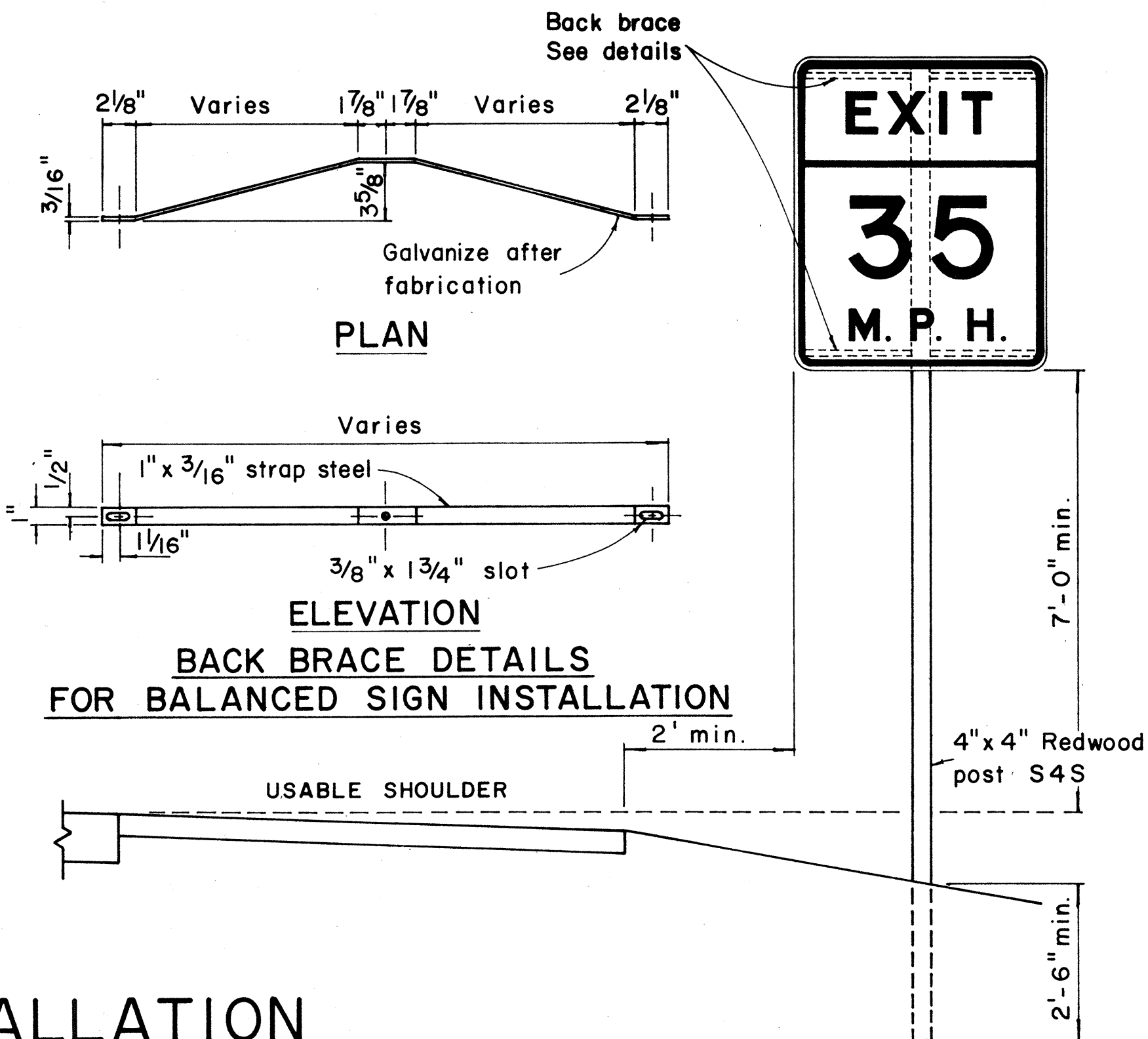
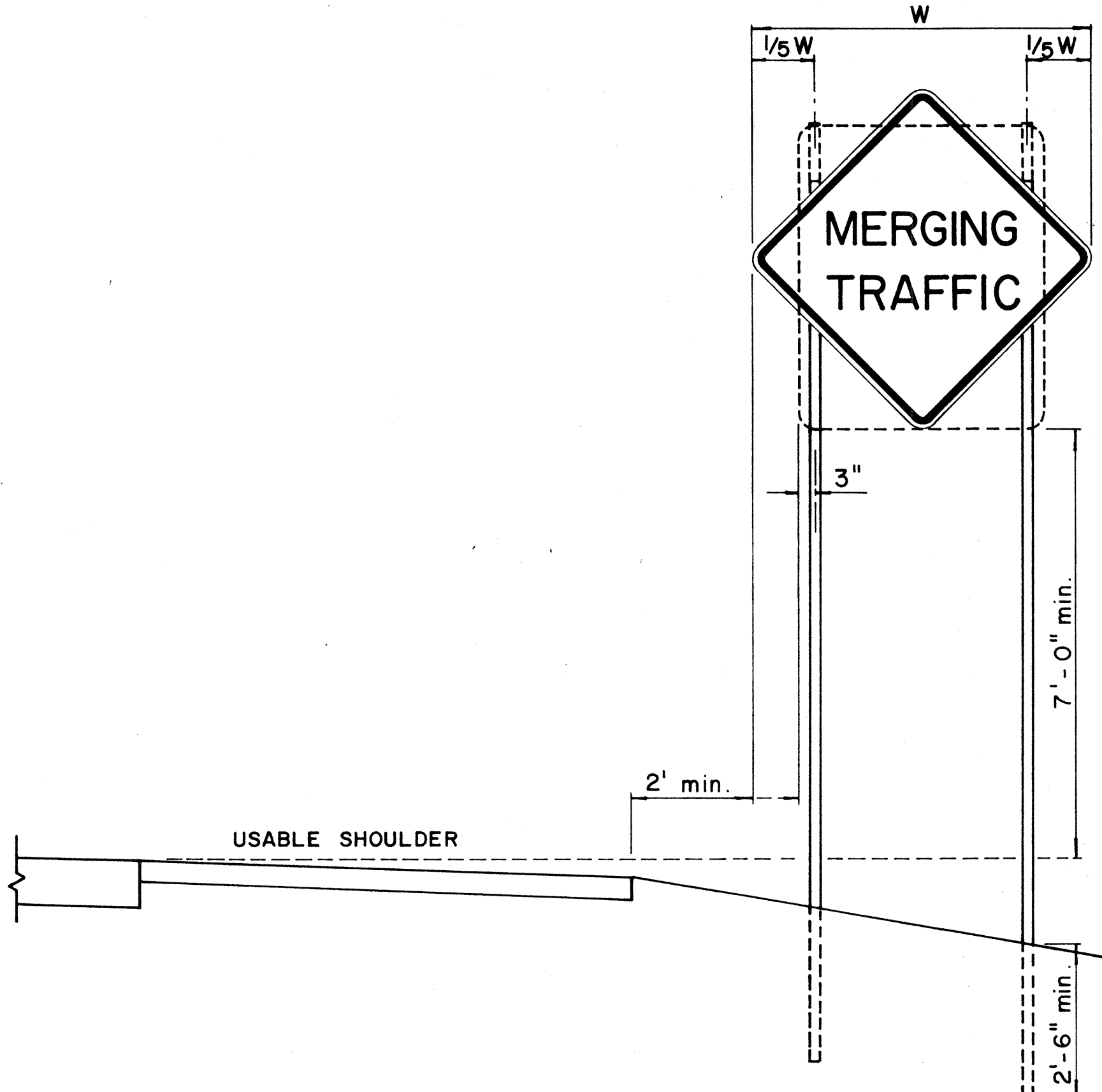
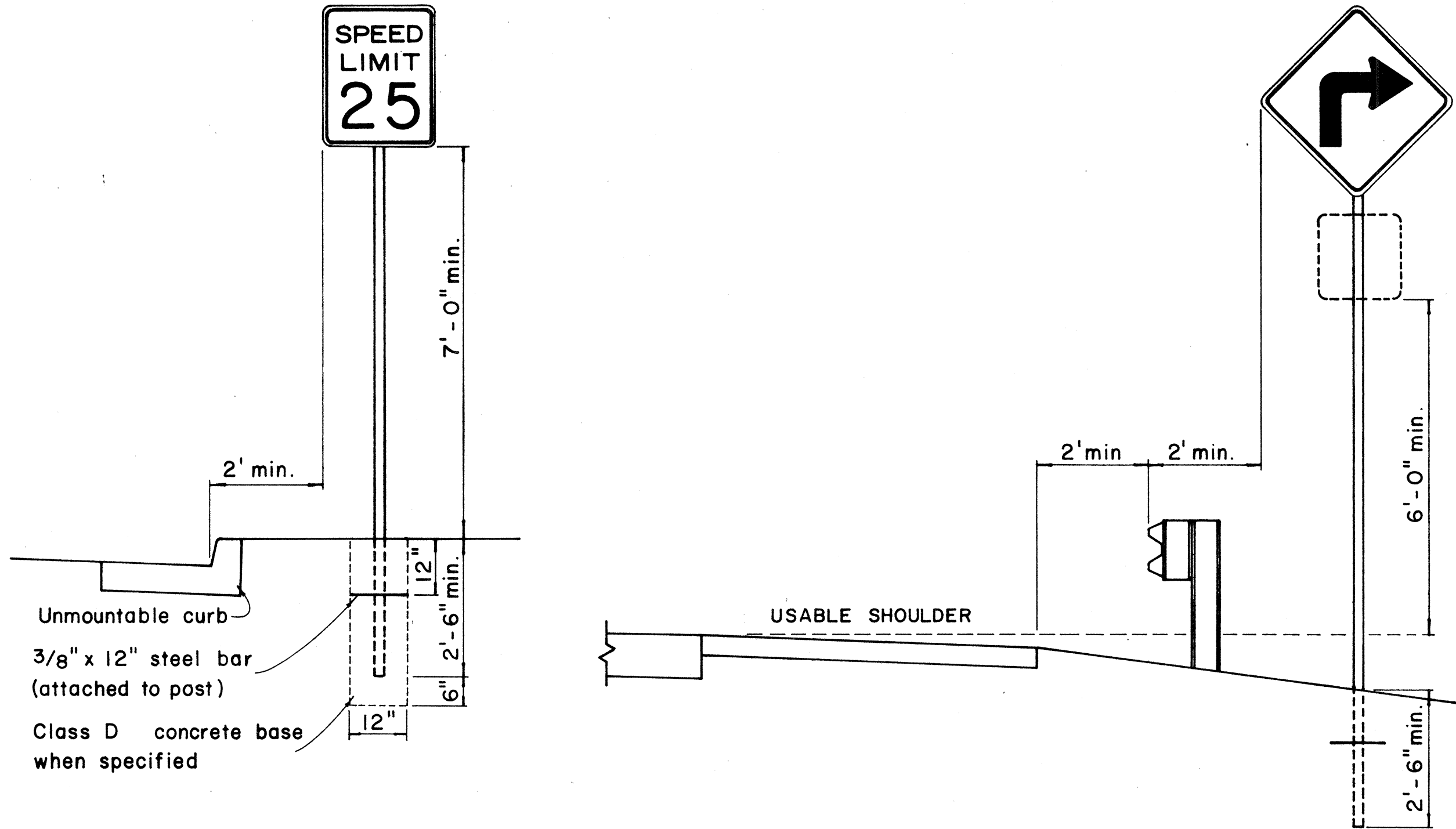
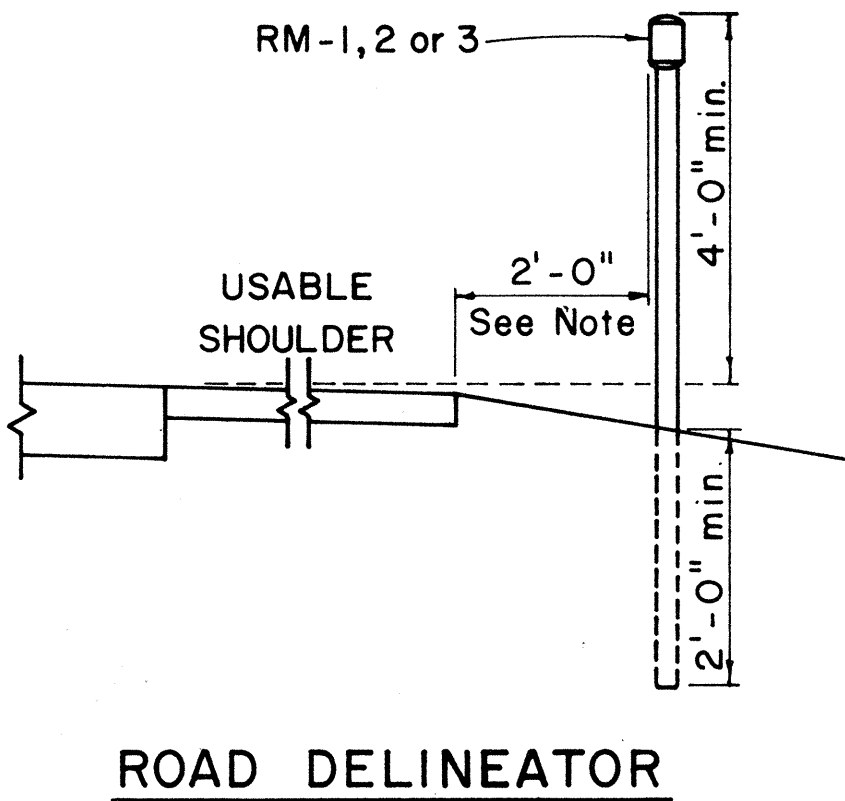


