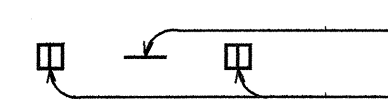
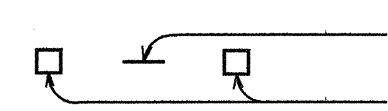



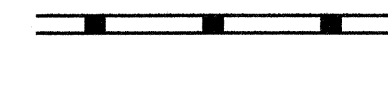
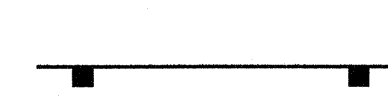




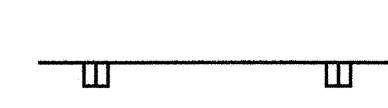
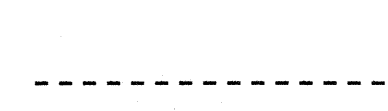

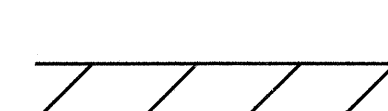





| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII | HAW. | STP-019-1(21) | 1996 | 3 | 12 |

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. Stop signs indicated to be removed shall be removed after the traffic signal system is operational.
10. Removal of Existing Delineators and Posts as directed by the Engineer shall be considered incidental to the various signing items.
11. 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.
12. Backing for all new regulatory and warning signs shall not be spliced.
13. All sign panels shall conform to Section 621 of Special Provisions and the latest editions and amendments of the following FHWA publications:
 - a. "Manual on Uniform Traffic Control Devices for Street and Highways" (MUTCD)
 - b. "Standard Highway Signs"
 - c. "Standard Alphabets for Highway Signs"
14. All new and relocated signs and markers installed on pipe post or light standard are to be mounted with band brackets and steel braces.
15. The Contractor shall erect at the beginning of the project and at the end of the project advance construction warning signs as indicated on the plans or as directed by the Engineer for the duration of the highway project and shall be maintained by the Contractor. These signs shall be placed in addition to the required traffic control signs called for in Section 645 - Traffic Control. The advance construction warning signs shall be new and become the property of the State. The Contractor shall remove, clean, and deliver the signs and posts to the Highway's District Baseyard or as directed by the Engineer of the project.
16. Restore all pavement markings damaged by the Contractor's operation, including striping and symbols damaged by sawcuts for loop detector installation. This work shall be considered incidental to the various contract items.
17. The Contractor shall schedule his work to minimize disruption of the on-going Queen Kaahumanu Highway Resurfacing Project, Project No. STP-019-1(18).

NOTES (Continued)

18. Clear shoulder areas shall be maintained for bicycle and pedestrian traffic at all times. If one shoulder is closed, appropriate signs shall be posted directing bicyclists and pedestrians to use opposite shoulder area.
19. Contractor shall schedule his work around the Iron Man Triathlon Race activities held annually in October. All pavement and shoulder areas shall be restored to smooth riding condition, completely cleaned, and pavement striping installed at least three weeks prior to the event. No construction work shall be permitted during this period.
20. Contractor shall maintain a minimum two (2) lanes open to thru traffic at all times.

CONSTRUCTION NOTES

1. The scope of work for this project consists of installing a new traffic signal system with appurtenances, pavement striping and markings, and signing.
2. The Contractor is reminded of the requirements of Subsection 108.01 - Subletting of Contract, which requires him to perform work amounting to not less than 50 percent of the total contract cost less deductible items. Non-compliance with this Subsection may be grounds for rejection of bid.
3. The Contractor's attention is directed to the following Sections of the Special Provisions: Subsection 107.13 - Public Convenience and Safety. Subsection 107.21 - Contractor's Responsibility for Utility Property and Services. Section 645 - Traffic Control.
4. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.
5. Locations of existing underground structures and utilities such as pipelines, conduits, cables, etc., manholes, monuments, and structures shown on plans are approximate only. It is not the intent of these plans to show the exact location of all underground utilities and structures. It is the responsibility of the Contractor to verify the locations of all existing utilities with the respective owners. Existing utilities damaged by the Contractor shall be repaired by the Contractor at his own cost.
6. Contractor shall provide for access to and from all existing side streets and driveways at all times.

| | |
|-------------|------|
| DESIGNED BY | DATE |
| DRAWN BY | |
| CHECKED BY | |
| NOTED BY | |
| DATE | |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PAVEMENT MARKING
LEGEND, DETAILS & NOTES
QUEEN KAAHUMANU HIGHWAY
Intersection Improvements at
Keahole Airport Road
Fed. Aid Project No. STP-019-1(21)
Not to Scale Date: Jan., 1996
SHEET No. 1 OF 3 SHEETS

