

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	62	87

LEGEND

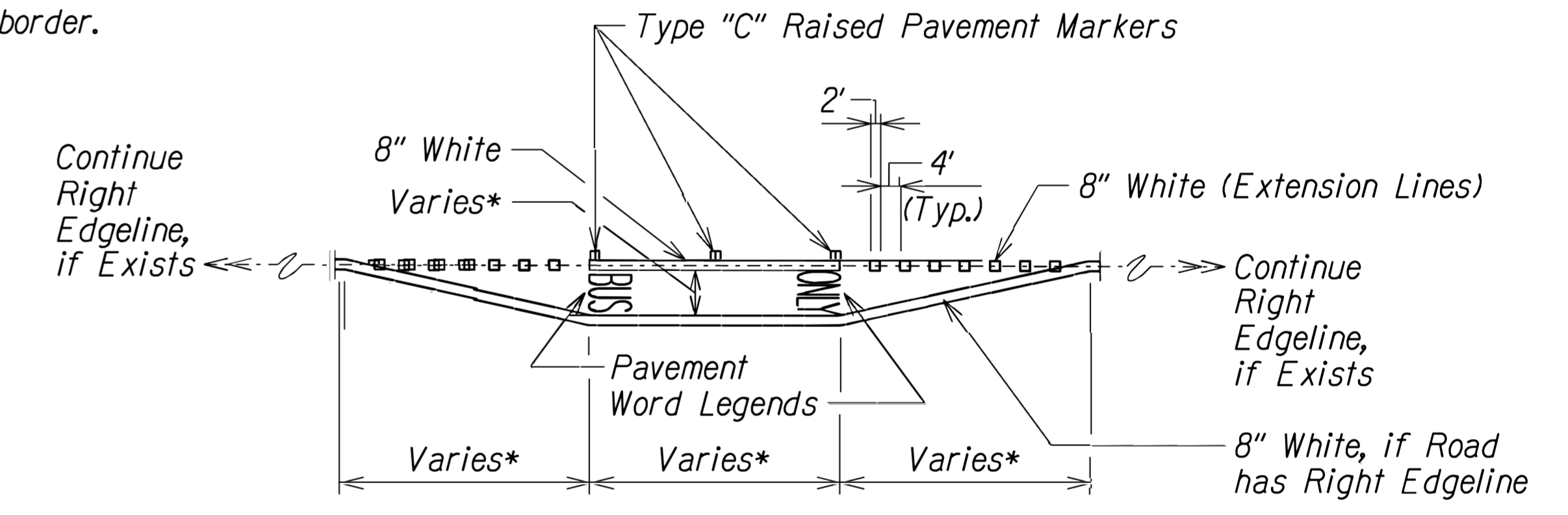
- 10' White Profiled Thermoplastic Stripe
Type C Raised Pavement Markers @ 40'-0" o.c.
- 10' Yellow Profiled Thermoplastic Stripe
Type D Raised Pavement Markers @ 40'-0" o.c.
- 8" White Stripe with Type C Raised Pavement
Markers @ 20'-0" o.c. (Tape, Type I or
Thermoplastic Extrusion)
- 4" Double Solid 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))
- 6" 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
10' White Profiled Thermoplastic Stripe
Type C Raised Pavement Markers @ 20'-0" o.c.
4" White Stripe (Tape, Type I or Thermoplastic
Extrusion)
- 6" 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)
- 10' Yellow Profiled Thermoplastic Stripe
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.

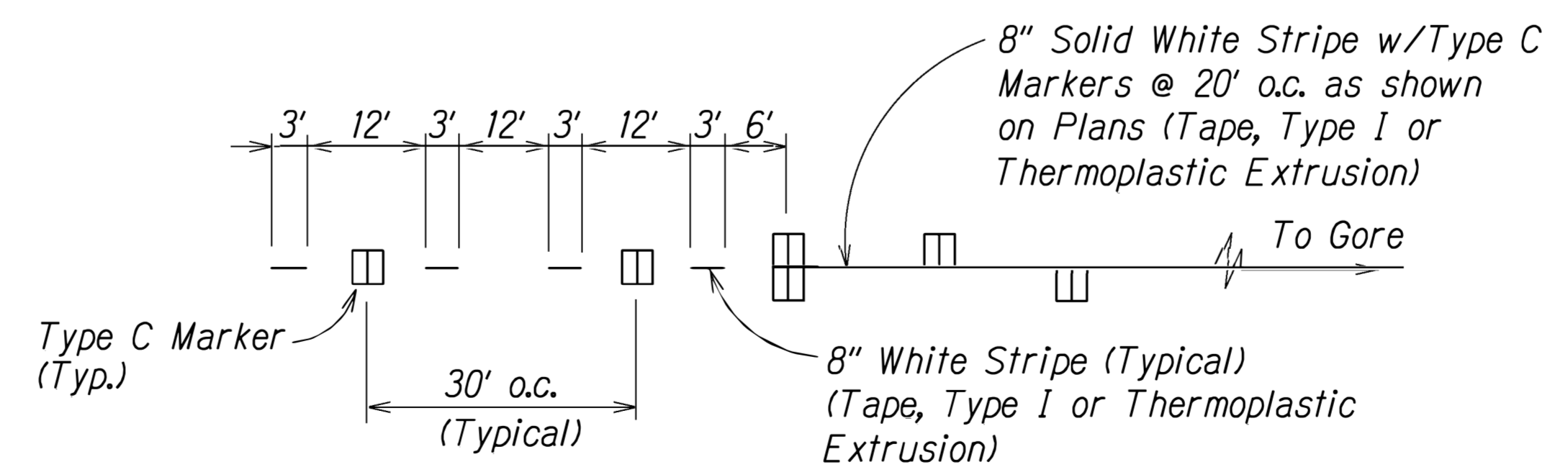
LEGEND:

- 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
- Anchor Base for Portable Contra-flow
Sign With White Circle Around Sleeve



* See Pavement Marking & Signing Plans for Dimensions

BUS BAY
Not to Scale



LANE DROP MARKING
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
1/1	TRACED BY	
	DESIGNED BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

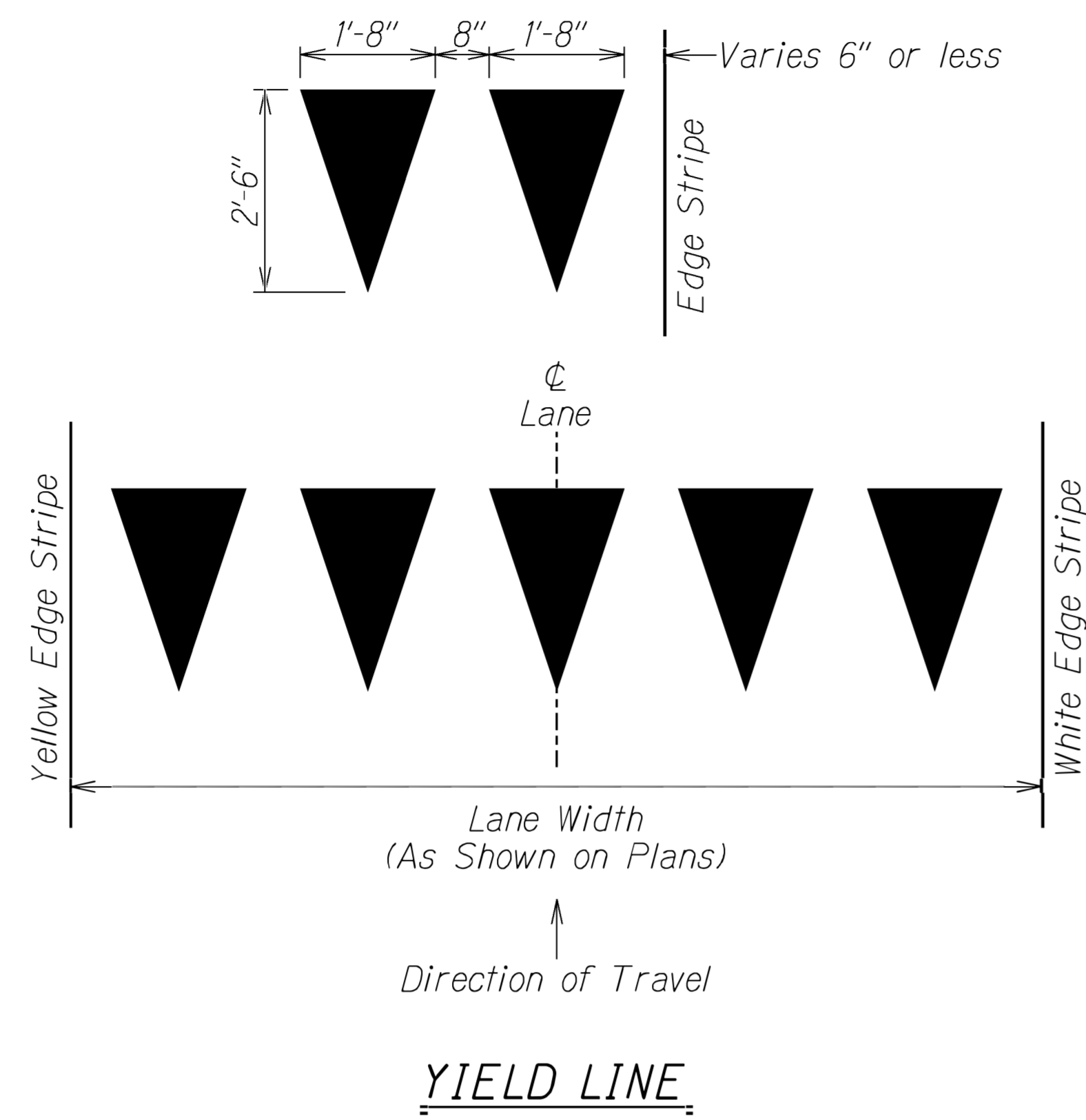
PAVEMENT MARKING
LEGEND, NOTES & DETAILS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)

Scale: As Shown Date: June, 2020

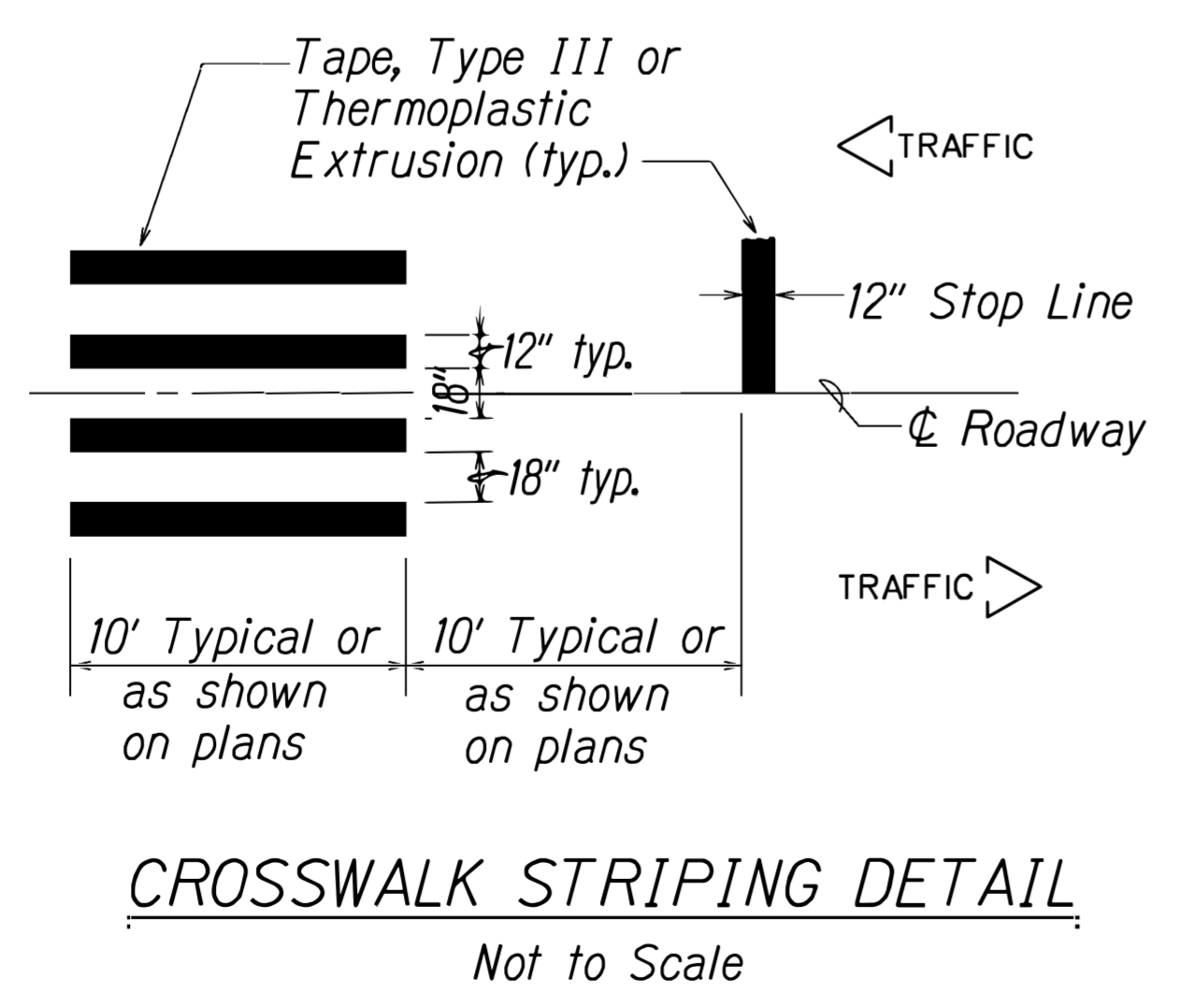
SHEET No. 71 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	63	87



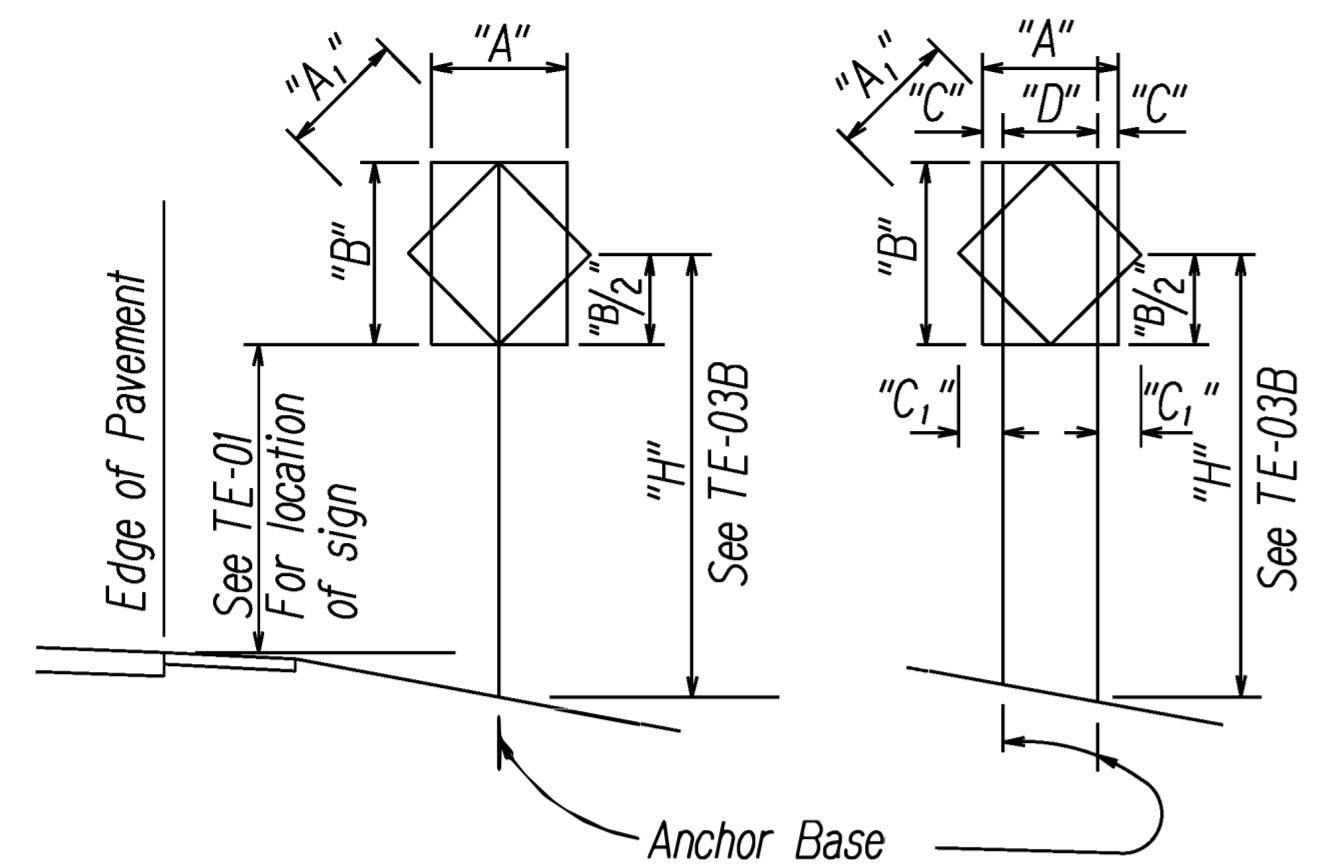
TCP Development

1. Contractor shall develop site-specific Traffic Control Plan (TCP) and work schedule based on work hours and lane closure restrictions stipulated in the contract documents.
2. TCP shall be developed after Contractor conducted field investigation of traffic conditions, including but not limited to, traffic volume counts taken during anticipated work hours, detour routes, traffic signal timing, pedestrian crossings, bicycle routes, public transportation and public gathering places such as schools, businesses and shopping malls within the project limits and surrounding areas.
3. Contractor may request multiple individual lane-closures within the project limits at the same time based on, including but not limited to, type of work to be performed, traffic volume, surround developments (e.g., schools, businesses) at each proposed work site.
4. Based on prevailing traffic conditions and other factors, the Engineer may allow up to three (3) individual closures at one time, with distance between individual closures be at least 1 mile apart.
5. If work zone traffic delays of more than 30 minutes within project limits were observed during construction, the State reserves the rights to suspend TCP if Contractor failed to adjust his work and/or TCP to address traffic concerns brought forth by the State in a timely and responsive manner.
6. If TCP affects City & County of Honolulu streets, such as but not limited to, traffic detours onto City streets, or traffic control devices placed on City streets, a City & County of Honolulu, Department of Transportation services (DTS) Permit for Street Usage shall be obtained prior to starting work. A TCP stamped by a registered Civil Engineer from the State of Hawaii may be required to obtain the DTS Permit for Street Usage.



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
1d1	CHECKED BY	
6/24/20		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PAVEMENT MARKING
LEGEND, NOTES & DETAILS
KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)
Scale: As Shown Date: June, 2020
SHEET No. T2 OF 26 SHEETS

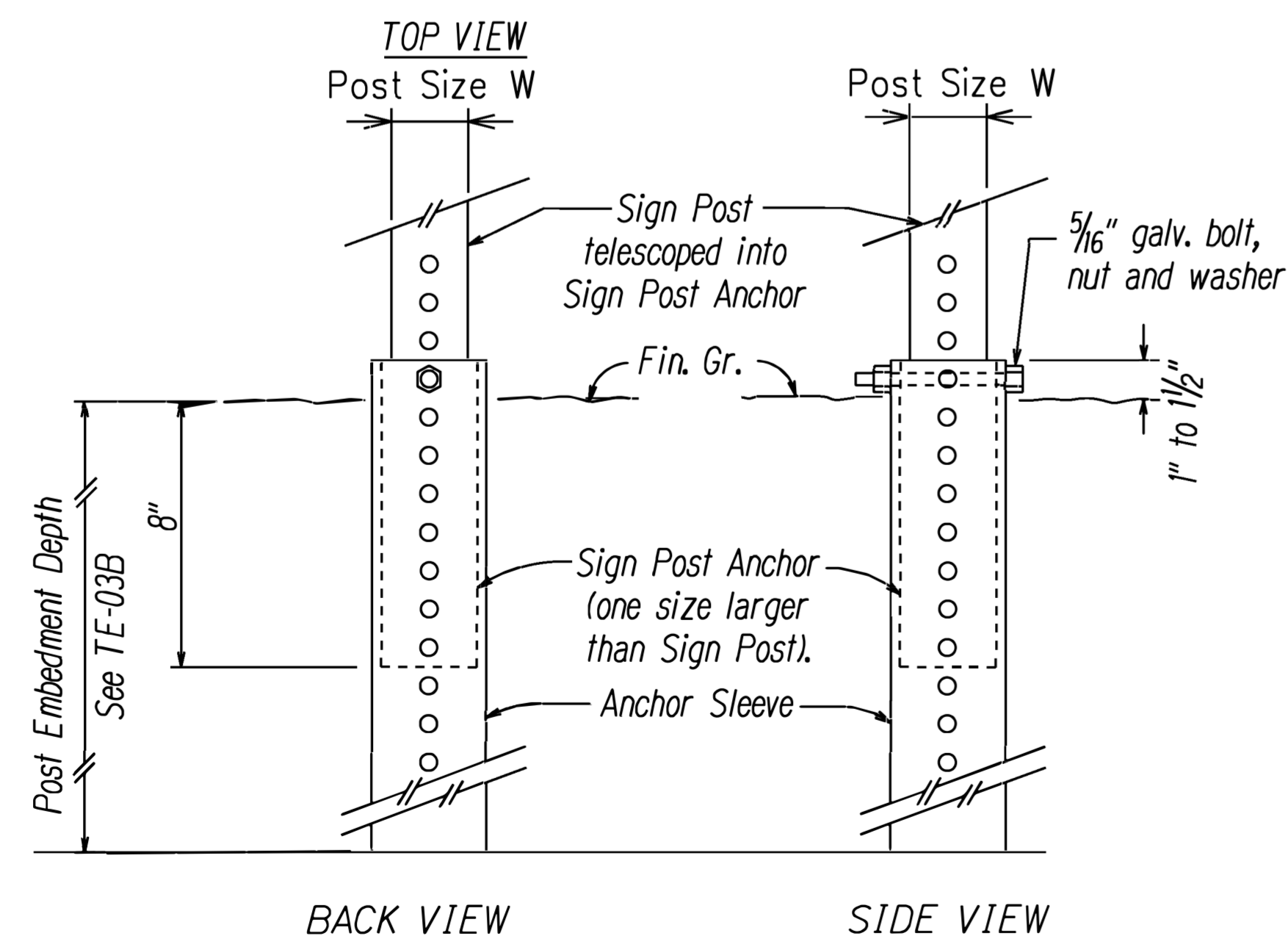
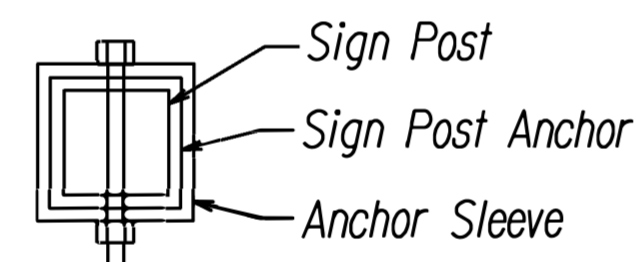


1 - POST "A" or "A₁" less than 36"
 2 - POST "A" or "A₁" less than 60"

"A" or "A ₁ "	"C"	"C ₁ "
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



BACK VIEW SIDE VIEW
SIGN POST INSTALLATION

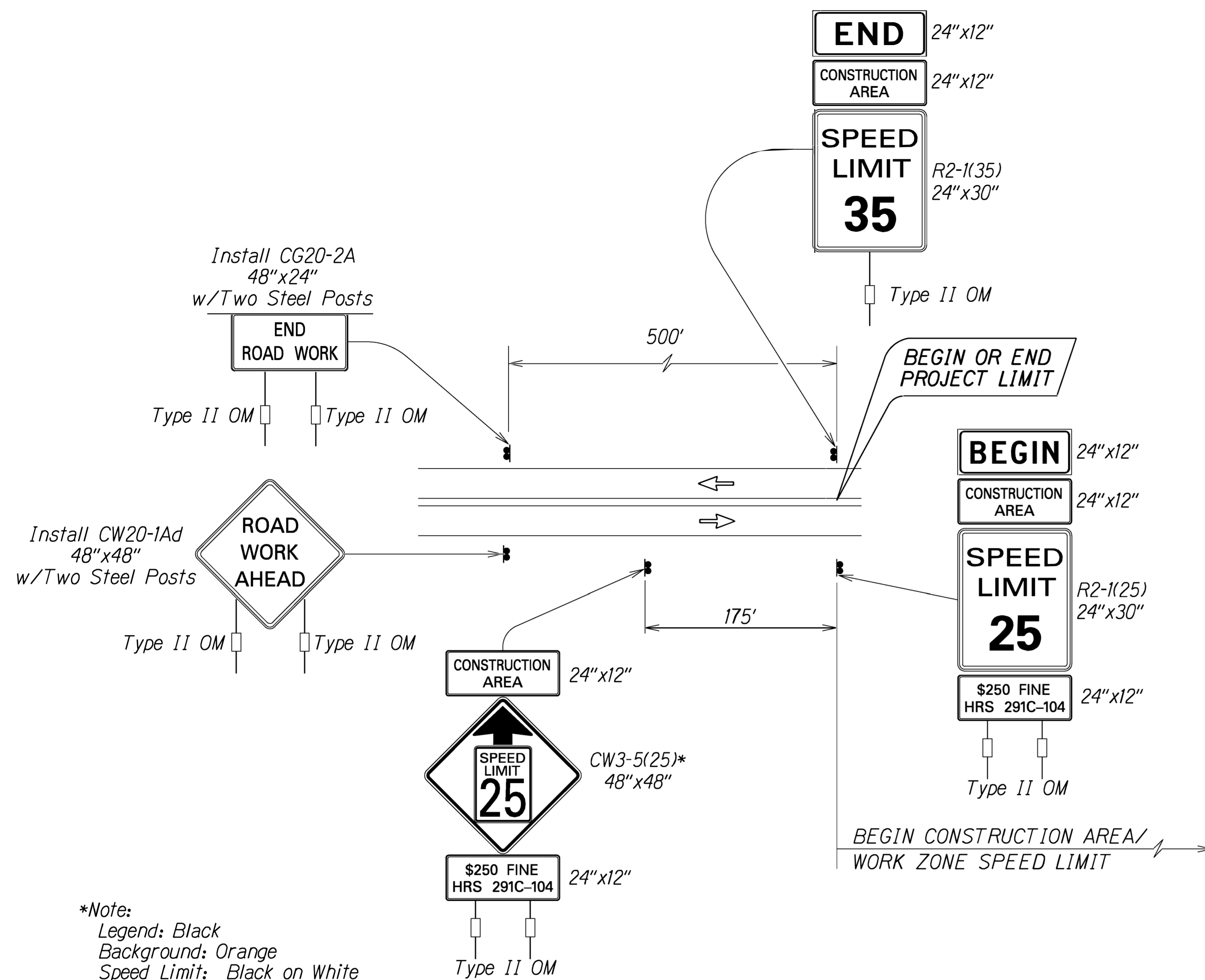
ANCHOR BASE DETAIL

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" ϕ 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 _____ DATE _____
 DRAWN BY _____
 NOTE BOOK _____
 CHECKED BY _____
 1/1/2020

