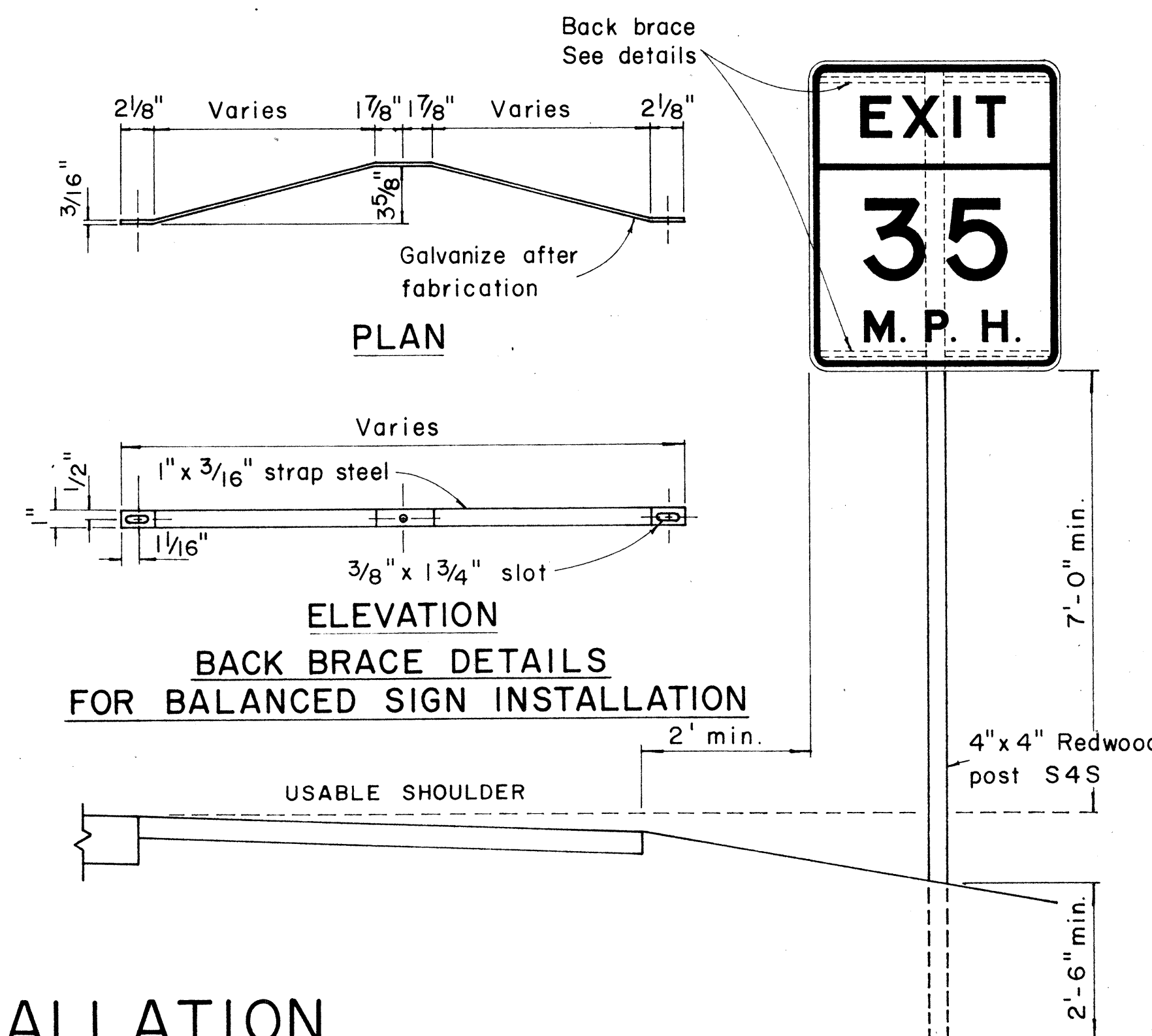
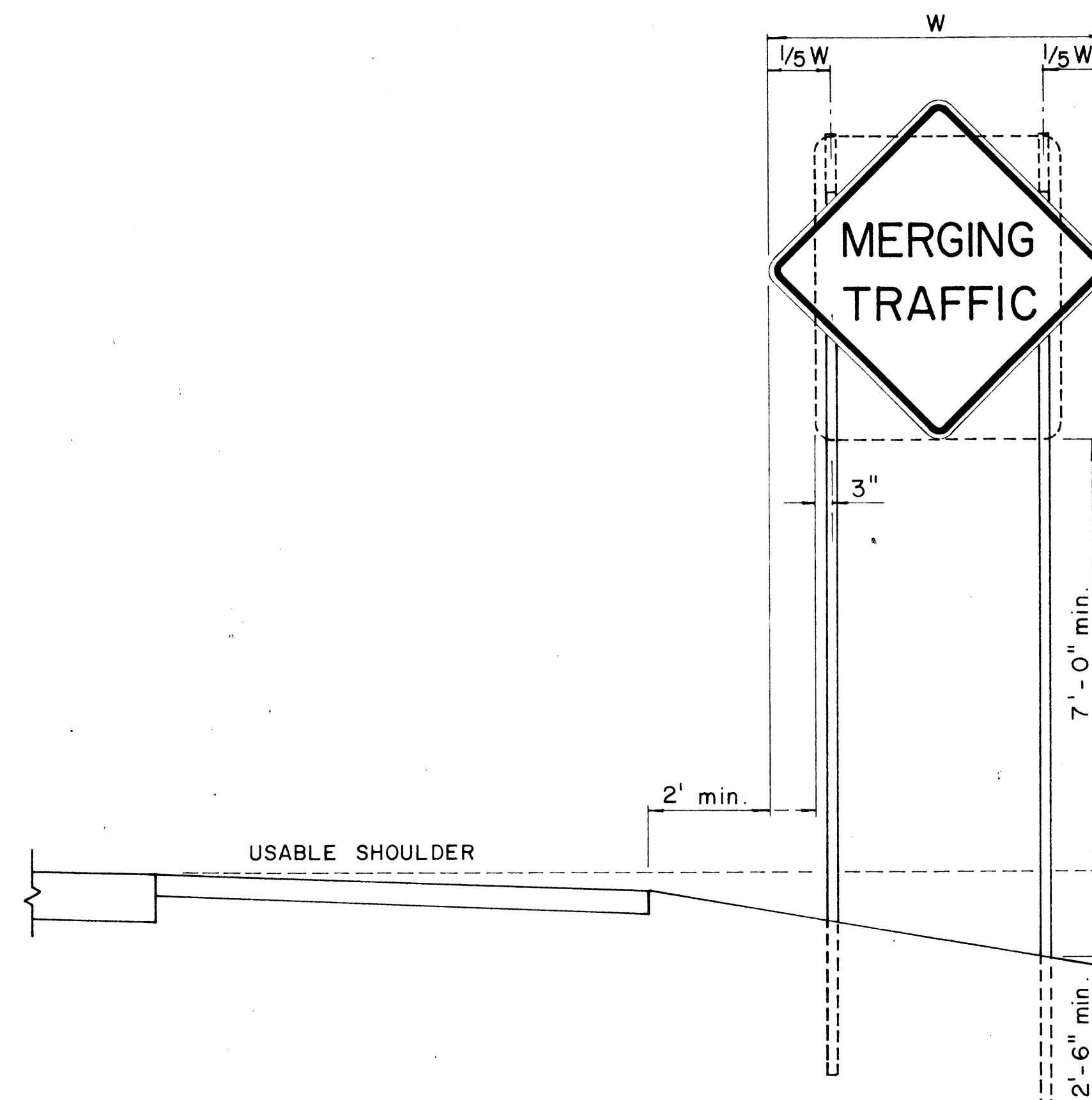
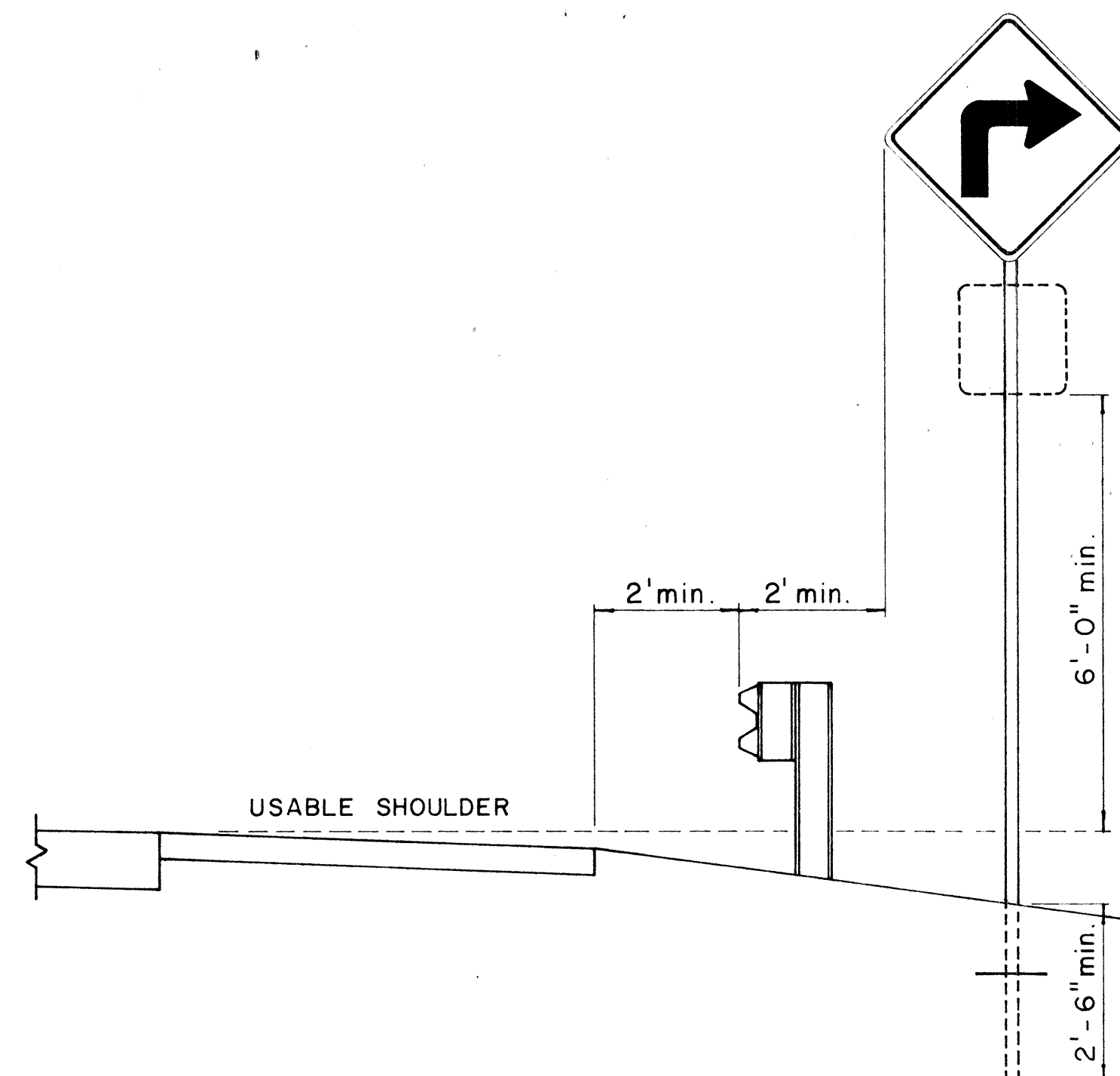
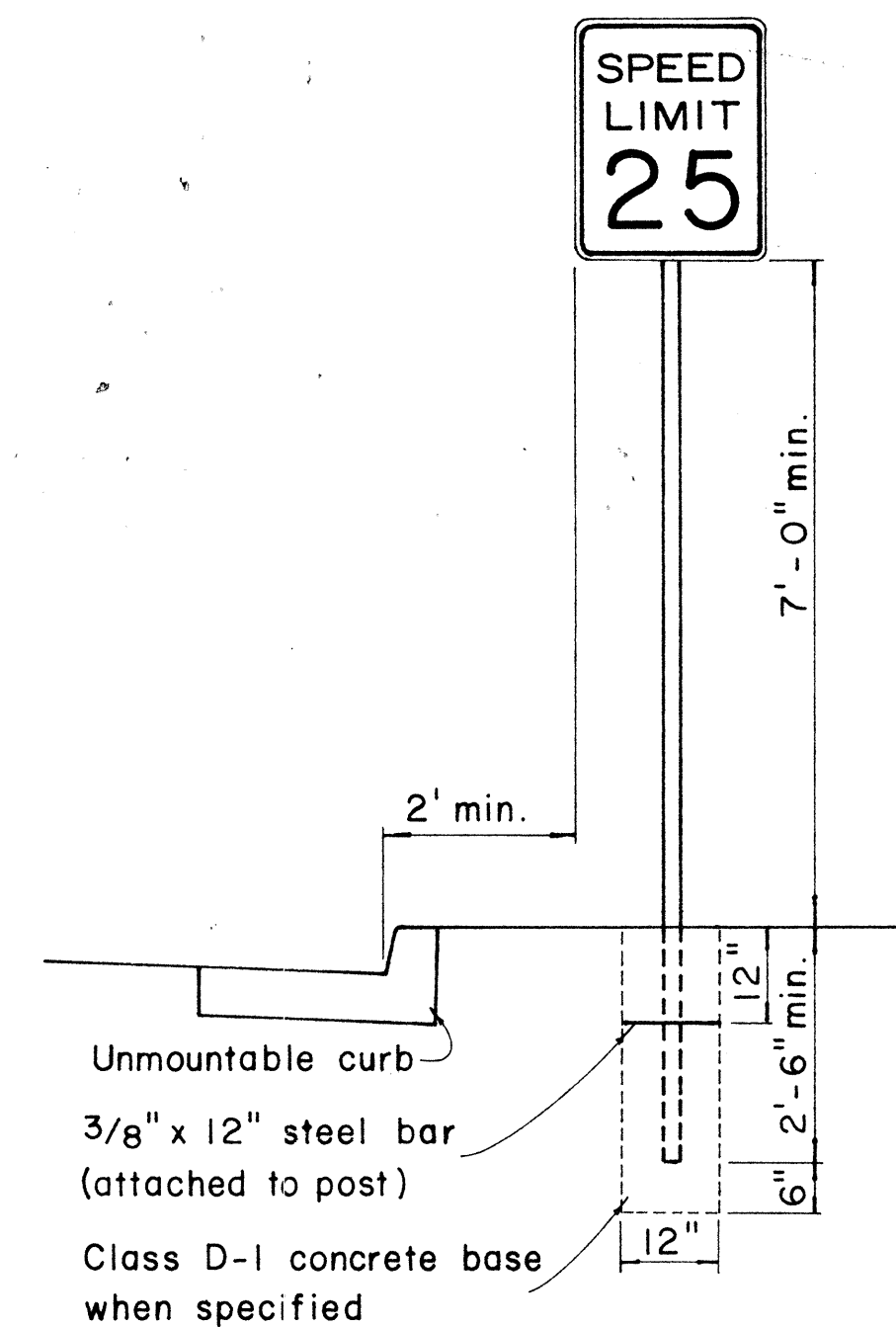
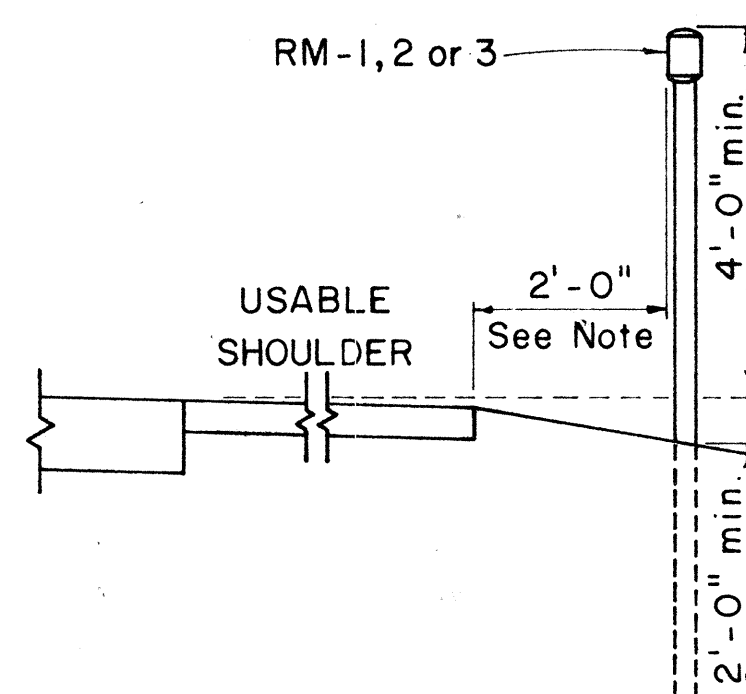


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-04-67	1967	4	11



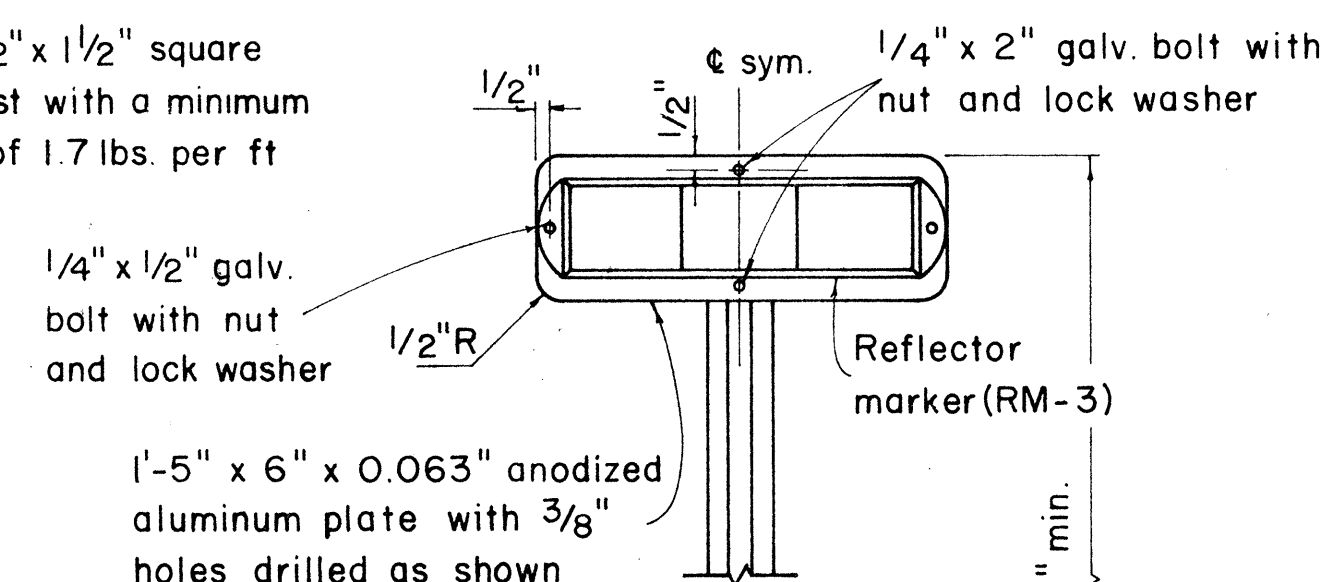
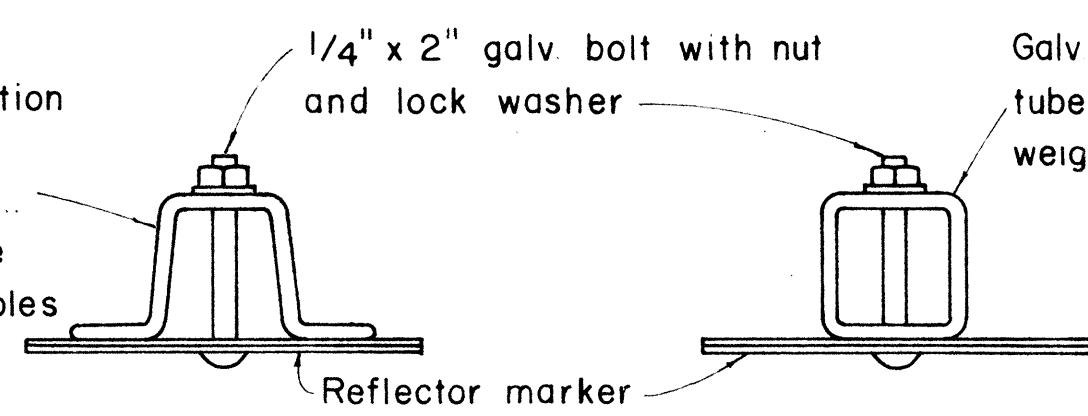
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



