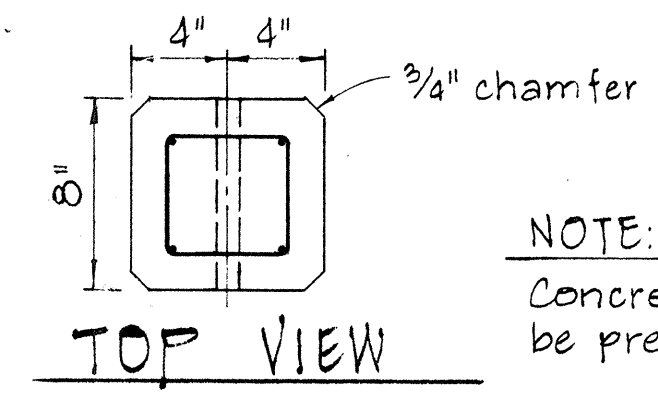
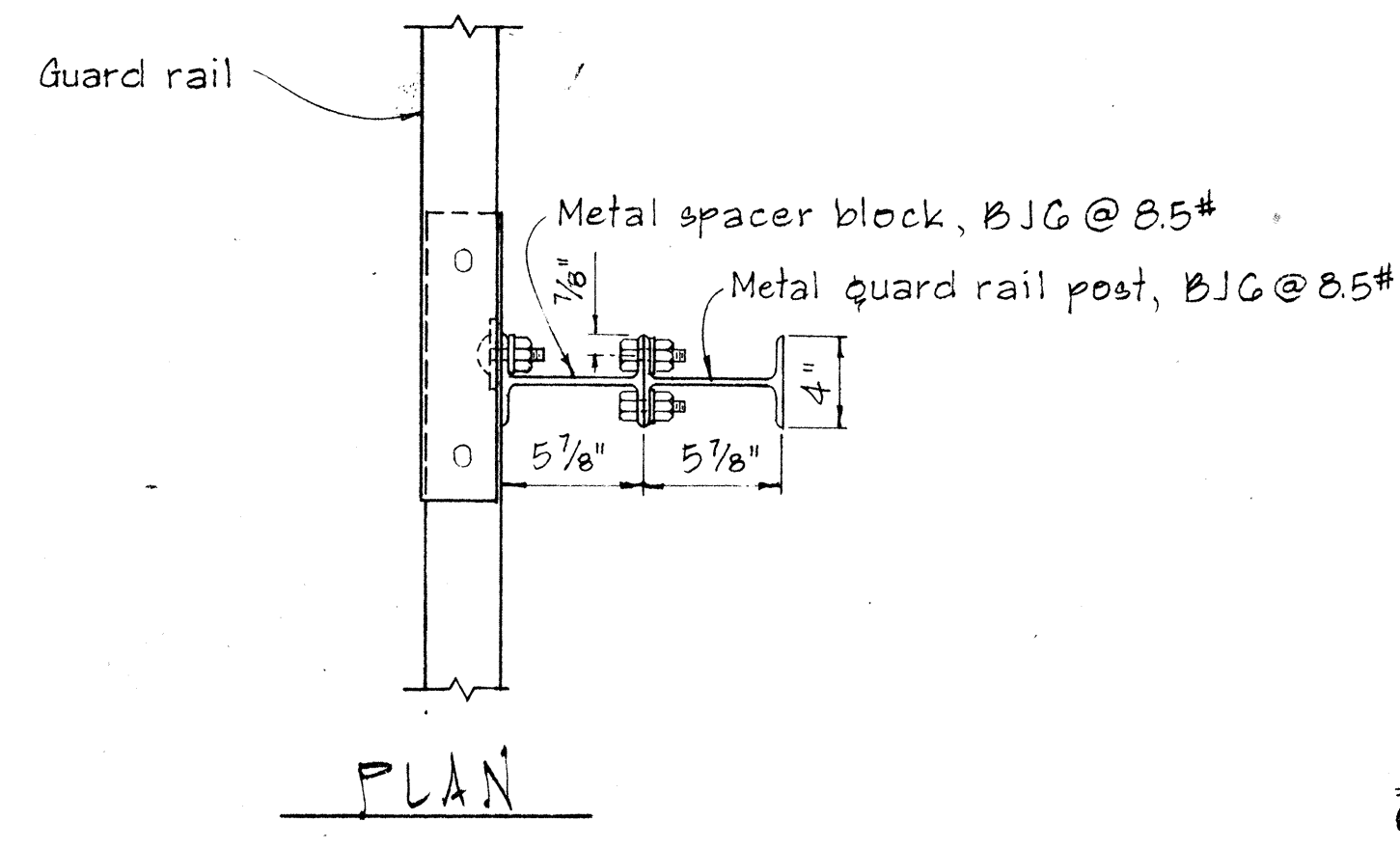
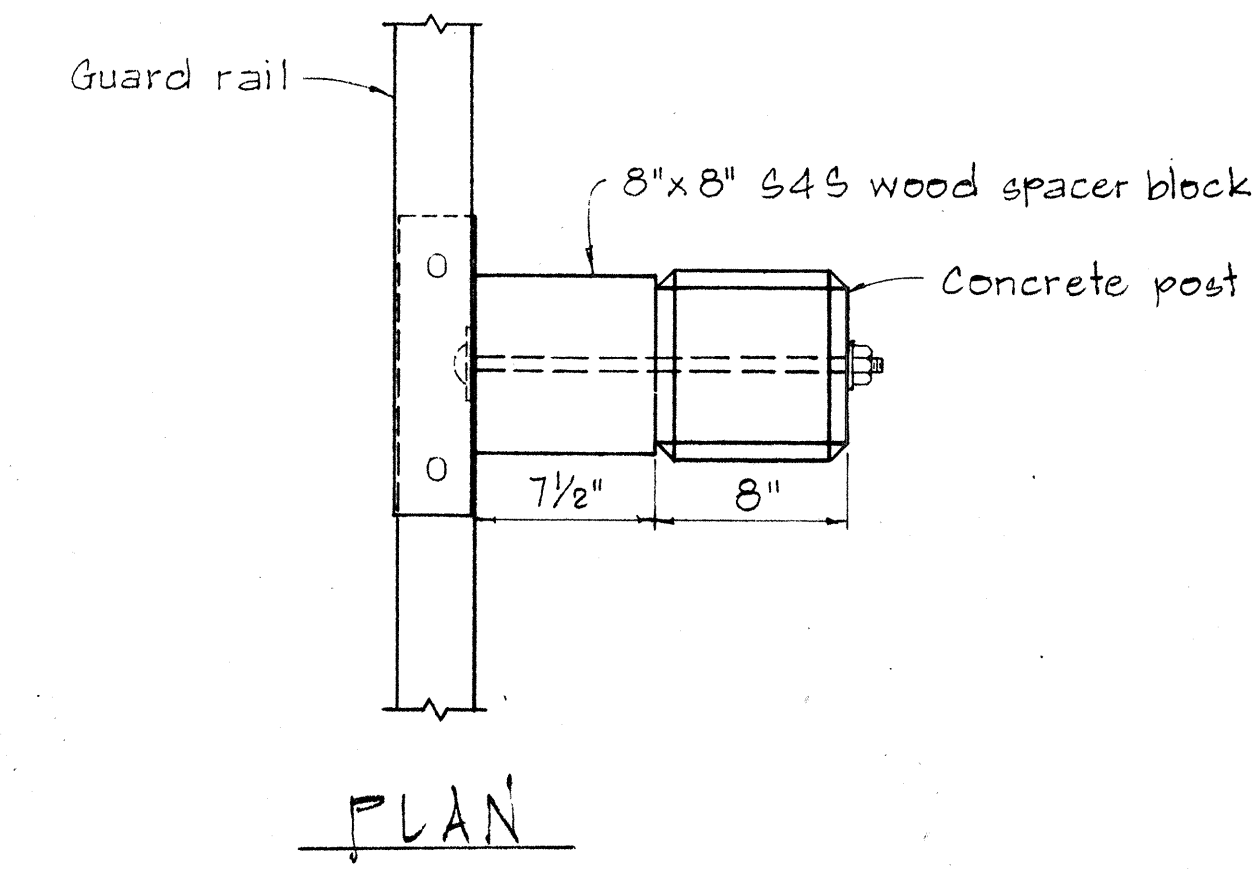
