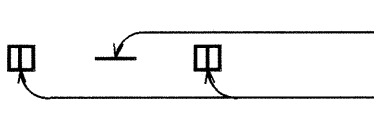
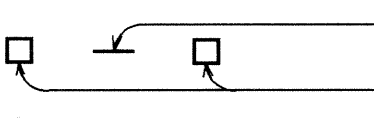
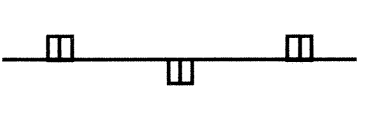
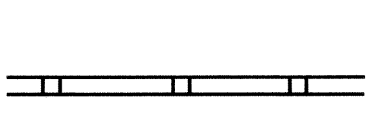


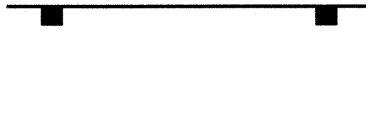
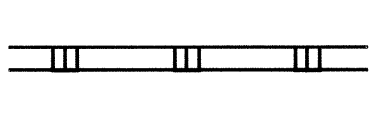

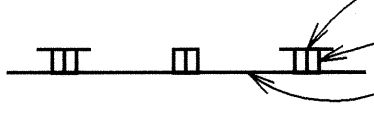










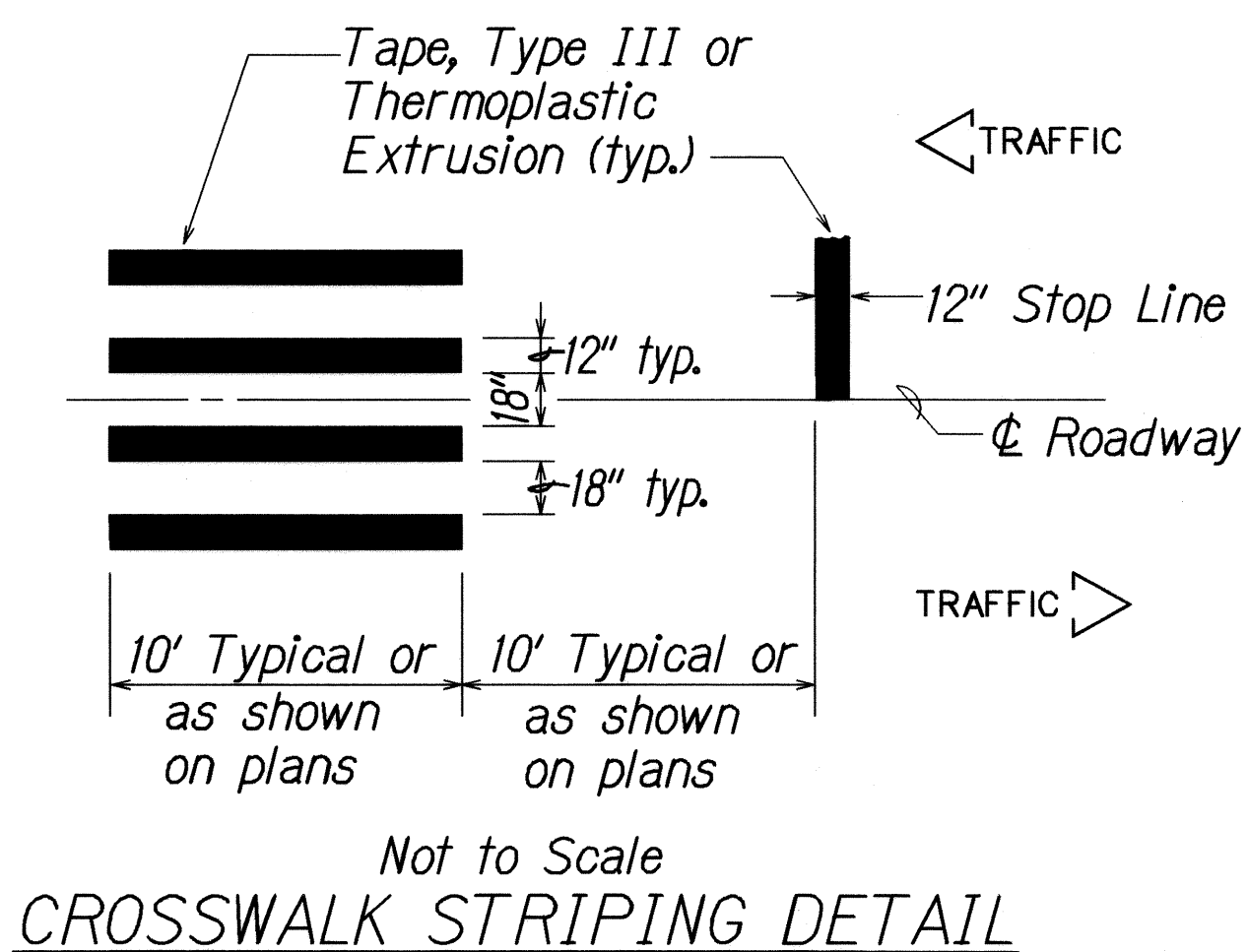
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(36)	2009	20	27

LEGEND


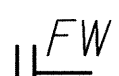
-  4 each Type A Raised Pavement Markers
Type C Raised Pavement Markers @ 40'-0" o.c.
-  4 each Type J Raised Pavement Markers
Type D Raised Pavement Markers @ 40'-0" o.c.
-  8" White Stripe with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)
-  4" Double Solid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

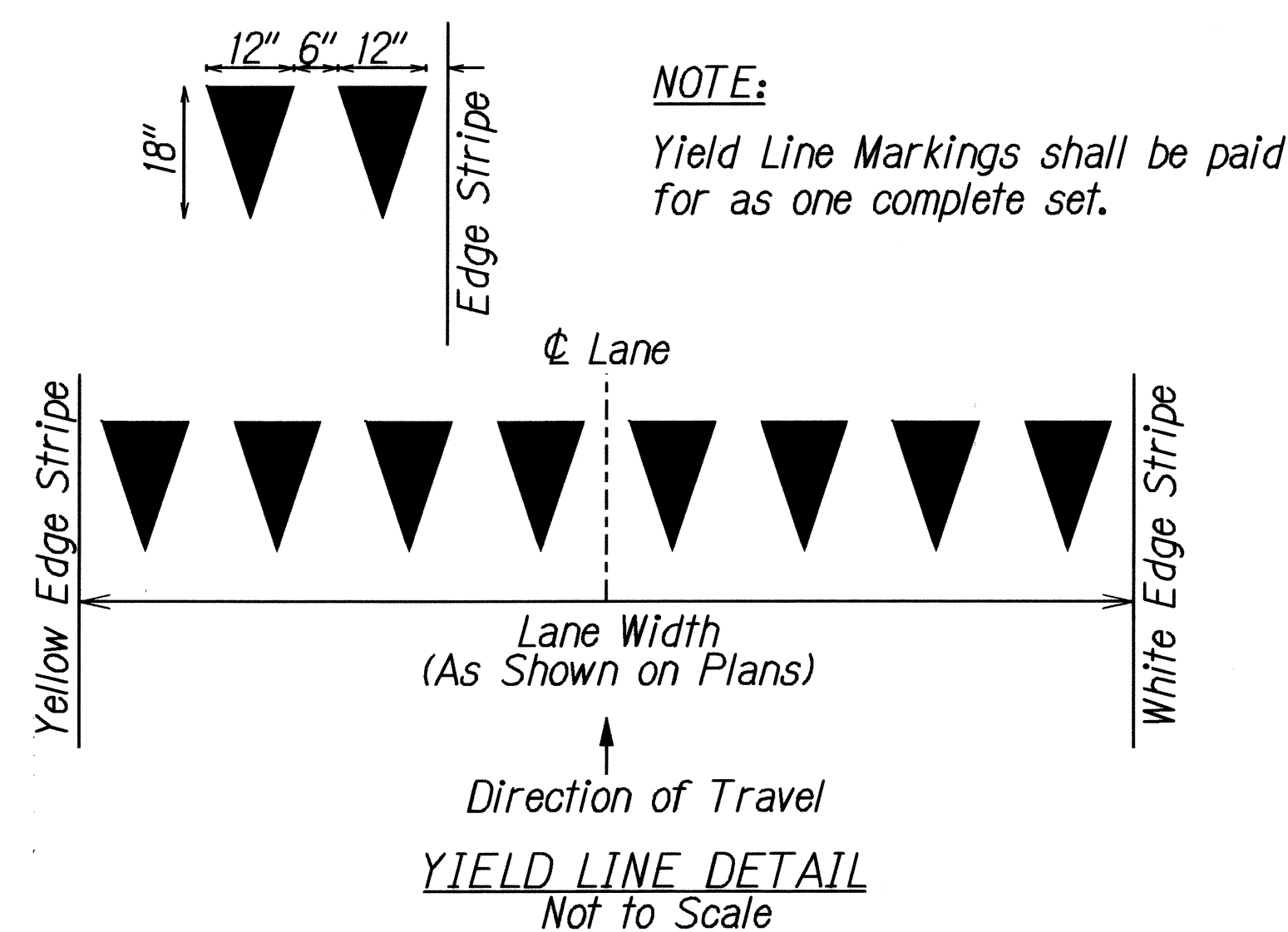
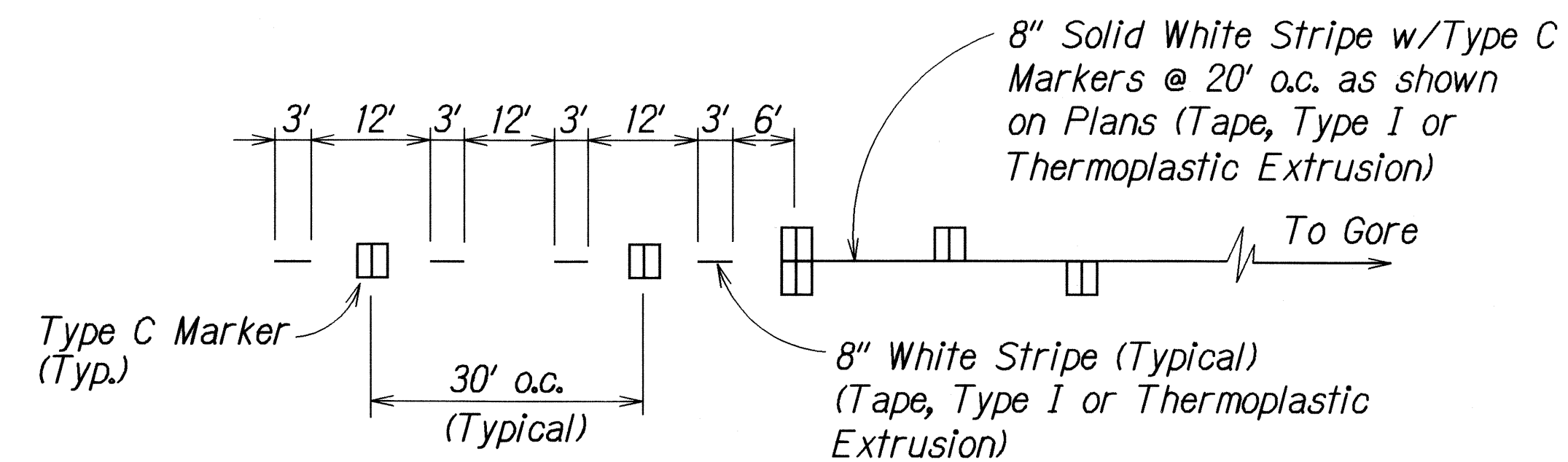
NOTES

