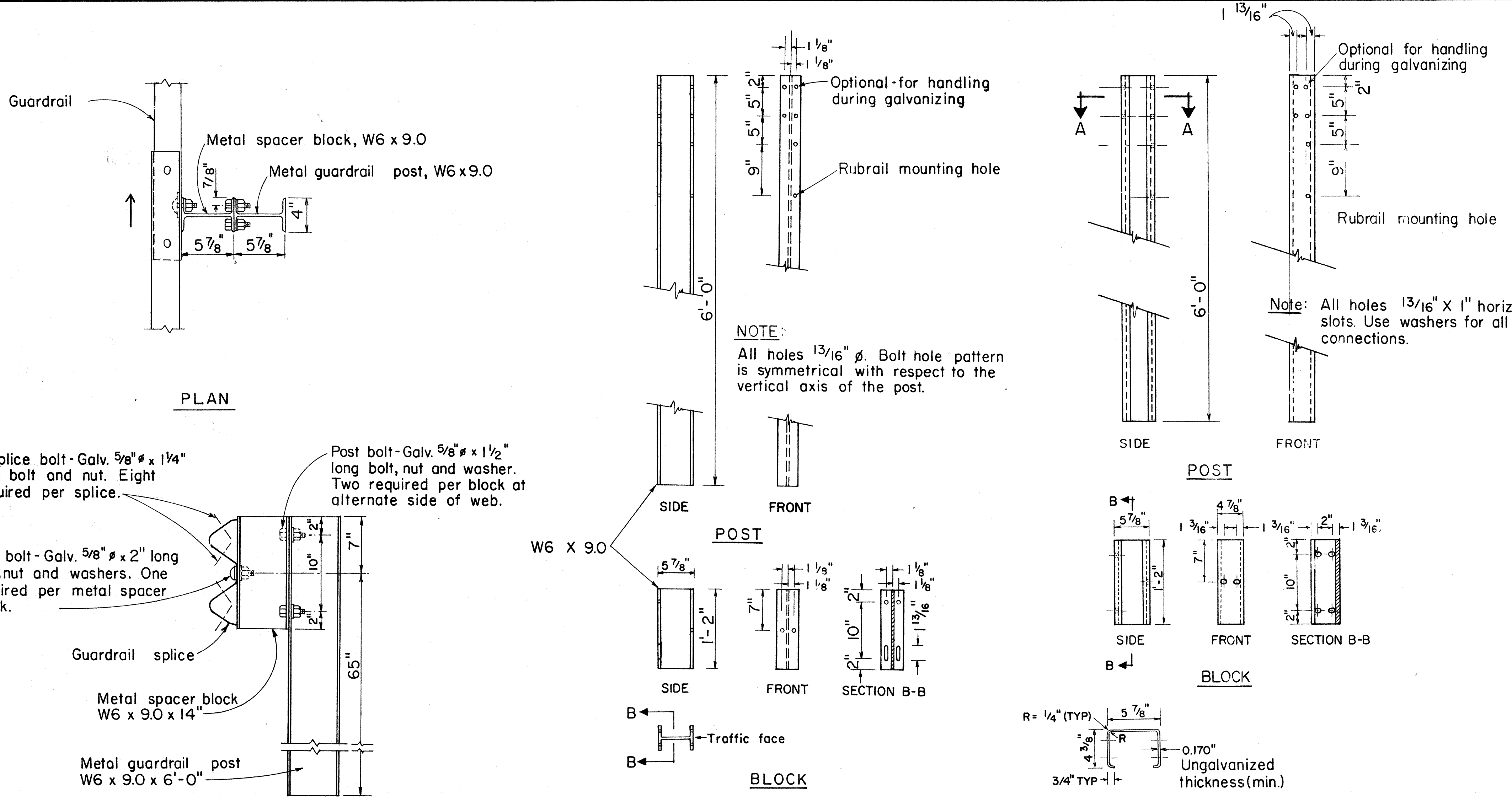


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-093-1(7)	1984	19	39

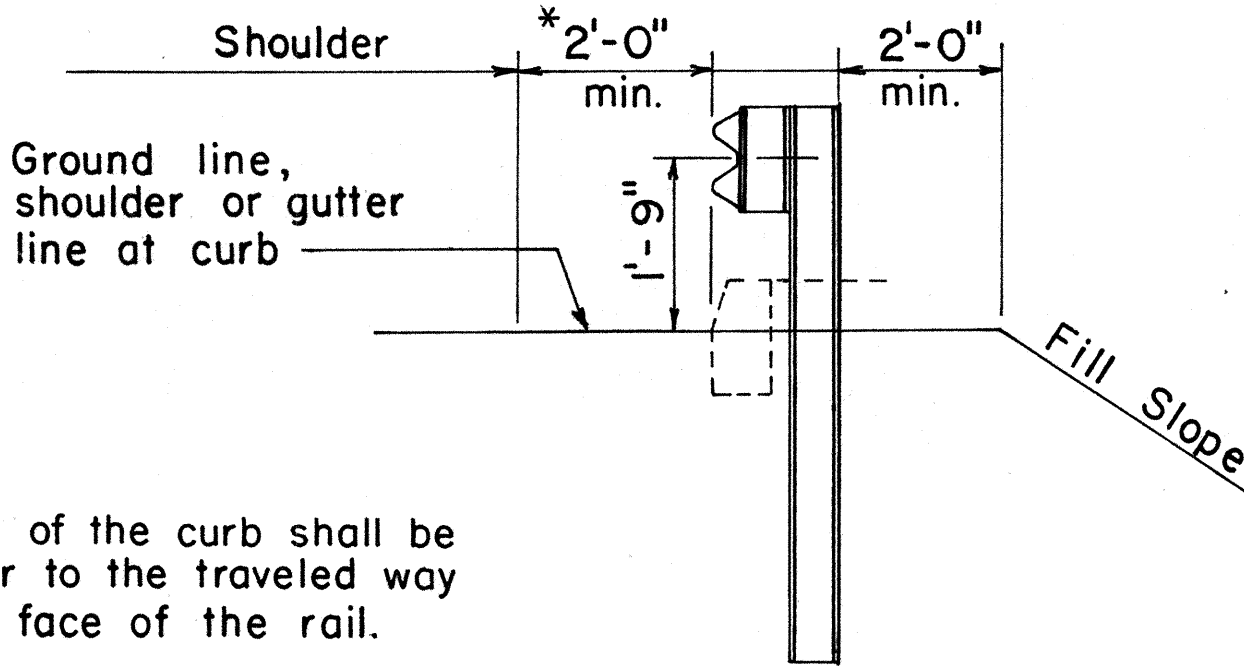
GENERAL NOTES

- 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.



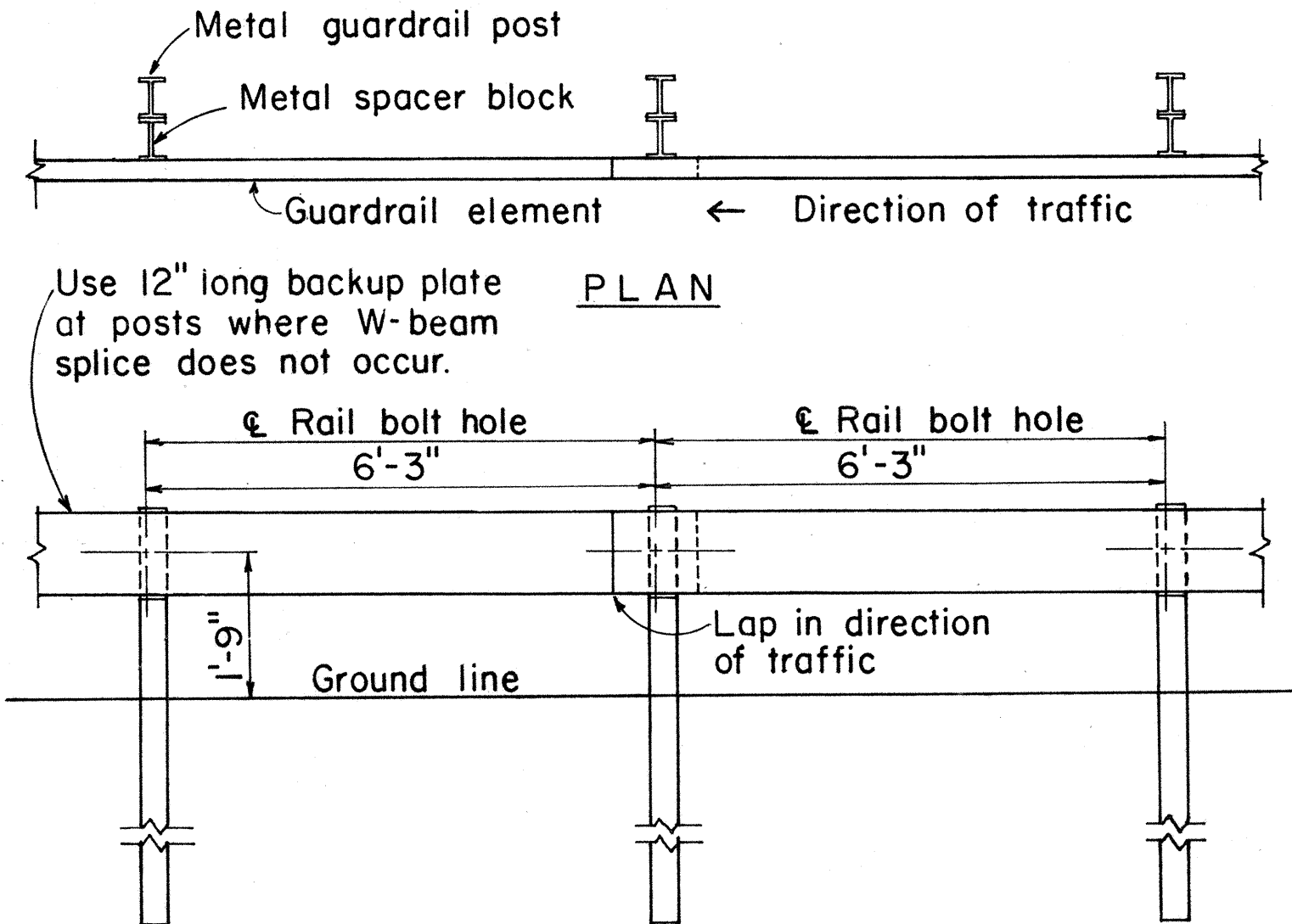
SINGLE METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

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



TYPICAL METAL GUARDRAIL DETAIL

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



METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

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

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	β D O	9-28-83

APPROVAL RECOMMENDED:

Evelyn Tanaka 9/1/82

TRAFFIC ENGINEER DATE

APPROVED:

Robert Zaleski 9/22/82

ASSISTANT CHIEF, ENGINEERING DATE

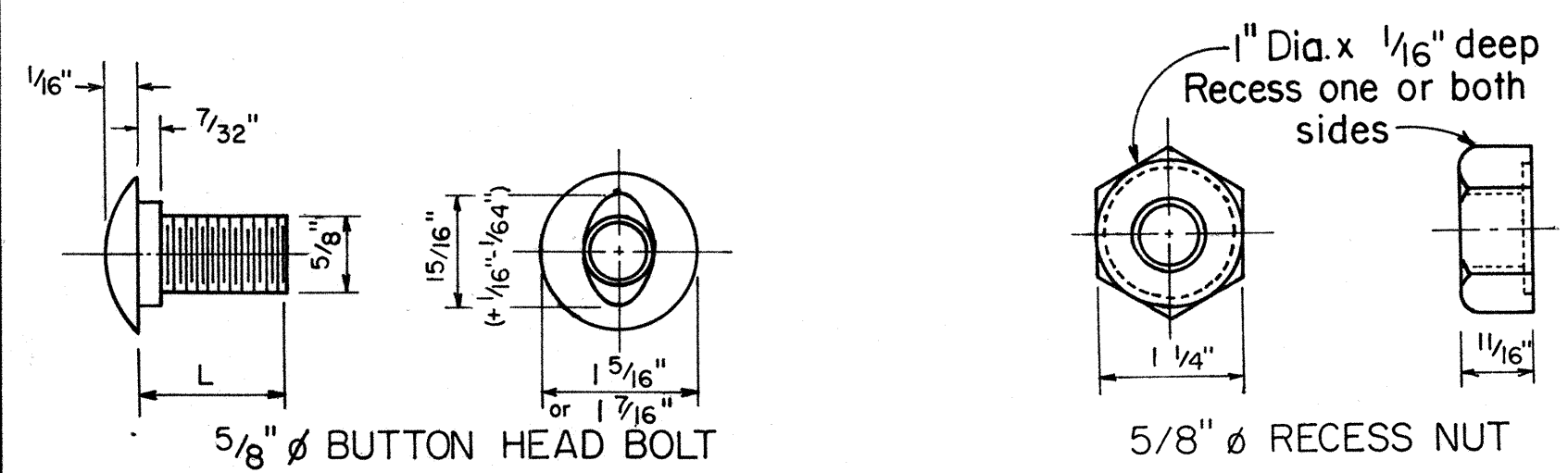
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARDRAIL

