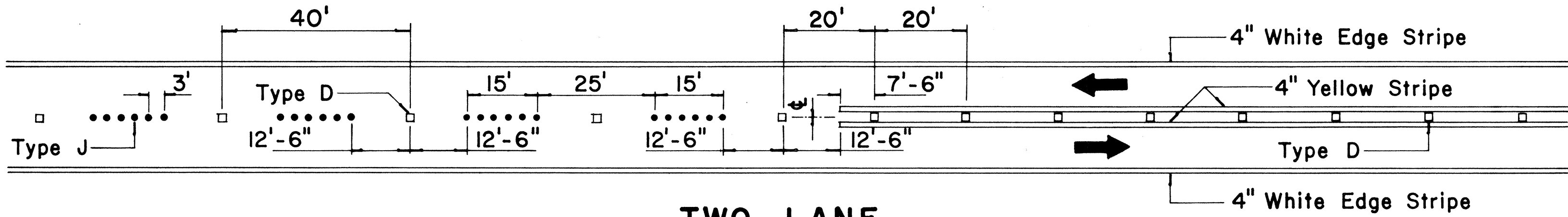
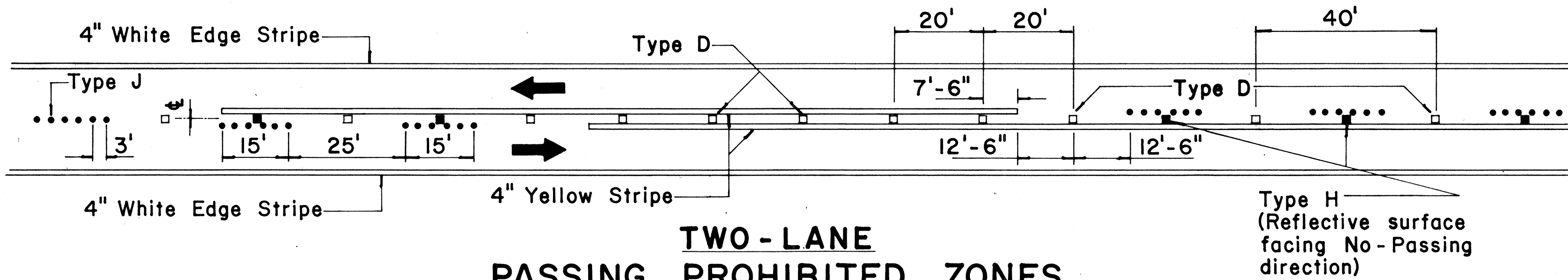


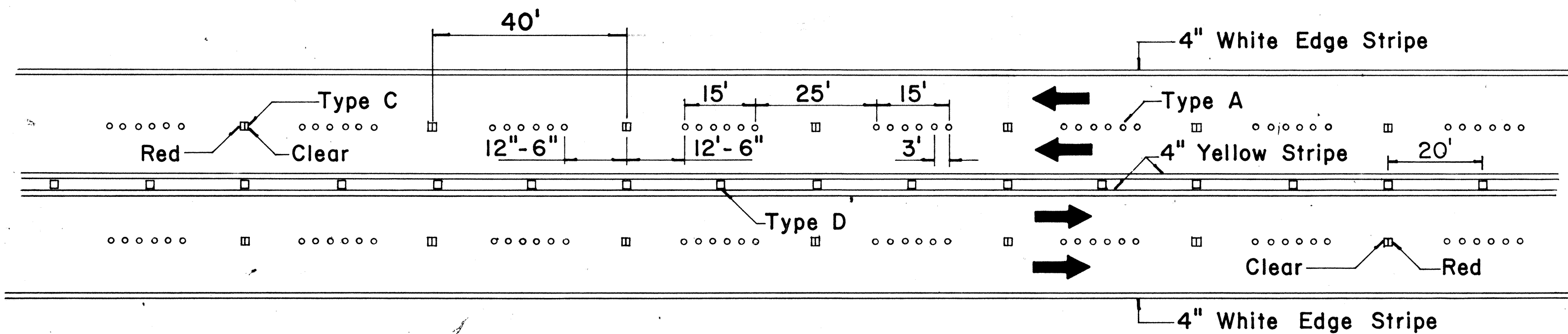
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	440AD1-72	1976	3	8



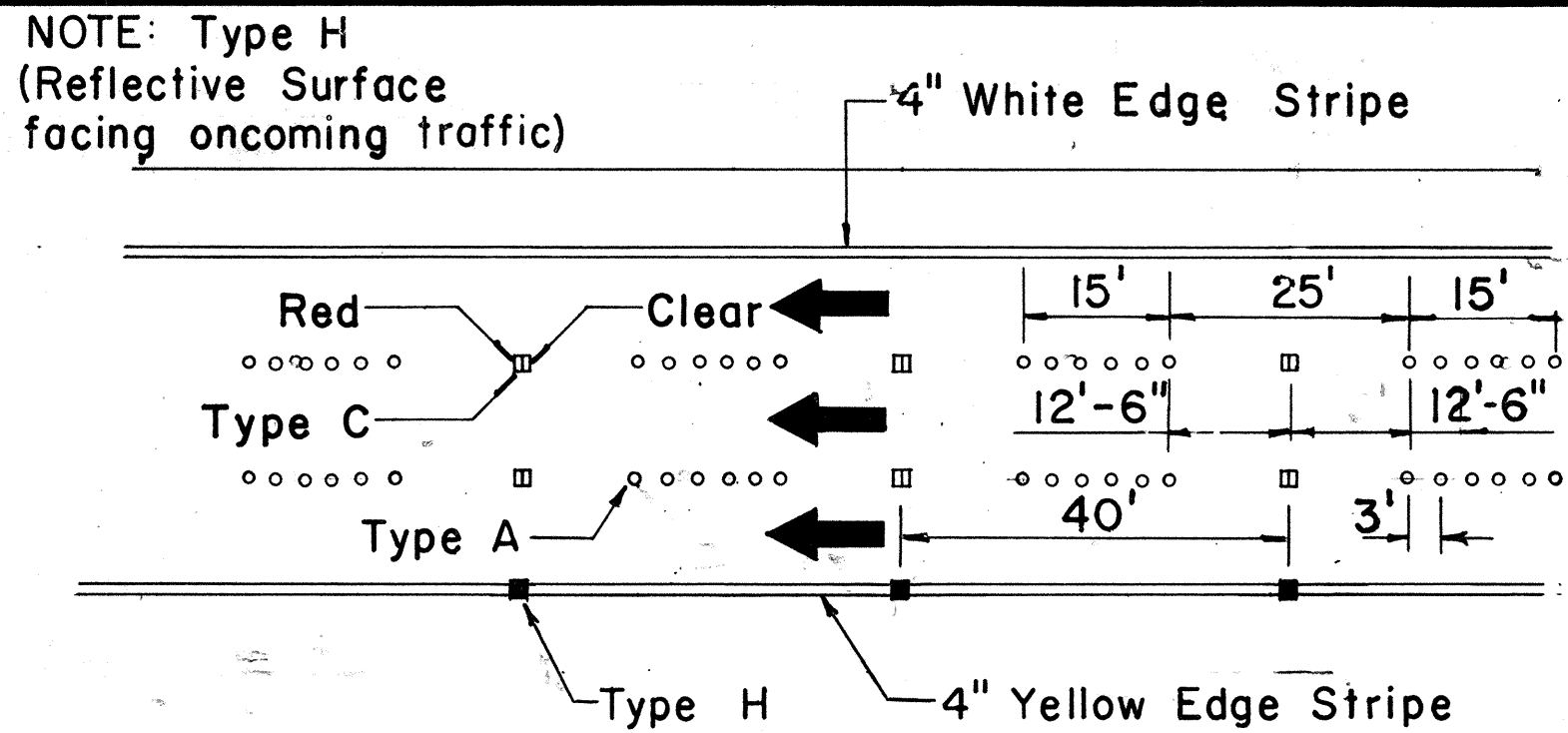
**TWO - LANE
PASSING PERMITTED AND PASSING PROHIBITED**



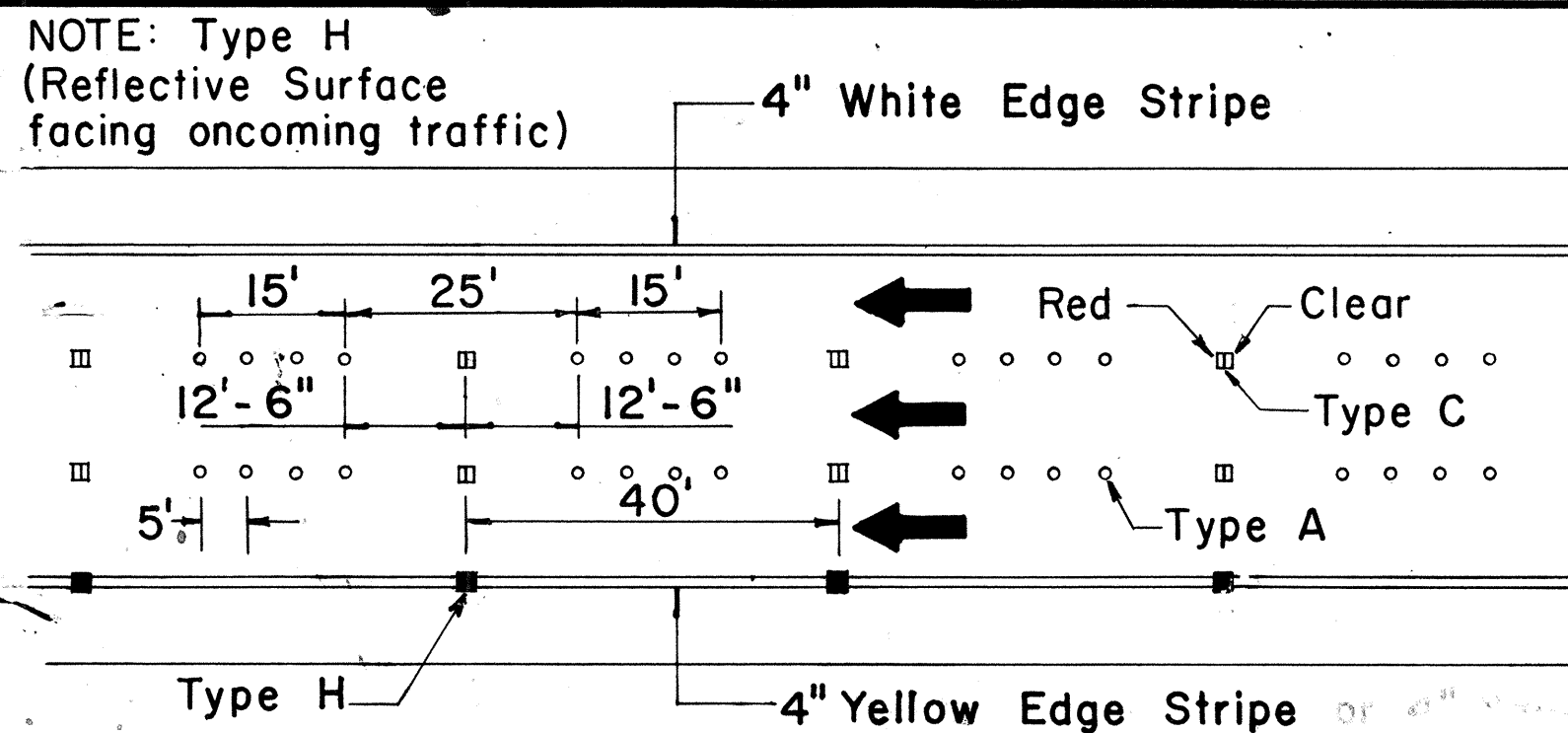
**TWO - LANE
PASSING PROHIBITED ZONES**



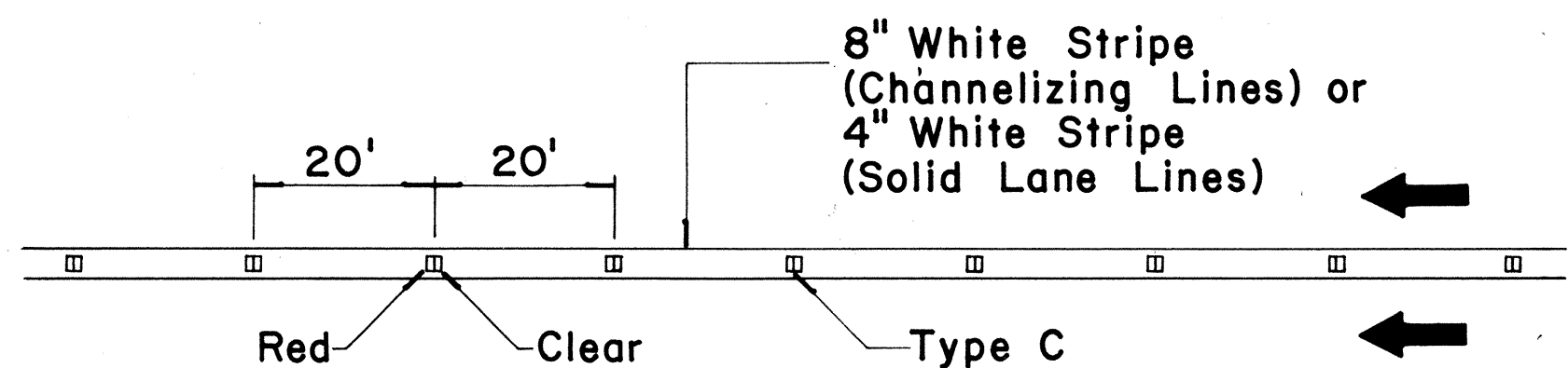
**MULTI - LANE
LANE LINES AND CENTER LINE**



