

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	5	39

Sta. 25+30 ± Lt.
Construct: CRM Headwall and concrete
collar and extend culvert
(For Details, See Plan Sht. No. 36)
Install: 36" CSP, sht. "t" = 0.079"

Sta. 29+75± Lt. to Sta. 30+50± Lt.
Install Guardrail, Type 3-Single w/Steel Post,
50 Lin. Ft.

¢ CURVE DATA
 $\Delta = 23^{\circ}49'00''$
 $R = 1639.16'$
 $T = 345.67'$
 $C = 676.47'$
 $L = 681.36'$

Sta. 39+55± Lt. to # Sta. 43+10± Lt.
Install Guardrail, Type 3-Single w/Steel Post,
330 Lin. Ft.

CURVE DATA
 $\Delta = 63^{\circ}25'00''$
 $R = 337.09'$
 $T = 208.26'$
 $C = 354.35'$
 $L = 373.31'$

~~Sta. 39+75± Rt. to Sta. 42+25± Rt.
Install Guardrail, Type 3-Single w/Steel Post,
250 Lin. Ft.~~

CURVE DATA

$\Delta = 14^{\circ}14'00''$
 $R = 818.44'$
 $T = 102.18'$
 $C = 202.79'$
 $L = 203.31'$

Sta. 33+50 ± Rt.
Construct: CRM Headwall and concrete
collar and extend culvert
(For Details, See Plan Sht. No. 36)
Install: 18" CSP, sht. "t" = 0.079"

CURVE DATA
 $\Delta = 23^{\circ}49'00''$
 $R = 1639.16'$
 $T = 345.67'$
 $L = 676.47'$
 $E = 681.36'$

E.P. CURVE DATA
 $\Delta = 94^{\circ}49'13''$
 $R = 140.00'$
 $T = 152.30'$
 $C = 206.14'$
 $L = 231.69'$

E.P. CURVE DATA
 $\Delta = 84^{\circ}55'45''$
 $R = 180.00'$
 $T = 164.74'$
 $C = 243.05'$
 $L = 266.81'$

E.P. CURVE DATA
 $\Delta = 47^{\circ}04'09''$
 $R = 240.00'$
 $T = 104.53'$
 $C = 191.67'$
 $L = 197.16'$

LEGEND FOR
AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

Sta. 30+35 ± Rt.
Construct: CRM Headwall and concrete
collar and extend culvert
(For Details, See Plan Sht. No. 36)
Install: 18" CSP, sht. "t" = 0.079"

Sta. 30+90± Lt. to Sta. 36+90± Lt.
Install Guardrail, Type 3-Single w/Steel Post,
575 Lin. Ft.

—Widen Tractor Crossing. This work shall be considered incidental to paved shoulder. For Details, See Sht. No. 4

Modified Type "G" Flare
with Rounded End

Origin of Azimuth: "Puu Pane" Δ 300 Lin. Ft.
Coordinates referred to: "Kailua" Δ

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

HALEAKALA HIGHWAY

Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction

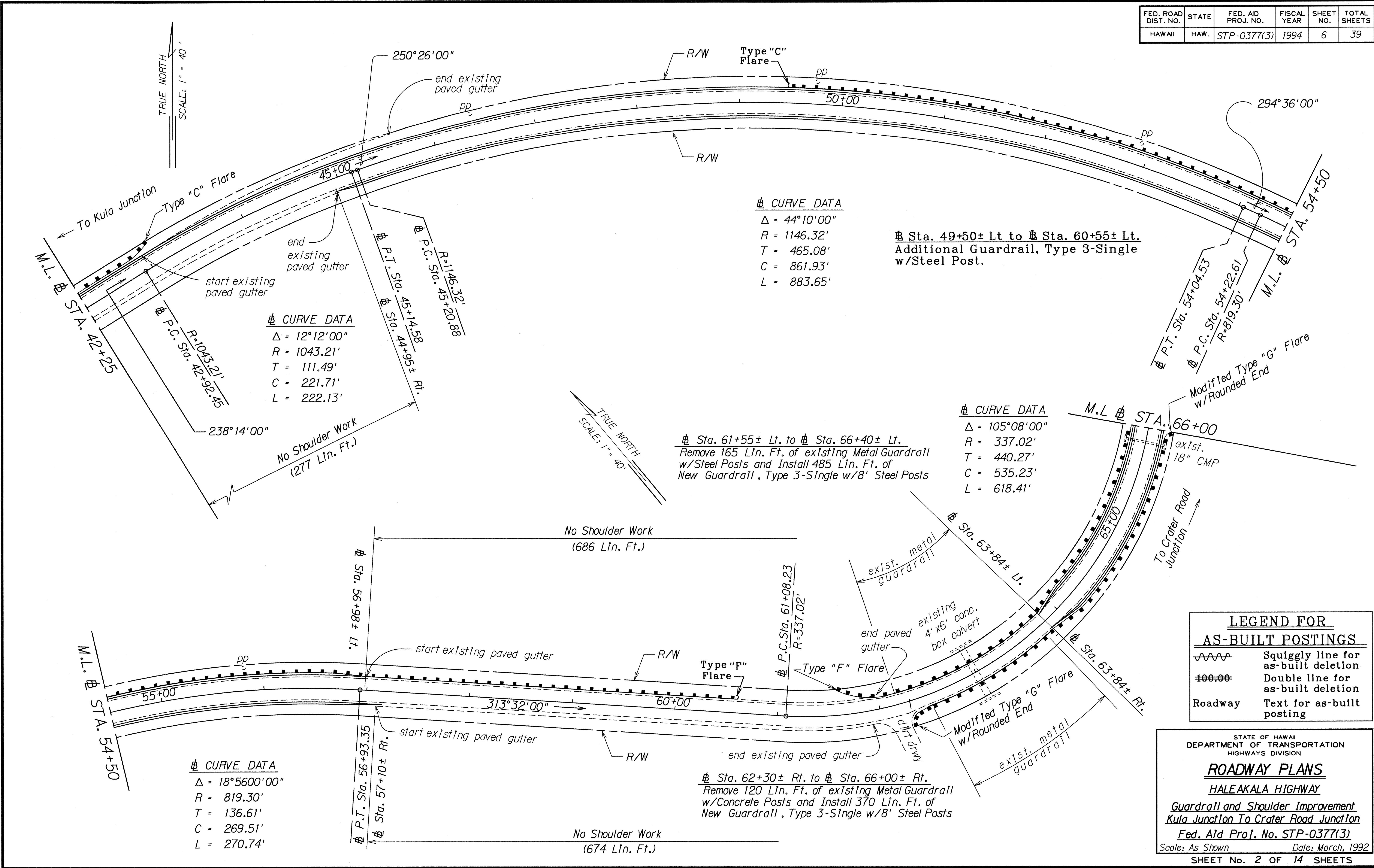
Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown Date: March, 1992

