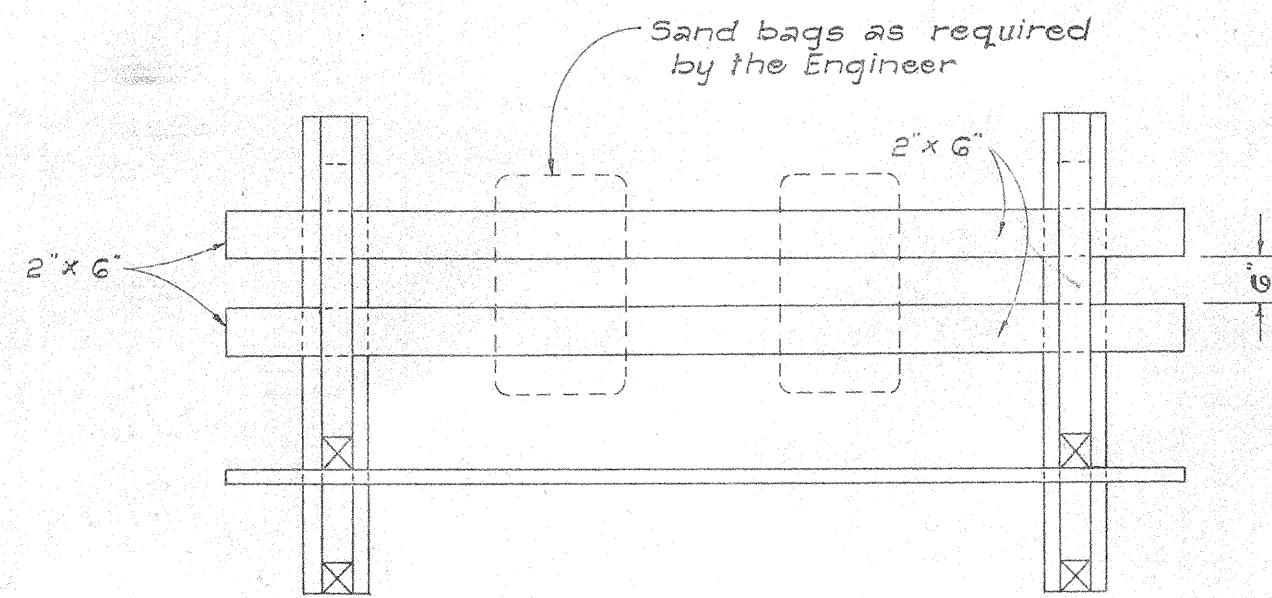
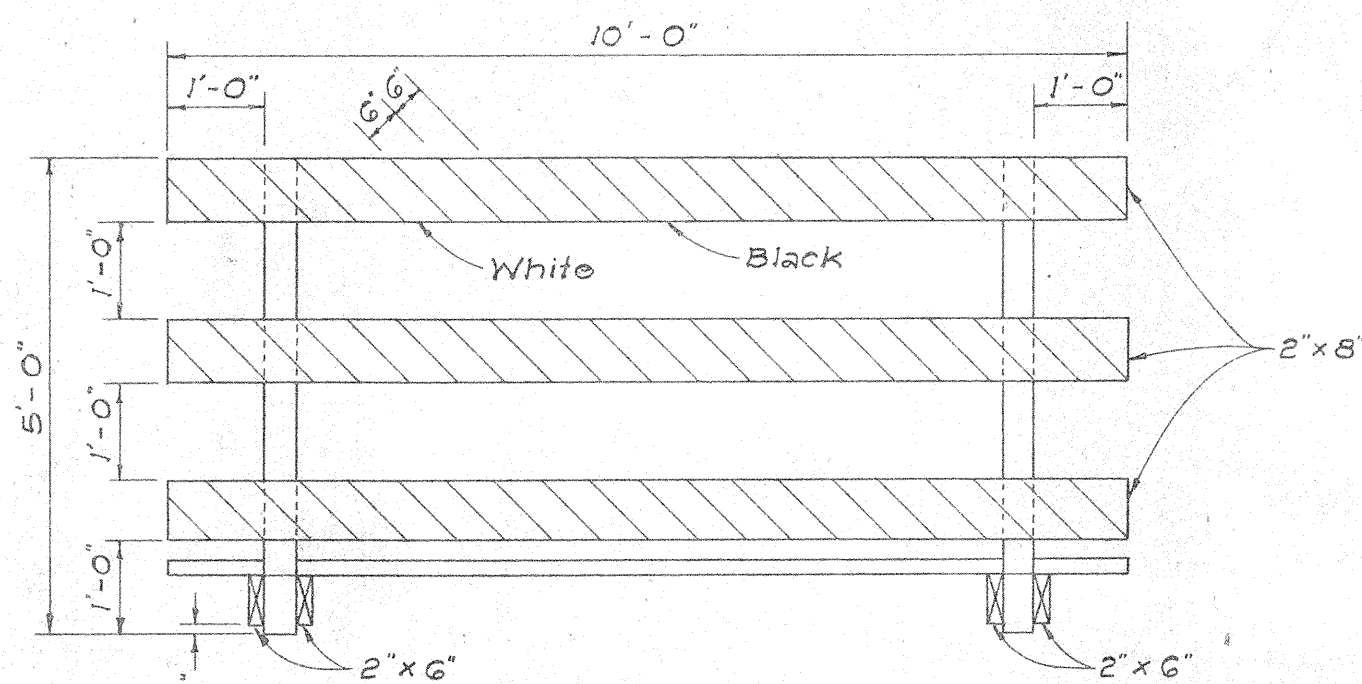


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-063-1(9) U-063-1(7)	1969	9	15

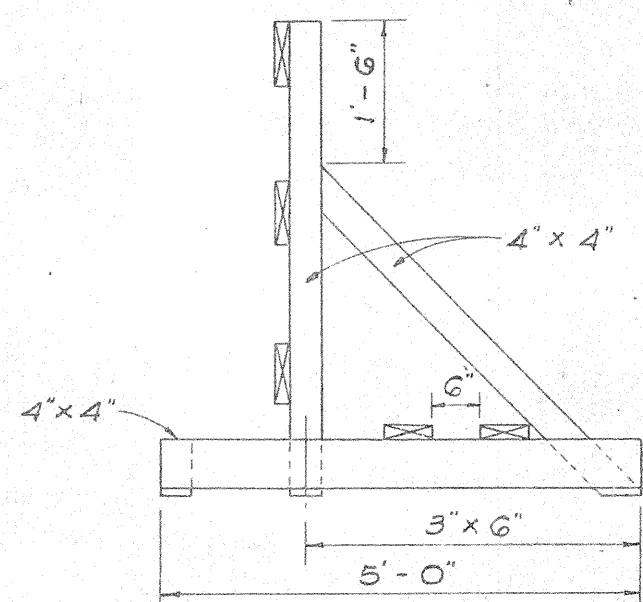


PLAN VIEW

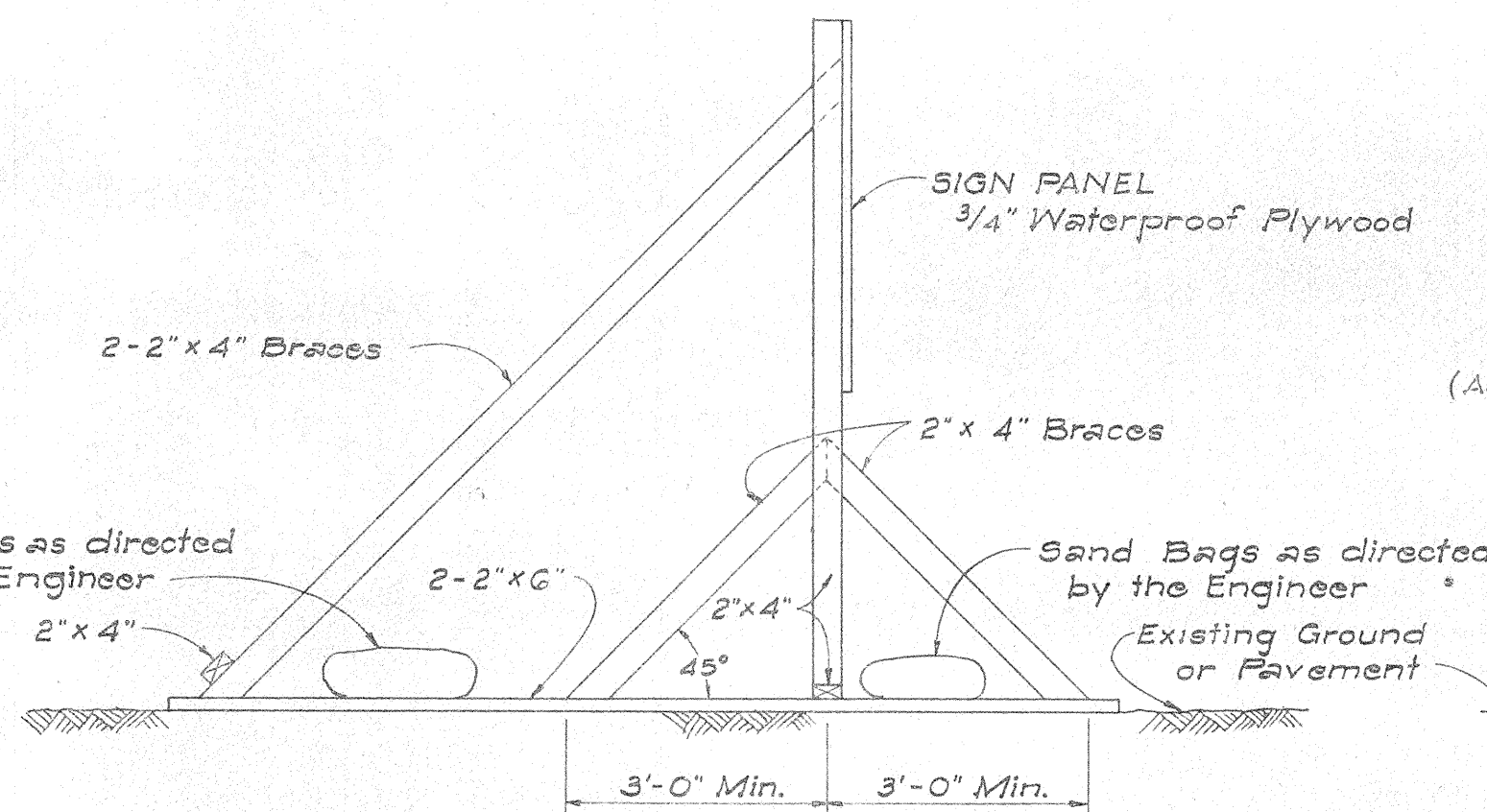


FRONT VIEW

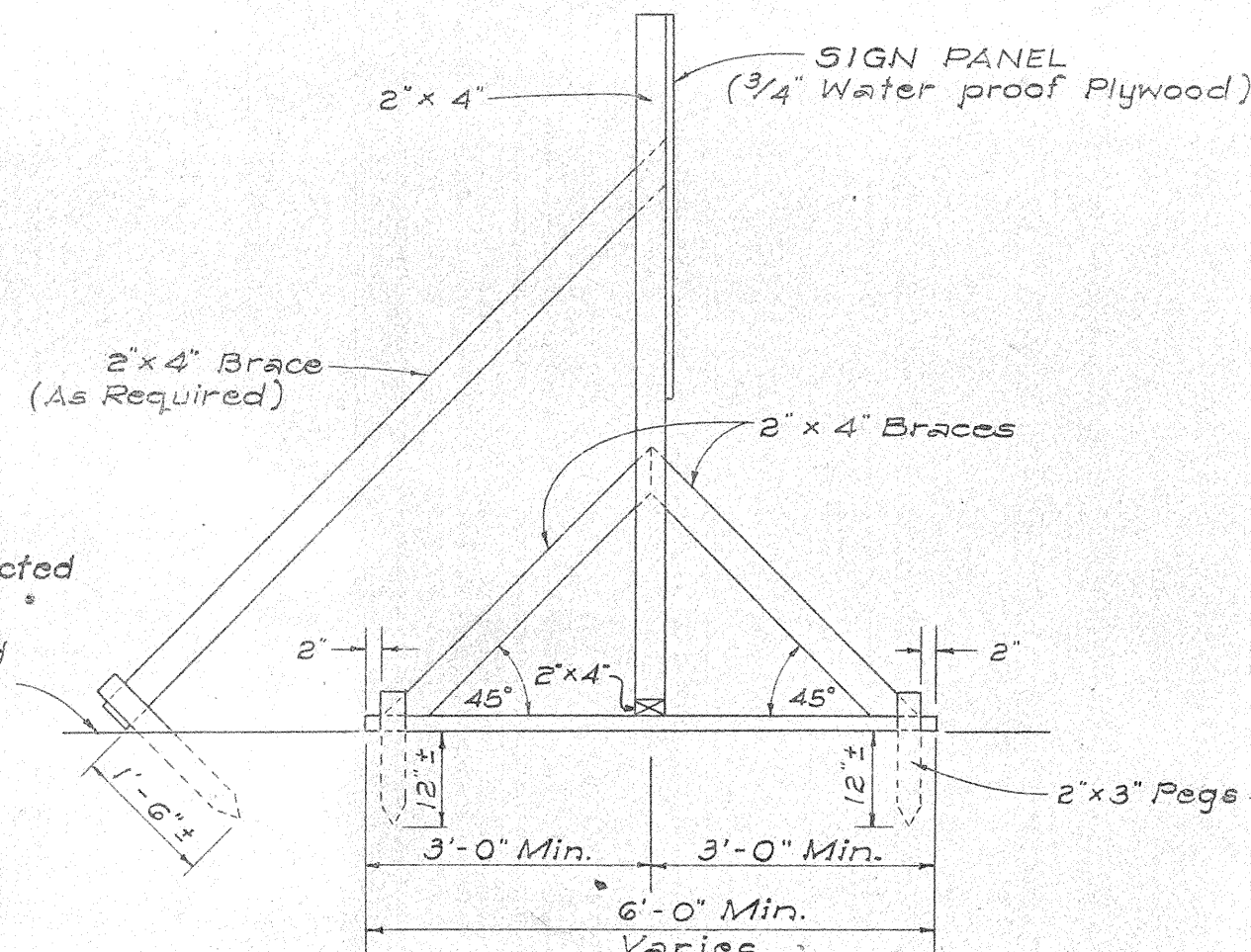
CLASS I BARRICADE



END VIEW



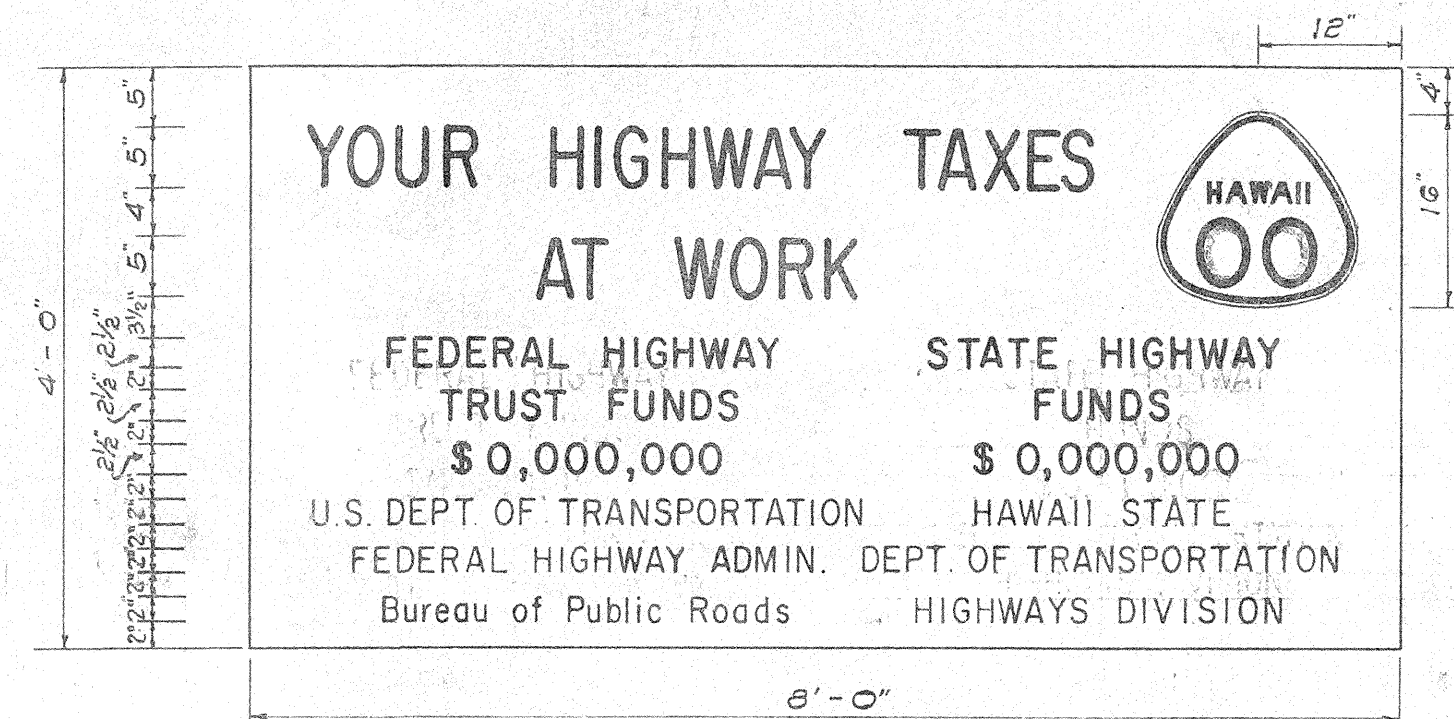
SIDE VIEW
(SIGN FRAME WEIGHTED DOWN)



SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)

