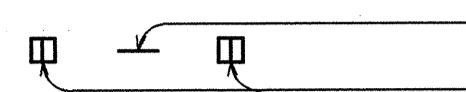
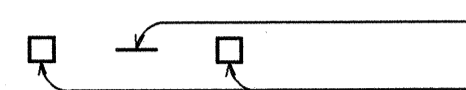



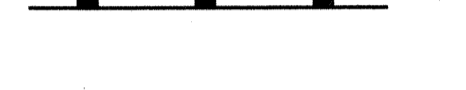
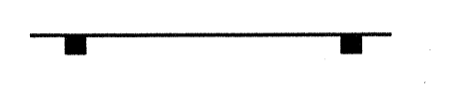




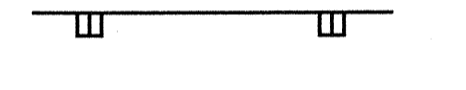
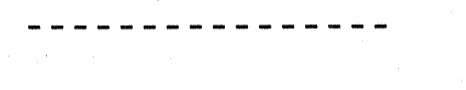
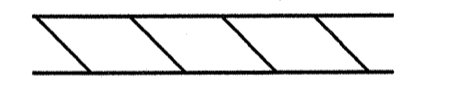



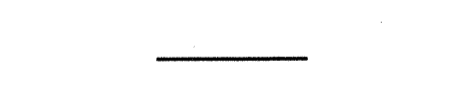


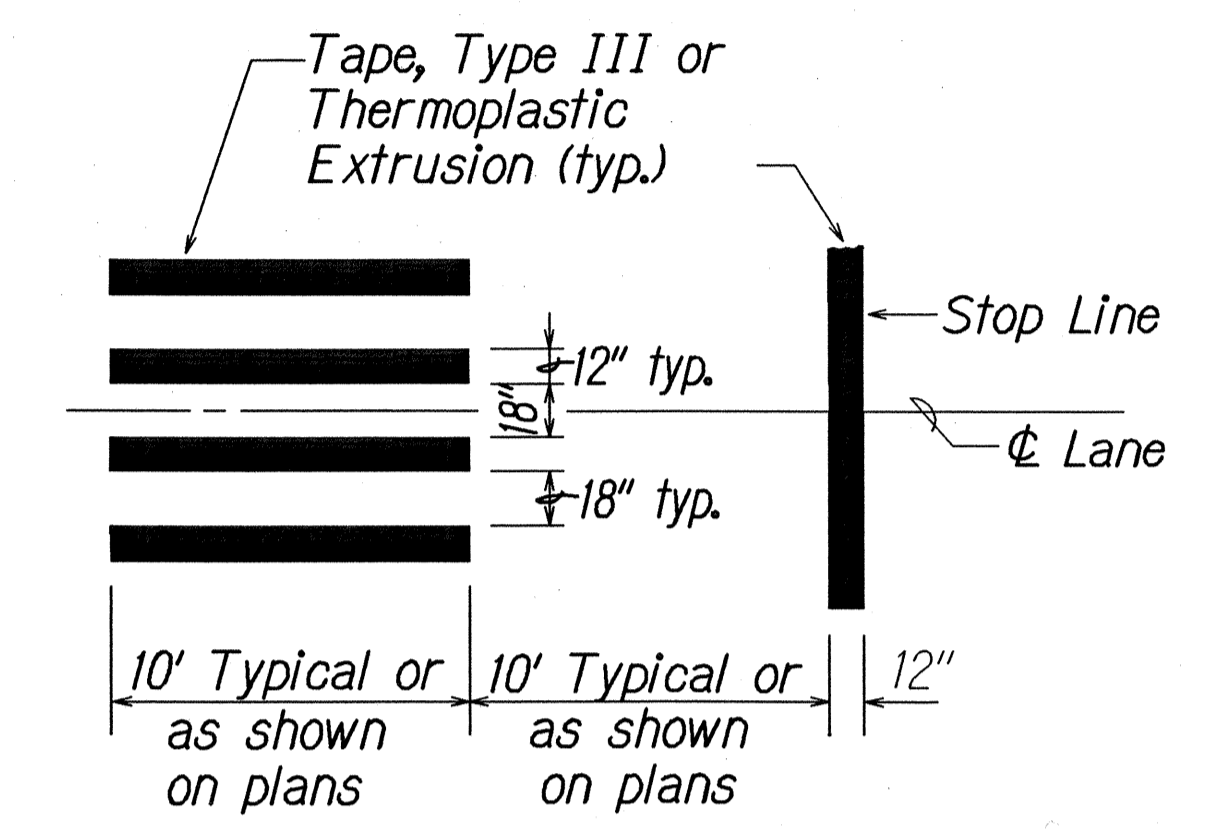
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	23	32

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)

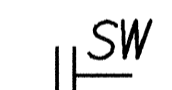
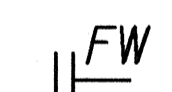
NOTES

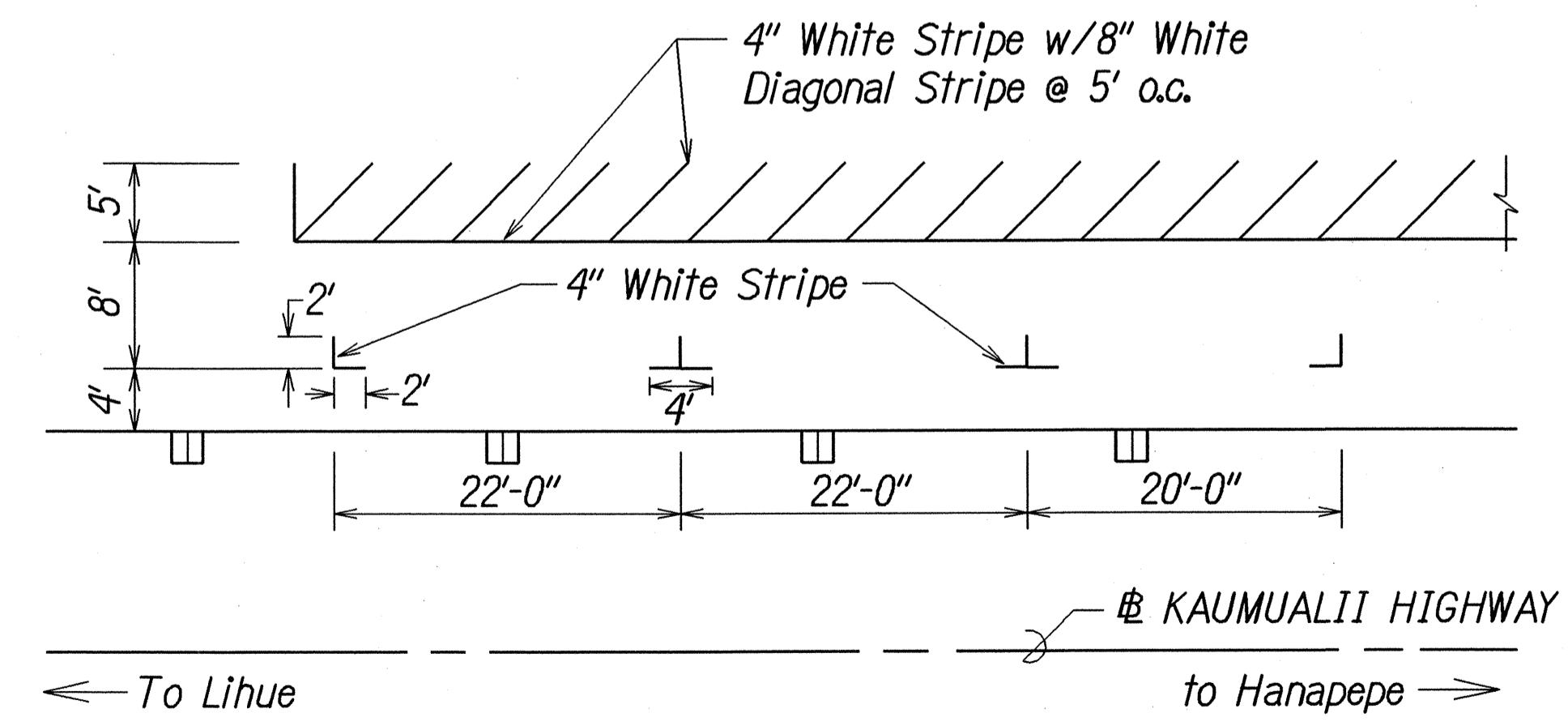
1. Layout of pavement markings and striping shall be done by the Contractor and approved by the Engineer prior to any installation work.
2. Existing pavement markings not incorporated in the final traffic pattern shall be removed as directed by the Engineer. Costs shall be incidental to the various pavement 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 and school warning signs with supplemental sign shall be on a fluorescent yellow-green retroreflective background with a black legend and border.
10. Install Type II Object Marker on all utility poles or trees that are within the State Highway right-of-way and within 30 feet of the roadway edge of pavement as directed by the Engineer.



