

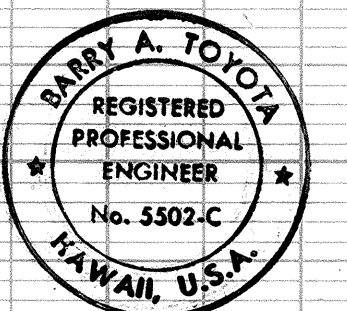
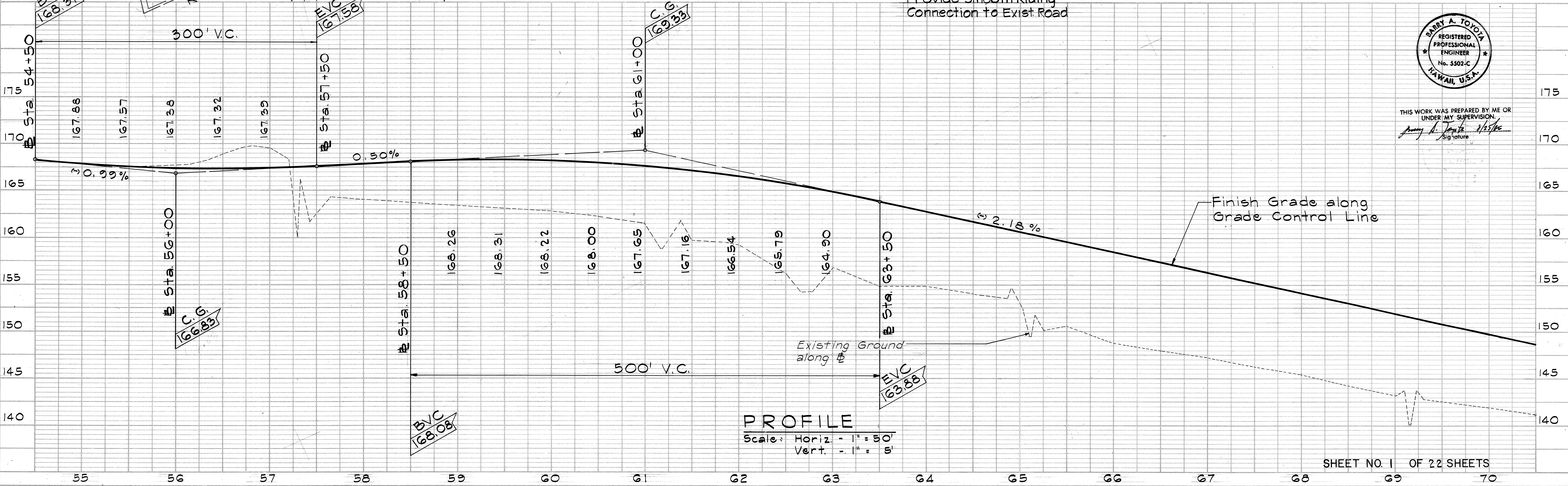
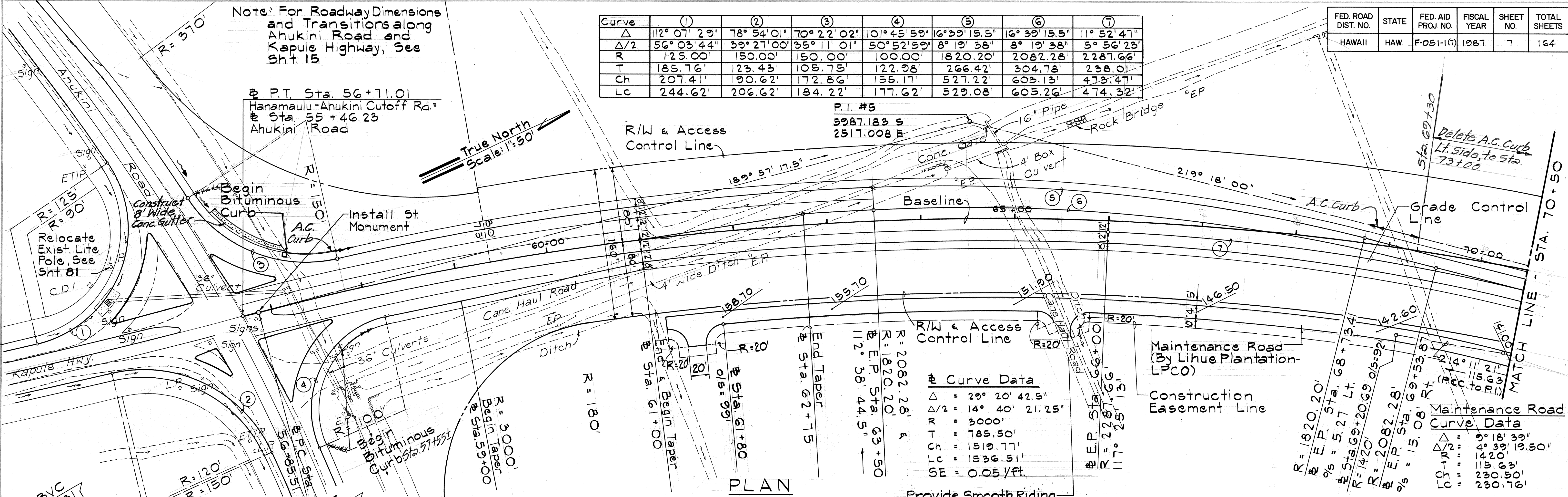
PLAN	SURVEYED	DATE
PLOTTED	BY	
NOTE BOOK		
NO.		

PROFILE	SURVEYED	DATE
PLOTTED	BY	
NOTE BOOK		
NO.		

Note: For Roadway Dimensions and Transitions along Ahukini Road and Kapule Highway, See Sht. 15

Curve	①	②	③	④	⑤	⑥	⑦
Δ	112° 07' 29"	78° 54' 01"	70° 22' 02"	101° 45' 59"	16° 39' 15.5"	16° 39' 15.5"	11° 52' 47"
$\Delta/2$	56° 03' 44"	39° 27' 00"	35° 11' 01"	50° 52' 59"	8° 19' 38"	8° 19' 38"	5° 56' 23"
R	125.00'	150.00'	150.00'	100.00'	1820.20'	2082.28'	2287.66'
T	185.76'	123.43'	105.75'	122.98'	266.42'	304.78'	238.01'
Ch	207.41'	190.62'	172.86'	155.17'	527.22'	603.13'	473.47'
Lc	244.62'	206.62'	184.22'	177.62'	529.08'	605.26'	474.32'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	7	164



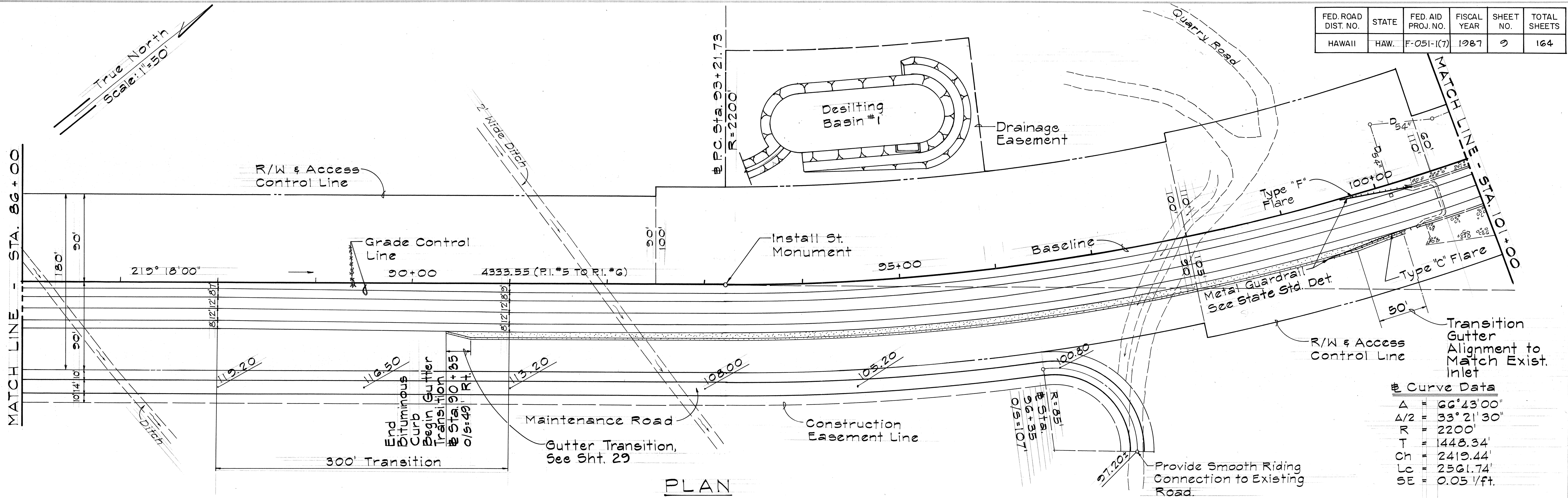
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Barry A. Tolson 1/23/88
 Signature

PROFILE
 Scale: Horiz. - 1" = 50'
 Vert. - 1" = 8'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	9	164

PLAN	DATE	BY	DATE
SURVEYED			
PLOTTED			
NOTE BOOK			
NO.			

PROFILE	DATE	BY	DATE
SURVEYED			
PLOTTED			
NOTE BOOK			
NO.			



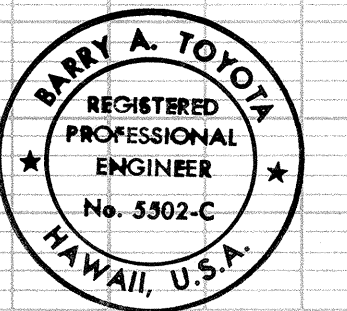
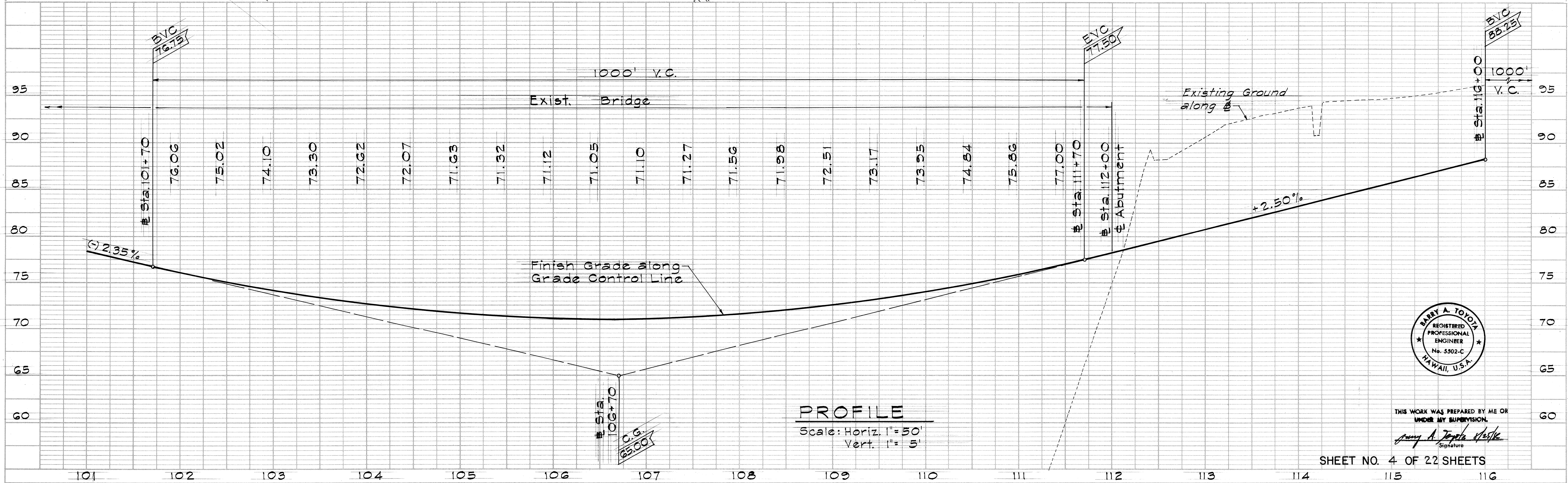
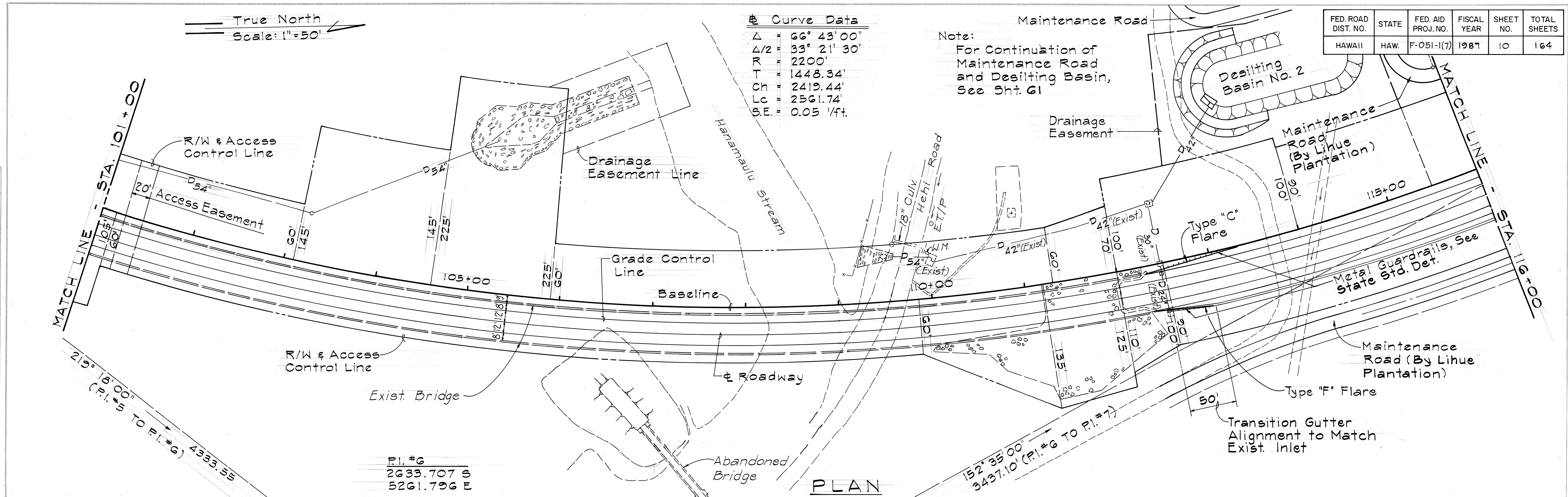
PLAN	DATE	BY	DATE
SURVEYED			
PLOTTED			
NOTED			
NO.			

