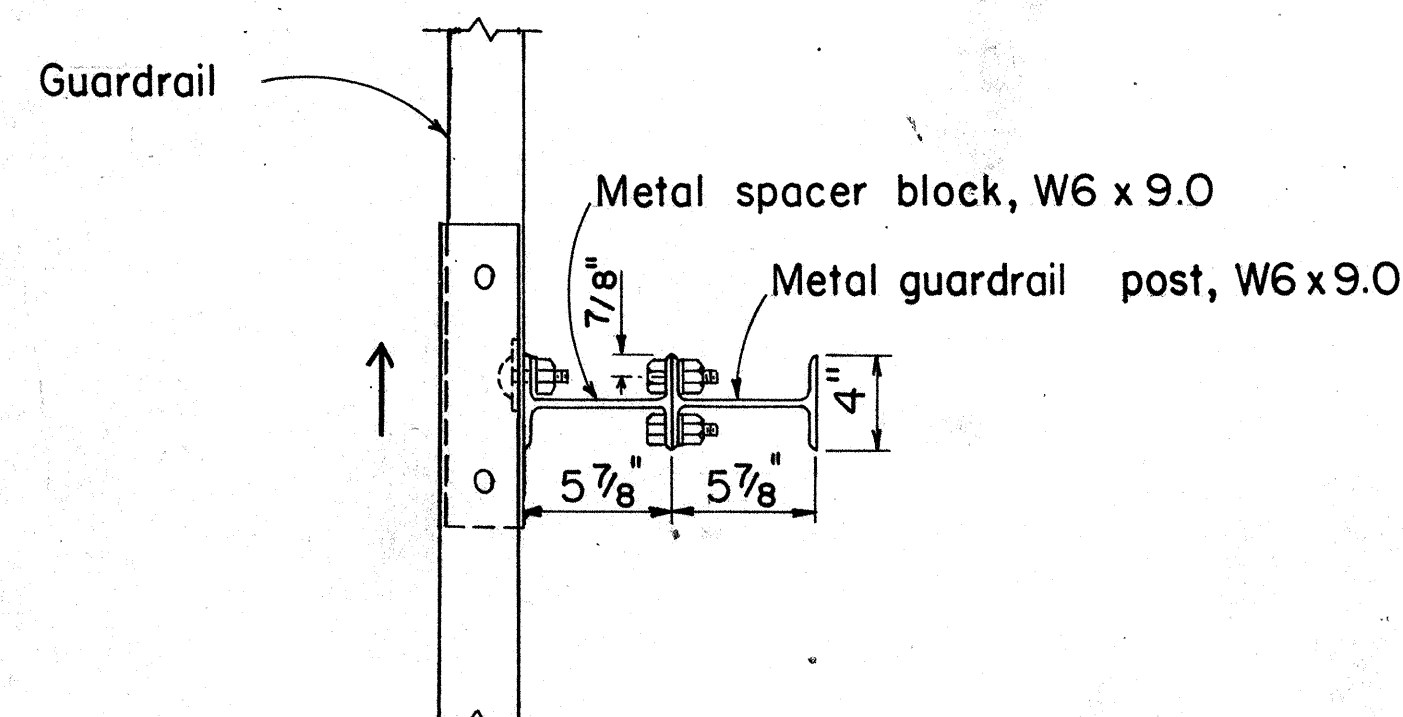


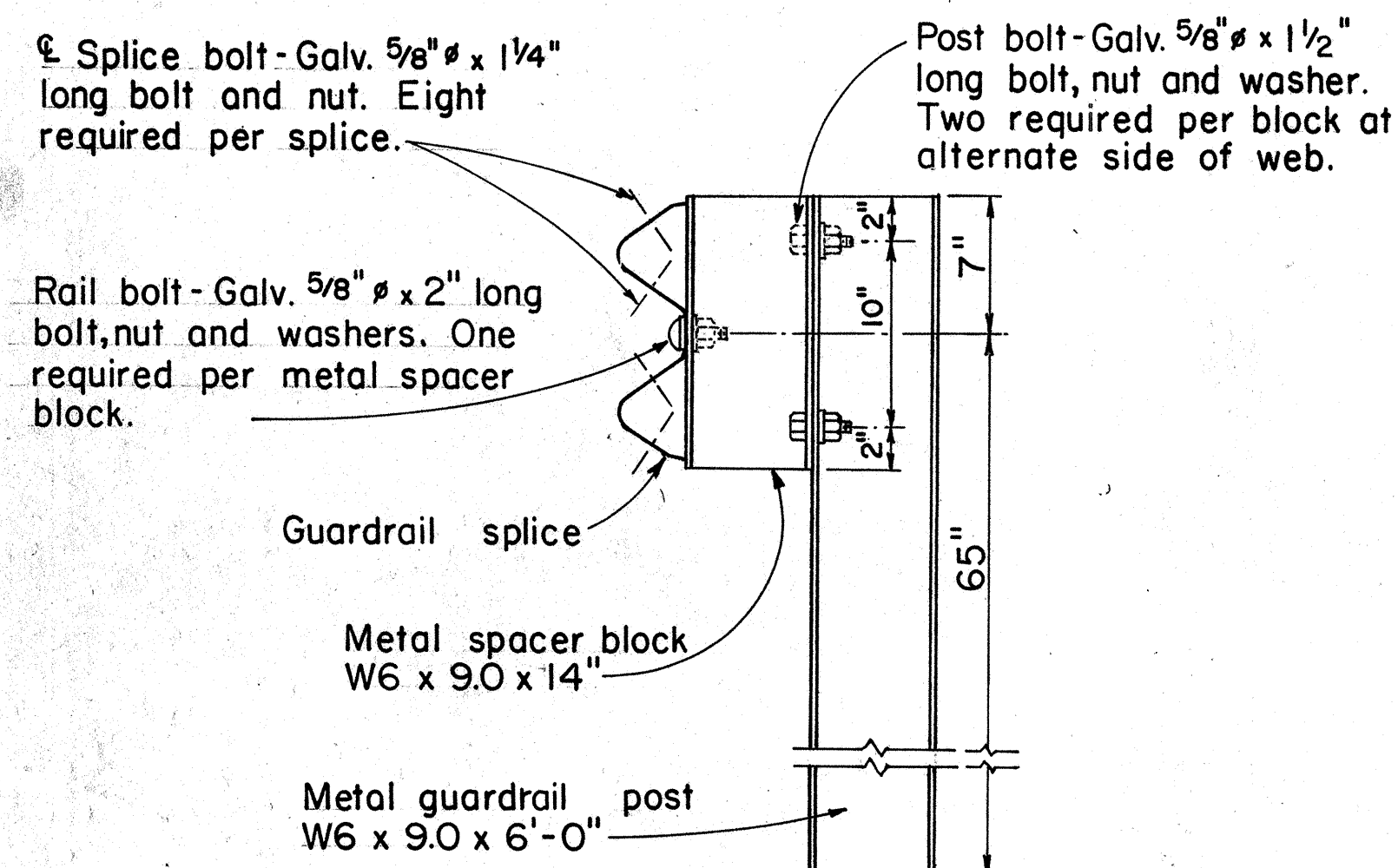
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	099A-01-83A	1984	6	11

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.



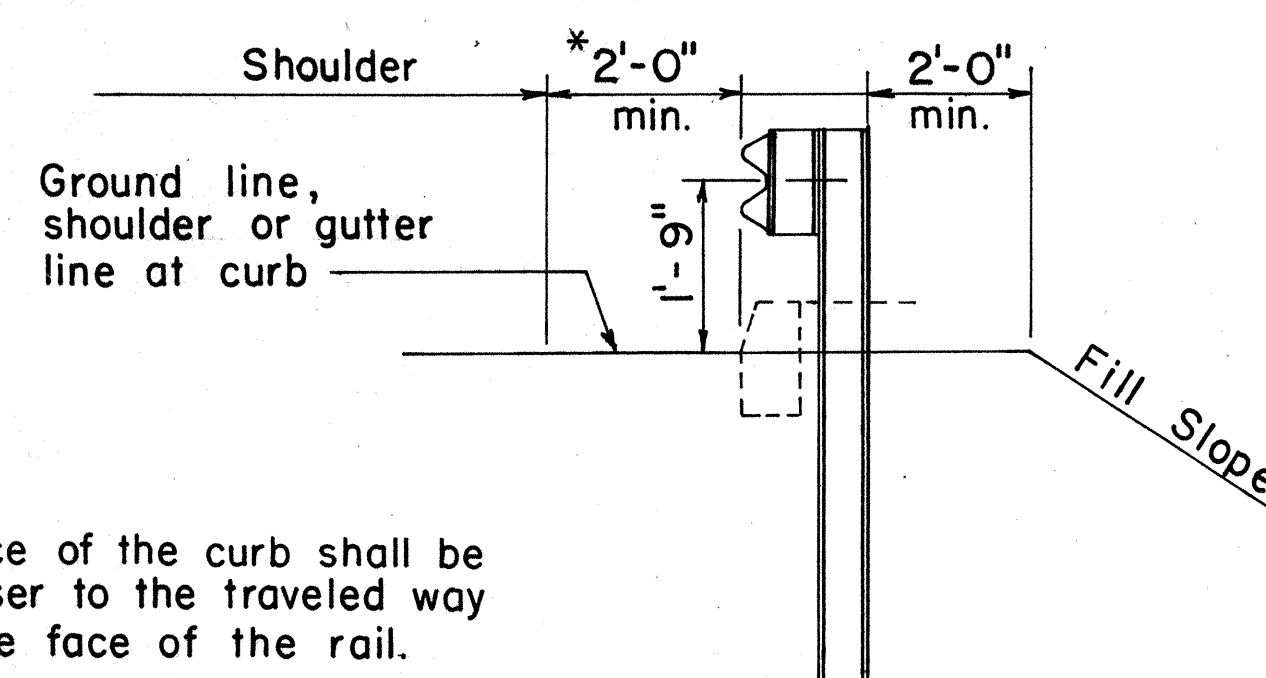
PLAN



ELEVATION

SINGLE METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

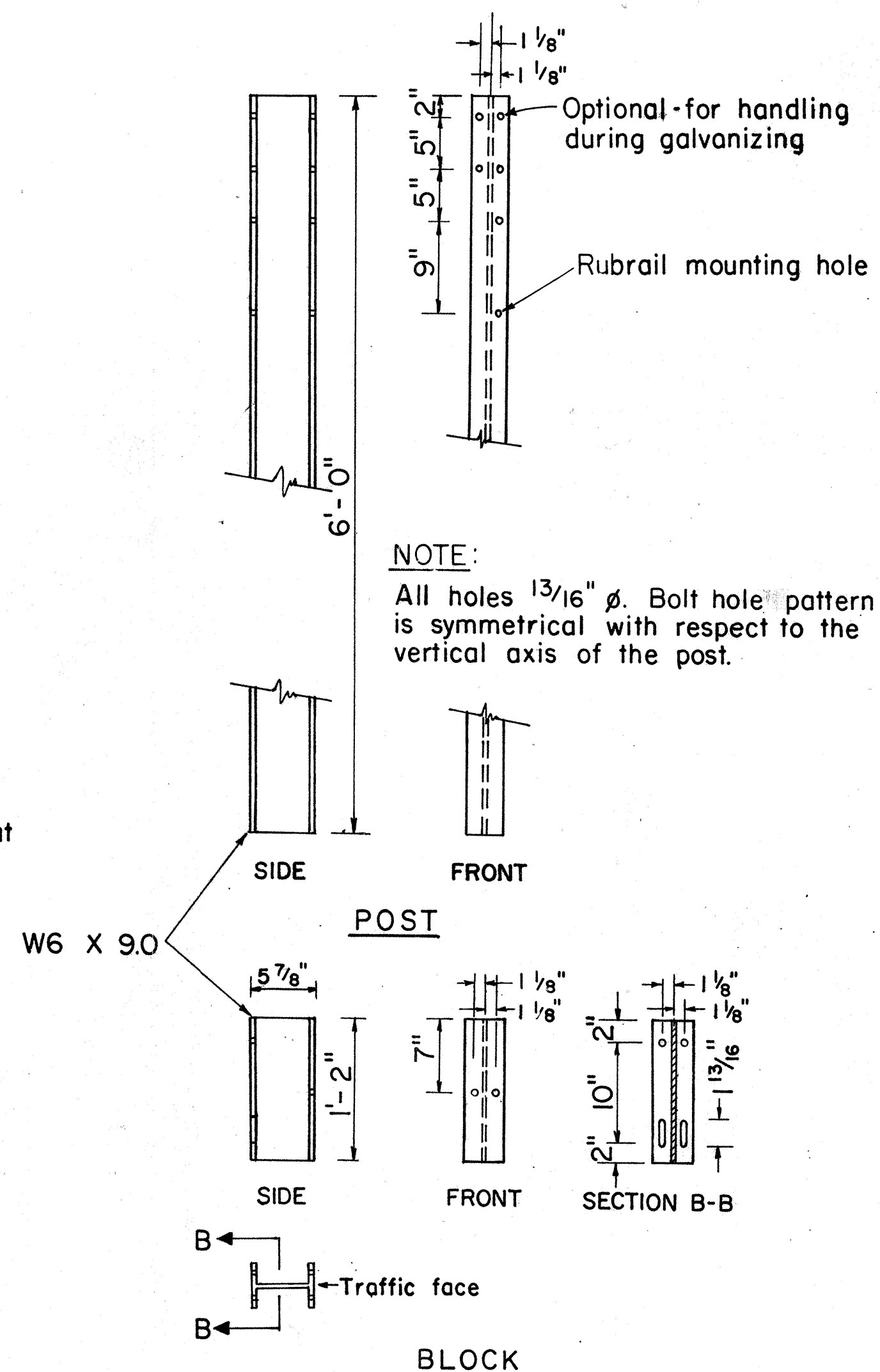
SCALE: 1/2" = 1'-0"



