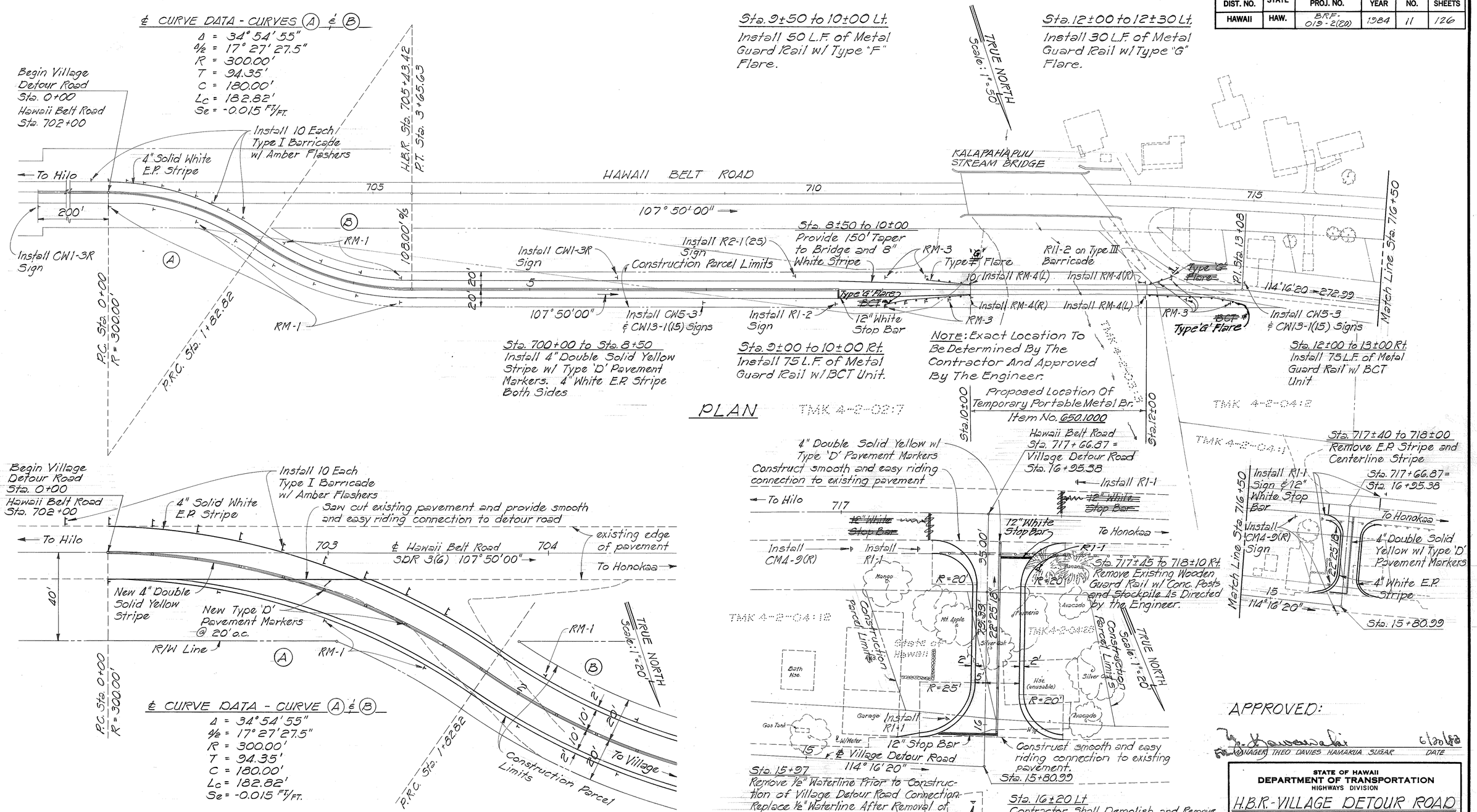
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF. 019-2(20)	1984	11	126



VILLAGE DETOUR ROAD CONNECTION
HILO END

VILLAGE DETOUR ROAD CONNECTION
HONOKAA END

APPROVED:

MANAGER, THEO DAVIES HAMAKUA SUGAR — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

H.B.R.-VILLAGE DETOUR ROAD CONNECTION DETAILS

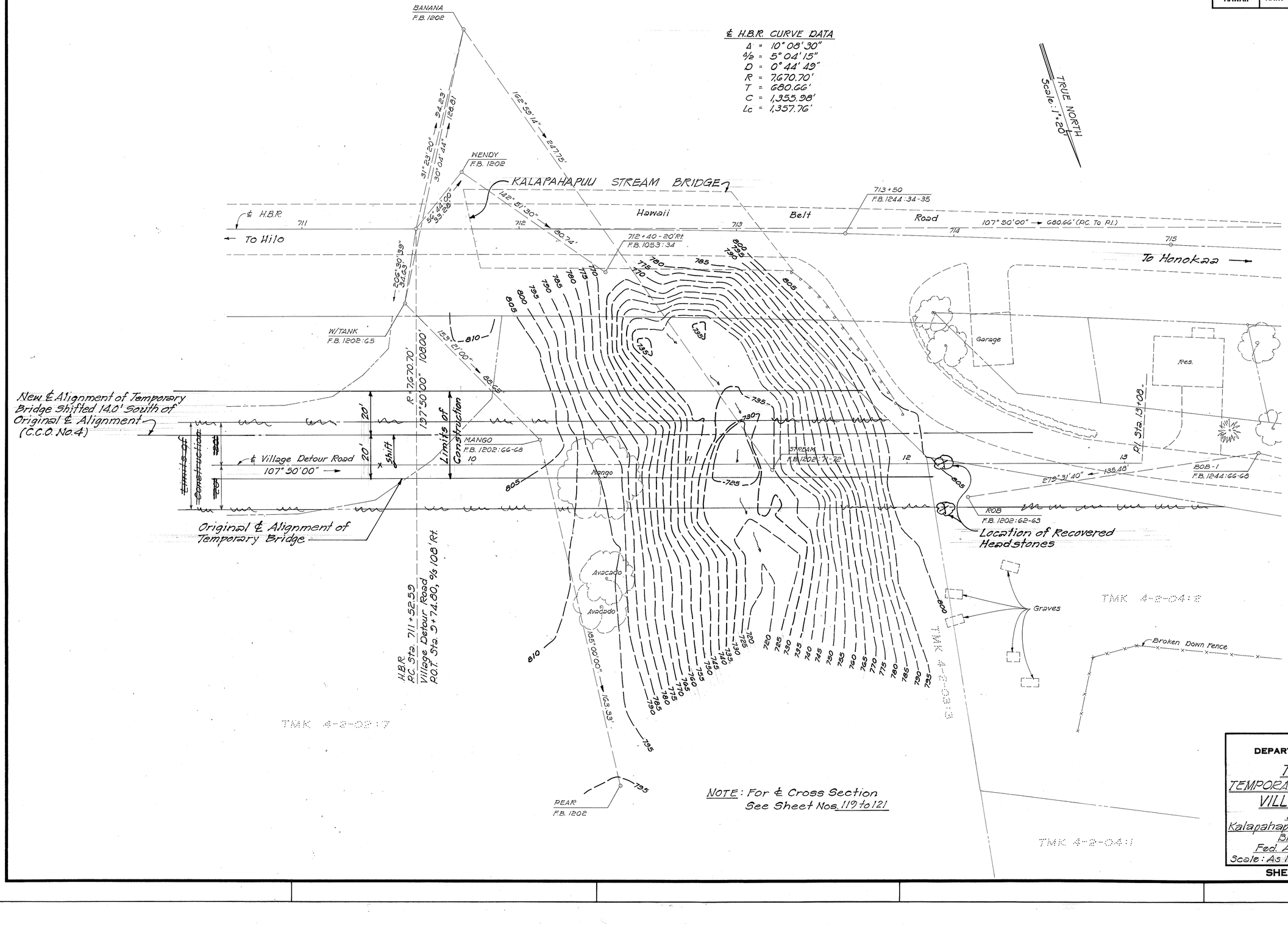
HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(20)

Scale: As Noted — Date: June 1983

SHEET No. 1 OF 14 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF 019-2(60)	1984	12	126



NOTE: For ℄ Cross Section See Sheet Nos. 119 to 121

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

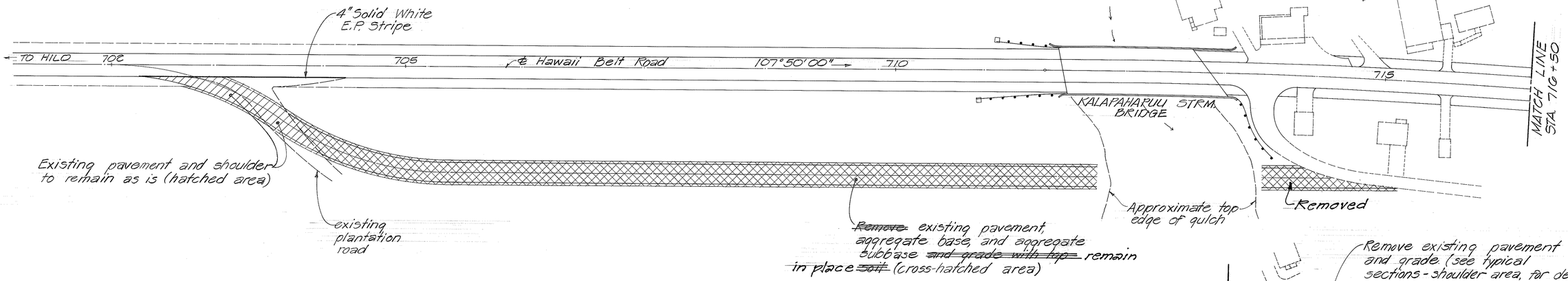
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TOPOGRAPHY AT TEMPORARY PORTABLE METAL BR. VILLAGE DETOUR ROAD

HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(60)
Scale: As Noted Date: June 1983