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	550A-01-70	1970	4	10

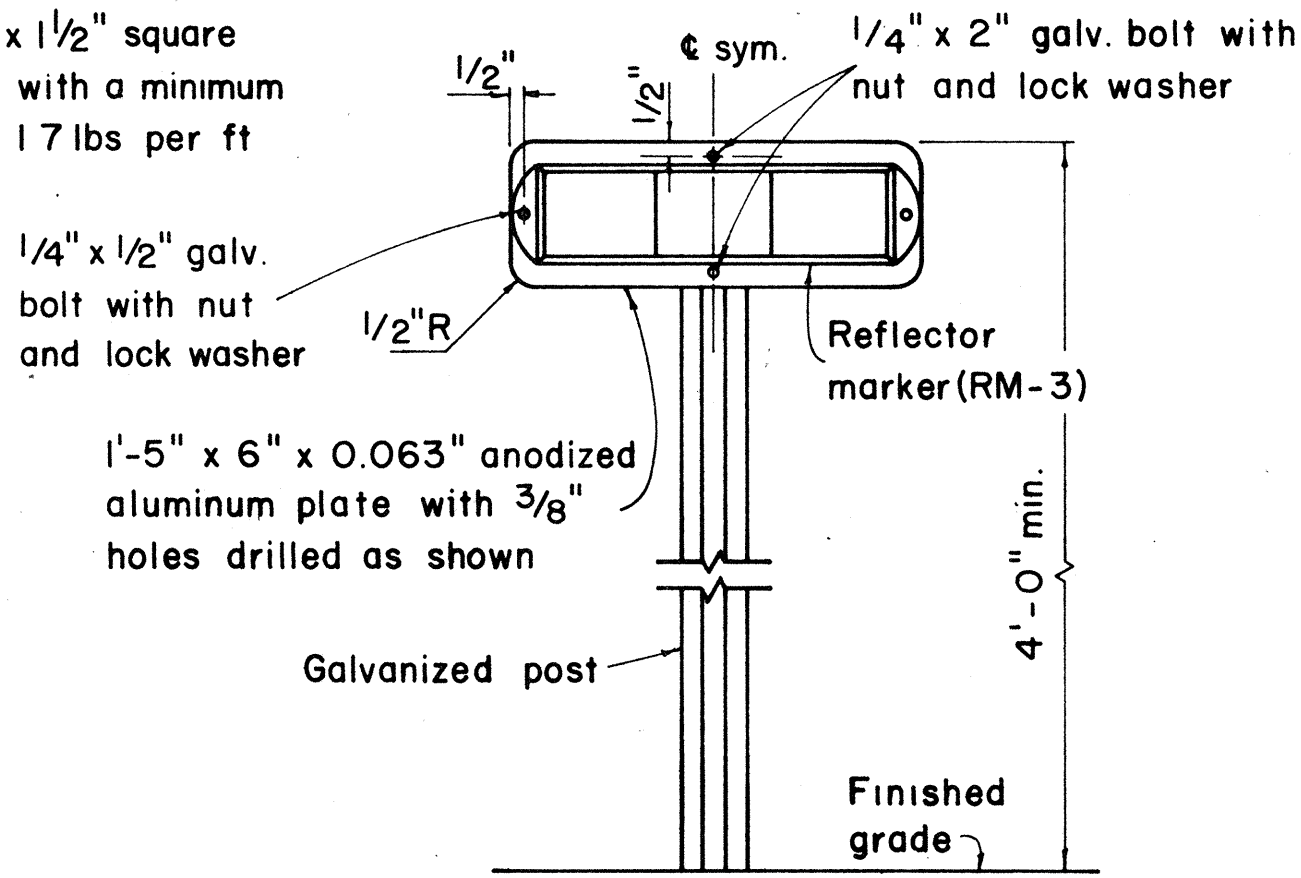
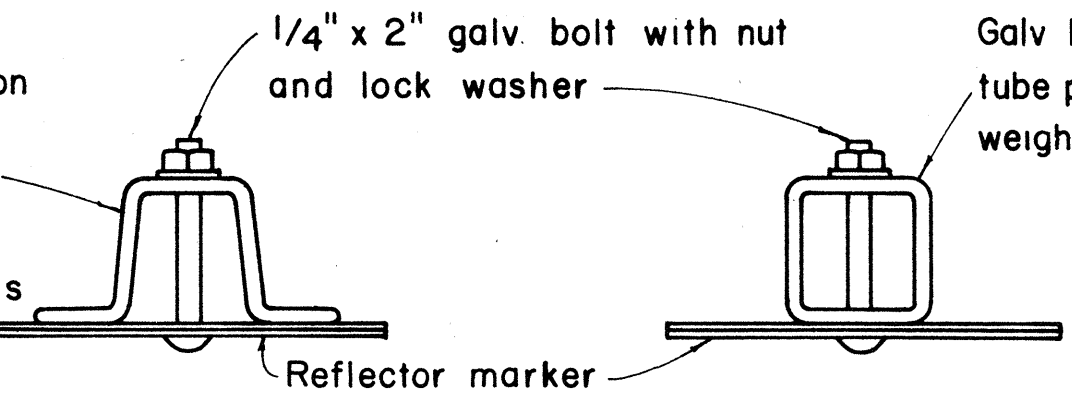


HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION

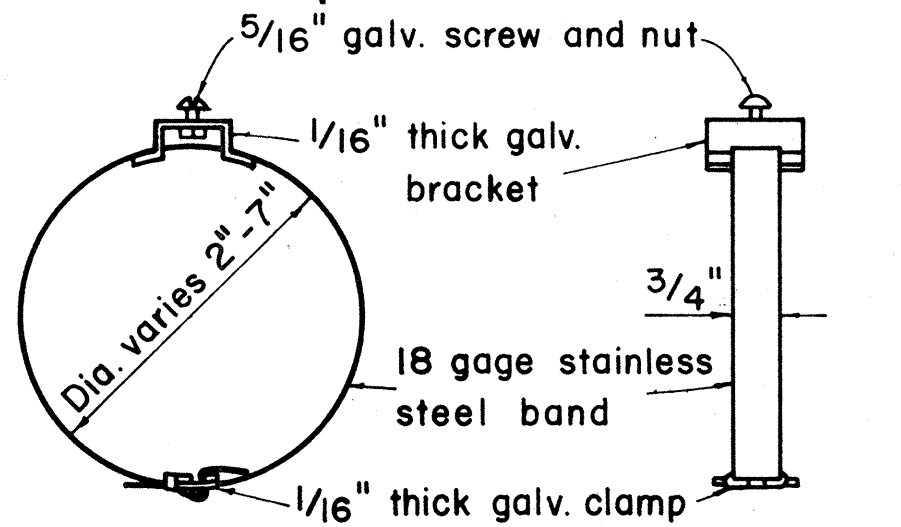


Galv. flanged channel 1/8" x 3/16" rolled section post with a minimum weight of 2 lbs. per ft. Upper 2 ft. shall have a single row of 3/8" holes centered in the web at 1" o.c.

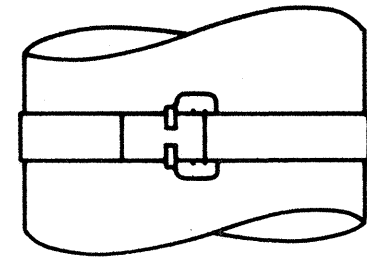
TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL 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.

APPROVAL RECOMMENDED:
E.ichi Tanaka 12/22/69
TRAFFIC ENGINEER DATE

APPROVED:
[Signature] 12-20-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

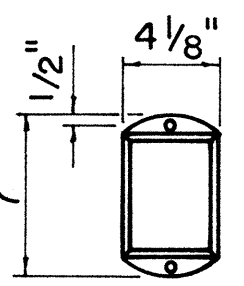
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS MISCELLANEOUS SIGN DETAILS

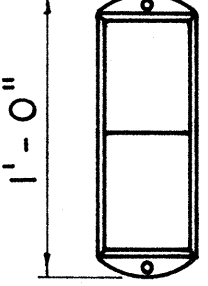
Not to scale March, 1968

SHEET No. 1 OF 6 SHEETS DT 100

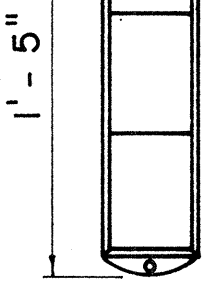
ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	



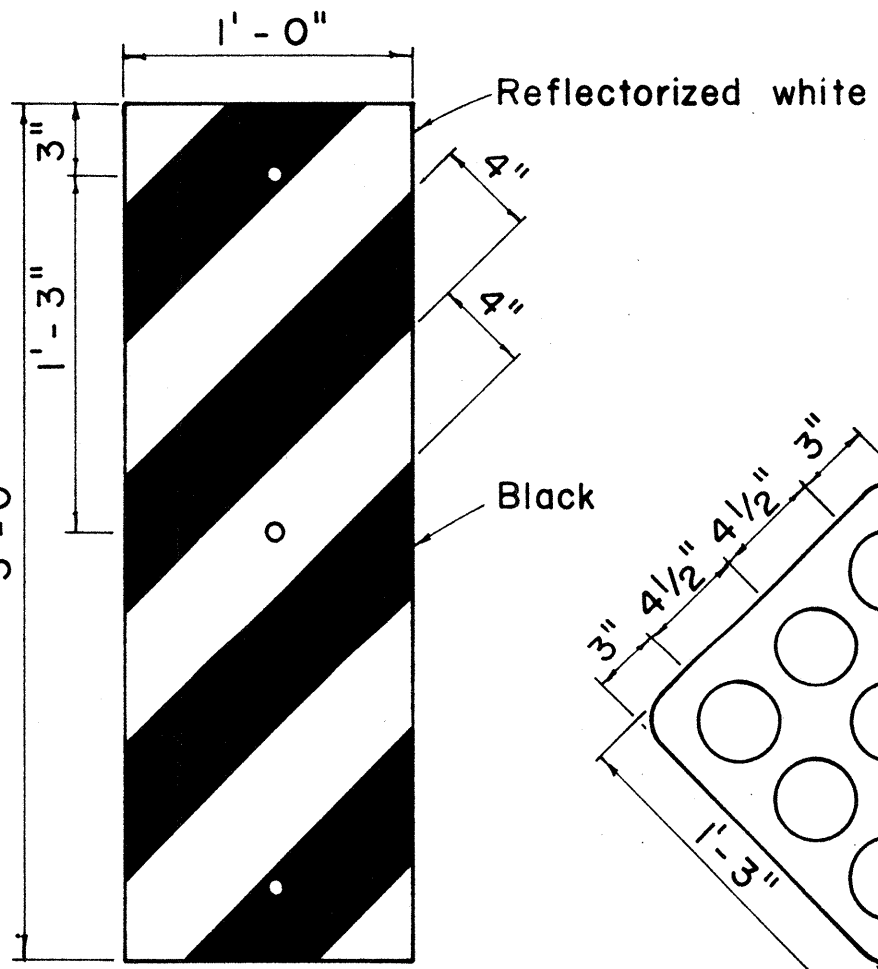
RM-1 (CLEAR)



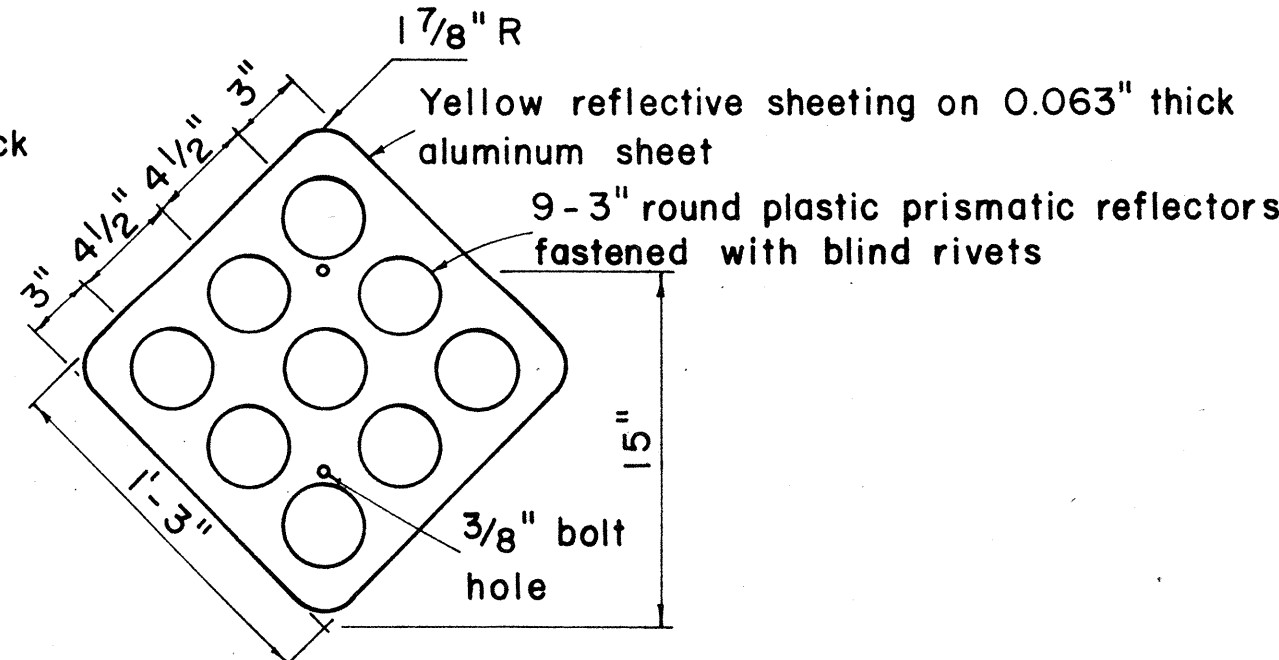
RM-2 (AMBER)



RM-3 (AMBER)



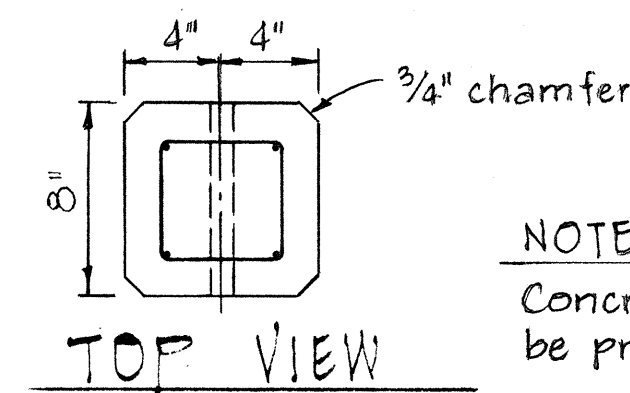
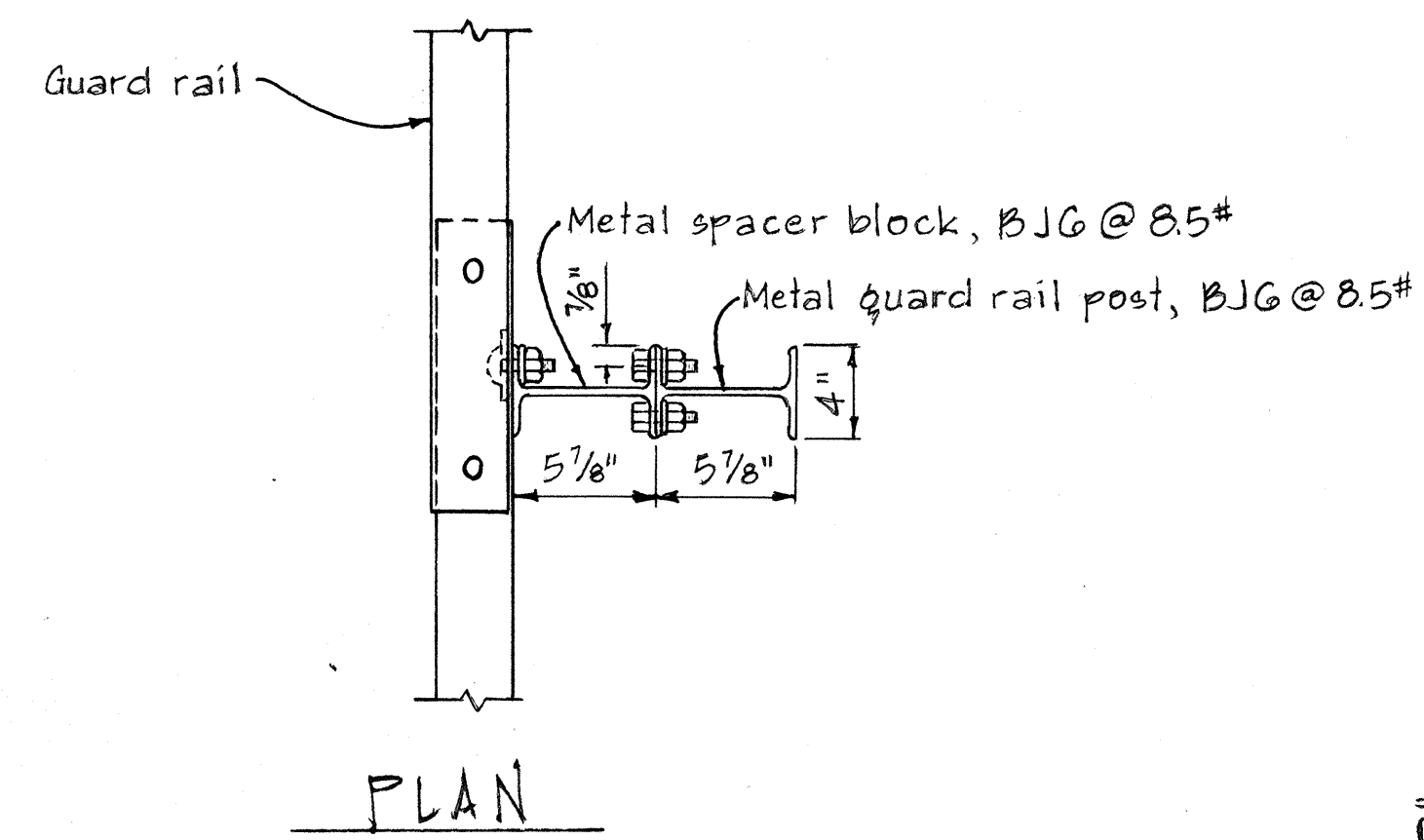
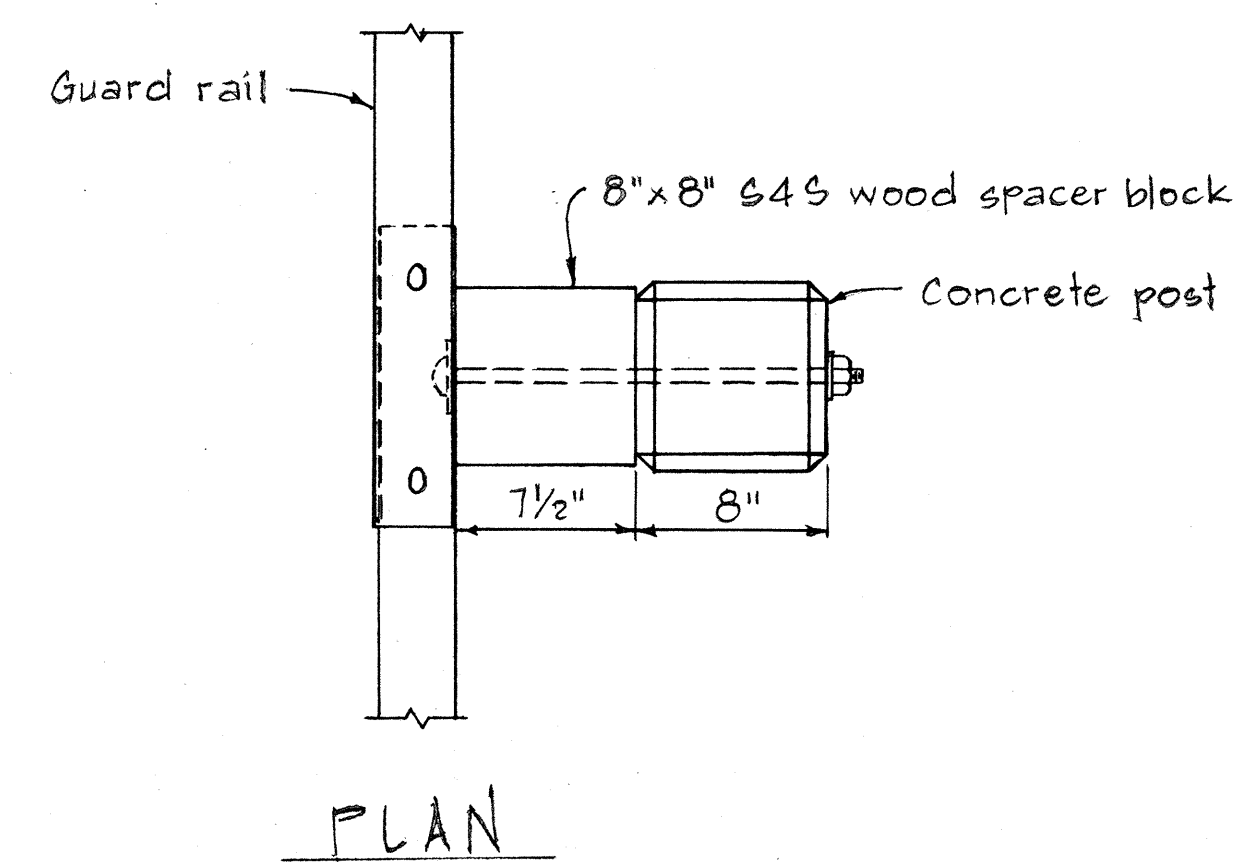
RM-4 (R)