ELEVATIONS

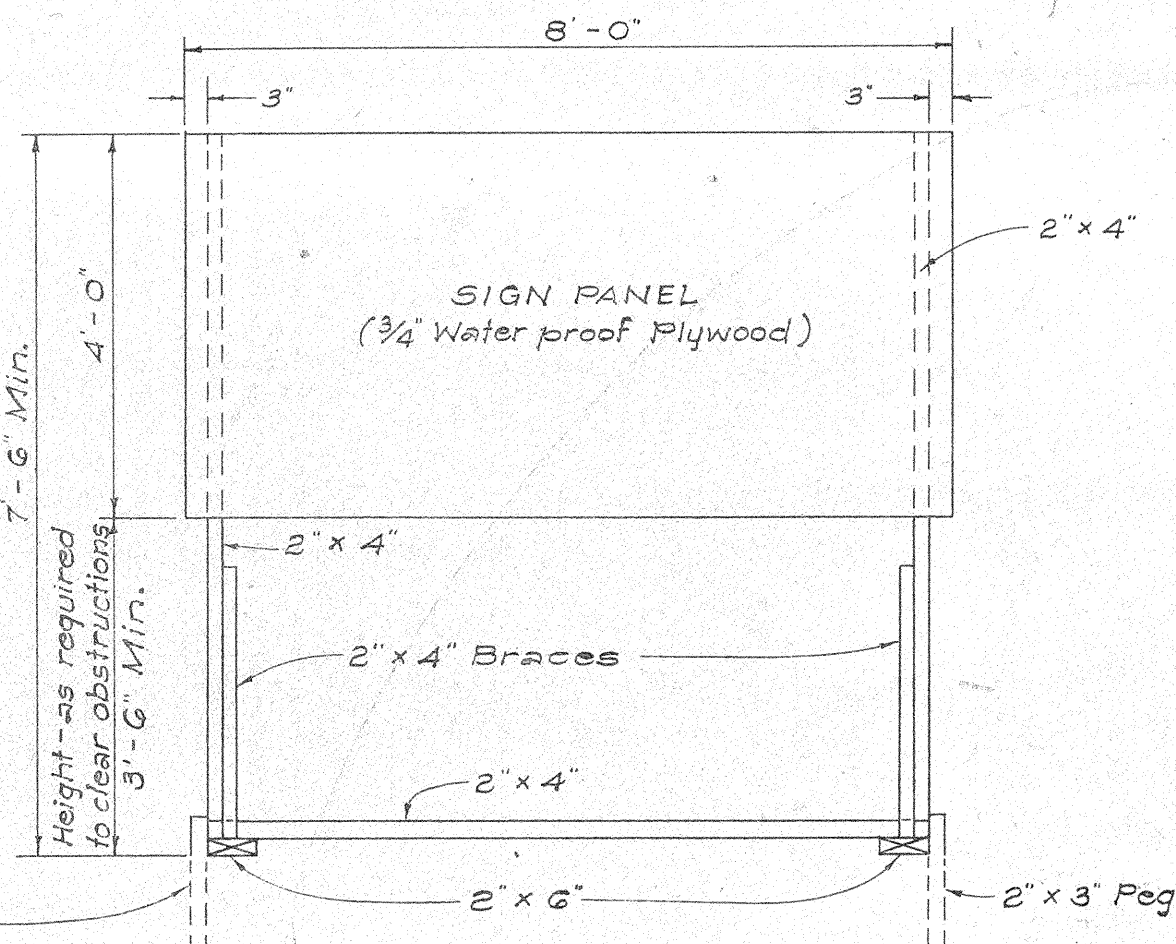
Scale: 1/2" = 1'-0"



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

PRIMARY AND SECONDARY SYSTEMS CONSTRUCTION IDENTIFICATION SIGN

Scale: As Shown



FRONT VIEW

NOTES:

- A. CONSTRUCTION IDENTIFICATION SIGNS
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. 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.
 4. 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.

REVISED: October 2, 1967

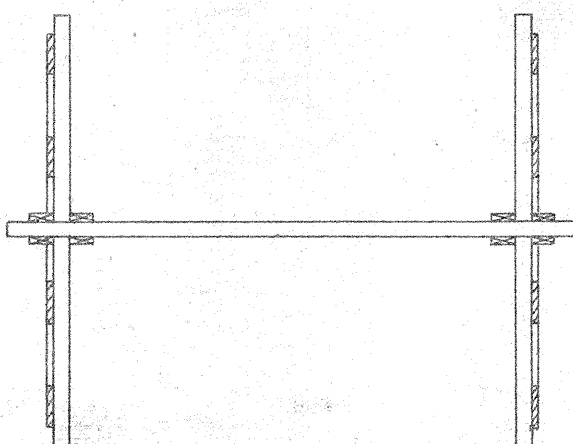
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES

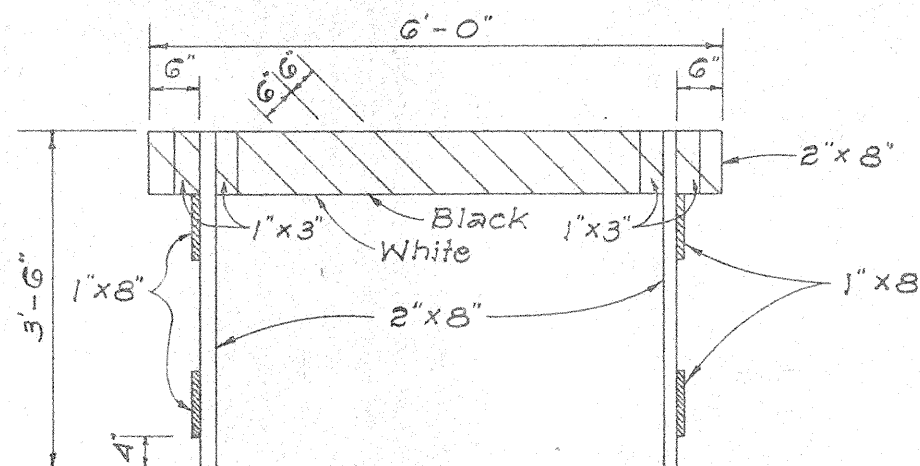
SCALE: As Shown DATE: March, 1969

SHEET No. 1 OF 7 SHEETS

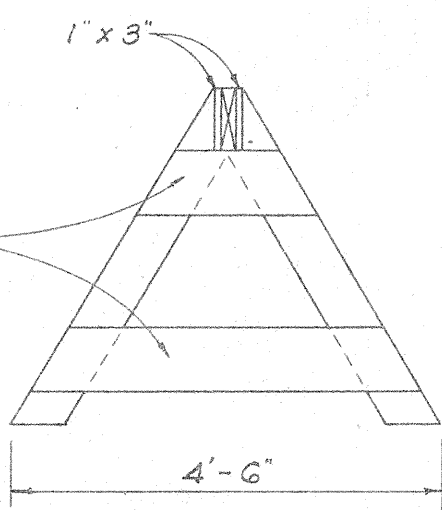
ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	



PLAN VIEW



FRONT VIEW



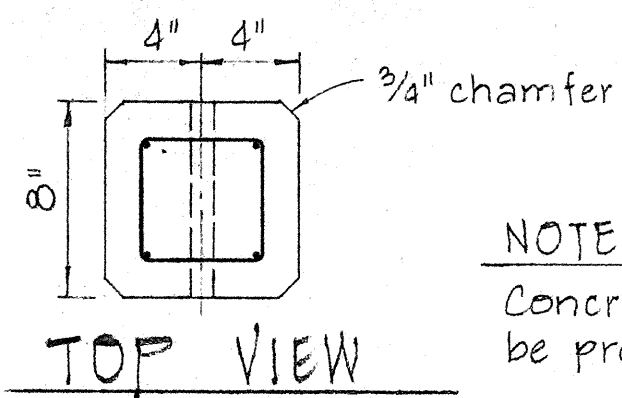
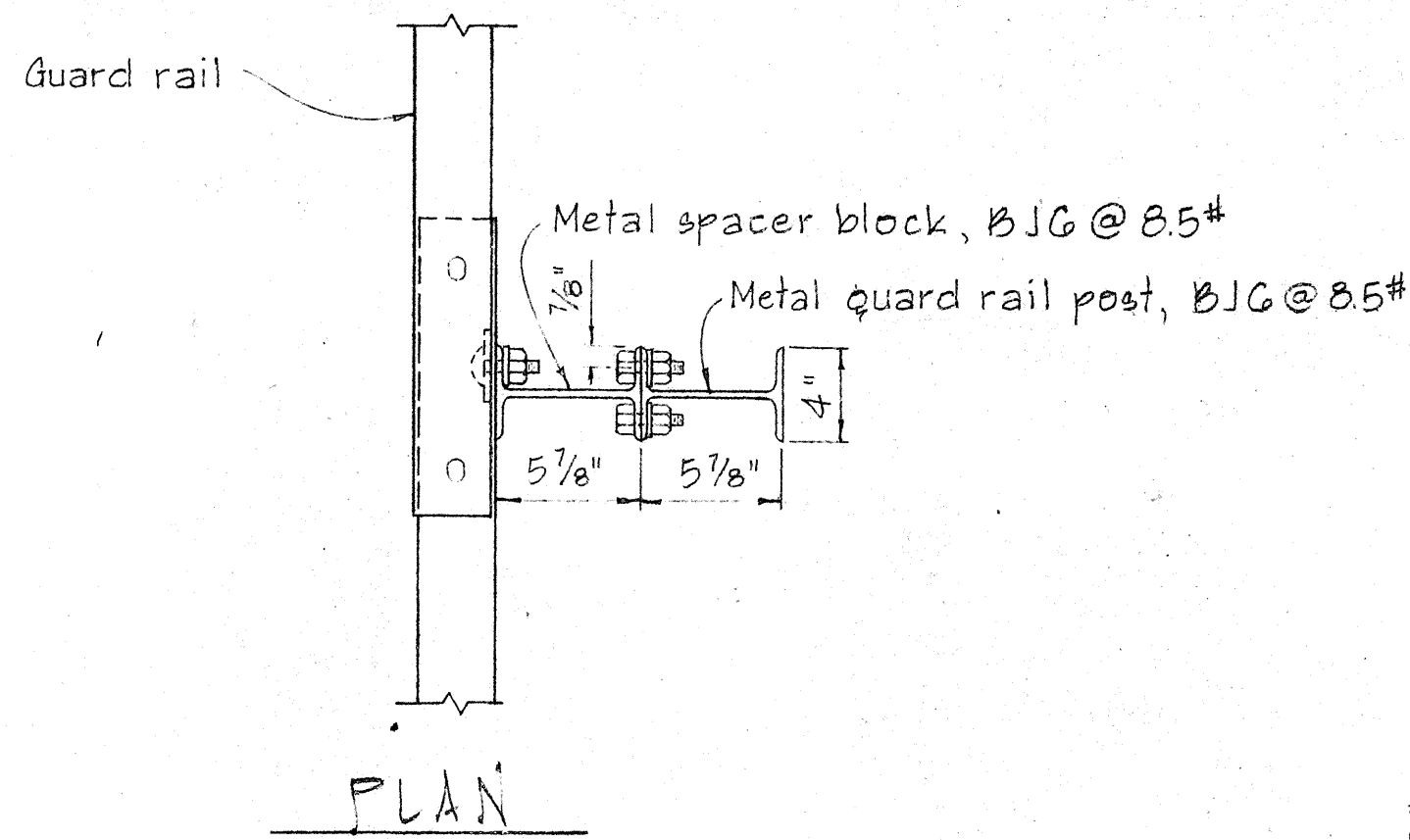
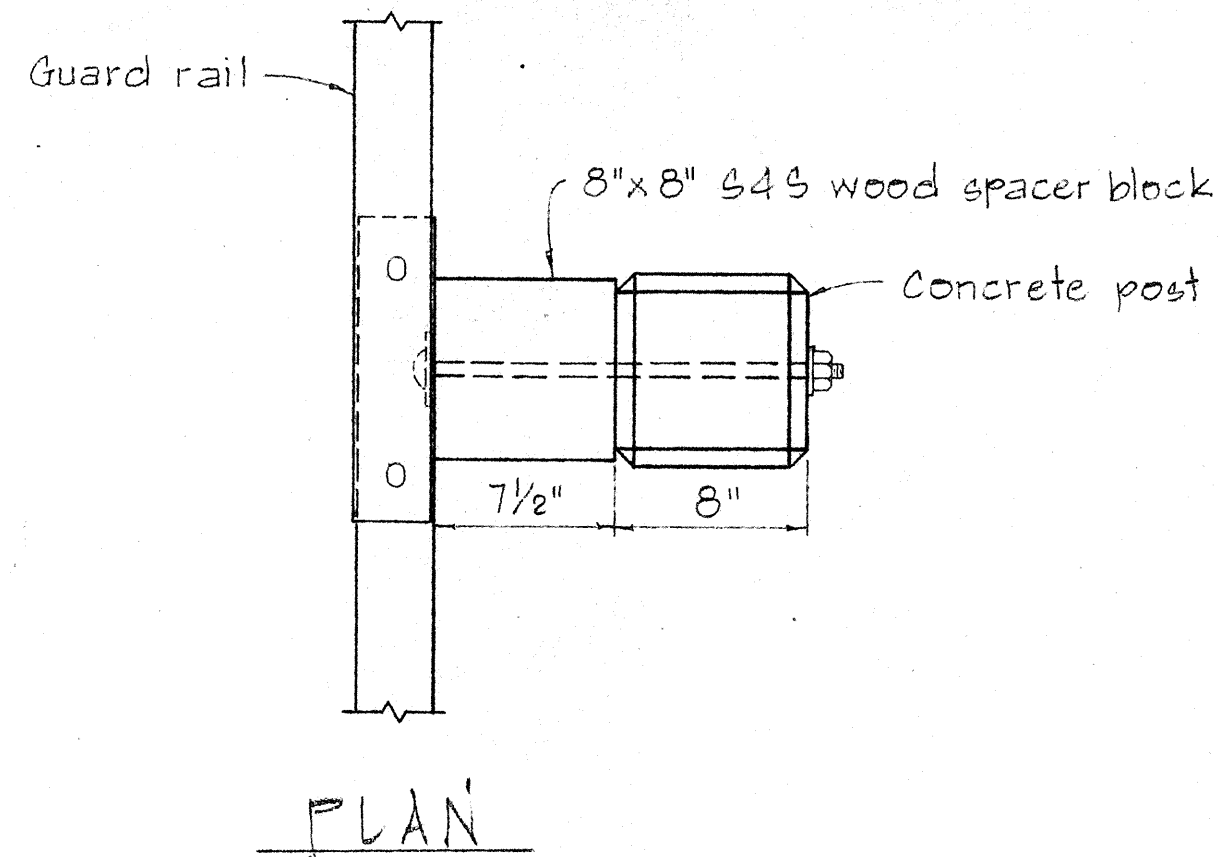
END VIEW

