DRAINAGE SUMMARY

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Rd.
PROJECT NO. NH-083-1(26)

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	40	238

DRAINAGE SHEET NO.	STRUCTURE NO.	TYPE OF STRUCTURE	BASELINE STATION	206 2020 STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM C.Y.	603 0010 BED COURSE MATERIAL FOR CULVERT C.Y.	603 1006 18-INCH REINFORCED CONCRETE PIPE, CL.III L.F.	603 1010 24-INCH REINFORCED CONCRETE PIPE, CL.III L.F.	603 1012 30-INCH REINFORCED CONCRETE PIPE, CL.III L.F.	603 1014 36-INCH REINFORCED CONCRETE PIPE, CL.III L.F.	603 1016 42-INCH REINFORCED CONCRETE PIPE, CL.III L.F.	604 5100 TYPE I DRAIN INLET (3.00 FEET TO 3.99 FEET) EA.	604 5102 TYPE I DRAIN INLET (4.00 FEET TO 4.99 FEET) EA.	604 5104 TYPE I DRAIN INLET (5.00 FEET TO 5.99 FEET) EA.	604 5110 TYPE II DRAIN INLET (5.00 FEET TO 5.99 FEET) EA.	604 5112 TYPE II DRAIN INLET (6.00 FEET TO 6.99 FEET) EA.	604 5114 TYPE II DRAIN INLET (9.00 FEET TO 9.99 FEET) EA.	604 5120 DRAIN INLET (SPECIAL) (6.00 FEET TO 6.99 FEET) EA.	604 5122 DRAIN INLET (SPECIAL) (9.00 FEET TO 9.99 FEET) EA.	604 5124 DRAIN INLET (SPECIAL) (13.00 FEET TO 13.99 FT.) EA.	604 5126 DRAIN INLET (SPECIAL) (19.00 FEET TO 19.99 FEET) EA.	604 5210 TYPE "B" CATCH BASIN (4.00 FEET TO 4.99 FEET) EA.	604 5220 TYPE "C" CATCH BASIN (4.00 FEET TO 4.99 FEET) EA.	604 5230 TYPE "A1" CATCH BASIN (4.00 FEET TO 4.99 FEET) EA.	604 5232 TYPE "A1" CATCH BASIN (5.00 FEET TO 5.99 FEET) EA.	604 5240 TYPE "B1" CATCH BASIN (4.00 FEET TO 4.99 FEET) EA.	604 5242 TYPE "B1" CATCH BASIN (5.00 FEET TO 5.99 FEET) EA.	604 5244 TYPE "B1" CATCH BASIN (6.00 FEET TO 6.99 FEET) EA.	604 5246 TYPE "B1" CATCH BASIN (10.00 FEET TO 10.99 FEET) EA.	604 5248 TYPE "B1" CATCH BASIN (11.00 FEET TO 11.99 FEET) EA.	604 5249 TYPE "B1" CATCH BASIN (12.00 FEET TO 12.99 FEET) EA.	604 5250 TYPE "B1" CATCH BASIN (13.00 FEET TO 13.99 FEET) EA.	604 5260 TYPE "C1" CATCH BASIN (4.00 FEET TO 4.99 FEET) EA.	604 5262 TYPE "C1" CATCH BASIN (5.00 FEET TO 5.99 FEET) EA.	604 5264 TYPE "C1" CATCH BASIN (6.00 FEET TO 6.99 FEET) EA.	604 5266 TYPE "C1" CATCH BASIN (7.00 FEET TO 7.99 FEET) EA.	604 5267 TYPE "C1" CATCH BASIN (9.00 FEET TO 9.99 FEET) EA.	604 5268 TYPE "C1" CATCH BASIN (10.00 FEET TO 10.99 FEET) EA.
D9	D.I. #1	D.I. TYPE I	12+70 L	78	23		107				1																														
D9	D.I. #2	D.I. TYPE I	12+70 R	176	53		247					1																													
D9	D.I. #3	D.I. TYPE I	15+20 L	90	23		107					1																													
D9	D.I. #4	D.I. TYPE I	15+20 R	73	21		97						1																												
D9	C.B. #1	C.B. TYPE "B1"	16+20 L	78	22		103																			1														
D9	D.I. #5	D.I. TYPE I	16+20 R	67	20		104					1																													
D9	C.B. #2	C.B. TYPE "C"	16+92 L	27	11	50																		1																
D9	D.M.H. #1	D.M.H. TYPE "SPECIAL"	17+28 R	32																																				
D9	C.B. #3	C.B. TYPE "SPECIAL"	17+44 L	15	4		16																																	
D10	C.B. #8	C.B. TYPE "D1"	18+90 L	143	29					96																														
D10	C.B. #4	C.B. TYPE "D1"	18+90 R	272	48					157																														
D10	C.B. #9	C.B. TYPE "A1"	19+41 L	60	12				45																1															
D10	C.B. #5	C.B. TYPE "A1"	19+41 R	38	10		45																	1																
D10	C.B. #10	C.B. TYPE "D1"	19+92 L	56	12				45																															
D10	C.B. #6	C.B. TYPE "D1"	19+92 R	36	10		45																																	
D10	C.B. #11	C.B. TYPE "C1"	21+00 L	108	28				102																															1
D10	C.B. #7	C.B. TYPE "B1"	21+00 R	66	22		102																			1														
D10	C.B. #12	C.B. TYPE "C1"	22+25 L	142	33				119																															1
D10	C.B. #13	C.B. TYPE "B1"	22+40 R	27																																				
D10	C.B. #15	C.B. TYPE "C1"	24+40 L	49	12		53																																	1
D10	D.M.H. #2	D.M.H TYPE "A"	24+40 R	47	9		42																																	
D10	C.B. #14	C.B. TYPE "B1"	24+40 R	156	42		194																																	
D10	D.I. #6	D.I. TYPE II	25+50 R	101	23		105																																	
D10	D.I. #7A	D.I. TYPE "SPECIAL"	25+50 L	35	1		5																																	
D10	C.B. #16	C.B. TYPE "C1"	26+00L	41	11		51																																	
D10	D.I. #7	D.I. TYPE II	26+00R	46	10		44																																	
D10	D.I. #8	D.I. TYPE II	26+50 R	43	10		44																																	
D11	D.I. #9	D.I. TYPE II	28+00 L	115	31		144																																	
D11	C.B. #17	C.B. TYPE "C1"	28+00 L	31	10		44																																	
D11	D.I. #9A	D.I. TYPE "SPECIAL"	28+00 R	68	13		61																																	
D11	D.I. #10	D.I. TYPE II	30+00 L	167	42		194																																	
D11	C.B. #18	C.B. TYPE "C1"	30+00 L	42	10		45																																	
D11	D.I. #11B	D.I. TYPE "SPECIAL"	32+80 L	17	1		5																																	
D11	D.I. #11	D.I. TYPE II	31+40 L	170	29		134																																	
D11	C.B. #19	C.B. TYPE "C1"	31+40 L	41	10		45																																	
D11	D.I. #11A	D.I. TYPE "SPECIAL"	32+80 R	71	13		61																																	
D11	D.I. #12	D.I. TYPE II	32+80 L	441	50		232																																	

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

DEXTER S. FU
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
PARK, INC.
dba PARK ENGINEERING

LIB: STATE\DOT\KAHEKILI\KAHE159\
DE001A 5/17/94 AAM

DRAINAGE SUMMARY

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Rd.
PROJECT NO. NH-083-1(26)

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	41	238

DRAINAGE SHEET NO.	STRUCTURE NO.	TYPE OF STRUCTURE	BASELINE STATION	604 5280 TYPE "D1" CATCH BASIN (4.00 FEET TO 4.99 FEET) EA.	604 5282 TYPE "D1" CATCH BASIN (5.00 FEET TO 5.99 FEET) EA.	604 5284 TYPE "D1" CATCH BASIN (6.00 FEET TO 6.99 FEET) EA.	604 5290 CATCH BASIN (SPECIAL) (4.00 FEET TO 4.99 FEET) EA.	604 5292 CATCH BASIN (SPECIAL) (6.00 FEET TO 6.99 FEET) EA.	604 5300 TYPE "A" DRAIN MANHOLE (4.00 FEET TO 4.99 FEET) EA.	604 5302 TYPE "A" DRAIN MANHOLE (6.00 FEET TO 6.99 FEET) EA.	604 5304 TYPE "A" DRAIN MANHOLE (9.00 FEET TO 9.99 FEET) EA.	604 5308 TYPE "A" DRAIN MANHOLE (11.00 FEET TO 11.99 FEET) EA.	604 5310 TYPE "A" DRAIN MANHOLE (12.00 FEET TO 12.99 FEET) EA.	604 5312 TYPE "A" DRAIN MANHOLE (13.00 FEET TO 13.99 FEET) EA.	604 5320 TYPE "C" DRAIN MANHOLE (10.00 FEET TO 10.99 FEET) EA.	604 5330 DRAIN MANHOLE (SPECIAL) (15.00 FEET TO 15.99 FEET) EA.	604 5332 DRAIN MANHOLE (SPECIAL) (22.00 FEET TO 22.99 FEET) EA.	640 7500 3.0 FT. X 2.0 FT. LINED RECTANGULAR DRAINAGE DITCH L.F.
D9	D.I. #1	D.I. TYPE I	12+70 L															
D9	D.I. #2	D.I. TYPE I	12+70 R															
D9	D.I. #3	D.I. TYPE I	15+20 L															
D9	D.I. #4	D.I. TYPE I	15+20 R															
D9	C.B. #1	C.B. TYPE "B1"	16+20 L															
D9	D.I. #5	D.I. TYPE I	16+20 R															
D9	C.B. #2	C.B. TYPE "C"	16+92 L															
D9	D.M.H. #1	D.M.H. TYPE "SPECIAL"	17+28 R													1		
D9	C.B. #3	C.B. TYPE "SPECIAL"	17+44 L				1											
D10	C.B. #8	C.B. TYPE "D1"	18+90 L			1												
D10	C.B. #4	C.B. TYPE "D1"	18+90 R			1												
D10	C.B. #9	C.B. TYPE "A1"	19+41 L															
D10	C.B. #5	C.B. TYPE "A1"	19+41 R															
D10	C.B. #10	C.B. TYPE "D1"	19+92 L		1													
D10	C.B. #6	C.B. TYPE "D1"	19+92 R	1														
D10	C.B. #11	C.B. TYPE "C1"	21+00 L															
D10	C.B. #7	C.B. TYPE "B1"	21+00 R															
D10	C.B. #12	C.B. TYPE "C1"	22+25 L															
D10	C.B. #13	C.B. TYPE "B1"	22+40 R															
D10	C.B. #15	C.B. TYPE "C1"	24+40 L															
D10	D.M.H. #2	D.M.H TYPE "A"	24+40 R							1								
D10	C.B. #14	C.B. TYPE "B1"	24+40 R															
D10	D.I. #6	D.I. TYPE II	25+50 R															
D10	D.I. #7A	D.I. TYPE "SPECIAL"	25+50 L															
D10	C.B. #16	C.B. TYPE "C1"	26+00 L															
D10	D.I. #7	D.I. TYPE II	26+00 R															
D10	D.I. #8	D.I. TYPE II	26+50 R															
D11	D.I. #9	D.I. TYPE II	28+00 L															
D11	C.B. #17	C.B. TYPE "C1"	28+00 L															
D11	D.I. #9A	D.I. TYPE "SPECIAL"	28+00 R															
D11	D.I. #10	D.I. TYPE II	30+00 L															
D11	C.B. #18	C.B. TYPE "C1"	30+00 L															
D11	D.I. #11B	D.I. TYPE "SPECIAL"	32+80 L															
D11	D.I. #11	D.I. TYPE II	31+40 L															
D11	C.B. #19	C.B. TYPE "C1"	31+40 L															
D11	D.I. #11A	D.I. TYPE "SPECIAL"	32+80 R															
D11	D.I. #12	D.I. TYPE II	32+80 L															

SURVEY PLOTTED BY
DRAWN BY
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No.

DEXTER S. FEJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

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PacEng, Inc.
dba PARK ENGINEERING

LIB: STATE\DOT\KAHEKILI\KAHE159\DE001B
5/17/94 AMM

AS-BUILT

DRAINAGE SUMMARY

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Rd.
PROJECT NO. NH-083-1(26)

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	42	238

DRAINAGE SHEET NO.	STRUCTURE NO.	TYPE OF STRUCTURE	BASELINE STATION	ITEM NO.	206 2020	603 0010	603 1006	603 1010	603 1012	603 1014	603 1016	604 5100	604 5102	604 5104	604 5110	604 5112	604 5114	604 5120	604 5122	604 5124	604 5126	604 5210	604 5220	604 5230	604 5232	604 5240	604 5242	604 5244	604 5246	604 5248	604 5249	604 5250	604 5260	604 5262	604 5264	604 5266	604 5267	604 5268
				DESCRIPTION / UNIT	C.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.
				STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM	41			45																														
D11	C.B. #20	C.B. TYPE "C1"	32+80 L	BED COURSE MATERIAL FOR CULVERT	10																															
D11	C.B. #22	C.B. TYPE "C1"	35+10 L	18-INCH REINFORCED CONCRETE PIPE, CL.III	48	14		65																									1				
D11	D.M.H. #3	D.M.H. TYPE "A"	35+10 R	24-INCH REINFORCED CONCRETE PIPE, CL.III	86	7		30																								1					
D11	C.B. #21	C.B. TYPE "B1"	35+10 R	30-INCH REINFORCED CONCRETE PIPE, CL.III	79	5		24																													
D12	C.B. #23	C.B. TYPE "B1"	35+80 R	36-INCH REINFORCED CONCRETE PIPE, CL.III	75	6		28																						1		1					
D12	C.B. #26	C.B. TYPE "C1"	37+00 L	42-INCH REINFORCED CONCRETE PIPE, CL.III	192	21		99																													1
D12	C.B. #24	C.B. TYPE "B1"	37+00 R	TYPE I DRAIN INLET (3.00 FEET TO 3.99 FEET)	236	25		114																						1							
D12	C.B. #27	C.B. TYPE "C1"	39+00 L	TYPE I DRAIN INLET (4.00 FEET TO 4.99 FEET)	124	42		194																										1			
D12	C.B. #25	C.B. TYPE "B1"	39+00 R	TYPE I DRAIN INLET (5.00 FEET TO 5.99 FEET)	142	42		194																			1										
D12	D.M.H. #4	D.M.H TYPE "C"	39+98± R	TYPE II DRAIN INLET (5.00 FEET TO 5.99 FEET)	16																																
D12	C.B. #30	C.B. TYPE "C1"	41+00 L	TYPE II DRAIN INLET (6.00 FEET TO 6.99 FEET)	199	21		99																													1
D12	C.B. #28	C.B. TYPE "B1"	41+00 R	TYPE II DRAIN INLET (9.00 FEET TO 9.99 FEET)	195	21		97																						1							
D12	C.B. #31	C.B. TYPE "C1"	43+50 L	DRAIN INLET (SPECIAL) (6.00 FEET TO 6.99 FEET)	148	53		244																										1			
D12	C.B. #29	C.B. TYPE "B1"	43+50 R	DRAIN INLET (SPECIAL) (9.00 FEET TO 9.99 FEET)	149	53		244																			1										
D13	D.M.H. #5	D.M.H. TYPE "SPECIAL"	44+32 R	DRAIN INLET (SPECIAL) (13.00 FEET TO 13.99 FEET)	49																																
D13	C.B. #32	C.B. TYPE "SPECIAL"	45+66 L	DRAIN INLET (SPECIAL) (19.00 FEET TO 19.99 FEET)	13																																
D13	C.B. #33	C.B. TYPE "B"	46+10 L	TYPE "B" CATCH BASIN (4.00 FEET TO 4.99 FEET)	105	8		39														1															
D13	C.B. #38	C.B. TYPE "C1"	46+55 L	TYPE "C" CATCH BASIN (4.00 FEET TO 4.99 FEET)	200	21		98																												1	
D13	C.B. #34	C.B. TYPE "B1"	46+55 R	TYPE "A1" CATCH BASIN (4.00 FEET TO 4.99 FEET)	628	53			216																						1						
D13	C.B. #39	C.B. TYPE "C1"	48+00 L	TYPE "A1" CATCH BASIN (5.00 FEET TO 5.99 FEET)	129	30		139																											1		
D13	C.B. #35	C.B. TYPE "B1"	48+00 R	TYPE "B1" CATCH BASIN (4.00 FEET TO 4.99 FEET)	94	30		139																			1										
D13	C.B. #40	C.B. TYPE "C1"	50+50 L	TYPE "B1" CATCH BASIN (5.00 FEET TO 5.99 FEET)	182	53		244																										1			
D13	C.B. #36	C.B. TYPE "B1"	50+50 R	TYPE "B1" CATCH BASIN (6.00 FEET TO 6.99 FEET)	155	53		244																			1										
D13	D.M.H. #5A	D.M.H. TYPE "A"	51+50 L	TYPE "B1" CATCH BASIN (10.00 FEET TO 10.99 FEET)	66	20		95																													
D13	C.B. #41	C.B. TYPE "C1"	53+00 L	TYPE "B1" CATCH BASIN (11.00 FEET TO 11.99 FEET)	129	53		244																							1						
D13	C.B. #37	C.B. TYPE "B1"	53+00 R	TYPE "B1" CATCH BASIN (12.00 FEET TO 12.99 FEET)	153	53		244																			1										
D14	D.M.H. #6	D.M.H. TYPE "A"	54+25 R	TYPE "B1" CATCH BASIN (13.00 FEET TO 13.99 FEET)	82																										1						
D14	C.B. #43	C.B. TYPE "C1"	55+50 L	TYPE "C1" CATCH BASIN (4.00 FEET TO 4.99 FEET)	52	12		54																									1				
D14	D.M.H. #7	D.M.H. TYPE "A"	55+50 R	TYPE "C1" CATCH BASIN (5.00 FEET TO 5.99 FEET)	252	26		120																													
D14	C.B. #42	C.B. TYPE "B1"	55+50 R	TYPE "C1" CATCH BASIN (6.00 FEET TO 6.99 FEET)	82	7		32																						1							
D14	C.B. #45	C.B. TYPE "C1"	57+80 L	TYPE "C1" CATCH BASIN (7.00 FEET TO 7.99 FEET)	46	12		53																								1					
D14	D.M.H. #8	D.M.H. TYPE "A"	57+80 R	TYPE "C1" CATCH BASIN (9.00 FEET TO 9.99 FEET)	402	49		226																													
D14	C.B. #44	C.B. TYPE "B1"	57+80 R	TYPE "C1" CATCH BASIN (10.00 FEET TO 10.99 FEET)	72	7		31																					1								
D14	D.M.H. #9	D.M.H. TYPE "A"	60+20 R		417	51		236																													
D14	D.M.H. #10	D.M.H. TYPE "A"	62+35 R		281	46		211																													
D14	C.B. #46	C.B. TYPE "C"	62+35 R		27	7		31															1													
D14	C.B. #47	C.B. TYPE "B1"	62+80 L		64	16		72																			1										

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
DEXTER S. EJI
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Parsch, Inc.
dba PARK ENGINEERING

LIB: STATE\DOT\KAHEKILI\KAHE159\DE002A 5/17/94 AMM

AS-BUILT 42

DRAINAGE SUMMARY

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Rd.
PROJECT NO. NH-083-1(26)

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	43	238

DRAINAGE SHEET NO.	STRUCTURE NO.	TYPE OF STRUCTURE	BASELINE STATION	604 5280 TYPE "D1" CATCH BASIN (4.00 FEET TO 4.99 FEET) EA.	604 5282 TYPE "D1" CATCH BASIN (5.00 FEET TO 5.99 FEET) EA.	604 5284 TYPE "D1" CATCH BASIN (6.00 FEET TO 6.99 FEET) EA.	604 5290 CATCH BASIN (SPECIAL) (4.00 FEET TO 4.99 FEET) EA.	604 5292 CATCH BASIN (SPECIAL) (6.00 FEET TO 6.99 FEET) EA.	604 5300 TYPE "A" DRAIN MANHOLE (4.00 FEET TO 4.99 FEET) EA.	604 5302 TYPE "A" DRAIN MANHOLE (6.00 FEET TO 6.99 FEET) EA.	604 5304 TYPE "A" DRAIN MANHOLE (9.00 FEET TO 9.99 FEET) EA.	604 5308 TYPE "A" DRAIN MANHOLE (11.00 FEET TO 11.99 FEET) EA.	604 5310 TYPE "A" DRAIN MANHOLE (12.00 FEET TO 12.99 FEET) EA.	604 5312 TYPE "A" DRAIN MANHOLE (13.00 FEET TO 13.99 FEET) EA.	604 5320 TYPE "C" DRAIN MANHOLE (10.00 FEET TO 10.99 FEET) EA.	604 5330 DRAIN MANHOLE (SPECIAL) (15.00 FEET TO 15.99 FEET) EA.	604 5332 DRAIN MANHOLE (SPECIAL) (22.00 FEET TO 22.99 FEET) EA.	640 7500 3.0 FT. X 2.0 FT. LINED RECTANGULAR DRAINAGE DITCH L.F.
D11	C.B. #20	C.B. TYPE "C1"	32+80 L															
D11	C.B. #22	C.B. TYPE "C1"	35+10 L															
D11	D.M.H. #3	D.M.H. TYPE "A"	35+10 R											1				
D11	C.B. #21	C.B. TYPE "B1"	35+10 R															
D12	C.B. #23	C.B. TYPE "B1"	35+80 R															
D12	C.B. #26	C.B. TYPE "C1"	37+00 L															
D12	C.B. #24	C.B. TYPE "B1"	37+00 R															
D12	C.B. #27	C.B. TYPE "C1"	39+00 L															
D12	C.B. #25	C.B. TYPE "B1"	39+00 R															
D12	D.M.H. #4	D.M.H TYPE "C"	39+98± R												1			
D12	C.B. #30	C.B. TYPE "C1"	41+00 L															
D12	C.B. #28	C.B. TYPE "B1"	41+00 R															
D12	C.B. #31	C.B. TYPE "C1"	43+50 L															
D12	C.B. #29	C.B. TYPE "B1"	43+50 R															
D13	D.M.H. #5	D.M.H. TYPE "SPECIAL"	44+32 R														1	
D13	C.B. #32	C.B. TYPE "SPECIAL"	45+66 L					1										
D13	C.B. #33	C.B. TYPE "B"	46+10 L															
D13	C.B. #38	C.B. TYPE "C1"	46+55 L															
D13	C.B. #34	C.B. TYPE "B1"	46+55 R															
D13	C.B. #39	C.B. TYPE "C1"	48+00 L															
D13	C.B. #35	C.B. TYPE "B1"	48+00 R															
D13	C.B. #40	C.B. TYPE "C1"	50+50 L															
D13	C.B. #36	C.B. TYPE "B1"	50+50 R															
D13	D.M.H. #5A	D.M.H. TYPE "A"	51+50 L						1									
D13	C.B. #41	C.B. TYPE "C1"	53+00 L															
D13	C.B. #37	C.B. TYPE "B1"	53+00 R															
D14	D.M.H. #6	D.M.H. TYPE "A"	54+25 R															
D14	C.B. #43	C.B. TYPE "C1"	55+50 L															
D14	D.M.H. #7	D.M.H. TYPE "A"	55+50 R										1					
D14	C.B. #42	C.B. TYPE "B1"	55+50 R															
D14	C.B. #45	C.B. TYPE "C1"	57+80 L															
D14	D.M.H. #8	D.M.H. TYPE "A"	57+80 R									1						
D14	C.B. #44	C.B. TYPE "B1"	57+80 R															
D14	D.M.H. #9	D.M.H. TYPE "A"	60+20 R								1							
D14	D.M.H. #10	D.M.H. TYPE "A"	62+35 R							1								
D14	C.B. #46	C.B. TYPE "C"	62+35 R															
D14	C.B. #47	C.B. TYPE "B1"	62+80 L															

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

DEXTER S. FU
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

LIB: STATE\DOT\KAHEKILI\KAHE15R
5/17/94 AMM
DE002B

AS-BUILT 43

DRAINAGE SUMMARY

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Rd.
PROJECT NO. NH-083-1(26)

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	ADD. 44	238

DRAINAGE SHEET NO.	STRUCTURE NO.	TYPE OF STRUCTURE	BASELINE STATION	206 2020 C.Y. STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM	503 7000 L.S. (C.Y.) INLET #1	503 7010 L.S. (C.Y.) OUTLET #1	503 7020 L.S. (C.Y.) OUTLET #5	503 7030 L.S. (C.Y.) OUTLET #6	503 7040 L.S. (C.Y.) CONCRETE LINED CHANNEL	508 0100 C.Y. CEMENT RUBBLE MASONARY	603 0010 C.Y. BED COURSE MATERIAL FOR CULVERT	603 1010 L.F. 24-INCH REINFORCED CONCRETE PIPE, CL.III	603 1014 L.F. 36-INCH REINFORCED CONCRETE PIPE, CL.III	603 1016 L.F. 42-INCH REINFORCED CONCRETE PIPE, CL.III	603 1018 L.F. 48-INCH REINFORCED CONCRETE PIPE, CL.III	603 1022 L.F. 60-INCH REINFORCED CONCRETE PIPE, CL.III	603 1024 L.F. 66-INCH REINFORCED CONCRETE PIPE, CL.III	603 6060 L.F. 10 FT. x 9 FT. BOX CULVERT	612 0100 C.Y. GROUTED RUBBLE PAVING
D9	INLET #1	INLET STRUCTURE	9+31 L		28						9								
D9	OUTLET #1	OUTLET STRUCTURE	10+25 R			75				2	27								9
D11	OUTLET #2	OUTLET STRUCTURE	35+43 R							37	7								33
D11	INLET #2	INLET STRUCTURE	35+57 L	25							20						74		28
D12	OUTLET #3	OUTLET STRUCTURE	39+91 R								48								62
D12	INLET #3	INLET STRUCTURE	40+30 L	211							24		252						34
D14	INLET #4	INLET STRUCTURE	54+02 L	4							4	8							8
D14	INLET #5	INLET STRUCTURE	54+25 L	1277							74					160			3
D14	OUTLET #5	OUTLET STRUCTURE	54+25 R				17	17			13								38
D14	INLET #6	INLET STRUCTURE	54+51 L				17	17			6				12				10
D14	OUTLET #6	OUTLET STRUCTURE	54+50.2 R								4								141
D14	INLET #7	INLET STRUCTURE	58+06 L							7	4		1						5
D9		10 FT. X 9 FT. BOX CULVERT		1285							196							176	
		CONCRETE LINED CHANNEL							44										

NOTE: BED COURSE MATERIAL FOR INLET AND OUTLET STRUCTURES, 10' x 9' BOX CULVERT AND ALL CONCRETE PIPES THIS SHEET SHALL BE PERMEABLE BASE COURSE.

SURVEY PLOTTED BY
DRAWN BY
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DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
ORIGINAL PLAN
NOTEBOOK
No.

DEXTER S. FUJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PerEx Inc.
dba PARK ENGINEERING

DATE	REVISION
6/07/94	ADDED NOTE. DELETED SUMMATION OF QUANTITIES.

SHEET No. D5 OF D49 SHEETS

AS-BUILT ADD. 44

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DE003R 6/15/94 AWM

DRAINAGE SUMMARY

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Rd.
PROJECT NO. NH-083-1(26)

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	45	238

ITEM NO.				206		640
				2030		7500
DESCRIPTION / UNIT				C.Y.		L.F.
DRAINAGE SHEET NO.	STRUCTURE NO.	TYPE OF STRUCTURE	BASELINE STATION FROM	BASELINE STATION TO	DITCH AND CHANNEL EXCAVATION	3.0 FT. x 2.0 FT. LINED RECTANGULAR DRAINAGE DITCH
D10	L.D. #3	LINED DITCH	25+50 L	28+50 L	119	300
D11	L.D. #1	LINED DITCH	28+00 R	29+00 R	40	100
D11	L.D. #4	LINED DITCH	28+50 L	32+80 L	170	430
D11	L.D. #2	LINED DITCH	29+00 R	32+80 R	150	380
D14	L.D. #5	LINED DITCH	54+25	54+25	3	42
D15	L.D. #6	LINED DITCH	64+53 L	71+39 L	271	686

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CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

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DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

ParEn, Inc.
dba PARK ENGINEERING

SHEET No. D6 OF D49 SHEETS

AS-BUILT 45

LIB: STATE\DOT\KAHEKILI\KAHE1198\
DEQ04 5/17/94 AAM

DRAINAGE SUMMARY

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Rd.
PROJECT NO. NH-083-1(26)

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	46	238

ITEM NO.	206		605
	2020		0006
UNIT USED	C.Y.		L.F.
UNDERDRAINS	STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM		6-INCH PERFORATED UNDERDRAIN PIPE
BASELINE STATION FROM	BASELINE STATION TO		
7+14 R	8+57 R	16	143
7+11 57' o/s L	7+11 45' o/s R	11	102
7+11 L	8+57 L	16	146
8+61 R	10+68 R	23	207
8+61 L	10+68 L	23	207
10+68 R	12+70 R	22	199
10+68 L	12+70 L	22	199
12+70 R	15+20 R	27	243
12+70 L	15+20 L	27	243
15+20 R	16+20 R	10	93
15+20 L	16+20 L	10	93
16+31 R	17+28 R	10	94
16+20 L	18+90 L	29	264
17+01 R	17+34 R	4	33
17+34 110' o/s R	17+28 53' o/s R	6	54
17+28 R	18+90 R	17	156
18+90 L	19+41 L	5	45
18+90 R	19+41 R	5	45
19+41 L	19+92 L	5	45
19+41 R	19+92 R	5	45
19+92 L	21+00 L	11	102
19+92 R	21+00 R	11	102
21+00 L	22+25 L	13	119
21+00 R	22+40 R	15	134
22+25 L	24+40 L	23	209
22+40 R	24+40 R	22	194
24+40 L	26+00 L	17	154
24+40 C	26+00 C	17	154
24+40 R	25+00 R	6	57
26+00 L	28+00 L	22	194
26+00 C	26+50 C	5	44
26+00 C	28+00 C	22	194
28+00 L	30+00 L	22	194
28+00 C	30+00 C	22	194
30+00 L	31+40 L	15	134
30+00 C	31+40 C	15	134

ITEM NO.	206		605
	2020		0006
UNIT USED	C.Y.		L.F.
UNDERDRAINS	STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM		6-INCH PERFORATED UNDERDRAIN PIPE
BASELINE STATION FROM	BASELINE STATION TO		
31+40 L	32+80 L	15	134
31+40 C	32+80 C	15	134
32+80 L	35+10 L	25	224
32+80 C	36+00 C	35	317
33+93 115' o/s R	34+25 107' o/s R	4	37
34+25 107' o/s R	35+10 R	12	106
35+10 R	35+80 R	7	64
35+10 L	37+00 L	20	184
35+80 R	37+00 R	13	114
37+00 L	39+00 L	22	194
37+00 R	39+00 R	22	194
39+00 L	41+00 L	22	194
39+00 R	39+98± R	10	93
39+98± R	41+00 R	11	97
41+00 L	43+50 L	27	244
41+00 R	43+50 R	27	244
43+50 L	46+55 L	33	299
43+50 R	44+32 R	8	76
44+32 R	45+53 114' o/s R	18	158
45+53 114' o/s R	45+95 105' o/s R	5	43
46+55 R	48+00 R	15	139
46+55 L	48+00 L	15	139
48+00 R	50+50 R	27	244
48+00 L	50+50 L	27	244
50+50 R	53+00 R	27	244
50+50 L	51+50 L	11	95
51+50 L	53+00 L	16	145
53+00 R	55+50 R	27	244
53+00 L	55+50 L	27	244
55+50 R	57+80 R	25	224
55+50 L	57+80 L	25	244
57+80 R	60+48 R	29	265
57+80 L	60+48 L	29	265
60+52 R	62+35 R	20	180
60+52 L	62+80 L	25	225

ITEM NO.	206		605
	2020		0006
UNIT USED	C.Y.		L.F.
UNDERDRAINS	STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM		6-INCH PERFORATED UNDERDRAIN PIPE
BASELINE STATION FROM	BASELINE STATION TO		
62+35 R	63+00 106' o/s R	12	105
63+00 106' o/s R	63+58 96' o/s R	6	56
62+80 L	63+58 56' o/s L	8	76
63+60 53' o/s L	67+00 24' o/s L	38	340
67+00 24' o/s L	71+00 1' o/s L	44	400
71+00 1' o/s L	74+05	34	305

ITEM NO.	206		605
	2020		0007
UNIT USED	C.Y.		L.F.
UNDERDRAINS	STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM		6-INCH NONPERFORATED UNDERDRAIN PIPE
BASELINE STATION FROM	BASELINE STATION TO		
7+11 R	CONC. CHANNEL	3	30
7+14 R	CONC. CHANNEL	4	34
67+00 24' o/s L	LINED DITCH	3	30
71+00 1' o/s L	LINED DITCH	6	53

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NOTEBOOK
No.
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DEXTER S. EU
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

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ParEn, Inc.
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SHEET No. D7 OF D49 SHEETS

AS-BUILT 46

LIB: STATE\DOT\KAHEKILI\KAHE159\
DE005
5/17/94
AMM

DRAINAGE SUMMARY

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Rd.
PROJECT NO. NH-083-1(26)

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	47	238

ITEM NO.				605	605
				0007	0008
DESCRIPTION / UNIT				L.F.	EA.
DRAINAGE SHEET NO.	STRUCTURE NO.	TYPE OF STRUCTURE	BASELINE STATION	6-INCH NONPERFORATED UNDERDRAIN PIPE (INCL. 45° ELBOW)	CLEANOUT
D9		CLEANOUT	7+11 L	6	1
D9		CLEANOUT	7+11 R	6	1
D9		CLEANOUT	7+14 R	6	1
D9		CLEANOUT	8+57 L	6	1
D9		CLEANOUT	8+57 R	6	1
D9		CLEANOUT	8+61 L	6	1
D9		CLEANOUT	8+61 R	6	1
D9		CLEANOUT	10+68 L	6	1
D9		CLEANOUT	10+68 R	6	1
D9		CLEANOUT	16+31 R	6	1
D9		CLEANOUT	17+01 R	6	1
D9		CLEANOUT	17+34 R	6	1
D10		CLEANOUT	25+01 R	6	1
D11		CLEANOUT	28+00 R	6	1
D11		CLEANOUT	29+98 R	6	1
D11		CLEANOUT	32+76 R	6	1
D11		CLEANOUT	32+92 R	6	1
D11		CLEANOUT	34+25 R	6	1
D11		CLEANOUT	35+98 R	6	1
D13		CLEANOUT	44+27 R	6	1
D13		CLEANOUT	45+40 L	6	1
D13		CLEANOUT	45+53 R	6	1
D13		CLEANOUT	45+95 R	6	1
D14		CLEANOUT	60+48 L	6	1
D14		CLEANOUT	60+48 R	6	1
D14		CLEANOUT	60+52 L	6	1
D14		CLEANOUT	60+52 R	6	1
D14		CLEANOUT	63+00 R	6	1
D14		CLEANOUT	63+58 L	6	1
D14		CLEANOUT	63+58 R	6	1
D11		CLEANOUT	36+00 C	6	1
D14		CLEANOUT	63+60 L	6	1
C16		CLEANOUT	67+00 L	6	1
C16		CLEANOUT	71+00 L	6	1

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CHECKED BY
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ORIGINAL PLAN
NOTEBOOK
No.

DEXTER S. FEI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

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Park, Inc.
dba PARK ENGINEERING

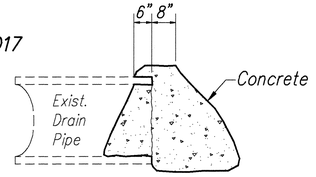
LIB: STATE\DOT\KAHEKILI\KAHE159\
DE006 5/17/94 AMM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	ADD. 48	238

GENERAL NOTES:

1- For Drain Line Profiles, See Sheet D16 and D17

2- All Pipes are Reinforced Concrete Class III



CONCRETE PLUG FOR EXISTING 24" DRAIN PIPES OR SMALLER
(Incidental to New Drain Lines)
Scale: 1/2" = 1'-0"

Subdrain Schedule

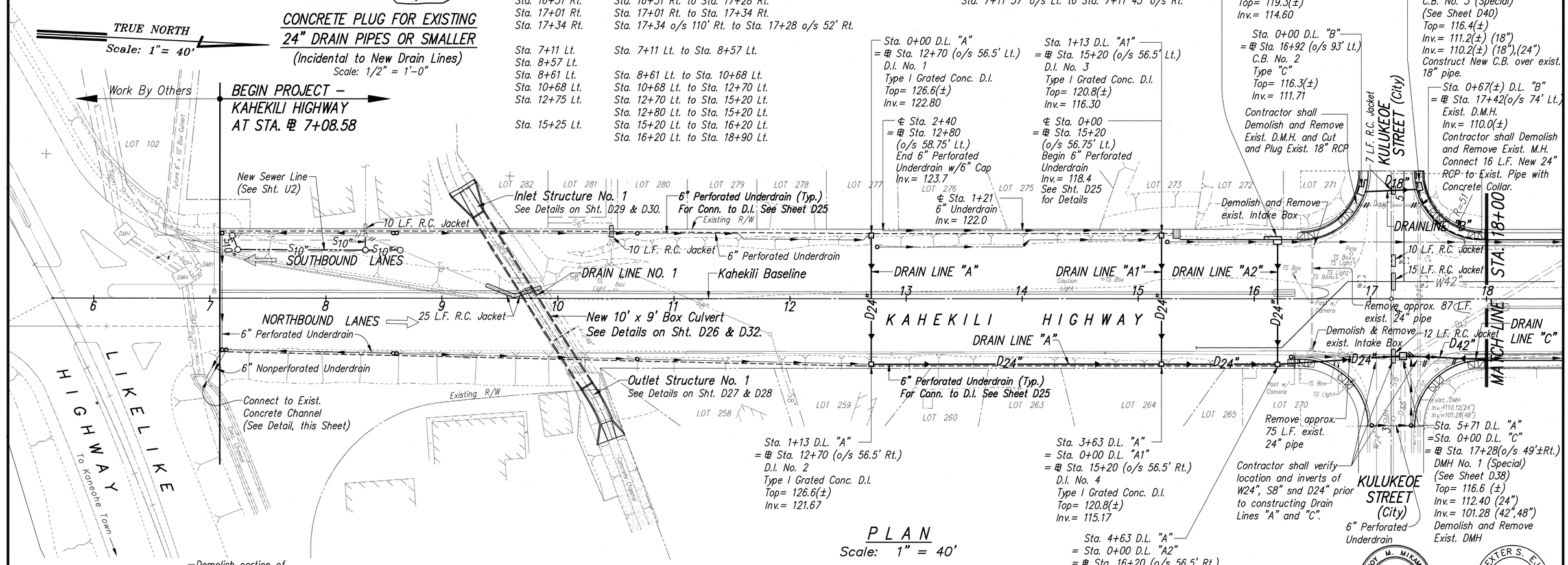
Cleanout	6" Perforated Underdrain Pipe
Sta. 7+14 Rt.	Sta. 7+14 Rt. to Sta. 8+57 Rt.
Sta. 8+57 Rt.	
Sta. 8+61 Rt.	Sta. 8+61 Rt. to Sta. 10+68 Rt.
Sta. 10+68 Rt.	Sta. 10+68 Rt. to Sta. 12+70 Rt.
	Sta. 12+70 Rt. to Sta. 15+20 Rt.
	Sta. 15+20 Rt. to Sta. 16+20 Rt.
Sta. 16+31 Rt.	Sta. 16+31 Rt. to Sta. 17+28 Rt.
Sta. 17+01 Rt.	Sta. 17+01 Rt. to Sta. 17+34 Rt.
Sta. 17+34 Rt.	Sta. 17+34 o/s 110' Rt. to Sta. 17+28 o/s 52' Rt.
Sta. 7+11 Lt.	Sta. 7+11 Lt. to Sta. 8+57 Lt.
Sta. 8+57 Lt.	
Sta. 8+61 Lt.	Sta. 8+61 Lt. to Sta. 10+68 Lt.
Sta. 10+68 Lt.	Sta. 10+68 Lt. to Sta. 12+70 Lt.
Sta. 12+75 Lt.	Sta. 12+70 Lt. to Sta. 15+20 Lt.
	Sta. 12+80 Lt. to Sta. 15+20 Lt.
Sta. 15+25 Lt.	Sta. 15+20 Lt. to Sta. 16+20 Lt.
	Sta. 16+20 Lt. to Sta. 18+90 Lt.

Subdrain Schedule

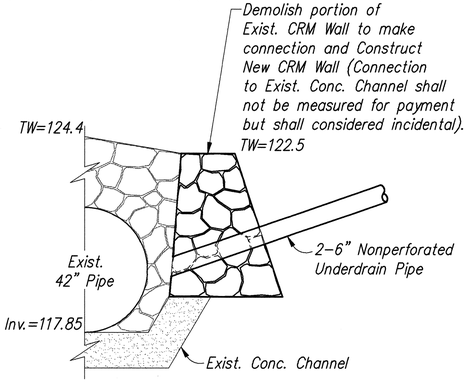
Cleanout	6" Nonperforated Underdrain Pipe
Sta. 7+11 Rt.	Sta. 7+11 Rt. to Concrete Channel
	Sta. 7+14 Rt. to Concrete Channel

Crossdrain Schedule

Cleanout	6" Nonperforated Underdrain Pipe
	Sta. 7+11 57' o/s Lt. to Sta. 7+11 45' o/s Rt.



PLAN
Scale: 1" = 40'



NONPERFORATED UNDERDRAIN CONNECTION DETAIL
Not to Scale

LEGEND

- Drain Structure, Type as Noted
- Drain Line, Direction of Flow
- Concrete Lined Ditch
- Underdrain Pipe
- Underdrain Cleanout
- Grade to Drain
- Edge of Pavement
- Cut & Plug Exist. Drain Line
- Pole — Existing Electrical Pole
- TS Box — Existing Traffic Signal Box
- TS Light — Existing Traffic Signal Light
- SMH — Existing Sewer Manhole
- WM — Existing Water Meter
- WV — Existing Water Valve
- DMH — Existing Drain Manhole
- DI — Existing Drain Intake
- E — Existing Electrical Line
- $S_{8"}$ — Existing Sewer Line
- $W_{8"}$ — Existing Water Line
- $D_{18"}$ — Existing Drain Line
- $G_{4"}$ — Existing Gas Line
- Existing Concrete Swale

DRAINAGE PLAN ABBREVIATION

C.B.	Catch Basin
C.R.M.	Cement Rubble Masonry
G.R.P.	Grouted Rubble Paving
D.I.	Drain Inlet
D.L.	Drain Line
D.M.H.	Drain Manhole
Inv.	Invert

APPROVED:

10/10/94
CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) — DATE
** Signature has been digitized

DATE	REVISION
10/2/96	REVISED DMH NO. 1
6/5/96	REVISED OUTLET FOR DRAIN LINE NO. 1.
11/16/95	REVISED UNDERDRAINS AND CLEANOUTS. ADDED UNDERDRAIN BEHIND R.C. WALL 1B. REVISED LOCATION OF CB NO. 3 AND VICINITY OF CB NO. 3. REVISED SEWER LINE "A" TO REFLECT CHANGES.
6/07/94	REVISED LOCATION NEW SEWER LINE. ADDED UNDERDRAIN CONNECTION DETAIL AND NOTE. ADDED R.C. JACKET ADDED APPROVAL BLOCK FOR DWWM.

ROY M. MIKAMI — LICENSED PROFESSIONAL ENGINEER — NO. 1595-C — HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
ParEn, Inc. dba PARK ENGINEERING

DEXTER S. ELI — REGISTERED PROFESSIONAL ENGINEER — No. 4739-C — HAWAII, U.S.A.
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ParEn, Inc. dba PARK ENGINEERING
** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN
℄ STA. 7+08.58 TO 18+00

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED — DATE: APRIL 1994

SHEET No. D9 OF D49 SHEETS

AS-BUILT C.O. ADD. 48

SURVEY PLOTTED BY / DRAWN BY / TRACED BY / DESIGNED BY / QUANTITIES BY / CHECKED BY / DATE
ORIGINAL PLAN / NOTEBOOK No.

ROTATED: 92° 41'
BASE PT: 0,0

US: STATE\DOT\HAIKU-KOOLAU\DRAINLINE 10/2/96 AMM KSU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	ADD 48	238

TRUE NORTH
Scale: 1"= 20'

LIKELIKE

Existing R/W

TMK 4-5-26:77

15,200 S

14,800 S

LOT 282 LOT 281 LOT 280

6' Wide Drain Easement

* Use Caution When Excavating

R.C. Wall No. 1A

℄ Ditch

24" RCP, Cl. III

MSERW No. 1

Grade to Drain (See Sheet D29)

60.00'

Likelike ℄ Sta. 105+33.11
= Kahekili ℄ Sta. 5+64.58

Sta. 0+00 D.L. "A-3"
= ℄ Sta. 7+58.35 (o/s 62.67' Lt.)
Begin Ditch
(See Detail, This Sht.)
Inv.= 123.8

Sta. 0+82.16 D.L. "A-3"
= ℄ Sta. 8+40.51 (o/s 62.67' Lt.)
D.I. No. 1A
Type 61614 (See Std. Plan H-11)
Top= 123.0
Inv.= 119.9

Sta. 1+51.86 D.L. "A-3"
= ℄ Sta. 9+10.21 (o/s 62.67' Lt.)
Inv.= 119.1
Concrete Collar
(See Detail This Sht.)

