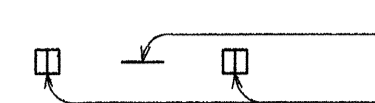
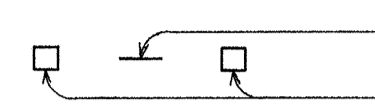

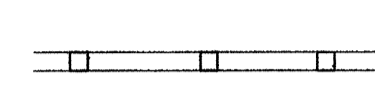



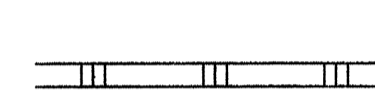

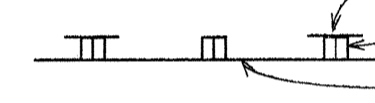

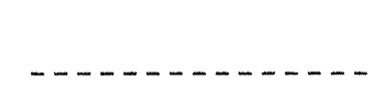
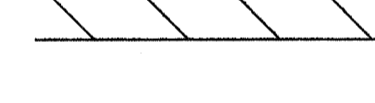


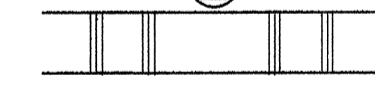

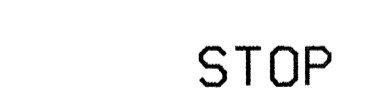








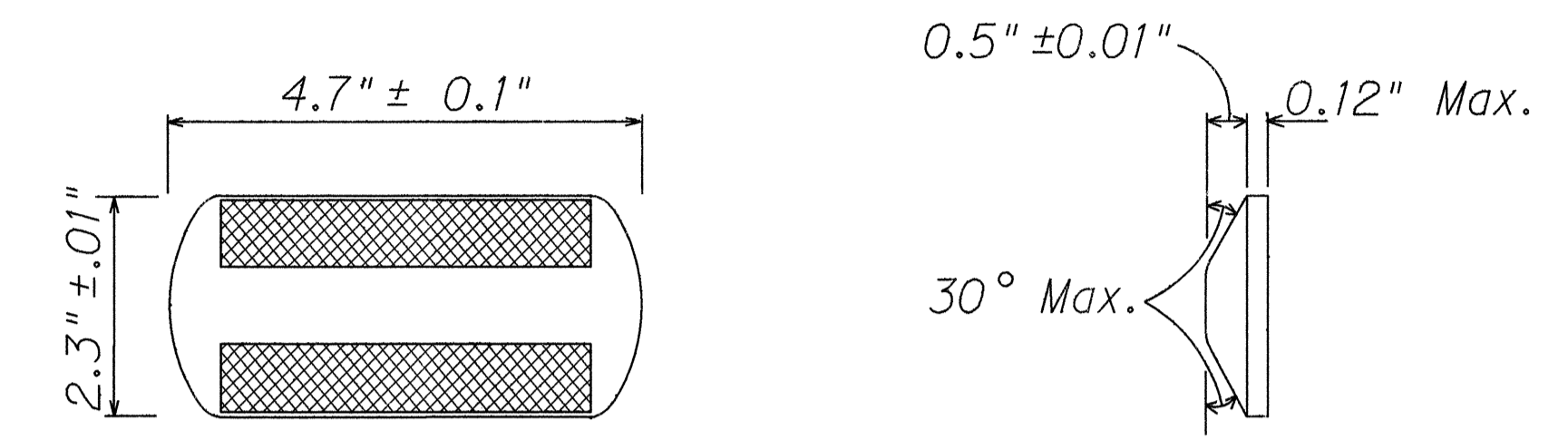


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	141	223

**LEGEND**

-  4 each Type A Raised Pavement Markers  
Type CL Raised Pavement Markers @ 40' - 0" o.c.
-  4 each Type J Raised Pavement Markers  
Type DL Raised Pavement Markers @ 40' - 0" o.c.
-  8" White Stripe with Type CL Raised Pavement Markers @ 20' - 0" o.c. (Tape, Type I or Thermoplastic Extrusion)
-  4" Double Solid Yellow with Type DL Raised Pavement Markers @ 20' - 0" o.c. (Tape, Type I or Thermoplastic Extrusion)
-  4" Double Solid Yellow Stripes with Type HL Raised Pavement Markers @ 20' - 0" o.c. (Tape, Type II or Thermoplastic Extrusion)
-  4" or 8" Yellow Edge Stripe with Type HL Raised Pavement Markers @ 40' - 0" o.c. (Tape, Type II or Thermoplastic Extrusion)
-  4" Double Solid White Stripes with Type CL 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 CL Raised Pavement Markers @ 20' - 0" o.c.  
4" White Stripe (Tape, Type I or Thermoplastic Extrusion)
-  4" or 8" White Edge Stripe with Type CL Raised Pavement Markers @ 40' - 0" o.c. (Tape, Type II or Thermoplastic Extrusion)
-  4" White Guide Lines (Thermoplastic Extrusion)
-  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. (Thermoplastic Extrusion)
-  Pavement Arrow (Tape, Type I or Thermoplastic Extrusion)
-  Pavement Word (Tape, Type I or Thermoplastic Extrusion)
-  4 Each Type J Raised Pavement Markers  
Type DL Raised Pavement Markers @ 40' - 0" o.c.  
Type HL 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 CL Markers @ 40' - 0" o.c. (Thermoplastic Extrusion)

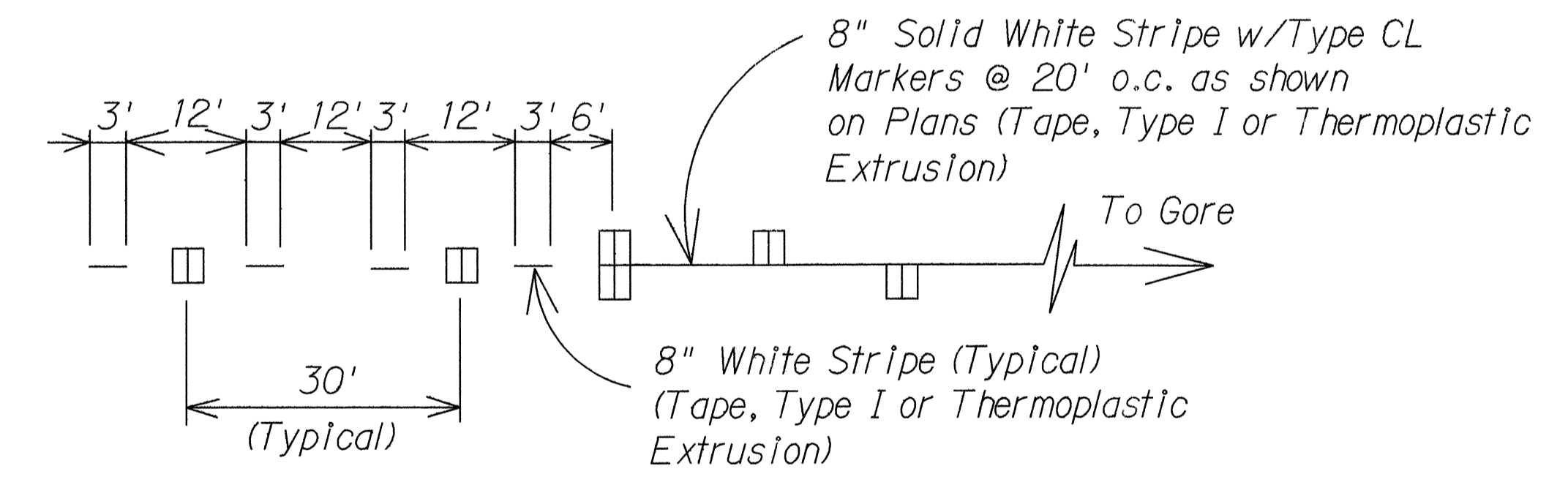
-  White Reflector Marker (RM-2) on Flexible Delineator (Type B)
-  White Reflector Marker (RM-2), Barrier Mounted
-  White Reflector Marker (RM-2), Wall Mounted
-  Yellow Reflector Marker (RM-2) on Flexible Delineator (Type B)
-  Yellow Reflector Marker (RM-2), Barrier Mounted
-  Yellow Reflector Marker (RM-2), Wall Mounted
-  White Reflector Marker (RM-2) on Steel Post
-  Yellow Reflector Marker (RM-2) on Steel Post



TYPE CL  
Red-Clear Reflective Marker  
or  
TYPE DL  
Two-Way Yellow Reflective Marker  
or  
TYPE HL  
One-Way Yellow Reflective Marker

**RAISED PAVEMENT MARKER DETAILS**

Not to Scale



**LANE DROP MARKING**

Not to Scale

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
N <sub>o</sub> .	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PAVEMENT MARKING  
LEGEND, DETAILS & NOTES**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Milliani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: As Shown      Date: April, 1992

SHEET No. 71 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	142	223

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. Details of Type C, Type D and Type H Markers on Standard Plan Nos. TE-30, TE-31 and TE-32 shall be deleted and replaced with details of Type CL, Type DL and Type HL Markers as shown on Sheet No. T1. All references to Type C, Type D and Type H Markers in the plans shall mean Type CL, Type DL and Type HL Markers.
5. Final locations of all signs shall be approved by the Engineer prior to any Installation work.
6. All pavement striping shall be as noted on the legend or plans.
7. 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.
8. Backing for all new Regulatory and Warning Signs shall not be spliced.
9. Interstate Route Marker Symbols shall conform to details shown on the plans and as specified in the MUTCD.
10. 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 Streets and Highways" (MUTCD)
  - b. "Standard Highway Signs."
  - c. "Standard Alphabets for Highway Signs."
11. Borders, messages, arrows, symbols and shields shall conform to details as shown on the plans and as specified in the MUTCD.
12. Sign messages shall be as indicated on the plan.
13. 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 shall be in only one direction if vertical abutting edges are used, no horizontal abutting edges shall be allowed and vice versa.
14. 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.
15. 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.
16. Removal of Existing Delineators and Posts not incorporated in the final traffic plans or as directed by the Engineer shall be considered incidental to the various signing items.
17. All preformed pavement marking tapes over existing pavement shall be applied with an approved primer as recommended by the tape manufacturer and as directed by the Engineer. The primer shall be allowed to dry to the tacky stage prior to tape application.
18. Regulatory and Warning Signs, directional signs ("DIR" designation), route and auxiliary markers, shield symbols, yellow "EXIT ONLY" panels, construction warning signs, and barricade rails shall be completely reflectorized with Type III or IV retroreflective sheeting.
19. The Contractor shall install new construction Warning Signs w/posts as noted on the plans. At the project completion, these signs and posts shall become the property of the state. The Contractor shall remove, clean, and deliver the signs and posts to the Oahu District Baseyard or as directed by the Engineer. The contract unit price shall be full compensation for all materials, labor, tools, equipment and incidentals necessary for the installation, maintenance, removal, cleaning, delivering, and storing of the signs w/posts.
20. The Contractor shall remove and deliver existing highway lighting standard to the Oahu District Baseyard or as directed by the Engineer. The cost of removing and delivering the existing highway lighting standard shall not be paid for but considered incidental to the various highway lighting items.

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
QUANTITIES BY	
NOTED BY	
NO.	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

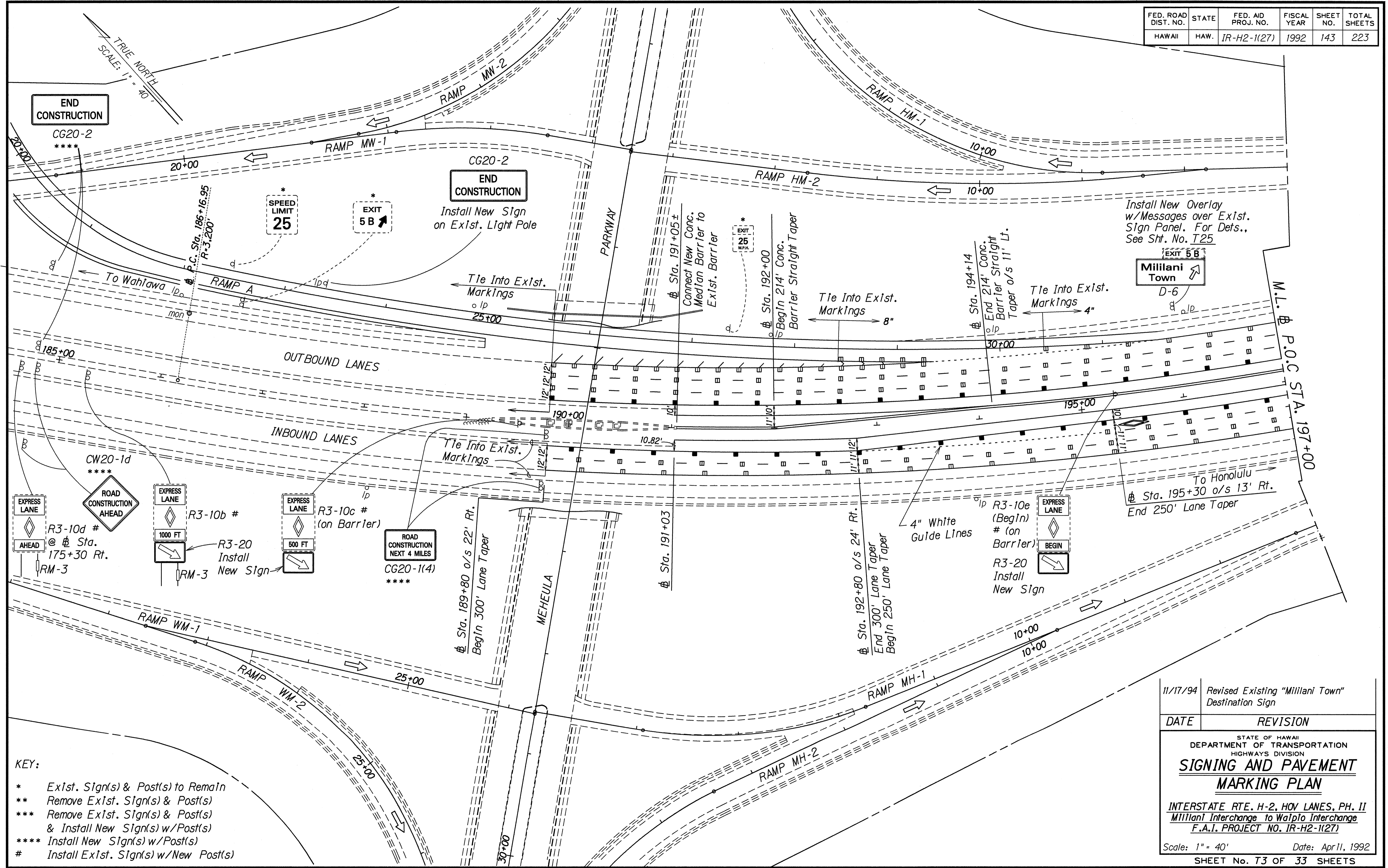
**NOTES**

**INTERSTATE RTE. H-2, HOV LANES, PH. II**  
**Mililani Interchange to Waipio Interchange**  
**F.A.I. PROJECT NO. IR-H2-1(27)**