CLASS II BARRICADE

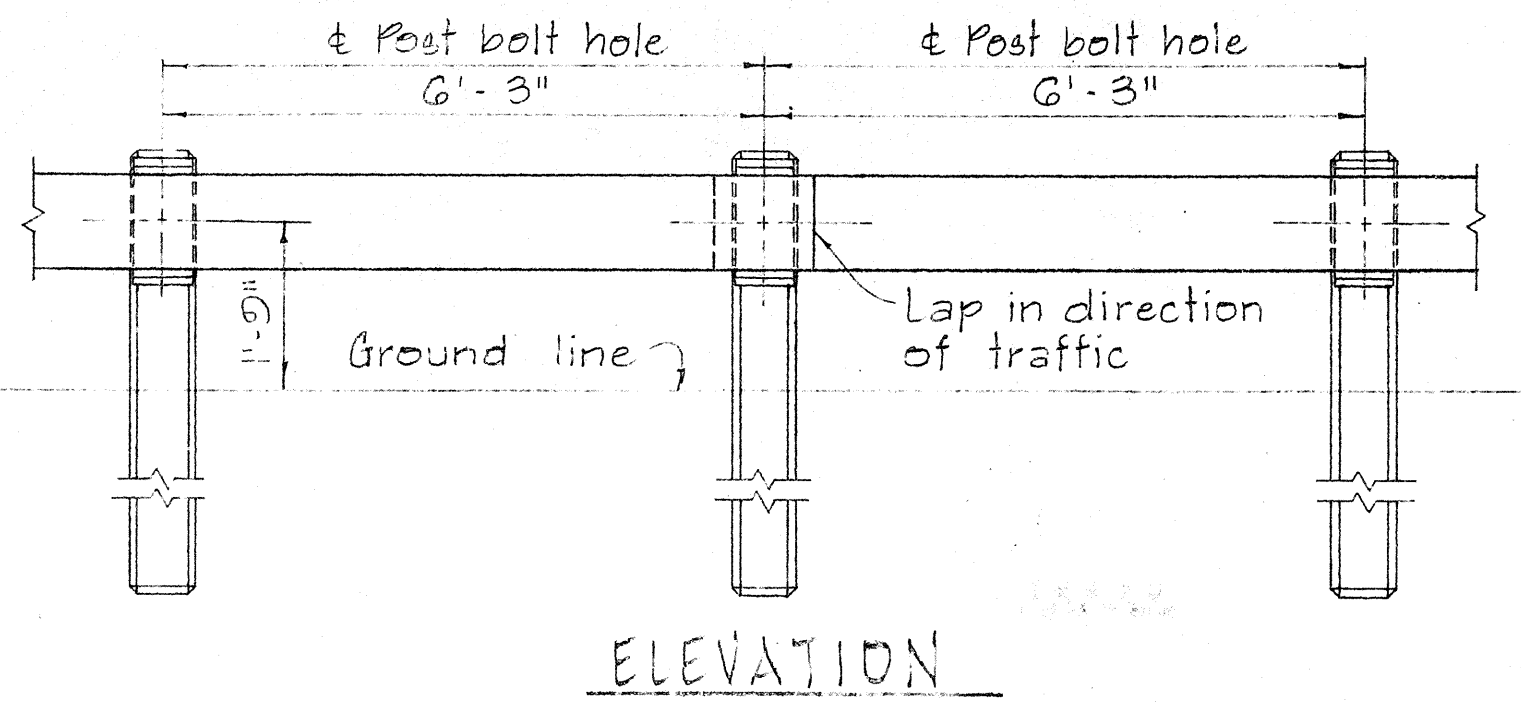
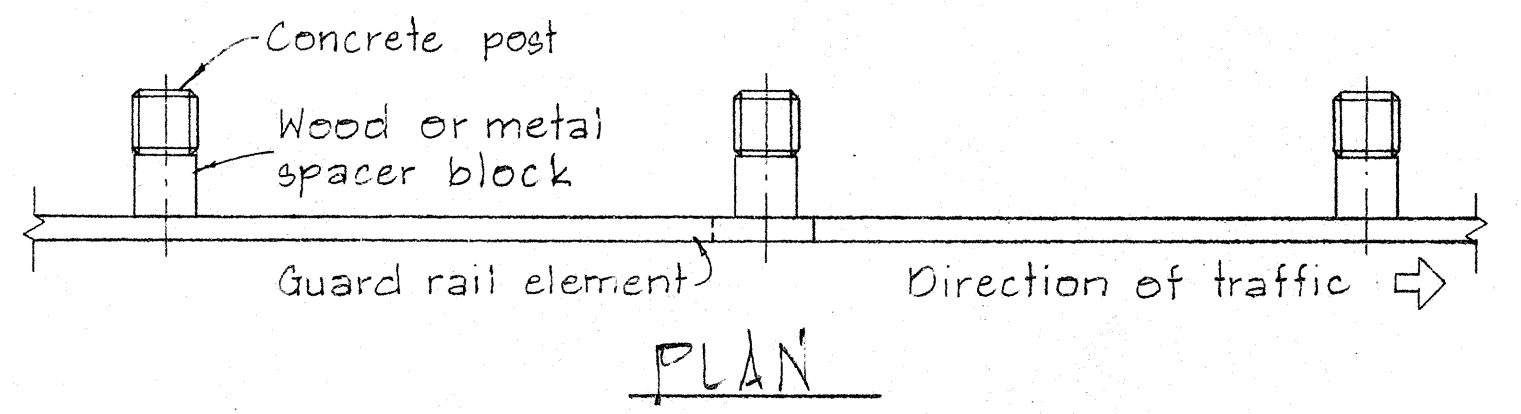
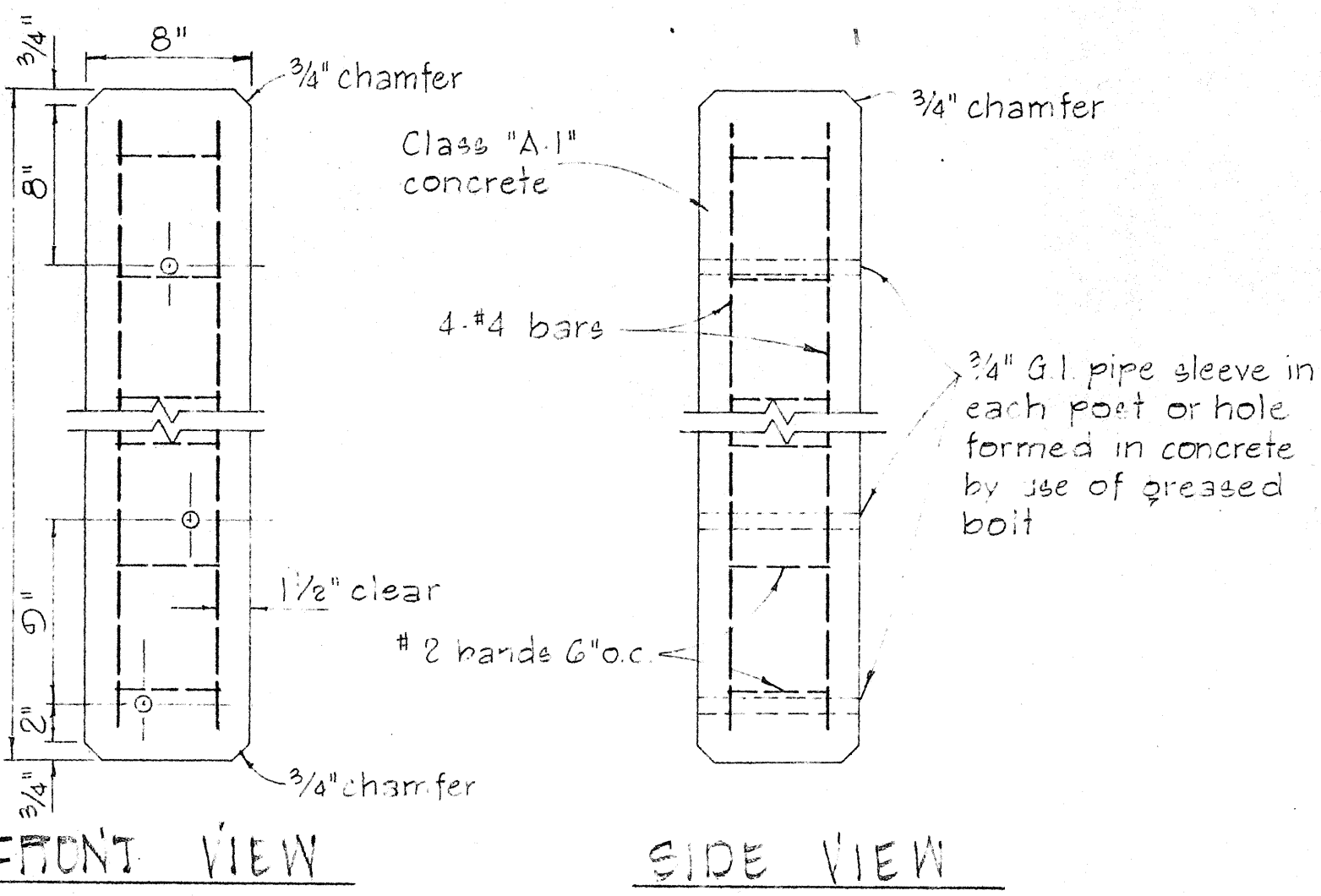
Scale: 1/2" = 1'-0"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-063-1(7) U-063-1(7)	1967	11	15

REVISED: 12-11-66
REVISED: 2-26-69

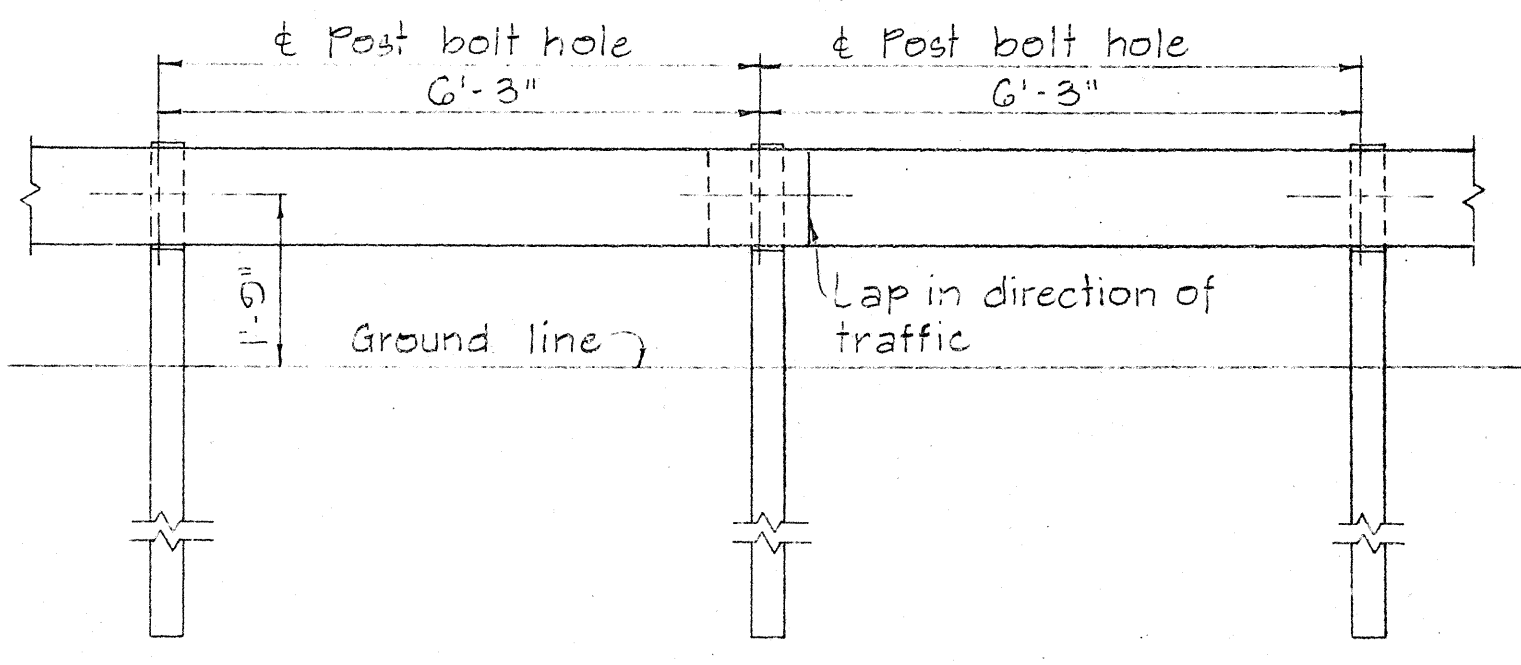
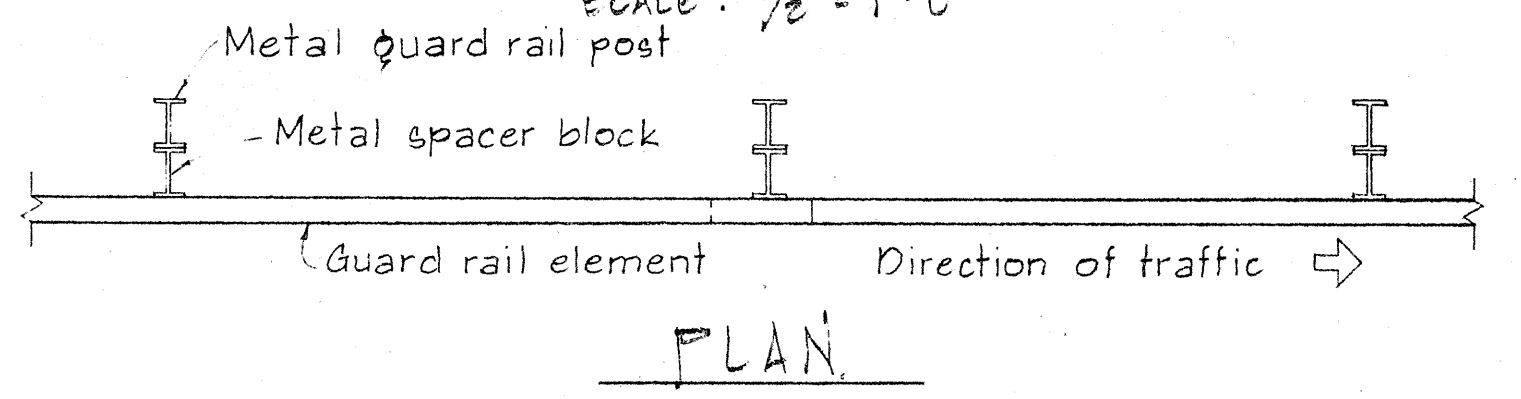


NOTE:
Concrete post shall be precast



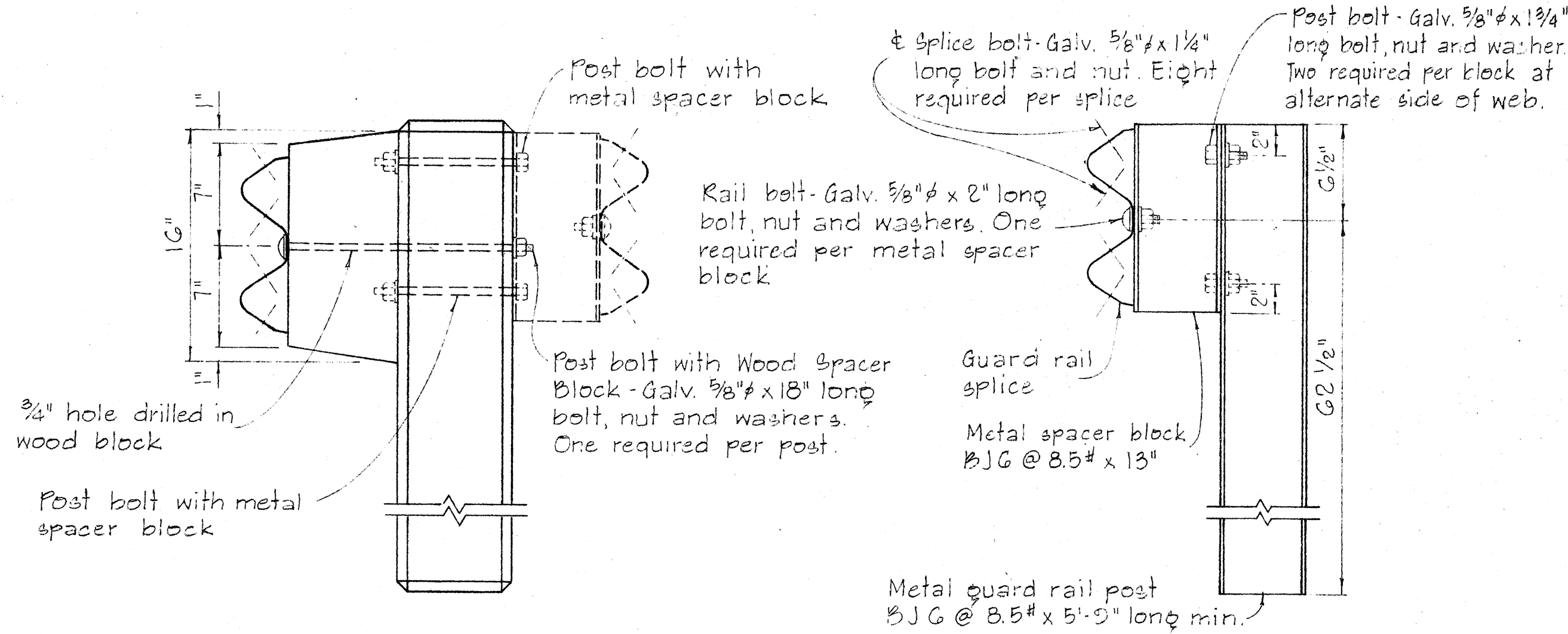
METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK.

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



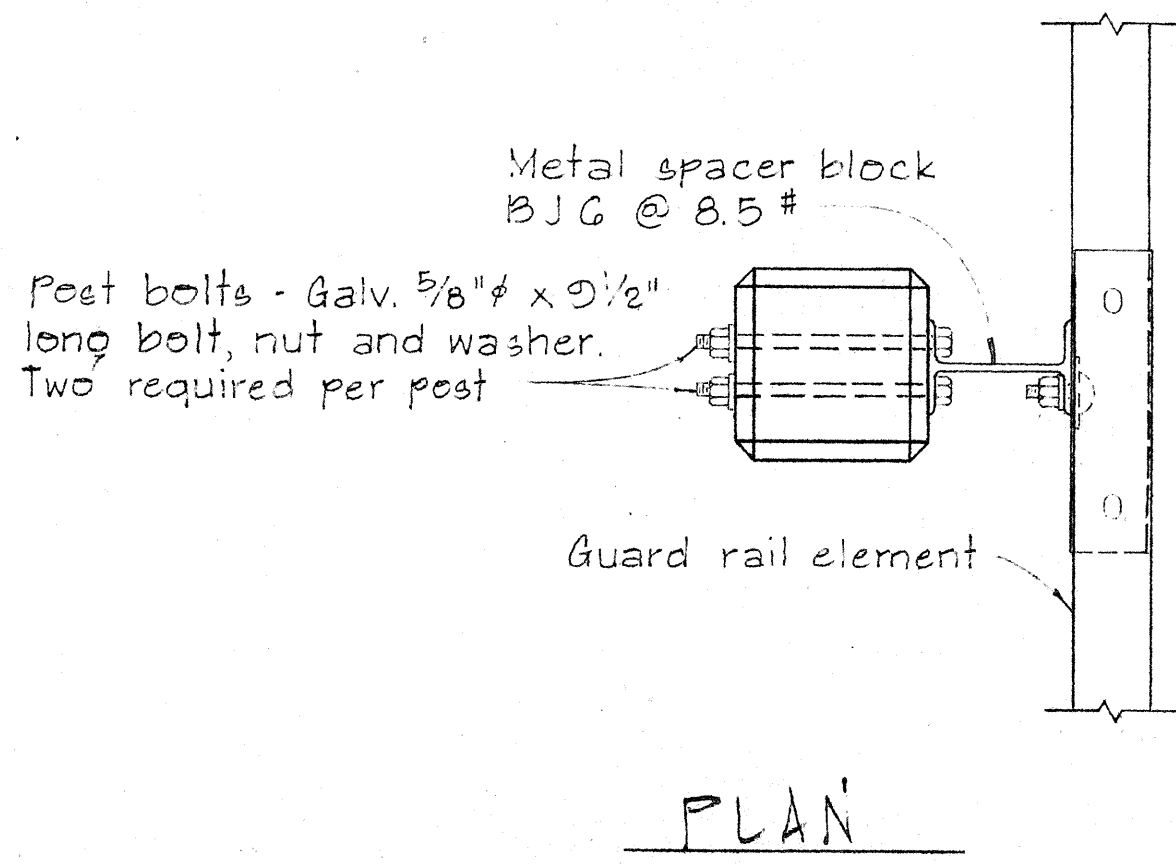
METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



