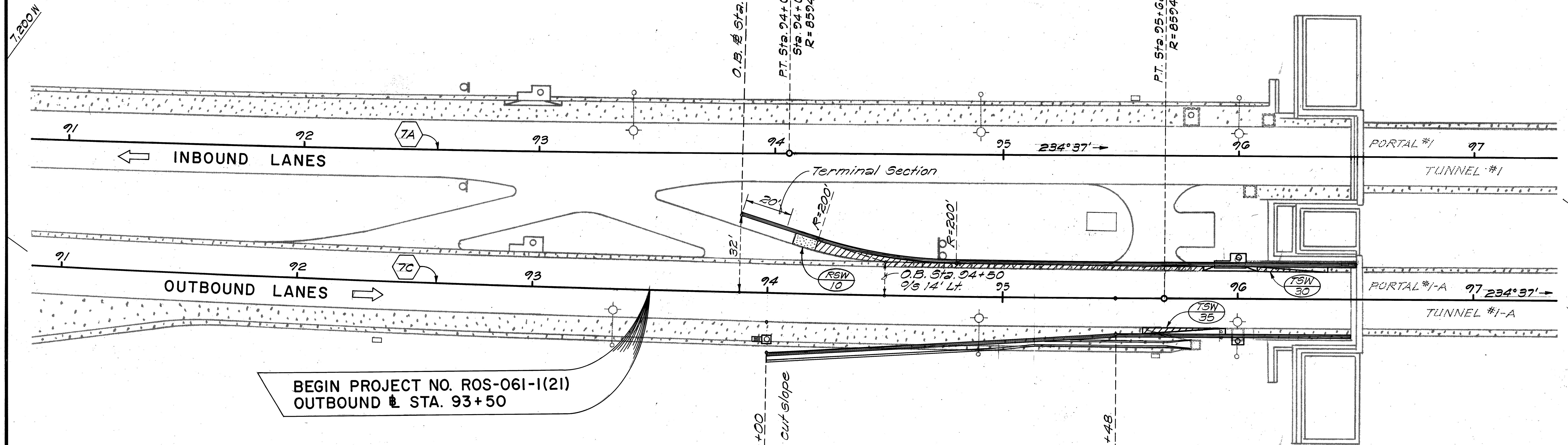


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-061-1(21)	1978	5	24

7A
I.B. CURVE DATA
 $\Delta = 10^{\circ}27'$
 $D = 0^{\circ}40'$
 $R = 8,594.37'$
 $T = 785.93'$
 $C = 1,565.33'$
 $L_c = 1,567.50'$
 $S.E. = 0.015'/ft.$



BEGIN PROJECT NO. ROS-061-1(21)
OUTBOUND STA. 93+50

LEGEND

- (TSW 30) = Sidewalk Transition Length in Feet For Details see Plan Sht. No. 15
- (RSW 10) = Rampdown Sidewalk Length in Feet For Details see Plan Sht. No. 15
- (4T 18) = Guard Rail, Type 4T Length in Feet For Details see Plan Sht. No. 25
- [Hatched] = P.C.C. Shoulder
- [Cross-hatched] = Asphalt Concrete Pavement Shoulder

7C
O.B. CURVE DATA
 $\Delta = 10^{\circ}27'$
 $D = 0^{\circ}40'$
 $R = 8,594.37'$
 $T = 785.93'$
 $C = 1,565.33'$
 $L_c = 1,567.50'$
 $S.E. = 0.015'/ft.$

- O.B. Sta. 94+00 to O.B. Sta. 96+48
9/5 26' Lt. Abut end into cut slope
- O.B. Sta. 94+00± Rt. to O.B. Sta. 96+03± Rt.
Construct: Type 4K Guard Rail
- O.B. Sta. 94+08± Lt. to O.B. Sta. 96+04± Lt.
Construct: Type 4K Guard Rail
- O.B. Sta. 96+04± Lt. to O.B. Sta. 96+49± Lt.
Construct: Type 4H Guard Rail
For details, see Plan Sht. No. 23
- O.B. Sta. 96+03± Rt. to O.B. Sta. 96+49± Rt.
Construct: Type 4H Guard Rail
For details, see Plan Sht. No. 23
- O.B. Sta. 95+48 to O.B. Sta. 96+48
9/5 15' Rt. Angle Point

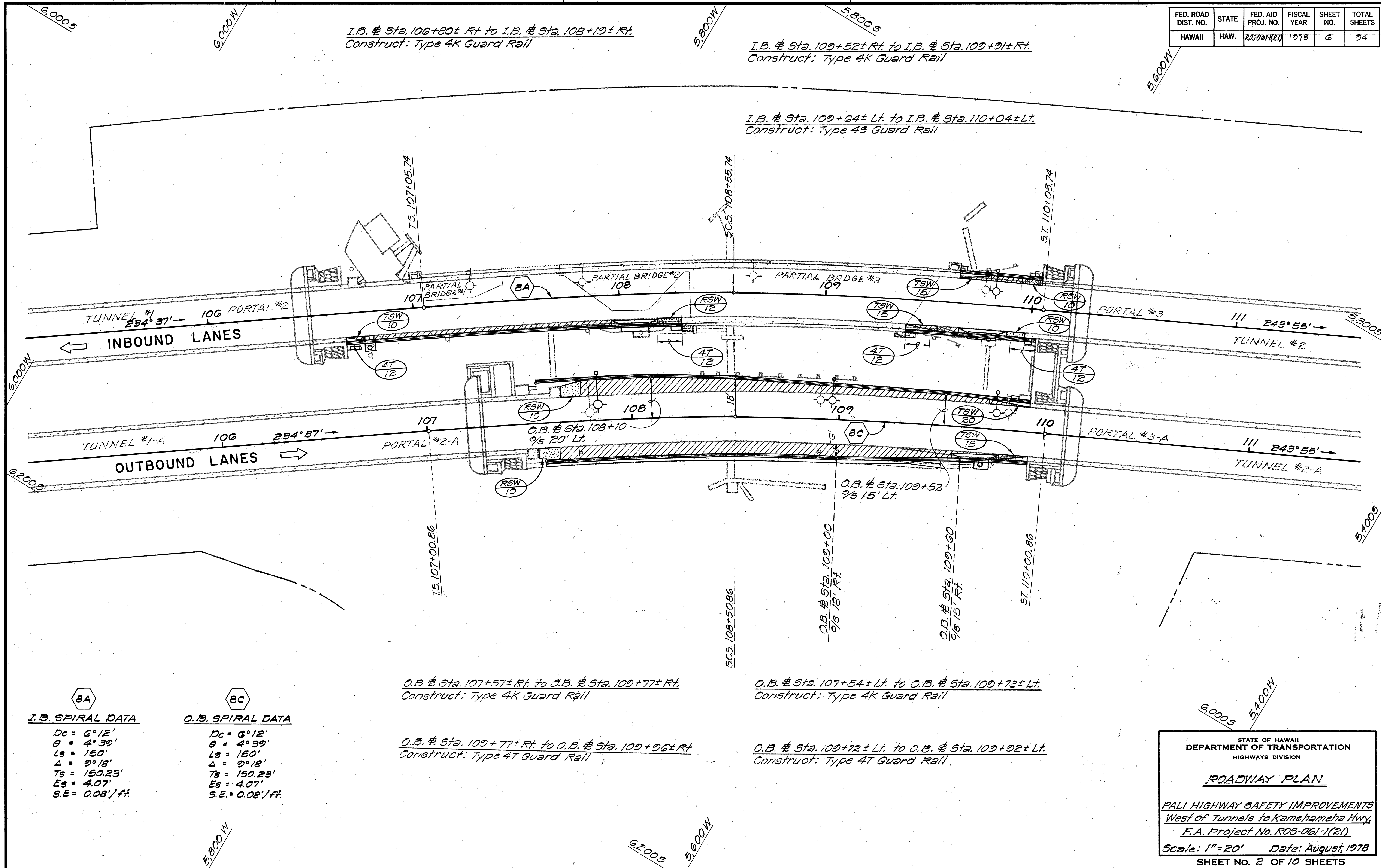
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

