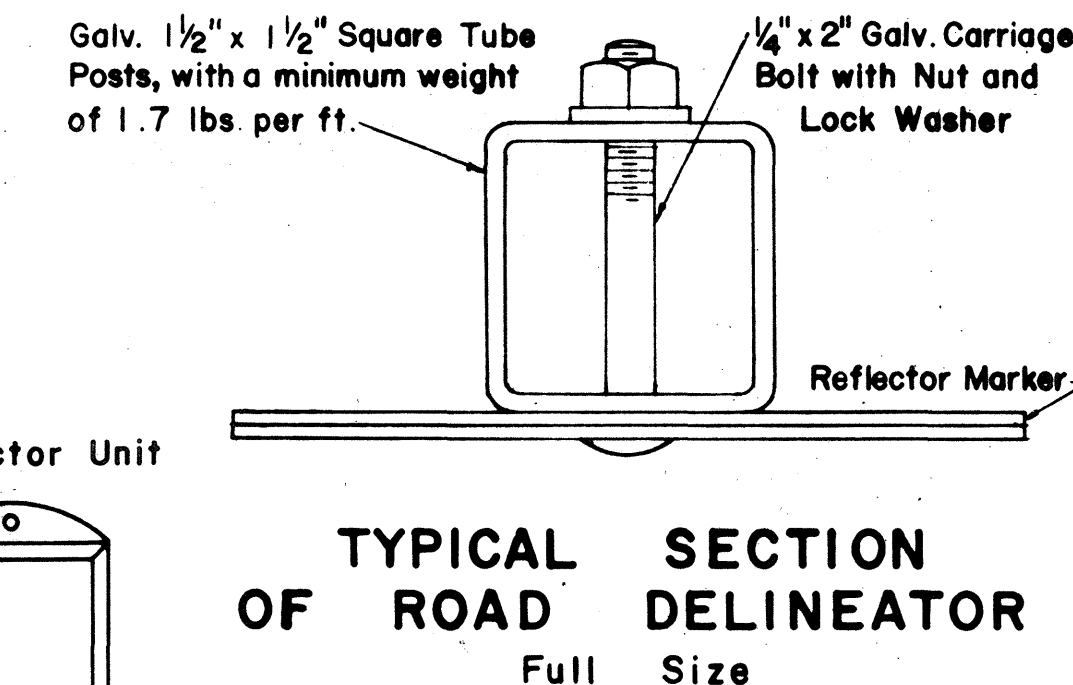
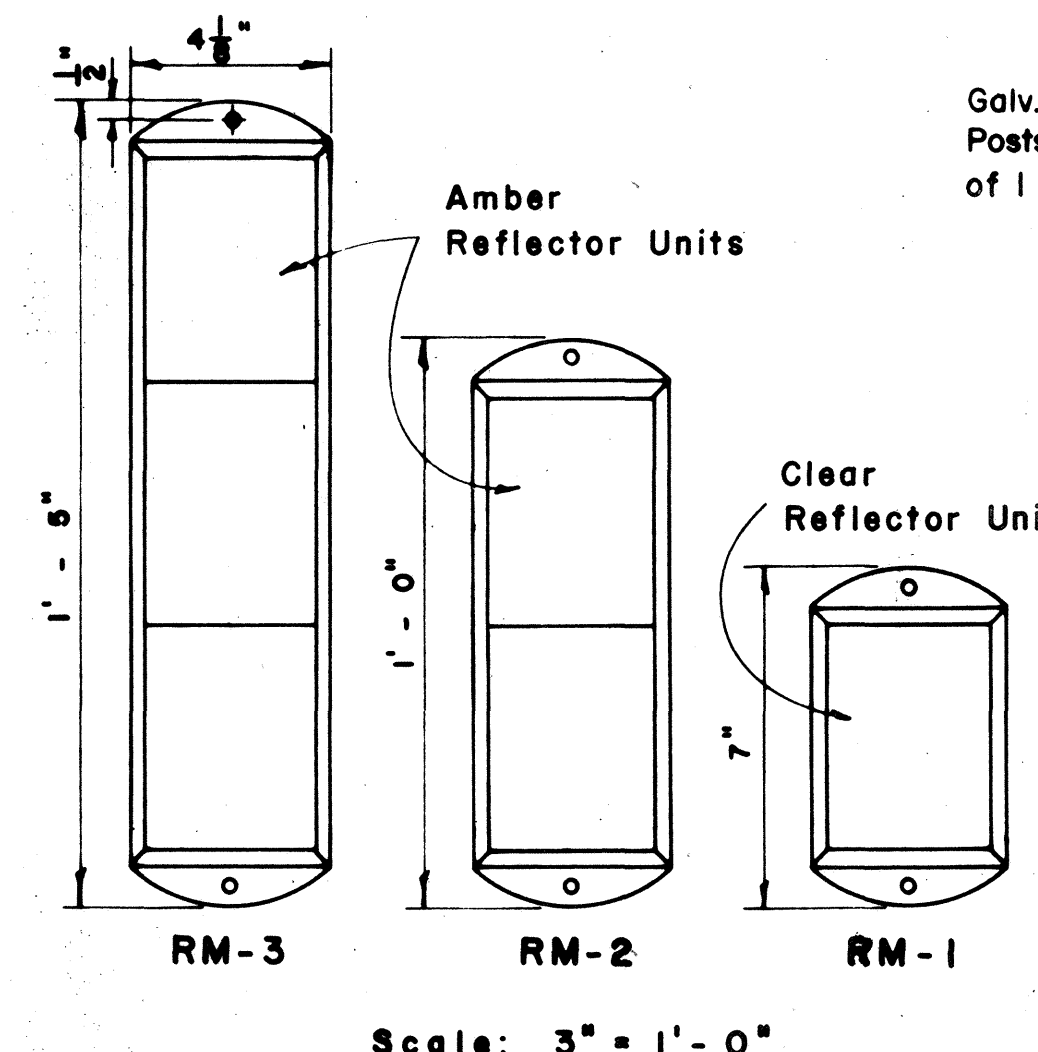
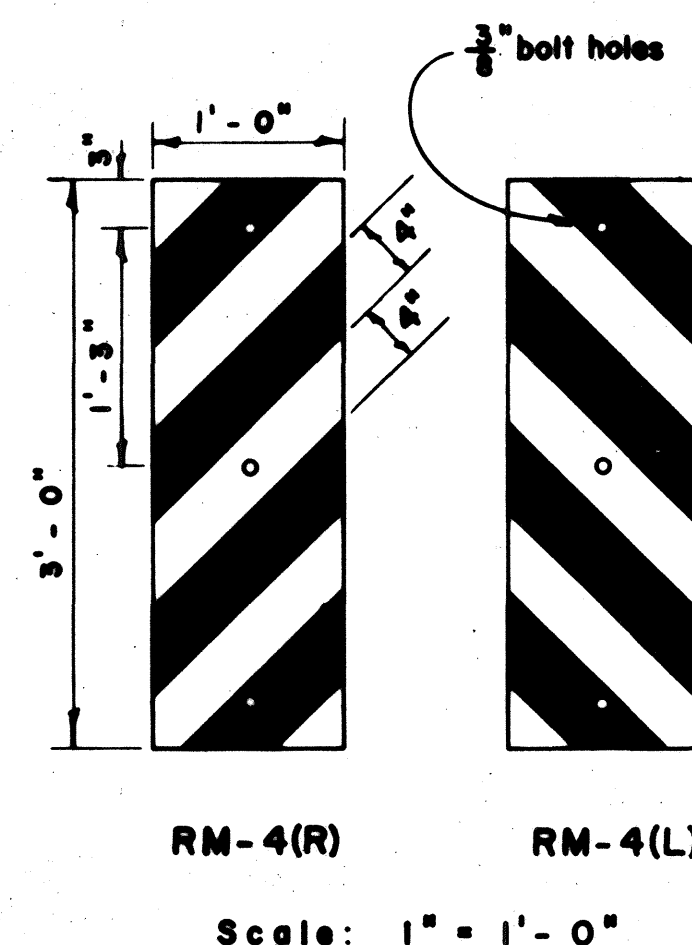
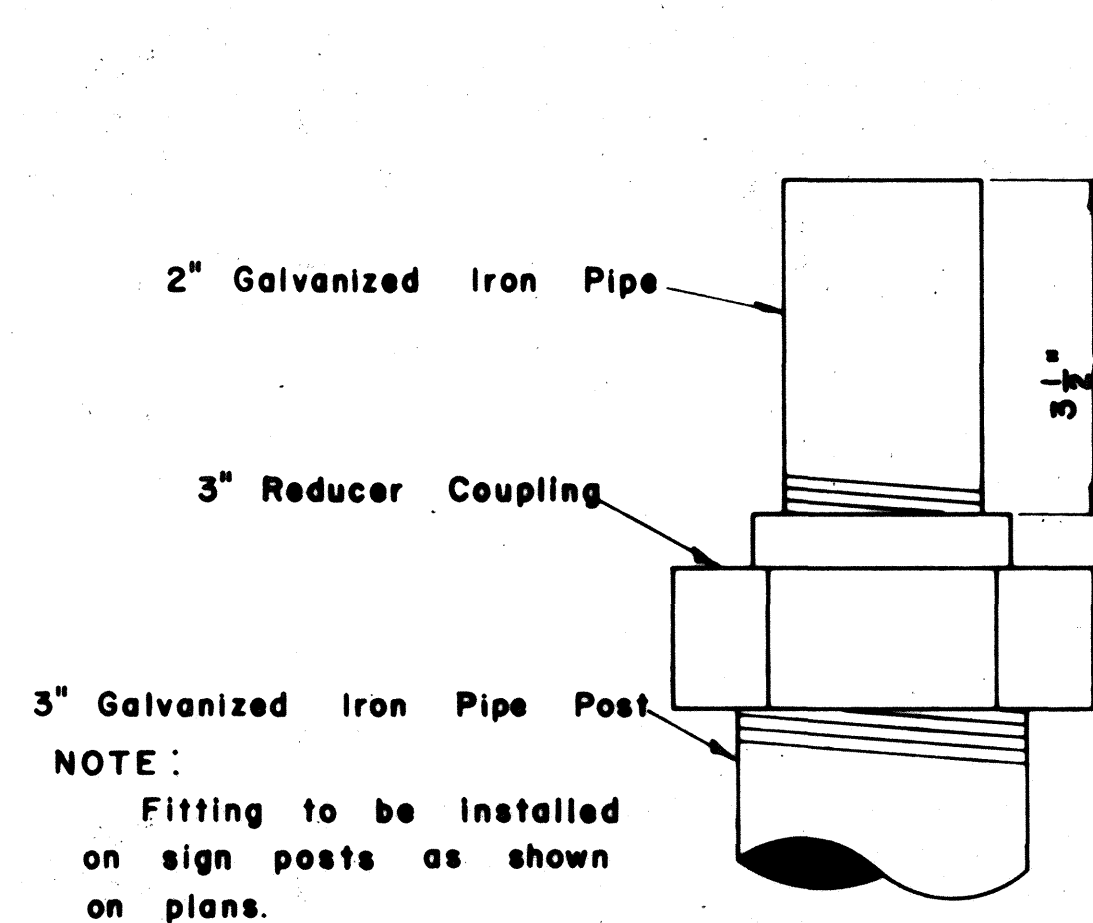
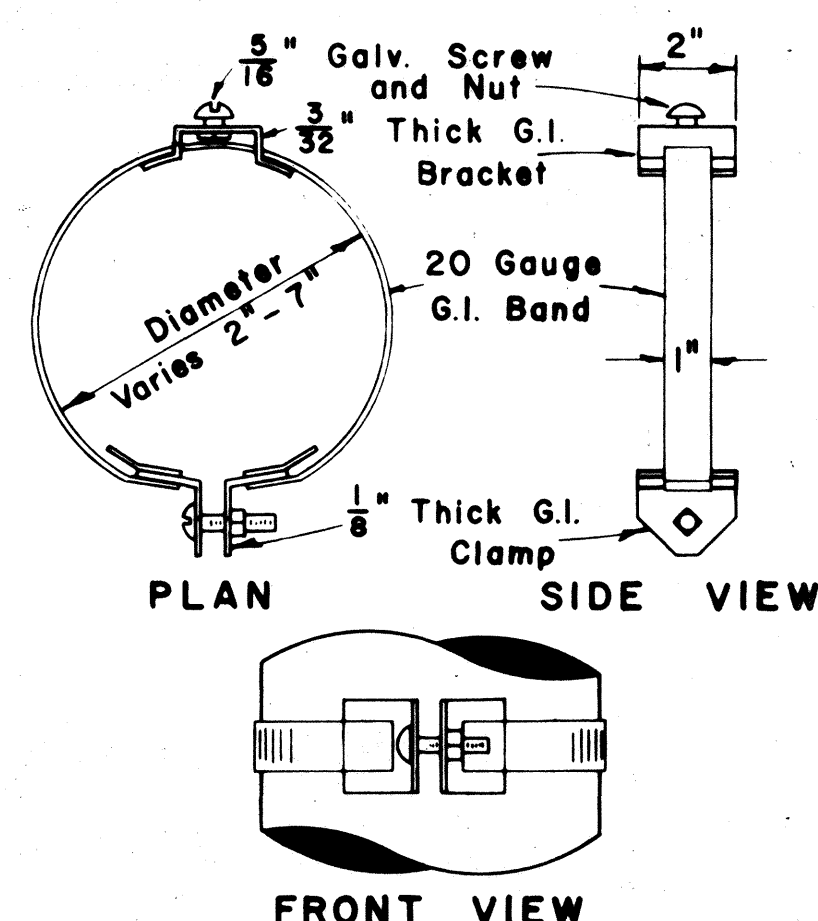
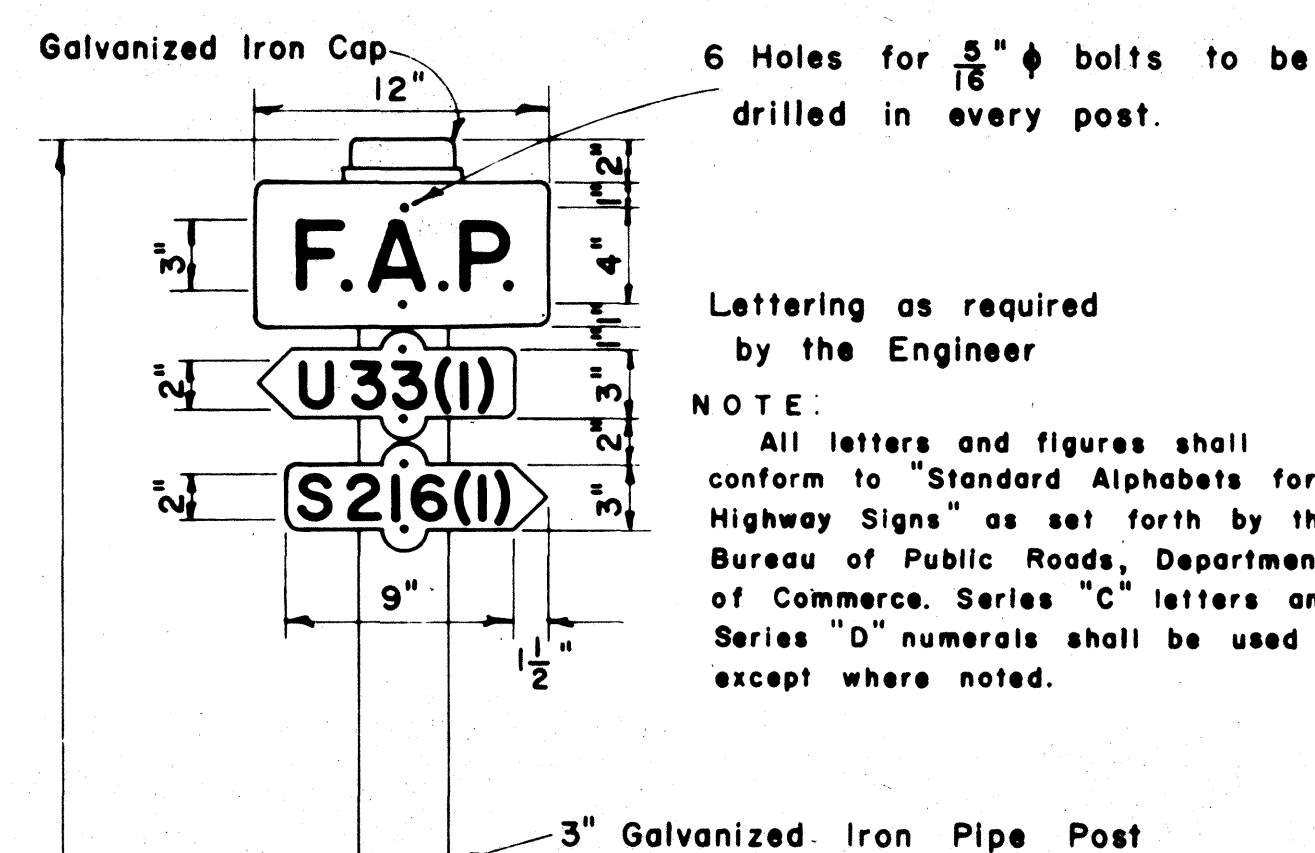
ROADSIDE SIGN
BUSINESS
OR
RESIDENCE DISTRICT



