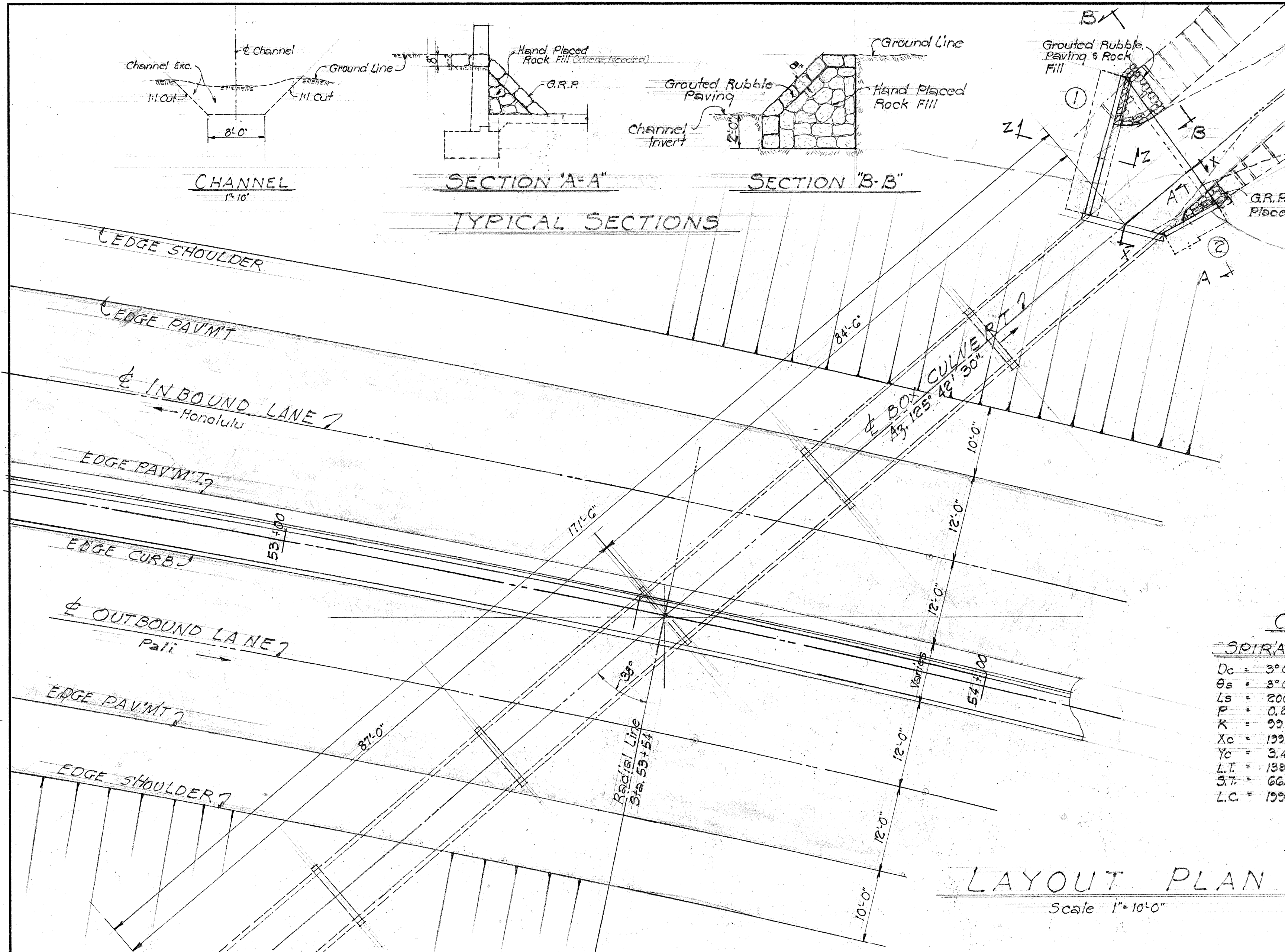
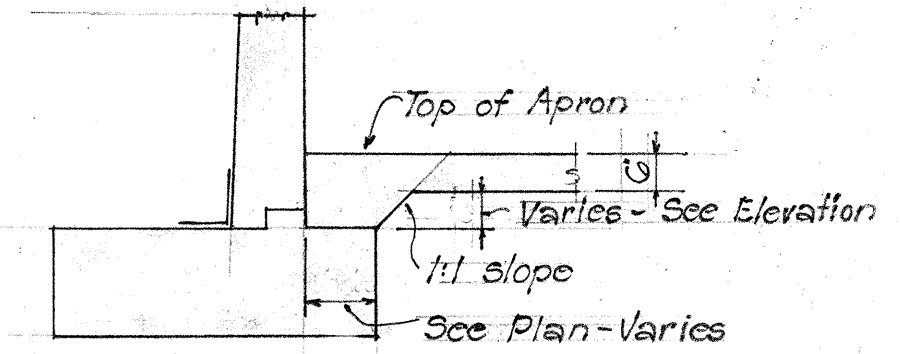
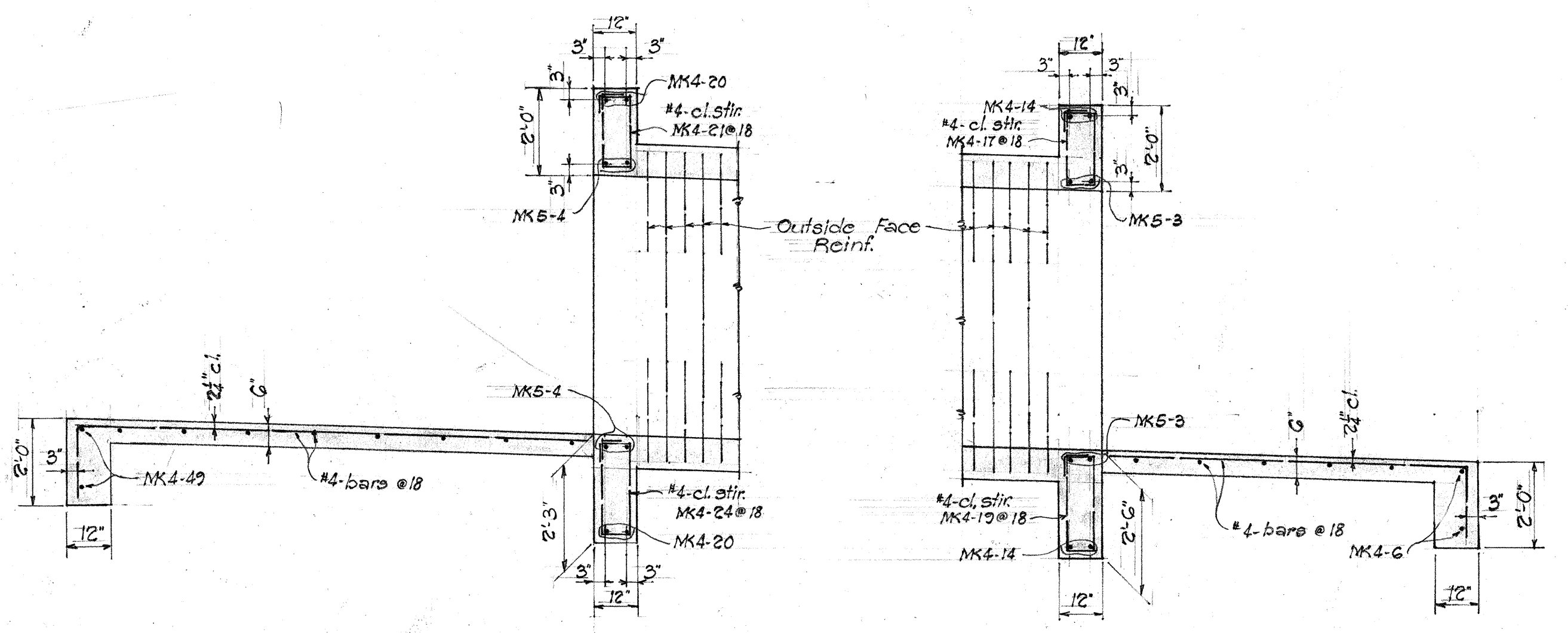