PALI HIGHWAY SAFETY IMPROVEMENTS
West of Tunnels to Kamehameha Hwy.
F.A. Project No. ROS-061-1(21)

Scale: 1" = 20' Date: August, 1978
SHEET NO. 1 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-061-1(21)	1978	6	24



8A
I.B. SPIRAL DATA
 $D_c = 6'12''$
 $\theta = 4'39''$
 $L_s = 150'$
 $\Delta = 9'18''$
 $T_s = 150.23'$
 $E_s = 4.07'$
 $S.E. = 0.08'/ft.$

8C
O.B. SPIRAL DATA
 $D_c = 6'12''$
 $\theta = 4'39''$
 $L_s = 150'$
 $\Delta = 9'18''$
 $T_s = 150.23'$
 $E_s = 4.07'$
 $S.E. = 0.08'/ft.$

O.B. Sta. 107+57± Rt. to O.B. Sta. 109+77± Rt.
 Construct: Type 4K Guard Rail

O.B. Sta. 109+77± Rt. to O.B. Sta. 109+96± Rt.
 Construct: Type 4T Guard Rail

O.B. Sta. 107+54± Lt. to O.B. Sta. 109+72± Lt.
 Construct: Type 4K Guard Rail

O.B. Sta. 109+72± Lt. to O.B. Sta. 109+92± Lt.
 Construct: Type 4T Guard Rail

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY PLAN
 PALI HIGHWAY SAFETY IMPROVEMENTS
 West of Tunnels to Kamehameha Hwy.
 F.A. Project No. ROS-061-1(21)
 Scale: 1"=20' Date: August, 1978
 SHEET No. 2 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-061(21)	1978	7	24

I.B. CURVE DATA

SPIRAL DATA

$Dc = 12^{\circ}22'30''$
 $\theta = 12^{\circ}22'30''$
 $Ls = 200'$
 $\Delta = 24^{\circ}45'$
 $Ts = 202.22'$
 $Es = 14.7'$
 $S.E. = 0.10'/ft.$

I.B. CURVE DATA

SPIRAL DATA

$Dc = 13^{\circ}43'56''$
 $\theta = 13^{\circ}43'56''$
 $Ls = 200'$
 $\Delta = 36^{\circ}46'$
 $Ts = 239.80'$
 $Es = 26.6'$

CIRC. DATA

$\Delta c = 9^{\circ}18'08''$
 $Dc = 13^{\circ}43'56''$
 $R = 417.24'$
 $T = 33.94'$
 $Lc = 67.74'$
 $C = 67.67'$
 $S.E. = 0.10'/ft.$
 $E.W. = 1 ft.$

I.B. # Sta. 115+37± Lt. to I.B. # Sta. 115+56± Lt.
Construct: Type 4S Guard Rail

I.B. # Sta. 115+52 Rt. to I.B. # Sta. 116+87± Rt.
Construct: Type 4K Guard Rail

O.B. # Sta. 115+47± Lt. to O.B. # Sta. 119+17± Lt.
Construct: Type 4K Guard Rail

O.B. # Sta. 115+41± Rt. to O.B. # Sta. 120+50± Rt.
Construct: Type 4K Guard Rail

O.B. # Sta. 119+17± Lt. to O.B. # Sta. 119+38 Lt.
Construct: Type 4F and Type 4T Guard Rail
For Details, see Plan Sht. Nos. 21 & 25.

NOTE:

1. The existing A.C. pavement shall be scarified and removed. Excavated soil from the adjacent areas shall be placed to a depth of 6 inches over the scarified areas. Payment for this work will be paid for under Item 203.0100, Roadway Excavation.

O.B. CURVE DATA

SPIRAL DATA

$Dc = 12^{\circ}22'30''$
 $\theta = 12^{\circ}22'30''$
 $Ls = 200'$
 $\Delta = 24^{\circ}45'$
 $Ts = 202.22'$
 $Es = 14.7'$
 $S.E. = 0.10'/ft.$