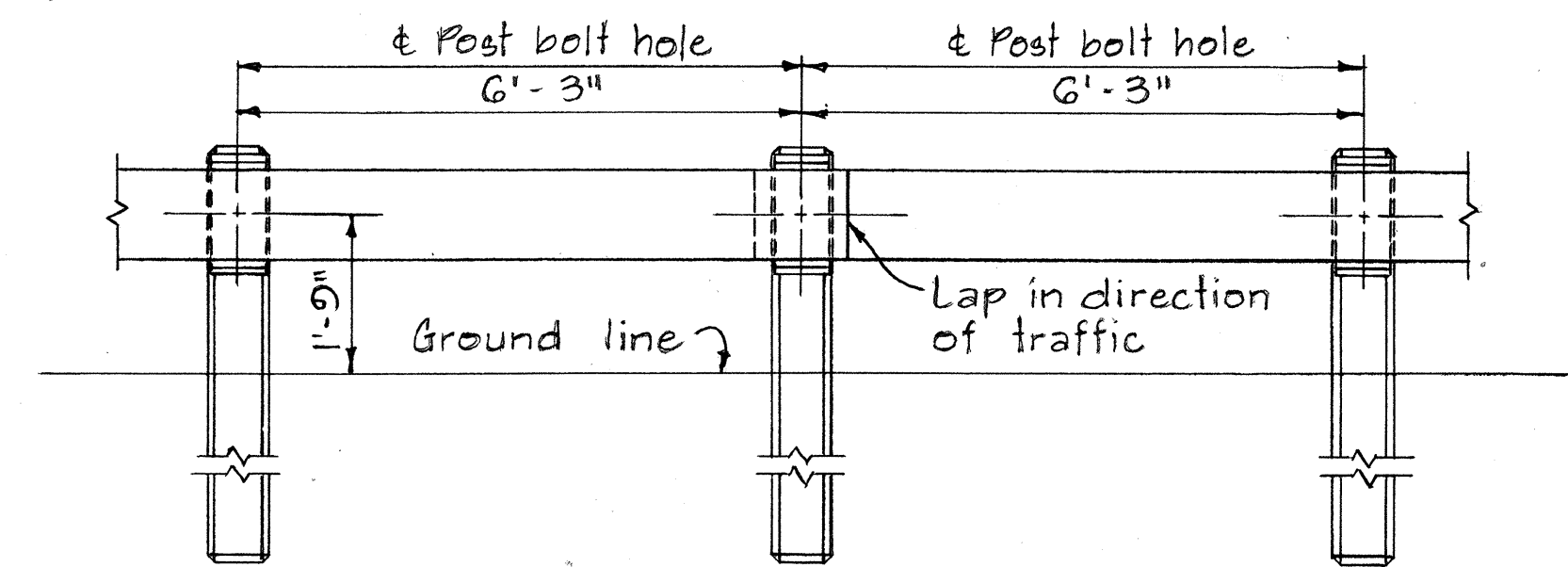
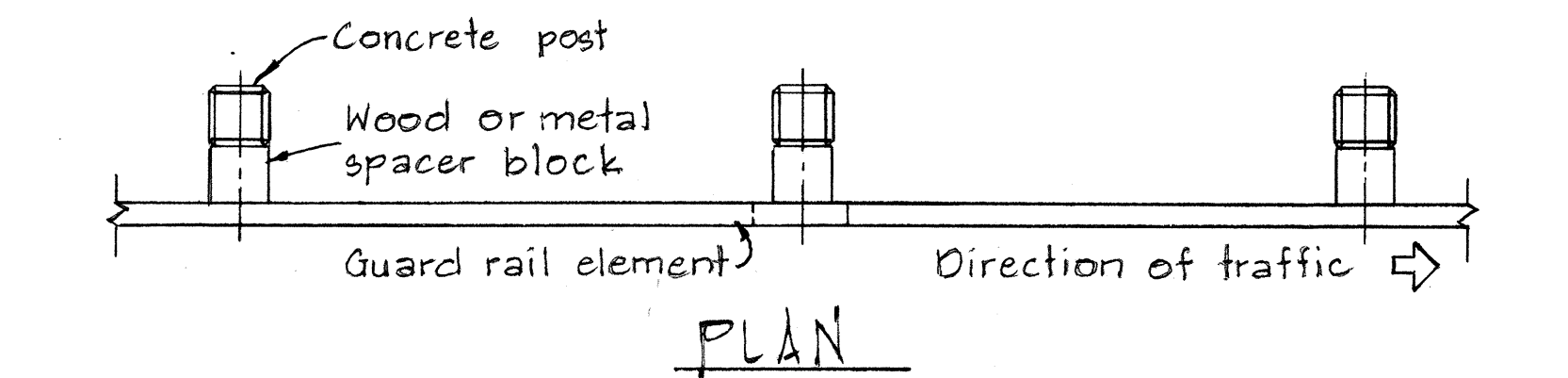
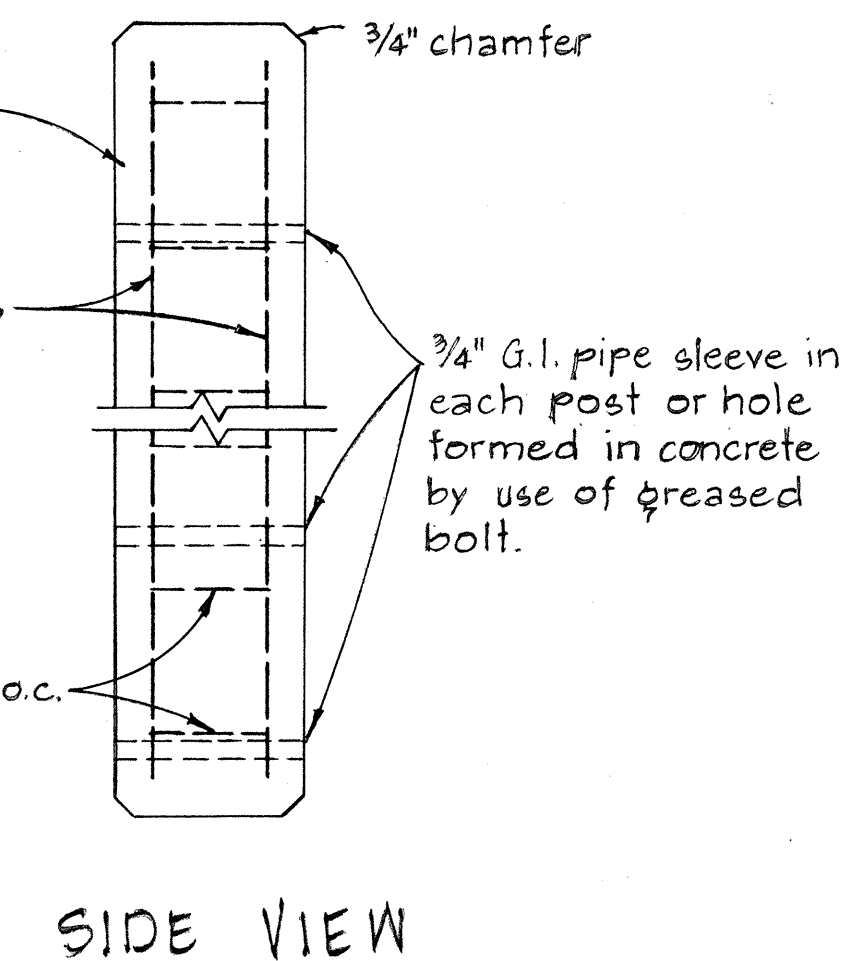
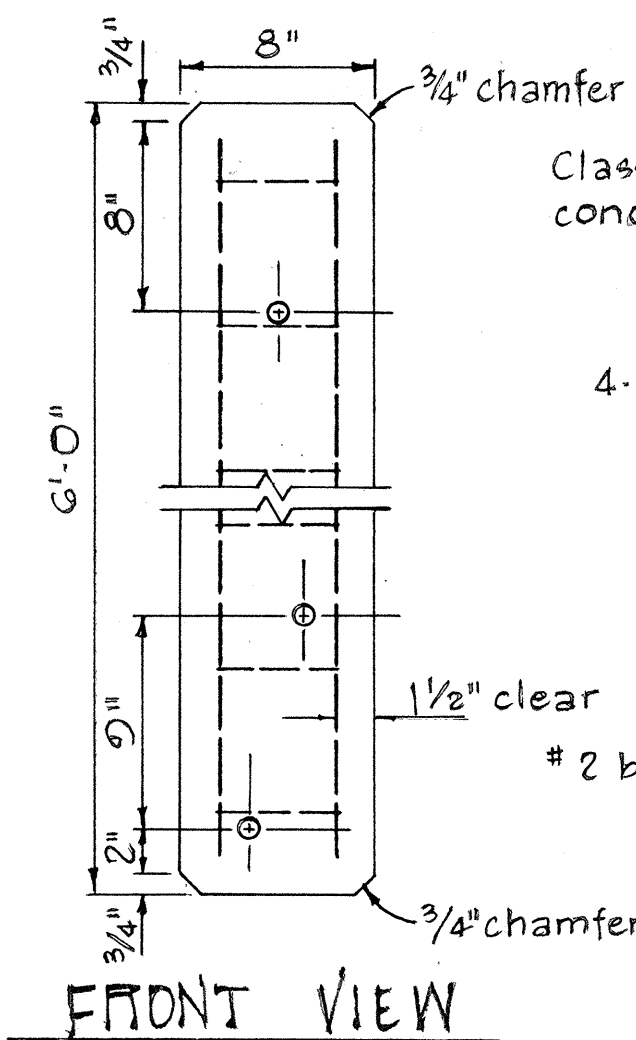
RM-9

REFLECTOR MARKERS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	550A-01-70	1970	5	10

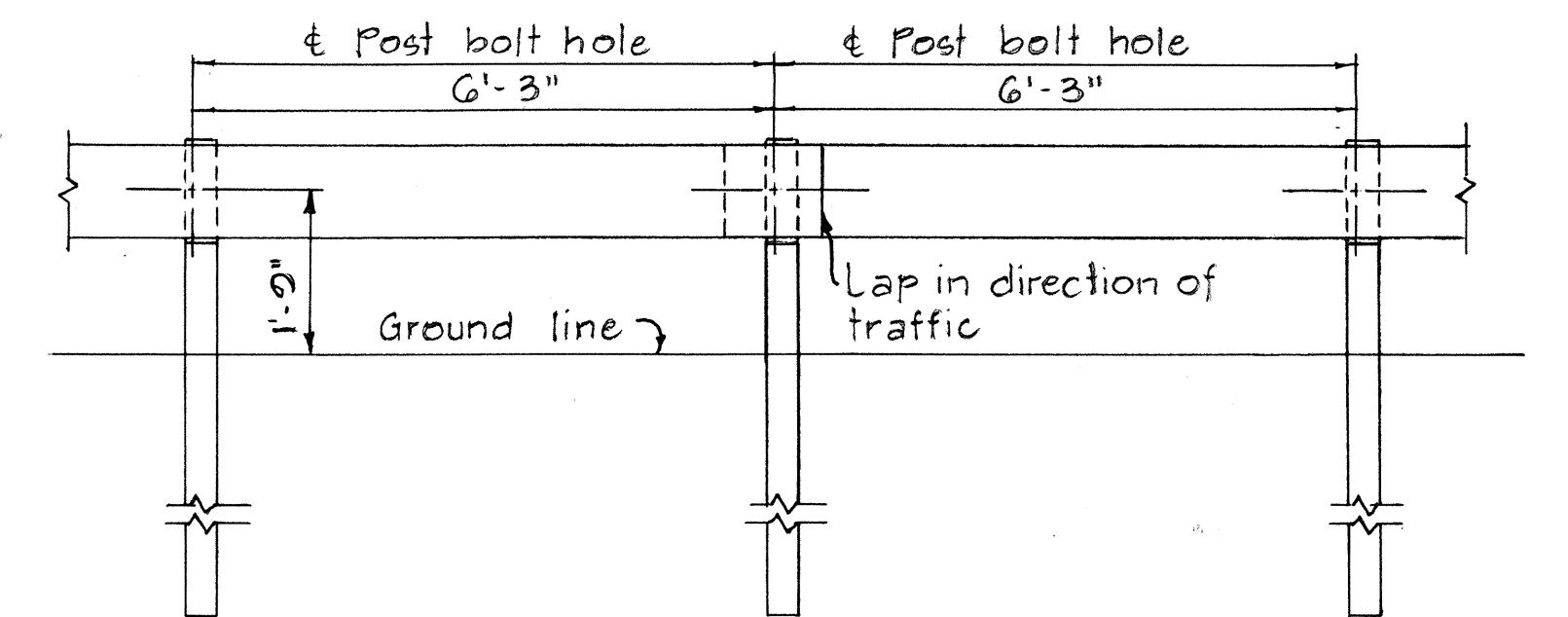
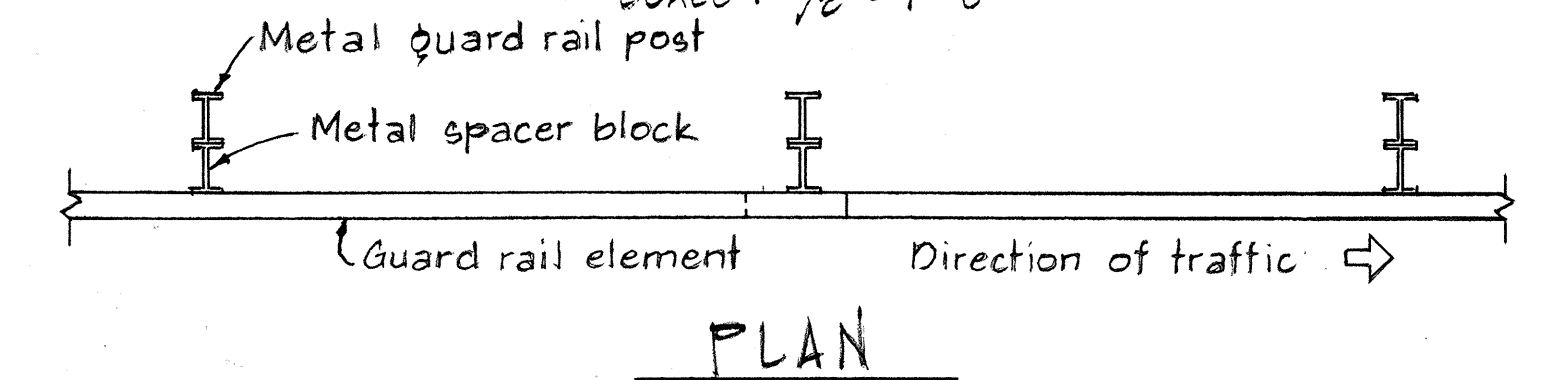


