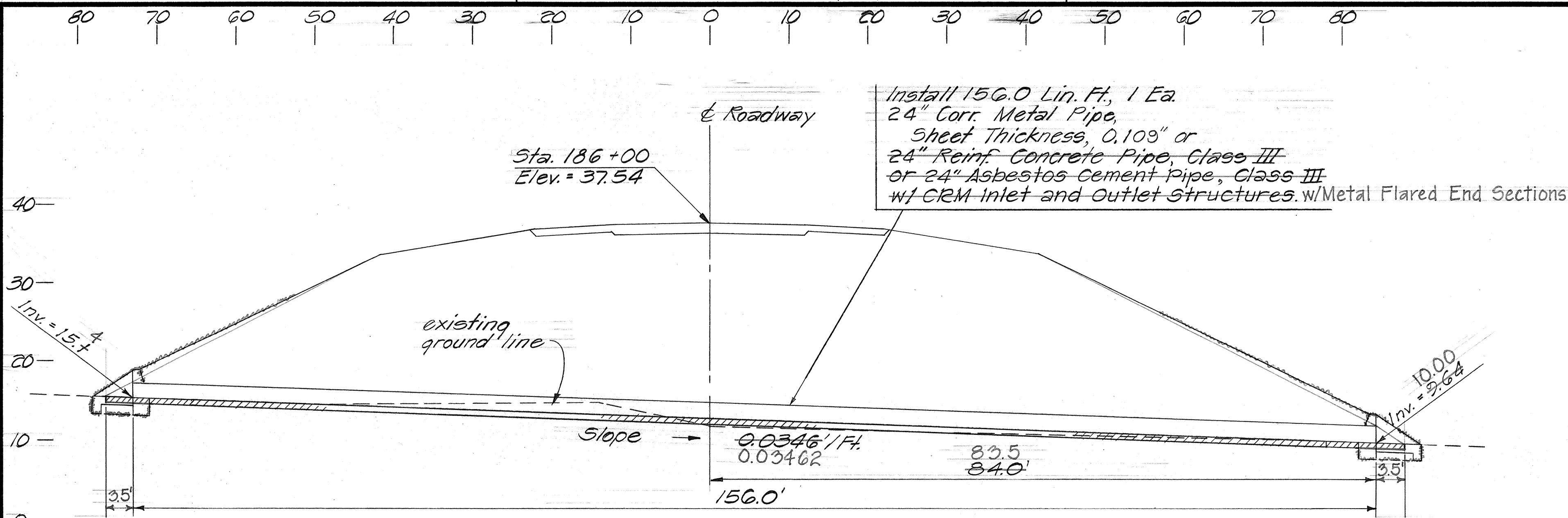
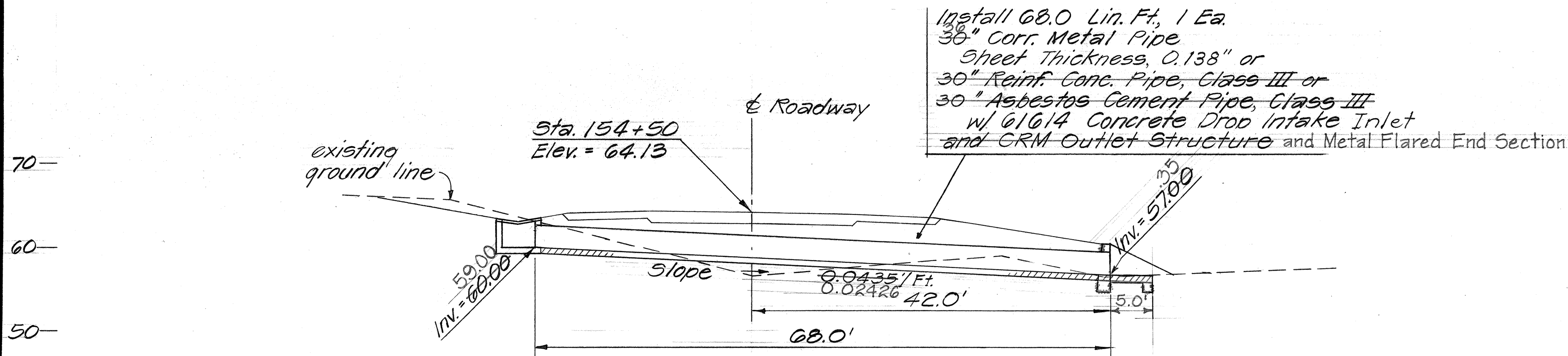


