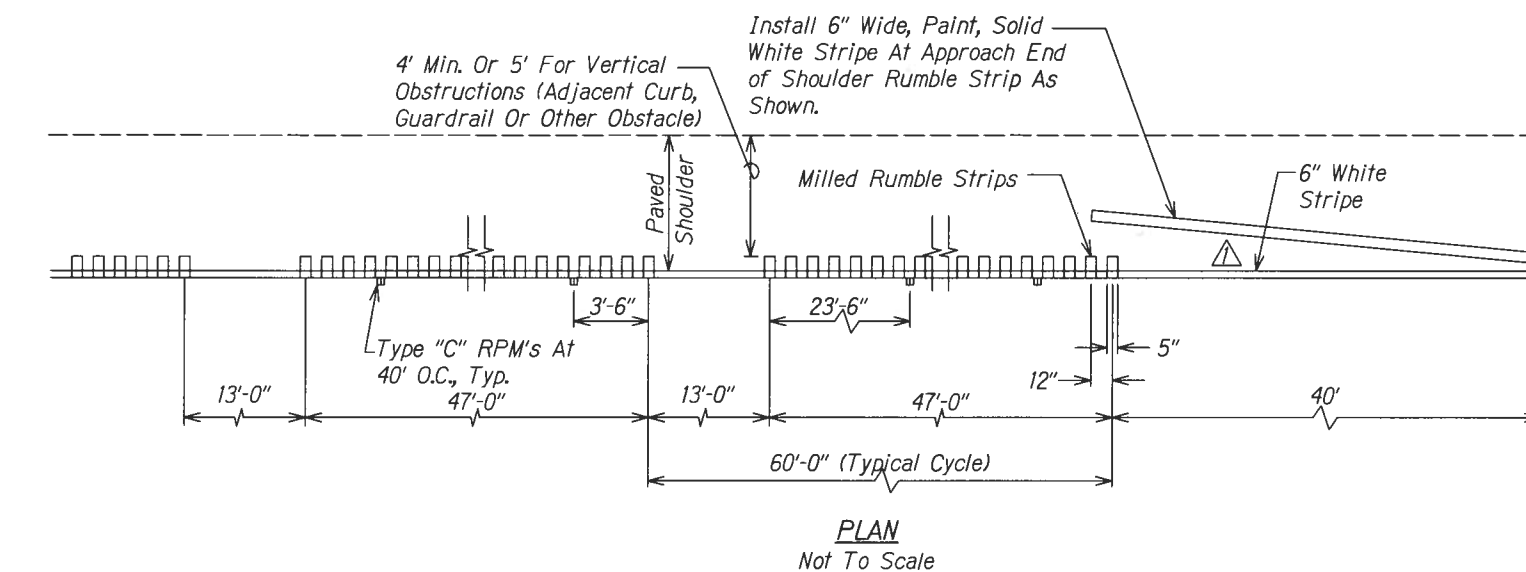


FILE: G:\DOT\1501 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS\300 DSGN\310 PLANS\MISCELLANEOUS DETAILS.DWG
Last Save by: LRS
Last Saved: 12/14/2017
Plotted on: 12/14/2017

