

SWPPP Attachments

Attachment A – Contractor/Sub-Contractor Control Maps, Property Boundary Maps, State Waters and BMP Maps, and BMP Details (SWPPP Sections 7.2.4, 7.2.6.1, 7.2.6.2 to 7.2.6.8 & 7.2.10)

**MAPS SHOWING LOCATIONS OF CONTRACTOR/SUB-CONTRACTOR CONTROL,
PROJECT SITE MAPS, CONSTRUCTION PLANS/DRAWINGS, BMP LOCATION MAPS,
AND BMP DETAILS**

Description

Legal Boundary Map

Construction Plans

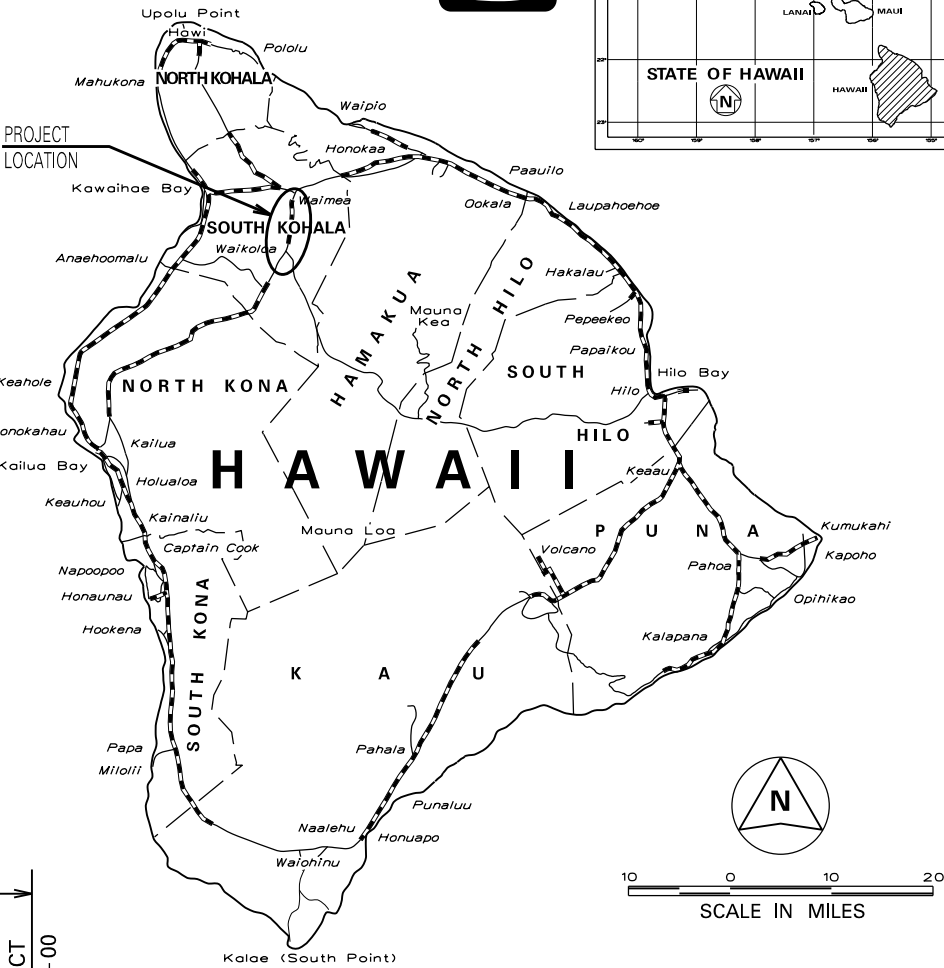
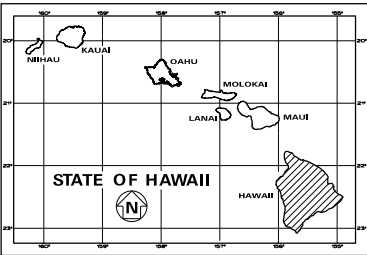
Discharge Points Location Map

INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STANDARD PLANS SUMMARY
3	GENERAL NOTES AND LEGEND
4-6	WATER POLLUTION & EROSION CONTROL NOTES
7	TYPICAL SECTION AND DETAILS
8-11	GUARDRAIL DETAILS
12-19	ROADWAY PLANS
20	CENTERLINE RUMBLE STRIP DETAIL
21	EDGE LINE RUMBLE STRIPES DETAIL
22	SIGN DETAILS
23	TRAFFIC NOTES
24	TRAFFIC CONTROL PLAN
25	WORK ZONE SIGNING PLAN, NOTES & DETAILS
26	INTERSECTION STRIPING PLAN
27	STRIPING/PAVEMENT MARKING SCHEDULE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII

PLANS FOR
**MAMALAHOA HIGHWAY
SAFETY IMPROVEMENTS**
MILE POST 3.90 TO MILE POST 6.90
FEDERAL AID PROJECT NO. HSIP-0190(017)
DISTRICT OF SOUTH KOHALA
ISLAND OF HAWAII

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	1	27



10 0 10 20
SCALE IN MILES

— FEDERAL AID PROJECTS PREVIOUSLY CONSTRUCTED OR UNDER CONSTRUCTION

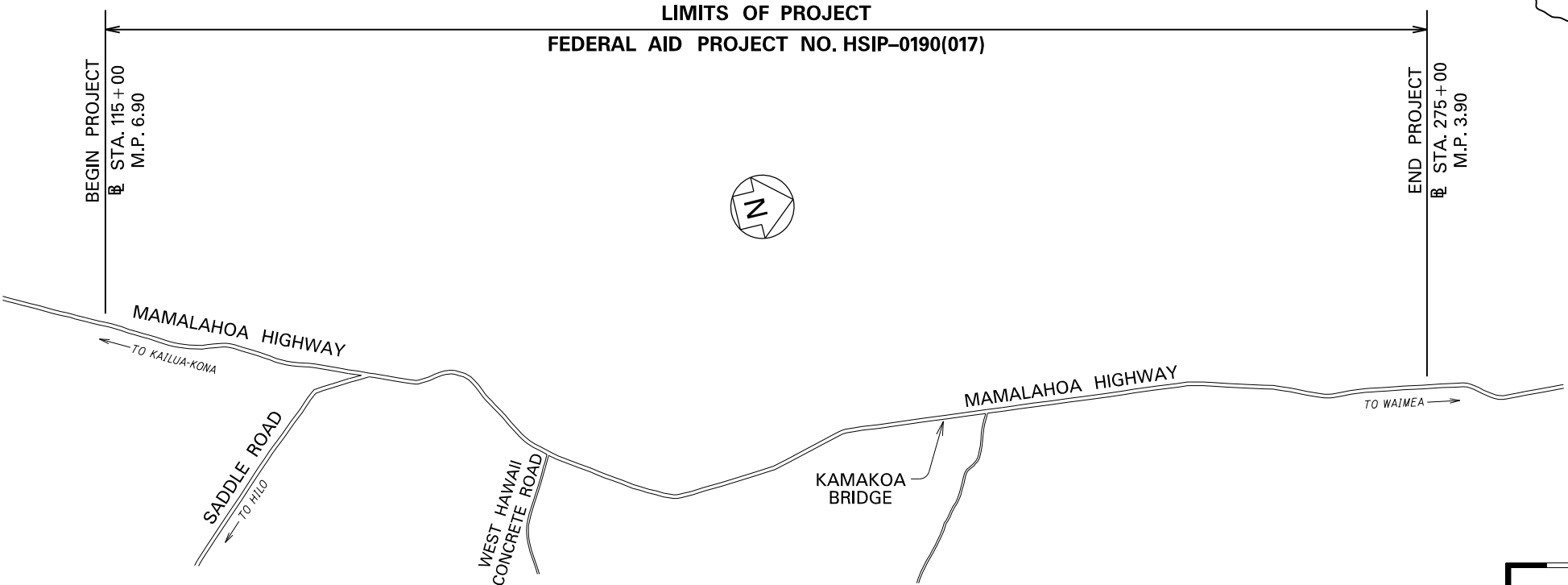
MILE POST 3.90 TO MILE POST 6.90

MAMALAHOA HIGHWAY (ROUTE 190)		
DESIGN DESIGNATIONS:	MP 3.90 to MP 6.25	MP 6.25 to MP 6.90
2017 ADT	7,900	6,000
2027 ADT	9,200	7,000
2037 ADT	10,600	8,000
2027 DHV	830	630
2037 DHV	950	720
Design K	9.0	9.0
Design D	55/45	55/45
Design T	5.5	6.0
T24	6.5	7.5