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



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
1/2, May	DESIGNED BY	
5, 6/11/08	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

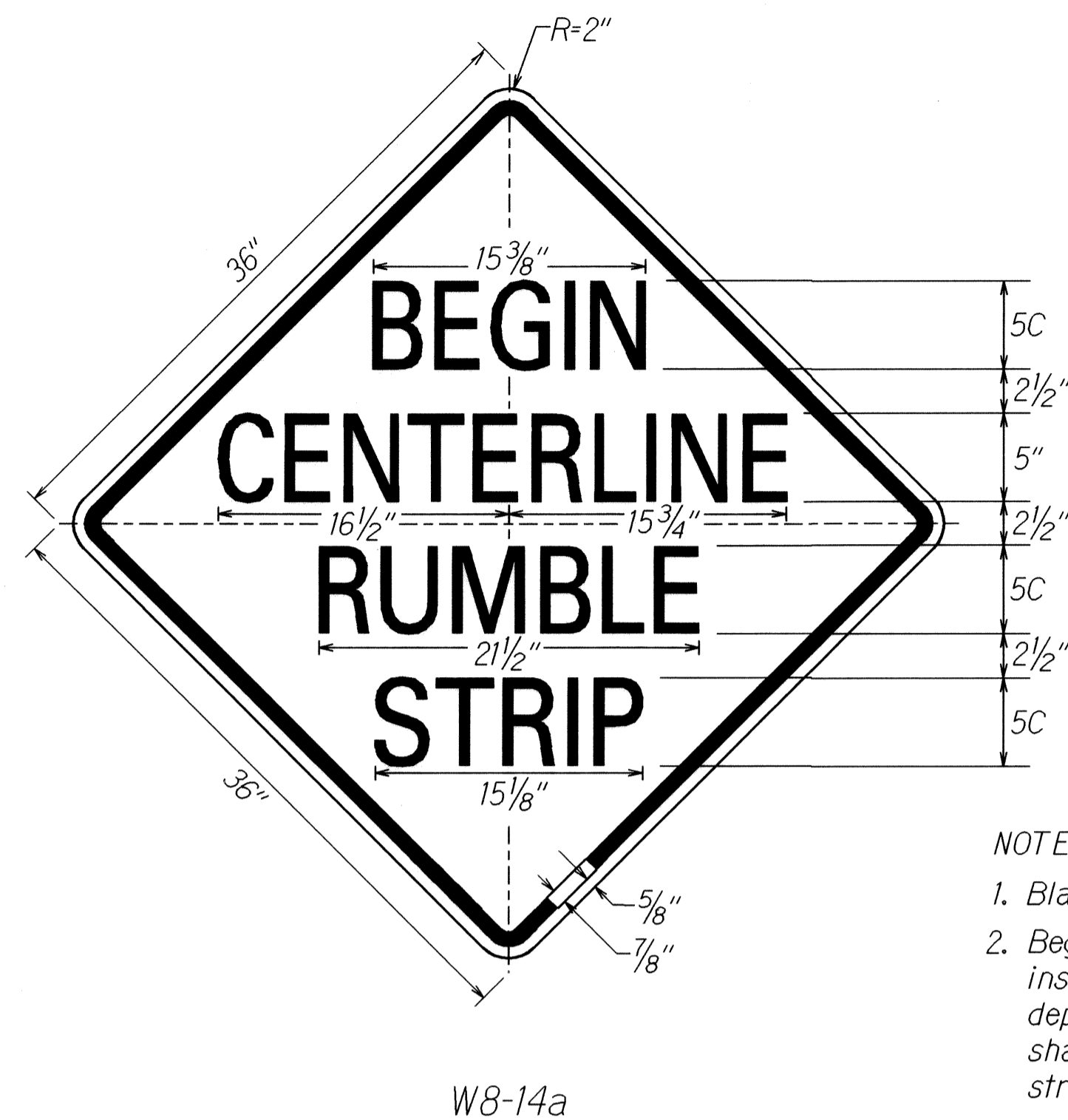
**PAVEMENT MARKING
LEGEND, DETAILS & NOTES**

