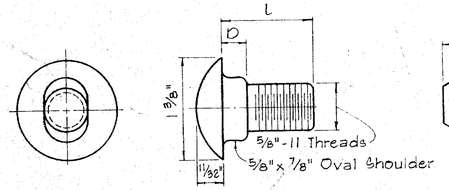
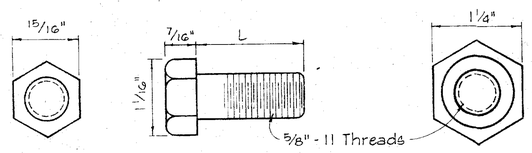
BOLT DIMENSIONS		
TYPE A BOLT	D	L
Splice Bolt	5/16"	1 1/4"
Post Bolt for Conc. Post w/ Double Wood Blocks	3/32"	24"
Post Bolt for Conc. Post w/ Single Wood Block	3/32"	18"
Rail Bolt for Metal Block	3/32"	2"

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"



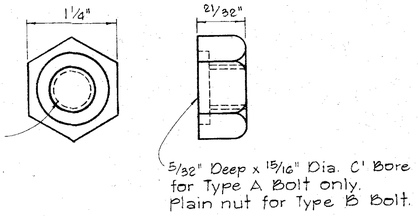
TYPE A BOLT



TYPE B BOLT

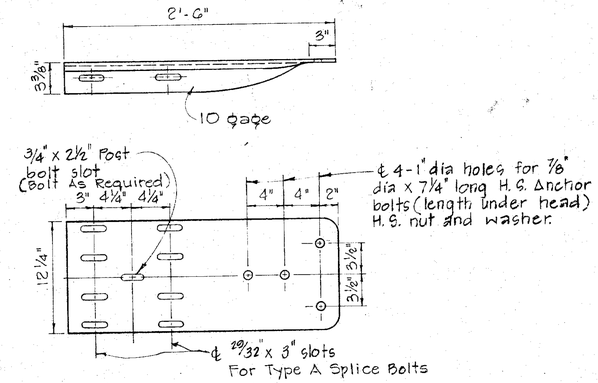
SPLICE RAIL AND POST BOLTS

Scale: Full Size



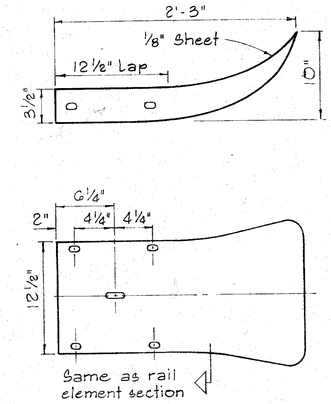
HEXAGON NUT

Scale: Full Size



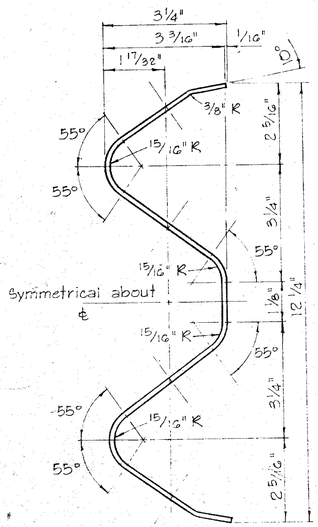
SPECIAL END SHOE

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



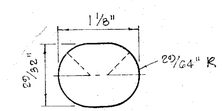
FLARED END

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

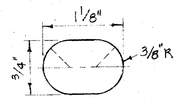


RAIL ELEMENT SECTION

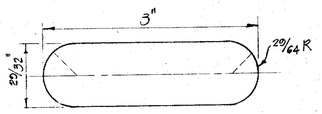
Scale: 6" = 1'-0"