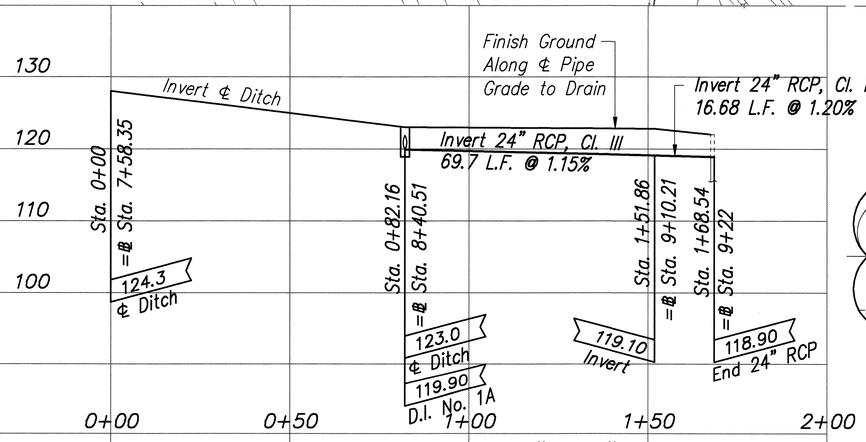
Sta. 1+68.54 D.L. "A-3"
= ℄ Sta. 9+22 (o/s 72.46' Lt.)
Inv.= 118.9
Neat Cut @ Wingwall
(See Detail Sht. D29)

Kahekili Baseline

6 7 8 9 10

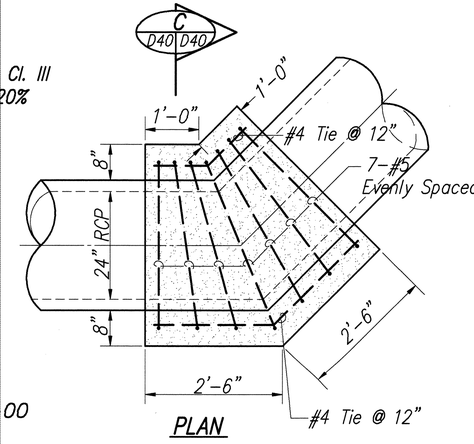
128.6 126.6

Existing R/W



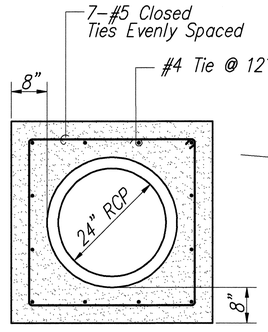
DRAIN LINE "A-3"
℄ Sta. 7+58.35 to ℄ Sta. 9+22

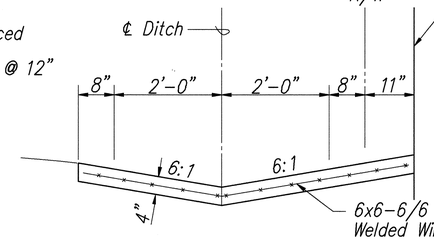
Scale: Horiz. 1"= 20'
Vert. 1"= 10'



PLAN

CONCRETE COLLAR FOR 24" RCP
Scale: 3/4"= 1'-0"





61614 - LINED DRAINAGE DITCH DETAIL
Scale: 3/4" = 1'-0"

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

DATE	REVISION
1/11/96	ADDED DRAIN LINE "A-3"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN
℄ Sta. 7+58.35 to ℄ Sta. 9+22
KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D9AOF D49 SHEETS

AS-BUILT C.O. ADD 48 S-1

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
ORIGINAL PLAN
NOTEBOOK
No.

ROTATED: BASE PT:

LIB: STATE\DOT\KAHEKILI\ADDENDUM
MSERWPROC 1/11/96 TSS KSU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	49	238

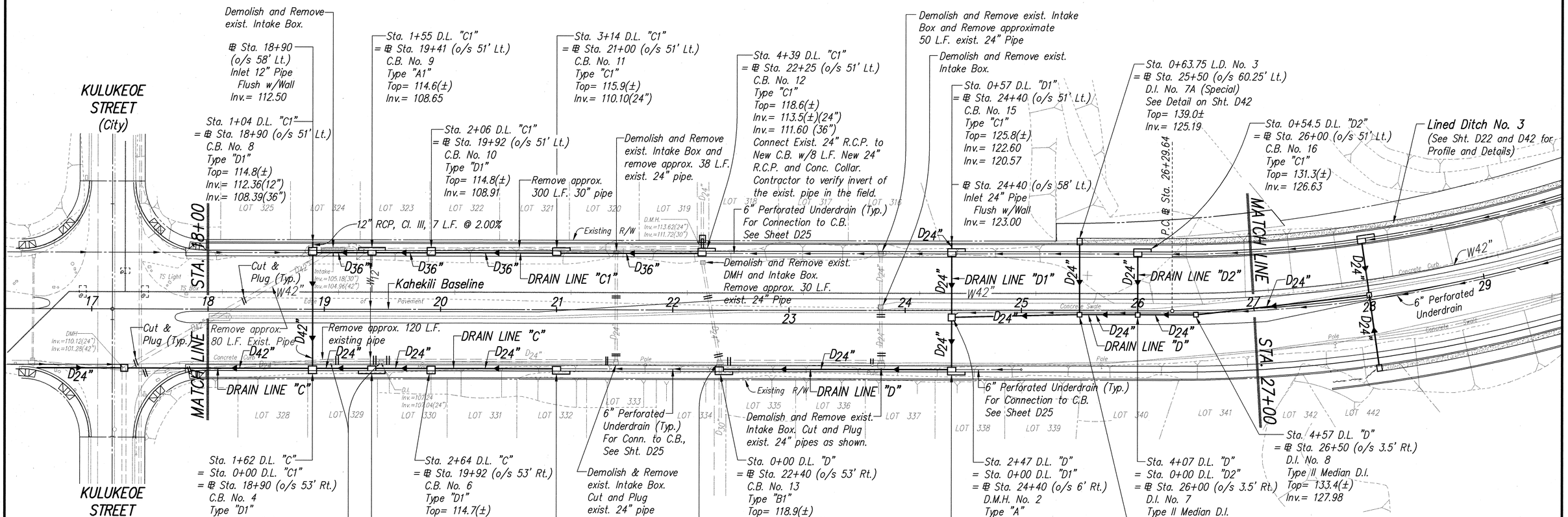
GENERAL NOTES:

1- For Drain Line Profiles, See Sheet D17

2- All Pipes are Reinforced Concrete Class III

TRUE NORTH

Scale: 1"= 40'



PLAN

Scale: 1"= 40'

Subdrain Schedule

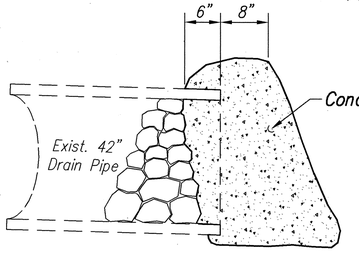
6" Perforated Underdrain Pipe

Sta. 21+00 Rt. to Sta. 22+40 Rt.
Sta. 24+40 Rt. to Sta. 25+00 Rt.
Sta. 24+40 Ctr. to Sta. 25+50 Ctr.
Sta. 25+50 Ctr. to Sta. 26+00 Ctr.
Sta. 26+00 Ctr. to Sta. 26+50 Ctr.
Sta. 22+25 Lt. to Sta. 24+40 Lt.
Sta. 24+40 Lt. to Sta. 26+00 Lt.

Cross Drain Schedule

6" Perforated Underdrain Pipe

Sta. 19+41 51' o/s to Sta. 19+41 53' o/s Rt.



CONCRETE PLUG FOR EXIST. 42" DRAIN PIPE

(Incidental to New Drain Lines)

Not to Scale

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) DATE 10/10/94

** SIGNATURE HAS BEEN DIGITIZED

DATE	REVISION
2/29/96	REVISED SUBDRAIN SCHEDULES AND ADJUSTED 24" PIPE AT CB NO. 15
6/07/94	ADDED NOTE. ADDED APPROVAL BLOCK FOR DWWM.

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

℄ STA. 18+00 TO 27+00

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D10 OF D49 SHEETS

AS-BUILT C.O. ADD. 49

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

ROTATED: 92° 41'
BASE PT. 0,0

LIB: STATE\DOT\KAHEKILI\ADDENDUM

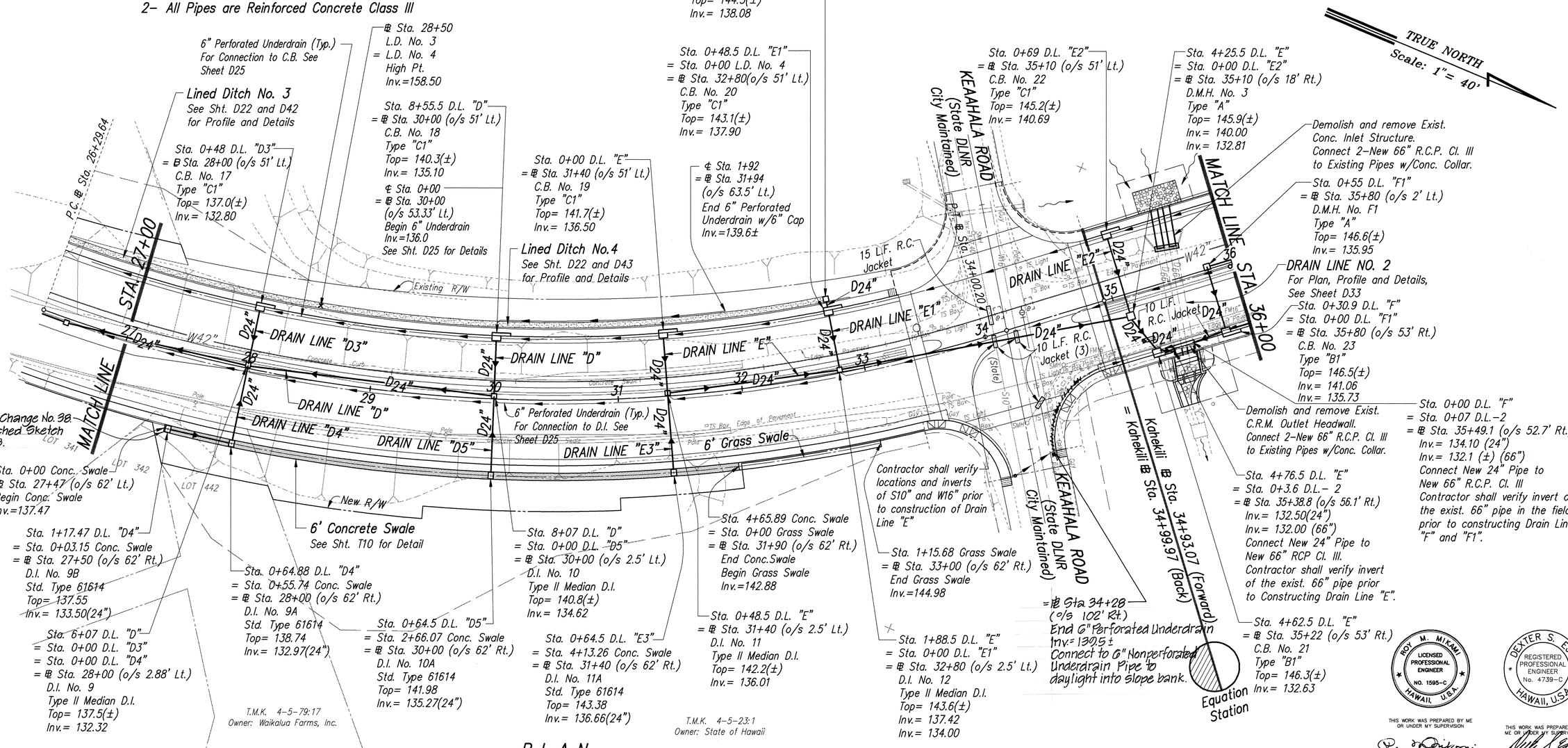
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	ADD. 50 R	238

GENERAL NOTES:

KANEOHE DISTRICT PARK

1- For Drain Line Profiles, See Sheet D17 and D18

2- All Pipes are Reinforced Concrete Class III



PLAN

Scale: 1"= 40'

Subdrain Schedule

Cleanout	6" Perforated Underdrain Pipe
	Sta. 26+50 Ctr. to Sta. 28+00 Ctr.
	Sta. 28+00 Ctr. to Sta. 30+00 Ctr.
	Sta. 30+00 Ctr. to Sta. 31+40 Ctr.
	Sta. 31+40 Ctr. to Sta. 32+80 Ctr.
Sta. 36+00 Ctr.	Sta. 32+80 Ctr. to Sta. 36+00 Ctr.
	Sta. 26+00 Lt. to Sta. 28+00 Lt.
	Sta. 28+00 Lt. to Sta. 30+00 Lt.
	Sta. 30+00 Lt. to Sta. 31+40 Lt.
	Sta. 30+00 Lt. to Sta. 31+94 Lt.
	Sta. 31+40 Lt. to Sta. 32+80 Lt.
	Sta. 32+80 Lt. to Sta. 35+10 Lt.

Subdrain Schedule

Cleanout	6" Perforated Underdrain Pipe
Sta. 33+93 Rt.	Sta. 33+92 114' o/s Rt. to Sta. 34+25 107' o/s Rt.
Sta. 34+25 Rt.	Sta. 34+25 107' o/s Rt. to Sta. 35+10 Rt.
	Sta. 35+10 Rt. to Sta. 35+80 Rt.

APPROVED:

10/10/94

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM DATE
(For Sewer Work within Public Road R/W only)
** SIGNATURE HAS BEEN DIGITIZED

DATE	REVISION
6/21/96	REVISED DRAIN LINES "F" AND "F1" AND C.B. NO. 21.
11/06/95	DELETE MSERW NO. 3 AND NO. 4 AND R.C. WALL NO. 5; ADD CONCRETE SWALE; DELETE LINED DITCH NO. 1 AND NO. 2; REVISE DRAIN LINE "D" AND "E"; ADD UNDERDRAIN BEHIND MSERW NO. 2 AND R.C. WALL NO. 6 BETWEEN ℄ STA. 30+00 AND ℄ STA. 31+94
7/13/94	ADDED "STATE" TO S10".
6/07/94	ADDED R.C. JACKETS. ADDED APPROVAL BLOCK FOR DWWM.

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING
** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN
℄ STA. 27+00 to 36+00

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D11 OF D49 SHEETS

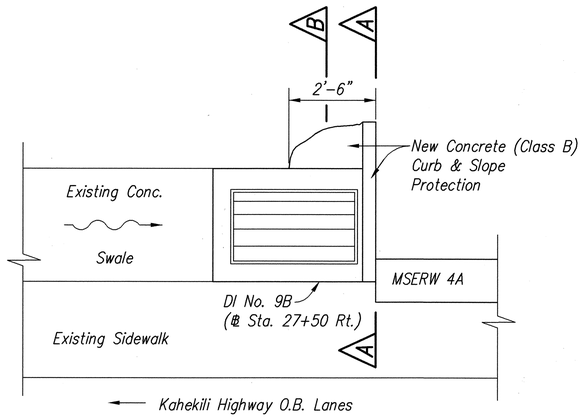
AS-BUILT C.O. ADD. 50 R

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

ROTATED: 1/2" 41'
BASE PT. 0,0

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAPLSRC 6/21/96 GKI KSU

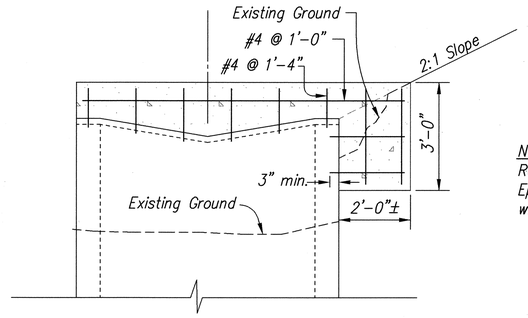
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	50S-1	238



PLAN

Slope Protection at DI No. 9B (Kahekili Sta. 27+50 Rt.)

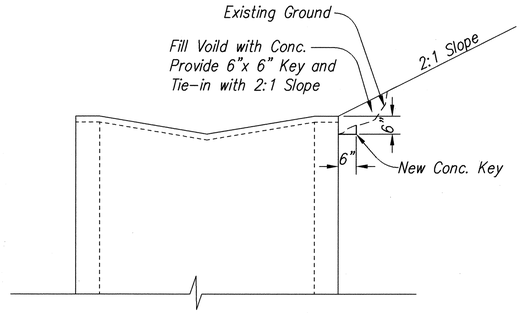
Not to Scale



NOTE:
Roughen Existing Finish and Epoxy Rebars into exist. D.I. with min. 3" penetration.

SECTION A-A

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



SECTION B

Not to Scale

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FIELD CHANGE NO. 38
SKETCH NO. FC38

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D11A OF D49 SHEETS

AS-BUILT C.O. ADD. 50R S-1

ROJ ELD:
BASE PT.:

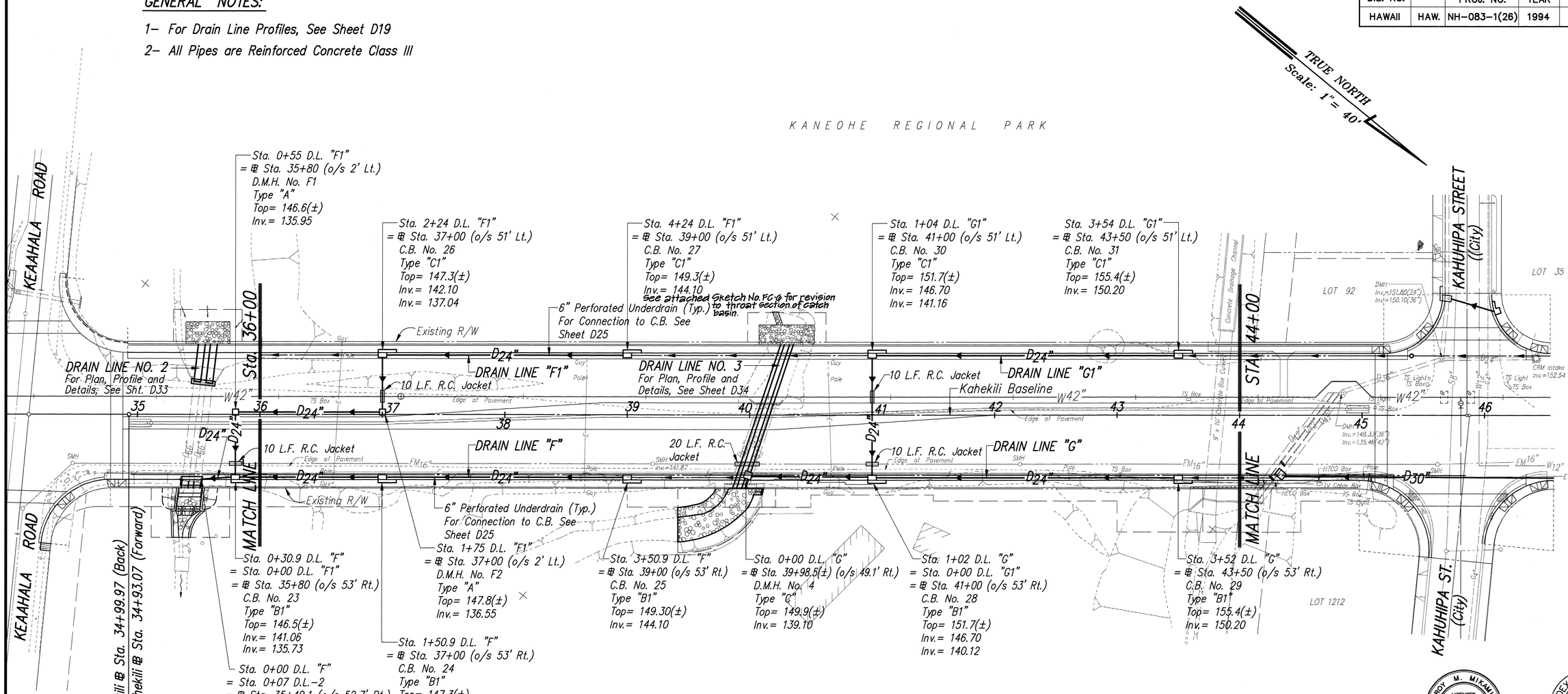
LIB: STATE\OOTV\KAHEKILI\ADDENDUM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	51 R	238

GENERAL NOTES:

1- For Drain Line Profiles, See Sheet D19

2- All Pipes are Reinforced Concrete Class III



PLAN

Scale: 1" = 40'

Subdrain Schedule

6" Perforated Underdrain Pipe

Sta. 35+80 Rt. to Sta. 37+00 Rt.
Sta. 37+00 Rt. to Sta. 39+00 Rt.
Sta. 39+00 Rt. to Sta. 39+98(±) Rt.
Sta. 39+98(±) Rt. to Sta. 41+00 Rt.
Sta. 41+00 Rt. to Sta. 43+50 Rt.
Sta. 35+10 Lt. to Sta. 37+00 Lt.
Sta. 37+00 Lt. to Sta. 39+00 Lt.
Sta. 39+00 Lt. to Sta. 41+00 Lt.
Sta. 41+00 Lt. to Sta. 43+50 Lt.

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWM (For Sewer Work within Public Road R/W only) DATE 10/10/94

** SIGNATURE HAS BEEN DIGITIZED

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PerEn, Inc. dba PARK ENGINEERING

DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PerEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

DATE	REVISION
6/21/96	REVISED DRAIN LINES "F" AND "F1" AND MODIFIED D.M.H. NO. 4
7/13/94	ADDED APPROVAL BLOCK FOR DWWM.
6/07/94	ADDED R.C. JACKET.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN
Ⓔ STA. 36+00 TO 44+00
KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D12 OF D49 SHEETS

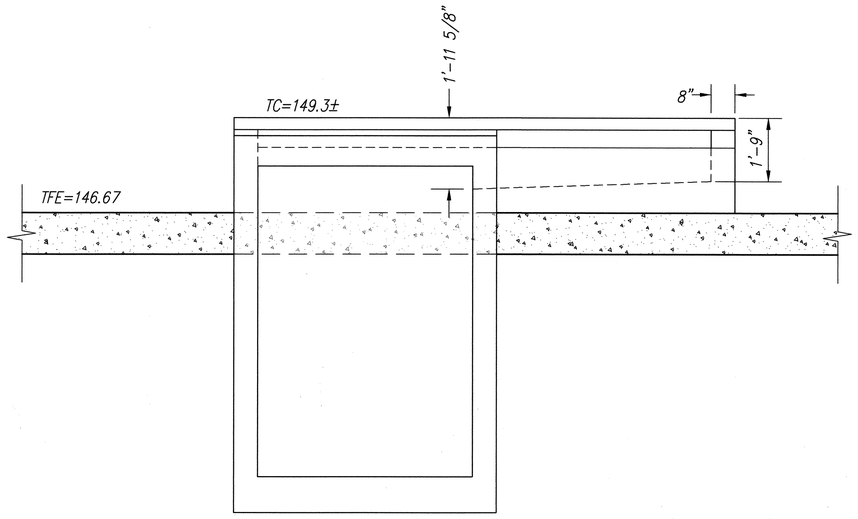
AS-BUILT C.O. ADD. 51 R

ORIGINAL PLAN | NOTEBOOK No. | STOREY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

ROTATED: 129° 28' 30"
BASE PT. 0,0

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAFT.DWG 6/21/96 AMM KSJ

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	51S-1	238



CB No. 27 – Modifed Type "C1"
℄ Sta. 39+00 (o/s 51' LT.)
Scale: 1/2" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FIELD CHANGE NO. 6
SKETCH NO. FC6

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D11A OF D49 SHEETS

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

AS-BUILT C.O. ADD. 51R S-1

XDTA FILE:
BASE PT:
LIB: STATE\DOT\KAHEKILI\ADDENDUM

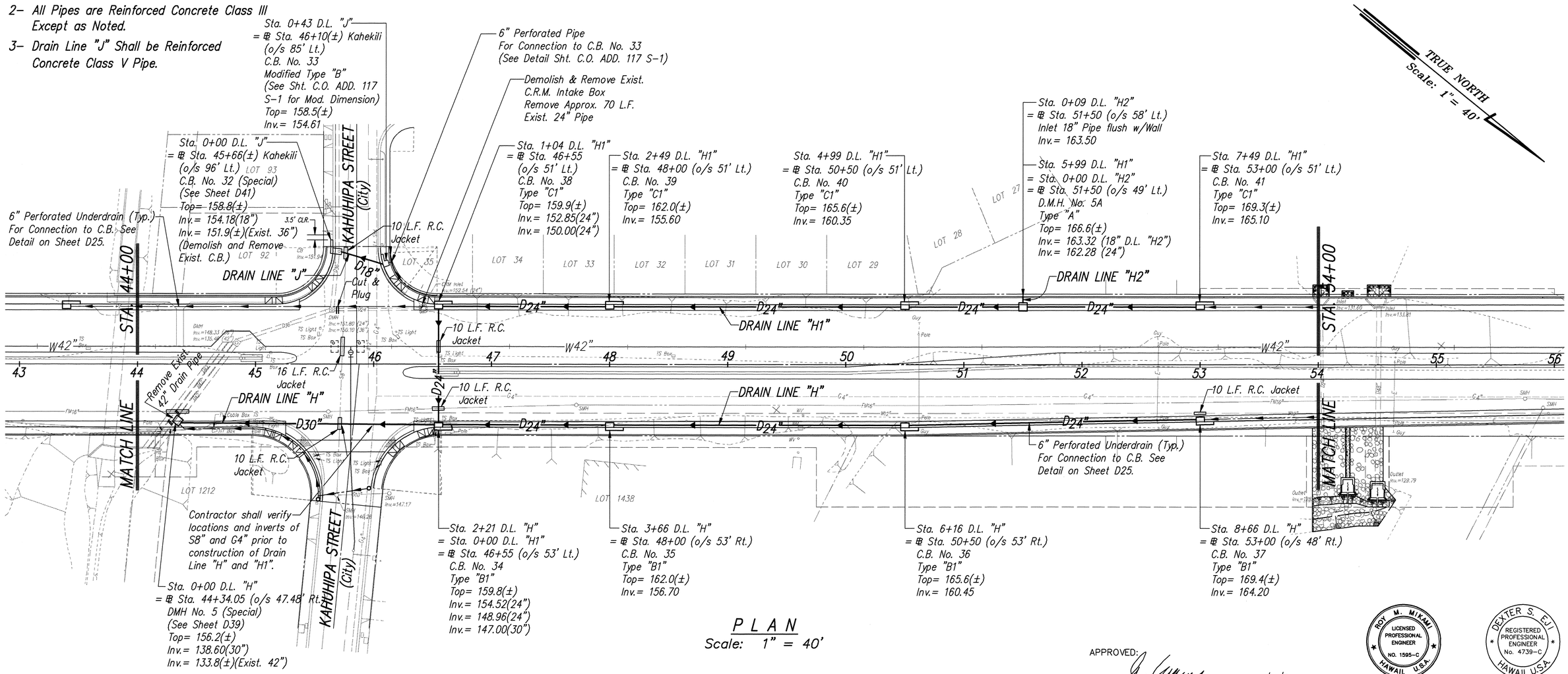
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	52 R	238

GENERAL NOTES:

1- For Drain Line Profiles, See Sheet D20

2- All Pipes are Reinforced Concrete Class III Except as Noted.

3- Drain Line "J" Shall be Reinforced Concrete Class V Pipe.



PLAN
Scale: 1" = 40'

APPROVED:

J. Cayetano 10/10/94

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) DATE

** SIGNATURE HAS BEEN DIGITIZED

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc. dba PARK ENGINEERING

DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, USA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

Subdrain Schedule

Cleanout

Sta. 45+53 114' o/s Rt.
Sta. 45+96 105' o/s Rt.

6" Perforated Underdrain Pipe

Sta. 43+50 Rt. to Sta. 44+32 Rt.
Sta. 44+32 Rt. to Sta. 45+53 114' o/s Rt.
Sta. 45+53 114' o/s Rt. to Sta. 45+96 105' o/s Rt.
Sta. 46+55 Rt. to Sta. 48+00 Rt.
Sta. 48+00 Rt. to Sta. 50+50 Rt.
Sta. 50+50 Rt. to Sta. 53+00 Rt.
Sta. 43+50 Lt. to Sta. 46+55 Lt.
Sta. 46+14 Lt. to Sta. 46+55 Lt.
Sta. 46+55 Lt. to Sta. 48+00 Lt.
Sta. 48+00 Lt. to Sta. 50+50 Lt.
Sta. 50+50 Lt. to Sta. 51+50 Lt.
Sta. 51+50 Lt. to Sta. 53+00 Lt.

DATE	REVISION
10/22/96	REVISED D.M.H. NO. 5
7/18/96	REVISED DRAIN LINE "J" AND GENERAL NOTES.
1/12/96	REVISED C.B. 33 AND ADDED 6" PERF. DRAIN PIPE BEHIND REVISED R.C. WALL NO. 14 AT RETURN
7/13/94	REVISED INVERTS OF C.B.'S NO. 32 & NO. 33. ADDED 3.5' CLR. BETWEEN C.B. & DWY. APRON. ADDED APPROVAL BLOCK FOR DWWM.
5/23/94	ADDED R.C. JACKETS.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN
℄ STA. 44+00 TO 54+00
KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D13 OF D49 SHEETS

AS-BUILT C.O. ADD. 52 R

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

ROTATED: 128° 28' 30"
BASE PT. 0,0

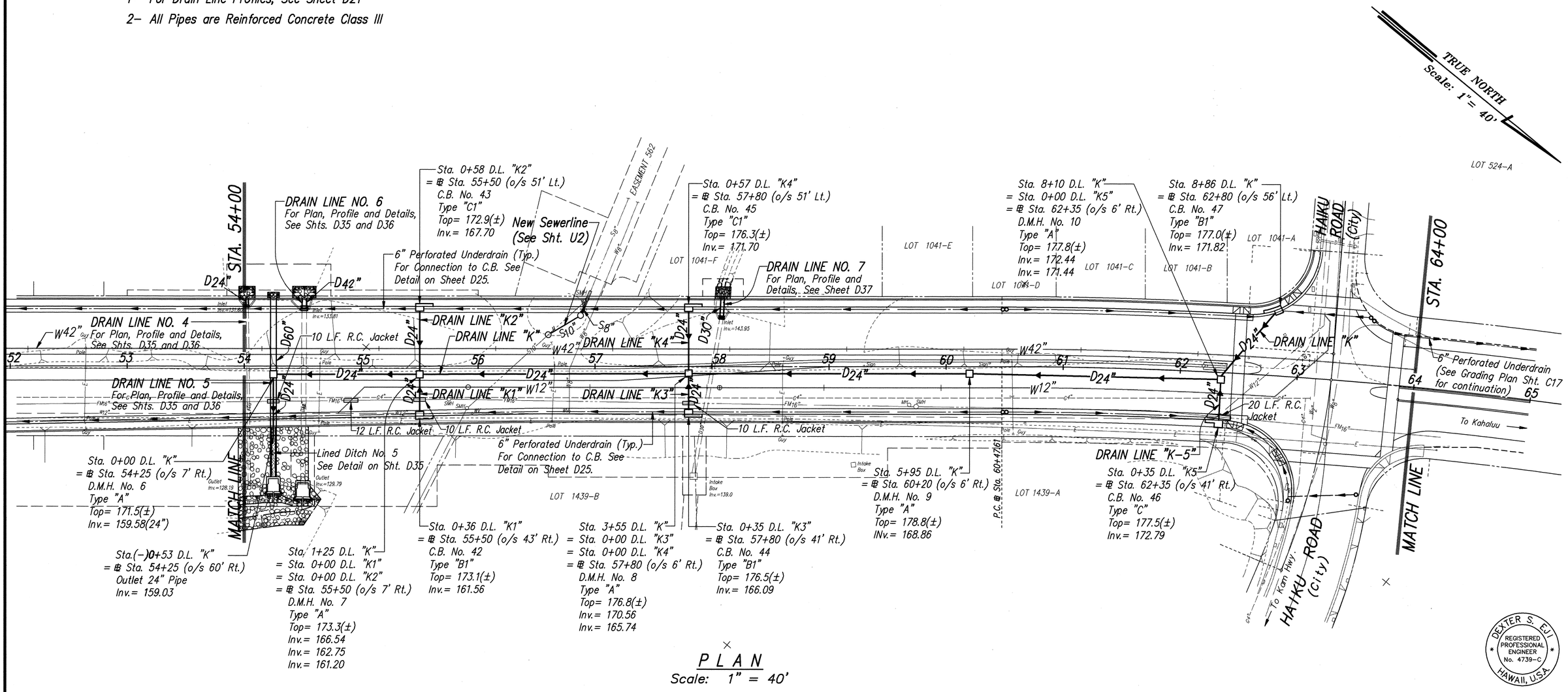
I:\PL STATE\OOT\KAHEKILI\ADDENDUM DRAFLCAD 10/22/96 AMM ASJ

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	ADD 53	238

GENERAL NOTES:

1- For Drain Line Profiles, See Sheet D21

2- All Pipes are Reinforced Concrete Class III



PLAN
Scale: 1" = 40'

Subdrain Schedule

Cleanout	6" Perforated Underdrain Pipe
	Sta. 53+00 Rt. to Sta. 55+50 Rt.
	Sta. 55+50 Rt. to Sta. 57+80 Rt.
Sta. 60+48 Rt.	Sta. 57+80 Rt. to Sta. 60+48 Rt.
Sta. 60+52 Rt.	Sta. 60+52 Rt. to Sta. 62+35 Rt.
Sta. 63+00 106' o/s Rt.	Sta. 62+35 Rt. to Sta. 63+00 106' o/s Rt.
Sta. 63+58 96' o/s Rt.	Sta. 63+00 106' o/s Rt. to Sta. 63+58 96' o/s Rt.
	Sta. 53+00 Lt. to Sta. 55+50 Lt.
	Sta. 55+50 Lt. to Sta. 57+80 Lt.
Sta. 60+48 Lt.	Sta. 57+80 Lt. to Sta. 60+48 Lt.
Sta. 60+52 Lt.	Sta. 60+52 Lt. to Sta. 62+80 Lt.
Sta. 63+58 56' o/s Lt.	Sta. 62+80 Lt. to Sta. 63+58 56' o/s Lt.

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) — DATE 10/10/94

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PanEn, Inc. dba PARK ENGINEERING

DATE	REVISION
10/23/95	REVISED DRAIN LINE NO. 7
7/14/95	REVISED DRAIN LINE NO. 6
6/07/94	REVISED LOCATION OF NEW SEWER LINE. ADDED R.C. JACKETS. ADDED APPROVAL BLOCK FOR DWWM.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN
℄ STA. 54+00 TO 64+00
KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D14 OF D49 SHEETS

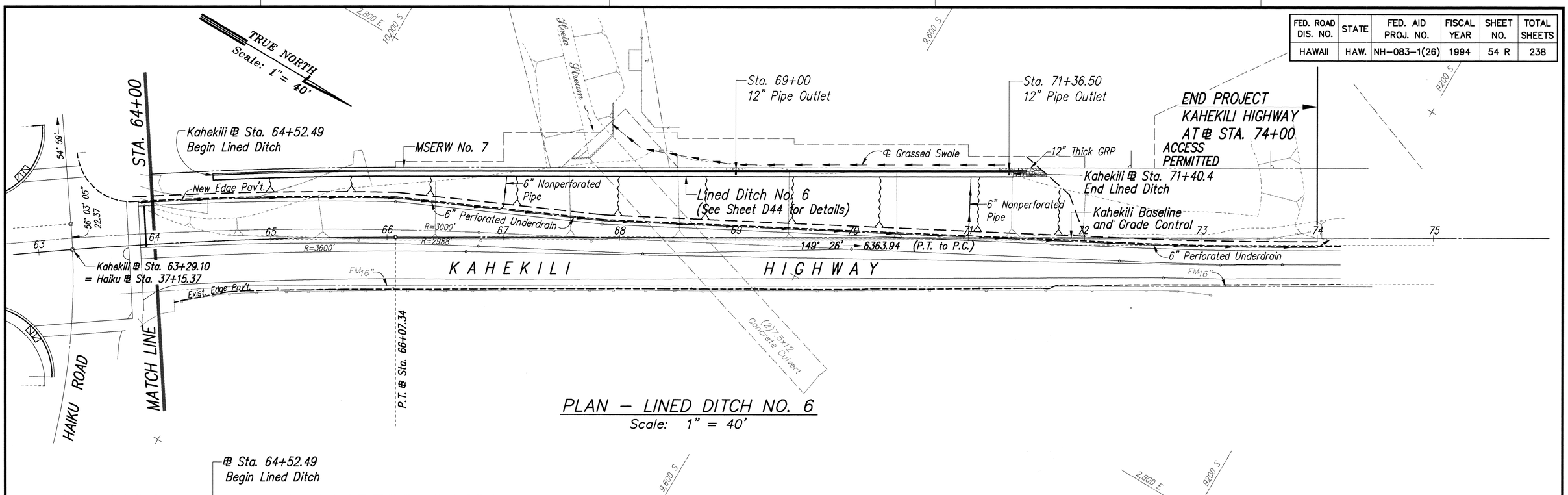
AS-BUILT C.O. ADD. 53

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
ORIGINAL PLAN
NOTEBOOK
No.

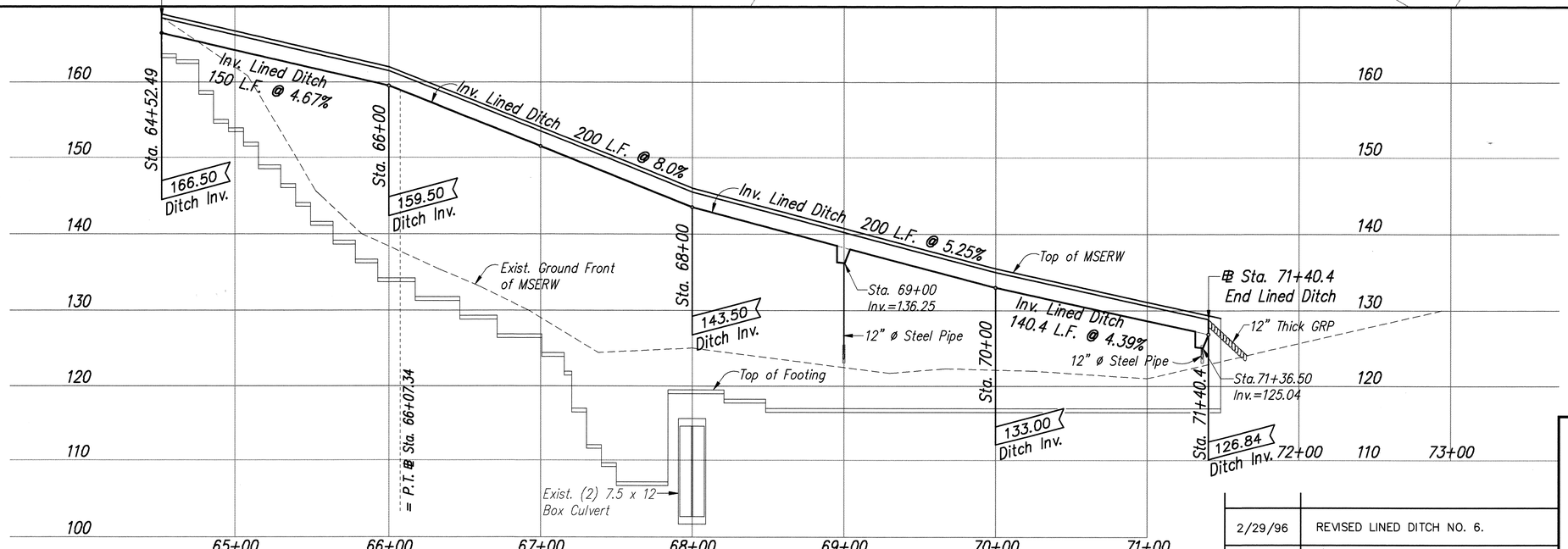
ROTATED: 129° 28' 30"
BASE PT. 0.0

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAPLAGR 6/17/94 AMM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	54 R	238



PLAN – LINED DITCH NO. 6
Scale: 1" = 40'



PROFILE – LINED DITCH NO. 6
Scale: Horiz. 1" = 40'
Vert. 1" = 8'

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWM (For Sewer Work within Public Road R/W only) — 10/10/94 DATE

** SIGNATURE HAS BEEN DIGITIZED

ROY M. MIKAMI — LICENSED PROFESSIONAL ENGINEER — NO. 1595-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

DEXTER S. EJI — REGISTERED PROFESSIONAL ENGINEER — No. 4739-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

DATE	REVISION
2/29/96	REVISED LINED DITCH NO. 6.
7/13/94	ADDED EXIST. 16" SEWER FORCE MAIN
6/07/94	EXTENDED GRASSED SWALE.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN AND PROFILE
LINED DITCH NO. 6

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED — DATE: APRIL 1994

SHEET No. D15 OF D49 SHEETS

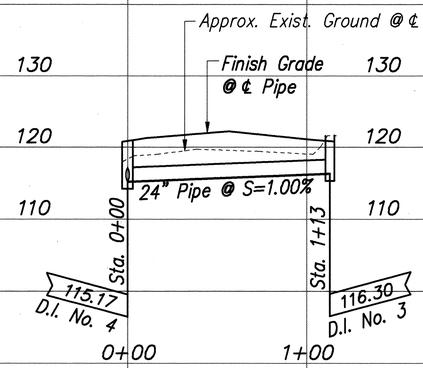
AS-BUILT C.O. ADD. 54 R

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

ROTATED: 120° 34'
BASE PT. 0,0

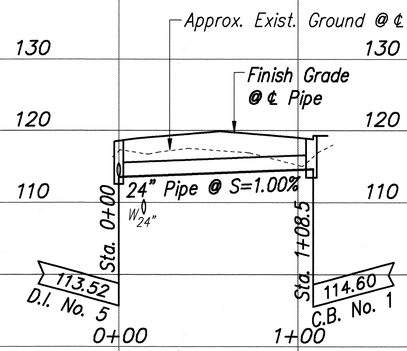
I:\PP-STATE\DOT-HAIKU\3-MODENDUM
DRAP.CRC 2/29/96 AMM KSU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	55	238



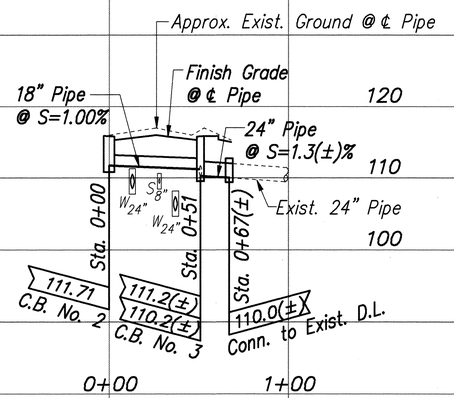
DRAIN LINE "A1"

℄ Sta. 15+20



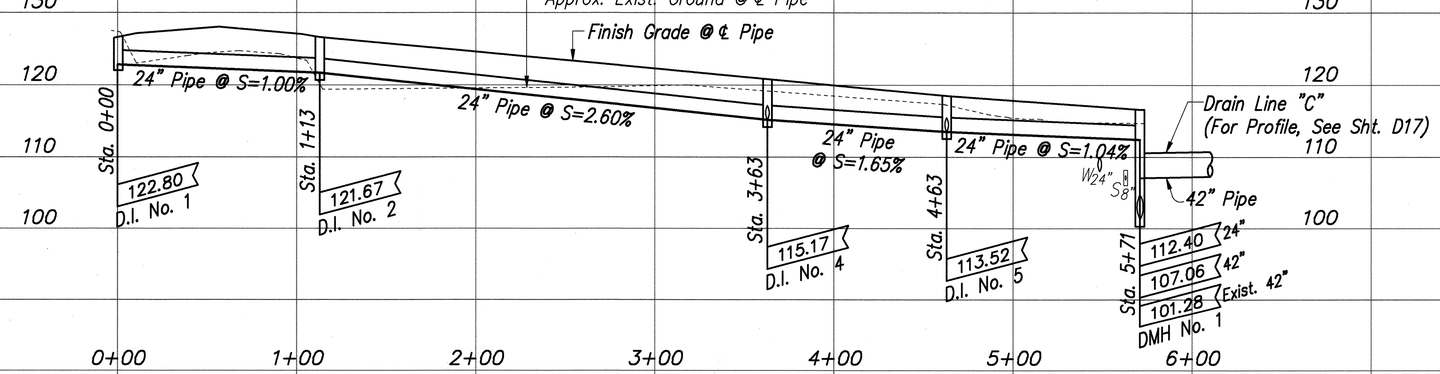
DRAIN LINE "A2"

℄ Sta. 16+20



DRAIN LINE "B"

℄ Sta. 16+92 to ℄ Sta. 17+42



DRAIN LINE "A"

℄ Sta. 12+70 to ℄ Sta. 17+28

Scale: Horiz. 1"= 40'
Vert. 1"= 10'

DATE	REVISION
11/06/95	REVISED DRAIN LINE "B"; ADDED LOCATION OF 24" WATER ON DRAIN LINE "A2"
7/13/94	ADDED APPROVAL BLOCK FOR DWWM. ADDED R.C. JACKET FOR 8" SEWER.