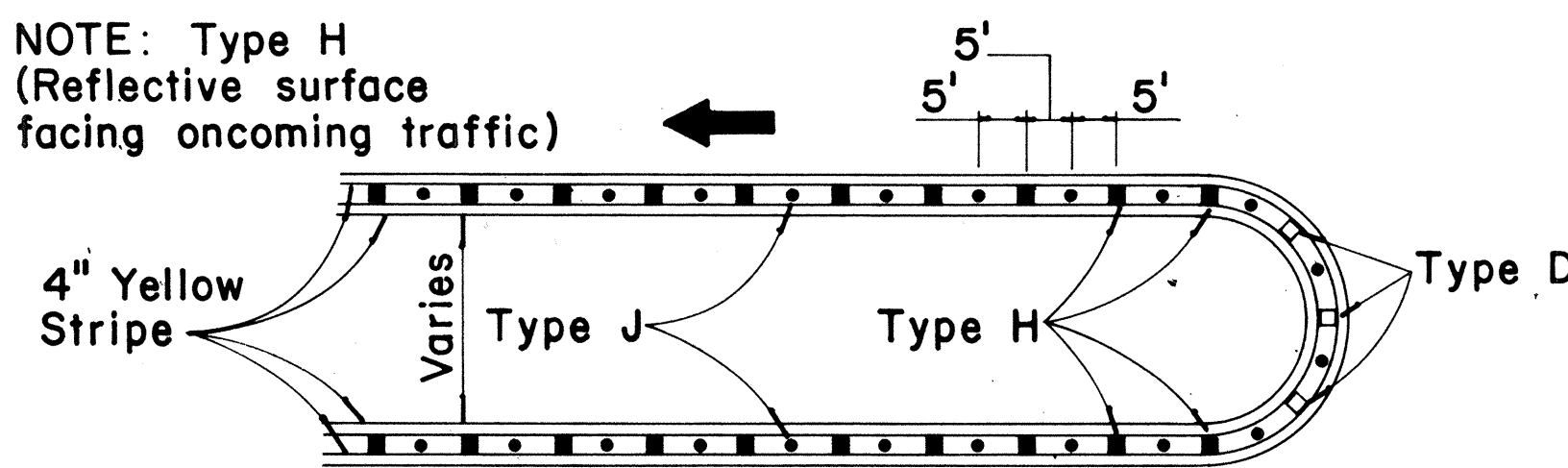
DIVIDED HIGHWAY LANE LINES



FREEWAY LANE LINES



**CHANNELIZING LINES
OR SOLID LANE LINES**



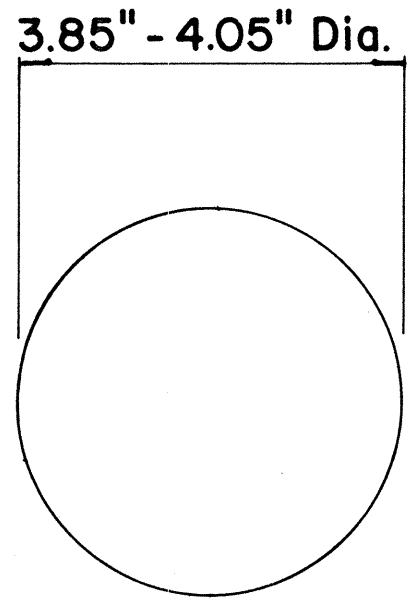
MEDIAN NOSE DELINEATION

TWO - LANE

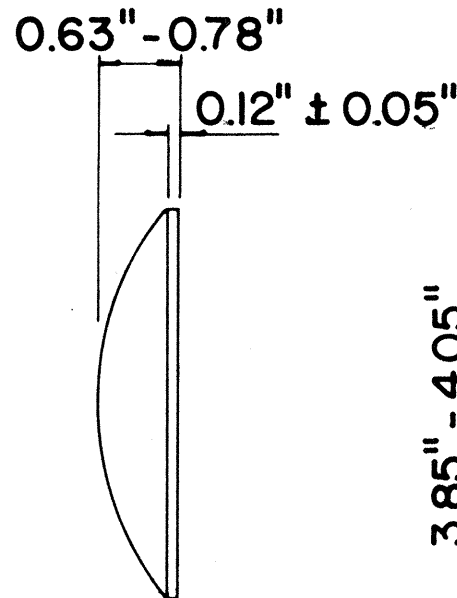
MULTI - LANE

**DIVIDED HIGHWAY
AND
FREEWAY**

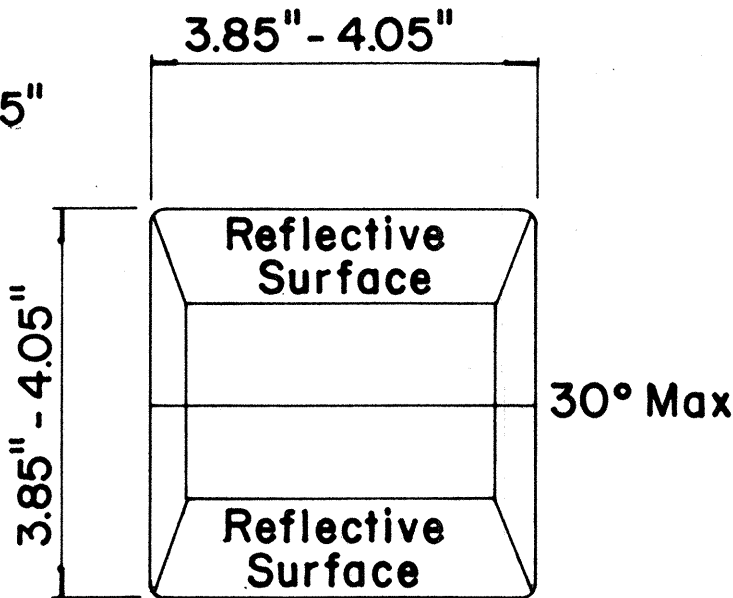
MISCELLANEOUS



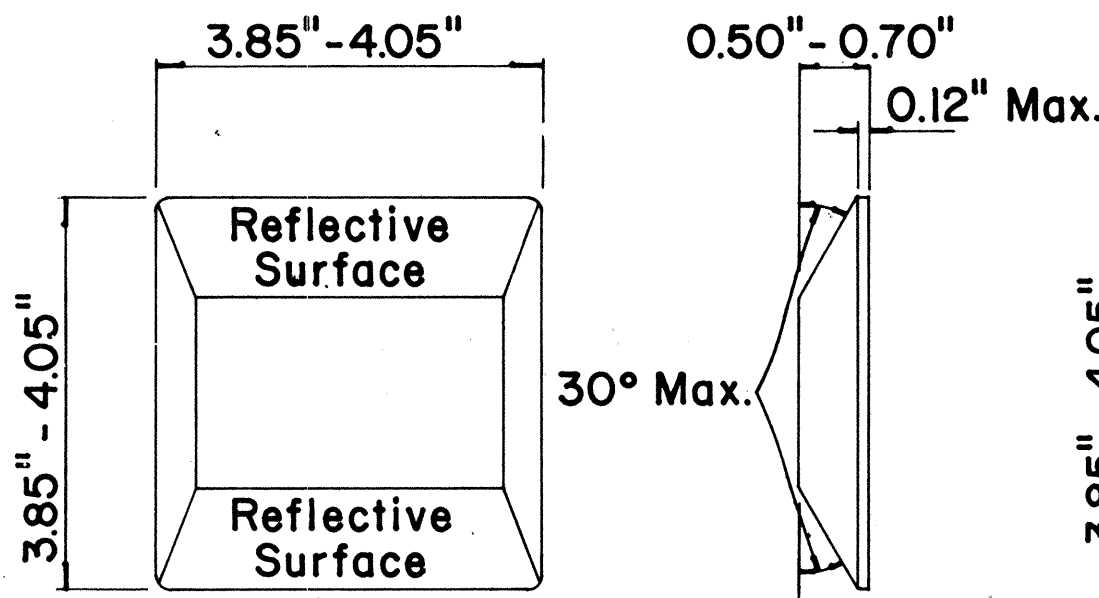
**TYPE A
NON - REFLECTIVE WHITE MARKER**



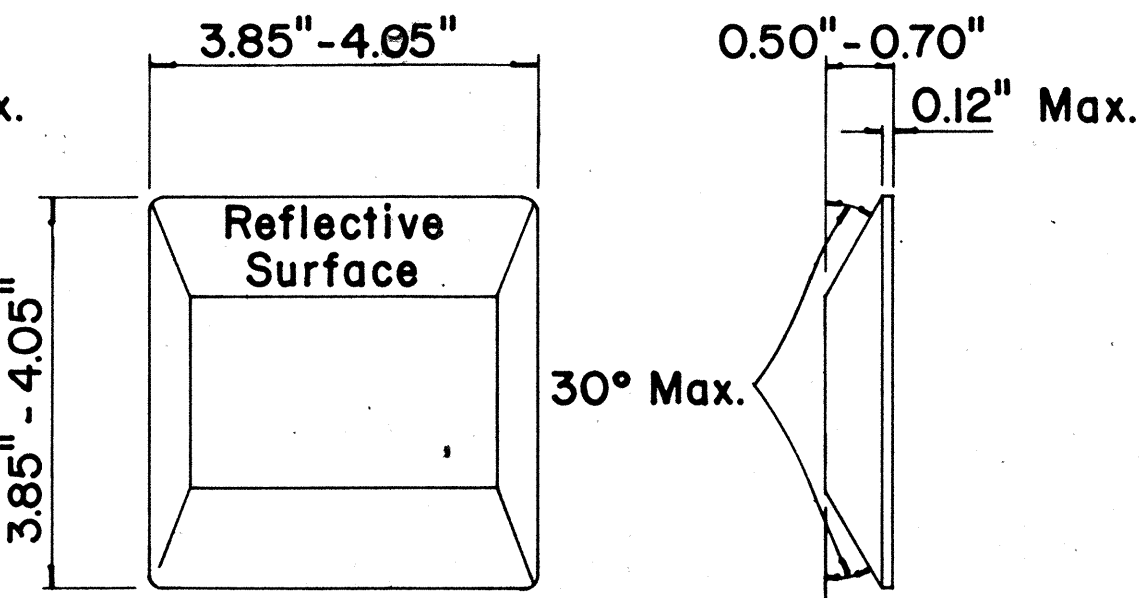
**TYPE J
NON - REFLECTIVE YELLOW MARKER**



**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 Contractor unless otherwise specified.

LEGEND

- Type A
- Type C
- Type D
- Type H
- Type J

APPROVAL RECOMMENDED:

E. Ichu Tanaka
TRAFFIC ENGINEER

11/18/71
DATE

APPROVED:

Shirley Z. Kish
ASSISTANT CHIEF, ENGINEERING

11/18/71
DATE

No.	REVISION	APPROVED BY	DATE
1	Add reflector marker in each line gap.	H.	10-21-72
2	Revised General Notes.	H.	10-21-72
3	Change 4" white edge stripe to 4" solid yellow edge stripe to left edge of a travel path and Add Type H Reflector Marker	H.	5-22-74