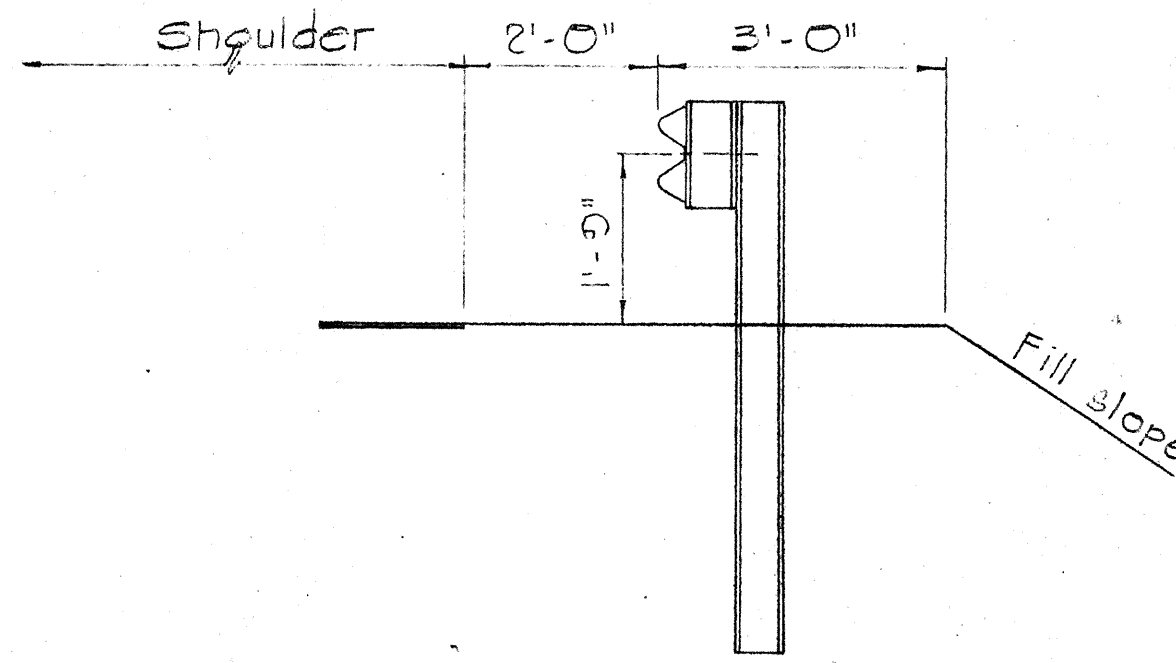
SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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"



AT SHOULDER SECTION

TYPICAL METAL GUARD RAIL DETAIL

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

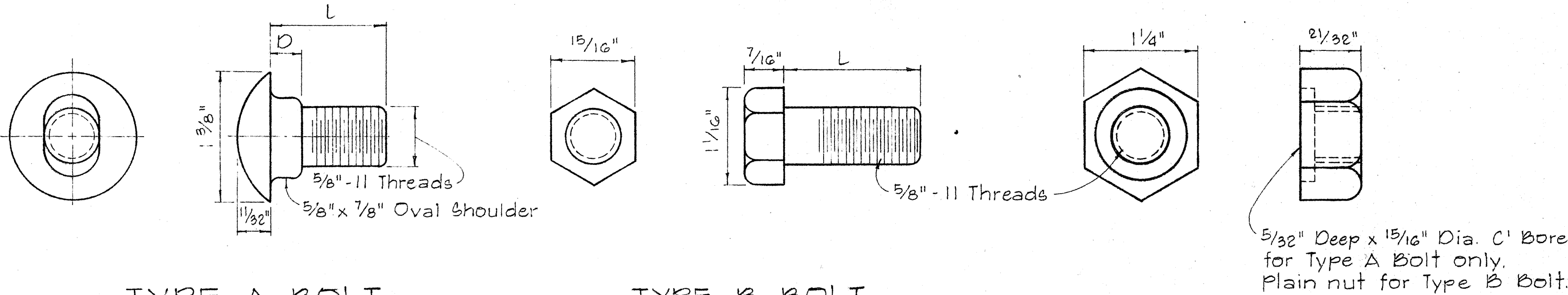
SCALE: AS SHOWN NOV. 1968

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-063-1(9) H-063-1(7)	1969	12	15

Revised: Dec. 11, 1968

BOLT DIMENSIONS		
TYPE A BOLT		
Splice Bolt	D 5/16"	L 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	L 5 1/2"	
Post Bolt for Metal Post w/ Metal Block	L 1 3/4"	



TYPE A BOLT

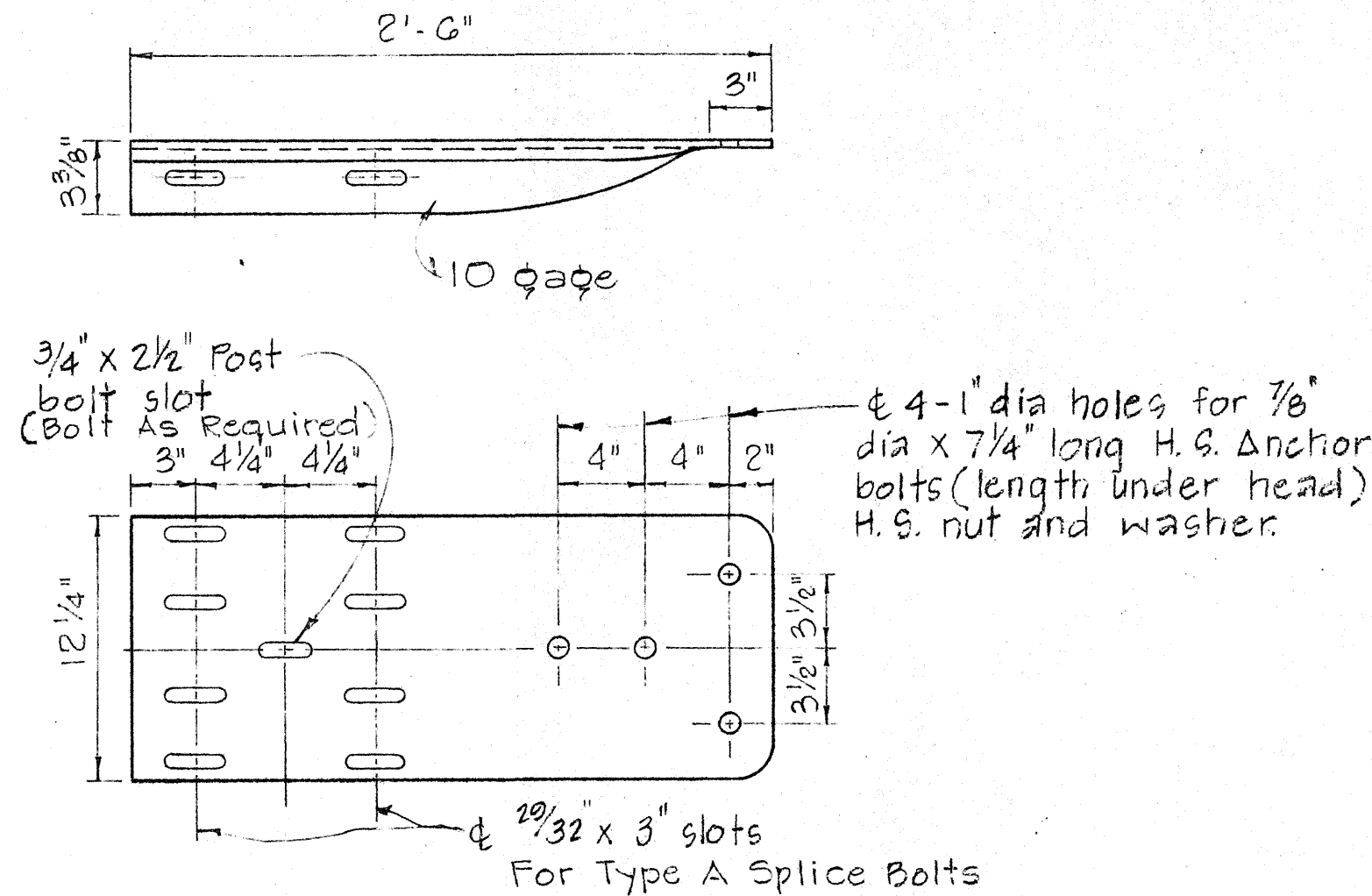
TYPE B BOLT

SPlice RAIL AND POST BOLTS

Scale: Full Size

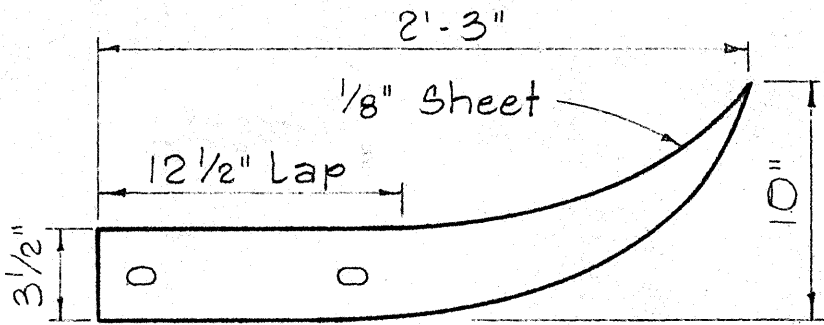
HEXAGON NUT

Scale: Full Size



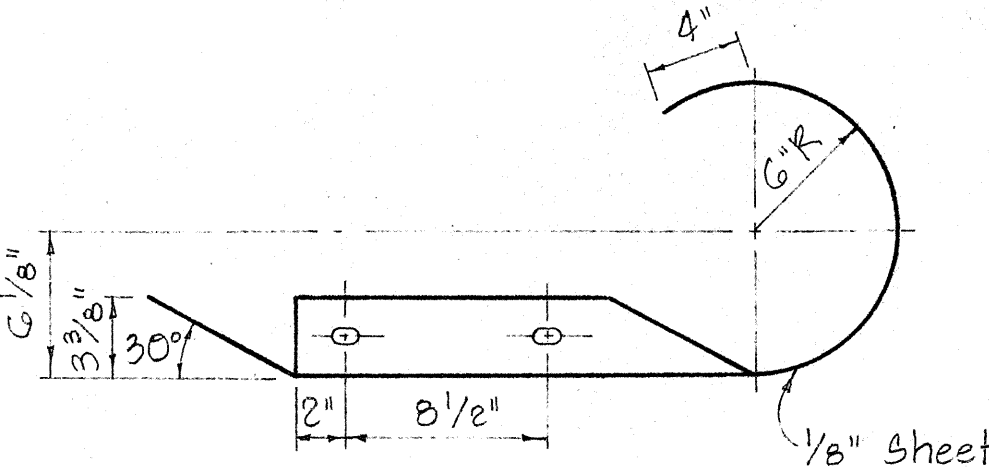
SPECIAL END SHOE

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



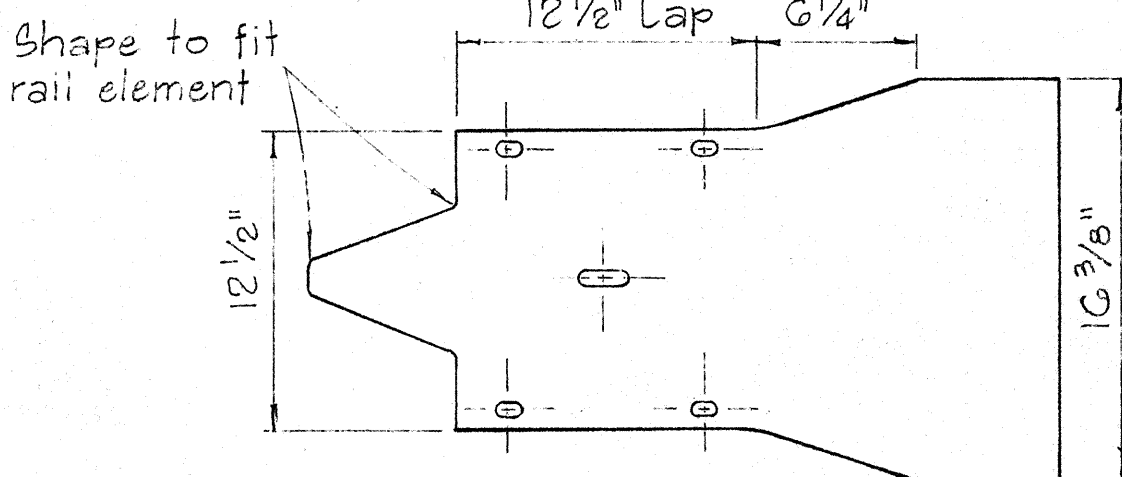
FLARED END

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



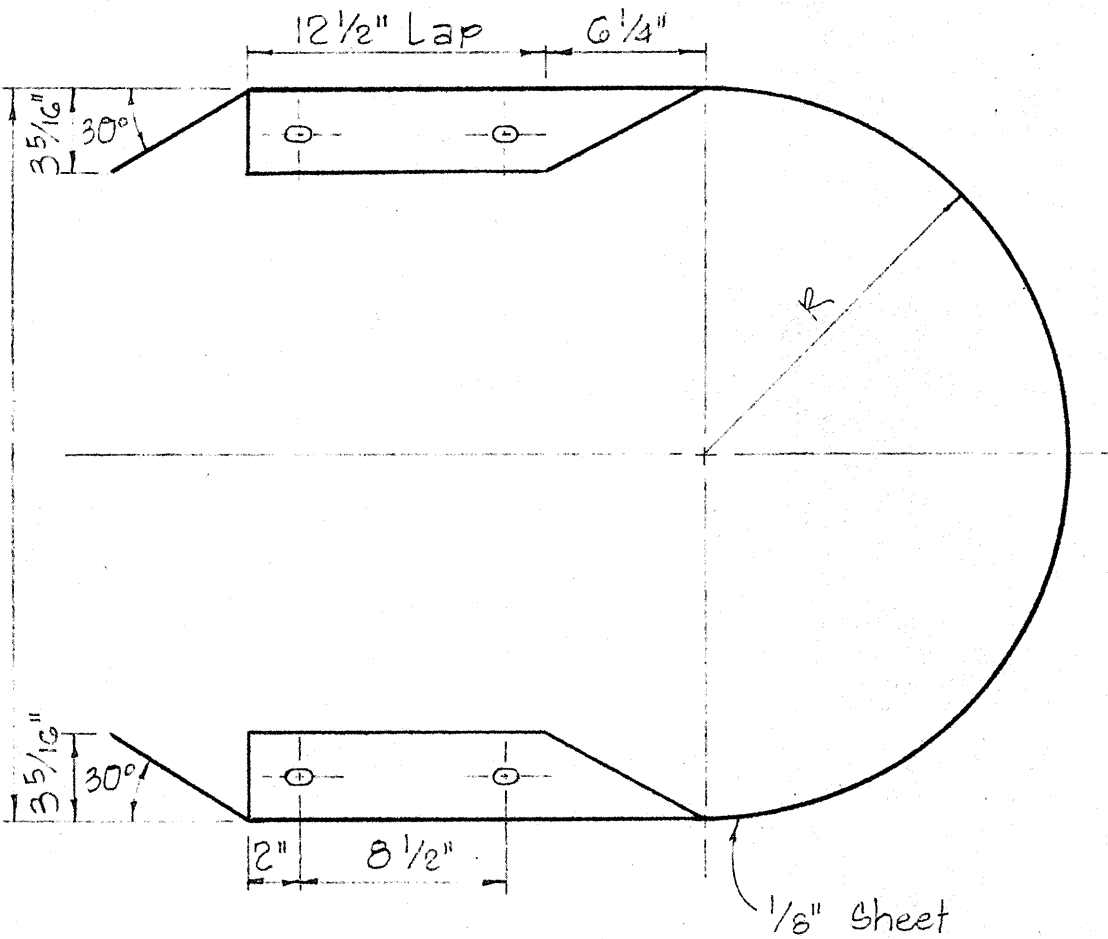
CURVED END

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

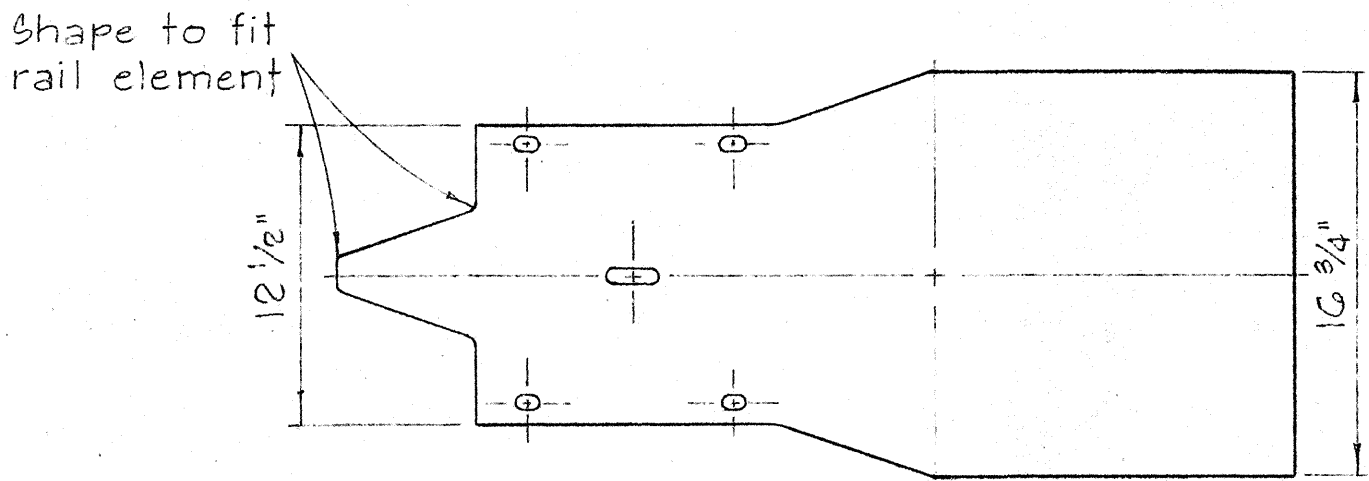


MEDIAN END

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



RAIL WASHER



RAIL SPICE

Scale: 3" = 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 1/8"
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"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

