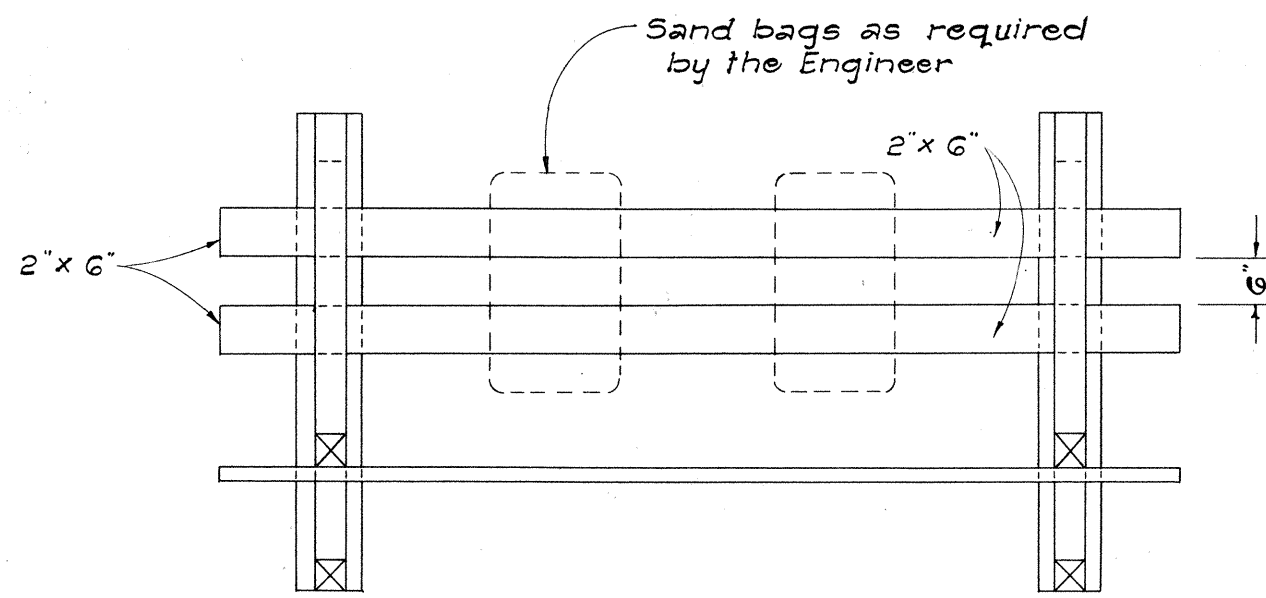
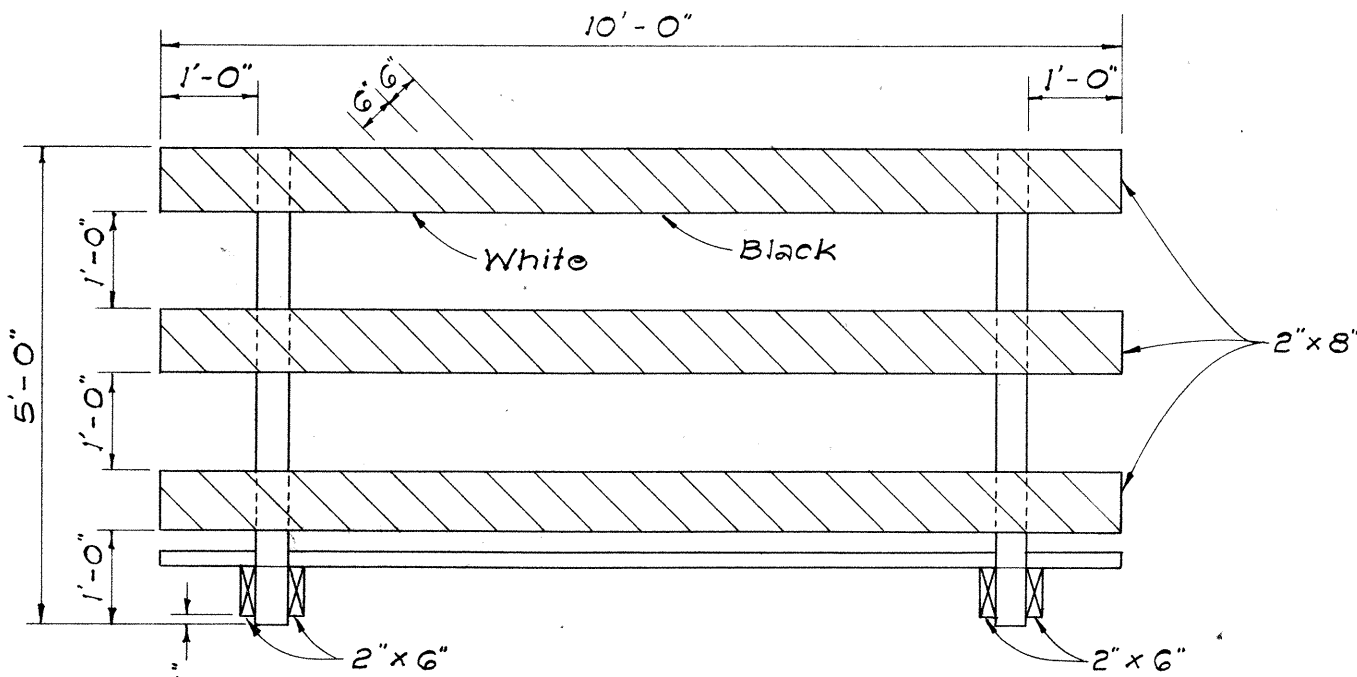


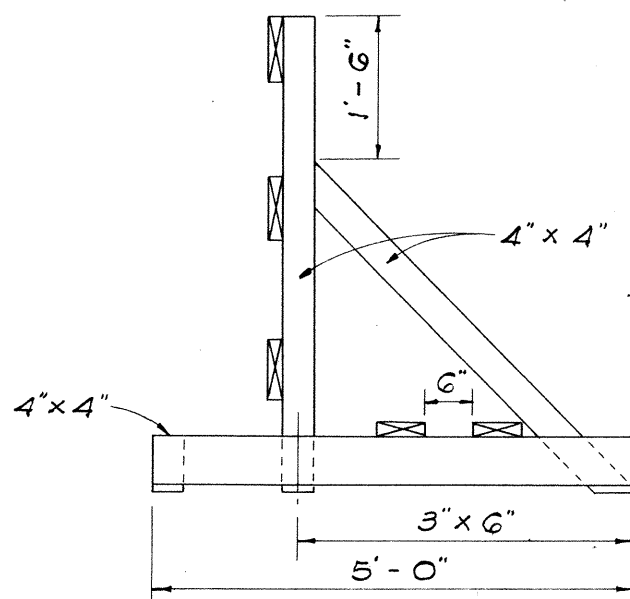
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-099-1(3)	1968	7	16



PLAN VIEW

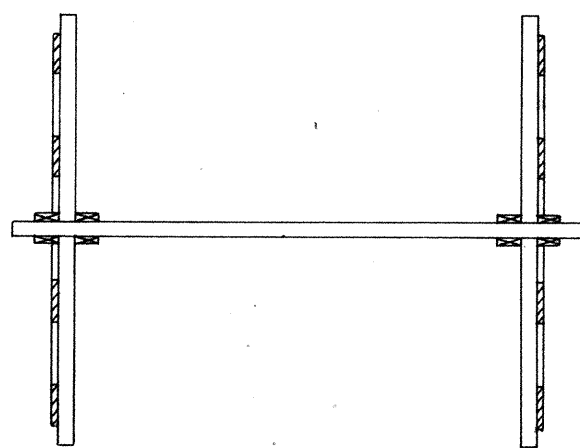


FRONT VIEW

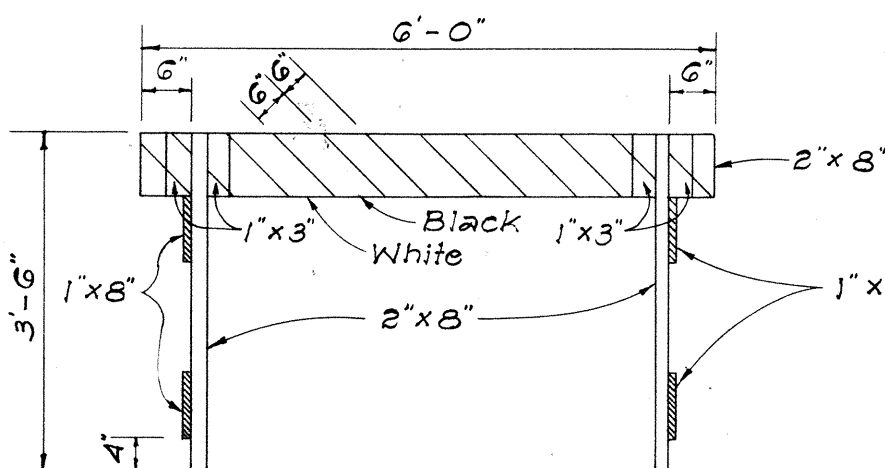


END VIEW

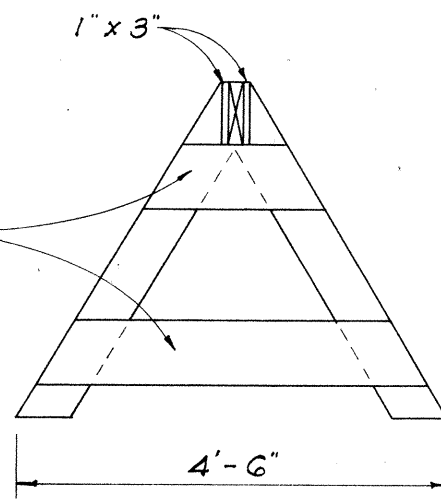
CLASS I BARRICADE



PLAN VIEW



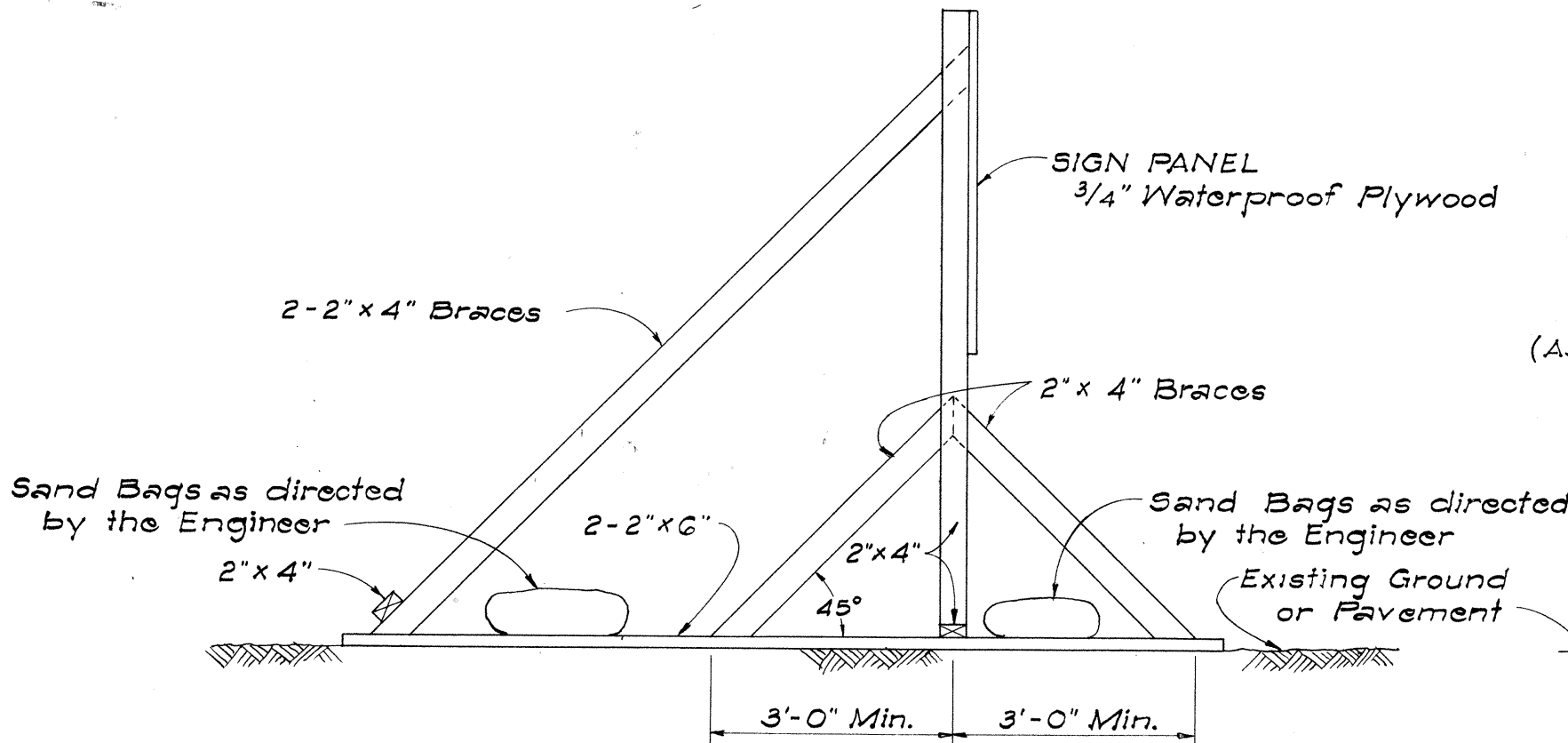
FRONT VIEW



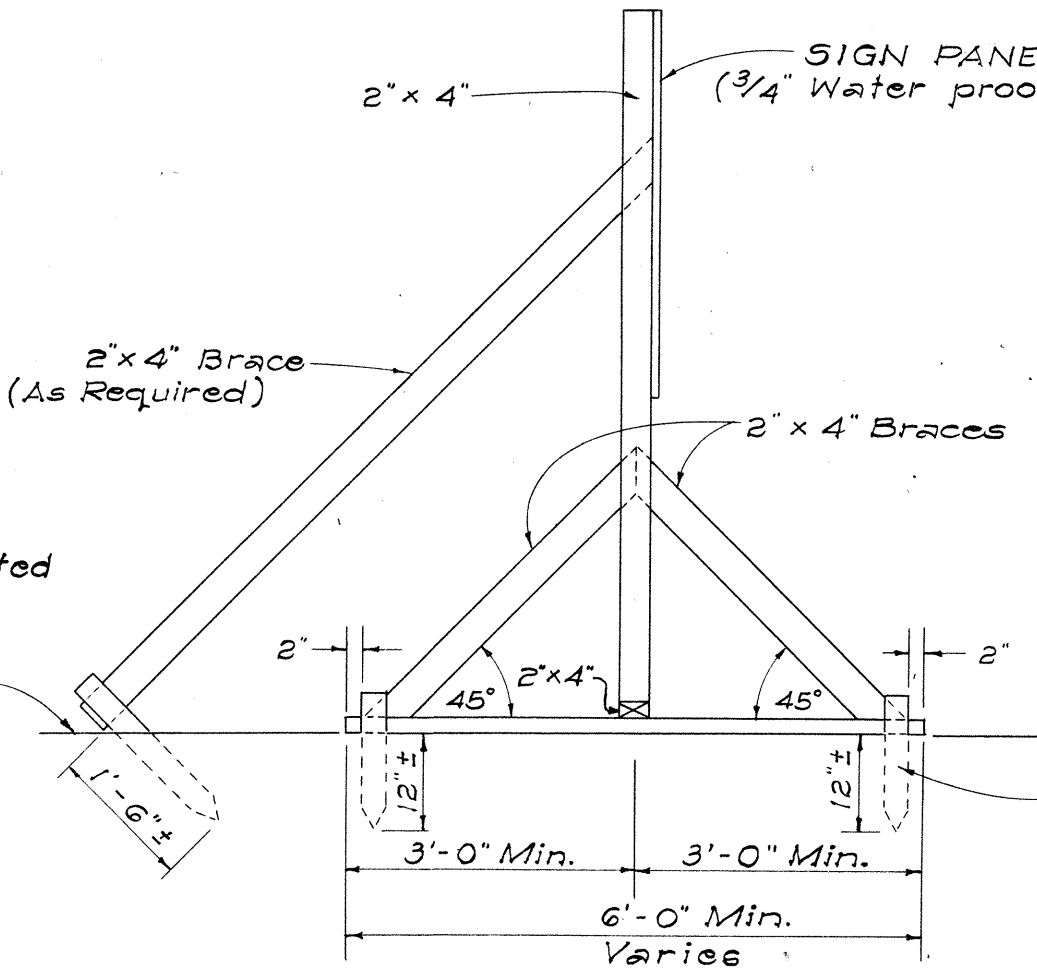
END VIEW

CLASS II BARRICADE

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



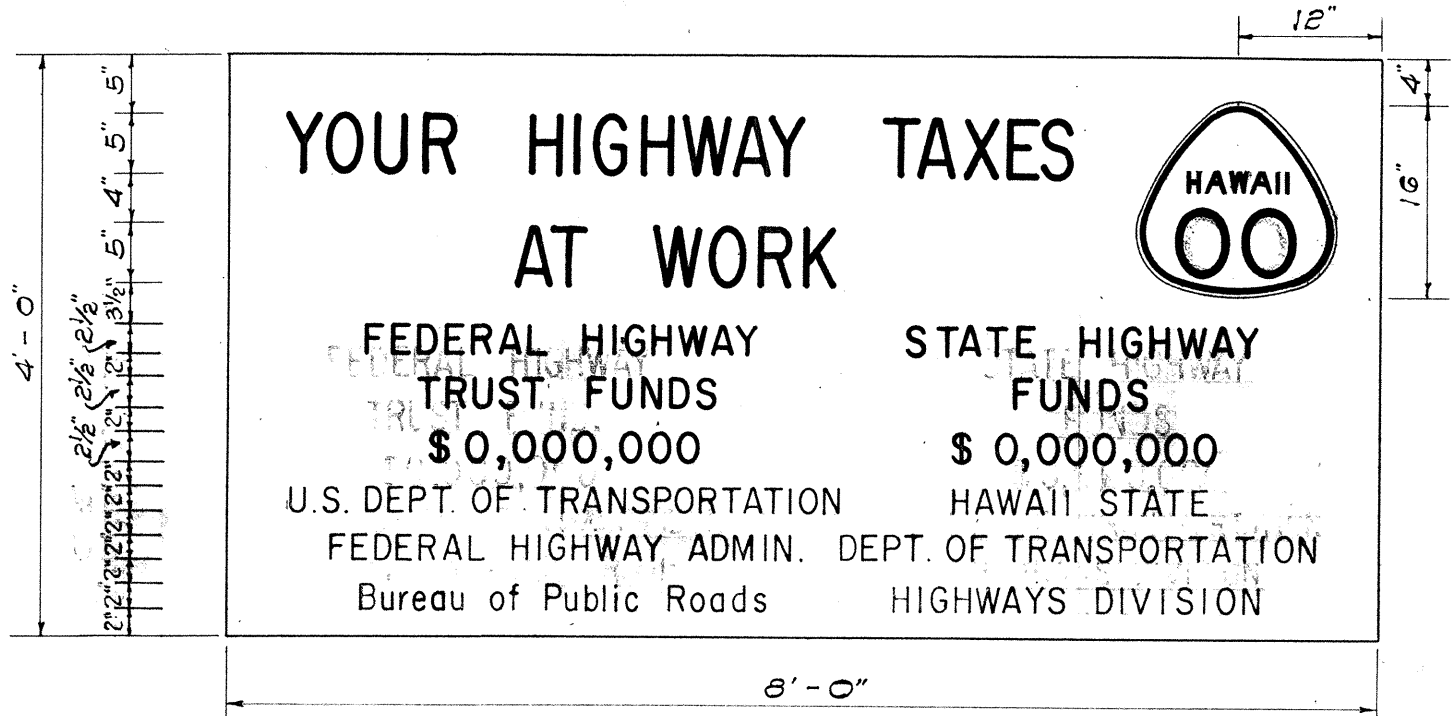
SIDE VIEW
(SIGN FRAME WEIGHTED DOWN)



SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)

ELEVATIONS

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

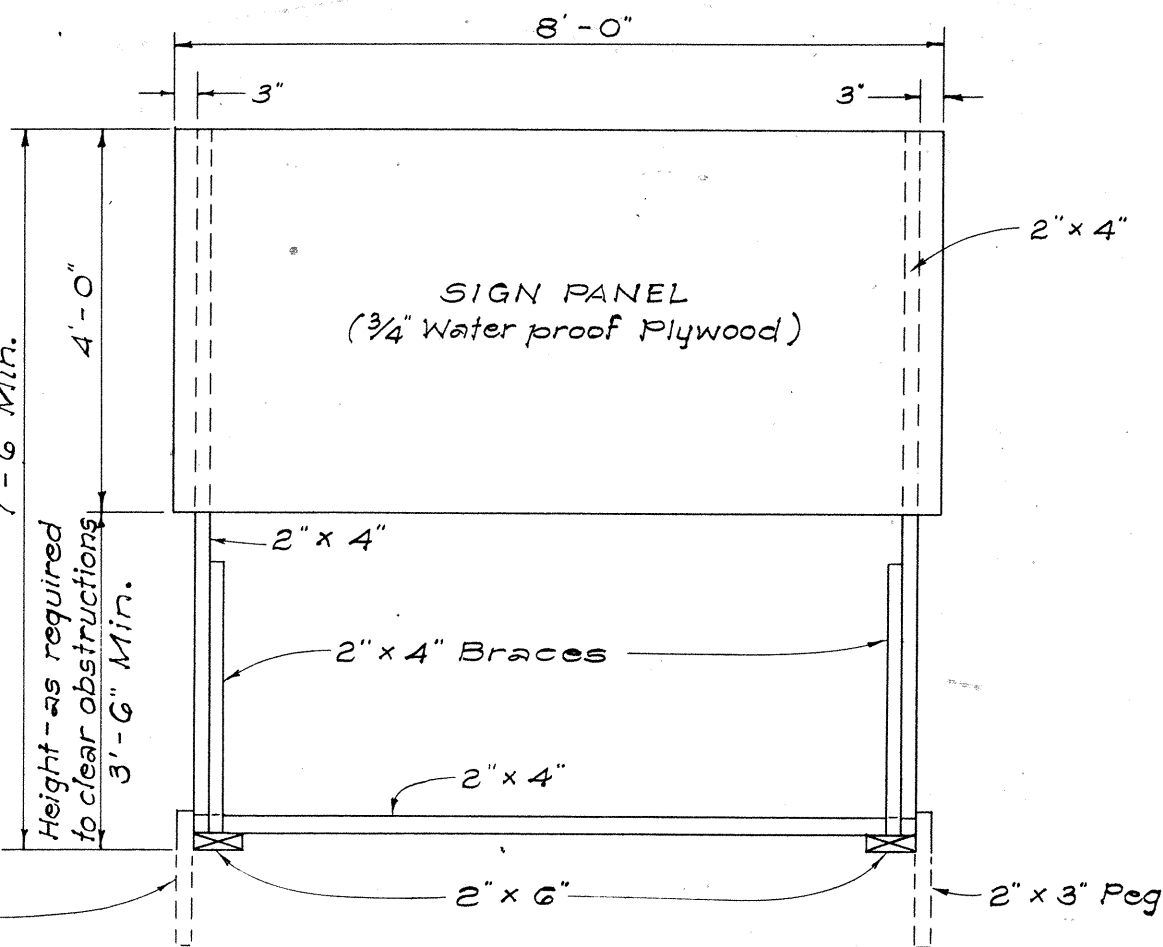


SIGN PANEL

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

PRIMARY AND SECONDARY SYSTEMS CONSTRUCTION IDENTIFICATION SIGN

Scale: As Shown



FRONT VIEW

NOTES:

- A. CONSTRUCTION IDENTIFICATION SIGNS**
 - The sign legend shall be black on white background.
 - The Contractor shall construct, install and maintain the project signs at the locations shown on the plans and as ordered by the Engineer.
 - The signs shall be removed and stock-piled upon completion of the project as ordered by the Engineer and are to become State property.
 - 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.
 - The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.

