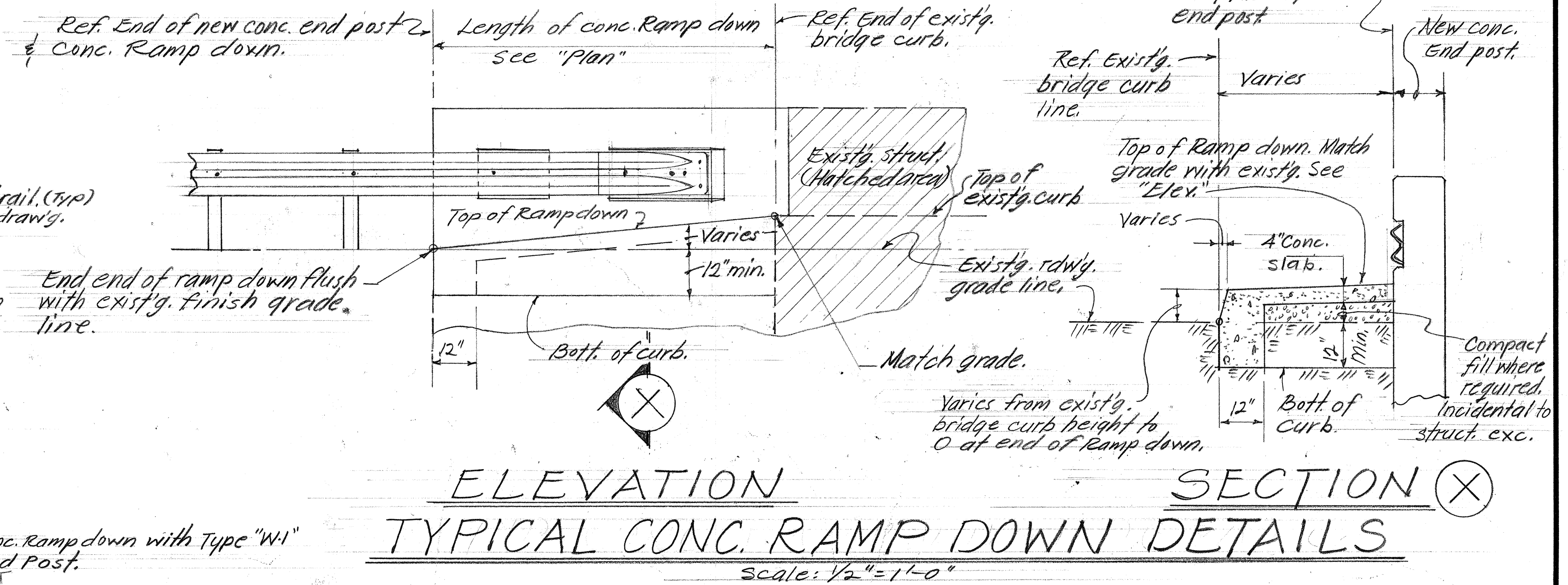
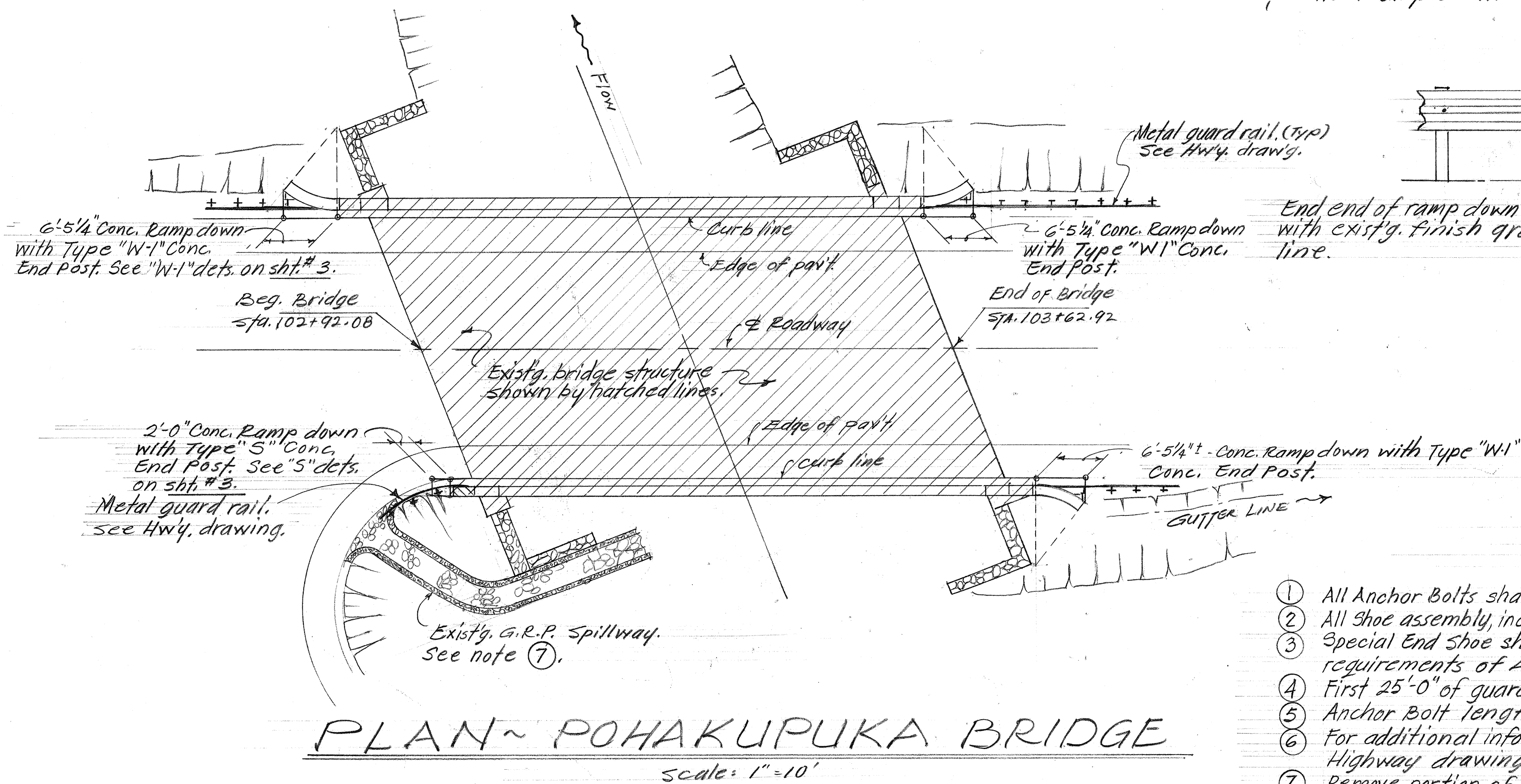
