

DRAINAGE SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	36	39

ITEM NO.		206.	508.	603.	603.	603.	603.
UNIT USED		1000	0100	0013	0015	2062	2069
		C.Y.	C.Y.	Ea.	Ea.	L.F.	L.F.
STRUCTURE	STATION	STRUCTURE EXCAVATION OTHER THAN AT BRIDGES	CEMENT RUBBLE MASONRY	CONCRETE COLLAR FOR 18-INCH CMP	CONCRETE COLLAR FOR 36-INCH CMP	18-INCH CORRUGATED METAL PIPE, SHT. "t" = 0.079"	36-INCH CORRUGATED METAL PIPE, SHT. "t" = 0.079"
CRM HEADWALL	Sta. 25+30± Lt.	4.0	3.5		1		2
CRM HEADWALL	Sta. 30+35± Rt.	2.5	1.5	1		6	
CRM HEADWALL	Sta. 33+50± Rt.	2.5	1.5	1		2	
CRM HEADWALL	Sta. 154+50 Lt.	2.5	1.5	1		2	
CRM HEADWALL	Sta. 246+50 Rt.	3.0	2.5				
CRM HEADWALL	Sta. 262+73± Lt.	4.0	3.5		1		2
CRM HEADWALL	Sta. 286+40 Lt.	2.5	1.5	1		2	
CRM HEADWALL	Sta. 294+40 Lt.	2.5	1.5	1		4	
CRM HEADWALL	Sta. 328+30 Lt.	4.0	3.5		1		2

DRAINAGE NOTES:

1.

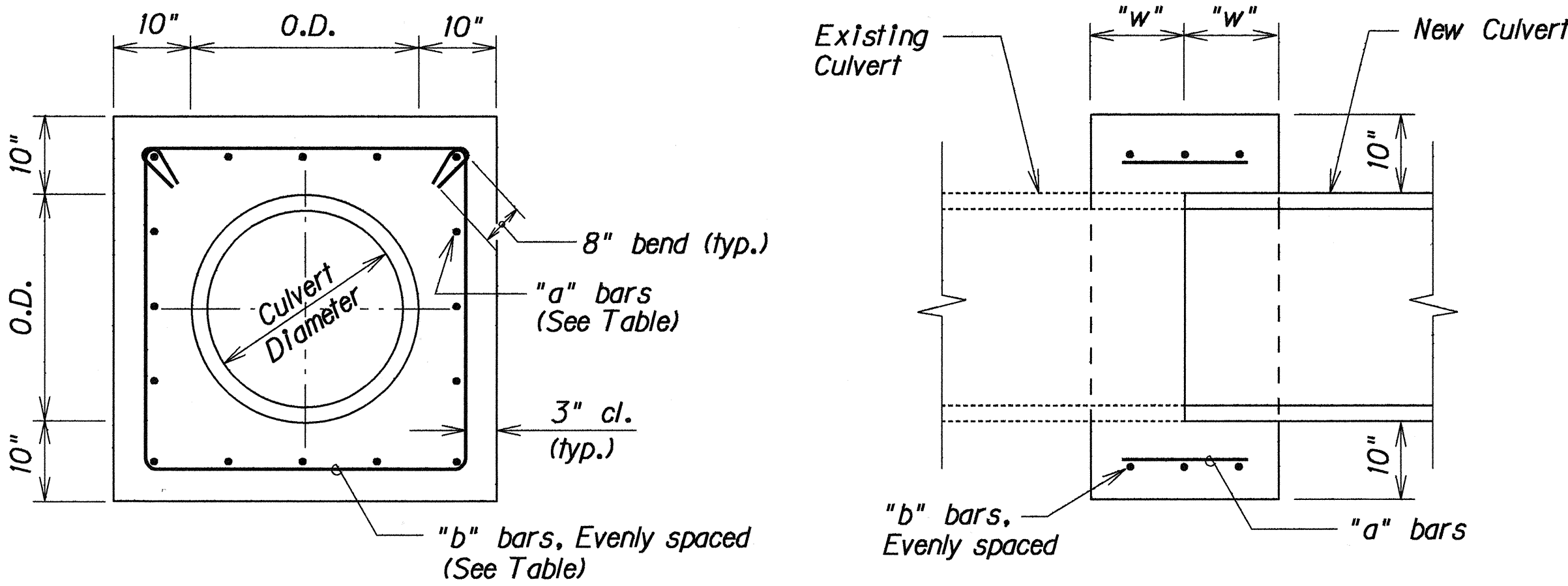
Existing drainage system will be functional at all times during construction. Contractor is to furnish materials, equipment, labor, tools, and Incidentals necessary to accomplish maintenance of flow, the cost of which shall be incidental to the various Contract Items.
2.

Demolishing, removing and disposing existing structures shall not be paid for separately but shall be considered incidental to the various Contract Items.
3.

The Contractor shall verify the locations of all culverts in the field. Any culvert damaged during construction shall be repaired or replaced by the Contractor at his expense.
4.

Inlet and outlet conditions shall be graded to permit free flow of run off. Grading shall be to the satisfaction of the Engineer. Above work shall be considered incidental to the various Contract Items.
5.

For Typical Concrete Collar details see this sheet.



Culvert Diameter	"a" bars	"b" bars	"w"
18" to 30"	#4 @ 9"	3- #4	12"
36" to 48"	#5 @ 9"	4- #4	15"

Note: Reinforcing Steel for Concrete Collar shall conform to the requirements of ASTM 615-Grade 60.

TYPICAL DETAILS OF REINFORCED CONCRETE COLLAR

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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
N.	DESIGNED BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE SUMMARY

HALEAKALA HIGHWAY

Guardrail & Shoulder Improvement
Kula Junction To Crater Road Junction

Fed. Aid Project No. STP-0377(3)

Scale: As Noted Date: May, 1992

SHEET No. H1 OF 1 SHEETS