

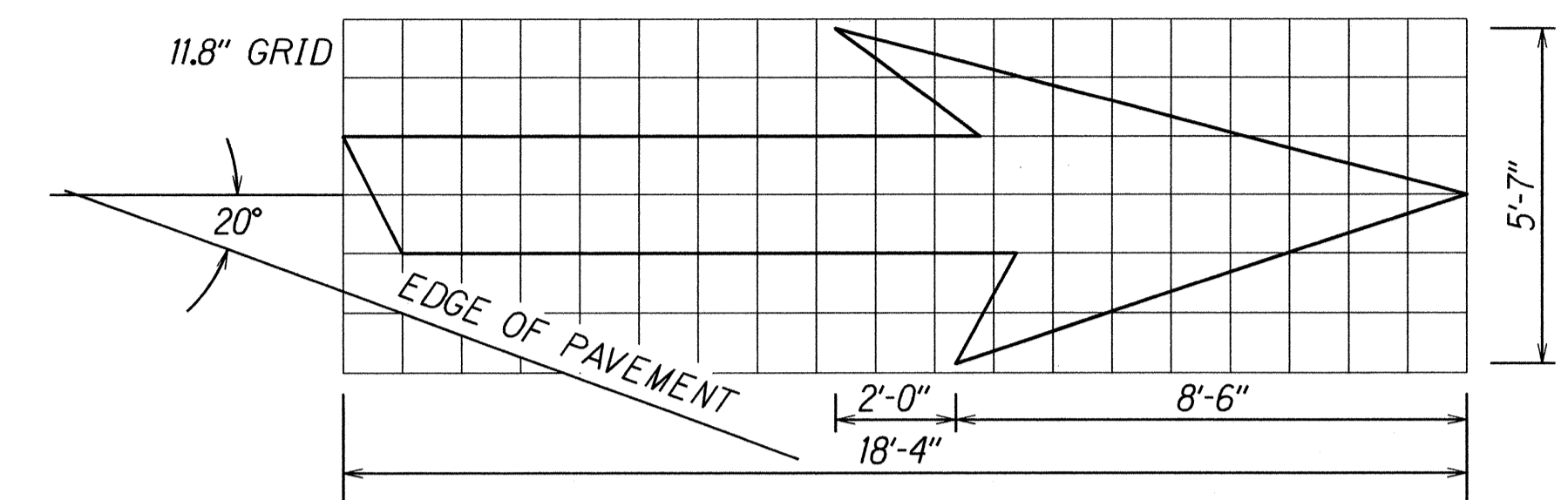
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	25	66

**LEGEND**

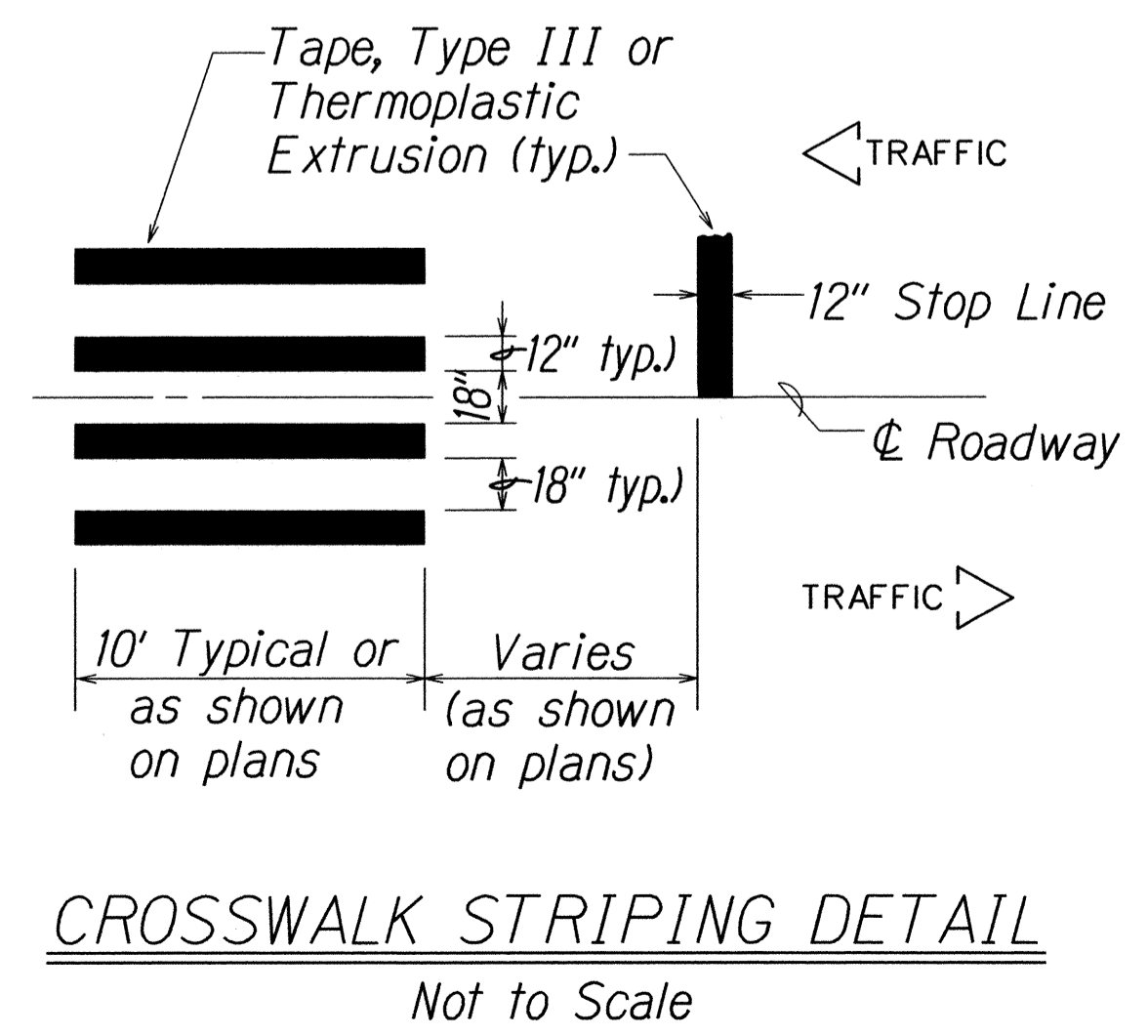
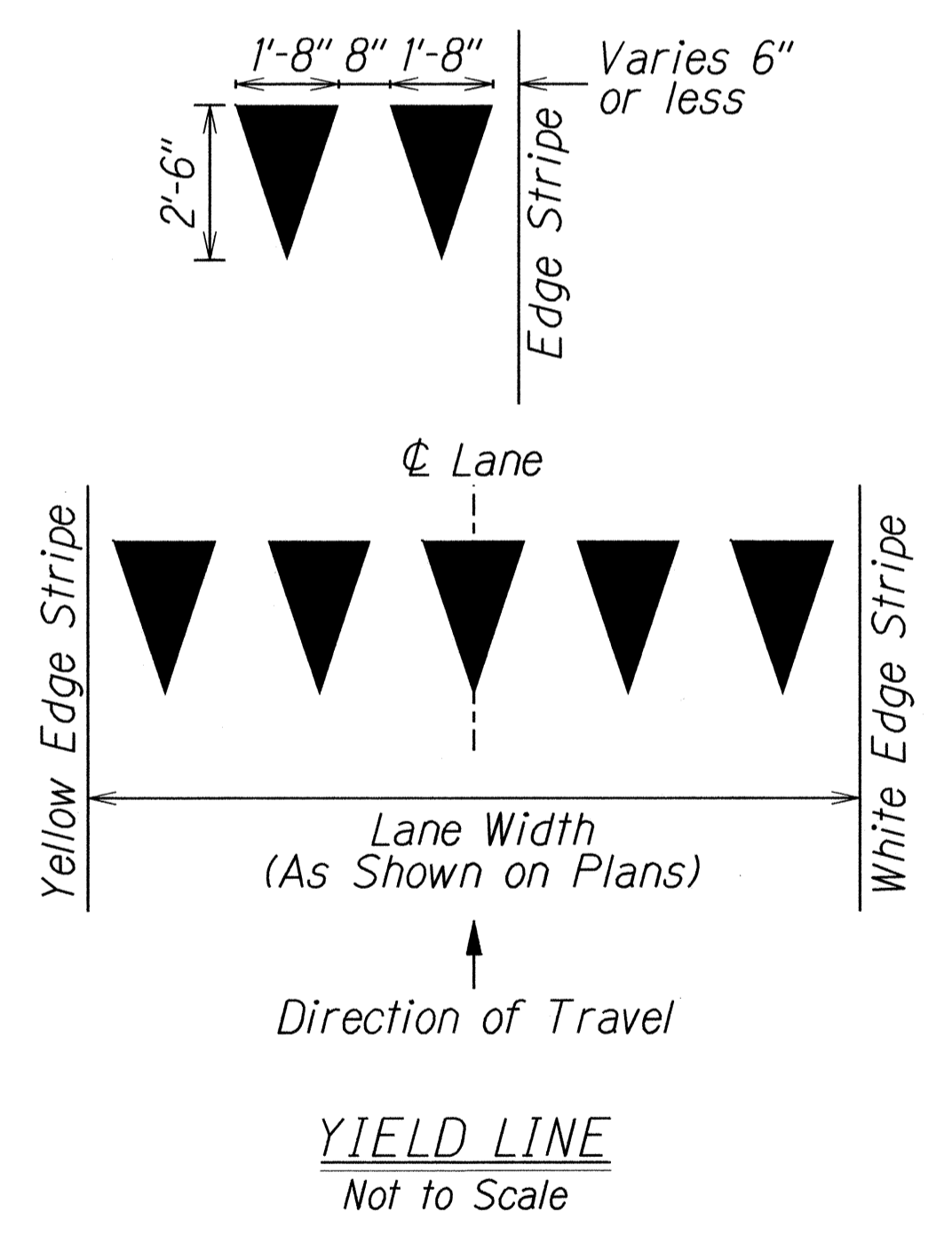
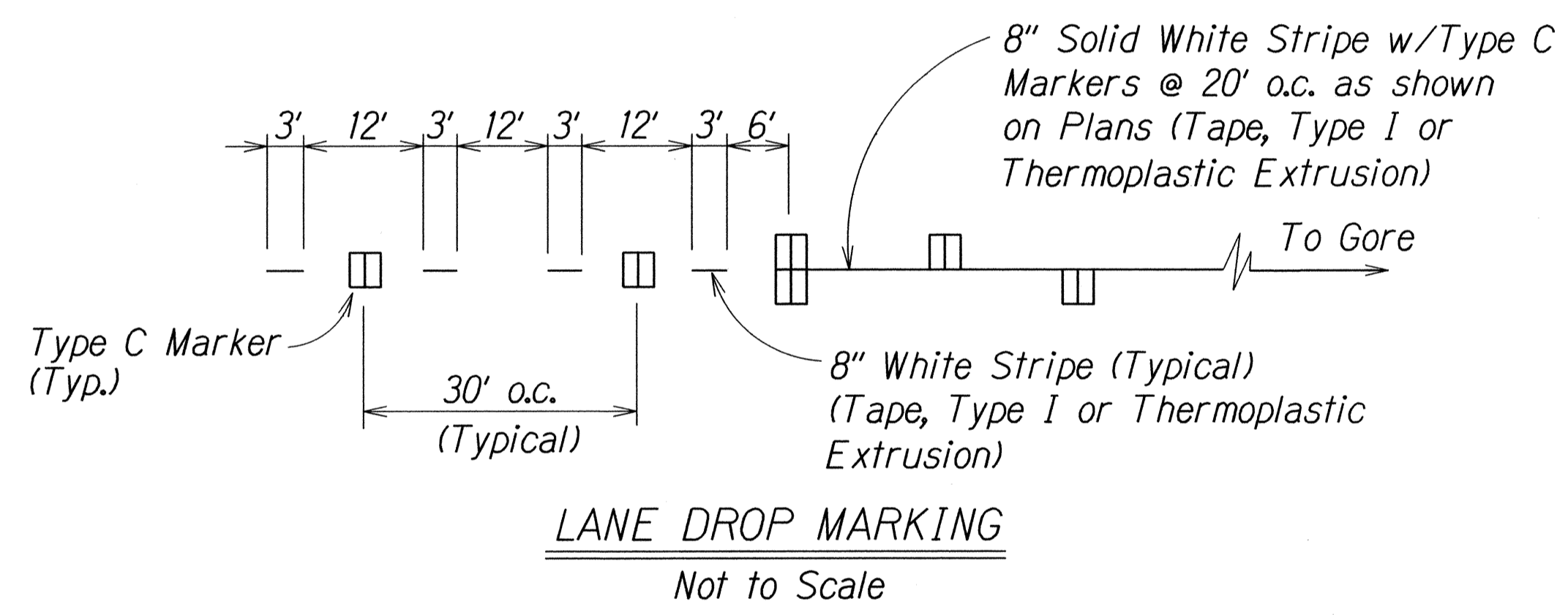
- 4 each Type A Raised Pavement Markers  
Type C Raised Pavement Markers @ 40'-0" o.c.
- 4 each Type J Raised Pavement Markers  
Type D Raised Pavement Markers @ 40'-0" o.c.
- 8" White Stripe with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)
- 4" Double Solid Yellow with Type D Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)
- 4" Double Solid Yellow Stripes with Type H Raised Pavement Markers @ 20'-0" o.c. (Tape, Type II or Thermoplastic Extrusion)
- 4" Yellow Edge Stripe with Type H Raised Pavement Markers @ 40'-0" o.c. (Tape, Type II or Thermoplastic Extrusion)
- 4" Double Solid White Stripes with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)
- Lane Change Restriction Marking  
4 each Type A Raised Pavement Markers  
Type C Raised Pavement Markers @ 20'-0" o.c.  
4" White Stripe (Tape, Type I or Thermoplastic Extrusion)
- 4" or 8" White Edge Stripe with Type C Raised Pavement Markers @ 40'-0" o.c. (Tape, Type II or Thermoplastic Extrusion)
- 4" White Guide Lines (Tape, Type III or Thermoplastic Extrusion except for bus bays)
- Transverse Median Marking (Tape, Type II or Thermoplastic Extrusion)
- Transverse Shoulder Marking (Tape, Type II or Thermoplastic Extrusion)
- Channelizing Island or Deceleration Lane Gore (Tape, Type II or Thermoplastic Extrusion)
- Crosswalk and Stop Line. All Stop Lines shall be 10'-0" from Crosswalk unless otherwise noted. The circled number indicates the number of lanes for payment (Tape, Type III or Thermoplastic Extrusion)
- Pavement Arrow (Tape, Type III or Thermoplastic Extrusion)
- STOP Pavement Word (Tape, Type III or Thermoplastic Extrusion)
- 4 Each Type J Raised Pavement Markers  
Type D Raised Pavement Markers @ 40'-0" o.c.  
Type H Raised Pavement Markers (Reflective Surface facing no-passing direction)  
4" Single Solid Yellow Stripe (Tape, Type I or Thermoplastic Extrusion)
- Extension of Edge Line, 4" Wide x 2'-0" Long White Stripe @ 10'-0" o.c. w/Type C Markers @ 40'-0" o.c. (Tape, Type III or Thermoplastic Extrusion)
- Reflector Marker (RM-5) Mounted on New and Existing Metal Guardrail

**NOTES**

1. Layout of pavement markings and striping shall be done by the Contractor and approved by the Engineer prior to any installation work.
2. Existing pavement markings not incorporated in the final traffic pattern shall be removed as directed by the Engineer. Costs shall be incidental to the various pavement marking items.
3. Raised pavement markers shall not be installed within crosswalks.
4. Final locations of all signs shall be approved by the Engineer prior to any installation work.
5. Existing signs not shown on these plans shall remain as posted unless otherwise directed by the Engineer. Removal and disposal of existing signs and/or posts as designated on these plans shall be incidental to the various signing items.
6. Final locations of all Stop Lines shall be approved by the Engineer prior to installation.
7. All pavement striping shall be as noted on the legend or plans.
8. All preformed pavement marking tapes over existing pavement shall be applied with an approved primer as recommended by the tape manufacturer and as approved by the Engineer. The primer shall be allowed to dry to the tacky stage prior to tape application.
9. All Pedestrian warning signs with supplemental sign shall be on a fluorescent yellow-green retroreflective background with a legend and border.



