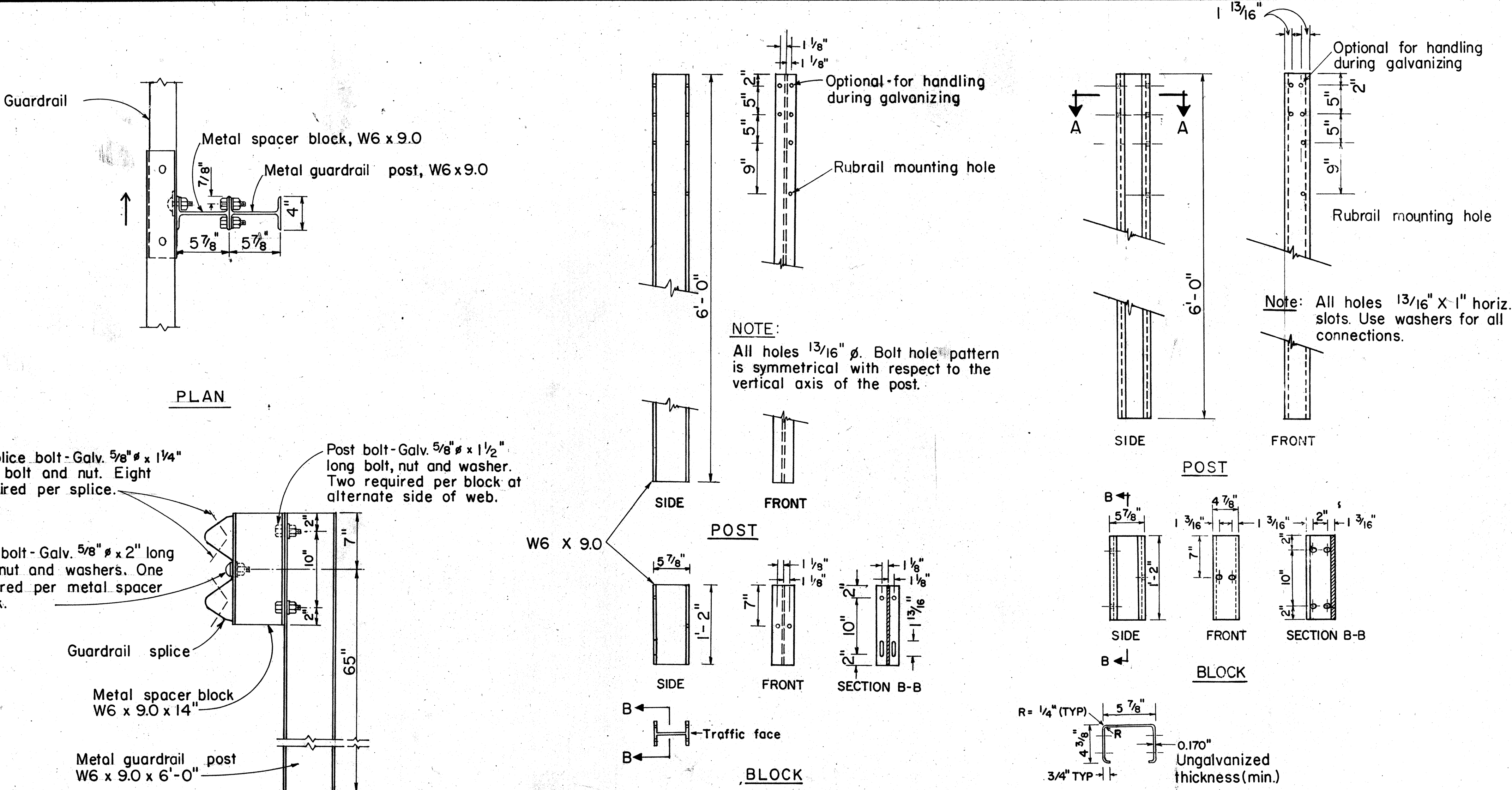


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RS-0750(7)	1984	8	32

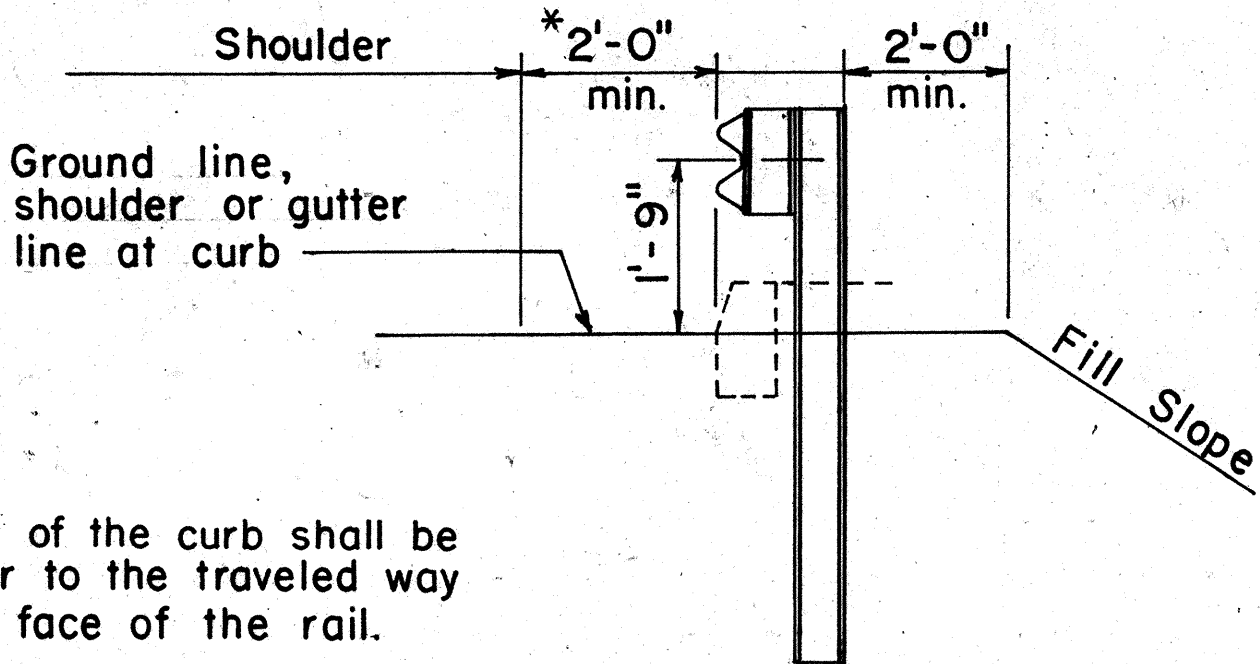
GENERAL NOTES

- Both of the alternate type posts may be used on any one project however, only one type of post shall be used in any single run of guardrail.
- All hardware, posts and blocks shall be galvanized. No punching, drilling or cutting will be permitted after galvanizing.
- Connection details for bent plate post and block shall be similar to the details shown for structural shape post, and block.
- Where conditions require, special post lengths in increments of 6 inches may be specified.
- For details of rail elements, bolts and nuts, see sheet DT 501.
- All fasteners, posts, blocks and rail elements shall conform to the latest edition and amendments of "A Guide to Standardized Highway Barrier Rail Hardware", a report prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee.



SINGLE METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

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

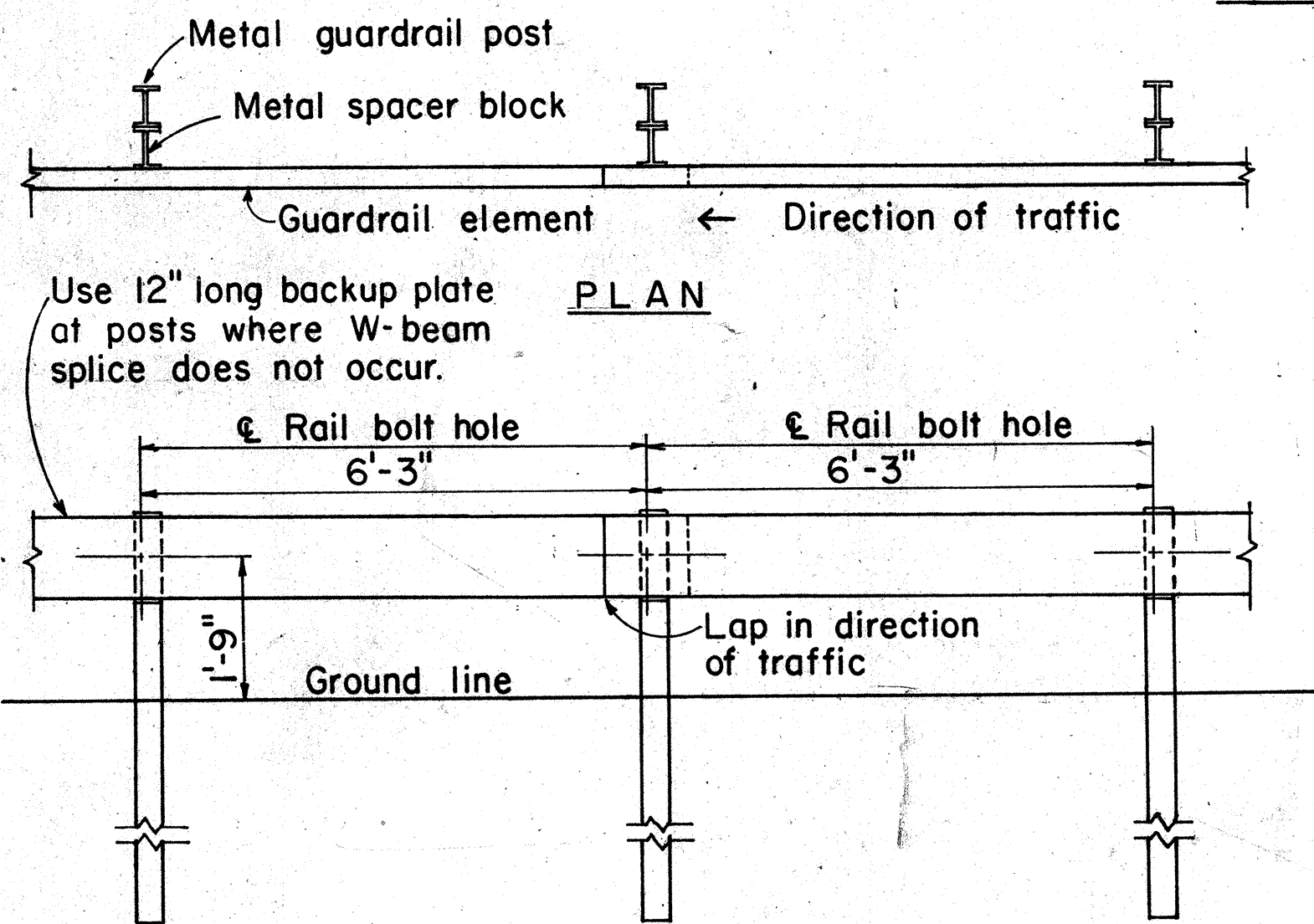


TYPICAL METAL GUARDRAIL DETAIL

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

STRUCTURAL SHAPE POST AND BLOCK

SCALE: 1" = 1'-0"



ELEVATION

METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

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

SECTION A-A N.T.S.

BENT PLATE POST AND BLOCK

SCALE: 1" = 1'-0"

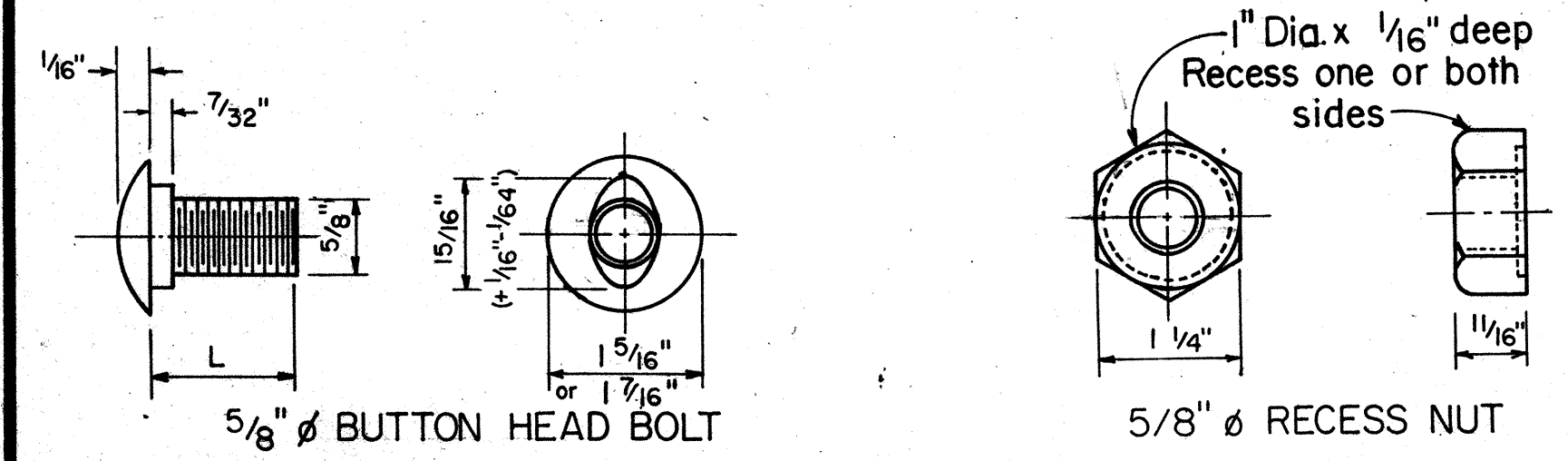
NO.	REVISION	APPROVED BY	DATE
1	Supersedes sht. DT 500 approved 12/30/69.	H.S.	9/22/82
2	Added General Notes No. 6	SD	9-28-83

APPROVAL RECOMMENDED:	9/7/82
<i>Erich Tanaka</i>	DATE
TRAFFIC ENGINEER	
APPROVED:	9/22/82
<i>Shirley Salschi</i>	DATE
ASSISTANT CHIEF, ENGINEERING	

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS METAL GUARDRAIL
Scale: As Shown July, 1982
SHEET NO. 1 OF 8 SHEETS DT 500

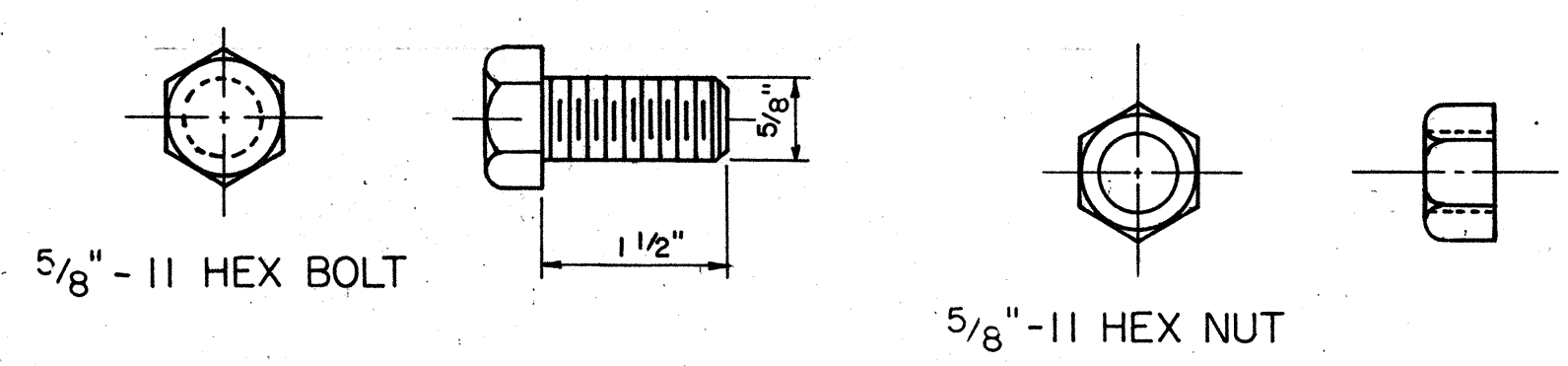
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RS-0750 (7)	1984	9	32