PROFILE	DATE	BY	DATE
SURVEYED			
PLOTTED			
NOTED			
NO.			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	10	164

Curve Data
 $\Delta = 66^\circ 43' 00''$
 $\Delta/2 = 33^\circ 21' 30''$
 $R = 2200'$
 $T = 1448.34'$
 $Ch = 2419.44'$
 $Lc = 2561.74'$
 $SE = 0.05' / ft.$

Note:
 For Continuation of
 Maintenance Road
 and Desilting Basin,
 See Sht. 61



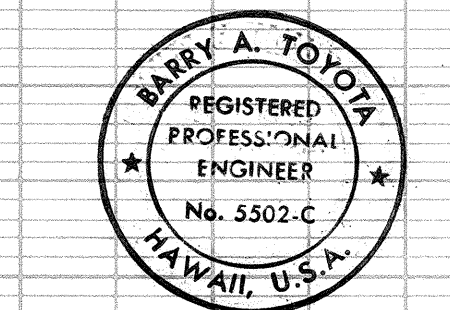
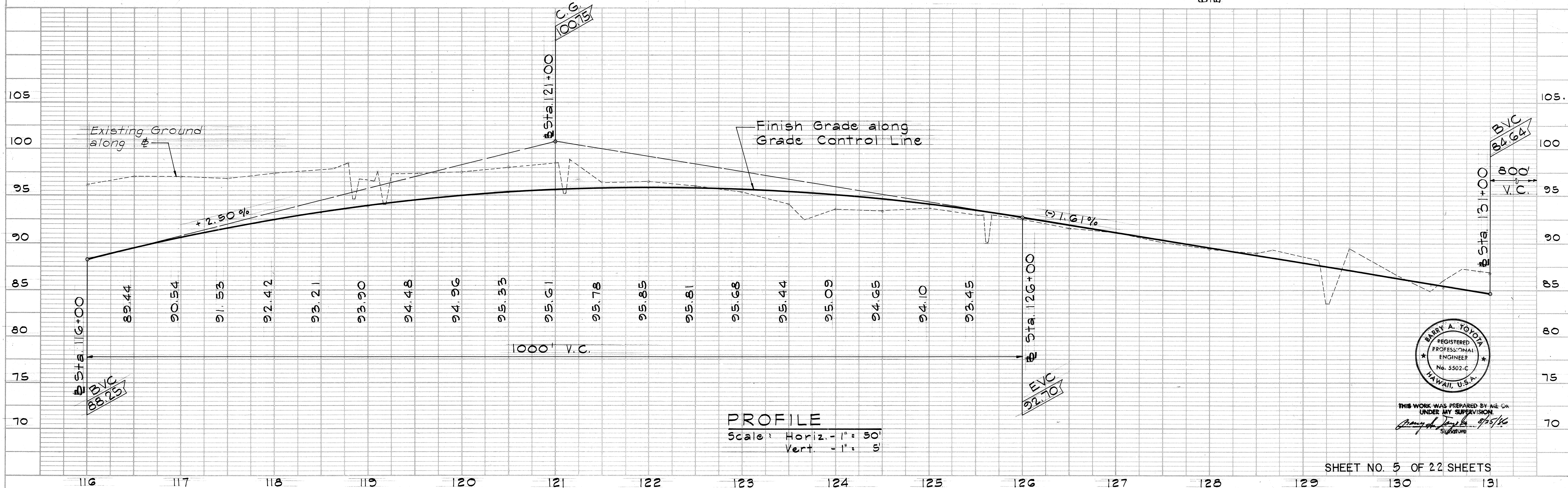
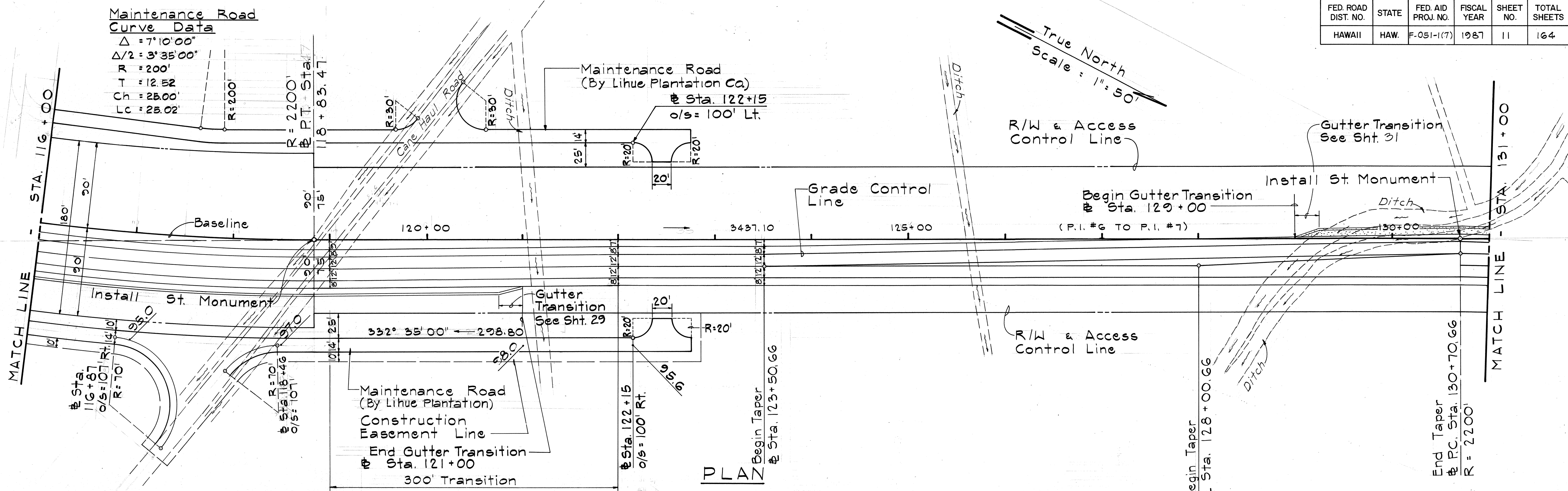
THIS WORK WAS PREPARED BY ME OR
 UNDER MY SUPERVISION.
 Barry A. Tofoya
 Signature

SHEET NO. 4 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	11	164

PLAN	DATE	BY
SURVEYED		
PLOTTED		
NOTE BOOK		
NO.		

PROFILE	DATE	BY
SURVEYED		
PLOTTED		
NOTE BOOK		
NO.		

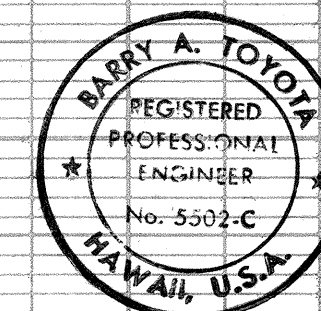
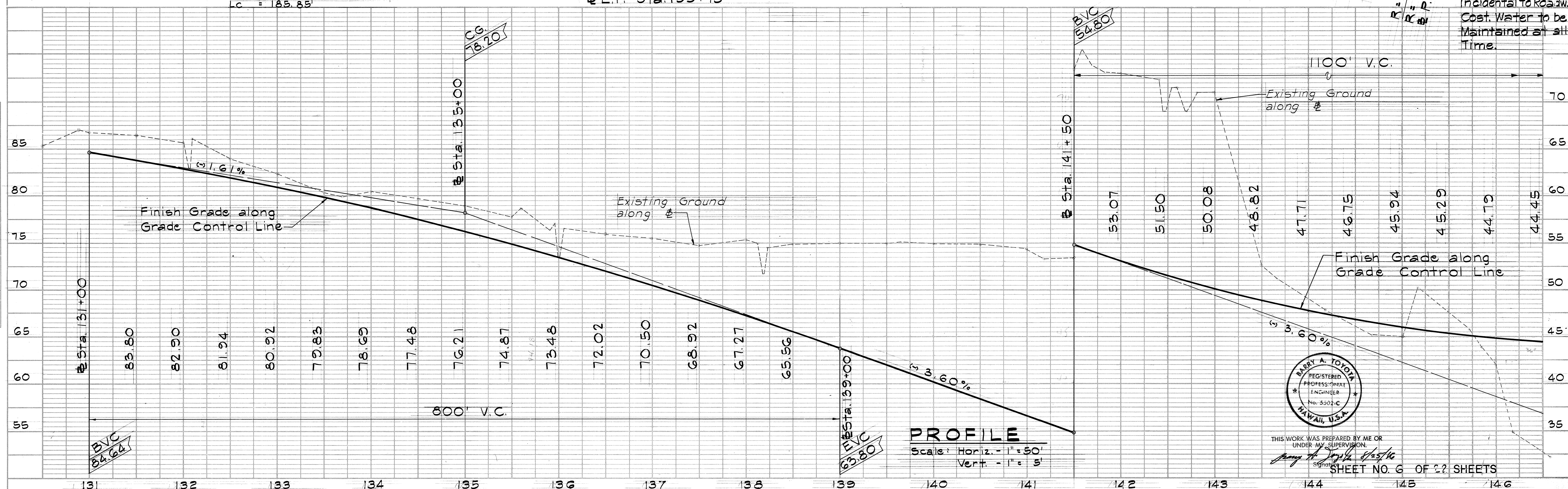
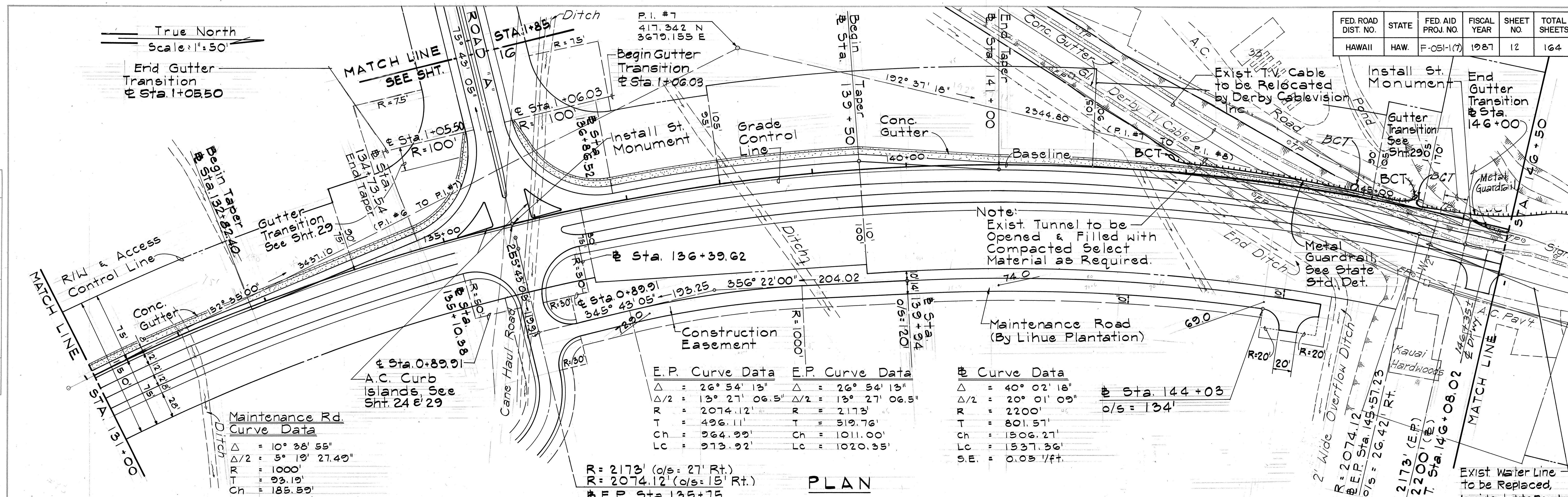


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
[Signature] 9/5/86
 Surveyor

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	12	164

PLAN	DATE	BY	DATE
SURVEYED			
NOTE BOOK			
NO.			