Date: April, 1992

SHEET No. T2 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	143	223



SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

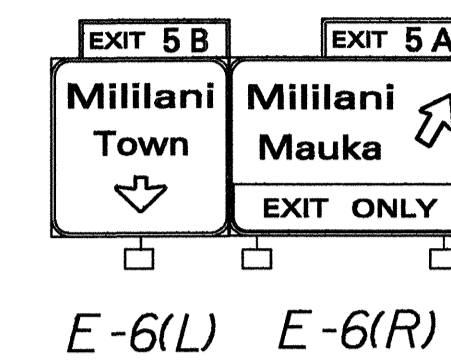
- KEY:**
- \* Exst. Sign(s) & Post(s) to Remain
  - \*\* Remove Exst. Sign(s) & Post(s)
  - \*\*\* Remove Exst. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exst. Sign(s) w/New Post(s)

11/17/94	Revised Existing "Milliani Town" Destination Sign
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>SIGNING AND PAVEMENT MARKING PLAN</b>	
INTERSTATE RTE. H-2, HOV LANES, PH. II MILLIANI INTERCHANGE TO WAIPIO INTERCHANGE F.A.I. PROJECT NO. IR-H2-1(27)	
Scale: 1" = 40'	Date: April, 1992
SHEET No. 73 OF 33 SHEETS	

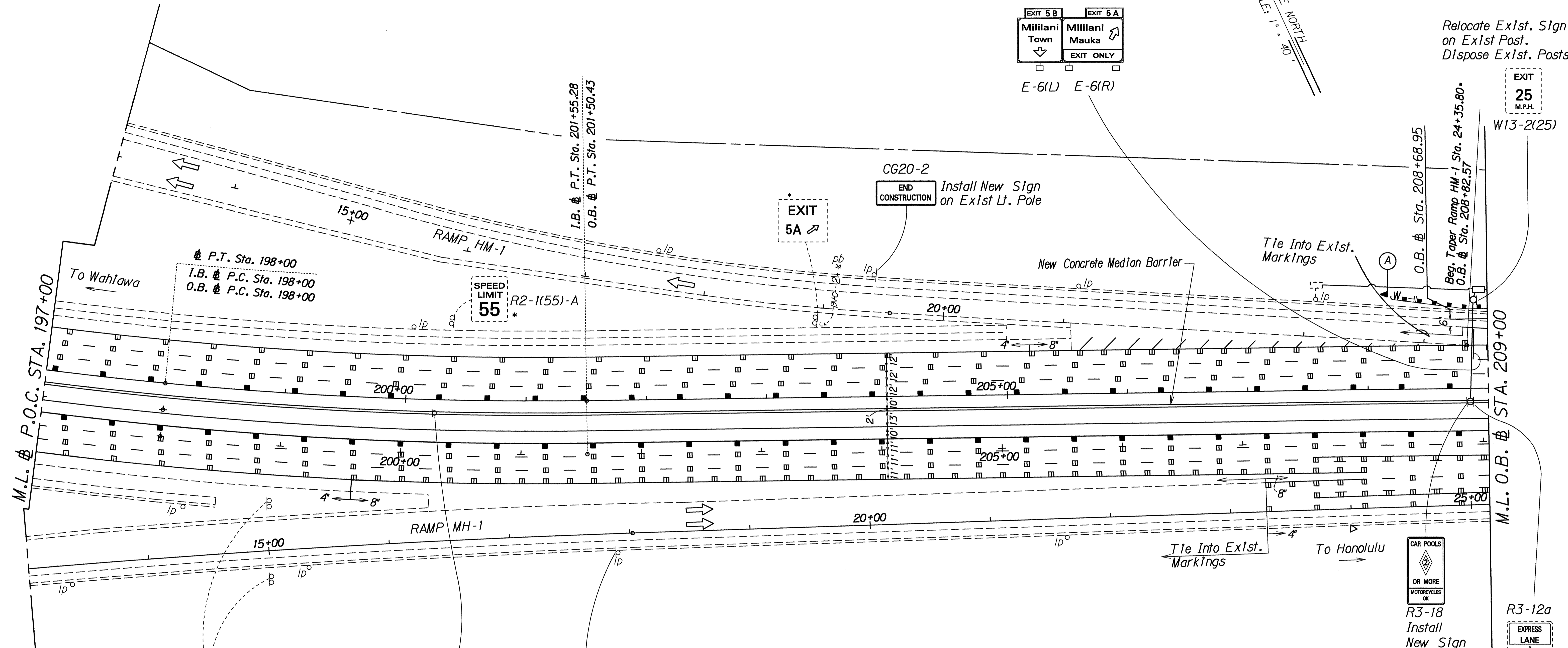
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	144	223

Install New Overhead Sign Support Structure & New Sign Panels.  
For det., see sht. nos. T25 & T26

TRUE NORTH  
SCALE: 1" = 40'

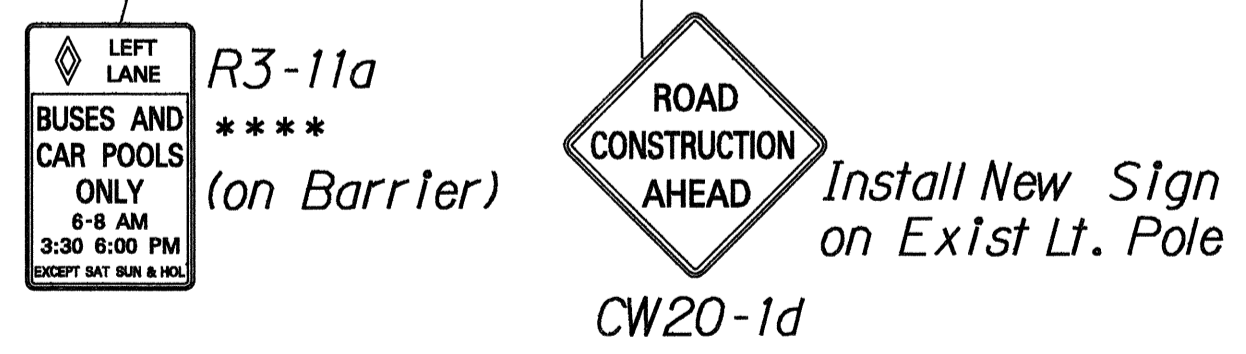


Relocate Exst. Sign on Exst Post.  
Dispose Exst. Posts



DATE	
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	
DATE	

- KEY:
- \* Exst. Sign(s) & Post(s) to Remain
  - \*\* Remove Exst. Sign(s) & Post(s)
  - \*\*\* Remove Exst. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exst. Sign(s) w/New Post(s)



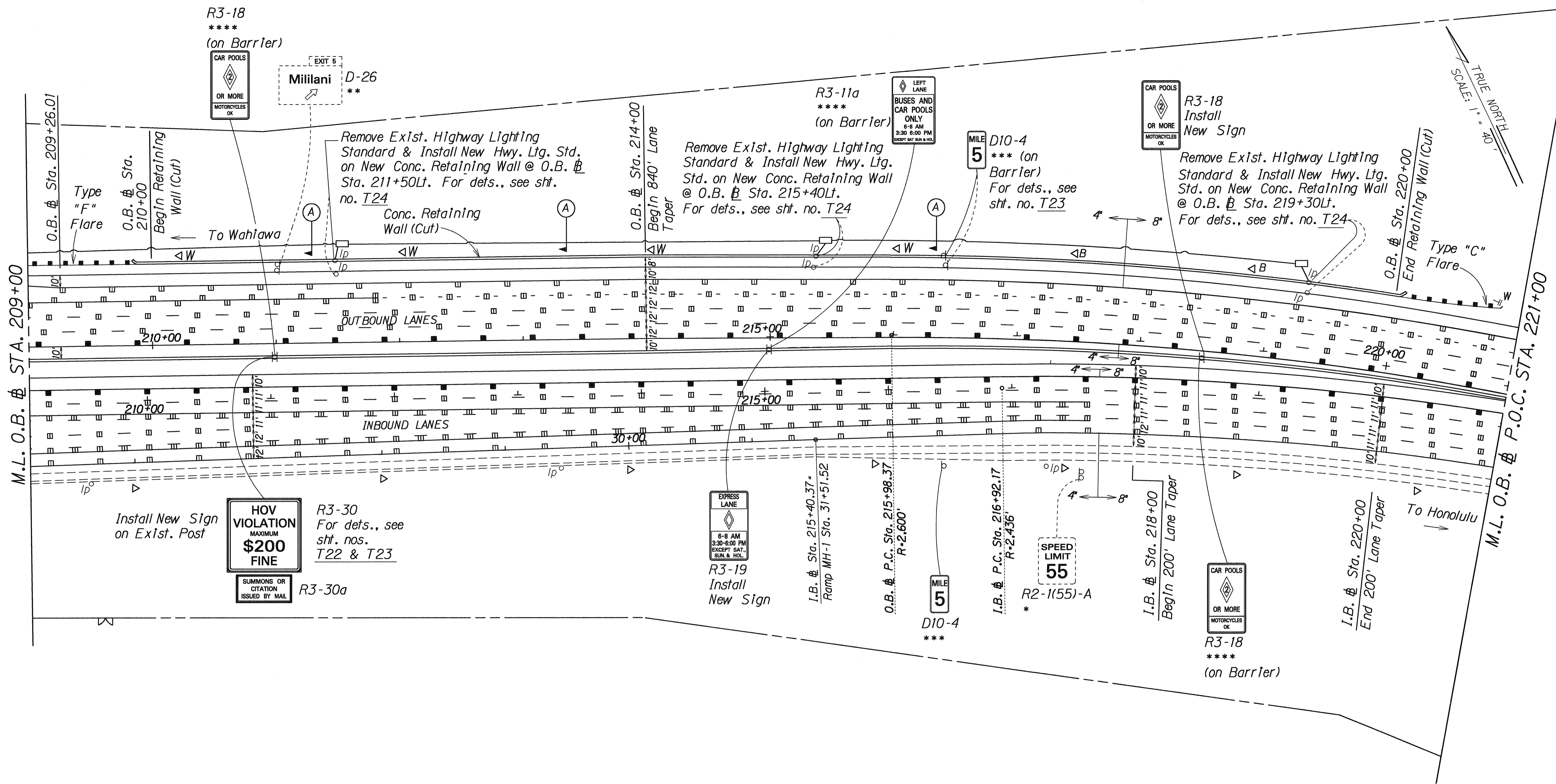
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT MARKING PLAN**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Mililani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 40' Date: April, 1992  
SHEET No. T4 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	145	223



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

**KEY:**

- \* Exist. Sign(s) & Post(s) to Remain
- \*\* Remove Exist. Sign(s) & Post(s)
- \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
- \*\*\*\* Install New Sign(s) w/Post(s)
- # Install Exist. Sign(s) w/New Post(s)

DATE	REVISION
7/21/94	Added Signs R3-30 and R3-30a

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT  
MARKING PLAN**

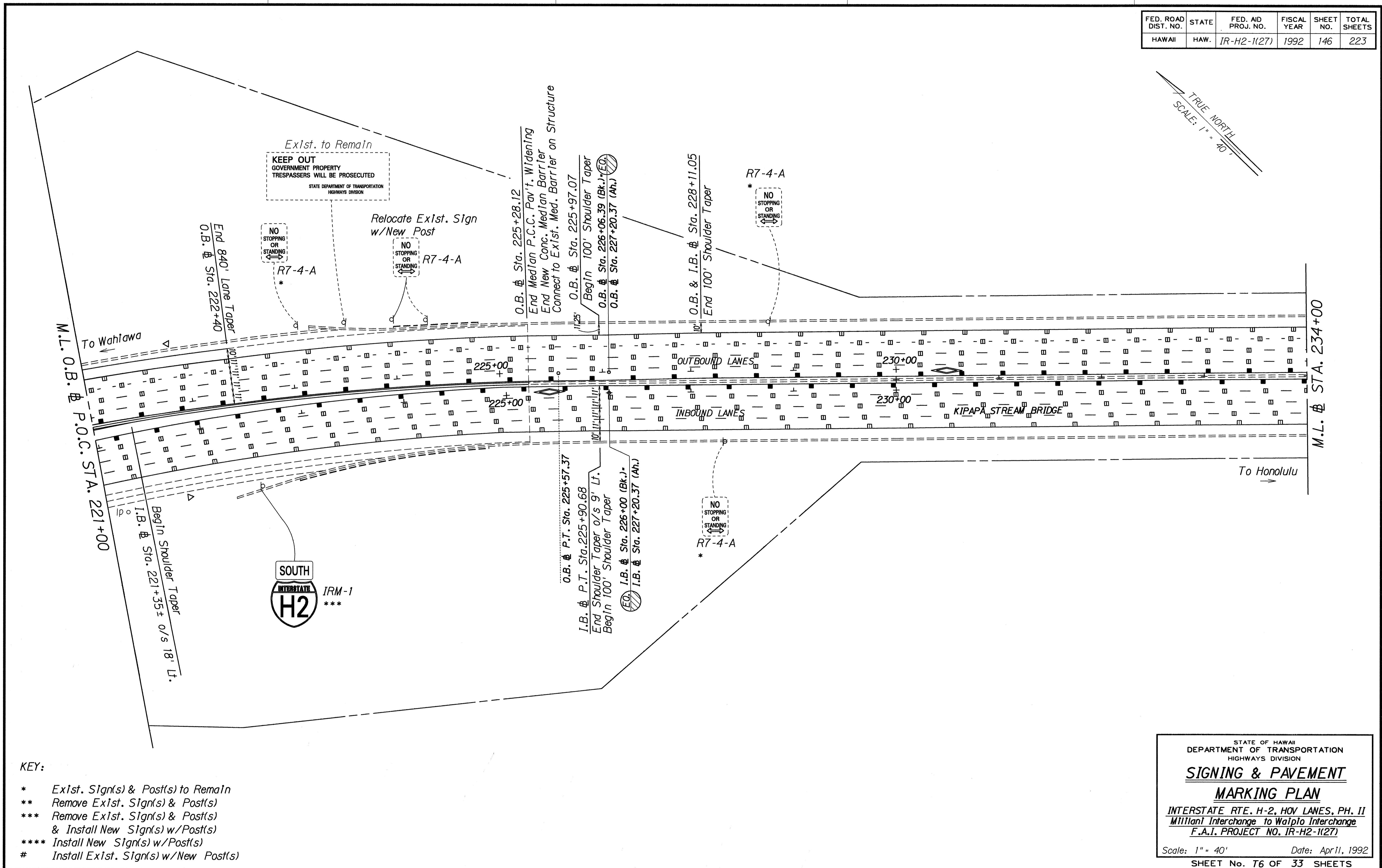
*INTERSTATE RTE. H-2, HOV LANES, PH. II  
Mililani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)*