**TYPE VI ARROW**  
RIGHT LANE DROP ARROW  
(FOR LEFT LANE, USE MIRROR IMAGE)



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING  
LEGEND, DETAILS & NOTES**

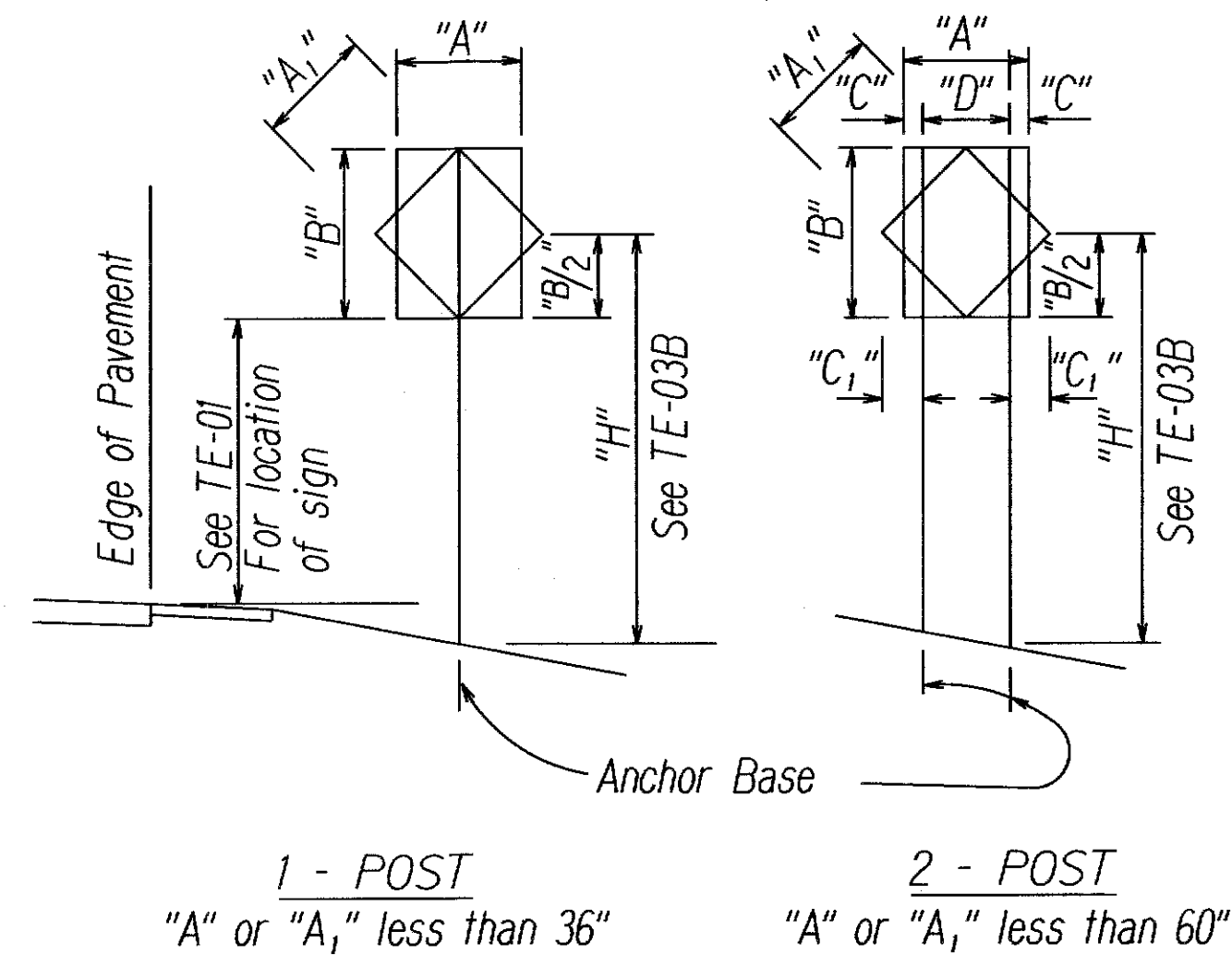
KAMEHAMEHA HIGHWAY  
SAFETY IMPROVEMENTS

Vicinity of Kahana Valley Road to Kaaawa Bridge  
Federal Aid Project No. HSIP-083-1(67)

Scale: As Shown Date: Dec., 2015

SHEET No. 25 OF 14 SHEETS

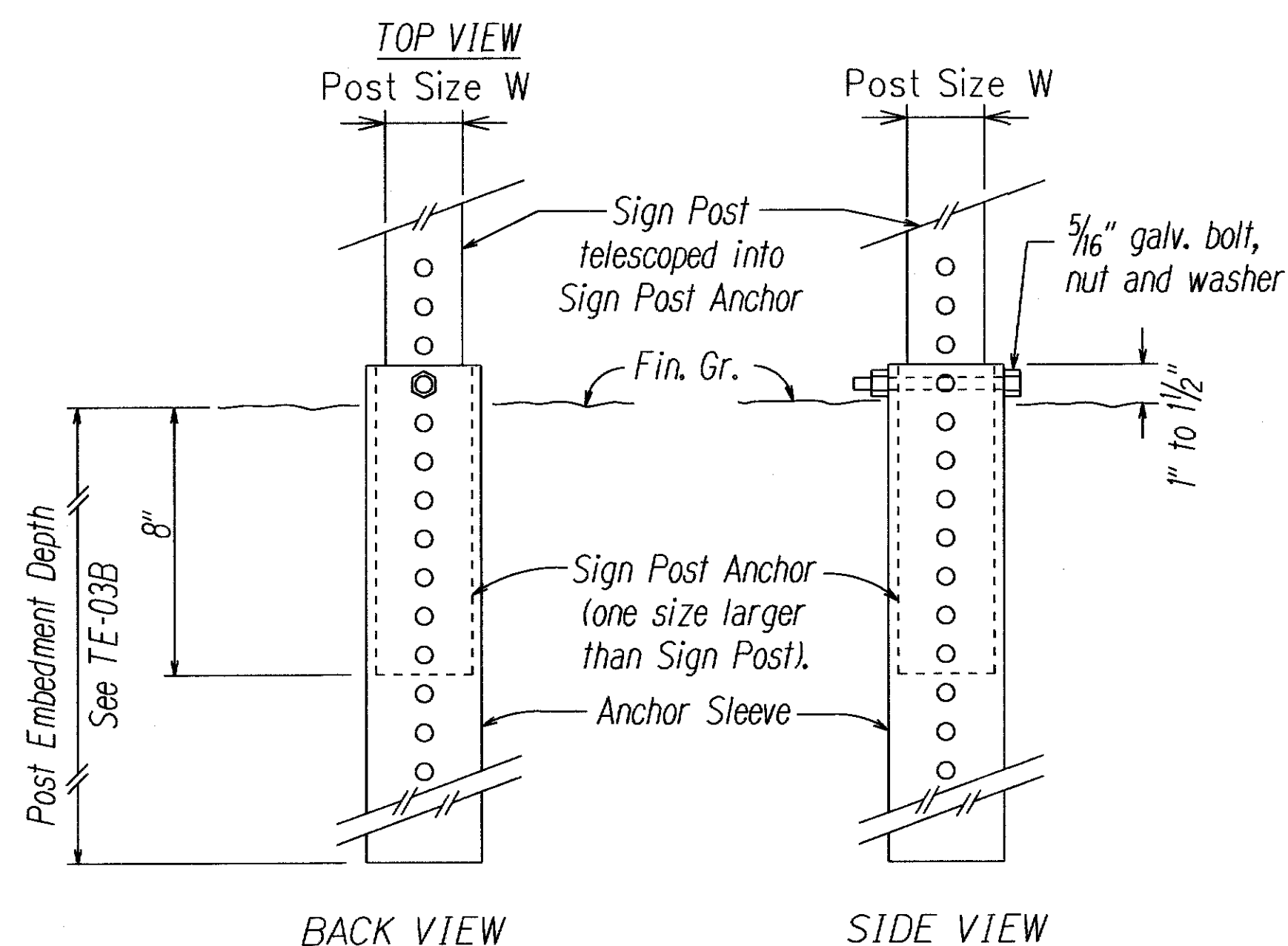
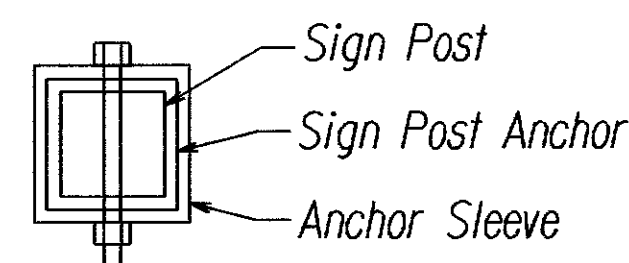
SURVEY PLOTTED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 ORIGINAL PLAN: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 QUANTITIES BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 N. 11/11/15



"A" or "A,"	"C"	"C <sub>1</sub> "
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



SIGN POST INSTALLATION  
ANCHOR BASE DETAIL

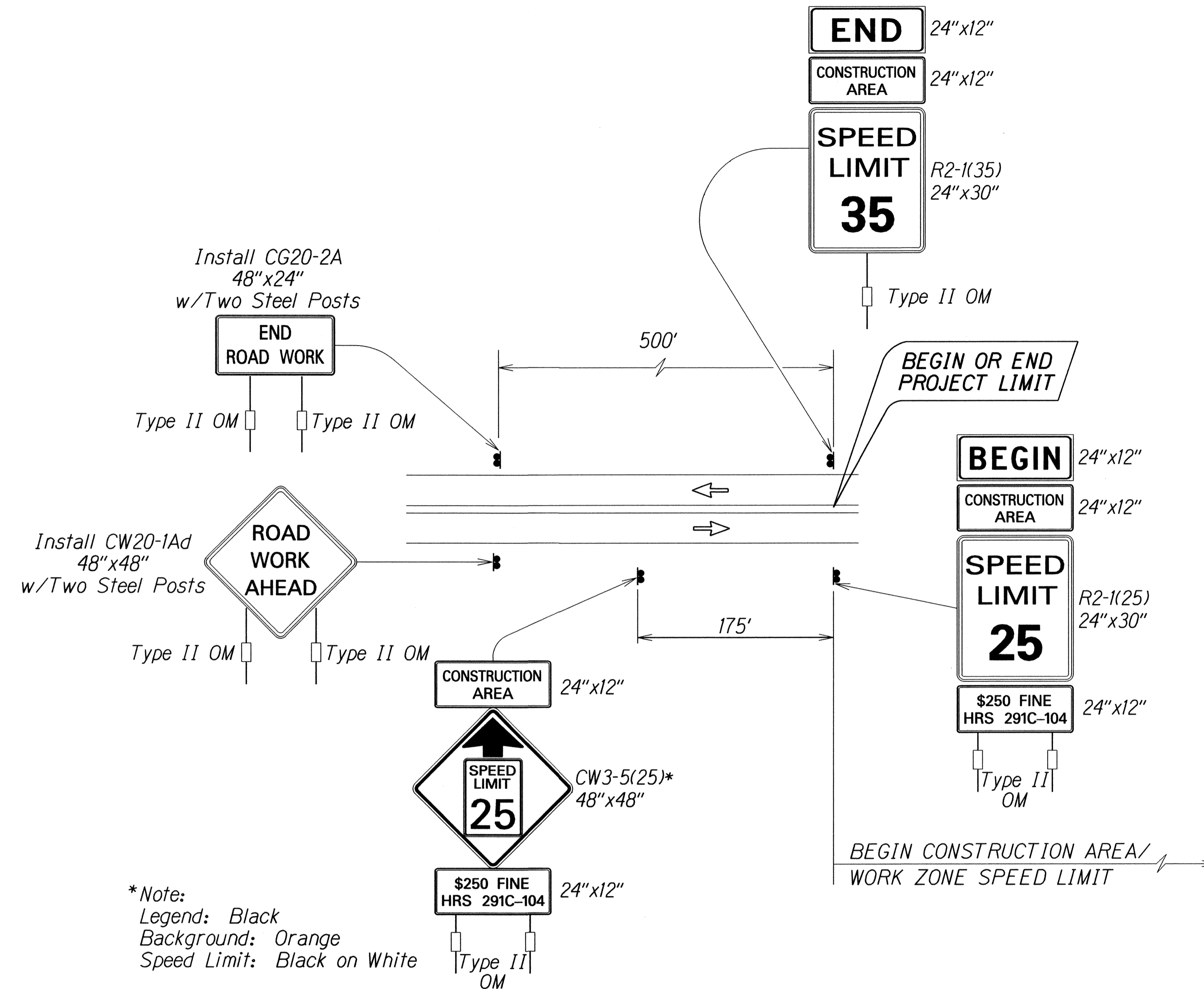
GENERAL NOTES

- 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 square tube posts shall be 12 gauge unless otherwise specified or shown on the plans.
  - Square tube posts shall be perforated with 7/16"  $\phi$  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 without break away anchor base 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.