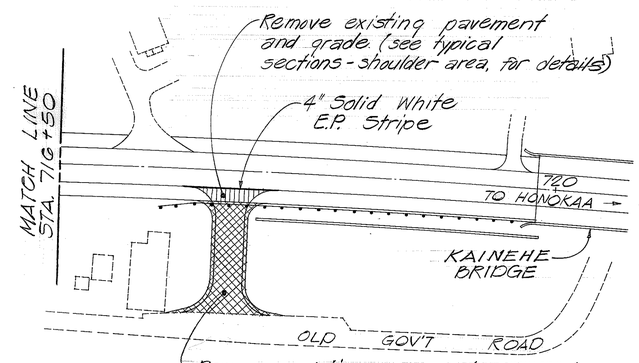
SHEET No. 2 OF 14 SHEETS

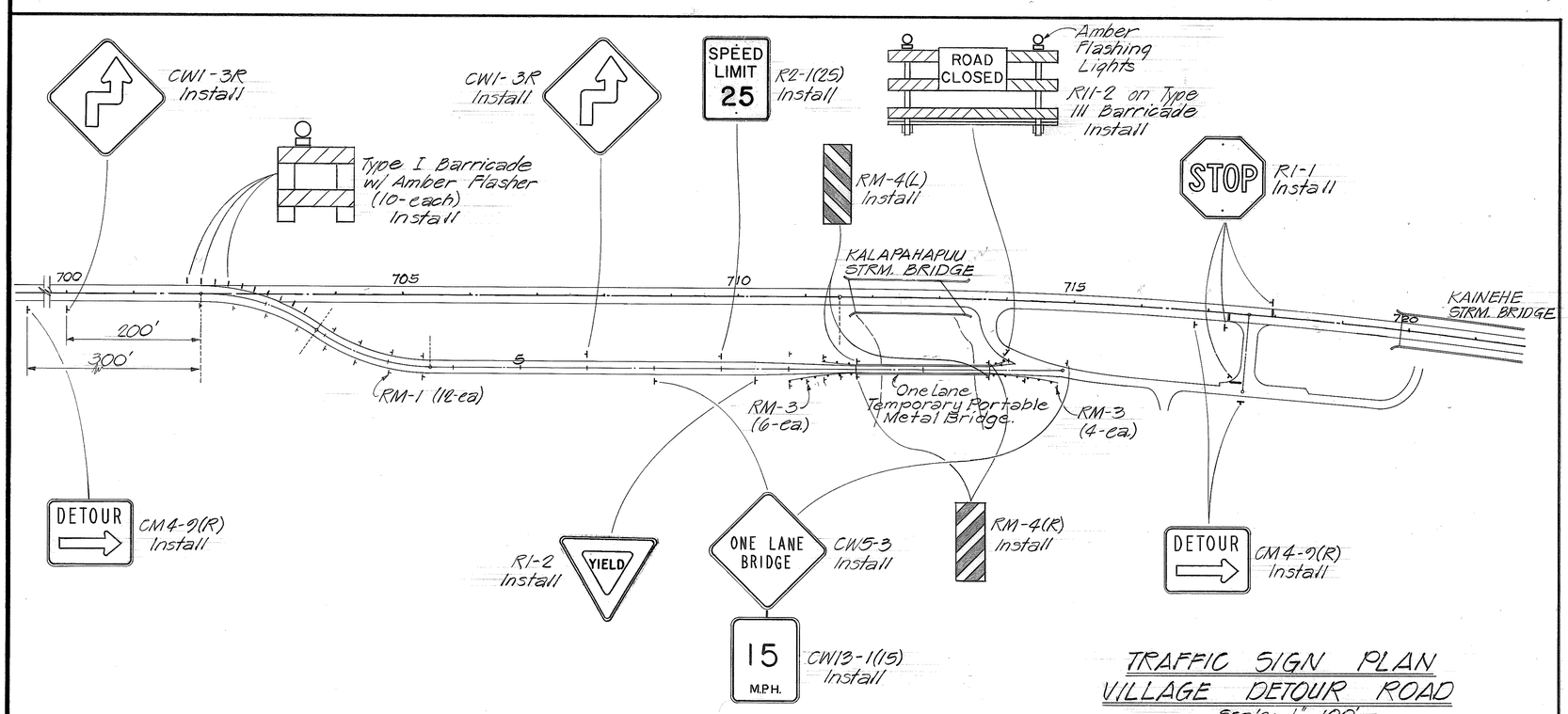
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-019-2(20)	1984	13	126



VILLAGE DETOUR ROAD RESTORATION - PHASE II

Scale: 1"=50'





TRAFFIC SIGN PLAN VILLAGE DETOUR ROAD

Scale: 1"=100'

NOTES

1. Remove existing phase I pavement, aggregate base, and aggregate subbase as shown and grade as specified. Work shall be paid under Item No. 202.0430.
2. Pavement striping to be done by others.
3. All pavement marker and striping removal shall be incidental to the respective Item No. 202.0430
4. Removal of all detour striping, barricades, and reflector markers shall be incidental to the respective item no.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VILLAGE DETOUR RD. RESTORATION - PHASE II.
TRAFFIC SIGN PLAN
HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(20)
Scale: As Noted Date: June 1983

SHEET No. 3 OF 14 SHEETS

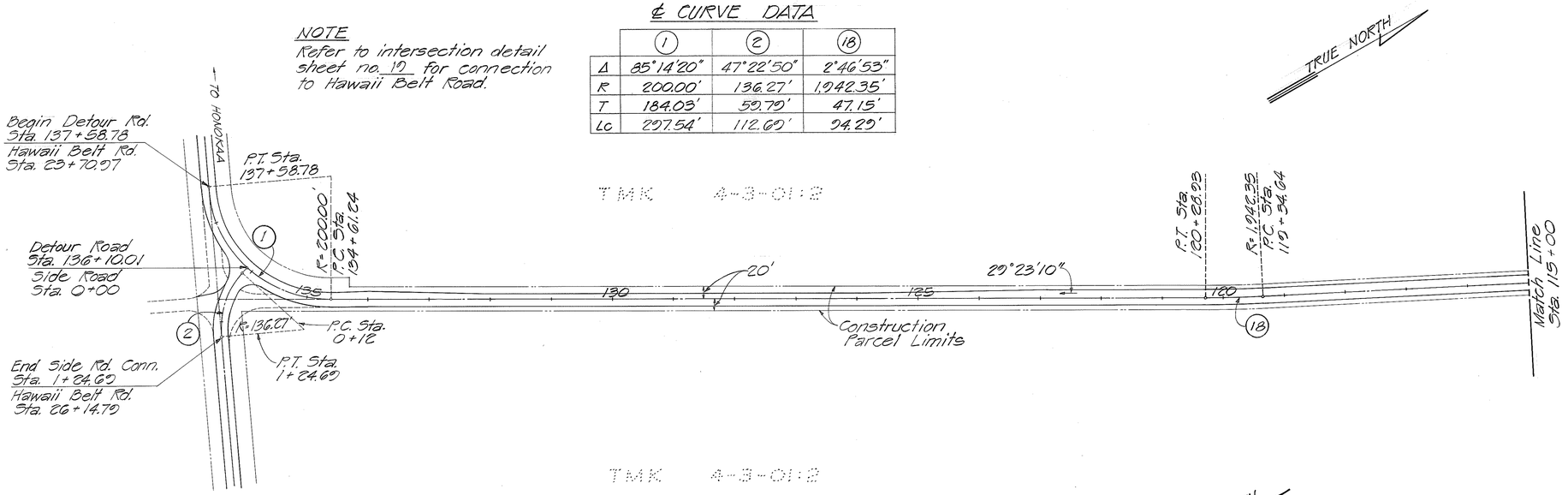
ORIGINAL PLAN
SURVEY PLOTTED BY DATE
DRAWN BY "
TRACED BY "
NOTE BOOK DESIGNED BY "
No. QUANTITIES BY "
CHECKED BY

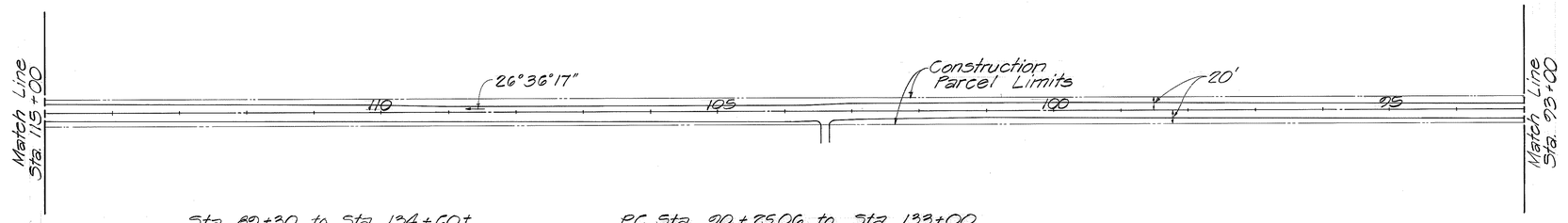
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-019-2(20)	1984	14	126

℄ CURVE DATA

	(1)	(2)	(18)
Δ	85°14'20"	47°22'50"	2°46'53"
R	200.00'	136.27'	1,942.35'
T	184.03'	59.79'	47.15'
Lc	297.54'	112.69'	94.29'

NOTE
Refer to intersection detail sheet no. 10 for connection to Hawaii Belt Road.





Sta. 89+30 to Sta. 134+60±
Provide 1" A.C. pavement, mix no. V resurfacing for 20' existing pavement. Pave additional 2' on both sides of roadway with 2" A.C. pavement, mix no. V (see typical sections for details)
Dressing of Shoulders w/Agg. Subbase Material - 113 c.y.

P.C. Sta. 90+25.06 to Sta. 133+00
Construct/Reconstruct existing shoulders. 2' to 4' ± wide x 1' deep (see typical sections for details). Total shoulder material 716 ~~853~~ C.Y. (AGG. SUBBASE)
The limits of construction/reconstruction are:
~~P.C. Sta. 90+25.06 to Sta. 96+00 L.~~
~~P.C. Sta. 90+25.06 to 94+00 R.~~
~~Sta. 97+00 to 111+00 R.~~
~~Sta. 107+00 to 109+00 L.~~
~~Sta. 113+00 to 123+00 R.~~
~~Sta. 125+00 to 127+00 R.~~
~~Sta. 123+00 to 133+00 L.~~

MAKAI DETOUR ROAD (M.D.R.) STAS.