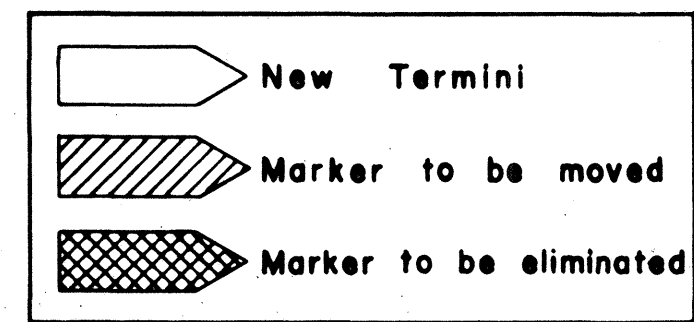
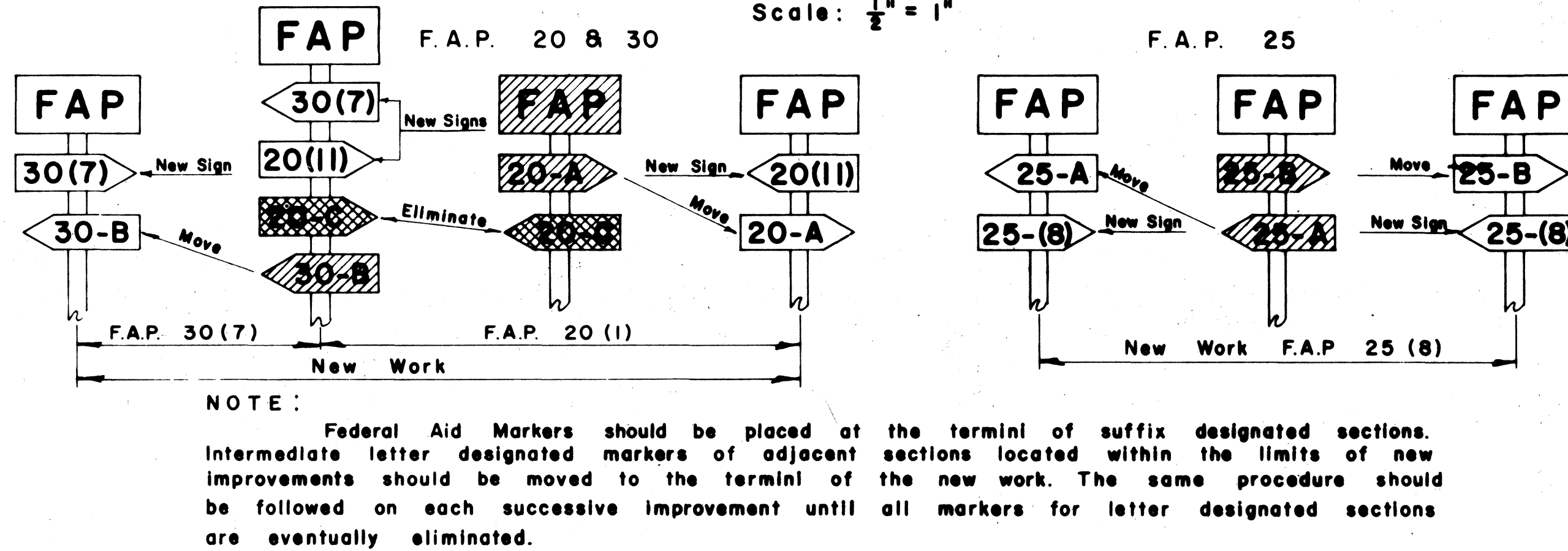
ROADSIDE SIGN
(DOUBLE POSTS)



HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS



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.



APPROVED: _____ DATE: 1/23/67
DIRECTOR OF TRANSPORTATION

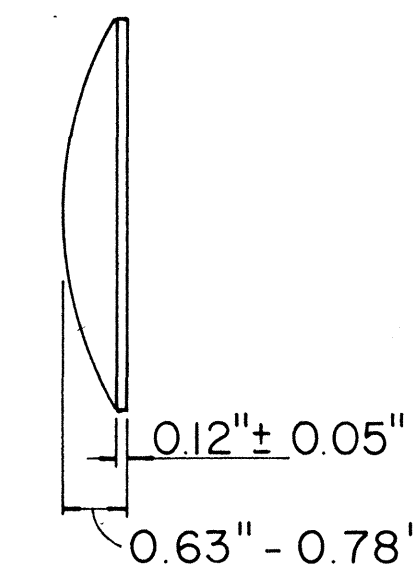
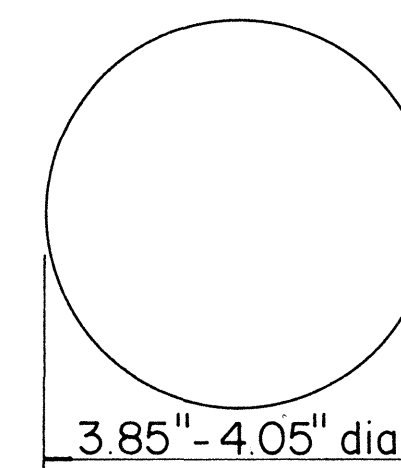
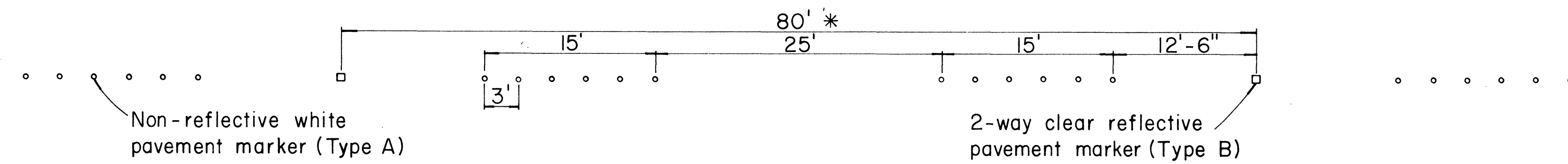
JANUARY 27, 1967
DECEMBER 8, 1964
REVISED: FEBRUARY 25, 1964

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1967	30	76

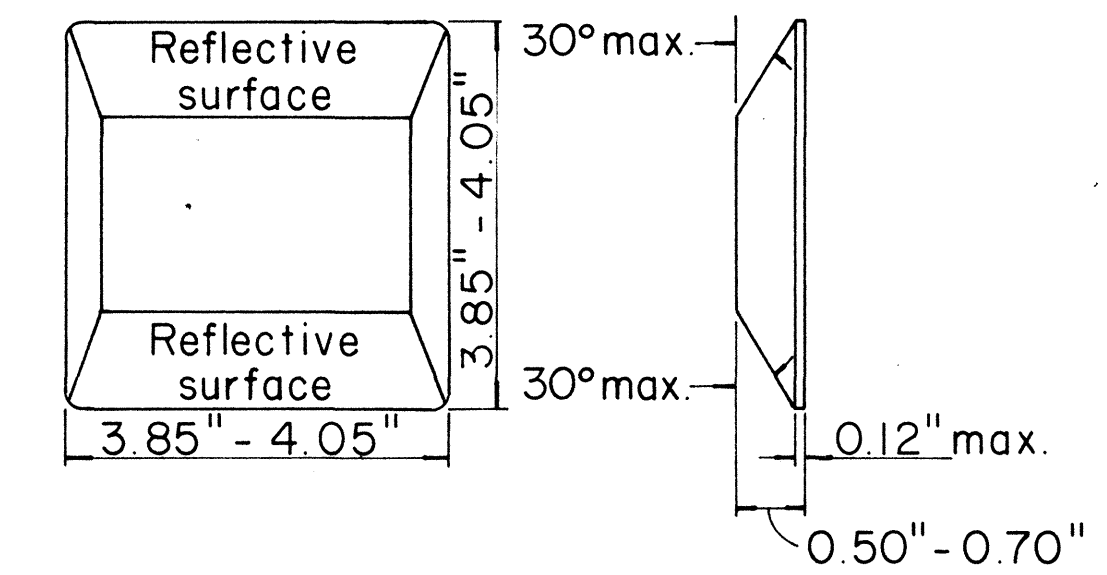
Proj. No. B-900-01-G4, Unit 1

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



TYPE A

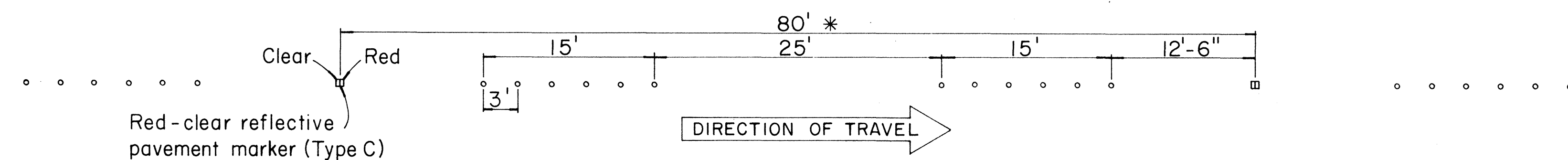
Non - reflective white marker



TYPE B

2-way clear reflective surface

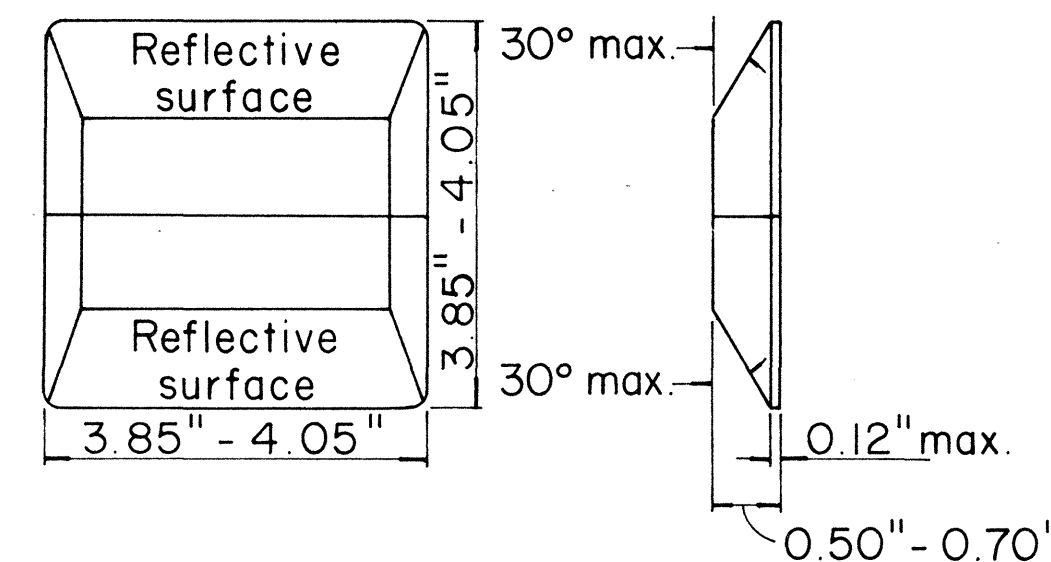
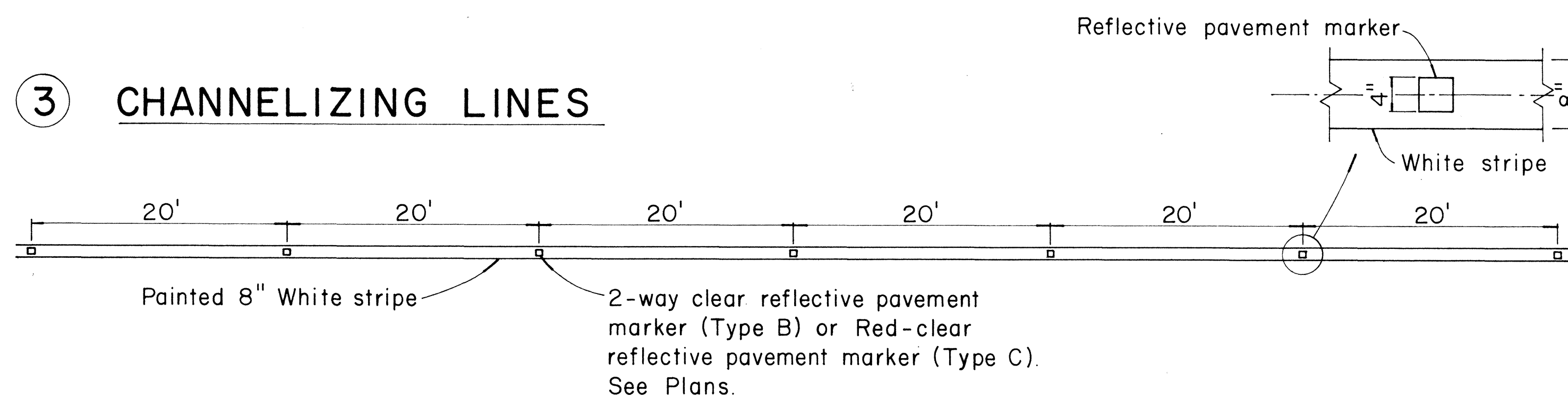
② LANE LINES



