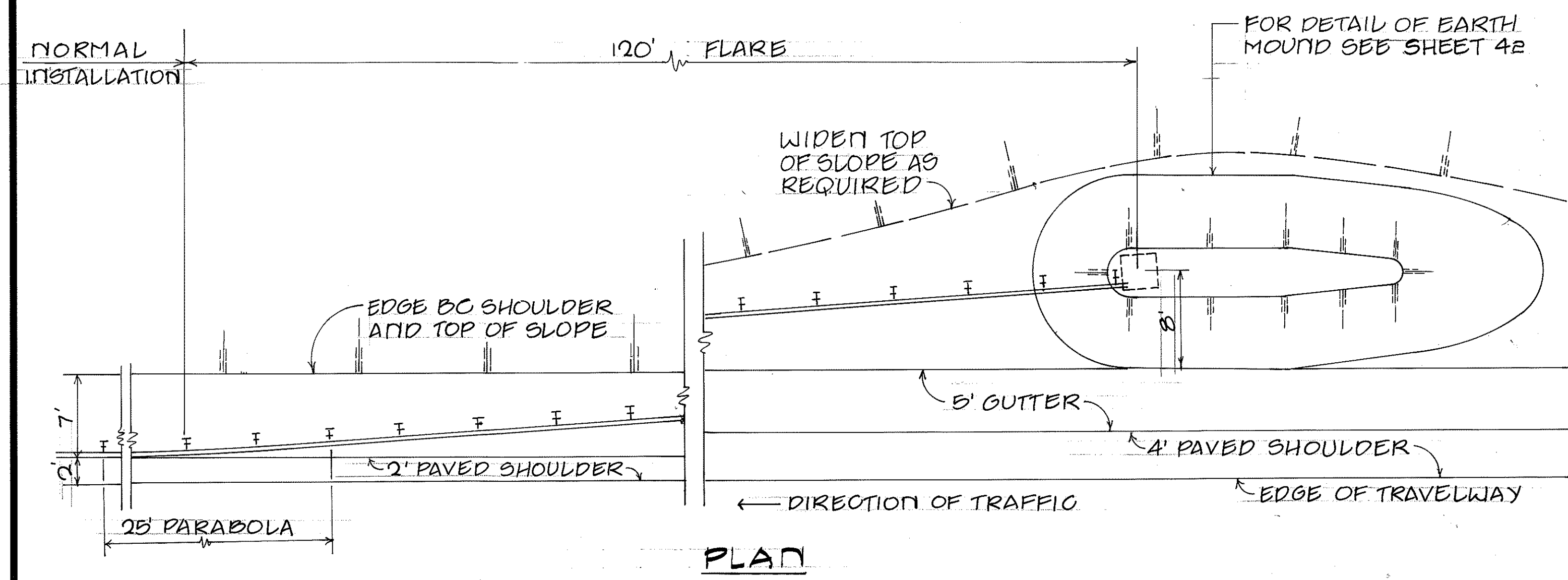
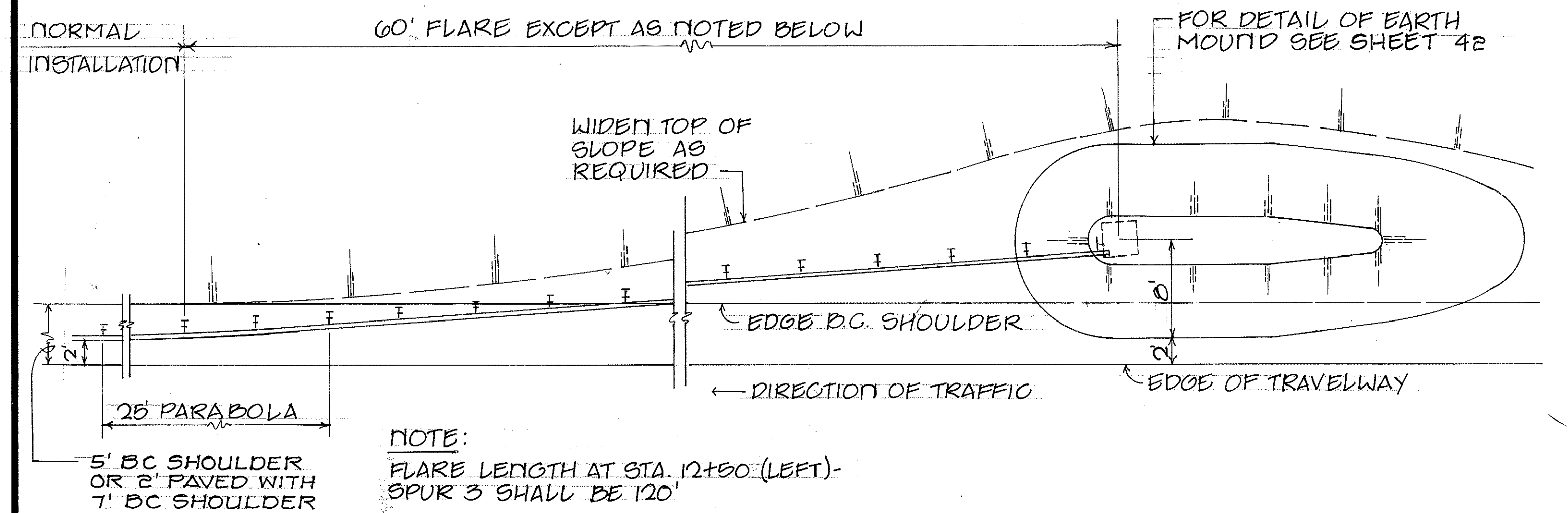