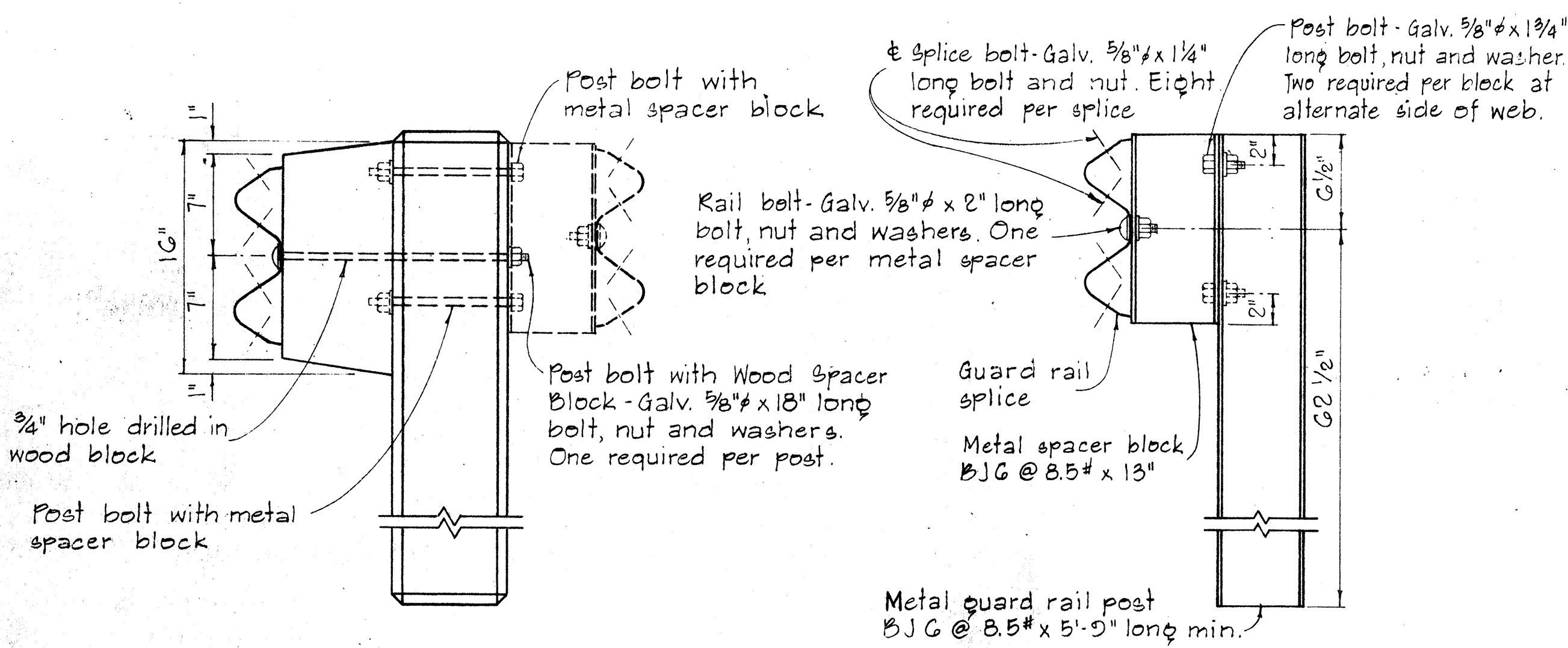
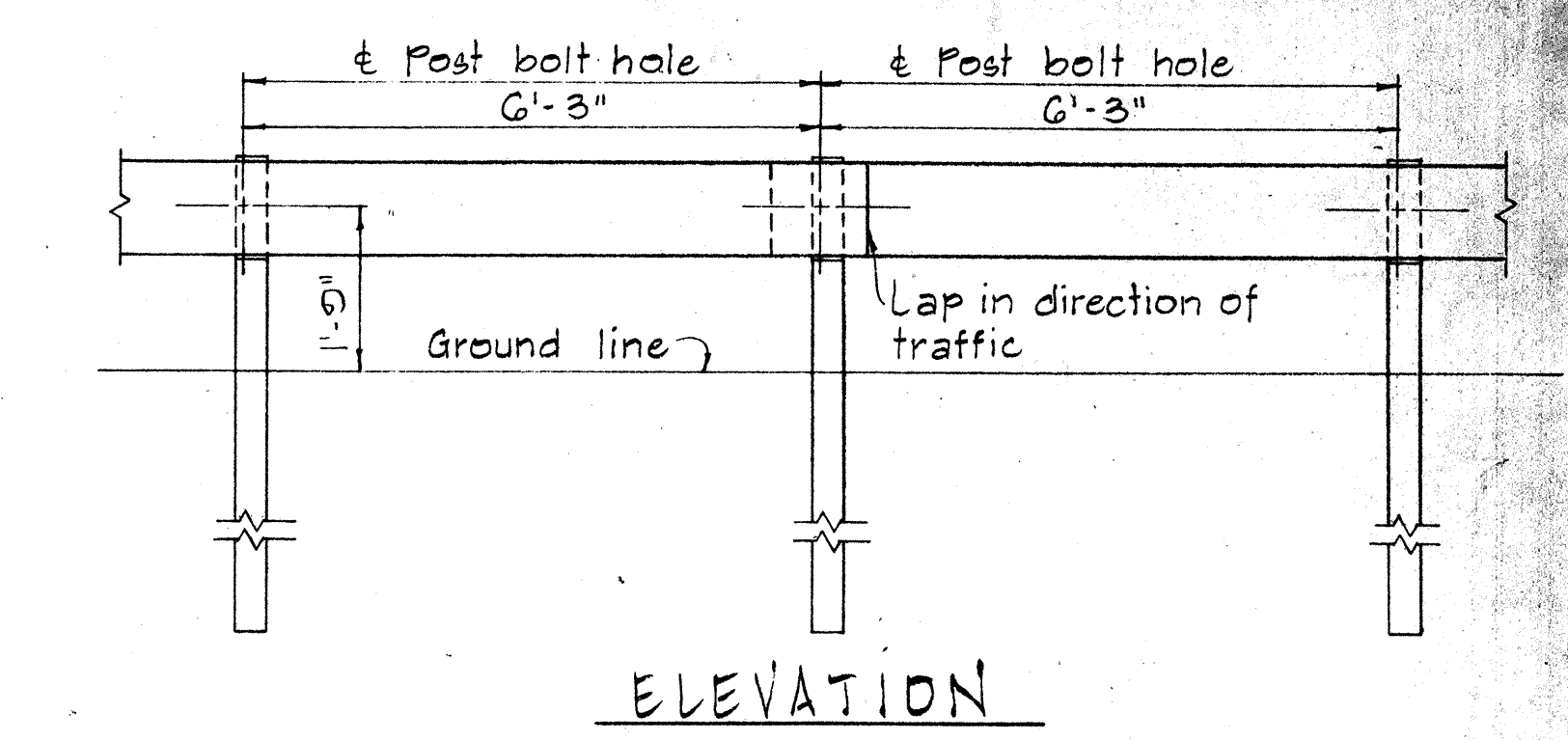
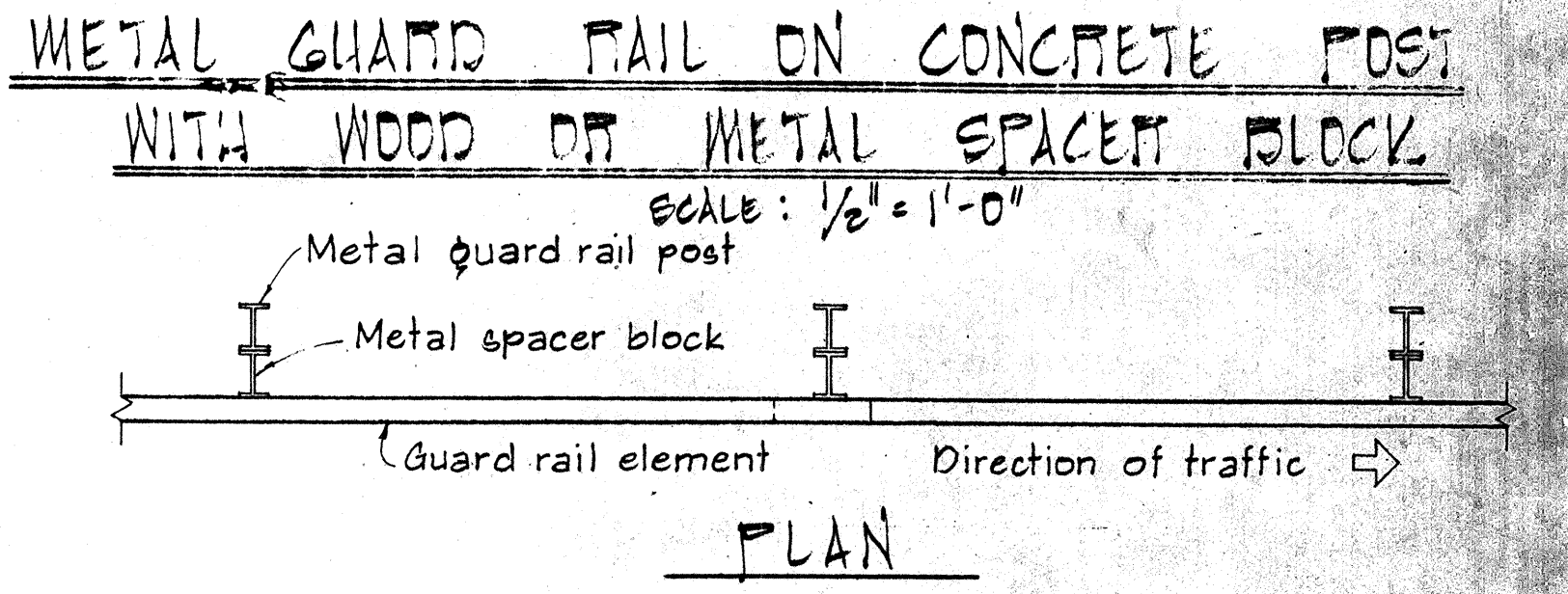
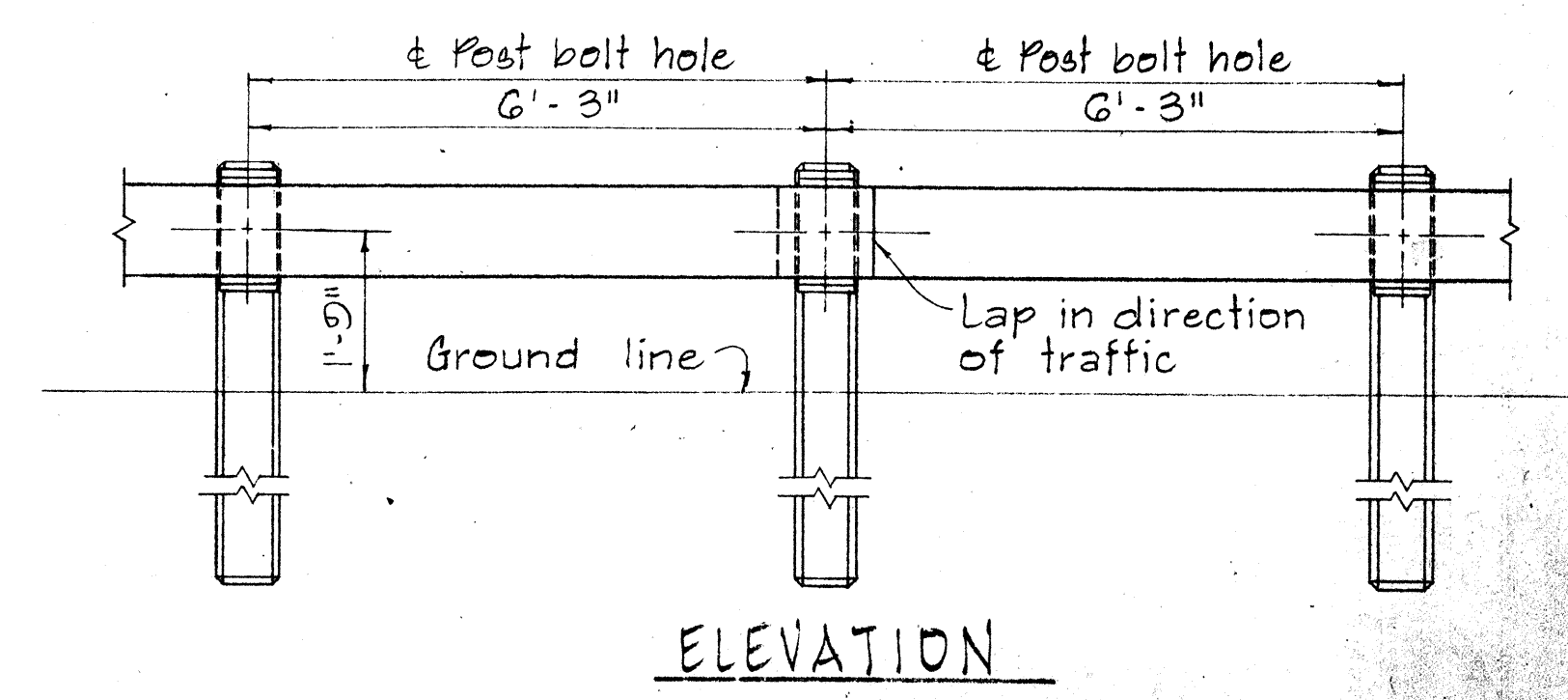
