

Sta. 144+37± to Sta. 147+56± o/s 11.0' Lt.

Remove 337.00 L.F. of Existing Guardrail and End Treatment.
Do Not Remove Guardrail before HECO Utility Poles Located at Sta. 144+12 to Sta. 147+56. Use Obstruction Installation for Power Poles.

Install: Transition Existing W-beam to Strong Post Thrie Beam Guardrail.
Strong Post Thrie Beam Guardrail (193.75 L.F.).
Strong Post Thrie Beam Guardrail (8' Posts) (87.50 L.F.).
QuadGuard QG28024 with anchor block or Equivalent at Approach End (1 Ea.).
Refer to Plan Sheet No. 21.

BEGIN PROJECT
Federal Aid Project No.
NH-083-1(77)
Sta. 144+00±

Sta. 147+88± to Sta. 148+38± o/s 12.50' Lt.

Remove 50.00 L.F. Existing Guardrail. Install 6.25 L.F.
31" W-Beam Guardrail with Standard 8" Offset Block
and Trailing-End Anchorage System on Approach and
Trailing End (2 Ea.).

Sta. 148+84± to Sta. 149+72± o/s 13.0' Lt.

Remove 87.50 L.F. Existing Guardrail. Install MSKT
-SP TL-2 or Equivalent at Approaching and Trailing
Ends (2 Ea.). Install 37.50 L.F. of Strong Post Thrie Beam
Guardrail Between End Treatments and Transition
to 31" W-Beam Guardrail with Standard 8" Offset Block.

Sta. 149+97± to Sta. 150+47± Lt.

Remove 50.00 L.F. of Existing Guardrail.

Sta. 150+78± to Sta. 151+40± o/s 18.0' Lt.

Remove 62.50 L.F. of Existing Guardrail.

Sta. 151+67± to

Sta. 152+04± Lt.

Remove 37.50 L.F. of
Existing Guardrail.

CURVE DATA

$\Delta = 69^{\circ}05'00''$
 $R = 650.00'$
 $T = 447.46'$
 $C = 737.11'$
 $L_c = 783.77'$
 $S.E. = 0.045 \text{ ft/ft}$

CURVE DATA

$\Delta = 13^{\circ}08'00''$
 $R = 2864.90'$
 $T = 329.79'$
 $C = 655.26'$
 $L_c = 656.69'$
 $S.E. = 0.00 \text{ ft/ft}$

Sta. 152+40± to Sta. 152+77± Lt.
Remove 37.50 L.F. of Existing Guardrail.

Sta. 153+03± to Sta. 153+28± Lt.
Remove 25.00 L.F. of Existing Guardrail.

Sta. 156+93± Rt.

Replace Existing Grates with Type I
Steel Grates. For Details See
Sheet No. H1.

Sta. 157+07± Rt.

Replace Existing Frame and Grate
with Type II Steel Frame and Grate.
For Details See Sheet No. H1.

Sta. 157+52± Rt.

Replace Existing Frame and Grate
with Type 5-A-9P Steel Frame and
Grates. For Details See Sheet
No. H2.

Approved:

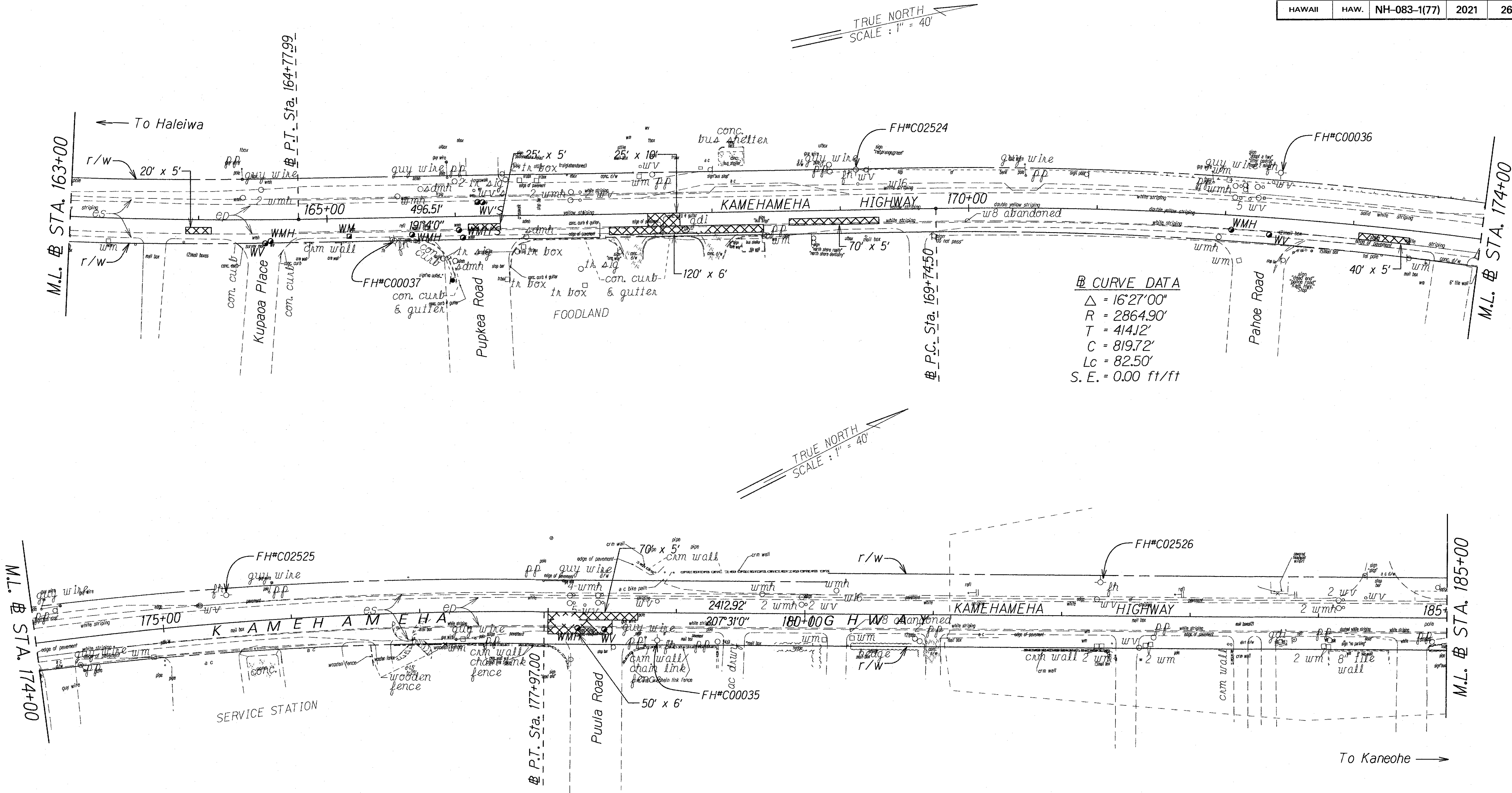
[Signature]
Manager and Chief Engineer, BWS
(For Work Affecting BWS Facilities
in City/State R/W and BWS Easement Only)

SEP 14 2020

Date

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLANS	
KAMEHAMEHA HIGHWAY REHABILITATION	
Vicinity of Kapuhi Street to Dairy Road	
Federal-Aid Project No. NH-083-1(77)	
Scale: 1" = 40'	Date: June, 2020
SHEET No. 1 OF 10 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(77)	2021	26	87



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
N.	

Approved:

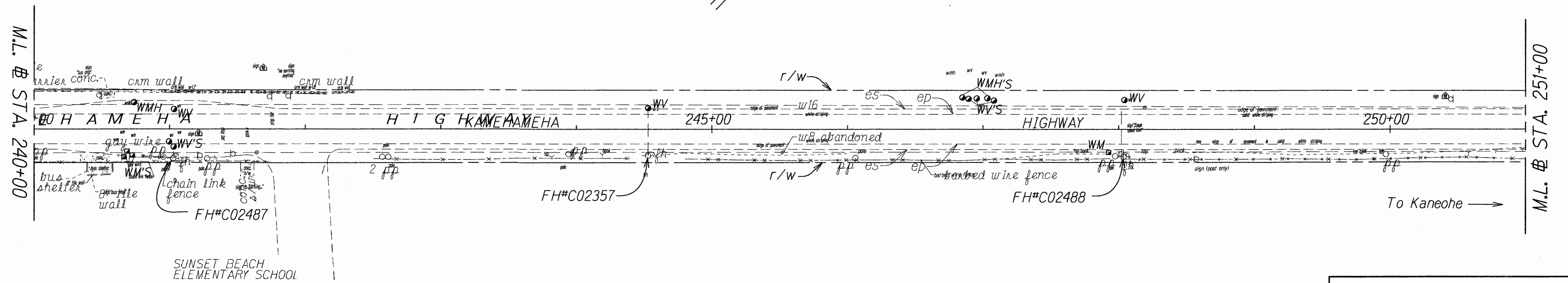
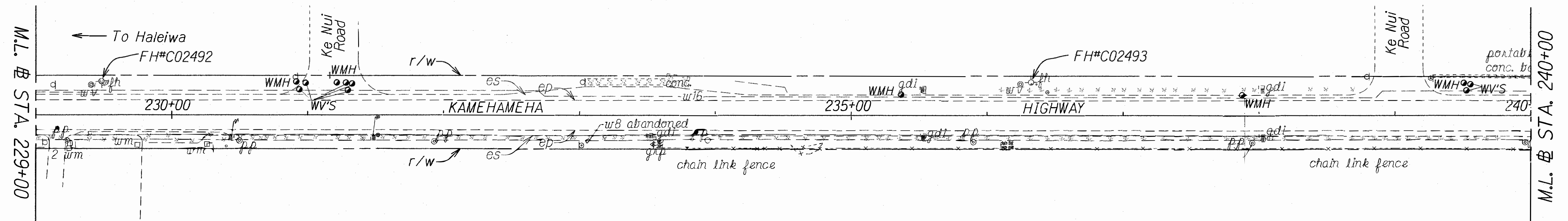
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SEP 14 2020
 Date

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

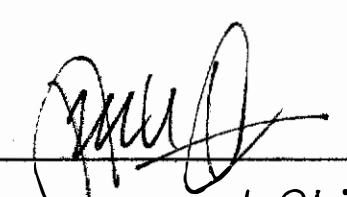
ROADWAY PLANS
KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)
Scale: 1" = 40' Date: June, 2020
SHEET No. 2 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(77)	2021	29	87



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

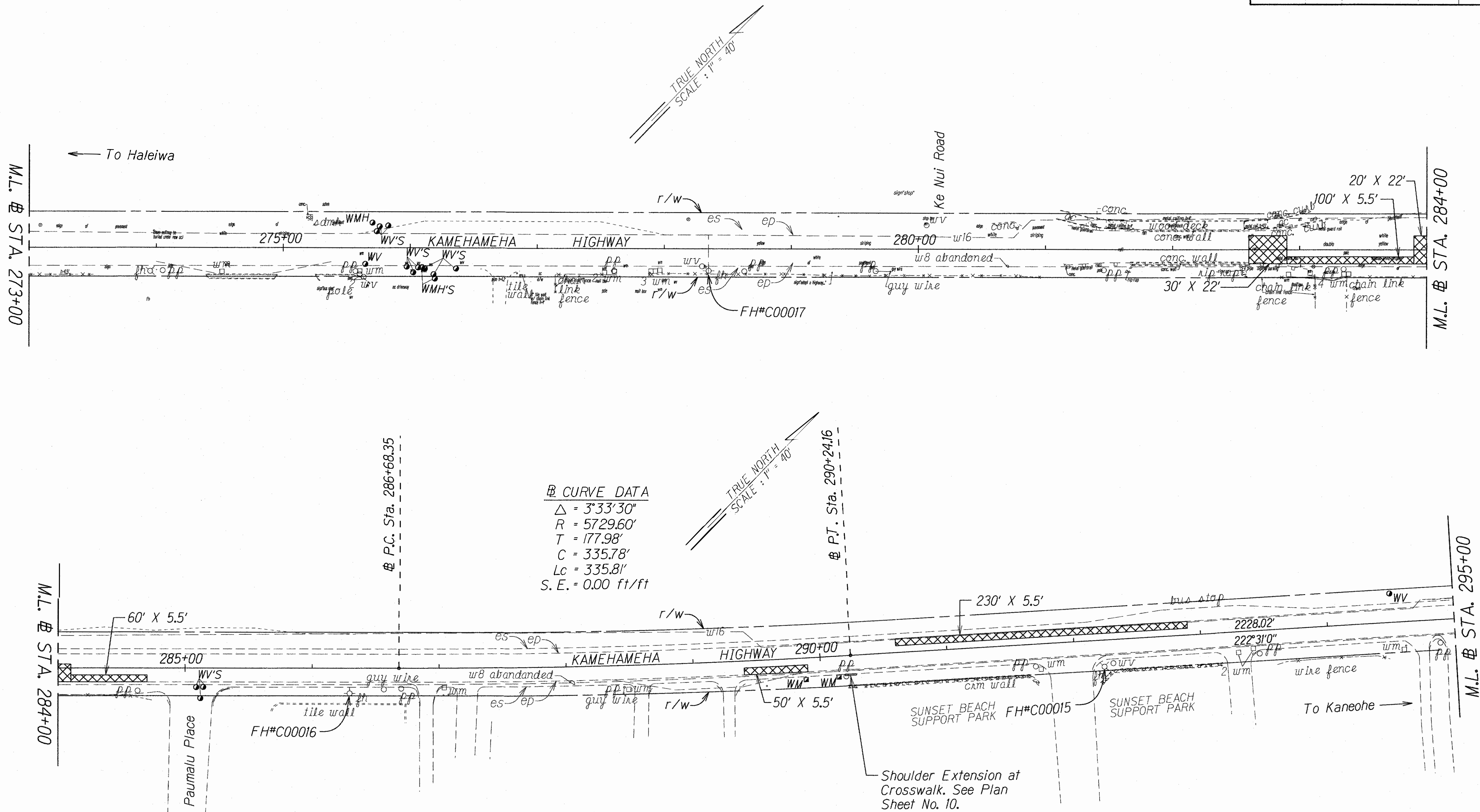
Approved:

for 
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 (For Work Affecting BWS Facilities
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SEP 14 2020
 Date

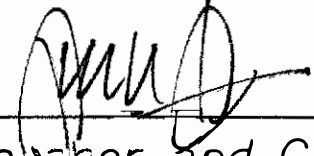
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLANS	
KAMEHAMEHA HIGHWAY REHABILITATION	
Vicinity of Kapuhi Street to Dairy Road	
Federal-Aid Project No. NH-083-1(77)	
Scale: 1" = 40'	Date: June, 2020
SHEET No. 5 OF 10 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(77)	2021	31	87



SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

Approved:

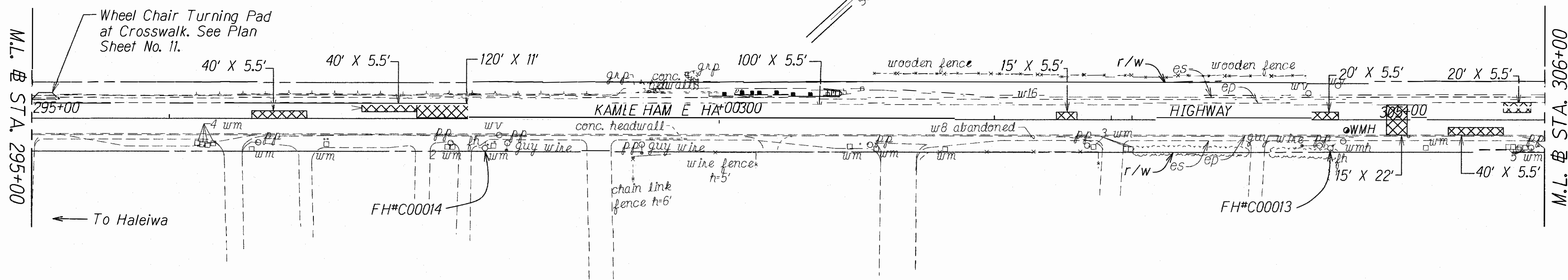
For 
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SEP 14 2020
 Date