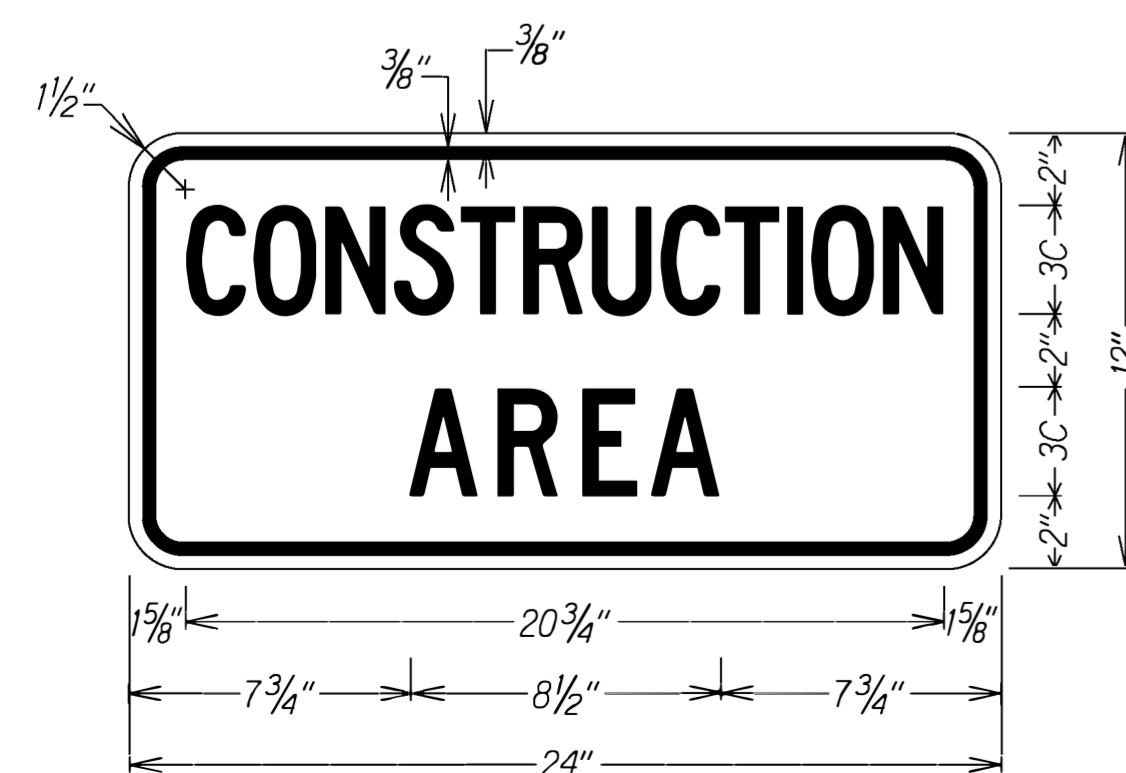
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**GALVANIZED SQUARE TUBE
 SIGN POST MOUNTING**
 KAMEHAMEHA HIGHWAY REHABILITATION
 Vicinity of Kapuhi Street to Dairy Road
 Federal Aid Project No. NH-083-1(77)
 Scale: As Shown Date: June, 2020



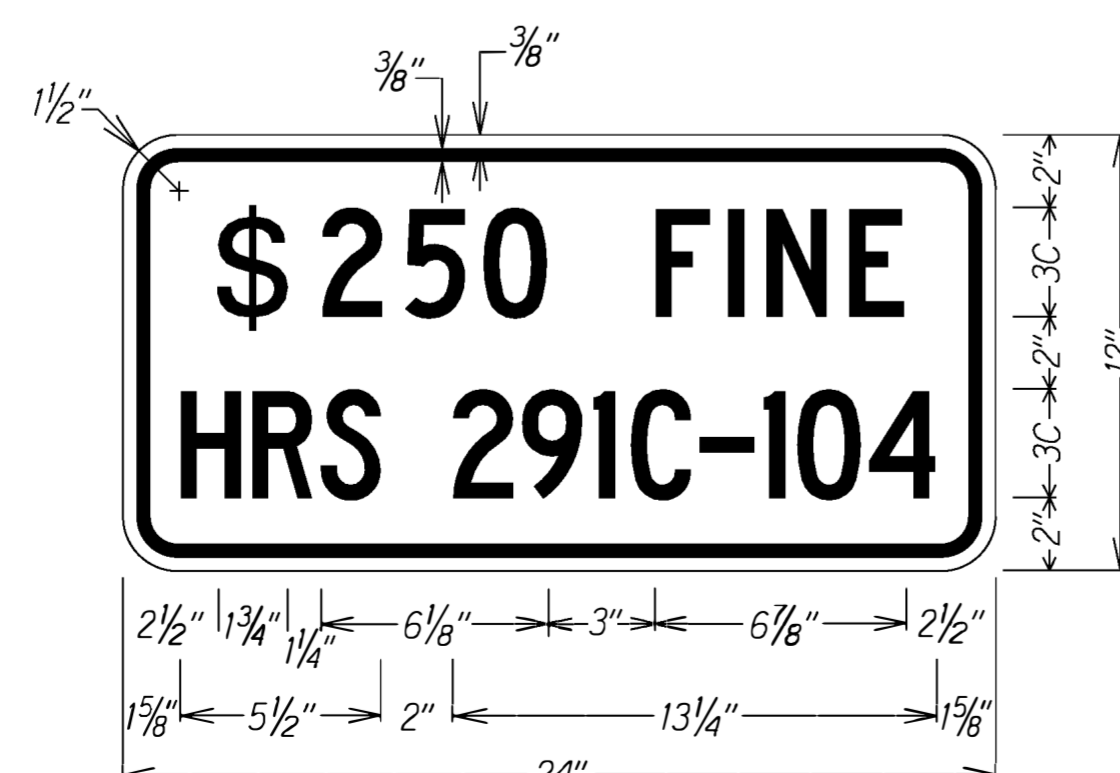
**TYPICAL DETAIL FOR CONSTRUCTION SIGNS
ON TWO LANE OR MULTILANE UNDIVIDED LOW SPEED HIGHWAY**

Work Zone Notes:

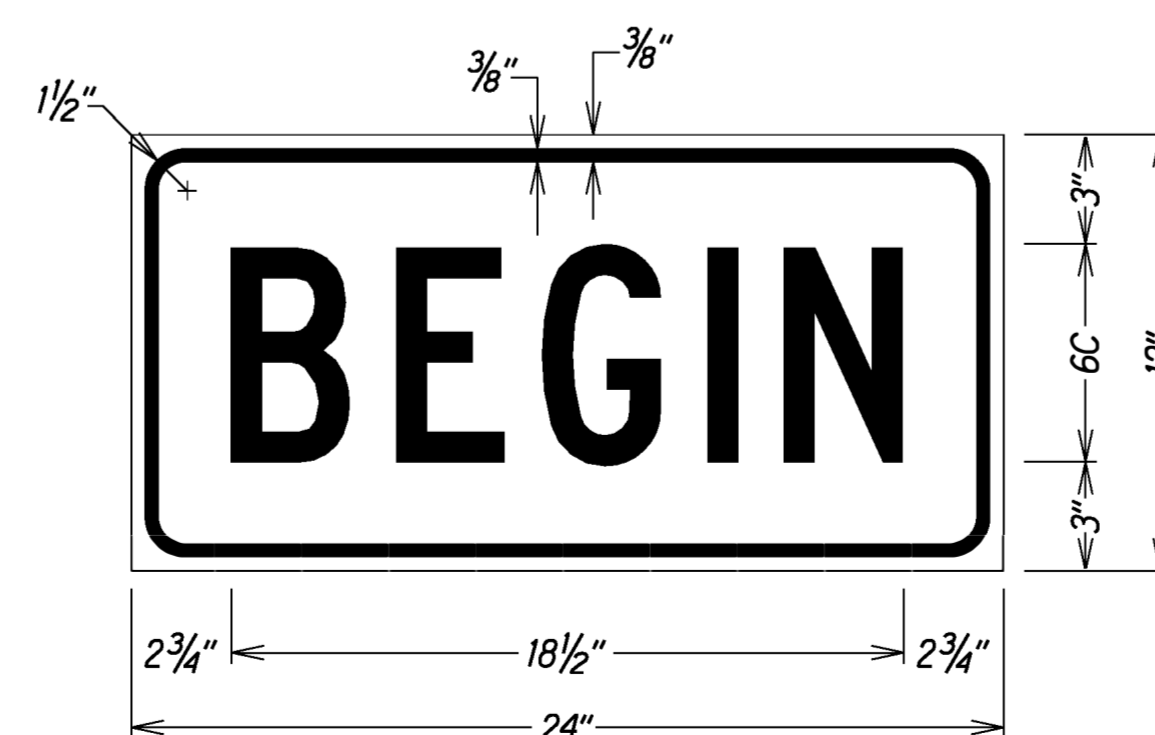
1. This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Standard Specifications and/or Special Provisions.
2. All 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.



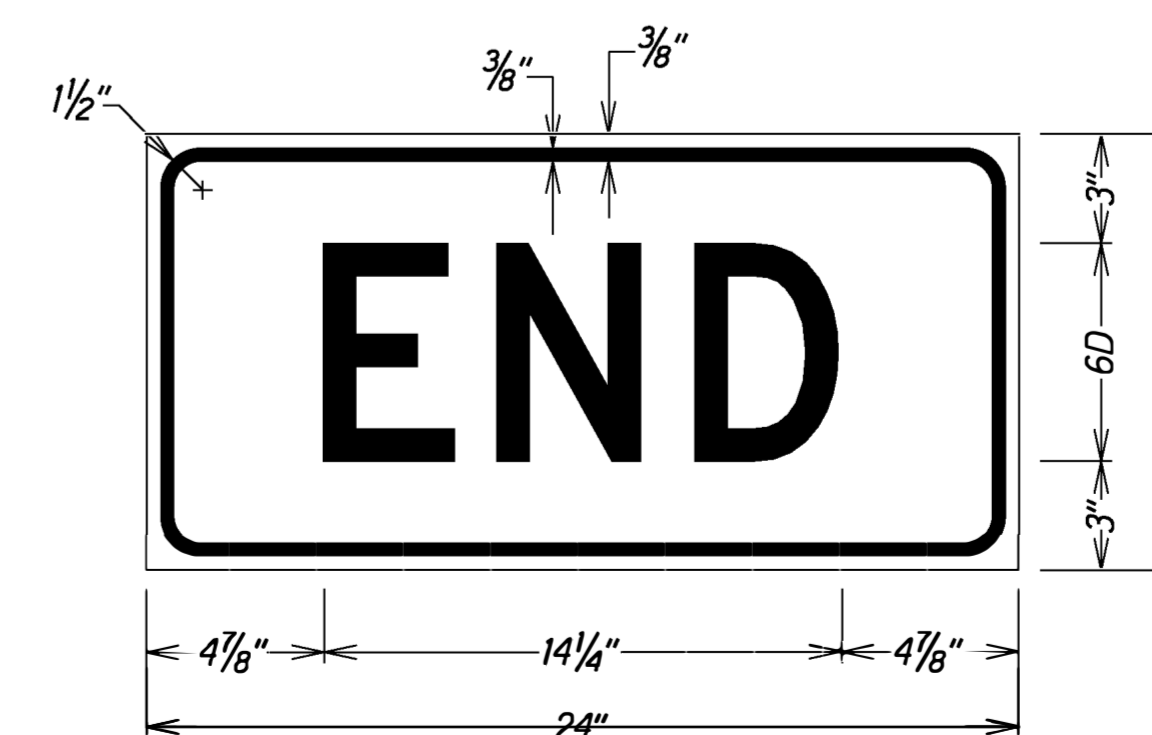
LEGEND: BLACK
BACKGROUND: ORANGE



LEGEND: BLACK
BACKGROUND: WHITE



LEGEND: BLACK
BACKGROUND: ORANGE



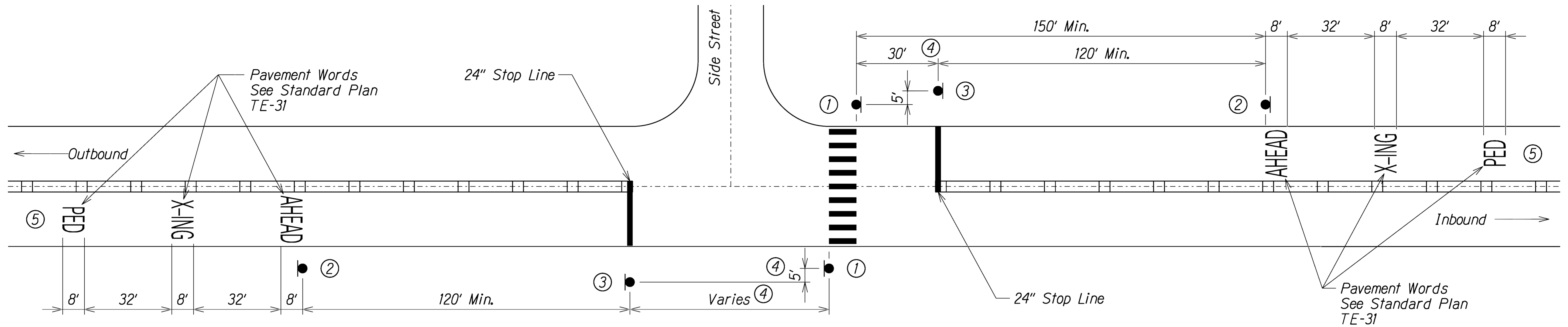
LEGEND: BLACK
BACKGROUND: ORANGE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**LOW SPEED UNDIVIDED HIGHWAY
WORK ZONE SIGNING PLAN, NOTES&DETAILS**

**KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)**

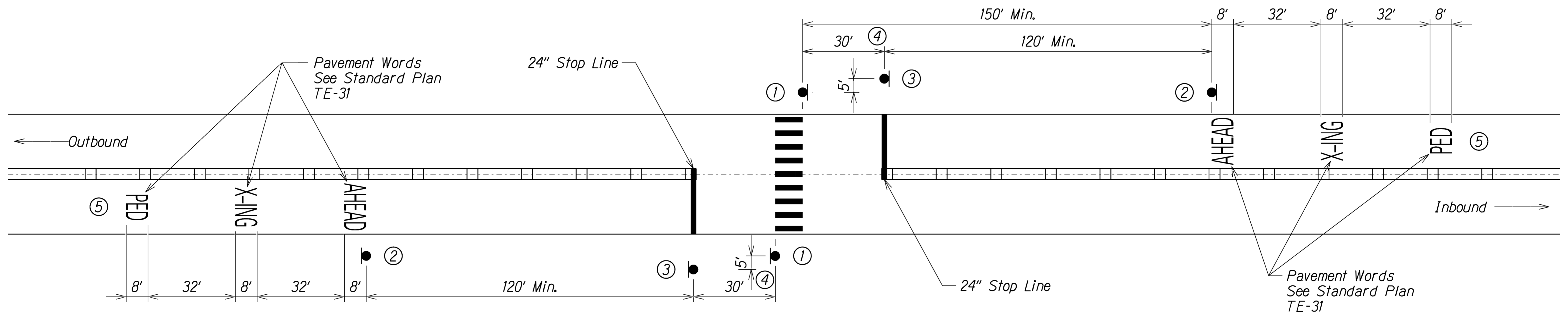
Scale: As Shown Date: June, 2020

SHEET No. 74 OF 26 SHEETS



TYPICAL UNSIGNALIZED INTERSECTION MARKINGS
(NO LEFT TURN STORAGE LANES)

Not to Scale



TYPICAL MIDBLOCK INTERSECTION MARKINGS

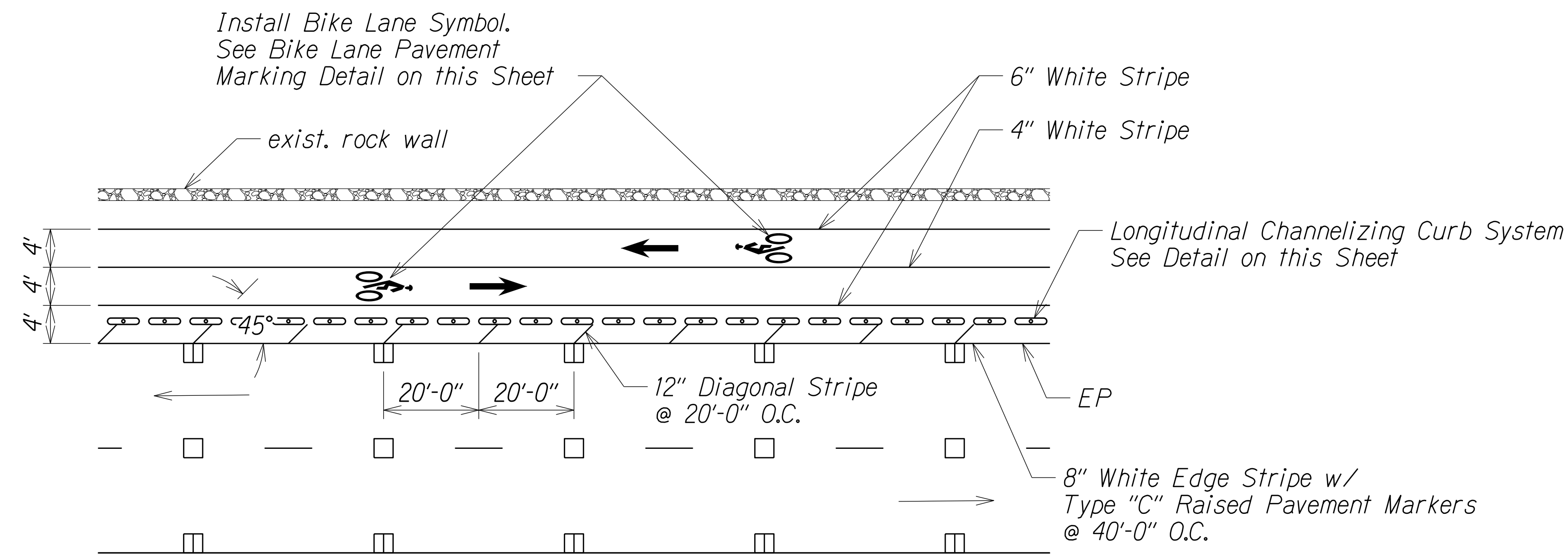
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SURVEY PLOTTED BY: _____ DATE: _____
 DRAWN BY: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____
 FILE NUMBER: _____
 FILE PATH: _____

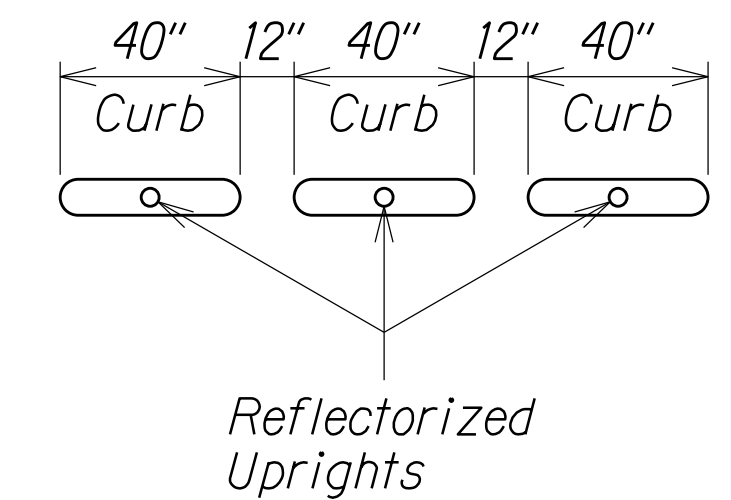
<p>①</p> <p>OR</p> <p>W16-7p 24\"/> <p>Black legend on flourescent yellow green background</p> </p>	<p>②</p> <p>OR</p> <p>AHEAD W16-9p 24\"/> <p>Black legend on flourescent yellow green background</p> </p>	<p>③</p> <p>Black legend on white background See Sign Detail on Plan Sheet T6.</p> <p>See ④ Note</p>	<p>④</p> <p>NOTE: If Distance is <50', Offset "STOP HERE FOR PEDESTRIANS" sign 5' horizontally with crossing sign. If insufficient space to offset, install sign as directed by the Engineer.</p>	<p>⑤</p> <p>NOTE: When school crosswalk warning assembly used install "SCHOOL" pavement word. See Standard Plan TE-31 for detail.</p>
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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
MID BLOCK CROSSWALK MARKING AND SIGNING
 KAMEHAMEHA HIGHWAY REHABILITATION
 Vicinity of Kapuhi Street to Dairy Road
 Federal Aid Project No. NH-083-1(77)
 Scale: As Shown Date: June, 2020
 SHEET No. T5 OF 26 SHEETS