O.B. CURVE DATA

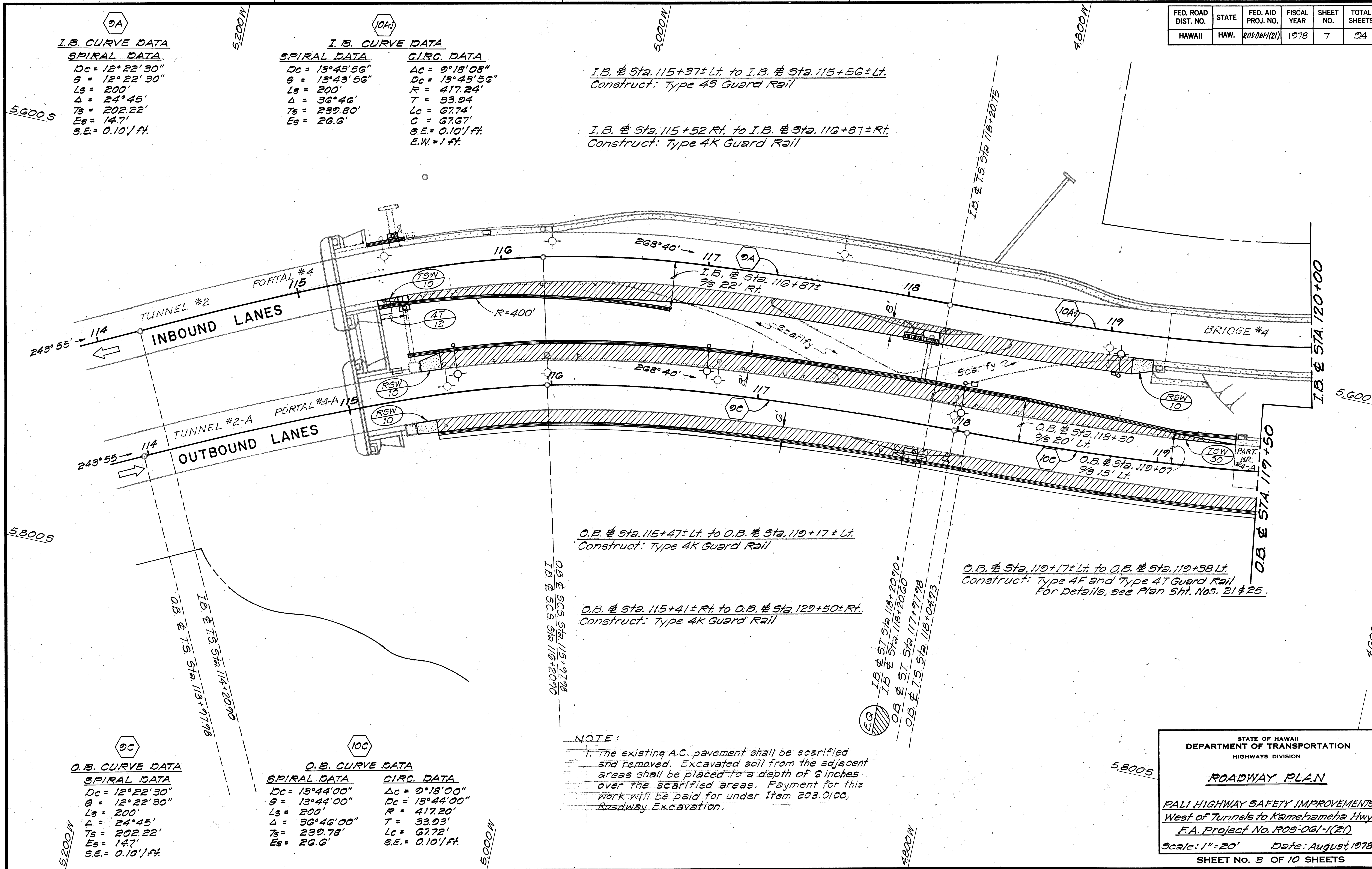
SPIRAL DATA

$Dc = 13^{\circ}44'00''$
 $\theta = 13^{\circ}44'00''$
 $Ls = 200'$
 $\Delta = 36^{\circ}46'00''$
 $Ts = 239.78'$
 $Es = 26.6'$

CIRC. DATA

$\Delta c = 9^{\circ}18'00''$
 $Dc = 13^{\circ}44'00''$
 $R = 417.20'$
 $T = 33.93'$
 $Lc = 67.72'$
 $S.E. = 0.10'/ft.$

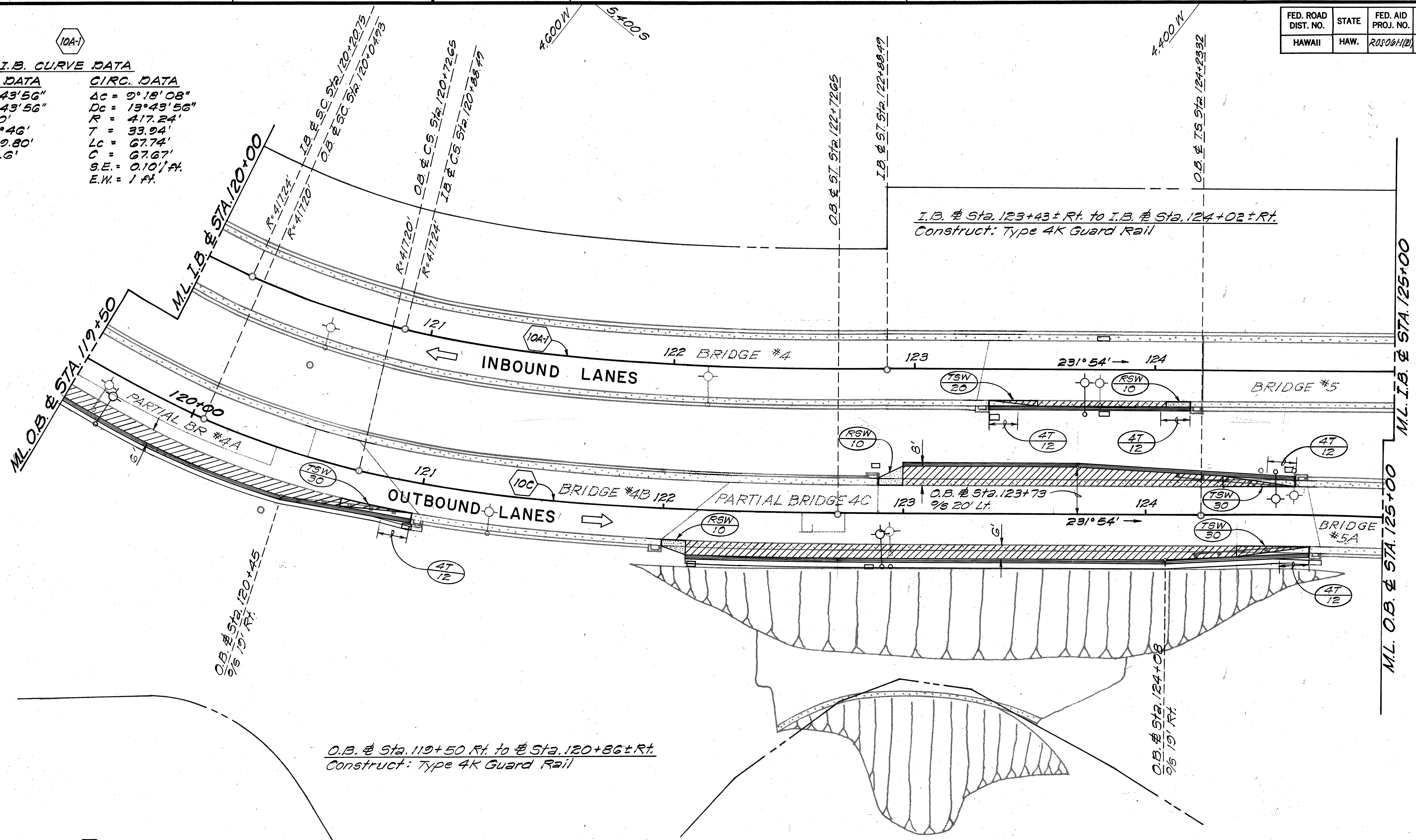
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION					
ROADWAY PLAN					
PALI HIGHWAY SAFETY IMPROVEMENTS West of Tunnel to Kamehameha Hwy. F.A. Project No. ROS-061-1(21)					
Scale: 1"=20' Date: August 1978					
SHEET NO. 3 OF 10 SHEETS					