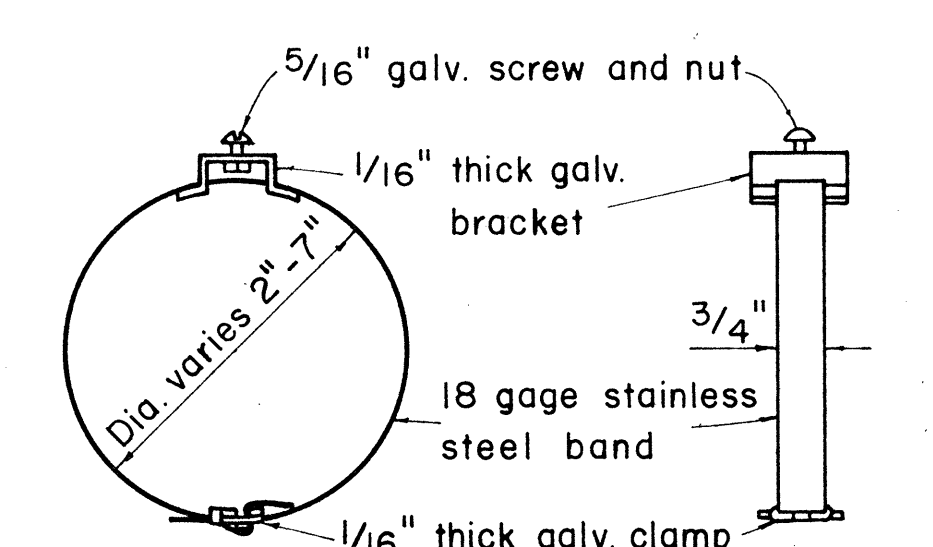
ROAD DELINEATOR

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

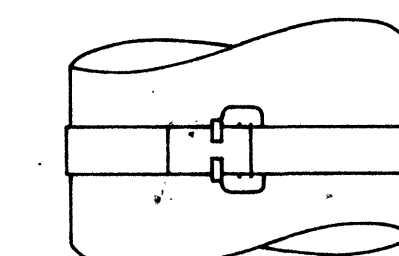


TYPICAL DETAIL
HORIZONTAL REFLECTOR MARKER
RM-3H



PLAN

SIDE VIEW

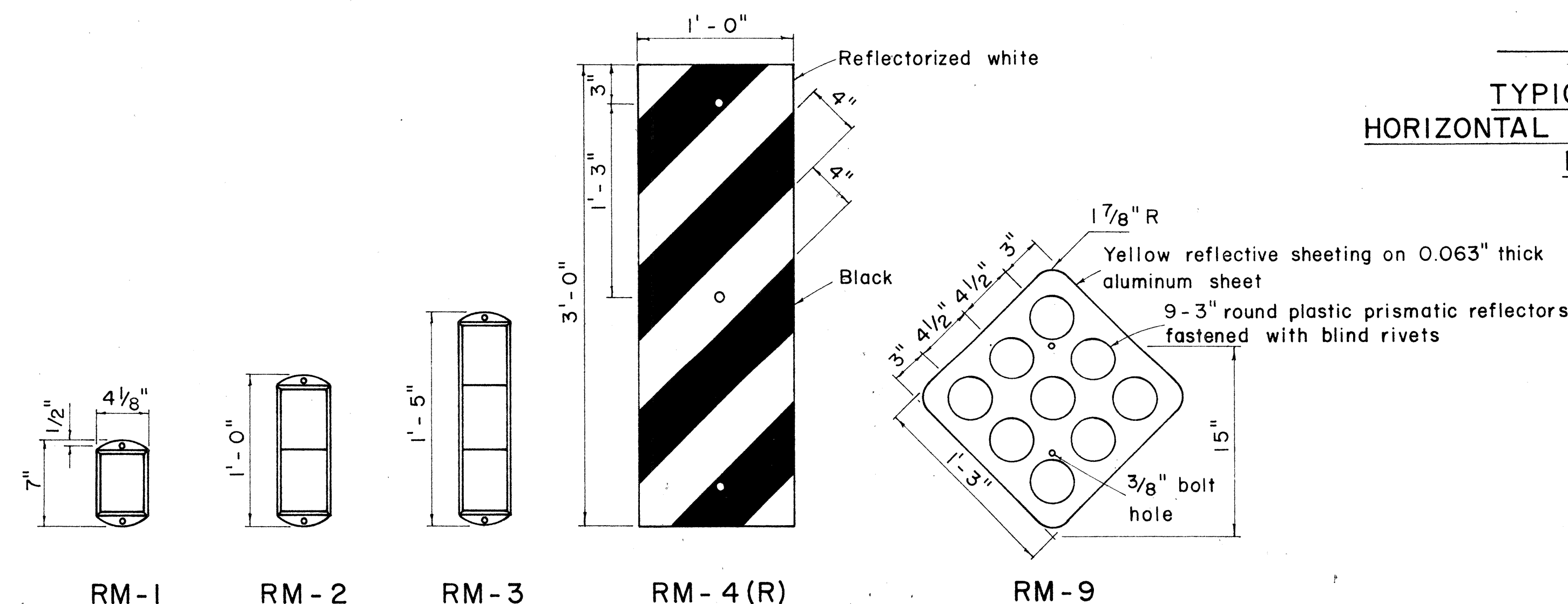


FRONT VIEW

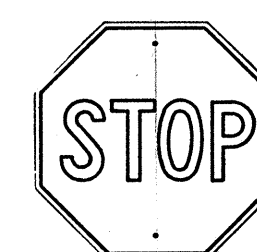
TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

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 1/2" 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.



REFLECTOR MARKERS



R-1
30" x 30"



W-1
30" x 30"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

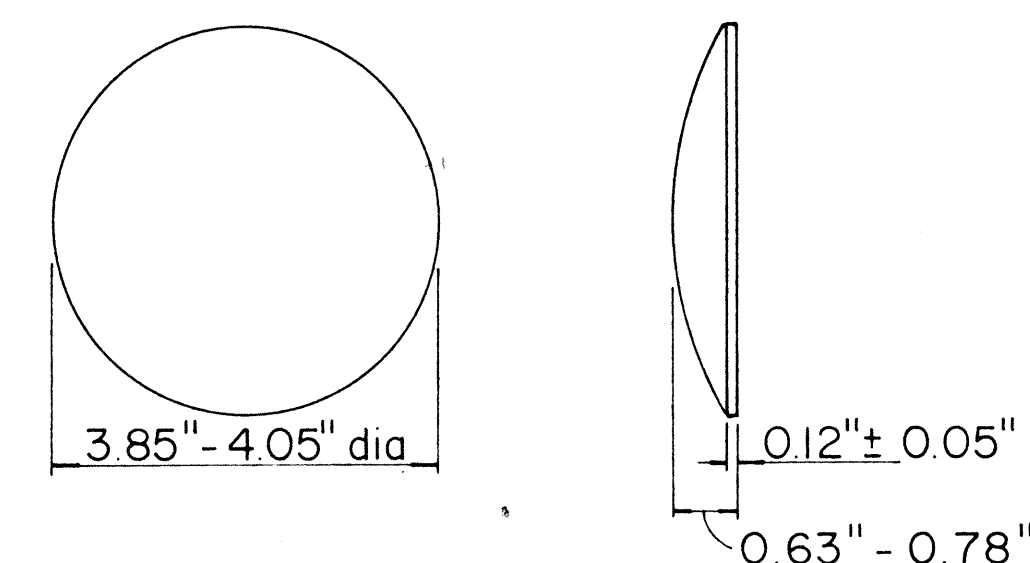
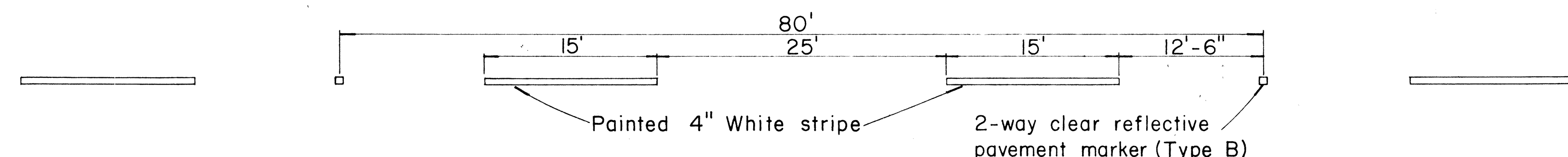
STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale March, 1968

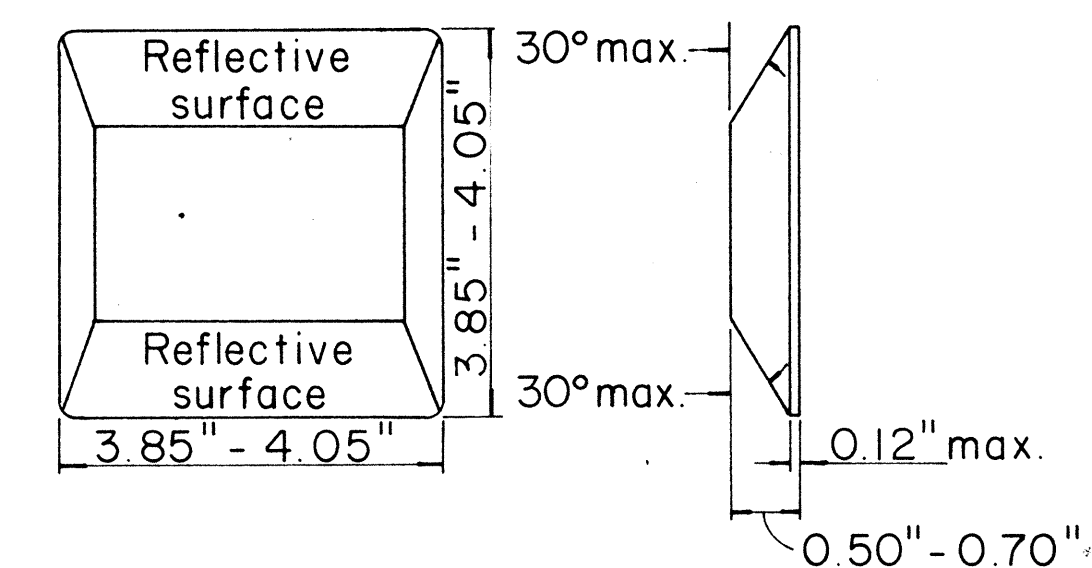
SHEET No. 1 OF 8 SHEETS DT 100

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-04-09	1969	5	11

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

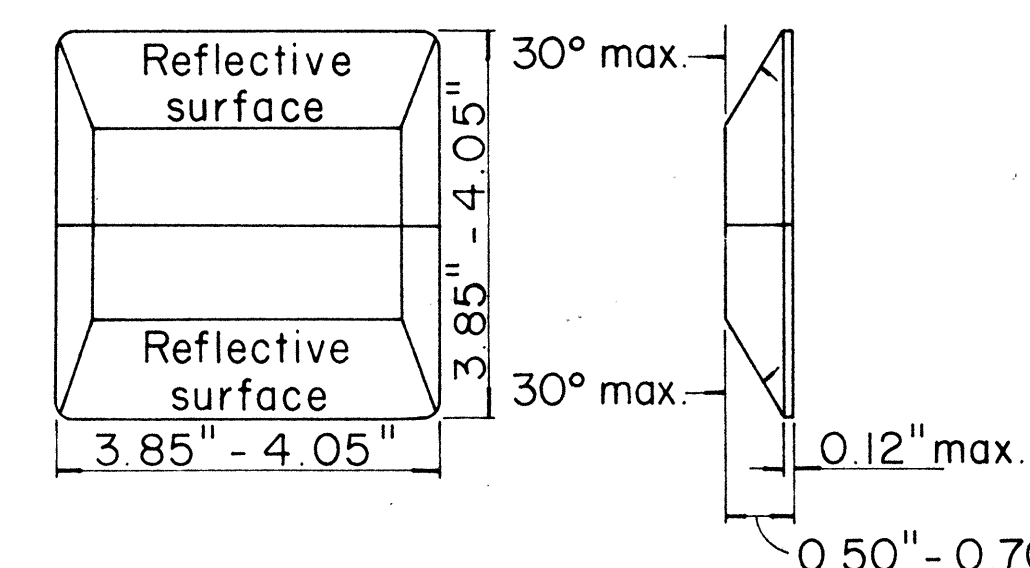
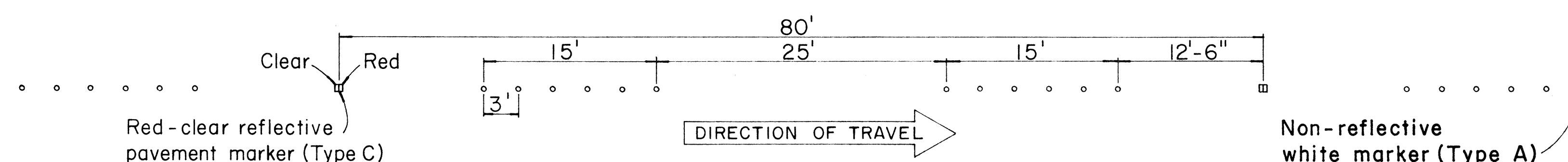


TYPE A
Non-reflective white marker

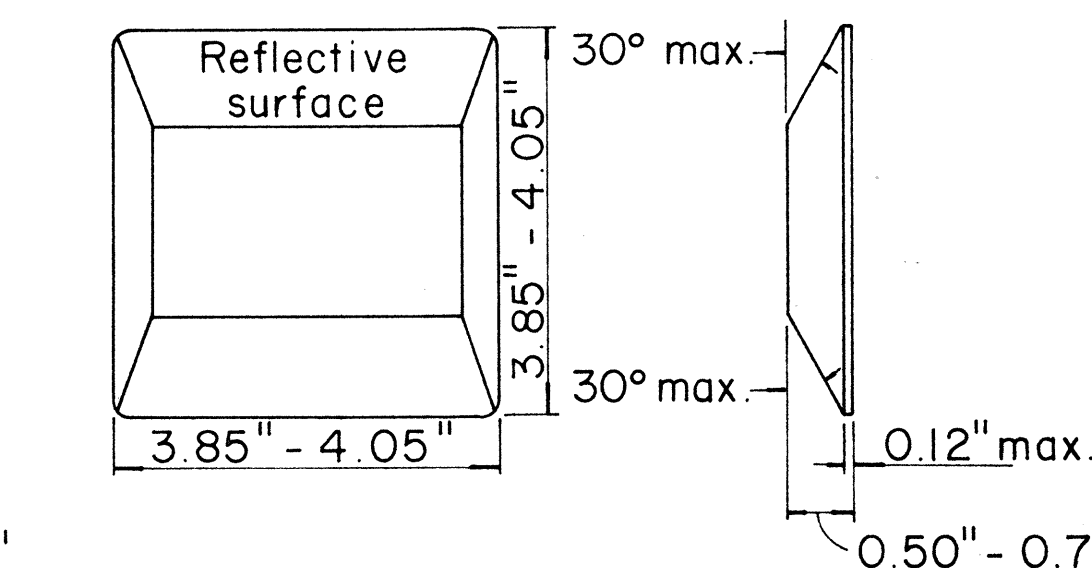


TYPE B
2-way clear reflective surface

② LANE LINES

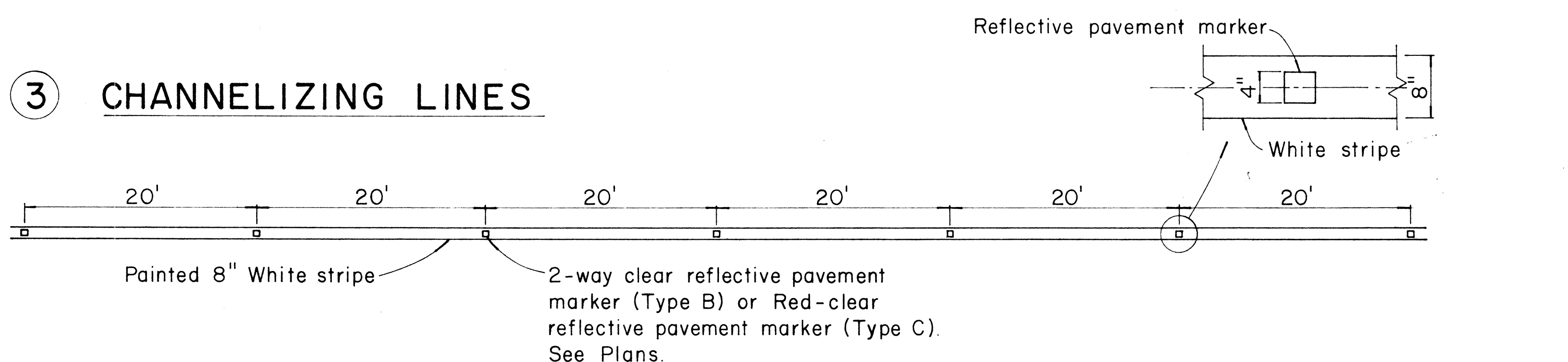


TYPE C
Red - clear reflective surface



TYPE H
One - way yellow reflective surface

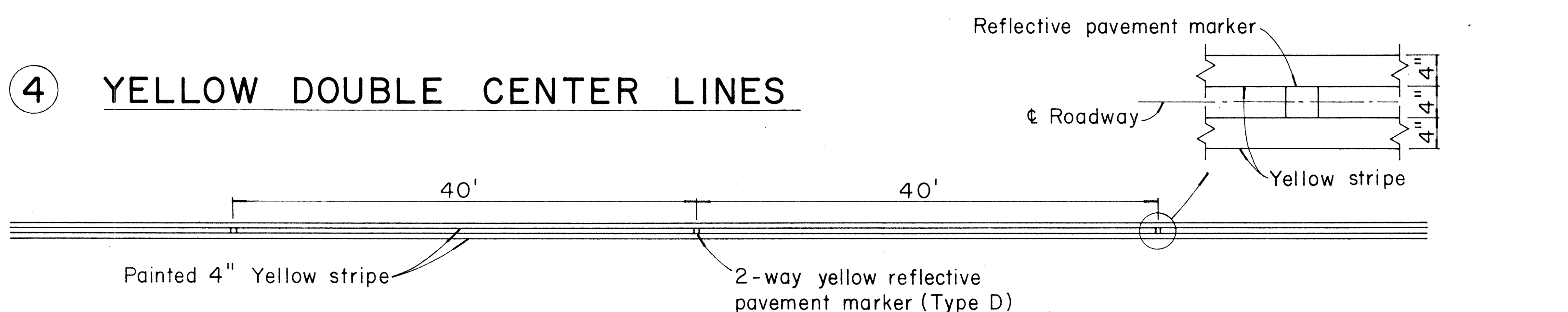
③ CHANNELIZING LINES



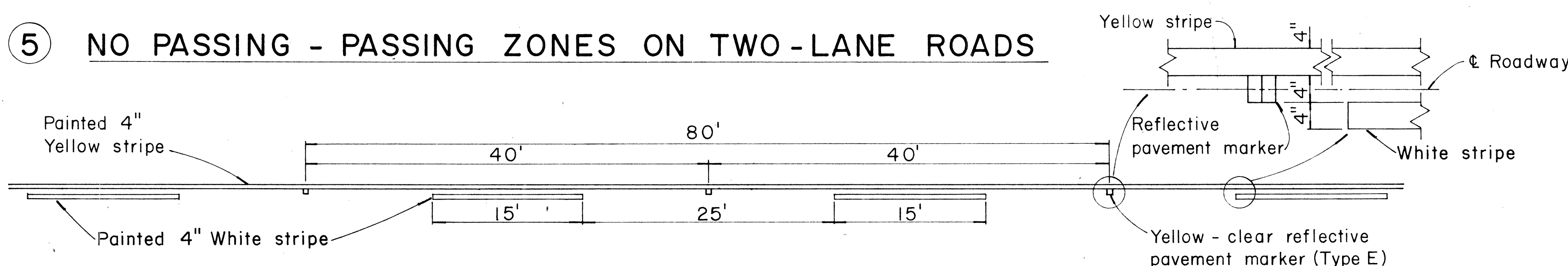
TYPE E
Yellow - clear reflective surface