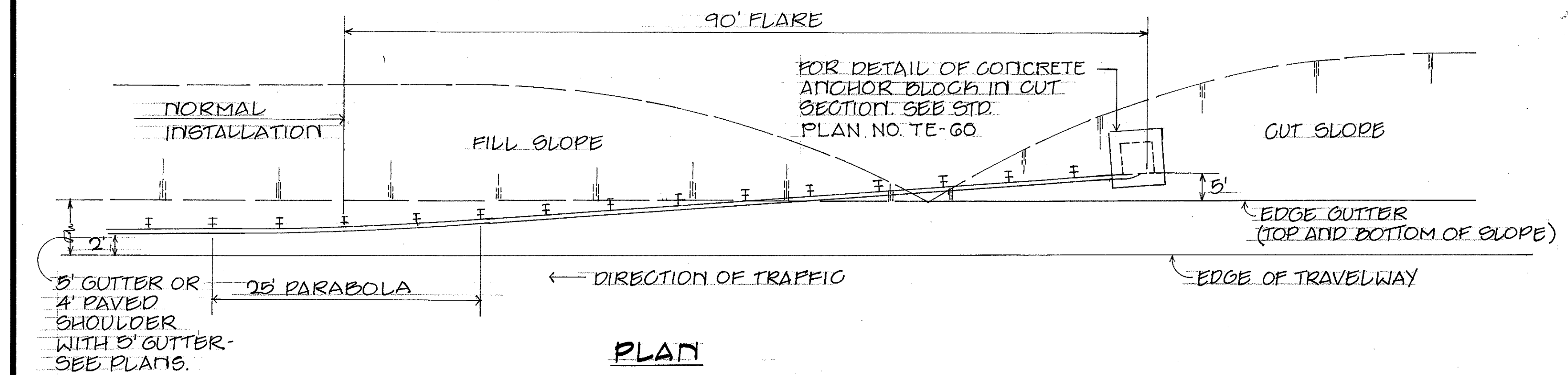
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY- H- 01- 86	1987	41	115



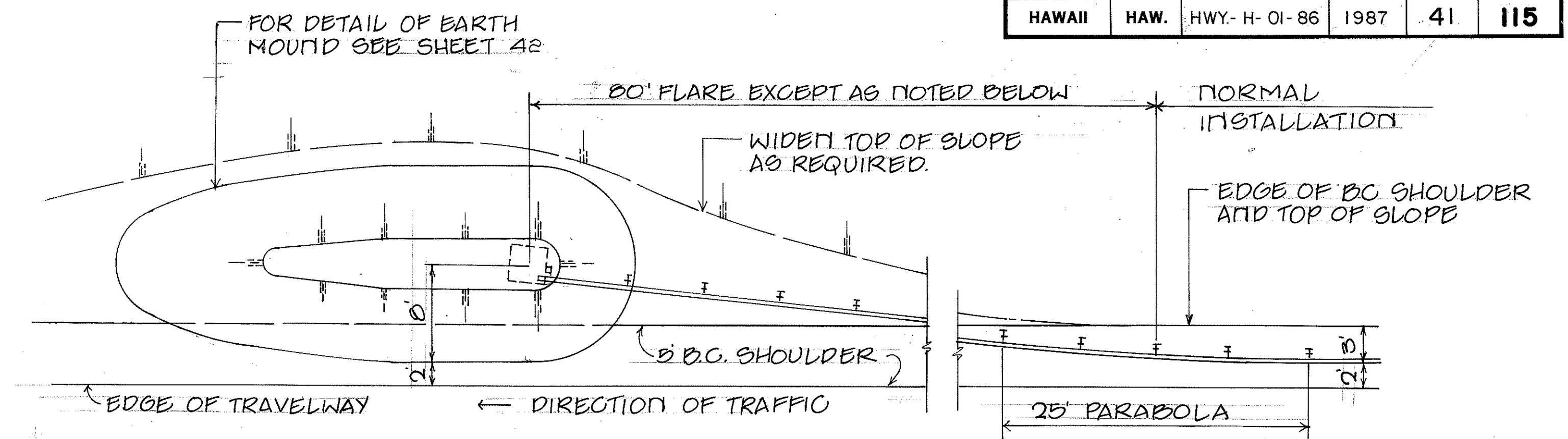
1 TYPE A-1 FLARE
41 NO SCALE



2 TYPE A-2 FLARE
41 NO SCALE

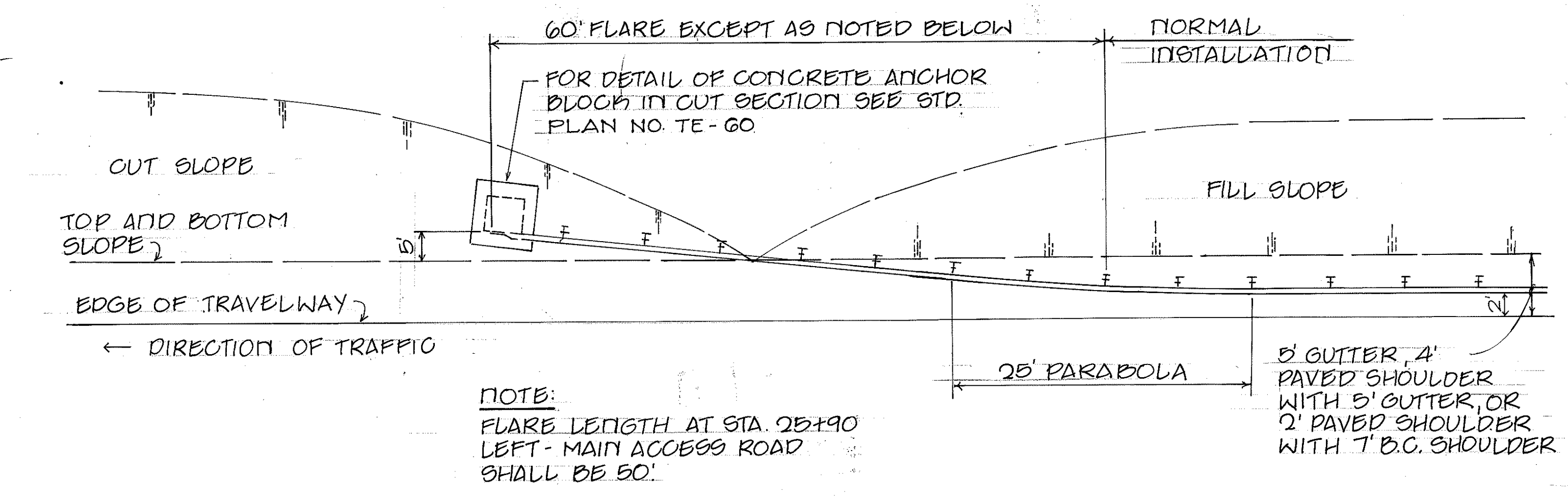


3 TYPE C-1 FLARE
41 NO SCALE



NOTE: FLARE LENGTH AT STA. 0+60 LEFT - SPUR 2 SHALL BE 40'