SHEET No. 1 of 14 SHEETS

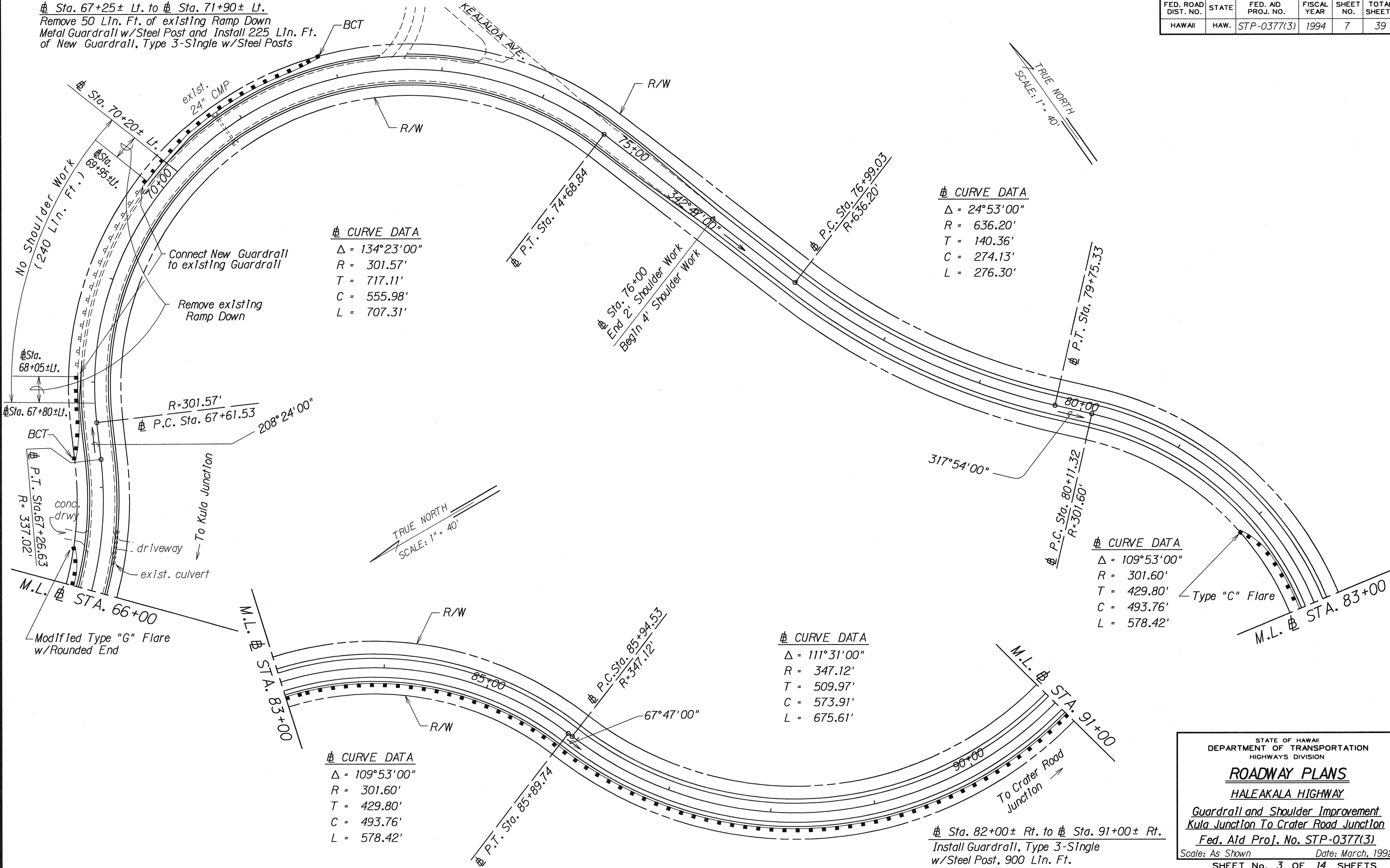
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	6	39

DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTED BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
N.	_____



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	7	39

Sta. 67+25± Lt. to Sta. 71+90± Lt.
Remove 50 Lin. Ft. of existing Ramp Down
Metal Guardrail w/Steel Post and Install 225 Lin. Ft.
of New Guardrail, Type 3-Single w/Steel Posts



SURVEY PLOTTED BY	DATE
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DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

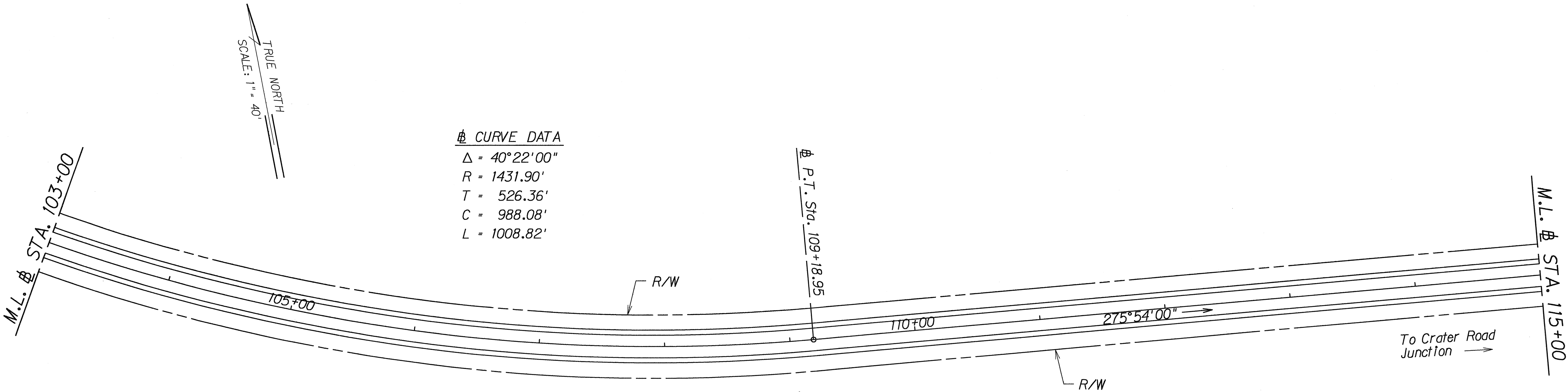
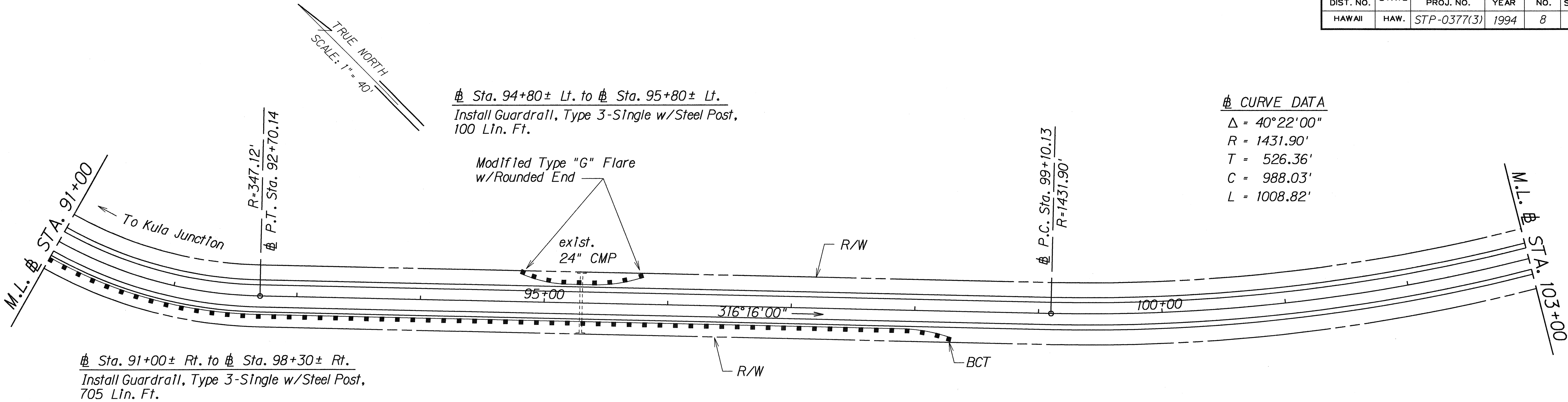
HALEAKALA HIGHWAY

Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction
Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown
Date: March, 1992

SHEET No. 3 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	8	39



DATE	_____
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NOTE BOOK	_____
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

HALEAKALA HIGHWAY

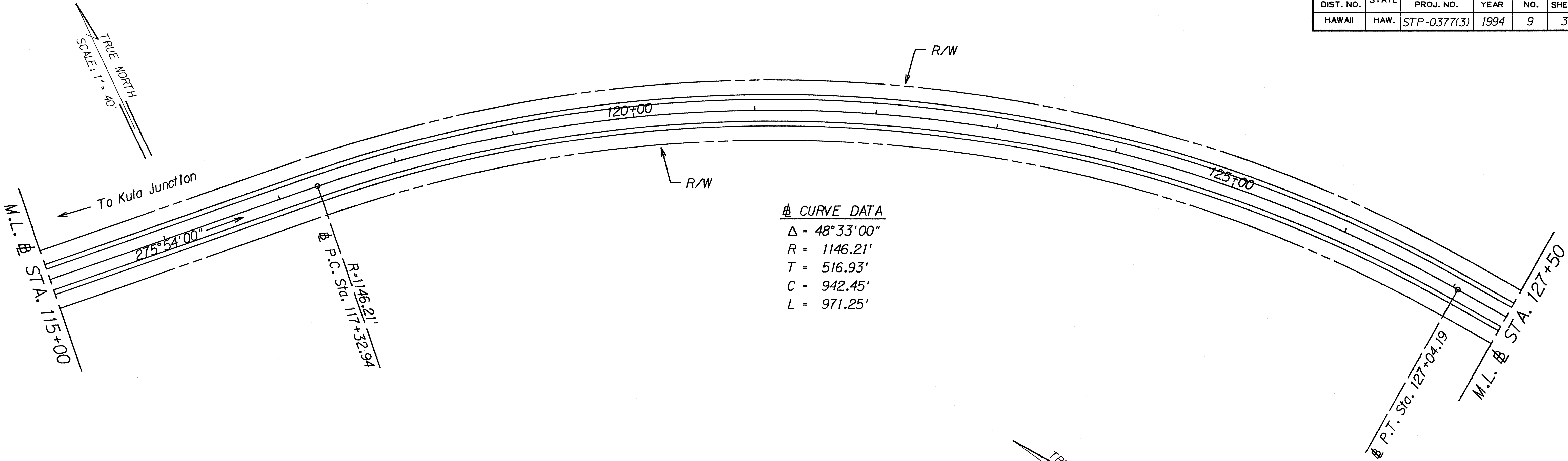
Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction

Fed. Aid Proj. No. STP-0377(3)

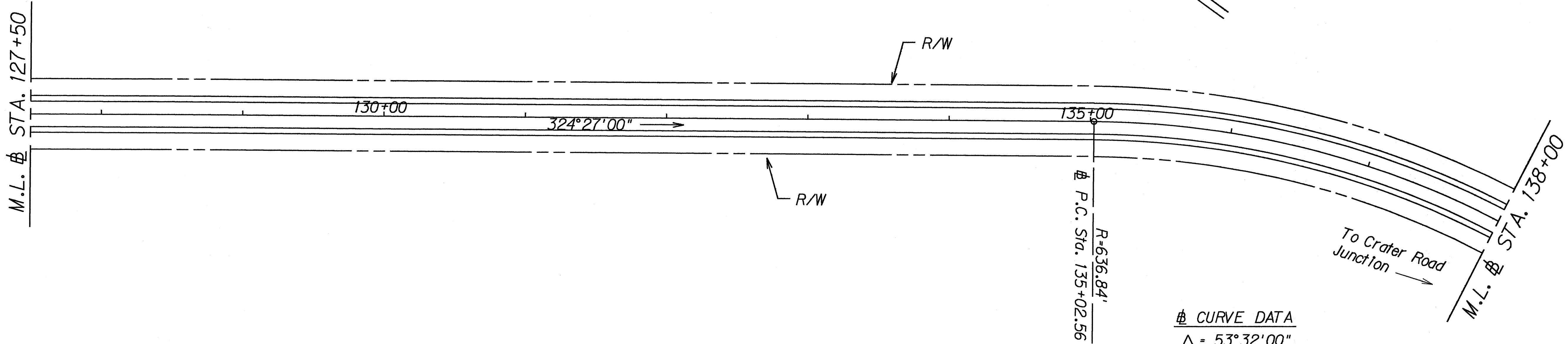
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SHEET No. 4 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	9	39



CURVE DATA
 $\Delta = 48^{\circ}33'00''$
 $R = 1146.21'$
 $T = 516.93'$
 $C = 942.45'$
 $L = 971.25'$



CURVE DATA
 $\Delta = 53^{\circ}32'00''$
 $R = 636.84'$
 $T = 321.23'$
 $C = 573.61'$
 $L = 595.02'$

ORIGINAL PLAN	DATE
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QUANTITIES BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

