

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-04	2004	46	61

**LEGEND**

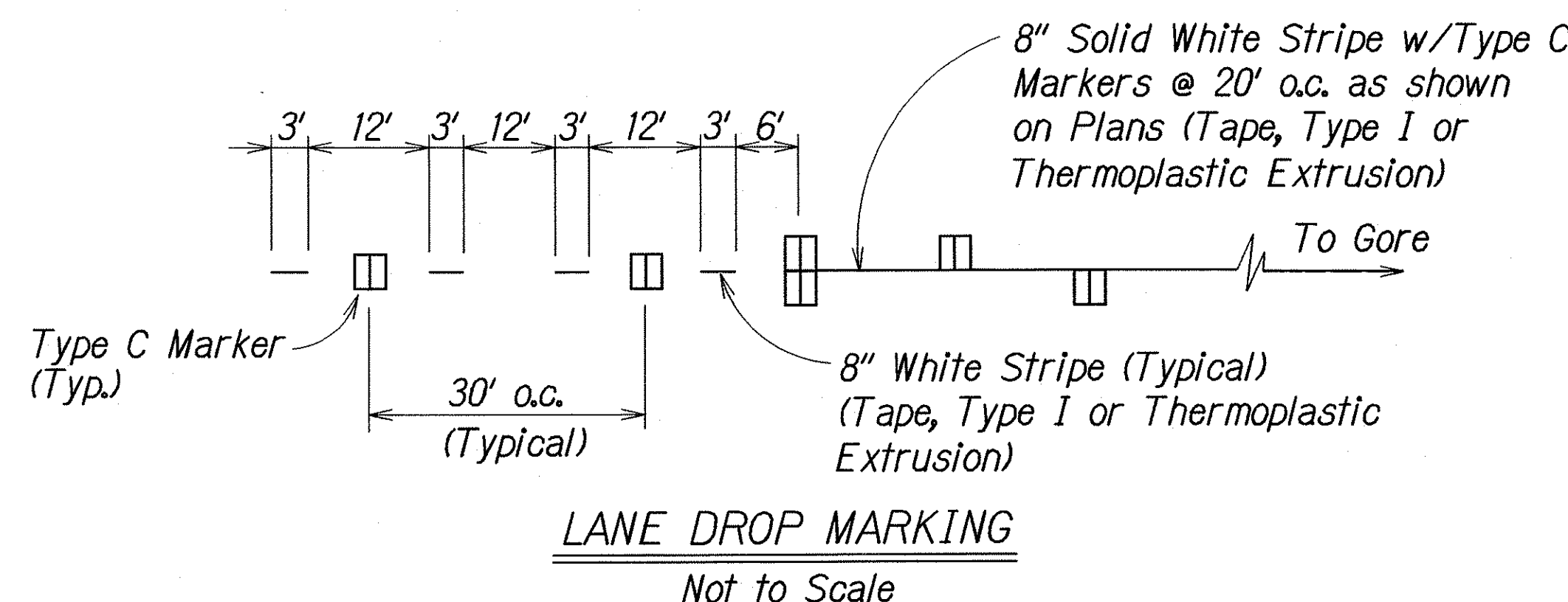
- 4 each Type A Raised Pavement Markers  
Type C Raised Pavement Markers @ 40'-0" o.c.
- 4 each Type J Raised Pavement Markers  
Type D Raised Pavement Markers @ 40'-0" o.c.
- 8" White Stripe with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)
- 4" Double Solid 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)
- Reflector Marker (RM-2, White) w/Flexible Delineator Post

**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 sign panels 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 Highway (MUTCD)
  - b. "Standard Highway Signs"
  - c. "Standard Alphabets For Highway Signs"
10. Borders, messages, arrows, symbols and shields shall conform to details as shown on the plans and as specified in the MUTCD.
11. Sign messages shall be as indicated on the plan.
12. All panels shall be reflectorized in accordance with Section 712.20 of the Standard Specifications. Minimum width of panels shall be 2 ft. abutting edges of panels and shall be in only one direction if vertical abutting edges are used, no horizontal abutting edges shall be allowed and vice versa.
13. All new and relocated signs and markers installed on pipe posts, light standard or expressway sign post are to be mounted with band brackets and steel braces.

**TRAFFIC SIGN SUMMARY**

SIGN NO.	MESSAGE	QUANTITY	
		10 SQ. FT. OR LESS W/POST(S)	W/O POST
D3-1	STREET NAME SIGN	-	1
D11-1	BIKE ROUTE	1	-
M7-2	DIRECTIONAL ARROW	-	1
R1-1	STOP	3	-
R2-1(35)	SPEED LIMIT 35	1	-
R10-11D	NO RIGHT TURN ON RED EXCEPT FROM RIGHT LANE AFTER STOP	1	-
R3-8A(LSS)	DIRECTIONAL ARROWS	-	3
R3-8(SSSR)	DIRECTIONAL ARROWS	1	-
RM-3	-	-	55
W4-3(R)	ADDED LANE	2	-
W11-2-A	PEDESTRIAN SYMBOL	6	-
W16-7P(L)-A	ARROW	-	2
W16-7P(R)-A	ARROW	-	2
W16-9P-A	AHEAD	-	2
<b>TOTAL</b>		<b>15</b>	<b>66</b>