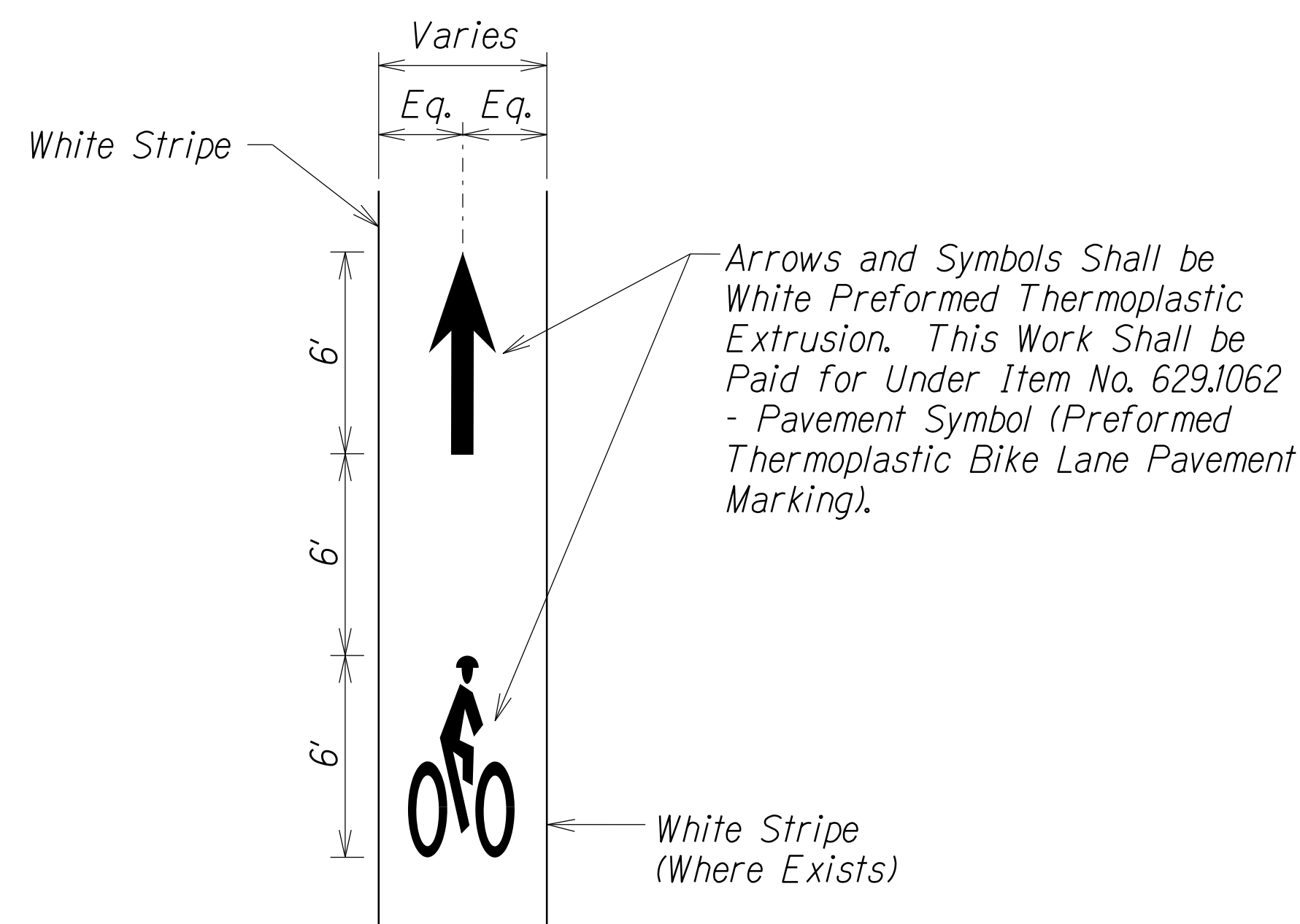
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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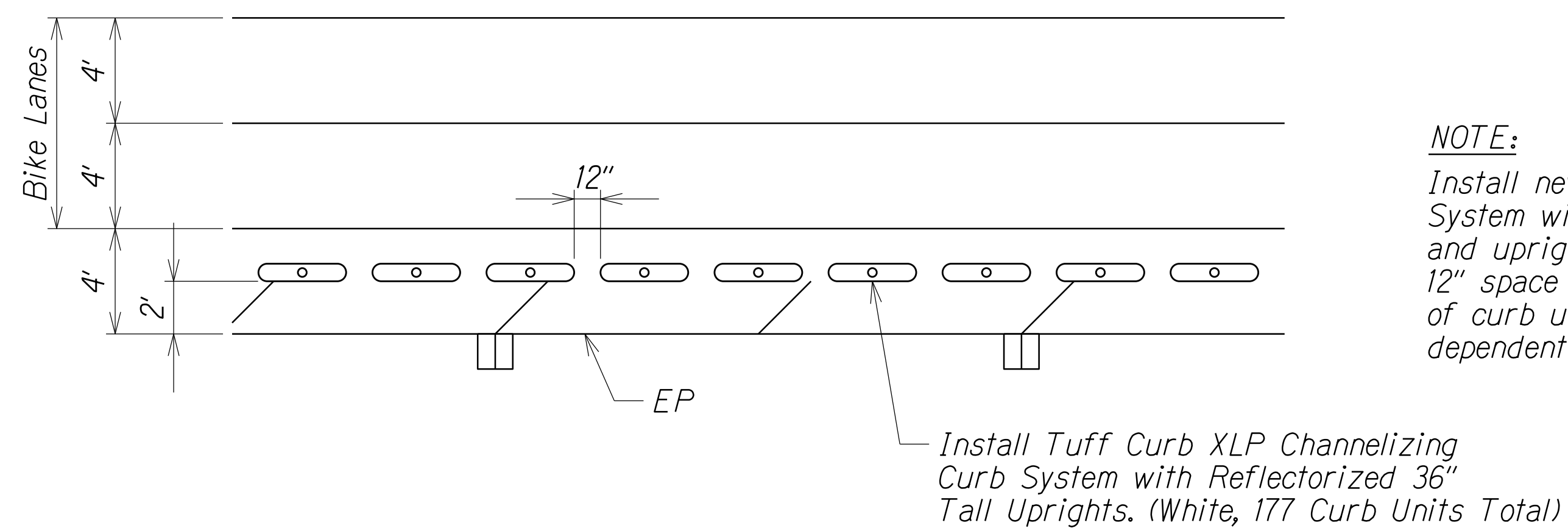
BIKE LANE STRIPING
(Sta. 213+65 Lt. to Sta. 223+90 Lt.)
Not to Scale



NOTE:
Install new Longitudinal Channelizing Curb System with Reflectorize Uprights. Curbs and uprights shall be white. Provide a 12" space between each curb unit. Amount of curb units and uprights used is dependent on type of curb system installed.



BIKE LANE PAVEMENT MARKING DETAIL
Not to Scale



TYPICAL LONGITUDINAL CHANNELIZING CURB SYSTEM DETAIL (L.C.C.S.)
(Sta. 213+70 Lt. to Sta. 218+80± Lt., Sta. 219+80 to Sta. 220+44 and Sta. 222+30± Lt. to Sta. 224+20± Lt.)
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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	DESIGNED BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

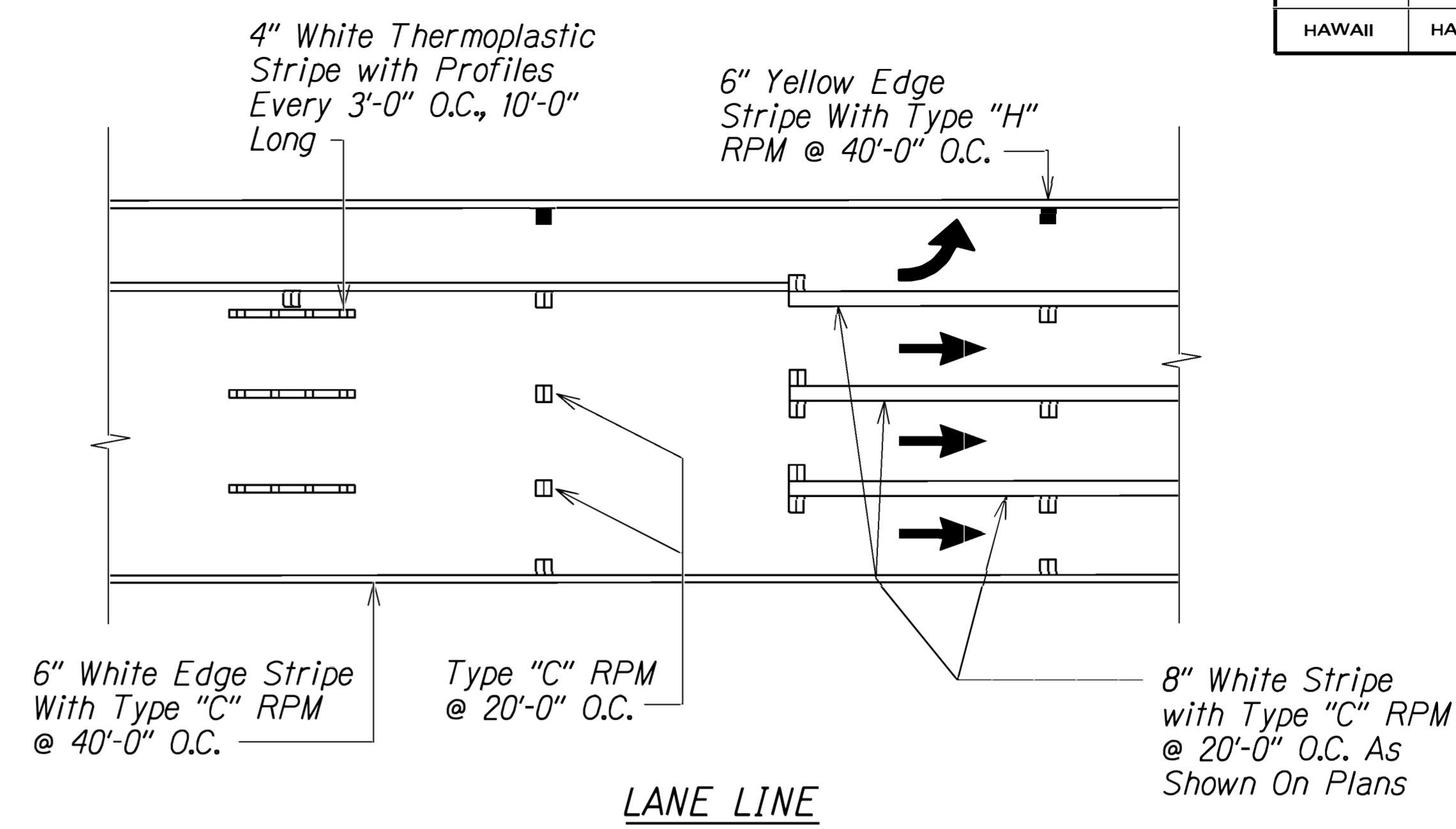
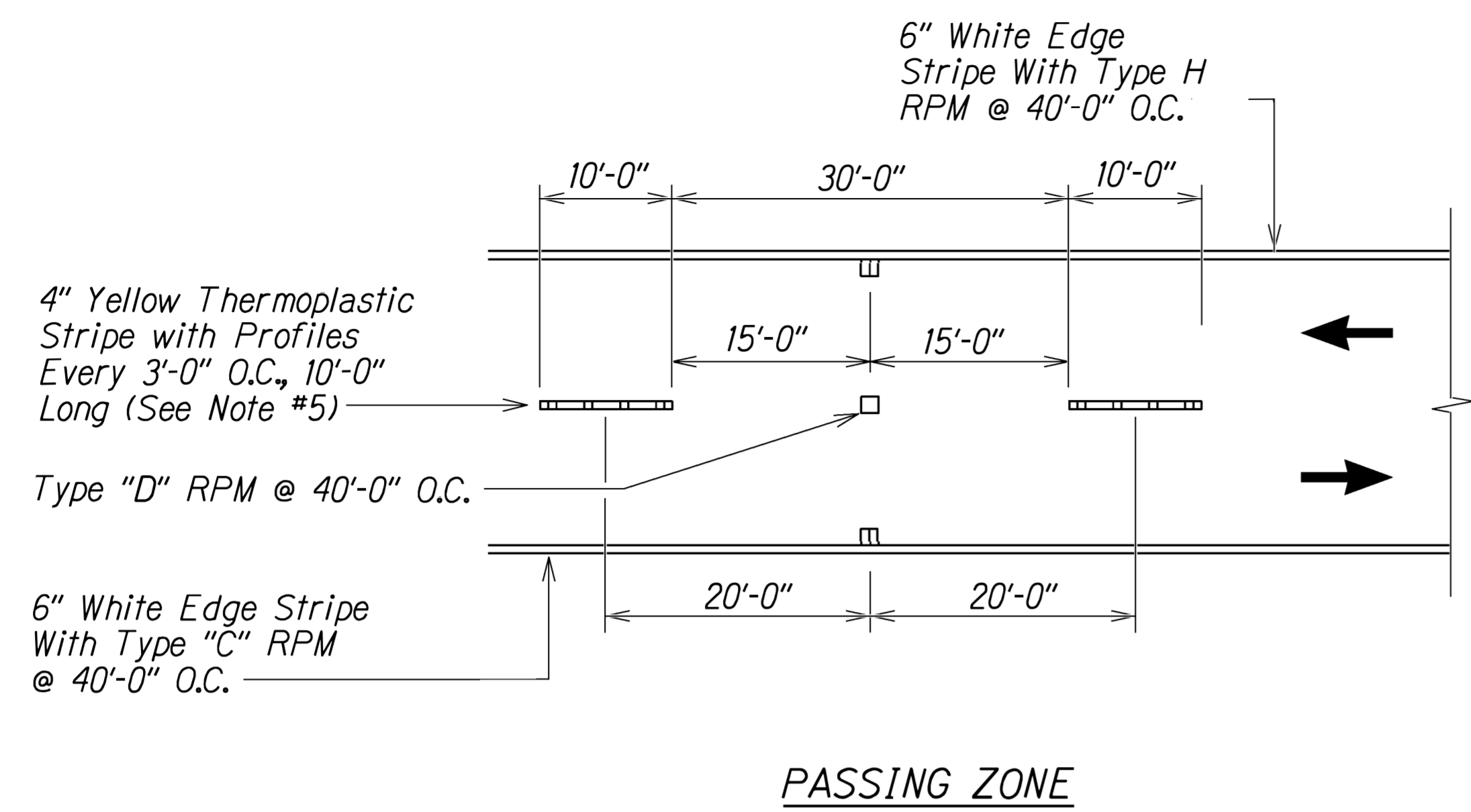
PAVEMENT MARKING
¢ SIGNING DETAILS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)

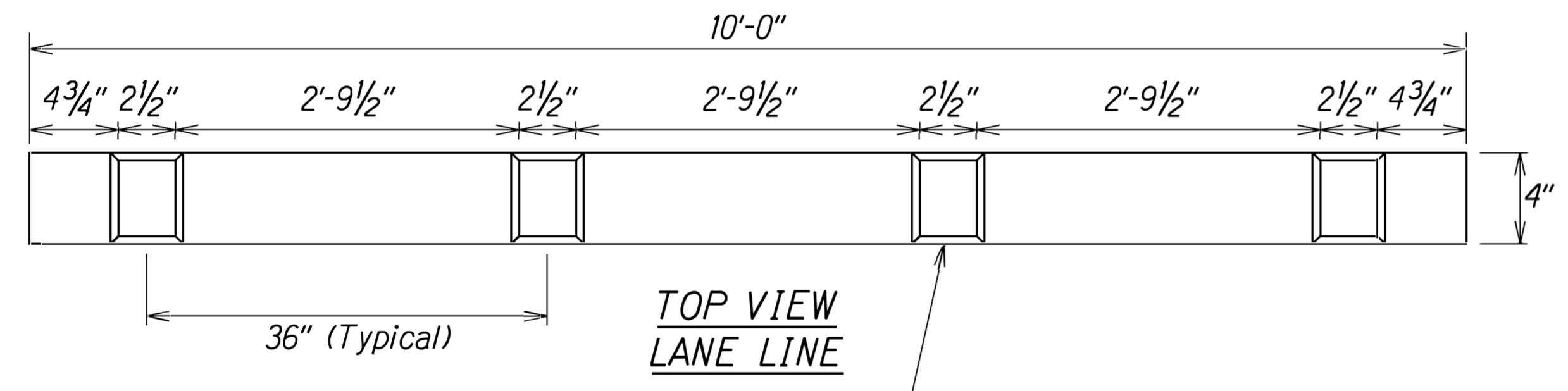
Scale: As Shown Date: June, 2020

SHEET No. T6 OF 26 SHEETS

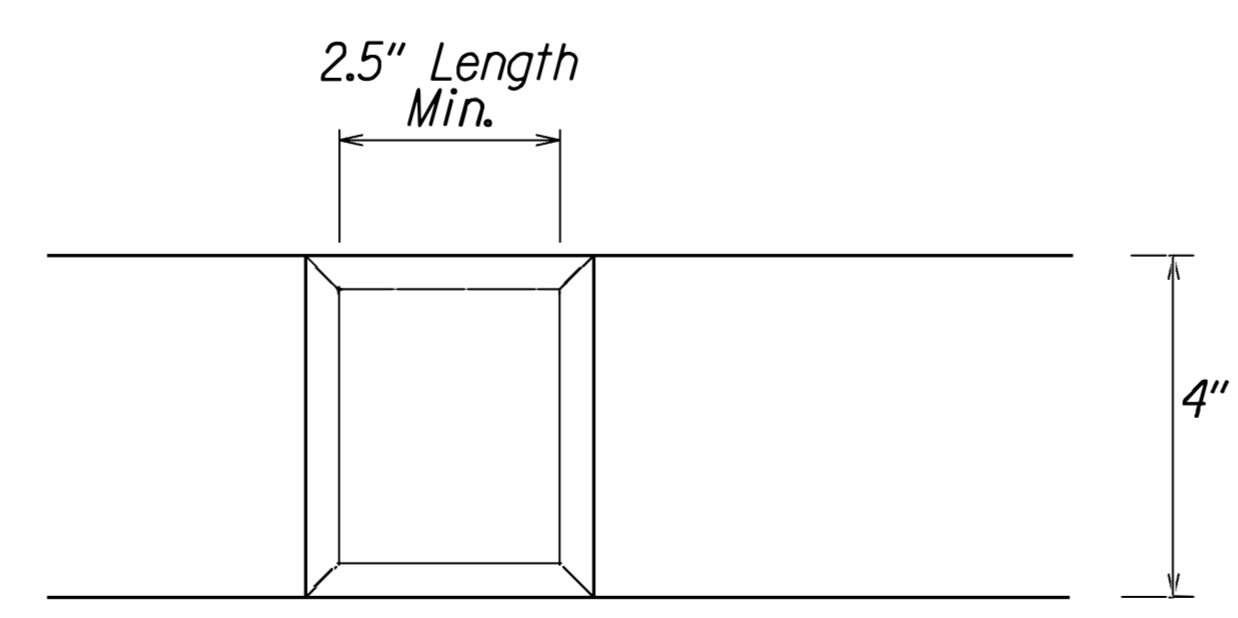
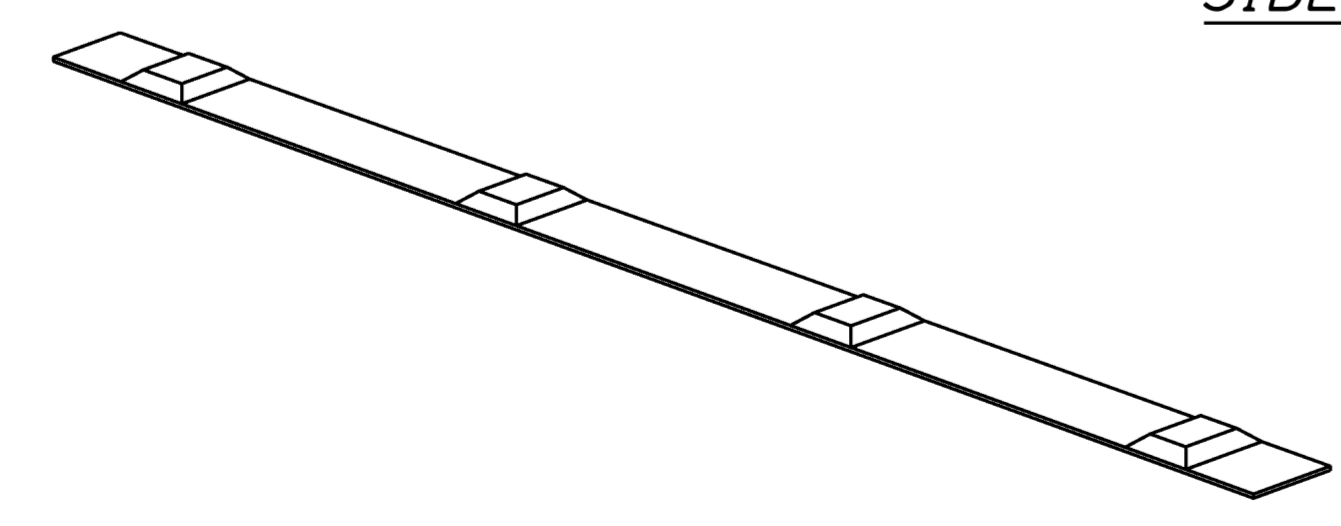
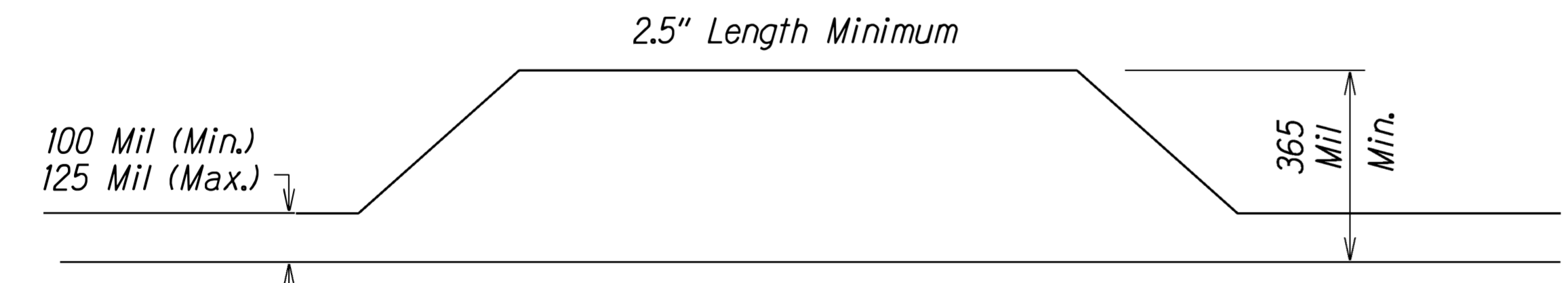
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(K077)	2021	68	87



DETAIL
Not To Scale



Profiles Placed on 36" O.C.
365 Mil. Height, including 100 Mil. Baseline.
Width Equal to Approximately Baseline Width



PROFILED THERMOPLASTIC STRIPING
Not to Scale

NOTES:

- The thermoplastic material shall be a alkyd-based compound formulated for profiled pavement marking. See specs subsection 629.03 for additional requirements
- The Engineer will include the longitudinal gaps for skip striping, up to thirty (30) feet long, in the measurement for payment.
- Install white profiled thermoplastic stripes as lane line.
- Install yellow profiled thermoplastic stripes for centerline passing zone.
- In areas with centerline milled rumble strips, install standard yellow thermoplastic stripes without raised profiles

SURVEY PLOTTED BY	DATE
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ORIGINAL PLAN	
DATE	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

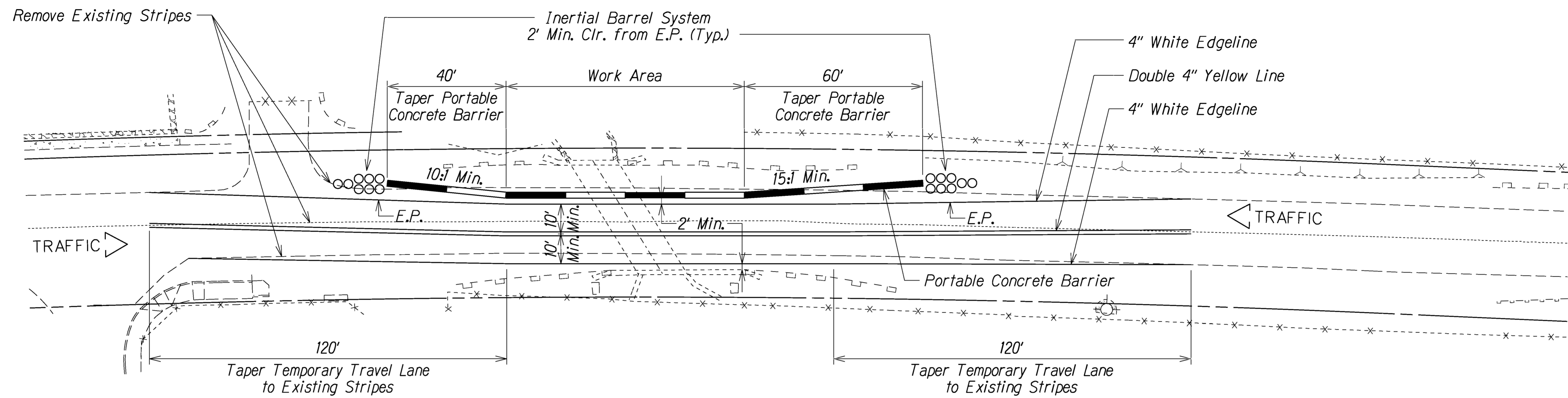
PROFILED PAVEMENT MARKING
DETAILS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(K77)

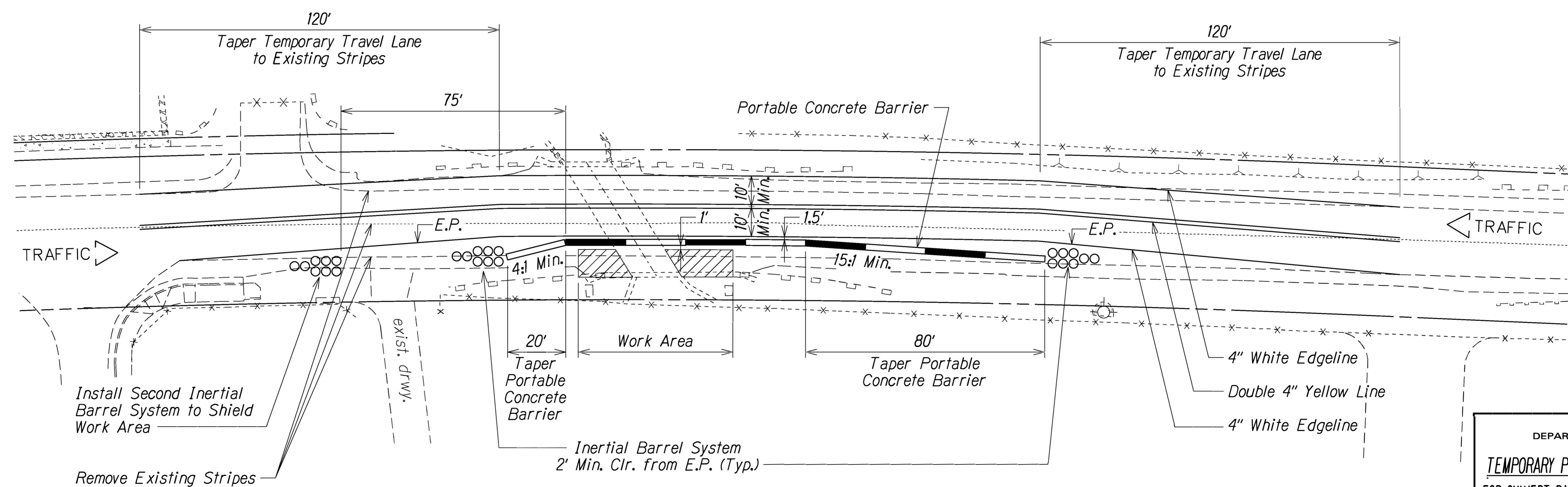
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SHEET No. 77 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	69	87