PROFILE	DATE	BY	DATE
SURVEYED			
NOTE BOOK			
NO.			



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: Barry A. Tonia 4/23/86

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-167	1987	13	164

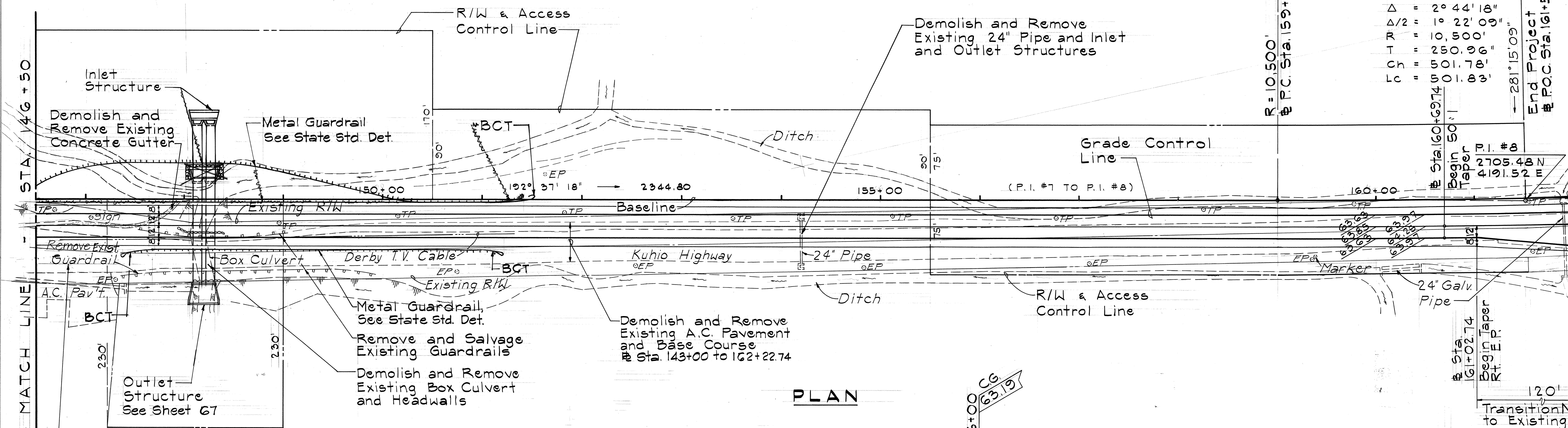
Curve Data
 $\Delta = 2^\circ 44' 18''$
 $\Delta/2 = 1^\circ 22' 09''$
 $R = 10,500'$
 $T = 250.96'$
 $Ch = 501.78'$
 $Lc = 501.83'$

End Project
 # P.O.C. Sta. 161+51.20

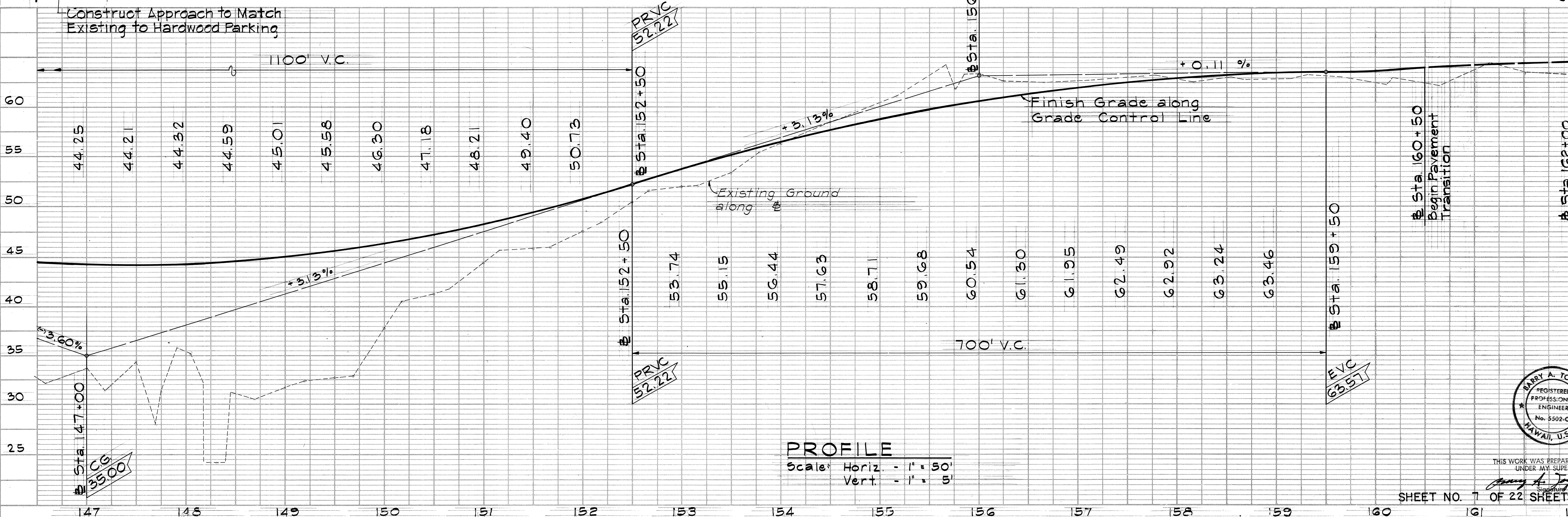
MATCH LINE - STA. 162+00

Sta. 160+69.74
 Begin Taper
 P.I. #8
 2705.48 N
 4191.52 E
 # Sta. 161+02.74
 Begin Taper
 R.T. E.P.

Transition New 8' Shoulder to Existing 4' Shoulder



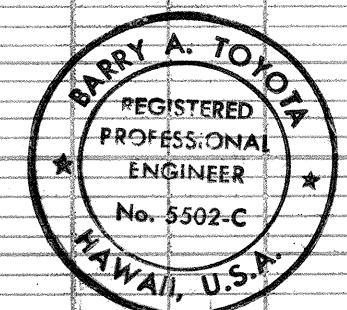
PLAN



PROFILE

Scale: Horiz. - 1" = 50'
 Vert. - 1" = 5'

SHEET NO. 7 OF 22 SHEETS



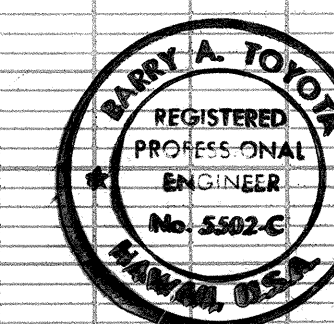
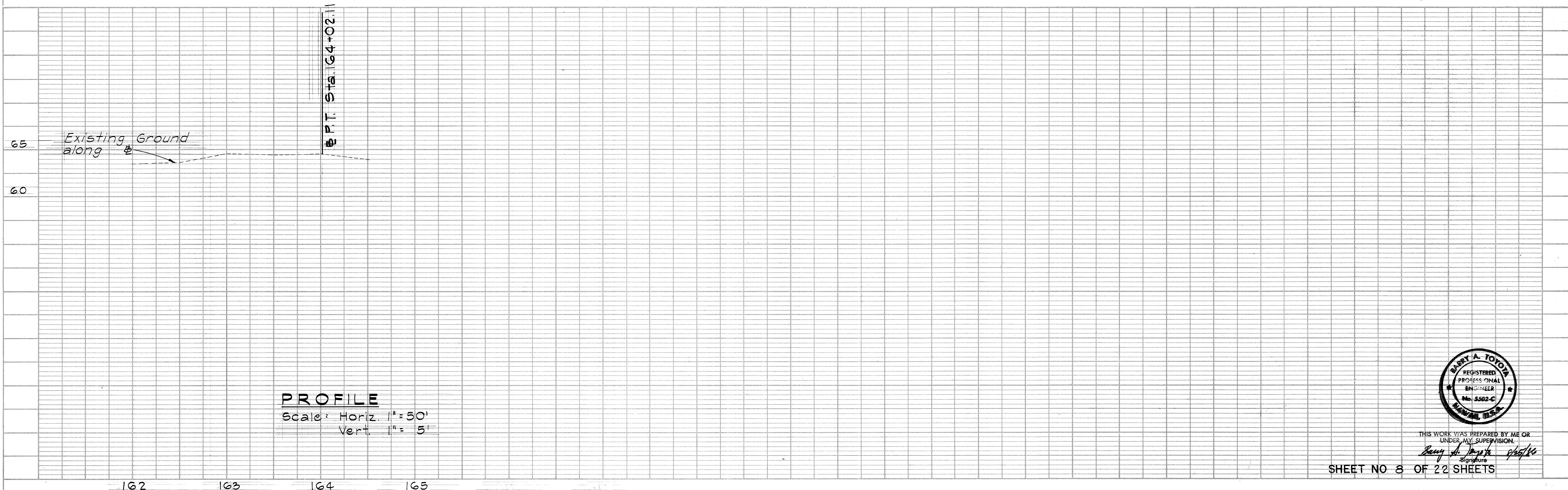
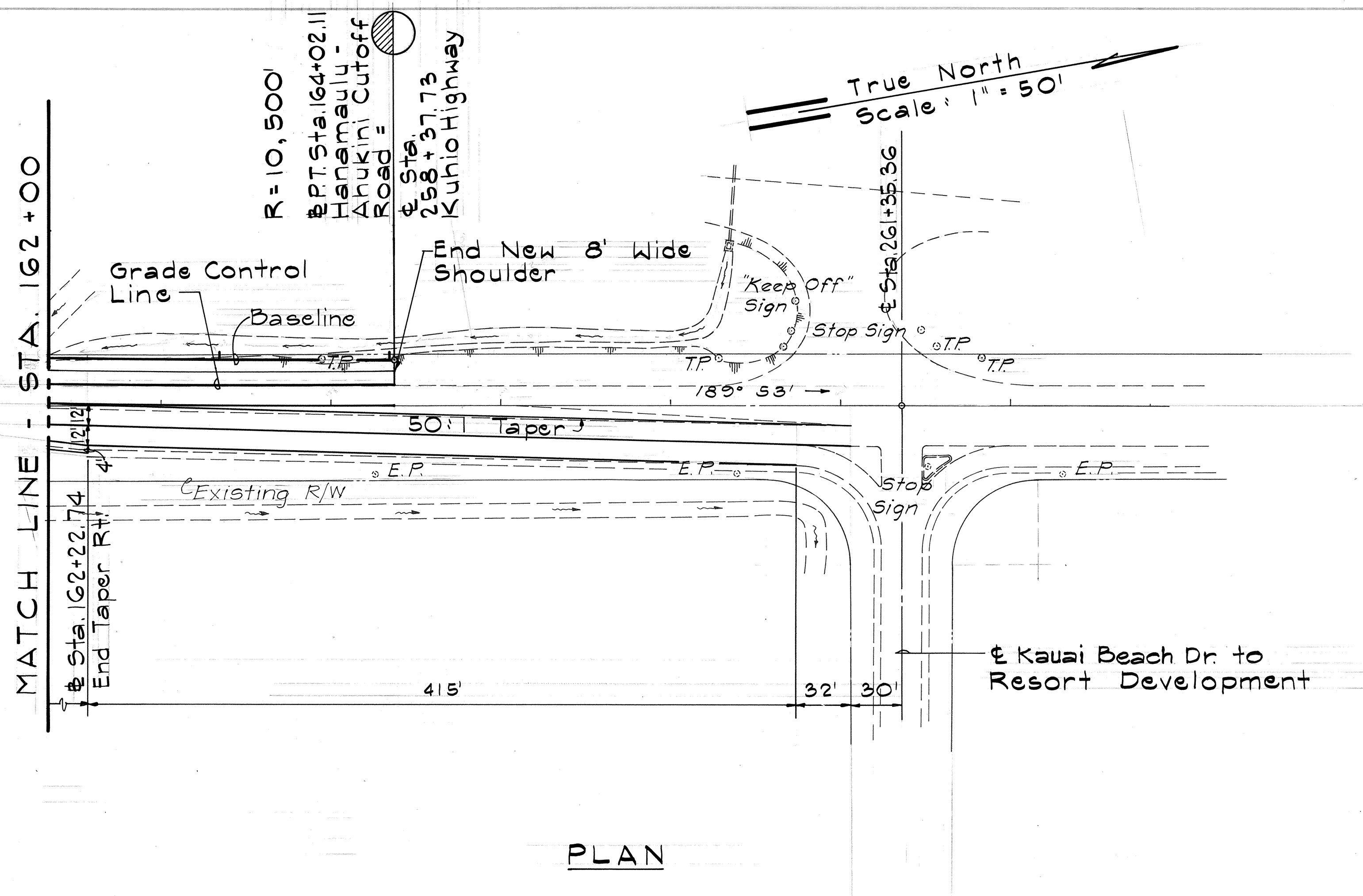
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Barry A. Tokita 4/20/87

