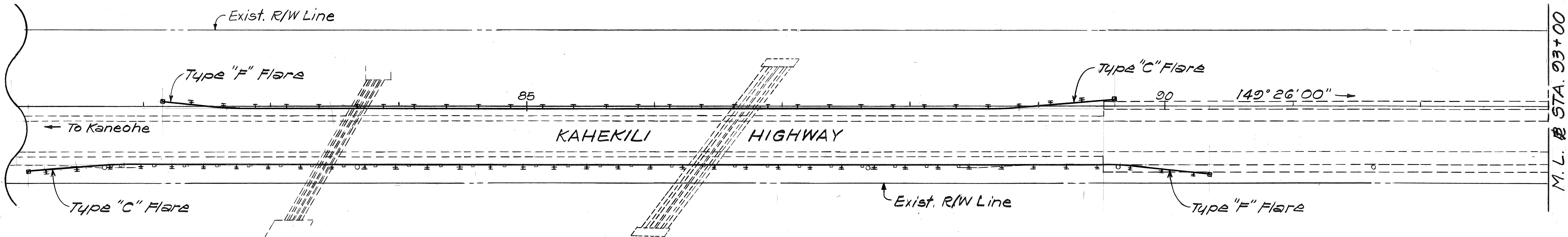


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	4	13

Sta. 82+15± Lt. to # Sta. 89+60± Lt.
Install 745 Lin. Ft. of Guardrail, Type 3-Single with 8 Ft. Steel Posts, o/s 10' from E.P.

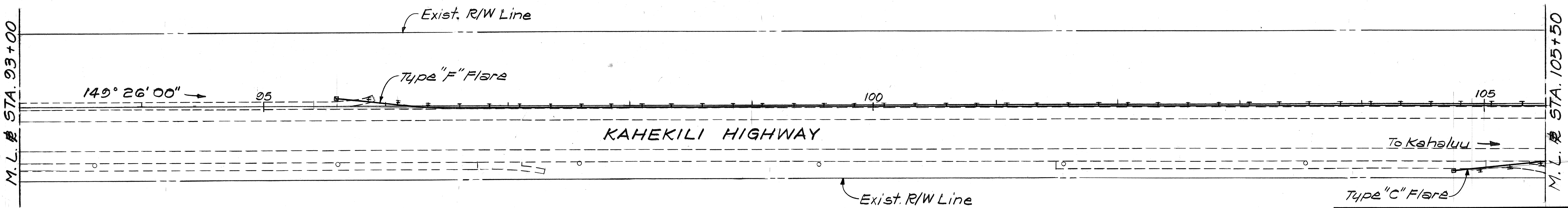


Sta. 81+10± Rt. to # Sta. 90+35± Rt.
Remove 695 Lin. Ft. of existing metal guardrail with concrete posts and install 925 Lin. Ft. of Guardrail, Type 3-Single with 8 Ft. Steel Posts, o/s 10' from E.P.

NOTES

1. References to Stations Lt. shall signify the Left Shoulder and Stations Rt. shall signify the Right Shoulder.
2. Where guardrail posts are to be installed in concrete spillways, provide neat cut 7" square holes and patch with mortar as directed by the Engineer. This work shall be considered incidental to the various items of work. Bituminous gutters and concrete spillways that are damaged by the Contractor during guardrail installation shall be repaired at his expense.

Sta. 95+60± Lt. to # Sta. 117+30± Lt.
Remove 270 Lin. Ft. of existing metal guardrail with concrete posts and install 2170 Lin. Ft. of Guardrail, Type 3-Single with 8 Ft. Steel Posts, o/s 10' from E.P.



PLAN
CONSTRUCTION AREA NO. 1
Scale: 1" = 40'

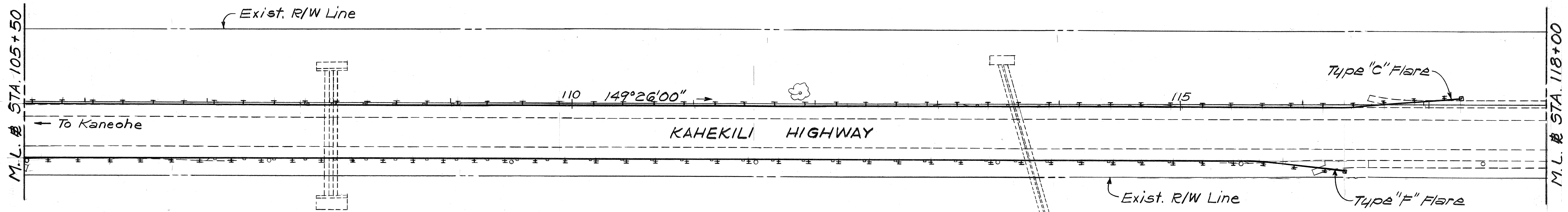
KAHEKILI HIGHWAY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL AND SHOULDER IMPROVEMENTS
KAHEKILI HIGHWAY
Project No. HWY-0-03-87
Scale: 1" = 40' Date: Nov. 1986
SHEET No. 1 OF 10 SHEETS

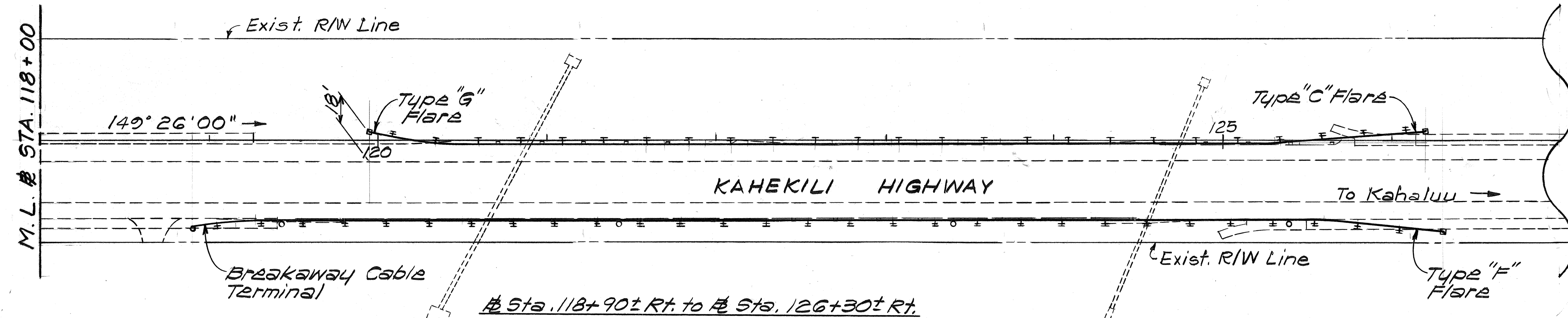
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	5	13



Sta. 104+75± Rt. to # Sta. 116+35± Rt.
 Remove 860 Lin. Ft. of existing metal
 guardrail with concrete posts and
 install 1,160 Lin. Ft. of Guardrail, Type 3-
 Single with 8 Ft. Steel Posts, o/s 10' from E.P.