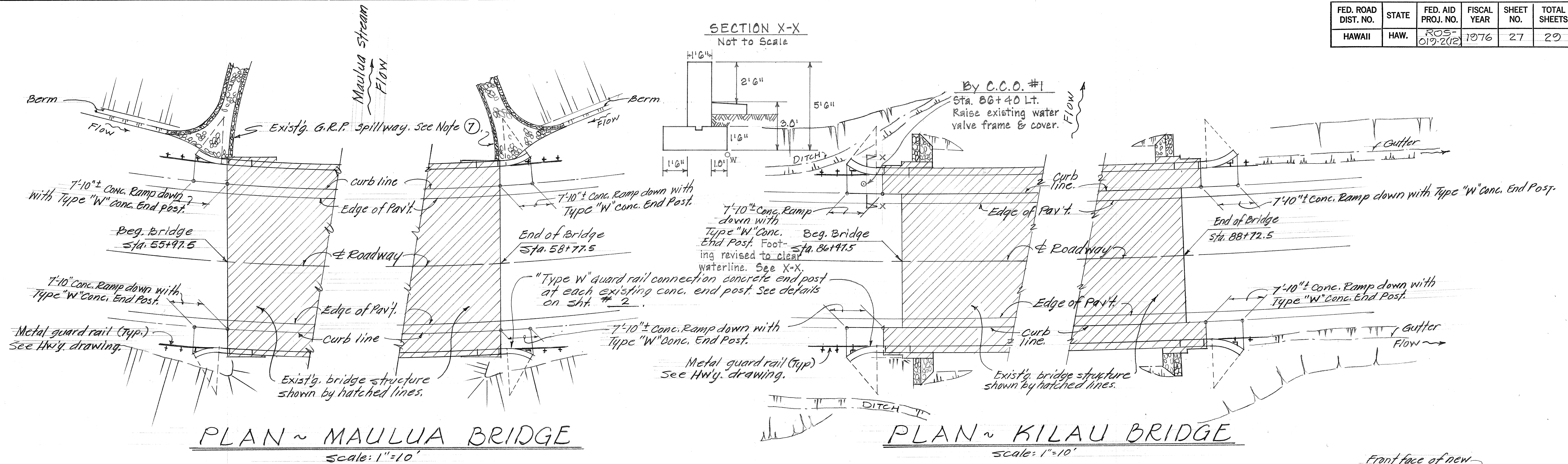