ORIGINAL PLAN  
SURVEY PLOTTED BY  
DRAWN BY  
NOTE BOOK  
T-22m  
CHECKED BY

2/12/16	Revised Notes
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>GALVANIZED SQUARE TUBE          SIGN POST MOUNTING</b> KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS Vicinity of Kahana Valley Road to Kaaawa Bridge Federal Aid Project No. HSIP-083-1(67) Scale: As Shown Date: Dec., 2015	
SHEET No. T2 OF 14 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	27	66

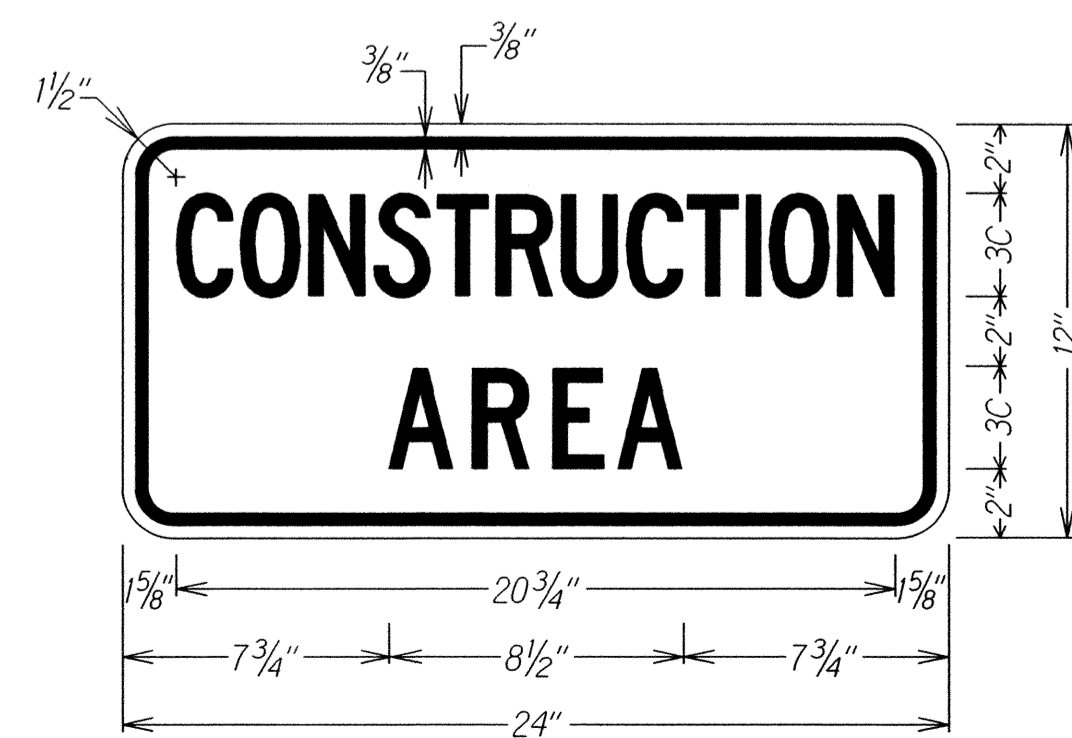


TYPICAL DETAIL FOR CONSTRUCTION SIGNS  
ON TWO LANE OR MULTILANE UNDIVIDED LOW SPEED HIGHWAY

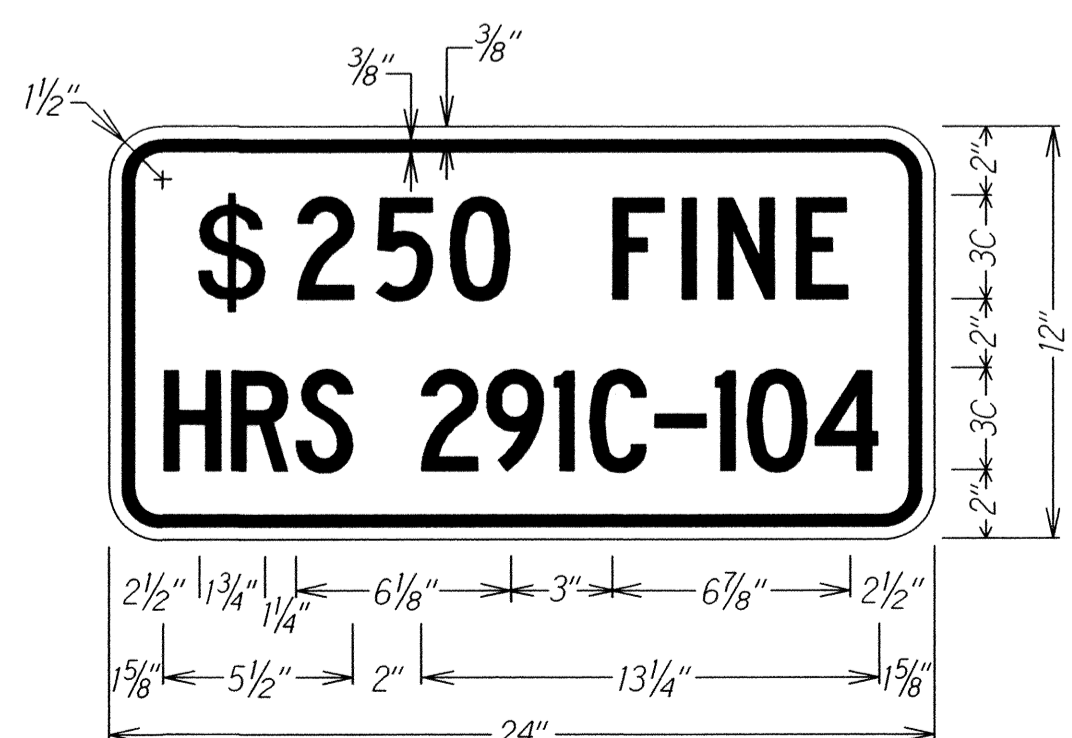
**Work Zone Note:**

1. This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.
2. All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(25) and CW3-5(25) with "CONSTRUCTION AREA" and "\$250 FINE HRS 291C-104" Supplemental Signs).
3. Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.
4. Each construction warning sign shall have a minimum of two (2) Type II OM. Each work zone speed limit assembly shall have a minimum of one (1) Type II OM. Installation of each Type II OM shall be considered incidental to Item No. 645.0100 - Traffic Control.
5. Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project limits shall be restored back to their original locations and configurations.
6. Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
7. The removal and restoration of existing regulatory speed limit signs with new posts along with the installation, maintenance and removal of work zone speed limit sign assemblies shall be considered incidental to Item No. 645.0100 - Traffic Control.

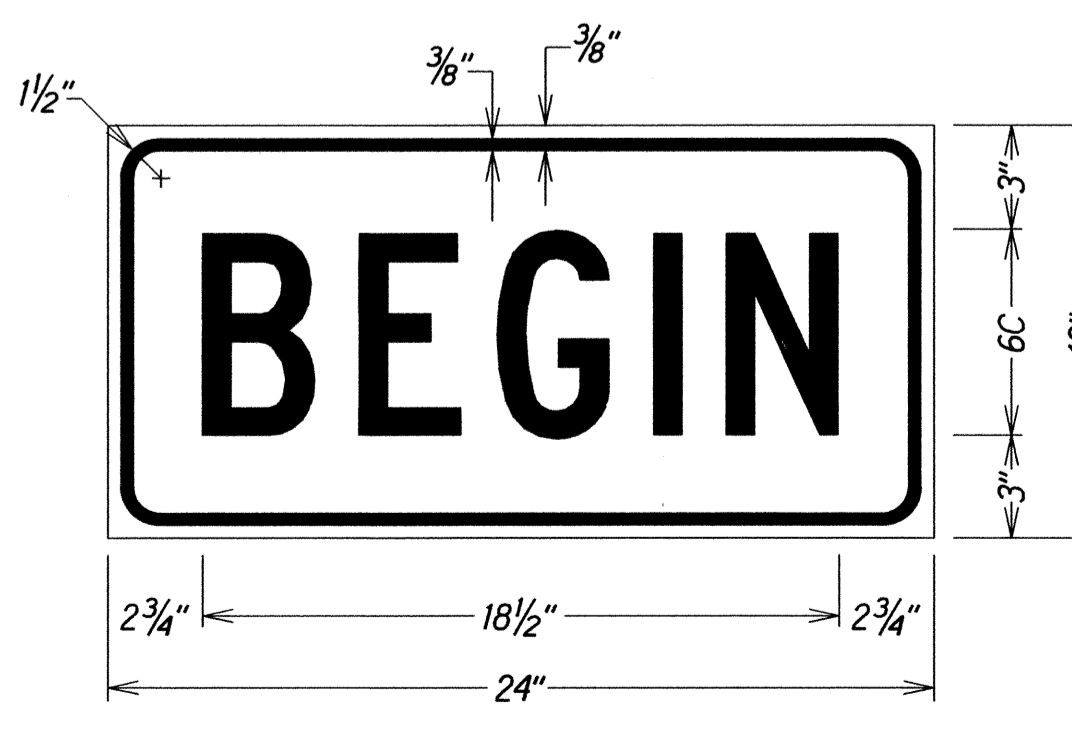
DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
DATE	_____
NO.	_____



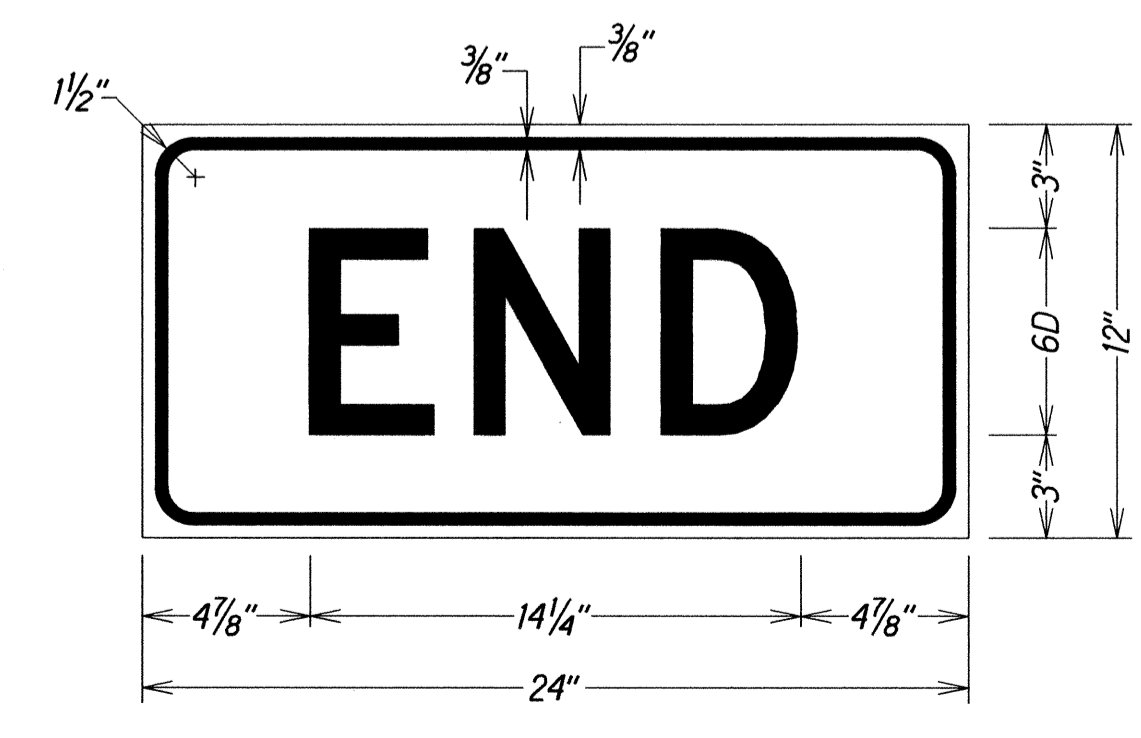
LEGEND: BLACK  
BACKGROUND: ORANGE



LEGEND: BLACK  
BACKGROUND: WHITE



LEGEND: BLACK  
BACKGROUND: ORANGE



LEGEND: BLACK  
BACKGROUND: ORANGE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**LOW SPEED UNDIVIDED HIGHWAY  
WORK ZONE SIGNING PLAN, NOTES & DETAILS**  
KAMEHAMEHA HIGHWAY  
SAFETY IMPROVEMENTS  
Vicinity of Kahana Valley Road to Kaaawa Bridge  
Federal Aid Project No. HSIP-083-1(67)  
Not To Scale Date: Dec., 2015  
SHEET No. T3 OF 14 SHEETS

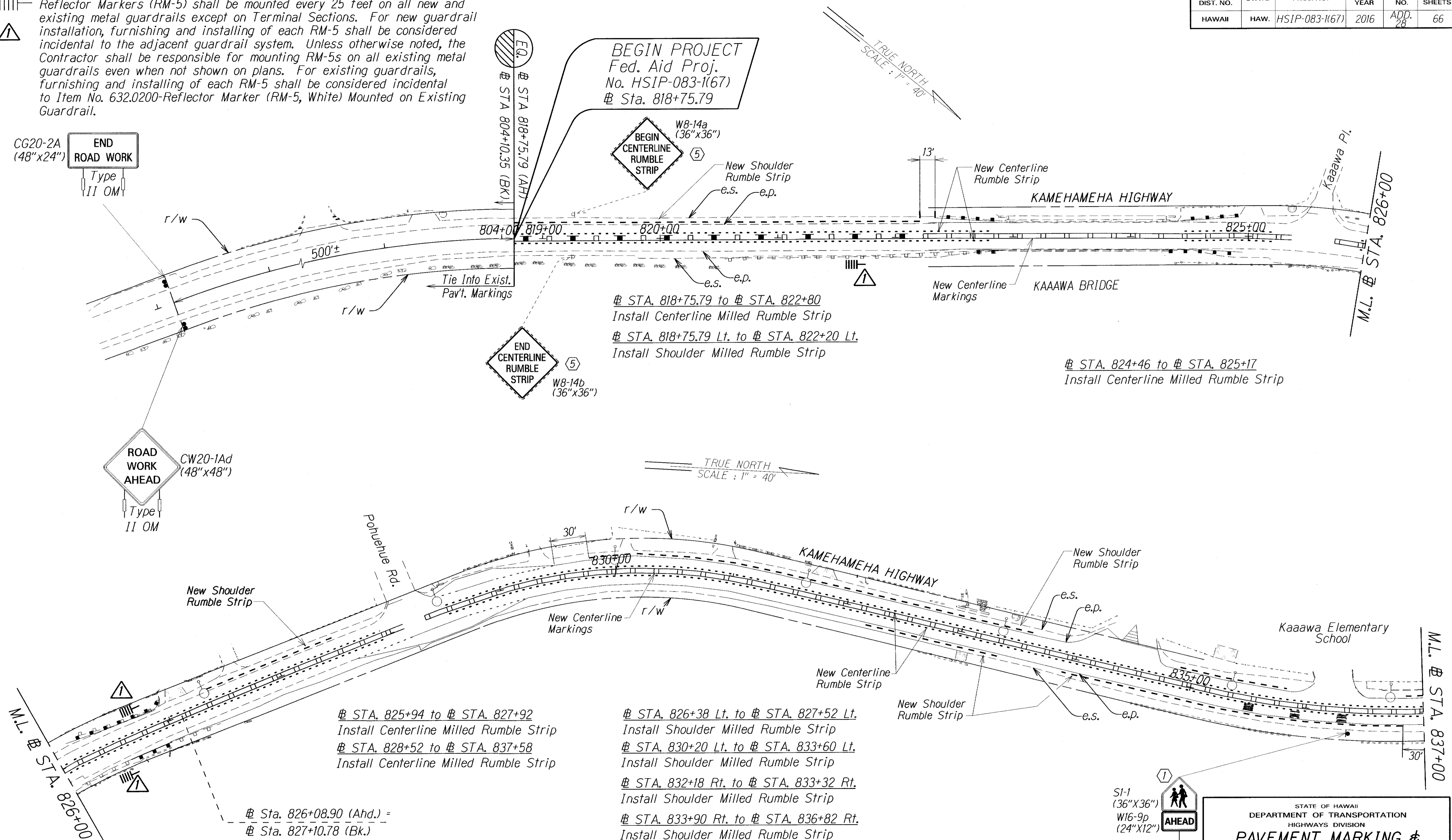
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	ADD. 28	66

Reflector Markers (RM-5) shall be mounted every 25 feet on all new and existing metal guardrails except on Terminal Sections. For new guardrail installation, furnishing and installing of each RM-5 shall be considered incidental to the adjacent guardrail system. Unless otherwise noted, the Contractor shall be responsible for mounting RM-5s on all existing metal guardrails even when not shown on plans. For existing guardrails, furnishing and installing of each RM-5 shall be considered incidental to Item No. 632.0200-Reflector Marker (RM-5, White) Mounted on Existing Guardrail.

CG20-2A (48"x24")  
**END ROAD WORK**  
 Type II OM

CW20-1Ad (48"x48")  
**ROAD WORK AHEAD**  
 Type II OM

**BEGIN PROJECT**  
 Fed. Aid Proj.  
 No. HSIP-083-1(67)  
 Sta. 818+75.79



# STA. 818+75.79 to # STA. 822+80  
 Install Centerline Milled Rumble Strip  
 # STA. 818+75.79 Lt. to # STA. 822+20 Lt.  
 Install Shoulder Milled Rumble Strip

# STA. 824+46 to # STA. 825+17  
 Install Centerline Milled Rumble Strip

# STA. 825+94 to # STA. 827+92  
 Install Centerline Milled Rumble Strip  
 # STA. 828+52 to # STA. 837+58  
 Install Centerline Milled Rumble Strip

# STA. 826+38 Lt. to # STA. 827+52 Lt.  
 Install Shoulder Milled Rumble Strip  
 # STA. 830+20 Lt. to # STA. 833+60 Lt.  
 Install Shoulder Milled Rumble Strip  
 # STA. 832+18 Rt. to # STA. 833+32 Rt.  
 Install Shoulder Milled Rumble Strip  
 # STA. 833+90 Rt. to # STA. 836+82 Rt.  
 Install Shoulder Milled Rumble Strip

# Sta. 826+08.90 (Ahd.) =  
 # Sta. 827+10.78 (Bk.)

**KEY:**

- ① Remove Exist. Sign(s) & Post(s) & Install New Sign(s) & Post(s)
- ② Remove Exist. Sign(s) & Install New Sign(s)
- ③ Install New Sign(s)
- ④ Install New Sign(s) & Post(s)
- ⑤ Remove Existing Sign(s) and Post(s)

**NOTE:**

- ① All new sign installations shall have vertical clearance of 7' minimum, from top of pavement at edge of lane to bottom of sign. For additional details see Standard Plan TE-01.
- ② All existing edgeline pavement marking & striping shall remain & are for reference only.