True North
 Scale: 1" = 40'

Sta. 119+95± Lt. to # Sta. 126+20± Lt.
 Remove 250 Lin. Ft. of existing metal
 guardrail with concrete posts and
 install 625 Lin. Ft. of Guardrail, Type 3-
 Single with 8 Ft. Steel Posts, o/s 10' from E.P.



Sta. 118+90± Rt. to # Sta. 126+30± Rt.
 Remove 510 Lin. Ft. of existing metal
 guardrail with concrete posts and
 install 715 Lin. Ft. of Guardrail, Type 3-
 Single with 8 Ft. Steel Posts, o/s 10' from E.P.

PLAN
 CONSTRUCTION AREA NO. 1
 Scale: 1" = 40'

KAHEKILI HIGHWAY

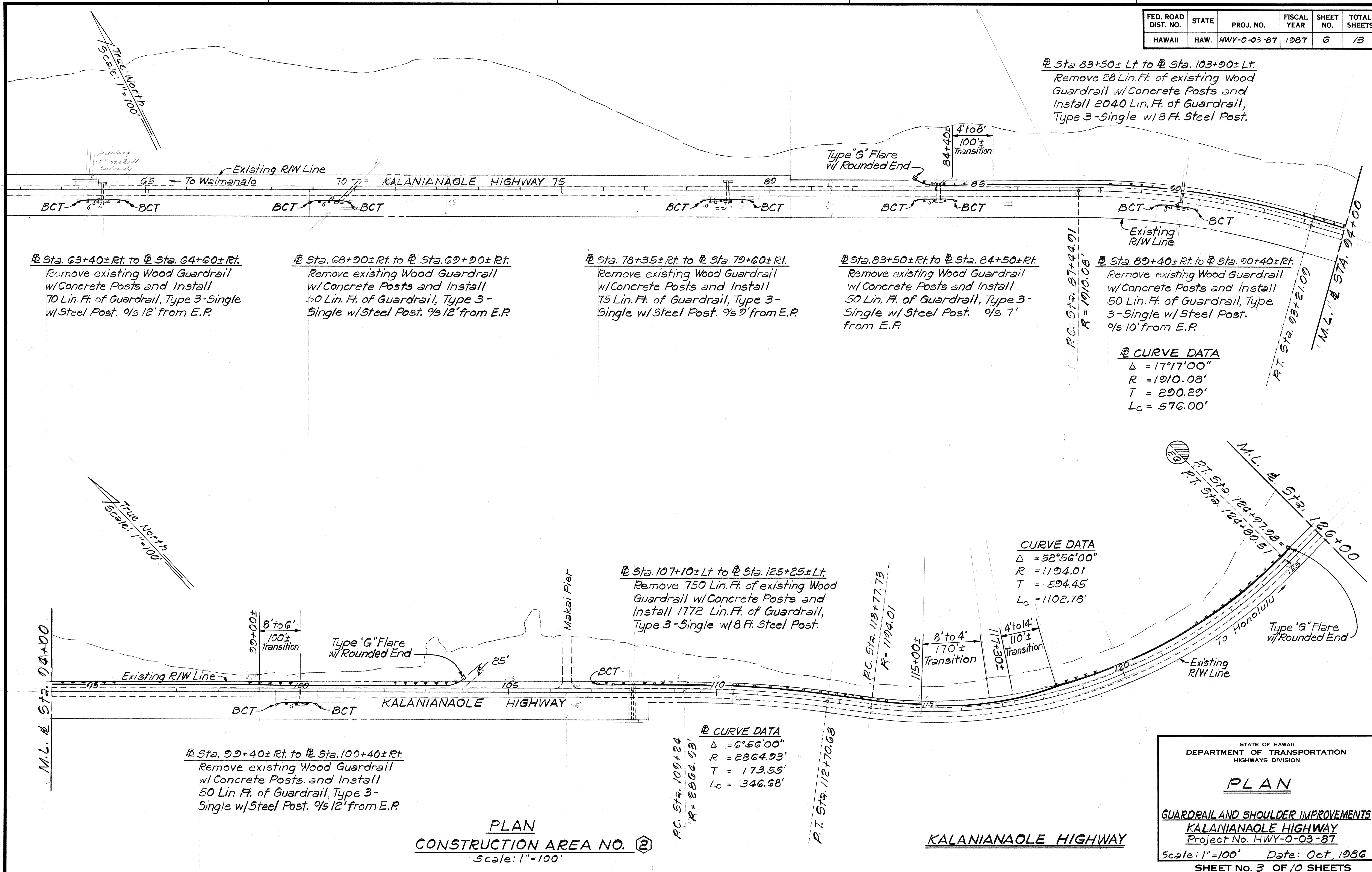
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PLAN

GUARDRAIL AND SHOULDER IMPROVEMENTS
 KAHEKILI HIGHWAY
 Project No. HWY-0-03-87
 Scale: 1" = 40' Date: Nov. 1986
 SHEET NO. 2 OF 10 SHEETS

ORIGINAL	DATE
PLAN	
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	

Sta. 83+50± Lt. to Sta. 103+90± Lt.
Remove 28 Lin. Ft. of existing Wood
Guardrail w/Concrete Posts and
Install 2040 Lin. Ft. of Guardrail,
Type 3-Single w/8 Ft. Steel Post.



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL AND SHOULDER IMPROVEMENTS
KALANIANA'OLE HIGHWAY
Project No. HWY-0-03-87