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-019-2(12)	1976	27	29



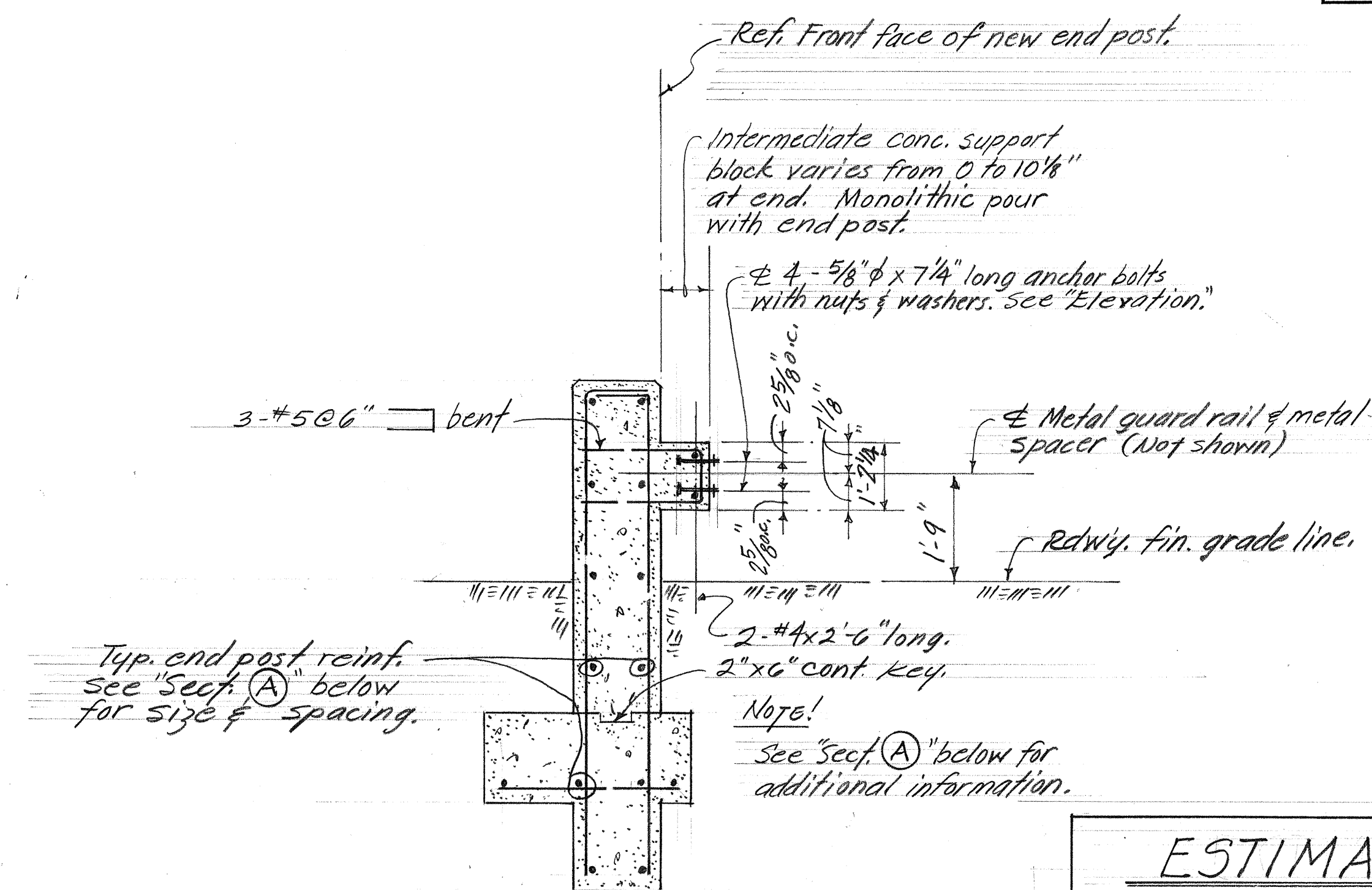
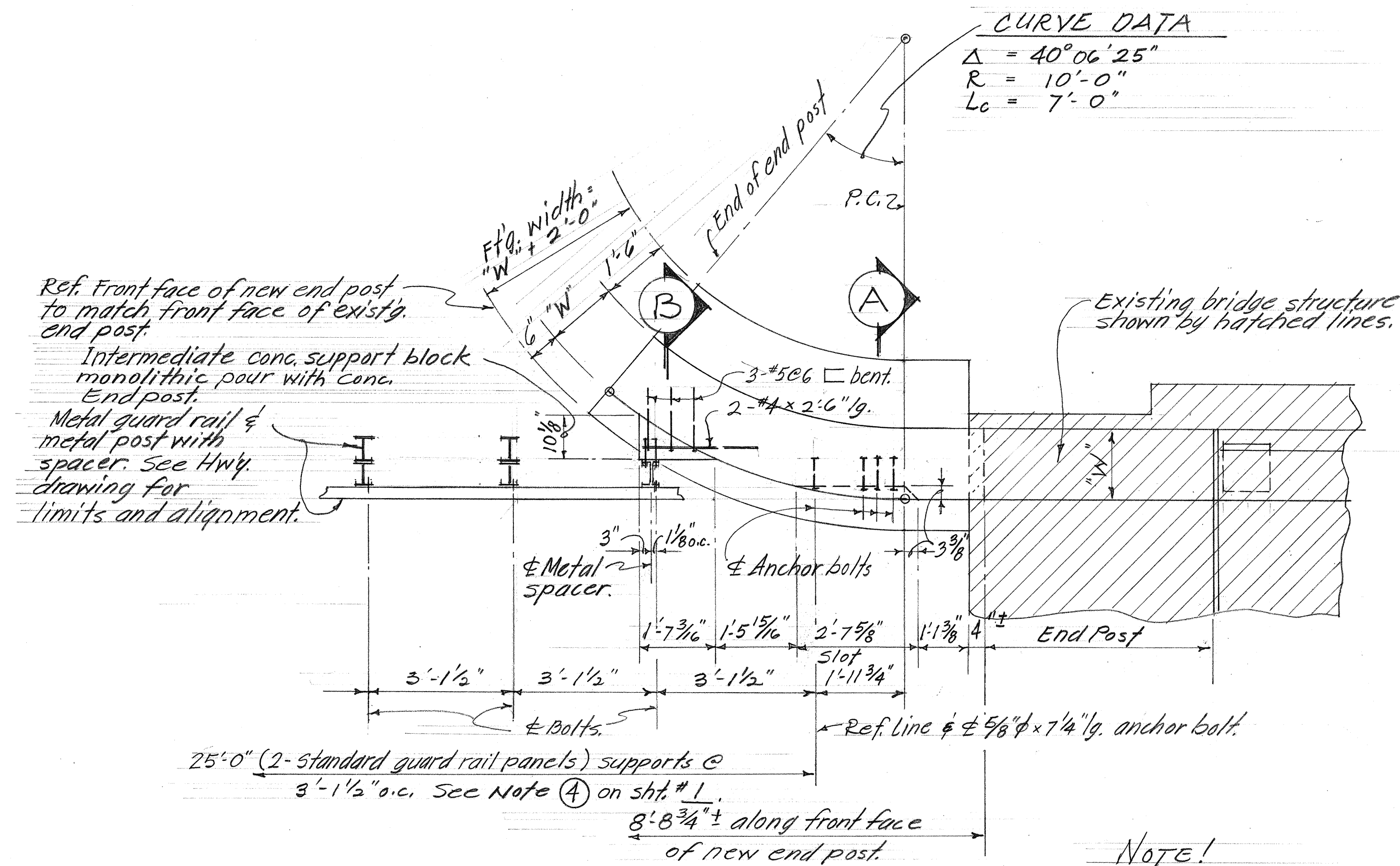
NOTES