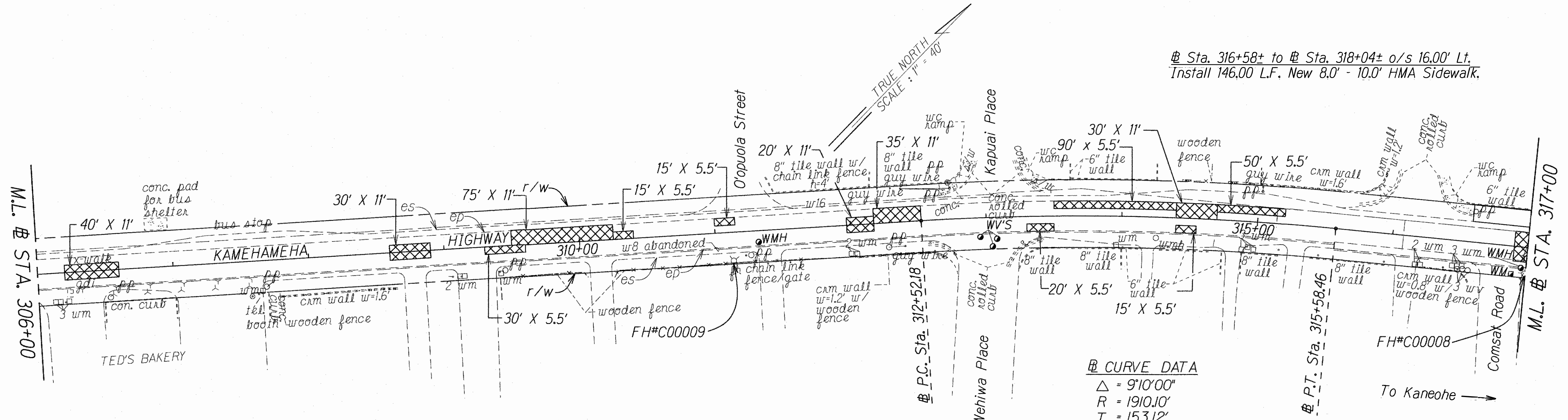
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLANS	
KAMEHAMEHA HIGHWAY REHABILITATION	
Vicinity of Kapuhi Street to Dairy Road	
Federal-Aid Project No. NH-083-1(77)	
Scale: 1" = 40'	Date: June, 2020
SHEET No. 7 OF 10 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(77)	2021	32	87

@ Sta. 299+80± to @ Sta. 301+00± o/s 16.75' Lt.
 Remove 137.50 L.F. of Existing Guardrail. Install 100.00 L.F. of 31" W-Beam Guardrail with Standard 8" Offset Block. Install Trailing-End Anchorage System on Trailing End (1 Ea.) and QuadGuard QG28024 with anchor block or Equivalent on Approaching End (1 Ea.).



@ Sta. 316+58± to @ Sta. 318+04± o/s 16.00' Lt.
 Install 146.00 L.F. New 8.0' - 10.0' HMA Sidewalk.



CURVE DATA
 $\Delta = 910.00'$
 $R = 1910.10'$
 $T = 153.12'$
 $C = 305.27'$
 $L_c = 305.60'$
 $S.E. = 0.02 \text{ ft/ft}$

Approved:

For Manager and Chief Engineer, BWS
 (For Work Affecting BWS Facilities
 in City/State R/W and BWS Easement Only)

SEP 14 2020
 Date

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY PLANS
 KAMEHAMEHA HIGHWAY REHABILITATION
 Vicinity of Kapuhi Street to Dairy Road
 Federal-Aid Project No. NH-083-1(77)
 Scale: 1" = 40' Date: June, 2020
 SHEET No. 8 OF 10 SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

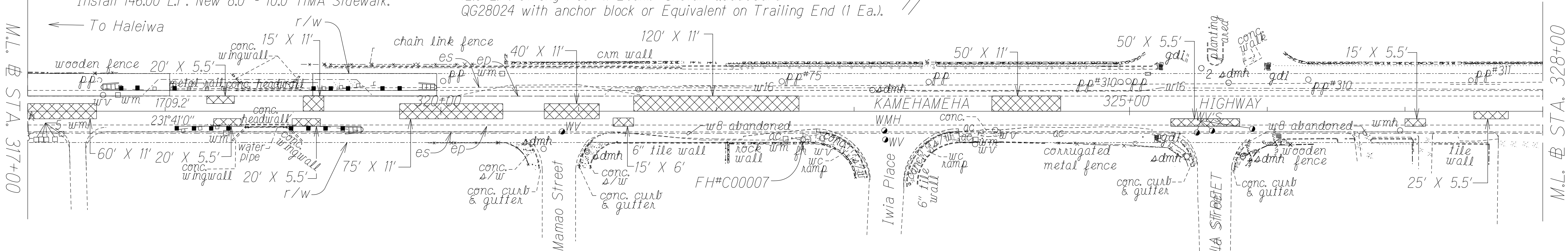
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(77)	2021	33	87

Sta. 317+57± to # Sta. 318+51± o/s 15.0'± Lt.

Retain Existing Thrie Beam (25.00 L.F.). Remove Existing Guardrails and Transition at Trailing End (68.75 L.F.). Transition from Existing Guardrail (6.25 L.F.) to Strong Post W-Beam. Install 6.25 L.F. of Strong Post W-Beam. Install 37.5 L.F. of Nested Long Span Strong Post W-Beam. Install 6.25 L.F. of Strong Post W-Beam. Install QuadGuard QG28024 with anchor block or Equivalent on Trailing End (1 Ea.).

