

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	6	29

Sta. 330+08± Rt. to # Sta. 330+58± Rt.

Remove 20 Lin. Ft. of metal guardrail.

Install:

Guardrail, Type 3 - Double w/
Steel Post = 25 Lin. Ft.
Guardrail, Type 3 - Single w/
Rub Rail on Steel Post = 25 Lin. Ft.
Inertial Barrier System,
Type "A" = 1 Ea.

Sta. 331+45± Rt. to # Sta. 331+80± Rt.

Remove 25 Lin. Ft. of metal guardrail.

Install:

Guardrail, Type 3 - Single w/
Rub Rail on Steel Post = 50 Lin. Ft.

Sta. 341+38± Rt. to # Sta. 341+90± Rt.

Remove 20 Lin. Ft. of metal guardrail.

Install:

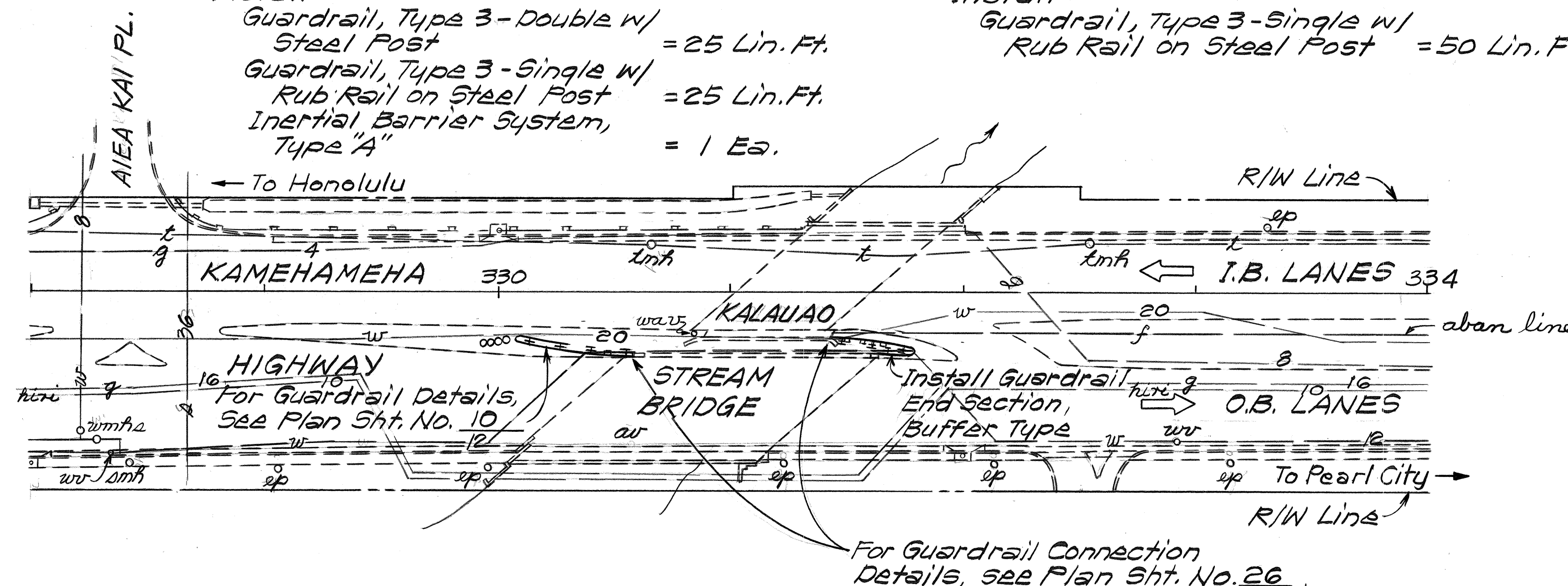
Guardrail, Type 3 - Double w/
Steel Post = 25 Lin. Ft.
Guardrail, Type 3 - Single w/
Rub Rail on Steel Post = 25 Lin. Ft.
Inertial Barrier System,
Type "B" = 1 Each

Sta. 342+44± Lt. to # Sta. 342+81± Lt.

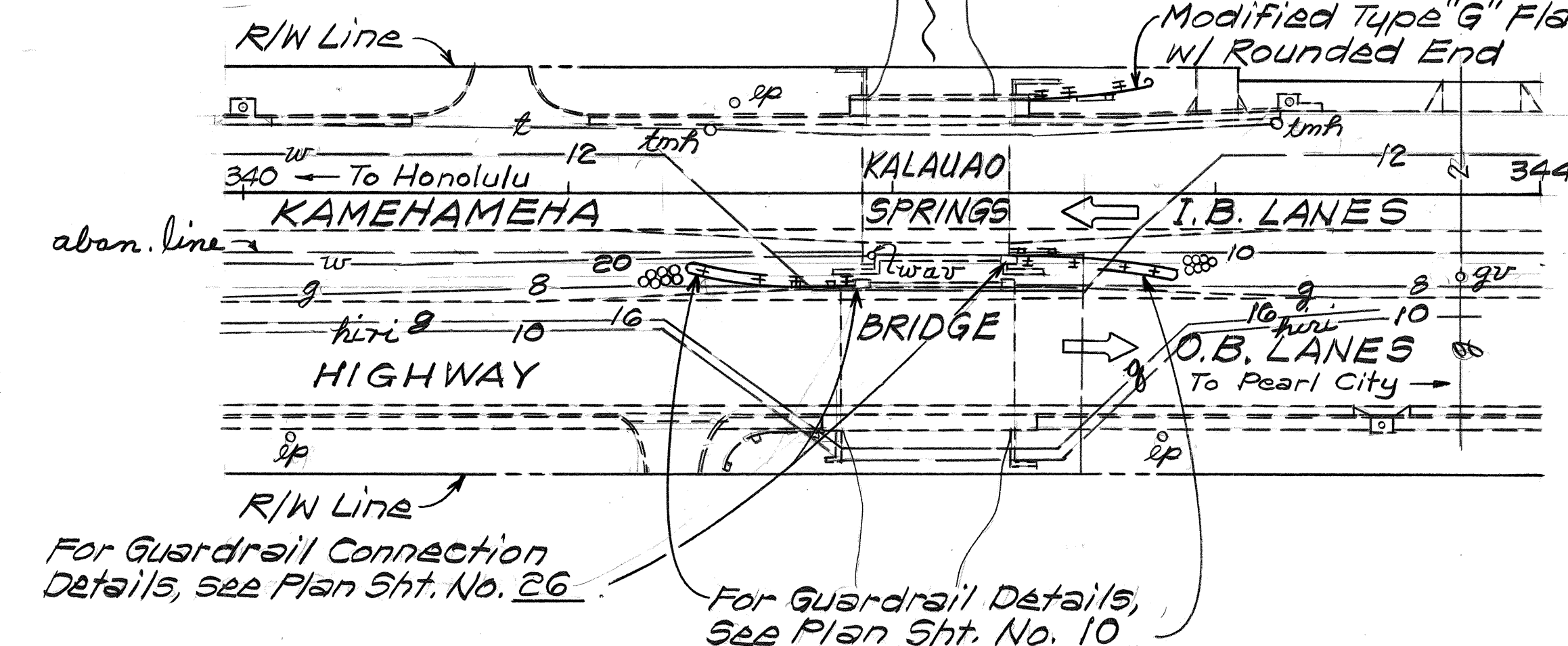
Remove 25 Lin. Ft. of metal guardrail.

Install:

Guardrail, Type 3 - Single
w/ Steel Post = 37 Lin. Ft.
Modified Type "G" Flare
w/ Rounded End



PLAN
CONSTRUCTION AREA NO. 1



PLAN
CONSTRUCTION AREA NO. 2

Sta. 375+42± Rt. to # Sta. 375+92± Rt.

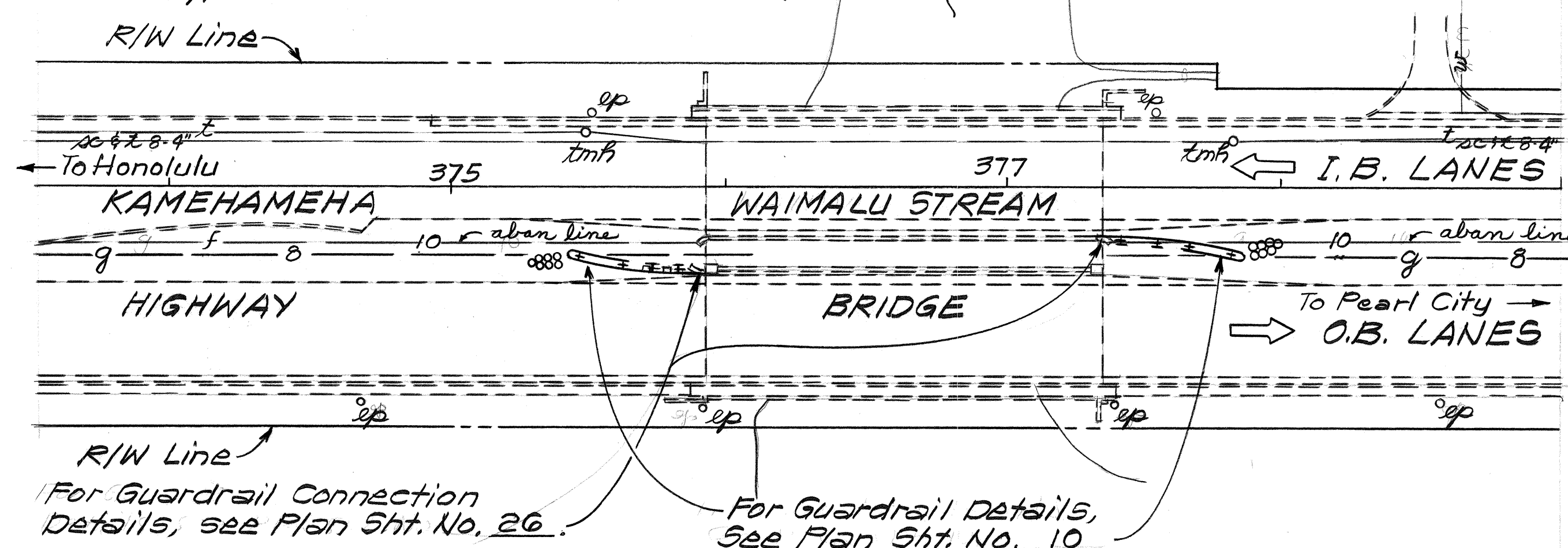
Remove 20 Lin. Ft. of metal guardrail

Install:

Guardrail, Type 3 - Double w/
Steel Post = 25 Lin. Ft.
Guardrail, Type 3 - Single w/
Rub Rail on Steel Post = 25 Lin. Ft.
Inertial Barrier System,
Type "B" = 1 Each

NOTE

The Contractor shall verify the location of all existing utility lines in areas where guardrails are to be installed, and notify their respective owners before commencing with work. Any damage to the existing utilities due to the Contractor's operations shall be repaired at his expense.



PLAN
CONSTRUCTION AREA NO. 3

Sta. 377+37± Rt. to # Sta. 377+87± Rt.

Install:

Guardrail, Type 3 - Double w/ Steel Post = 25 Lin. Ft.
Guardrail, Type 3 - Single w/ Rub Rail on Steel Post = 25 Lin. Ft.
Inertial Barrier System, Type "B" = 1 Each

KAMEHAMEHA HIGHWAY

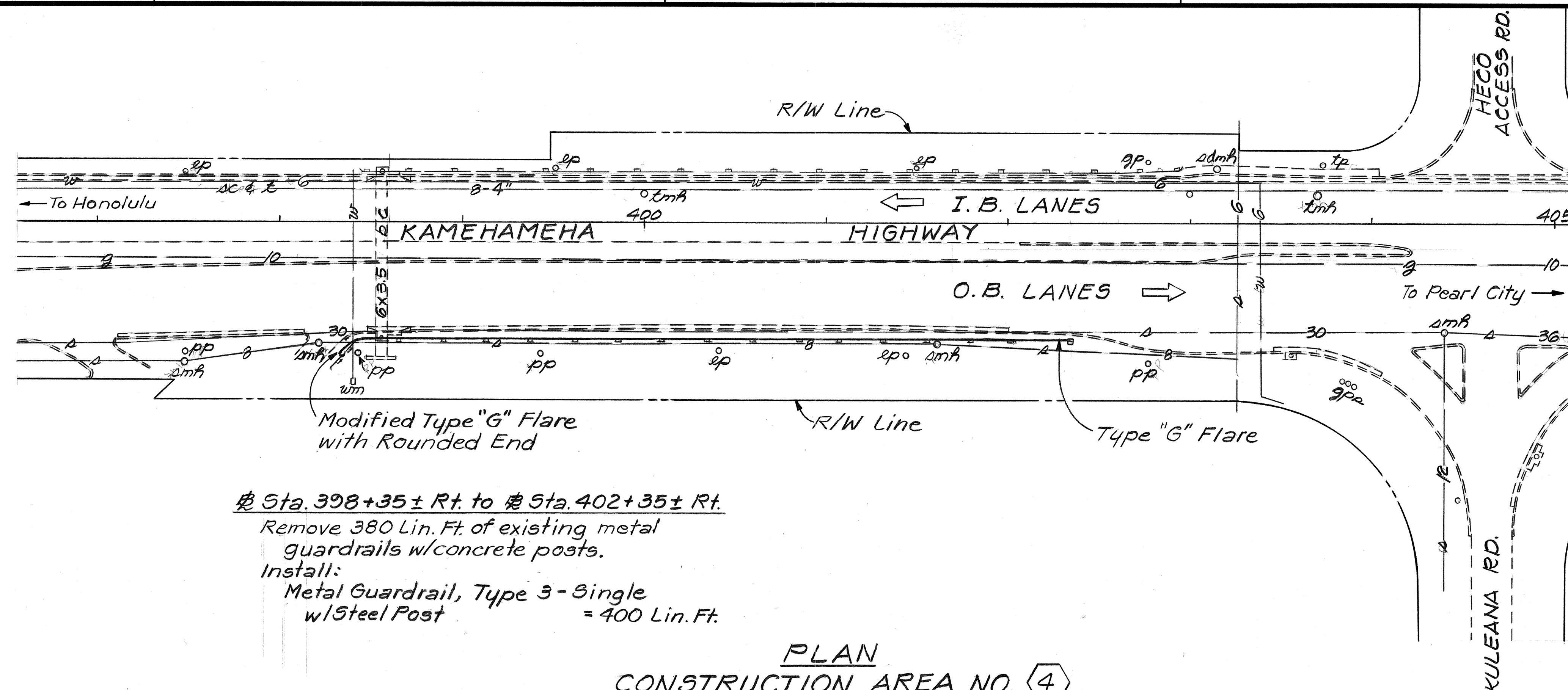
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

Scale: 1" = 40' Date: Nov., 1987
SHEET No. 1 OF 20 SHEETS

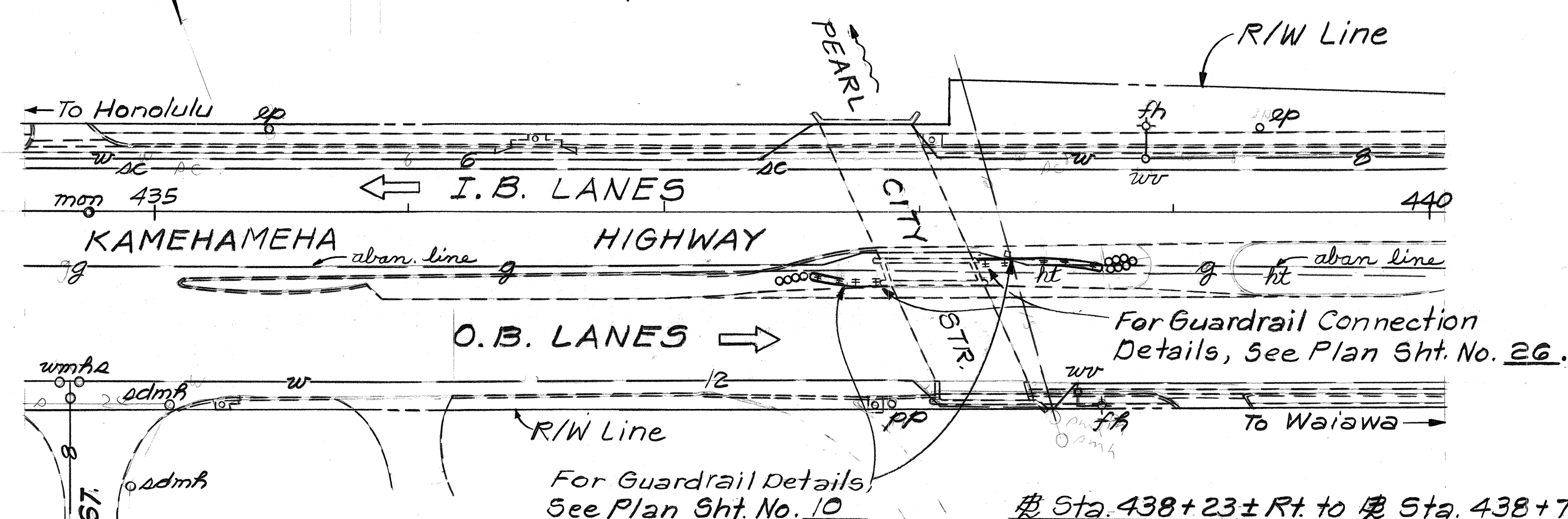
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	7	29



Sta. 398+35± Rt. to # Sta. 402+35± Rt.
 Remove 380 Lin. Ft. of existing metal guardrails w/concrete posts.
 Install:
 Metal Guardrail, Type 3-Single w/Steel Post = 400 Lin. Ft.