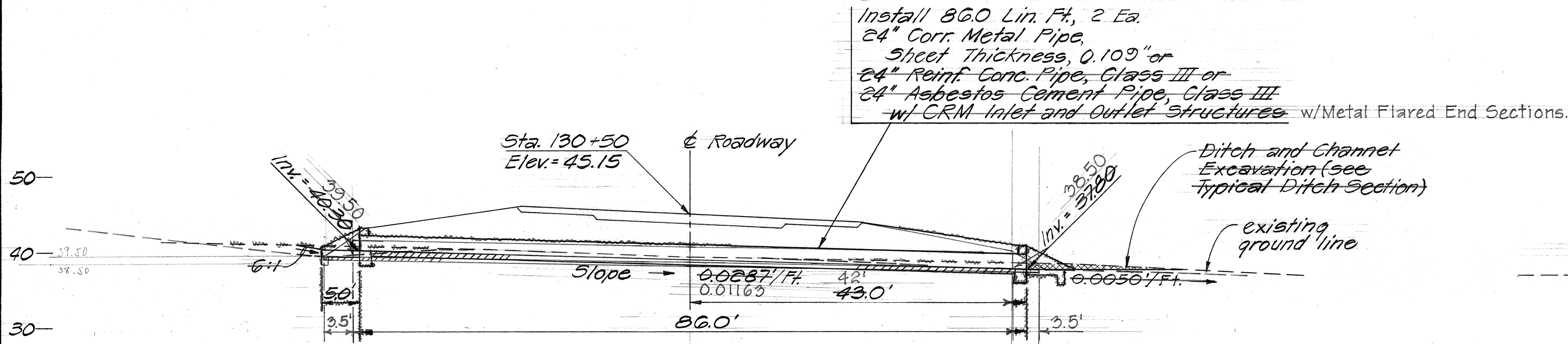
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER 9(3)	1979	19	89



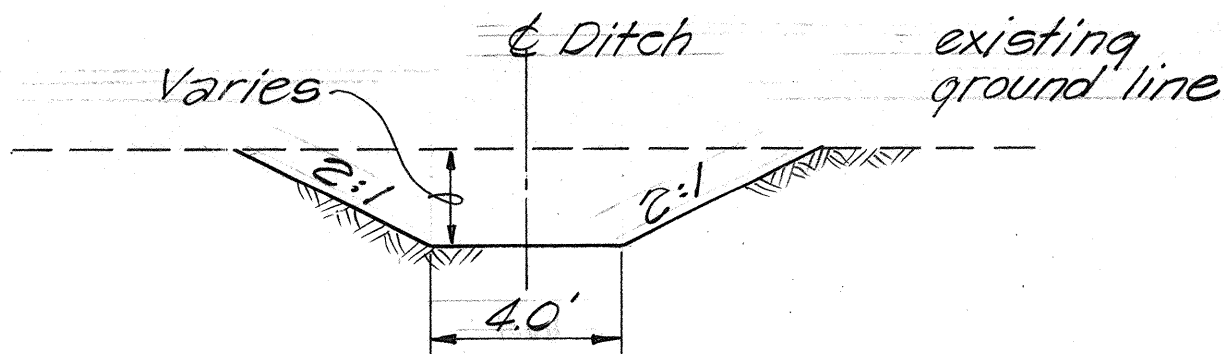
SECTION THRU & OF CULVERT
STRUCTURE NO. 3 ~ STA. 186+00
Scale: 1"=10'



SECTION THRU & OF CULVERT
STRUCTURE NO. 2 ~ STA. 154+50
Scale: 1"=10'



SECTION THRU & OF CULVERT
STRUCTURE NO. 1 ~ STA. 130+50
Scale: 1"=10'



