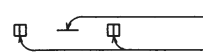
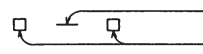
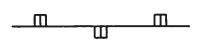




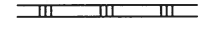

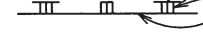

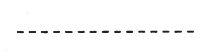
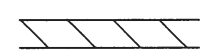
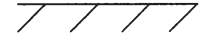



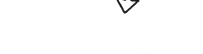






**LEGEND**

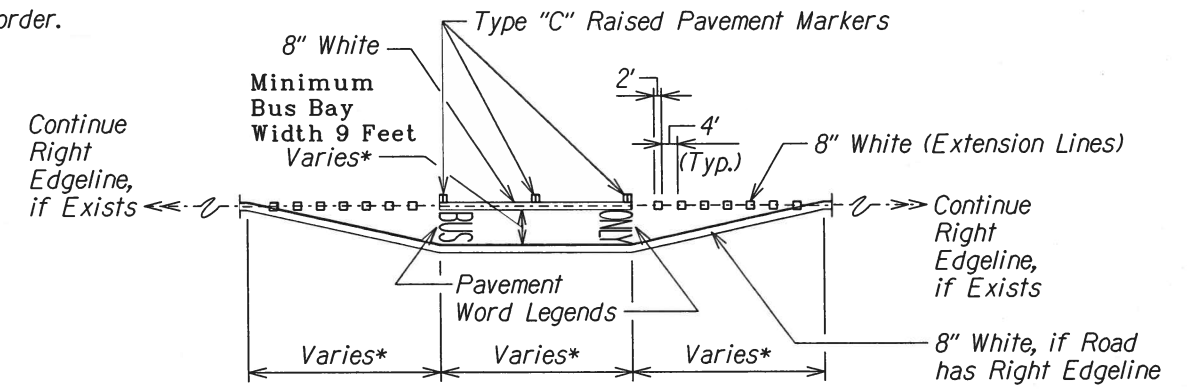
-  4 each Type A Raised Pavement Markers  
Type C Raised Pavement Markers @ 40'-0" o.c.
-  4 each Type J Raised Pavement Markers  
Type D Raised Pavement Markers @ 40'-0" o.c.
-  8" White Stripe with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)
-  4" Double Solid 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)

**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 black legend and border.

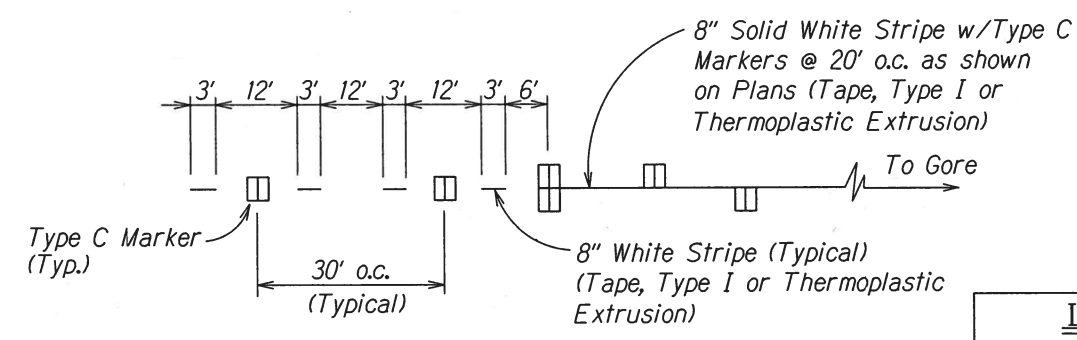
**LEGEND:**

-  SW Reflector Marker (RM-2, White) w/ Steel Post
-  FW Reflector Marker (RM-2, White) w/ Flexible Post
-  FY Reflector Marker (RM-2, Yellow) w/ Flexible Post
-  |||| Reflector Marker (RM-5, White)

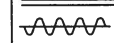
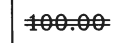



\* See Pavement Marking & Signing Plans for Dimensions

**BUS BAY (WITH 8" EDGELINE)**  
Not to Scale



**LANE DROP MARKING**  
Not to Scale

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

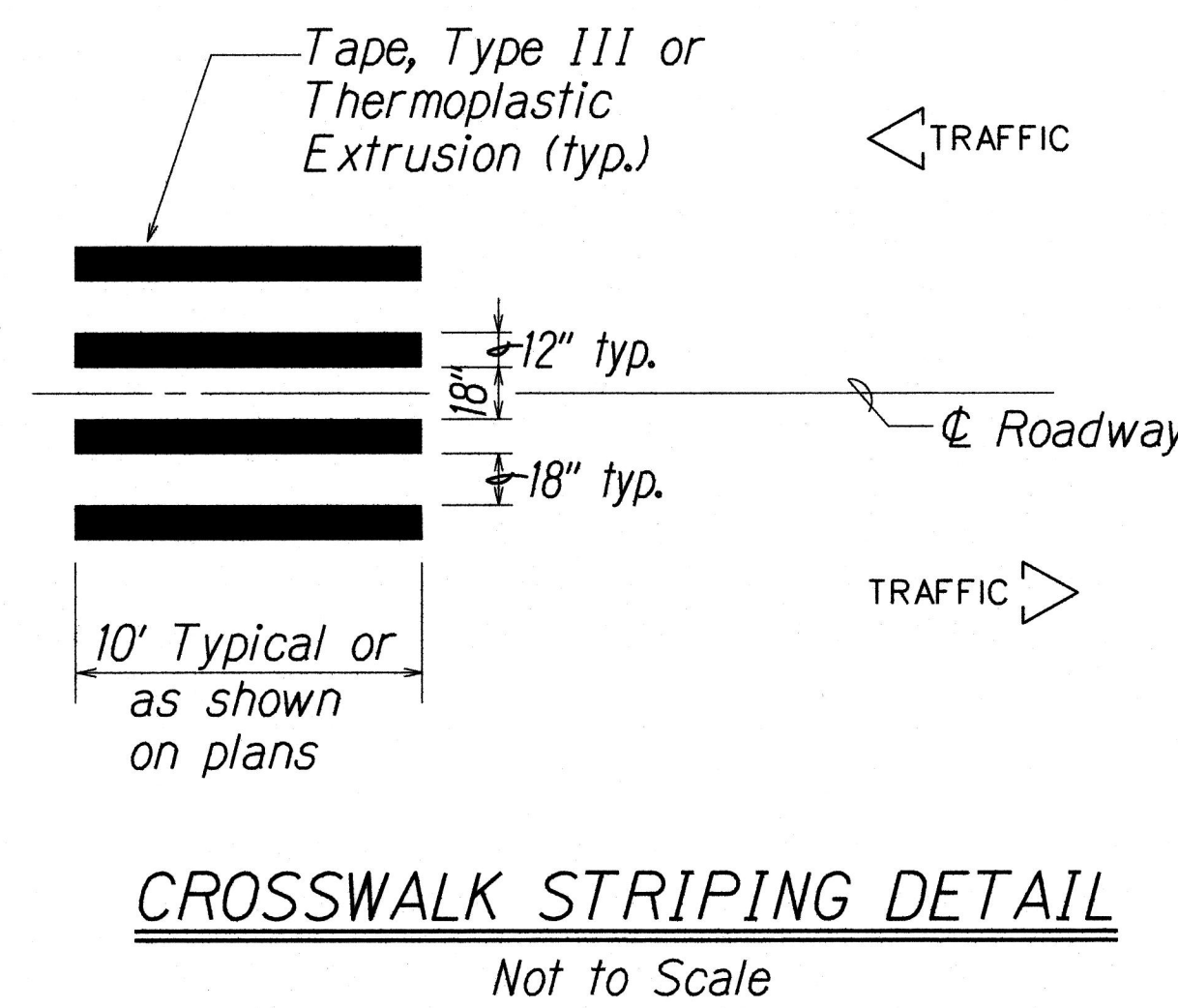
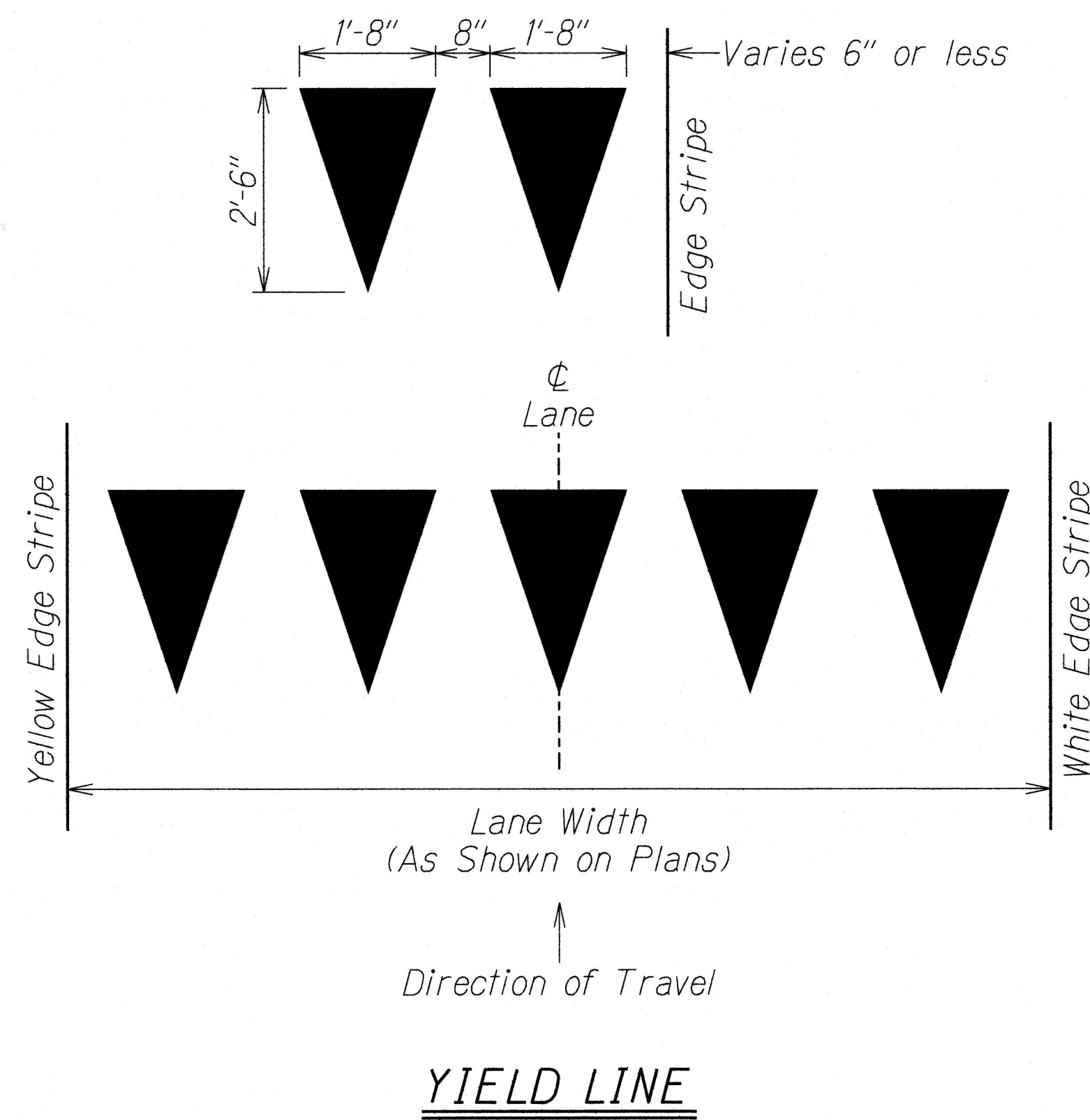
**PAVEMENT MARKING**  
**LEGEND, NOTES & DETAILS**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: As Shown Date: July 2018

SHEET No. 11 OF 17 SHEETS

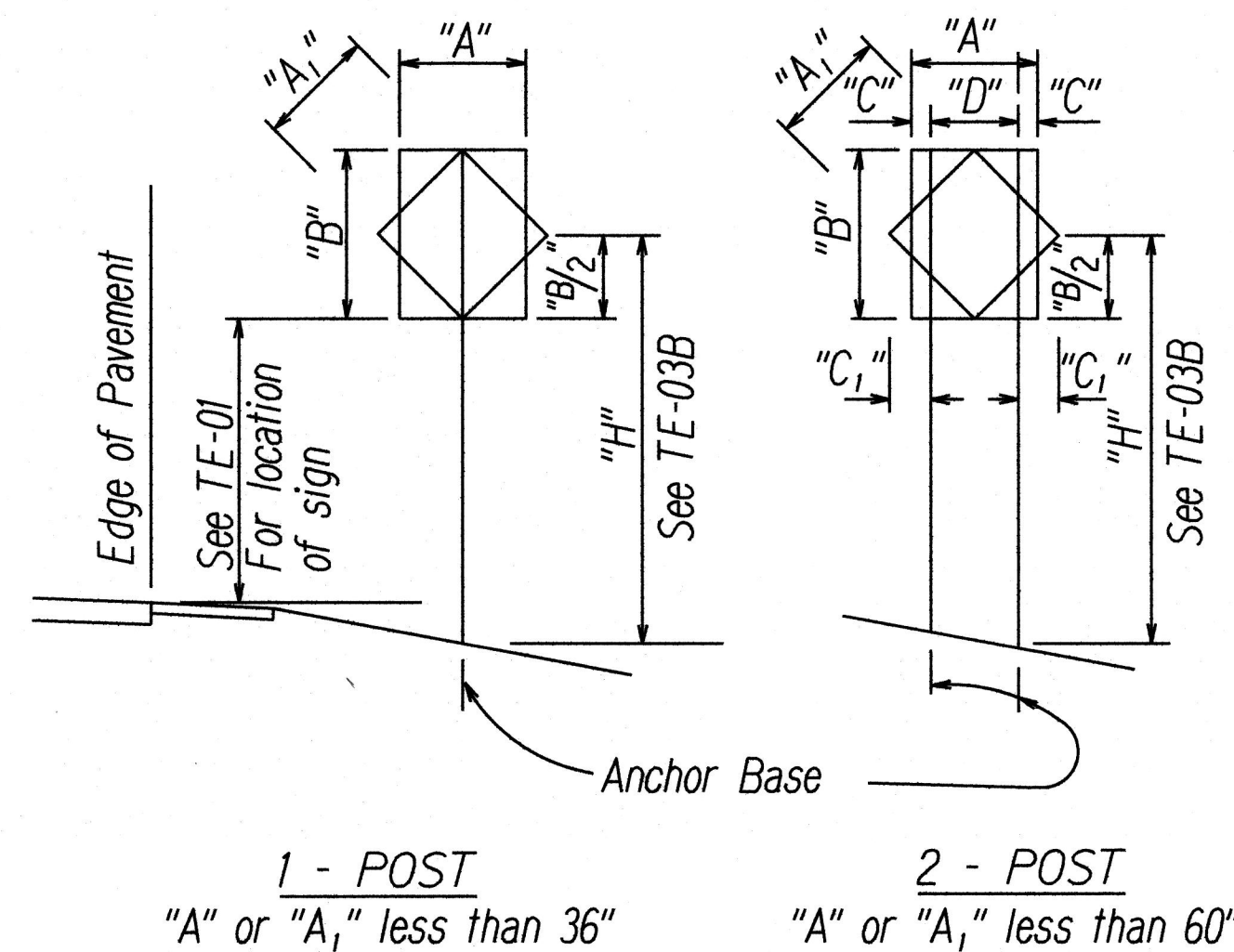
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 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 QUANTITY BY: \_\_\_\_\_  
 HAWAII STRIPING