PLAN CONSTRUCTION AREA NO. 4

Sta. 437+60± Rt. to # Sta. 437+85± Rt.
 Remove 15 Lin. Ft. of metal guardrail.
 Install:
 Guardrail, Type 3-Double w/Rub Rail on Steel Post = 25 Lin. Ft.
 Inertial Barrier System, Type "A" = 1 Each



Sta. 438+23± Rt. to # Sta. 438+73± Rt.
 Remove 20 Lin. Ft. of metal guardrail.
 Install:
 Guardrail, Type 3-Double w/Steel Post = 25 Lin. Ft.
 Guardrail, Type 3-Single w/Rub Rail on Steel Post = 25 Lin. Ft.
 Inertial Barrier System Type "B" = 1 Each

PLAN CONSTRUCTION AREA NO. 5

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PLAN

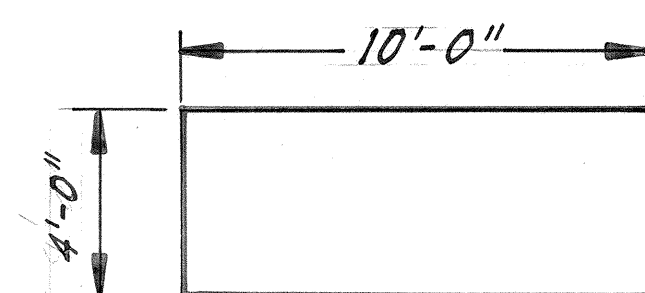
GUARDRAIL & SHOULDER IMPROVEMENTS
 AT VARIOUS LOCATIONS ON OAHU
 PROJECT NO. HWY-0-01-88

Scale: 1"=40' Date: Nov., 1987
 SHEET No. 2 OF 20 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	8	29

Sidewalk Ramp Down at Sta. 23+70 Rt.

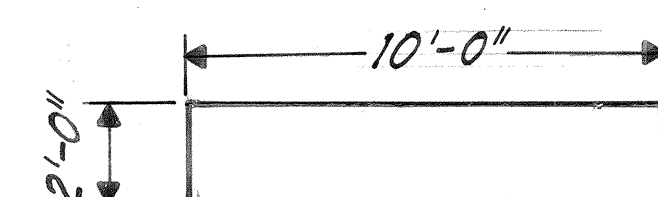


PLAN

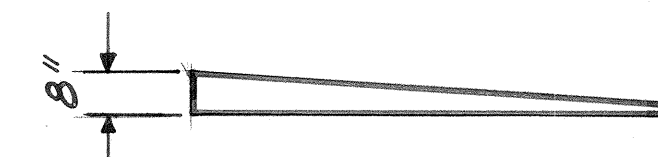


ELEVATION

Sidewalk Ramp Down at Sta. 23+70 Lt.



PLAN



ELEVATION

Inb. & Sta. 20+45 ± Lt. to & Sta. 23+70 ± Lt.
Remove existing guardrail and install 300 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post and 25 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

Inb. & Sta. 22+70 ± Rt. to & Sta. 23+70 ± Rt.
Remove existing guardrail and install 75 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post and 25 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

Modified Type "G" Flare w/Rounded End.

For Guardrail Connection Details, See Plan Sht. No. 26.

Outb. & Sta. 20+24 ± Lt. to & Sta. 21+24 ± Lt.
Remove existing guardrail and install 75 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post and 25 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

Outb. & Sta. 20+24 ± Rt. to & Sta. 21+49 ± Rt.
Remove existing guardrail and install 100 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post and 25 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

Reconnect to exist. connection.

Outb. & Sta. 23+85 ± Rt. to & Sta. 27+95 ± Rt.
Remove existing guardrail and install 410 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

Modified Type "G" Flare w/Rounded End.

For Guardrail Connection Details, See Plan Sht. No. 26.

Outb. & Sta. 24+14 ± Lt. to & Sta. 25+00 ± Lt.
Remove existing guardrail and install 131 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post and 1 each Inertial Barrier System Type "B".

I.B. & Sta. 44+60 ± Rt. to & Sta. 55+45 ± Rt.
I.B. & Sta. 57+07 ± Rt. to & Sta. 61+40 ± Rt.
Remove existing guardrail and install 1245 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post.

Proj. No. F-9 (35)
& Inb. Sta. 30+28.51 = EA
Proj. No. F-47 (4)
& I.B. PT. Sta. 63+06.46

Proj. No. F-47 (4)
& O.B. PT. Sta. 60+23.67 = EA
Proj. No. DA-NR 14 (2)

O.B. & Sta. 59+00 ± Lt. to & Sta. 59+80 ± Lt.
Remove existing guardrail and install 80 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post.

I.B. & Sta. 49+94 ± Lt. to & Sta. 55+45 ± Lt.
I.B. & Sta. 57+07 ± Lt. to & Sta. 59+00 ± Lt.
Remove existing guardrail and install 744 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post.

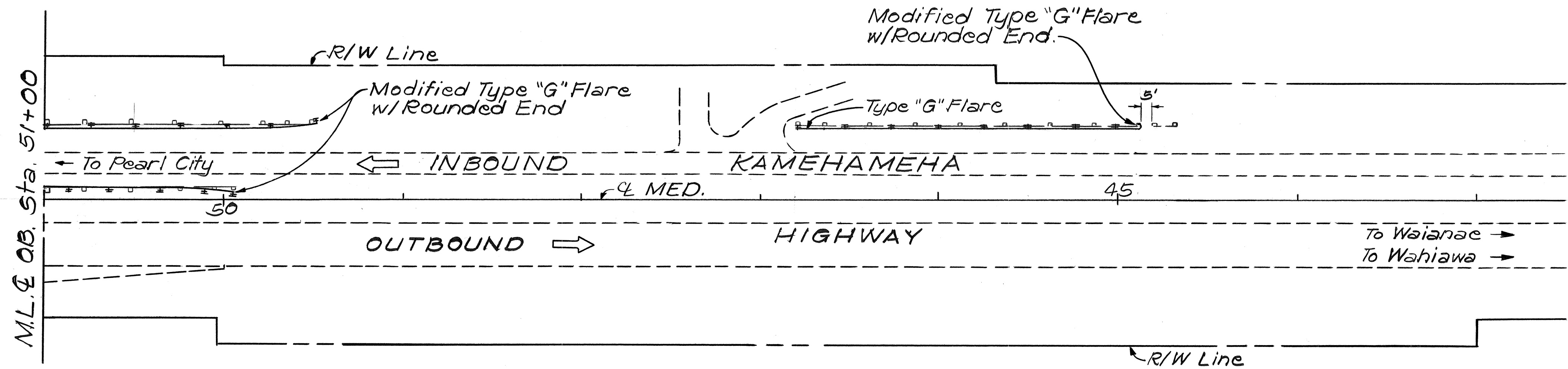
PLAN
CONSTRUCTION AREA NO. 6
KAMEHAMEHA HIGHWAY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PLAN
GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88
Scale: 1"=40' Date: Nov, 1987
SHEET NO. 3 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	9	29

True North
Scale: 1"=40'

NOTE:
At right shoulder, install new guardrail
2' in from existing guardrail.



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

Scale: 1"=40' Date: Nov., 1987

SHEET No. 4 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	10	29

Sta. 2+57± Rt. to Sta. 3+57± Rt. (Median)

Remove 50 Lin. Ft. of metal guardrail.

Install:

Guardrail, Type 3 - Double w/Steel Post = 25 Lin. Ft.
Guardrail, Type 3 - Single w/Rub Rail on Steel Post = 37.5 Lin. Ft.
Guardrail, Type 3 - Single w/Steel Post = 37.5 Lin. Ft.
Inertial Barrier System, Type "B" = 1 Each

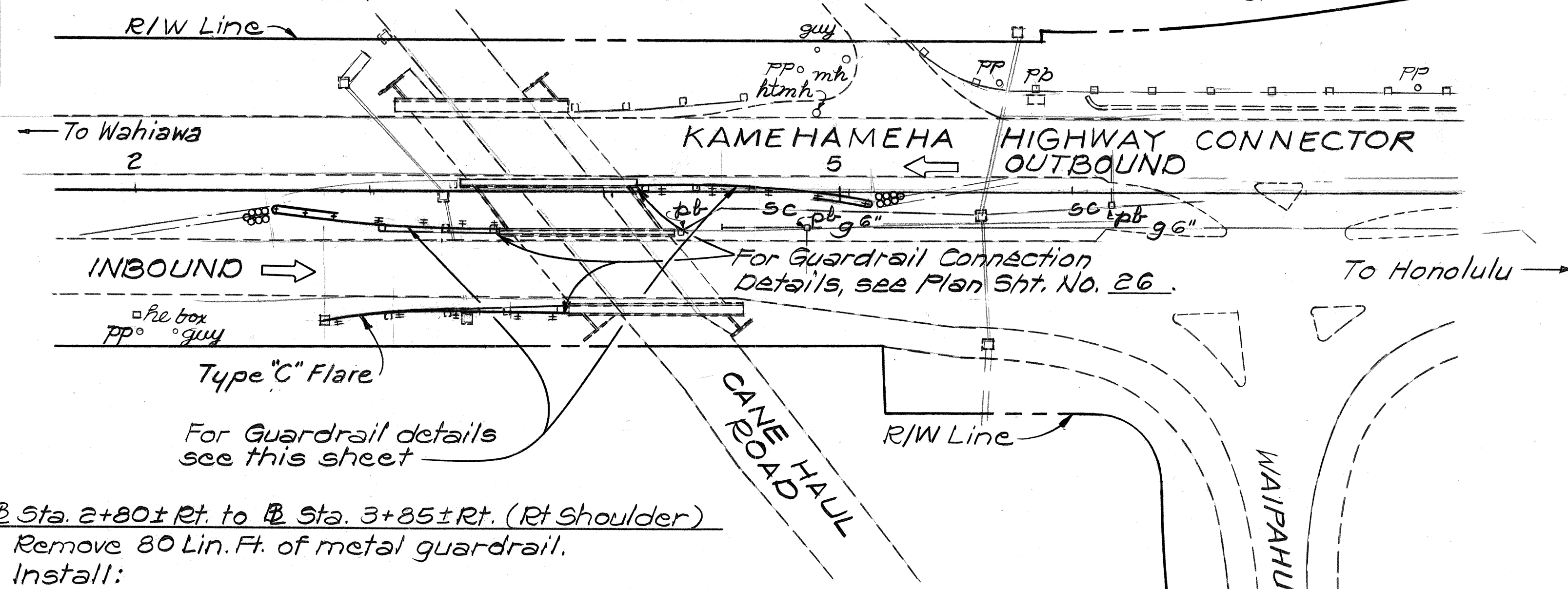
Sta. 4+15± Lt. to Sta. 5+15± Lt. (Median)

Remove 50 Lin. Ft. of metal guardrail.

Install:

Guardrail, Type 3 - Double w/Steel Post = 25 Lin. Ft.
Guardrail, Type 3 - Single w/Rub Rail on Steel Post = 37.5 Lin. Ft.
Guardrail, Type 3 - Single w/Steel Post = 37.5 Lin. Ft.
Inertial Barrier System, Type "B" = 1 Each

TRUE NORTH
Scale: 1" = 40'



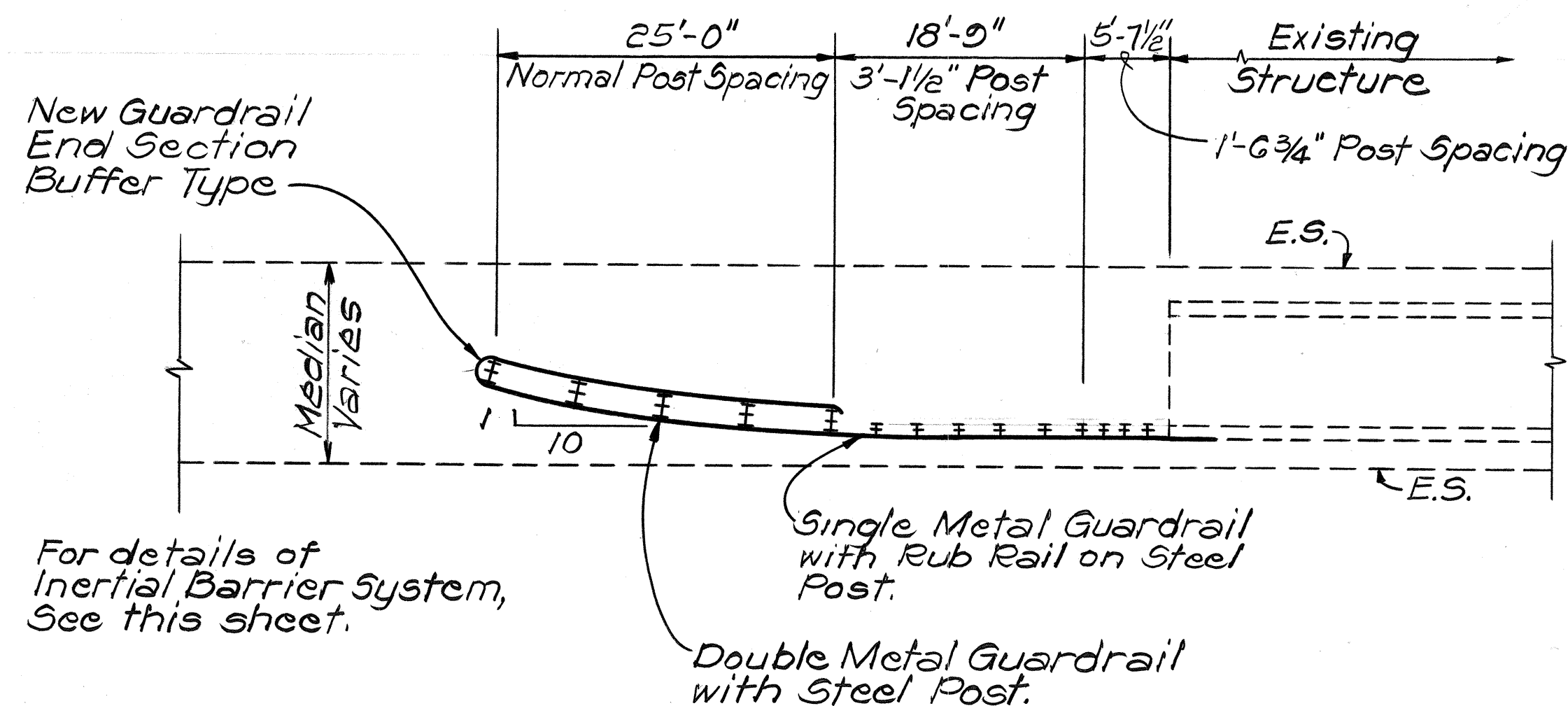
Sta. 2+80± Rt. to Sta. 3+85± Rt. (Rt Shoulder)

Remove 80 Lin. Ft. of metal guardrail.