**PORTABLE CONCRETE BARRIER PLAN FOR CULVERT END POST WORK (MAKAI)
AT STA. 337+98.50±**



**PORTABLE CONCRETE BARRIER PLAN FOR CULVERT END POST WORK (MAUKA)
AT STA. 337+98.50±**

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

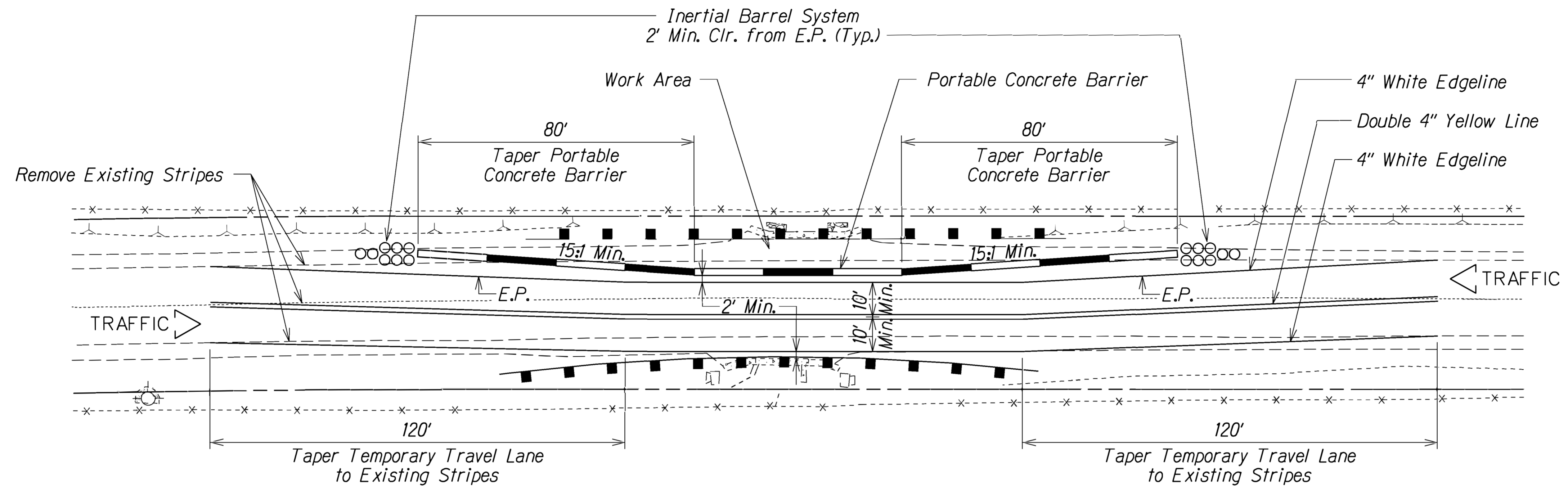
**TEMPORARY PORTABLE CONCRETE BARRIER PLAN
FOR CULVERT RAIL AND END POST WORK @ STA. 337+98.50±**

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)

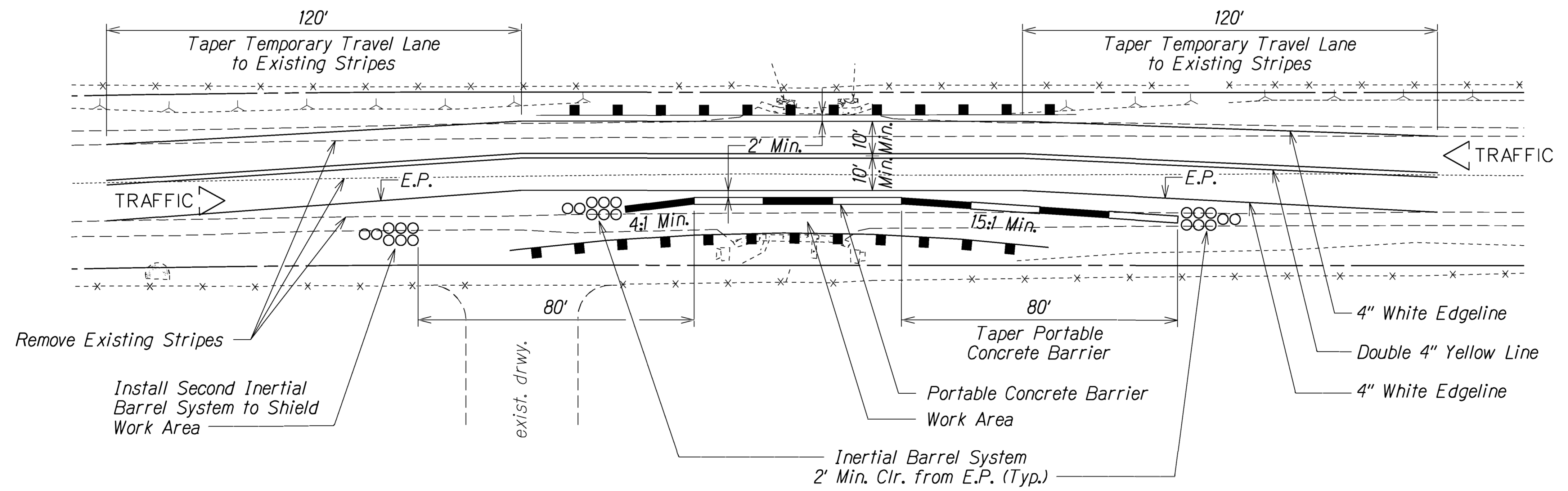
Scale: 1" = 20' Date: June, 2020

SHEET No. 78 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	70	87



**PORTABLE CONCRETE BARRIER PLAN FOR CULVERT RAIL WORK (MAKAI)
AT STA. 341+47±**



**PORTABLE CONCRETE BARRIER PLAN FOR CULVERT RAIL WORK (MAUKA)
AT STA. 341+47±**

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

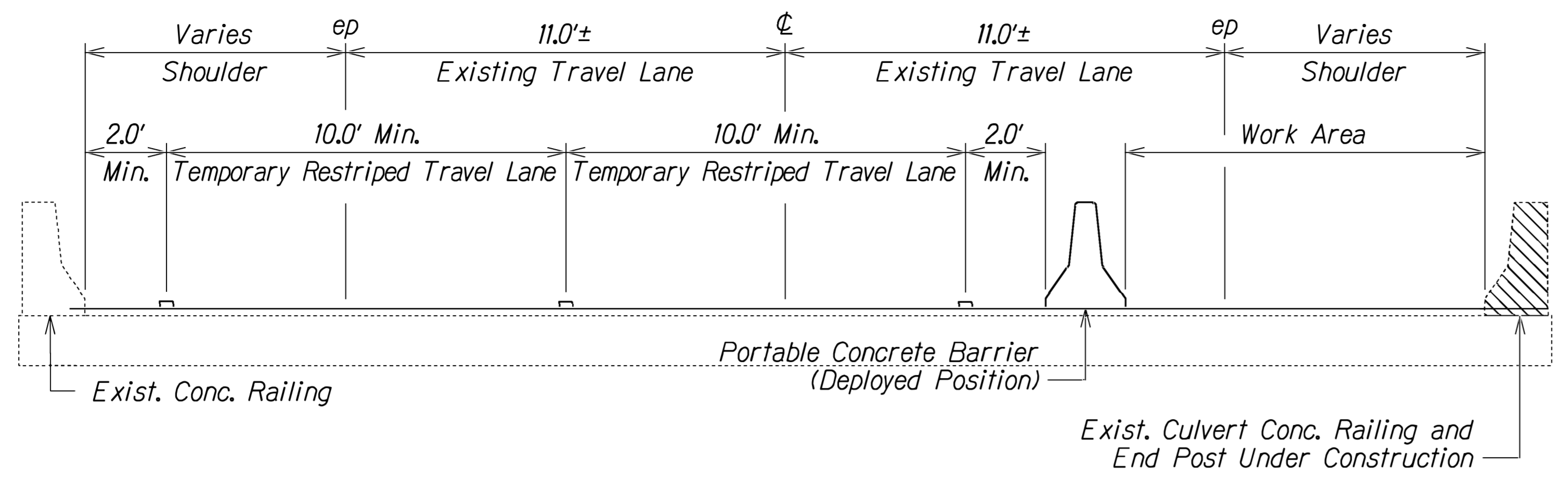
TEMPORARY PORTABLE CONCRETE BARRIER PLAN
FOR CULVERT RAIL WORK @ STA. 341+47±

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)

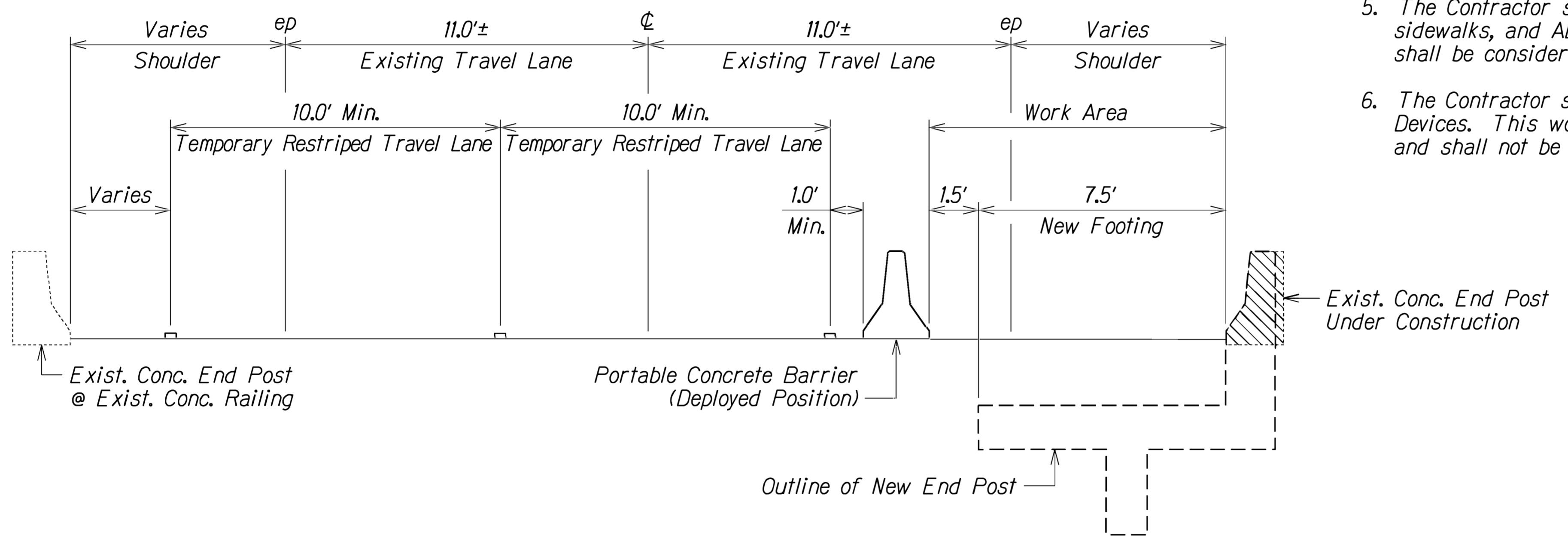
Scale: 1" = 20' Date: June, 2020

SHEET No. 79 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	71	87



TYPICAL - PORTABLE CONCRETE BARRIER POSITION FOR CULVERT RAIL WORK DETAIL
Not to Scale

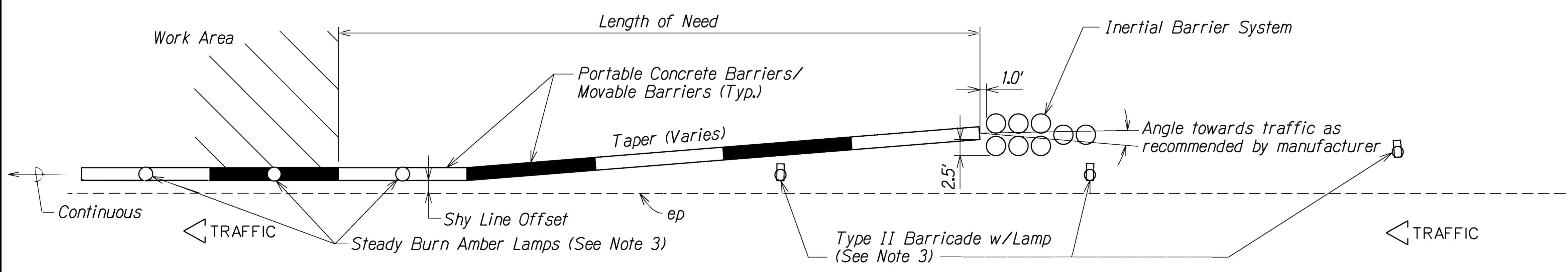


PORTABLE CONCRETE BARRIER POSITION FOR CULVERT END POST WORK DETAIL AT STA. 337+98.50± (MAUKA)
Not to Scale

NOTES:

1. Portable Concrete Barrier shall be set to the Deployed Position for the duration of Culvert rail work. The Contractor shall not perform work on both sides of the structure concurrently.
2. Inertial Barrier System (Sand Barrels) shall comply with the manufacturer's recommendations/requirements.
3. Place Type II Barricade w/Lamp at spacings and positions that comply with part 6 of the MUTCD, Typical Application 5, and install steady burn amber lamps on Portable Concrete Barriers @ 20.0' o.c. Installing, maintaining and removing each steady burn amber lamp including changing of batteries and bulbs shall be considered incidental to applicable Portable Concrete Barriers items.
4. Travel Lanes shall be temporarily restriped and adjusted to 10 feet to accommodate Portable Concrete Barrier Installation and use. Following the completion of culvert work, Travel Lanes shall be restriped to their original locations. This work shall be considered incidental to various contract items and shall not be paid for separately.
5. The Contractor shall provide and maintain for access to and form all existing driveways, sidewalks, and ADA access routes, and side streets, and cross streets at all times. This work shall be considered incidental to various contract items and will not be paid for separately.
6. The Contractor shall develop a Traffic Control Plan to include all necessary Traffic Control Devices. This work shall be considered incidental to Contract Item No. 645.0100 - Traffic Control and shall not be paid for separately.

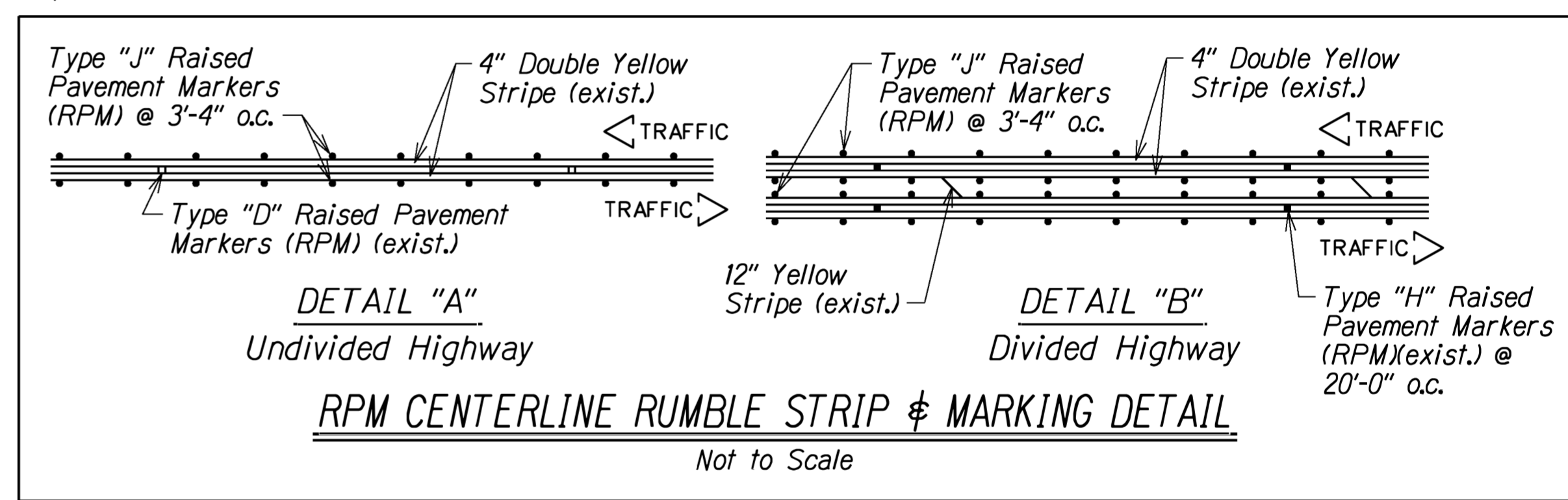
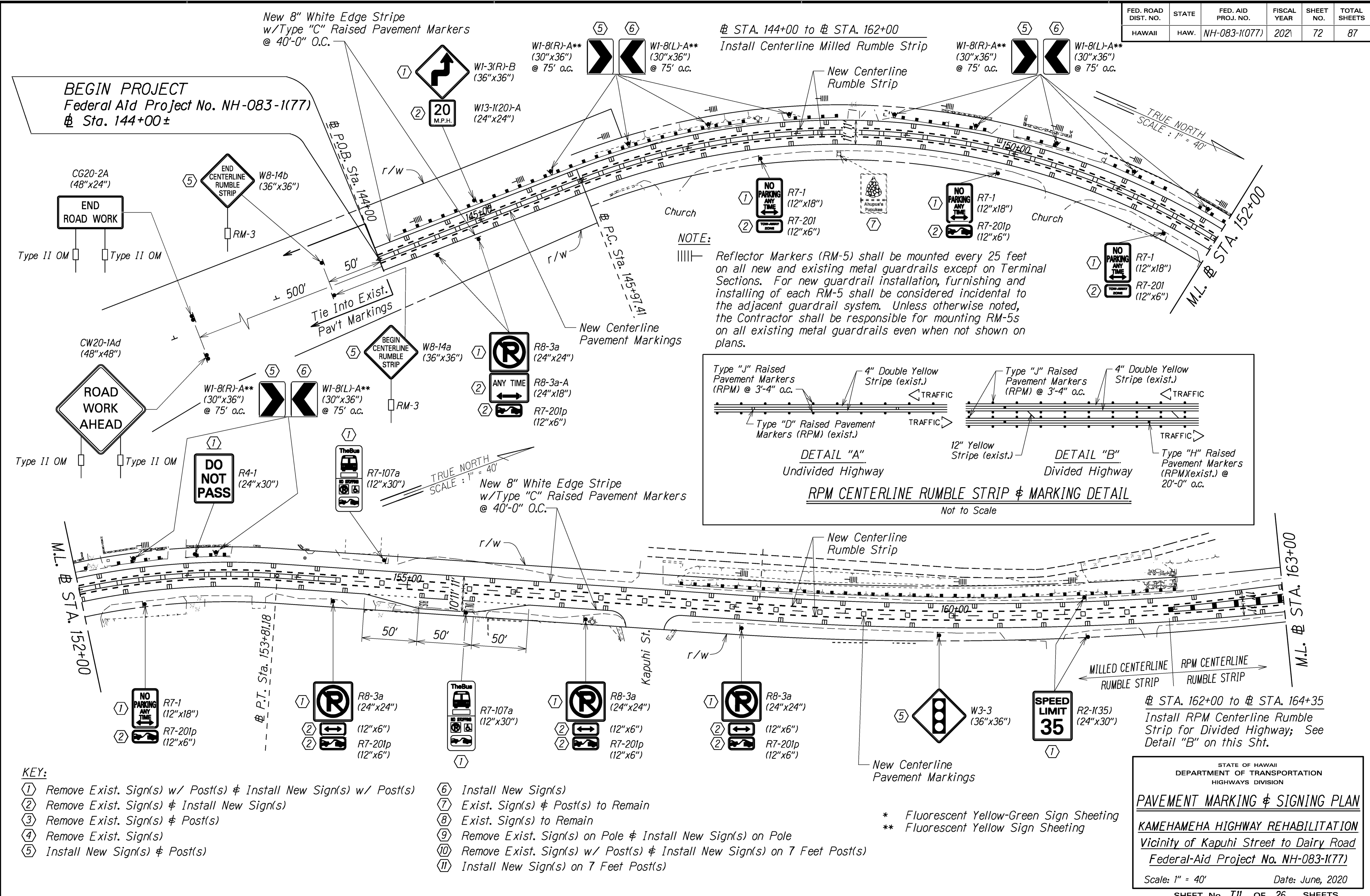
SURVEY PLOTTED BY: _____ DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____
 TOLERANCE: _____
 CHECKED BY: _____



TYPICAL DETAIL - PORTABLE CONCRETE BARRIER INSTALLATION
Not to Scale

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
TEMPORARY PORTABLE CONCRETE BARRIER
 DETAILS AND NOTES
KAMEHAMEHA HIGHWAY REHABILITATION
 Vicinity of Kapuhi Street to Dairy Road
 Federal Aid Project No. NH-083-1(77)
 Scale: As Shown Date: June, 2020
 SHEET No. T10 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	72	87



- KEY:**
- ① Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s)
 - ② Remove Exist. Sign(s) & Install New Sign(s)
 - ③ Remove Exist. Sign(s) & Post(s)
 - ④ Remove Exist. Sign(s)
 - ⑤ Install New Sign(s) & Post(s)
 - ⑥ Install New Sign(s)
 - ⑦ Exist. Sign(s) & Post(s) to Remain
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 - ⑩ Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) on 7 Feet Post(s)
 - ⑪ Install New Sign(s) on 7 Feet Post(s)

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)

Scale: 1" = 40' Date: June, 2020

SHEET No. 711 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	73	87

± STA. 162+00 to ± STA. 164+35
Install RPM Centerline Rumble Strip for Divided Highway; See Detail "B" on Plan Sht. No. T11.

± STA. 164+75 to ± STA. 165+40
Install RPM Centerline Rumble Strip for Divided Highway; See Detail "B" on Plan Sht. No. T11.

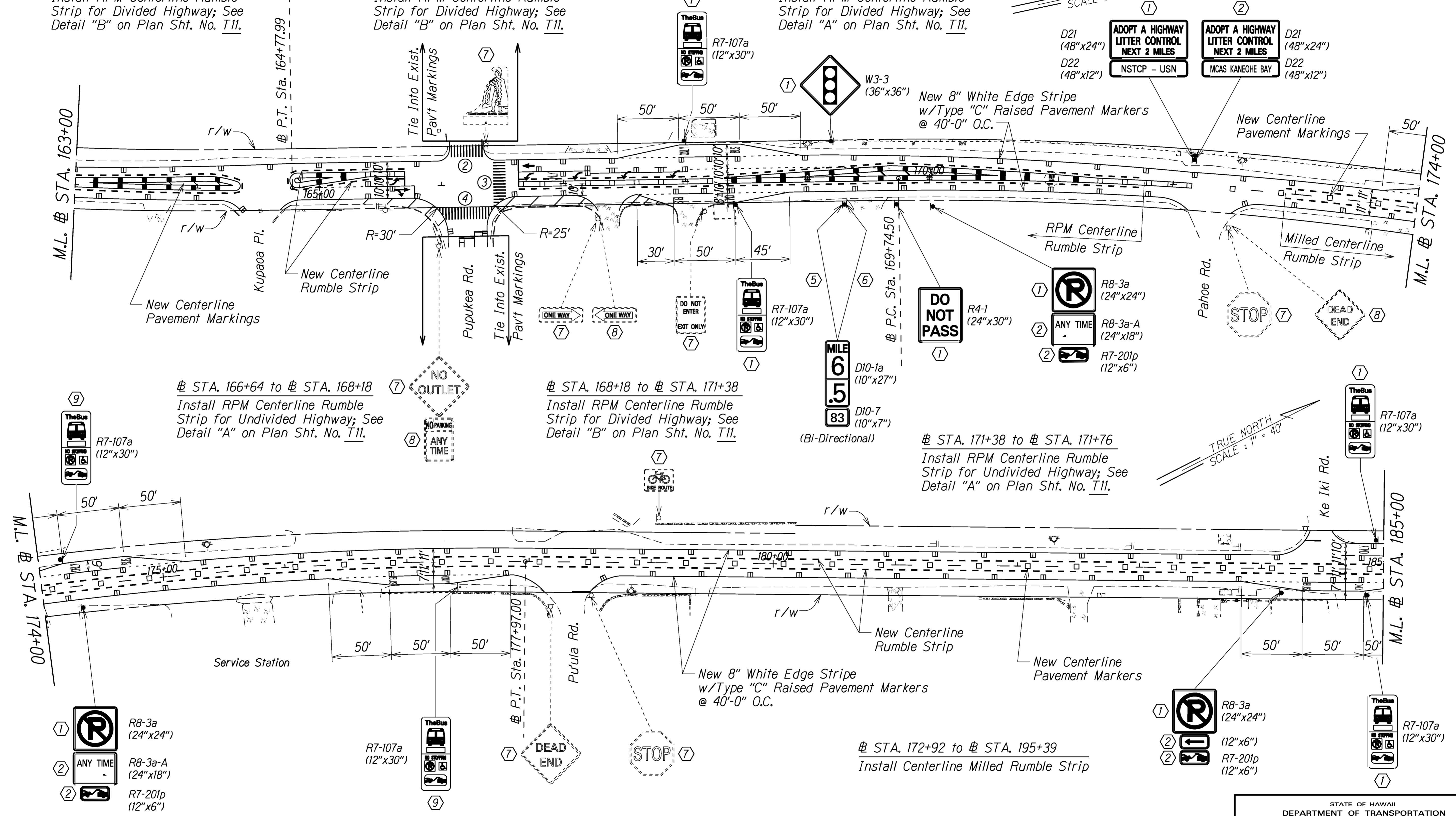
± STA. 165+40 to ± STA. 165+70
Install RPM Centerline Rumble Strip for Divided Highway; See Detail "A" on Plan Sht. No. T11.