**HAWAII BELT ROAD GUARDRAIL
AND SHOULDER IMPROVEMENTS
Paauhau Road to Pakalana Street
Project No. NH-019-1(36)**

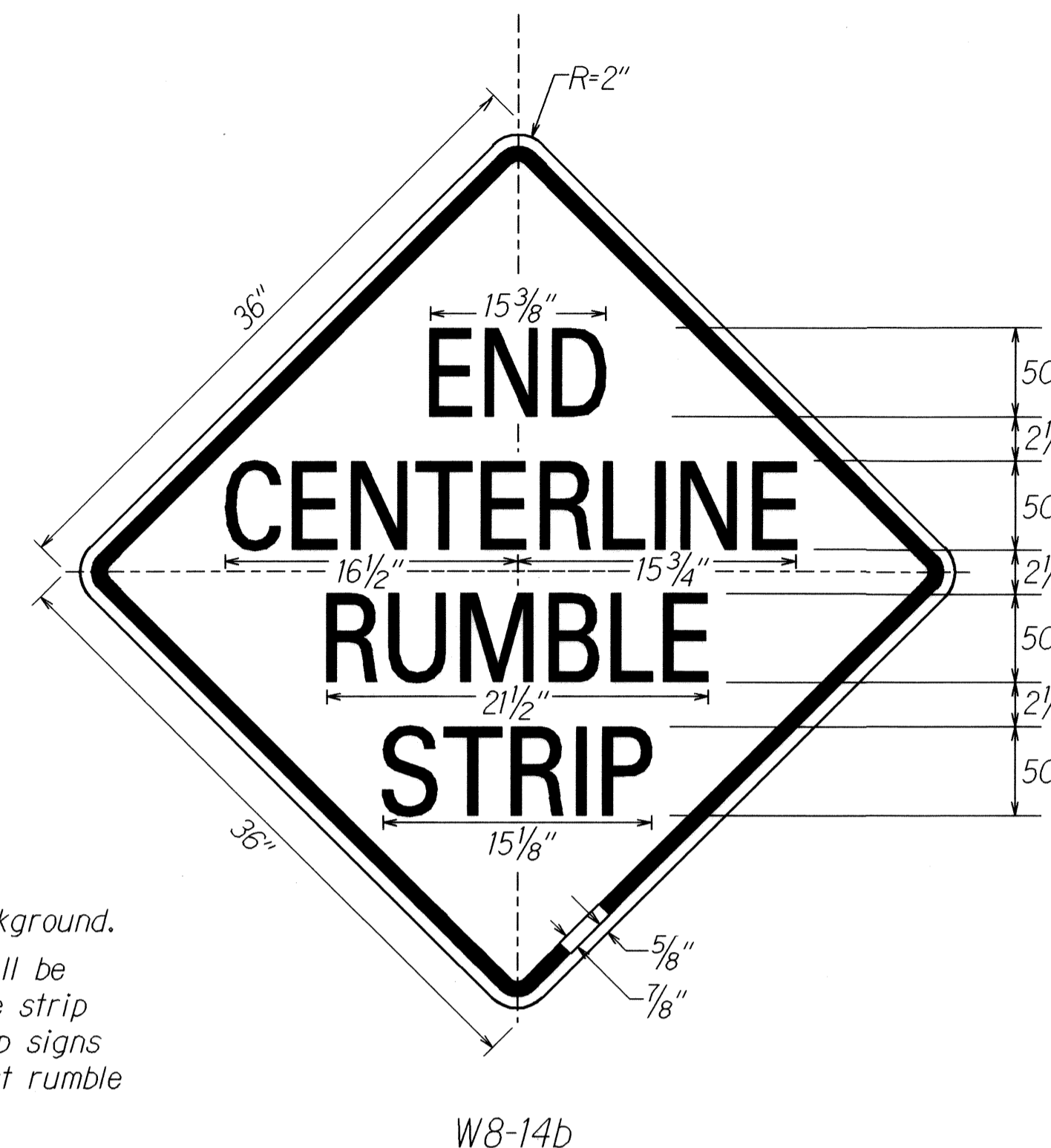
Scale: 1" = 40' Date: October 2008

SHEET No. **T1** OF **8** SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(36)	2009	21	27



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. Sign posts shall be painted with yellow reflective paint, except where located behind guardrails. Such paint work shall be considered incidental to sign items.
10. Contractor shall mark the back of all signs using labels and equipment provided by the State. Payment to be incidental to various contract items.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

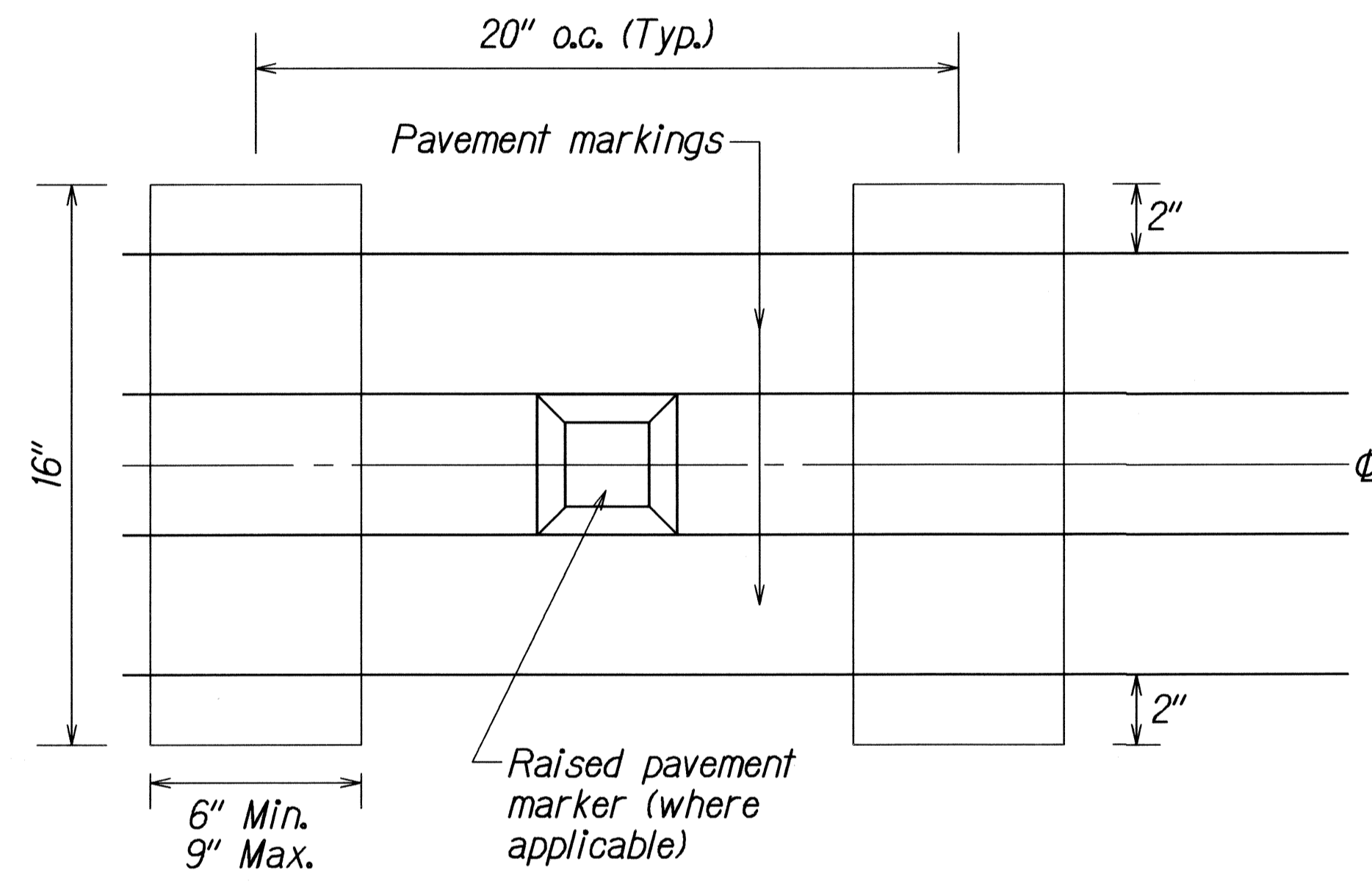
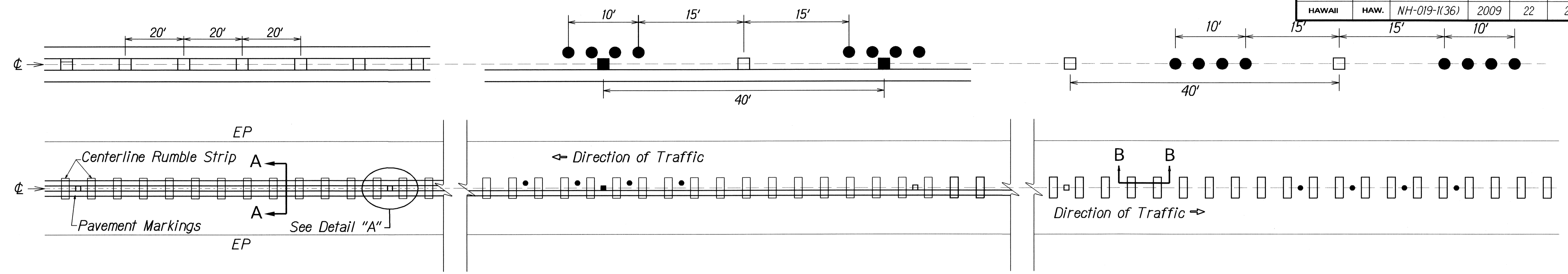
**CENTERLINE RUMBLE STRIP
SIGN DETAILS AND NOTES**

HAWAII BELT ROAD GUARDRAIL
SHOULDER IMPROVEMENTS
Paauhau Road to Pakalana Street
Federal Aid Project No. NH-019-1(36)