NOTE:
Concrete post shall
be precast



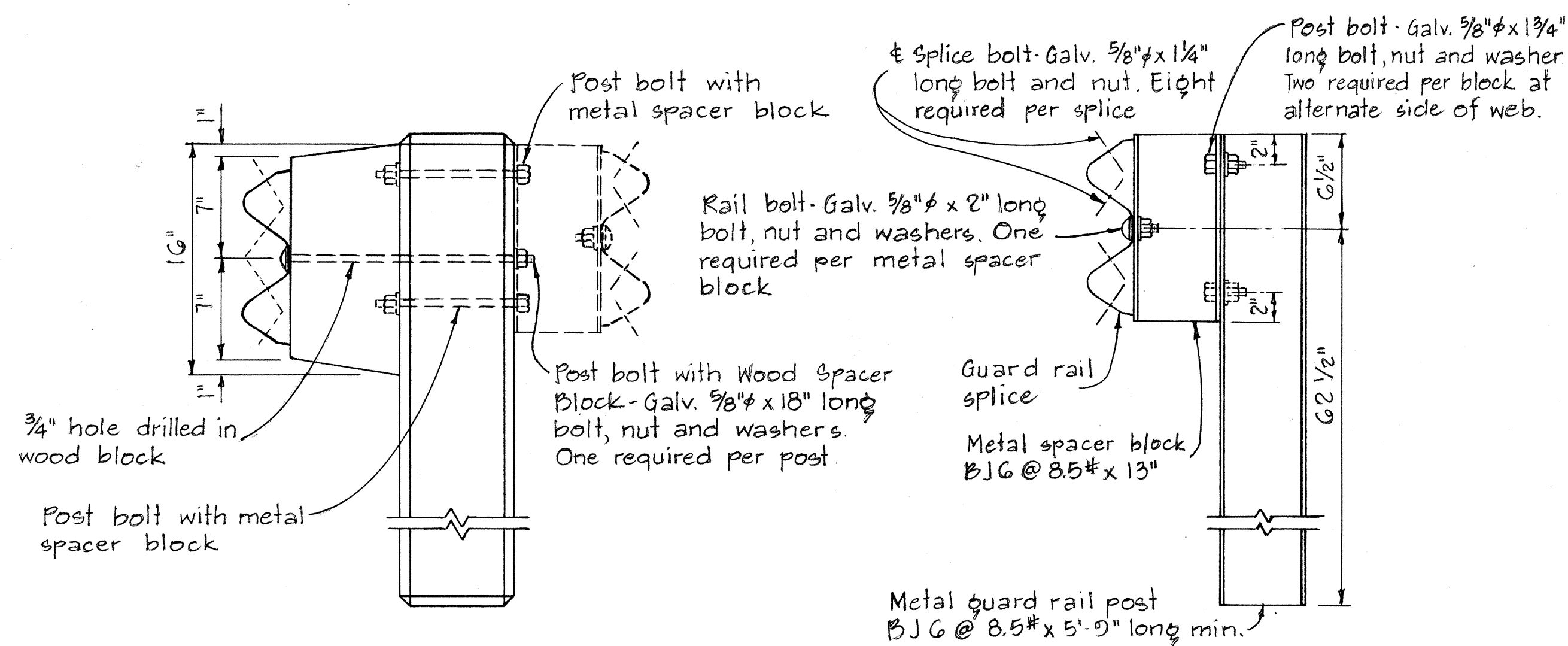
ELEVATION
METAL GUARD RAIL ON CONCRETE POST
WITH WOOD OR METAL SPACER BLOCK.

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



ELEVATION
METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK

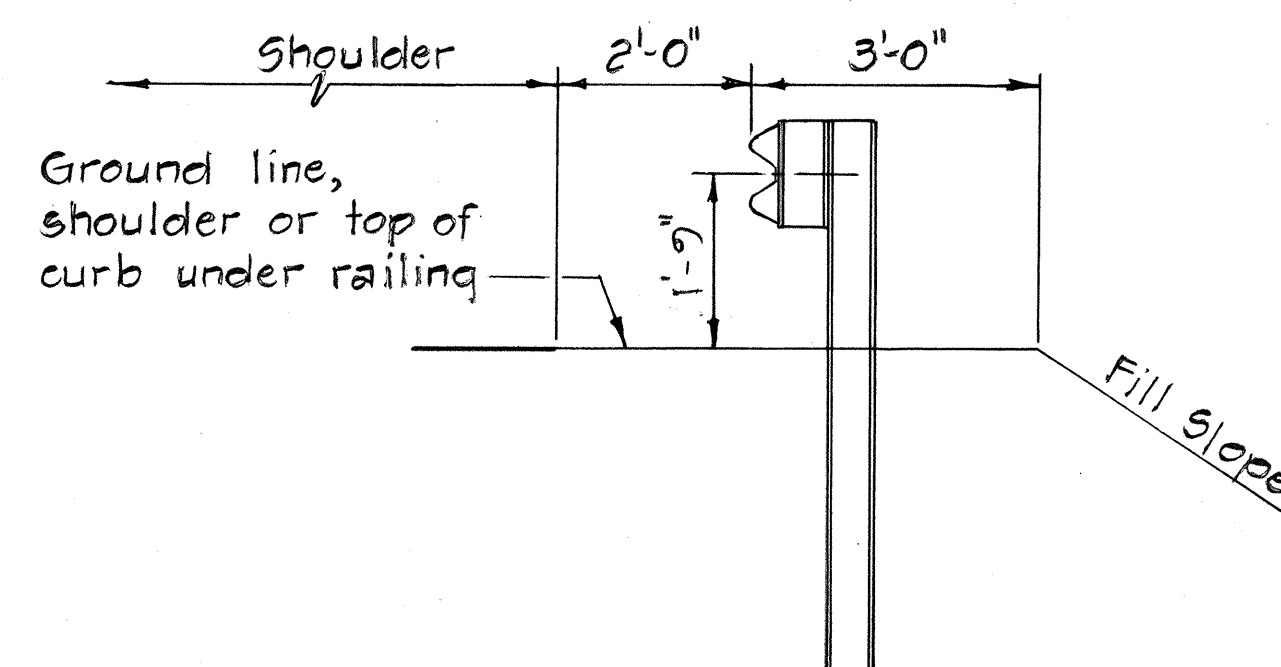
SCALE: $\frac{1}{2}'' = 1'-0''$



SINGLE METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK

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

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



AT SHOULDER SECTION

TYPICAL METAL GUARD
RAIL DETAIL

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

APPROVAL RECOMMENDED:

Etschi Tanaka
TRAFFIC ENGINEER

12/29/69
DATE

APPROVED:

Herbert D. Schindler
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 6 SHEETS		DT 500
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2

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

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

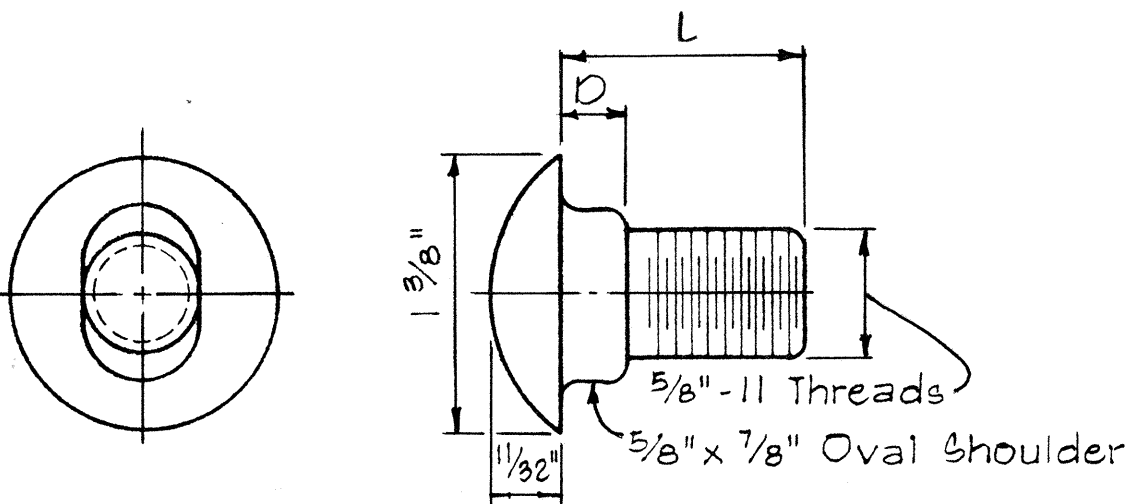
SCALE: $1\frac{1}{2}'' = 1'-0''$

PRINTED ON NO. 1000H CLEARPRINT

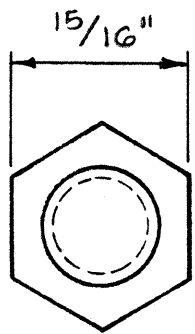
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	550A-01-70	1970	6	10

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"

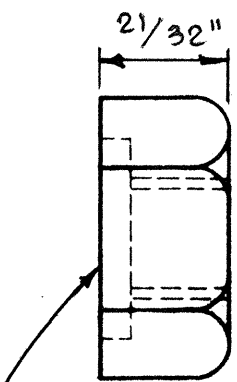
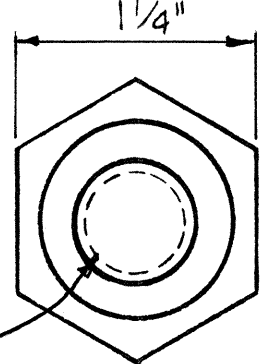
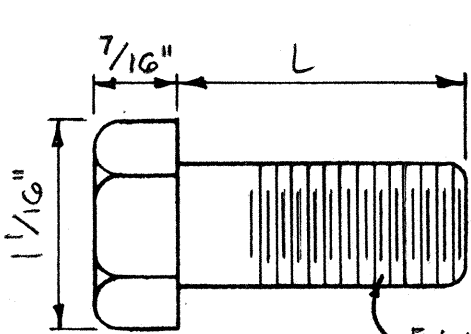
BOLT DIMENSIONS	
TYPE B BOLT	
	L
Post Bolt for Conc. Post w/ Metal Blocks	5 1/2"
Post Bolt for Metal Post w/ Metal Block	1 3/4"



TYPE A BOLT

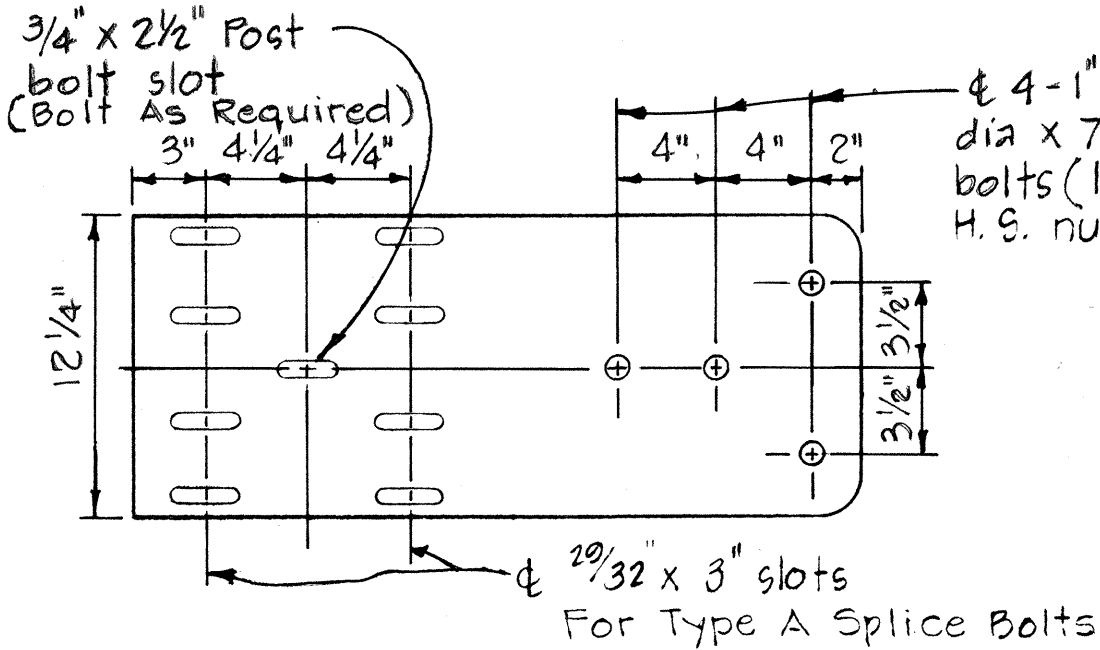
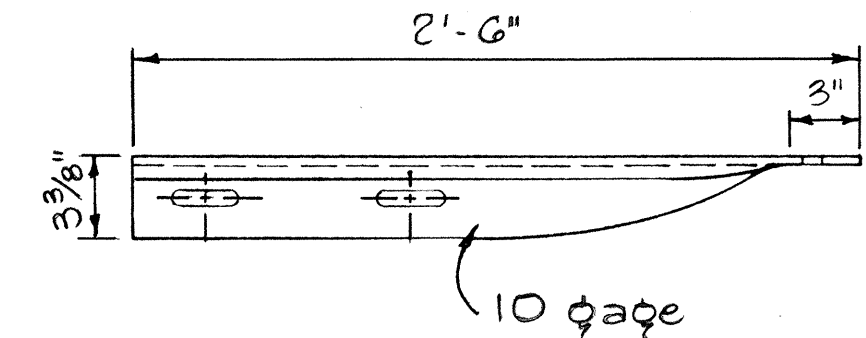


TYPE B BOLT



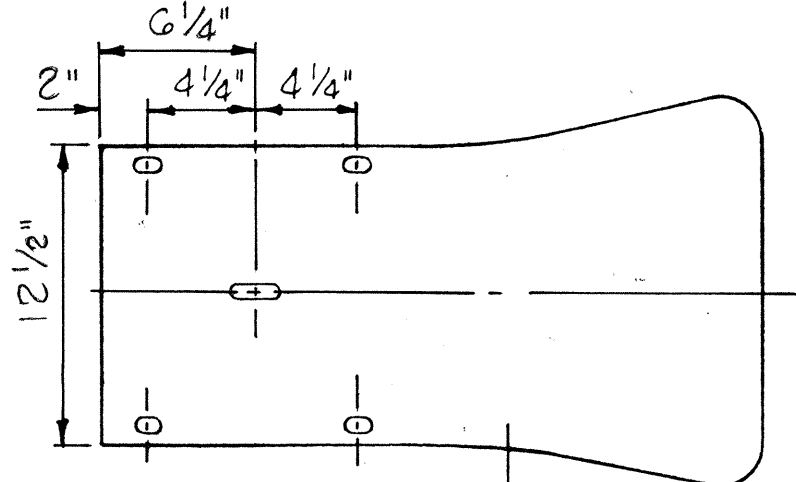
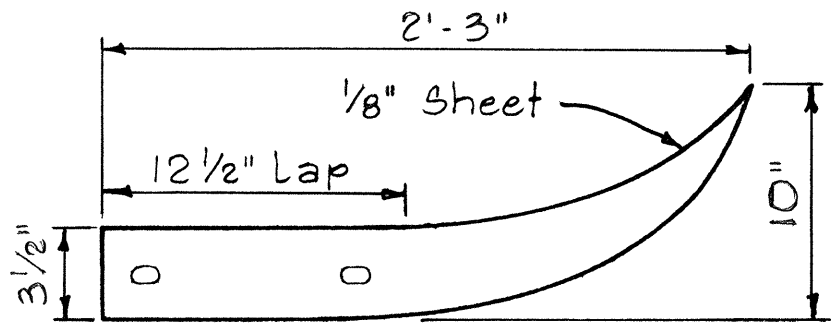
5/32" Deep x 1 5/16" Dia. C' Bore for Type A Bolt only. Plain nut for Type B Bolt.