AT SHOULDER SECTION

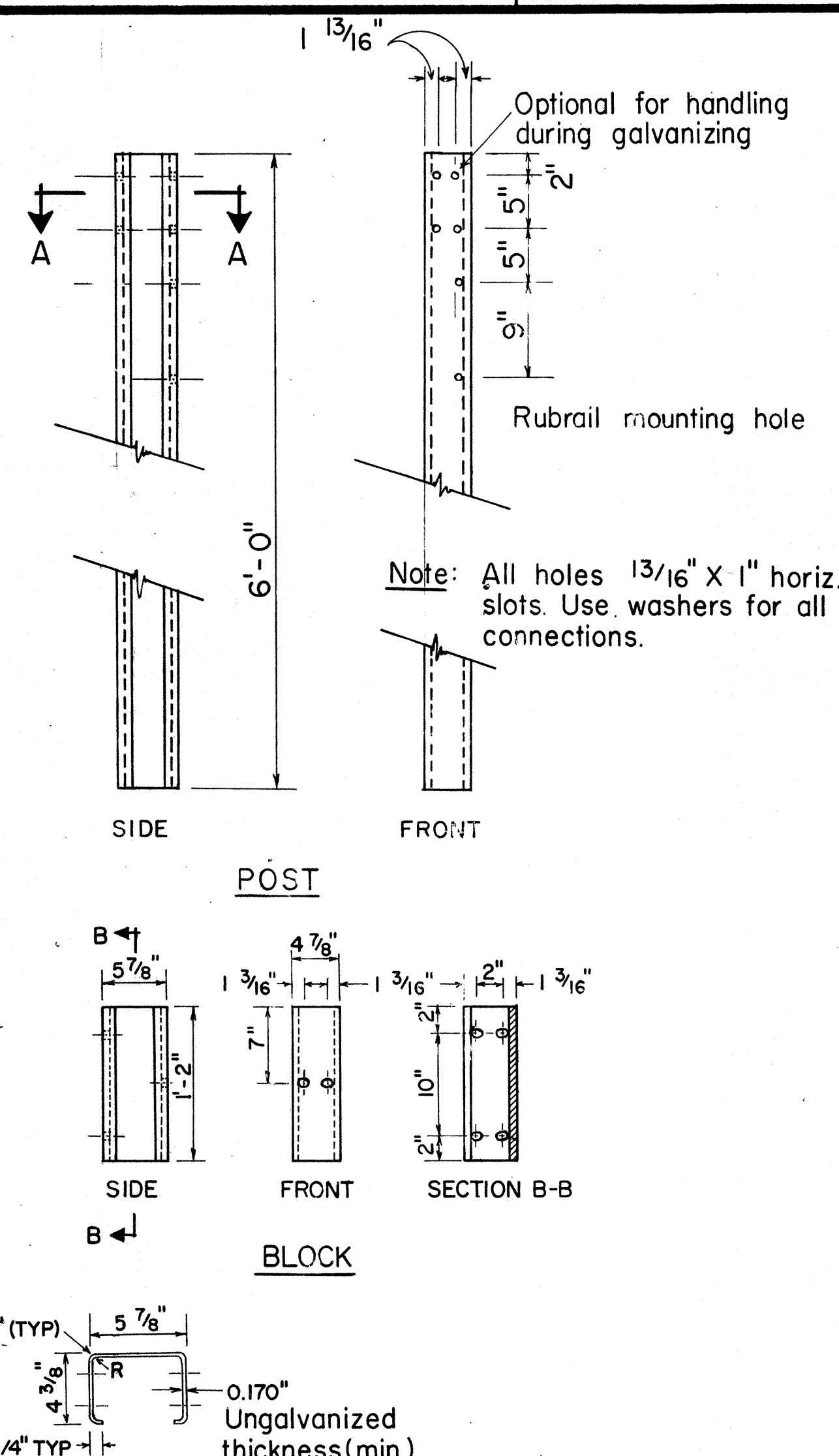
TYPICAL METAL GUARDRAIL DETAIL

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



STRUCTURAL SHAPE POST AND BLOCK

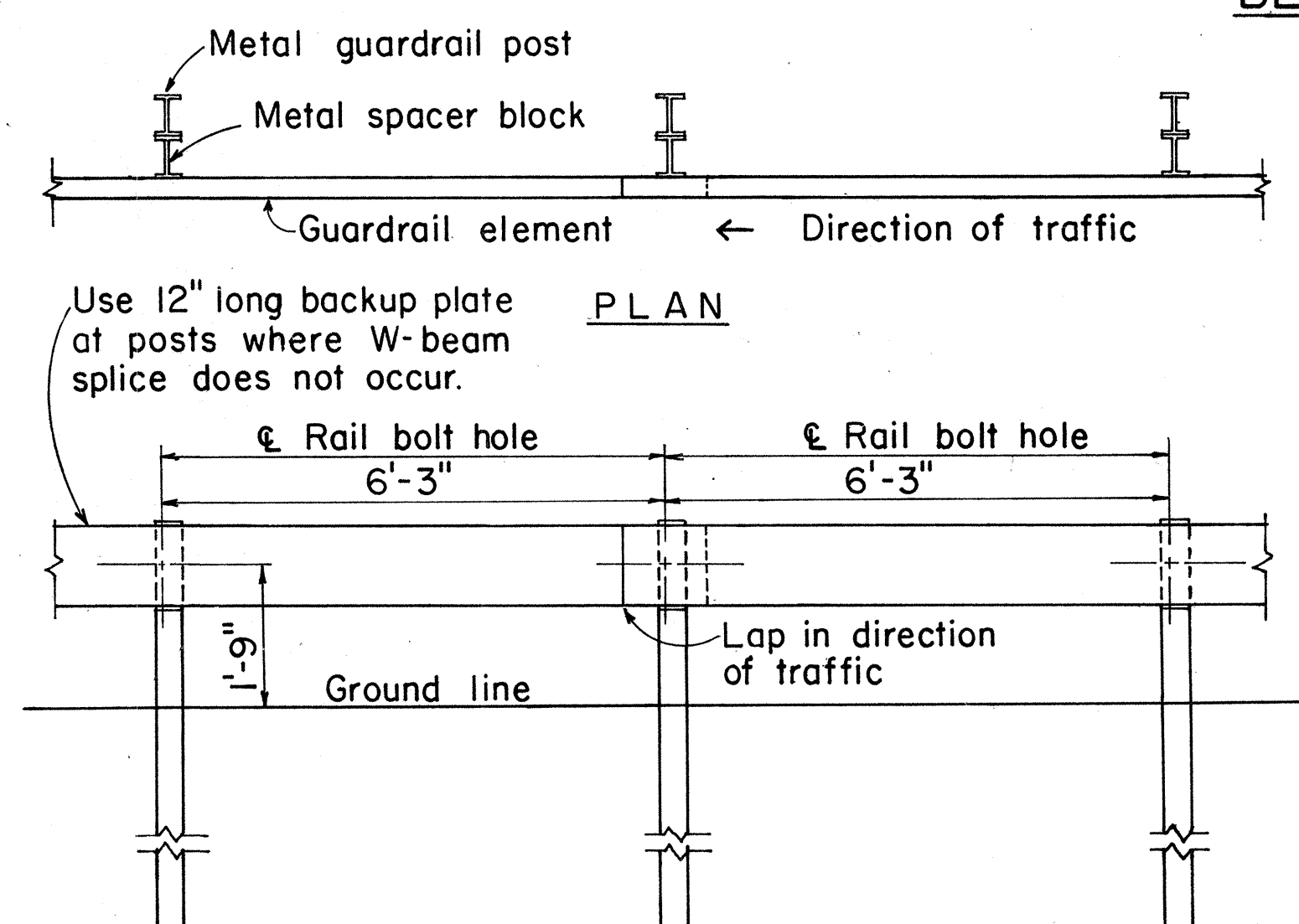
SCALE: 1" = 1'-0"



SECTION A-A N.T.S.

BENT PLATE POST AND BLOCK

SCALE: 1" = 1'-0"



ELEVATION

METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

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

APPROVAL RECOMMENDED:
Eishi Tanaka 9/1/82
TRAFFIC ENGINEER DATE

APPROVED:
Shiroh Zalsishi 9/22/82
ASSISTANT CHIEF, ENGINEERING DATE

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

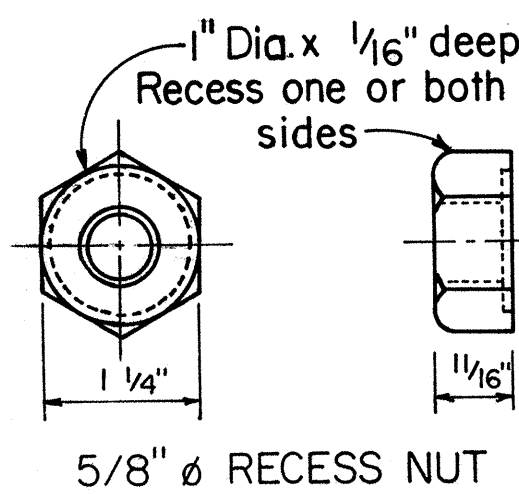
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS METAL GUARDRAIL

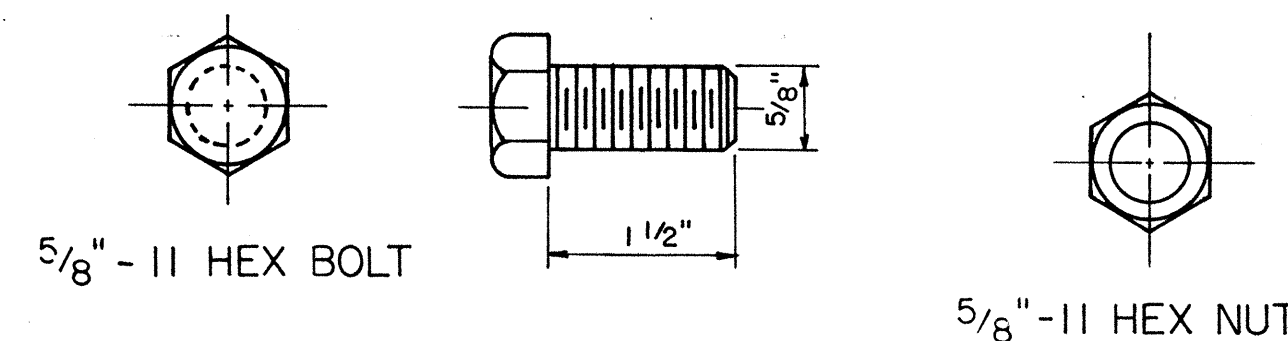
Scale: As Shown July, 1982
SHEET NO. OF SHEETS DT 500

Diagram illustrating the dimensions of a curved lap joint:

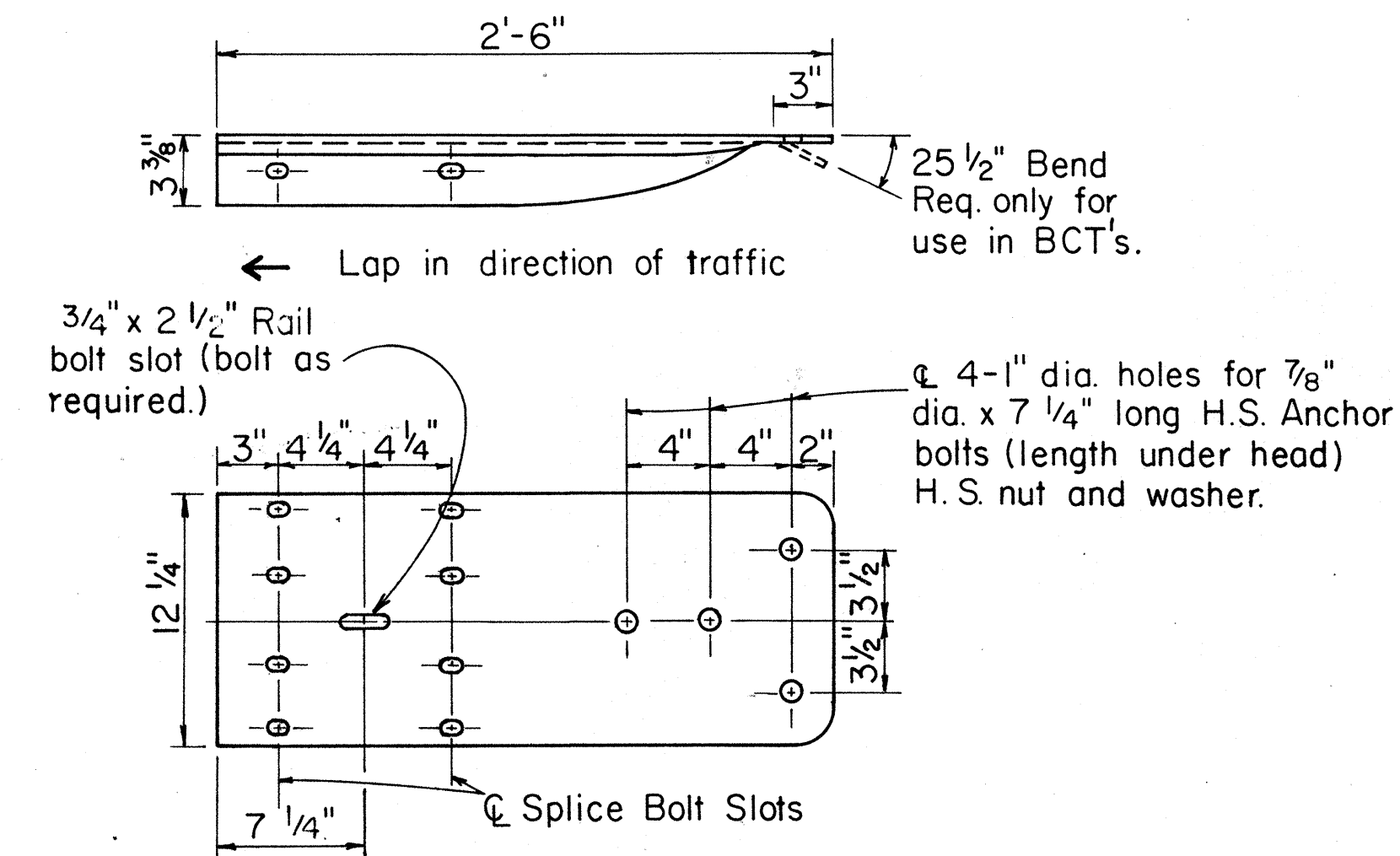
- Total length of the top plate: $2'-3\frac{1}{2}"$
- Lap length: $12\frac{1}{2}"$
- Thickness of the bottom plate: $3\frac{3}{8}"$
- Vertical height of the joint: $10"$