PLAN	SURVEYED	DATE
NOTE BOOK	ALIGNMENT CHECKED	
NO.	RT. OF WAY CHECKED	

PROFILE	SURVEYED	DATE
NOTE BOOK	GRADES CHECKED	
NO.	STRUCTURE NOTATION CHKD	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1967	14	164

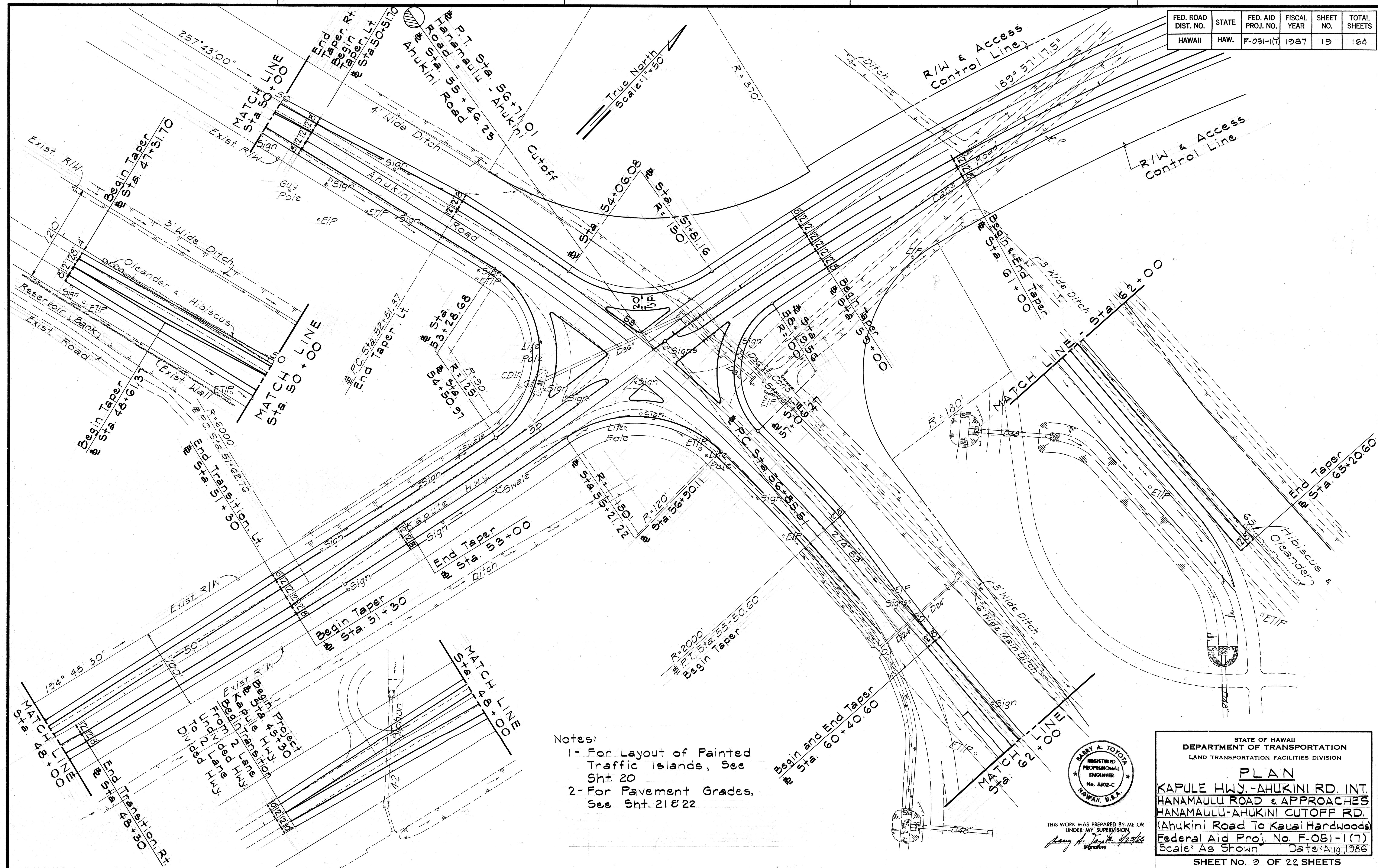


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Barry A. Toyon
 Signature

SHEET NO 8 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	15	164

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
DATE	



Notes:
 1- For Layout of Painted Traffic Islands, See Sht. 20
 2- For Pavement Grades, See Sht. 21 & 22

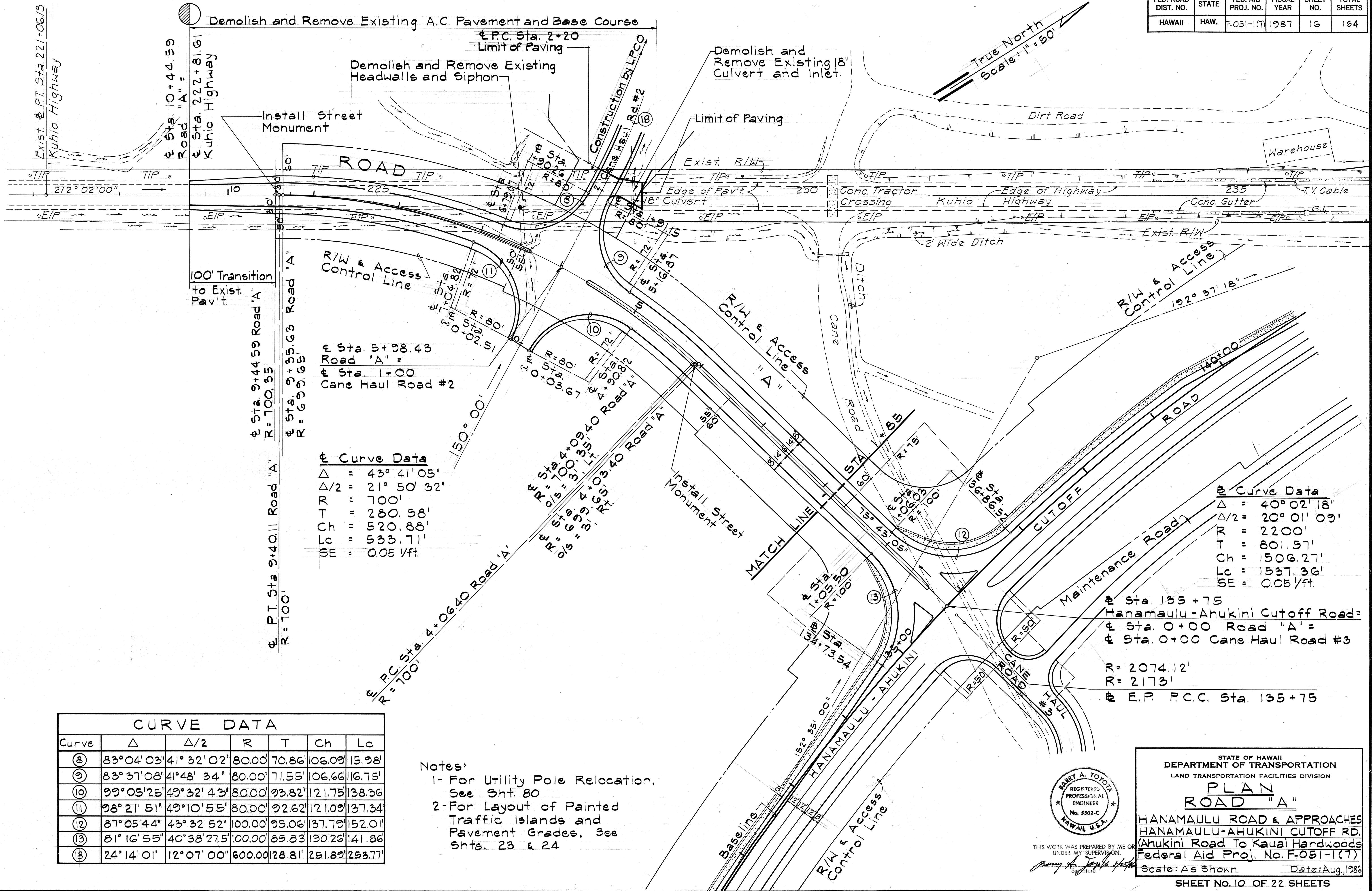
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Sammy A. Toyota
 REGISTERED PROFESSIONAL ENGINEER
 No. 5502-C
 HAWAII, U.S.A.

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

PLAN
 KAPULE HWY. - AHUKINI RD. INT.
 HANAMAULU ROAD & APPROACHES
 HANAMAULU-AHUKINI CUTOFF RD.
 (Ahukini Road To Kauai Hardwoods)
 Federal Aid Proj. No. F-051-1(7)
 Scale: As Shown Date: Aug. 1986

SHEET NO. 9 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	16	164



Curve	Δ	$\Delta/2$	R	T	Ch	Lc
(8)	83°04'03"	41°32'02"	80.00	70.86	106.09	15.98
(9)	83°37'08"	41°48'34"	80.00	71.55	106.66	16.75
(10)	99°05'25"	49°32'43"	80.00	93.82	121.75	138.36
(11)	98°21'51"	49°10'55"	80.00	92.62	121.09	137.34
(12)	87°05'44"	43°32'52"	100.00	95.06	137.79	152.01
(13)	81°16'55"	40°38'27.5"	100.00	85.83	130.26	141.86
(18)	24°14'01"	12°07'00"	600.00	128.81	251.89	293.77

- Notes:
- 1- For Utility Pole Relocation, See Sht. 80
 - 2- For Layout of Painted Traffic Islands and Pavement Grades, See Shts. 23 & 24

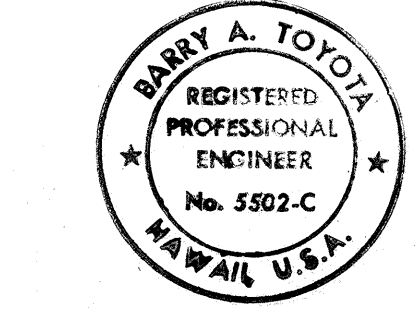
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

PLAN
ROAD "A"

HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Handwoods
Federal Aid Proj. No. F-051-1(7))