TYPE D

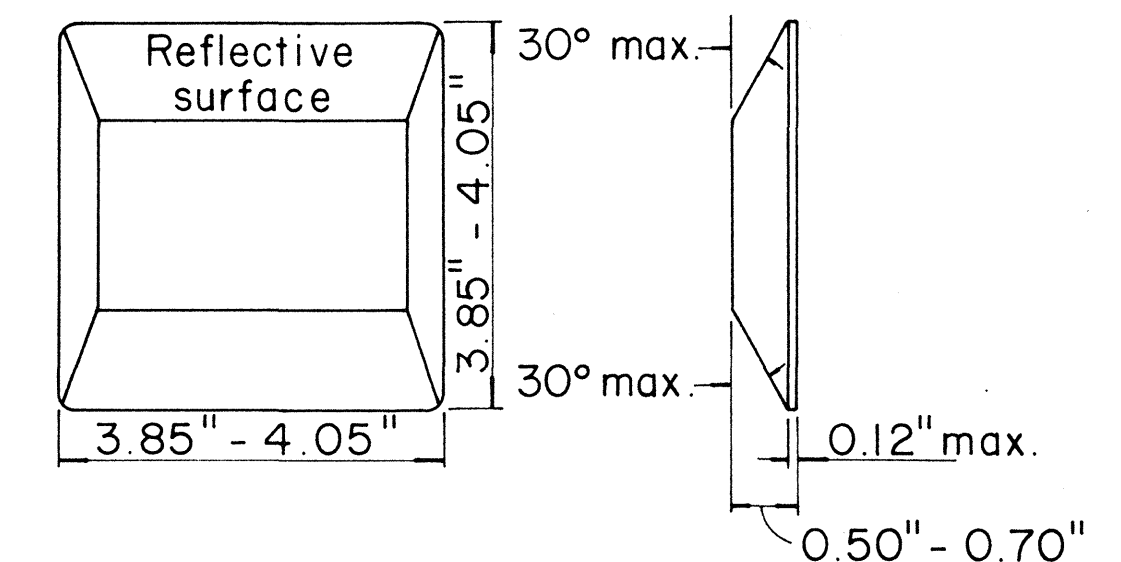
2-way yellow reflective surface

③ CHANNELIZING LINES



TYPE C

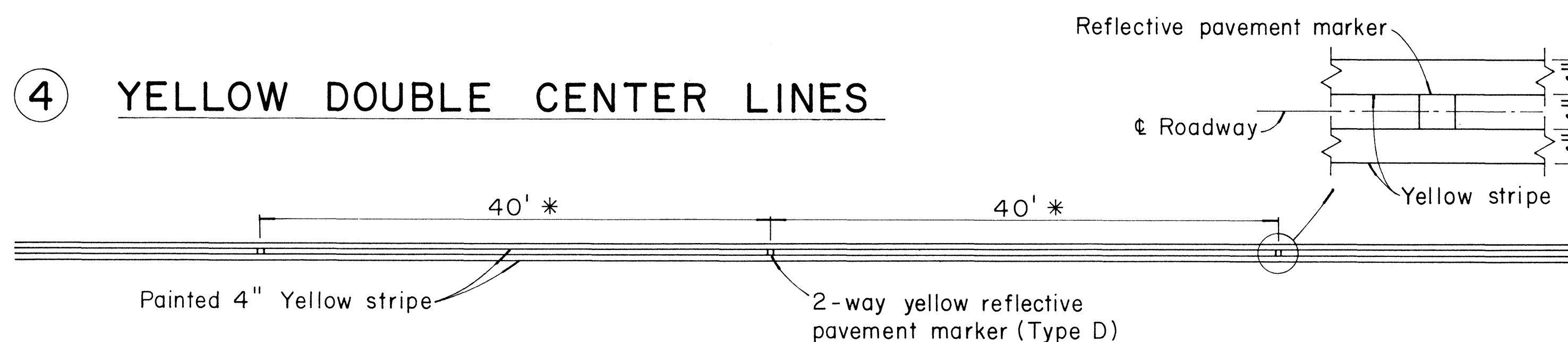
Red - clear reflective surface



TYPE H

One - way yellow reflective surface

④ YELLOW DOUBLE CENTER LINES



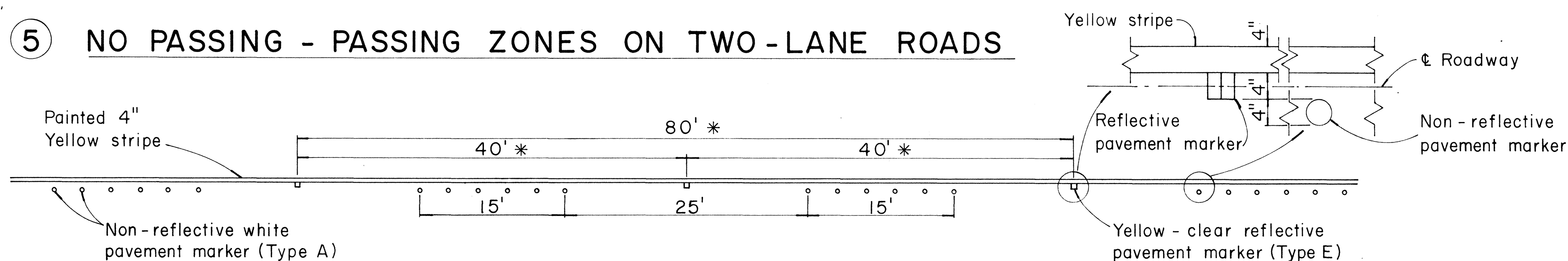
TYPE E

Yellow - clear reflective surface

TYPE G

One - way clear reflective surface

⑤ NO PASSING - PASSING ZONES ON TWO-LANE ROADS



NOTE:

Painted stripes to be done by State forces

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RAISED PAVEMENT MARKERS

Not to Scale

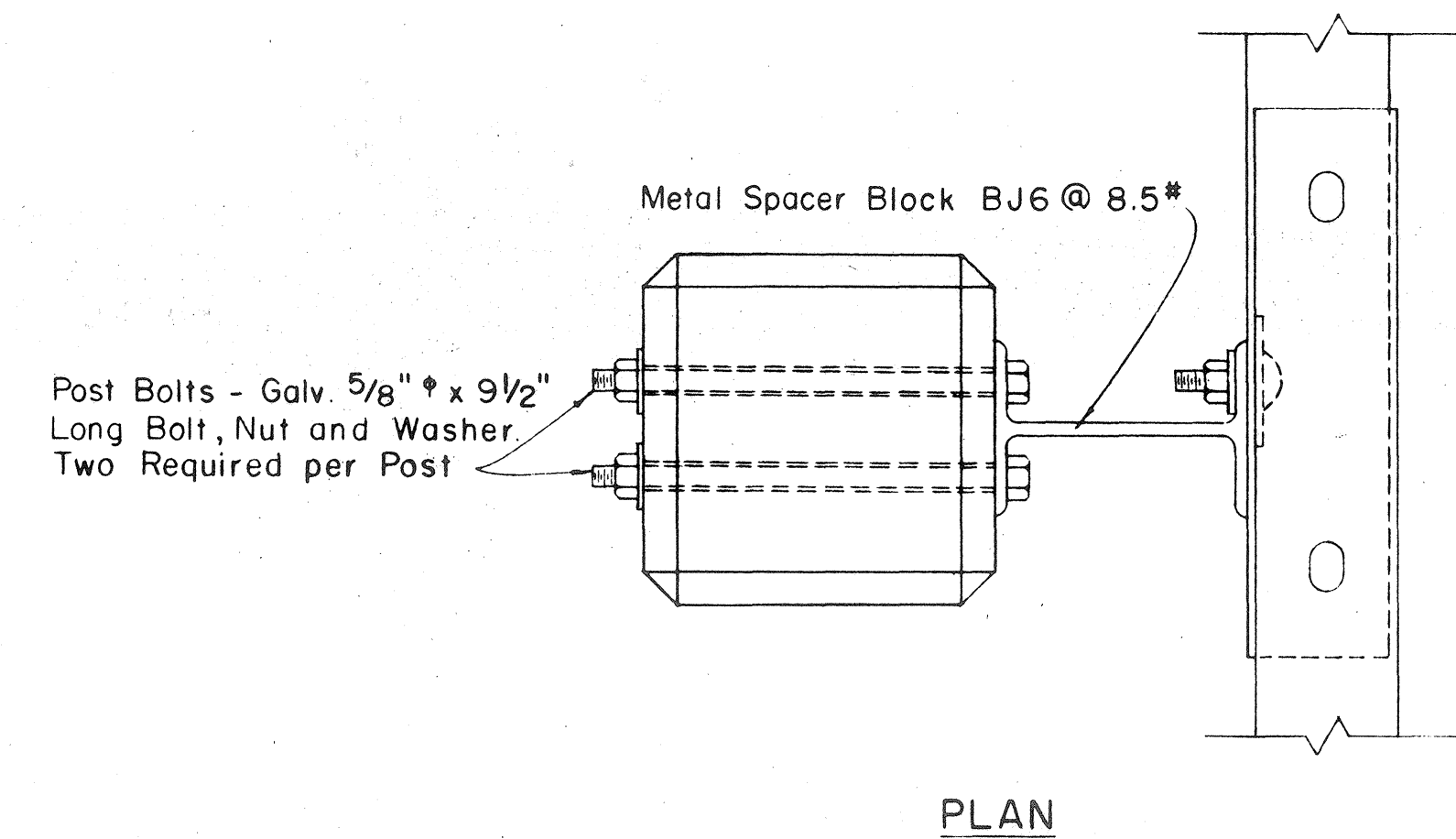
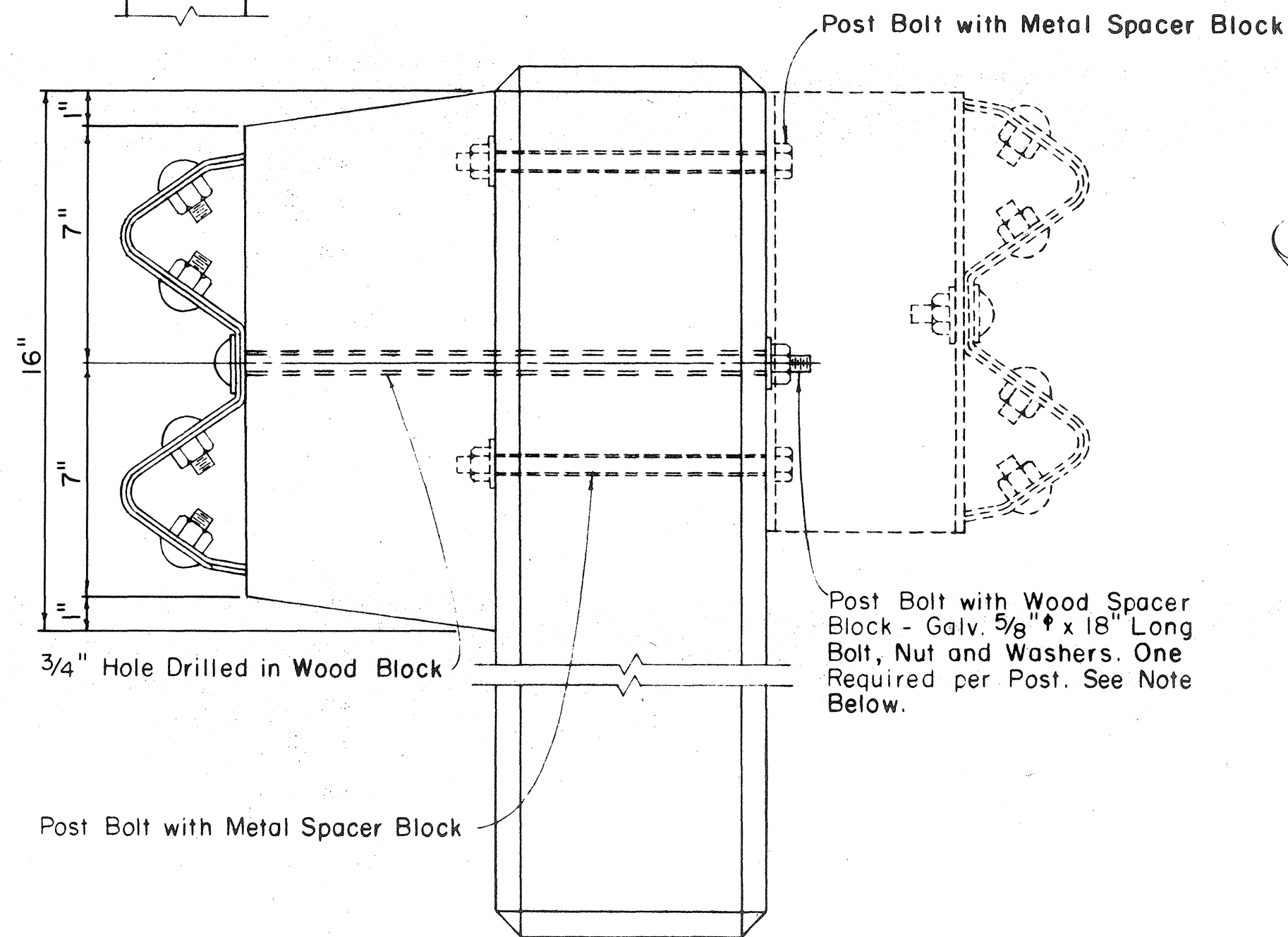
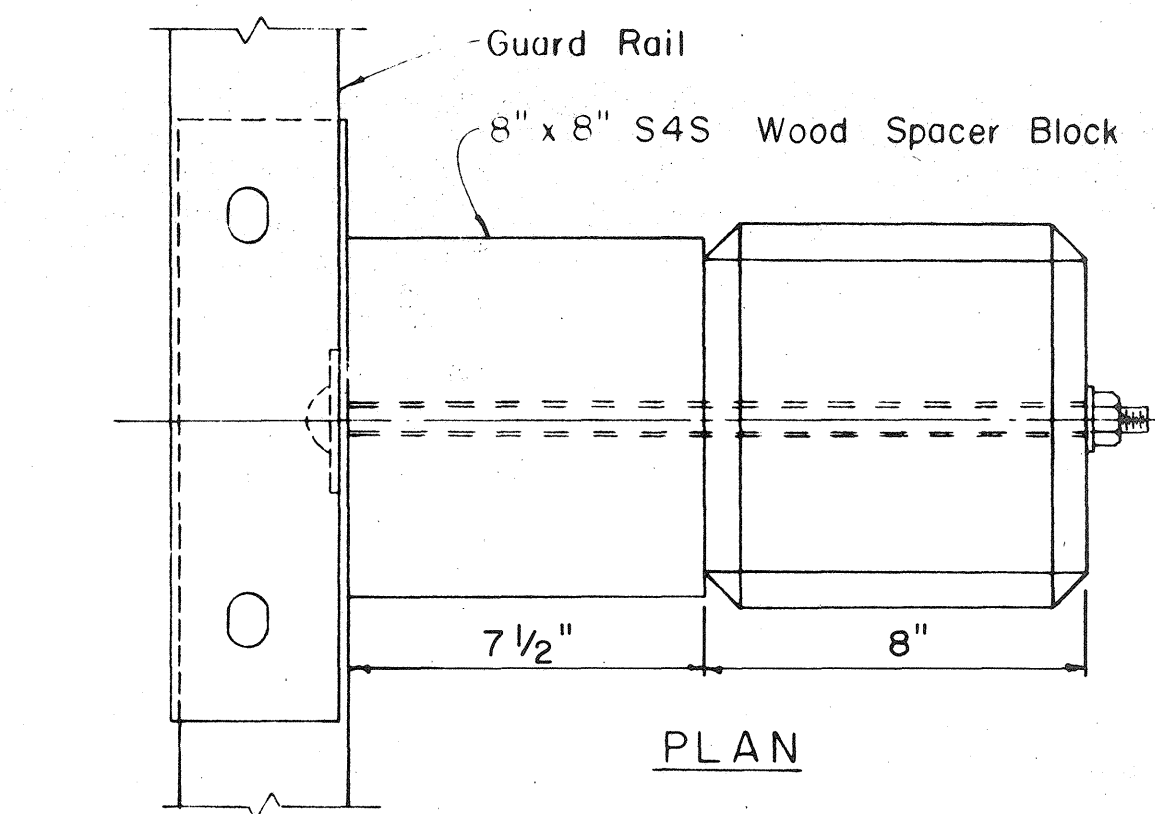
Sept., 1967