Scale: 1" = 40' Date: April, 1992

SHEET No. 75 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	146	223

TRUE NORTH  
SCALE: 1" = 40'



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

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT  
MARKING PLAN**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Miliani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

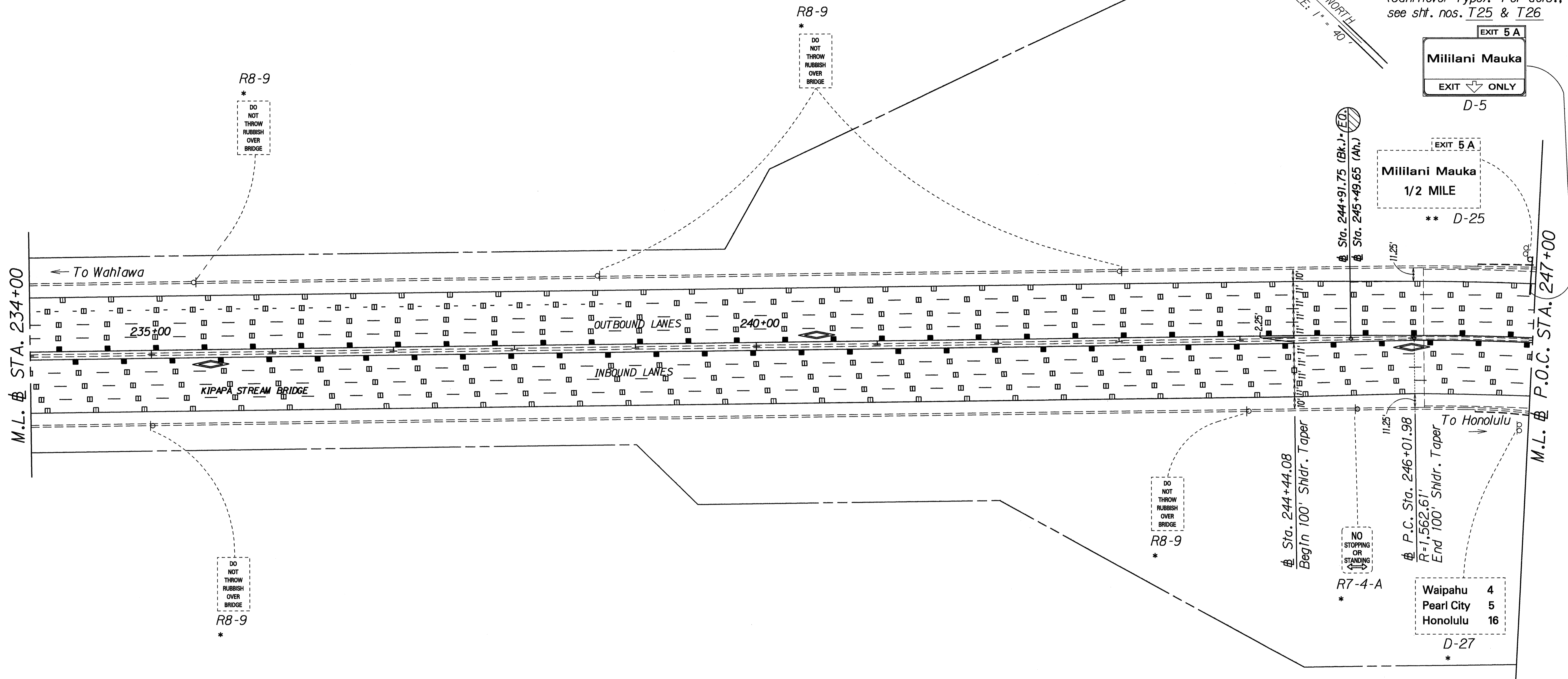
Scale: 1" = 40'      Date: Apr 11, 1992

SHEET No. 76 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	147	223

Install New Sign Panel & Overhead Sign Support (Cantilever Type). For detls., see sht. nos. T25 & T26

TRUE NORTH  
SCALE: 1" = 40'



SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

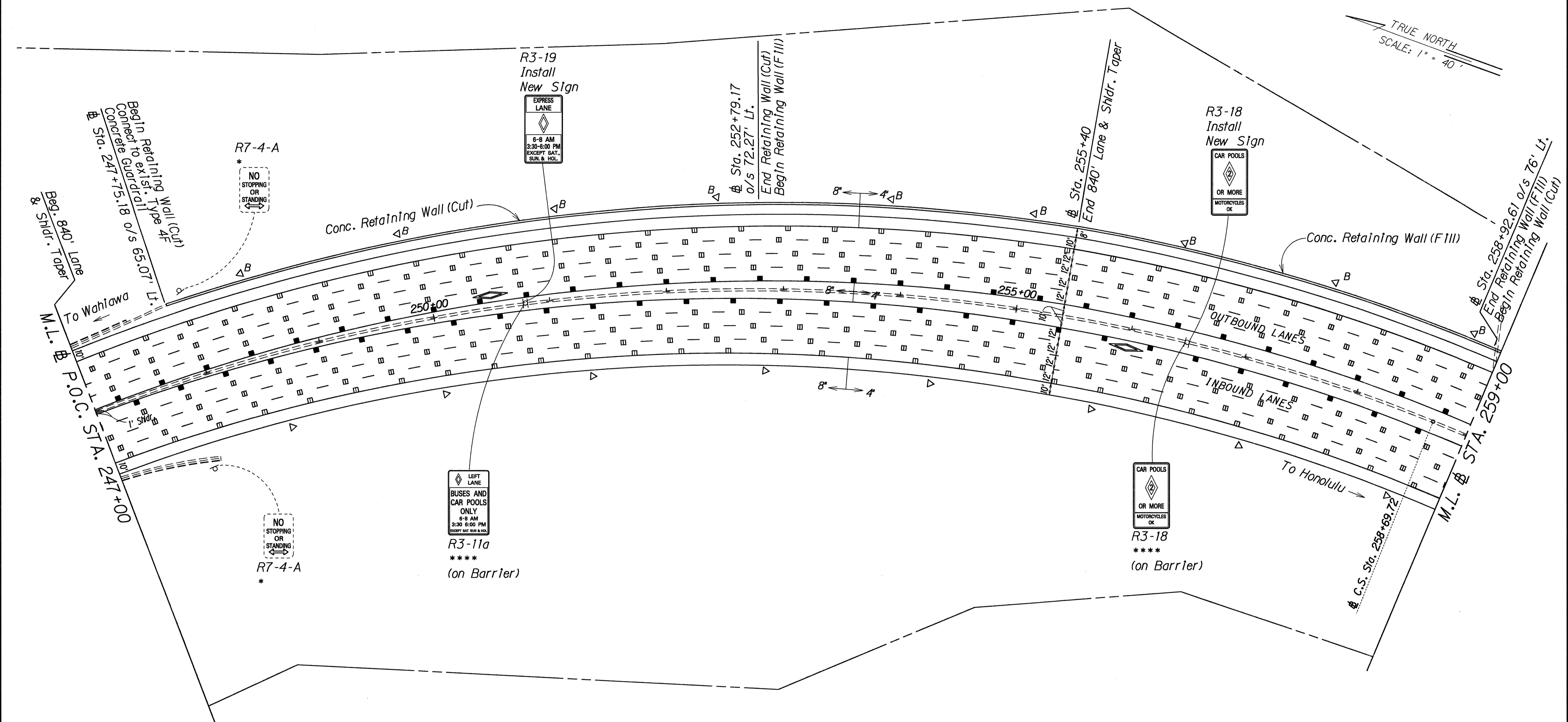
**SIGNING & PAVEMENT**  
**MARKING PLAN**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Mililani Interchange to Waipaho Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 40' Date: April, 1992  
SHEET No. T7 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	148	223

TRUE NORTH  
SCALE: 1" = 40'



SURVEY PLOTTED BY	DATE
DESIGNED BY	
REVISIONS BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### SIGNING & PAYMENT MARKING PLAN

*INTERSTATE RTE. H-2, HOV LANES, PH. II  
Milliani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)*

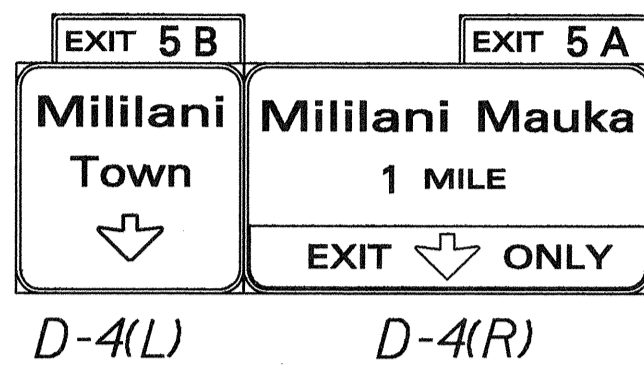
Scale: 1" = 40' Date: April, 1992

SHEET No. 18 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	149	223

TRUE NORTH  
SCALE: 1" = 40'

Install New Sign Panel &  
Sign Support on Exist.  
Pineapple Rd. Overpass.  
For det., see sht. nos. T25 & T26



W14-5  
\*\*\*\* (on Barrier)  
For det., see  
sht. nos. T22 & T23



R3-11a  
Install  
New Sign



Conc. Retaining Wall (Cut)  
To Wahiawa ←

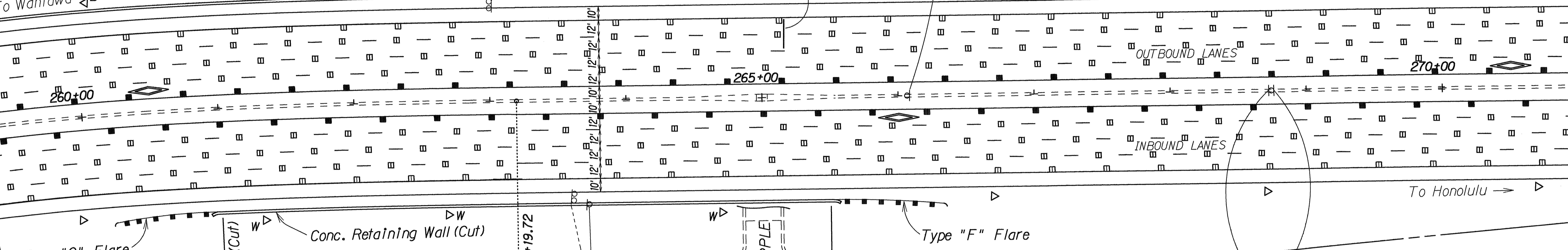
Sta. 265+50 Lt.  
End Retaining Wall (Cut)

Type "G" Flare

Type "C" Flare

M.L. # STA. 259+00

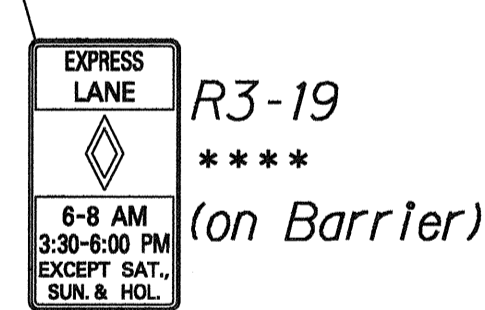
M.L. # STA. 271+00



Type "C" Flare

Conc. Retaining Wall (Cut)

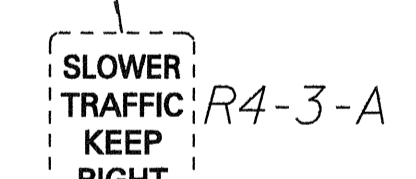
Type "F" Flare



Sta. 261+00 Rt.  
Begin Retaining Wall (Cut)

S.T. Sta. 263+19.72

Sta. 265+50 Rt.  
End Retaining Wall (Cut)



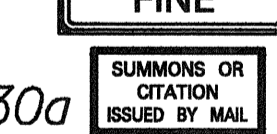
R4-3-A  
Relocate Exist. Sign  
w/New Post on Wall  
See sht no. T23 for Sign  
Mounting Details

Install New Signs  
(BI-Directional)  
w/Post on Exist.  
Concrete Barrier



R3-30  
For det., see  
sht. nos.  
T22 & T23

R3-30a



R3-19  
\*\*\*\*  
(on Barrier)

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

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

DATE	REVISION
7/21/94	Added Signs R3-30 and R3-30a

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

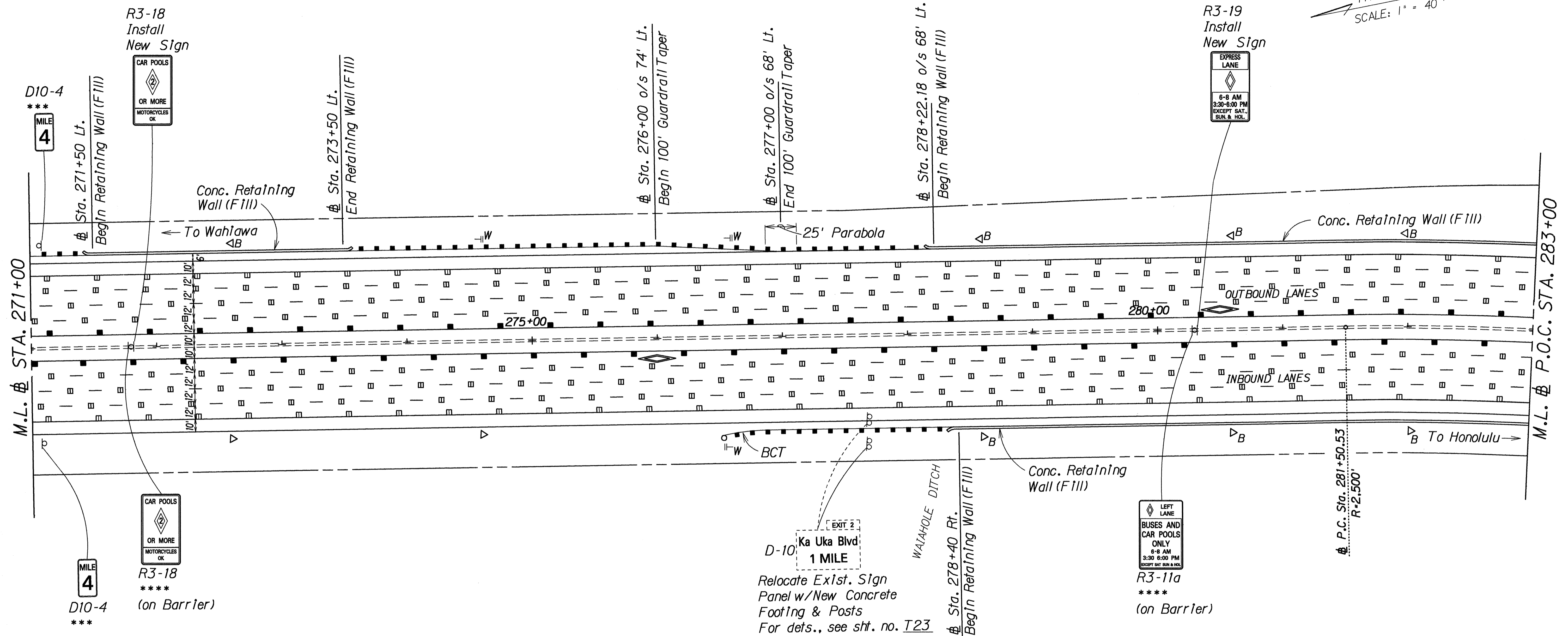
**SIGNING & PAVEMENT  
MARKING PLAN**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Mililani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 40' Date: April, 1992  
SHEET No. 19 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	150	223