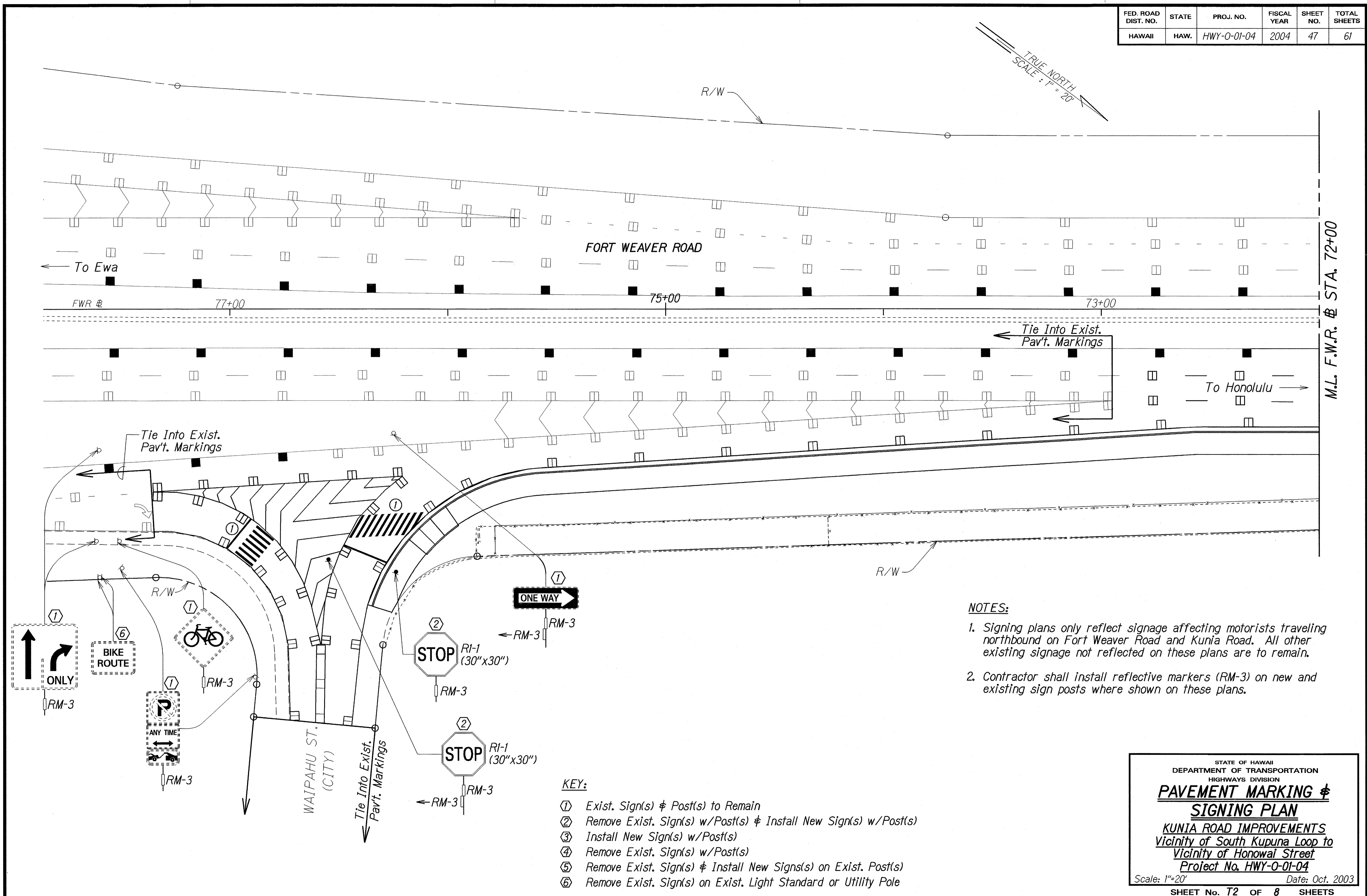


SURVEY PLOTTED BY: DATE: 10/20/03  
 DRAWN BY: X  
 TRACED BY: X  
 NOTE BOOK: 10/1/03  
 QUANTITIES BY: X  
 CHECKED BY: X  
 No. 10/1/03

td:\usr2\traffic\std\legendr.dgn

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**PAVEMENT MARKING**  
**LEGEND, DETAILS & NOTES**  
 KUNIA ROAD IMPROVEMENTS  
 Vicinity of South Kupuna Loop to  
 Vicinity of Honowai Street  
 Project No. HWY-0-01-04  
 Scale: As Noted Date: Oct. 2003  
 SHEET No. 71 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-04	2004	47	61



SURVEY PLOTTED BY	DATE
DRAWN BY	02/20/03
DESIGNED BY	
NOTE BOOK	
DESIGNED BY	F. Chan/L. Kuo
QUANTITIES BY	
CHECKED BY	N. Shunjo

- NOTES:**
1. Signing plans only reflect signage affecting motorists traveling northbound on Fort Weaver Road and Kunia Road. All other existing signage not reflected on these plans are to remain.
  2. Contractor shall install reflective markers (RM-3) on new and existing sign posts where shown on these plans.

- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
  - ② Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/Post(s)
  - ③ Install New Sign(s) w/Post(s)
  - ④ Remove Exist. Sign(s) w/Post(s)
  - ⑤ Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s)
  - ⑥ Remove Exist. Sign(s) on Exist. Light Standard or Utility Pole

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

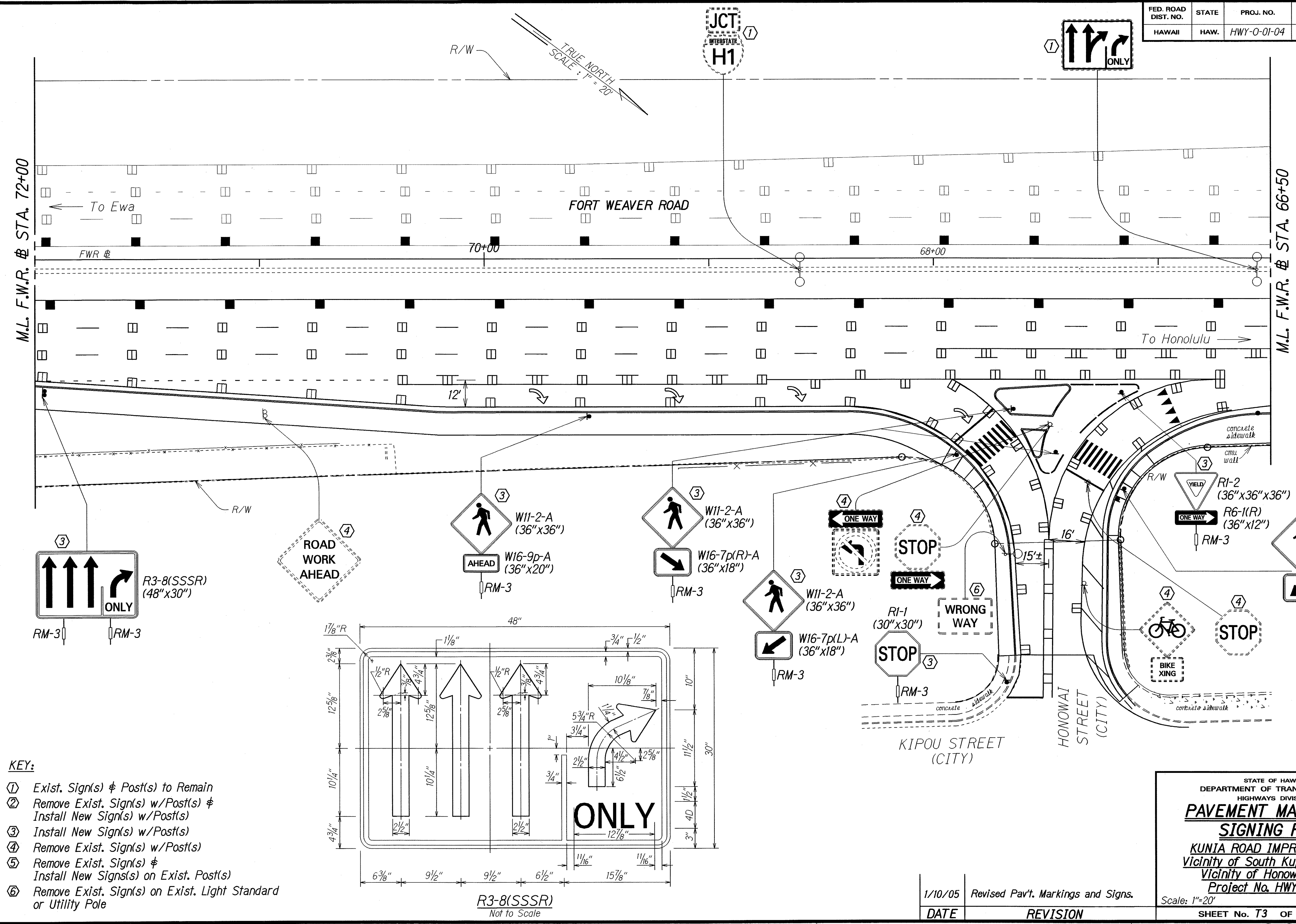
**PAVEMENT MARKING &  
SIGNING PLAN**

KUNIA ROAD IMPROVEMENTS  
Vicinity of South Kupuna Loop to  
Vicinity of Honolulu Street  
Project No. HWY-0-01-04