ROY MANABU MIYAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING
↔ SIGNATURE HAS BEEN DIGITIZED

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only)
↔ SIGNATURE HAS BEEN DIGITIZED

10/10/94
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D16 OF D49 SHEETS

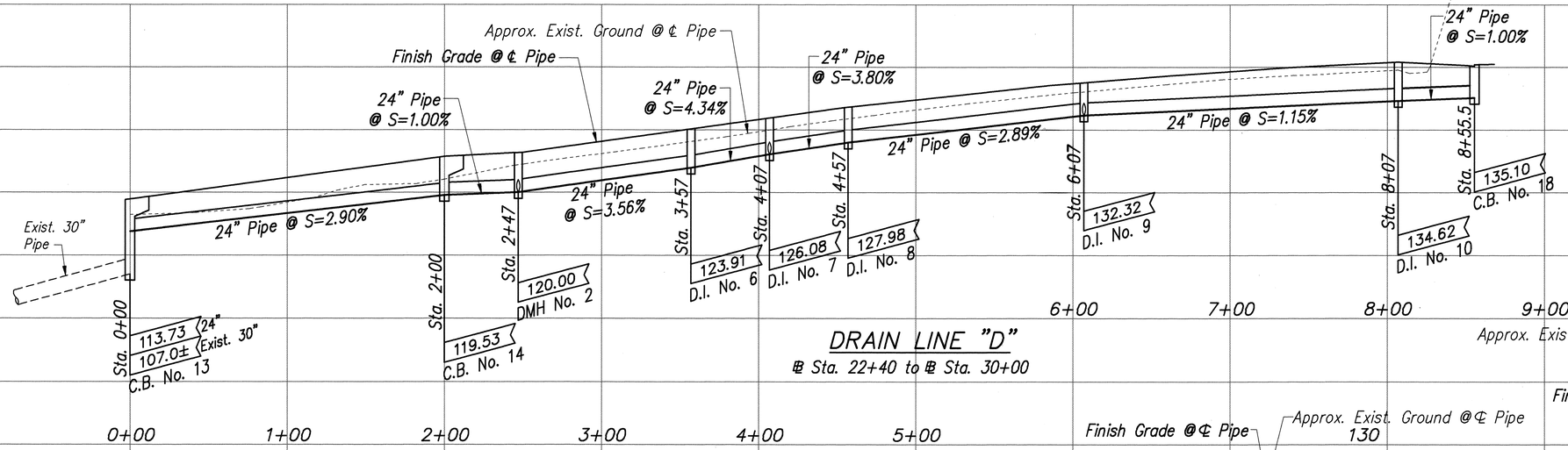
AS-BUILT C.O. 55 R

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

ROTATED: BASE PT:

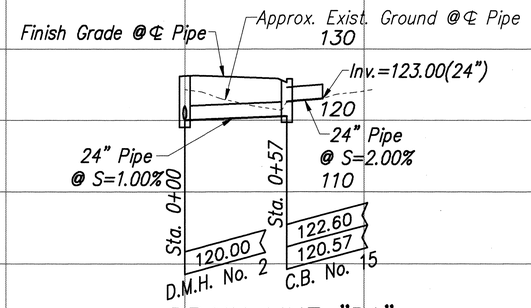
U:\ENGR\DOT\KAHEKILI\ADDENDUM
DRAFROM 11/06/95 AMM DAS

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	56	238



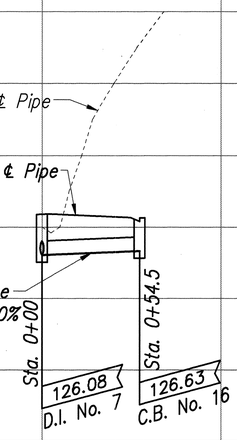
DRAIN LINE "D"

℄ Sta. 22+40 to ℄ Sta. 30+00



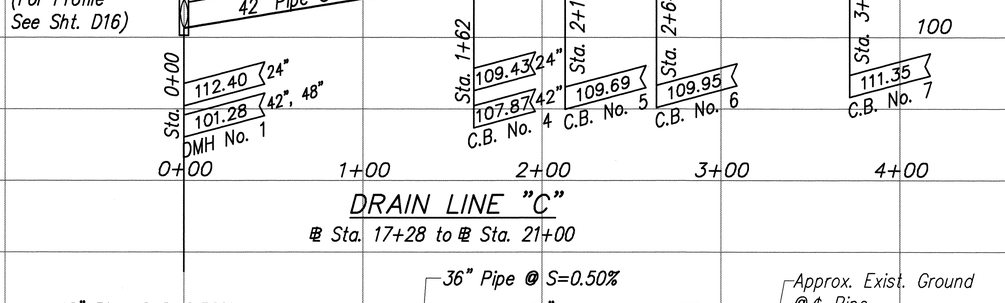
DRAIN LINE "D1"

℄ Sta. 24+40



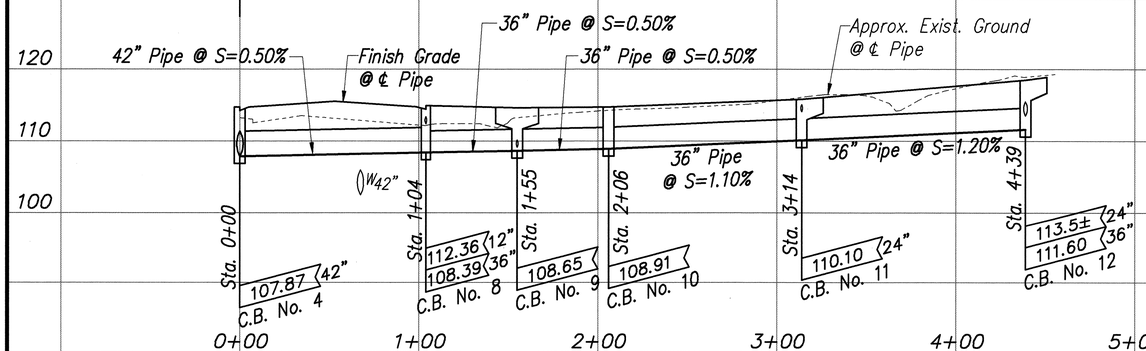
DRAIN LINE "D2"

℄ Sta. 26+00



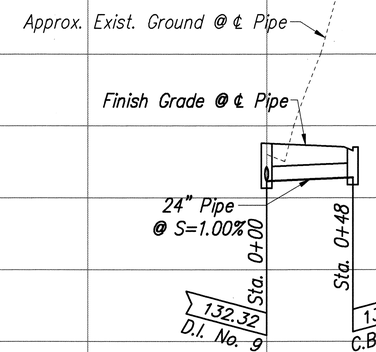
DRAIN LINE "C"

℄ Sta. 17+28 to ℄ Sta. 21+00



DRAIN LINE "C1"

℄ Sta. 18+90 to ℄ Sta. 22+25



DRAIN LINE "D3"

℄ Sta. 28+00

Scale: Horiz. 1"= 40'
Vert. 1"= 10'

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM
(For Sewer Work within Public Road R/W only)
** SIGNATURE HAS BEEN DIGITIZED

10/10/94
DATE

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING
** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D17 OF D49 SHEETS

DATE	REVISION
10/2/96	REVISED DRAIN LINE "C" PROFILE
7/13/94	ADDED DWWM SIGNATURE BLOCK.

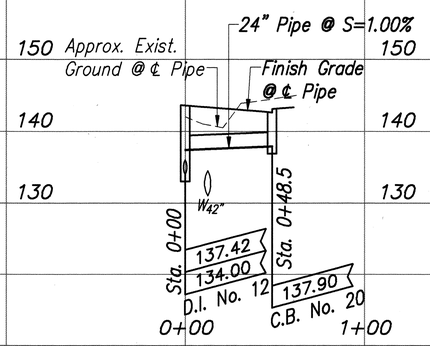
AS-BUILT C.O. 56 R

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

ROTATED: BASE PT:

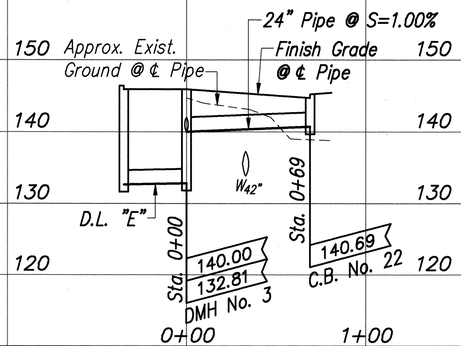
DB: STATE\DOT\KAHEKILI\ADDENDUM
DGN/DRG: 10/2/96 AMM GHT KSU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	57R	238



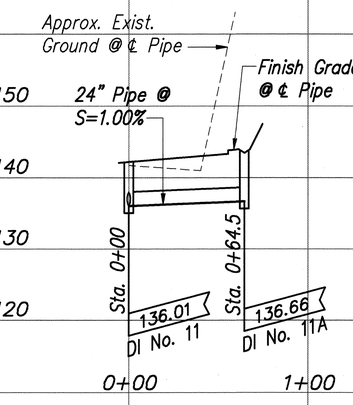
DRAIN LINE "E1"

℄ Sta. 32+80



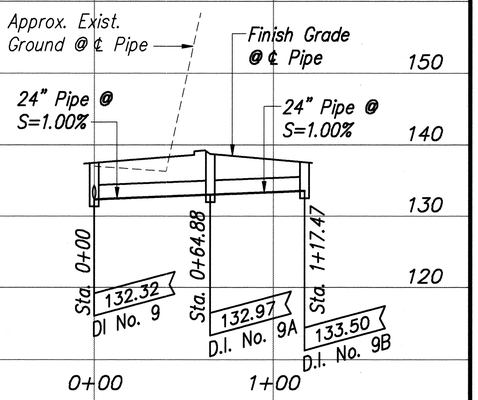
DRAIN LINE "E2"

℄ Sta. 35+10



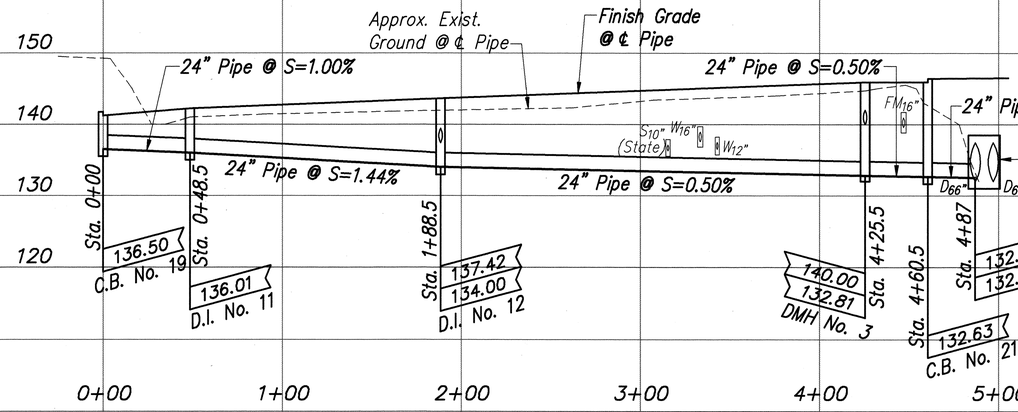
DRAIN LINE "E3"

℄ Sta. 31+40



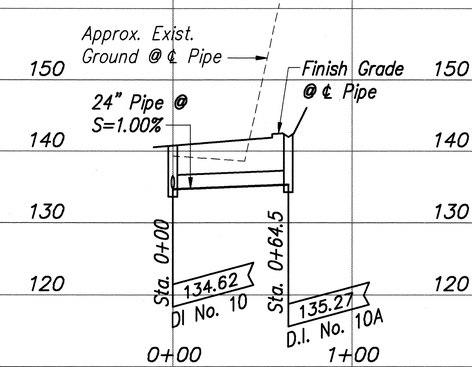
DRAIN LINE "D4"

℄ Sta. 28+00



DRAIN LINE "E"

℄ Sta. 31+40 to ℄ Sta. 35+38.8



DRAIN LINE "D5"

℄ Sta. 30+00

Scale: Horiz. 1"= 40'
Vert. 1"= 10'

DATE	REVISION
11/06/95	ADD DRAIN LINE "D4", "D5" AND "E3"
7/13/94	ADDED DWWM SIGNATURE BLOCK. ADDED R.C. JACKET FOR FM SEWER.

ROY MANABU MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM
(For Sewer Work within Public Road R/W only)
** SIGNATURE HAS BEEN DIGITIZED

10/10/94
DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING
** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D18 OF D49 SHEETS

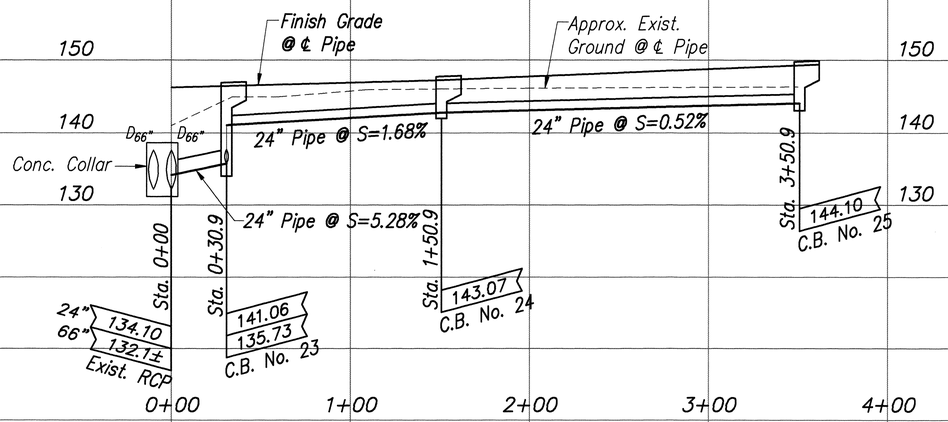
AS-BUILT C.O. 57 R

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

ROTATED: BASE PT:

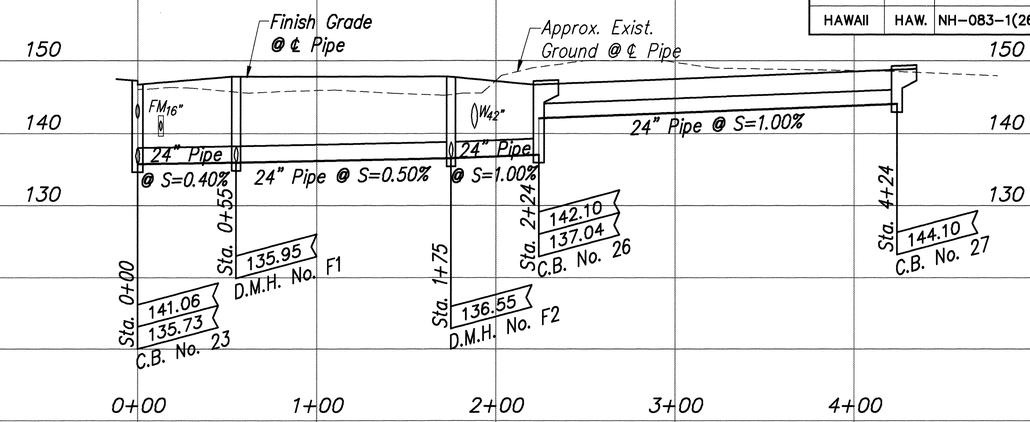
LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAWING: 11/06/95 GM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	58	238



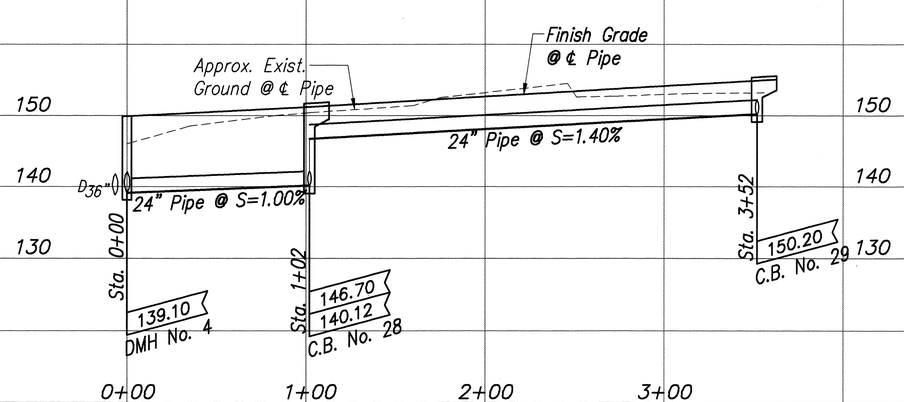
DRAIN LINE "F"

℄ Sta. 35+49.1 to ℄ Sta. 39+00



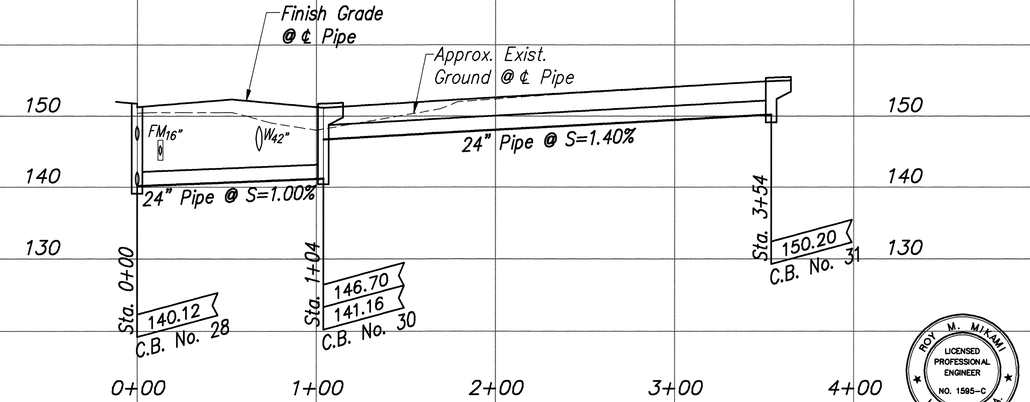
DRAIN LINE "F1"

℄ Sta. 35+80 to ℄ Sta. 39+00



DRAIN LINE "G"

℄ Sta. 39+98(±) to ℄ Sta. 43+50



DRAIN LINE "G1"

℄ Sta. 41+00 to ℄ Sta. 43+50

Scale: Horiz. 1"= 40'
Vert. 1"= 10'

DATE	REVISION
6/21/96	REVISED DRAIN LINES "F" & "F1".
7/13/94	ADDED DWWM SIGNATURE BLOCK.

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) — DATE 10/10/94

* SIGNATURE HAS BEEN DIGITIZED

ROY M. MIKAMI — LICENSED PROFESSIONAL ENGINEER — NO. 1595-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

DEXTER S. EJI — REGISTERED PROFESSIONAL ENGINEER — No. 4739-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED — DATE: APRIL 1994

SHEET No. D19 OF D49 SHEETS

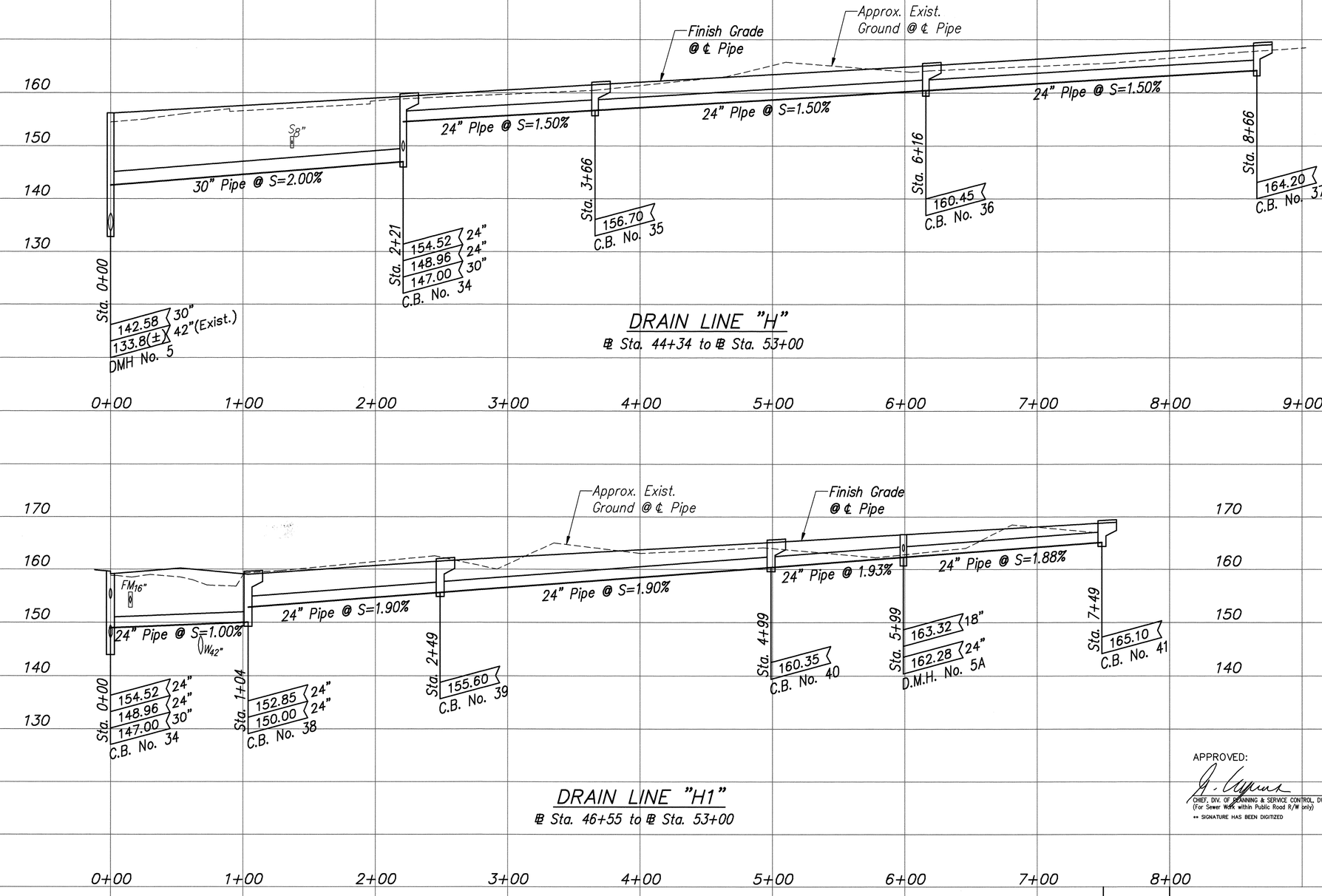
AS-BUILT C.O. 58 R

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
ORIGINAL PLAN
NOTEBOOK No.

ROTATED: BASE PT:

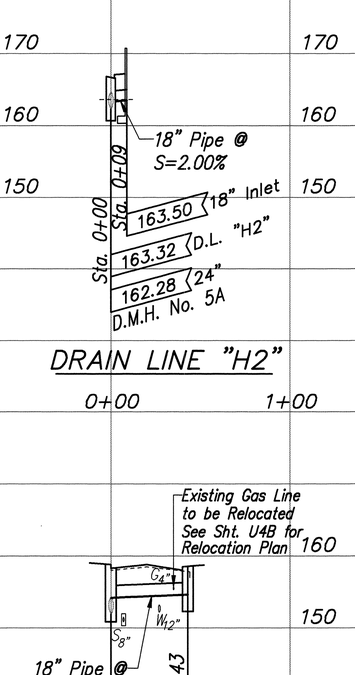
I:\BL: STATE\DOT\KAHEKILI\ADDENDUM DRWFARC 6/21/96 KSJ

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	59	238



DRAIN LINE "H"

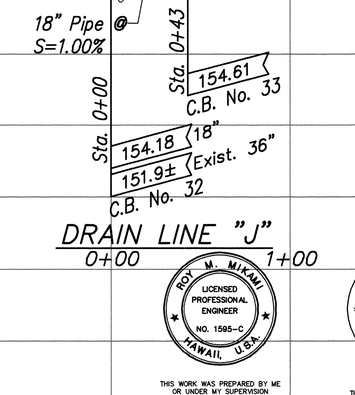
℄ Sta. 44+34 to ℄ Sta. 53+00



DRAIN LINE "H2"

DRAIN LINE "H1"

℄ Sta. 46+55 to ℄ Sta. 53+00



DRAIN LINE "J"

Scale: Horiz. 1"= 40'
Vert. 1"= 10'

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) — DATE 10/10/94

** SIGNATURE HAS BEEN DIGITIZED

ROY M. MIKAMI — LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

DEXTER S. FUJI — REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

DATE	REVISION
7/26/96	REVISED DRAIN LINE "J" AND ADDED EXISTING 12" WATER AND 4" GAS LINES.
7/13/94	ADDED DWWM SIGNATURE BLOCK. REVISED DRAIN LINE "J" AND ADDED 8" SEWER w/R.C. JACKET.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED — DATE: APRIL 1994

SHEET No. D20 OF D49 SHEETS

AS-BUILT C.O. 59 R

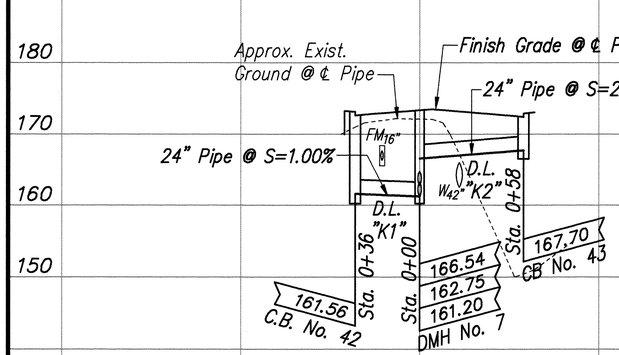
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

ROTATED: BASE PT.

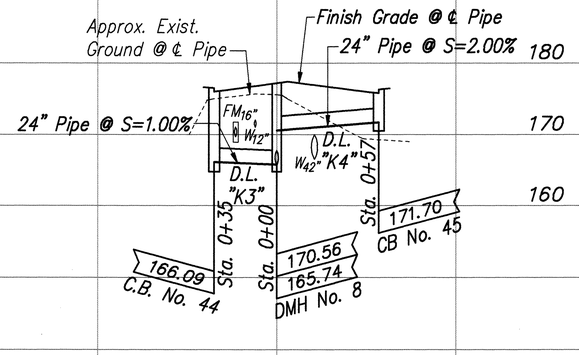
LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAWDIR 7/26/94 AMM GHT KSU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	60	238



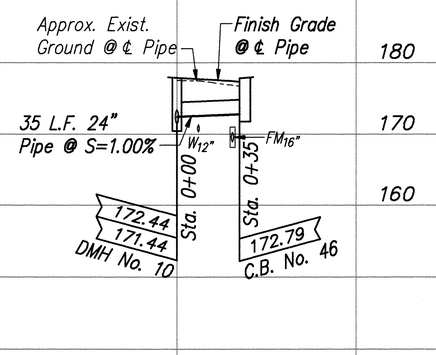
DRAIN LINE "K1" & "K2"

℄ Sta. 55+50



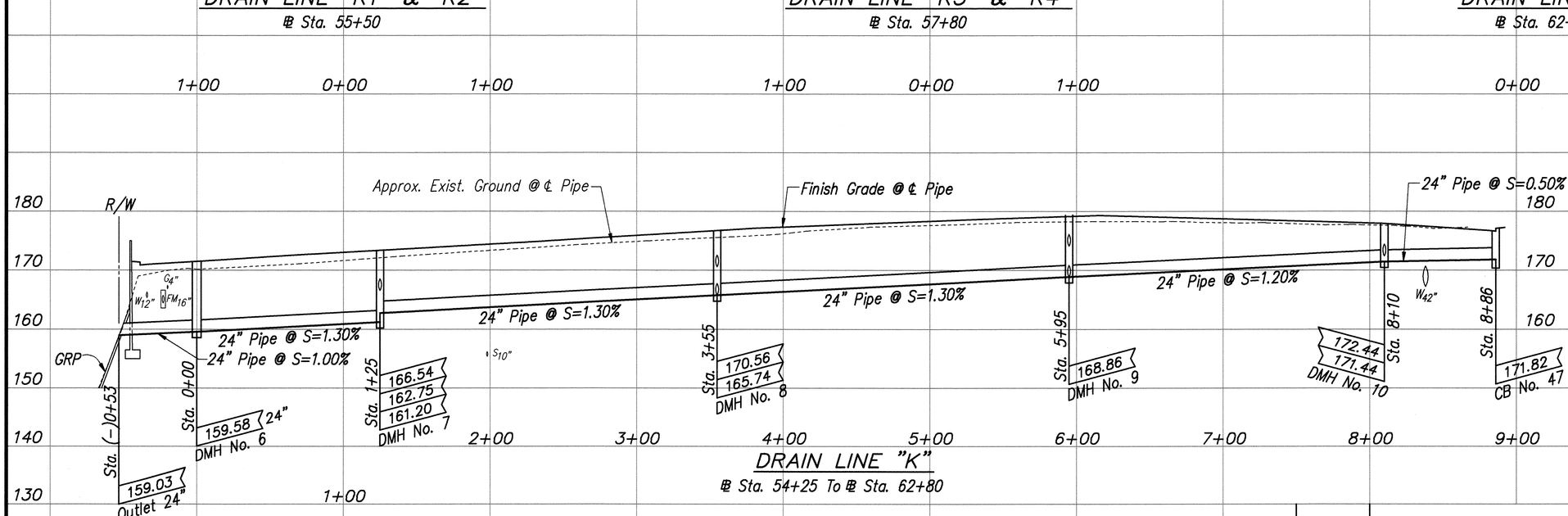
DRAIN LINE "K3" & "K4"

℄ Sta. 57+80



DRAIN LINE "K5"

℄ Sta. 62+35



DRAIN LINE "K"

℄ Sta. 54+25 To ℄ Sta. 62+80

Scale: Horiz. 1"= 40'
Vert. 1"= 10'

DEXTER S. ELI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only)

10/10/94
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D21 OF D49 SHEETS

DATE	REVISION
7/13/94	ADDED DWWM SIGNATURE BLOCK.

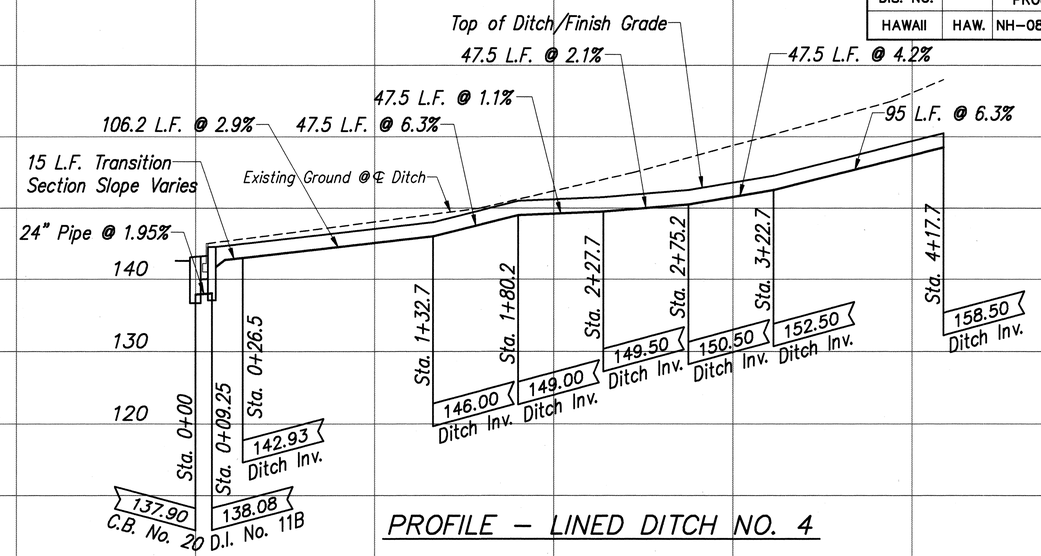
AS-BUILT 60 R

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

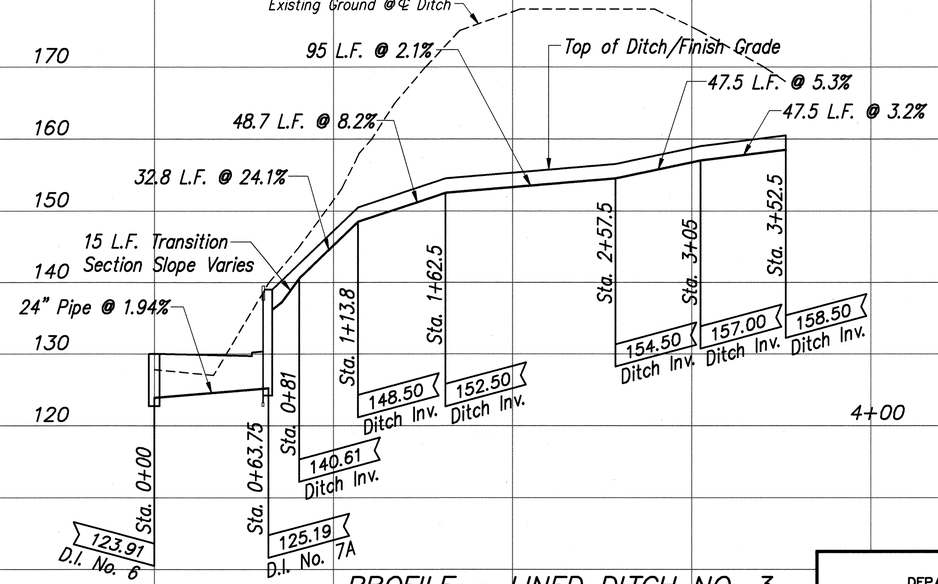
ROTATED: BASE PT.

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAPROGR 6/12/94 AMM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	61	238



PROFILE – LINED DITCH NO. 4



PROFILE – LINED DITCH NO. 3

Scale: Horiz. 1"= 40'
Vert. 1"= 10'

DATE	REVISION
11/06/95	DELETED LINED DITCH NO. 1 AND NO. 2

ROY MANABU MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING
** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

LINED DITCH NOS. 3 AND 4

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D22 OF D49 SHEETS

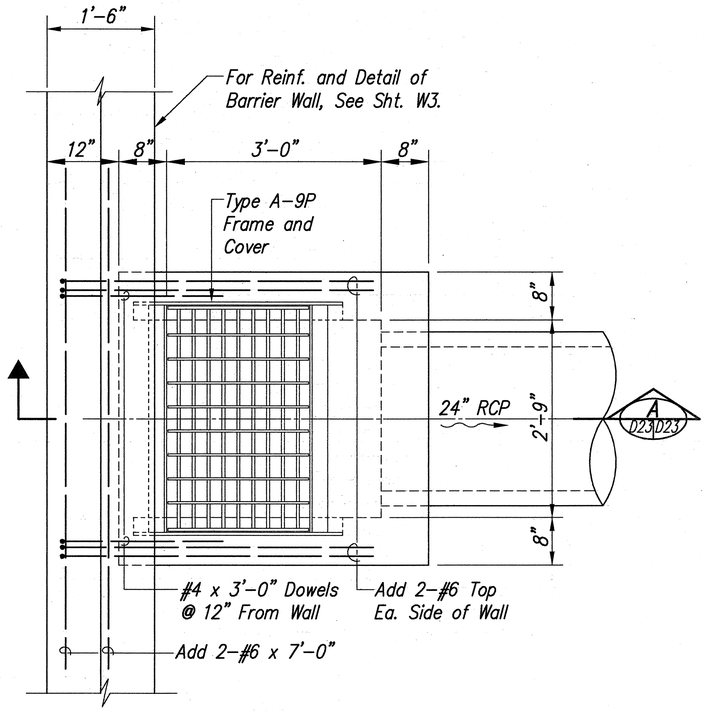
AS-BUILT C.O. 61

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

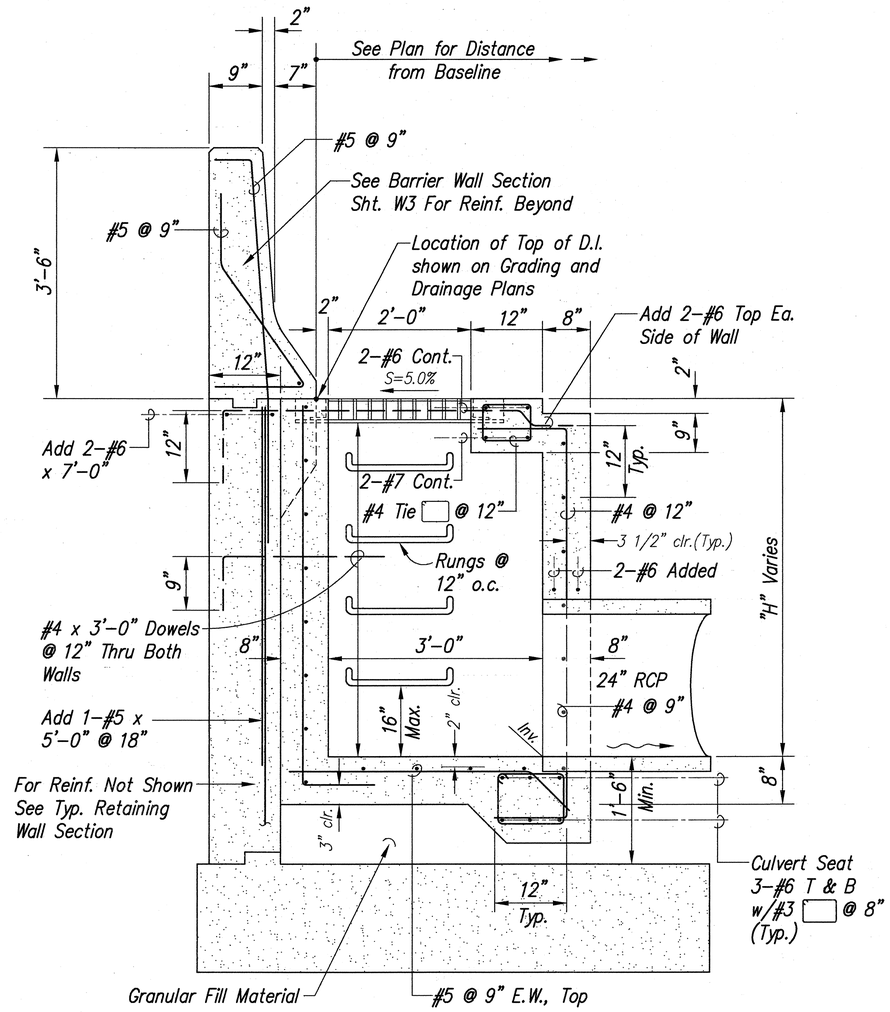
ROTATED: BASE PT.

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAWING 11/06/95 AMM GM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	62	238



PLAN



SECTION A D23 D23

TYPE I GRATED CONCRETE DRAIN INLET DETAILS

Scale: 1" = 1'-0"

T I T KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PlanTech, Inc. dba PARK ENGINEERING

DEXTER S. EU
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PlanTech, Inc. dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D23 OF D49 SHEETS

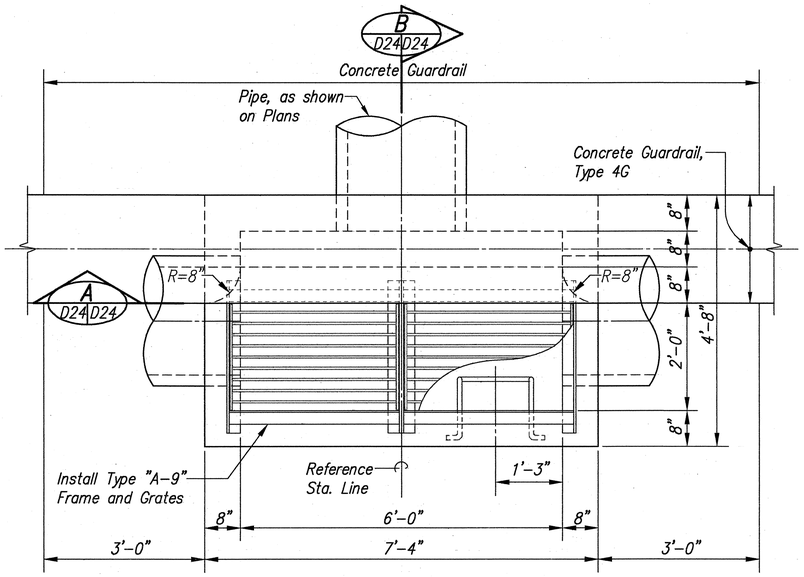
AS-BUILT 62

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

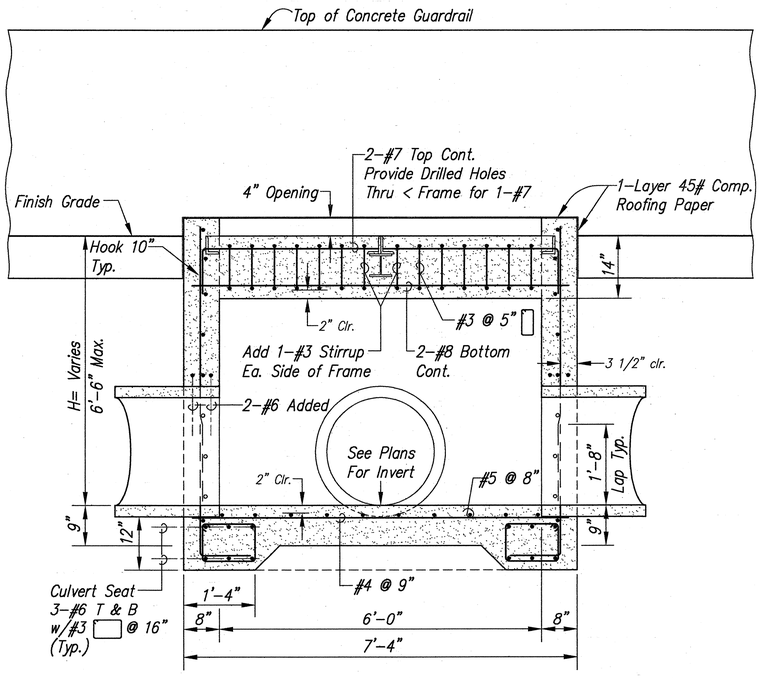
ROTATED: BASE PT.

DB: STATE\DOT\KAHEKILI\KAHE1S9\ DRAFT1 5/23/94 AMM

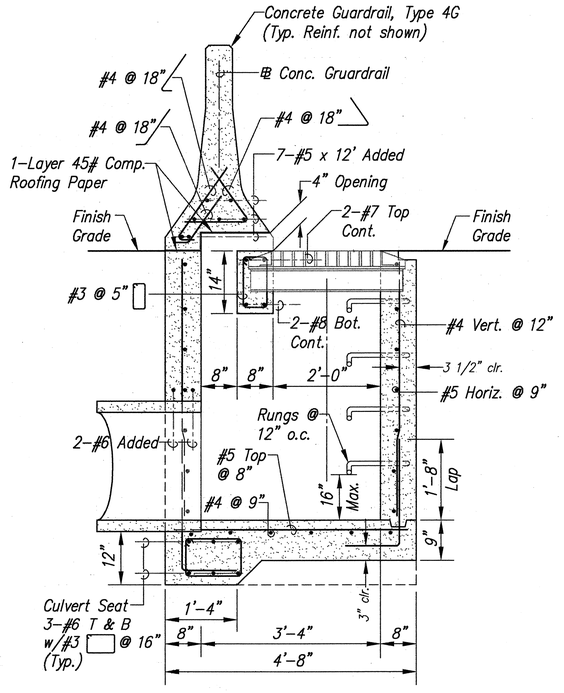
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	63	238



PLAN



SECTION A D24D24



SECTION B D24D24

TYPE II MEDIAN DROP INLET DETAILS

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

KWONG CHUN TIT
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

DEXTER S. EU
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D24 OF D49 SHEETS

AS-BUILT 63

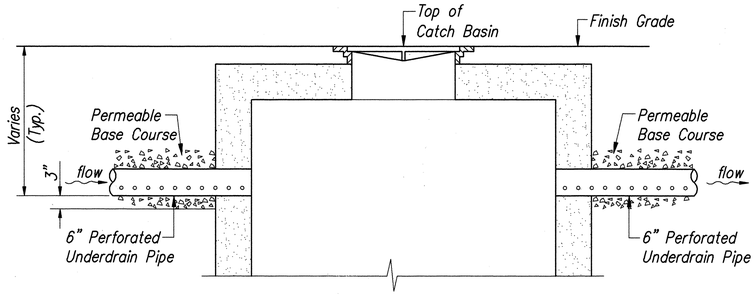
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

ROTATED: BASE PT.