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS06H(2)	1978	8	24

I.B. CURVE DATA

SPIRAL DATA	CIRC. DATA
Dc = 13°43'56"	Δc = 9°18'08"
θs = 13°43'56"	Dc = 13°43'56"
Ls = 200'	R = 417.24'
Δ = 36°46'	T = 33.94'
Ts = 239.80'	Lc = 67.74'
Es = 26.6'	C = 67.67'
	S.E. = 0.10'/ft.
	E.W. = 1 ft.



O.B. CURVE DATA

SPIRAL DATA	CIRC. DATA
Dc = 13°44'00"	Δc = 9°18'00"
θs = 13°44'00"	Dc = 13°44'00"
Ls = 200'	R = 417.20'
Δ = 36°46'	T = 33.93'
Ts = 229.78'	Lc = 67.72'
Es = 26.6'	S.E. = 0.10'/ft.

O.B. Sta. 122+00± Rt. to O.B. Sta. 124+56± Rt.
Construct: Type 4K Guard Rail

O.B. Sta. 123+00± Lt. to O.B. Sta. 124+51± Lt.
Construct: Type 4K Guard Rail

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

PALI HIGHWAY SAFETY IMPROVEMENTS
West of Tunnels to Kamehameha Hwy.
F.A. Project No. ROS-DG1-1(21)

Scale: 1" = 20' Date: August, 1978

SHEET NO. 4 OF 10 SHEETS

ORIGINAL PLAN
DRAWN BY
DESIGNED BY
NOTE BOOK
CHECKED BY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-061(21)	1978	9	24

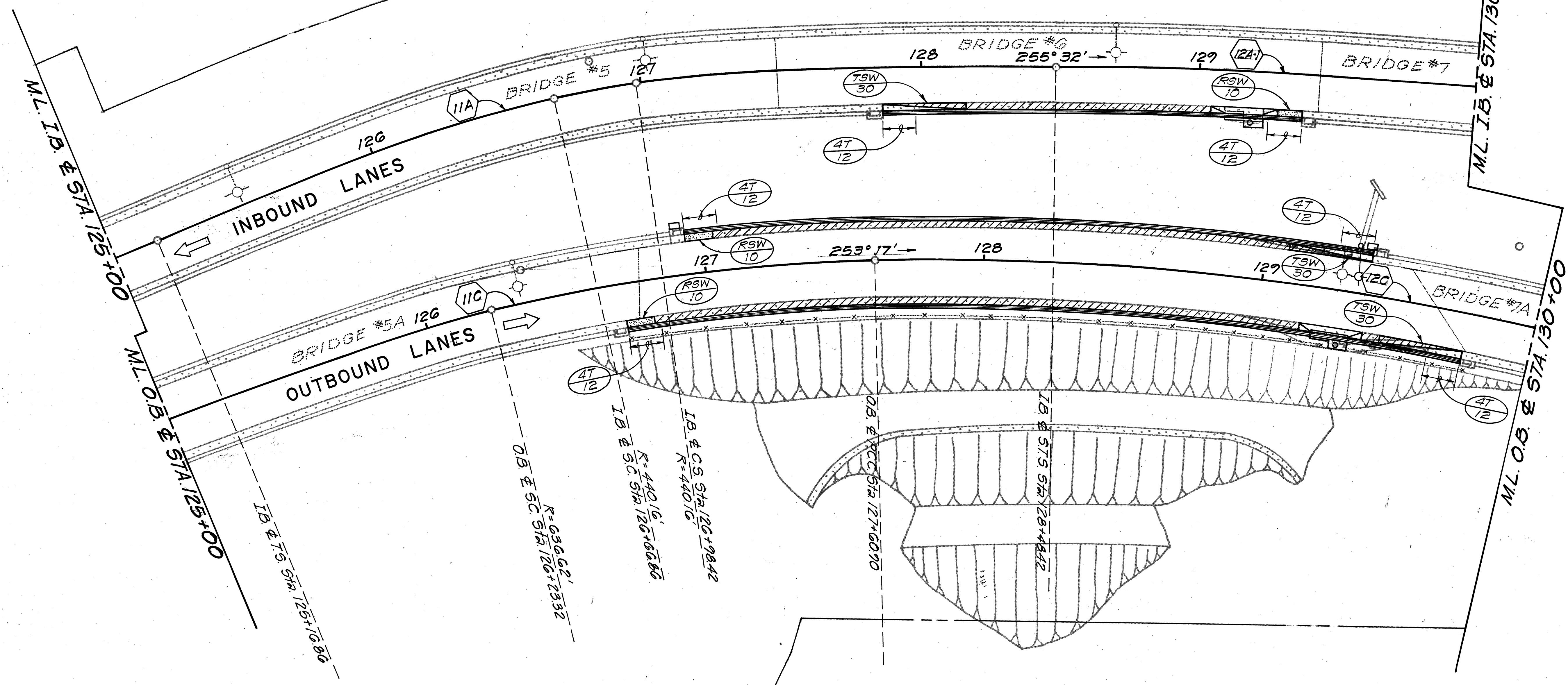
I.B. CURVE DATA

SPIRAL DATA	CIRC. DATA
Dc = 13° 01' 02"	Δc = 4° 06' 28"
θs = 9° 45' 46"	Dc = 13° 01' 08"
Ls = 150'	R = 440.16'
Δ = 23° 38'	T = 15.79'
Ts = 167.47'	Lc = 31.56'
Es = 11.6'	C = 31.55'
	S.E. = 0.10'/ft.
	E.W. = 1 ft.

I.B. CURVE DATA

SPIRAL DATA	CIRC. DATA
Dc = 9° 00'	Δ = 37° 57' 57"
θ = 9° 00'	D = 9° 00'
Ls = 200'	R = 636.62'
	T = 218.99'
	Lc = 421.84'
	C = 414.17'
	S.E. = 0.10'/ft.
	E.W. = 1 ft.

I.B. # Sta. 127+98± Rt. to I.B. # Sta. 129+26± Rt.
Construct: Type 4K Guard Rail



O.B. CURVE DATA

SPIRAL DATA	CIRC. DATA
Dc = 9° 00'	Δc = 12° 23'
θ = 9° 00'	Dc = 9° 00'
Ls = 200'	R = 636.62'
	T = 69.07'
	Lc = 137.59'
	S.E. = 0.10'/ft.