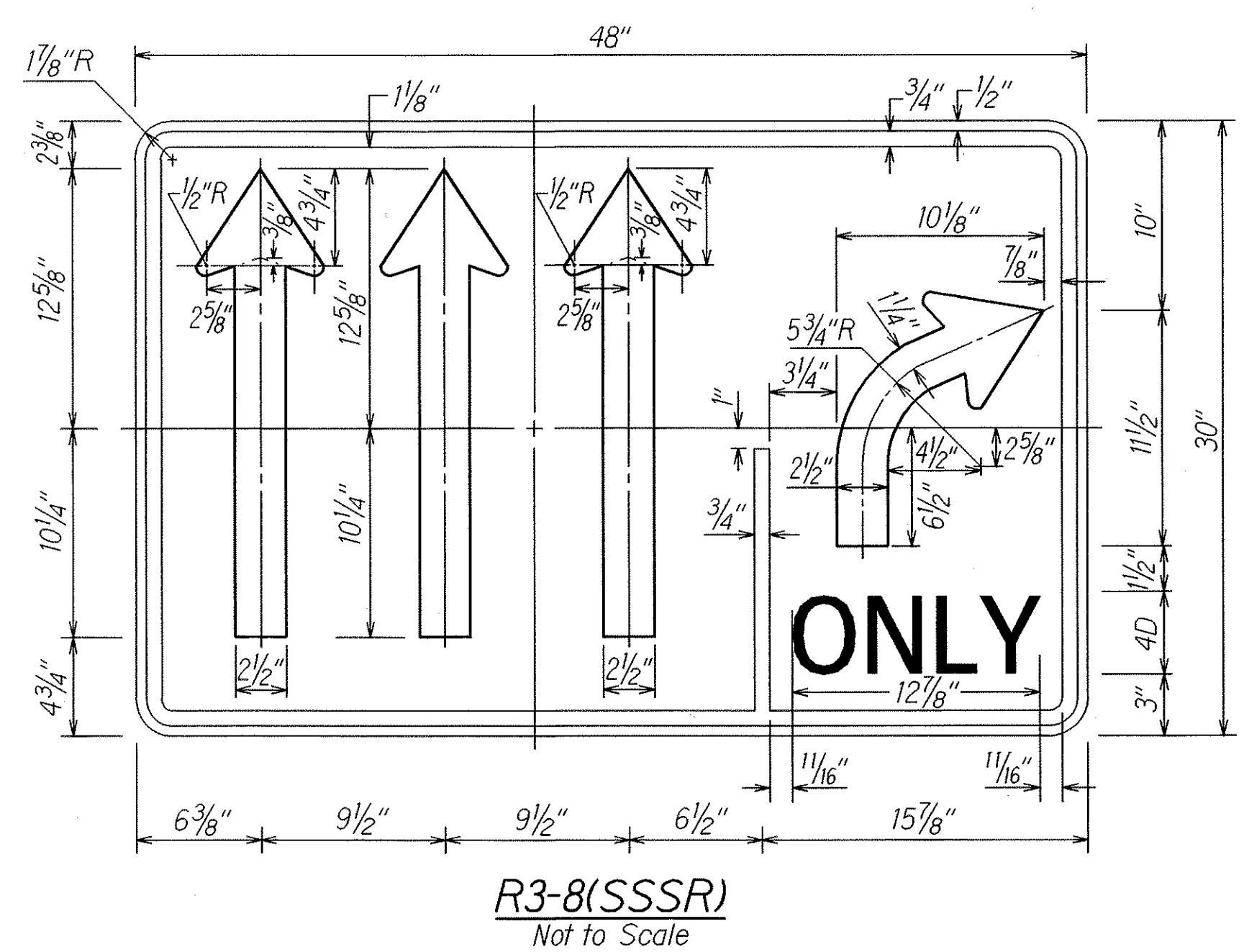
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SHEET No. T2 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-04	2004	C.O.48	61



- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
  - ② Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/Post(s)
  - ③ Install New Sign(s) w/Post(s)
  - ④ Remove Exist. Sign(s) w/Post(s)
  - ⑤ Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s)
  - ⑥ Remove Exist. Sign(s) on Exist. Light Standard or Utility Pole



ORIGINAL PLAN	DATE	1/26/05
SURVEY PLOTTED BY		
DRAWN BY		
NOTE BOOK		
DESIGNED BY		
QUANTITIES BY		
CHECKED BY		

DATE	REVISION
1/10/05	Revised Pav't. Markings and Signs.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

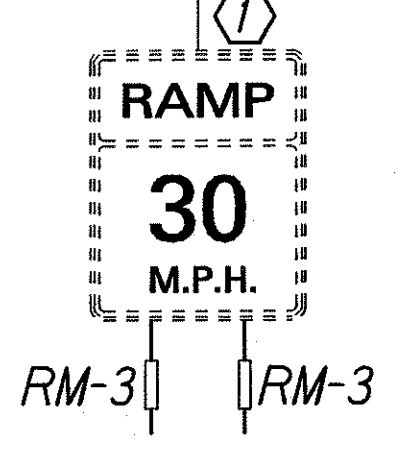
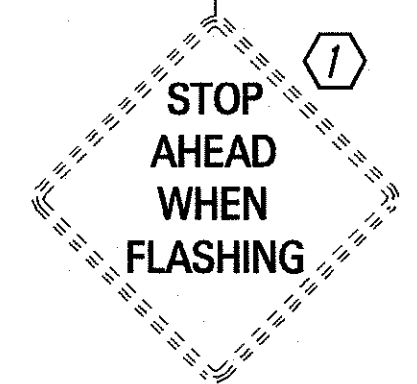
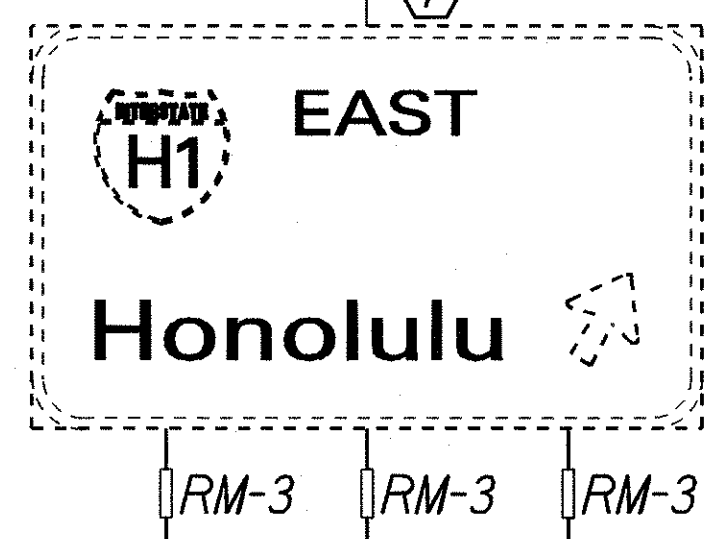
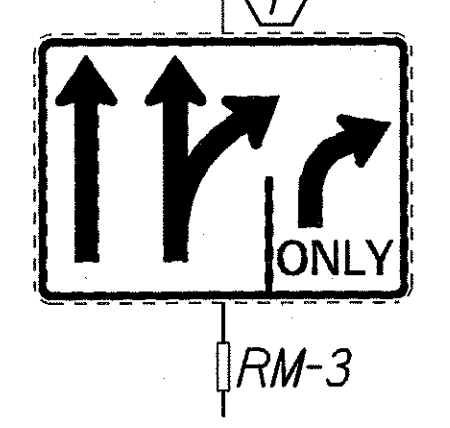
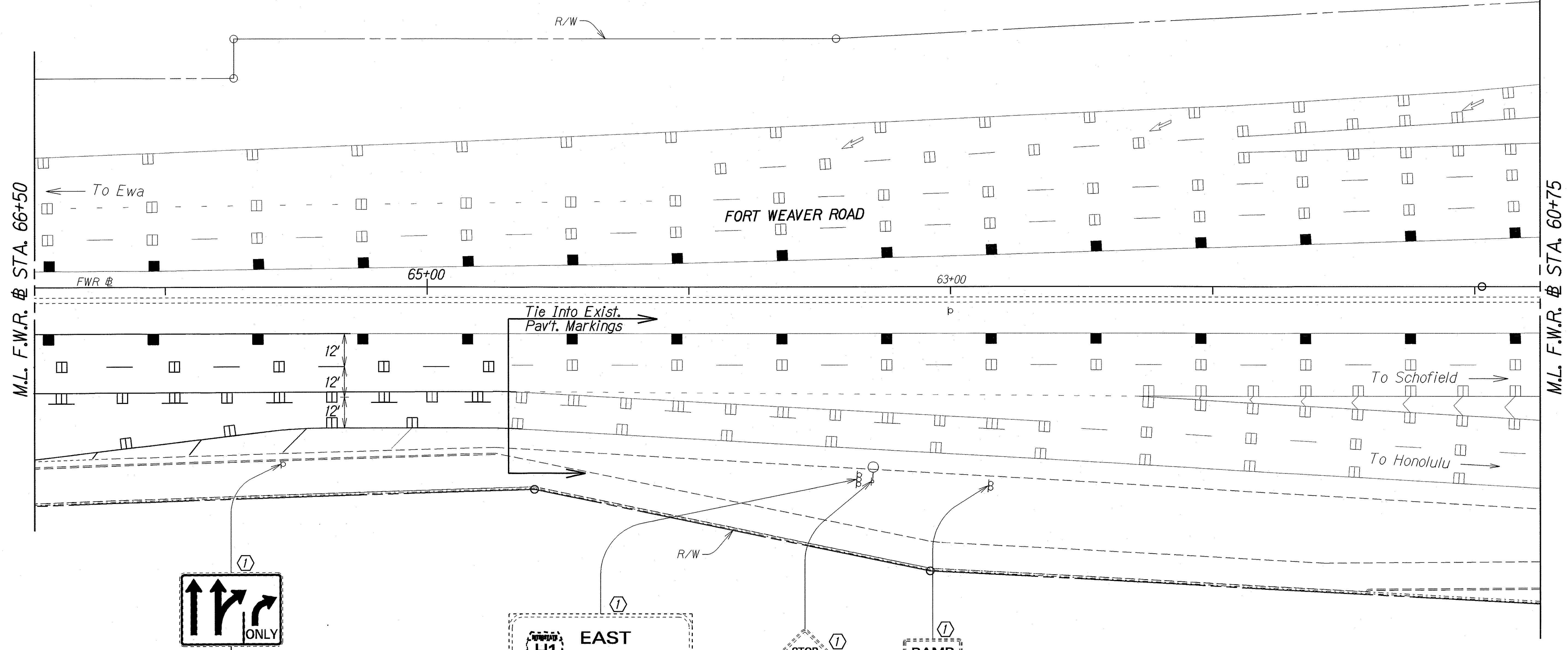
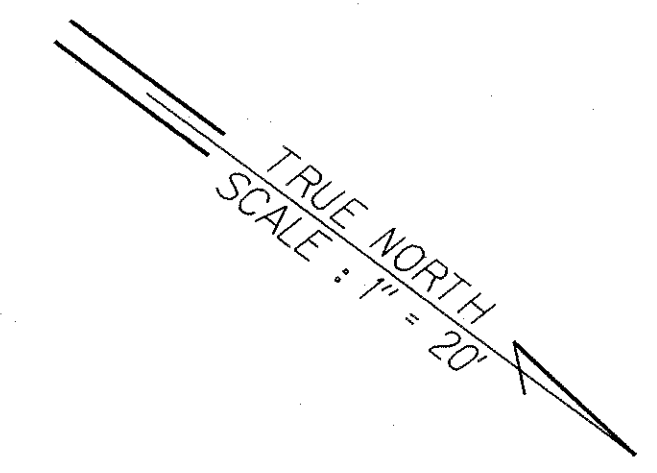
**PAVEMENT MARKING & SIGNING PLAN**