SHEET No. 8 OF 11 SHEETS

33 (1)

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

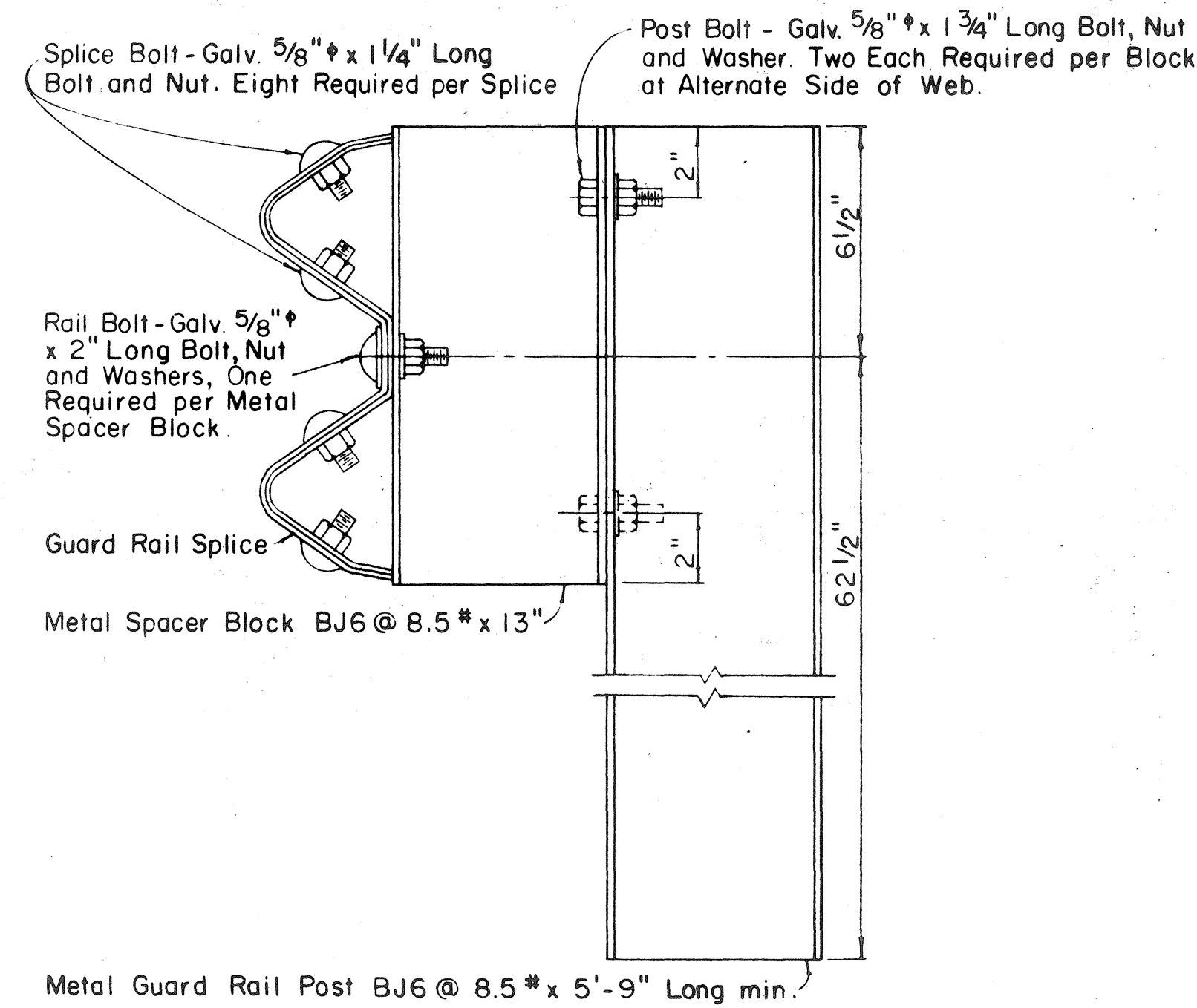
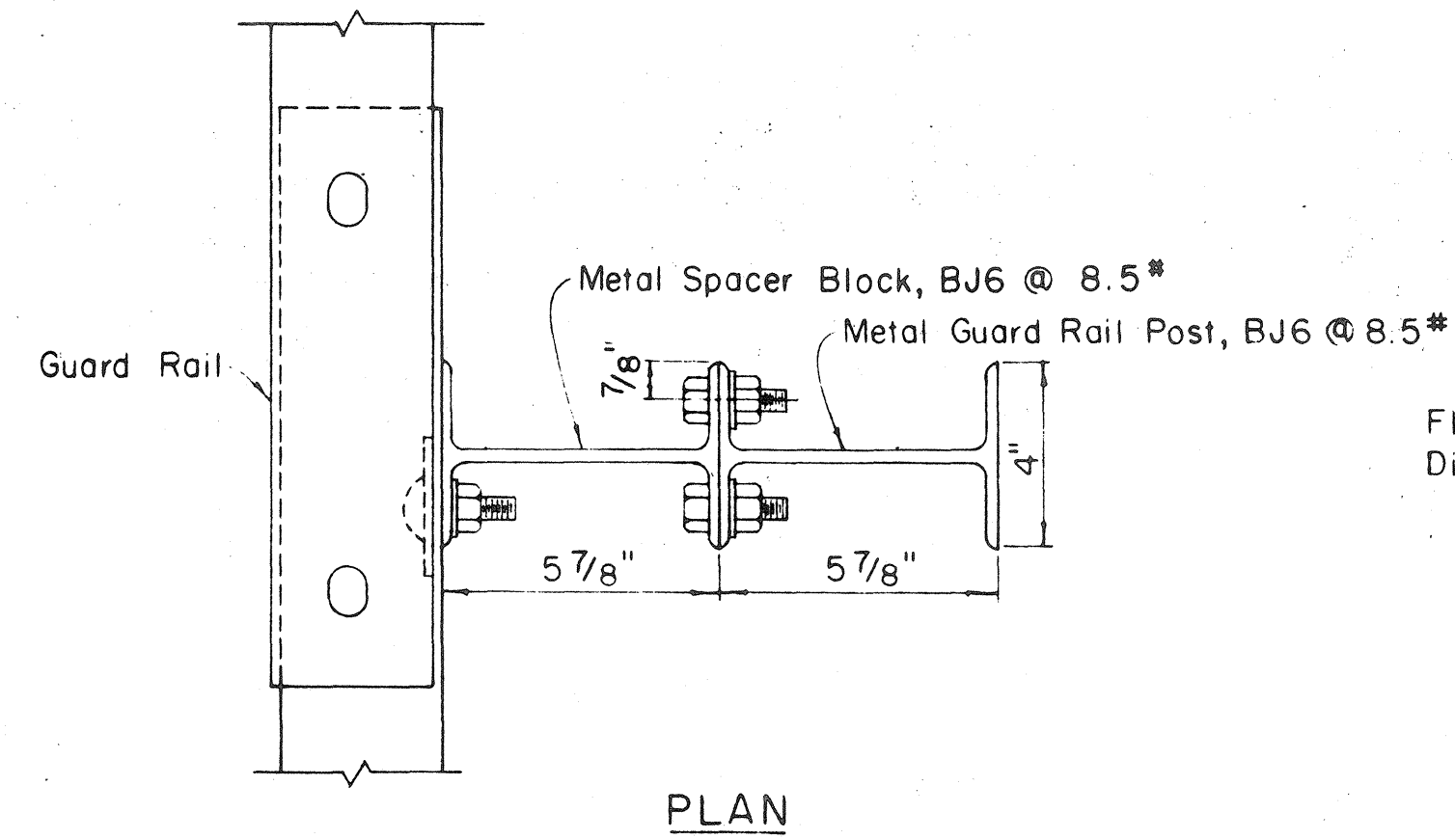
* For curves less than 1000' radius use one-half spacing



SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

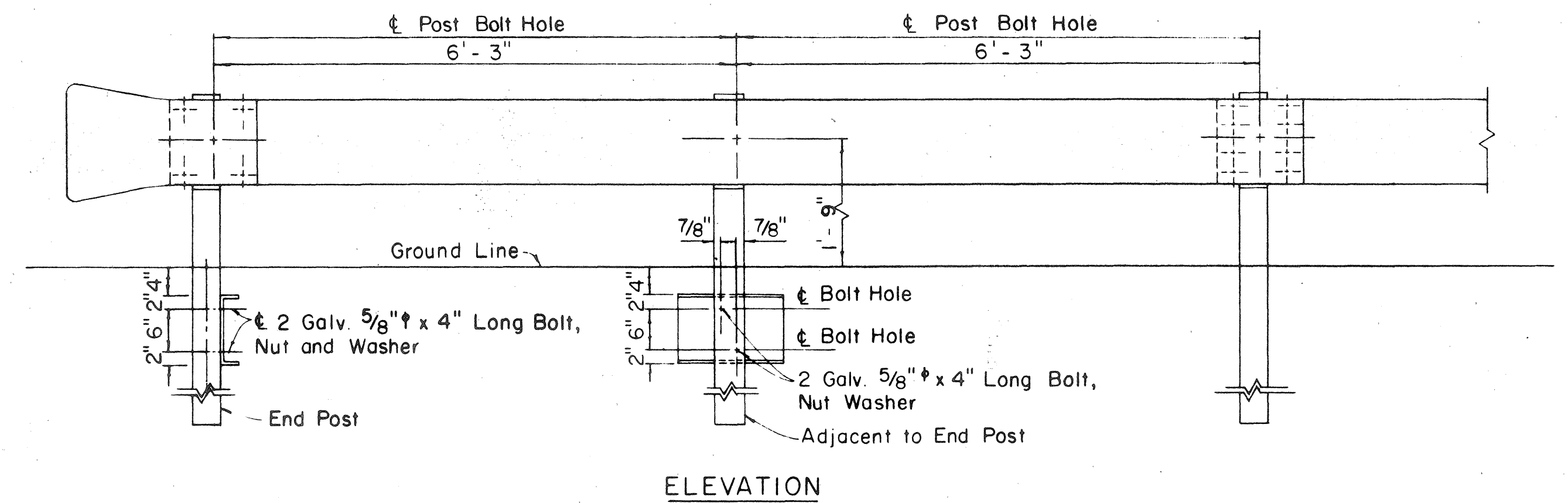
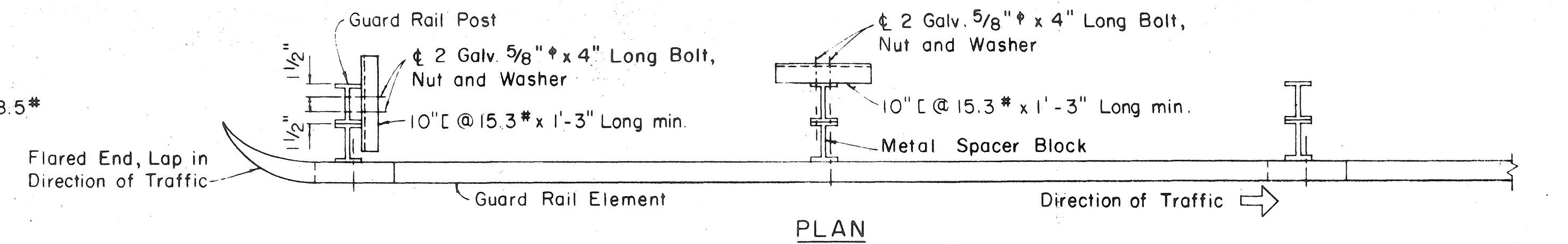
Scale: 3" = 1' - 0"

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.