TRUE NORTH  
SCALE: 1" = 40'



- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
QUANTITIES BY	_____
PLANNED BY	_____
REVISIONS	_____

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT**  
**MARKING PLAN**

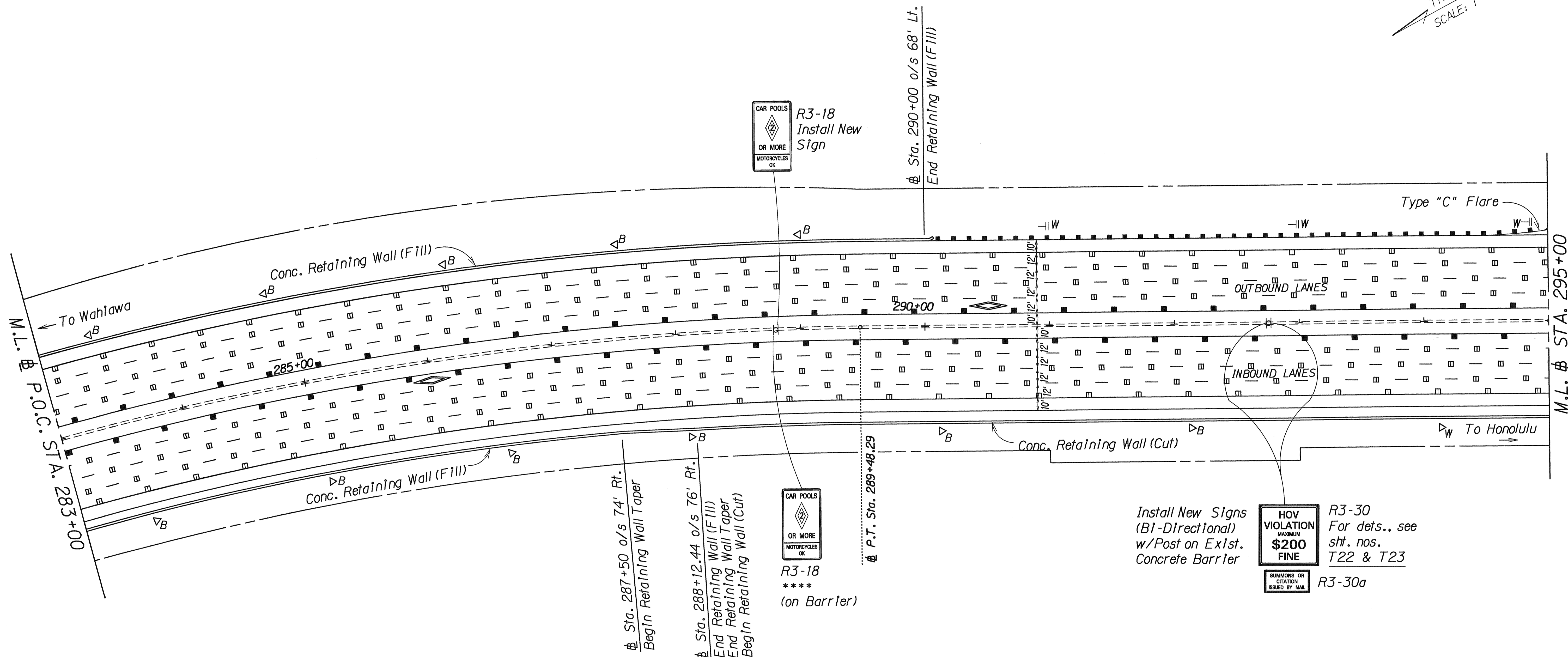
INTERSTATE RTE. H-2, HOV LANES, PH. II  
Miliiani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 40'      Date: April, 1992

SHEET No. T10 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	151	223

TRUE NORTH  
SCALE: 1" = 40'



CAR POOLS  
OR MORE  
MOTORCYCLES OK  
R3-18  
Install New Sign

CAR POOLS  
OR MORE  
MOTORCYCLES OK  
R3-18  
\*\*\*\*  
(on Barrier)

Install New Signs  
(BI-Directional)  
w/Post on Exist.  
Concrete Barrier

HOV VIOLATION  
MAXIMUM  
\$200  
FINE

R3-30  
For defs., see  
shf. nos.  
T22 & T23

SUMMONS OR  
CITATION  
ISSUED BY MAIL

R3-30a

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

DATE	REVISION
7/21/94	Added Signs R3-30 and R3-30a

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT**

**MARKING PLAN**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Milliani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

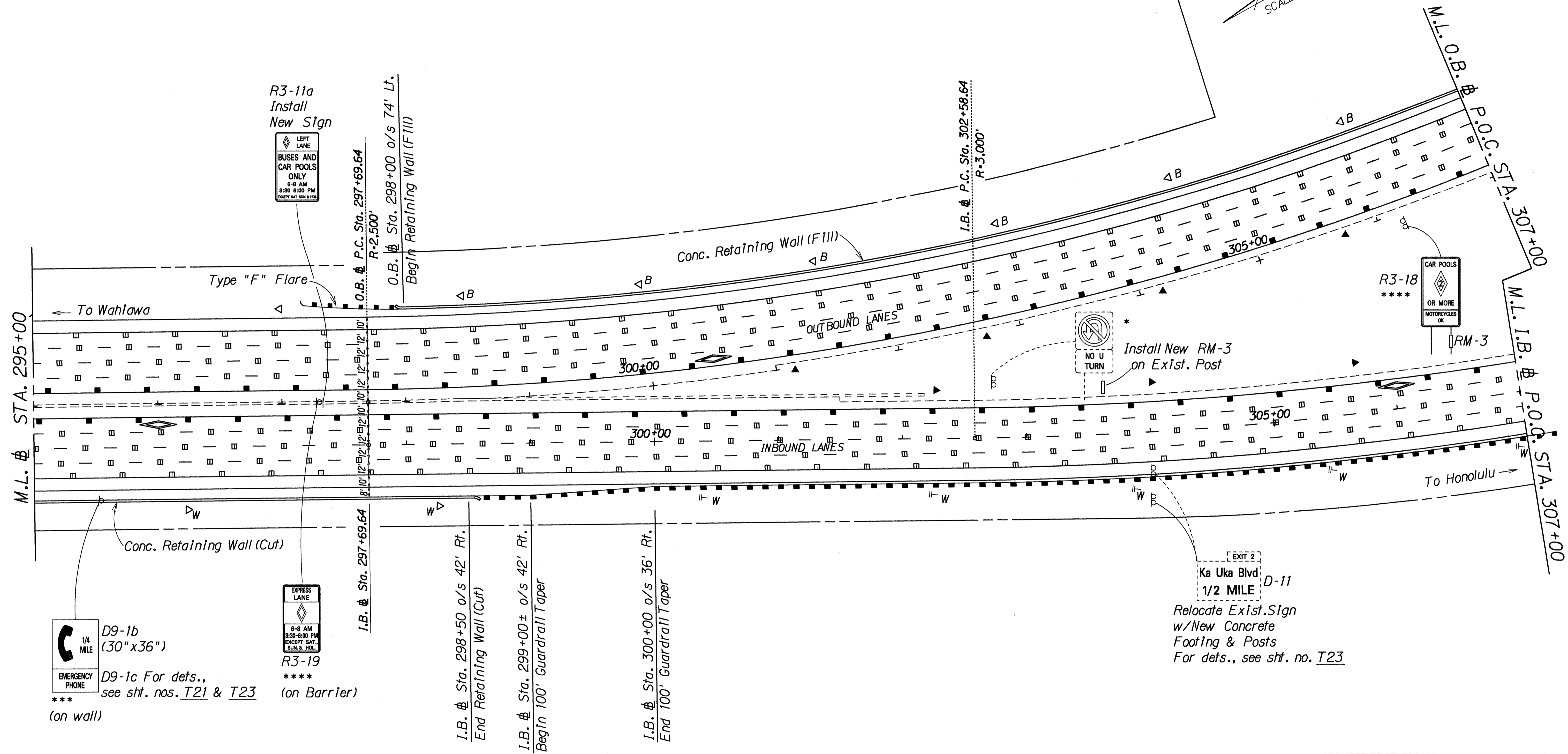
Scale: 1" = 40'      Date: Apr 11, 1992

SHEET No. 111 OF 33 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	152	223

TRUE NORTH  
SCALE: 1" = 40'



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT**  
**MARKING PLAN**

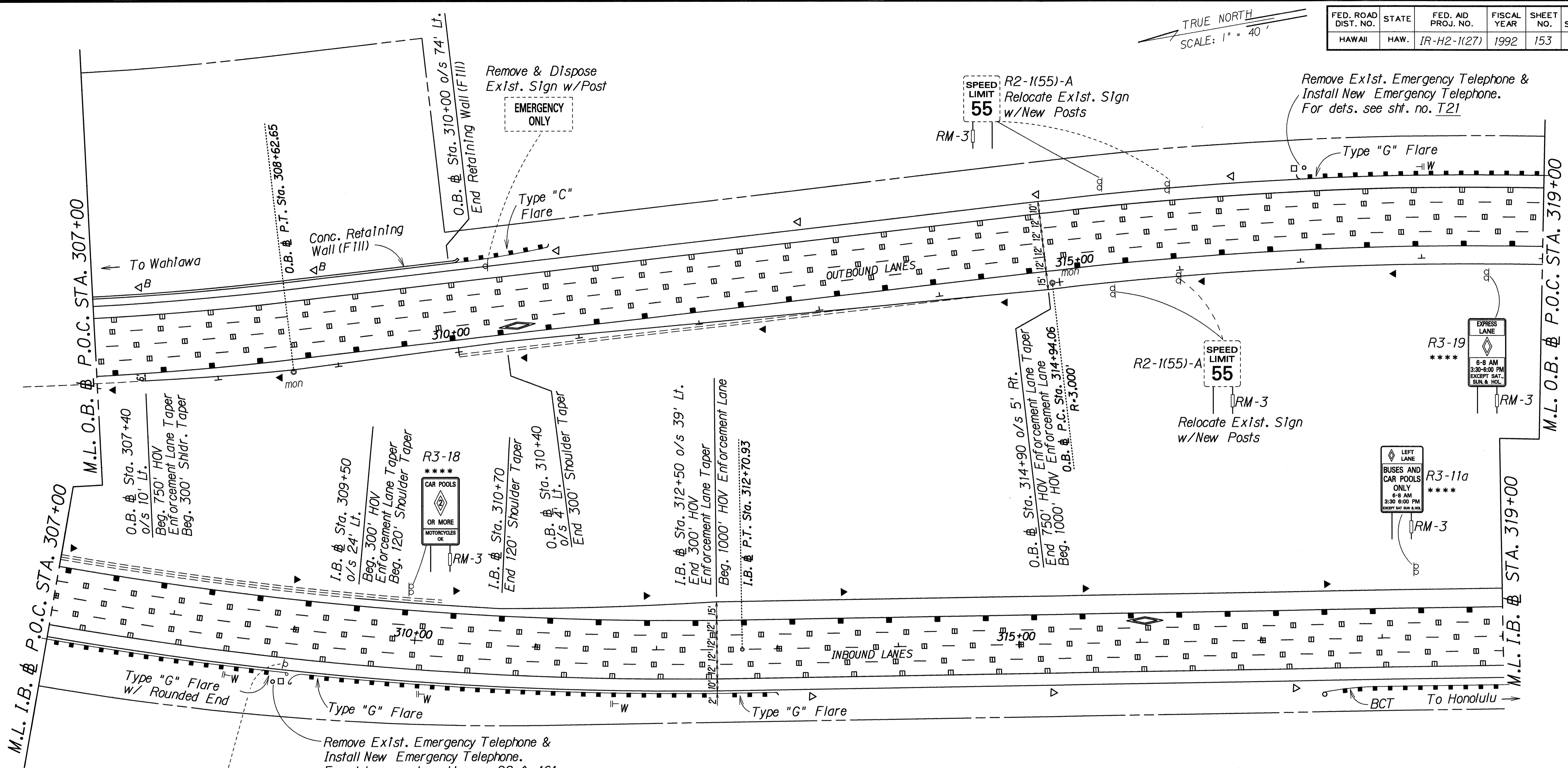
INTERSTATE RTE. H-2, HOV LANES, PH. II  
MITTANI Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 40'      Date: Apr 11, 1992

SHEET No. T12 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	153	223

TRUE NORTH  
SCALE: 1" = 40'