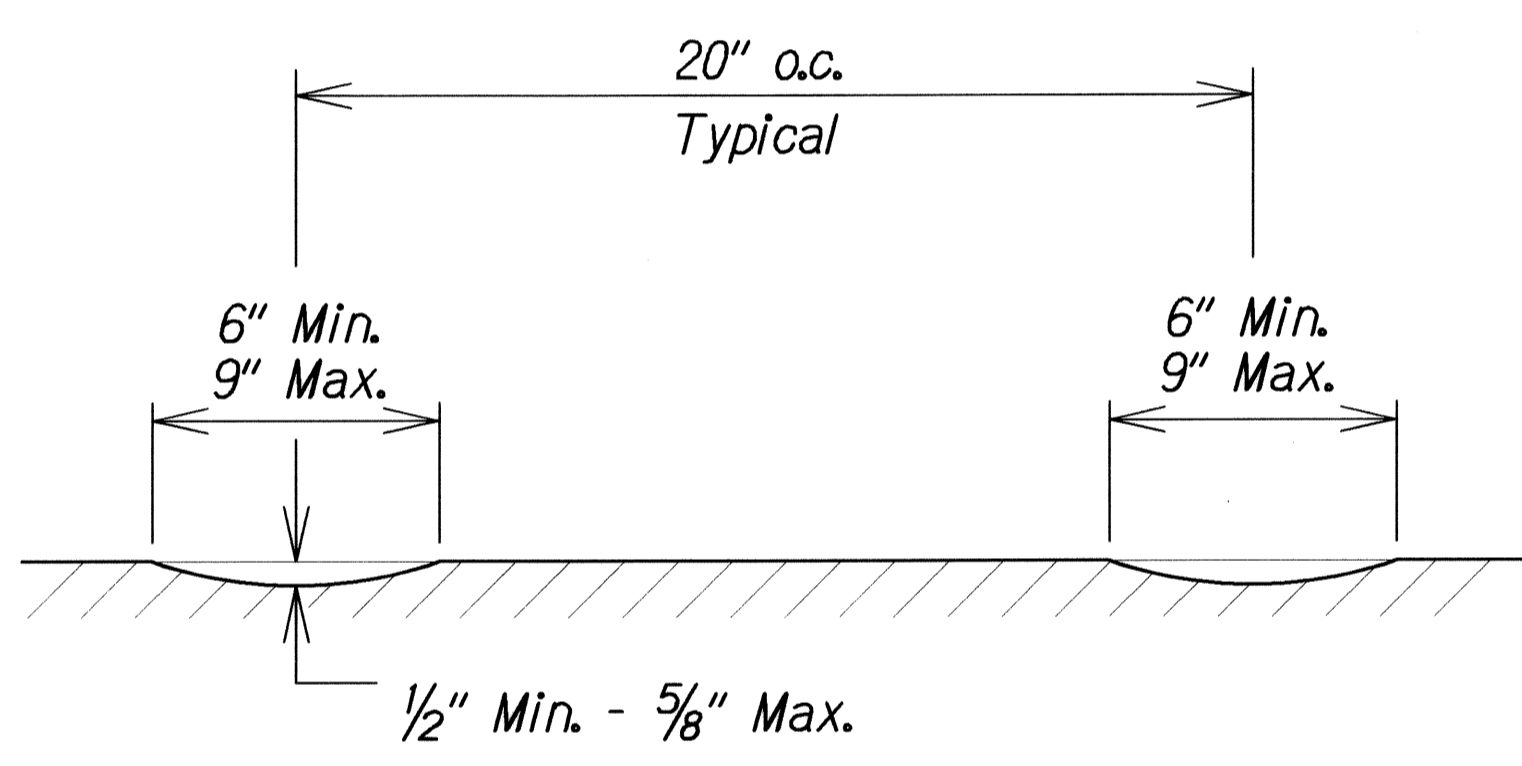
Not to Scale Date: October 2008

SHEET No. T2 OF 8 SHEETS

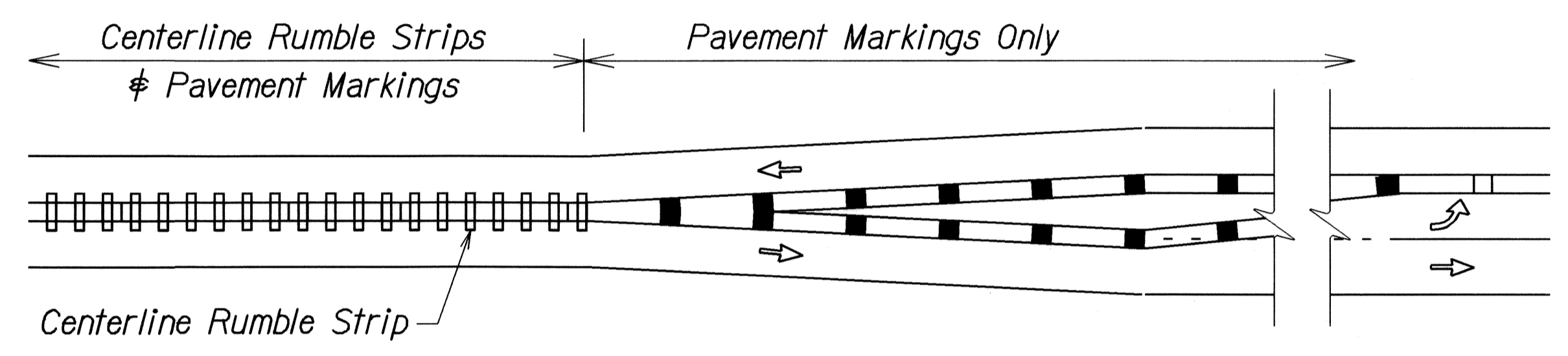
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(36)	2009	22	27



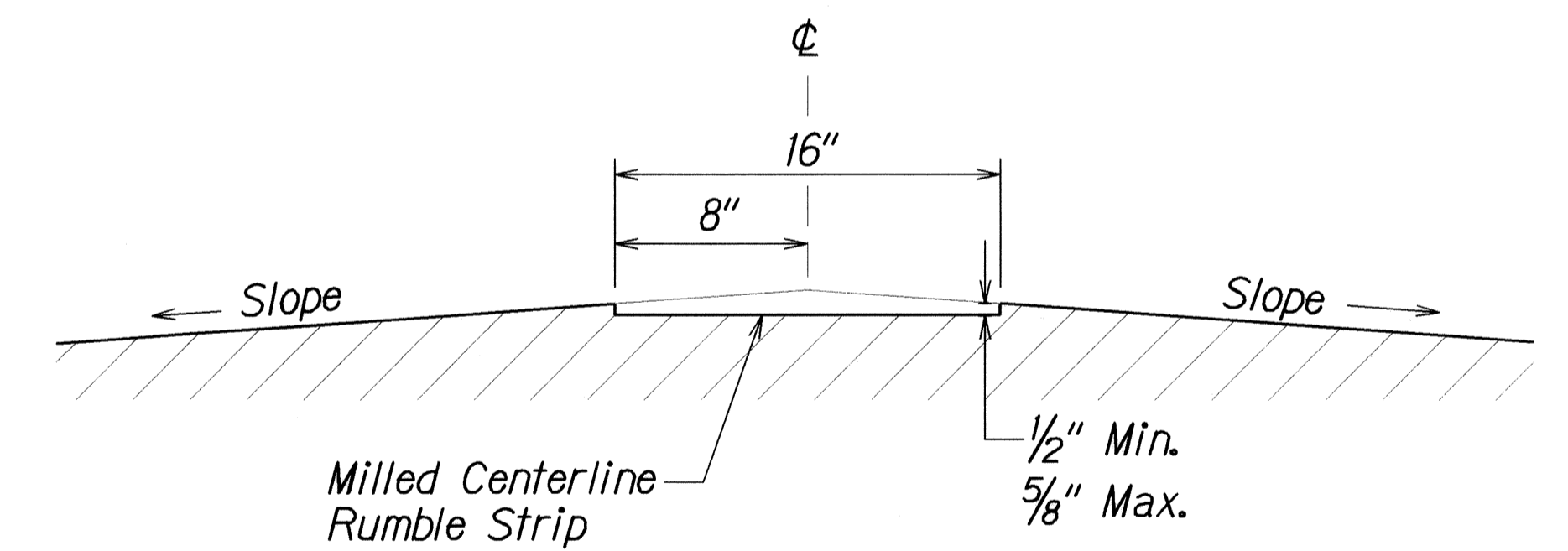
DETAIL "A"
Not to Scale



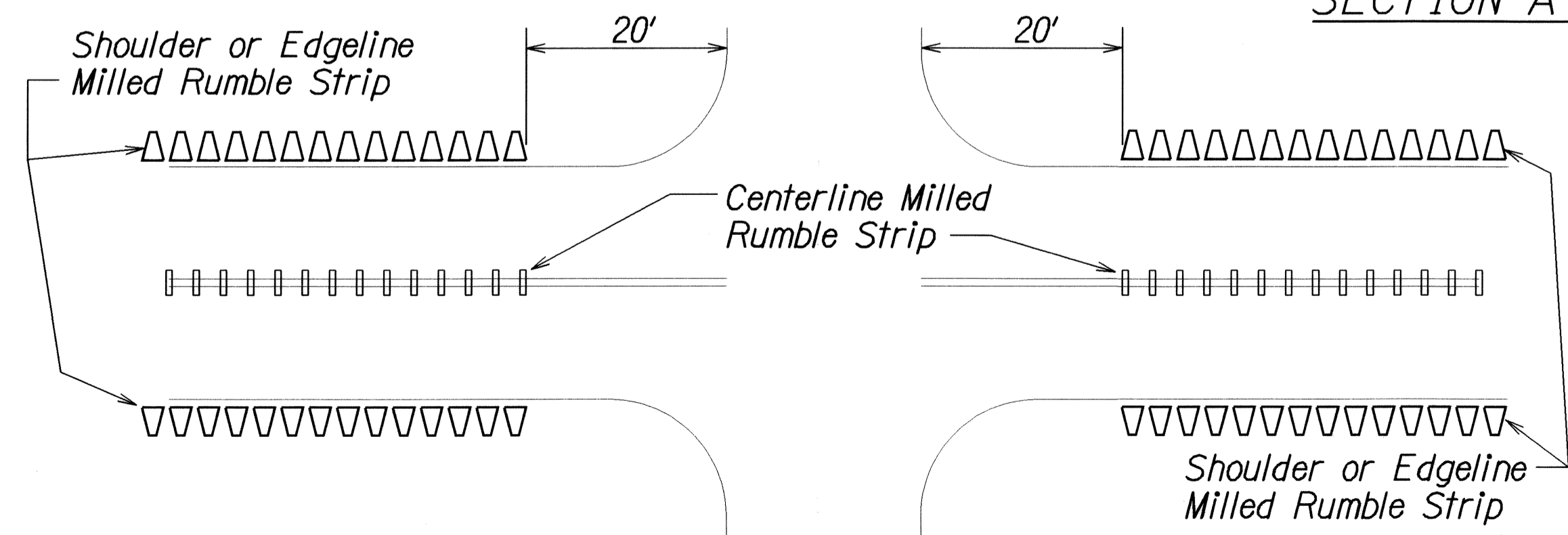
SECTION B-B - CENTERLINE MILLED RUMBLE STRIP
Not to Scale



