

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIPE CULVERT
EXTENSION DETAILS

MAMALAOHA HIGHWAY RESURFACING
KAMAKOHA BRIDGE NO. 1 TO KEAMUKU
PROJECT NO. RS-0190(B)

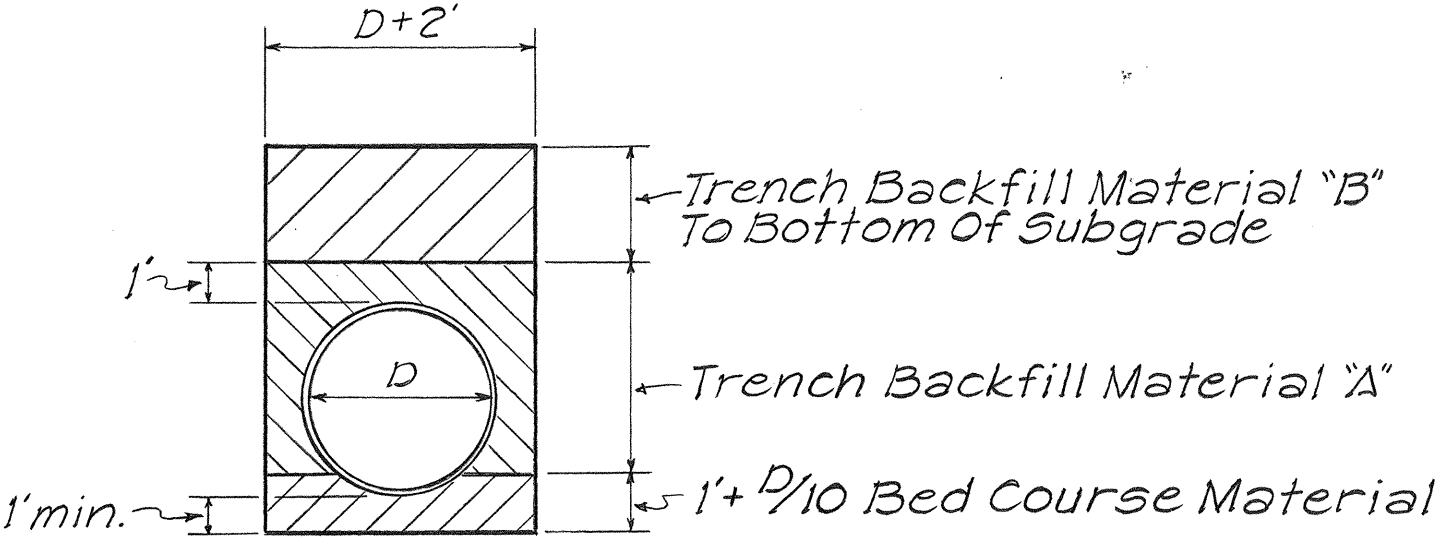
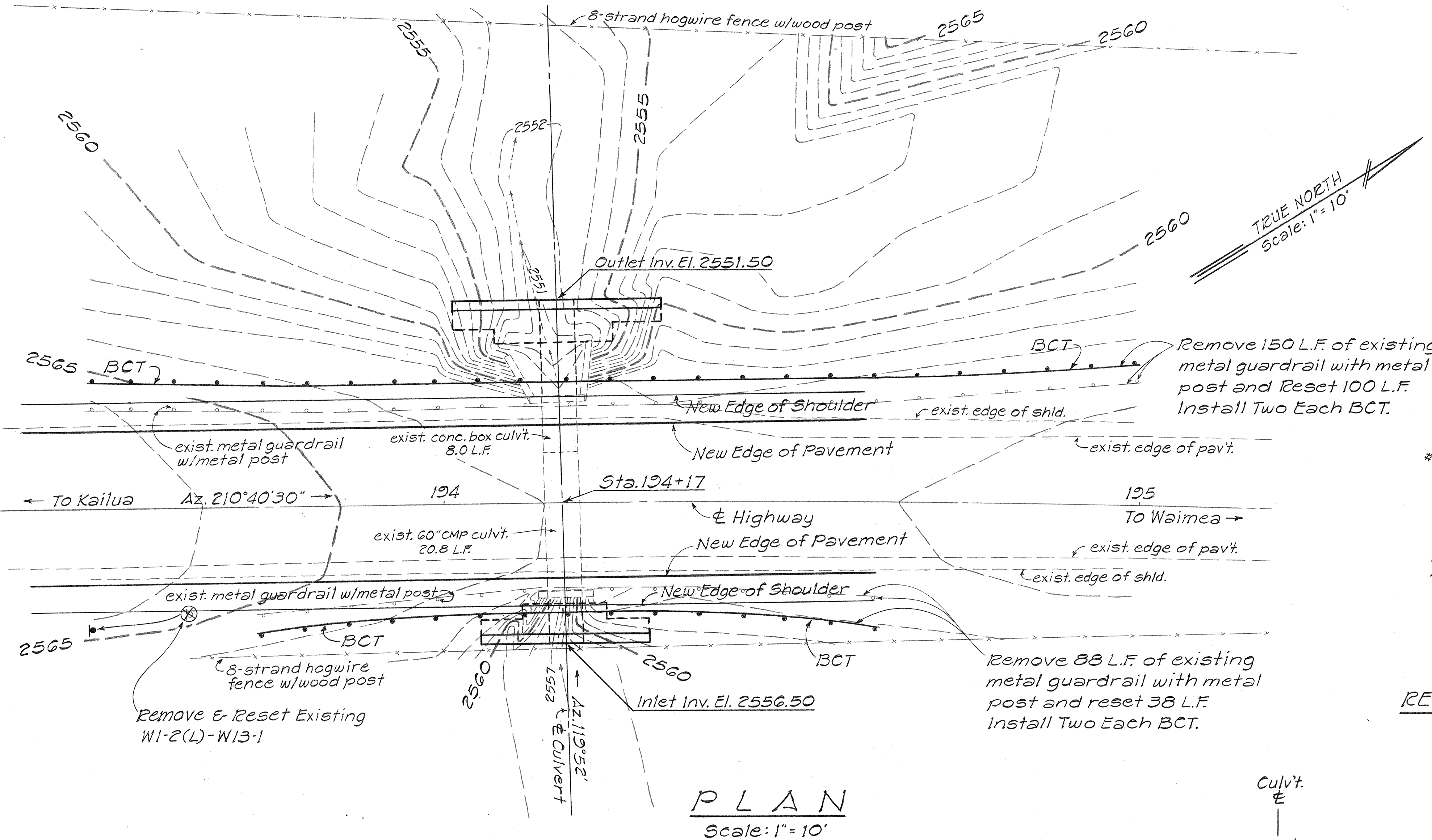
Scale: As Noted Date: March 1987