4 TYPE D-1 FLARE
41 NO SCALE



5 TYPE F-1 FLARE
41 NO SCALE

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

ROYCE S. FUKUNAGA
REGISTERED PROFESSIONAL ENGINEER
No. 2107-C
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FLARED ENDS FOR GUARDRAILS

MAUNA KEA OBSERVATORY ACCESS ROAD
PHASE I

PROJECT NO. HWY- H-01- 86

SCALE: AS SHOWN

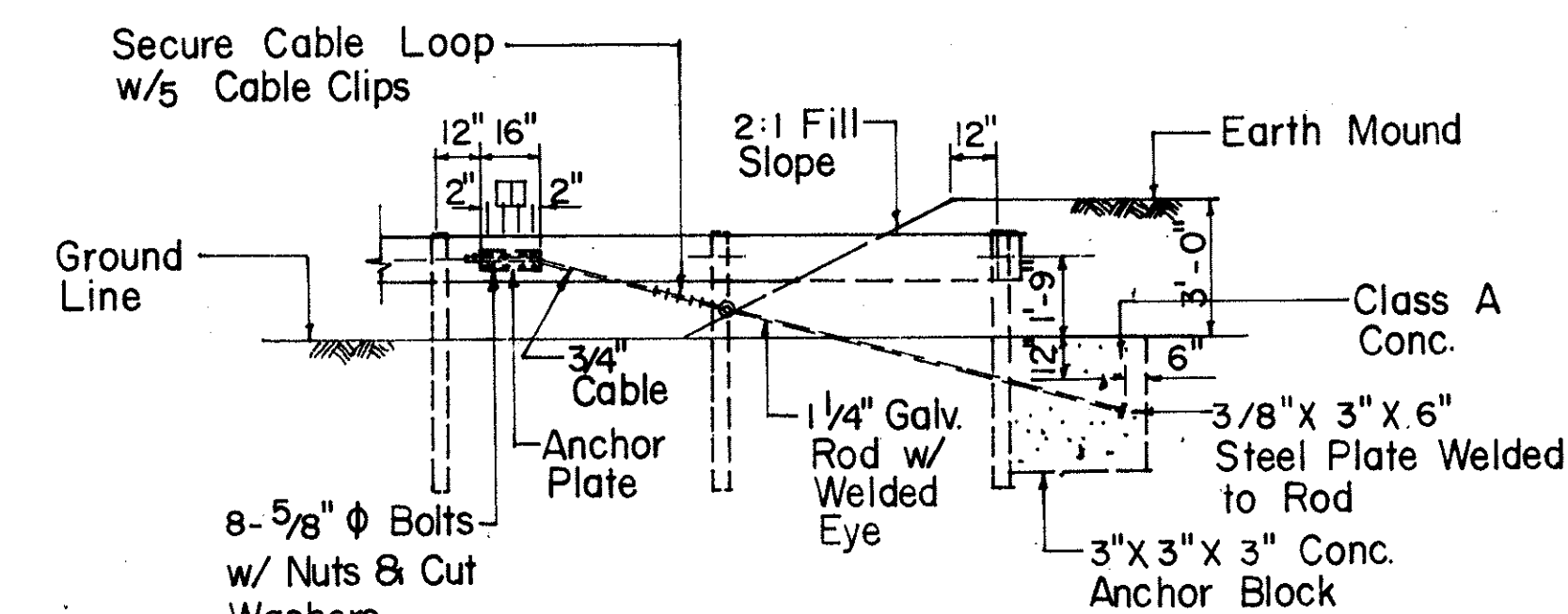
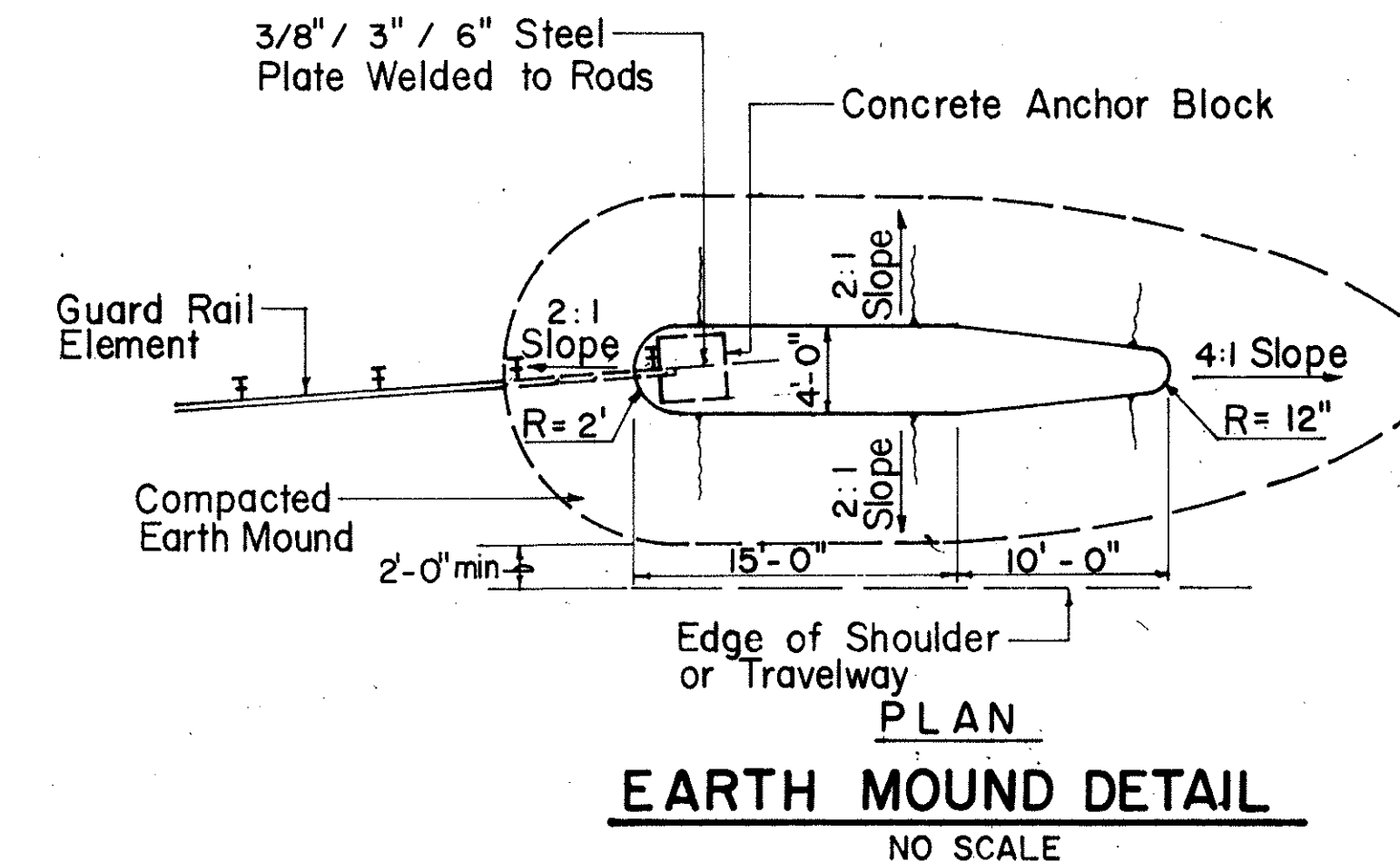
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Royce S. Fukunaga
FUKUNAGA & ASSOCIATES