CROSSWALK STRIPING DETAIL
Not to Scale

LEGEND:

-  SW Reflector Marker (RM-2, White) w/ steel post
-  FW Reflector Marker (RM-2, White) w/ flexible post



TYPICAL PARKING STALL DETAIL
@ STA. 5+30± TO 5+94± LT.
Not to Scale

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

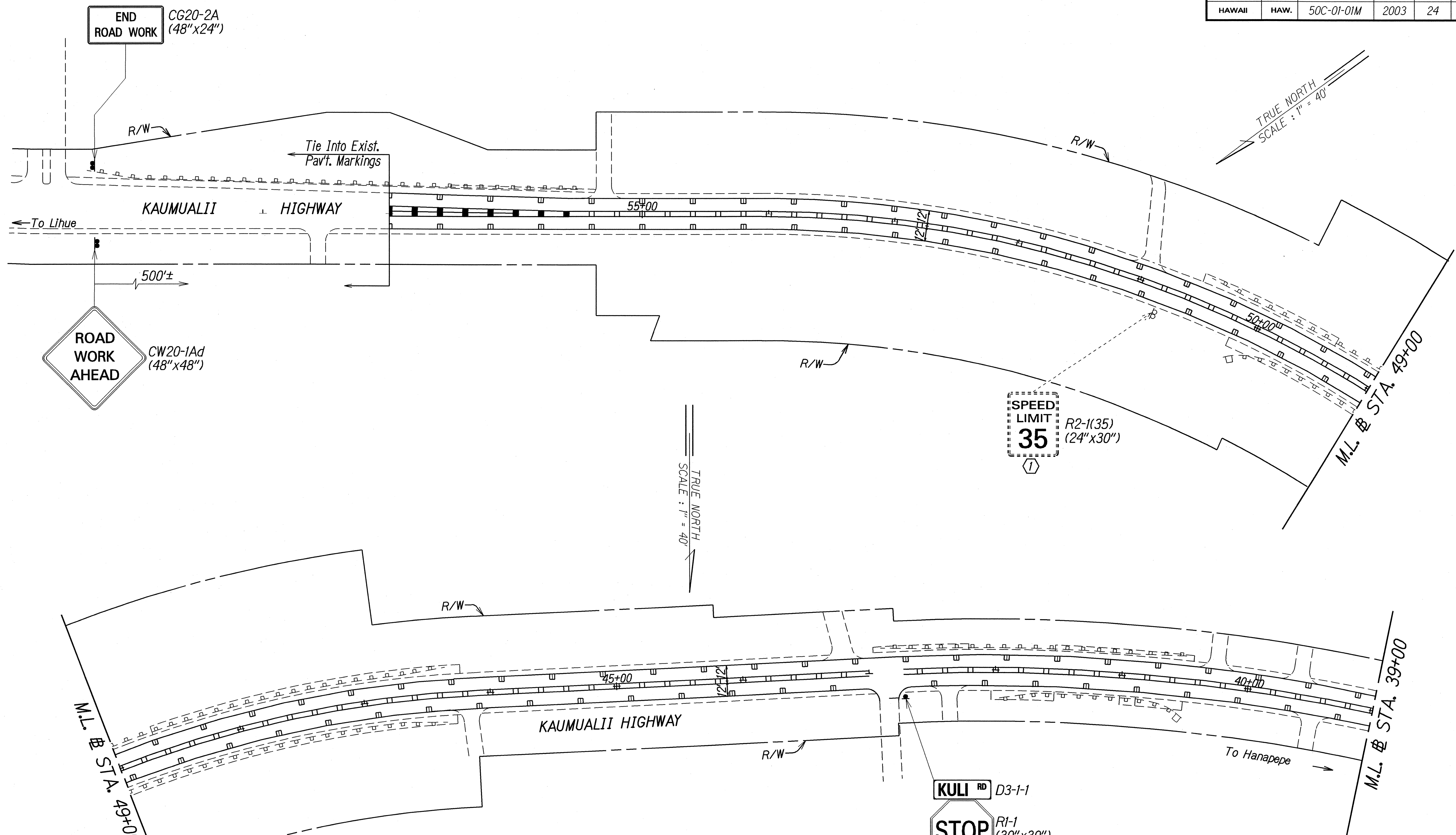
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PAVEMENT MARKING
LEGEND, DETAILS & NOTES**

KAUMUALII HIGHWAY RESURFACING
Lawai Bridge to Halewili Road, Kalaheo
Project No. 50C-01-01M

Scale: As Shown Date: March 2003
SHEET No. 71 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	24	32



- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
 - ③ Install New Sign(s) w/Post(s)
 - ④ Remove Exist. Sign(s) and Reinstall on New Post
 - ⑤ Install New Sign on Exist. Post

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
102/may	
14	

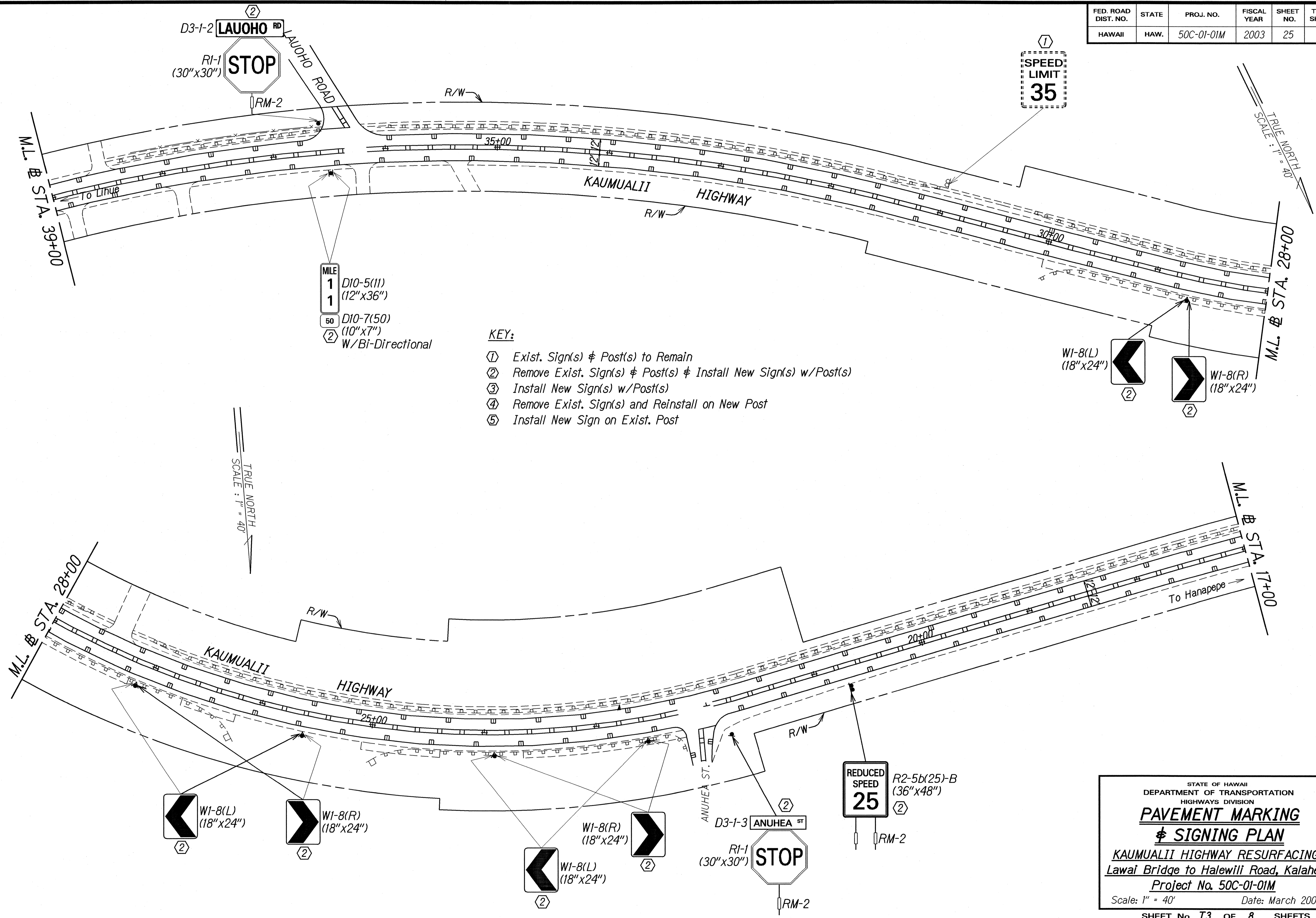
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PAVEMENT MARKING
& SIGNING PLAN**

KAUMUALII HIGHWAY RESURFACING
Lawai Bridge to Halewili Road, Kalaheo
Project No. 50C-01-01M
Scale: 1" = 40' Date: March 2003

SHEET No. T2 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	25	32



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PAVEMENT MARKING
& SIGNING PLAN**

**KAUMUALII HIGHWAY RESURFACING
Lawai Bridge to Halewili Road, Kalaheo**

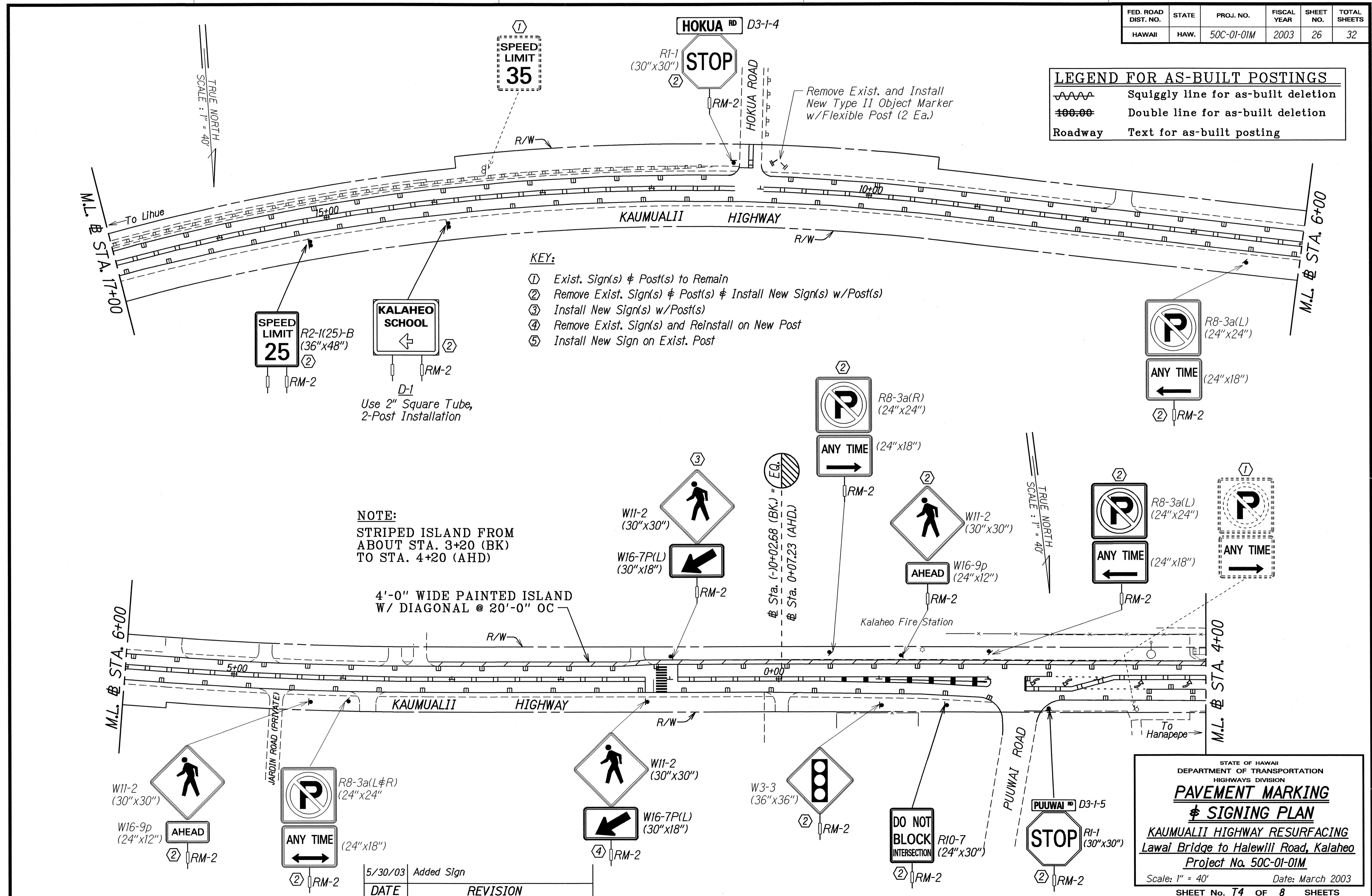
Project No. 50C-01-01M

Scale: 1" = 40' Date: March 2003

SHEET No. T3 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	26	32

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting



- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
 - ③ Install New Sign(s) w/Post(s)
 - ④ Remove Exist. Sign(s) and Reinstall on New Post
 - ⑤ Install New Sign on Exist. Post