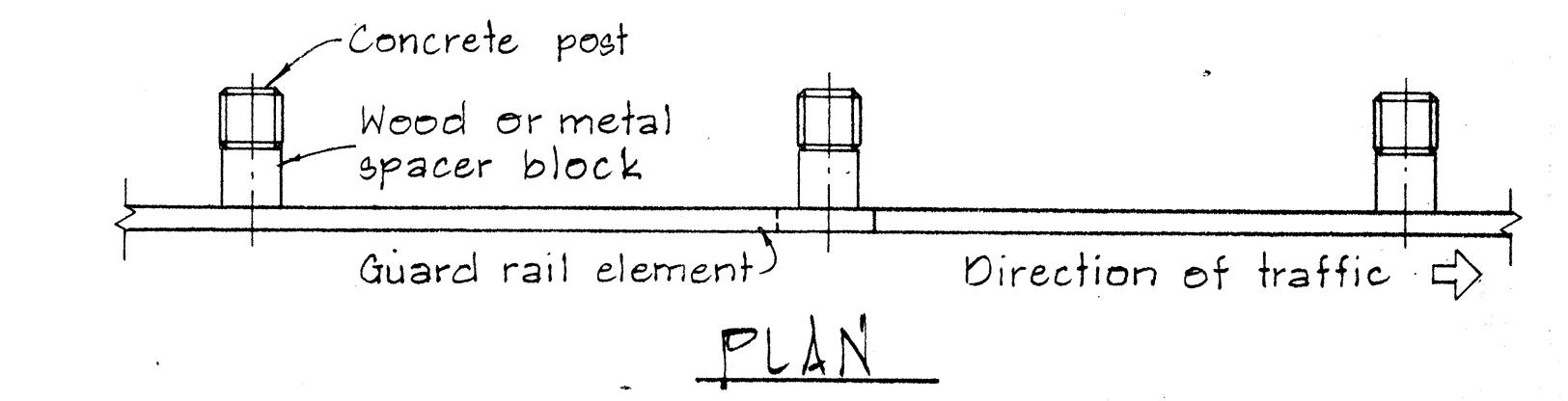
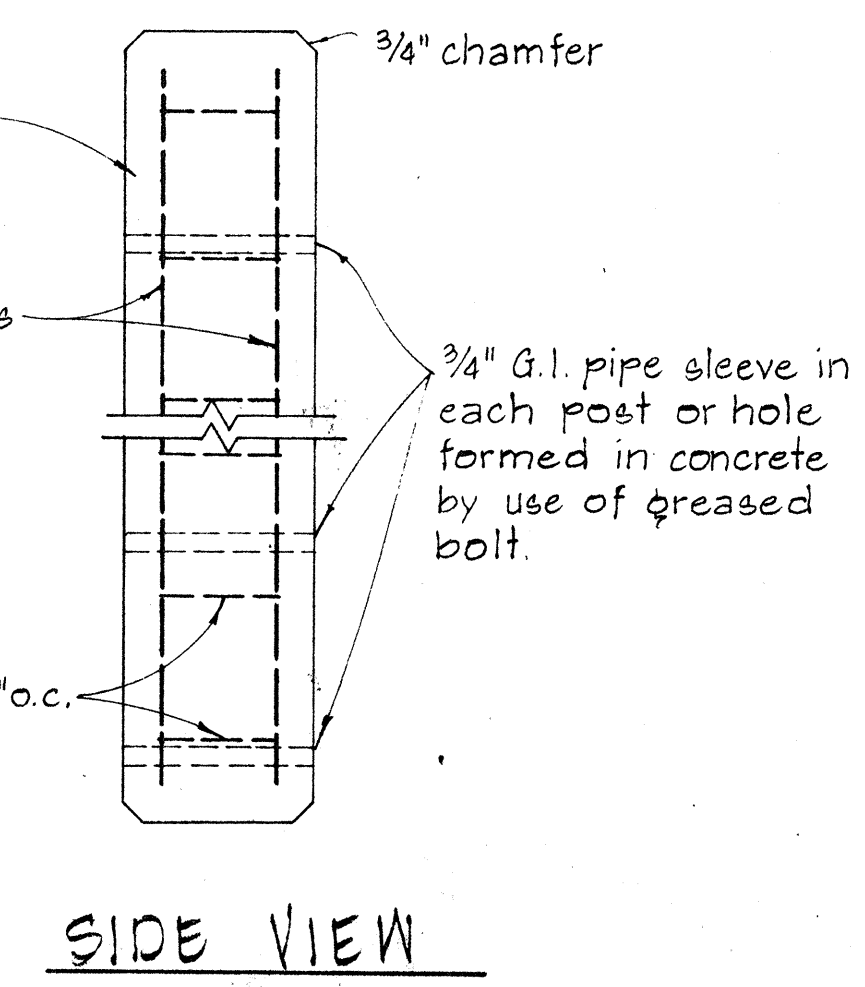
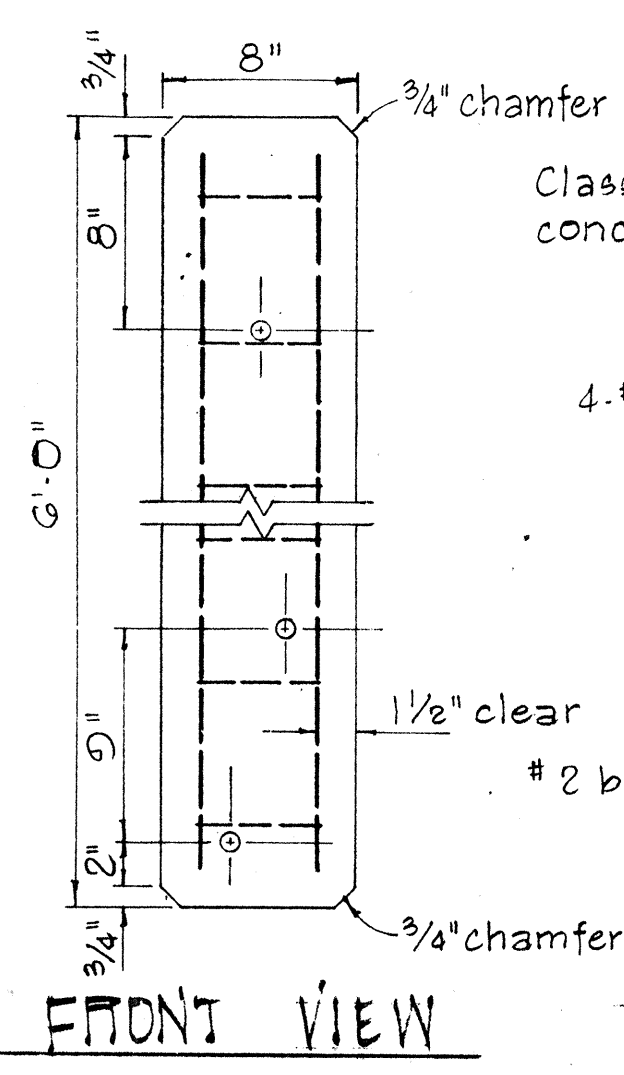