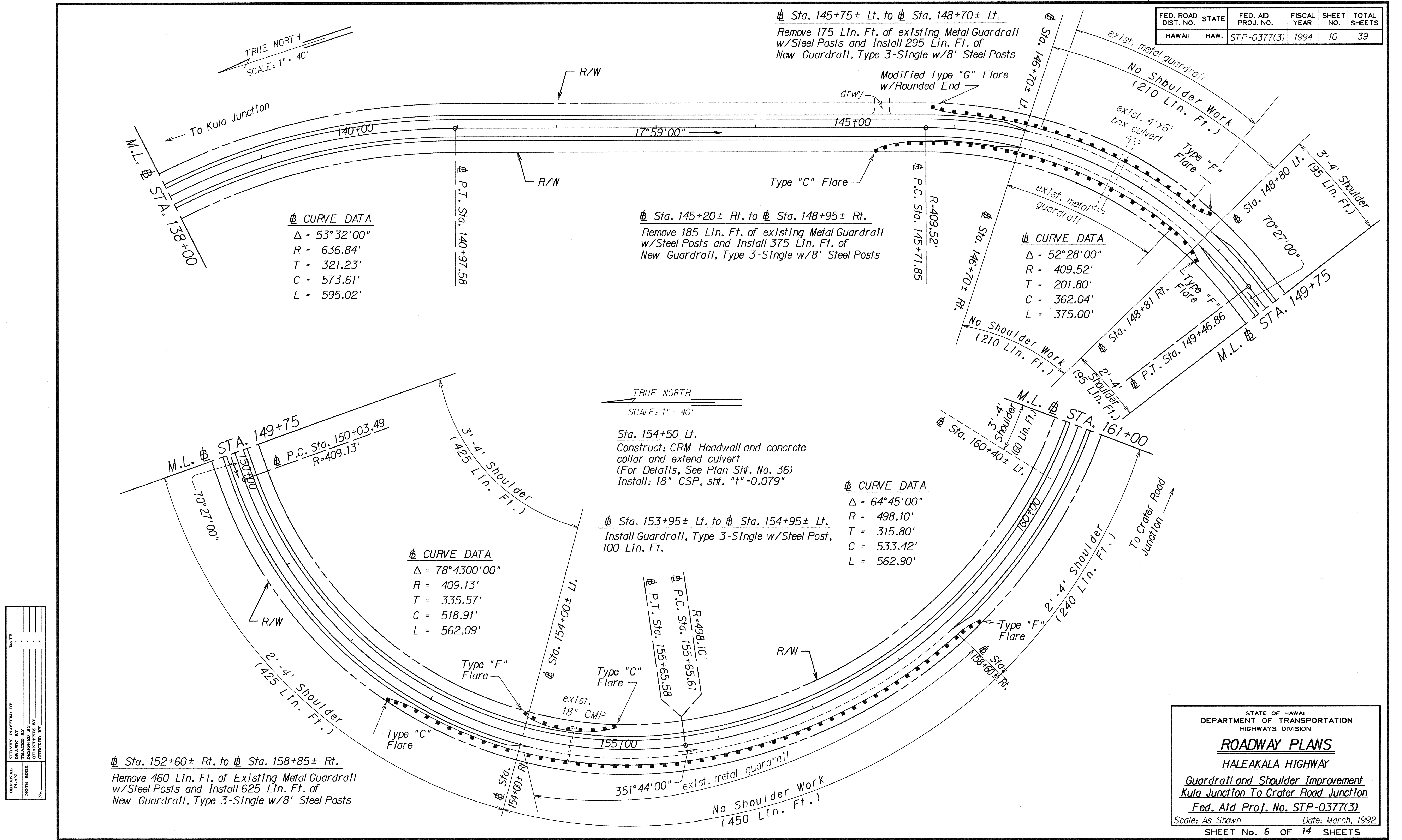
HALEAKALA HIGHWAY

Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction
Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown
Date: March, 1992

SHEET No. 5 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	10	39



SURVEY PLOTTED BY	DATE
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ORIGINAL PLAN	
NOTE BOOK	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

HALEAKALA HIGHWAY

Guardrail and Shoulder Improvement

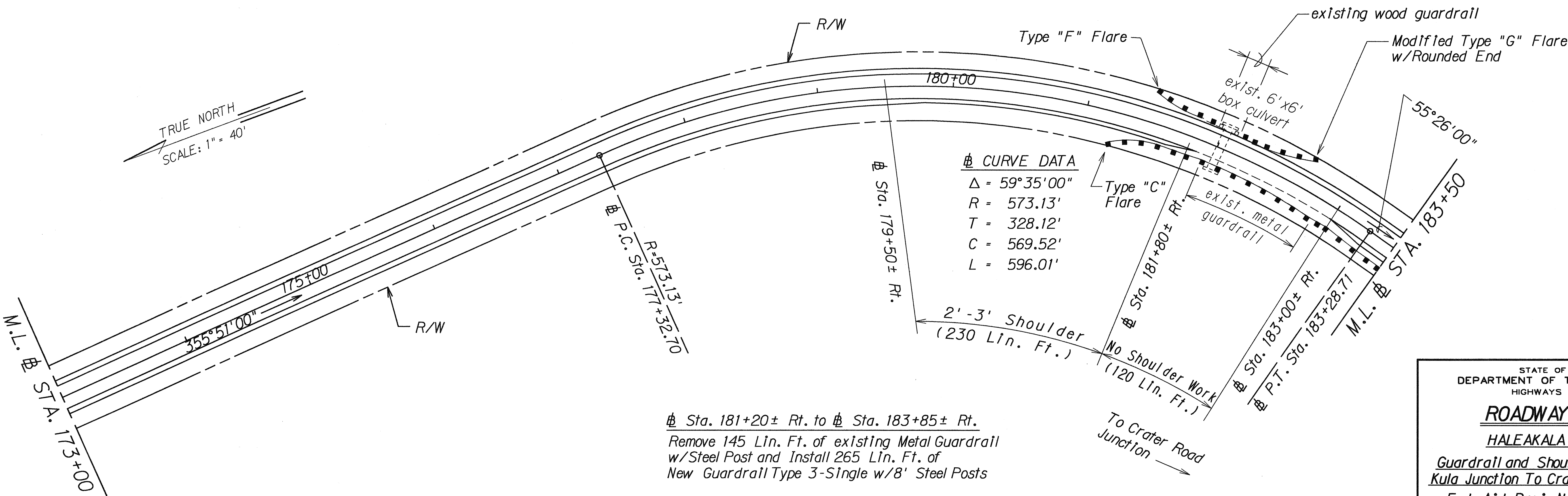
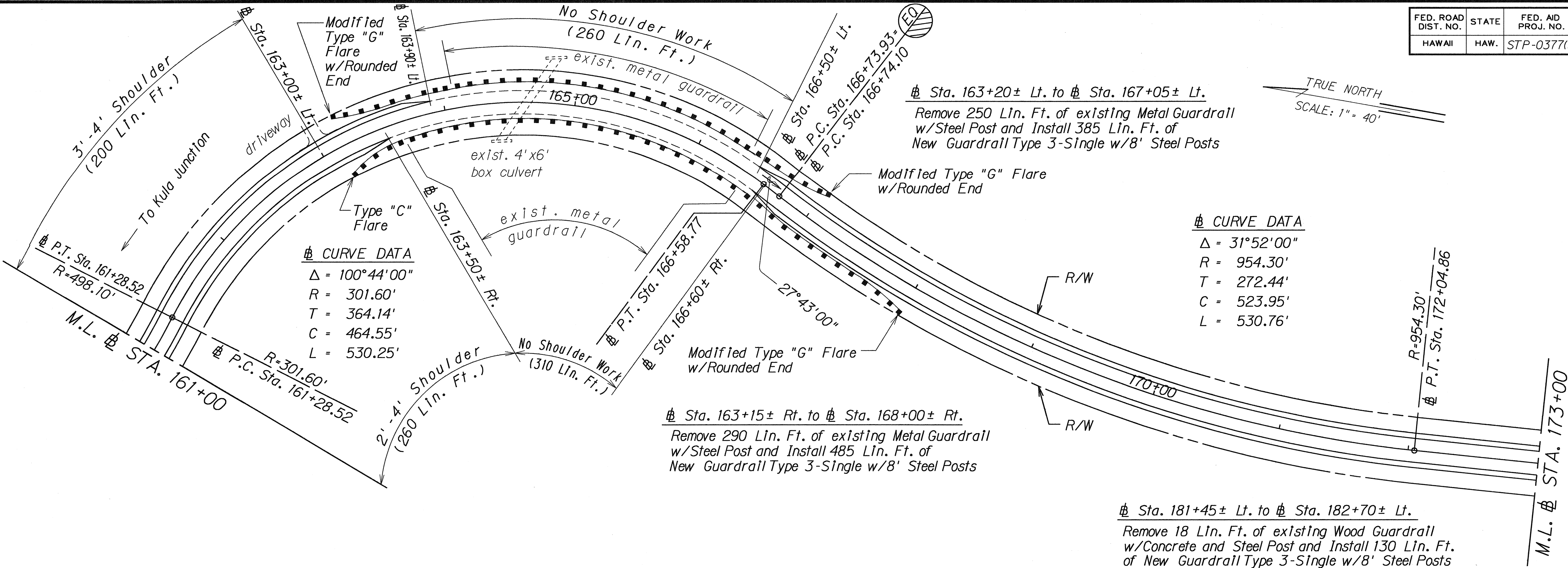
Kula Junction To Crater Road Junction

Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown Date: March, 1992

SHEET No. 6 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	11	39



DATE	_____
DESIGNED BY	_____
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NOTED BY	_____
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ORIGINAL PLAN	_____
PLAN	_____
NOTE BOOK	_____
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