HEXAGON NUT



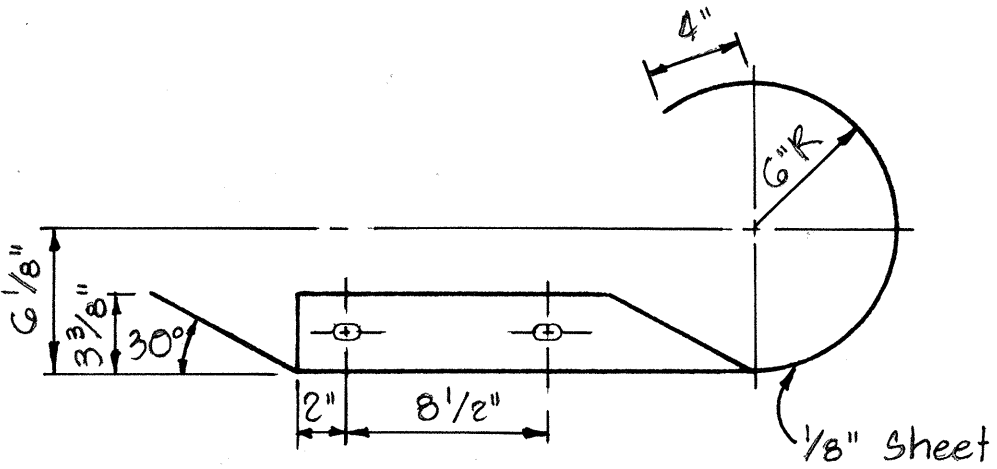
SPECIAL END SHOE

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



FLARED END

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



CURVED END

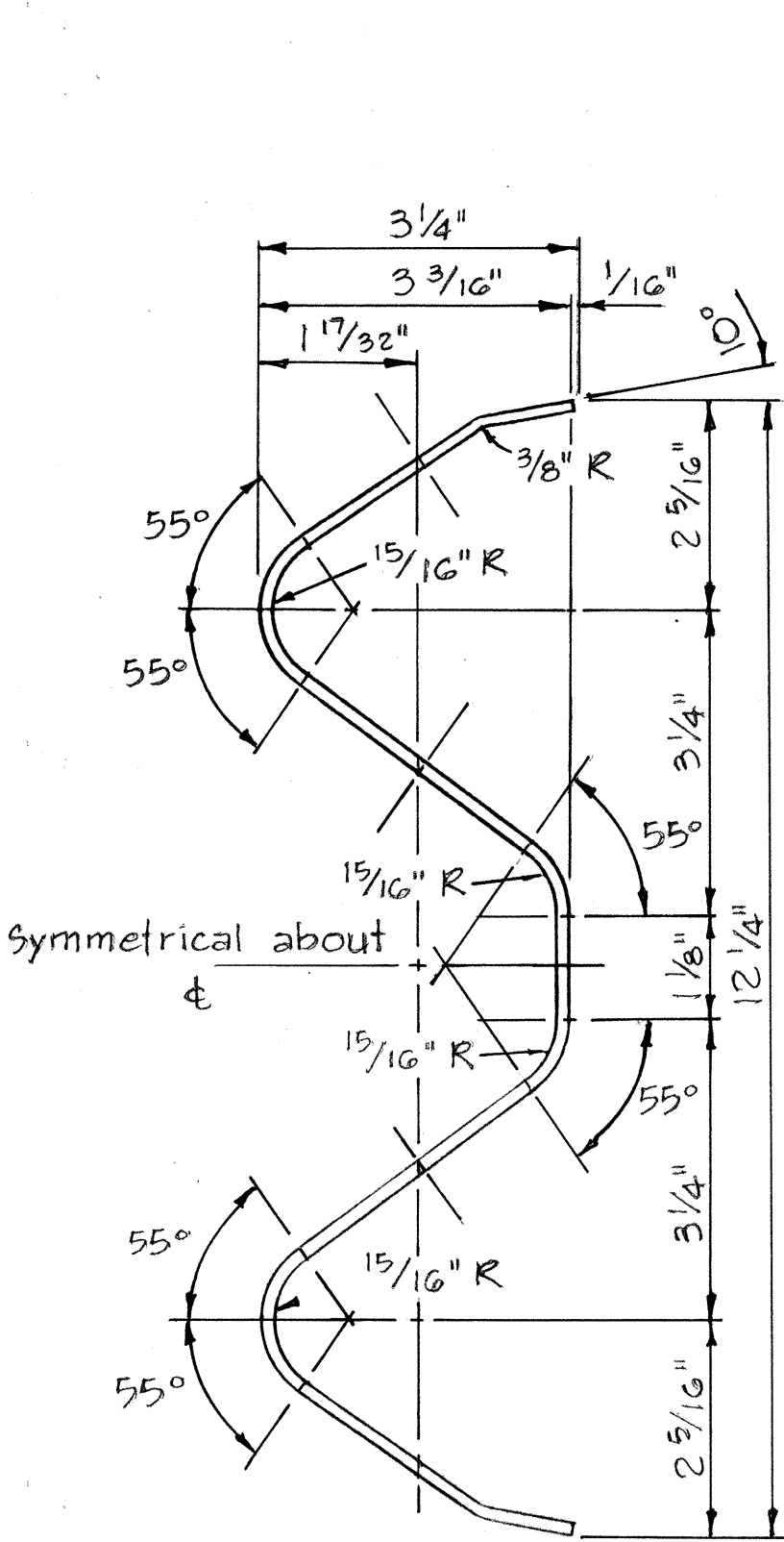
Scale: 1 1/2" = 1'-0"

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
APPROVED:
ASSISTANT CHIEF, ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
METAL GUARD RAIL
Scale As Noted August, 1968
SHEET No. 3 OF 6 SHEETS DT 501

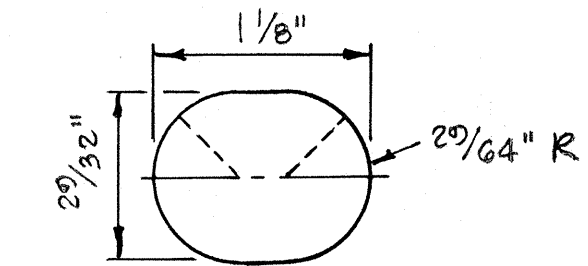
SPlice RAIL AND POST BOLTS

Scale: Full Size



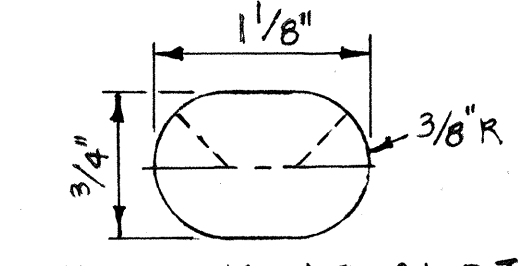
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

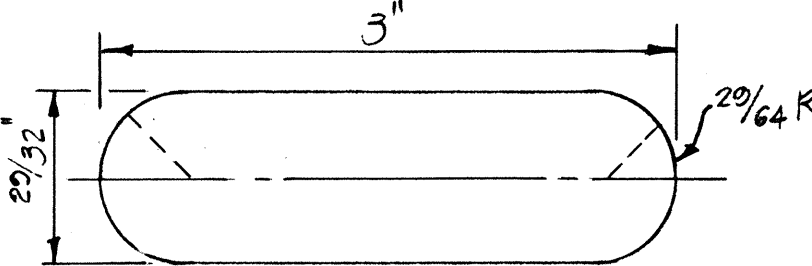


SPlice BOLT SLOT

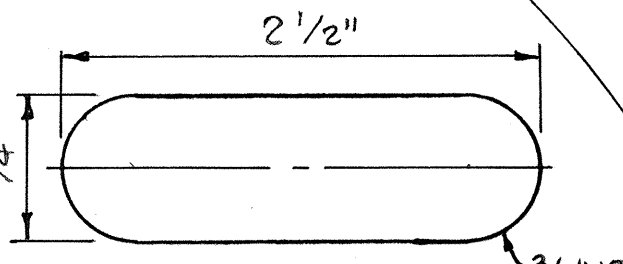
Scale: Full Size



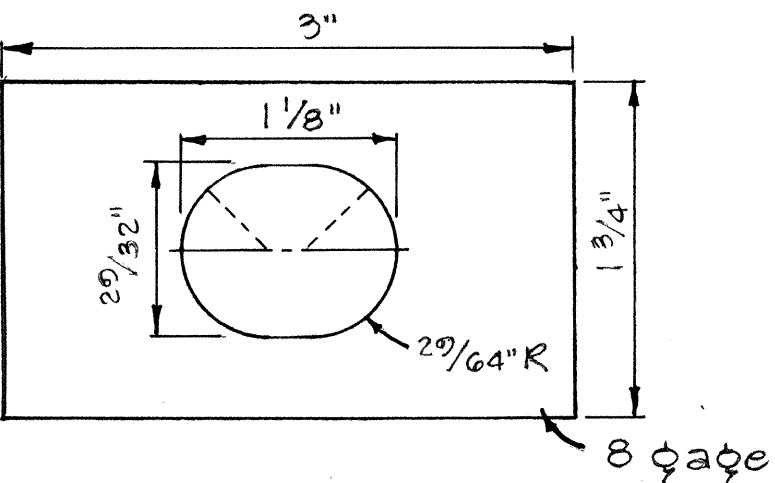
SPlice BOLT SLOT FOR ALL ENDS



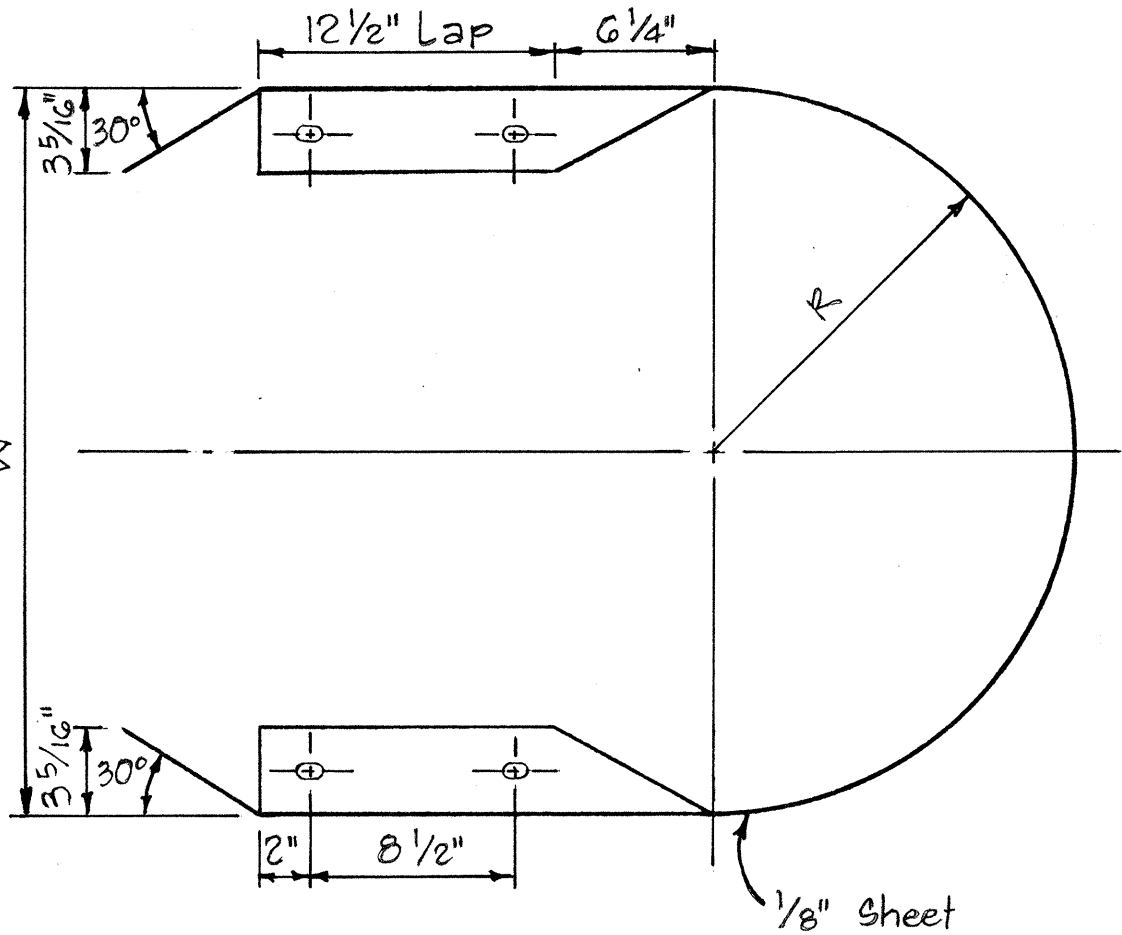
SPlice BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT

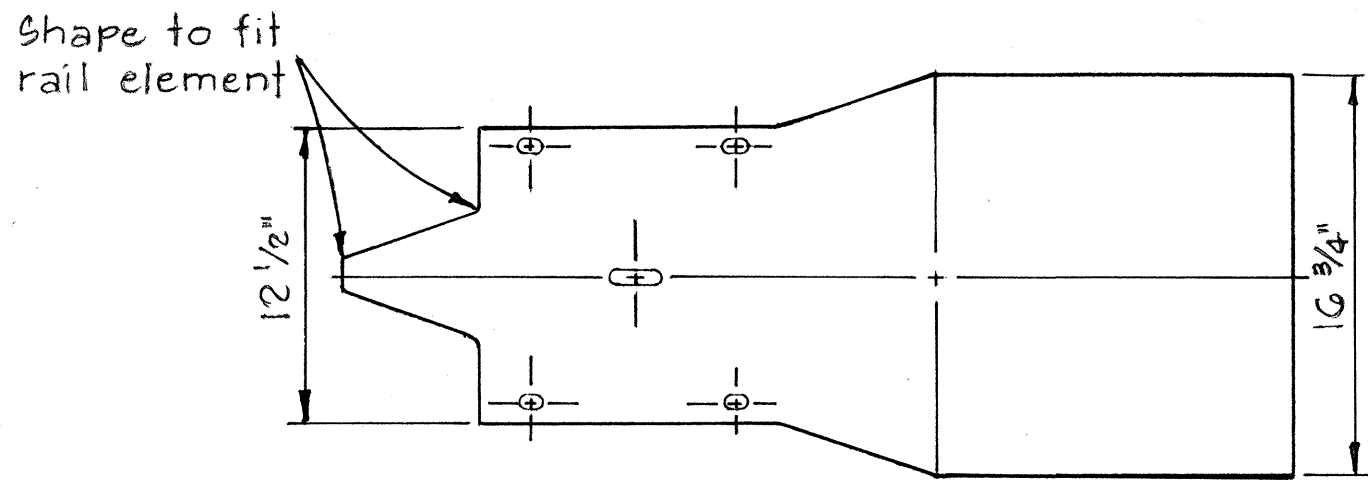


RAIL WASHER



MEDIAN END

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



- 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.