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-01-72	1976	10	13

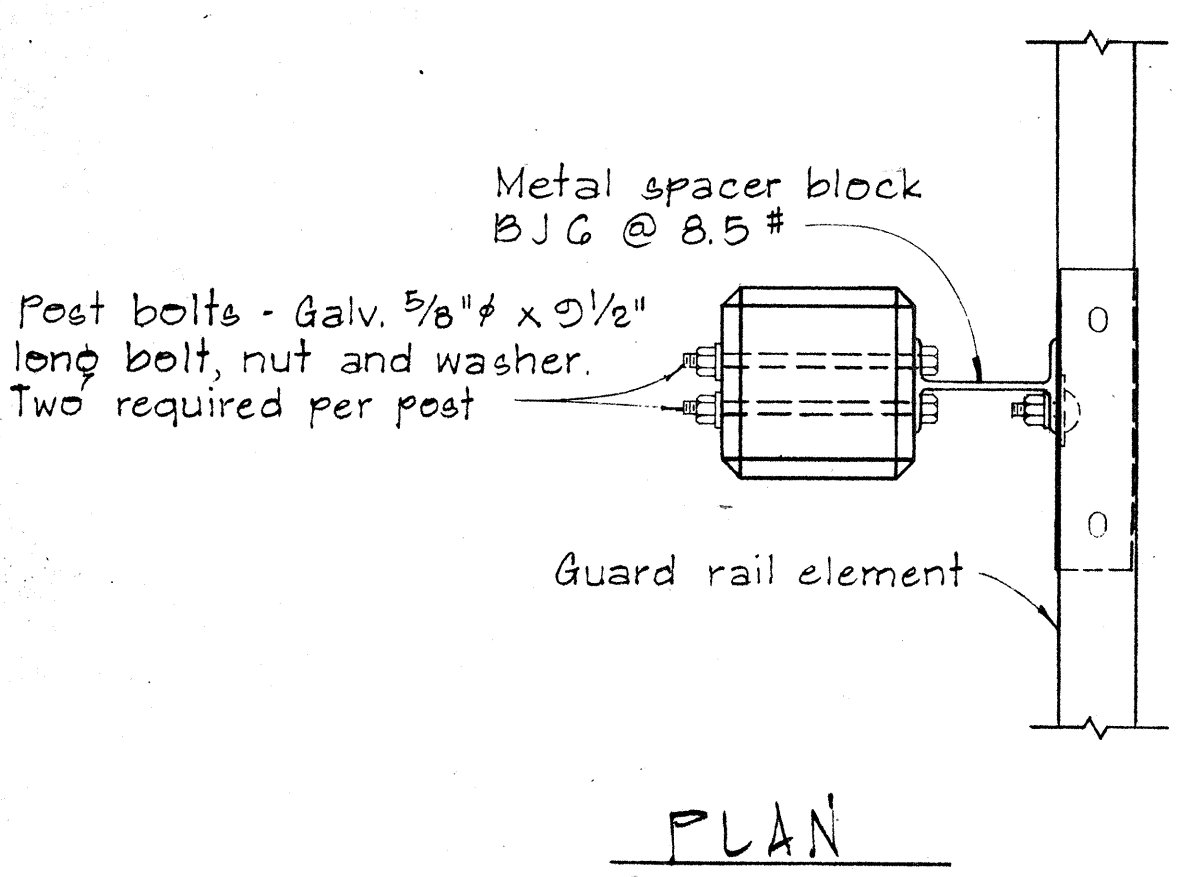


NOTE:
Concrete post shall be precast

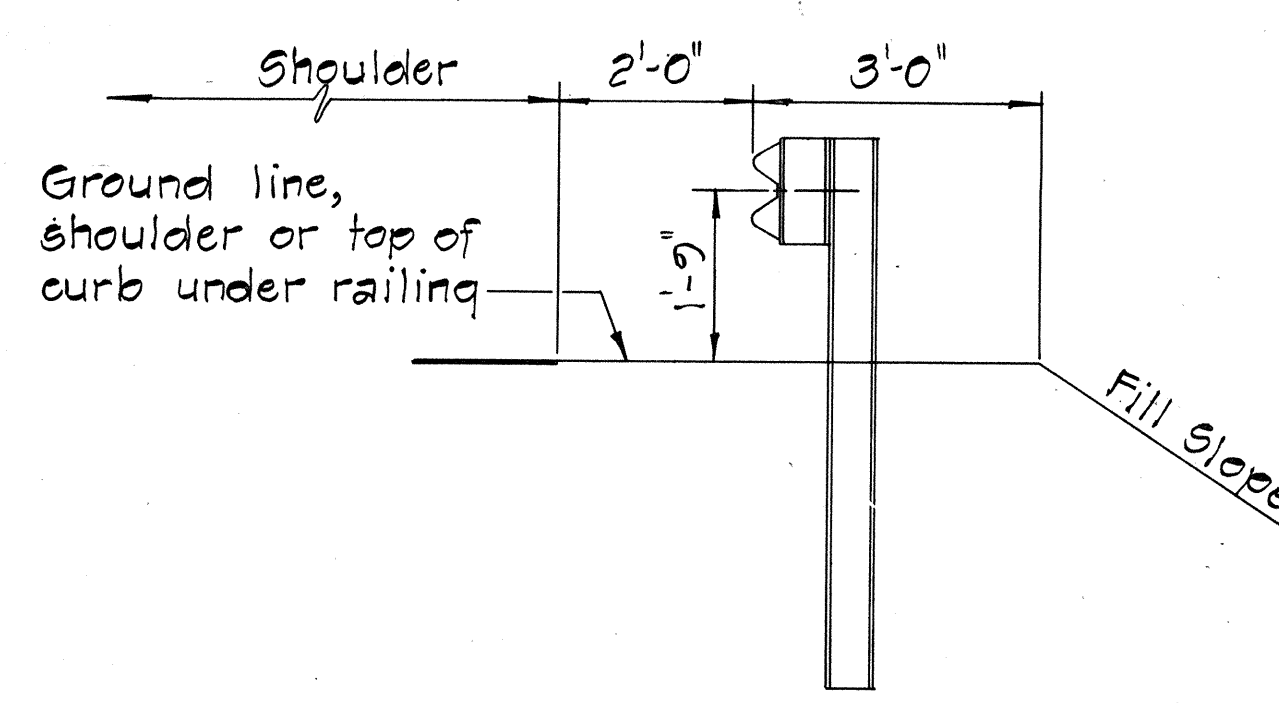


SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"

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"



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

APPROVAL RECOMMENDED:
Eichi Tanaka
TRAFFIC ENGINEER
12/29/62
DATE

APPROVED:
Robert J. Delenda
ASSISTANT CHIEF, ENGINEERING
12-30-62
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN
NOV. 1968

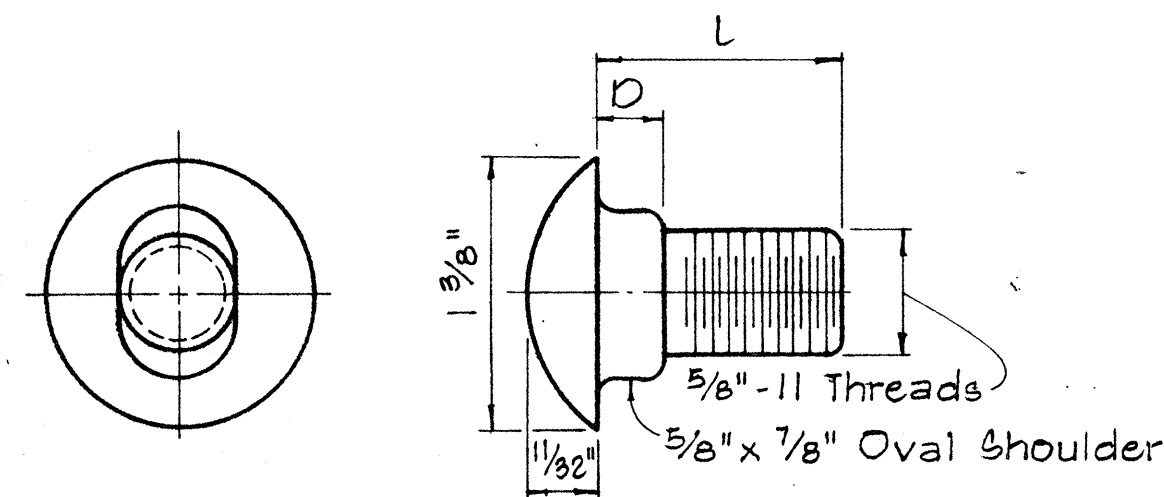
SHEET NO. 1 OF 4 SHEETS DT 500

DATE	
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	

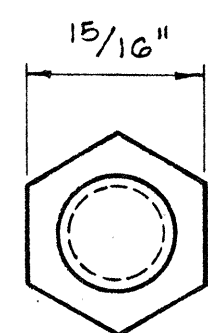
BOLT DIMENSIONS			
TYPE A BOLT			
Splice Bolt	5/16"	1 1/4"	
Post Bolt for Conc. Post w/ Double Wood Blocks	3/32"	24"	
Post Bolt for Conc. Post w/ Single Wood Block	3/32"	18"	
Rail Bolt for Metal Block	3/32"	2"	

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"	

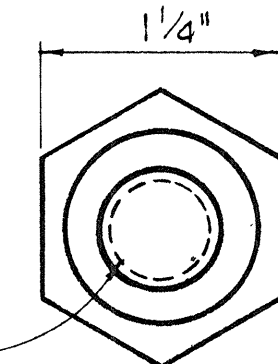
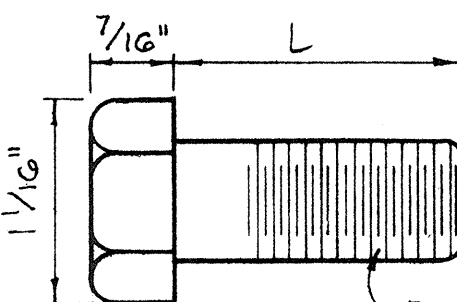
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-01-72	1976	11	13