CENTERLINE MILLED RUMBLE STRIP INSTALLATION LIMIT
Not to Scale



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



MILLED RUMBLE STRIP INSTALLATION LIMITS
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.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

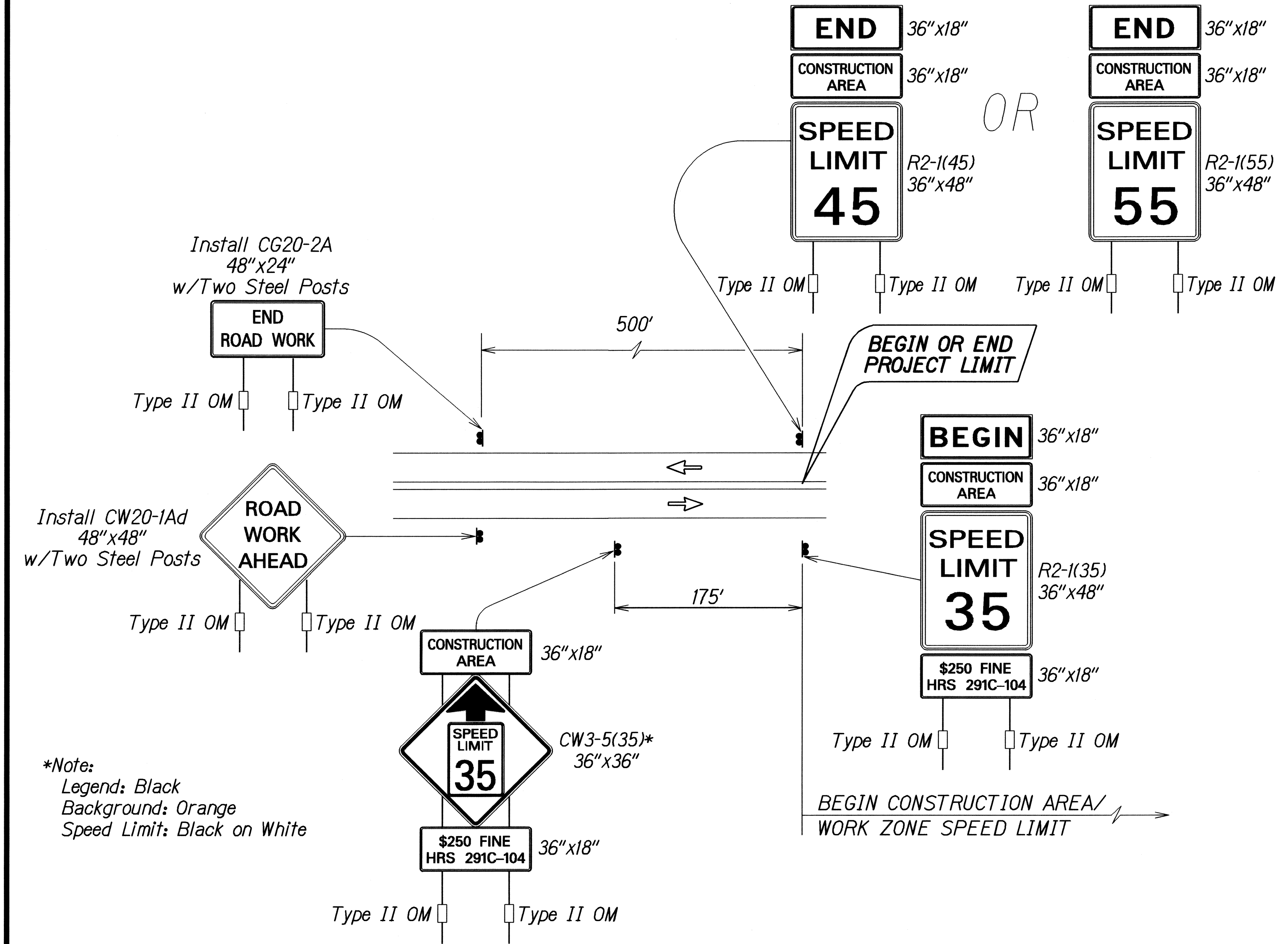
MILLED RUMBLE STRIP DETAIL

HAWAII BELT ROAD GUARDRAIL AND SHOULDER IMPROVEMENTS
Paauhau Road to Pakalana Street
Project No. NH-019-1(36)

Not to Scale Date: October 2008

SHEET No. T3 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(36)	2009	23	27



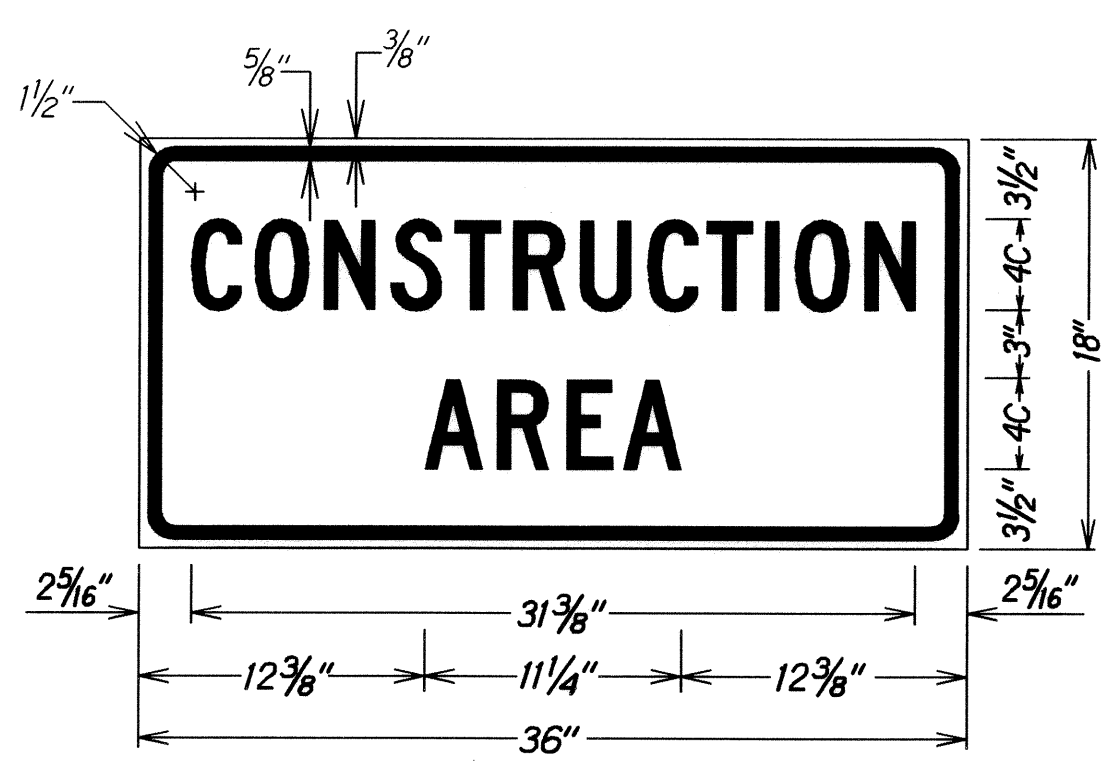
Work Zone Note:

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(35) and CW3-5(35) 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 and work zone speed limit assembly shall have a minimum of two (2) 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.

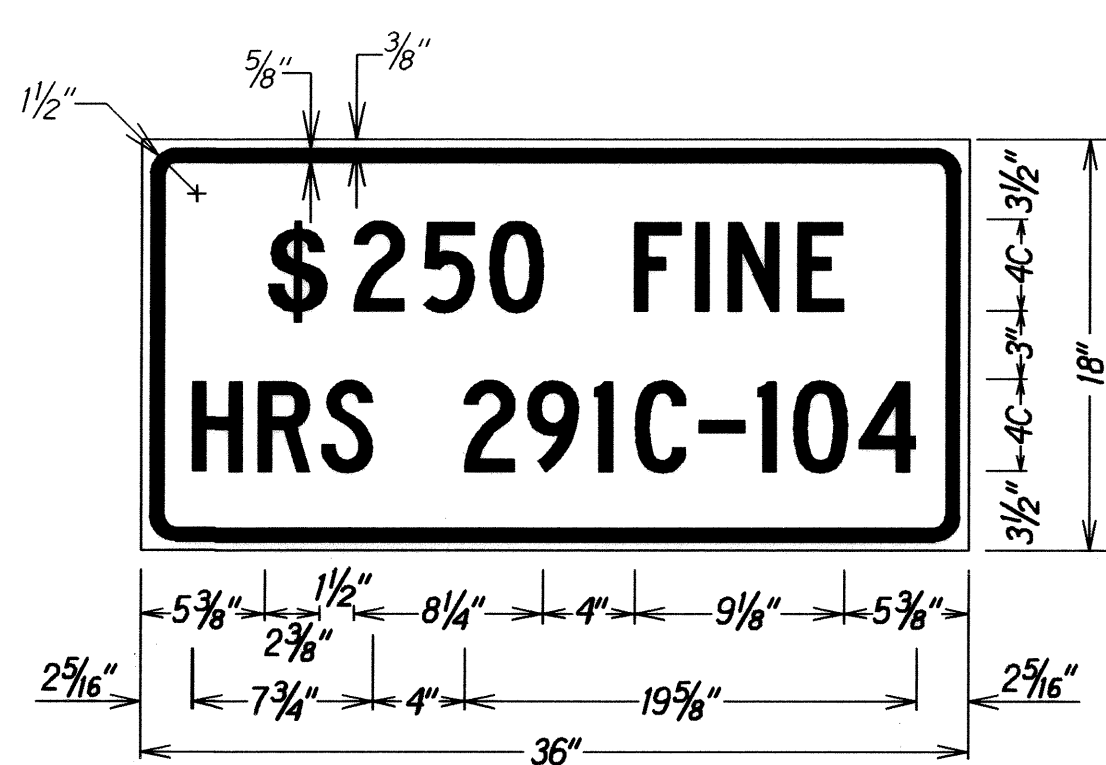
***Note:**
 Legend: Black
 Background: Orange
 Speed Limit: Black on White