CURVE DATA

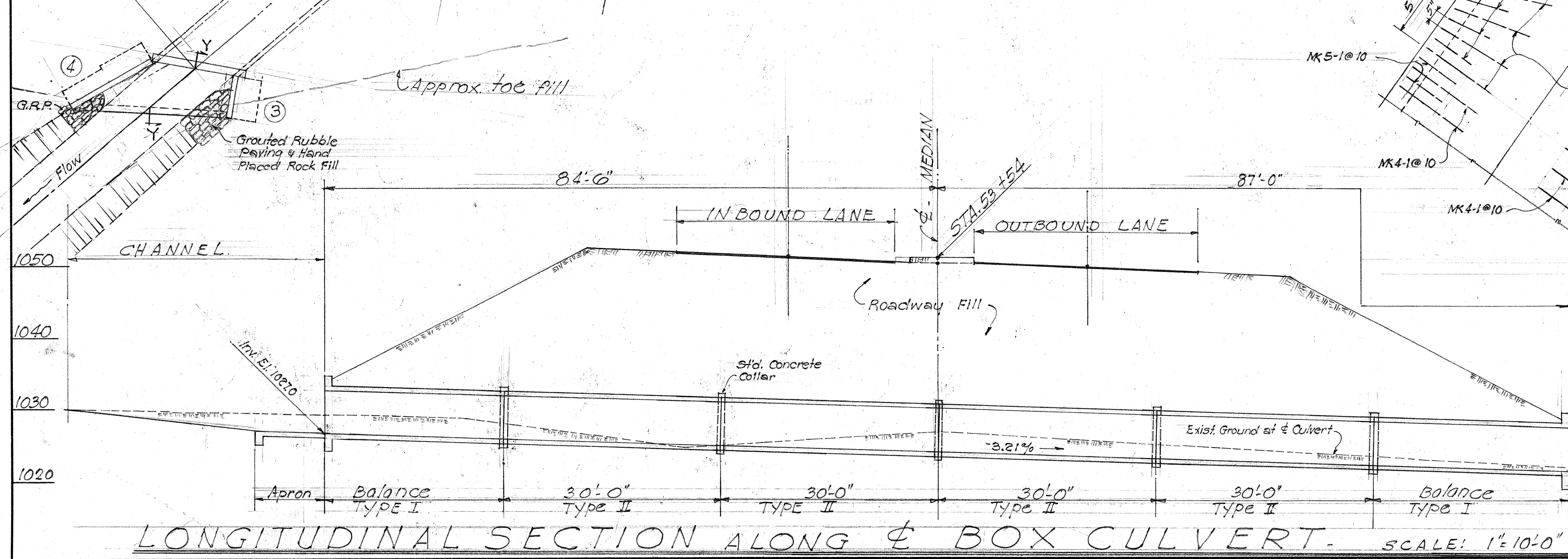
SPIRAL	CIRCULAR
Dc = 3° 00'	Δc = 37° 54'
θs = 3° 00'	Dc = 3° 00'
Ls = 200.00'	R = 1309.86'
P = 0.87'	T = 655.75'
K = 92.99'	Lc = 1263.33'
Xc = 129.95'	C = 1240.43'
Yc = 3.49'	
LT = 138.35'	Δ = 43° 54'
ST = 66.68'	Ts = 870.05'
LC = 139.98'	Es = 150.2'
	SE = 0.05'/H



ESTIMATED QUANTITIES

CLASS A-1 CONCRETE	2230 cu.yds
STRUCTURAL EXCAVATION	320.0 cu.yds.
DAM PROOFING	540.0 sq.yds.
CHANNEL EXCAVATION	110.0 cu.yds
GROUTED RUBBLE PAVING	5.0 cu.yds
HANDPLACED ROCKFILL	10.0 cu.yds
REINFORCING STEEL	26,500 lbs.

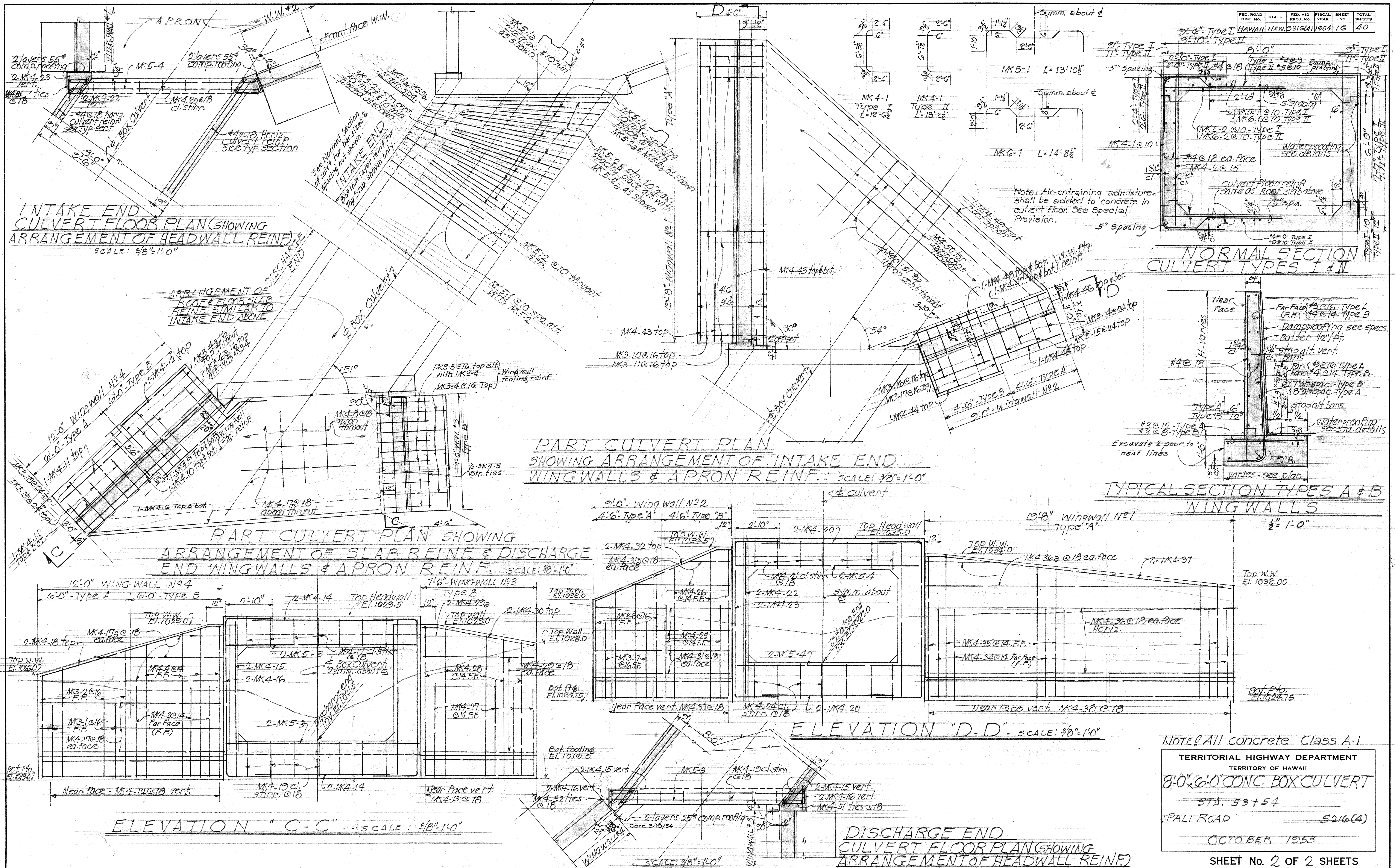
REINF. PLAN-INTAKE Scale 3/8"=1'-0"
 Shown-Culvert top slab, top layer reinf. only. Discharge end similar except opposite hand.