O.B. CURVE DATA

Δ = 27° 14'
R = 954.92'
T = 231.91'
Lc = 453.88'
C = 449.62'
S.E. = 0.10'/ft.

O.B. # Sta. 126+81± Rt. to O.B. # Sta. 129+64± Rt.
Construct: Type 4K Guard Rail

O.B. # Sta. 127+06± Lt. to O.B. # Sta. 129+26± Lt.
Construct: Type 4K Guard Rail

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

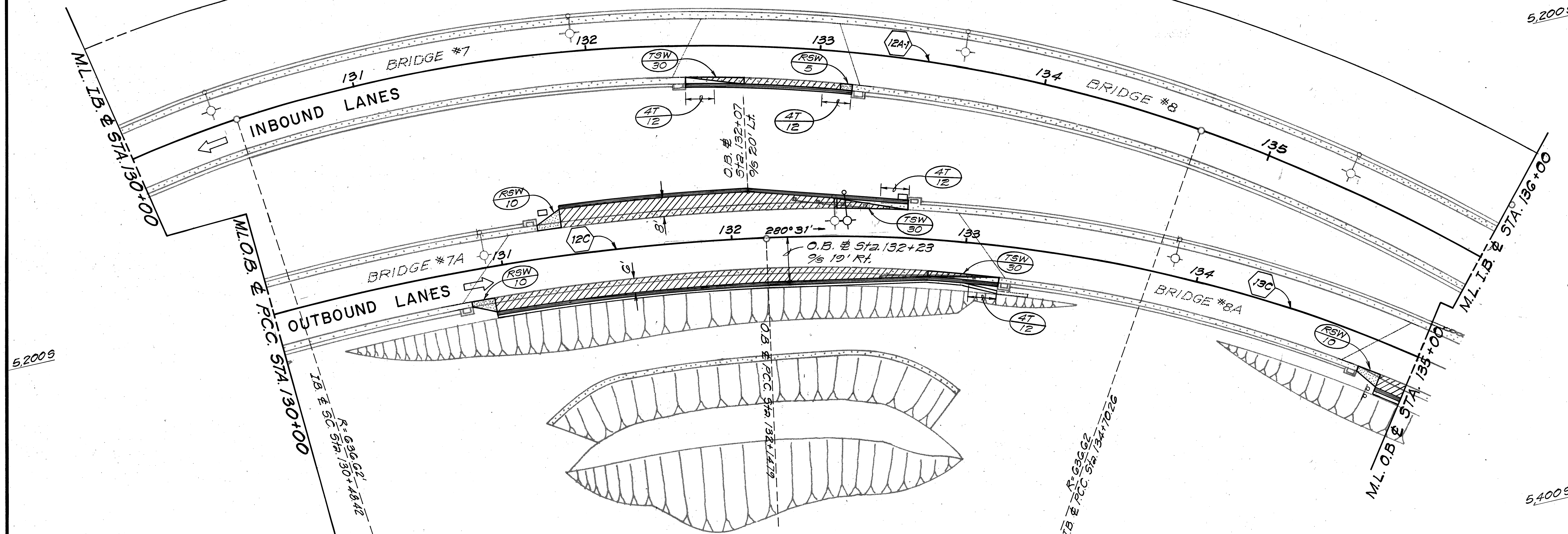
PALI HIGHWAY SAFETY IMPROVEMENTS
West of Tunnels to Kamehameha Hwy.
F.A. Project No. ROS-061-1(21)
Scale: 1"=20' Date: August 1978
SHEET NO. 5 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-061-1(21)	1978	10	24

I.B. CURVE DATA

SPIRAL DATA	CIRC. DATA
$D_c = 9^{\circ}00'$	$\Delta = 37^{\circ}57'57''$
$\theta = 9^{\circ}00'$	$D = 9^{\circ}00'$
$L_s = 200'$	$R = 636.62'$
	$T = 218.99'$
	$L_c = 421.84'$
	$C = 414.17'$
	$S.E. = 0.10'/ft.$
	$E.W. = 1'ft.$

I.B. # Sta. 132+55± Rt. to I.B. # Sta. 133+03± Rt.
Construct: Type 4K Guard Rail



O.B. CURVE DATA

$\Delta = 27^{\circ}14'$
$R = 254.92'$
$T = 231.31'$
$L_c = 453.88'$
$C = 449.62'$
$S.E. = 0.10'/ft.$

O.B. CURVE DATA

SPIRAL DATA	CIRC. DATA
$D_c = 9^{\circ}00'$	$\Delta = 53^{\circ}09'$
$\theta_s = 9^{\circ}00'$	$D = 9^{\circ}00'$
$L_s = 200'$	$R = 636.62'$
	$T = 318.45'$
	$L_c = 590.56'$
	$S.E. = 0.10'/ft.$

O.B. # Sta. 130+24± Rt. to O.B. # Sta. 133+03± Rt.
Construct: Type 4K Guard Rail

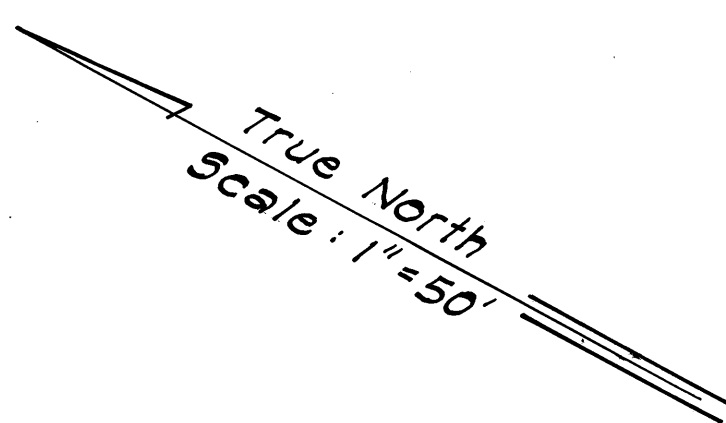
O.B. # Sta. 131+27± Lt. to O.B. # Sta. 132+63± Lt.
Construct: Type 4K Guard Rail

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

PALI HIGHWAY SAFETY IMPROVEMENTS
West of Tunnel to Kamehameha Hwy.
F.A. Project No. ROS-061-1(21)
Scale: 1" = 20' Date: August 1978
SHEET NO. 6 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-0611(2)	1978	11	24



I.B. CURVE DATA		I.B. CURVE DATA	
SPIRAL DATA	CIRC. DATA	SPIRAL DATA	CIRC. DATA
Dc = 7°20'	Δ = 32°50'03"	Ds = 6°15'	Δ = 6°15'
θ = 7°20'	D = 7°20'	θ = 6°15'	D = 6°15'
Ls = 200'	R = 781.31'	Ls = 200'	R = 12°30'
	T = 230.21'		Ts = 200.56'
	Lc = 447.74'		Es = 7.3'
	C = 441.64'		S.E. = 0.10'/ft.
	S.E. = 0.10'/ft.		E.W. = 1 ft.

