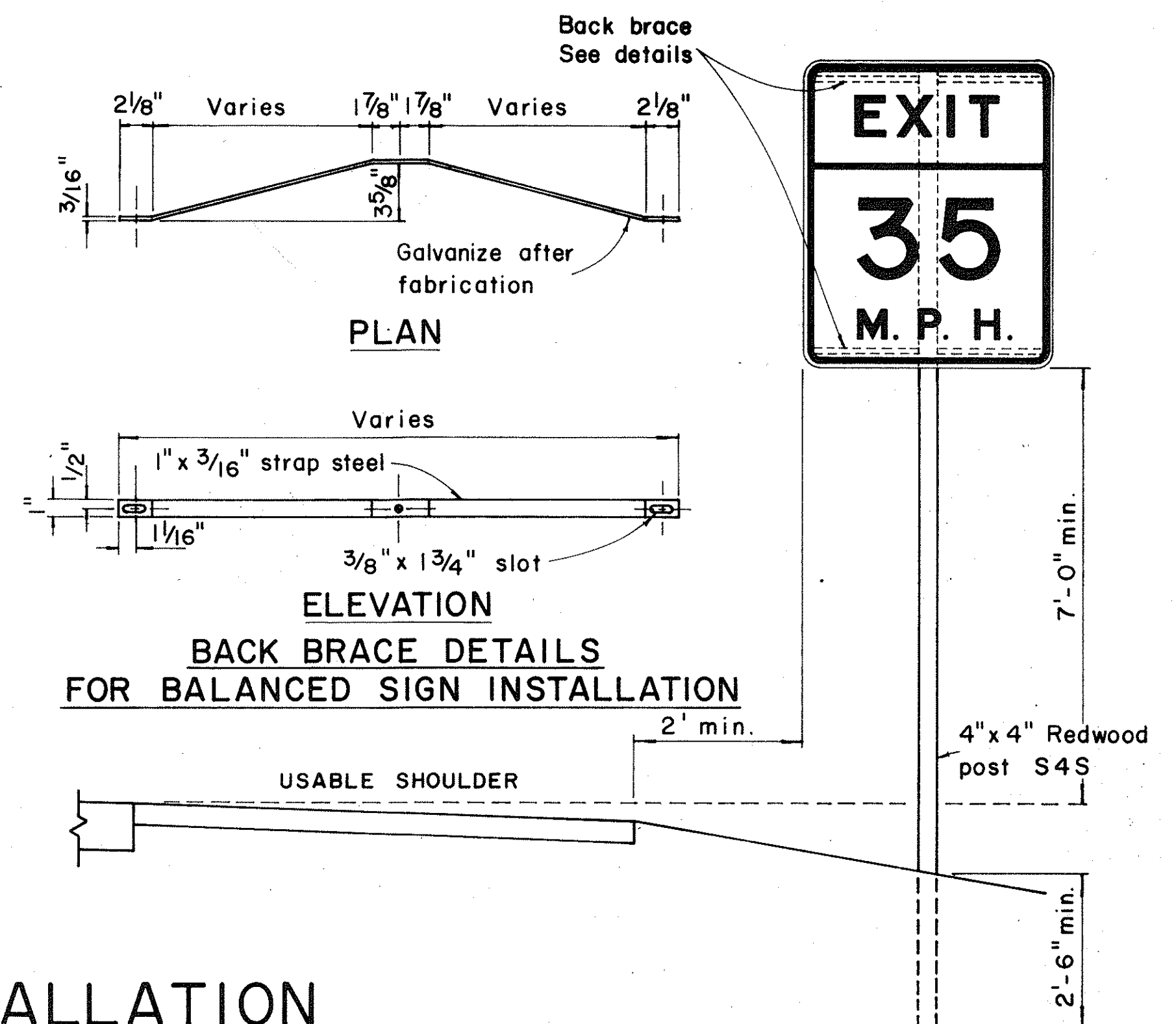
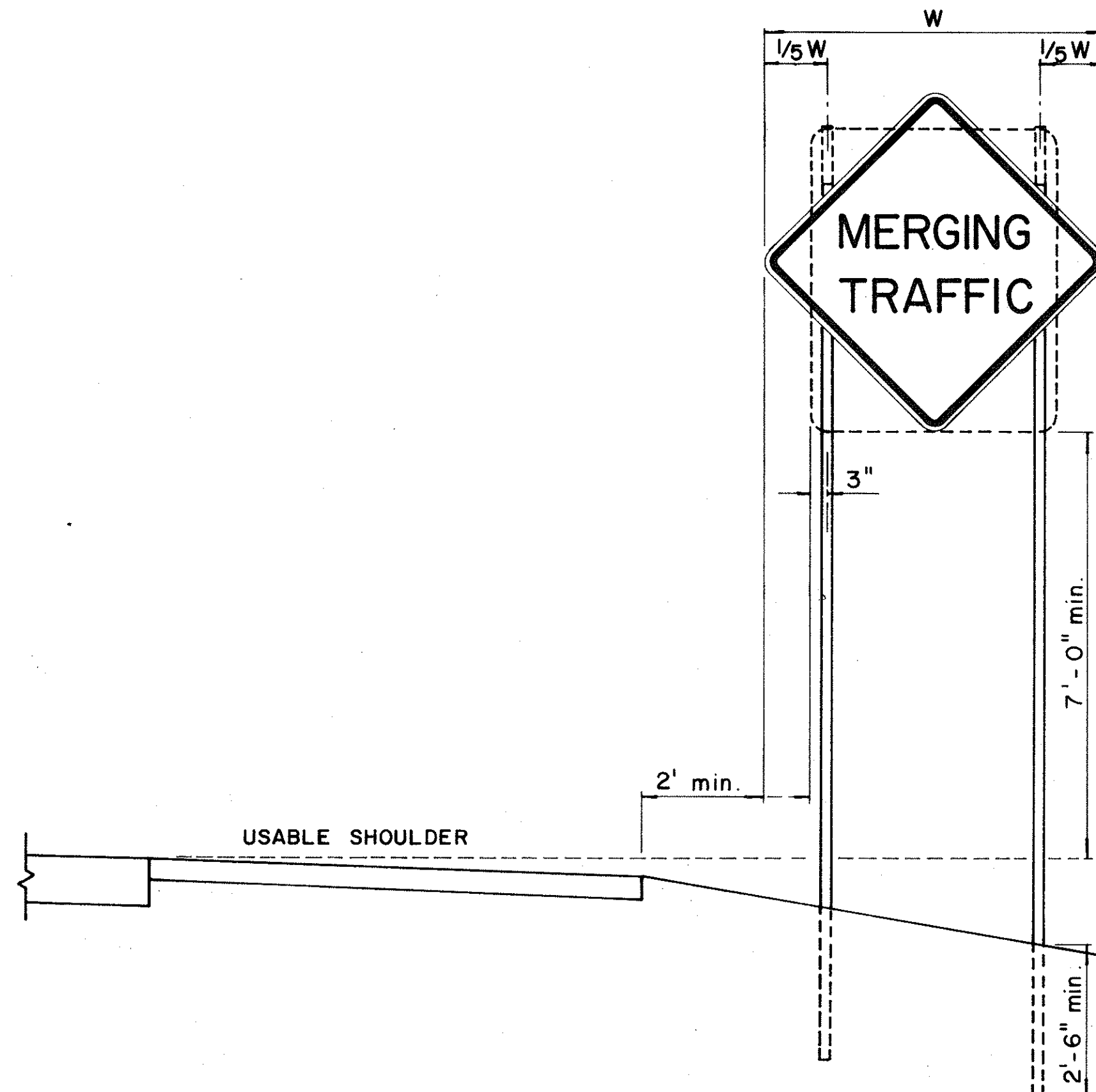
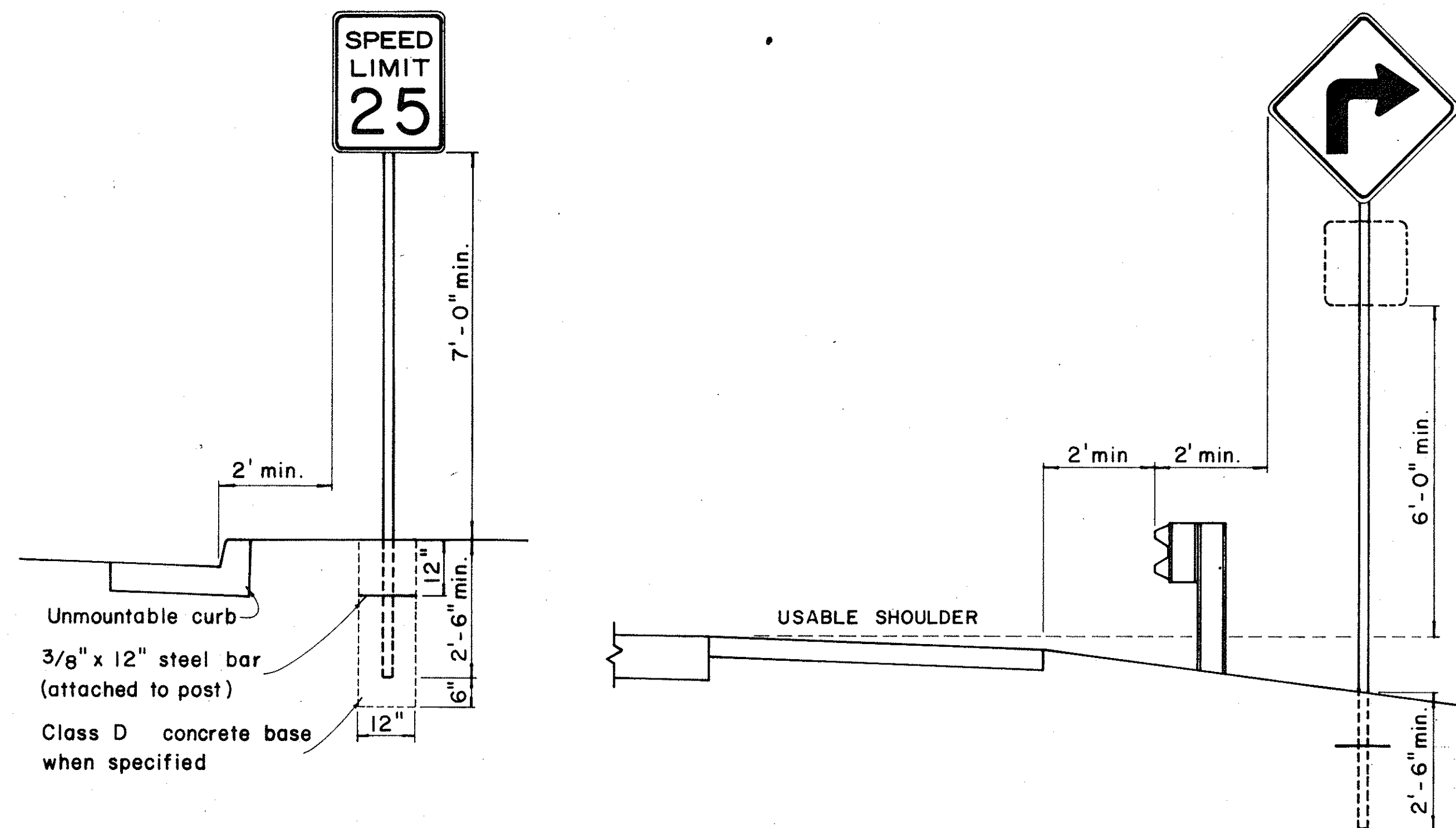
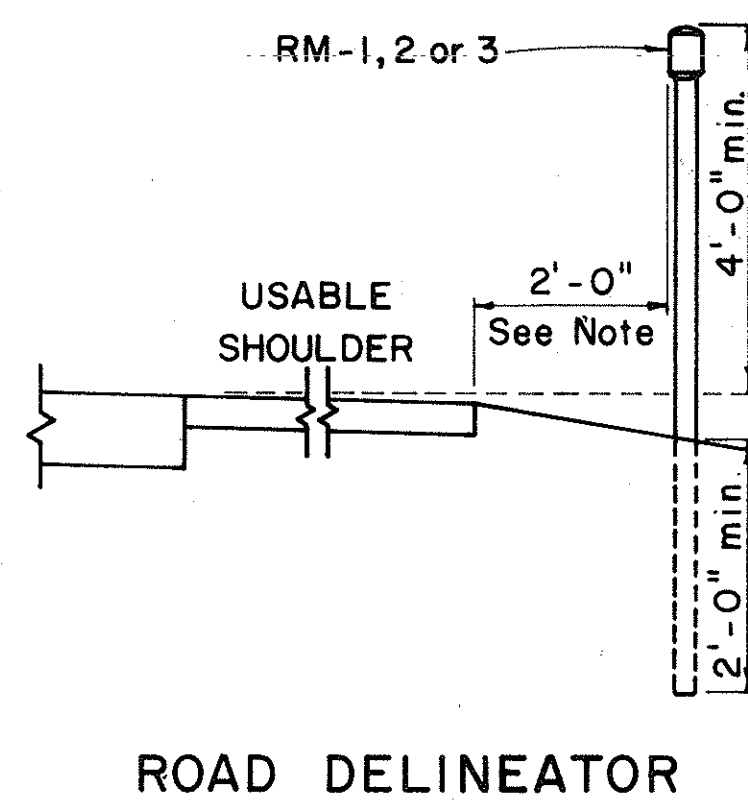


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	62A-02-72	1972	9	8

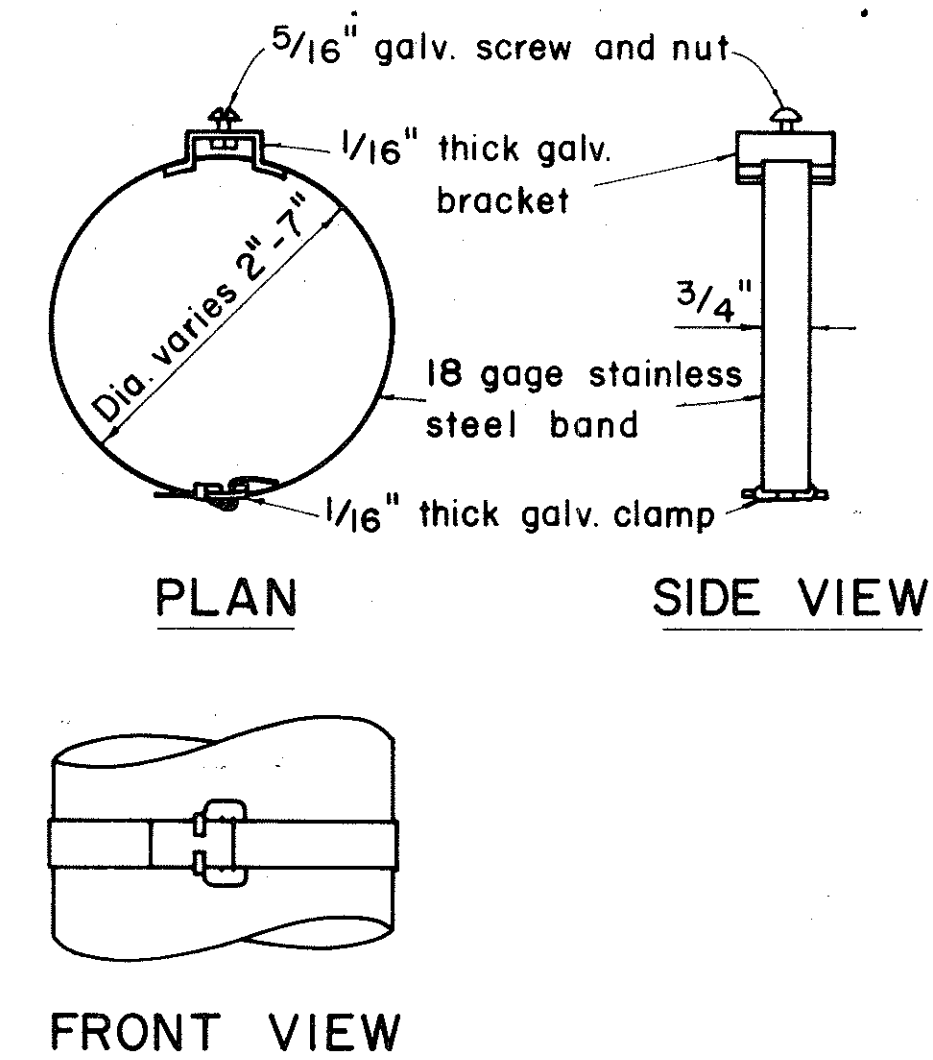
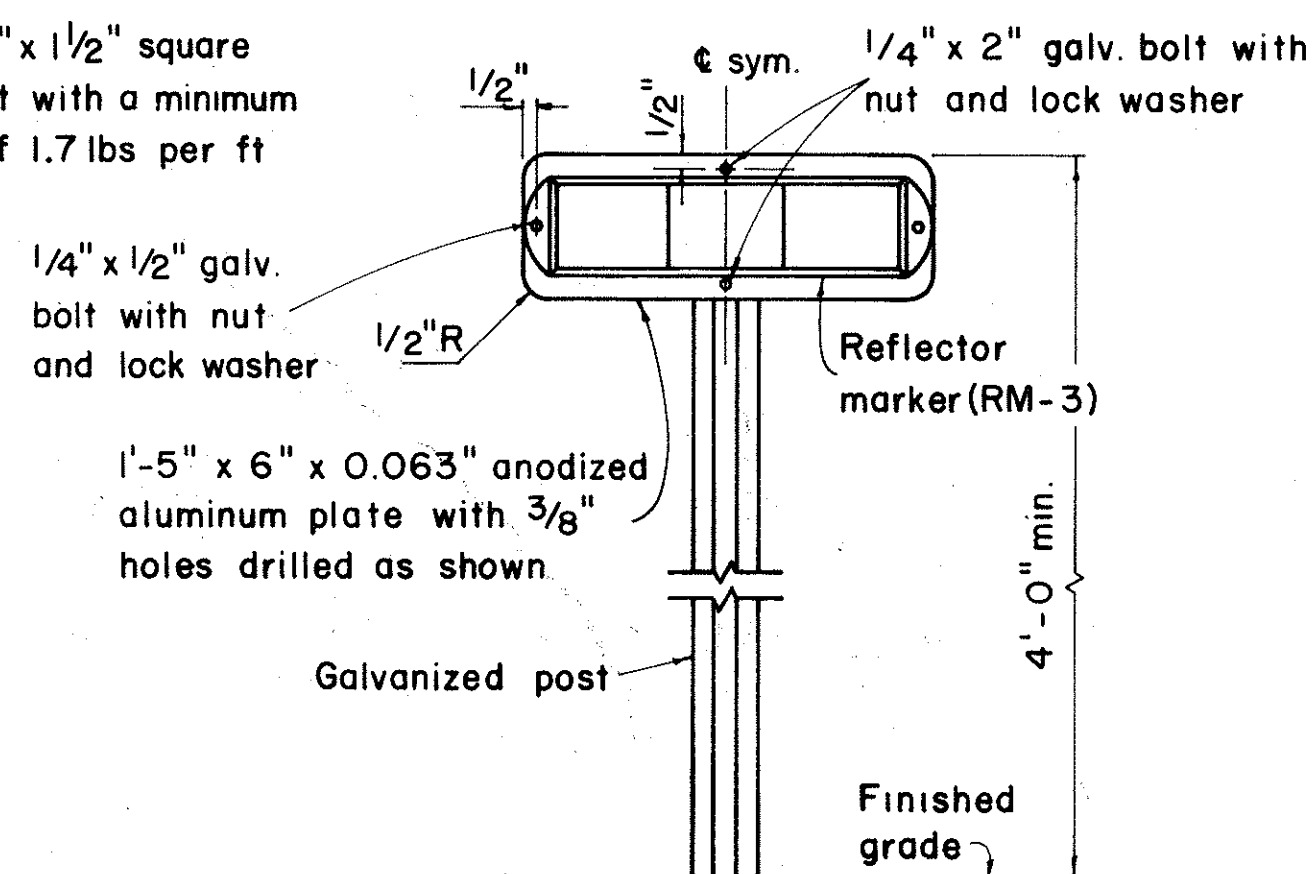
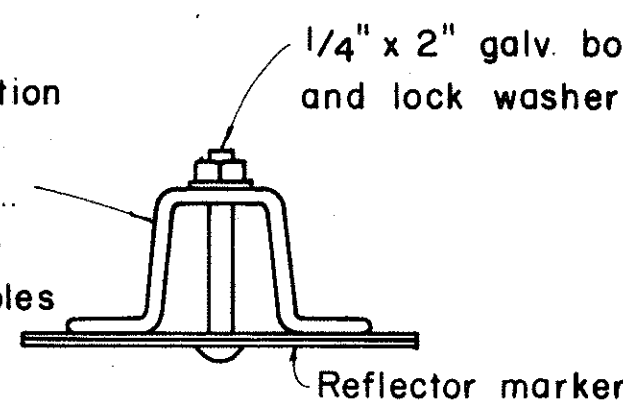


HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



Galv. flanged channel 1/8" x 3/16" rolled section post with a minimum weight of 2 lbs. per ft. Upper 2 ft. shall have a single row of 3/8" holes centered in the web at 1" o.c.

TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

GENERAL NOTES:

- Sign posts shall be 2" galv. standard pipe or 2" x 2" galv. sq. tube post.
- Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two 2" galv. standard pipe or two 2" x 2" galv. sq. tube post or 4" x 4" redwood post S4S.
- Signs shall be attached to post with 5/16" galv. bolts with nuts and 7/8" x 0.06 stainless steel washers with neoprene rubber gasket.
- Sign posts shall extend 3/2" above sign where required for City and County street name signs.
- 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.
- Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
- (R) or (L) indicates right or left and shall be as shown on the plans.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
12/29/69
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

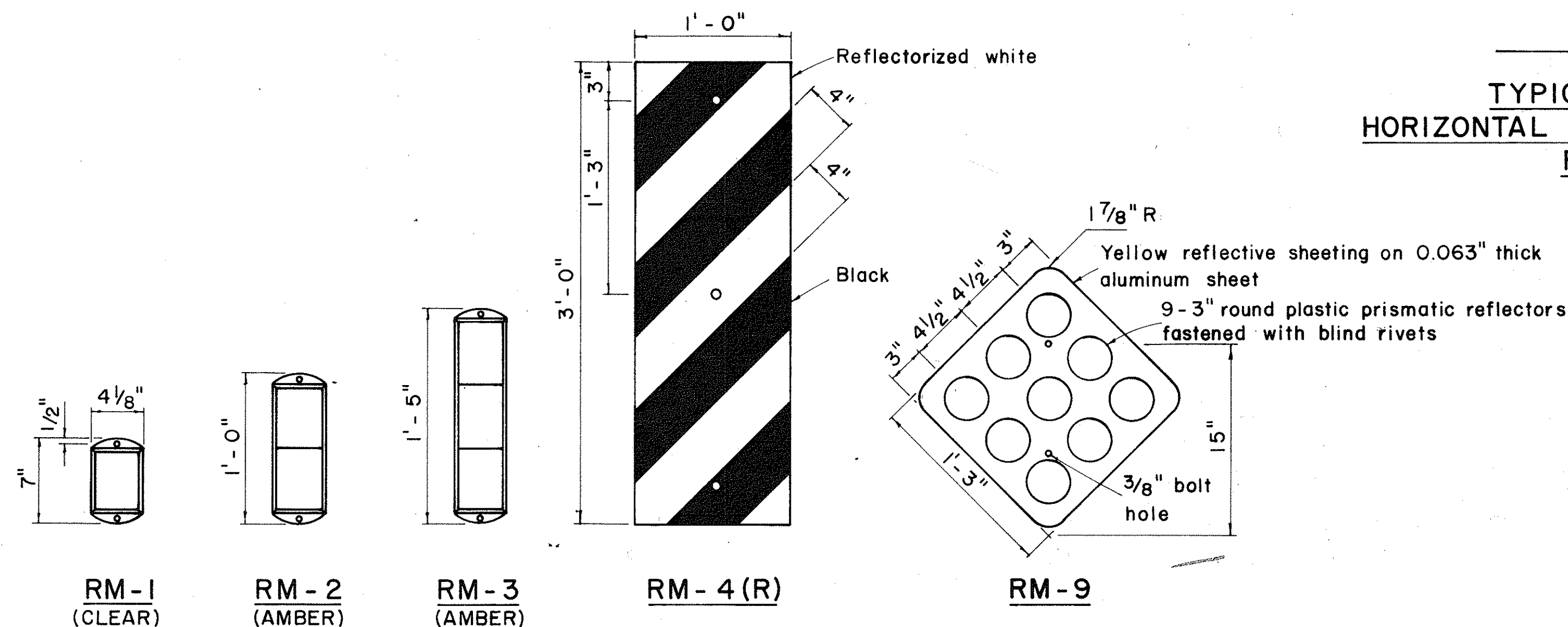
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

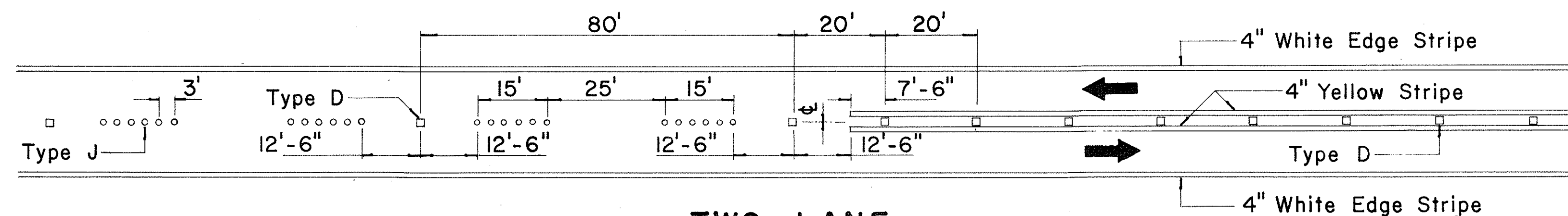
Not to scale
March, 1968

SHEET No. 7 OF 6 SHEETS DT 100

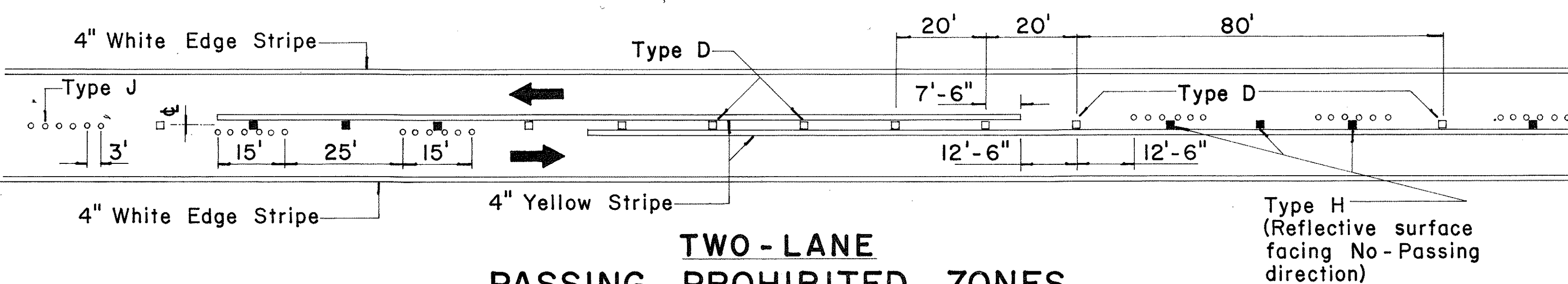


ORIGINAL PLAN	DATE
TRACED BY	
QUANTITIES BY	
CHECKED BY	

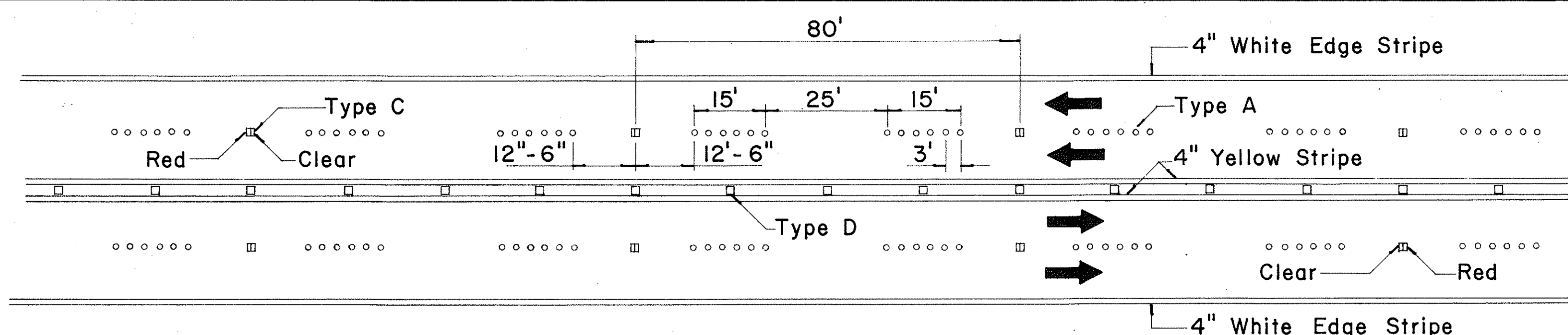
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	63A-02-72	1972	4	8



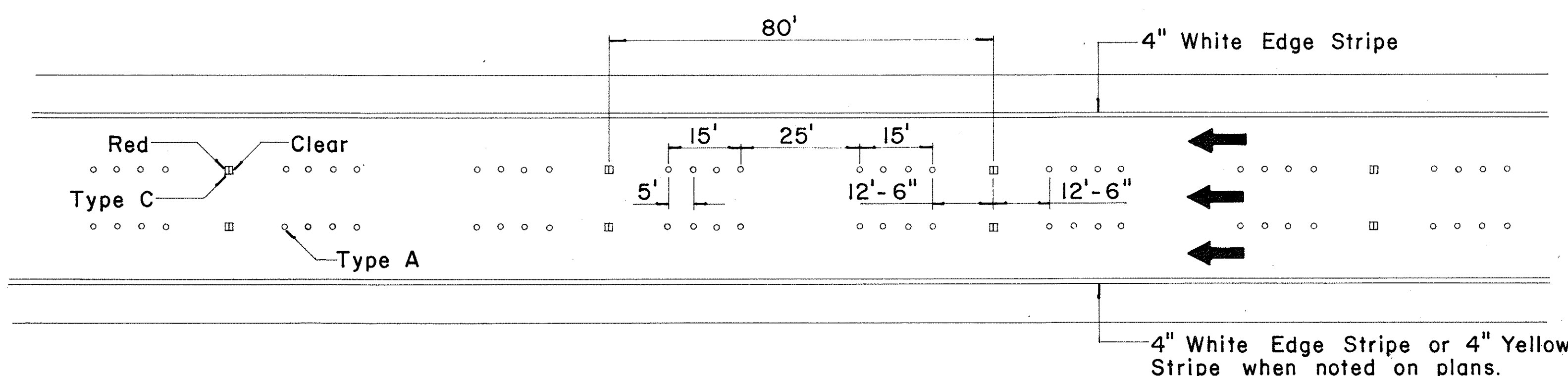
**TWO-LANE
PASSING PERMITTED AND PASSING PROHIBITED**



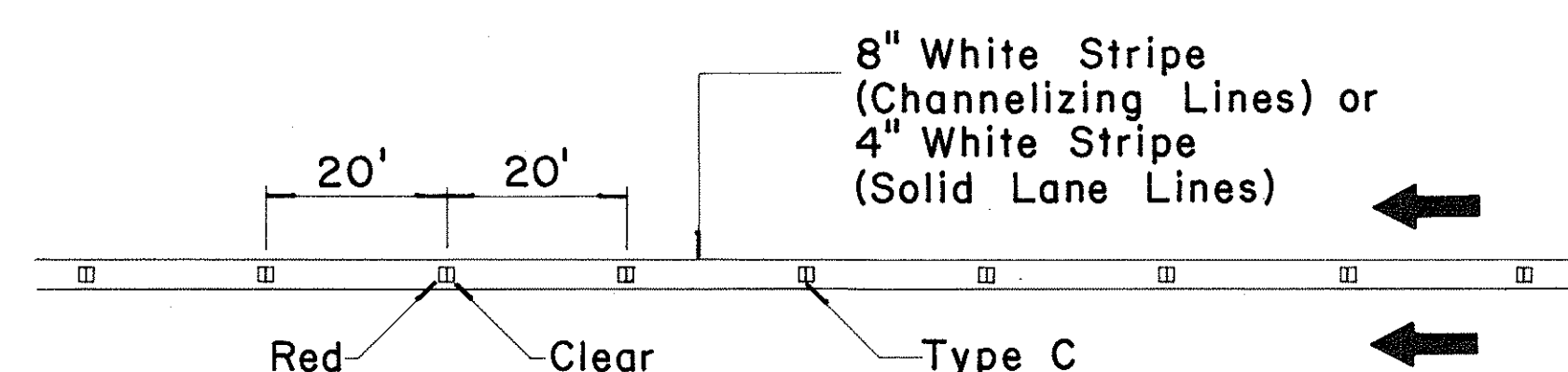
**TWO-LANE
PASSING PROHIBITED ZONES**



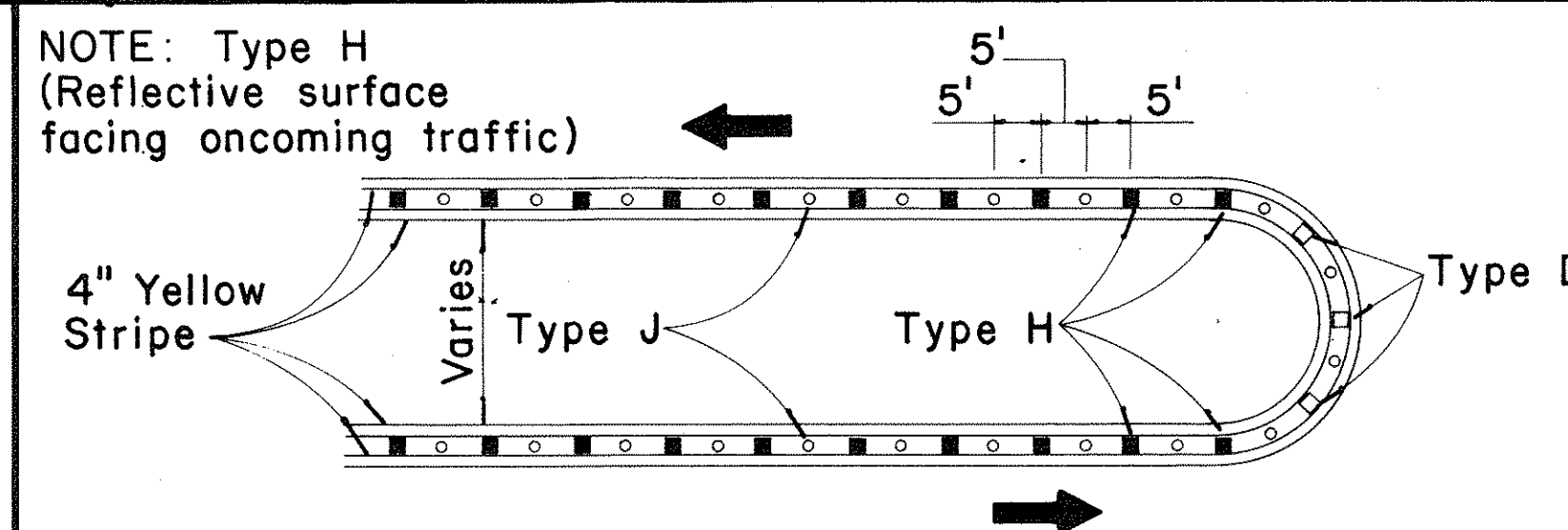
**MULTI-LANE
LANE LINES AND CENTER LINE**