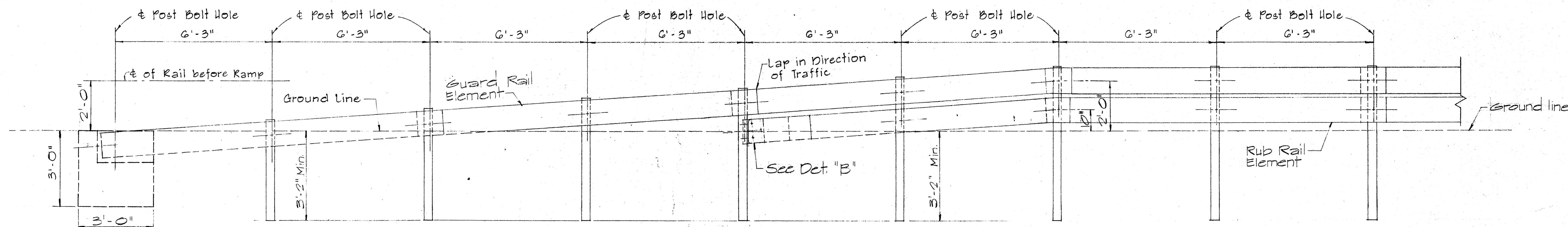
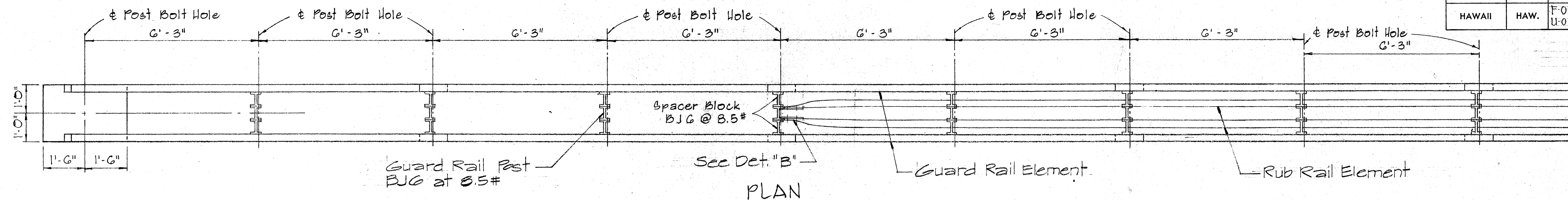
Scale: As Noted

August, 1968

SHEET No. 4 OF 7 SHEETS DT 501

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-003-1(9) U-003-1(7)	1969	13	15

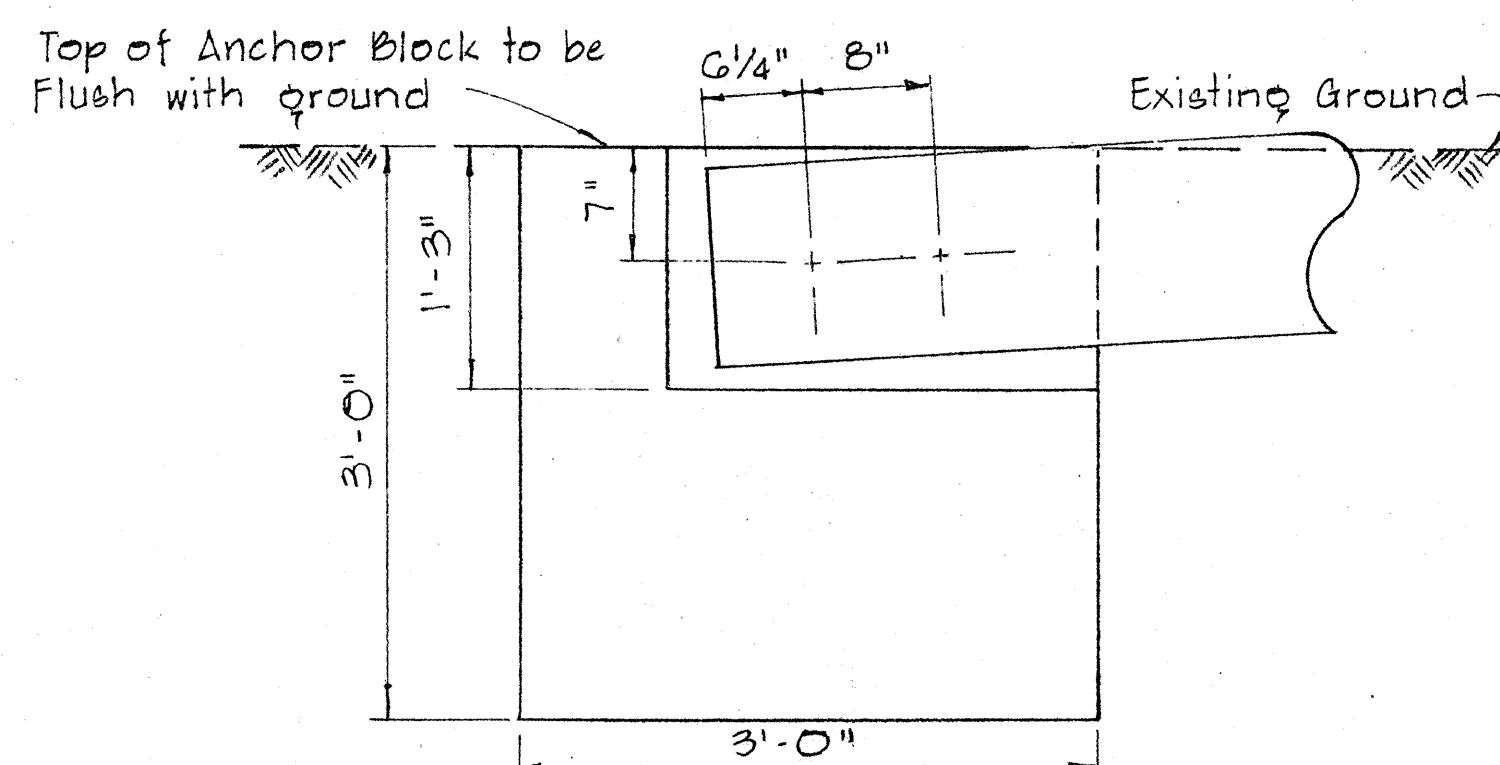
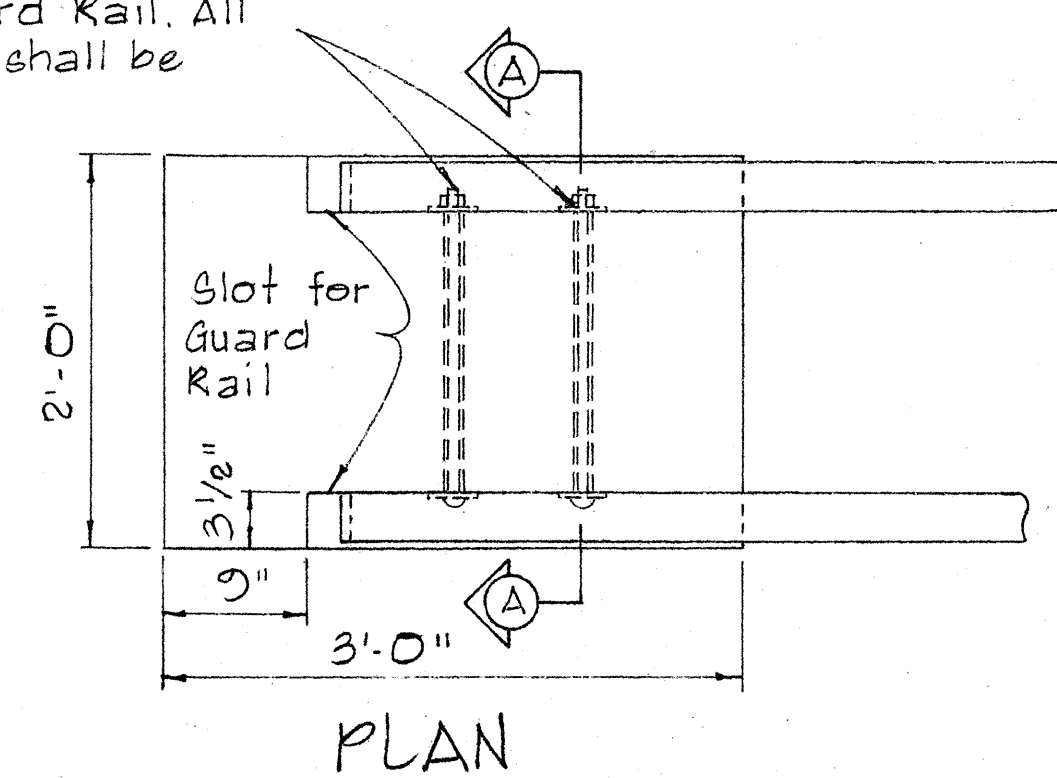
REVISED: 12-11-68
REVISED: 2-24-69



STRAIGHT APPROACH - RAMP END ANCHORAGE (MEDIAN)

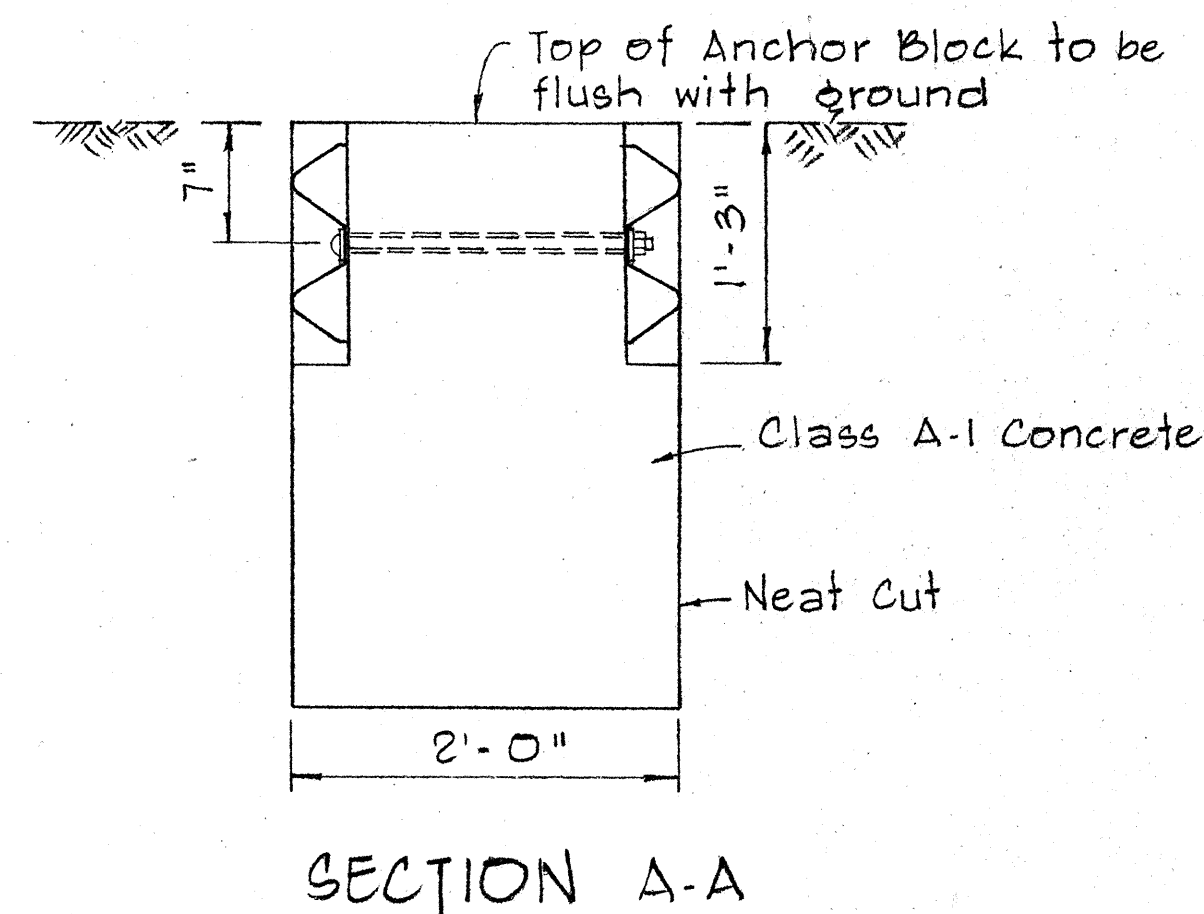
Scale: 1/2" = 1'-0"

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

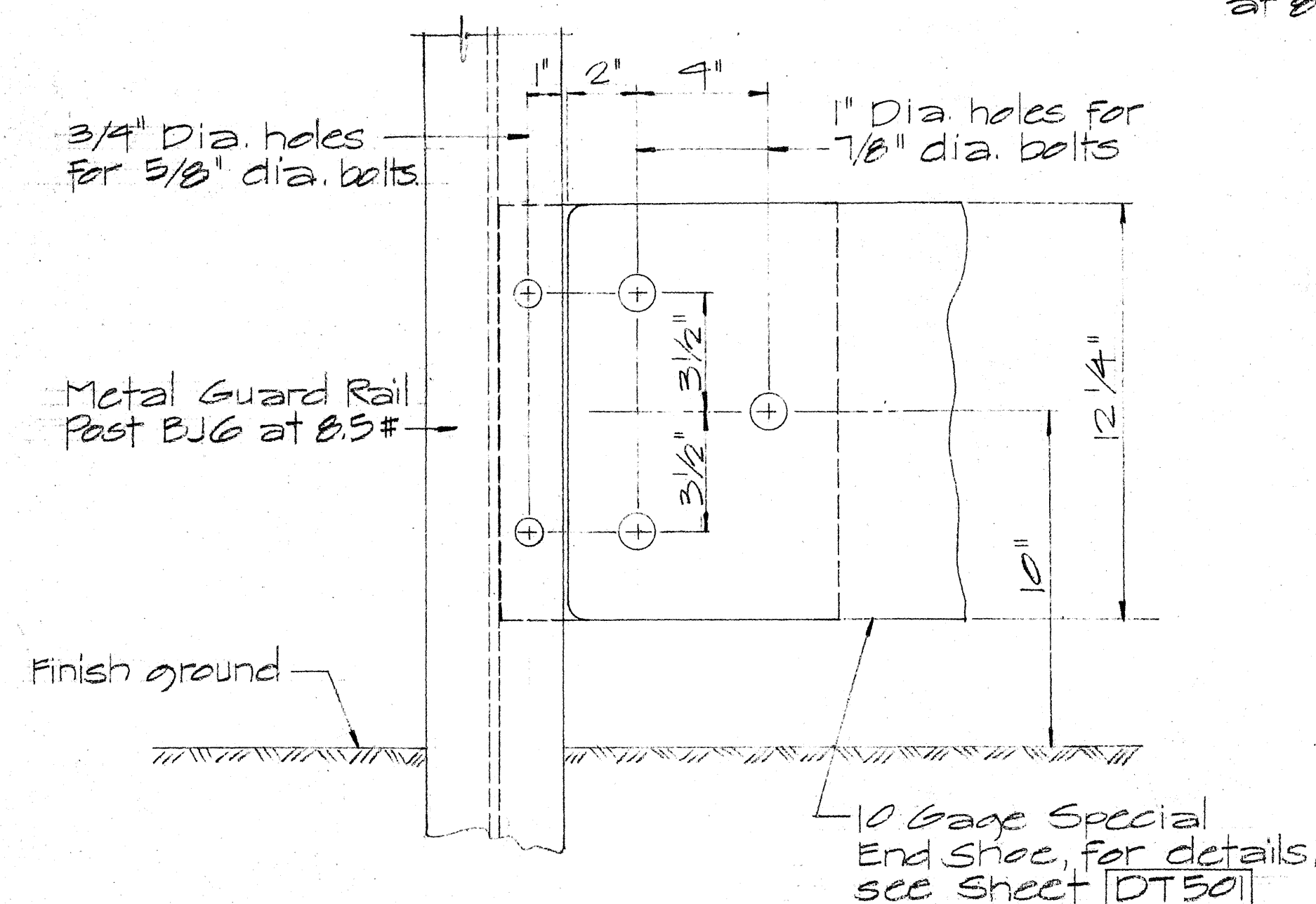


CONCRETE ANCHOR BLOCK FOR RAMP END

Scale: 1" = 1'-0"



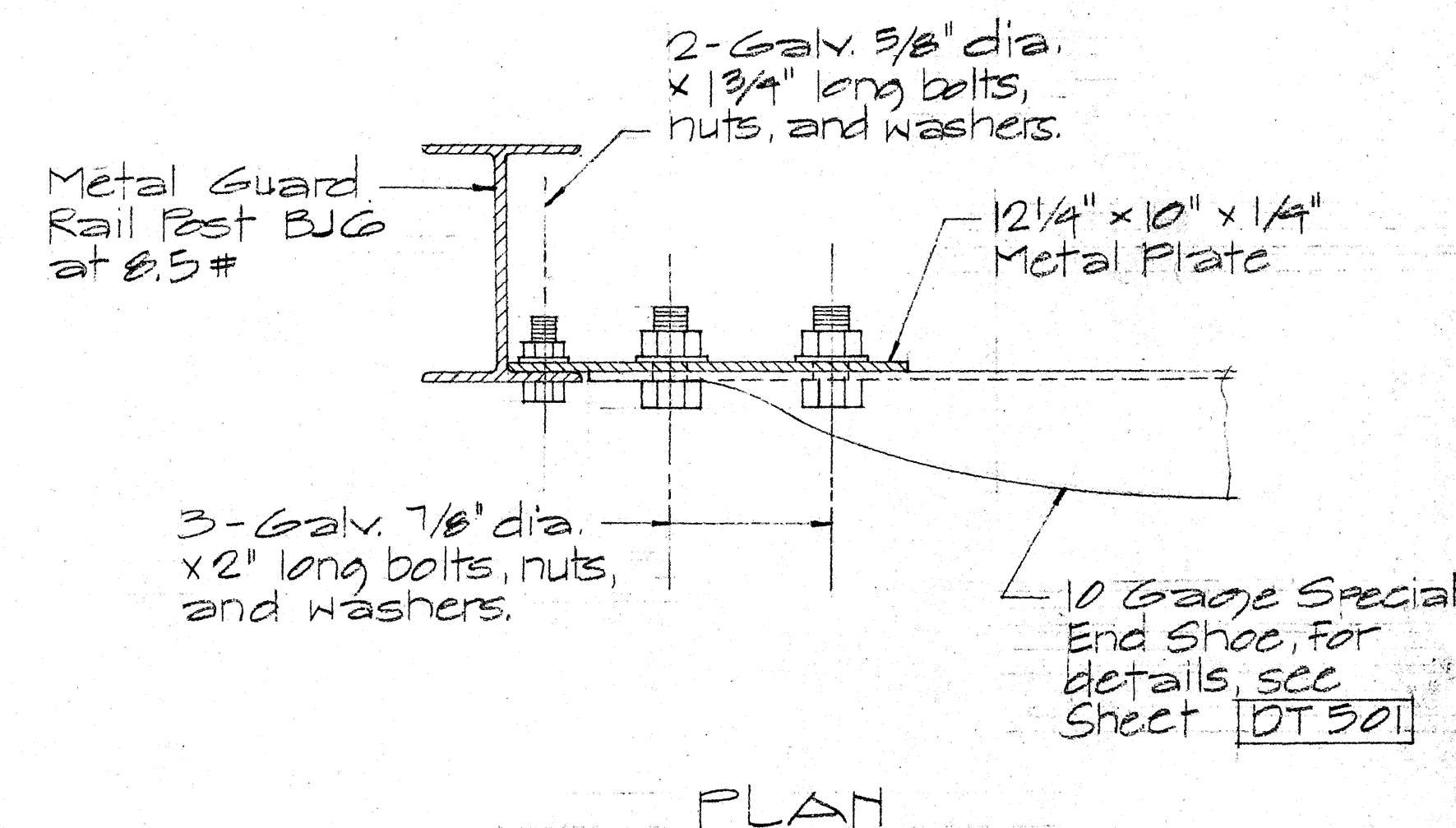
NOTE: Concrete, Excavation, and Miscellaneous Appurtenances necessary to anchor the Guard Rail Ends, shall be incidental to the Metal Guard Rail.