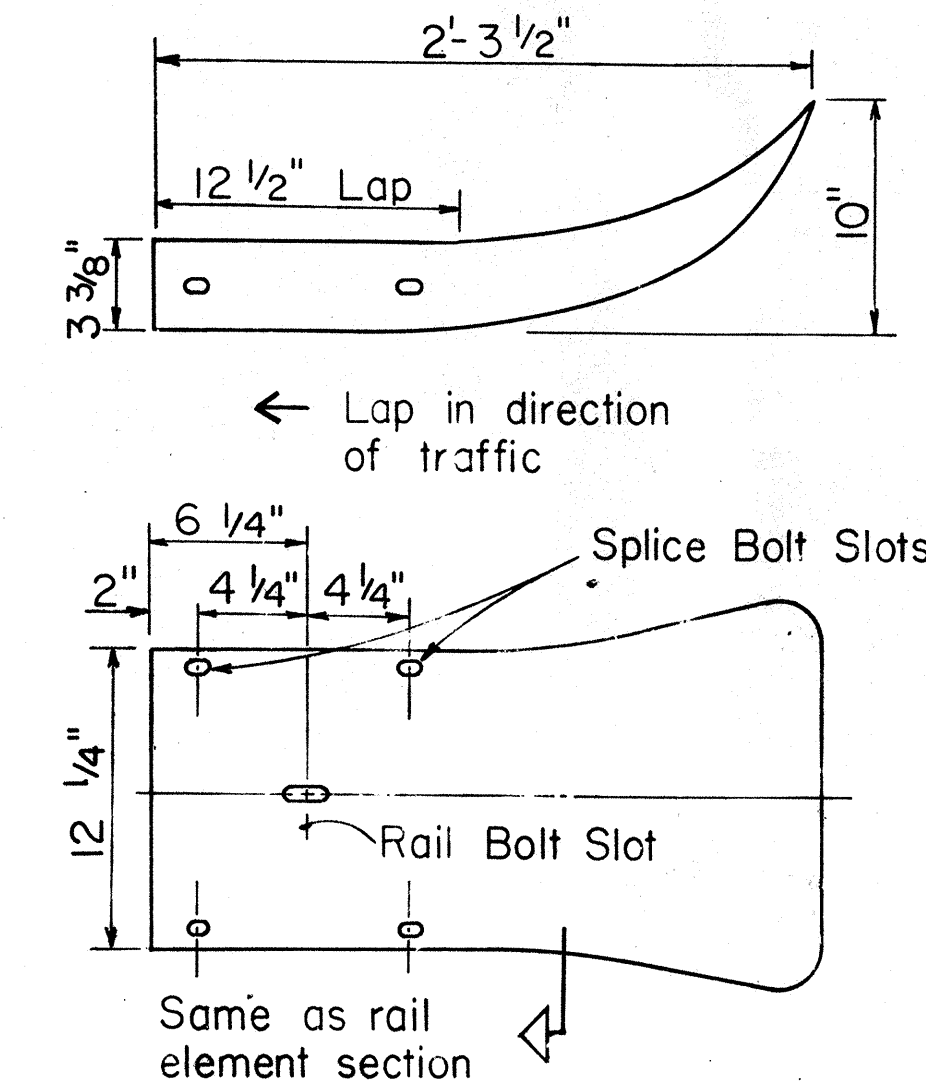
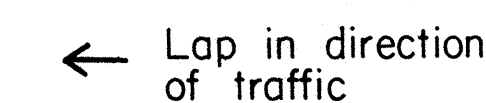
5/8" BUTTON HEAD BOLT
AND RECESS NUT
Scale: NTS



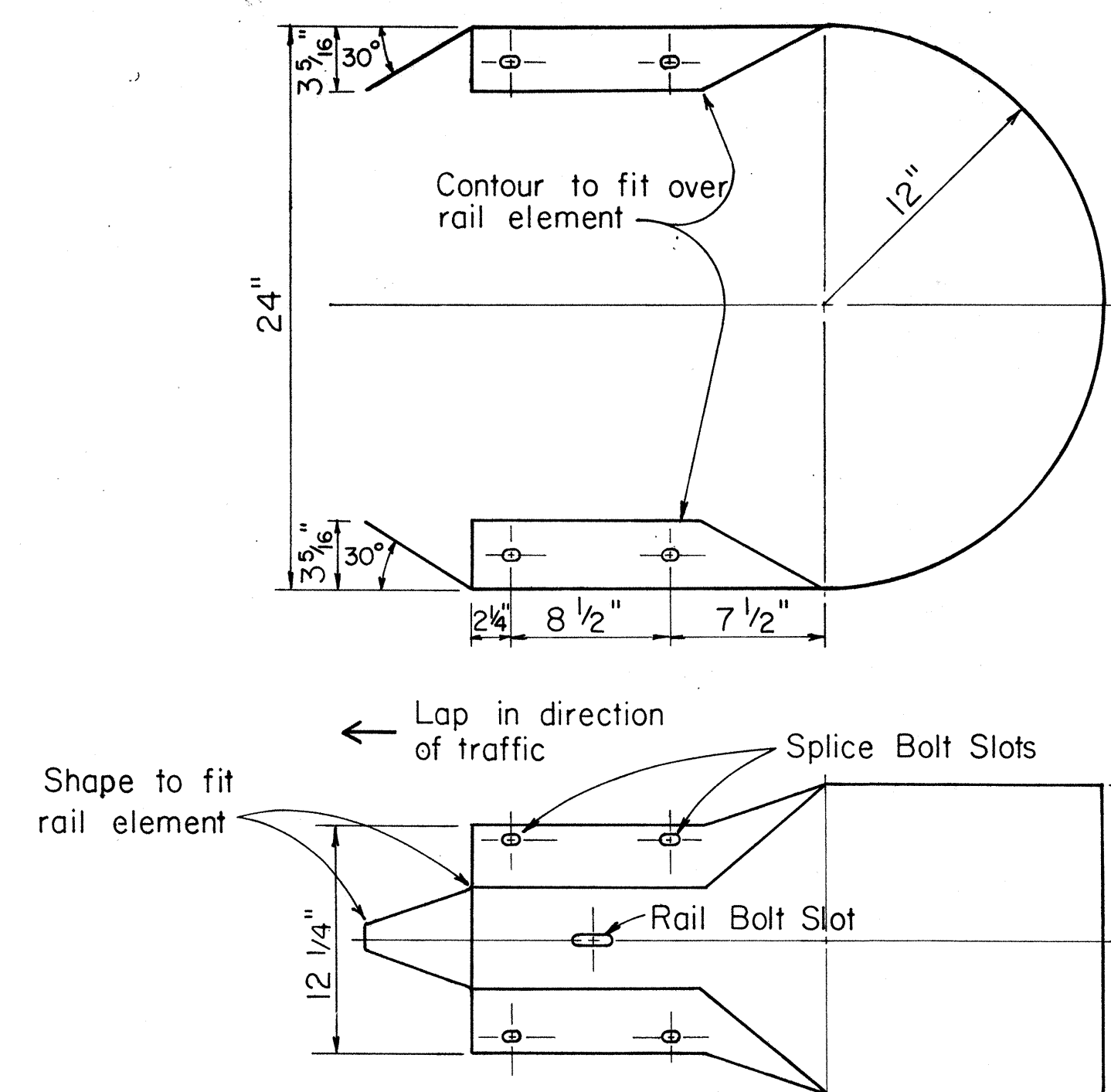
5/8" HEX POST BOLT AND NUT
Scale: N.T.S.



