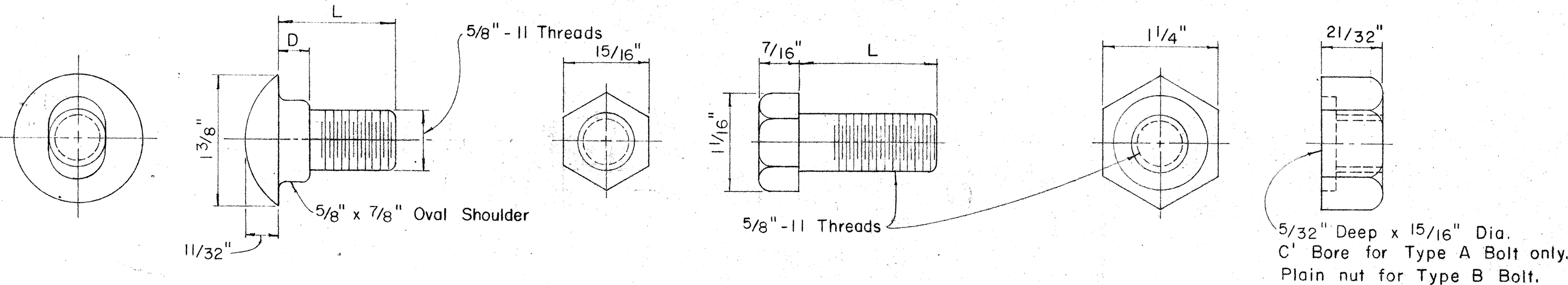


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-02-68	1968	10	13

BOLT DIMENSIONS		
TYPE A BOLT		
Splice Bolt	5/16"	1 1/4"
Post Bolt for Conc. Post w/ Double Wood Blocks	3/32"	2 1/4"
Post Bolt for Conc. Post w/ Single Wood Block	3/32"	1 8"
Rail Bolt for Metal Block	3/32"	2"

BOLT DIMENSIONS		
TYPE B BOLT		
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

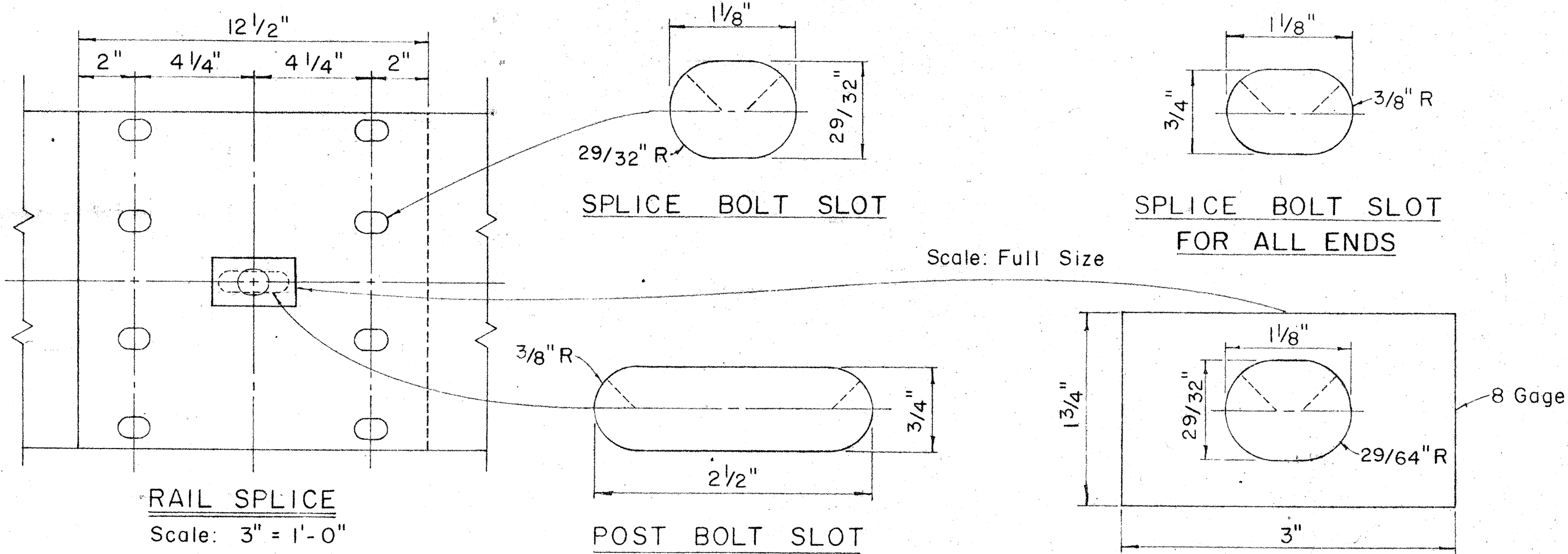
TYPE B BOLT

HEXAGON NUT

Scale: Full Size

SPLICE RAIL AND POST BOLTS

Scale: Full Size



SPLICE BOLT SLOT

SPLICE BOLT SLOT FOR ALL ENDS

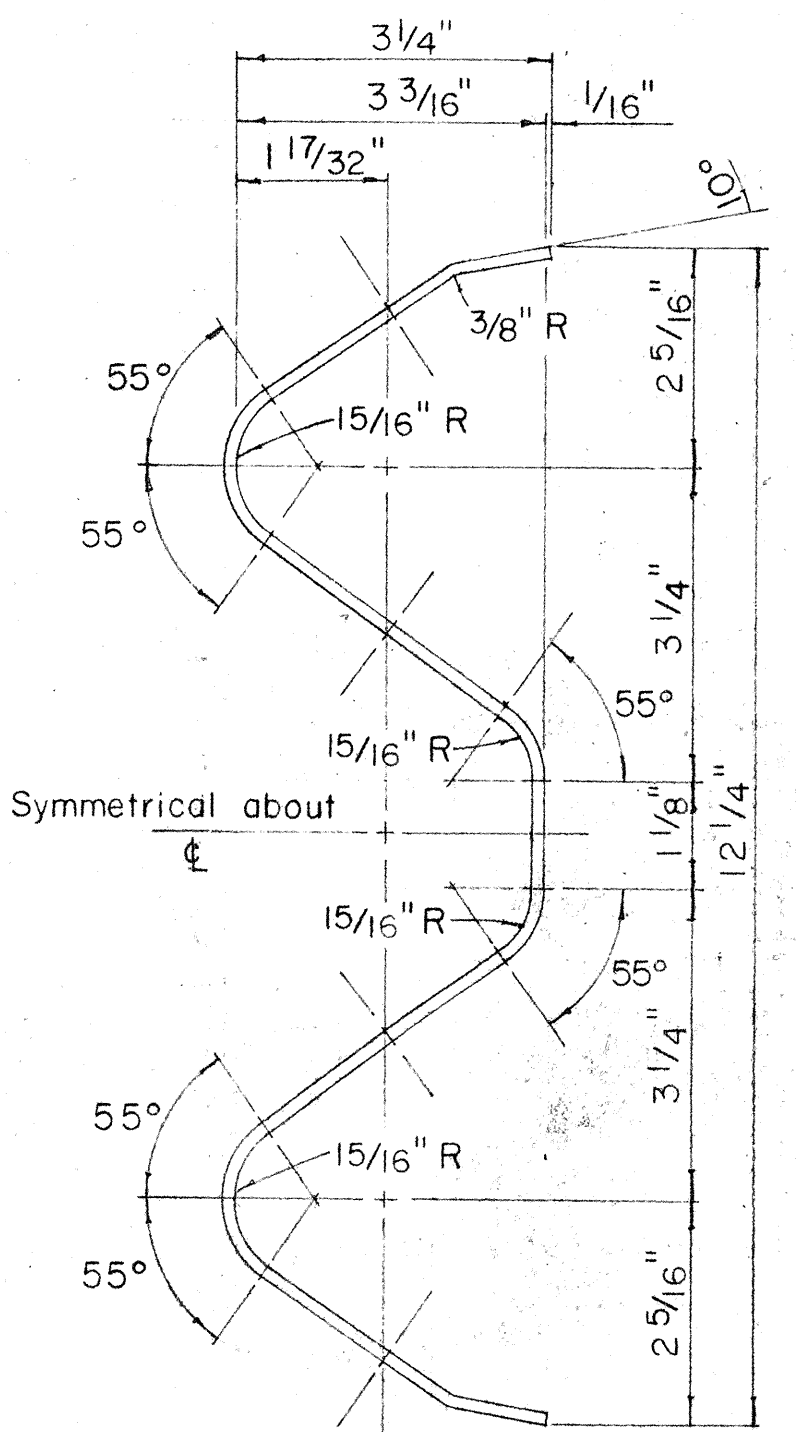
POST BOLT SLOT

RAIL WASHER

MEDIAN END

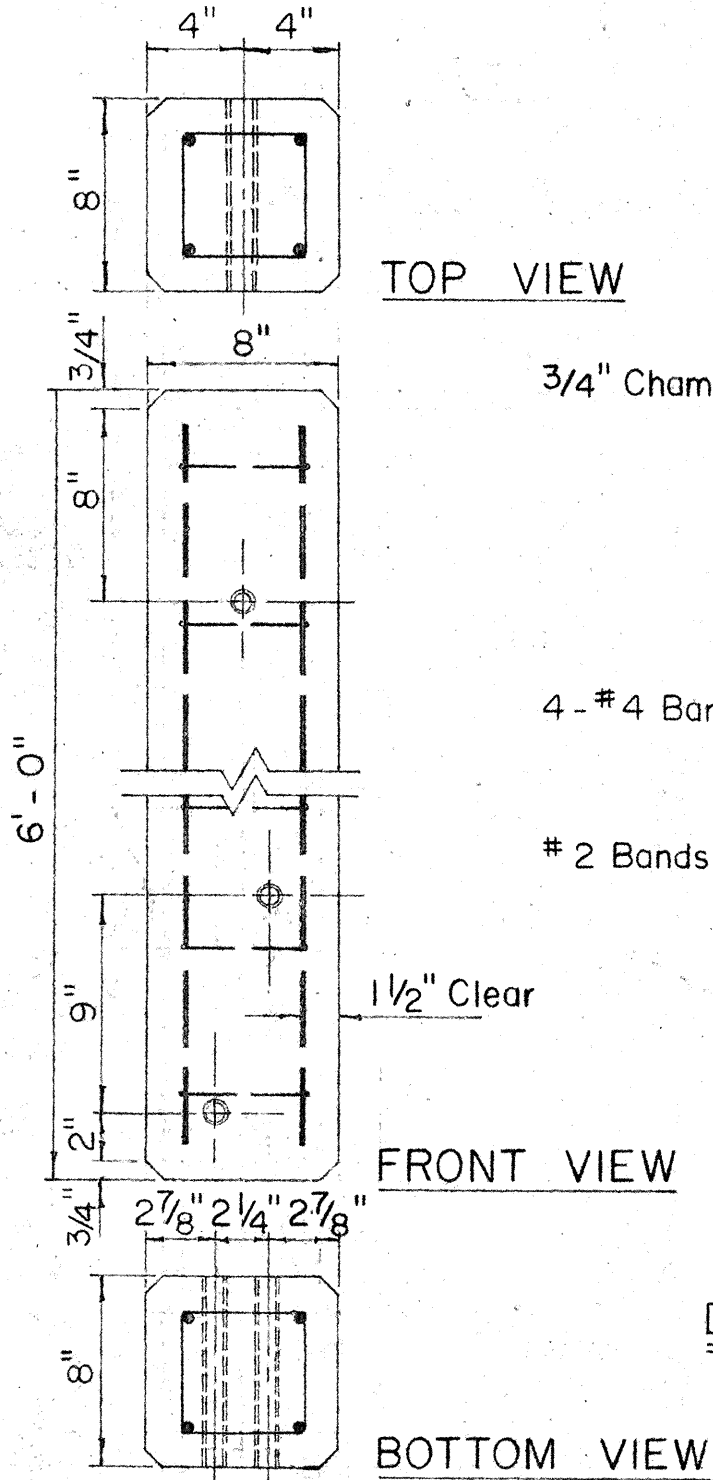
Scale 1 1/2" = 1' - 0"