Sta. 146+00± Lt. to Sta. 148+00± Lt.
Install: Type 3 Guard Rail, Single w/
Steel Post.

Sta. 146+00± Lt.
Construct: Type C End Post
For Details, See Plan Sht. No. 19

I.B. Sta. 137+07± Lt. to I.B. Sta. 137+03± Lt.
Construct: CRM Wall, For Details, See Plan Sht. No. 4
Remove: Existing Metal Guard Rail and Post.

I.B. Sta. 136+90± Rt.
Construct: Type C End Post
Reset 25 L.F. of Exist.
Guard Rail.

O.B. Sta. 135+51± Rt.
Construct: Type C End Post
Reset 25 L.F. of
Exist. Guard Rail.

Reset 5' from
paved ramp edge
25 L.F. of existing
Type 3 Guard
Rail, Single w/
Steel Post.
Connect end to
Type E End Post.

Sta. 146+85± Rt.
Remove 25 L.F. of Existing Metal Guard
Rail and Post. Reset Median End Guard
Rail. Payment for this work shall be under
Item 606.3110.

O.B. Sta. 134+88± Rt. to O.B. Sta. 142+88± Rt.
Construct: Type 4K Guard Rail

O.B. Sta. 143+00± Rt.
Construct: Type E End Post
For Details, See Plan Sht. No. 20

O.B. CURVE DATA		O.B. CURVE DATA	
SPIRAL DATA	CIRC. DATA	SPIRAL DATA	CIRC. DATA
Dc = 9°00'	Δ = 53°09'	Ds = 6°15'	Δ = 6°15'
θ = 9°00'	D = 9°00'	θ = 6°15'	D = 6°15'
Ls = 200'	R = 636.62'	Ls = 200'	R = 12°30'
	T = 318.45'		Ts = 200.56'
	Lc = 590.56'		Es = 7.31'
	S.E. = 0.10'/ft.		S.E. = 0.10'/ft.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

PALI HIGHWAY SAFETY IMPROVEMENTS
West of Tunnels to Kamehameha Highway
F.A. Project No. ROS-061-1(21)
Scale: 1"=50' Date: August, 1978
SHEET No. 7 OF 10 SHEETS

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

9/5/79	Extend Type 3 Guard Rail to S.S.R. & Sta. 3+40 Widen Pavement to provide 10' refuge at St. Stephens Seminary intersection. Lane widths varies from 12' to 11'.
5/2/79	Redesigned Type 4M G.R. to Types 4M-1, 4M-2, & 4M-3 for & Sta. 168+00 Rt. to & Sta. 171+50± Rt. Extend Type 3 G.R. and Paved Shoulder at St. Stephen's Seminary Entrance

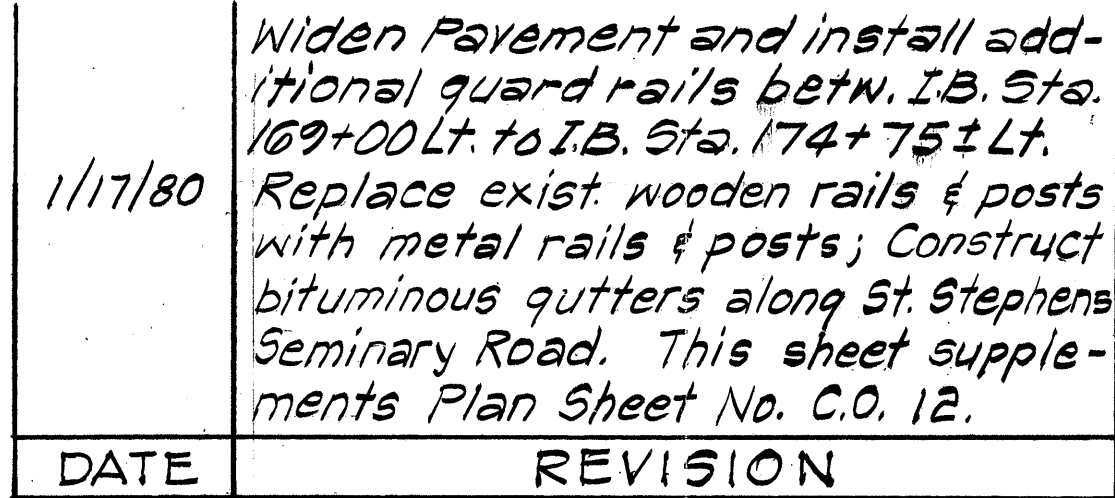
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<u>ROADWAY PLAN</u> <u>PALI HIGHWAY SAFETY IMPROVEMENTS</u> <u>Nest of Tunnels to Kamehameha Highway</u> <u>F.A. Project No. ROS-061-1(21)</u> <u>Scale: 1" = 50'</u> <u>Date: August, 1978</u>	
SHEET NO. 8 OF 10 SHEETS	

<u>BASELINE CURVE DATA</u>	
<u>SPIRAL DATA</u>	<u>CIRC. DATA</u>
$\theta = 21^{\circ}29'09.3''$	$\Delta C = 148^{\circ}21'41.4''$
$L_S = 300'$	$R = 400'$
$L_C = 298.13'$	$T_C = 1411.76'$
$X_C = 295.81'$	$C_C = 769.70'$
$Y_C = 37.13'$	$L_C = 1035.76'$
$L_T = 201.49'$	$S.E. = 0.10' / ft.$
$S.T. = 101.36'$	$E.W. = 3 ft.$
$K = 149.30'$	$\Delta = 191^{\circ}21'$
$P = 2.33'$	

From Sta. 151+00 ± RT to Sta. 160+08 ± RT.
Construct: Type 4G Guard Rail
For details, see Sht. Nos. 15 & 22