Sta. 316+58± to # Sta. 318+04± o/s 16.0'± Lt.

Install 146.00 L.F. New 8.0' - 10.0' HMA Sidewalk.



Sta. 318+07 ± to # Sta. 318+57± o/s 10.0' Rt.

Retain Existing Thrie Beam (25.00 L.F.). Remove Existing Guardrail and Transition at Approaching End (25.00 L.F.). Transition from Existing Guardrail (6.25 L.F.) to 31" W-Beam with Standard 8" Offset Block. Install Trailing-End Anchorage System on Approach End (1 Ea.).

Sta. 318+90± to # Sta. 319+40± o/s 10.0' Rt.

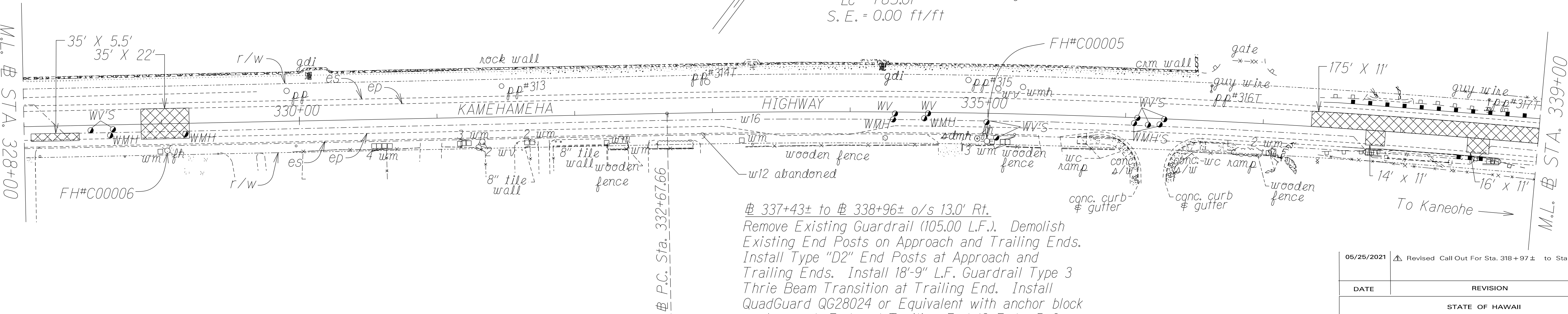
Retain Existing Thrie Beam (25.00 L.F.). Remove Existing Guardrail and Transition at Trailing End (25.00 L.F.). Install 12.50 L.F. of Strong Post Thrie Beam. Install QuadGuard QG28024 with anchor block or Equivalent on Trailing Edge (1 Ea.).

CURVE DATA

Δ = 7°51'00"
R = 5729.65'
T = 393.14'
C = 784.44'
Lc = 785.01'
S.E. = 0.00 ft/ft

337+2± to # 339+20± o/s 20' Lt.

Remove 112.50 L.F. of Existing Guardrail. Demolish Existing Culvert Rail and Endposts. Install Modified Delaware Retrofit and 18'-9" L.F. Guardrail Type 3 Thrie Beam Transition on Both Ends. At Trailing End, Install 6.25 L.F. of 31" W-Beam with Standard 8" Offset Block (8' Posts) and MSKT-SP TL-2 or Equivalent (1 Ea.). At Approach End, Install 62.50 L.F. of Strong Post Thrie Beam (8' Posts) with 1' 6¾" Post Spacing. Transition to 6.25 L.F. of 31" W-Beam with 8" Standard Offset Block (8' Posts) and Install MSKT-SP TL-2 or Equivalent (1 Ea.). Refer to Sheet No. Q4 to Q5 for Bridge Details.



337+43± to # 338+96± o/s 13.0' Rt.

Remove Existing Guardrail (105.00 L.F.). Demolish Existing End Posts on Approach and Trailing Ends. Install Type "D2" End Posts at Approach and Trailing Ends. Install 18'-9" L.F. Guardrail Type 3 Thrie Beam Transition at Trailing End. Install QuadGuard QG28024 or Equivalent with anchor block on Approach End and Trailing End (2 Ea.). Refer to Sheet No. Q4 to Q5 for Bridge Details.