NOTE:
 STRIPED ISLAND FROM ABOUT STA. 3+20 (BK) TO STA. 4+20 (AHD)

4'-0" WIDE PAINTED ISLAND W/ DIAGONAL @ 20'-0" OC

DATE	REVISION
5/30/03	Added Sign

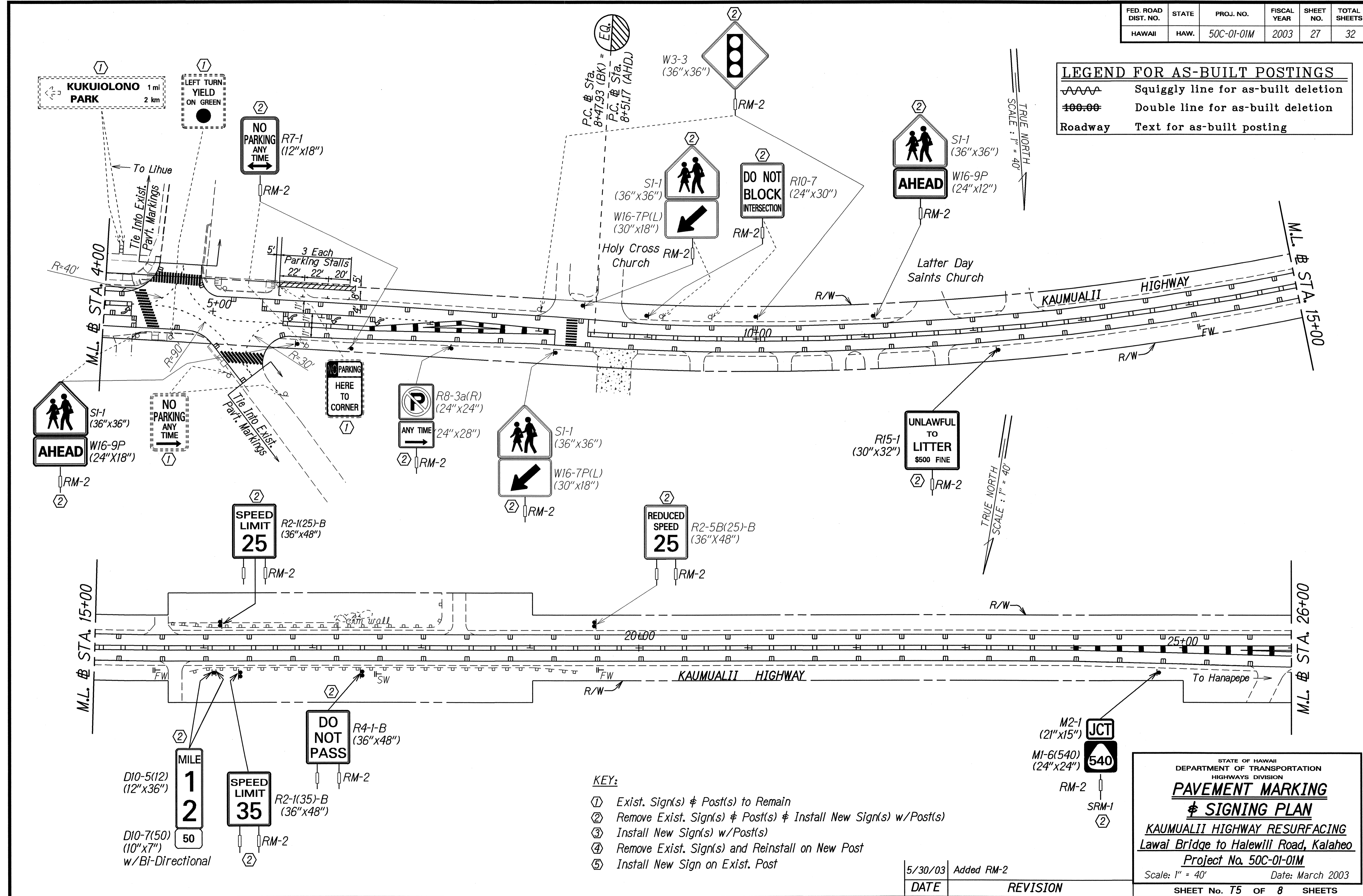
SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
PAVEMENT MARKING
 & **SIGNING PLAN**
KAUNUALII HIGHWAY RESURFACING
 Lawai Bridge to Halewill Road, Kalaheo
 Project No. 50C-01-01M
 Scale: 1" = 40' Date: March 2003
 SHEET No. 74 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	27	32

LEGEND FOR AS-BUILT POSTINGS

- Squiggly line for as-built deletion
- Double line for as-built deletion
- Roadway Text for as-built posting



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

- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
 - ③ Install New Sign(s) w/Post(s)
 - ④ Remove Exist. Sign(s) and Reinstall on New Post
 - ⑤ Install New Sign on Exist. Post

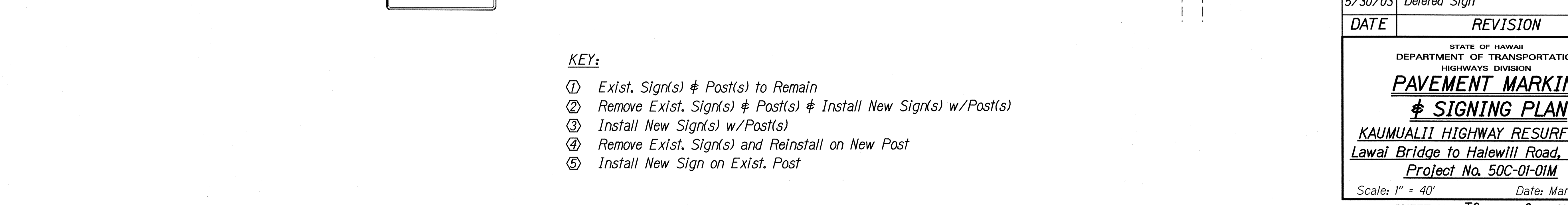
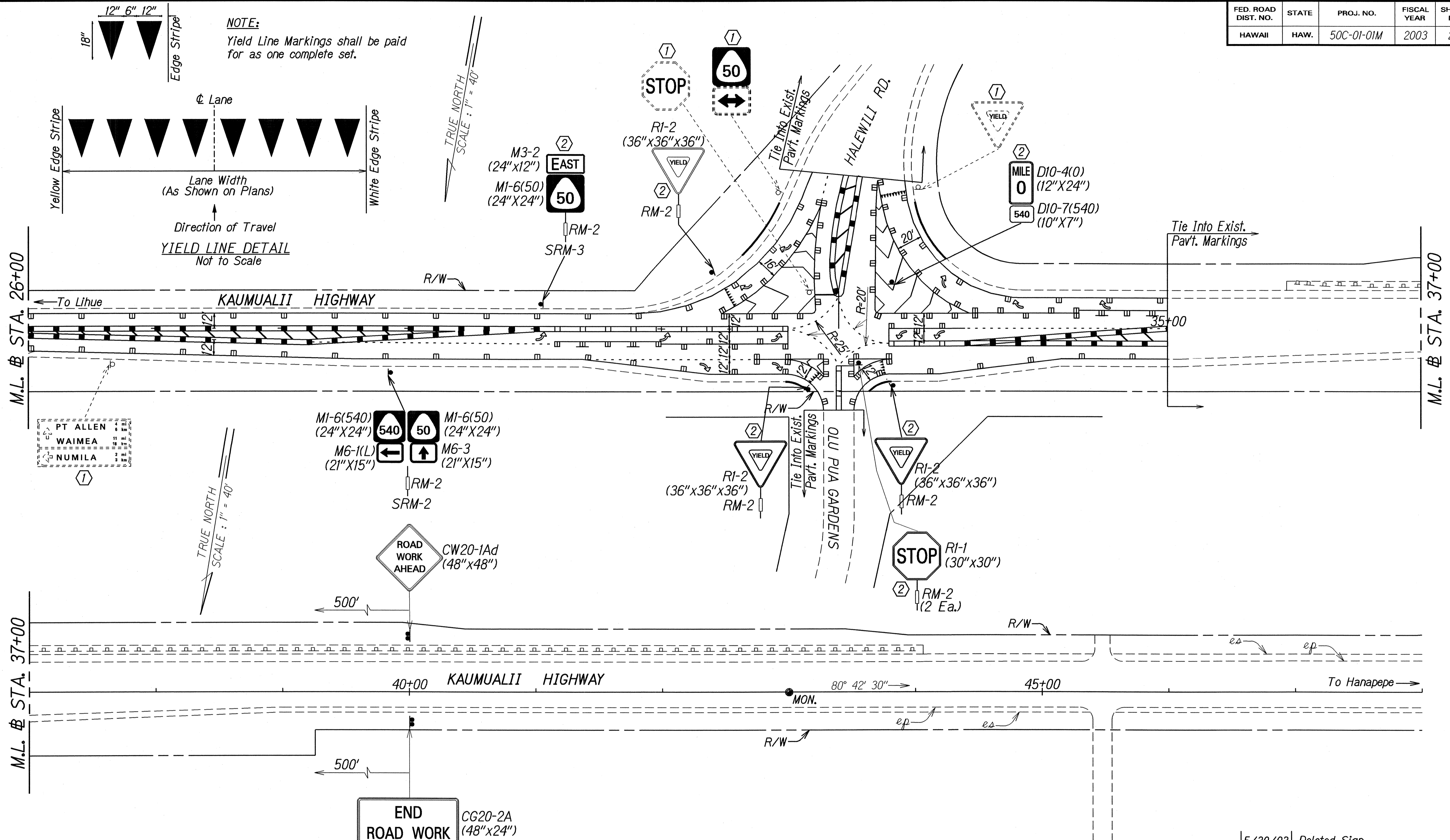
DATE	REVISION
5/30/03	Added RM-2