Scale: As Shown Date: Aug. 1986

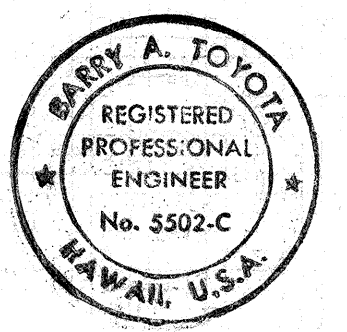
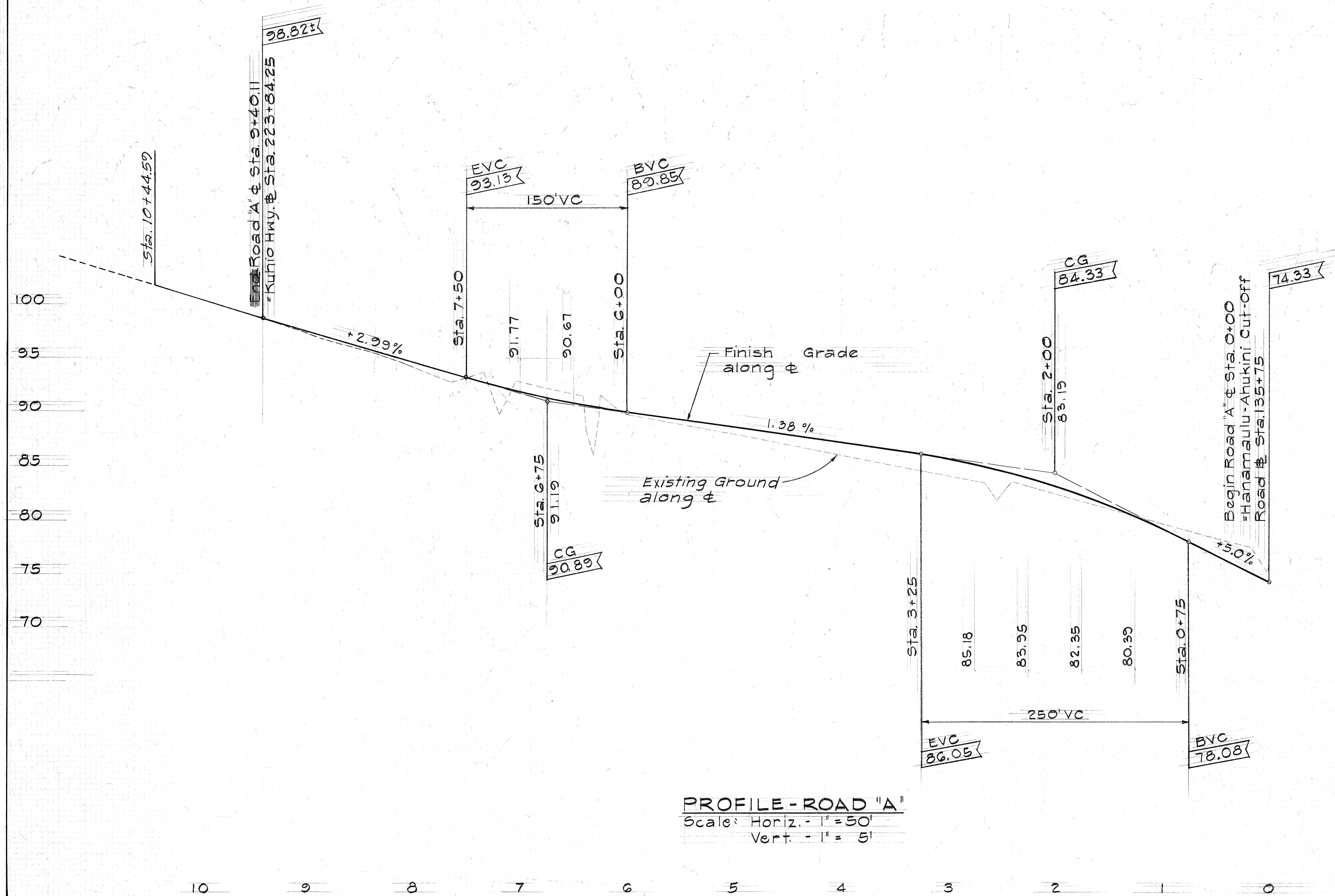
SHEET NO. 10 OF 22 SHEETS



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: Barry A. Toyota

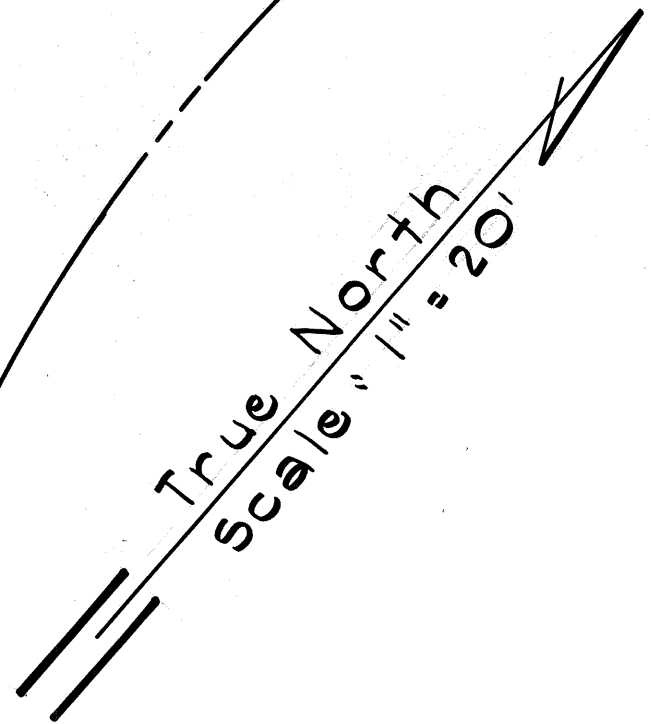
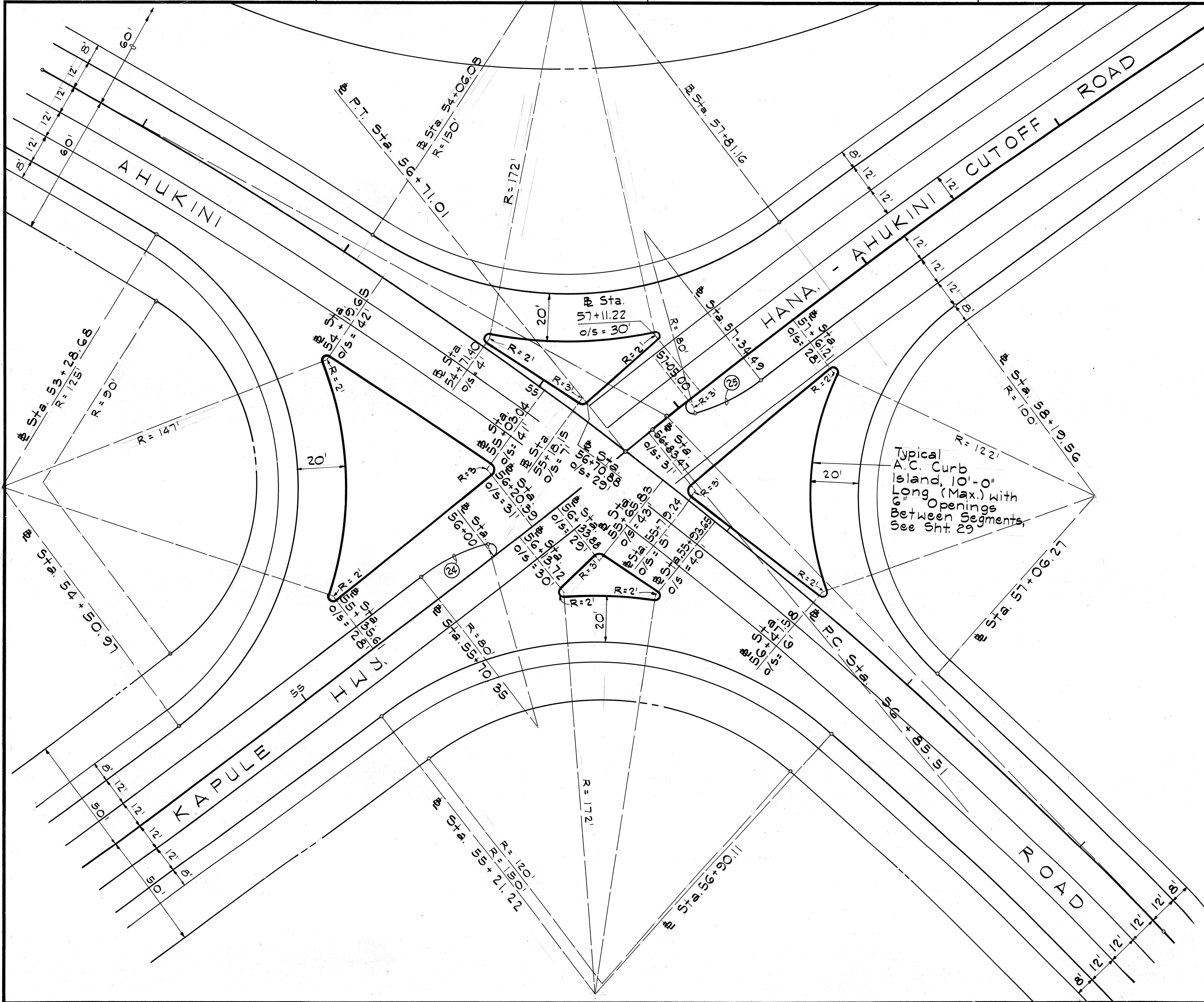
SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	17	164



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Signature: Barry A. Toyota

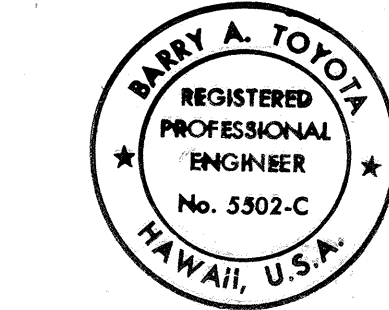
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	20	164



MEDIAN NOSE CURVE DATA						
	Δ	$\Delta/2$	R	T	Ch	Lc
(24)	22° 37' 43"	11° 18' 51.49"	80.00	16.01	31.39	31.60
(25)	22° 29' 18"	11° 14' 39"	80.00	15.90	31.20	31.40

Typical
A.C. Curb
Island, 10'-0"
Long (Max.) with
6" Openings
Between Segments,
See Sht. 29

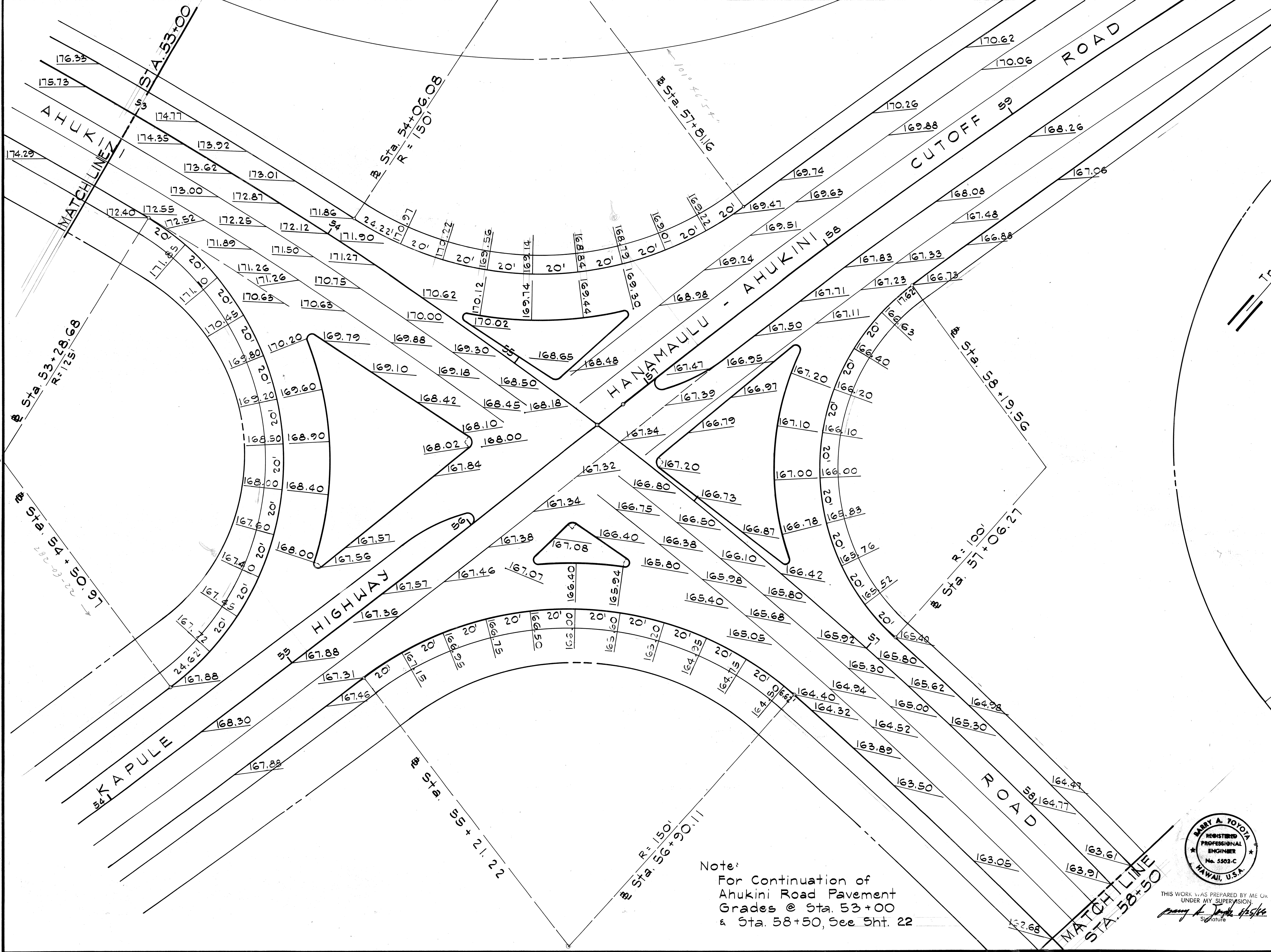
ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Barry A. Toyota
Signature