Scale: As Shown
July, 1982
SHEET NO. 1 OF 5 SHEETS DT 500

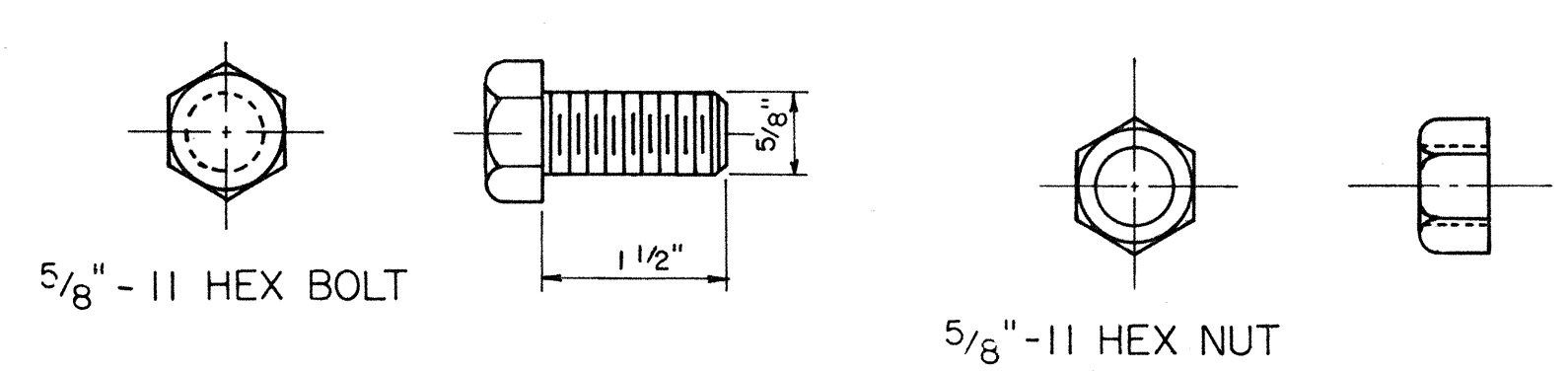
ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-093-1(7)	1984	20	39

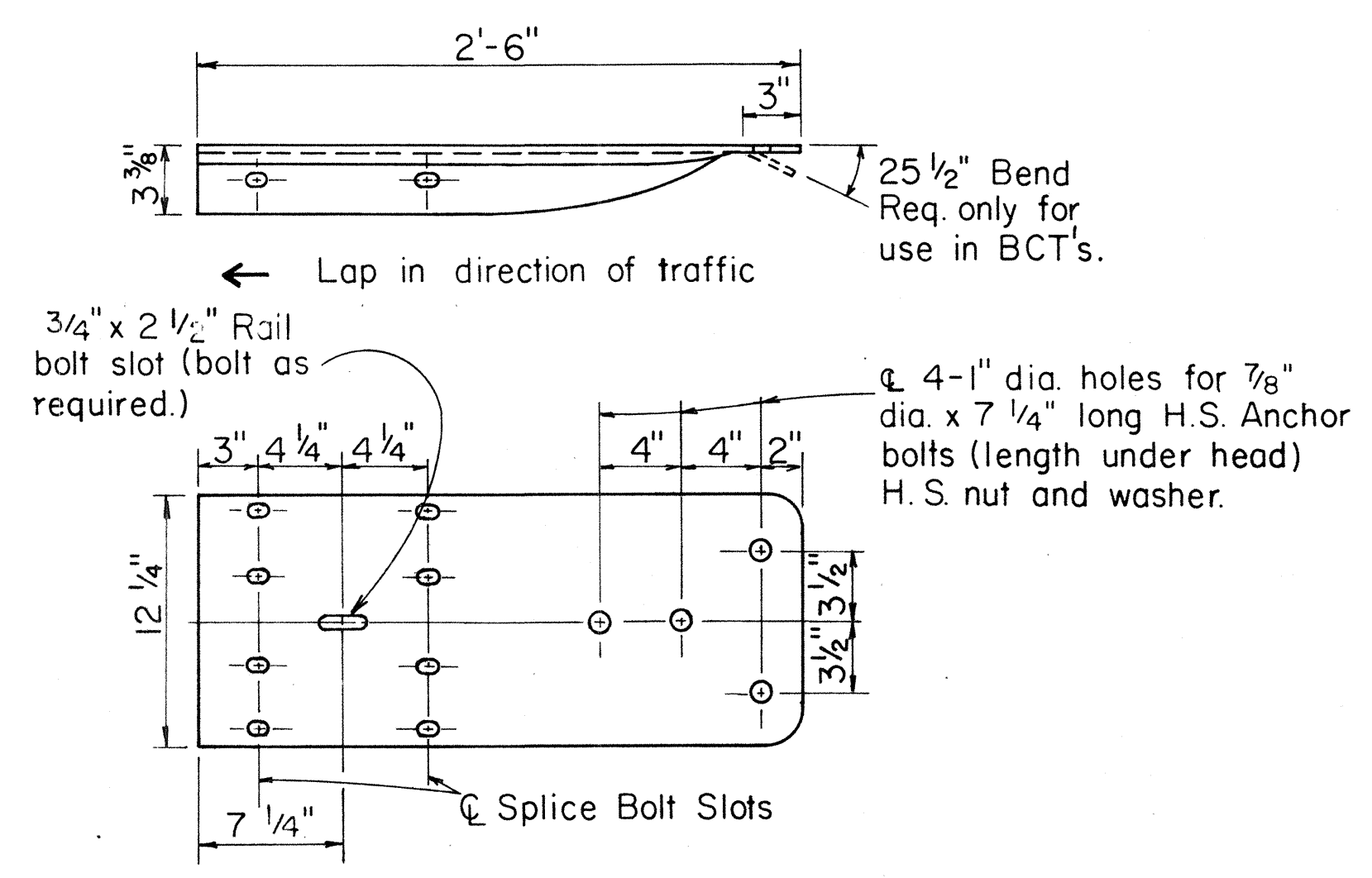


L	Thread Length	Intended Use
1 1/4"	Full length thread	Splice rail elements
2"	1 1/2" min. thread len.	Fasten rails to posts

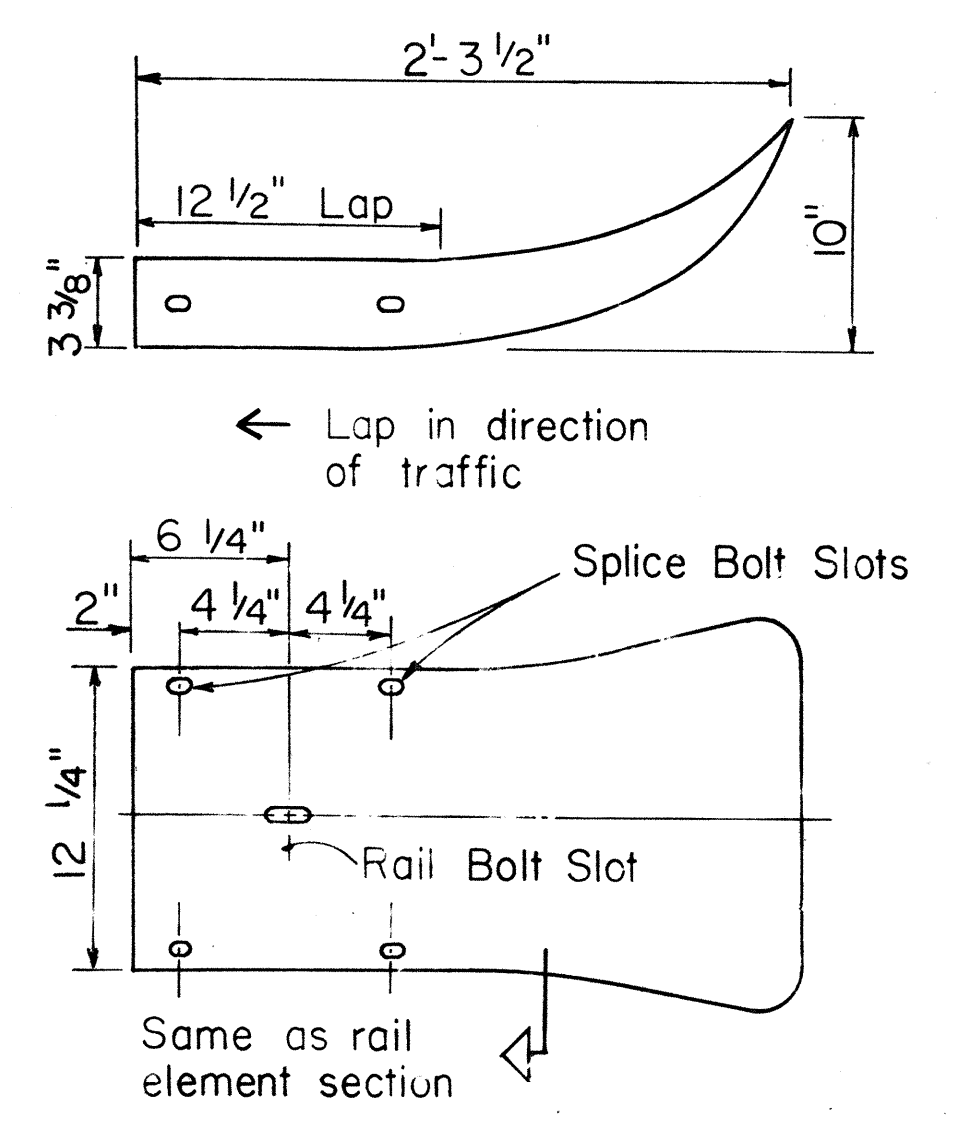
**5/8" BUTTON HEAD BOLT
AND RECESS NUT**
Scale: N.T.S.



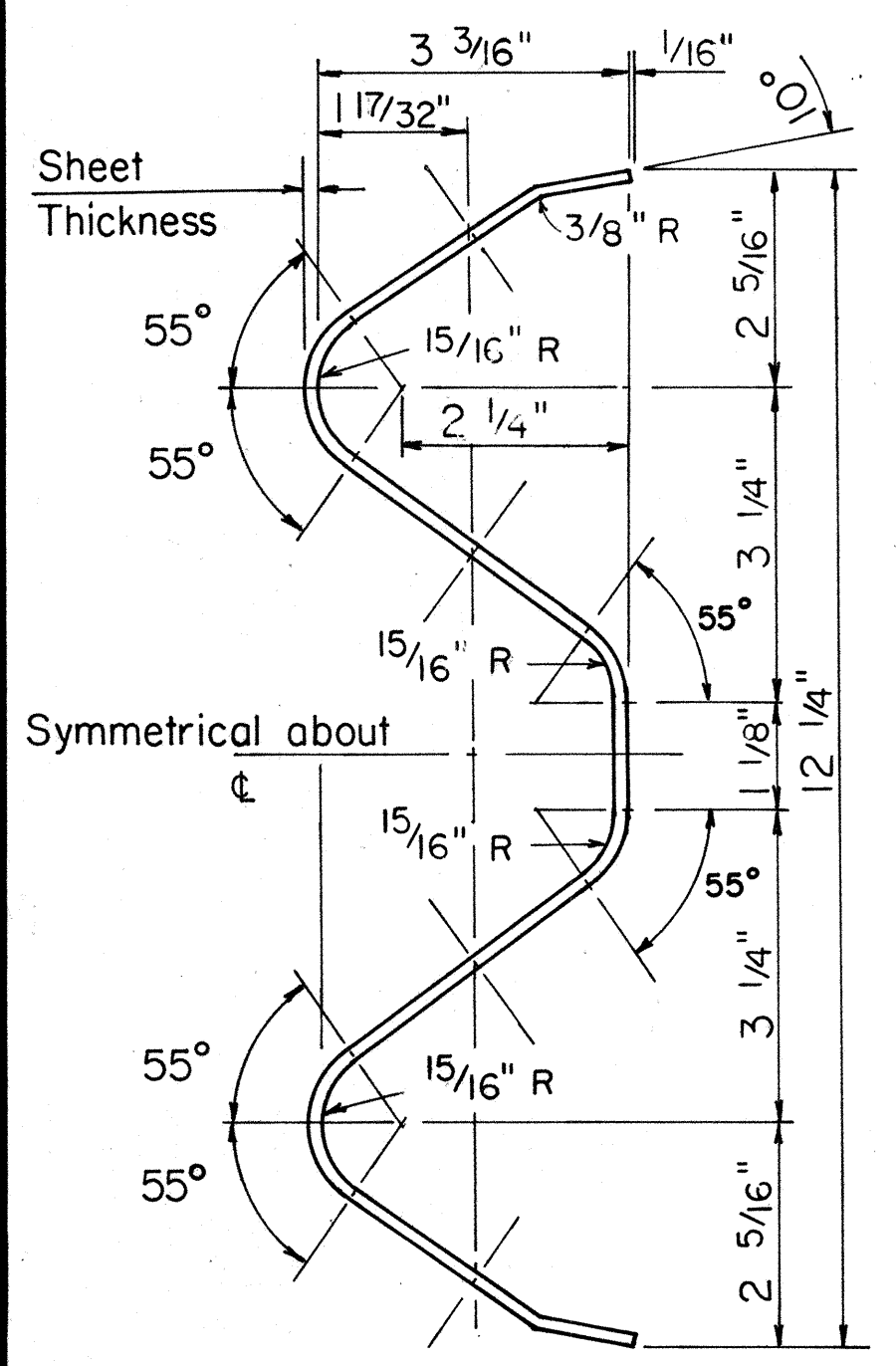
5/8" HEX POST BOLT AND NUT
Scale: N.T.S.