DETAIL "B"

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

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



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAIL GUARD RAIL RAMP END ANCHORAGE

Scale: as Noted

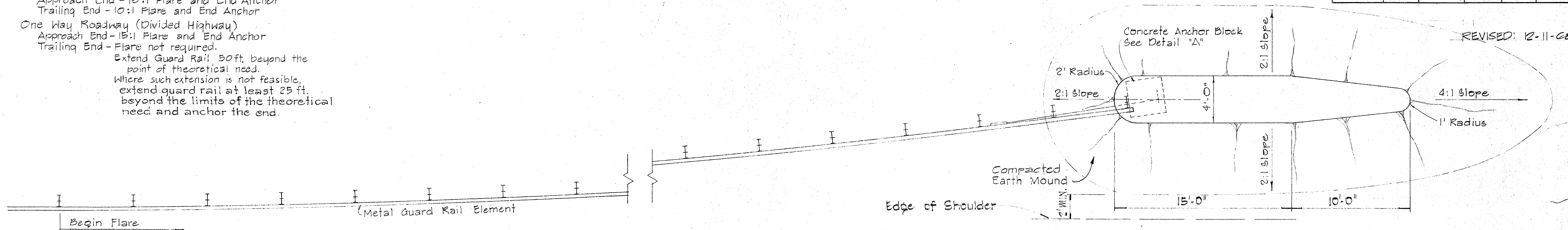
August, 1968

SHEET No. 5 OF 7 SHEETS DT 502

NOTE:

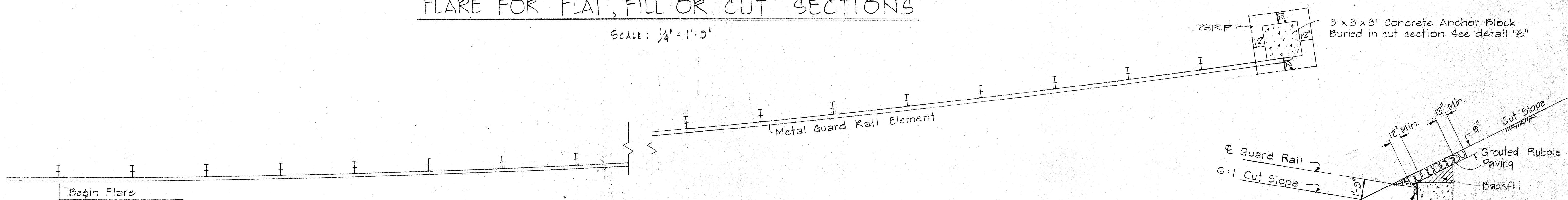
Two Way Roadway:
 Approach End - 15:1 Flare and End Anchor
 Trailing End - 10:1 Flare and End Anchor
 One Way Roadway (Divided Highway)
 Approach End - 15:1 Flare and End Anchor
 Trailing End - Flare not required.
 Extend Guard Rail 50 ft. beyond the point of theoretical need.
 Where such extension is 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.	F-063-1(7) H-063-1(7)	1969	14	15



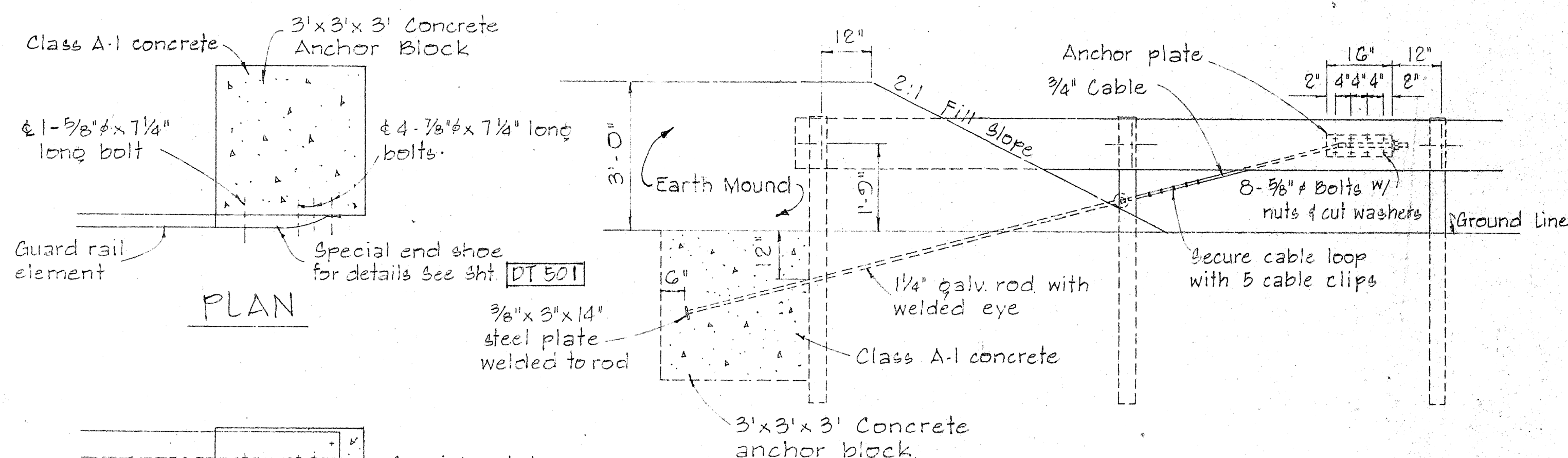
FLARE FOR FLAT, FILL OR CUT SECTIONS

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



FLARE FOR CUT SECTION

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

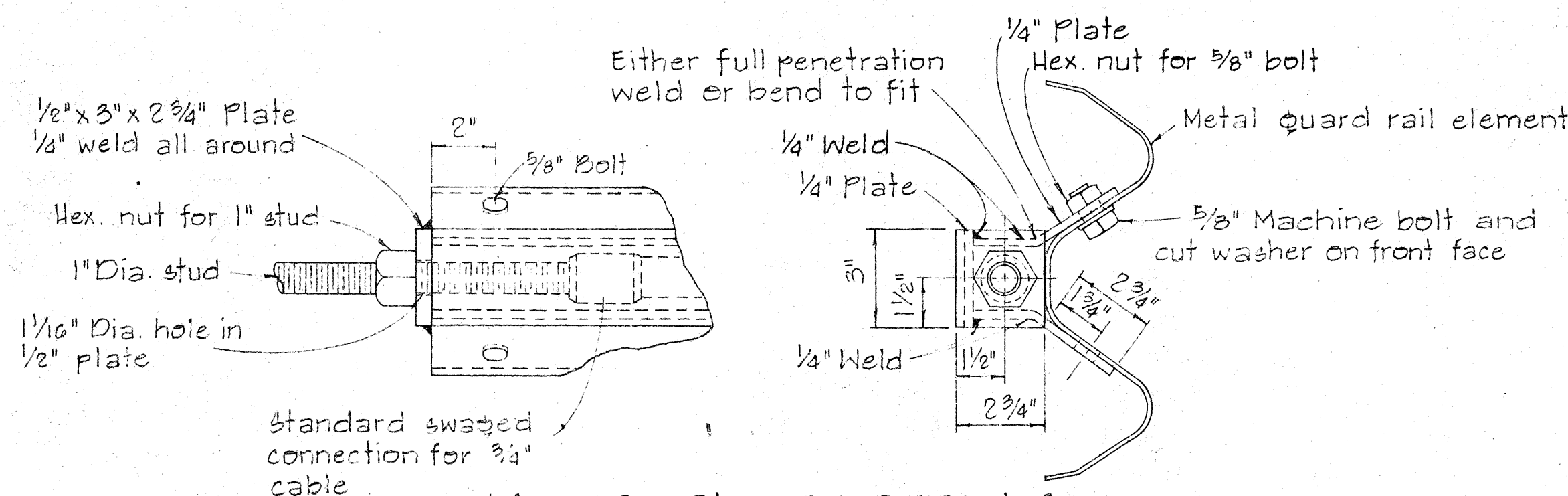


DETAIL "A"

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, GRR, 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

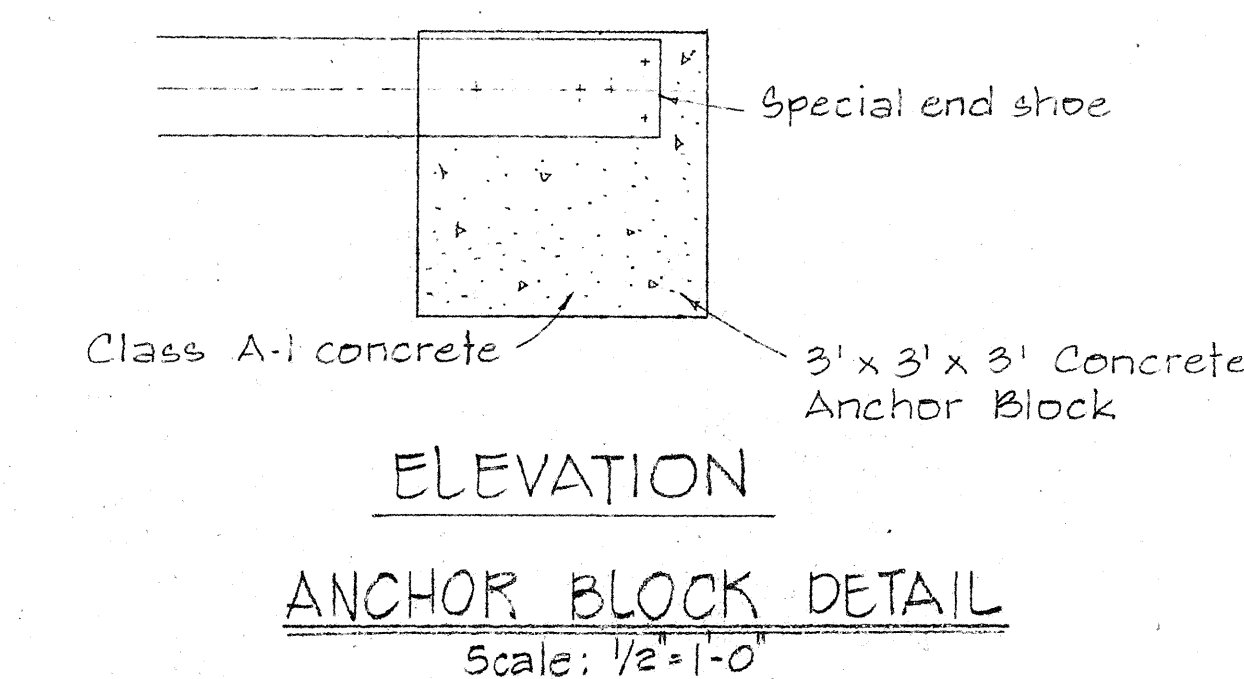
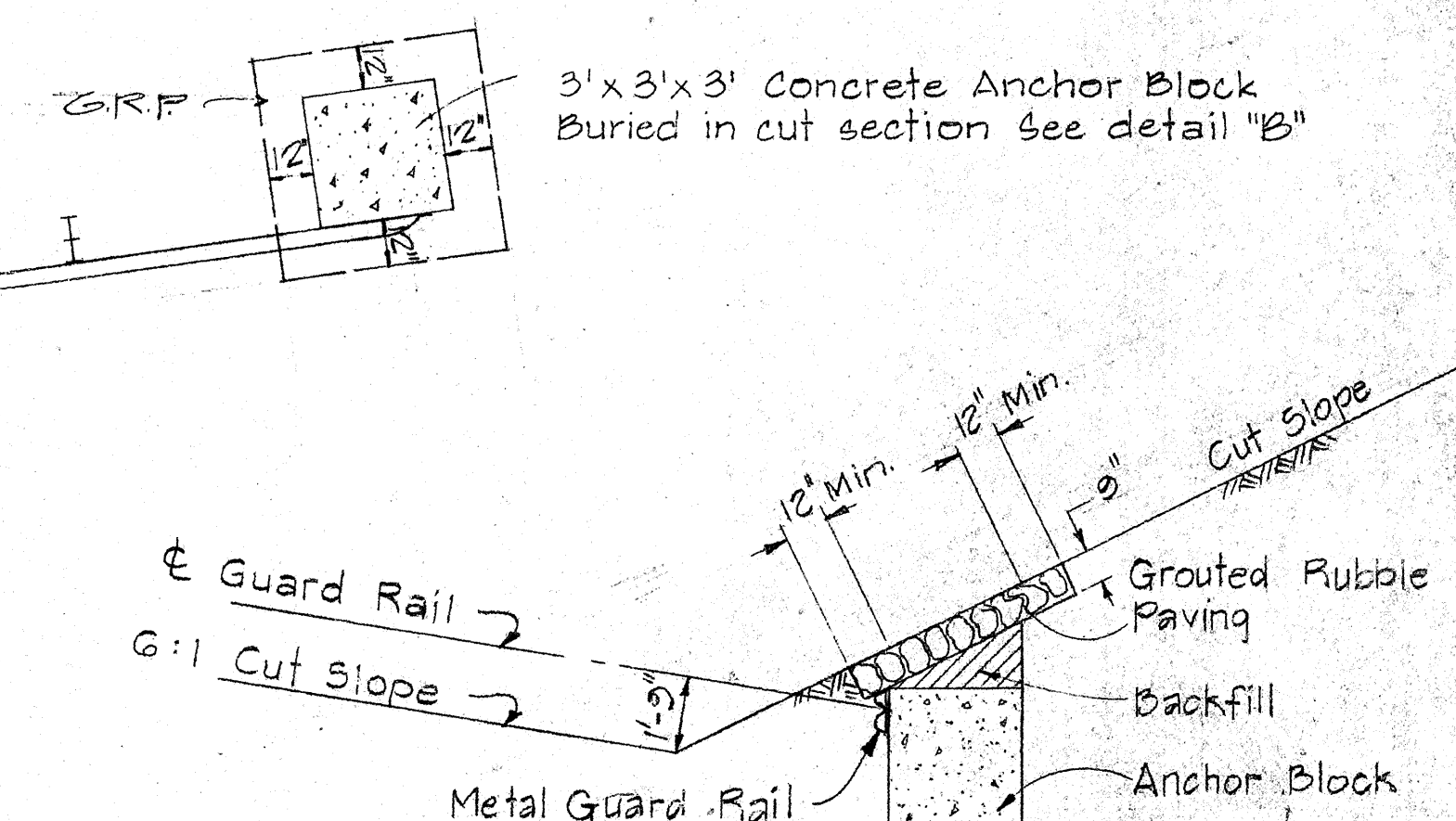
SCALE: 1" = 3"

STANDARD SWAGED FITTING AND STUD

SCALE: 1" = 3"

DETAIL "B"