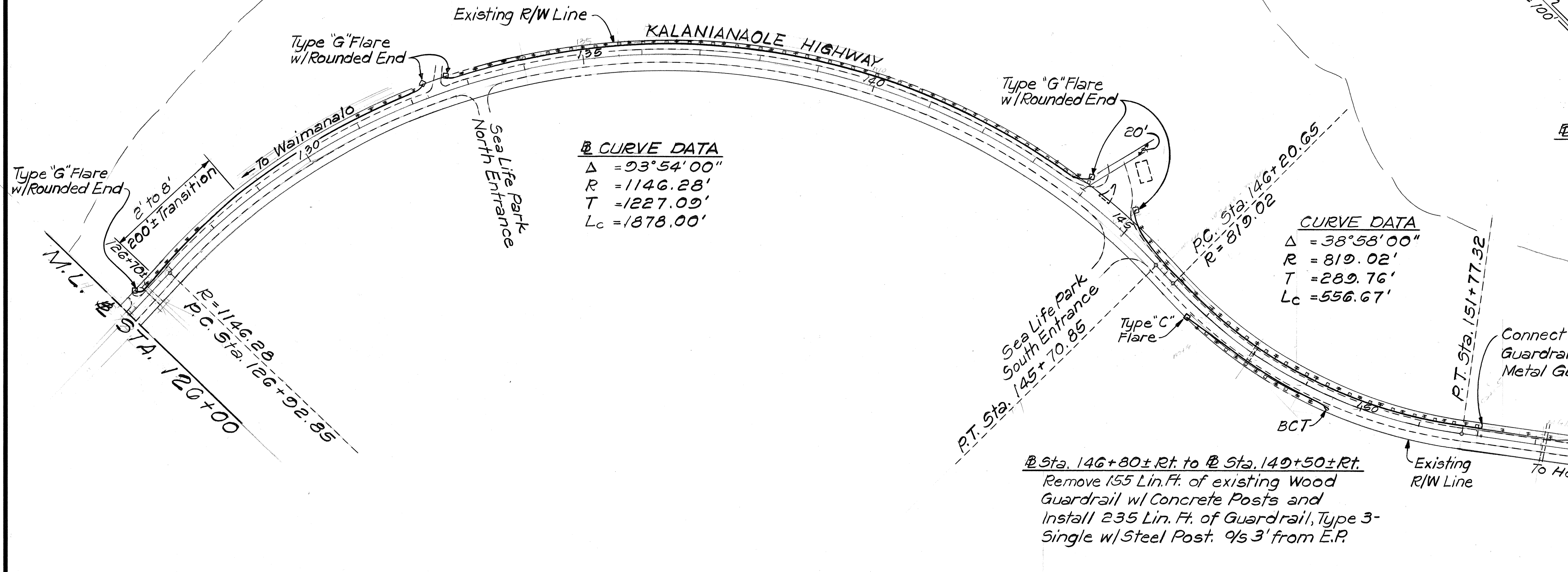
Scale: 1"=100' Date: Oct., 1986

SHEET No. 3 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	7	13

@ Sta. 126+35± Lt. to @ Sta. 132+30± Lt.
 Install 595 Lin. Ft. of Guardrail, Type 3-
 Single w/8 Ft. Steel Post.

@ Sta. 132+65± Lt. to @ Sta. 144+00± Lt.
 Remove 940 Lin. Ft. of existing Wood
 Guardrail w/ Concrete Posts and Install
 1135 Lin. Ft. of Guardrail, Type 3-Single
 w/8 Ft. Steel Post. 9/8 8' from E.P.



PLAN
 CONSTRUCTION AREA NO ②
 Scale: 1"=100'

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

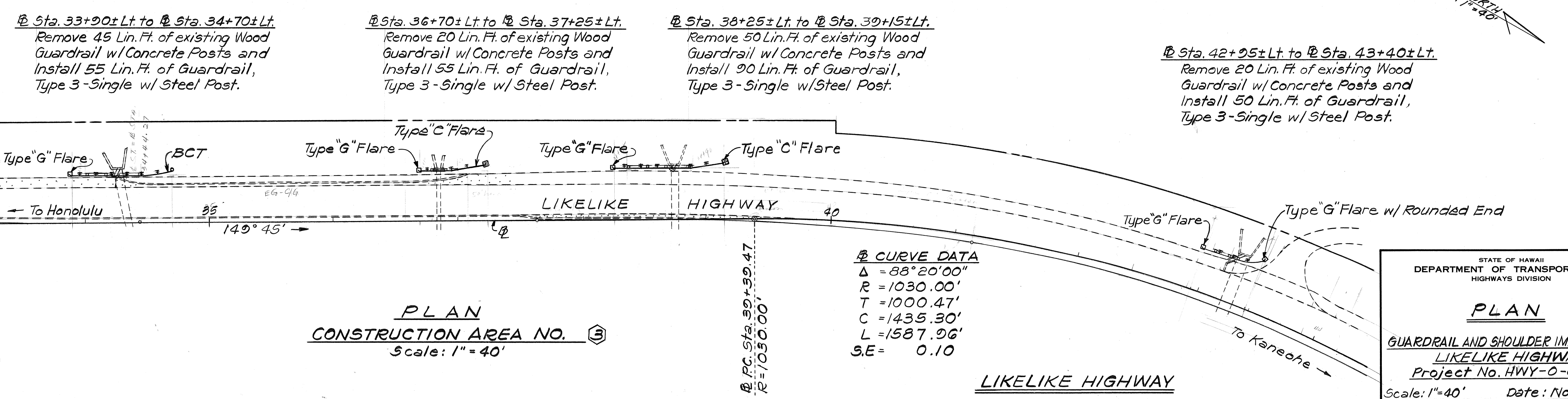
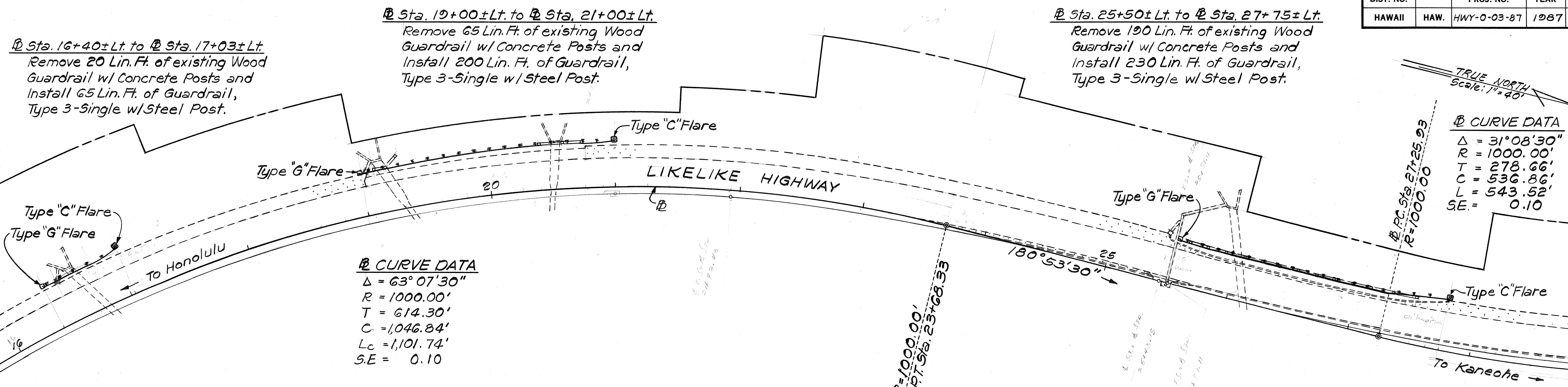
KALANIANAʻOLE HIGHWAY

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PLAN

GUARDRAIL AND SHOULDER IMPROVEMENTS
 KALANIANAʻOLE HIGHWAY
 Project No. HWY-0-03-87
 Scale: 1"=100' Date: Oct., 1986
 SHEET NO. 4 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	8	13



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL AND SHOULDER IMPROVEMENTS
LIKELIKE HIGHWAY
Project No. HWY-0-03-87
Scale: 1"=40' Date: Nov. 1986
SHEET No. 5 OF 10 SHEETS