- B. WOOD BARRICADES**
 - The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
 - 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.

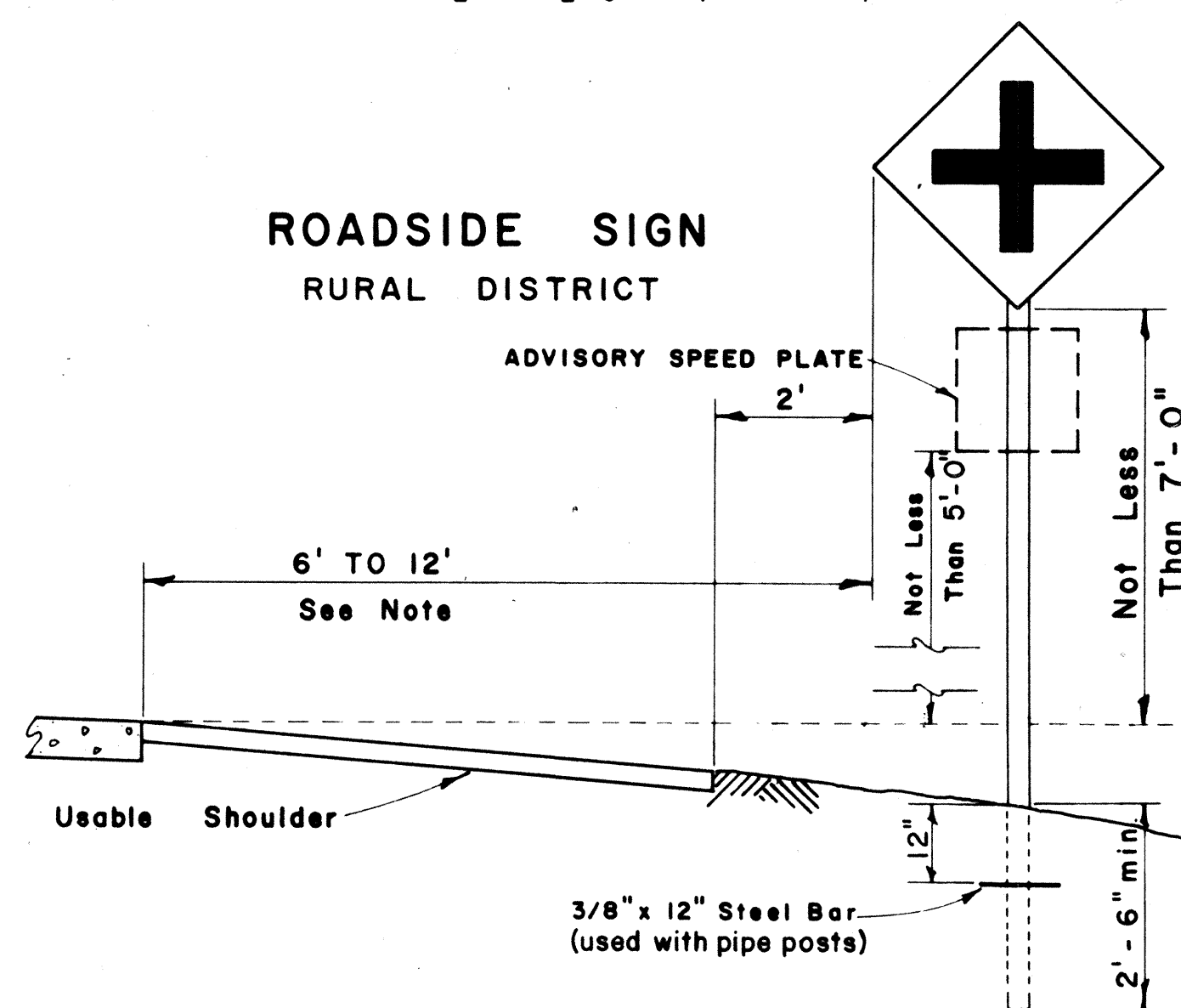
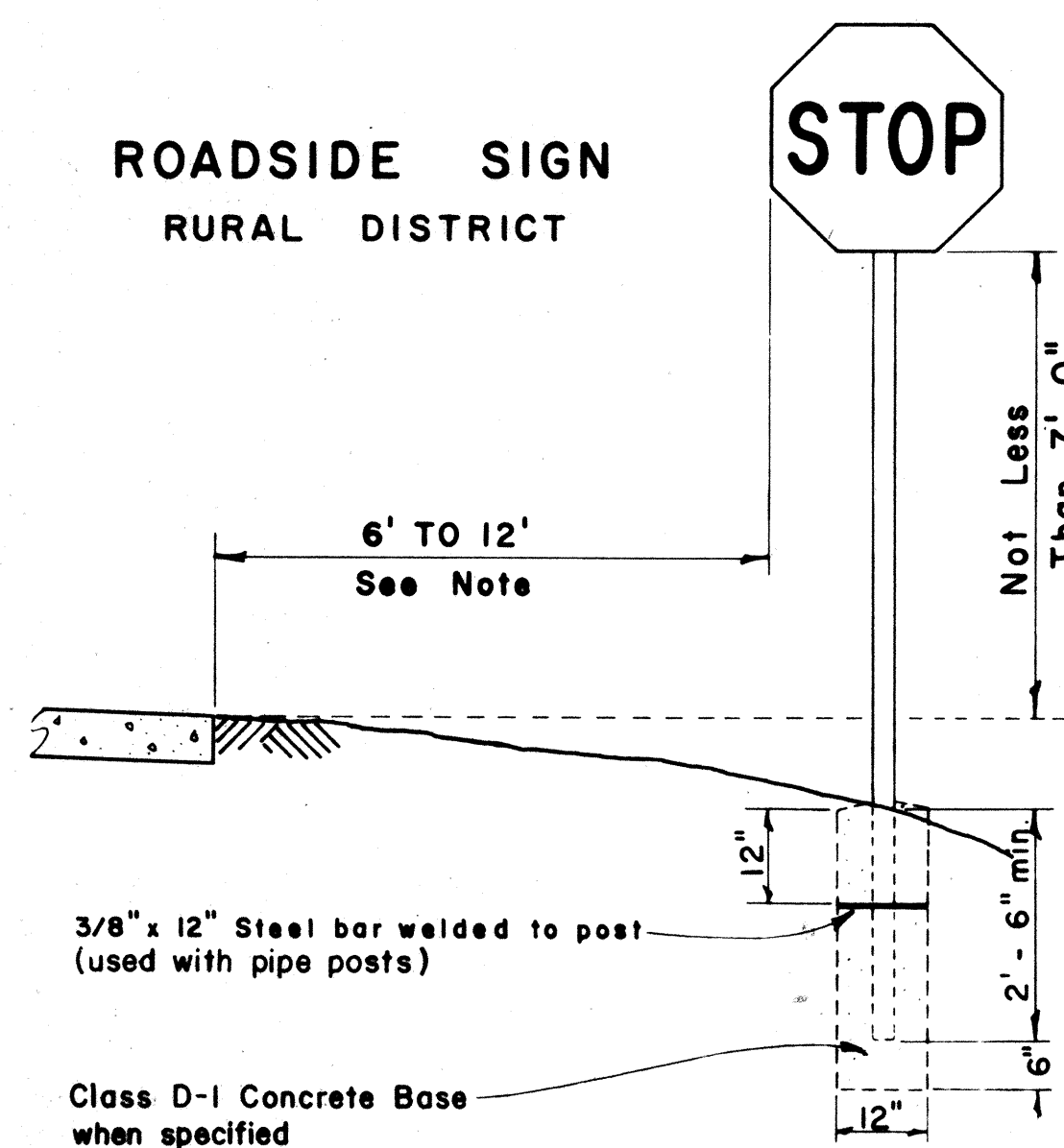
REVISED: October 2, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

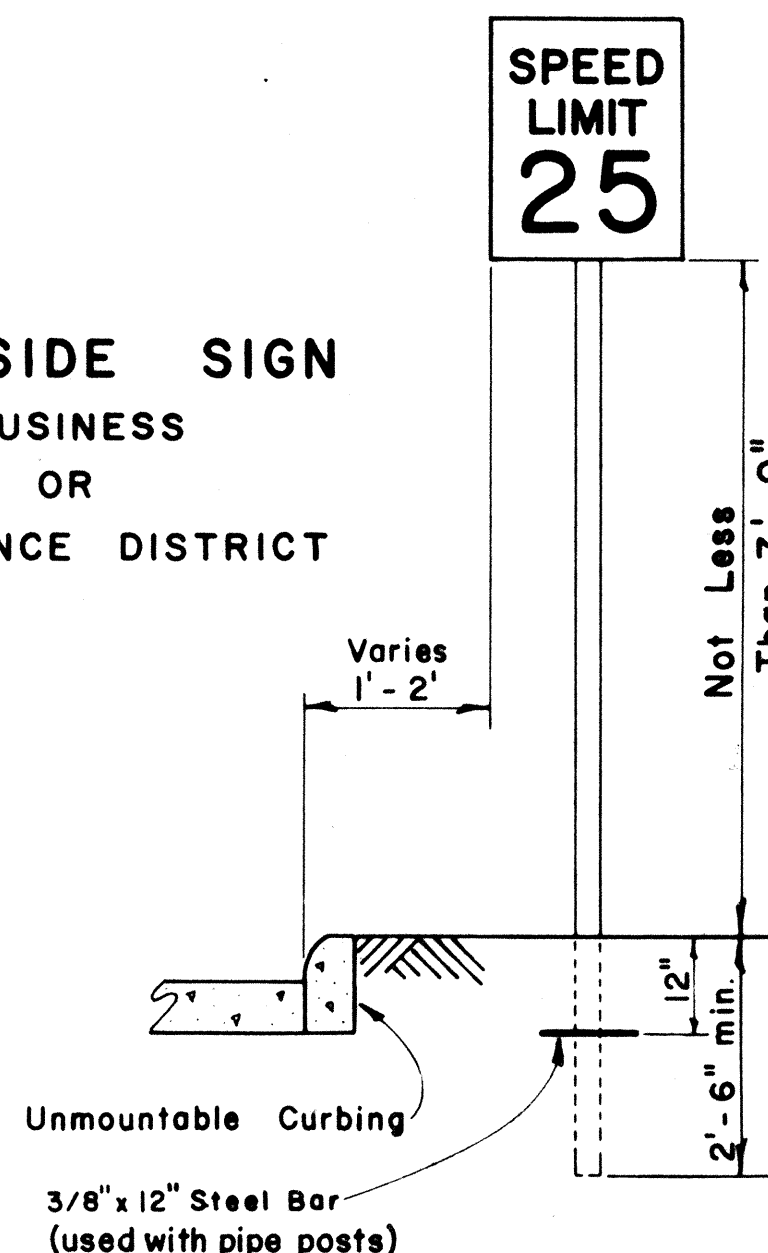
TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES

F.A.P. PROJECT NO. F-099-1 (3)
SCALE: As Shown
DATE: OCT. 1967

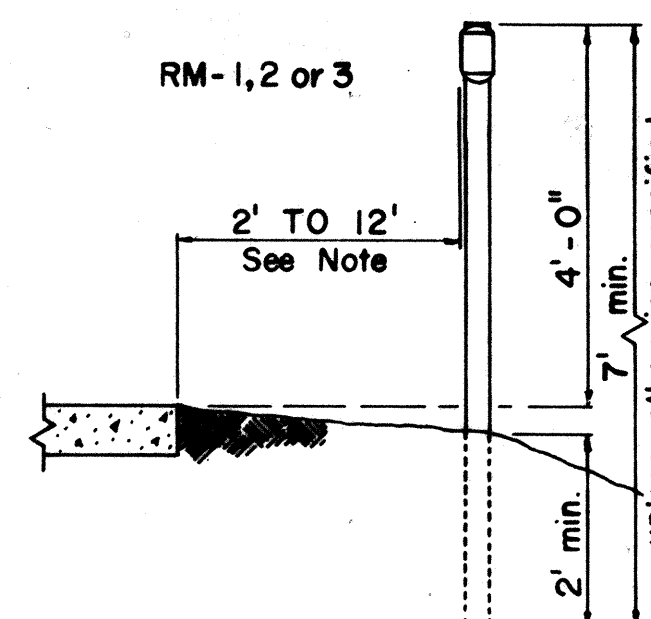
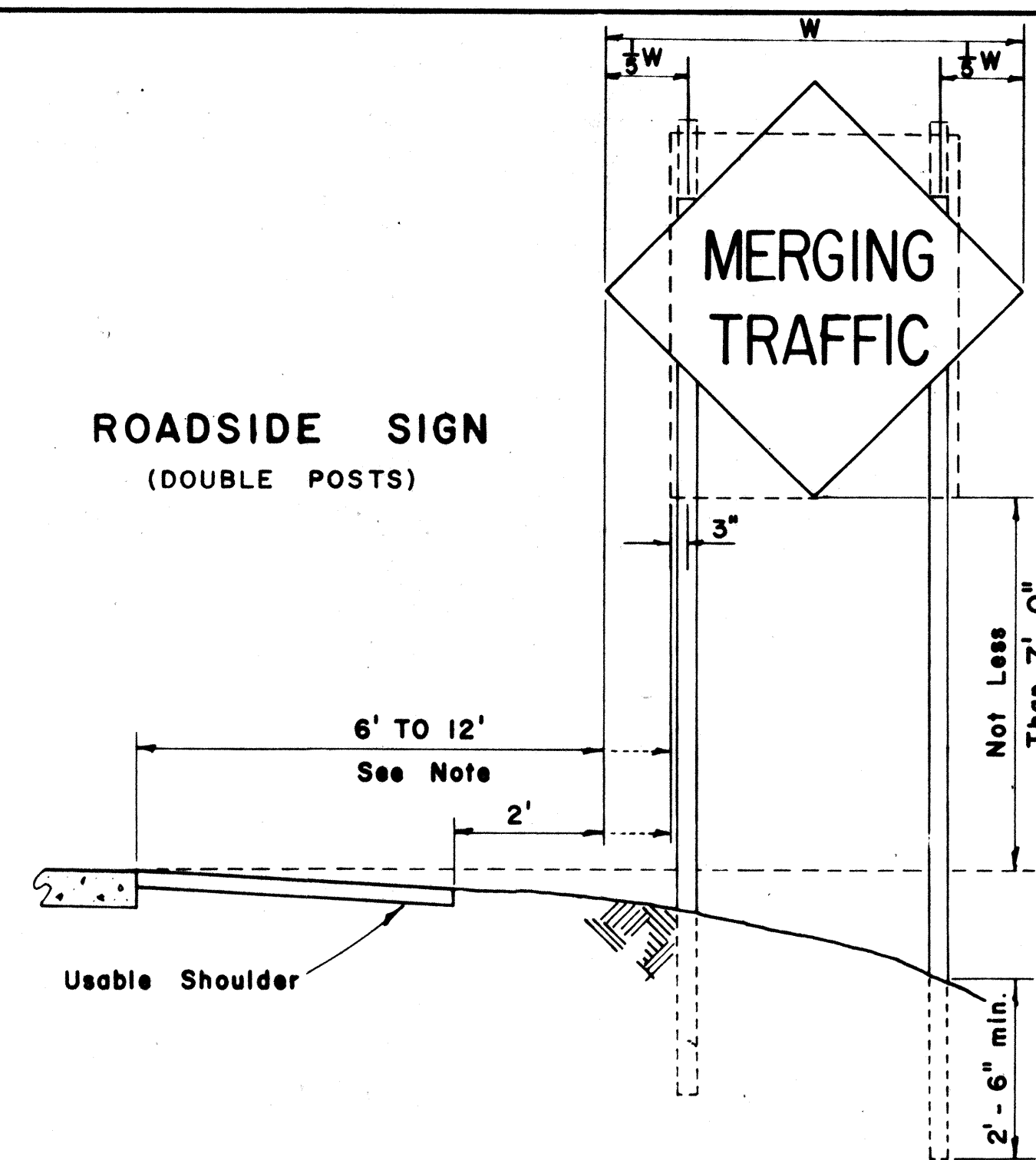
- NOTE:
1. All signs and road delineators shall be placed 2' outside the usable roadway shoulder or 1' outside unmountable curbing present and within the limits shown below.
 2. Except as noted below, sign posts shall be either 3" galv. std. pipe or 2 1/2" x 2 1/2" galv. square tube posts for signs larger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

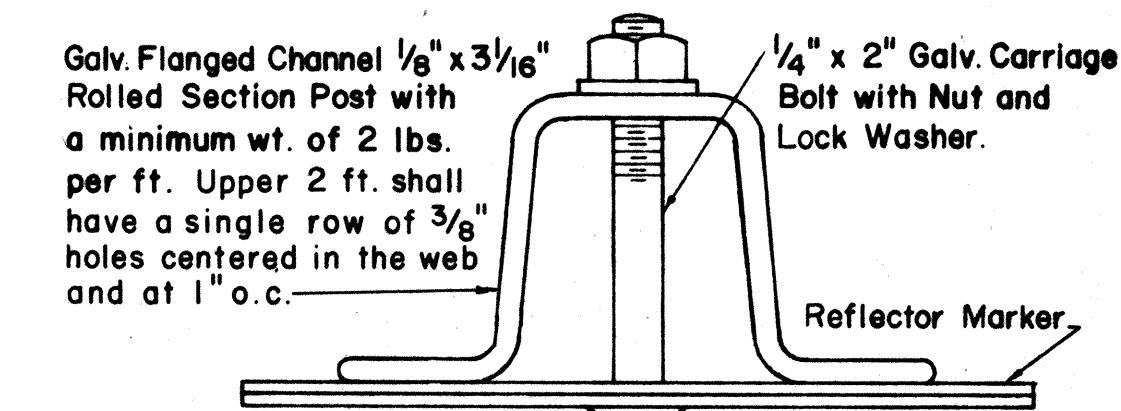


ROADSIDE SIGN
(DOUBLE POSTS)