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

KAUMUALII HIGHWAY RESURFACING
Lawai Bridge to Halewili Road, Kalaheo
Project No. 50C-01-01M
Scale: 1" = 40' Date: March 2003
SHEET No. 75 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	28	32

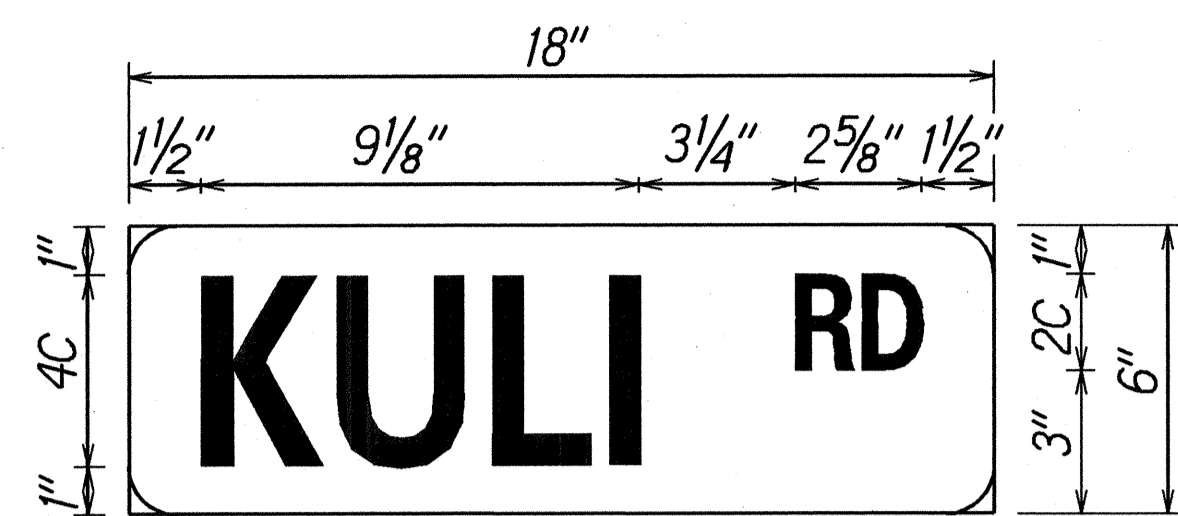


SURVEY PLOTTED BY	DATE
DRAWN BY M. Takafuji	
TRACED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

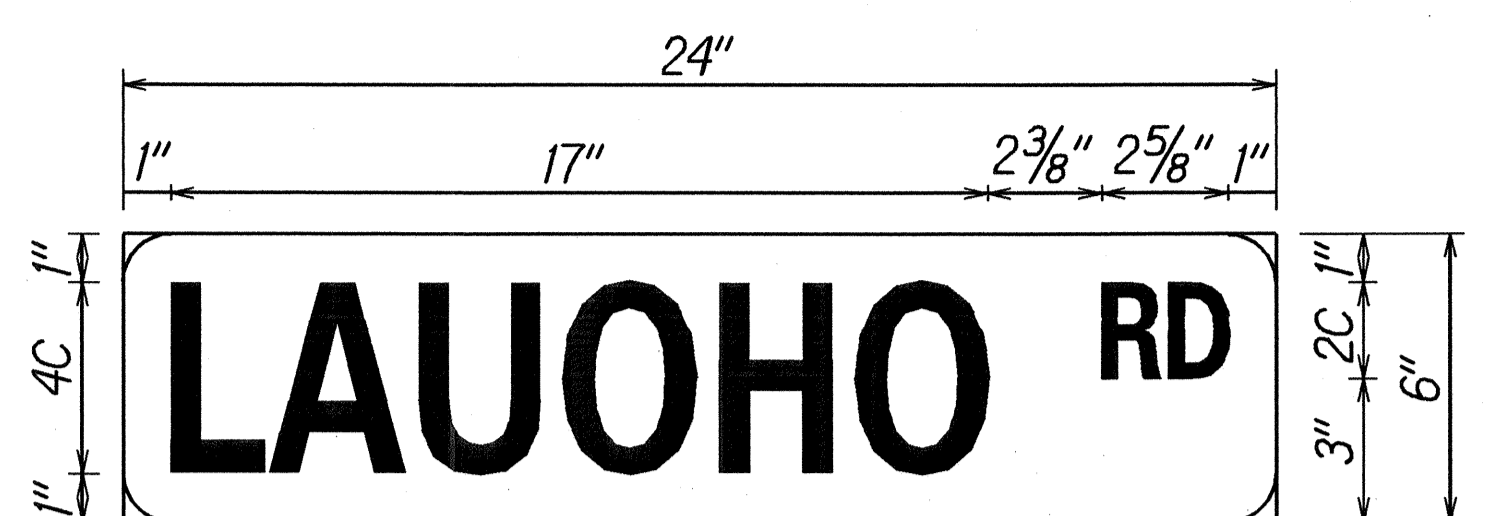
- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
 - ③ Install New Sign(s) w/Post(s)
 - ④ Remove Exist. Sign(s) and Reinstall on New Post
 - ⑤ Install New Sign on Exist. Post

5/30/03	Deleted Sign
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PAVEMENT MARKING	
& SIGNING PLAN	
KAUMUALII HIGHWAY RESURFACING Lawai Bridge to Halewili Road, Kalaheo Project No. 50C-01-01M	
Scale: 1" = 40'	Date: March 2003
SHEET No. T6 OF 8 SHEETS	

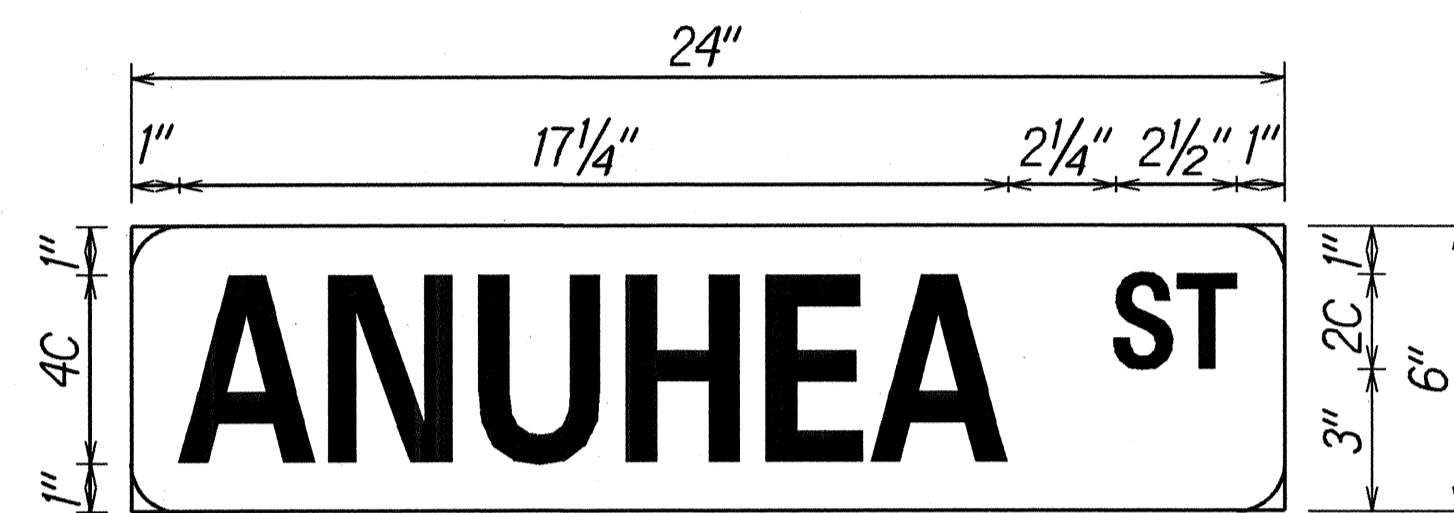
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	29	32



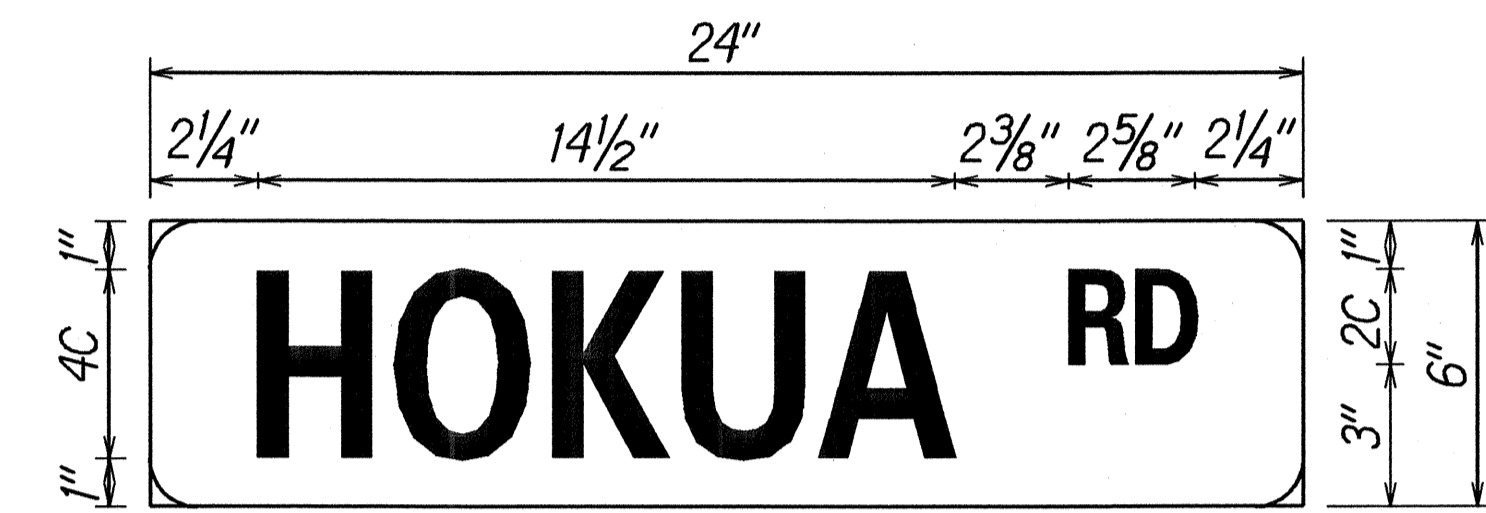
D3-1-1
Sta. 42+70 Rt.