**KUNIA ROAD IMPROVEMENTS**  
Vicinity of South Kupuna Loop to  
Vicinity of Honowai Street  
Project No. HWY-0-01-04

Scale: 1"=20' Date: Oct. 2003

SHEET No. T3 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-04	2004	49	61

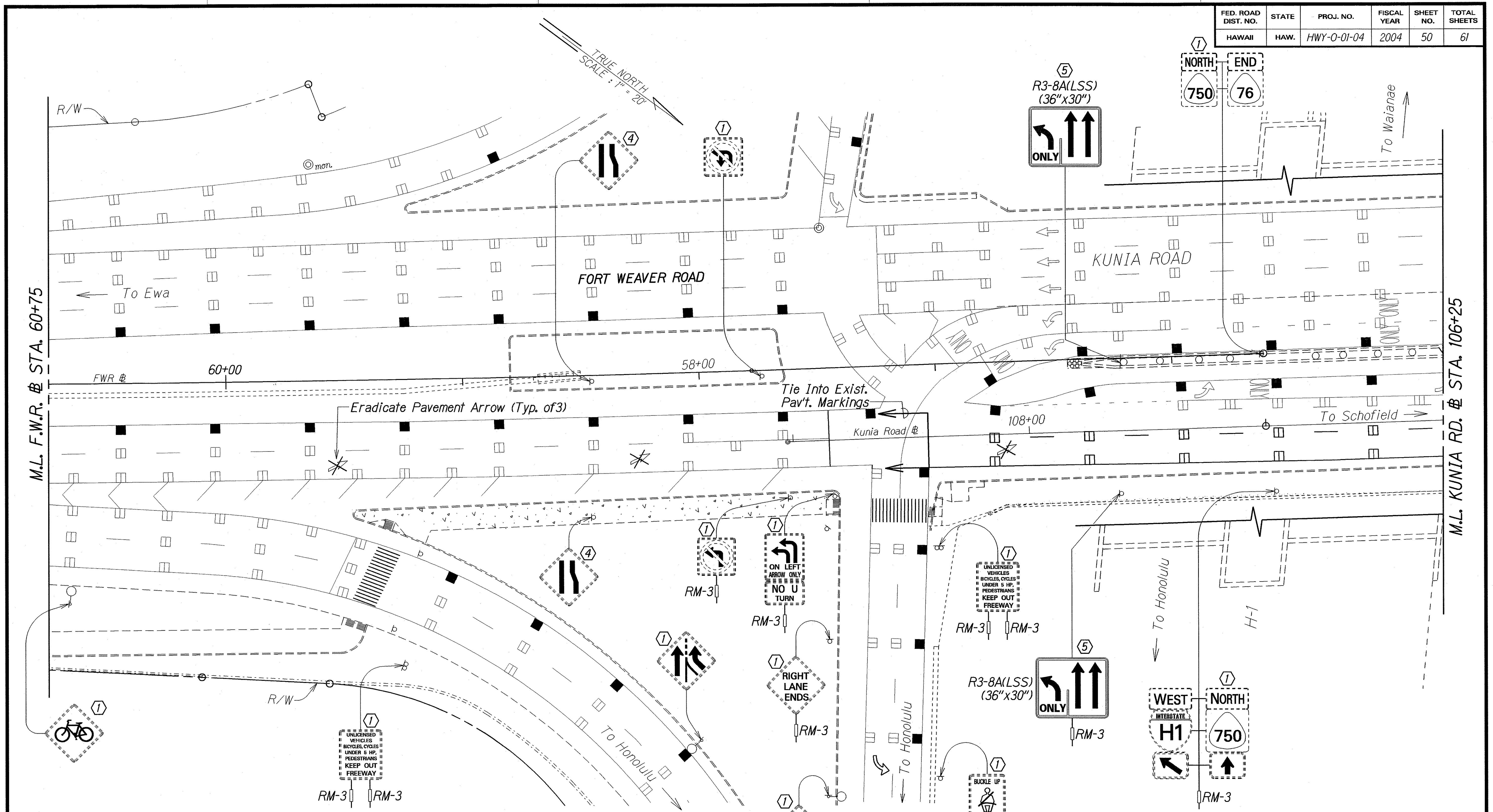


- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
  - ② Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/Post(s)
  - ③ Install New Sign(s) w/Post(s)
  - ④ Remove Exist. Sign(s) w/Post(s)
  - ⑤ Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s)
  - ⑥ Remove Exist. Sign(s) on Exist. Light Standard or Utility Pole

SURVEY PLOTTED BY: DATE: 02/02/03  
 DRAWN BY: JAL/LH  
 NOTE BOOK: P. Charz/L. Kuo  
 QUANTITIES BY: M. Shunp03  
 CHECKED BY: N. Shunp03

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**PAVEMENT MARKING & SIGNING PLAN**  
 KUNIA ROAD IMPROVEMENTS  
 Vicinity of South Kupuna Loop to  
 Vicinity of Honowai Street  
 Project No. HWY-0-01-04  
 Scale: 1"=20' Date: Oct. 2003  
 SHEET No. T4 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-04	2004	50	61



- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
  - ② Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/Post(s)
  - ③ Install New Sign(s) w/Post(s)
  - ④ Remove Exist. Sign(s) w/Post(s)
  - ⑤ Remove Exist. Sign(s) & Install New Signs(s) on Exist. Post(s)
  - ⑥ Remove Exist. Sign(s) on Exist. Light Standard or Utility Pole

Note: Remove & Dispose approximately twelve (12) existing white delineators in the H-1 Kunia Exit vicinity.