Not to Scale



ELEVATION

ANCHOR BLOCK DETAIL

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

METAL GUARD RAIL FLARE DETAIL

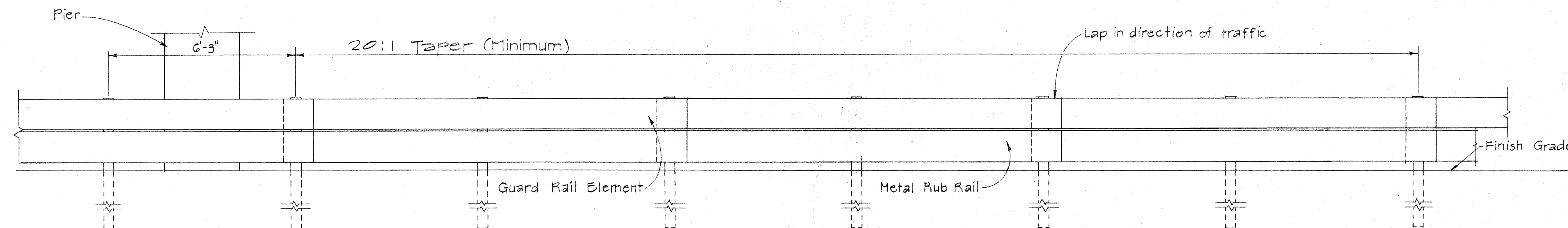
Scale: As Shown

Nov. 1968

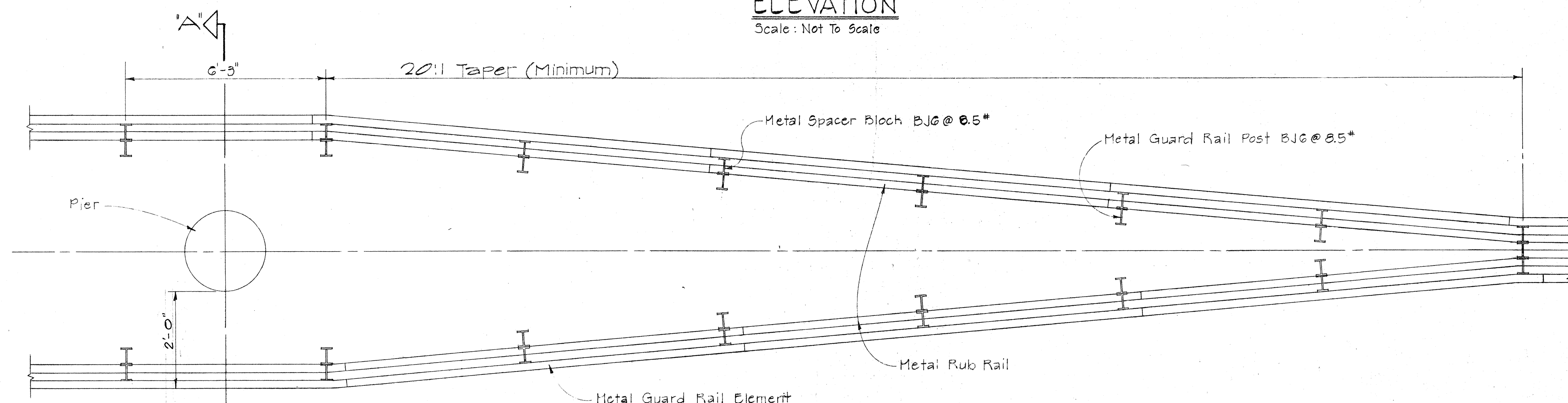
SHEET No. 6 OF 7 SHEETS DT 503

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-063-1(9) U-063-1(7)	1969	15	15

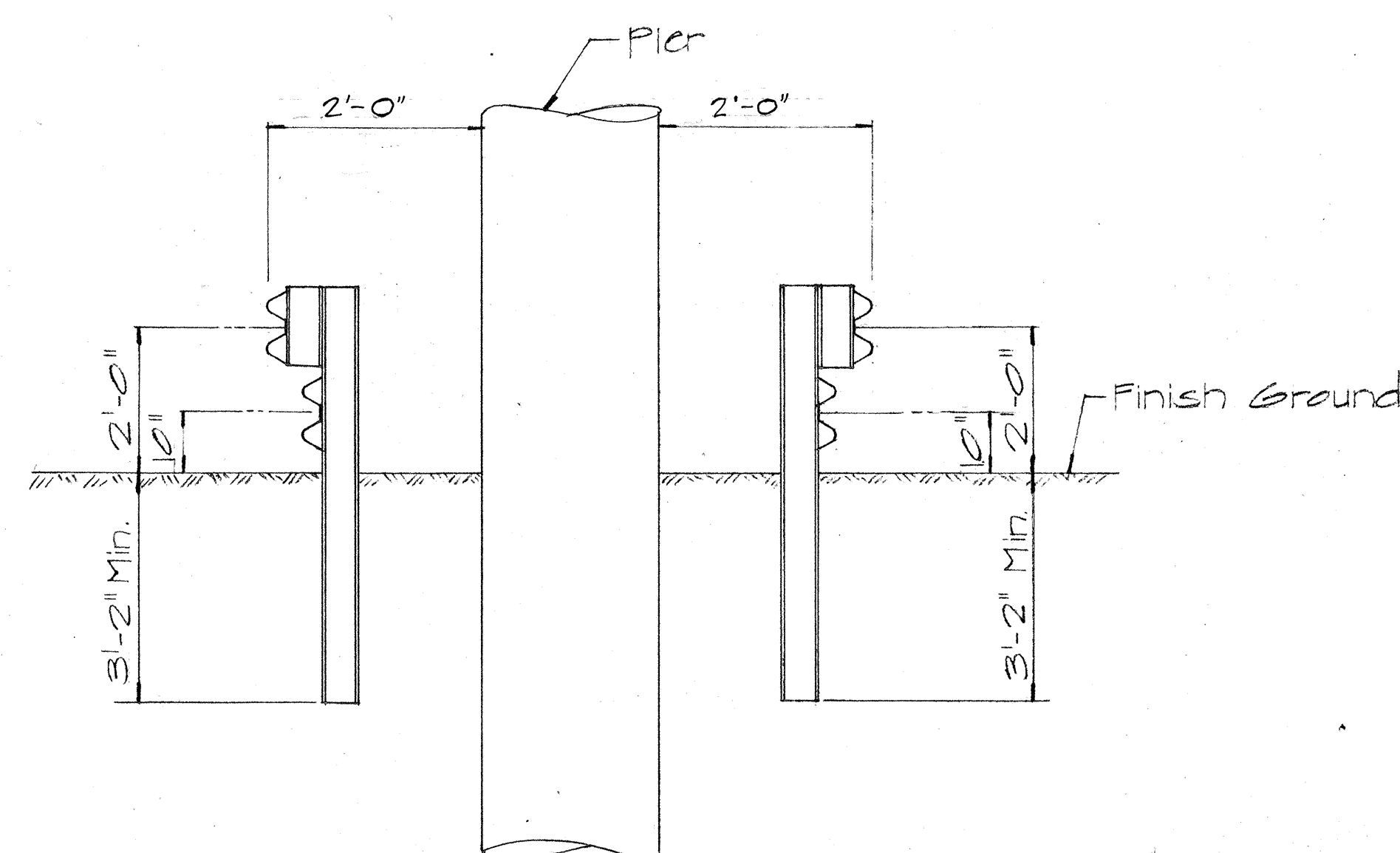
REVISED: 12-11-68
REVISED: 2-27-69



ELEVATION
Scale: Not To Scale



PLAN
Scale: Not To Scale



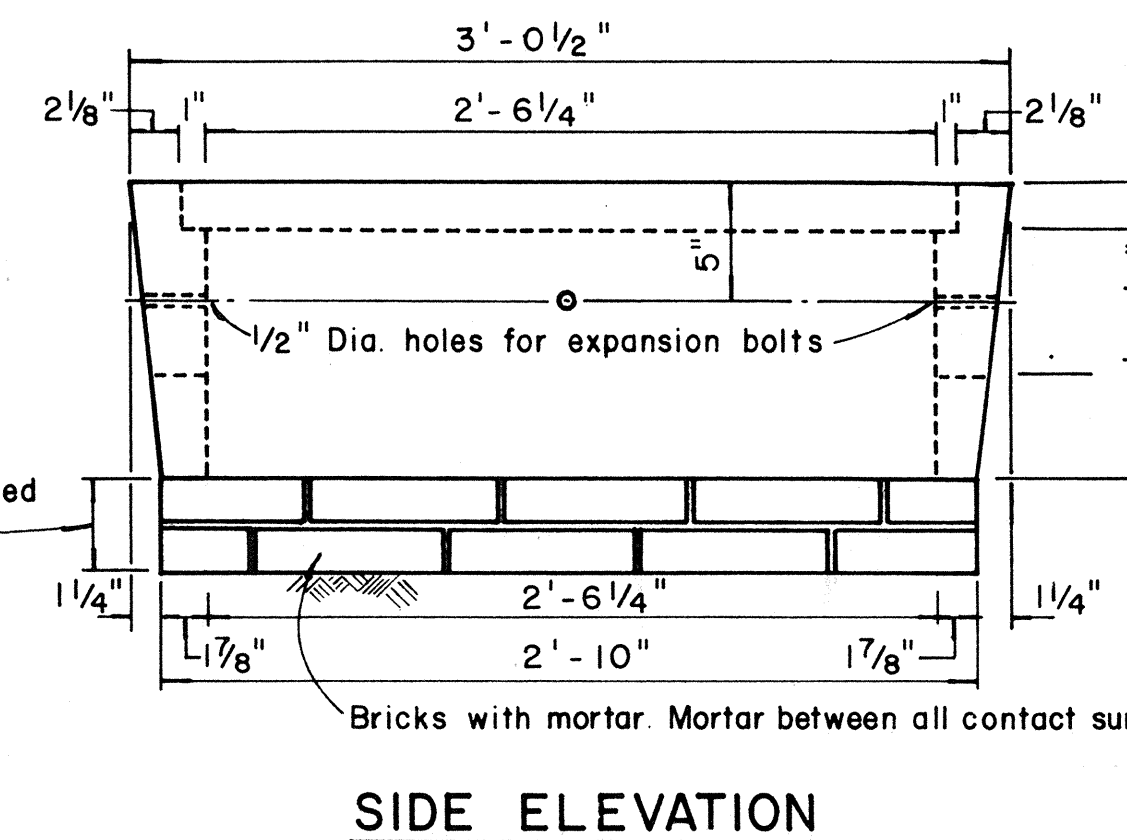
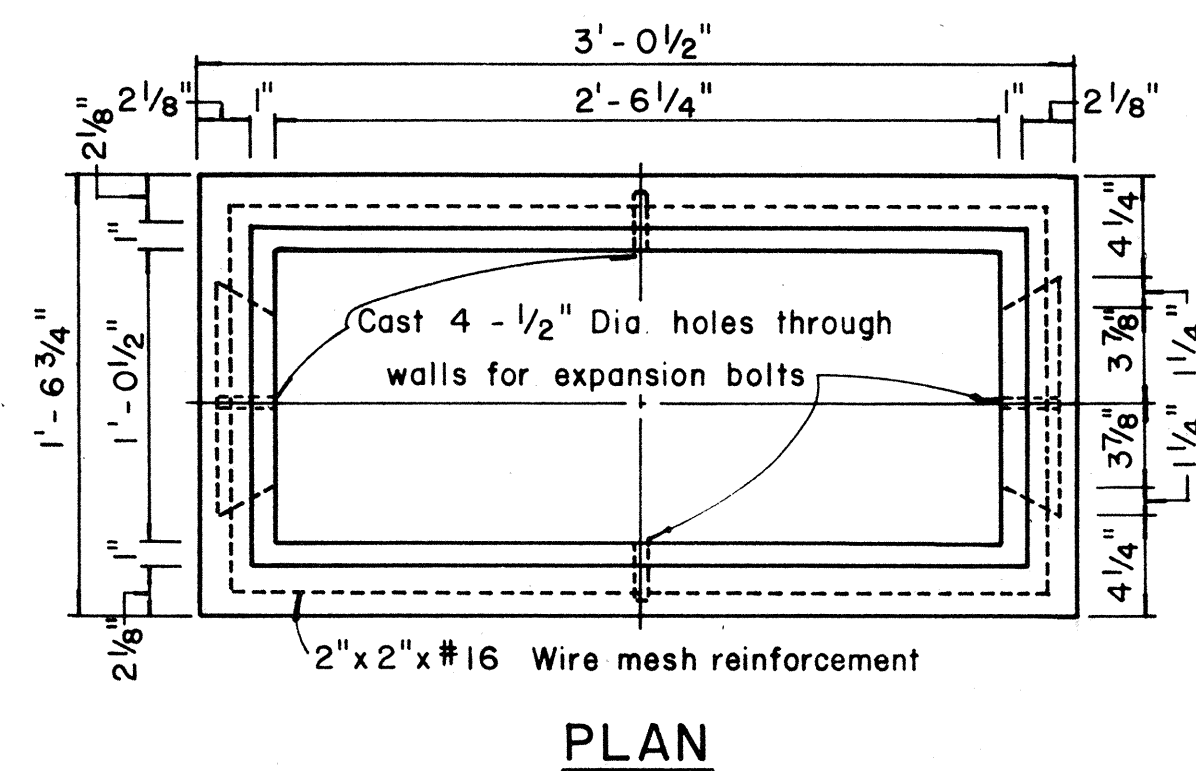
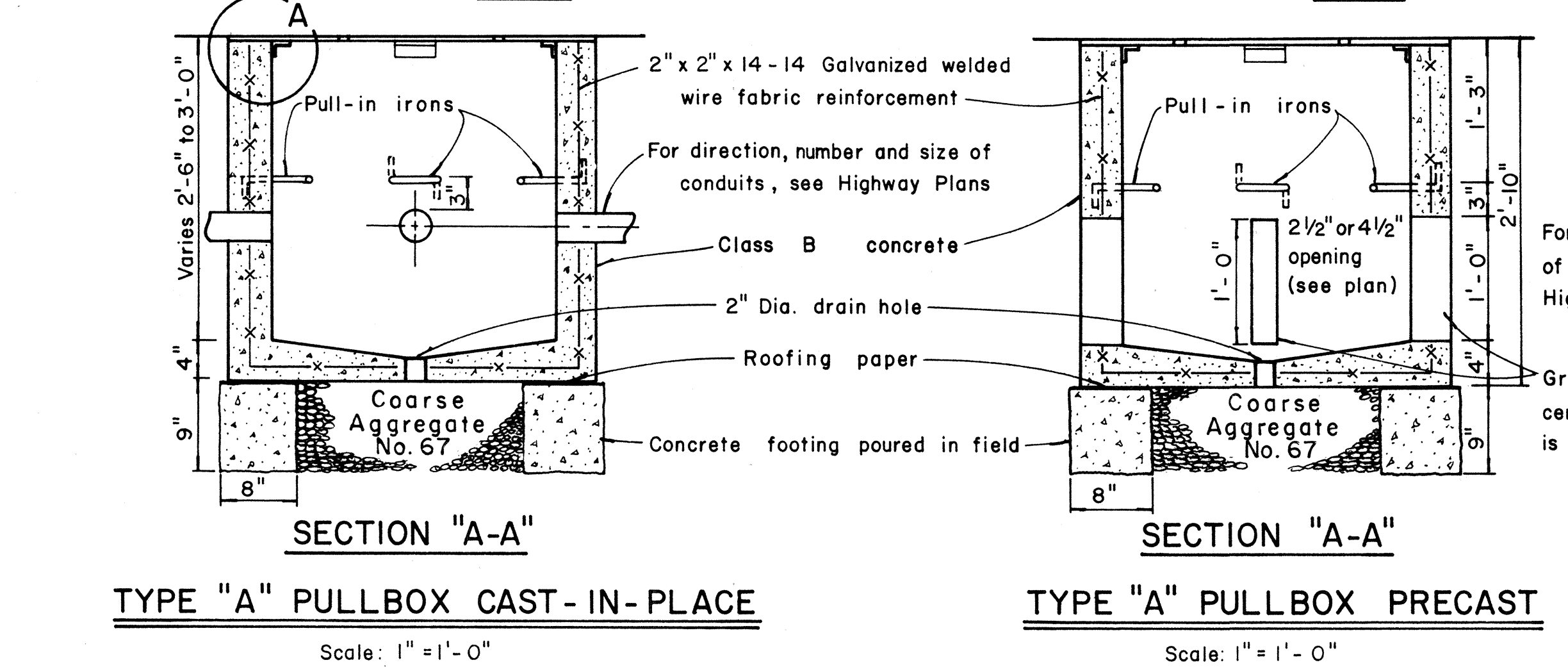
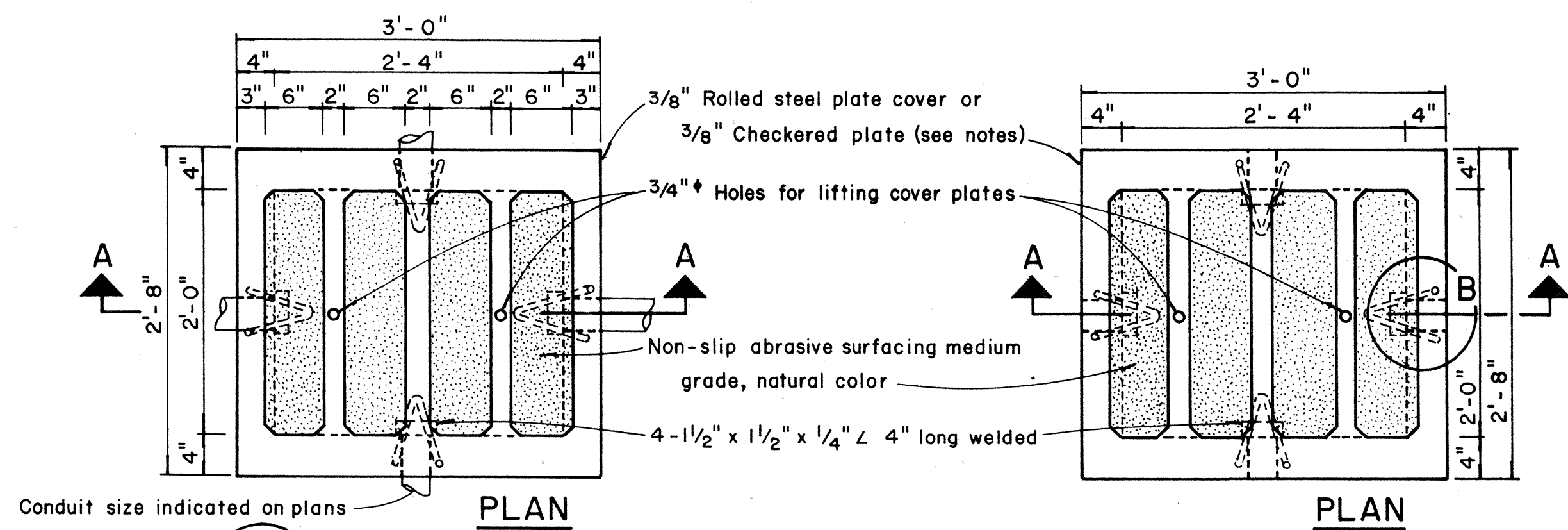
SECTION "A-A"
Scale: Not To Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