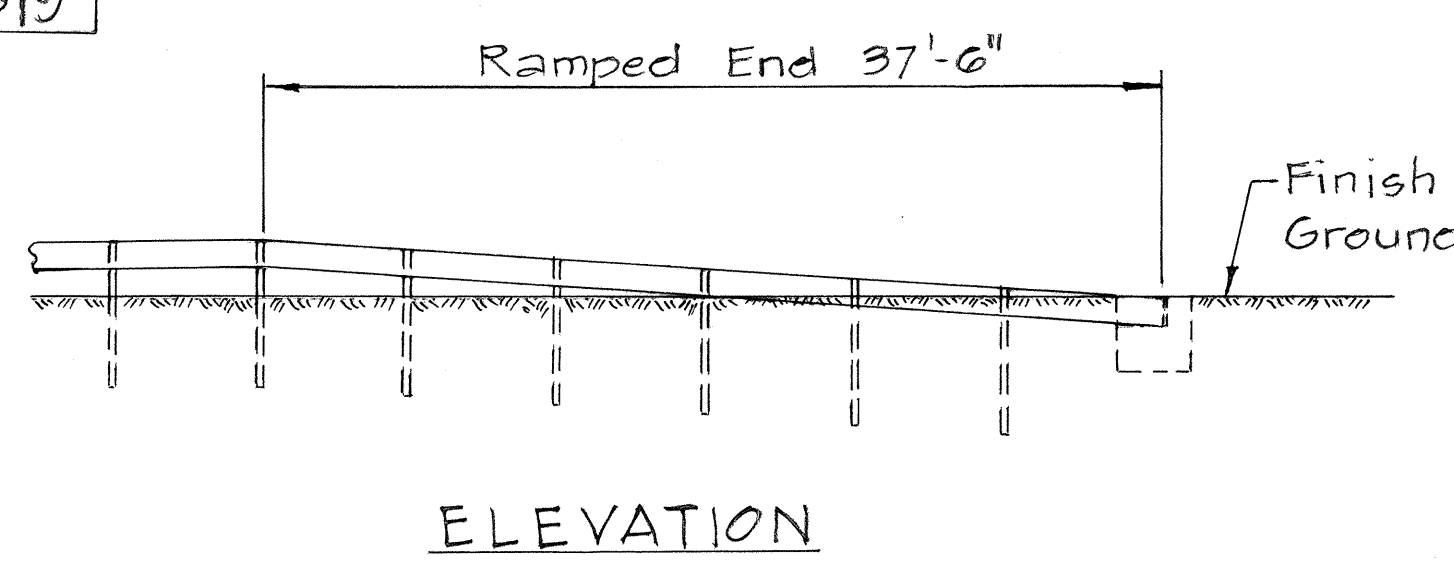
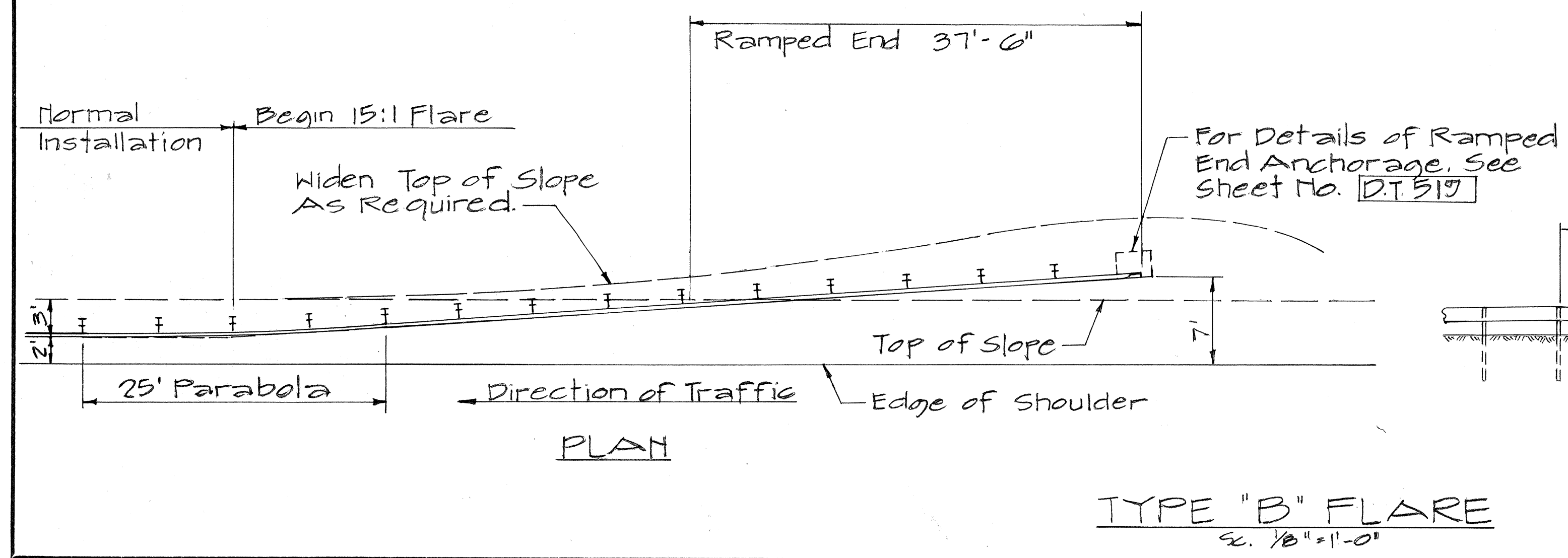
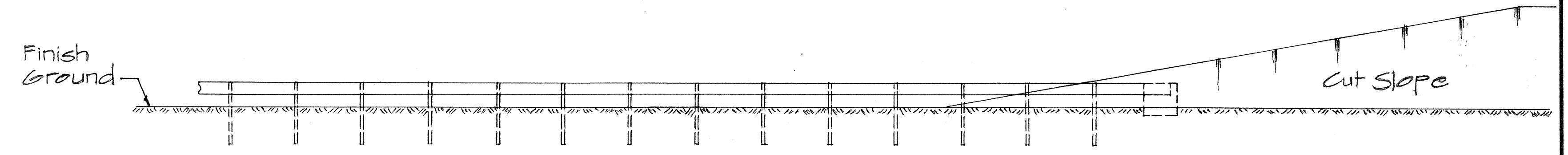
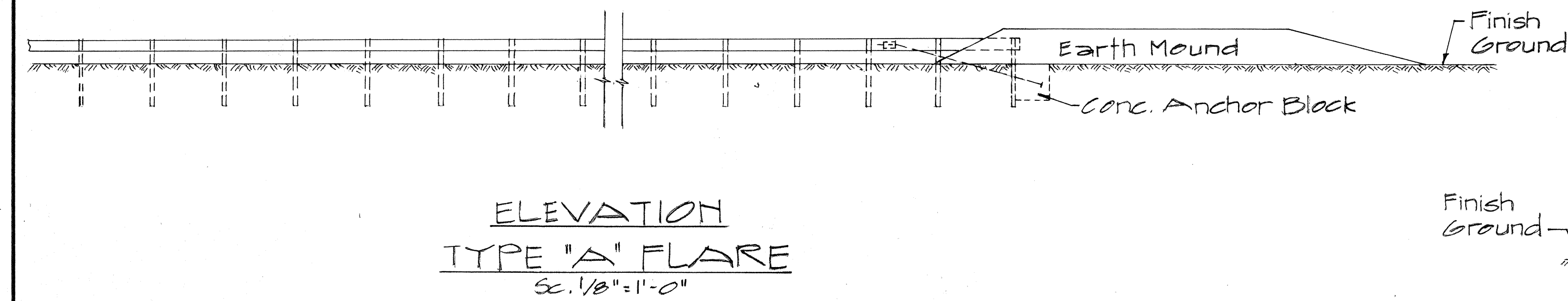
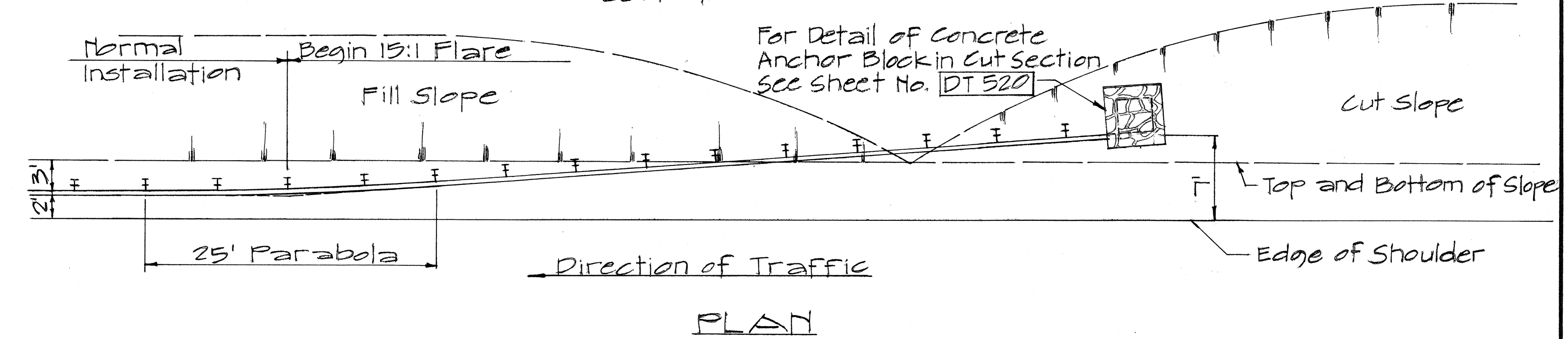
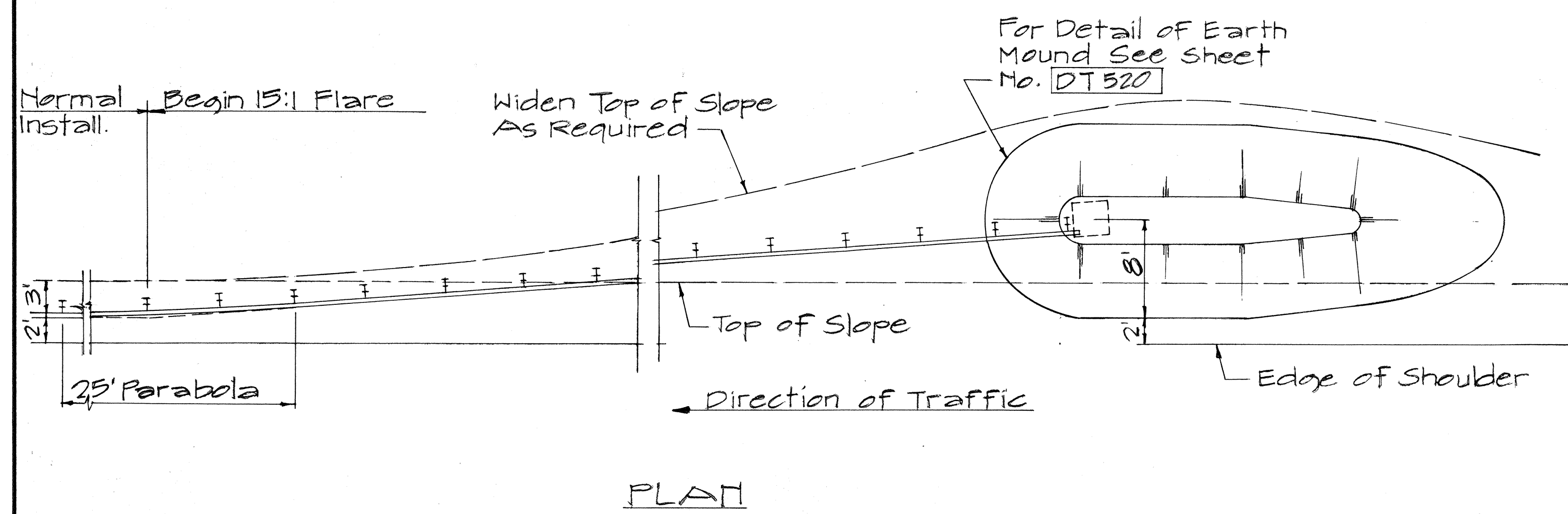
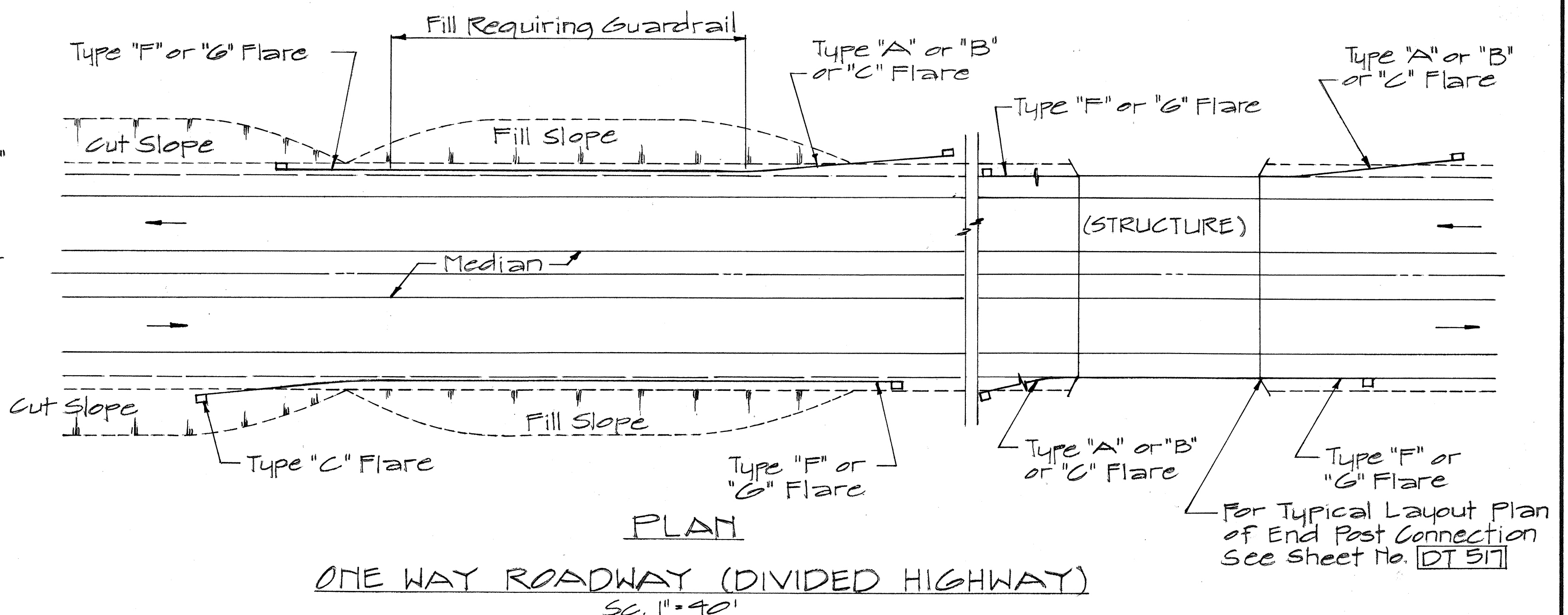
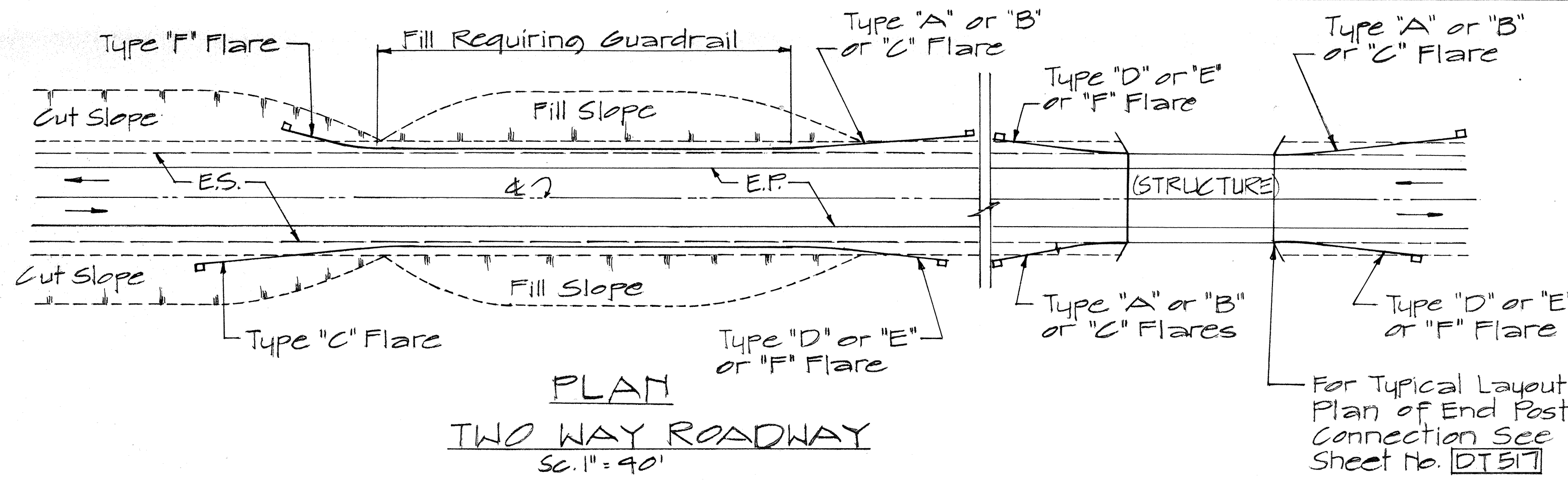
MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"