TYPICAL DITCH SECTION
Scale: 1"=4'

SUMMARY													
ITEM NO.	206. 2020	207. 0100	503. 0020	508. 0100	602. 1020	603. 0100	603. 2264	603. 7360	603. 7460	603. 7220	604. 2330	603. 2632	612. 0100
ITEM	Structure Excavation for Drainage System	Ditch and Channel Excavation	Class A Concrete for Drainage System	Cement Rubble Masonry	Reinforcing Steel for Drainage System	Bed Course Material for Culvert	36" Corr. Bituminous Coated Metal Pipe, Sheet Thickness 0.138"	30" CMP, Sht. Thk. 0.138" or 30" RCP, Class III or 30" Asb. Cem. Pipe Cl. III	36" CMP, Sht. Thk. 0.138" or 30" RCP, Class III or 30" Asb. Cem. Pipe Cl. III	24" CMP, Sht. Thk. 0.109" or 24" RCP, Class III or 24" Asb. Cem. Pipe Cl. III	Type G1G14 Steel Frame and Grate	36" x 22" CMP-Arch Sheet Thickness 0.109"	Grouted Rubble Paving
STATION	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Lb.	Cu. Yd.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Ea.	Lin. Ft.	Cu. Yd.
130+50	93	9	-	17	-	15	-	-	-	172	-	-	6.9
154+50	63	-	1.5	8	34	8	-	60	60	-	1	-	2.0
186+00	100	-	-	15	-	15	-	-	-	156	-	-	2.8
209+00	64	33	1.5	4	34	11	-	-	-	-	1	82	2.3
222+50	109	-	-	16	-	11	-	-	99	-	-	-	4.5
250+63	20	-	-	9	-	1	0	-	-	-	-	-	2.9
TOTALS	599	42	3.0	74	68	61	0	60	167	328	2	82	21.4

- NOTE:
1. Fill Slopes shall be flush with top of Headwalls. See detail; sheet no. 20.
 2. The Contractor may, at his option and subject to approval by the Engineer, furnish prefabricated end sections for culverts in lieu of CRM inlet/outlet structures. Prefabricated structures, if used, shall conform to details of California Standard D94-7 "Flared End Sections," dated Dec. 9, 1976.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