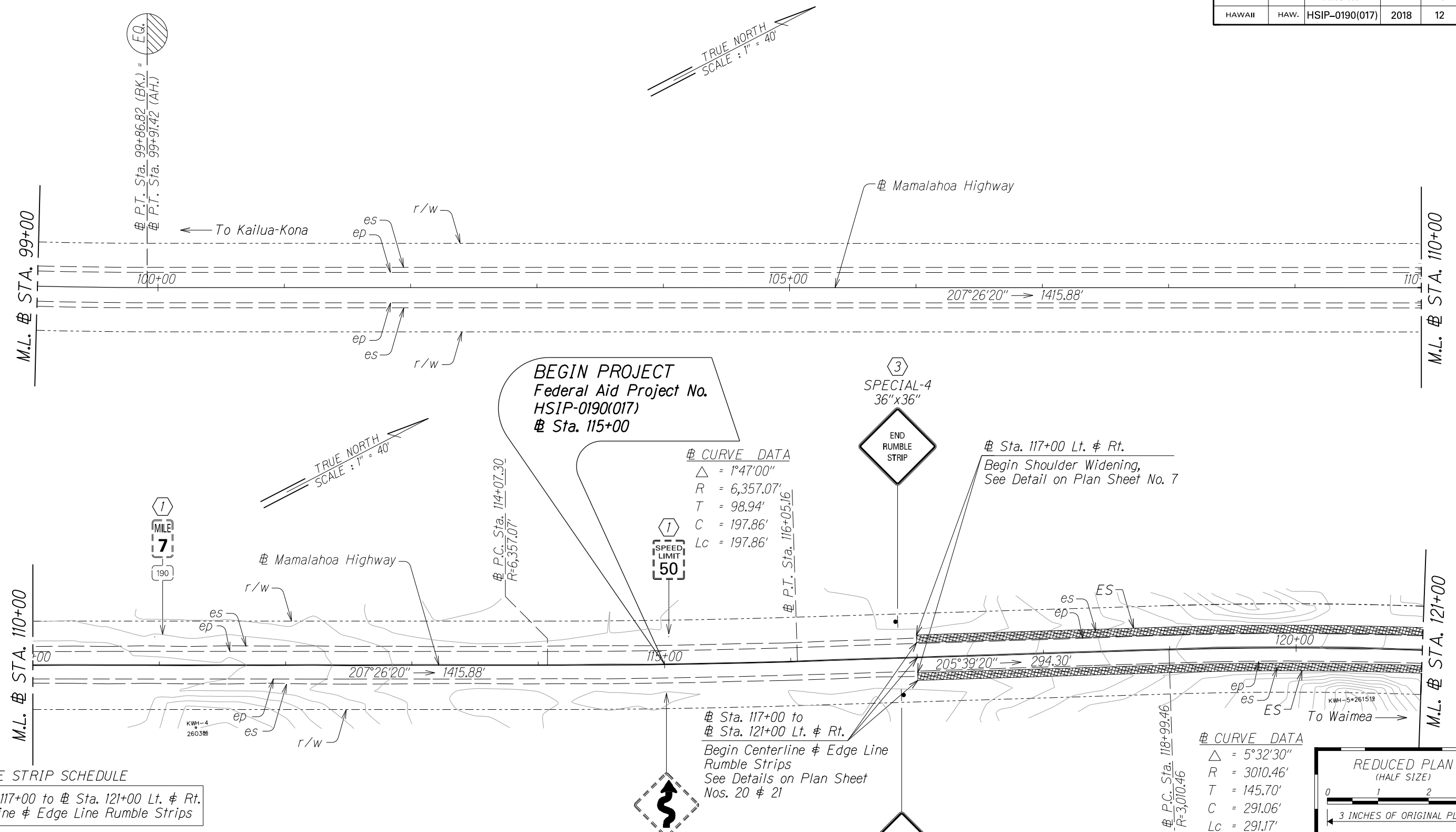
DEPARTMENT OF TRANSPORTATION STATE OF HAWAII	
APPROVED:	
DIR. OF TRANSPORTATION	DATE

Okahara and Assoc., Inc.
DESIGNED BY
HWY-DS
MANAGED BY
692-7544
PHONE
Oct. 2017
DATE



LAYOUT PLAN
GROSS LENGTH OF PROJECT..... 3 MILES
NET LENGTH OF PROJECT..... 3 MILES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	12	27



RUMBLE STRIP SCHEDULE

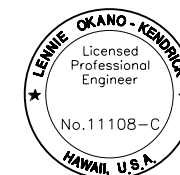
Sta. 117+00 to Sta. 121+00 Lt. & Rt.
Centerline & Edge Line Rumble Strips

- ① Existing Sign(s) $\neq$ Post(s) to Remain.
- ② Remove Existing Sign(s) $\neq$ Install New Sign(s) on Existing Post(s).
- ③ Install New Sign(s) w/ Post(s).
- ④ Install New Sign(s) w/ Post(s) at 100 Feet Apart.

Notes:

1. *Paint All New Sign Posts and Existing Sign Posts to Remain w/ Yellow Reflective Paint. This Work Shall be Considered Incidental to Sign Items.*
2. *See New Striping and Pavement Marking Schedule on Plan Sheet No. 27.*

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



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Expiration Date of License 4/18

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

MAMALAHOA HIGHWAY

SAFETY IMPROVEMENTS

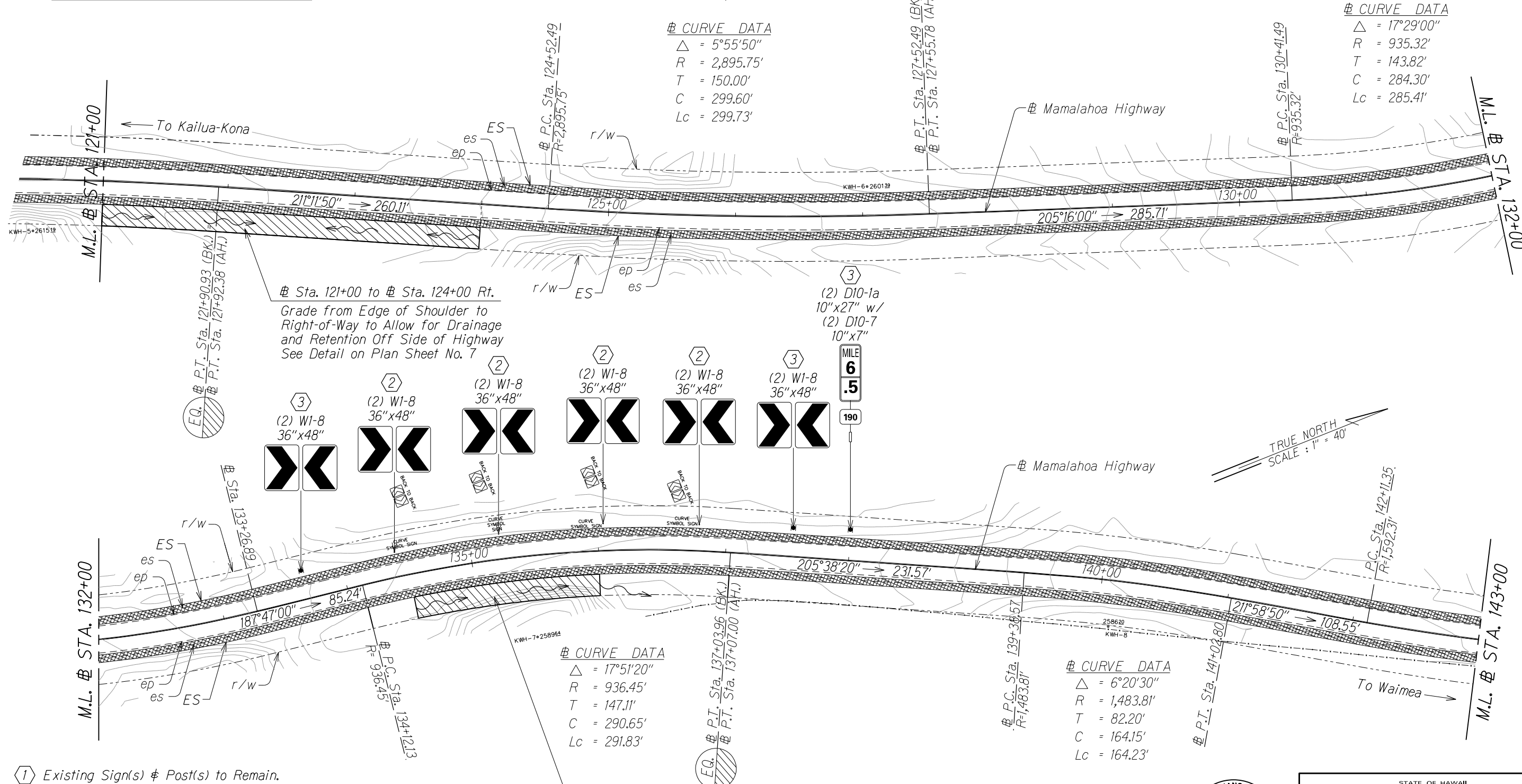
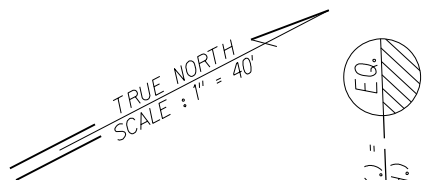
Mile Post 3.90 to Mile Post 6.90