NO	REVISION	APPROVED BY	DATE

DATE	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	550A-01-70	1970	7	10

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



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

NO.	REVISION	APPROVED BY	DATE

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

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

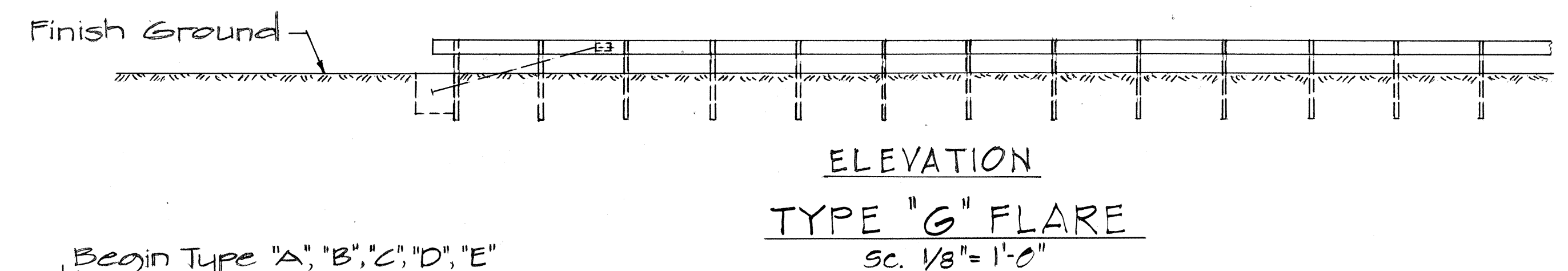
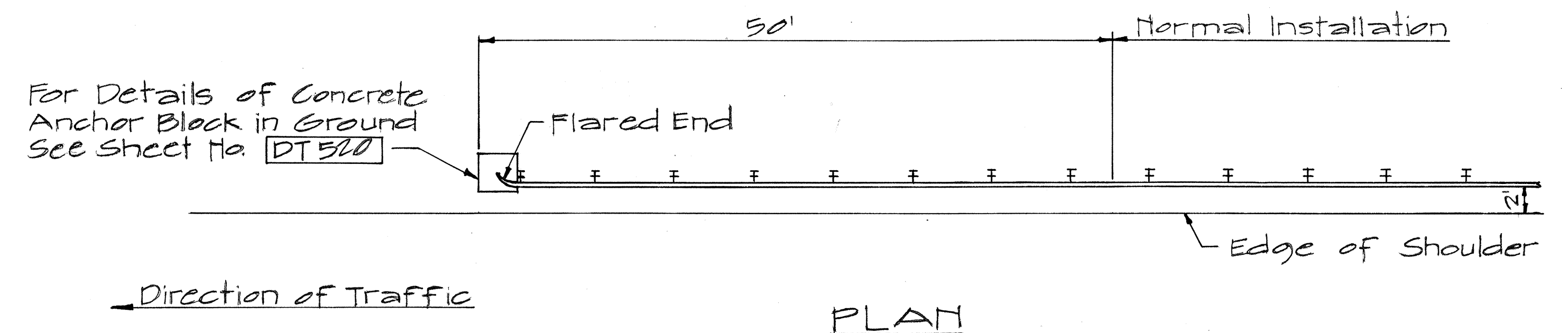
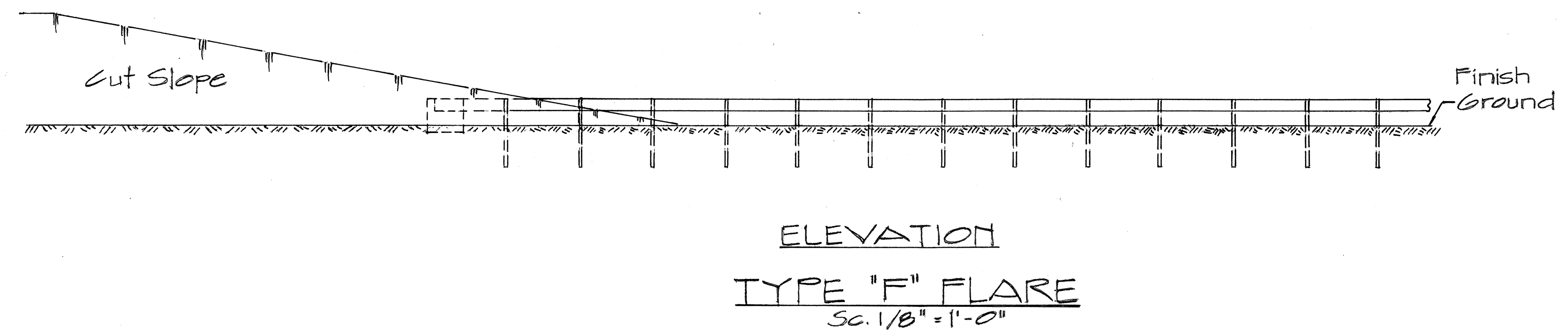
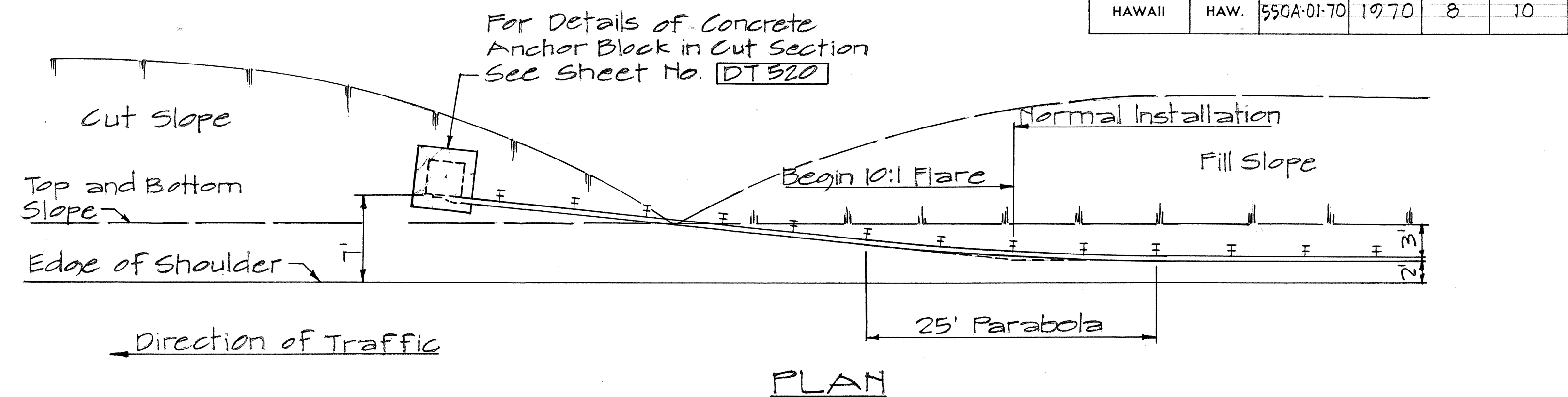
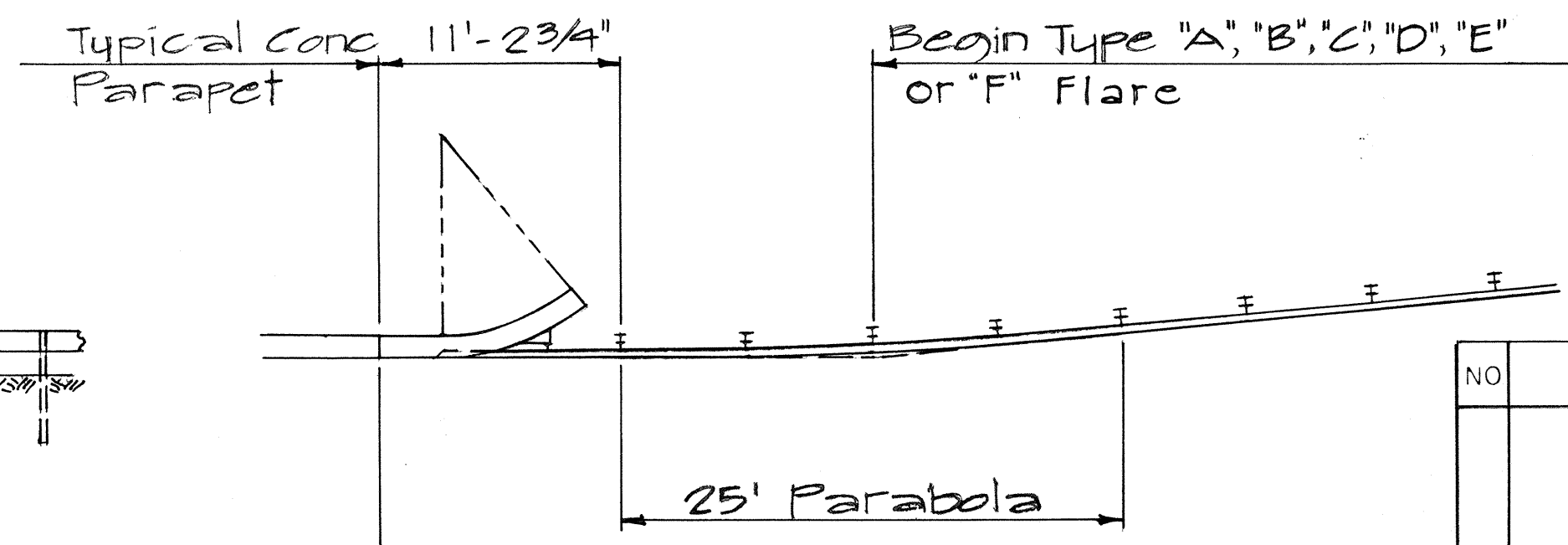
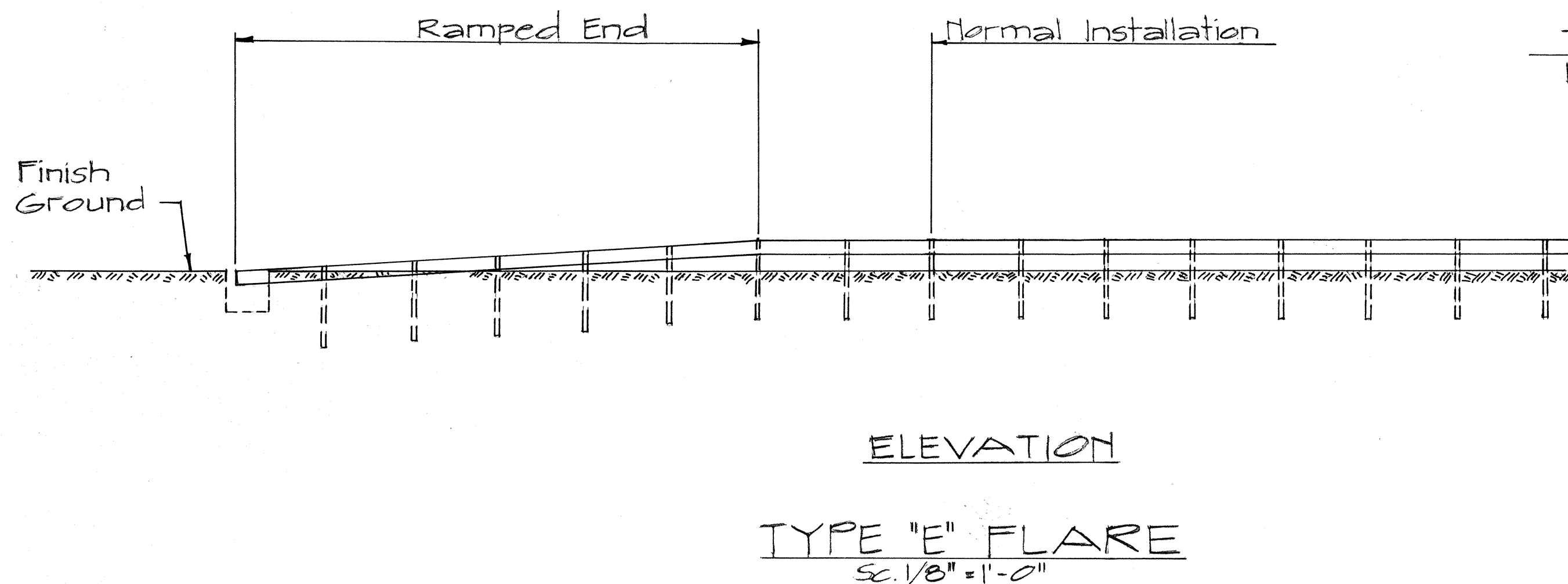
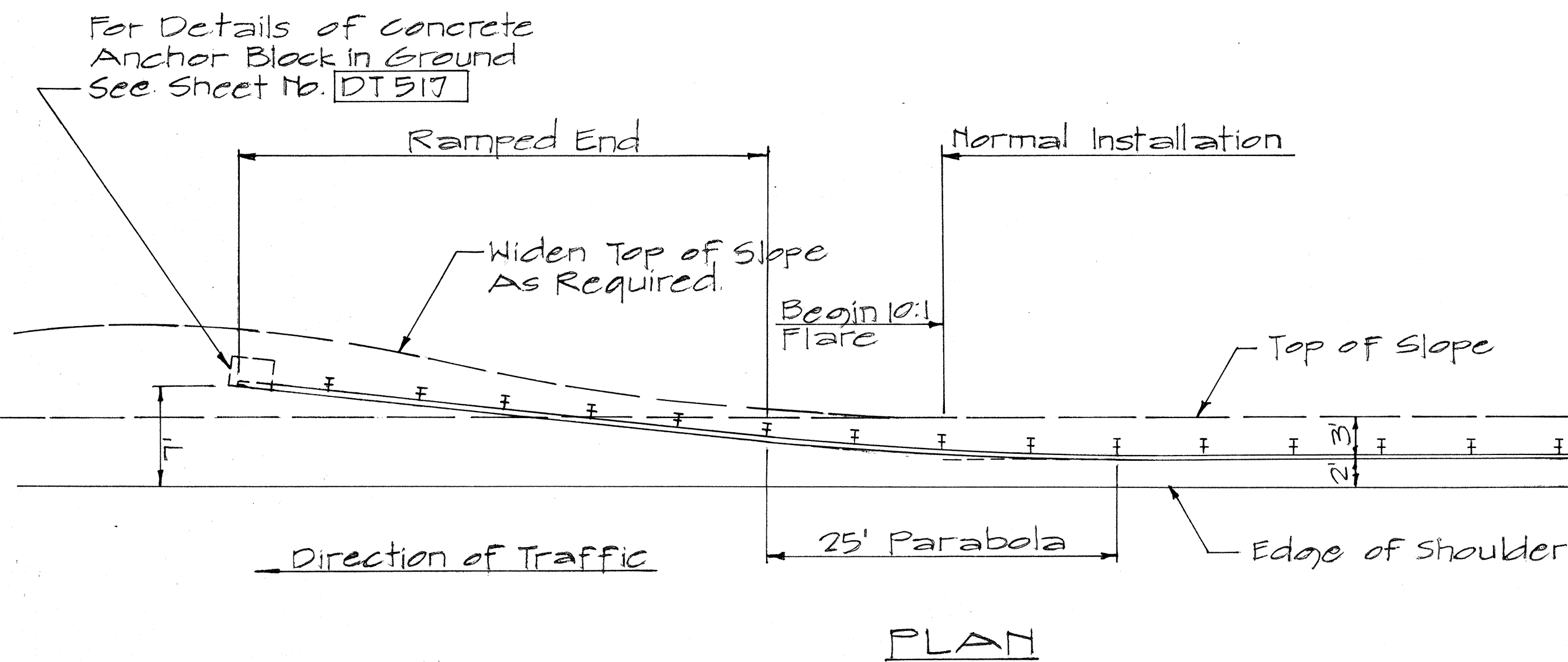
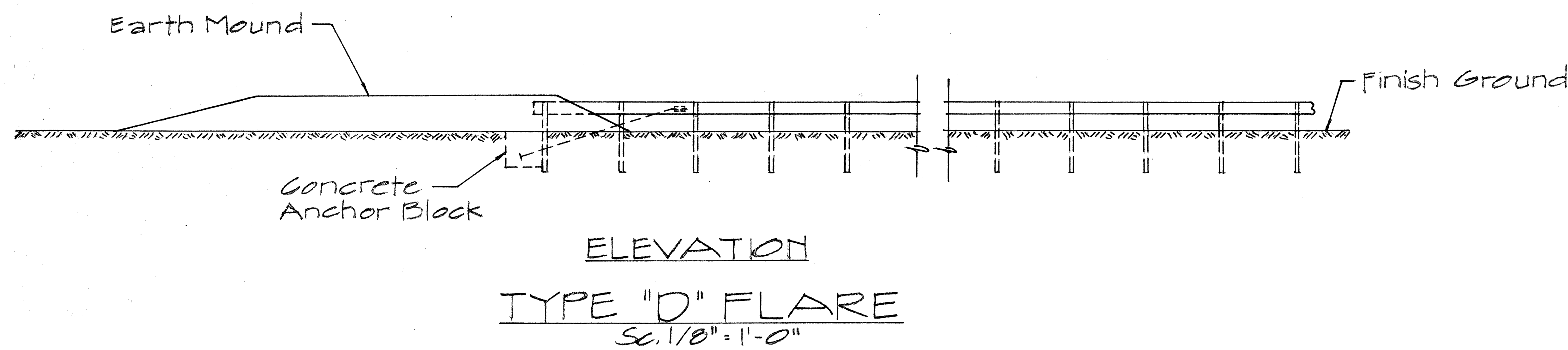
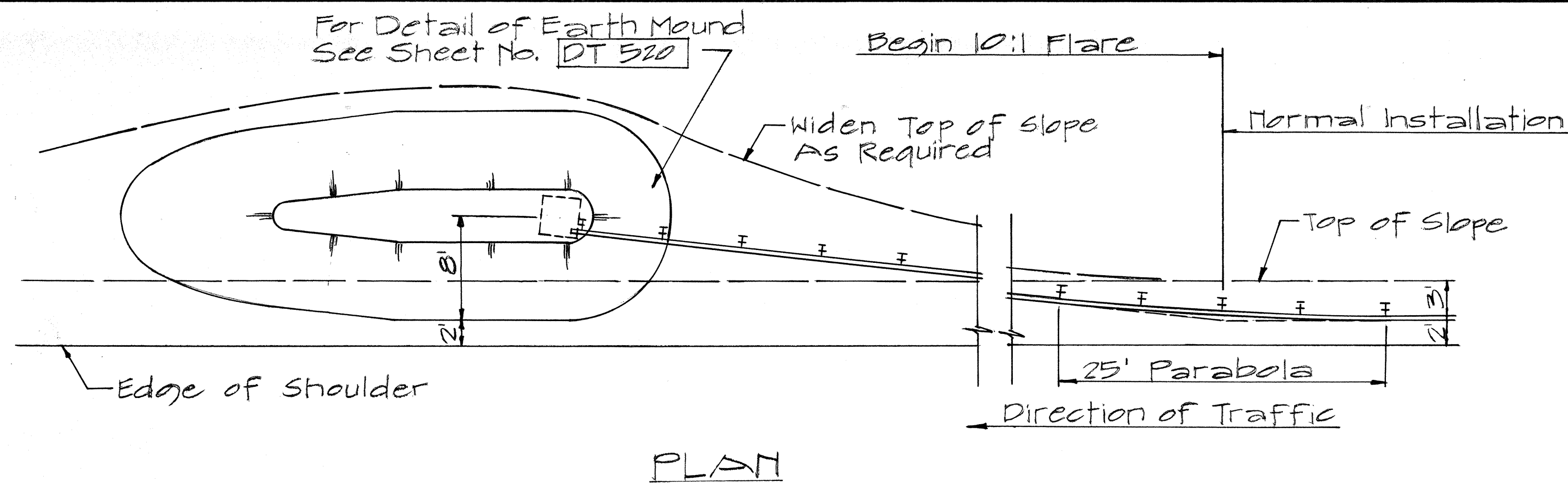
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