Install:

Guardrail, Type 3 - Single w/Steel Post = 80 Lin. Ft.
Guardrail, Type 3 - Single w/Rub Rail on Steel Post = 25 Lin. Ft.

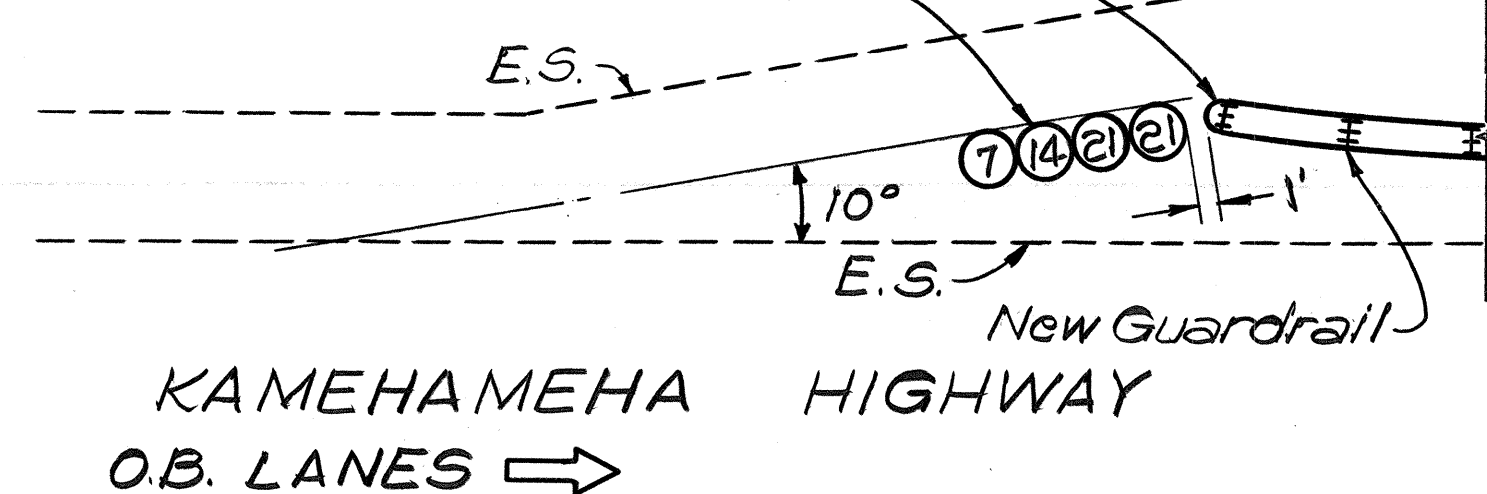
PLAN CONSTRUCTION AREA NO. 7



TYPICAL DETAIL
GUARDRAIL AT STRUCTURES
Scale: 1" = 10'-0"

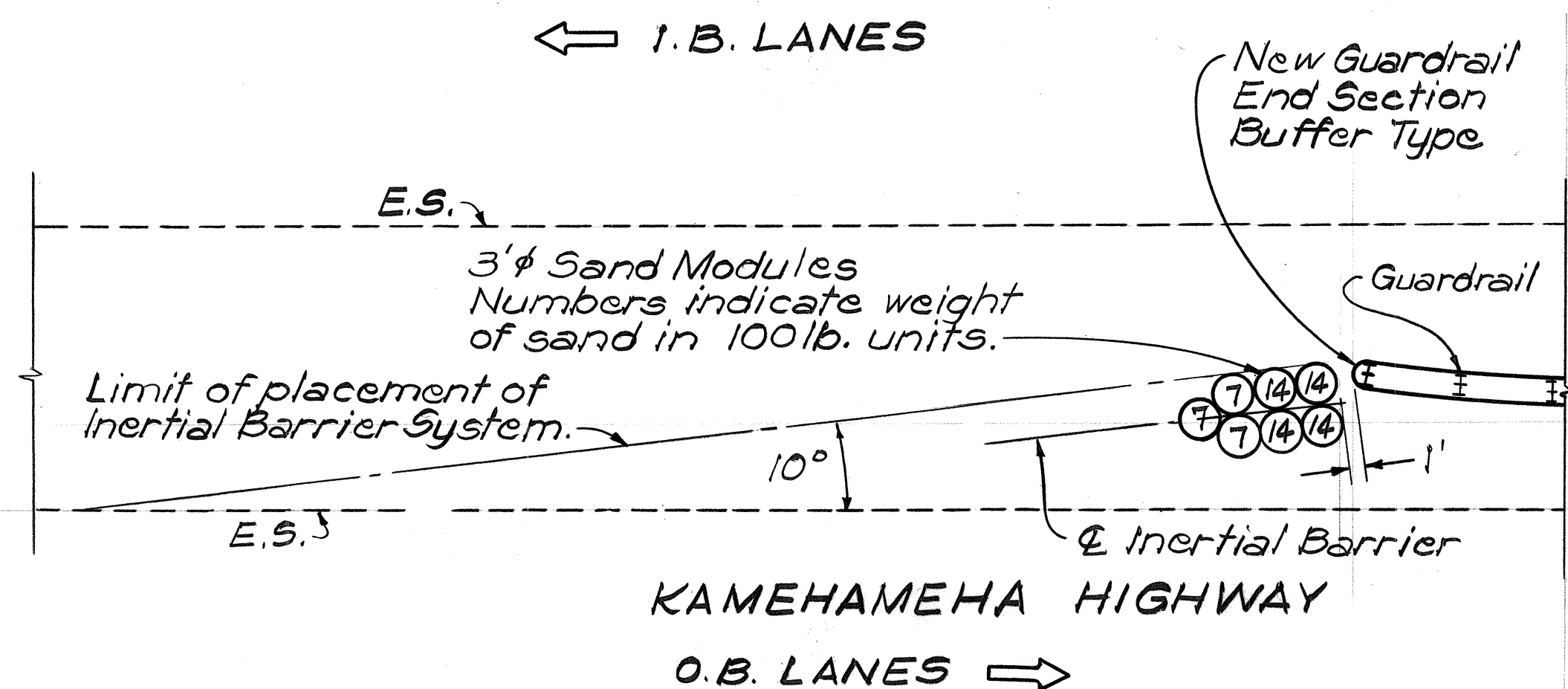
I.B. LANES

3' Sand Modules
Numbers indicate weight
of sand in 100 lb units.



TYPICAL DETAIL
INSTALLATION OF INERTIAL BARRIER SYSTEM
TYPE "A"
Scale: 1" = 10'-0"

I.B. LANES



TYPICAL DETAIL
INSTALLATION OF INERTIAL BARRIER SYSTEM
TYPE "B"
Scale: 1" = 10'-0"

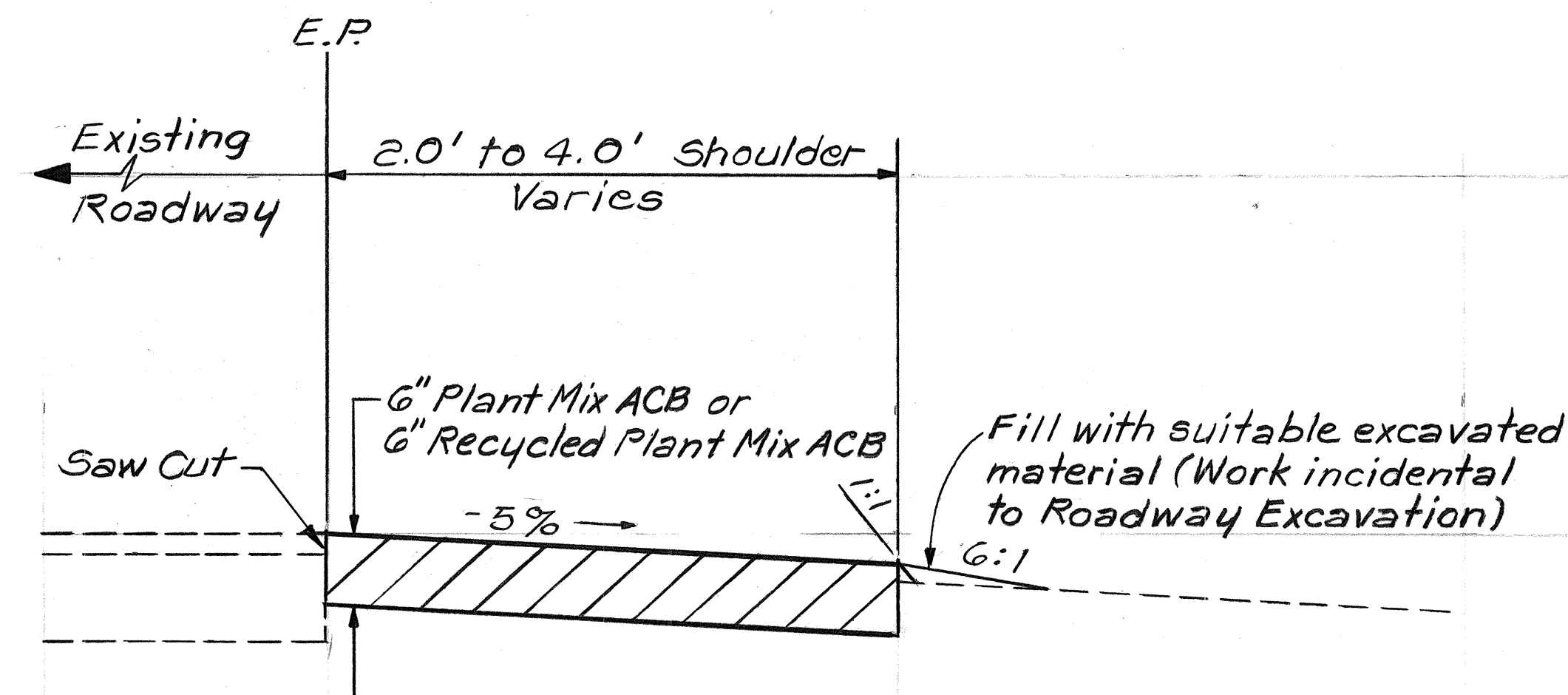
KAMEHAMEHA HIGHWAY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

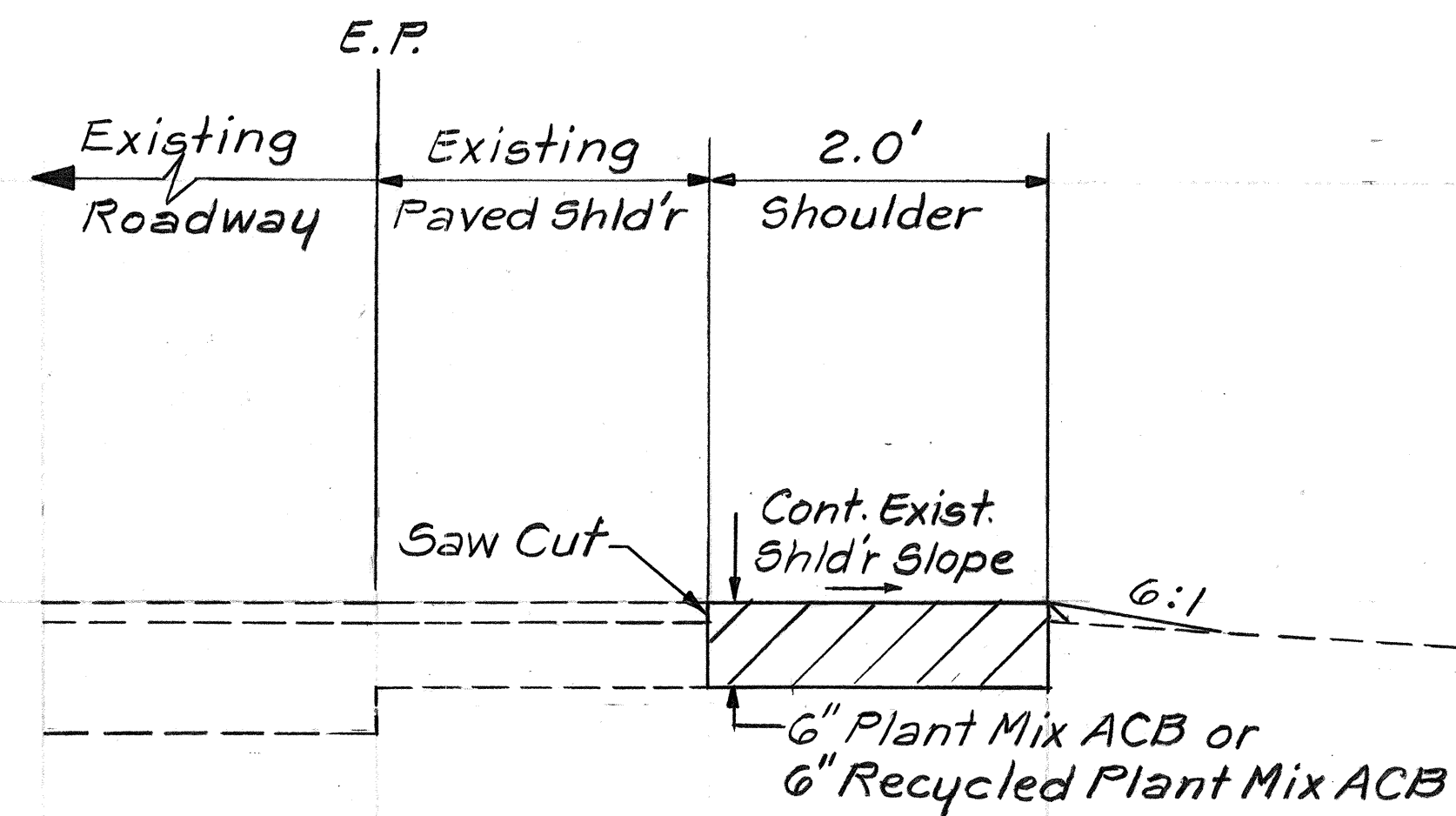
PLAN AND DETAILS
GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88
Scale: As Noted Date: Nov, 1987
SHEET NO. 5 OF 20 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	11	29



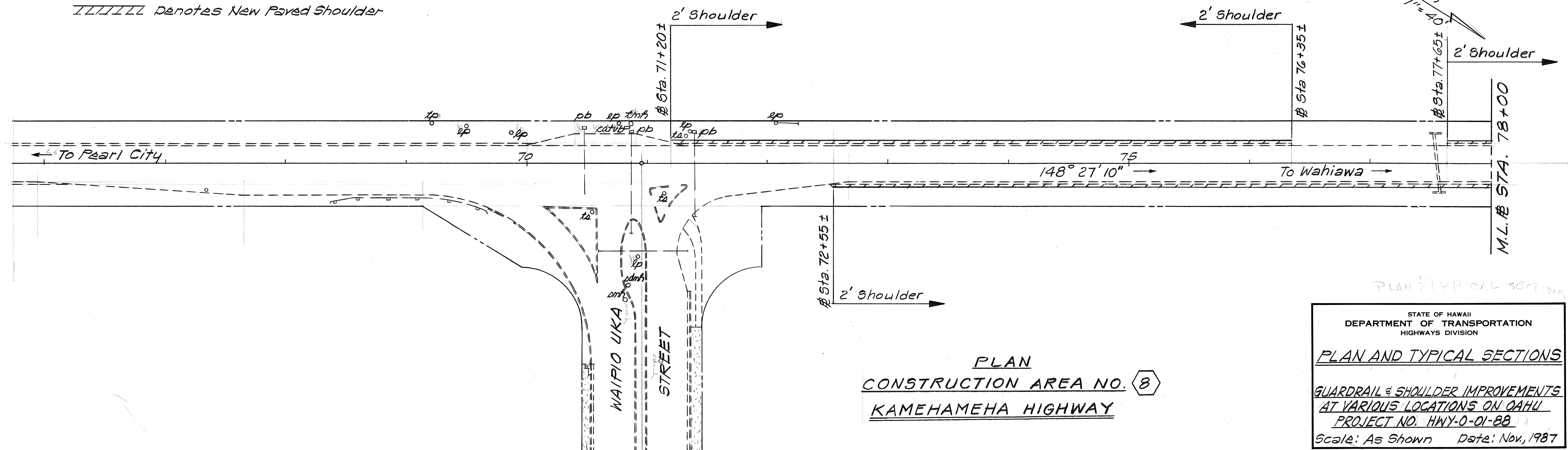
TYPICAL PAVED SHOULDER
Kamehameha Hwy. (Mililani Section)
Scale: 1" = 1'-0"