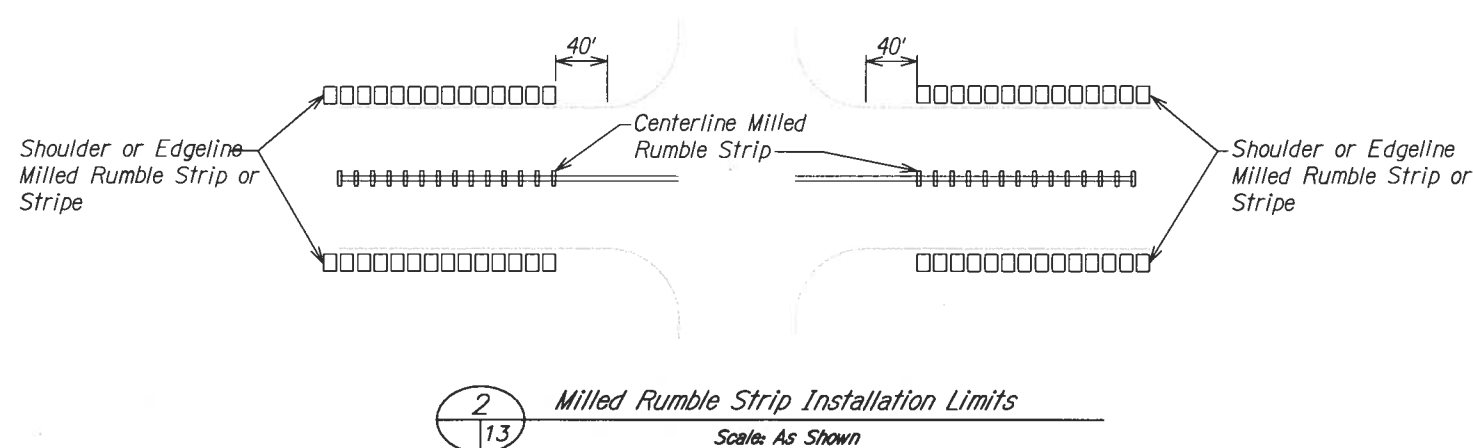
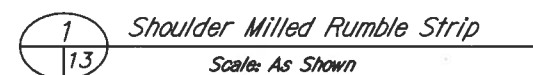
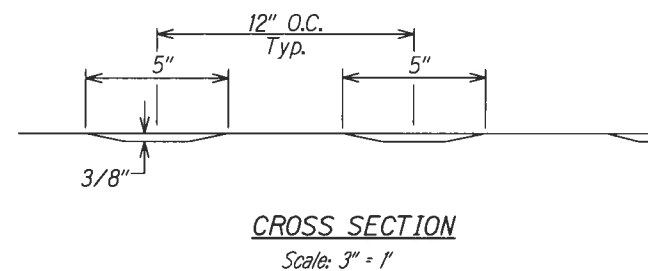
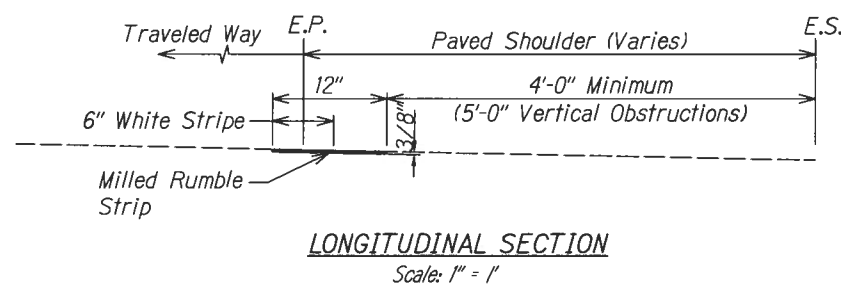
DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
IN CHARGE	DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-030-1(055)	2018	ADD. 13	25



Notes:

1. Shoulder Rumble Strip Should Not Be Used Unless 4 Feet Of Clear Shoulder Width For Bicycle Use (Or 5 Feet If There Are Vertical Obstructions) 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.
3. Milled Rumble Strips Are To Be Placed On The Edge Line Marking. Hot Spray Thermoplastic Shall Be Used To Reapply Edge Line Over The Top Of The Milled Rumble Strip.

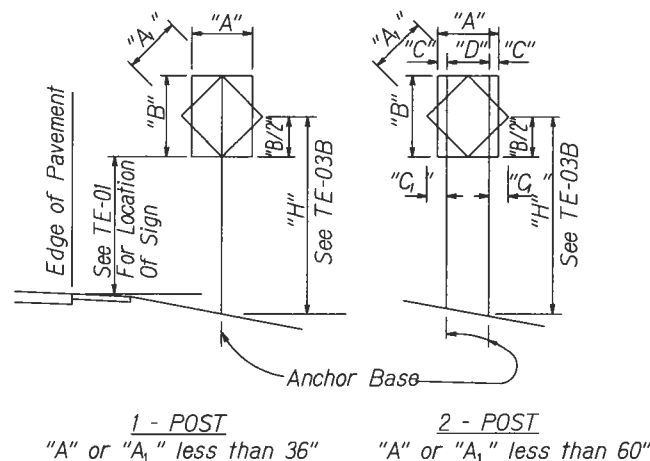


12/14/17	Revised detail per DOT standard details
DATE	REVISION
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION MISCELLANEOUS DETAILS 2 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS Vicinity of Ukumehame to Olowalu Federal Aid Project No. HSIP-030-1(055) Scale: As Shown Date: September 2017
SHEET No. 2 OF 3 SHEETS	

ADD. 13

FILE: G:\DOT\1501 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS\300 DSCN\310 PLANS\MISCELLANEOUS DETAILS 3.DWG
Last Save by: LRS
Last Saved: 12/14/2017
Plotted on: 12/14/2017