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	21	36



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
162	DESIGNED BY	
N.S. 1/10/192	QUANTITIES BY	
	CHECKED BY	

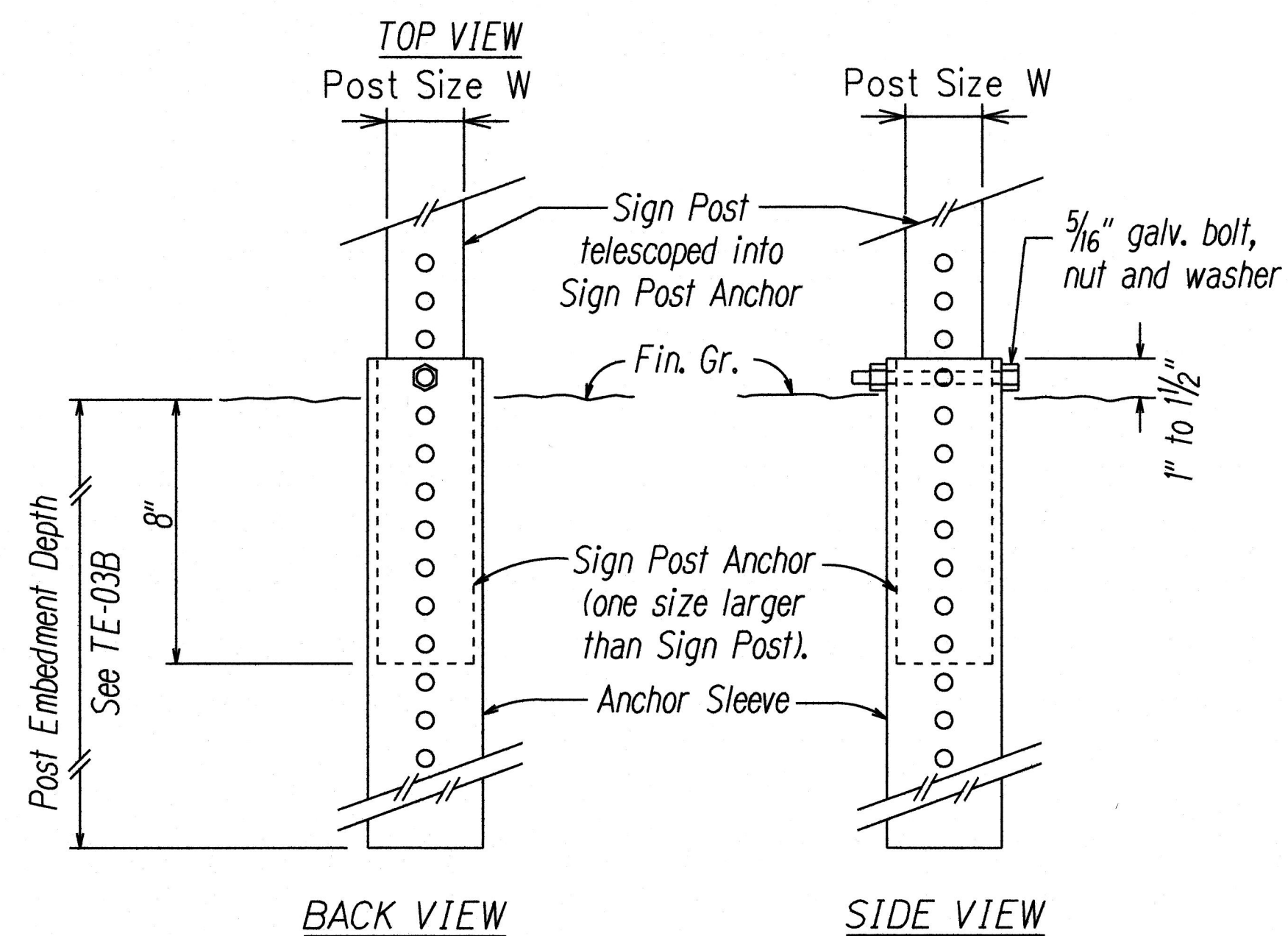
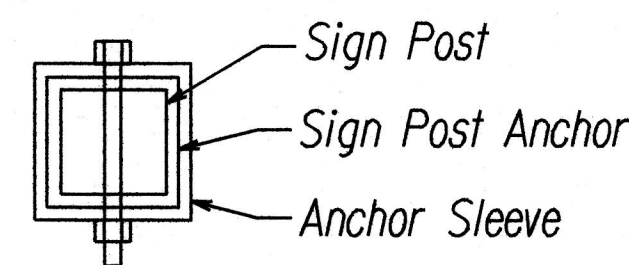
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**PAVEMENT MARKING**  
**LEGEND, NOTES & DETAILS**  
KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to Vicinity of Kahakili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: As Shown Date: July 2018  
SHEET No. T2 OF 17 SHEETS



"A" or "A <sub>1</sub> "	"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.

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO. 102	
DATE	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

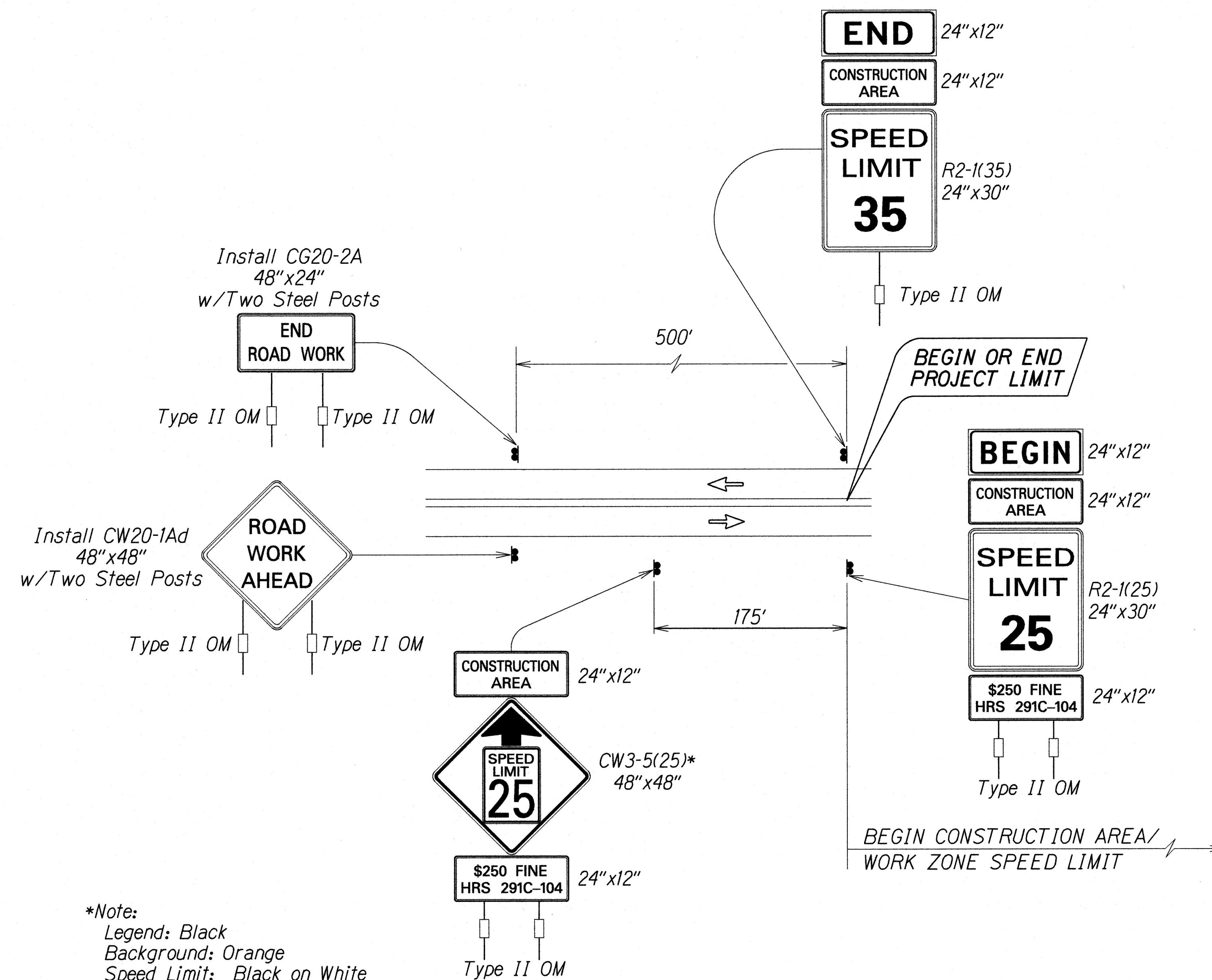
**GALVANIZED SQUARE TUBE  
SIGN POST MOUNTING**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to Vicinity of Kahakili Highway  
Federal Aid Project No. HSIP-083-1(66)

Scale: As Shown Date: July 2018

SHEET No. T3 OF 17 SHEETS

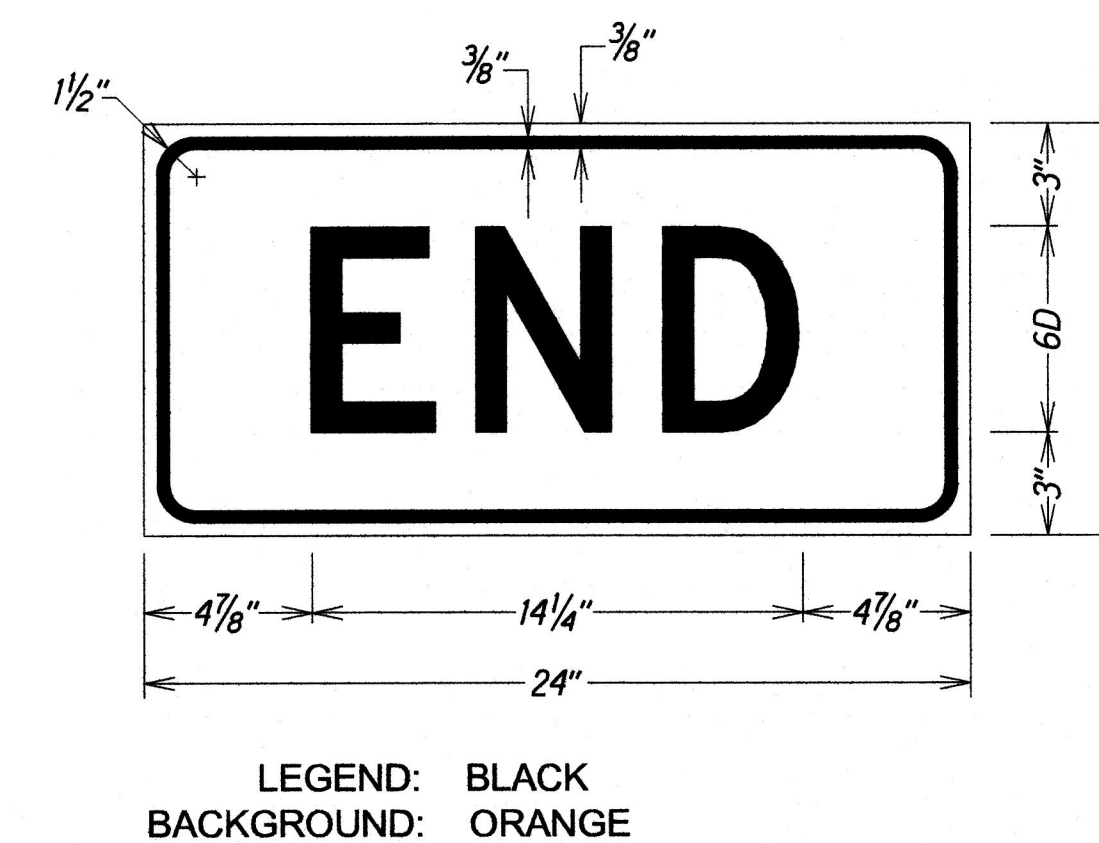
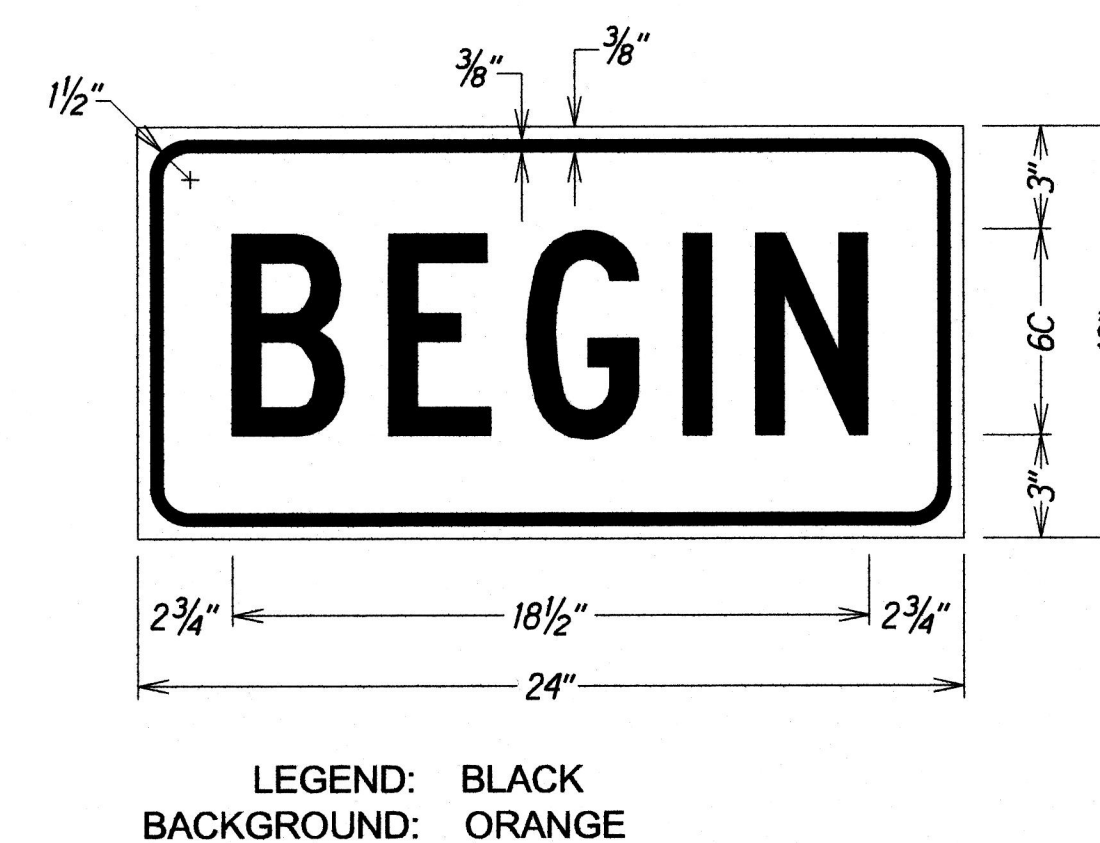
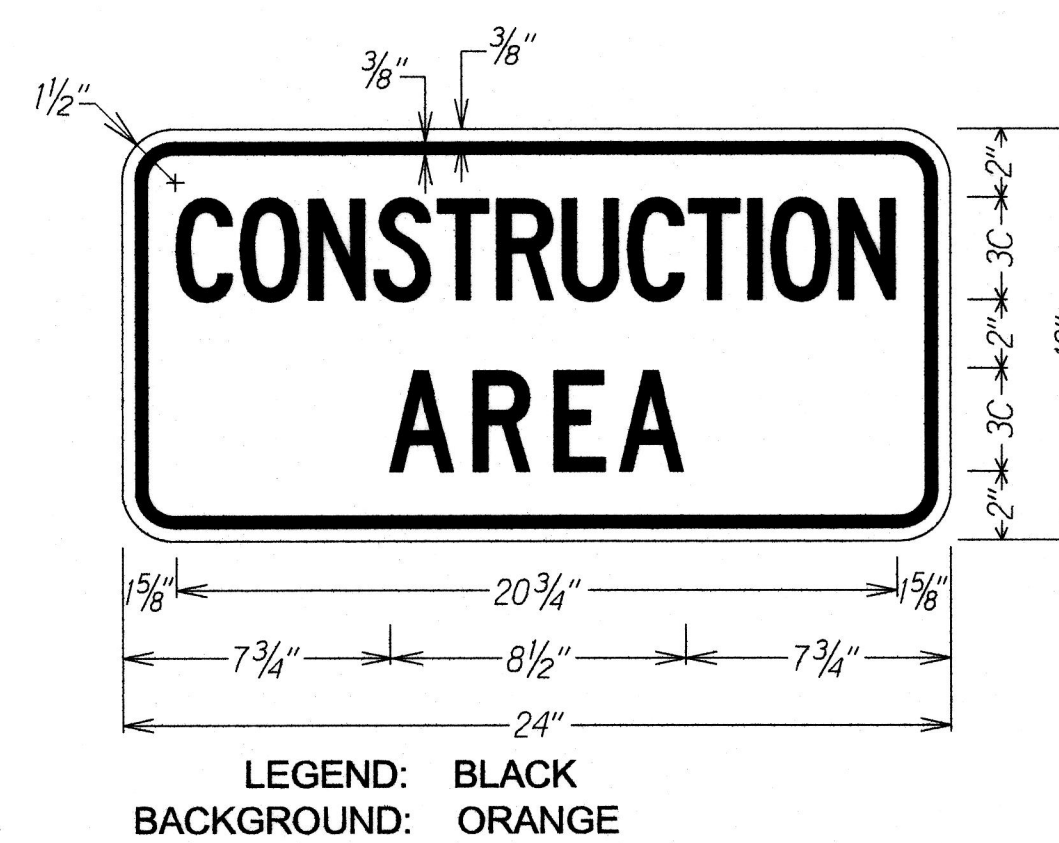
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	23	36