- 1 All Anchor Bolts shall be High Strength bolts conforming to the requirements of ASTM A325.
- 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 AASHTO 180.
- 4 First 25'-0" of guard rail adjoining "Special End Shoe" shall be galvanized steel.
- 5 Anchor Bolt length given from under bolt head.
- 6 For additional information on Special End Shoe and metal guard rail, see Highway drawing.
- 7 Remove portion of existing G.R.P. spillway lining where new guard rail connection end post and metal rail post occur and restore spillway after completion of improvements. Removal and restoration of existing GRP Spillway will not be measured and paid for separately but shall be incidental to various contract items.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
SAFETY IMPROVEMENT PLANS
FOR MAULUA, KILAU AND POHAKUPUKA BRIDGES
HAWAII BELT ROAD
Proj. No. ROS-019-2(12)
Scale as shown DATE: Oct., 1976
SHEET NO. 1 OF 3 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS- 019-2(12)	1976	28	29

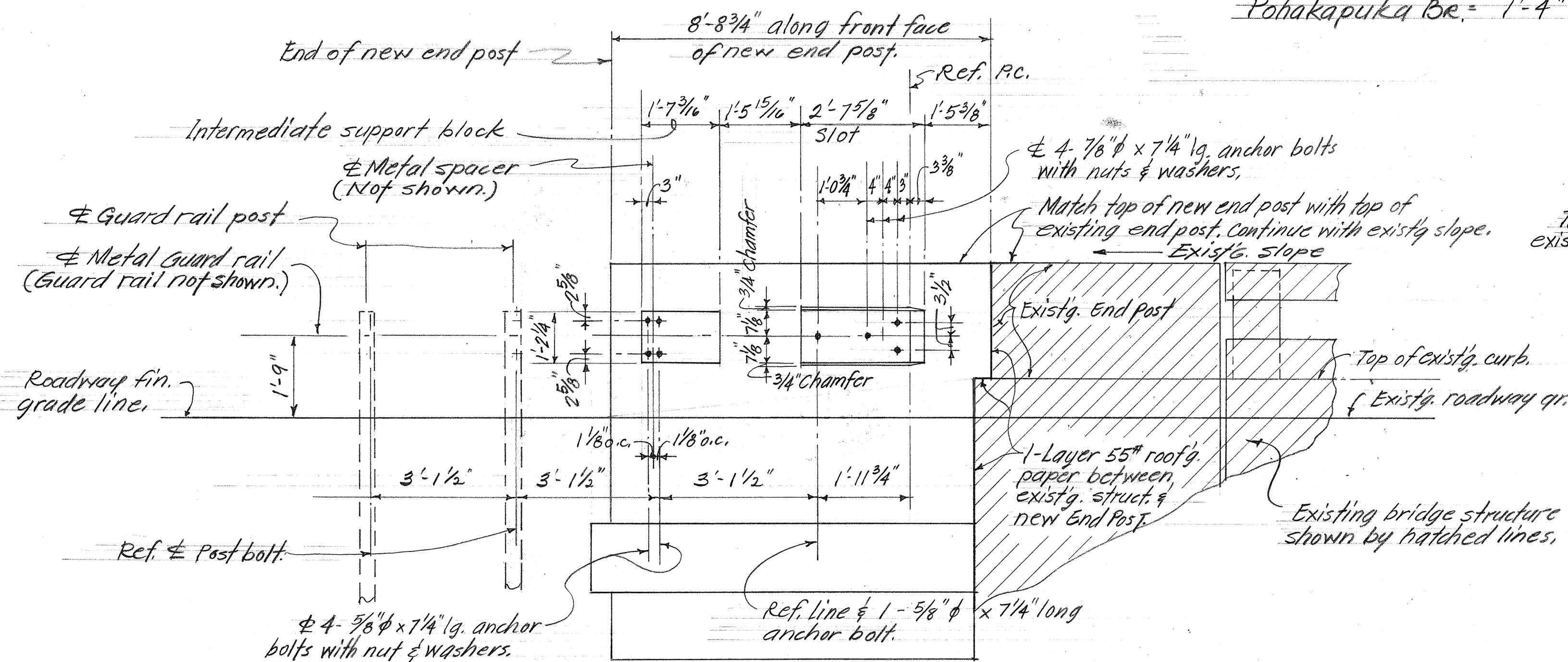


SECTION (B)

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

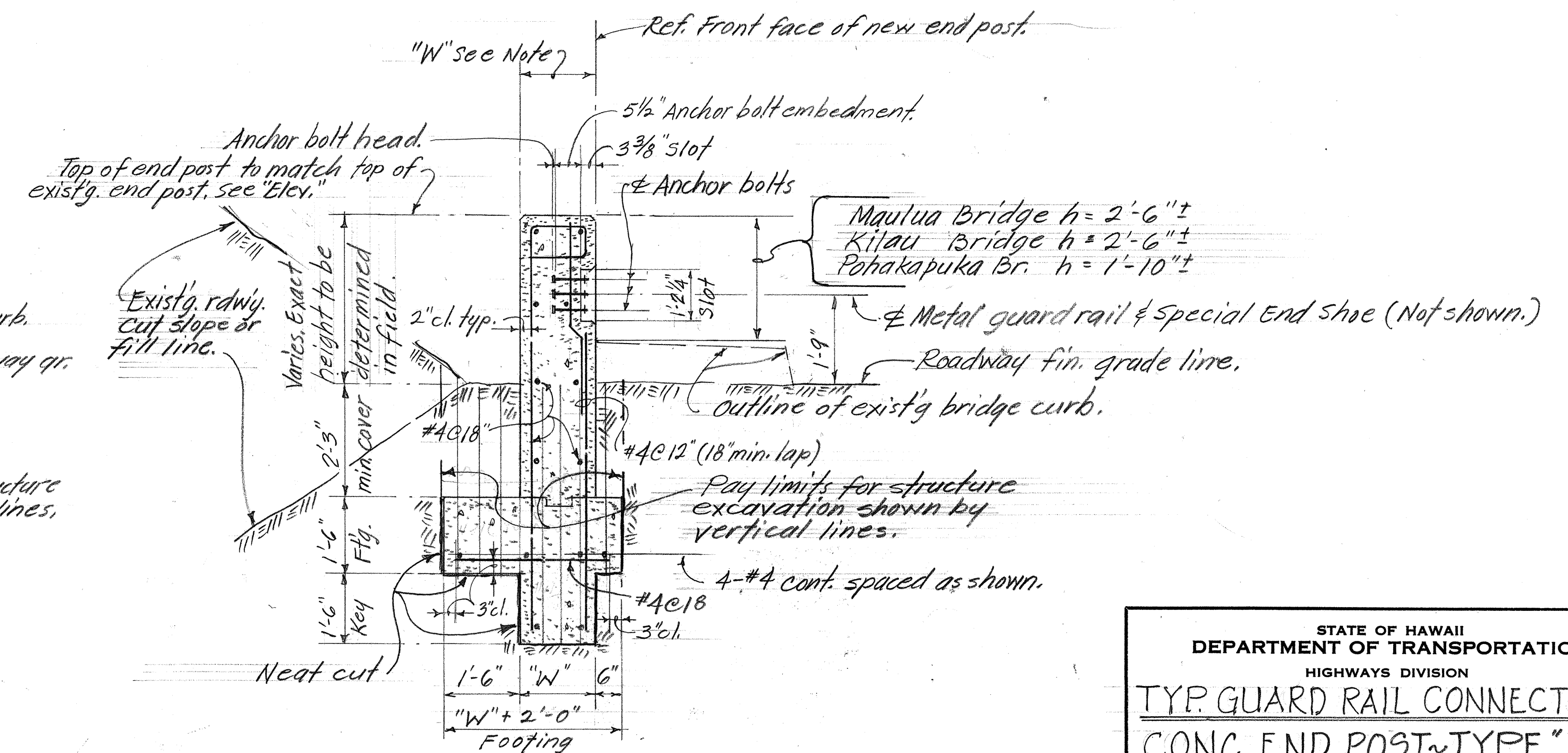
PLAN

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



ELEVATION

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



SECTION (A)