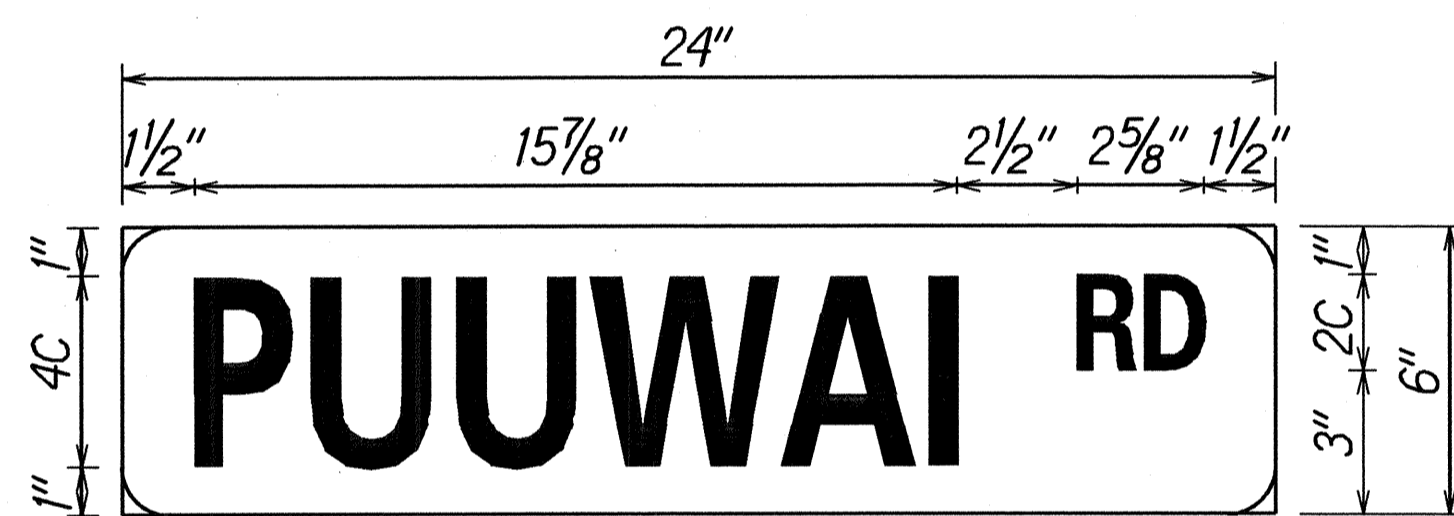
D3-1-2
Sta. 36+40 Lt.



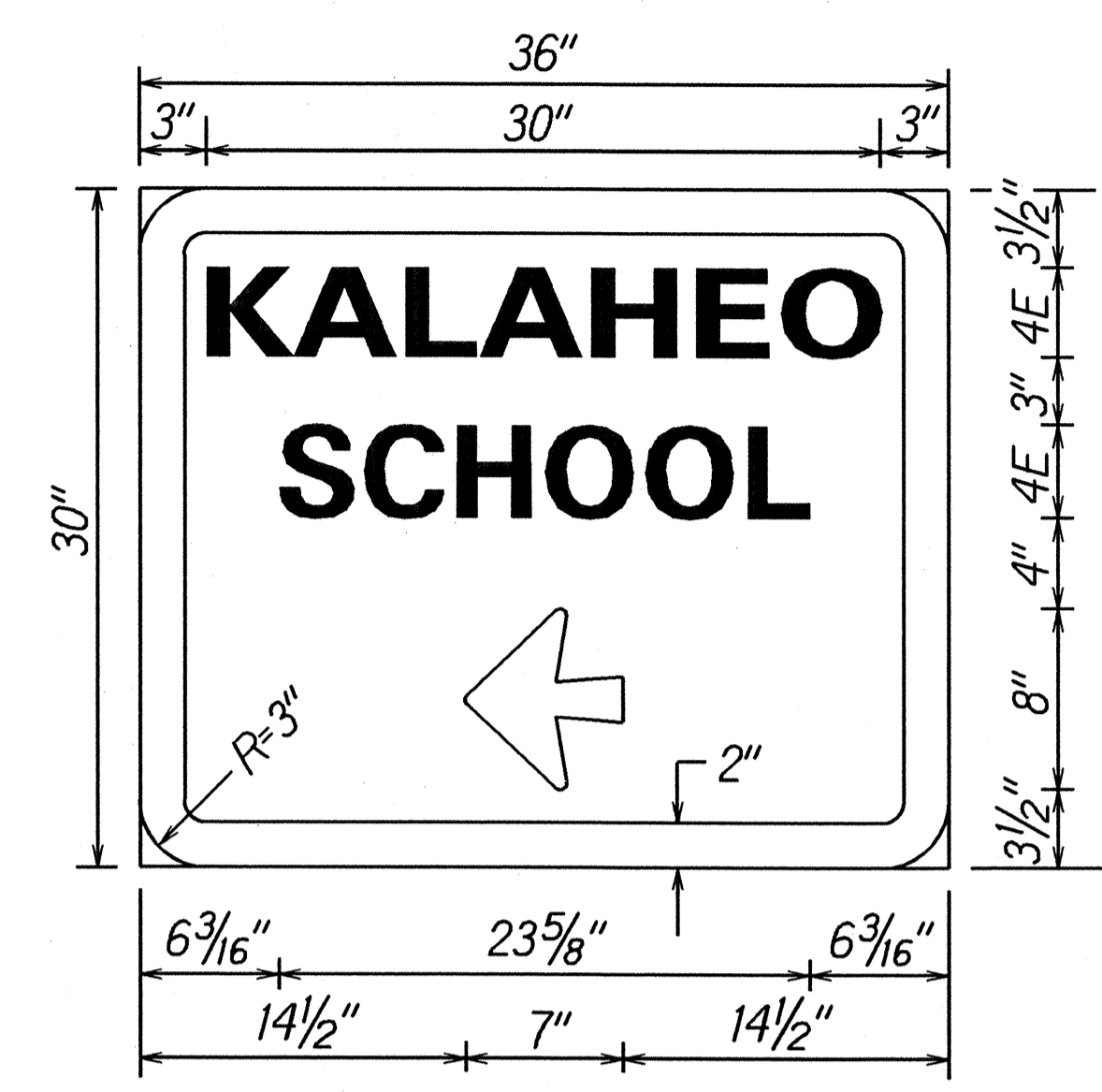
D3-1-3
Sta. 21+85 Rt.



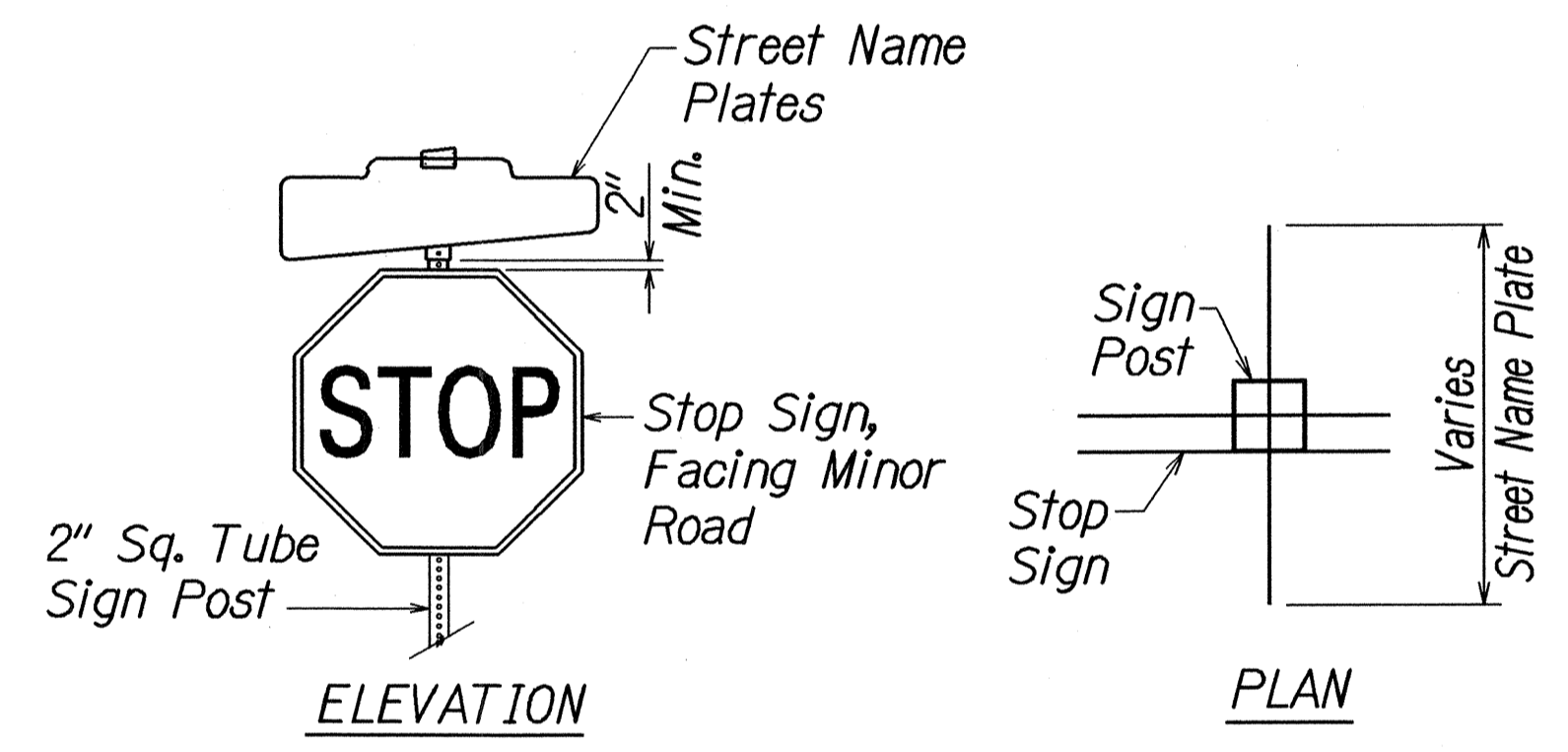
D3-1-4
Sta. 11+25 Lt.