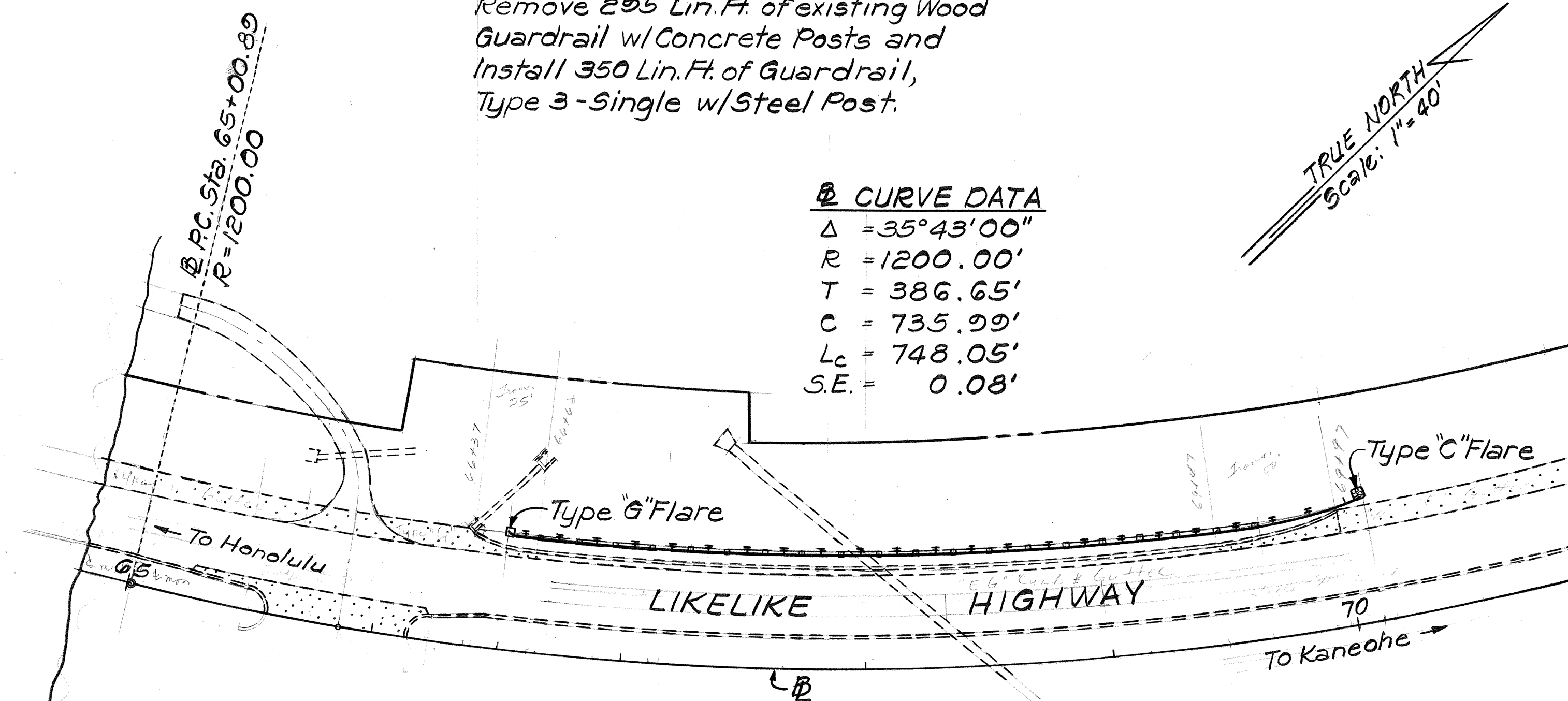
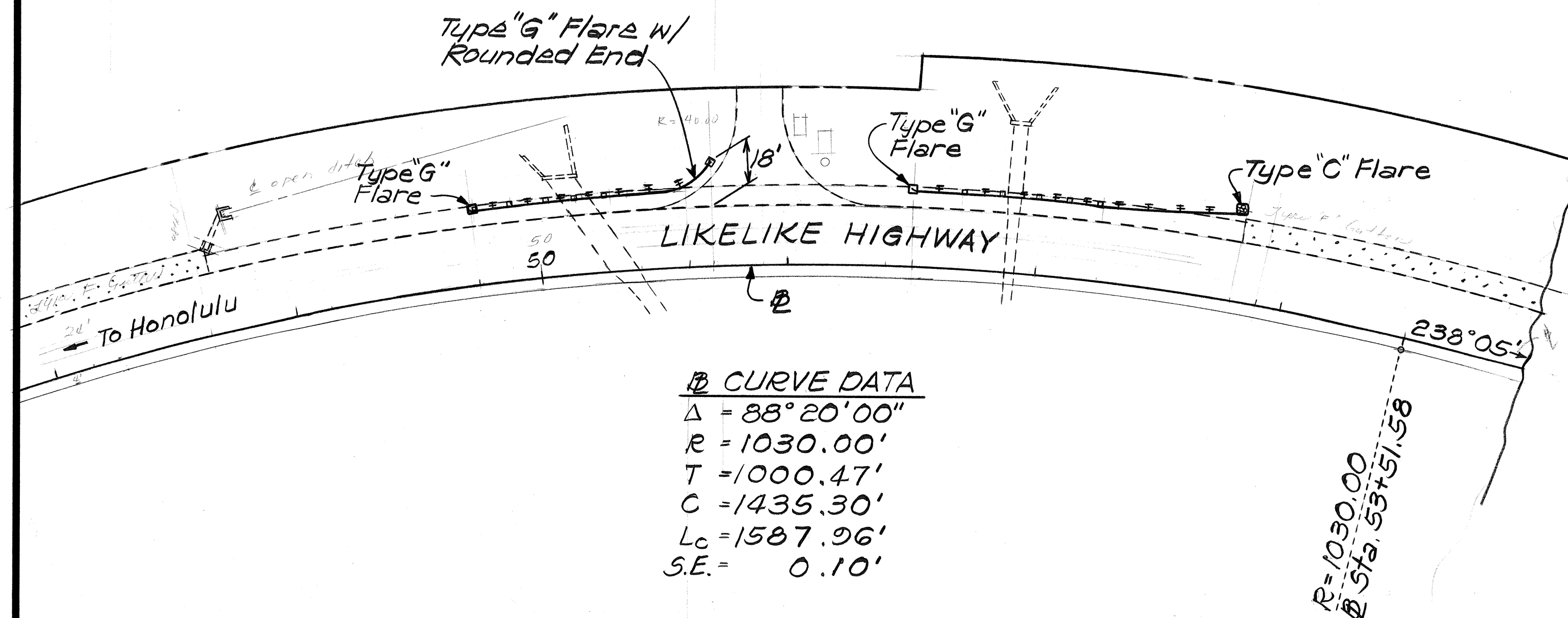
DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
NO.	_____

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	9	13

Sta. 49+75±Lt. to Sta. 50+70±Lt.
Remove 55 Lin. Ft. of existing Wood
Guardrail w/Concrete Posts and
Install 100 Lin. Ft. of Guardrail,
Type 3-Single w/Steel Post.

Sta. 51+50±Lt. to Sta. 52+80±Lt.
Remove 60 Lin. Ft. of existing Wood
Guardrail w/Concrete Posts and
Install 140 Lin. Ft. of Guardrail,
Type 3-Single w/Steel Post.