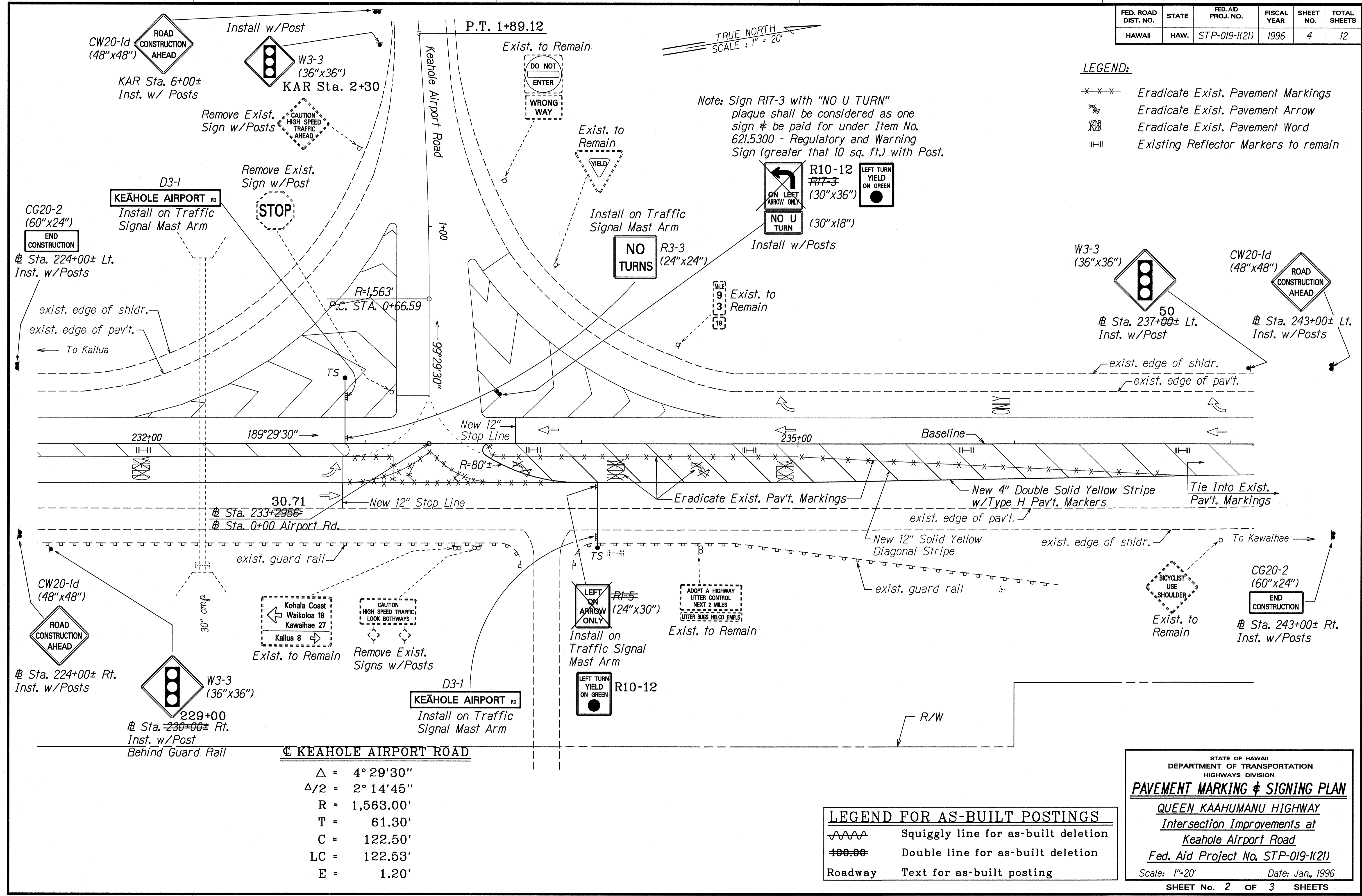
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII | HAW. | STP-019-1(21) | 1996 | 4 | 12 |

LEGEND:

- x---x---x--- Eradicate Exist. Pavement Markings
- x--- Eradicate Exist. Pavement Arrow
- x--- Eradicate Exist. Pavement Word
- ||--- Existing Reflector Markers to remain