Approved:

Manager and Chief Engineer, BWS
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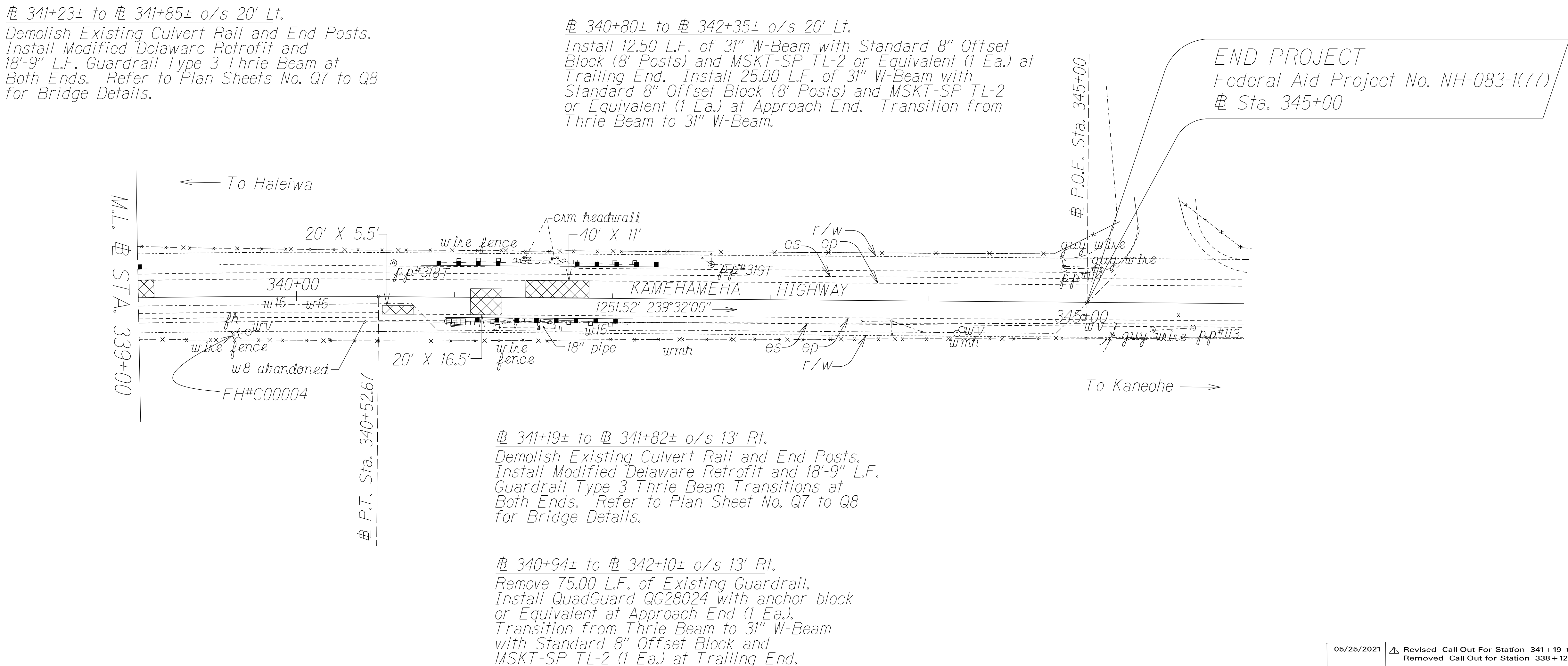
Date

05/25/2021	Revised Call Out For Sta. 318+97± to Sta. 319+97±
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLANS	
KAMEHAMEHA HIGHWAY REHABILITATION Vicinity of Kapuhi Street to Dairy Road Federal-Aid Project No. NH-083-1(77)	
Scale: 1" = 40'	Date: June, 2020
SHEET No. 9 OF 10 SHEETS	

ADD. 4

33

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(77)	2021	34	87



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

Approved:

Manager and Chief Engineer, BWS
(For Work Affecting BWS Facilities
in City/State R/W and BWS Easement Only)

Date _____

05/25/2021	 Revised Call Out For Station 341+19 to Station 341+82 Removed Call Out For Station 338+12 to 339+20
DATE	REVISION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION



ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION

Vicinity of Kapuhi Street to Dairy Road

Federal-Aid Project No. NH-083-K(77)

Scale: 1" = 40' Date: June, 2020