Federal Aid Project No. HSIP-0190(017)

Scale: 1"=40' Date: October, 2017

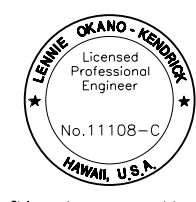
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	13	27

RUMBLE STRIP SCHEDULE
Sta. 121+00 to Sta. 143+00 Lt. & Rt.
Centerline & Edge Line Rumble Strips



- 1 Existing Sign(s) & Post(s) to Remain.
2 Remove Existing Sign(s) & Install New Sign(s) on Existing Post(s).
3 Install New Sign(s) w/ Post(s).
4 Install New Sign(s) w/ Post(s) at 100 Feet Apart.
- Notes:
1. Paint All New Sign Posts and Existing Sign Posts to Remain w/ Yellow Reflective Paint. This Work Shall be Considered Incidental to Sign Items.
2. See New Striping and Pavement Marking Schedule on Plan Sheet No. 27.

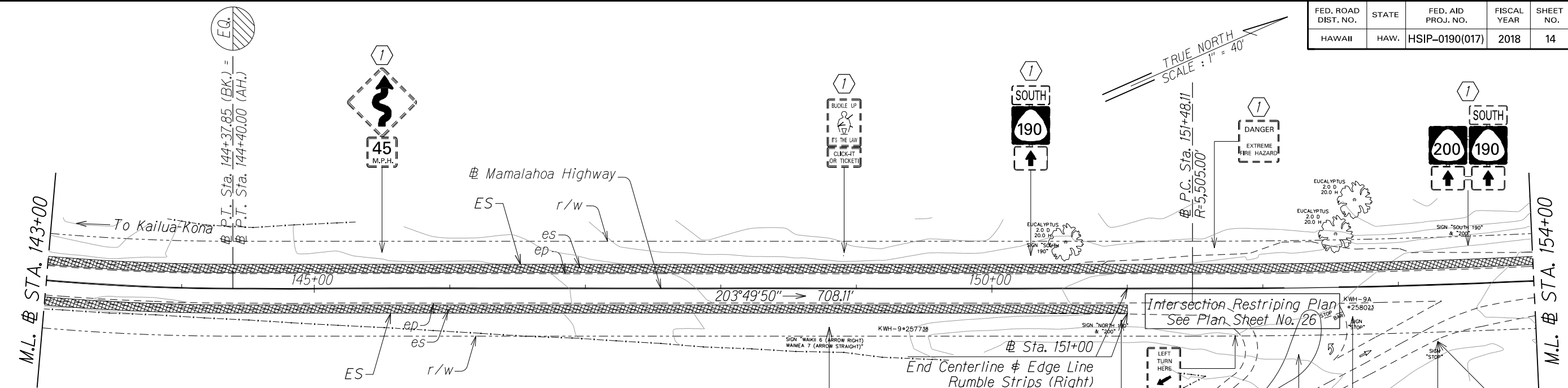
Sta. 134+50 to Sta. 136+00 Rt.
Grade from Edge of Shoulder to
Right-of-Way to Allow for Drainage
Off Side of Highway to Natural Sump
See Detail on Plan Sheet No. 7



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLANS
MAMALAHOA HIGHWAY
SAFETY IMPROVEMENTS
Mile Post 3.90 to Mile Post 6.90
Federal Aid Project No. HSIP-0190(017)
Scale: 1"=40' Date: October, 2017
SHEET No. 2 OF 8 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	14	27



RUMBLE STRIP SCHEDULE	
Sta. 143+00 to Sta. 151+00	Centerline Rumble Strip
Sta. 154+50 to Sta. 165+00	Centerline Rumble Strip
Sta. 143+00 to Sta. 165+00	Lt. Edge Line Rumble Strip
Sta. 143+00 to Sta. 151+00	Rt. Edge Line Rumble Strip
Sta. 154+50 to Sta. 165+00	Rt. Edge Line Rumble Strip

- Existing Sign(s) & Post(s) to Remain.
 - Remove Existing Sign(s) & Install New Sign(s) on Existing Post(s).
 - Install New Sign(s) w/ Post(s).
 - Install New Sign(s) w/ Post(s) at 100 Feet Apart.
- Notes:
- Paint All New Sign Posts and Existing Sign Posts to Remain w/ Yellow Reflective Paint. This Work Shall be Considered Incidental to Sign Items.
 - See New Striping and Pavement Marking Schedule on Plan Sheet No. 27.

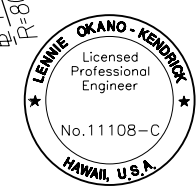
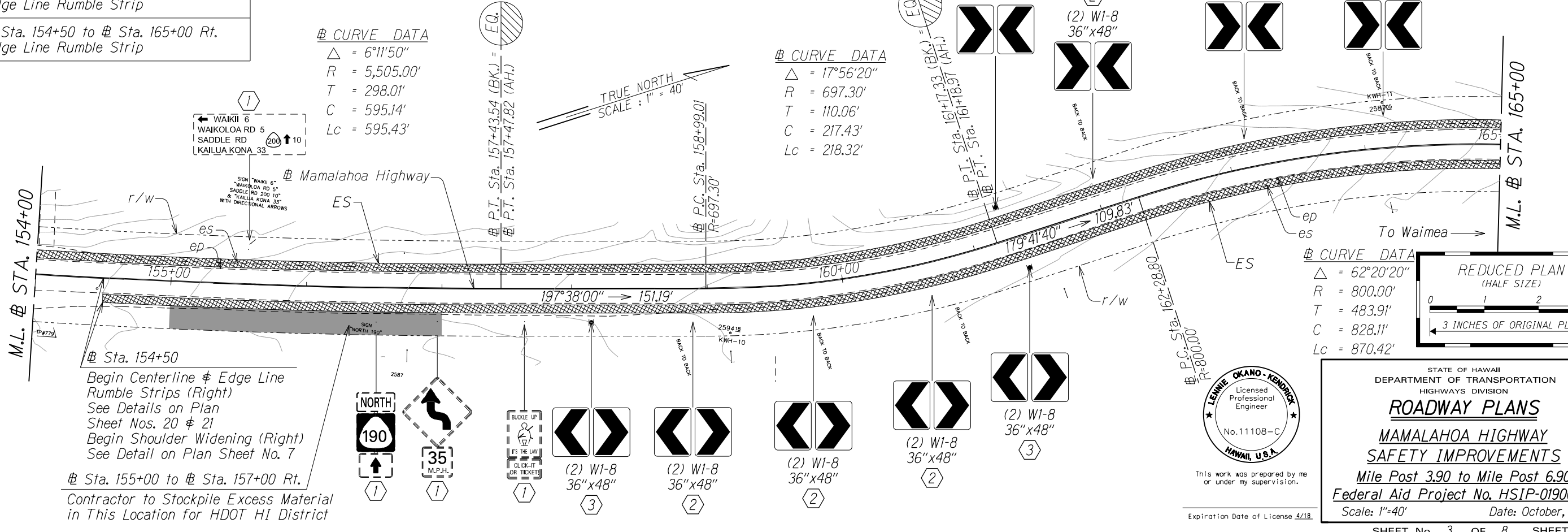
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Δ	$= 6^{\circ}11'50''$
R	$= 5,505.00'$
T	$= 298.01'$
C	$= 595.14'$
Lc	$= 595.43'$

CURVE DATA	
Δ	$= 17^{\circ}56'20''$
R	$= 697.30'$
T	$= 110.06'$
C	$= 217.43'$
Lc	$= 218.32'$

CURVE DATA	
Δ	$= 62^{\circ}20'20''$
R	$= 800.00'$
T	$= 483.91'$
C	$= 828.11'$
Lc	$= 870.42'$



SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

MAMALAHOA HIGHWAY

SAFETY IMPROVEMENTS

Mile Post 3.90 to Mile Post 6.90

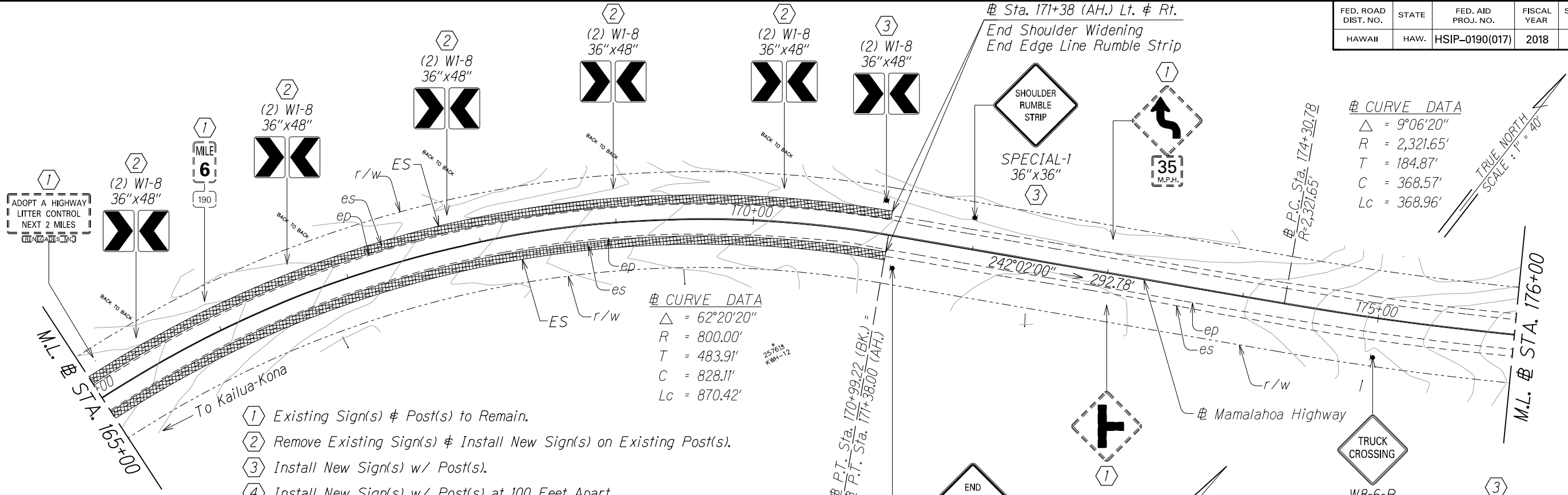
Federal Aid Project No. HSIP-0190(017)

Scale: 1"=40' Date: October, 2017

Expiration Date of License 4/18

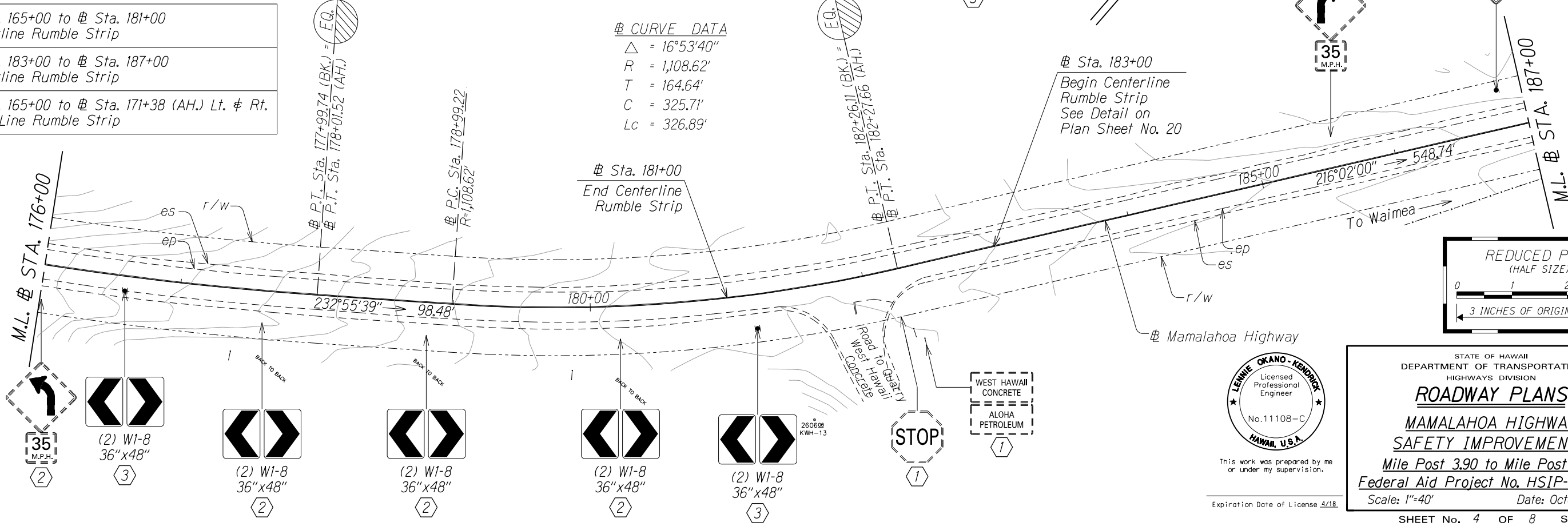
SHEET No. 3 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	15	27

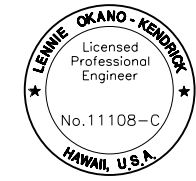


- Notes:
1. Existing Sign(s) & Post(s) to Remain.
 2. Remove Existing Sign(s) & Install New Sign(s) on Existing Post(s).
 3. Install New Sign(s) w/ Post(s).
 4. Install New Sign(s) w/ Post(s) at 100 Feet Apart.
- Notes:
1. Paint All New Sign Posts and Existing Sign Posts to Remain w/ Yellow Reflective Paint. This Work Shall be Considered Incidental to Sign Items.
 2. See New Striping and Pavement Marking Schedule on Plan Sheet No. 27.

RUMBLE STRIP SCHEDULE
Sta. 165+00 to # Sta. 181+00 Centerline Rumble Strip
Sta. 183+00 to # Sta. 187+00 Centerline Rumble Strip
Sta. 165+00 to # Sta. 171+38 (AH.) Lt. & Rt. Edge Line Rumble Strip



SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

MAMALAHOA HIGHWAY
SAFETY IMPROVEMENTS

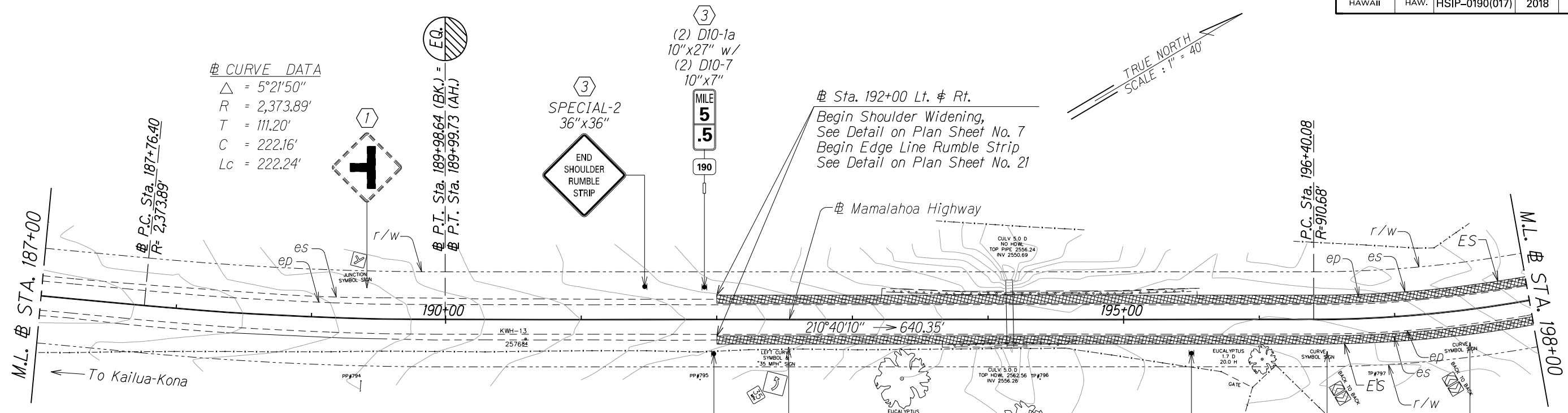
Mile Post 3.90 to Mile Post 6.90
Federal Aid Project No. HSIP-0190(017)