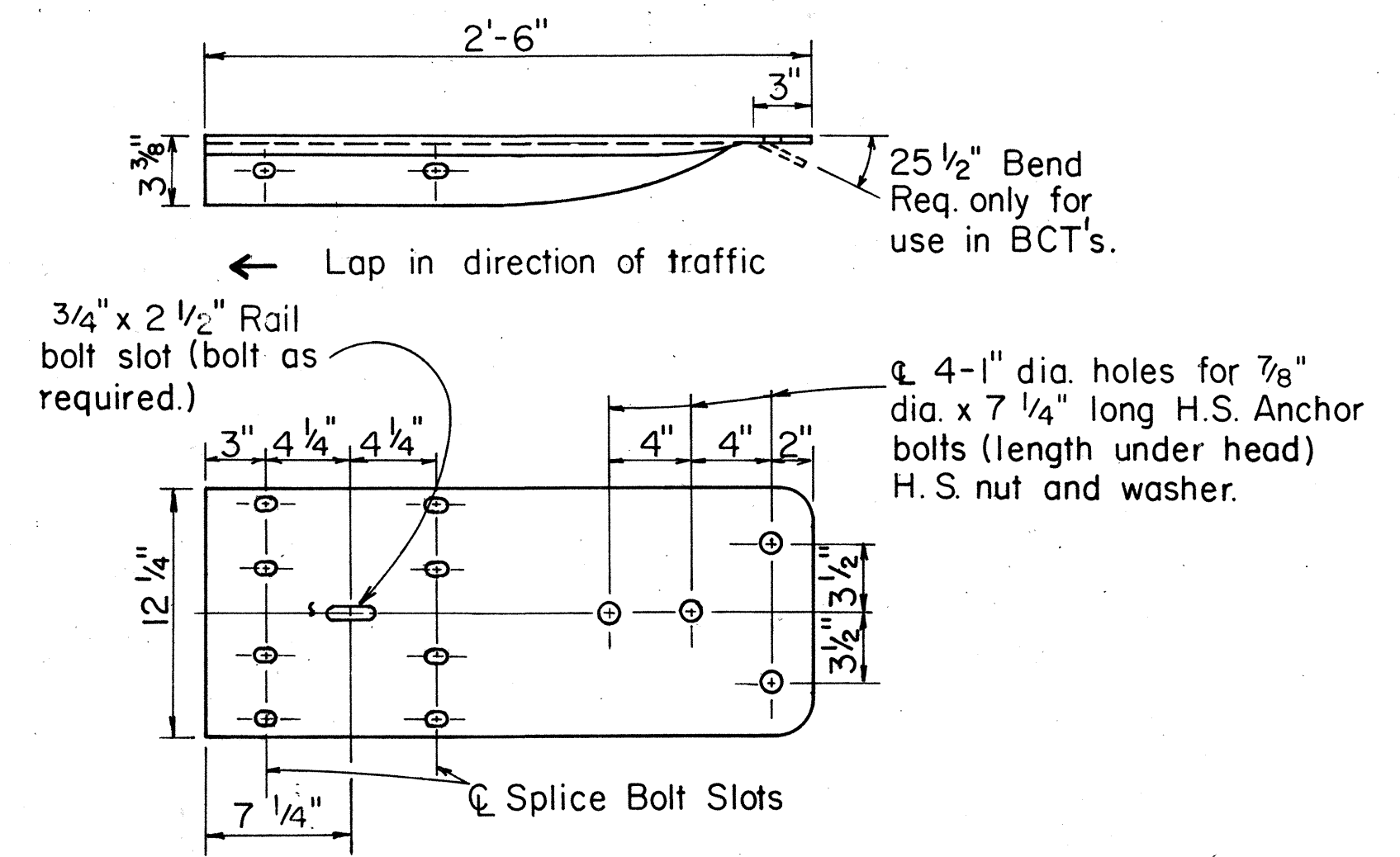


L	Thread Length	Intended Use
1 1/4"	Full length thread	Splice rail elements
2"	1 1/2" min. thread len.	Fasten rails to posts

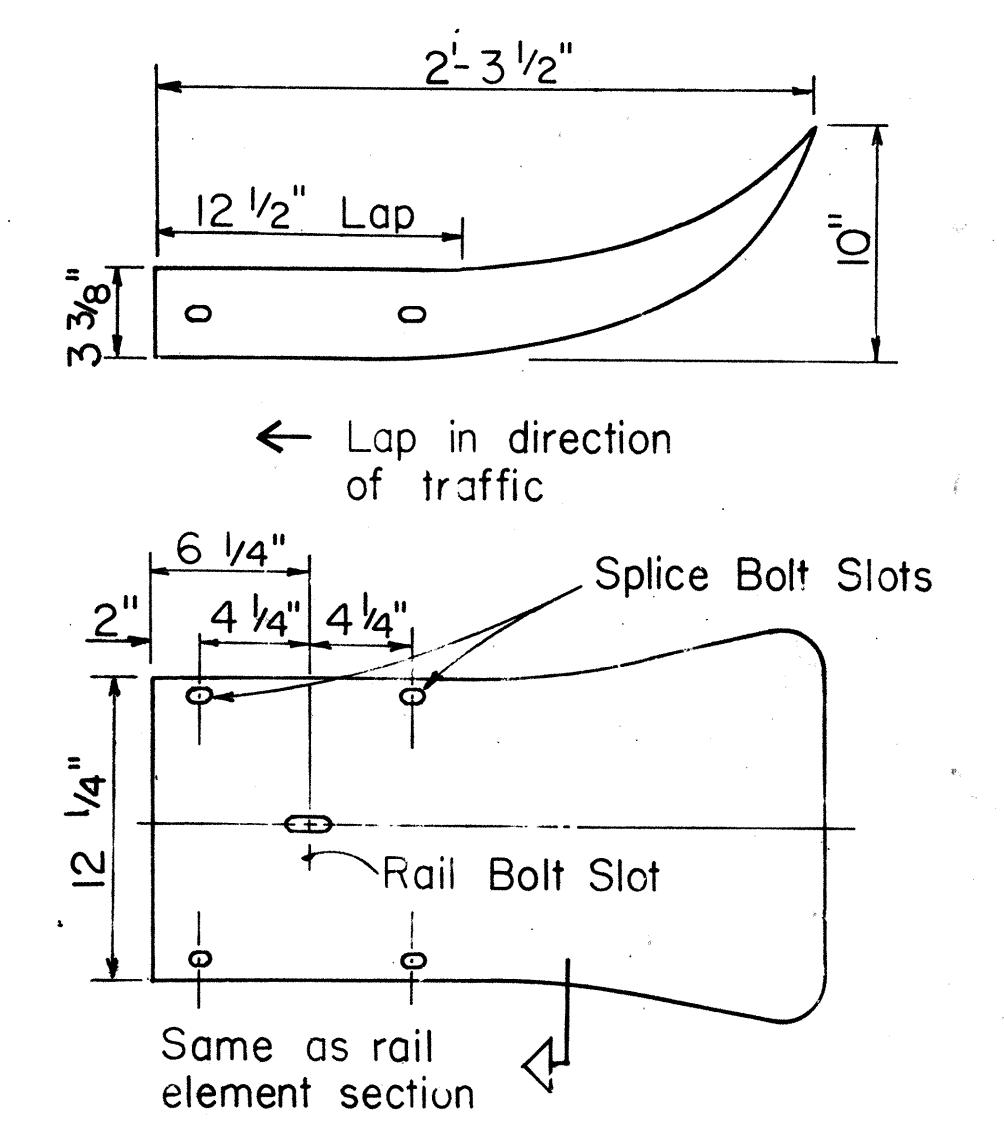
5/8" BUTTON HEAD BOLT AND RECESS NUT
Scale: NTS



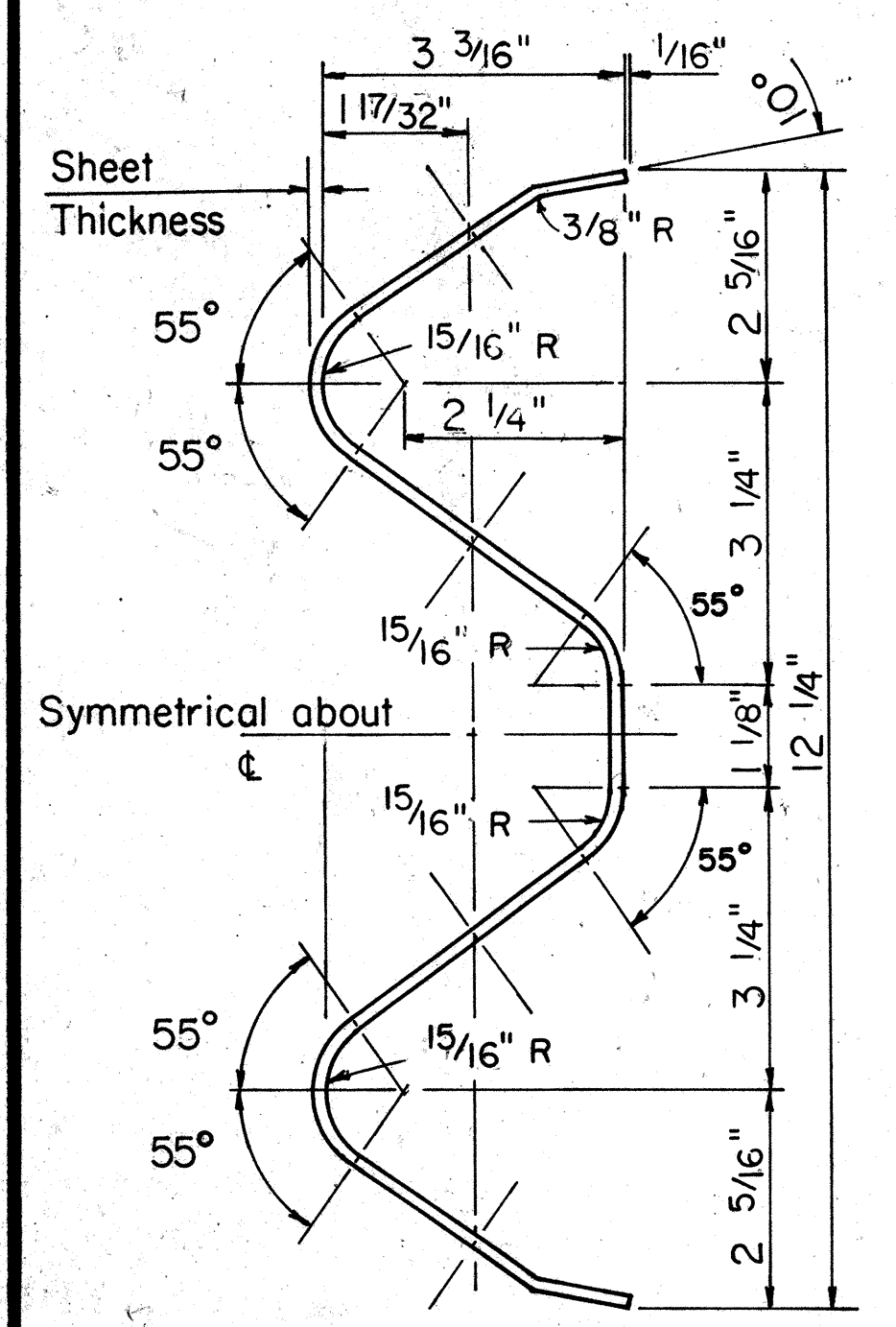
5/8" HEX POST BOLT AND NUT
Scale: N.T.S.



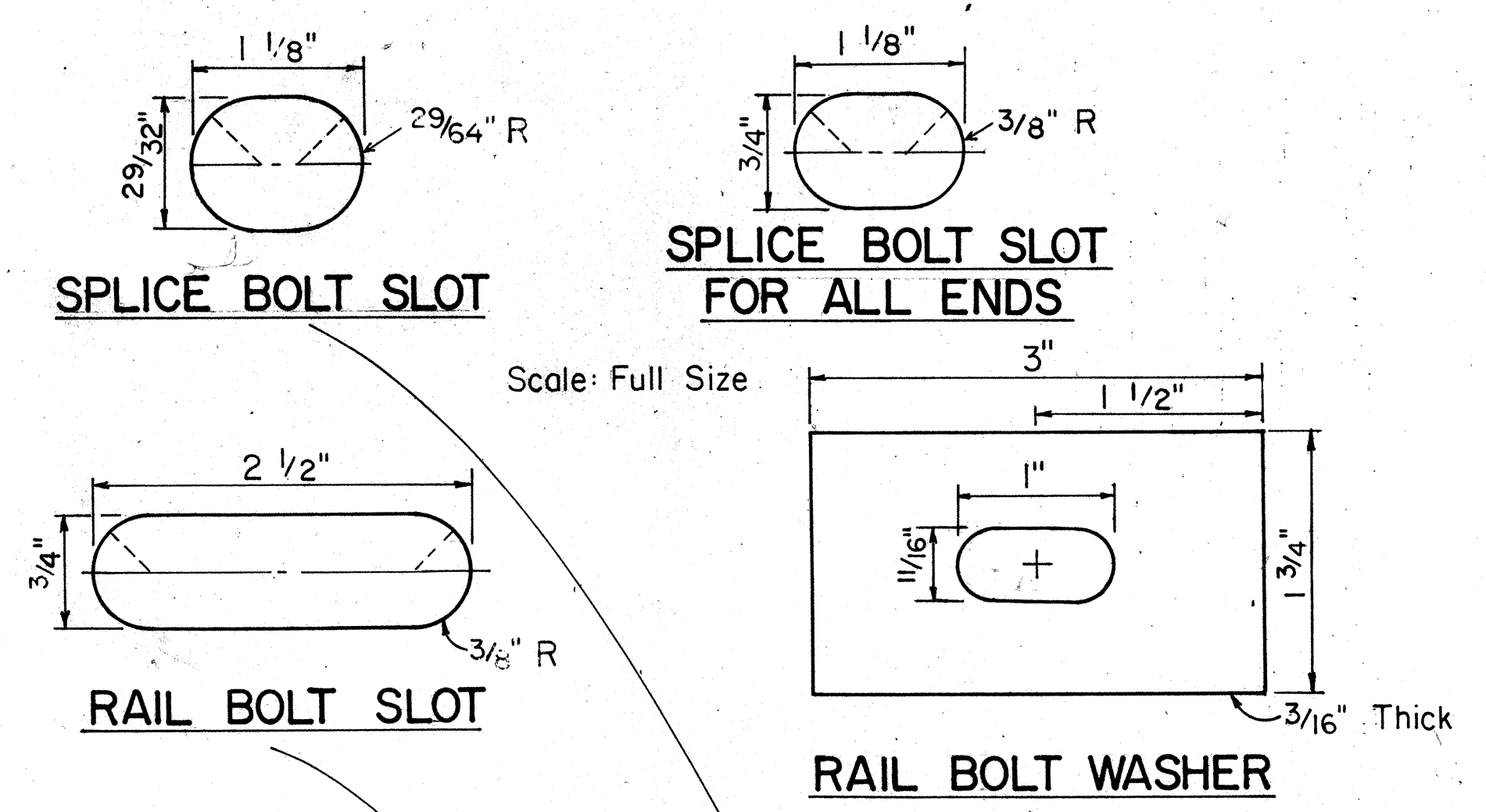
W BEAM TERMINAL CONNECTOR
Scale: 1 1/2" = 1'-0"



W BEAM END SECTION (FLARED)
Scale: 1 1/2" = 1'-0"



RAIL ELEMENT SECTION
Scale: 6" = 1'-0"