TYPICAL PAVED SHOULDER
Kamehameha Hwy. (Waipio Section)
Scale: 1" = 1'-0"

PLAN LEGEND

||||| Denotes New Paved Shoulder



PLAN
CONSTRUCTION AREA NO. 8
KAMEHAMEHA HIGHWAY

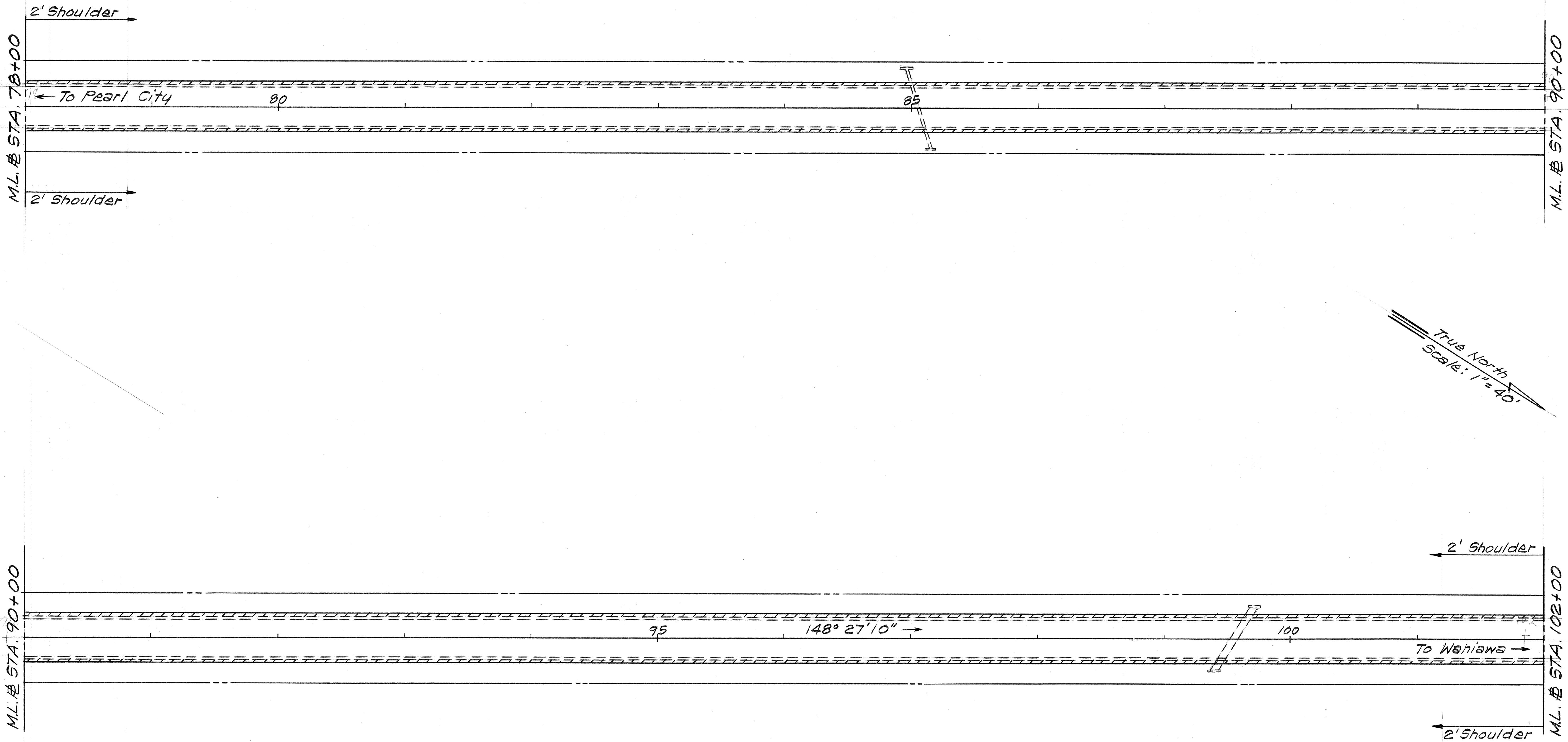
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN AND TYPICAL SECTIONS

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88
Scale: As Shown Date: Nov, 1987
SHEET NO. 6 OF 20 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	12	29



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

KAMEHAMEHA HIGHWAY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

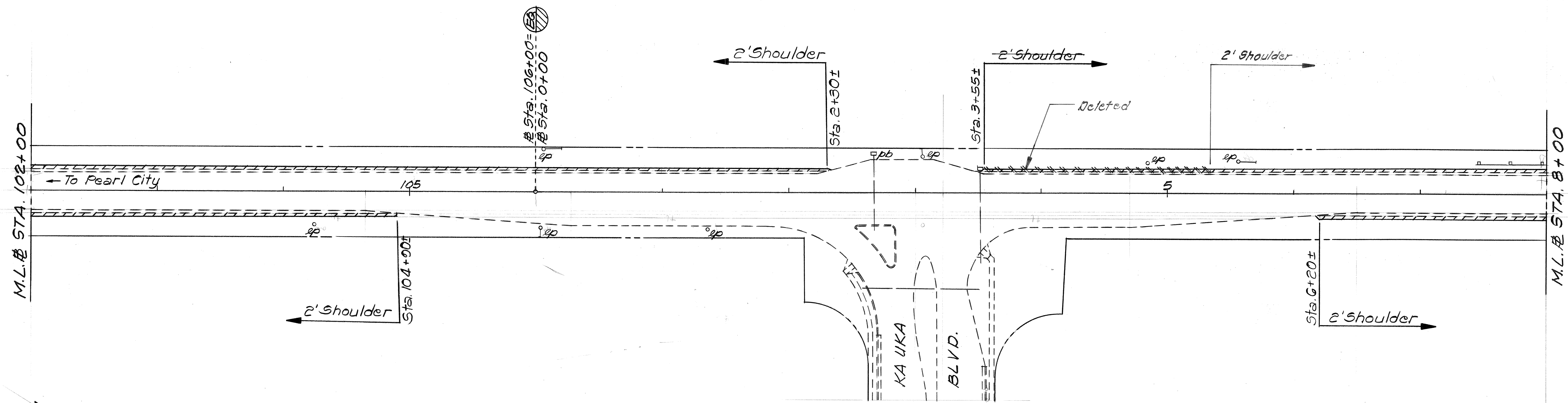
PLAN

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

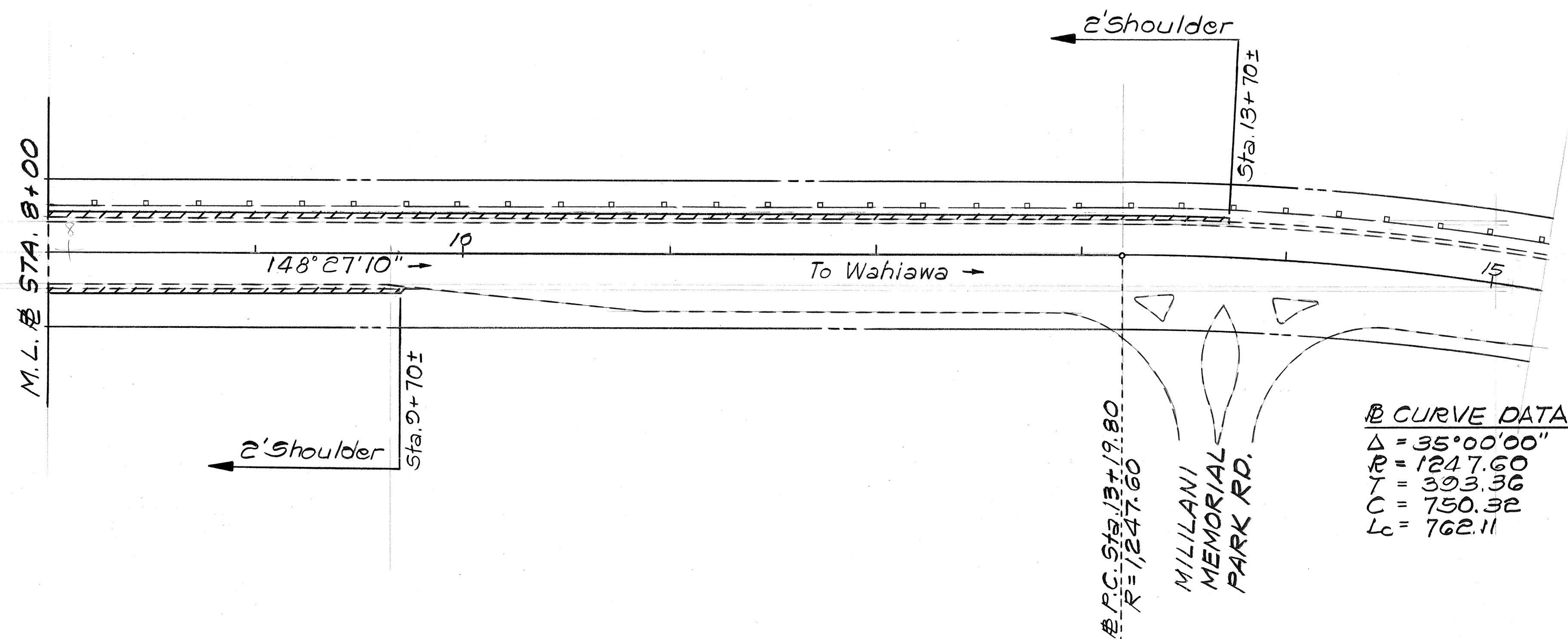
Scale: 1"=40' Date: Nov, 1987

SHEET NO. 7 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	13	29



True North
Scale: 1" = 40'



B CURVE DATA
 $\Delta = 35^{\circ}00'00''$
 $R = 1247.60$
 $T = 393.36$
 $C = 750.32$
 $L_c = 762.11$

KAMEHAMEHA HIGHWAY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

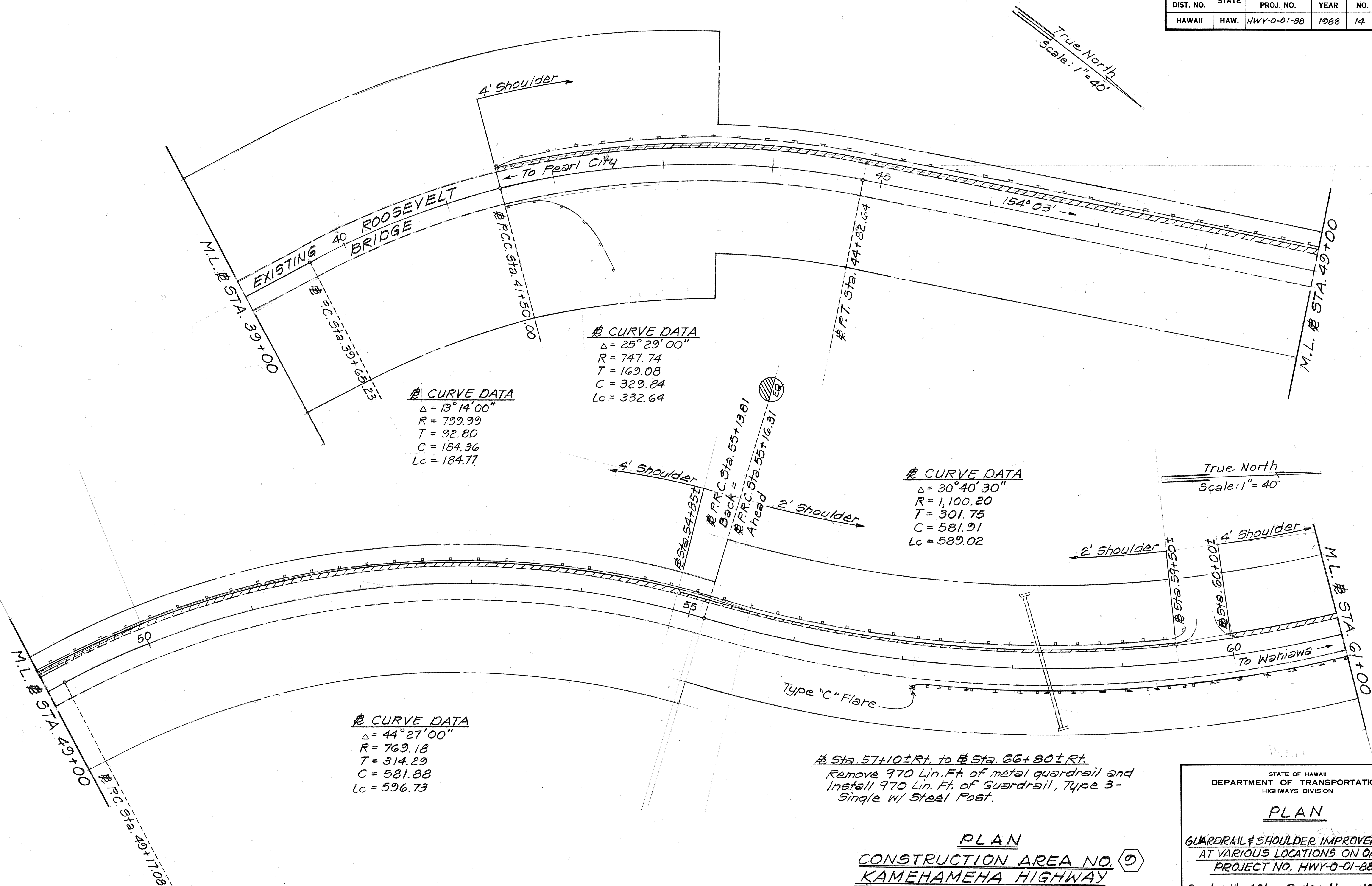
GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