SHEET NO. 1 OF 2 SHEETS

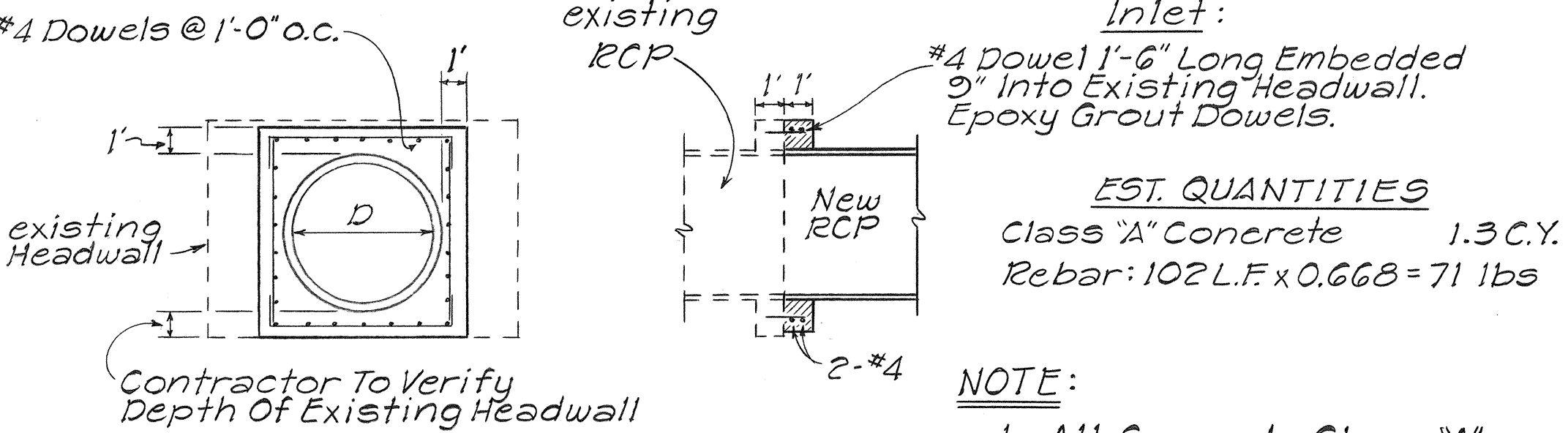


ESTIMATED DRAINAGE QUANTITIES												
DRAINAGE FACILITY	ITEM NO. →	202. 0440										
	DESCRIPTION	Removal of Culvert Structure	Structure Excavation for Drainage System	Structure Backfill	Ditch and Channel Excavation	Class A' Concrete for Drainage System	Cement Rubble Masonry	Reinforcing Steel for Drainage System	Bed Course Material	60-Inch Reinf. Conc. Pipe, Class III	36-inch Conc. Metal Pipe, Sht. Thickness 0.109 inch	
	UNIT USED →	L.S.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	LBS.	C.Y.	L.F.	L.F.	
"A"	STA. 51 + 23	-	4	9	1	6.9	-	102	3	-	14	
"B"	STA. 60 + 63	-	4	9	1	6.9	-	102	4	-	15	
"C"	STA. 104 + 17	L.S.	51	40	6	3.9	42	180	8	30	-	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RS-0190(8)	1987	34	56