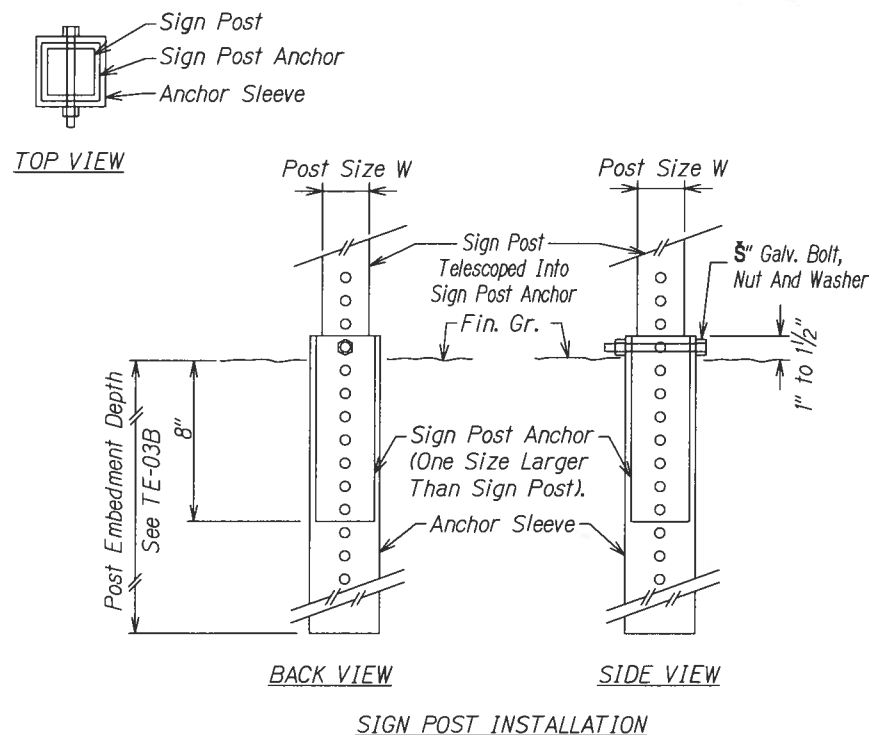
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	
APPROVED BY	
NOTED BY	
DATE	



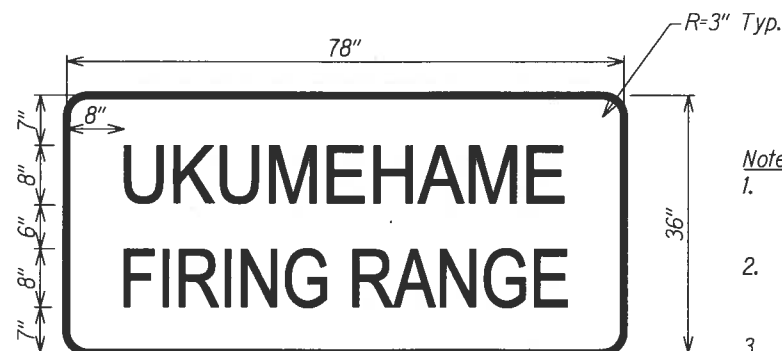
"A" or "A ₁ "	"C"	"G"
Less Than 36"	6"	-
Greater Than 36" And Less Than 48"	9"	19"
Greater Than 48"	12"	24"

NOTE: Frame stiffeners are required when D is greater than 24". See General Notes

TYPICAL INSTALLATION



1 Tube Sign Post Mounting
Scale: Not To Scale



2 Ukumehame Firing Range Sign
Scale: Not To Scale

Notes:

- Sign shall have a white reflectorized border on a green reflectorized background.
- Drill 3/8" diameter bolt holes (for mounting) at appropriate locations.
- Corners of sign panels shall be rounded to fit the border.
- Lettering shall be centered and 8" SERIES D letters.

GENERAL NOTES

- Design Specifications:
 - Design shall conform w/ the latest AASHTO Standard Specifications for the Structural Supports for Highway Signs, Luminaires & Traffic Signals and its Interim supplements and modifications by the Highways Division, Department of Transportation State of Hawaii.
 - Latest HDOT Memorandum with subject title "Design Criteria for Bridges and Structures."
- Loads:
 - Basic Wind Speed: 105 mph.
 - Recurrence Interval of 10 years.
- Materials:
 - Post shall conform to the Standard Specifications.
 - All connection bolts shall be AASHTO M164 bolts and anchor bolts shall be AASHTO M314-105 bolt.
 - Lap splice nuts and bolts shall be M180, with an ultimate tensile strength of 180 ksi, min.
 - Aluminum members and surfaces in contact with structural steel shall be isolated with neoprene material as approved by the Engineer.
- General:
 - See General Notes on B-01, TE-01, and TE-03B for additional information.
 - All posts shall be 12 gage unless otherwise specified or shown on the plans.
 - Square tube posts shall be perforated with 3/8"Ø holes, 1" o.c., 4 sides, along entire length of post.
 - All accessories, fittings and stiffener details (as required) shall be submitted to the Engineer for approval 20 days prior to installation.
 - Alternate designs in accordance with the plans and specifications shall use the Service Load Design Method and shall be stamped by a registered structural engineer of the State of Hawaii and submitted to the Engineer for approval.
 - All sign support posts shall be outside of the clear zone or shielded by an appropriate traffic barrier system. The traffic barrier system shall be submitted to the Engineer for his approval.
 - The Contractor shall use templates while installing the anchor bolts. Anchor bolts shall be vertical.
 - Excavation and backfill shall be considered incidental to the cost of the sign foundation.