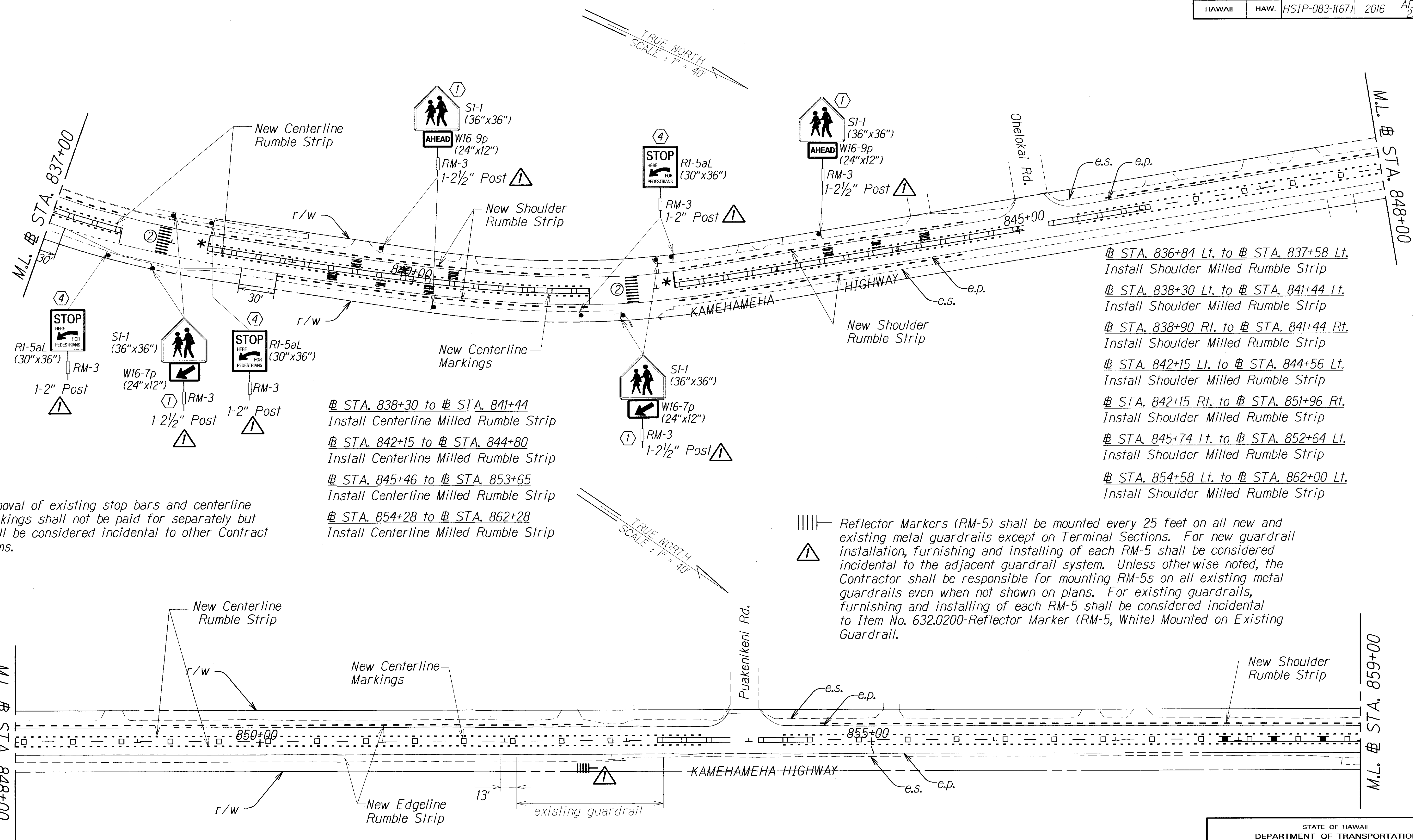
	2/12/16	Added sign post sizes, Notes, and RM-5 symbol
	DATE	REVISION

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
SCALE	
NOTES	

S1-1 (36"x36")  
 W16-9p (24"x12")  
 RM-3  
 1-2 1/2" Post

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**PAVEMENT MARKING & SIGNING PLAN**  
 KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Vicinity of Kahana Valley Road to Kaaawa Bridge  
 Federal Aid Project No. HSIP-083-1(67)  
 Scale: 1" = 40.0' Date: Dec., 2015  
 SHEET No. T4 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	ADD. 29	66



- # STA. 836+84 Lt. to # STA. 837+58 Lt. Install Shoulder Milled Rumble Strip
- # STA. 838+30 Lt. to # STA. 841+44 Lt. Install Shoulder Milled Rumble Strip
- # STA. 838+90 Rt. to # STA. 841+44 Rt. Install Shoulder Milled Rumble Strip
- # STA. 842+15 Lt. to # STA. 844+80 Lt. Install Shoulder Milled Rumble Strip
- # STA. 842+15 Rt. to # STA. 851+96 Rt. Install Shoulder Milled Rumble Strip
- # STA. 845+74 Lt. to # STA. 852+64 Lt. Install Shoulder Milled Rumble Strip
- # STA. 854+58 Lt. to # STA. 862+00 Lt. Install Shoulder Milled Rumble Strip

\*Removal of existing stop bars and centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

- # STA. 838+30 to # STA. 841+44 Install Centerline Milled Rumble Strip
- # STA. 842+15 to # STA. 844+80 Install Centerline Milled Rumble Strip
- # STA. 845+46 to # STA. 853+65 Install Centerline Milled Rumble Strip
- # STA. 854+28 to # STA. 862+28 Install Centerline Milled Rumble Strip

|||— Reflector Markers (RM-5) shall be mounted every 25 feet on all new and existing metal guardrails except on Terminal Sections. For new guardrail installation, furnishing and installing of each RM-5 shall be considered incidental to the adjacent guardrail system. Unless otherwise noted, the Contractor shall be responsible for mounting RM-5s on all existing metal guardrails even when not shown on plans. For existing guardrails, furnishing and installing of each RM-5 shall be considered incidental to Item No. 632.0200-Reflector Marker (RM-5, White) Mounted on Existing Guardrail.

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

- KEY:**
- ① Remove Exist. Sign(s) & Post(s) & Install New Sign(s) & Posts(s)
  - ② Remove Exist. Sign(s) & Install New Sign(s)
  - ③ Install New Sign(s)
  - ④ Install New Sign(s) & Post(s)

- NOTE:**
1. All new sign installations shall have vertical clearance of 7' minimum, from top of pavement at edge of lane to bottom of sign. For additional details see Standard Plan TE-01.
  2. All existing edgeline pavement marking & striping shall remain & are for reference only.

2/12/16	Added sign post sizes, Notes, and RM-5 symbol
DATE	REVISION

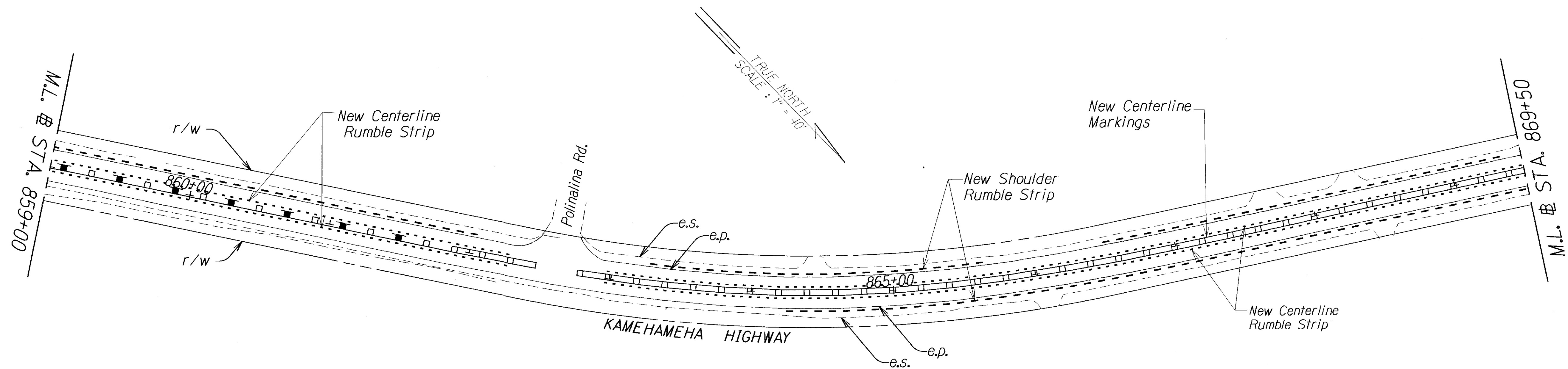
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING &  
SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Vicinity of Kahana Valley Road to Kaaawa Bridge  
Federal Aid Project No. HSIP-083-1(67)  
Scale: 1" = 40.0' Date: Dec., 2015

SHEET No. 75 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	ADD. 30	66

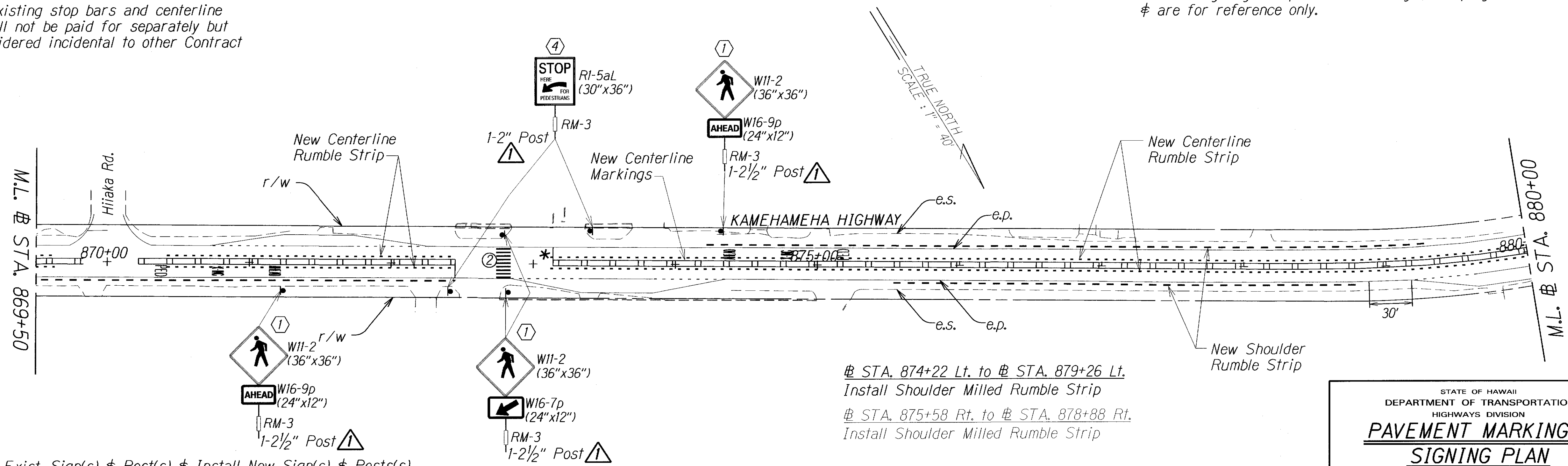


@ STA. 854+28 to @ STA. 862+28  
 Install Centerline Milled Rumble Strip  
 @ STA. 862+70 to @ STA. 869+60  
 Install Centerline Milled Rumble Strip

@ STA. 854+58 Lt. to @ STA. 862+00 Lt.  
 Install Shoulder Milled Rumble Strip  
 @ STA. 863+26 Lt. to @ STA. 865+62 Lt.  
 Install Shoulder Milled Rumble Strip  
 @ STA. 864+25 Rt. to @ STA. 872+45 Rt.  
 Install Shoulder Milled Rumble Strip  
 @ STA. 866+50 Lt. to @ STA. 869+34 Lt.  
 Install Shoulder Milled Rumble Strip

- NOTE:**
1. All new sign installations shall have vertical clearance of 7' minimum, from top of pavement at edge of lane to bottom of sign. For additional details see Standard Plan TE-01.
  2. All existing edgeline pavement marking & striping shall remain & are for reference only.

\* Removal of existing stop bars and centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.



- KEY:**
- 1 Remove Exist. Sign(s) & Post(s) & Install New Sign(s) & Posts(s)
  - 2 Remove Exist. Sign(s) & Install New Sign(s)
  - 3 Install New Sign(s)
  - 4 Install New Sign(s) & Post(s)

@ STA. 870+40 to @ STA. 872+45  
 Install Centerline Milled Rumble Strip  
 @ STA. 873+14 to @ STA. 880+72  
 Install Centerline Milled Rumble Strip