DATE	BY

- KEY:**
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT**

**MARKING PLAN**

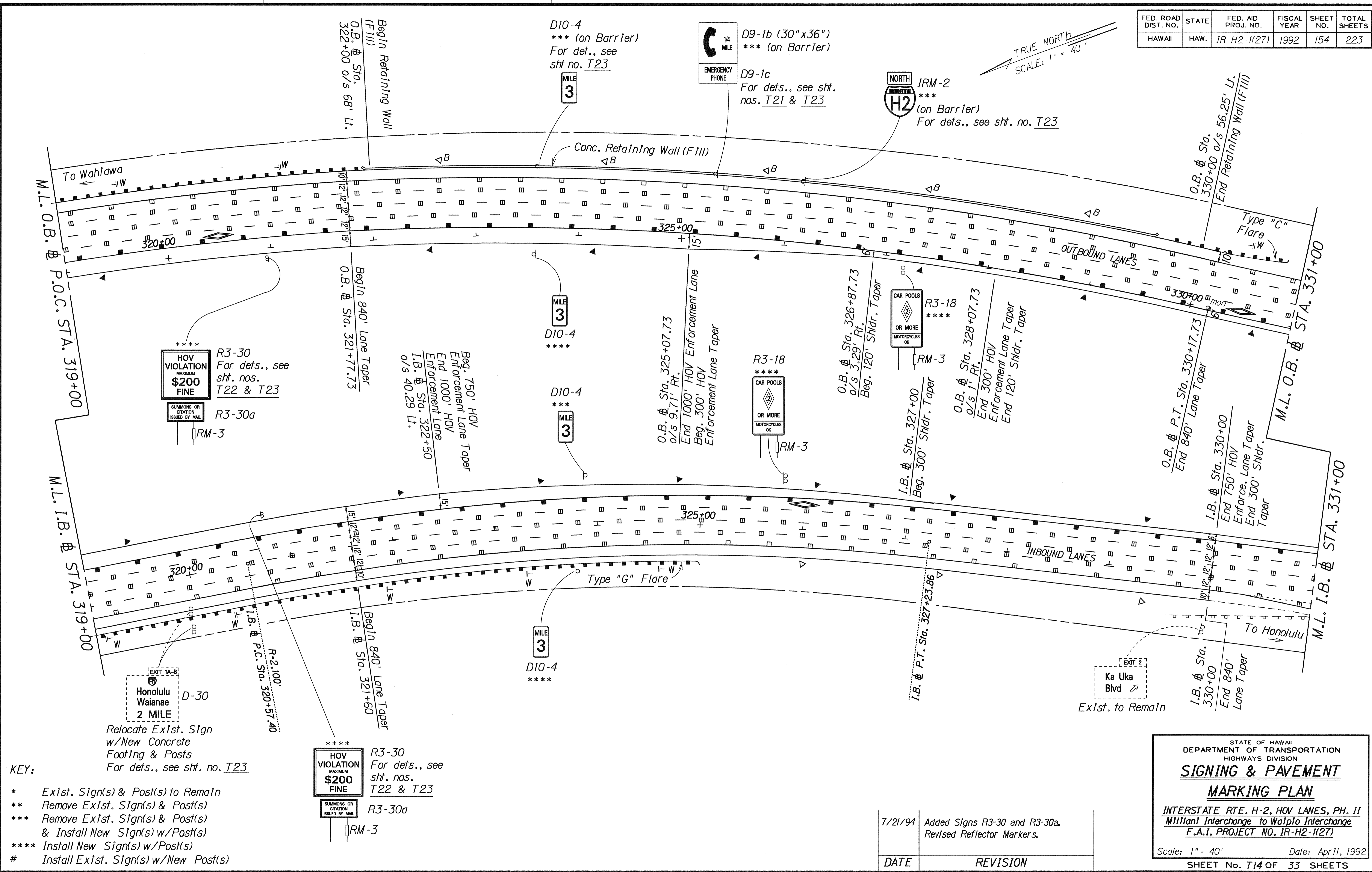
INTERSTATE RTE. H-2, HOV LANES, PH. II  
Milioli Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 40' Date: April, 1992

SHEET No. 713 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	154	223

TRUE NORTH  
SCALE: 1" = 40'



SURVEY PLOTTED BY	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

\*\*\*\*  
R3-30  
For dets., see  
sht. nos.  
T22 & T23

HOV VIOLATION  
MAXIMUM  
\$200  
FINE

SUMMONS OR  
CITATION  
ISSUED BY MAIL

R3-30a

\*\*\*\*  
R3-30  
For dets., see  
sht. nos.  
T22 & T23

HOV VIOLATION  
MAXIMUM  
\$200  
FINE

SUMMONS OR  
CITATION  
ISSUED BY MAIL

R3-30a

7/21/94	Added Signs R3-30 and R3-30a. Revised Reflector Markers.
DATE	REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT**

**MARKING PLAN**

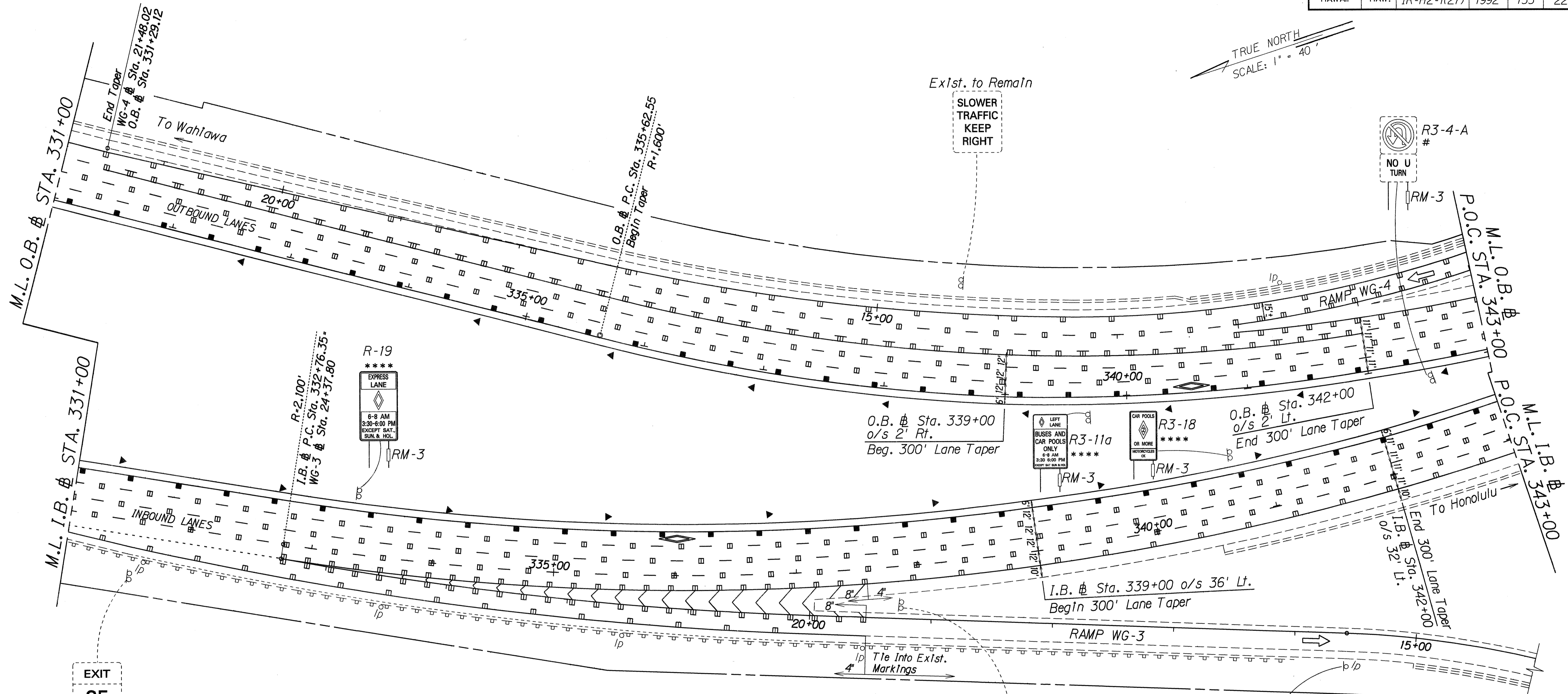
INTERSTATE RTE. H-2, HOV LANES, PH. II  
MILITARY Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 40' Date: April 11, 1992

SHEET No. T14 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	155	223

TRUE NORTH  
SCALE: 1" = 40'



SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTE BOOK	
NO.	

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT**

**MARKING PLAN**

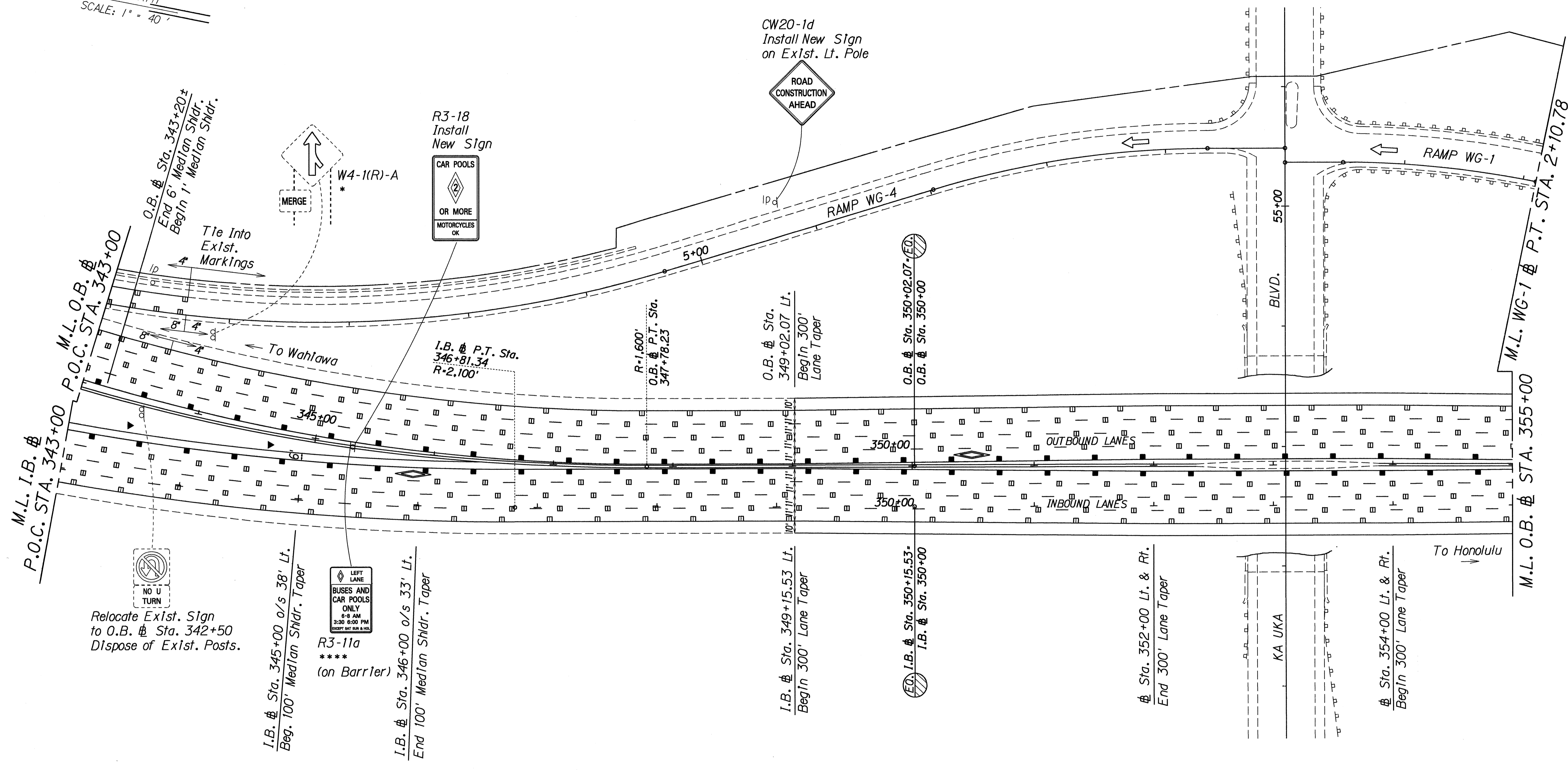
*INTERSTATE RTE. H-2, HOV LANES, PH. II  
Million Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)*

Scale: 1" = 40' Date: April, 1992

SHEET No. 115 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	156	223

TRUE NORTH  
SCALE: 1" = 40'



SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT  
MARKING PLAN**

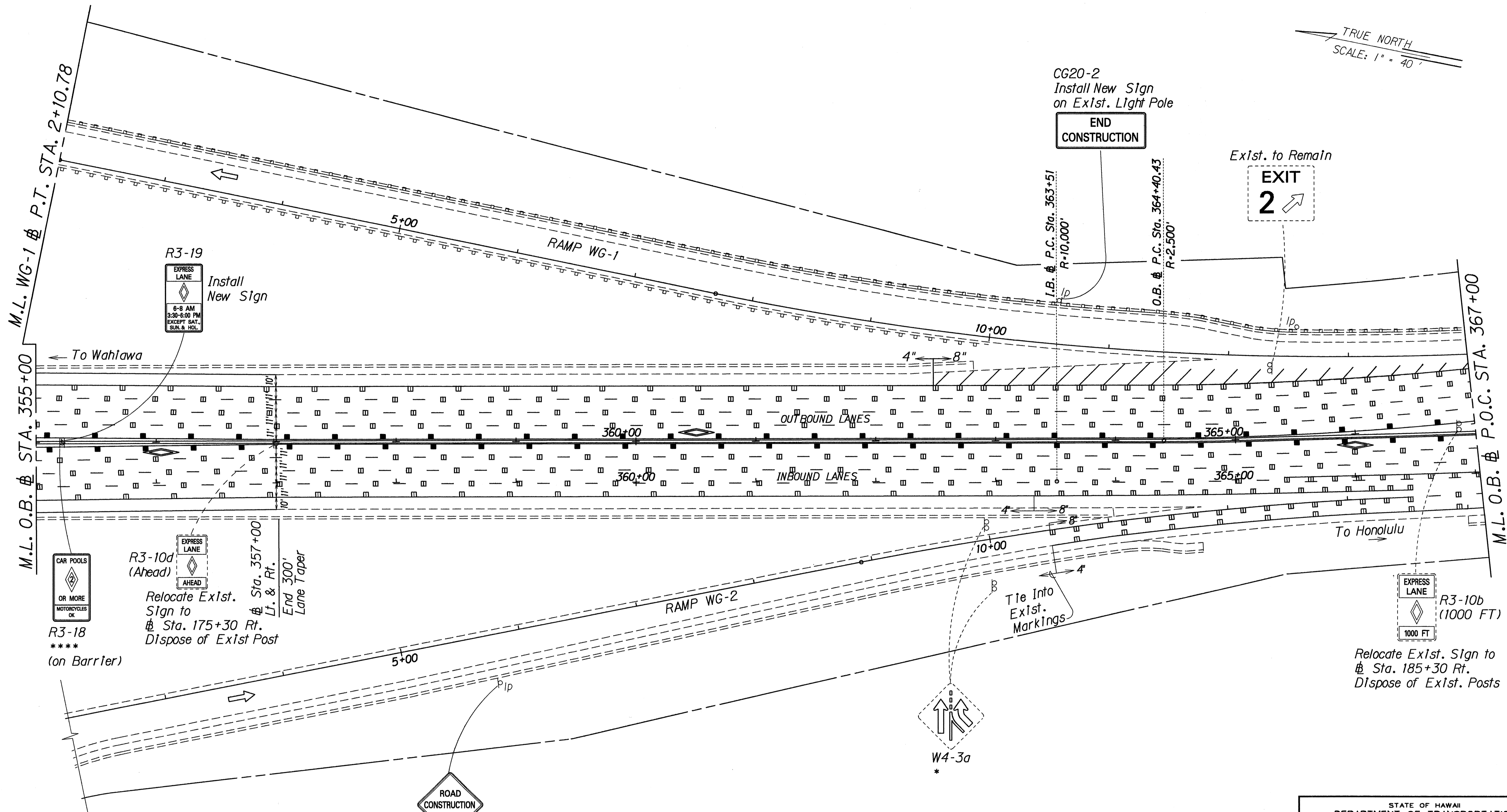
*INTERSTATE RTE. H-2, HOV LANES, PH. II  
Miliāni Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)*