FREEWAY LANE LINES



**CHANNELIZING LINES
OR SOLID LANE LINES**



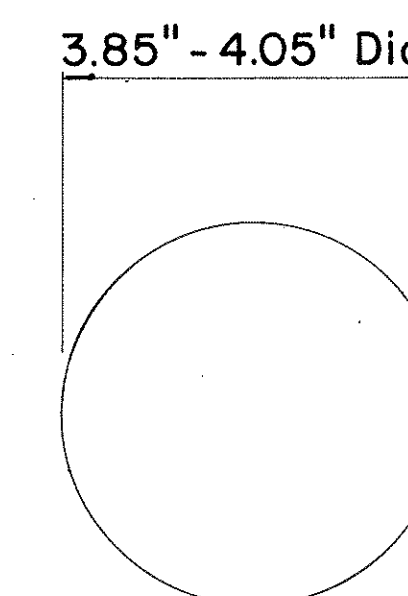
MEDIAN NOSE DELINEATION

TWO - LANE

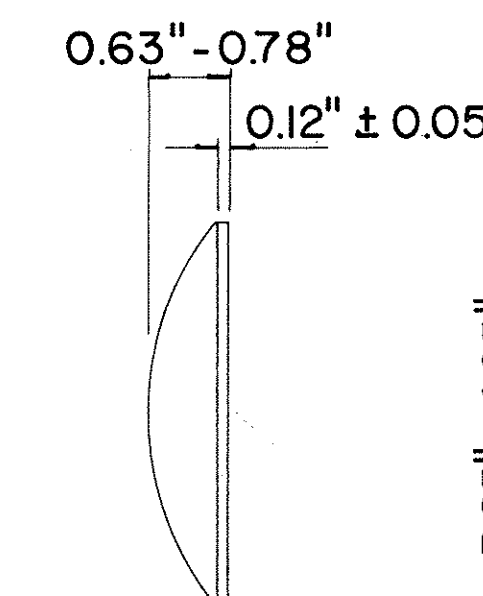
MULTI - LANE

FREEWAY

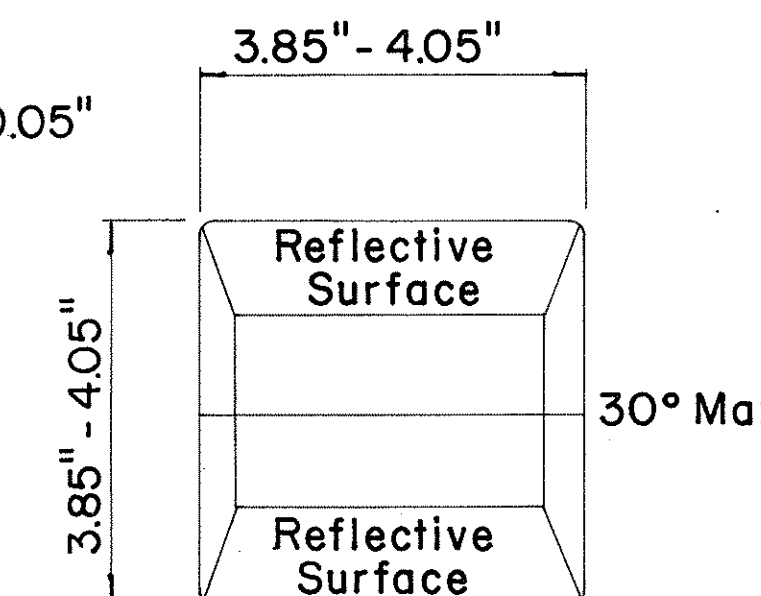
MISCELLANEOUS



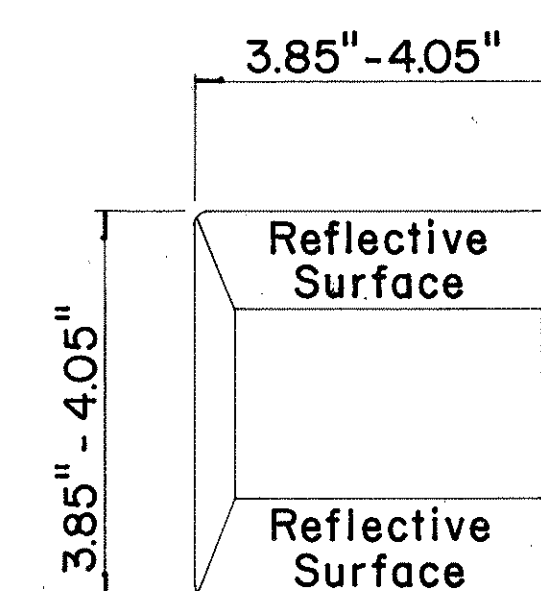
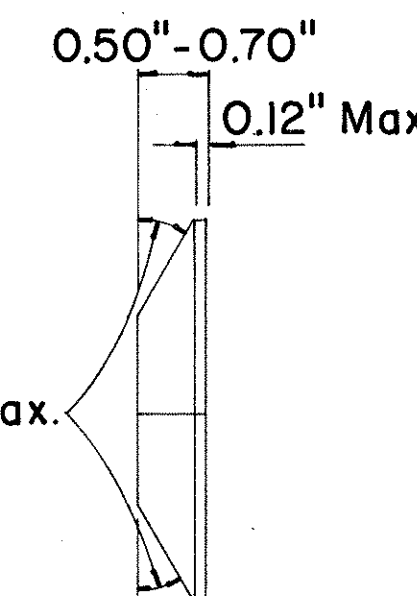
**TYPE A
NON-REFLECTIVE WHITE MARKER**



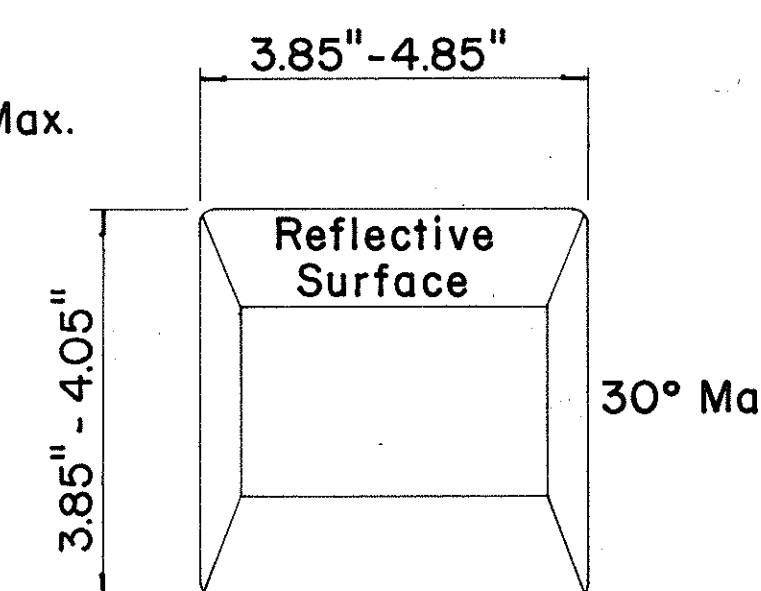
**TYPE J
NON-REFLECTIVE YELLOW MARKER**



**TYPE C
RED-CLEAR REFLECTIVE MARKER**



**TYPE D
TWO-WAY YELLOW REFLECTIVE MARKER**



**TYPE H
ONE-WAY YELLOW REFLECTIVE MARKER**

GENERAL NOTES

1. Painted stripes to be done by State forces.

APPROVAL RECOMMENDED:
Eichie Tanaka 11/18/71
TRAFFIC ENGINEER DATE

APPROVED:
Shelton S. Sato 11/18/71
ASSISTANT CHIEF, ENGINEERING DATE

No.	REVISION	APPROVED BY	DATE

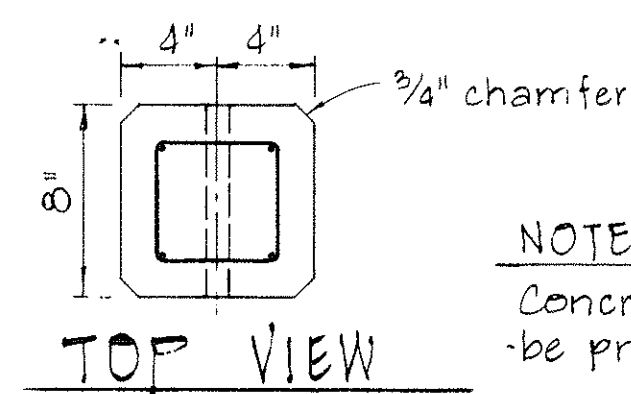
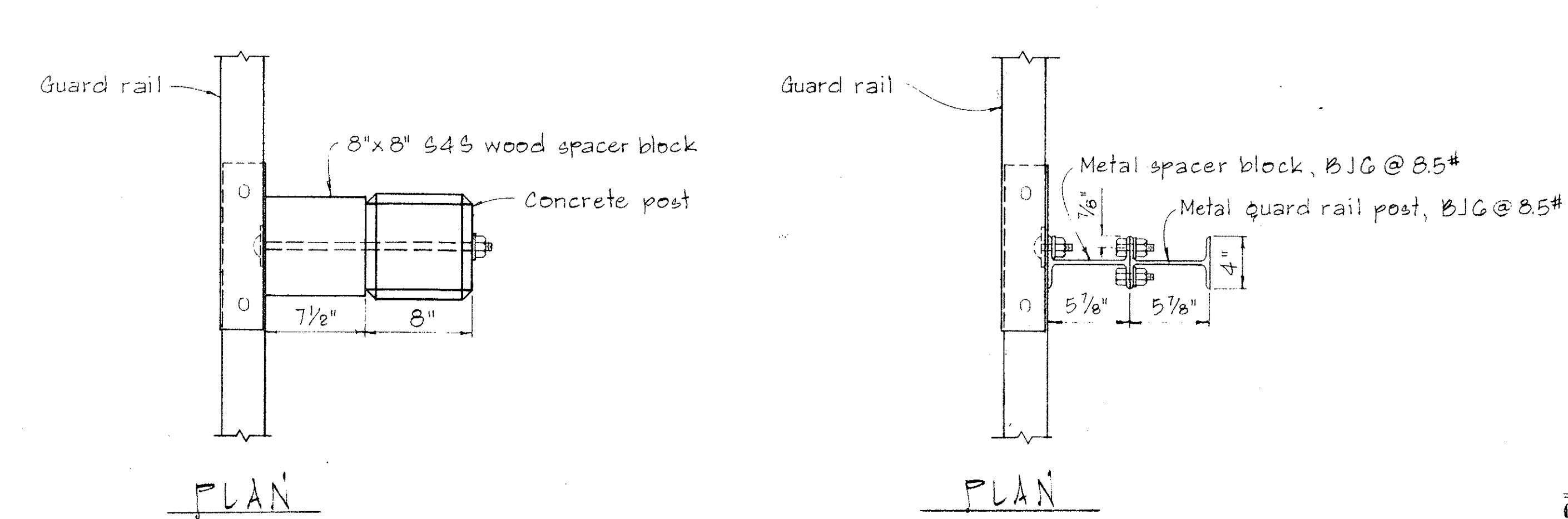
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
RAISED PAVEMENT MARKERS**

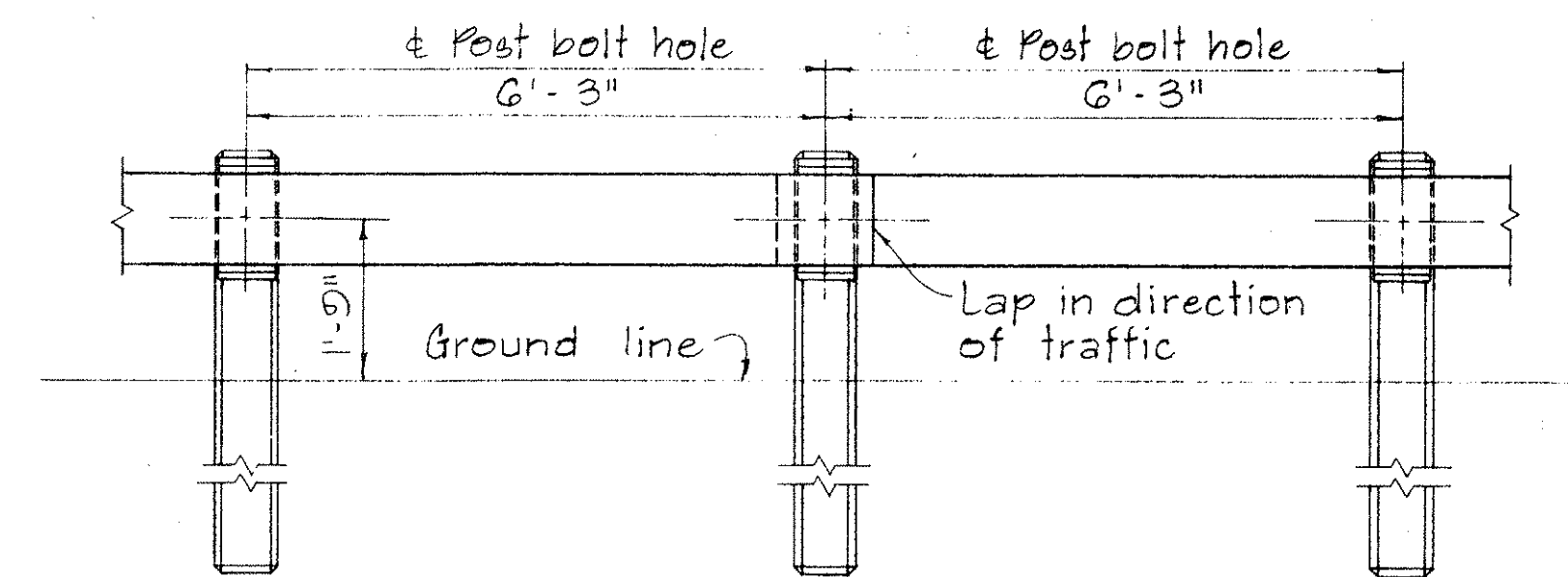
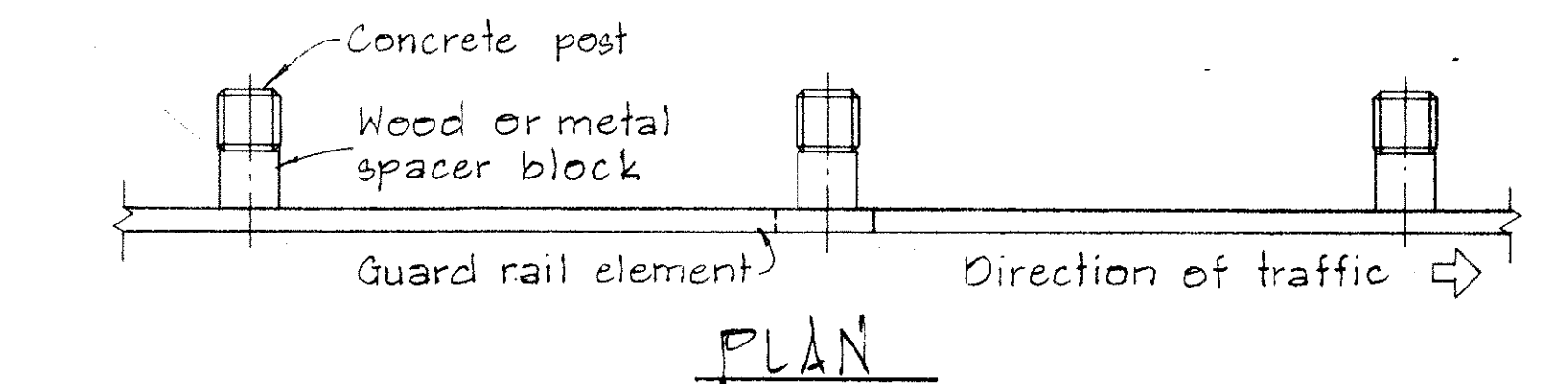
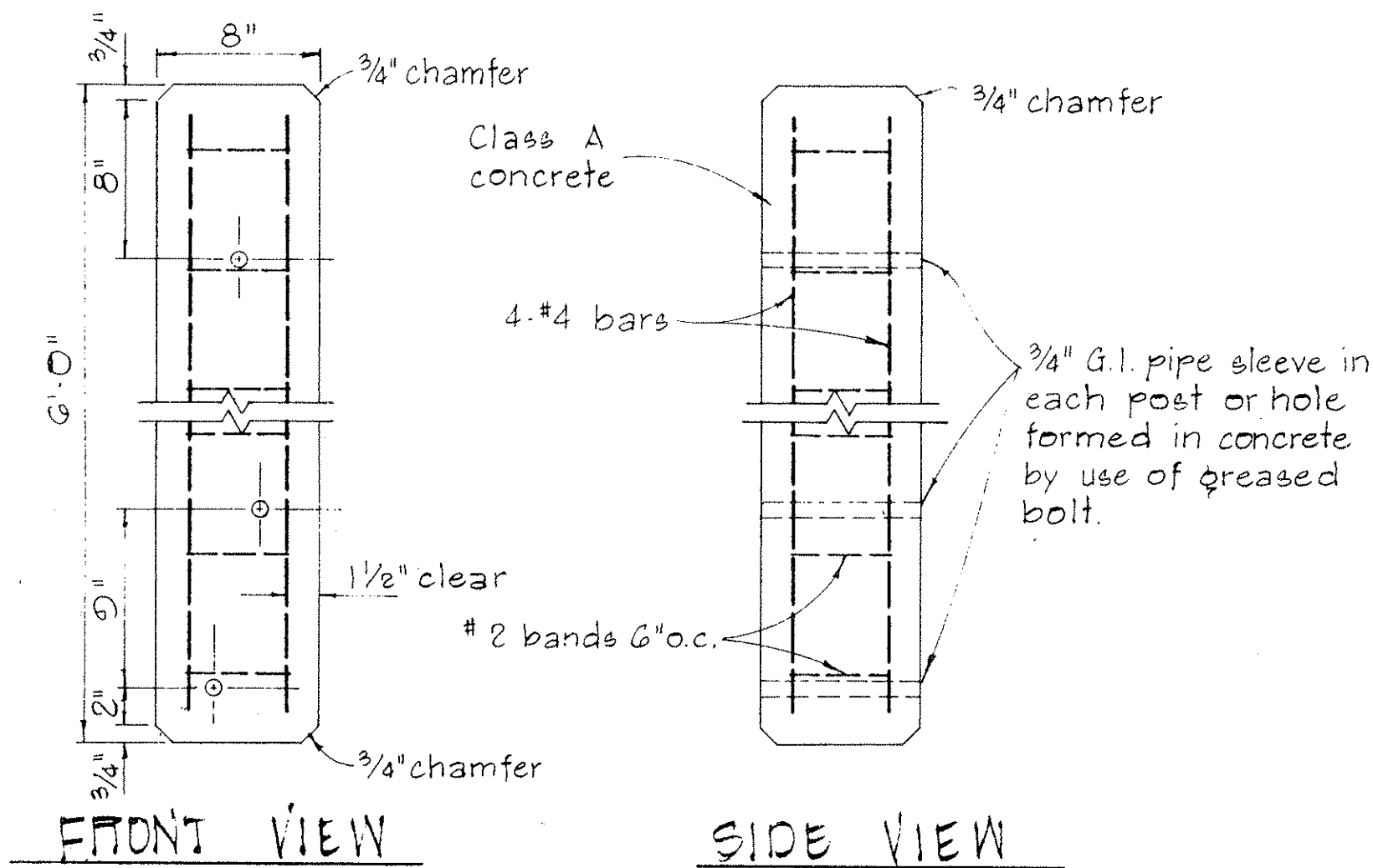
Not to Scale October 1971
SHEET No. 2 OF 6 SHEETS DT 300