Scale: 1"=40' Date: October, 2017

SHEET No. 4 OF 8 SHEETS

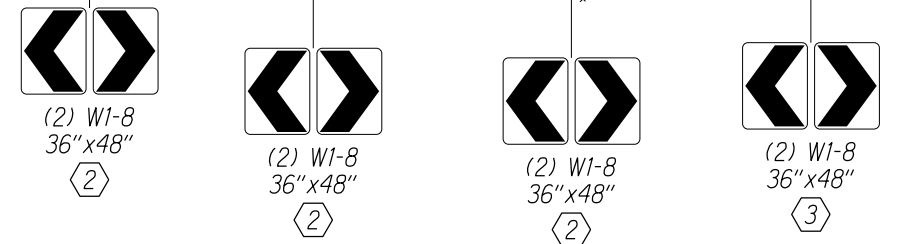
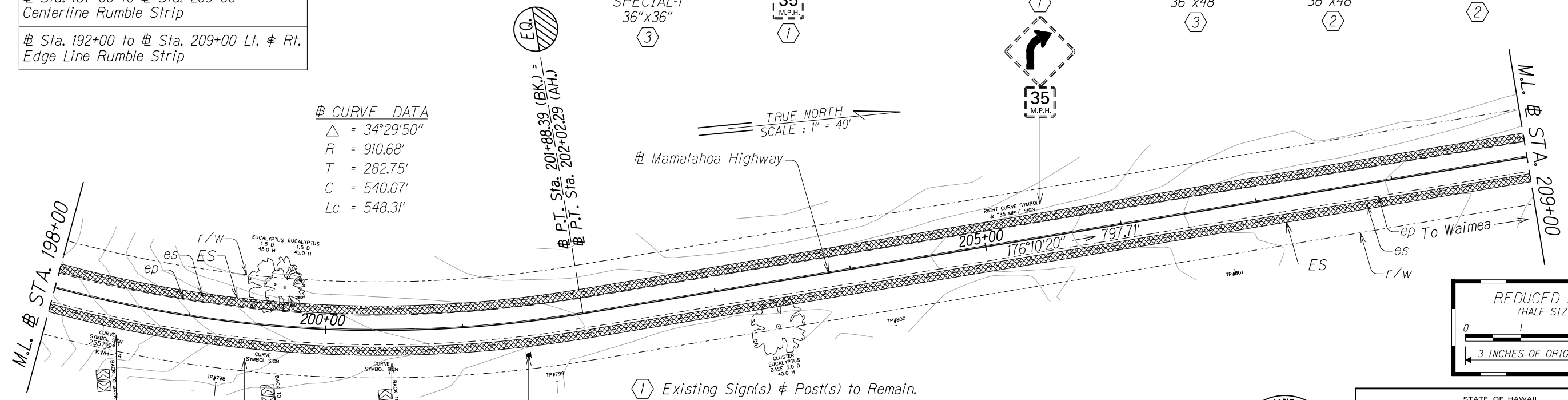
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	16	27

CURVE DATA
 $\Delta = 5^{\circ}21'50''$
 $R = 2,373.89'$
 $T = 111.20'$
 $C = 222.16'$
 $Lc = 222.24'$

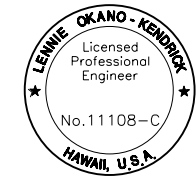


RUMBLE STRIP SCHEDULE
Sta. 187+00 to # Sta. 209+00
Centerline Rumble Strip
Sta. 192+00 to # Sta. 209+00 Lt. & Rt.
Edge Line Rumble Strip

CURVE DATA
 $\Delta = 34^{\circ}29'50''$
 $R = 910.68'$
 $T = 282.75'$
 $C = 540.07'$
 $Lc = 548.31'$



- 1 Existing Sign(s) & Post(s) to Remain.
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 - 4 Install New Sign(s) w/ Post(s) at 100 Feet Apart.
- Notes:
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2. See New Striping and Pavement Marking Schedule on Plan Sheet No. 27.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLANS
MAMALAHOA HIGHWAY
SAFETY IMPROVEMENTS
Mile Post 3.90 to Mile Post 6.90
Federal Aid Project No. HSIP-0190(017)
Scale: 1"=40' Date: October, 2017

SHEET No. 5 OF 8 SHEETS

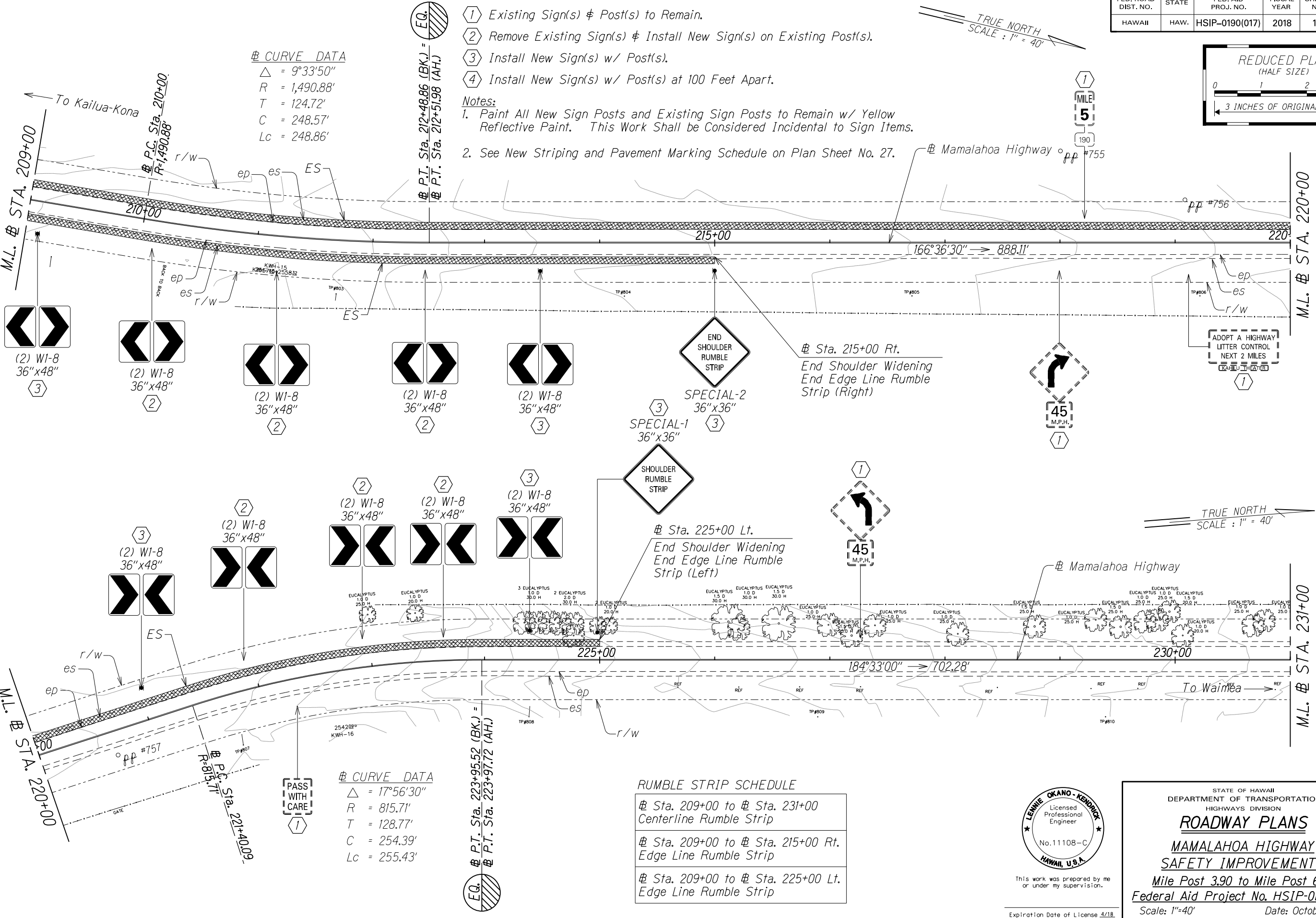
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
N.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	17	27



- Existing Sign(s) & Post(s) to Remain.
- Remove Existing Sign(s) & Install New Sign(s) on Existing Post(s).
- Install New Sign(s) w/ Post(s).
- Install New Sign(s) w/ Post(s) at 100 Feet Apart.

Notes:
1. Paint All New Sign Posts and Existing Sign Posts to Remain w/ Yellow Reflective Paint. This Work Shall be Considered Incidental to Sign Items.
2. See New Striping and Pavement Marking Schedule on Plan Sheet No. 27.