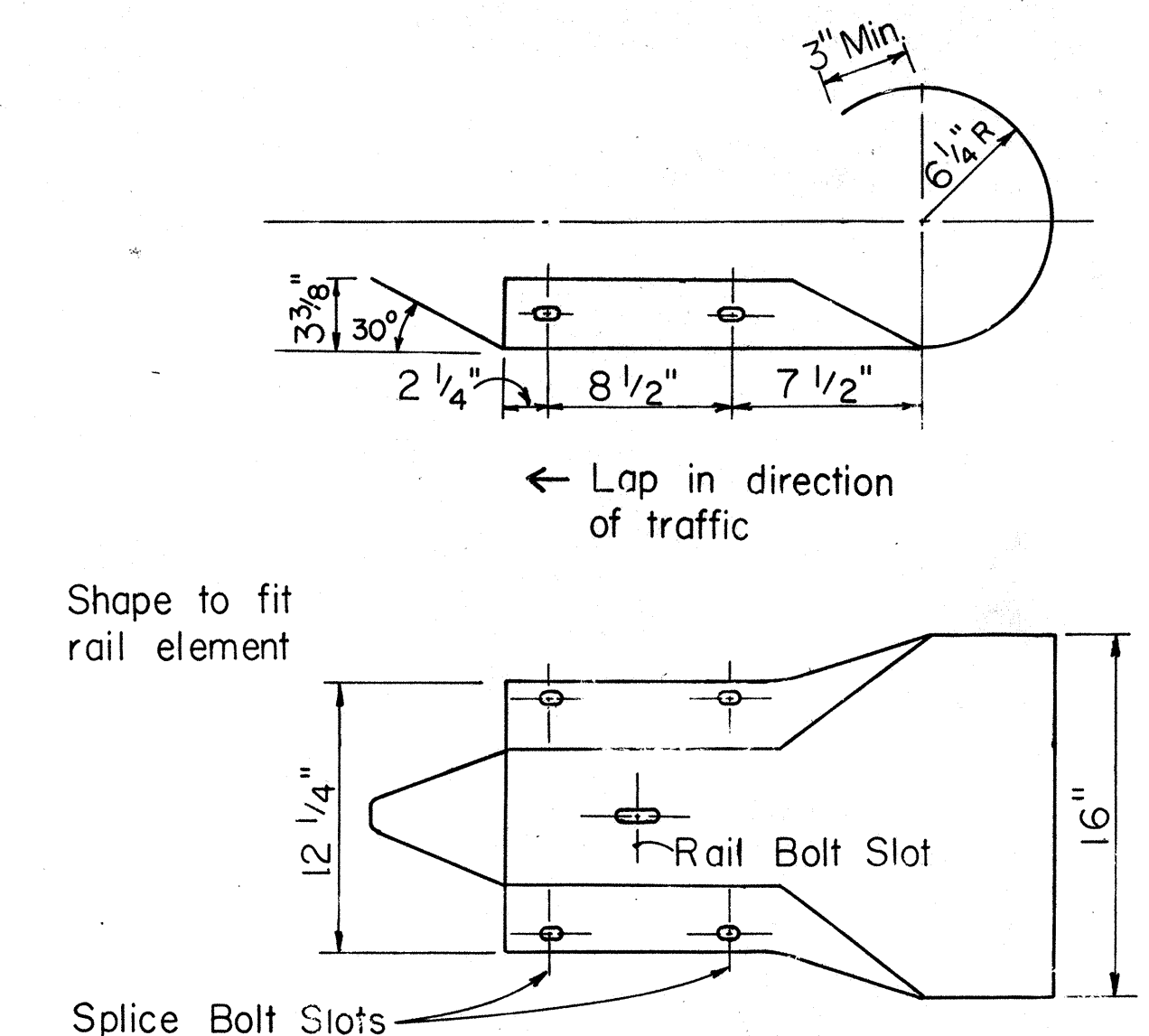
Scale: $1\frac{1}{2}" = 1'-0"$



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



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



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

TRAFFIC ENGINEER

9/20/82
DATE

9/22/82
DATE

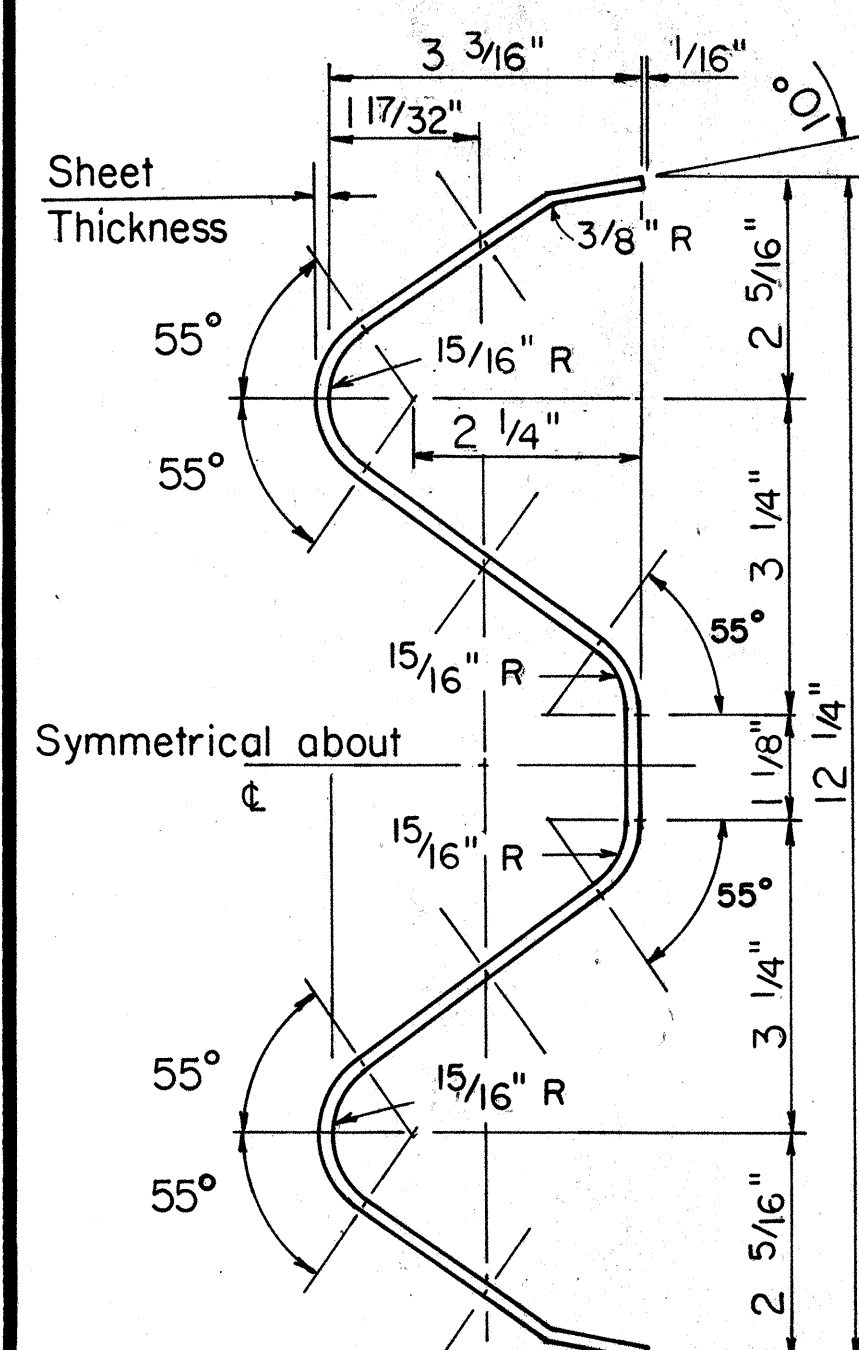
NO.	REVISION	APPROVED BY	DATE
1	Supersedes sht. DT 501 approved 12/30/69	H.F.	9/22/8

STANDARD DETAILS

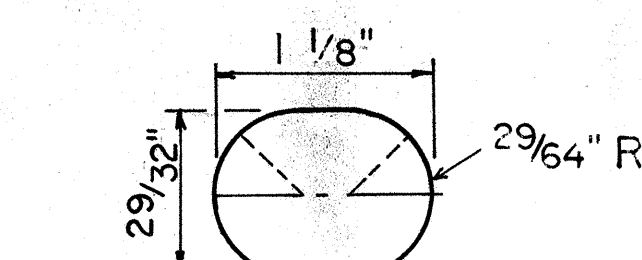
METAL GUARDRAIL

Scale: As Noted July, 1982

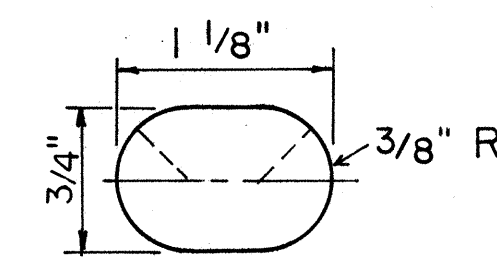
SHEET NO. OF SHEETS DT 501



Scale: 6" = 1'-0"