91+50 TO 94+50 LT. (WIDTH=2.0')
94+50 TO 102+00 LT. (W=4.0')
102+00 TO 109+50 LT. (W=2.0')
111+50 TO 109+50 LT. (NO WORK)
111+50 TO 112+50 LT. (W=2.0')
112+50 TO 122+00 LT. (NO WORK)
122+00 TO 134+60 LT. (W=2.0')

91+85 TO 97+25 RT. (W=2.0')
97+25 TO 103+50 RT. (W=4.0')
103+50 TO 119+00 RT. (W=2.0')
119+00 TO 123+00 RT. (W=4.0')
123+00 TO 130+00 RT. (W=2.0')
130+00 TO 134+60 RT. (W=4.0')

TMK 4-3-01:2

APPROVED:

MANAGER, THEO. DAVIES HAMAKUA SUGAR — 6/20/83 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN
MAKAI DETOUR ROAD
HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(20)

Scale: 1"=100' Date: June 1983

SHEET No. 4 OF 14 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-010-2(20)	1984	15	126

℄ CURVE DATA

	(17)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
Δ	102°17'05"	4°04'20"	18°59'00"	3°57'05"	29°27'50"	26°15'20"	11°31'55"	12°11'35"
R	72.00'	1,600.00'	765.00'	5,000.00'	385.00'	365.00'	1,870.00'	790.00'
T	80.37'	56.88'	126.64'	172.47'	101.23'	85.12'	188.82'	84.38'
Lc	128.53'	113.72'	253.46'	344.82'	197.98'	167.26'	376.37'	168.12'

E.P. CURVE (G)
Δ = 104°30'00"
R = 77.00'
T = 99.45'
Lc = 48.77'

Hatch area denotes intersection pavement widening (3,200 sq.ft.)

Estimated Quantities

Roadway Excavation	300 C.Y.
Aggregate Subbase	237 C.Y.
Aggregate Base	79 C.Y.

TRUE NORTH

TMK 4-2-03:3

TMK 4-3-01:2

TMK 4-2-03:3

TMK 4-2-02:7

Match Line Sta. 93+00

Sta. 150+45.48 Ahead
P.T. Sta. 90+45.48, Bk

(G) R=72.00'

P.T. Sta. 151+24.48

(17)

26°36'17"

308°53'22.5"

312°57'42.5"

(20) R=1,600.00'

P.C. Sta. 154+60.67

P.T. Sta. 155+74.39

P.C. Sta. 156+56.46 R=765.00'

P.T. Sta. 158+83.92

(21)

20

293°58'42.5"

Construction Parcel Limits

P.C. Sta. 160+27.44 R=5,000.00'

P.T. Sta. 164+42.76

(22)

297°55'47.5"

(23)

P.C. Sta. 165+42.46 R=385.00'

P.T. Sta. 167+38.40

R=365.00'

P.C. Sta. 168+90.61

Install 87.5 L.F. Metal Guard Rail w/ Steel Posts and Type 'G' Flare at Tail End

Install 87.5 L.F. Metal Guard Rail w/ Steel Posts and Type 'G' Flare at Approach End

For details of Metal Guard Rail connection to existing bridge structure, see sheet no. 23

Install 81.25 L.F. Metal Guard Rail w/ Steel Posts. Tie into Cut Slope

P.T. Sta. 170+57.67

(24)

242°12'37.5"

R=1,870.00'

P.C. Sta. 171+91.08

268°27'57.5"

Install 31.25 L.F. Metal Guard Rail w/ Steel Posts and Type 'G' Flare at Trail End

(25)

253°44'30"

R=790.00'

P.C. Sta. 176+16.09

P.T. Sta. 175+75.45

(26)

Match Line Sta. 177+80.21

P.T. Sta. 177+80.21

Sta. 155+50 to Sta. 177+00
Sta. 196+00 to Sta. 216+75

Plantation to realign road. Work to be completed before start of contract. Any change in quantities will be covered by a contract change order.

Sta. 160+50± to Sta. 173+00±

Trim overhanging tree branches along both sides of roadway to a clearing height of 15-ft.(min)

Match Line Sta. 177+80.21

P.C. Sta. 176+50.94 R=795.00'

P.T. Sta. 178+09.81

(27)

365°56'05"

(28) R=365.00'

P.C. Sta. 180+01.53

P.T. Sta. 183+93.60

284°35'30"

314°45'10"

20'

(29)

P.C. Sta. 190+72.16 R=800.00'

P.T. Sta. 193+65.76

312°56'35"

(30)

P.C. Sta. 199+00.96 R=135.00'

P.T. Sta. 200+46.64

Construction Parcel Limits

Sta. 151+00 to Sta. 230+90

Dressing of shoulder with aggregate subbase material.
Total aggregate subbase 585 C.Y.
Provide 28-ft. wide x 2" A.C. pavement, mix no. V

Sta. 198+00± to Sta. 204+50±

Trim overhanging tree branches along both sides of roadway to a clearing height of 15-ft. (min.)

4°52'35"

20°07'15"

P.C. Sta. 200+45.65 R=570.00'

P.T. Sta. 204+00.66

(31)

P.C. Sta. 204+40.01 R=45.00'

(32)

307°48'30"

P.T. Sta. 204+86.80

P.C. Sta. 205+47.30 R=62.50'

Install 25 L.F. Metal Guard Rail w/ Steel Posts and Type 'G' Flare at Approach End

Install 75 L.F. Metal Guard Rail w/ Steel Posts and Type 'G' Flare at Trail End

P.T. Sta. 211+23.99

209°23'10"

Match Line Sta. 213+00

(34) R=165.00'

P.C. Sta. 209+15.08

205°37'50"

(33)

P.T. Sta. 206+98.76

For details of Metal Guard Rail connection to existing bridge structure, see sht. no. 24

Install 25 L.F. Metal Guard Rail w/ Steel Posts and Type 'G' Flare at Trail End

Install 50 L.F. Metal Guard Rail w/ Steel Posts and Type 'G' Flare at Approach End

℄ CURVE DATA

	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
Δ	18°39'25"	30°09'50"	1°48'35"	51°36'00"	15°34'40"	72°18'30"	102°10'40"	95°45'20"
R	795.00'	365.00'	8,000.00'	135.00'	570.00'	45.00'	62.50'	165.00'
T	130.60'	98.36'	126.33'	65.26'	77.97'	32.88'	77.43'	138.23'
Lc	258.87'	192.16'	252.64'	121.58'	154.97'	56.79'	111.46'	206.91'

SURVEY PLOTTED BY: JK DATE
DRAWN BY: " "
TRACED BY: " "
DESIGNED BY: " "
QUANTITIES BY: " "
CHECKED BY: " "
NOTE BOOK
ORIGINAL PLAN
No. 122

APPROVED:

For Hawaiian Sugar 6/20/83
MANAGER, THEO DAVIES HAMAKUA SUGAR DATE

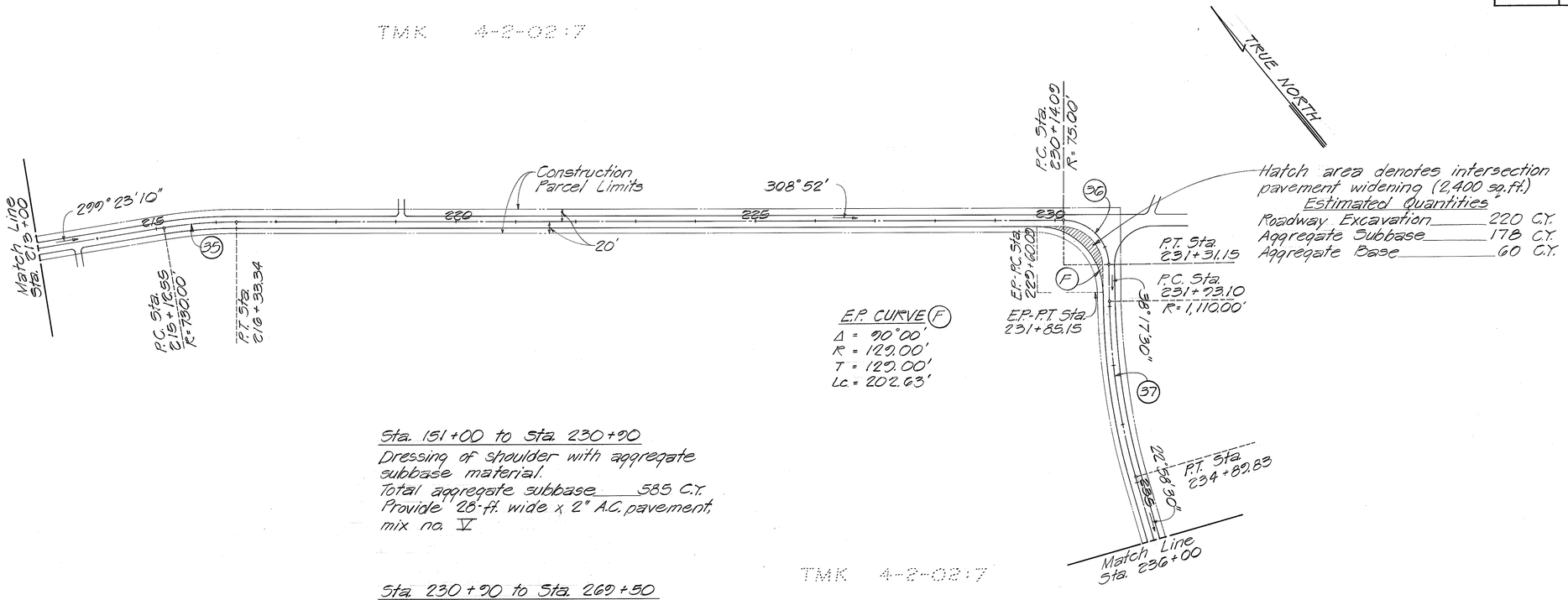
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN
MAKAI DETOUR ROAD
HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-010-2(20)

Scale: 1"=100' Date: June 1983

SHEET No. 5 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-010-2(20)	1984	16	126



℄ CURVE DATA

	(35)	(36)	(37)	(38)	(39)
Δ	9°28'50"	89°25'30"	15°19'00"	13°15'25"	5°24'20"
R	730.00'	75.00'	1,110.00'	2,085.00'	1,980.00'
T	60.53'	74.25'	149.26'	242.29'	93.47'
Lc	120.79'	117.06'	296.73'	482.42'	186.80'

APPROVED:

For MANAGER, THEO DAVIES HAMAKUA SUGAR — DATE 6/20/83

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

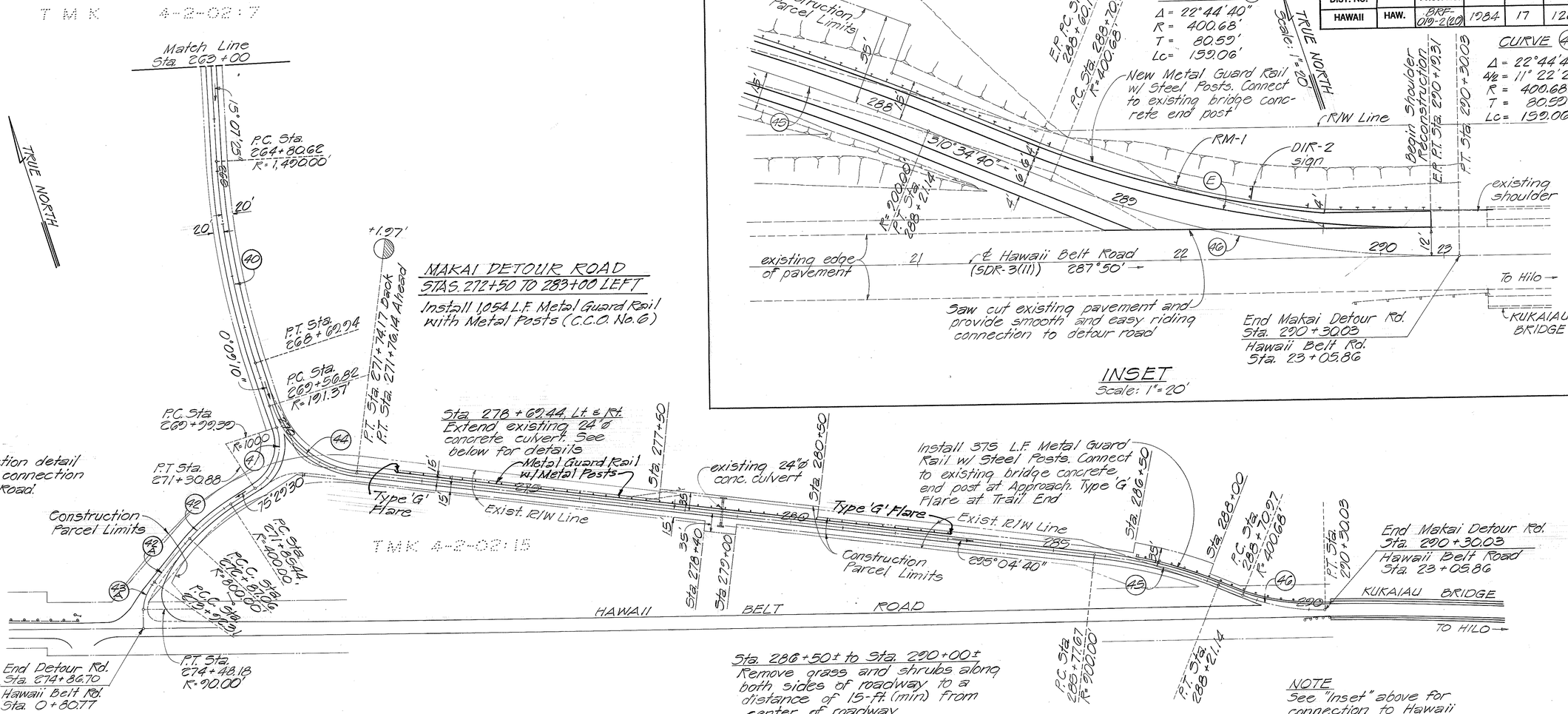
ROADWAY PLAN
MAKAI DETOUR ROAD
HAWAII BELT ROAD
Kalapahapuu Strm. and Kaiehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-010-2(20)

Scale: 1"=100' Date: June 1983

SHEET No. 6 OF 14 SHEETS

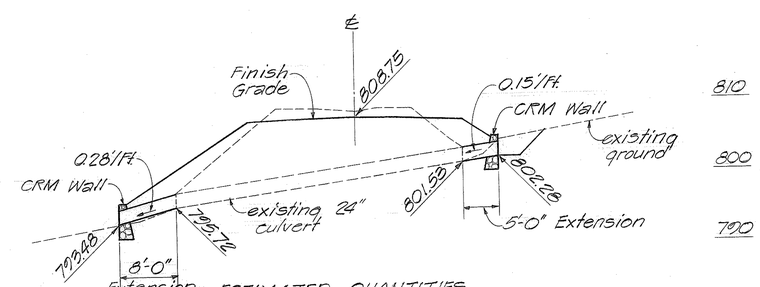
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGNED BY	"
	QUANTITIES BY	"
No.	CHECKED BY	"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-019-2(20)	1984	17	126



℄ CURVE DATA

	(40)	(41)	(42)	(42A)	(43A)	(44)	(45)	(46)
Δ	14°58'15"	75°20'20"	14°33'20"	7°32'16"	35°35'54"	65°04'30"	15°30'	22°44'40"
R	1,400.00'	100.00'	400.00'	800.00'	90.00'	191.37'	900.00'	400.68'
T	103.77'	77.20'	51.08'	52.70'	28.87'	122.09'	122.48'	80.59'
LC	389.32'	131.49'	101.62'	105.25'	55.87'	217.35'	243.47'	159.06'



ESTIMATED QUANTITIES

Structural Excavation	4.3 C.Y.	Class 'B' Conc (Collar)	1.0 C.Y.
Ditch and Channel Exc.	5.0 C.Y.	Reinf. Steel	58.0 LB.
Bed Course Material	1.0 C.Y.	CRM Wall	4.0 C.Y.
24-Inch Reinf. Conc. Pipe, Cl. III	13.0 L.F.	Structure Backfill	4.4 C.Y.

SECTION THRU CULVERT AT STA. 278+62.44
Scale: 1"=10'

APPROVED:

For MANAGER, THEO DAVIES HAMAKUA SUGAR — DATE 6/20/83

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN
MAKAI DETOUR ROAD
HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(20)

Scale: 1"=100' Date: June 1983

SHEET No. 7 OF 14 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-019-2(20)	1984	18	126