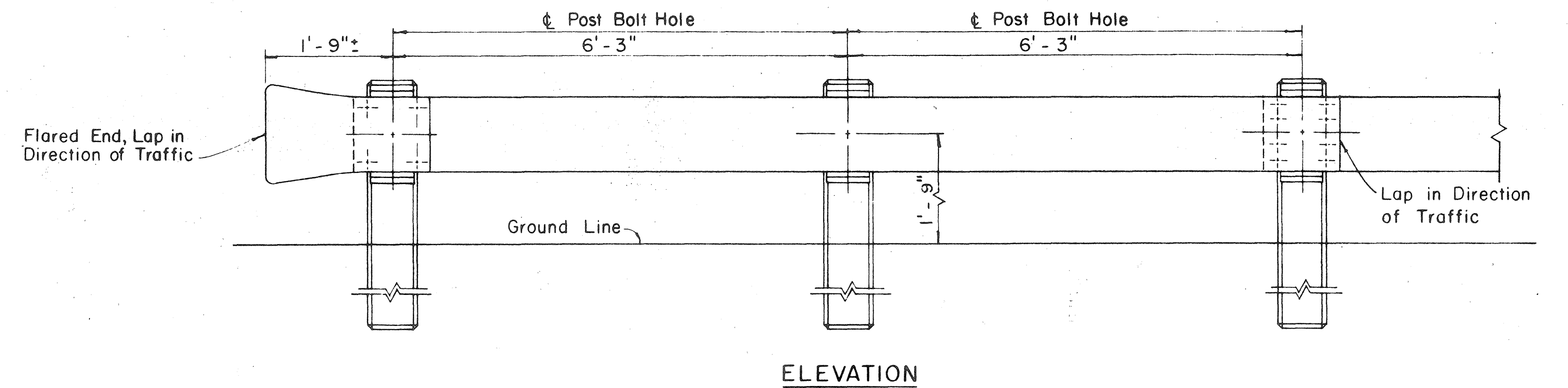
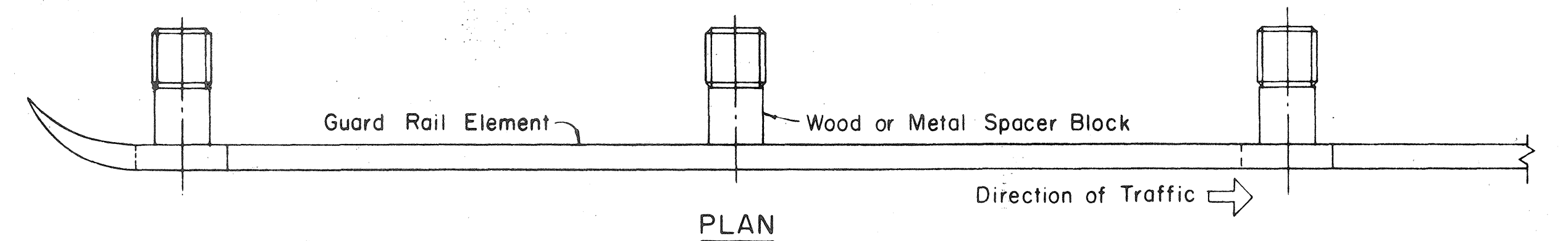
SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

Scale: 3" = 1' - 0"



METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

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

DETAILS FOR SINGLE GUARD RAIL

REVISED: August 10, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

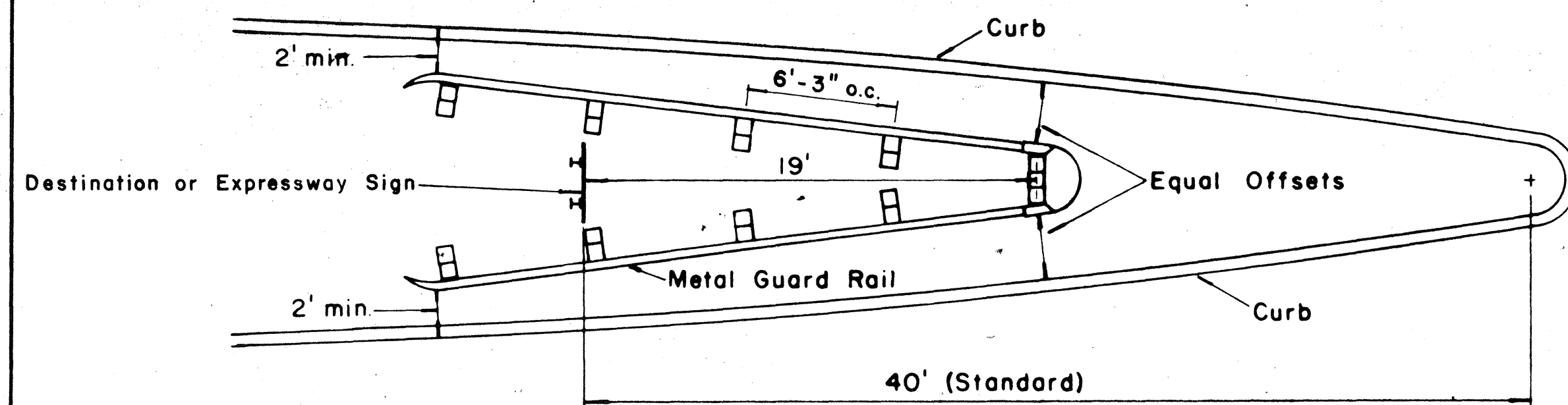
STANDARD DETAILS

METAL GUARD RAIL

Scale: as noted

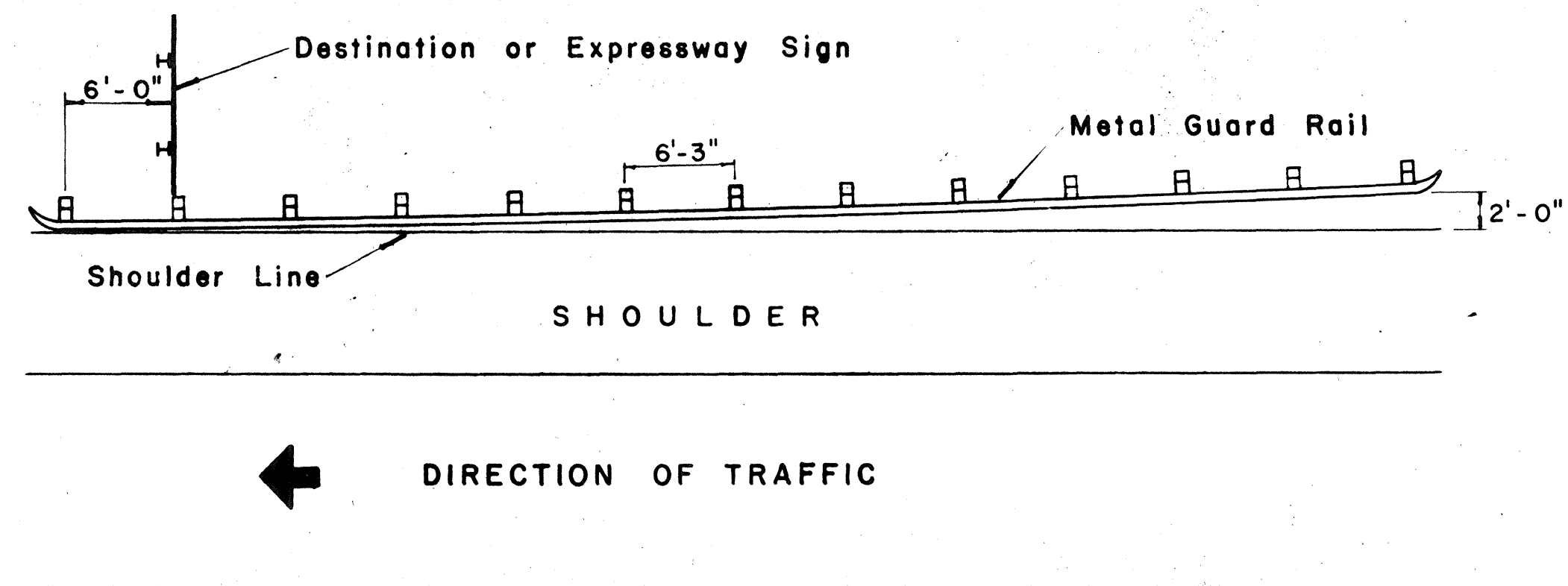
SHEET NO. 31 OF 76 SHEETS

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



GORE MOUNTED SIGN

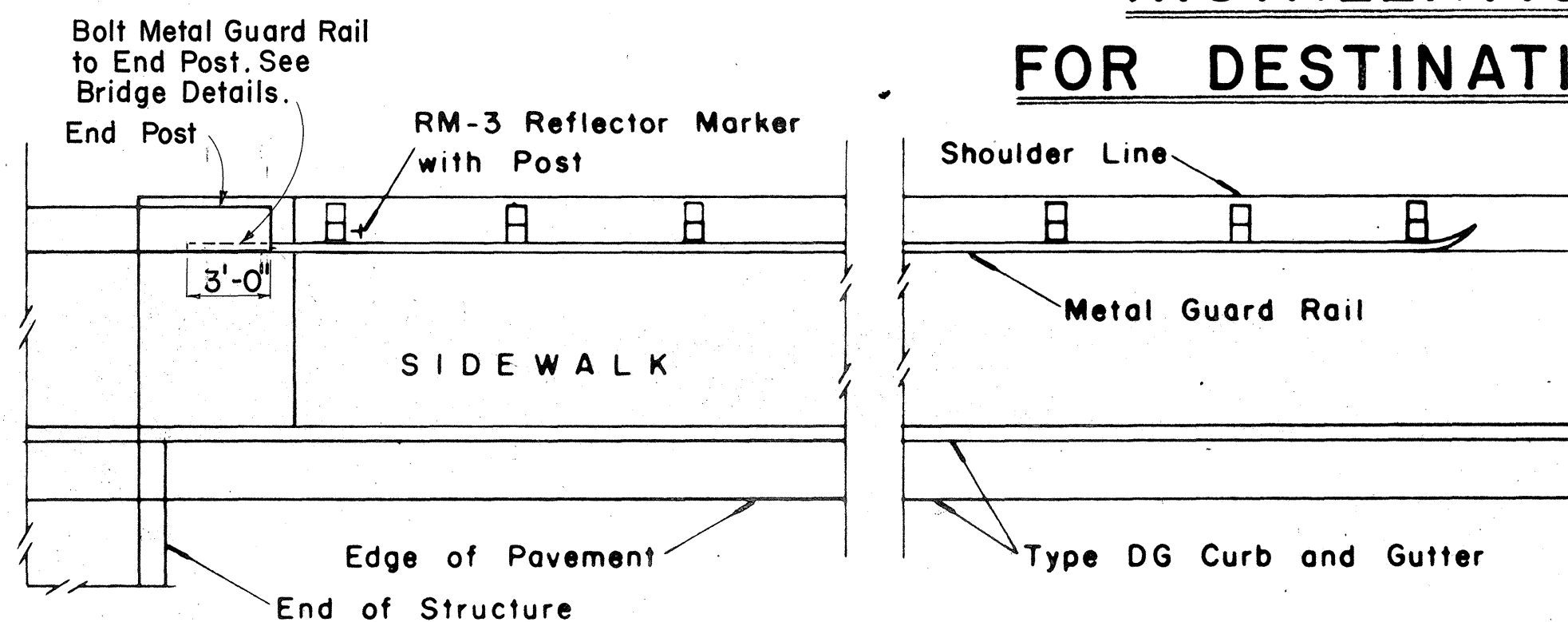
Scale: $\frac{3}{16}'' = 1' - 0''$



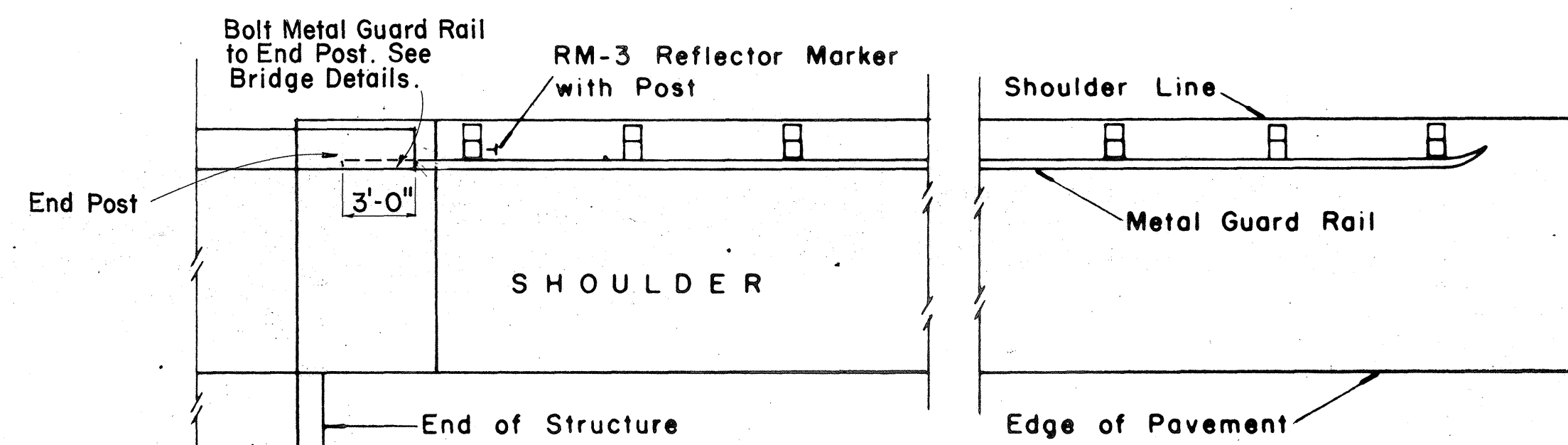
SHOULDER MOUNTED SIGN

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

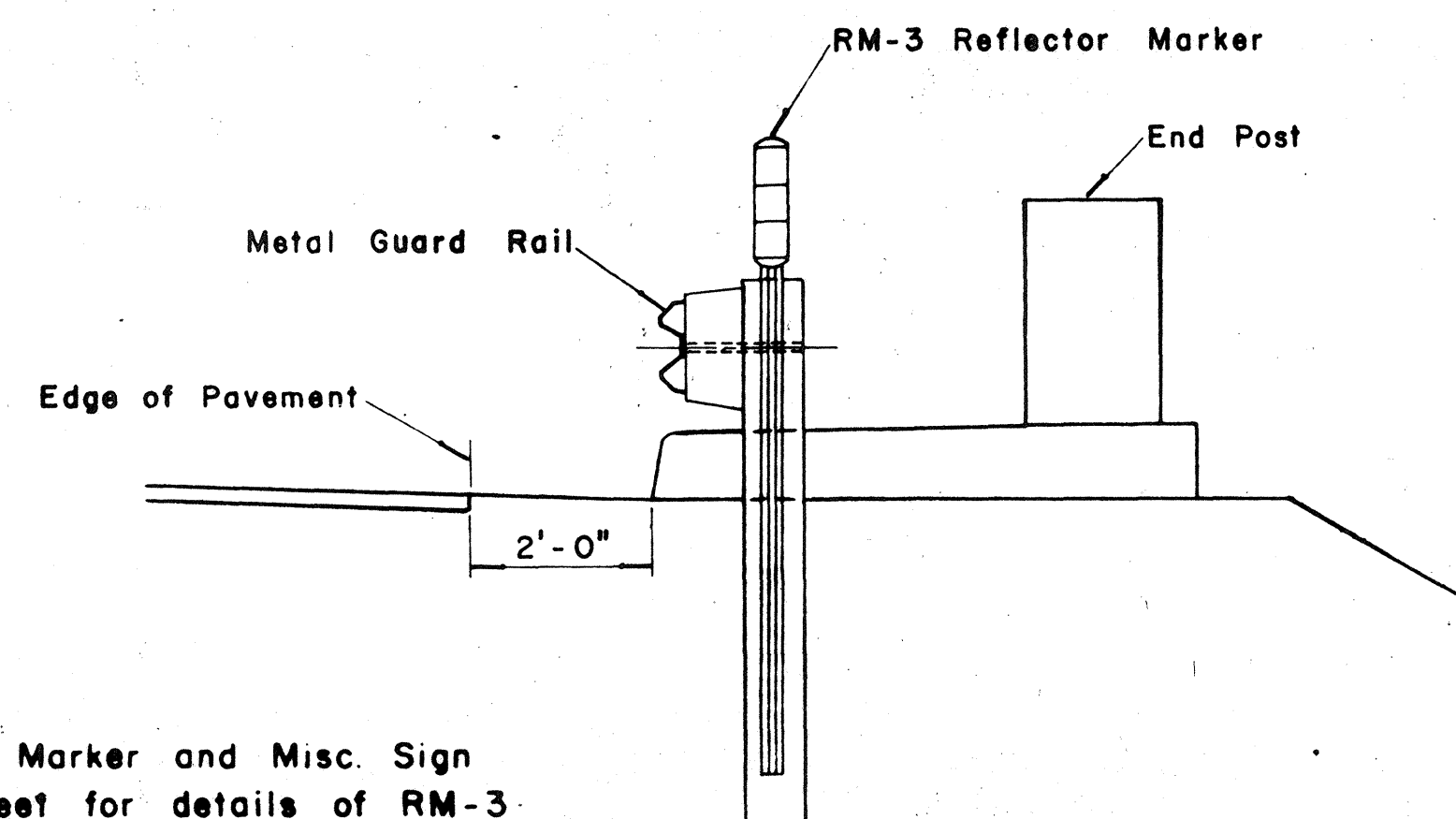
INSTALLATION OF METAL GUARD RAIL FOR DESTINATION AND EXPRESSWAY SIGNS



SIDEWALK CARRIED THROUGH STRUCTURE



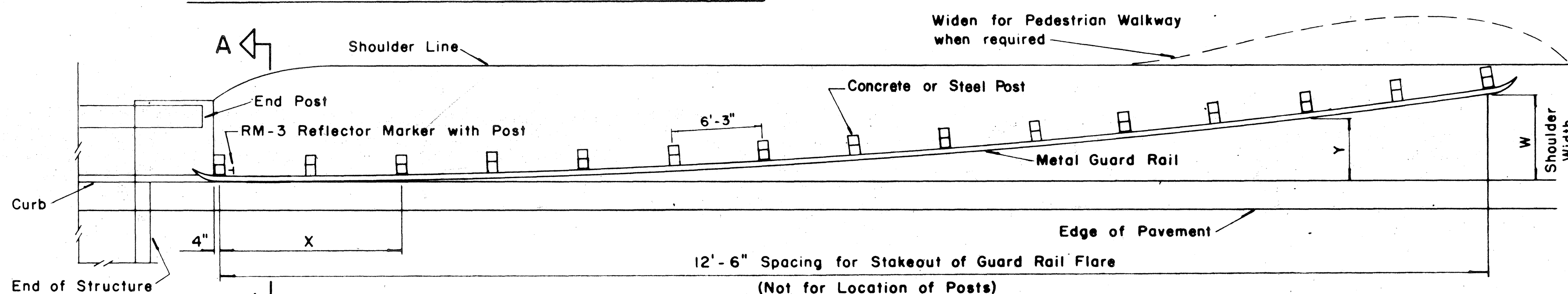
SHOULDER CARRIED THROUGH STRUCTURE



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

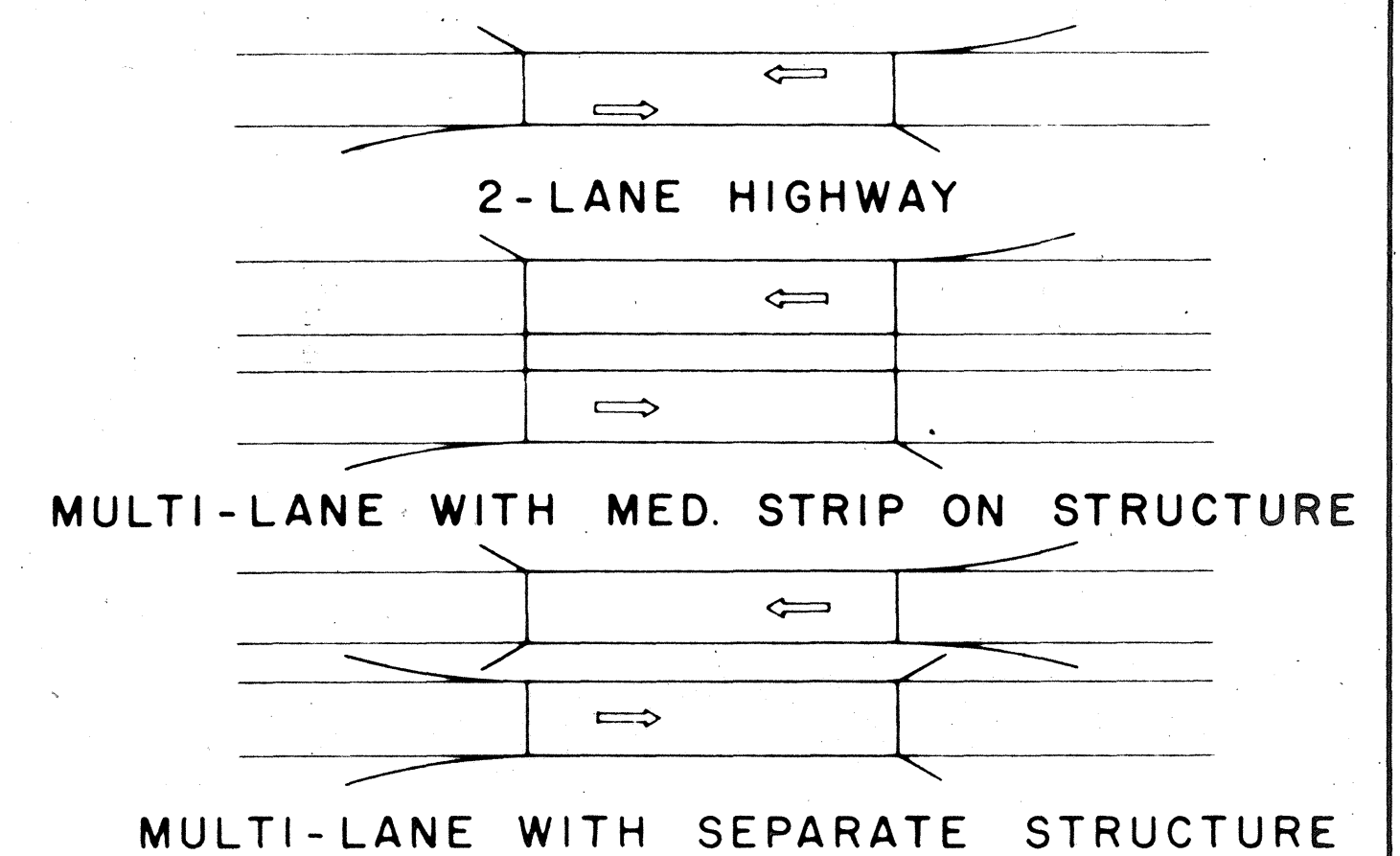
X	Y					
	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.85
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48
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. 10 OF 11 SHEETS

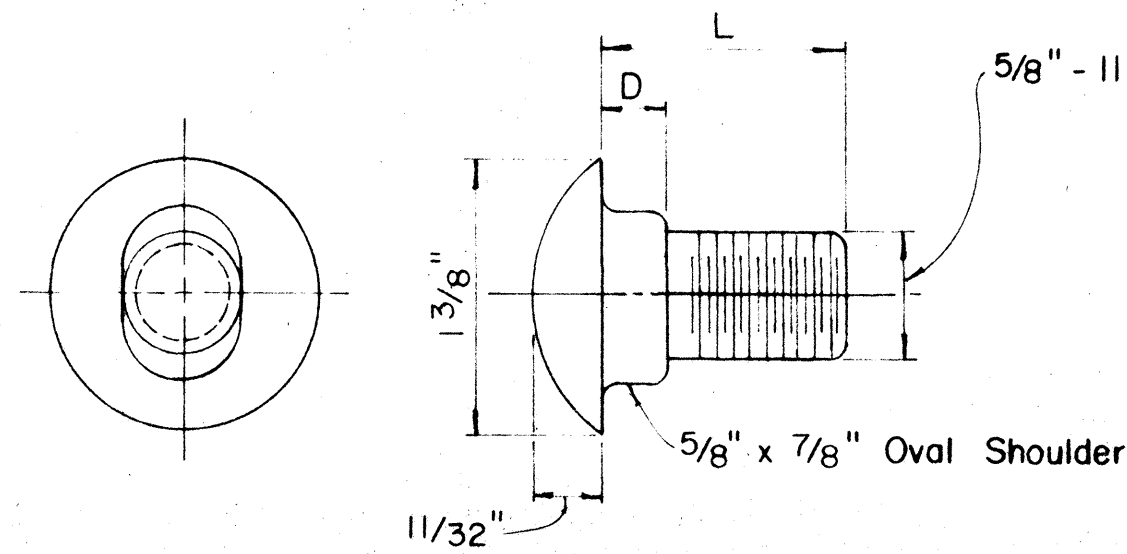
DATE

DESIGNED BY
CHECKED BY

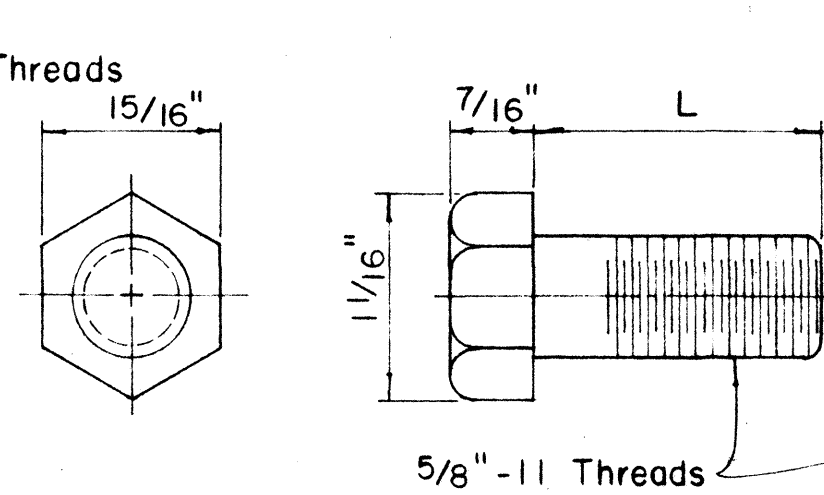
ORIGINAL
PLAN
NOTED
BY

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

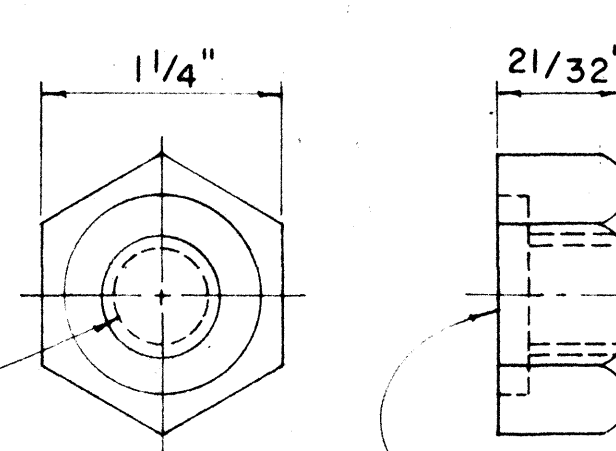
BOLT DIMENSIONS TYPE B BOLT	
	L
Post Bolt for Conc. Post w/ Metal Blocks	9 1/2"
Post Bolt for Metal Post w/ Metal Block	1 3/4"