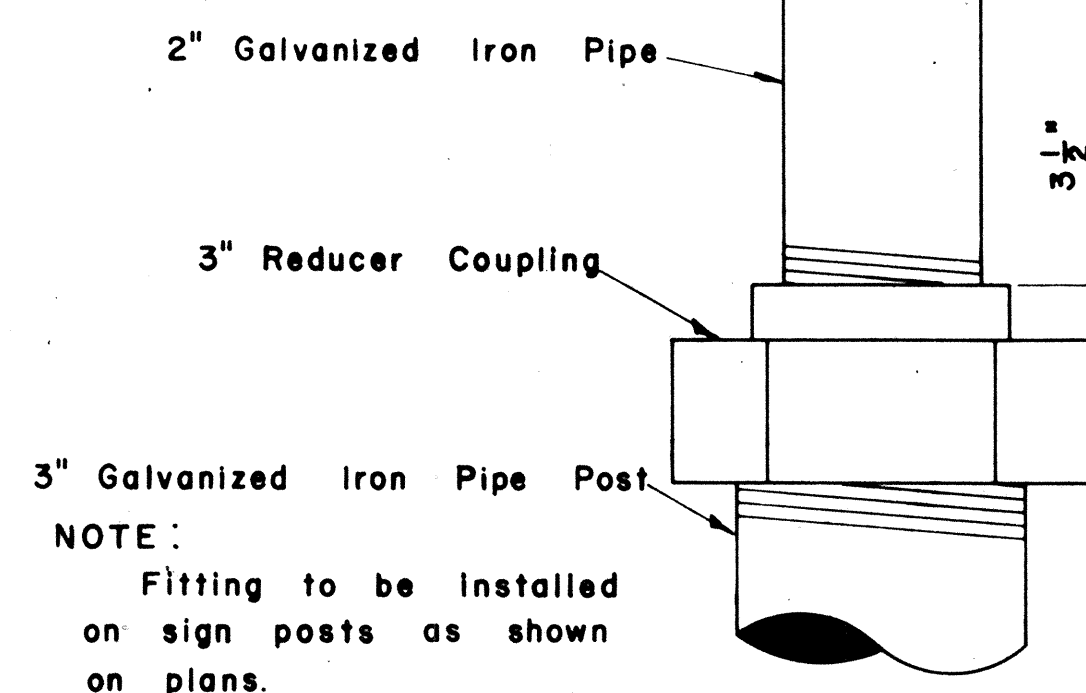
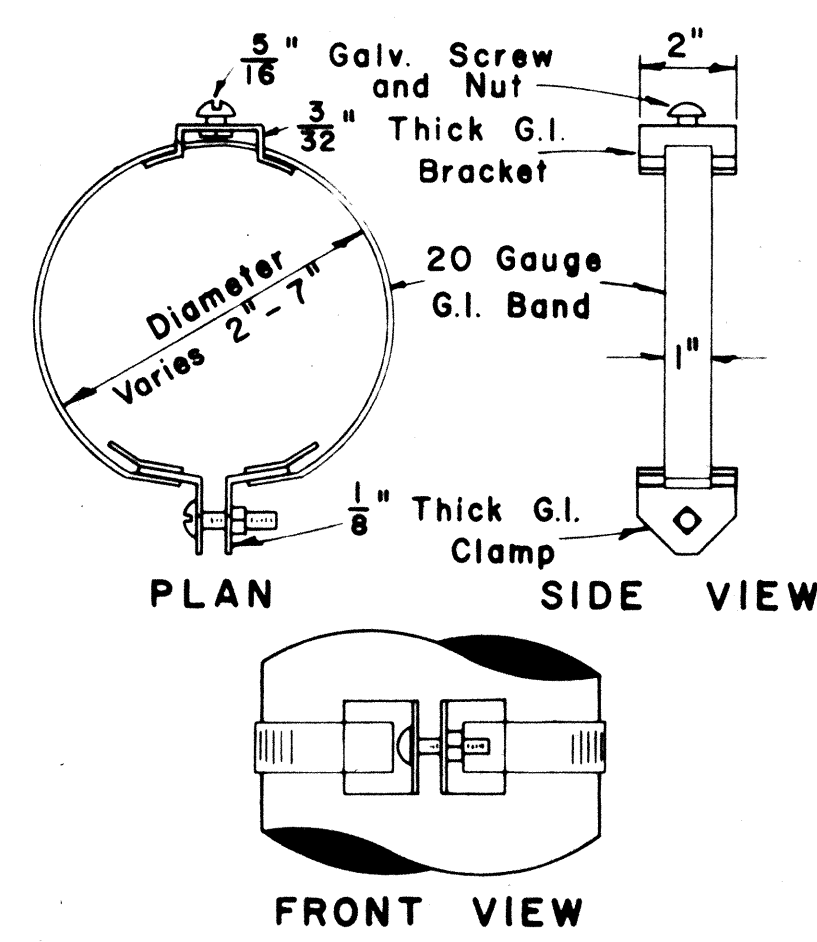
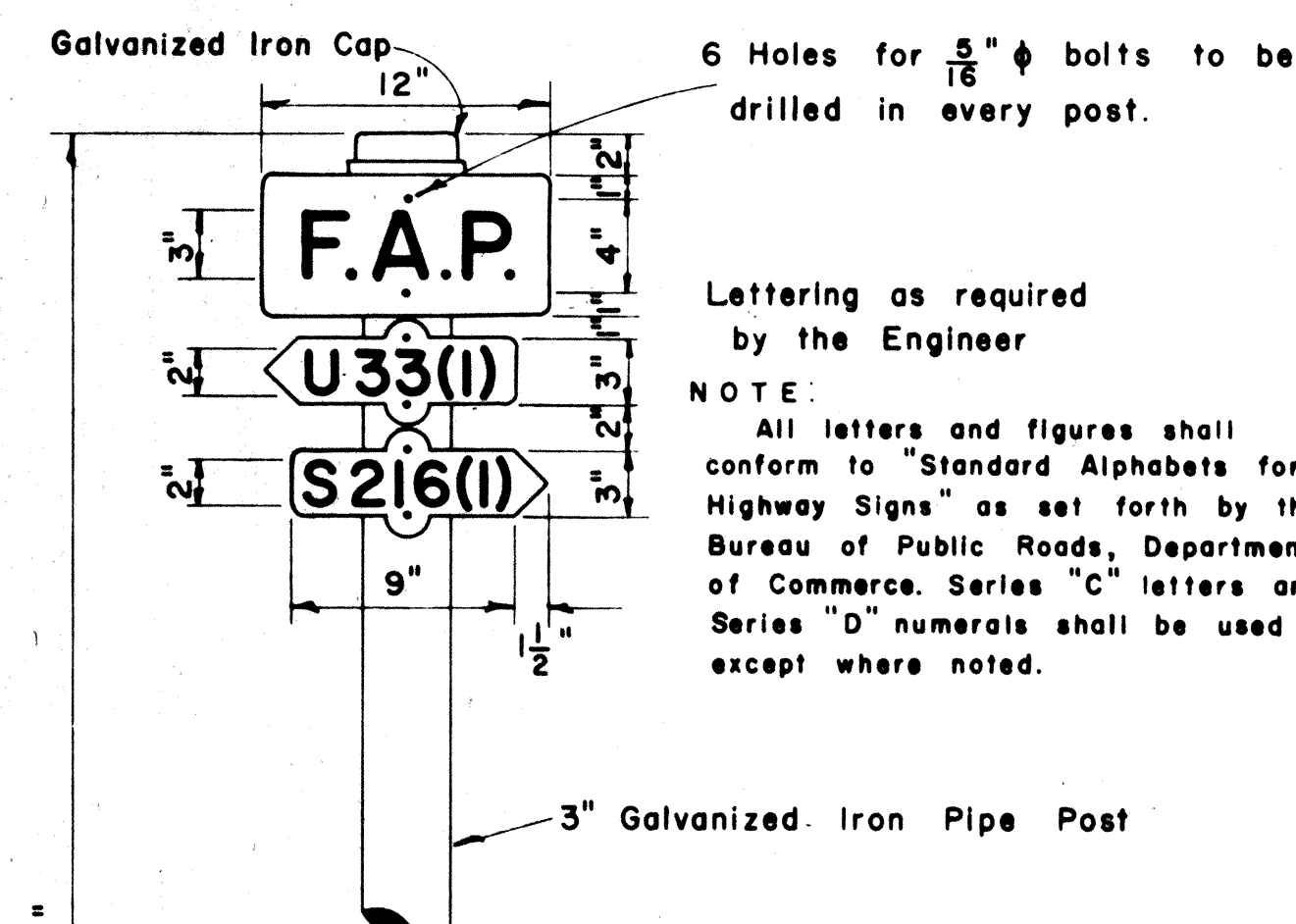


ROAD DELINEATOR

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

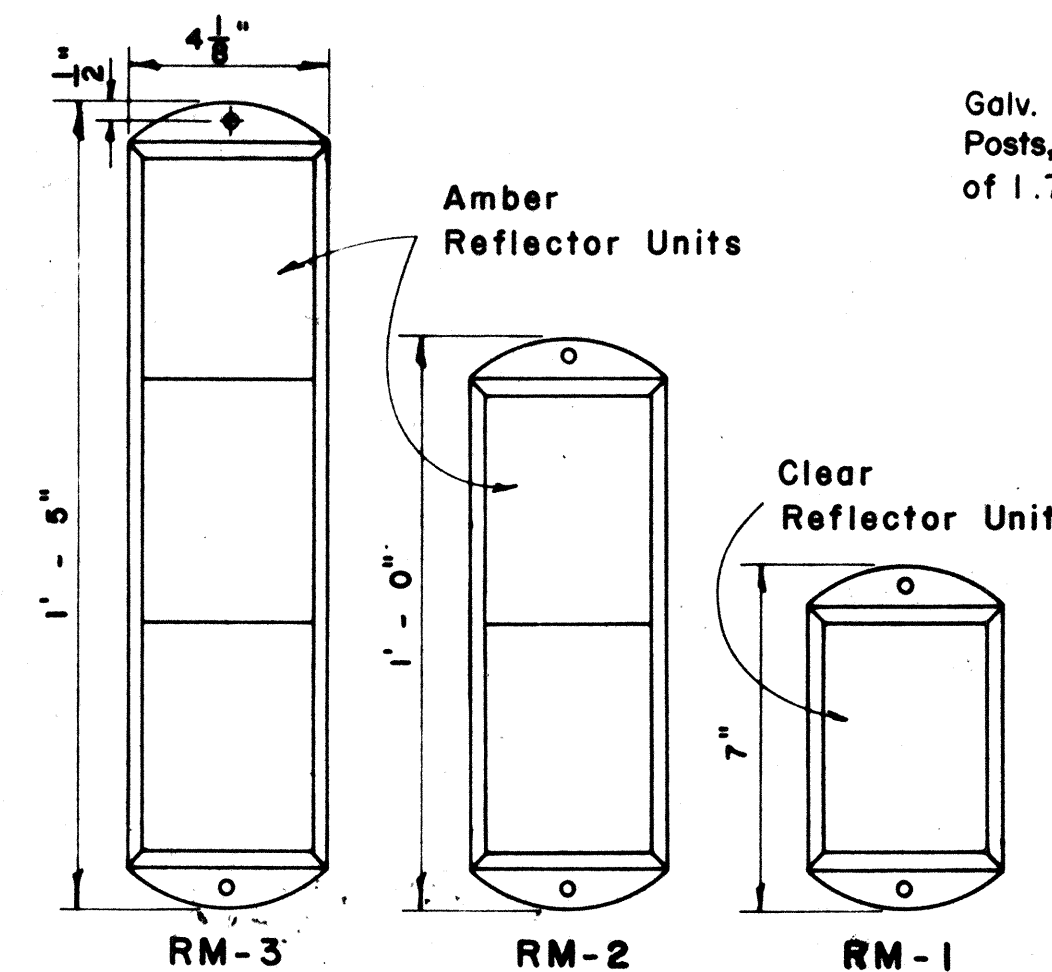
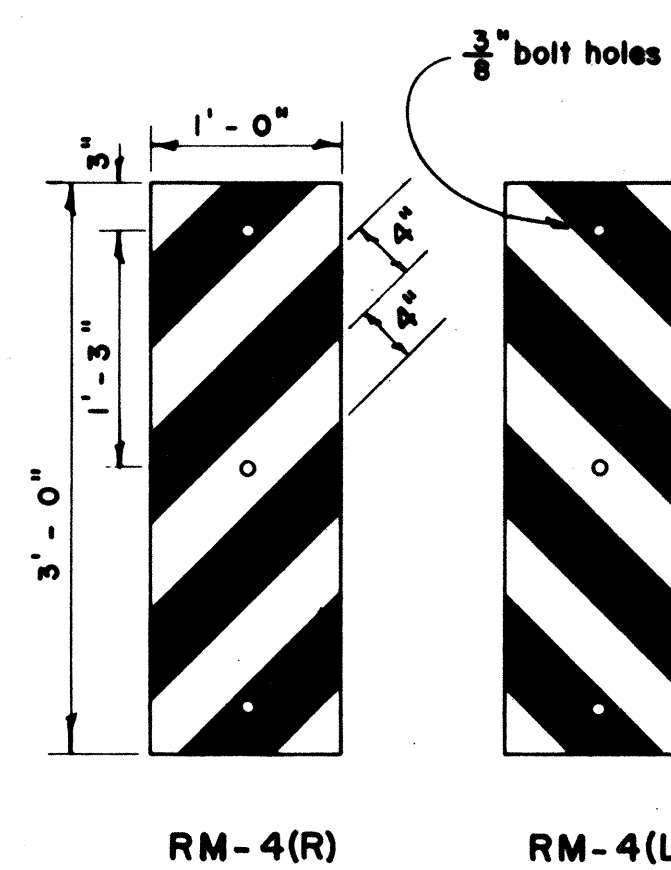


HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS



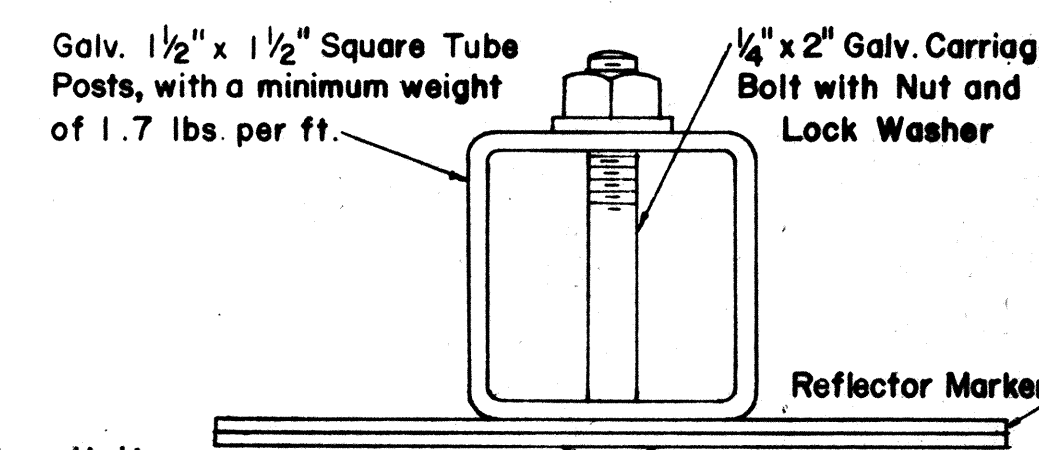
DETAIL OF SIGN POST FITTING FOR CITY & COUNTY STREET NAME SIGNS

Scale: 1/2" = 1'



REFLECTOR MARKERS

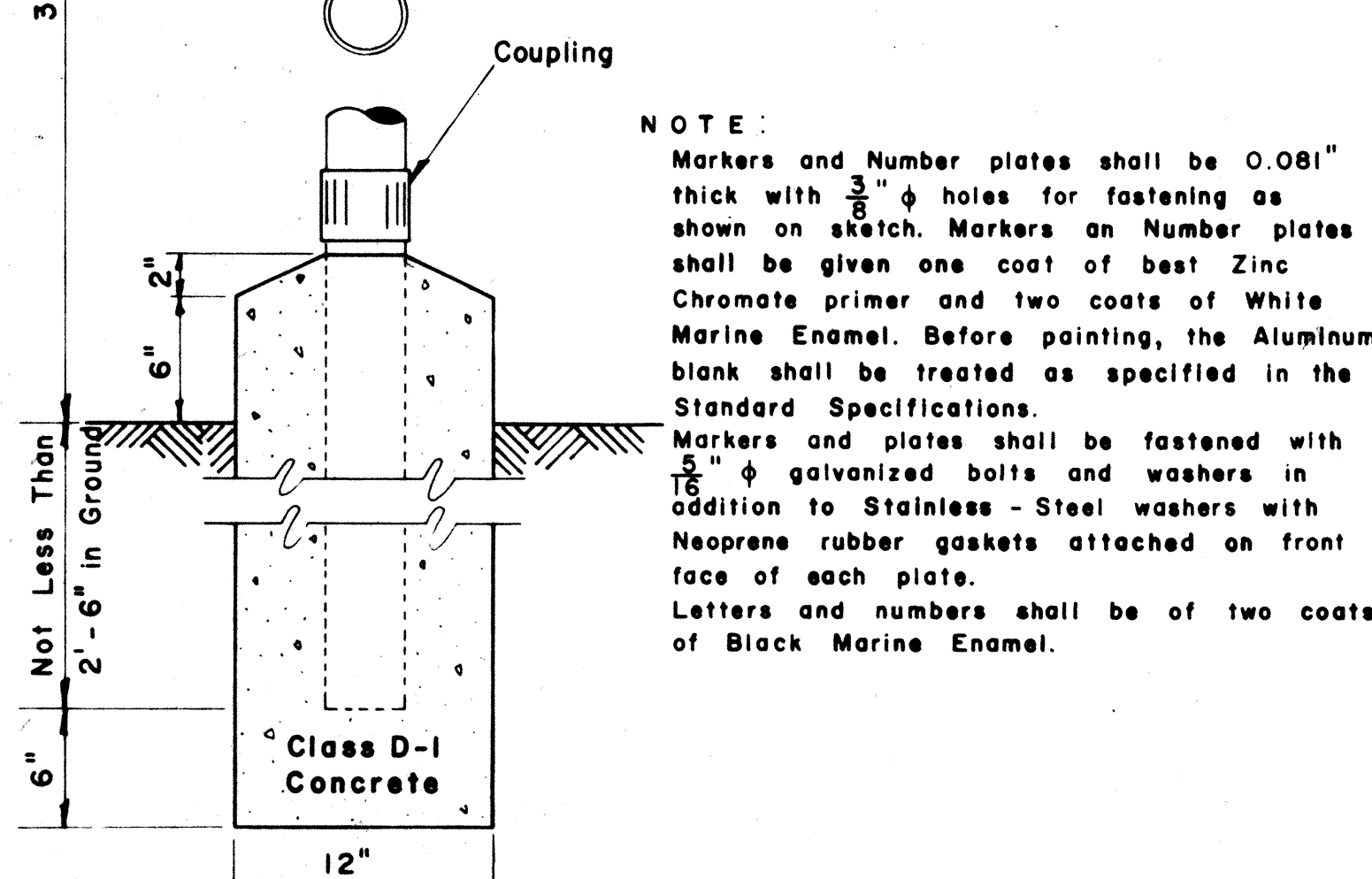
Scale: As Shown



TYPICAL SECTION OF ROAD DELINEATOR
Full Size

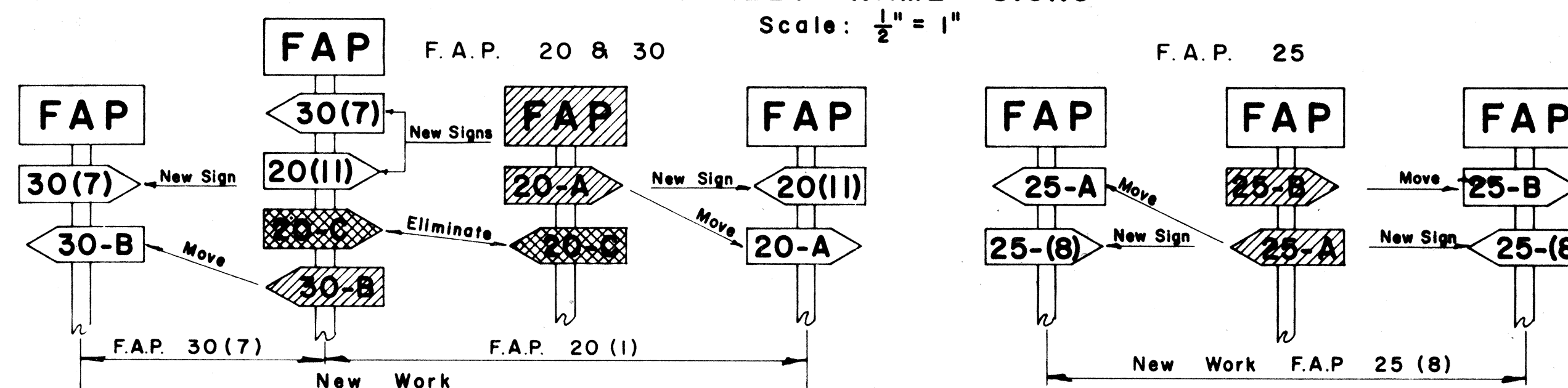
NOTE:

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"



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)

APPROVED: _____ DATE: 1/24/64

DIRECTOR OF TRANSPORTATION

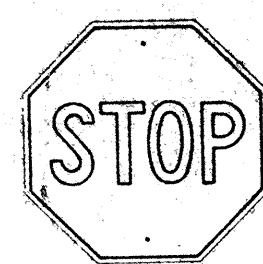
JANUARY 27, 1967
DECEMBER 8, 1964
REVISED: FEBRUARY 25, 1964

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

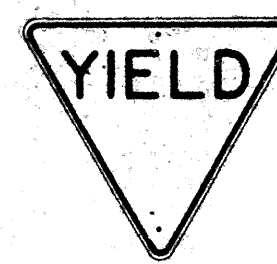
Scale: As Shown

SHEET No. 2 OF 7 SHEETS

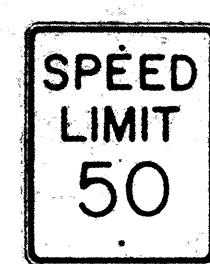
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-099-I(3)	1968	7	16



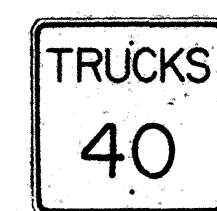
R1-1 30"x 30"