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY.-H-01-86	1987	42	115

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 Standard Plan TE-51.
- 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.



NOTES:-

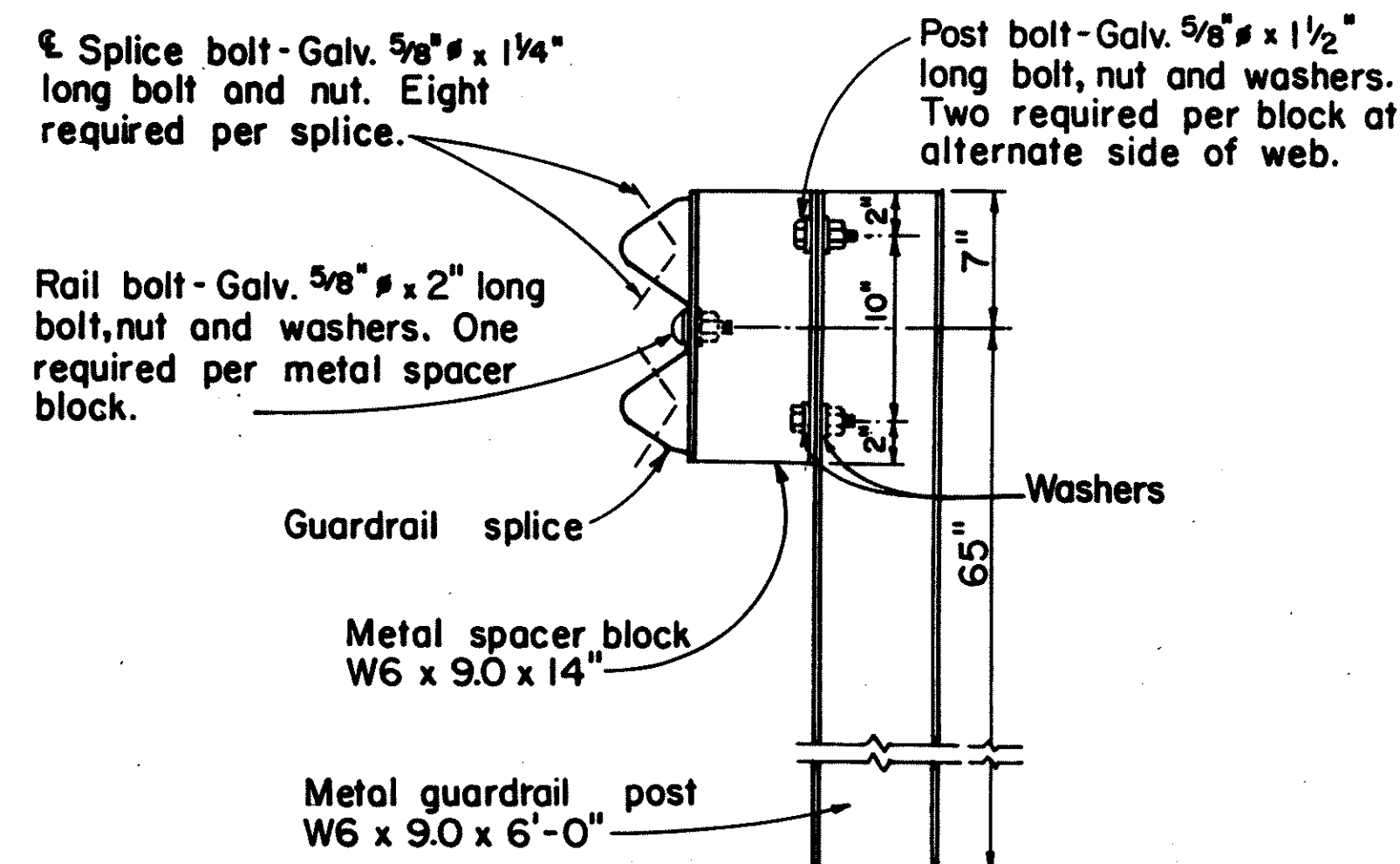
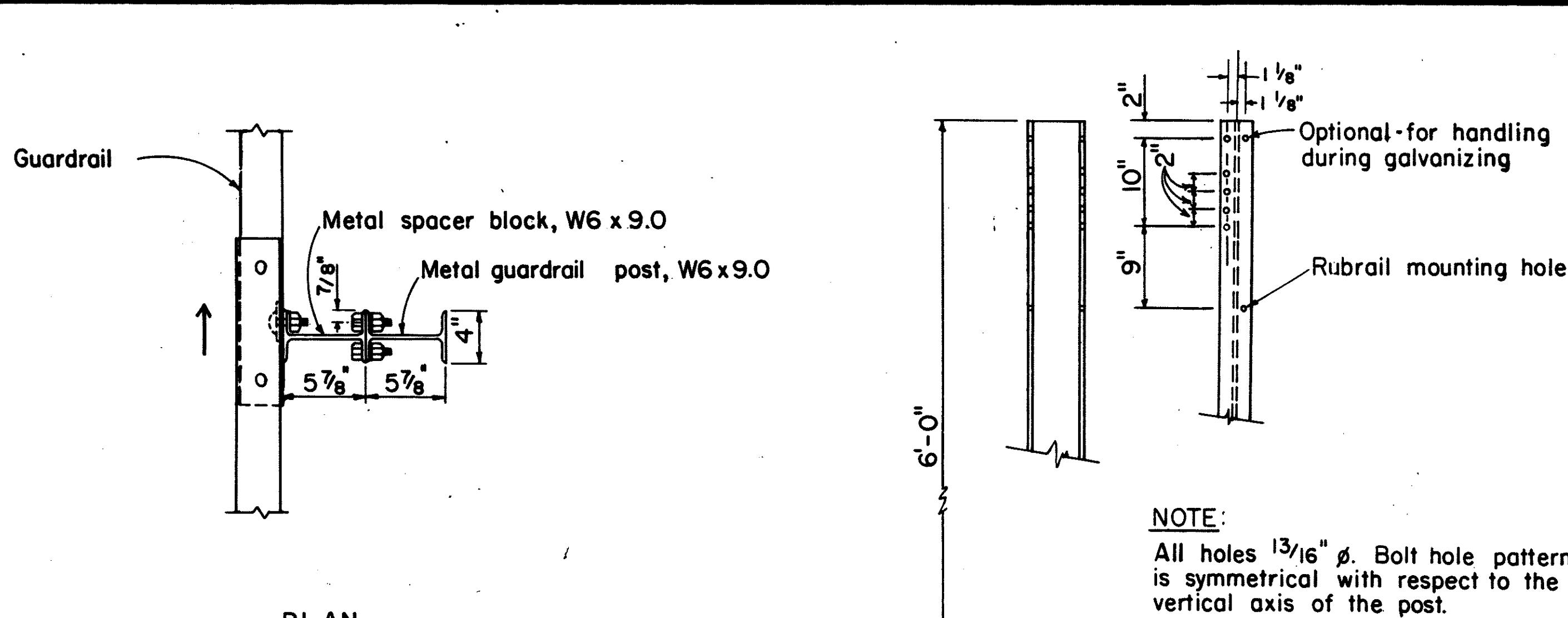
- Galvanized anchor rod, metal guard rail and post buried in ground shall be covered with a min. 20-mil thickness of coal tar enamel conforming to AWWA standard: C-203.
- Concrete, G.R.P., excavation, earth mound, anchor rods and miscellaneous appurtenances necessary to anchor the guard rail ends shall be incidental to the metal guard rail.