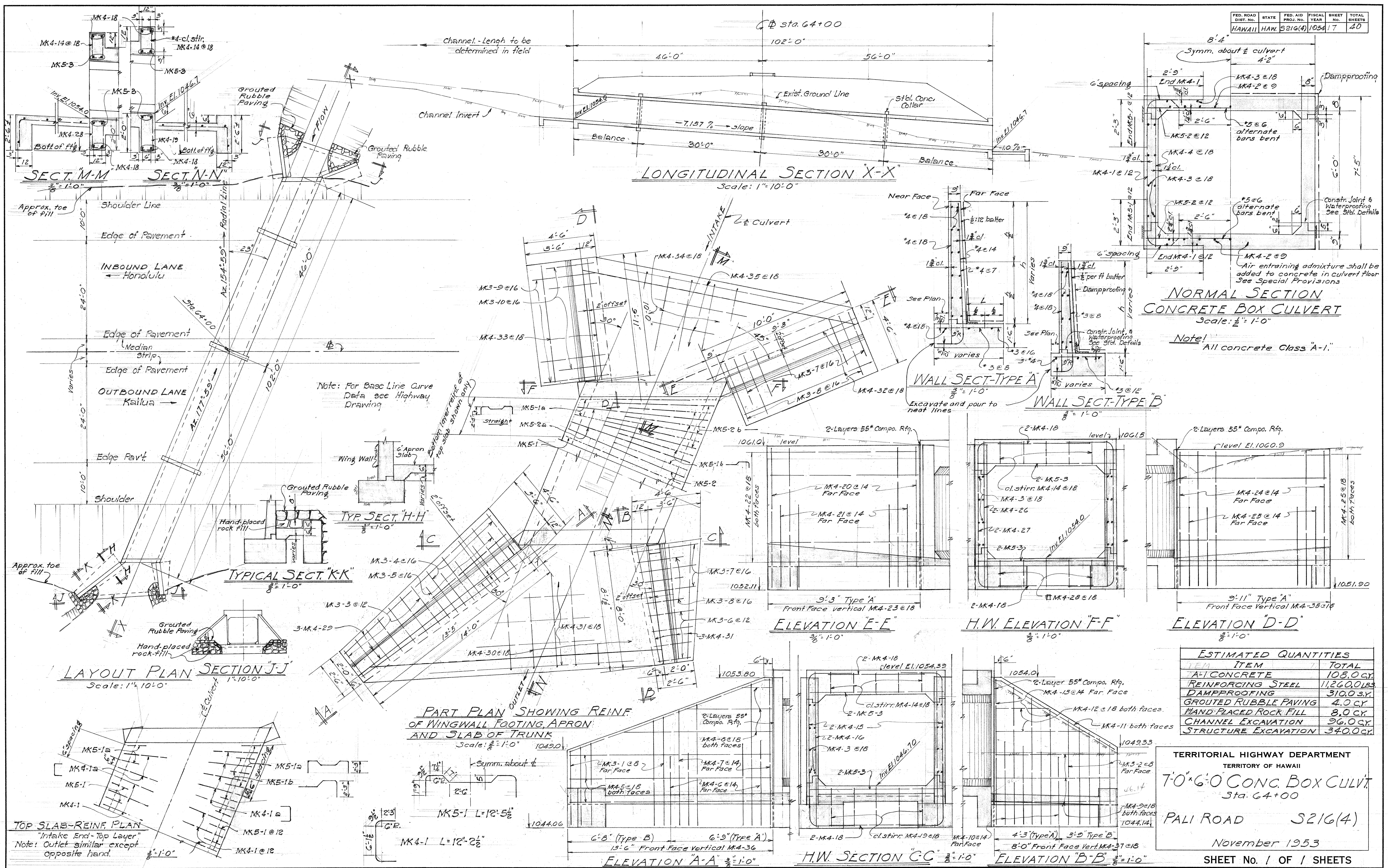
TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
8'x6' CONC. BOX CULV'T.
 Sta. 53+54
 PALI ROAD 5216(4)
 OCTOBER 1953
 SHEET No. 1 OF 2 SHEETS

DESIGNED BY: J. A. ...
 DRAWN BY: J. A. ...
 CHECKED BY: J. A. ...
 DATE: 10-23-53

ORIGINAL PLAN	SURVEY PLOTTED BY DESIGNED BY <i>A.C. Barfels</i> DRAWN BY <i>F.C. & T.C.</i>	DATE " <i>10-58</i> " " " "
NOTE BOOK	TRADED BY QUANTITIES BY <i>T.C.</i> QUANTITIES CHECKED BY <i>F.C.</i> CHECKED BY <i>J.H.O.</i>	" " " " " " " "