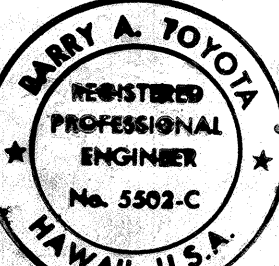
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
TRAFFIC ISLAND PLAN
KAPULE HWY.-AHUKINI RD. INT.
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale As Shown Date Aug. 1986
SHEET No. 14 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	21	164



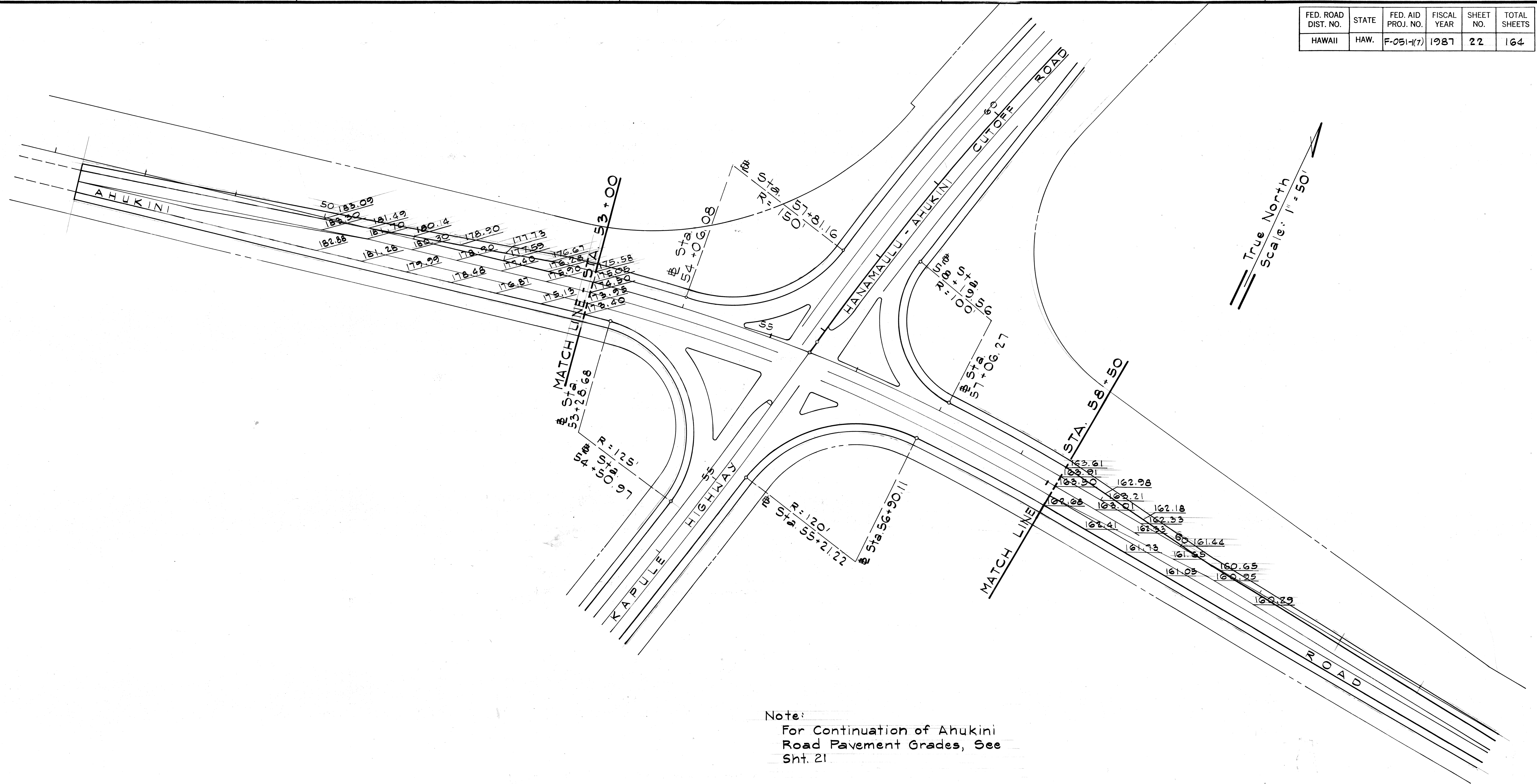
ORIGINAL PLAN	DATE
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

Note:
For Continuation of
Ahukini Road Pavement
Grades @ Sta. 53+00
& Sta. 58+50, See Sht. 22


 THIS WORK WAS PREPARED BY ME OR
 UNDER MY SUPERVISION.
 Signature: *Barry A. Toyok* Date: *1/25/88*

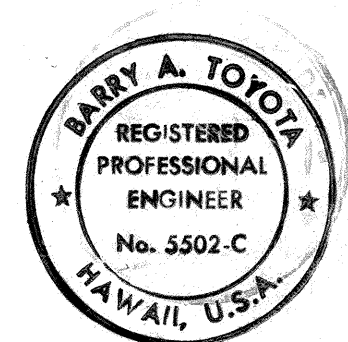
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
PAVEMENT GRADES
 KAPULE HWY.-AHUKINI RD. INT.
 HANAMAULU ROAD & APPROACHES
 HANAMAULU-AHUKINI CUTOFF RD.
 (Ahukini Road To Kauai Hardwoods)
 Federal Aid Proj. No. F-051-1(7)
 Scale: As Shown Date: Aug. 1986
 SHEET No. 15 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	22	164



Note:
For Continuation of Ahukini
Road Pavement Grades, See
Sht. 21

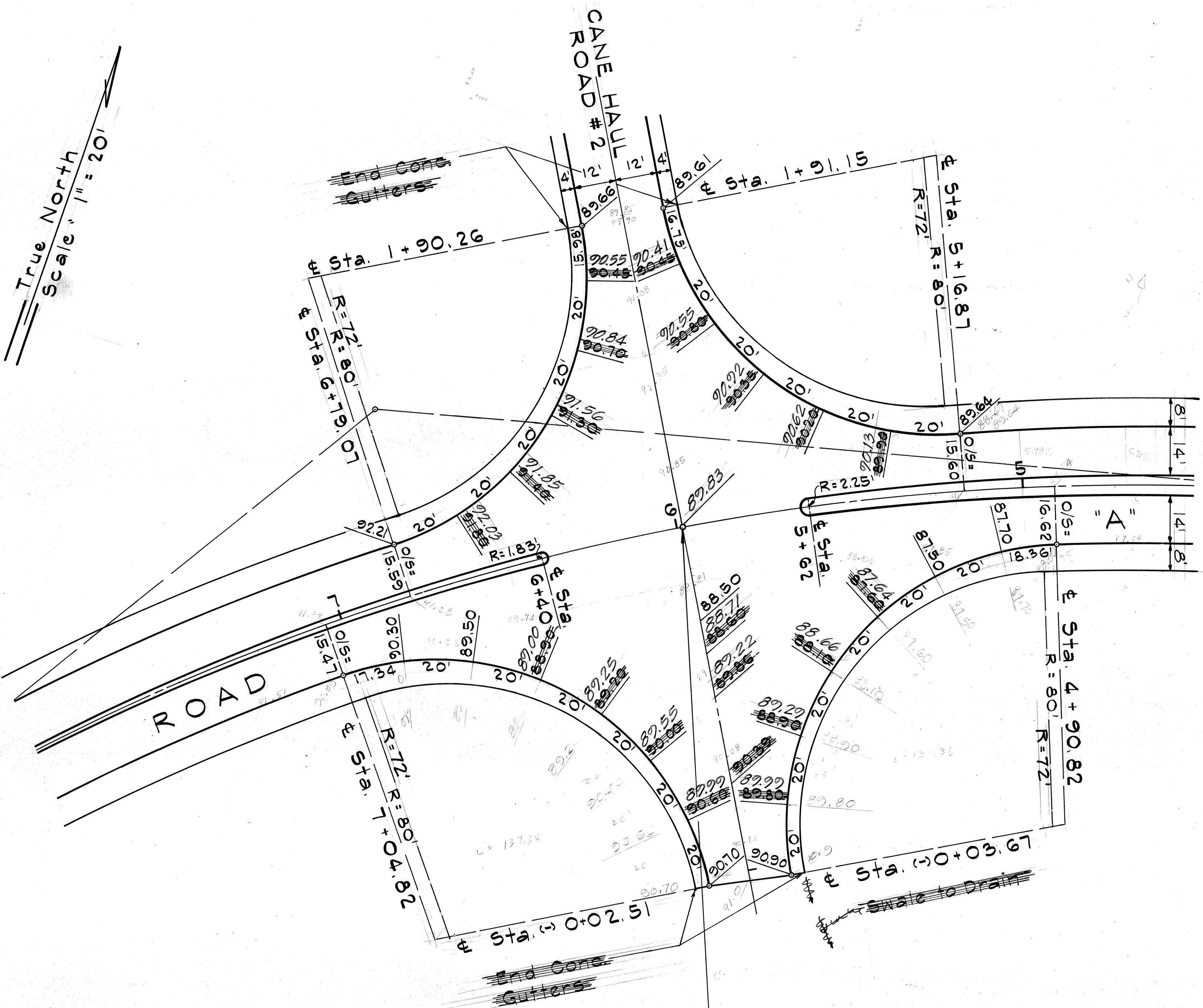
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	CHECKED BY	



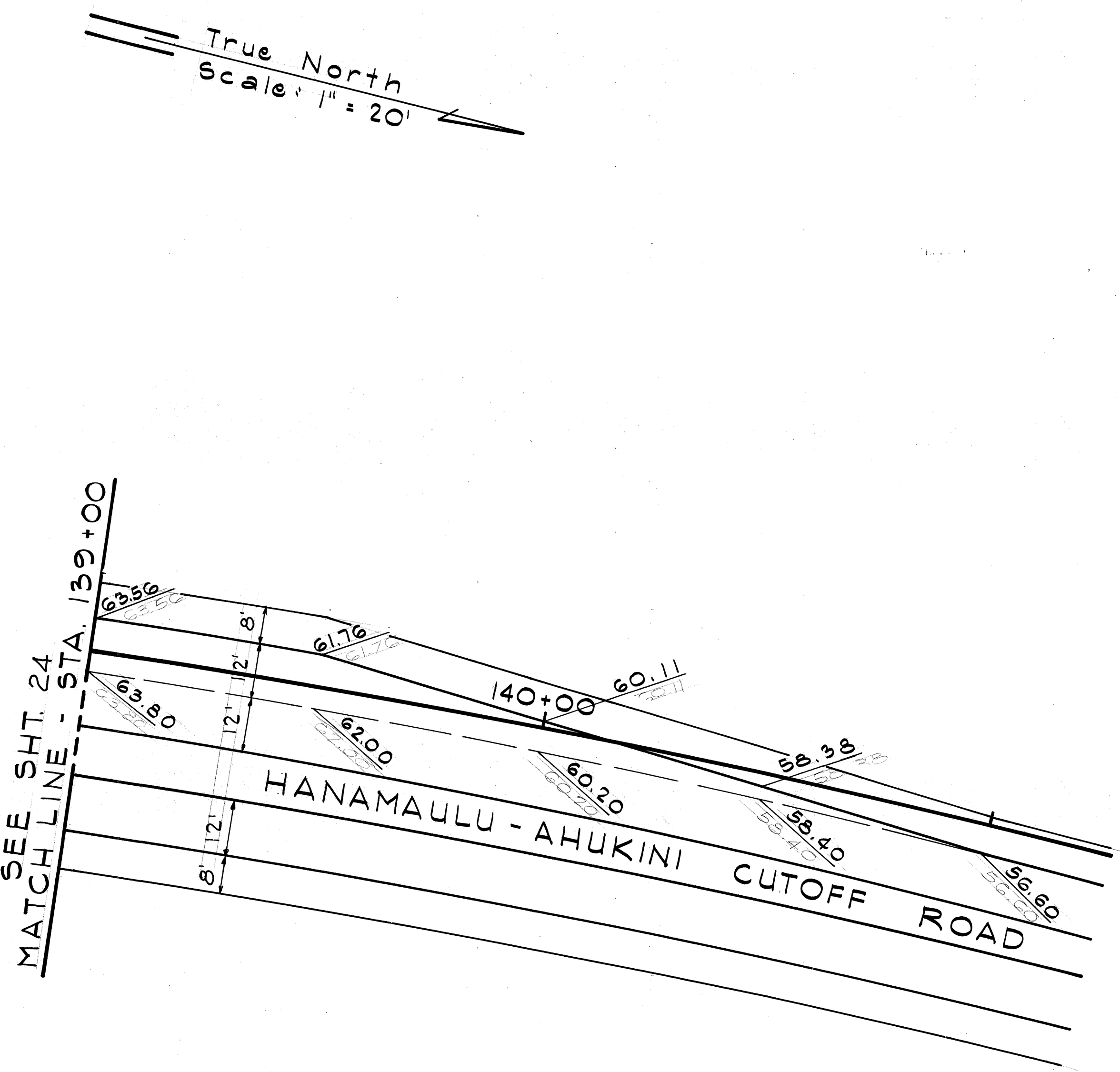
THIS WORK WAS PREPARED BY ME OR
UNDER MY SUPERVISION.
Barry A. Toyota
Signature