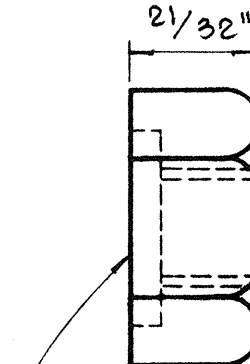
TYPE A BOLT



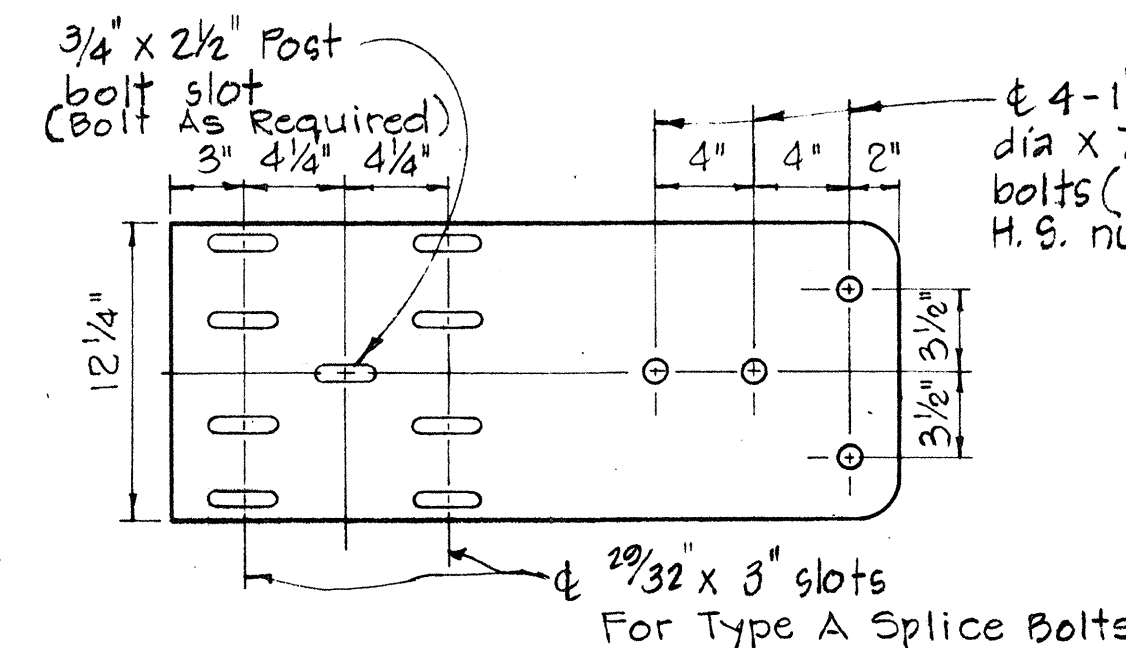
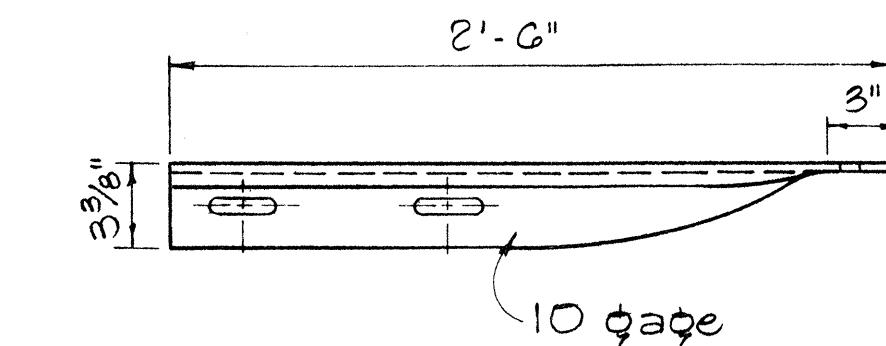
TYPE B BOLT



HEXAGON NUT

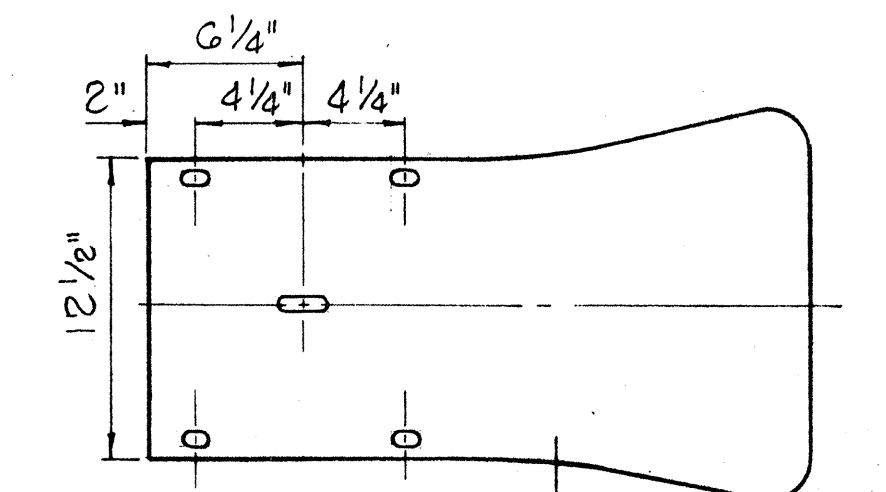
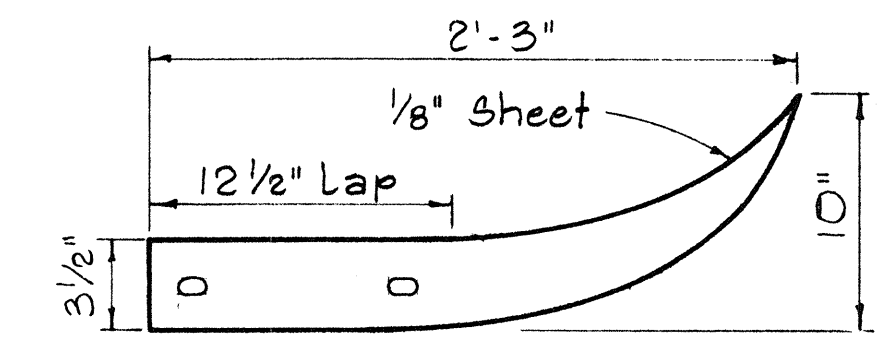


5/32" Deep x 1 5/16" Dia. C' Bore for Type A Bolt only.
Plain nut for Type B Bolt.



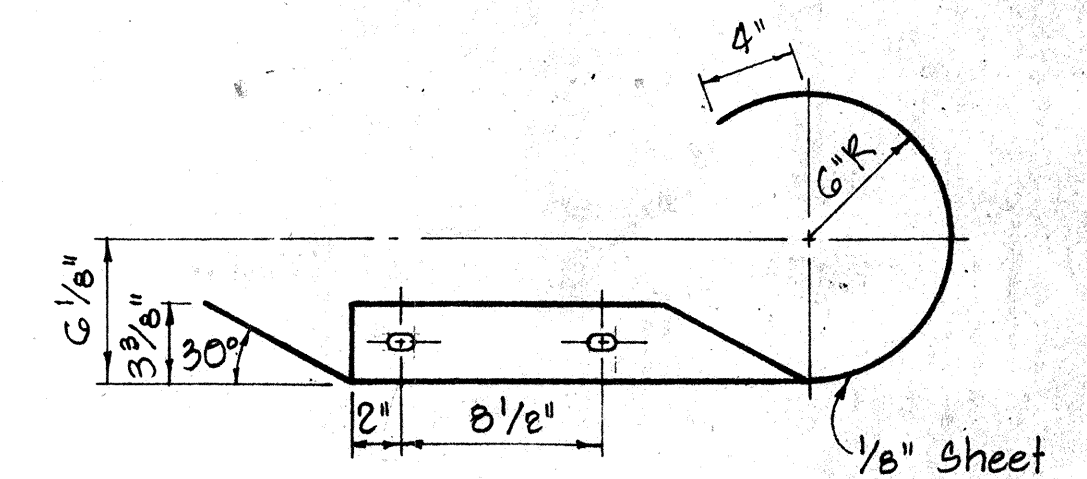
SPECIAL END SHOE

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



FLARED END

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



CURVED END

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

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12/23/69

DATE

12-30-68

DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted

August, 1968

SHEET No. 2 OF 4 SHEETS DT 501

111

SPICE RAIL AND POST BOLTS

Scale: Full Size

HEXAGON NUT

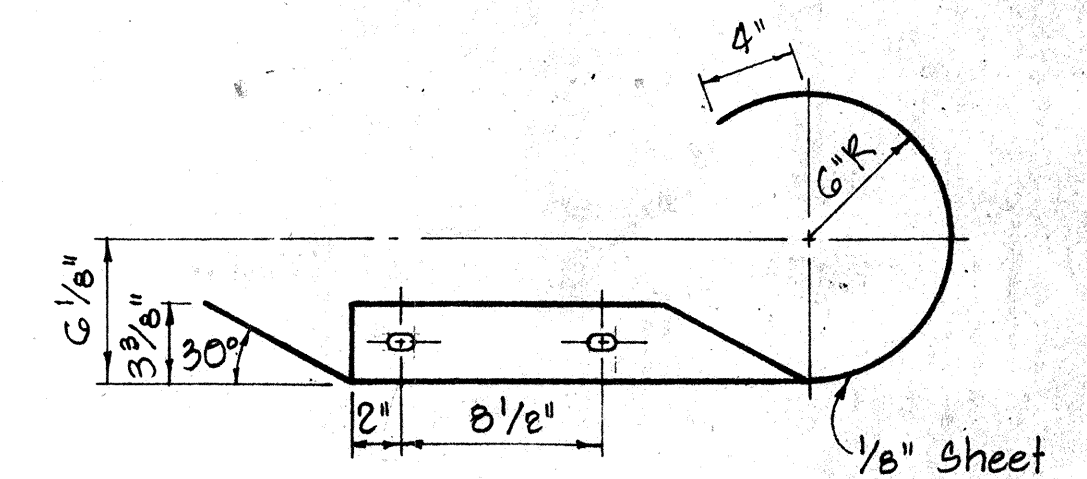
Scale: Full Size

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"