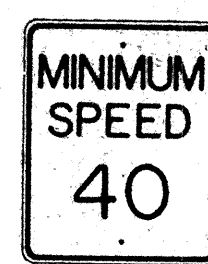
R1-2 36"x 36"x 36"
R1-2-E 48"x 48"x 48"
R1-2-I 60"x 60"x 60"



R2-1(50) 24"x 30"
R2-1(50)-E 36"x 48"
R2-1(50)-I 48"x 60"



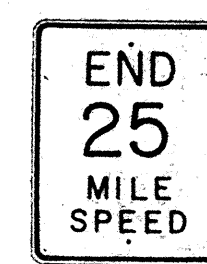
R2-2(40) 24"x 24"
R2-2(40)-E 36"x 36"
R2-2(40)-I 48"x 48"



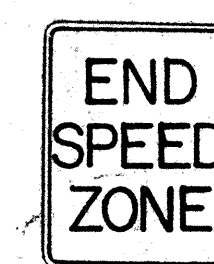
R2-4(40) 24"x 30"
R2-4(40)-E 36"x 48"
R2-4(40)-I 48"x 60"



R2-5 24"x 30"
R2-5-E 36"x 48"
R2-5-I 48"x 60"



R2-6(25) 24"x 30"
R2-6(25)-E 36"x 48"
R2-6(25)-I 48"x 60"



R2-7 24"x 30"
R2-7-E 36"x 48"
R2-7-I 48"x 60"



R3-1 24"x 30"
R3-1-E 36"x 48"



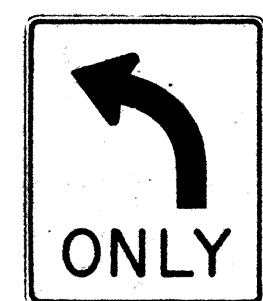
R3-2 24"x 30"
R3-2-E 36"x 48"



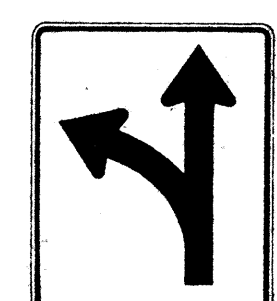
R3-3 24"x 24"



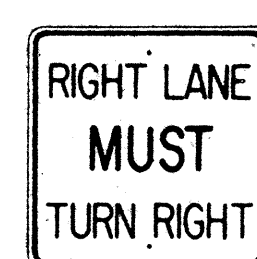
R3-4 24"x 30"
R3-4-E 36"x 48"
R3-4-I 48"x 60"



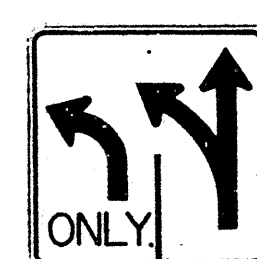
R3-5(L) 30"x 36"



R3-6(L) 30"x 36"



R3-7(R) 30"x 30"



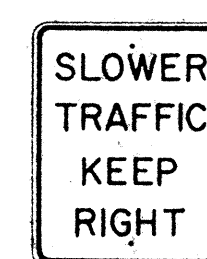
R3-8(L) 30"x 30"



R4-1 24"x 30"



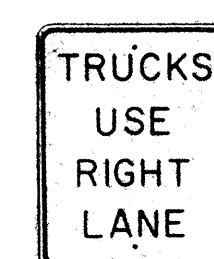
R4-2 24"x 30"



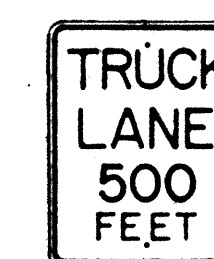
R4-3 24"x 30"
R4-3-E 36"x 48"
R4-3-I 48"x 60"



R4-4 24"x 30"
R4-4-E 36"x 48"
R4-4-I 48"x 60"



R4-5 24"x 30"
R4-5-E 36"x 48"



R4-6 24"x 30"
R4-6-E 36"x 48"



R4-7(R) 24"x 30"
R4-7(R)-E 36"x 48"



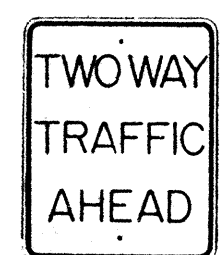
R5-1 24"x 24"



R6-1(R) 36"x 12"



R6-2(R) 18"x 24"



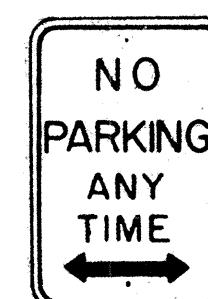
R6-3 24"x 30"



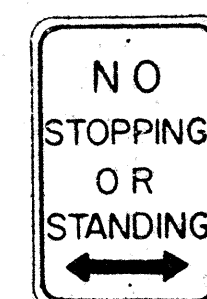
R6-4 24"x 30"



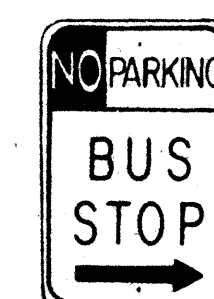
R6-5 24"x 30"



R7-1 12"x 18"



R7-4 12"x 18"
R7-4-E 24"x 30"



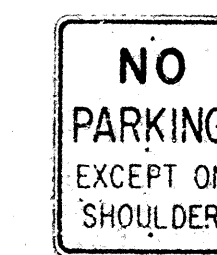
R7-107(R) 12"x 18"



R7-201 12"x 6"



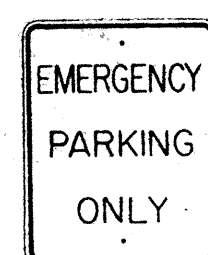
R8-1 24"x 30"
R8-1-E 36"x 48"
R8-1-I 48"x 60"



R8-2 24"x 30"
R8-2-E 36"x 48"



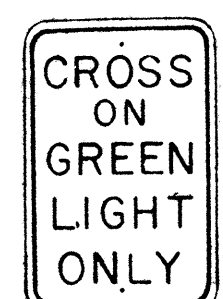
R8-3 24"x 30"
R8-3-E 36"x 48"



R8-4 24"x 30"
R8-4-E 36"x 48"
R8-4-I 48"x 36"



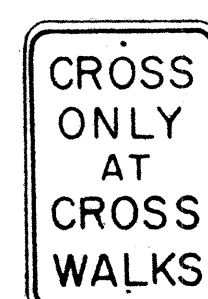
R9-1 18"x 24"



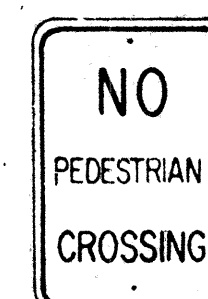
R9-2 12"x 18"



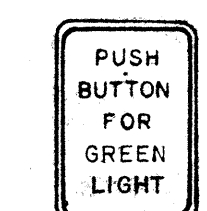
R9-3 12"x 18"



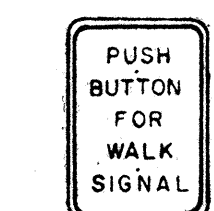
R9-4 12"x 18"



R9-5 12"x 18"



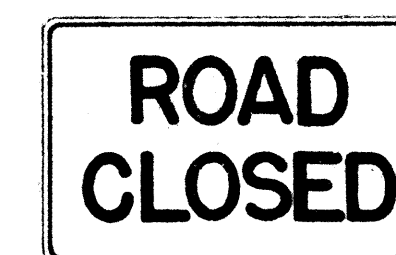
R9-6 9"x 12"



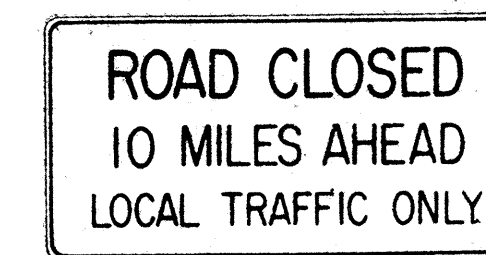
R9-7 9"x 12"



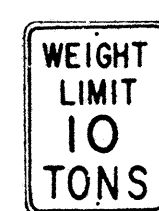
R10-1 24"x 30"
R10-1-E 36"x 48"
R10-1-I 48"x 60"



R10-2 48"x 30"



R10-3(10) 60"x 30"



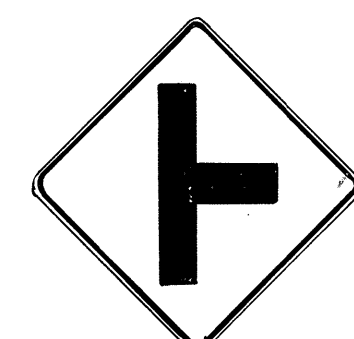
R10-4(10) 18"x 24"



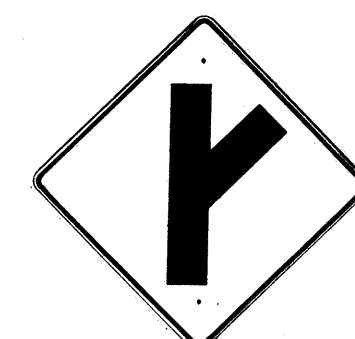
R5-5(1) 24"x 18"

NOTE:
White legend and border
on Red background.

6" Series C: R5-5(1)



W2-2 30"x 30"



W2-3(R) 30"x 30"

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

NOT TO SCALE

SHEET No. 3 OF 7 SHEETS

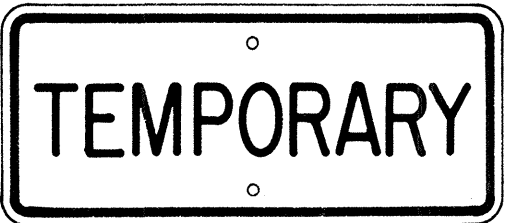
DATE	DESIGNED BY	CHECKED BY
PLAN	NOTE BOOK	No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-099-1(3)	1968	10	16

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 $\frac{3}{8}$ " 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:

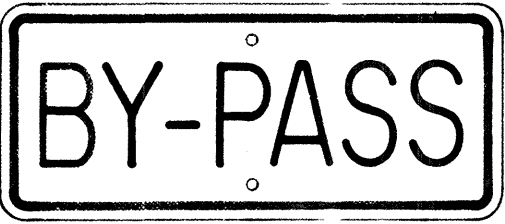
M6-1-N : NORTH
 M6-1-E : EAST
 M6-1-S : SOUTH
 M6-1-W : WEST
- Auxiliary markers denoted with the suffix "I": (M4-1-I) shall have a white legend on a blue background.
- Cardinal Direction Marker (M6-1) with suffix I (3) shall have a white legend on a blue background and shall be 30"x 15" in size.
- For M1-3 and M1-4 signs, number in () indicates route number and shall be as shown on the plan.



M5-1
21"x 9"



M5-2
21"x 9"



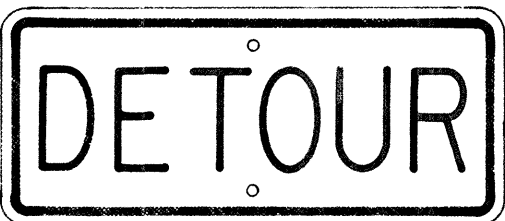
M5-3
21"x 9"



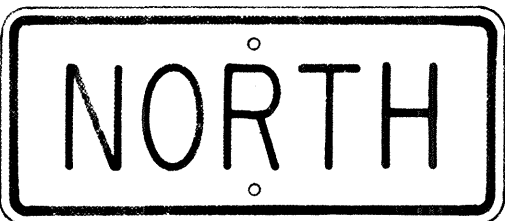
M5-4
21"x 9"



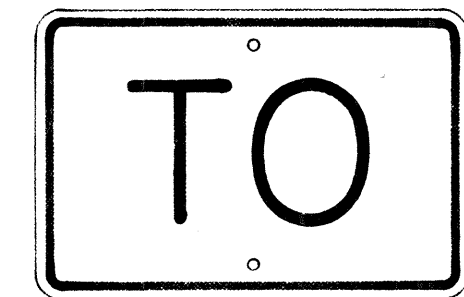
M5-5
21"x 9"



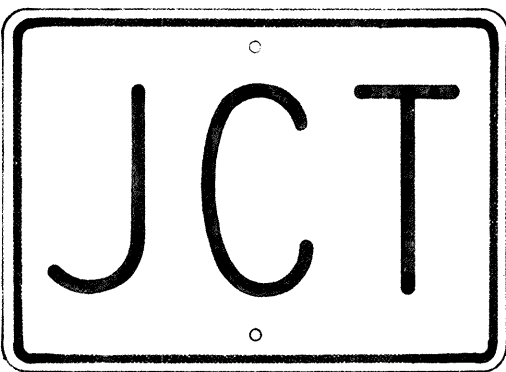
M5-6
21"x 9"



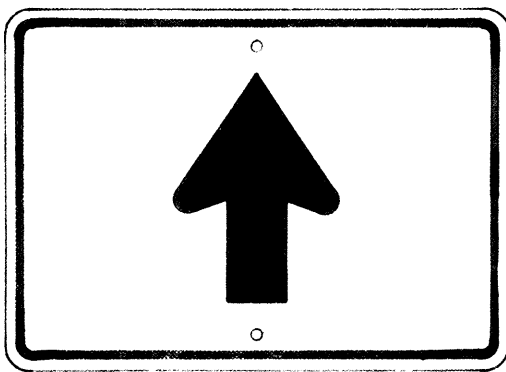
M6-1-N
21"x 9"
(See Note 6)



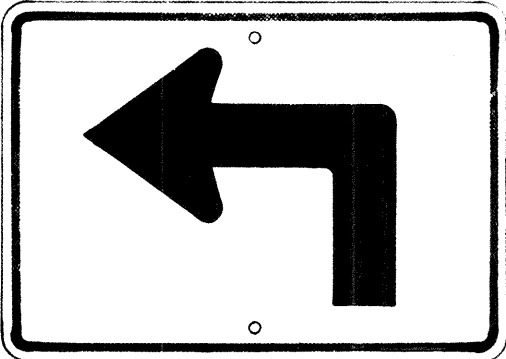
M7-1
18"x 12"



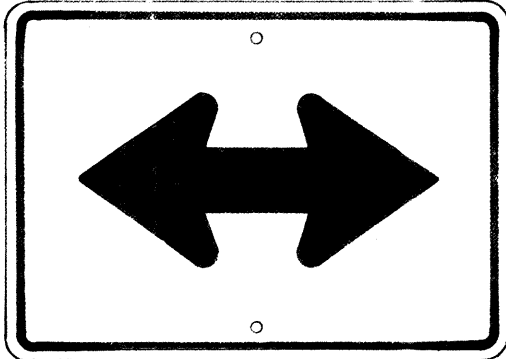
M2-1
21"x 15"



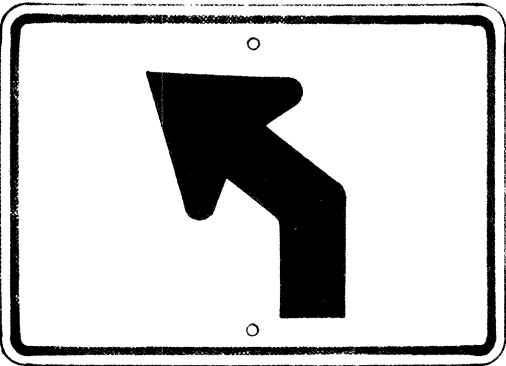
M4-3
21"x 15"



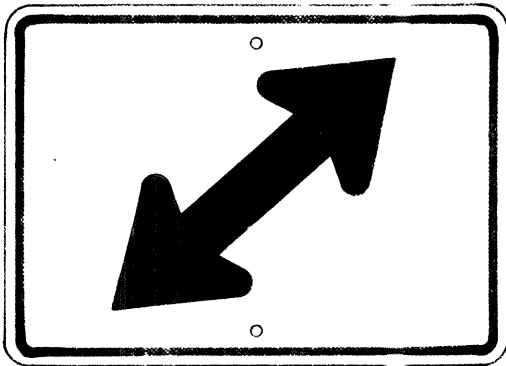
M3-1-L
* M3-1-R
21"x 15"



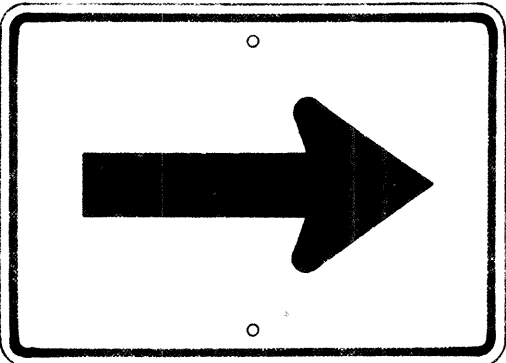
M4-4
21"x 15"



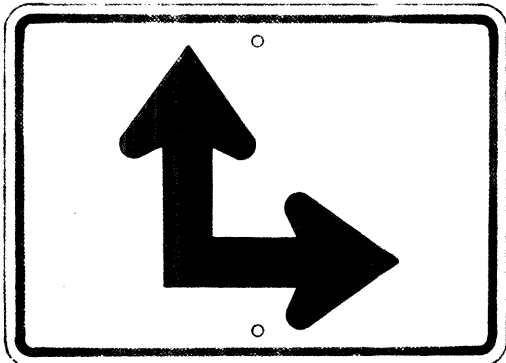
M3-2-L
* M3-2-R
21"x 15"



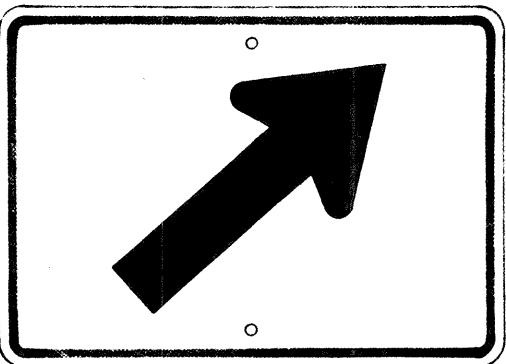
M4-5-R
* M4-5-L
21"x 15"



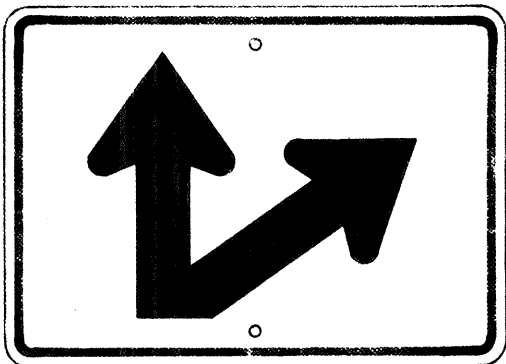
M4-1
21"x 15"



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



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

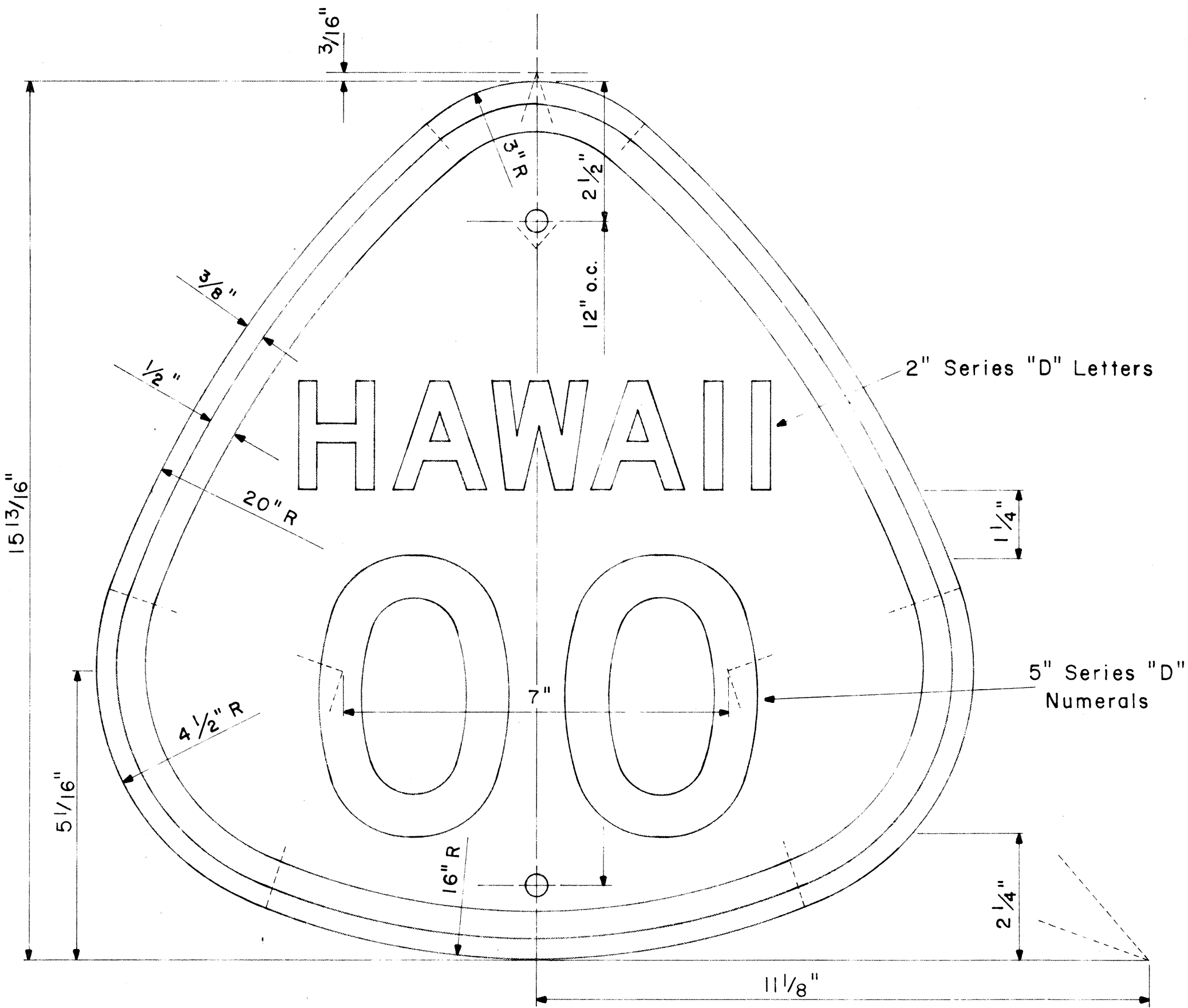


M4-7-R
* M4-7-L
21"x 15"