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



RAIL ELEMENT SECTION

Scale: 6" = 1' - 0"



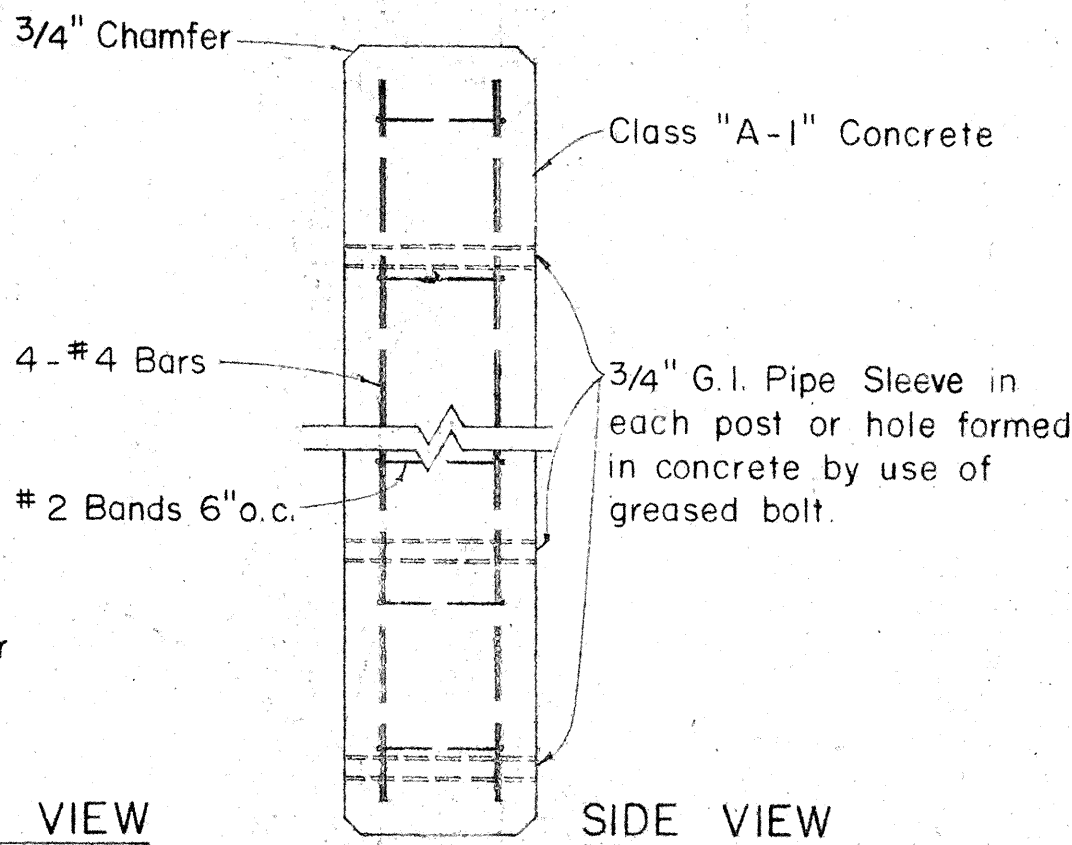
TOP VIEW

FRONT VIEW

BOTTOM VIEW

NOTE:

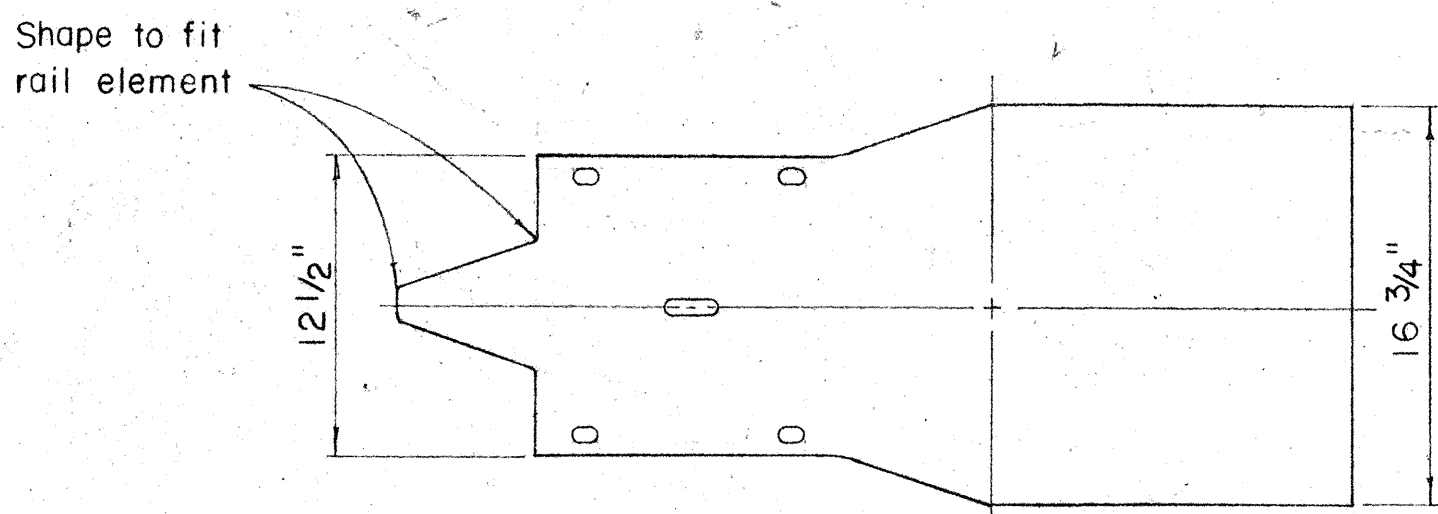
Concrete post shall be precast



SIDE VIEW

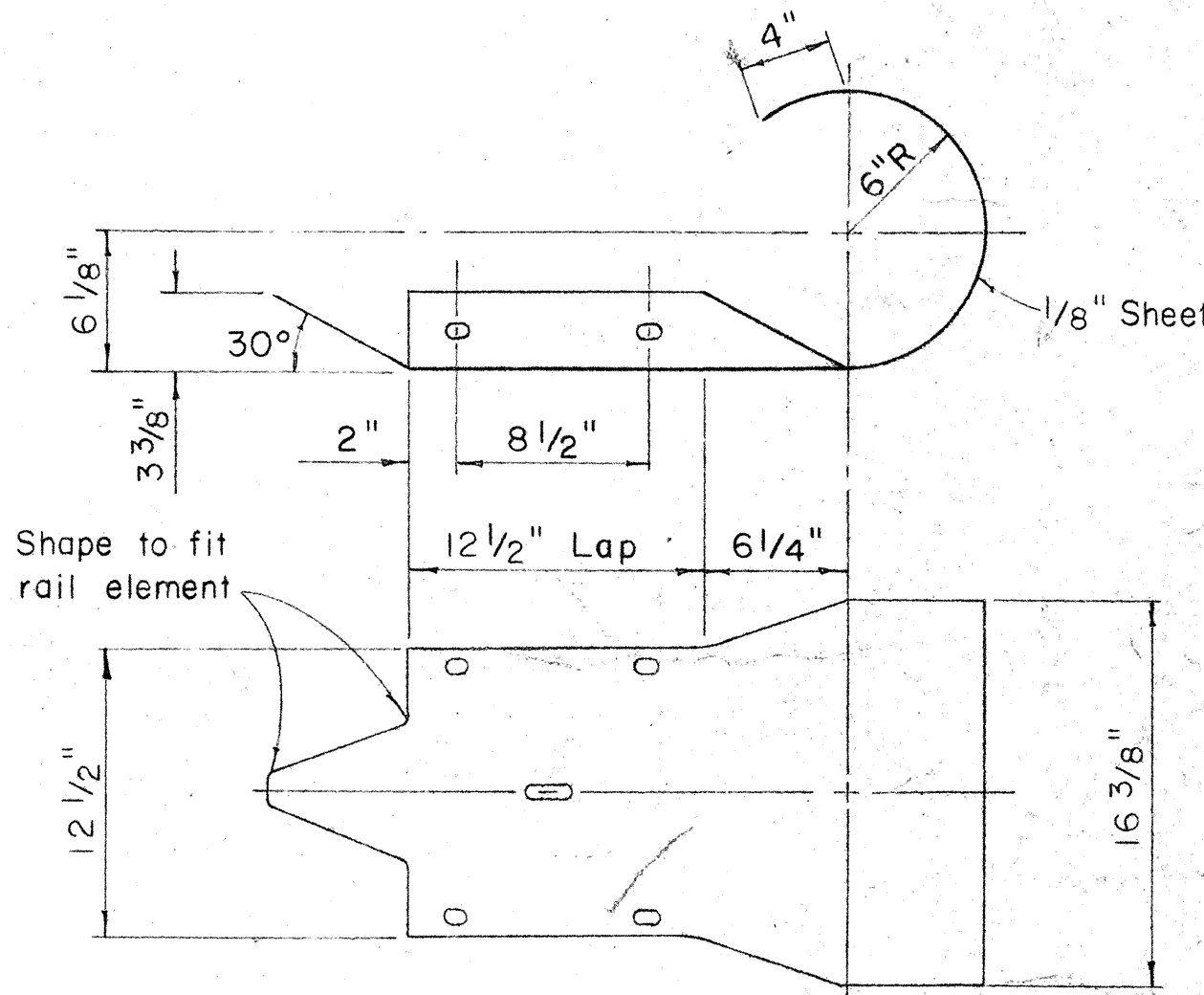
DETAIL OF CONCRETE POST

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



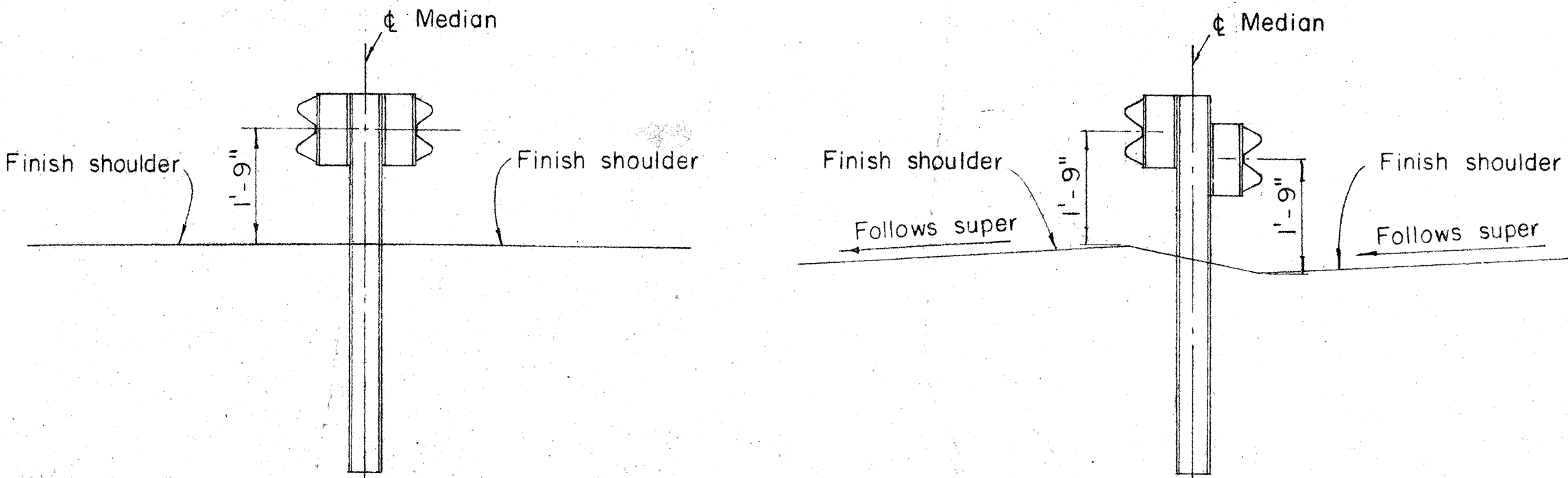
FLARED END

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



CURVED END

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



AT TANGENT SECTION

AT SUPER SECTION

TYPICAL MEDIAN GUARD RAIL DETAIL

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

REVISED: Oct. 27, 1967
REVISED: Sept. 1, 1967
REVISED: June 2, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