SPLICE BOLT SLOT

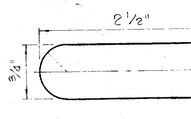


SPLICE BOLT SLOT FOR ALL ENDS

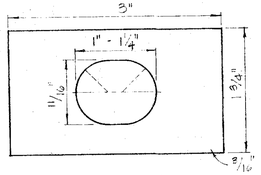


SPLICE BOLT SLOT FOR SPECIAL END SHOE

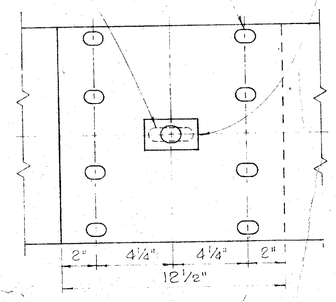
Scale: Full Size



POST BOLT SLOT



RAIL WASHER



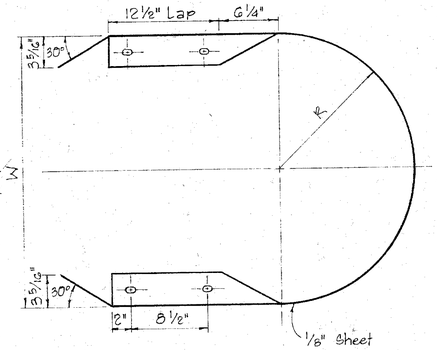
RAIL SPLICE

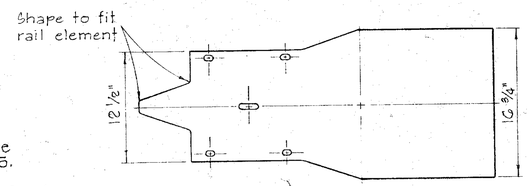
Scale: 3" = 1'-0"

NOTES:

1. H.S. Bolts shall conform to the requirements of ASTM A 325.
2. Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AASHO 180.

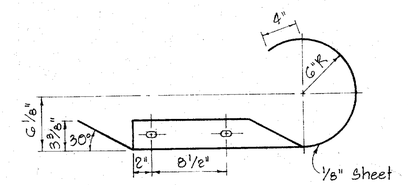
MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"