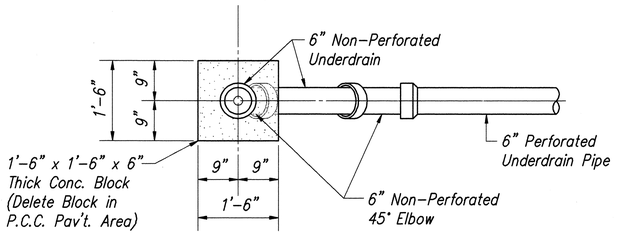
LIB: STATE\DOT\KAHEKILI\KAHE169\
DRAWING 5/21/94 JMM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	64	238

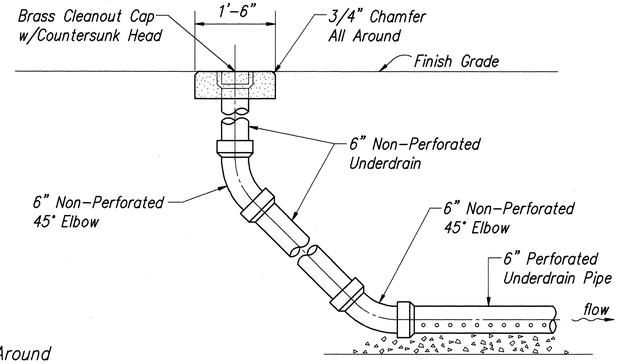


TYPICAL CONNECTION OF UNDERDRAIN TO DRAINAGE STRUCTURE

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

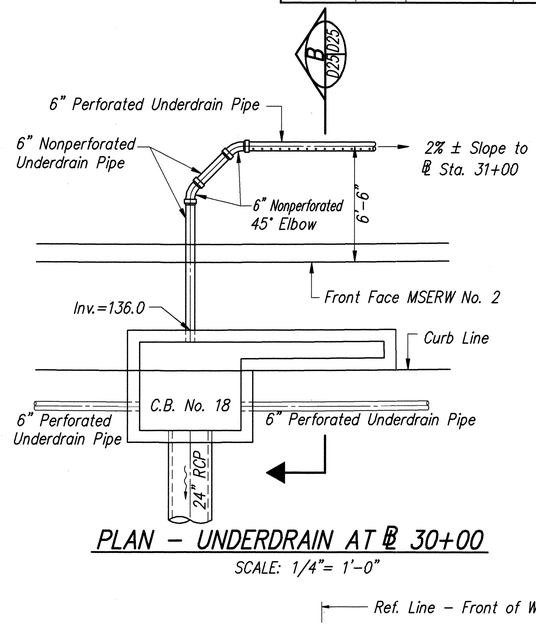


PLAN



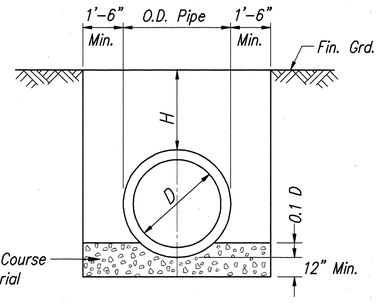
TYPICAL CLEANOUT DETAIL

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



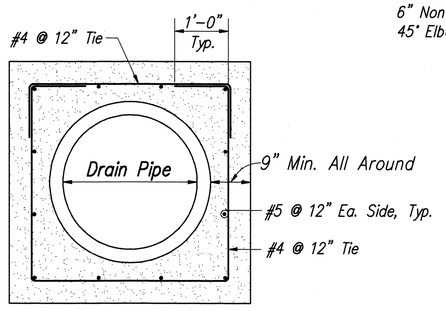
PLAN – UNDERDRAIN AT ℄ 30+00

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



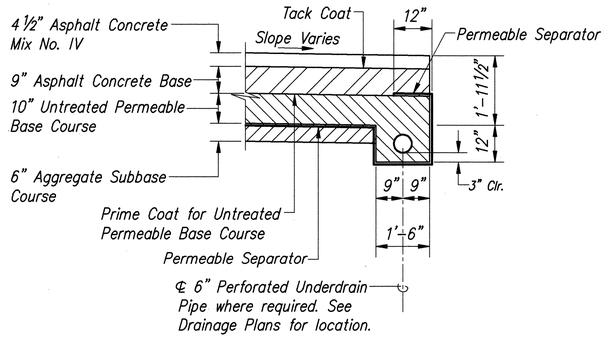
TYP. TRENCH FOR DRAIN PIPES

Not to Scale



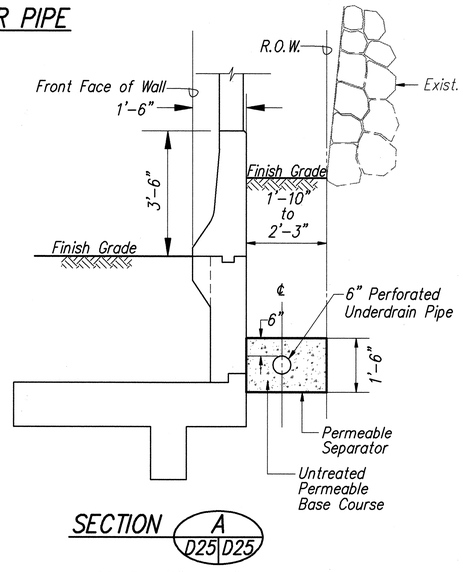
CONCRETE JACKET FOR PIPE

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



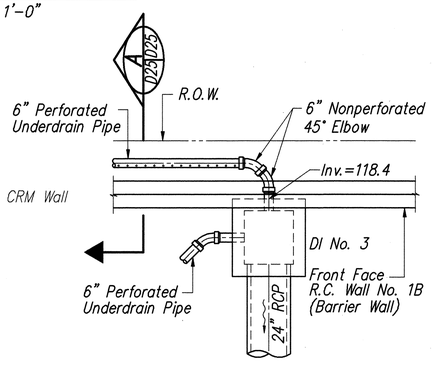
6" PERFORATED UNDERDRAIN DETAIL

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



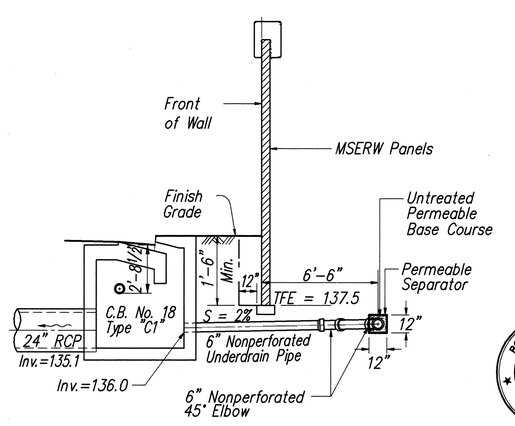
SECTION A D25 D25

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



PLAN – UNDERDRAIN AT ℄ 15+20

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



SECTION B D25 D25

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

ROY M. MIKAMI REGISTERED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEx, Inc. dba PARK ENGINEERING

11/01/95	ADDED UNDERDRAIN DETAILS AT ℄ STA. 15+20 AND ℄ STA. 30+00
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D25 OF D49 SHEETS

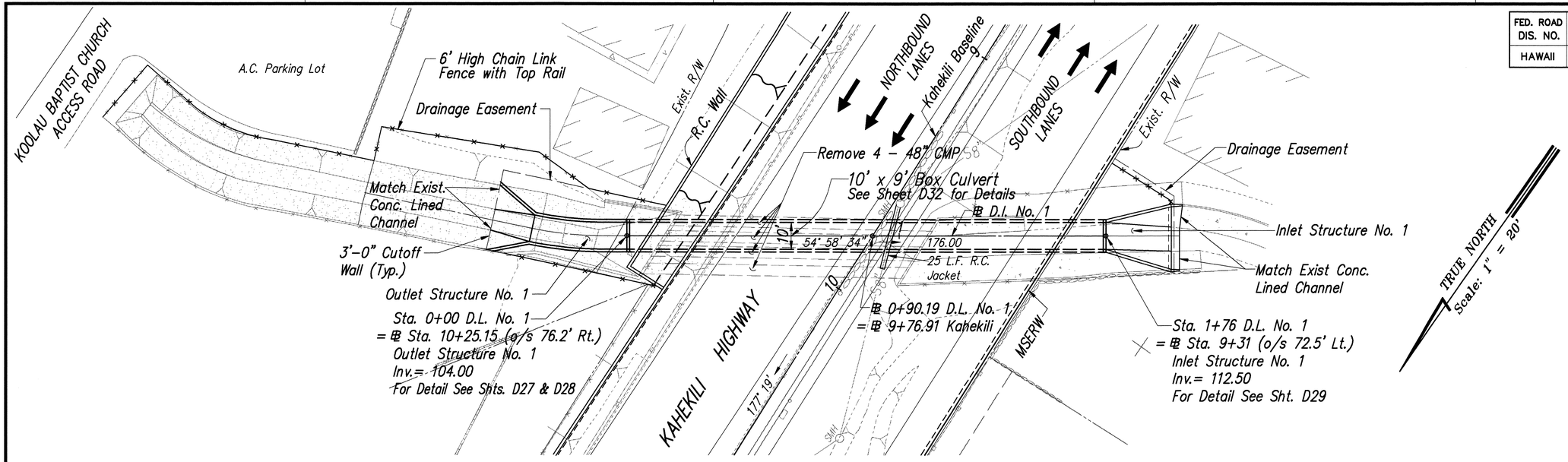
AS-BUILT C.O. 64

ORIGINAL PLAN | NOTEBOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

ROTATED: BASE PT.

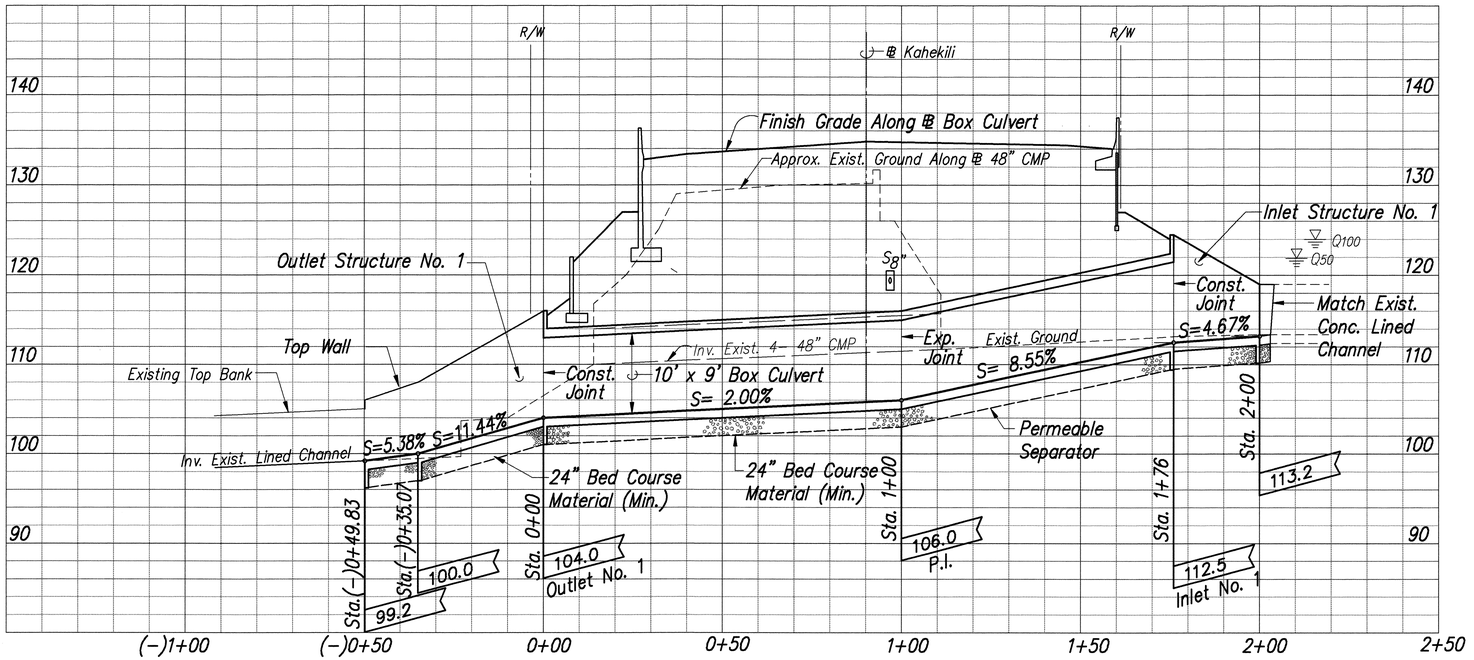
UB: STATE\DOT\KAHEKILI\ADDENDUM
DRAWING 11/01/95 AMM KSU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	65	238



PLAN - DRAIN LINE NO. 1

Scale: 1" = 20'



PROFILE - DRAIN LINE NO. 1

Scale: Horiz. 1" = 20'
Vert. 1" = 8'

Note: *Permeable Separator shall not be measured for payment but shall be considered incidental to Bed Course material and no payment shall be made.*

APPROVED:

10/10/94
CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) — DATE
** SIGNATURE HAS BEEN DIGITIZED

ROY M. MIKAMI — LICENSED PROFESSIONAL ENGINEER — NO. 1595-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

DEXTER S. EU — REGISTERED PROFESSIONAL ENGINEER — No. 4739-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

DATE	REVISION
6/5/96	REVISED OUTLET STRUCTURE NO. 1.
7/13/94	ADDED DWWM SIGNATURE BLOCK. REVISED R.C. JACKET FOR 8" SEWER.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
DRAIN LINE NO. 1

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED — DATE: APRIL 1994

SHEET No. D26 OF D49 SHEETS

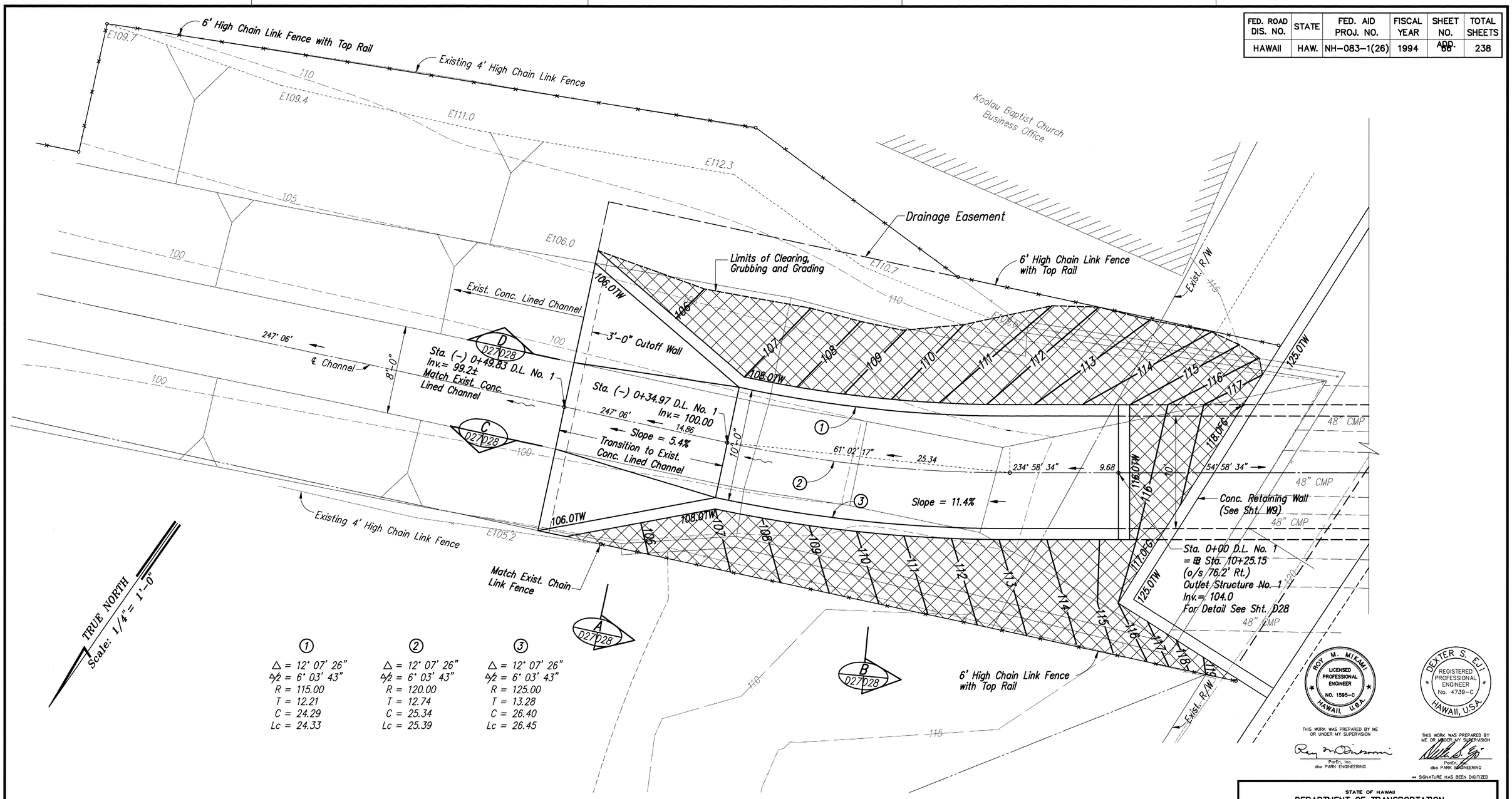
AS-BUILT C.O. 65 R

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

ROTATED: 215° 01' 26.136"
BASE PT. 0,0

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRGETAKE 6/5/96 AIM GHT +GU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	ADD. 66	238



① △ = 12° 07' 26" ½ = 6° 03' 43" R = 115.00 T = 12.21 C = 24.29 Lc = 24.33

② △ = 12° 07' 26" ½ = 6° 03' 43" R = 120.00 T = 12.74 C = 25.34 Lc = 25.39

③ △ = 12° 07' 26" ½ = 6° 03' 43" R = 125.00 T = 13.28 C = 26.40 Lc = 26.45

LEGEND:

Erosion Control Matting on Grassed Surface w/6" Planting Soil

PLAN – OUTLET STRUCTURE NO. 1

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

ParEn, Inc. dba PARK ENGINEERING

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.

ParEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

DATE	REVISION
6/5/96	REVISED OUTLET STRUCTURE NO. 1 AND CHAIN LINK FENCE.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS OUTLET STRUCTURE NO. 1 AND CONC. LINED CHANNEL

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D27 OF D49 SHEETS

AS-BUILT C.O. 66

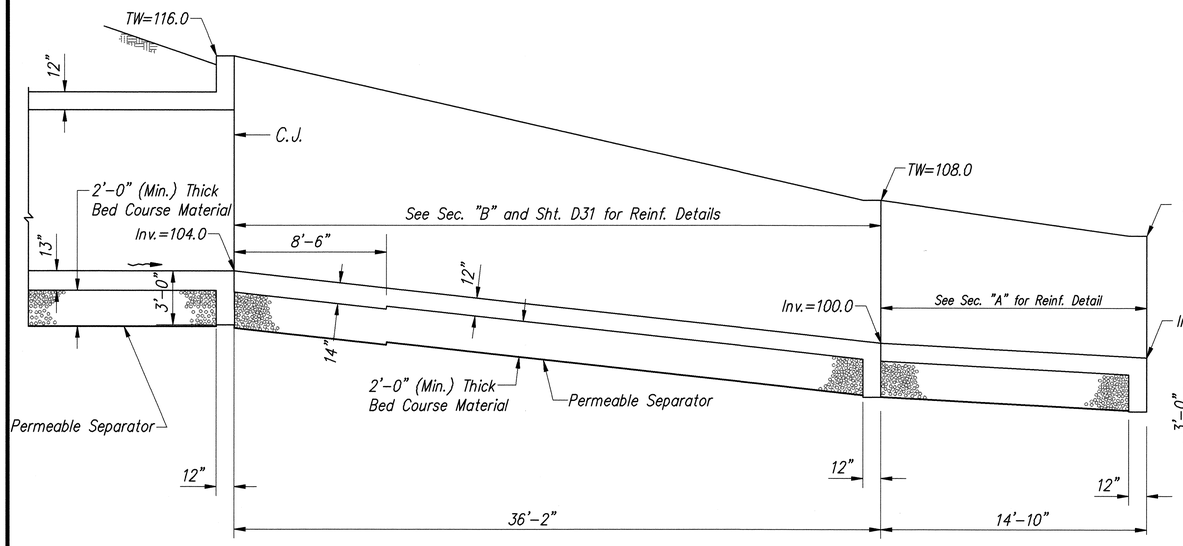
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

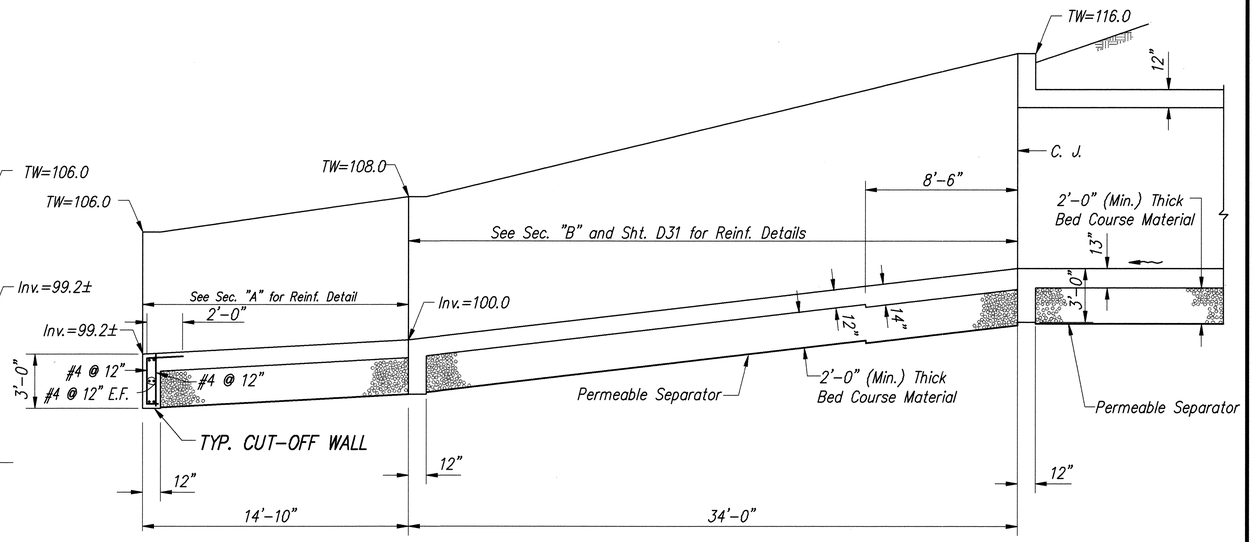
ROTATED: 215° 01' 26.136"
BASE PT: 0,0

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAWING: 6/5/96 AMM 24T KSJ

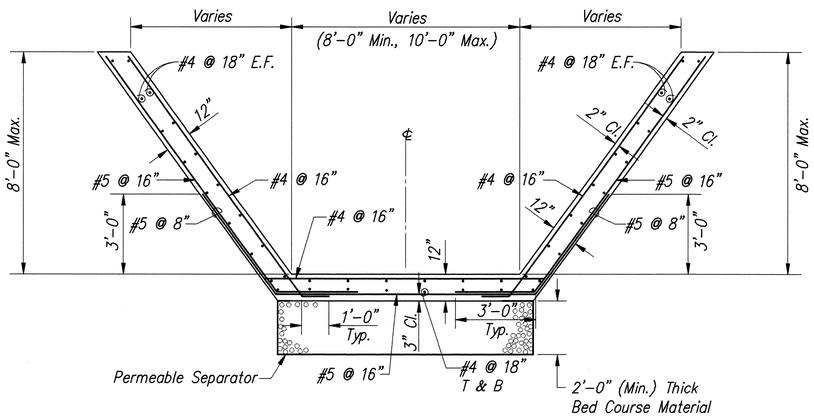
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	67	238



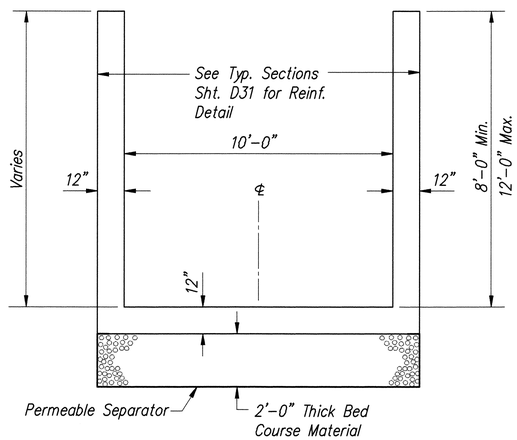
SECTION C (D27/D28)
Scale: 1/4"= 1'-0"



SECTION D (D27/D28)
Scale: 1/4"= 1'-0"



SECTION A (D27/D28)
Scale: 3/8"= 1'-0"



SECTION B (D27/D28)
Scale: 3/8"= 1'-0"

Note: Permeable Separator shall not be measured for payment but shall be considered incidental to Bed Course material and no separate payment shall be made.

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Parkin, Inc. dba PARK ENGINEERING

DEXTER S. EU REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, USA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
OUTLET STRUCTURE NO. 1

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D28 OF D49 SHEETS

DATE	REVISION
7/26/96	REVISED OUTLET STRUCTURE NO. 1 DETAILS

AS-BUILT C.O. 67

DETAIL – OUTLET STRUCTURE NO. 1

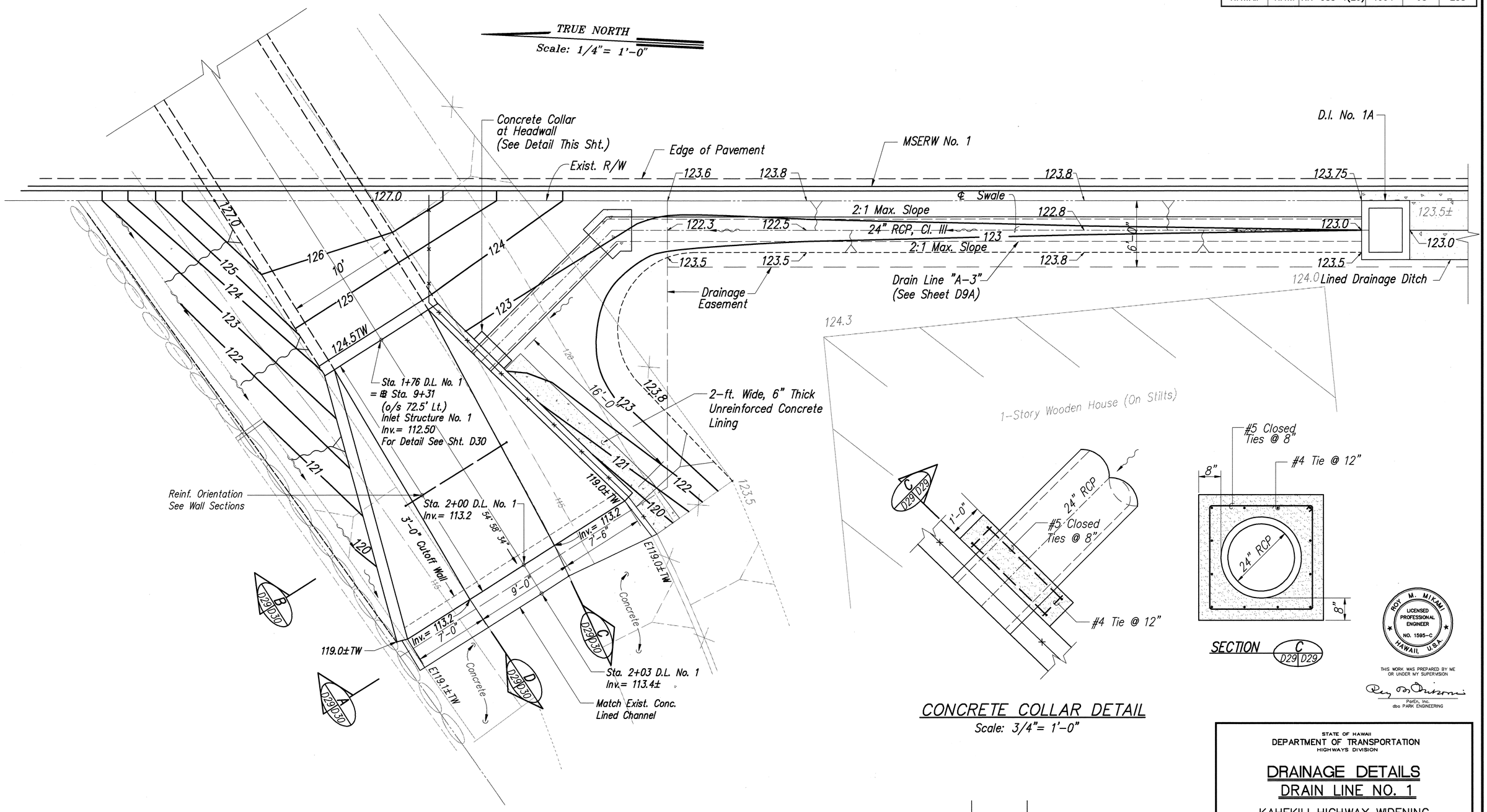
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

ROTATED: 215° 01' 26.136"
BASE PT. 0,0

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAWING 7/26/96 GHT KSU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	68	238



PLAN — INLET STRUCTURE NO. 1

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

CONCRETE COLLAR DETAIL

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

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
DRAIN LINE NO. 1

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D29 OF D49 SHEETS

DATE	REVISION
1/11/96	ADDED DRAIN LINE "A-3" AND REVISED GRADING

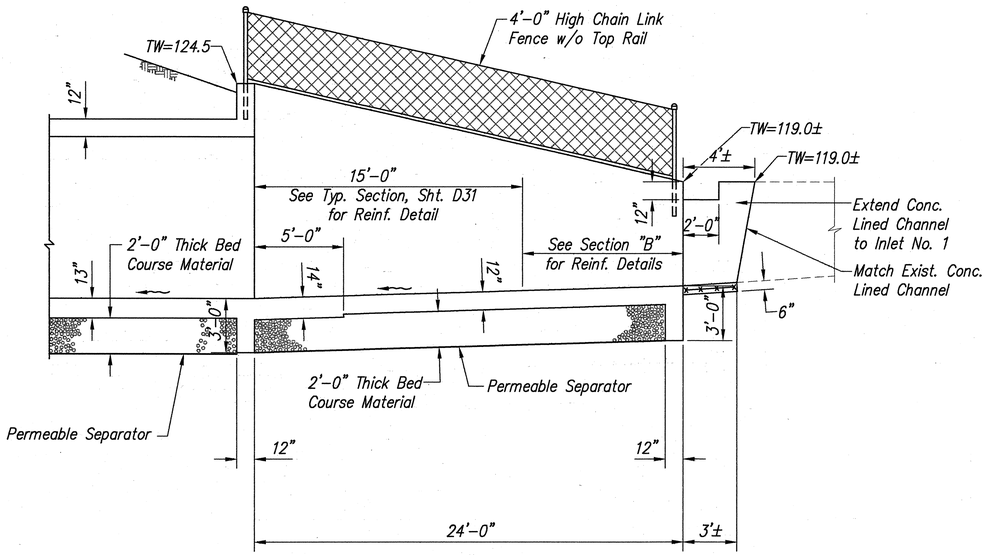
AS-BUILT C.O. 68

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

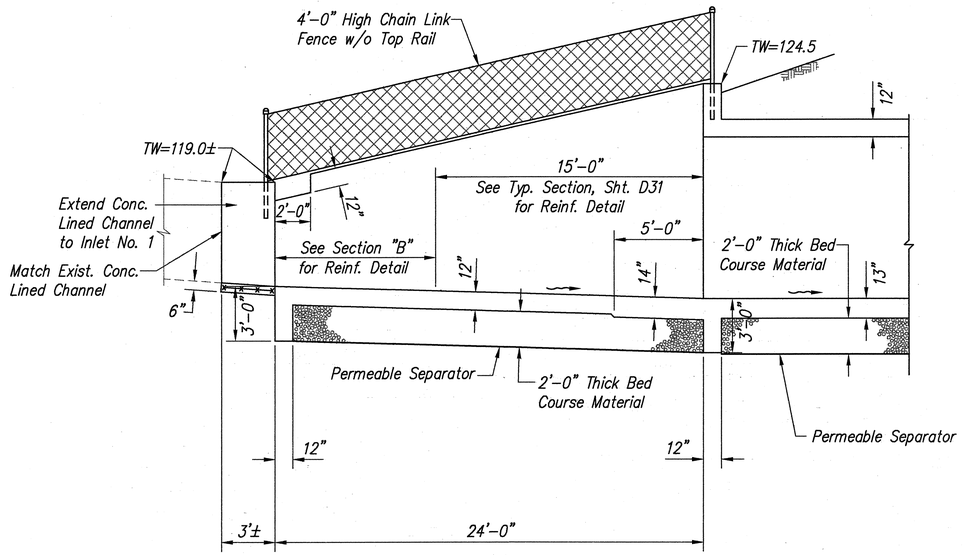
ROTATED: 21.5° 01' 26.136"
BASE PT. 0,0

LIB: STATE:\DOT\KAHEKILI\ADDENDUM
DRAIE7C 1/11/96 TSS KSU

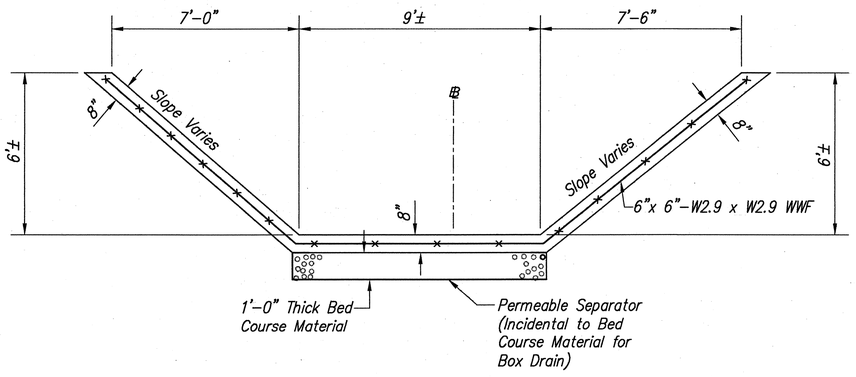
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	69	238



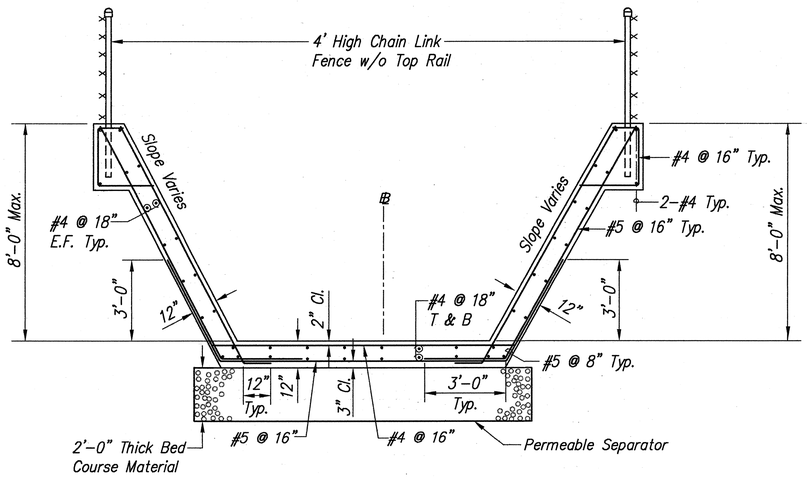
SECTION C (D30D44)
Scale: 1/4"= 1'-0"



SECTION D (D30D44)
Scale: 1/4"= 1'-0"



SECTION A (D30D44)
Scale: 3/8"= 1'-0"



SECTION B (D30D44)
Scale: 3/8"= 1'-0"

Note: Permeable Separator shall not be measured for payment but shall be considered incidental to Bed Course material and no separate payment shall be made.

DETAIL – INLET STRUCTURE NO. 1

DEXTER S. EU
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, USA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
INLET STRUCTURE NO. 1

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D30 OF D49 SHEETS

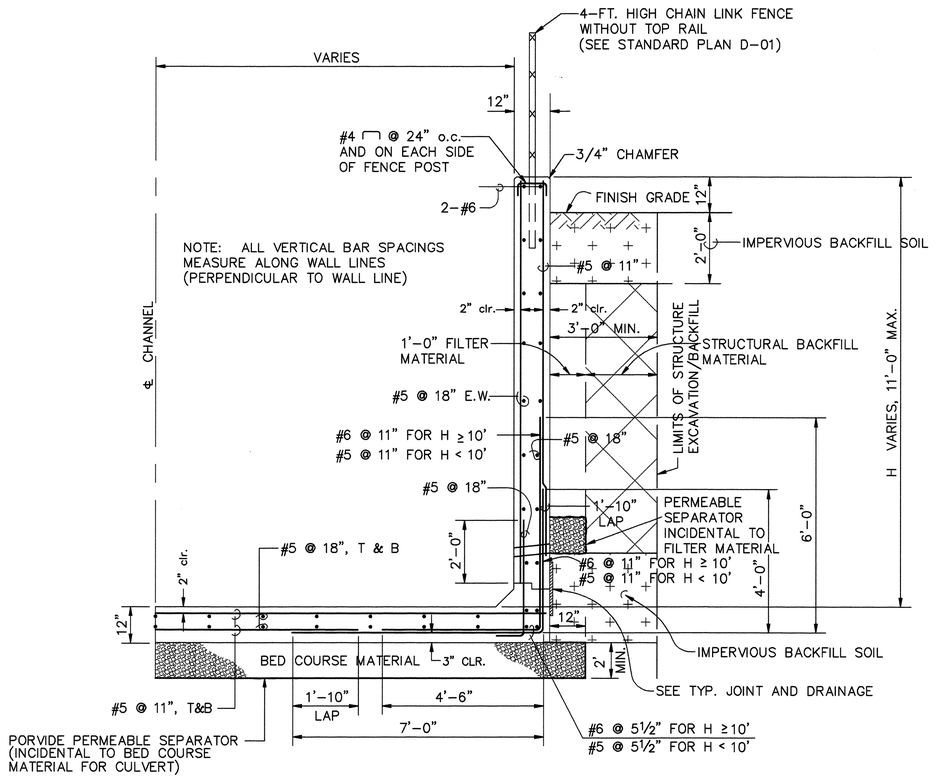
AS-BUILT 69

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

ROTATED: 215° 01' 26.136"
BASE PT: 0,0

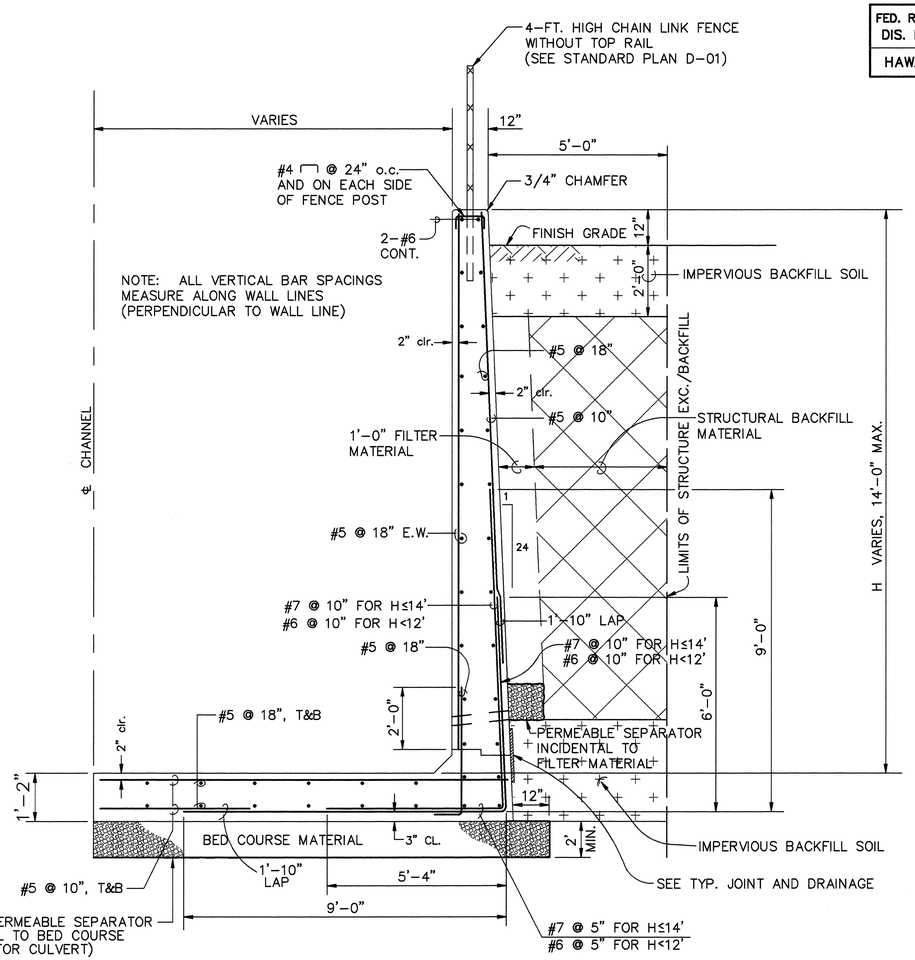
LIB: STATE DOT\KAHEKILI\KAHE169\
DRAWER 5/21/94 GHT

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	ADD. 70	238



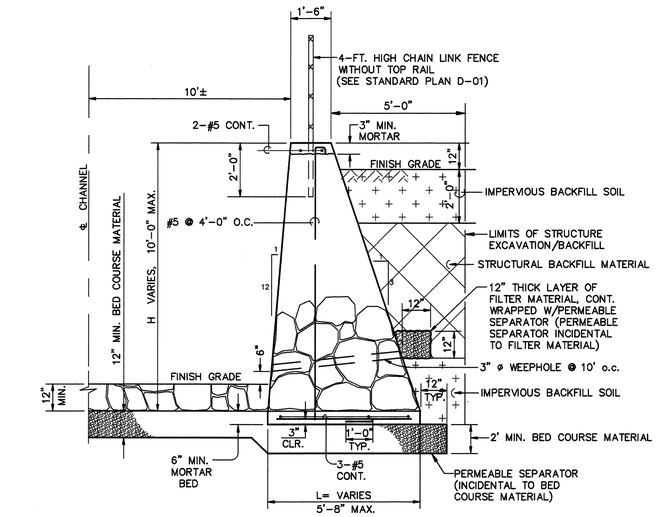
TYPICAL RC CHANNEL WALL SECTION - MAX. HT., (H≥ 11')

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



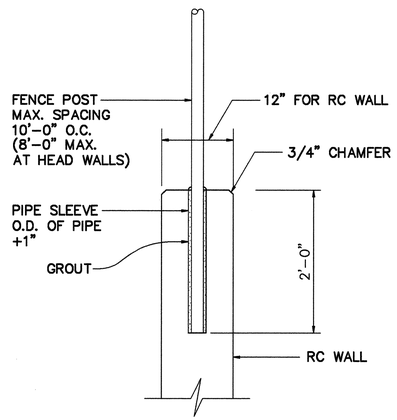
TYPICAL RC CHANNEL WALL SECTION - MAX. HT., (H= 11'-1" TO 14'-0")

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



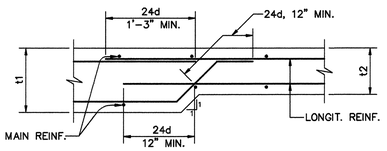
TYPICAL CRM CHANNEL WALL SECTION

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



FENCE POST DETAIL

SCALE: 1"= 1'-0"



SLAB THICKNESS CHANGE

NOT TO SCALE

KWONG CHUN TIT
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RC AND CRM CHANNEL WALL SECTIONS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D31 OF D49 SHEETS

DATE	REVISION
6/07/94	ADDED LIMITS OF STRUCTURAL BACKFILL AND HATCHING.

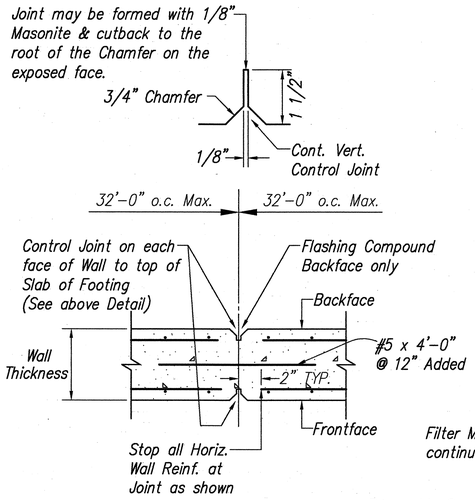
AS-BUILT ADD. 70

ORIGINAL PLAT | NOTEBOOK | No.
SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

ROTATED: BASE PT.

LIB: STATE:\DOT\KAHEKILI\ADDENDUM
DRAGETPR 6/18/94 AAM GHT

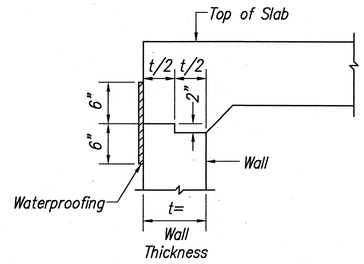
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	71	238



CONTROL JOINT DETAIL

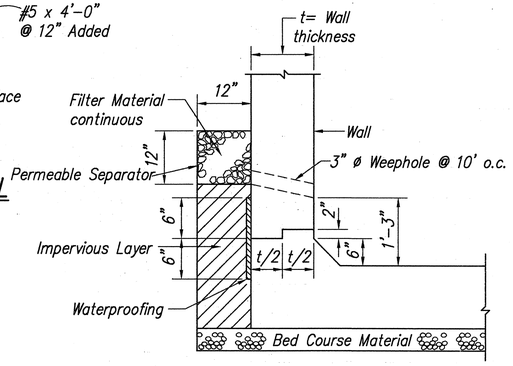
Max. Spacing 30'-0"

Not to Scale



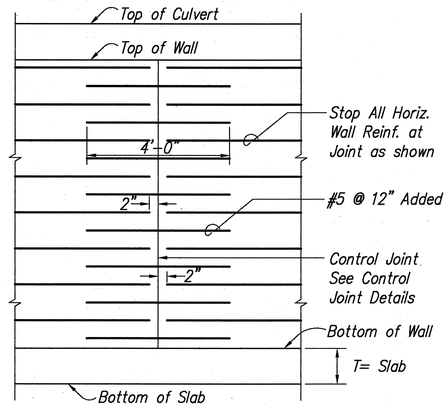
TYPICAL UPPER JOINT DETAIL FOR BOX CULVERT

Not to Scale



TYPICAL JOINT AND DRAINAGE DETAIL FOR BOX CULVERT

Not to Scale

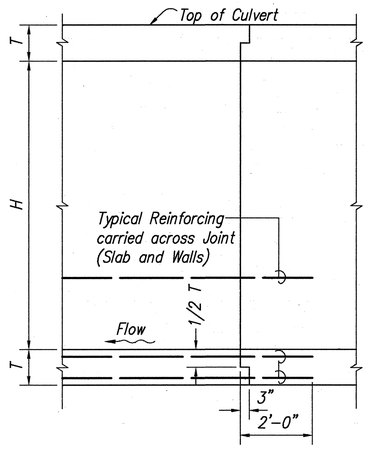


ELEVATION VIEW

VERTICAL CONTROL JOINT

Max. Spacing 30'-0"

Not to Scale

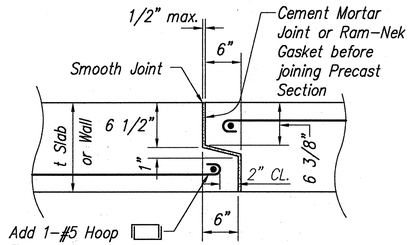


TYPICAL ELEVATION VIEW

CONSTRUCTION JOINT DETAIL

Max. Spacing 45'-0"

Not to Scale

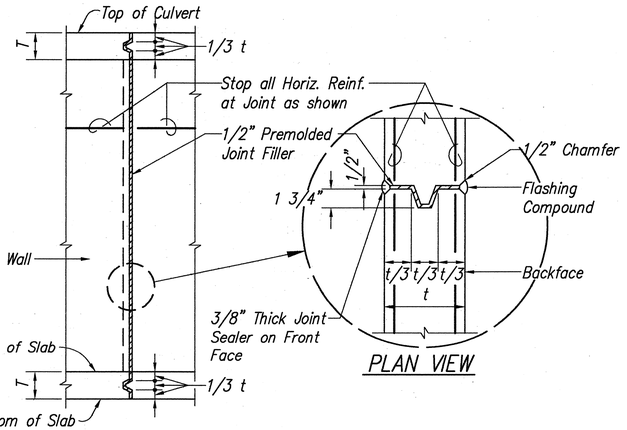


Note: Submit Shop Drawings for Precast Joint Details for approval (other Precast Joint Details may be used)

PRECAST JOINT DETAIL (OPTIONAL)

(Min. Spacing of Joints = 5'-0")

Not to Scale



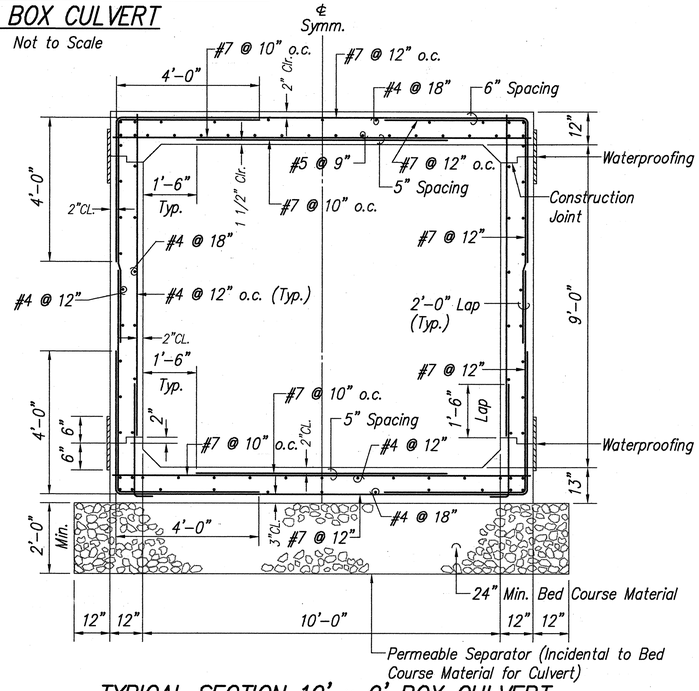
ELEVATION

PLAN VIEW

EXPANSION JOINT DETAILS

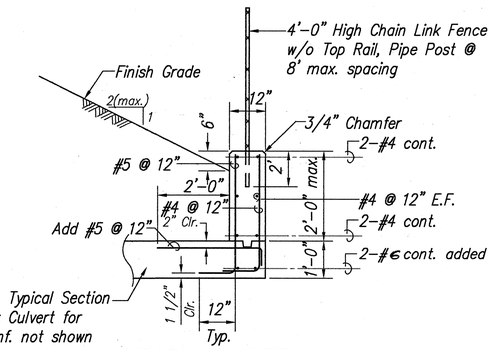
MAX. SPACING 90'-0"

Not to Scale



TYPICAL SECTION 10' x 9' BOX CULVERT

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



HEADWALL DETAIL

Not to Scale

Structural Notes for Box Culvert Construction:

1- All Concrete shall have a minimum 28 Days Compressive Strength (f'c) of 4000 PSI.