AUXILIARY MARKERS

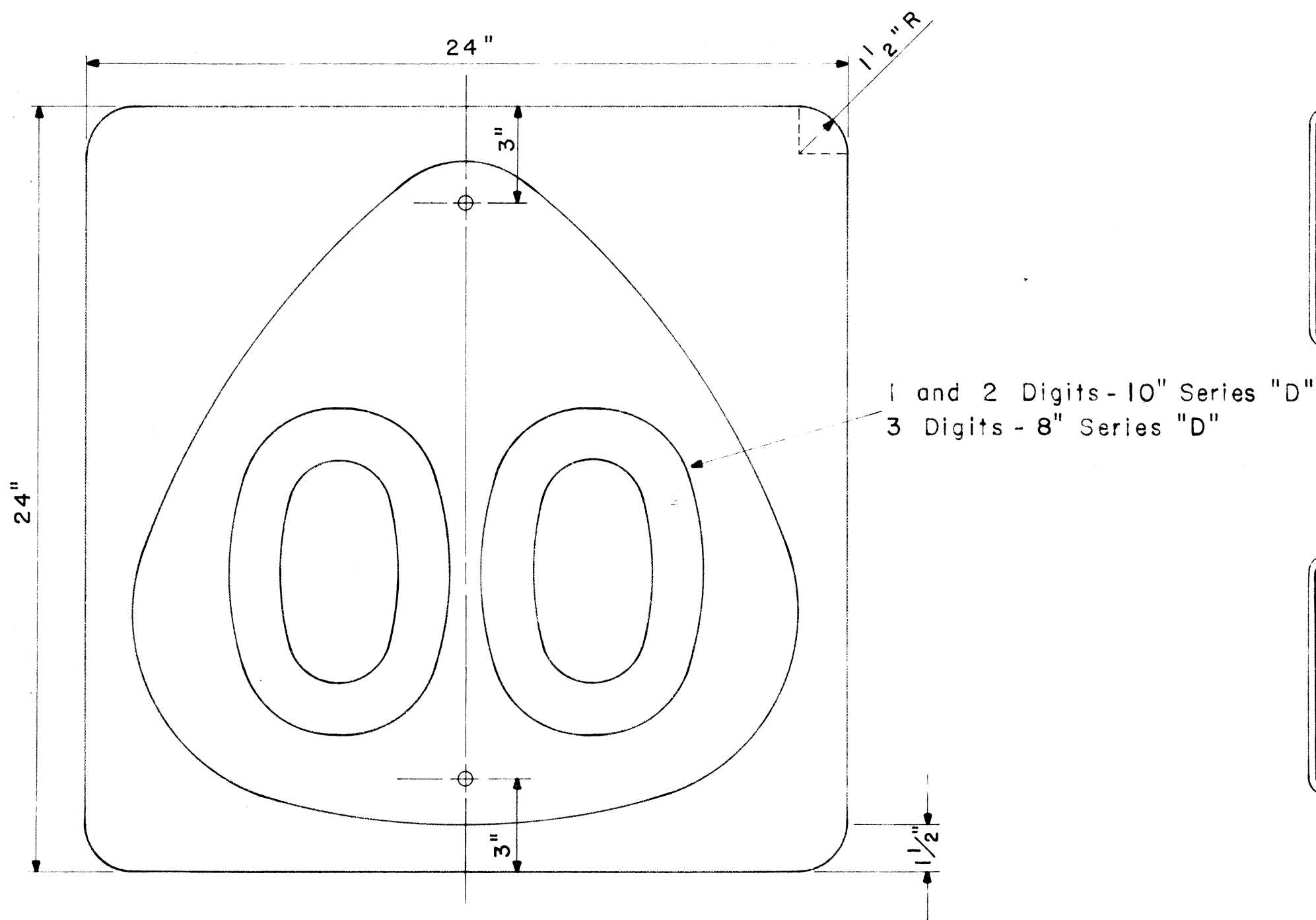
Scale: $\frac{1}{8}$ " = 1"

* NOTE:
Signs shall be similar but opposite in direction.



STATE ROUTE MARKER
M1-3(00)

Scale: $\frac{1}{2}$ " = 1"



STATE ROUTE MARKER
M1-4(00)

Scale: $\frac{1}{4}$ " = 1"

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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
NOTED BY	CHECKED BY	
NO.		

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STANDARD DETAILS

STATE ROUTE MARKERS

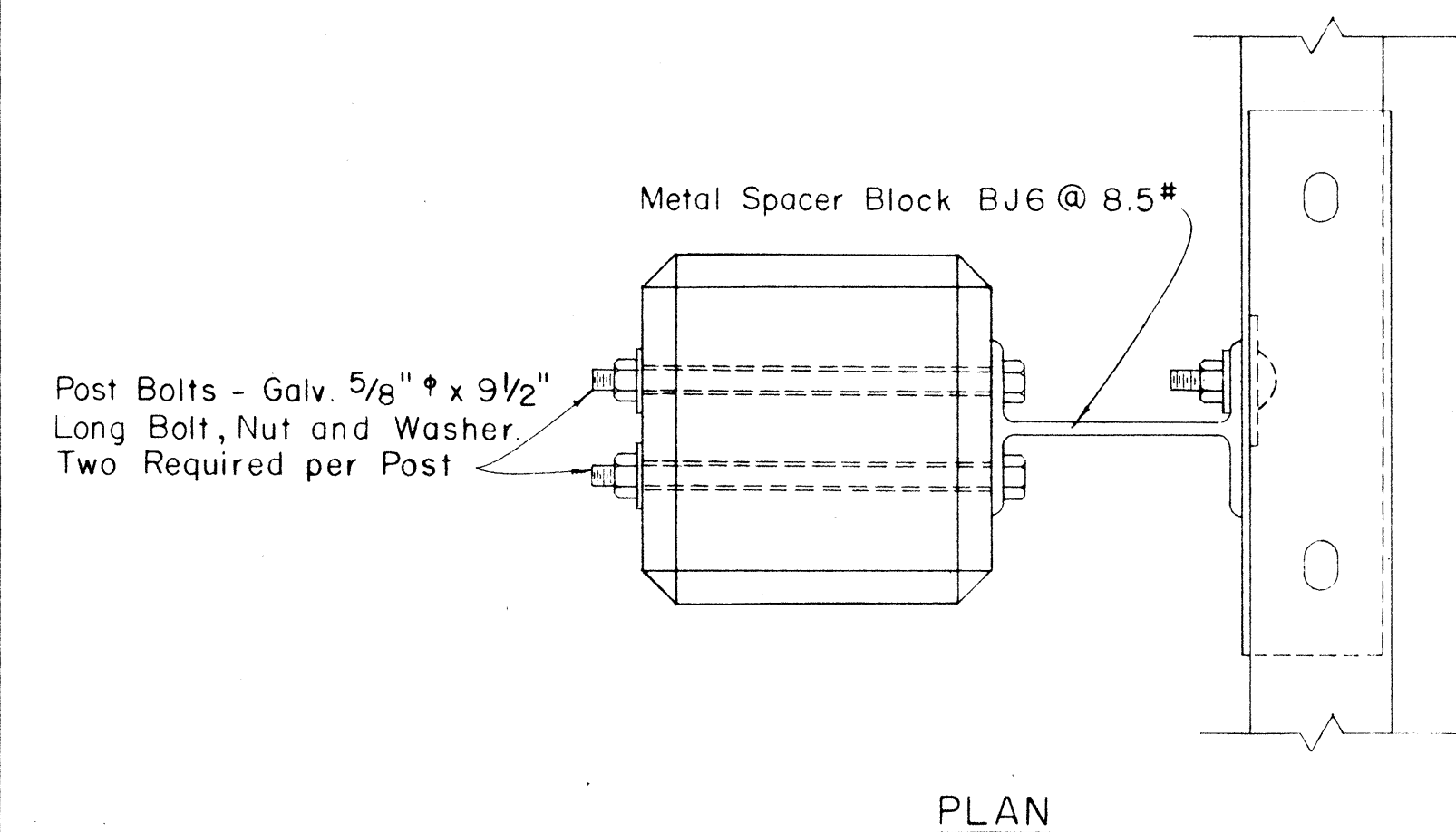
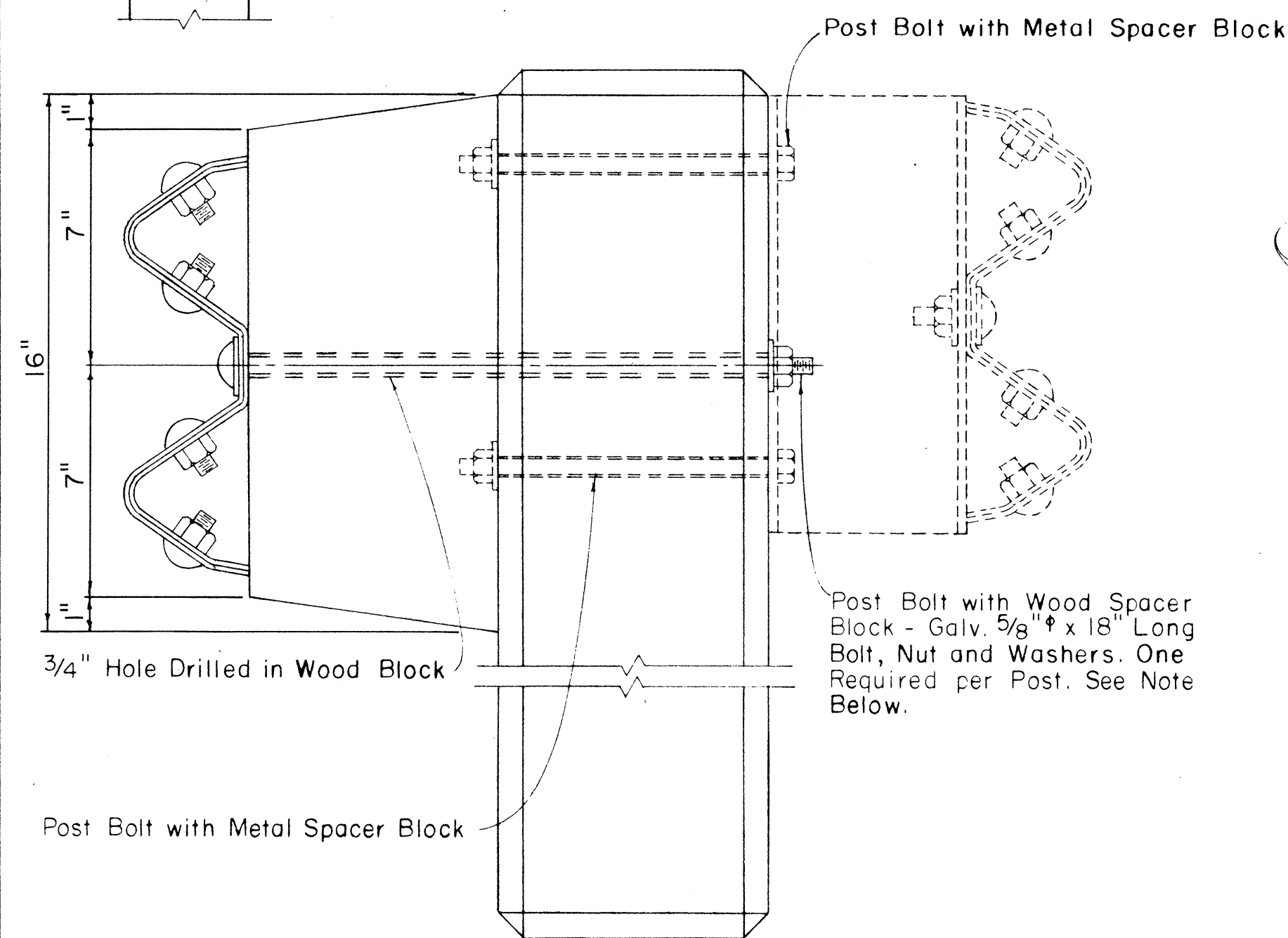
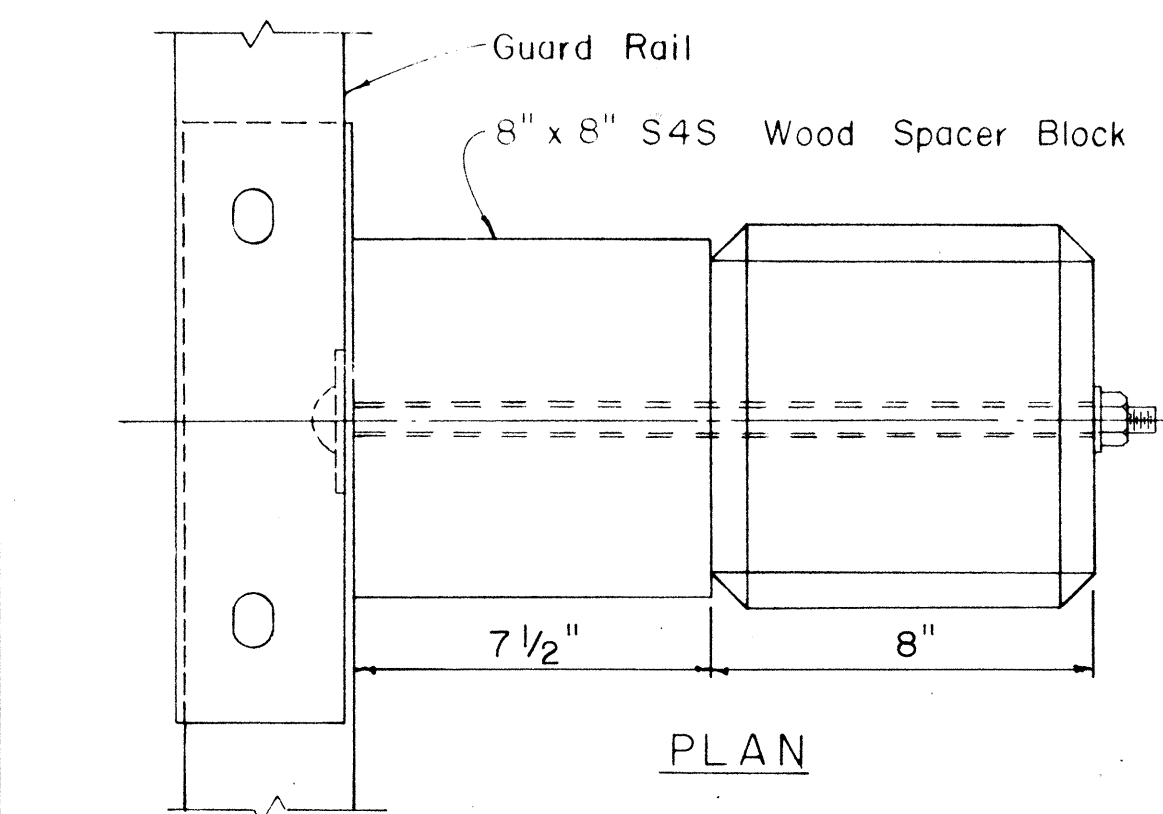
AND

AUXILIARY MARKERS

Scale: As Noted

SHEET NO. 4 OF 7 SHEETS

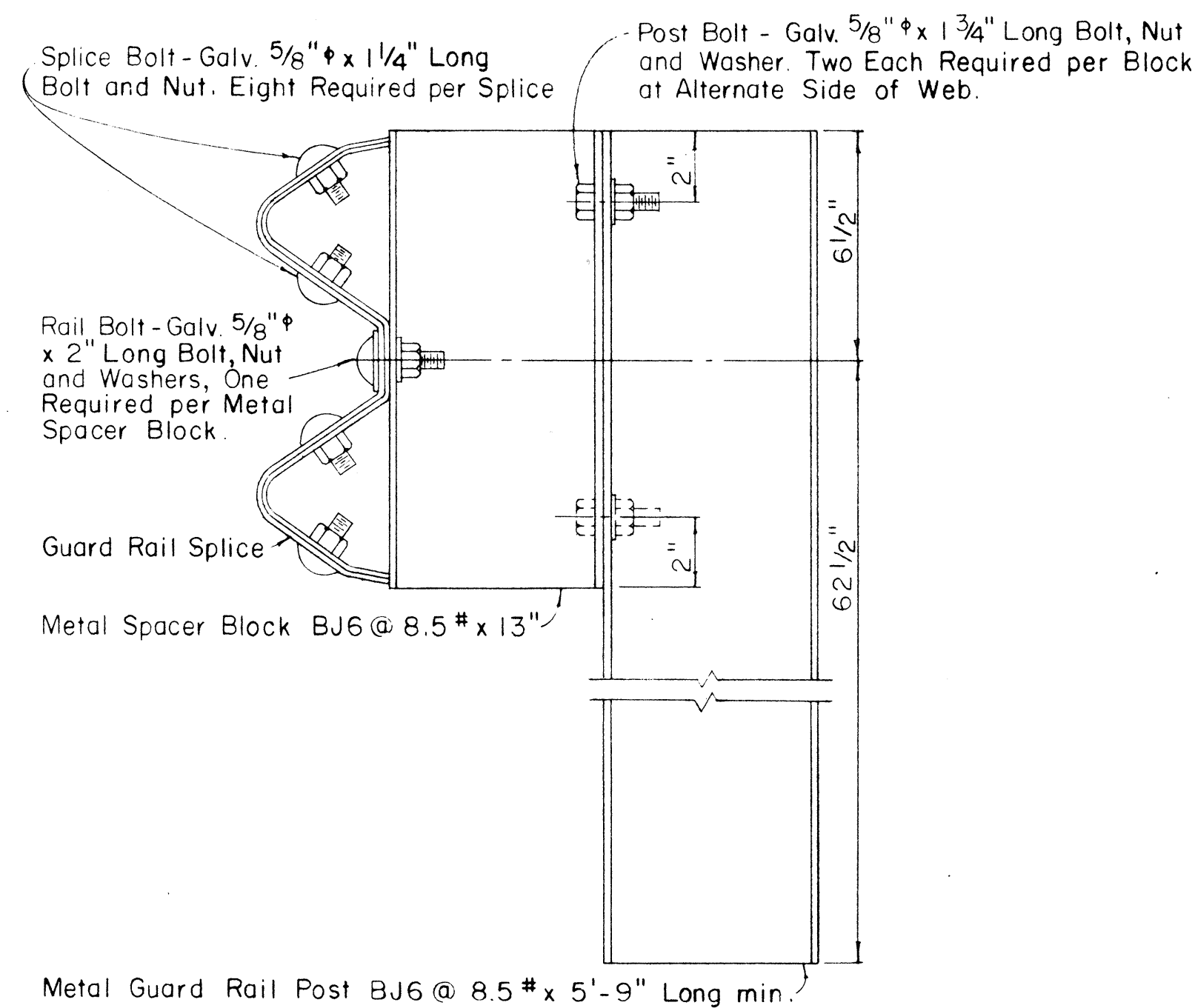
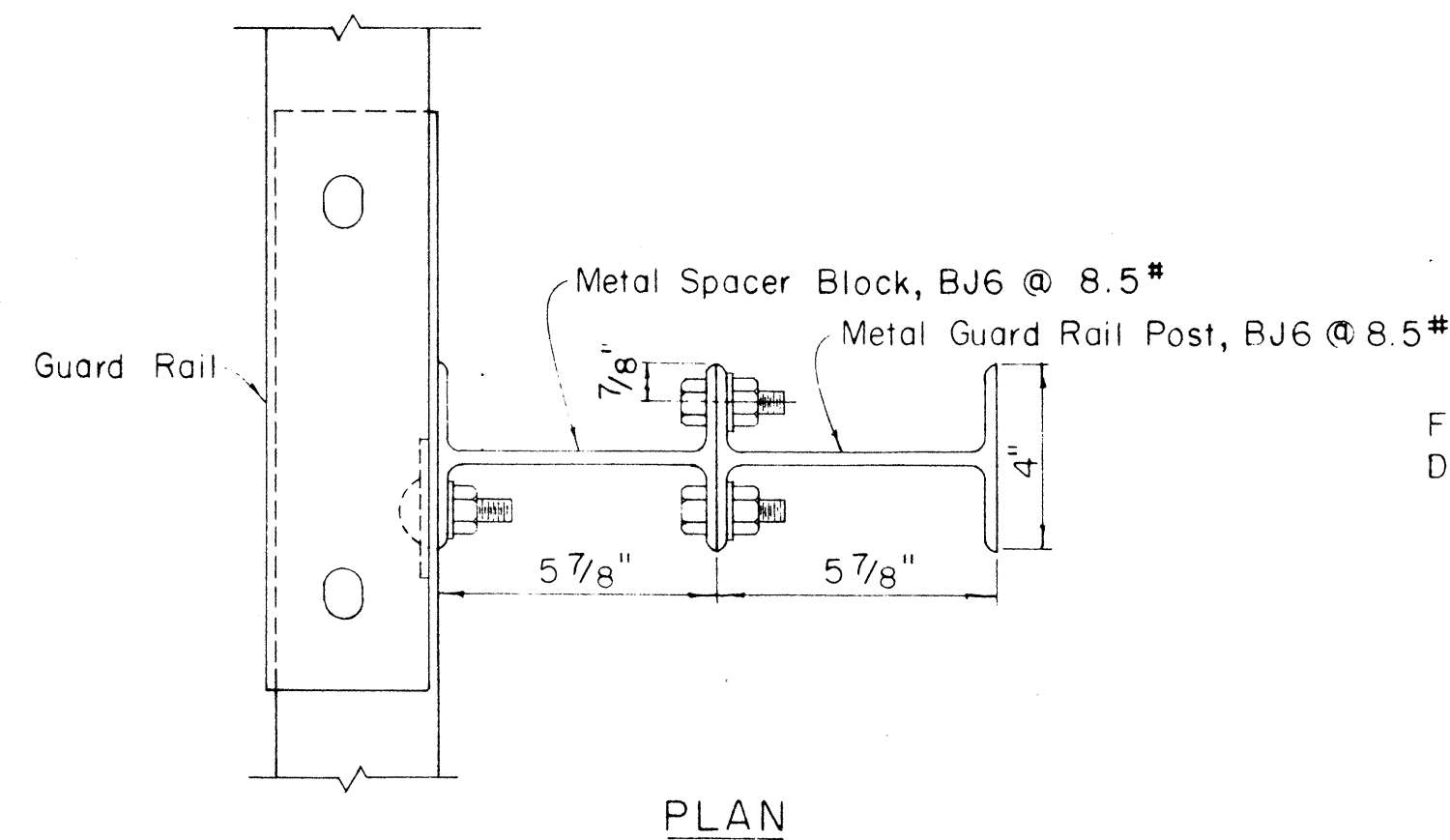
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-077-1(3)	1968	11	16