± STA. 166+64 to ± STA. 168+18
Install RPM Centerline Rumble Strip for Undivided Highway; See Detail "A" on Plan Sht. No. T11.

± STA. 168+18 to ± STA. 171+38
Install RPM Centerline Rumble Strip for Divided Highway; See Detail "B" on Plan Sht. No. T11.

± STA. 171+38 to ± STA. 171+76
Install RPM Centerline Rumble Strip for Undivided Highway; See Detail "A" on Plan Sht. No. T11.

± STA. 172+92 to ± STA. 195+39
Install Centerline Milled Rumble Strip



KEY:

- ① Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s)
- ② Remove Exist. Sign(s) & Install New Sign(s)
- ③ Remove Exist. Sign(s) & Post(s)
- ④ Remove Exist. Sign(s)
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- ⑪ Install New Sign(s) on 7 Feet Post(s)

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

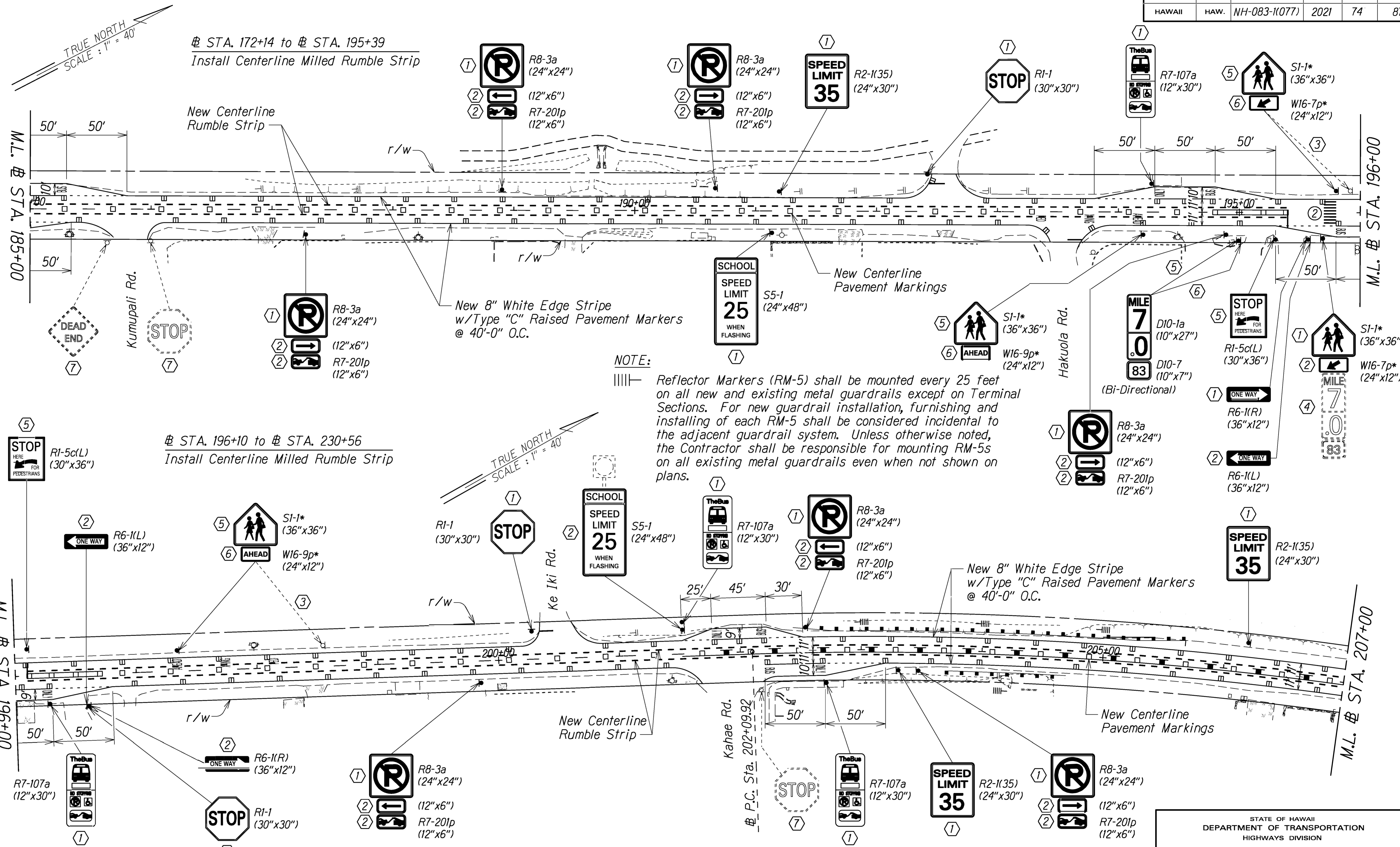
PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(077)

Scale: 1" = 40' Date: June, 2020

SHEET No. T12 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	74	87



NOTE:
 ||||| 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.

- KEY:**
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 - ④ Remove Exist. Sign(s)
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 - ⑦ Exist. Sign(s) & Post(s) to Remain
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 - ⑨ Remove Exist. Sign(s) on Pole & Install New Sign(s) on Pole
 - ⑩ Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) on 7 Feet Post(s)
 - ⑪ Install New Sign(s) on 7 Feet Post(s)

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
 Vicinity of Kapuhi Street to Dairy Road
 Federal-Aid Project No. NH-083-1(077)

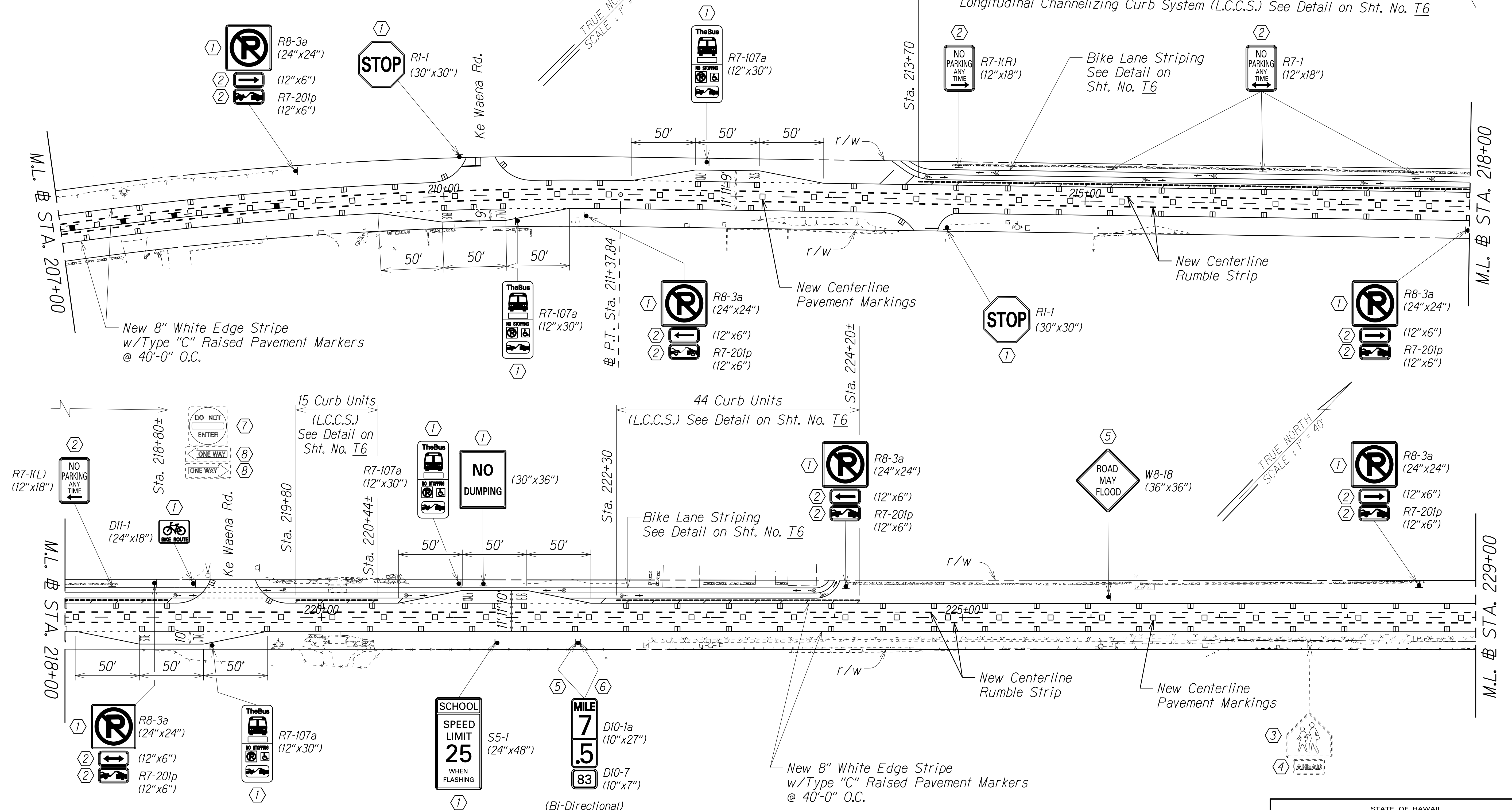
Scale: 1" = 40' Date: June, 2020

SHEET No. T13 OF 26 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2020	75	87

± STA. 196+10 to ± STA. 230+56
Install Centerline Milled Rumble Strip



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

KEY:

- ① Remove Exist. Sign(s) w/ Post(s) ± Install New Sign(s) w/ Post(s)
- ② Remove Exist. Sign(s) ± Install New Sign(s)
- ③ Remove Exist. Sign(s) ± Post(s)
- ④ Remove Exist. Sign(s)
- ⑤ Install New Sign(s) ± Post(s)
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- ⑪ Install New Sign(s) on 7 Feet Post(s)

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)

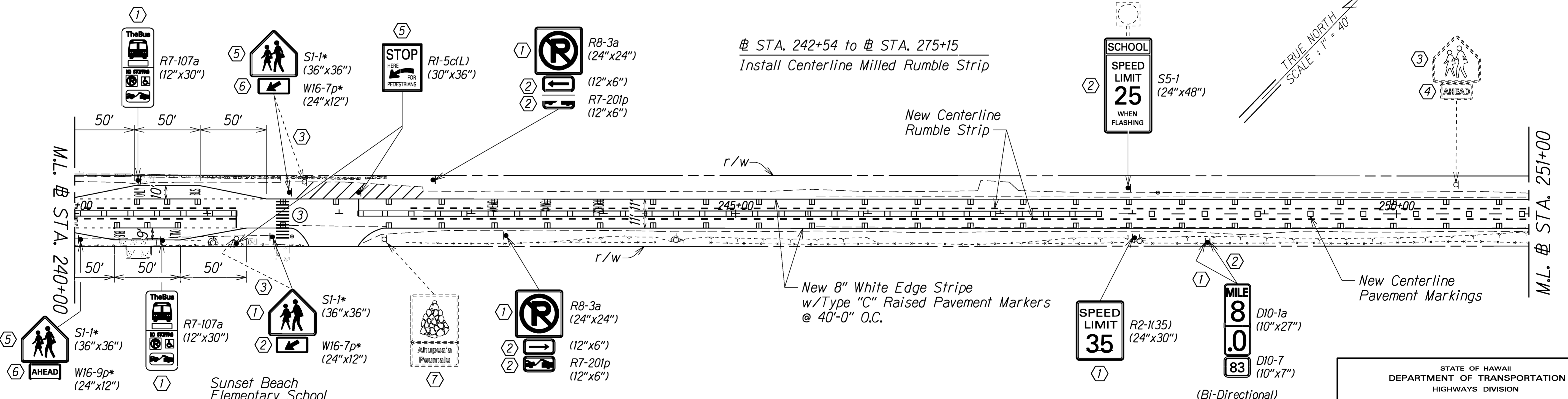
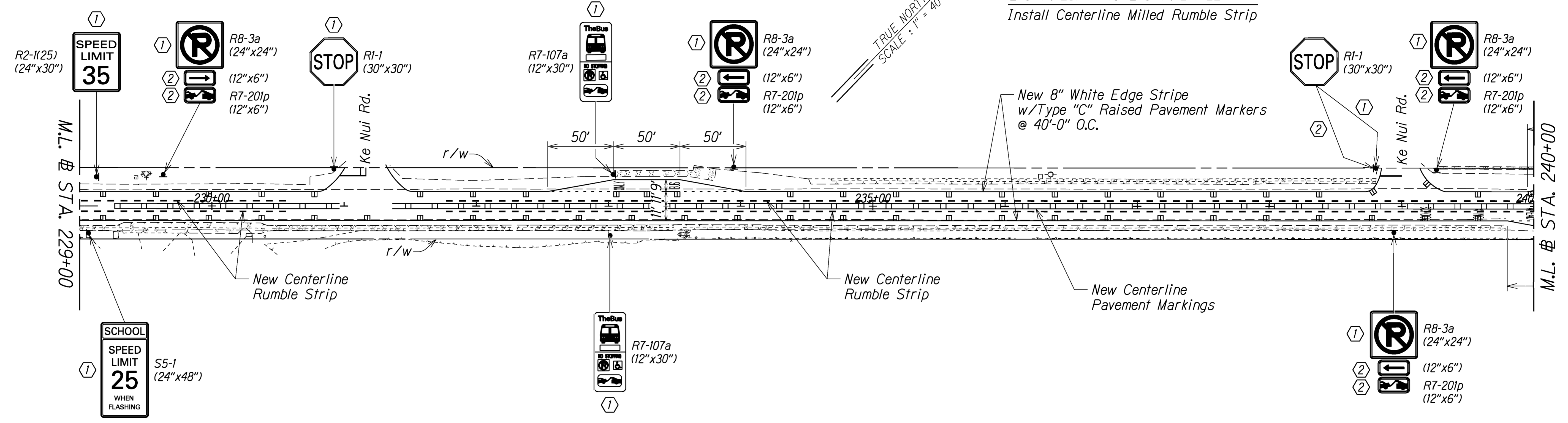
Scale: 1" = 40' Date: June, 2020

SHEET No. T14 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	76	87

± STA. 196+10 to ± STA. 230+56
Install Centerline Milled Rumble Strip

± STA. 231+77 to ± STA. 241+22
Install Centerline Milled Rumble Strip



KEY:

- ① Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s)
- ② Remove Exist. Sign(s) & Install New Sign(s)
- ③ Remove Exist. Sign(s) & Post(s)
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- ⑪ Install New Sign(s) on 7 Feet Post(s)

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

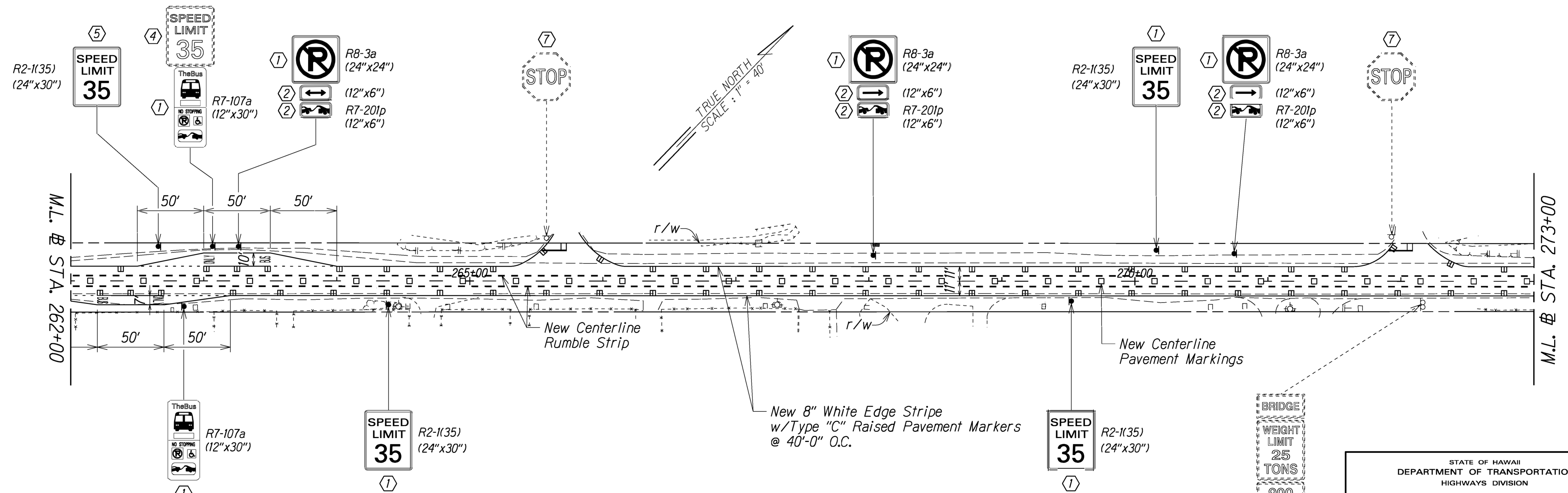
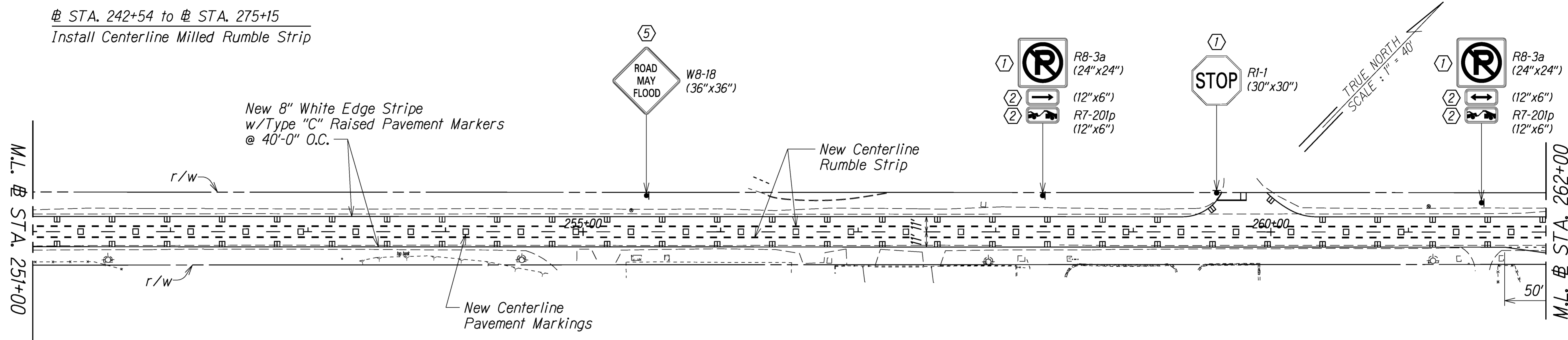
KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)

Scale: 1" = 40' Date: June, 2020

SHEET No. T15 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	77	87

± STA. 242+54 to ± STA. 275+15
Install Centerline Milled Rumble Strip



KEY:

- ① Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s)
- ② Remove Exist. Sign(s) & Install New Sign(s)
- ③ Remove Exist. Sign(s) & Post(s)
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* Fluorescent Yellow-Green Sign Sheeting
** Fluorescent Yellow Sign Sheeting

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

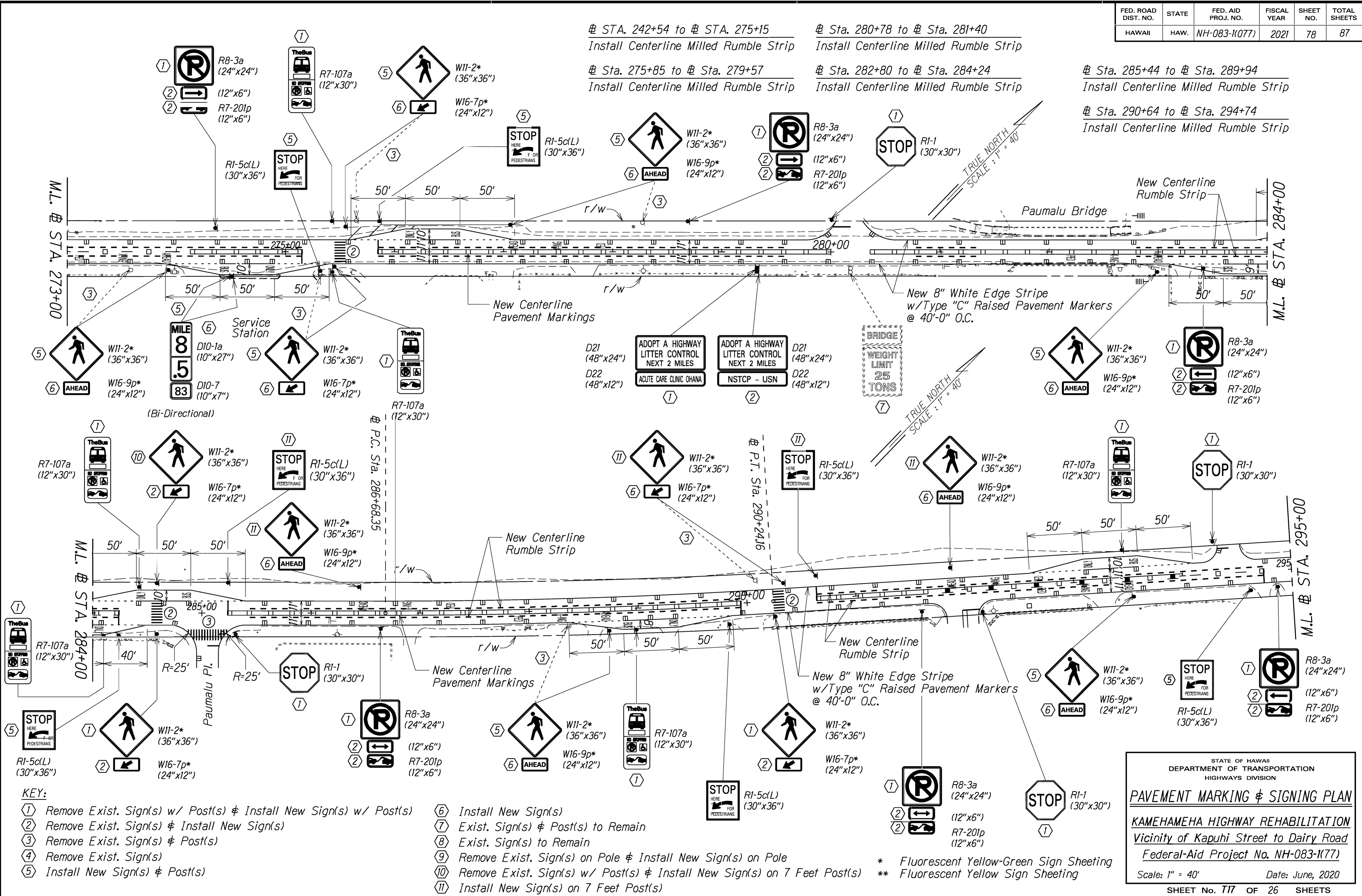
PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)

Scale: 1" = 40' Date: June, 2020

SHEET No. T16 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	78	87



@ STA. 242+54 to @ STA. 275+15
 Install Centerline Milled Rumble Strip

@ Sta. 275+85 to @ Sta. 279+57
 Install Centerline Milled Rumble Strip

@ Sta. 280+78 to @ Sta. 281+40
 Install Centerline Milled Rumble Strip

@ Sta. 282+80 to @ Sta. 284+24
 Install Centerline Milled Rumble Strip

@ Sta. 285+44 to @ Sta. 289+94
 Install Centerline Milled Rumble Strip

@ Sta. 290+64 to @ Sta. 294+74
 Install Centerline Milled Rumble Strip

- KEY:**
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* Fluorescent Yellow-Green Sign Sheeting
 ** Fluorescent Yellow Sign Sheeting

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)

Scale: 1" = 40' Date: June, 2020

SHEET No. T17 OF 26 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	79	87



NOTE:
 Reflecter 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.