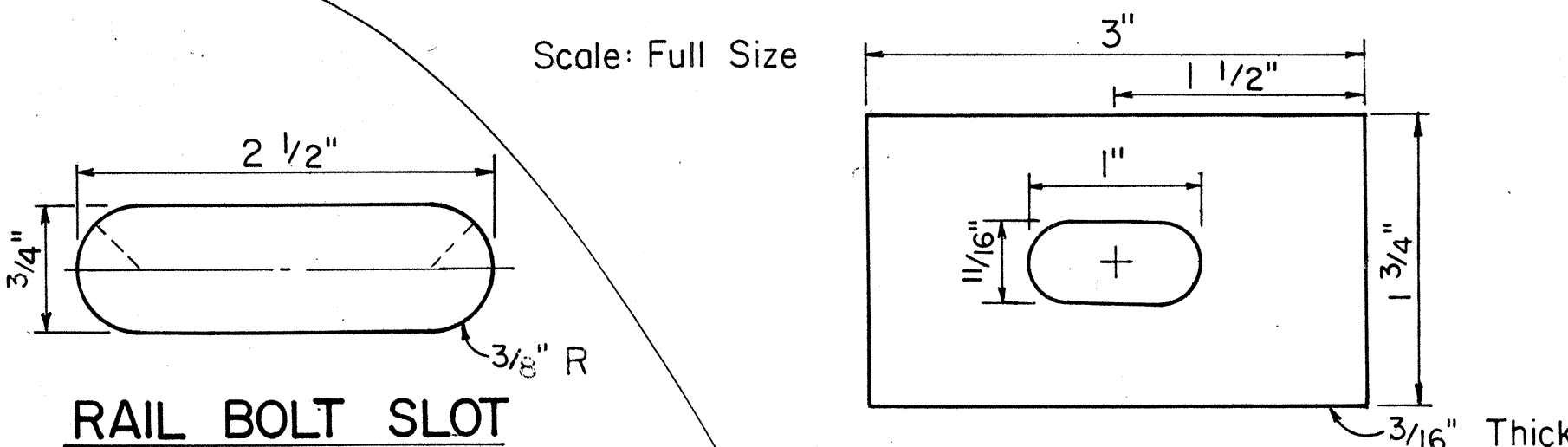


SPLICE BOLT SLOT



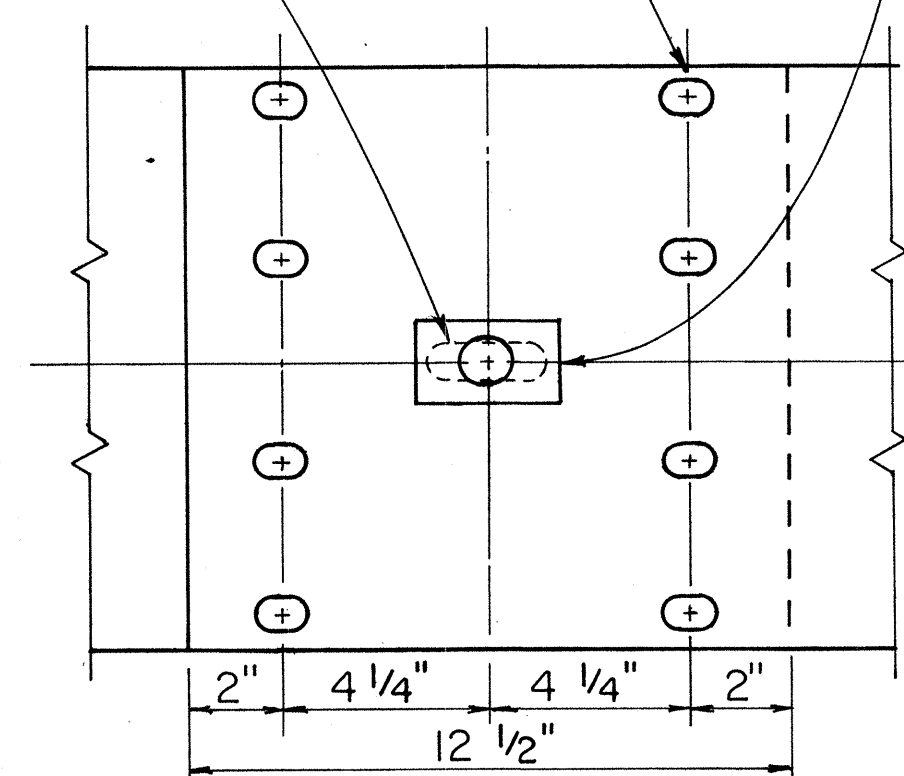
SPLICE BOLT SLOT
FOR ALL ENDS

Scale: Full Size



RAIL BOLT SLOT

RAIL BOLT WASHER



RAIL SPLICE

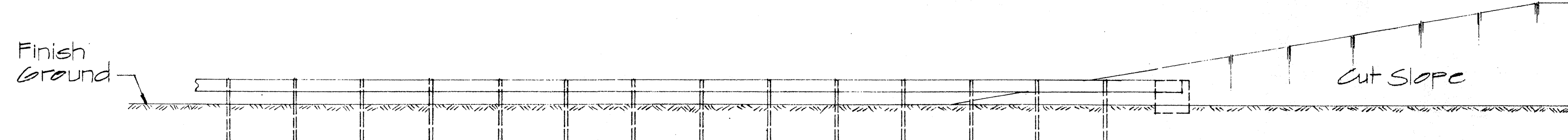
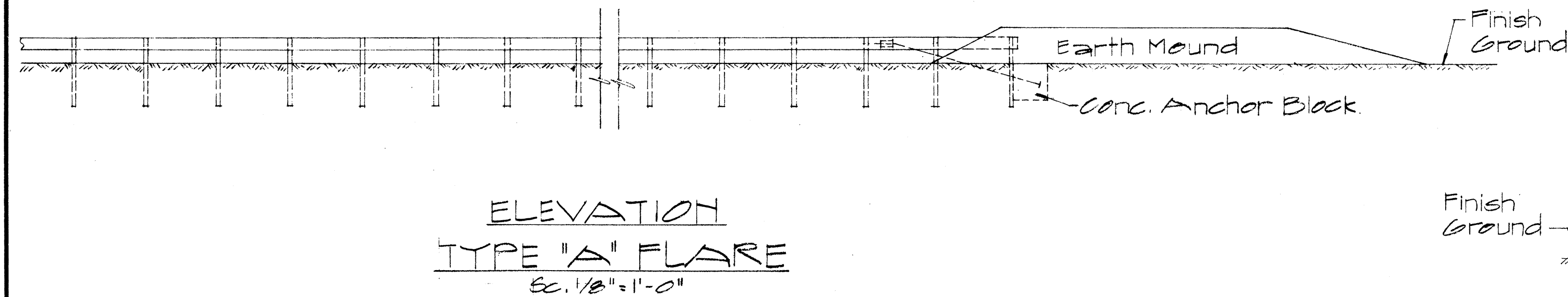
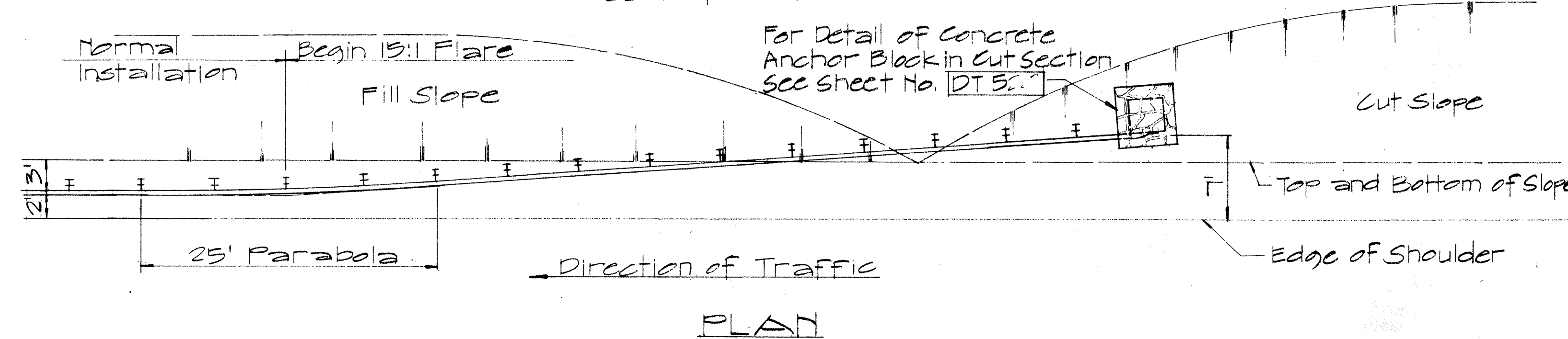
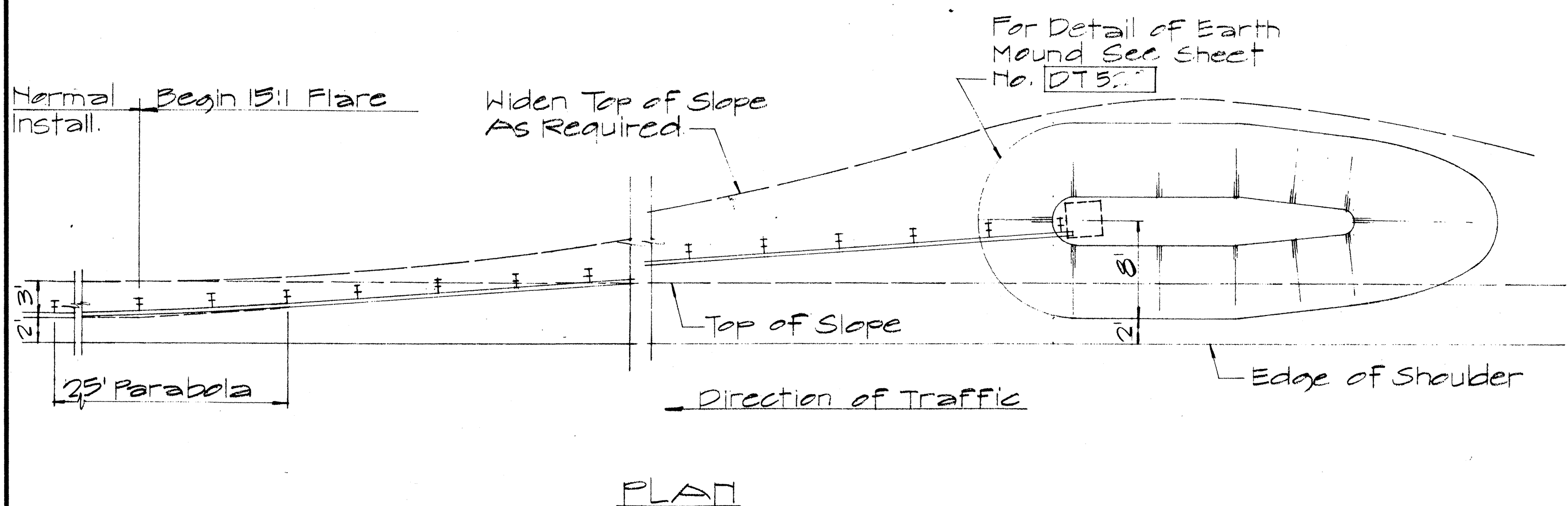
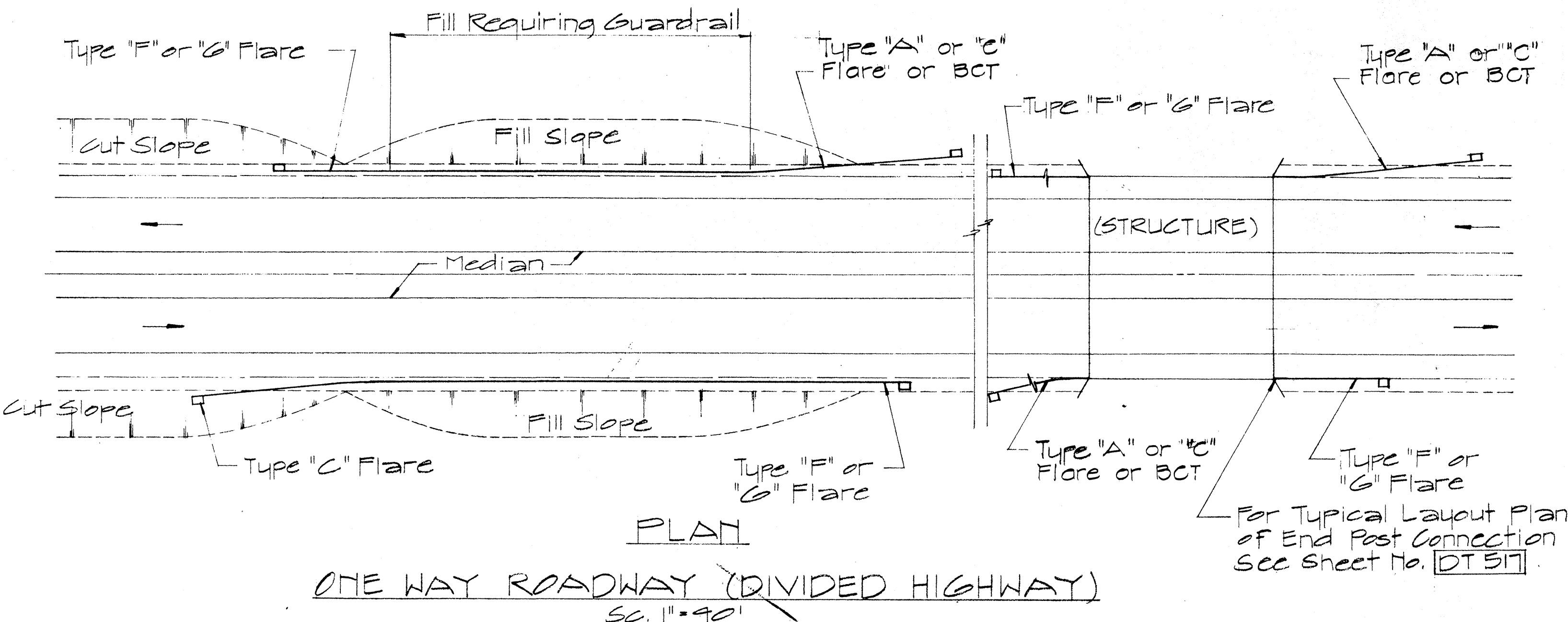
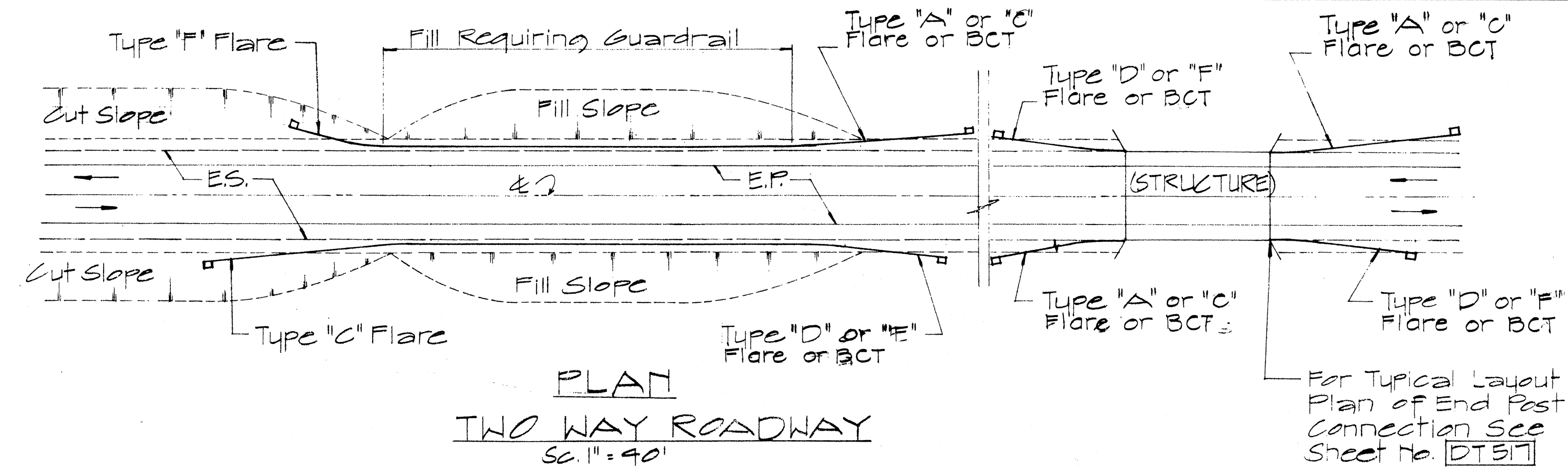
Scale: 3" = 1'-0"

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99A-0183A	1984	8	11

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:
TRAFFIC ENGINEER
DATE 12/29/69

APPROVED:
ASSISTANT CHIEF, ENGINEERING
DATE 12-30-69

NO.	REVISION	APPROVED BY	DATE
1	Delete Type "B" Flare and Type "E" Flare	H.T.	6/15/83