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

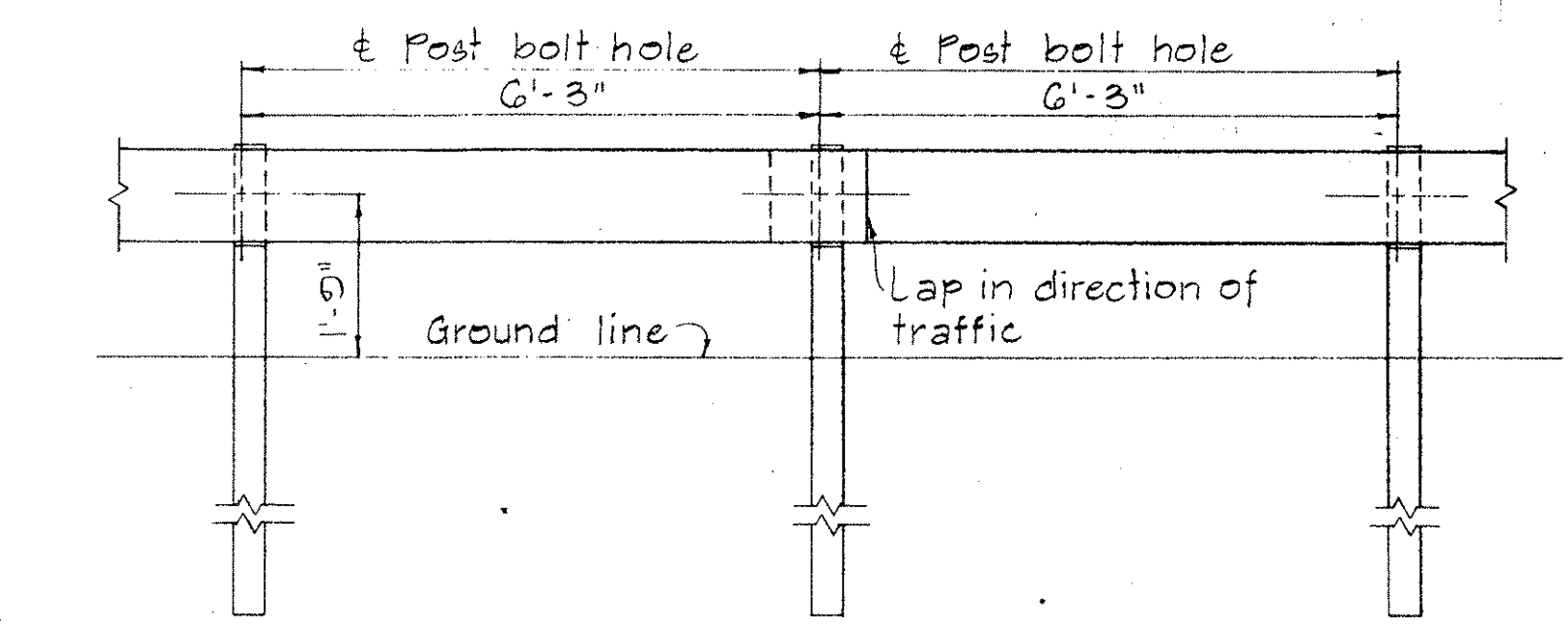
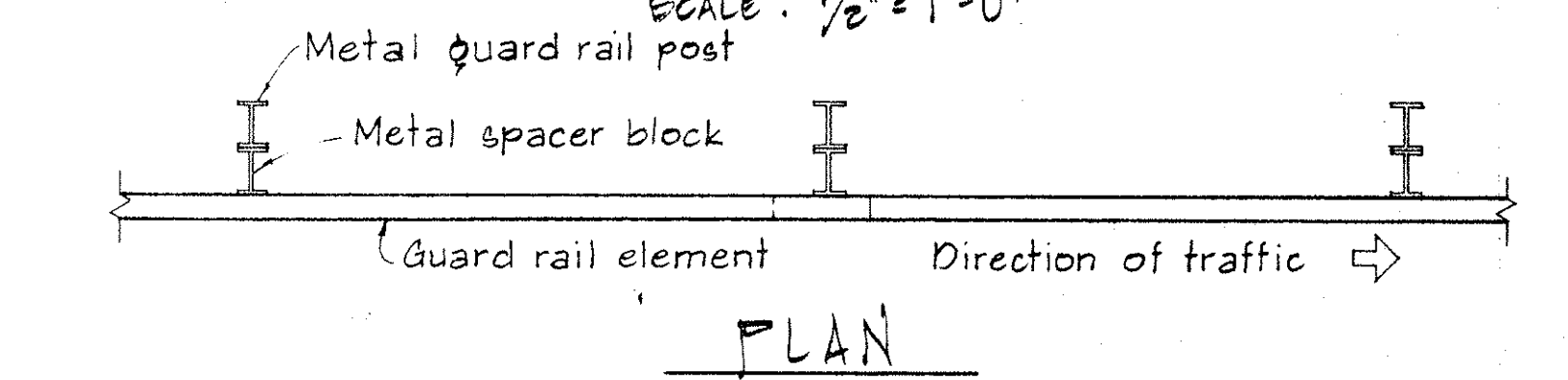
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	63A-02-72	1972	5	8



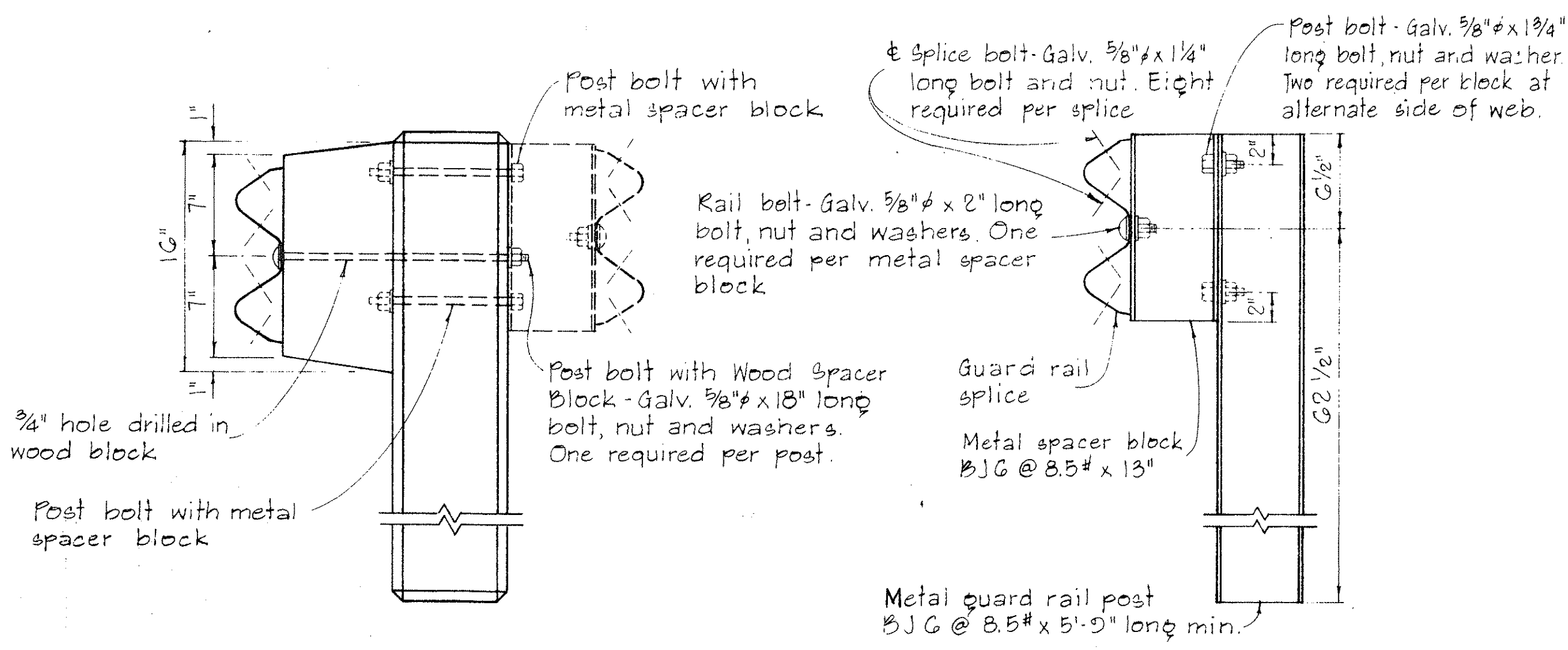
NOTE:
Concrete post shall be precast



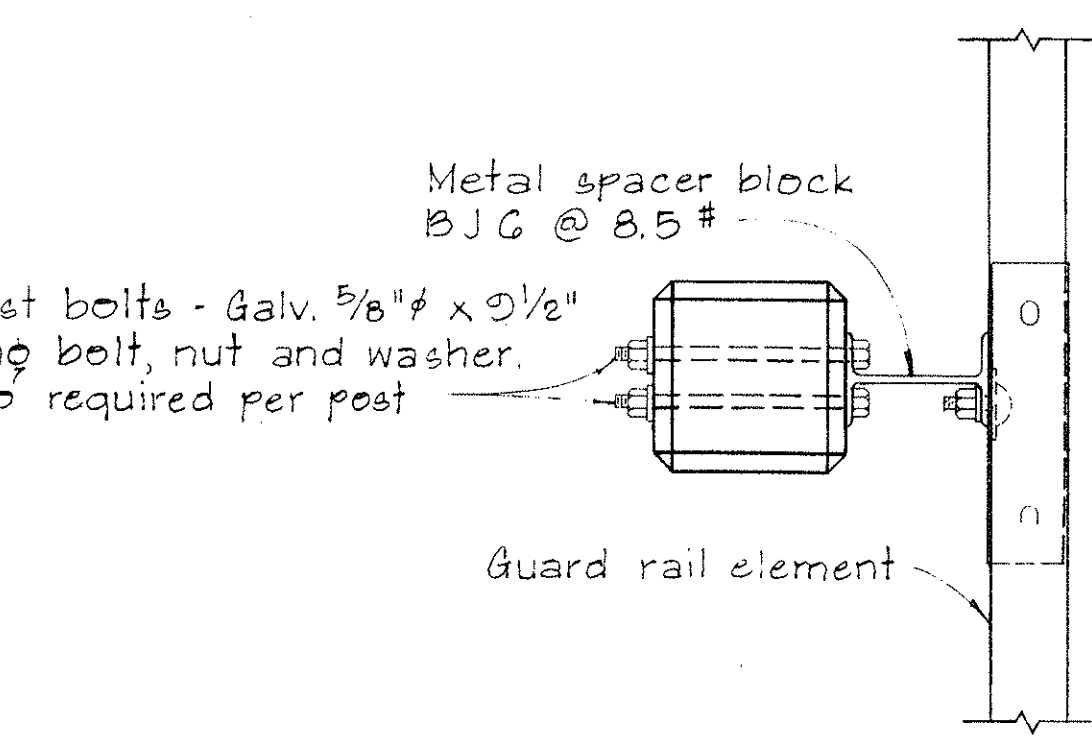
METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK.



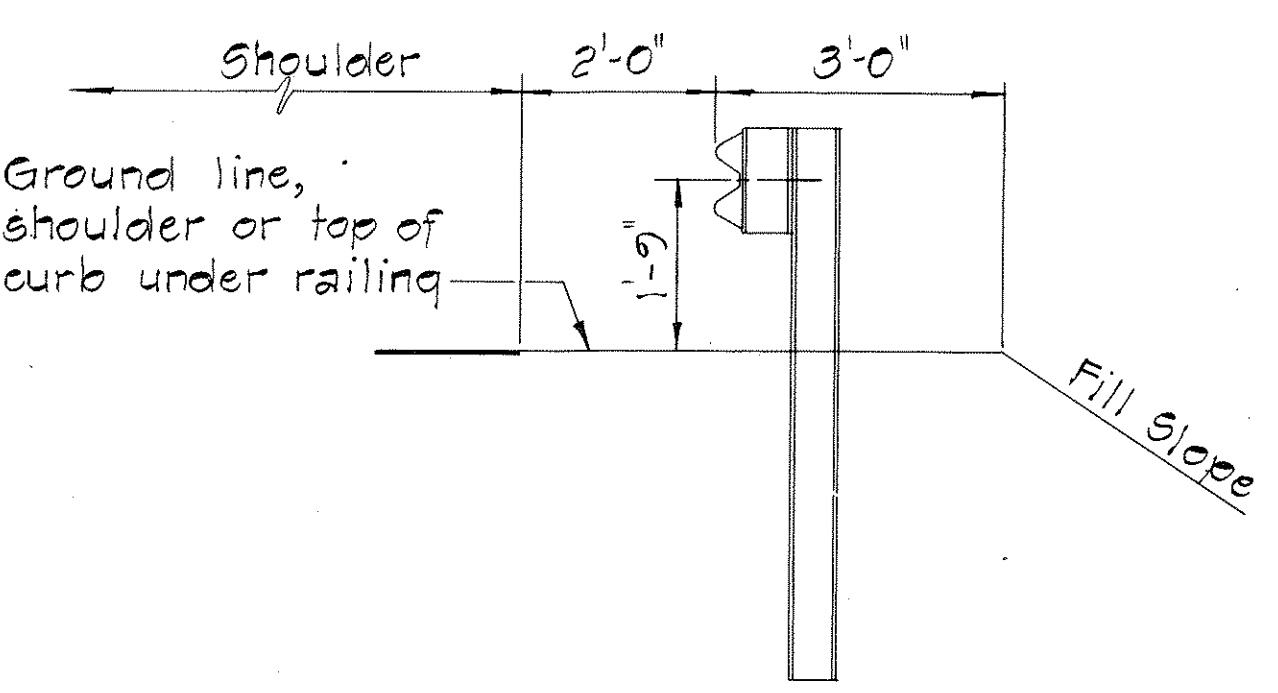
METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK



SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK



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



TYPICAL METAL GUARD RAIL DETAIL

APPROVAL RECOMMENDED:
Erich Tanaka
TRAFFIC ENGINEER
12/29/69
DATE

APPROVED:
Hubert J. Zehner
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

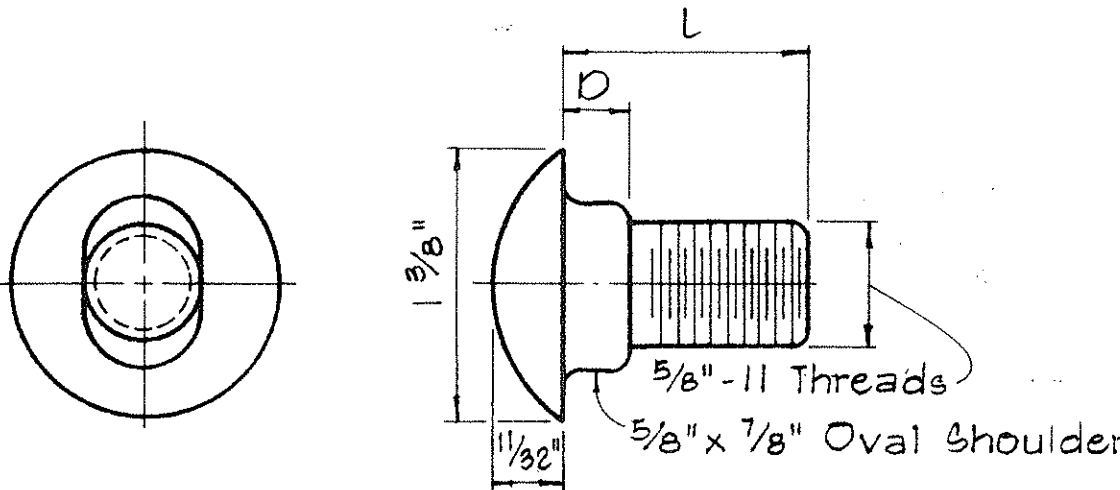
STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN
NOV. 1968

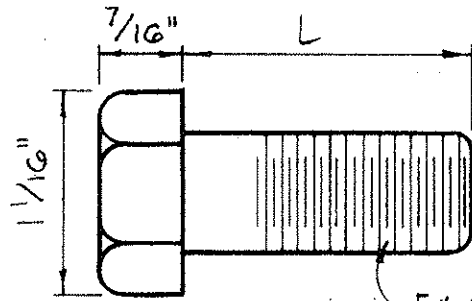
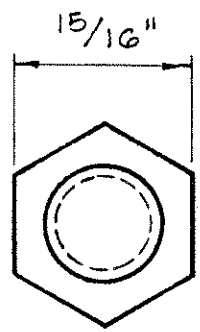
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	63A-02-72	1972	6	8

BOLT DIMENSIONS		
TYPE A BOLT		
Splice Bolt	5/16"	1 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"

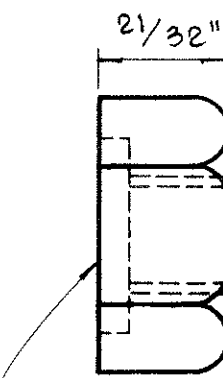
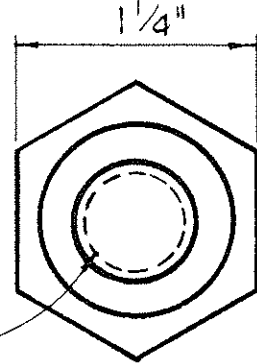
BOLT DIMENSIONS		
TYPE B BOLT		
Post Bolt for Conc. Post w/ Metal Blocks		5 1/2"
Post Bolt for Metal Post w/ Metal Block		1 3/4"



TYPE A BOLT



TYPE B BOLT



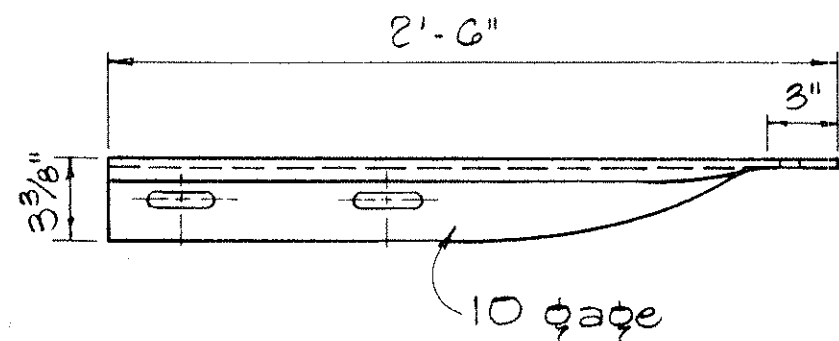
5/32" Deep x 1 5/16" Dia. C' Bore for Type A Bolt only. Plain nut for Type B Bolt.