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12/23/69

DATE

12-30-68

DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

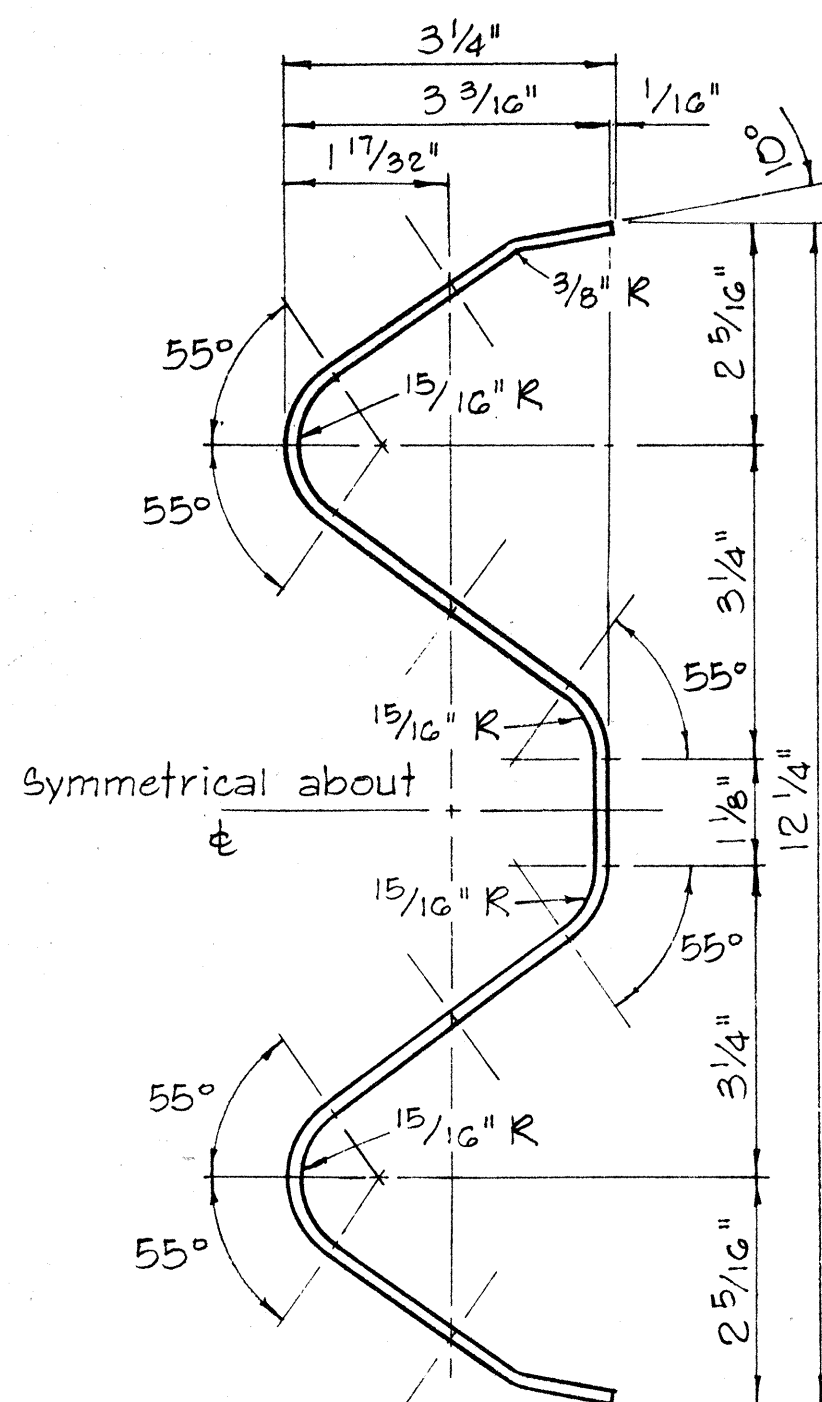
STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted

August, 1968

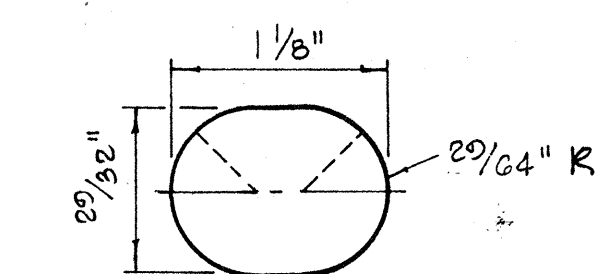
SHEET No. 2 OF 4 SHEETS DT 501

111



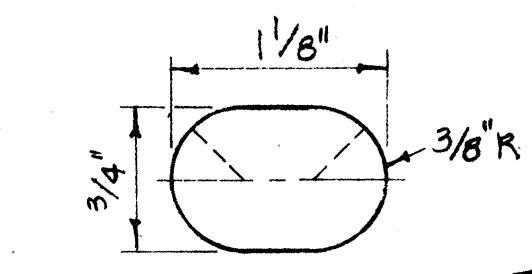
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

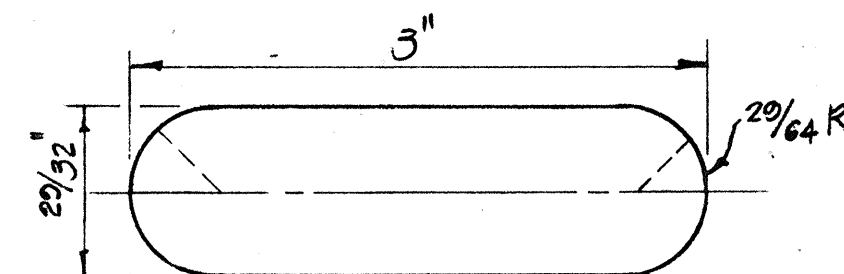


SPICE BOLT SLOT

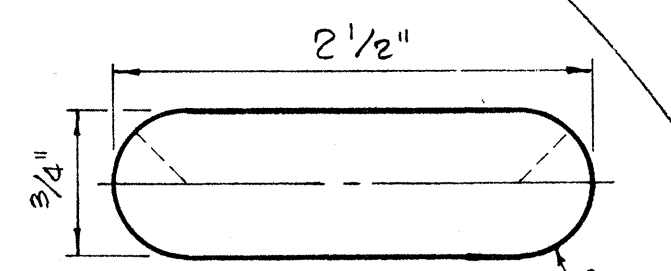
Scale: Full Size



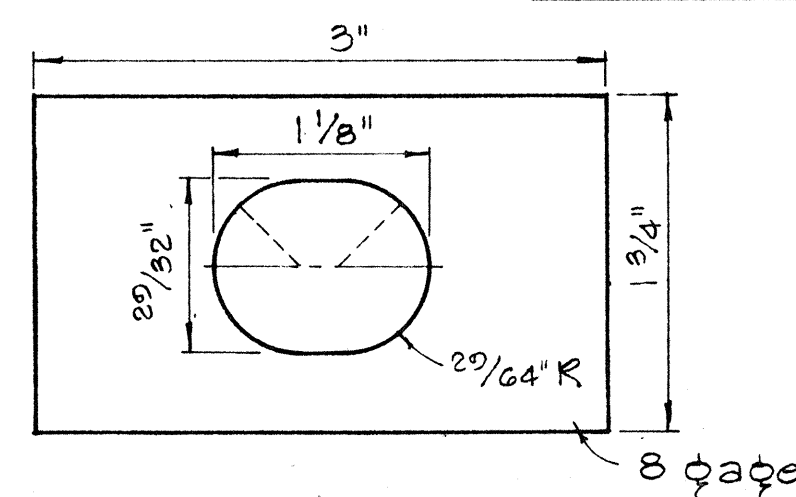
SPICE BOLT SLOT FOR ALL ENDS



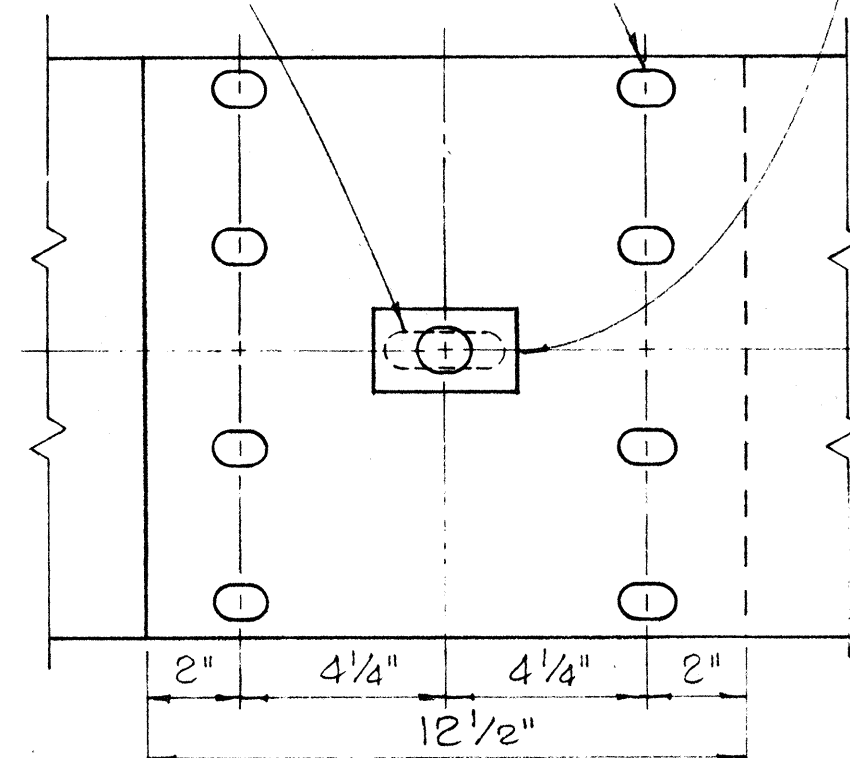
SPICE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