2- Unless shown otherwise, all Reinforcing Bars shall be Deformed Intermediate Grade Bars conforming to A-615 Grade 60.

3- All Reinforcing Bars shall have a minimum lap of 40 Bar diameters unless otherwise noted.

4- All Work and Material shall conform to the Hawaii Standard Specifications for Road and Bridge Construction, 1985 Edition.

5- Waterproofing of Construction Joints shall consist of firmly bonded membrane composed of 2 layers of Saturated Fabric and 3 moppings of Waterproofing Asphalt. A coating of Primer shall be applied to the surface before the first application of Asphalt. Primer shall conform to the requirements of ASSHTO M116. Fabric for Waterproofing shall conform to the requirements of ASTM D-1668. Asphalt shall conform to the requirements of AASHTO M115.

6- Height of Fill = 19'-0" max.

KWONG CHUN T I T REGISTERED PROFESSIONAL ENGINEER No. 2147-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Parsons, Inc. dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BOX CULVERT SECTIONS, DETAILS AND STRUCTURAL NOTES

KAHEKILI HIGHWAY WIDENING

Likelike Hwy. to Vicinity of Haiku Road

F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D32 OF D49 SHEETS

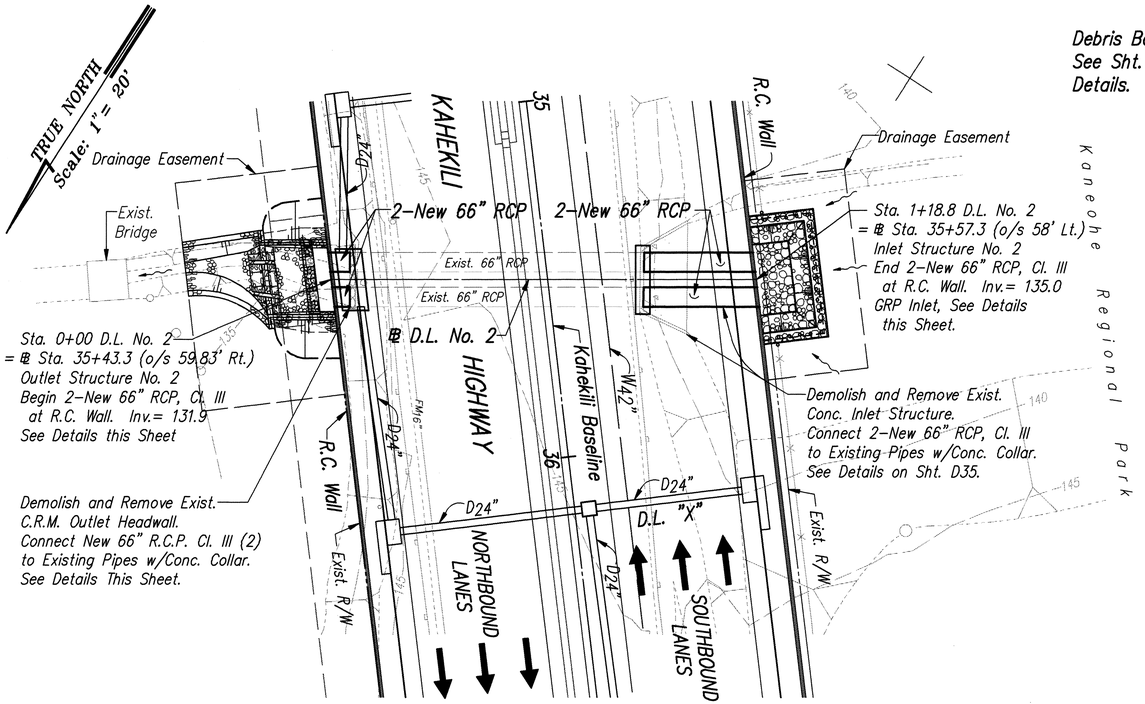
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
ORIGINAL PLAN
NOTEBOOK
No.

ROTATED: BASE PT.

U:\B: STATE\DOT\KAHEKILI\KAHE159\ DRGNETD 5/21/94 AAM GHT

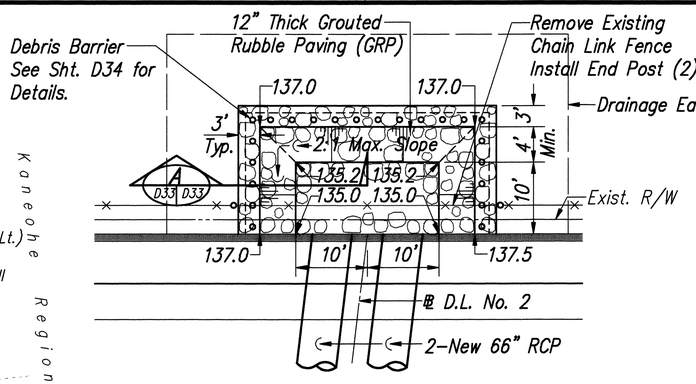
AS-BUILT 71

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	72 R	238



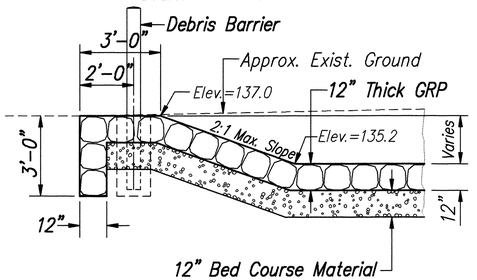
PLAN – DRAIN LINE NO. 2

Scale: 1" = 20'



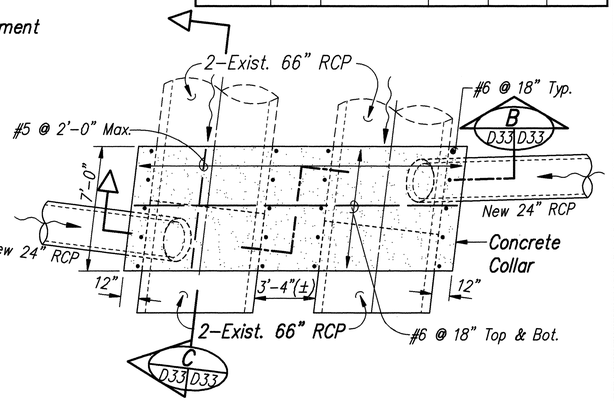
DETAIL – INLET STRUCTURE NO. 2

Scale: 1" = 10'



SECTION A

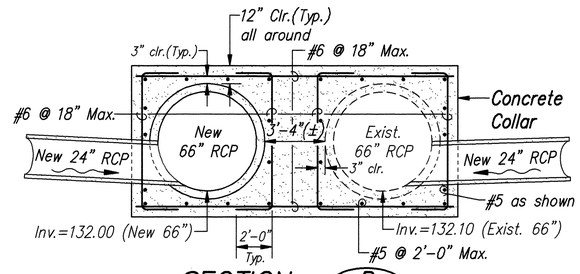
Scale: 3/8"= 1'-0" (D33 | D33)



PLAN – CONCRETE COLLAR

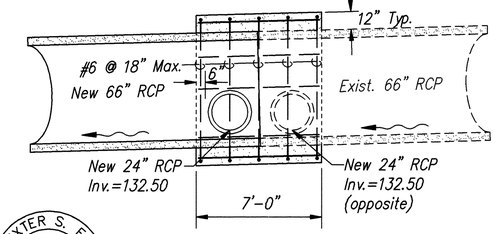
(Connection of 24" D.L. to 66" D.L.)

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



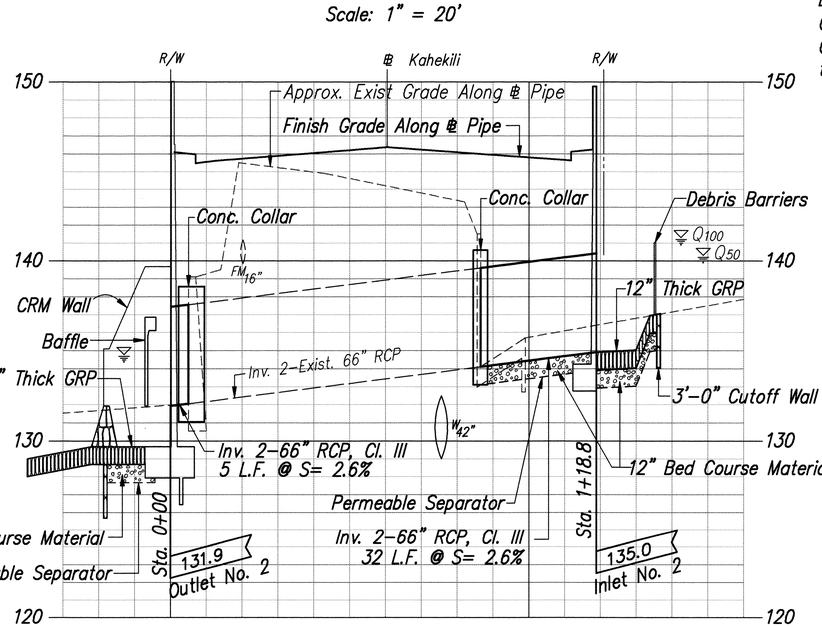
SECTION B

Scale: 1/4"= 1'-0" (D33 | D33)



SECTION C

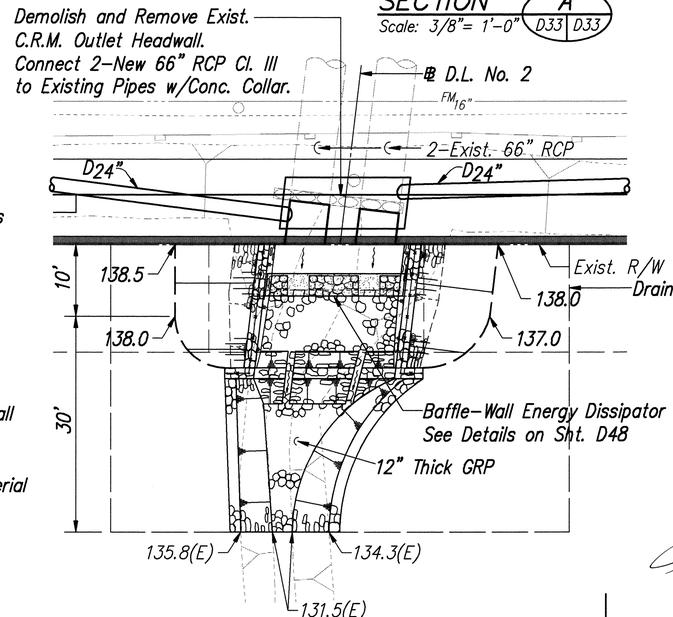
Scale: 1/4"= 1'-0" (D33 | D33)



PROFILE – DRAIN LINE NO. 2

Scale: Horiz. 1" = 20'
Vert. 1" = 4'

Note:
Permeable Separator shall not be measured for payment but shall be considered incidental to Bed Course Material and no separate payment shall be made.



DETAIL – OUTLET STRUCTURE NO. 2

Scale: 1" = 10'

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) — DATE 10/10/94

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
T. T. KWONG CHUN, REGISTERED PROFESSIONAL ENGINEER, No. 2147-S, HAWAII, U.S.A.
ParEn, Inc. dba PARK ENGINEERING

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
DEXTER S. EJI, REGISTERED PROFESSIONAL ENGINEER, No. 4739-C, HAWAII, U.S.A.
ParEn, Inc. dba PARK ENGINEERING

DATE	REVISION
7/13/94	ADDED DWWM SIGNATURE BLOCK.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
DRAIN LINE NO. 2

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED — DATE: APRIL 1994

SHEET No. D33 OF D49 SHEETS

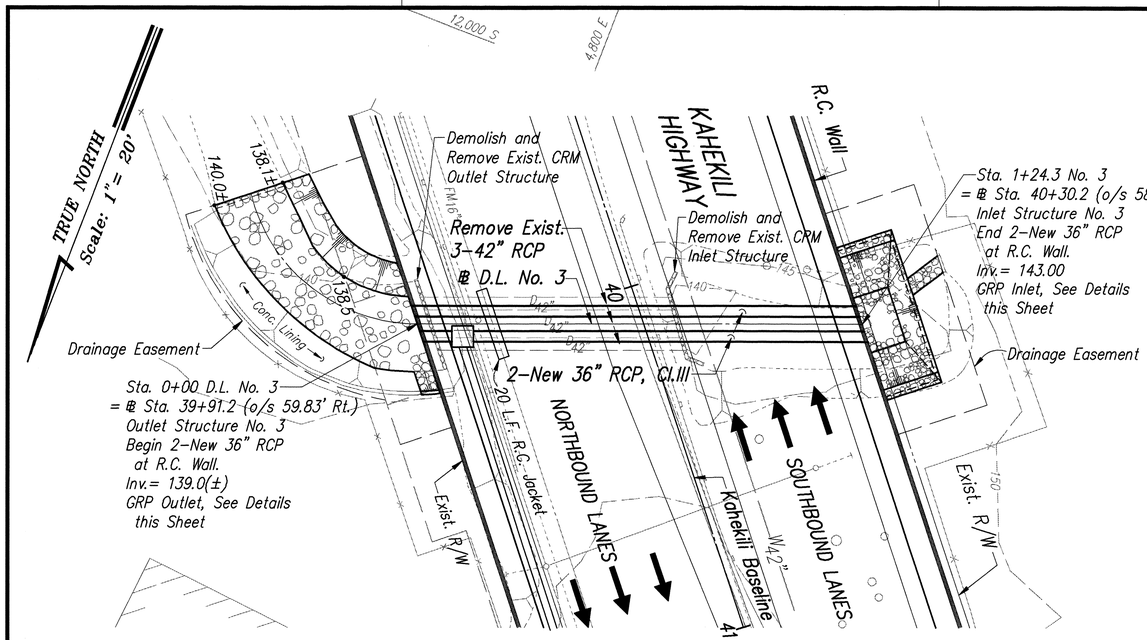
AS-BUILT 72 R

STORY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
ORIGINAL PLAN
NOTEBOOK
No.

ROTATED: 212° 42' 19.218"
BASE PT. 0.0

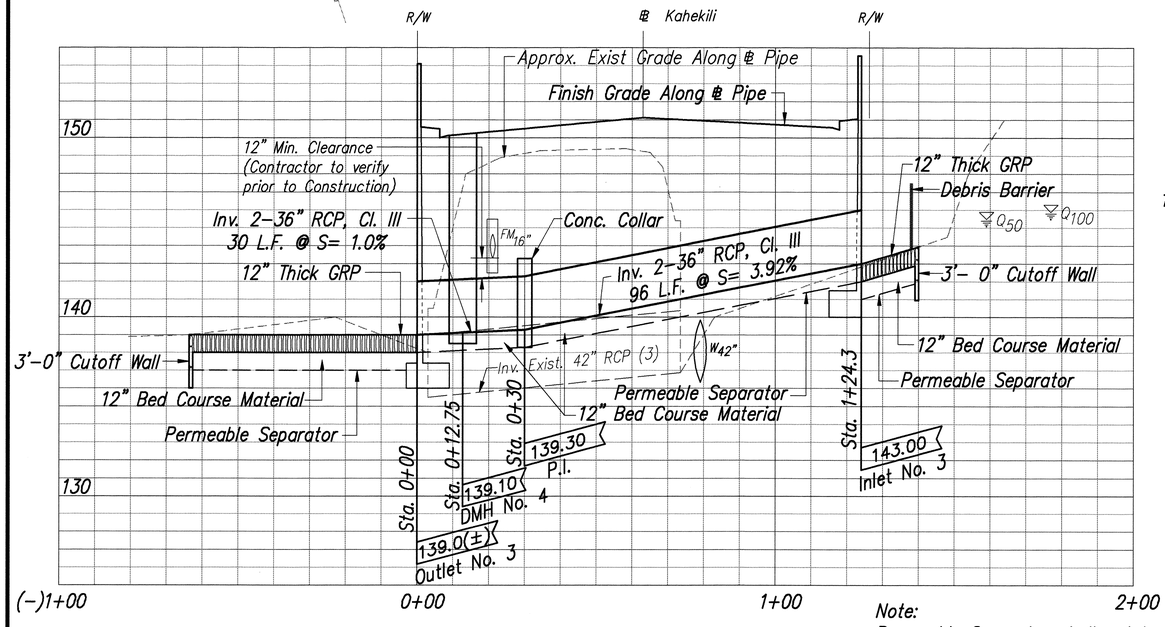
LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRADTTR 7/13/94 AWM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	73	238



PLAN – DRAIN LINE NO. 3

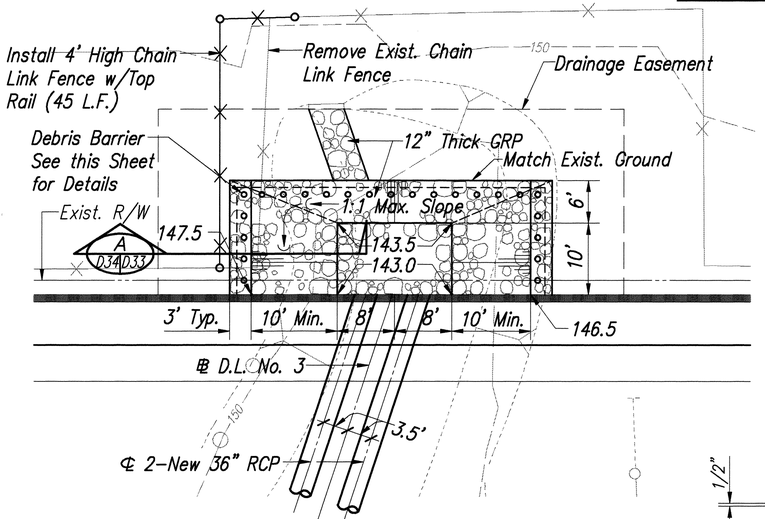
Scale: 1" = 20'



PROFILE – DRAIN LINE NO. 3

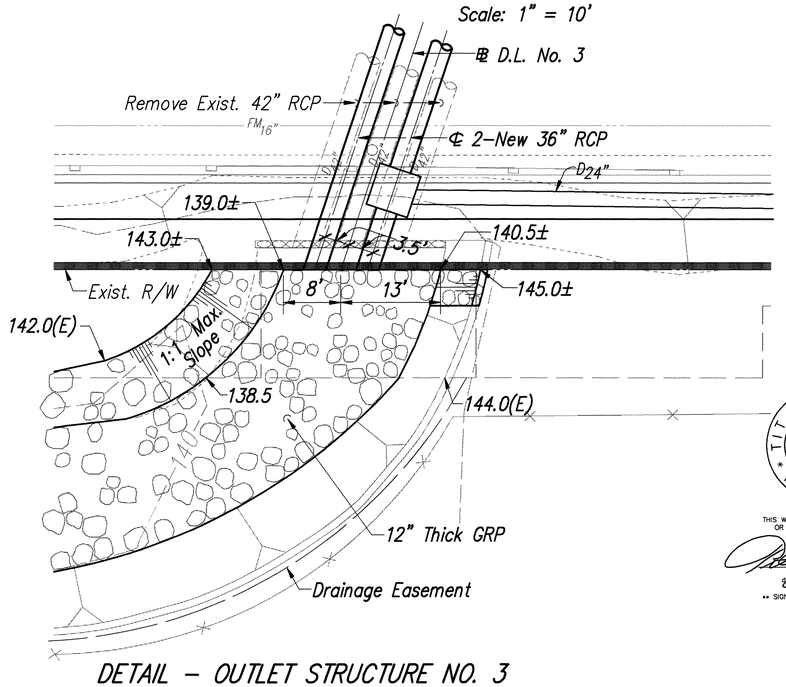
Scale: Horiz. 1" = 20'
Vert. 1" = 4'

Note:
Permeable Separator shall not be measured for payment but shall be considered incidental to Bed Course Material and no separate payment shall be made.



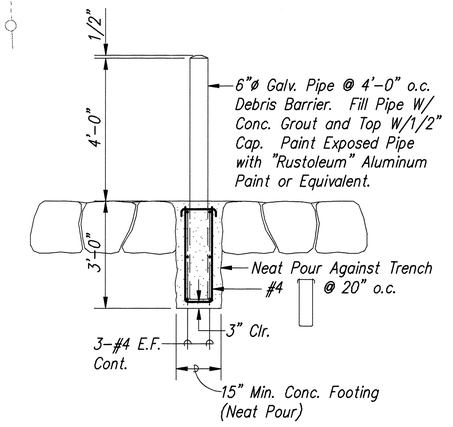
DETAIL – INLET STRUCTURE NO. 3

Scale: 1" = 10'



DETAIL – OUTLET STRUCTURE NO. 3

Scale: 1" = 10'



DETAIL – DEBRIS BARRIER

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

T.T. KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) DATE

DATE	REVISION
6/21/96	REVISED LOCATION OF D.M.H. NO. 4 AND REMOVED DISSIPATORS FROM OUTLET.
7/13/94	ADDED DWWM SIGNATURE BLOCK. ADDED R.C. JACKET FOR F.M. SEWER.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
DRAIN LINE NO. 3

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D34 OF D49 SHEETS

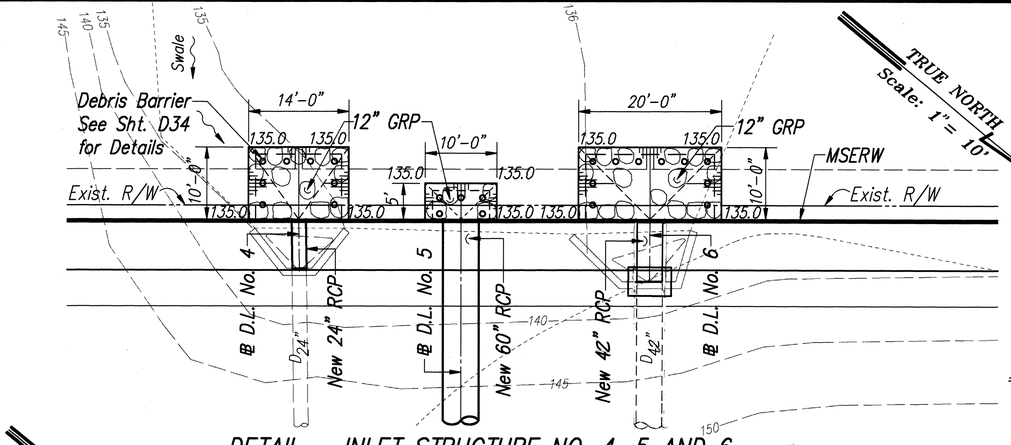
AS-BUILT C.O. 73 R

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

ROTATED: 135° 50' 42.457" BASE PT. 0.0

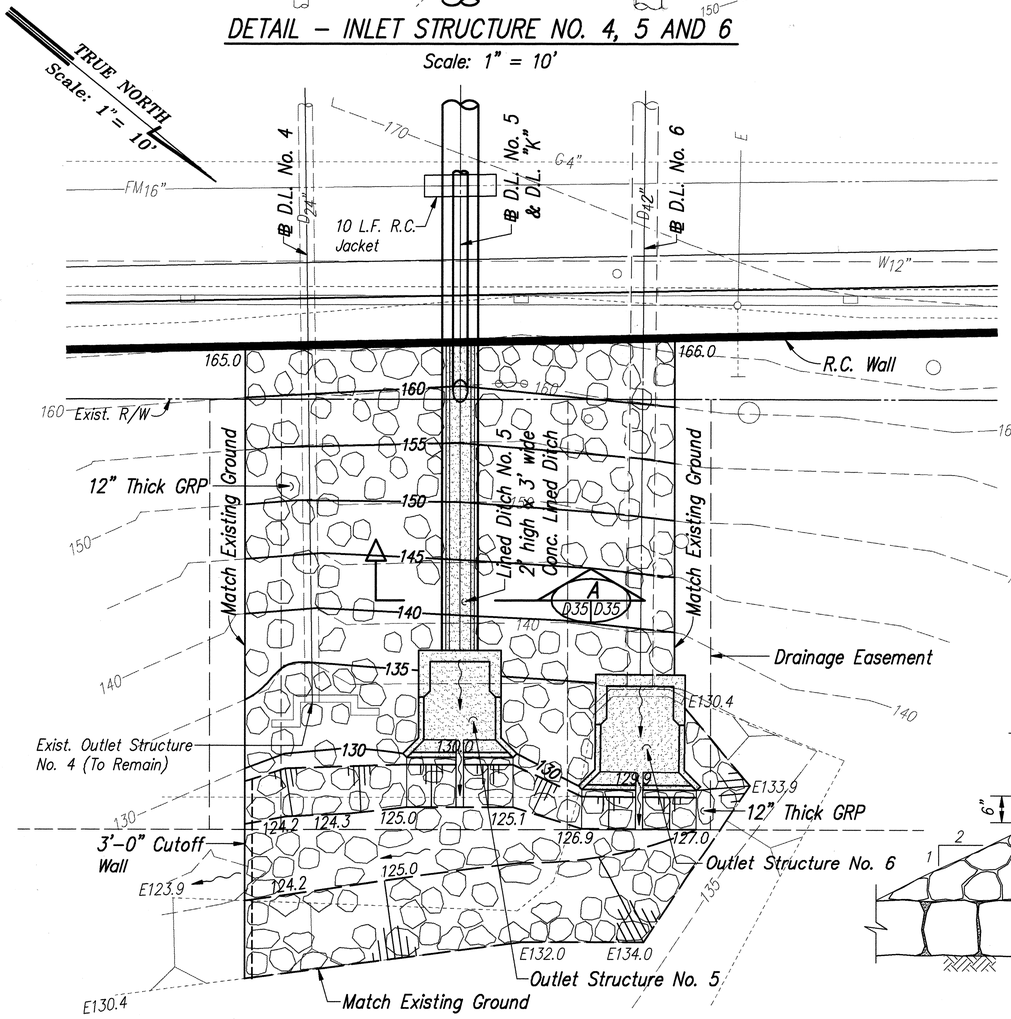
US STATE DOT\HAIKALU ADDENDUM
DRDT.DRC 6/27/96 AM KSJ

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	74 R	238



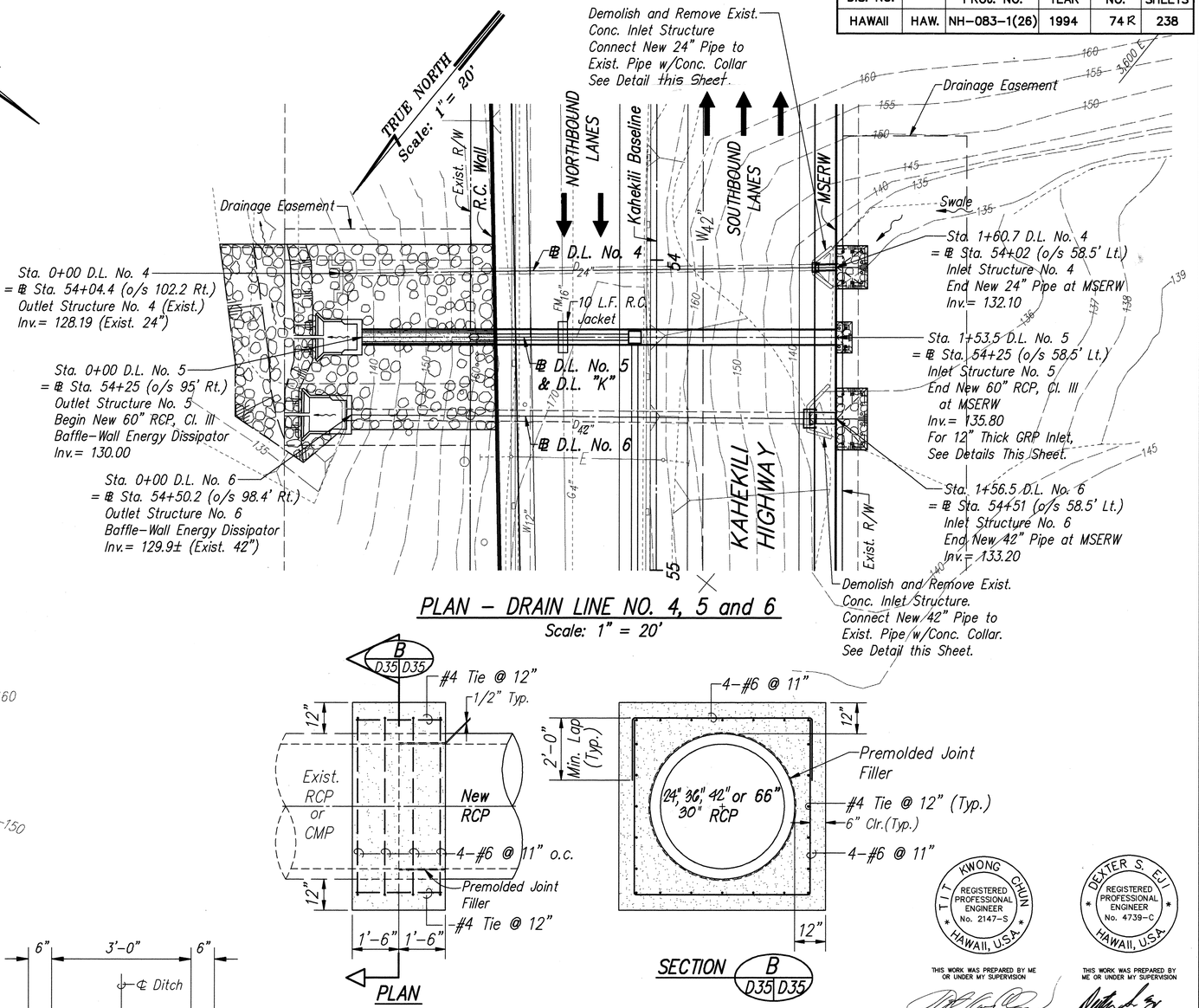
DETAIL – INLET STRUCTURE NO. 4, 5 AND 6

Scale: 1" = 10'



DETAIL – OUTLET STRUCTURE NO. 4, 5 AND 6

Scale: 1" = 10'

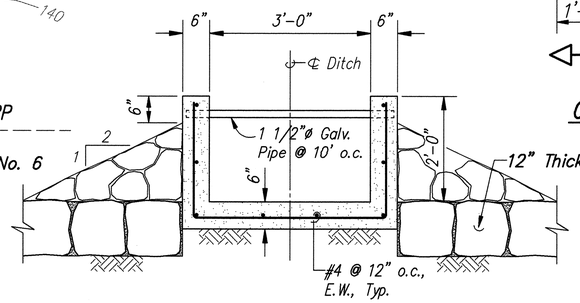


PLAN – DRAIN LINE NO. 4, 5 and 6

Scale: 1" = 20'

CONCRETE COLLAR FOR 24", 36", 42", 30" & 66" PIPE

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



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

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) — DATE 10/10/94

DATE	REVISION
10/23/95	REVISED DRAIN LINE NO. 7
7/14/95	REVISED DRAIN LINE NO. 6
7/13/94	ADDED DWWM SIGNATURE BLOCK. ADDED R.C. JACKET FOR F.M. SEWER.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

TIT KWONG CHUN — REGISTERED PROFESSIONAL ENGINEER No. 2147-S — HAWAII, U.S.A.

ParEn, Inc. dba PARK ENGINEERING

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DEXTER S. EJI — REGISTERED PROFESSIONAL ENGINEER No. 4739-C — HAWAII, U.S.A.

ParEn, Inc. dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
D.L. NO. 4, 5 and 6 PLAN

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED — DATE: APRIL 1994

SHEET No. D35 OF D49 SHEETS

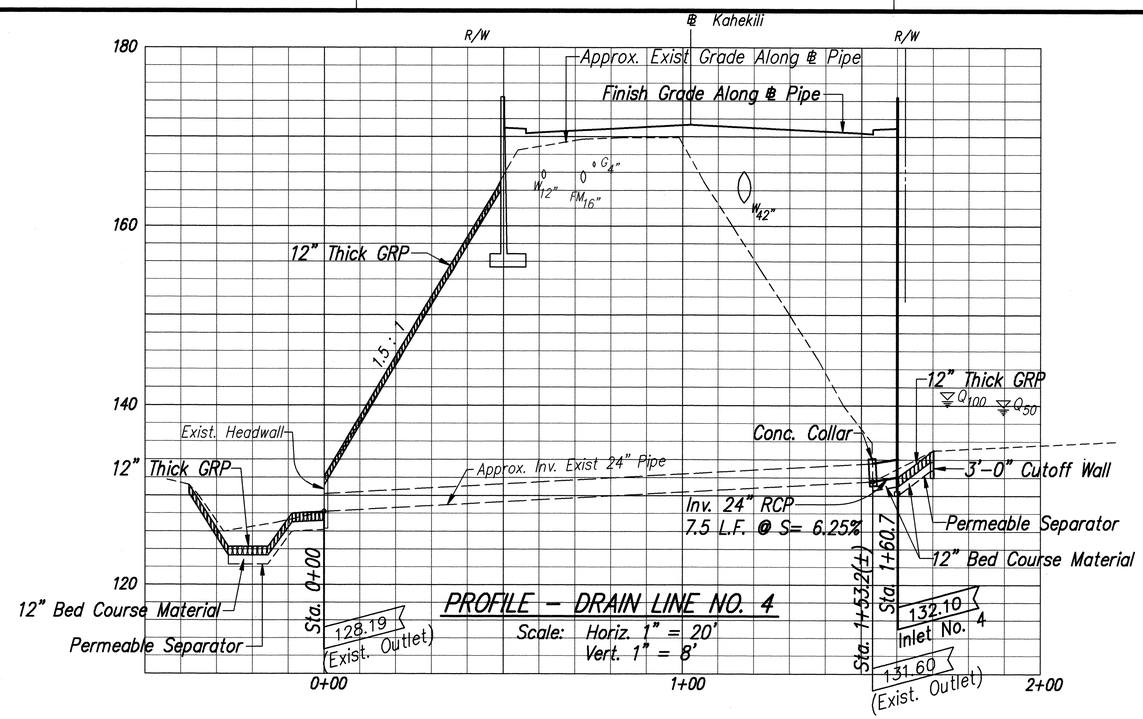
AS-BUILT C.O. 74 R

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

ROTATED: 219° 28' 30"
BASE PT. 0.0

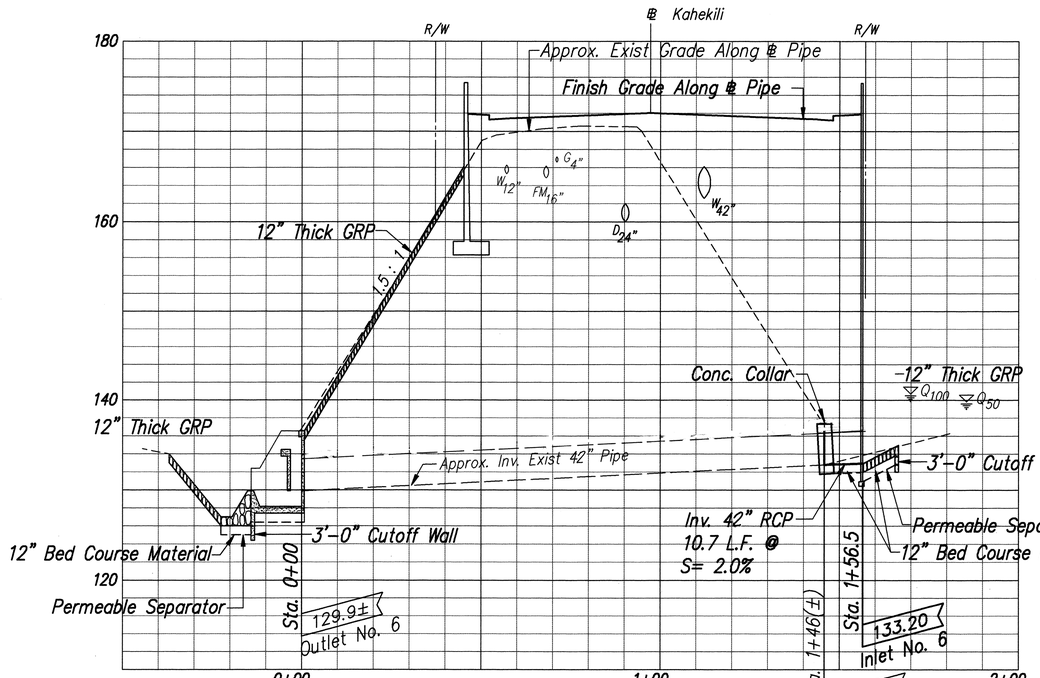
LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAWING: 7/13/94 AWM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	75 R	238



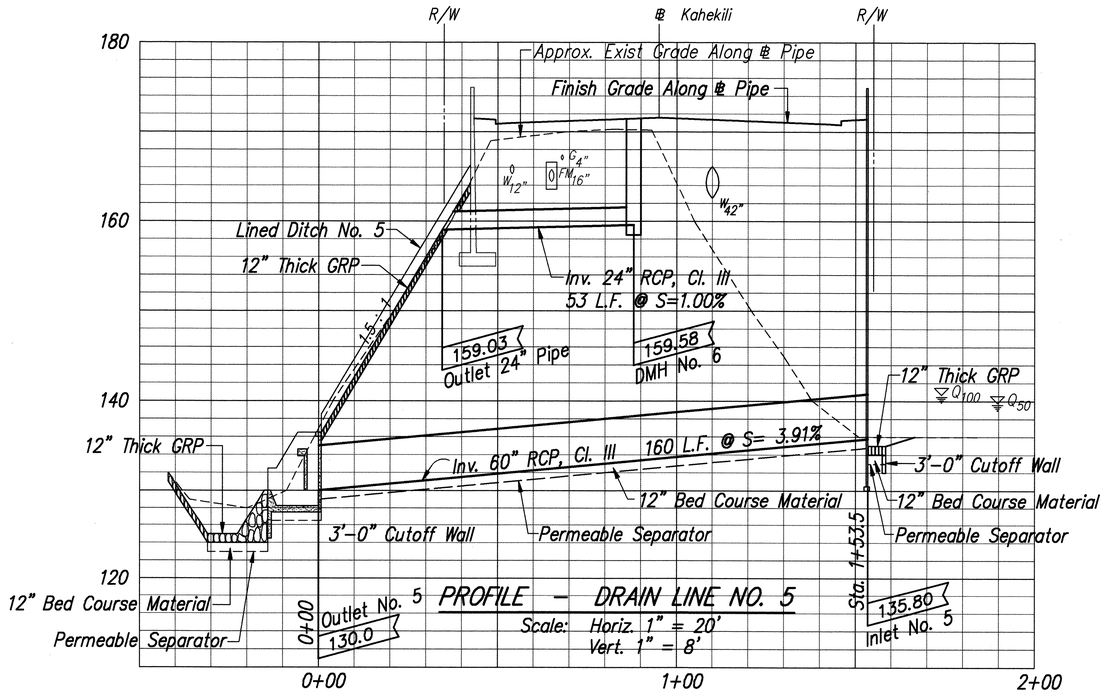
PROFILE - DRAIN LINE NO. 4

Scale: Horiz. 1" = 20'
Vert. 1" = 8'



PROFILE - DRAIN LINE NO. 6

Scale: Horiz. 1" = 20'
Vert. 1" = 8'



PROFILE - DRAIN LINE NO. 5

Scale: Horiz. 1" = 20'
Vert. 1" = 8'

Note:
Permeable Separator shall not be measured for payment but shall be considered incidental to Bed Course Material and no separate payment shall be made.

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

APPROVED:
CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only)
DATE 10/10/94

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
PacEn, Inc.
dba PARK ENGINEERING

DATE	REVISION
7/14/95	REVISED DRAIN LINE NO. 6
7/13/94	ADDED DWWM SIGNATURE BLOCK. ADDED R.C. JACKET FOR FM SEWER.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
D.L. NO. 4, 5 and 6 PROFILE

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D36 OF D49 SHEETS

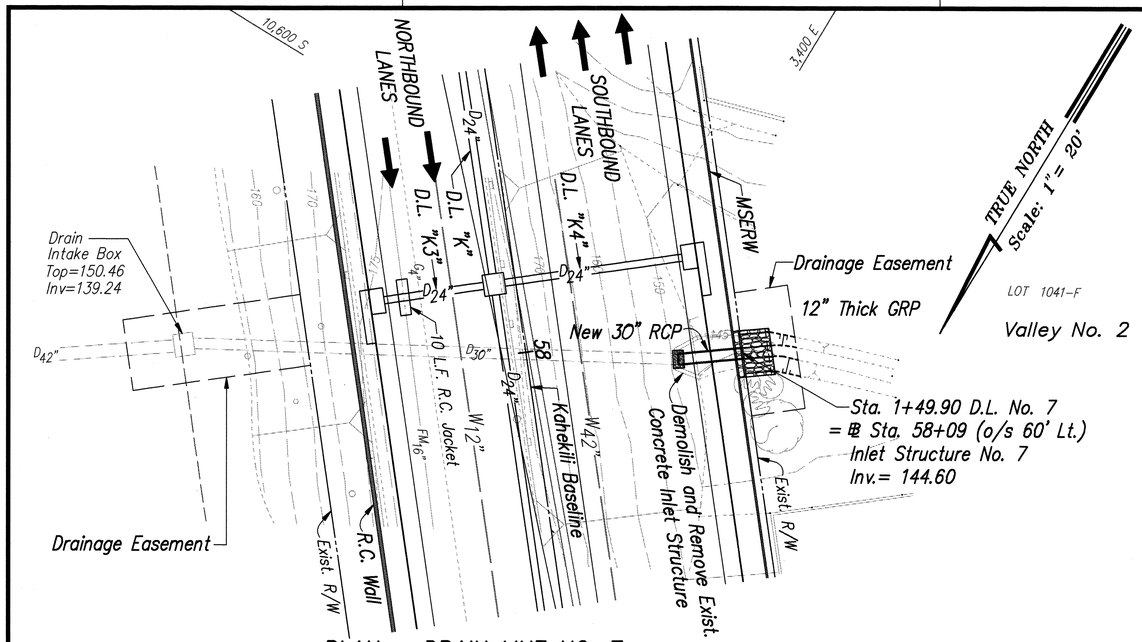
AS-BUILT C.O. 75 R

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

ROTATED: 219° 28' 30"
BASE PT: 0.0

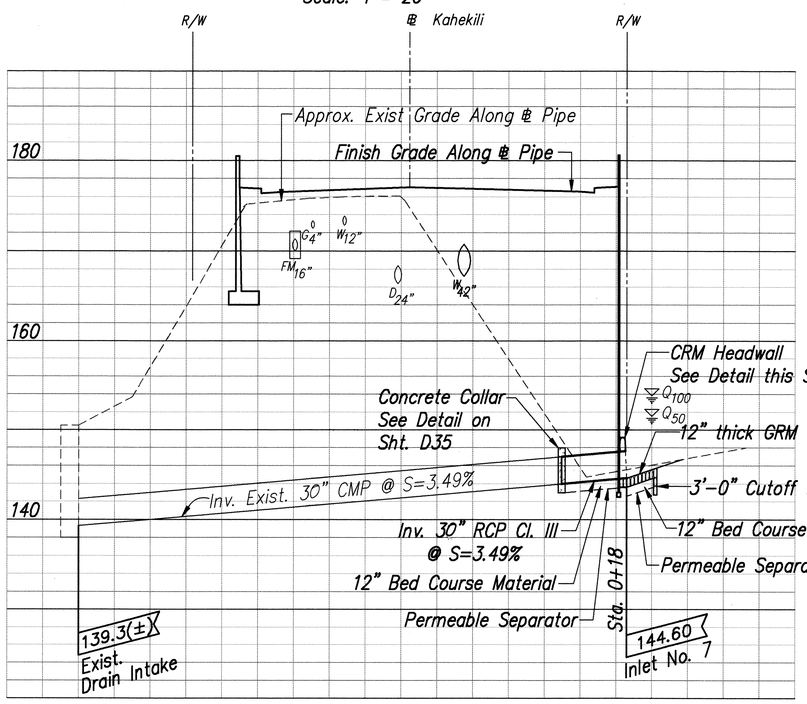
LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAFTER 7/13/94 AMM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	76 R	238



PLAN – DRAIN LINE NO. 7

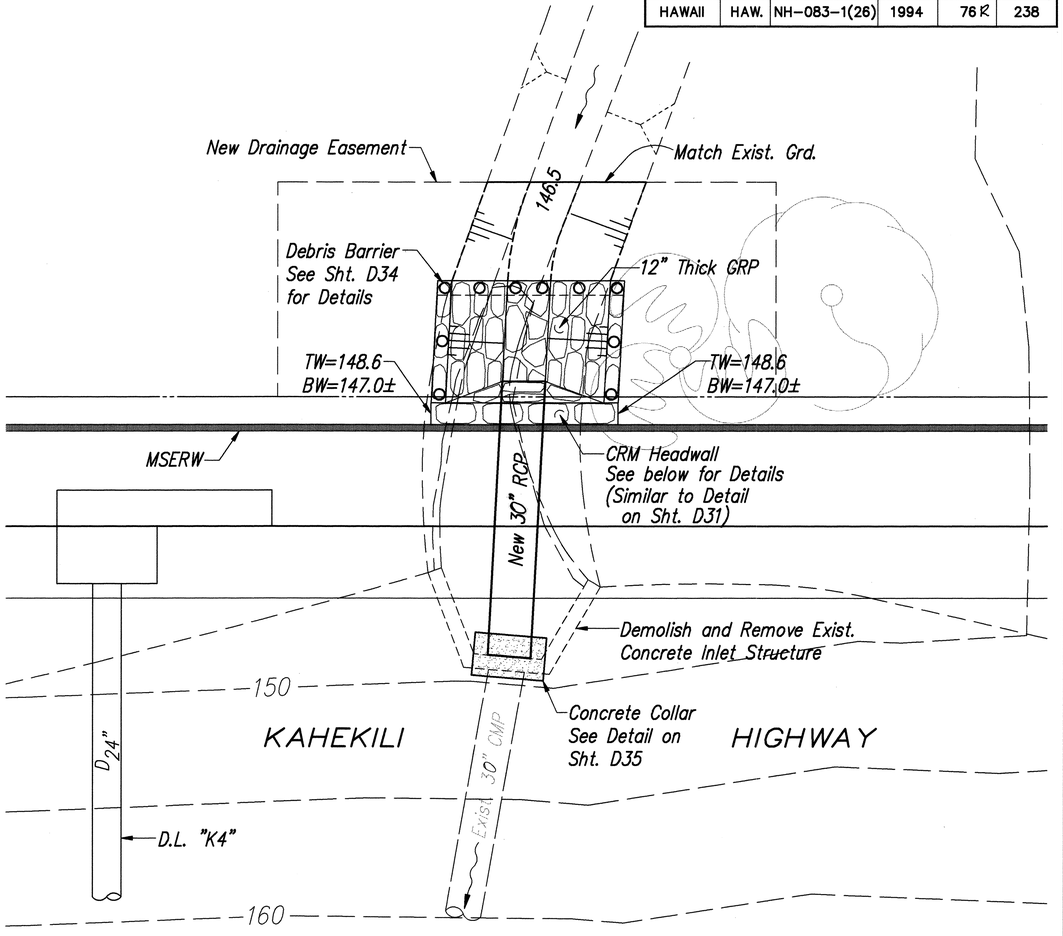
Scale: 1"= 20'



PROFILE – DRAIN LINE NO. 7

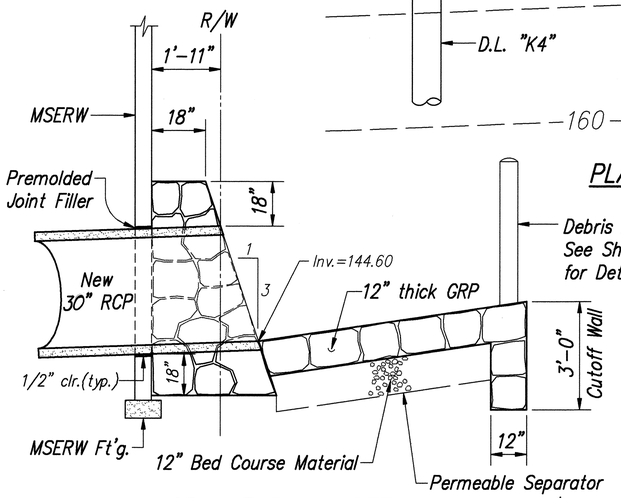
Scale: Horiz. 1" = 20'
Vert. 1" = 8'

Note:
Permeable Separator shall not be measured for payment but shall be considered incidental to Bed Course Material and no separate payment shall be made.