Sc. As Noted April 1967
SHEET No. 4 OF 6 SHEETS DT 516

DATE: _____
SURVEY PLOTTED BY: _____
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.	550A-01-70	1970	8	10



APPROVAL RECOMMENDED: E. J. Tanaka 12/29/69 DATE

TRAFFIC ENGINEER

APPROVED: W. J. J. J. 12-30-69 DATE

ASSISTANT CHIEF, ENGINEERING

NO	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

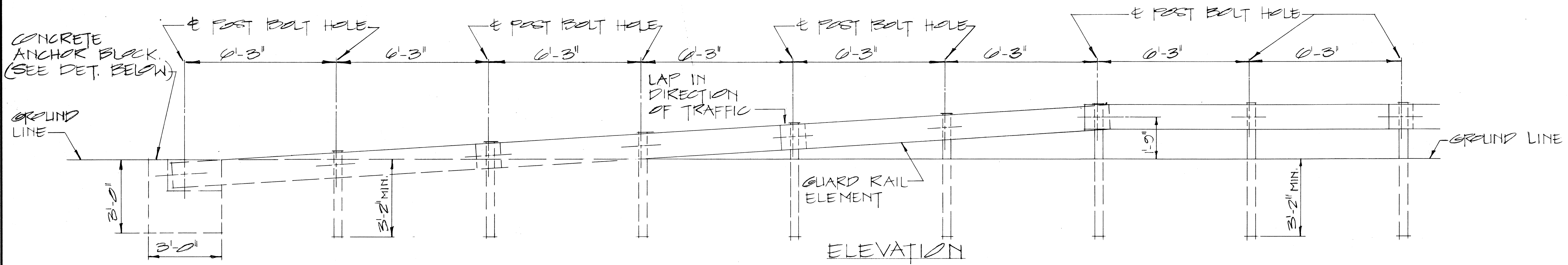
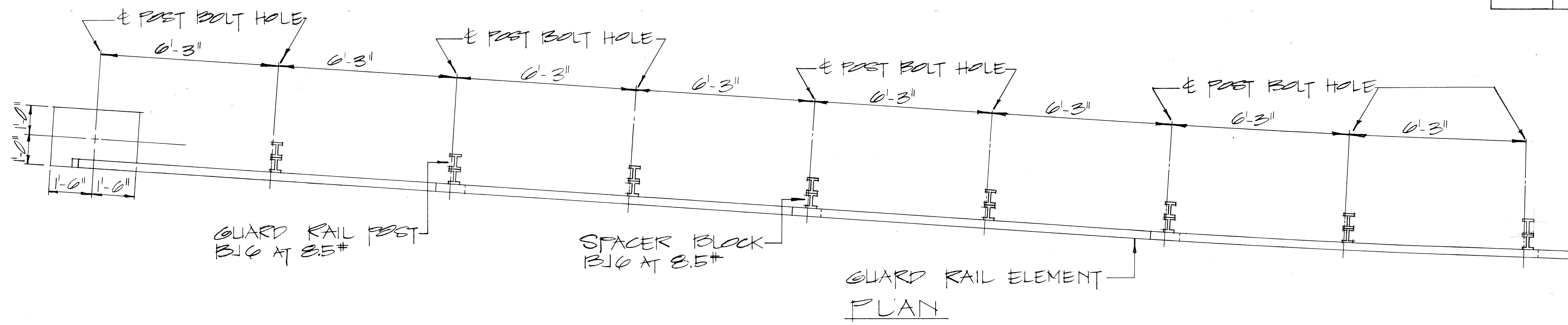
STANDARD DETAILS
OF TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Sc. As Noted April 1969

SHEET No. 5 OF 6 SHEETS DT 517

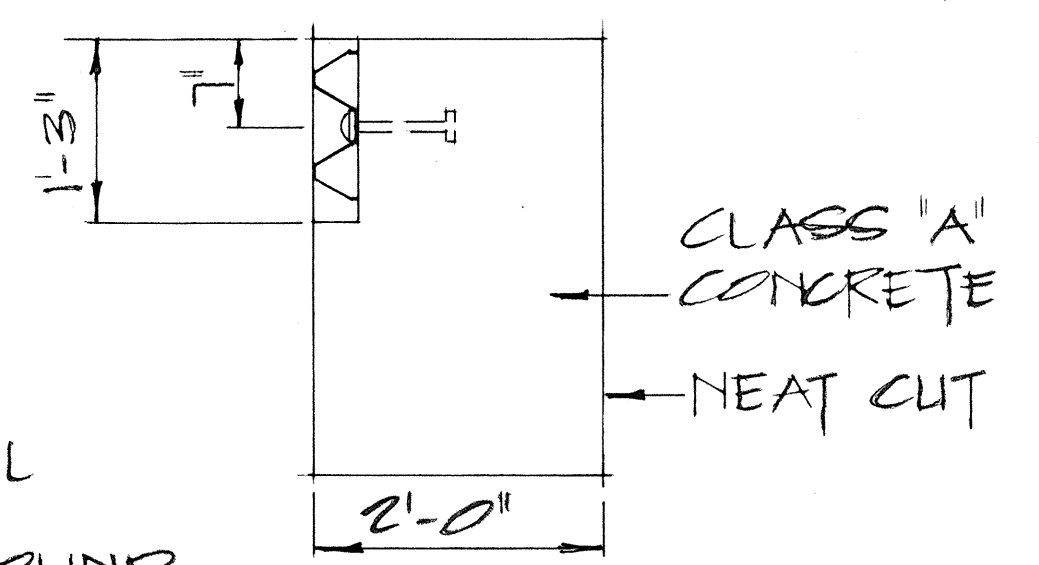
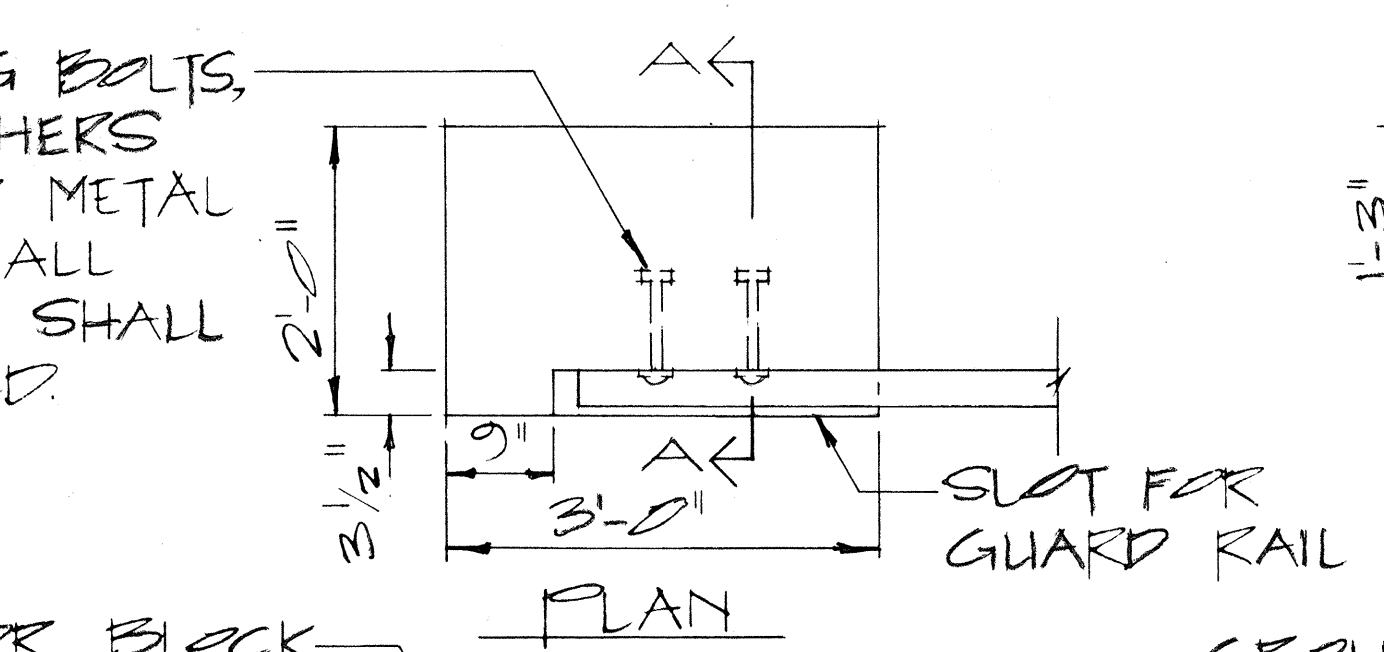
DATE	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	550A-01-70	1970	9	10

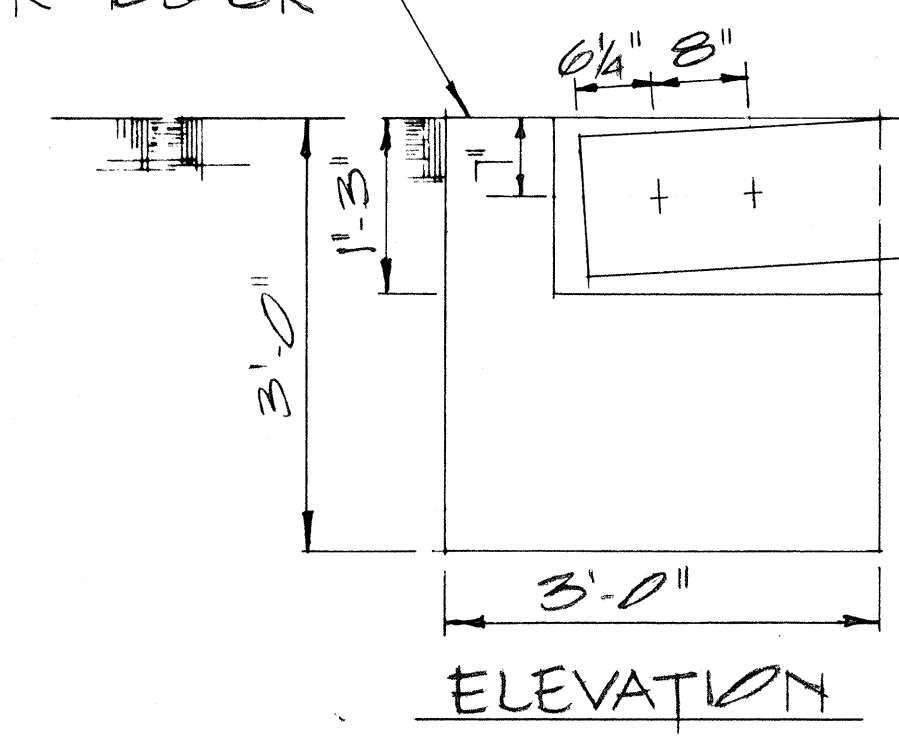


RAMP END ANCHORAGE
SCALE: 1/2" = 1'-0"

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



TOP OF ANCHOR BLOCK TO BE FLUSH 1/4" GROUND.



GROUND LINE

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: 3/4" = 1'-0"

APPROVAL RECOMMENDED:
Traffic Engineer
DATE: 12-23-69

APPROVED:
Assistant Chief, Engineering
DATE: 12-30-69

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. 6 OF 6 SHEETS

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