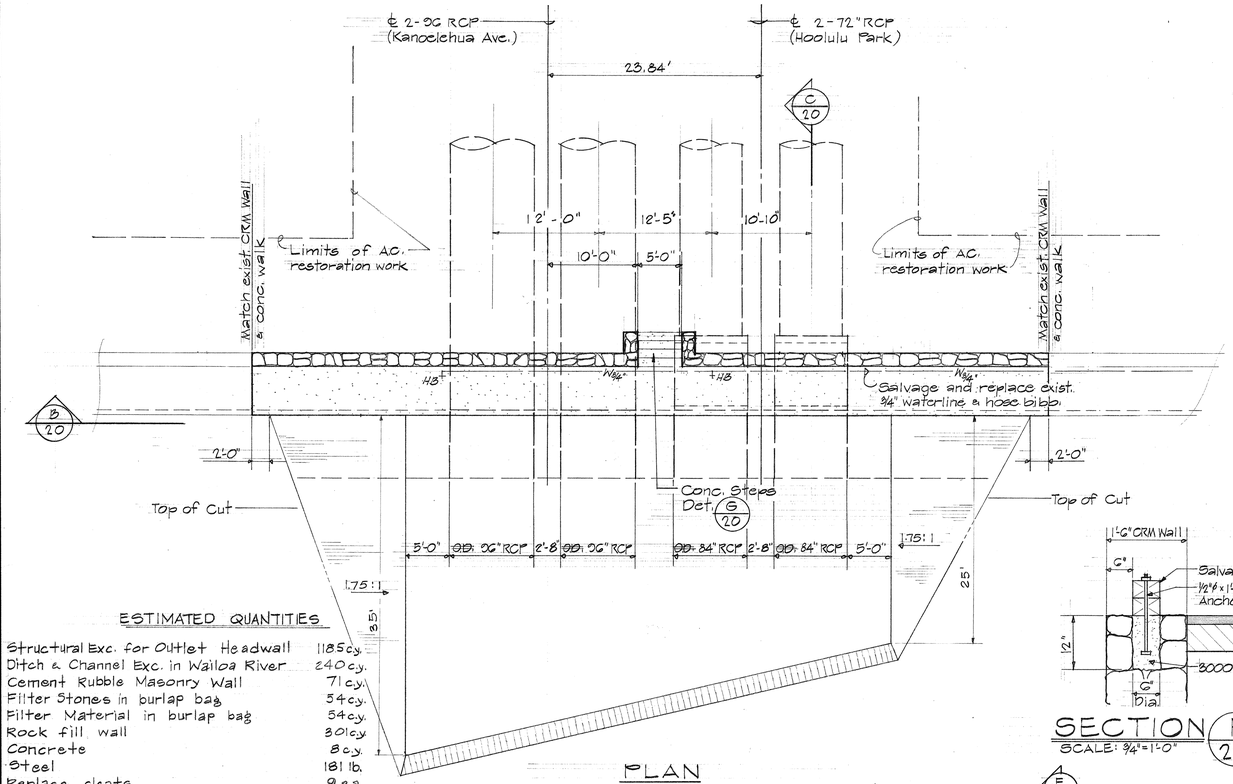
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-RF-011-2(13)	1975	20	126



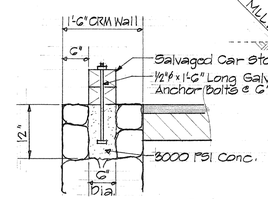
ESTIMATED QUANTITIES

Structural Exc. for Outlet Headwall	1185 c.y.
Ditch & Channel Exc. in Wailoa River	240 c.y.
Cement Rubble Masonry Wall	71 c.y.
Filter Stones in burlap bag	54 c.y.
Filter Material in burlap bag	54 c.y.
Rock fill wall	301 c.y.
Concrete	8 c.y.
Steel	181 lb.
Replace cleats	9 ea.
Replacing car stop	89 L.F.
Replacing fender system	89.5 L.F.
Precast reducer 84" to 72"	8 L.F.
Tremie Concrete	153 c.y.
6" x 6" x 10/10 wire mesh	49 s.y.