PLAN – INLET STRUCTURE NO. 7

Scale: 1"= 5'



CRM HEADWALL DETAIL

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

TIT KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

DEXTER S. EU
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

APPROVED:

CHIEF, DIV. OF PLANNING & SERVICE CONTROL, DWWM (For Sewer Work within Public Road R/W only) — DATE 10/10/94

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION — PorEn, Inc. dba PARK ENGINEERING

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION — PorEn, Inc. dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
DRAIN LINE NO. 7

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED — DATE: APRIL 1994

SHEET No. D37 OF D49 SHEETS

DATE	REVISION
10/23/95	REVISED DRAIN LINE NO. 7
7/13/94	ADDED DWWM SIGNATURE BLOCK. ADDED R.C. JACKET FOR 16" SEWER.

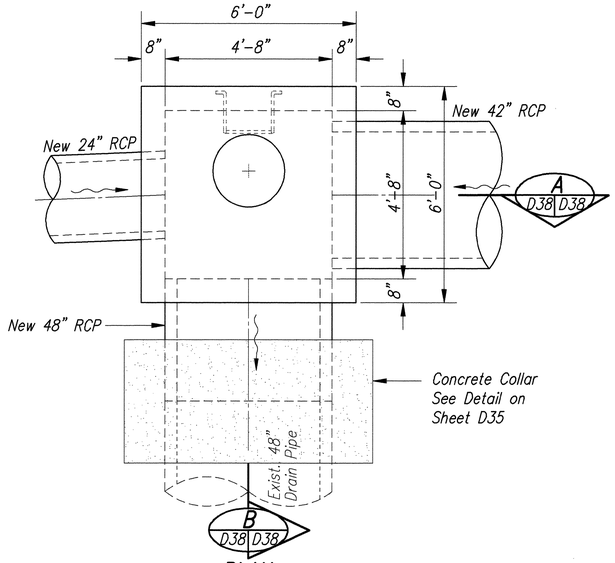
AS-BUILT C.O. 76 R

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

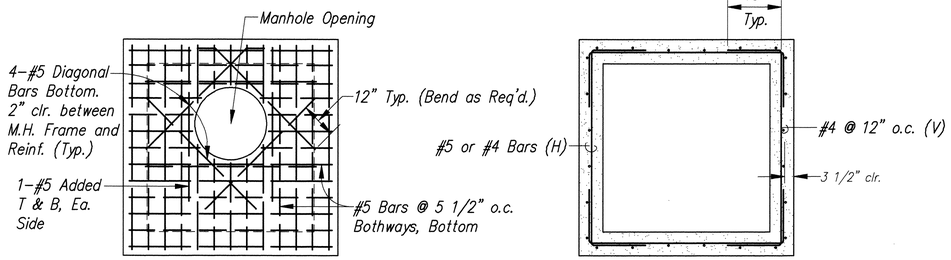
ROTATED: (-)150° 36'41.553"
BASE PT. 0,0

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAFTSR 7/13/94 AMM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	77	238

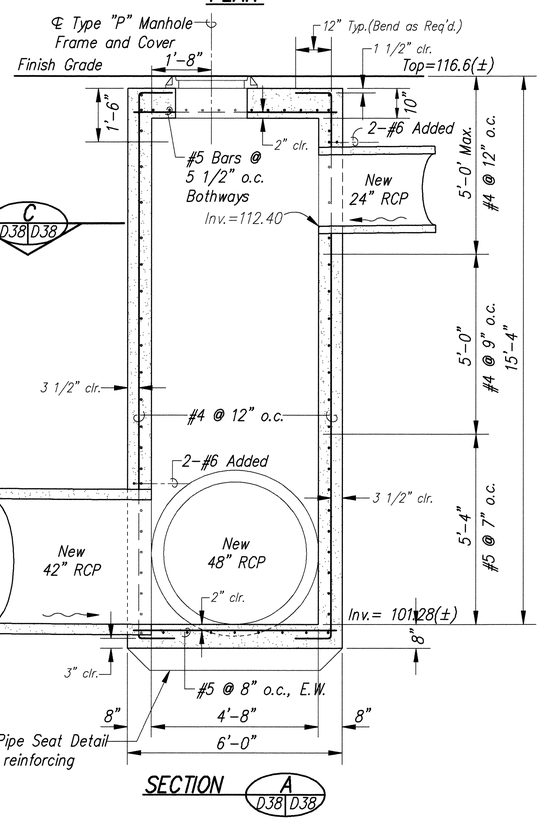


PLAN

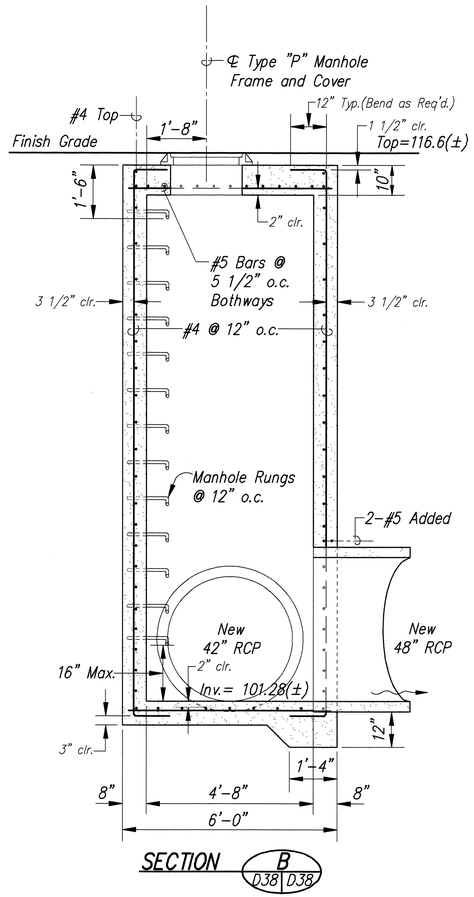


TOP SLAB PLAN

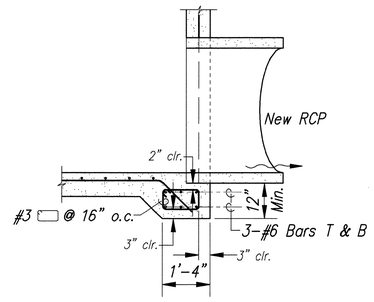
SECTION C D38 D38



SECTION A D38 D38



SECTION B D38 D38



TYP. PIPE SEAT DETAIL

DRAIN MANHOLE NO. 1

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

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
ParEn, Inc. dba PARK ENGINEERING

TIT KWONG CHUN REGISTERED PROFESSIONAL ENGINEER No. 2147-S HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
ParEn, Inc. dba PARK ENGINEERING
** SIGNATURE HAS BEEN DIGITIZED

DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
ParEn, Inc. dba PARK ENGINEERING
** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D38 OF D49 SHEETS

DATE	REVISION
10/2/96	REVISED NEW 42" RCP.

AS-BUILT C.O. 77

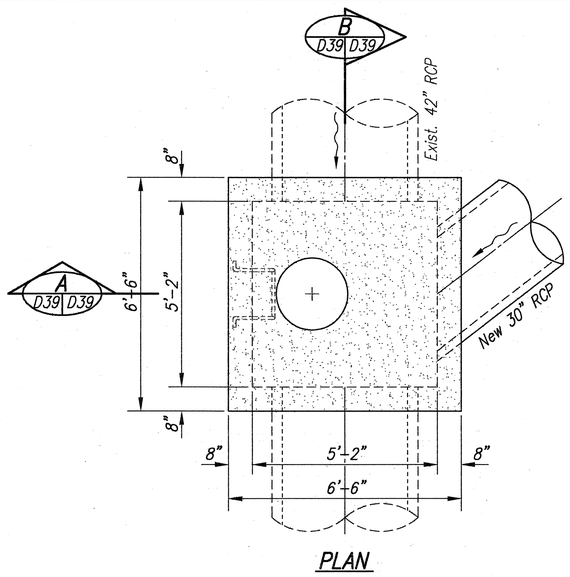
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTEBOOK
No.

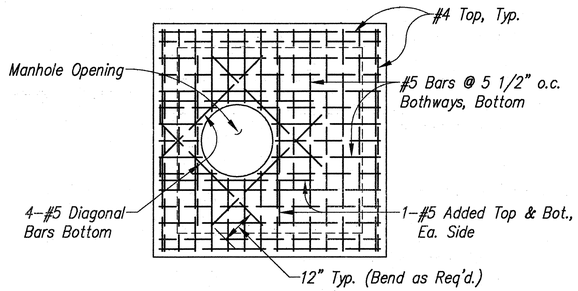
ROTATED: BASE PT.

DIR: STATE\DOT\KAHEKILI\ADDENDUM
DRAWTEC 10/2/96 AMM KSU

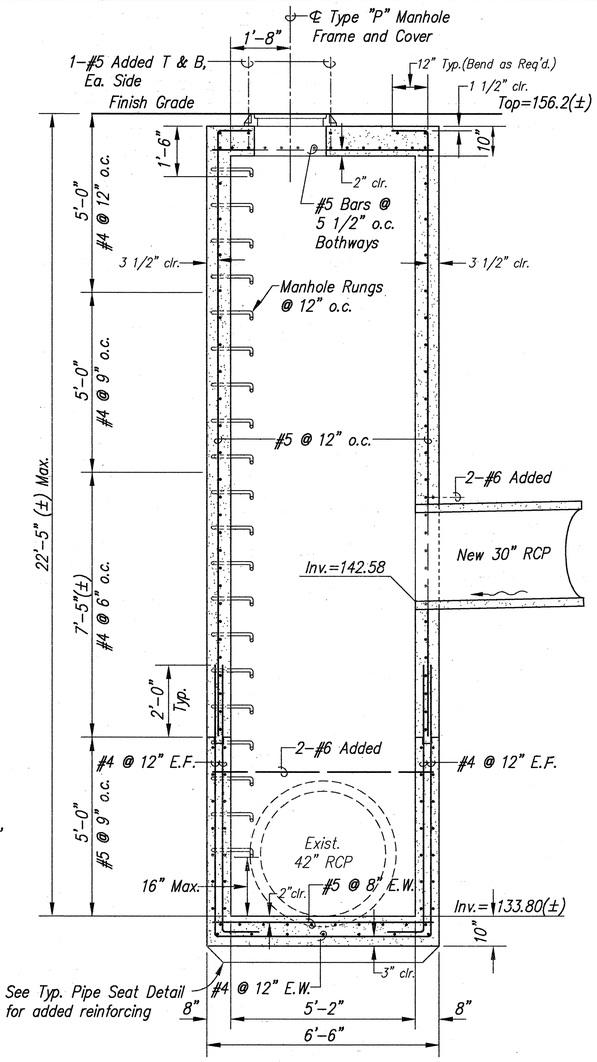
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	78	238



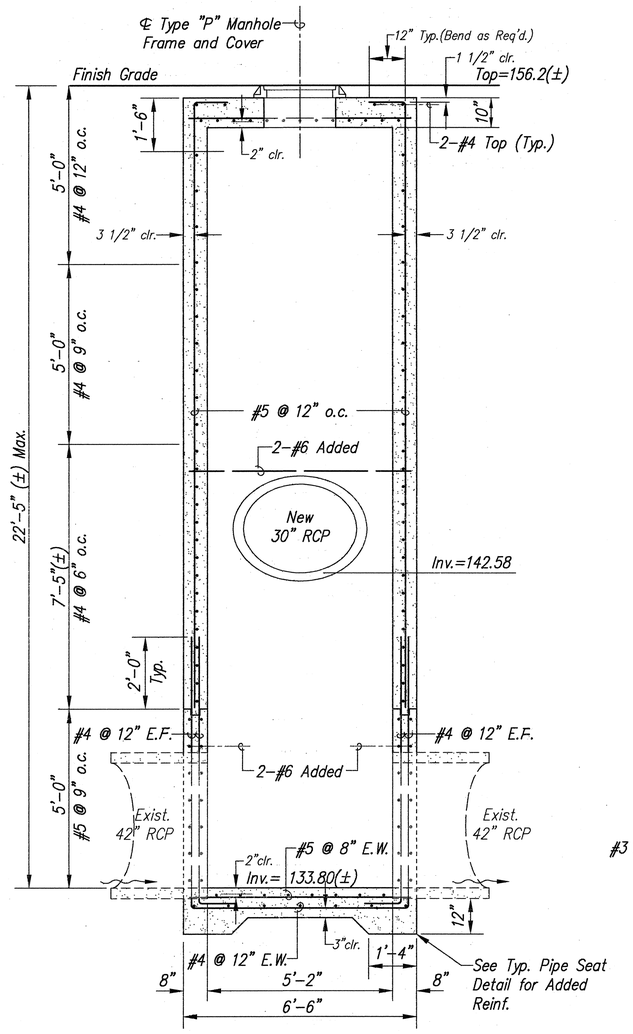
PLAN



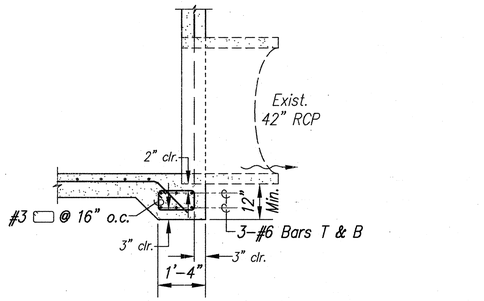
TOP SLAB PLAN



SECTION A D39 D39



SECTION B D39 D39



TYP. PIPE SEAT DETAIL

DRAIN MANHOLE NO. 5

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

KWONG CHUN T/T REGISTERED PROFESSIONAL ENGINEER No. 2147-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D39 OF D49 SHEETS

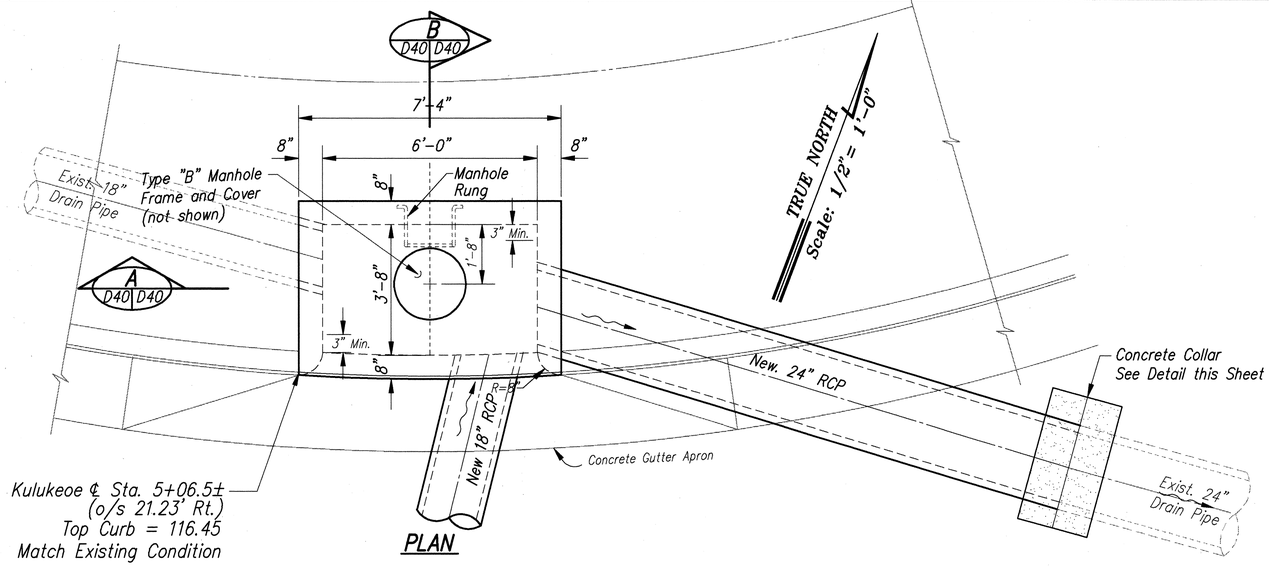
AS-BUILT 78

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

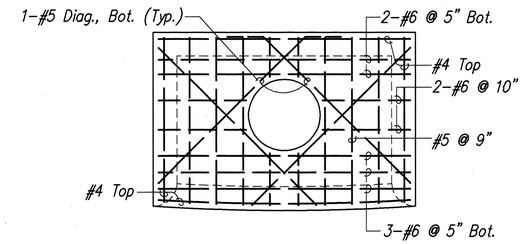
ROTATED: BASE PT.

LIB: STATE\DOT\KAHEKILI\KAHE199\DRADET7 AMM 5/11/94

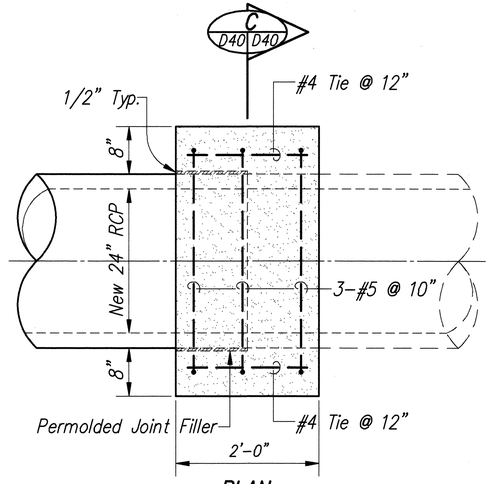
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	79	238



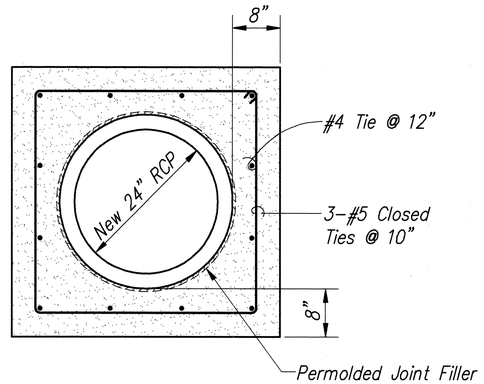
PLAN



TOP SLAB REINFORCING

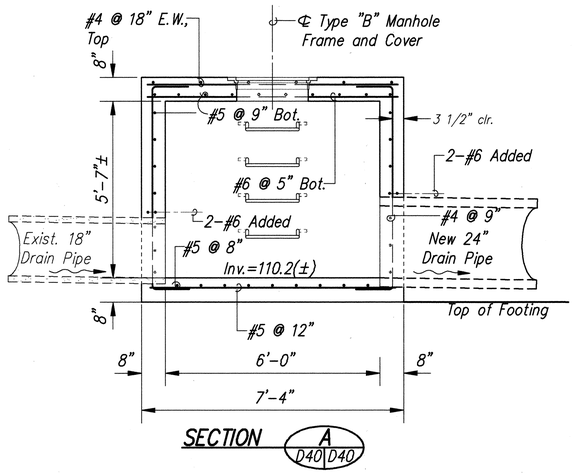


PLAN

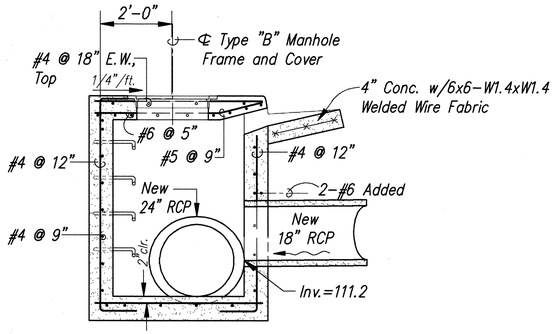


SECTION C D40 D40

CONCRETE COLLAR FOR 24" RCP
Scale: 1"= 1'-0"



SECTION A D40 D40



SECTION B D40 D40

CATCH BASIN NO. 3
Scale: 1/2" = 1'-0"

DATE	REVISION
10/30/95	REVISED PLAN AND SECTIONS FOR CATCH BASIN NO. 3

T. I. T. KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

ROY M. MIKAMI
REGISTERED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D40 OF D49 SHEETS

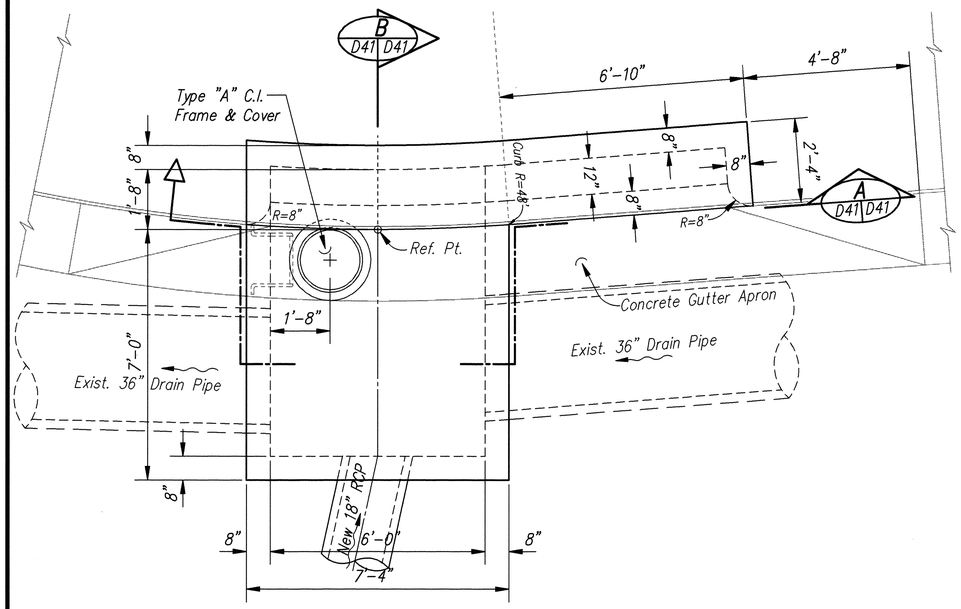
AS-BUILT C.O. 79

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

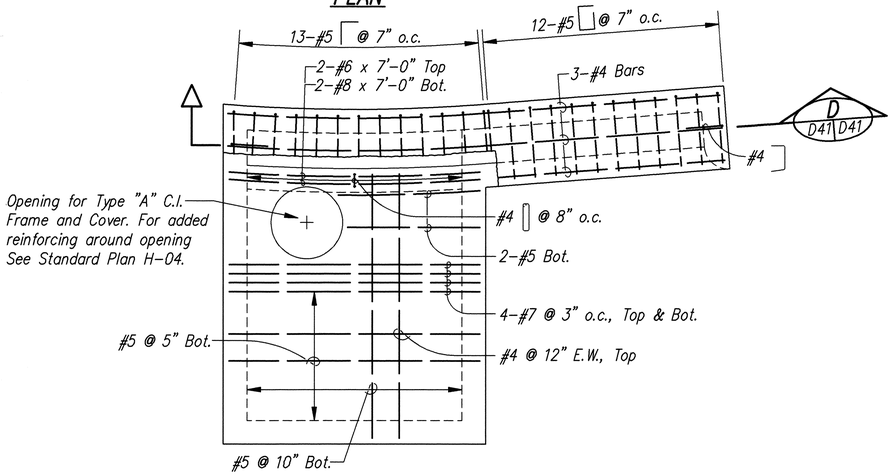
ROTATED: BASE PT.

DB: STATE\DOT\KAHEKILI ADDENDUM
DRAWING: 10/30/95 AMM PSU

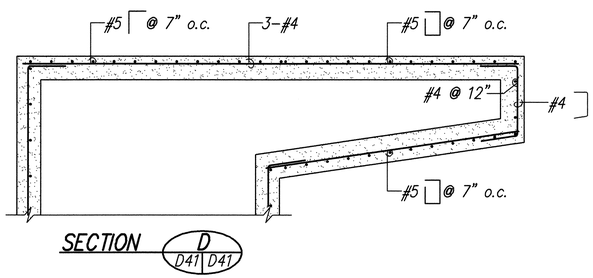
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	80	238



PLAN

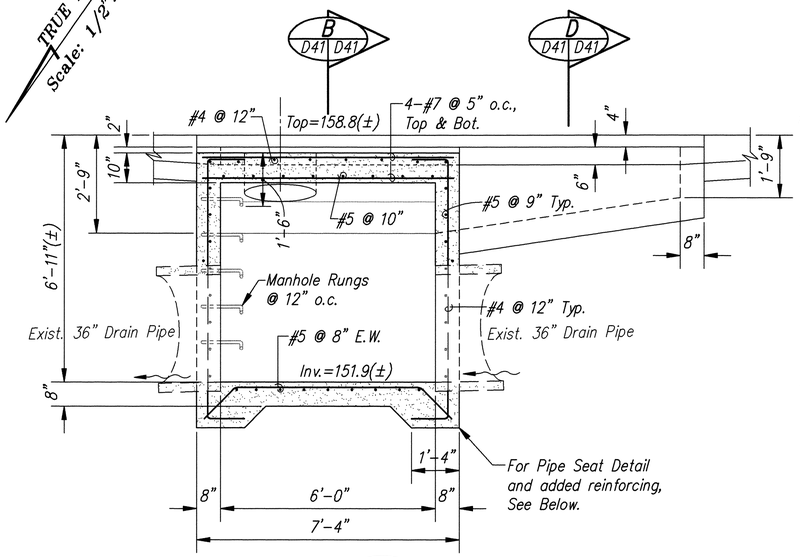


TOP SLAB REINFORCING

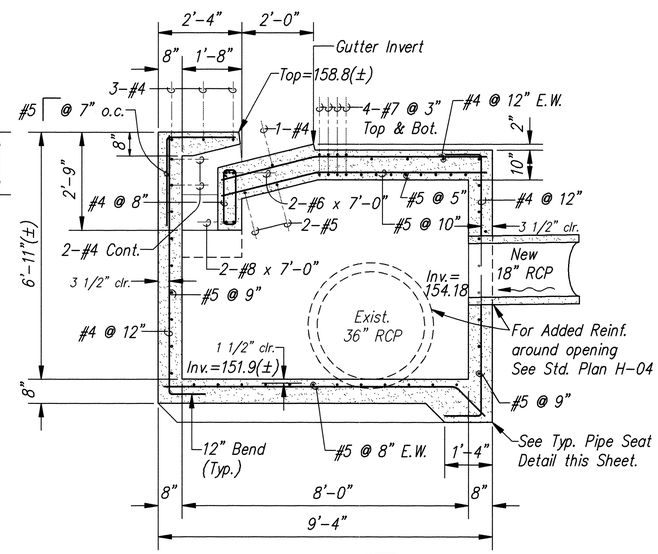


SECTION D D41 D41

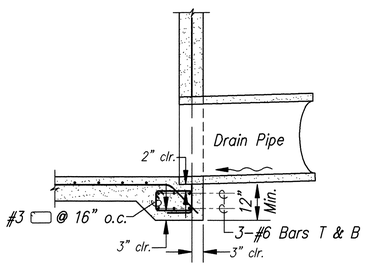
TRUE NORTH
Scale: 1/2" = 1'-0"



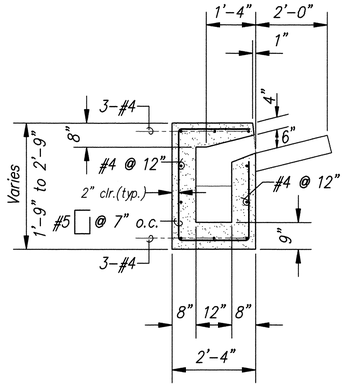
SECTION A D41 D41



SECTION B D41 D41



TYP. PIPE SEAT DETAIL



SECTION B D41 D41

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER NO. 1595-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

TIT KWONG CHUN REGISTERED PROFESSIONAL ENGINEER No. 2147-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc. dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.

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** SIGNATURE HAS BEEN DIGITIZED

CATCH BASIN NO. 32
Scale: 1/2" = 1'-0"

DATE	REVISION
7/18/96	REVISED DIAMETER AND INVERT OF DRAIN LINE "J" AT C.B. NO. 32.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D41 OF D49 SHEETS

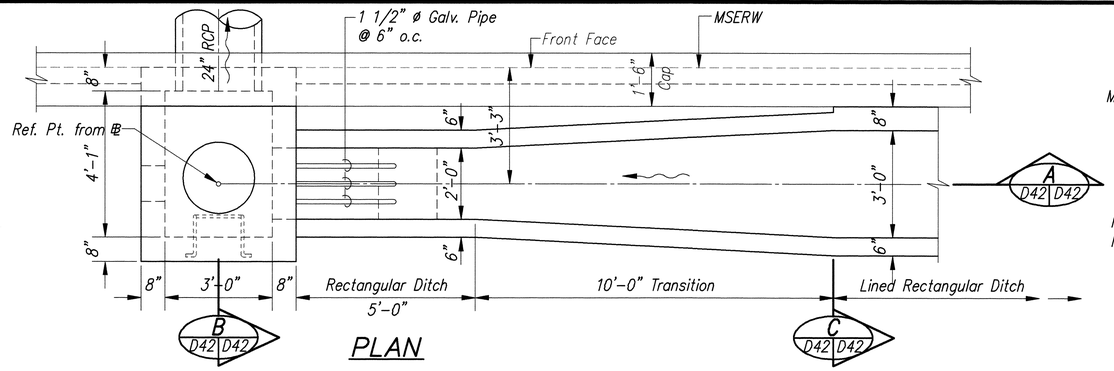
AS-BUILT C.O. 80

ORIGINAL PLAN | NOTEBOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

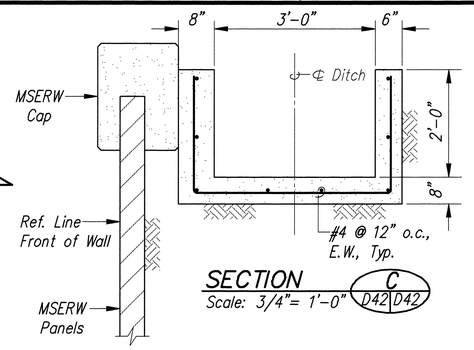
ROTATED: BASE PT:

LIB: STATE\JOT\KAHEKILI\ADDENDUM DRAWING 7/10/96 ARM KSU

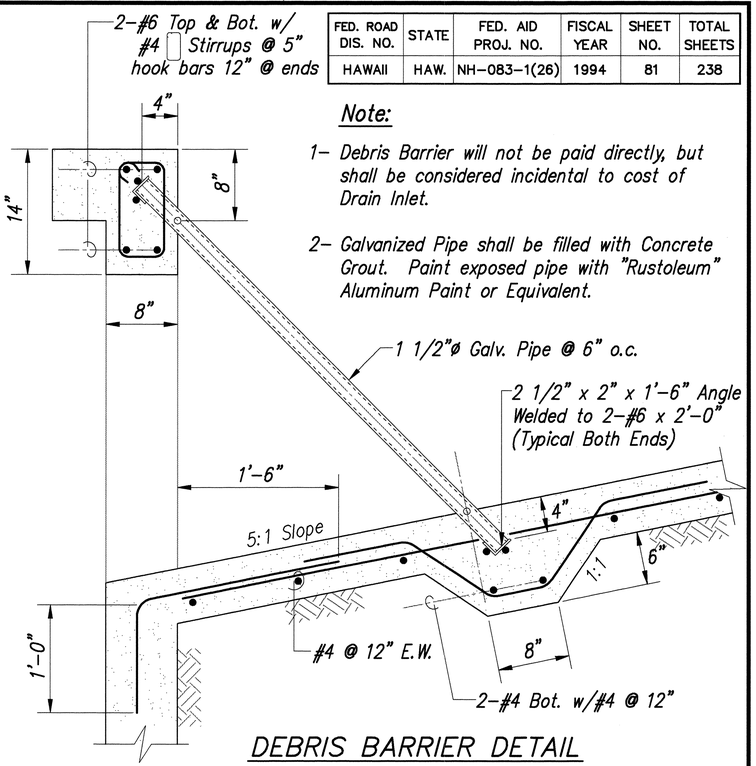
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	81	238



PLAN



SECTION C D42 D42
Scale: 3/4"= 1'-0"

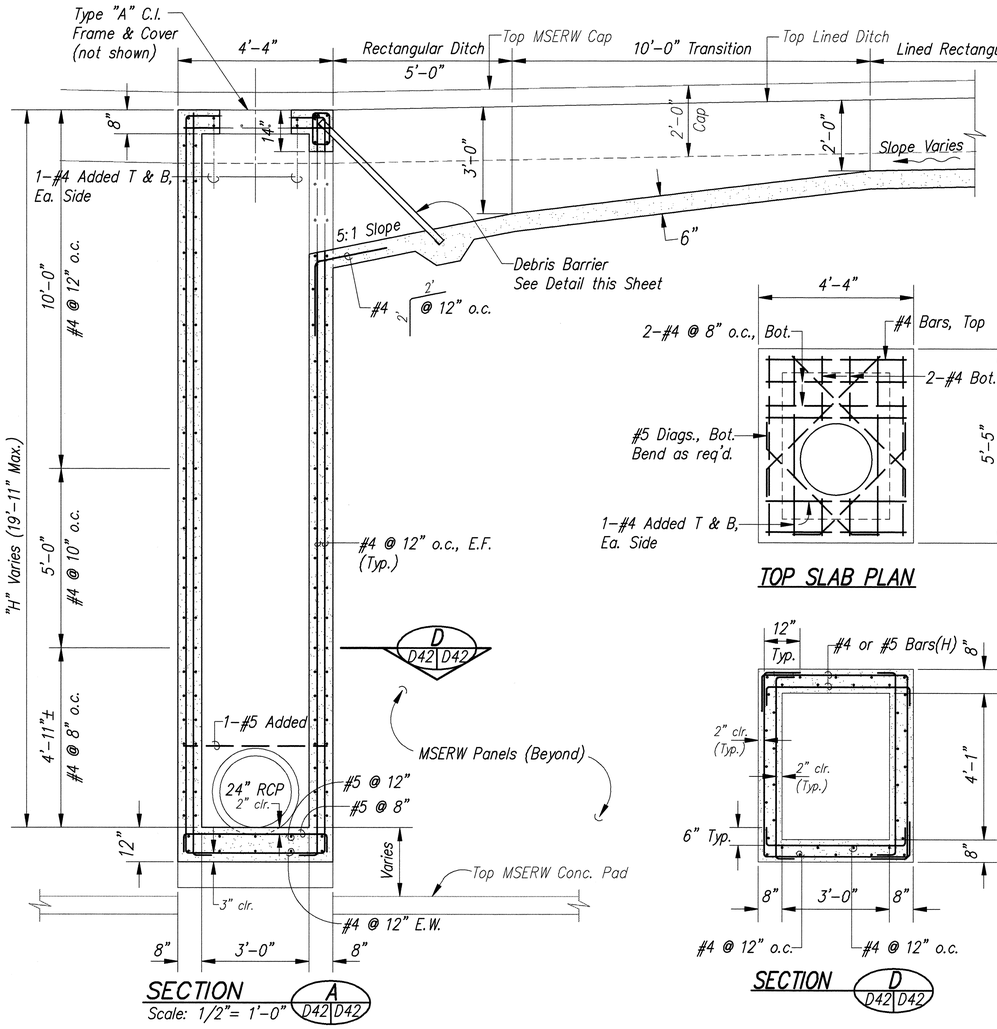


DEBRIS BARRIER DETAIL
Scale: 1 1/2" = 1'-0"

Note:

1- Debris Barrier will not be paid directly, but shall be considered incidental to cost of Drain Inlet.

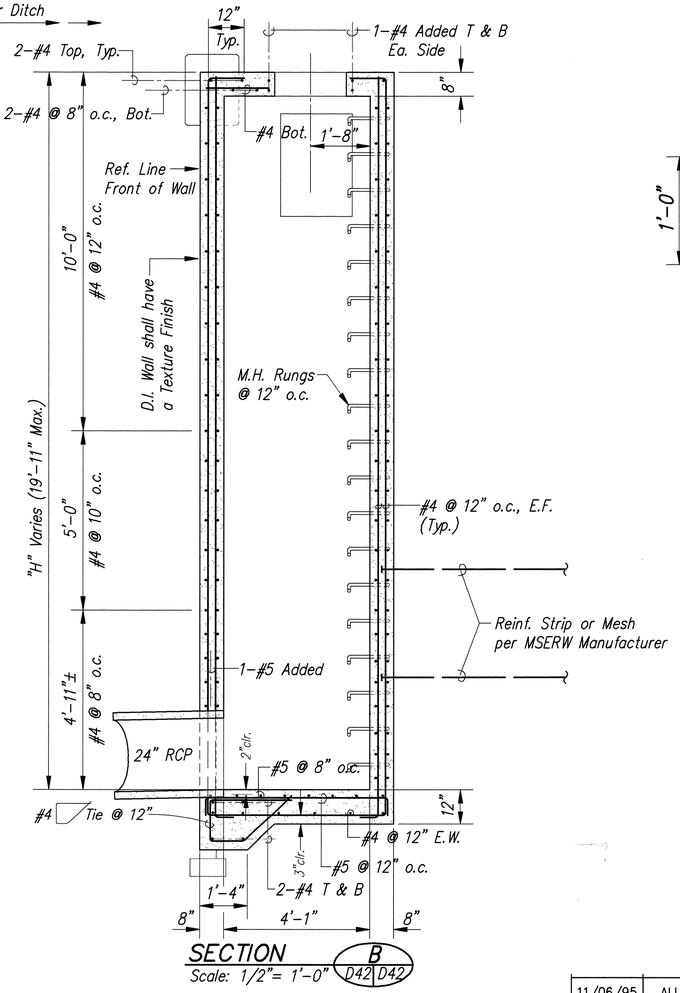
2- Galvanized Pipe shall be filled with Concrete Grout. Paint exposed pipe with "Rustoleum" Aluminum Paint or Equivalent.



SECTION A
Scale: 1/2"= 1'-0" A D42 D42

TOP SLAB PLAN

SECTION D D42 D42



SECTION B
Scale: 1/2"= 1'-0" B D42 D42

DRAIN INLET NO. 7A

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER No. 1595-C HAWAII, U.S.A.
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T. KWONG CHUN REGISTERED PROFESSIONAL ENGINEER No. 2147-S HAWAII, U.S.A.
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ParEn, Inc. dba PARK ENGINEERING

DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
ParEn, Inc. dba PARK ENGINEERING

➡ SIGNATURE HAS BEEN DIGITIZED ➡ SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D42 OF D49 SHEETS

DATE	REVISION
11/06/95	ALL REFERENCES TO DRAIN INLET NO. 9A DELETED FROM THIS SHEET

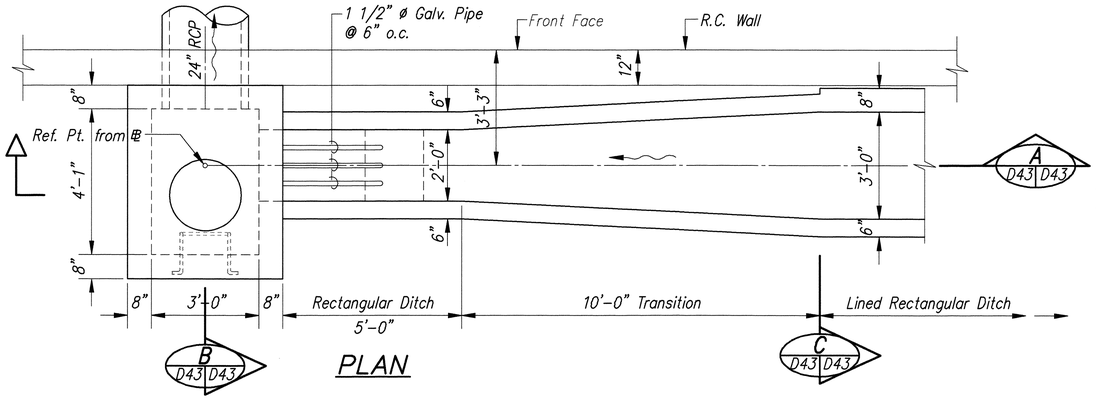
AS-BUILT C.O. 81

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

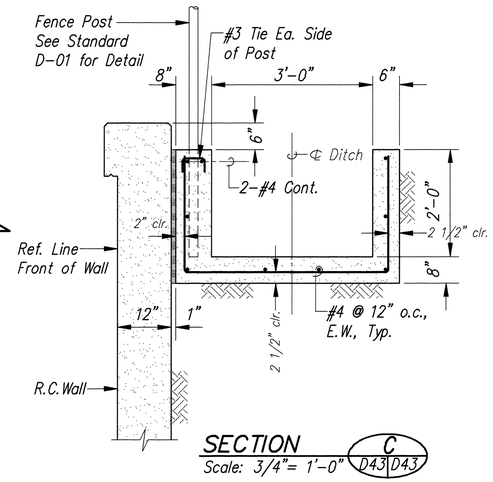
ROTATED: BASE PT.