HALEAKALA HIGHWAY

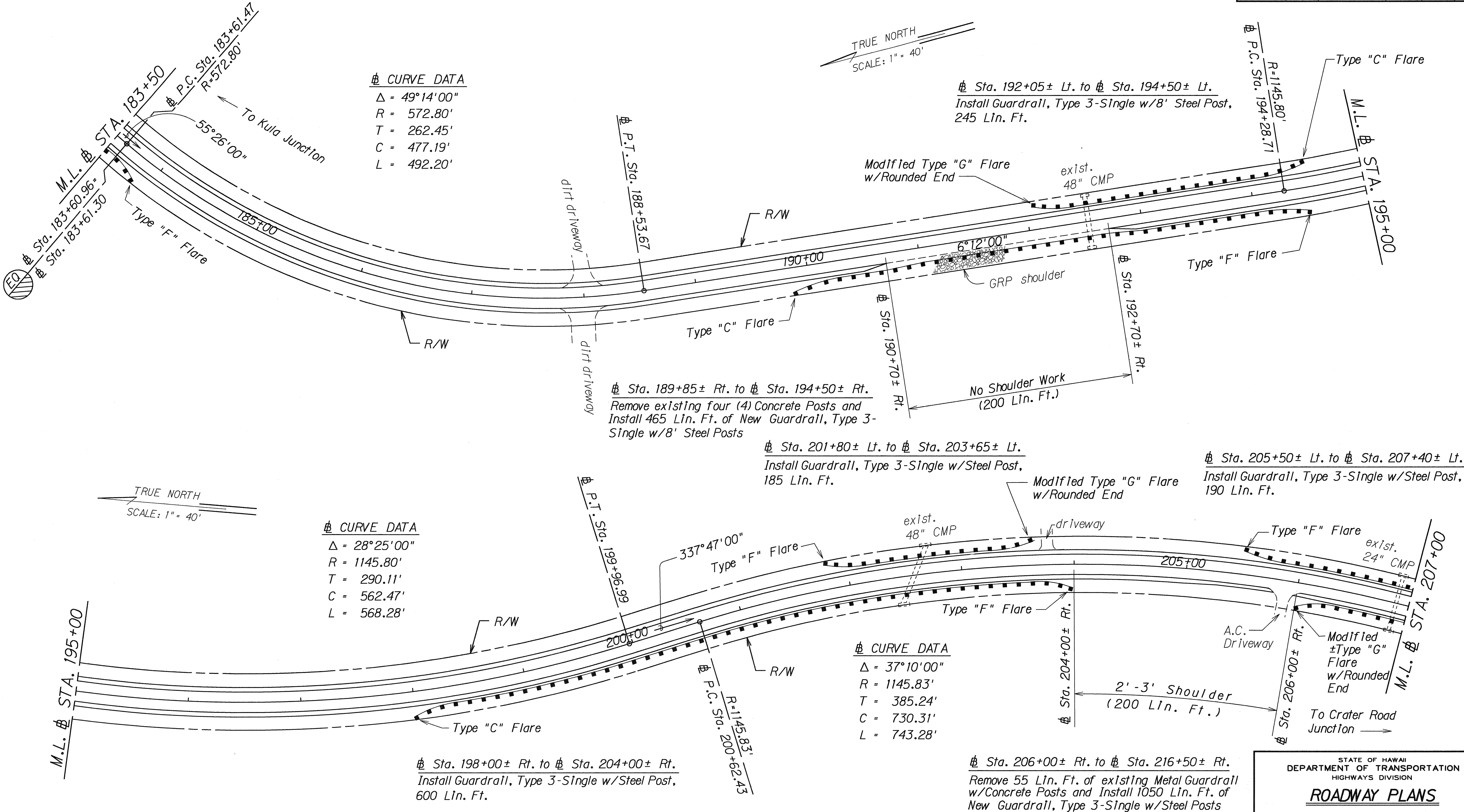
Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction

Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown Date: March, 1992

SHEET No. 7 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	12	39



SURVEY PLOTTED BY	DATE
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ORIGINAL PLAN	
NOTE BOOK	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

HALEAKALA HIGHWAY

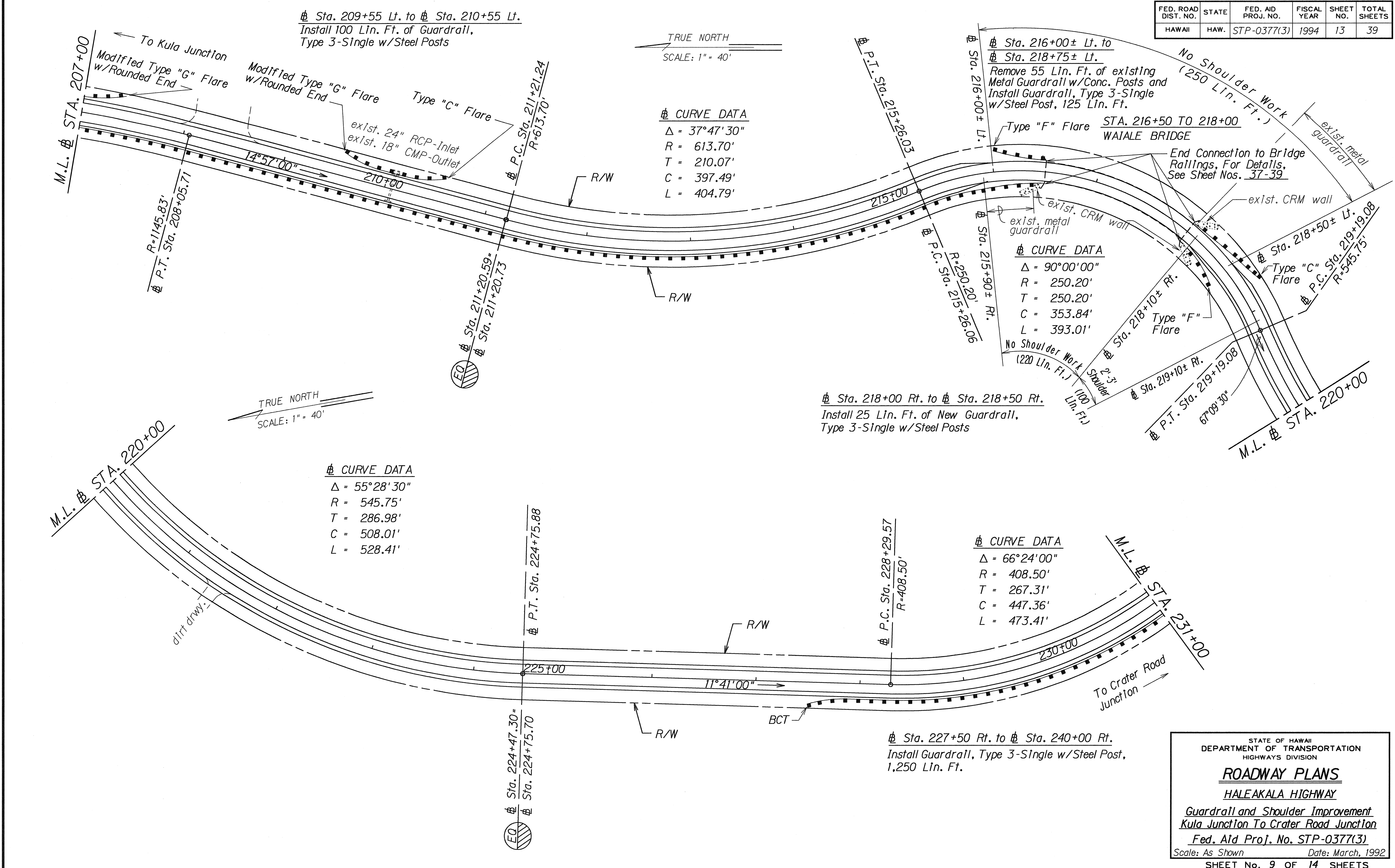
Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction

Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown Date: March, 1992

SHEET No. 8 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	13	39



SURVEY PLOTTED BY	DATE
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QUANTITIES BY	
CHECKED BY	

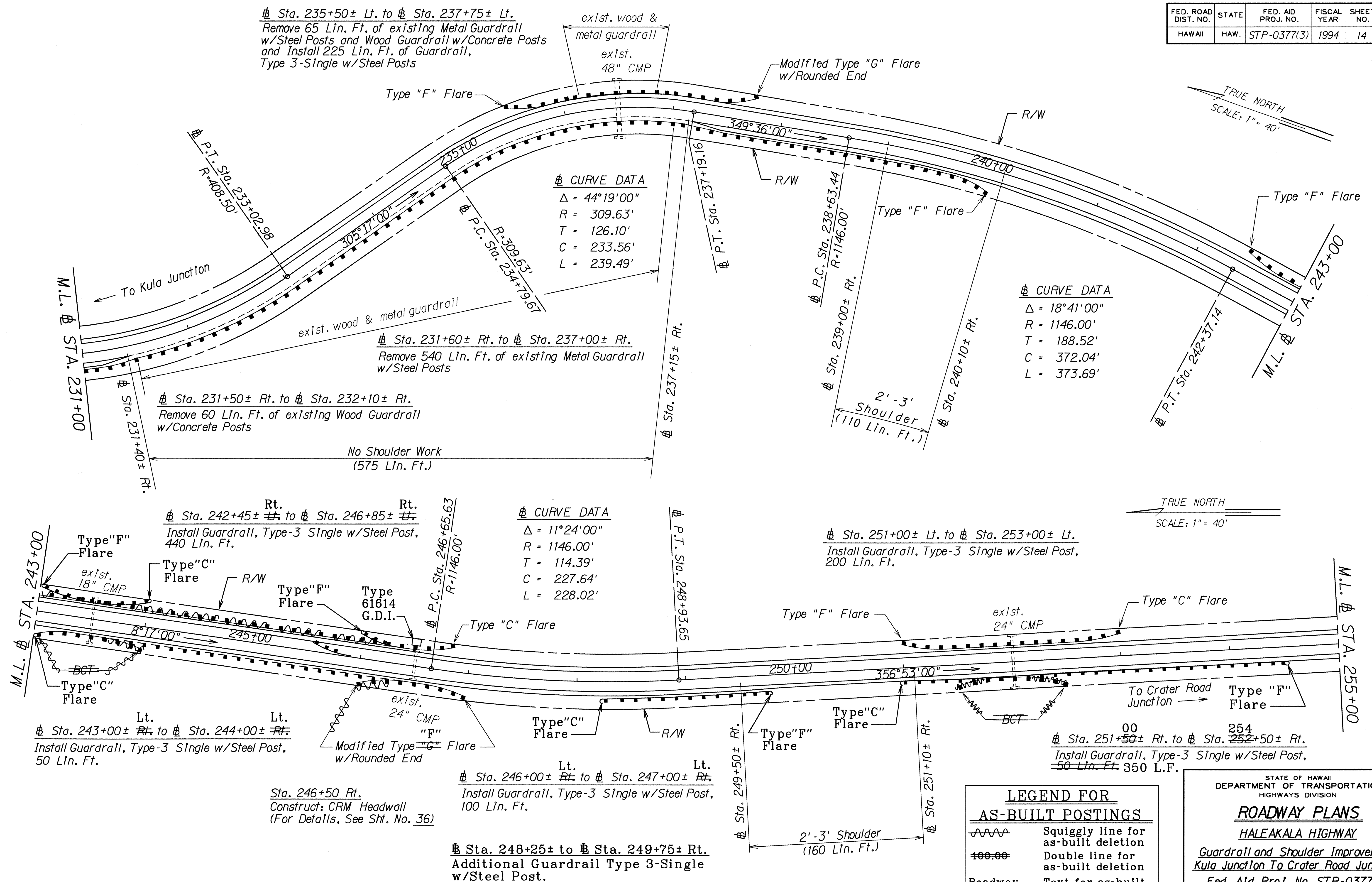
ORIGINAL PLAN	N.
NOTE BOOK	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS
HALEAKALA HIGHWAY
Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction
Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown Date: March, 1992
SHEET No. 9 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	14	39



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

ROADWAY PLANS

HALEAKALA HIGHWAY

Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction
Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown Date: March, 1992

SHEET NO. 10 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	15	39

Sta. 264+50± Lt. to Sta. 266+45± Lt.
Remove 134 Lin. Ft. of existing Metal Guardrail w/Steel Posts and Install 195 Lin. Ft. of New Metal Guardrail w/8" Steel Posts

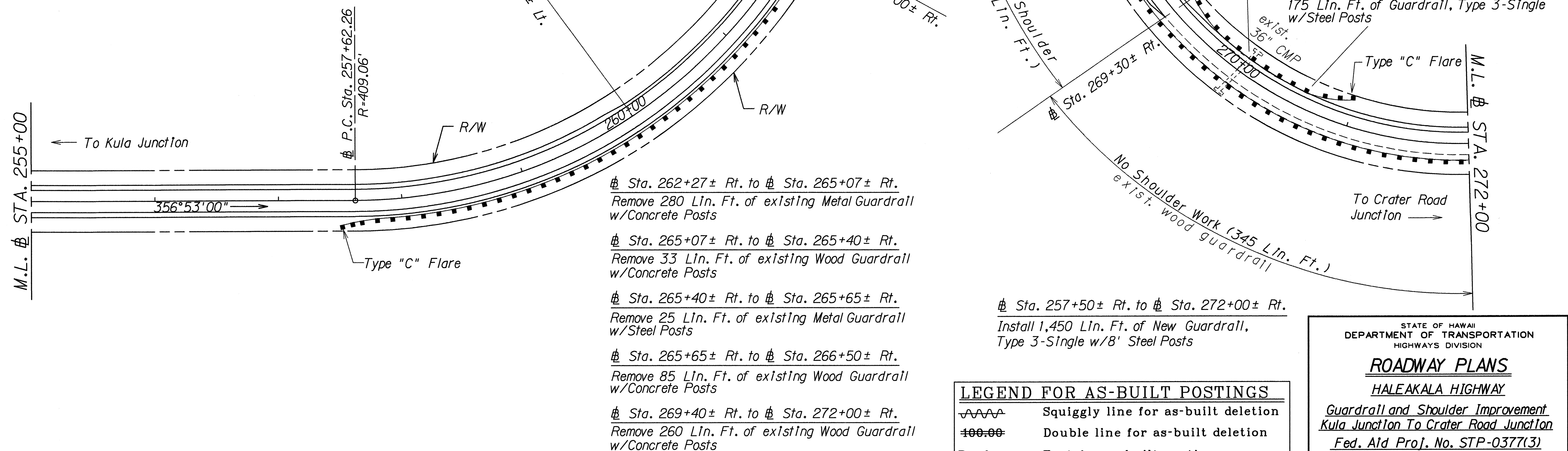
CURVE DATA
 $\Delta = 170^\circ 13' 00''$
 $R = 81.86'$
 $T = 956.49'$
 $C = 163.12'$
 $L = 243.19'$

TRUE NORTH
SCALE: 1" = 40'

Sta. 262+73± Lt.
Construct: CRM Headwall and concrete collar and extend culvert.
(For Details, See Plan Sht. No. 36)
Install: 36" CSP, sht. "t"=0.079"

CURVE DATA
 $\Delta = 71^\circ 36' 00''$
 $R = 409.06'$
 $T = 295.02'$
 $C = 478.57'$
 $L = 511.18'$