CO12

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



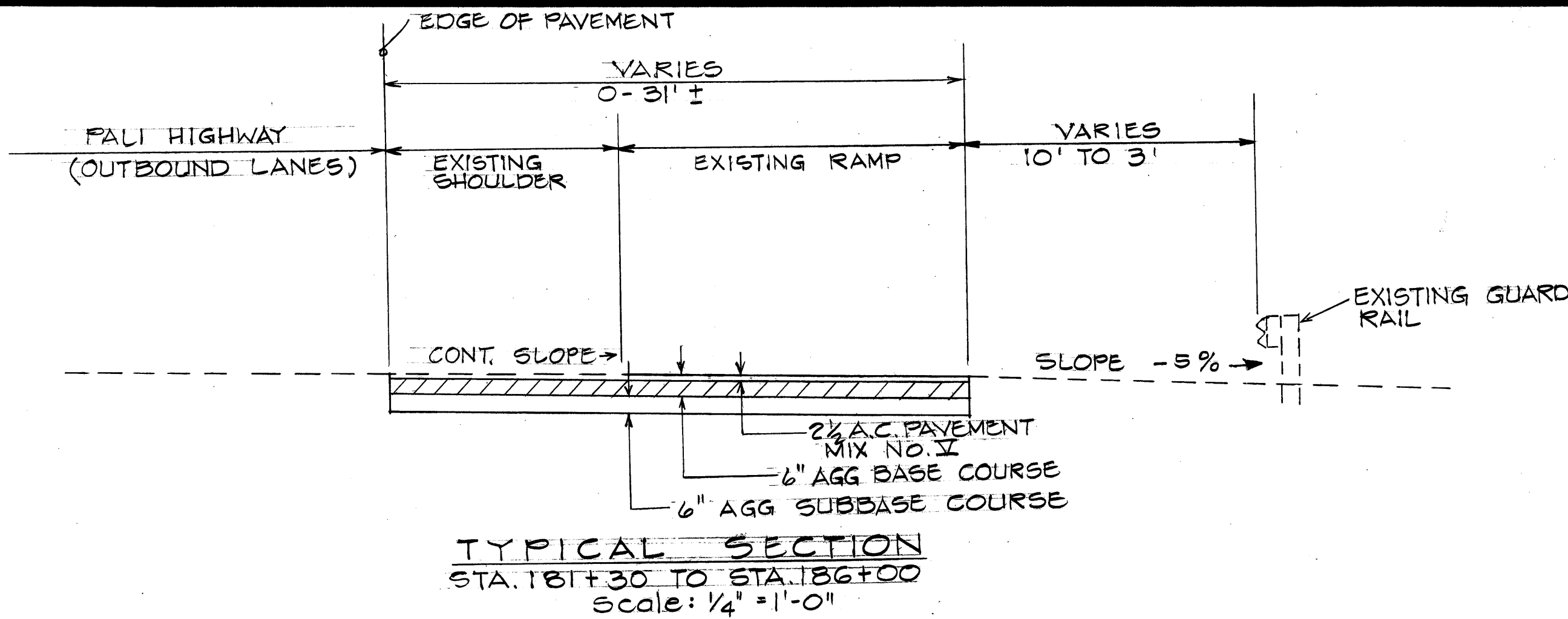
C.O. 12 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS061(21)	1978	13	24

NOTE:
FOR FRAMING AND PANEL LAYOUT
DETAILS SEE SHEET NO. 71 & 72

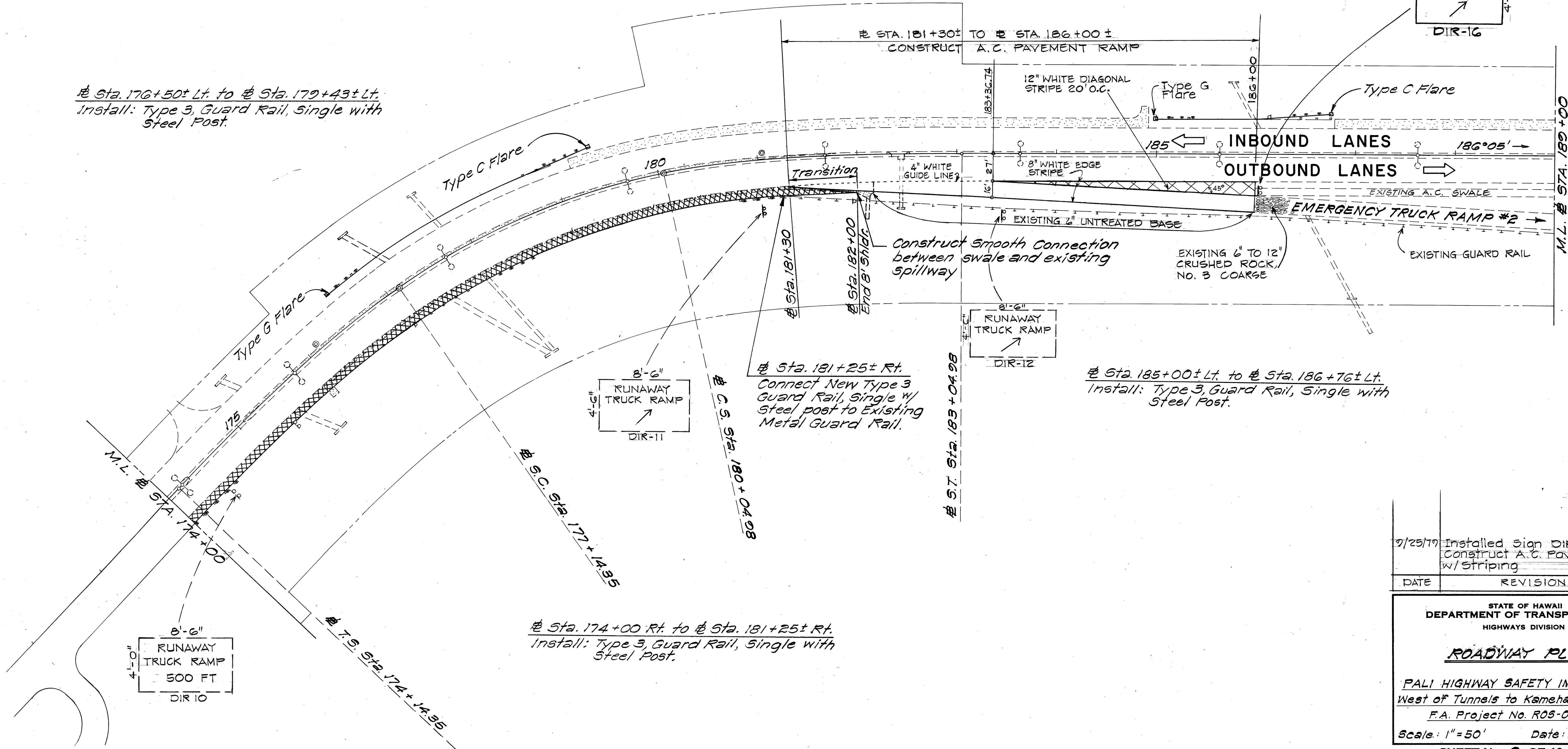
BASELINE CURVE DATA	
SPIRAL DATA	CIRC. DATA
$\theta_s = 12^{\circ}00'$	$\Delta C = 23^{\circ}15'$
$L_s = 300'$	$R = 716.22'$
$L.C. = 299.42'$	$T_c = 147.34'$
$X_c = 298.69'$	$C_c = 288.64'$
$Y_c = 20.88'$	$L_c = 290.63'$
$L.T. = 200.46'$	$S.E. = 0.10'/ft.$
$S.T. = 100.42'$	$E.W. = 2' ft.$
$K = 149.78'$	$\Delta = 47^{\circ}15'$
$P = 5.23'$	$T_s = 465.35'$

True North
Scale: 1"=50'



Sta. 176+50± Lt. to Sta. 179+43± Lt.
Install: Type 3, Guard Rail, Single with Steel Post.