RAIL WASHER



RAIL SPICE

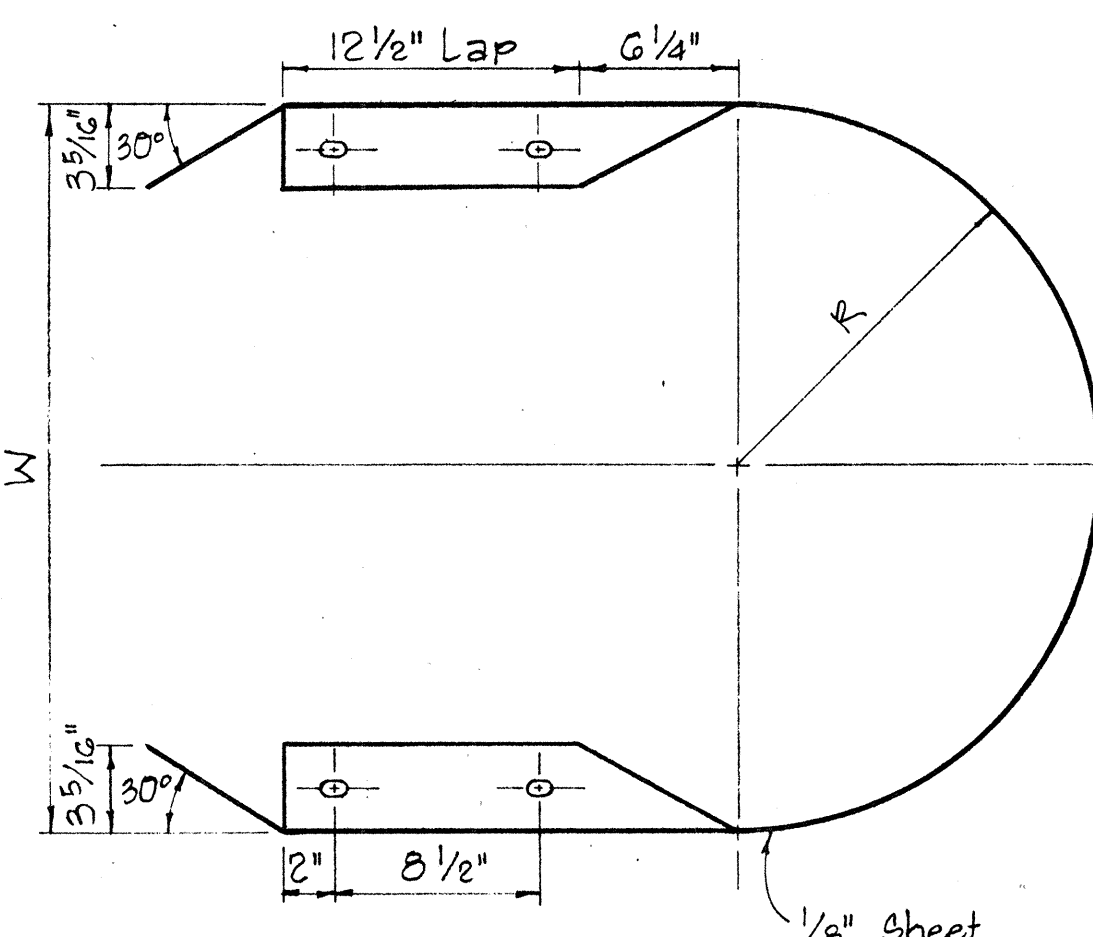
Scale: 3" = 1'-0"

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"	