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

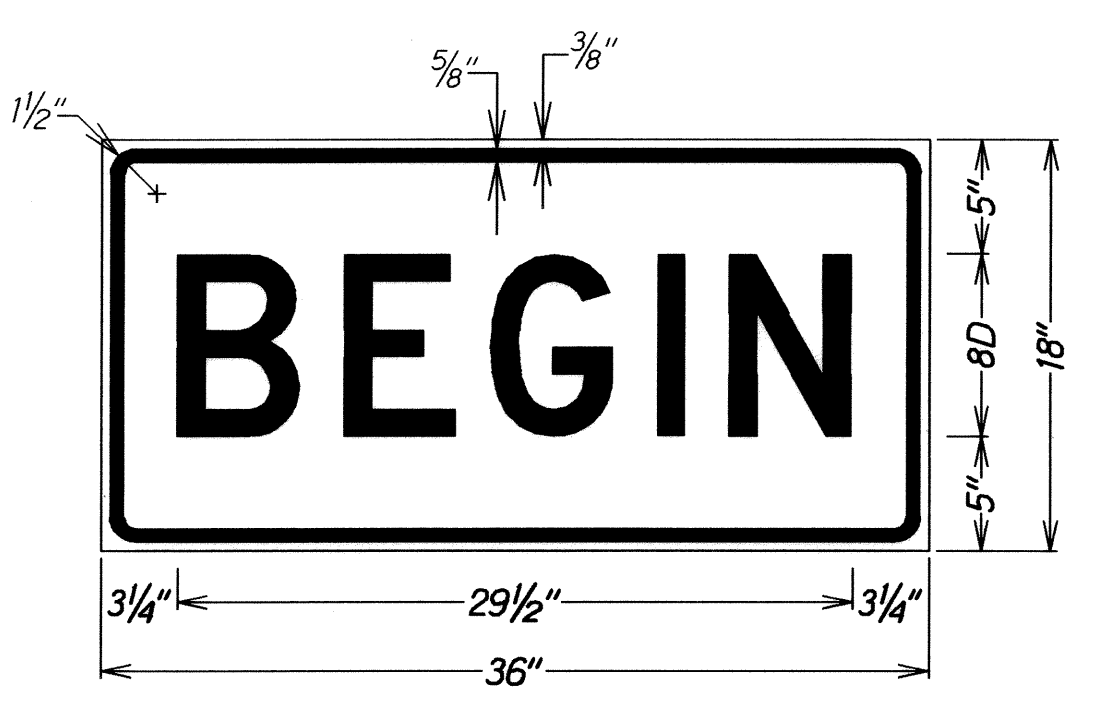
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NO. 001111	J.H.	8/2/07
10/2/08	TRACED BY	
	REVISIONS BY	
	CHECKED BY	



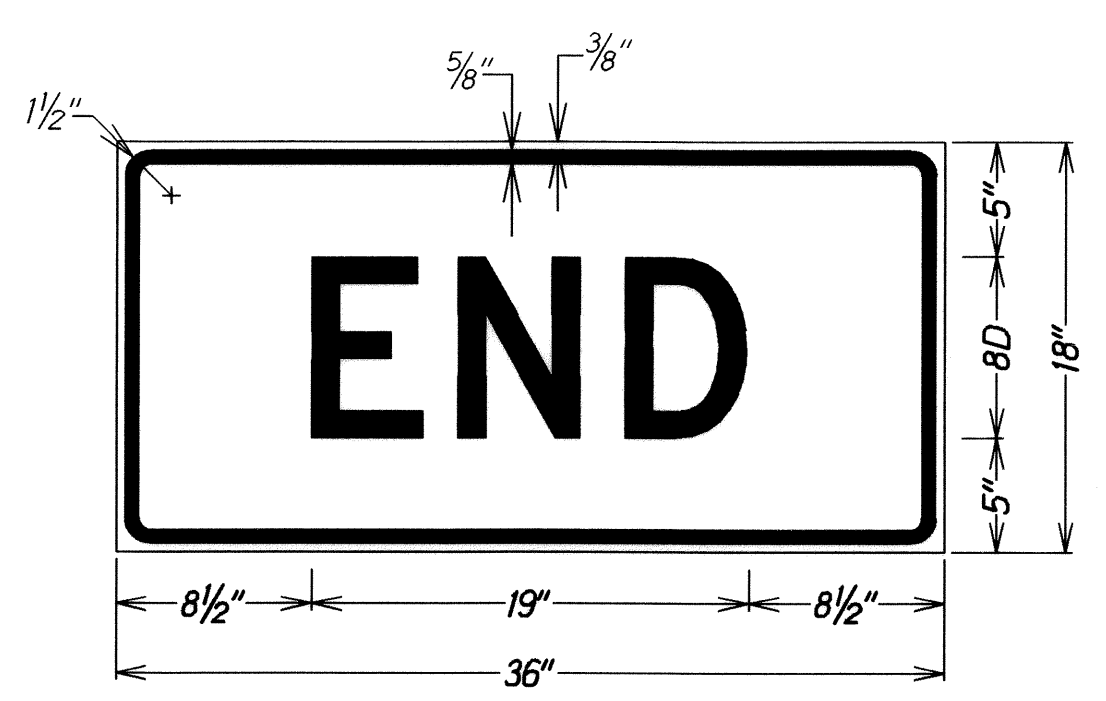
LEGEND: BLACK
 BACKGROUND: ORANGE



LEGEND: BLACK
 BACKGROUND: WHITE



LEGEND: BLACK
 BACKGROUND: ORANGE



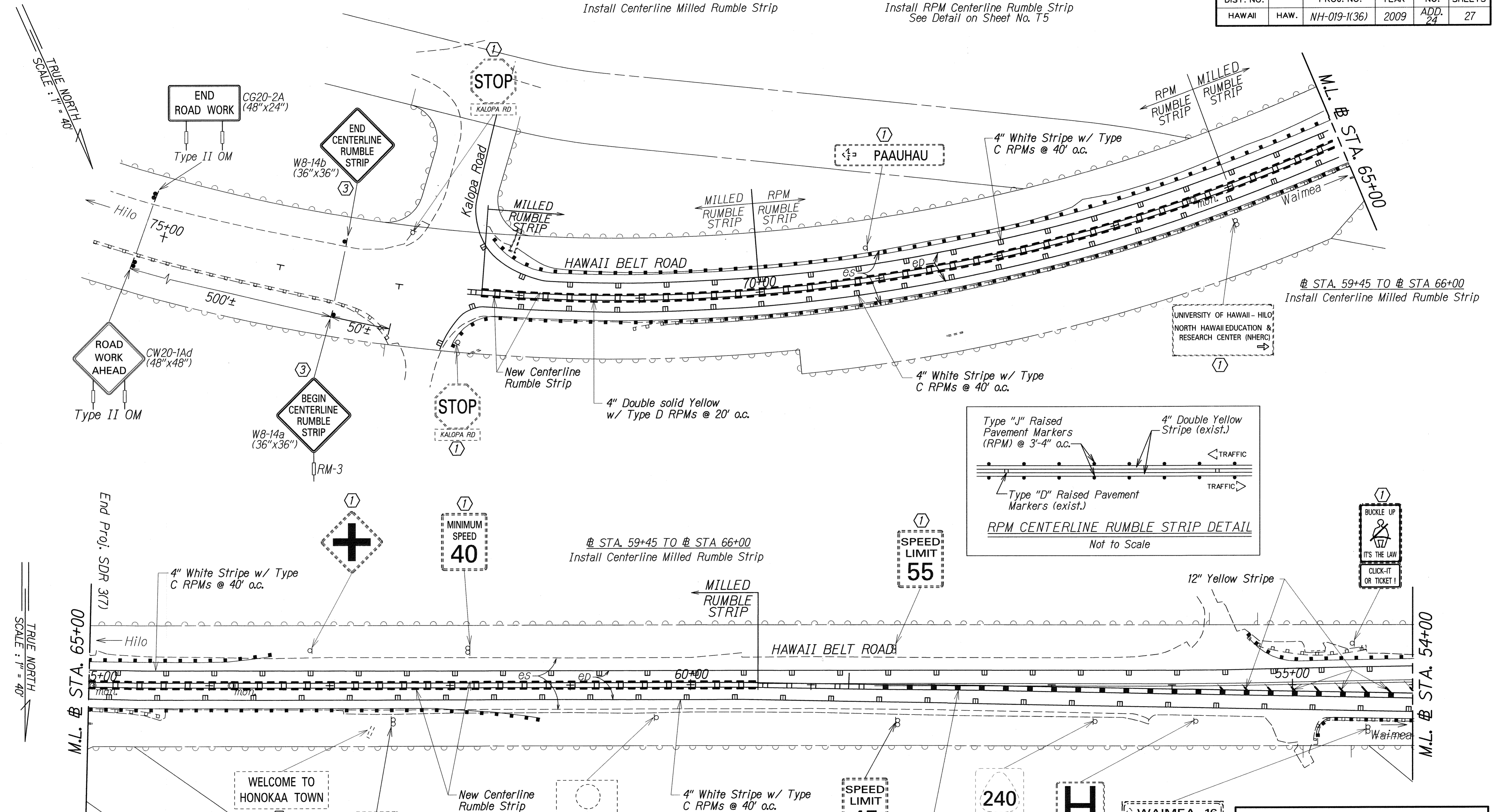
LEGEND: BLACK
 BACKGROUND: ORANGE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**HAWAII BELT ROAD GUARDRAIL
 AND SHOULDER IMPROVEMENTS**
 Paauhau Road to Pakalana Street
 Project No. NH-019-1(36)
 Scale: 1" = 40' Date: October 2008
 SHEET No. T4 OF 8 SHEETS