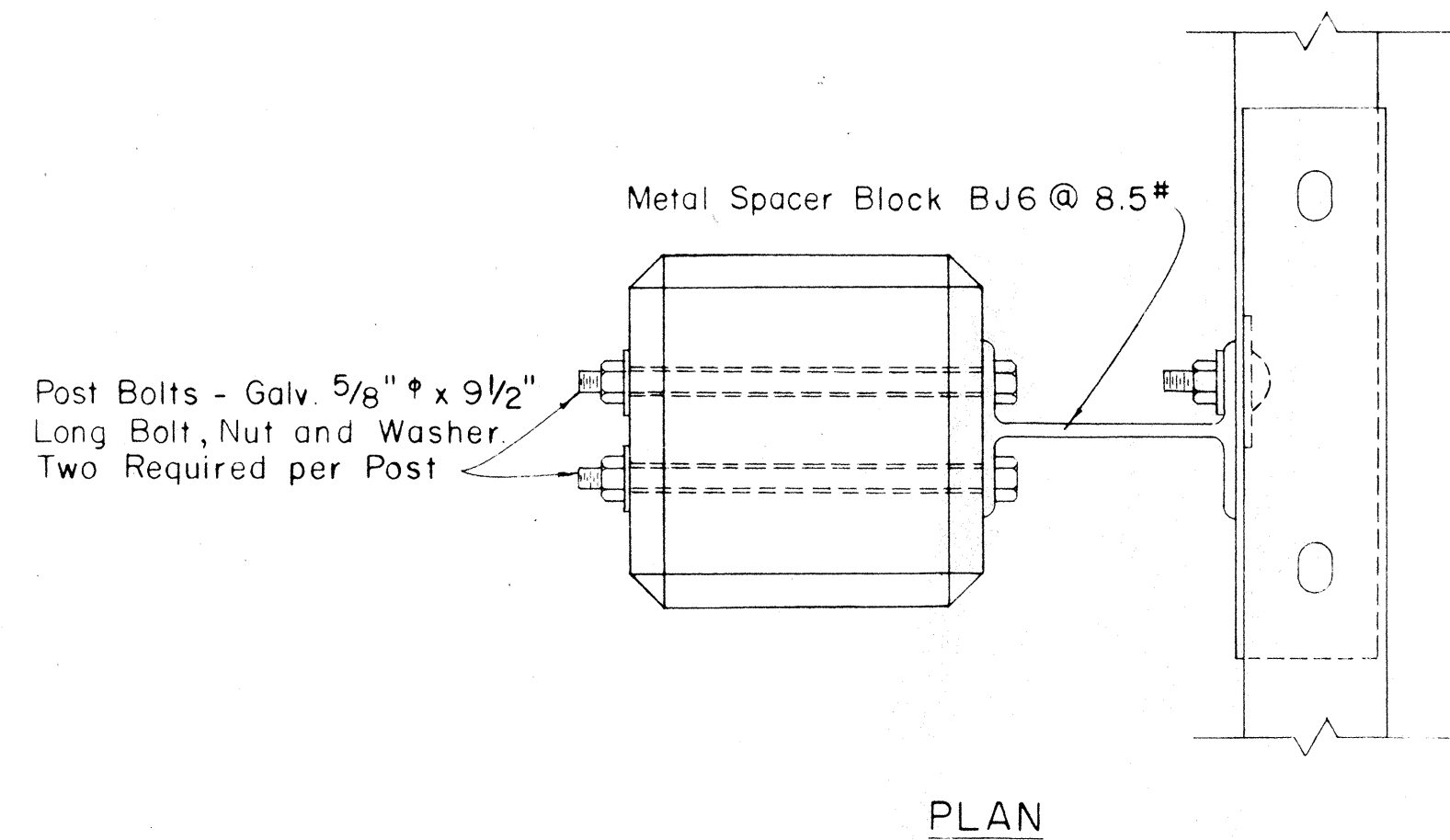
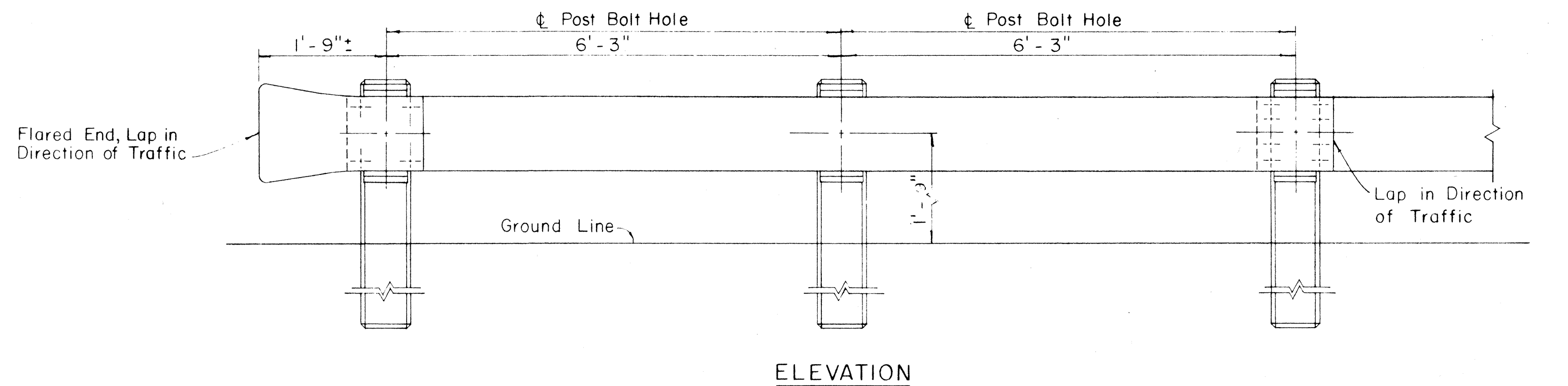
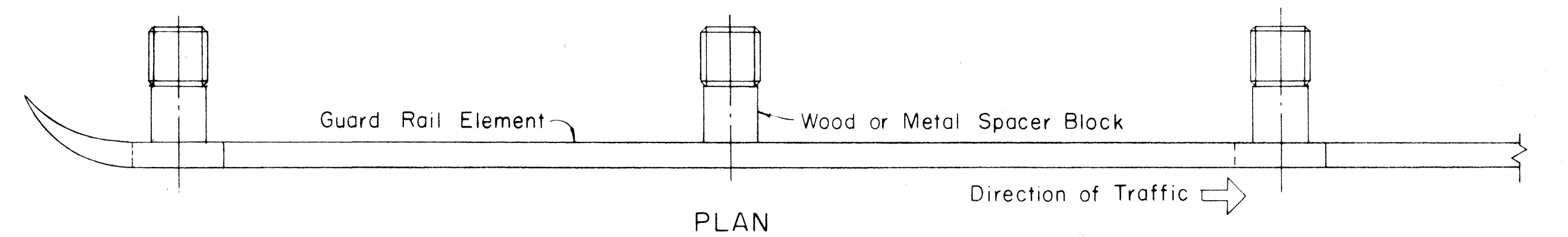
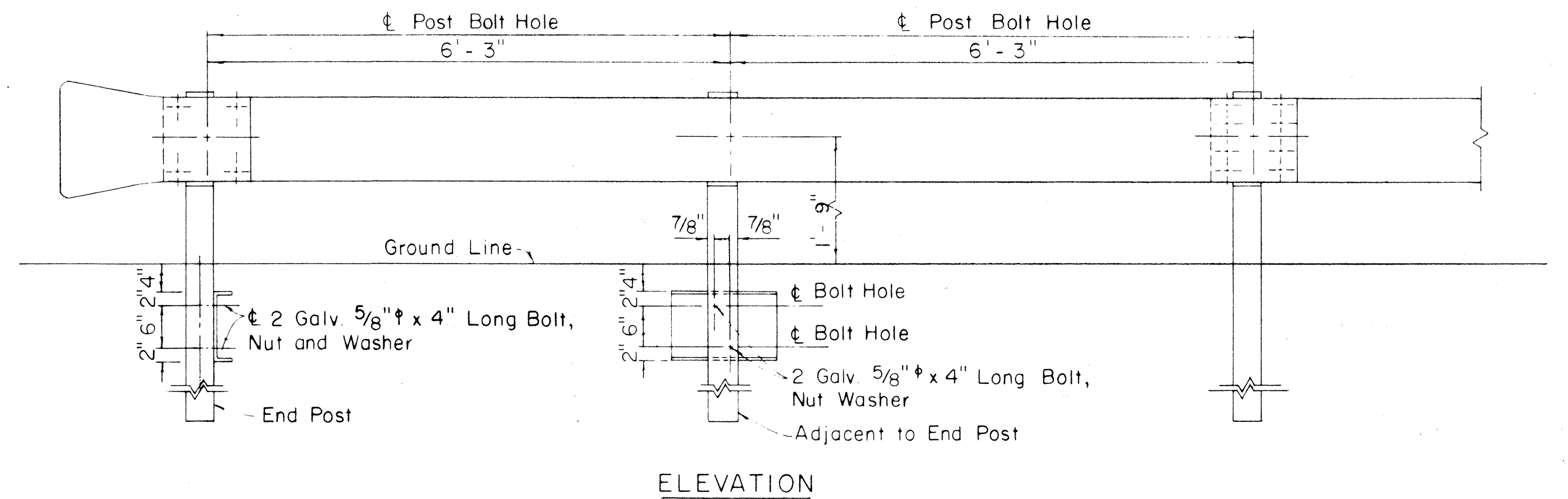
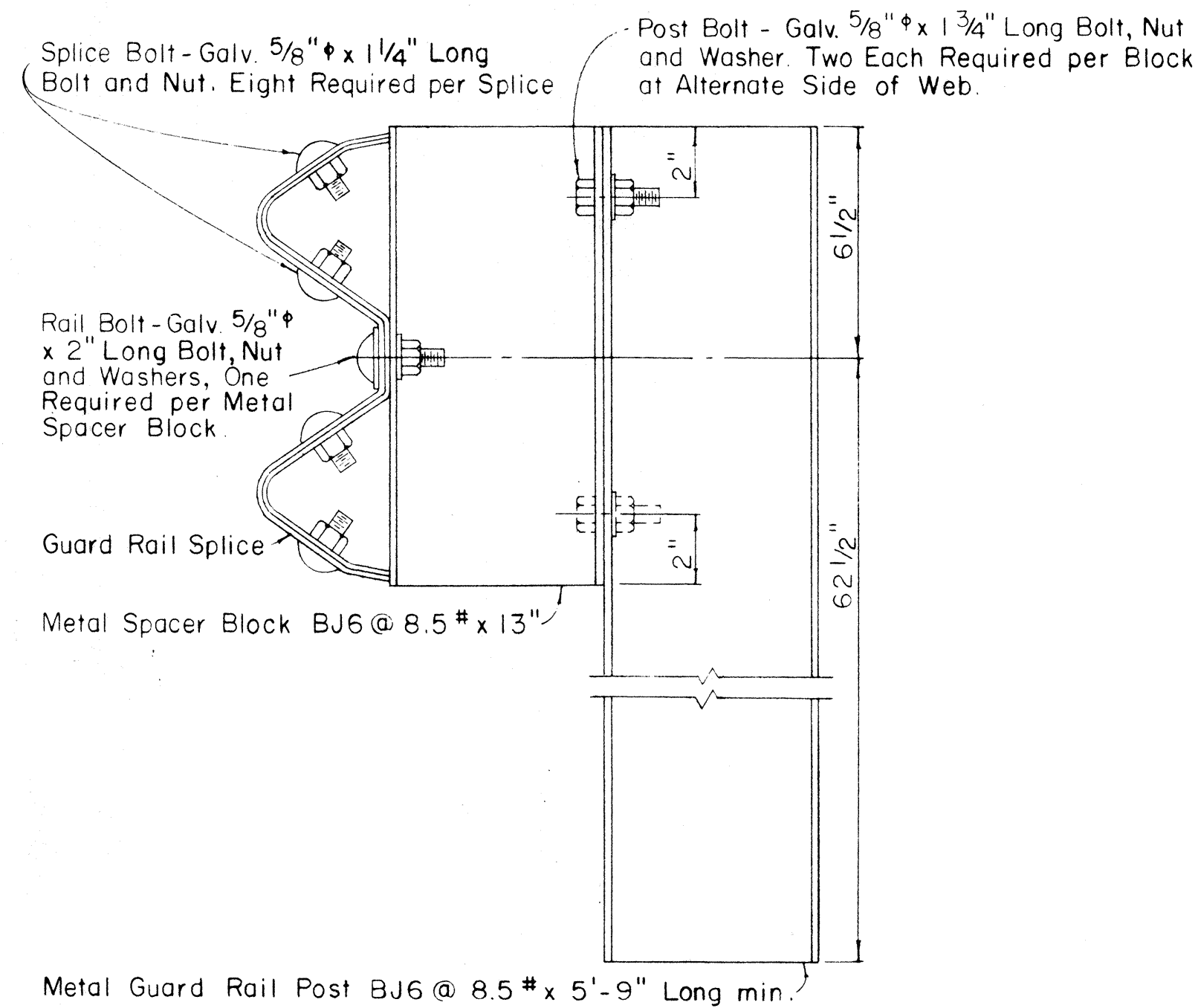