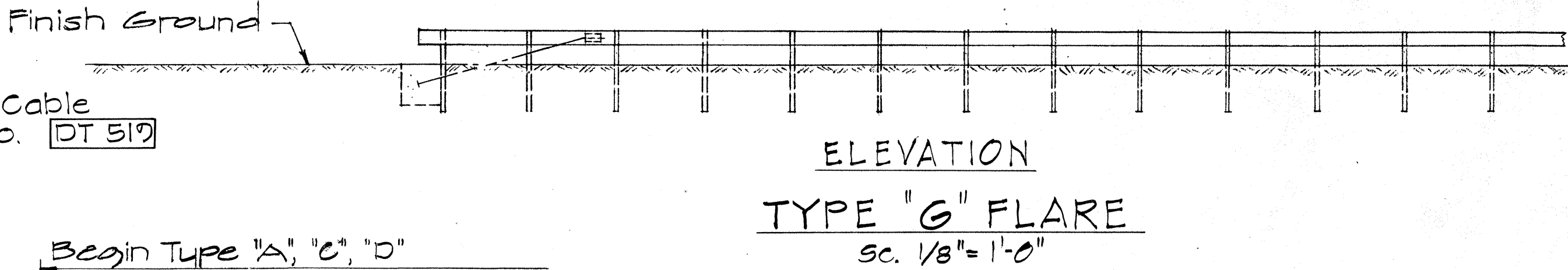
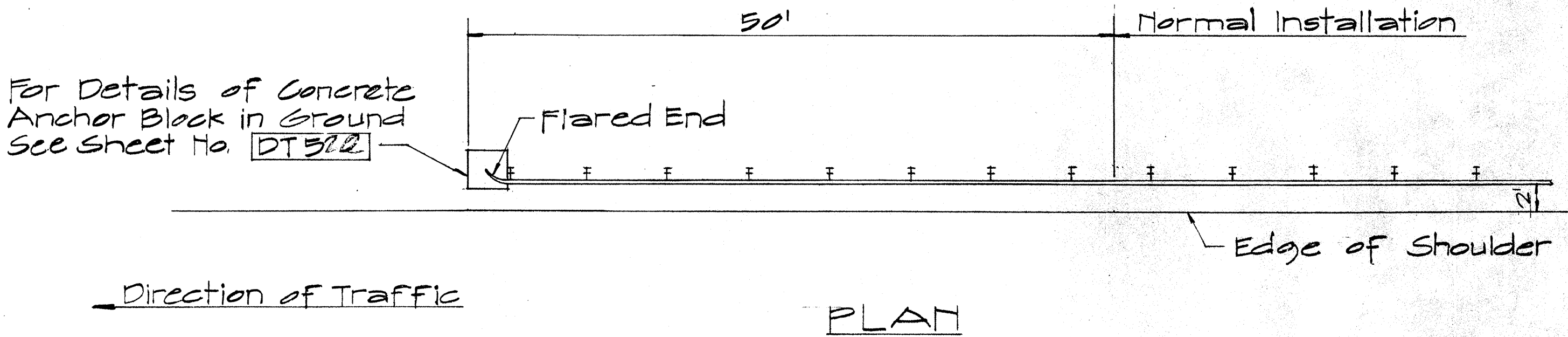
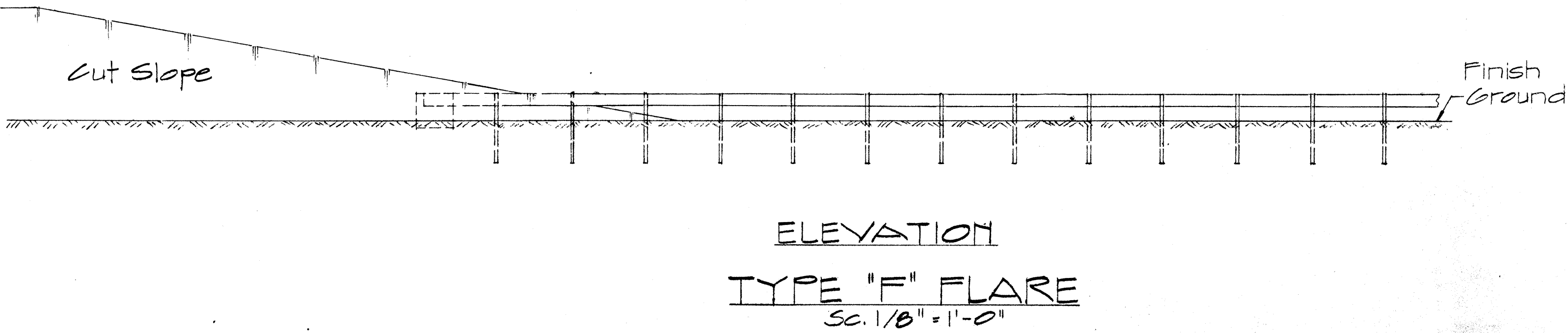
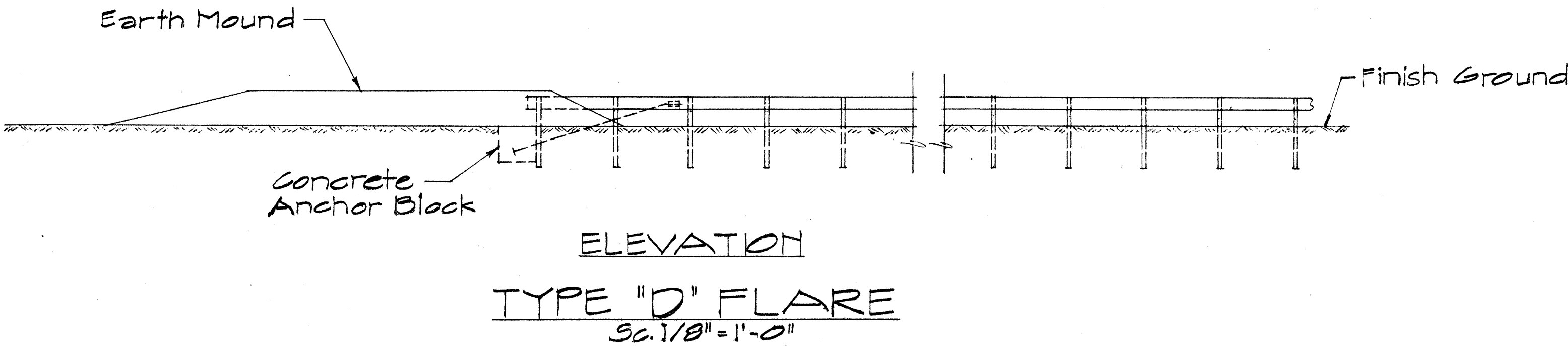
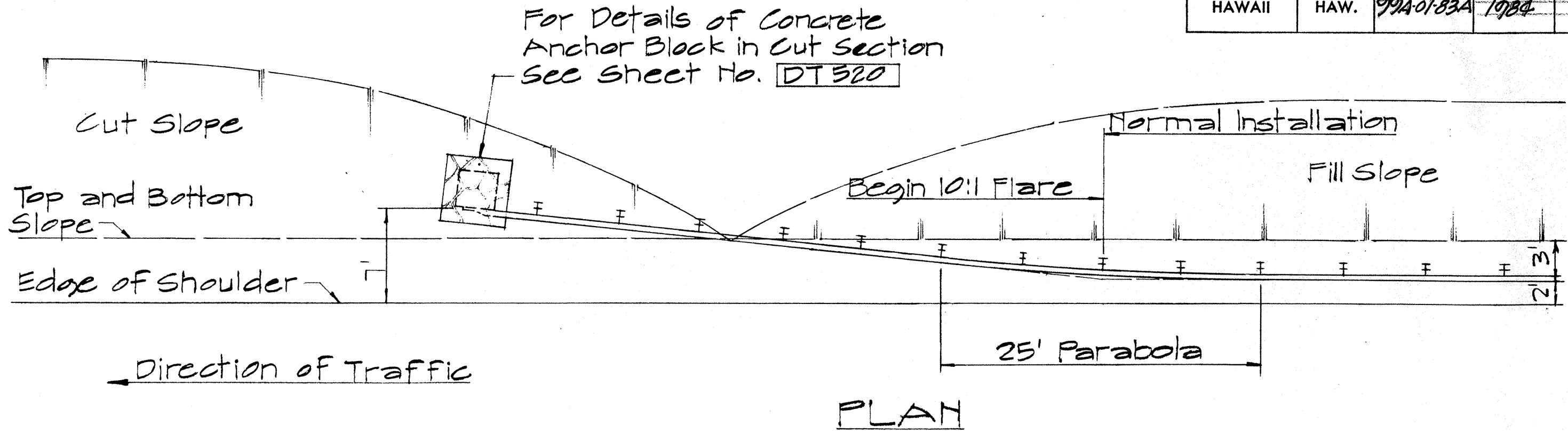
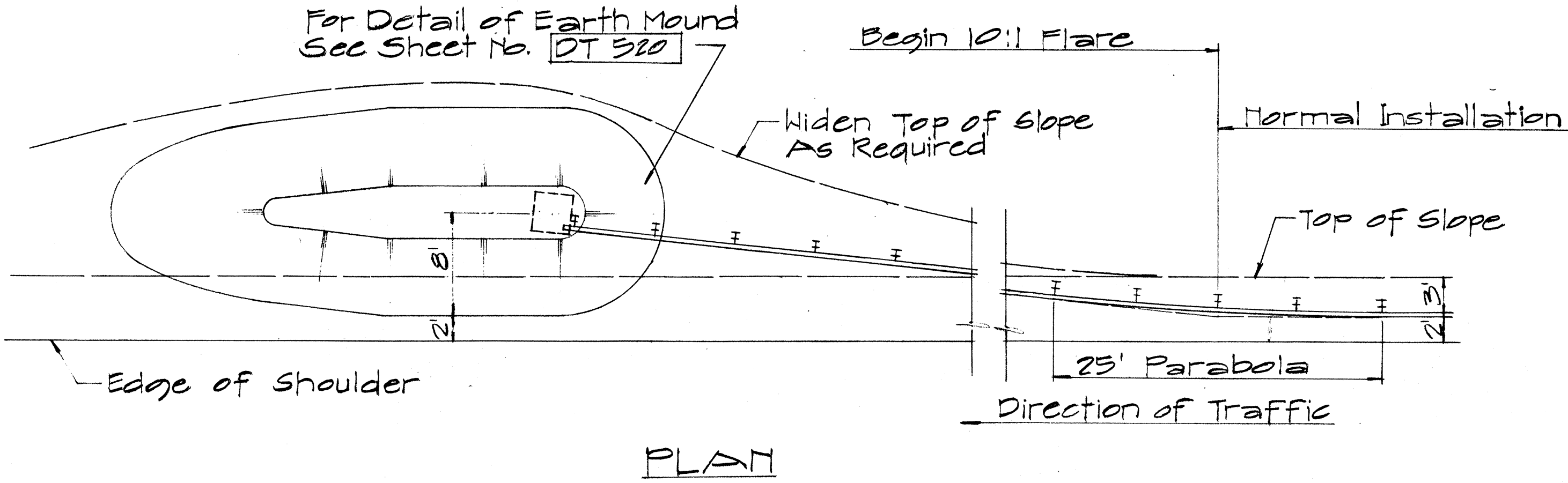
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

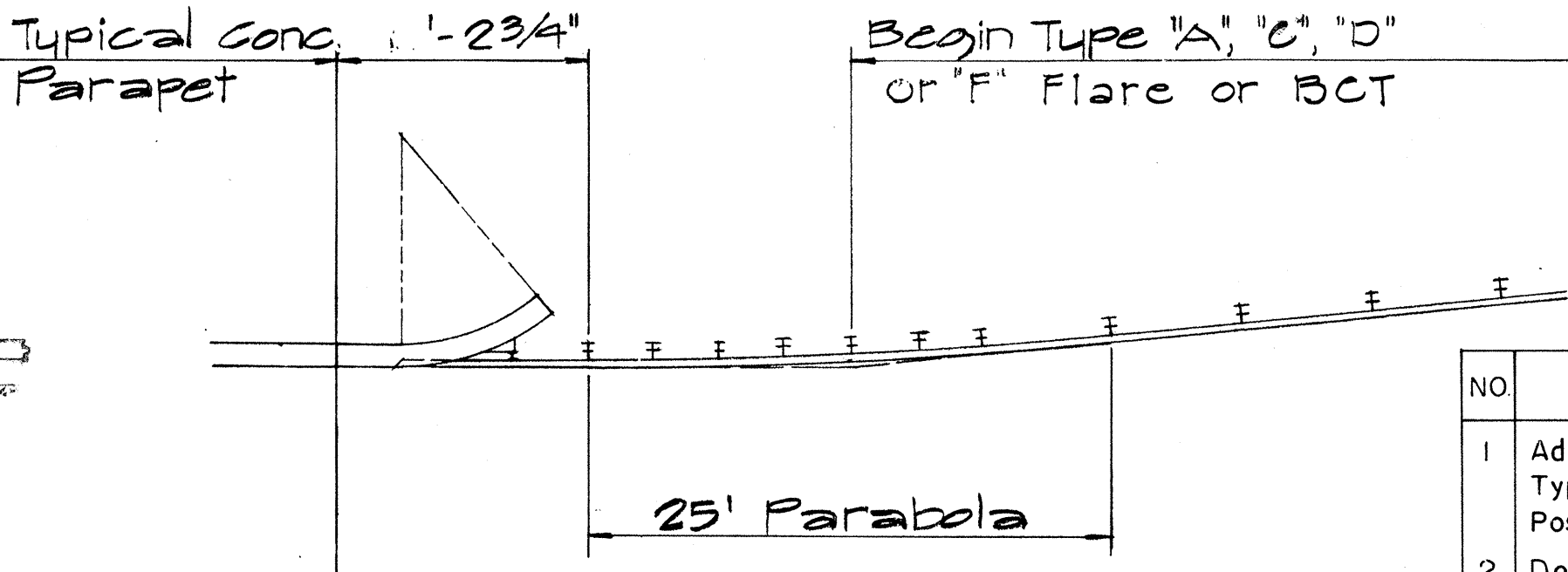
Sc. As Noted April 1969

DATE
SERVED BY
DRAWN BY
DESIGNED BY
NOTED 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.	99A-01-53A	1984	9	11



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



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:
Erich Tanaka 12/29/69
TRAFFIC ENGINEER DATE
APPROVED:
Wm. J. 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