12/13/17	Added Ukumehame Firing Range sign details
DATE	REVISION
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION MISCELLANEOUS DETAILS 3 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS Vicinity of Ukumehame to Olowalu Federal Aid Project No. HSIP-030-K055 Scale: As Shown Date: September 2017
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION Expiration Date of the License: 04/30/2018	SHEET No. 3 OF 3 SHEETS

FILE: G:\DOT\1501 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS\300 DSGN\310 PLANS\ROADWAY PLAN 1.DWG
Last Save by: LRS
Last Saved: 12/14/2017
Plotted on: 12/14/2017

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

- ① Remove Exist. Sign(s)
- ② Remove $\neq$ Replace Exist. Sign(s)
- ③ Install New Sign(s) $\neq$ Post(s)
- ④ Remove $\neq$ Replace Exist. Sign(s)
Coordinate W/DOT

B CURVE DATA
 $\Delta = 19^{\circ}14'30''$
 $D = 1^{\circ}00'00''$
 $R = 5729.59'$
 $T = 971.23'$
 $C = 1915.14'$
 $L_c = 1924.17'$
 $S. E. = 0.00 \text{ ft/ft}$

12/14/17	 Added sign dimensions, revised 4" to 6" white edge striping
DATE	REVISION
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>ROADWAY PLAN</u> <u>HONOAPIILANI HIGHWAY</u> <u>SAFETY IMPROVEMENTS</u> <u>Vicinity of Ukumehame to Olowalu</u> <u>Federal Aid Project No. HSIP-030-K055)</u>
 THIS WORK WAS PREPARED BY ME UNDER MY SUPERVISION Expiration Date of the License: 09/30/2018	Scale: As Shown Date: September 2017

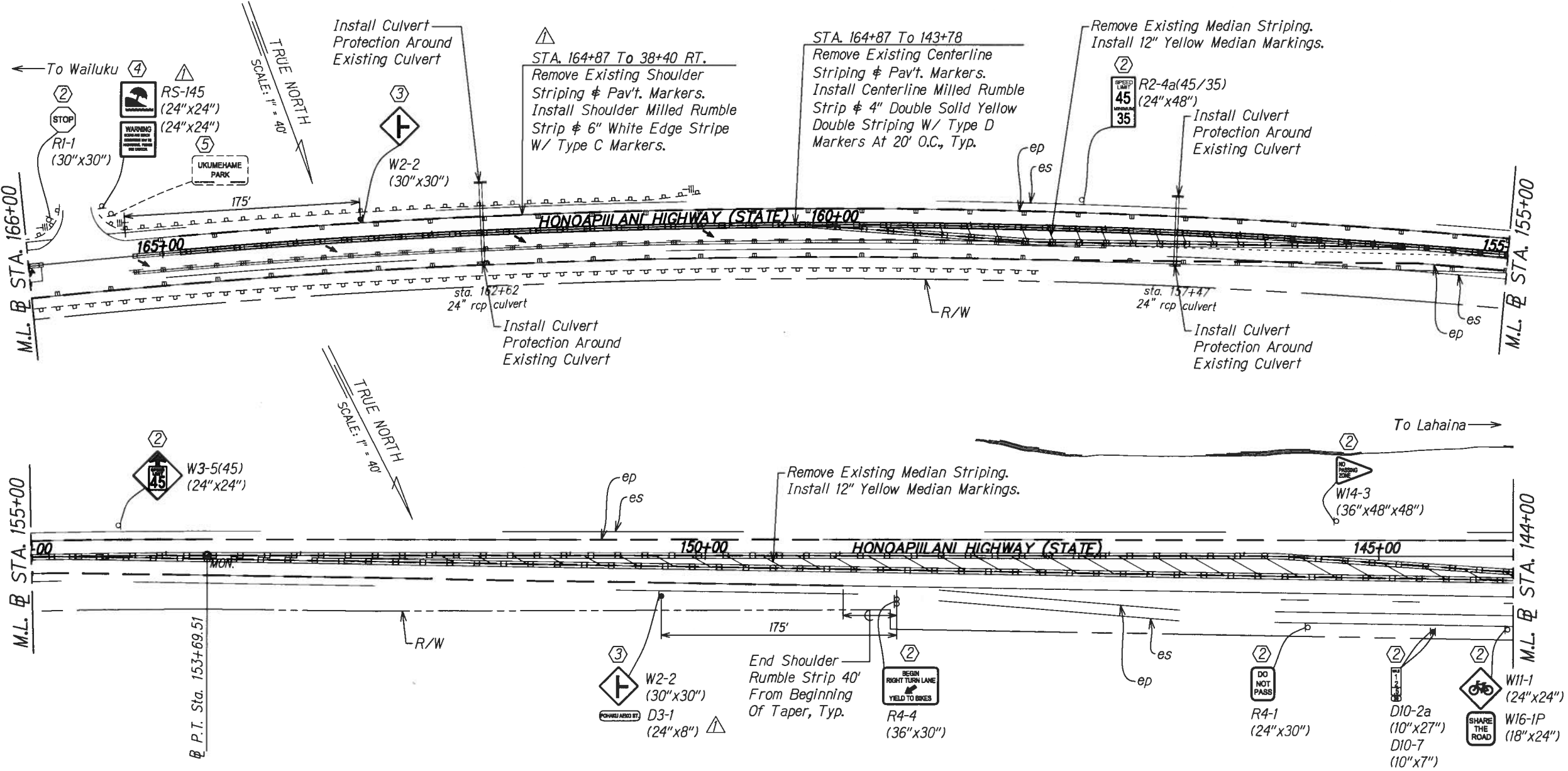
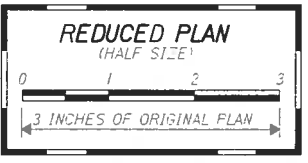
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-030-K055	2018	ADD. 16	25