D3-1-5
Sta. 2+60 Rt.



D-1
Sta. 13+90 Rt.



STREET NAME AND STOP SIGN DETAILS

NOTES:

- Contractor shall provide the same message on the front and back side of the sign. Payment will not be made separately but shall be considered as one unit.
- All street name signs shall be mounted on the stop sign post unless otherwise as noted on the plans.
- The accepted quantities of street name signs will be paid for at the contract unit price per each, complete in place. The contract unit price paid shall be full compensation for all necessary hardware, equipment, tools, labor, materials, and other incidentals for the installation of the new sign brackets.
- Reflective sheeting shall be Scotchlite reflective sheating No. 3277, green, wide angle, flat top or approved equal. Letters shall be 4" silver Scotchlite No. 3270 or No. 2270, or approved equal.
- Removing and reinstalling existing Street Name Signs on Regulatory and Warning Sign Post shall not be paid for separately but shall be considered incidental to the various signing items.

DESTINATION SIGN

- All signs shall conform to Section 621 of the Special Provisions and the latest edition amendments of the following FHWA publications:
 - "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD)
 - "Standard Highway Signs"
 - "Standard Alphabets for Highway Signs"
- Borders, messages, arrows, symbols and shield conform to details as shown on the plans and as specified in the MUTCD.
- Sign messages shall be as indicated on the plans.
- All panels shall be reflectorized in accordance with Section 712.20 of the Standard Specifications.
- The height and lateral location of signs shall conform to details as shown in Std. Plan TE-01.

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
TRACED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET NAME & DESTINATION

SIGN LAYOUT & DETAILS

KAUMUALII HIGHWAY RESURFACING
Lawai Bridge to Halewili Road, Kalaheo
Project No. 50C-01-01M

Scale: As Shown Date: March 2003

PAVEMENT MARKING SUMMARY	
DESCRIPTION	QUANTITY
PAVEMENT MARKERS	
TYPE A _____	16 EA.
TYPE C _____	520 EA.
TYPE D _____	370 EA.
TYPE H _____	130 EA.
TAPE - TYPE I OR THERMOPLASTIC EXTRUSION	
4-INCH PAVEMENT STRIPE (WHITE) _____	80 L.F.
8-INCH PAVEMENT STRIPE (WHITE) _____	370 L.F.
DOUBLE 4-INCH PAVEMENT STRIPE (YELLOW) _____	7,400 L.F.
TAPE - TYPE II OR THERMOPLASTIC EXTRUSION	
4-INCH PAVEMENT STRIPE (WHITE) _____	17,300 L.F.
8-INCH PAVEMENT STRIPE (WHITE) _____	850 L.F.
12-INCH PAVEMENT STRIPE (WHITE) _____	350 L.F.
12-INCH PAVEMENT STRIPE (YELLOW) _____	290 L.F.
DOUBLE 4-INCH PAVEMENT STRIPE (YELLOW) _____	2,400 L.F.
TAPE - TYPE III OR THERMOPLASTIC EXTRUSION	
4-INCH PAVEMENT STRIPE (WHITE) _____	440 L.F.
4-INCH PAVEMENT STRIPE (YELLOW) _____	860 L.F.
12-INCH PAVEMENT STRIPE (WHITE) _____	270 L.F.
CROSSWALK MARKINGS _____	12 LANES
PAVEMENT ARROW _____	20 EA.
PAVEMENT SYMBOL (SHARK'S TEETH MARKING) (WHITE) _____	4 EA.

TRAFFIC SIGN SUMMARY					
SIGN NO.	MESSAGE	QUANTITY			
		10 SQ. FT. OR LESS		GREATER THAN 10 SQ. FT.	
		W/POST	W/O POST	W/POSTS	W/O POSTS
R1-1	STOP	6			
R1-2	YIELD	3			
R2-1(25)-B	SPEED LIMIT 25			2	
R2-1(35)-B	SPEED LIMIT 35			1	
R2-5b(25)-B	REDUCED SPEED 25			2	
R4-1-B	DO NOT PASS			1	
R7-1	NO PARKING ANYTIME \longleftrightarrow	1			
R8-3a(L)		2			
R8-3a(R)		2			
R8-3a(L&R)		1			
R10-7	DO NOT BLOCK INTERSECTION	2			
R15-1	UNLAWFUL TO LITTER \$500 FINE	1			
W1-8(L)		5			
W1-8(R)			5		
W3-3		2			
W11-2		4			
W16-7P(L)			4		
W16-9P			4		
S1-1		4			
TOTAL		33	13	6	

ROUTE MARKER SUMMARY							
SIGN ASSEMBLY	LOCATION	SIGN NO. AND MESSAGE	TYPE A ASSEMBLY		TYPE B ASSEMBLY		
			W/POST	W/O POST	W/POST	W/O POST	
SRM-1	# STA. 24+80 RT.	M2-1 JCT	1				
		M1-6(540) 540					
SRM-2	# STA. 28+80 RT.	M1-6(540) 540					
		M6-1(L) ←					
		M1-6(50) 50					
SRM-3	# STA. 30+00 LT.	M6-3 ↑					
		M3-2 EAST					
		M1-6(50) 50	1				
TOTAL			2		1		

MILEPOST MARKER SUMMARY			
LOCATION	SIGN NO. AND MESSAGE	QUANTITY	
		W/POST	W/O POST
# STA. 36+50 LT.	D10-5(11) 11 D10-7(50) 50	1	x
# STA. 16+10 RT.	D10-5(12) 12 D10-7(50) 50	1	x
HR # STA. 126+83 LT.	D10-4(0) 0 D10-7(540) 540	1	x
TOTAL		3	x

MILEPOST MARKER SHALL BE INSTALLED BI-DIRECTIONAL.

5/30/03	Revised Sign Quantities
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TRAFFIC SUMMARIES	
KAUMUALII HIGHWAY RESURFACING Lawai Bridge to Halewili Road, Kalaheo Project No. 50C-01-01M	
Date: March 2003	
SHEET No. 78 OF 8 SHEETS	

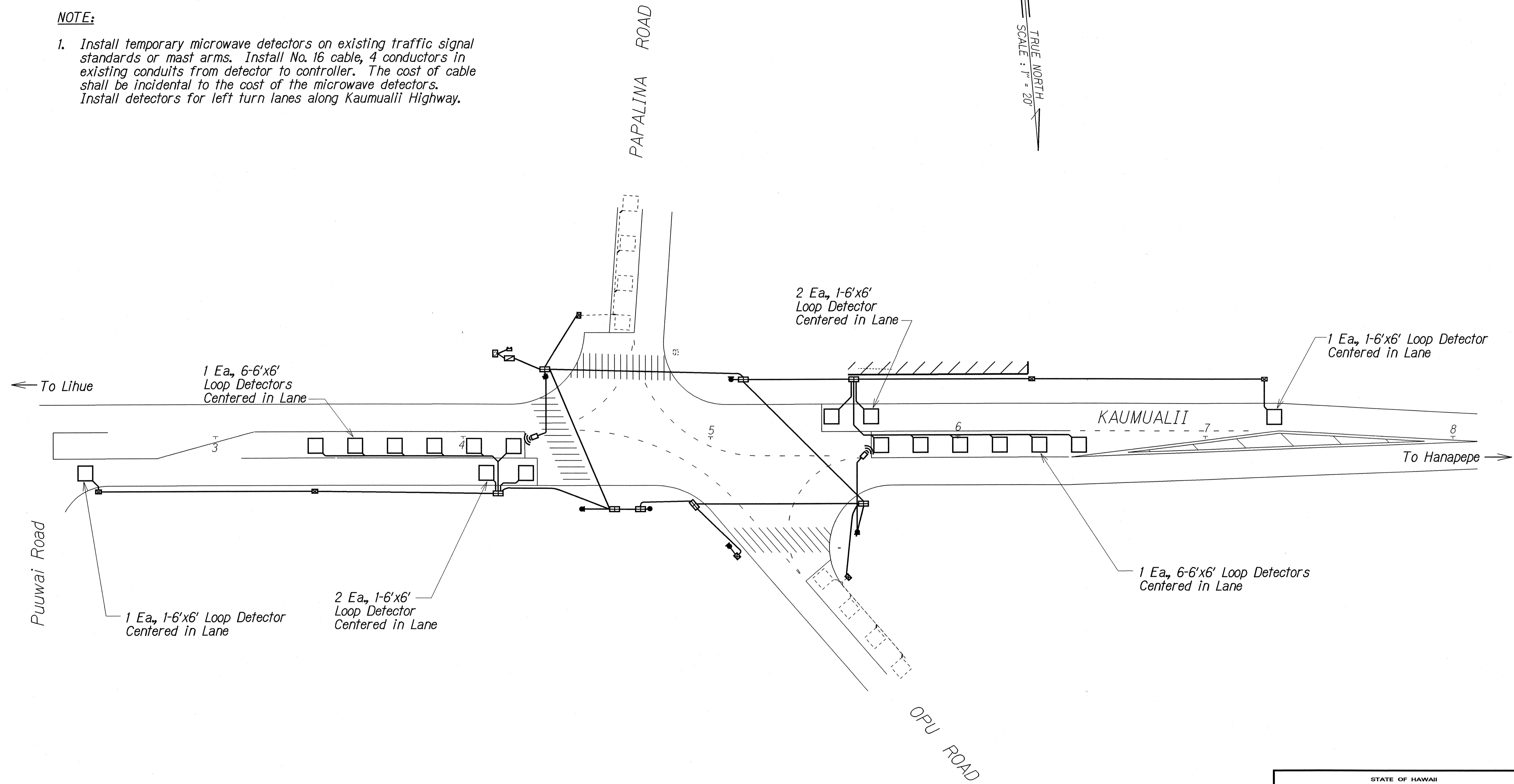
SURVEY PLOTTED BY _____ DATE _____
 DRAWN BY _____
 CHECKED BY _____
 ORIGINAL PLAN _____
 NOTE BOOK _____
 QUANTITIES BY _____
 CHECKED BY _____

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	31	32

NOTE:

1. Install temporary microwave detectors on existing traffic signal standards or mast arms. Install No. 16 cable, 4 conductors in existing conduits from detector to controller. The cost of cable shall be incidental to the cost of the microwave detectors. Install detectors for left turn lanes along Kaumualii Highway.