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
PAVEMENT GRADES
KAPULE HWY.-AHUKINI RD. INT.
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As Shown Date: Aug. 1986
SHEET NO. 16 OF 22 SHEETS

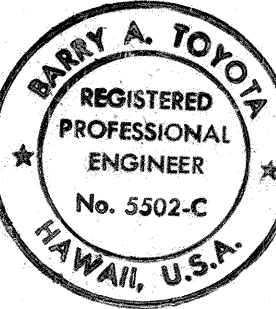
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	23	164



Sta. 5+98.43
Road "A" =
Sta. 1+00
Cane Haul Road



ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	

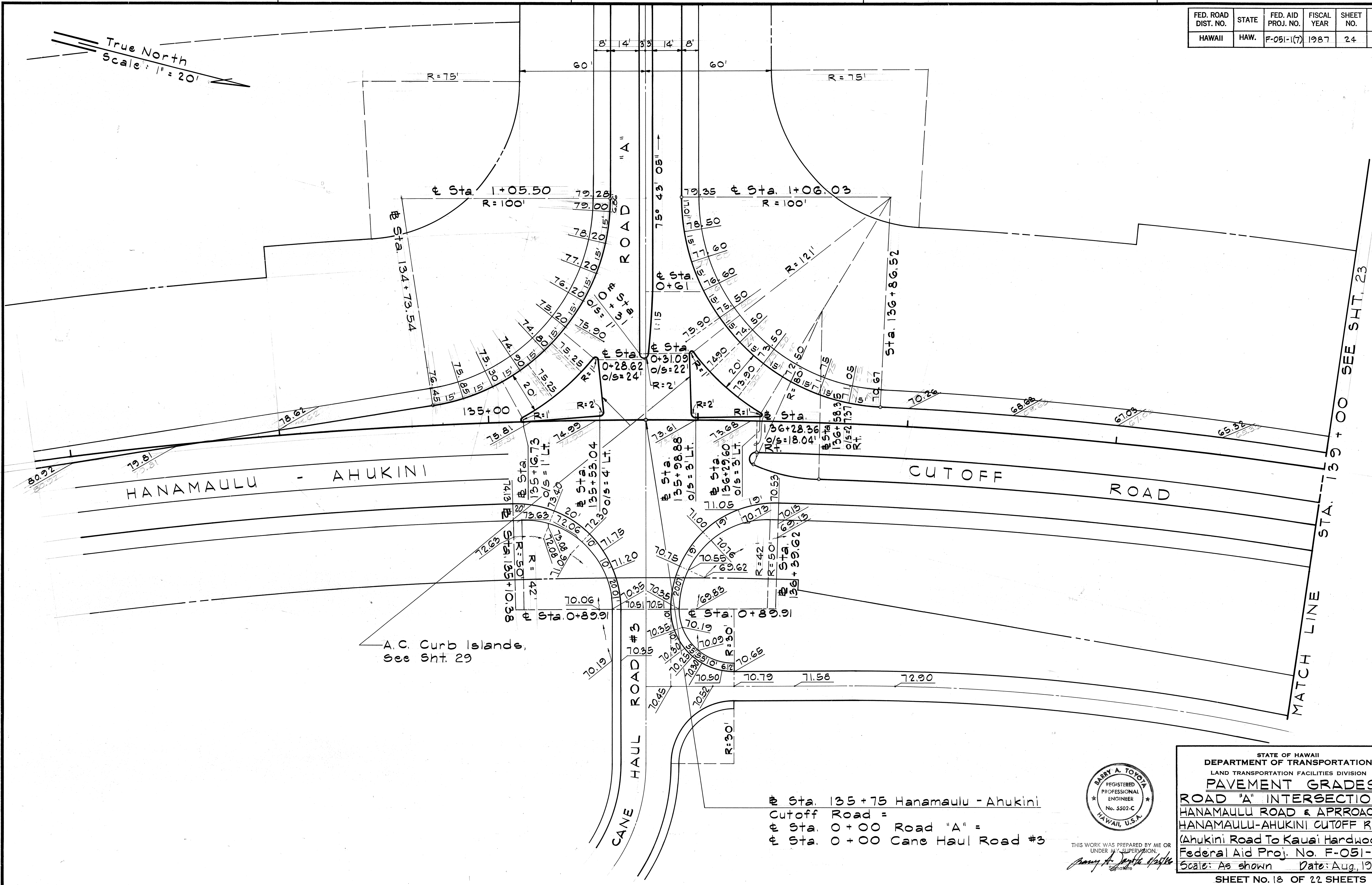


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: Barry A. Toyota

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
PAVEMENT GRADES
ROAD "A" - C.H.R. #2 INT.
AND HANAMAULU-AHUKINI
CUTOFF RD. STA. 139+00 TO 141+00
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug., 1986

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	24	164

True North
Scale: 1" = 20'



HANAMAULU - AHUKINI

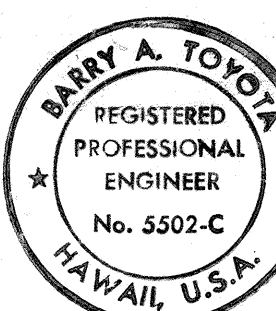
CUTOFF ROAD

CANE HAUL ROAD #3

MATCH LINE
STA. 139+00 SEE SHT. 23

A.C. Curb Islands,
See Sht. 29

Sta. 135+75 Hanamaulu - Ahukini
Cutoff Road =
Sta. 0+00 Road "A" =
Sta. 0+00 Cane Haul Road #3

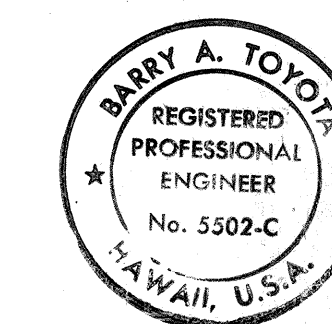
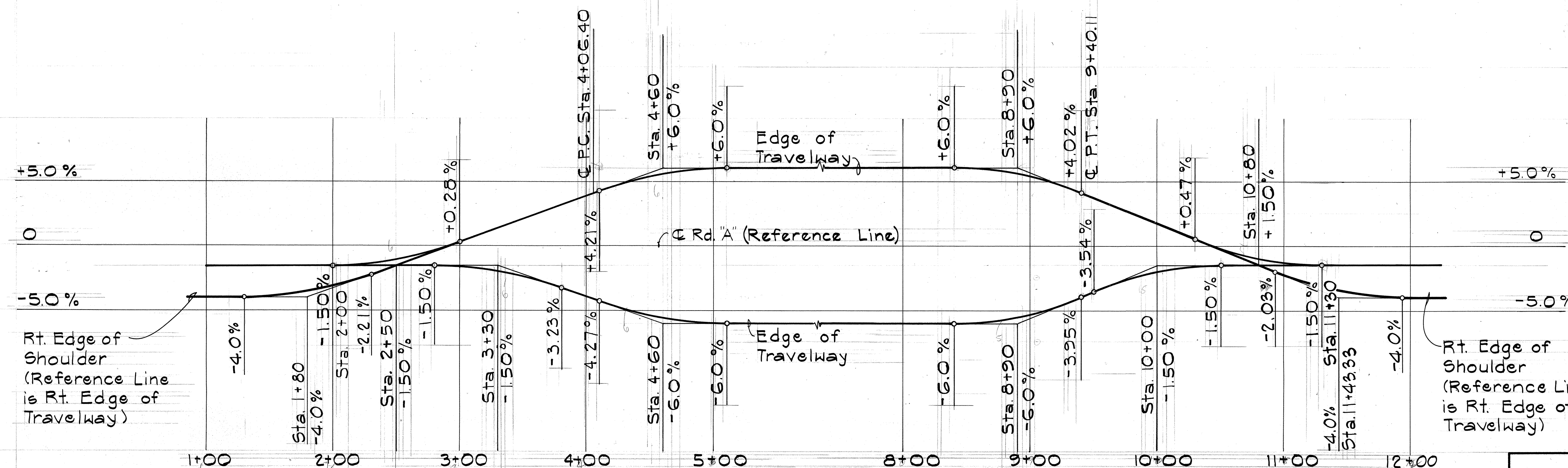
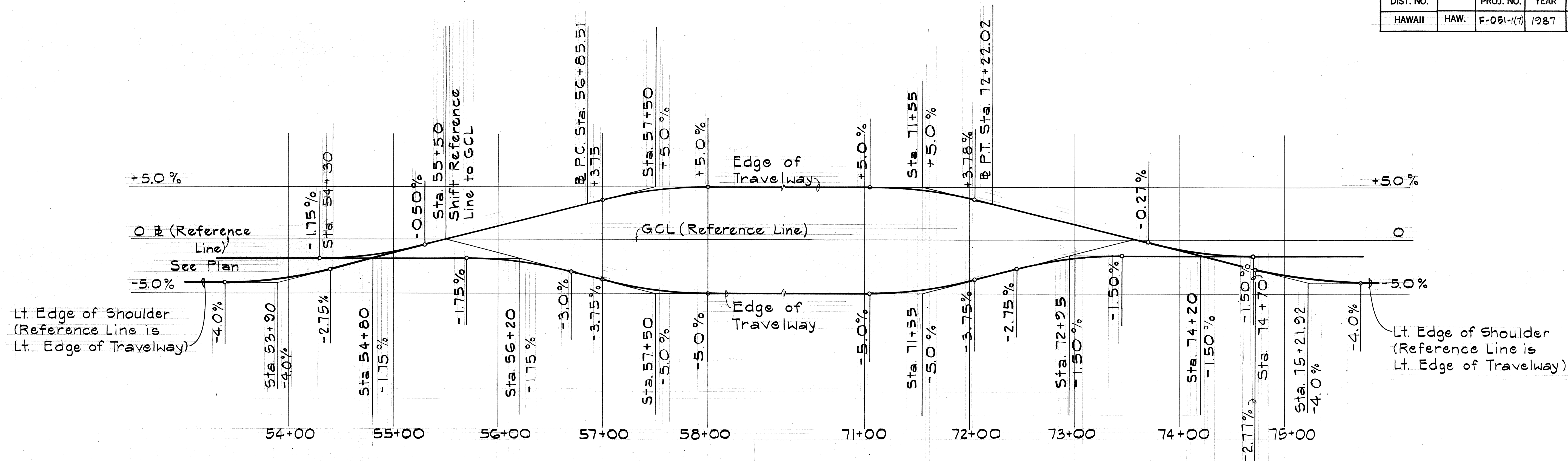


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Barry A. Toyota
Engineer

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
PAVEMENT GRADES
ROAD "A" INTERSECTION
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug. 1986
SHEET No. 18 OF 22 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	25	164