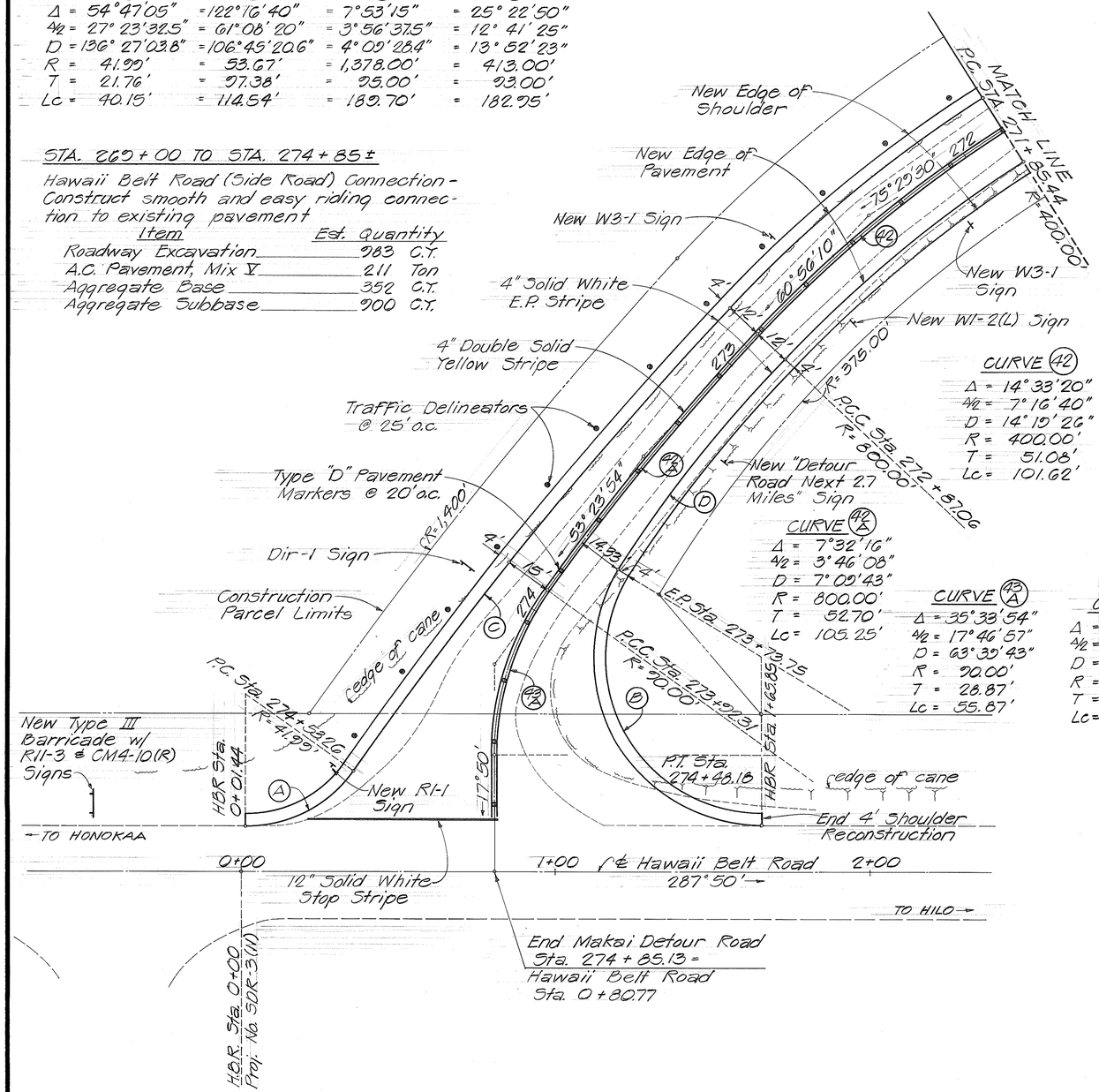
E.P. CURVE DATA

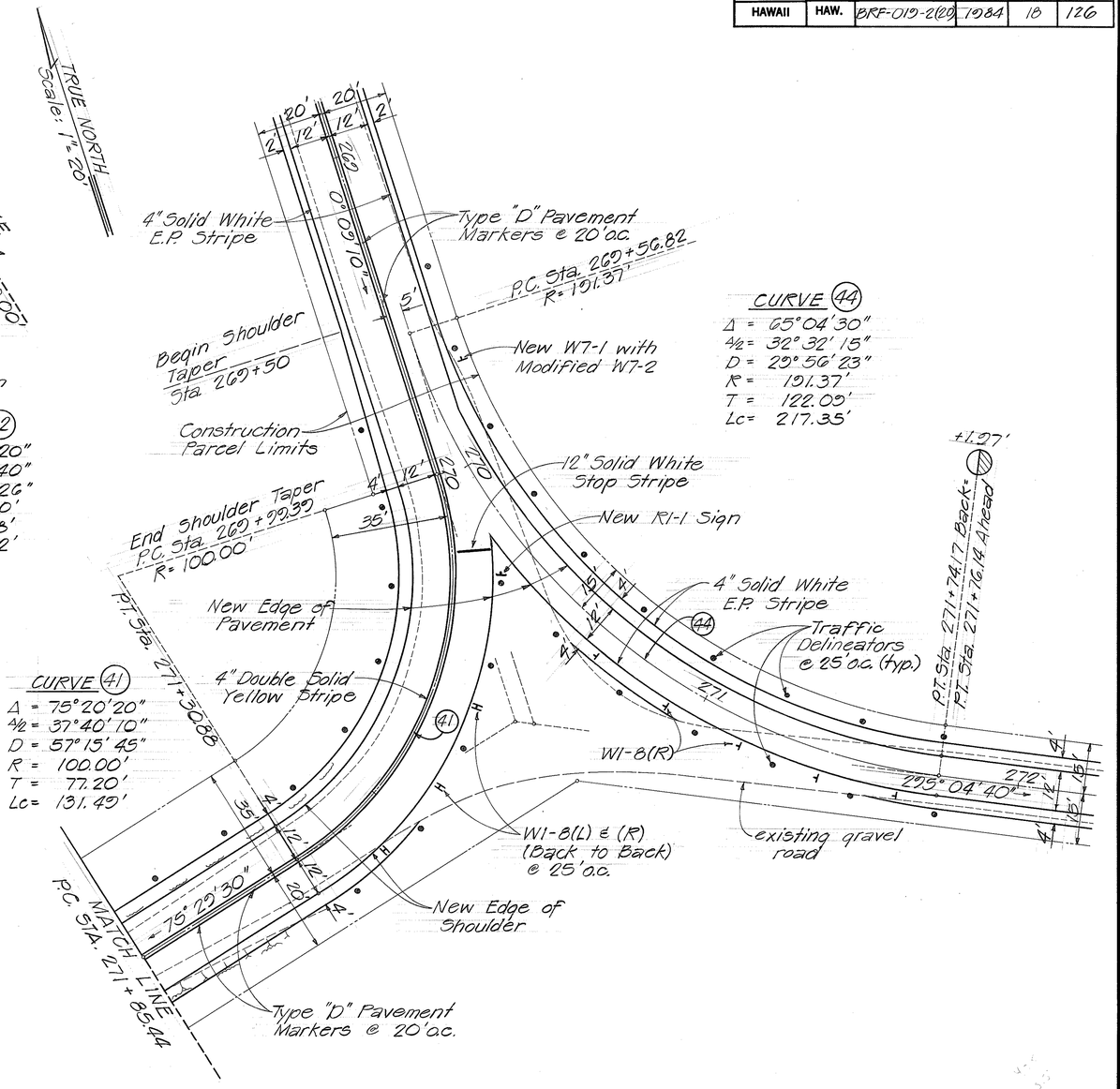
	(A)	(B)	(C)	(D)
Δ	= 54°47'05"	= 122°16'40"	= 7°53'15"	= 25°22'50"
½	= 27°23'32.5"	= 61°08'20"	= 3°56'37.5"	= 12°41'25"
D	= 136°27'03.8"	= 106°45'20.6"	= 4°09'28.4"	= 13°52'23"
R	= 41.99'	= 53.67'	= 1,378.00'	= 413.00'
T	= 21.76'	= 97.38'	= 95.00'	= 93.00'
Lc	= 40.15'	= 114.54'	= 189.70'	= 182.95'

STA. 260+00 TO STA. 274+85.5±

Hawaii Belt Road (Side Road) Connection - Construct smooth and easy riding connection to existing pavement

Item	Est. Quantity
Roadway Excavation	983 C.Y.
A.C. Pavement, Mix V	211 Ton
Aggregate Base	352 C.Y.
Aggregate Subbase	700 C.Y.





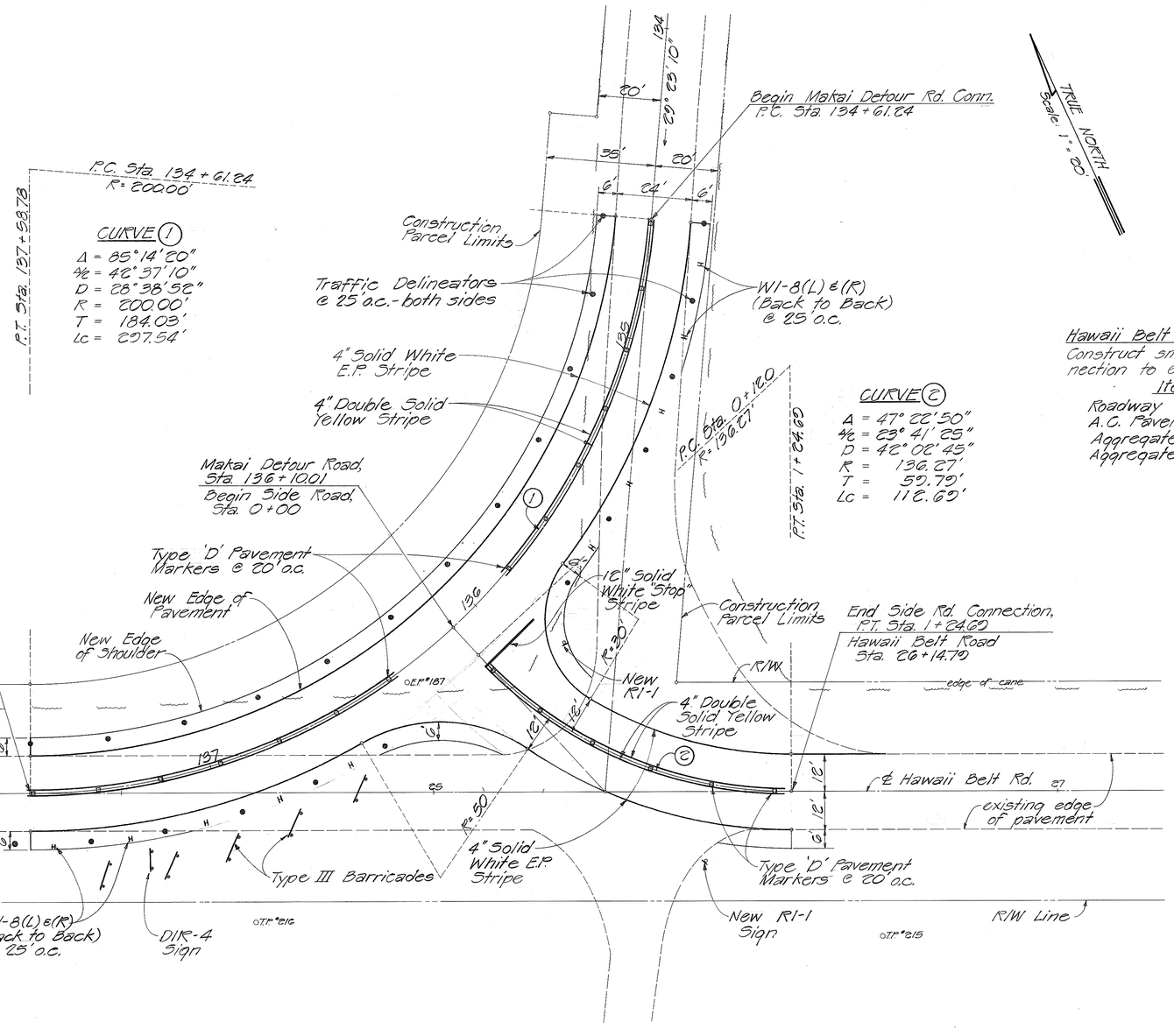
ORIGINAL PLAN	
SURVEY PLOTTED BY	DATE
DRAWN BY	" "
TRACED BY	" "
DESIGNED BY	" "
QUANTITIES BY	" "
CHECKED BY	" "
NOTE BOOK	
No.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

MAKAI DETOUR ROAD CONN. (HILO END) - PHASE I
HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(20)
Scale: 1" = 20' Date: June 1983

SHEET No. 8 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-019-2(20)	1984	19	126



Hawaii Belt Road (Side Road) Connection
Construct smooth and easy riding connection to existing pavement

Item	Est. Quantity
Roadway Excavation	521 C.Y.
A.C. Pavement, Mix V	85 Ton
Aggregate Base	132 C.Y.
Aggregate Subbase	680 C.Y.

GENERAL NOTES
1. Pavement striping by others
2. Install RM-1 delineators as shown
3. Install raised pavement markers

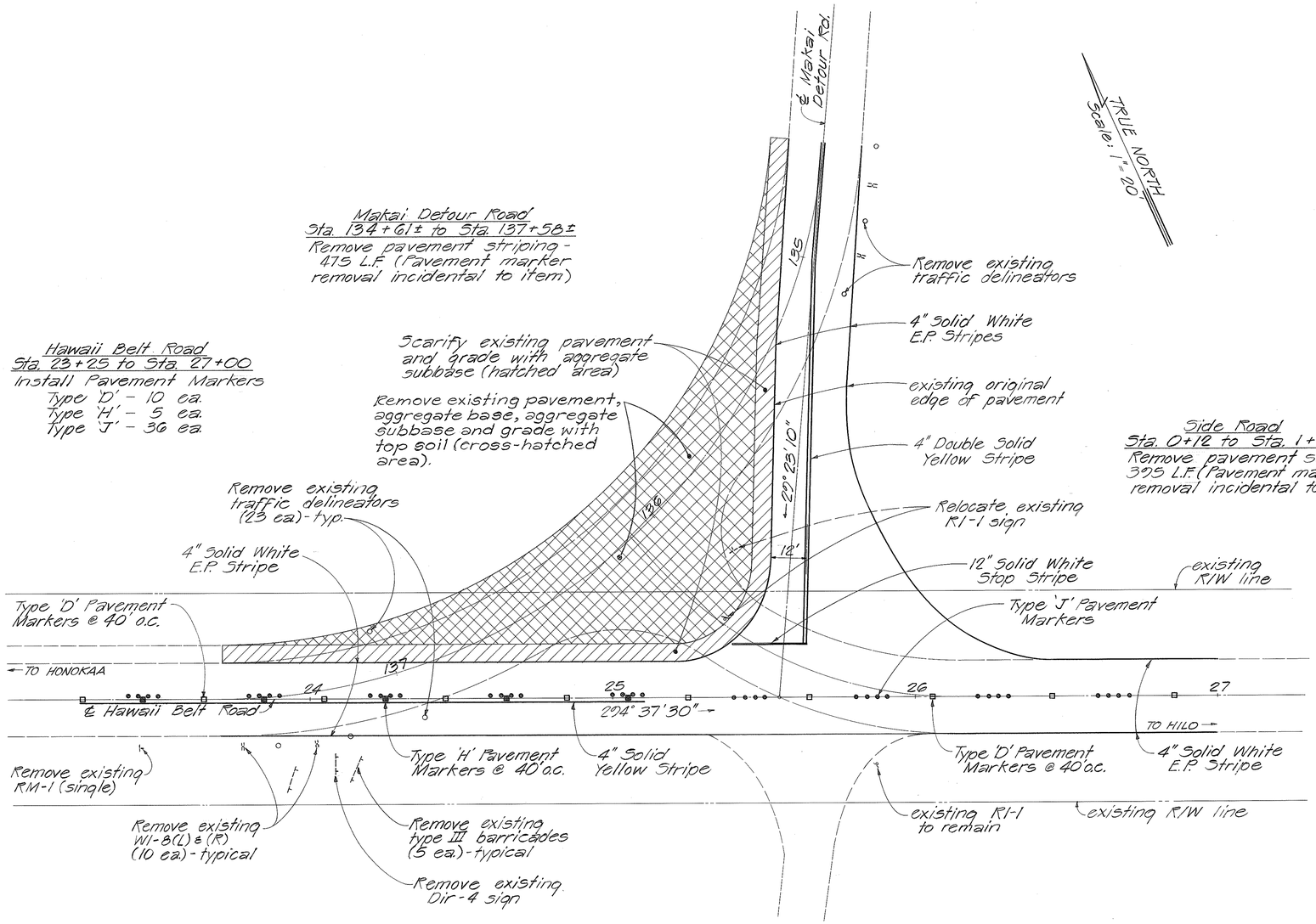
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
NOTE BOOK	TRACED BY	"
	DESIGNED BY	"
No.	QUANTITIES BY	"
	CHECKED BY	"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