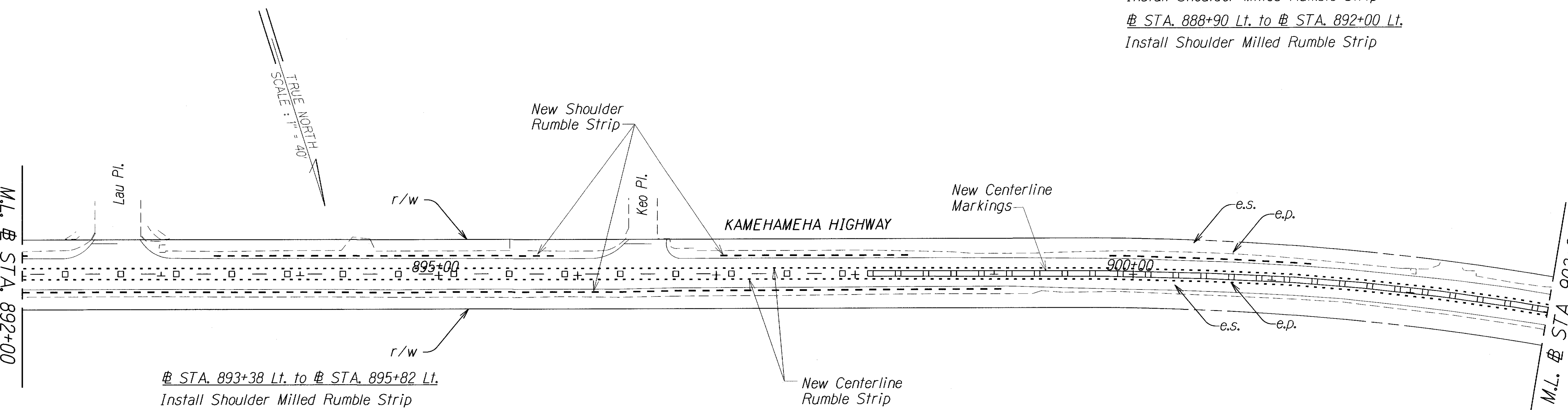
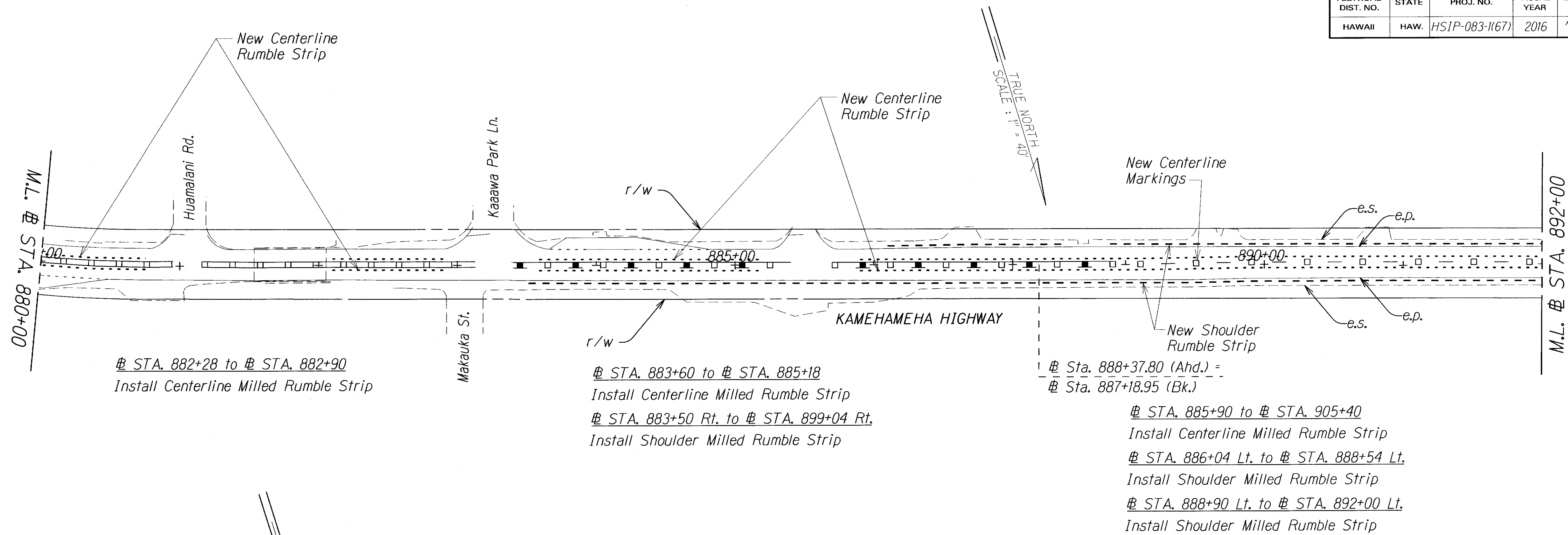
@ STA. 874+22 Lt. to @ STA. 879+26 Lt.  
 Install Shoulder Milled Rumble Strip  
 @ STA. 875+58 Rt. to @ STA. 878+88 Rt.  
 Install Shoulder Milled Rumble Strip

DATE	REVISION
2/12/16	Added sign post sizes, Notes, and RM-5 symbol

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

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**PAVEMENT MARKING & SIGNING PLAN**  
 KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Vicinity of Kahana Valley Road to Kaaawa Bridge  
 Federal Aid Project No. HSIP-083-1(67)  
 Scale: 1" = 40.0' Date: Dec., 2015  
 SHEET No. T6 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-11671	2016	ADD. 31	66



# STA. 882+28 to # STA. 882+90  
 Install Centerline Milled Rumble Strip  
 # STA. 883+60 to # STA. 885+18  
 Install Centerline Milled Rumble Strip  
 # STA. 883+50 Rt. to # STA. 899+04 Rt.  
 Install Shoulder Milled Rumble Strip  
 # Sta. 888+37.80 (Ahd.) -  
 # Sta. 887+18.95 (Bk.)  
 # STA. 885+90 to # STA. 905+40  
 Install Centerline Milled Rumble Strip  
 # STA. 886+04 Lt. to # STA. 888+54 Lt.  
 Install Shoulder Milled Rumble Strip  
 # STA. 888+90 Lt. to # STA. 892+00 Lt.  
 Install Shoulder Milled Rumble Strip  
 # STA. 893+38 Lt. to # STA. 895+82 Lt.  
 Install Shoulder Milled Rumble Strip  
 # STA. 897+02 Lt. to # STA. 898+38 Lt.  
 Install Shoulder Milled Rumble Strip  
 # STA. 899+82 Lt. to # STA. 901+26 Lt.  
 Install Shoulder Milled Rumble Strip

- KEY:**
- ① Remove Exist. Sign(s) & Post(s) & Install New Sign(s) & Posts(s)
  - ② Remove Exist. Sign(s) & Install New Sign(s)
  - ③ Install New Sign(s)
  - ④ Install New Sign(s) & Post(s)


- NOTE:**
- 1. All new sign installations shall have vertical clearance of 7' minimum, from top of pavement at edge of lane to bottom of sign. For additional details see Standard Plan TE-01.
  - 2. All existing edgeline pavement marking & striping shall remain & are for reference only.

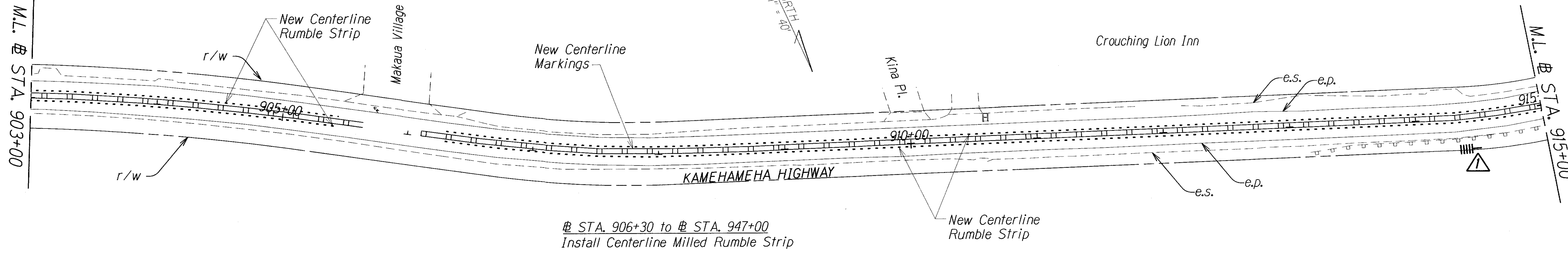
SURVEY PLOTTED BY	DATE
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CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
DATE	
SCALE	


2/12/16	Added Notes
DATE	REVISION

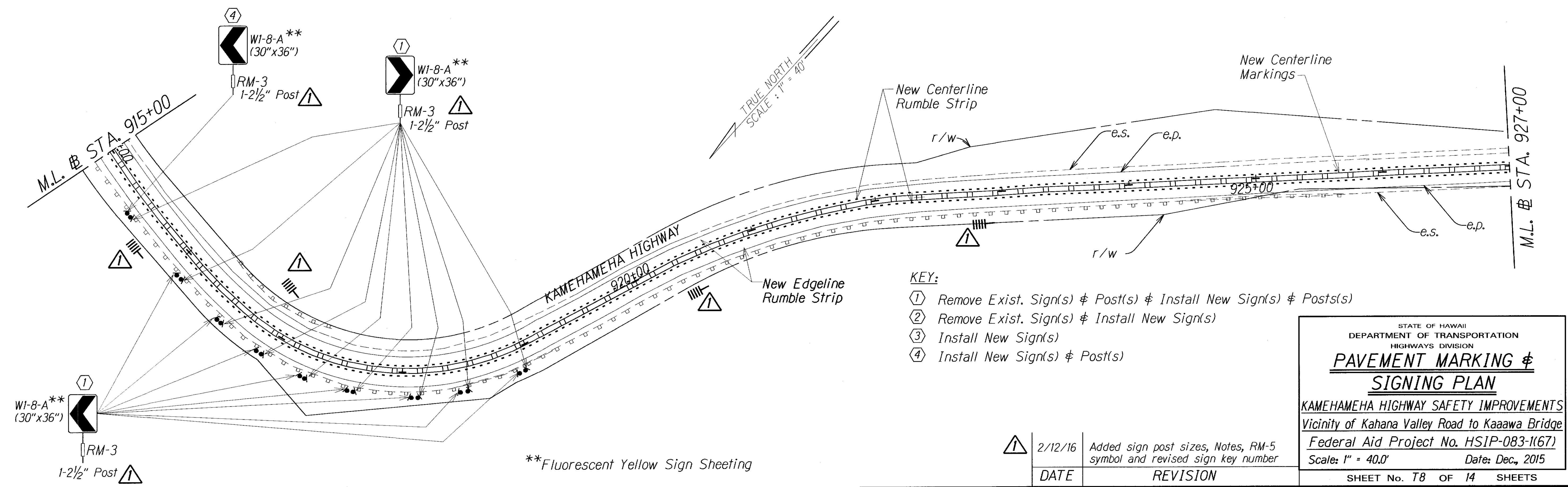
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**PAVEMENT MARKING & SIGNING PLAN**  
 KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Vicinity of Kahana Valley Road to Kaaawa Bridge  
 Federal Aid Project No. HSIP-083-11671  
 Scale: 1" = 40.0'      Date: Dec., 2015  
 SHEET No. 17 OF 14 SHEETS

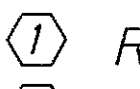
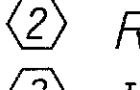
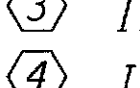

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	ADD. 32	66

 Reflector Markers (RM-5) shall be mounted every 25 feet on all new and existing metal guardrails except on Terminal Sections. For new guardrail installation, furnishing and installing of each RM-5 shall be considered incidental to the adjacent guardrail system. Unless otherwise noted, the Contractor shall be responsible for mounting RM-5s on all existing metal guardrails even when not shown on plans. For existing guardrails, furnishing and installing of each RM-5 shall be considered incidental to Item No. 632.0200-Reflector Marker (RM-5, White) Mounted on Existing Guardrail.




- NOTE:**
-  All new sign installations shall have vertical clearance of 7' minimum, from top of pavement at edge of lane to bottom of sign. For additional details see Standard Plan TE-01.
  - All existing edgeline pavement marking & striping shall remain & are for reference only.



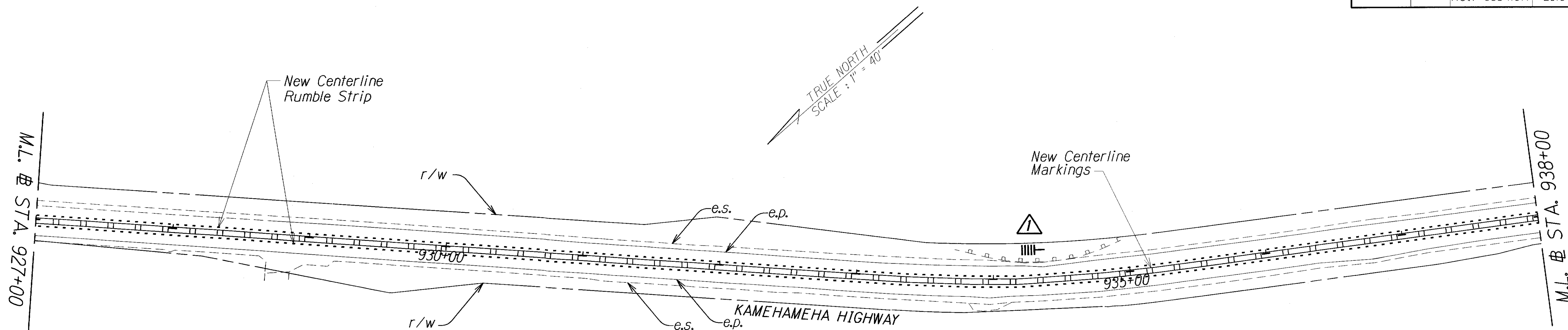
- KEY:**
-  Remove Exist. Sign(s) & Post(s) & Install New Sign(s) & Posts(s)
  -  Remove Exist. Sign(s) & Install New Sign(s)
  -  Install New Sign(s)
  -  Install New Sign(s) & Post(s)

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
SCALE	

DATE	REVISION
 2/12/16	Added sign post sizes, Notes, RM-5 symbol and revised sign key number

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**PAVEMENT MARKING & SIGNING PLAN**  
 KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Vicinity of Kahana Valley Road to Kaaawa Bridge  
 Federal Aid Project No. HSIP-083-1(67)  
 Scale: 1" = 40.0' Date: Dec., 2015  
 SHEET No. T8 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1167	2016	ADD. 33	66

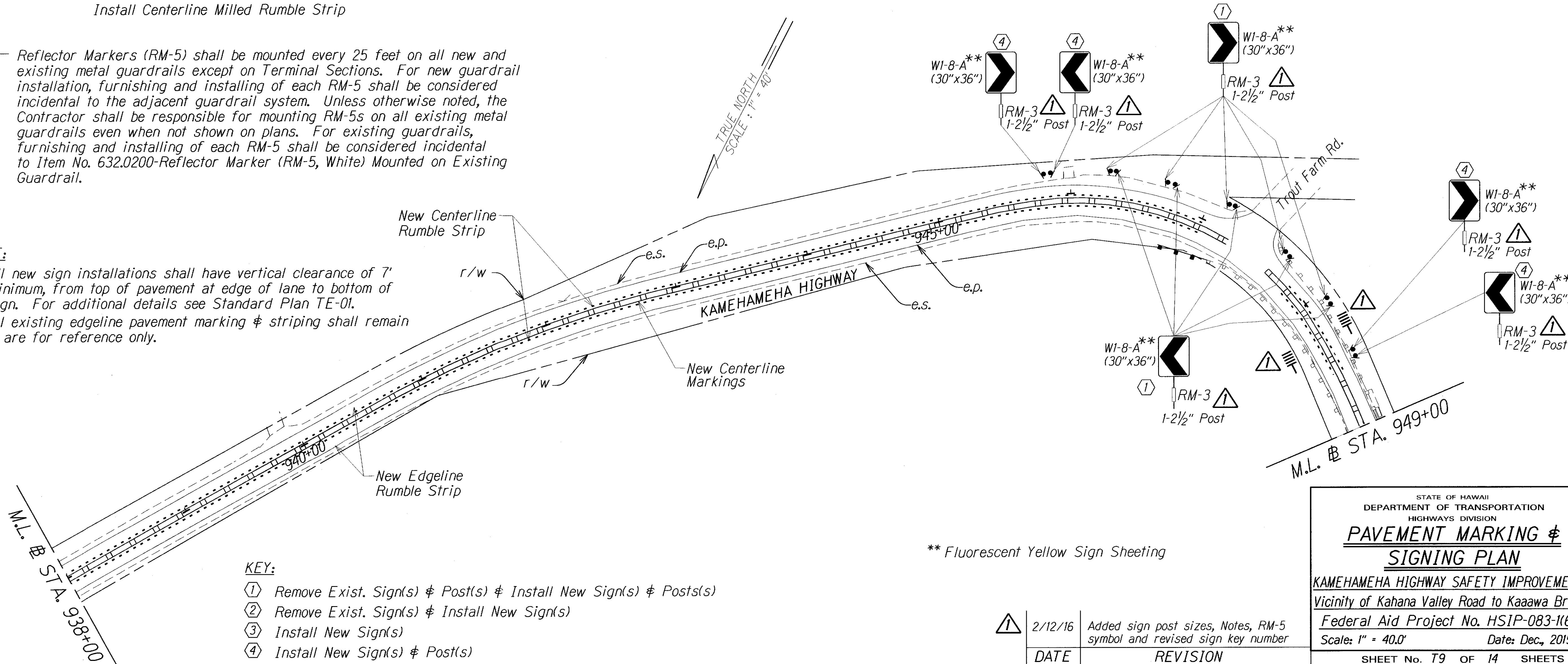


# STA. 906+30 to # STA. 947+00  
 Install Centerline Milled Rumble Strip  
 # STA. 947+82 to # STA. 948+58  
 Install Centerline Milled Rumble Strip

Reflector Markers (RM-5) shall be mounted every 25 feet on all new and existing metal guardrails except on Terminal Sections. For new guardrail installation, furnishing and installing of each RM-5 shall be considered incidental to the adjacent guardrail system. Unless otherwise noted, the Contractor shall be responsible for mounting RM-5s on all existing metal guardrails even when not shown on plans. For existing guardrails, furnishing and installing of each RM-5 shall be considered incidental to Item No. 632.0200-Reflector Marker (RM-5, White) Mounted on Existing Guardrail.