Shape to fit rail element

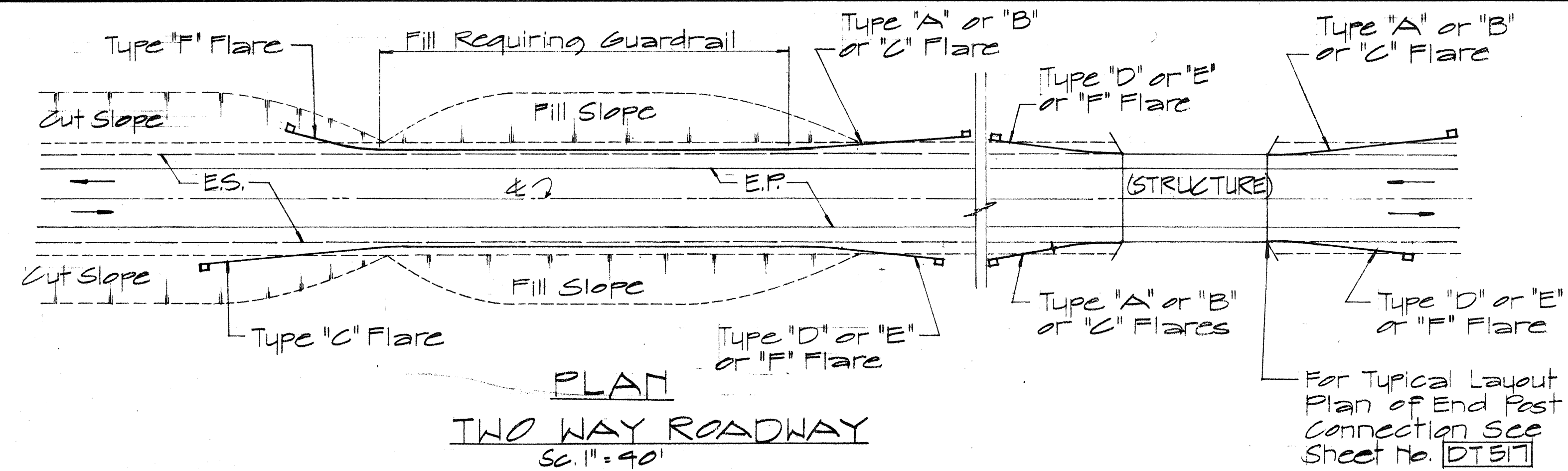


MEDIAN END

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

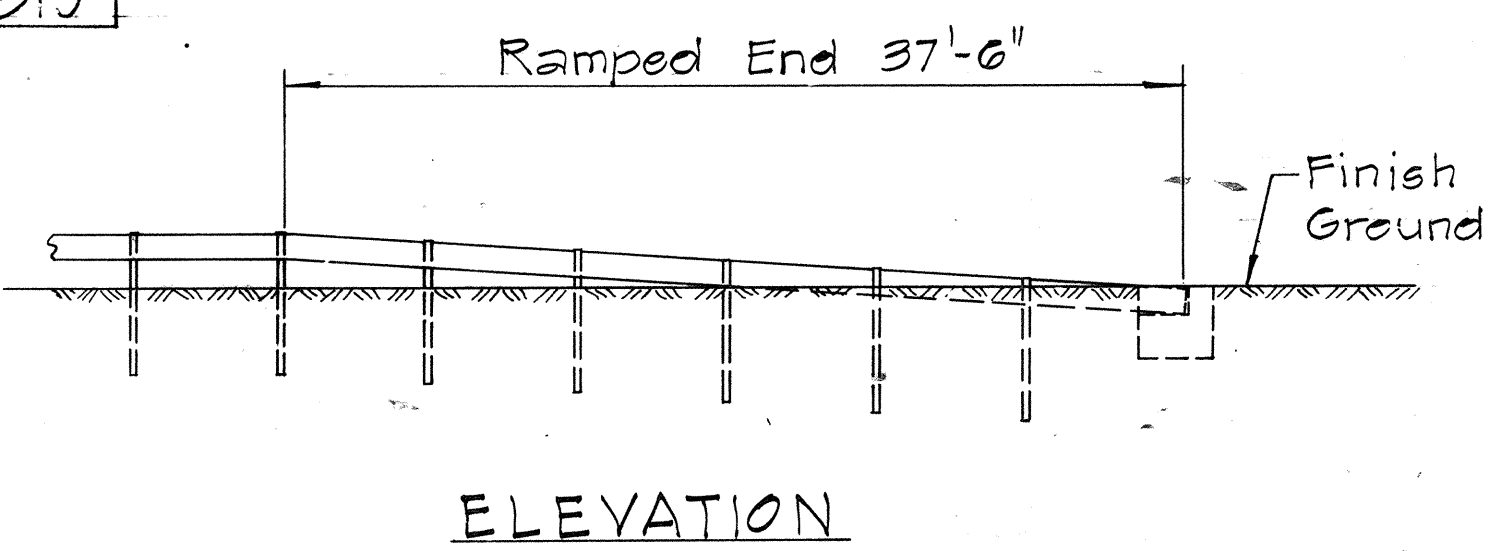
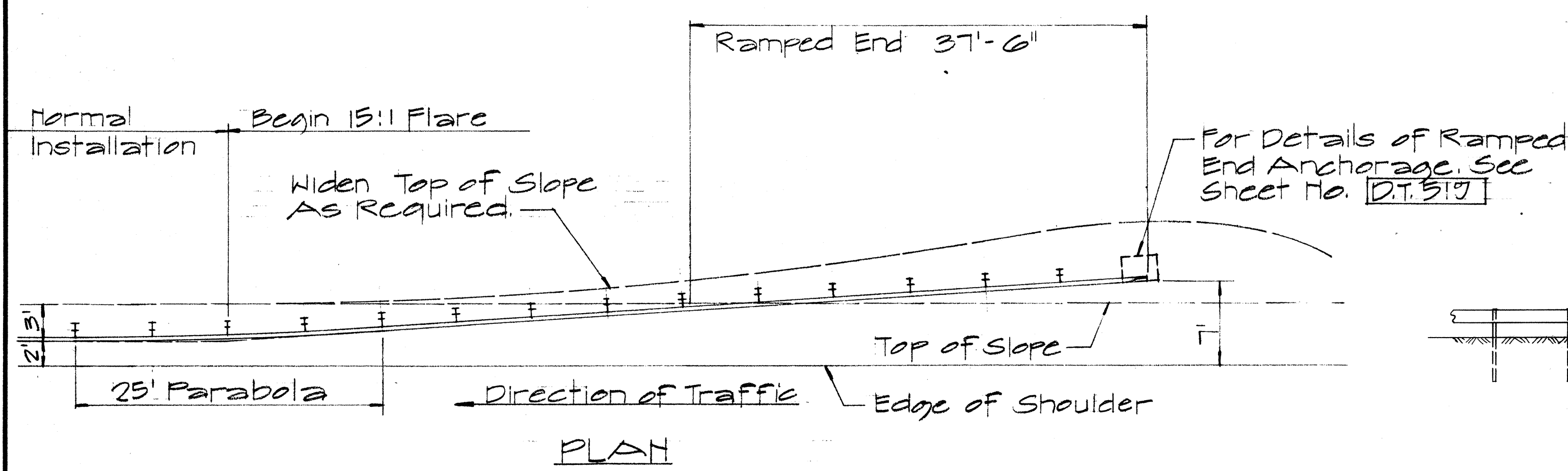
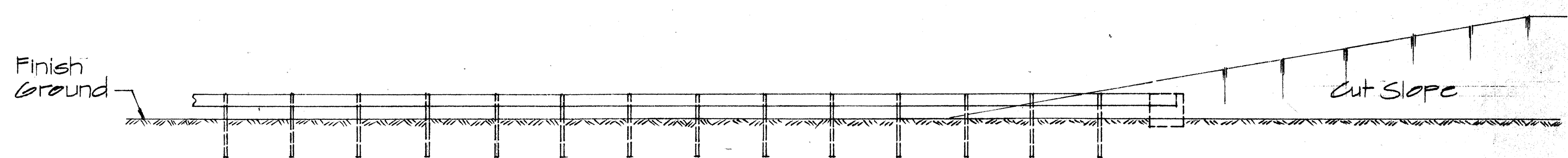
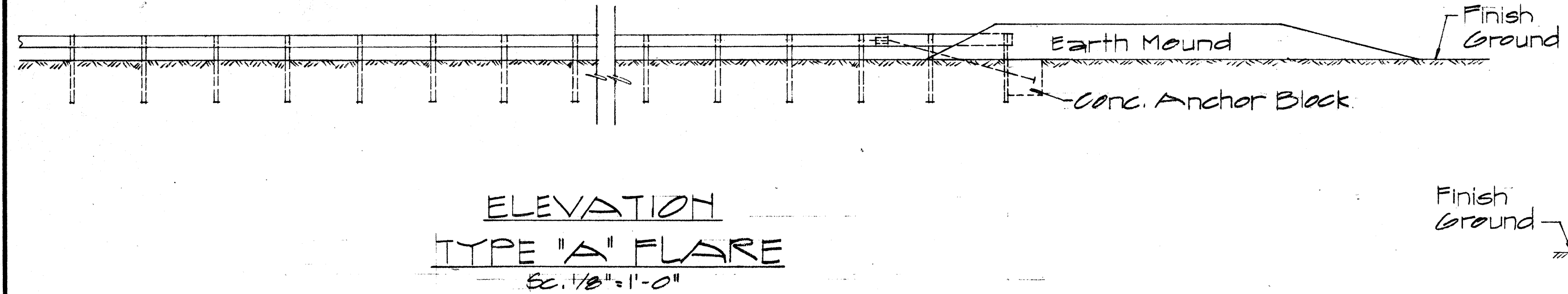
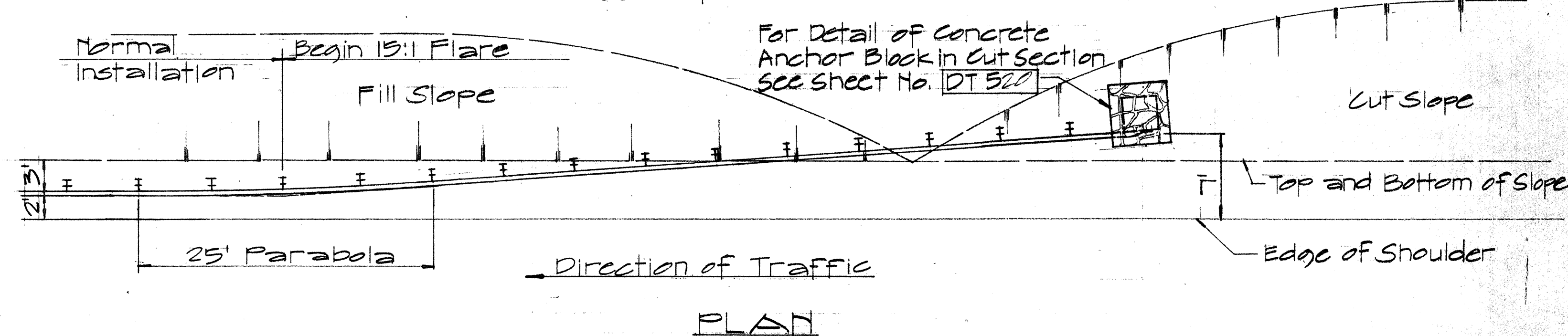
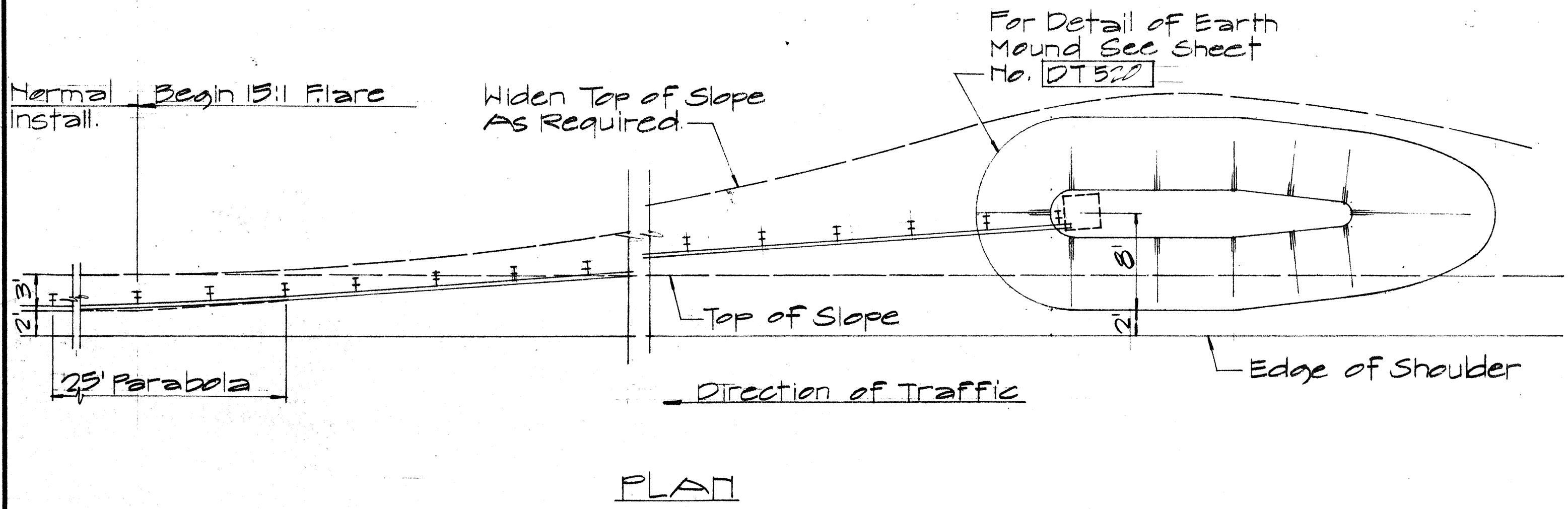
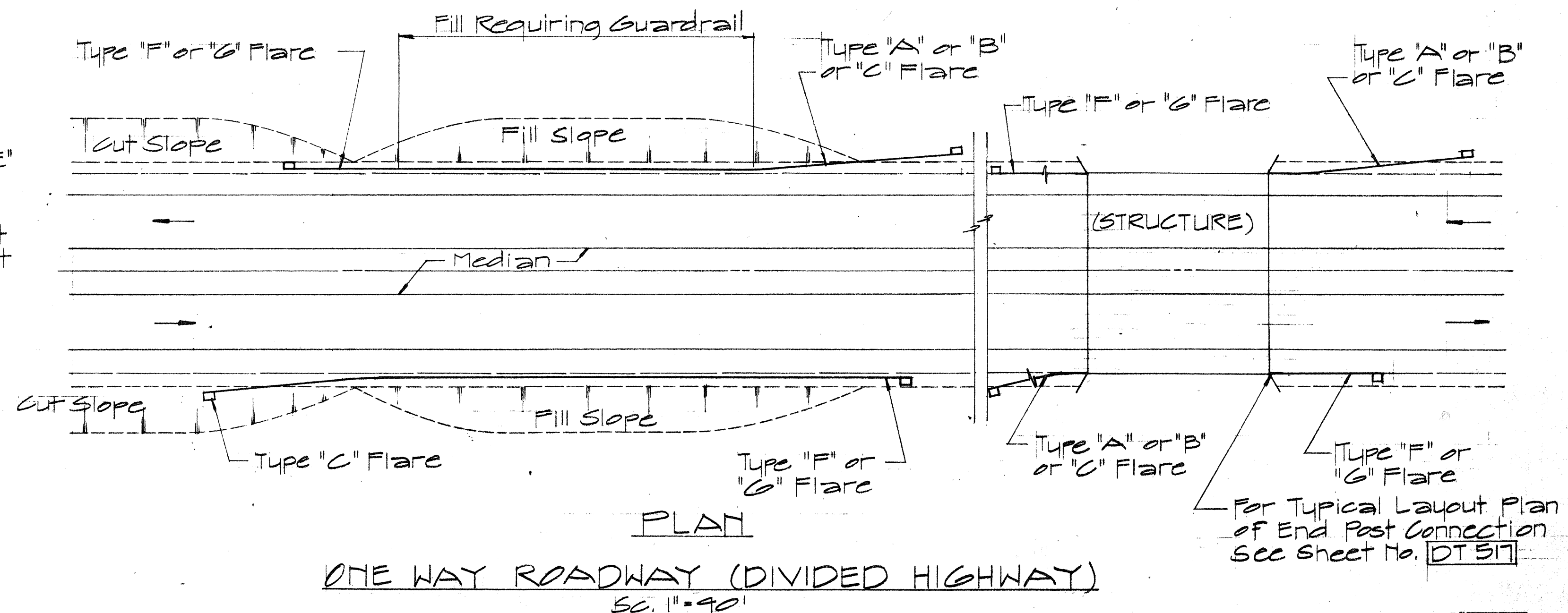
NO	REVISION	APPROVED BY	DATE

DATE	
DESIGNED BY	
CHECKED BY	
NO. 1	



NOTE:
Metal guard rail connection to structures requires End Post Connection. See structure plans.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	96A-01-72	1976	12	13



ELEVATION
TYPE "C" FLARE
SC. 1/8" = 1'-0"

NO.	REVISION	APPROVED BY	DATE

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
OF APPROACH END
FLARE - ONE & TWO
WAY ROADWAY**

SC. As Noted
APRIL 1969

SHEET No. 3 OF 4 SHEETS DT 516

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