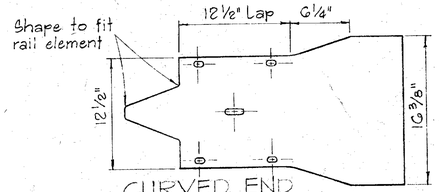




MEDIAN END

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





CURVED END

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

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

KAMEHAMEHA HIGHWAY BRIDGE OVER KAHALUU STREAM
KAHALUU, OAHU, HAWAII

GUARD RAIL DETAILS

MY 6/7/77

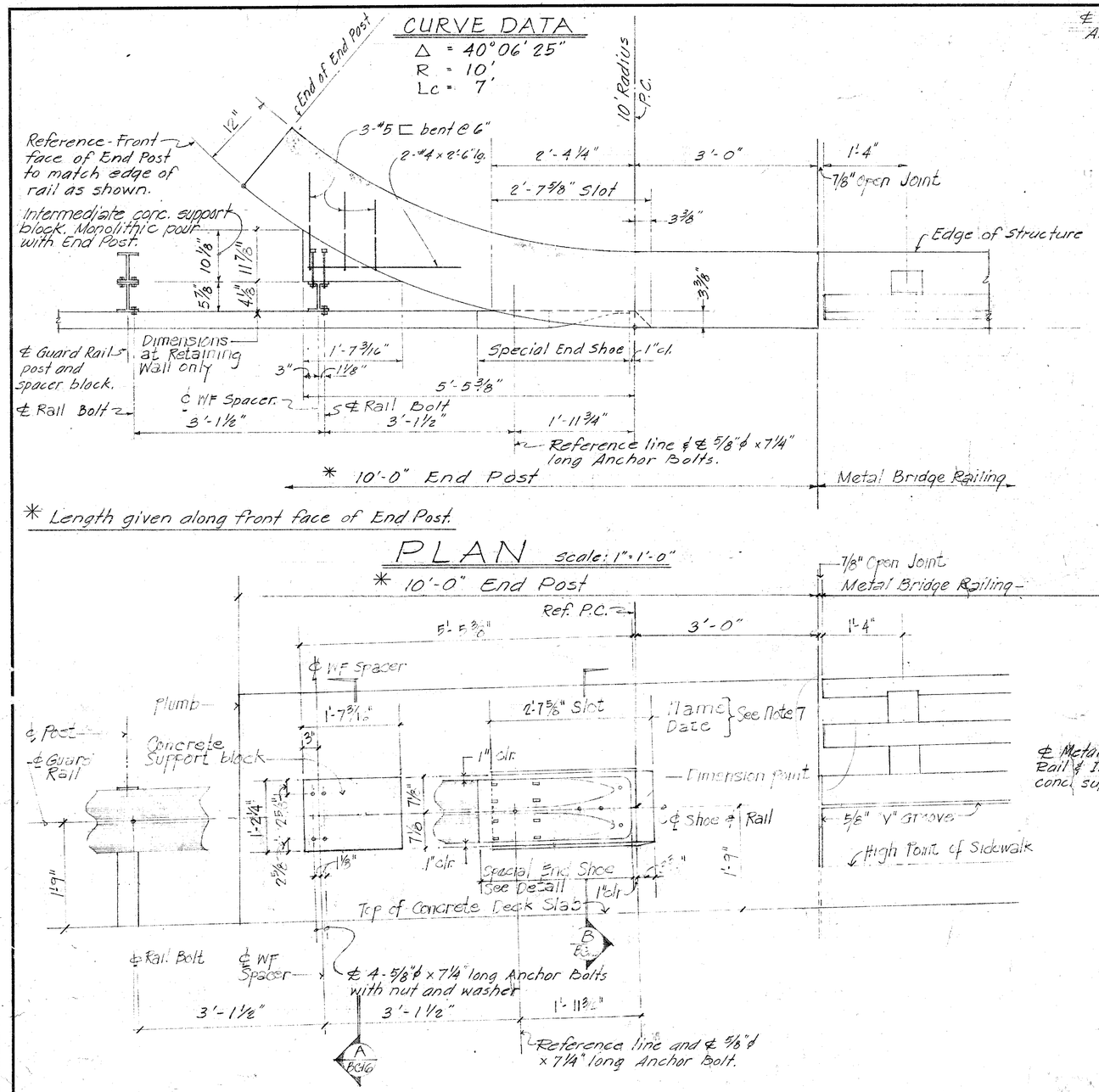
DRAFTSMAN: CHECKED BY:
APPROVED: 6/7/77

JOB NO. 38-77 DWG. NO. 7-E-23094

SHEET BC 15 OF 52 SHEETS FILE 1 POCKET 2 FOLDER 1 NO 22

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

PRINTED ON NO. 1000H CLEARPRINT

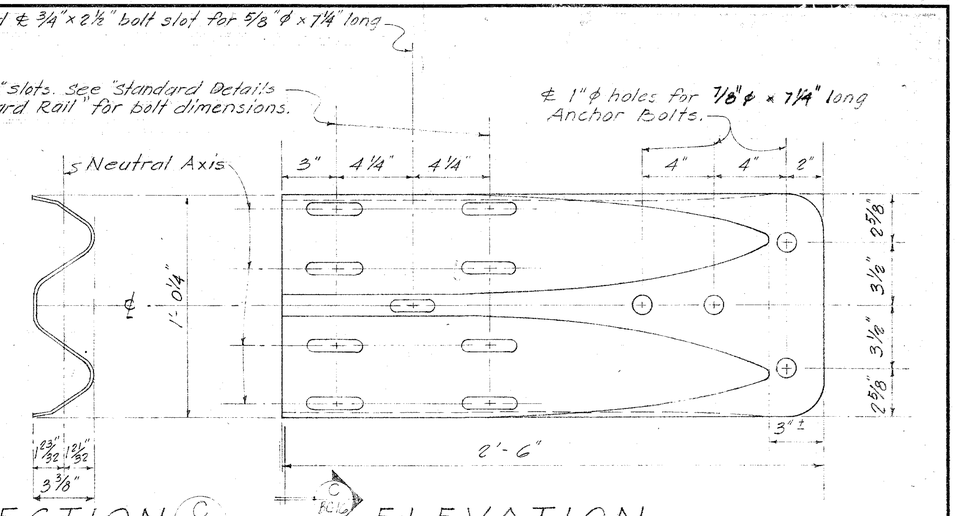


* Length given along front face of End Post.