TRUE NORTH
SCALE: 1" = 20'



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
102/may	DESIGNED BY	
S. S. S. S.	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

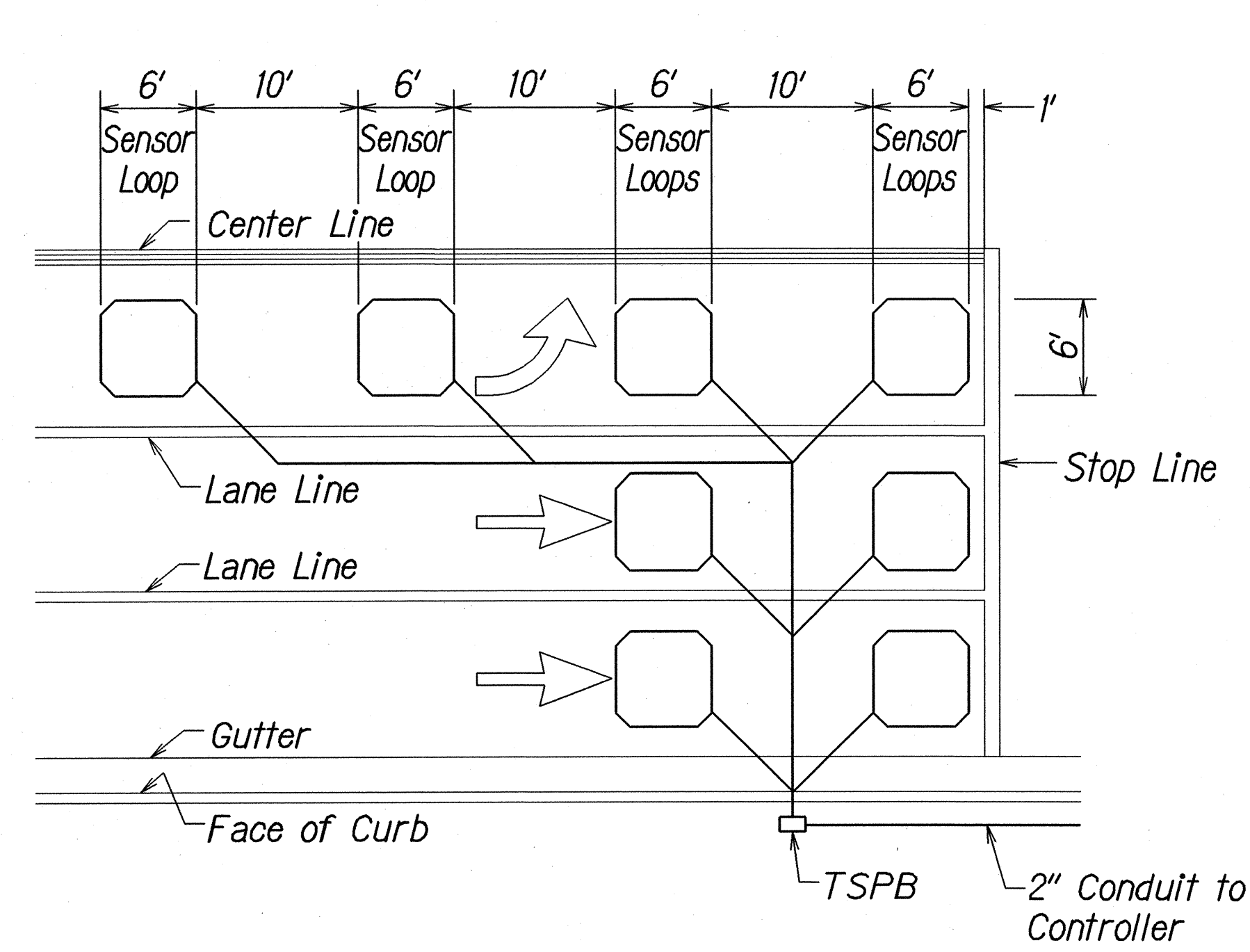
TRAFFIC SIGNAL PLAN

KAUMUALII HIGHWAY RESURFACING
Lawai Bridge to Halewili Road, Kalaheo
Project No. 50C-01-01M

Scale: 1"=20' Date: March 2003

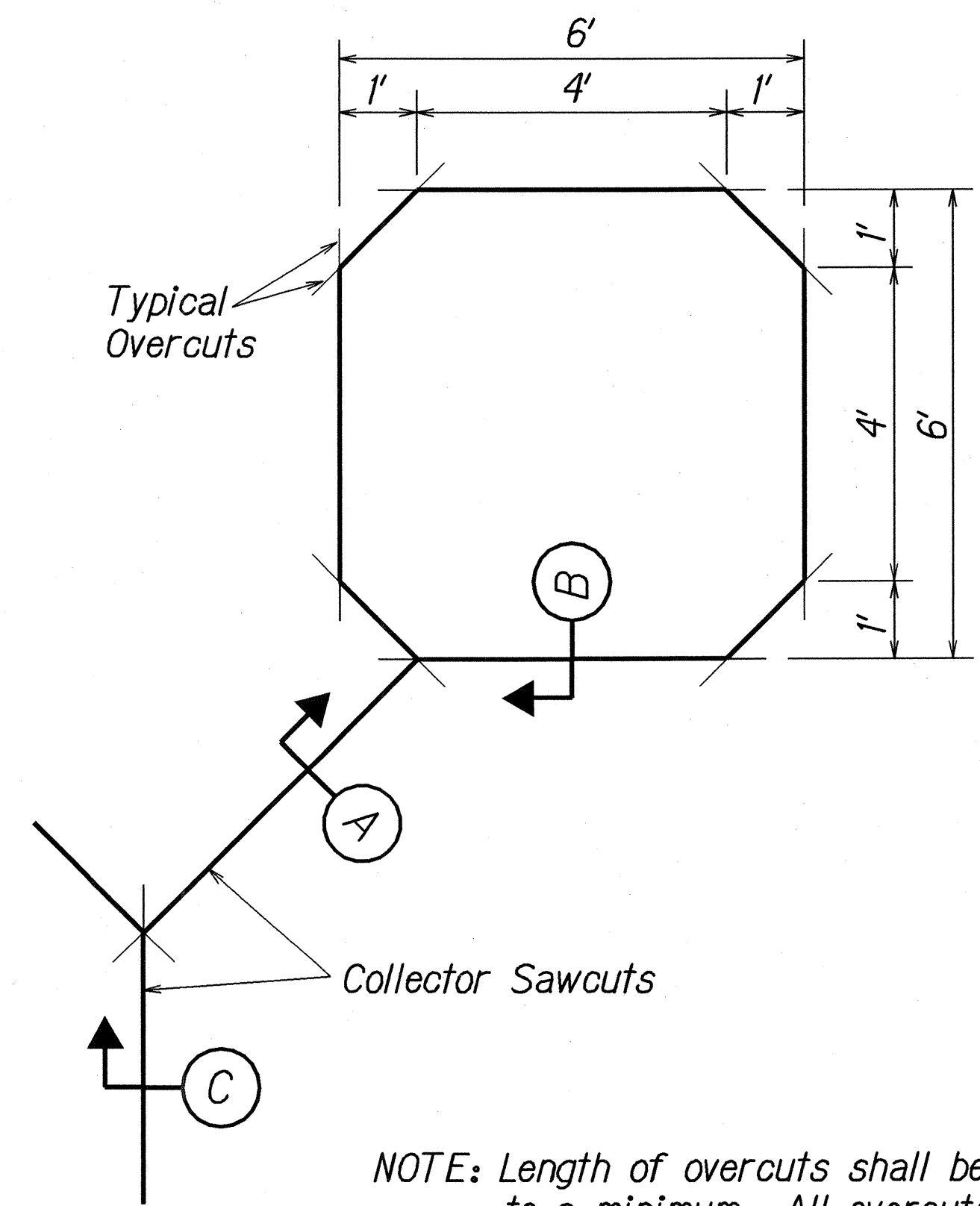
SHEET No. TSI OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	50C-01-01M	2003	32	32



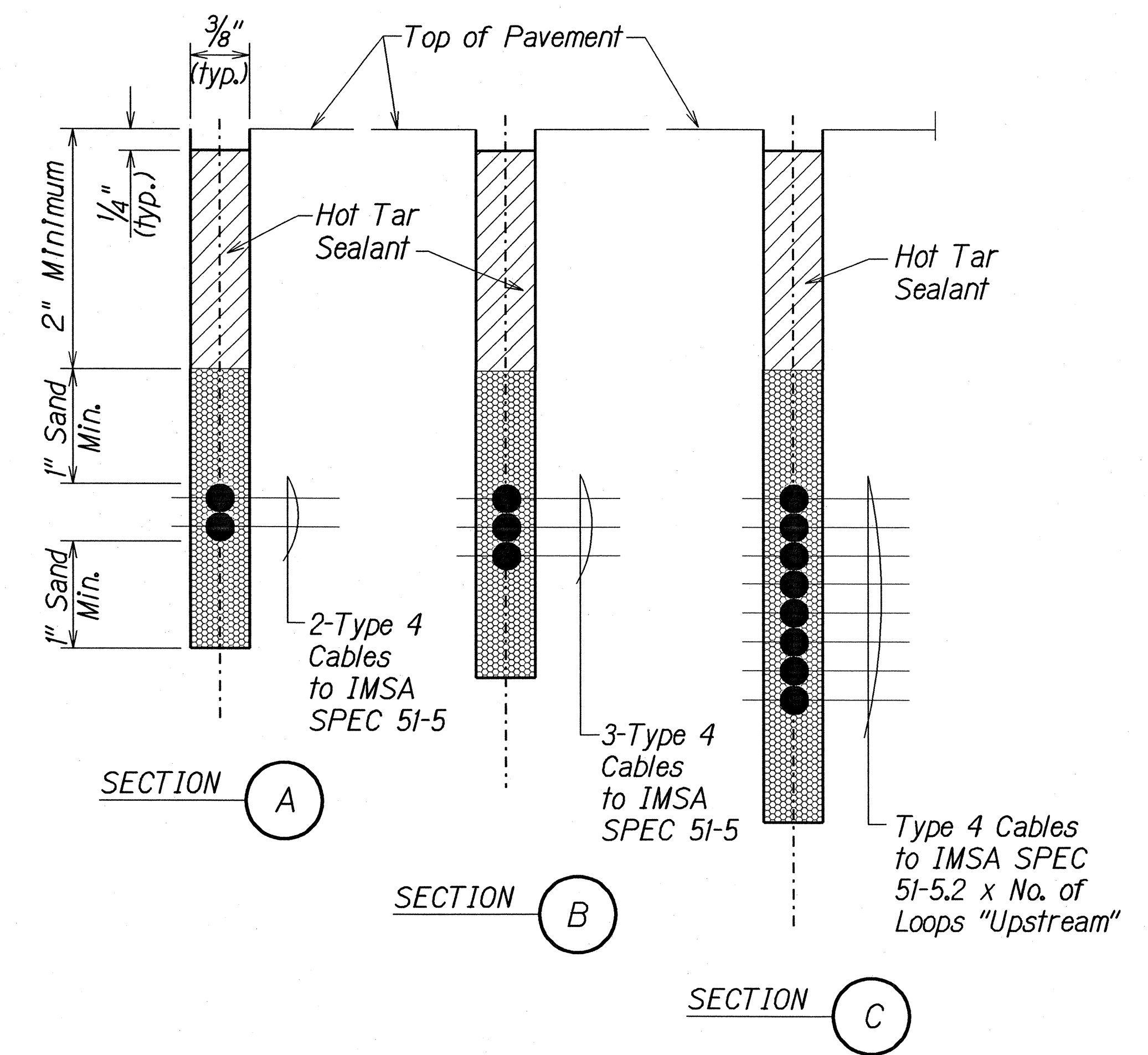
- NOTES:**
1. Center sensor loops in lanes.
 2. Collector cables shall be twisted 2 turns per foot.
 3. Number of loops and locations vary. See project plans.
 4. Number and locations of collector sawcuts may be varied in the field to suit.