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

TYPICAL TYPE "W" CONC. END POST

<u>ESTIMATED QUANTITIES</u>		
<u>METAL GUARD RAIL CONNECTION TYPE "W", "W-1" & "S"</u>		
<u>CONCRETE END POST AND RAMP DOWN</u>		
END POST CONCRETE	— —	50.0 CY
RAMP DOWN CONCRETE	— —	3.3 CY
REINF. STEEL	— —	2,238.0 LBS.
REMOVAL OF EXIST'G. STRUCT.	— —	0.3 C.Y.
STRUCT. EXCAVATION	— —	50.7 C.Y.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYP. GUARD RAIL CONNECTION
CONC. END POST~TYPE "W"

HAWAII BELT ROAD
PROJ. No. RDS-019-2(12)

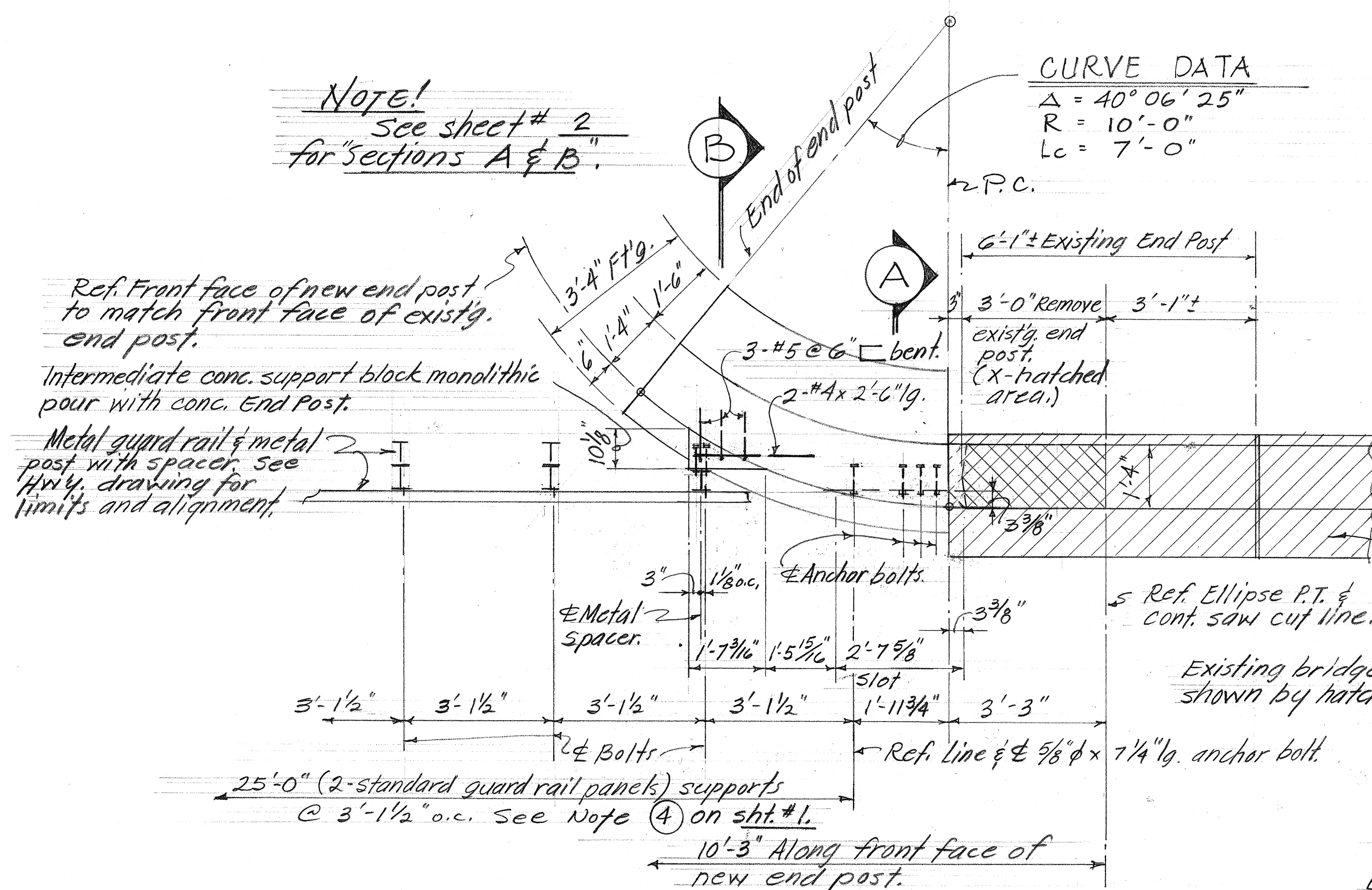
Scale as shown DATE: Oct., 1975

SHEET No. 2 OF 3 SHEETS

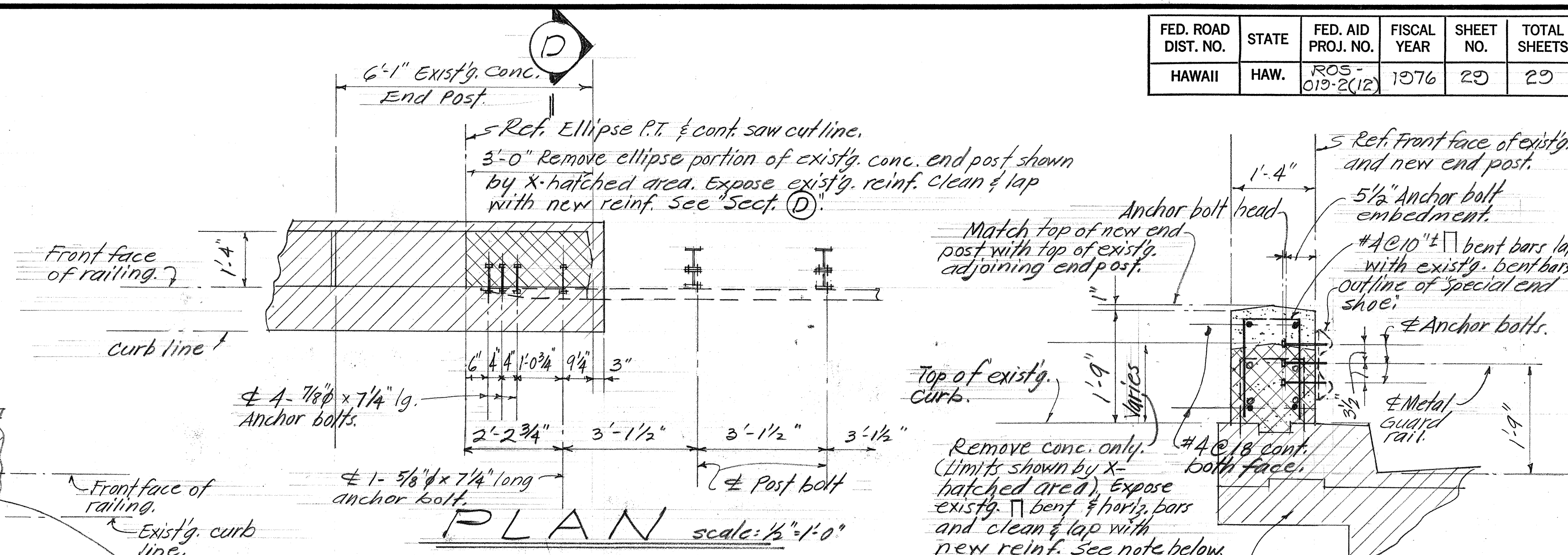
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-019-2(12)	1976	23	23

NOTE!
See sheet # 2
for sections A & B.

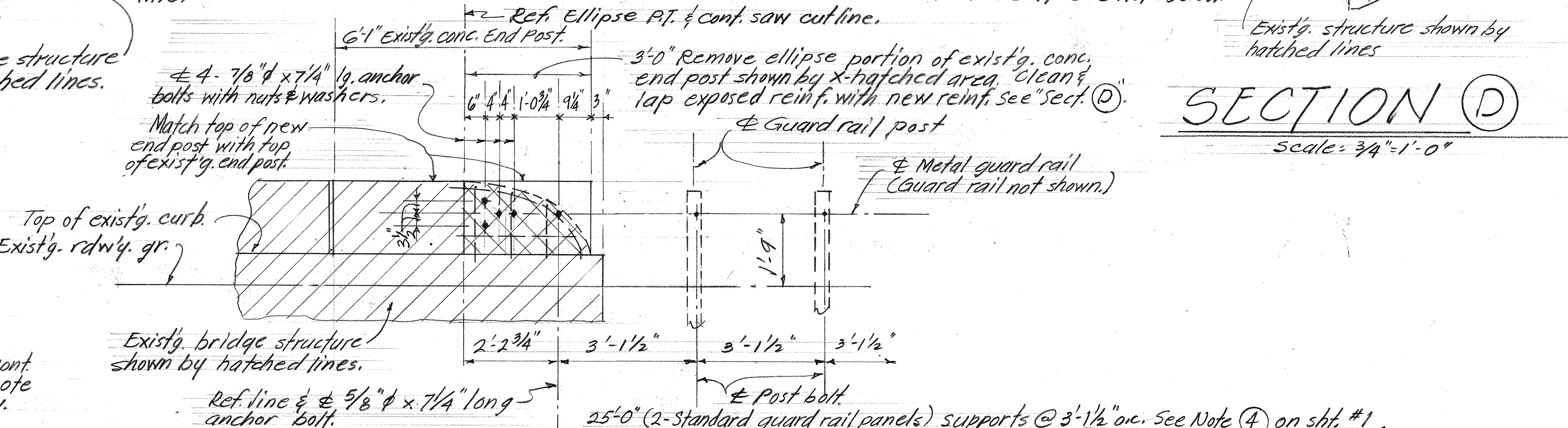
CURVE DATA
 $\Delta = 40^\circ 06' 25''$
 $R = 10'-0''$
 $L_c = 7'-0''$