TYPE G
One - way clear reflective surface

④ YELLOW DOUBLE CENTER LINES



⑤ NO PASSING - PASSING ZONES ON TWO-LANE ROADS



NOTE:
Painted stripes to be done by State forces

REVISED: Aug. 26, 1968

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RAISED PAVEMENT MARKERS

Not to Scale
Sept., 1967

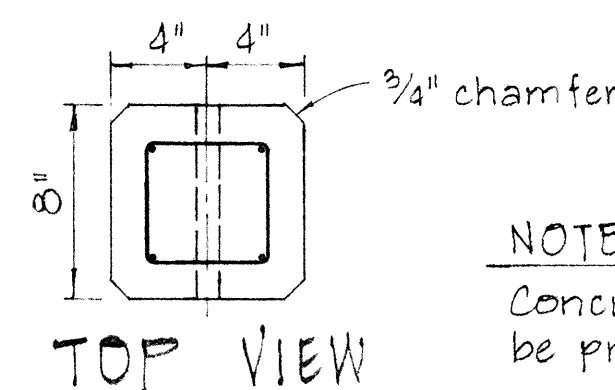
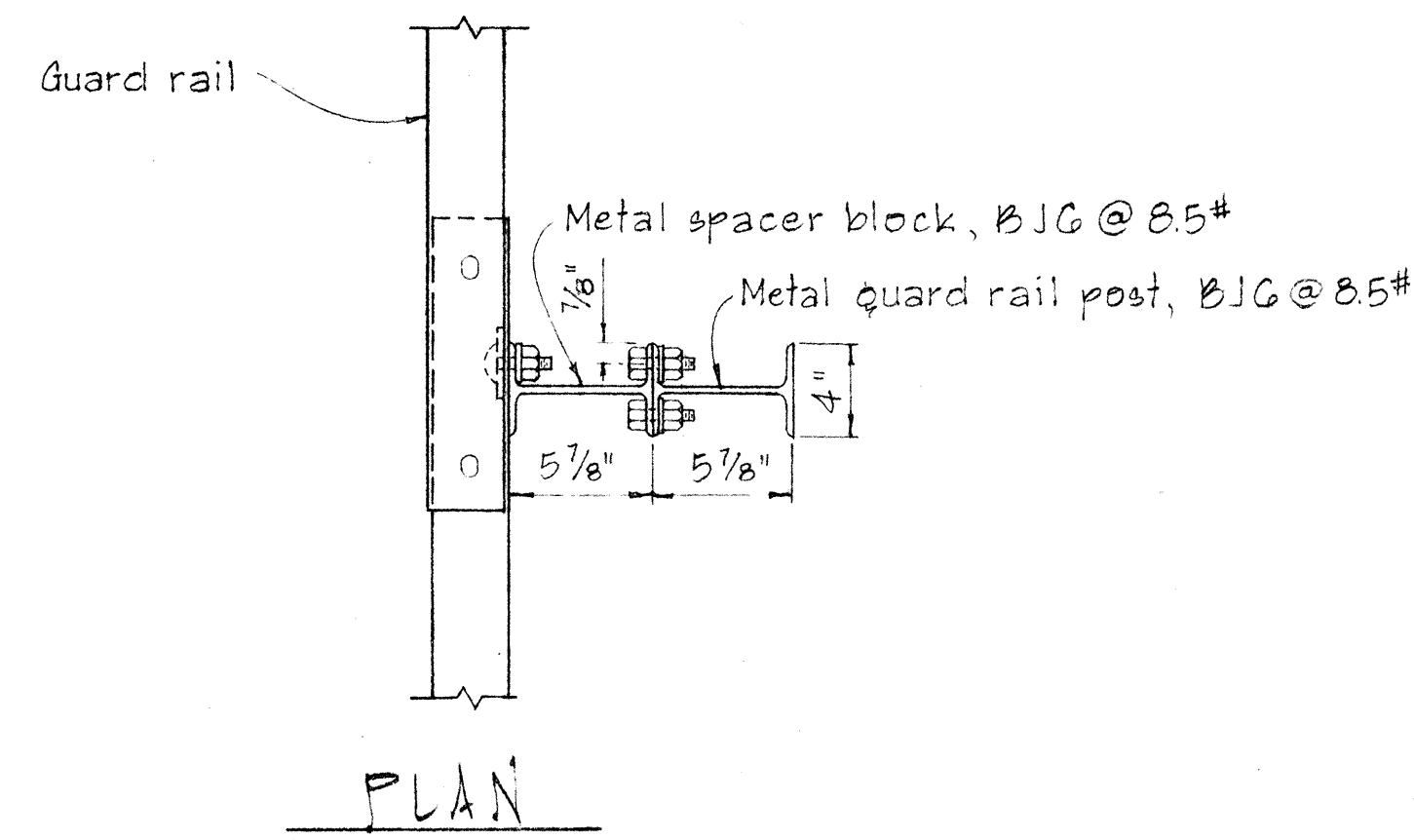
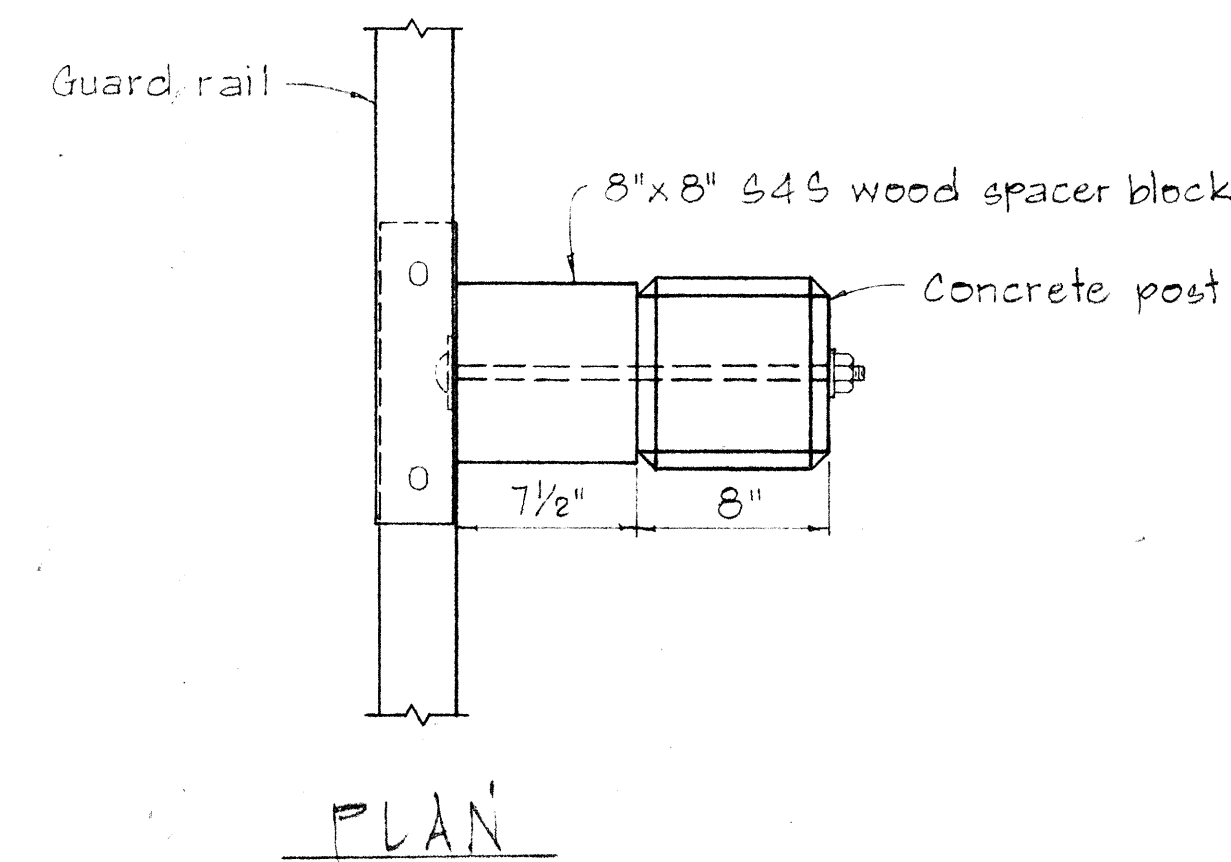
SHEET No. 2 OF 8 SHEETS

DD-C-6-7

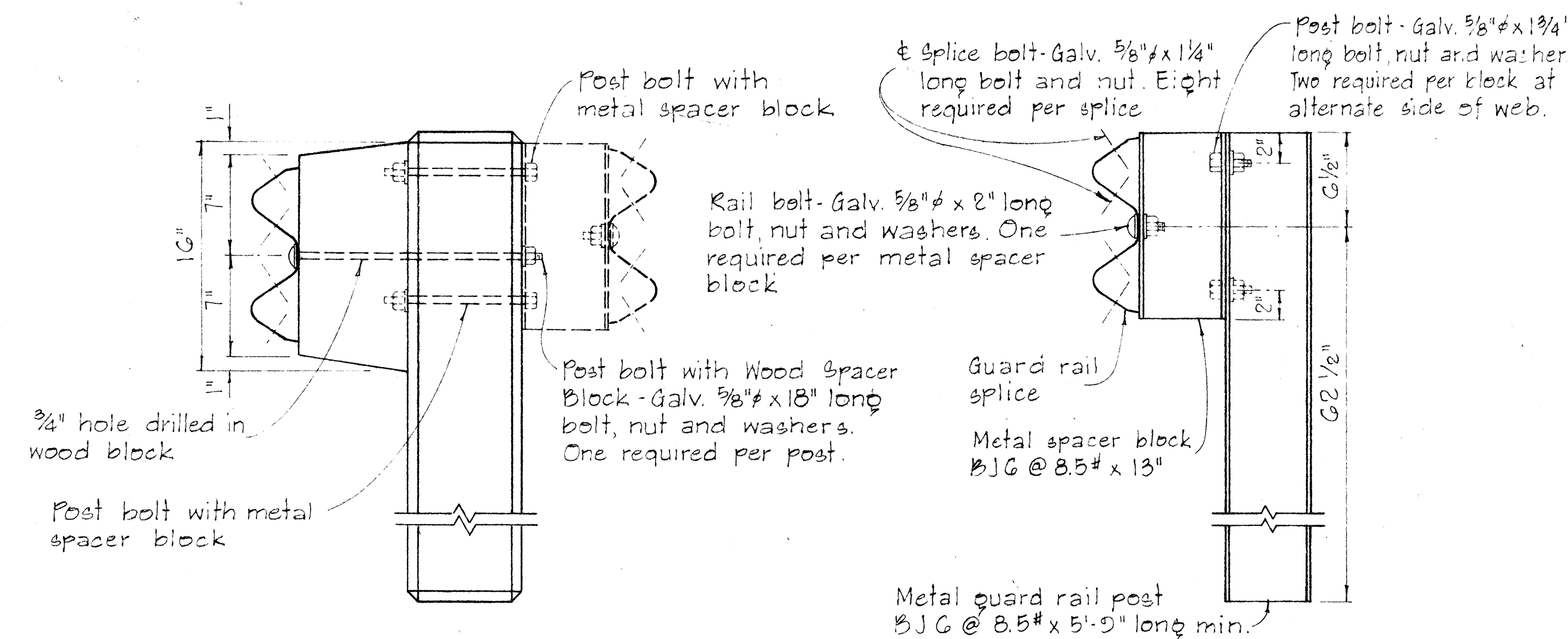
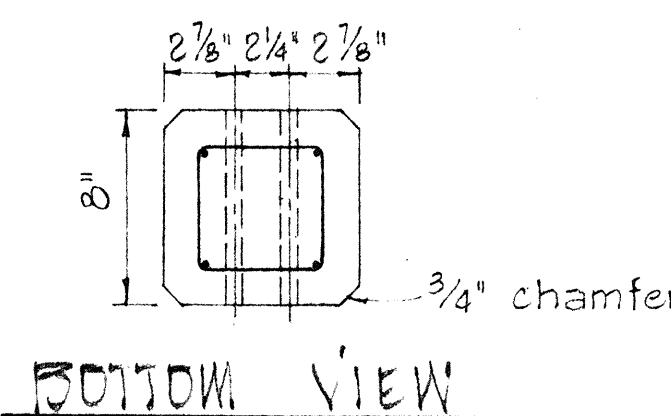
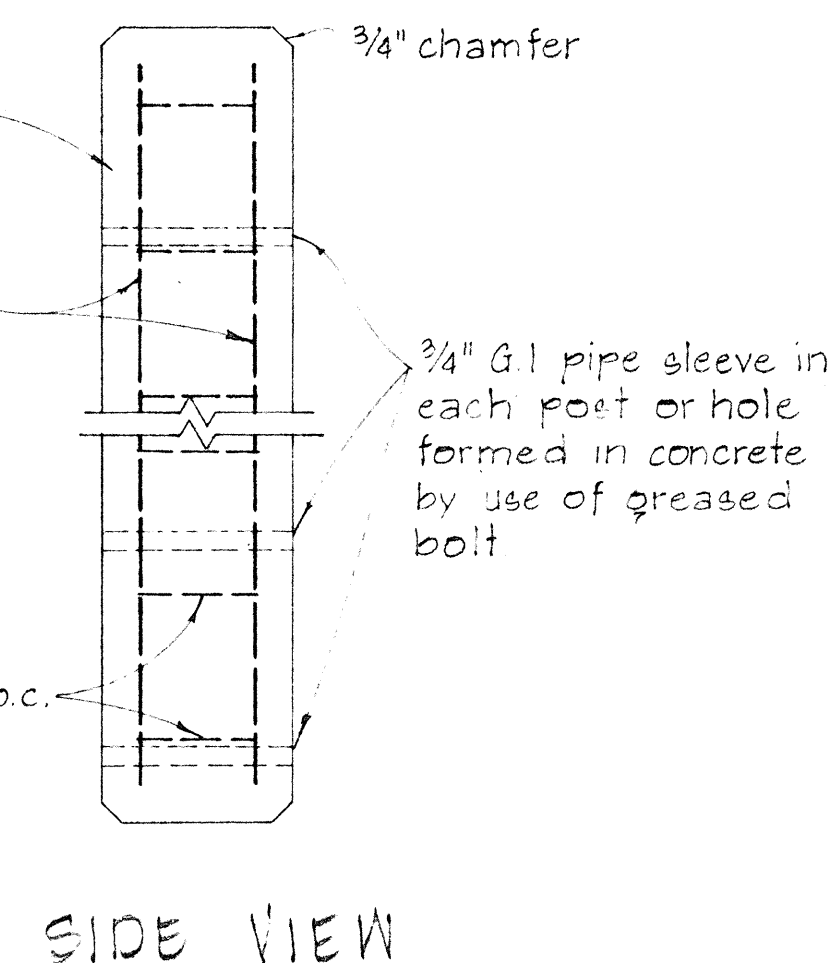
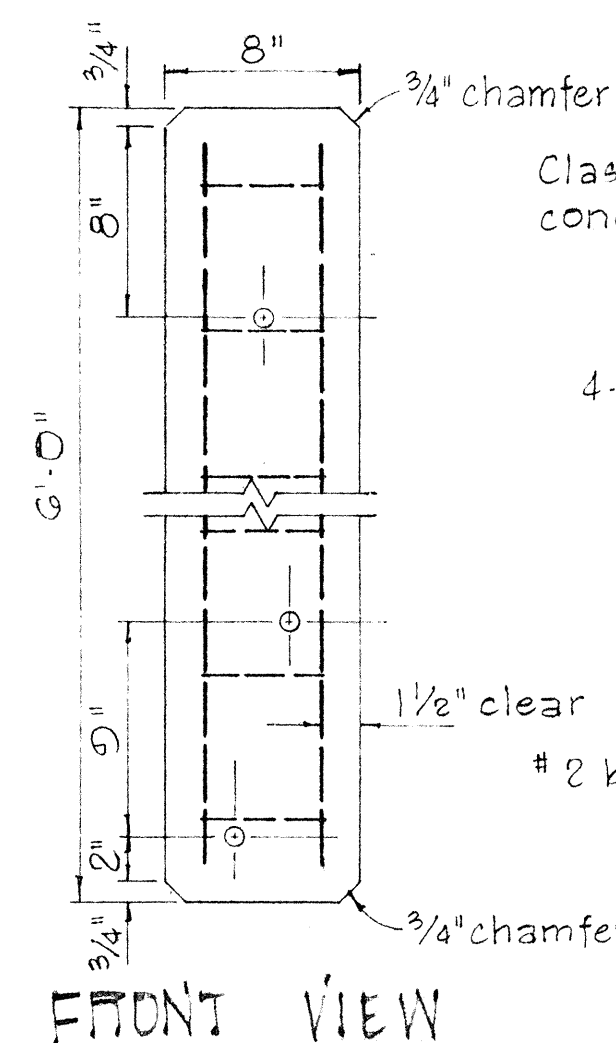
DATE	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-04-02	1967	7	11

REVISED: 12-11-68
REVISED: 2-26-69

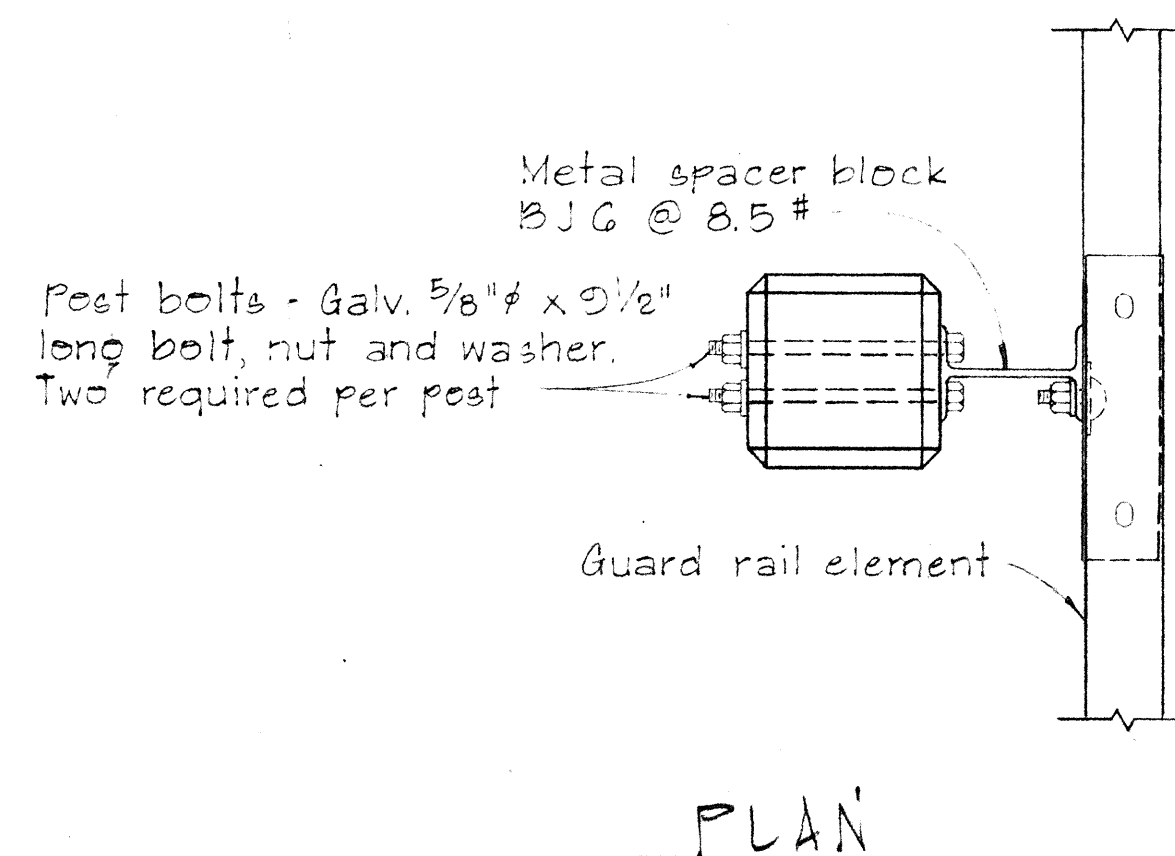


NOTE:
Concrete post shall be precast

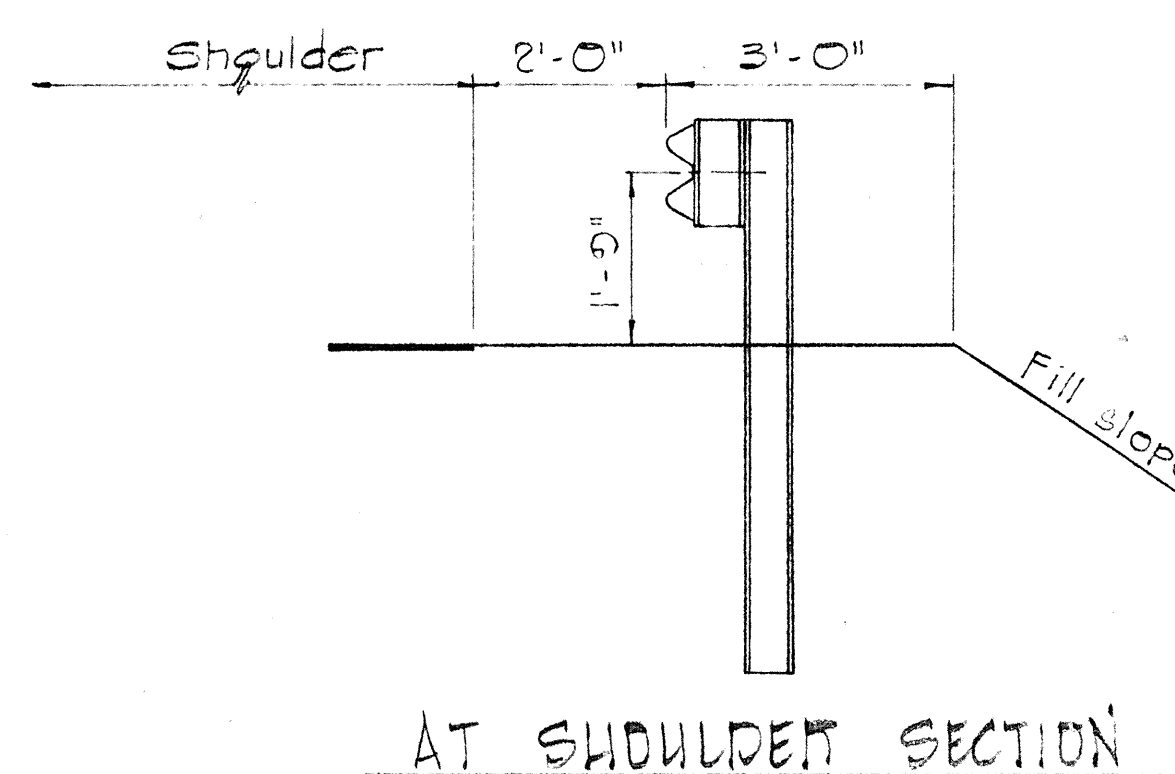


SINGLE METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"