**NOTE:**

- All new sign installations shall have vertical clearance of 7' minimum, from top of pavement at edge of lane to bottom of sign. For additional details see Standard Plan TE-01.
- All existing edgeline pavement marking & striping shall remain & are for reference only.



- KEY:**
- Remove Exist. Sign(s) & Post(s) & Install New Sign(s) & Posts(s)
  - Remove Exist. Sign(s) & Install New Sign(s)
  - Install New Sign(s)
  - Install New Sign(s) & Post(s)

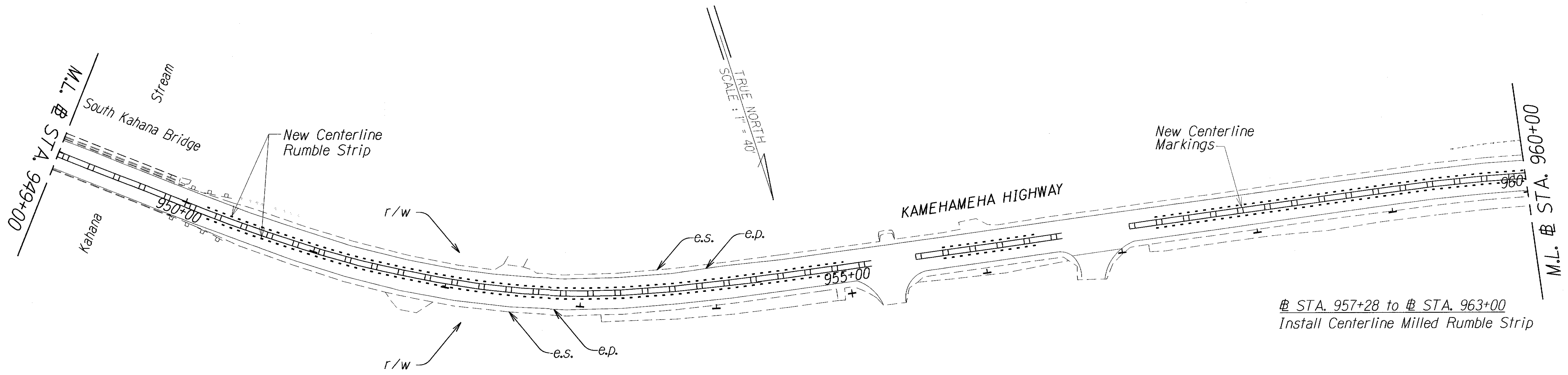
\*\* Fluorescent Yellow Sign Sheeting

	2/12/16	Added sign post sizes, Notes, RM-5 symbol and revised sign key number
DATE		REVISION

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**PAVEMENT MARKING & SIGNING PLAN**  
 KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Vicinity of Kahana Valley Road to Kaaawa Bridge  
 Federal Aid Project No. HSIP-083-1167  
 Scale: 1" = 40.0' Date: Dec., 2015  
 SHEET No. T9 OF 14 SHEETS

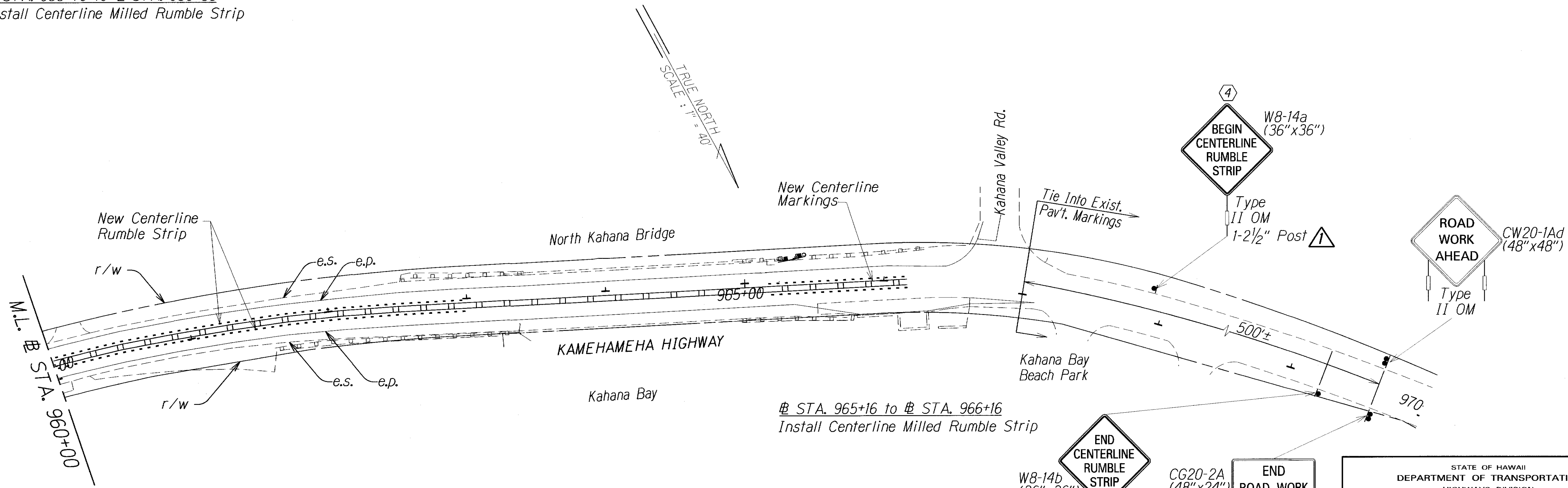
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
DATE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	ADD. 34	66



# STA. 957+28 to # STA. 963+00  
Install Centerline Milled Rumble Strip

# STA. 950+15 to # STA. 954+98  
Install Centerline Milled Rumble Strip  
# STA. 955+70 to # STA. 956+38  
Install Centerline Milled Rumble Strip



# STA. 965+16 to # STA. 966+16  
Install Centerline Milled Rumble Strip

**KEY:**

- ① Remove Exist. Sign(s) & Post(s) & Install New Sign(s) & Posts(s)
- ② Remove Exist. Sign(s) & Install New Sign(s)
- ③ Install New Sign(s)
- ④ Install New Sign(s) & Post(s)

**NOTE:**

- ① All new sign installations shall have vertical clearance of 7' minimum, from top of pavement at edge of lane to bottom of sign. For additional details see Standard Plan TE-01.
- ② All existing edgeline pavement marking & striping shall remain & are for reference only.

DATE	REVISION
2/12/16	Added sign post sizes and Notes

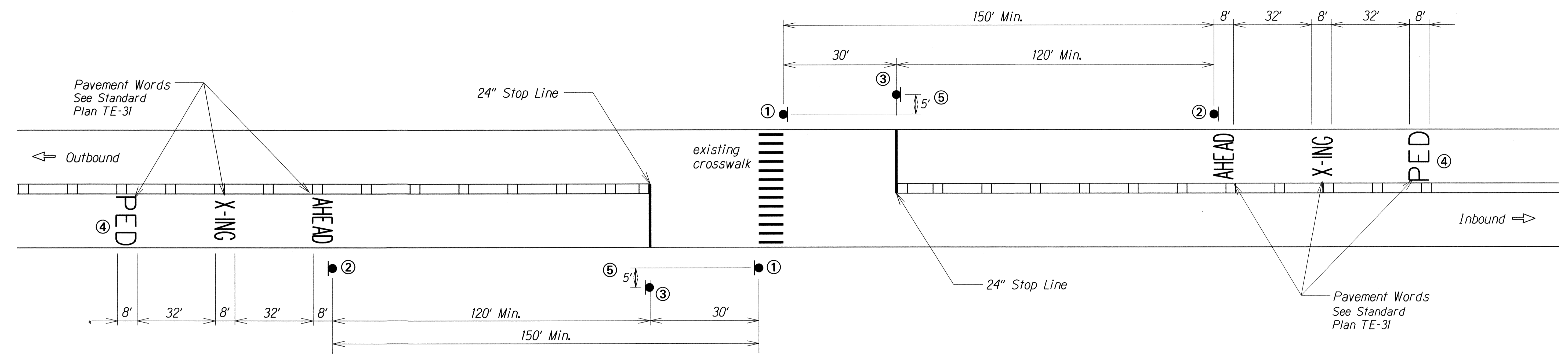
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Vicinity of Kahana Valley Road to Kaaawa Bridge  
Federal Aid Project No. HSIP-083-1(67)  
Scale: 1" = 40.0' Date: Dec., 2015  
SHEET No. 110 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(67)	2016	35	66



TYPICAL MIDBLOCK CROSSWALK MARKINGS  
Not to Scale



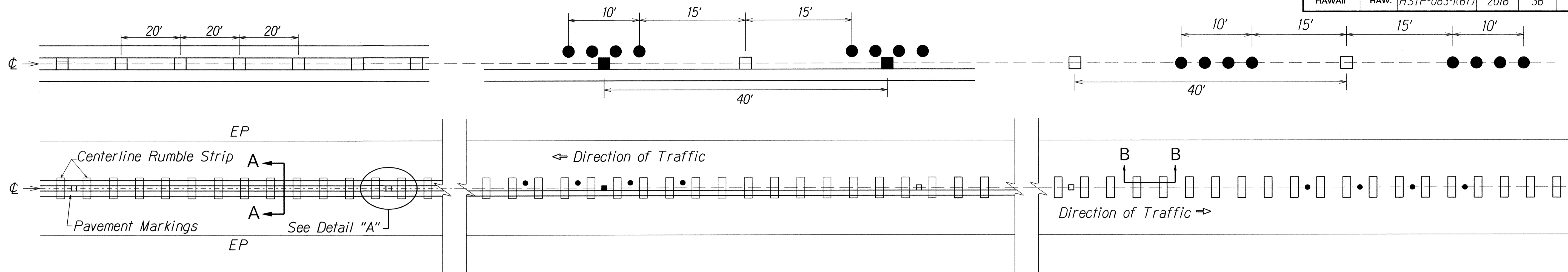
RI-5c(L)  
Colors: Black on White

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
FILED IN	
DATE	

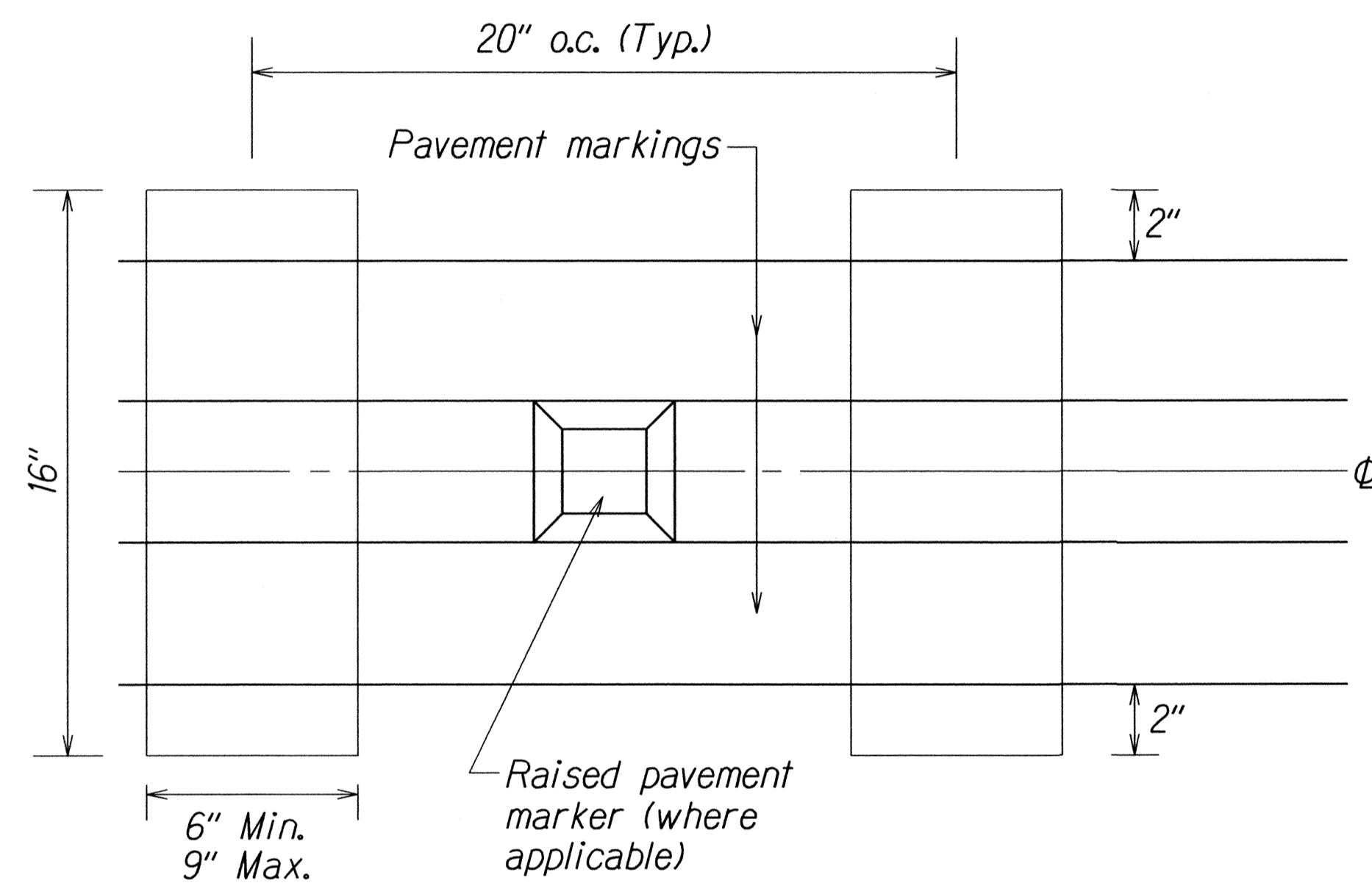
<p>①</p> <p>Black legend on flourescent yellow green background</p>	<p>②</p> <p>Black legend on flourescent yellow green background</p>	<p>③</p> <p>Black legend on white background See detail on this sheet.</p>	<p>④</p> <p><b>NOTE:</b> When School Crosswalk Warning Assembly used install "SCHOOL" pavement word. See Standard Plan TE-31</p>	<p>⑤</p> <p><b>NOTE:</b> Offset "STOP HERE FOR PEDESTRIANS" sign 5' horizontally with crossing sign.</p>
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**PAVEMENT MARKING**  
**LEGEND, DETAILS & NOTES**  
KAMEHAMEHA HIGHWAY  
SAFETY IMPROVEMENTS  
Vicinity of Kahana Valley Road to Kaaawa Bridge  
Federal-Aid Project No. NH-083-1(072)  
Scale: NTS Date: Dec, 2015  
SHEET No. 11 OF 14 SHEETS