FILE: G:\DOT\1501 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS\300 DSGN\310 PLANS\ROADWAY PLAN 2.DWG
Last Save by: LRS
Last Saved: 12/14/2017
Plotted on: 12/14/2017

REVISION	DATE	BY	CHKD

Note: Existing Roadway Layout is Based On The Latest Available DOT Base Files And May Not Accurately Reflect Field Conditions. The Contractor Shall Make Adjustments To The Proposed Improvements As Necessary.

- ① Remove Exist. Sign(s)
- ② Remove & Replace Exist. Sign(s)
- ③ Install New Sign(s) & Post(s)
- ④ Remove & Replace Exist. Sign(s) Coordinate W/DOT
- ⑤ Existing Sign to Remain

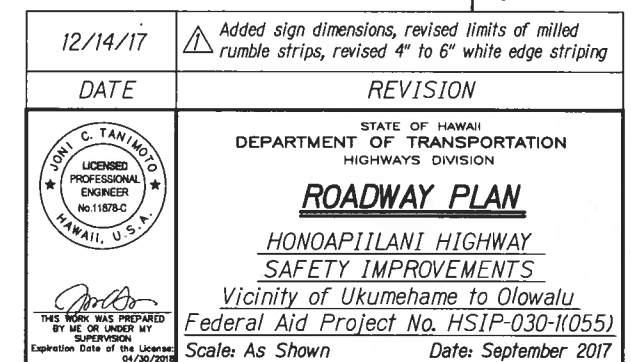


12/14/17	Added sign dimensions, revised 4" to 6" white edge striping
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS Vicinity of Ukumehame to Olowalu Federal Aid Project No. HSIP-030-K055 Scale: As Shown Date: September 2017	
SHEET No. 2 OF 9 SHEETS	

FILE: G:\DOTH1501 HONOAPILANI HIGHWAY SAFETY IMPROVEMENTS\300 DSGN\310 PLANS\ROADWAY PLAN 3.DWG
Last Save by: LRS
Last Saved: 12/14/2017
Plotted on: 12/14/2017



- ① Remove Exist. Sign(s)
- ② Remove ϕ Replace Exist. Sign(s)
- ③ Install New Sign(s) ϕ Post(s)
- ④ Remove ϕ Replace Exist. Sign(s)
Coordinate W/DOT