H.B.R.-MAKAI DETOUR RD. CONNECTION
DETAILS (HONOKAA END)
HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(20)
Scale: 1"=20' Date: June 1983

SHEET No. 9 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-010-2(20)	1984	20	126



GENERAL NOTES

1. Remove existing phase I pavement, aggregate base and aggregate subbase as shown and grade as specified. Work shall be paid under Item No. 202.0430.
2. Pavement striping to be done by others.
3. All pavement marker and striping removal shall be incidental to Item No. 202.0430
4. Removal of all detour signing, barricades, and reflector markers shall be incidental to the respective item no.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

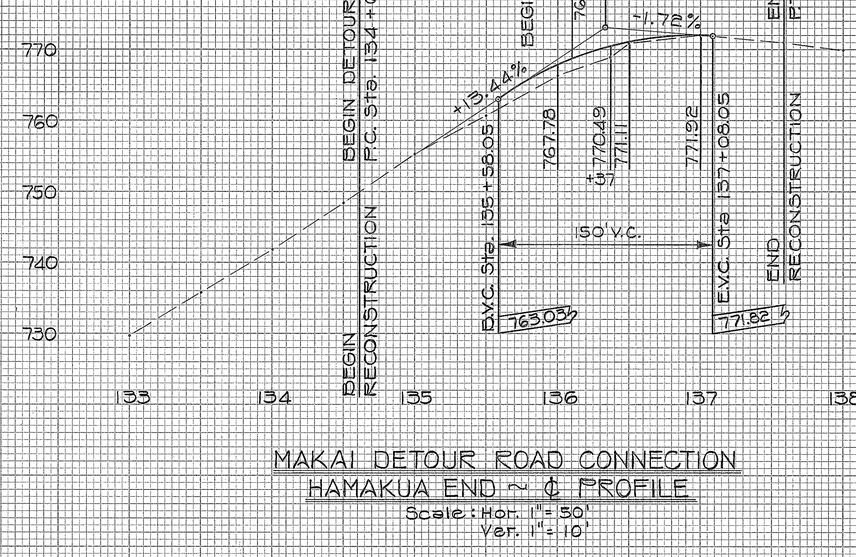
H.B.R.-MAKAI DETOUR RD RESTORATION
DETAILS (HONOKAA END) - PHASE II

HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm.
Bridge Replacements
Fed. Aid Proj. No. BRF-010-2(20)

Scale: 1" = 20' Date: June 1983

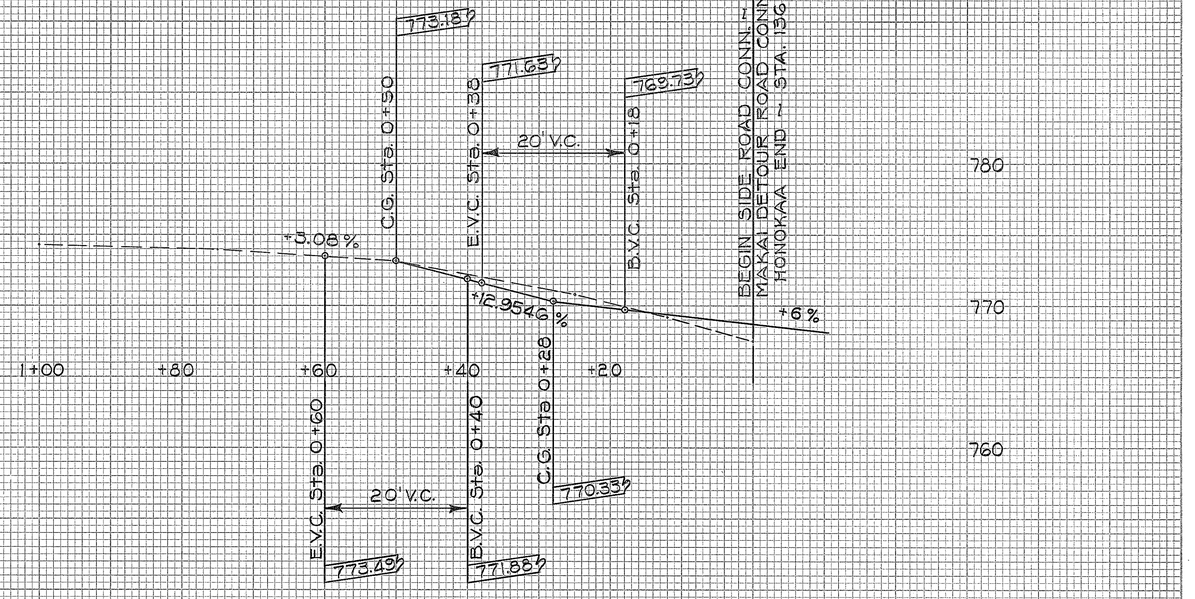
SHEET No. 10 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-019-2(20)	1984	21	126



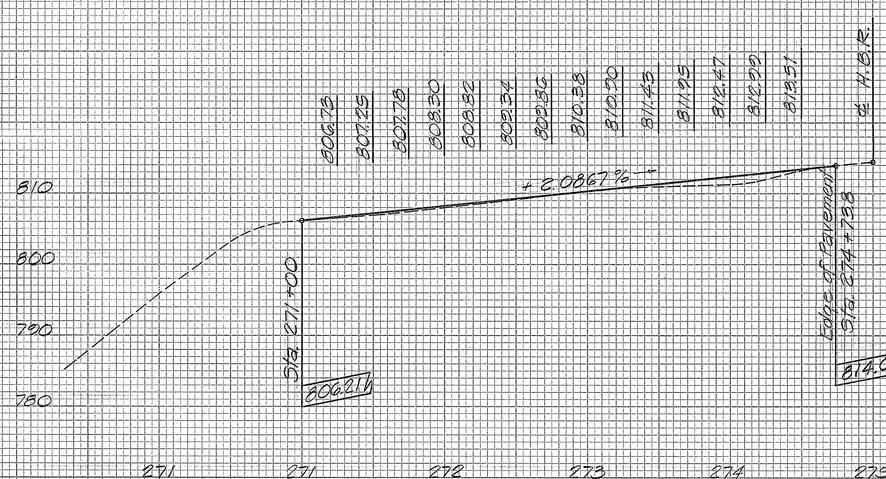
MAKAI DETOUR ROAD CONNECTION
HAMAKUA END ~ ℄ PROFILE

Scale: Hor. 1" = 50'
Ver. 1" = 10'



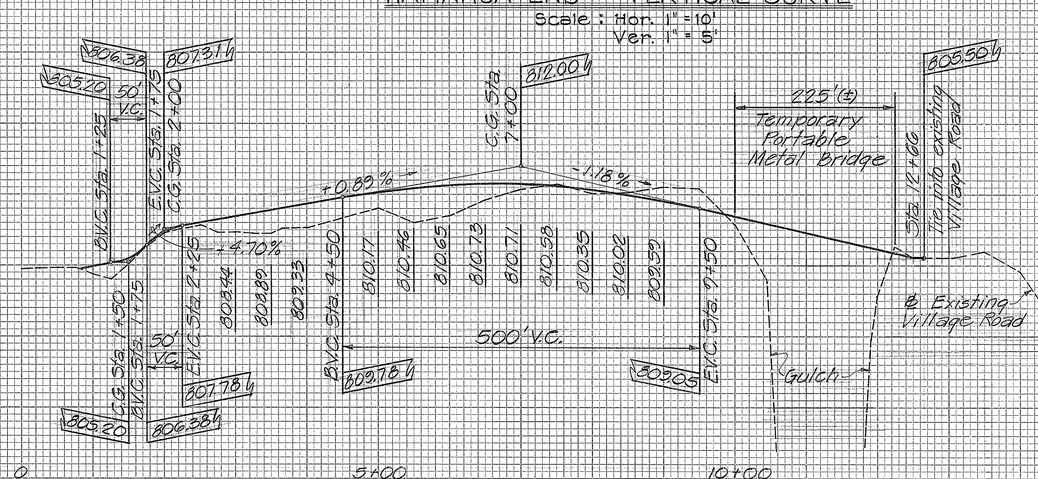
SIDE ROAD ~ MAKAI DETOUR ROAD CONNECTION
HAMAKUA END ~ VERTICAL CURVE

Scale: Hor. 1" = 10'
Ver. 1" = 5'



MAKAI DETOUR ROAD CONNECTION
HILO END ~ ℄ PROFILE

Scale: Hor. 1" = 50'
Ver. 1" = 10'



H.B.R. ~ VILLAGE DETOUR ROAD CONNECTION
℄ PROFILE

Scale: Hor. 1" = 100'
Ver. 1" = 5'