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

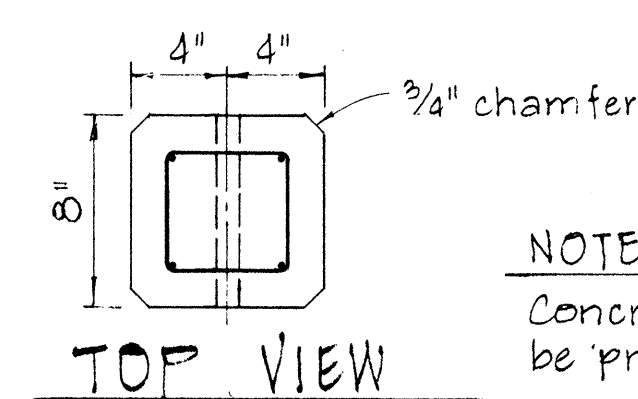
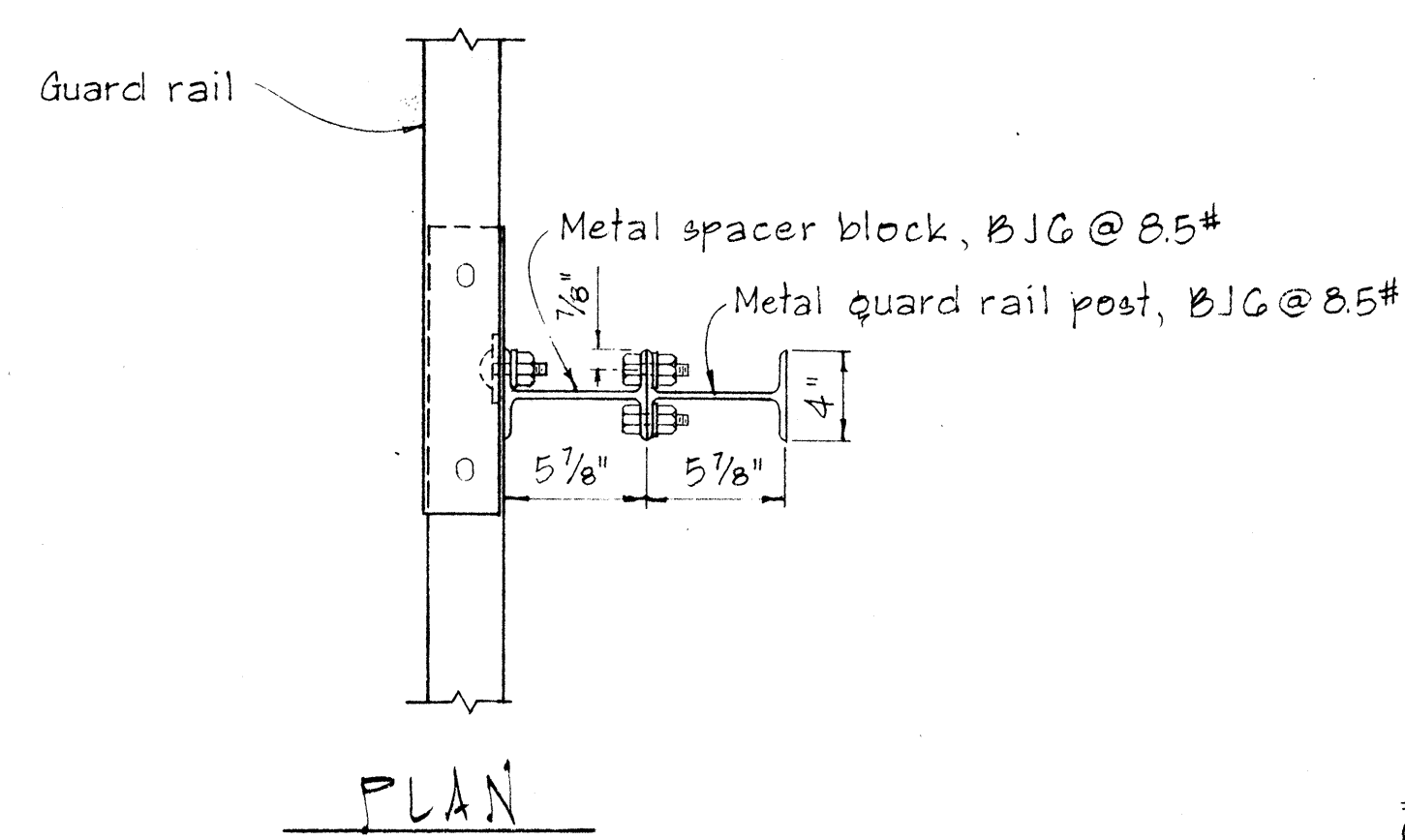
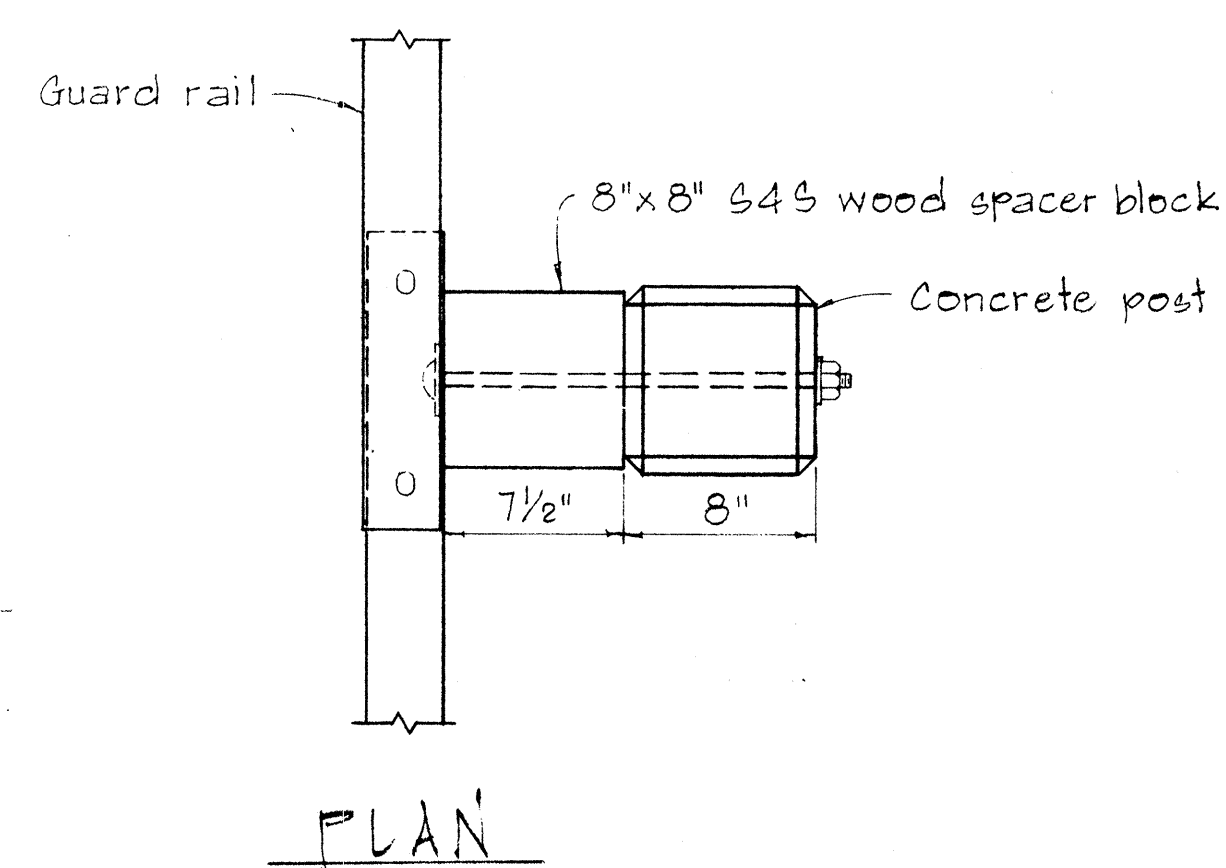
**STANDARD DETAILS
RAISED PAVEMENT MARKERS**

Not to Scale October 1971

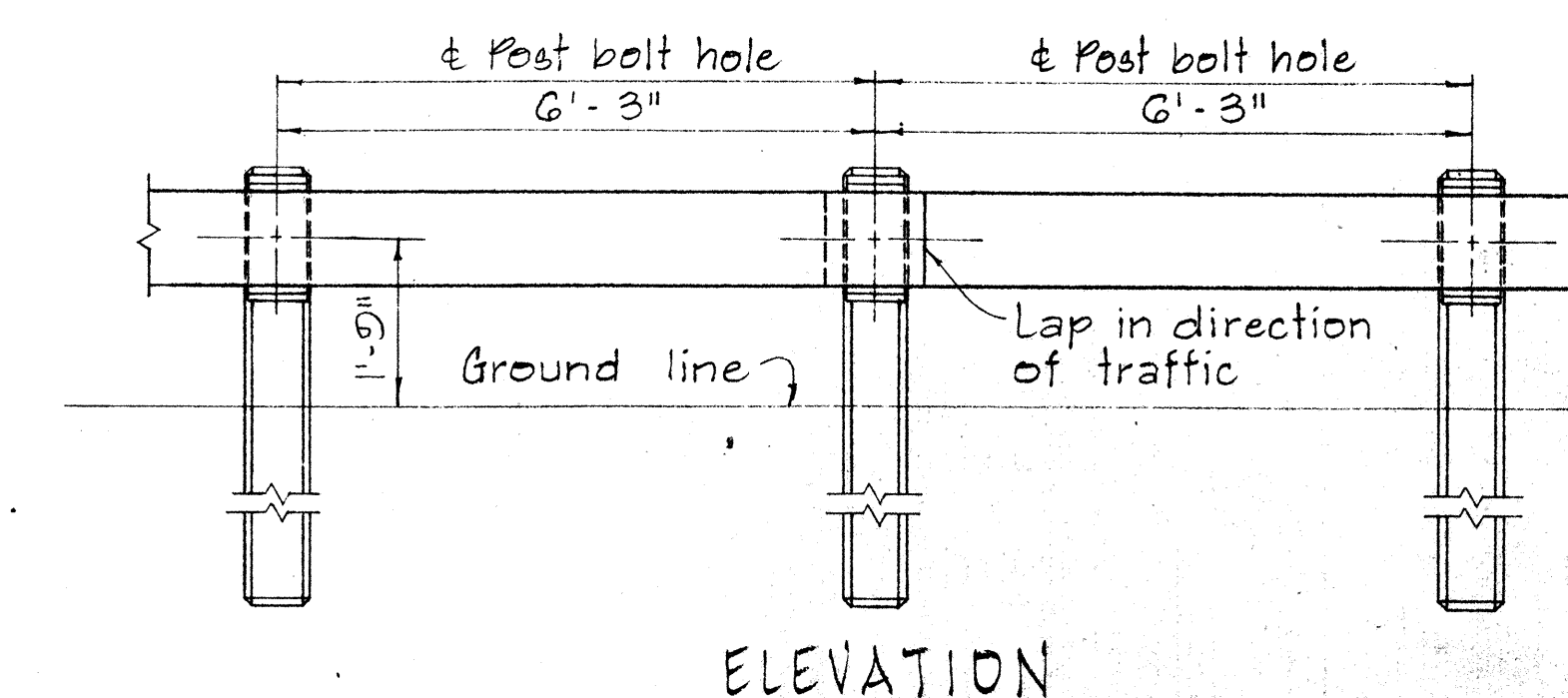
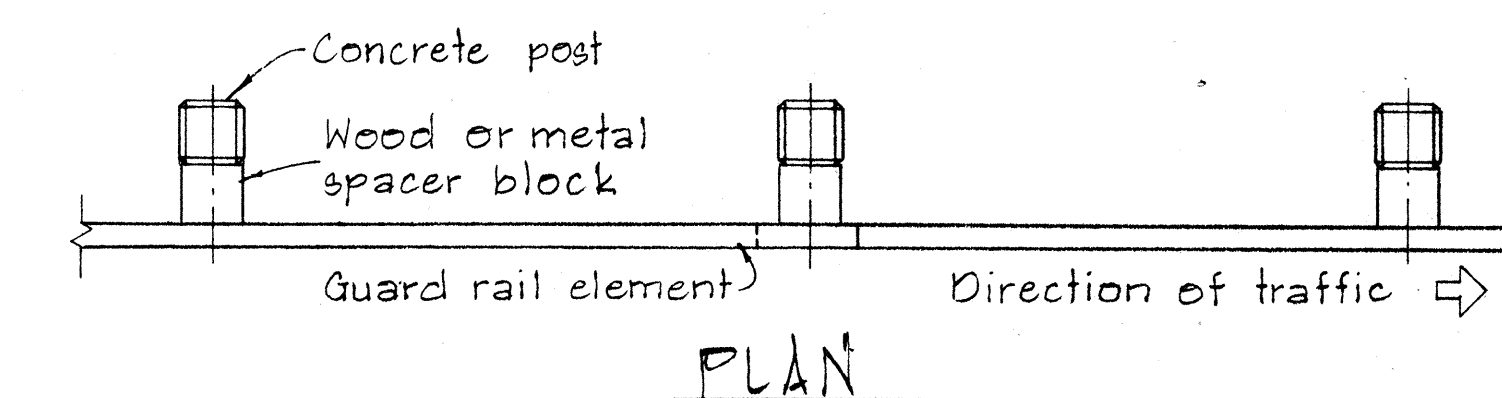
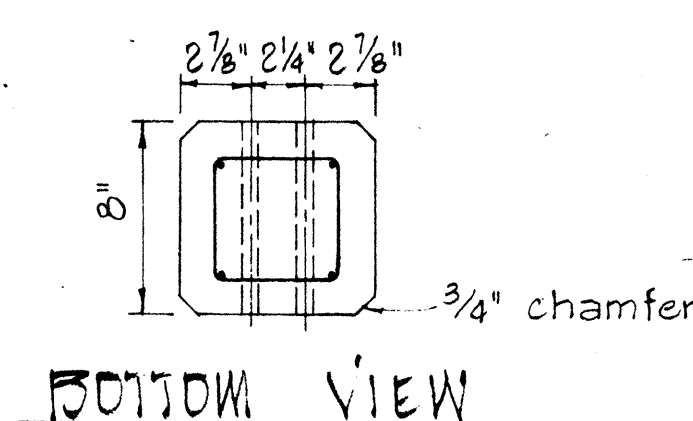
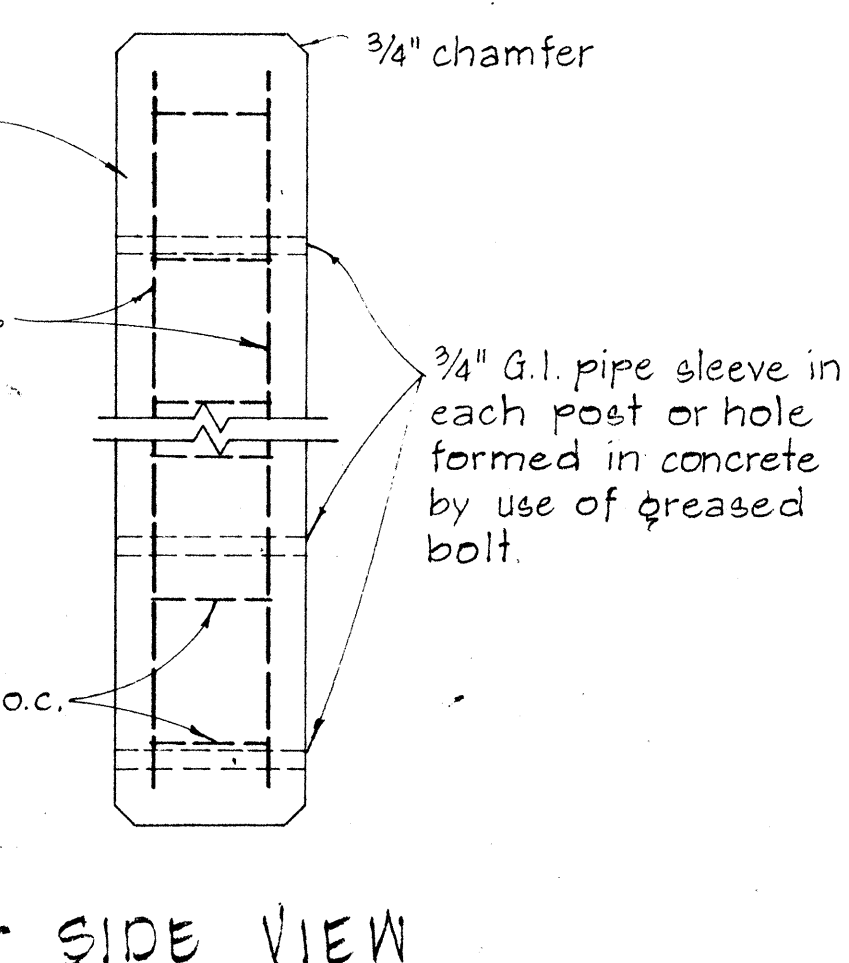
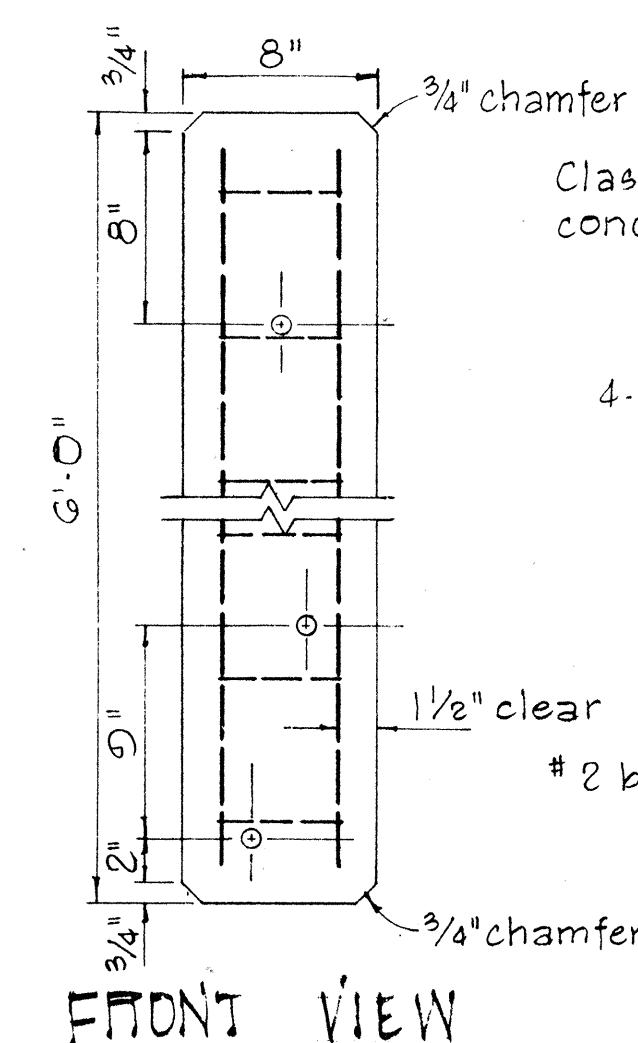
SHEET No. 1 OF 5 SHEETS DT 300