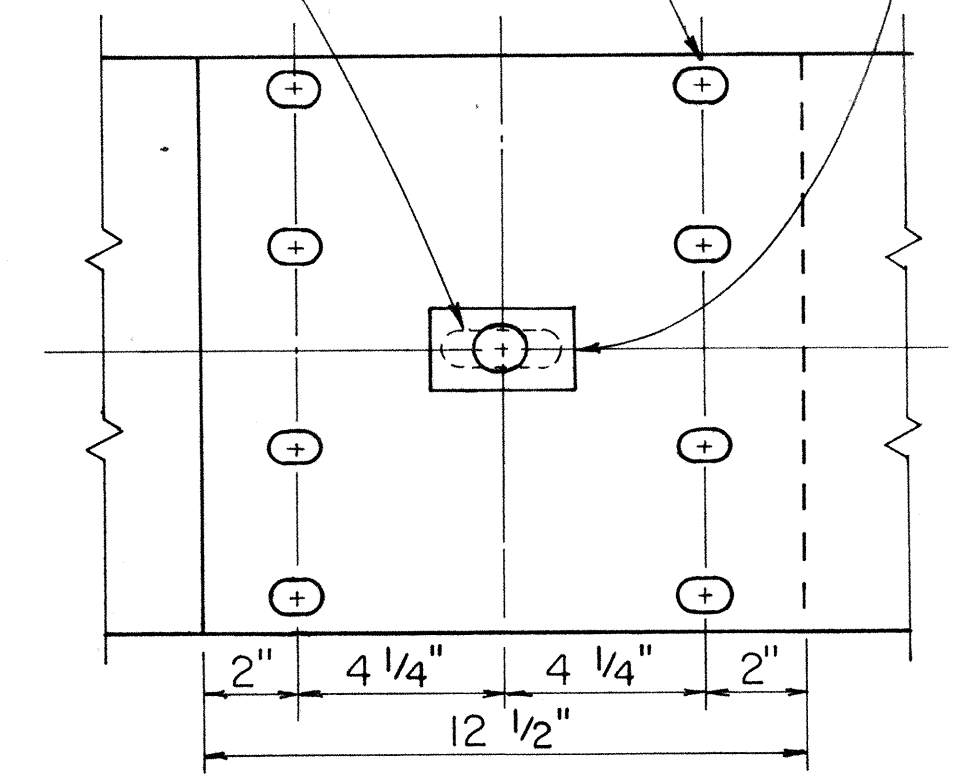
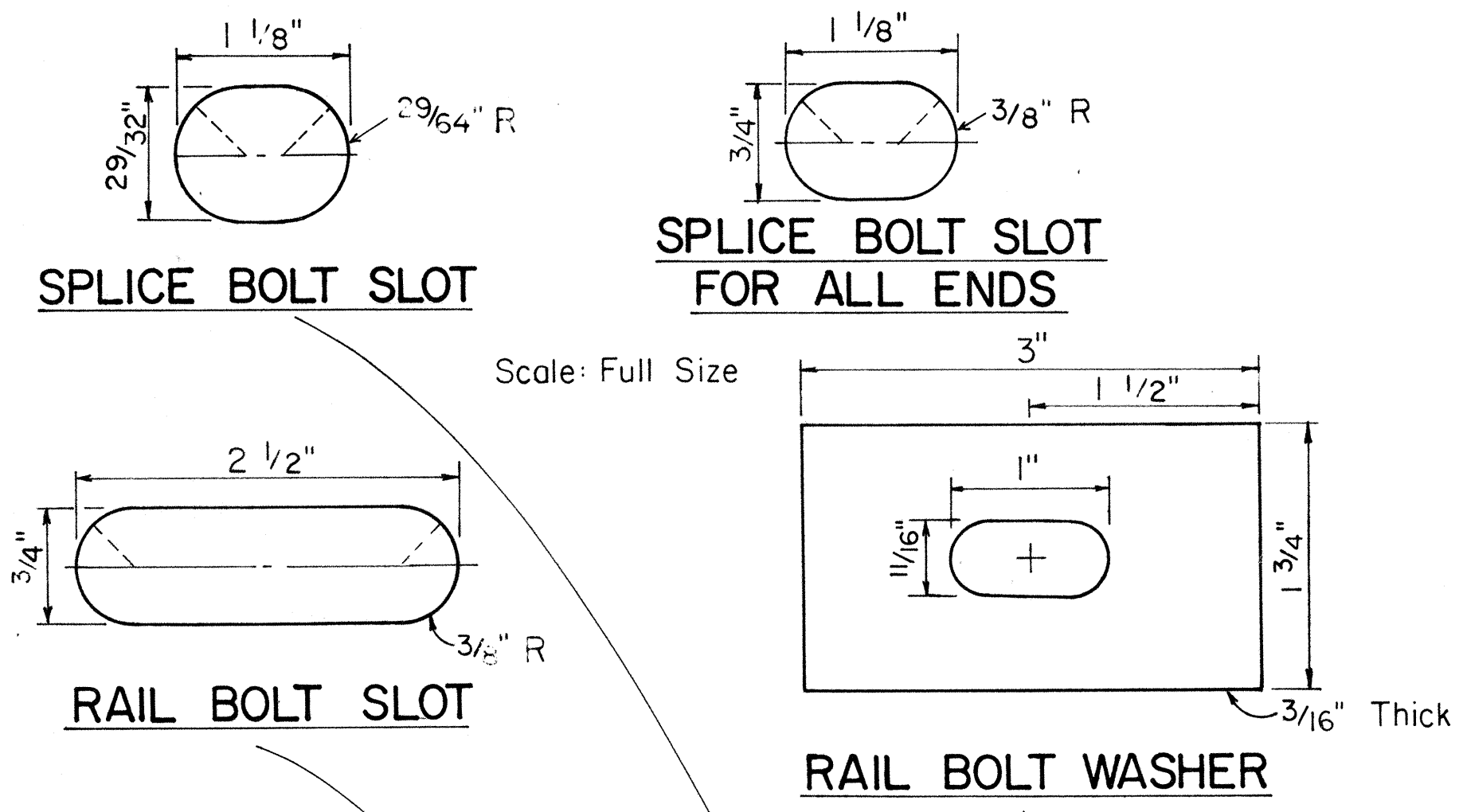
W BEAM TERMINAL CONNECTOR
Scale: 1 1/2" = 1'-0"



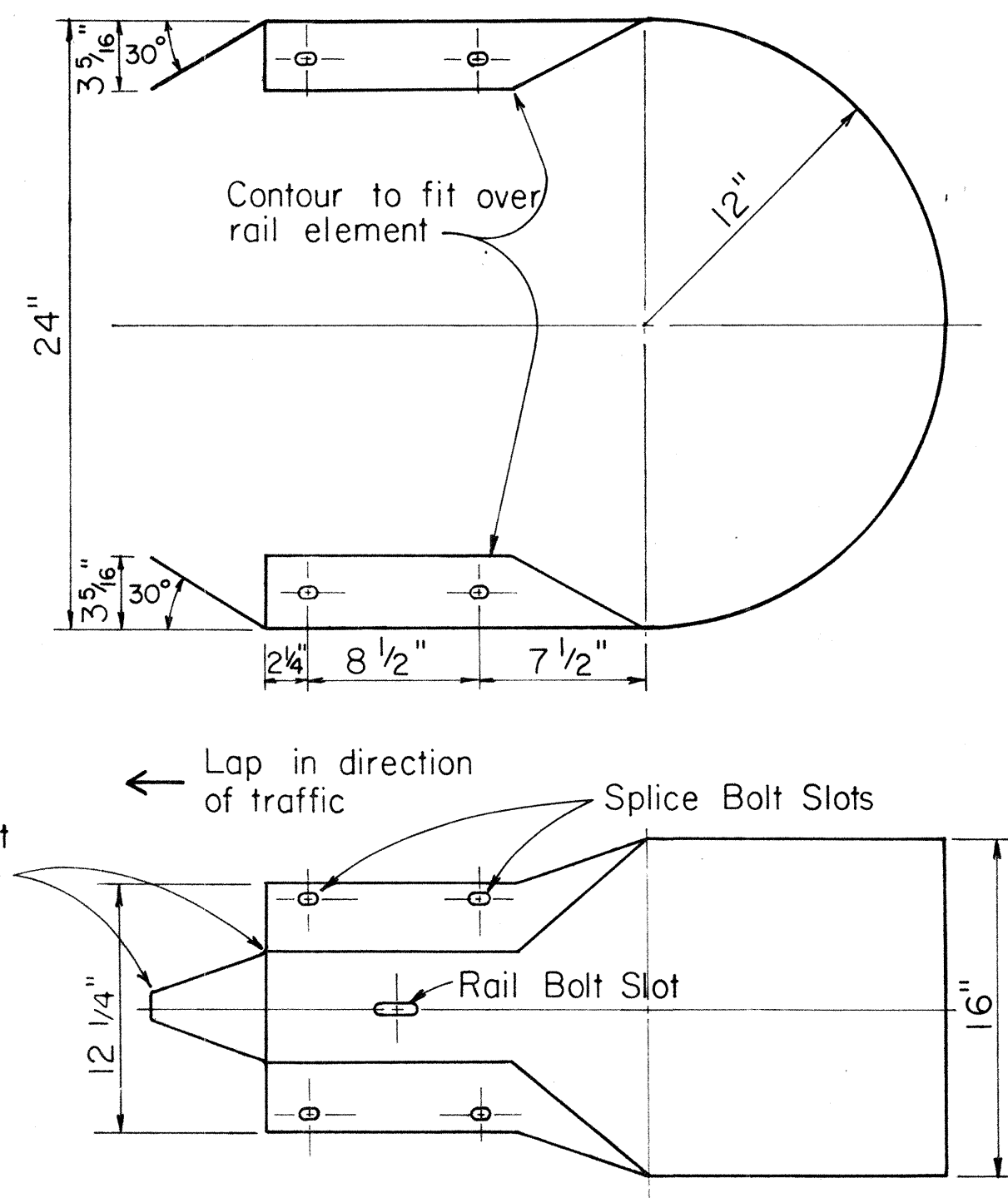
W BEAM END SECTION (FLARED)
Scale: 1 1/2" = 1'-0"



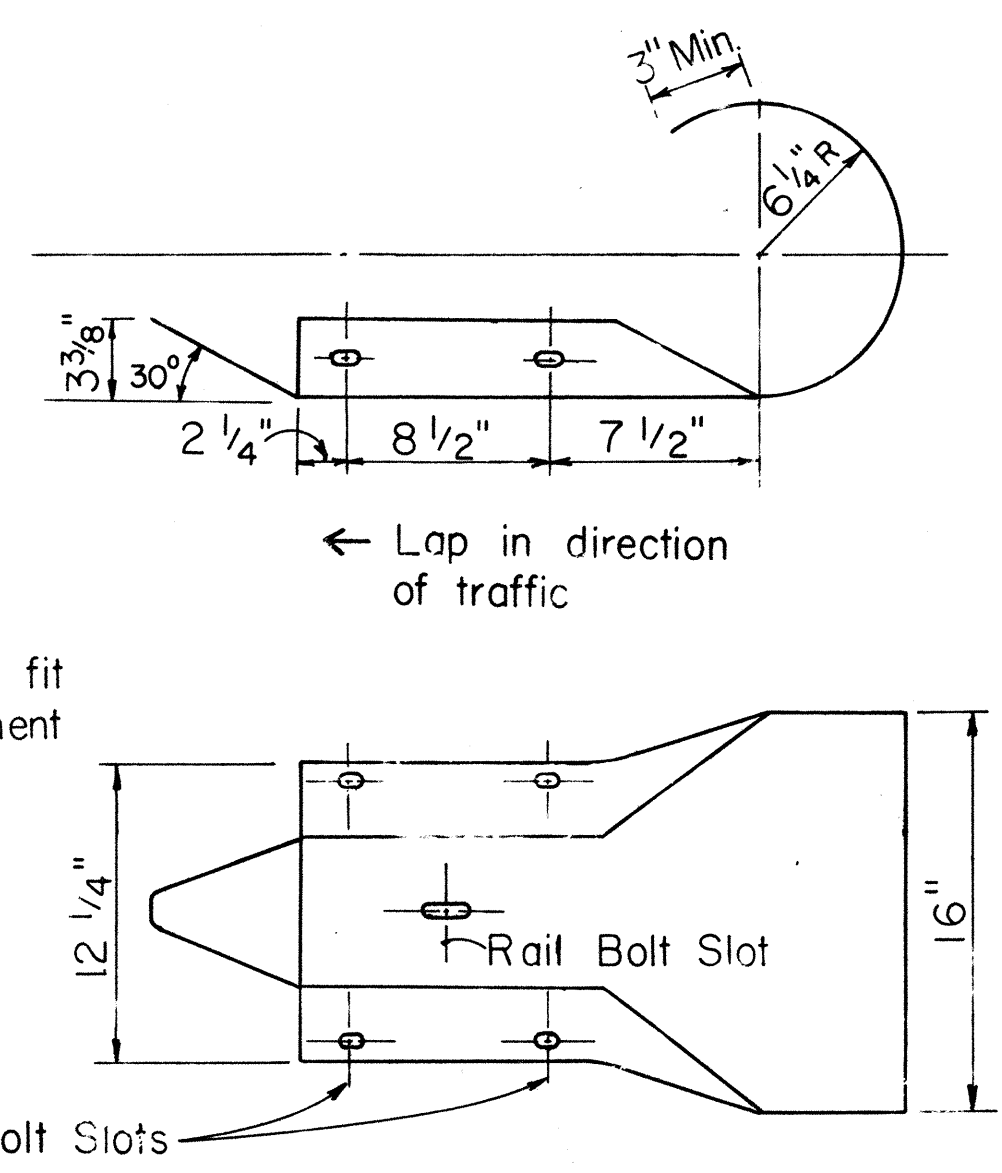
RAIL ELEMENT SECTION
Scale: 6" = 1'-0"