Sheet no. 11 of 14 Sheets

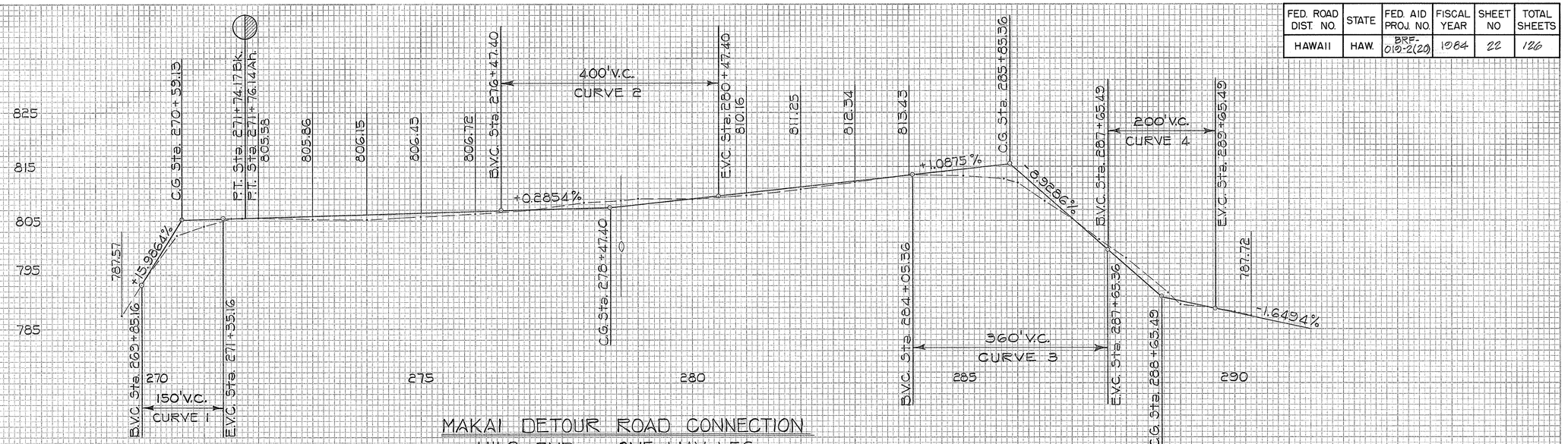
21

K&E PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO

48 7056 MADE IN U.S.A.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
HAWAII	HAW.	BRF-010-2(20)	1984	22	126

FINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		

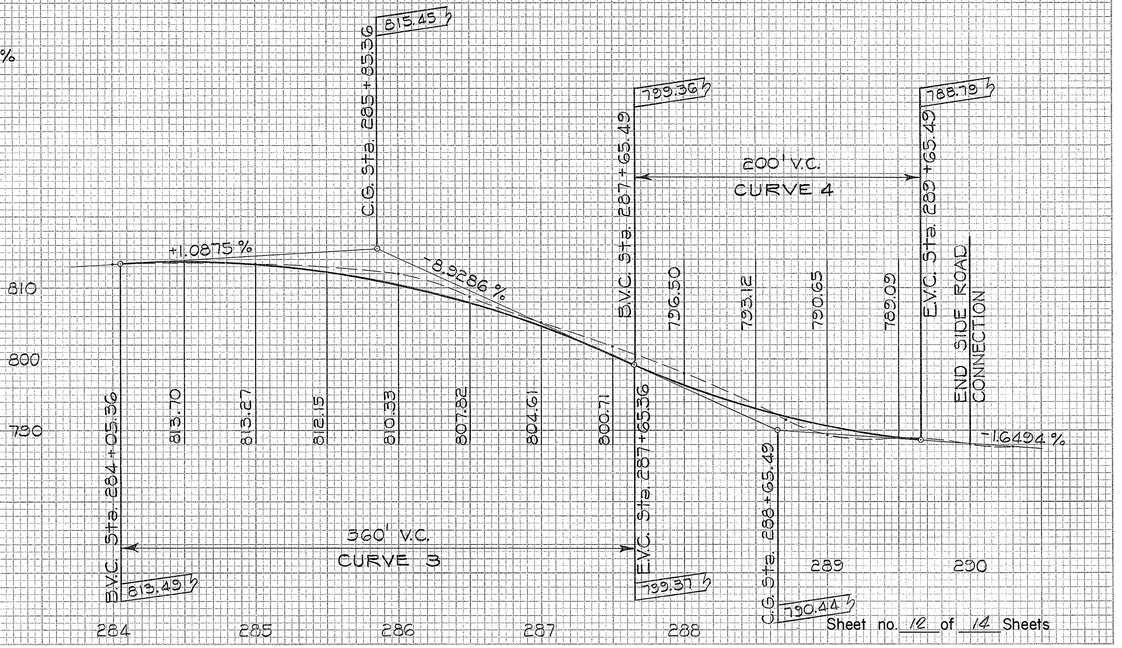


MAKAI DETOUR ROAD CONNECTION
HILO END ~ ONE WAY LEG

Scale: Hor. 1" = 100'
Ver. 1" = 10'

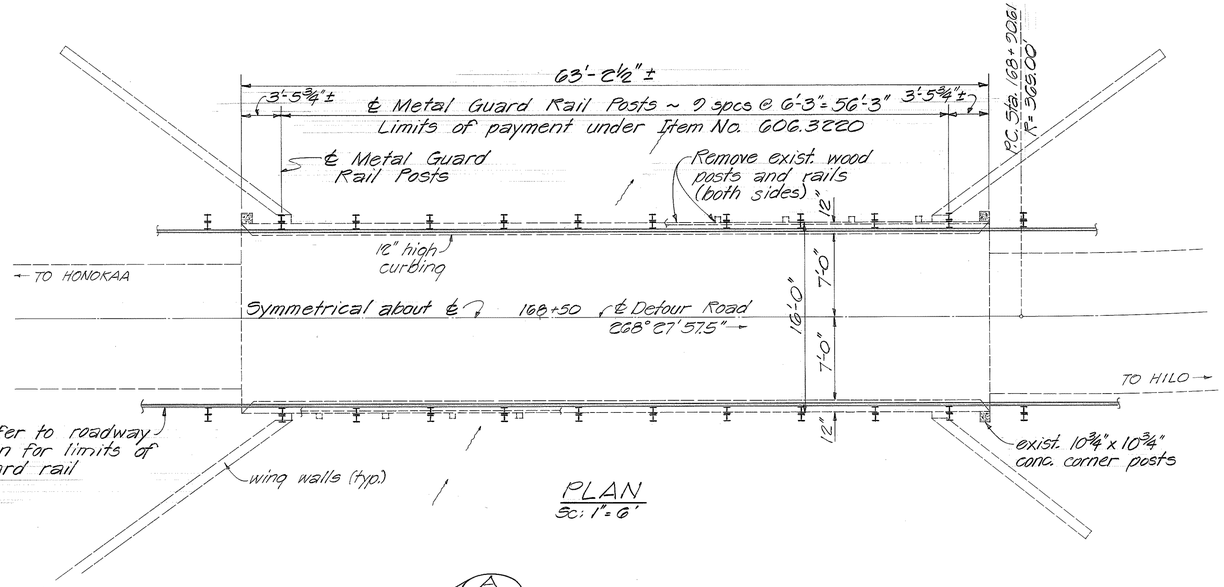
CURVE 2
Scale: Hor. 1" = 50'
Ver. 1" = 5'

CURVE 1
Scale: Hor. 1" = 50'
Ver. 1" = 10'

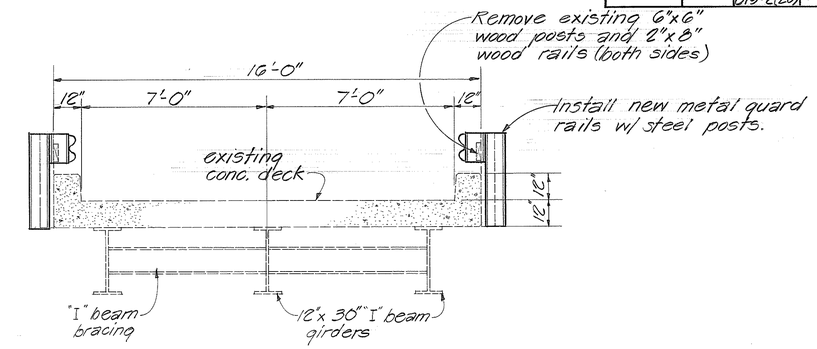


CURVE 3 & 4
Scale: Hor. 1" = 50'
Ver. 1" = 10'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-0110-2(20)	1984	23	126

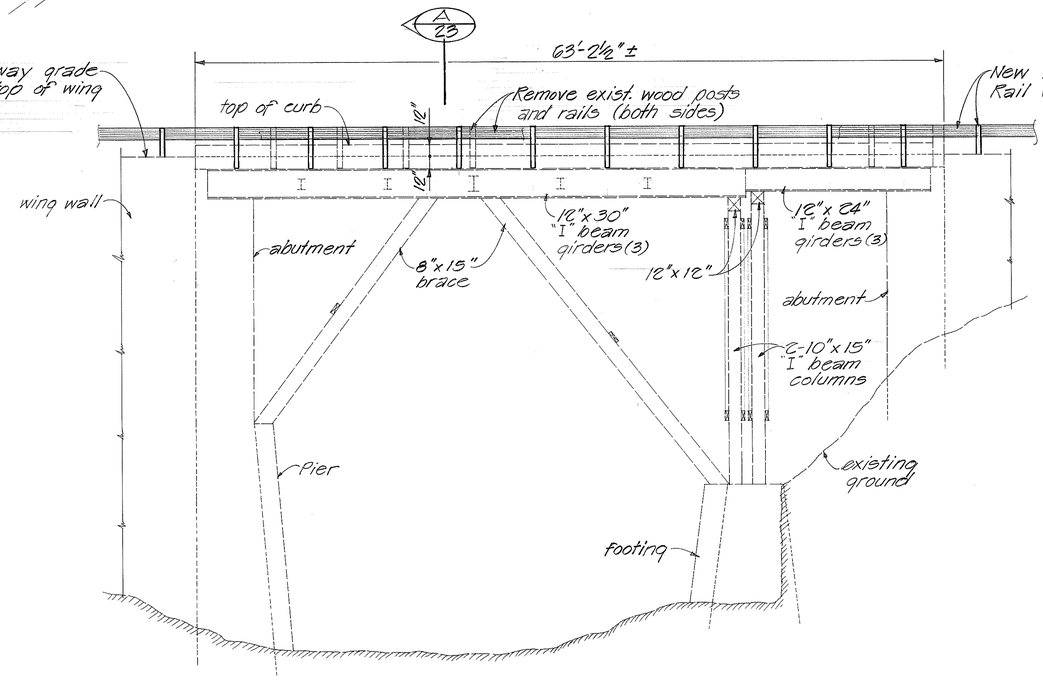


PLAN
Sc: 1" = 6'