LIB: STATE\DOT\KAHEKILI\ADDENDUM
DRAWING 2/14/96 GK

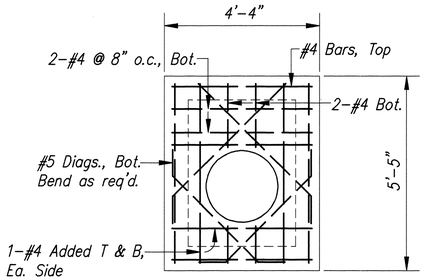
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	82	238



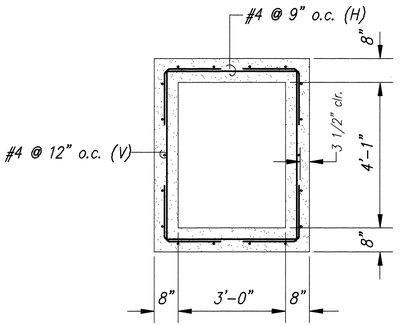
PLAN



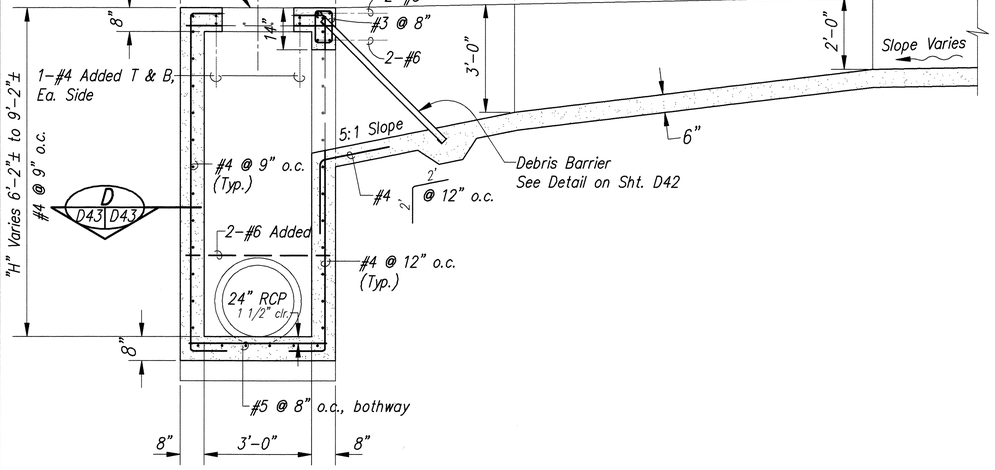
SECTION C
Scale: 3/4"= 1'-0" D43 D43



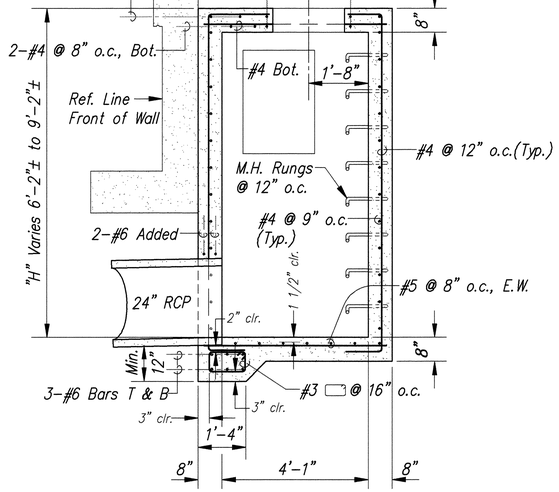
TOP SLAB PLAN



SECTION D
D43 D43



SECTION A
Scale: 1/2"= 1'-0" D43 D43



SECTION B
Scale: 1/2"= 1'-0" D43 D43

DRAIN INLET NO. 11B

ROY M. MIKAMI LICENSED PROFESSIONAL ENGINEER No. 1595-C HAWAII, U.S.A.
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ParEn, Inc. dba PARK ENGINEERING

T.I.T. KWONG CHUN REGISTERED PROFESSIONAL ENGINEER No. 2147-S HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
ParEn, Inc. dba PARK ENGINEERING
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DEXTER S. EJI REGISTERED PROFESSIONAL ENGINEER No. 4739-C HAWAII, U.S.A.
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ParEn, Inc. dba PARK ENGINEERING
** SIGNATURE HAS BEEN DIGITIZED

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

DATE	REVISION
11/06/95	REFERENCE TO DRAIN INLET NO. 11A DELETED FROM THIS SHEET.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

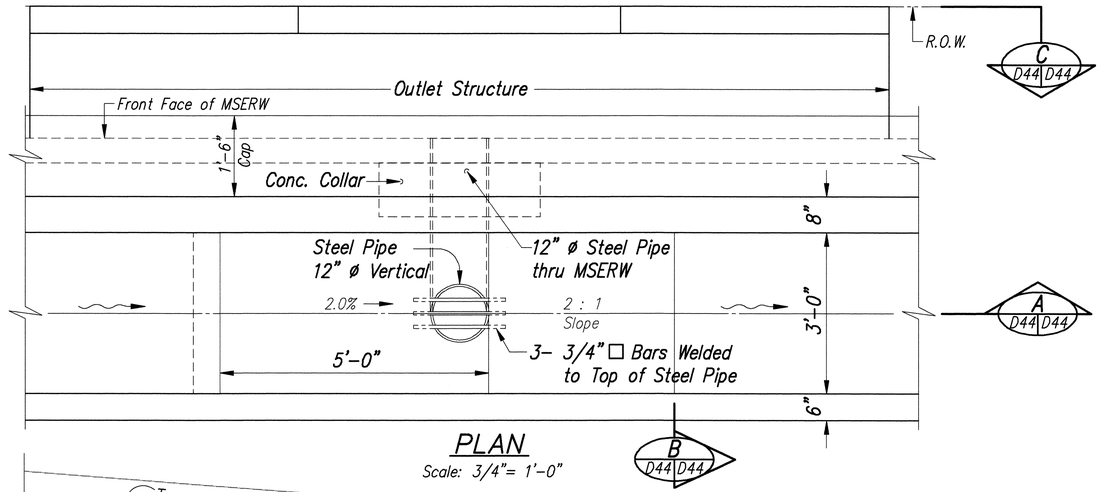
SHEET No. D43 OF D49 SHEETS

AS-BUILT C.O. 82

ROTATED: BASE PT.

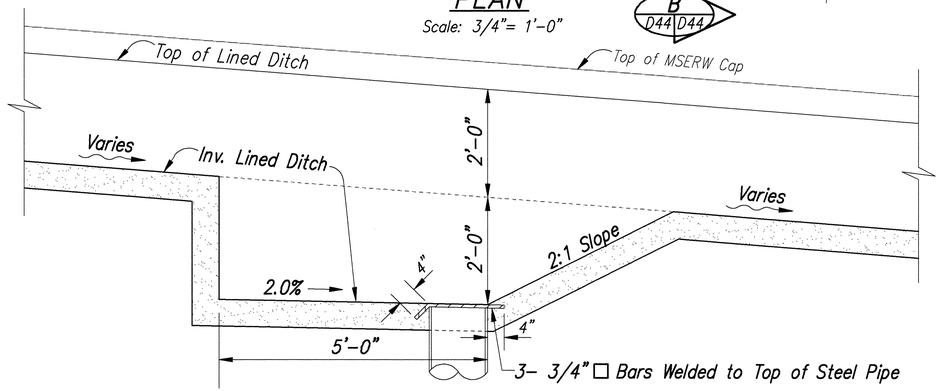
LIB: STATE\DOT\KAHEKILI\ADDENDUM\DRAD12C 2/14/96 GKI

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	83	238



PLAN

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

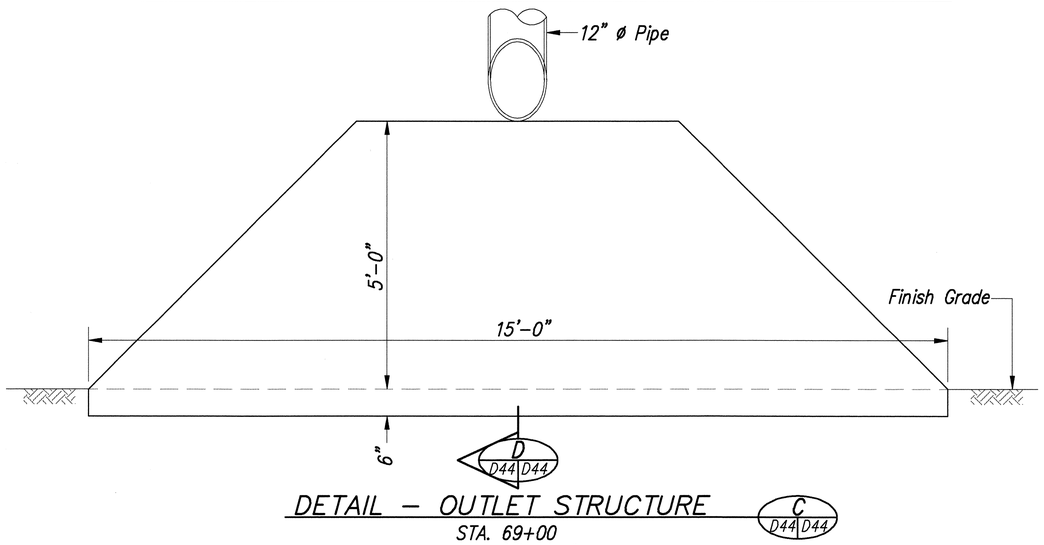


SECTION A

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

D44 D44

LINED DITCH NO. 6 AT 12" ø STEEL PIPE, ℄ STA. 69+00

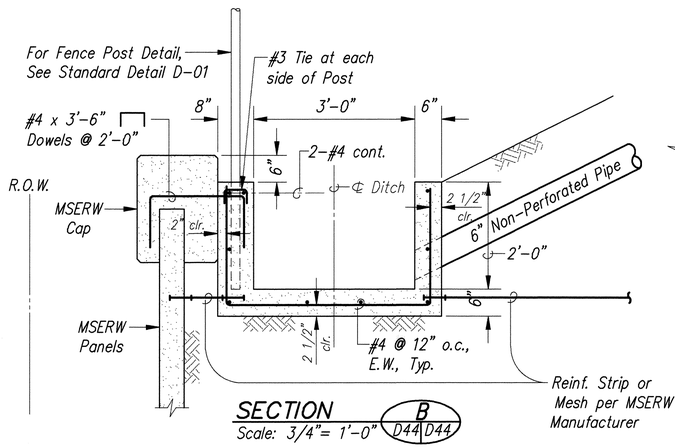


DETAIL – OUTLET STRUCTURE C

STA. 69+00

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

D44 D44

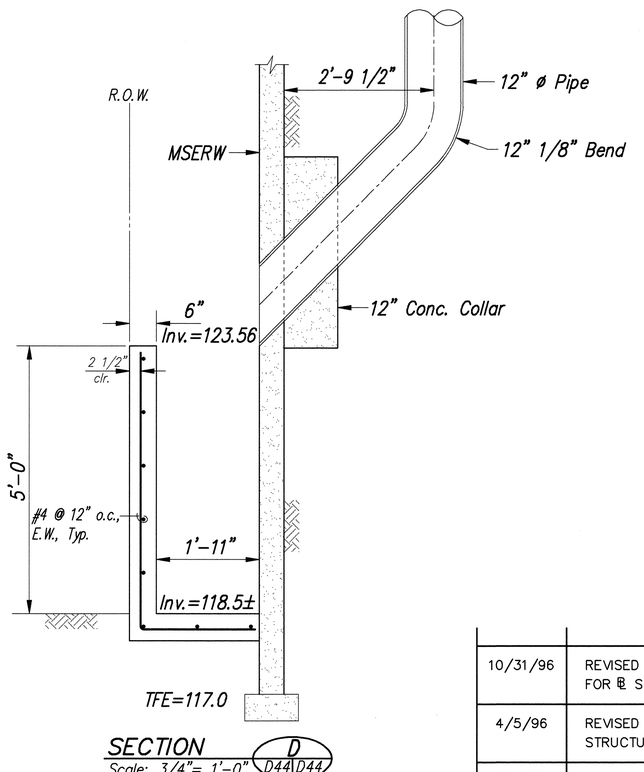


SECTION B

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

D44 D44

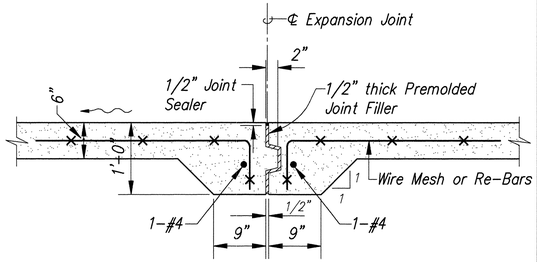
Note: 12" ø Steel Pipe, 3/4" □ Bars shall not be measured separately but shall be incidental to Lined Ditch.



SECTION D

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

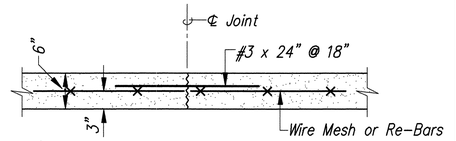
D44 D44



EXPANSION JOINT AT LINED DITCH OR CHANNEL

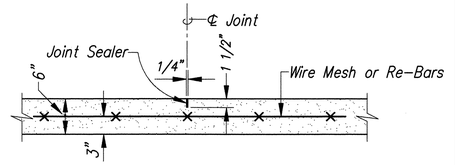
(Max. Spacing 96'-0" o.c.)

Scale: 1" = 1'-0"



CONSTRUCTION JOINT AT LINED DITCH OR CHANNEL

Scale: 1" = 1'-0"



CONTROL JOINT AT LINED DITCH OR CHANNEL

(Max. Spacing 32'-0" o.c.)

Scale: 1" = 1'-0"

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

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ParEn, Inc.
dba PARK ENGINEERING

T. T. KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

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ParEn, Inc.
dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

** SIGNATURE HAS BEEN DIGITIZED

ORIGINAL PLAN

NOTEBOOK No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DATE	REVISION
10/31/96	REVISED 12" ø PIPE OUTLET STRUCTURE FOR ℄ STA. 69+00.
4/5/96	REVISED 12" ø STEEL PIPE OUTLET STRUCTURE.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

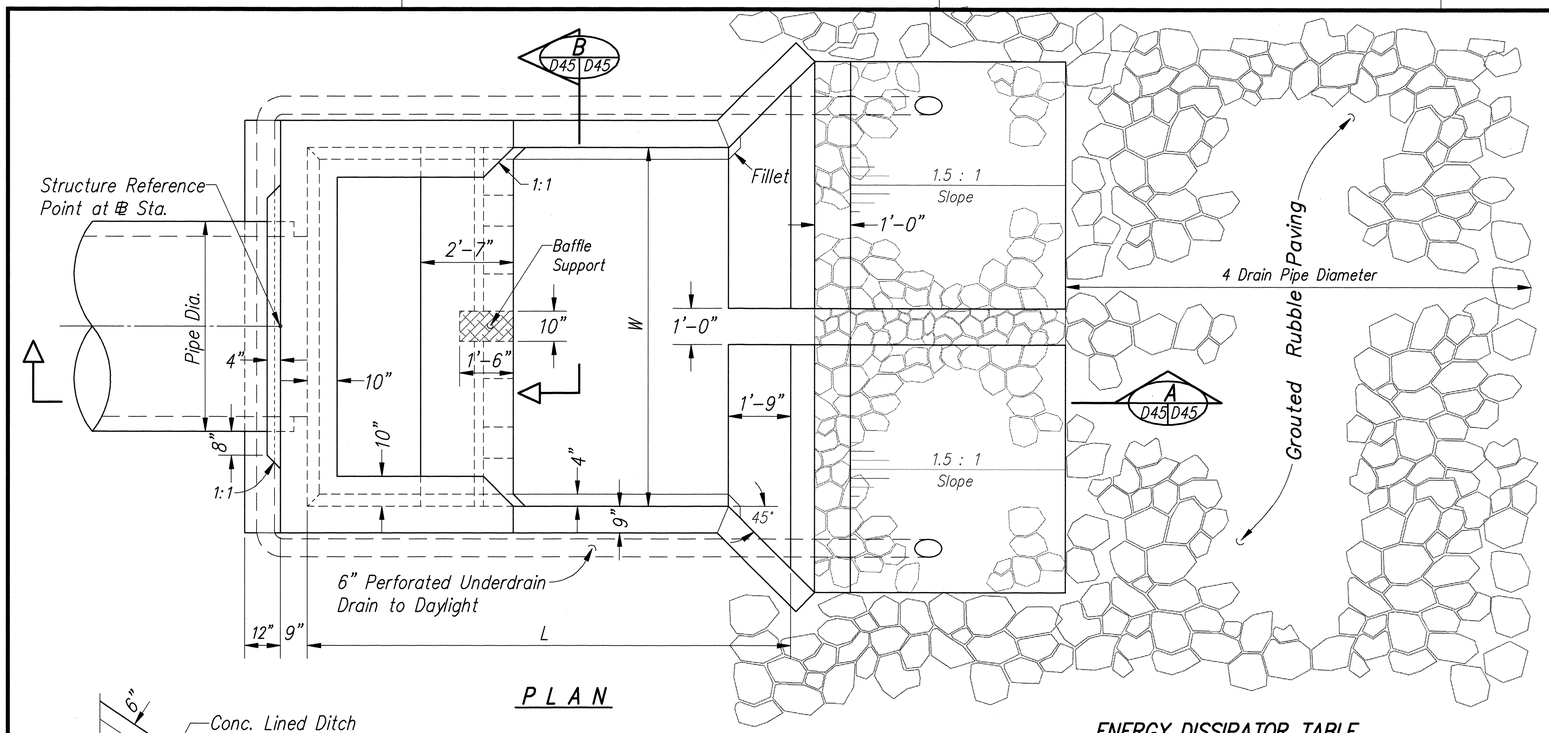
SHEET No. D44 OF D49 SHEETS

AS-BUILT C.O. 83

ROTATED: BASE PT:

I:\DL_STATE\DOT\KAHEKILI\ADDENDUM DIRECTED: 10/31/96 AMM KSU

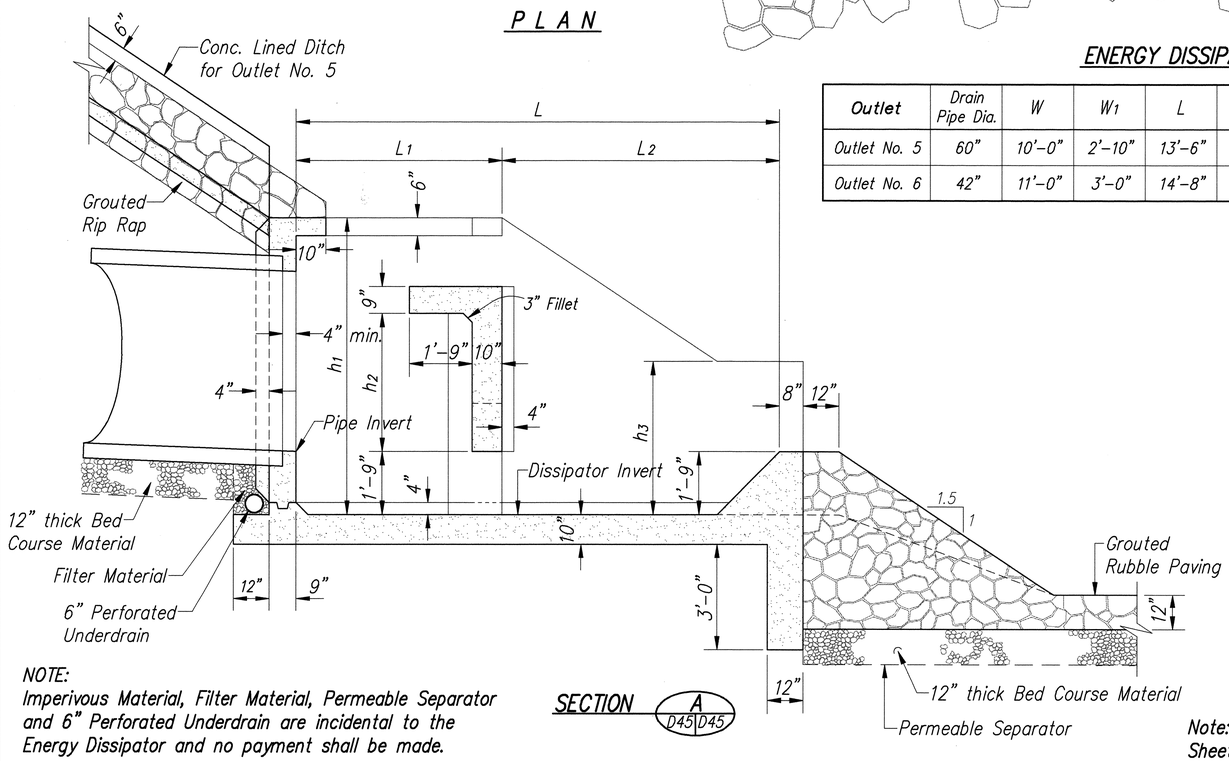
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	84	238



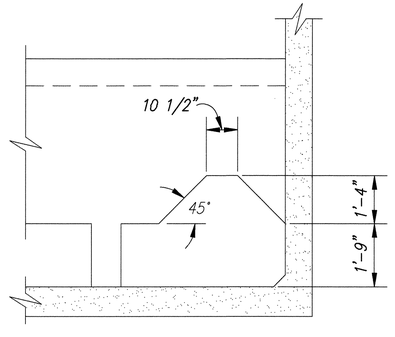
PLAN

ENERGY DISSIPATOR TABLE

Outlet	Drain Pipe Dia.	W	W1	L	L1	L2	h1	h2	h3
Outlet No. 5	60"	10'-0"	2'-10"	13'-6"	5'-9"	7'-9"	8'-3"	3'-10"	4'-3"
Outlet No. 6	42"	11'-0"	3'-0"	14'-8"	6'-3"	8'-5"	8'-5"	4'-3"	4'-8"



NOTE:
Imperivous Material, Filter Material, Permeable Separator and 6" Perforated Underdrain are incidental to the Energy Dissipator and no payment shall be made.



SECTION B
D45 D45

Note: See Structural Drawings on Sheet D47 for Reinforcing Details.

ENERGY DISSIPATOR FOR OUTLET NOS. 5, AND 6

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

T.I.T. KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

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Parsch, Inc.
dba PARK ENGINEERING

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DEXTER S. EUI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

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ParEn, Inc.
dba PARK ENGINEERING

** SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D45 OF D49 SHEETS

DATE	REVISION
7/16/96	REVISED PIPE DIA. FOR DRAIN LINE NO. 6 TO 42" TO MATCH EXIST.

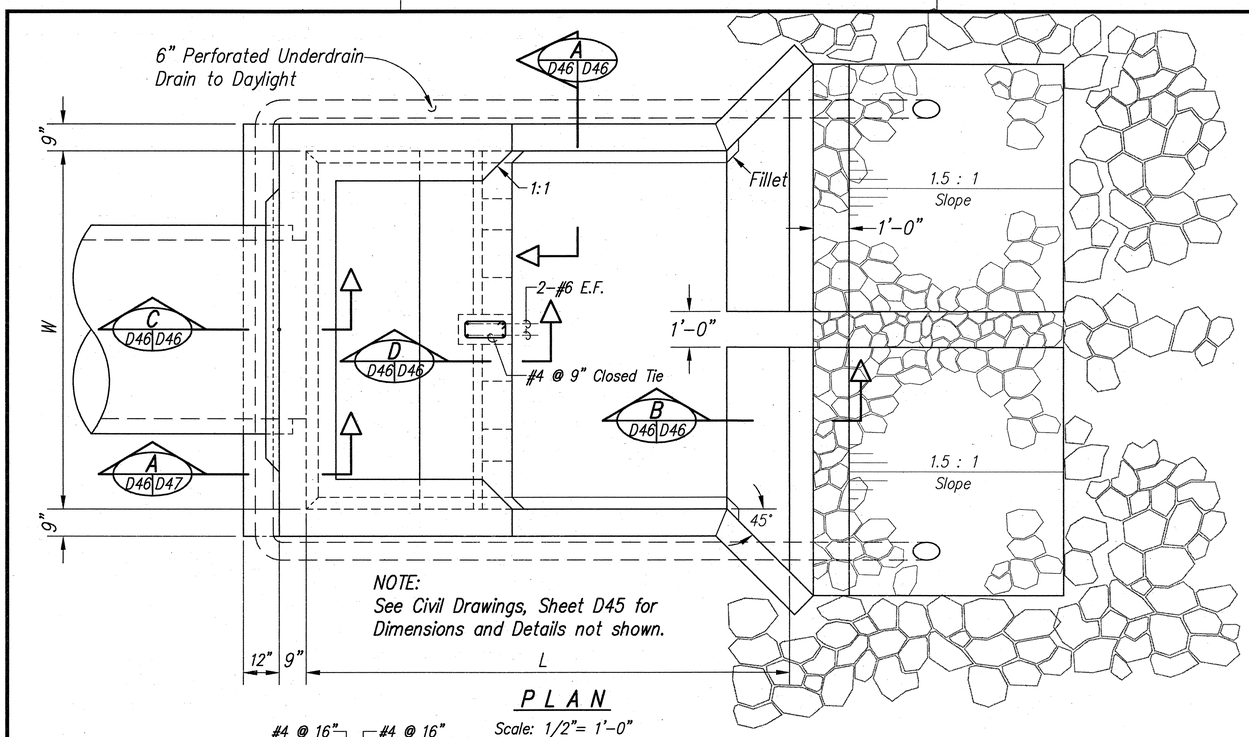
AS-BUILT C.O. 84

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

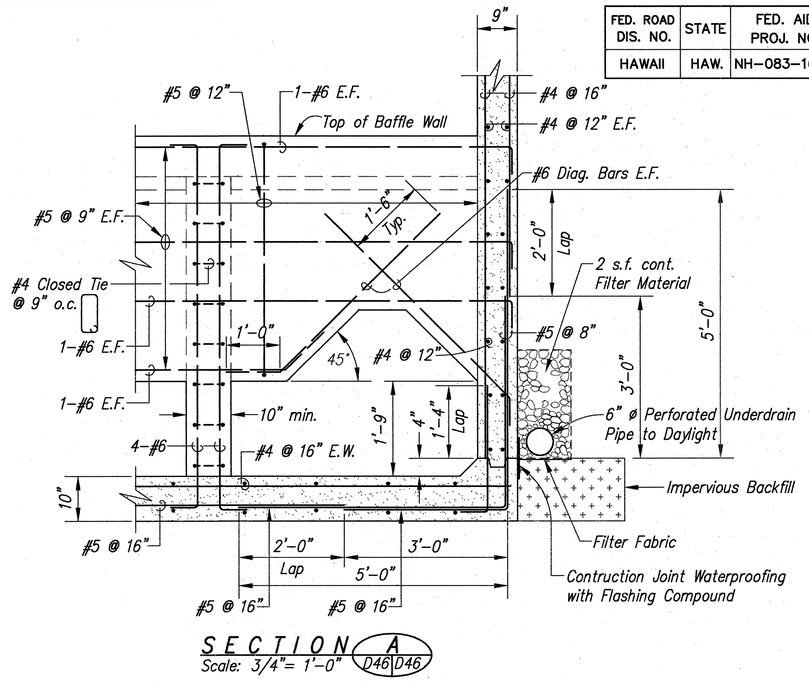
ROTATED: BASE: P1

LIB: STATE\OTT\KAHEKILI\ADDENDUM
DRAWING 7/16/96 AMM KSJ

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	85	238

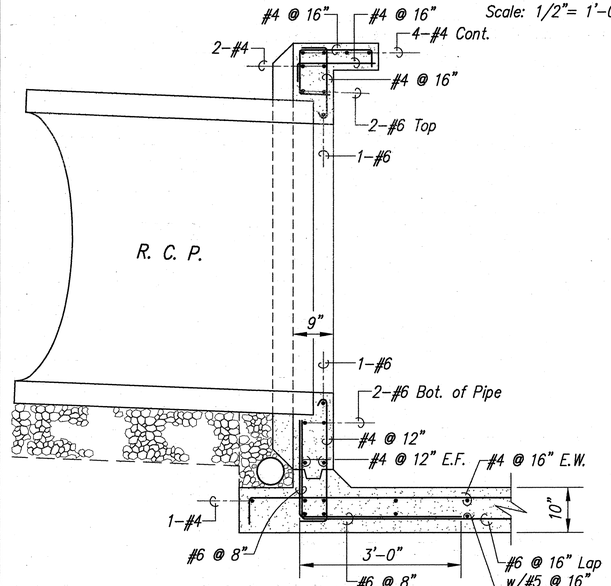


PLAN
Scale: 1/2"= 1'-0"

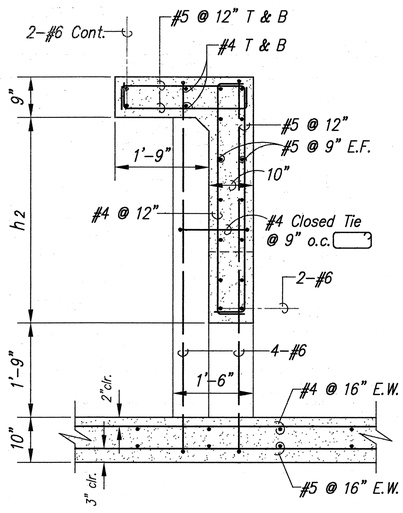


SECTION A D46 D46
Scale: 3/4"= 1'-0"

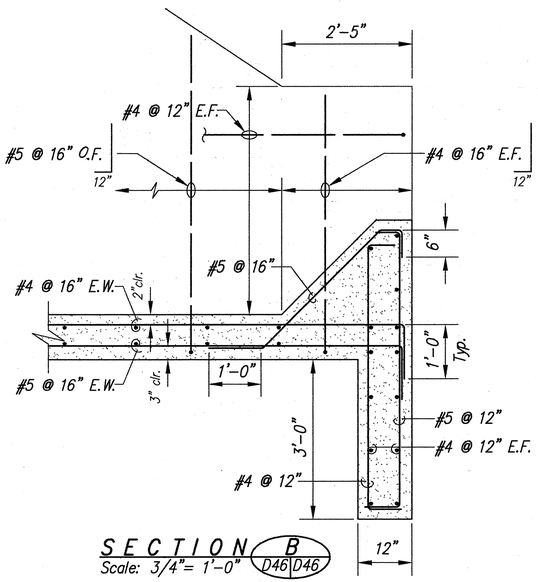
NOTE:
Impervious Material, Filter Material, Permeable Separator amd 6" Perforated Underdrain are incidental to the Energy Dissipator and no payment shall be made.



SECTION C D46 D46
Scale: 3/4"= 1'-0"



SECTION D D46 D46
Scale: 3/4"= 1'-0"



SECTION B D46 D46
Scale: 3/4"= 1'-0"

ENERGY DISSIPATOR DETAILS FOR OUTLETS NOS. 5 AND 6

T I T KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
PlanSA, Inc.
dba PARK ENGINEERING

DEXTER S. EU
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
PlanSA, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D46 OF D49 SHEETS

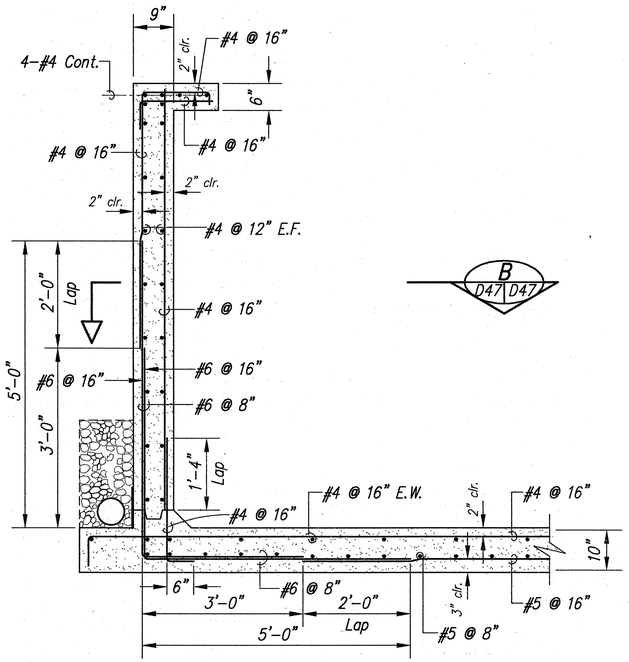
ORIGINAL PLAN
NOTEBOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ROTATED: BASE PT.

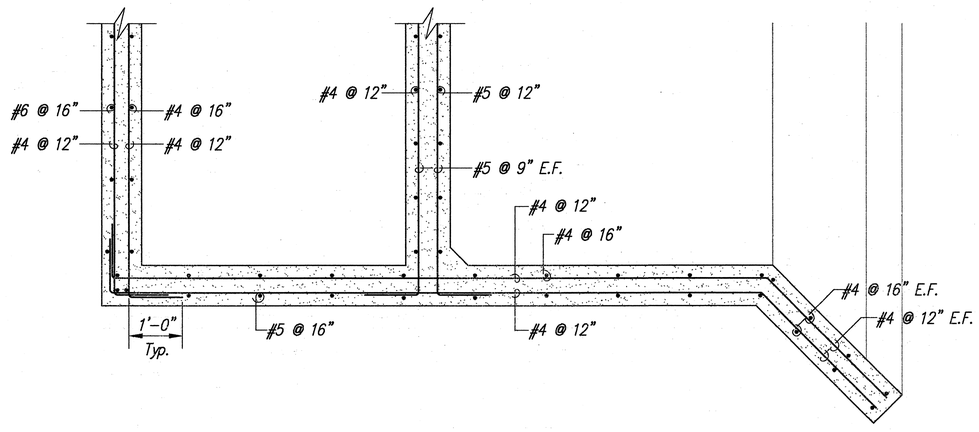
UB: STATE:\DOT\KAHEKILI\KAHET59\ DRADET24 5/21/94 AHM

AS-BUILT 85

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	86	238



SECTION A
Scale: 3/4"= 1'-0" D46 D47



SECTION B
Scale: 3/4"= 1'-0" D47 D47

ENERGY DISSIPATOR DETAILS

T I T KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D47 OF D49 SHEETS

AS-BUILT 86

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

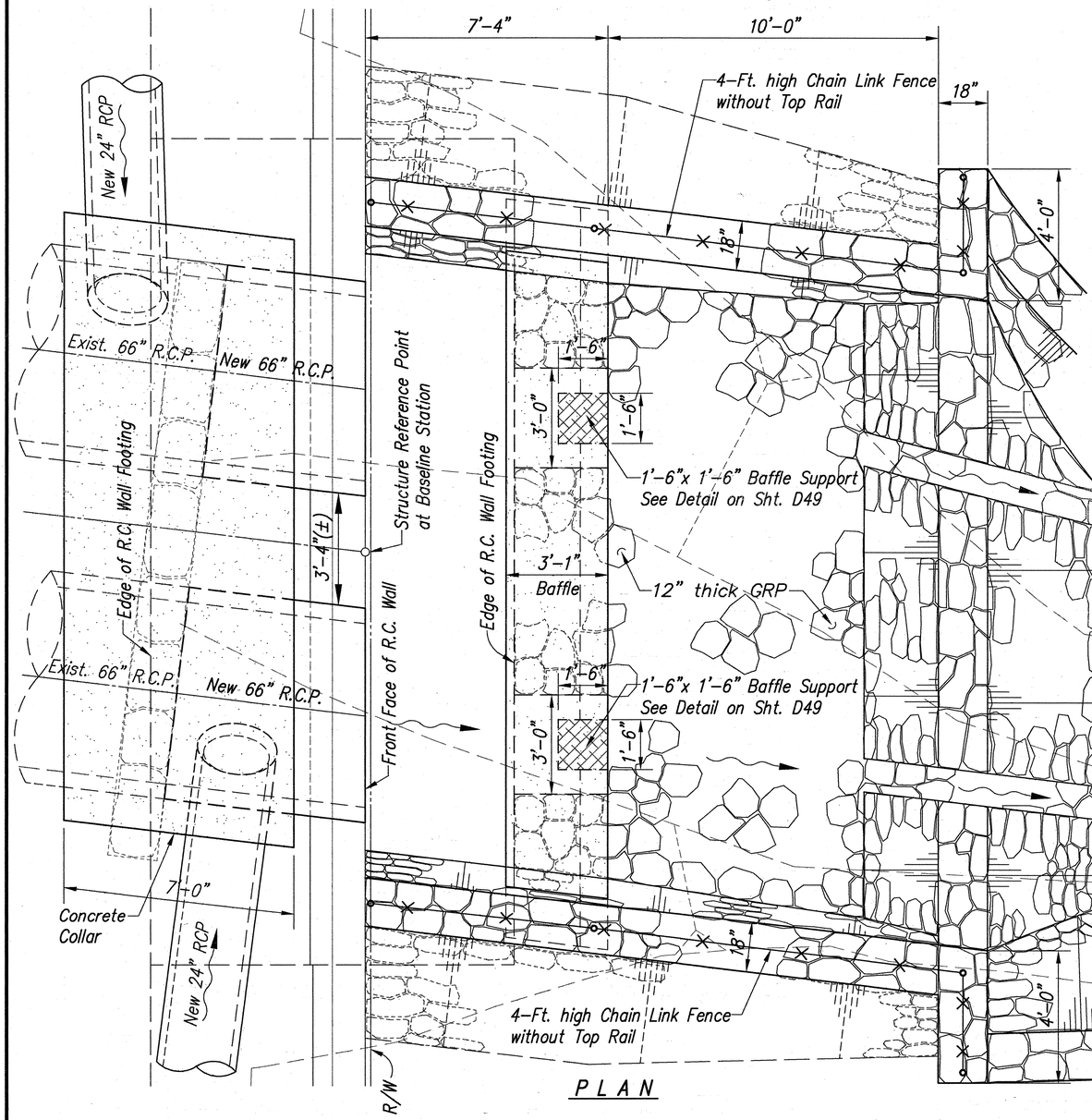
ORIGINAL PLAN
NOTEBOOK
No.

ROTATED: BASE PT.

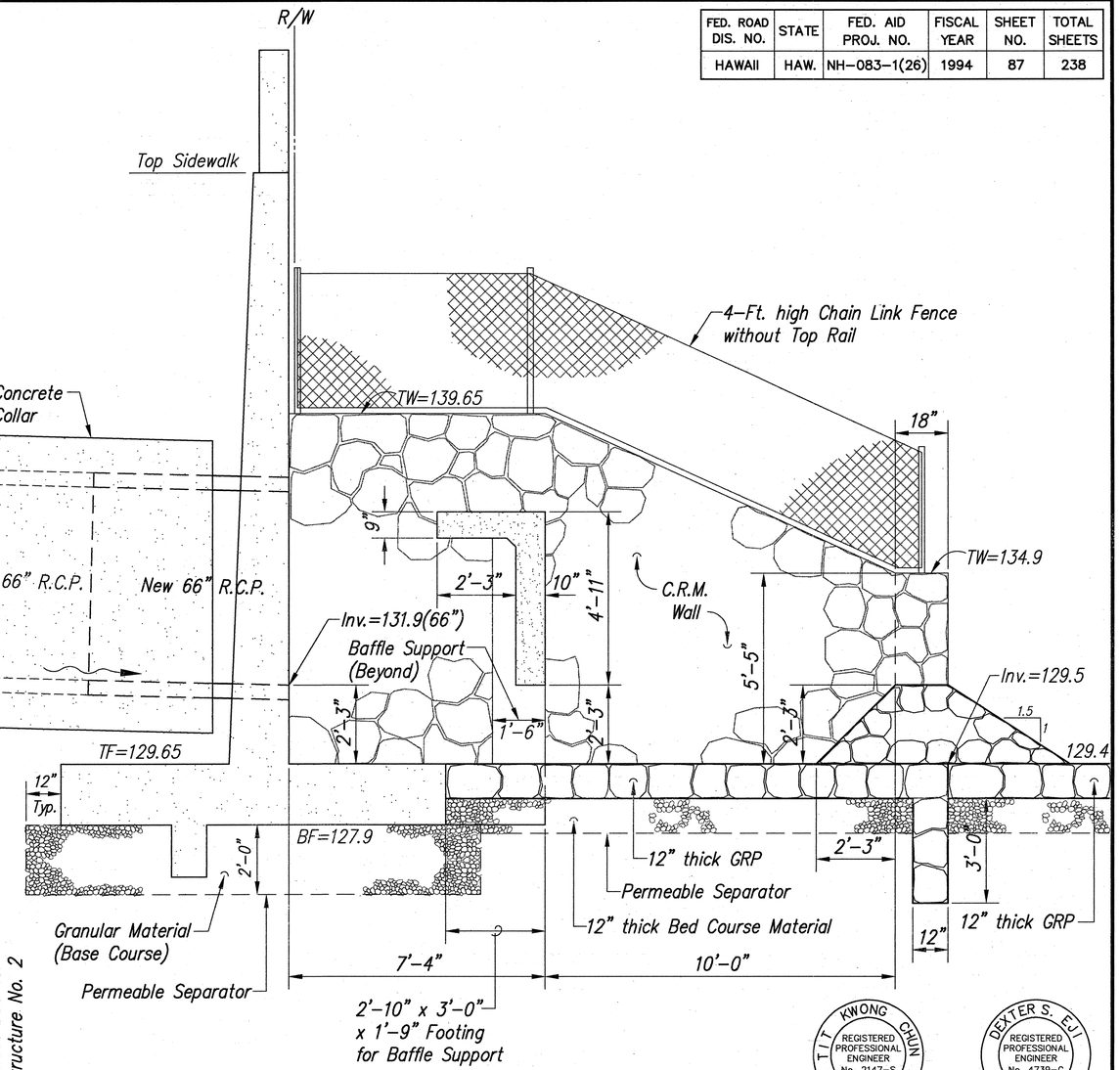
LIB: STATE\DOT\KAHEKILI\KAHE159\ DRAIE125 5/20/94 AMM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	87	238

Note:
See Structural Drawings on Sheet D49
for CRM Wall and Reinforcing Details.



PLAN



SECTION

Note:

1- Baffle and Baffle Support shall not be measured but shall be incidental to R.C. Wall No. 11

2- Permeable Separator shall be considered incidental to Granular Material or Bed Course Material and no payment shall be made.

ENERGY DISSIPATOR FOR OUTLET NO. 2

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

T I T KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

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ParEn, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D48 OF D49 SHEETS

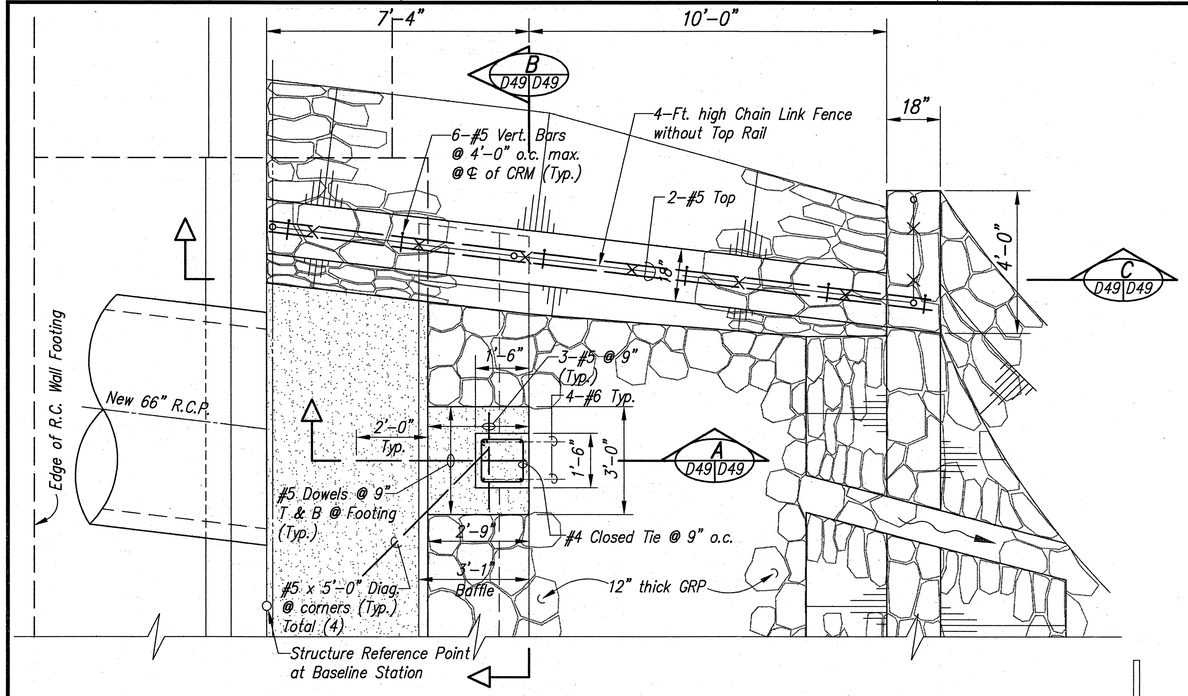
ORIGINAL PLAN
NOTEBOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ROTATED: BASE PT.