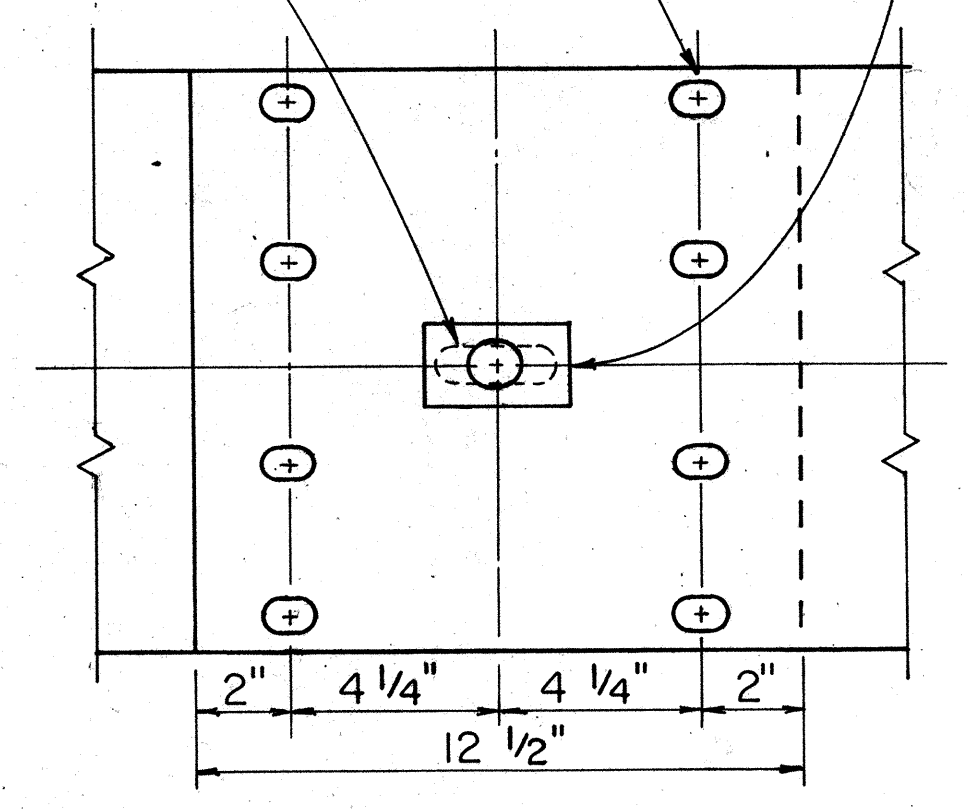


SPLICE BOLT SLOT

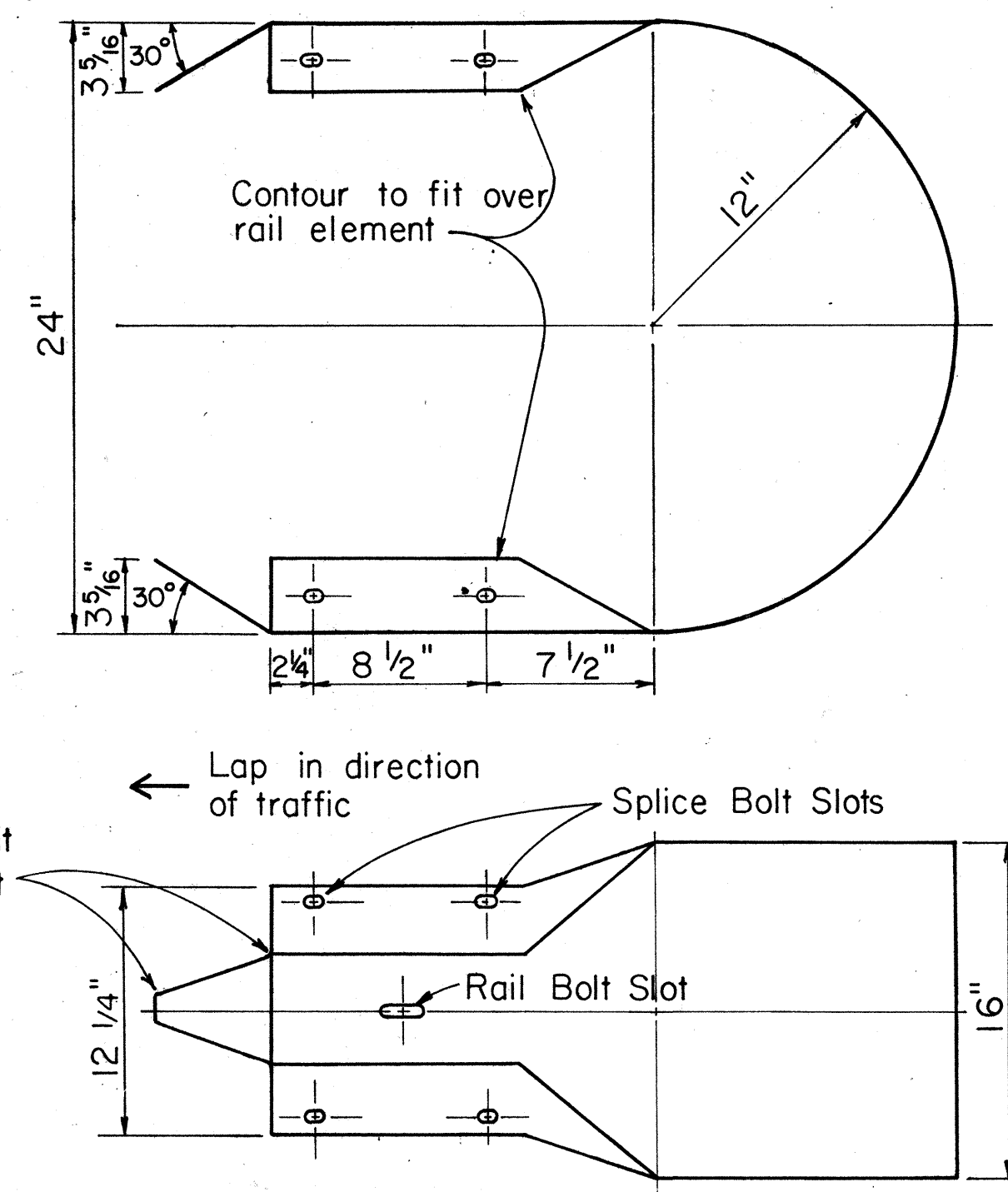
SPLICE BOLT SLOT FOR ALL ENDS

RAIL BOLT SLOT

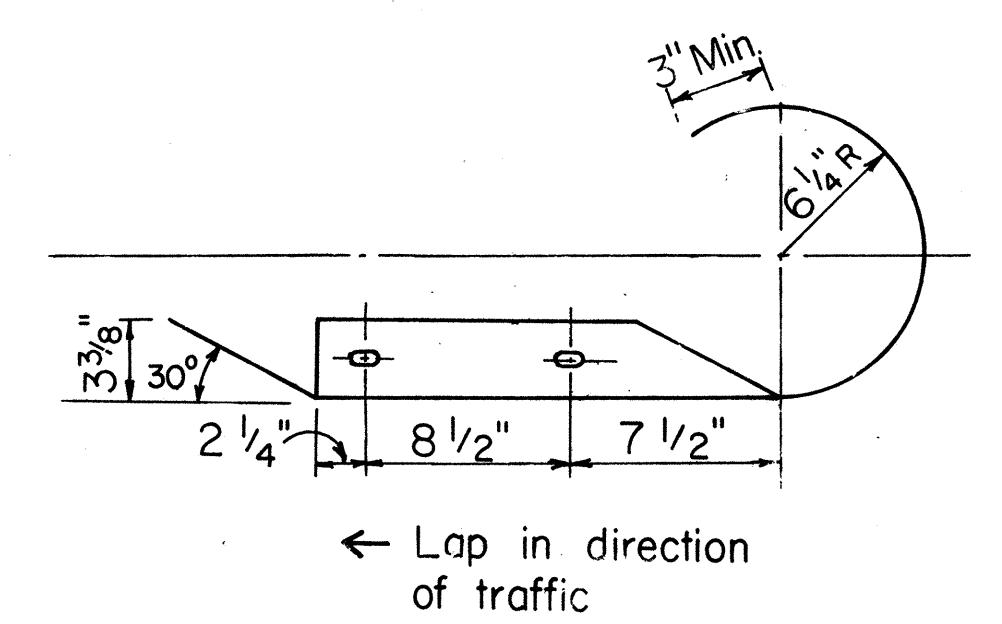
RAIL BOLT WASHER



RAIL SPLICE
Scale: 3" = 1'-0"



W BEAM END SECTION (BUFFER)
Scale: 1 1/2" = 1'-0"



W BEAM END SECTION (ROUNDED)
Scale: 1 1/2" = 1'-0"

APPROVAL RECOMMENDED:
Erich Tanaka 9/20/82
TRAFFIC ENGINEER DATE

APPROVED:
Harold S. S. S. 9/22/82
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes sht. DT 501 approved 12/30/69	Hf.	9/22/82

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARDRAIL

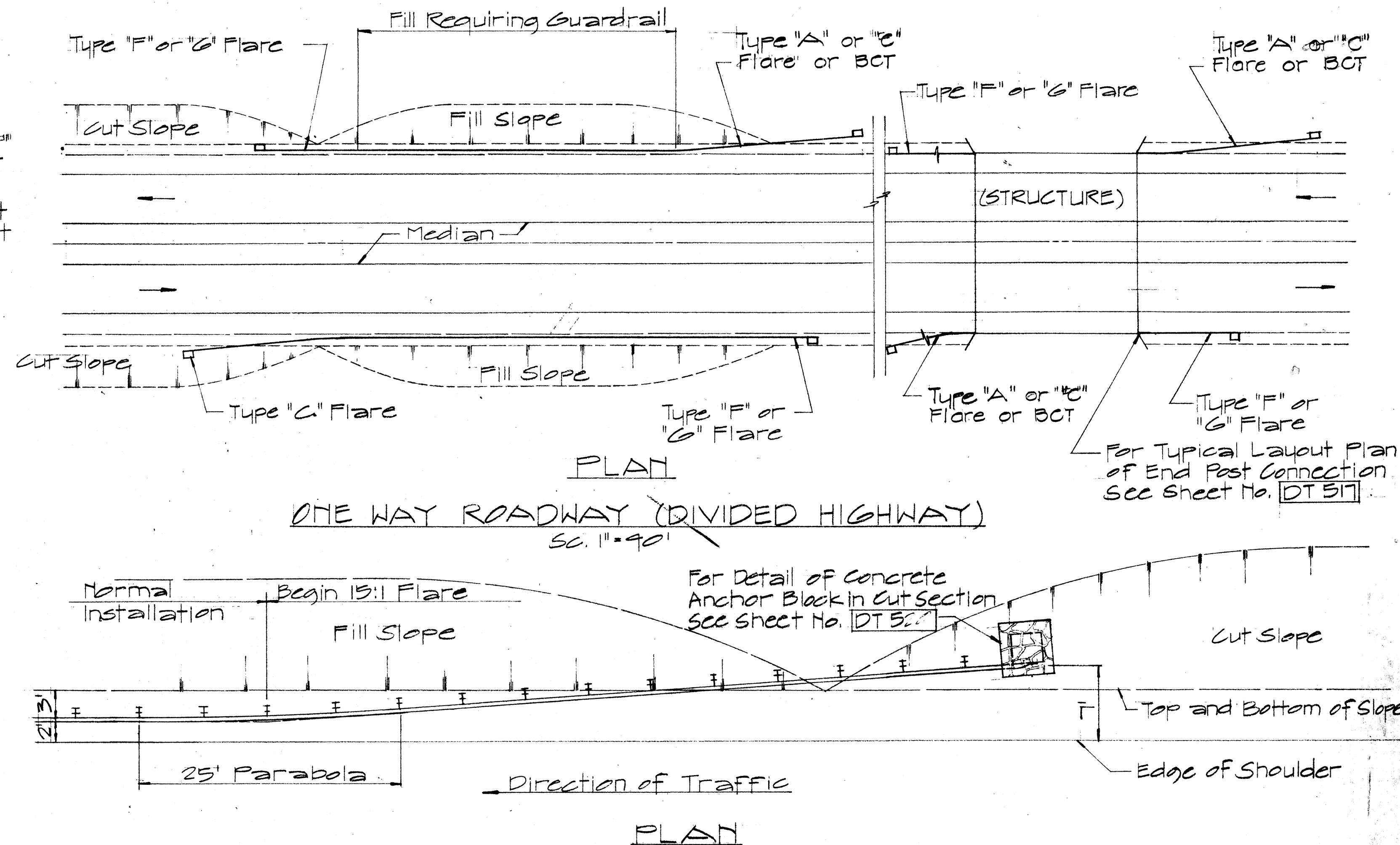
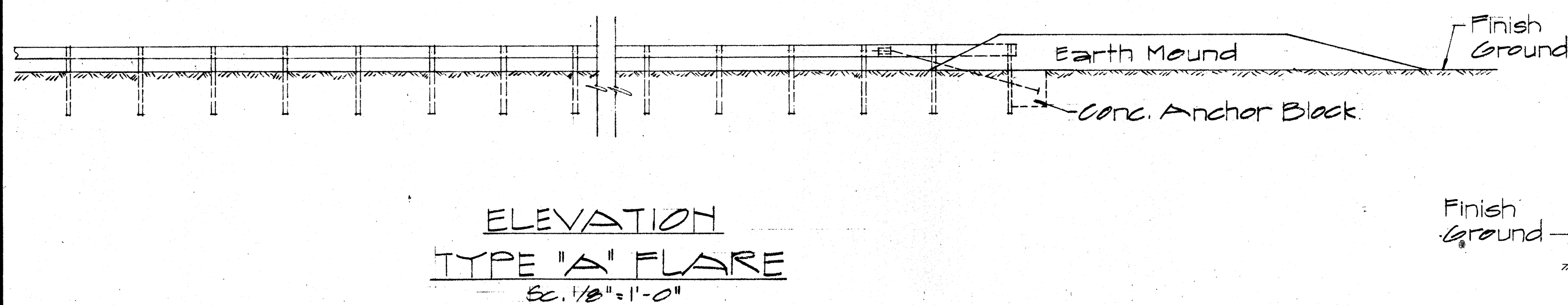
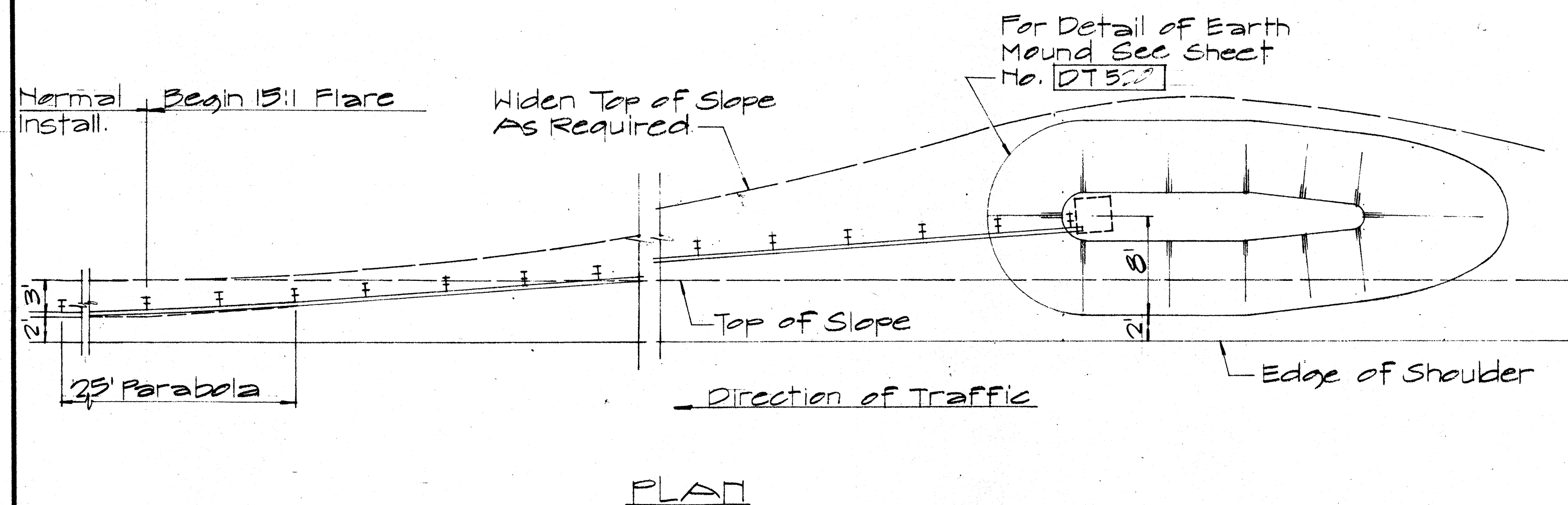
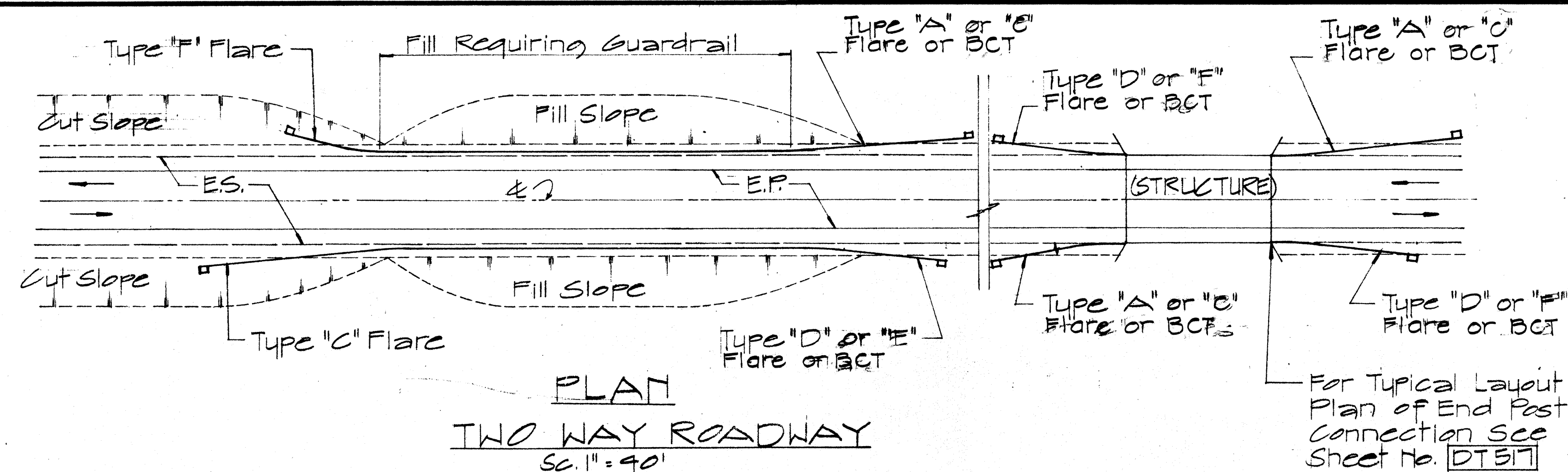
Scale: As Noted
July, 1982
SHEET NO. 2 OF 8 SHEETS DT 501