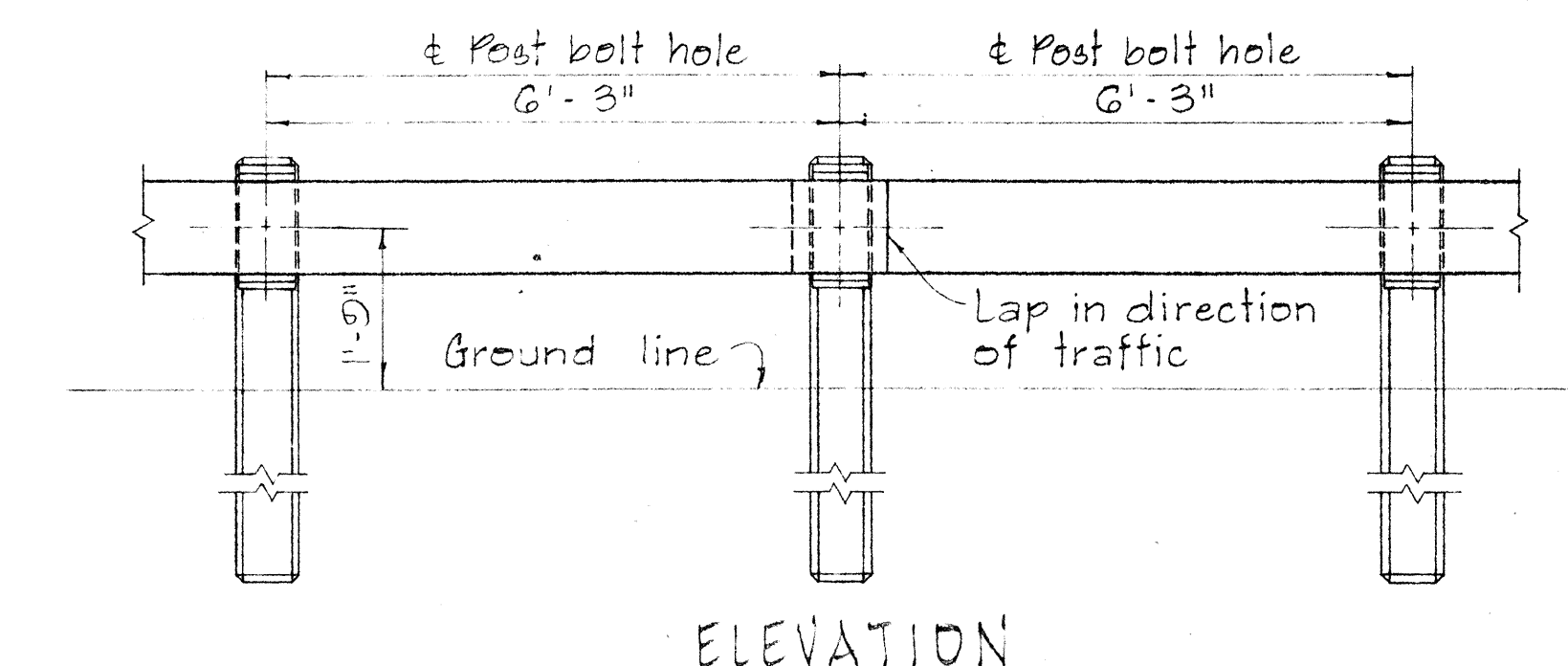
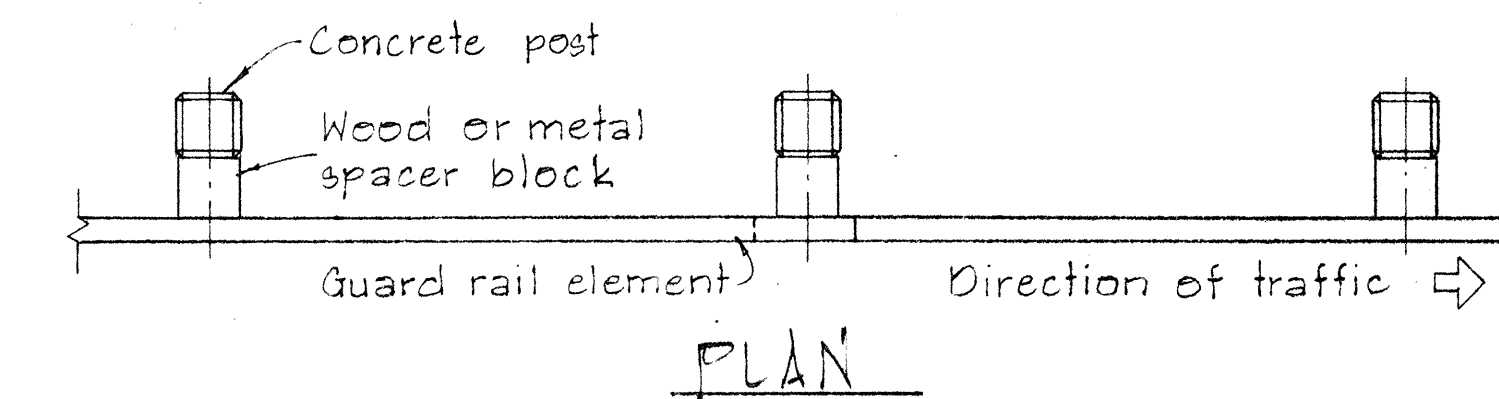
DETAIL OF CONCRETE POST
SCALE: 1 1/2" = 1'-0"



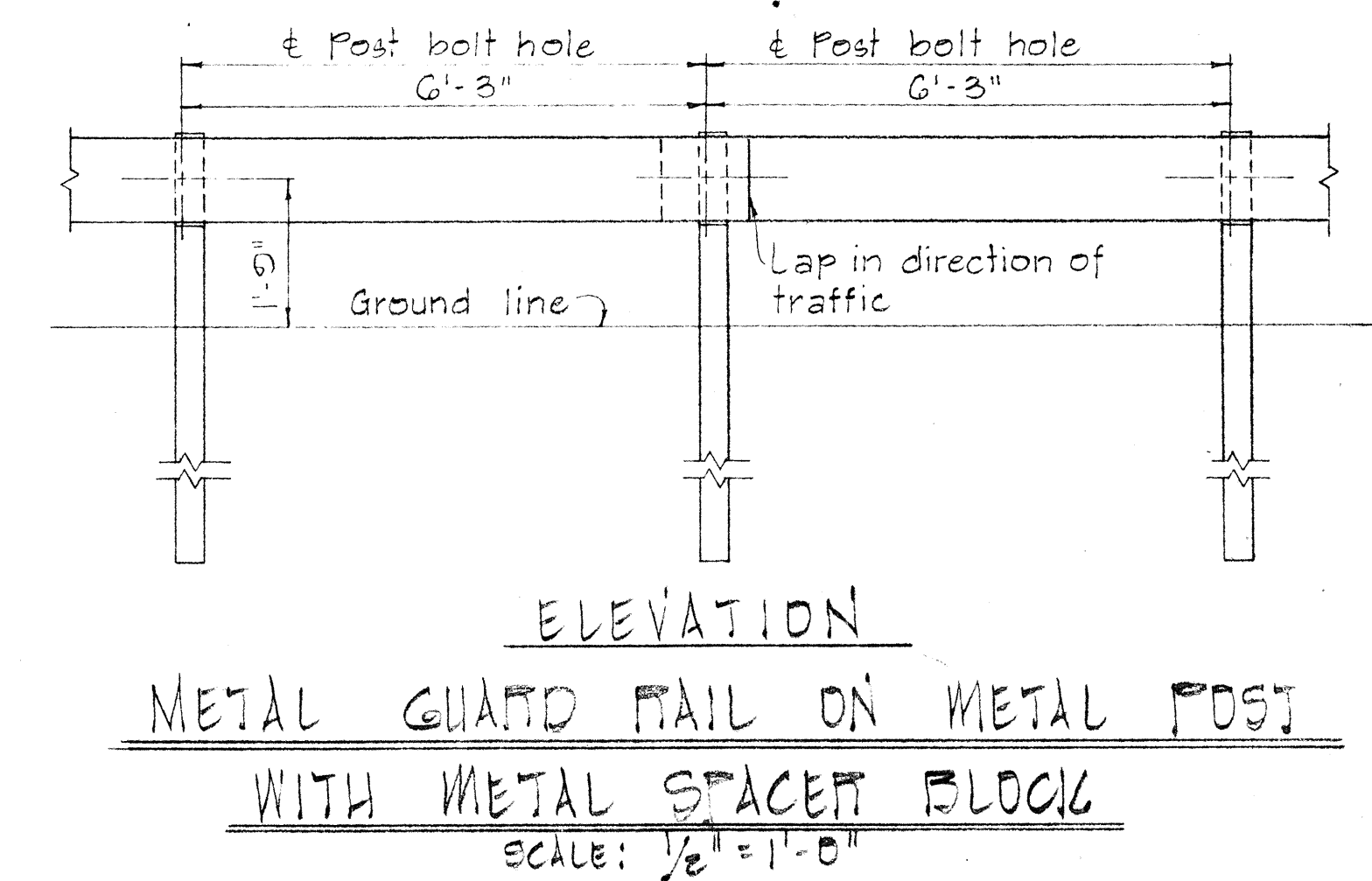
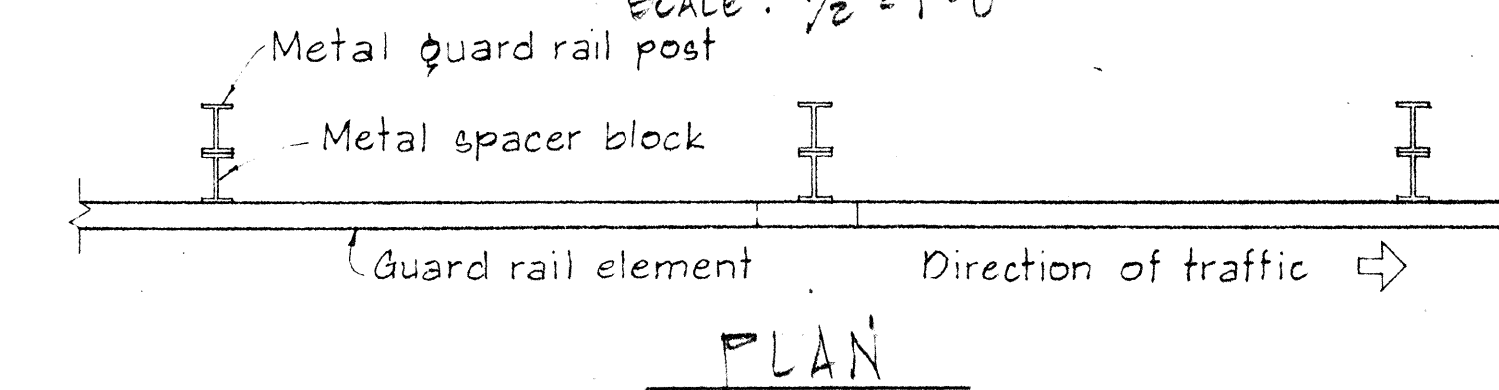
SINGLE METAL GUARD RAIL ON PRECAST
CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"



TYPICAL METAL GUARD RAIL DETAIL
SCALE: 1/2" = 1'-0"



METAL GUARD RAIL ON CONCRETE POST
WITH WOOD OR METAL SPACER BLOCK
SCALE: 1/2" = 1'-0"



METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK
SCALE: 1/2" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

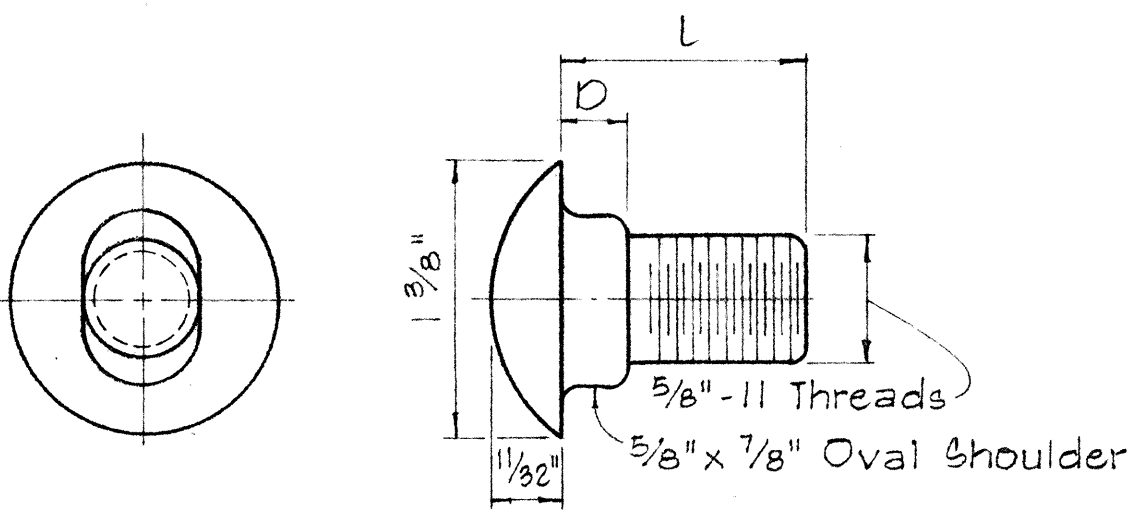
SCALE: AS SHOWN
NOV. 1968
SHEET No. 4 OF 8 SHEETS DT 500

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-04-67	1967	8	11

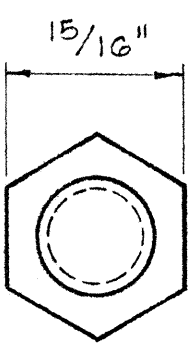
Revised: Dec. 11, 1968

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"

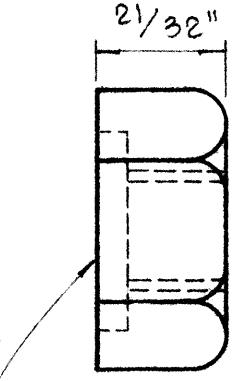
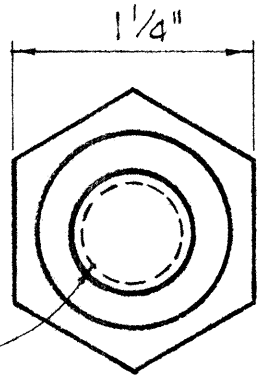
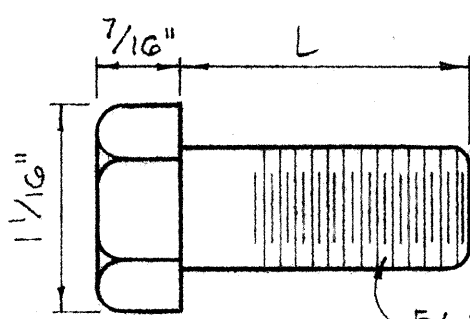
BOLT DIMENSIONS		
TYPE B BOLT		
Post Bolt for Conc. Post w/ Metal Blocks	5/16"	2 1/2"
Post Bolt for Metal Post w/ Metal Block	1 3/4"	



TYPE A BOLT



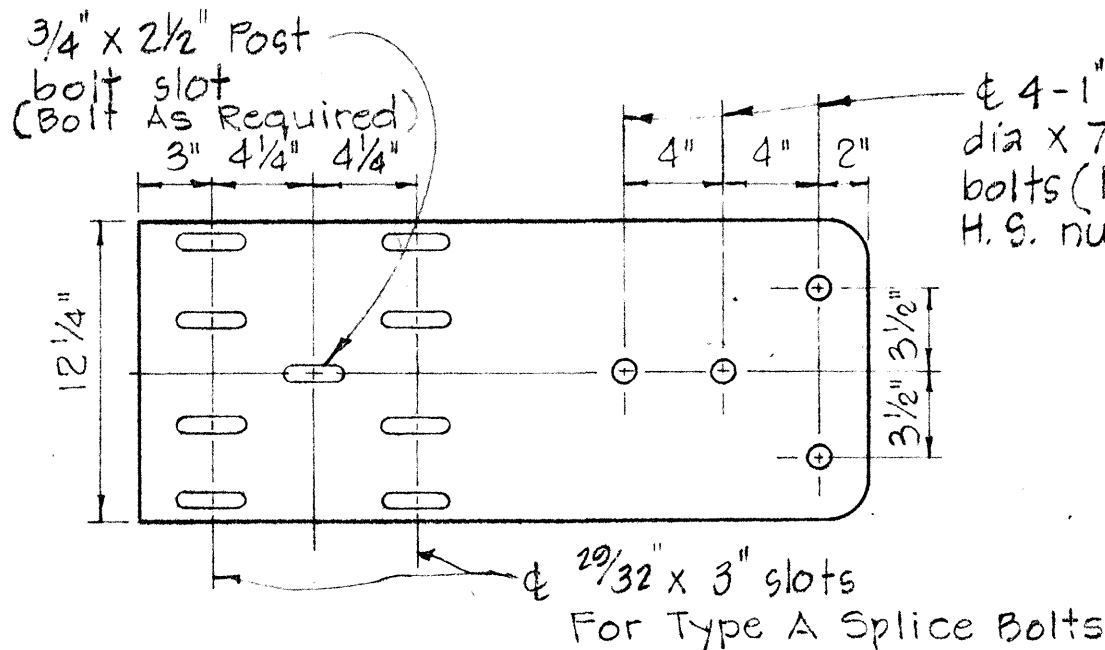
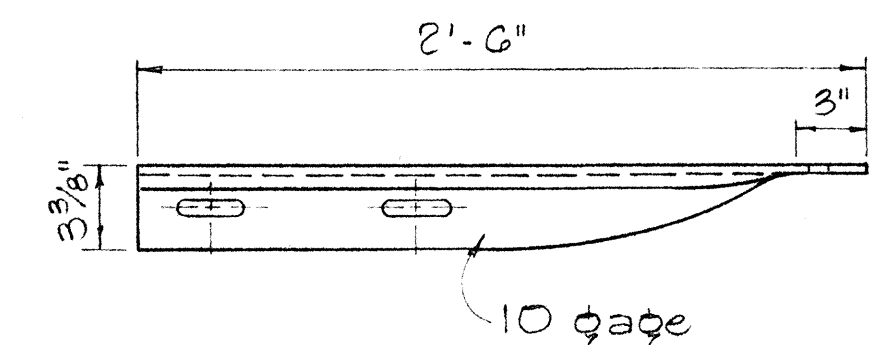
TYPE B BOLT