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	S216(4)	1954	17	40



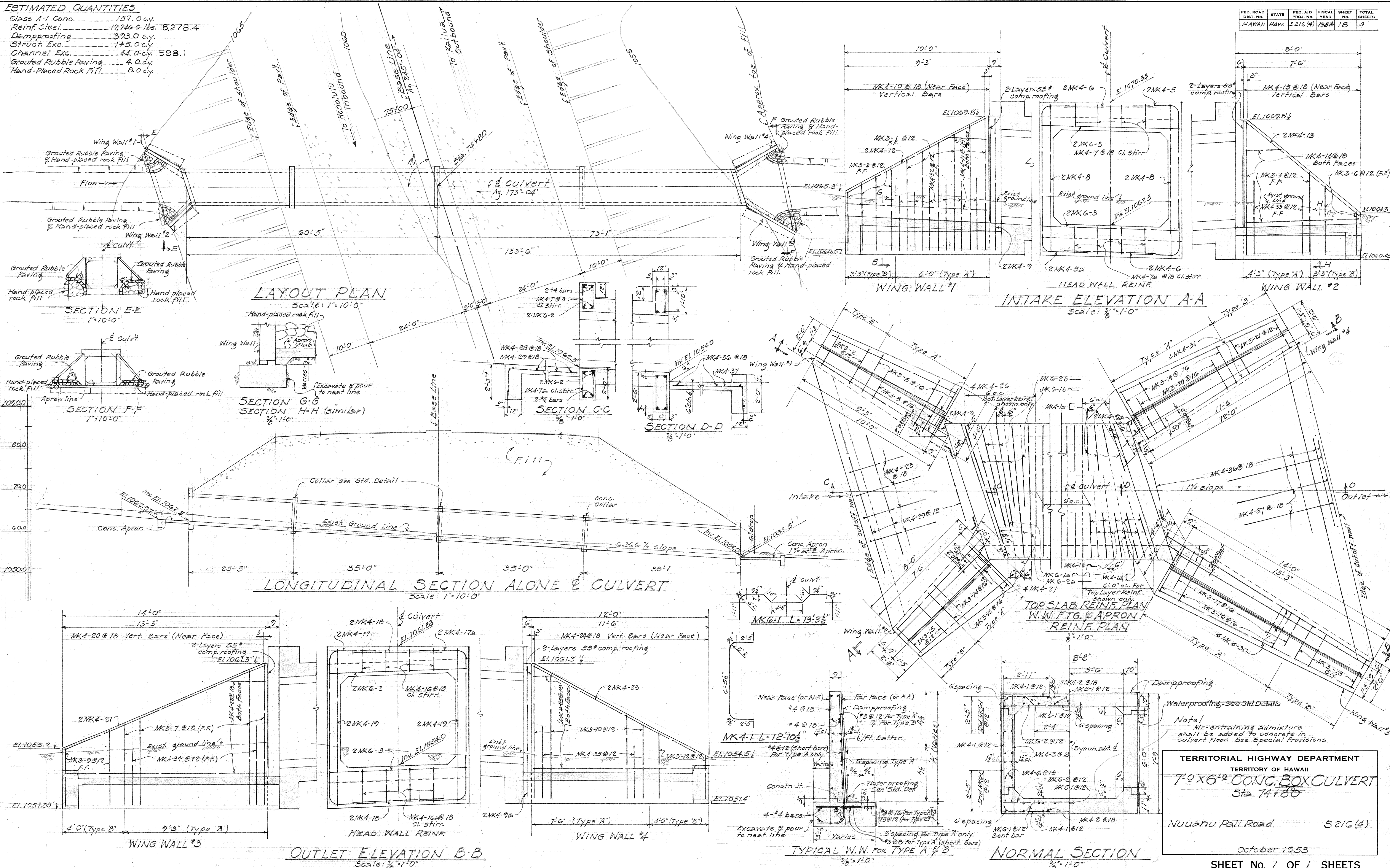
ESTIMATED QUANTITIES		
ITEM	UNIT	TOTAL
7'0" x 6'0" CONCRETE	CY	108.0
REINFORCING STEEL	LB	12,600
DAMP-PROOFING	SQ. YD.	310.0
GROUTED RUBBLE PAVING	CY	4.0
HAND-PLACED ROCK FILL	CY	8.0
CHANNEL EXCAVATION	CU YD.	96.0
STRUCTURE EXCAVATION	CU YD.	340.0

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
7'0" x 6'0" CONCRETE BOX CULVERT
Sta. 64+00
PALI ROAD S216(4)
November 1953
SHEET No. 1 OF 1 SHEETS

5648.17

ESTIMATED QUANTITIES		
Class A-1 Conc.	137.0 cu.	
Reinf. Steel	17,746.6 lbs.	18,278.4
Damp-proofing	323.0 sq. yd.	
Struct. Exc.	145.0 cu. yd.	
Channel Exc.	44.0 cu. yd.	598.1
Grouted Rubble Paving	4.0 cu. yd.	
Hand-Placed Rock Fill	8.0 cu. yd.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5216(4)	1964	18	4



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
7'0" x 6'0" CONG. BOX CULVERT
Sta. 74+80

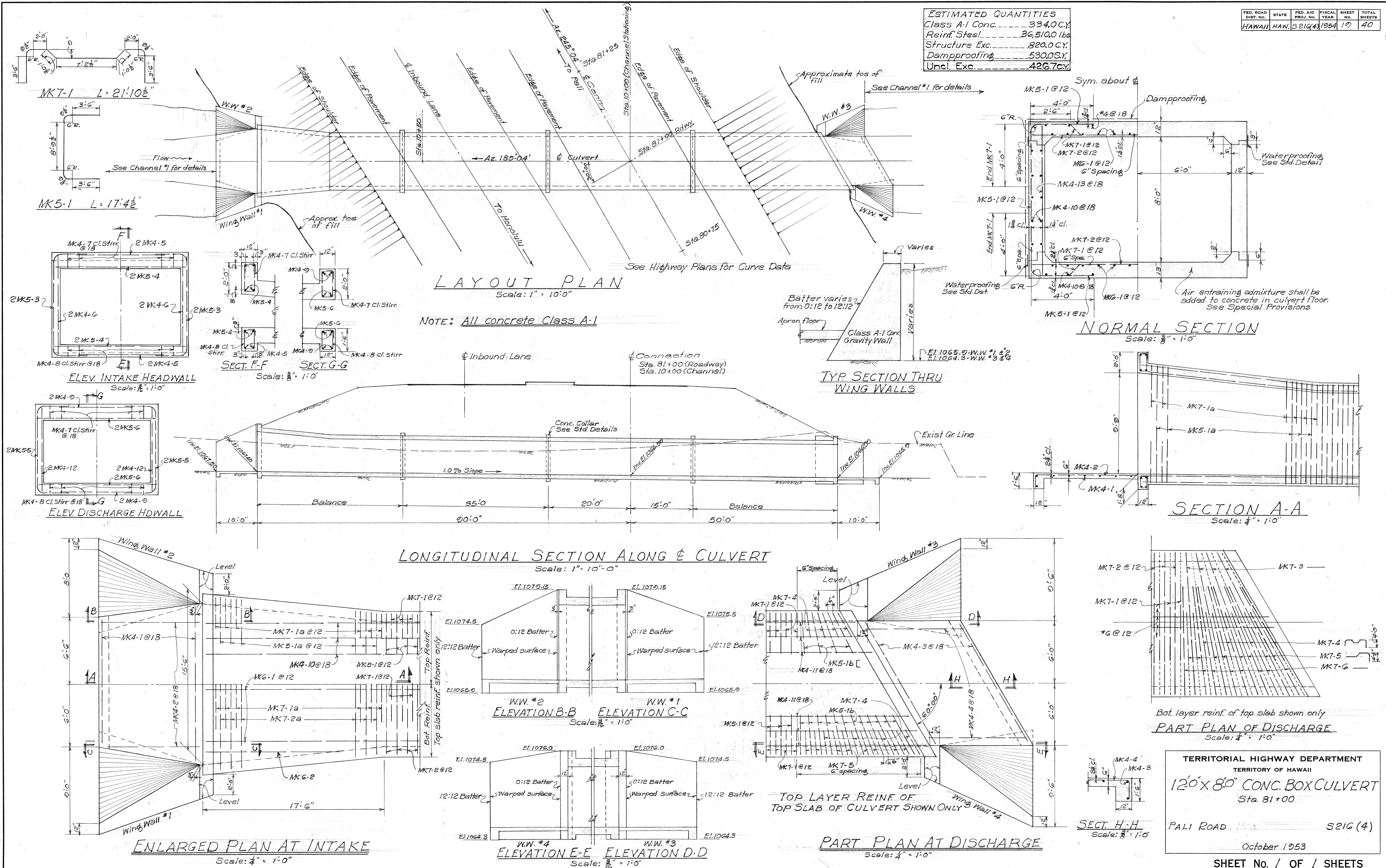
Nuuanu Pali Road. 5216(4)