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

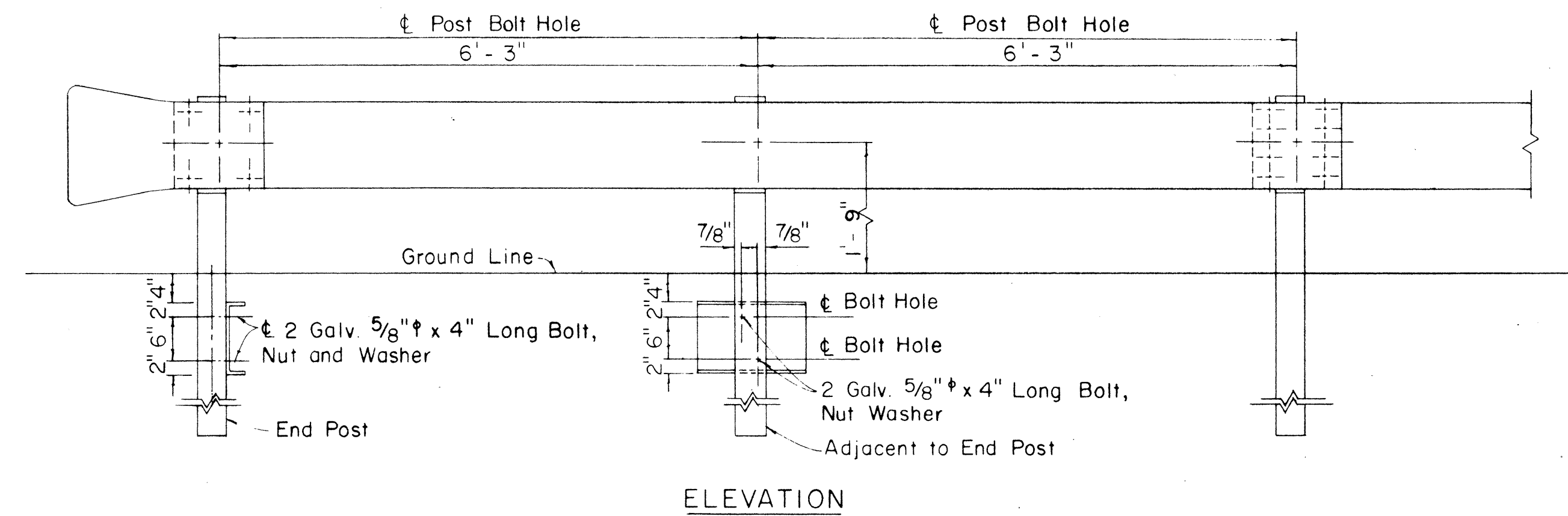
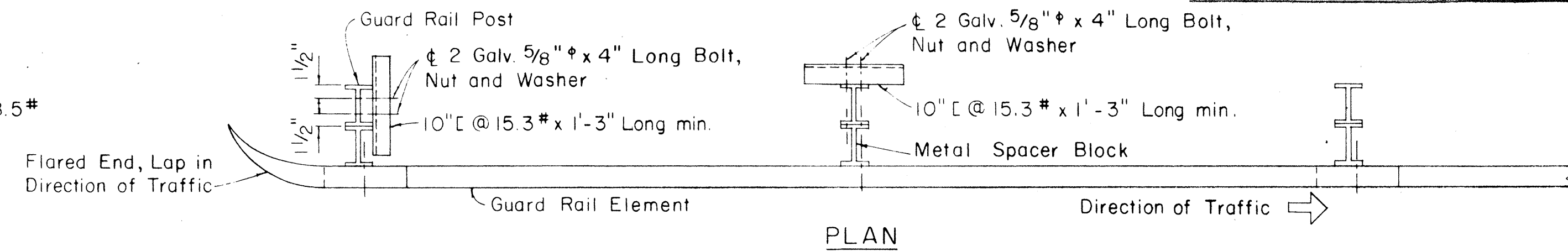
Scale: 3" = 1' - 0"

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.



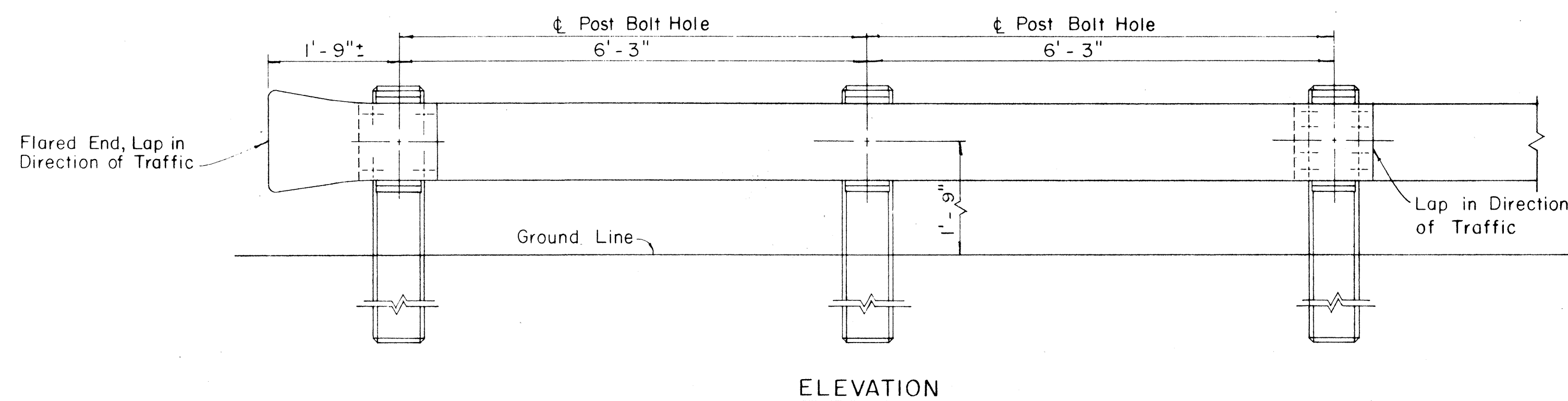
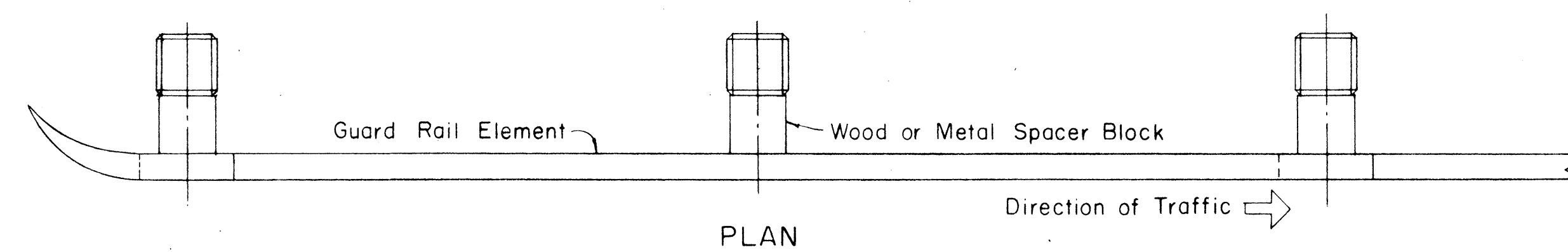
SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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"

REVISED: August 10, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAIL

Scale: as noted

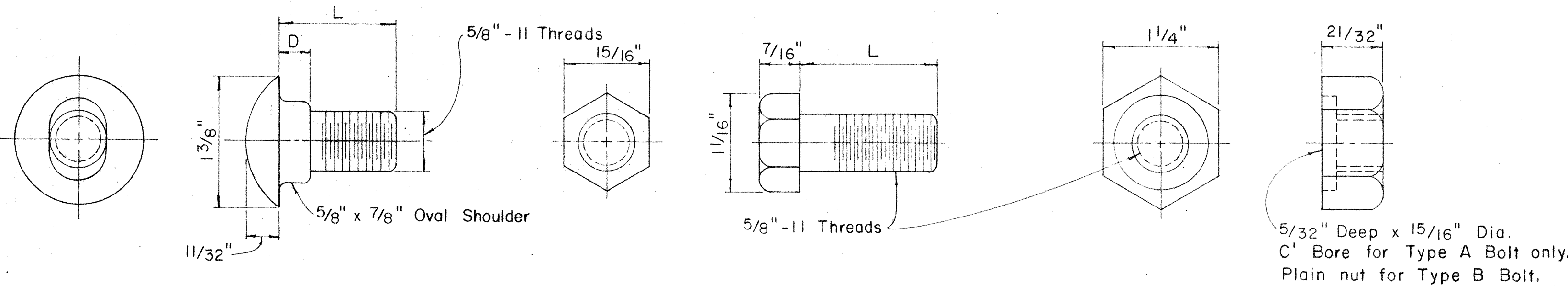
SHEET No. 5 OF 7 SHEETS

DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTED BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-022-1(3)	1968	12	16

BOLT DIMENSIONS TYPE A BOLT		
	D	L
Splice Bolt	5/16"	11 1/4"
Post Bolt for Conc. Post w/ Double Wood Blocks	3/32"	24"
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	13 3/4"



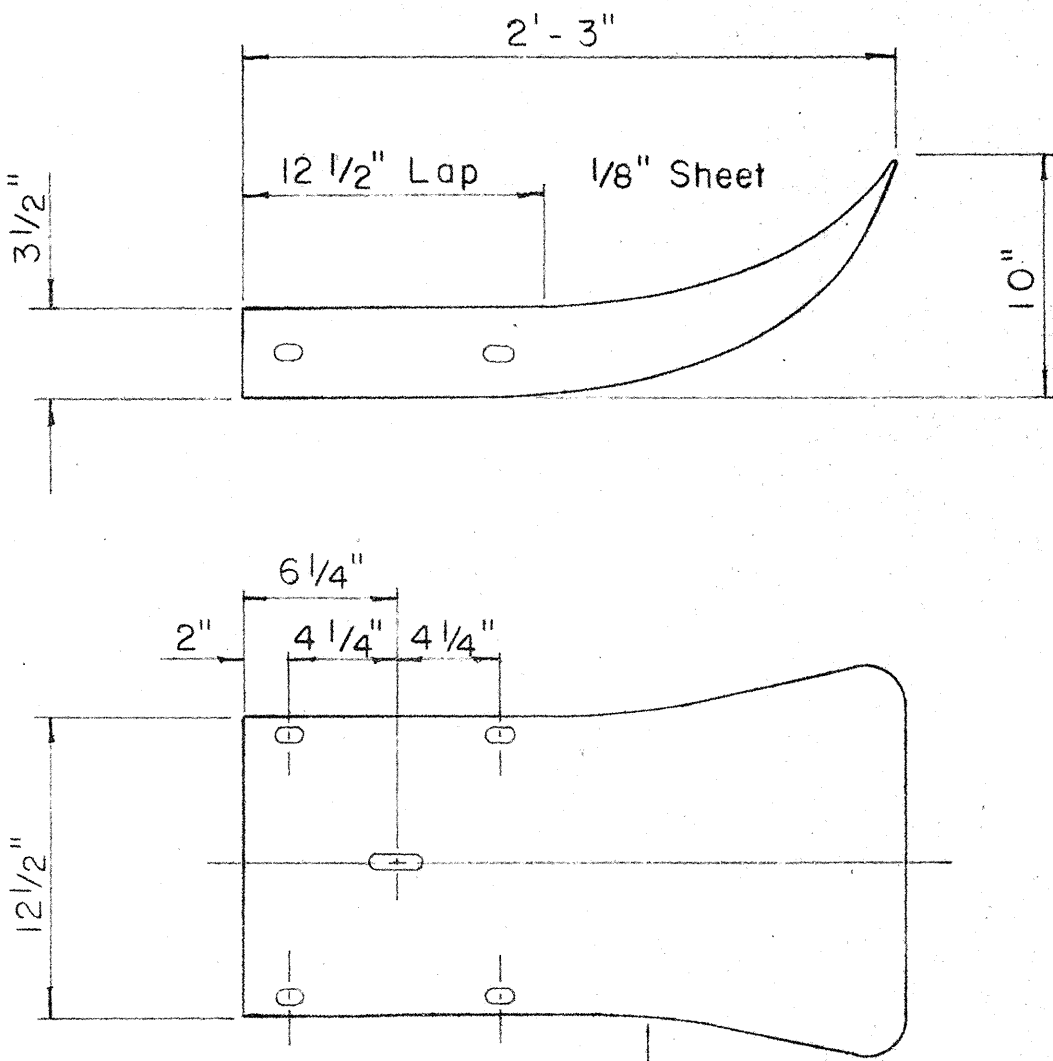
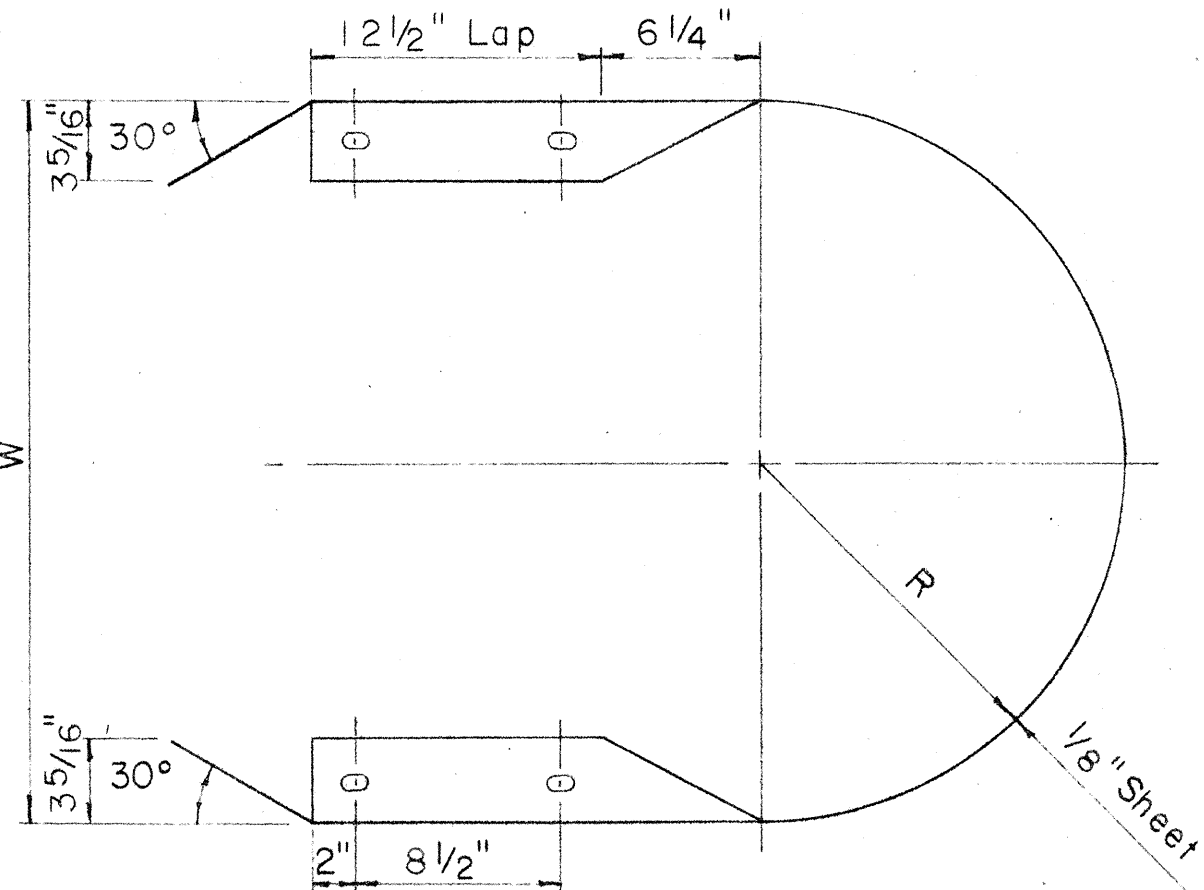
TYPE A BOLT

TYPE B BOLT

HEXAGON NUT

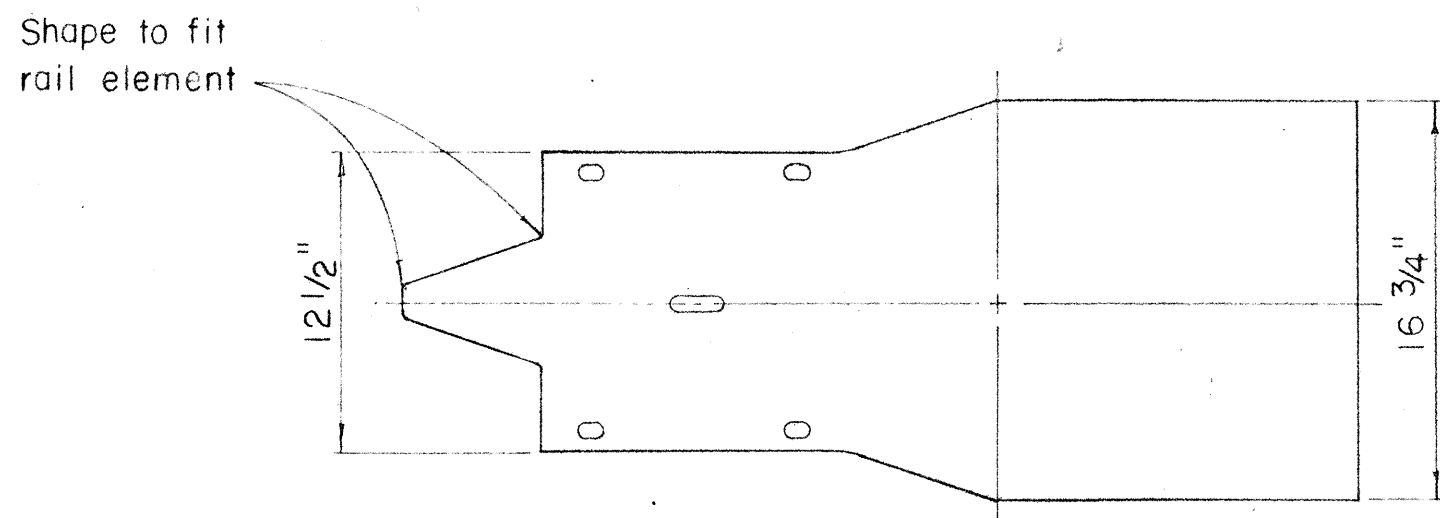
SPLICE RAIL AND POST BOLTS

Scale: Full Size



FLARED END

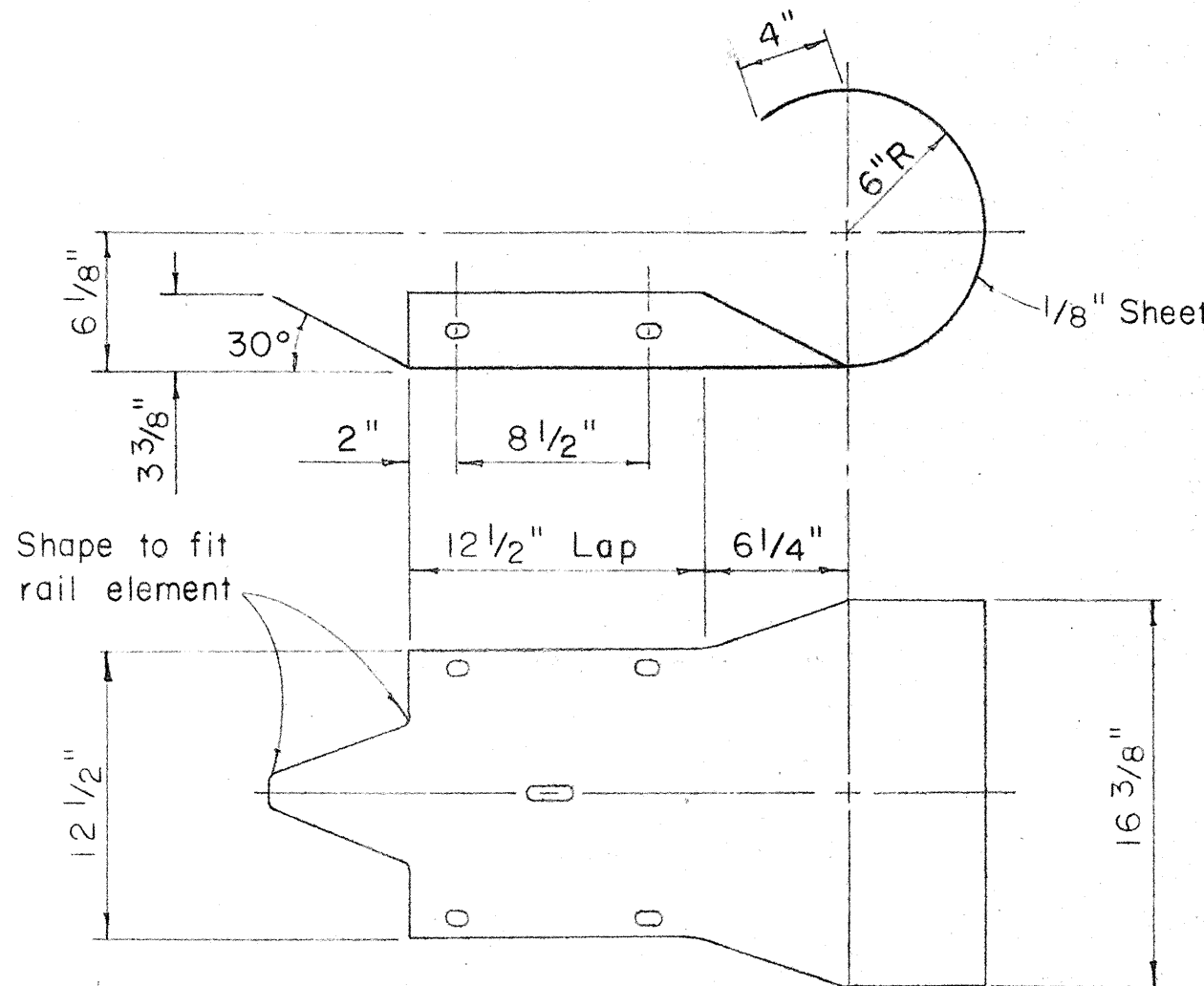
Scale: 1 1/2" = 1' - 0"