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	440A0172	1976	4	8

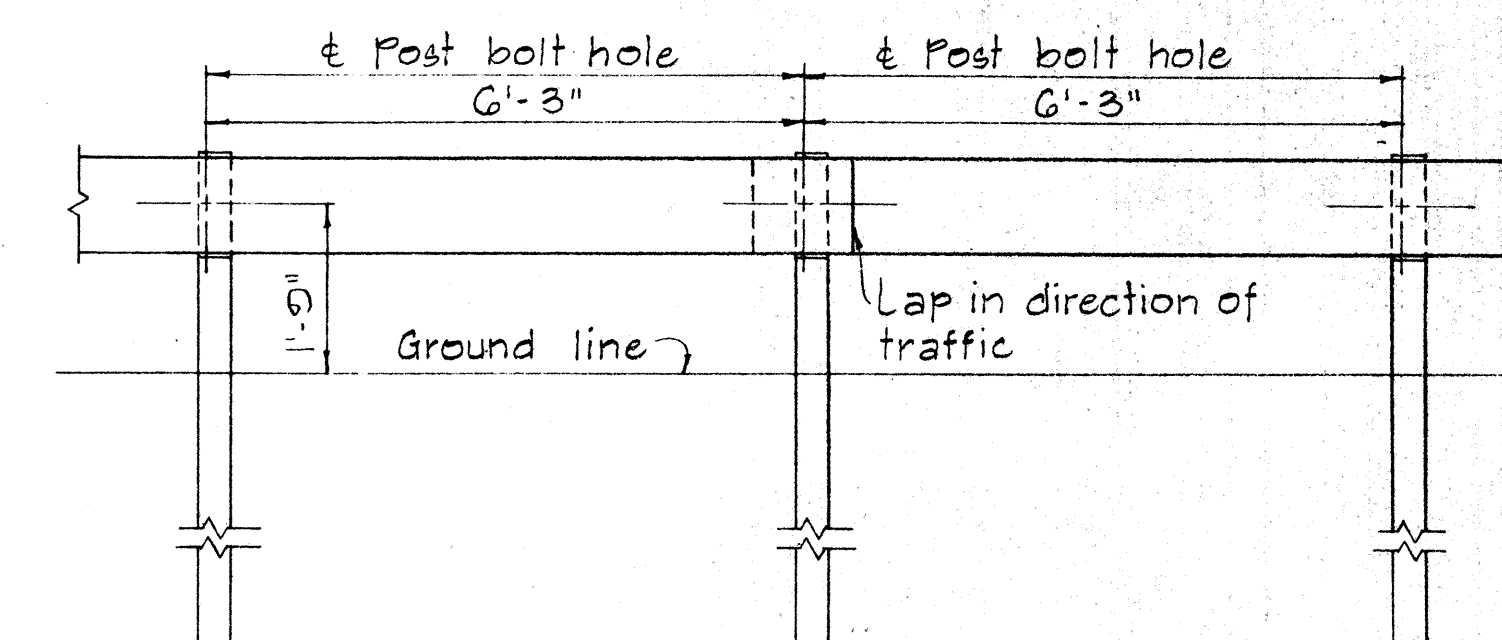
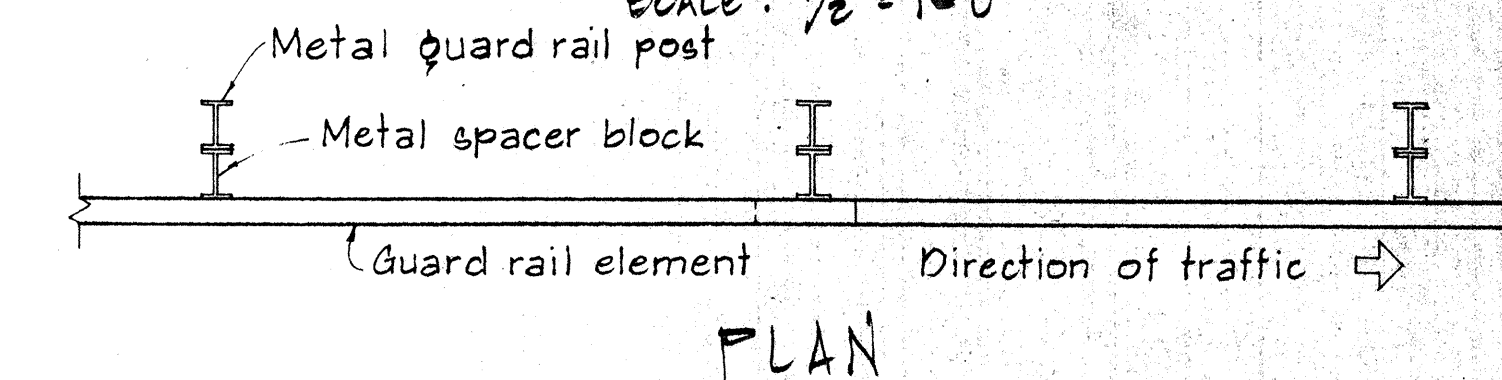


NOTE:
Concrete post shall be precast



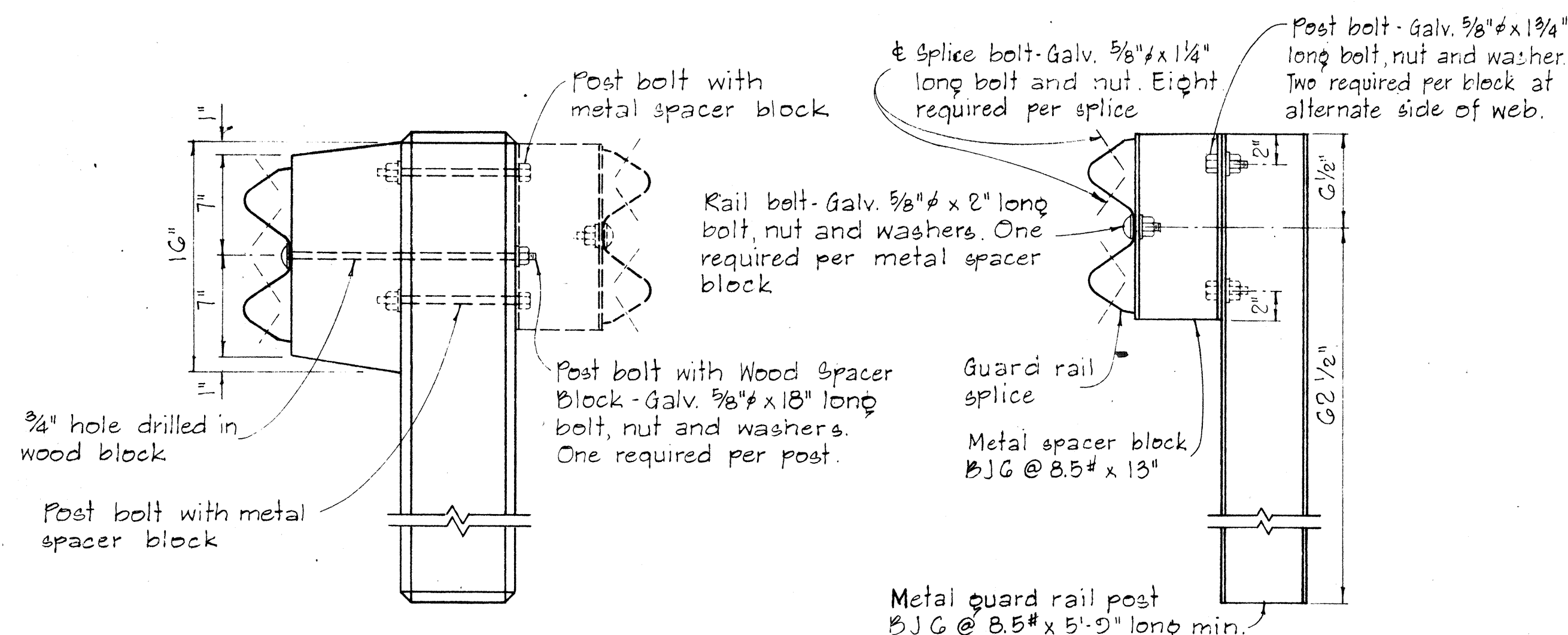
METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

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



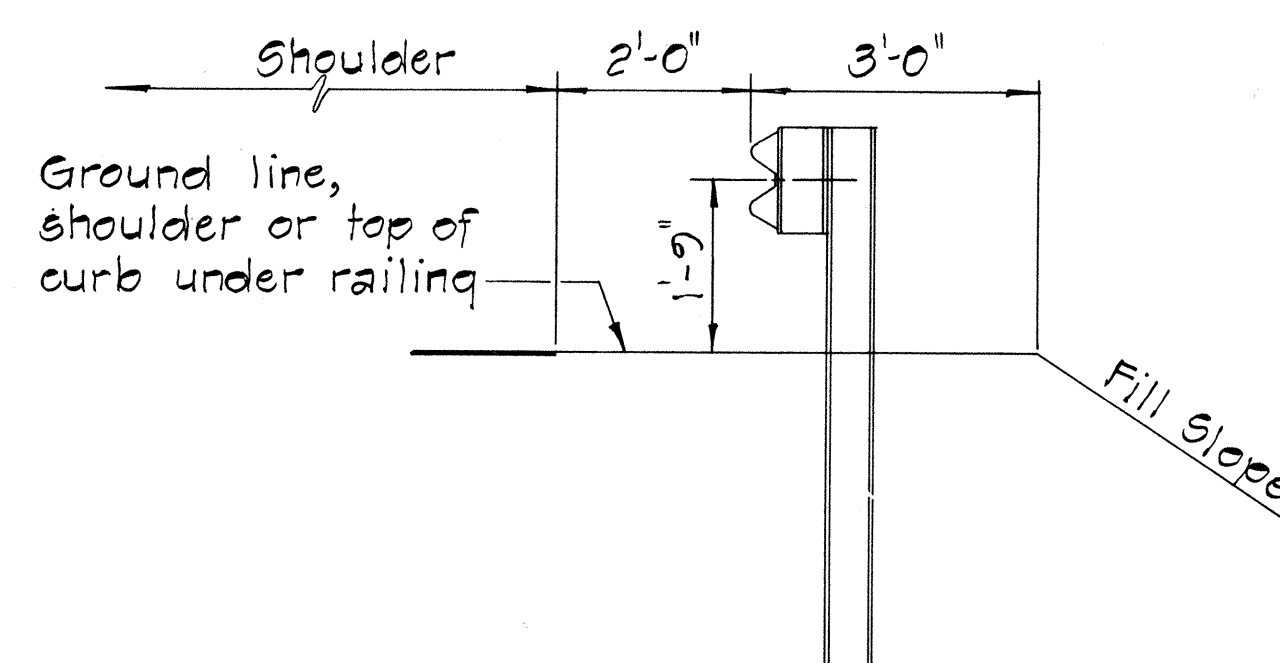
METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