⑥ STA. 70+00 TO ⑥ STA. 72+25
Install Centerline Milled Rumble Strip

⑥ STA. 66+00 TO ⑥ STA. 70+00
Install RPM Centerline Rumble Strip
See Detail on Sheet No. T5

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(36)	2009	ADD. 24	27



KEY:

- ① Exist. Sign(s) & Post(s) to Remain
- ② Remove Exist. Sign(s) w/Post(s)
- ③ Install New Sign(s) w/Post(s)
- ④ Relocate Exist. Sign(s) w/Post(s)
- ⑤ New Location(s) of Relocated Exist. Sign(s) w/Post(s)
- ⑥ Install New Sign(s) on Exist. Post(s)
- ⑦ Install New Sign(s)

NOTE:

The removal of existing sign(s) and post(s) shall be considered incidental to various contract items.

DATE	REVISION
7/23/09	Added to key list Added call-out for striping & centerline rumble strip Revised pavement marking & striping

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

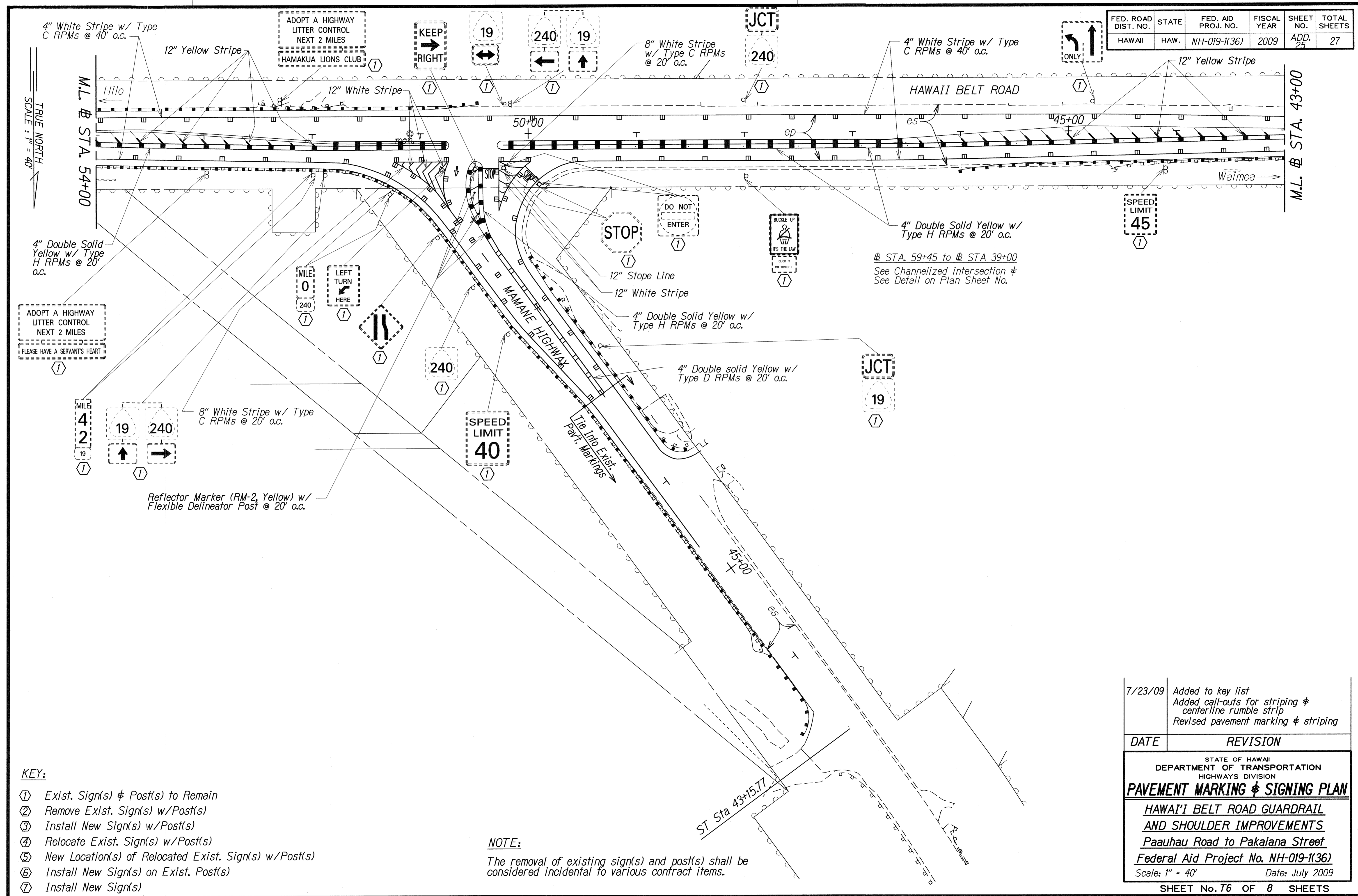
PAVEMENT MARKING & SIGNING PLAN

HAWAII BELT ROAD GUARDRAIL AND SHOULDER IMPROVEMENTS
Paaupahu Road to Pakalana Street
Federal Aid Project No. NH-019-1(36)

Scale: 1" = 40' Date: July 2009

SHEET No. T5 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(36)	2009	ADD. 25	27



- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) w/Post(s)
 - ③ Install New Sign(s) w/Post(s)
 - ④ Relocate Exist. Sign(s) w/Post(s)
 - ⑤ New Location(s) of Relocated Exist. Sign(s) w/Post(s)
 - ⑥ Install New Sign(s) on Exist. Post(s)
 - ⑦ Install New Sign(s)

NOTE:
The removal of existing sign(s) and post(s) shall be considered incidental to various contract items.

DATE	REVISION
7/23/09	Added to key list Added call-outs for striping & centerline rumble strip Revised pavement marking & striping