TYPICAL SENSOR LOOP LAYOUT

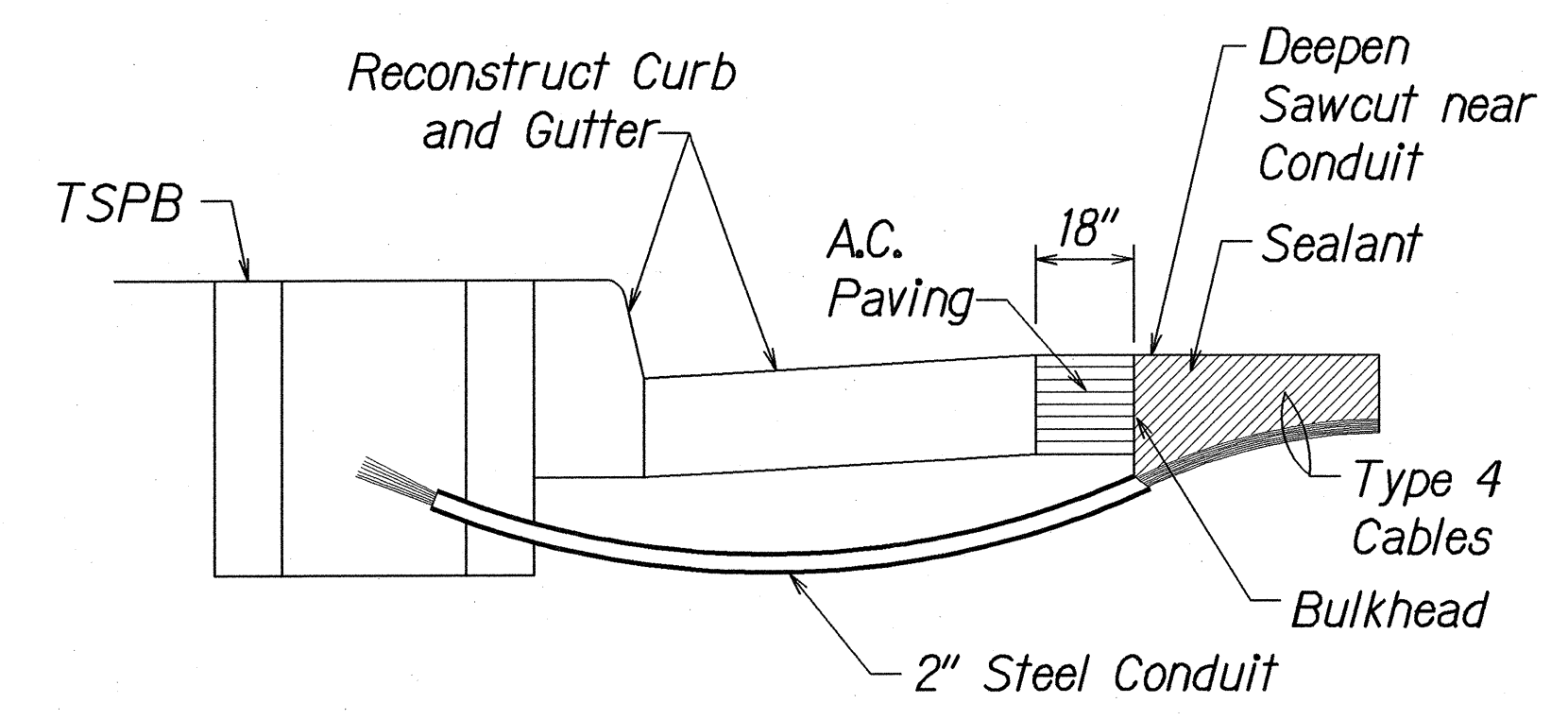


NOTE: Length of overcuts shall be kept to a minimum. All overcuts shall be back filled with hot tar.

TYPICAL SENSOR LOOP SAWCUT DETAIL

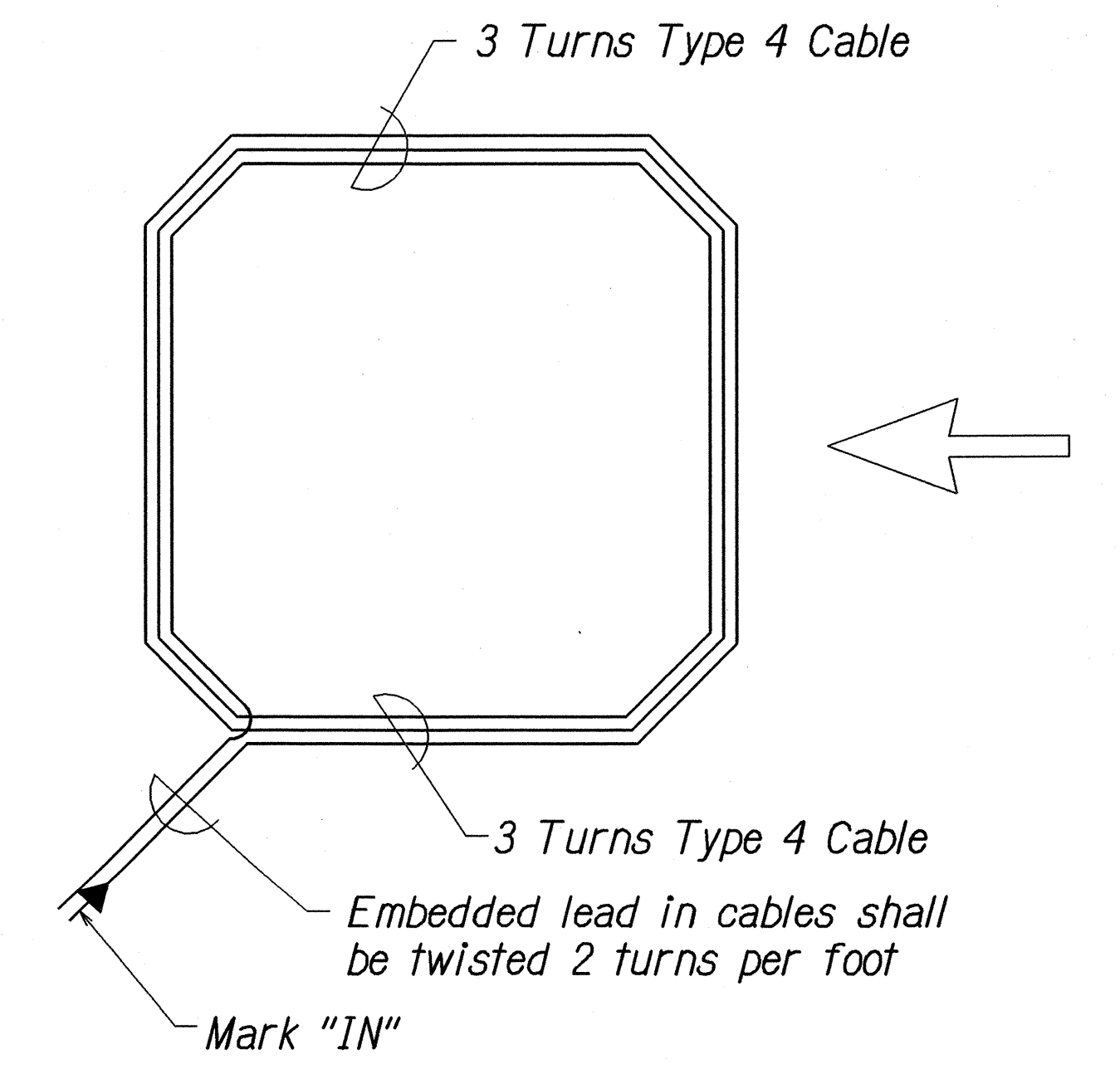


TYPICAL SECTION THROUGH SENSOR LOOP



- 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 AC.
 5. Reconstruct curb and gutter as required.

DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY



TYPICAL SENSOR LOOP WIRING DIAGRAM

DATE	1/11/03
SURVEY PLOTTED BY	J. K.
DRAWN BY	M. K.
DESIGNED BY	G. K.
CHECKED BY	S. K.
ORIGINAL PLAN	
NOTE BOOK	
DATE	
BY	
NO.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOOP DETECTOR DETAILS

KAUMUALII HIGHWAY RESURFACING
Lawai Bridge to Halewili Road, Kalaheo
Project No. 50C-01-01M

Not to Scale Date: March 2003

SHEET No. TS2 OF 2 SHEETS