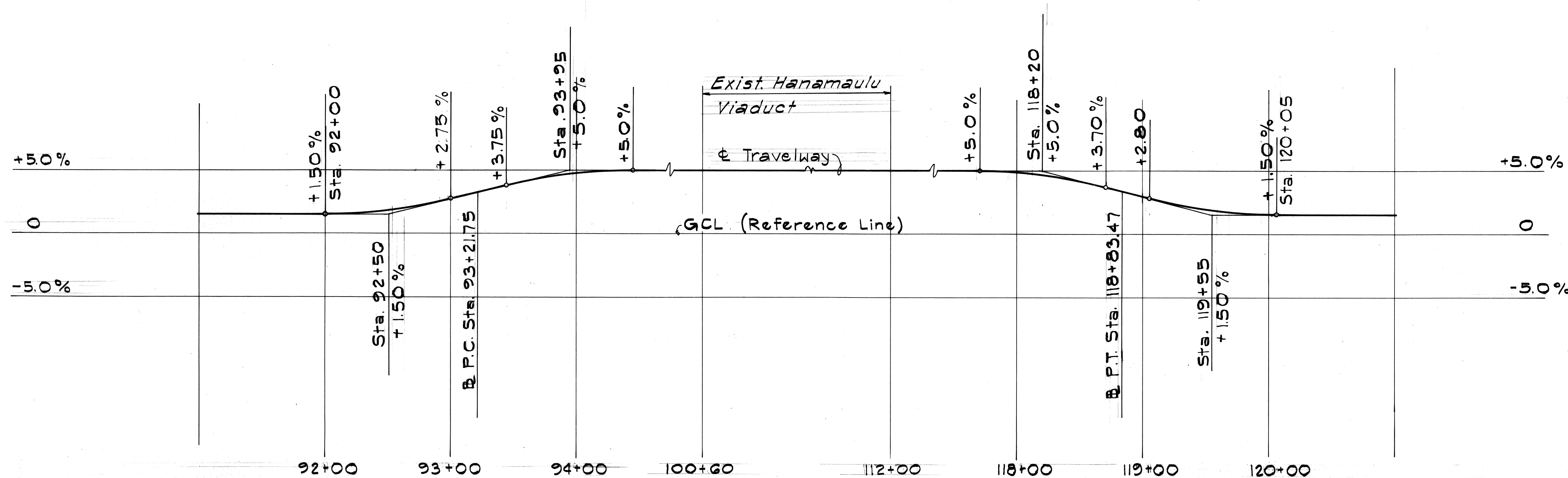
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Barry A. Toyok
Signature

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

SUPERELEVATION DIAGRAM
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug., 1986

SHEET No. 19 OF 22 SHEETS

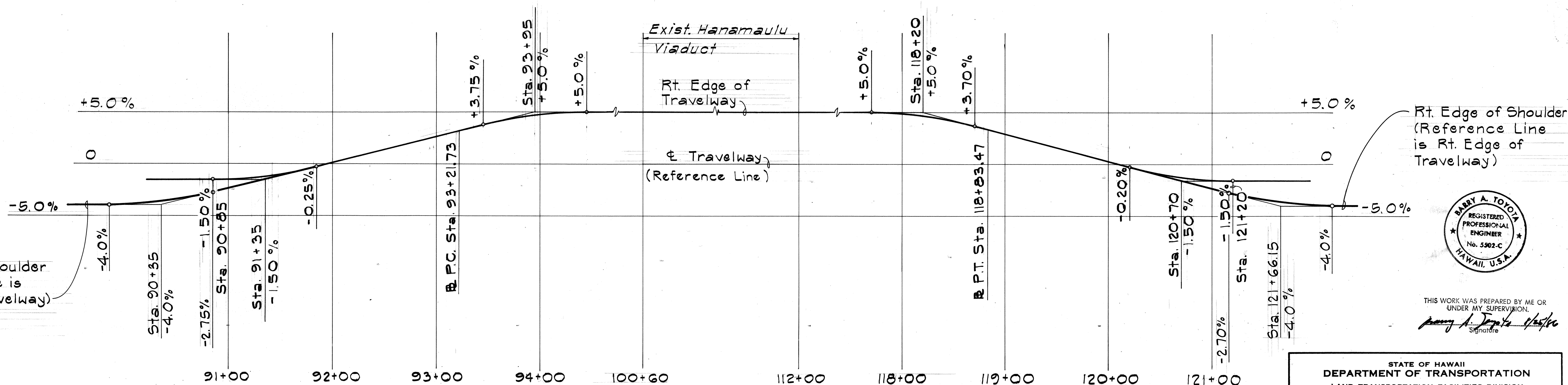
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	26	124



Superelevation Diagram @ Sta. 92+00 to 120+05

Scale: Horiz. 1" = 50'
1" = 5.0%

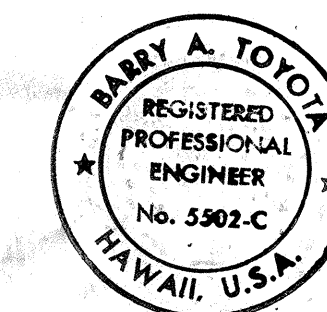
Note:
All Rounding = 100' V.C.



Superelevation Diagram @ Sta. 90+85 to 121+20

Scale: Horiz. 1" = 50'
1" = 5.0%

Note:
All Rounding = 100' V.C.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Barry A. Toyota
Signature

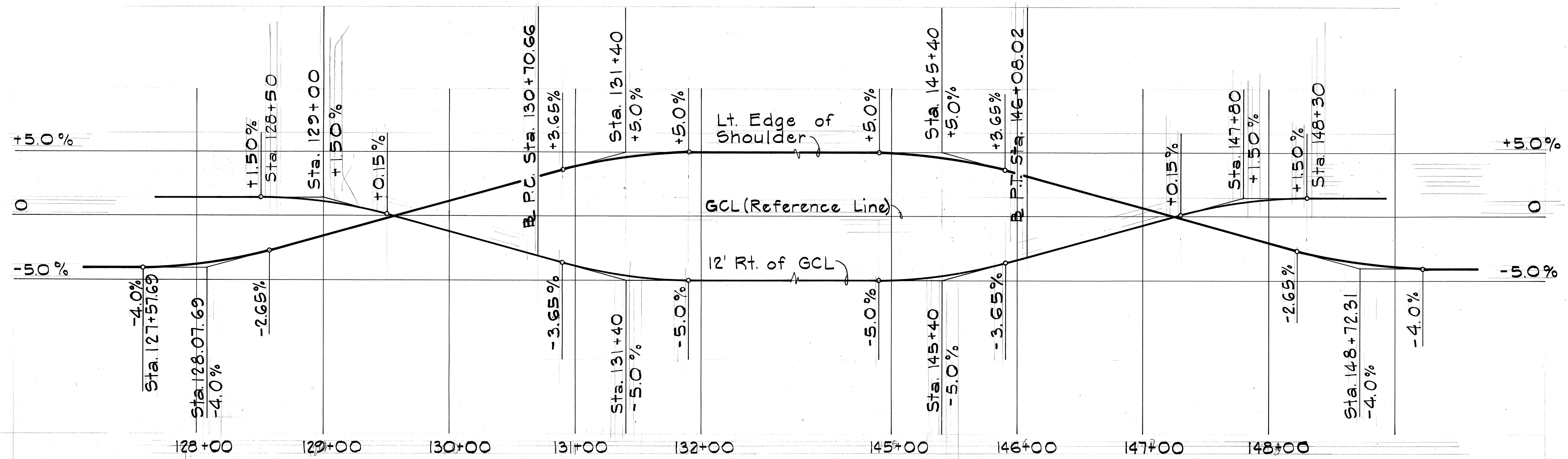
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

SUPERELEVATION DIAGRAM
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road to Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug. 1986

SHEET No. 20 OF 22 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

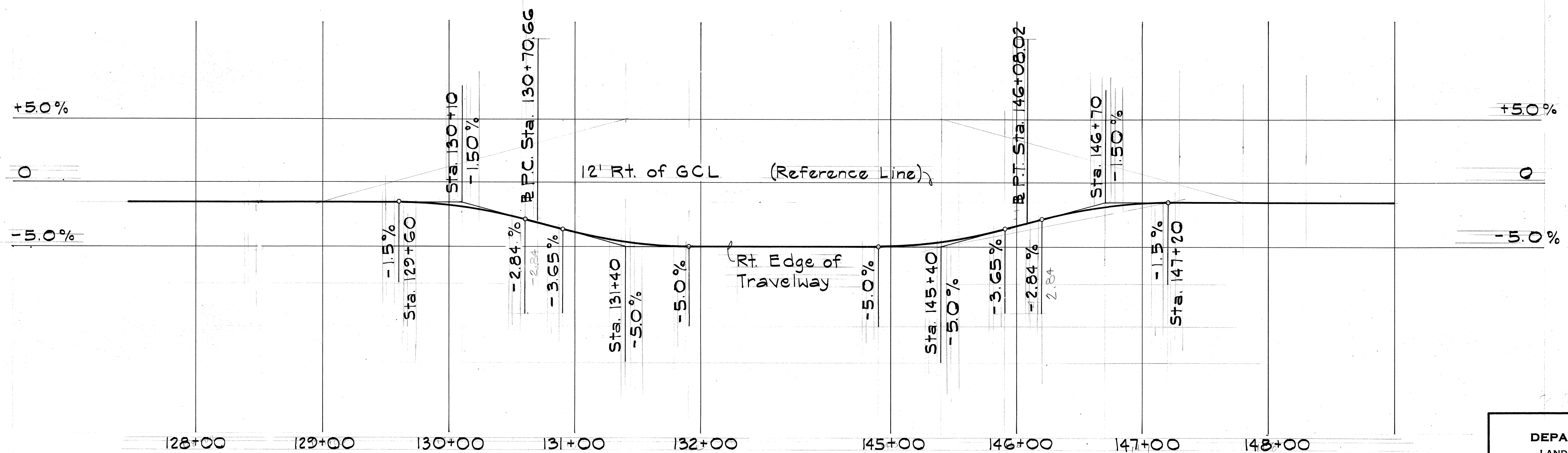
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	27	164



Superelevation Diagram B Sta. 128+50 to 148+30

Scale: Horiz. 1" = 50'
Vert. 1" = 5%

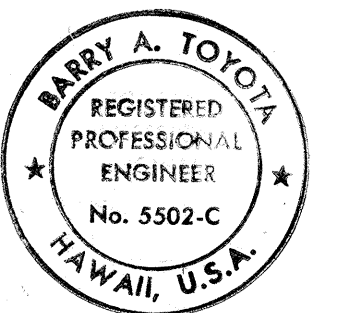
Note:
All Rounding = 100' V.C.



Superelevation Diagram B Sta. 129+60 to 147+20

Scale: Horiz. 1" = 50'
Vert. 1" = 5%

Note:
All Rounding = 100' V.C.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Barry A. Toyota 8/25/86
Signature

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

SUPERELEVATION DIAGRAM
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug., 1986
SHEET No. 21 OF 22 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
QUANTITIES BY	CHECKED BY	
NO.		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	28	164

Inlet Structure
 Sta. 148+20
 o/s = 23' L + 77' L
 Inv. = 25.00
 See Det. Sht. G7E68

True North
 Scale: 1" = 20'

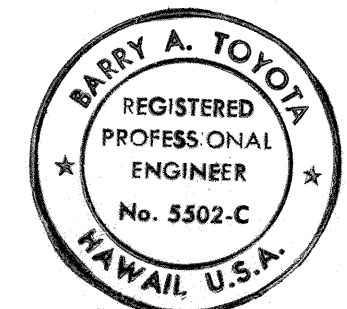
For Cont. of Grading, See Cross Section Shts. Begin 50' Transition to 4:1 Slope

For Cont. of Grading, See Cross Section Shts.

2:1 Slope
 Sta. 148+20
 2 of 2 108" CIMP Pipes
 12° 37' 18"

Outlet Structure
 Sta. 148+20
 o/s = 86' R + 13' L
 Inv. = 18.60
 See Det. Sht. G7

ORIGINAL PLAN	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
 [Signature]
 Date: Aug. 1986

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

**GRADING PLAN
 HARDWOOD CULVERT**

HANAMAULU ROAD & APPROACHES
 HANAMAULU-AHUKINI CUTOFF RD.
 (Ahukini Road To Kauai Hardwoods)
 Federal Aid Proj. No. F-051-1(7)
 Scale: 1" = 20' Date: Aug. 1986

SHEET No. 22 OF 22 SHEETS