PLAN scale: 1/2" = 1'-0"

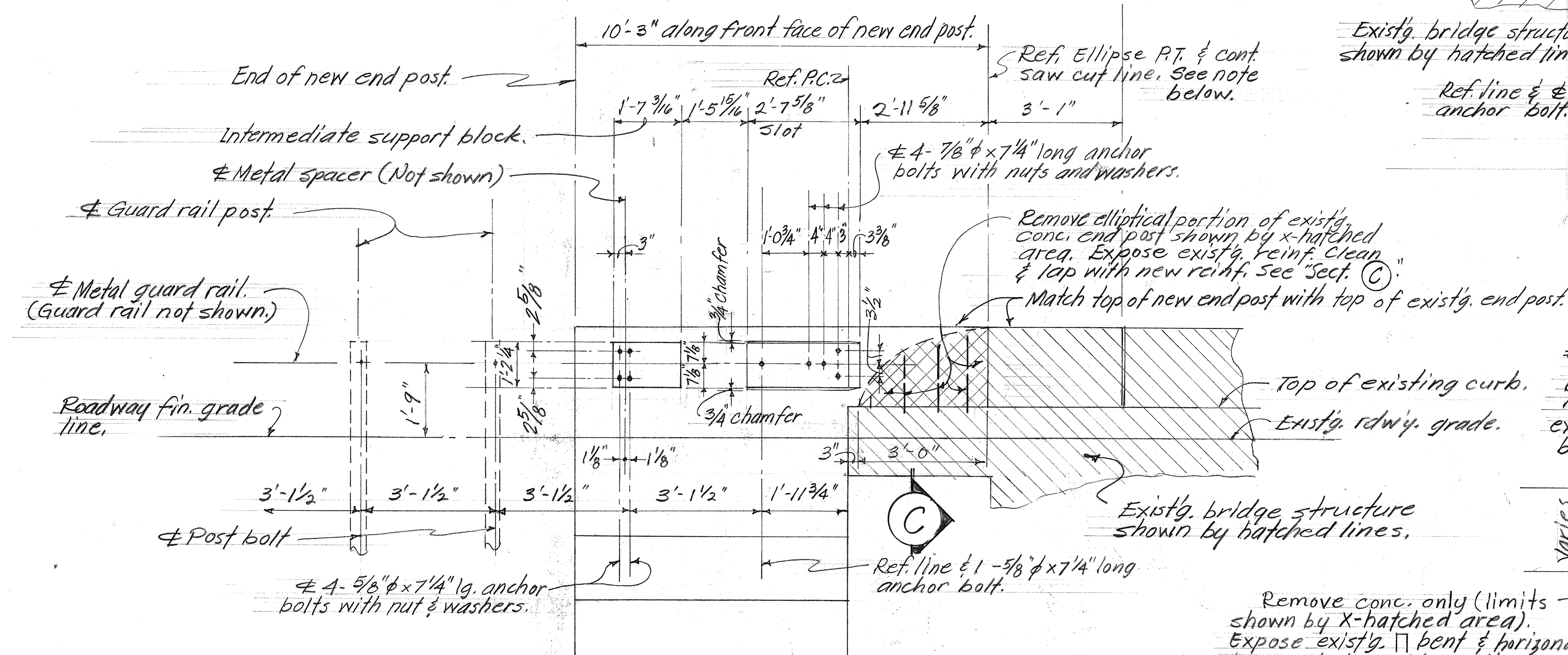


PLAN scale: 1/2" = 1'-0"



ELEVATION scale: 1/2" = 1'-0"

TYPE "S" CONC. END POST



ELEVATION scale: 1/2" = 1'-0"

TYPICAL TYPE "W-1" CONC. END POST

NOTE!

For removal of existing concrete, saw cut faces of existing end post in a straight and clean line to the plane of the outer edge of the existing reinf.
Any damage to portions of the structure which are to remain in place shall be repaired at the Contractor's expense to the satisfaction of the Engineer.

SECTION C scale: 3/4" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYP. GUARD RAIL CONNECTION
CONC. END POST ~ TYPE "W-1" & "S"
HAWAII BELT ROAD
PROJ. No. ROS-019-2(12)
Scale as shown DATE: Oct, 1975
SHEET No. 3 OF 3 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	