HEXAGON NUT

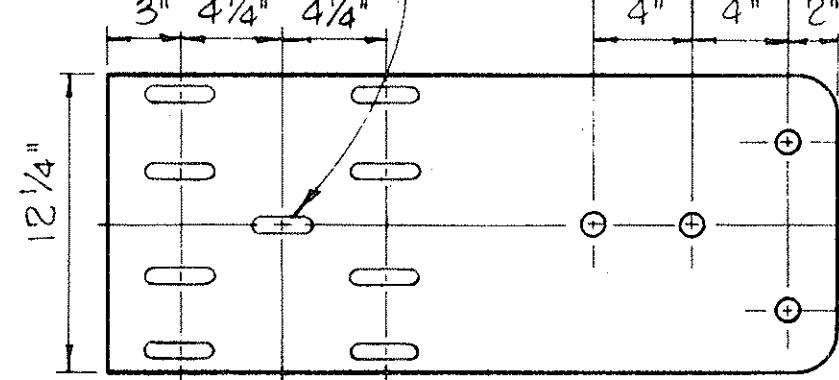
SPICE RAIL AND POST BOLTS

Scale: Full Size

Scale: Full Size



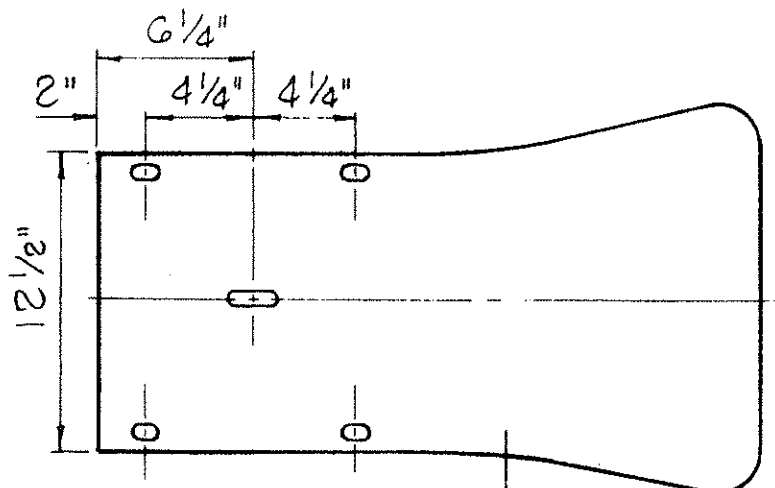
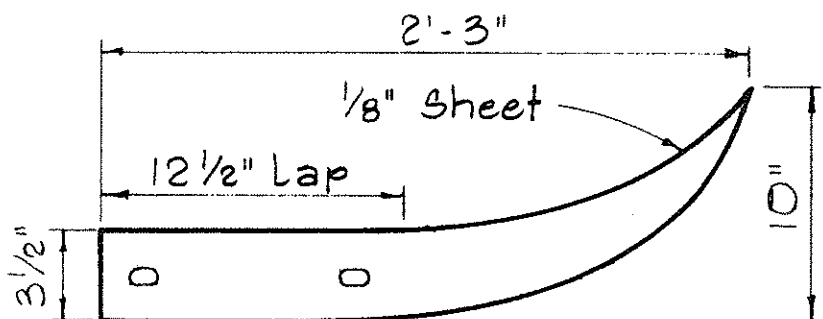
3/4" x 2 1/2" Post bolt slot (bolt as required) 3" 4 1/4" 4 1/4"



For Type A Splice Bolts

SPECIAL END SHOE

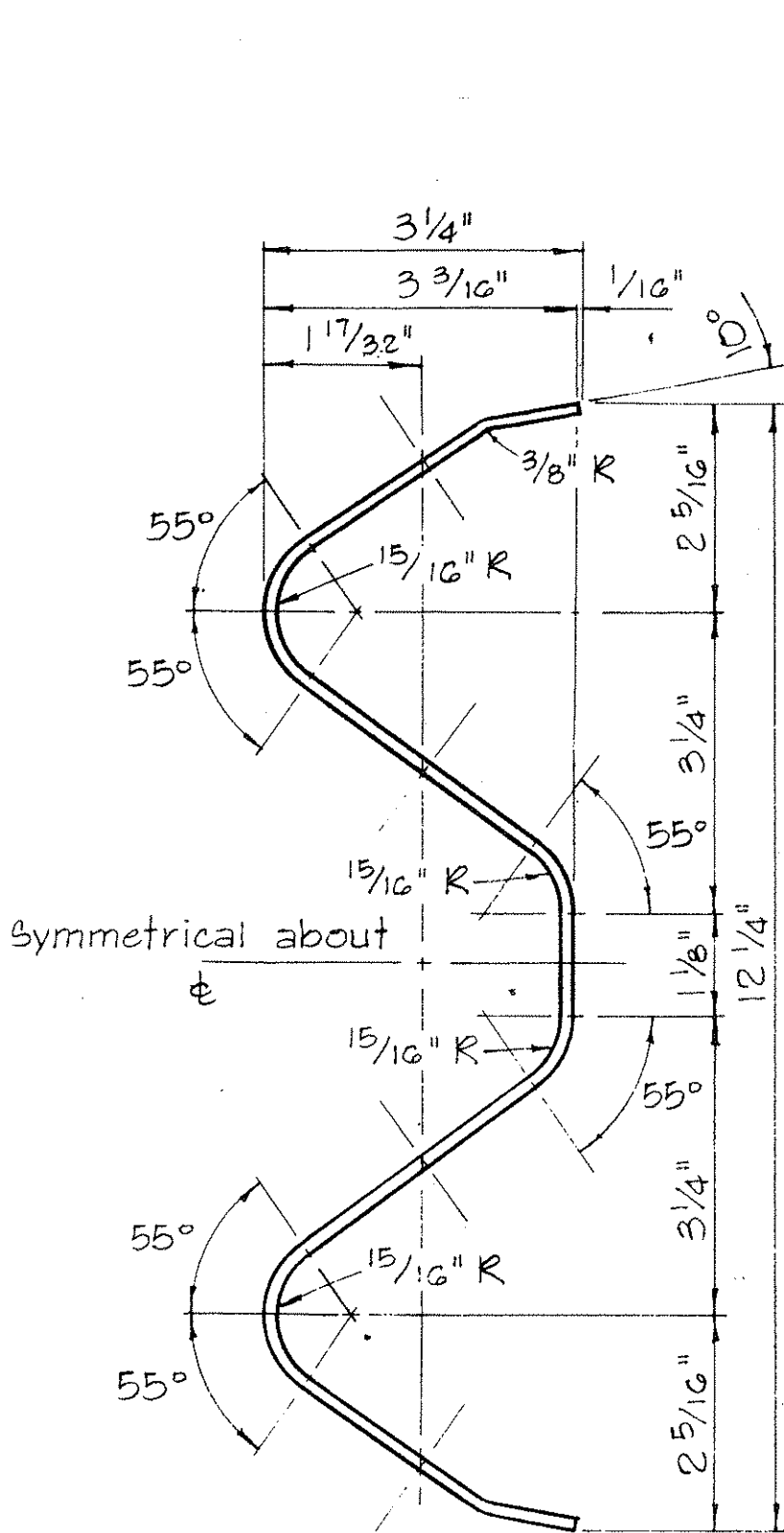
Scale: 1 1/2" = 1'-0"



Same as rail element section

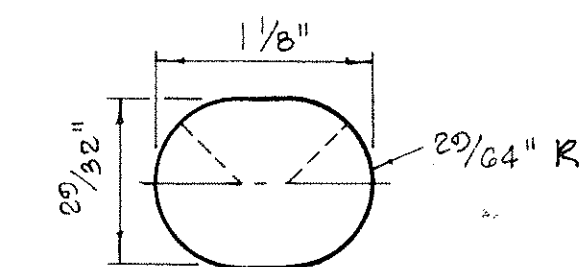
FLARED END

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

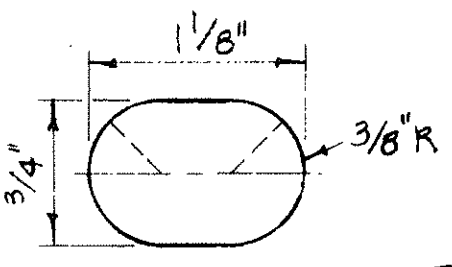


RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

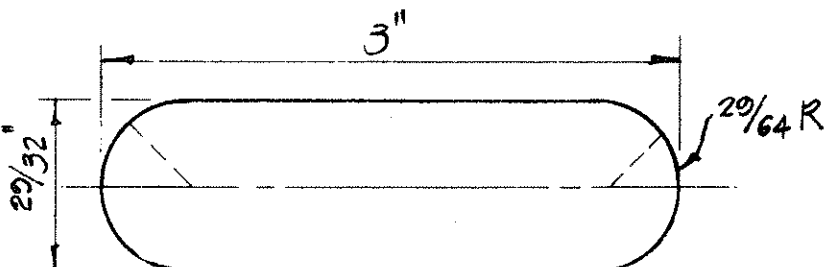


SPICE BOLT SLOT

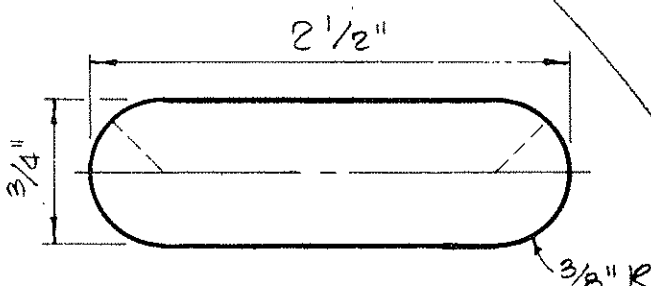


SPICE BOLT SLOT FOR ALL ENDS

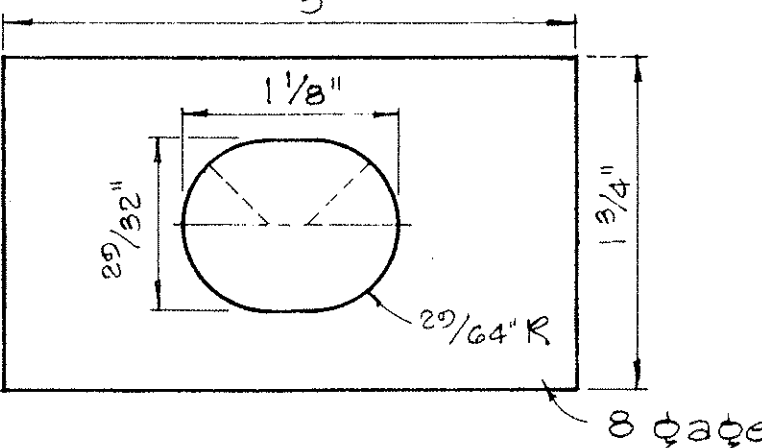
Scale: Full Size



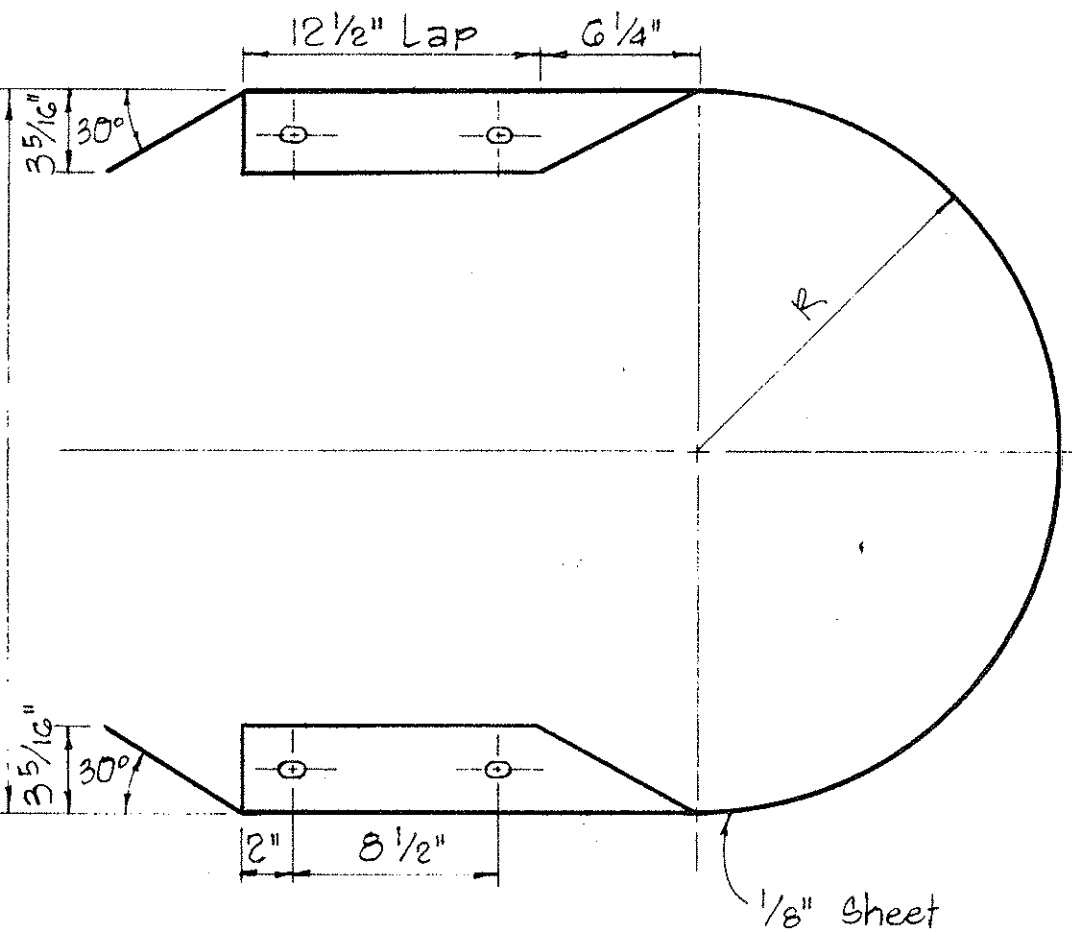
SPICE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



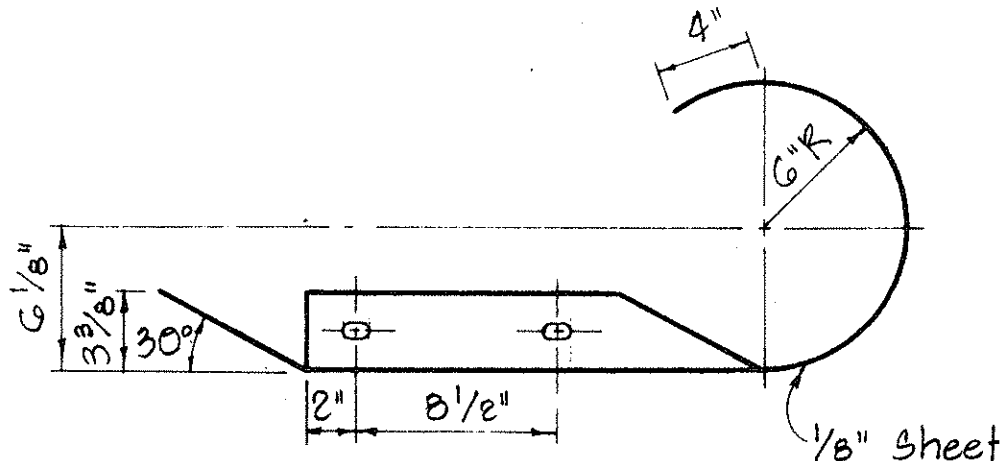
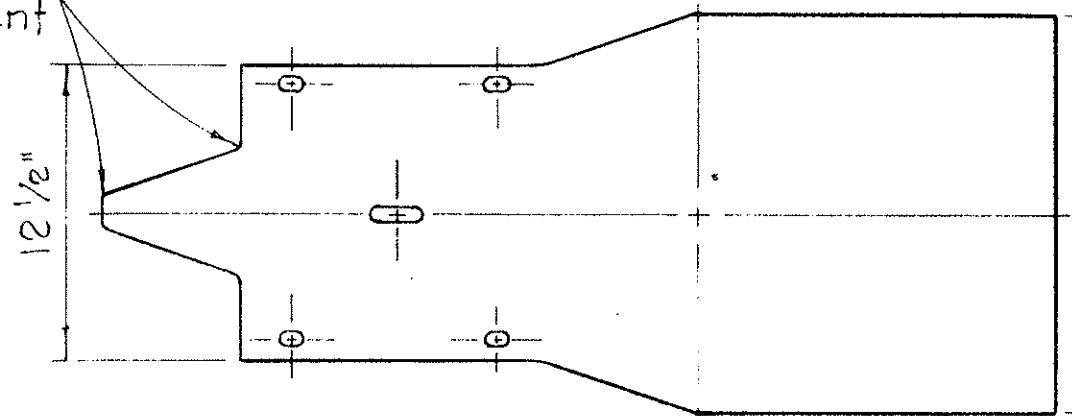
RAIL WASHER