MEDIAN END

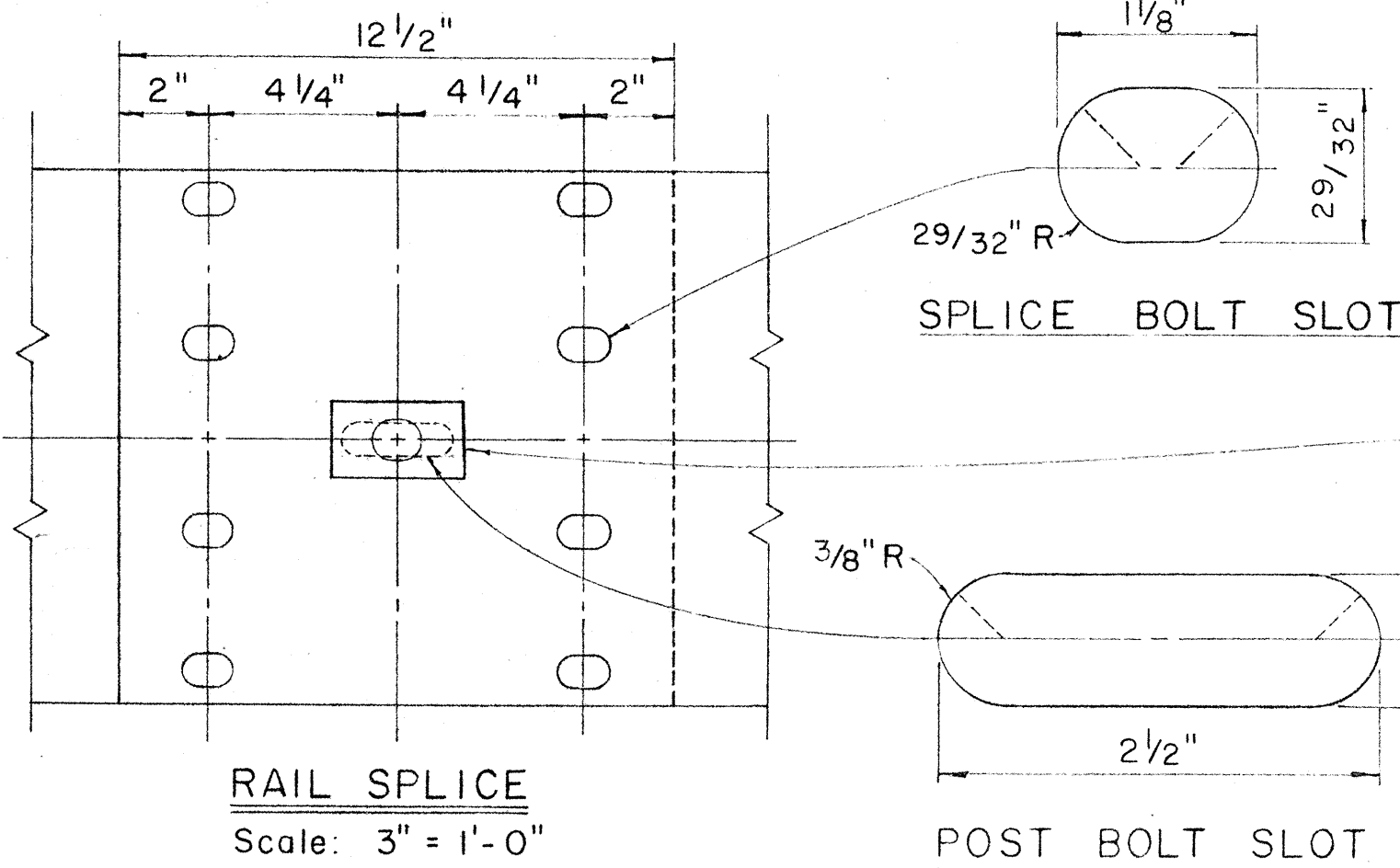
Scale: 1 1/2" = 1' - 0"

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 Concrete Post with Metal Blocks (BJ6)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJ6)	24 3/8"	12 3/16"



CURVED END

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



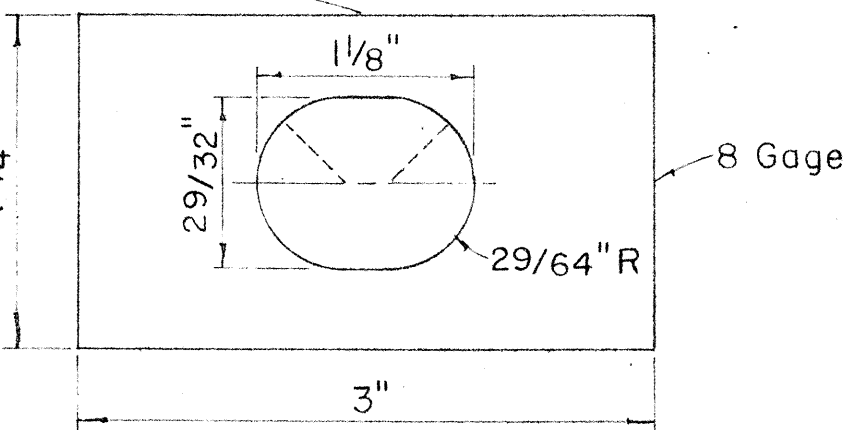
RAIL SPLICE

Scale: 3" = 1' - 0"

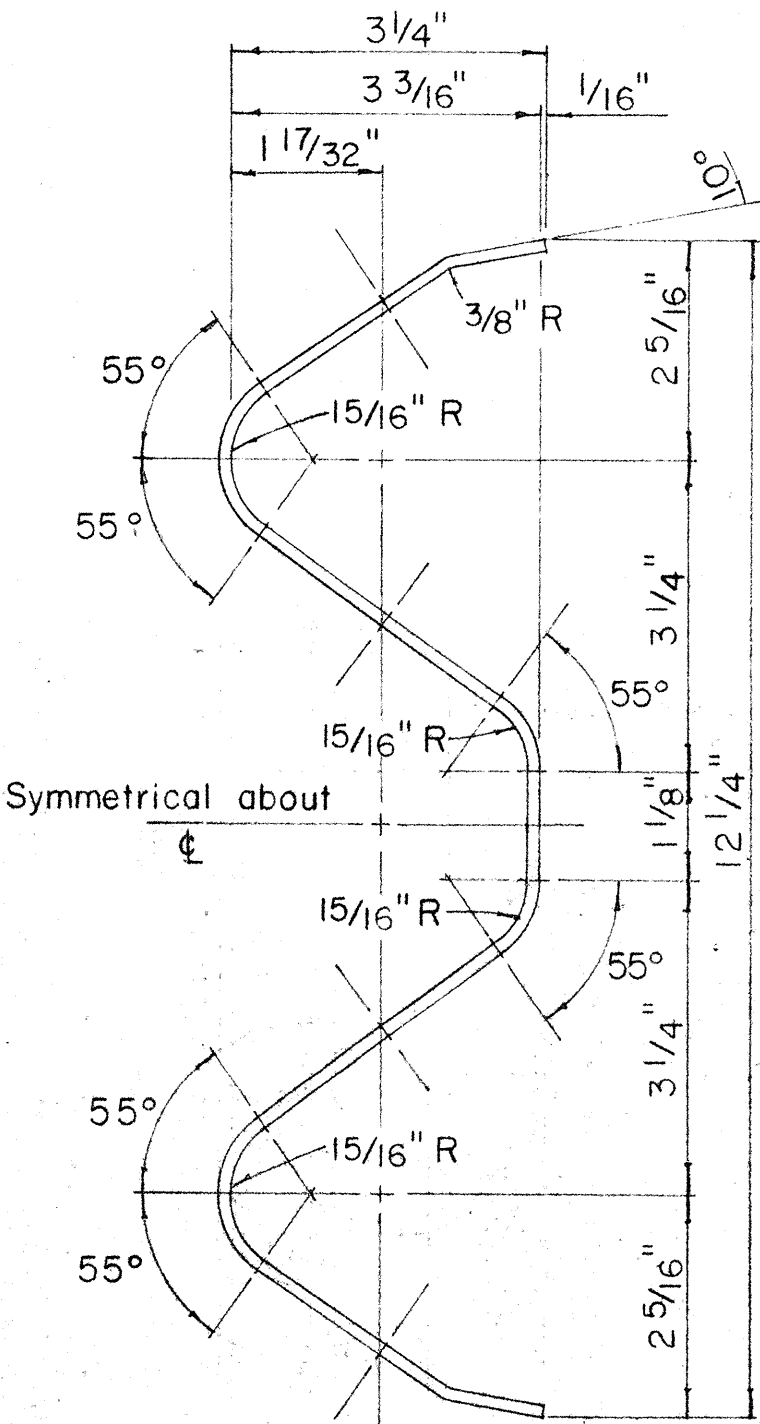
POST BOLT SLOT

SPLICE BOLT SLOT FOR ALL ENDS

Scale: Full Size

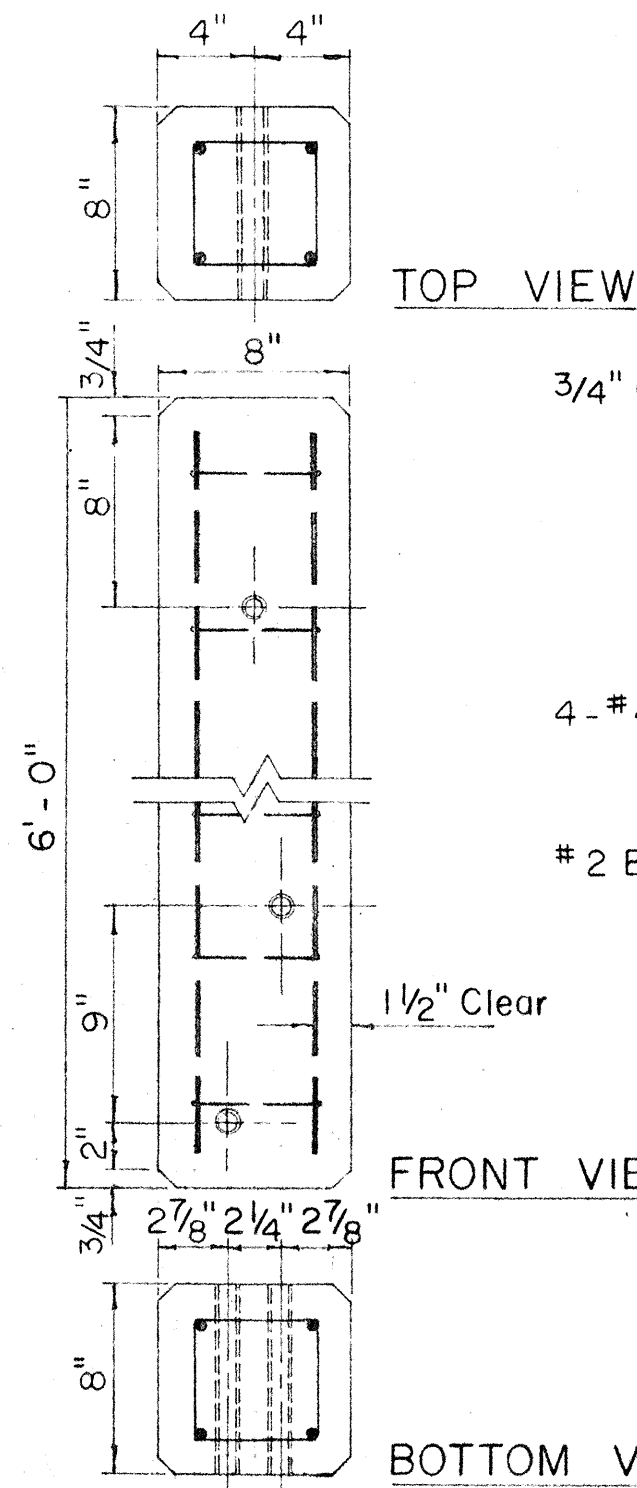


RAIL WASHER



RAIL ELEMENT SECTION

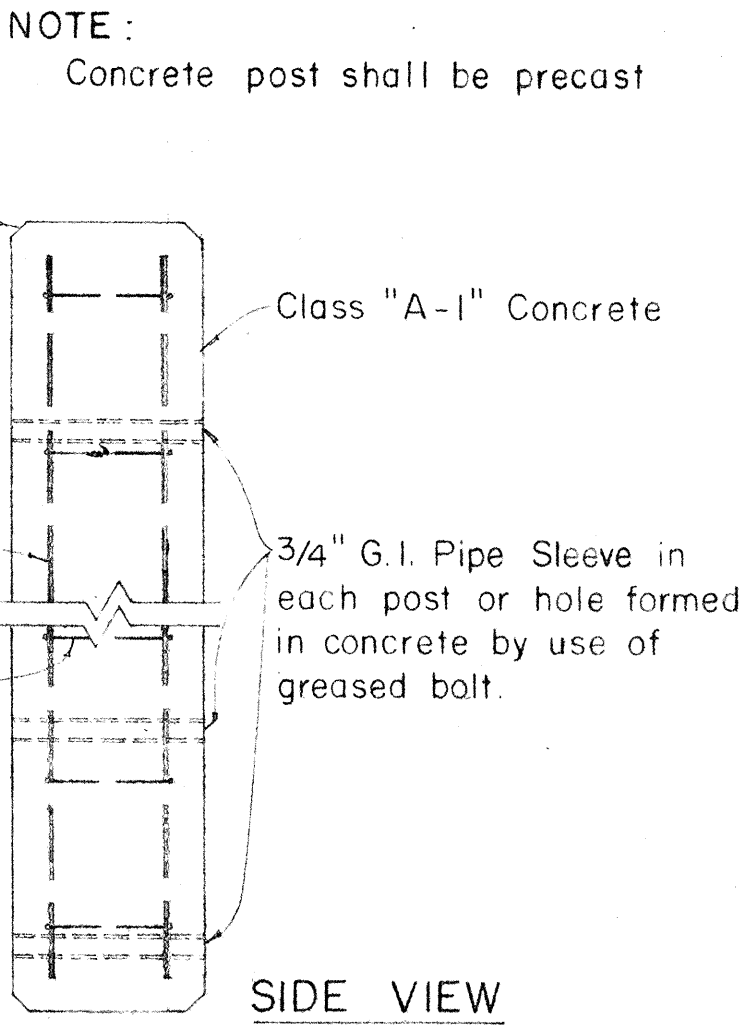
Scale: 6" = 1' - 0"



TOP VIEW

FRONT VIEW

BOTTOM VIEW

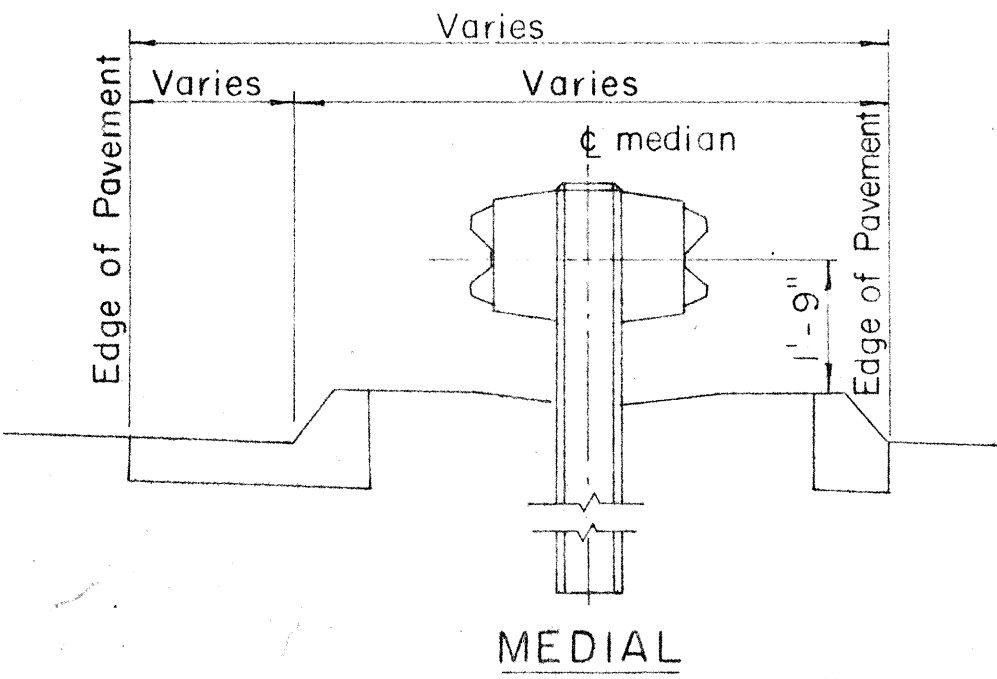


SIDE VIEW

DETAIL OF CONCRETE POST

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

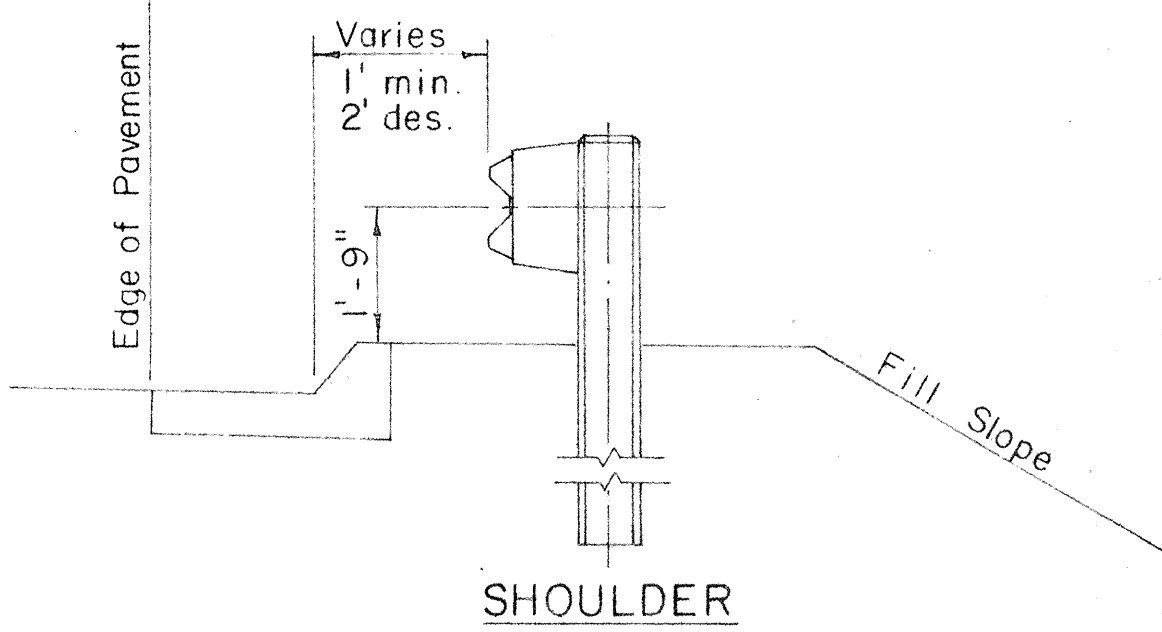
NOTE: Concrete post shall be precast



MEDIAL

TYPICAL GUARD RAIL DETAIL

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



SHOULDER

REVISED: Sept. 1, 1967
REVISED: June 2, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAIL

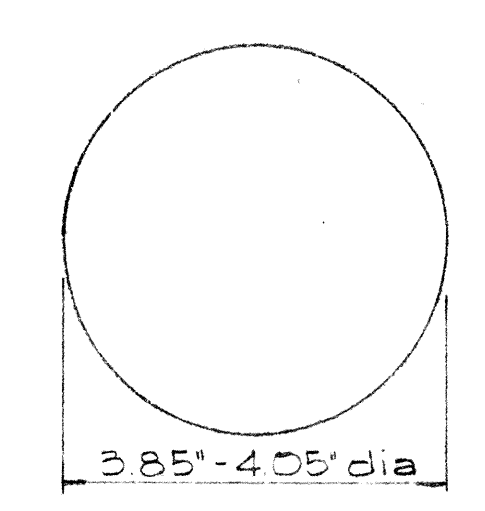
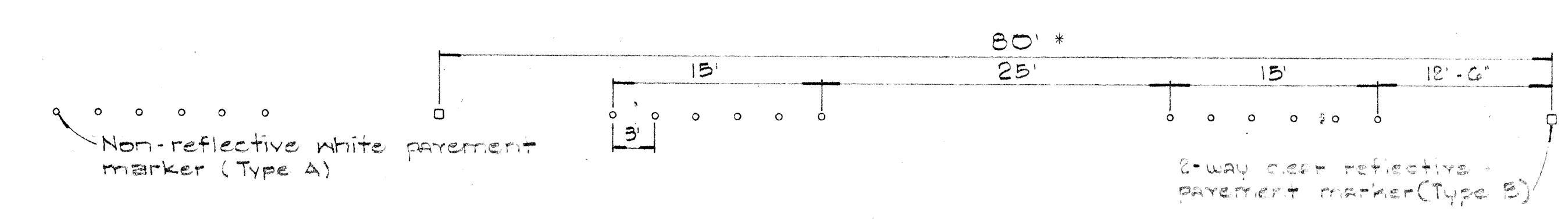
Scale: as noted

SHEET No. 6 OF 7 SHEETS

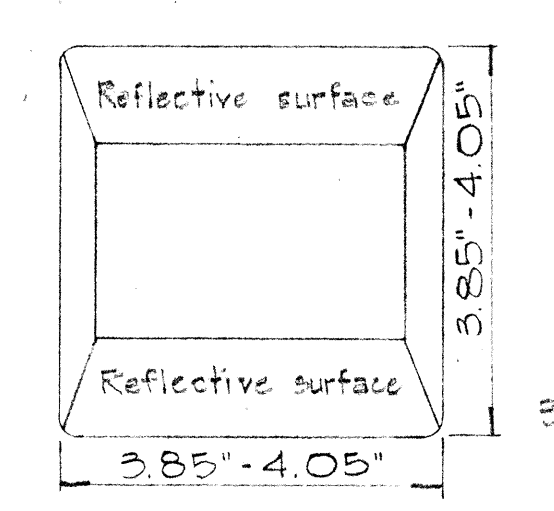
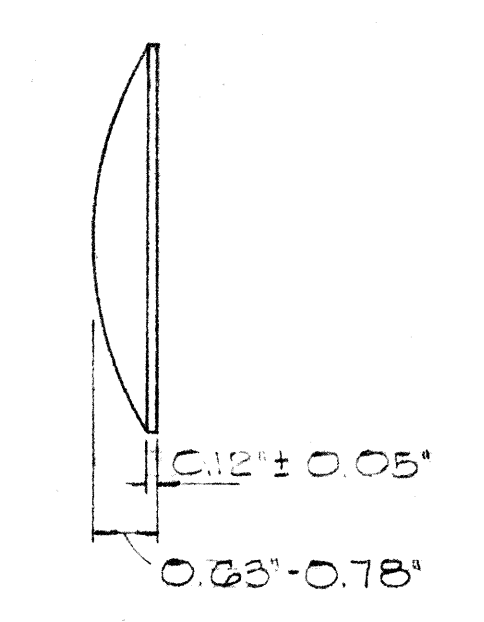
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
APPROVED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-099-1(3)	1968	13	16

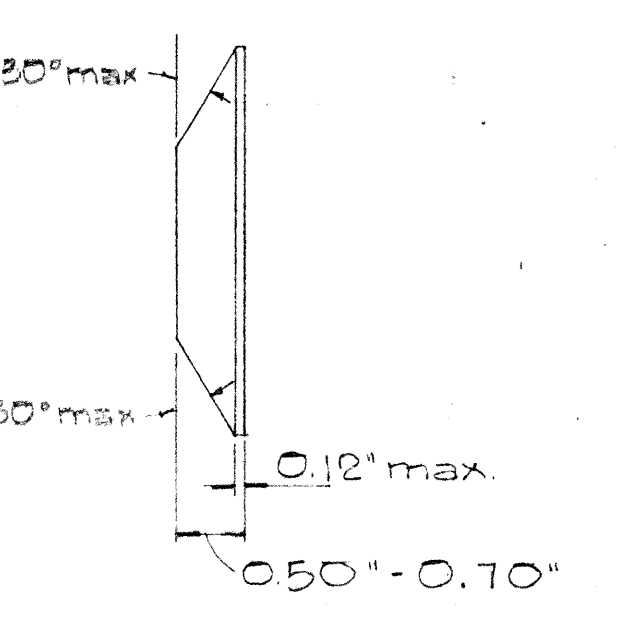
① CENTER LINES ON TWO-LANE RURAL ROADS AND CITY STREETS



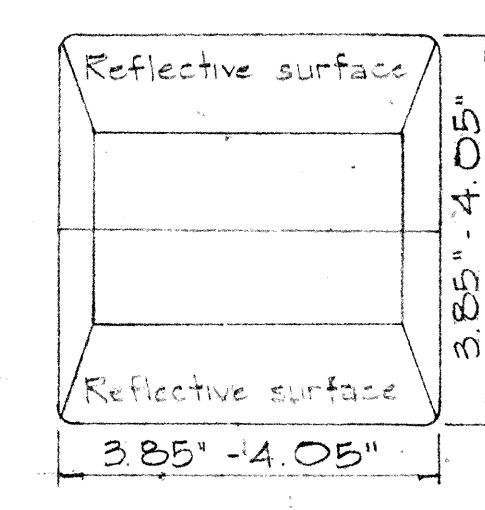
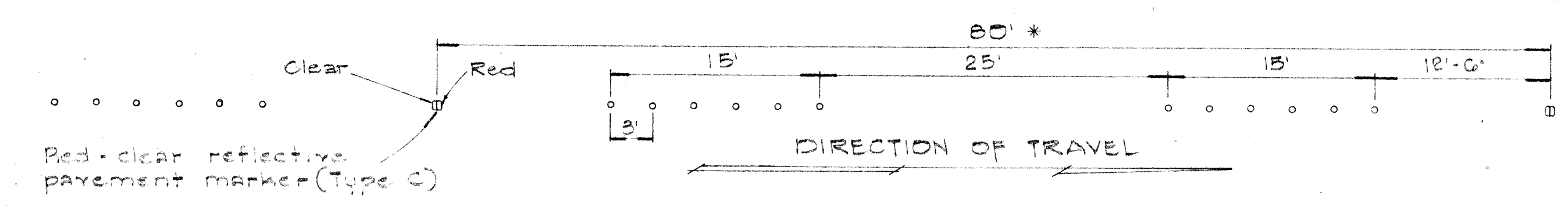
TYPE A
Non-reflective white marker



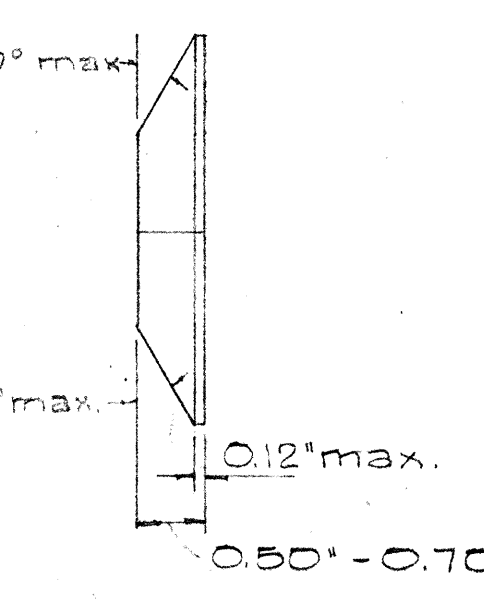
TYPE B
2-way clear reflective surface



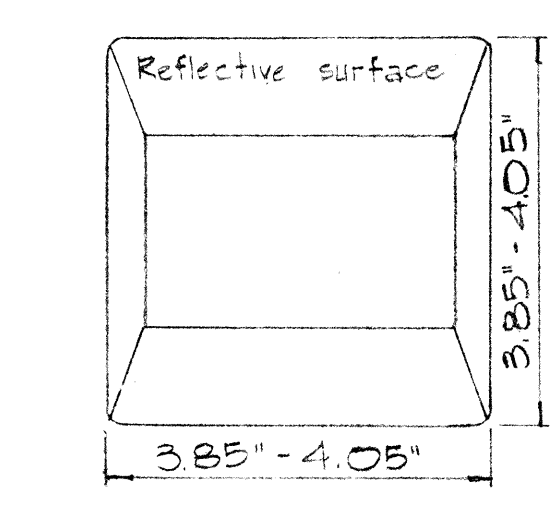
② LANE LINES



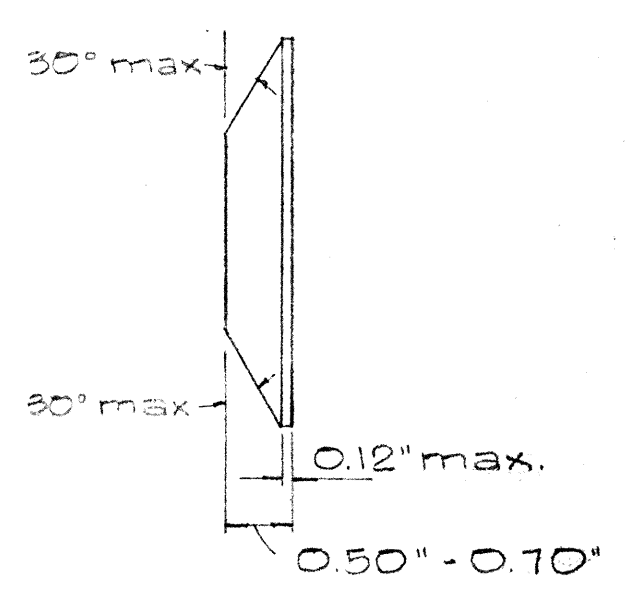
TYPE C
Red-clear reflective surface



TYPE E
Yellow-clear reflective surface

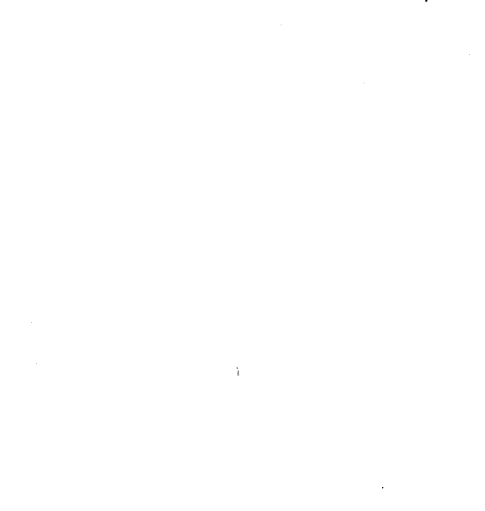
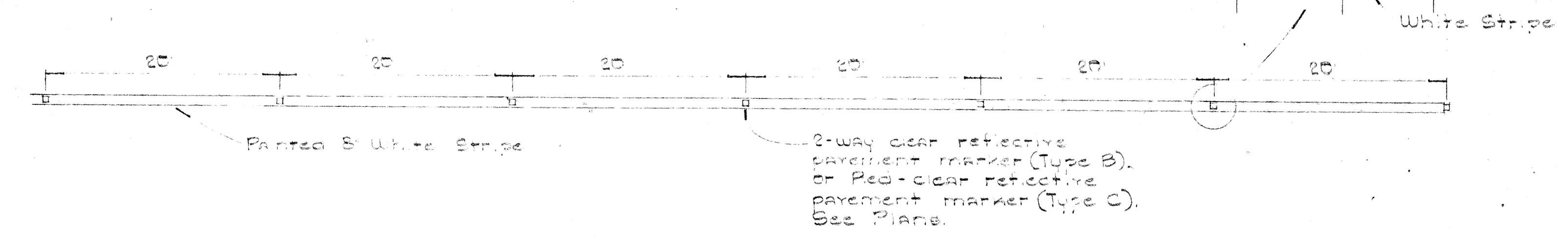


TYPE H
One-way yellow reflective surface



TYPE G
One-way clear reflective surface

③ CHANNELIZING LINES



TYPE C
Red-clear reflective surface



TYPE E
Yellow-clear reflective surface

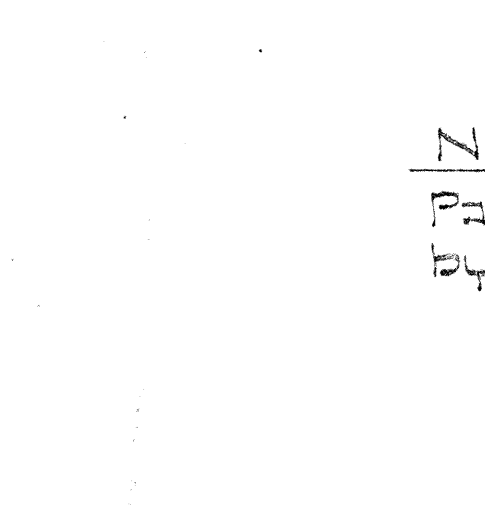
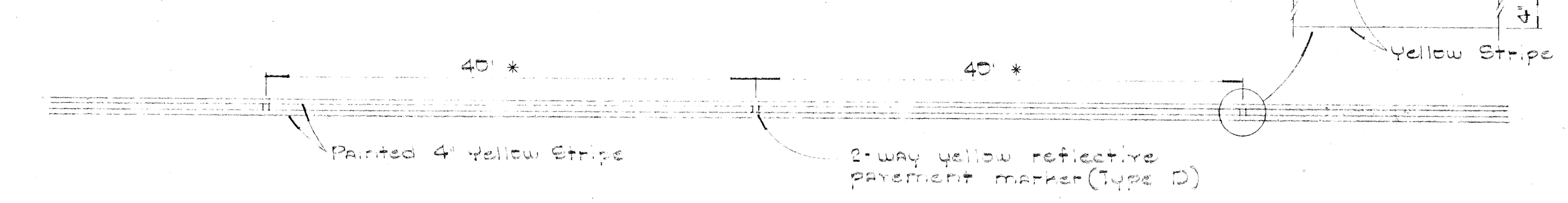


TYPE H
One-way yellow reflective surface

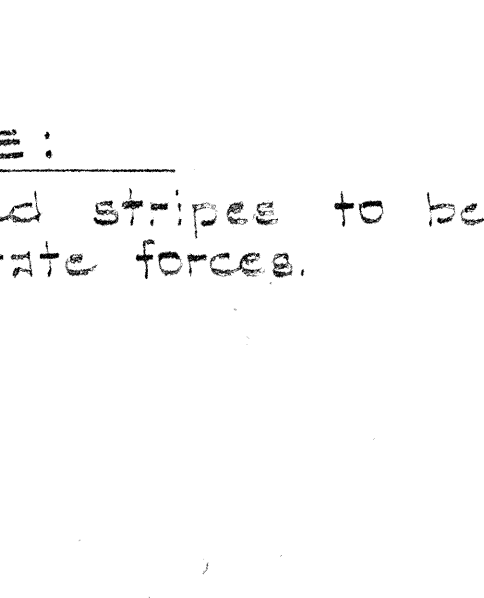


TYPE G
One-way clear reflective surface

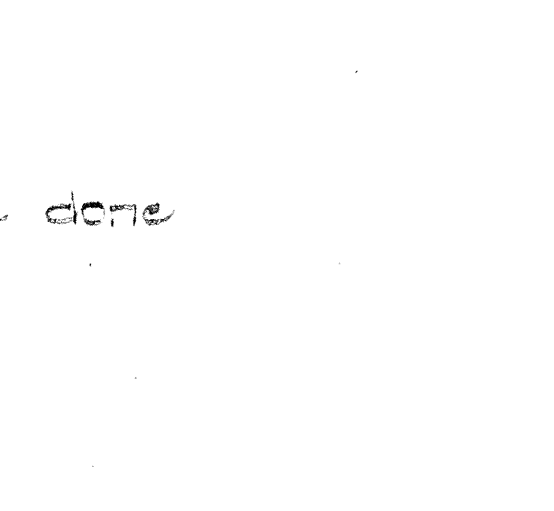
④ YELLOW DOUBLE CENTER LINES



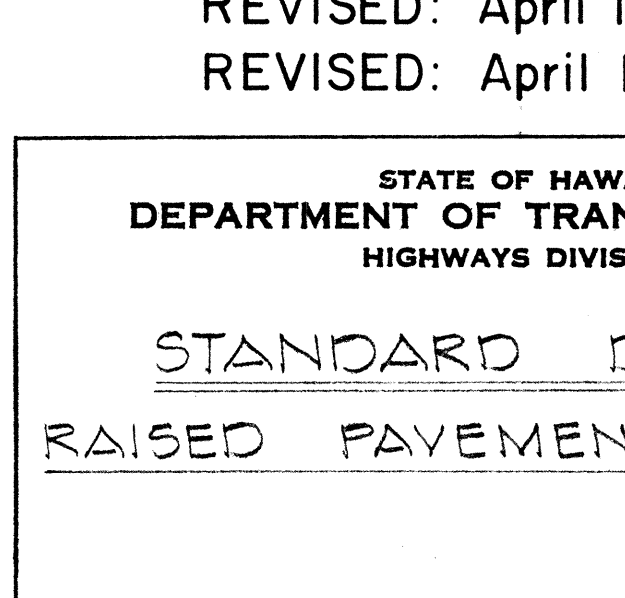
TYPE E
Yellow-clear reflective surface



TYPE G
One-way clear reflective surface

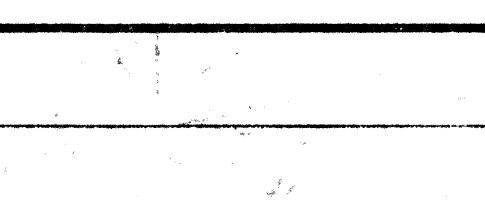
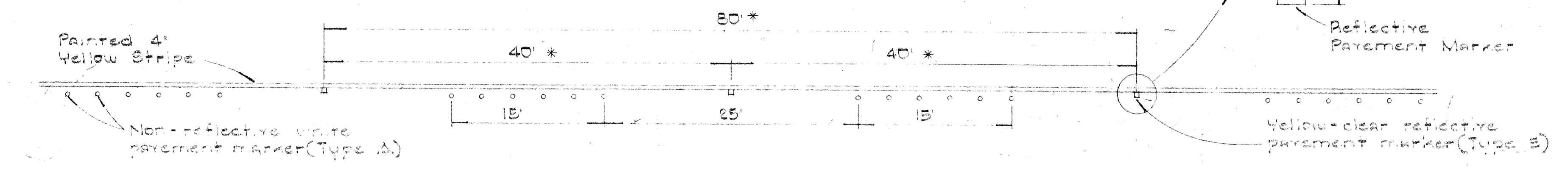


TYPE H
One-way yellow reflective surface

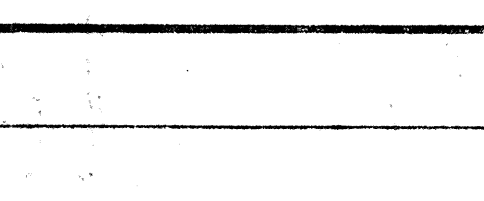


TYPE G
One-way clear reflective surface

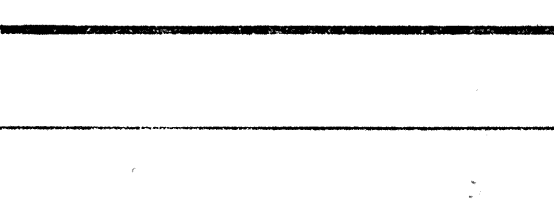
⑤ NO PASSING - PASSING ZONES ON TWO-LANE ROADS



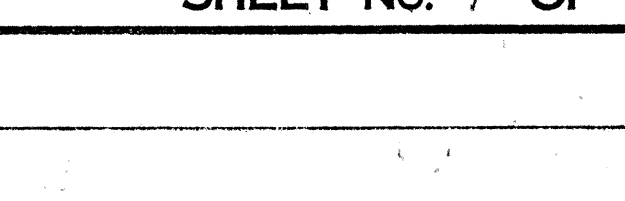
TYPE C
Red-clear reflective surface



TYPE E
Yellow-clear reflective surface



TYPE H
One-way yellow reflective surface



TYPE G
One-way clear reflective surface

NOTE:
Painted stripes to be done by State forces.

REVISED: April 14, 1967
REVISED: April 13, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RAISED PAVEMENT MARKERS

Not to Scale

SHEET No. 7 OF 7, SHEETS

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