October 1953

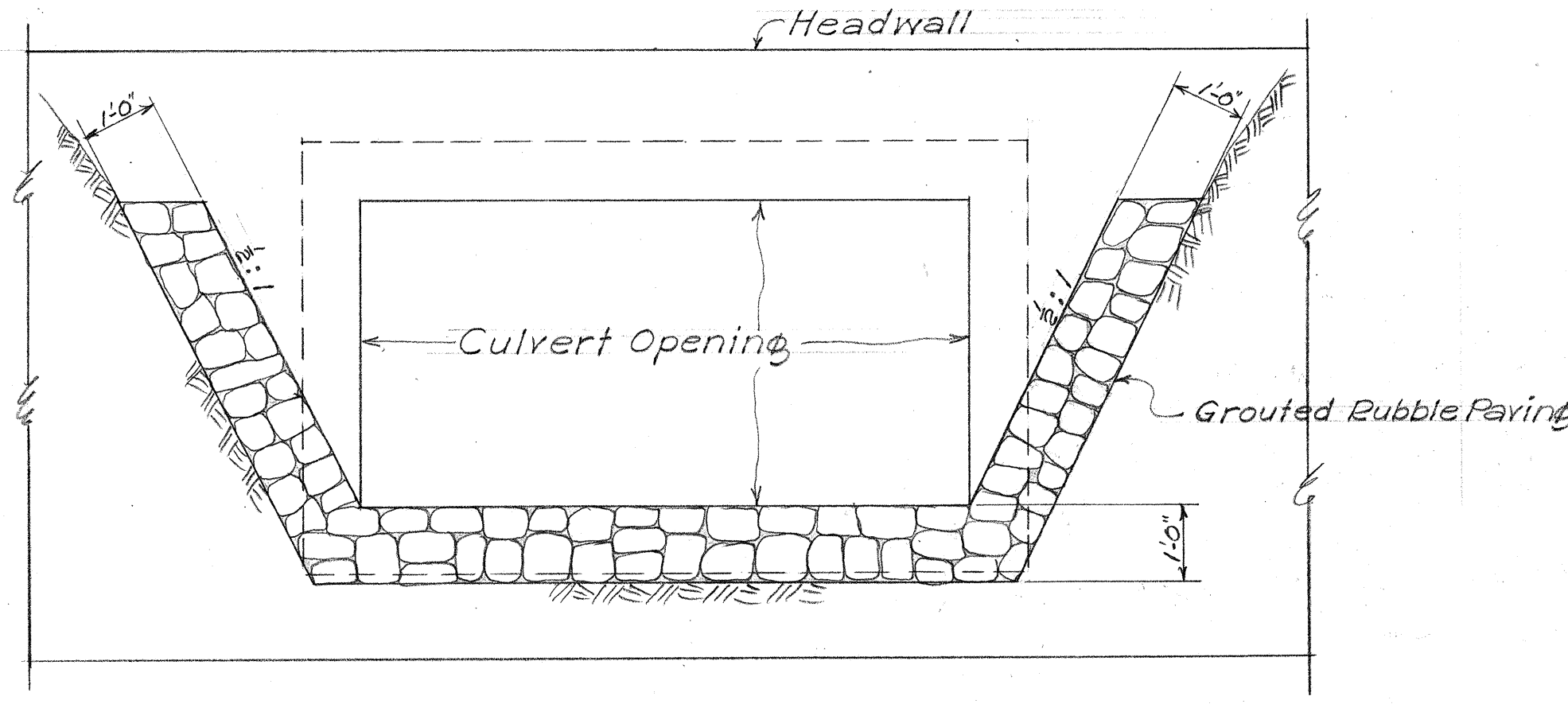
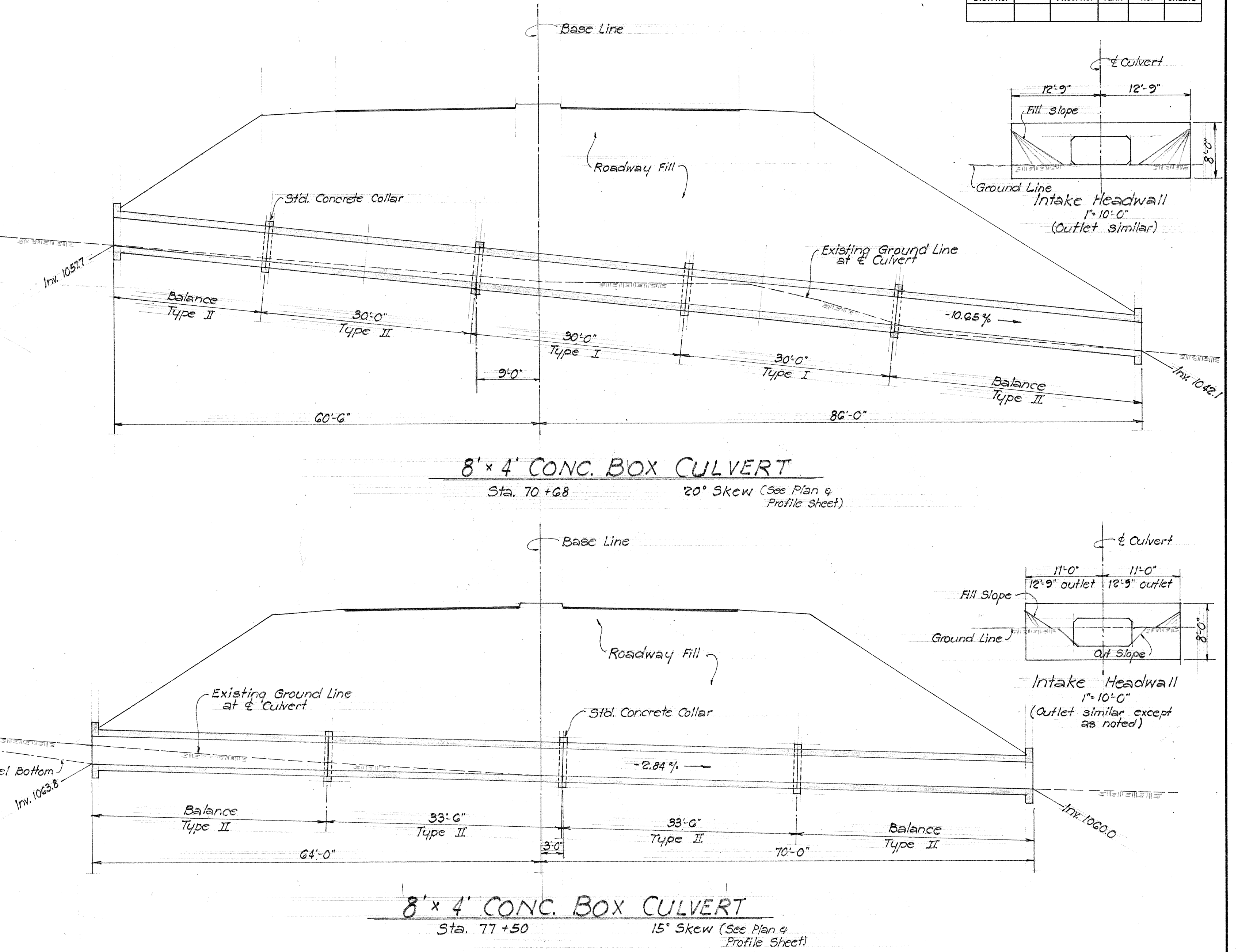
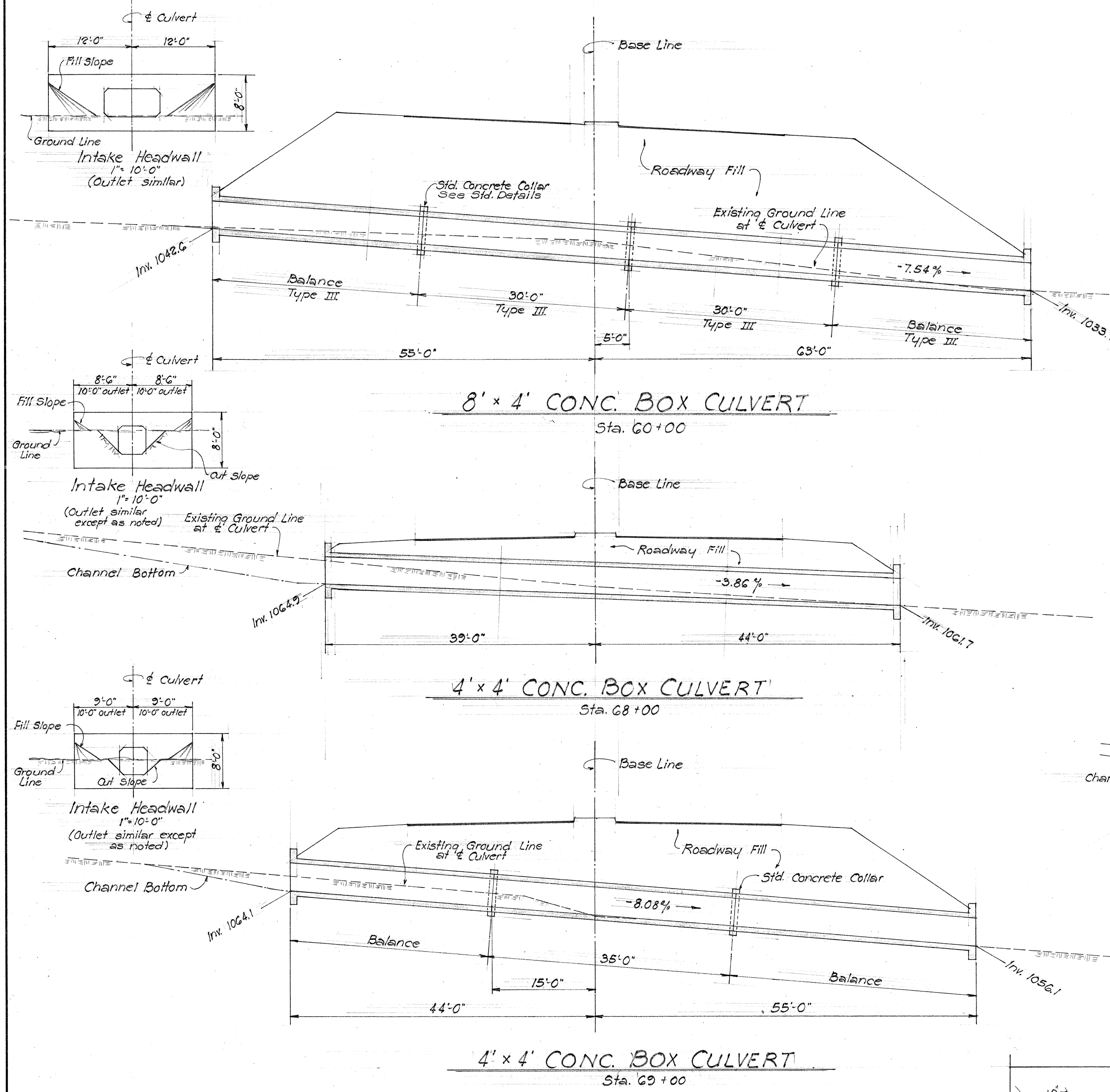
SHEET No. 1 OF 1 SHEETS