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	H.T.	9/22/82

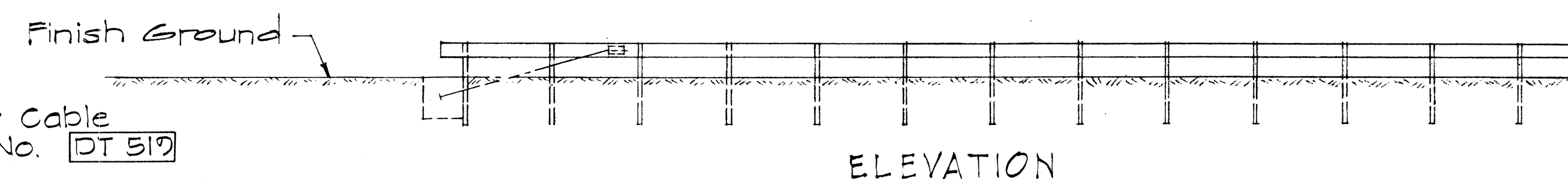
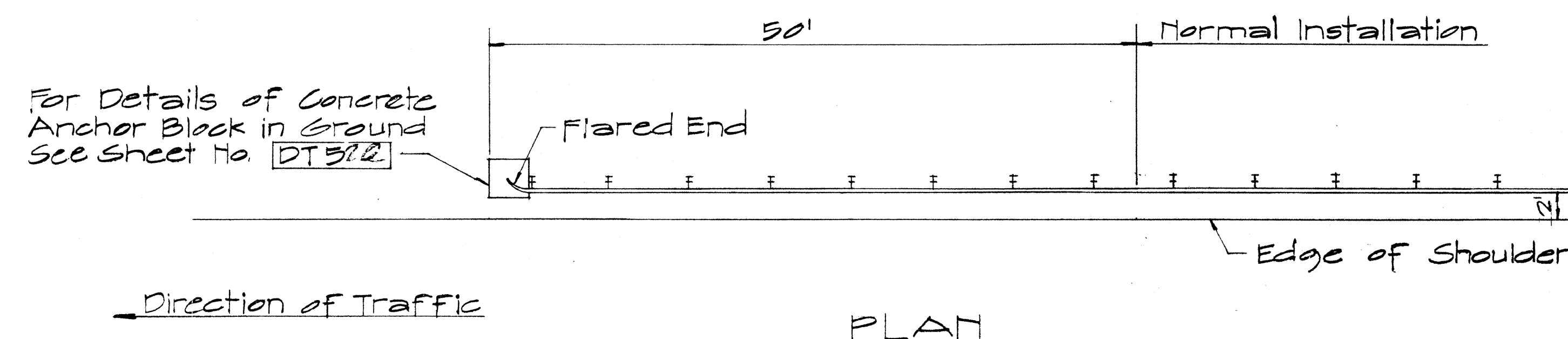
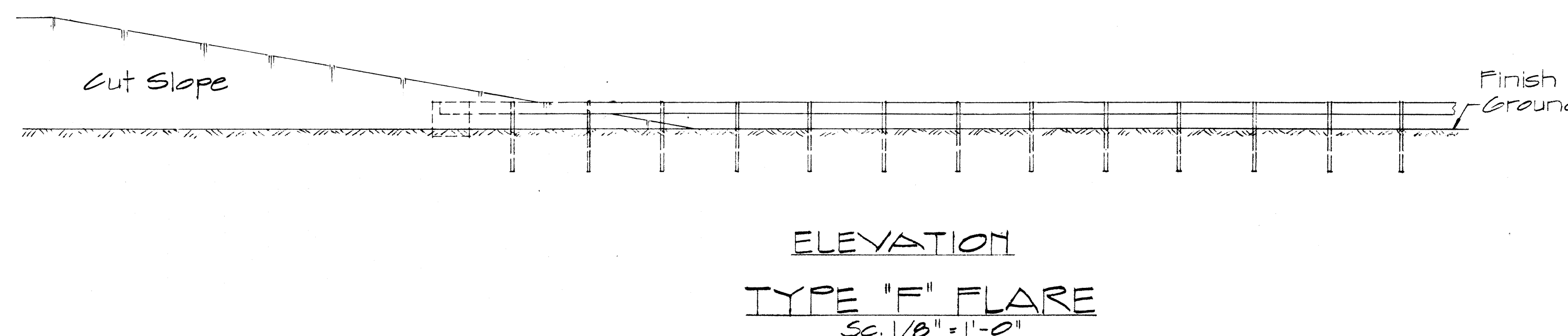
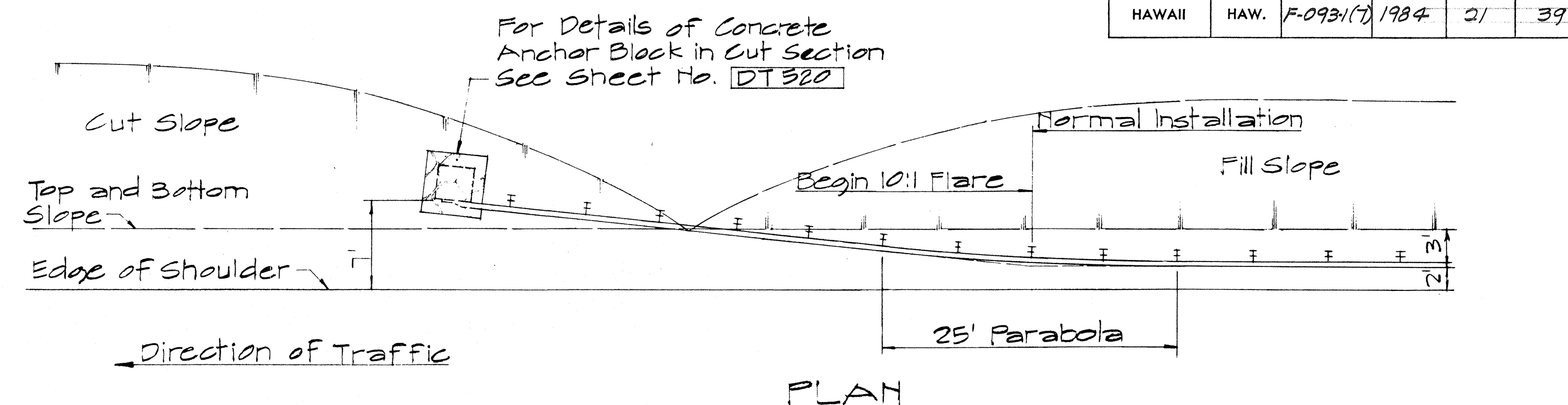
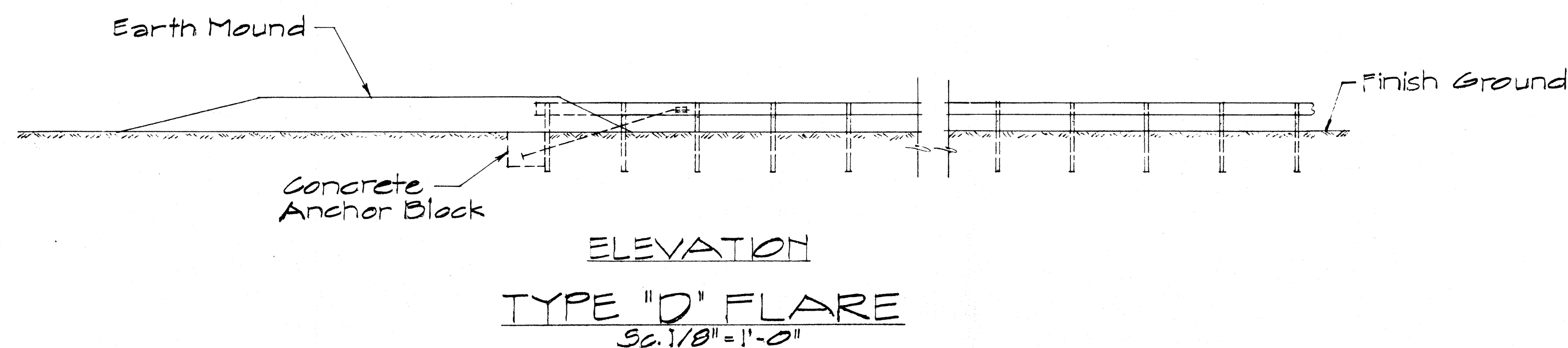
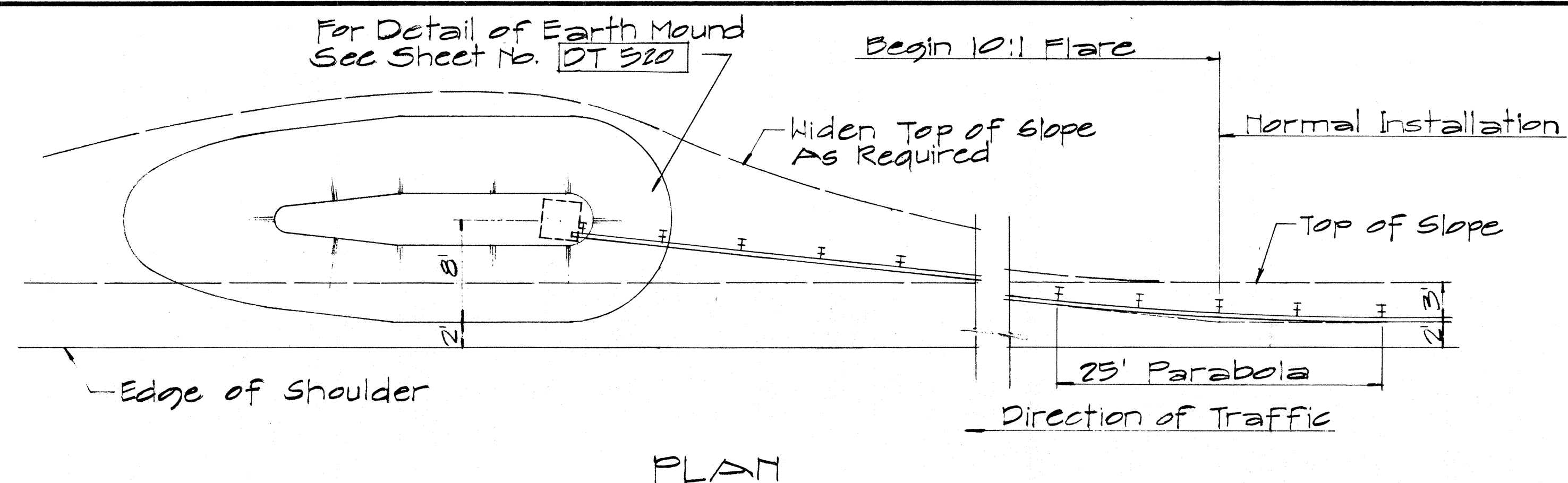
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARDRAIL

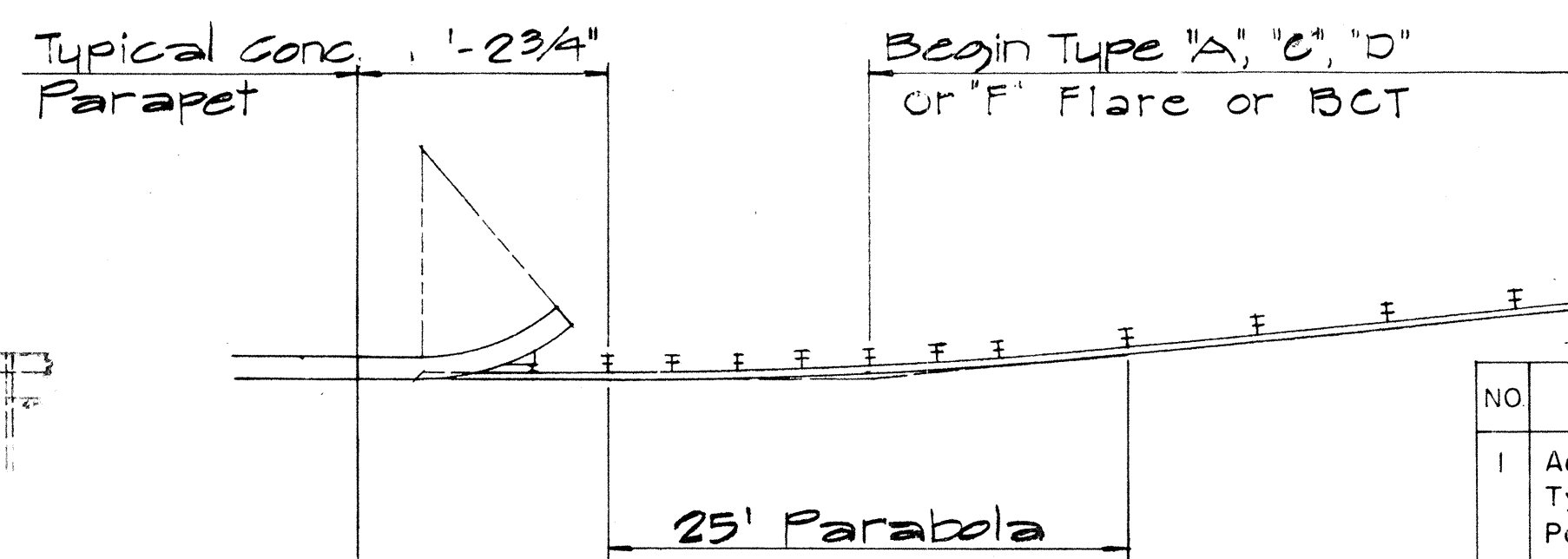
Scale: As Noted
July, 1982
SHEET NO. 2 OF 5 SHEETS DT 501

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-0931(7)	1984	21	39



NOTE:
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 319



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.	6-15-78

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

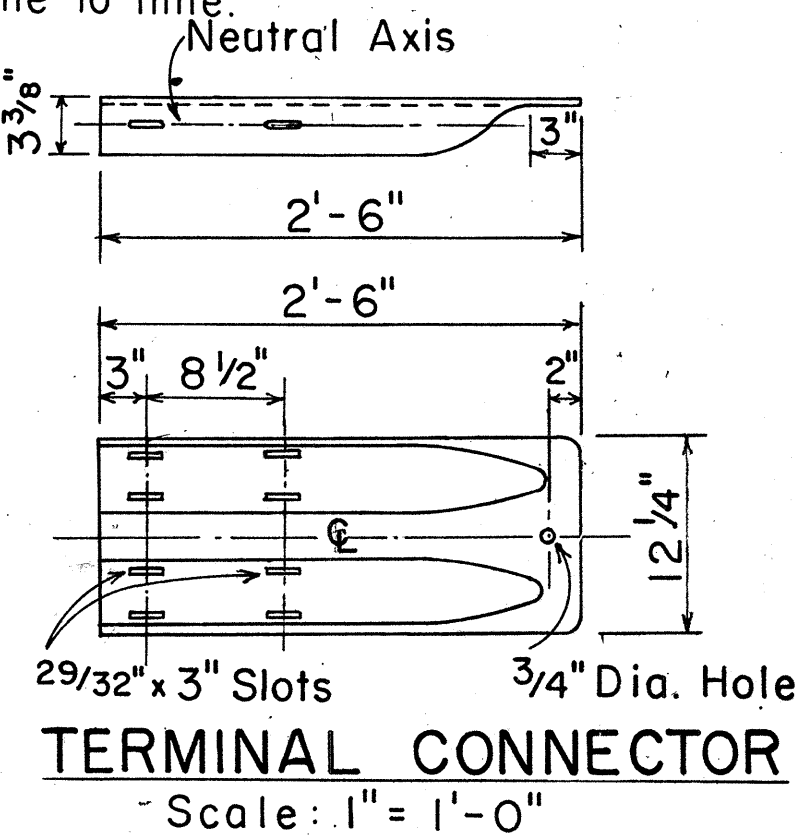
Scale: As Noted April 1969

SHEET No. 3 OF 5 SHEETS DT 517

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F0931(7)	1984	22	39

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 accomodate 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 superceded 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.