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DRAWN BY		
TRACED BY		
NOTED BY		
CHECKED BY		
No.		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RS 0750(1)	1984	10	32

NOTE:

1. Metal guard rail connection to structures requires End Post Connection. See structure plans.
2. For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 519



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

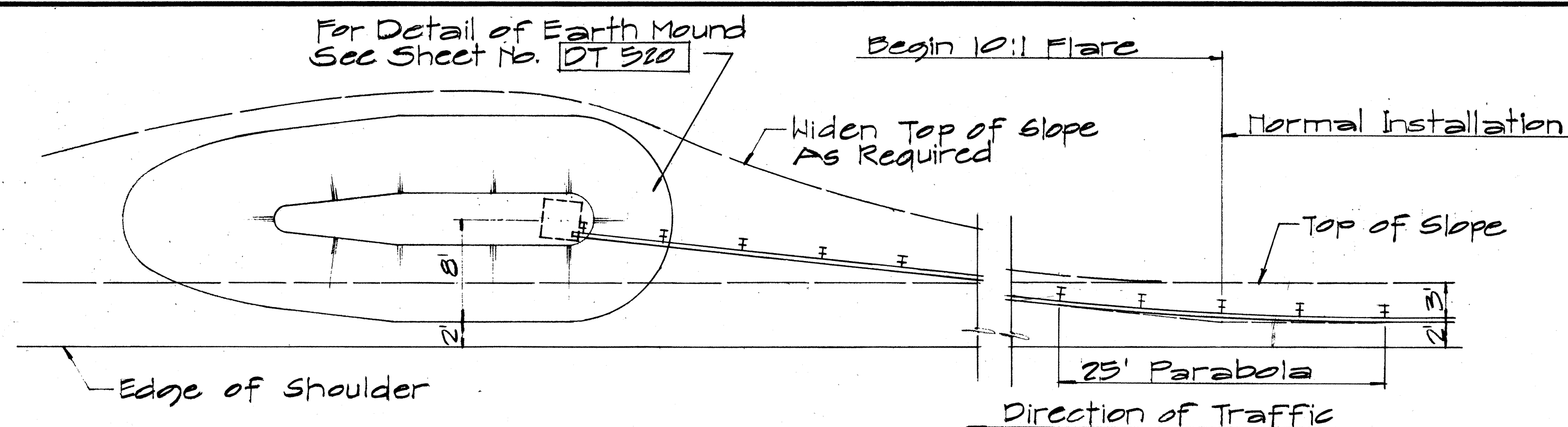
APPROVED:
W. S. S. S. 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

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

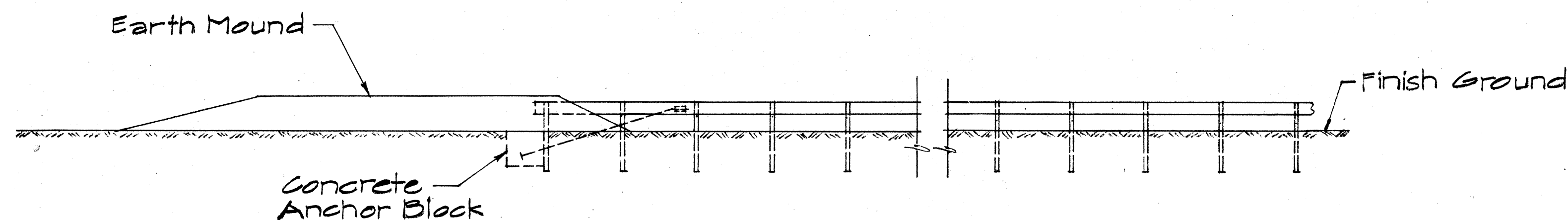
NO.	REVISION	APPROVED BY	DATE
1	Delete Type "B" Flare and Type "E" Flare	H.T.	6/15/82

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 8 SHEETS DT 516

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RS0750(1)	1984	11	32

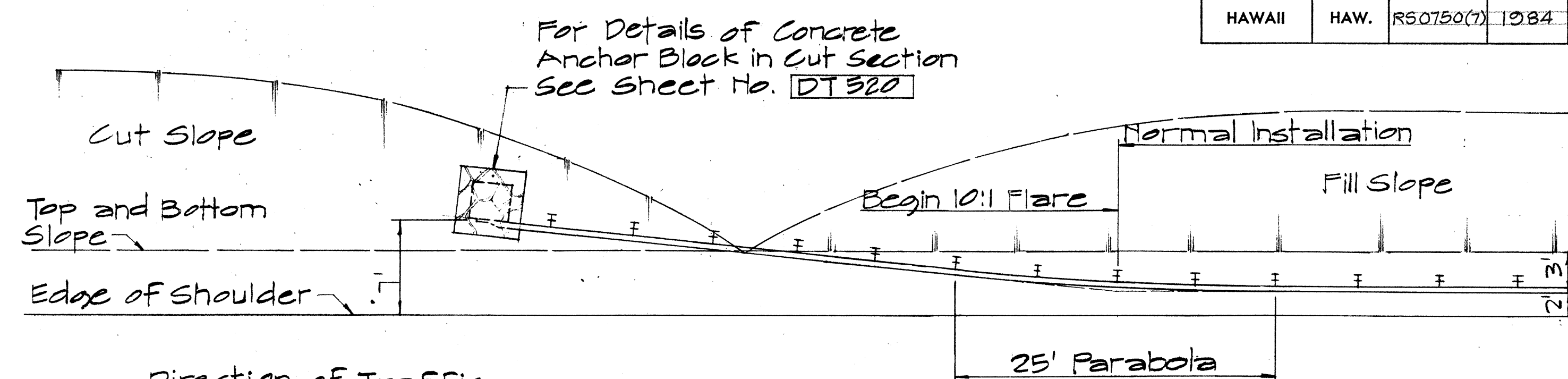


PLAN

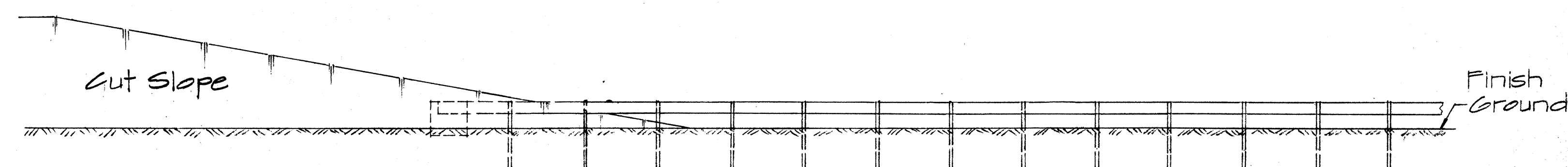


ELEVATION

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

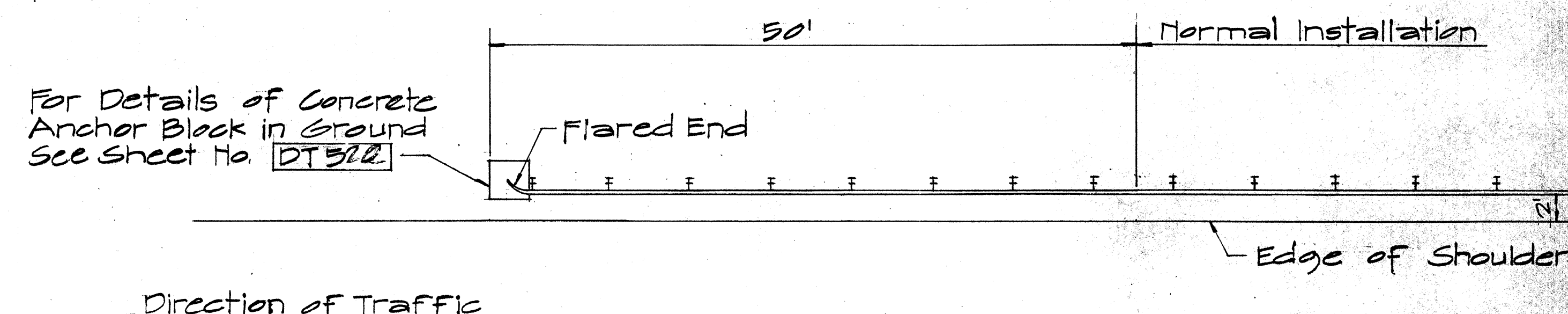


PLAN

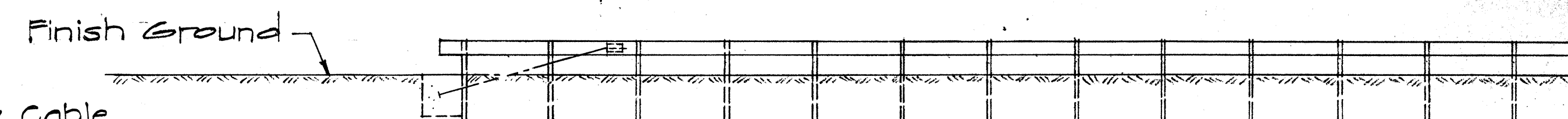


ELEVATION

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



PLAN



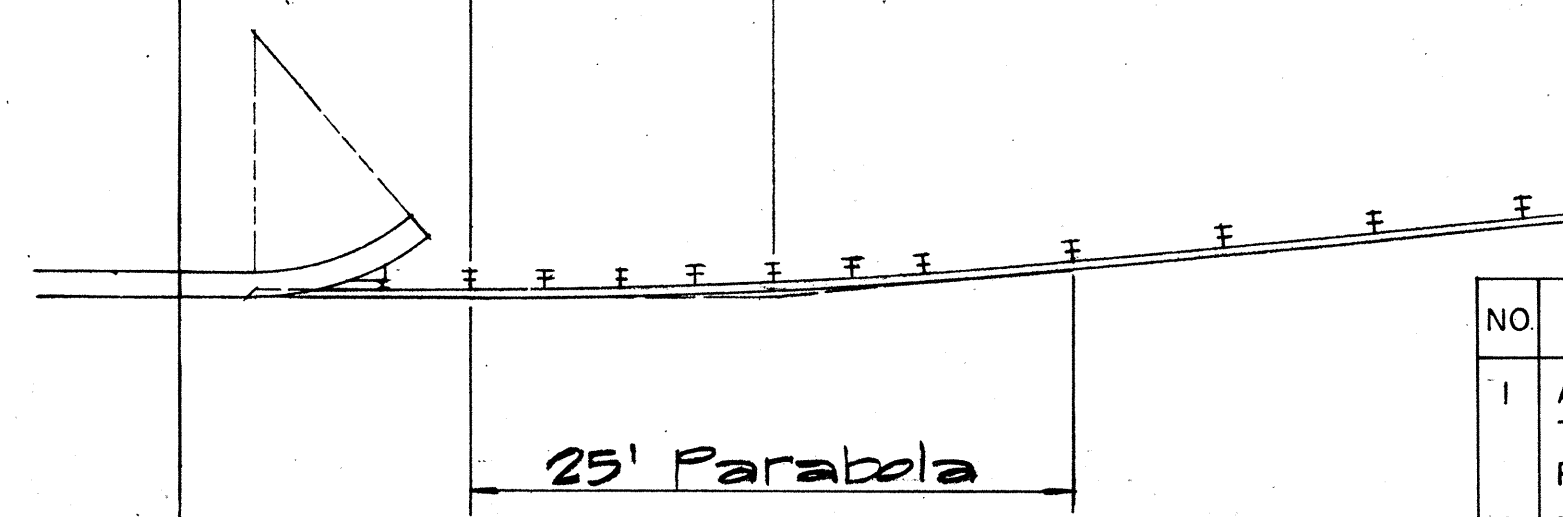
ELEVATION

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

NOTE:
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 519

Typical Conc. Parapet 1'-2 3/4"