Sta. 66+50±Lt. to Sta. 70+10±Lt.
Remove 225 Lin. Ft. of existing Wood
Guardrail w/Concrete Posts and
Install 350 Lin. Ft. of Guardrail,
Type 3-Single w/Steel Post.



PLAN
CONSTRUCTION AREA NO. 3
Scale: 1"=40'

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

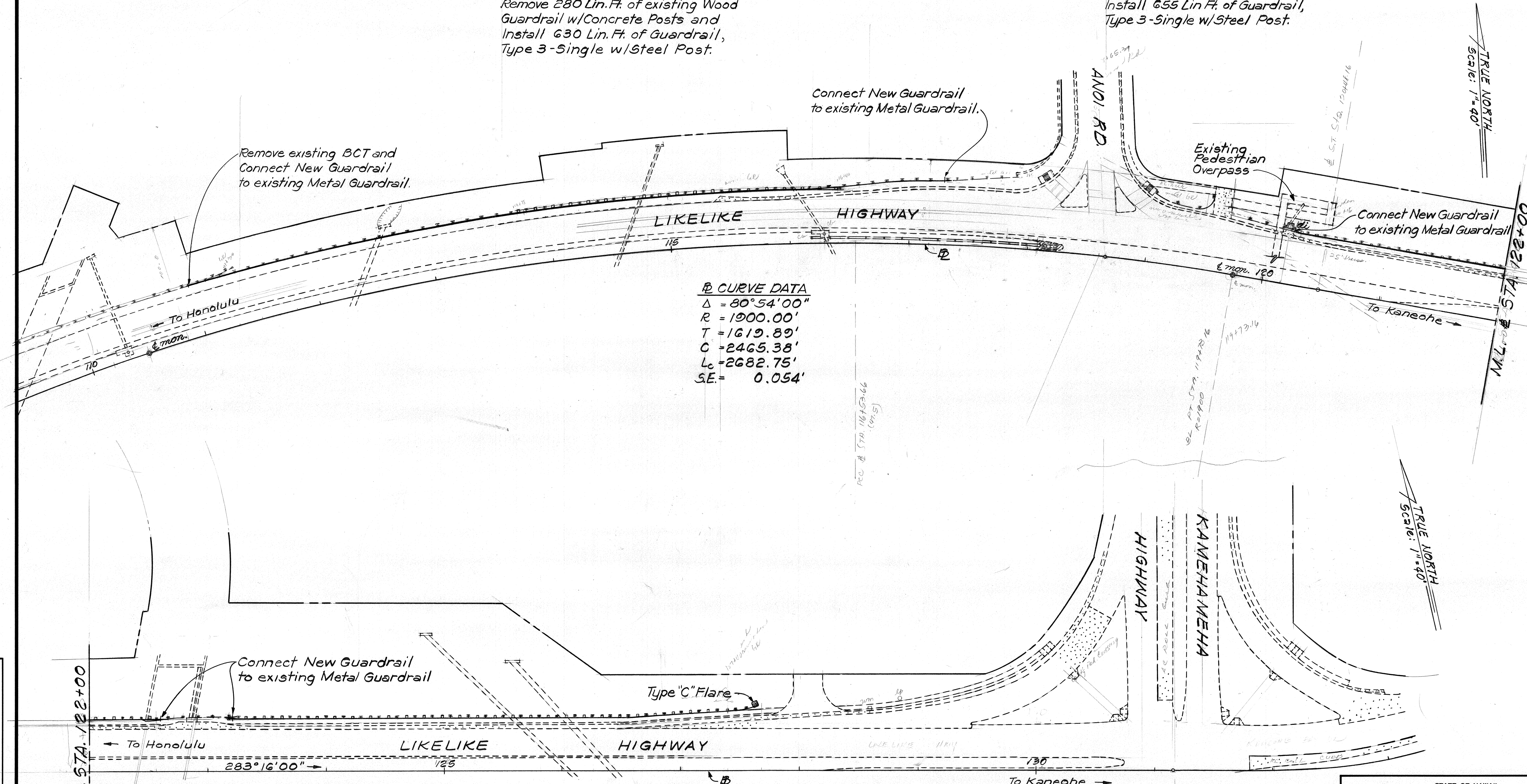
LIKELINE HIGHWAY

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
PLAN
GUARDRAIL AND SHOULDER IMPROVEMENTS LIKELINE HIGHWAY Project No. HWY-0-03-87
Scale: 1"=40' Date: Nov. 1986 SHEET NO. 6 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	10	13

Sta. 111+00±Lt. to Sta. 117+30±Lt.
Remove 280 Lin. Ft. of existing Wood Guardrail w/Concrete Posts and Install 630 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post.

Sta. 120+20±Lt. to Sta. 127+60±Lt.
Remove 655 Lin. Ft. of existing Wood Guardrail w/Concrete Posts and Install 655 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post.



CURVE DATA
 $\Delta = 80^{\circ}54'00''$
 $R = 1900.00'$
 $T = 1619.89'$
 $C = 2465.38'$
 $L_c = 2682.75'$
 $SE = 0.054'$

PLAN
CONSTRUCTION AREA NO. 4
 Scale: 1" = 40'

LIKELINE HIGHWAY

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PLAN

GUARDRAIL AND SHOULDER IMPROVEMENTS
 LIKELINE HIGHWAY
 Project No. HWY-0-03-87
 Scale: 1" = 40' Date: Nov. 1986
 SHEET No. 7 OF 10 SHEETS

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	11	13

NOTE
Relocation of the existing sign and post will not be paid for separately but shall be considered incidental to the various types of guardrail.