Scale: 1" = 40' Date: Nov., 1987

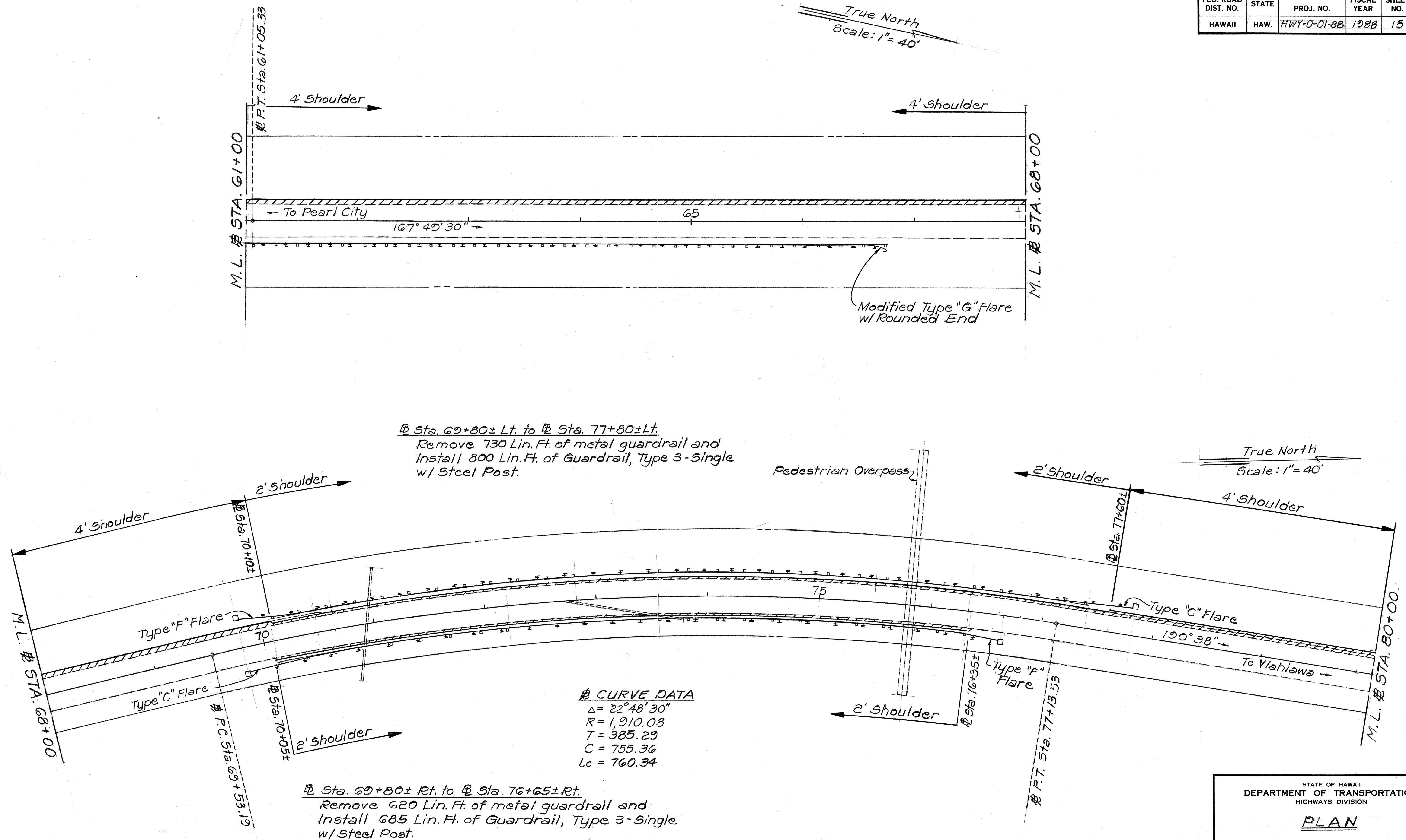
SHEET No. 8 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	14	29

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	15	29



KAMEHAMEHA HIGHWAY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GURDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

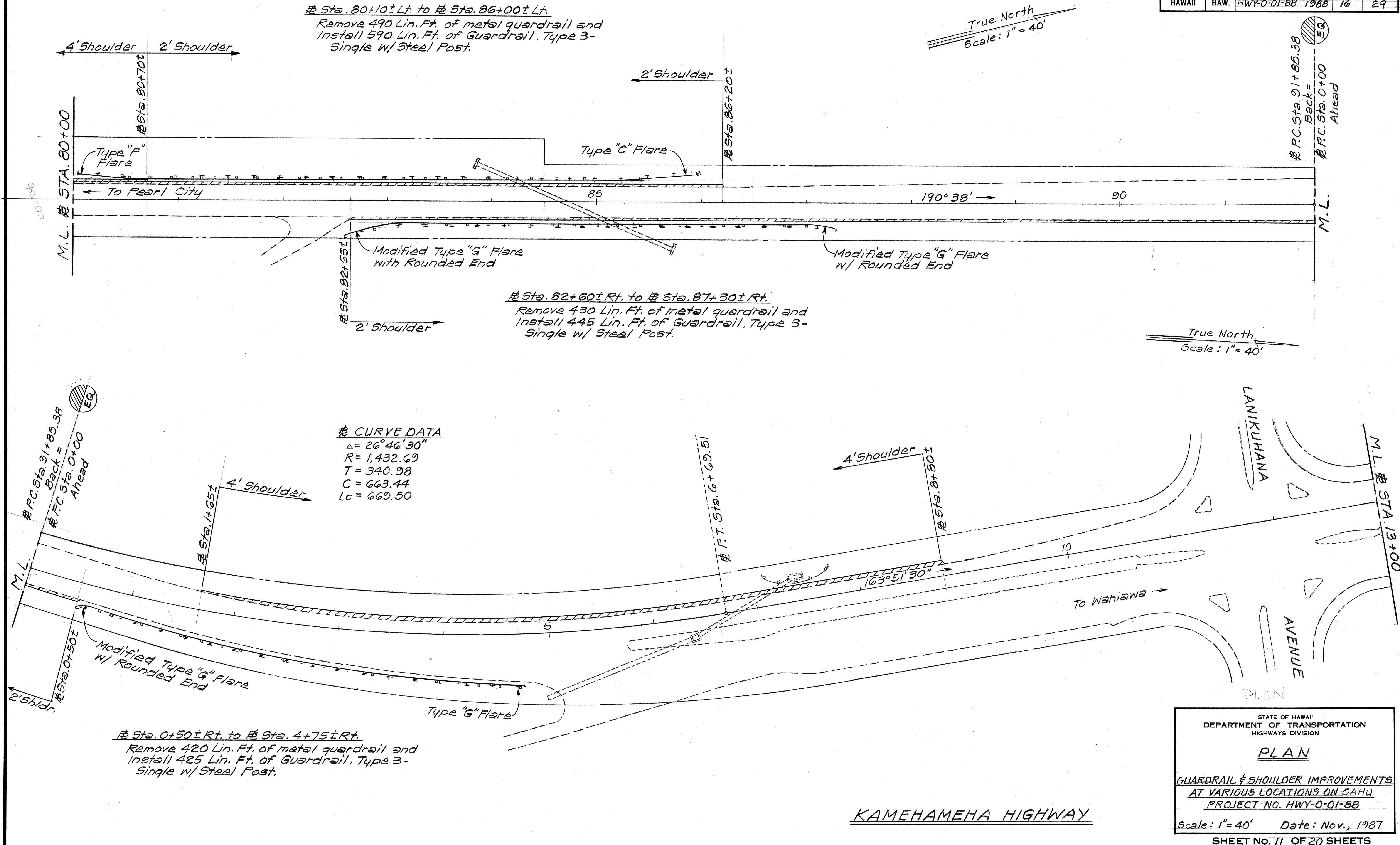
Scale: 1" = 40' Date: Nov., 1987

SHEET No. 10 OF 20 SHEETS

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

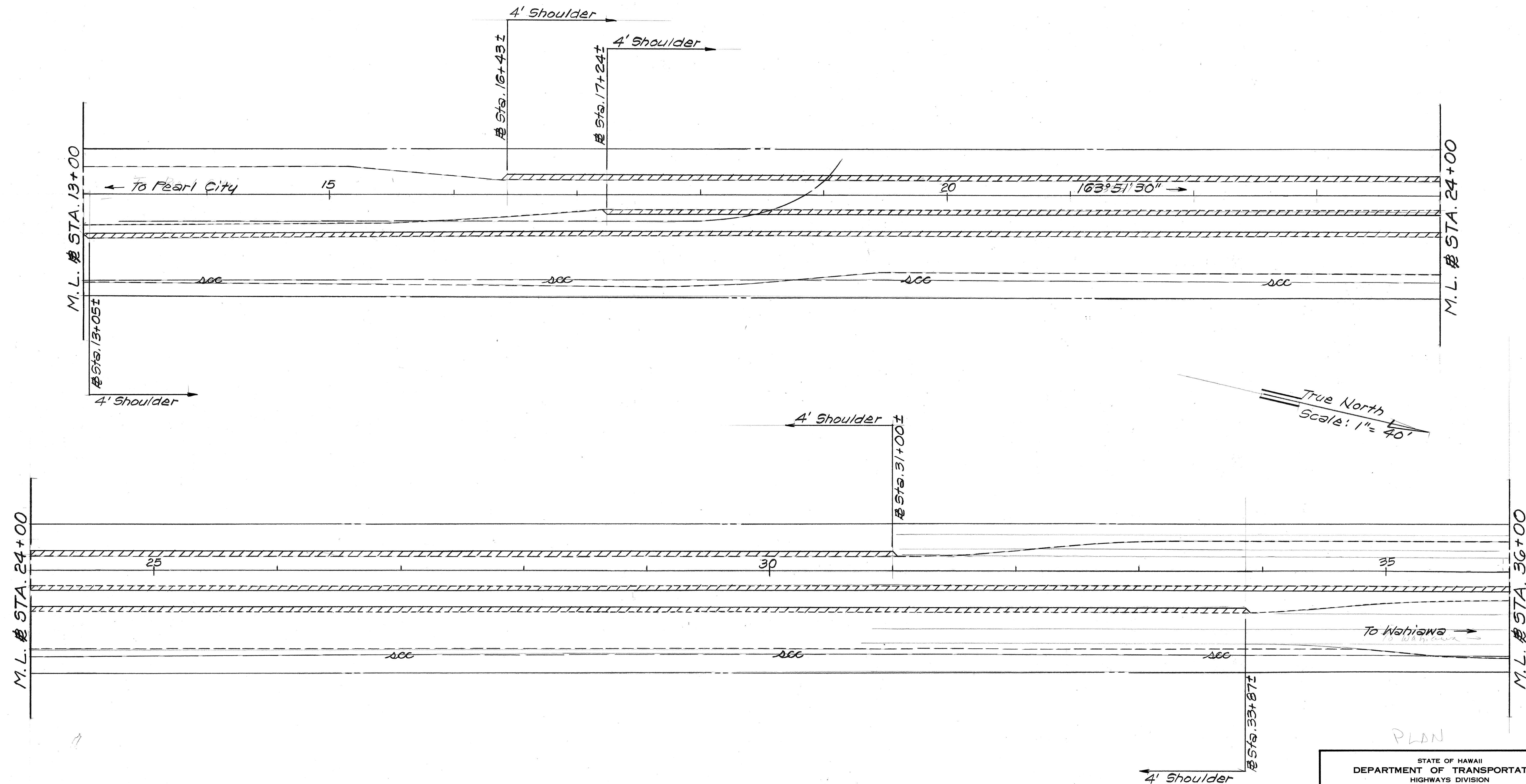
ORIGINAL PLAN	NOTE BOOK
	No. _____

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	16	29



ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	17	29



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

**GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU**

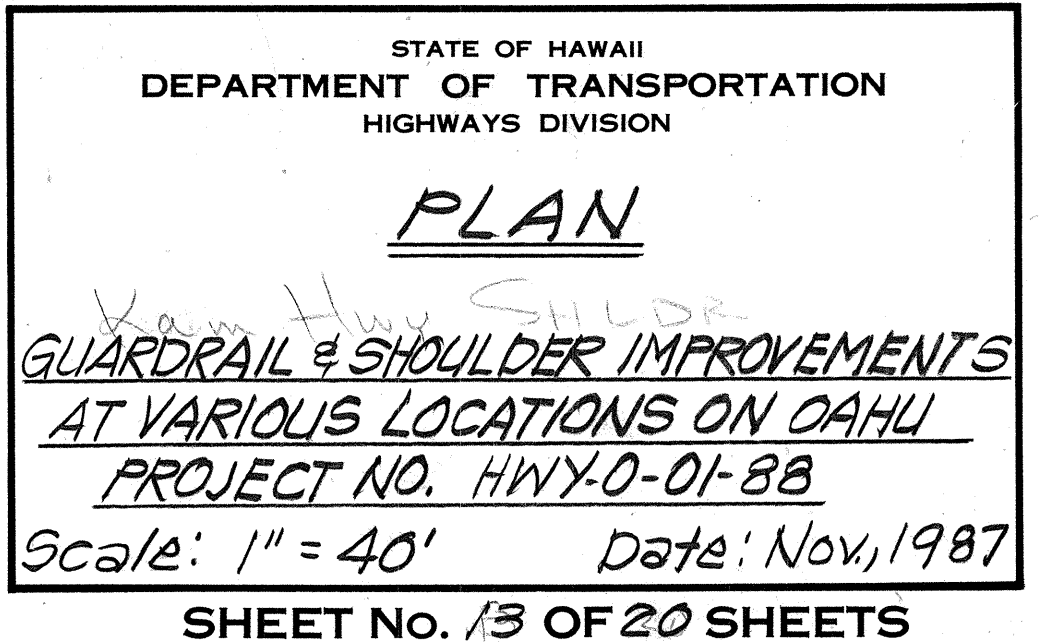
PROJECT NO. HWY-0-01-88

Scale: 1" = 40' Date: Nov., 1987

SHEET No. 17 OF 20 SHEETS

KAMEHAMEHA HIGHWAY

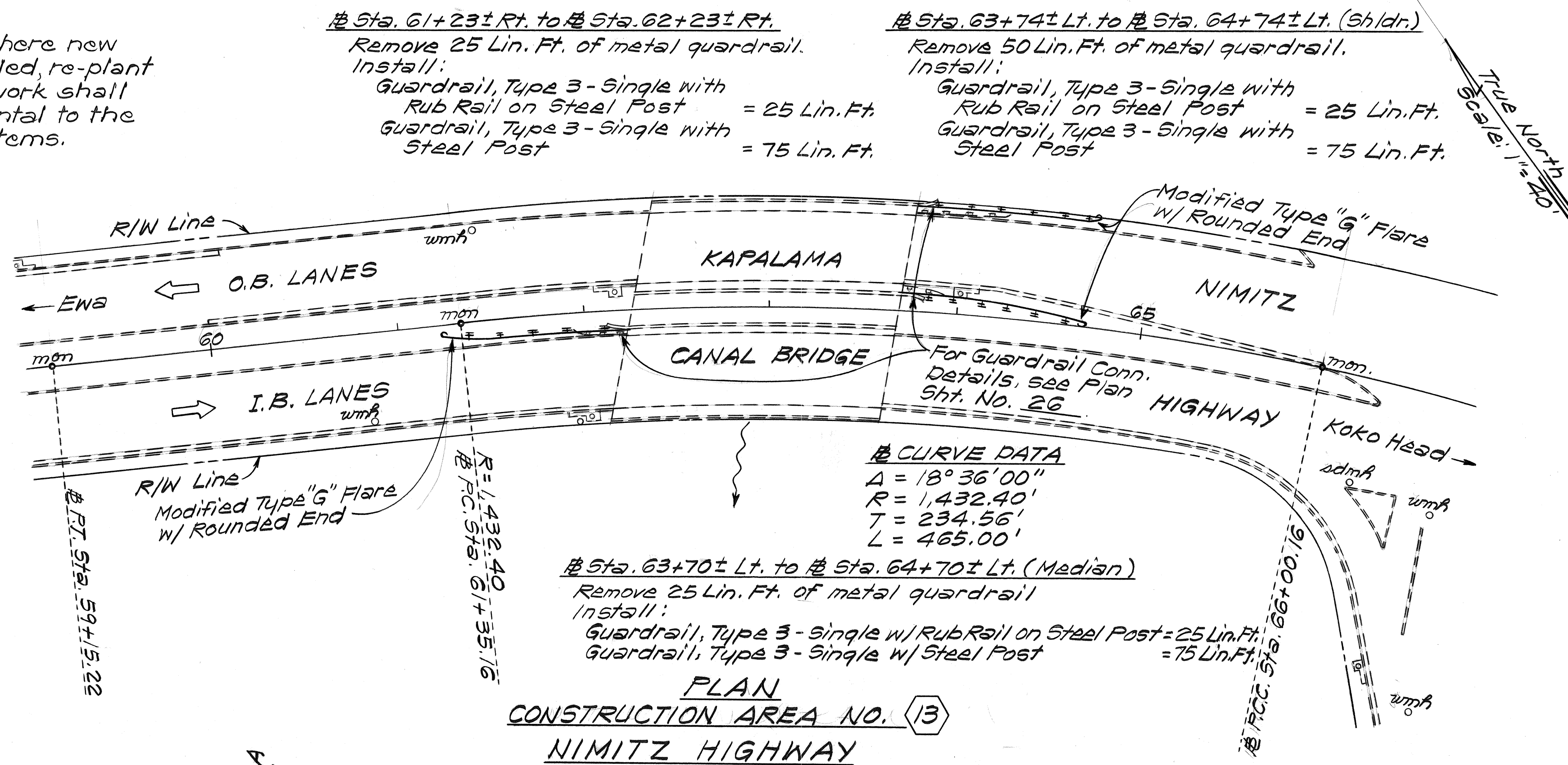
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NOTE BOOK	DRAWN BY _____	" _____
	TRACED BY _____	" _____
	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
No. _____	CHECKED BY _____	" _____