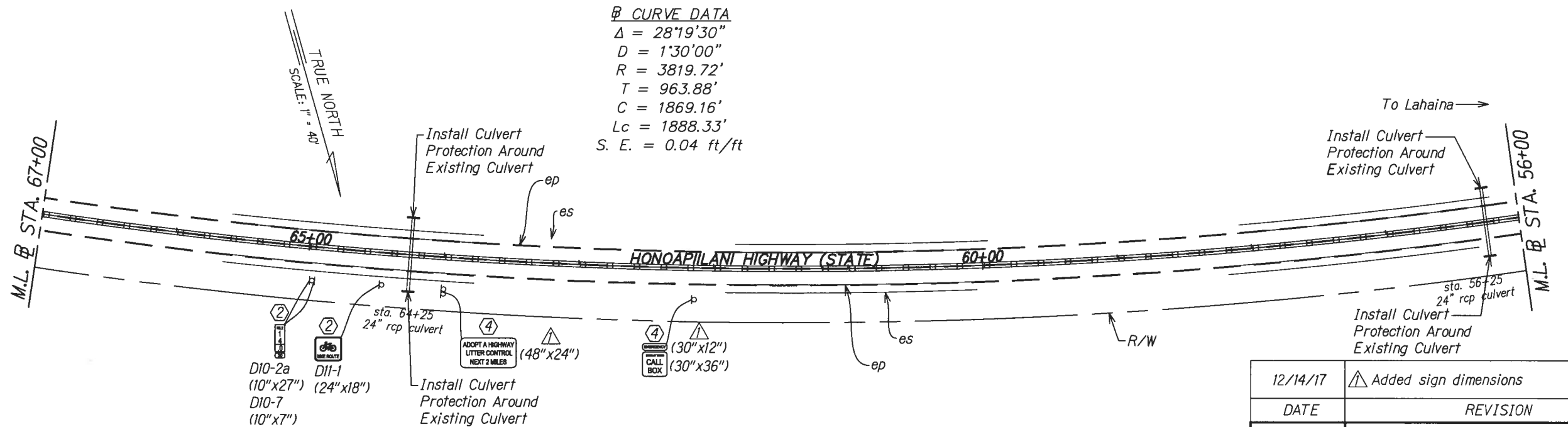
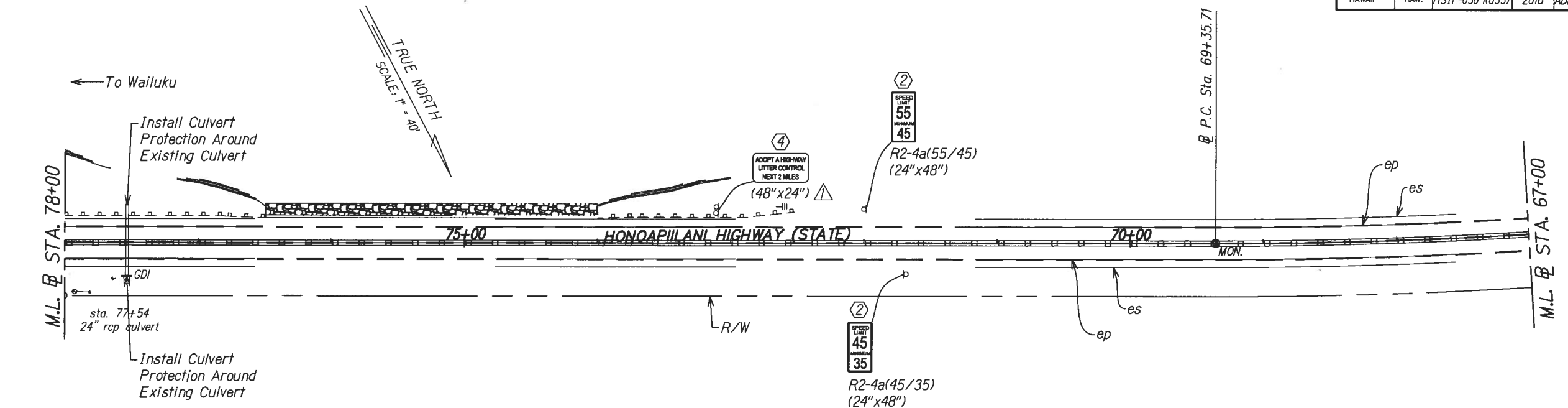
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Last Save by: LRS
Last Saved: 12/14/2017
Plotted on: 12/14/2017

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____	
	DESIGNED BY _____	_____
NOTE BOOK	CHECKED BY _____	
	QUANTITIES BY _____	_____



FILE: G:\DOT\1501 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS\300 DSCN\310 PLANS\ROADWAY PLAN 6.DWG
Last Save by: LRS
Last Saved: 12/14/2017
Plotted on: 12/14/2017

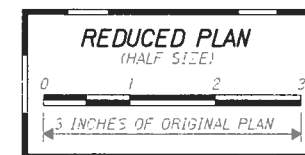
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	
REVIEWED BY	
APPROVED BY	
DATE	



Curve Data
 $\Delta = 28^{\circ}19'30''$
 $D = 1^{\circ}30'00''$
 $R = 3819.72'$
 $T = 963.88'$
 $C = 1869.16'$
 $L_c = 1888.33'$
 $S. E. = 0.04 \text{ ft/ft}$

Note: Existing Roadway Layout is Based On The Latest Available DOT Base Files And May Not Accurately Reflect Field Conditions. The Contractor Shall Make Adjustments To The Proposed Improvements As Necessary.

- ① Remove Exist. Sign(s) & Post(s)
- ② Remove & Replace Exist. Sign(s)
- ③ Install New Sign(s) & Post(s)
- ④ Remove & Replace Exist. Sign(s) Coordinate W/DOT