TRUE NORTH
SCALE: 1" = 20'

Note: Sign R17-3 with "NO U TURN" plaque shall be considered as one sign & be paid for under Item No. 621.5300 - Regulatory and Warning Sign (greater than 10 sq. ft.) with Post.



| | |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY | |
| DESIGNED BY | |
| QUANTITIES BY | |
| CHECKED BY | |
| ORIGINAL PLAN | |
| NOTE BOOK | |
| NO. 1000 | |
| NO. 1000 | |

| | | |
|------------|---|------------|
| Δ | = | 4° 29' 30" |
| $\Delta/2$ | = | 2° 14' 45" |
| R | = | 1,563.00' |
| T | = | 61.30' |
| C | = | 122.50' |
| LC | = | 122.53' |
| E | = | 1.20' |

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

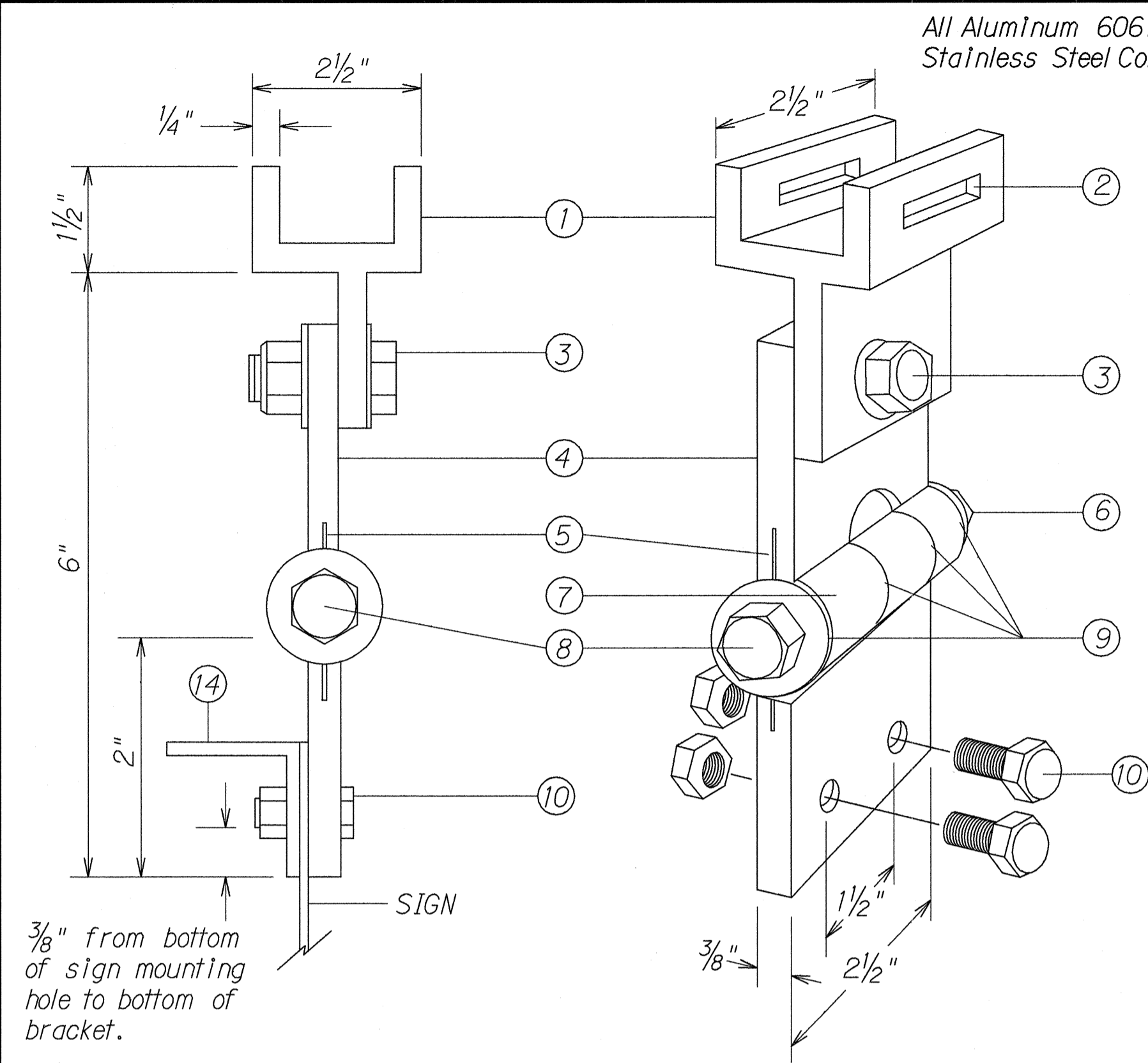
PAVEMENT MARKING & SIGNING PLAN

QUEEN KAAHUMANU HIGHWAY
Intersection Improvements at
Keahole Airport Road
Fed. Aid Project No. STP-019-1(21)