Scale: 1" = 40'      Date: Apr 11, 1992

SHEET No. 716 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	157	223

TRUE NORTH  
SCALE: 1" = 40'



**KEY:**

- \* Exist. Sign(s) & Post(s) to Remain
- \*\* Remove Exist. Sign(s) & Post(s)
- \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
- \*\*\*\* Install New Sign(s) w/Post(s)
- # Install Exist. Sign(s) w/New Post(s)

**ROAD CONSTRUCTION AHEAD**  
CW20-1d  
Install New Sign on Exist. Lt. Pole

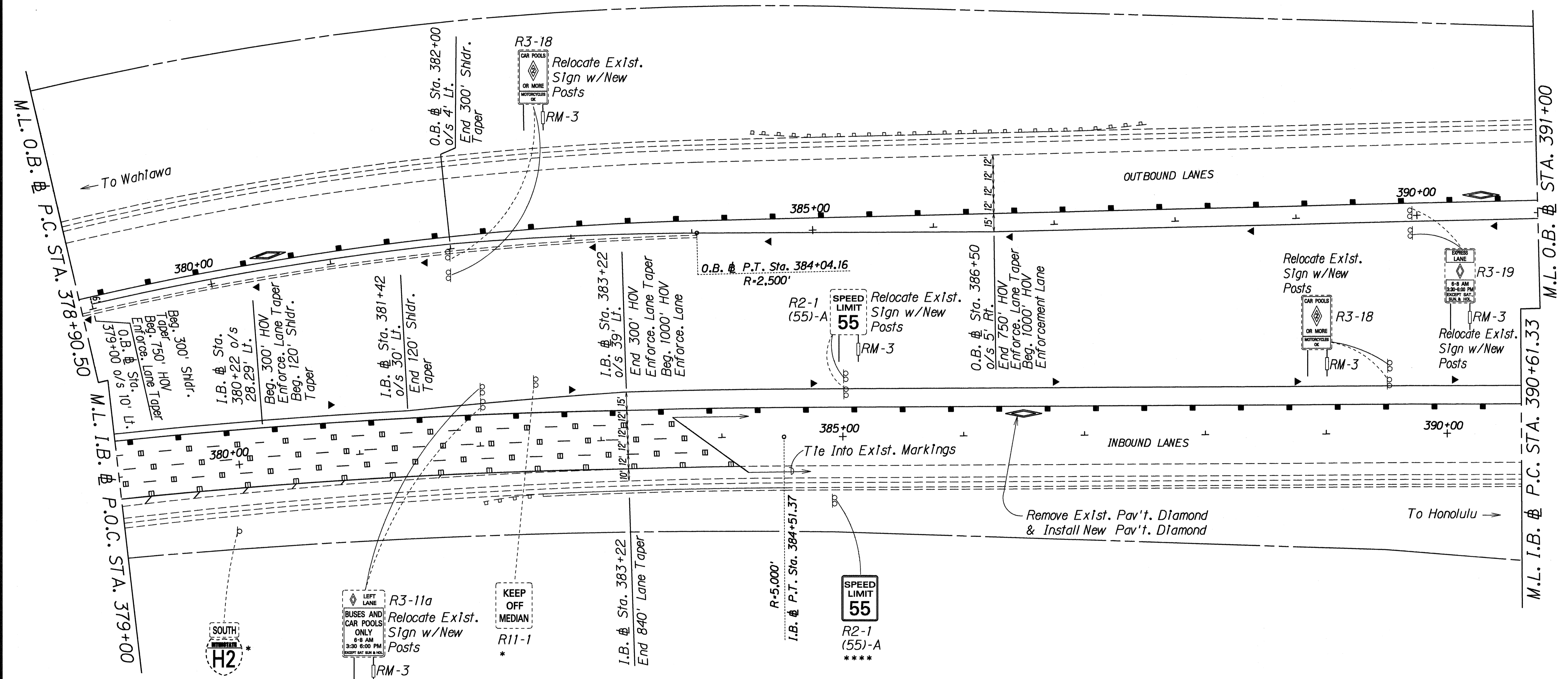
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SIGNING & PAVEMENT**  
**MARKING PLAN**  
INTERSTATE RTE. H-2, HOV LANES, PH. II  
Millian Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)  
Scale: 1" = 40' Date: April, 1992  
SHEET No. 117 OF 33 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	159	223

TRUE NORTH  
SCALE: 1" = 40'



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
N.	

- KEY:
- \* Exist. Sign(s) & Post(s) to Remain
  - \*\* Remove Exist. Sign(s) & Post(s)
  - \*\*\* Remove Exist. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exist. Sign(s) w/New Post(s)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

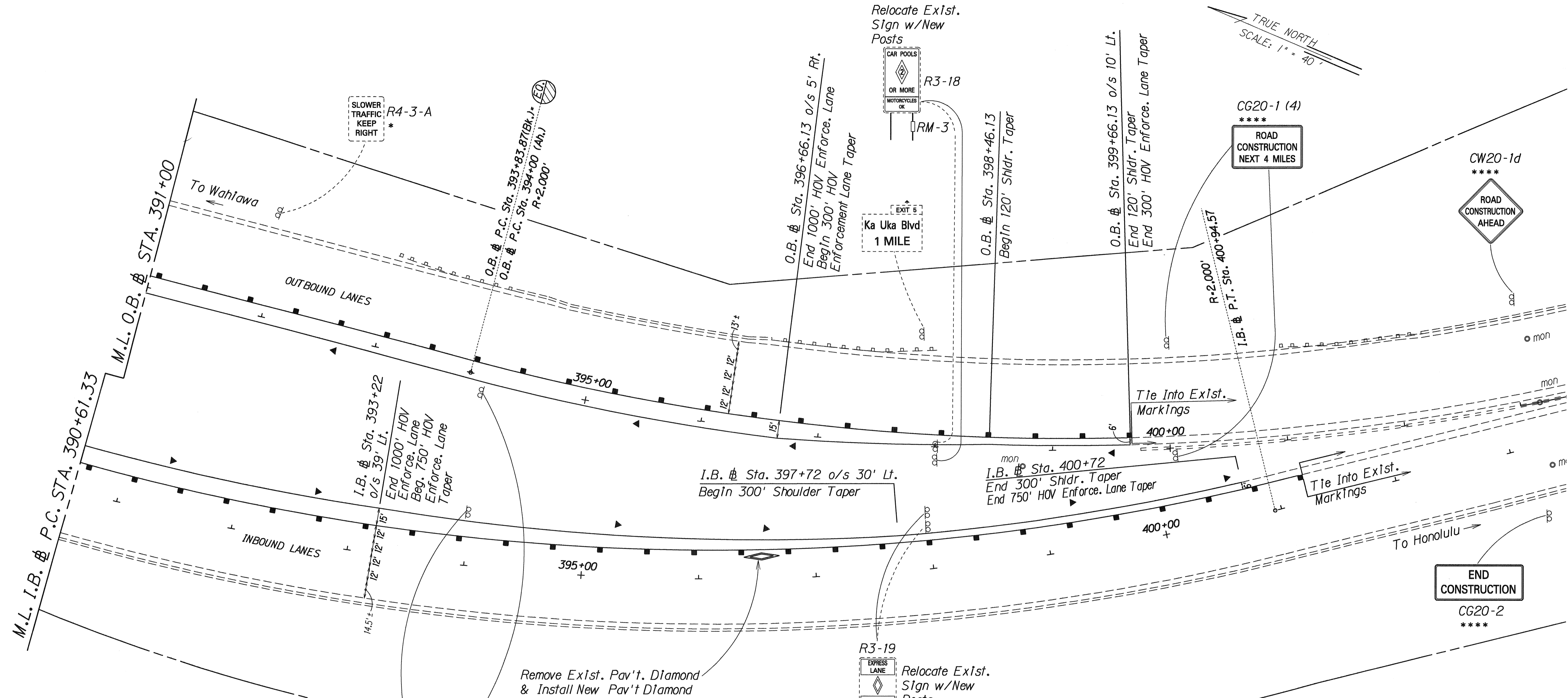
### SIGNING & PAVEMENT MARKING PLAN

*INTERSTATE RTE. H-2, HOV LANES, PH. II  
Millian Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)*

Scale: 1" = 40' Date: April, 1992

SHEET No. 119 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	160	223



TRUE NORTH  
SCALE: 1" = 40'

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTED BY	
CHECKED BY	

- KEY:**
- \* Exst. Sign(s) & Post(s) to Remain
  - \*\* Remove Exst. Sign(s) & Post(s)
  - \*\*\* Remove Exst. Sign(s) & Post(s) & Install New Sign(s) w/Post(s)
  - \*\*\*\* Install New Sign(s) w/Post(s)
  - # Install Exst. Sign(s) w/New Post(s)

\*\*\*\*  
R3-30  
For det's., see  
sht. nos.  
T22 & T23

HOV VIOLATION  
MAXIMUM  
\$200  
FINE

SUMMONS OR  
CITATION  
ISSUED BY MAIL

RM-3

DATE	REVISION
7/21/94	Added Signs R3-30 and R3-30a. Revised Reflector Markers.

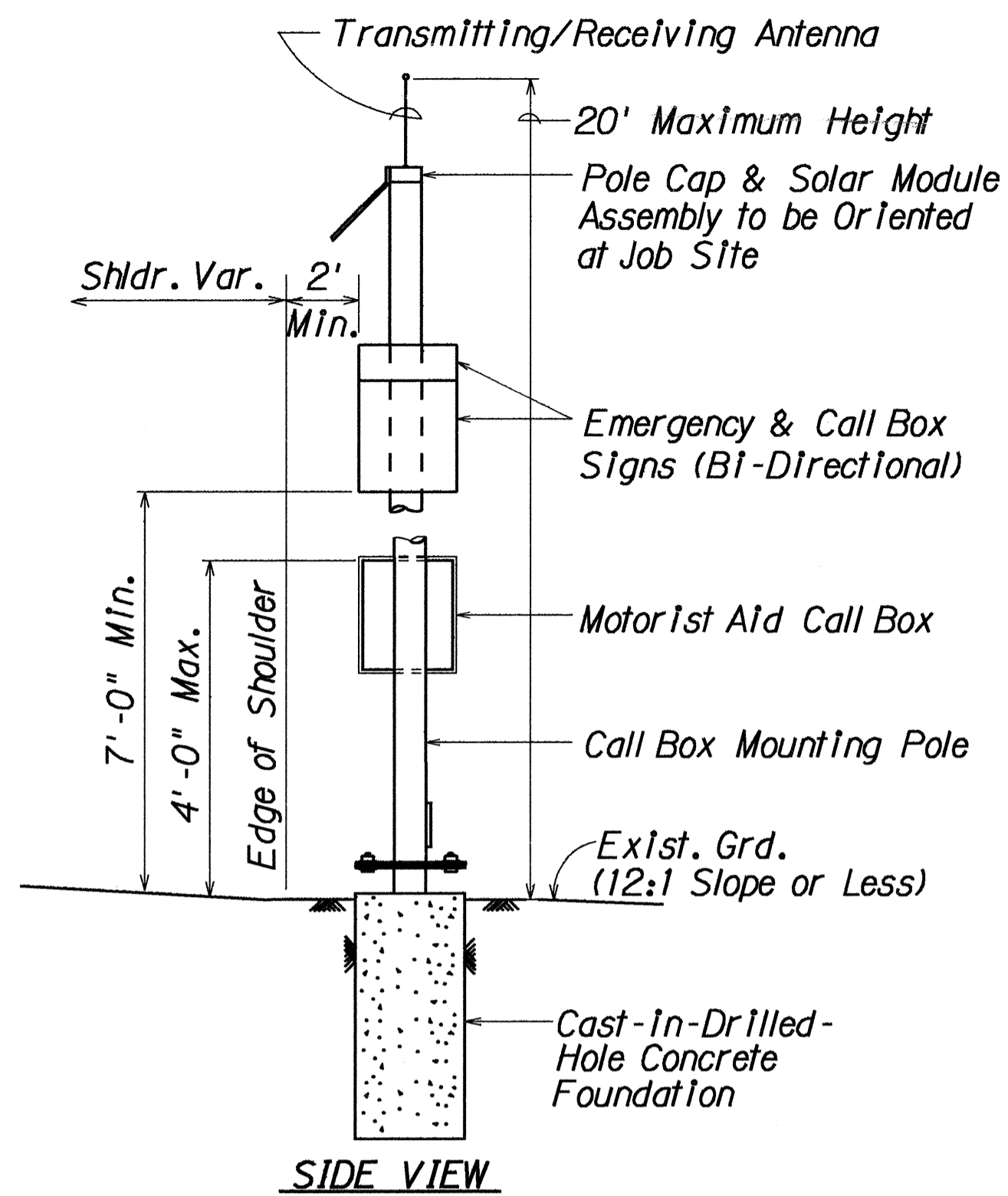
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING & PAVEMENT  
MARKING PLAN**