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

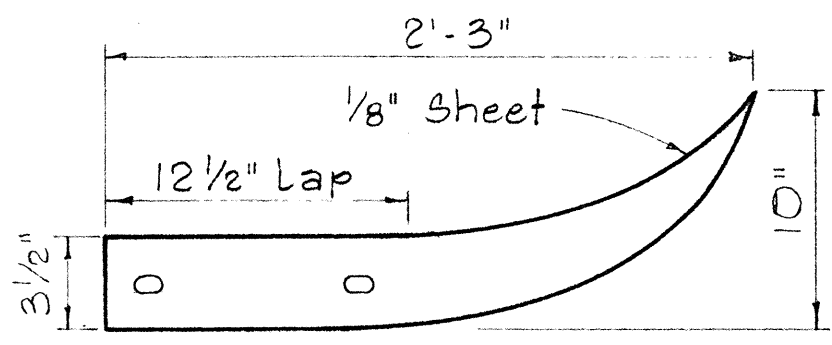
HEXAGON NUT

Scale: Full Size



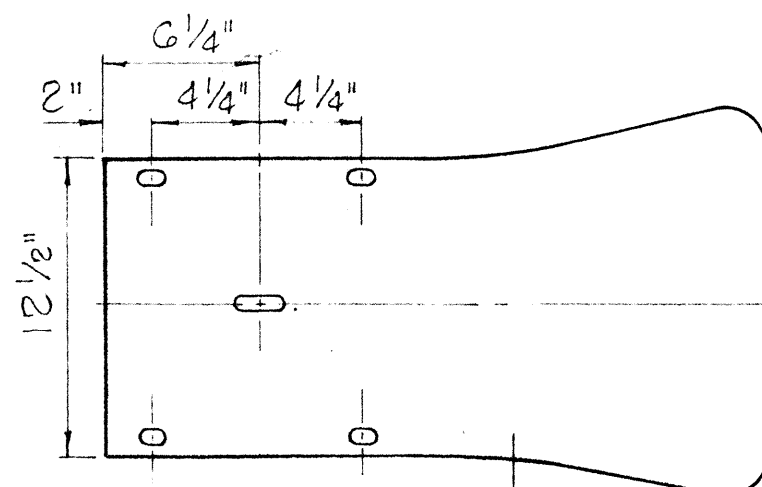
SPECIAL END SHOE

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

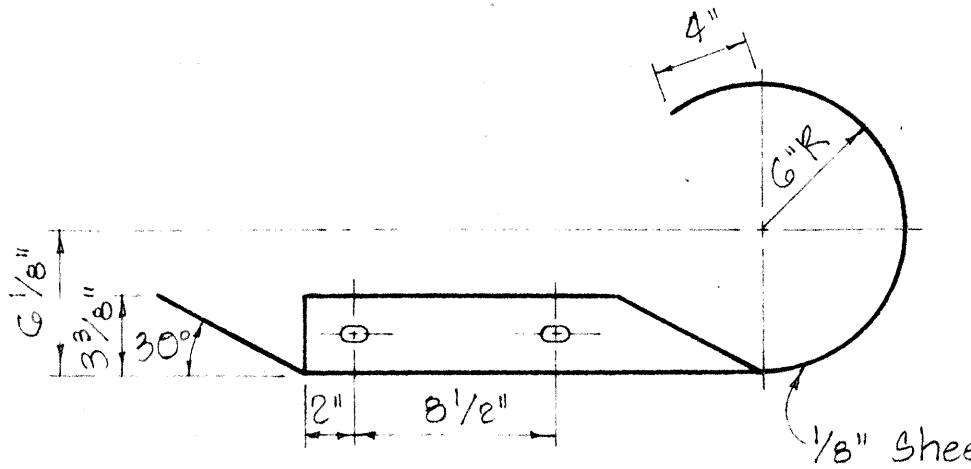


FLARED END

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

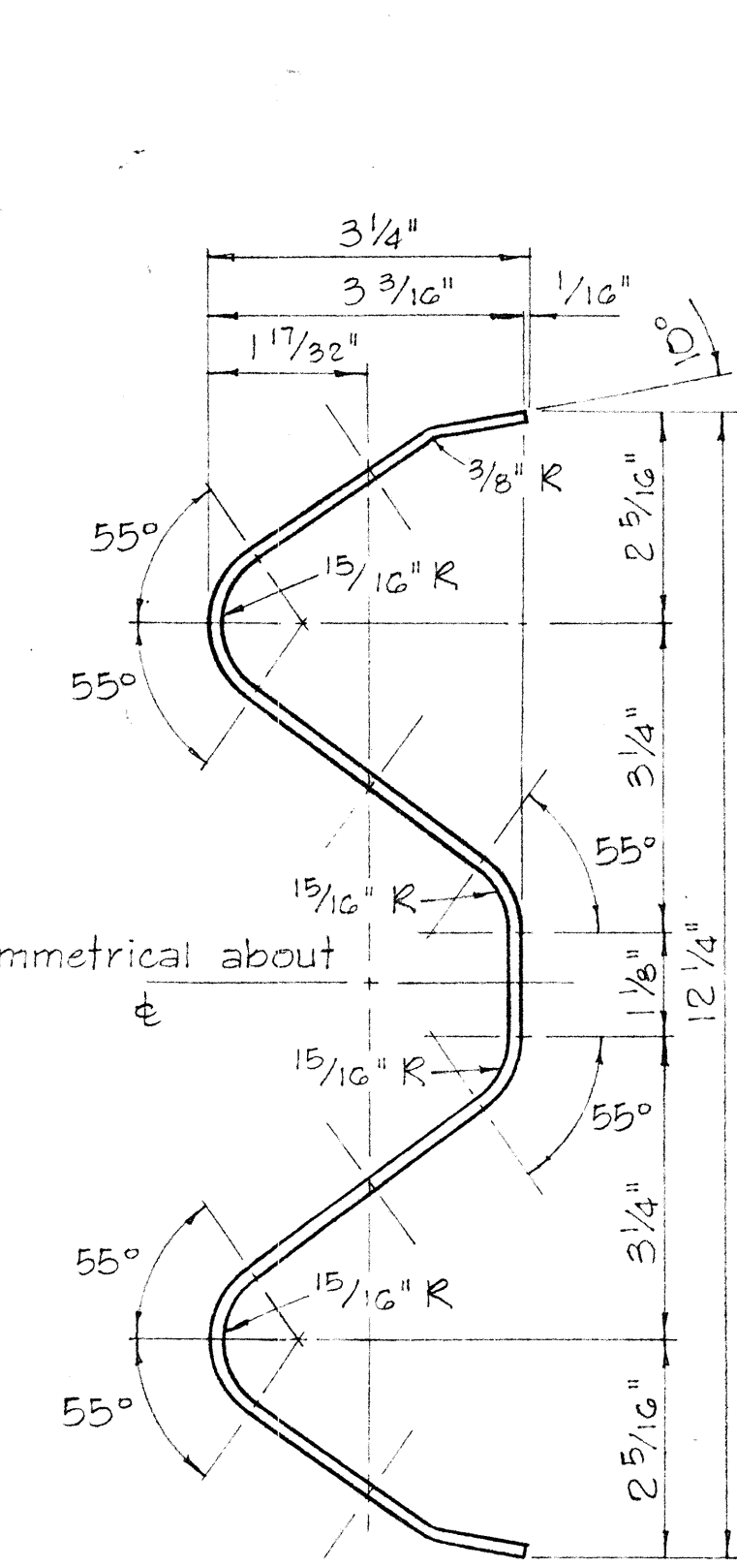
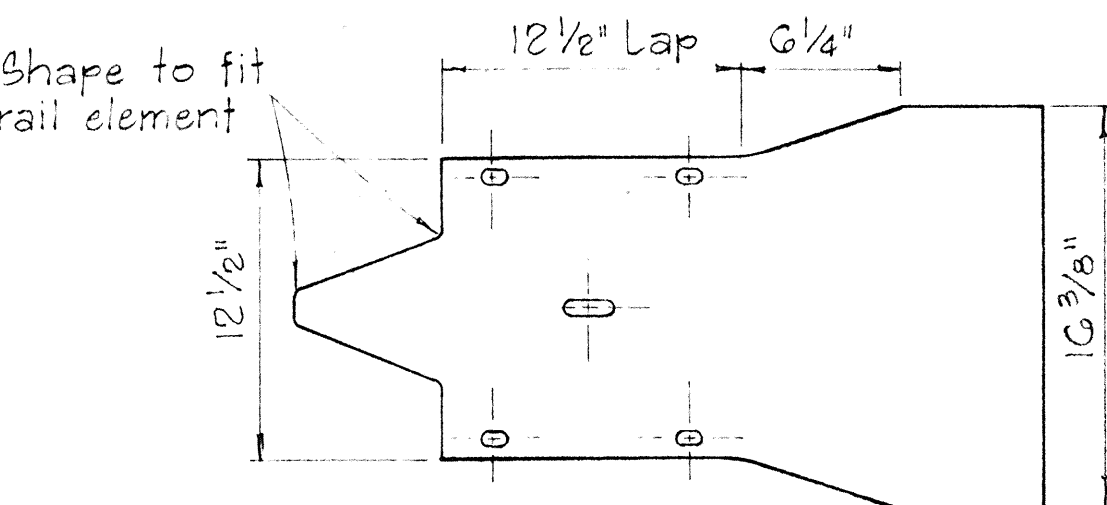


Same as rail element section



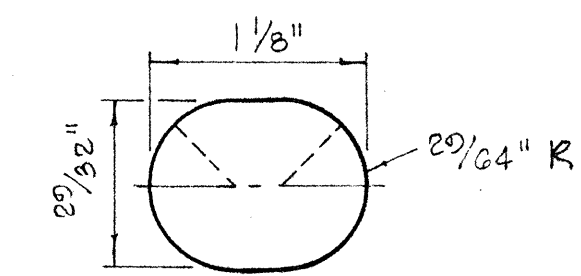
CURVED END

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



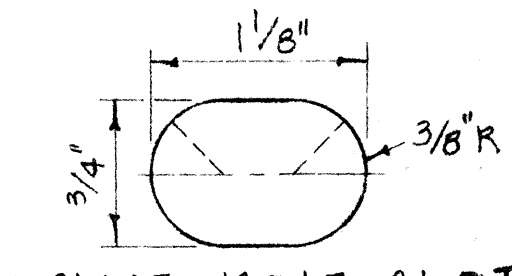
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

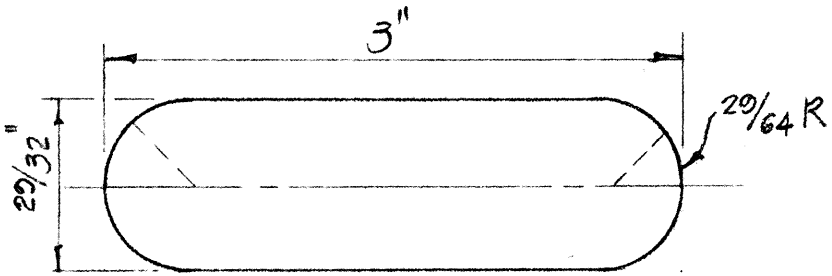


SPlice Bolt Slot

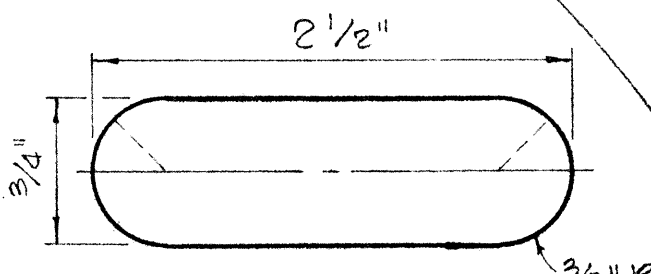
Scale: Full Size



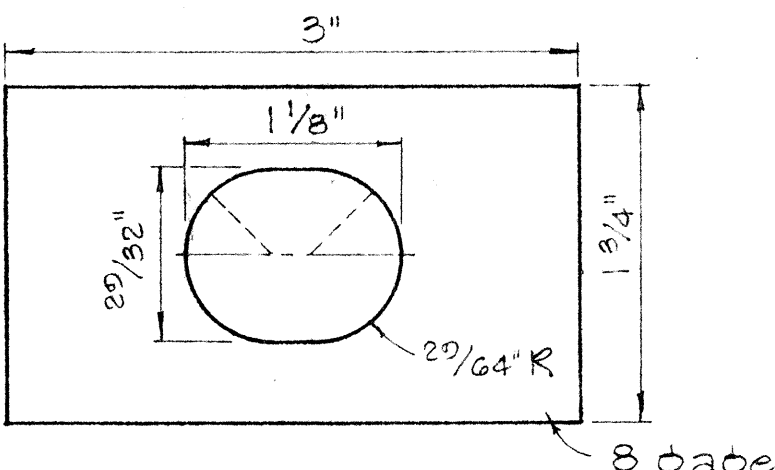
SPlice Bolt Slot FOR ALL ENDS



SPlice Bolt Slot FOR SPECIAL END SHOE



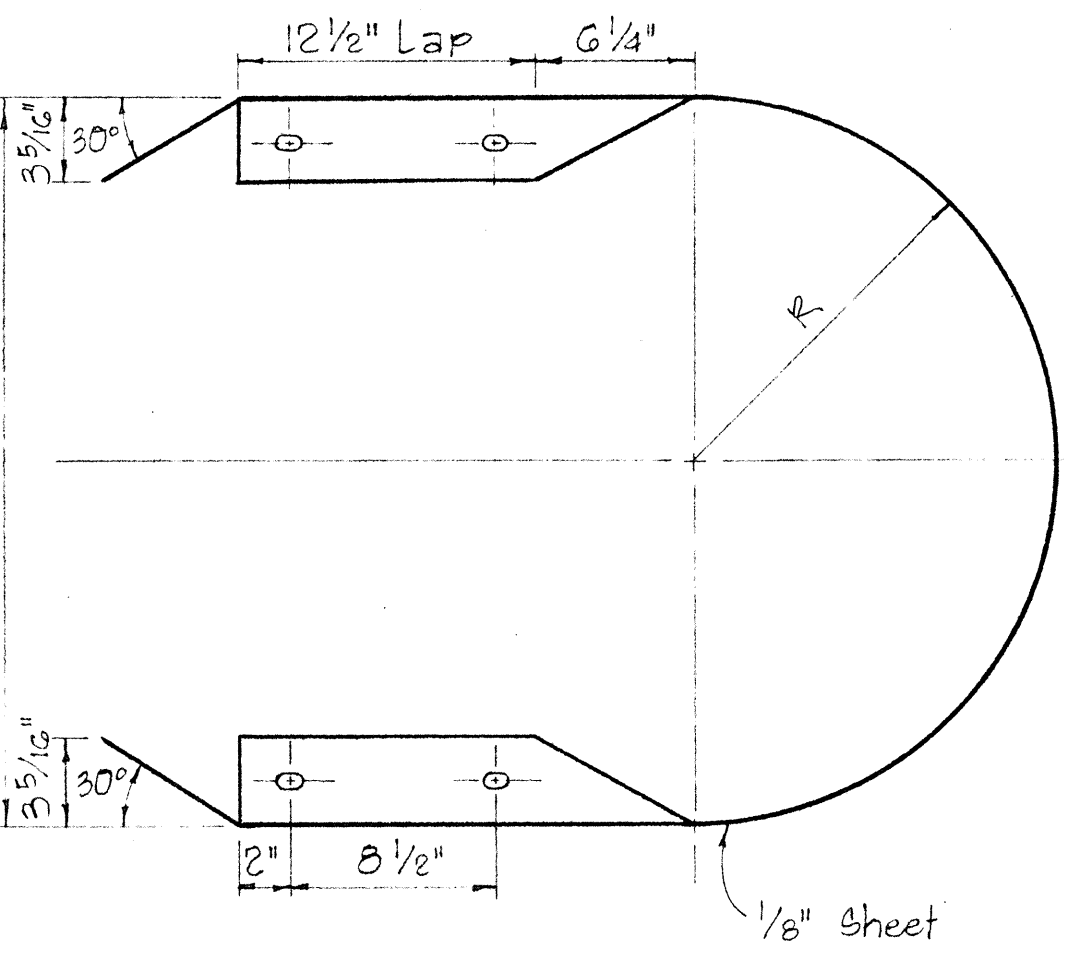
POST Bolt Slot



RAIL WASHER

NOTES:

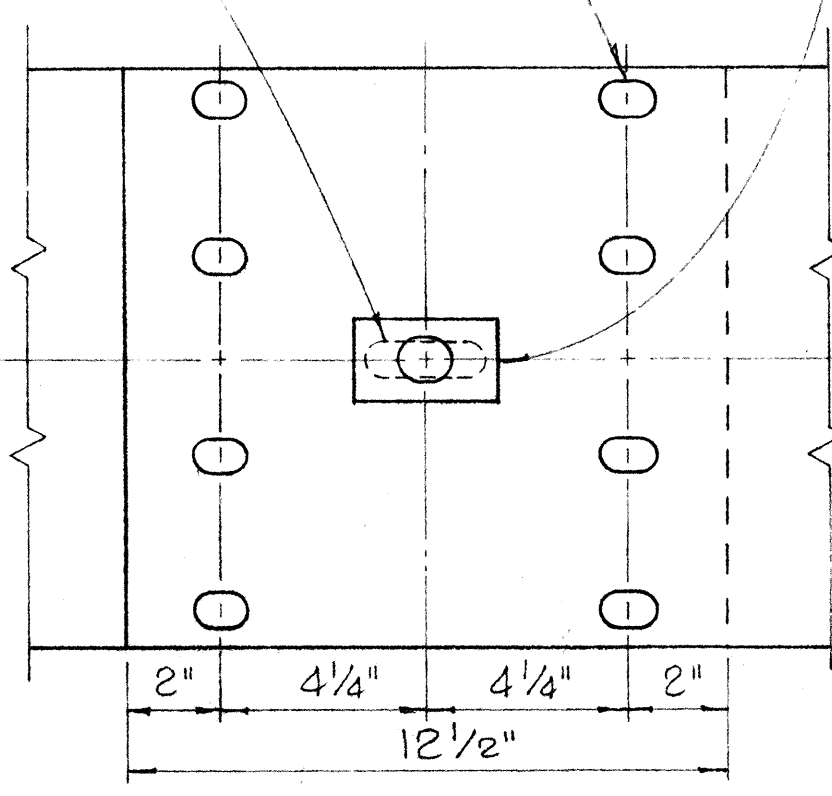
- H.S. Bolts shall conform to the requirements of ASTM A-325.
- Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AASHTO 180.