Begin Type "A", "C", "D" or "F" Flare or BCT



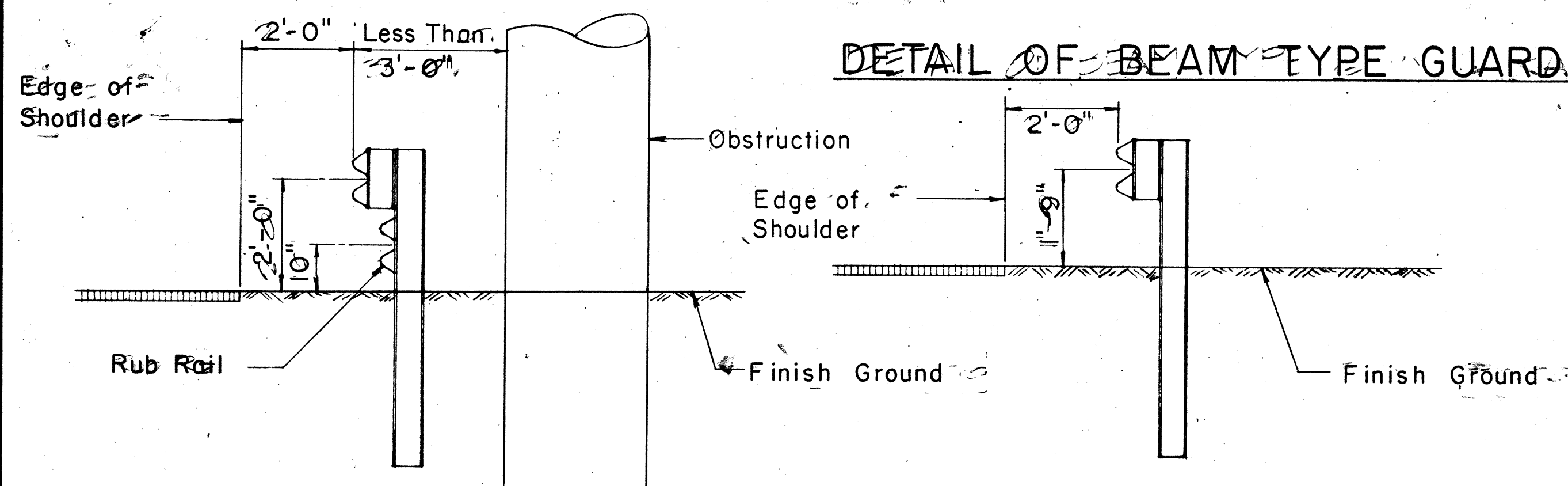
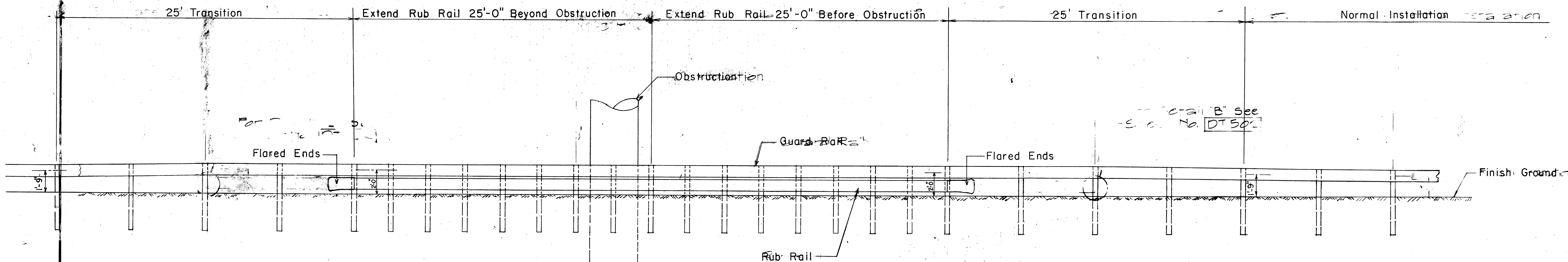
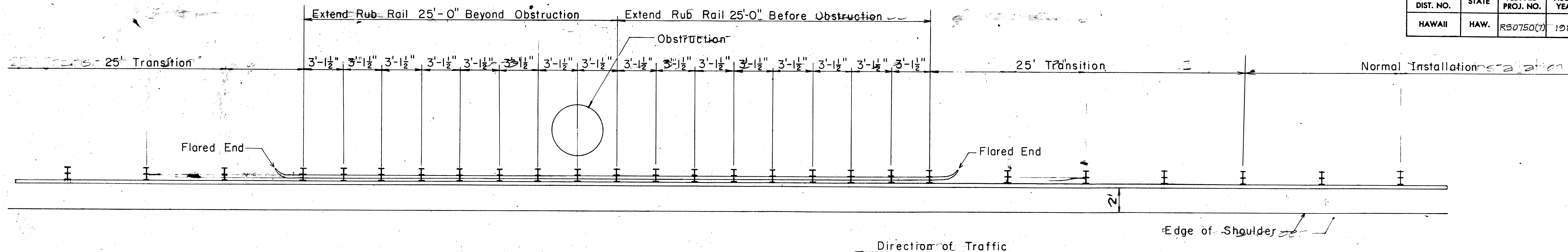
TYPICAL LAYOUT PLAN OF
END POST CONNECTION
Sc. 1/8" = 1'-0"

NO.	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.C.	4-12-72
2	Delete Type "B" Flare and Type "E" Flare	H.C.	6-15-73

APPROVAL RECOMMENDED:
Eishi Tanaka 12/29/69
TRAFFIC ENGINEER DATE
APPROVED:
Wm. S. Sal 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

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 8 SHEETS DT 517

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	R50750(7)	1984	12	32



TYP. SEC. AT OBSTRUCTION

TYP. SEC. AT NORMAL INSTALLATION

TYP. GUARD RAIL SECTIONS

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

APPROVAL RECOMMENDED:

Eishi Tanaka 12/29/80
TRAFFIC ENGINEER DATE

APPROVED:

Steve A. A. A. 12-30-80
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Added Additional Guard Rail Posts and Installed Flared Ends at end of Rub Rail	H.T.	5/16/80

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAIL

BEAM TYPE GUARD RAIL WITH
RUB RAIL AT OBSTRUCTION
SHOULDER INSTALLATION

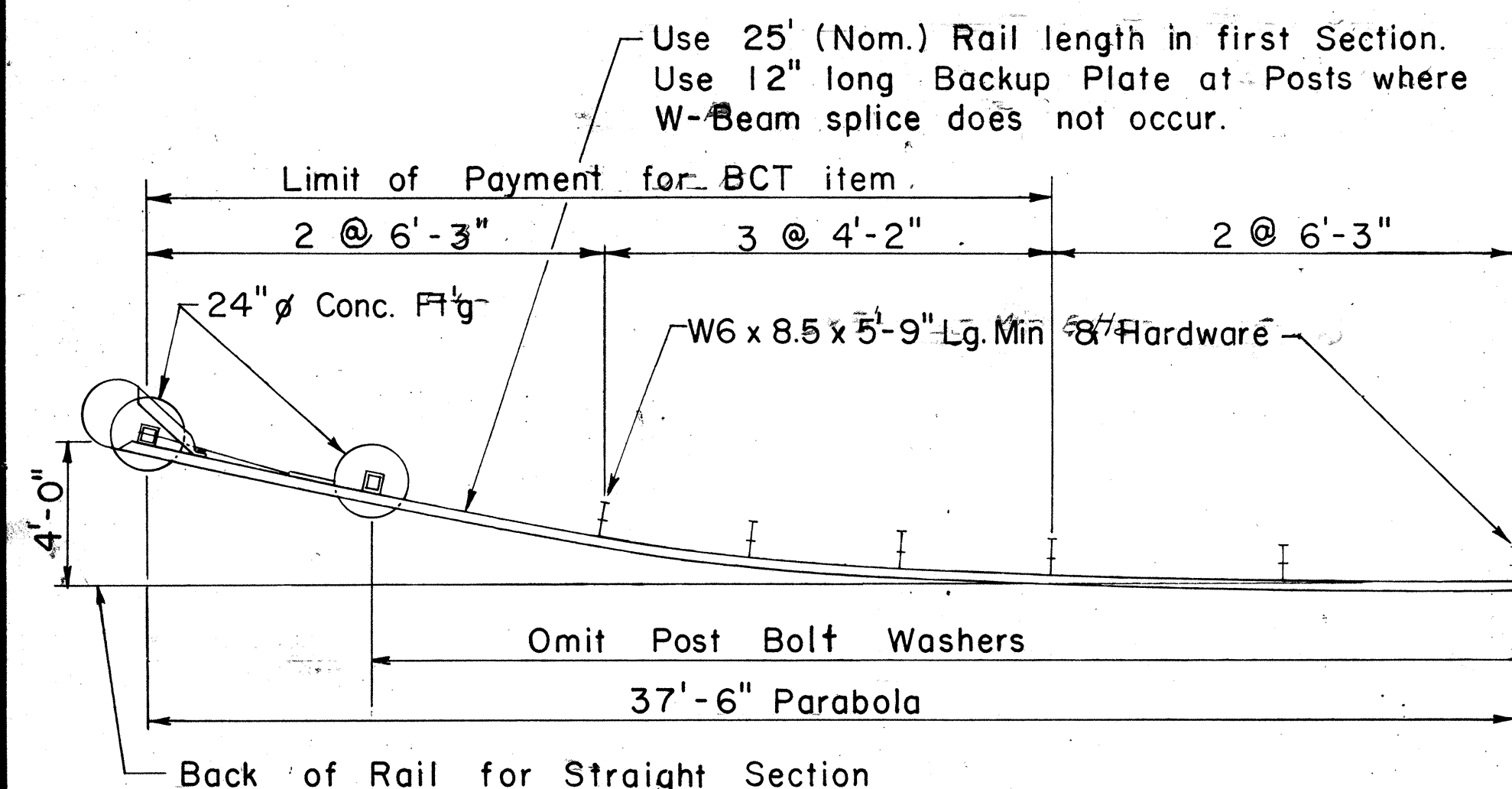
SCALE: AS SHOWN DATE: JUNE, 1969

SHEET No. 5 OF 8 SHEETS DT 518

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	R50150(1)	1984	13	32

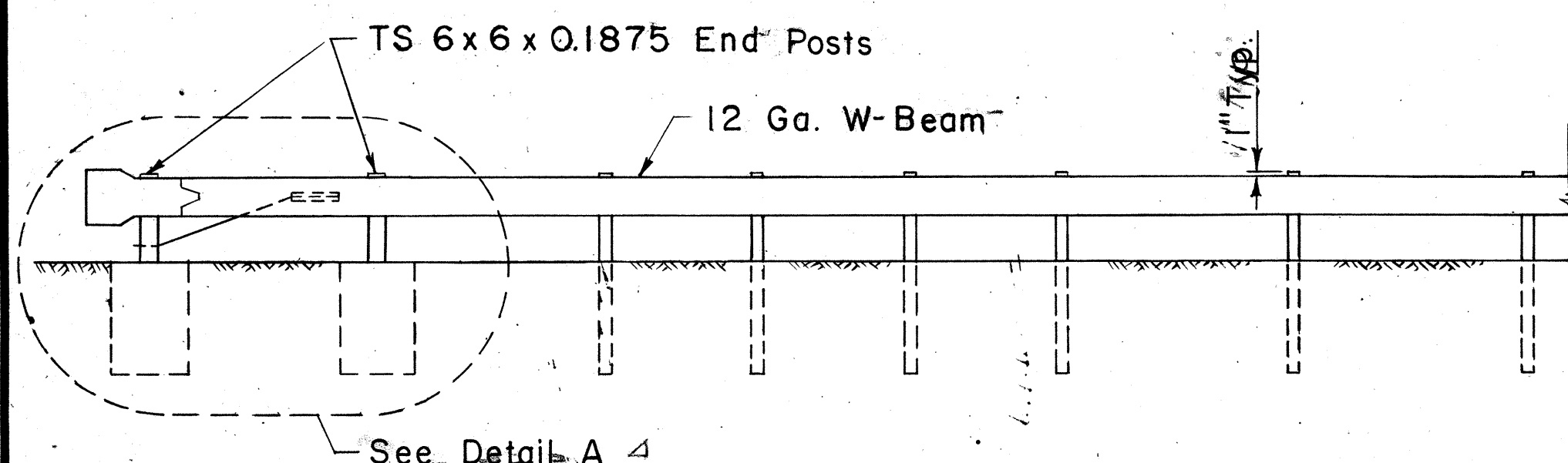
NOTES:

1. Anchor Plate and Anchor Cable Assembly (Standard Swaged Fitting and Stud). See Standard Detail Sheet No. DT 520.
2. Other Anchor Cable Assemblies may be used. Minimum breaking strength of assembly should be 40,000 lbs.
3. Second Terminal Post does not require holes to accommodate Anchor Cable.
4. Slip Base Load shall be controlled with a Calibrated Torque Wrench - Torque 155 - 170 ft. lbs.
5. Concrete shall be Class A.
6. B.C.T. Hardware has been superseded by "A Guide Standardized Highway Barrier Rail Hardware," A report prepared and approved by the AASHTO-AGC-ARTBA joint cooperation committee. All hardware shall conform to above mentioned publication and as revised from time to time.



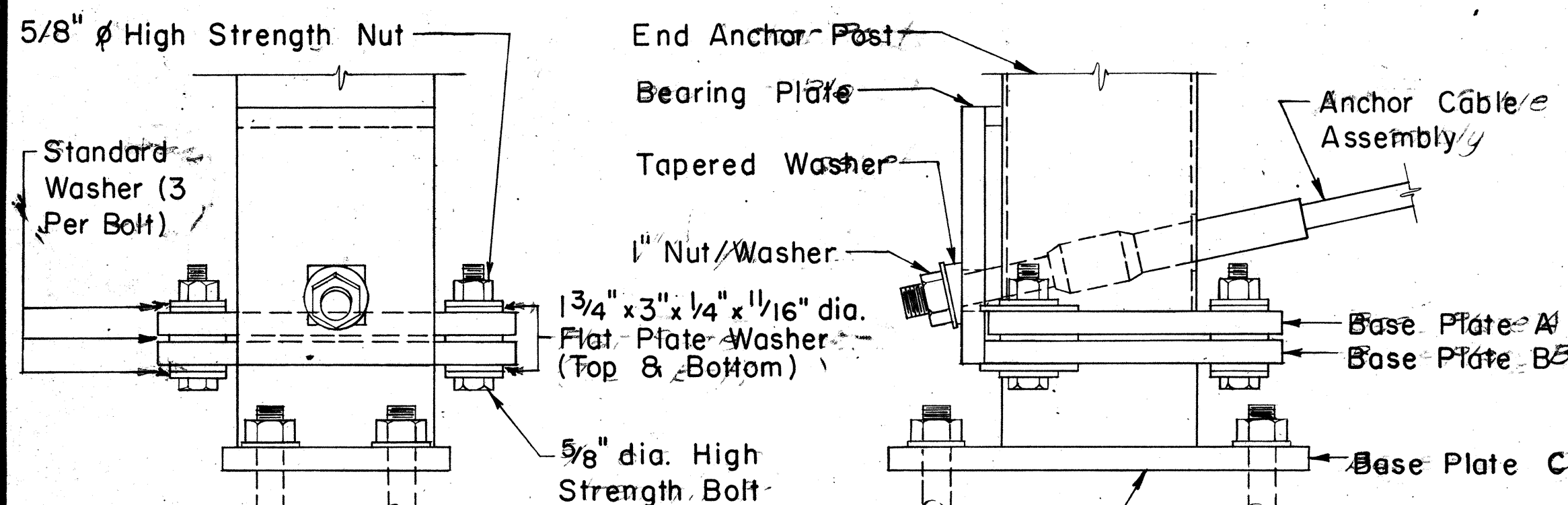
PLAN

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



ELEVATION

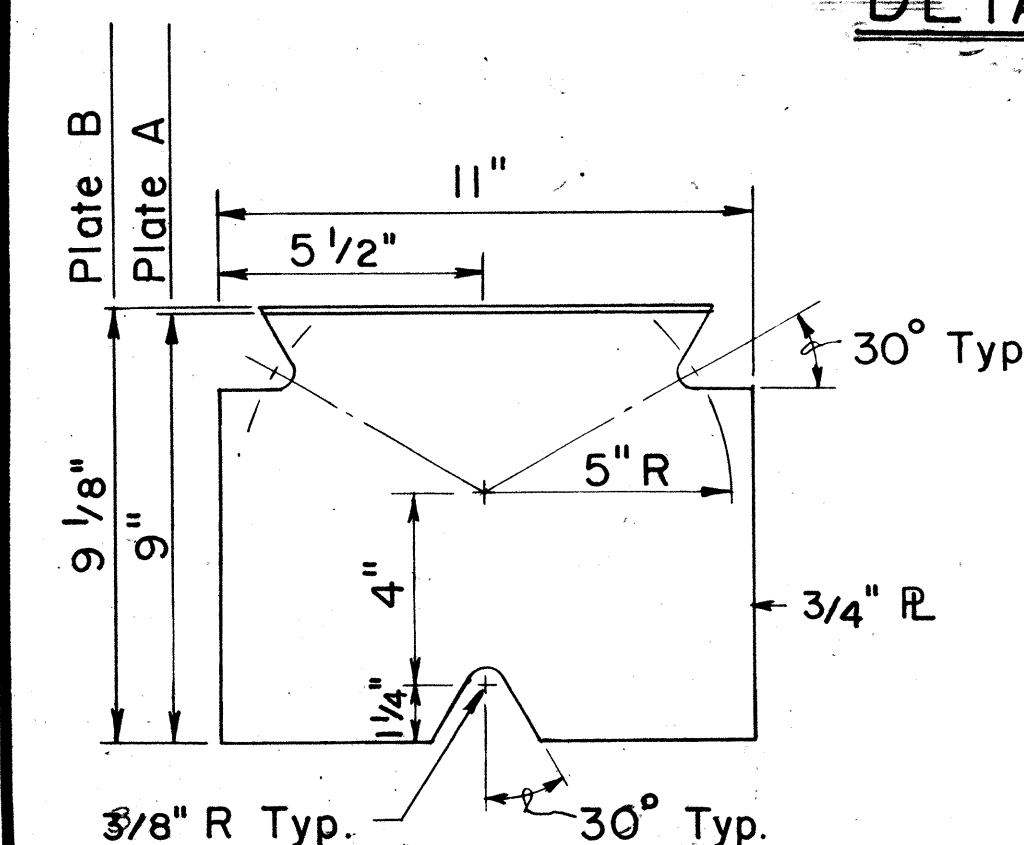
Scale: 1/4" = 1'-0"