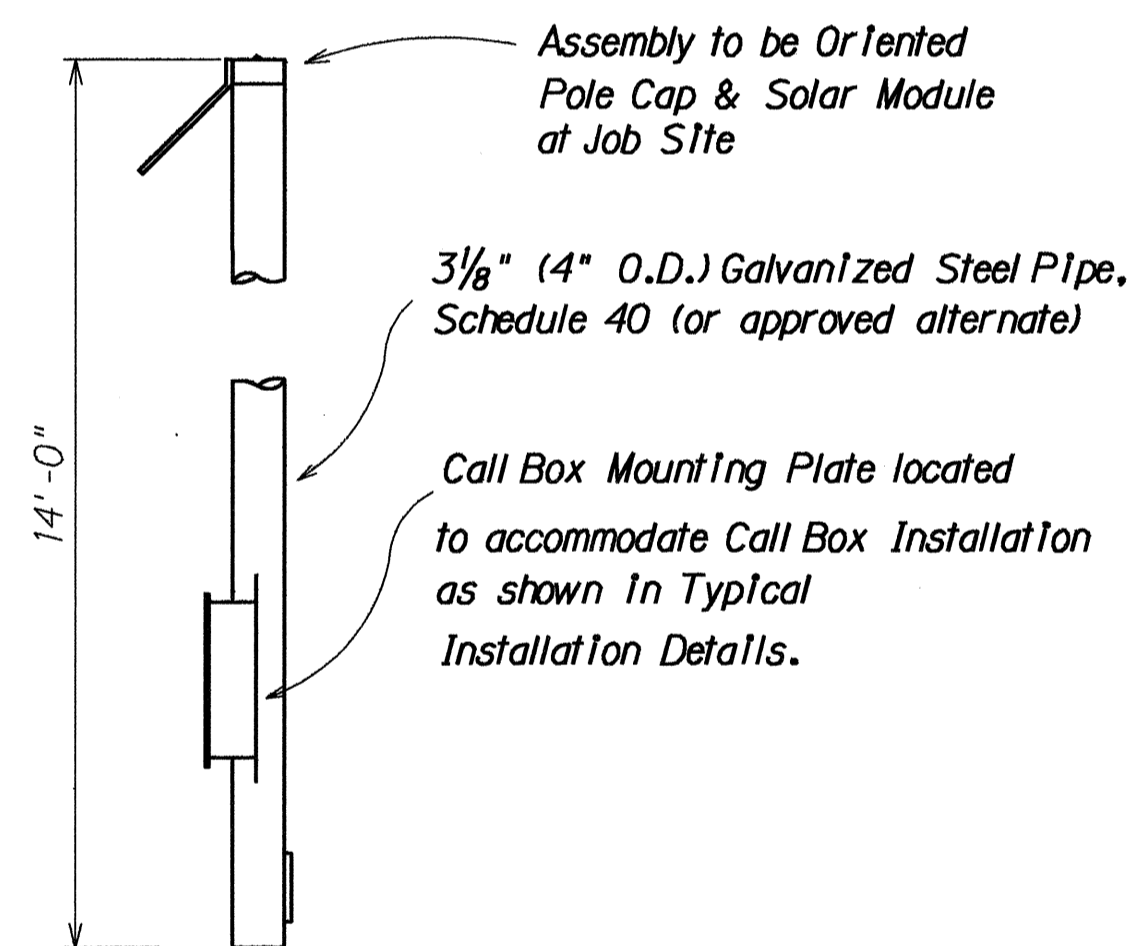
INTERSTATE RTE. H-2, HOV LANES, PH. II  
Milioli Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 40' Date: Apr 11, 1992  
SHEET No. T20 OF 33 SHEETS

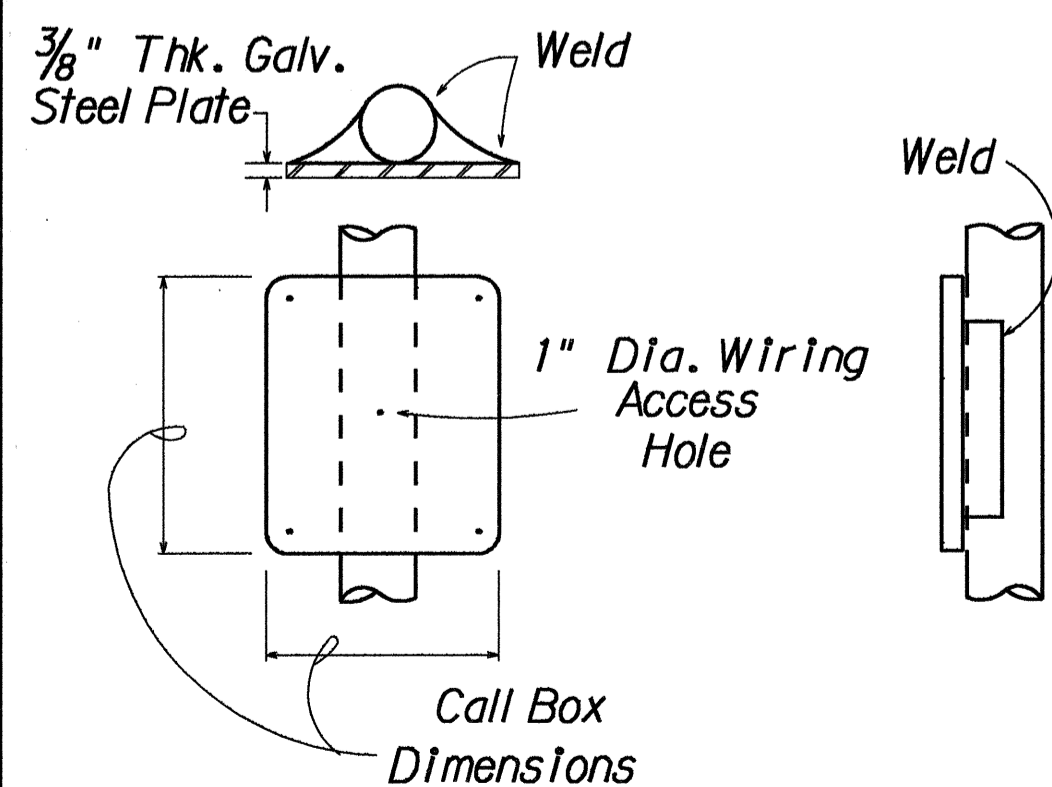
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	161	223



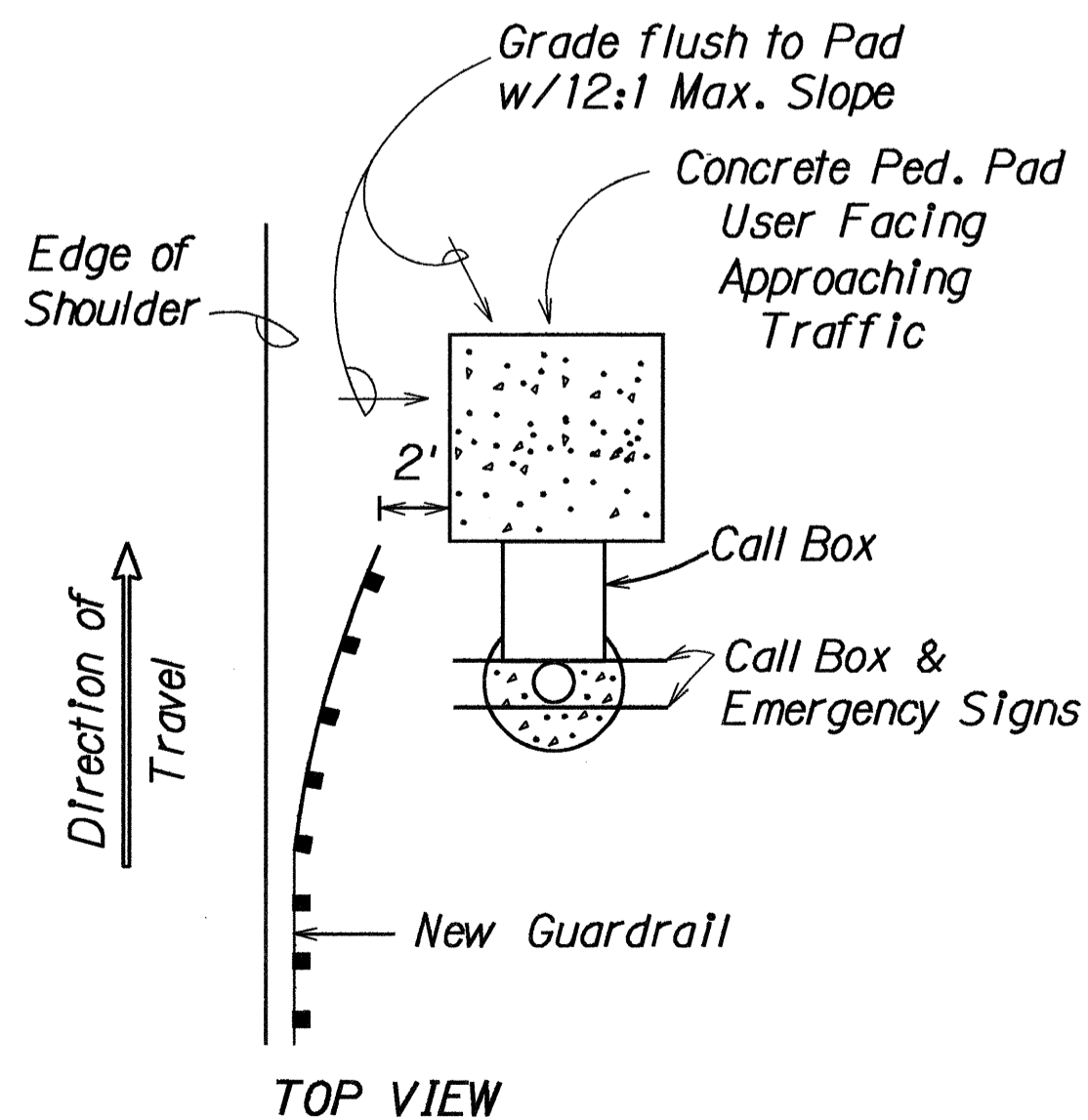
TYPICAL INSTALLATION



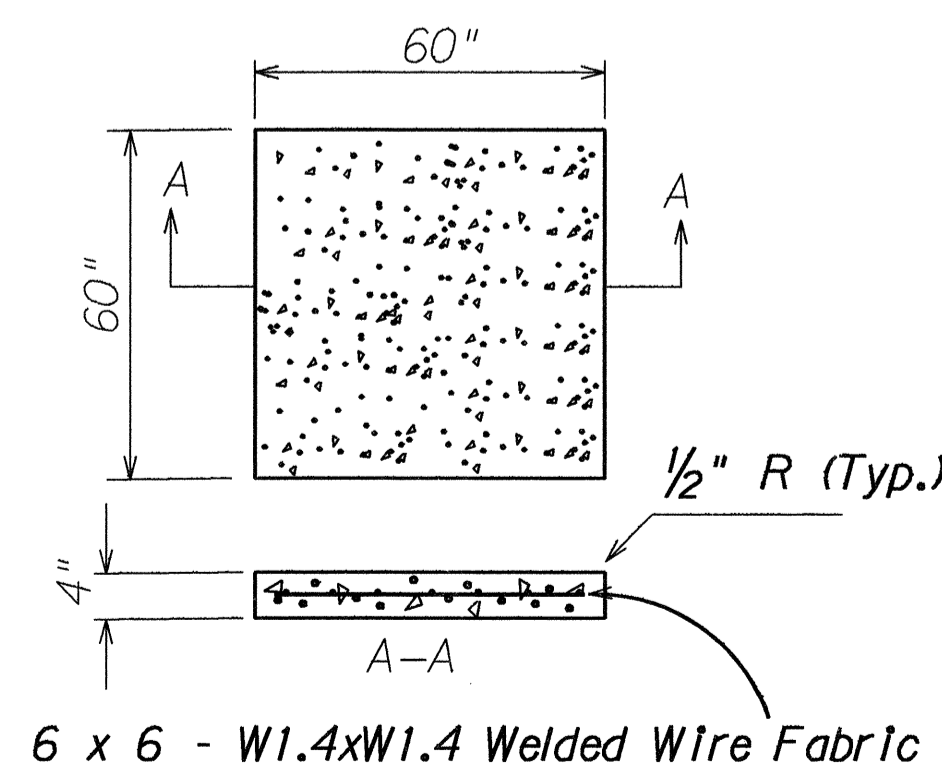
CALL BOX MOUNTING POLE



CALL BOX MOUNTING DETAILS



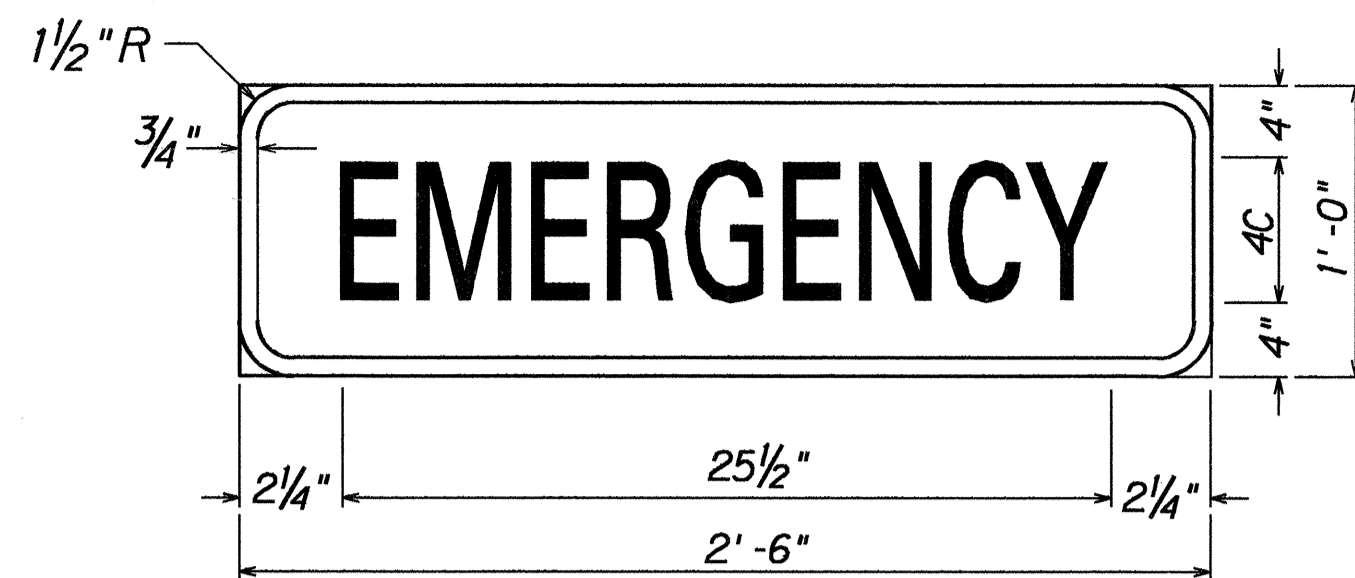
TOP VIEW  
@ O.B. Sta. 317+00 Lt.