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

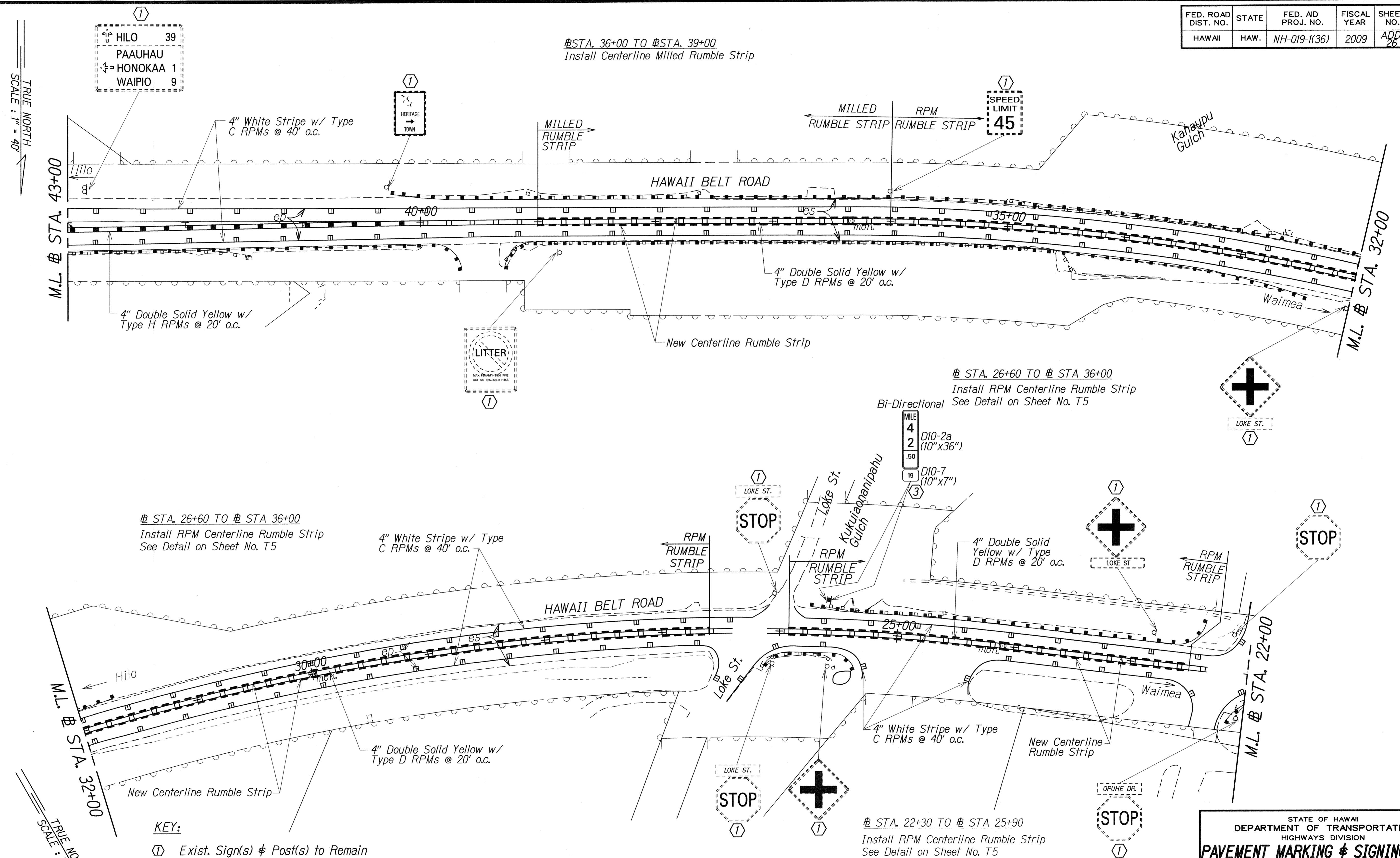
PAVEMENT MARKING & SIGNING PLAN

HAWAII BELT ROAD GUARDRAIL
AND SHOULDER IMPROVEMENTS
Paauhau Road to Pakalana Street
Federal Aid Project No. NH-019-1(36)

Scale: 1" = 40' Date: July 2009

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
DATE	_____
DESIGNED BY	_____
CHECKED BY	_____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(36)	2009	ADD. 26	27



TRUE NORTH
SCALE: 1" = 40'

M.L. # STA. 43+00

M.L. # STA. 32+00

M.L. # STA. 32+00

M.L. # STA. 22+00

TRUE NORTH
SCALE: 1" = 40'

- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) w/Post(s)
 - ③ Install New Sign(s) w/Post(s)
 - ④ Relocate Exist. Sign(s) w/Post(s)
 - ⑤ New Location(s) of Relocated Exist. Sign(s) w/Post(s)
 - ⑥ Install New Sign(s) on Exist. Post(s)
 - ⑦ Install New Sign(s)

NOTE:
The removal of existing sign(s) and post(s) shall be considered incidental to various contract items.

DATE	REVISION
7/23/09	Revised milepost marker & location of milepost marker Added to key list Added call-out for striping & centerline rumble strip Revised pavement marking & striping

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

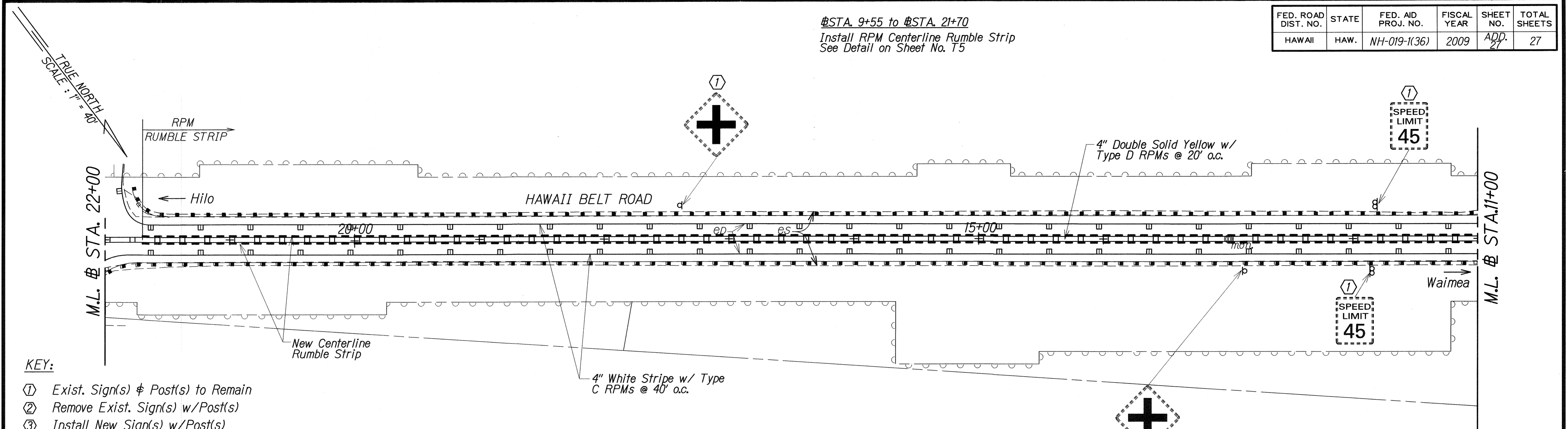
HAWAII BELT ROAD GUARDRAIL AND SHOULDER IMPROVEMENTS
Paauhau Road to Pakalana Street
Federal Aid Project No. NH-019-1(36)
Scale: 1" = 40' Date: July 2009

SHEET No. 26 OF 27 SHEETS

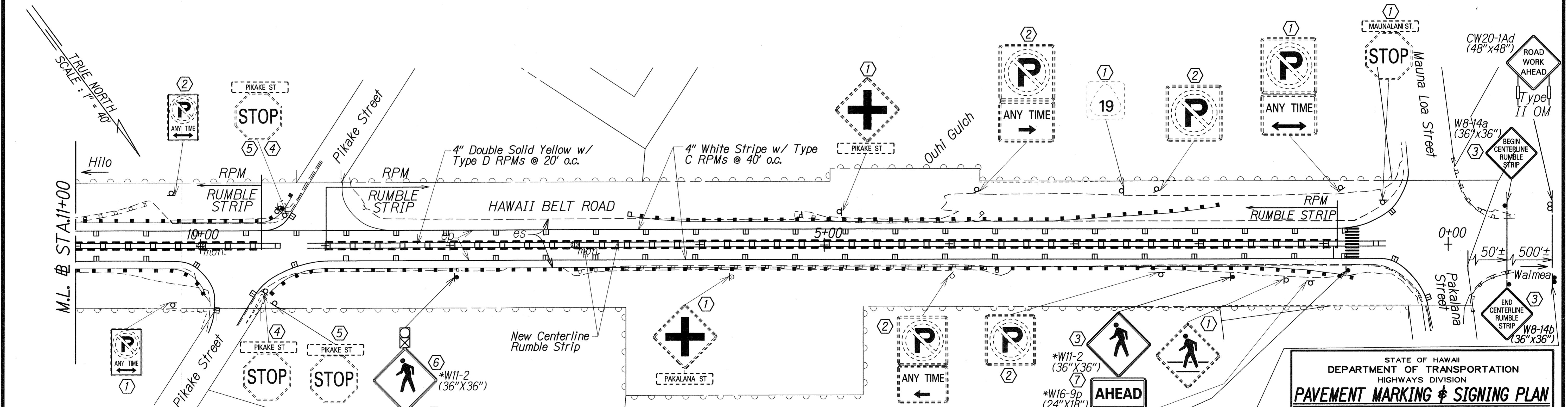
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(36)	2009	ADD. 27	27

#STA. 9+55 to #STA. 21+70
Install RPM Centerline Rumble Strip
See Detail on Sheet No. T5



- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) w/Post(s)
 - ③ Install New Sign(s) w/Post(s)
 - ④ Relocate Exist. Sign(s) w/Post(s)
 - ⑤ New Location(s) of Relocated Exist. Sign(s) w/Post(s)
 - ⑥ Install New Sign(s) on Exist. Post(s)
 - ⑦ Install New Sign(s)



*Fluorescent Yellow-Green Sign Sheeting

NOTES:
The removal of existing sign(s) and post(s) shall be considered incidental to various contract items.

#STA. 9+00 to #STA. 0+90
Install RPM Centerline Rumble Strip
See Detail on Sheet No. T5

DATE	REVISION
7/23/09	Deleted centerline rumble strip installation call-out note Revised sign call-out Added to key list Added call-out for striping & centerline rumble strip Revised pavement marking & striping

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

HAWAII BELT ROAD GUARDRAIL AND SHOULDER IMPROVEMENTS
Paauhau Road to Pakalana Street
Federal Aid Project No. NH-019-1(36)

Scale: 1" = 40' Date: July 2009

SHEET No. T8 OF 8 SHEETS

DATE	SURVEY PLOTTED BY
	DATE
	DESIGNED BY
	QUANTITIES BY
	CHECKED BY