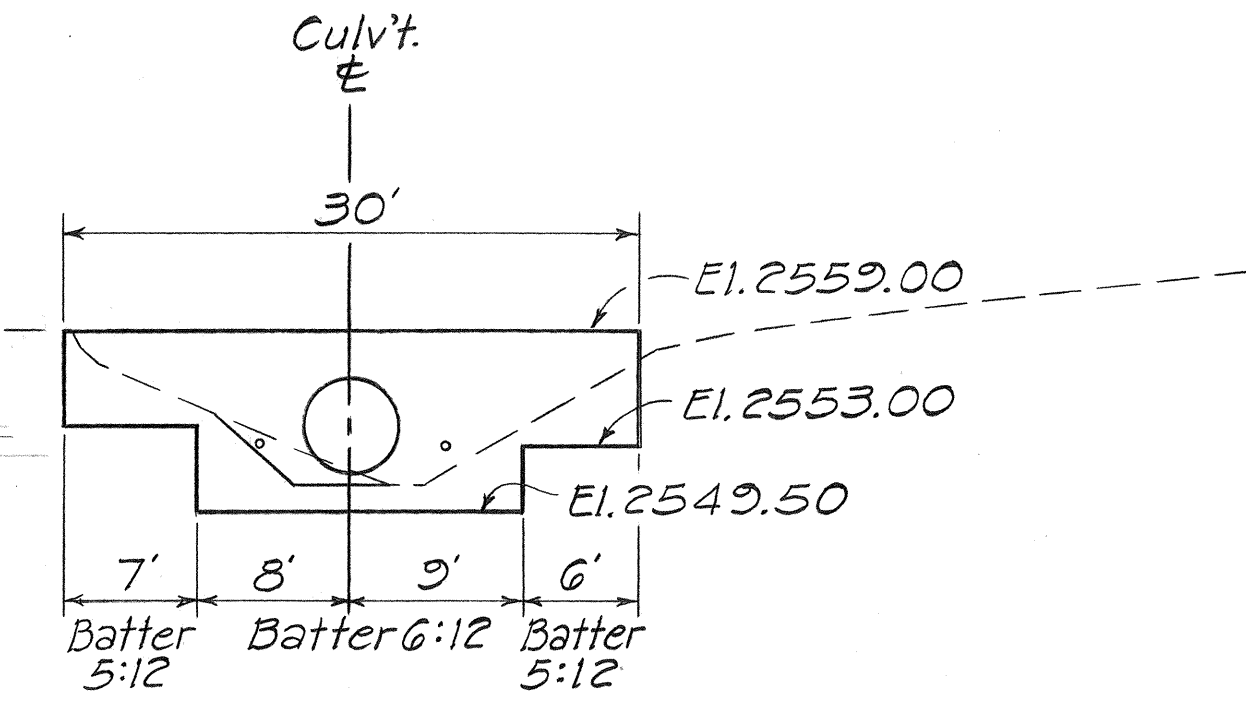