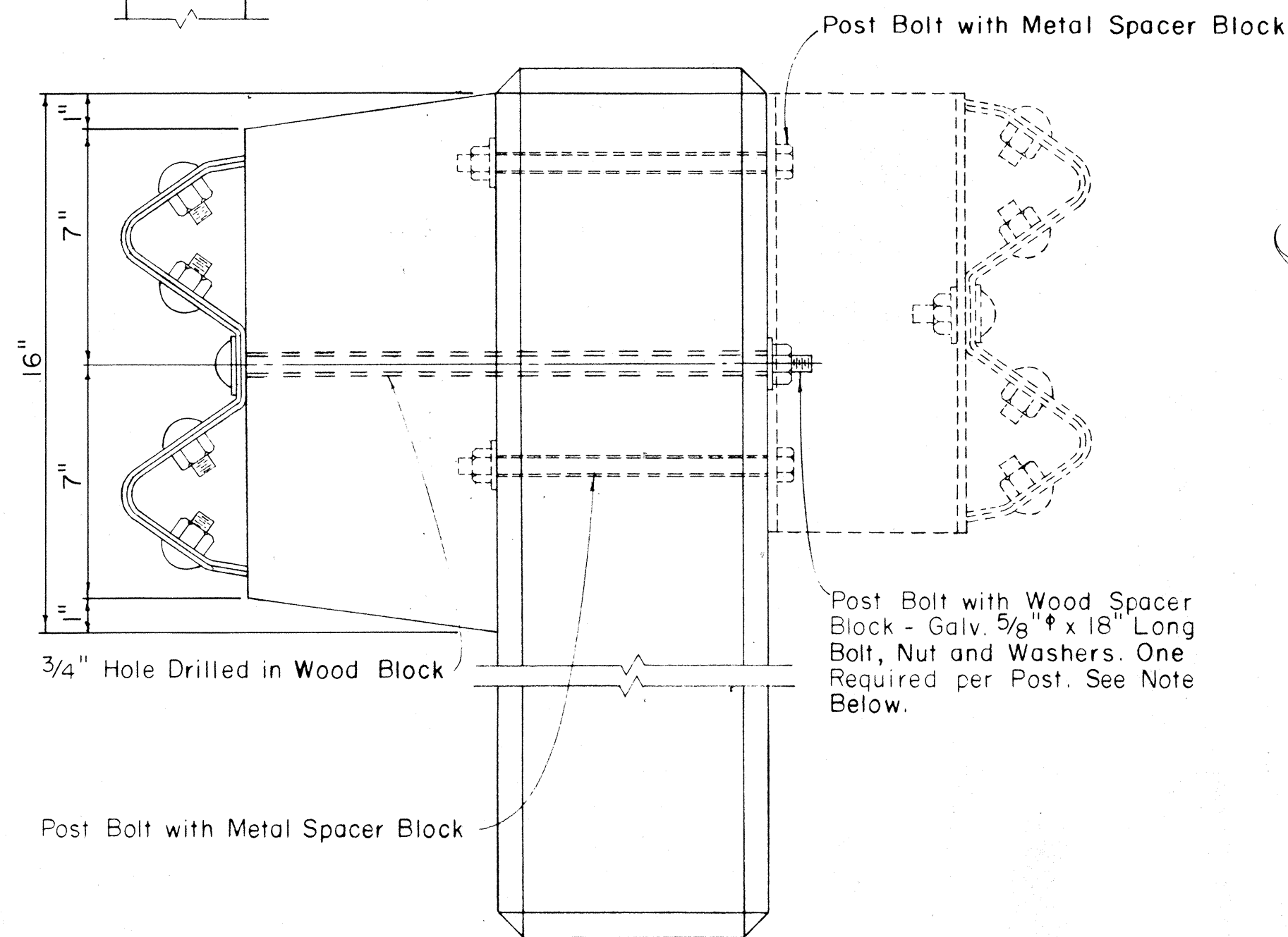
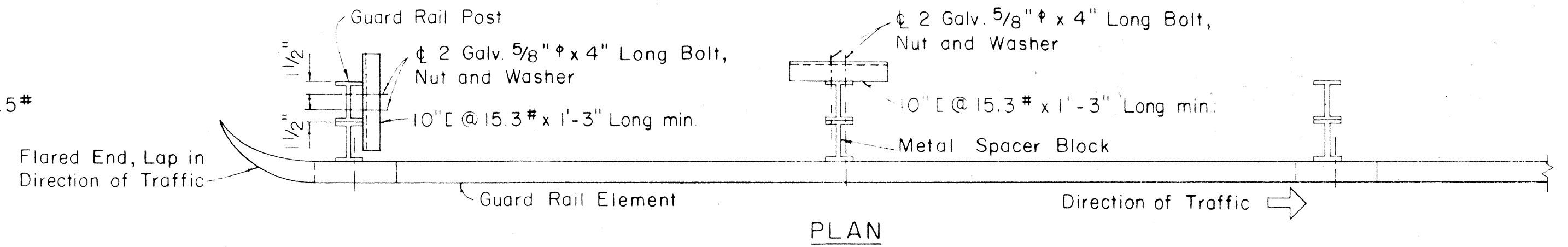
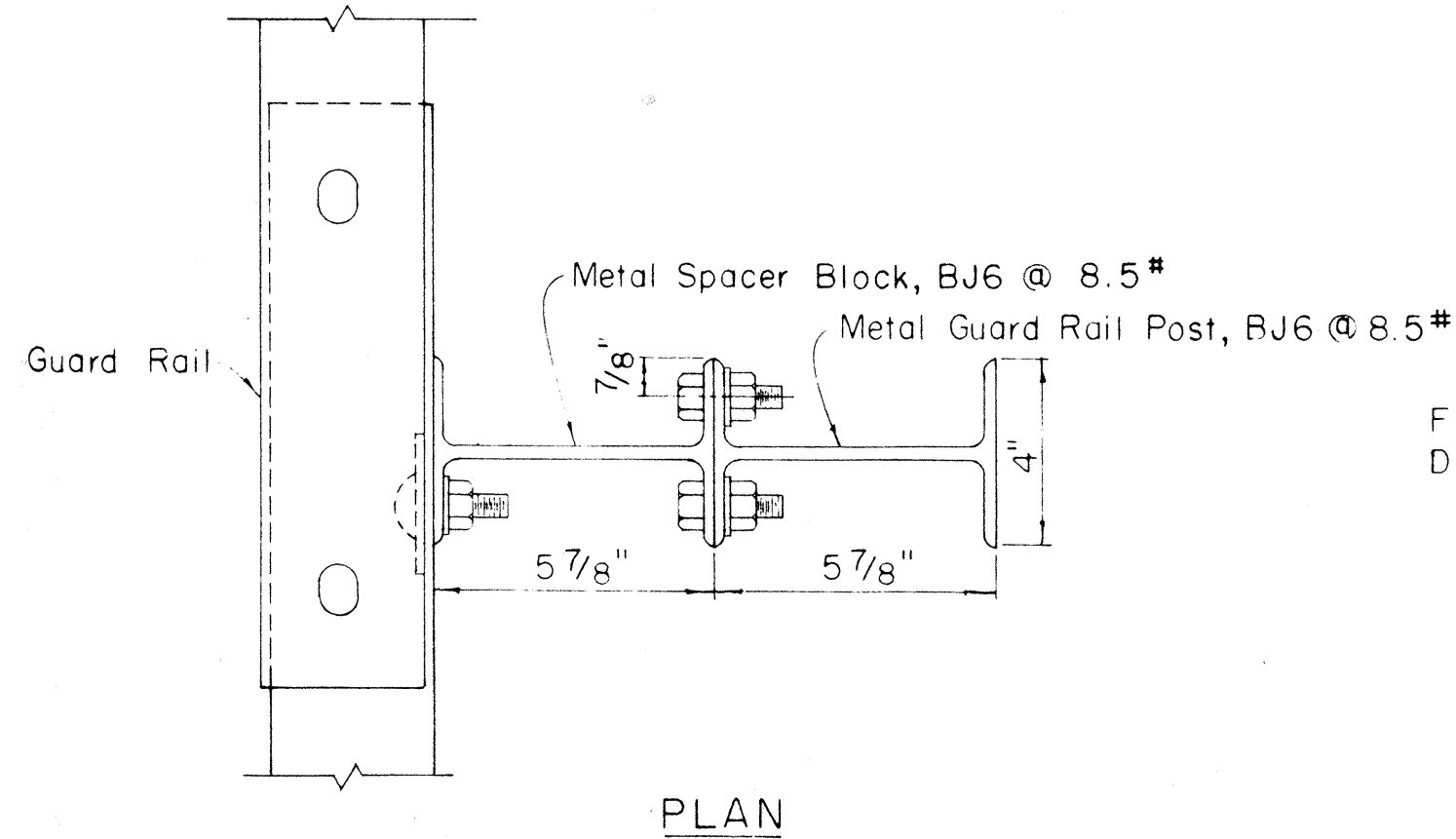
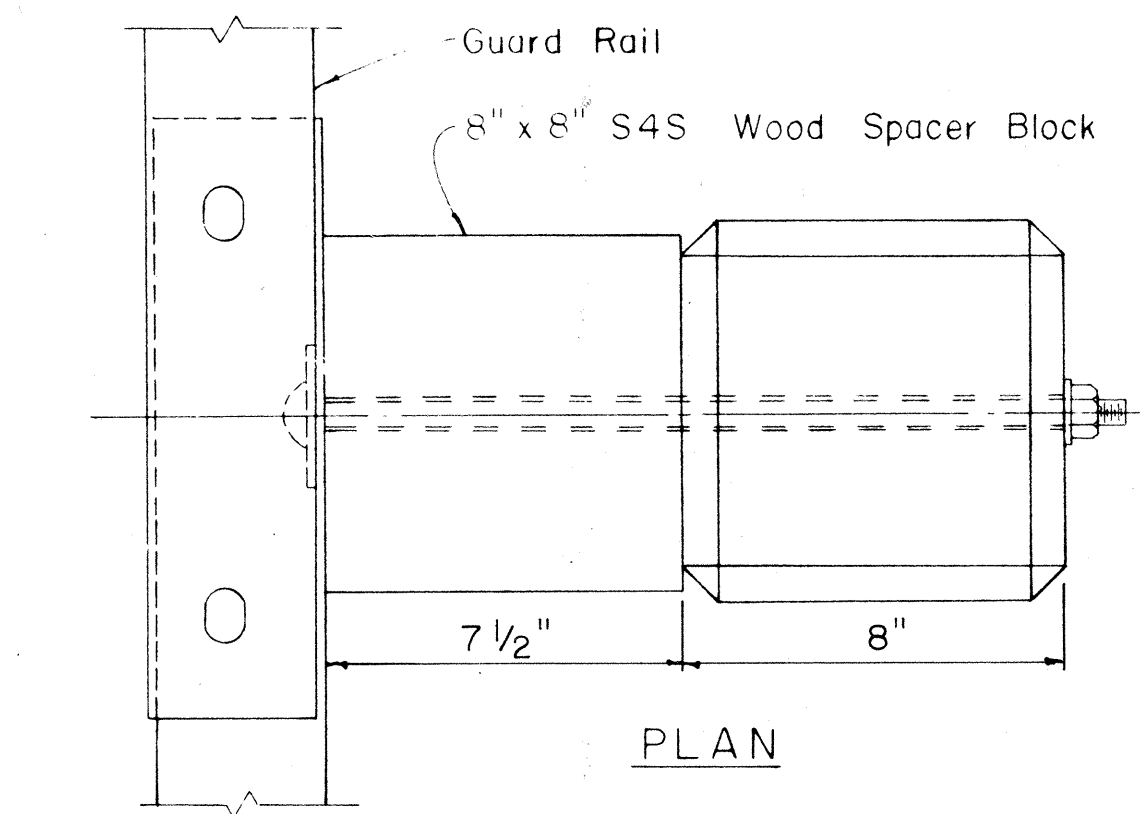
METAL GUARD RAIL