DATE: 10/20/03  
 SURVEY PLOTTED BY: [Blank]  
 DRAWN BY: [Blank]  
 DESIGNED BY: E. CHIRAZI/KUB  
 NOTE BOOK: [Blank]  
 CHECKED BY: [Blank]

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

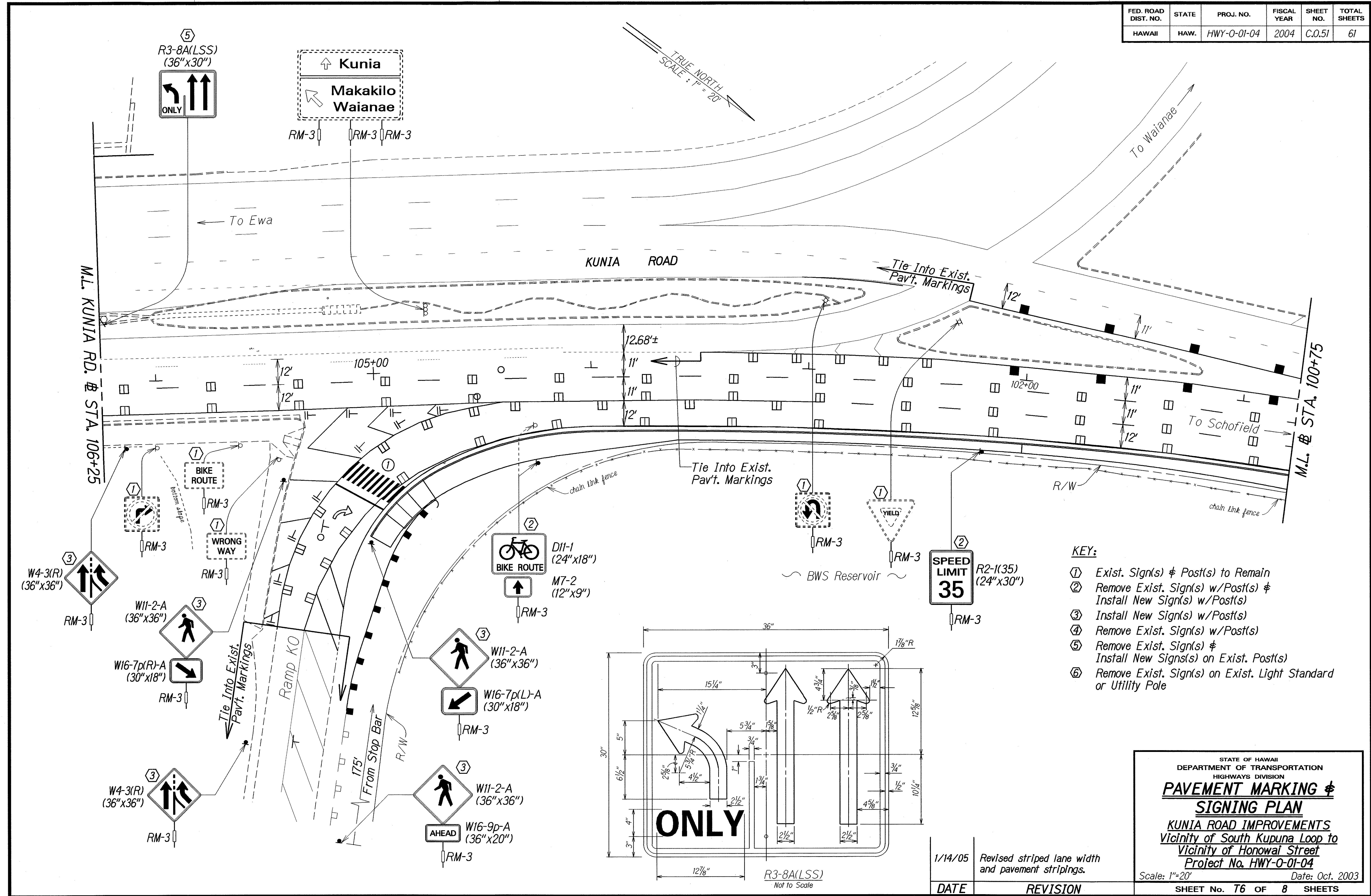
**PAVEMENT MARKING & SIGNING PLAN**

**KUNIA ROAD IMPROVEMENTS**  
 Vicinity of South Kupuna Loop to  
 Vicinity of Honowai Street  
 Project No. HWY-0-01-04

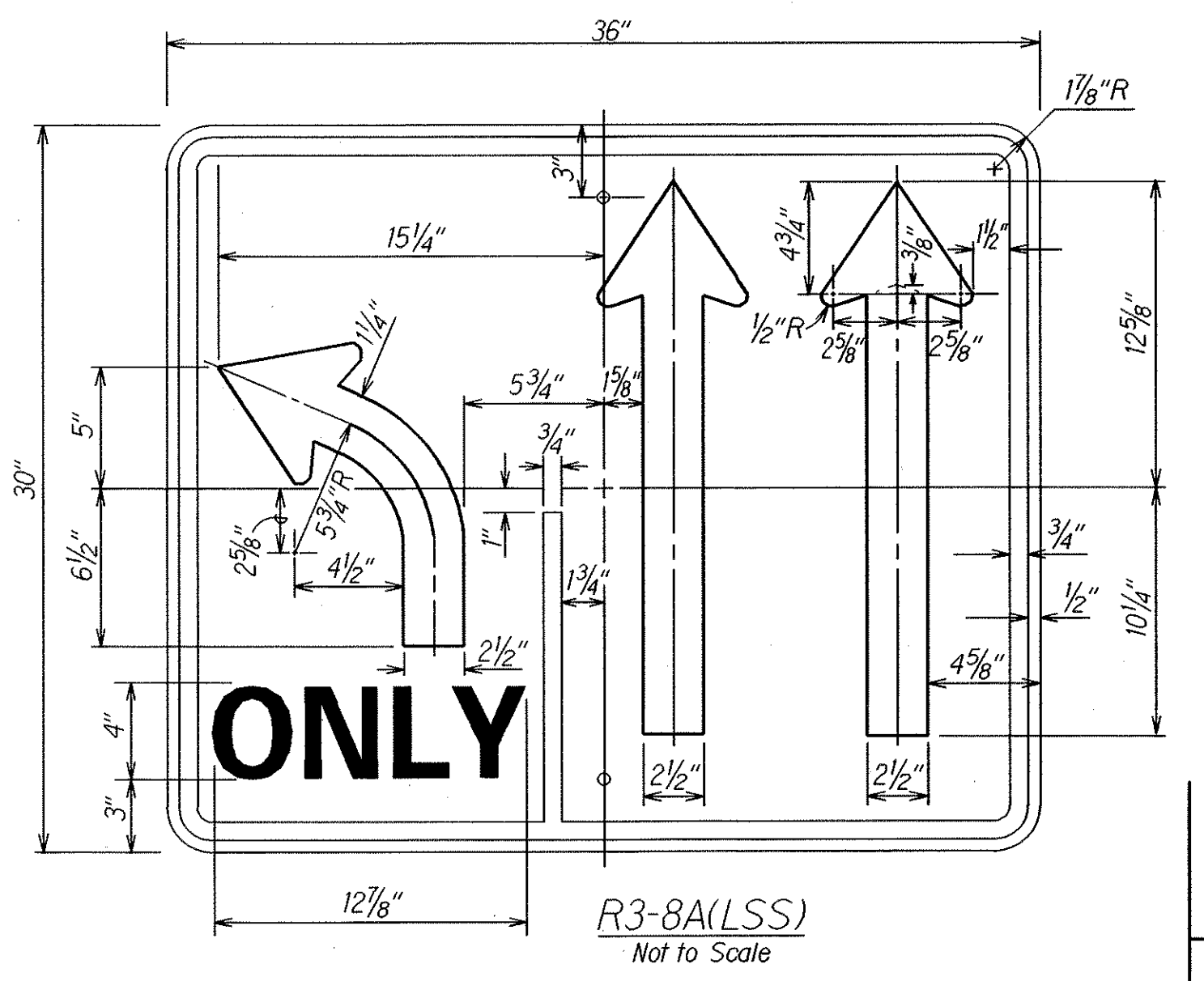
Scale: 1"=20' Date: Oct. 2003

SHEET No. 75 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-04	2004	C.O.51	61



- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
  - ② Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/Post(s)
  - ③ Install New Sign(s) w/Post(s)
  - ④ Remove Exist. Sign(s) w/Post(s)
  - ⑤ Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s)
  - ⑥ Remove Exist. Sign(s) on Exist. Light Standard or Utility Pole



DATE	REVISION
1/14/05	Revised striped lane width and pavement stripings.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING & SIGNING PLAN**

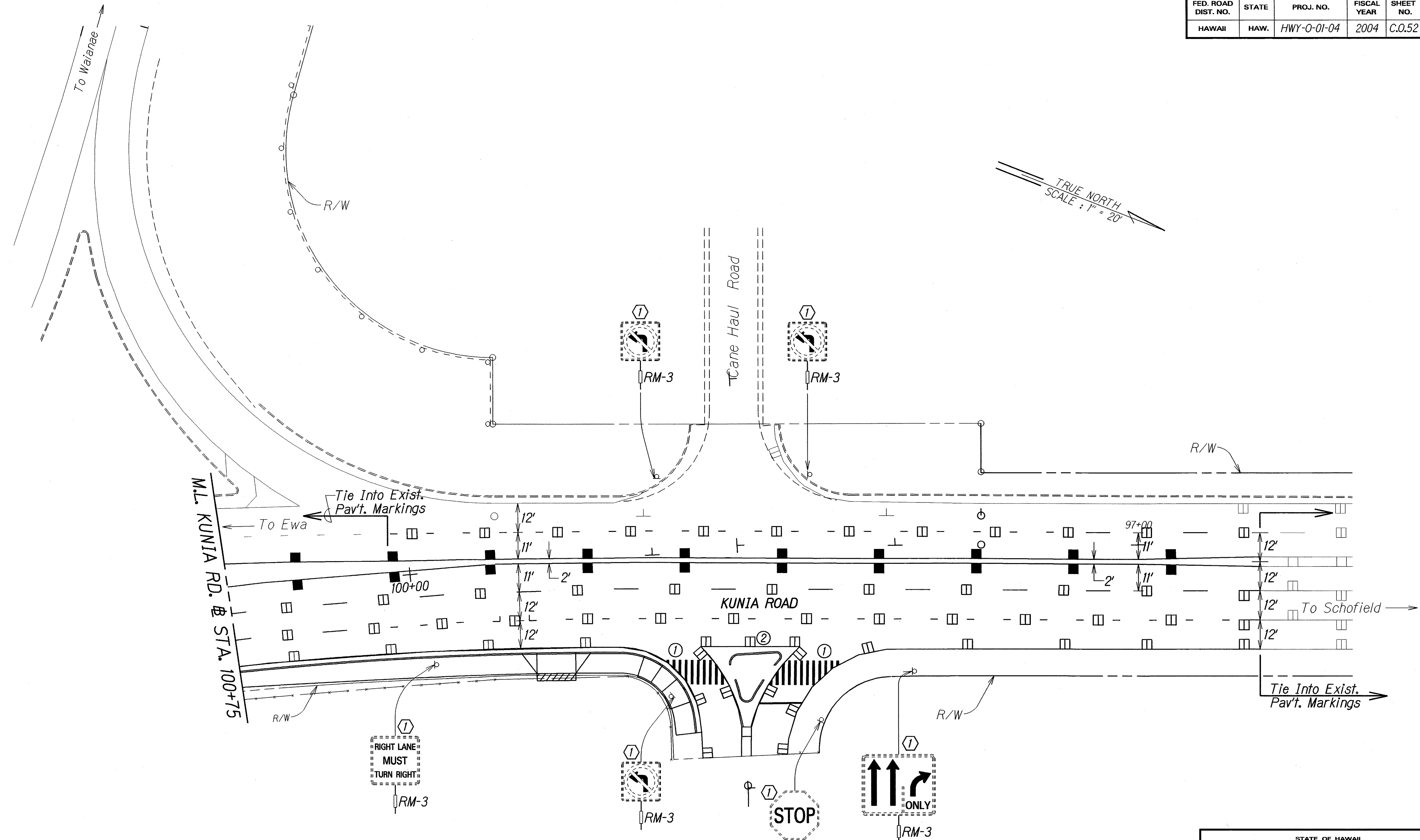
**KUNIA ROAD IMPROVEMENTS**  
Vicinity of South Kupuna Loop to  
Vicinity of Honowai Street  
Project No. HWY-0-01-04

Scale: 1"=20' Date: Oct. 2003

SHEET No. 76 OF 8 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
DATE	10/10/03

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-04	2004	C.O.52	61



DATE	12/12/03
SURVEY PLOTTED BY	
DRAWN BY	J.H.L.
TRACED BY	F. CHAZAL-KUO
NOTE BOOK	10/1/03
QUANTITIES BY	
CHECKED BY	

- KEY:**
- ① Exist. Sign(s) & Post(s) to Remain
  - ② Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/Post(s)
  - ③ Install New Sign(s) w/Post(s)
  - ④ Remove Exist. Sign(s) w/Post(s)
  - ⑤ Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s)
  - ⑥ Remove Exist. Sign(s) on Exist. Light Standard or Utility Pole

DATE	REVISION
1/14/05	Revised striped lane width and pavement stripings.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING &  
SIGNING PLAN**