MEDIAN END

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

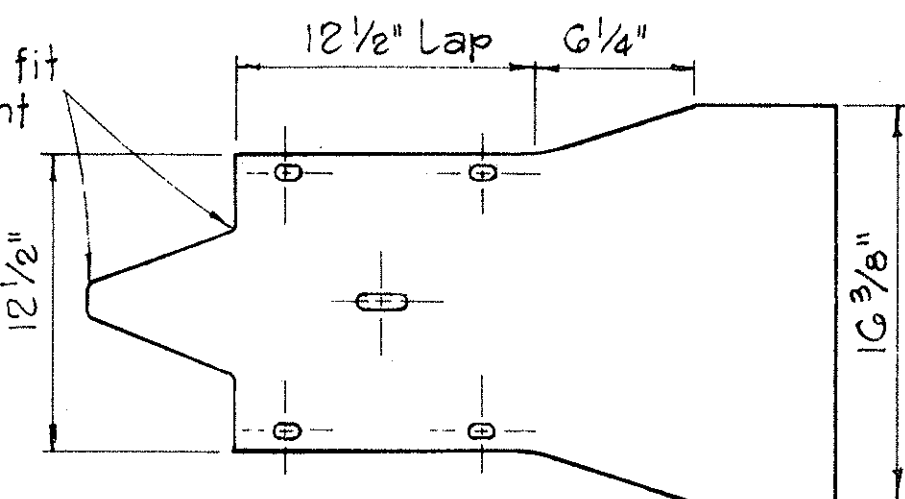
Shape to fit rail element



CURVED END

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

Shape to fit rail element

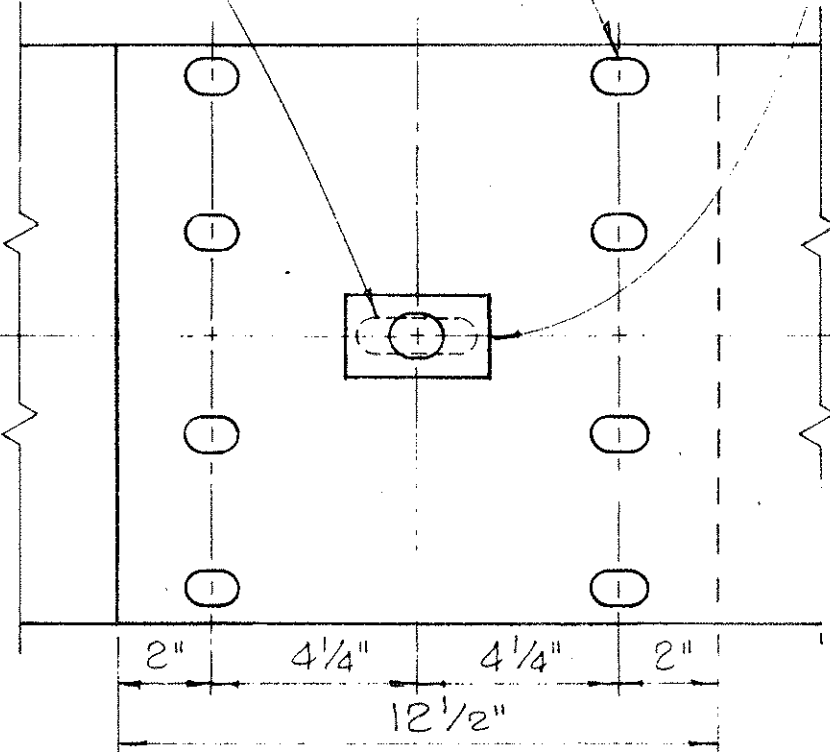


NOTES:

1. H.S. Bolts shall conform to the requirements of ASTM A 325.
2. Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AASHTO 180.

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



RAIL SPICE

Scale: 3" = 1'-0"

NO	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:	12/29/63
TRAFFIC ENGINEER	DATE
APPROVED:	12-30-63
ASSISTANT CHIEF, ENGINEERING	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

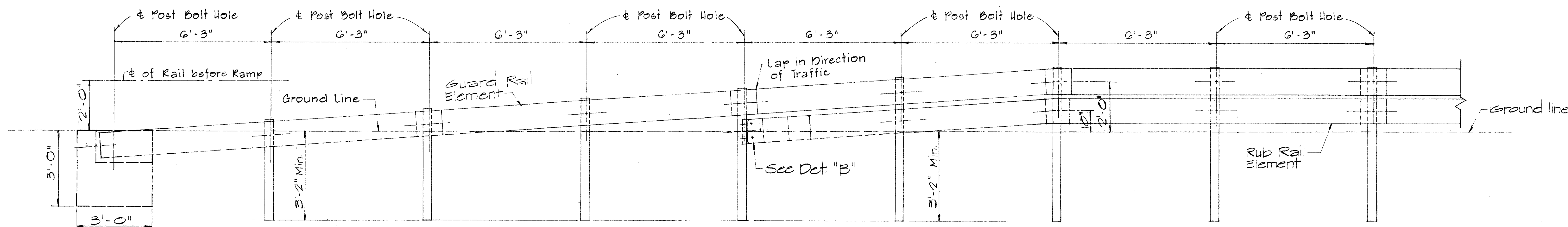
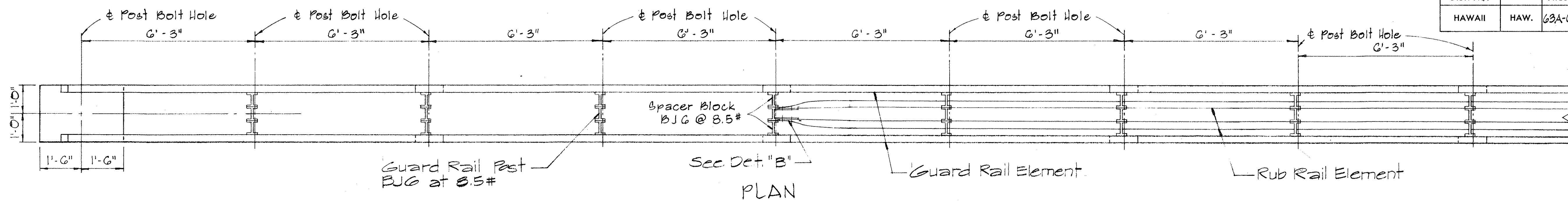
STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted August, 1968

SHEET No. 4 OF 6 SHEETS DT 501

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	

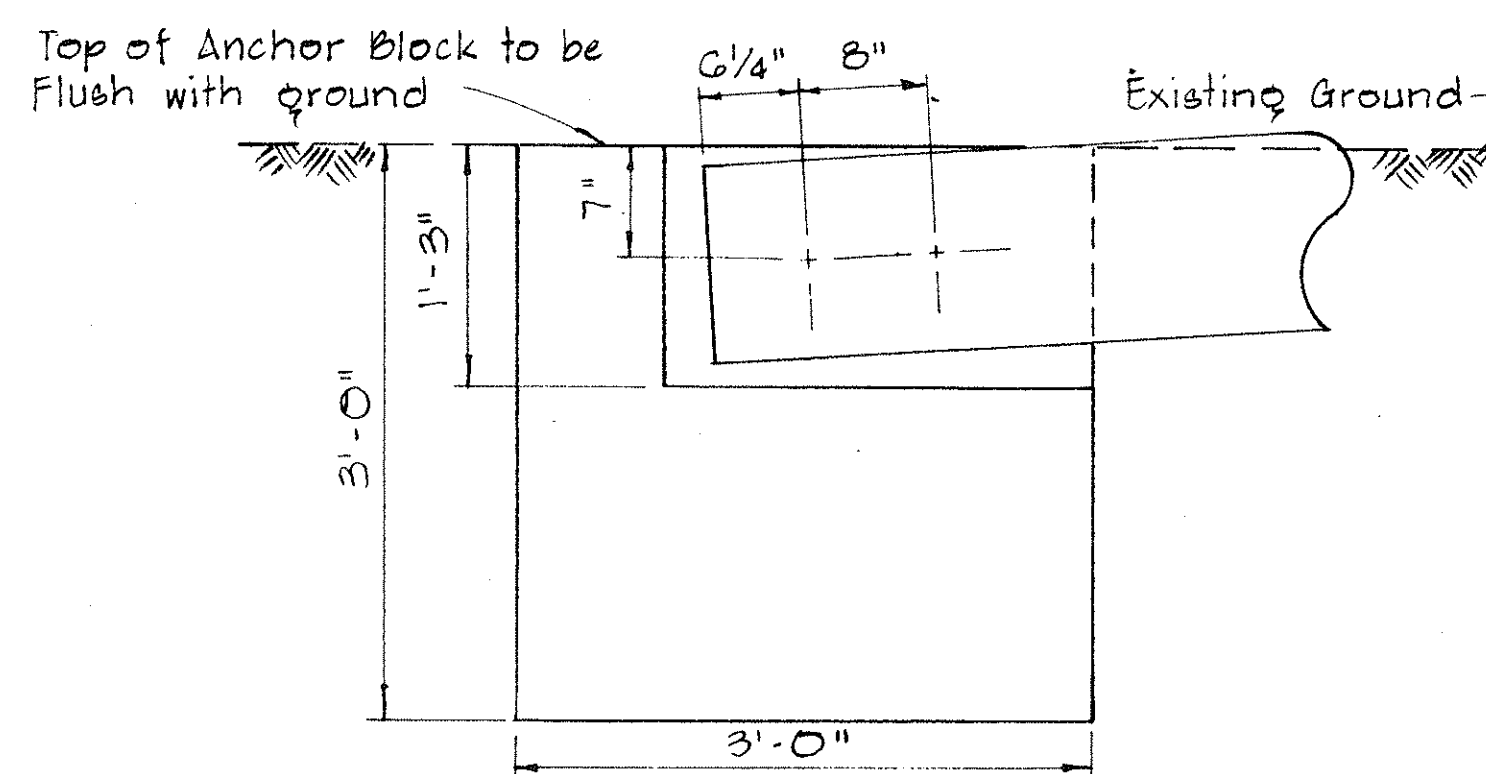
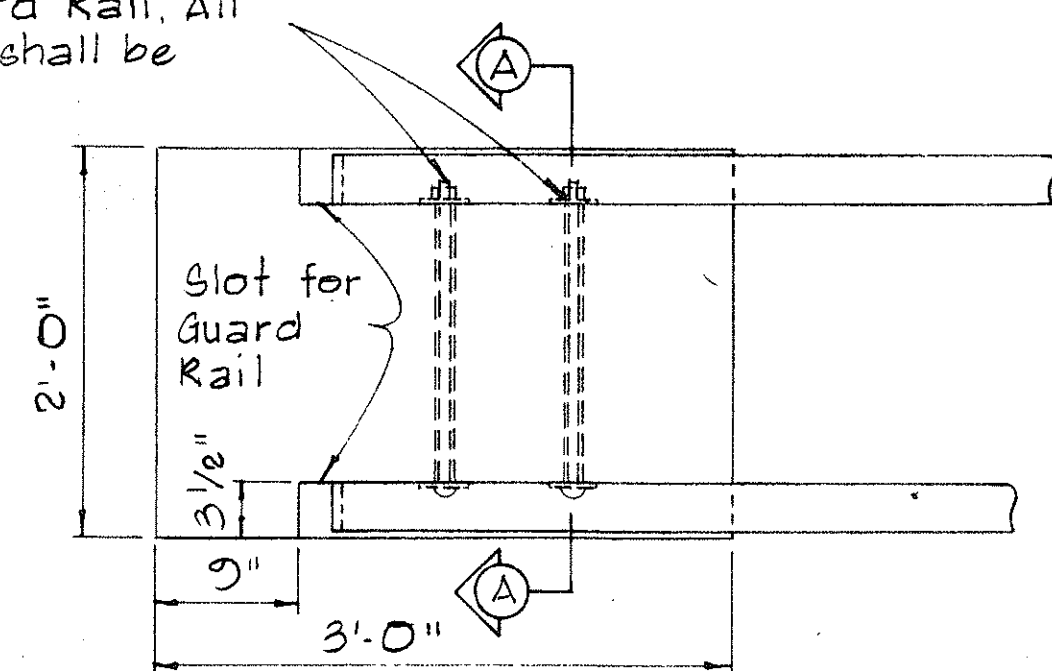
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	63A-02-72	1972	7	8



STRAIGHT APPROACH - RAMP END ANCHORAGE (MEDIAN)

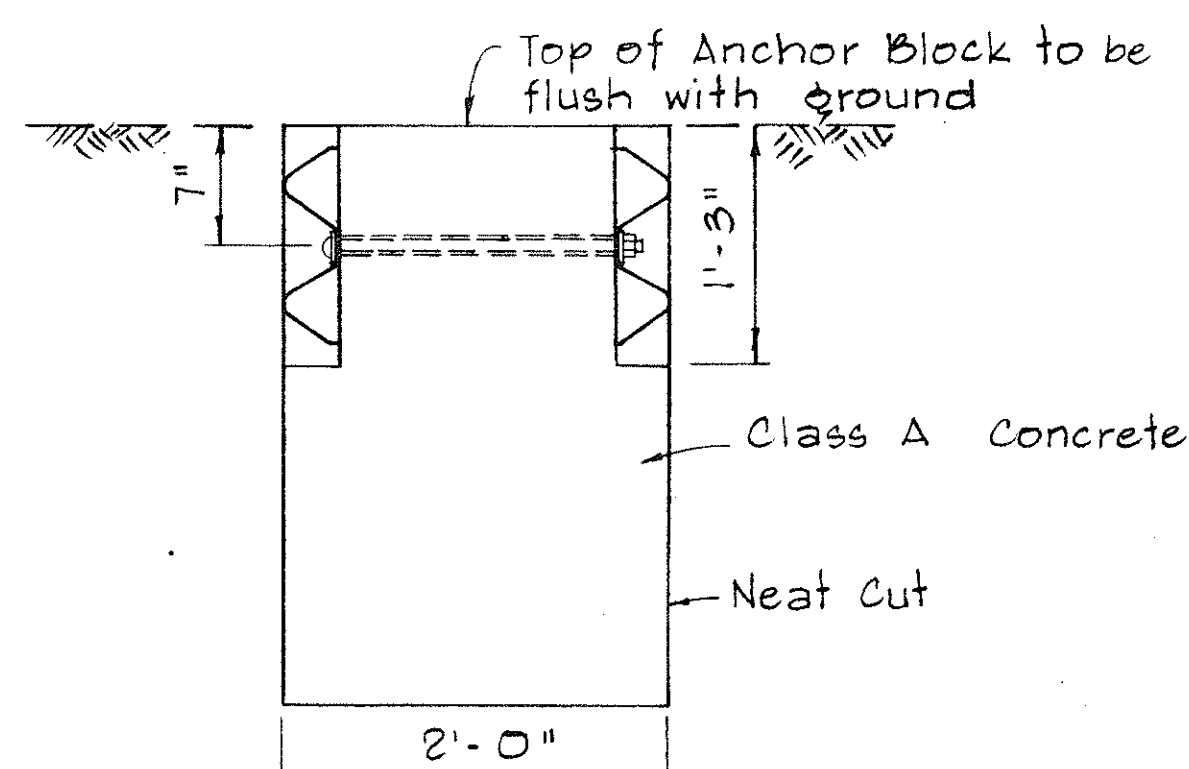
Scale: 1/2" = 1'-0"

5/8" Bolts with 3/4" G.I. Pipe Sleeve in each hole. Incident to Metal Guard Rail. All Metal Pieces shall be Galvanized.



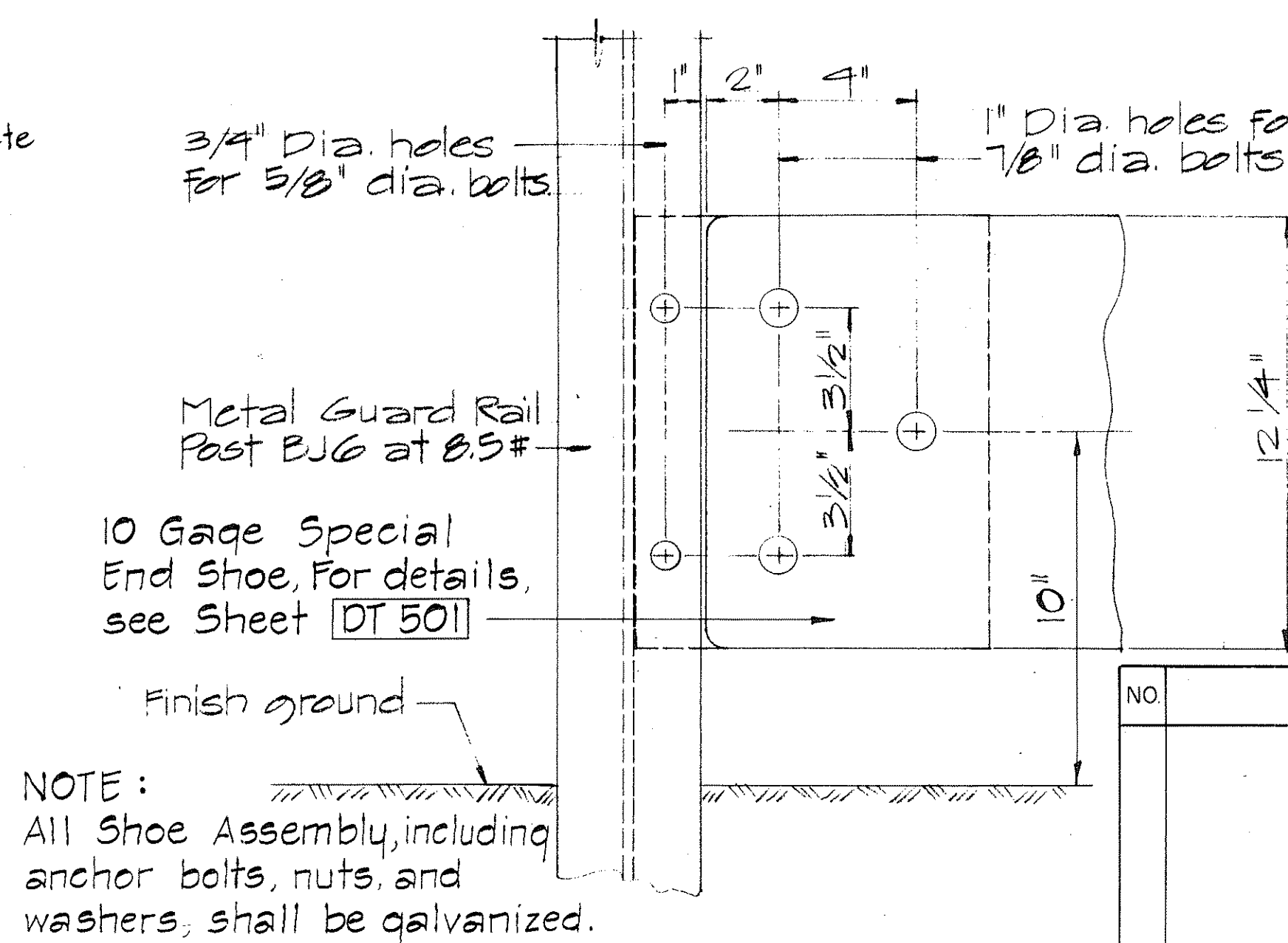
CONCRETE ANCHOR BLOCK FOR RAMP END

Scale: 1" = 1'-0"