DATE	REVISION	BY	CHKD.
Oct 1953	1	W. J. HARRIS	
	2	W. J. HARRIS	
	3	W. J. HARRIS	
	4	W. J. HARRIS	
	5	W. J. HARRIS	
	6	W. J. HARRIS	
	7	W. J. HARRIS	
	8	W. J. HARRIS	
	9	W. J. HARRIS	
	10	W. J. HARRIS	

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	5216(4)	1954	19	40



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS



ESTIMATED QUANTITIES						
Location	Class A-1" Concrete	Reinf. Steel	Structure Excavation	Dampproofing	Channel Excavation	G.R.P.
8' x 4' Sta. 46+75	172.9	25.724	193	386.9	213.7	21 c.y.
5' x 4' " 57+25	52+82	84.3	10.625	193.4	262	583.4
8' x 4' " 60+00	115.8	14.246.9	330	247	587.1	18
4' x 4' " 68+00	46.5	5.730	45	146	26	15
4' x 4' " 69+00	24.8	3.474.8	70	169	85.8	13
8' x 4' " 70+68	102.1	22.164.6	270	357	932.6	18
8' x 4' " 77+50	149.8	21.199	137	352	200	35
Grand Total	833.4 c.y.	113,755 lb.	731 c.y.	1876 s.y.	74 c.y.	141.5 c.y.

TYPICAL SECTION OF CHANNEL WITH GROUTED RUBBLE PAVING

To accompany W.O. No.1

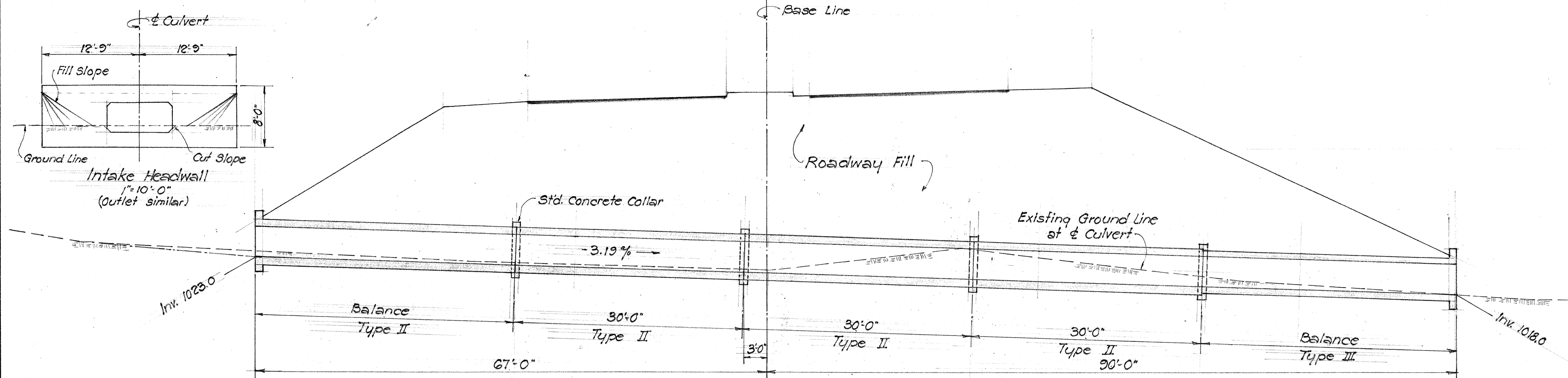
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
CONCRETE BOX CULVERTS
REPLACING
ORIGINAL PIPE CULVERTS