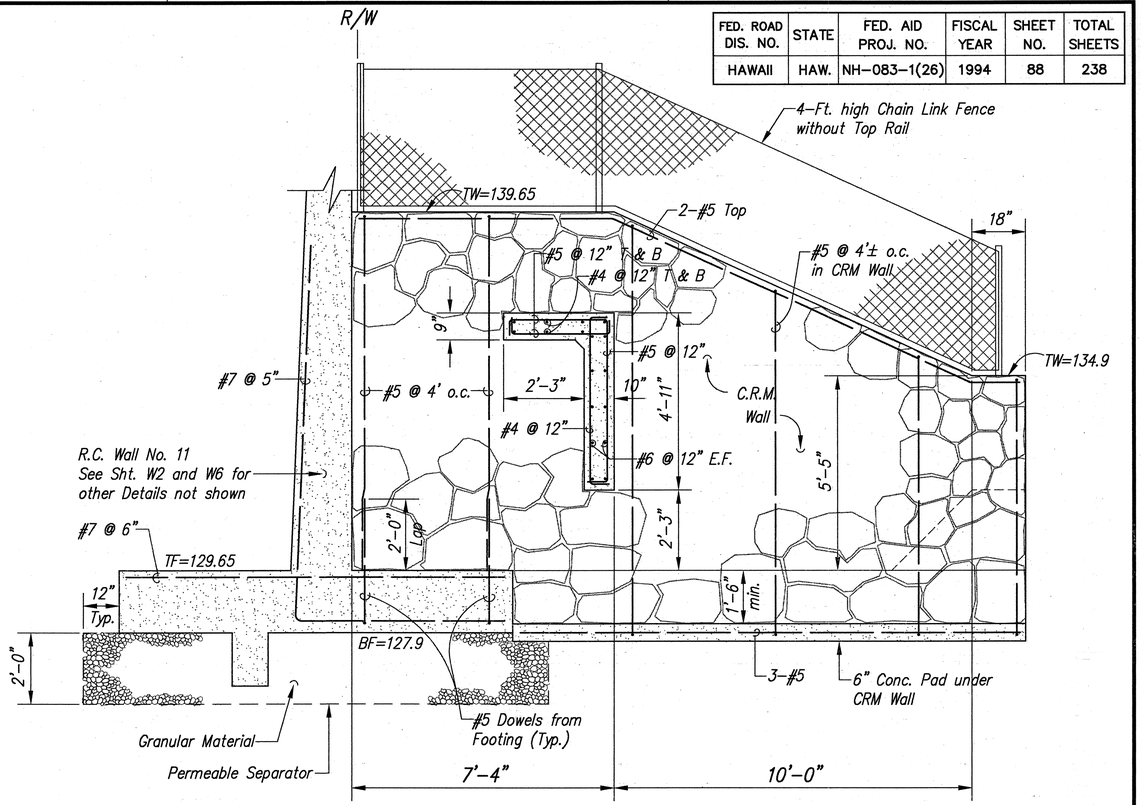
LIB: STATE\DOT\KAHEKILI\KAHE1599\ DRADET26 5/19/94 AMM

AS-BUILT 87

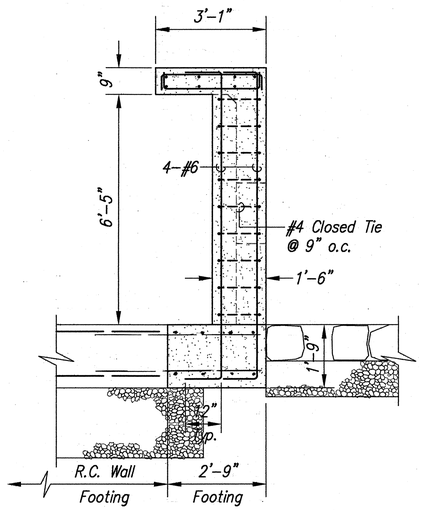
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	88	238



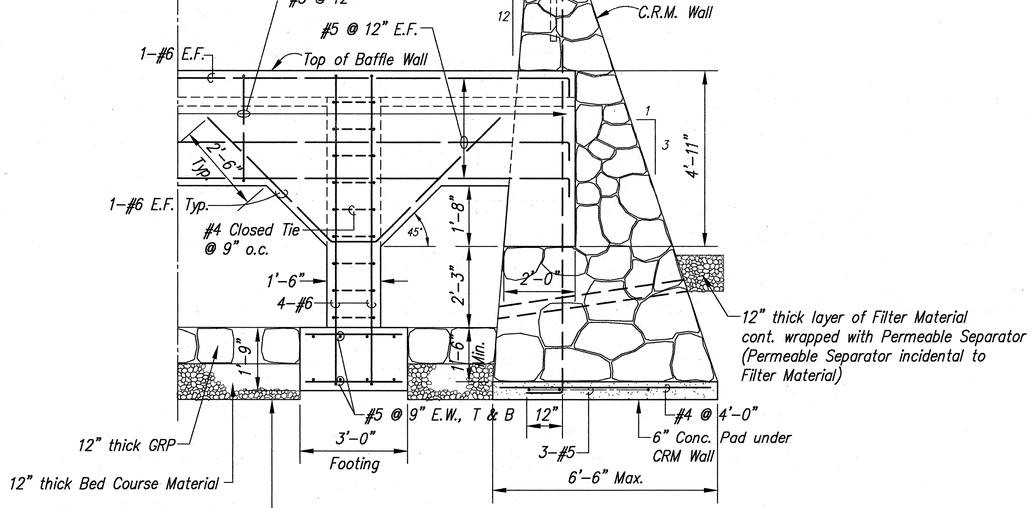
PLAN
Scale: 1/2"= 1'-0"



SECTION ALONG CRM WALL C
Scale: 1/2"= 1'-0"
D48 D49



SECTION A
Scale: 1/2"= 1'-0"
D49 D49



SECTION B
Scale: 1/2"= 1'-0"
D49 D49

ENERGY DISSIPATOR DETAILS FOR OUTLET NO. 2

T I T KWONG CHUN
REGISTERED PROFESSIONAL ENGINEER
No. 2147-S
HAWAII, U.S.A.

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PanEx, Inc.
dba PARK ENGINEERING

DEXTER S. EJI
REGISTERED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PanEx, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D49 OF D49 SHEETS

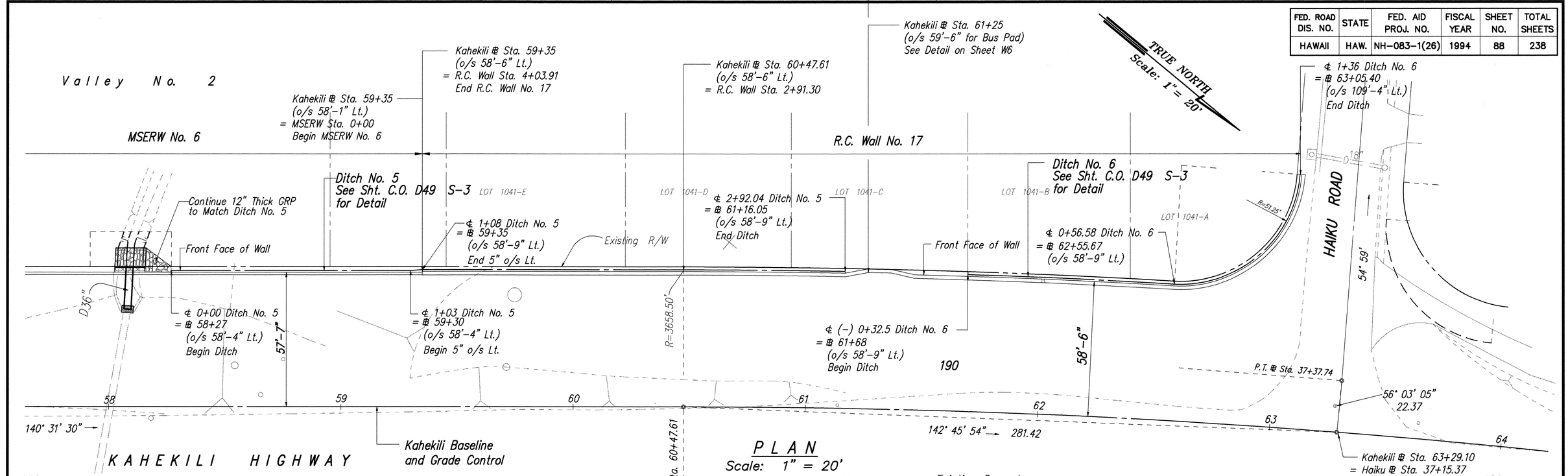
AS-BUILT 88

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

ROTATED: BASE PT.

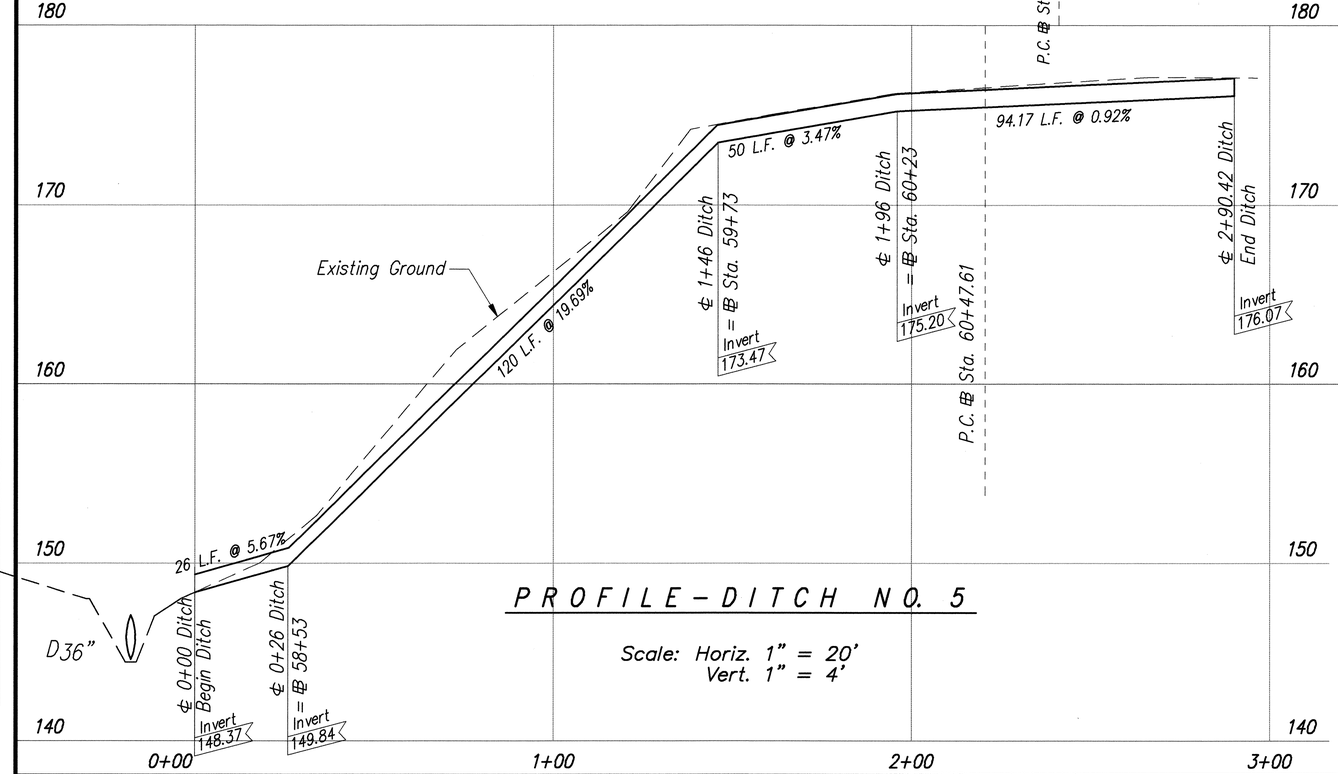
UB: STATE\DOT\KAHEKILI\KAHE1S9\ DRADET27 5/21/94 AAM

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	88	238



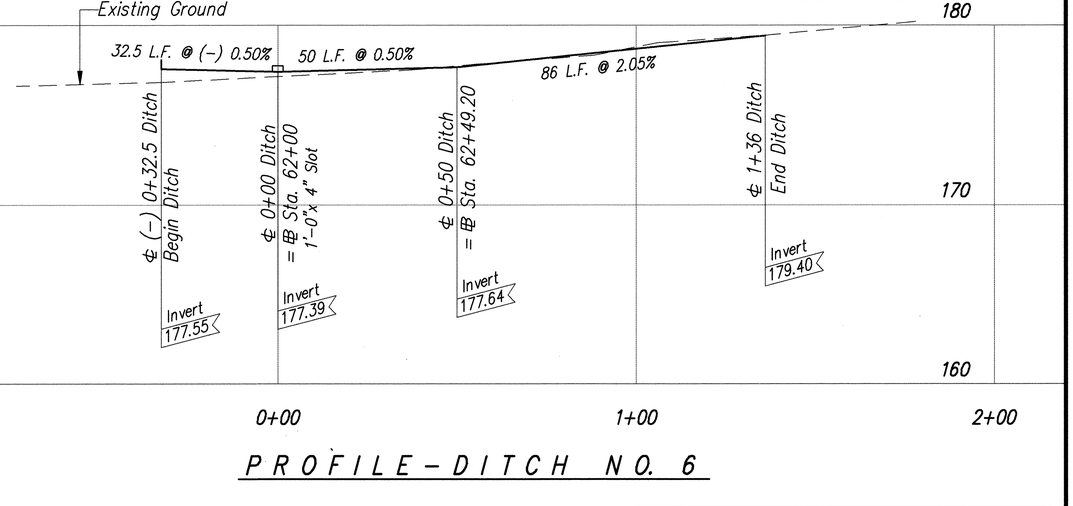
PLAN

Scale: 1" = 20'



PROFILE - DITCH NO. 5

Scale: Horiz. 1" = 20'
Vert. 1" = 4'



PROFILE - DITCH NO. 6

STUDY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
ORIGINAL PLAN
NOTEBOOK
No.

ROY MANABU MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PerEx, Inc.
dba PARK ENGINEERING

DATE	REVISION
9/27/95	ADDITION OF DITCH NOS. 5 & 6 ℄ STA. 58+27 LT. TO ℄ STA. 63+05.40 LT.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN AND PROFILE DITCH NO. 5 AND 6

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

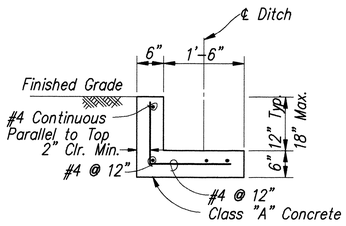
SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D49A OF D49 SHEETS

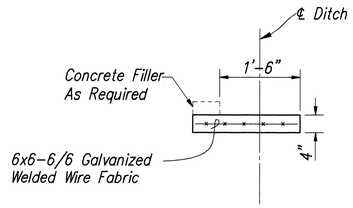
AS-BUILT C.O. 88 S-1

LIB: STATE\DOT\KAHEKILI\C.O. HAIKU 8/7/95 KSU

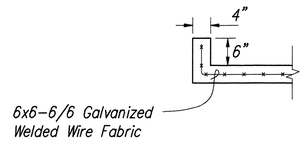
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	88	238



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



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



END SECTION
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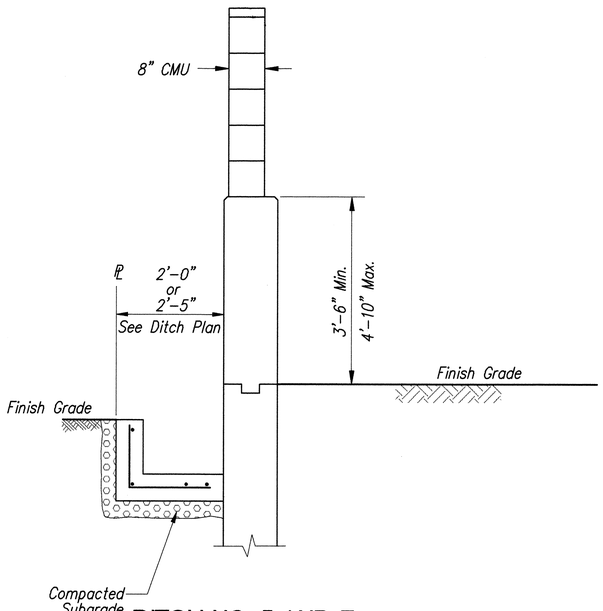
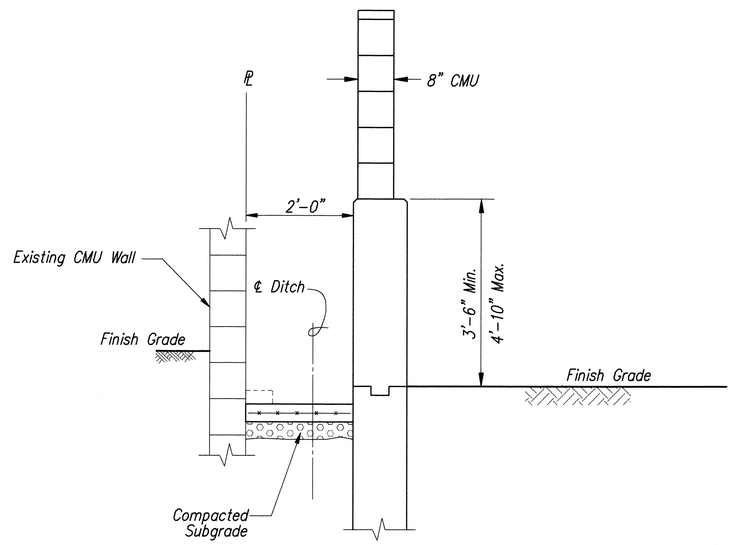


DITCH NO. 5 AND 7
SCALE: 3/4"= 1'-0"



DITCH NO. 6
SCALE: 3/4"= 1'-0"

9/27/95	ADDITION OF DITCH DETAILS FOR DITCH NOS. 5, 6 & 7
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
DITCH NO. 5, 6 AND 7

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D49B OF D49 SHEETS

ROY MANABU MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII U.S.A.

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ParEn, Inc.
dba PARK ENGINEERING

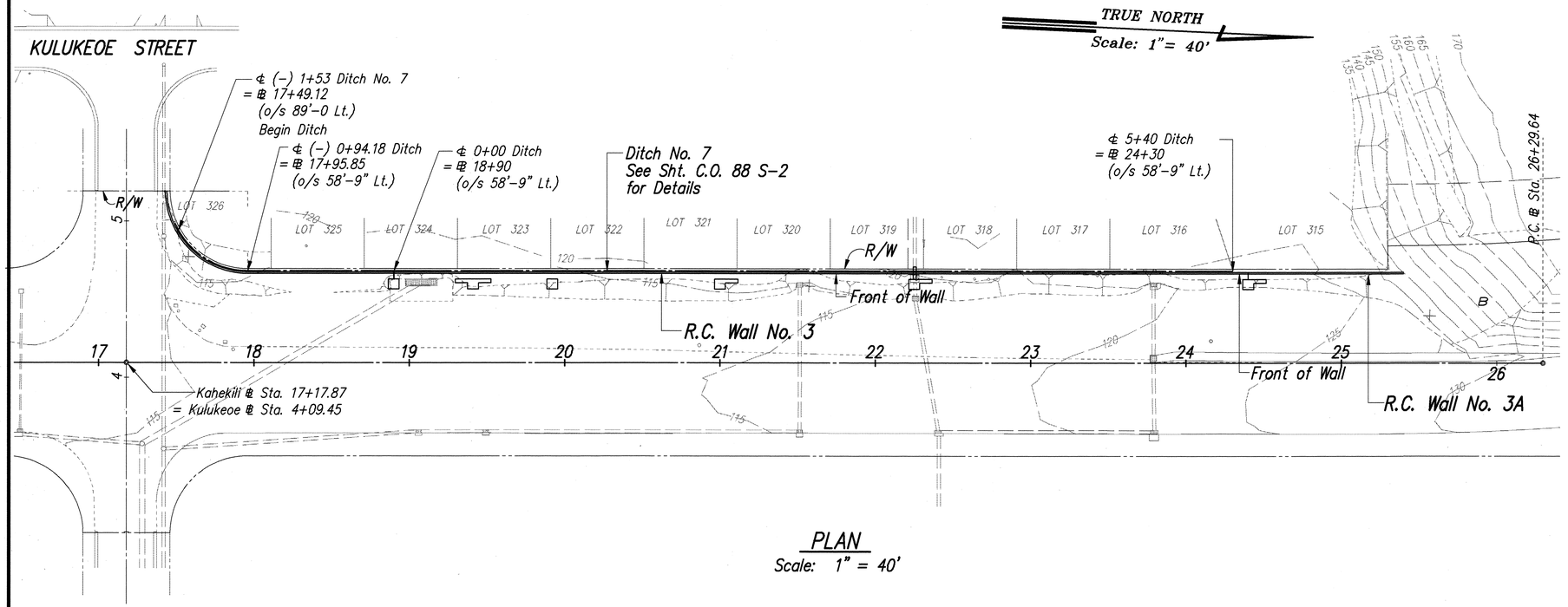
SUBMITTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

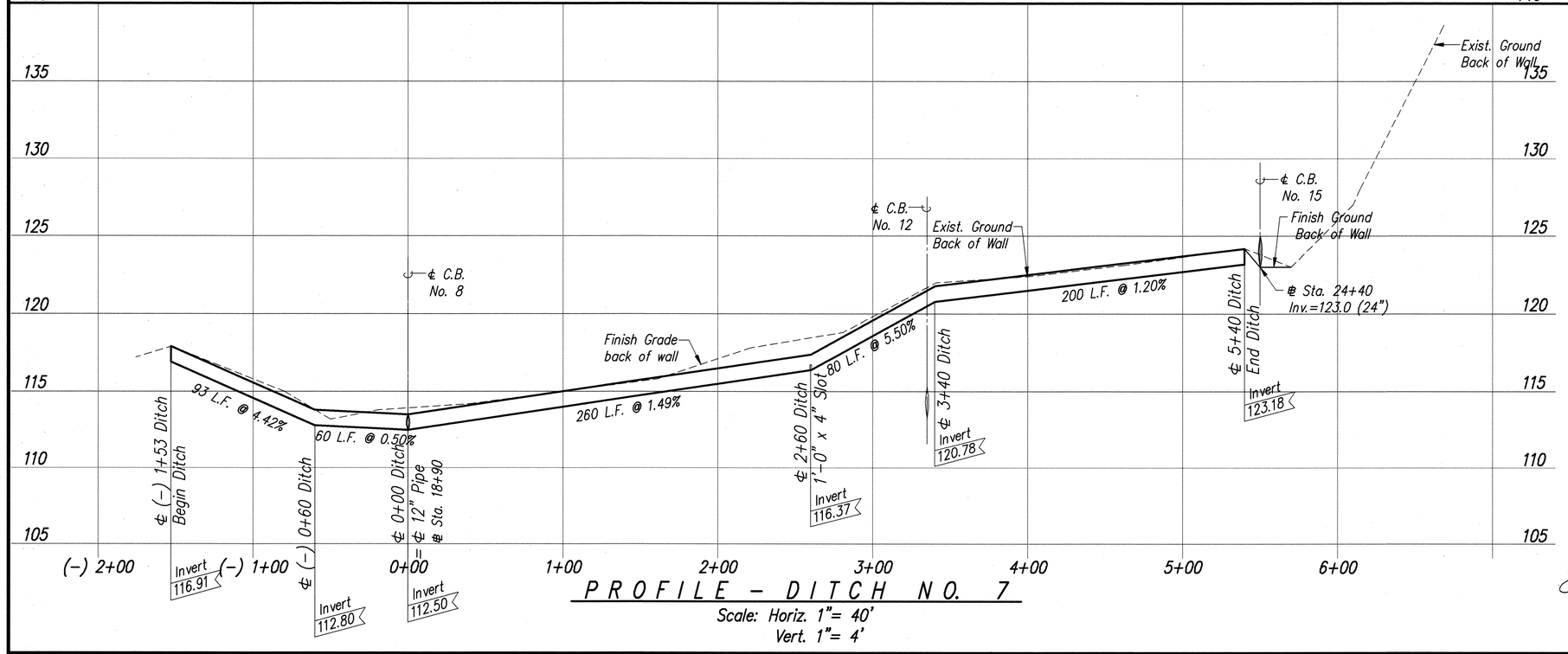
ORIGINAL PLAN
NOTEBOOK
No.

AS-BUILT C.O. 88 S-2

UB: STATE\DOT\KAHEKILI\C.O. DTDHET1 6/7/95 KSU

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	88	238





STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN AND PROFILE
DITCH NO. 7

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D49C OF D49 SHEETS

AS-BUILT C.O. 88 S-3

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
No. 1595-C
HAWAII, U.S.A.

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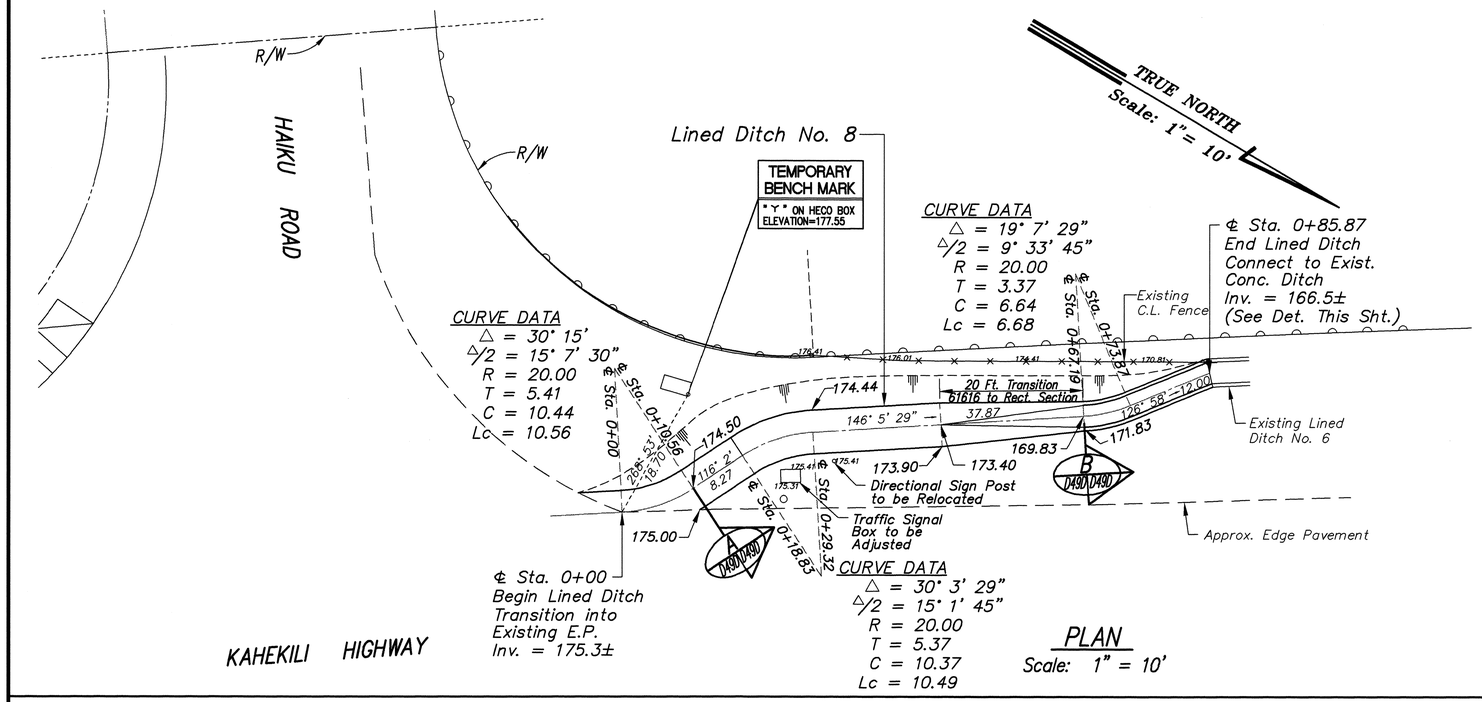
ParEn, Inc.
dba PARK ENGINEERING

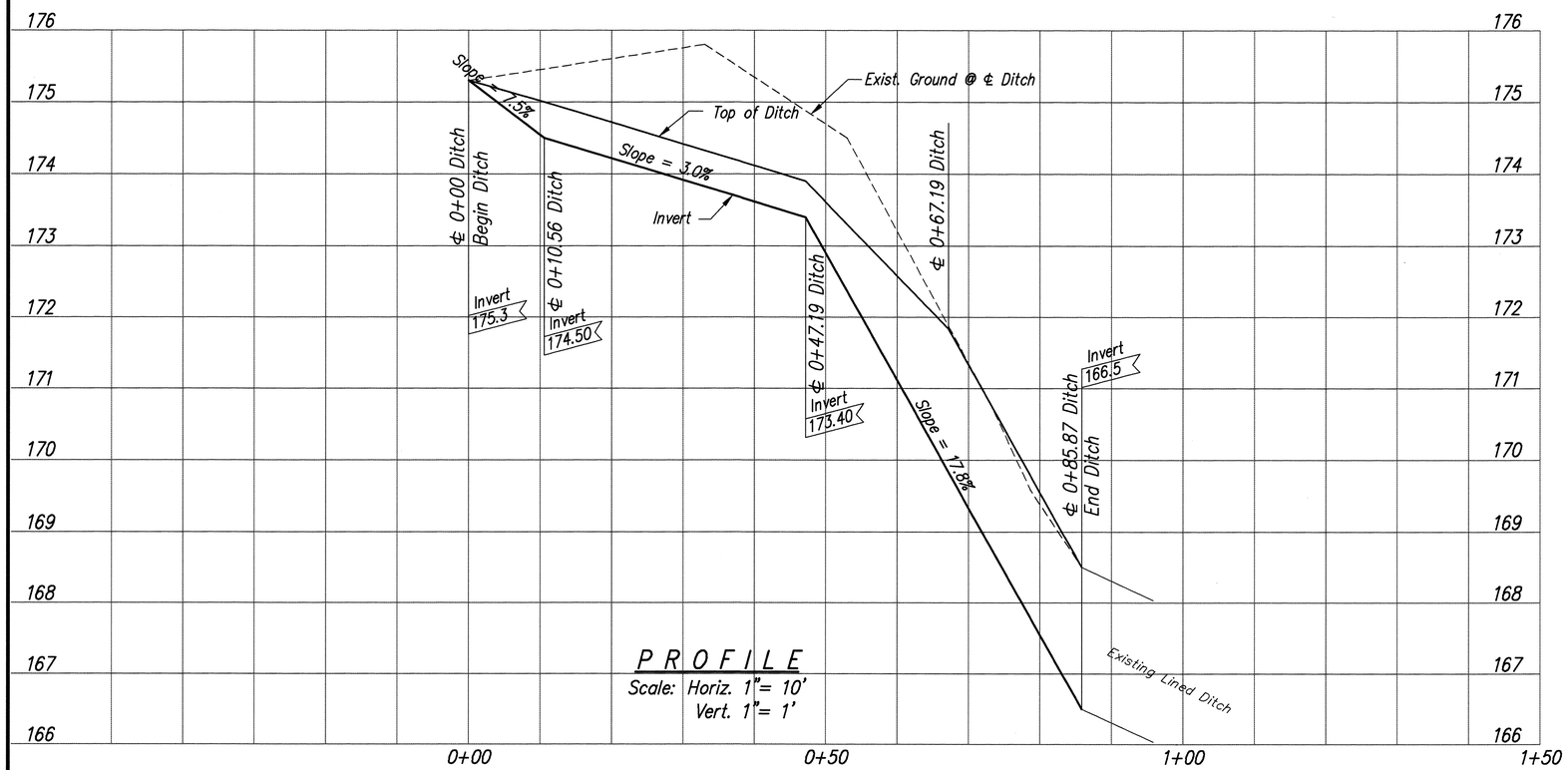
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
ORIGINAL PLAN
NOTEBOOK
No.

U:\B\ STATE\DOT\KAHEKILI\CHANGE
KULUKEOE 10/20/95 KSU

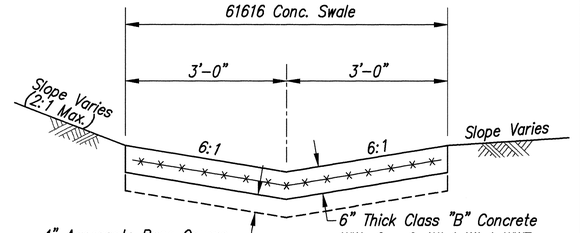
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	88	238



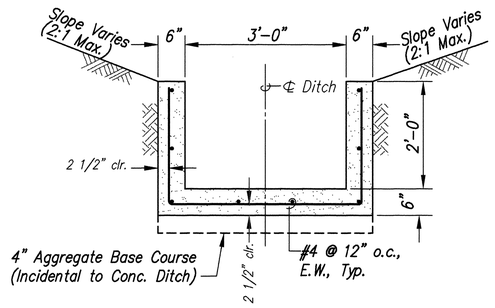
PLAN
Scale: 1" = 10'



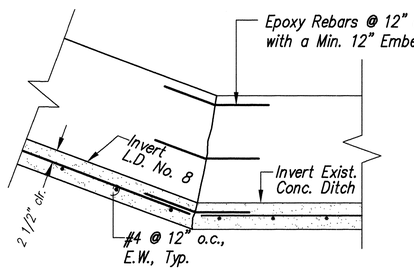
PROFILE
Scale: Horiz. 1"= 10'
Vert. 1"= 1'



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



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



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

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

DATE	REVISION
11/13/97	ADDED LINED DITCH NO. 8

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN AND PROFILE
LINED DITCH NO. 8

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

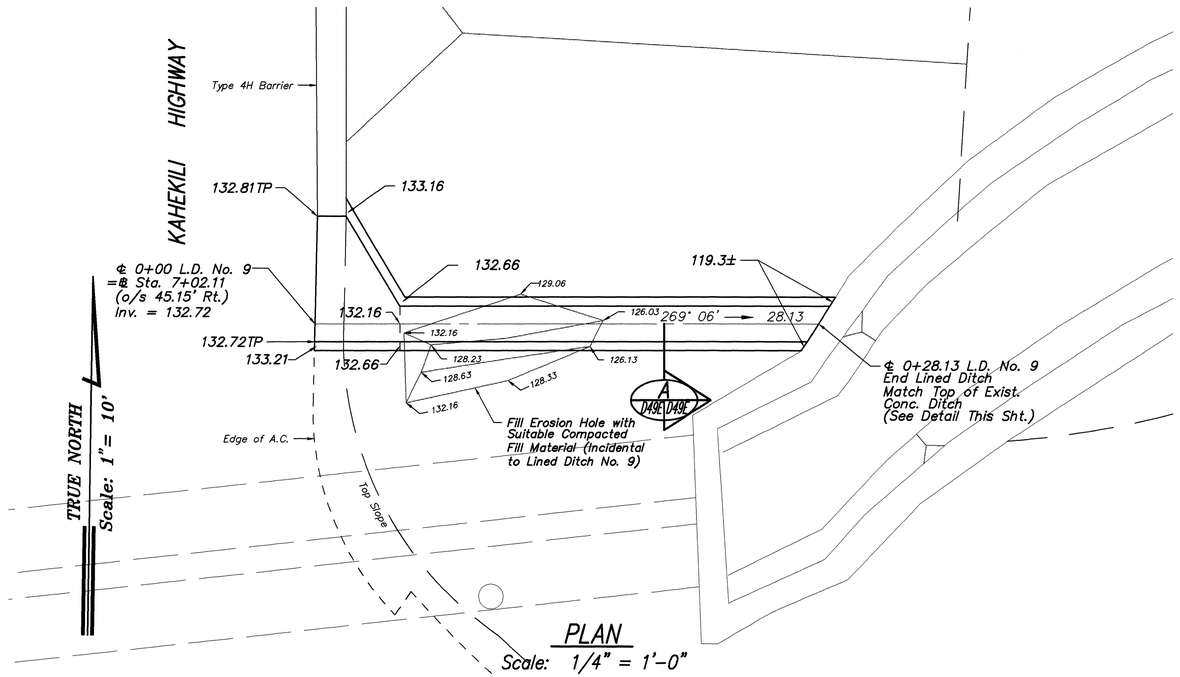
SHEET No. D49D OF D49 SHEETS

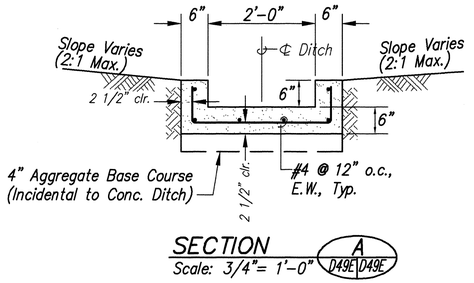
ORIGINAL PLAN
NOTEBOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

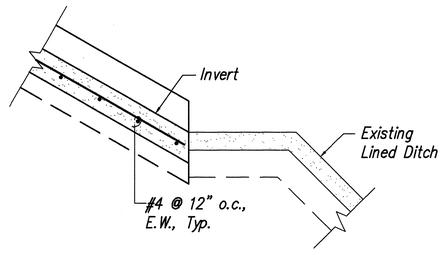
AS-BUILT C.O. 88 S-4

LIB: STATE\DOT\KAHEKILI\DO-SHEET
DRD'27Oct 11/10/97 1630

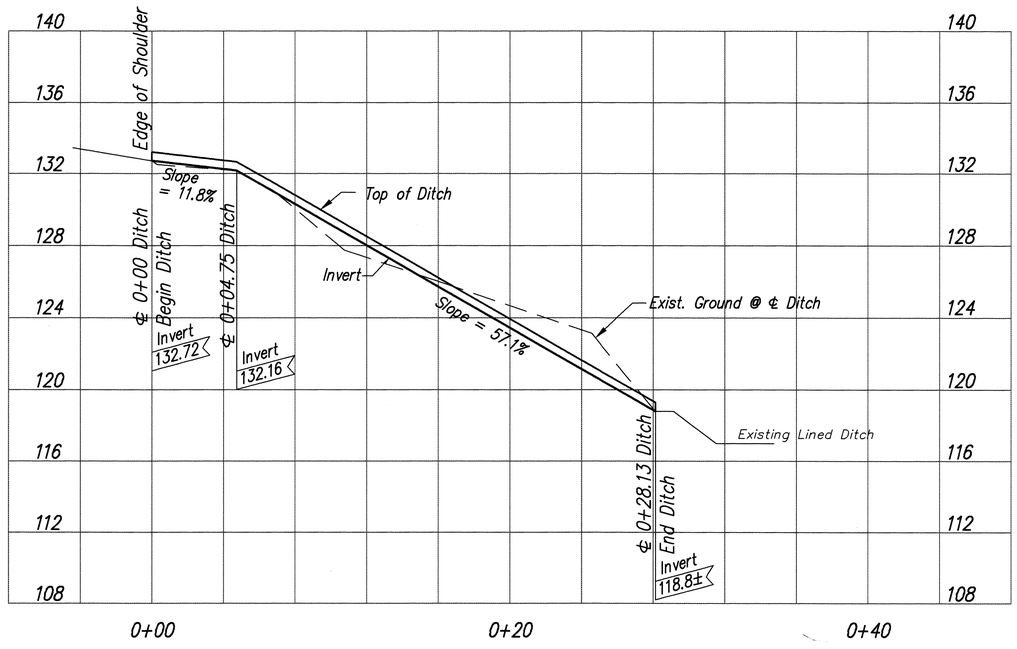
FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	88	238







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



PROFILE
Scale: Horiz. 1"= 4'
Vert. 1"= 4'

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN AND PROFILE
LINED DITCH NO. 9

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D49E OF D49 SHEETS

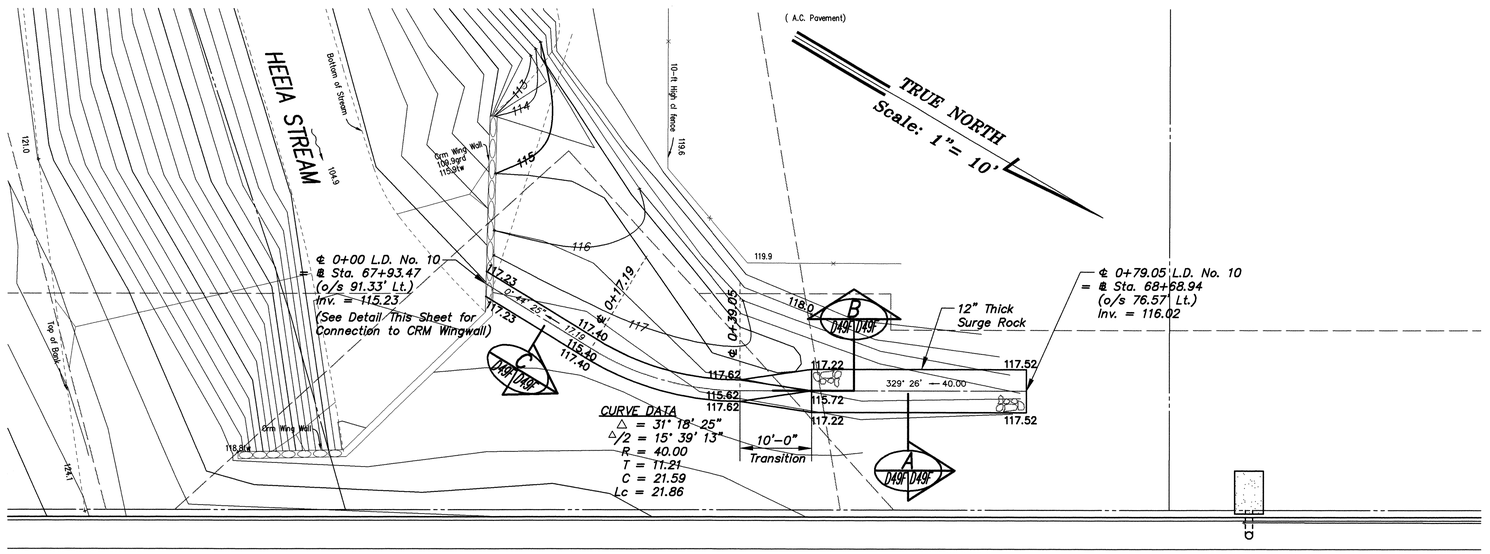
DATE	REVISION
11/13/97	ADDED LINED DITCH NO. 9

AS-BUILT C.O. 88 S-5

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

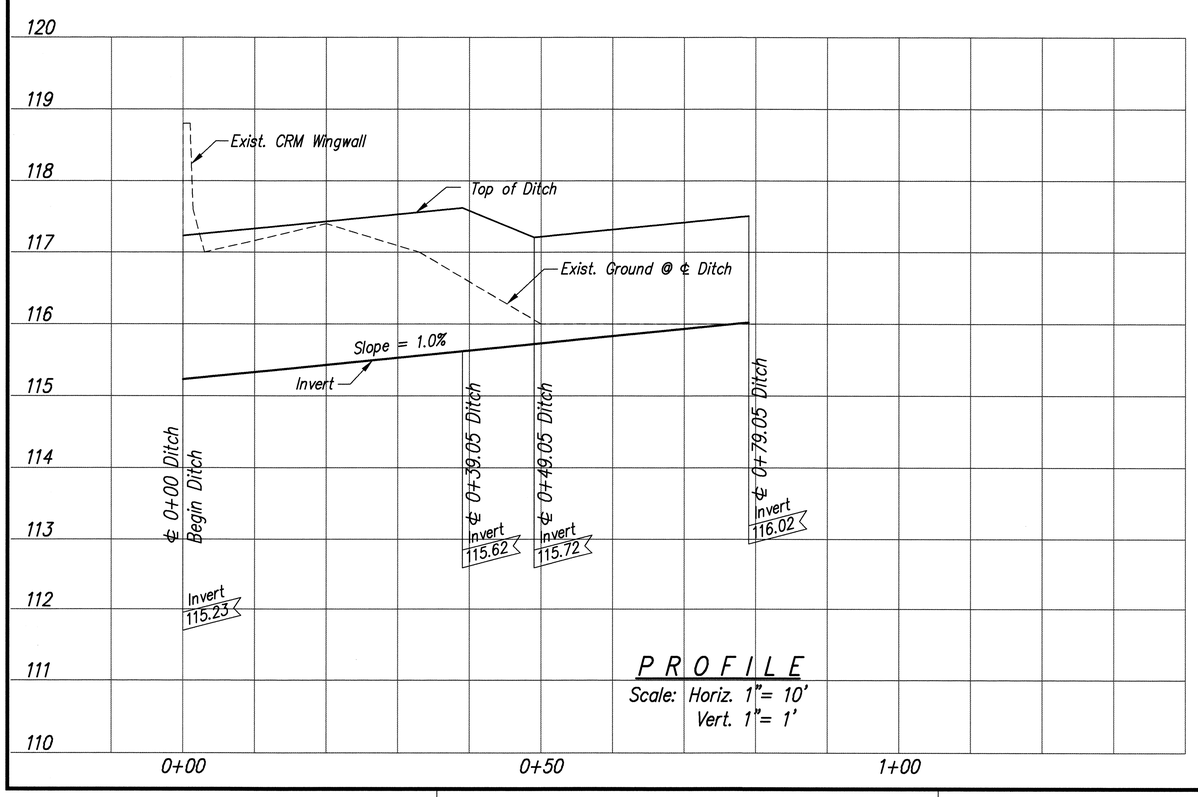
LIB: STATE\DOT\KAHEKILI\CO-SHEET
D80T2FCS 11/13/97 KSJ

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	88	238

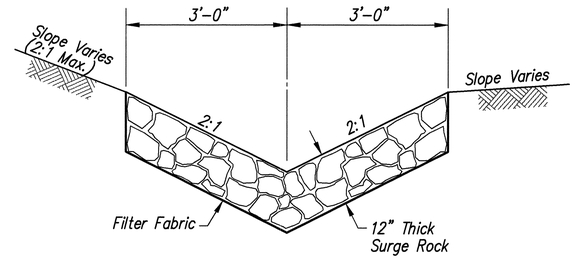


PLAN
Scale: 1" = 10'

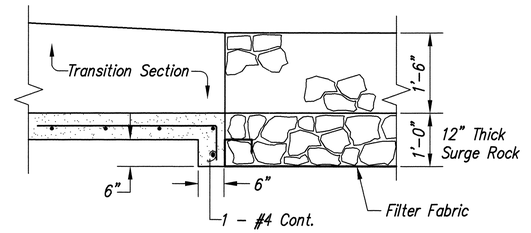
KAHEKILI HIGHWAY



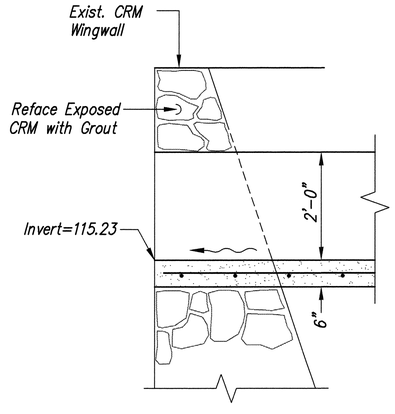
PROFILE
Scale: Horiz. 1"= 10'
Vert. 1"= 1'



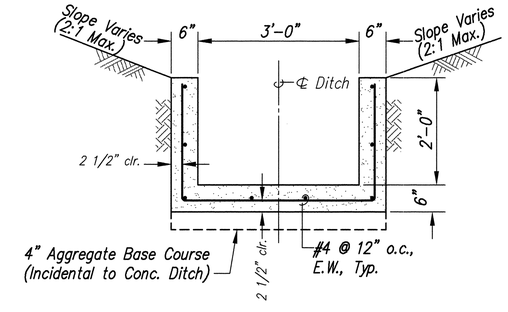
SECTION A
Scale: 3/4"= 1'-0"
D49F D49F



SECTION B
Scale: 3/4"= 1'-0"
D49F D49F



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



SECTION C
Scale: 3/4"= 1'-0"
D49F D49F

ROY M. MIKAMI
LICENSED PROFESSIONAL ENGINEER
NO. 1595-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PacEn, Inc.
dba PARK ENGINEERING

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

DATE	REVISION
12/4/97	ADDED LINED DITCH NO. 10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN AND PROFILE
LINED DITCH NO. 10

KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)

SCALE: AS NOTED DATE: APRIL 1994

SHEET No. D49F OF D49 SHEETS

AS-BUILT C.O. 88 S-6

LIB: STATE\DOT\KAHEKILI\CO-SHEET
DN01Z708 11/13/97 KSU