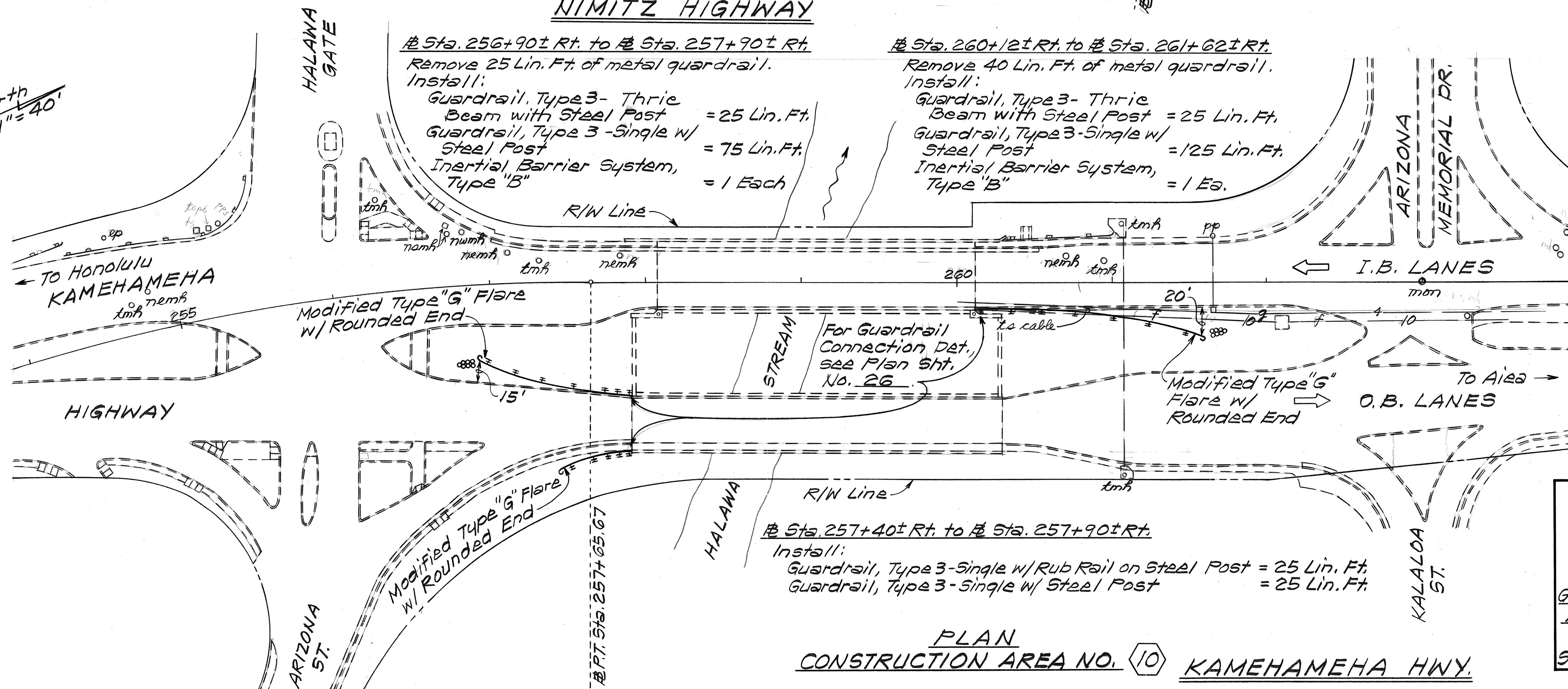
NOTE:

In landscaped area where new Guardrails are installed, re-plant if necessary. This work shall be considered incidental to the various contract items.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	19	29



**PLAN
CONSTRUCTION AREA NO. 13
NIMITZ HIGHWAY**



**PLAN
CONSTRUCTION AREA NO. 10
KAMEHAMEHA HWY.**

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

Scale: 1" = 40'

Date: Nov., 1987

SHEET No. 14 OF 20 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	20	29

Sta. 152+00±Lt. to Sta. 172+60±Lt.
Construct 1900 Lin. Ft. of Paved Shoulder. (For Typical Shoulder Section see Plan Sht. No. 21.)

Sta. 157+93±Lt. to Sta. 160+10±Lt.
Remove 220 Lin. Ft. of existing wood guardrails w/concrete posts.
Install 192 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post and 25 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

NOTE:
Begin Shoulder Paving at Sta. 152+00±Lt.

Modified Type "G" Flare w/Rounded End

For Guardrail Connection to Structure details, see Plan Sheet No. 26.

Modified Type "G" Flare w/Rounded End

Modified Type "G" Flare w/Rounded End.

True North
Scale: 1"=40'

Modified Type "G" Flare w/Rounded End

CURVE DATA

$\Delta = 44^{\circ}05'$
 $R = 409.26'$
 $T = 165.70'$
 $L = 314.88'$

Modified Type "G" Flare w/Rounded End

Sta. 159+67±Rt. to Sta. 160+27±Rt.

Remove 50 Lin. Ft. of existing metal guardrail w/steel posts.
Install 35 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post and 25 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

Sta. 160+75±Rt. to Sta. 161+35±Rt.

Remove 30 Lin. Ft. of existing metal guardrail w/steel posts.
Install 35 Lin. Ft. of Guardrail, Type 3-Single w/Steel Posts and 25 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

Leave 4'-0" guardrail opening for Fire Hydrant.

CURVE DATA

$\Delta = 81^{\circ}40'$
 $R = 409.26'$
 $T = 354.62'$
 $L = 584.41'$

Sta. 160+55±Lt. to Sta. 164+60±Lt.

Remove 405 Lin. Ft. of existing metal guardrail w/steel posts.
Install 380 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post and 25 Lin. Ft. of Guardrail, Type 3-Single w/Rub Rail on Steel Post.

Sta. 165+15±Lt. to Sta. 166+80±Lt.

Remove 155 Lin. Ft. of existing metal guardrail w/steel posts.
Install 155 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post.

Sta. 167+25±Lt. to Sta. 173+10±Lt.

Remove 525 Lin. Ft. of existing wood guardrails w/concrete posts.
Install 585 Lin. Ft. of Guardrail, Type 3-Single w/Steel Post.

For Guardrail Installation at Utility Poles, see details on Plan Sht. No. 21.

Modified Type "G" Flare w/Rounded End

True North
Scale: 1"=40'

CURVE DATA

$\Delta = 27^{\circ}31'40''$
 $R = 390.00'$
 $T = 95.53'$
 $L = 187.38'$

Type "G" Flare

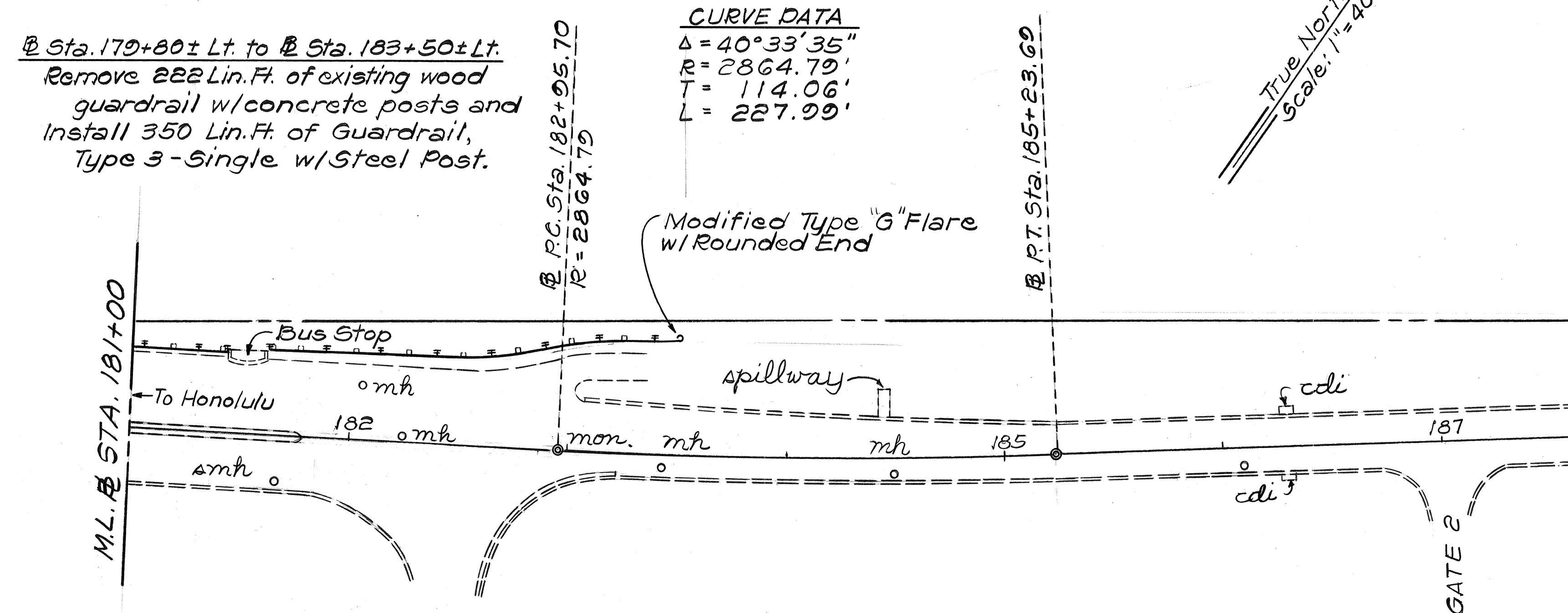
PLAN

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

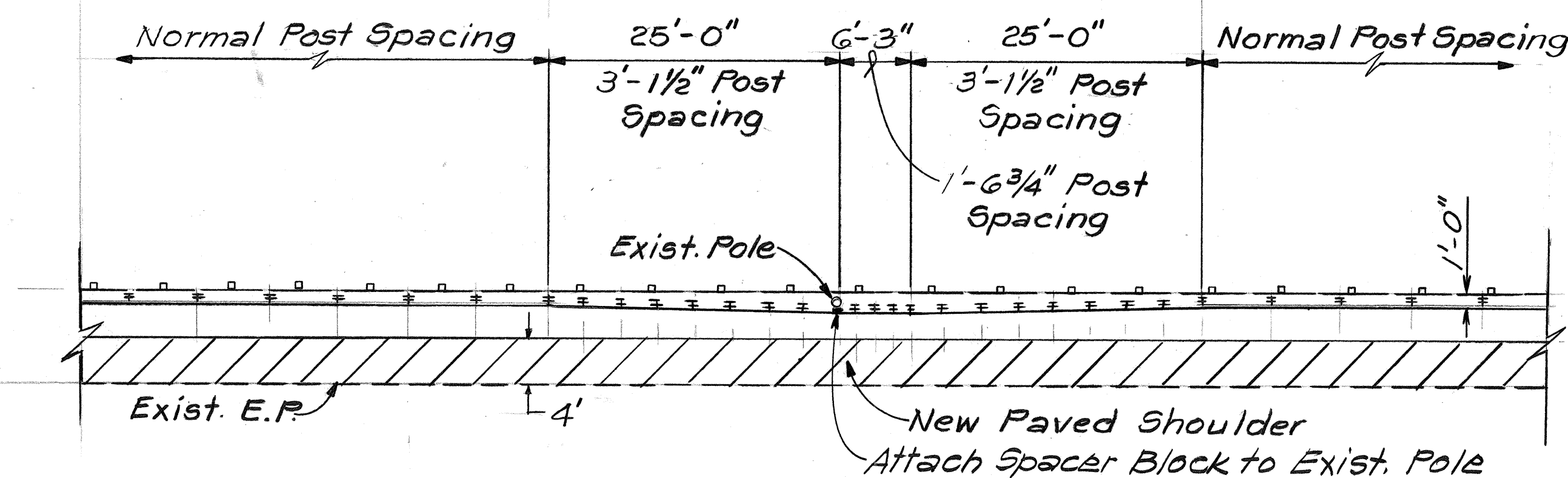
Scale: 1"=40' Date: Nov., 1987
SHEET No. 15 OF 20 SHEETS

PLAN
CONSTRUCTION AREA NO. 11
HALAWA HEIGHTS ROAD

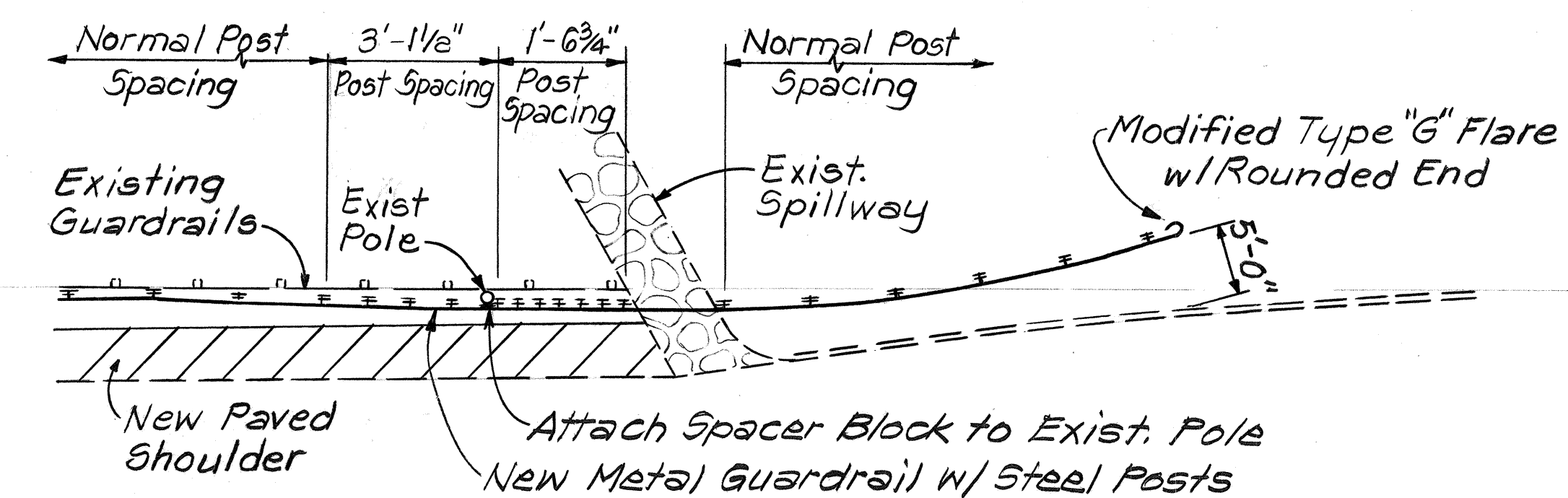
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	21	29