SIDE ELEVATION

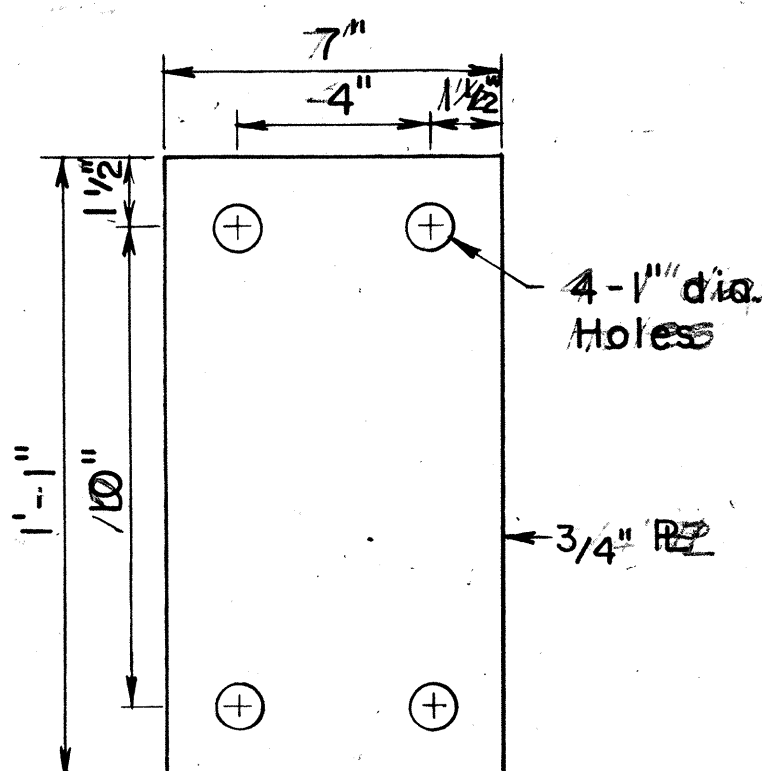
FRONT ELEVATION

DETAIL B



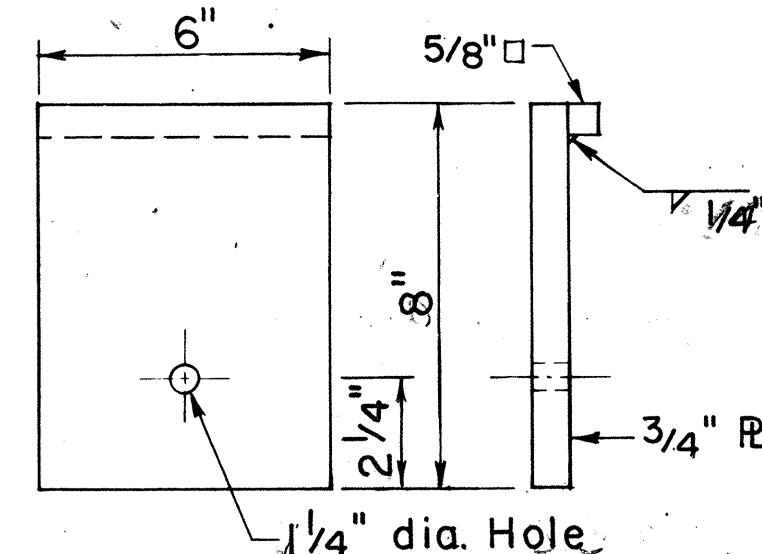
BASE PLATES A & B

Scale: 3" = 1'-0"



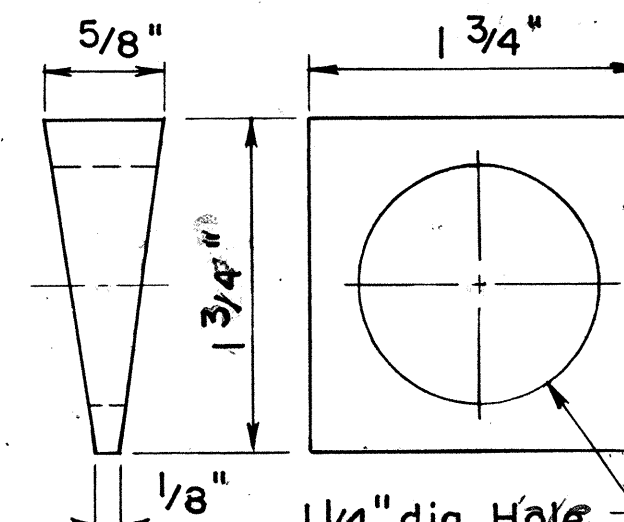
BASE PLATE C

Scale: 3" = 1'-0"



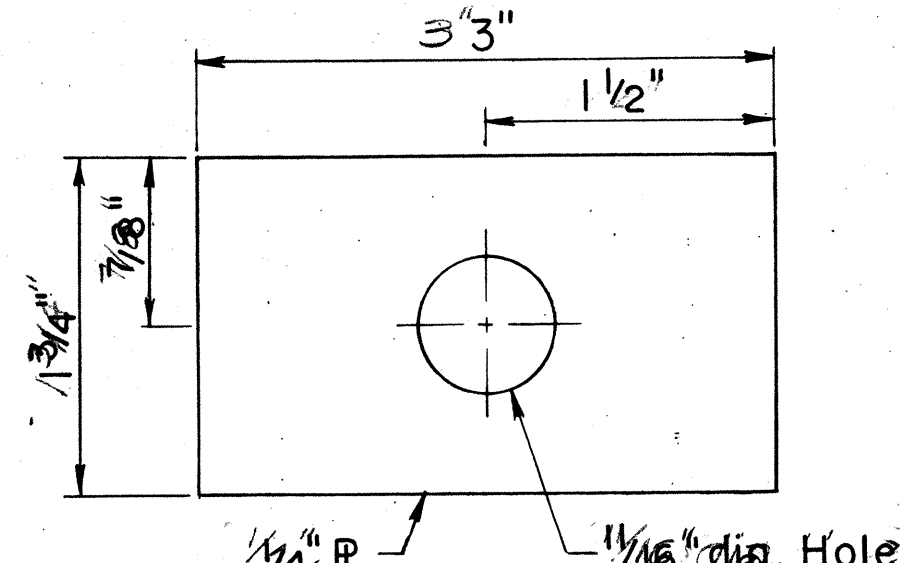
BEARING PLATE

Scale: 3" = 1'-0"