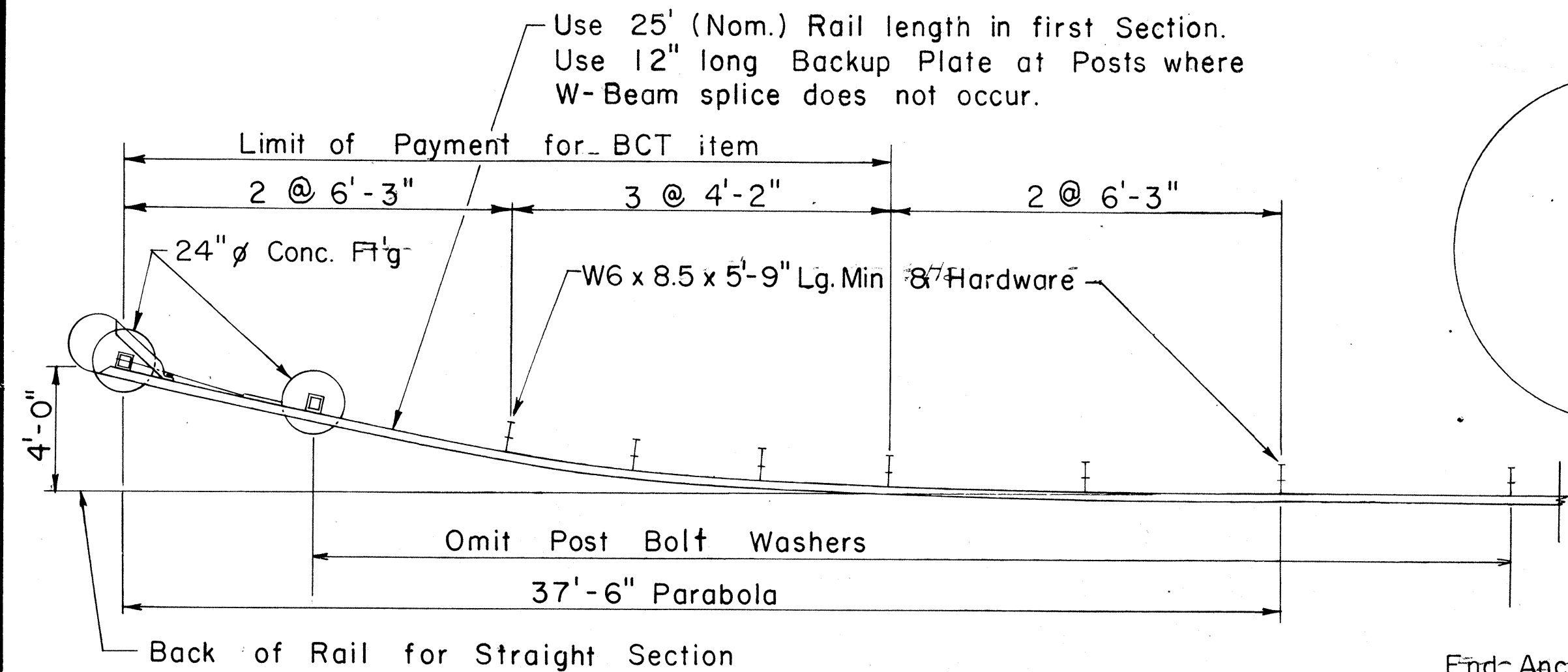
SHEET NO. OF SHEETS DT 517

DATE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	79A-0187A	1984	10	11

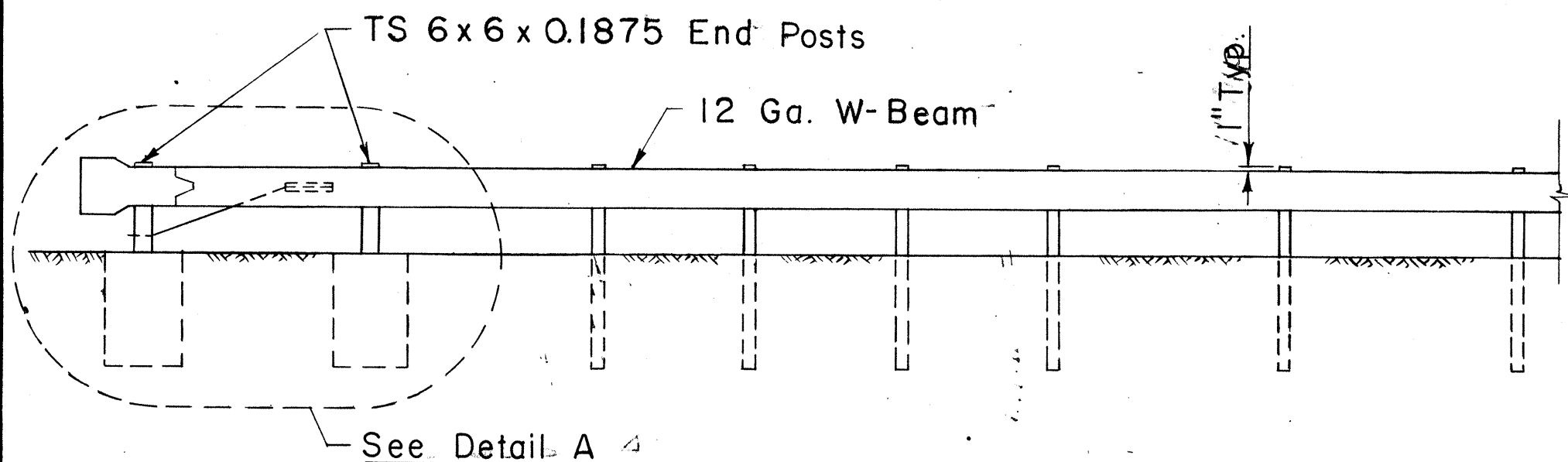
NOTES:

- Anchor Plate and Anchor Cable Assembly (Standard Swaged Fitting and Stud). See Standard Detail Sheet No. DT 520.
- Other Anchor Cable Assemblies may be used. Minimum breaking strength of assembly should be 40,000 lbs.
- Second Terminal Post does not require holes to accommodate Anchor Cable.
- Slip Base Load shall be controlled with a Calibrated Torque Wrench - Torque 155 - 170 ft. lbs.
- Concrete shall be Class A.
- 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.



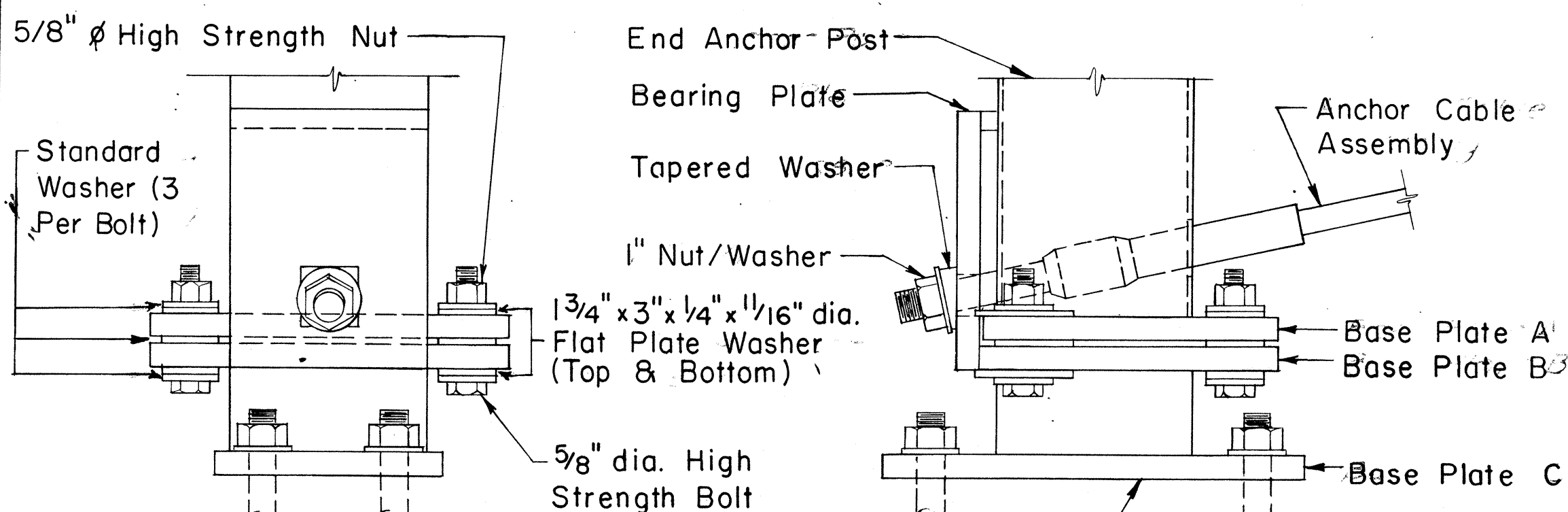
PLAN

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



ELEVATION

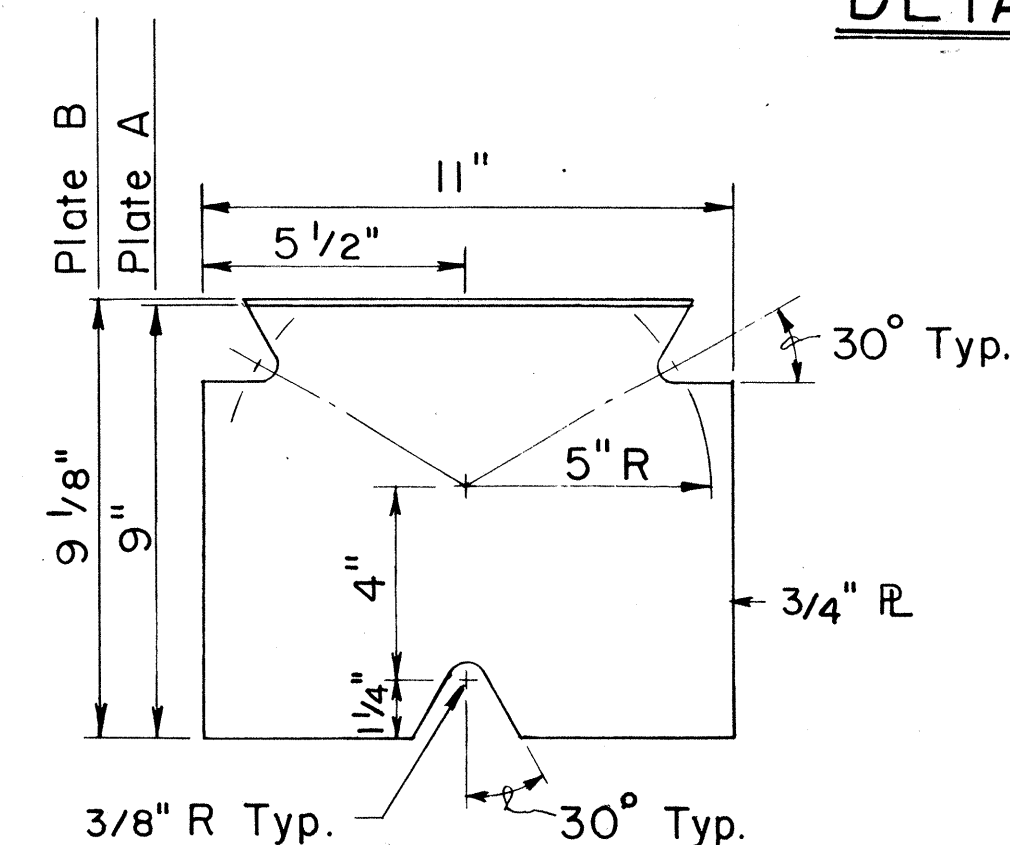
Scale: 1/4" = 1'-0"



SIDE ELEVATION

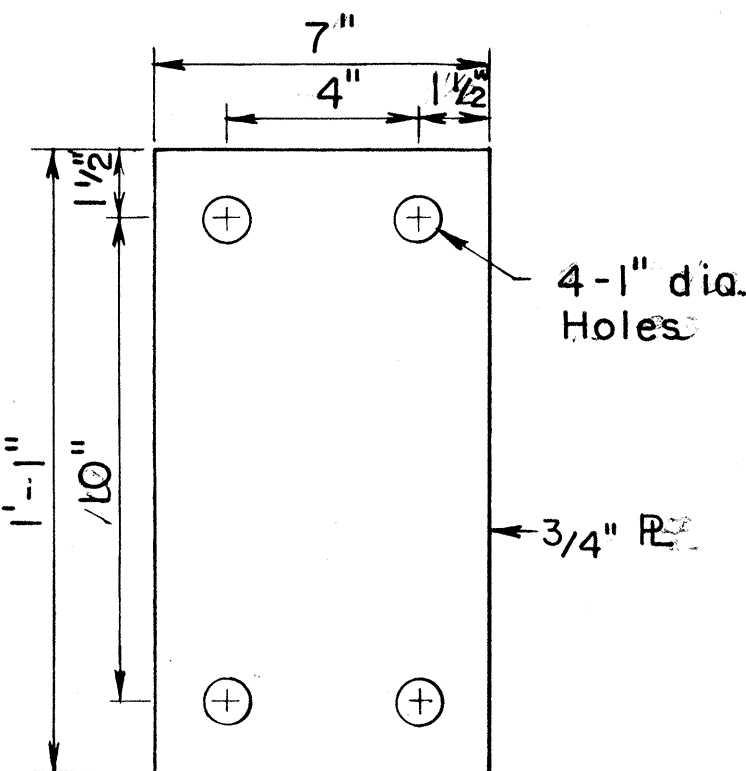
DETAIL B

FRONT ELEVATION



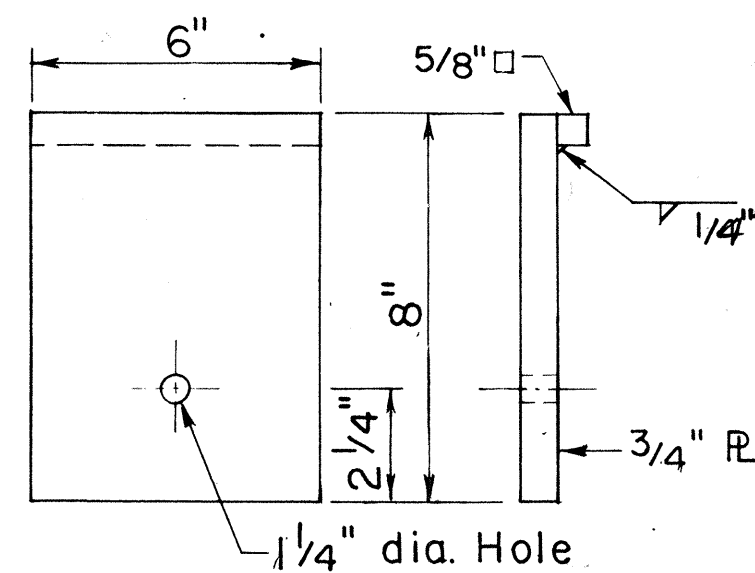
BASE PLATES A & B

Scale: 3" = 1'-0"



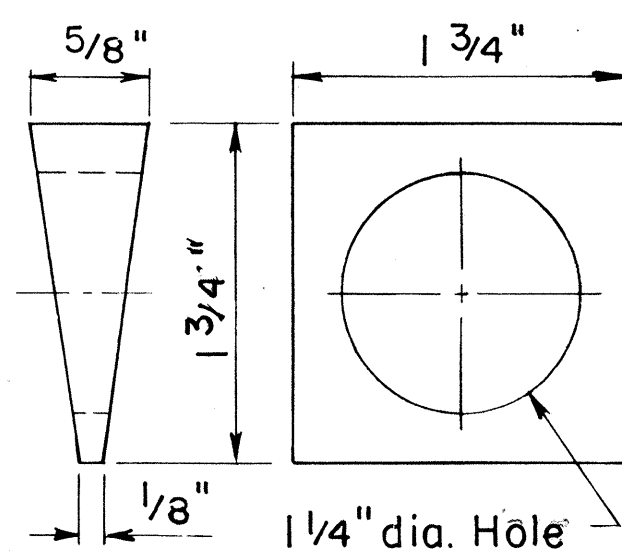
BASE PLATE C

Scale: 3" = 1'-0"