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	25 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/8"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"



RAIL SPLICE

Scale: 3" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

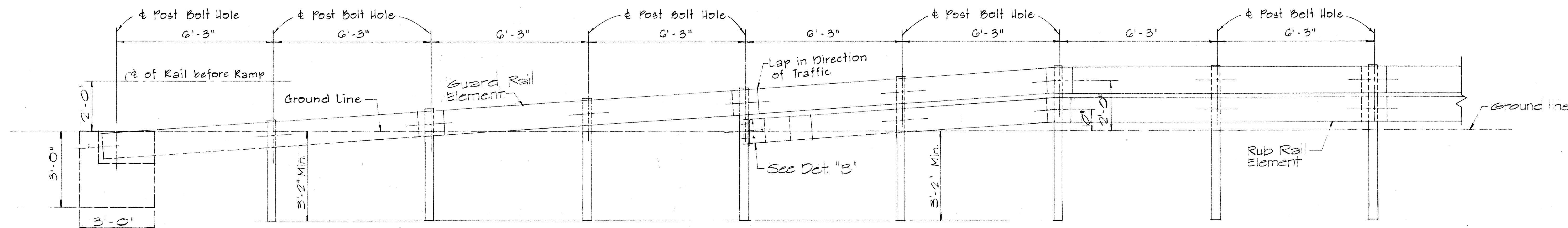
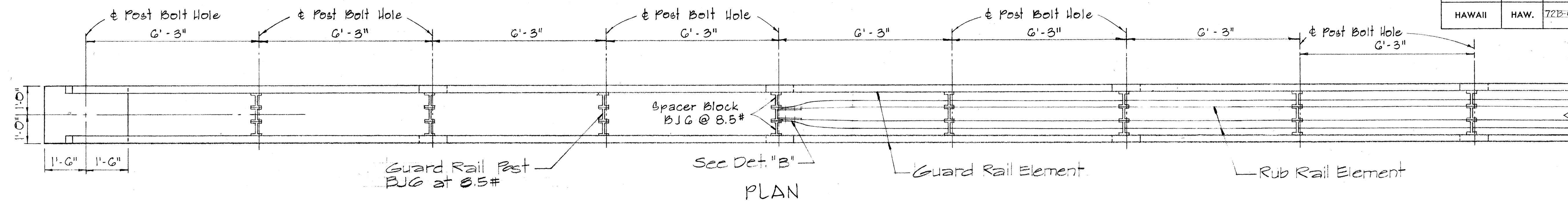
Scale: As Noted August, 1968
SHEET No. 5 OF 8 SHEETS DT 501

DD-C-6-7

DATE	BY
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-04-02	1967	9	11

REVISED: 12-11-68
REVISED: 2-24-67

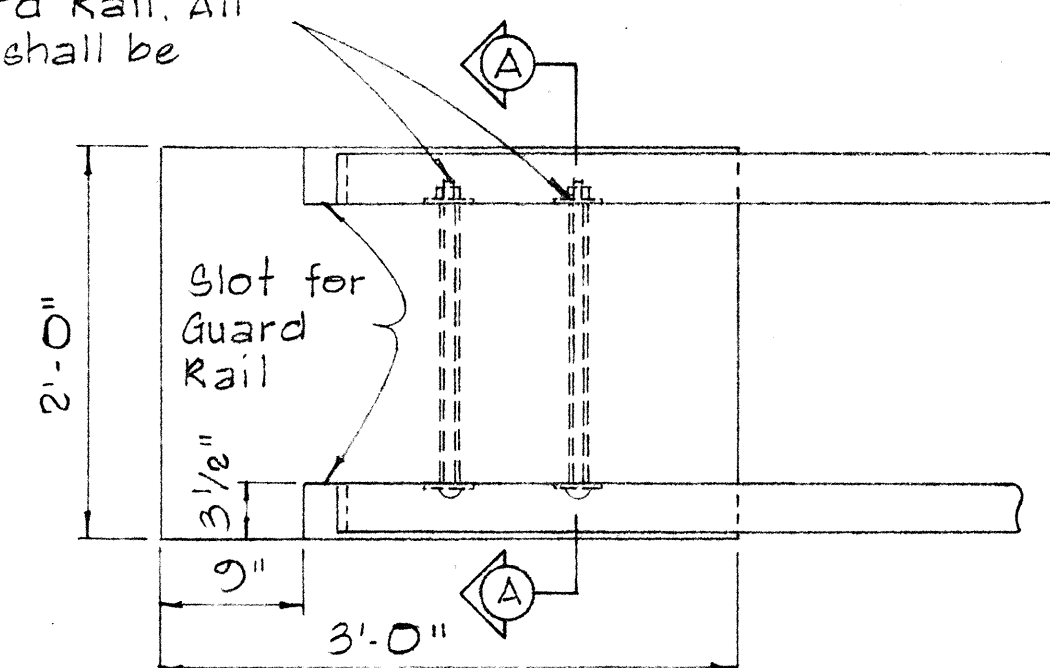


ELEVATION

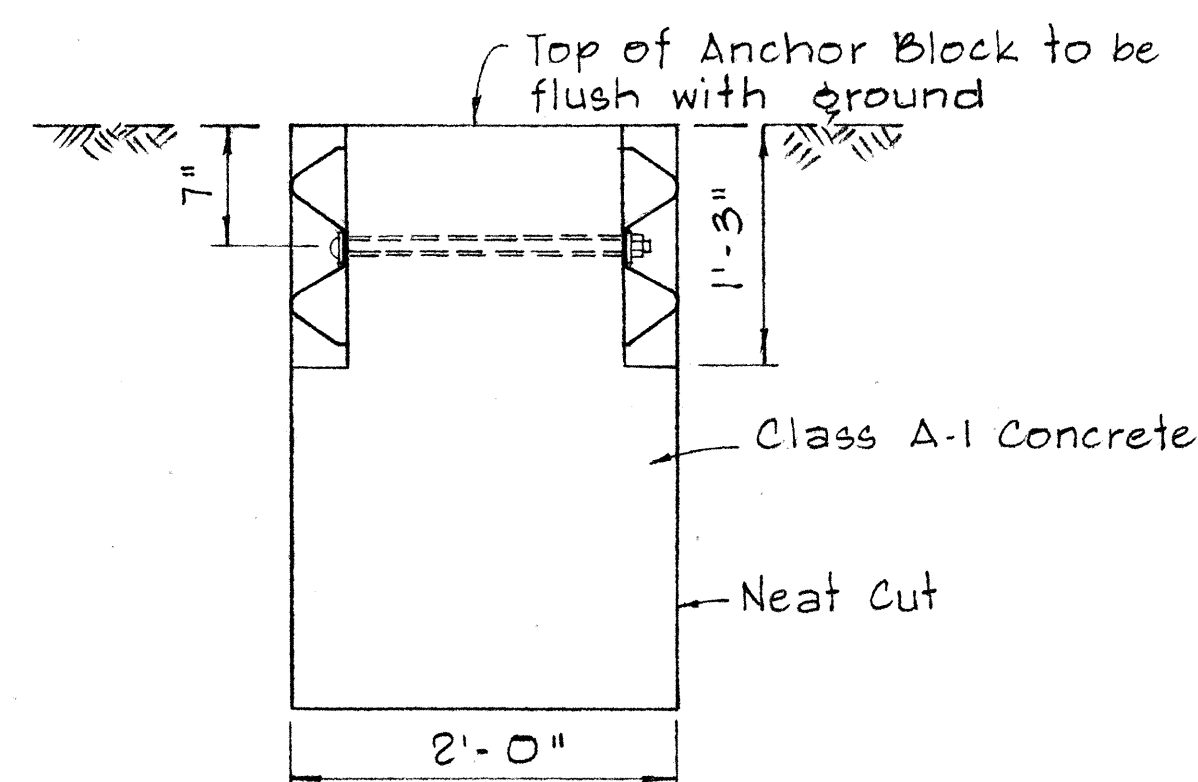
STRAIGHT APPROACH - RAMP END ANCHORAGE (MEDIAN)

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

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

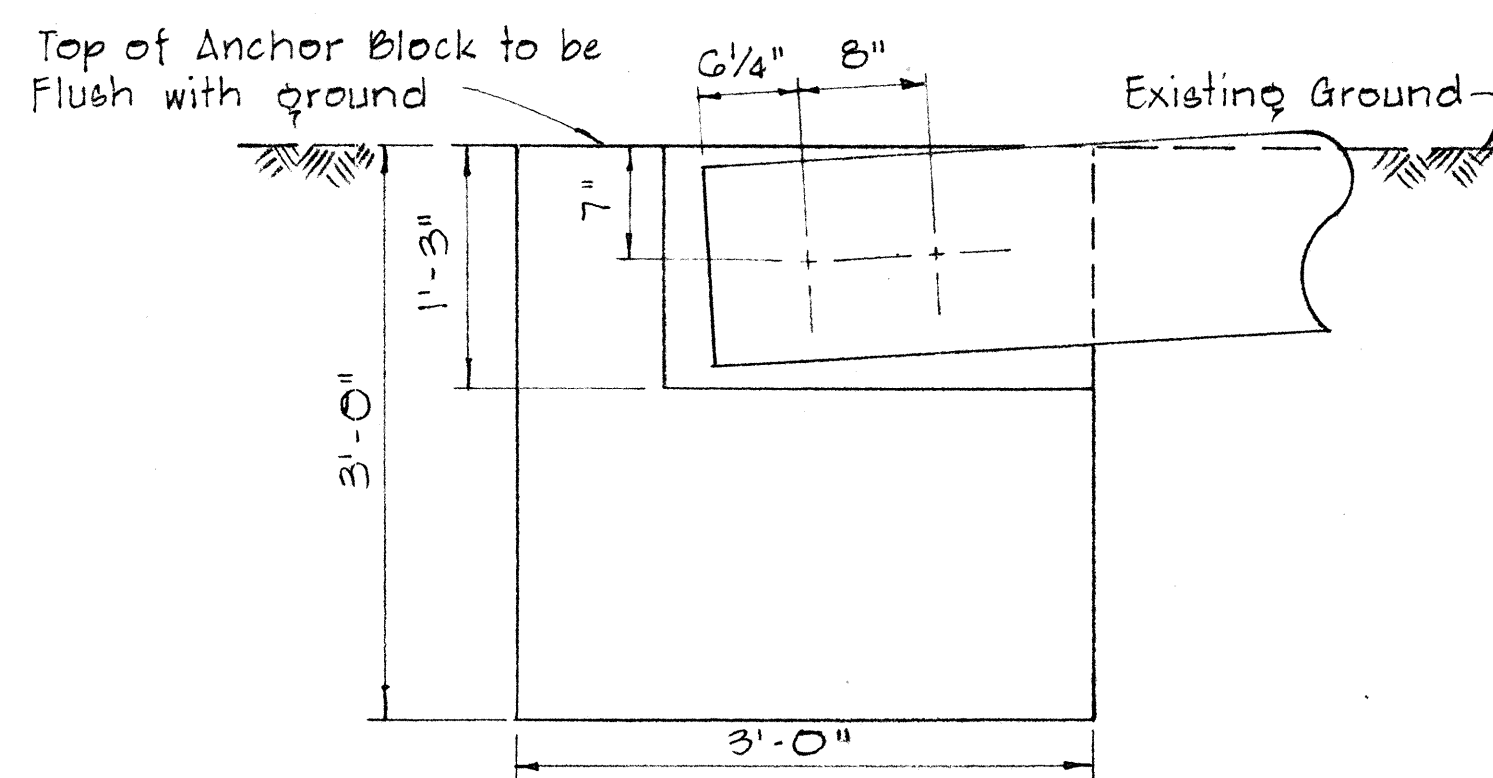


PLAN



SECTION A-A

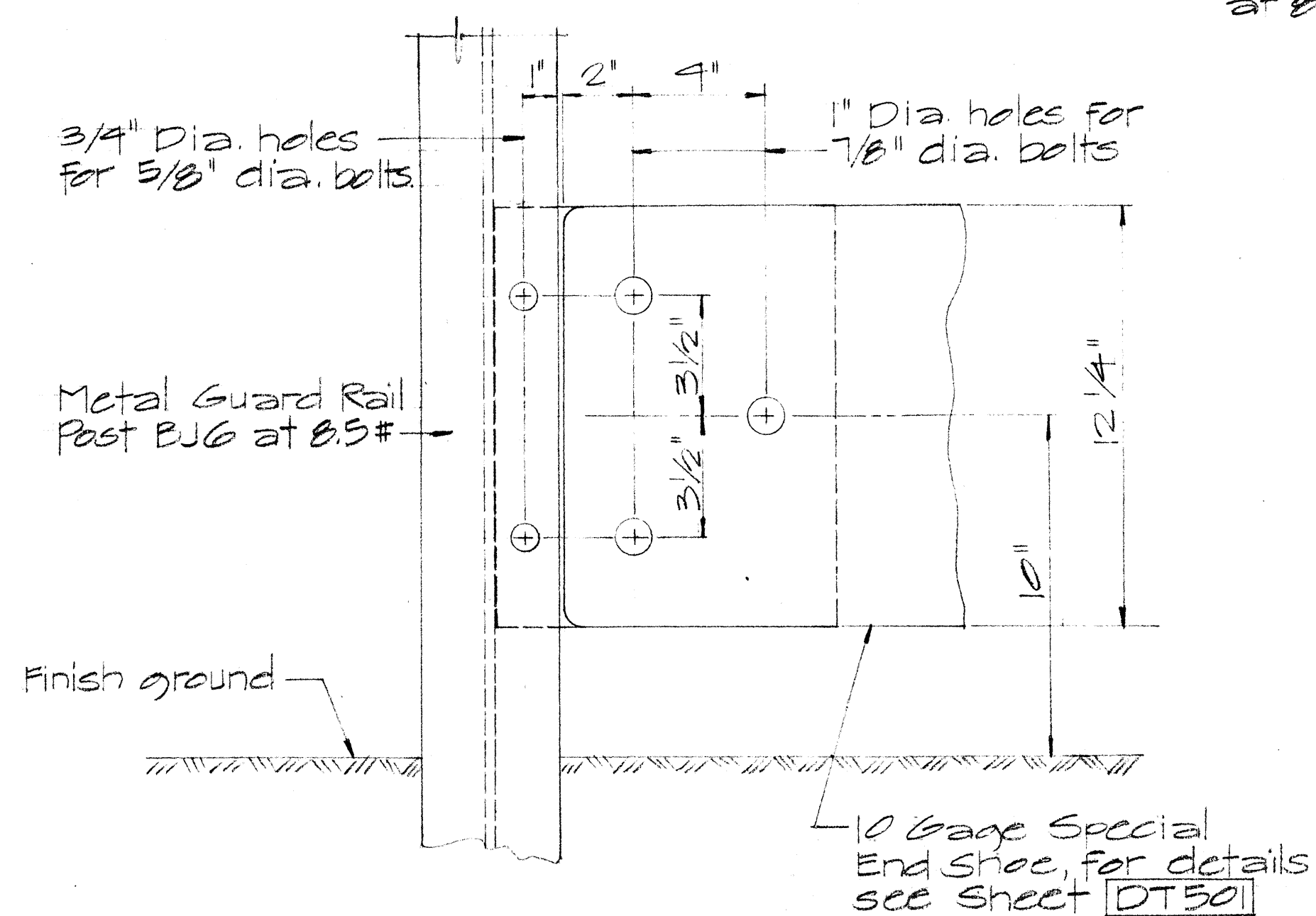
NOTE: Concrete, Excavation, and Miscellaneous Appurtenances necessary to anchor the Guard Rail Ends, shall be incidental to the Metal Guard Rail.



ELEVATION

CONCRETE ANCHOR BLOCK FOR RAMP END

Scale: 1"=1'-0"

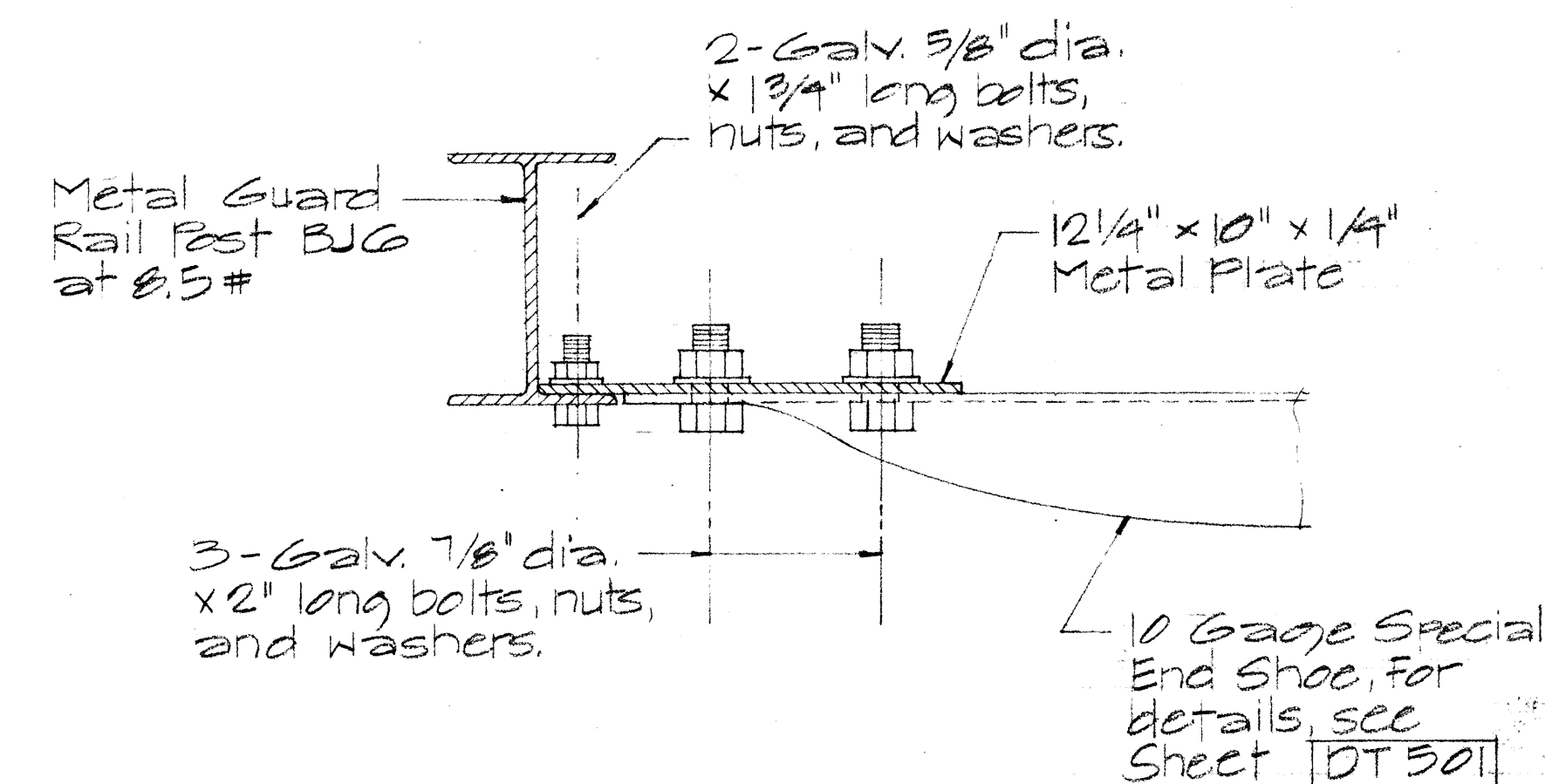


ELEVATION

DETAIL "B"

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

NOTE: All Shoe Assembly, including anchor bolts, nuts, and washers, shall be galvanized.