Scale: as noted

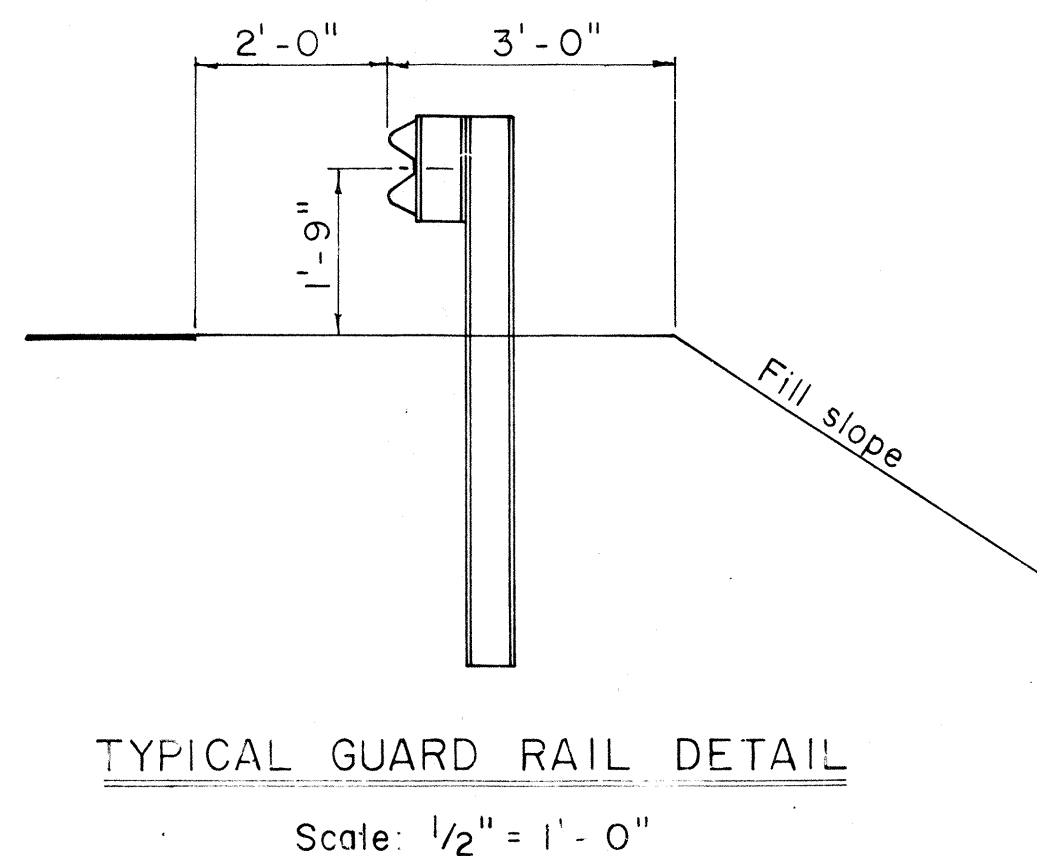
SHEET No. 1 OF 4 SHEETS

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-02-68	1968	11	13



SINGLE METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK
Scale: 3" = 1' - 0"



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.

METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
Scale: 3/4" = 1' - 0"

REVISED: October 27, 1967
REVISED: August 10, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

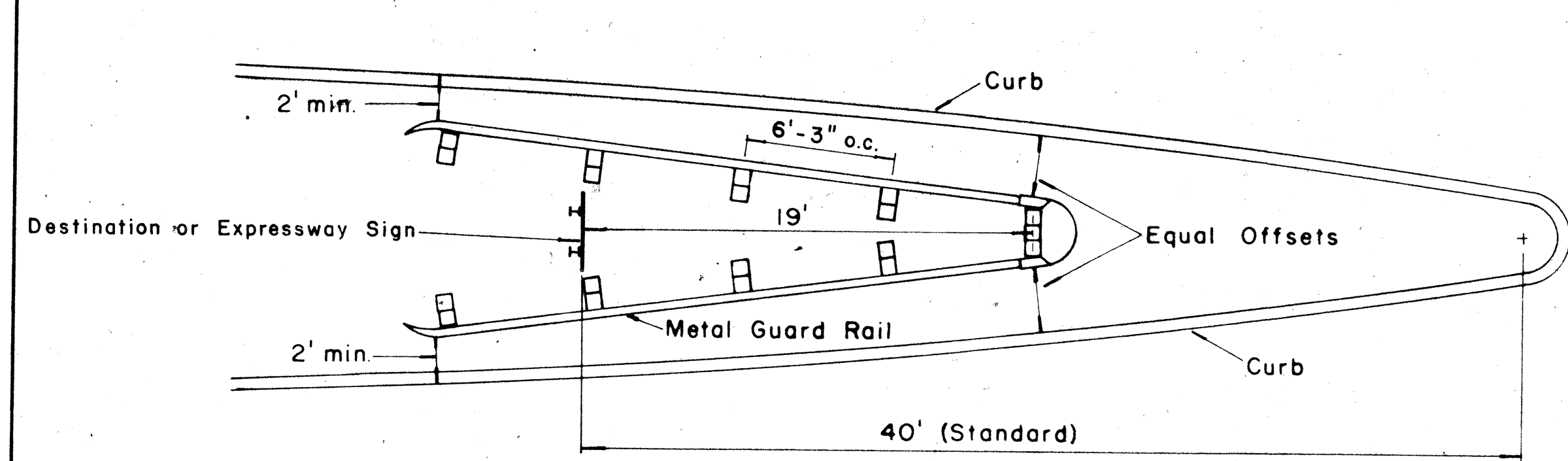
STANDARD DETAILS

METAL GUARD RAIL

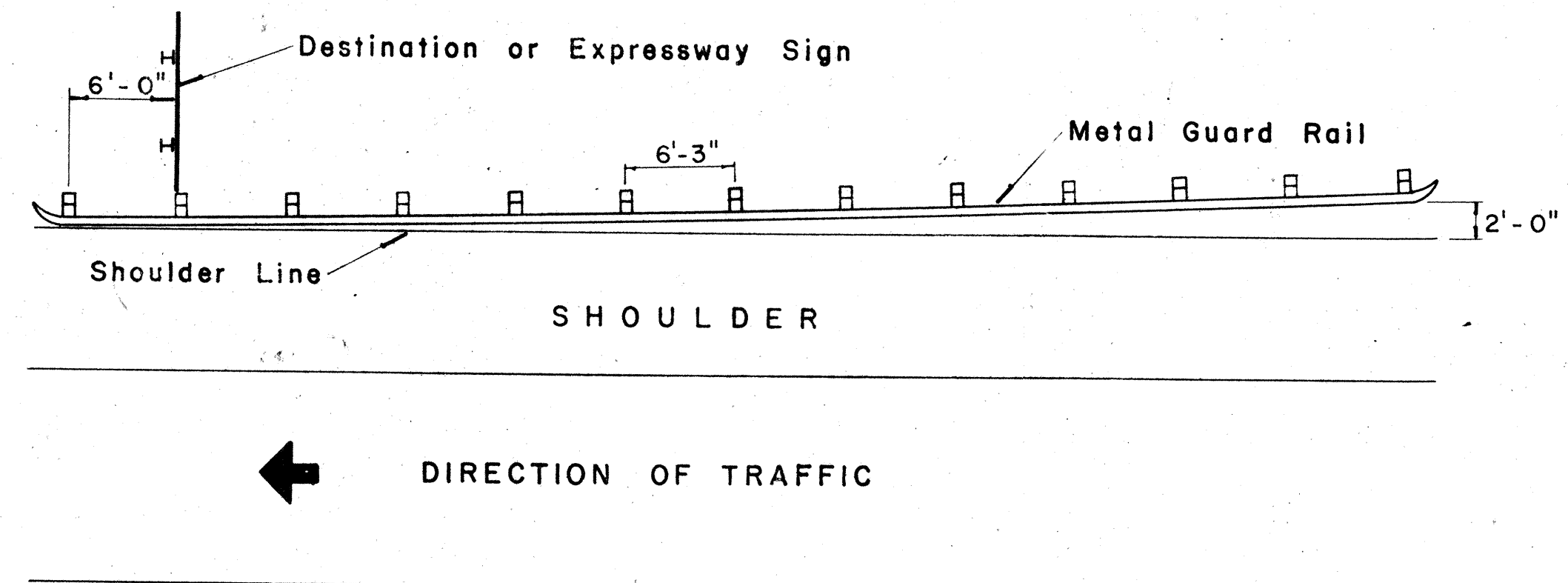
Scale: as noted

SHEET No. 2 OF 4 SHEETS

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

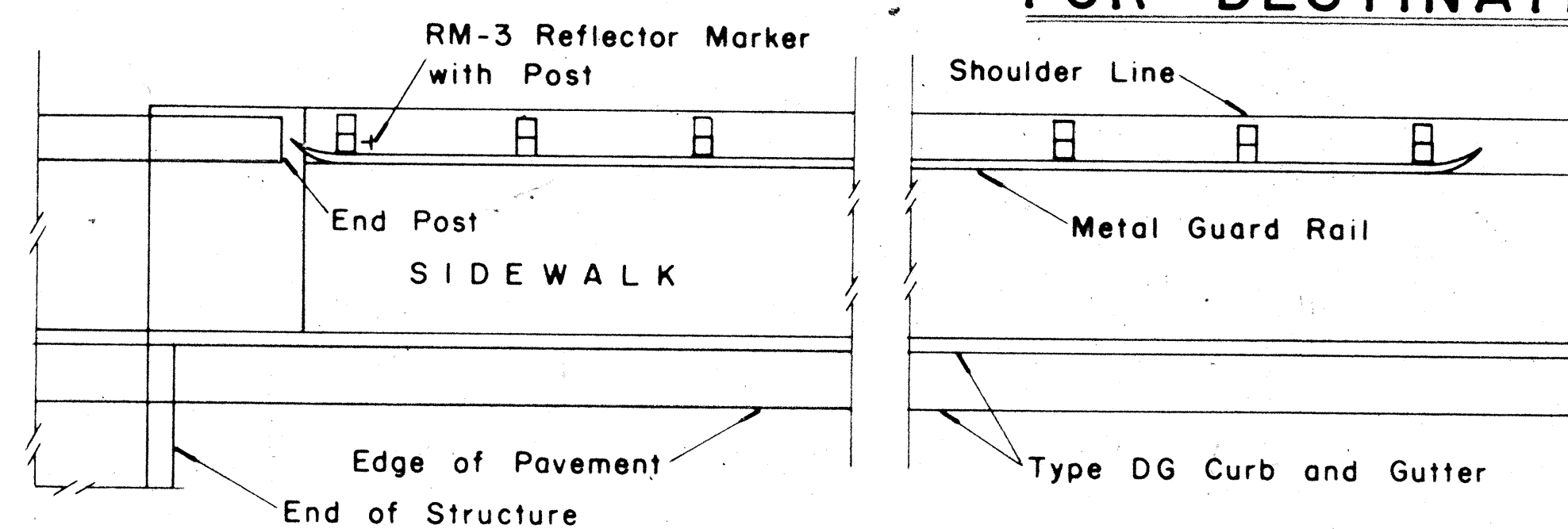


GORE MOUNTED SIGN
Scale: $\frac{3}{16}" = 1' - 0"$

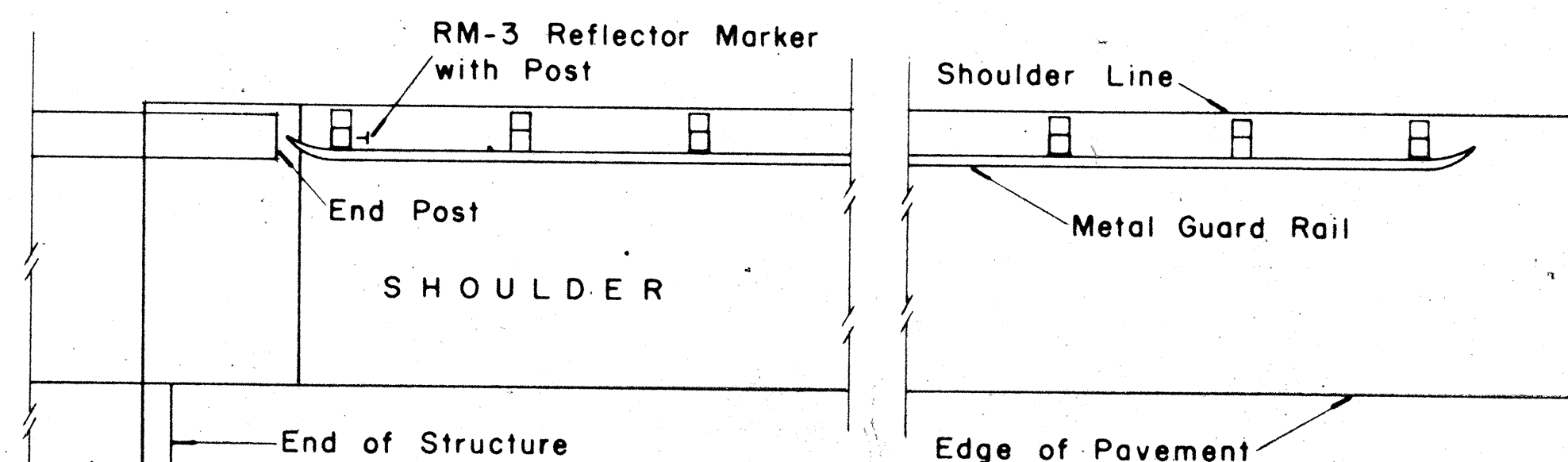


SHOULDER MOUNTED SIGN
Scale: $\frac{1}{8}" = 1' - 0"$

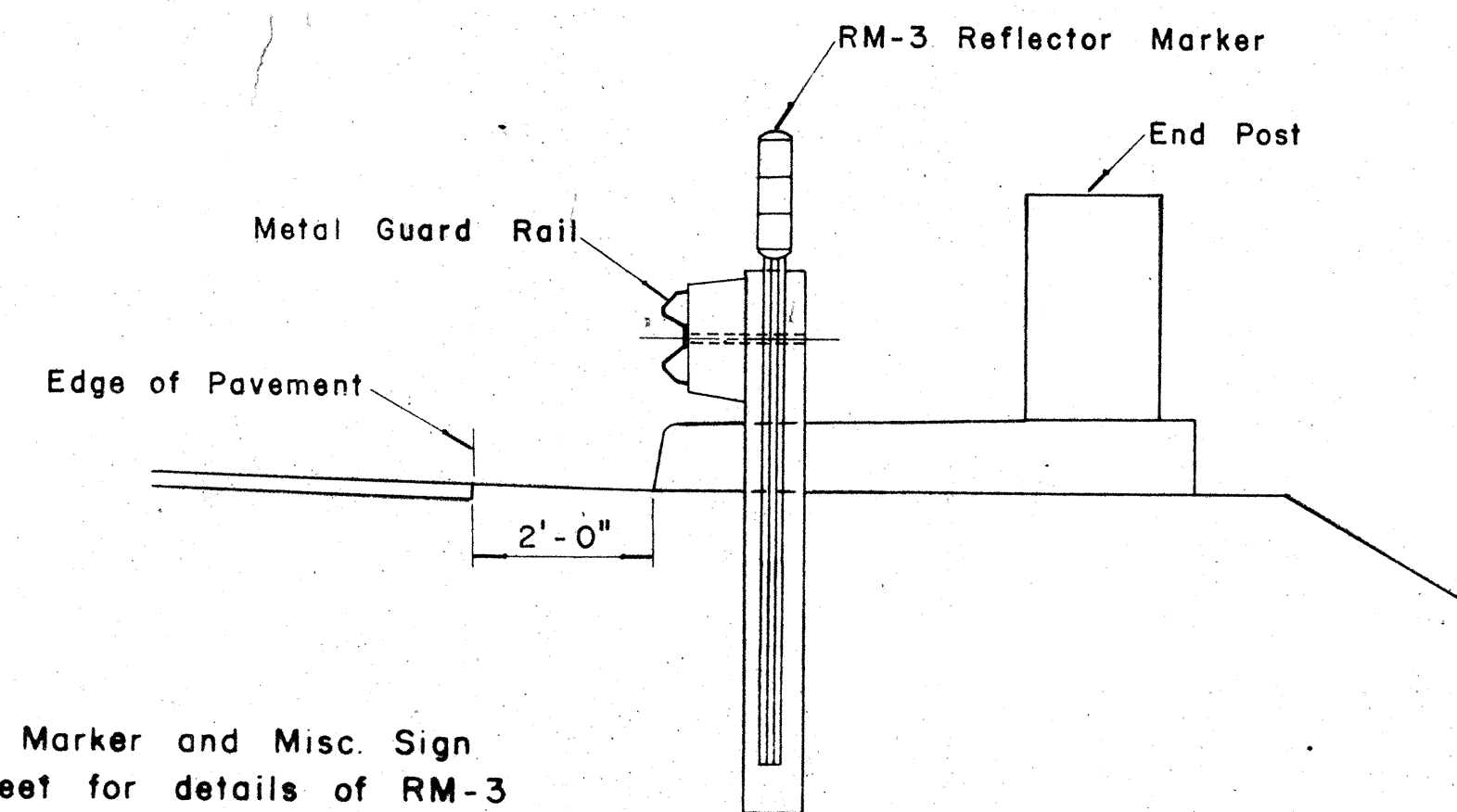
INSTALLATION OF METAL GUARD RAIL FOR DESTINATION AND EXPRESSWAY SIGNS



SIDEWALK CARRIED THROUGH STRUCTURE



SHOULDER CARRIED THROUGH STRUCTURE



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

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

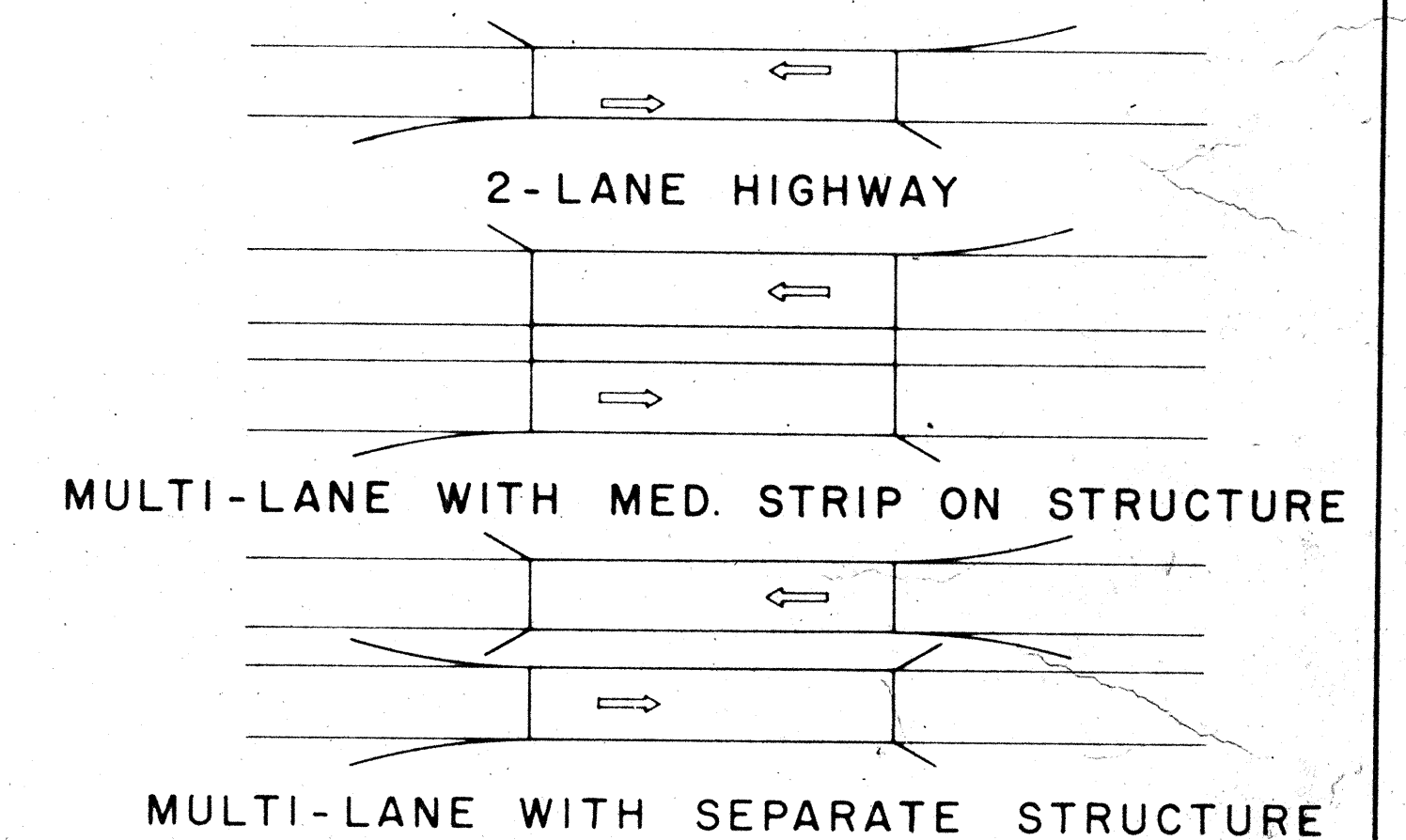
X	Y					
	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.85
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48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

W = GUARD RAIL FLARE

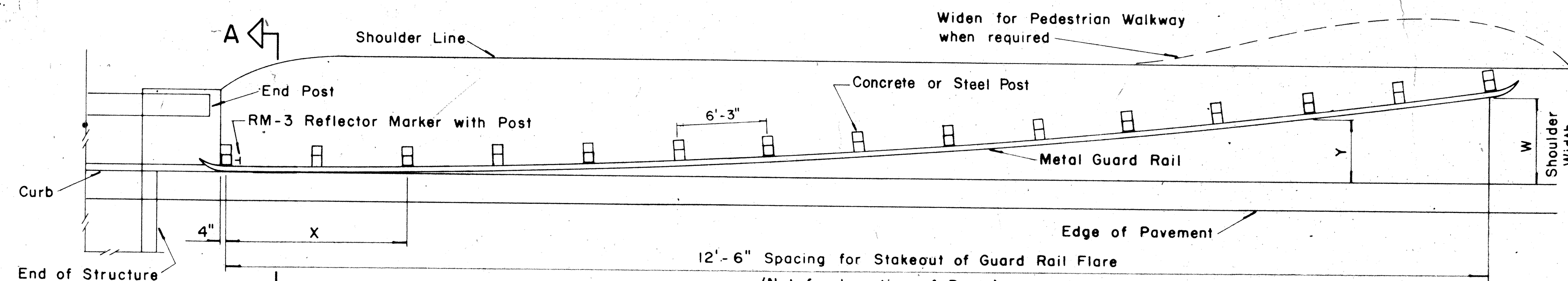
X = DISTANCE FROM POST AT
BRIDGE TO OFFSET POINTS

Y = GUARD RAIL FLARE OFFSET

GUARD RAIL OFFSET



TYPICAL GUARD RAIL FLARES AT STRUCTURE APPROACHES



SHOULDER NOT CARRIED THROUGH STRUCTURE
INSTALLATION OF METAL GUARD RAIL FLARE AT STRUCTURES
Scale: $\frac{3}{16}" = 1' - 0"$

DATE

SURVEY PLOTTED BY

ORIGINAL PLAN

NO.