CURVE DATA
 $\Delta = 9^{\circ}33'50''$
 $R = 1,490.88'$
 $T = 124.72'$
 $C = 248.57'$
 $Lc = 248.86'$

CURVE DATA
 $\Delta = 17^{\circ}56'30''$
 $R = 815.71'$
 $T = 128.77'$
 $C = 254.39'$
 $Lc = 255.43'$

RUMBLE STRIP SCHEDULE	
# Sta. 209+00 to # Sta. 231+00	Centerline Rumble Strip
# Sta. 209+00 to # Sta. 215+00 Rt.	Edge Line Rumble Strip
# Sta. 209+00 to # Sta. 225+00 Lt.	Edge Line Rumble Strip

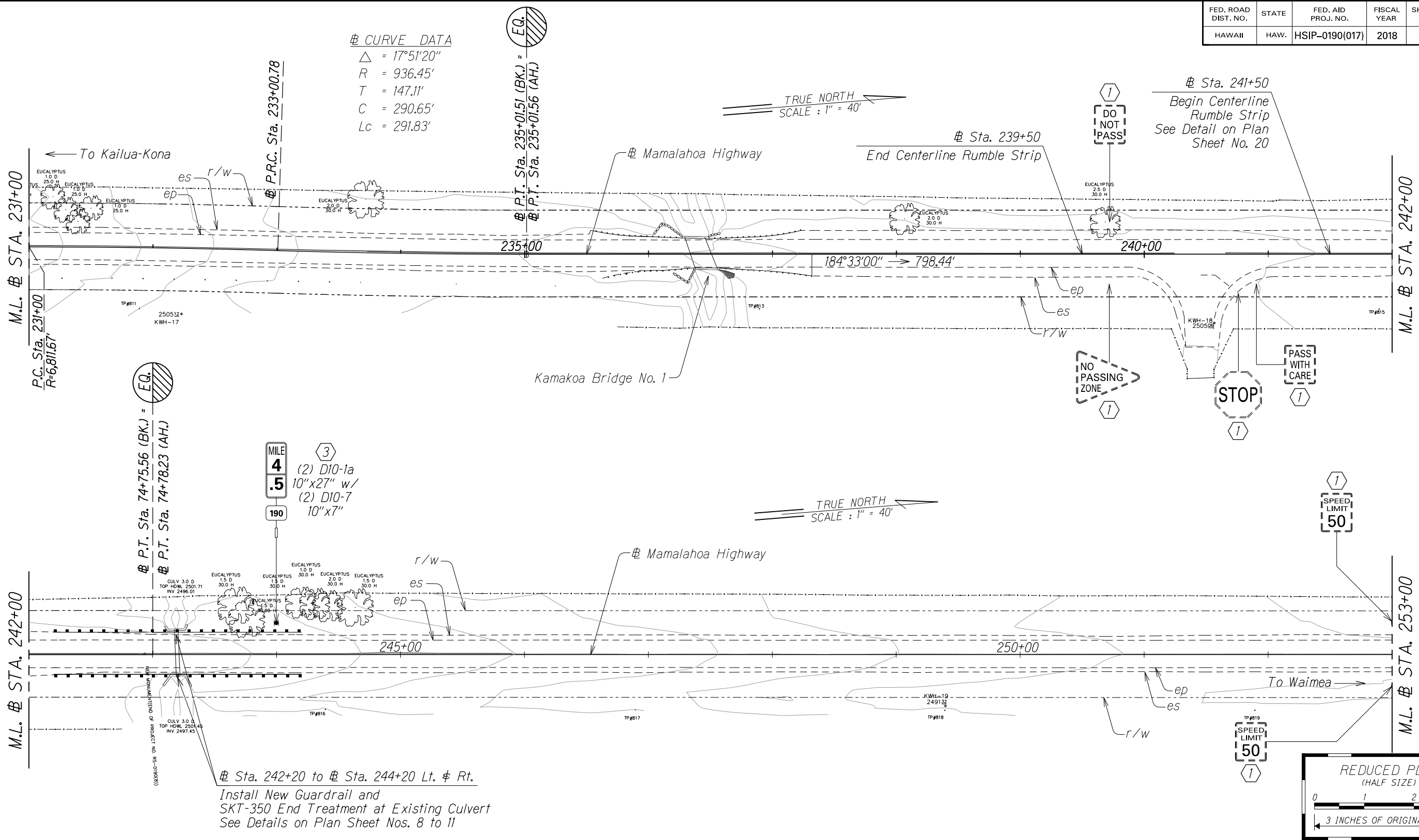


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLANS
MAMALAHOA HIGHWAY
SAFETY IMPROVEMENTS
Mile Post 3.90 to Mile Post 6.90
Federal Aid Project No. HSIP-0190(017)
Scale: 1"=40' Date: October, 2017

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

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Expiration Date of License 4/18.

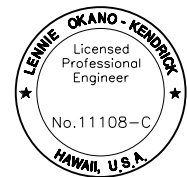
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	18	27



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

Notes:

- Paint All New Sign Posts and Existing Sign Posts to Remain w/ Yellow Reflective Paint. This Work Shall be Considered Incidental to Sign Items.
- See New Striping and Pavement Marking Schedule on Plan Sheet No. 27.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

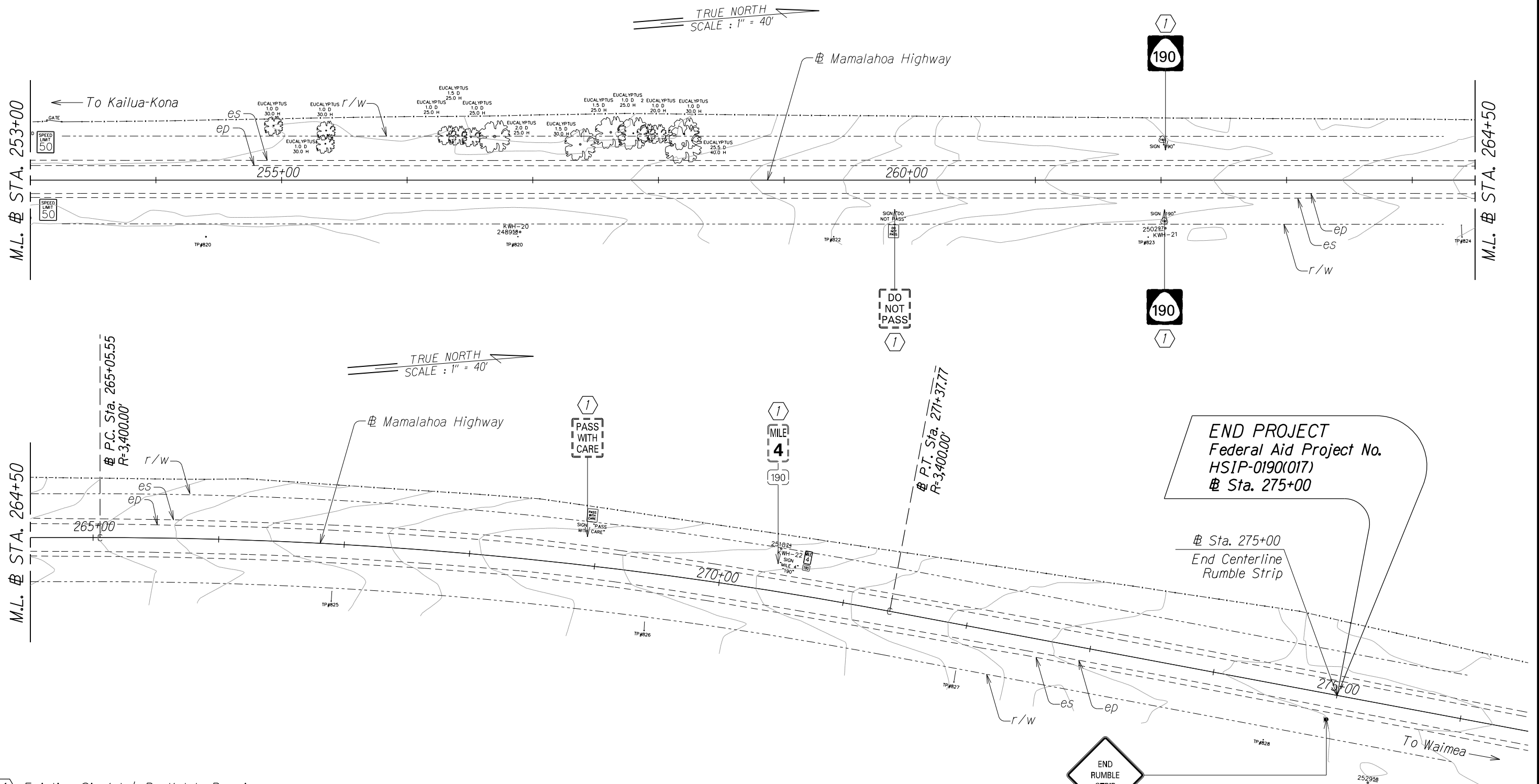
MAMALAHOA HIGHWAY

SAFETY IMPROVEMENTS

Mile Post 3.90 to Mile Post 6.90
Federal Aid Project No. HSIP-0190(017)
Scale: 1"=40' Date: October, 2017

SHEET No. 7 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	19	27



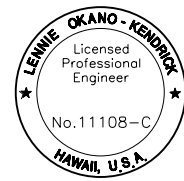
- ① Existing Sign(s) & Post(s) to Remain.
② Remove Existing Sign(s) & Install New Sign(s) on Existing Post(s).
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2. See New Striping and Pavement Marking Schedule on Plan Sheet No. 27.