PALM RD. S216(4)
February 1954
SHEET No. 1 OF 3 SHEETS
5648.19A

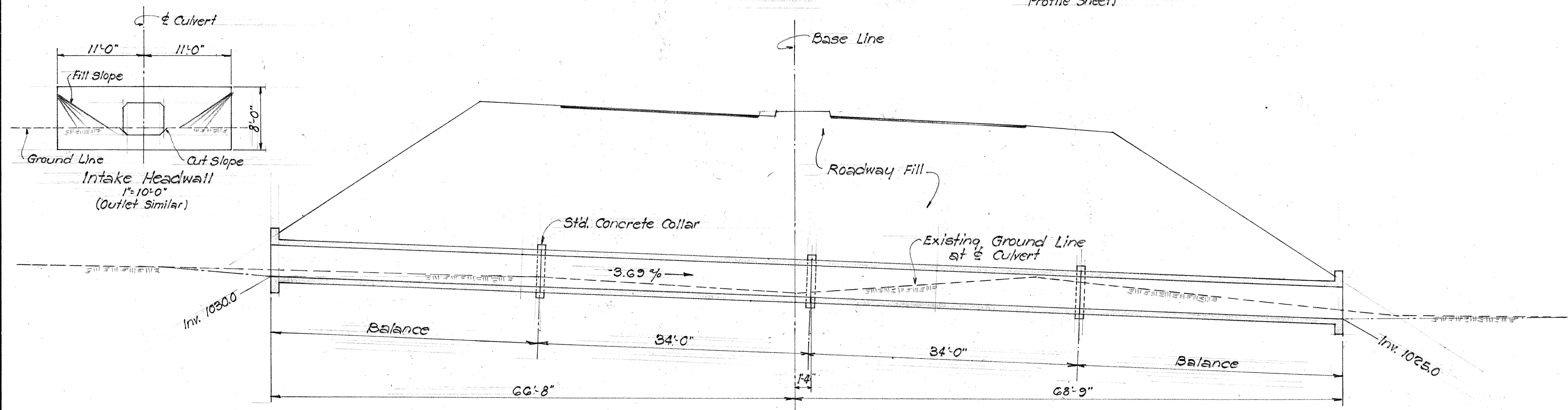
SURVEY PLOTTED BY: _____
DESIGNED BY: _____
CHECKED BY: _____
DATE: _____

ORIGINAL PLAN No. _____
NOTE BOOK No. _____
QUANTITIES BY: _____
CHECKED BY: _____

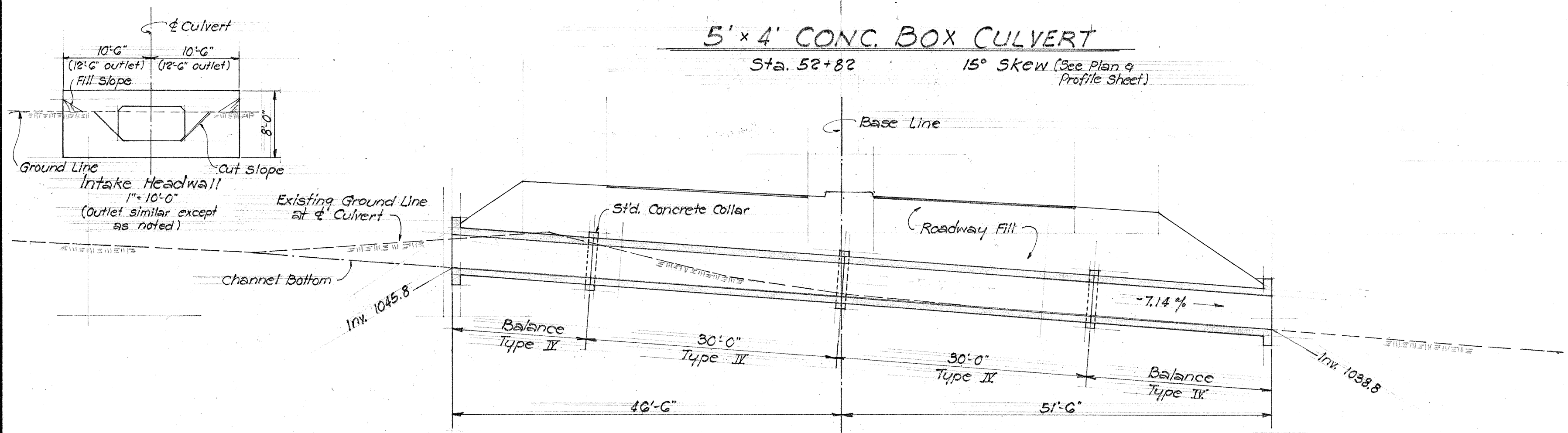
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS



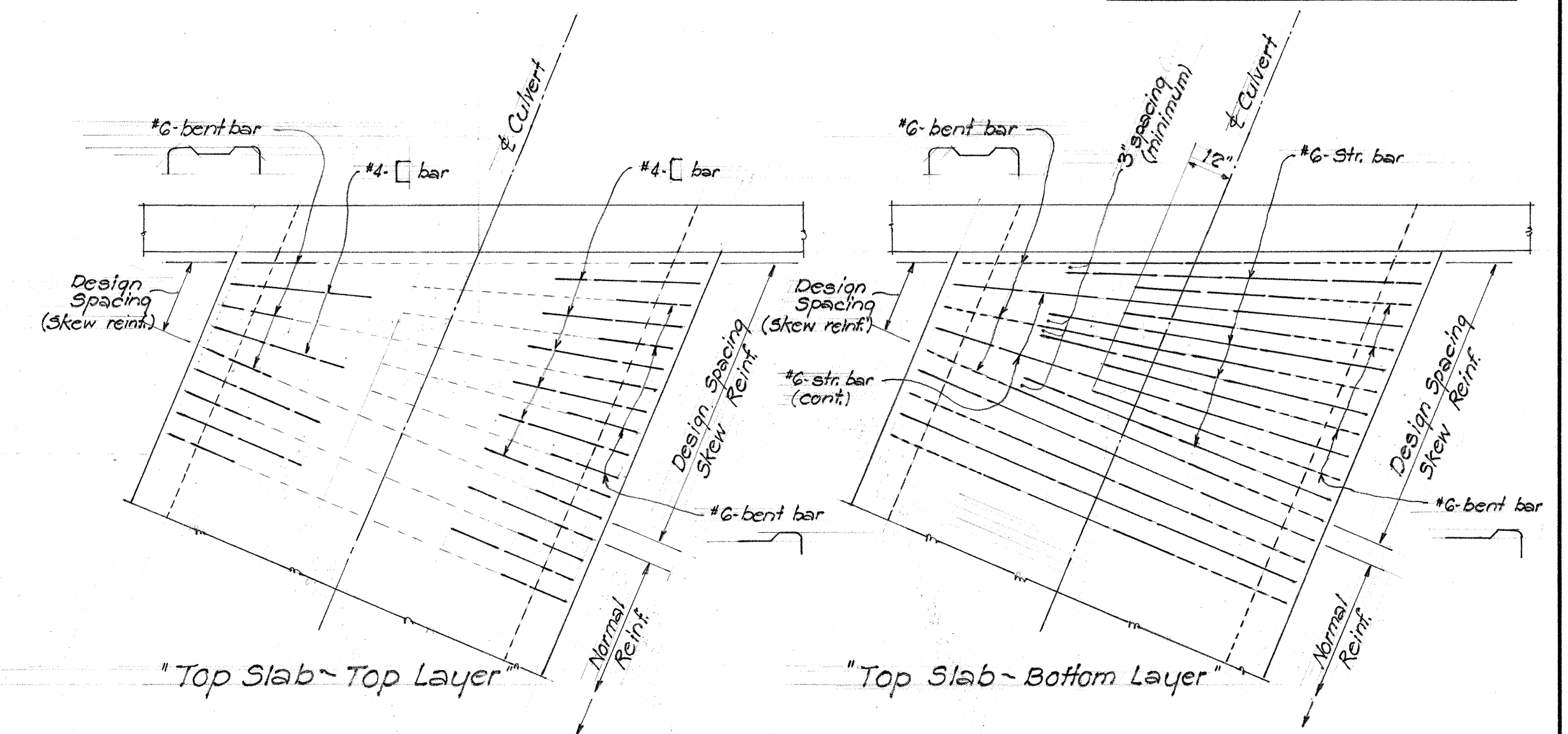
8' x 4' CONC. BOX CULVERT
Sta. 46+13 23° Skew (See Plan & Profile Sheet)