ANCHOR BLOCK DETAIL IN EARTH MOUND

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

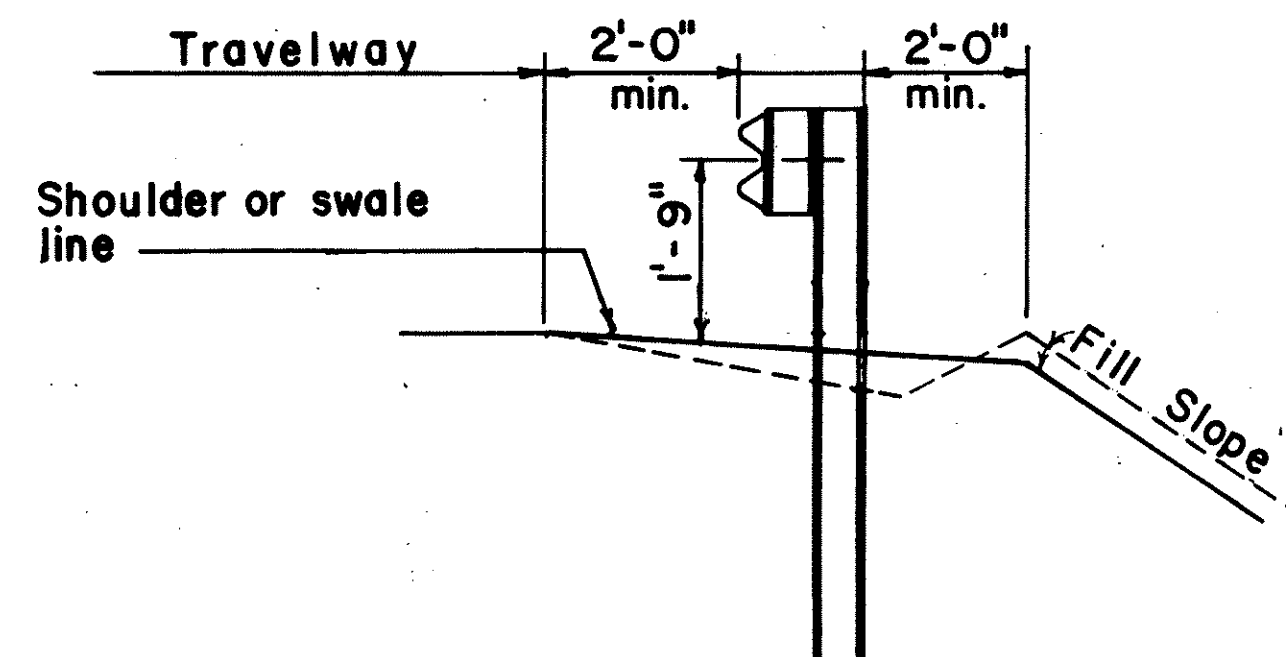
GUARDRAIL DETAILS

MAUNA KEA OBSERVATORY ACCESS ROAD
PHASE I
PROJECT NO HWY.-H-01-86
Scale: As Shown



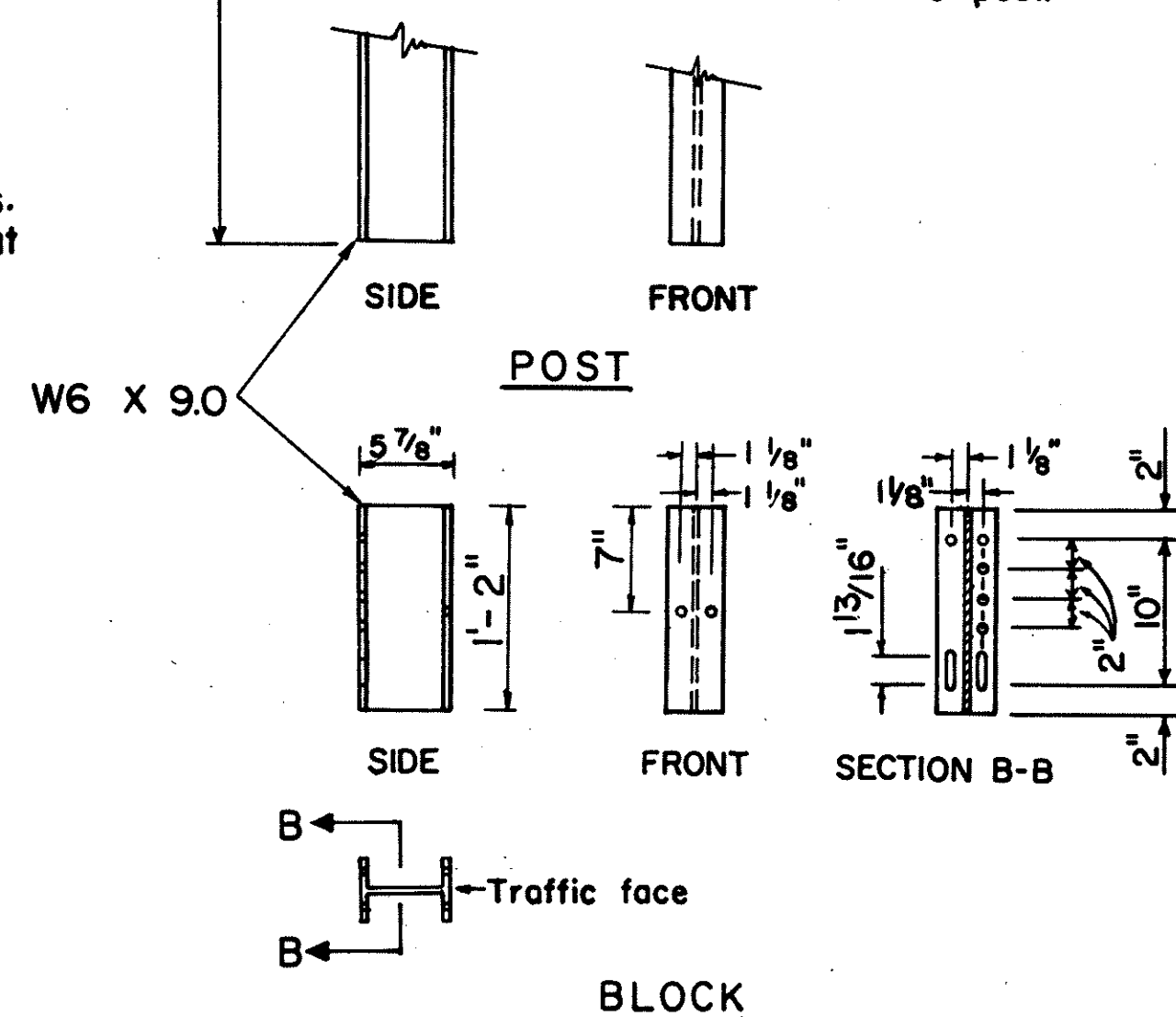
SINGLE METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