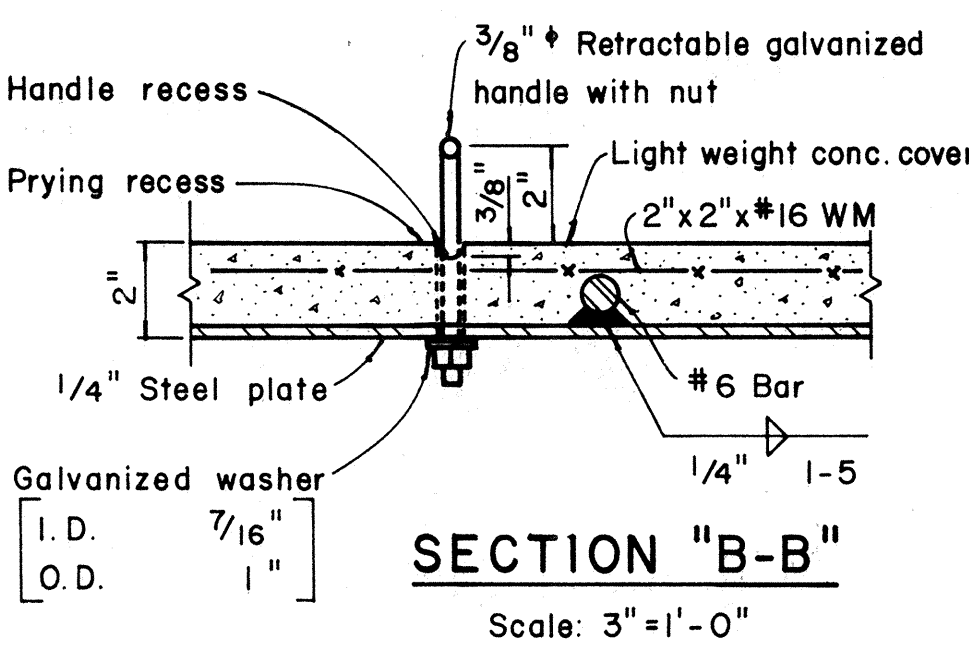
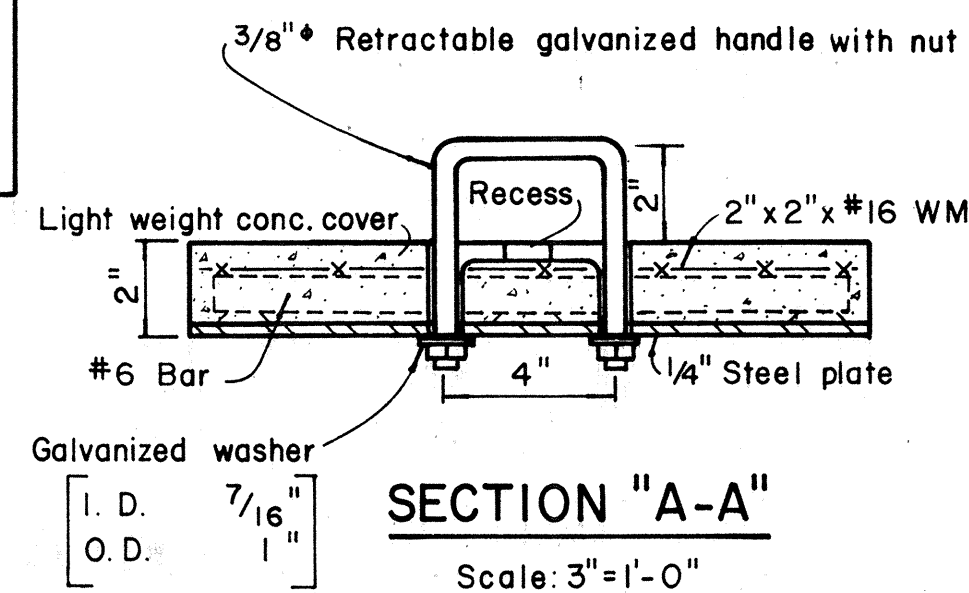
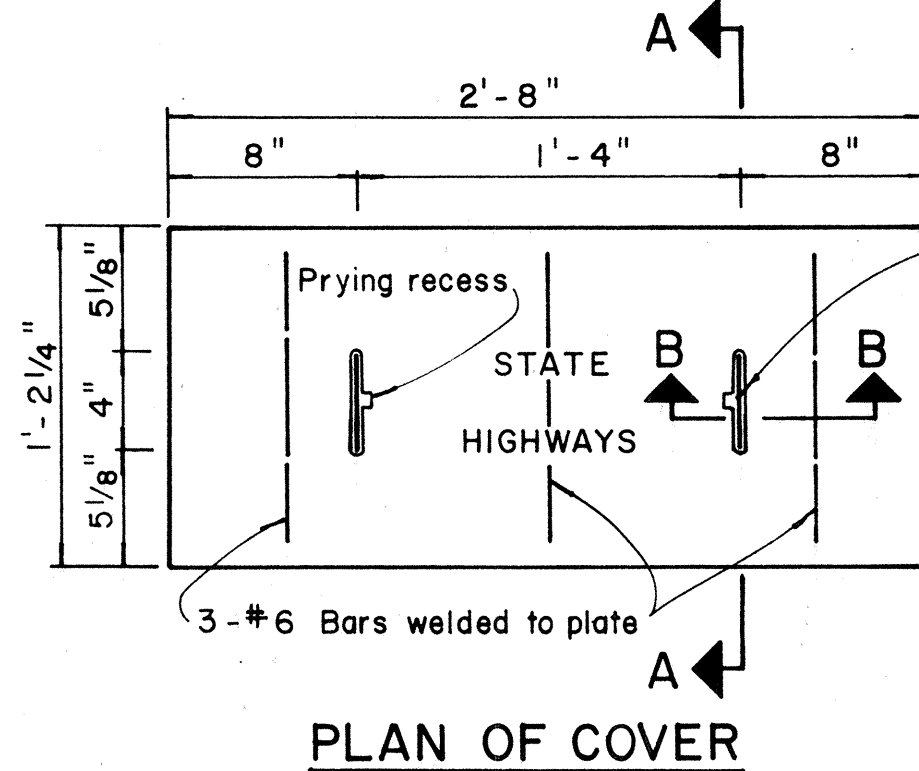
**TRANSITION DETAIL OF
METAL GUARD RAIL
WITH RUB RAIL AT
OBSTRUCTION**

Scale: As Shown Nov. 1968

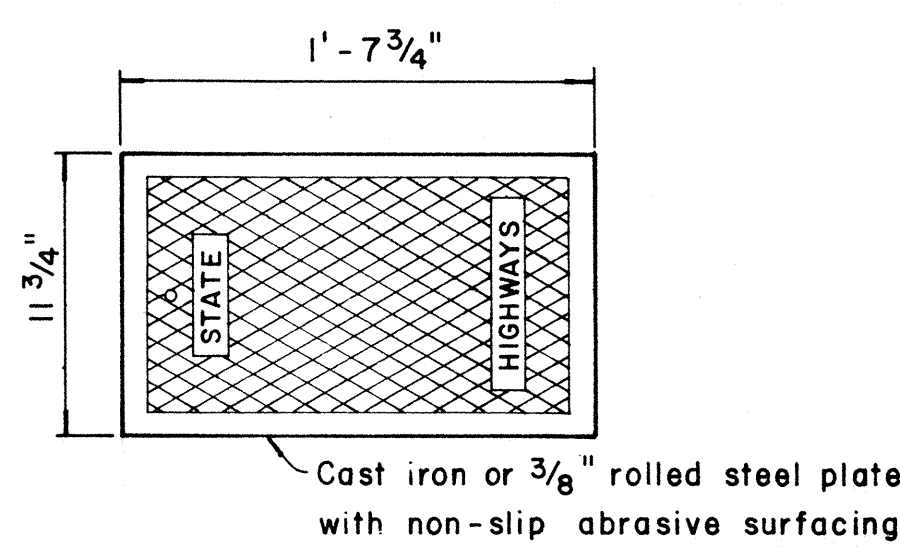
SHEET No. 7 OF 7 SHEETS DT 505



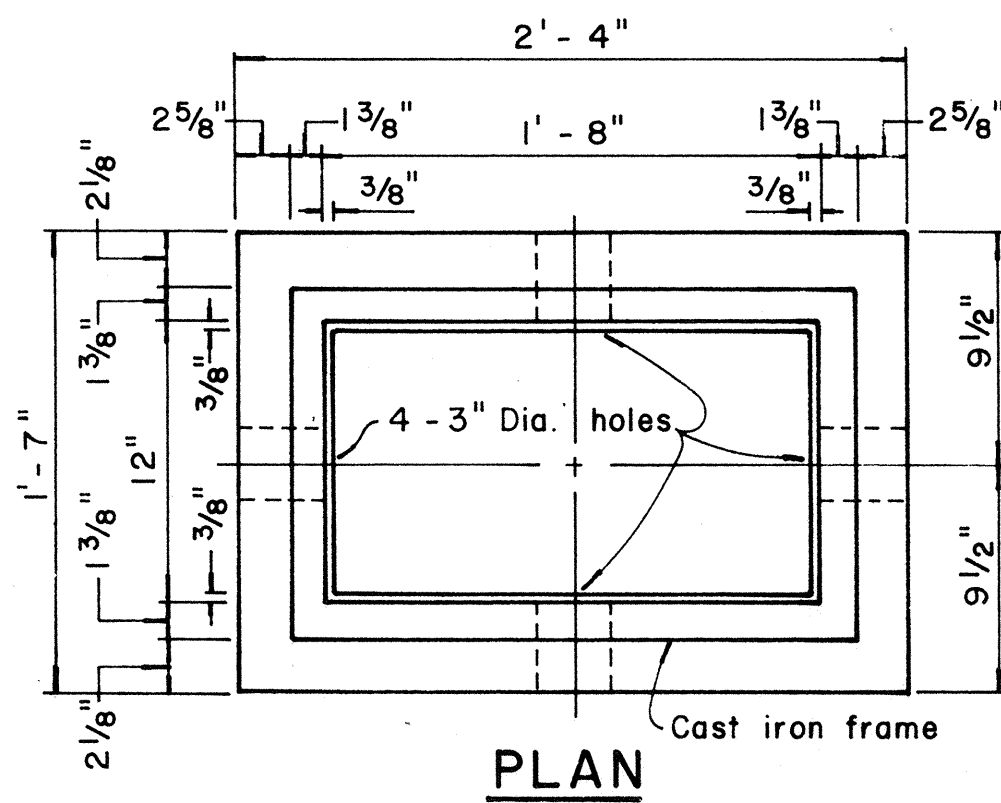
TYPE "C" PULLBOX
Scale: 1 1/2" = 1'-0"



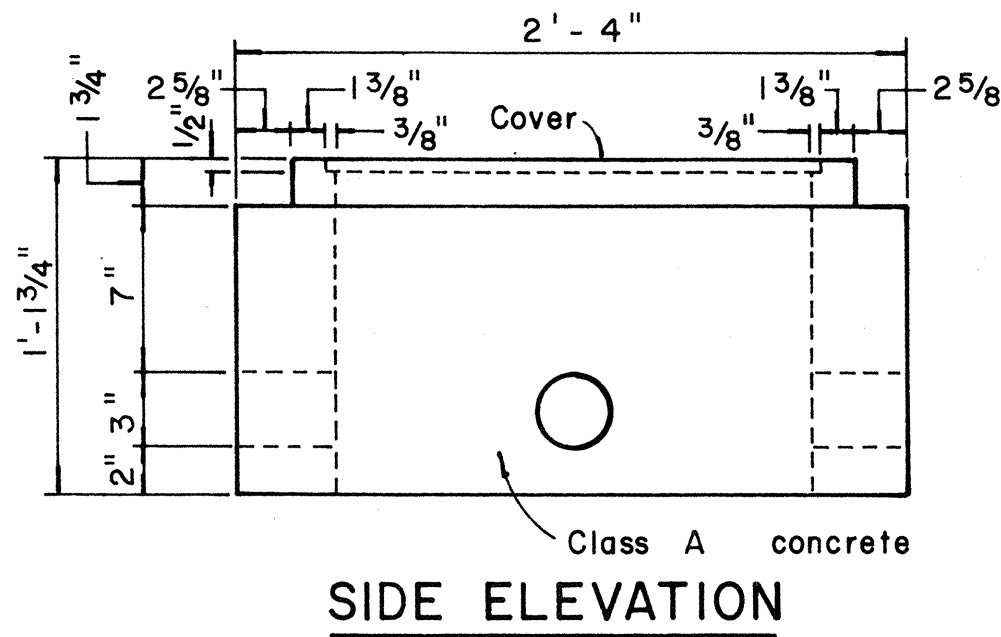
NOTE:
Steel rim shall be welded to bottom of steel cover if necessary so that top of cover and frame are flush



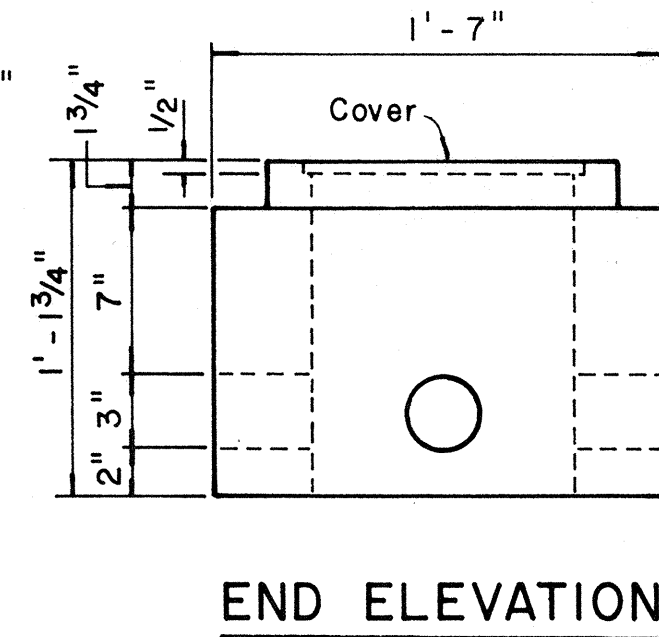
PLAN OF COVER



PLAN

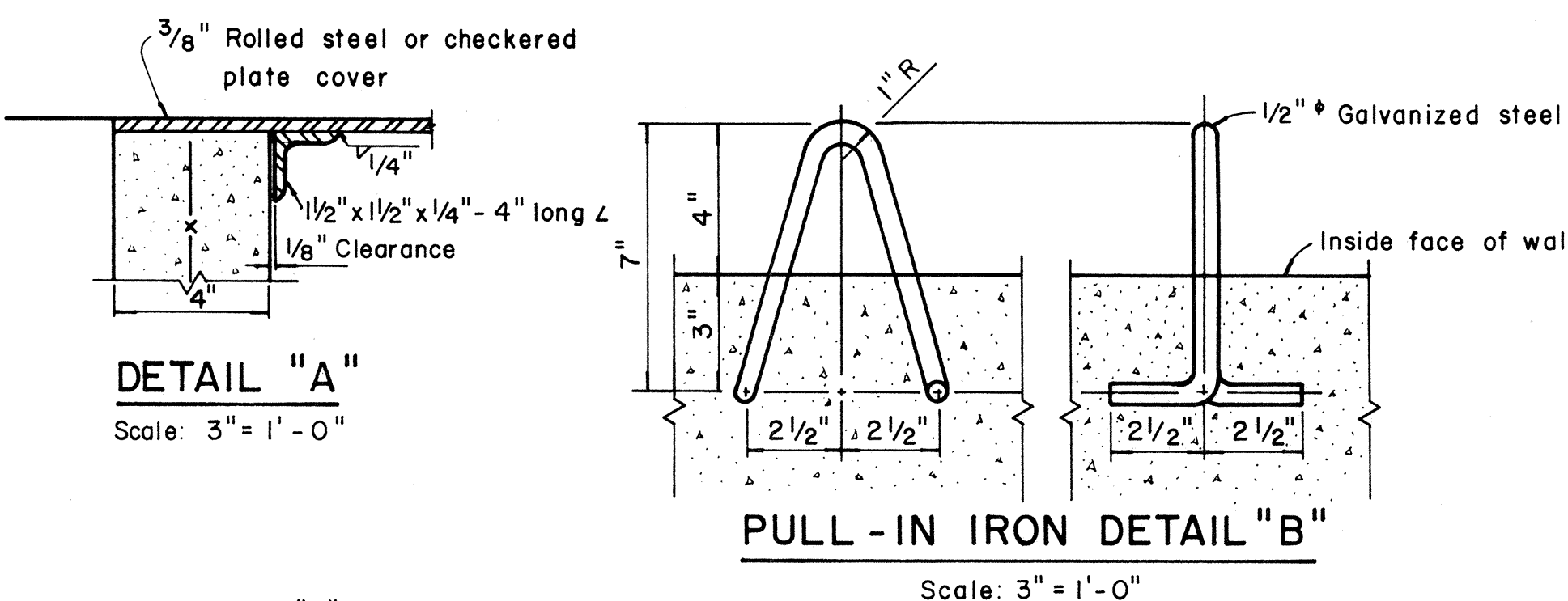


SIDE ELEVATION



END ELEVATION

TYPE "B" PULLBOX
Scale: 1 1/2" = 1'-0"



NOTES: (FOR TYPE "A" PULLBOX)

- 3/8" Rolled steel plate cover with non-slip abrasive surfacing medium grade, natural color shall be used on all pullboxes located on sidewalk areas where pedestrians are walking.
- 3/8" Checkered plate cover shall be used on all pullboxes located in median areas and other locations where there are no pedestrians walking.
- Pull irons shall be placed opposite each conduit slot.
- Covers on all pullboxes located in sidewalk areas shall be set flush with the concrete sidewalk.
- Each pullbox shall have a pair of pull irons opposite each other for lifting purposes.

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

APPROVED:
[Signature]
ASSISTANT CHIEF, ENGINEERING
12-29-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
PULLBOXES**

Scale as noted Date

SHEET No. OF SHEETS DT 401