**Work Zone Notes:**

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 Standard Specifications and/or 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.

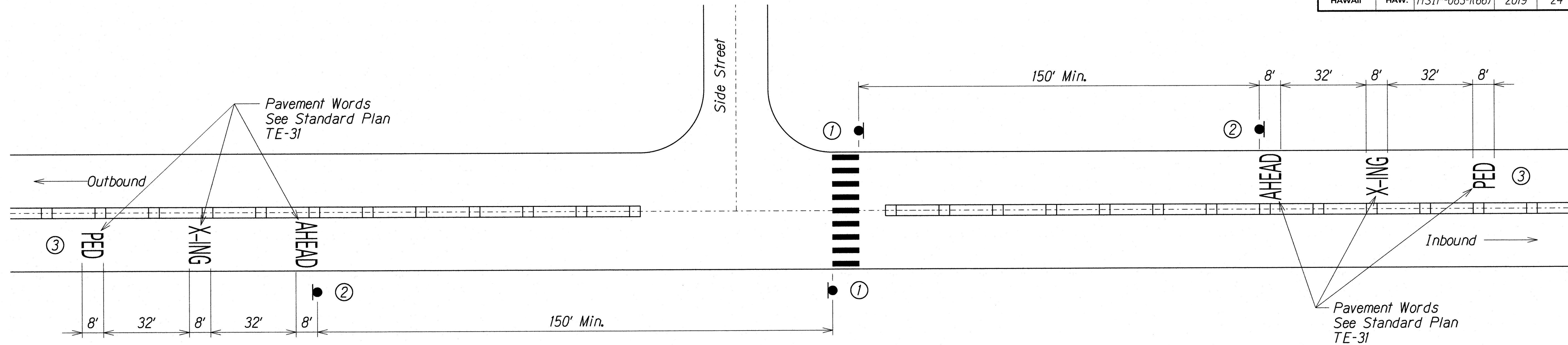
**TYPICAL DETAIL FOR CONSTRUCTION SIGNS  
ON TWO LANE OR MULTILANE UNDIVIDED LOW SPEED HIGHWAY**



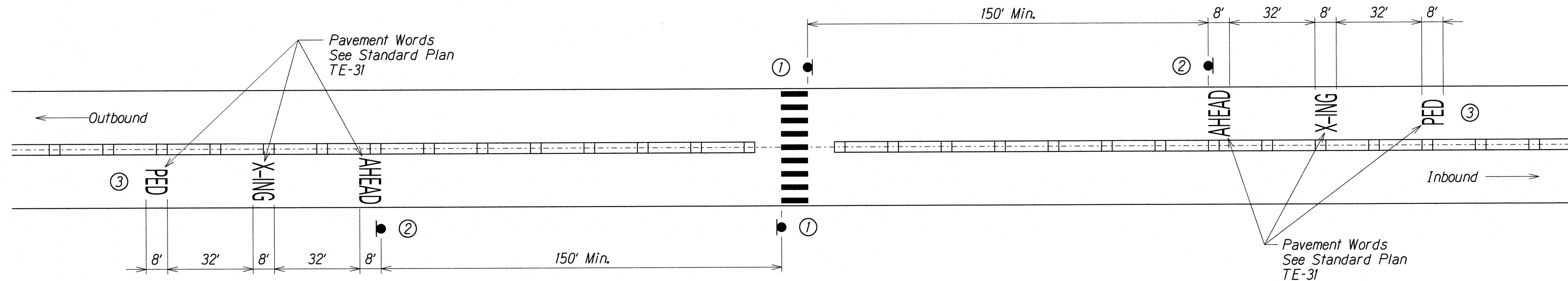
SURVEY PLOTTED BY	DATE
DRAWN BY	
NOTE BOOK DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**LOW SPEED UNDIVIDED HIGHWAY**  
**WORK ZONE SIGNING PLAN, NOTES&DETAILS**  
KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to Vicinity of Kahakili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: As Shown Date: July 2018  
SHEET No. T4 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	24	36



**TYPICAL UNSIGNALIZED INTERSECTION MARKINGS**  
**(NO LEFT TURN STORAGE LANES)**  
 Not to Scale



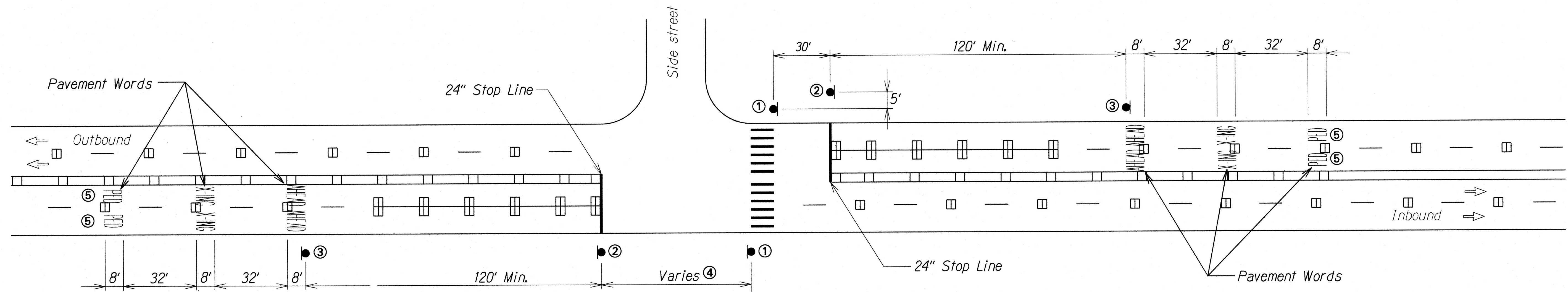
**TYPICAL MIDBLOCK INTERSECTION MARKINGS**  
 Not to Scale

<p>①</p> <p>W11-2 36"x36"</p> <p>OR</p> <p>SI-1 36"x36"</p> <p>W16-7p 24"x12"</p> <p>Black legend on flourescent yellow green background</p>	<p>②</p> <p>W11-2 36"x36"</p> <p>OR</p> <p>SI-1 36"x36"</p> <p>AHEAD W16-9p 24"x12"</p> <p>Black legend on flourescent yellow green background</p>	<p>③</p> <p><b>NOTE:</b>        When school crosswalk warning assembly used install "SCHOOL" pavement word. See Standard Plan TE-31 for detail.</p>
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SURVEY PLOTTED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 PLAN \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 102  
 QUANTITIES BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 N/A

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**MID BLOCK CROSSWALK  
 MARKING AND SIGNING**  
 KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Waikane Valley Road to Vicinity of Kahakili Highway  
 Federal Aid Project No. HSIP-083-1(66)  
 Scale: As Shown Date: July 2018  
 SHEET No. T5 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	25	36



**TYPICAL UNSIGNALIZED INTERSECTION MARKINGS**

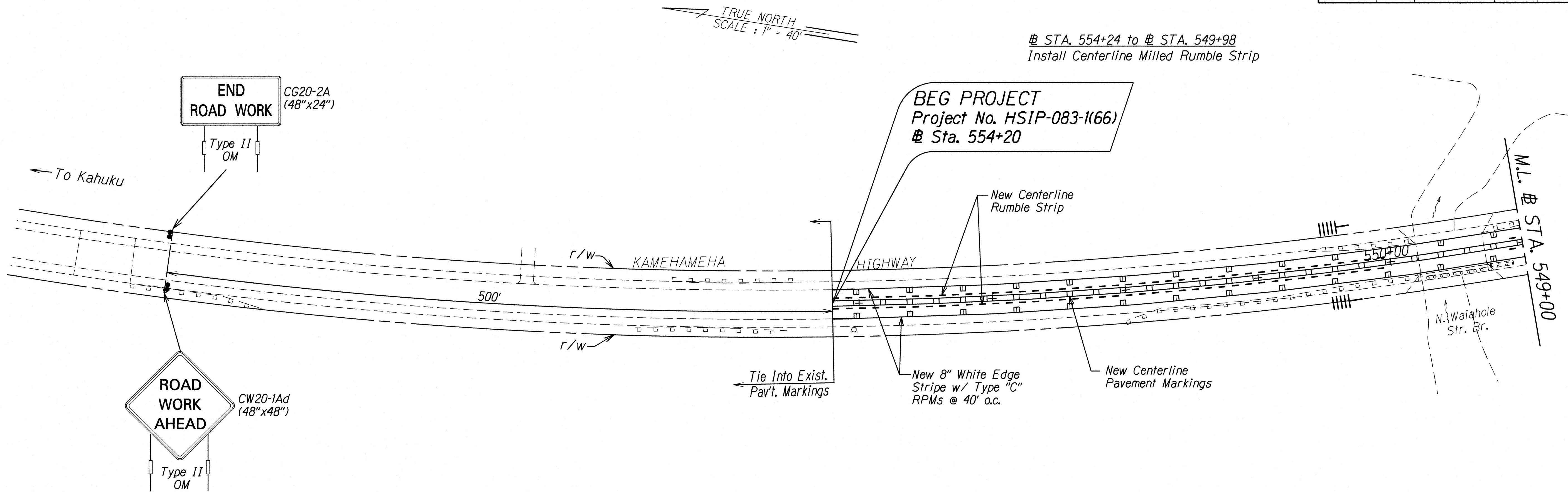
Not to Scale

<p>①</p> <p>W11-2 36"x36"</p> <p>W16-7p 24"x12"</p> <p>Black legend on flourescent yellow green background</p>	<p>②</p> <p>Revised RI-5c(L) 30"x36"</p> <p>Black legend on white background See attached sheet for detail</p> <p>See ④ Note</p>	<p>③</p> <p>W11-2 36"x36"</p> <p>W16-9p 24"x12"</p> <p>Black legend on flourescent yellow green background</p>	<p>④</p> <p><b>NOTE:</b> If distance is &lt;50', offset "Stop Here For Pedestrians" sign 5' horizontally with crossing sign. Where shoulder space is limited, install sign as directed by Engineer.</p>	<p>⑤</p> <p><b>NOTE:</b> When school crosswalk warning assembly used install "SCHOOL" pavement word. See Standard Plan TE-31 for detail.</p>
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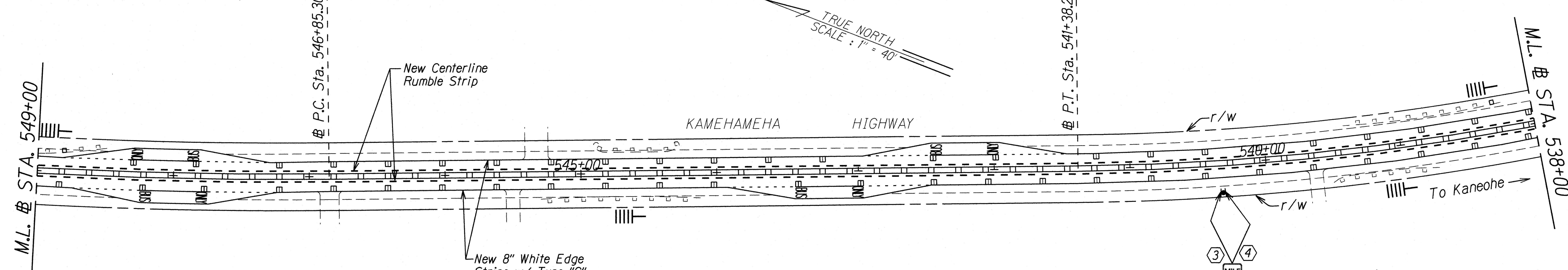
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 DRAWN BY \_\_\_\_\_  
 TRACED BY \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 QUANTITIES BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 ORIGINAL PLAN \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 N. S. / m. / l. / m.