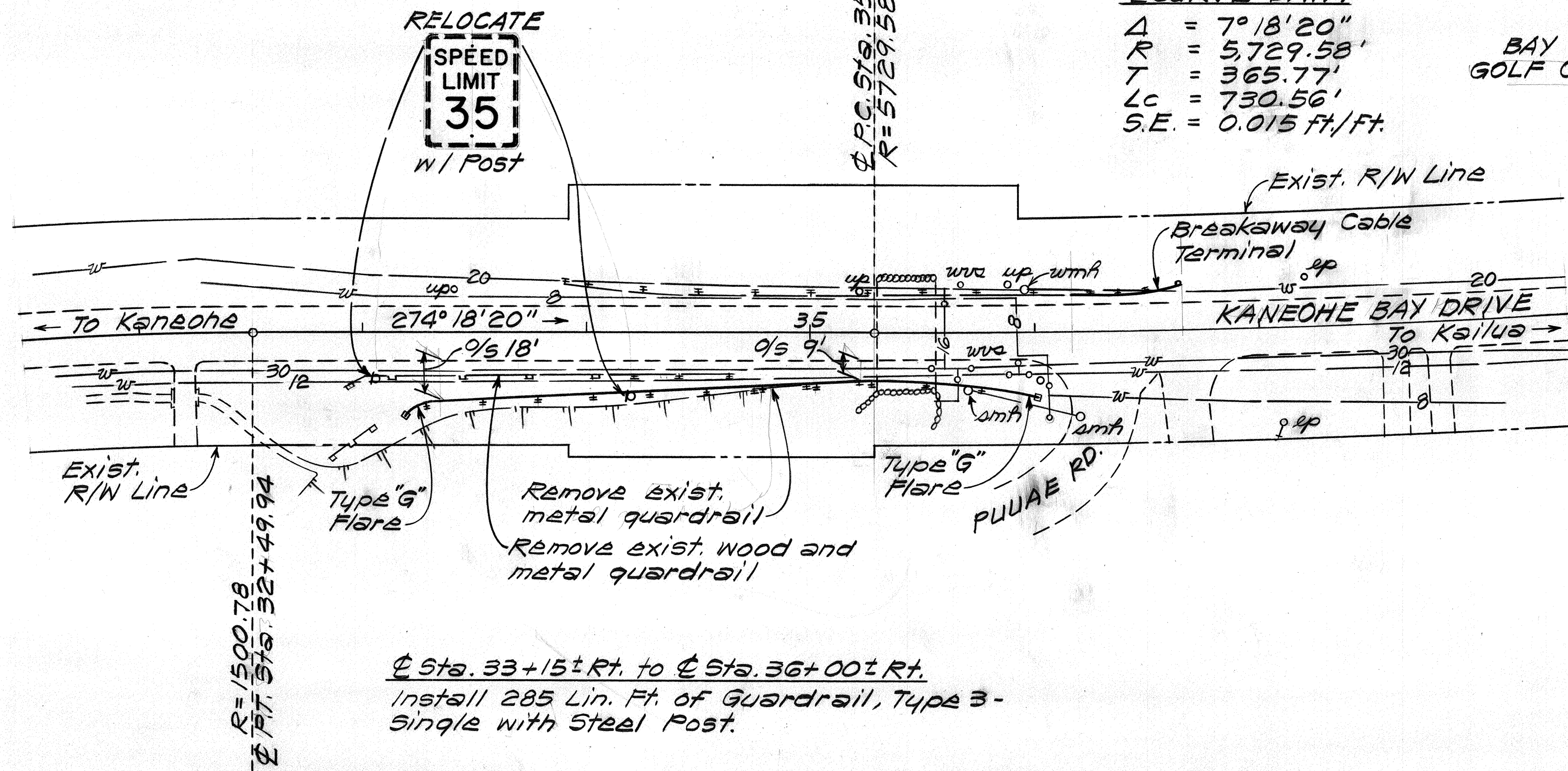
Sta. 36+17± Lt. to Sta. 36+67± Lt.
Install 25 Lin. Ft. of Guardrail, Type 3-Single with Steel Post.

CURVE DATA

$\Delta = 7^\circ 18' 20''$
 $R = 5,729.58'$
 $T = 365.77'$
 $L_c = 730.56'$
 $S.E. = 0.015 \text{ ft./ft.}$

BAY VIEW
GOLF COURSE

True North
Scale: 1" = 40'



Sta. 33+15± Rt. to Sta. 36+00± Rt.
Install 285 Lin. Ft. of Guardrail, Type 3-Single with Steel Post.

PLAN
CONSTRUCTION AREA NO. 5
Scale: 1" = 40'

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL AND SHOULDER IMPROVEMENTS
Kaneohe Bay Drive
Project No. HWY-0-03-87
Scale: 1" = 40' Date: Nov, 1986
SHEET No. 8 OF 10 SHEETS

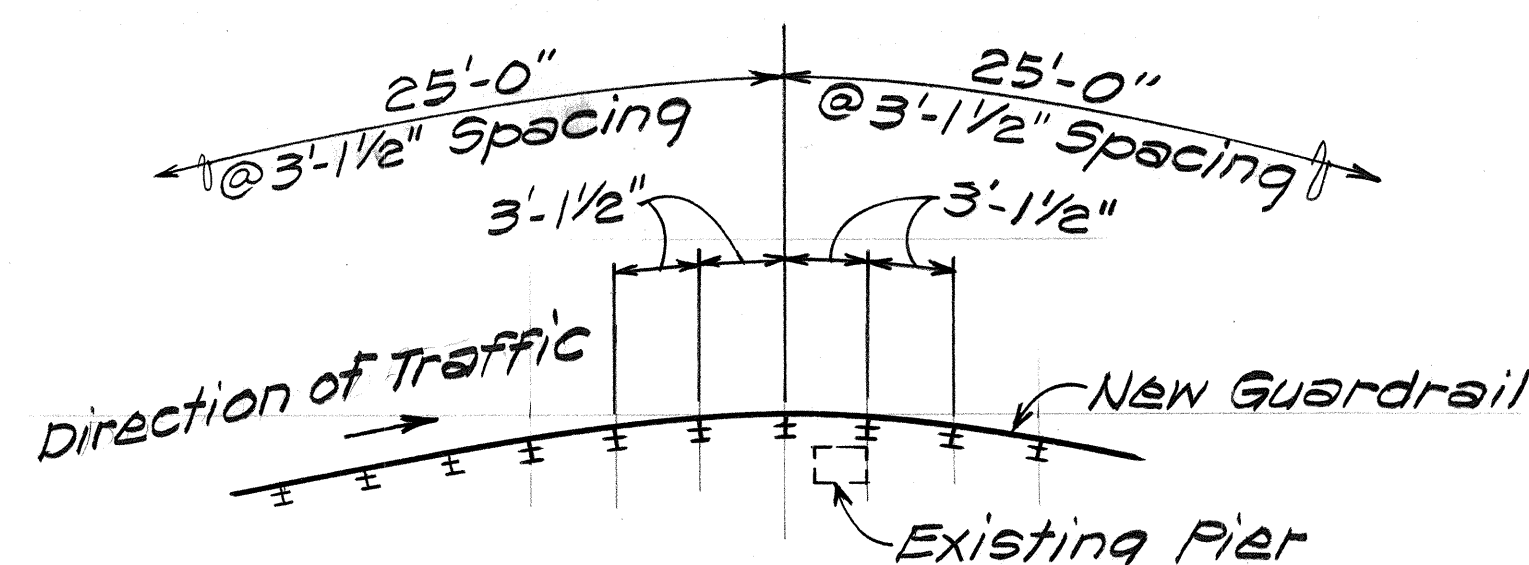
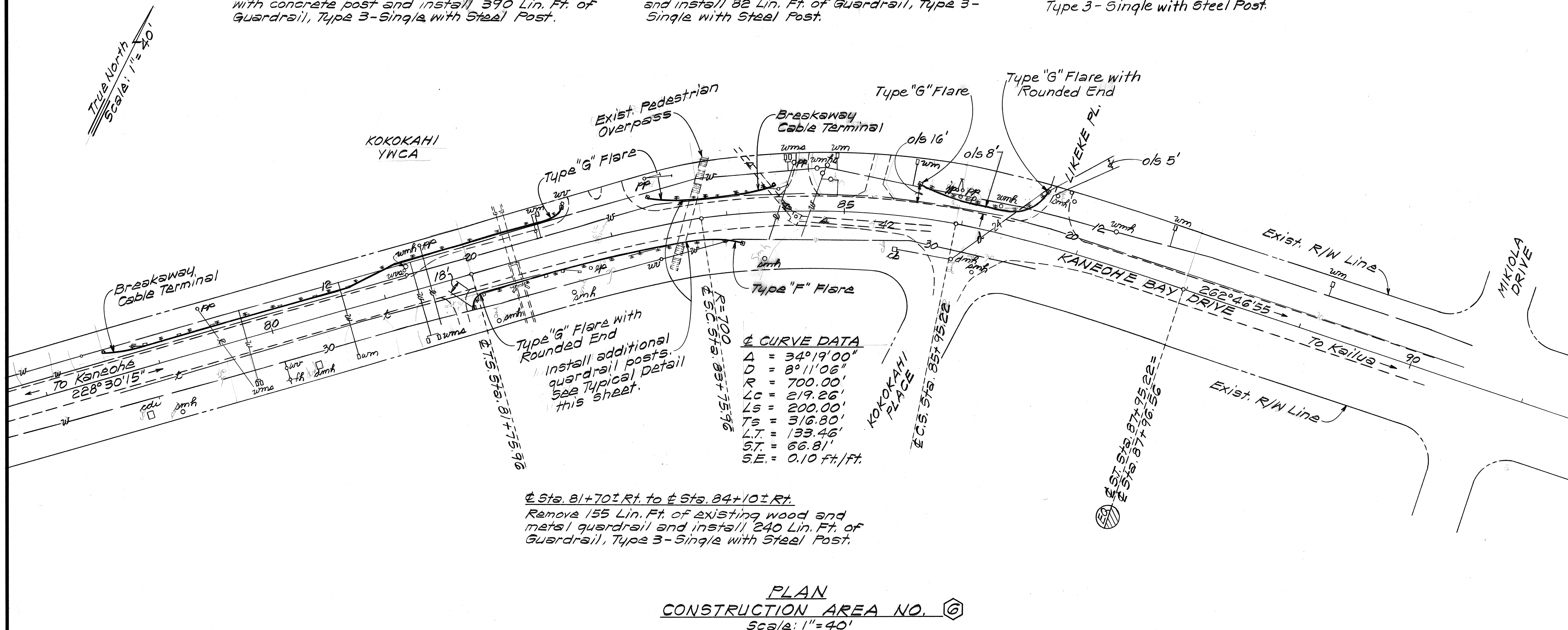
Kaneohe Bay Drive