TRACED BY

CHECKED BY

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAILS

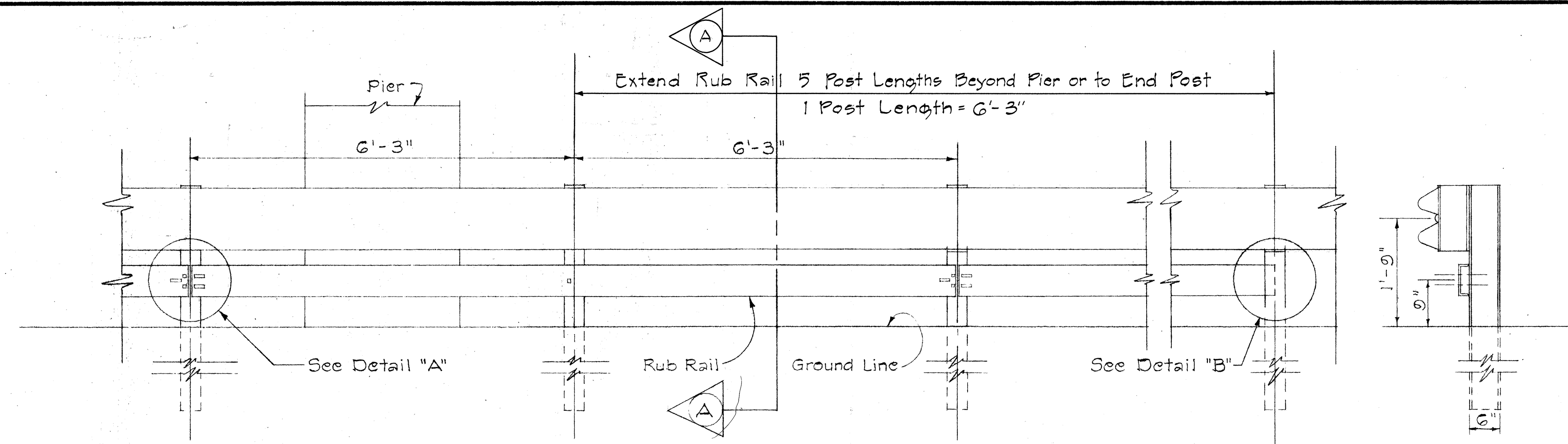
AT

STRUCTURES & GUIDE SIGNS

Scale: As Noted

SHEET No. 3 OF 4 SHEETS

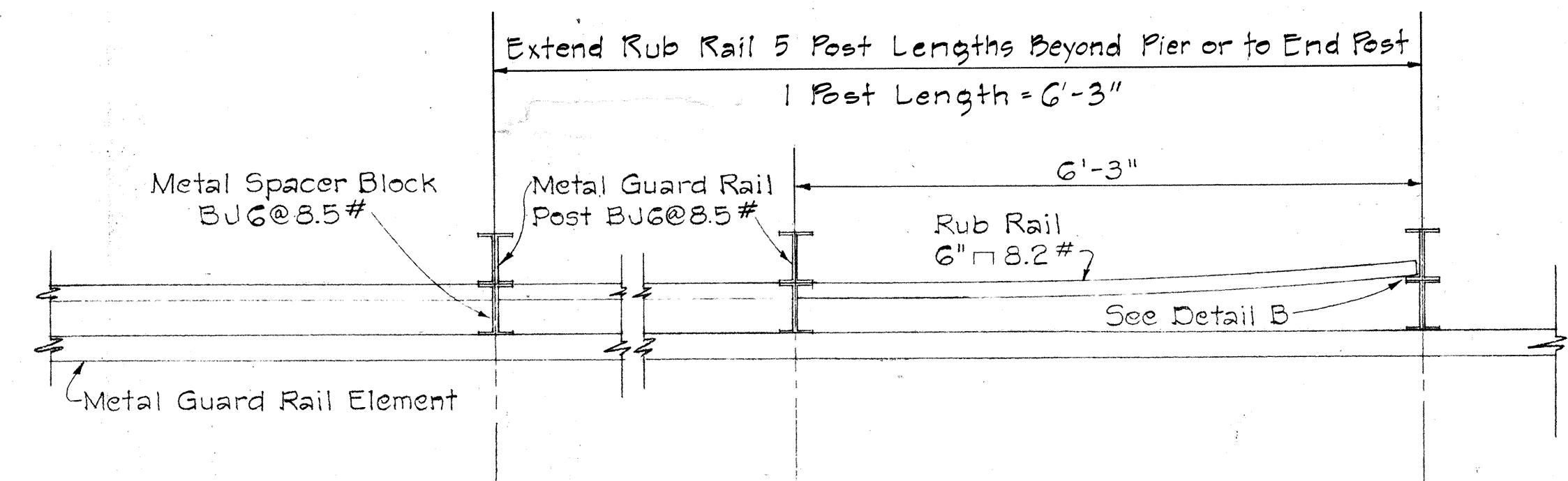
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-02-68	1968	13	13



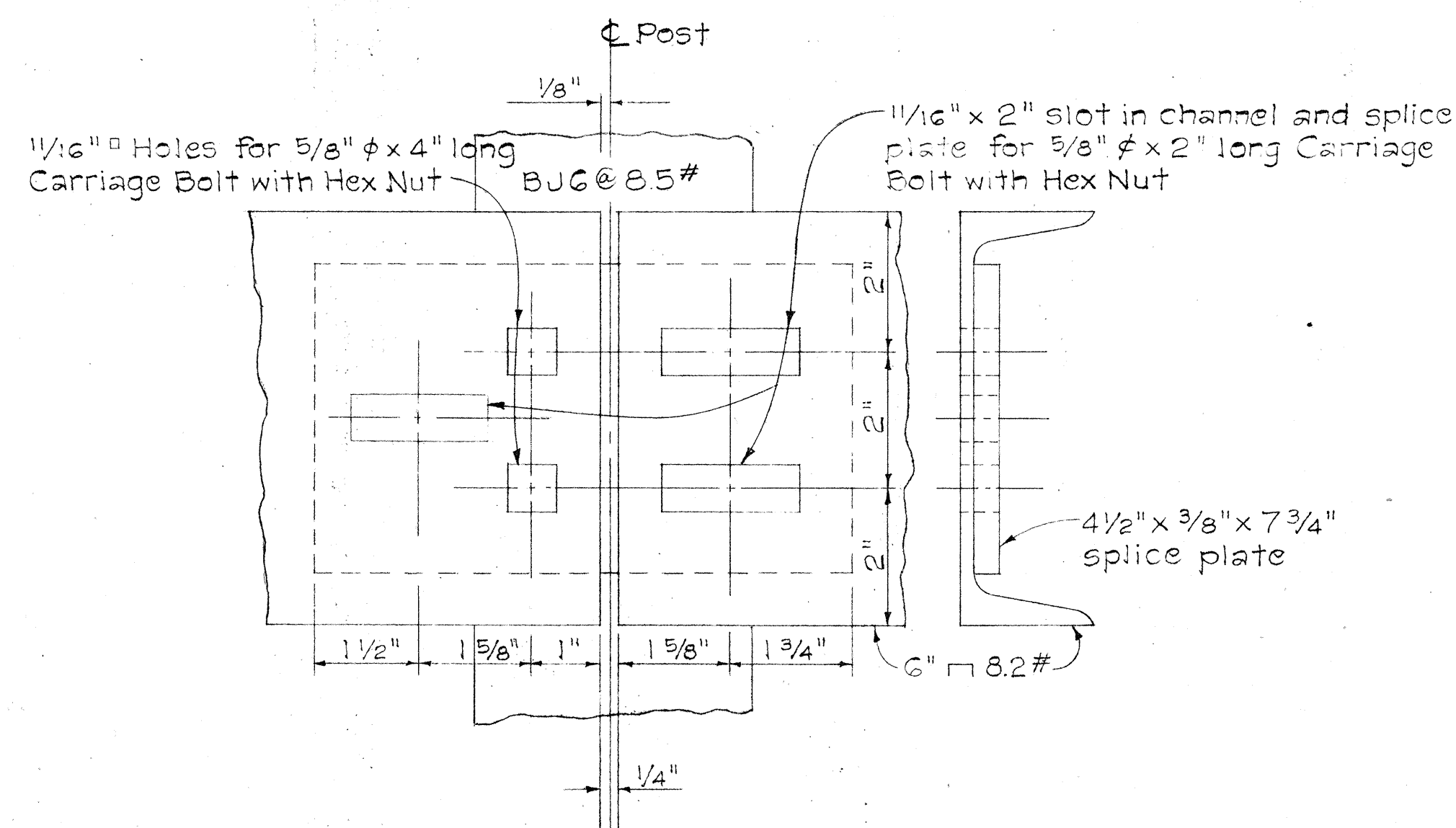
NOTE:

1. Cut washers are required at all bolt installations.

ELEVATION
RUB RAIL
Scale: $3/4" = 1'-0"$

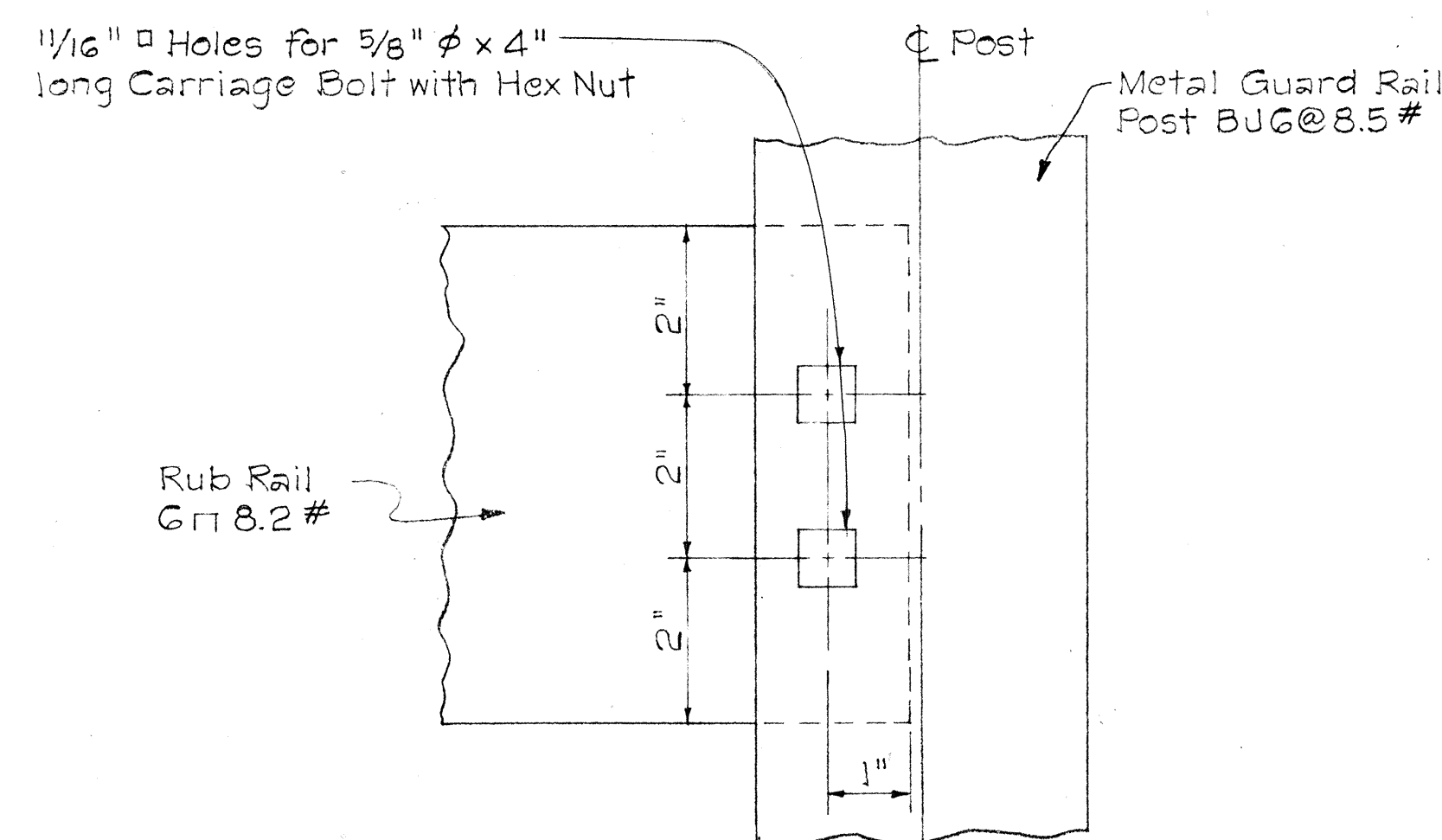


PLAN
Scale: $3/4" = 1'-0"$



ELEVATION

DETAIL "A" OF RUB RAIL SPLICE
(Rail Splices to occur at 12'-6")
Scale: 6"=1'-0"



ELEVATION

DETAIL "B"
Scale: 6" = 1'-0"

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

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

RUB RAIL DETAILS

PROJ. NO. 72B-02-68

SHEET No. 4 OF 4 SHEETS