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



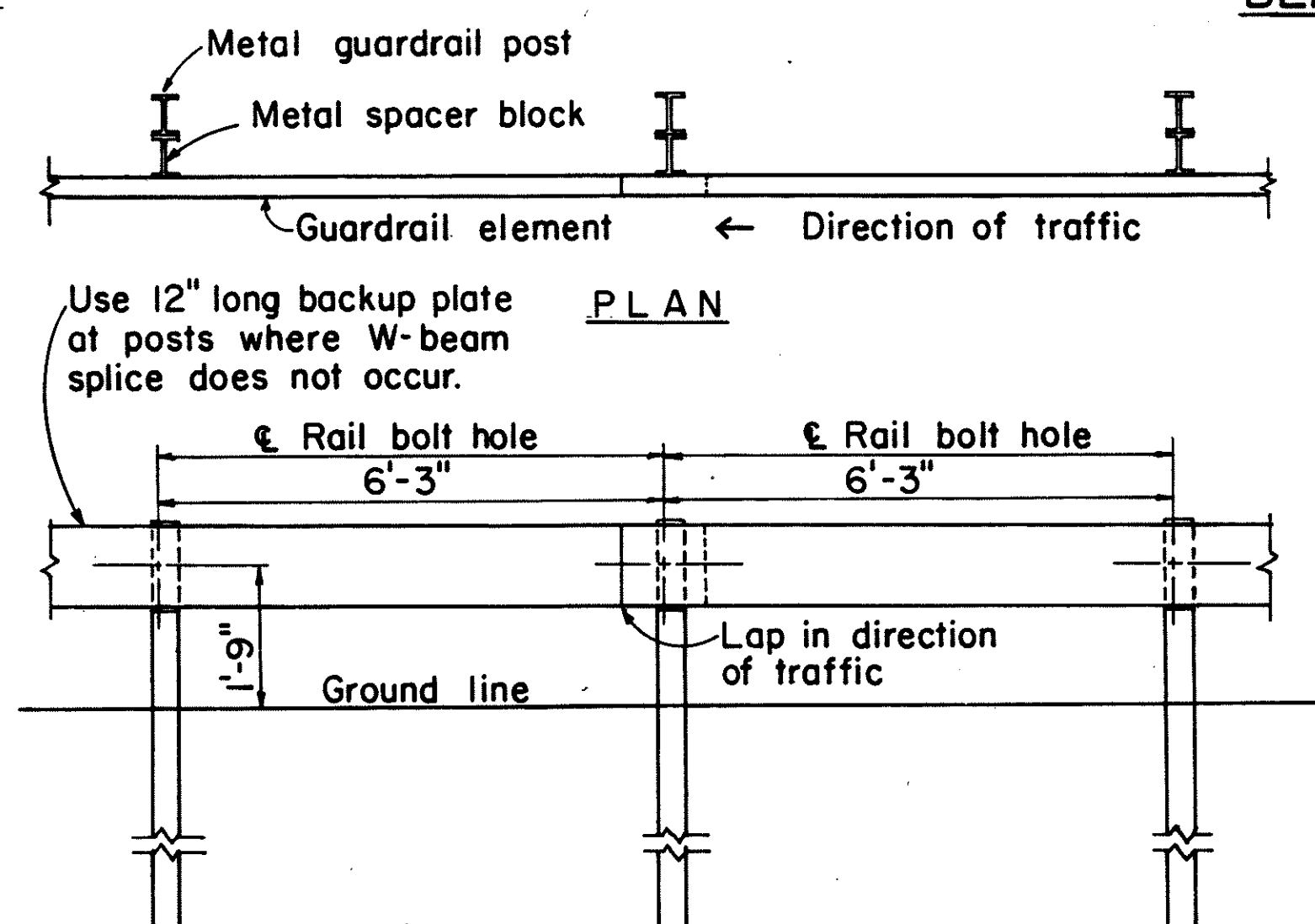
TYPICAL METAL GUARDRAIL DETAIL

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