PLAN

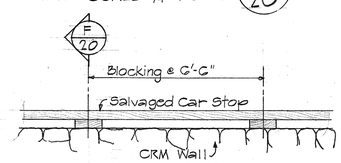
OUTLET DETAIL (A/20)

Scale: 1/8" = 1'-0"



SECTION (F/20)

SCALE: 3/4" = 1'-0"



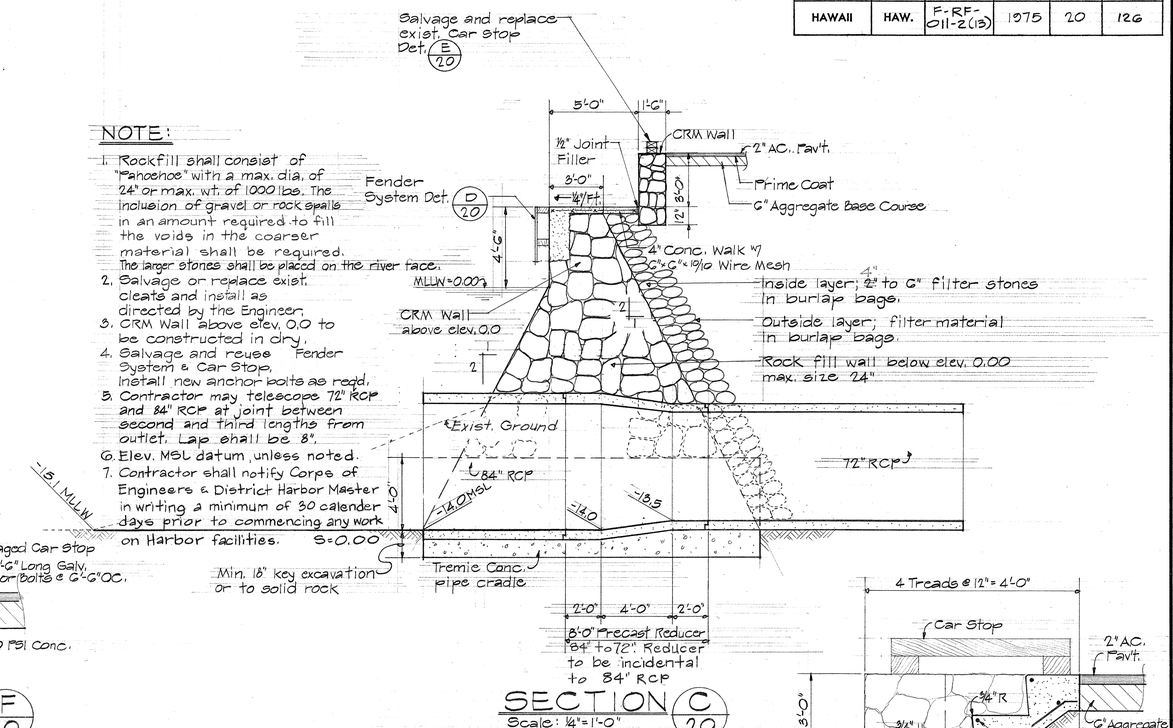
ELEVATION

CAR STOP DETAIL (E/20)

SCALE: 3/8" = 1'-0"

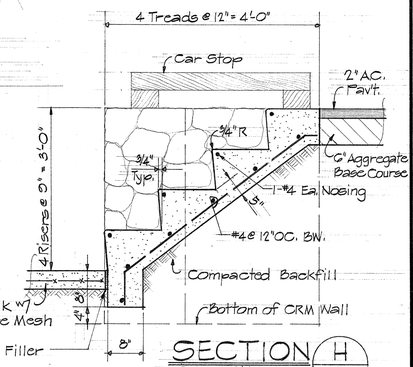
NOTE:

1. Rockfill shall consist of "Fanoehoe" with a max. dia. of 24" or max. wt. of 1000 lbs. The inclusion of gravel or rock spalls in an amount required to fill the voids in the coarser material shall be required. The larger stones shall be placed on the river face.
2. Salvage or replace exist. cleats and install as directed by the Engineer.
3. CRM Wall above elev. 0.0 to be constructed in dry.
4. Salvage and reuse Fender System & Car Stop. Install new anchor bolts as reqd.
5. Contractor may telescope 72" RCP and 84" RCP at joint between second and third lengths from outlet. Lap shall be 8".
6. Elev. MSL datum, unless noted.
7. Contractor shall notify Corps of Engineers & District Harbor Master in writing a minimum of 30 calender days prior to commencing any work on Harbor facilities.