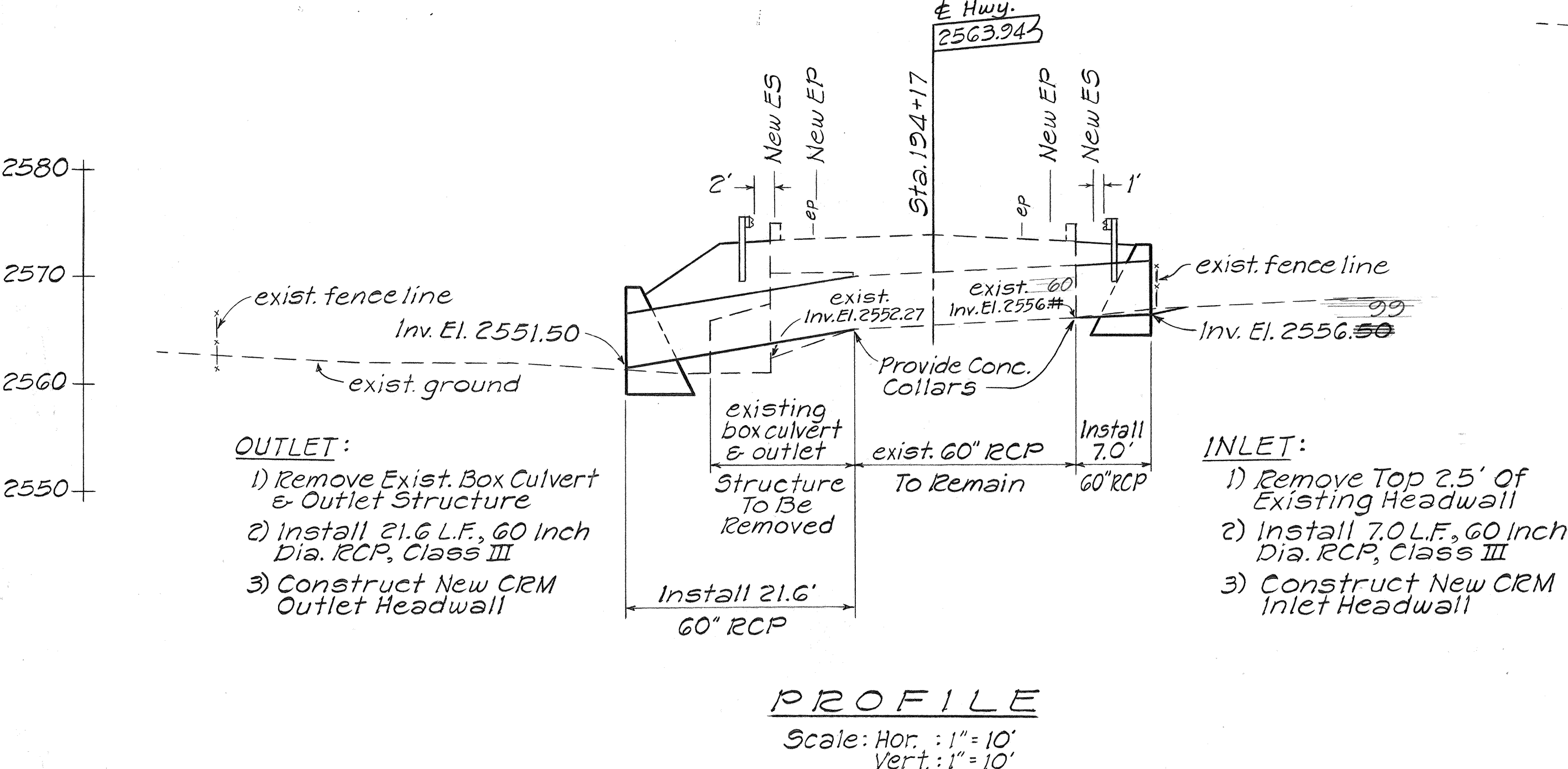