**KUNIA ROAD IMPROVEMENTS**  
Vicinity of South Kupuna Loop to  
Vicinity of Honowai Street  
Project No. HWY-0-01-04

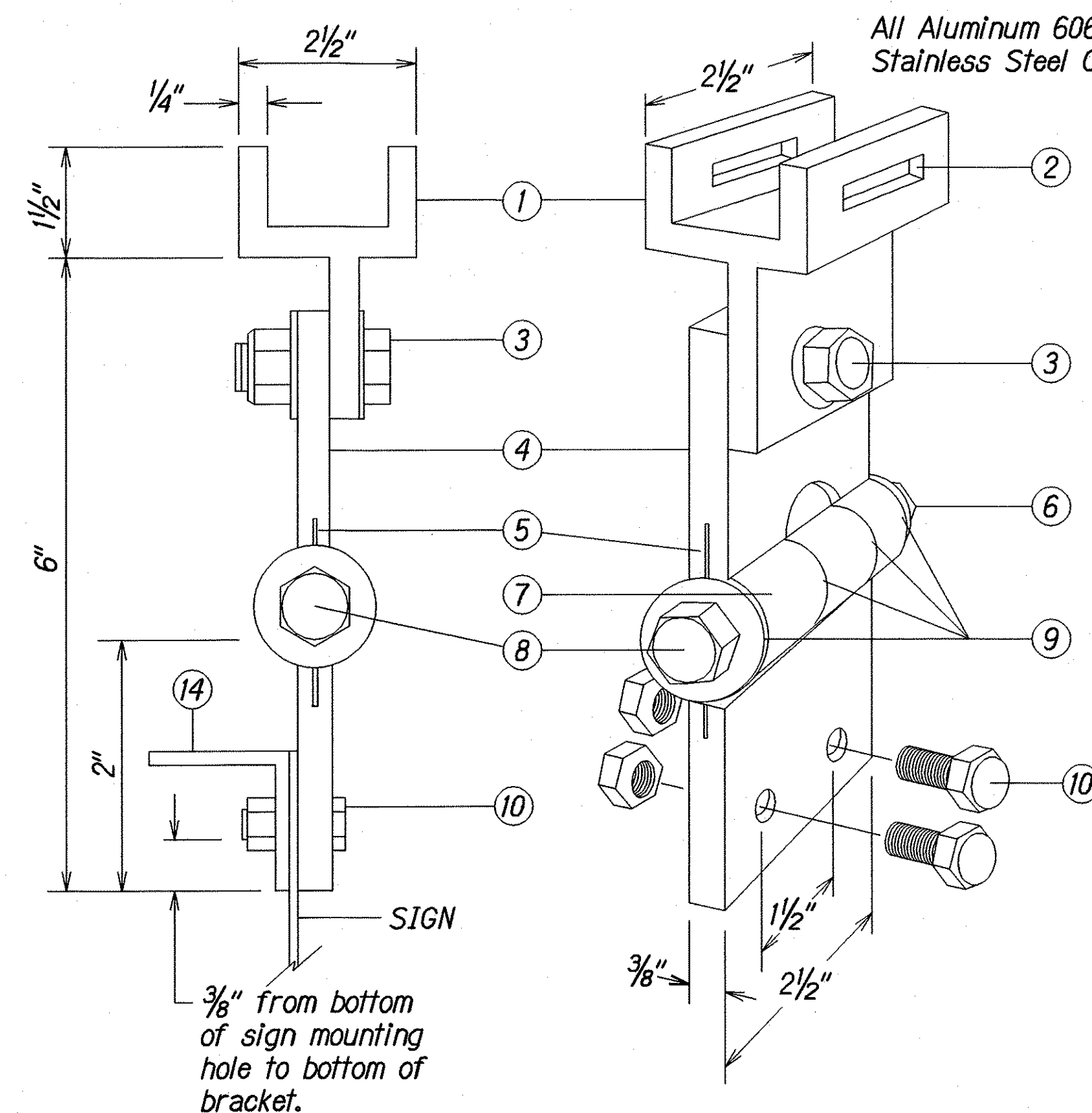
Scale: 1"=20' Date: Oct. 2003

SHEET No. 77 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-04	2004	53	61

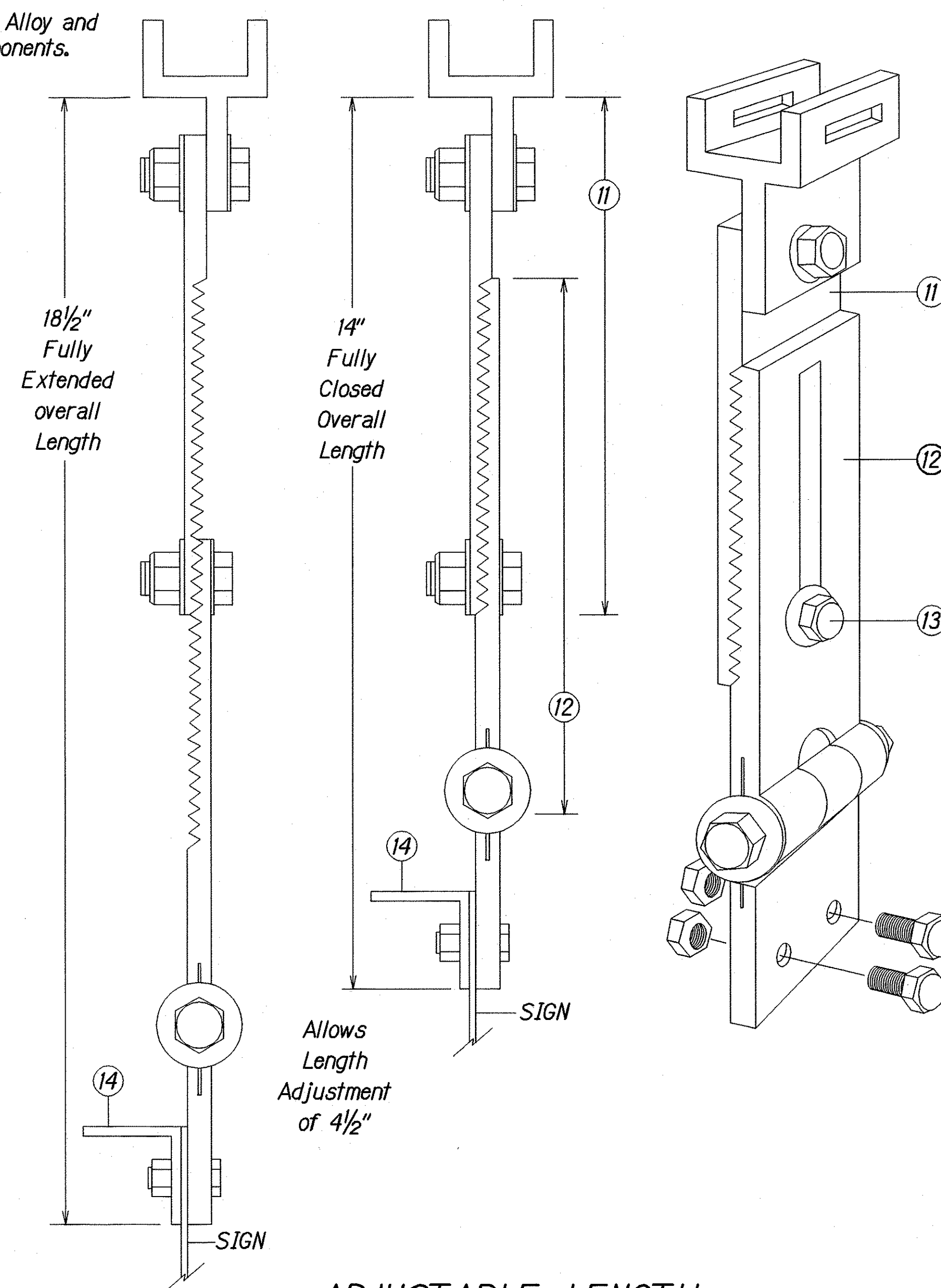
**STREET NAME (D3) SIGN NOTES:**

1. Sign D3-1 shall be a new Street Name Sign. The 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.
2. Colors:  
Legend - White (Reflectorized)  
Background - Green (Reflectorized)
3. All panels shall be reflectorized with Type III or IV retroreflective sheeting in accordance with Section - 712.20 of the Standard Specifications.
4. All signs shall conform to section 621 of the Standard Specifications 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"
5. Borders and messages shall conform to details as shown on the plans and as specified in the MUTCD.
6. Sign mounting brackets, aluminum angle, fixtures, fasteners and all necessary hardware, and equipment, tools, labor, materials and other incidentals for installation, will not be paid for separately but shall be considered incidental to street name sign installation.
7. Number of Swing Sign Brackets required per Sign Panel:  
3 Brackets - Panel length 7' or less  
4 Brackets - Panel length greater than 7' with a maximum length of 9'-6"
8. Diacritical marks for Street Name are not authorized.