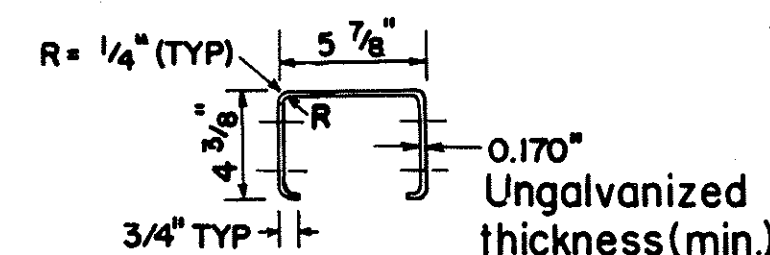
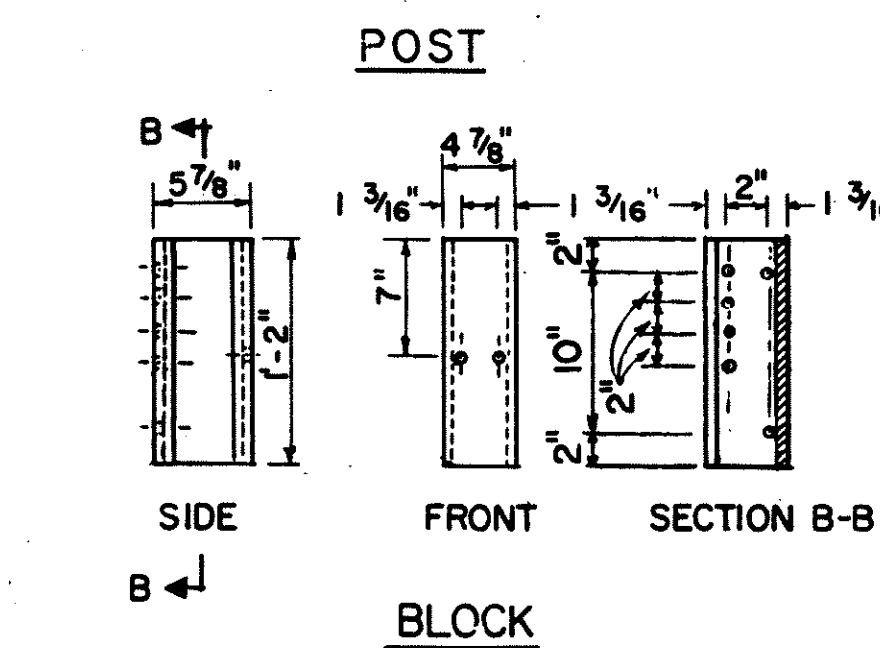
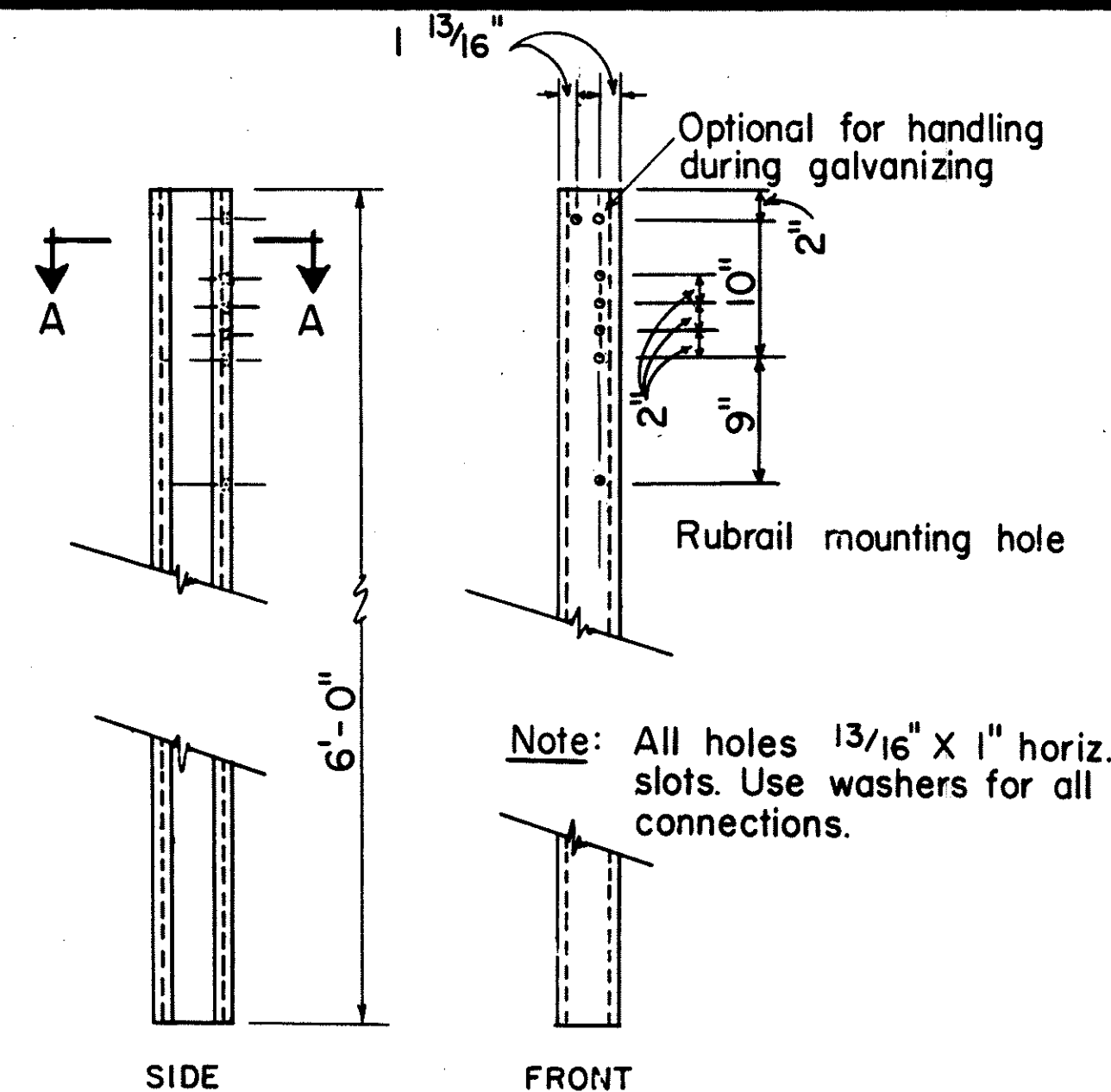
STRUCTURAL SHAPE POST AND BLOCK