CURVE DATA
 $\Delta = 138^\circ 39' 00''$
 $R = 302.37'$
 $T = 801.26'$
 $C = 565.79'$
 $L = 731.70'$



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS
HALEAKALA HIGHWAY

Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction
Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown Date: March, 1992

SHEET No. 11 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	16	39

Sta. 272+00± Rt. to Sta. 273+40± Rt.
Remove 140 Lin. Ft. of existing Wood Guardrail w/Concrete Posts

Sta. 273+40± Rt. to Sta. 273+95± Rt.
Remove 55 Lin. Ft. of existing Metal Guardrail w/Steel Posts

Sta. 273+95± Rt. to Sta. 274+28± Rt.
Remove 33 Lin. Ft. of existing Wood Guardrail w/Concrete Posts

Sta. 281+95± Rt. to Sta. 282+95± Rt.
Remove 100 Lin. Ft. of existing wood guardrail w/Concrete Posts

Sta. 280+75± & Sta. 282+75±
Reconstruct Root Damaged A.C. Pavement. All work will be paid for by the Sq. Ft. under Item 421.0100 - Paved Shoulder. The exact limits and locations shall be determined in the field by the Engineer. For Details, See Sht. No. 4

CURVE DATA
 $\Delta = 69^\circ 44' 00''$
 $R = 301.54'$
 $T = 210.10'$
 $C = 344.76'$
 $L = 367.00'$

Sta. 272+00± Rt. to Sta. 284+00± Rt.
Install 1,200 Lin. Ft. of Guardrail, Type 3-Single w/8' Steel Posts

Sta. 276+80± Rt. to Sta. 277+65± Rt.
Remove 85 Lin. Ft. of existing Metal Guardrail w/Concrete Posts

Sta. 277+65± Rt. to Sta. 278+70± Rt.
Remove 105 Lin. Ft. of existing Wood Guardrail w/Steel & Concrete Posts

Sta. 278+70± Rt. to Sta. 279+75± Rt.
Remove 105 Lin. Ft. of existing Metal Guardrail w/Steel Posts

Sta. 294+40 Lt.
Construct CRM Headwall and concrete collar and extend culvert
(For Details See Plan Sht. No. 36)
Install: 18" CSP, sht. "t" = 0.079"

Sta. 294+02± Lt. to Sta. 295+15± Lt.
Remove 12.5 Lin. Ft. of existing Metal Guardrail w/Steel Posts and Install 113 Lin. Ft. of New Guardrail, Type 3-Single w/Steel Posts

Sta. 294+10± Rt. to Sta. 295+20± Rt.
Remove 12.5 Lin. Ft. of existing metal guardrail and Install 48 Lin. Ft. of Guardrail, Type 3-Single w/Rubrail on Steel Posts and 62 Lin. Ft. of Guardrail, Type 3-Single w/Steel Posts

Sta. 286+40 Lt.
Construct CRM Headwall and concrete collar and extend culvert
(For Details, See Plan Sht. No. 36)
Grade roadside swale to drain towards Inlet.
Install: 18" CSP, sht. "t" = 0.079"

Sta. 285+90± Lt. to Sta. 286+90± Lt.
Install Guardrail, Type 3-Single w/Steel Posts, 100 Lin. Ft.

Sta. 290+40± Lt. to Sta. 291+40± Lt.
Install Guardrail, Type 3-Single w/Steel Posts, 100 Lin. Ft.

CURVE DATA
 $\Delta = 45^\circ 56' 00''$
 $R = 572.53'$
 $T = 242.63'$
 $C = 446.80'$
 $L = 458.99'$

Sta. 285+00
Type "F" Flare
Type "C" Flare
M.L.

Sta. 286+00± Rt. to Sta. 287+50± Rt.
Install Guardrail, Type 3-Single w/Steel Posts, 150 Lin. Ft.

Modified Type "G" Flare w/Rounded End

Sta. 289+45± Rt. to Sta. 291+70± Rt.
Install 75 Lin. Ft. of Guardrail, Type 3-Single w/Rubrail on Steel Posts and 150 Lin. Ft. of Guardrail, Type 3-Single w/Steel Posts

Modified Type "G" Flare w/Rounded End

Sta. 294+15± Rt.
Modified Type "G" Flare w/Rounded End
No Shoulder Work (50 Lin. Ft.)

Sta. 295+10± Rt.
Modified Type "G" Flare w/Rounded End
No Shoulder Work (90 Lin. Ft.)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

HALEAKALA HIGHWAY

Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction

Fed. Aid Proj. No. STP-0377(3)

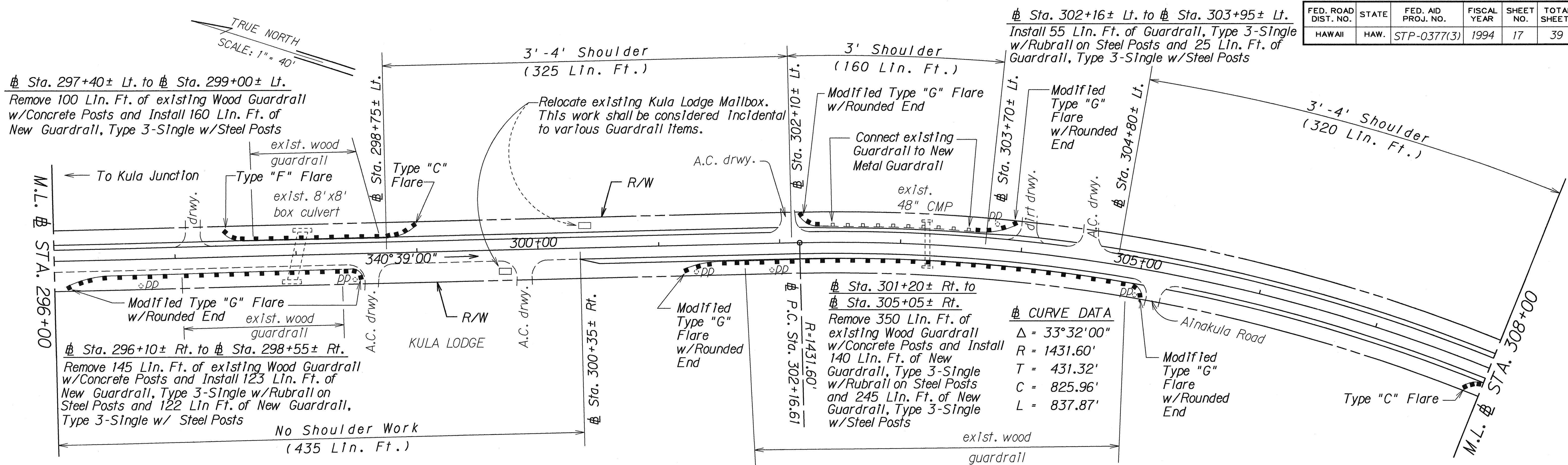
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SHEET No. 12 OF 14 SHEETS