RUMBLE STRIP SCHEDULE

Sta. 253+00 to # Sta. 275+00
Centerline Rumble Strip

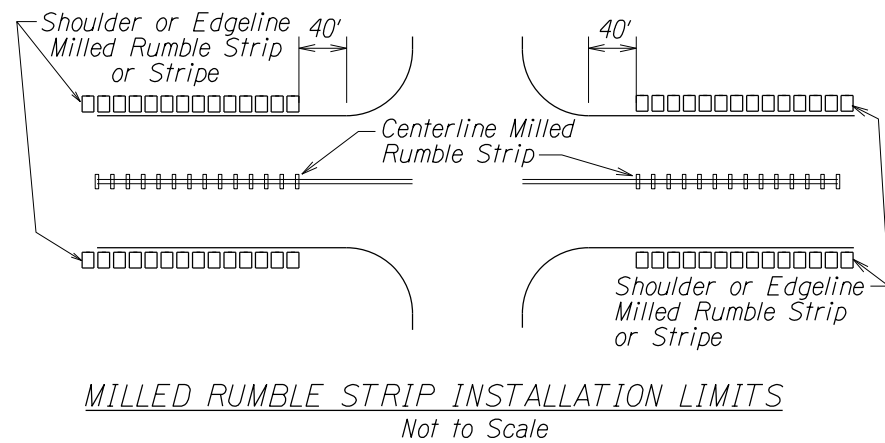
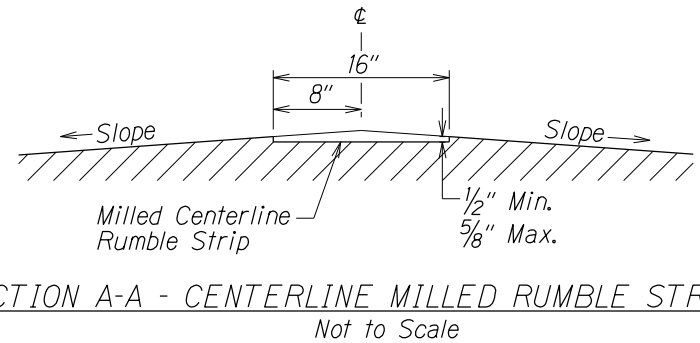
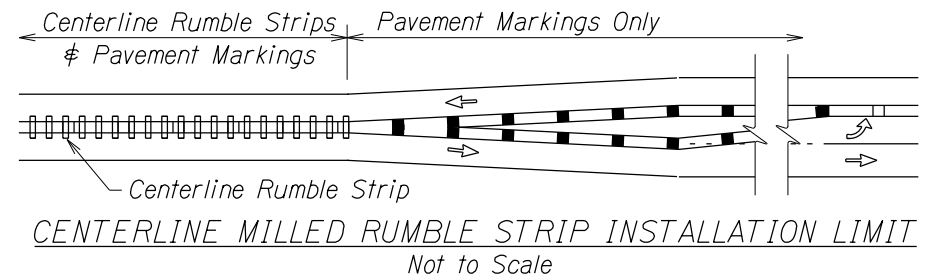
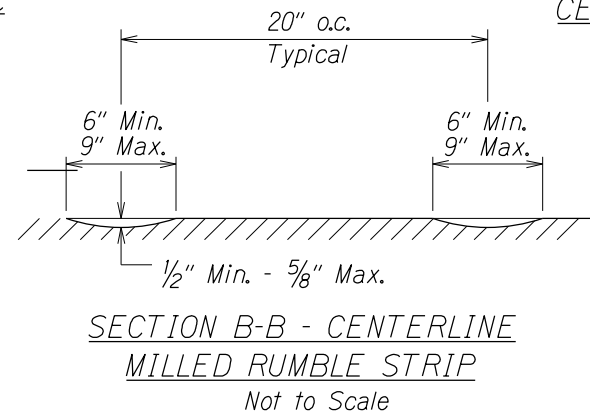
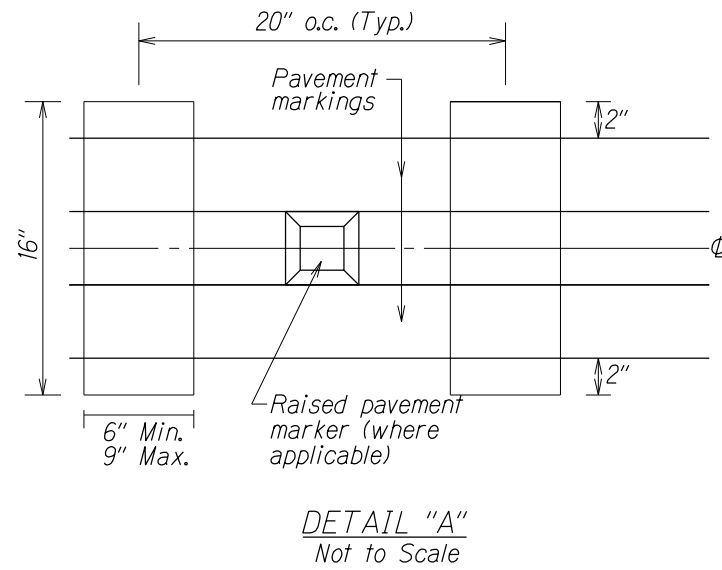
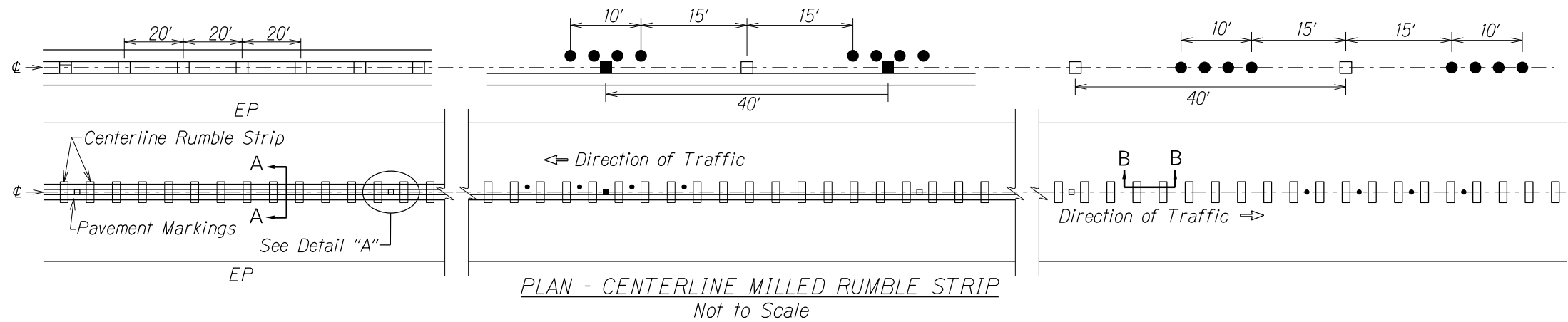


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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLANS
MAMALAHOA HIGHWAY
SAFETY IMPROVEMENTS
Mile Post 3.90 to Mile Post 6.90
Federal Aid Project No. HSIP-0190(017)
Scale: 1"=40' Date: October, 2017
SHEET No. 8 OF 8 SHEETS

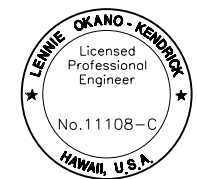
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	20	27



CENTERLINE RUMBLE STRIPS

NOTES:

1. Dimensions shown are approximate. Adjust rumble strip spacing to coordinate with pavement markings prior to installation.
2. Raised pavement markers shall be installed on level surface between the rumble strips. Do not install raised pavement markers inside the milled area.
3. Do not install centerline rumble strips on bridge decks.
4. Where at-grade bridges are present, rumble strips shall end/begin 20 L.F. beyond the existing bridge deck joints/concrete approach slab.
5. Hot spray thermoplastic shall be used for solid line markings within the milled centerline rumble strip area.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CENTERLINE RUMBLE STRIPS