PLAN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAIL GUARD RAIL RAMP END ANCHORAGE

Scale: as Noted

August, 1968

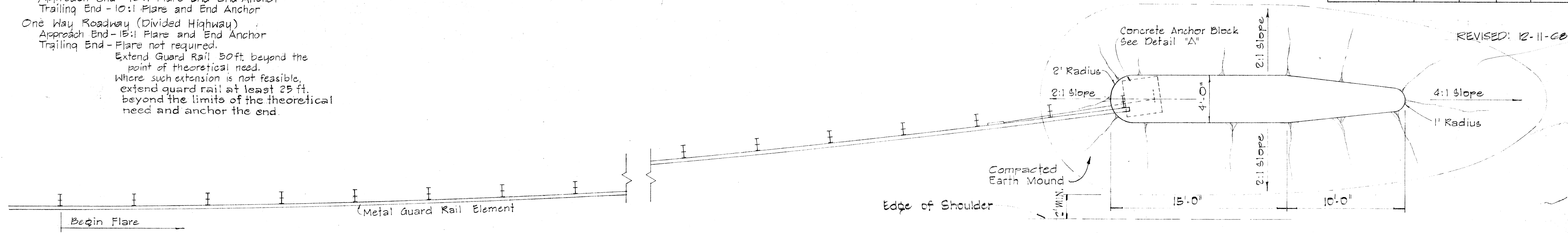
SHEET NO. 6 OF 8 SHEETS DT 502

9

NOTE:

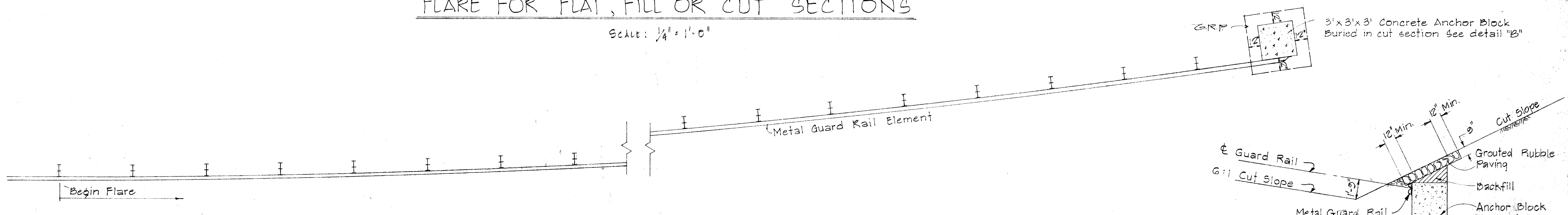
Two Way Roadway:
 Approach End - 15:1 Flare and End Anchor
 Trailing End - 10:1 Flare and End Anchor
 One Way Roadway (Divided Highway)
 Approach End - 15:1 Flare and End Anchor
 Trailing End - Flare not required.
 Extend Guard Rail 50 ft. beyond the point of theoretical need.
 Where such extension is not feasible, extend guard rail at least 25 ft. beyond the limits of the theoretical need and anchor the end.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72B-04-09	1967	10	11



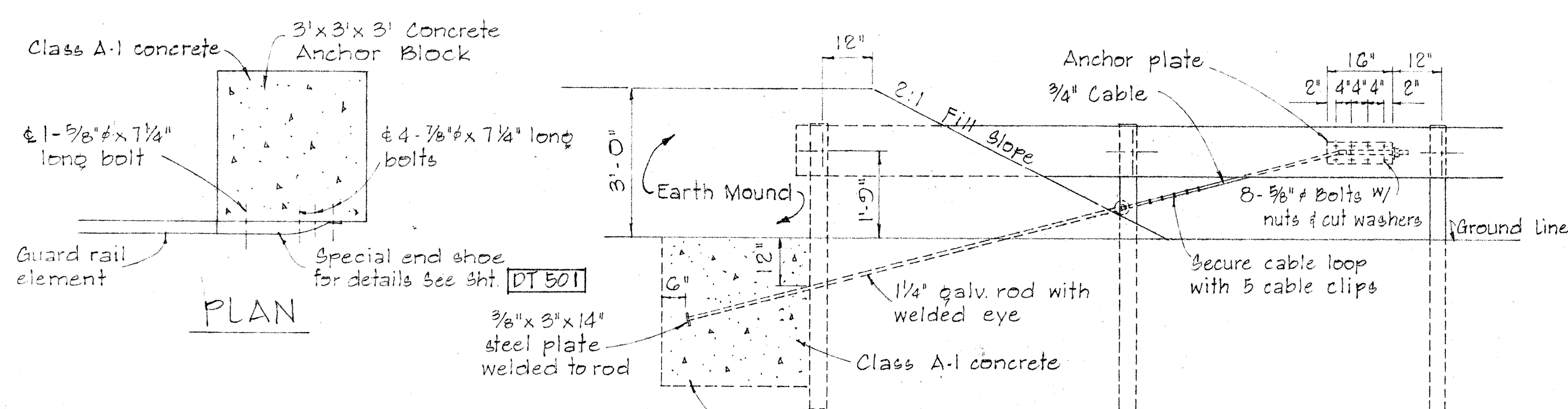
FLARE FOR FLAT, FILL OR CUT SECTIONS

SCALE: 1/4" = 1'-0"

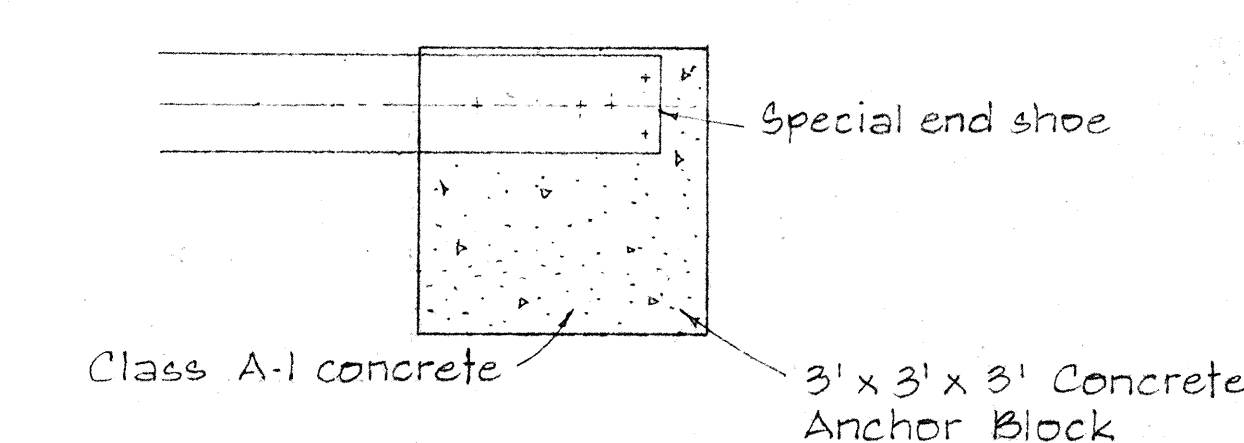


FLARE FOR CUT SECTION

SCALE: 1/4" = 1'-0"



PLAN



ELEVATION

ANCHOR BLOCK DETAIL

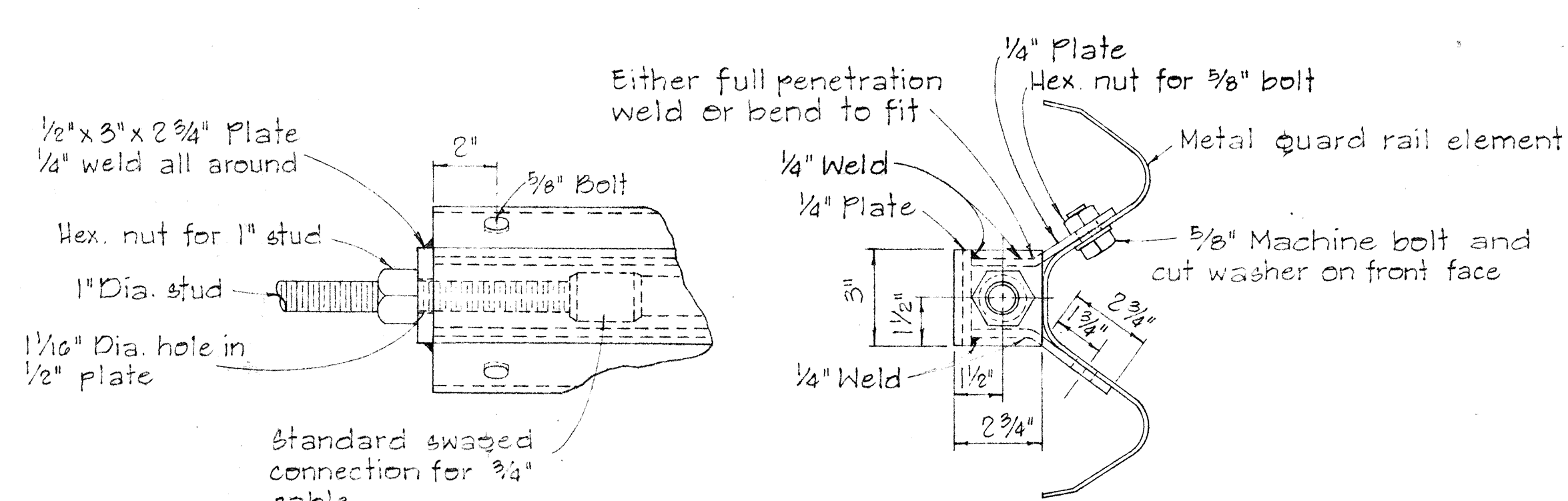
Scale: 1/2" = 1'-0"

DETAIL "A"

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

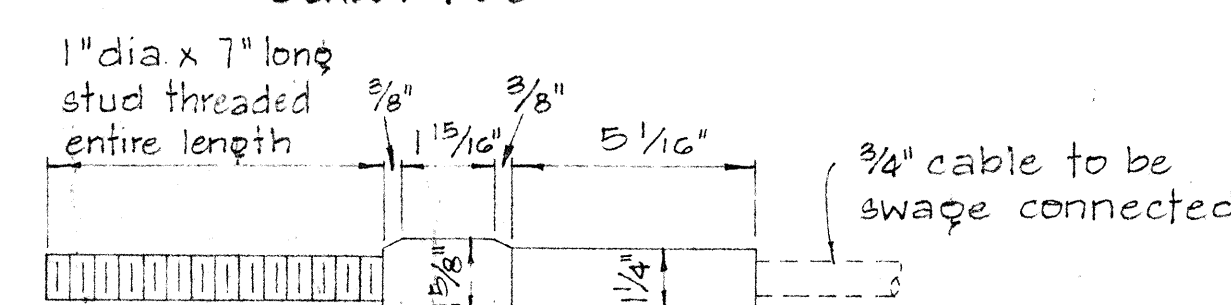
NOTE:

- Galvanized Anchor Rod, Metal Guard Rail and Post buried in ground shall be covered with coat of coal tar enamel.
- Concrete, GRP, Excavation, Earth Mound, Anchor Rods, and Miscellaneous Appurtenances necessary to anchor the Guard Rail Ends, shall be incidental to the Metal Guard Rail.



ANCHOR PLATE DETAILS

SCALE: 1" = 3"

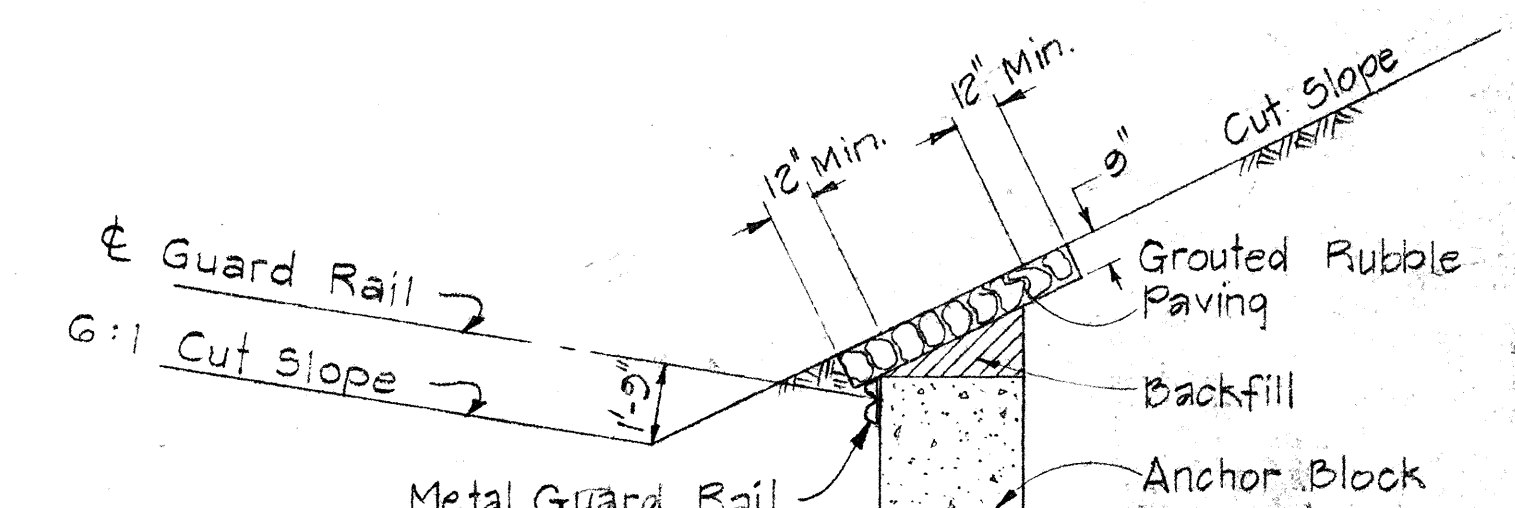


STANDARD SWAGED FITTING AND STUD

SCALE: 1" = 3"

DETAIL "B"

Not to Scale



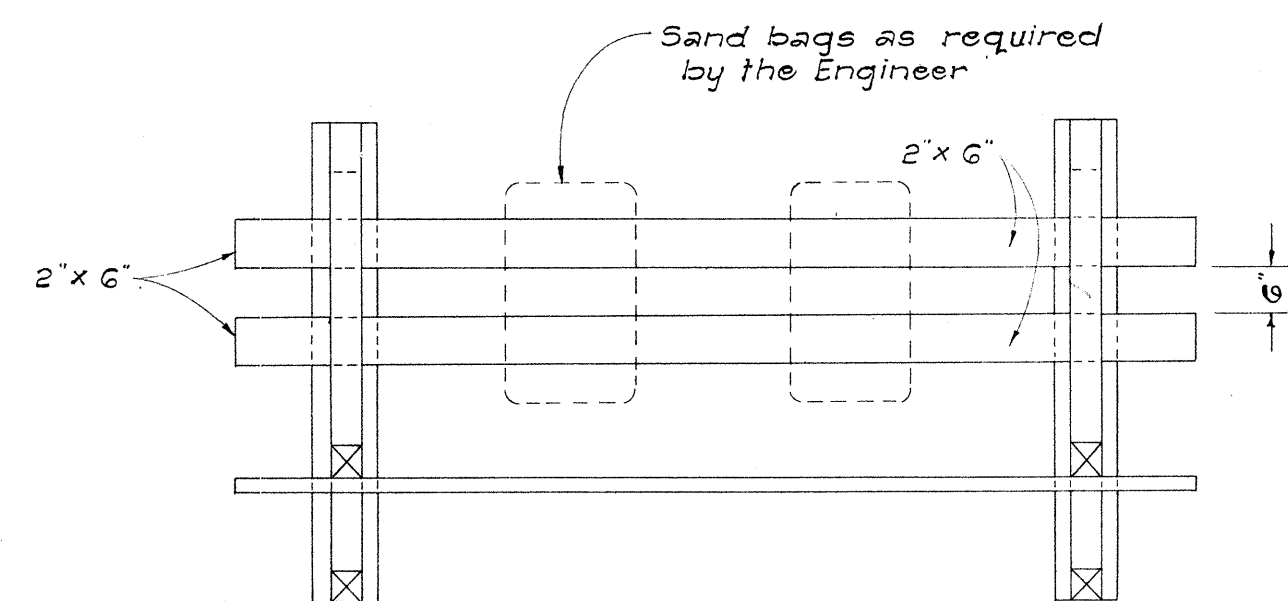
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

METAL GUARD RAIL FLARE DETAIL

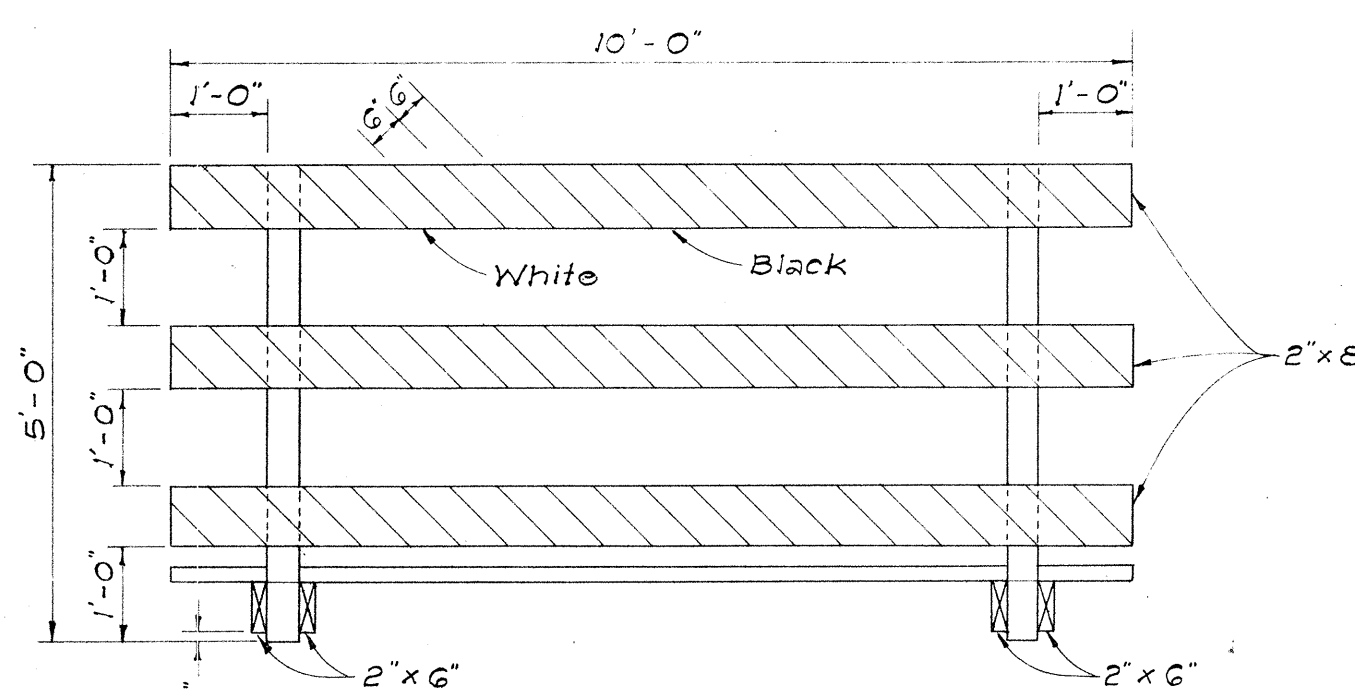
Scale: As Shown

Nov. 1968

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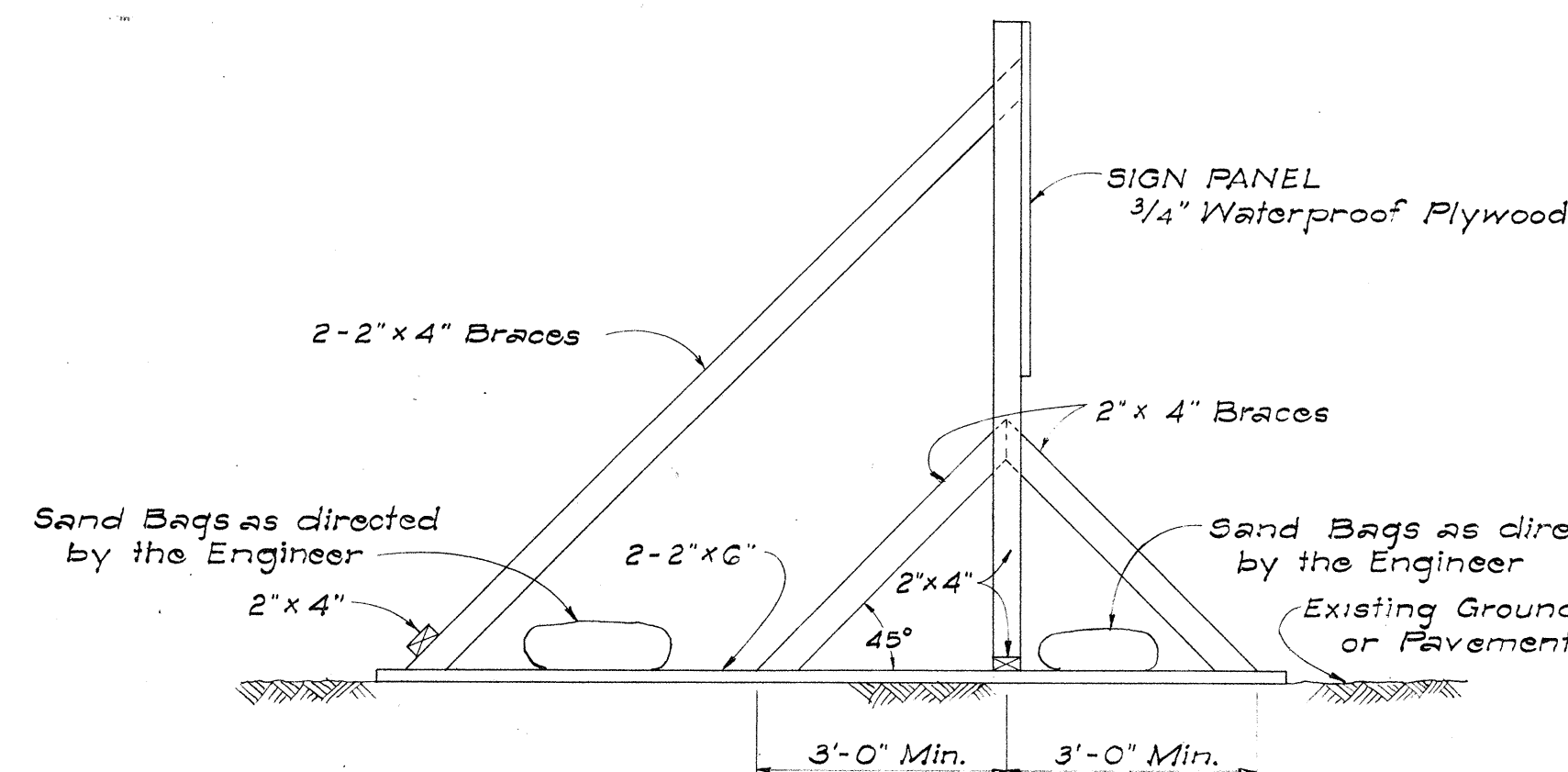