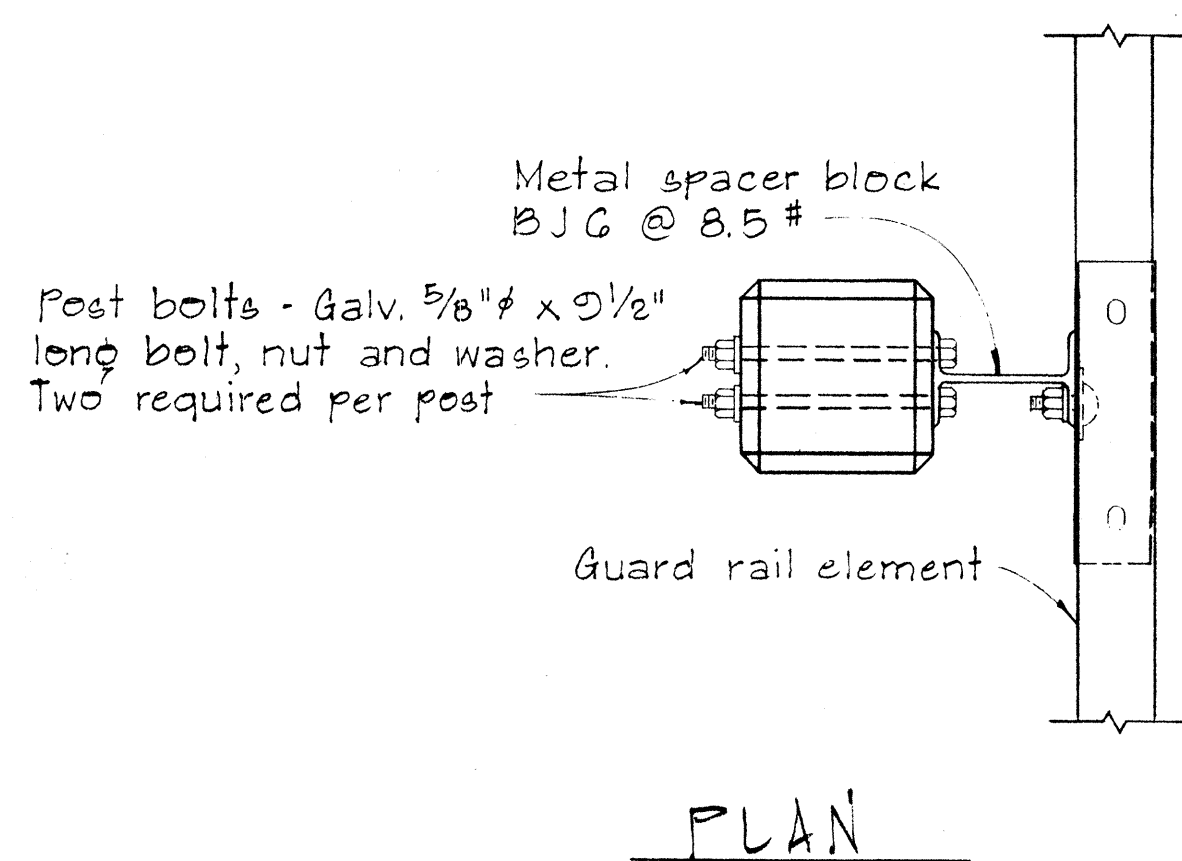
SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



TYPICAL METAL GUARD RAIL DETAIL

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



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

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

APPROVAL RECOMMENDED:
Traffic Engineer

12/29/62
DATE

APPROVED:
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

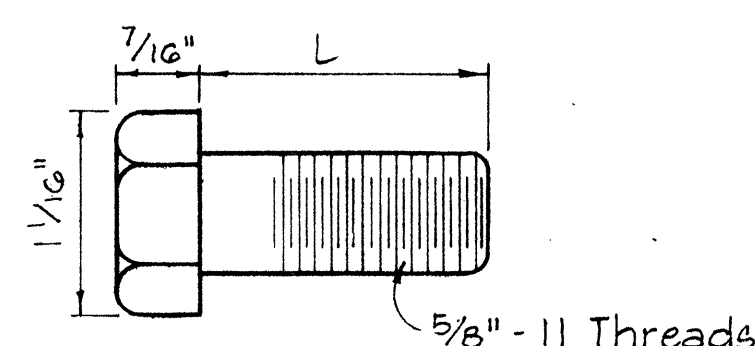
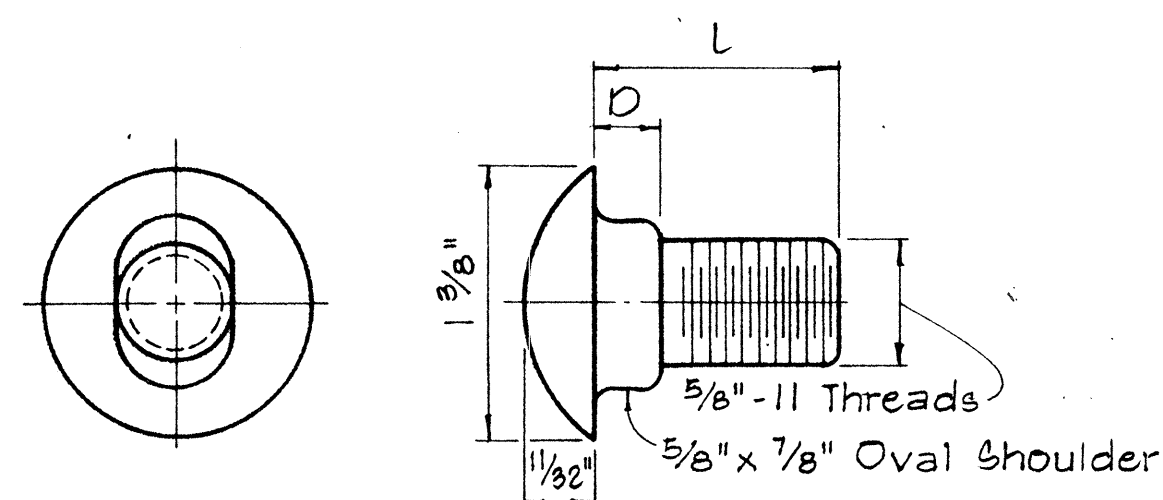
SCALE: AS SHOWN

NOV. 1968

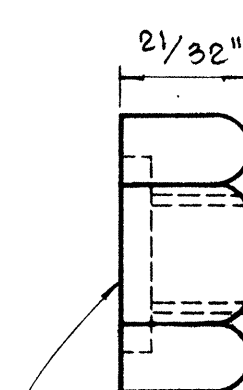
SHEET NO. 2 OF 5 SHEETS DT 500

BOLT DIMENSIONS		
TYPE A BOLT	D	L
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"

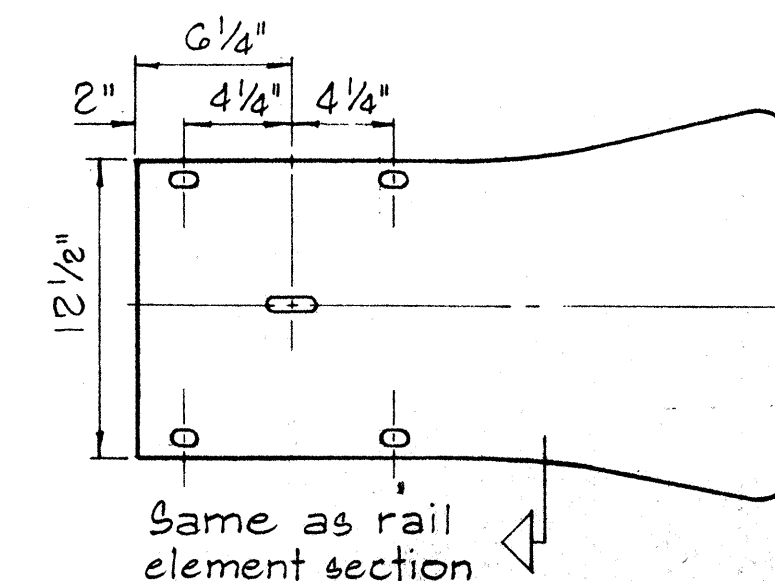
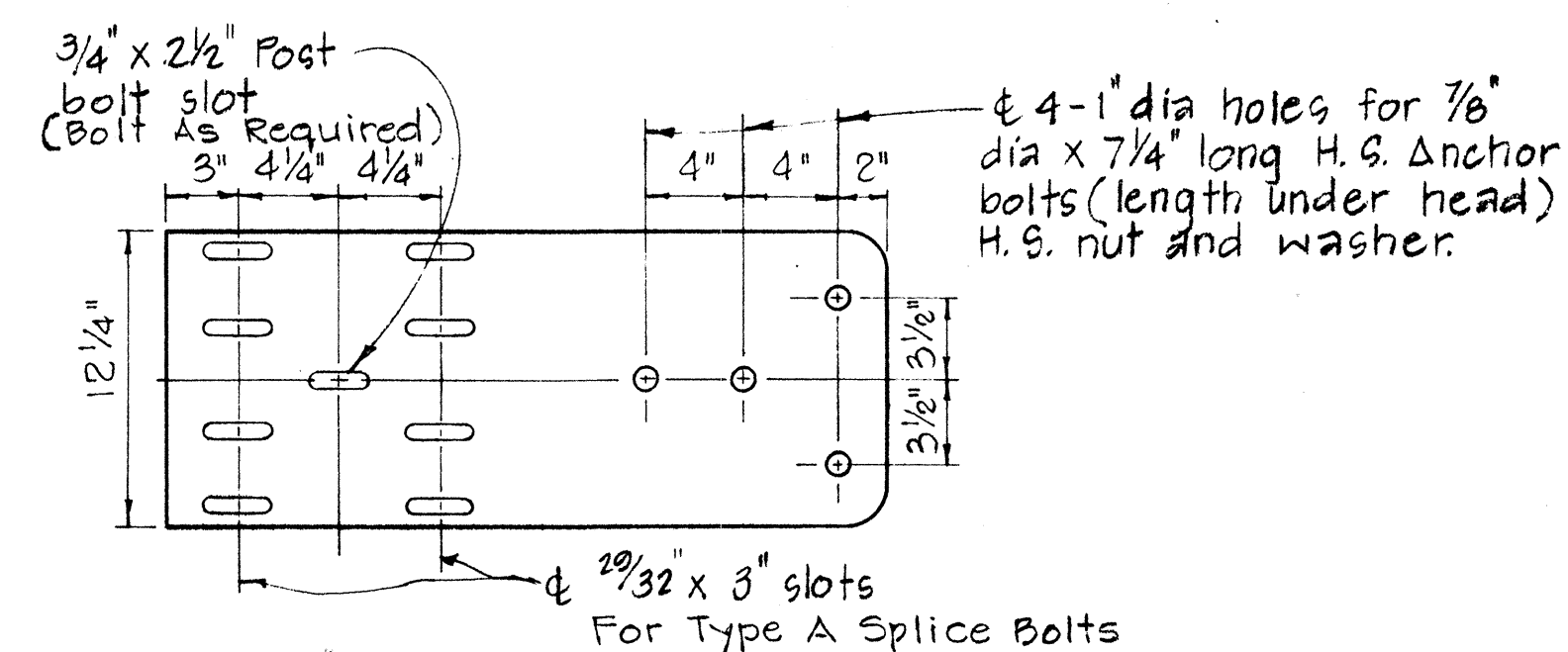
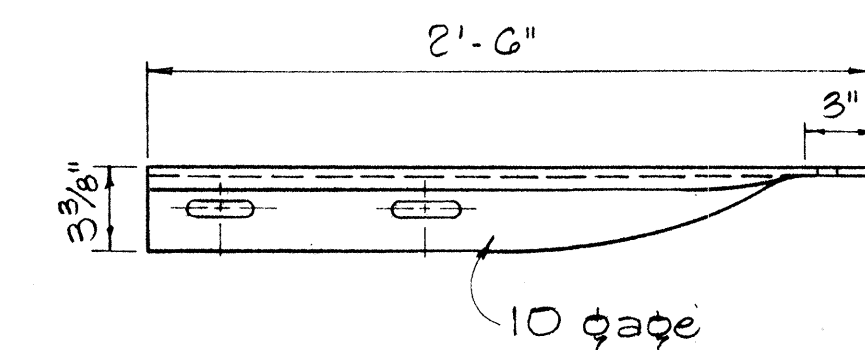
BOLT DIMENSIONS	
TYPE B BOLT	L
Post Bolt for Conc. Post w/ Metal Blocks	9 1/2"
Post Bolt for Metal Post w/ Metal Block	13 3/4"



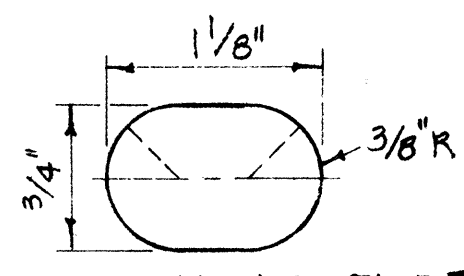
Technical drawing of a hexagonal nut. The drawing shows a hexagonal shape with concentric circles representing the nut's profile. A dimension line at the top indicates a width of $1\frac{1}{4}"$.



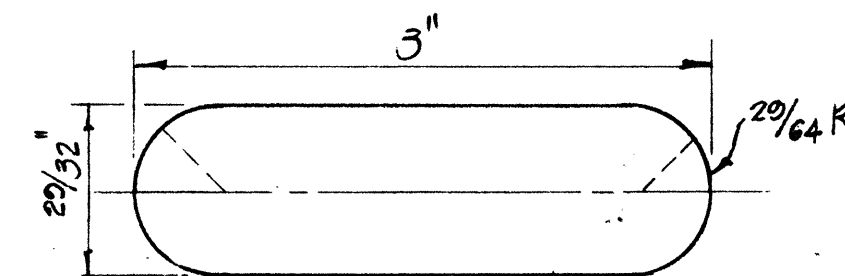
5/32" Deep x 15/16" Dia. C' Bore
for Type A Bolt only.
plain nut for Type B Bolt.