TYPE A BOLT



TYPE B BOLT



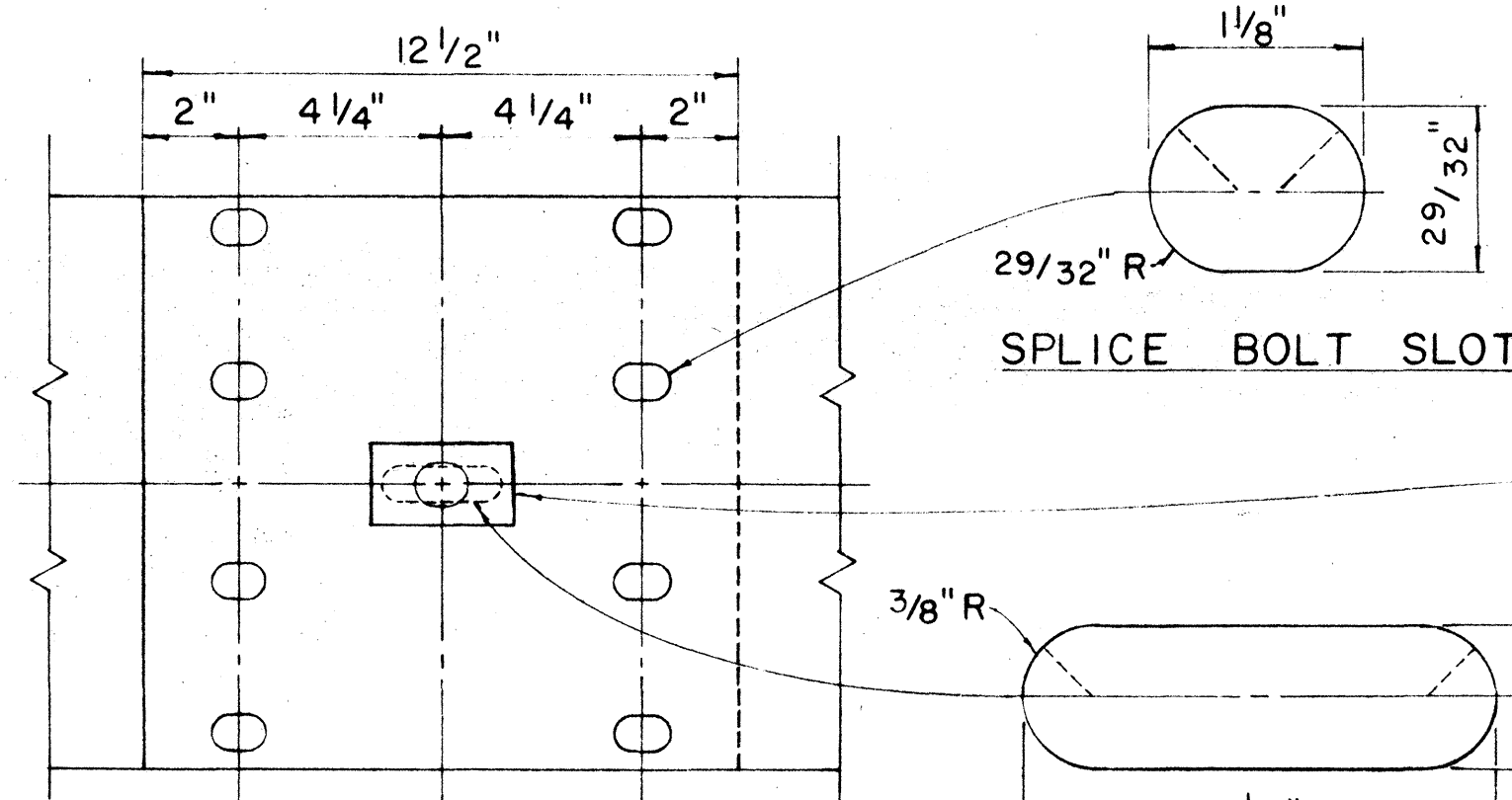
HEXAGON NUT

Scale: Full Size

5/32" Deep x 15/16" Dia.
C' Bore for Type A Bolt only.
Plain nut for Type B Bolt.

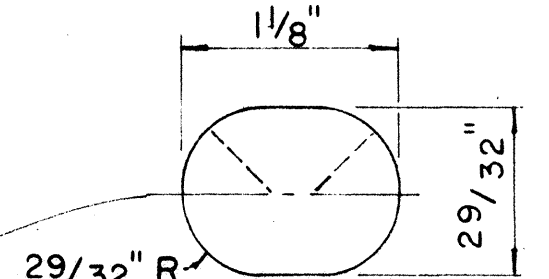
SPLICE RAIL AND POST BOLTS

Scale: Full Size



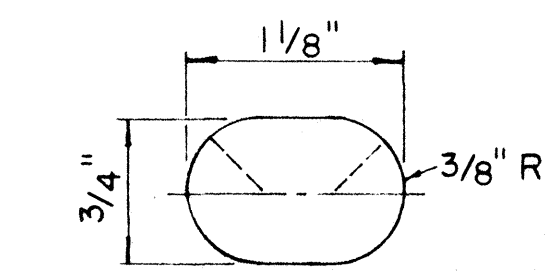
RAIL SPLICE

Scale: 3" = 1'-0"