- KEY:**
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* Fluorescent Yellow-Green Sign Sheeting
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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
 Vicinity of Kapuhi Street to Dairy Road
 Federal-Aid Project No. NH-083-1(077)

Scale: 1" = 40' Date: June, 2020

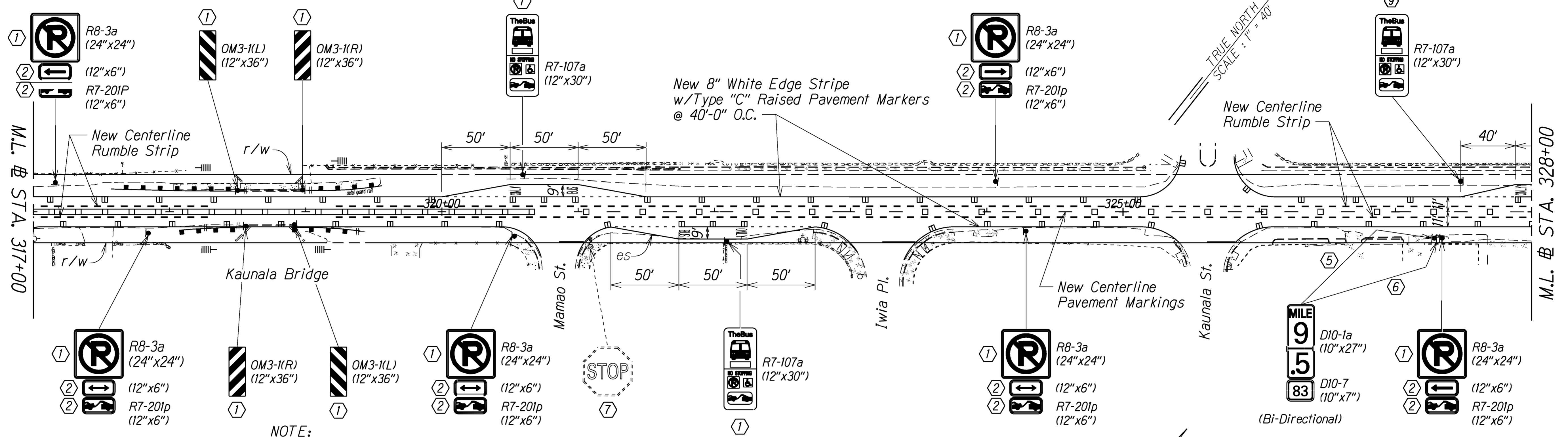
SHEET No. T18 OF 26 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	80	87

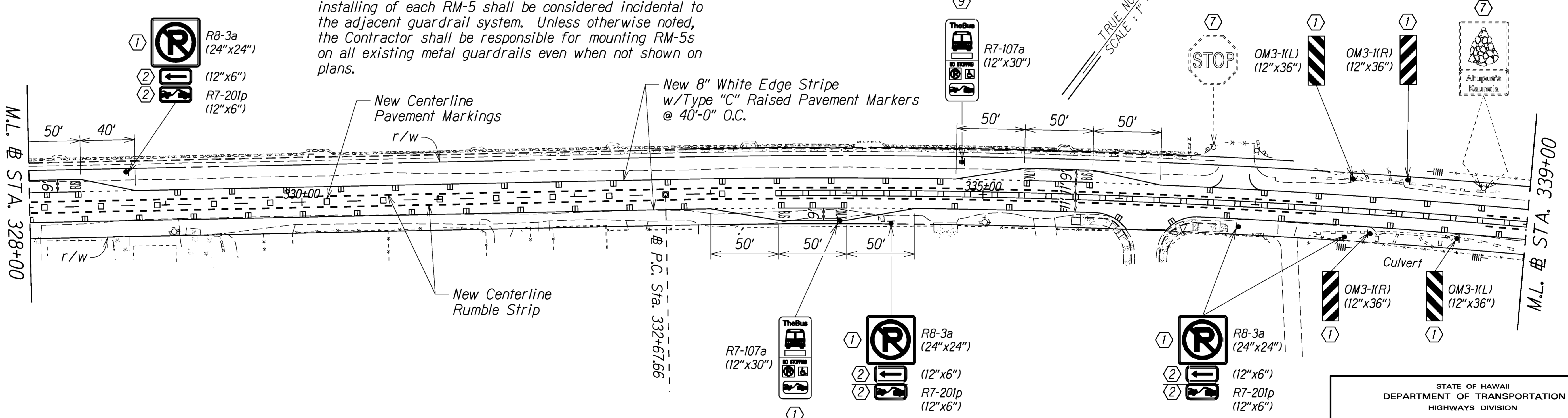
± STA. 316+76 to ± STA. 318+28
Install Centerline Milled Rumble Strip

± STA. 319+22 to ± STA. 337+45
Install Centerline Milled Rumble Strip



NOTE:
 ||||| 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.

± Sta. 338+70 to ± Sta. 340+72
Install Centerline Milled Rumble Strip



KEY:

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SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTE BOOK	
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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

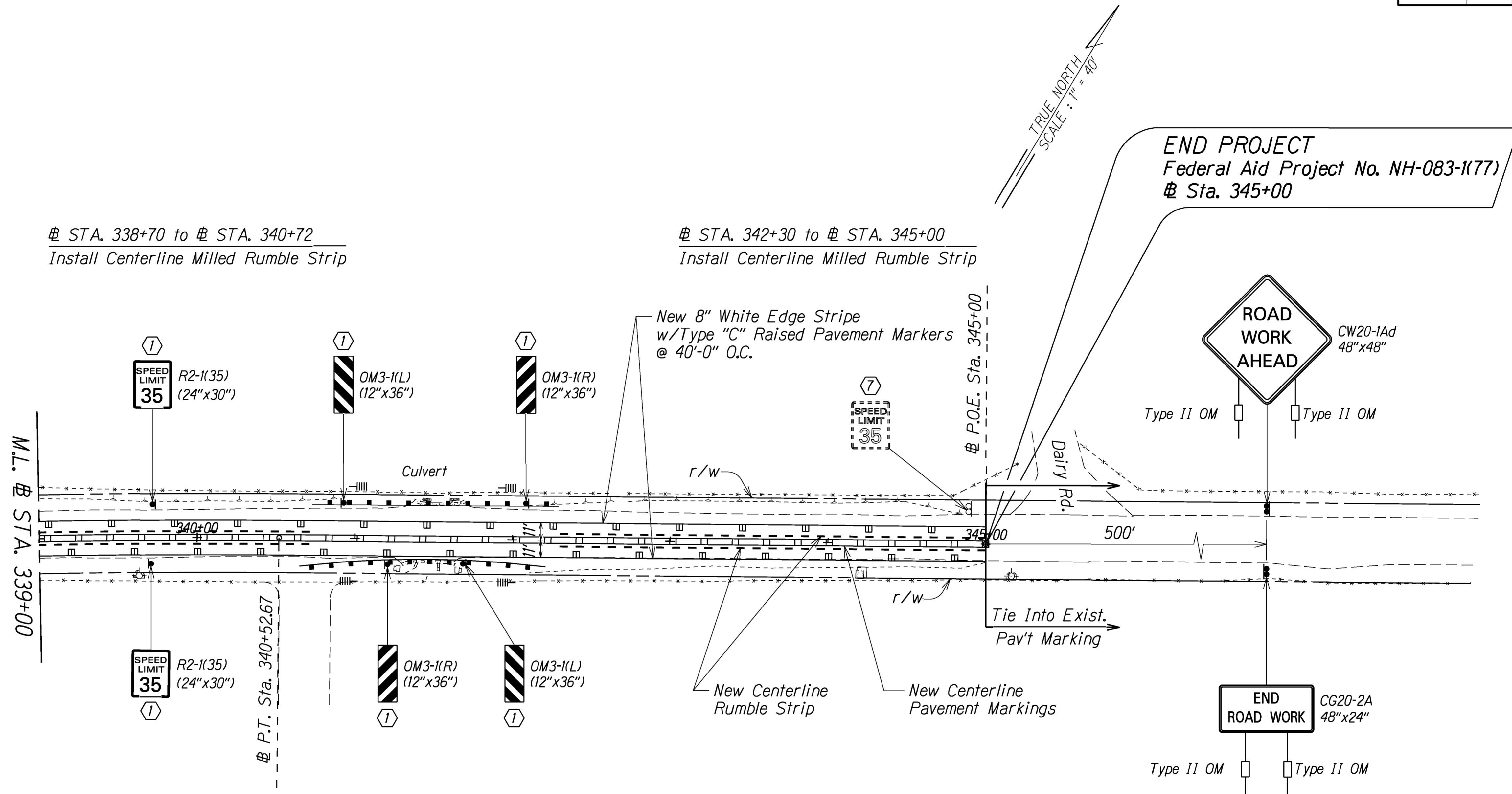
PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
 Vicinity of Kapuhi Street to Dairy Road
 Federal-Aid Project No. NH-083-1(077)

Scale: 1" = 40' Date: June, 2020

SHEET No. T19 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	81	87



NOTE:

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KEY:

- | | |
|---|--|
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| | ⑪ Install New Sign(s) on 7 Feet Post(s) |

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

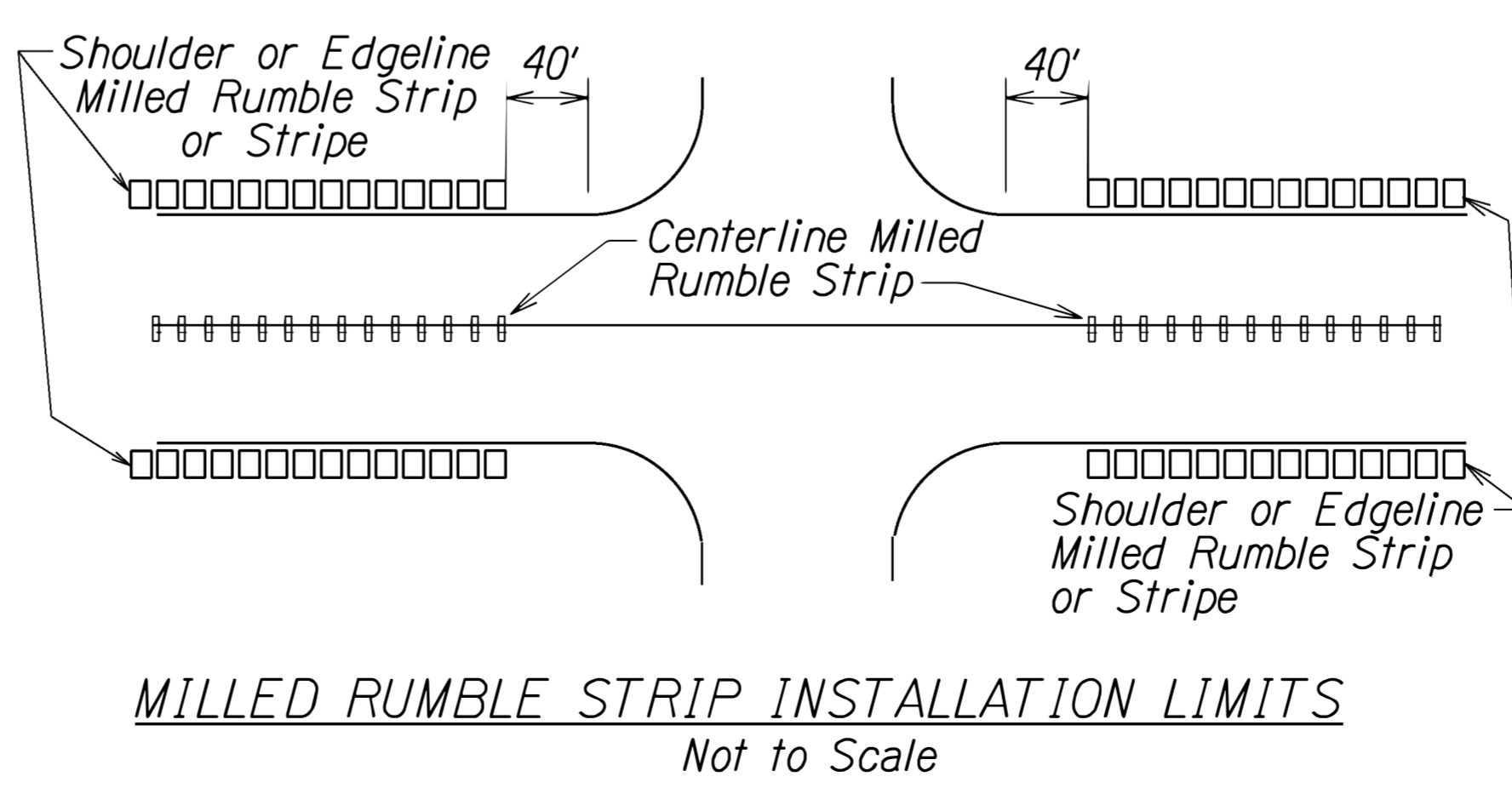
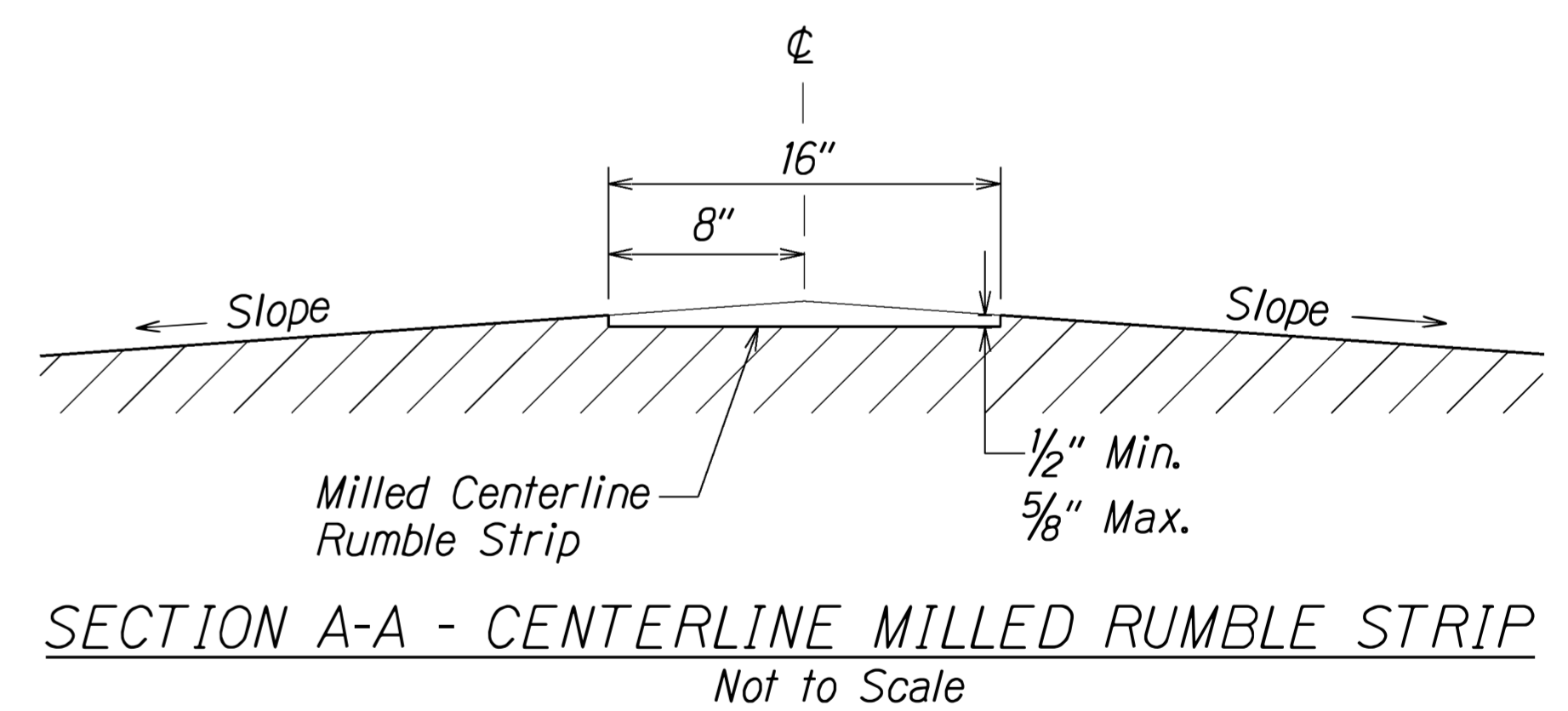
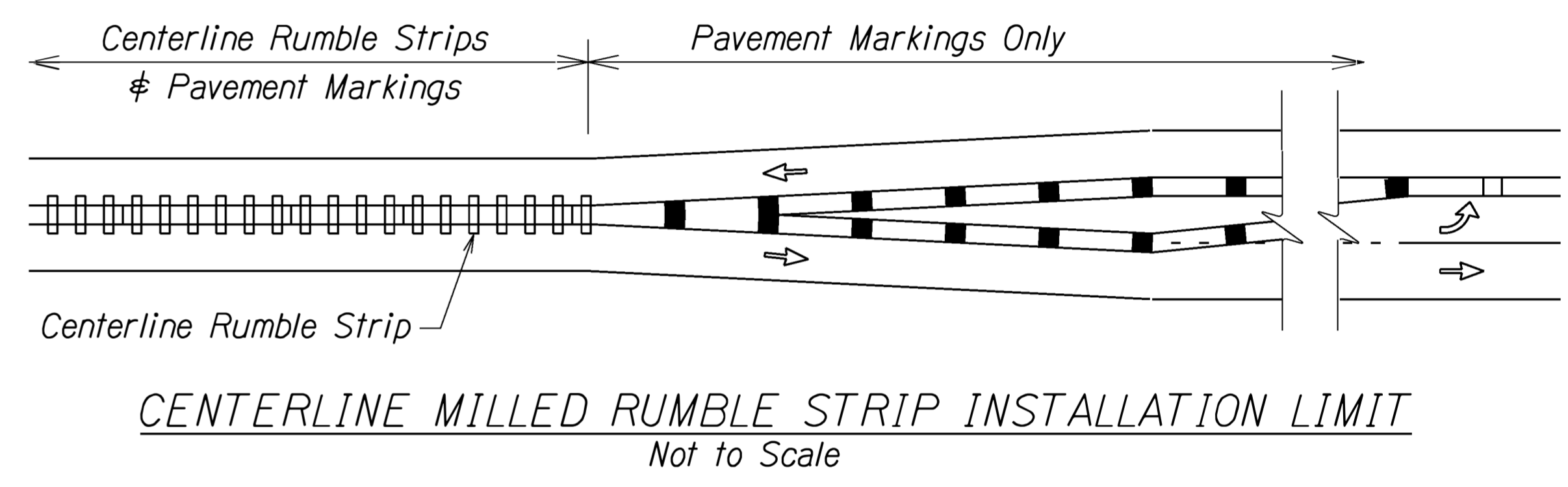
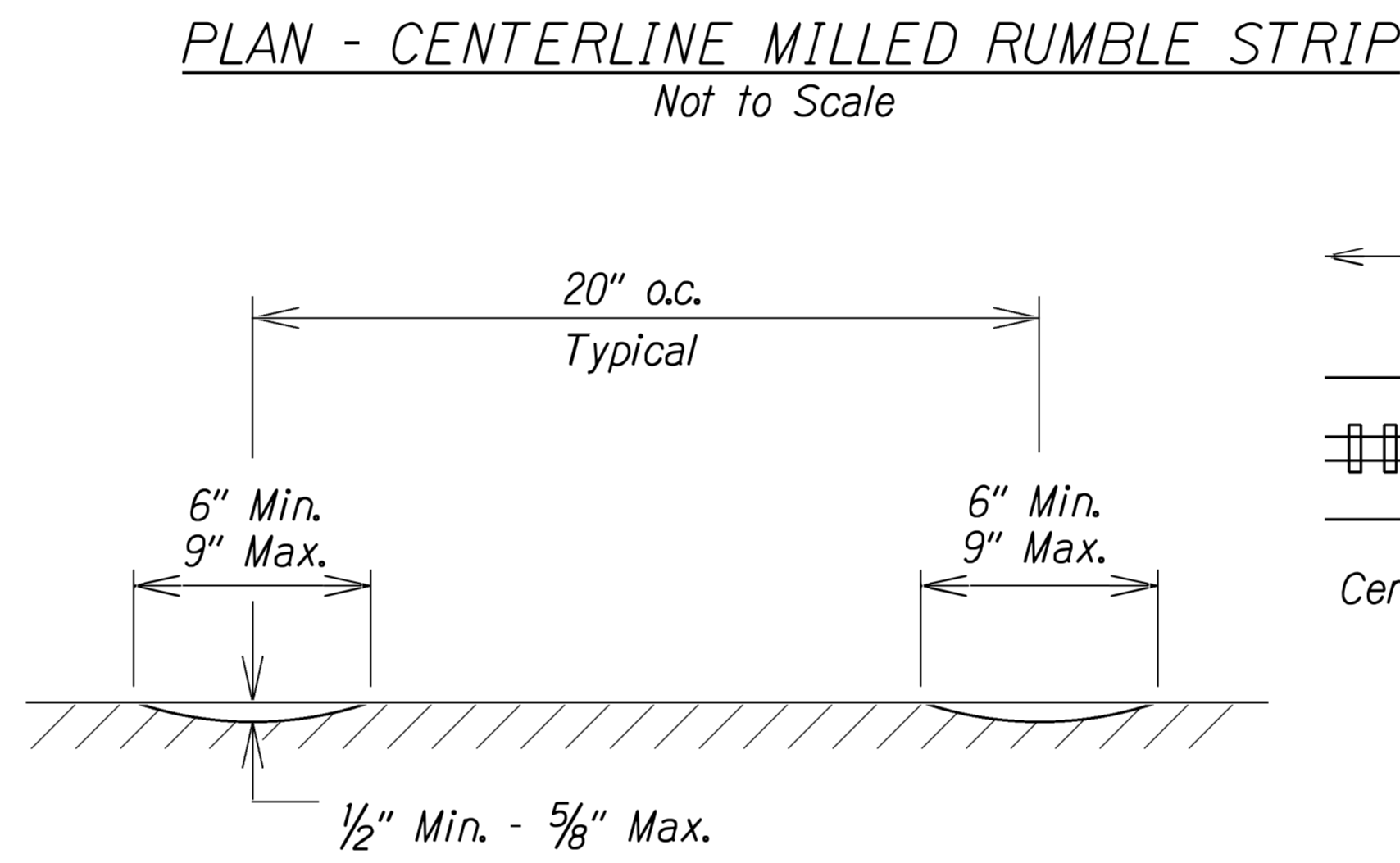
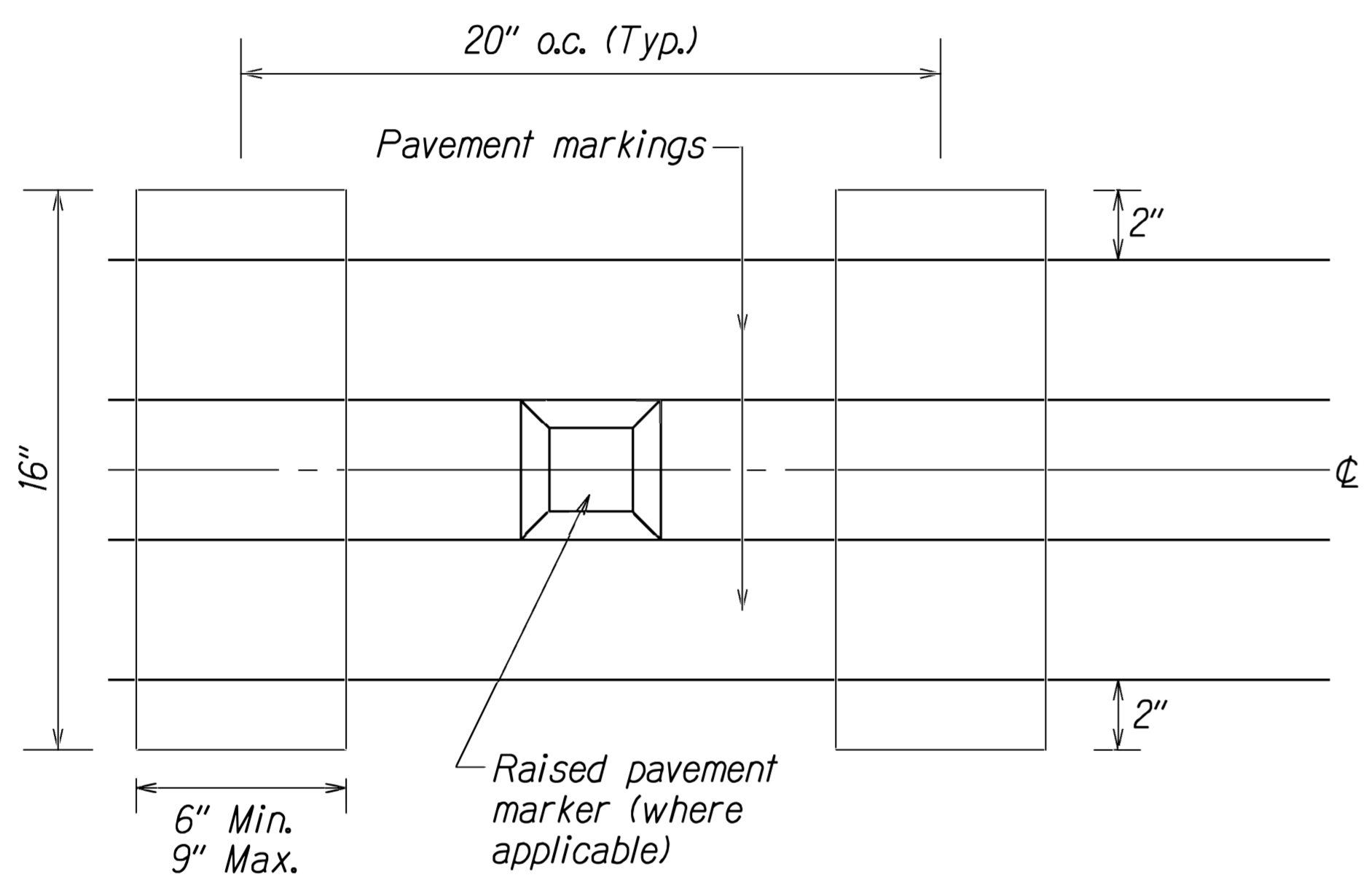
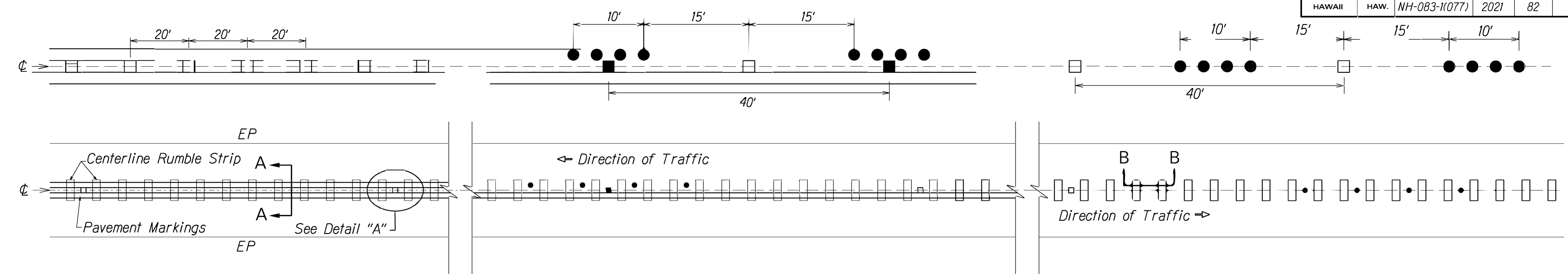
PAVEMENT MARKING & SIGNING PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)