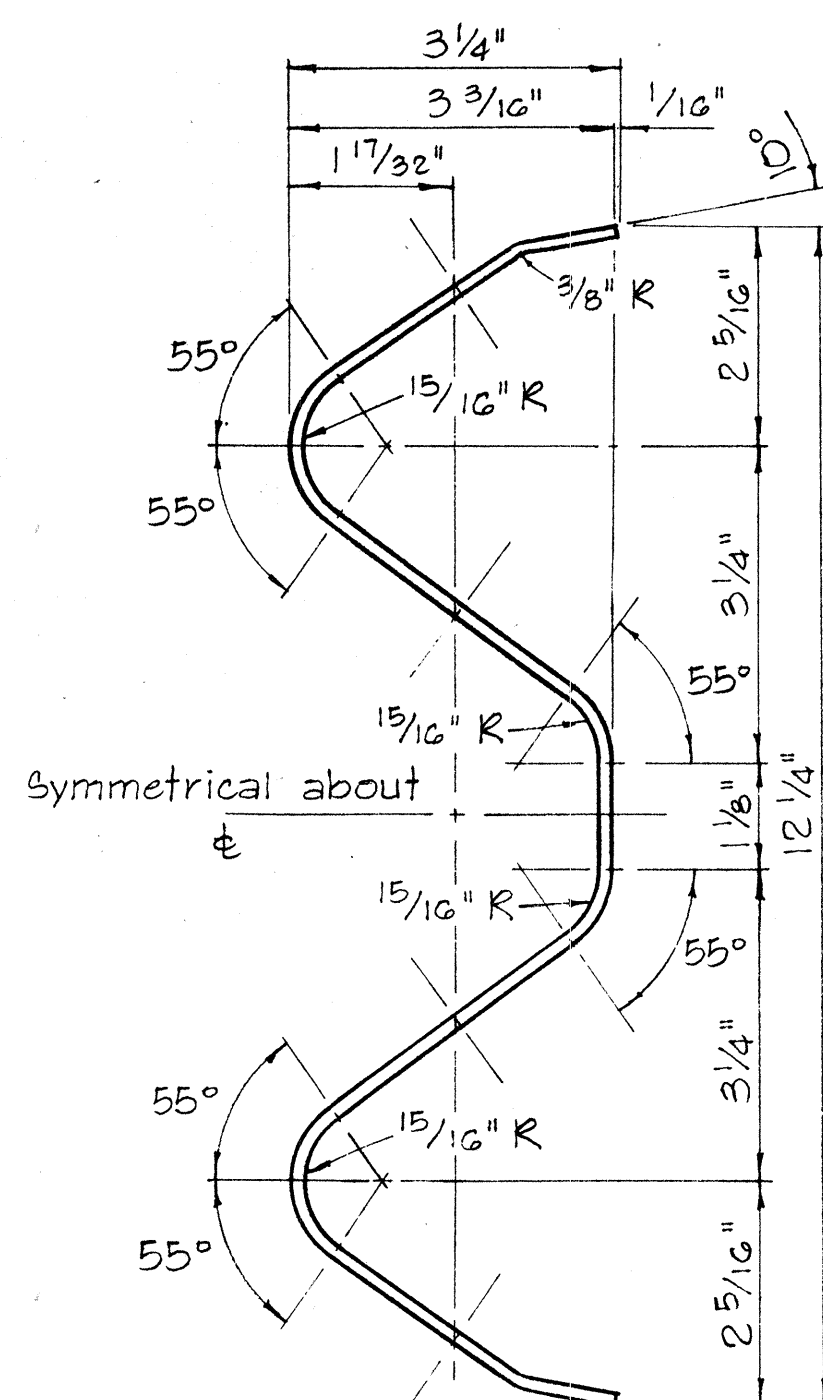
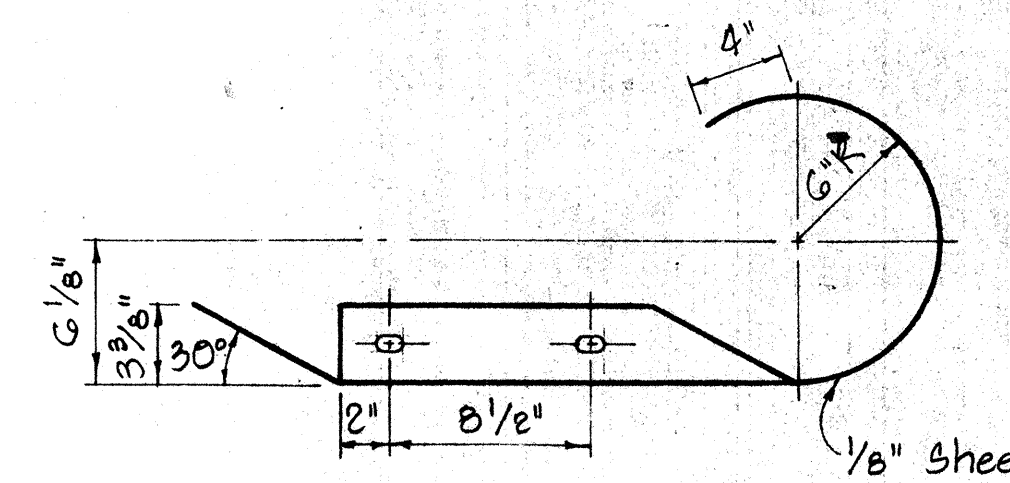
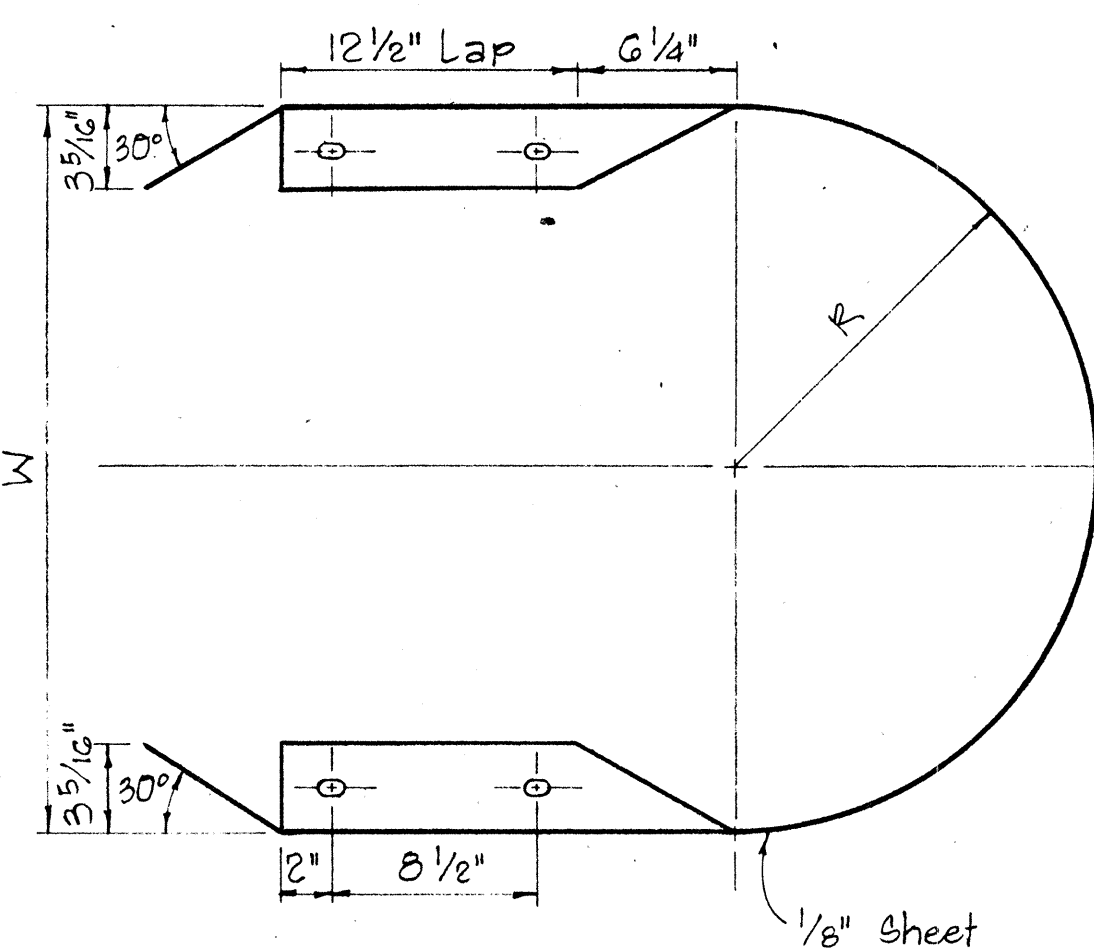
SPLICE BOLT SLOT



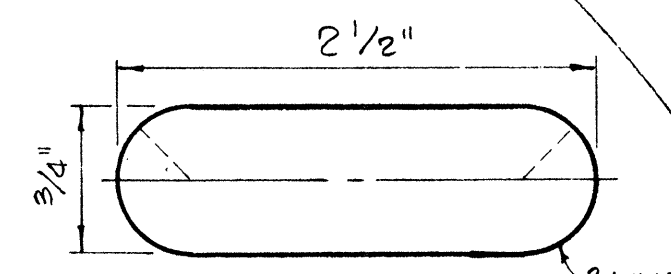
SPLICE BOLT SLOT
FOR ALL ENDS



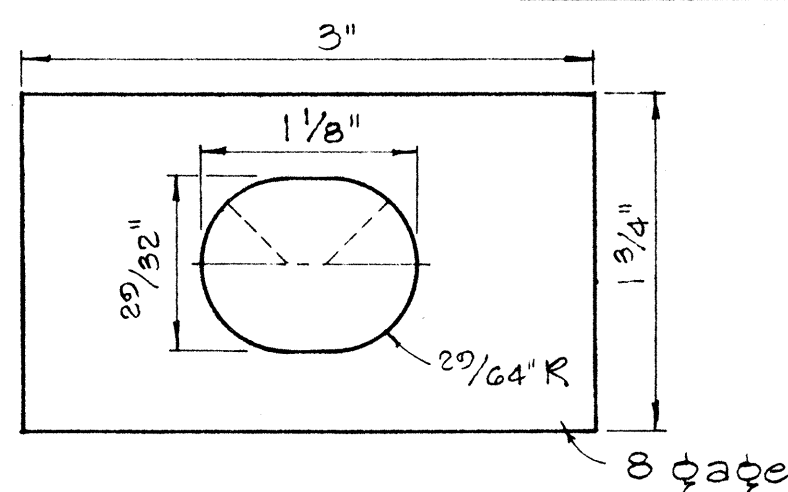
SPLICE BOLT SLOT
FOR SPECIAL END SHOE



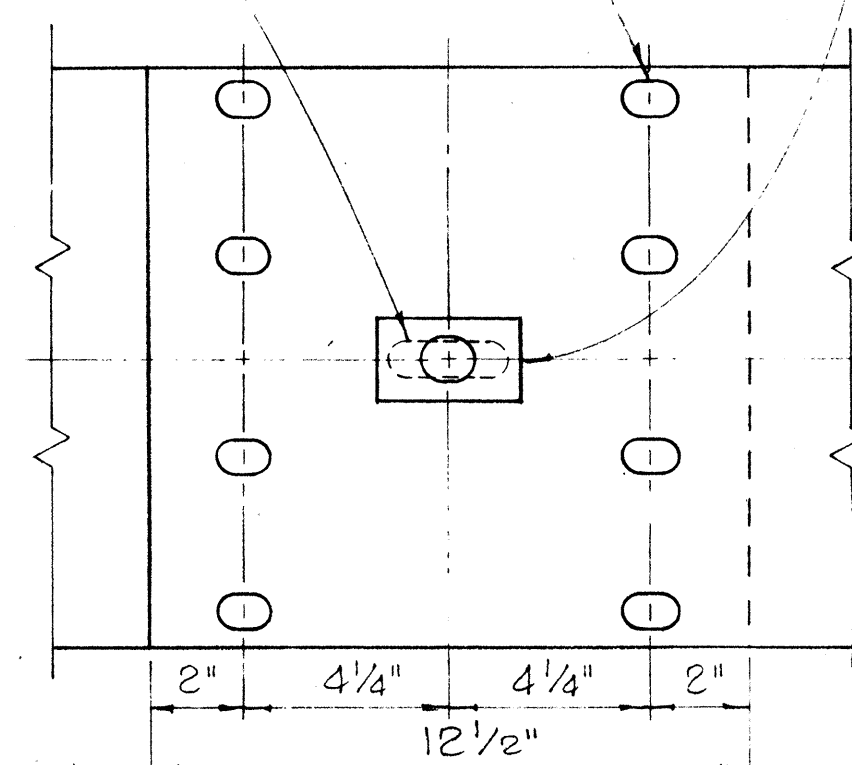
RAIL ELEMENT SECTION



POST BOLT SLOT



RAIL WASHER



RAIL SPICE

- 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"

MEDIAN END

NO.	REVISION	APPROVED BY	DATE

CURVED END

APPROVAL RECOMMENDED:

Eiichi Tanaka
TRAFFIC ENGINEER

TRAFFIC ENGINEER
APPROVED:

2/11/22
ASSISTANT CHIEF, ENG

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

STANDARD DETAILS

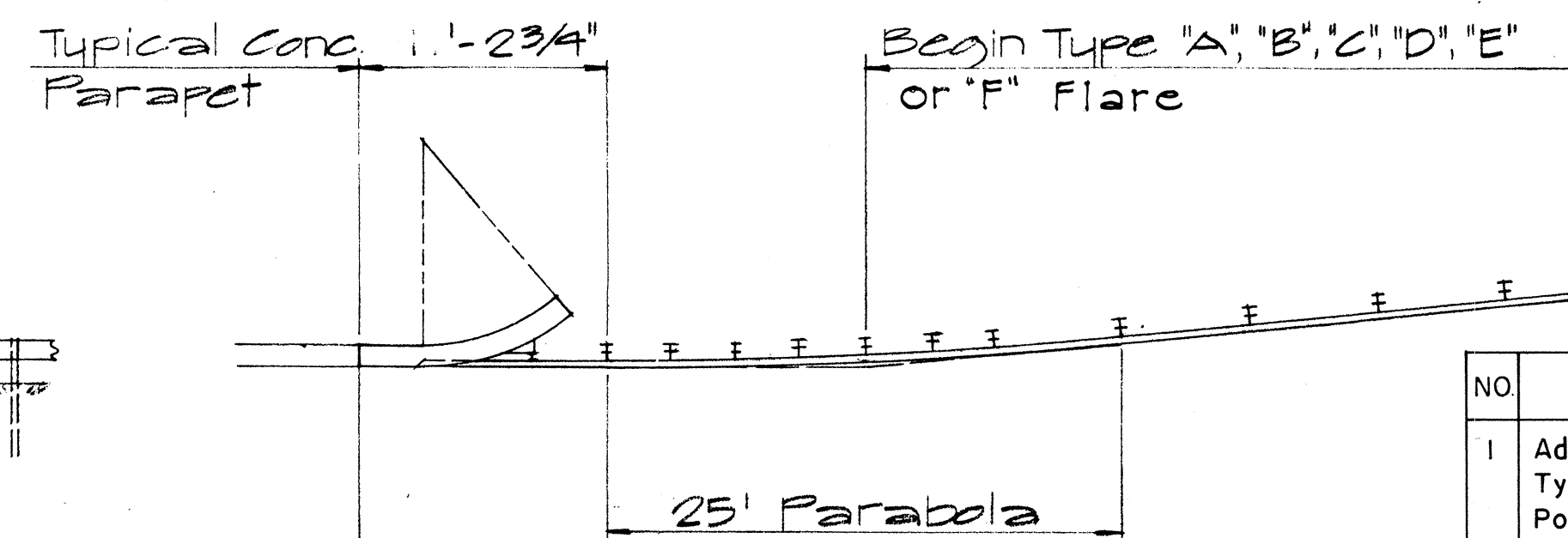
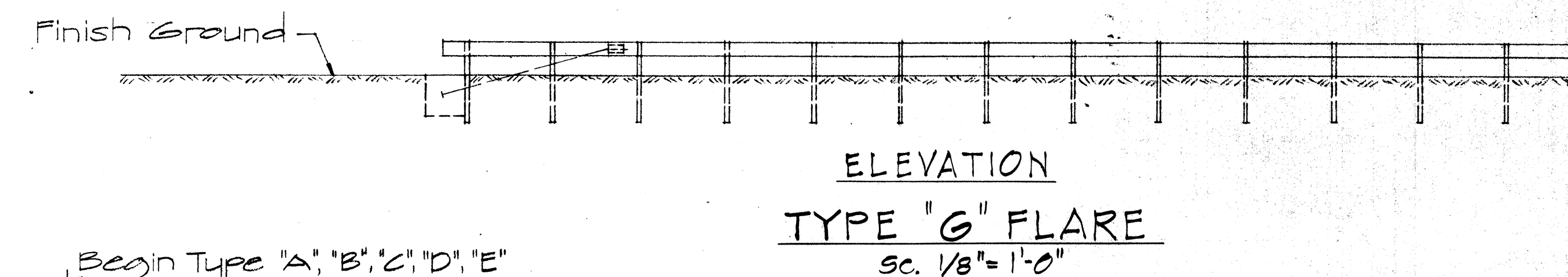
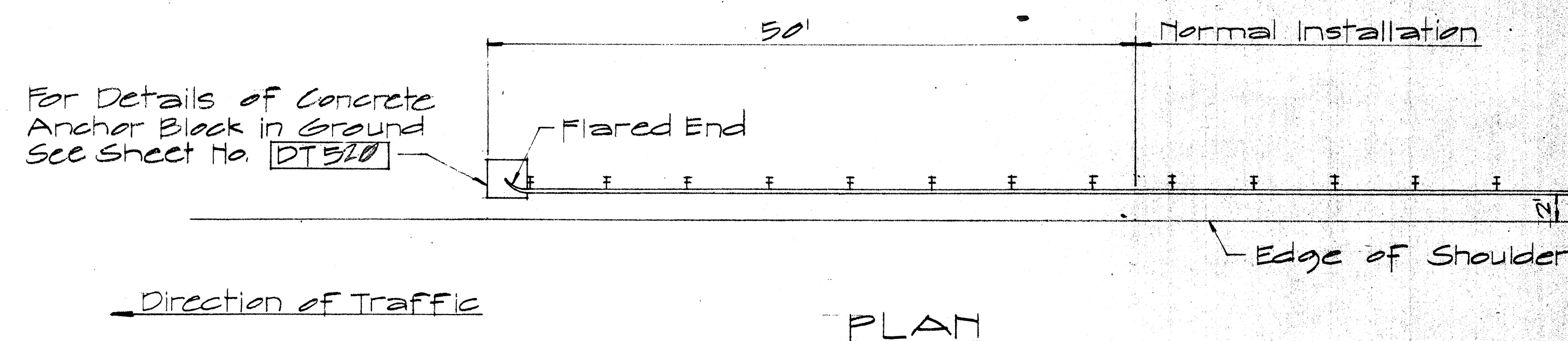
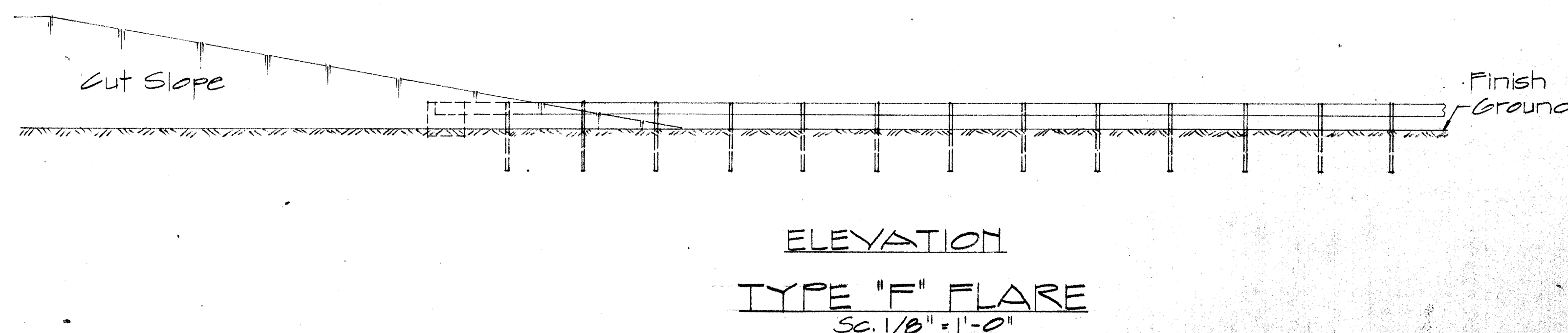
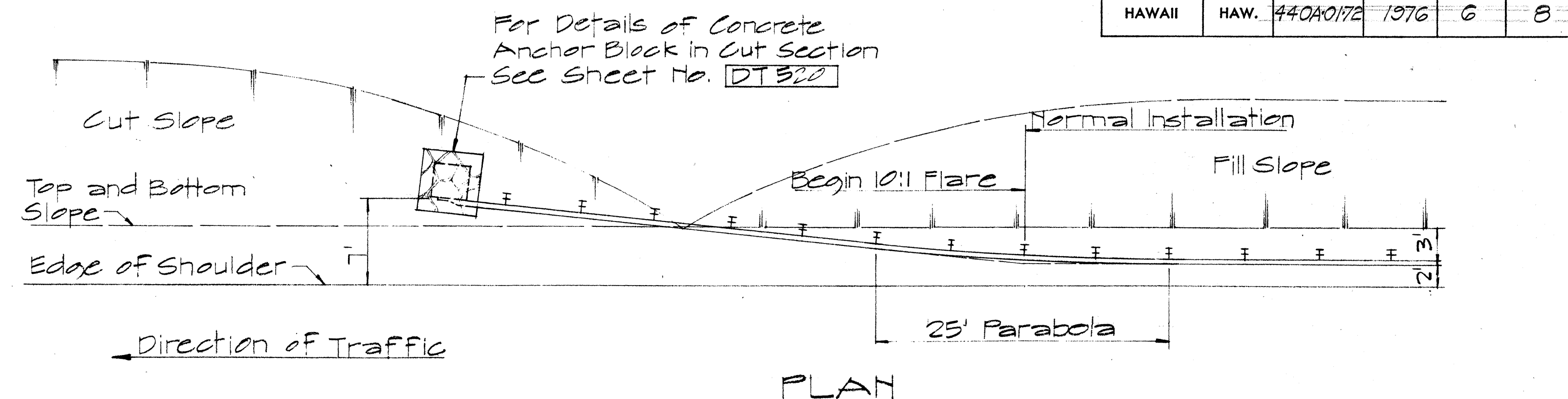
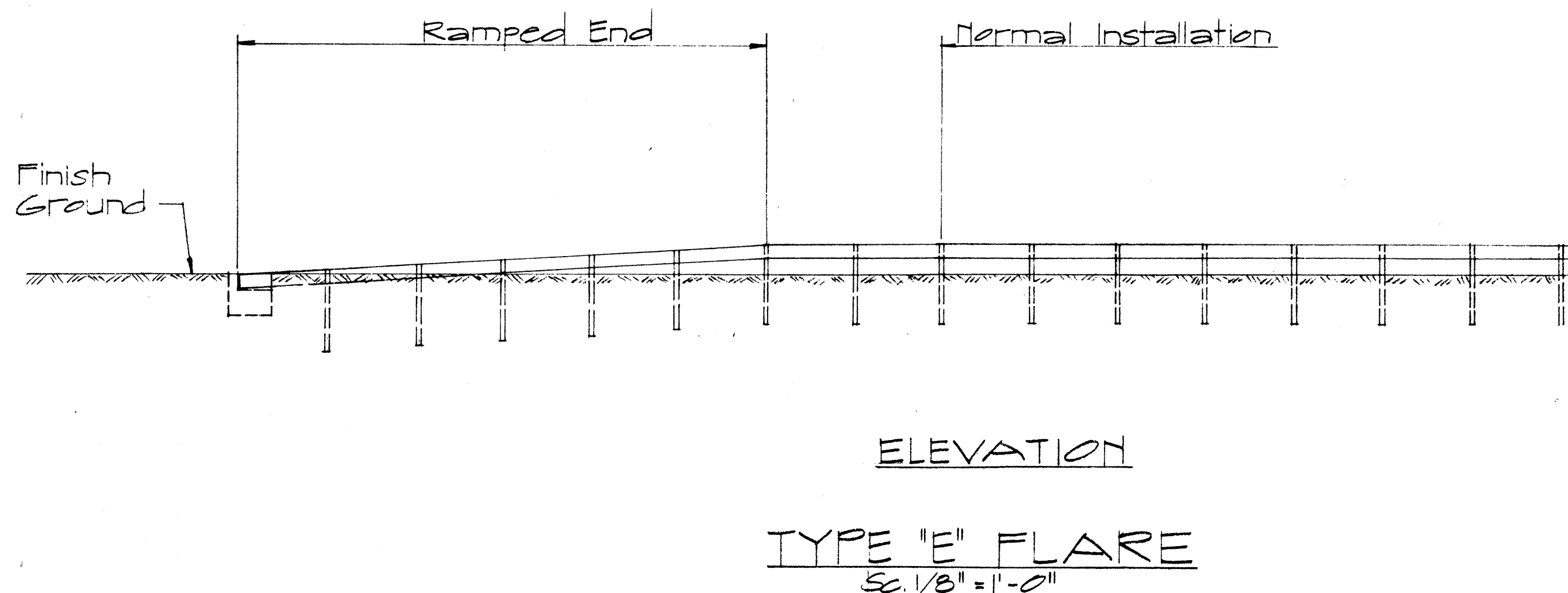
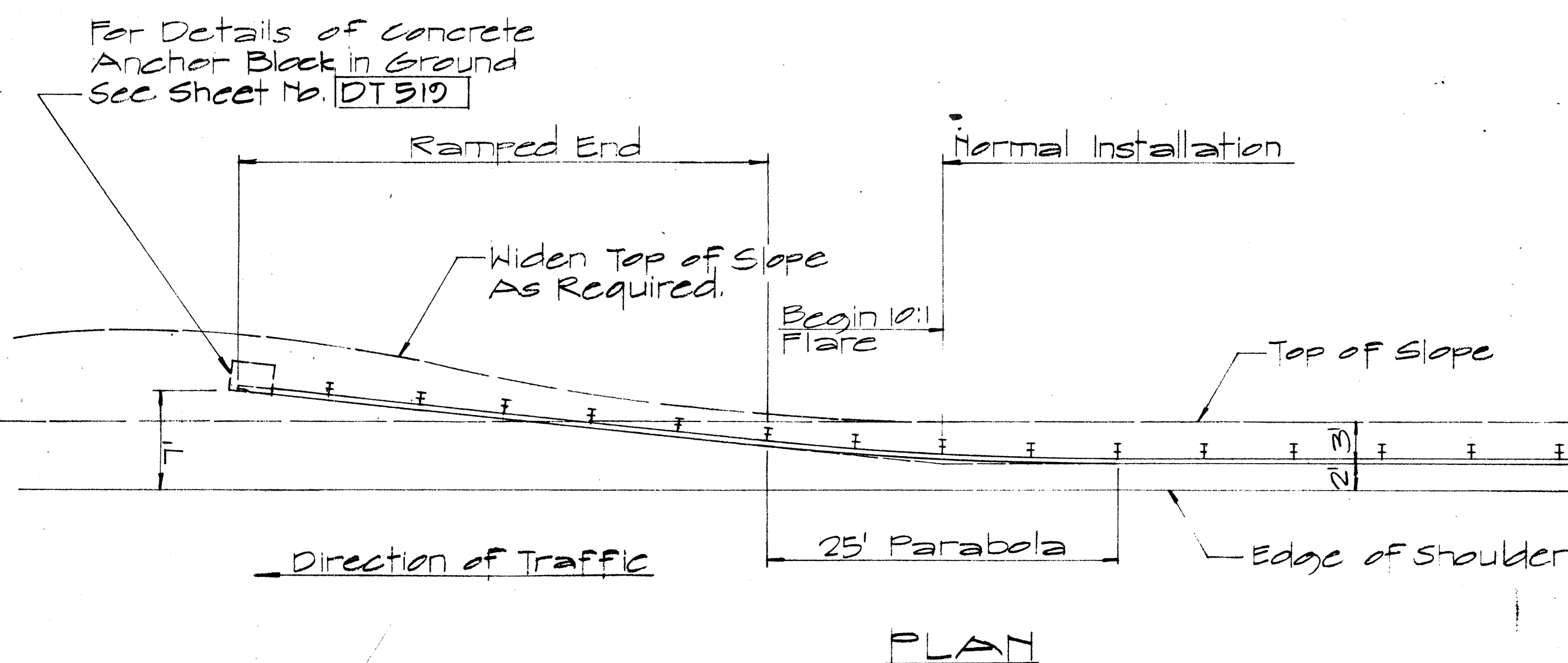
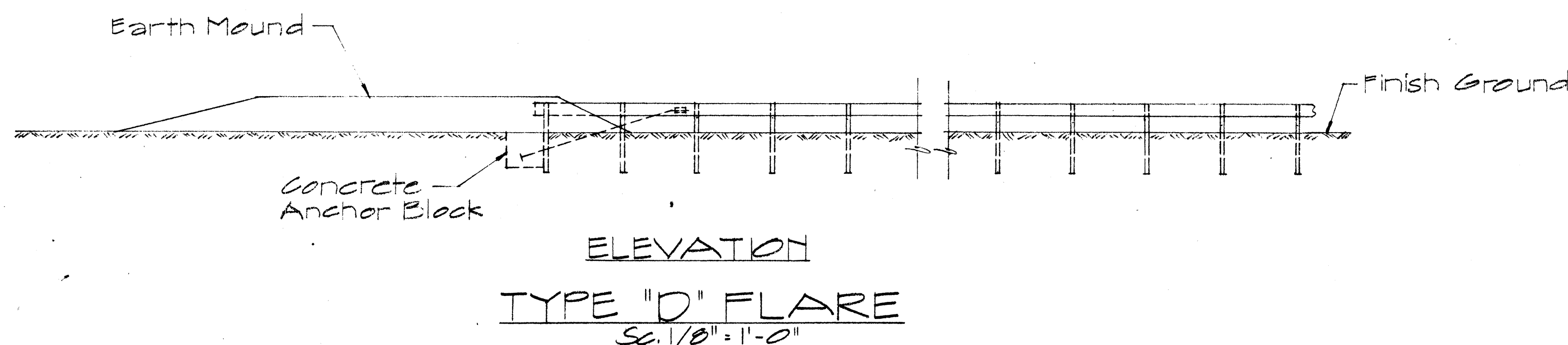
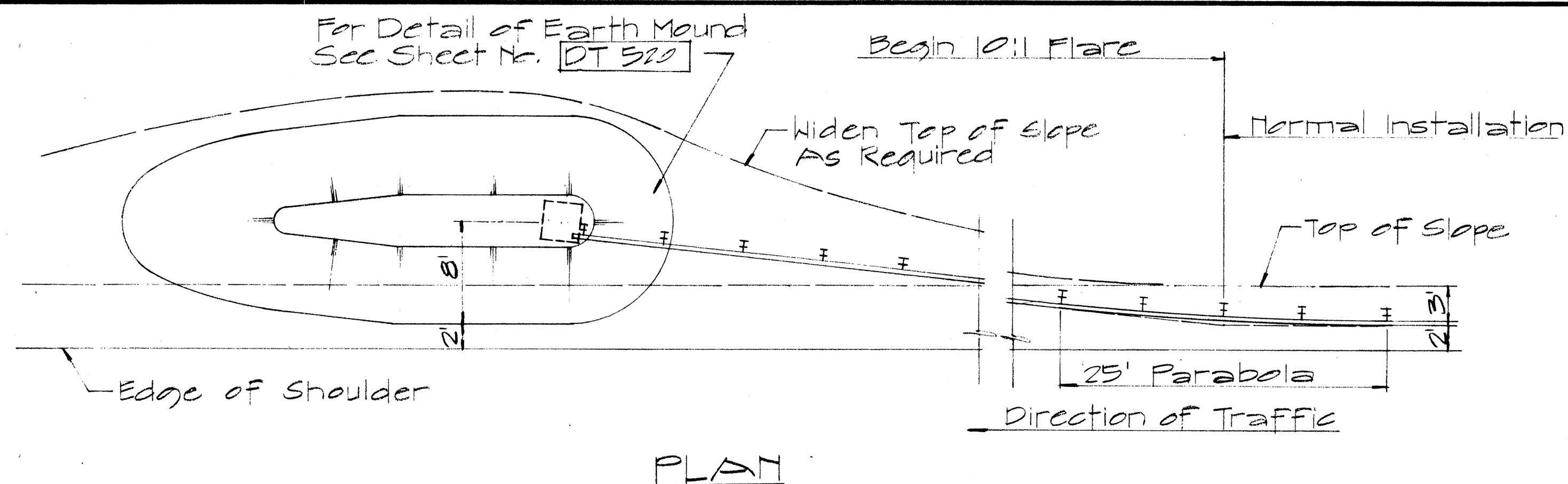
METAL GUARD RAIL