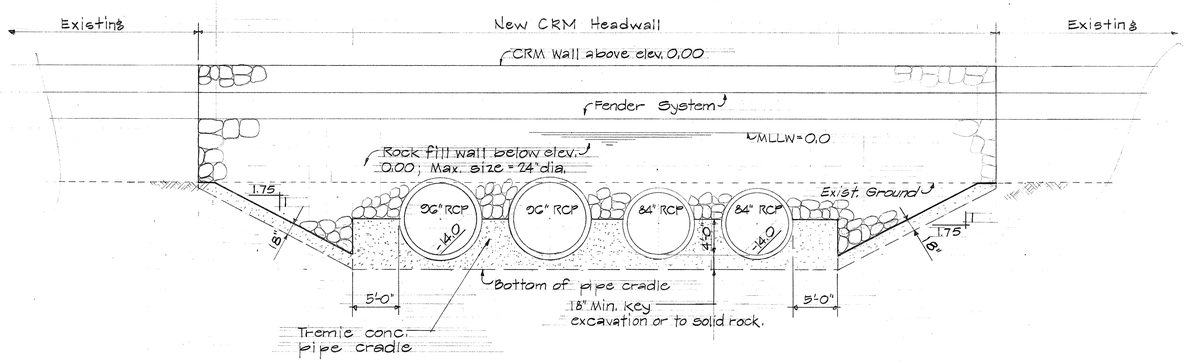
SECTION (C/20)

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



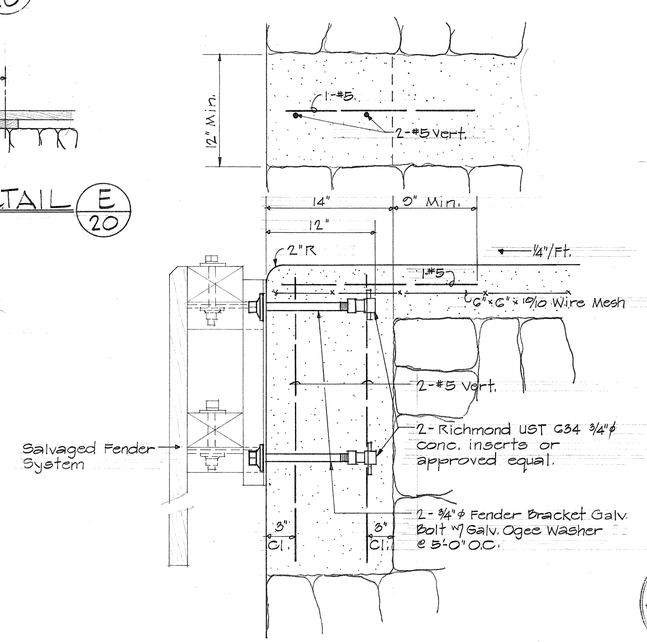
SECTION (H/20)

SCALE: 3/4" = 1'-0"



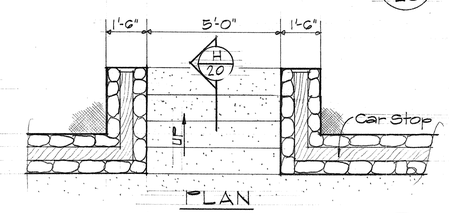
SECTION (B/20)

Scale: 1/8" = 1'-0"



FENDER SYSTEM DETAIL (D/20)

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



PLAN

CONC. STEPS DETAIL (G/20)

SCALE: 3/8" = 1'-0"

HENRY S. HOSHIDE
REGISTERED PROFESSIONAL ENGINEER
No. 2448
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Henry S. Hoshide
Signature

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAILOA RIVER OUTLET DETAIL

KANOELEHUA AVE.
MAKALIKA ST. TO KAMEHAMEHA AVE.
Federal Aid Project No. F-RF-011-2(13)
Scale: As Shown

SHEET No. 1 OF 1 SHEETS

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

K+E CRYSTALENE TRACING PAPER L.A. 3888