PLAN VIEW

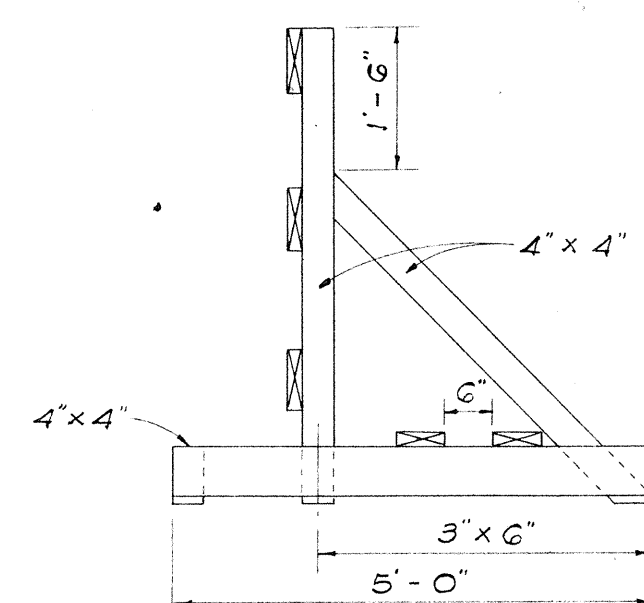


FRONT VIEW

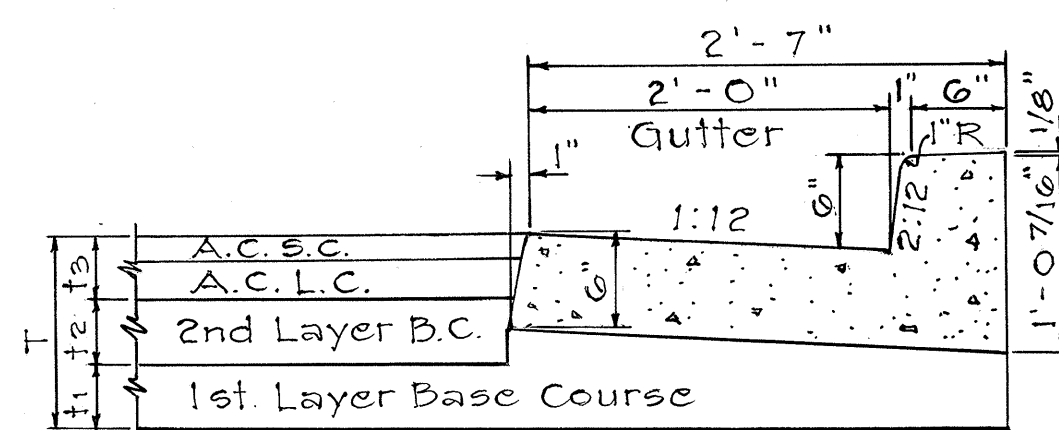
CLASS I BARRICADE



SIDE VIEW
(SIGN FRAME WEIGHTED DOWN)



END VIEW

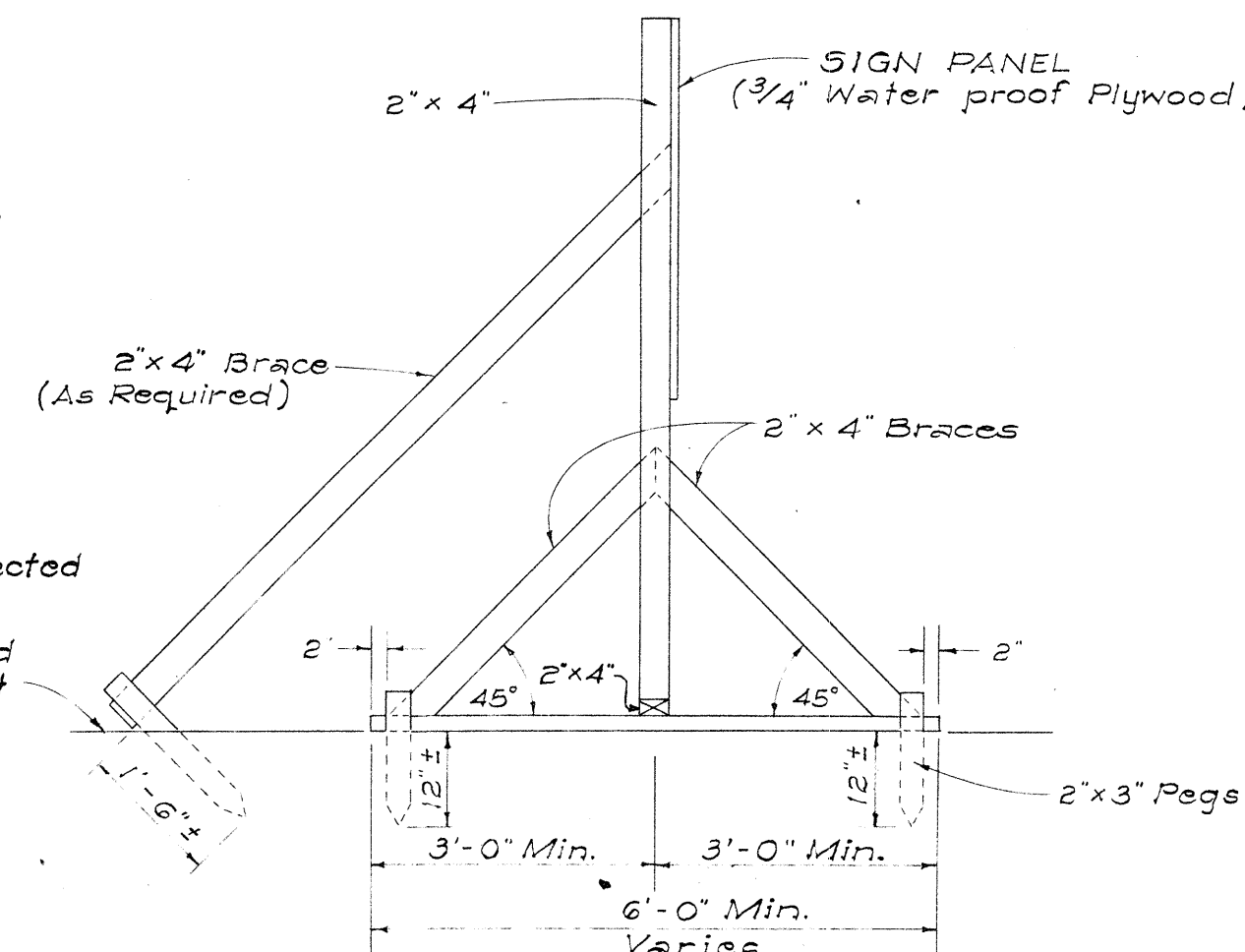


TYPE "DG" CURB & GUTTER

Scale: 1" = 1' - 0"

NOTE:

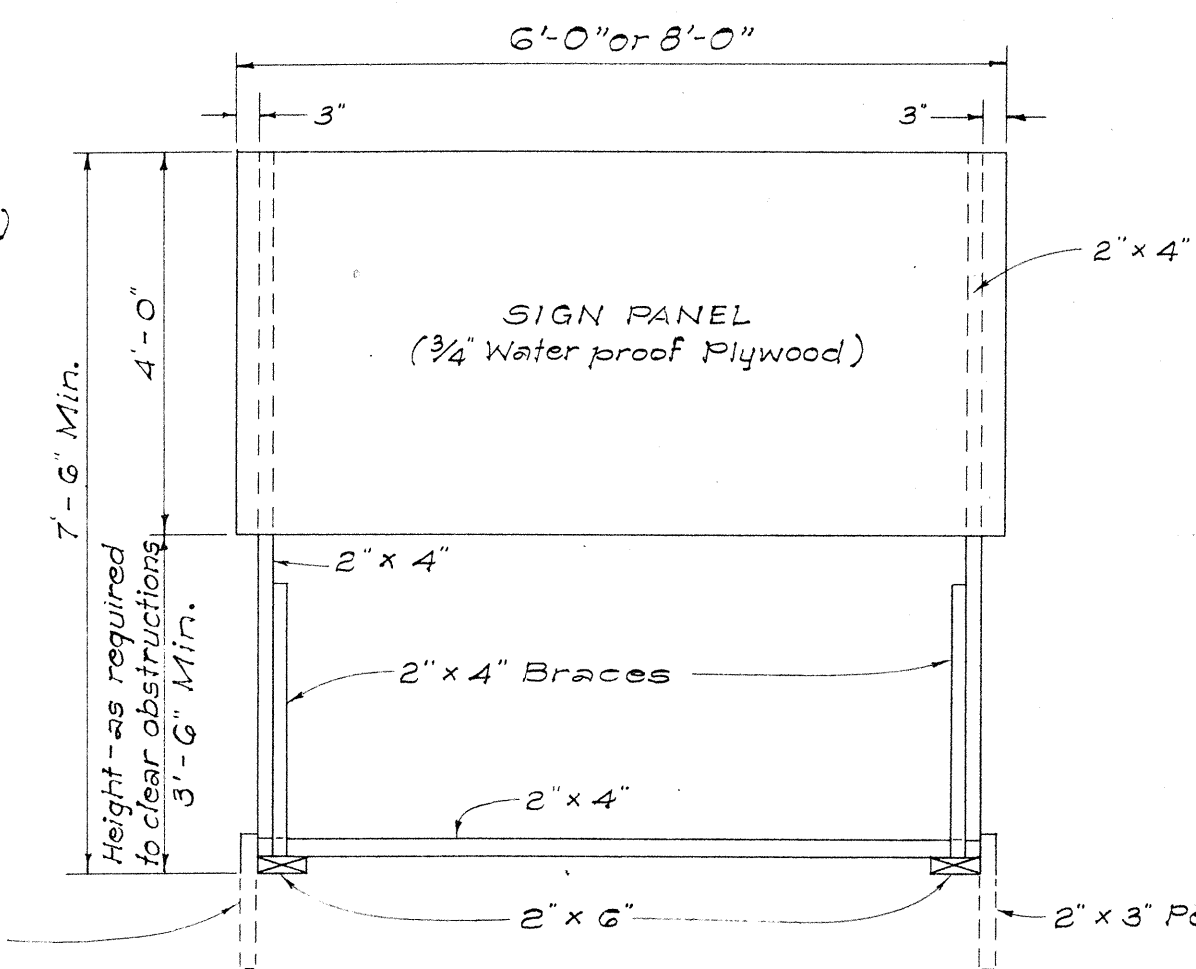
Type "DG" Concrete Curb and Gutter, are to be poured monolithically, cast-in-place, and shall be of Class "A-1" Concrete.



SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)

ELEVATIONS

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



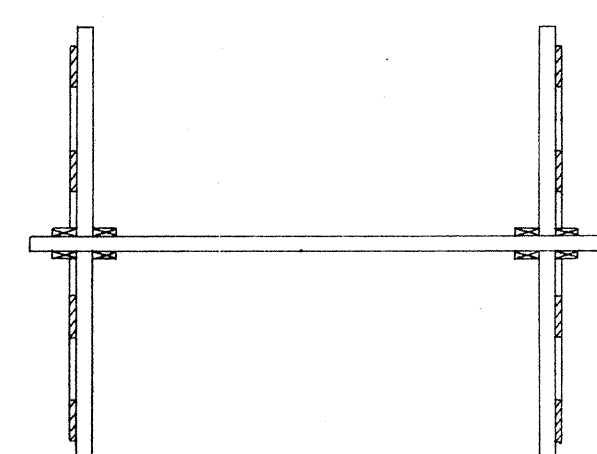
FRONT VIEW

NOTES:

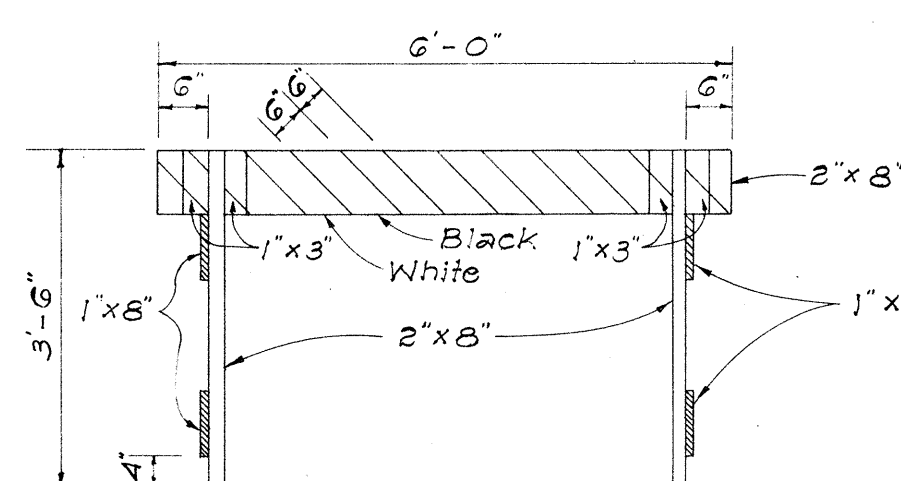
- CONSTRUCTION IDENTIFICATION SIGNS**
 - The sign legend shall be black on white background.
 - The Contractor shall construct, install and maintain the project signs at the locations shown on the plans and as ordered by the Engineer.
 - Letters shall be Series "C" of the sizes shown on the Plan and 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

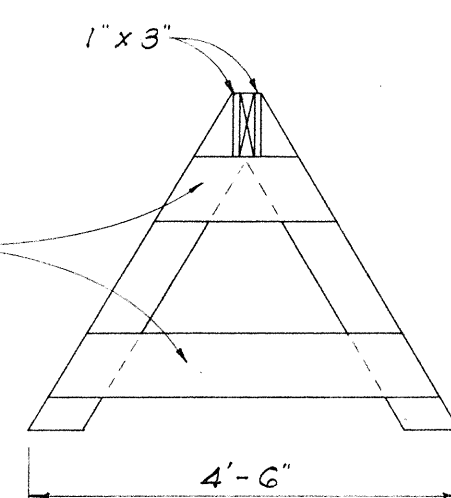
- The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
- The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.



PLAN VIEW



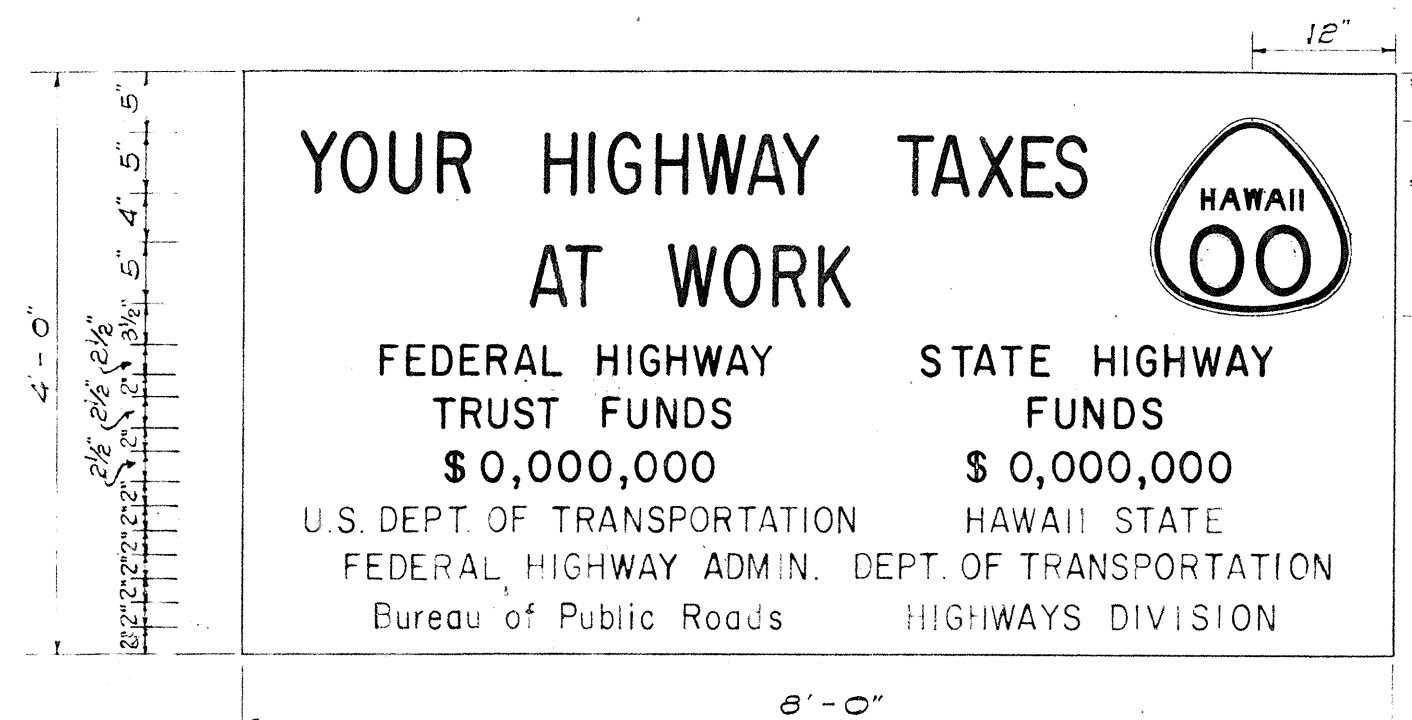
FRONT VIEW



END VIEW

CLASS II BARRICADE

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

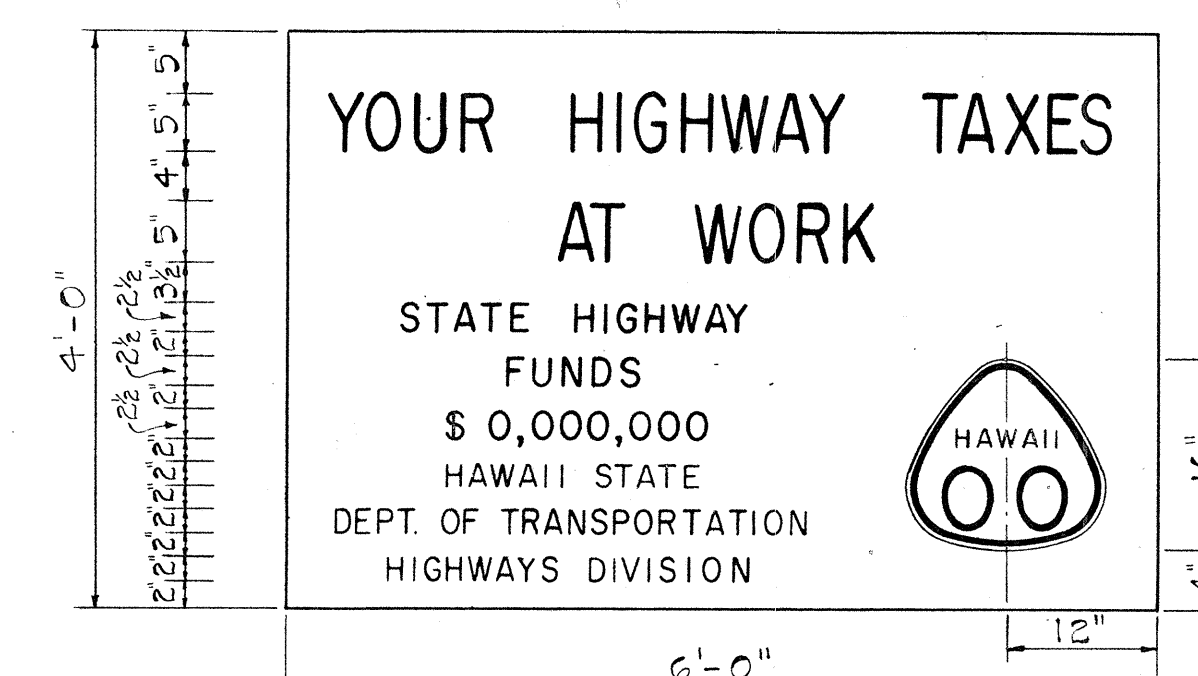


SIGN PANEL

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

PRIMARY AND SECONDARY SYSTEMS CONSTRUCTION IDENTIFICATION SIGN

Scale: As Shown



SIGN PANEL

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

NON-FEDERAL AID PROJECT CONSTRUCTION IDENTIFICATION SIGN

REVISED: February 25, 1969

REVISED: October 2, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES
AND
TYPE "DG" CURB & GUTTER

SCALE: As Shown

DATE: March, 1967

SHEET No. 8 OF 8 SHEETS