Scale: 1" = 40' Date: June, 2020

SHEET No. T20 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	82	87



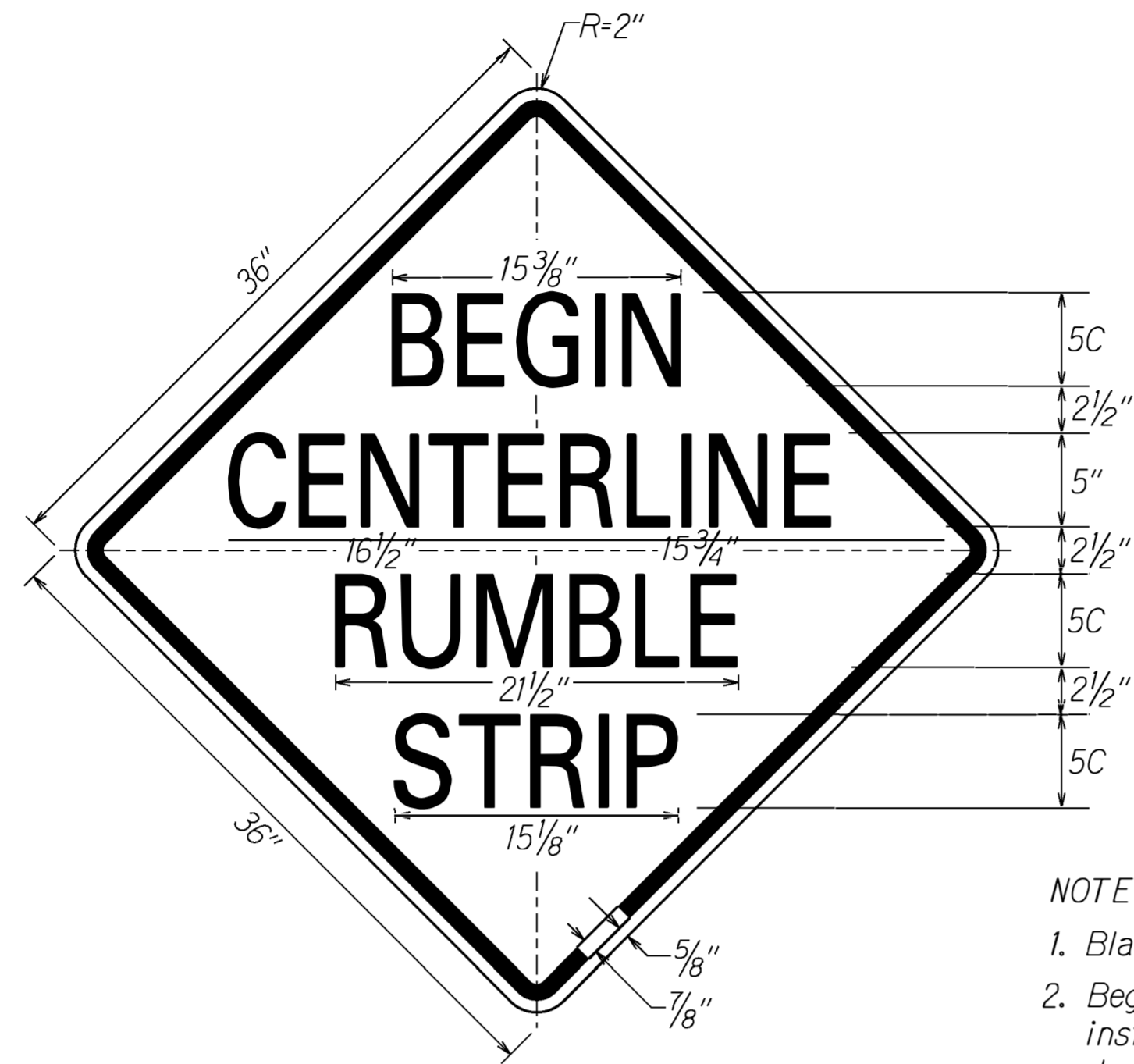
NOTES:

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.

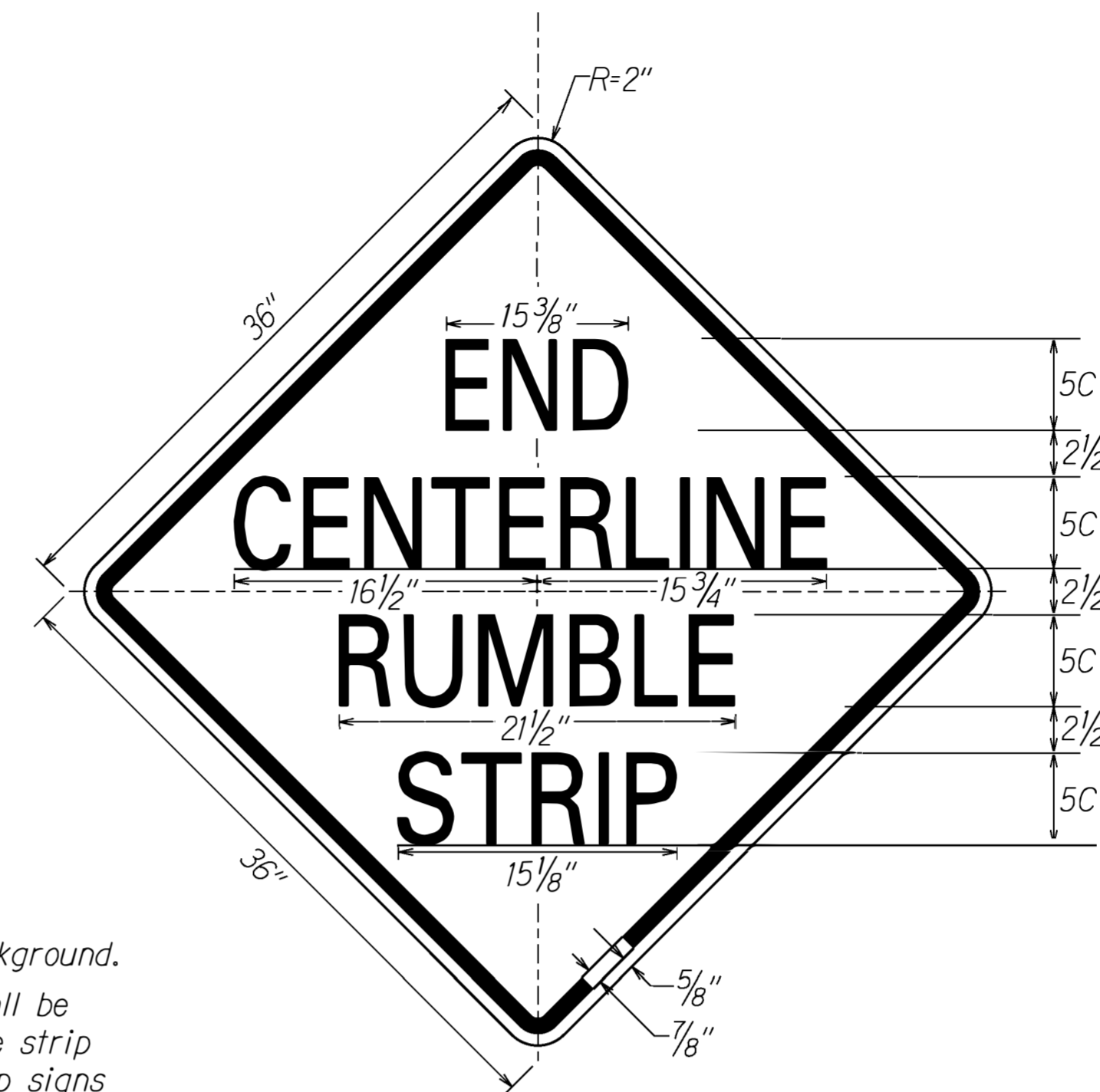
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DATE	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CENTERLINE MILLED RUMBLE STRIP DETAIL
KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)
Scale: As Shown Date: June, 2020
SHEET No. T21 OF 26 SHEETS

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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
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10/1	CHECKED BY	
10/1	DATE	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CENTERLINE RUMBLE STRIP
SIGN DETAILS AND NOTES

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)

Scale: As Shown Date: June, 2020

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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TRAFFIC SIGNAL NOTES

- The locations of the Traffic Signal Standards, Traffic Signal Standards w/Mast Arms, Pedestrian Push Buttons, Traffic Controller, Pullboxes, Conduits and Loop Detectors shall be staked out in the field by the Contractor and approval of the locations shall be obtained from the Engineer prior to construction and installation.
- All splicing shall be done in the pullboxes.
- Furnishing and installing the conduit stubouts (pullboxes to edge of pavement) will not be paid for separately but shall be considered incidental to the various contract items.
- A solid #8 bare copper wire shall be pulled with the traffic signal control cable for equipment ground. Cost shall be incidental to the installation of the control cable.
- All Traffic signal controller equipment shall be completely wired in the cabinet and shall control the traffic signals as called for in the plans.
- The loop amplifier units furnished for this project shall be capable of operating the loop detector configurations shown on the plans. Cost for the loop amplifier shall be incidental to the installation of the loop detector.
- Should any defect be encountered during the warranty period, the manufacturer will be notified and he shall promptly correct such defect. Service call (by factory qualified representative) during the warranty period for repairs or other maintenance shall be answered within 24 hours and shall be done at no expense to the State. All repairs shall be done as soon as possible.
- All traffic signal work shall conform to the requirements of the "Manual On Uniform Traffic Control Devices For Streets And Highways", Federal Highway Administration (1988) and Amendments.
- Locations of traffic markings and markers (lane lines, Stop lines, crosswalk, etc.) shown on the plans shall be verified with the Engineer prior to the installation of the traffic signal system.
- All Conduits between pullboxes and Traffic Signal/Highway Lighting Standards shall not be paid for separately but shall be considered incidental to the various contract items.
- All Signal-Drop Cables (Type 5 Cables) from the various Types of Traffic Signal Head on the traffic signal standards and mast arms to the pullboxes shall not be paid for separately but considered incidental to the Traffic Signal Head.
- After installing all the traffic signal cables, the Contractor shall duct seal all conduits in the pullboxes, traffic signal standards and traffic signal controller cabinet concrete base. The duct seal material shall be approved by the Traffic Signal Inspector/Engineer and shall not be paid for separately but considered incidental to the direct buried and/or concrete encased conduits.
- After installing the Traffic Signal System, the Contractor shall apply grease to all parts of the Traffic Signal System (i.e. fittings, brackets, nipples, elbows, screws, signal head assemblies, bolts, hinges, etc.) as directed by the Traffic Signal Inspector, to prevent rust and corrosion. The grease material shall be approved by the Signal Inspector.
- Connecting into existing traffic signal system and making all necessary adjustments shall not be paid for separately, but considered incidental to the various traffic signal contract items.
- The Contractor shall notify the Traffic Control Branch, Department of Transportation Services, City & County of Honolulu, (Phone No. 768-8388) two weeks prior to commencing any work on the traffic signal system.

TRAFFIC SIGNAL LEGEND

NEW	EXISTING	
_____	-----	Traffic Signal Conduit
△ 1 △ 2 △ 3	△ 1 △ 2 △ 3	Conduit Run Numbers
(A) (B) (C)	(A) (B) (C)	Equipment description, installation or item no.
□ M	□ M	Traffic Signal Master Controller Door Indicates Front of Cabinet
□ C	□ C	Traffic Signal Controller Door Indicates Front of Cabinet
□ ○	□ ○	Meter Pedestal
←	←	12" RYG Traffic Signal Head
← ↑	← ↑	12" R ↑ Y ↑ G Traffic Signal Head
← ↑ ↓	← ↑ ↓	12" R ← Y ← G Traffic Signal Head
← ↑ ↓	← ↑ ↓	12" R ← Y ← G Traffic Signal Head (Programmed Visibility)
← ↑ ↓	← ↑ ↓	12" RYG ← G Fiber Optic Traffic Signal Head
△	△	Type I Standard and Attached Signals
△ 24' 12'	△ 24' 12'	Type II Standard with Signal Mast Arm and Attached Signals (Nos. indicates mast arm length & distance between signal heads as specified on plans)
△ 24' 12'	△ 24' 12'	Type III Standard with Luminaire and Signal Mast Arm and Attached Signals (Nos. indicates mast arm lengths & distance between signal heads as specified on plans)
Y	Y	Flashing Beacon, One Signal Section, "Y" indicates 12" Yellow Lens
⊗	⊗	Opticom Receiver (Arrow indicates direction detector faces)
•	•	Pipe Guard
□	□	Pedestrian Signal Head
□	□ t _{ap} b	Type A Pullbox
□	□ t _{ap} b	Type B Pullbox
□	□ t _{ap} b	Type C Pullbox
□ □	□ □	Loop Detector

HIGHWAY LIGHTING LEGEND

NEW	EXISTING	
— HL —	--- hl ---	Highway Lighting Conduit
■	□ hl	Type A Pullbox (Hwy. Ltg.)
●	○	Highway Lighting Standard

NEW TRAFFIC SIGNAL ASSEMBLY W/ LED SIGNAL LIGHTS & TRAFFIC SIGNAL BACK PLATE**		
STREET NAME/INTERSECTION	IN BOUND (IB)	OUT BOUND (OB)
Pupukea Road	2	2

** Replace existing mast arm mounted traffic signal head with new traffic signal head with LED optical units and traffic signal back plate.

ORIGINAL PLAN	DATE
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FILE	
REVISIONS	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

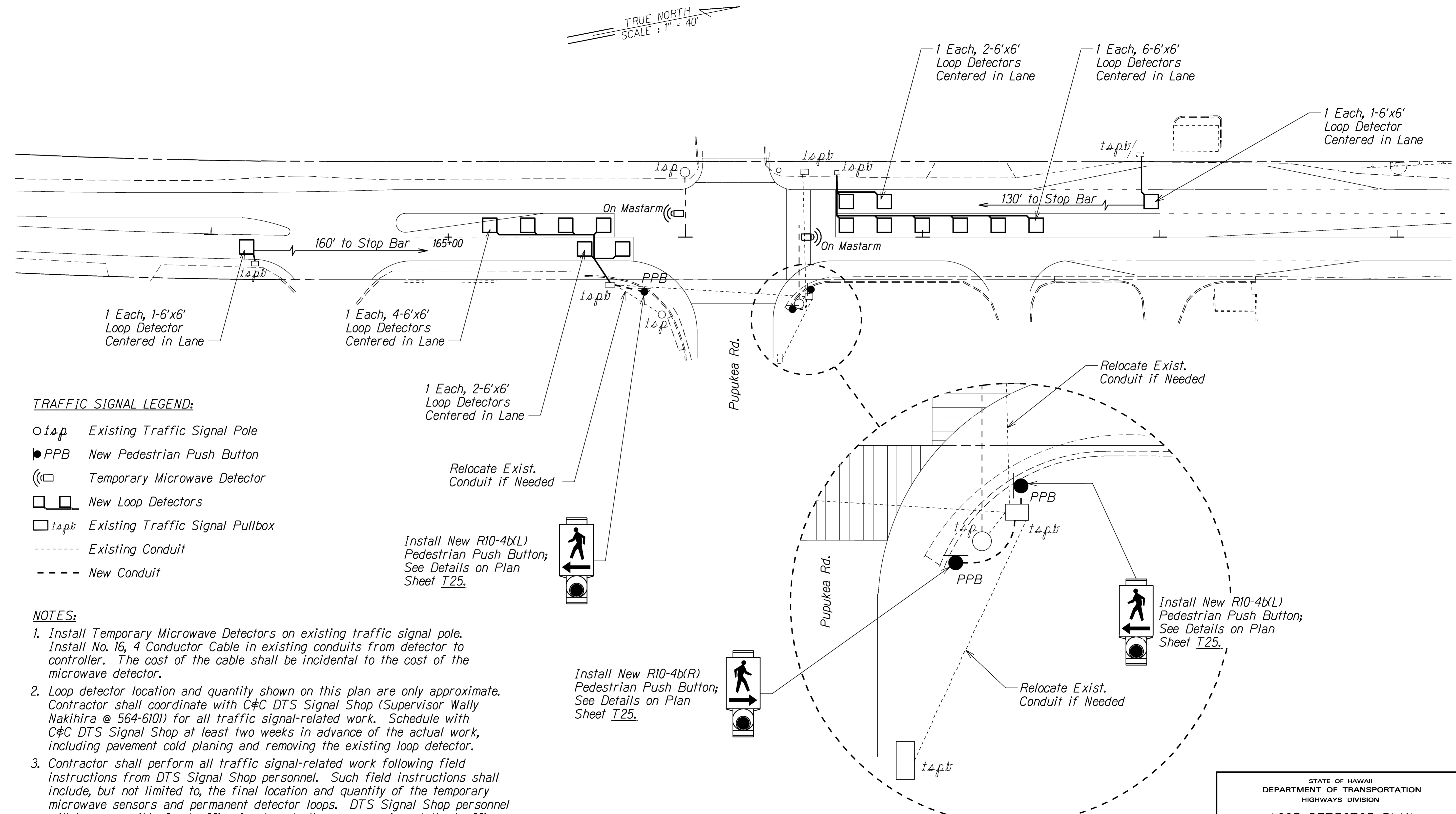
TRAFFIC SIGNAL NOTES AND LEGEND

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)

Scale: As Shown Date: June, 2020

SHEET No. T23 OF 26 SHEETS

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HAWAII	HAW.	NH-083-1(077)	2021	85	87



TRAFFIC SIGNAL LEGEND:

- *tsp* Existing Traffic Signal Pole
- PPB New Pedestrian Push Button
- Ⓜ Temporary Microwave Detector
- □ New Loop Detectors
- *tspb* Existing Traffic Signal Pullbox
- Existing Conduit
- New Conduit

NOTES:

1. Install Temporary Microwave Detectors on existing traffic signal pole. Install No. 16, 4 Conductor Cable in existing conduits from detector to controller. The cost of the cable shall be incidental to the cost of the microwave detector.
2. Loop detector location and quantity shown on this plan are only approximate. Contractor shall coordinate with C&C DTS Signal Shop (Supervisor Wally Nakhira @ 564-6101) for all traffic signal-related work. Schedule with C&C DTS Signal Shop at least two weeks in advance of the actual work, including pavement cold planing and removing the existing loop detector.
3. Contractor shall perform all traffic signal-related work following field instructions from DTS Signal Shop personnel. Such field instructions shall include, but not limited to, the final location and quantity of the temporary microwave sensors and permanent detector loops. DTS Signal Shop personnel will be responsible for traffic signal controller programming at the traffic signal cabinet to accommodate the temporary and permanent operations.
4. Contractor shall promptly take down and turn over the temporary microwave sensors to DTS when the permanent detector loops are in place and operational. Contractor shall perform all necessary work to restore traffic signal system back to a neat appearance of the electrical trade.

NOTE:

The costs and materials to relocate existing conduit(s) if needed will not be paid for separately and shall be considered incidental to the Traffic Signal Work.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

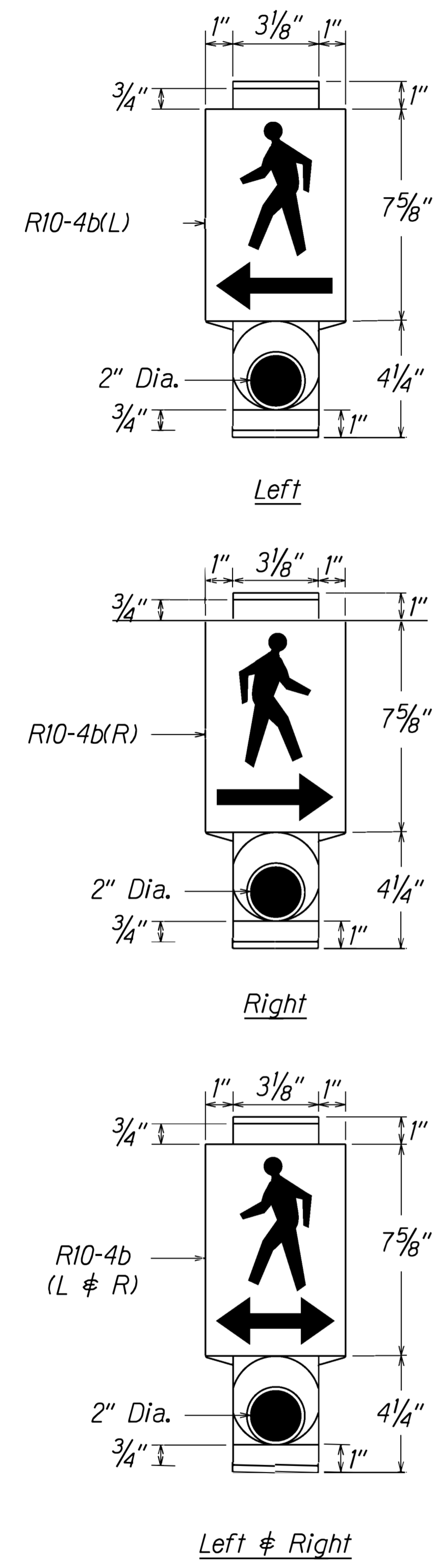
LOOP DETECTOR PLAN

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)

Scale: 1" = 20' Date: June, 2020

SHEET No. T24 OF 26 SHEETS

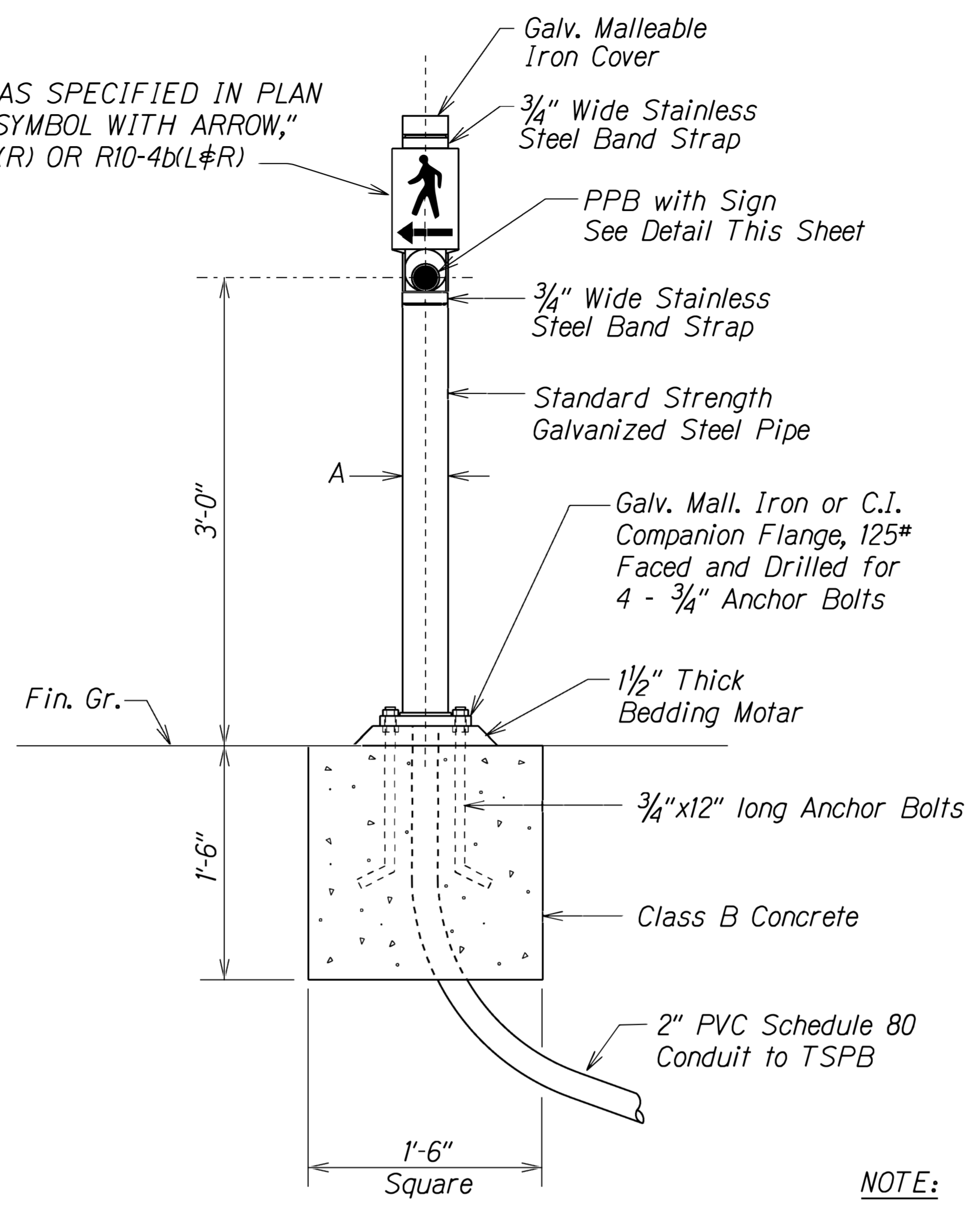
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(077)	2021	86	87