Scale: 1"=20' Date: Jan., 1996

SHEET No. 2 OF 3 SHEETS

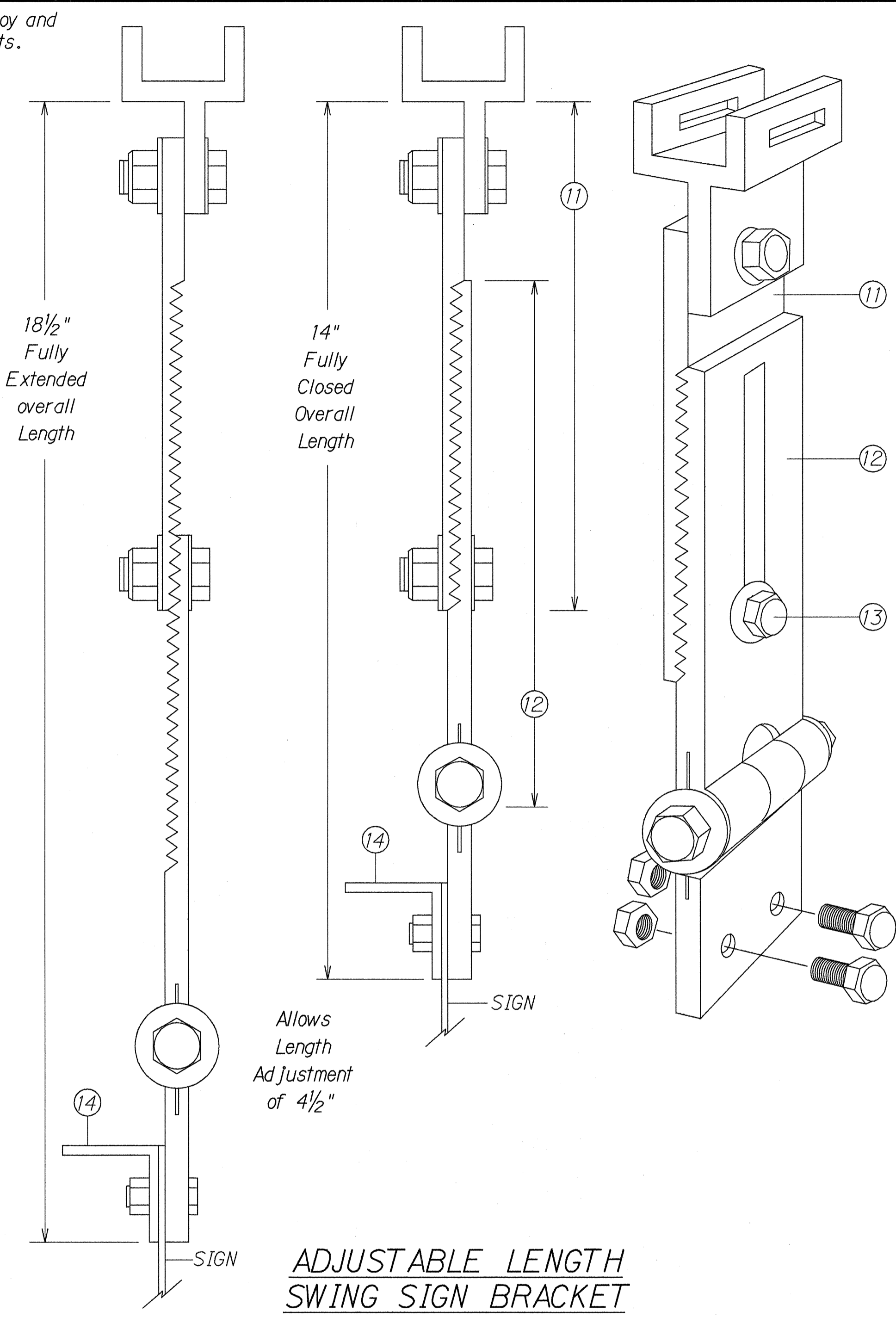
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII | HAW. | STP-019-1(21) | 1996 | 5 | 12 |