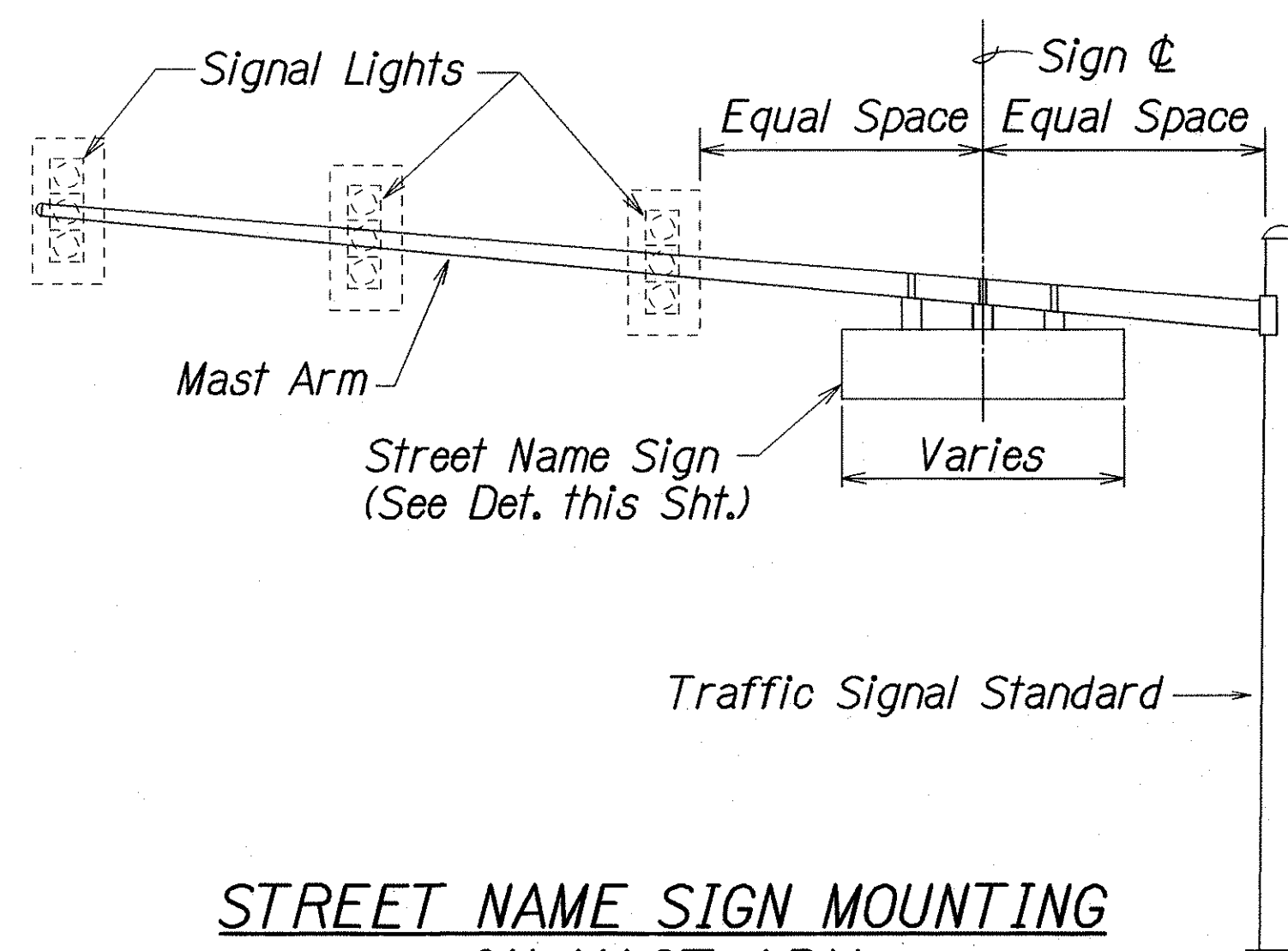


**FIXED LENGTH NON-ADJUSTABLE SWING SIGN BRACKET**

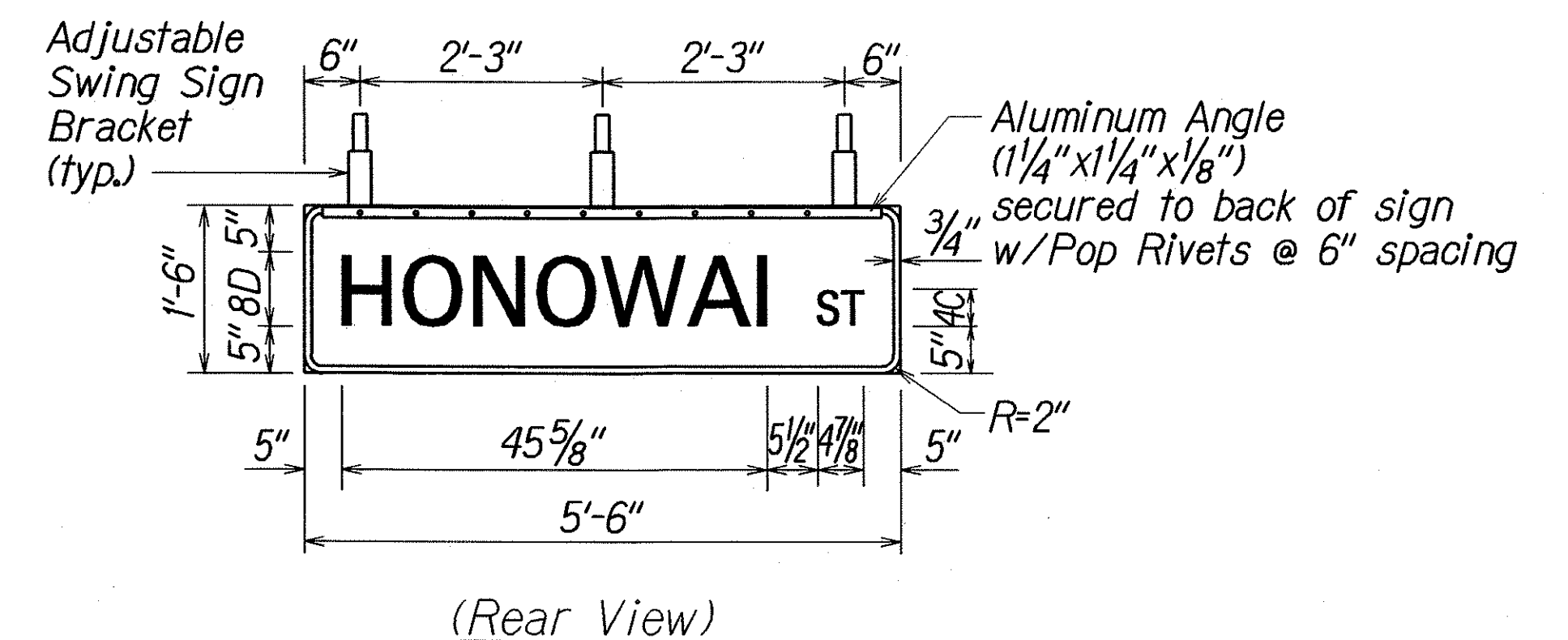
- 1 Pivotal Upper Bracket
- 2 1 5/8" x 1/4" Slot for double strapping to electroliner mast arm. (M2G-34S(HD) .030" x 3/4" Heavy Duty Stainless Steel Strap with M2G-34B(HD) Buckle recommended.)
- 3 1/2" - 13 x 1 1/2" Stainless Steel Hex Head Bolt with Stainless Steel Hex Lock Nut and 1/16" Stainless Steel Washer (both sides). Allows upper bracket to pivot and align with electroliner mast arm.
- 4 6" Overall drop with Fixed Length Sign Bracket
- 5 Stainless Steel Damper Spring (Removable)
- 6 Stainless Steel Hex Lock Nut with 1/16" Stainless Steel Washer
- 7 1" O.D. Axle Housing
- 8 1/2" - 13 x 4" Stainless Steel Hex Head Bolt with 1/16" Stainless Steel Washer
- 9 Oillite Bushing
- 10 Sign Mounting Sets, consisting of two each 5/16" - 18 x 1" Stainless Steel Hex Head Bolt with Stainless Steel Hex Lock Nut. Two holes on 1/2" centers provide positive lock sign mounting to bracket.
- 11 8 1/4" overall length Upper Adjustable Sign Bracket section
- 12 9" overall length Lower Adjustable Sign Bracket section, including Axle Housing (8" overall length to top of Axle Housing)
- 13 1/2" - 13 x 1 1/2" Stainless Steel Hex Bolt with Stainless Steel Hex Lock Nut and 1/16" Stainless Steel Washers (both sides). Loosen lock nut, adjust bracket teeth to level sign.
- 14 1 1/4" x 1 1/4" x 1/8" Aluminum Angle



**ADJUSTABLE LENGTH SWING SIGN BRACKET**



**STREET NAME SIGN MOUNTING ON MAST ARM**



**PANEL & SWING BRACKET LAYOUT FOR STREET NAME SIGN**

Note: Dimensions may vary slightly.

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	10/20/03
DRAWN BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

tdl/usr2/traffic/std/stnmgnr.dgn

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGN MOUNTING DETAIL**

**KUNIA ROAD IMPROVEMENTS**  
Vicinity of South Kupuna Loop to  
Vicinity of Honowai Street  
Project No. HWY-0-01-04

Scale: As Noted Date: Oct. 2003

SHEET No. 78 OF 8 SHEETS