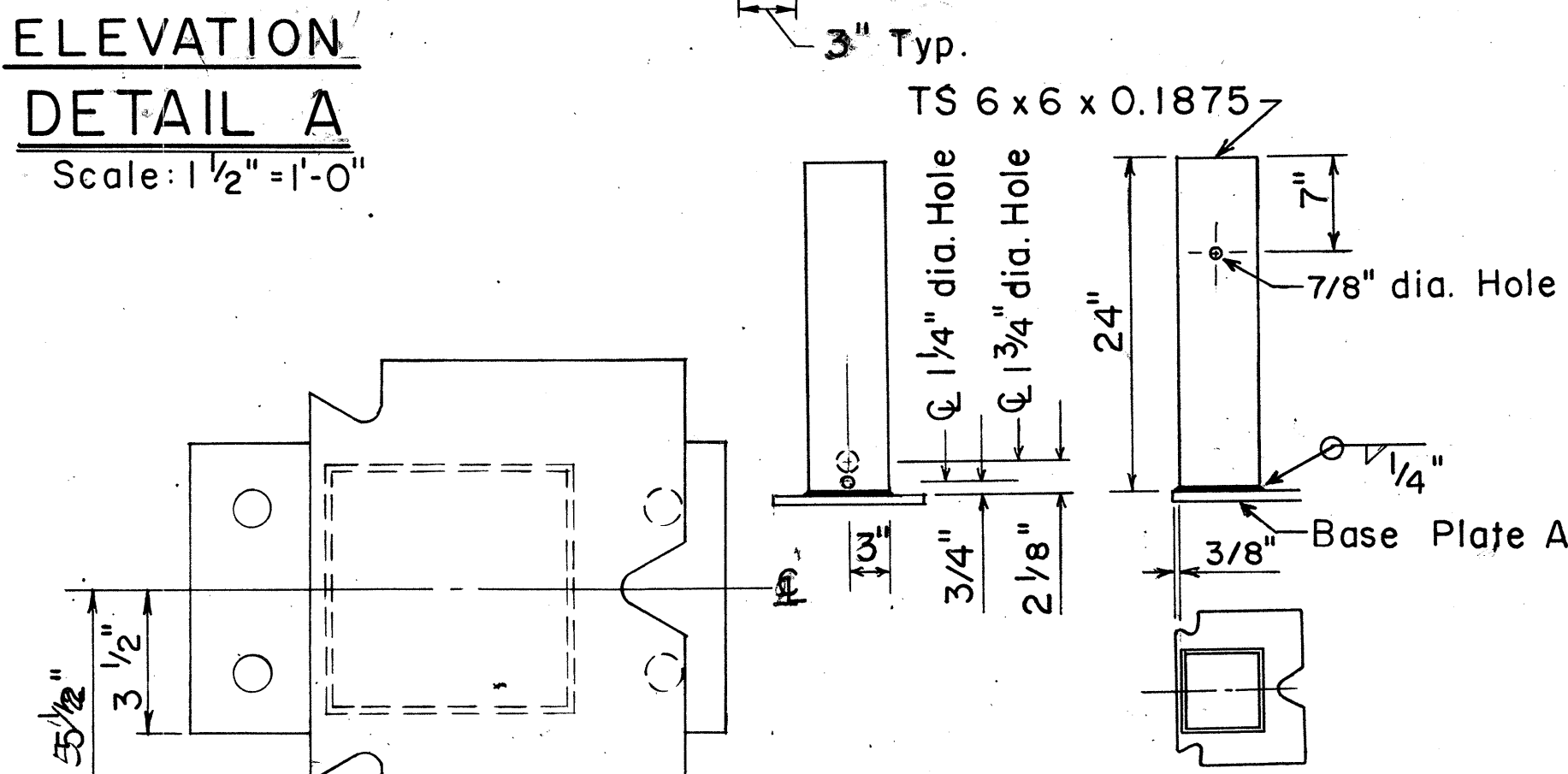
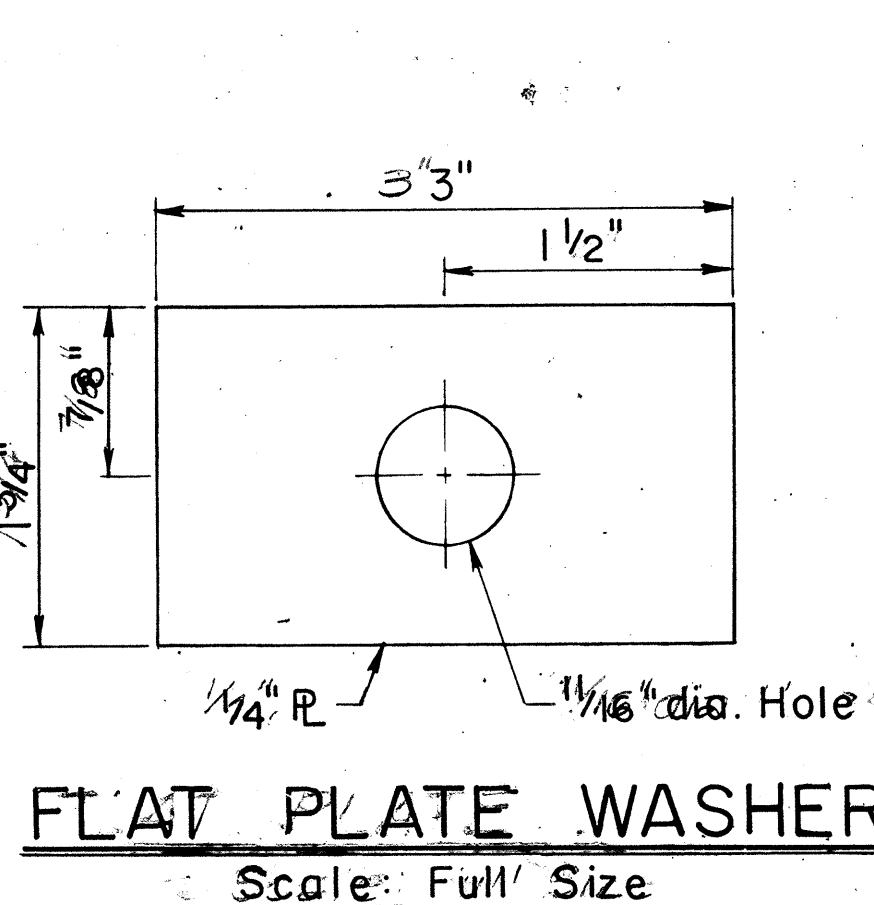
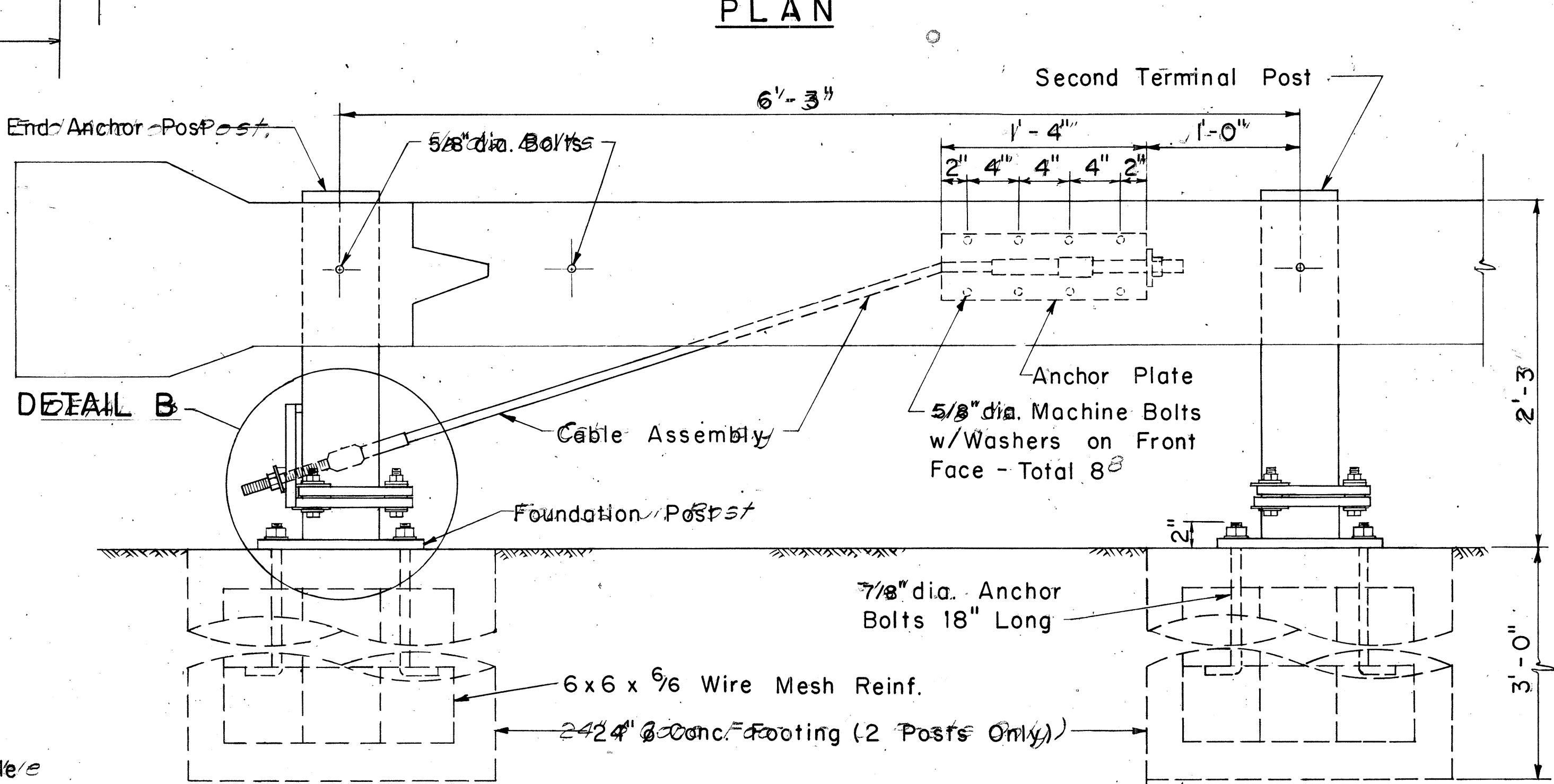
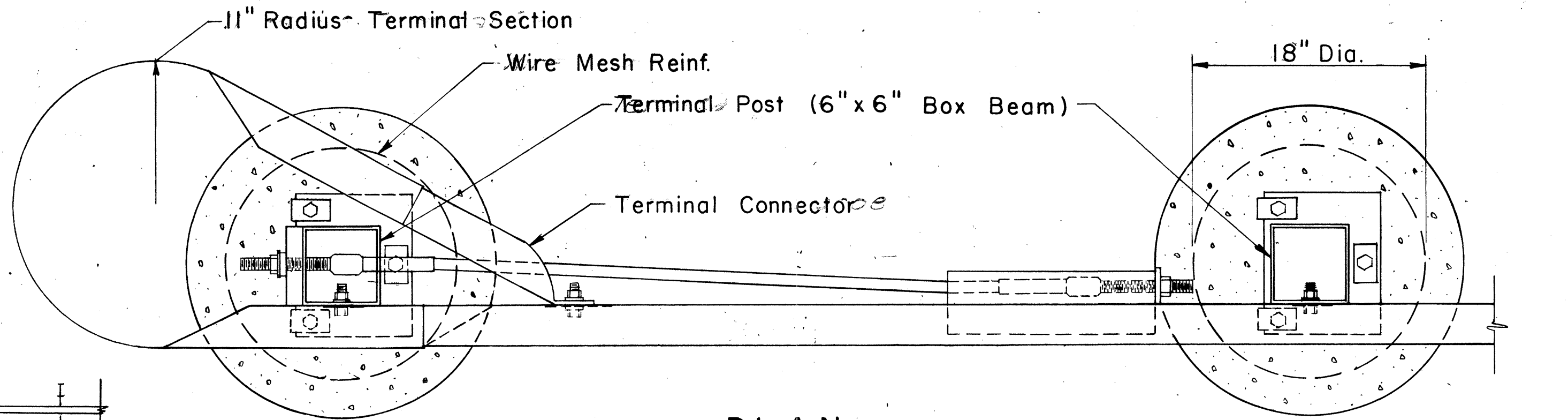
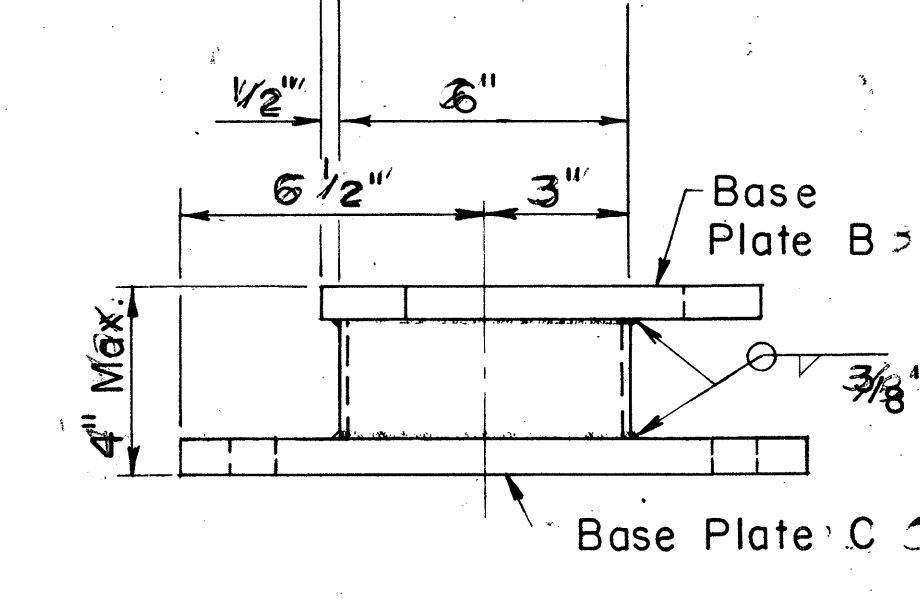
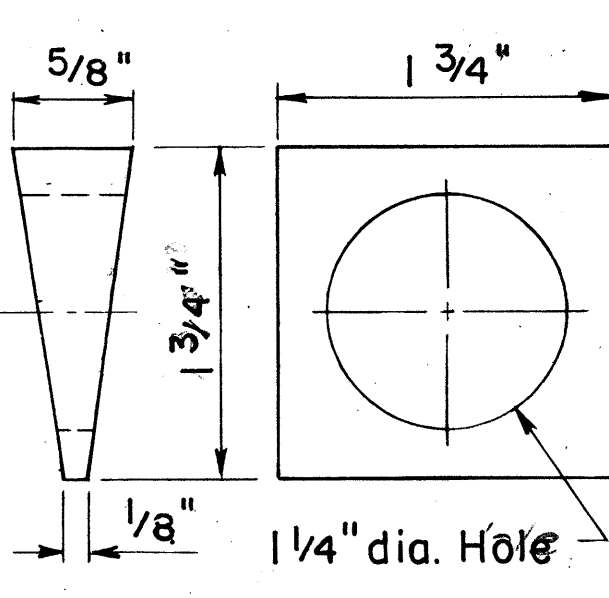