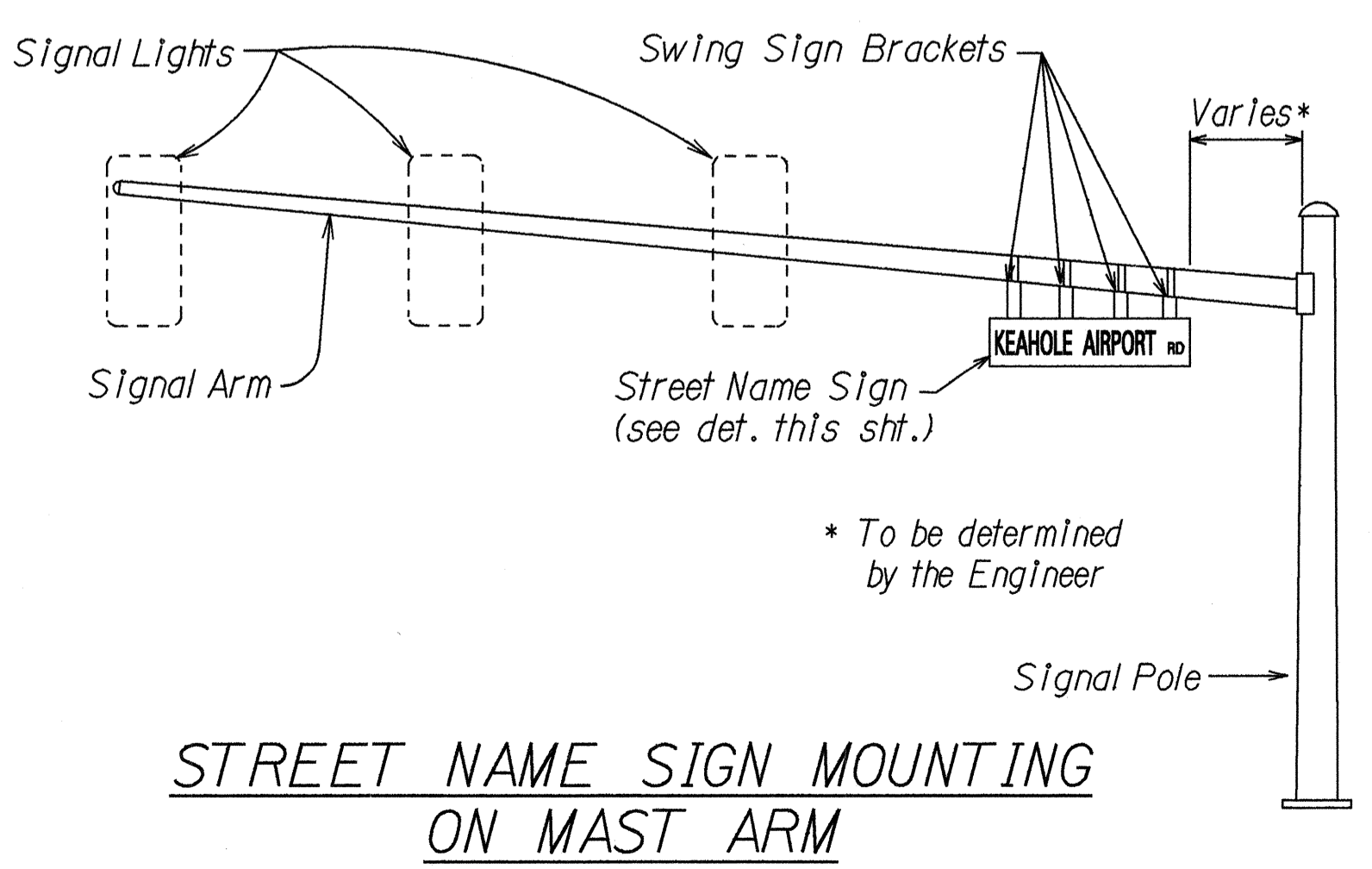
FIXED LENGTH NON-ADJUSTABLE SWING SIGN BRACKET

- ① Pivotal Upper Bracket
- ② 1 5/8" x 1/4" Slot for double strapping to electrolier 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 electrolier mast arm.
- ④ 6" Overall drop with Fixed Length Sign Bracket
- ⑤ Stainless Steel Dampener 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 O111te 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 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