Scale: As Noted

August, 1968

SHEET No. 3 OF 5 SHEETS DT 501

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	44040172	1976	6	8



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

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

NO	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.C.	4-12-72

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

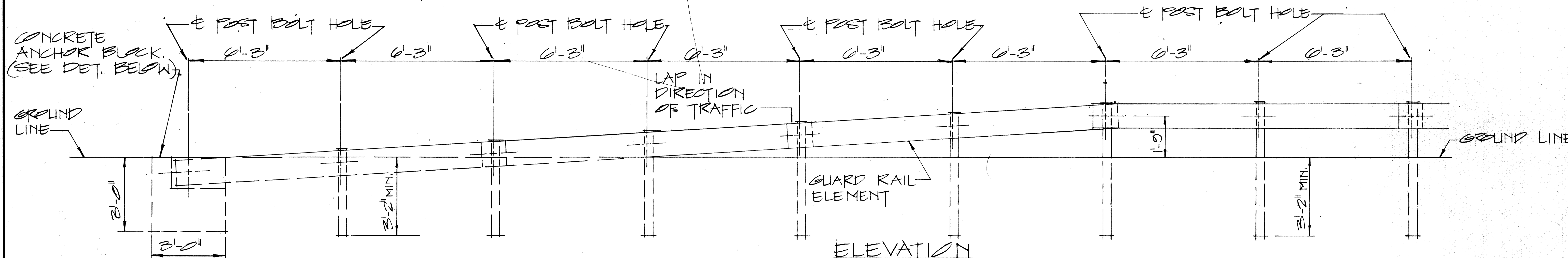
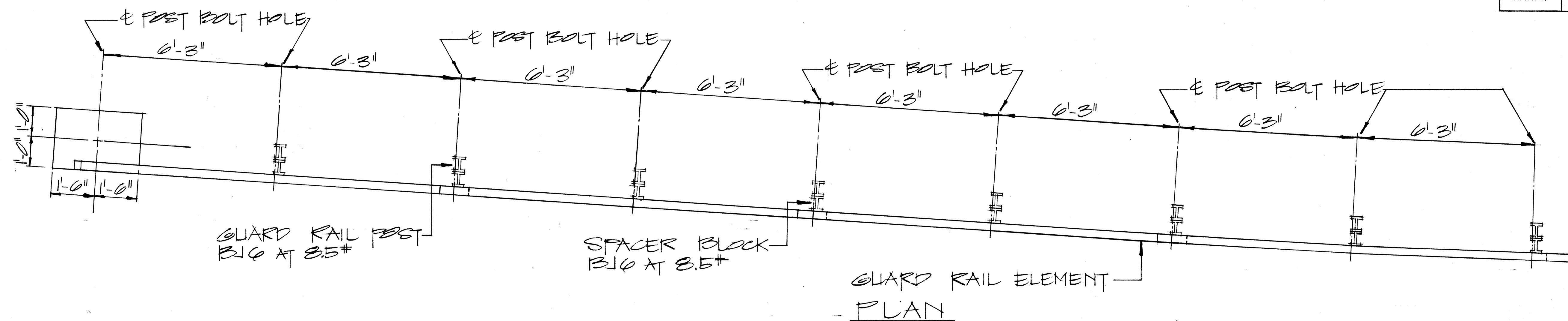
STANDARD DETAILS
 TRAILING END
 FLARE - ONE & TWO
 WAY ROADWAY

Scale: As Noted April 1969

SHEET No. 4 OF 5 SHEETS DT 517

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

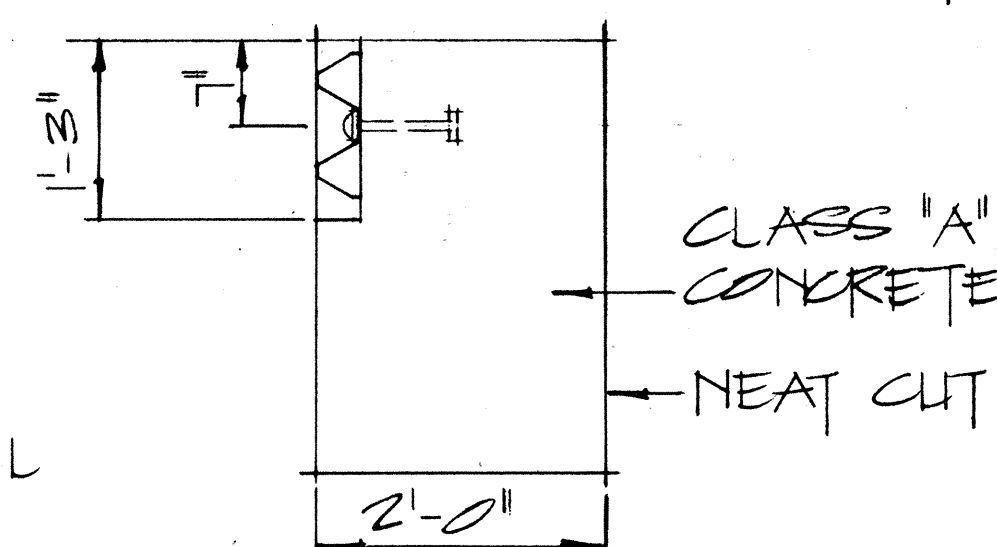
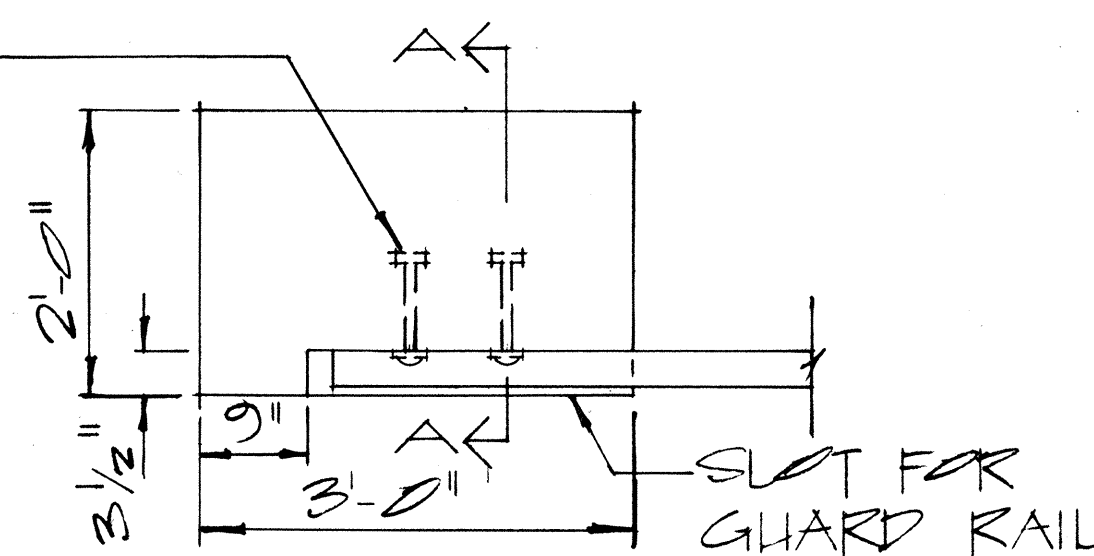
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	440A0172	1976	7	8



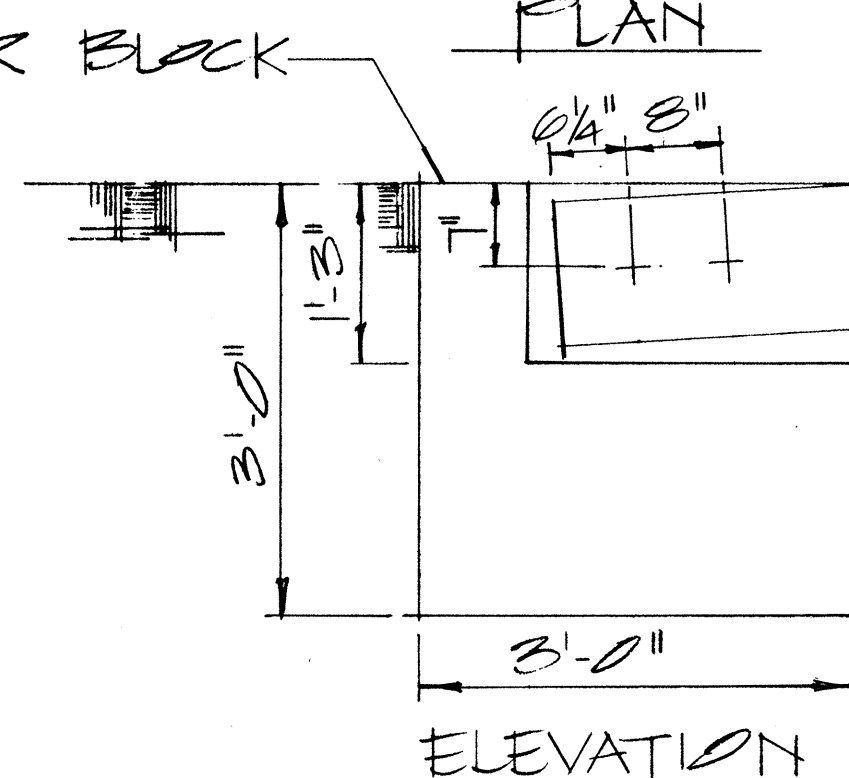
RAMP END ANCHORAGE

SCALE: $\frac{1}{2}" = 1'-0"$

2-5/8" x 7/4" LONG BOLTS, NUTS & WASHERS INCIDENTAL TO METAL GUARD RAIL. ALL METAL PIECES SHALL BE GALVANIZED.



TOP OF ANCHOR BLOCK TO BE FLUSH w/ GROUND.



NOTE: CONCRETE, EXCAVATION AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS, SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.

CONCRETE ANCHOR BLOCK

SCALE: $\frac{3}{4}" = 1'-0"$

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
GUARD RAIL, TYPE 3
RAMP END ANCHORAGE
SCALE: AS SHOWN
SHEET NO. 5 OF 5 SHEETS