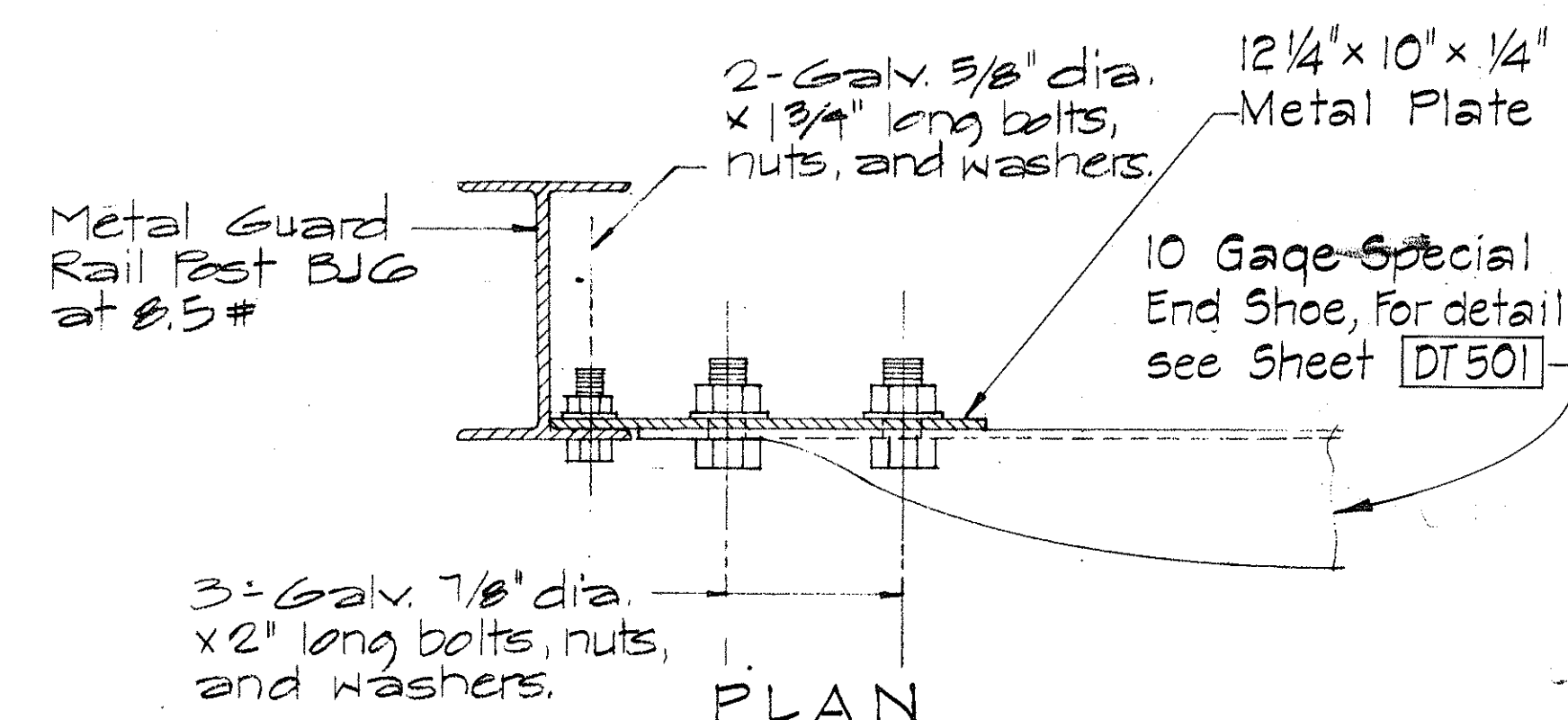
SECTION A-A

NOTE: Concrete, Excavation, and Miscellaneous Appurtenances necessary to anchor the Guard Rail Ends, shall be incidental to the Metal Guard Rail.



ELEVATION DETAIL "B"

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



APPROVAL RECOMMENDED:
TRAFFIC ENGINEER

12/29/69
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING

12-20-69
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAIL
GUARD RAIL
RAMP END ANCHORAGE

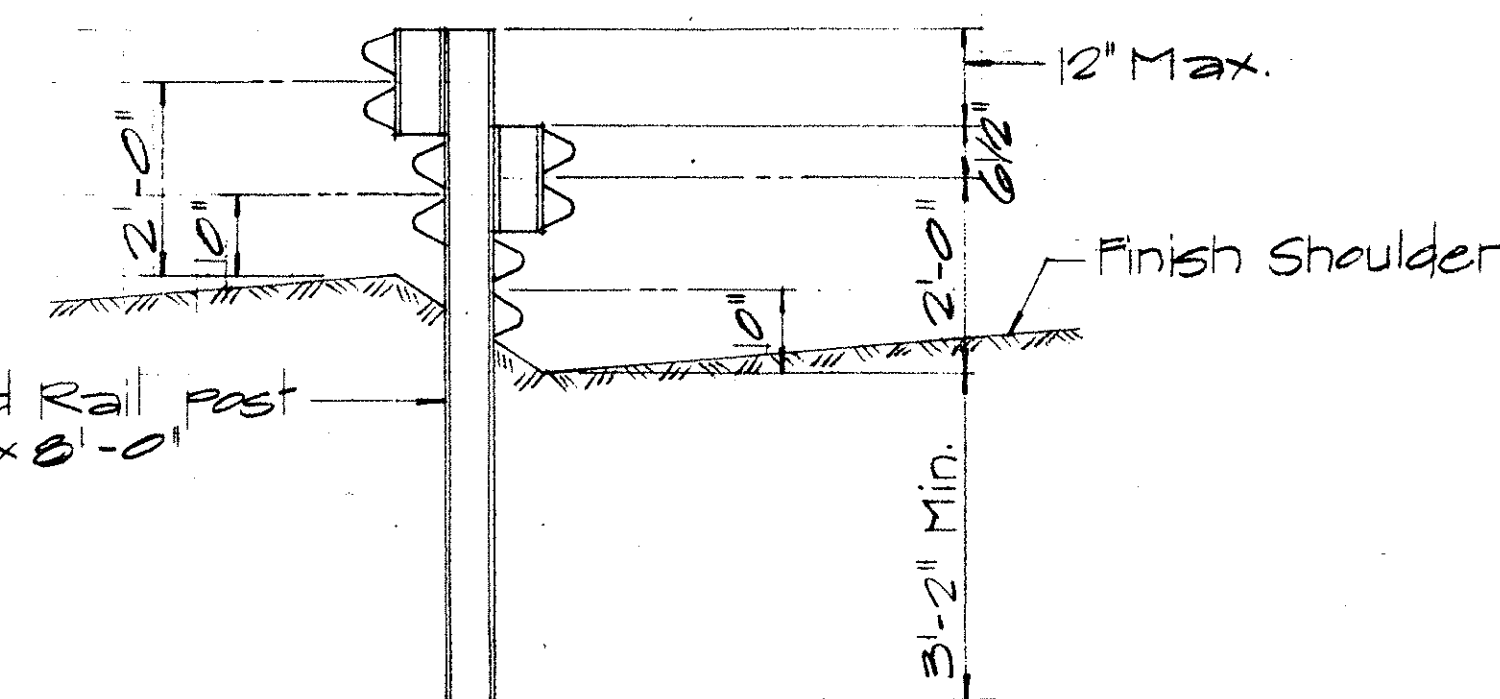
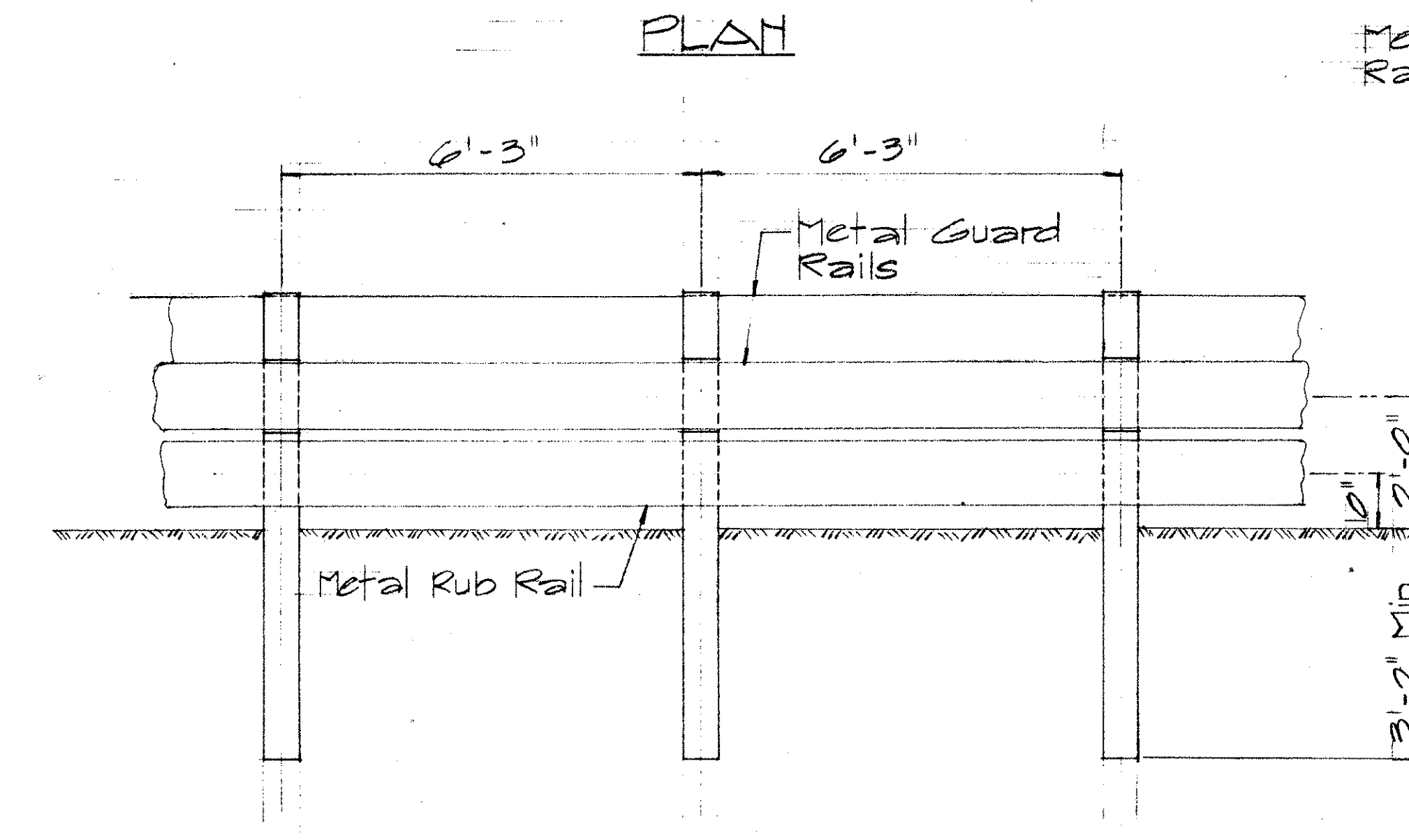
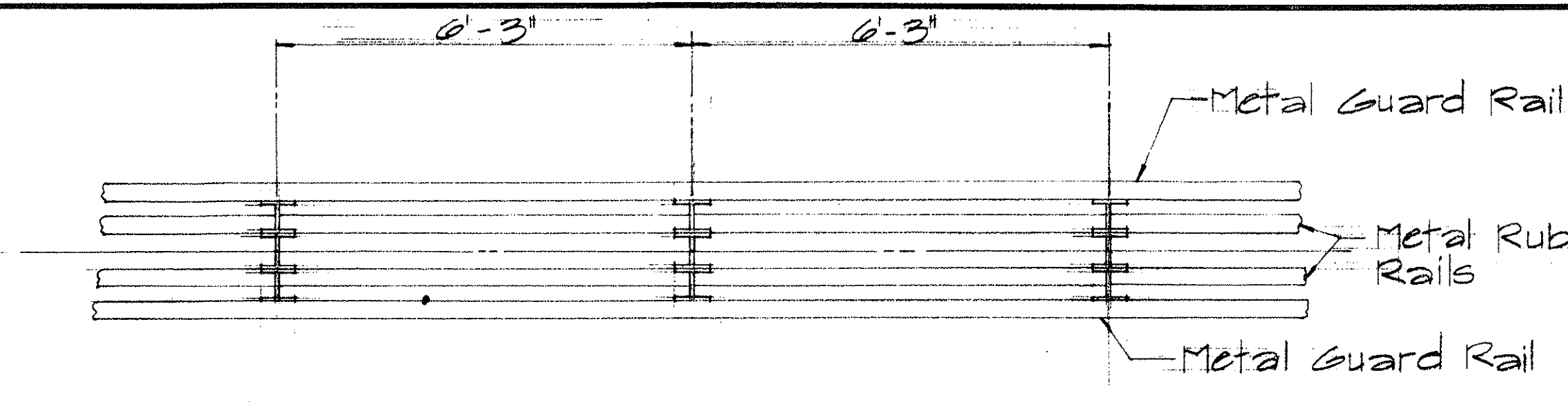
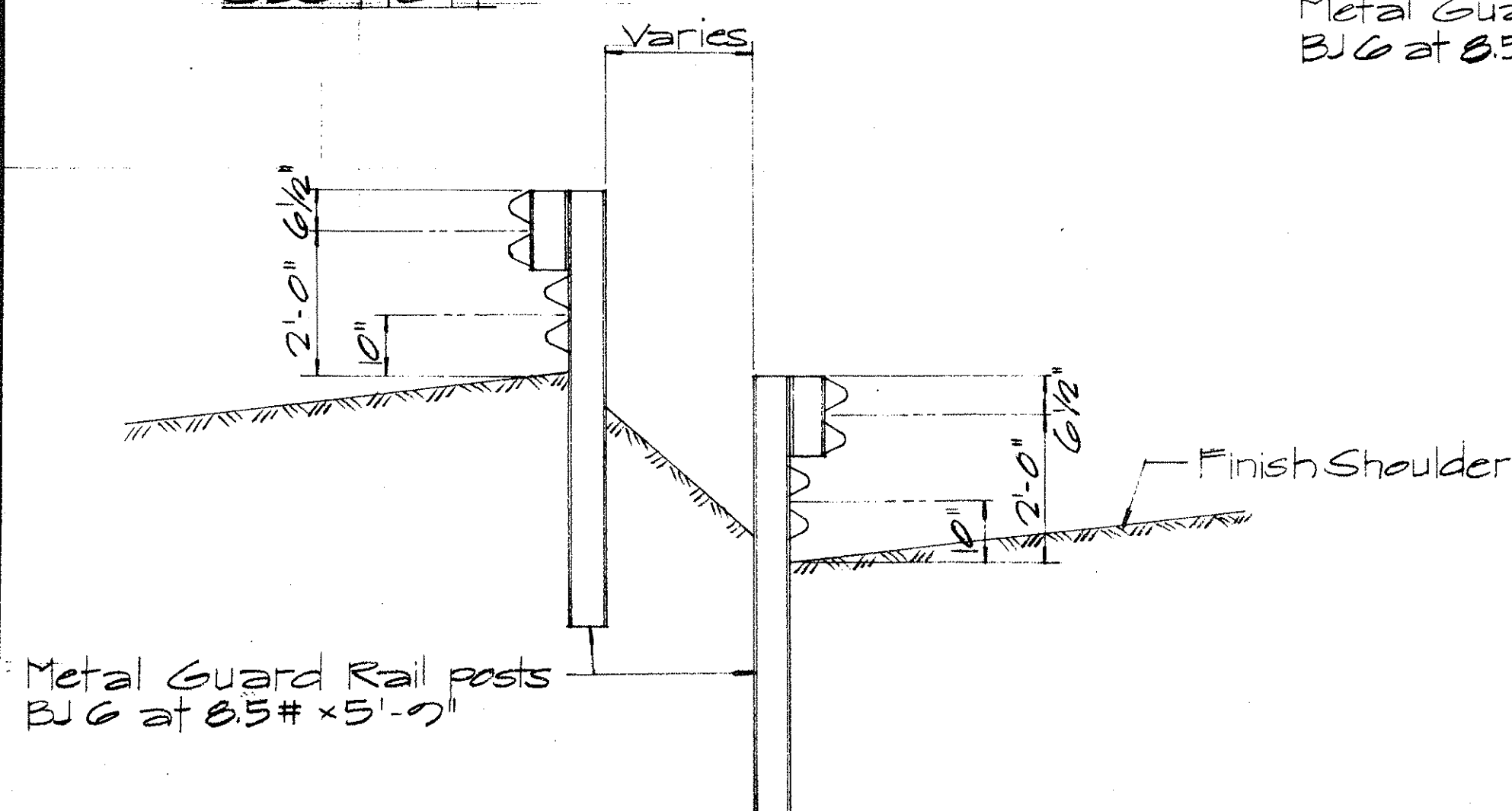
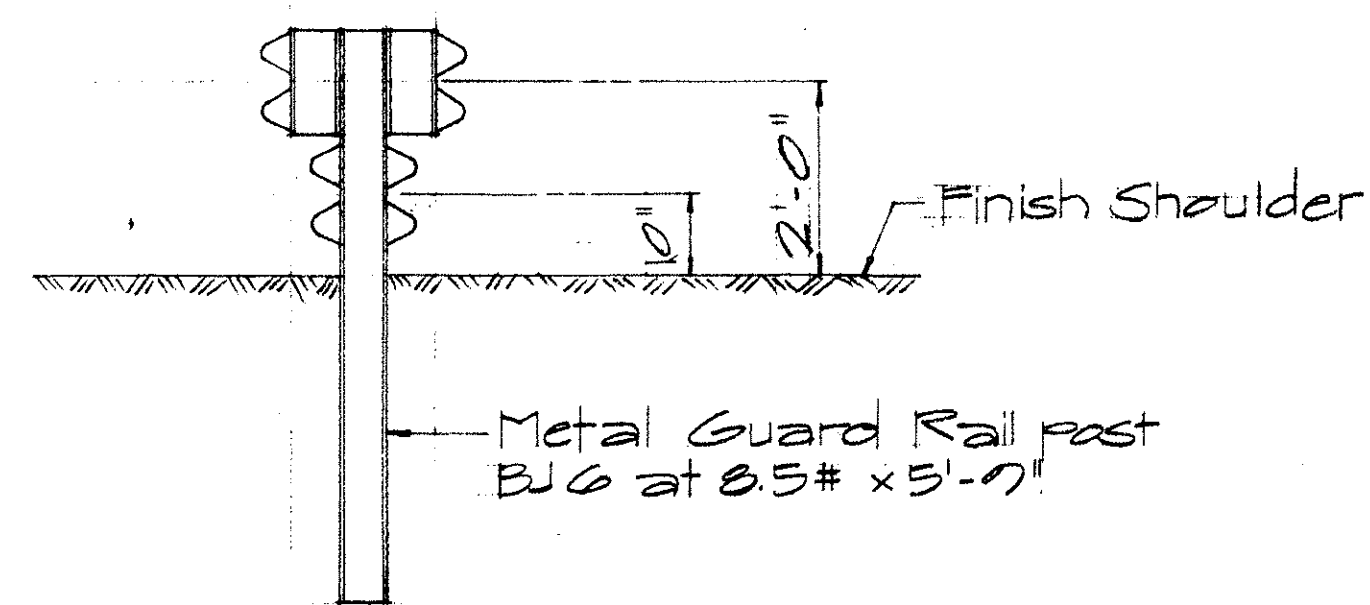
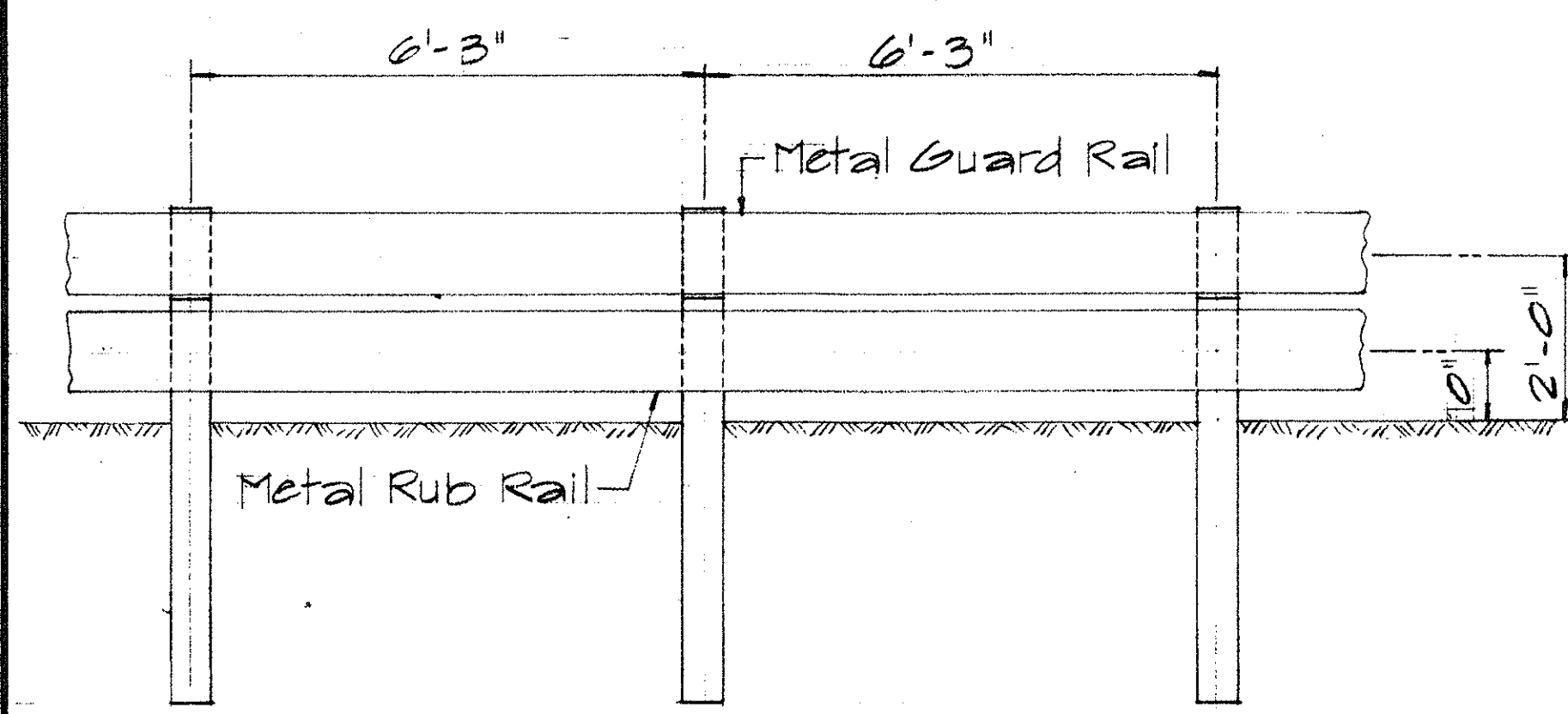
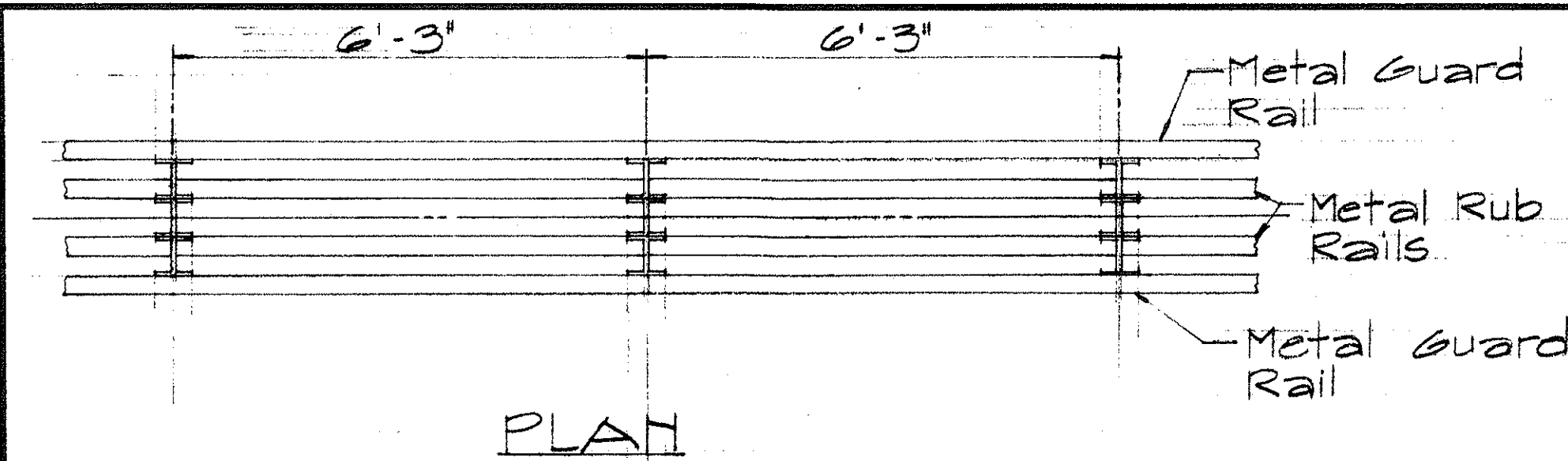
Scale: as Noted