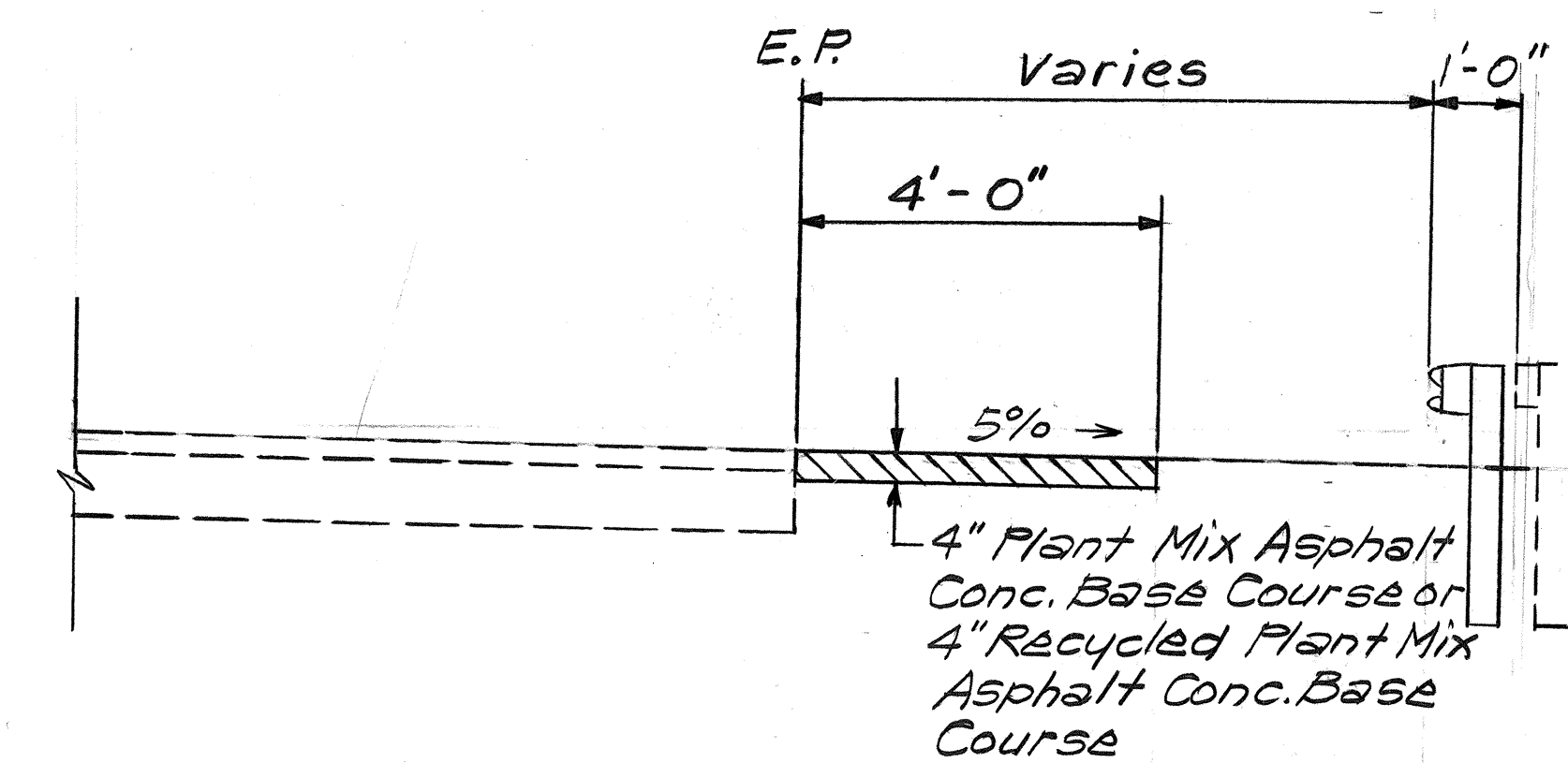
PLAN
 CONSTRUCTION AREA NO. 11



GUARDRAIL DETAIL AT UTILITY POLES
 @ STA. 168+65± Lt. & @ STA. 170+50± Lt.
 Scale: 1" = 10'-0"



GUARDRAIL DETAIL AT UTILITY POLE
 @ STA. 172+50± Lt.
 Scale: 1" = 10'-0"



TYPICAL SHOULDER SECTION
 Not to Scale

NOTE: New guardrail location shown 1'-0" in from existing guardrail is between @ Sta. 168+40± and 173+00± Lt. only. Rest of new guardrails shall be installed as shown on the plans.

HALAWA HEIGHTS ROAD

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PLAN AND DETAILS

GUARDRAIL & SHOULDER IMPROVEMENTS
 AT VARIOUS LOCATIONS ON OAHU
 PROJECT NO. HWY-0-01-88

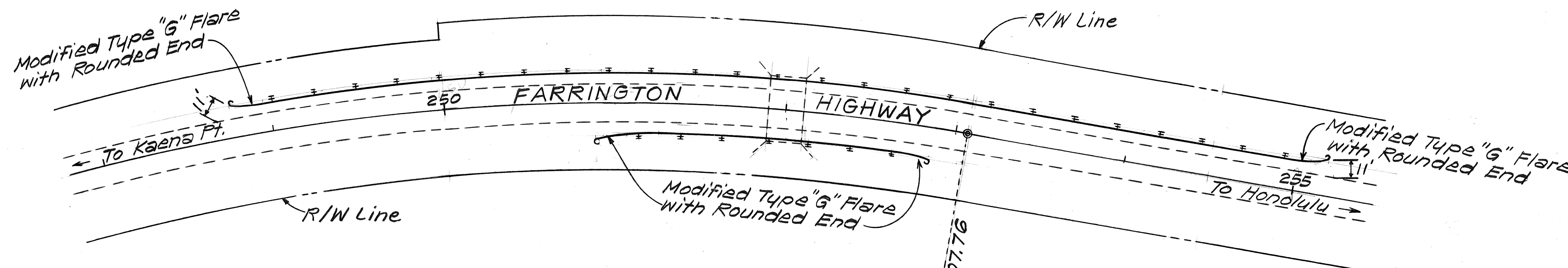
Scale: As Noted Date: Nov, 1987
 SHEET No. 16 OF 20 SHEETS

SURVEY PLOTTED BY	DATE
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-0-01-88	1988	22	29

Sta. 248+75 ± Lt. to # Sta. 255+20 ± Lt.
Install 645 Lin. Ft. of Guardrail, Type 3-
Single w/ Steel Post, 9/8 7' from E.P.

True North
Scale: 1" = 40'



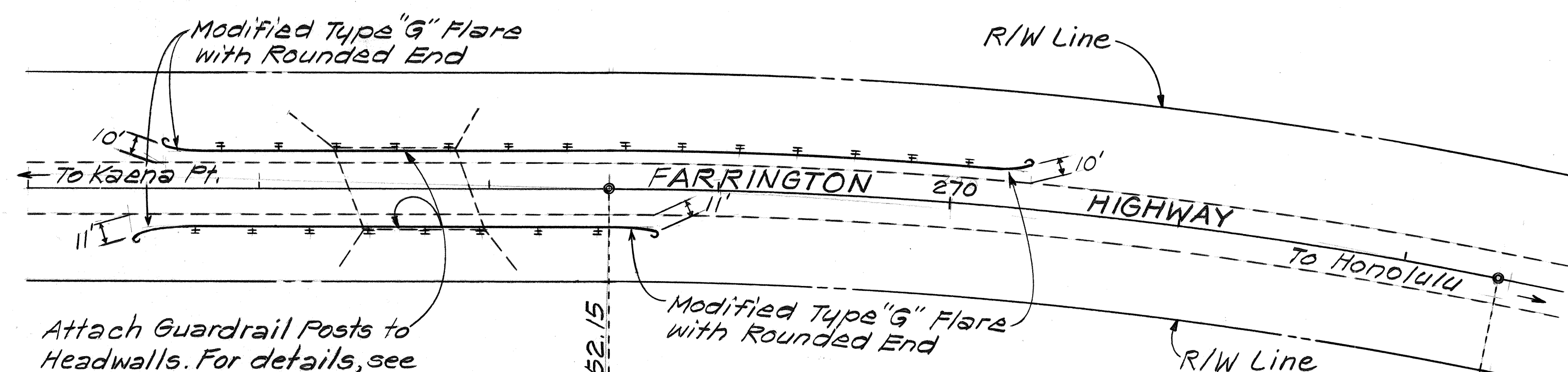
CURVE DATA

$\Delta = 35^\circ 05'$
 $R = 1,200.00'$
 $T = 379.32'$
 $Lc = 734.78'$

Sta. 250+90 ± Rt. to # Sta. 252+88 ± Rt.
Install 198 Lin. Ft. of Guardrail, Type 3-
Single w/ Steel Post, 9/8 7' from E.P.

Sta. 266+60 ± Lt. to # Sta. 267+03 ± Lt.
Sta. 268+18 ± Lt. to # Sta. 270+35 ± Lt.
Install 260 Lin. Ft. of Guardrail, Type 3-
Single w/ Steel Post, 9/8 6' from E.P.

Sta. 267+03 ± Lt. to # Sta. 268+18 ± Lt.
Install 115 Lin. Ft. of Guardrail, Type 3-
Single w/ Rub Rail on Steel Post.



Attach Guardrail Posts to
Headwalls. For details, see
Plan Sht. No. 26.

Sta. 266+45 ± Rt. to # Sta. 267+14 ± Rt.
Sta. 268+29 ± Rt. to # Sta. 268+75 ± Rt.
Install 115 Lin. Ft. of Guardrail, Type 3-
Single w/ Steel Post, 9/8 6'-6" from E.P.

Sta. 267+14 ± Rt. to # Sta. 268+29 ± Rt.
Install 115 Lin. Ft. of Guardrail, Type 3-
Single w/ Rub Rail on Steel Post.

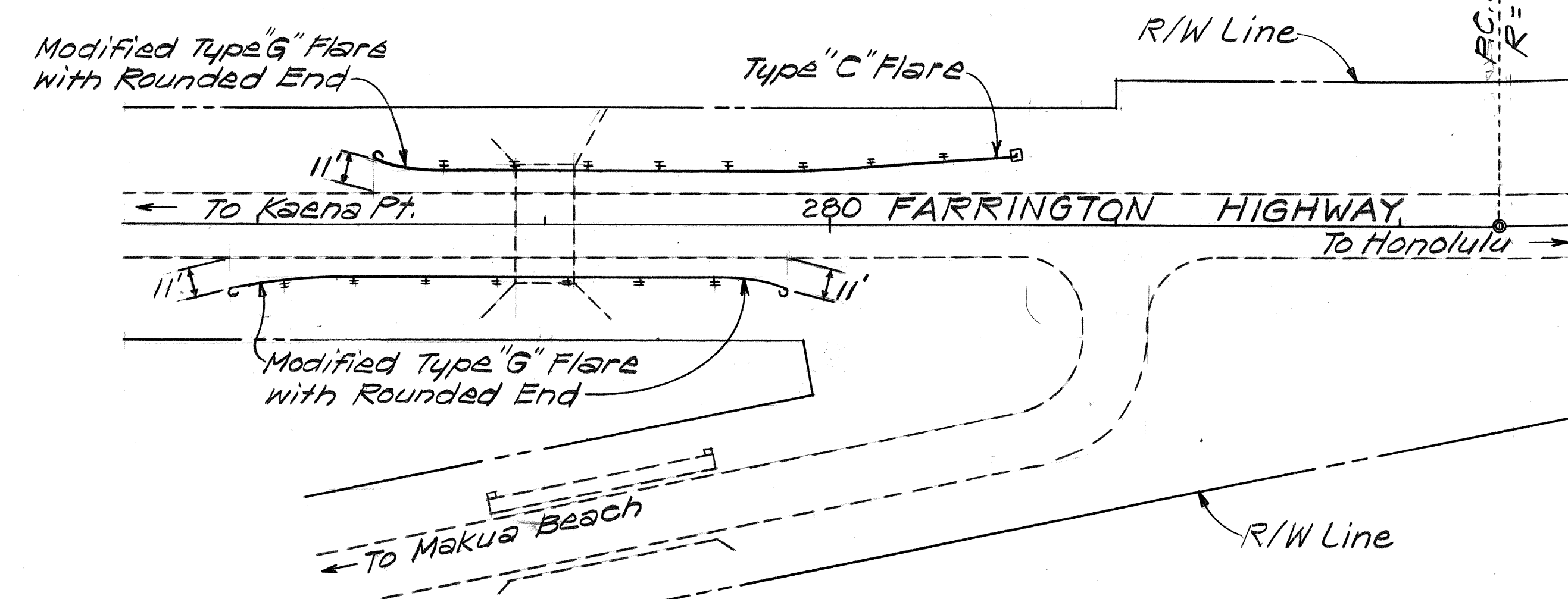
CURVE DATA

$\Delta = 11^\circ 05'$
 $R = 2,000.00'$
 $T = 194.95'$
 $Lc = 388.63'$

FARRINGTON HIGHWAY (MAKUA)

Sta. 278+40 ± Lt. to # Sta. 280+65 ± Lt.
Install 225 Lin. Ft. of Guardrail, Type 3-
Single w/ Steel Post, 9/8 7' from E.P.

True North
Scale: 1" = 40'



Sta. 277+90 ± Rt. to # Sta. 279+85 ± Rt.
Install 195 Lin. Ft. of Guardrail, Type 3-
Single w/ Steel Post, 9/8 7' from E.P.

PLAN
CONSTRUCTION AREA NO. 12

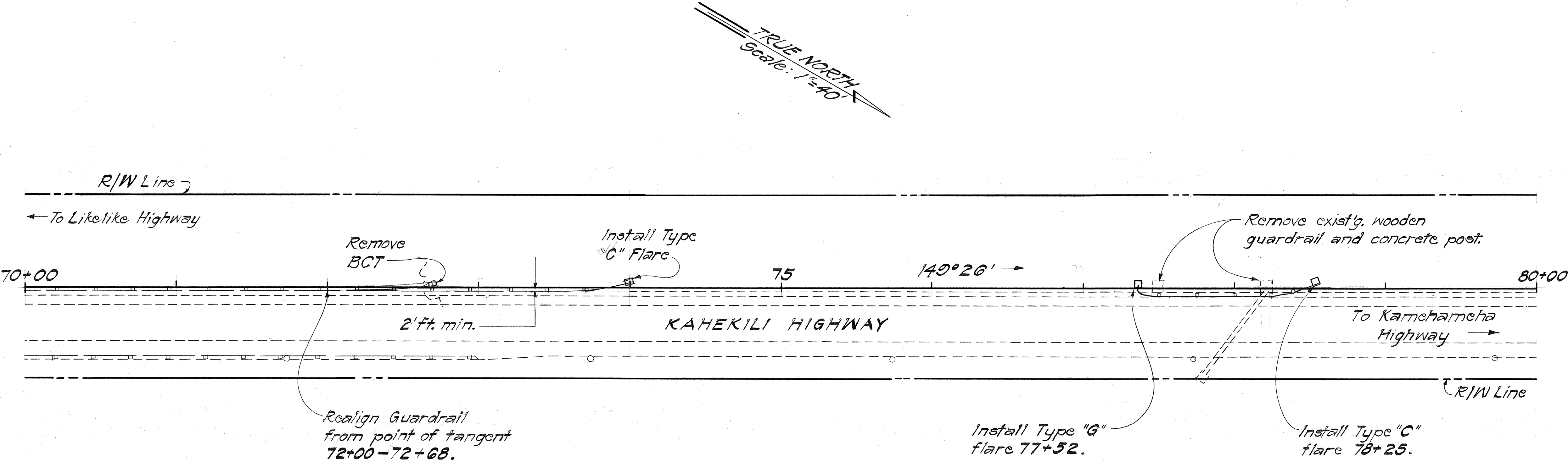
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

Scale: 1" = 40' Date: Nov, 1987
SHEET No. 17 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HAWY-0-01-88	1988	CO 22 S-1	29