TYPICAL SECTION TRENCH BACKFILL MATERIAL
NOT TO SCALE

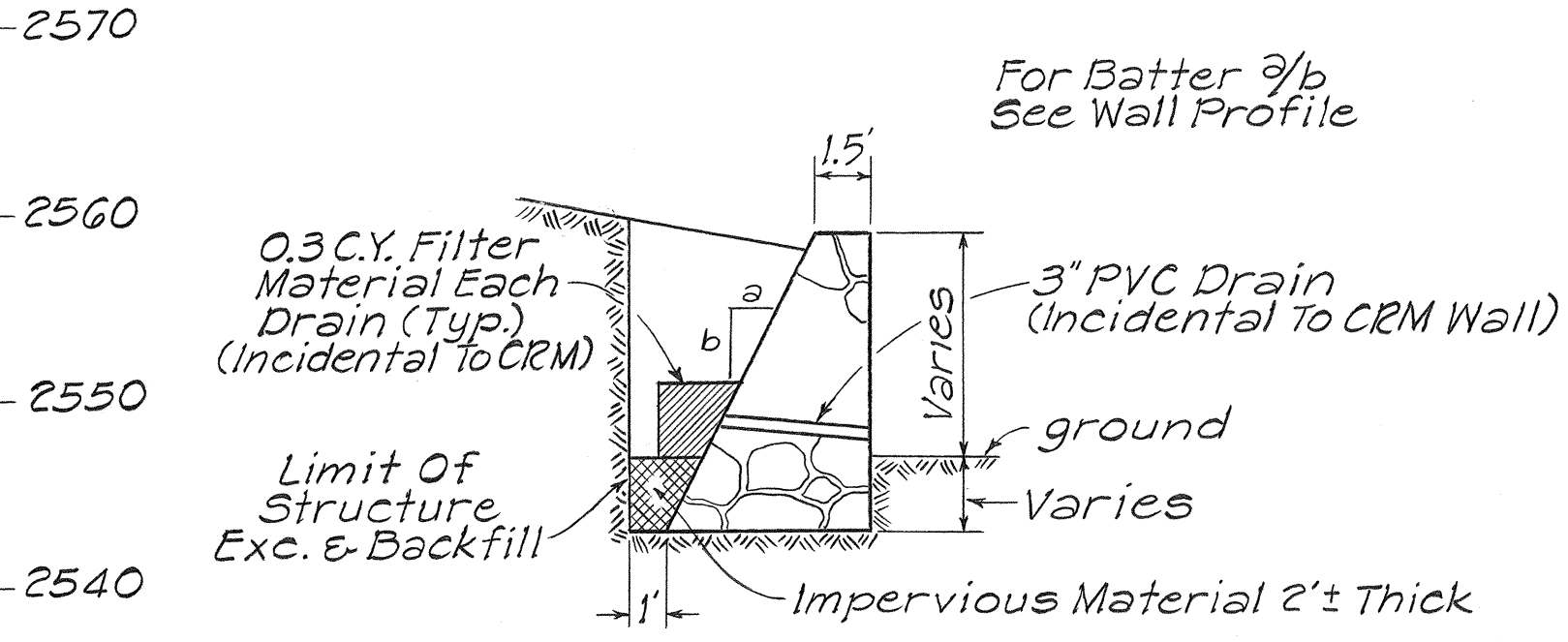


REINFORCED CONCRETE COLLAR DETAIL
NOT TO SCALE

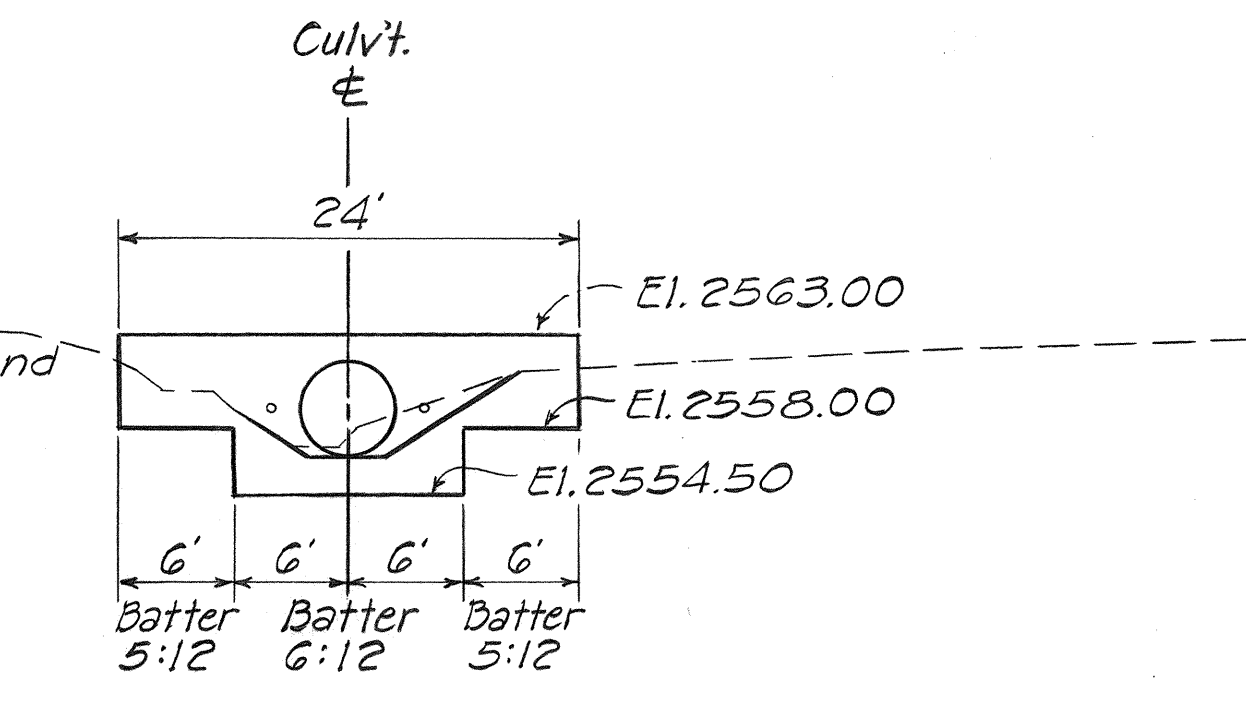
- EST. QUANTITIES**
Class 'A' Concrete 1.3 C.Y.
Rebar: 102 L.F. x 0.668 = 71 lbs
- NOTE:**
1. All Concrete Class 'A'
2. Outlet Collar 2 feet thick. Similar Steel arrangement except double horizontal and vertical steel quantities.



OUTLET WALL PROFILE
(29' LEFT OF HWY. C)



CRM WALL DETAIL
Scale: 1" = 5'-0"



INLET WALL PROFILE
(20' RIGHT OF HWY. C)
Scale: Hor. : 1" = 10'
Vert. : 1" = 10'

NOTE: Construct CRM Walls Parallel To Hwy. C.

60 INCH RCP CULVERT AT STA. 124+17

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAIL
MAMALAHOA HWY. RESURFACING
Keamuku to Vicinity of Kamakoa Br. No. 1
PROJ. No. RS-0190(8)
SOUTH KOHALA, HAWAII
Scale: As Noted Date: Mar. 1987