INSTALL
8'-6"
RUNAWAY
TRUCK RAMP
DIR-16



Sta. 185+00± Lt. to Sta. 186+76± Lt.
Install: Type 3, Guard Rail, Single with Steel Post.

Sta. 181+25± Rt.
Connect New Type 3 Guard Rail, Single w/ Steel post to Existing Metal Guard Rail.

Sta. 174+00 Rt. to Sta. 181+25± Rt.
Install: Type 3, Guard Rail, Single with Steel Post.

9/25/79 Installed Sign DIR-16 and Construct A.C. Pavement Ramp w/ Striping

DATE	REVISION
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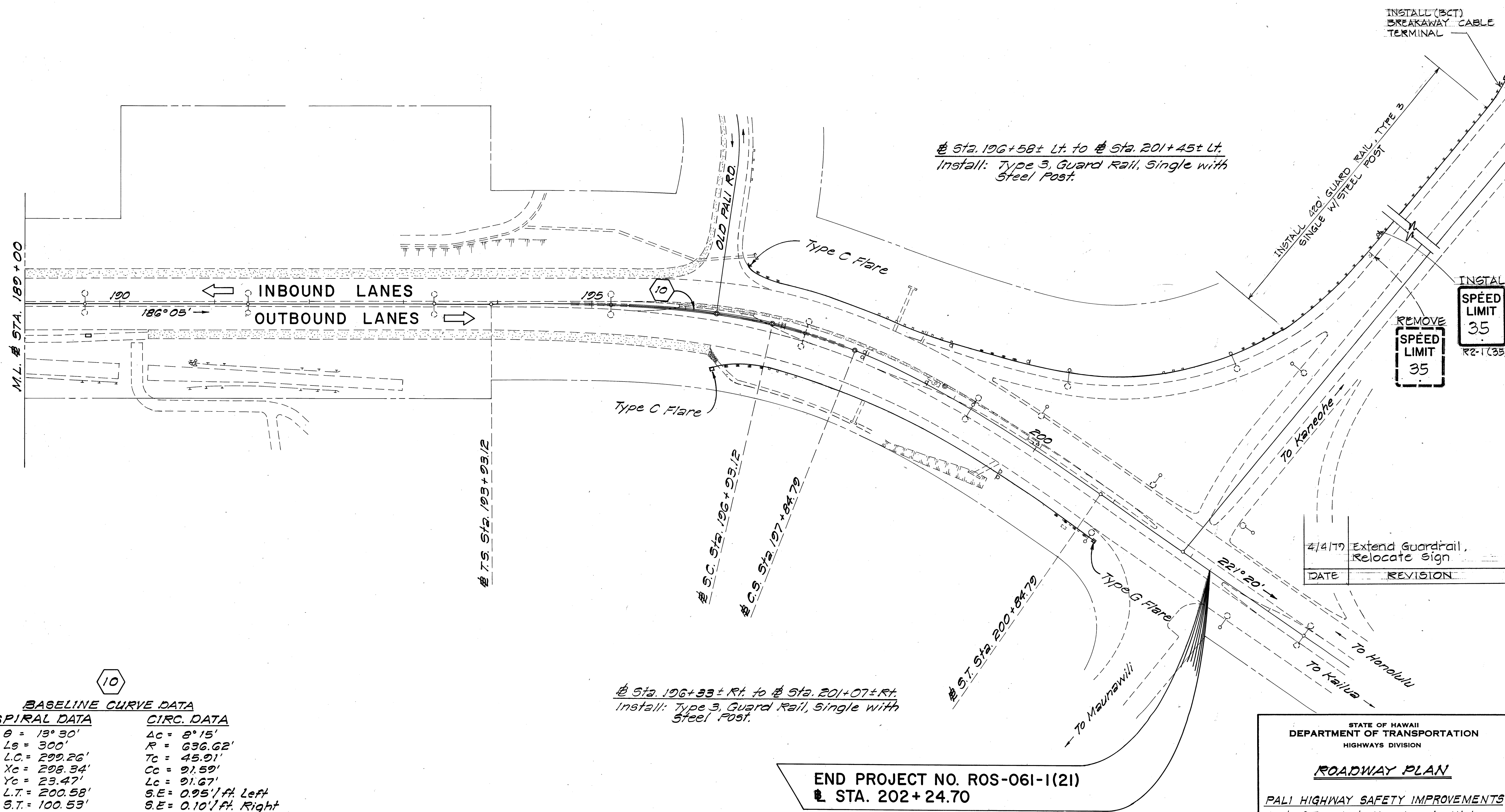
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN
PALI HIGHWAY SAFETY IMPROVEMENTS
West of Tunnels to Kamehameha Highway
F.A. Project No. ROS-061-1(21)
Scale: 1"=50' Date: August, 1978
SHEET No. 9 OF 10 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ROS-061-1(21)	1978	14	24

True North
Scale: 1"=50'



BASELINE CURVE DATA	
SPIRAL DATA	CIRC. DATA
$\theta = 13^{\circ} 30'$	$\Delta C = 8^{\circ} 15'$
$LS = 300'$	$R = 636.62'$
$L.C. = 209.26'$	$T.C. = 45.91'$
$X.C. = 208.34'$	$C.C. = 91.59'$
$Y.C. = 23.47'$	$L.C. = 91.67'$
$L.T. = 200.58'$	$S.E. = 0.95'/ft. Left$
$S.T. = 100.53'$	$S.E. = 0.10'/ft. Right$
$K = 149.72'$	$E.W. = 2 ft.$
$P = 5.88'$	$\Delta = 35^{\circ} 15'$
	$T.S. = 353.85'$

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

PALI HIGHWAY SAFETY IMPROVEMENTS
West of Tunnels to Kamehameha Highway
F.A. Project No. ROS-061-1(21)
Scale: 1"=50' Date: August, 1978
SHEET NO. 10 OF 10 SHEETS

END PROJECT NO. ROS-061-1(21)
STA. 202+24.70