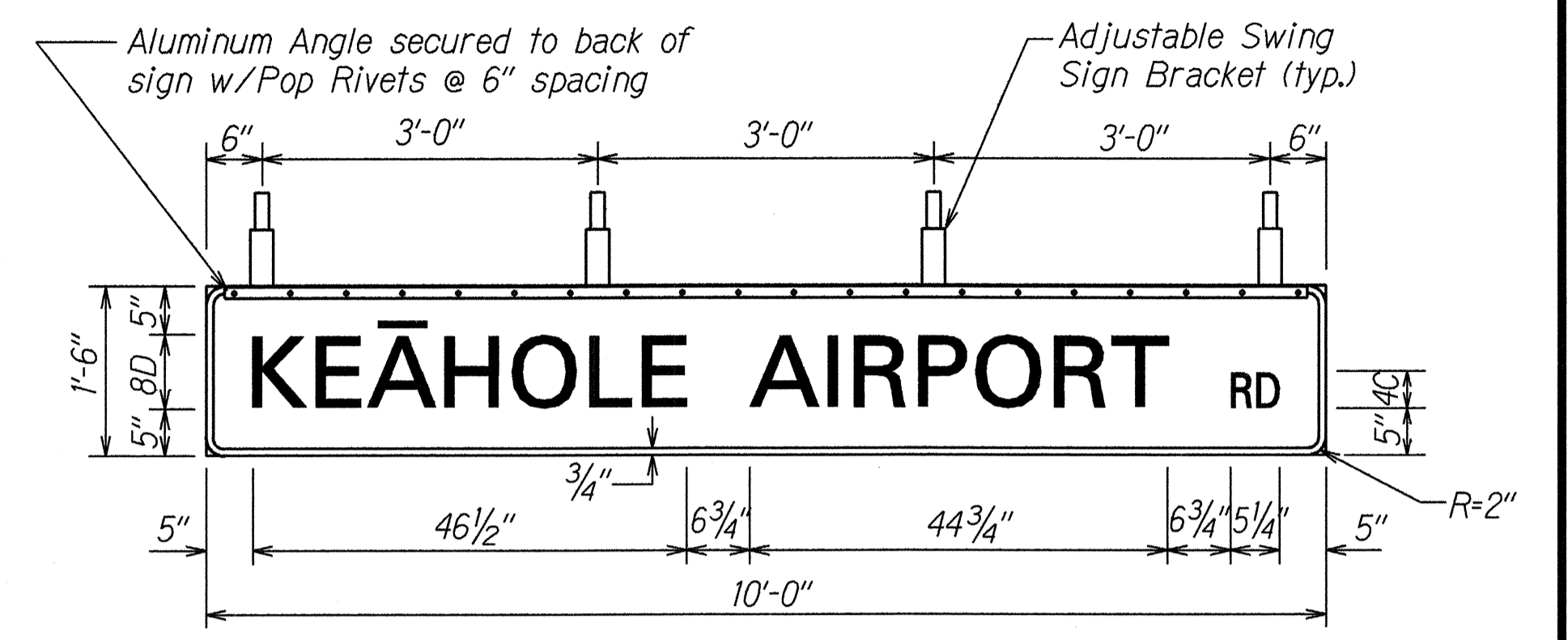
Note: Dimensions may vary slightly.



ADJUSTABLE LENGTH SWING SIGN BRACKET



STREET NAME SIGN MOUNTING ON MAST ARM



D3-1 (Rear View) STREET NAME SIGN DETAIL

STREET NAME (D3) SIGN NOTES:

1. Provide the same message on the front and back side of the sign. Payment will not be made separately 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 (High Intensity or High Performance Grade).
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, fixtures, fasteners and all necessary hardware, and equipment, tools, labor, materials and other incidental for installation, will not be paid for separately but shall be considered incidental to street name sign installation.
7. Install Street Name Signs on Traffic Signal Mast Arm.
8. The macron (-), which serves two functions, used on all long vowels and on one-syllable words and particles that are always stressed, shall be installed on the new Street Name Sign in accordance with the book entitled, "Hawaiian Street Names", The Hawaiian Dictionary and History of O'ahu Street Names.

| | |
|-------------------|------------|
| DATE | 11/18/95 |
| SURVEY PLANNED BY | |
| DESIGNED BY | G. KERRILL |
| QUANTITY | |
| CHECKED BY | |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SWING SIGN BRACKET DETAIL

QUEEN KAAHUMANU HIGHWAY
Intersection Improvements at
Keahole Airport Road
Fed. Aid Project No. STP-019-1(21)
Not to Scale Date: Jan., 1996

SHEET No. 3 OF 3 SHEETS