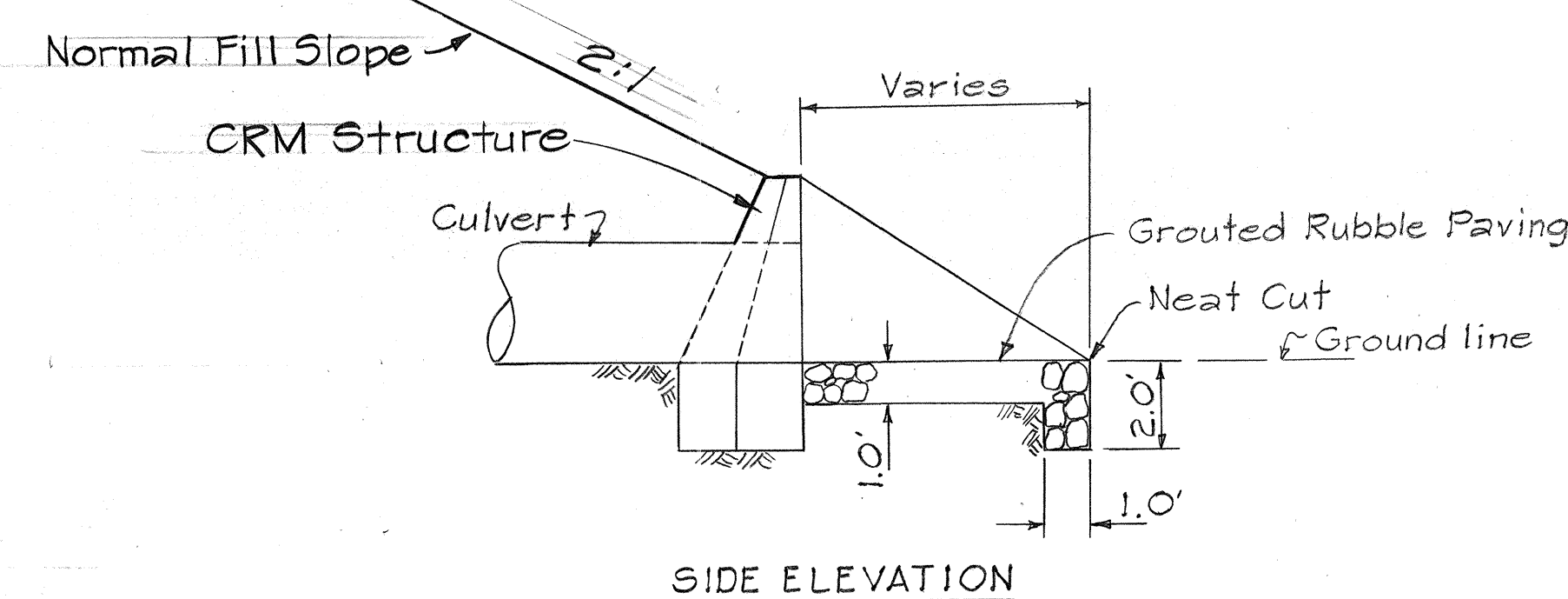
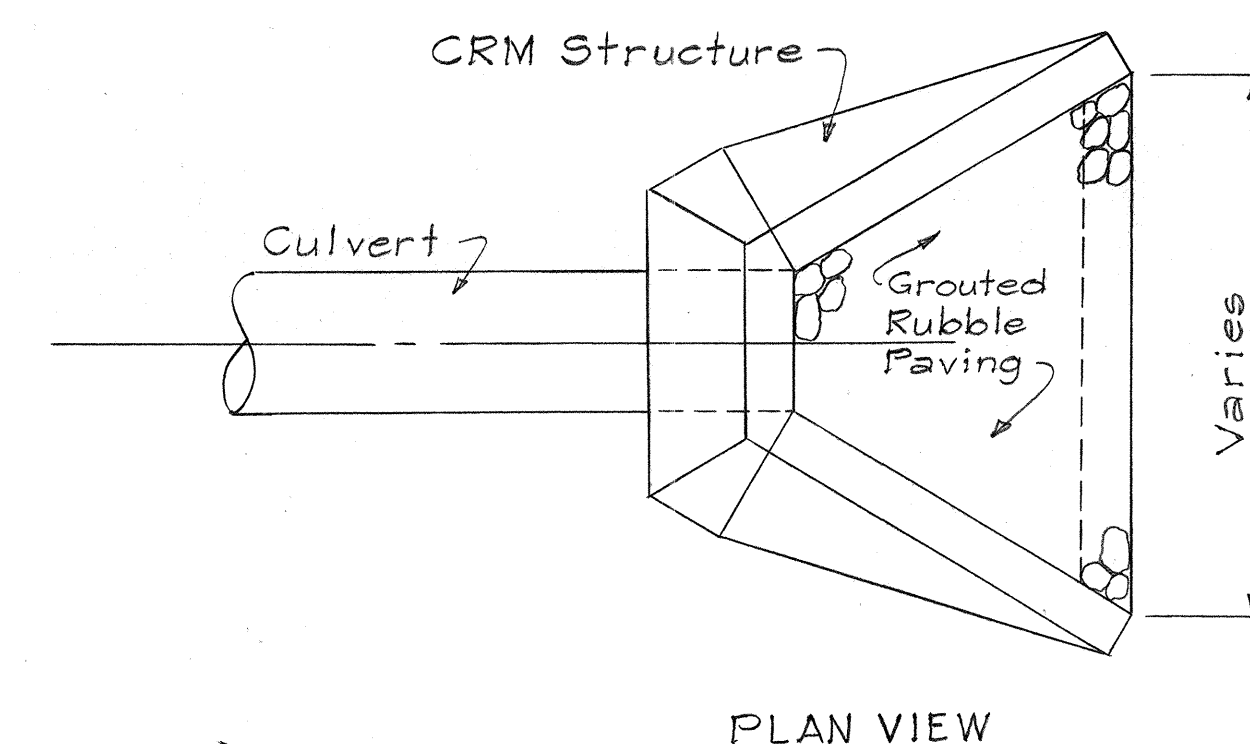