PEDESTRIAN PUSH BUTTON WITH SIGN

Man, Arrow & Push Button - White
Background - Black

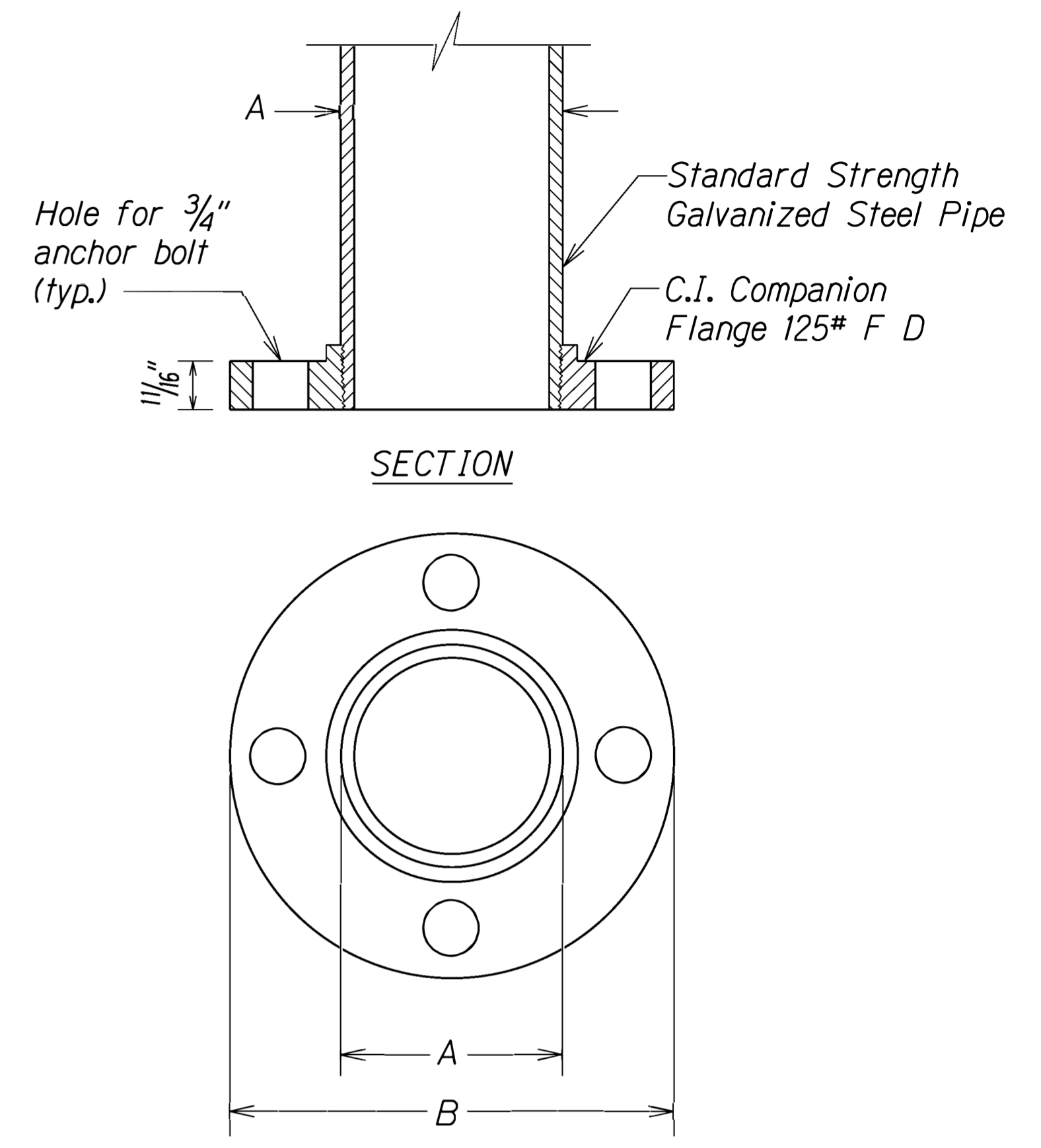
TRAFFIC SIGN AS SPECIFIED IN PLAN
"WALKING MAN SYMBOL WITH ARROW,"
R10-4b(L), R10-4b(R) OR R10-4b(L&R)



PPB POST AND FOOTING DETAIL

DATA TABLE FOR PPB POST		
AMOUNT OF PPB	DIMENSIONS	
	A	B
1	3 1/2"	8"
2-3	4 1/2"	9"

- NOTE:**
1. Conduits shall protrude 2" max. above finished surface of foundation.
 2. Conduits shall slope away from post foundation.

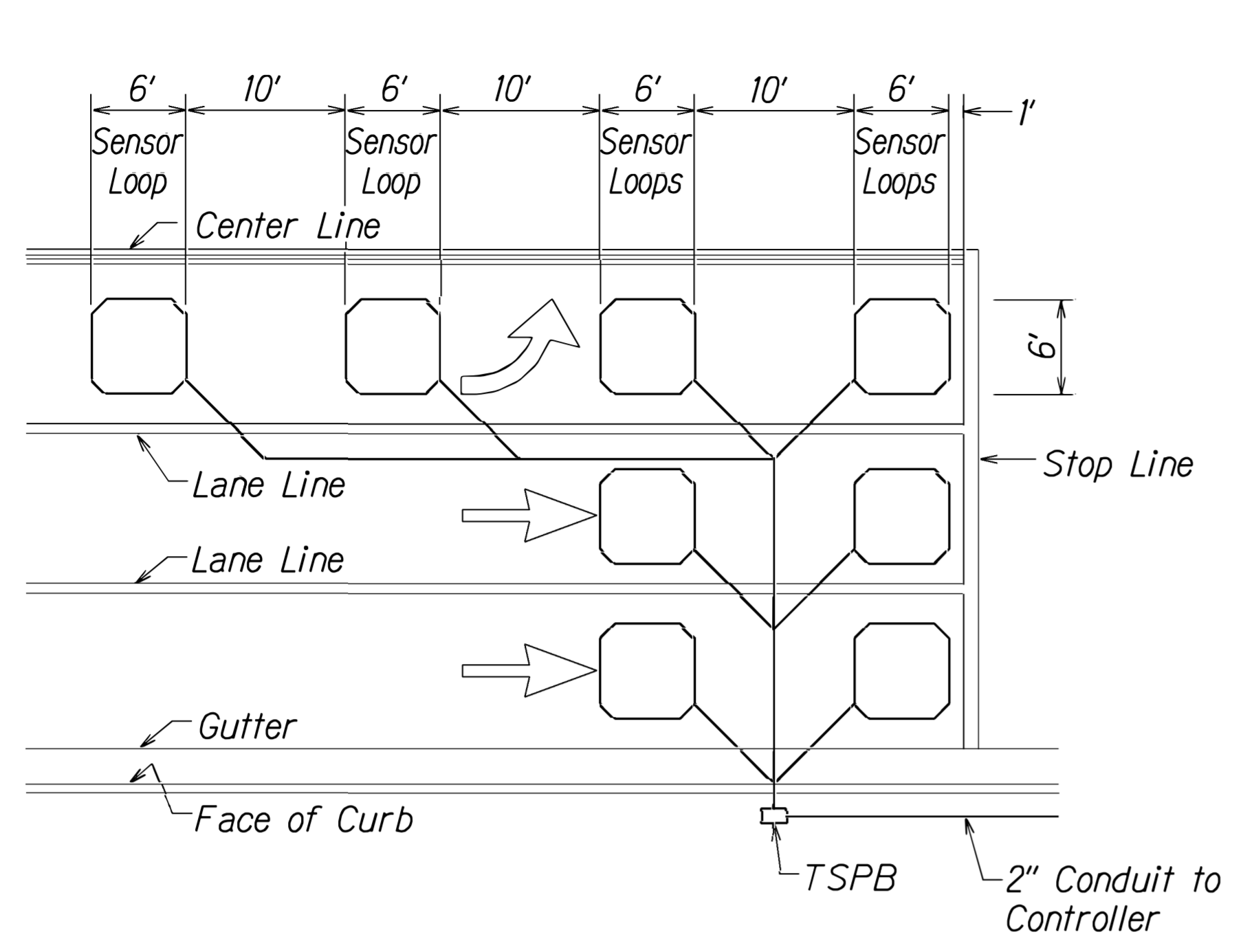


SECTION
TOP VIEW
FLANGE DETAIL

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NOTE BOOK	
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4/20/2020	

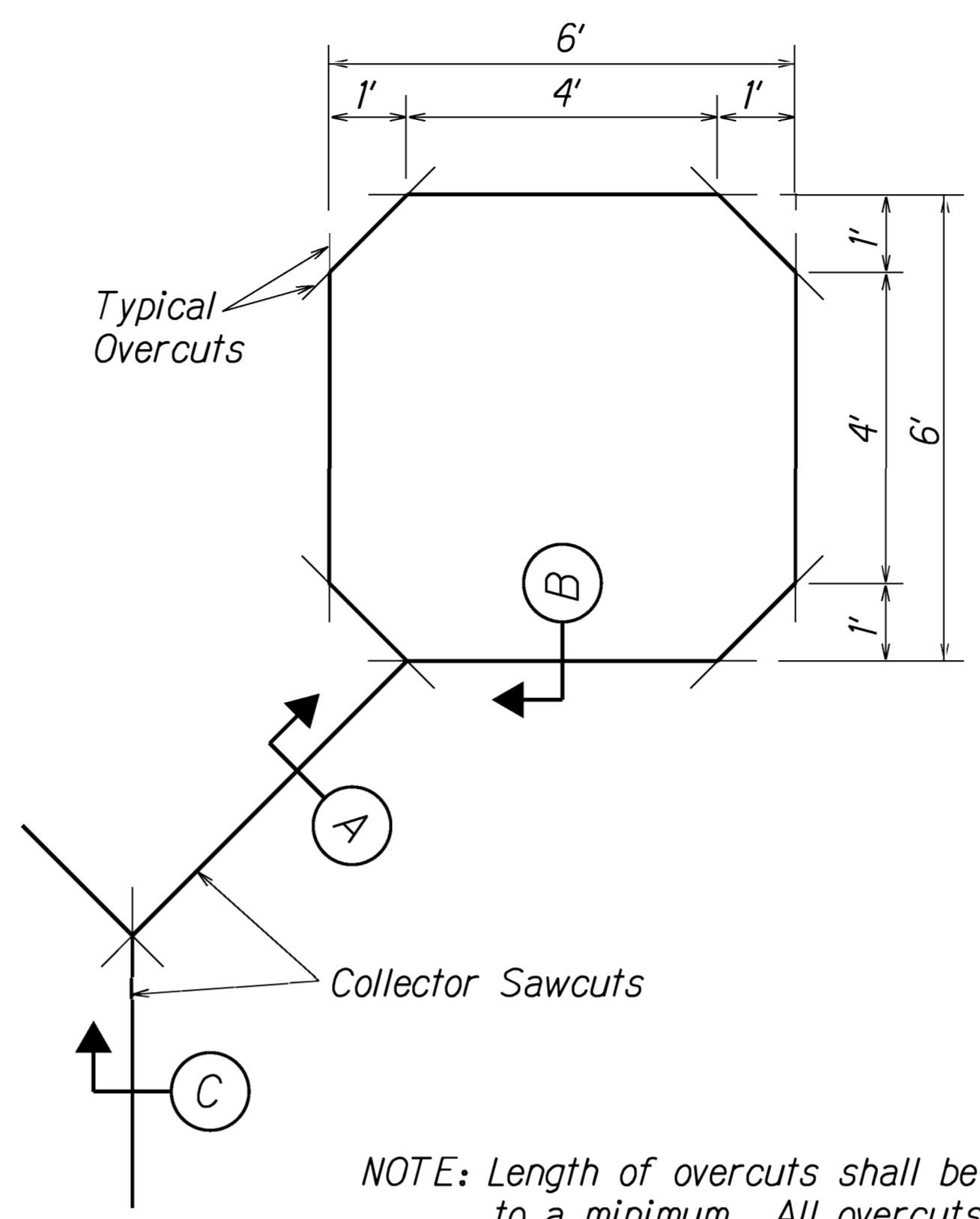
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC SIGNAL SYSTEM
PEDESTRIAN PUSHBUTTON DETAILS
KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal Aid Project No. NH-083-1(77)
Scale: As Shown Date: June, 2020
SHEET No. T25 OF 26 SHEETS

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HAWAII	HAW.	NH-083-1(077)	2021	87	87

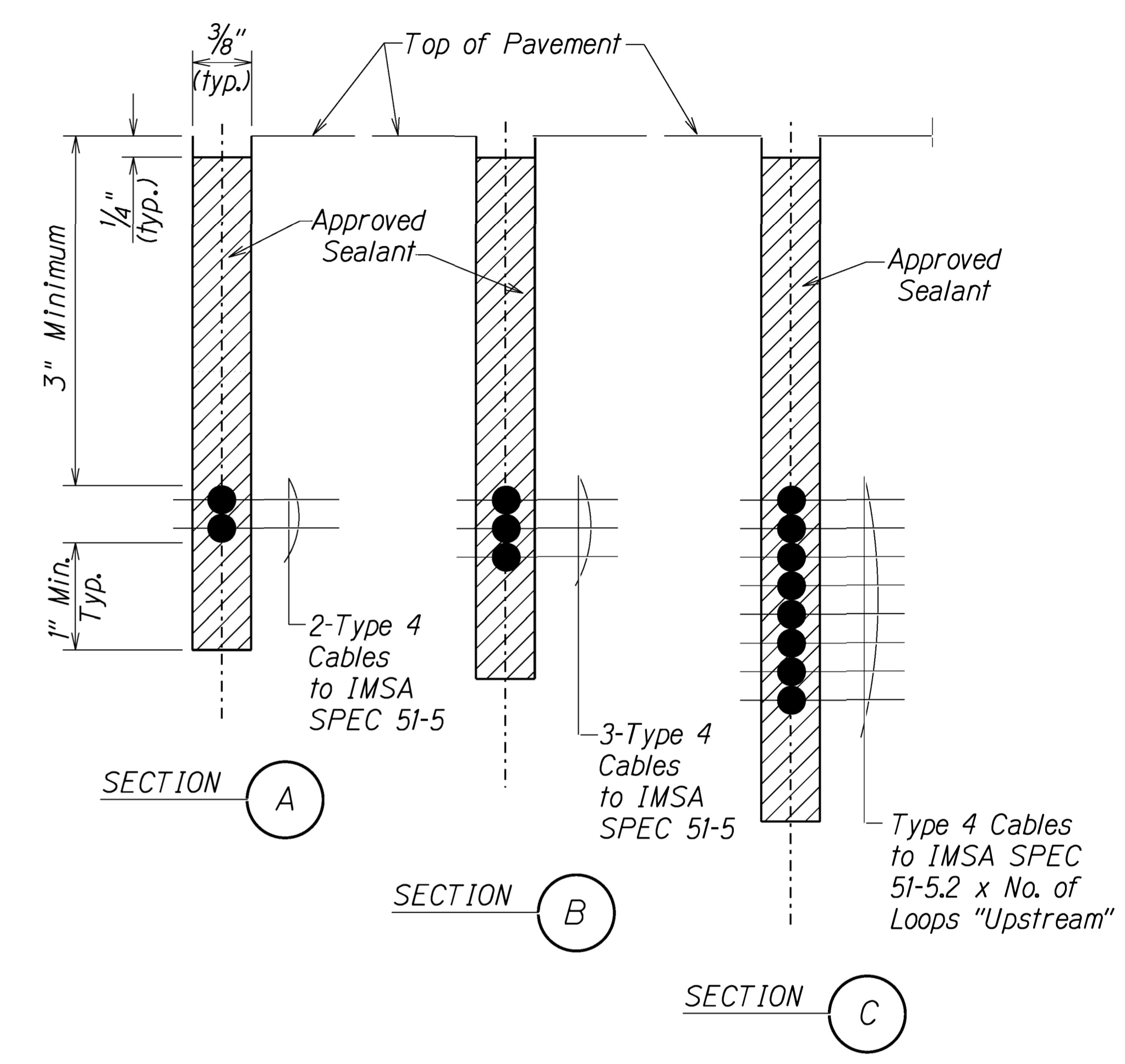


- NOTES:**
1. Center sensor loops in lanes.
 2. Collector cables shall be twisted 2 turns per foot.
 3. Number of loops and locations vary. See project plans.
 4. Number and locations of collector sawcuts may be varied in the field to suit.

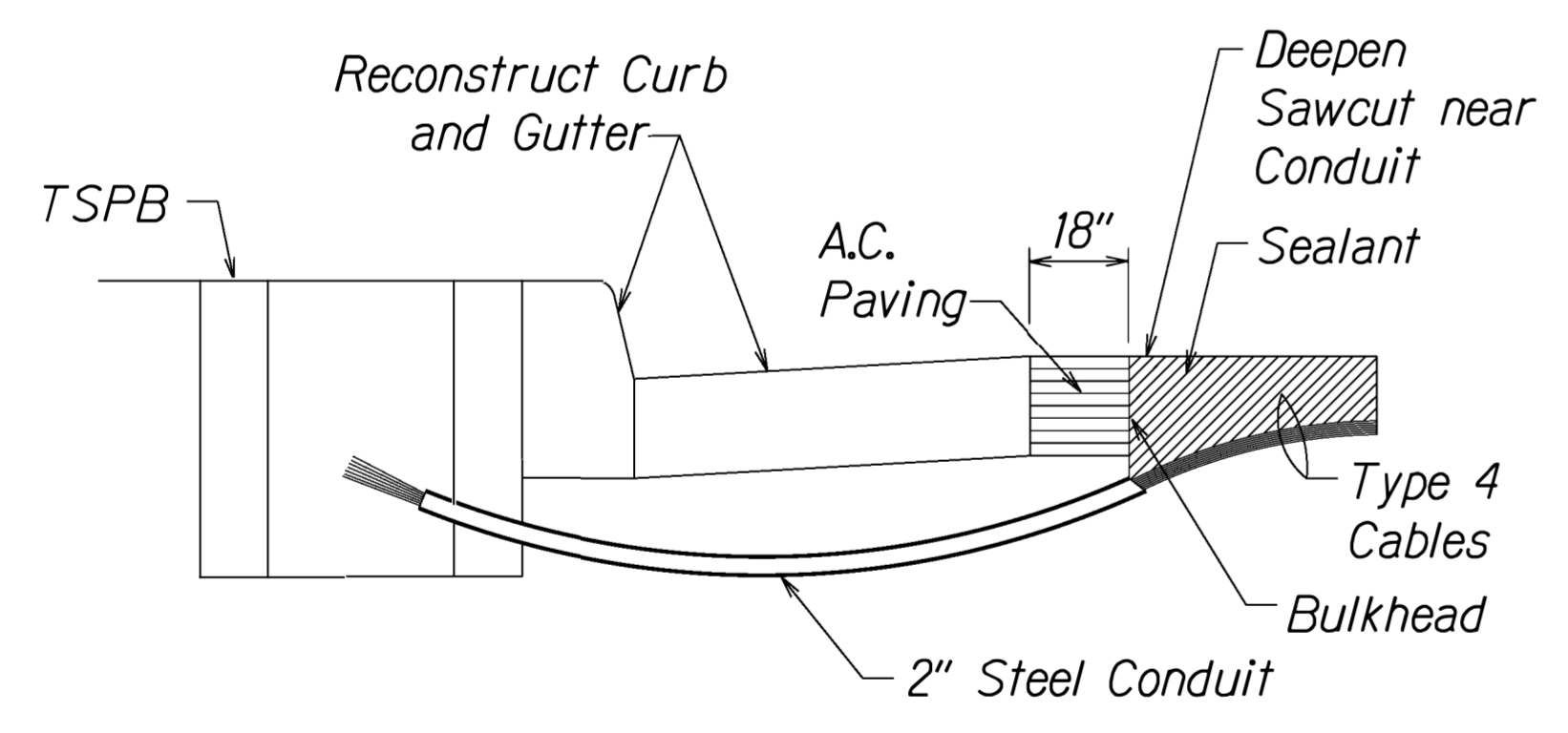
TYPICAL SENSOR LOOP LAYOUT



TYPICAL SENSOR LOOP SAWCUT DETAIL

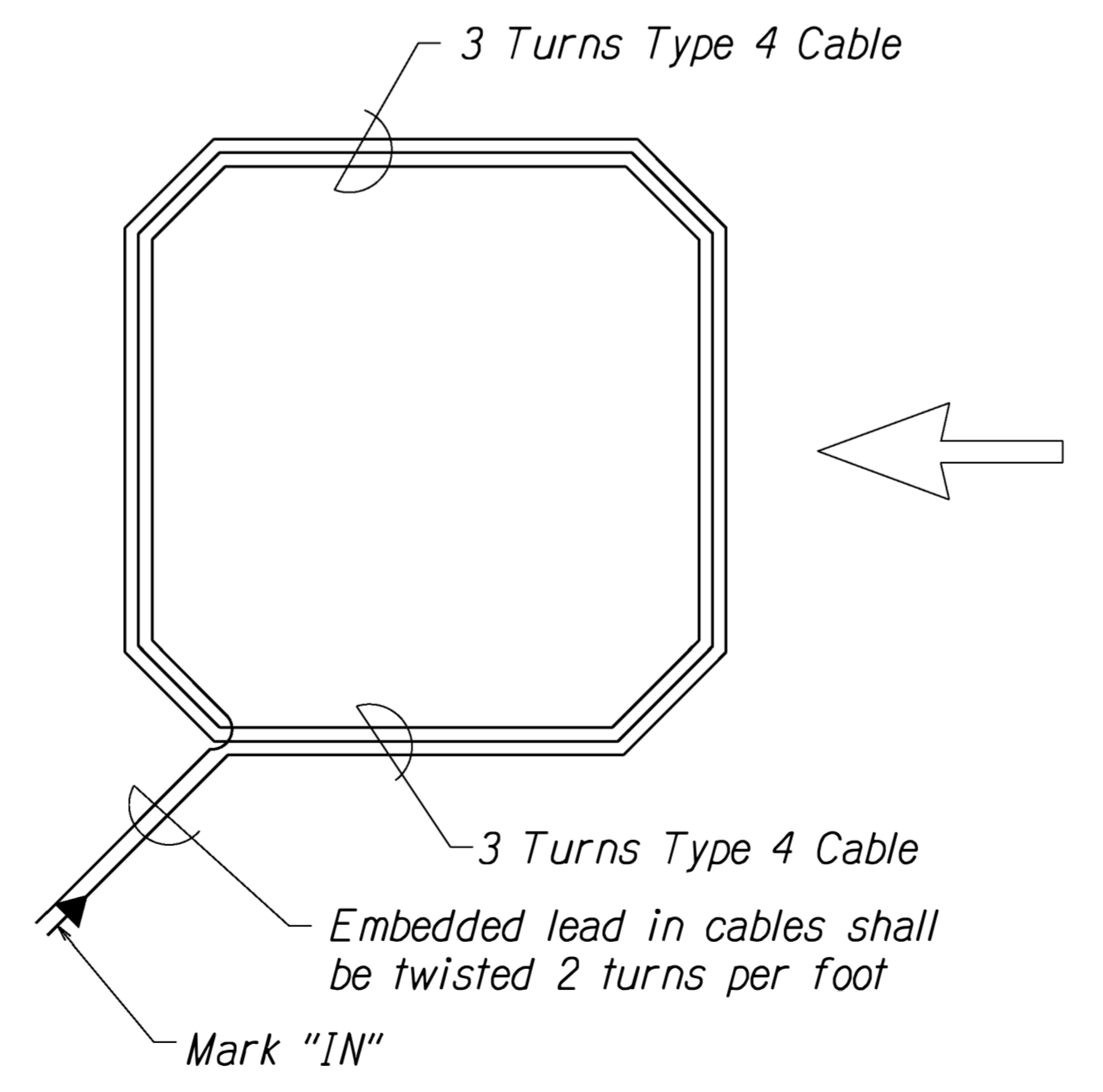


TYPICAL SECTION THROUGH SENSOR LOOP
Not to Scale



- NOTES ON CONSTRUCTION AT END OF SAWCUT**
1. Seal roadway end of conduit after installation of conductors.
 2. Install bulkhead across conduit trench.
 3. Place hot tar in sawcut.
 4. Backfill over conduit with new A.C.
 5. Reconstruct curb and gutter as required.

DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY



TYPICAL SENSOR LOOP WIRING DIAGRAM
Not to Scale

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOOP DETECTOR DETAILS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Dairy Road
Federal-Aid Project No. NH-083-1(77)

Scale: 1" = 40' Date: June, 2020

SHEET No. T26 OF 26 SHEETS