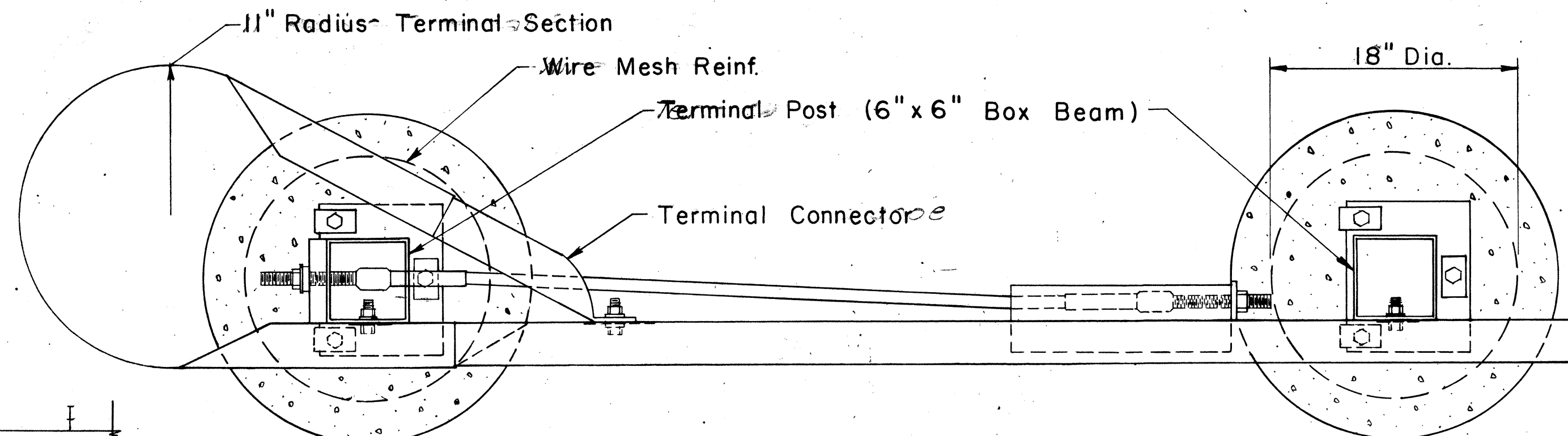
TAPERED WASHER

Scale: Full Size

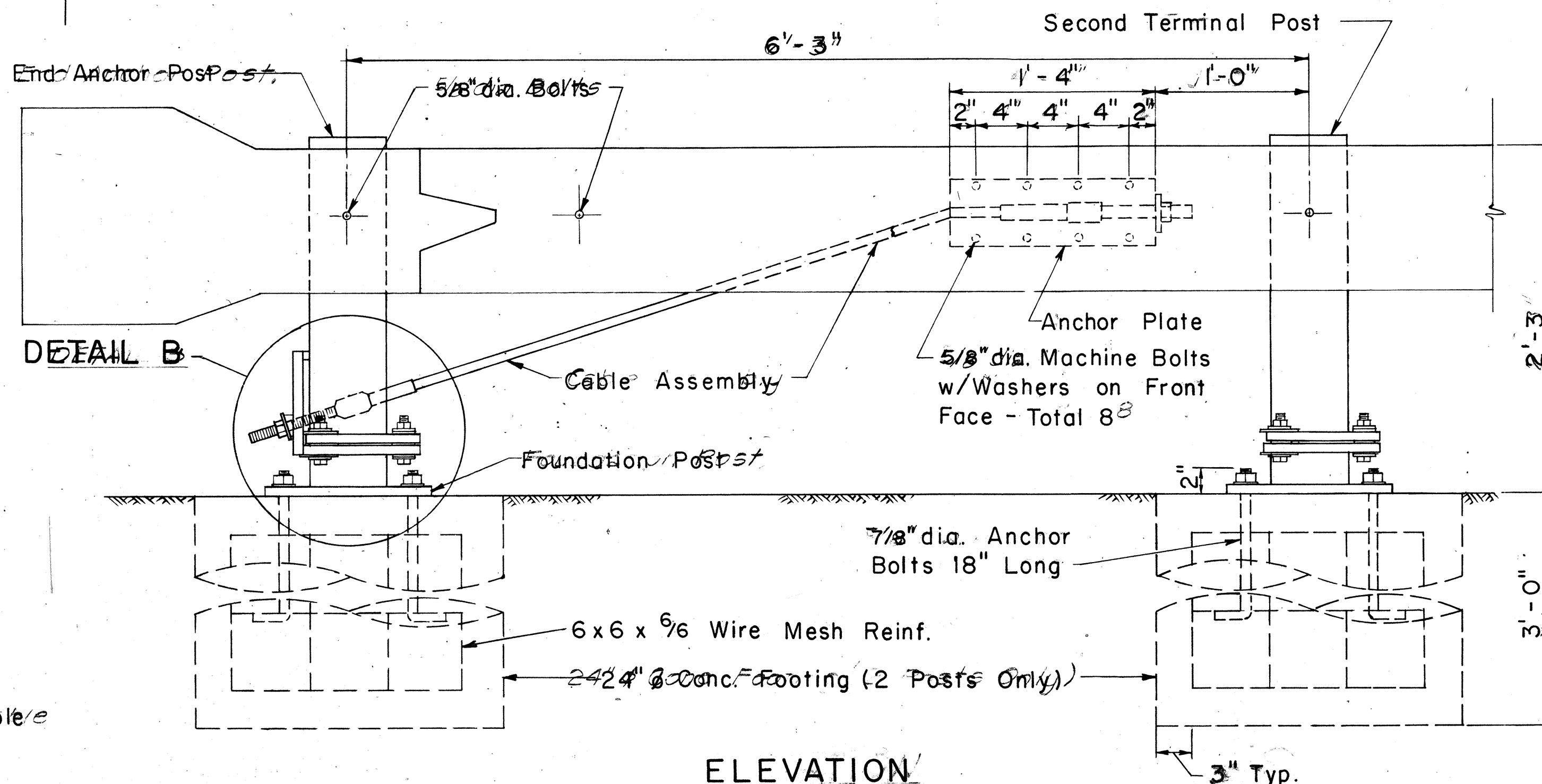


FLAT PLATE WASHER

Scale: Full Size



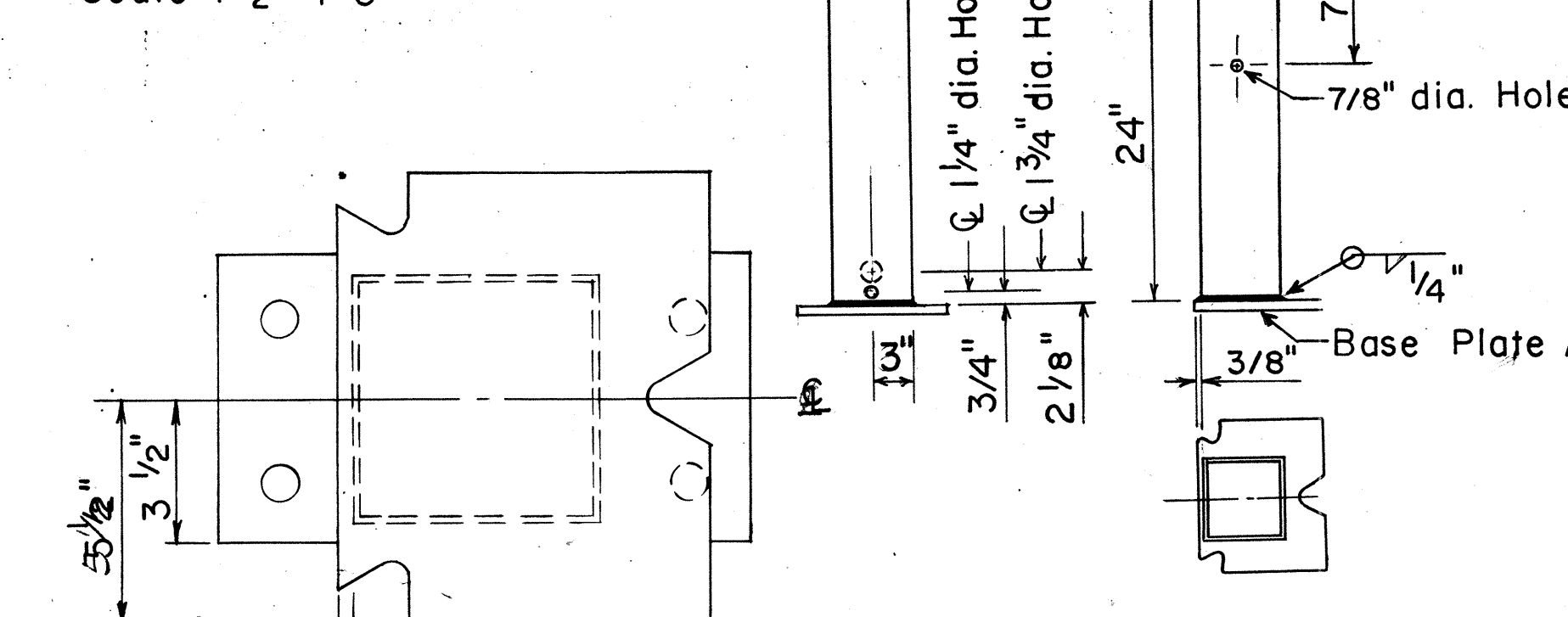
PLAN



ELEVATION

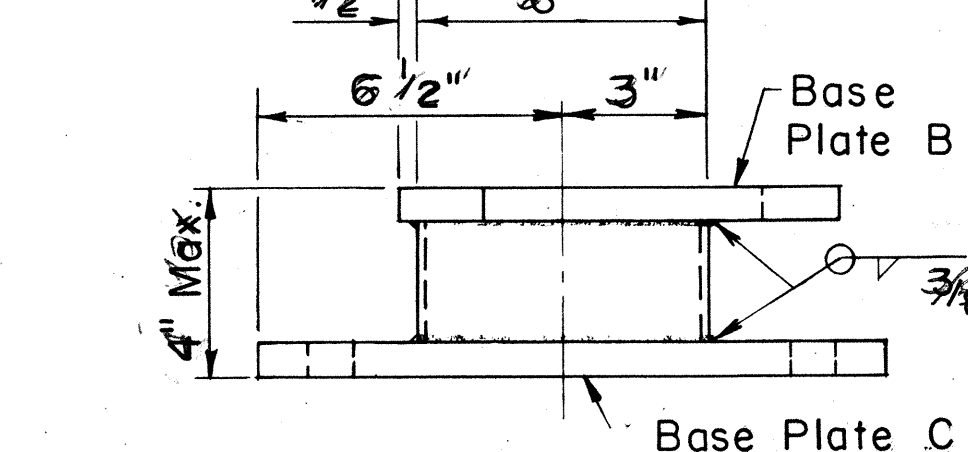
DETAIL A

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



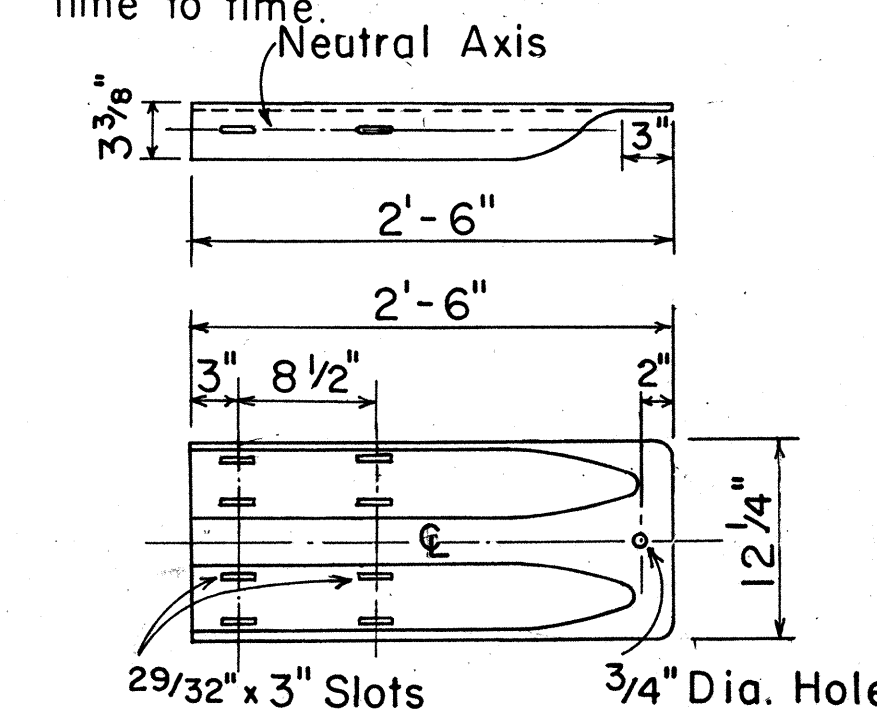
TERMINAL POST

Scale: 1" = 1'-0"



FOUNDATION POST

Scale: 3" = 1'-0"



TERMINAL CONNECTOR

Scale: 1" = 1'-0"

APPROVAL RECOMMENDED:

Eishi Tanaka
TRAFFIC ENGINEER

6/14/78
DATE

APPROVED:

Harbor Zafishu
ASSISTANT CHIEF, ENGINEERING

6/15/78
DATE

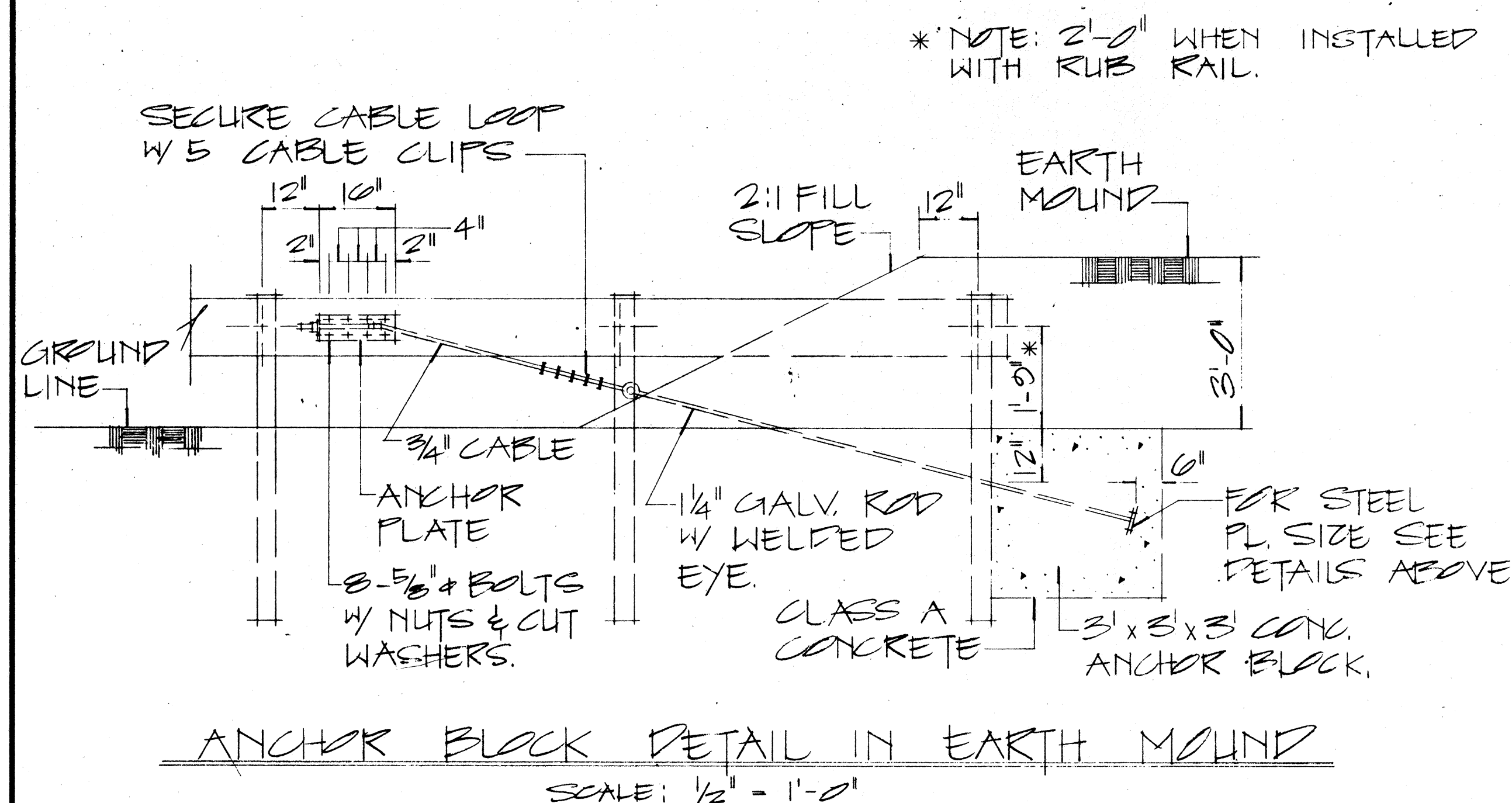
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 519 Approved 12/30/69	H.T.	6/15/78
2	Added Note 6	H.T.	12/17/80

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD DETAIL	
BREAKAWAY CABLE TERMINAL (BCT)	
Scale: As Shown	Date: June 1978
SHEET No. 6 OF 8 SHEETS DT 519	

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

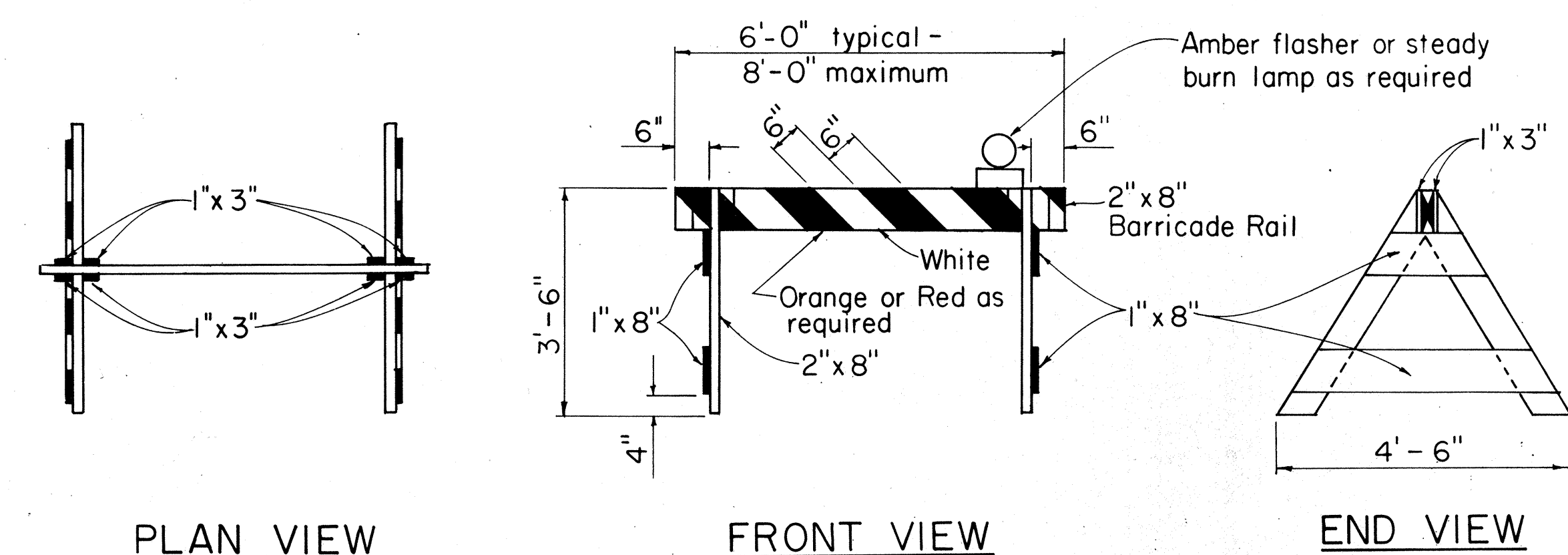
EARTH MOUND DETAIL (SINGLE GUARD RAIL)

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

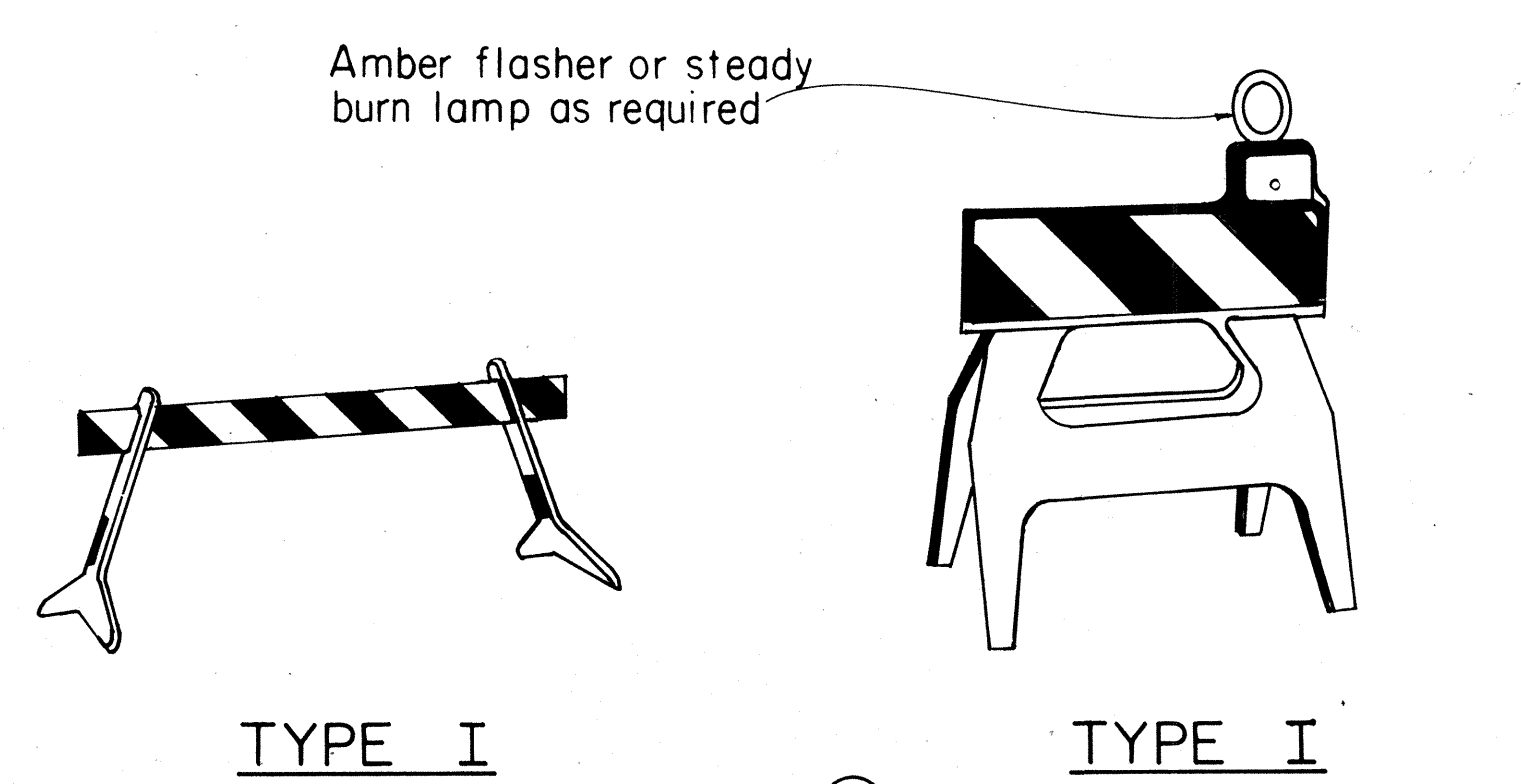


14

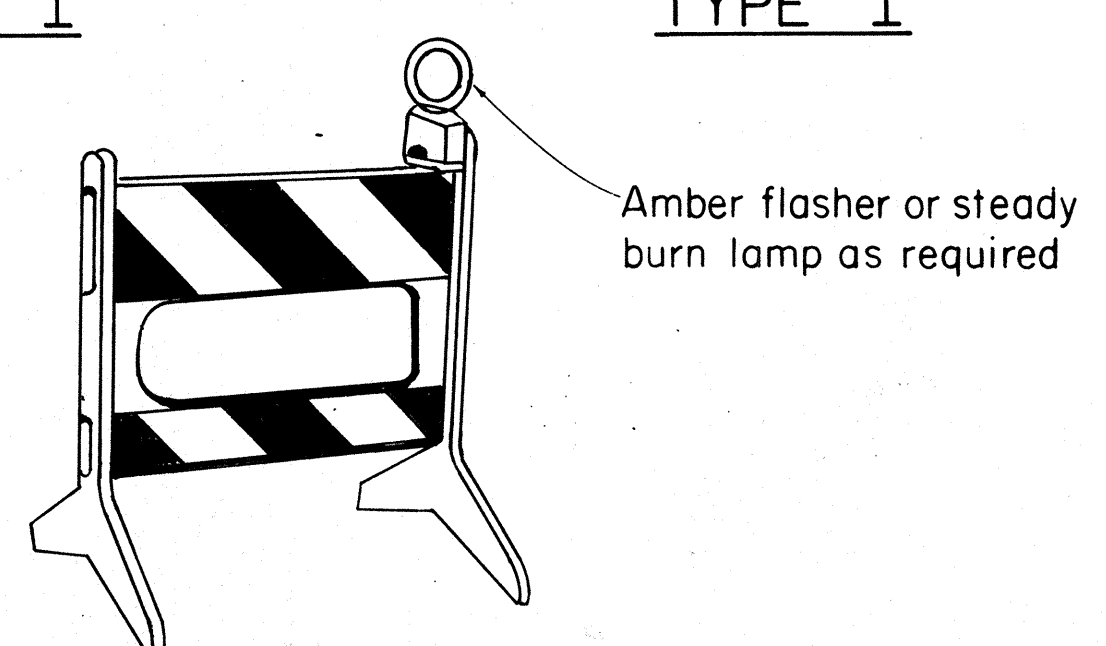
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RS-0750(7)	1984	15	32