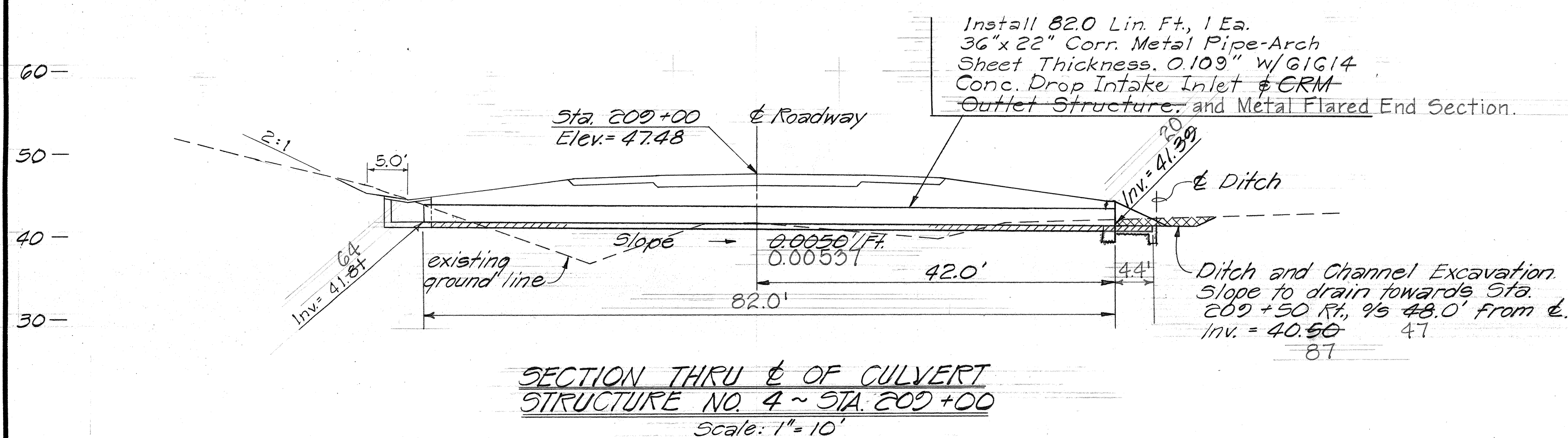
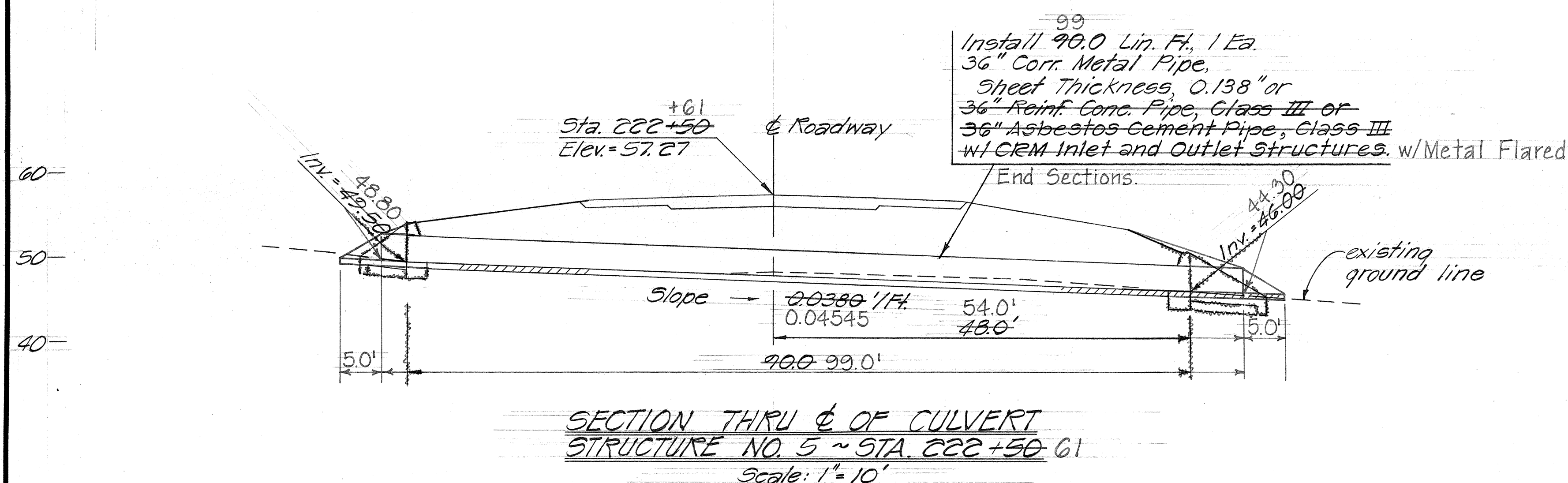
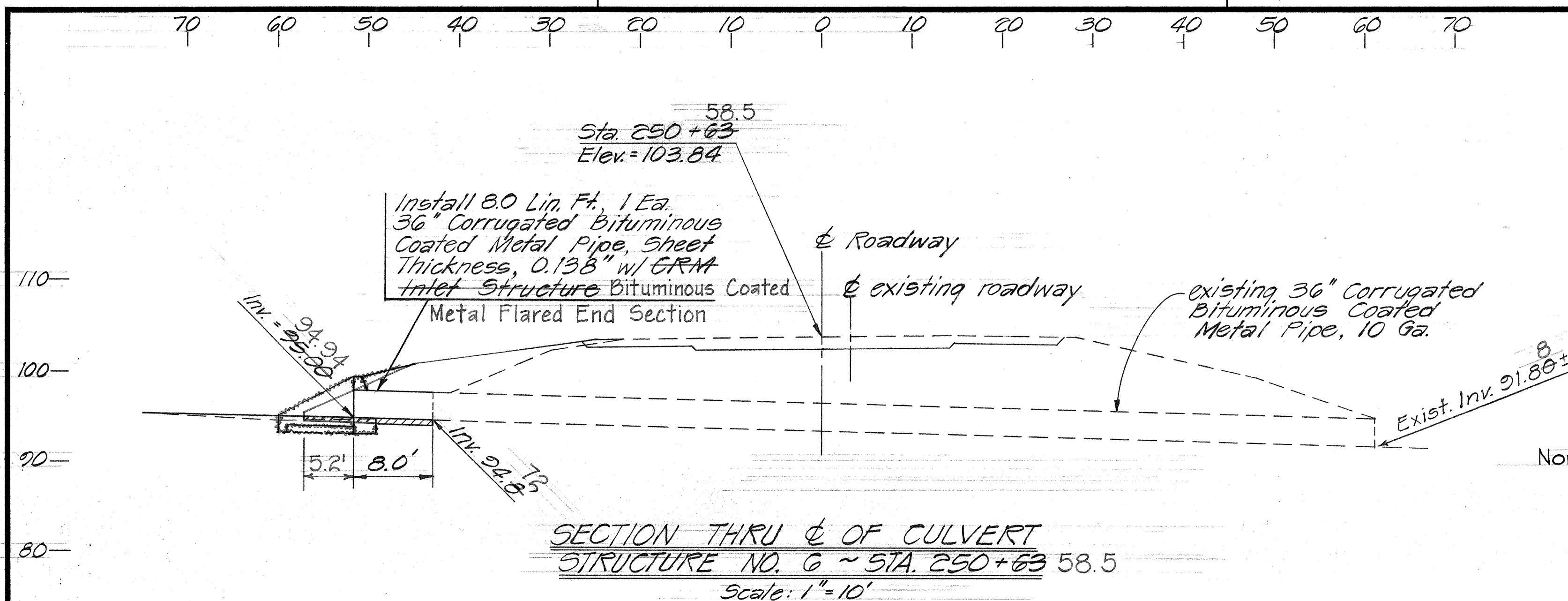
DRAINAGE CULVERTS
STRUCTURE Nos. 1-3
KAIMU-CHAIN OF CRATERS ROAD
F.A.P. NO. ER-9(3)