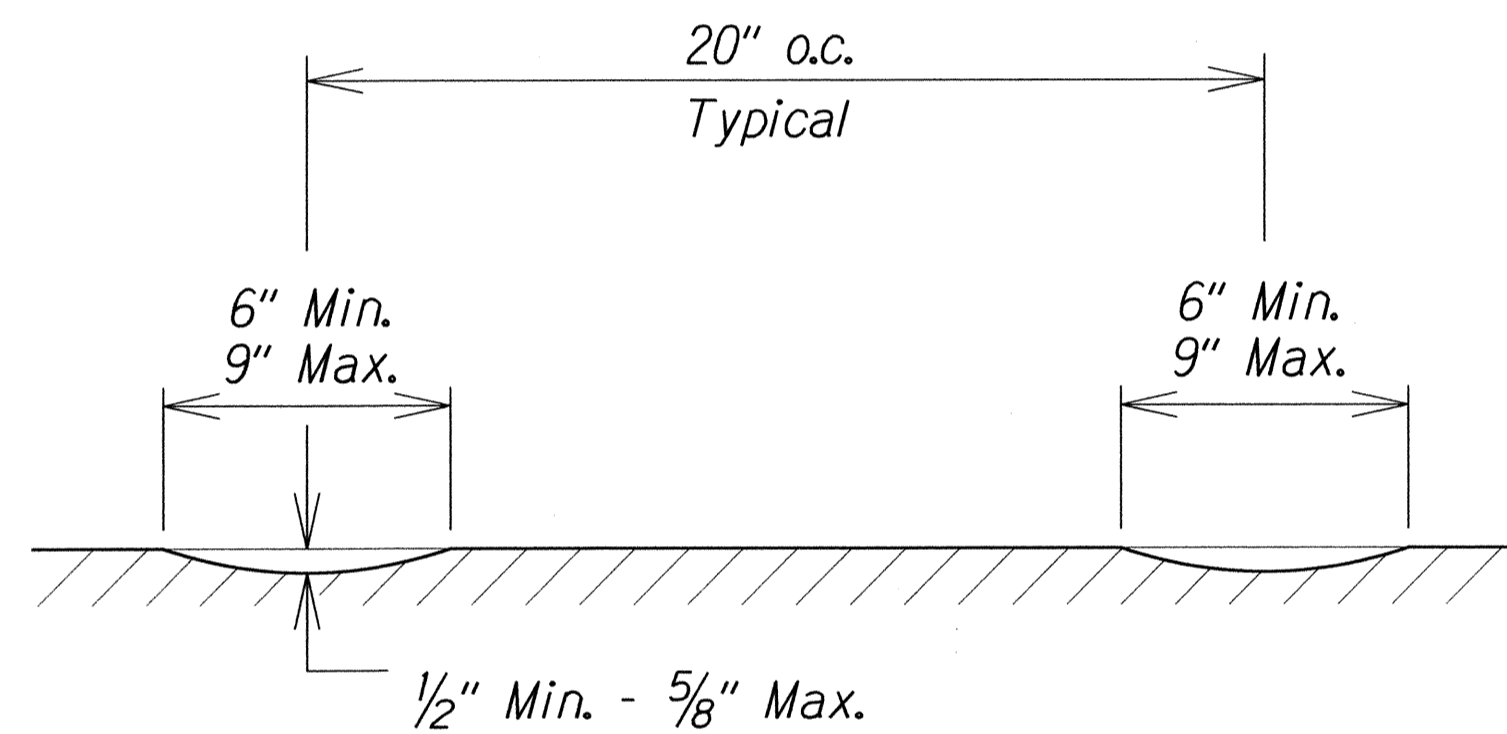
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	36	66



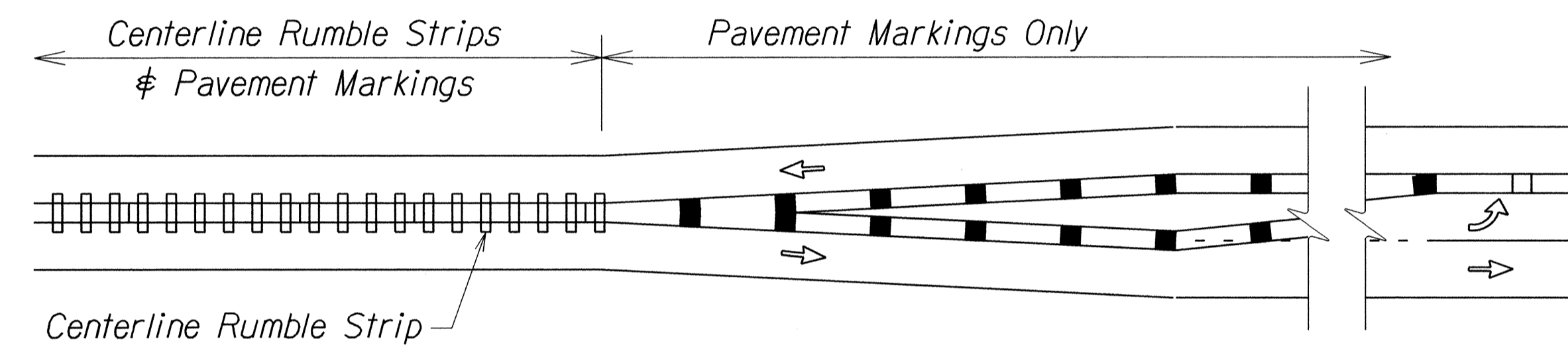
**PLAN - CENTERLINE MILLED RUMBLE STRIP**  
Not to Scale



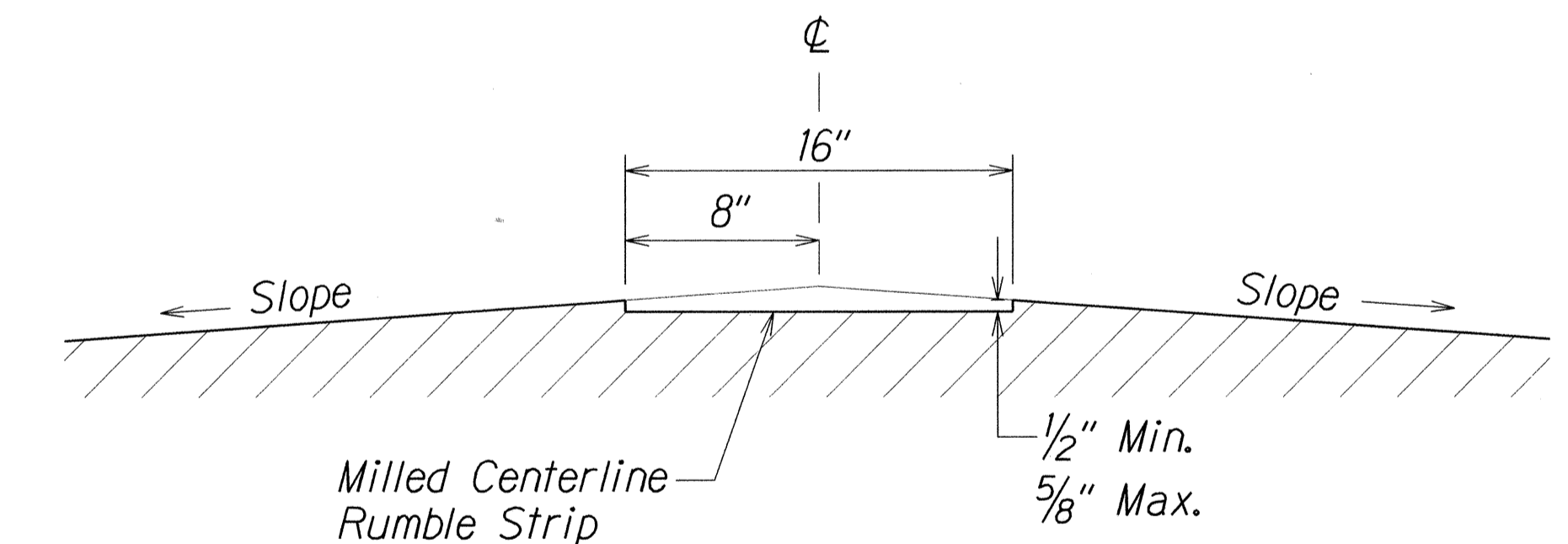
**DETAIL "A"**  
Not to Scale



**SECTION B-B - CENTERLINE MILLED RUMBLE STRIP**  
Not to Scale



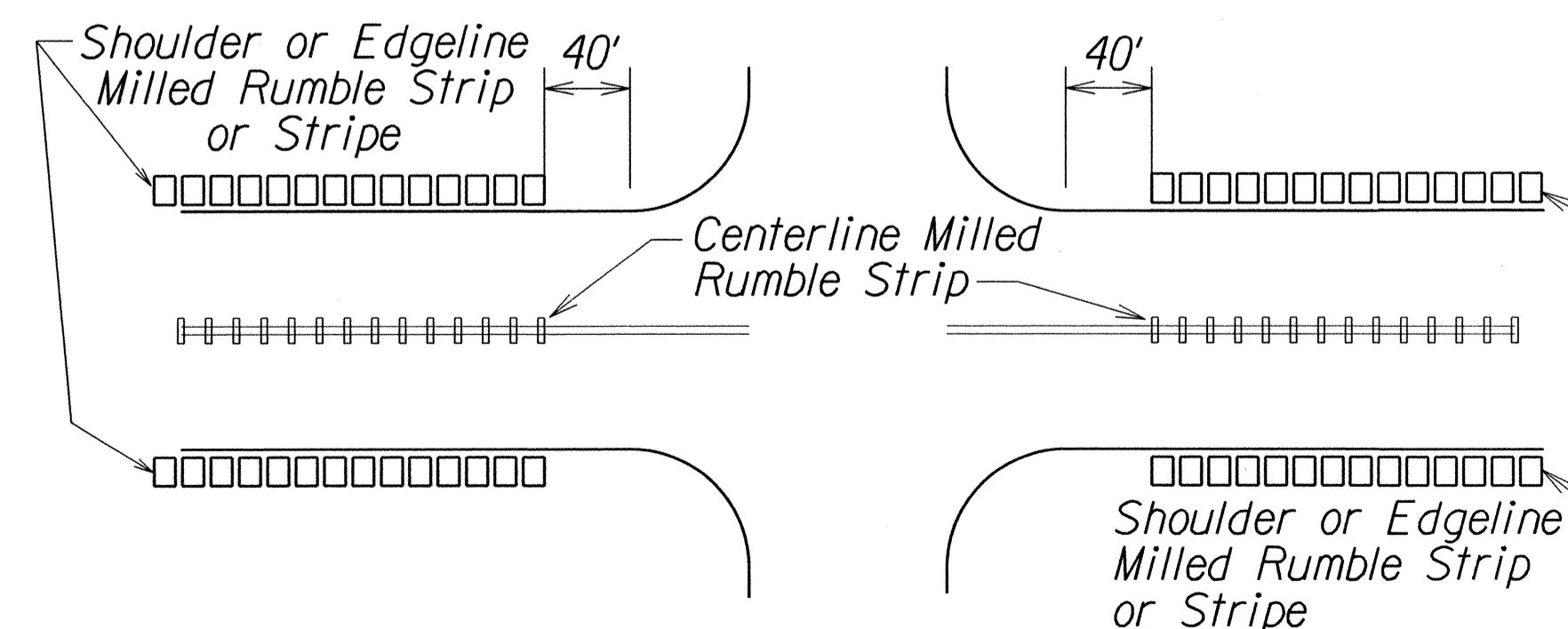
**CENTERLINE MILLED RUMBLE STRIP INSTALLATION LIMIT**  
Not to Scale



**SECTION A-A - CENTERLINE MILLED RUMBLE STRIP**  
Not to Scale

**NOTES:**

1. The method of constructing the centerline milled rumble strip shall be submitted to the Engineer for acceptance prior to the actual work.
2. Dimensions shown are approximate. Adjust rumble strip spacing to coordinate with pavement markings prior to installation.
3. Raised pavement markers shall be installed on level surface between the rumble strips. Do not install raised pavement markers inside the milled area.
4. The construction of the centerline milled rumble strip shall be paid for under Item No. 615.0100 - 16-inch Milled Rumble Strip, Centerline.
5. The milling apparatus and removal of existing pavement markings will not be paid for separately and shall be considered incidental to Item 615.0100 - 16-Inch Milled Rumble Strip, Centerline.
6. Do not install centerline rumble strips on bridge decks.
7. Where at-grade bridges are present, rumble strips shall end/begin 20 L.F. beyond the existing bridge deck joints/concrete approach slab.
8. Hot spray thermoplastic shall be used for solid line markings within the milled centerline rumble strip area.

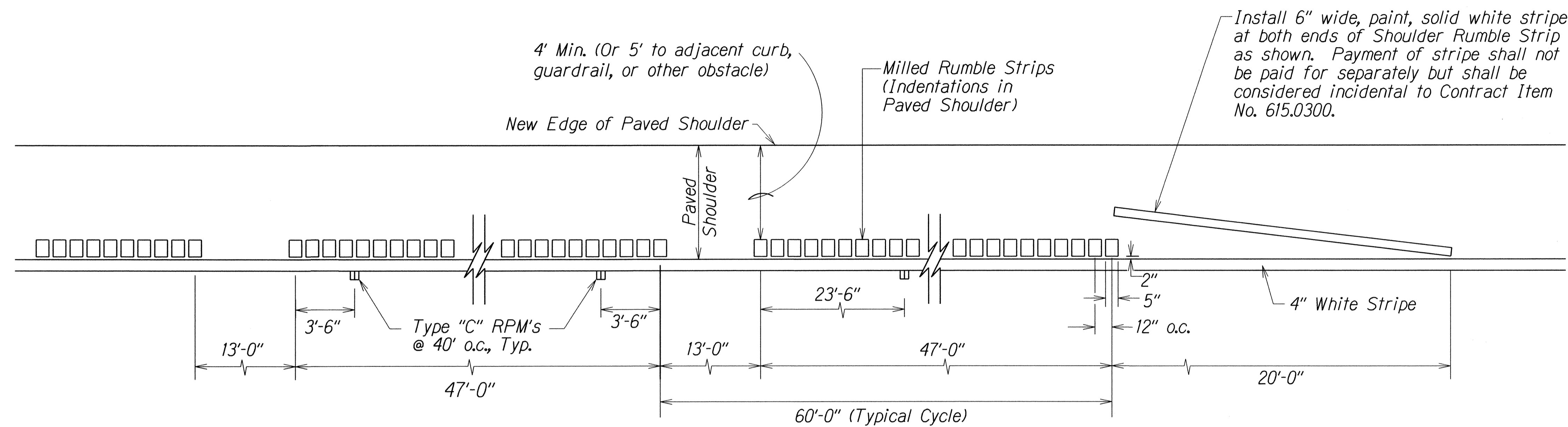


**MILLED RUMBLE STRIP INSTALLATION LIMITS**  
Not to Scale

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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**CENTERLINE MILLED RUMBLE STRIP DETAIL**  
KAMEHAMEHA HIGHWAY  
SAFETY IMPROVEMENTS  
Vicinity of Kahana Valley Road to Kaaawa Bridge  
Federal Aid Project No. HSIP-083-1(67)  
Scale: As Shown Date: Dec., 2015  
SHEET No. T12 OF 14 SHEETS