TYPE I BARRICADE
Scale: 1/2" = 1'-0"



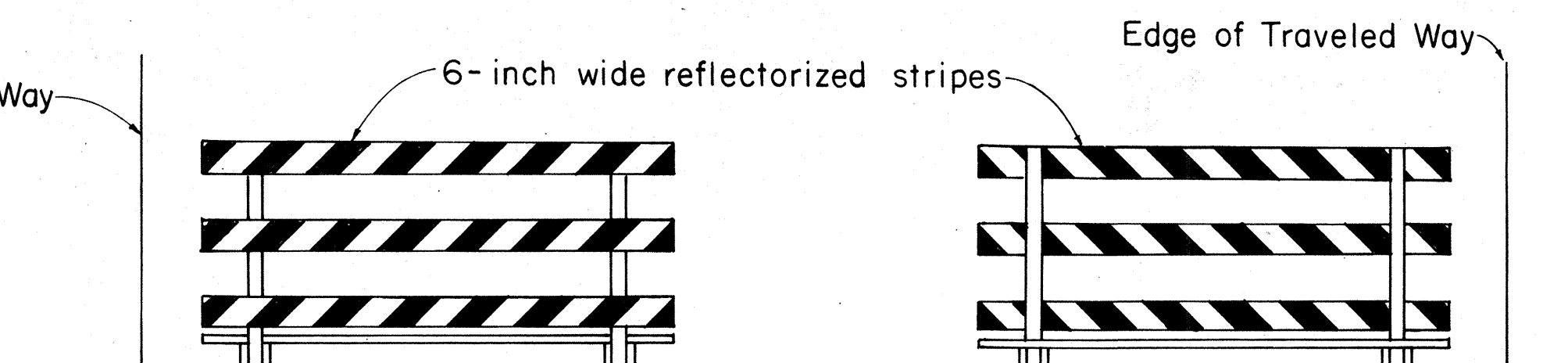
TYPE I



TYPE II

PLASTIC MOLDED BARRICADE OPTIONS*
Not to Scale

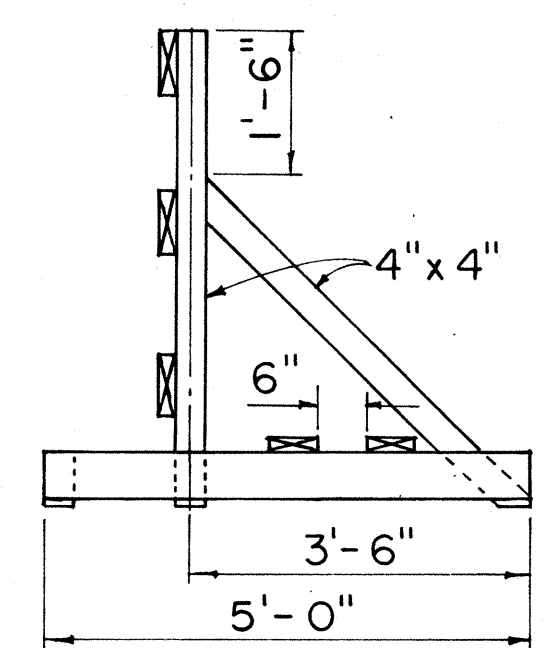
* Shop Drawings must be submitted for approval.



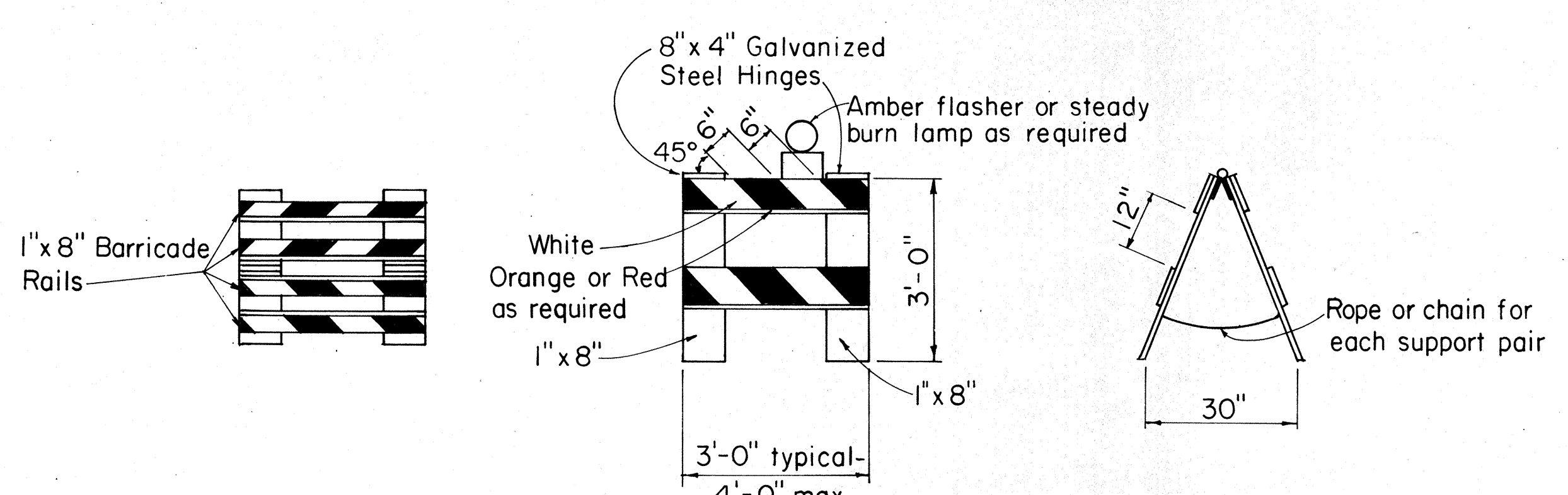
FRONT FACE **BACK FACE**

TYPICAL BARRICADE STRIPING DETAILS**
Not to Scale

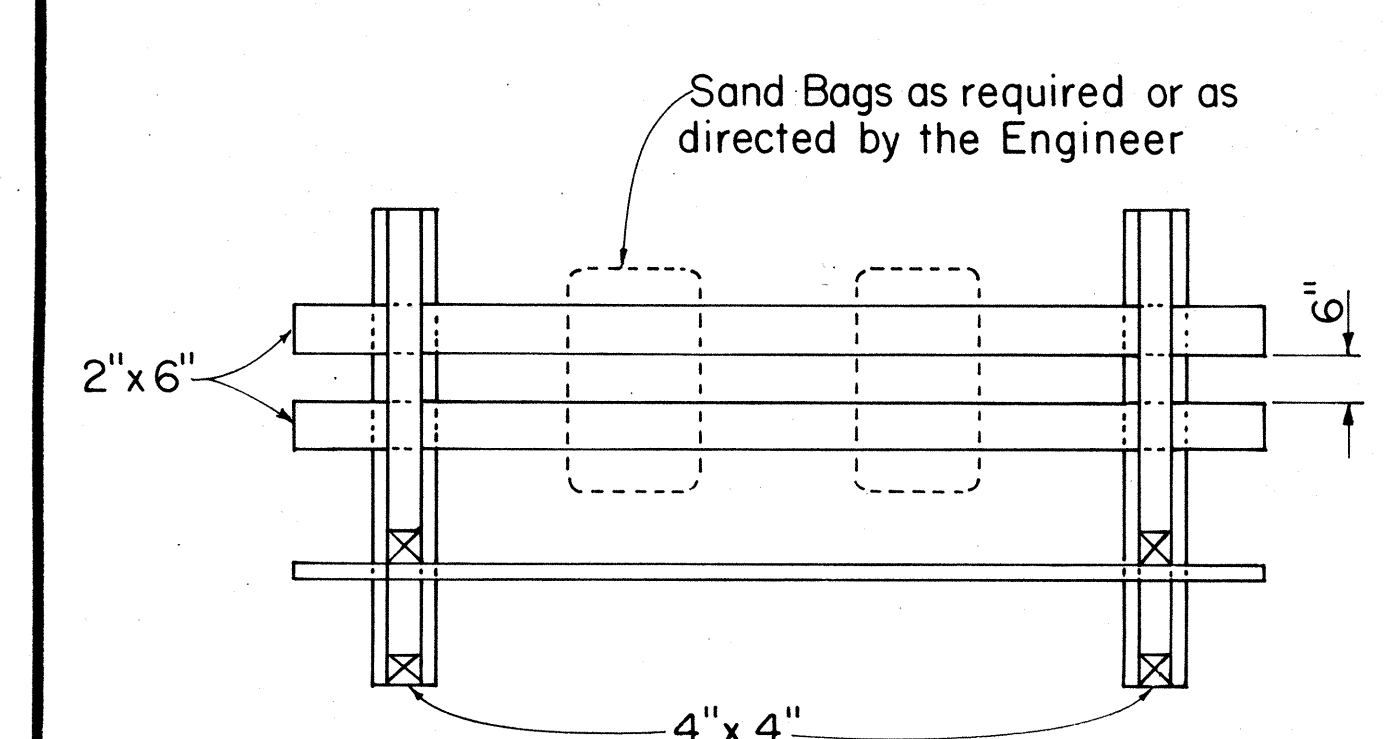
** Similar for Types I & II



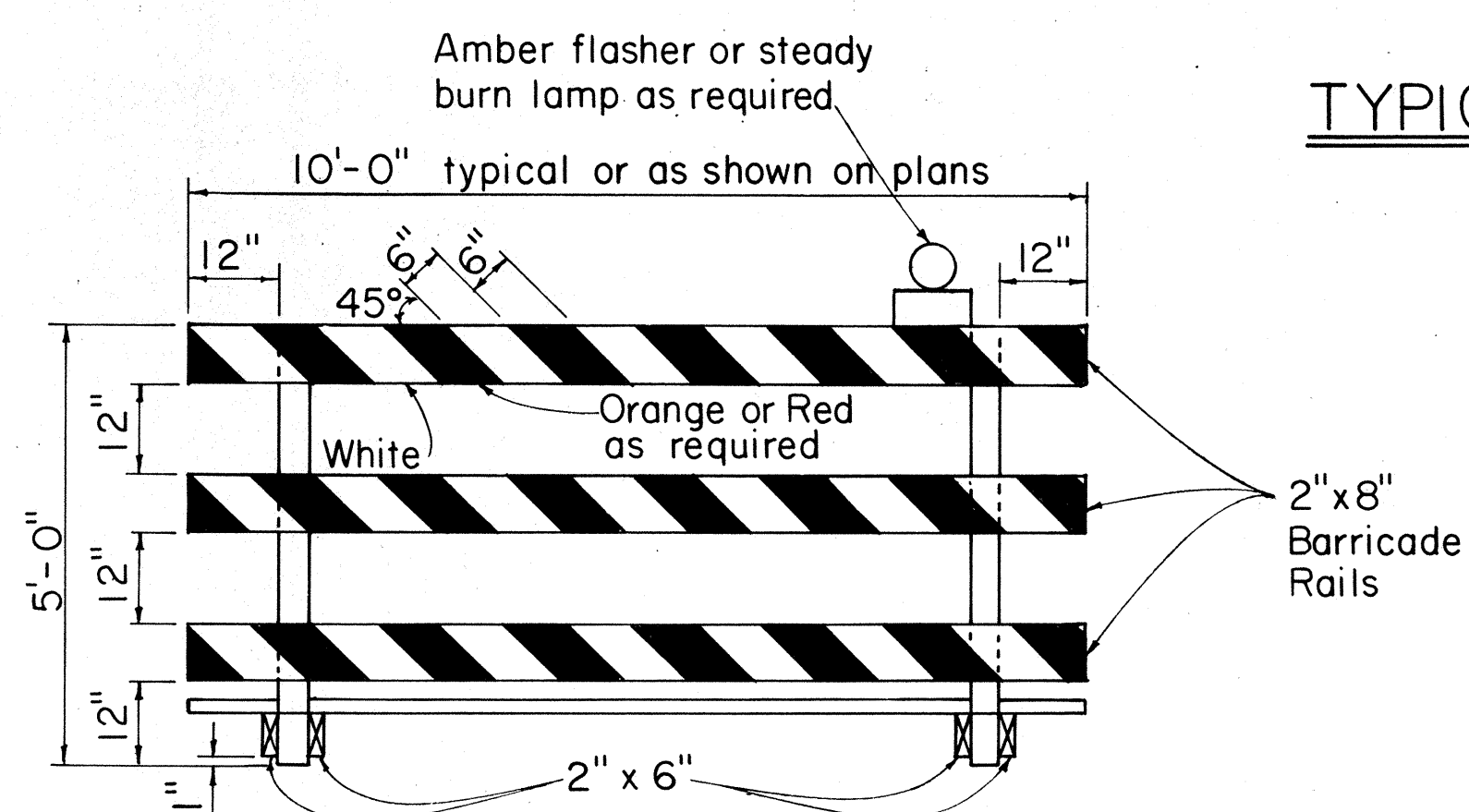
END VIEW



TYPE II BARRICADE
Scale: 1/2" = 1'-0"



PLAN VIEW



TYPE III BARRICADE
Scale: 1/2" = 1'-0"

GENERAL NOTES

1. The front and back faces of each barricade rail shall be reflectorized with stripes sloping downward toward the same side (traveled way) of each barricade.
2. Contractor may submit alternate barricade designs for approval.
3. Sandbags or other approved weights shall not be placed on top of any striped rail.
4. The Contractor is directed to Section 626.

DATE	____
SURVEY PLOTTED BY	____
DESIGNED BY	____
TRACED BY	____
NOTE BOOK	____
QUANTITIES BY	____
CHECKED BY	____
No.	____

APPROVAL RECOMMENDED:	____	10/21/81
TRAFFIC ENGINEER	____	DATE
APPROVED:	____	10/23/81
ASSISTANT CHIEF, ENGINEERING	____	DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes DT 800 Approved 12/30/69	H.C.	10/23/81

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

BARRICADES

SCALE: As Shown

SHEET NO. 8 OF 8 SHEETS DT 800