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	12	13

± Sta. 78+55± Lt. to ± Sta. 82+67± Lt.
 Remove 200 Lin. Ft. of existing wood guardrail with concrete post and install 390 Lin. Ft. of Guardrail, Type 3-Single with Steel Post.

± Sta. 83+38± Lt. to ± Sta. 84+45± Lt.
 Remove 50 Lin. Ft. of existing metal guardrail and install 82 Lin. Ft. of Guardrail, Type 3-Single with Steel Post.

± Sta. 85+61± Lt. to ± Sta. 86+65± Lt.
 Install 127 Lin. Ft. of Guardrail Type 3-Single with Steel Post.



TYPICAL DETAIL
 GUARDRAIL POST SPACING AT
 OBSTRUCTION
 Not to Scale

KANE OHE BAY DRIVE

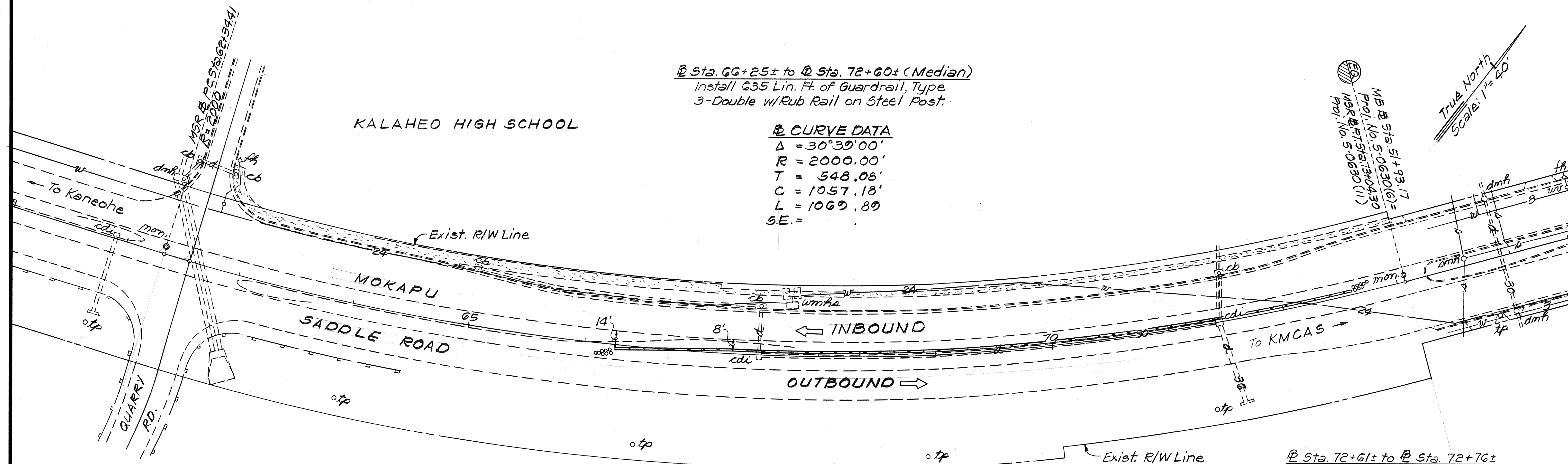
2/3/87	Added New Guardrail at ± Sta. 85+61± Lt. to ± Sta. 86+65± Lt.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<u>PLAN</u> GUARDRAIL AND SHOULDER IMPROVEMENTS KANE OHE BAY DRIVE Project No. HWY-0-03-87 Scale: As Shown Date: Nov, 1986 SHEET No. 9 OF 10 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-87	1987	13	13

At Sta. 66+25± to At Sta. 72+60± (Median)
Install G35 Lin. Ft. of Guardrail, Type
3-Double w/Rub Rail on Steel Post.