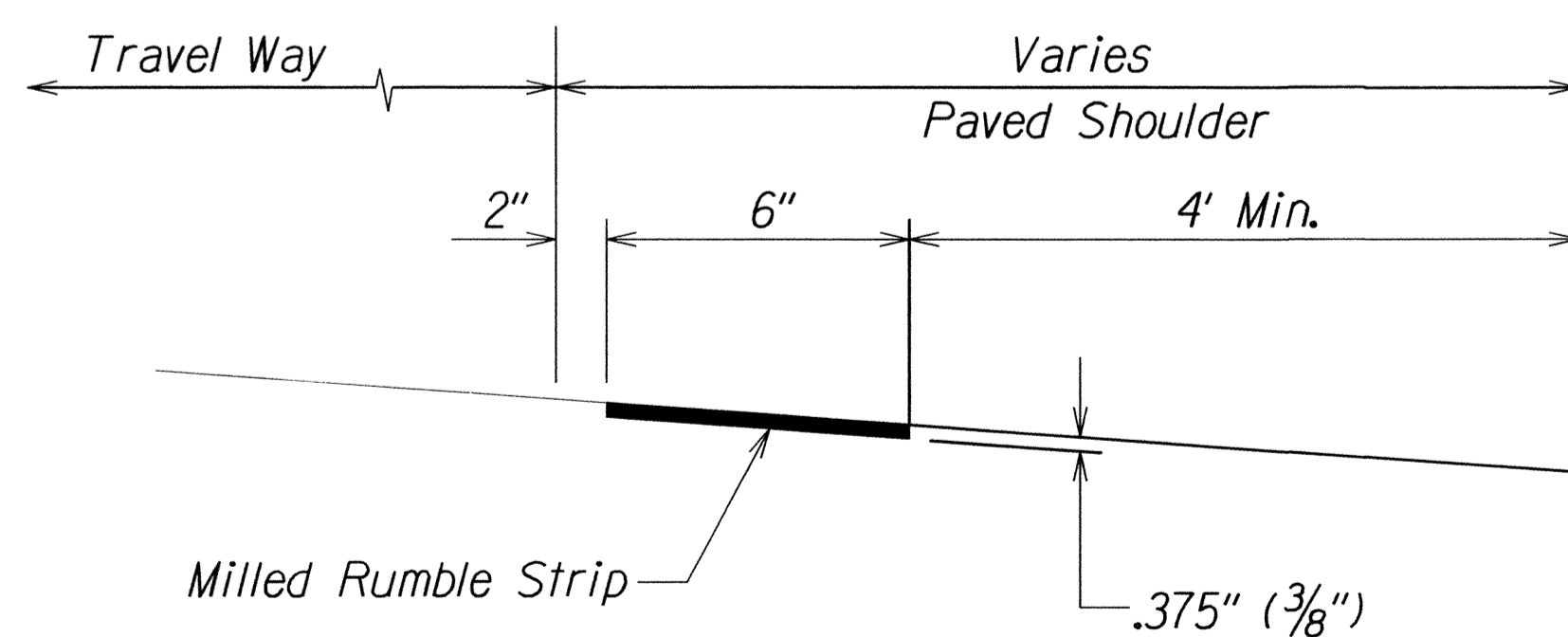
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(67)	2016	37	66



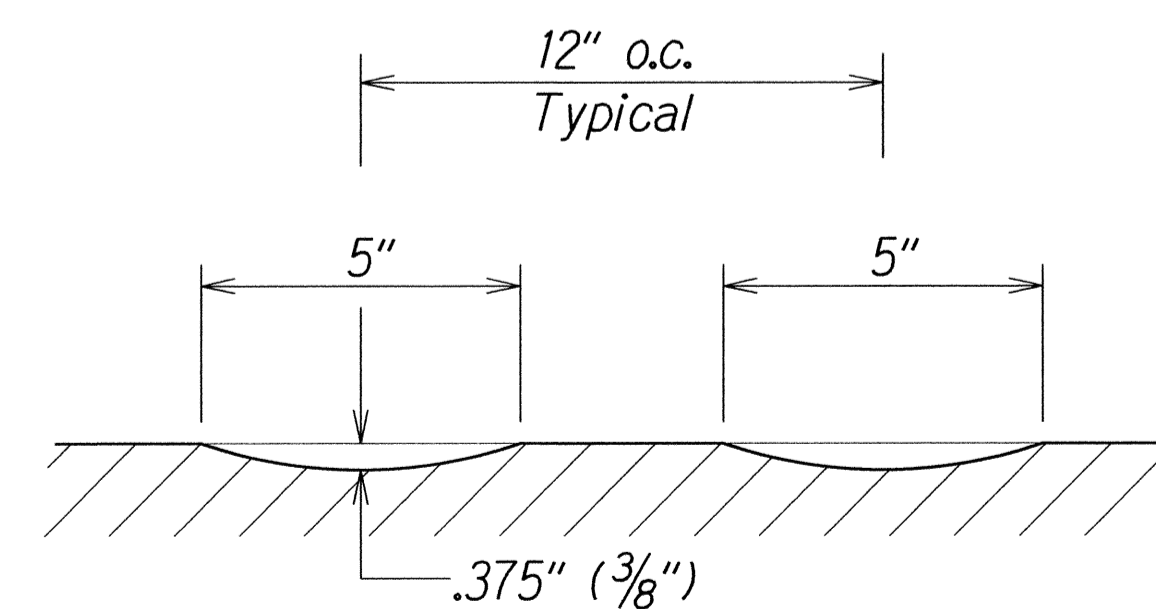
PLAN - MILLED RUMBLE STRIP  
Not to Scale

NOTES:

1. The method of constructing the modified edgeline milled rumble strip shall be submitted to the Engineer for acceptance prior to the actual work.
2. Dimensions shown are approximate. Adjust rumble strip spacing to coordinate with pavement marking prior to installation.
3. The construction of the shoulder milled rumble strip and 13-foot gaps shall be paid for under Item No. 615.0300 - 6-Inch Milled Rumble Strip, Shoulder.
4. The milling apparatus will not be paid for separately and shall be considered incidental to Item 615.0300 - 6-Inch Milled Rumble Strip, Shoulder.
5. Rumble strips shall be installed along all shoulders, except at right turn deceleration and acceleration lanes, as noted on the plans.
6. Do not install shoulder rumble strips on bridge decks.
7. Where at-grade bridges are present, rumble strips shall end/begin 20 L.F. beyond the existing bridge deck joints/concrete approach slab.
8. Do not place Type "C" Markers within 2 feet of the 13 feet rumble strip opening.



LONGITUDINAL SECTION - MILLED RUMBLE STRIP



CROSS SECTION - MILLED RUMBLE STRIP  
Not to Scale

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NO. OF SHEETS	
DATE	

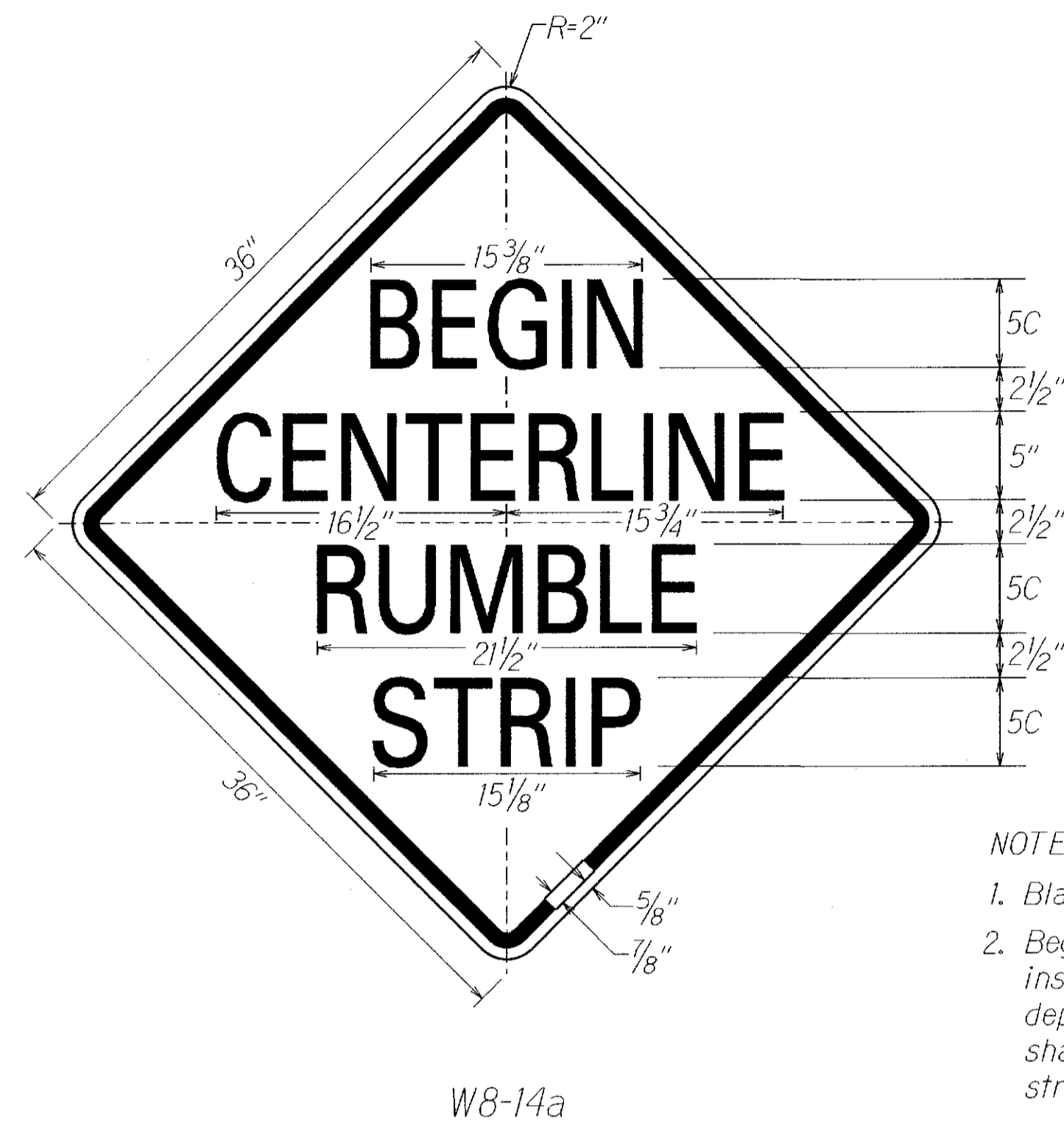
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SHOULDER MILLED RUMBLE STRIP DETAIL**

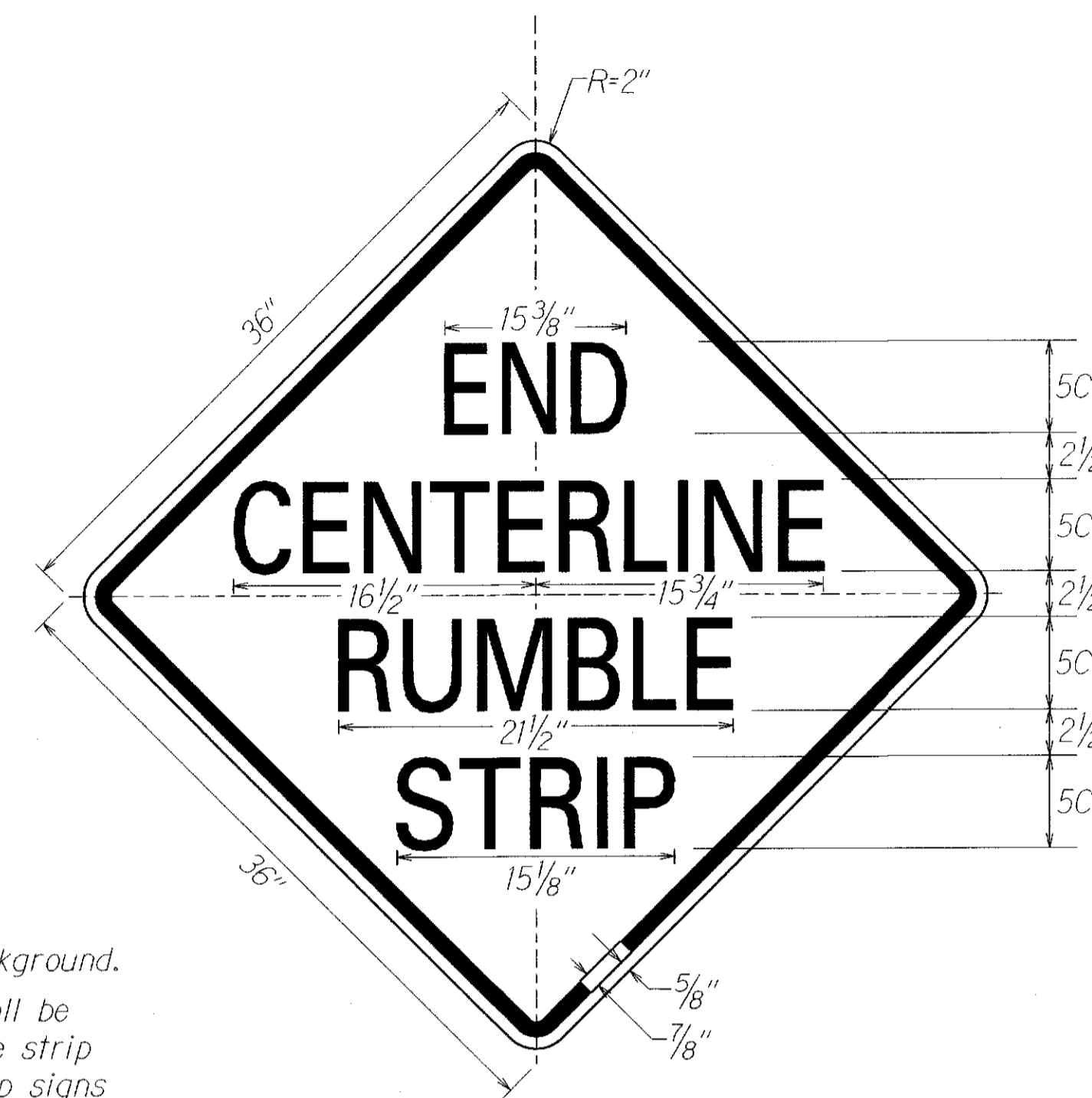
KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Vicinity of Kahana Valley Road to Kaaawa Bridge  
Federal Aid Project No. HSIP-083-1(67)  
Scale: As Shown Date: Dec., 2015

SHEET No. T13 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-11671	2016	ADD. 38	66



W8-14a



W8-14b

NOTE:

1. Black legend on reflectorized yellow background.
2. Begin Centerline Rumble Strip signs shall be installed 50 feet before the first rumble strip depression. End Centerline Rumble Strip signs shall be installed 50 feet beyond the last rumble strip depression.

SIGN NOTES

1. All signs shall conform to Section 621 of the Special Provisions and the latest editions and amendments of the following FHWA publications:
  - a. "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD)
  - b. "Standard Highway Signs"
  - c. "Standard Alphabets for Highway Signs"
2. Borders, messages, arrows, symbols and shield shall conform to details as shown on the plans and as specified in the MUTCD.
3. Sign messages shall be as indicated on the plan, or as directed by the Engineer.
4. Backing for all new Regulatory and Warning Signs shall not be spliced.
5. Final locations of all signs shall be accepted by the Engineer prior to any installation work.
6. Existing signs that are to be replaced, shall not be removed until new signs are installed as replacements, or the messages are no longer necessary.
7. Existing signs not shown on these plans shall remain as posted unless otherwise directed by the Engineer. Removal and disposal of existing signs and/or posts as designated on these plans shall be incidental to the various signing items.
8. All signs shall be installed on square tube posts, unless otherwise noted.
9. For centerline rumble strip sign (Shown on this sheet) each sign post shall have a Type II OM. Installation of Type II OM shall be considered incidental to sign items.
10. For all other new sign installations with post(s), each sign post shall have an RM-3 reflector marker. Installation of RM-3 shall be considered incidental to Sign Items.
11. Contractor shall mark the back of all signs using labels. Payment to be incidental to various contract items.

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

▲	2/12/16	Revised Notes
	DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>CENTERLINE RUMBLE STRIP</b> <b>SIGN DETAILS AND NOTES</b> KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS Vicinity of Kahana Valley Road to Kaaawa Bridge Federal Aid Project No. HSIP-083-11671 Not to Scale Date: Dec., 2015		
SHEET No. T14 OF 14 SHEETS		