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**UNSIGNALIZED INTERSECTION  
 MARKINGS AND SIGNS**  
 KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Waikane Valley Road to Vicinity of Kahekili Highway  
 Federal Aid Project No. HSIP-083-1(66)  
 Scale: As Shown Date: July 2018  
 SHEET No. T6 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	26	36



From STA. 549+10 to STA. 549+45  
Install Centerline Milled Rumble Strip



- 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 Exist. Sign(s) & Post(s)

- NOTE:**
1. All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
  2. Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

|||— 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	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____
NO.	_____

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

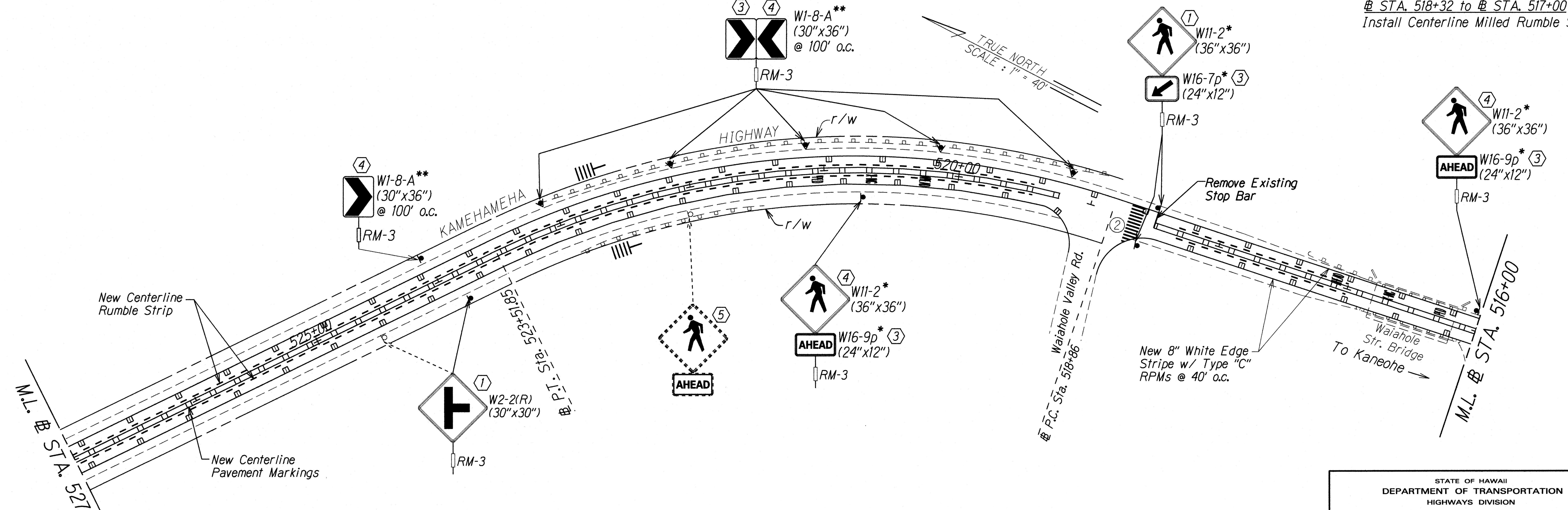
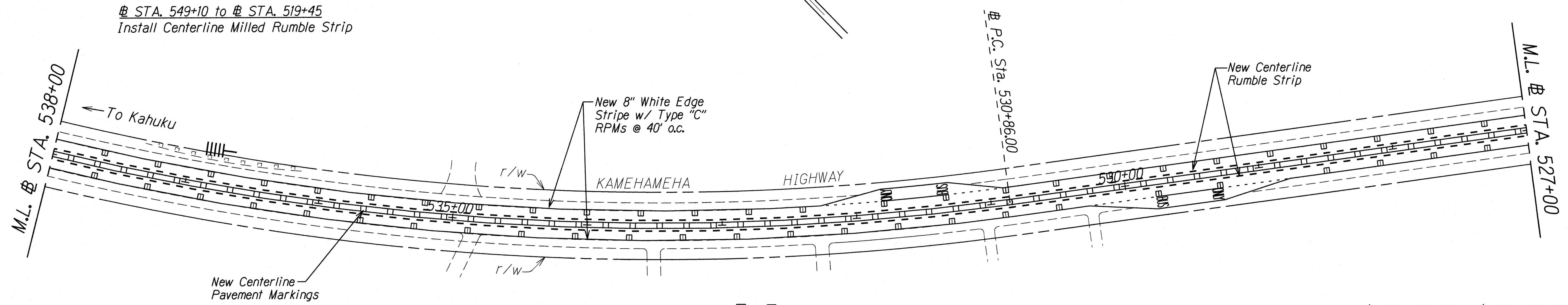
**PAVEMENT MARKING & SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to  
Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: 1" = 40'      Date: July 2018

SHEET No. 17 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	27	36

||||| 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.



**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 Exist. Sign(s) & Post(s)

**NOTE:**

1. All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
2. Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

\* Fluorescent Yellow-Green Sign Sheeting  
 \*\* Fluorescent Yellow Sign Sheeting

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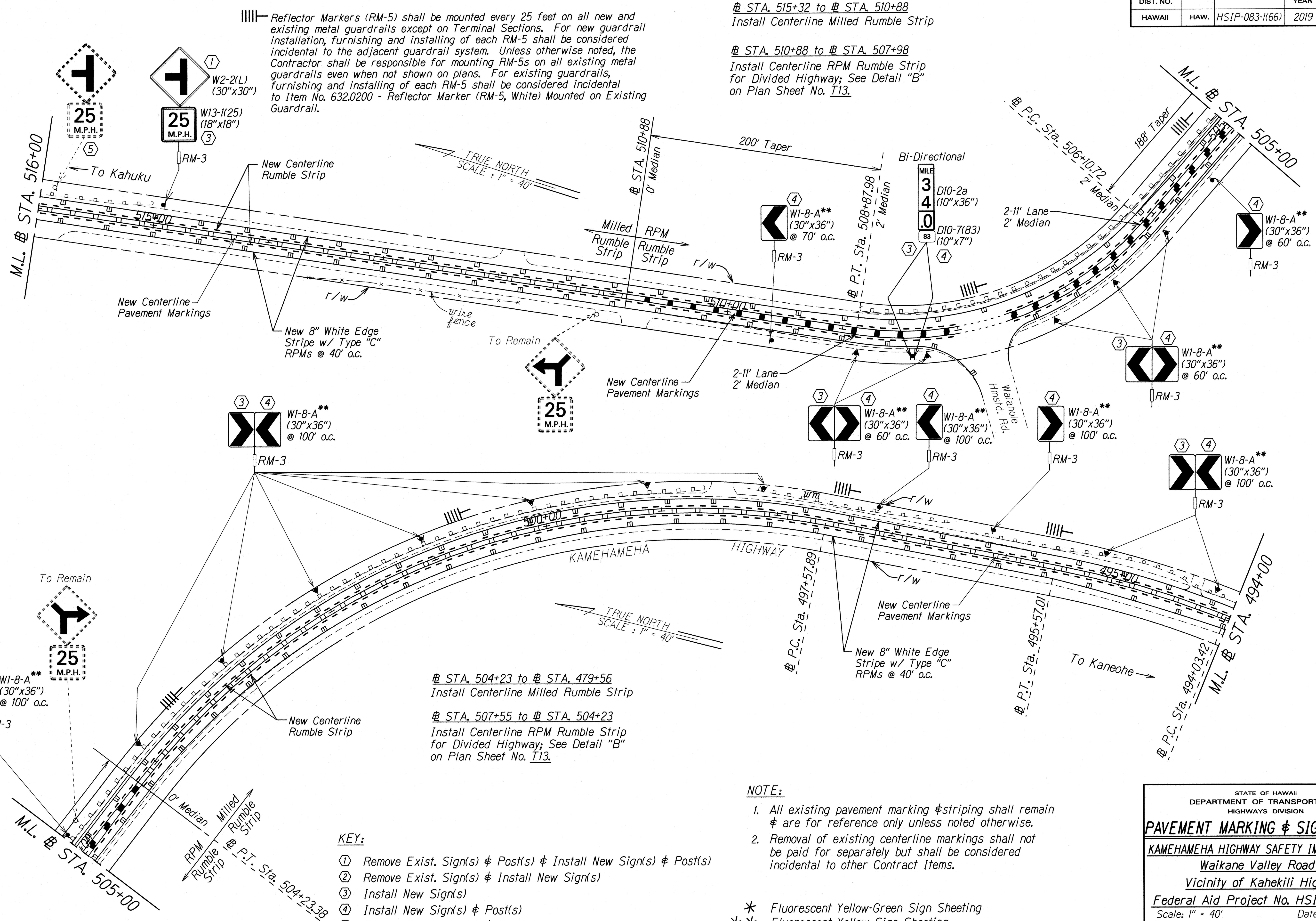
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Waikane Valley Road to  
 Vicinity of Kahekili Highway  
 Federal Aid Project No. HSIP-083-1(66)  
 Scale: 1" = 40' Date: July 2018

SHEET No. T8 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	28	36



||||| 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.

④ STA. 515+32 to ④ STA. 510+88  
Install Centerline Milled Rumble Strip

④ STA. 510+88 to ④ STA. 507+98  
Install Centerline RPM Rumble Strip for Divided Highway; See Detail "B" on Plan Sheet No. T13.

④ STA. 504+23 to ④ STA. 479+56  
Install Centerline Milled Rumble Strip

④ STA. 507+55 to ④ STA. 504+23  
Install Centerline RPM Rumble Strip for Divided Highway; See Detail "B" on Plan Sheet No. T13.

**NOTE:**

- All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
- Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

- \* Fluorescent Yellow-Green Sign Sheeting
- \*\* Fluorescent Yellow Sign Sheeting

**KEY:**

- Remove Exist. Sign(s) & Post(s) & Install New Sign(s) & Post(s)
- Remove Exist. Sign(s) & Install New Sign(s)
- Install New Sign(s)
- Install New Sign(s) & Post(s)
- Remove Exist. Sign(s) & Post(s)

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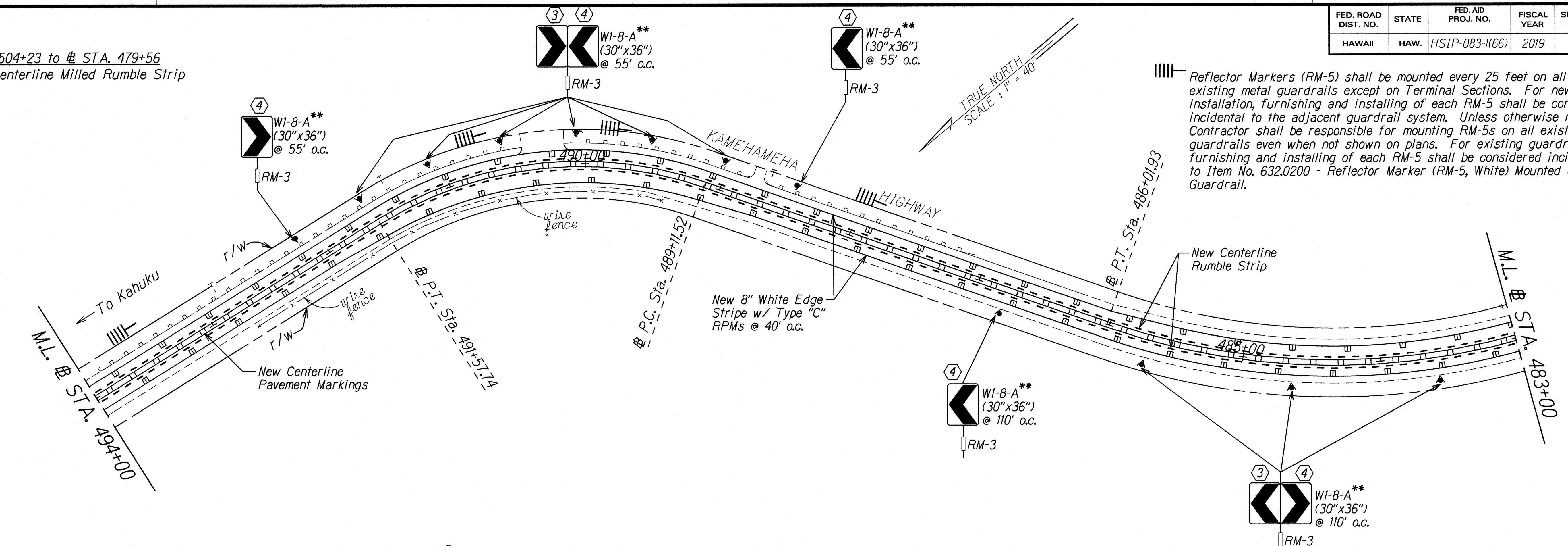
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to  
Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: 1" = 40' Date: July 2018  
SHEET No. T9 OF 17 SHEETS