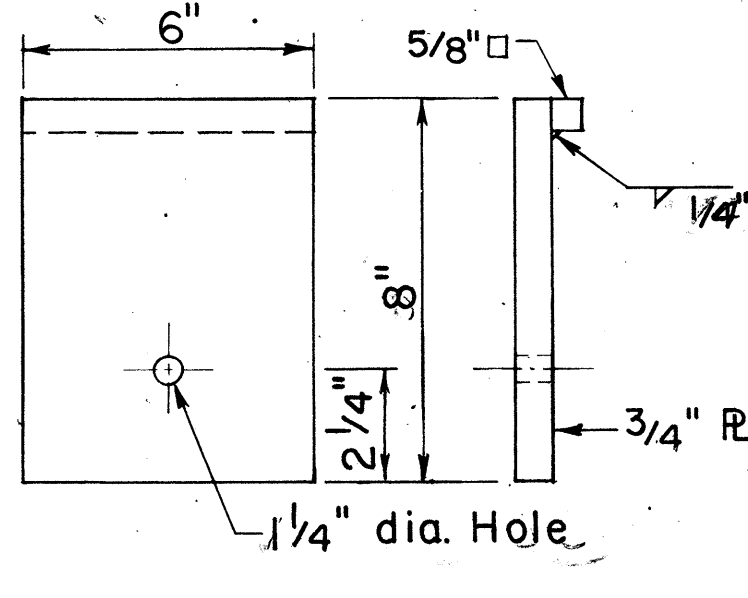
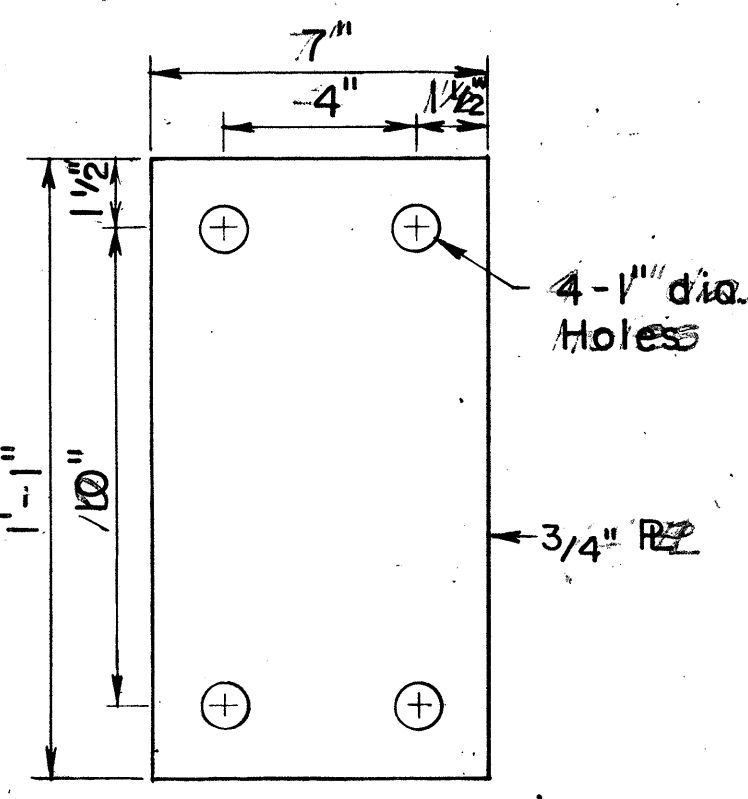
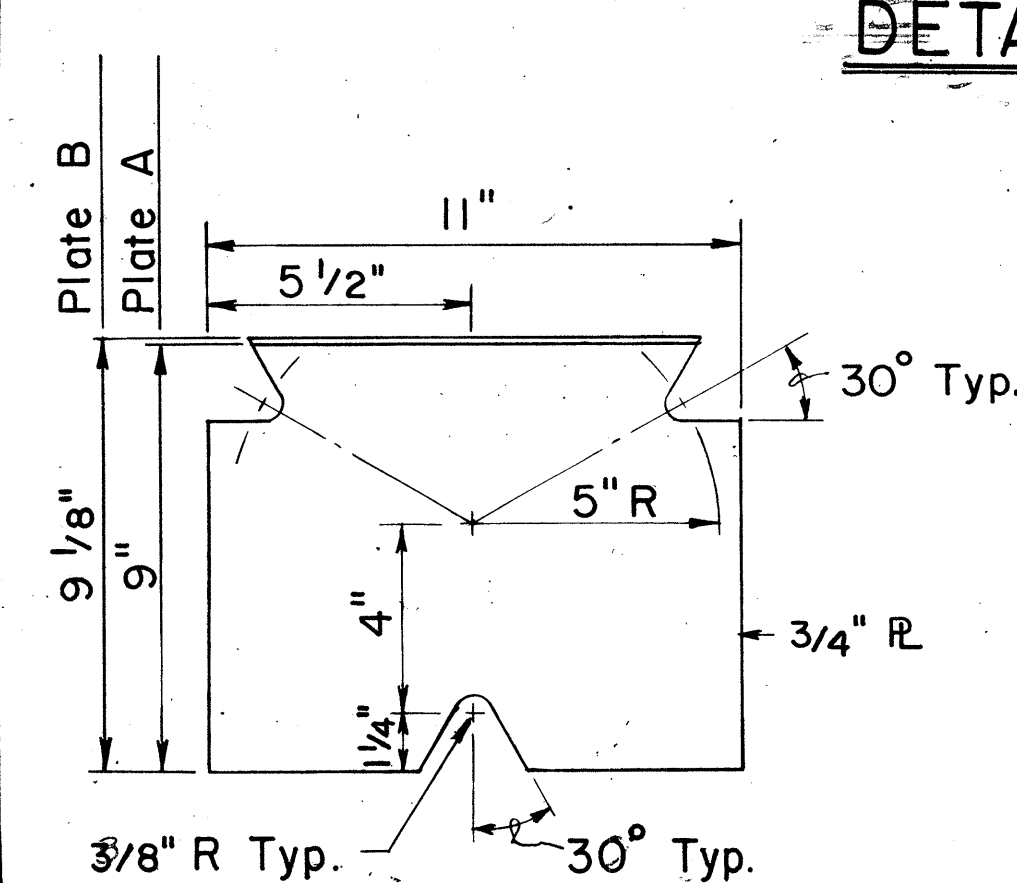
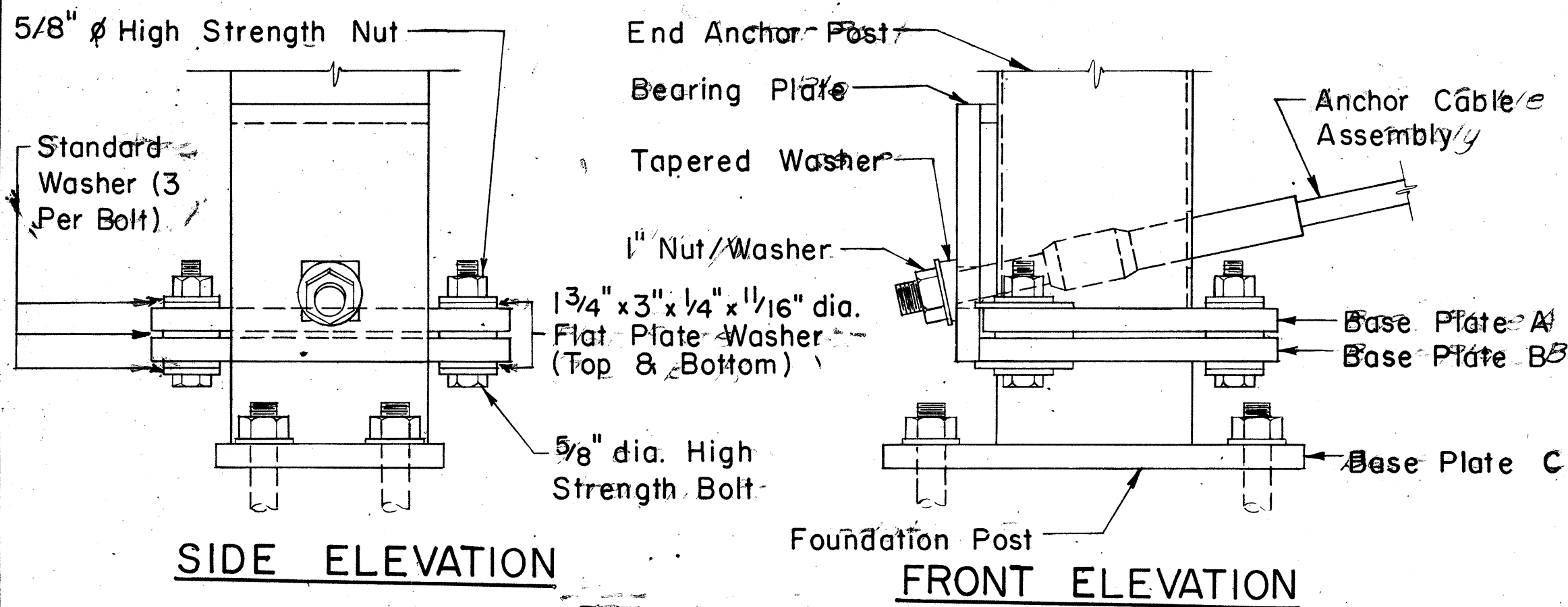
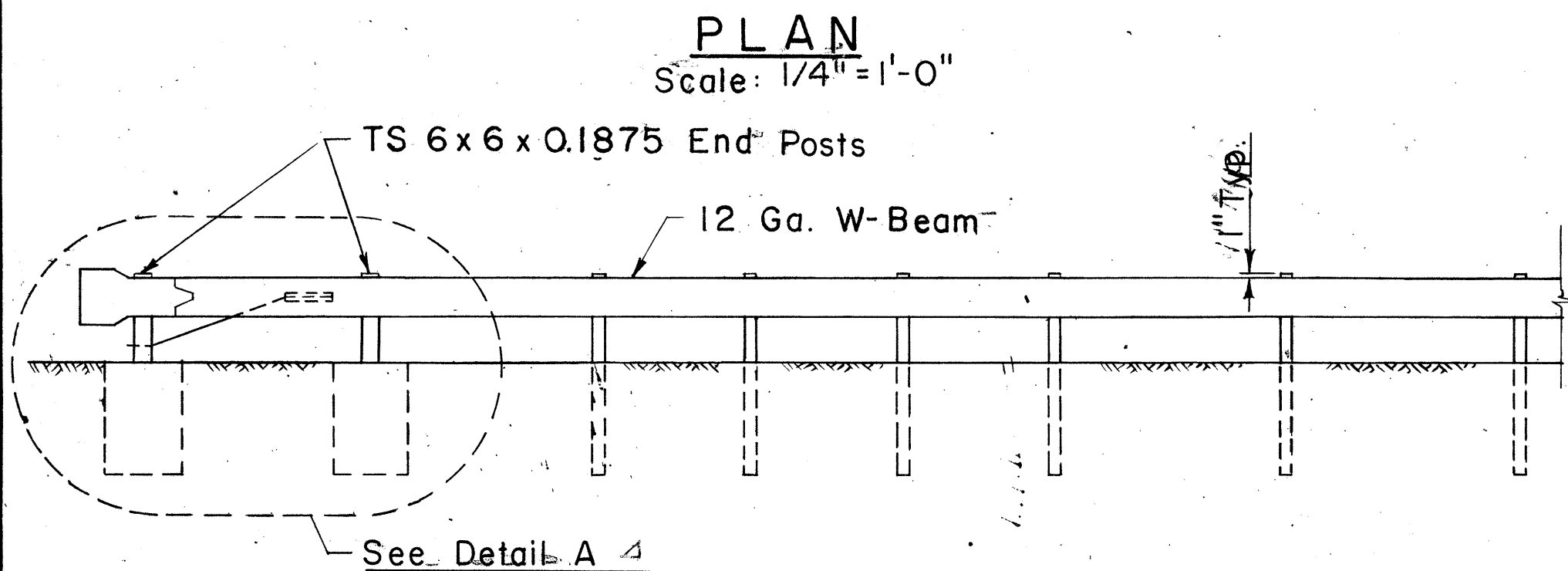
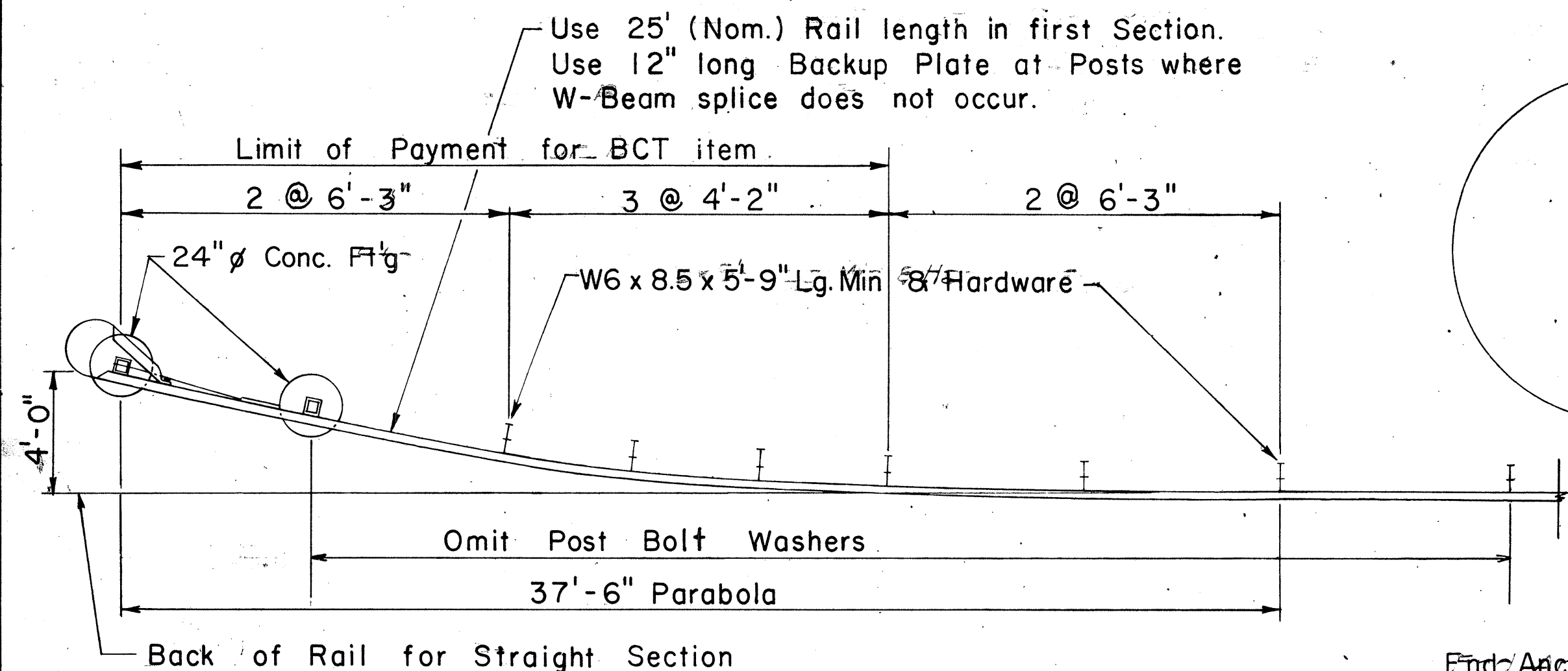
APPROVAL RECOMMENDED:

Eishi Tanaka
TRAFFIC ENGINEER
6/14/78
DATE

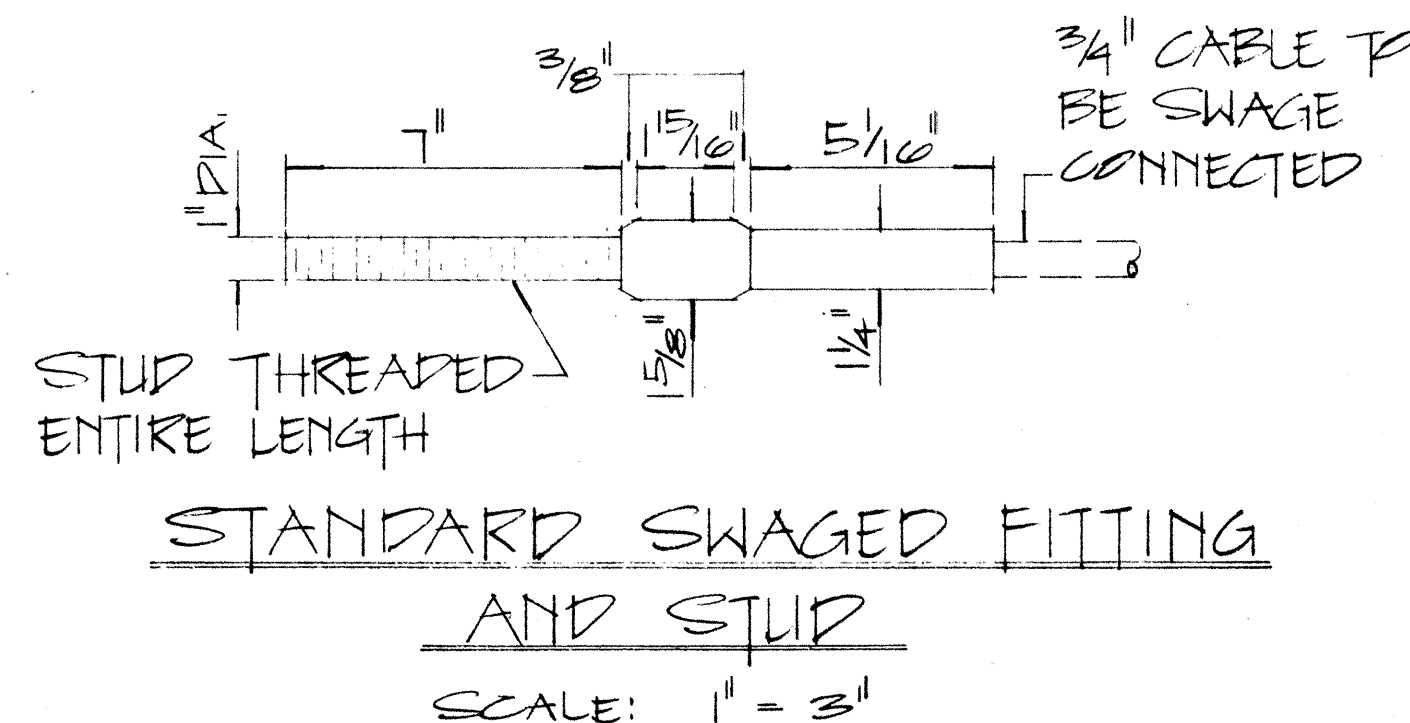
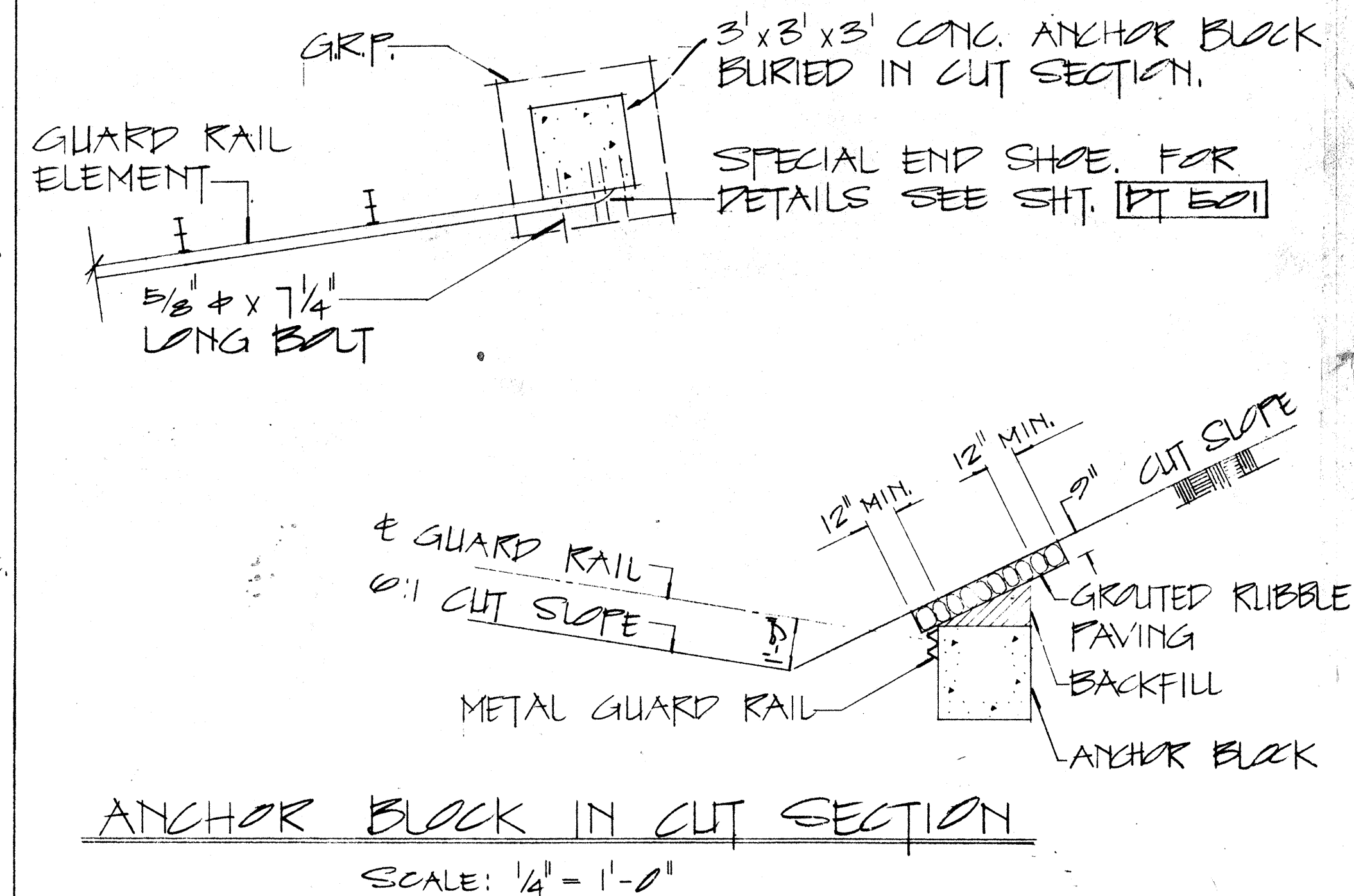
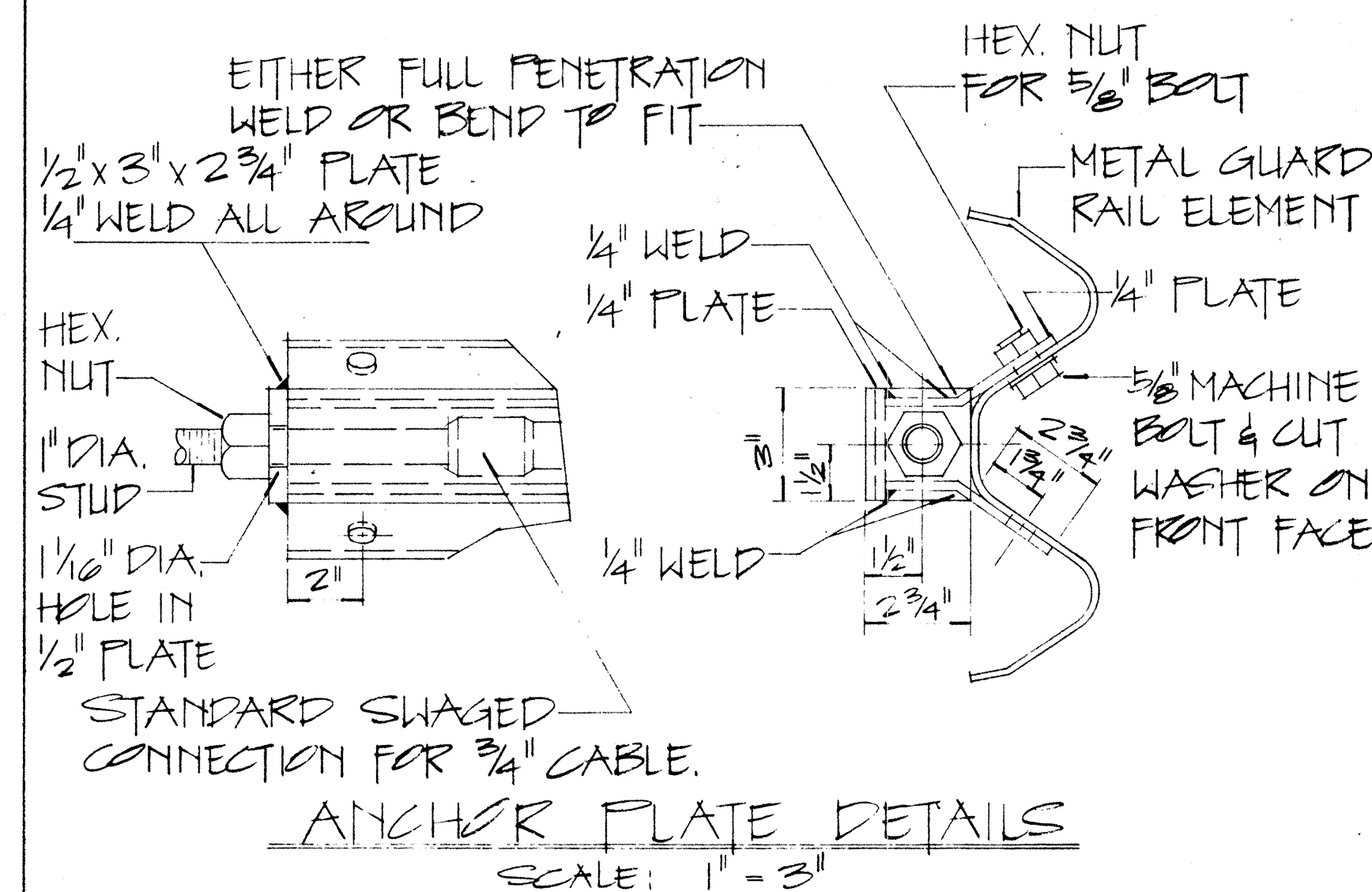
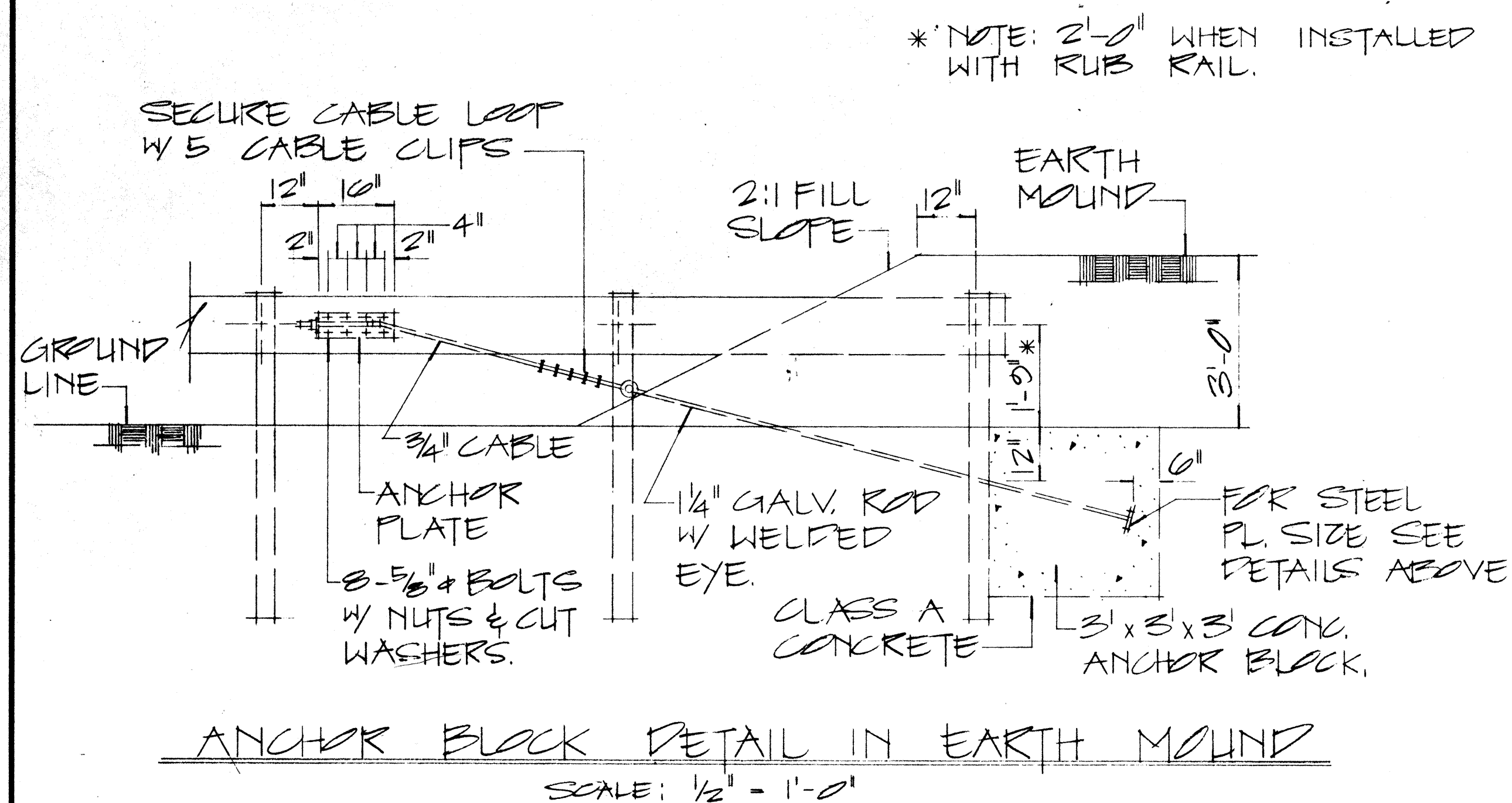
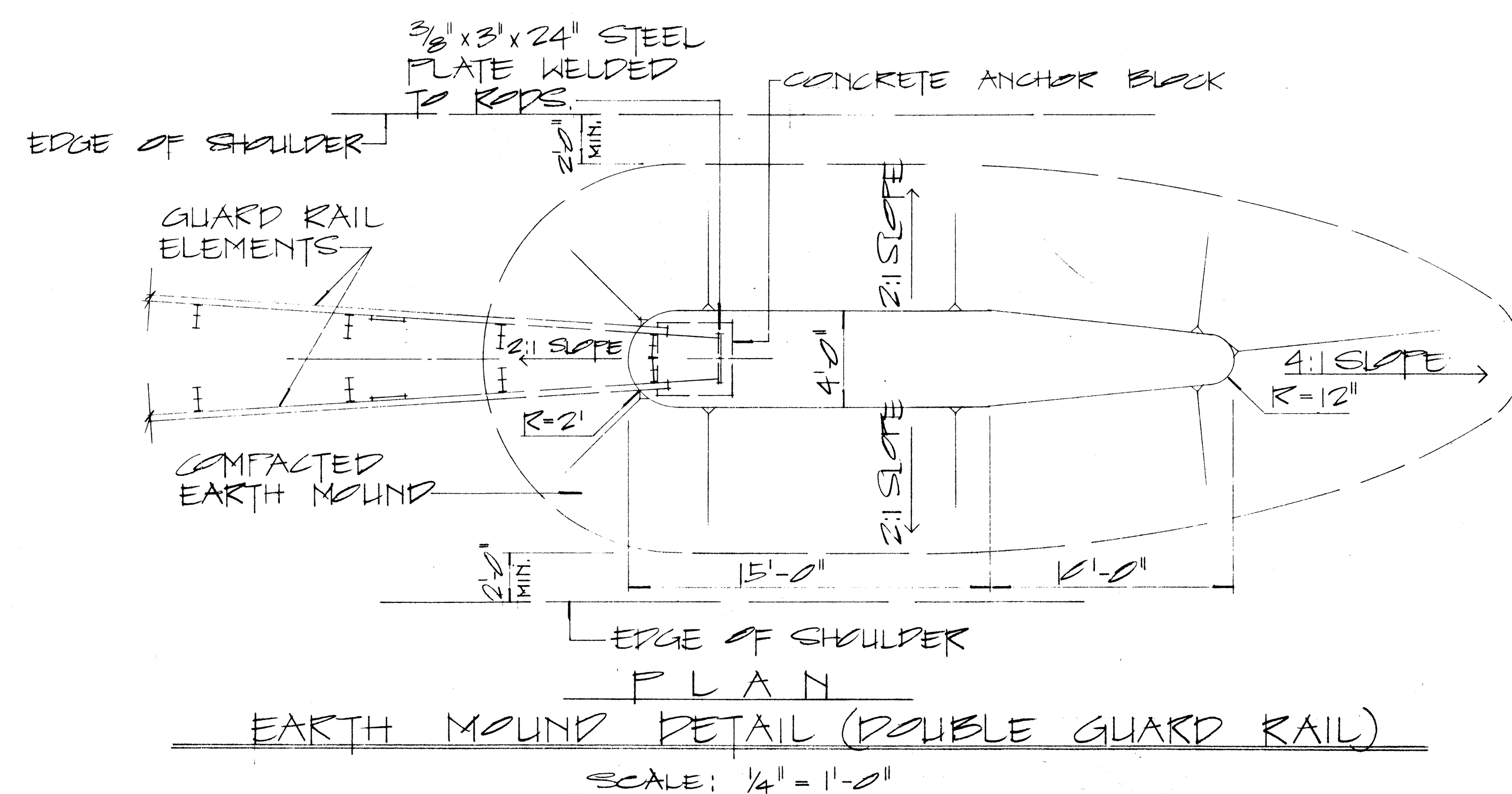
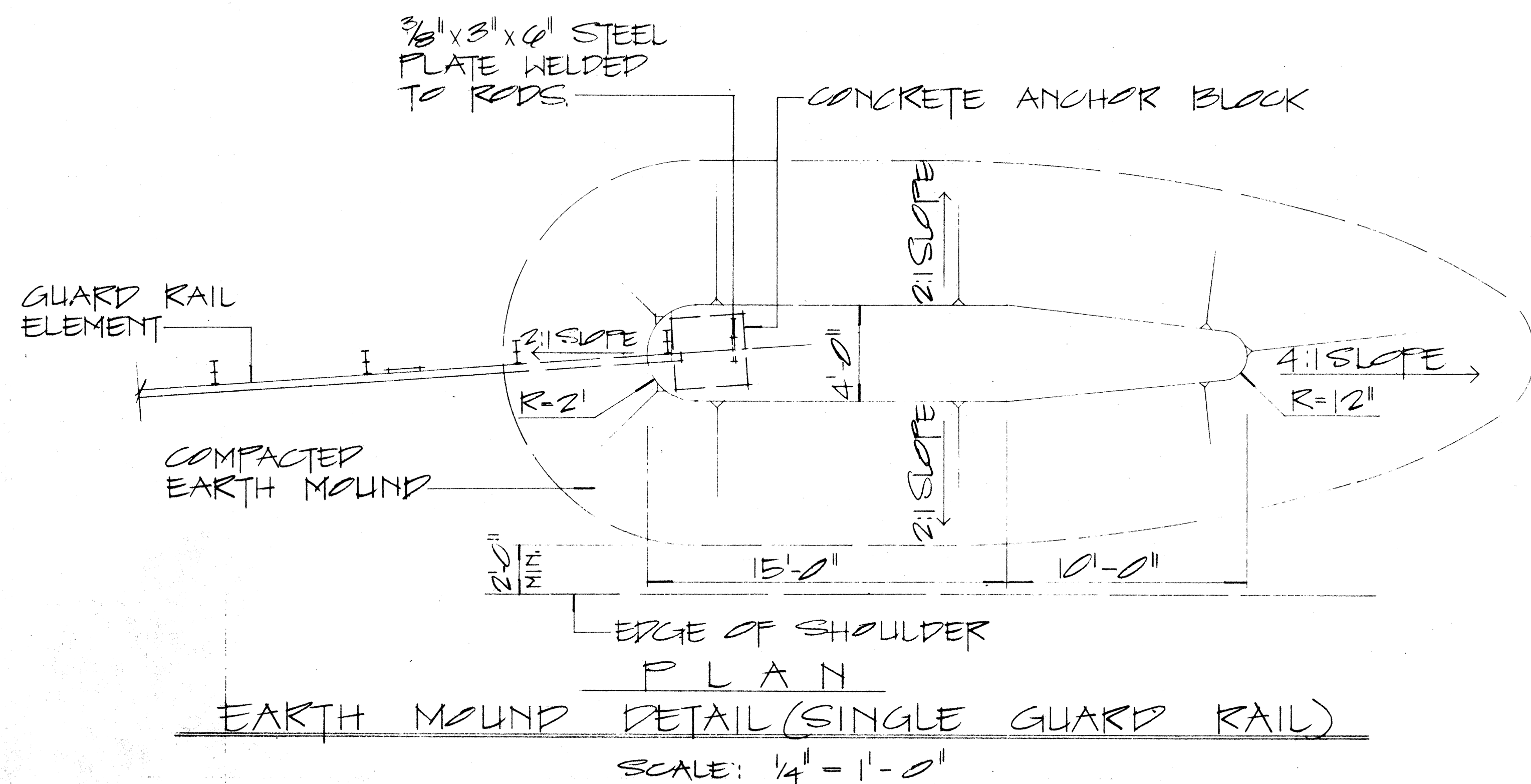
APPROVED:

Harbor 2. Eishi
ASSISTANT CHIEF, ENGINEERING
6/15/78
DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<u>STANDARD DETAIL</u>	
BREAKAWAY CABLE TERMINAL (BCT)	
Scale: As Shown	Date: June 1978
SHEET No. 4 OF 5 SHEETS DT 519	



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F0931(7)	1984	23	39



APPROVAL RECOMMENDED: *Eiichi Tanaka* 12/29/82
TRAFFIC ENGINEER DATE

APPROVED: *211222* 12-30-89
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
EARTH MOUND AND
ANCHOR BLOCK DETAILS

SCALE: AS SHOWN OCT 1969
SHEET No. 5 OF 5 SHEETS PT E20

NOTE:

1. GALVANIZED ANCHOR ROD, METAL GUARD RAIL AND POST BURIED IN GROUND SHALL BE COVERED WITH A MIN. 20-MIL THICKNESS OF COAL TAR ENAMEL CONFORMING TO ANWA STANDARD: C 203
2. CONCRETE, GRP, EXCAVATION, EARTH MOUND, ANCHOR RODS AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.

DATE	
DESIGNED BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	