SCALE: 1" = 1'-0"



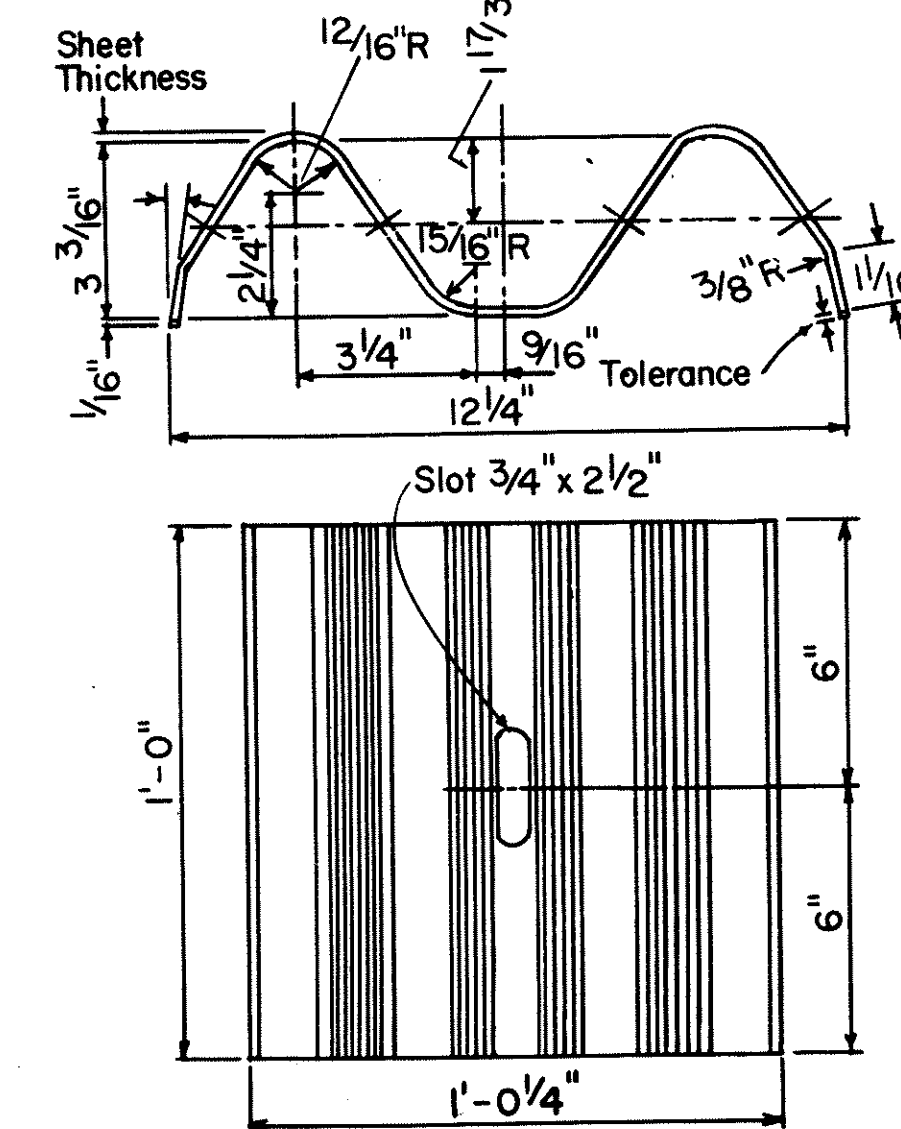
METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

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



BENT PLATE POST AND BLOCK

SCALE: 1" = 1'-0"



BACK-UP-PLATE

N.T.S.

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
CHECKED BY	
QUANTITIES BY	
NOTES BY	
ORIGINAL PLAN	
NOTE BOOK	