CURVE DATA

$\Delta = 30^\circ 39' 00''$
 $R = 2000.00'$
 $T = 548.08'$
 $C = 1057.18'$
 $L = 1069.89'$
 $S.E. =$



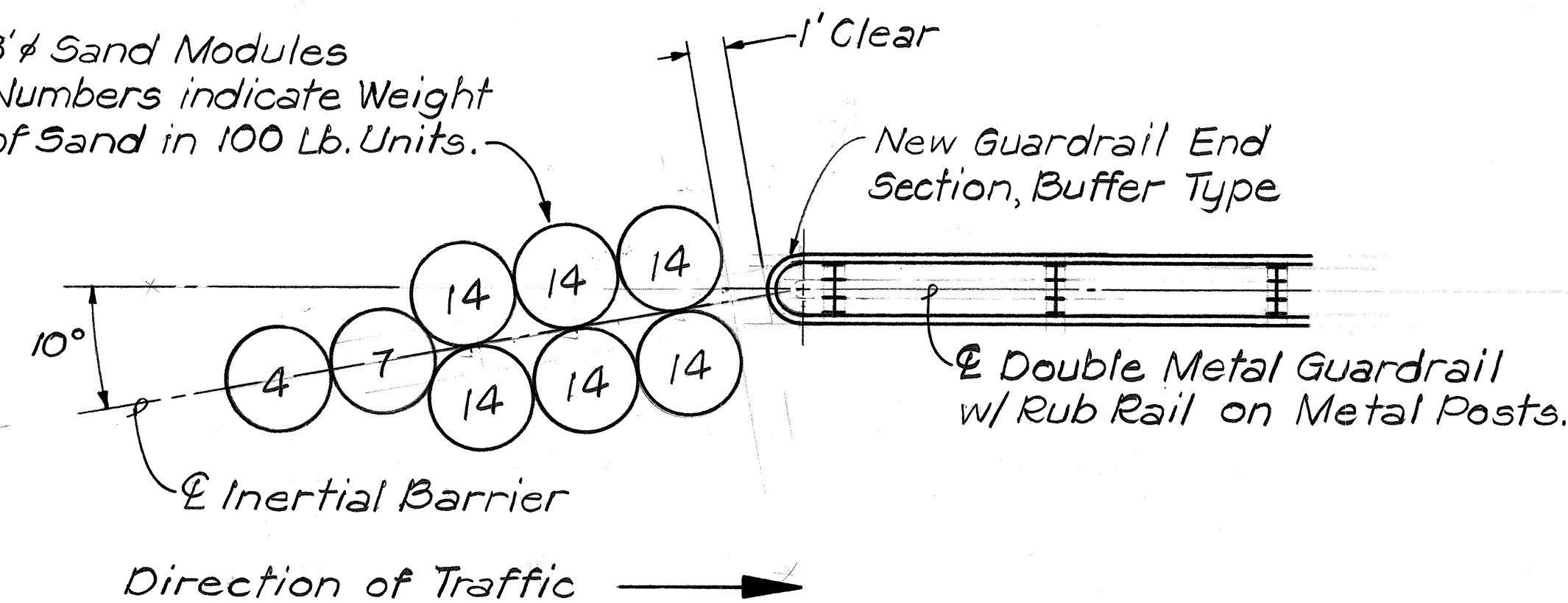
At Sta. 66+10± to At Sta. 66+25±
Install End Treatment, Inertial
Barrier System, Type I.
See details this sheet.

PLAN CONSTRUCTION AREA NO. 7

Scale: 1" = 40'

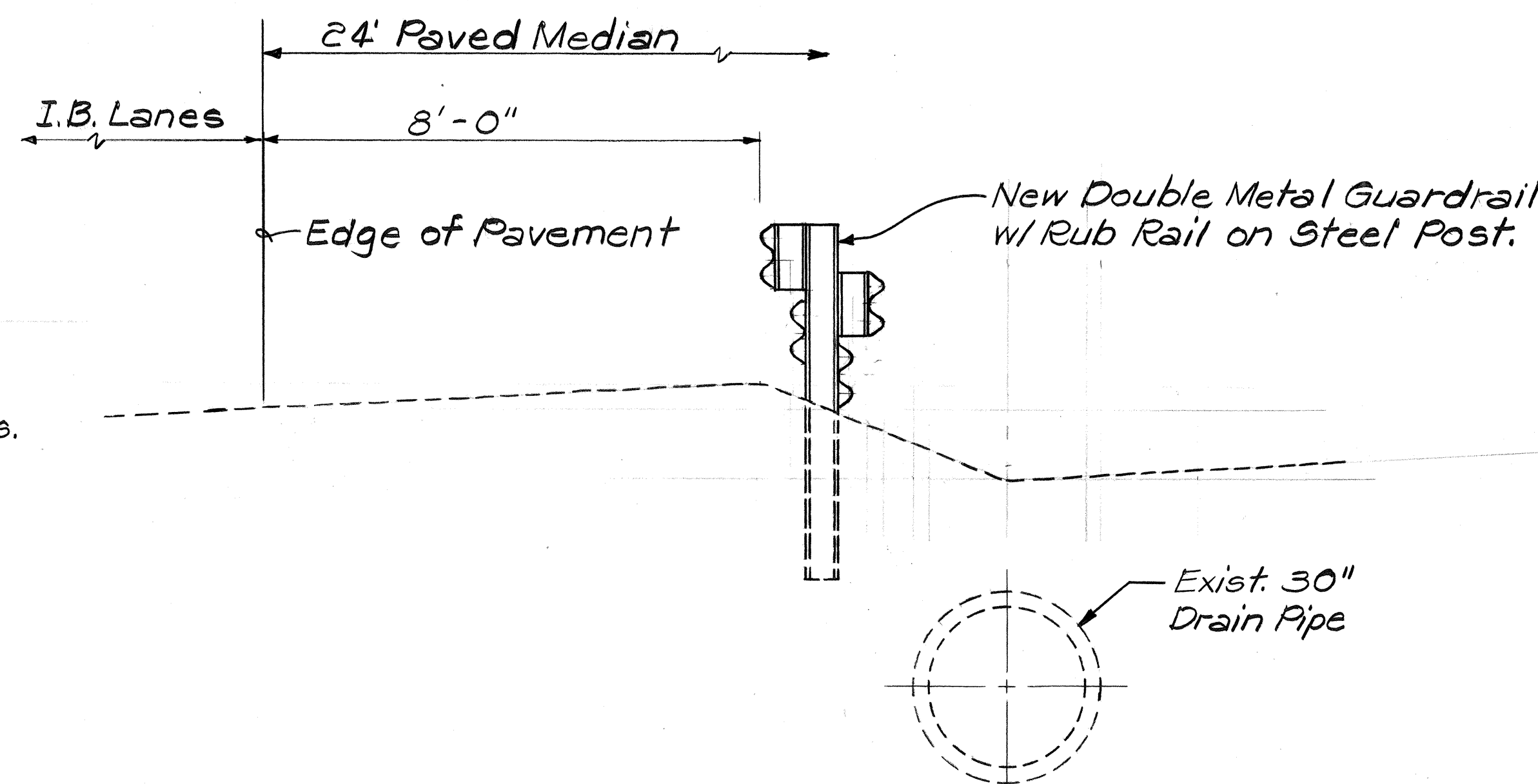
At Sta. 72+61± to At Sta. 72+76±
Install End Treatment, Inertial
Barrier System, Type I.
See details this sheet.

3" Sand Modules
Numbers indicate Weight
of Sand in 100 Lb. Units.



PLAN - INERTIAL BARRIER SYSTEM

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



TYPICAL SECTION

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

MOKAPU SADDLE ROAD

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PLAN	
GUARDRAIL AND SHOULDER IMPROVEMENTS MOKAPU SADDLE ROAD Project No. HWY-0-03-87	
Scale: As Noted Date: Nov. 1986	
SHEET NO. 10 OF 10 SHEETS	

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