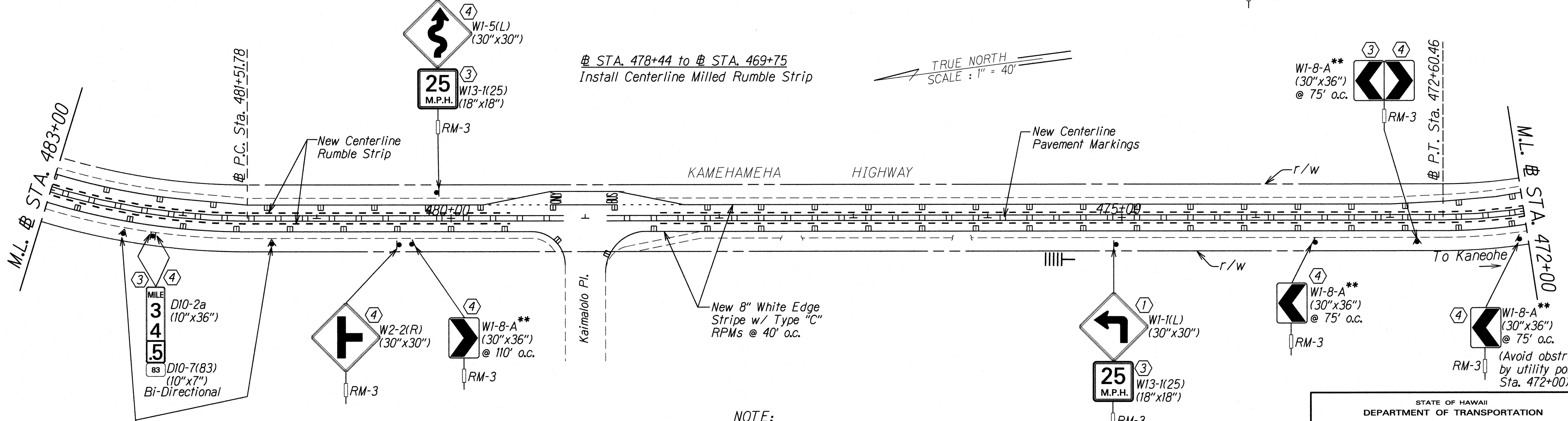
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	29	36

# STA. 504+23 to # STA. 479+56  
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.

# STA. 478+44 to # STA. 469+75  
Install Centerline Milled Rumble Strip



- 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 Exist. Sign(s) & Post(s)

- NOTE:**
- 1. All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
  - 2. Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

- \* Fluorescent Yellow-Green Sign Sheeting
- \*\* Fluorescent Yellow Sign Sheeting

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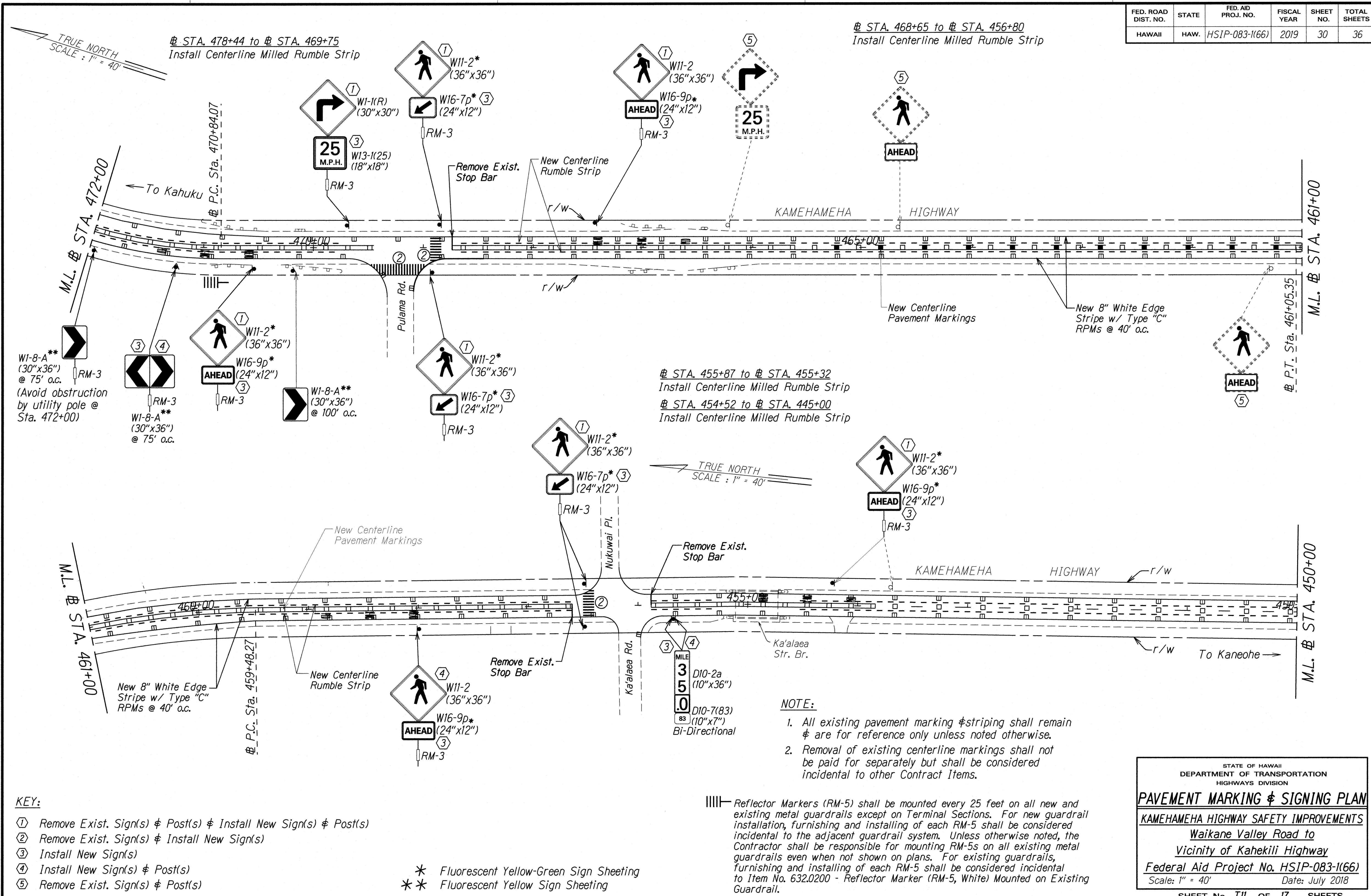
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to  
Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: 1" = 40' Date: July 2018

SHEET No. T10 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	30	36



- 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 Exist. Sign(s) & Post(s)

\* Fluorescent Yellow-Green Sign Sheeting  
 \*\* Fluorescent Yellow Sign Sheeting

- NOTE:**
1. All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
  2. Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

|||— 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.

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

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
 Waikane Valley Road to  
 Vicinity of Kahekili Highway  
 Federal Aid Project No. HSIP-083-1(66)  
 Scale: 1" = 40' Date: July 2018

SHEET No. 111 OF 17 SHEETS

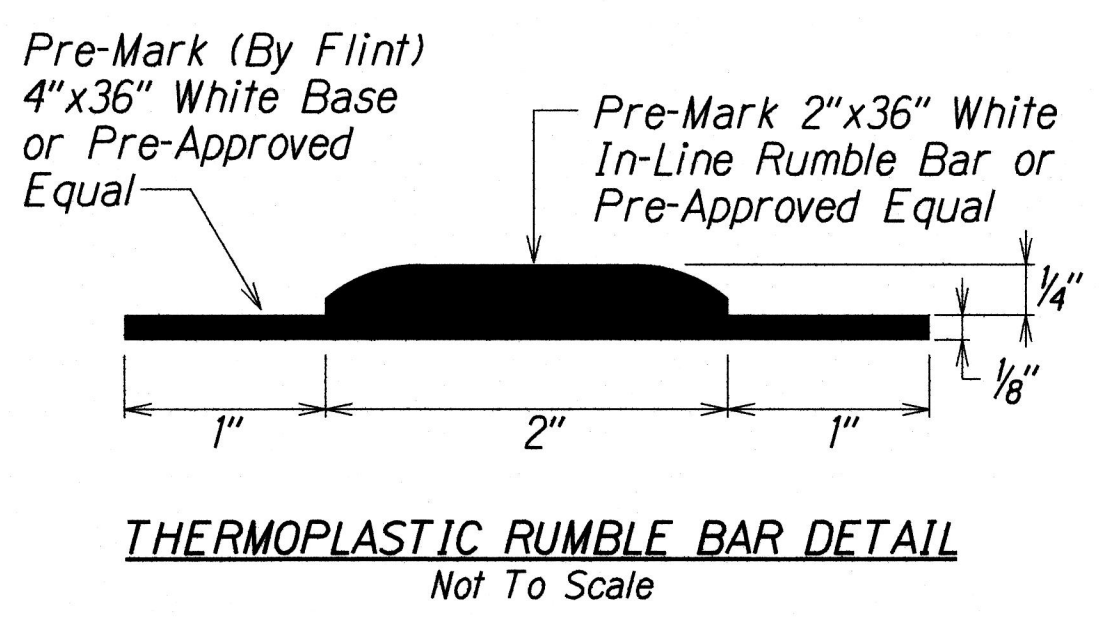
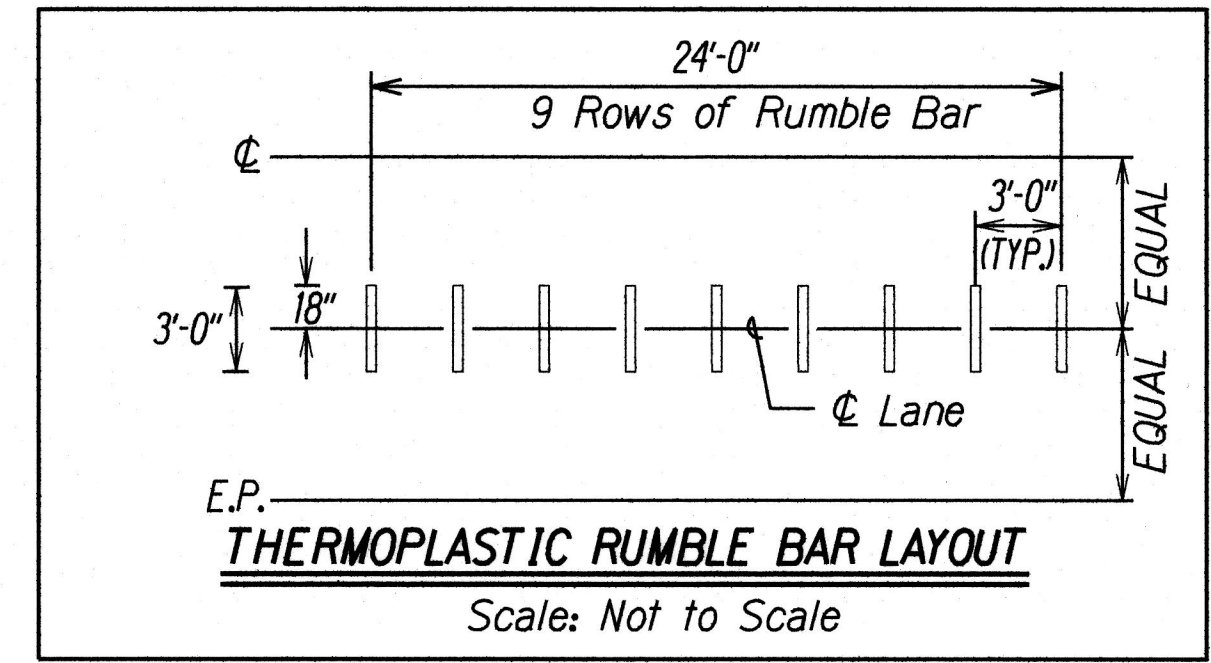
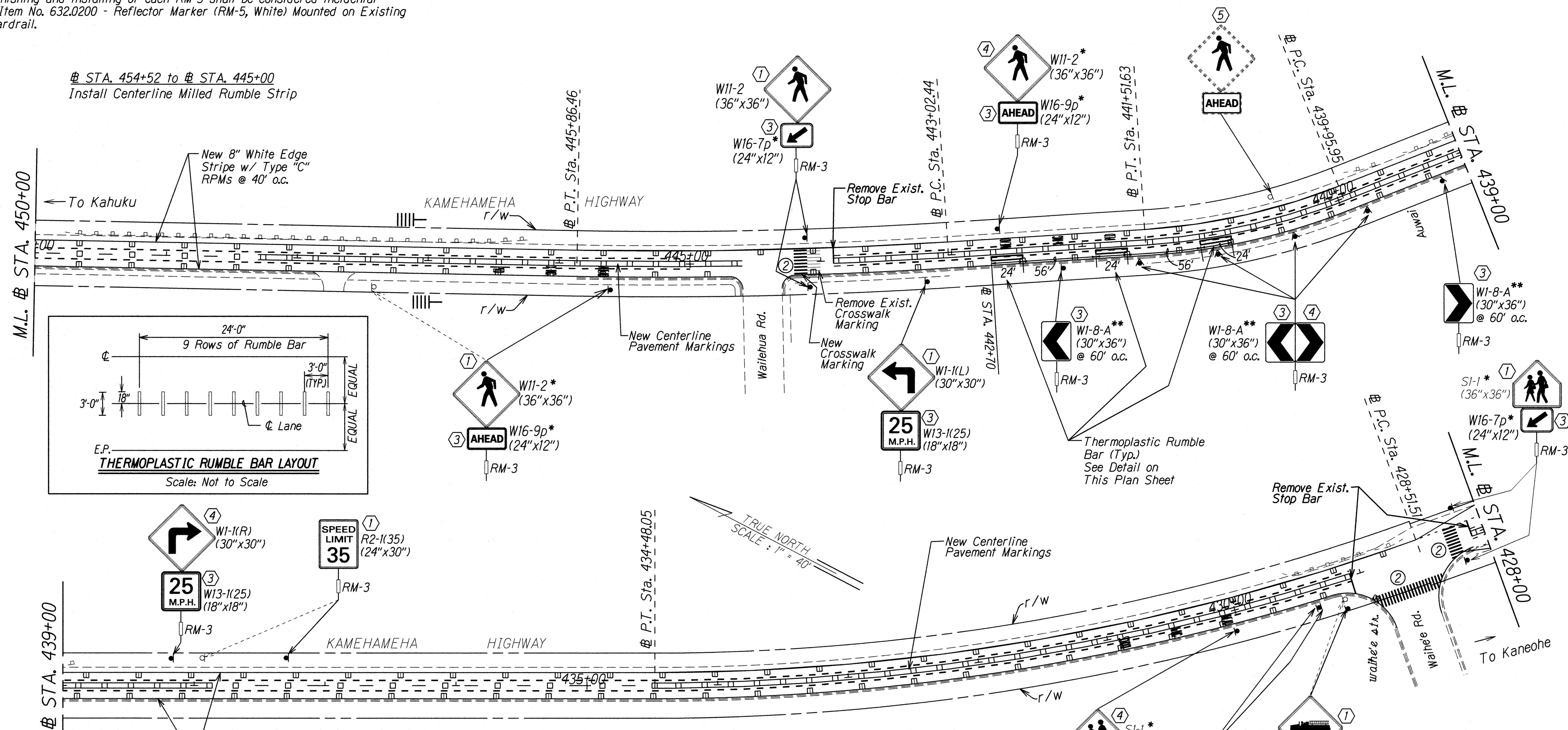
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	31	36

||| 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.