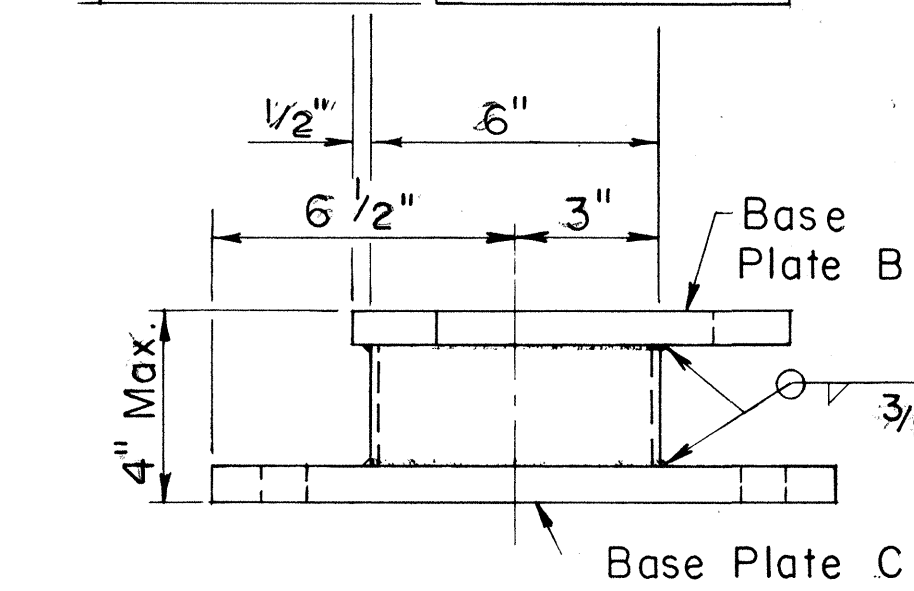
BEARING PLATE

Scale: 3" = 1'-0"



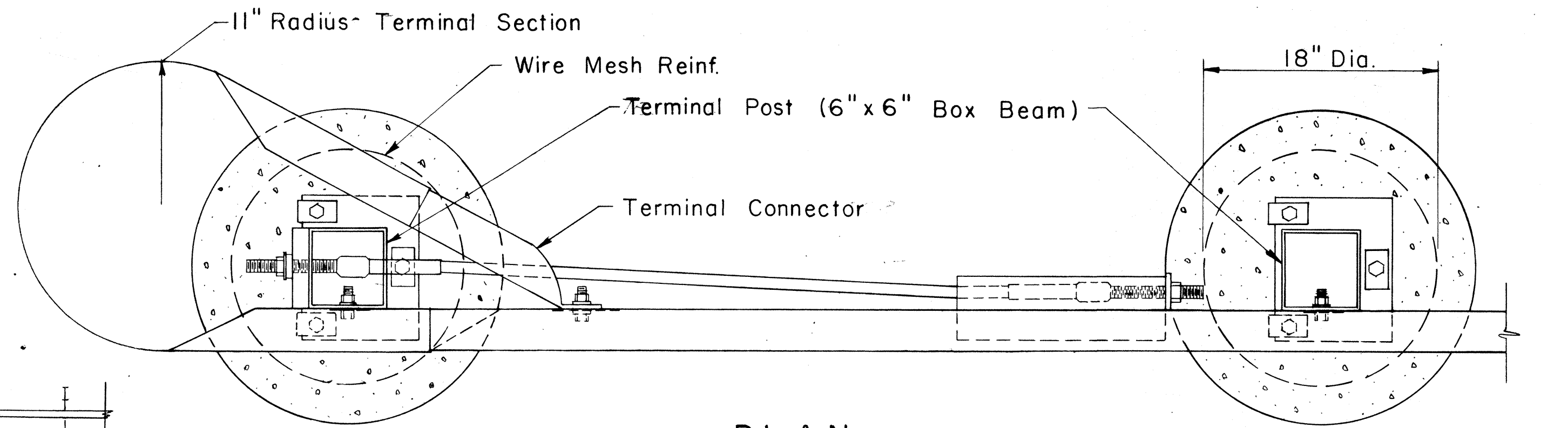
TAPERED WASHER

Scale: Full Size

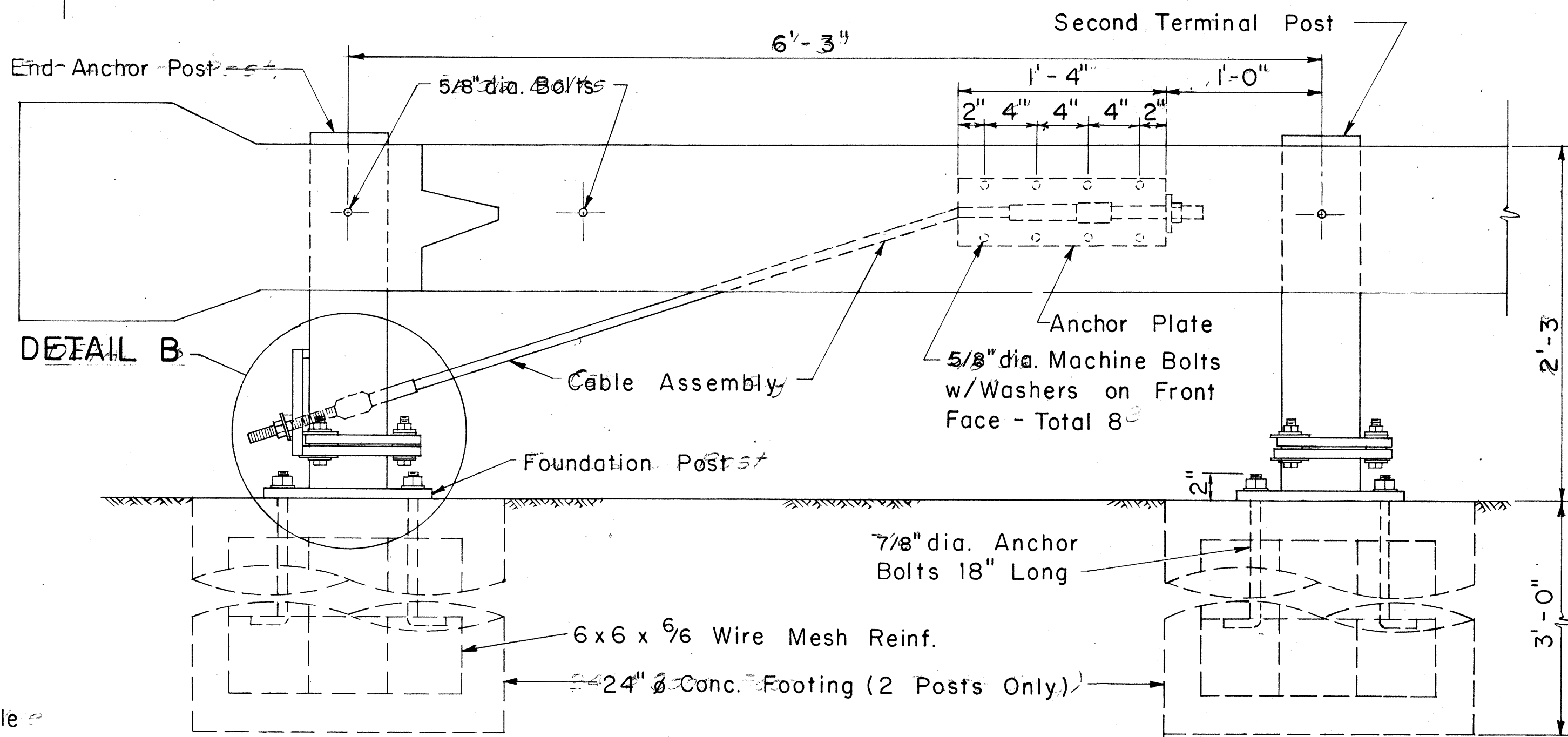


FOUNDATION POST

Scale: 3" = 1'-0"



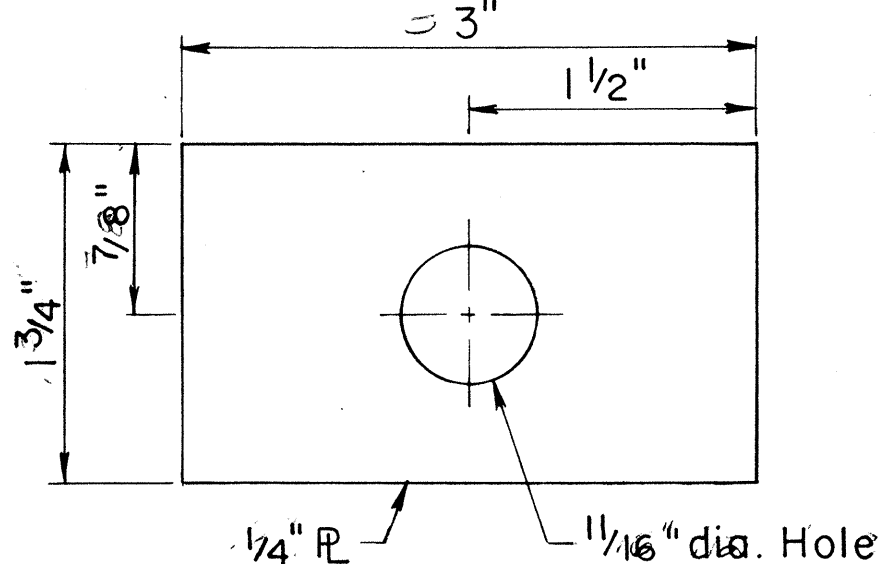
PLAN



ELEVATION

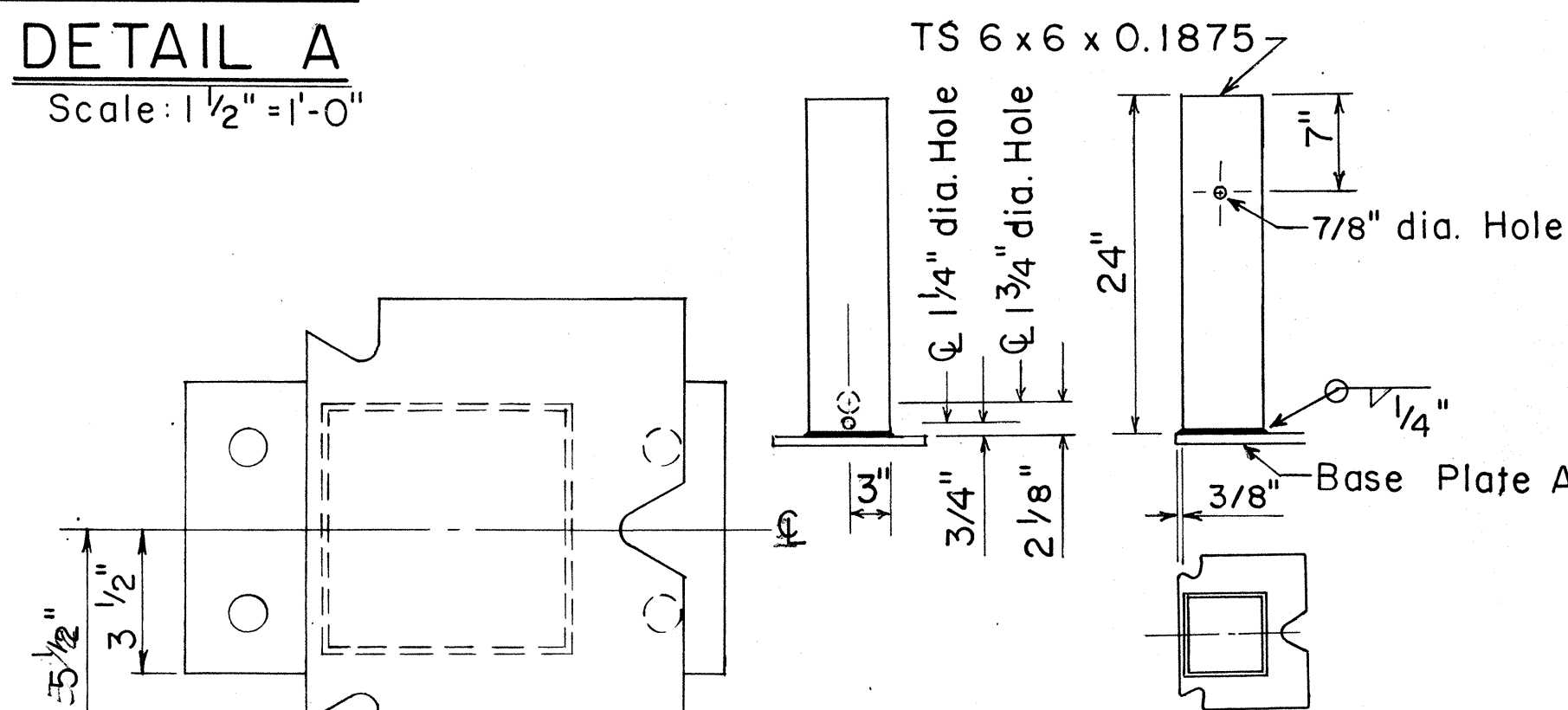
DETAIL A

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



FLAT PLATE WASHER

Scale: Full Size



TERMINAL POST

Scale: 1" = 1'-0"

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.	12/1/80

APPROVAL RECOMMENDED:

Erichi Tanaka
TRAFFIC ENGINEER

6/14/78
DATE

APPROVED:

Harbor Zaleski
ASSISTANT CHIEF, ENGINEERING

6/15/78
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAIL

BREAKAWAY CABLE TERMINAL (BCT)

Scale: As Shown Date: June 1978

SHEET No. OF SHEETS DT 519