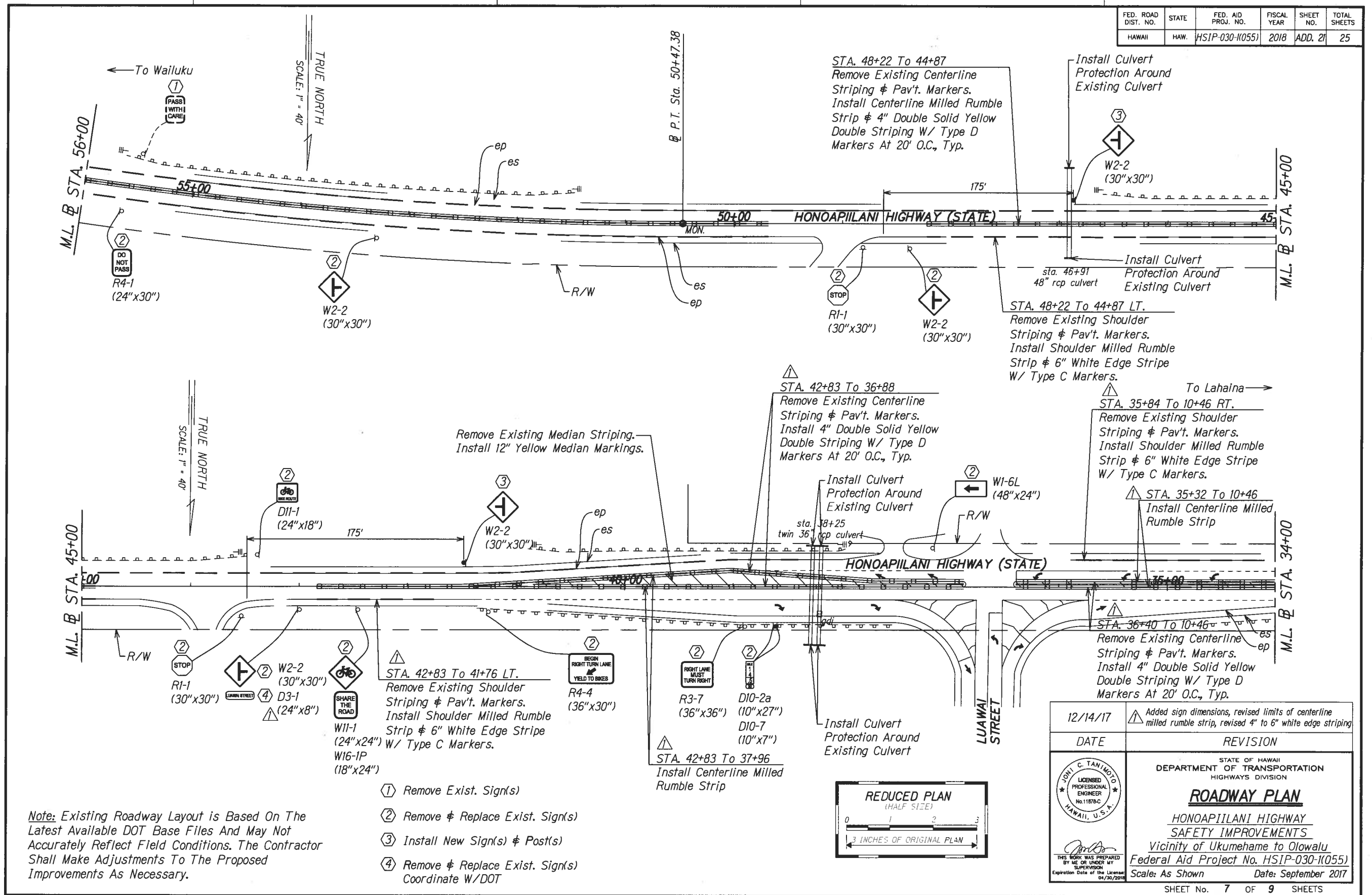
12/14/17	Added sign dimensions
DATE	REVISION
JOHN C. TANIMOTO LICENSED PROFESSIONAL ENGINEER NO. 11876-C HAWAII, U.S.A. THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION Expiration Date of the License: 04/30/2018 STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS Vicinity of Ukumehame to Olowalu Federal Aid Project No. HSIP-030-110551 Scale: As Shown Date: September 2017	
SHEET No. 6 OF 9 SHEETS	

FILE: G:\DOT\1501 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS\300 DSGN\310 PLANS\ROADWAY PLAN 7.DWG
Last Save by: LRS
Last Saved: 12/14/2017
Plotted on: 12/14/2017

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	
APPROVED BY	

Note: Existing Roadway Layout is Based On The Latest Available DOT Base Files And May Not Accurately Reflect Field Conditions. The Contractor Shall Make Adjustments To The Proposed Improvements As Necessary.

- 1 Remove Exist. Sign(s)
- 2 Remove & Replace Exist. Sign(s)
- 3 Install New Sign(s) & Post(s)
- 4 Remove & Replace Exist. Sign(s) Coordinate W/DOT