TRUE NORTH  
SCALE: 1" = 40'

# STA. 443+90 to # STA. 429+08  
Install Centerline Milled Rumble Strip

# STA. 454+52 to # STA. 445+00  
Install Centerline Milled Rumble Strip



- NOTE:**
- All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
  - Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

\* Fluorescent Yellow-Green Sign Sheeting  
\*\* Fluorescent Yellow Sign Sheeting

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

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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to  
Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: 1" = 40' Date: July 2018  
SHEET No. T12 OF 17 SHEETS

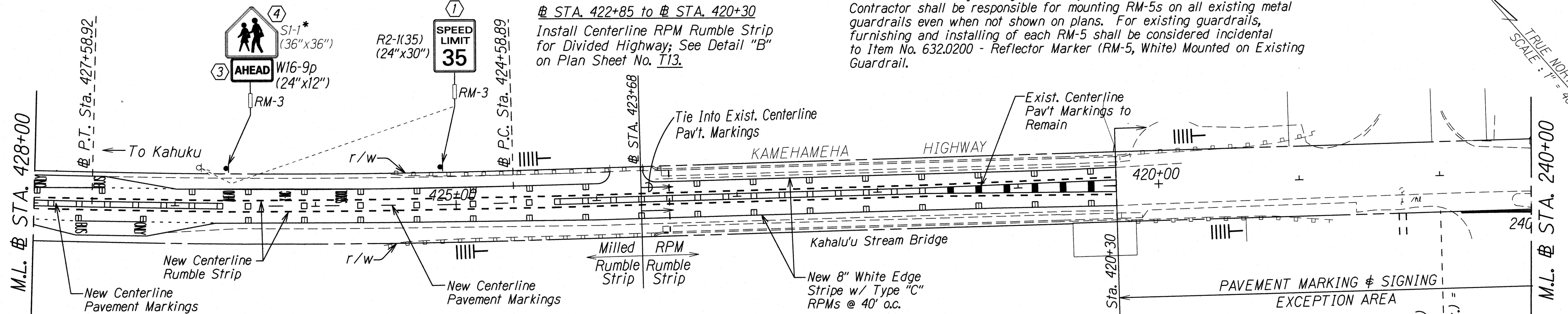
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1166	2019	32	36

# STA. 428+10 to # STA. 423+68  
Install Centerline Milled Rumble Strip

# STA. 423+68 to # STA. 422+85  
Install Centerline RPM Rumble Strip for Undivided Highway; See Detail "A" on Plan Sheet No. T13.

# STA. 422+85 to # STA. 420+30  
Install Centerline RPM Rumble Strip for Divided Highway; See Detail "B" on Plan Sheet No. T13.

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.

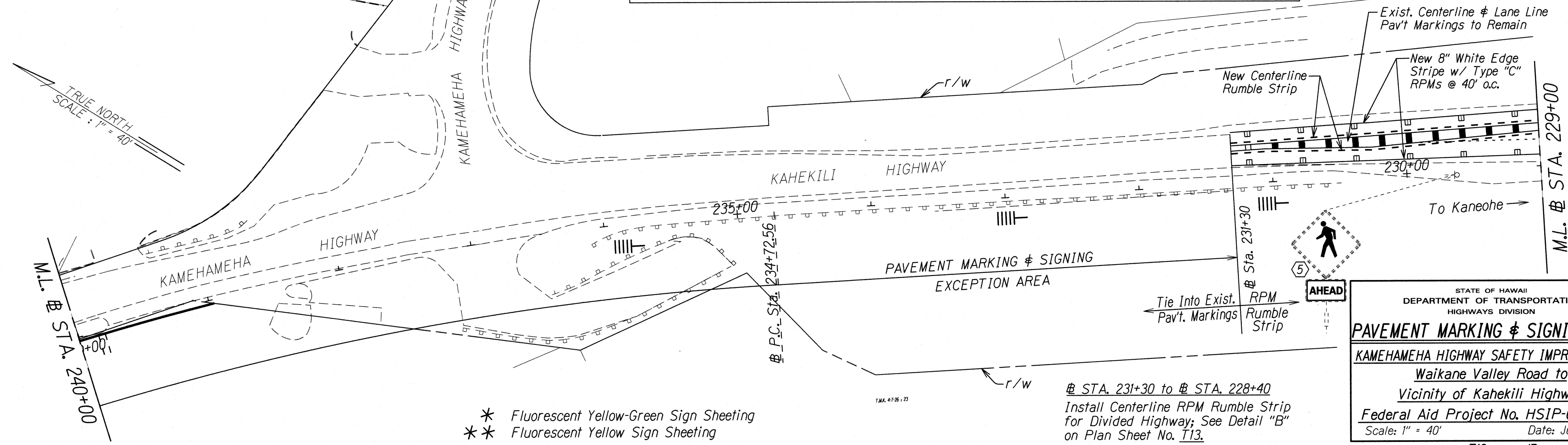
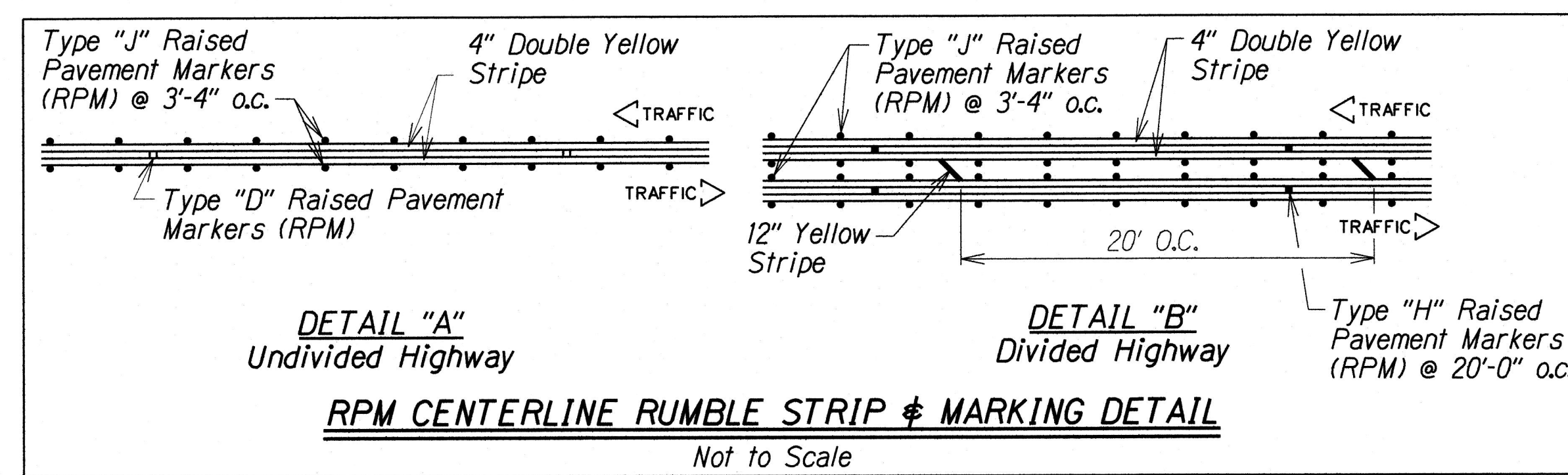


**KEY:**

- 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 Exist. Sign(s) & Post(s)

**NOTE:**

1. All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
2. Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.



\* Fluorescent Yellow-Green Sign Sheeting  
\*\* Fluorescent Yellow Sign Sheeting

# STA. 231+30 to # STA. 228+40  
Install Centerline RPM Rumble Strip for Divided Highway; See Detail "B" on Plan Sheet No. T13.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to  
Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1166  
Scale: 1" = 40' Date: July 2018

SHEET No. T13 OF 17 SHEETS

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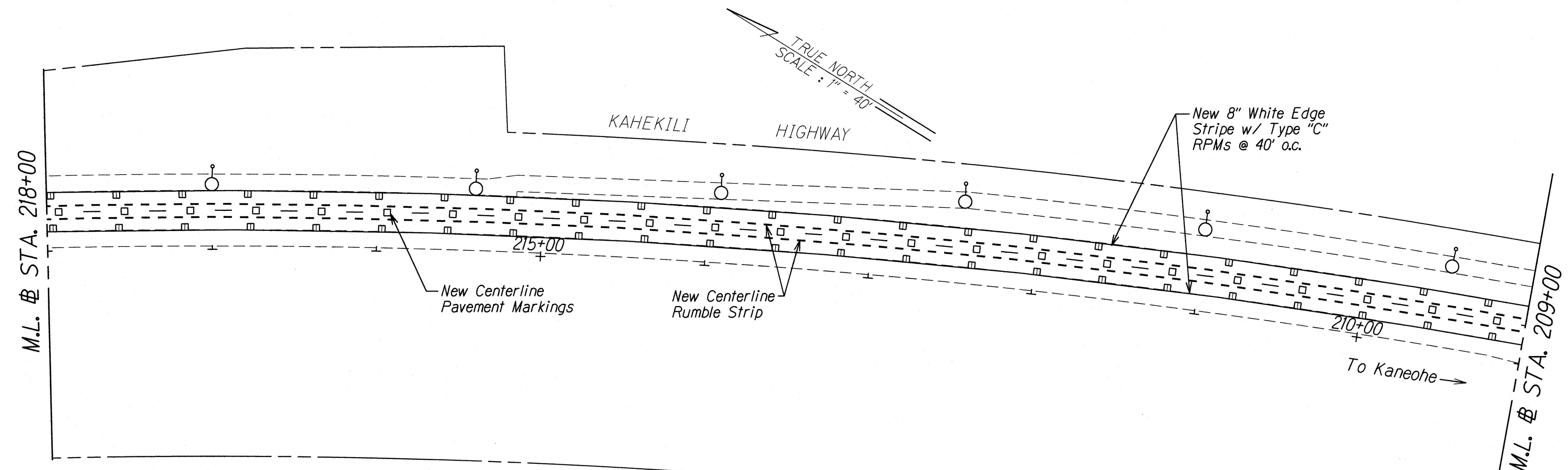
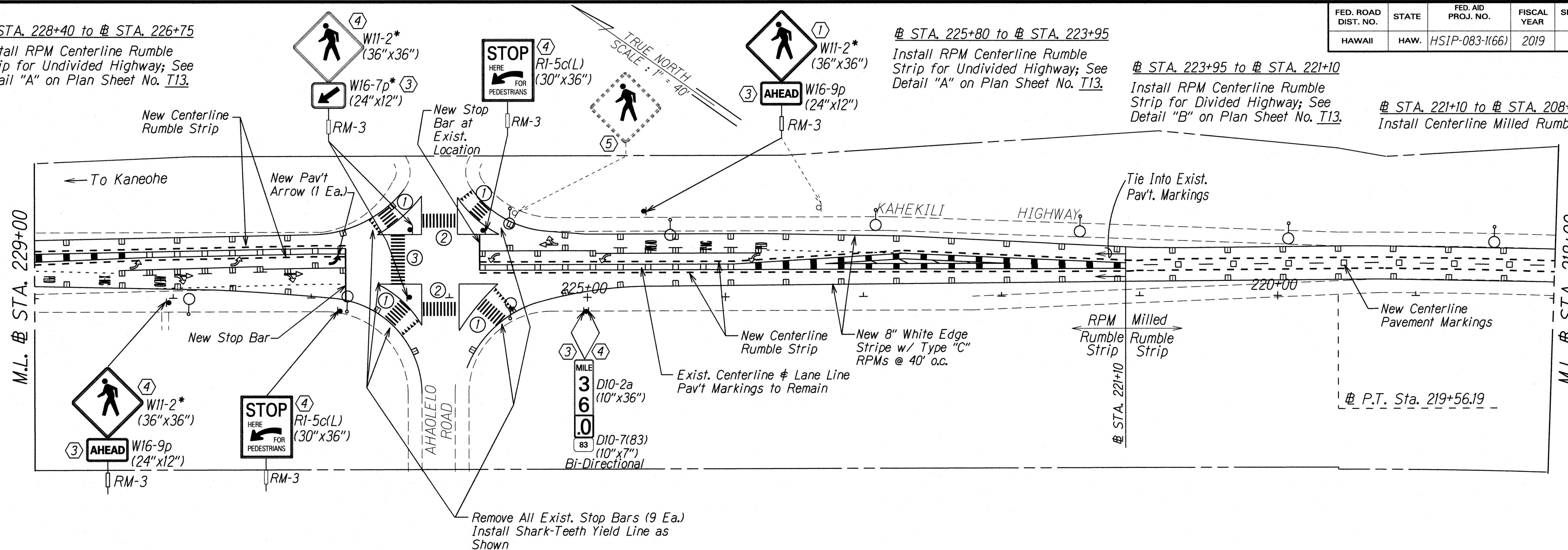
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	33	36

# STA. 228+40 to # STA. 226+75  
Install RPM Centerline Rumble Strip for Undivided Highway; See Detail "A" on Plan Sheet No. T13.

# STA. 225+80 to # STA. 223+95  
Install RPM Centerline Rumble Strip for Undivided Highway; See Detail "A" on Plan Sheet No. T13.

# STA. 223+95 to # STA. 221+10  
Install RPM Centerline Rumble Strip for Divided Highway; See Detail "B" on Plan Sheet No. T13.