5' x 4' CONC. BOX CULVERT
Sta. 52+82 15° Skew (See Plan & Profile Sheet)

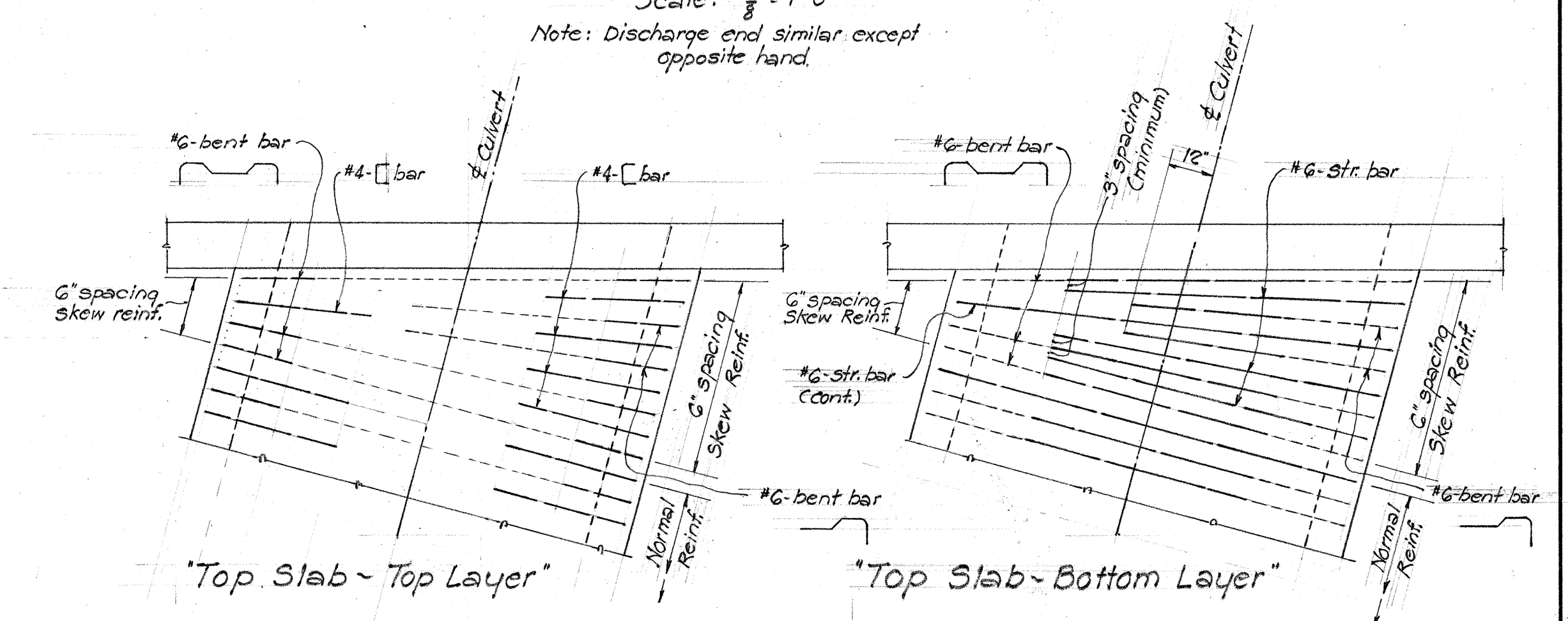


8' x 4' CONC. BOX CULVERT
Sta. 57+25 4° Skew (See Plan & Profile Sheet)



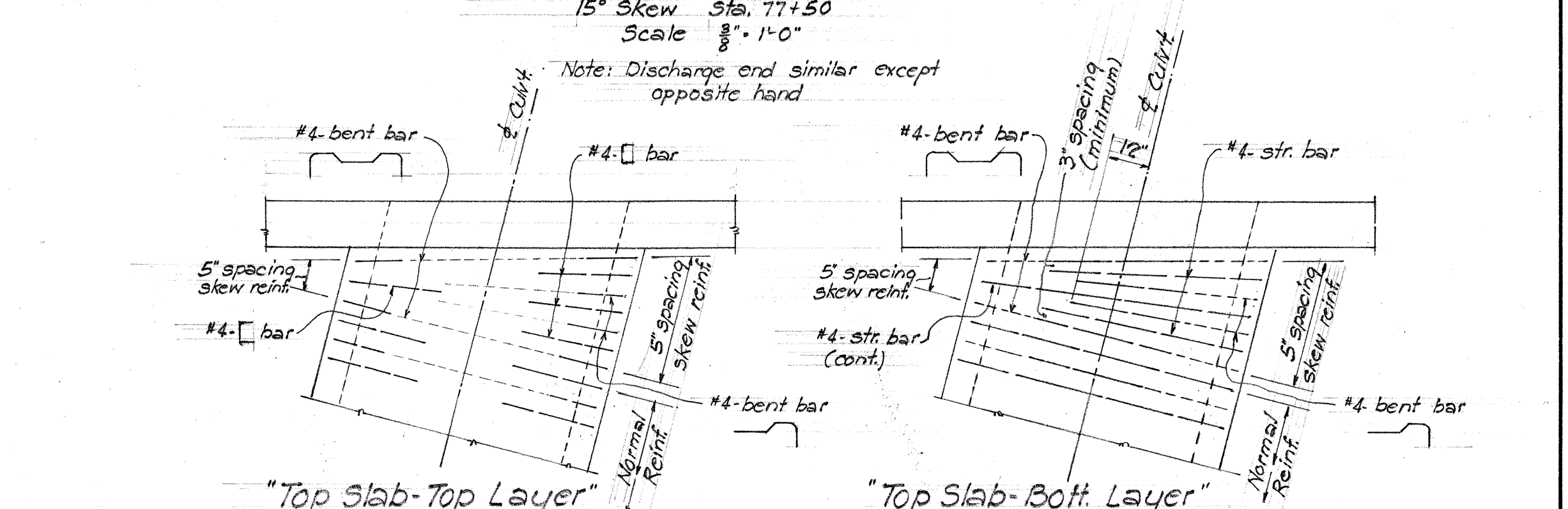
REINF. PLAN - INTAKE

23° Skew (20° Skew Similar)
Scale: 3/8" = 1'-0"
Note: Discharge end similar except opposite hand.



REINF. PLAN - INTAKE

15° Skew Sta. 77+50
Scale: 3/8" = 1'-0"
Note: Discharge end similar except opposite hand.



REINF. PLAN - INTAKE

15° Skew Sta. 52+82
Scale: 3/8" = 1'-0"
Note: Discharge end similar except opposite hand.

To accompany W.O. No. 1
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
CONCRETE BOX CULVERTS
REPLACING
ORIGINAL PIPE CULVERTS
PALI RD. S216(4)
February 1954

DATE: _____
SURVEY PLOTTED BY: _____
DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
NOTE BOOK NO. _____

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