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-030-1(055)	2018	ADD. 21	25

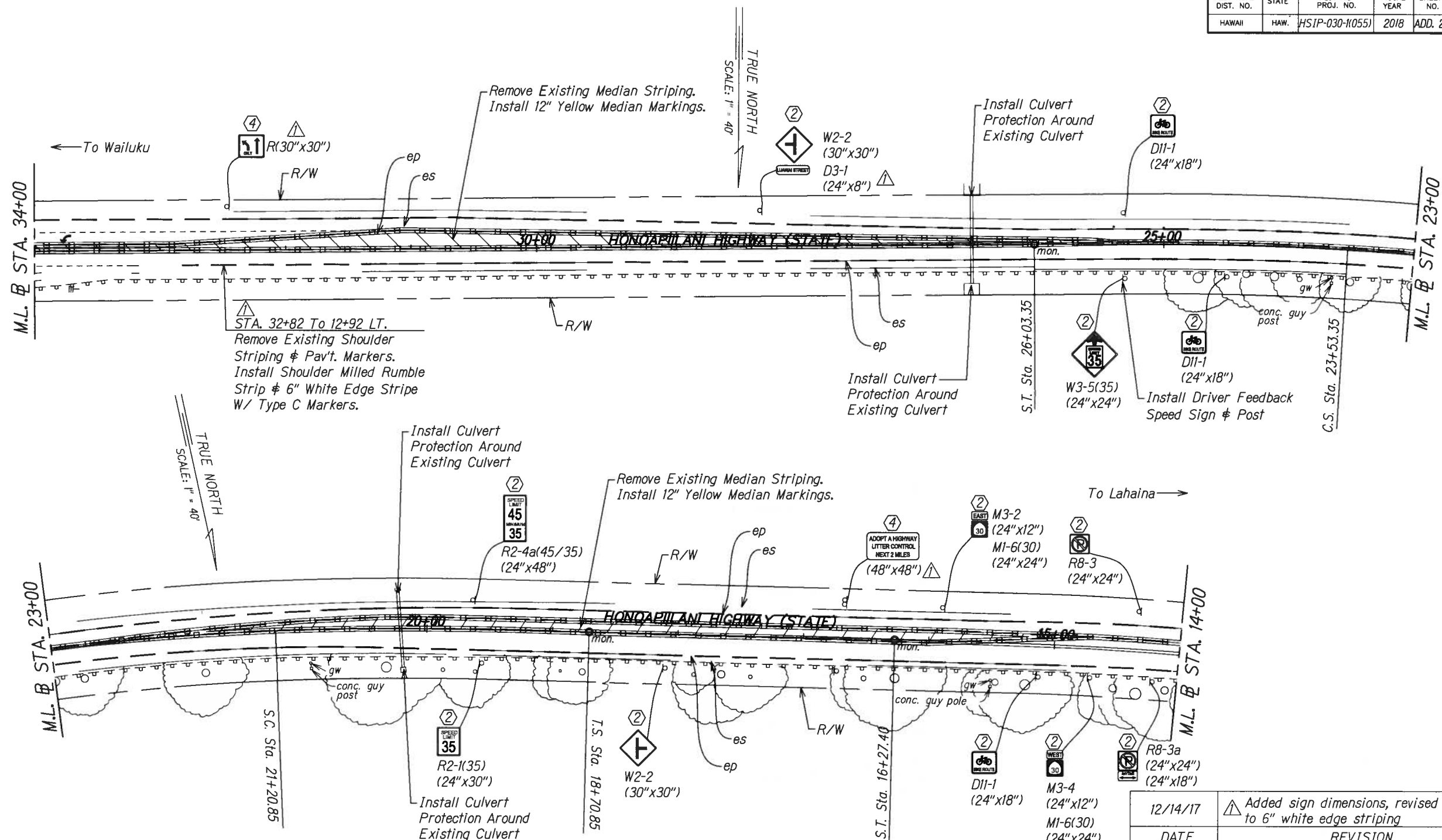
12/14/17	Added sign dimensions, revised limits of centerline milled rumble strip, revised 4" to 6" white edge striping
DATE	REVISION
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS Vicinity of Ukumehame to Olowalu Federal Aid Project No. HSIP-030-1(055) Scale: As Shown Date: September 2017
SHEET No. 7 OF 9 SHEETS	

FILE: G:\DOT\1501 HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS\300 DSCN\310 PLANS\ROADWAY PLAN 8.DWG
 Last Save by: LRS
 Last Saved: 12/14/2017
 Plotted on: 12/14/2017

DESIGNED BY	DATE
CHECKED BY	DATE
IN CHARGE	DATE
PROJECT MANAGER	DATE

Note: Existing Roadway Layout is Based On The Latest Available DOT Base Files And May Not Accurately Reflect Field Conditions. The Contractor Shall Make Adjustments To The Proposed Improvements As Necessary.

- ① Remove Exist. Sign(s)
- ② Remove & Replace Exist. Sign(s)
- ③ Install New Sign(s) & Post(s)
- ④ Remove & Replace Exist. Sign(s) Coordinate W/DOT



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-030-1(055)	2018	ADD. 22	25

12/14/17	Added sign dimensions, revised 4" to 6" white edge striping
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN HONOAPIILANI HIGHWAY SAFETY IMPROVEMENTS Vicinity of Ukumehame to Olowalu Federal Aid Project No. HSIP-030-1(055) Scale: As Shown Date: September 2017	
SHEET No. 8 OF 9 SHEETS ADD. 22	