# STA. 221+10 to # STA. 208+60  
Install Centerline Milled Rumble Strip



**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 Exist. Sign(s) & Post(s)

**NOTE:**

- 1. All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
- 2. Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

- \* Fluorescent Yellow-Green Sign Sheeting
- \*\* Fluorescent Yellow Sign Sheeting

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NOTE BOOK	
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

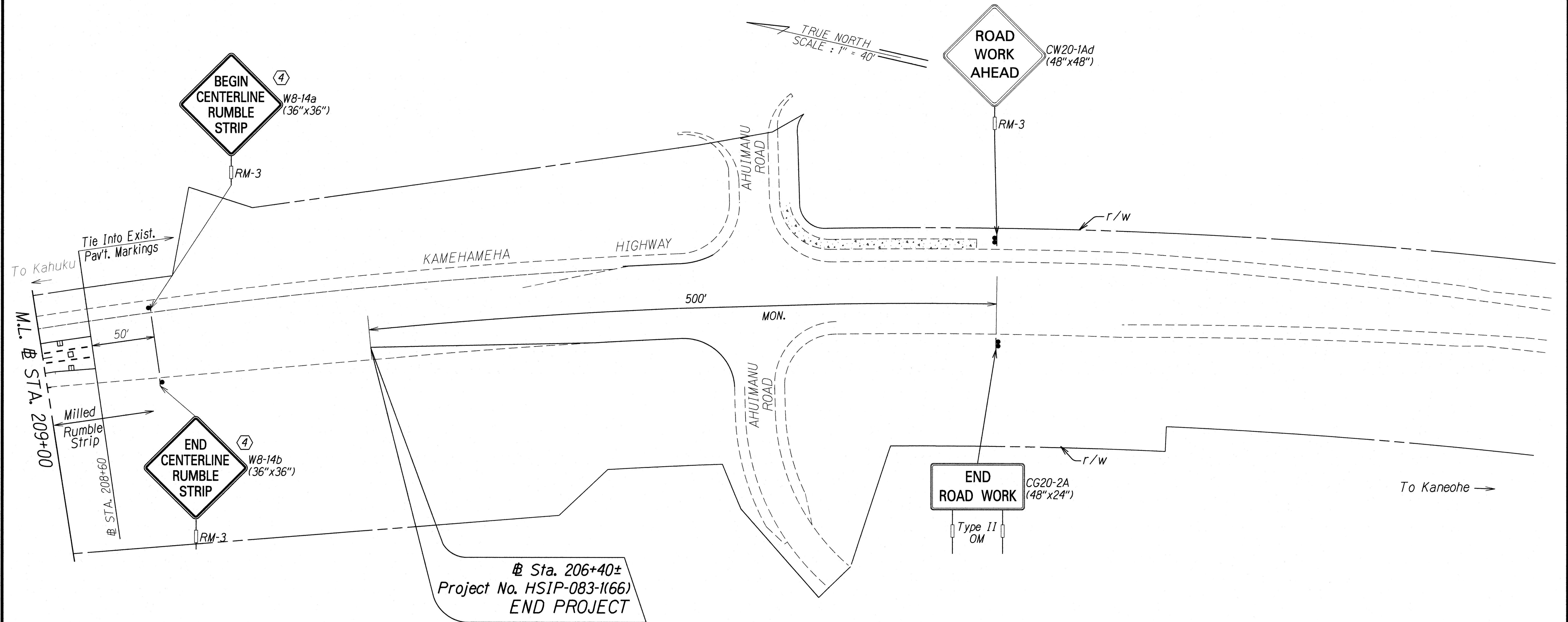
KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to  
Vicinity of Kahakili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: 1" = 40' Date: July 2018

SHEET No. T14 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	34	36

⊕ STA. 221+10 to ⊕ STA. 208+60  
Install Centerline Milled Rumble Strip

⊕ STA. 208+60 to ⊕ STA. 205+20  
Install Centerline RPM Rumble Strip for Divided Highway; See Detail "B" on Plan Sheet No. T13.



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QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
102	
No. 10/11/19	

**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 Exist. Sign(s) & Post(s)

**NOTE:**

1. All existing pavement marking & striping shall remain & are for reference only unless noted otherwise.
2. Removal of existing centerline markings shall not be paid for separately but shall be considered incidental to other Contract Items.

- \* Fluorescent Yellow-Green Sign Sheeting
- \*\* Fluorescent Yellow Sign Sheeting

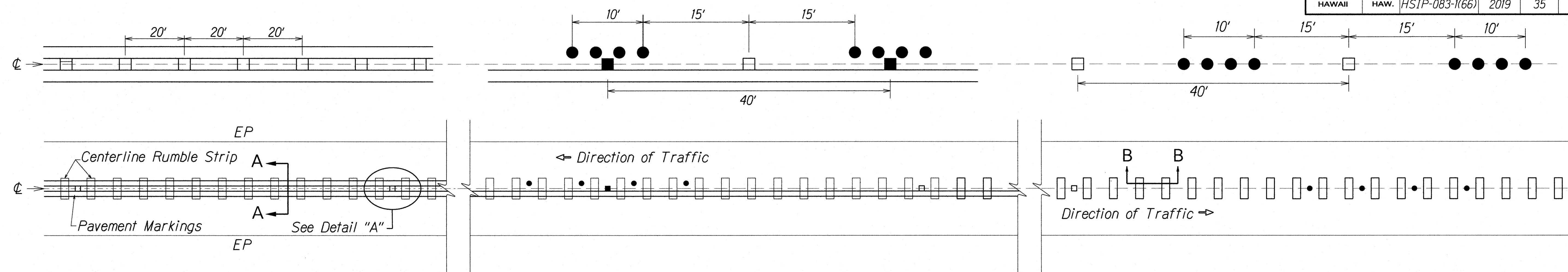
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

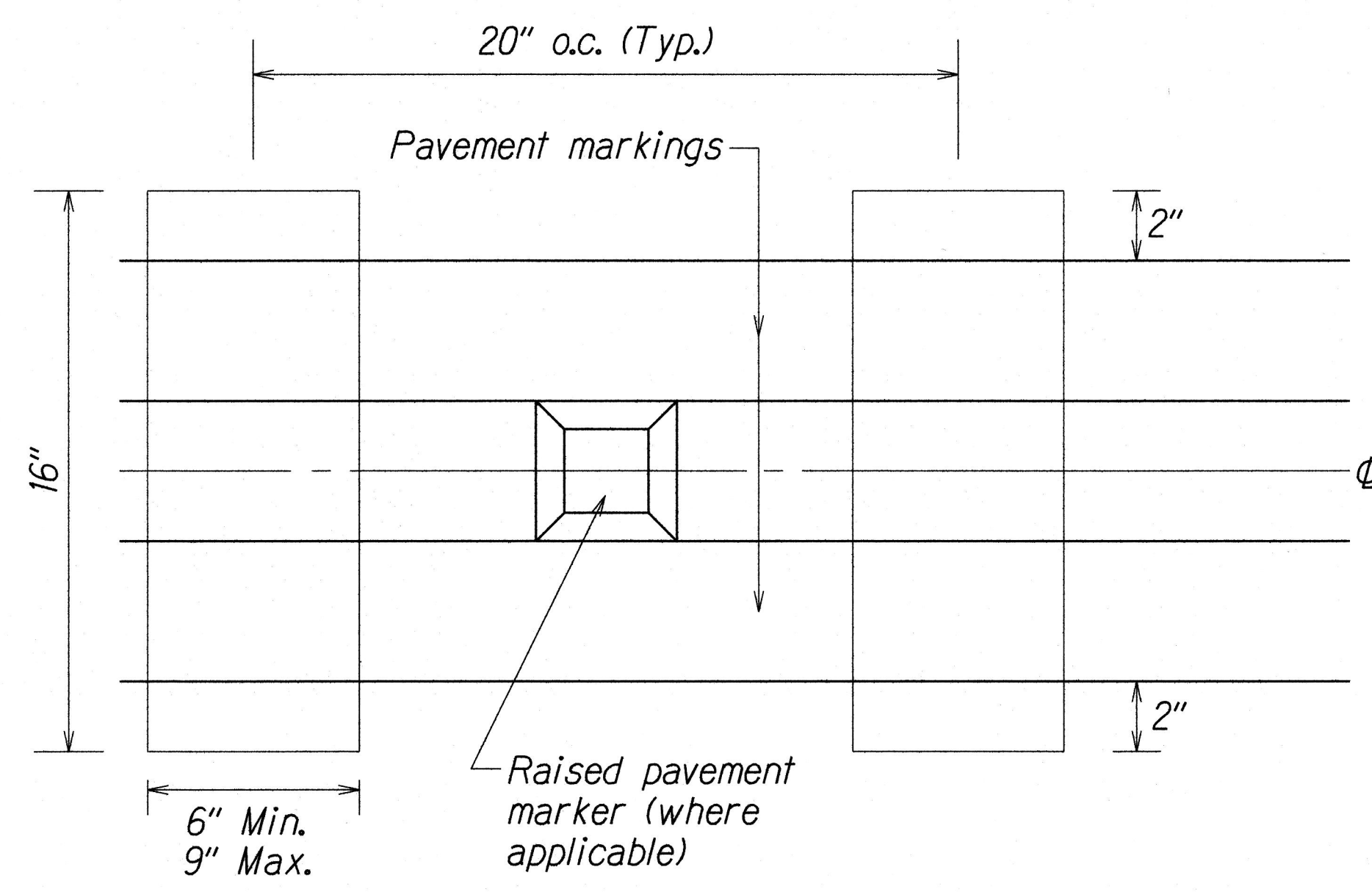
KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to  
Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: 1" = 40' Date: July 2018

SHEET No. T15 OF 17 SHEETS

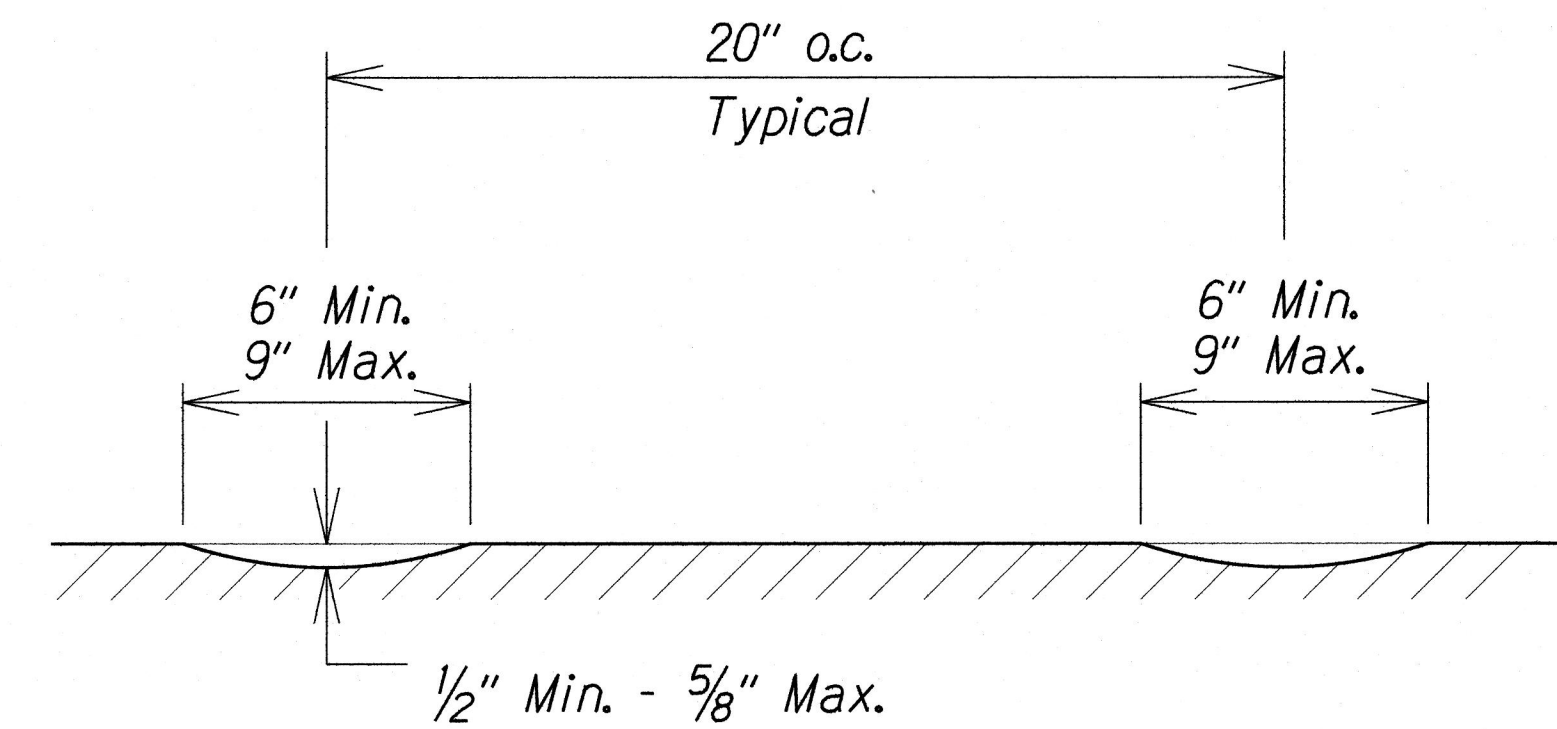
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	35	36



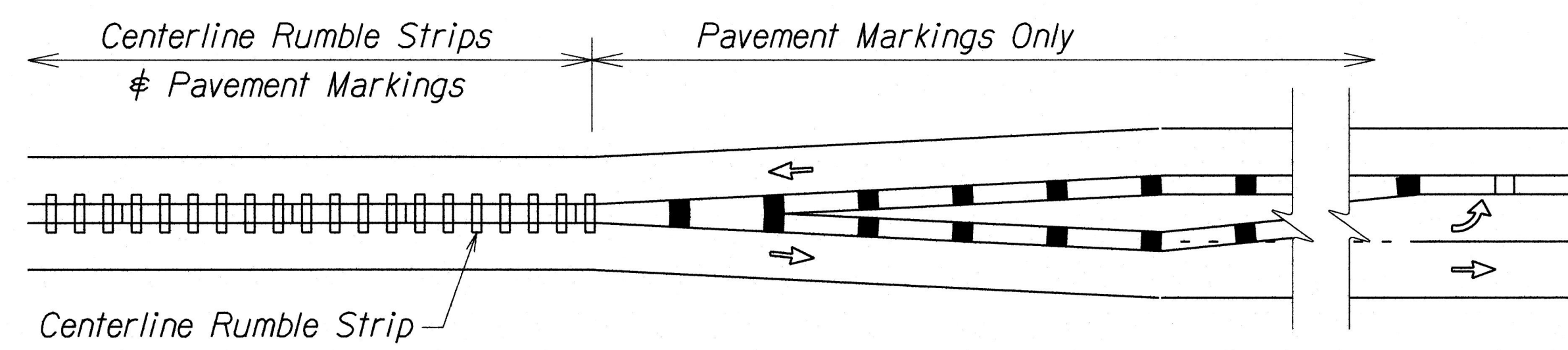
PLAN - CENTERLINE MILLED RUMBLE STRIP  
Not to Scale