PLAN

CONSTRUCTION AREA NO. 14

KAHEKILI HIGHWAY

THIS TRACING PREPARED DURING
"AS BUILT" POSTINGS.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU

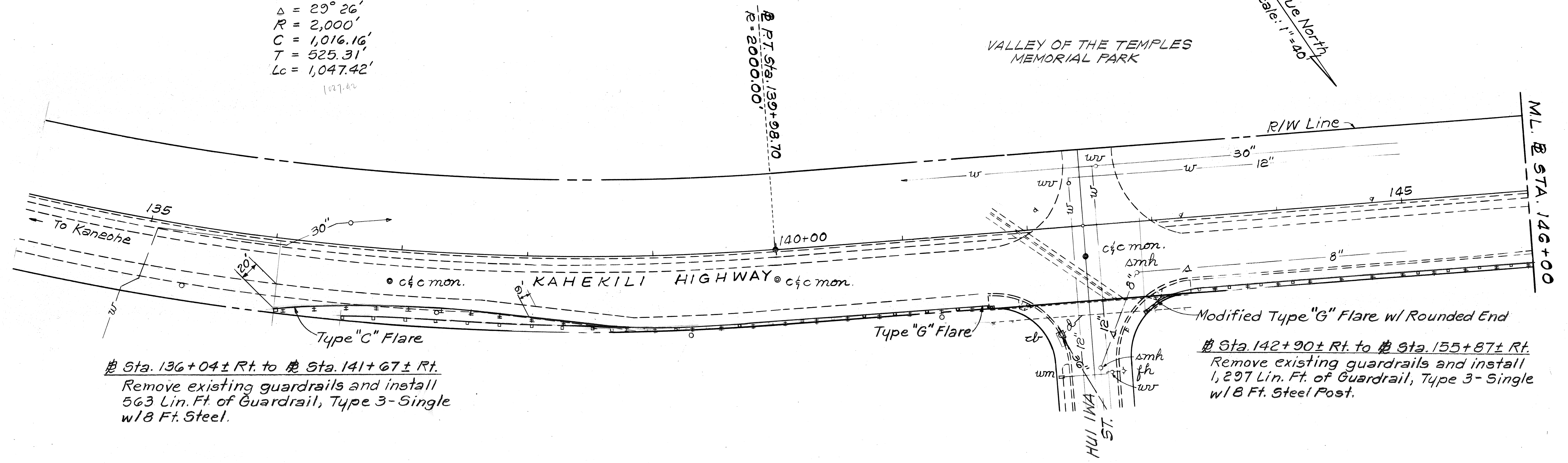
PROJECT NO. HWY-0-01-88
Scale: 1"=40' Date: June, 1990

SHEET No. 17A OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	23	29

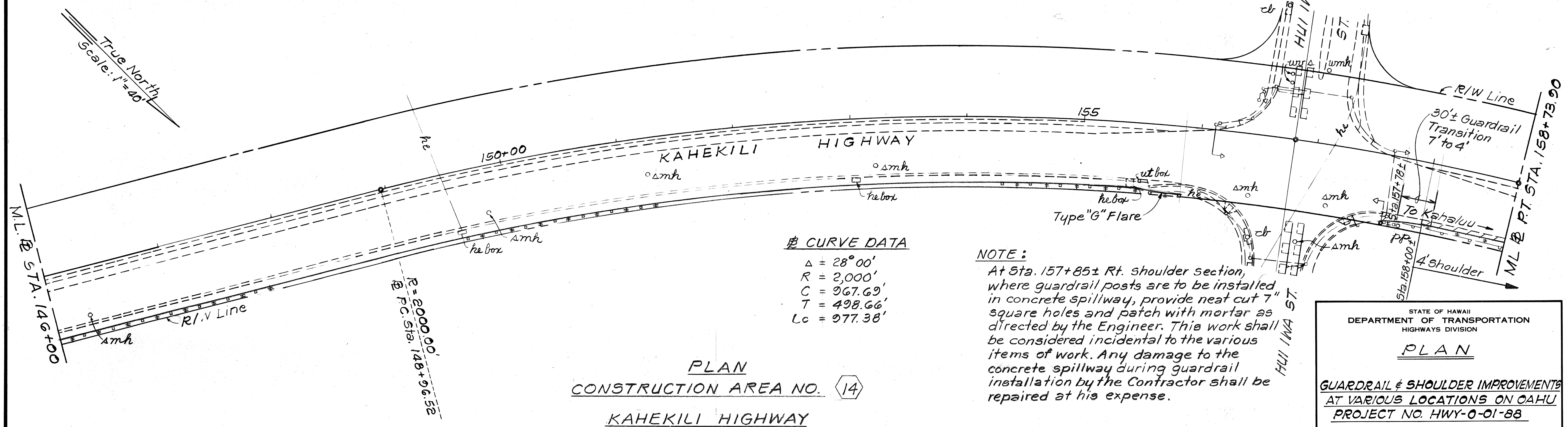
CURVE DATA
 $\Delta = 29^{\circ} 26'$
 $R = 2,000'$
 $C = 1,016.16'$
 $T = 525.31'$
 $L_c = 1,047.42'$
 1077.62

True North
 Scale: 1" = 40'



Sta. 136+04± Rt. to Sta. 141+67± Rt.
 Remove existing guardrails and install
 563 Lin. Ft. of Guardrail, Type 3- Single
 w/ 8 Ft. Steel.

Sta. 142+90± Rt. to Sta. 155+87± Rt.
 Remove existing guardrails and install
 1,297 Lin. Ft. of Guardrail, Type 3- Single
 w/ 8 Ft. Steel Post.



CURVE DATA
 $\Delta = 28^{\circ} 00'$
 $R = 2,000'$
 $C = 967.69'$
 $T = 498.66'$
 $L_c = 977.38'$

NOTE:
 At Sta. 157+85± Rt. Shoulder section, where guardrail posts are to be installed in concrete spillway, 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. Any damage to the concrete spillway during guardrail installation by the Contractor shall be repaired at his expense.

PLAN
CONSTRUCTION AREA NO. 14
KAHEKILI HIGHWAY

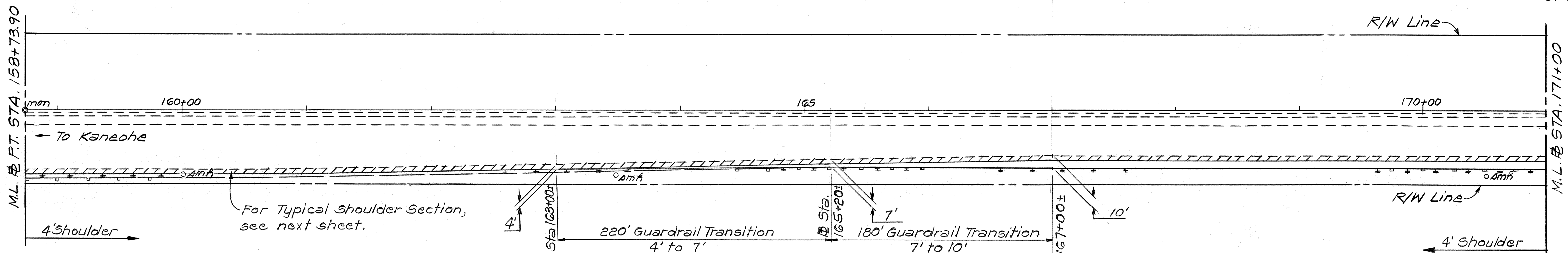
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PLAN

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88
 Scale: 1" = 40' Date: Nov. 1987
 SHEET No. 18 OF 20 SHEETS

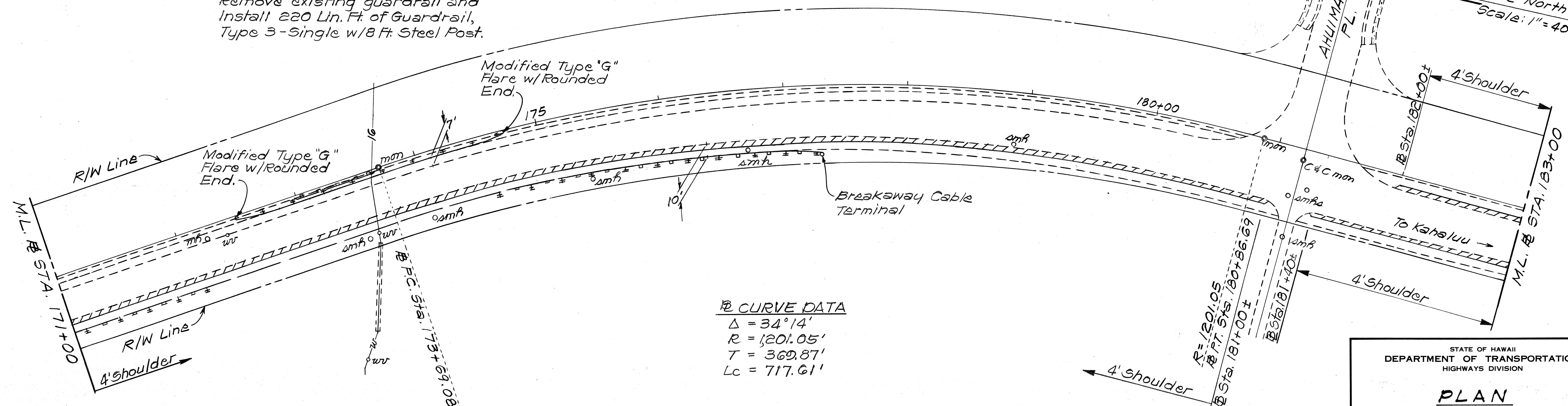
DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	24	29



From Sta. 157+84± Rt. to Sta. 177+30± Rt.
Remove existing guardrails and
Install 1,946 Lin. Ft. of Guardrail,
Type 3-Single w/8 Ft. Steel Post.

From Sta. 172+50± Lt. to Sta. 174+70± Lt.
Remove existing guardrail and
Install 220 Lin. Ft. of Guardrail,
Type 3-Single w/8 Ft. Steel Post.



CURVE DATA
 $\Delta = 34^{\circ}14'$
 $R = 1201.05'$
 $T = 369.87'$
 $L_c = 717.61'$

KAHEKILI HIGHWAY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

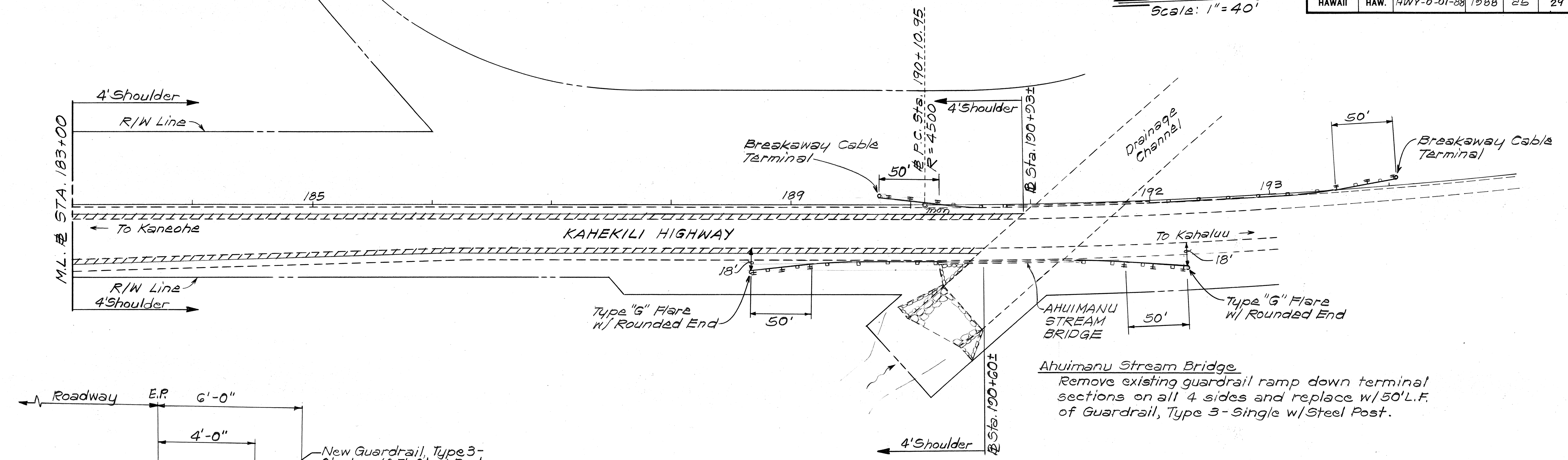
**GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88**

Scale: 1"=40' Date: Nov, 1987
SHEET NO. 19 OF 20 SHEETS

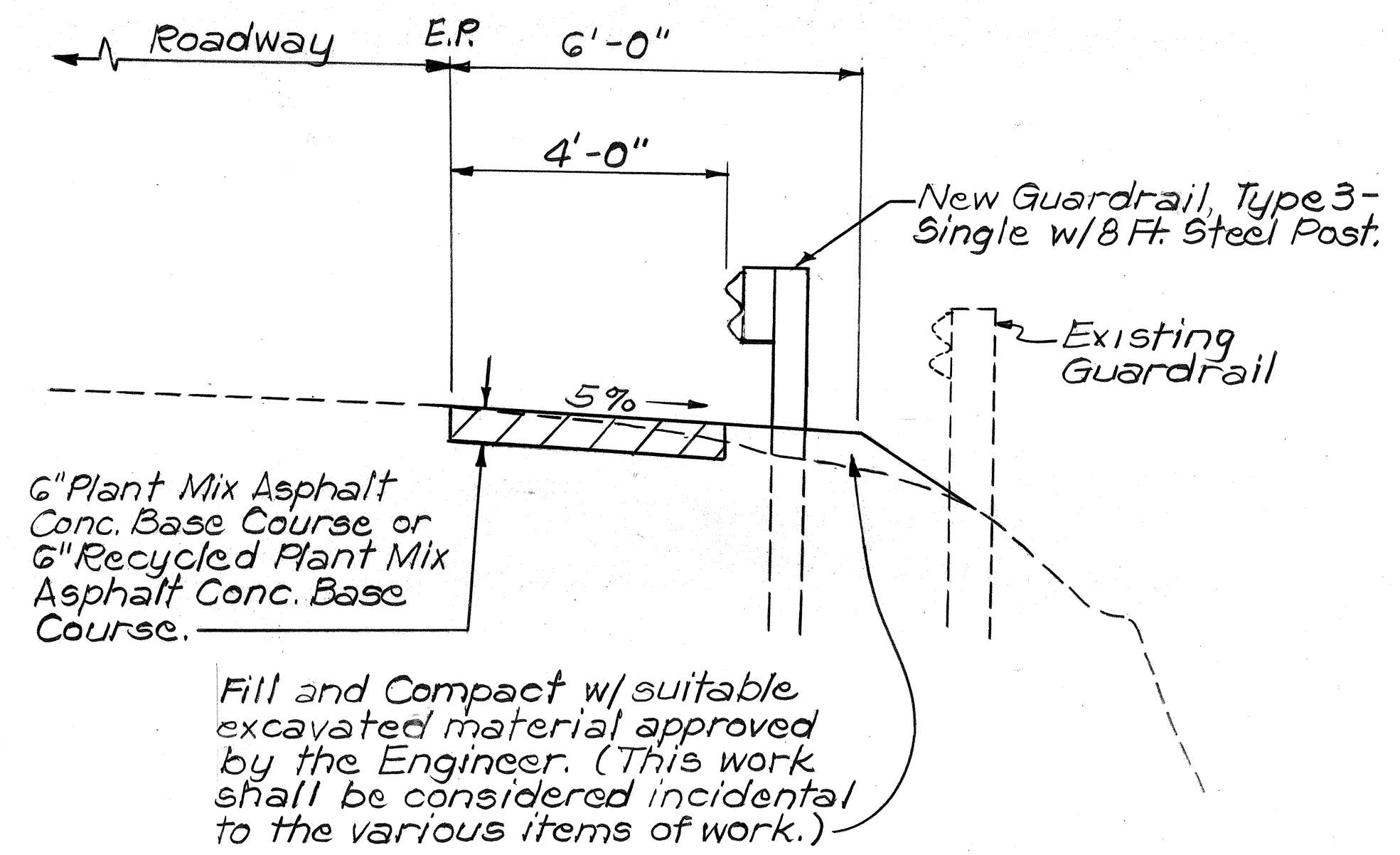
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-88	1988	25	29

True North
Scale: 1" = 40'



Ahuimanu Stream Bridge
Remove existing guardrail ramp down terminal sections on all 4 sides and replace w/ 50' L.F. of Guardrail, Type 3- Single w/ Steel Post.



TYPICAL SHOULDER SECTION
@ STA. 158+00± RT. to @ STA. 163+00± RT.
Scale: 1/2" = 1'-0"

KAHEKILI HIGHWAY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN AND TYPICAL SHOULDER SECTION

GUARDRAIL & SHOULDER IMPROVEMENTS
AT VARIOUS LOCATIONS ON OAHU
PROJECT NO. HWY-0-01-88

Scale: 1" = 40' Date: Nov., 1987
SHEET No. 20 OF 20 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	