PLAN Scale: 1" = 1'-0"

ELEVATION

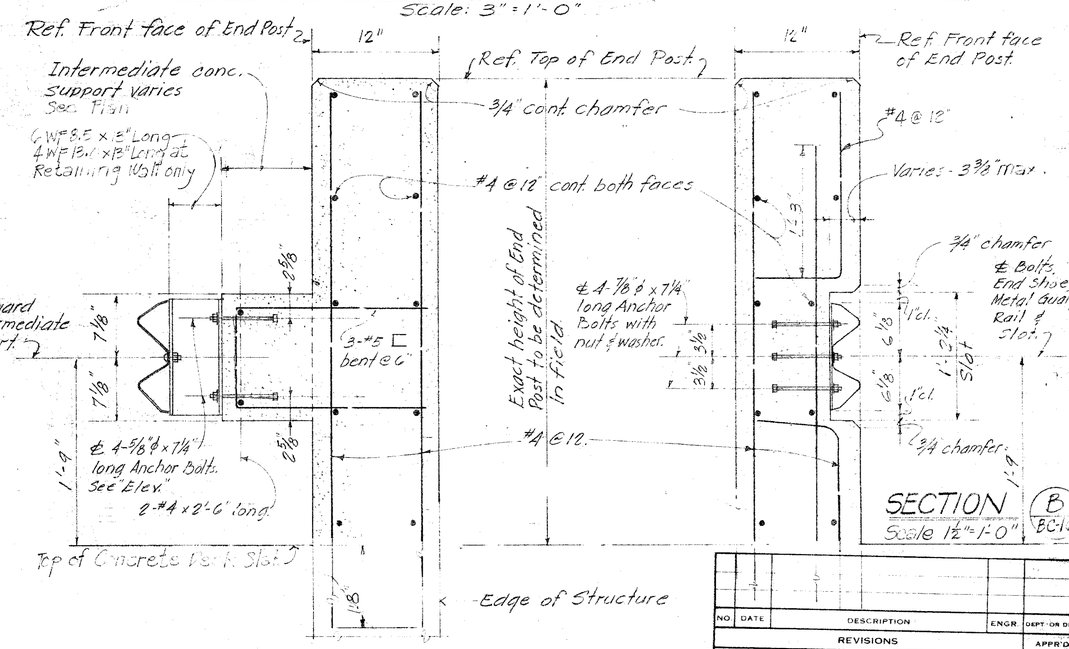
Scale: 1" = 1'-0"



SECTION ELEVATION

SPECIAL END SHOE DETAILS

Scale: 3" = 1'-0"



NOTES:

1. All Anchor Bolts shall be High Strength bolts conforming to the requirements of ASTM A-325.
2. All shoe assembly, including anchor bolts, nuts and washers, shall be galvanized.
3. Special End Shoe shall be Fabricated from 10 gage steel conforming to the requirements of AASHO 180.
4. Guard rail shall be galvanized steel.
5. Anchor bolt length given under bolt head.
6. These details are applicable for Connections to Retaining walls also.
7. Place name of structure as shown. For location, see "Plan" on Contract Drawing. Date shown will be year structure is completed. Letter size and detail see standard Drawing DB-100.

NO.	DATE	DESCRIPTION	ENGR.	DEPT. OR DIV.
		REVISIONS		APPR'D

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
DIVISION OF ENGINEERING
KAMEHAMEHA HIGHWAY BRIDGE
OVER KAHALUU STREAM
KAHALUU, OAHU, HAWAII

GUARDRAIL DETAILS

ENGINEER MT DATE 2/17/77
DRAFTSMAN RL CHECKED BY
APPROVED
CHIEF, DIVISION OF ENGINEERING

JOB NO. 38-77 DWG. NO. 7-E-23094

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