SURVEY PLOTTED BY	DATE
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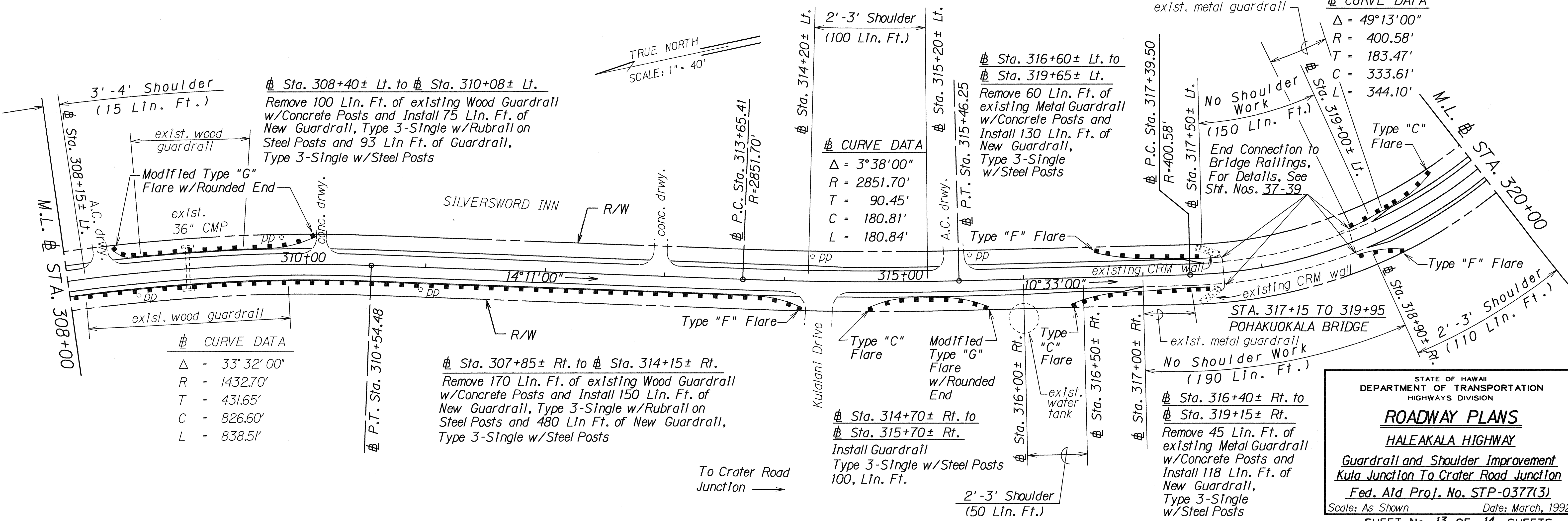
ORIGINAL PLAN	
NOTE BOOK	
DATE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	17	39



CURVE DATA

$\Delta = 33^\circ 32' 00''$
$R = 1431.60'$
$T = 431.32'$
$C = 825.96'$
$L = 837.87'$



CURVE DATA

$\Delta = 3^\circ 38' 00''$
$R = 2851.70'$
$T = 90.45'$
$C = 180.81'$
$L = 180.84'$

CURVE DATA

$\Delta = 49^\circ 13' 00''$
$R = 400.58'$
$T = 183.47'$
$C = 333.61'$
$L = 344.10'$

SURVEY PLOTTED BY	DATE
DESIGNED BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

HALEAKALA HIGHWAY

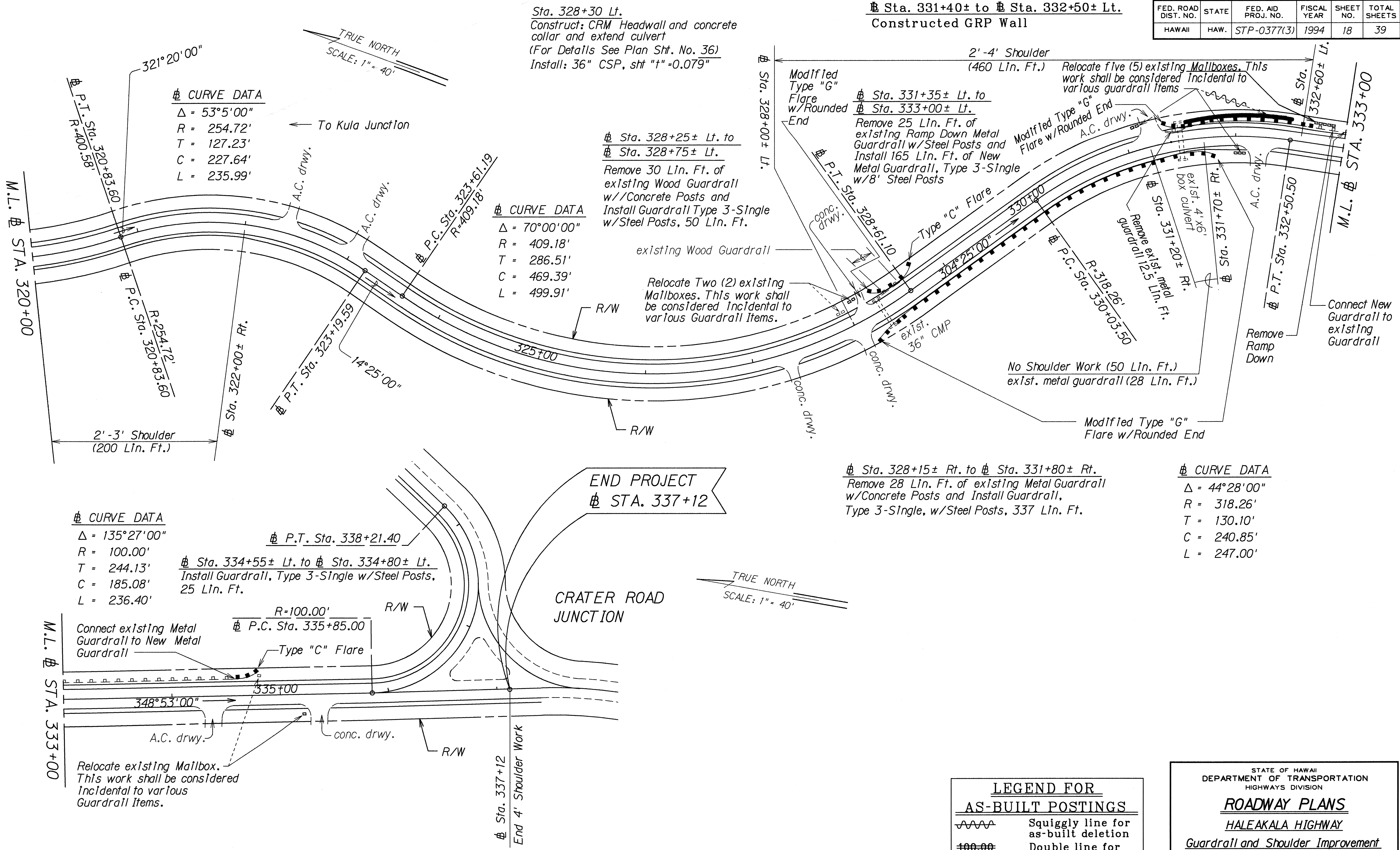
Guardrail and Shoulder Improvement
Kula Junction To Crater Road Junction

Fed. Aid Proj. No. STP-0377(3)

Scale: As Shown Date: March, 1992

SHEET No. 13 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0377(3)	1994	18	39



DATE	10/1/92
DESIGNED BY	XXX
TRACED BY	XXX
NOTED BY	XXX
QUANTITIES BY	XXX
CHECKED BY	XXX

LEGEND FOR AS-BUILT POSTINGS	
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==	Double line for as-built deletion
Roadway	Text for as-built posting

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ROADWAY PLANS**  
**HALEAKALA HIGHWAY**  
**Guardrail and Shoulder Improvement**  
**Kula Junction To Crater Road Junction**  
**Fed. Aid Proj. No. STP-0377(3)**  
Scale: As Shown Date: March, 1992  
SHEET No. 14 OF 14 SHEETS