Scale: As Noted
Date: May 1978

SHEET No. 1 OF 2 SHEETS

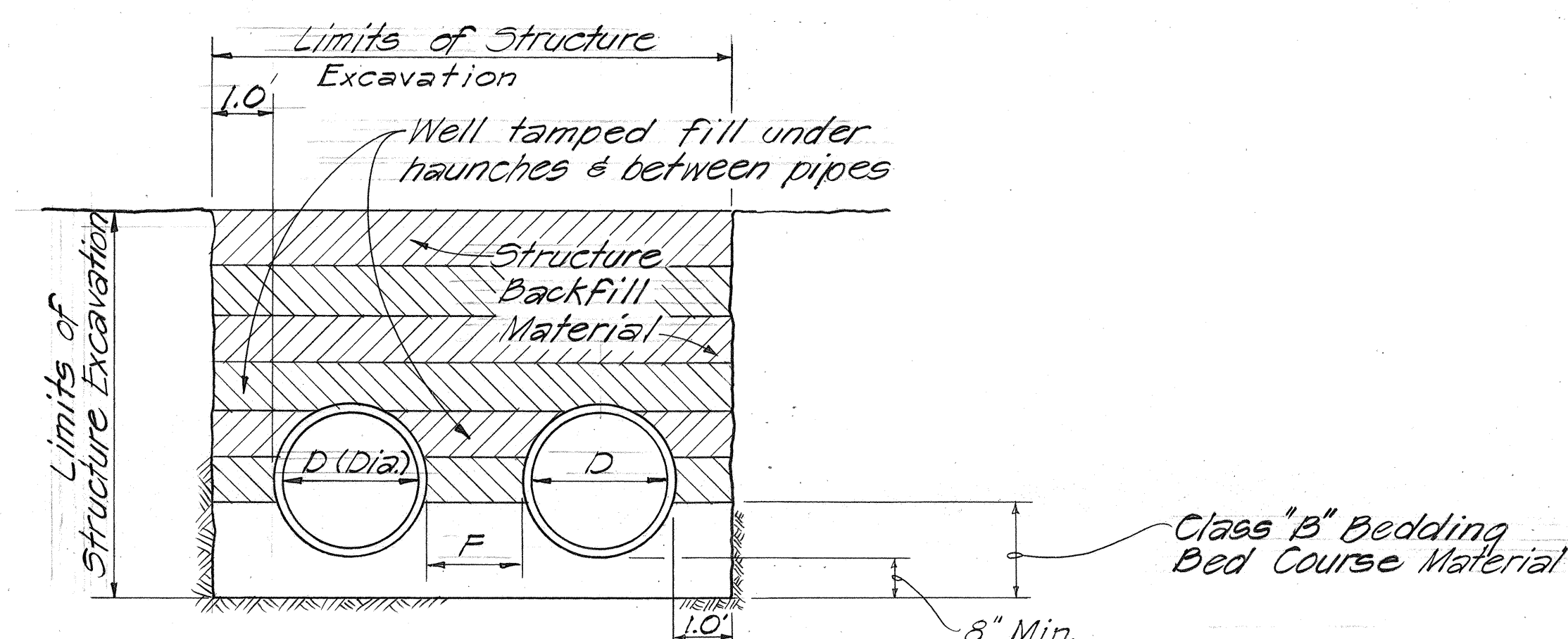
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	DATE
DRAWN BY	DATE
DESIGNED BY	DATE
QUANTITIES BY	DATE
CHECKED BY	DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER 9(3)	1979	20	89



TYPICAL GRP INLET & OUTLET APRON DETAIL AT CRM STRUCTURE

Not to Scale



PIPE DIAMETER (D)	MIN. DISTANCE (F) BETWEEN PIPES
24 in. to 72 in.	1/2 Dia. (D) in.
72 in. and up	36 in.

DOUBLE PIPE INSTALLATION

Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

DRAINAGE CULVERTS
STRUCTURE Nos. 4-6

KAIMU-CHAIN OF CRATERS ROAD
F.A.P. NO. ER-9(3)

Scale: As Noted Date: May 1978

SHEET No. 2 OF 2 SHEETS

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