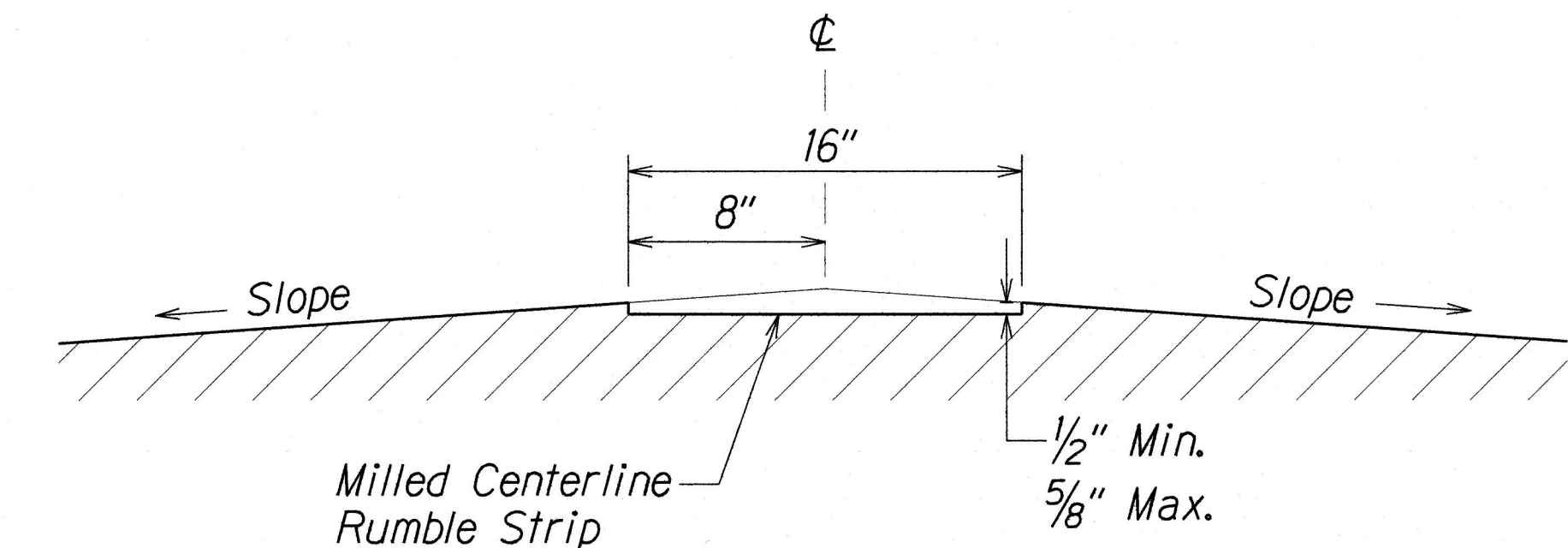
DETAIL "A"  
Not to Scale



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



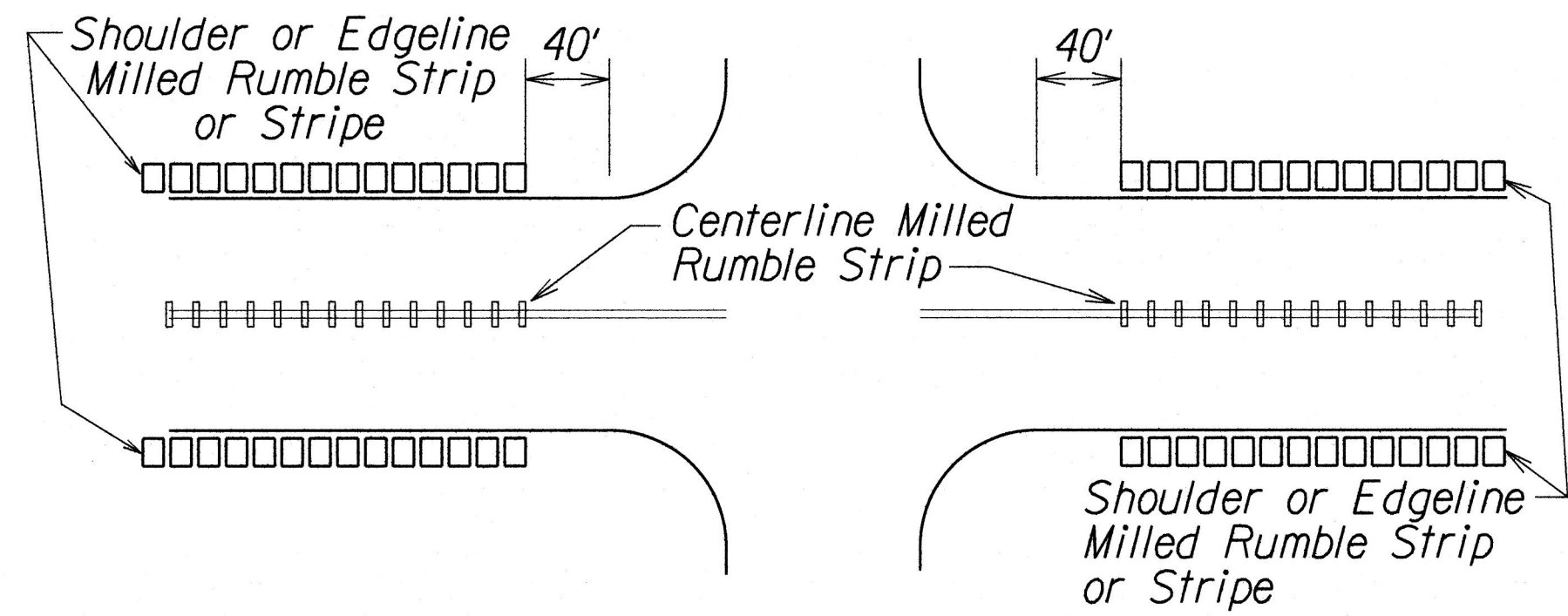
CENTERLINE MILLED RUMBLE STRIP INSTALLATION LIMIT  
Not to Scale



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. Contractor shall install temporary striping after milling rumble strip by end of work day.
9. 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

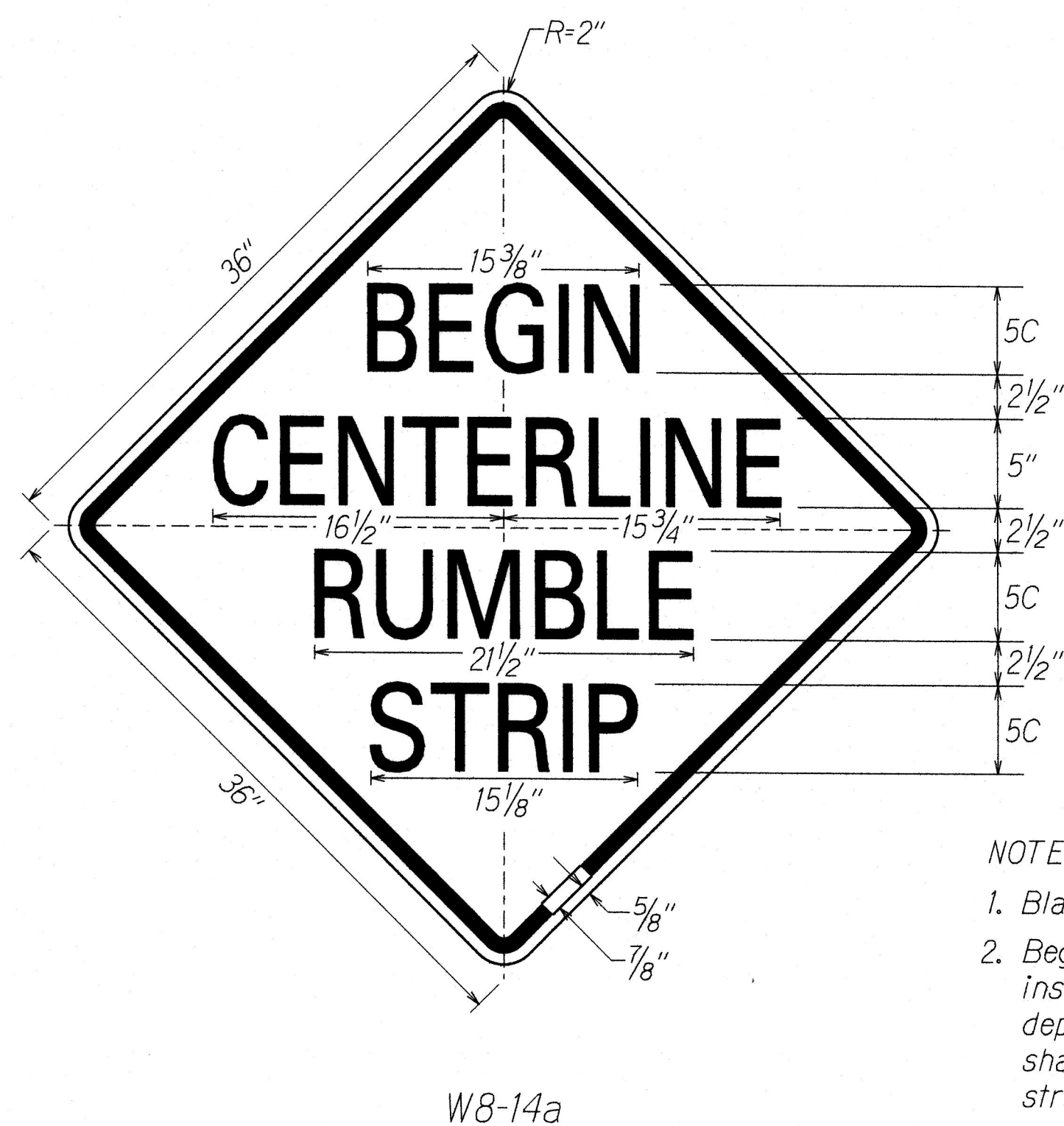
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CENTERLINE MILLED RUMBLE STRIP DETAIL**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1(66)  
Scale: As Shown Date: July 2018  
SHEET No. T16 OF 17 SHEETS

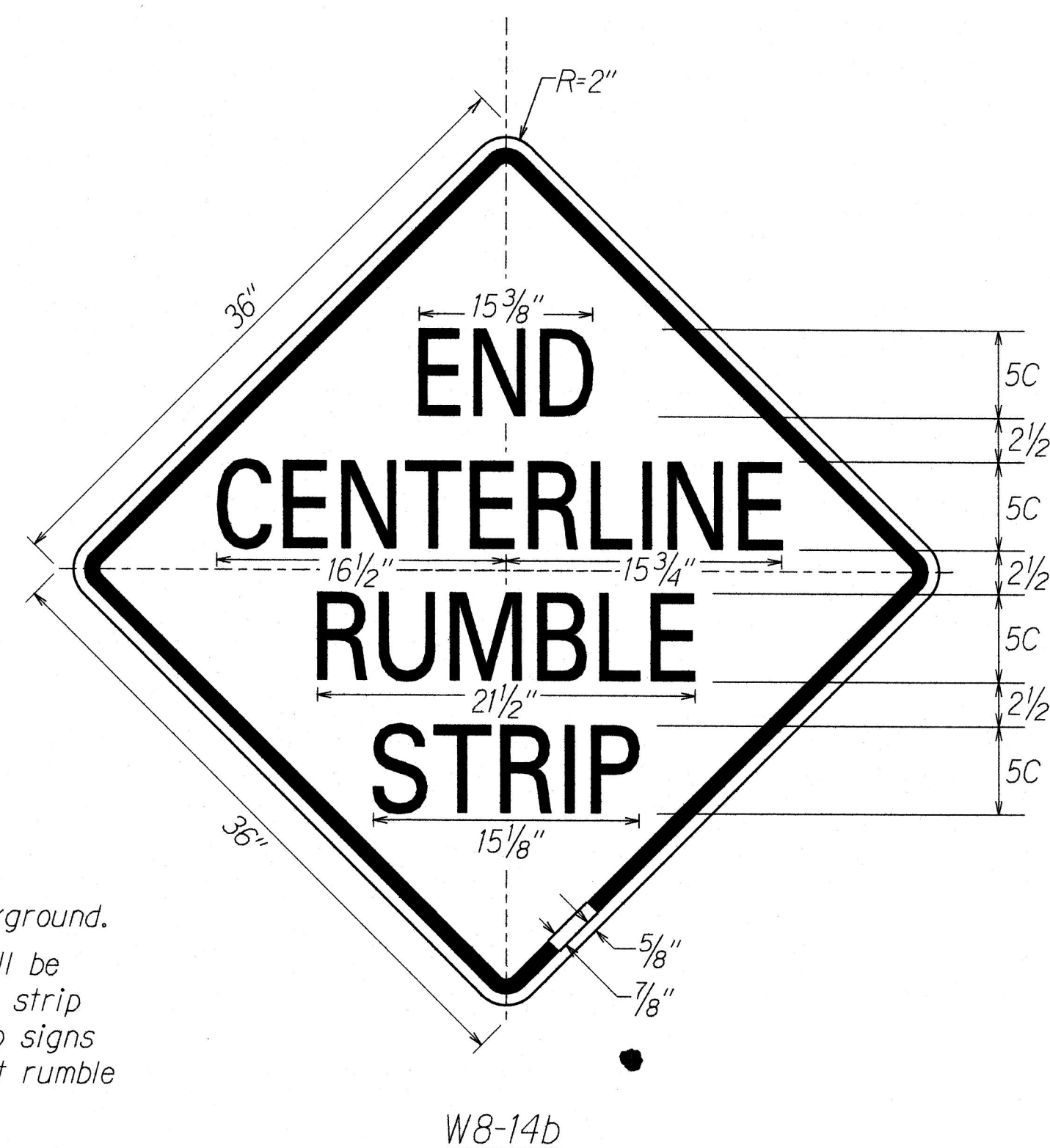
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-083-1(66)	2019	36	36



W8-14a

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.



W8-14b

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
NOTE BOOK	DESIGNED BY	
QUANTITIES BY	CHECKED BY	
sk/ab/c/sd		

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CENTERLINE RUMBLE STRIP  
SIGN DETAILS AND NOTES**

KAMEHAMEHA HIGHWAY SAFETY IMPROVEMENTS  
Waikane Valley Road to Vicinity of Kahekili Highway  
Federal Aid Project No. HSIP-083-1(66)

Scale: As Shown Date: July 2018

SHEET No. 117 OF 17 SHEETS