August, 1968

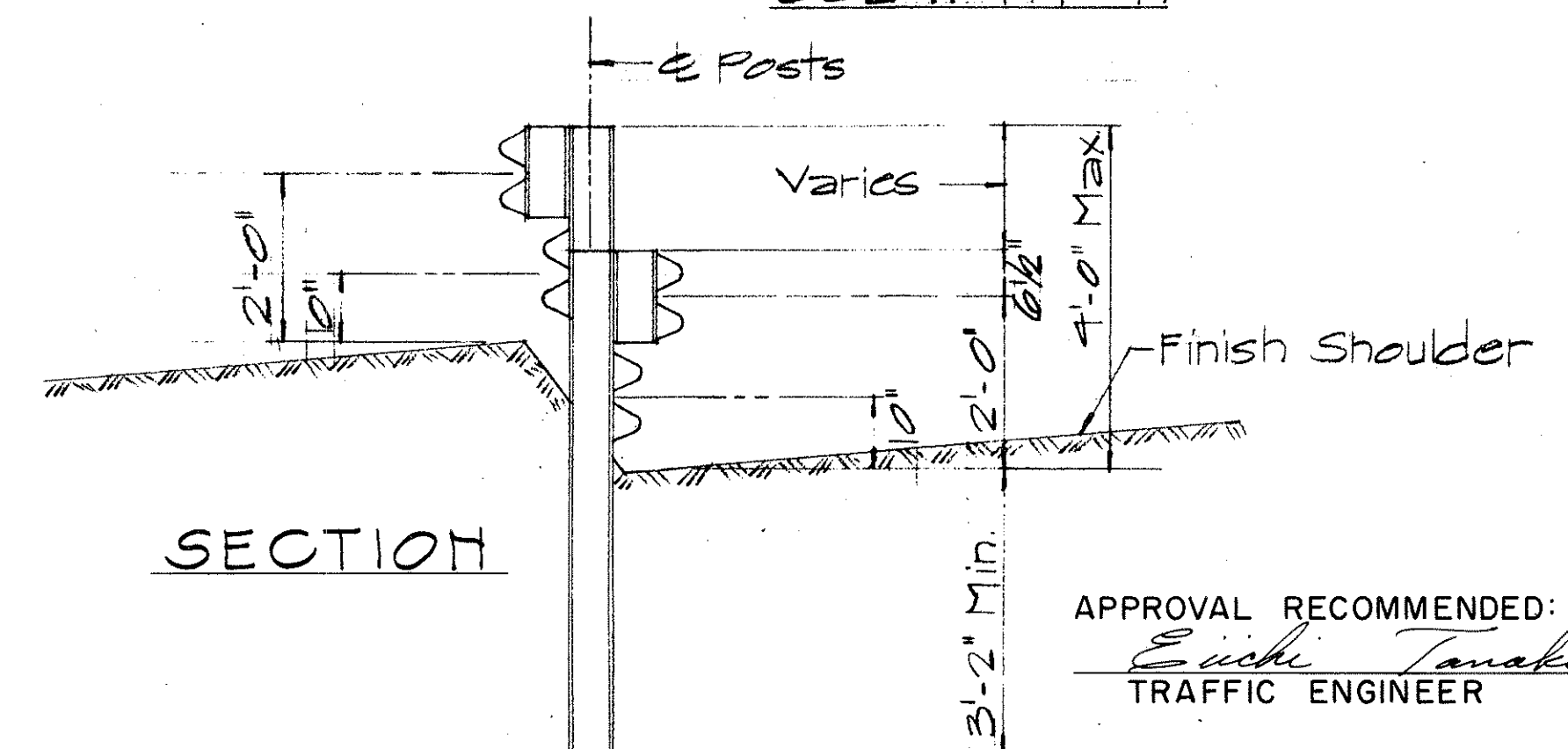
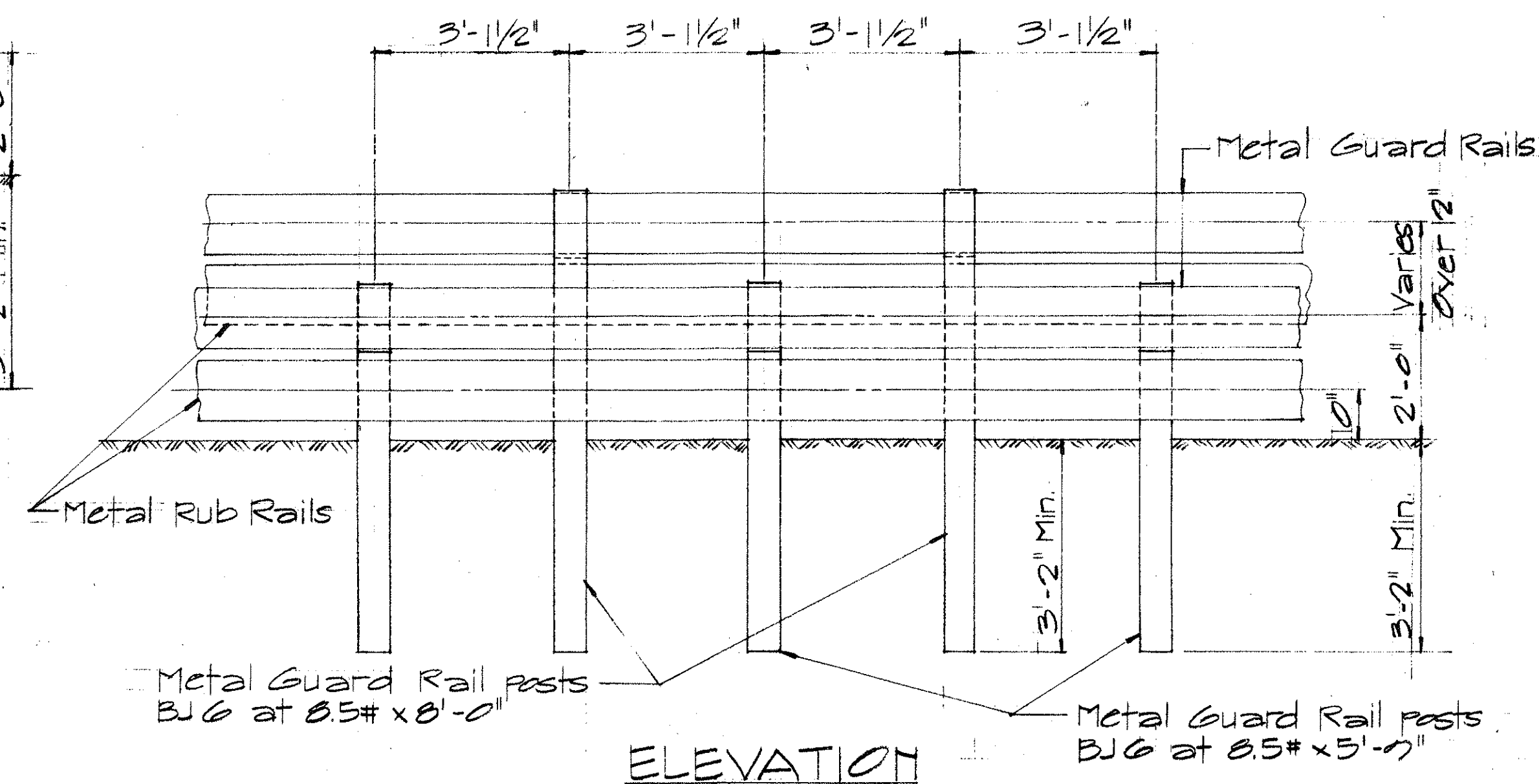
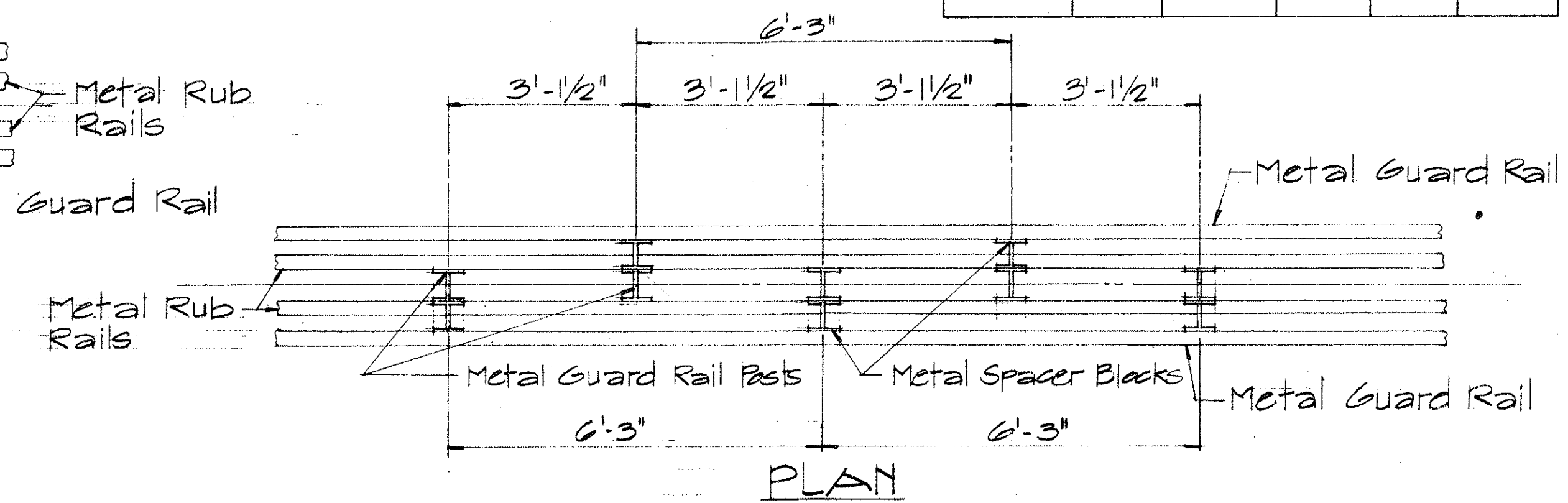
SHEET No. 5 OF 6 SHEETS DT 502

DATE	
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	63A-02-72	1972	8	8



TYPICAL SAW TOOTH INSTALLATION
Sc. 1/2" = 1'-0"



TYPICAL STAGGERED INSTALLATION
Sc. 1/2" = 1'-0"

APPROVAL RECOMMENDED:
Eushi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:
Stewart S. Zedler 12/30/69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAIL
METAL GUARD RAIL
WITH RUB RAIL

Scale: 1/2" = 1'-0" Feb. 10/67

SHEET No. 6 OF 6 SHEETS DT 514

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTE BOOK	
CHECKED BY	