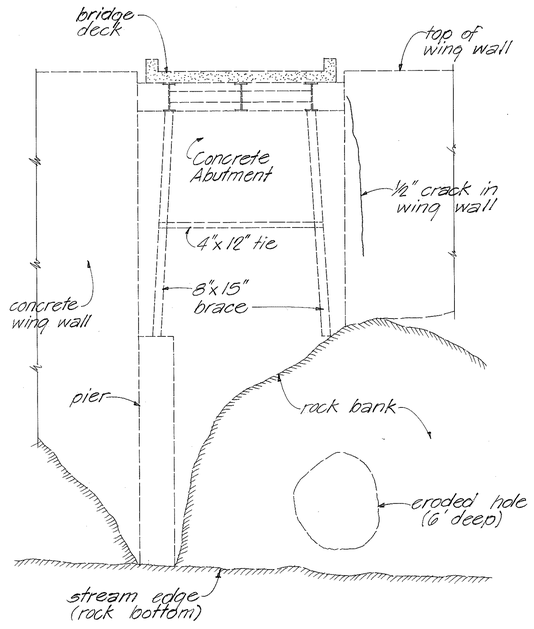


DECK SECTION
Sc: 3/8" = 1'-0"

NOTE:
For details of guard rail post connection to existing concrete bridge, see Sheet No. 24



ELEVATION (MAUKA)
Sc: 1" = 6'



ABUTMENT ELEVATION A 23
Sc: 1" = 6'

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

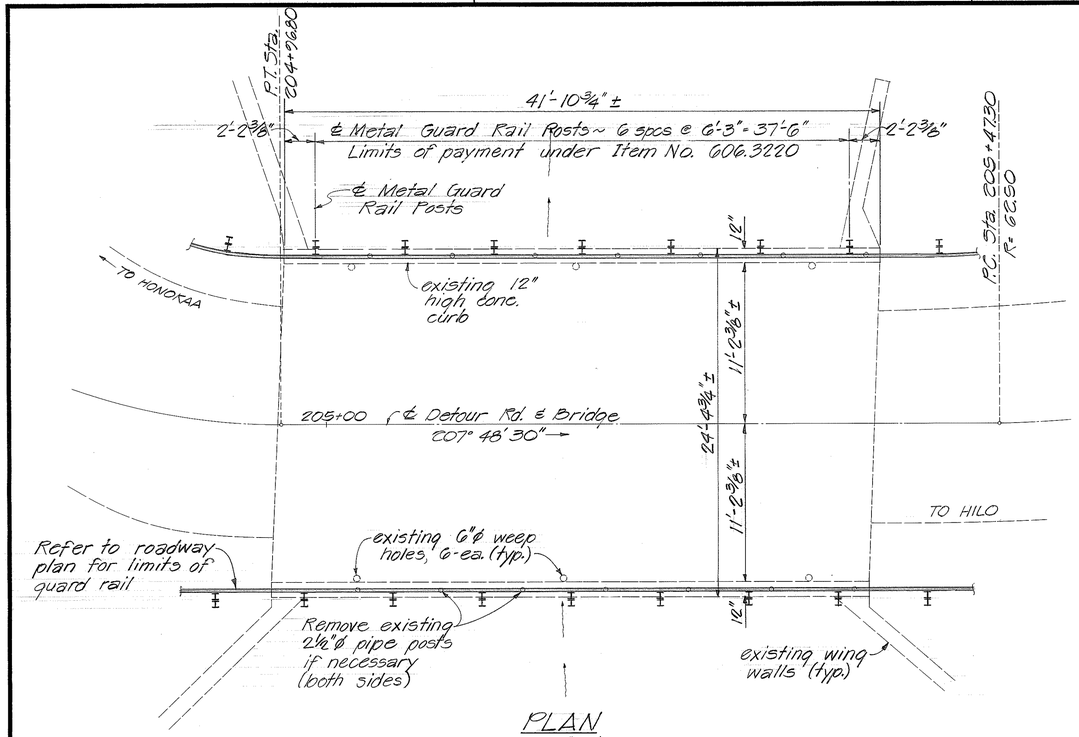
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXIST. PLANTATION BRIDGE AT DETOUR RD STA. 168+56.4 ±
HAWAII BELT ROAD
Kalapahapuu Strm. and Kainehe Strm. Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(20)

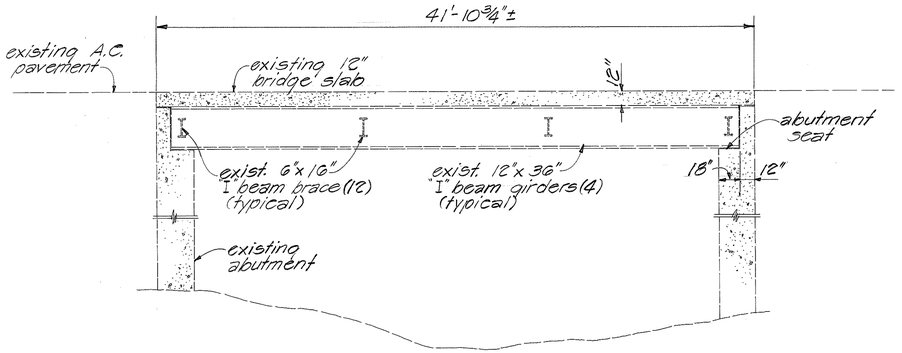
Scale: As Shown Date: June 1983

SHEET No. 13 OF 14 SHEETS

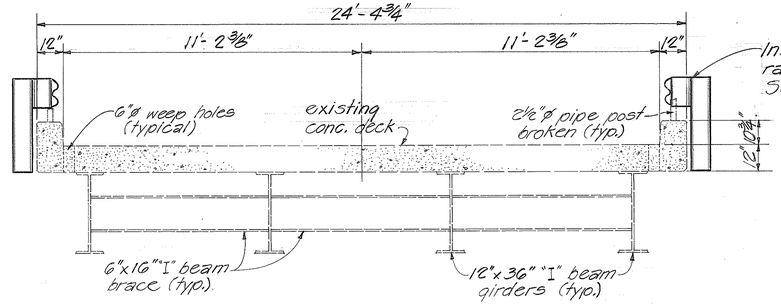
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-019-2(20)	1984	24	126



PLAN
Sc: 1"=5'



SECTION THRU ℄ ROAD
Sc: 1"=5'



TYPICAL DECK SECTION
Sc: 3/16" = 1'-0"

NOTES

MATERIALS

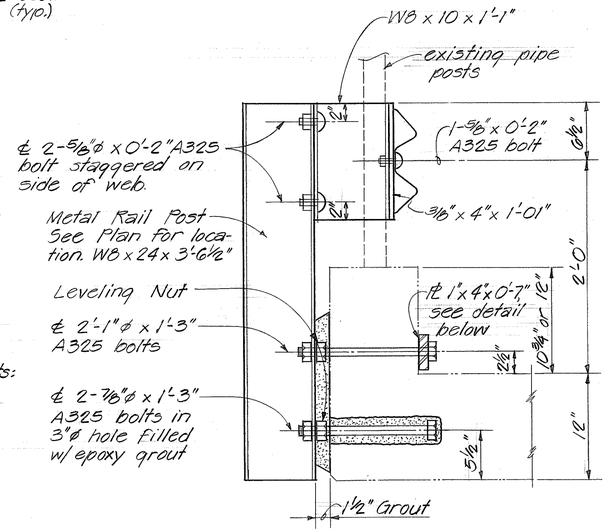
1. Structural Shapes, Bolts, Nuts and Washers.
   a. All shapes, bolts and it's to be hot dip galvanized after fabrication.
   b. Shapes and it's to be ASTM A36.
   c. All bolts, including anchor bolts, nuts and washers shall conform to the requirements of sub-section 713.03-Bolts and Nuts of the Standard Specifications.
2. Epoxy Grout
   a. Epoxy grout shall be a 2 component, 100% solids, moisture-insensitive, epoxy-resin system made for use as a high strength grout for anchor bolts when mixed with an aggregate and shall meet the following requirements:

Neat Material	
Tensile strength ASTM D-638	3,000 psi min. @ 14 days 73°F cure
Tensile elongation ASTM D-638, modified	½-2% @ 14 days 73°F cure
Compressive strength ASTM D-695	2,000 psi min. @ 28 days 73°F cure
Compressive modulus ASTM D-695	360,000 psi min @ 28 days 73°F cure
Water pick-up ASTM D-570	1.0% max.

3. Grout
   a. Grout shall be freshly prepared and uniformly mixed in the following:
      1 - part portland cement
      2 - parts sand
      1 - part gravel (3/16" to ½")
      (not more than 1/10 part lime added to 1-part portland cement may be added)
      Sufficient water shall be used to produce a consistantly just fluid enough for pouring without segregation.
      Grout shall attain a 28 day compressive strength of 2,500 psi.

CONSTRUCTION REQUIREMENT

1. All work shall be done by workmen skilled in the trade and workmanship shall be first class, conforming to the applicable requirements of the plans.
2. Anchor bolts shall be installed centered in drilled holes and grouted with epoxy grout as shown on the plans. Holes shall be clean and sound and free of dust, laitance, grease, or any other material detrimental to the bond. Epoxy grout shall be mixed and placed in strict accordance with the manfacturer's recommendation.
3. The installation of guard rail onto concrete structure shall be paid under Item No. 606.3220 - Guard Rail, Type 3, Single with Steel Post on Concrete Structure (Lin. Ft.)



DETAIL A/24
Sc: 1½" = 1'-0"

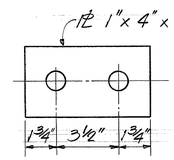


PLATE DETAIL

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXIST. PLANTATION BRIDGE AT DETOUR RD. STA. 205+17.5±

HAWAII BELT ROAD
Kalapahapuu Strm. and Kaiehe Strm.
Bridge Replacements
Fed. Aid Proj. No. BRF-019-2(20)

Scale: As Shown Date: June 1983

SHEET No. 14 OF 14 SHEETS