MAMALAHOA HIGHWAY

SAFETY IMPROVEMENTS

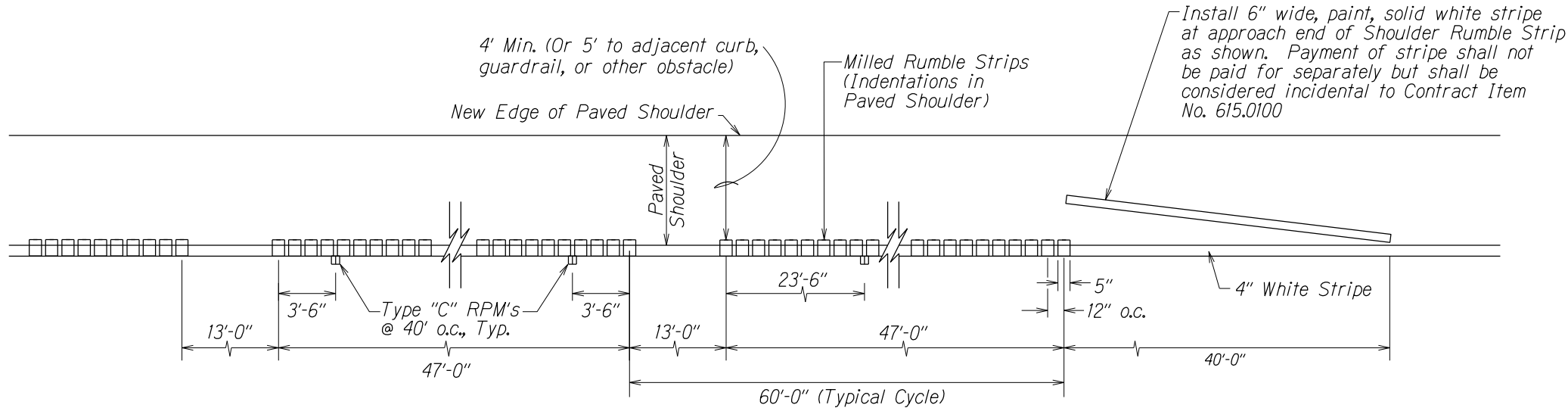
Mile Post 3.90 to Mile Post 6.90

Federal Aid Project No. HSIP-0190(017)

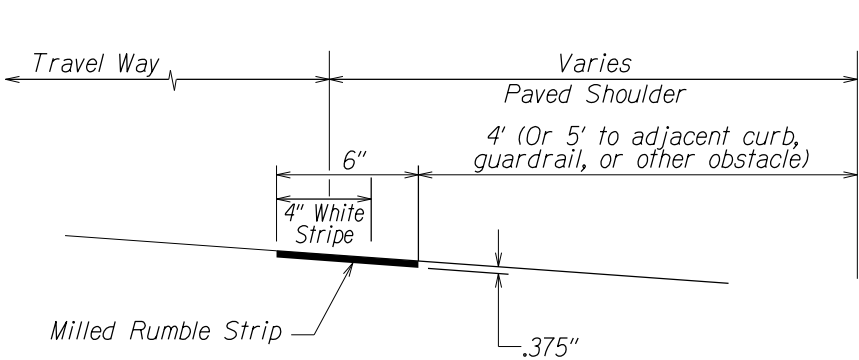
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SHEET No. 1 OF 1 SHEETS

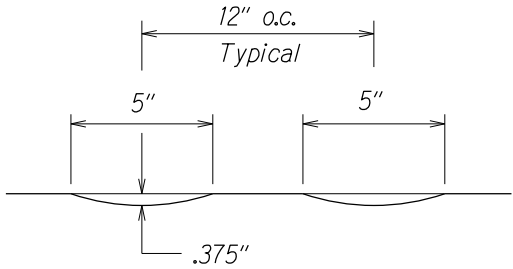
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-0190(017)	2018	21	27



PLAN - MILLED EDGE LINE RUMBLE STRIPE
Not to Scale



LONGITUDINAL SECTION - MILLED EDGE LINE RUMBLE STRIPE



CROSS SECTION
MILLED EDGE LINE RUMBLE STRIPE
Not to Scale

NOTES:

1. Edge line rumble stripe should not be used unless 4 feet of clear shoulder width for bicycle use is available between the rumble strips and the outer edge of the paved shoulder.
2. Do not place Type "C" markers within 2 feet of the 13 feet Rumble Strip opening.

EDGE LINE RUMBLE STRIPES



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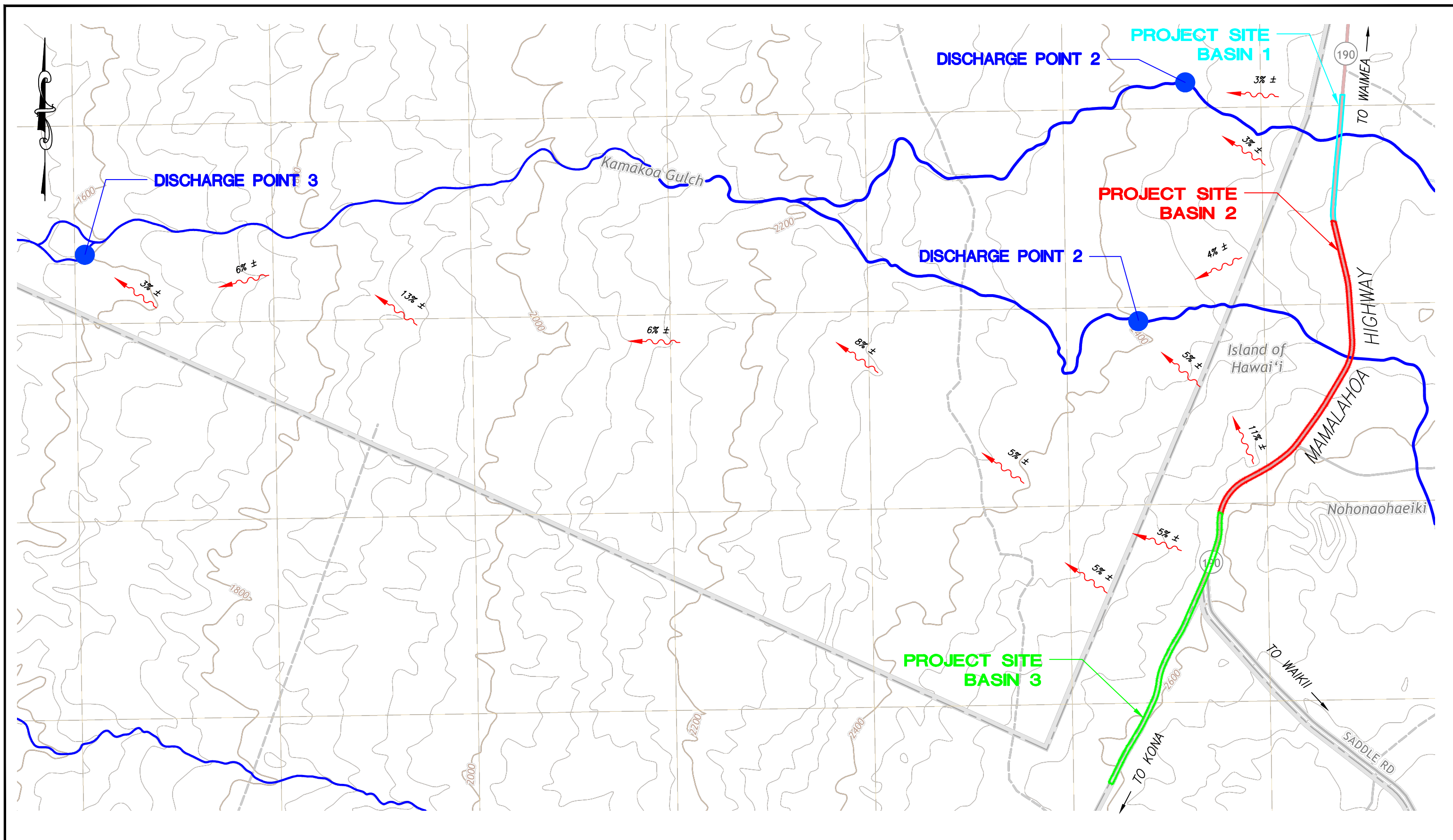
Expiration Date of License 4/18.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EDGE LINE RUMBLE STRIPES

MAMALAHOA HIGHWAY
SAFETY IMPROVEMENTS
Mile Post 3.90 to Mile Post 6.90
Federal Aid Project No. HSIP-0190(017)
Scale: Not to Scale Date: October, 2017

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
N _o .	



*INTERMITTENT STREAMS COLLECT OFF-SITE RUNOFF ENTERING SITE.
THESE STREAMS WILL NOT BE DISTURBED BY CONSTRUCTION ACTIVITIES.



Discharge Points Location Map - USGS Base