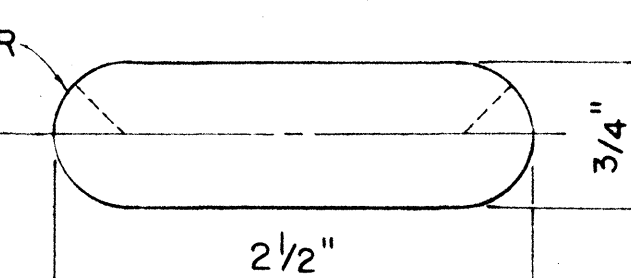


SPLICE BOLT SLOT

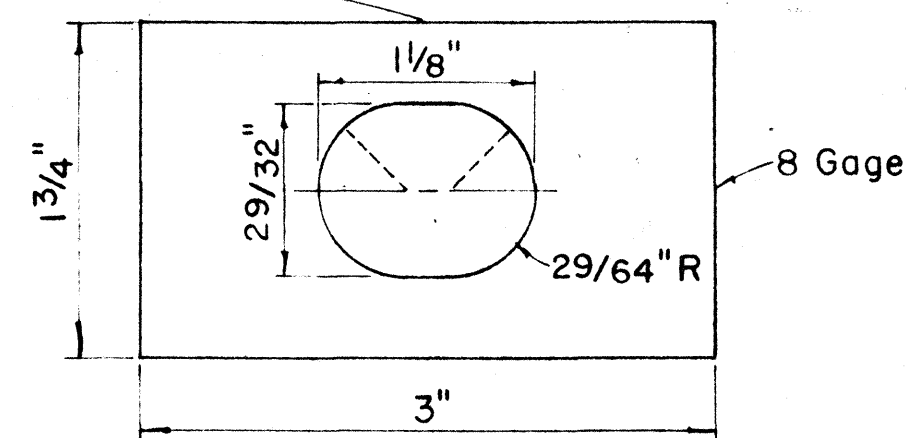
Scale: Full Size



SPLICE BOLT SLOT
FOR ALL ENDS

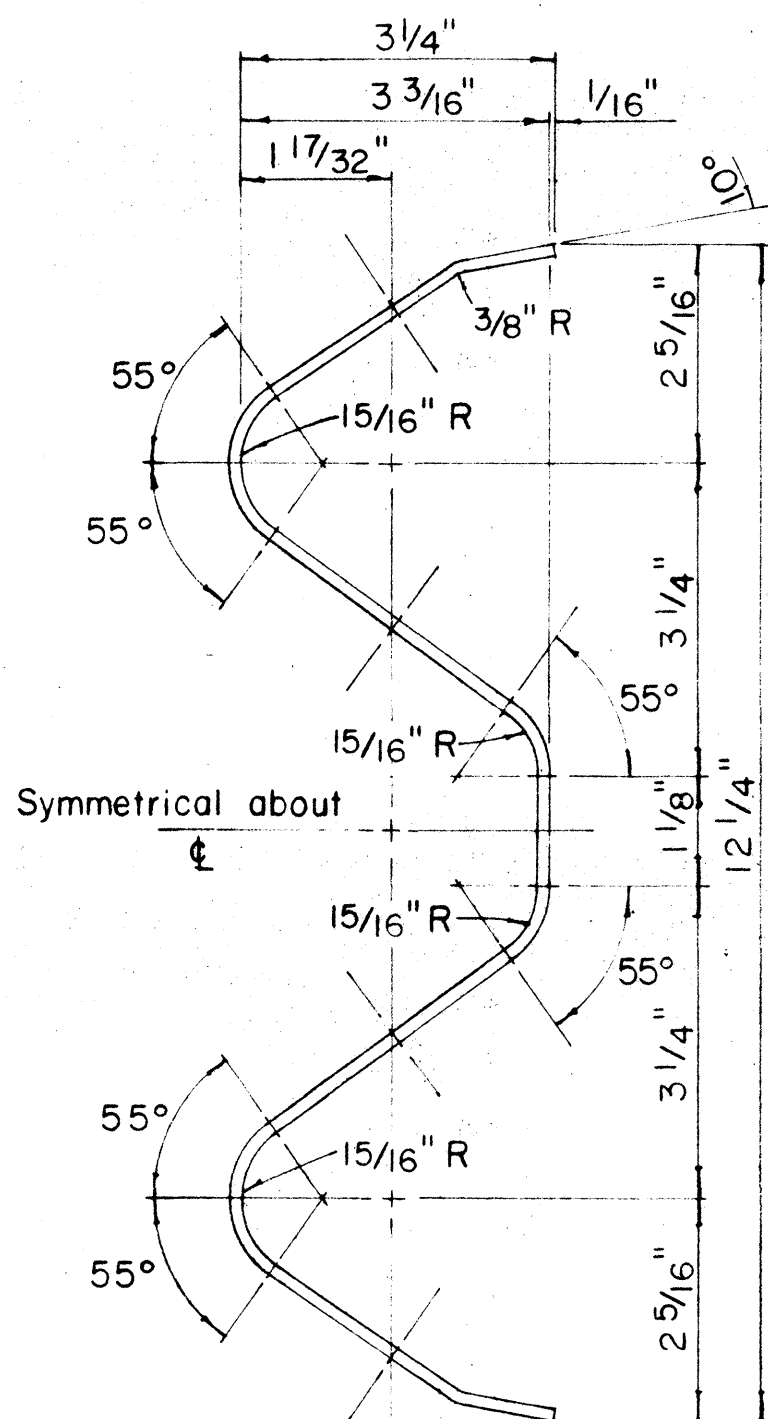


POST BOLT SLOT



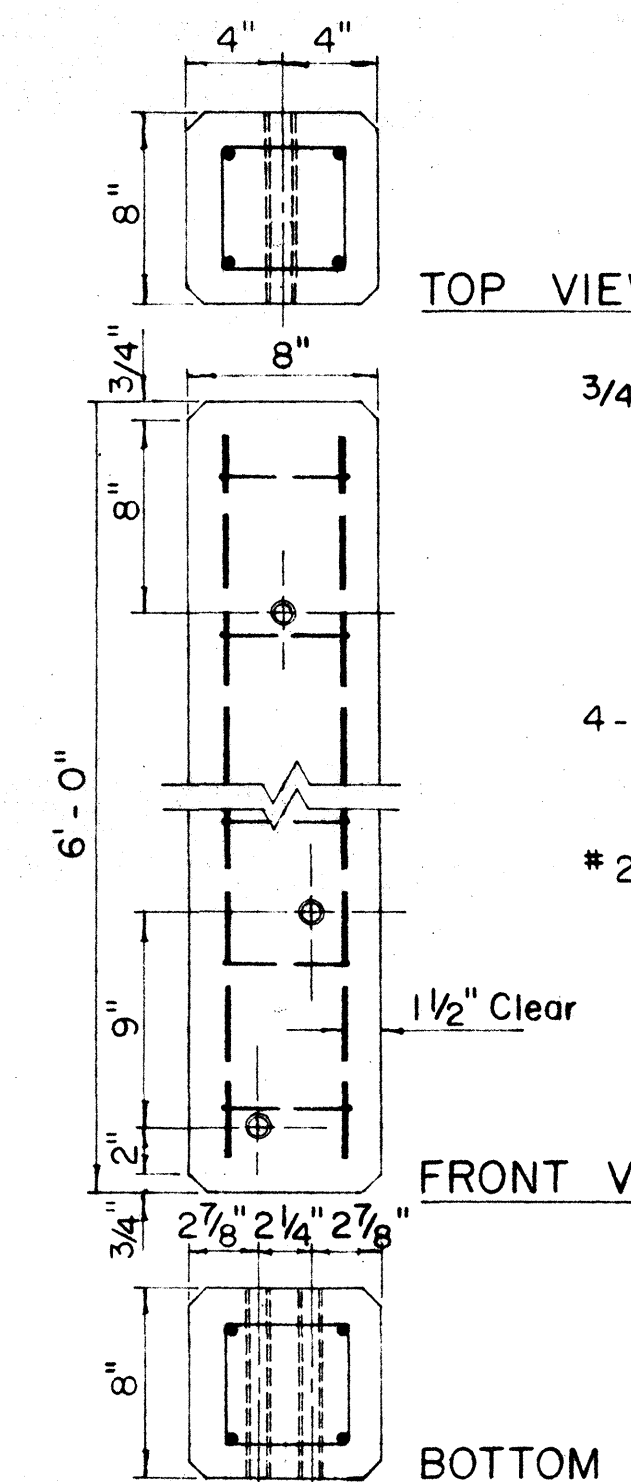
RAIL WASHER

NOTE:
Concrete post shall be precast



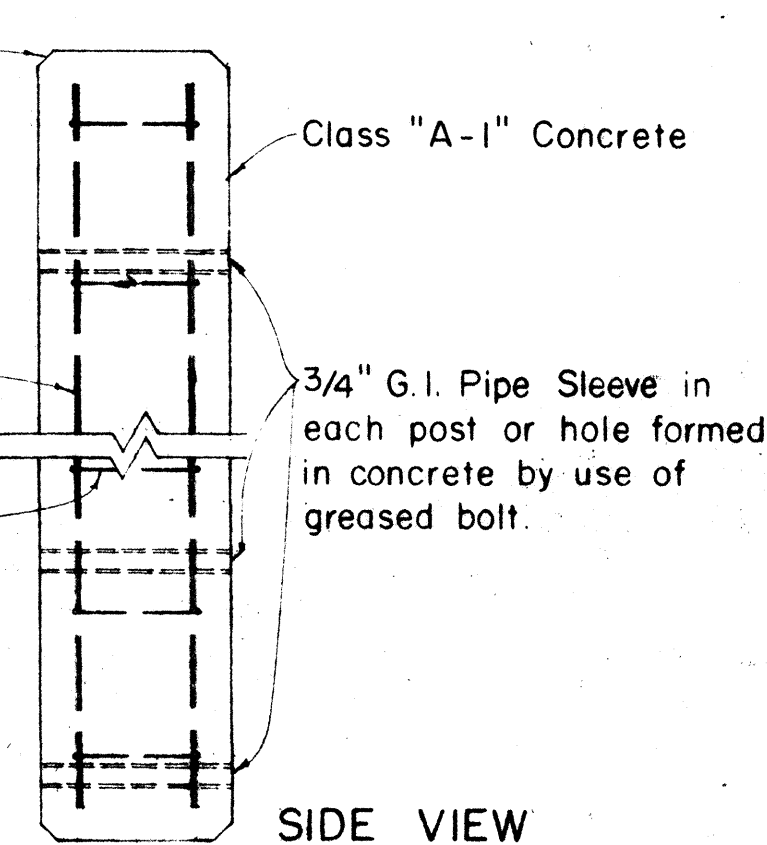
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

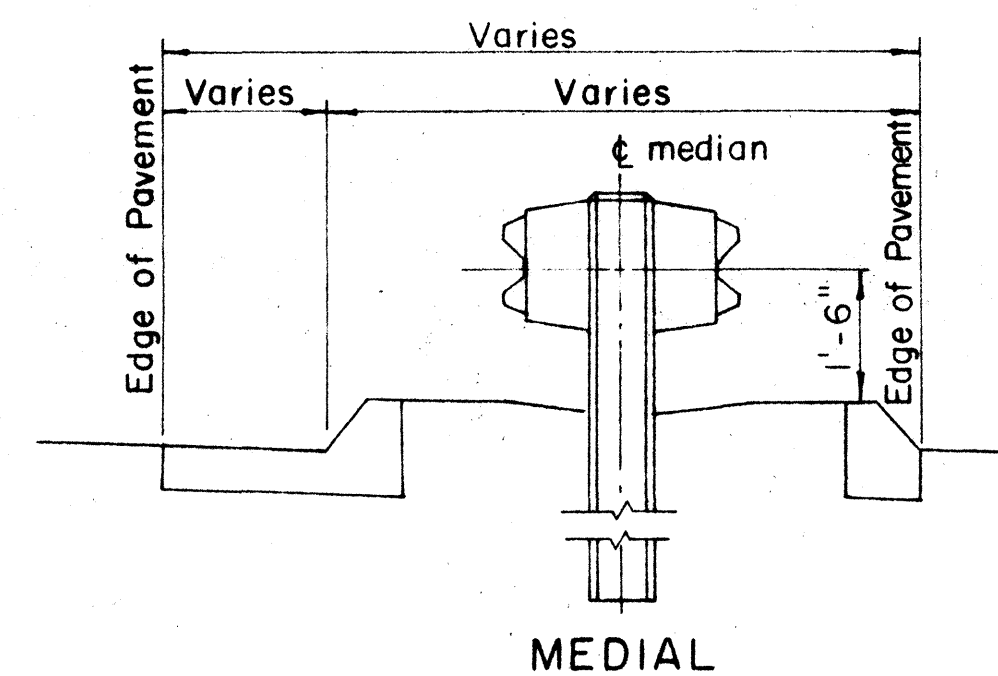


DETAIL OF CONCRETE POST

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



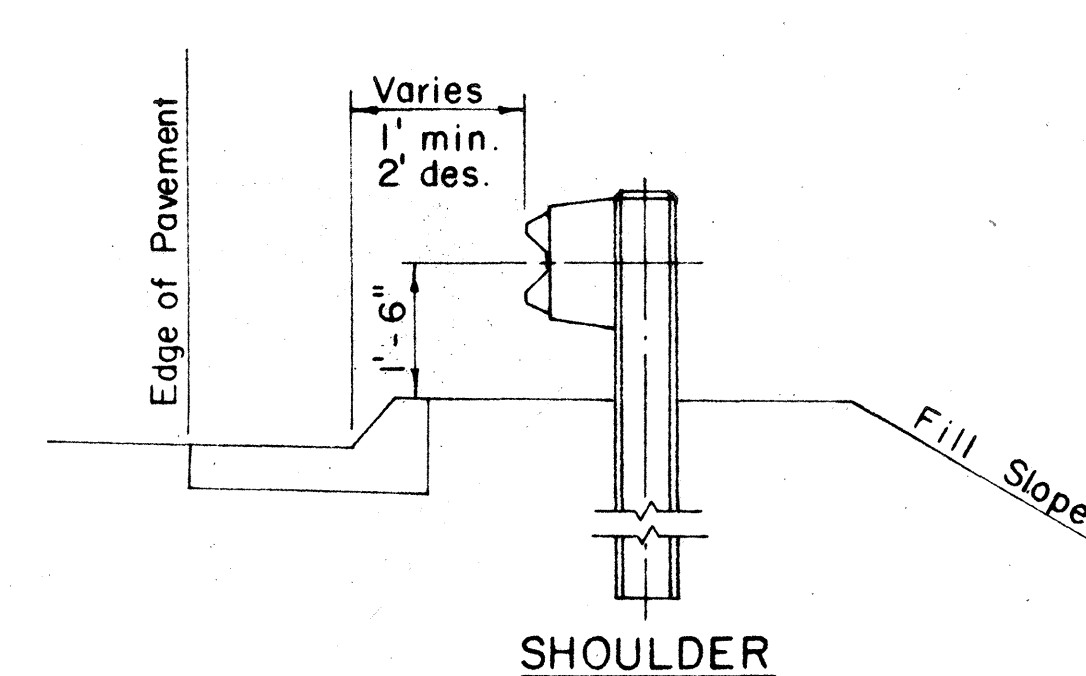
SIDE VIEW



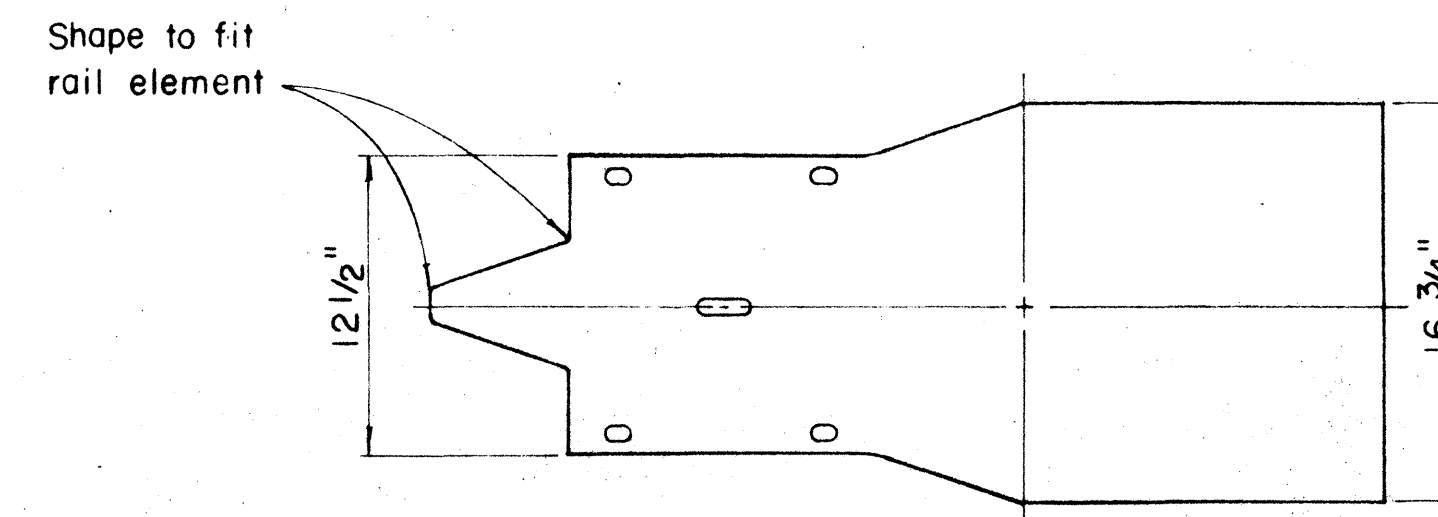
MEDIAL

TYPICAL GUARD RAIL DETAIL

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



SHOULDER



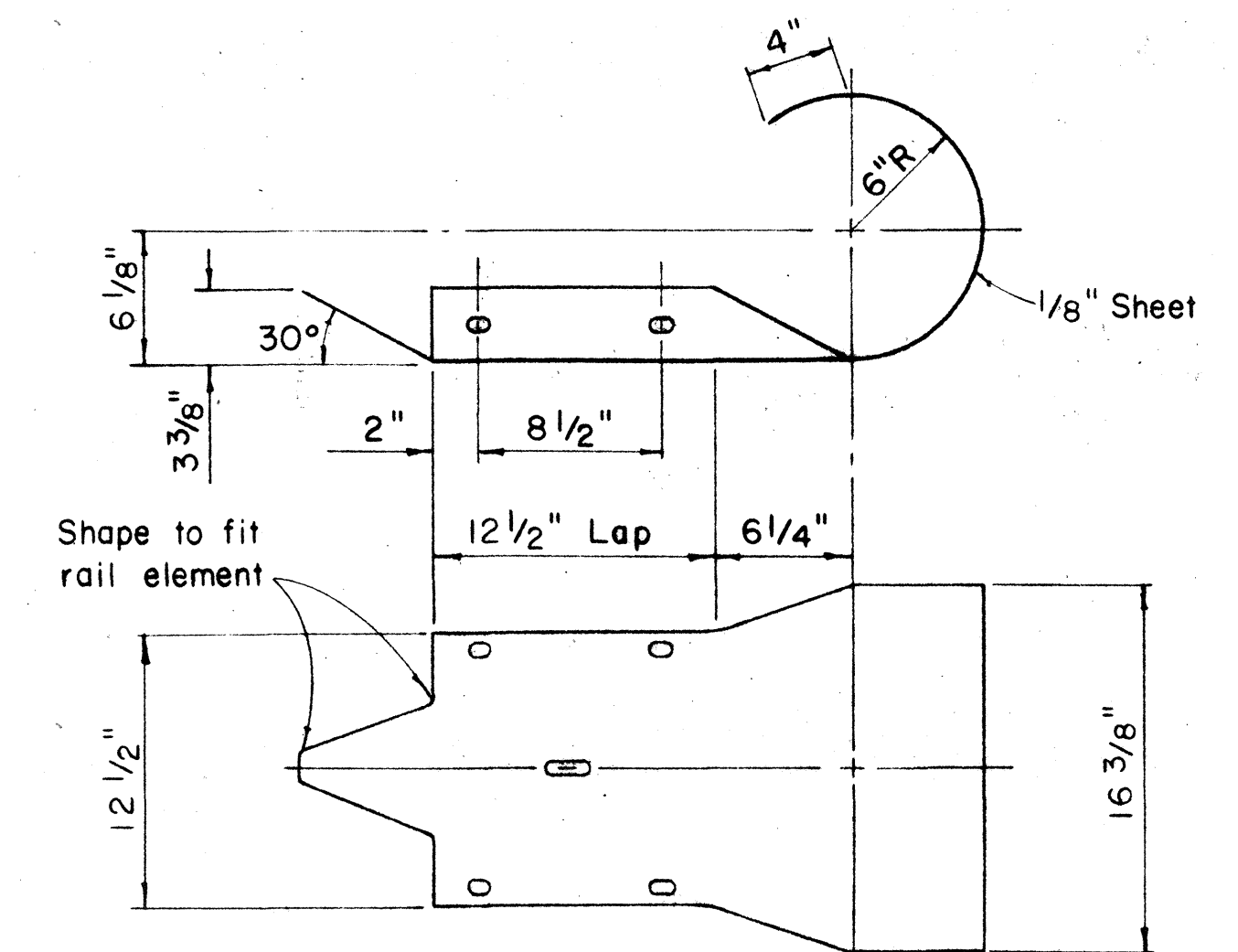
FLARED END

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

MEDIAN END DIMENSIONS

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

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 Concrete Post with Metal Blocks (BJ 6)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJ 6)	24 3/8"	12 3/16"



CURVED END

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

REVISED: June 2, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAIL

Scale: as noted

SHEET No. 11 OF 11 SHEETS