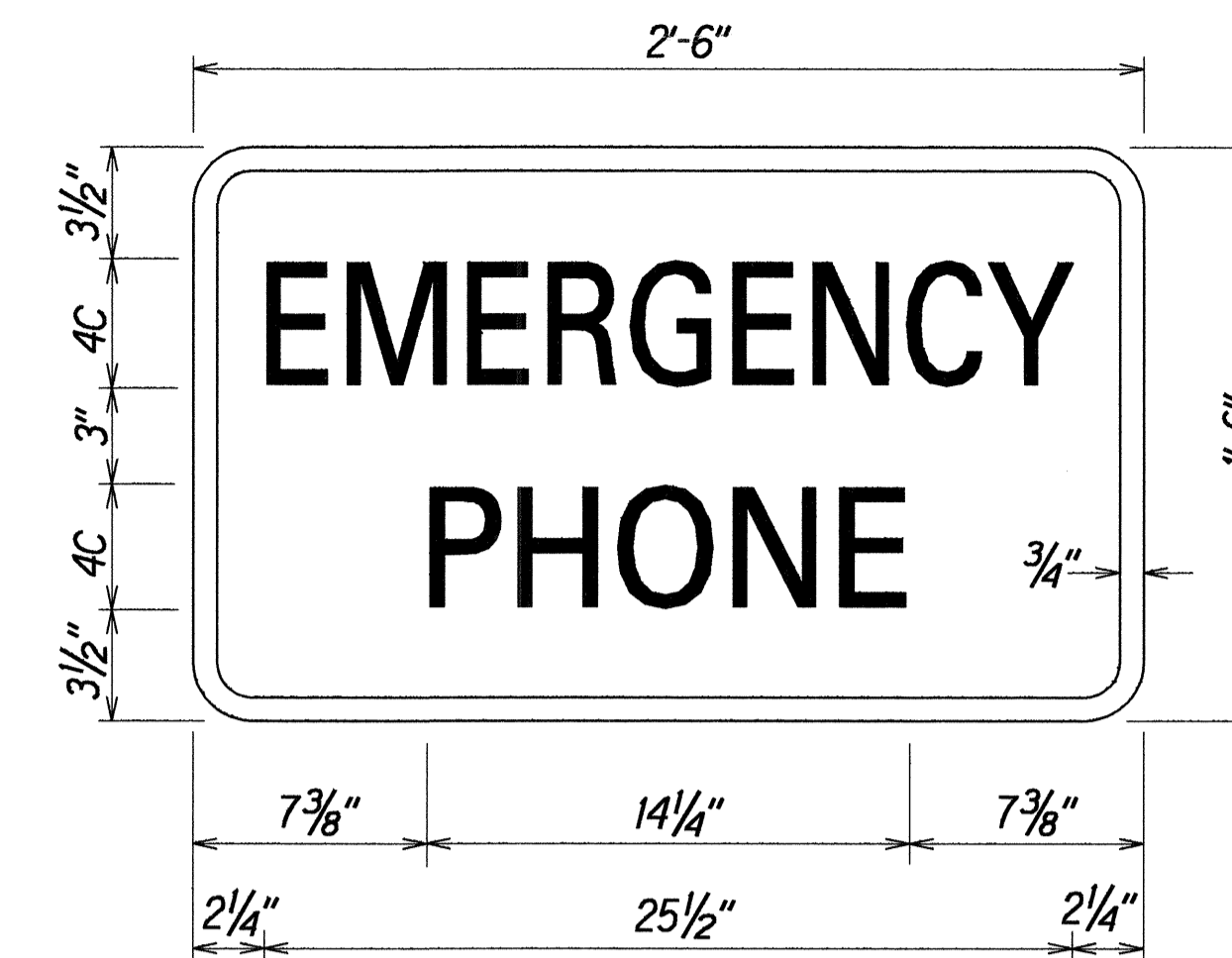
CONCRETE PEDESTRIAN PAD

GENERAL NOTES

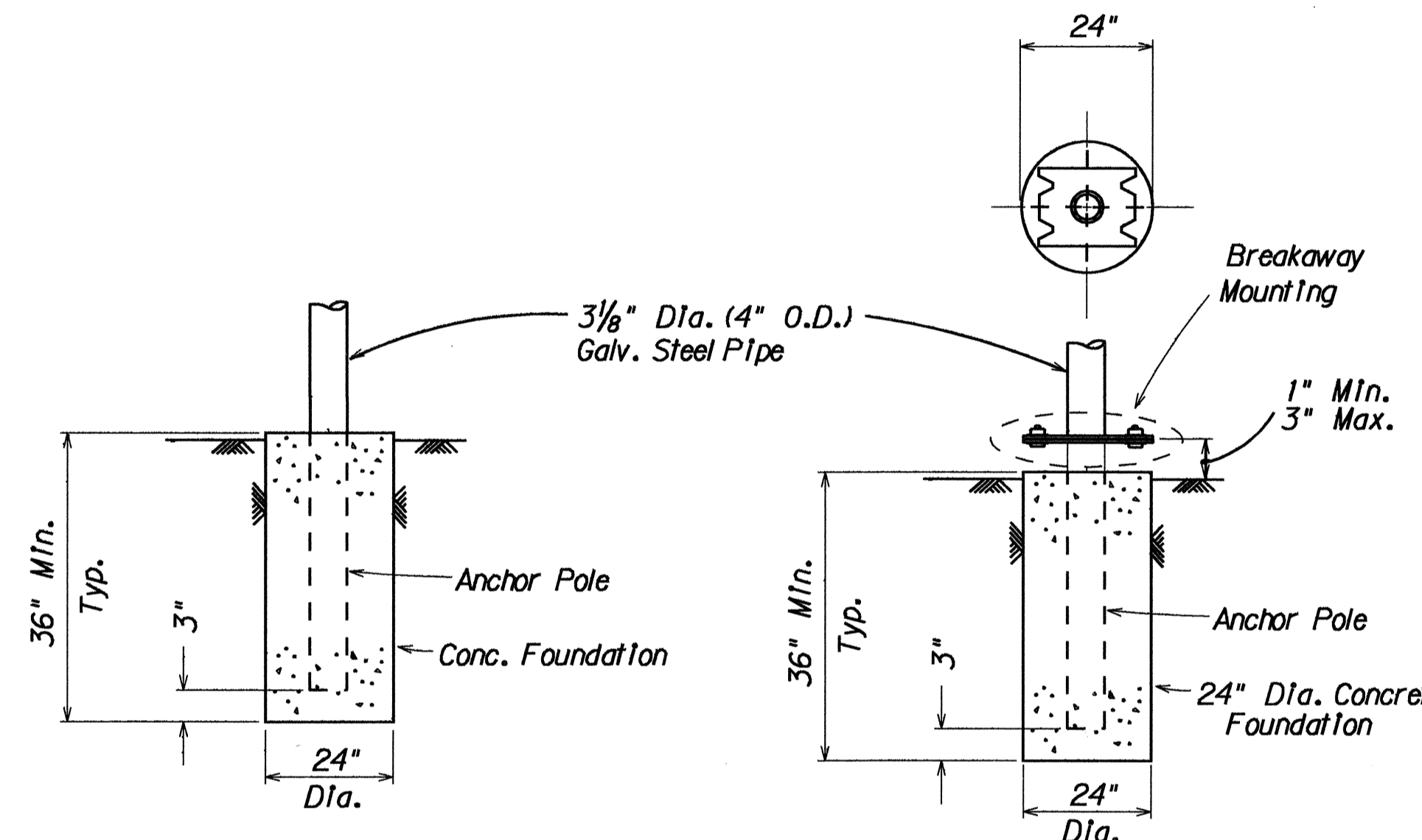
- The Contractor shall remove and deliver existing emergency telephones to the Oahu District Baseyard at 727 Kakoi Street or as directed by the engineer and install new emergency telephones as shown on plans.
- The exact locations of Emergency Call Box units shall be determined in the field by the Engineer.
- Existing structures and utilities damaged by the Contractor shall be repaired by the Contractor at his expense.
- All signs shall have a white reflectorized border and legend on a blue reflectorized background.
- The Concrete Pedestrian Pad will be considered incidental to Item NO. 650.0100 - Emergency Telephones.
- All panels shall be reflectorized with Type B reflective sheeting in accordance with Section 712.20 of the Standard Specifications.
- All signs shall conform to section 621 of the Standard Specifications and the latest editions and 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 and messages shall conform to details as shown on the plans and as specified in the MUTCD.



EMERGENCY SIGN



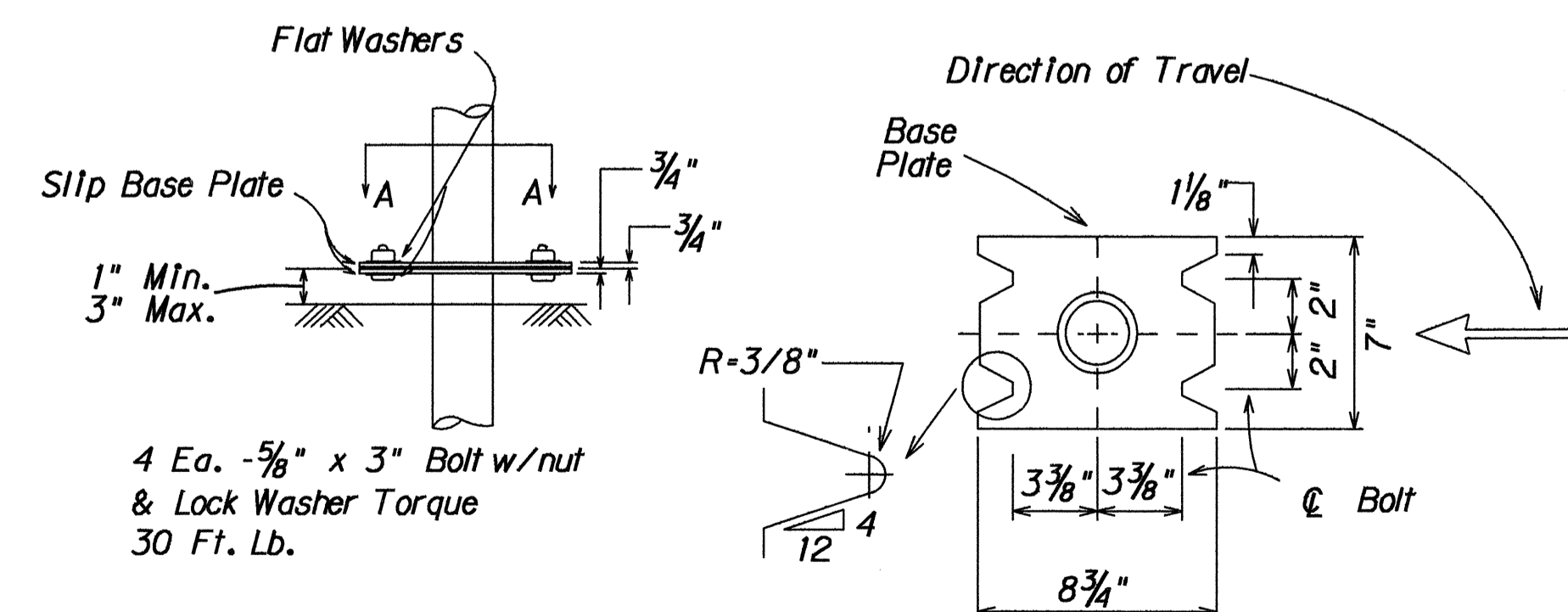
Sign D9-1c



CIDH FOUNDATION WITHOUT BREAKAWAY MOUNTING @ I.B. Sta. 309+90 Rt.

CIDH FOUNDATION WITH BREAKAWAY MOUNTING @ O.B. Sta. 317+00 Lt.

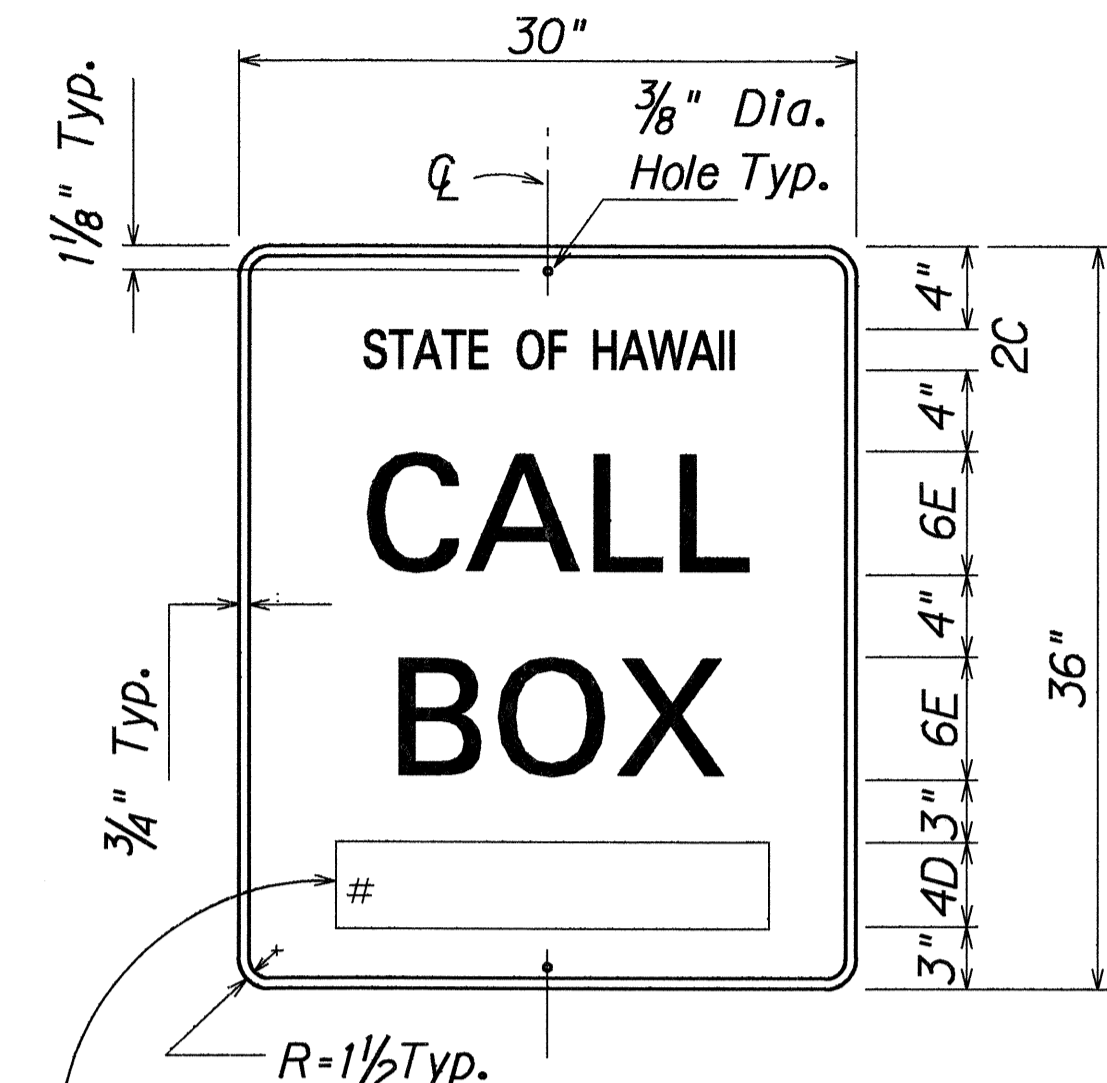
CONCRETE FOUNDATION



NOTE  
All Contact washer areas shall be free of galvanizing runs & beads & rubbed with paraffin

SECTION A-A

BREAKAWAY MOUNTING DETEAIL



CALL BOX SIGN

Call Box Identification Numbers shall be centered in the bottom position of the sign.

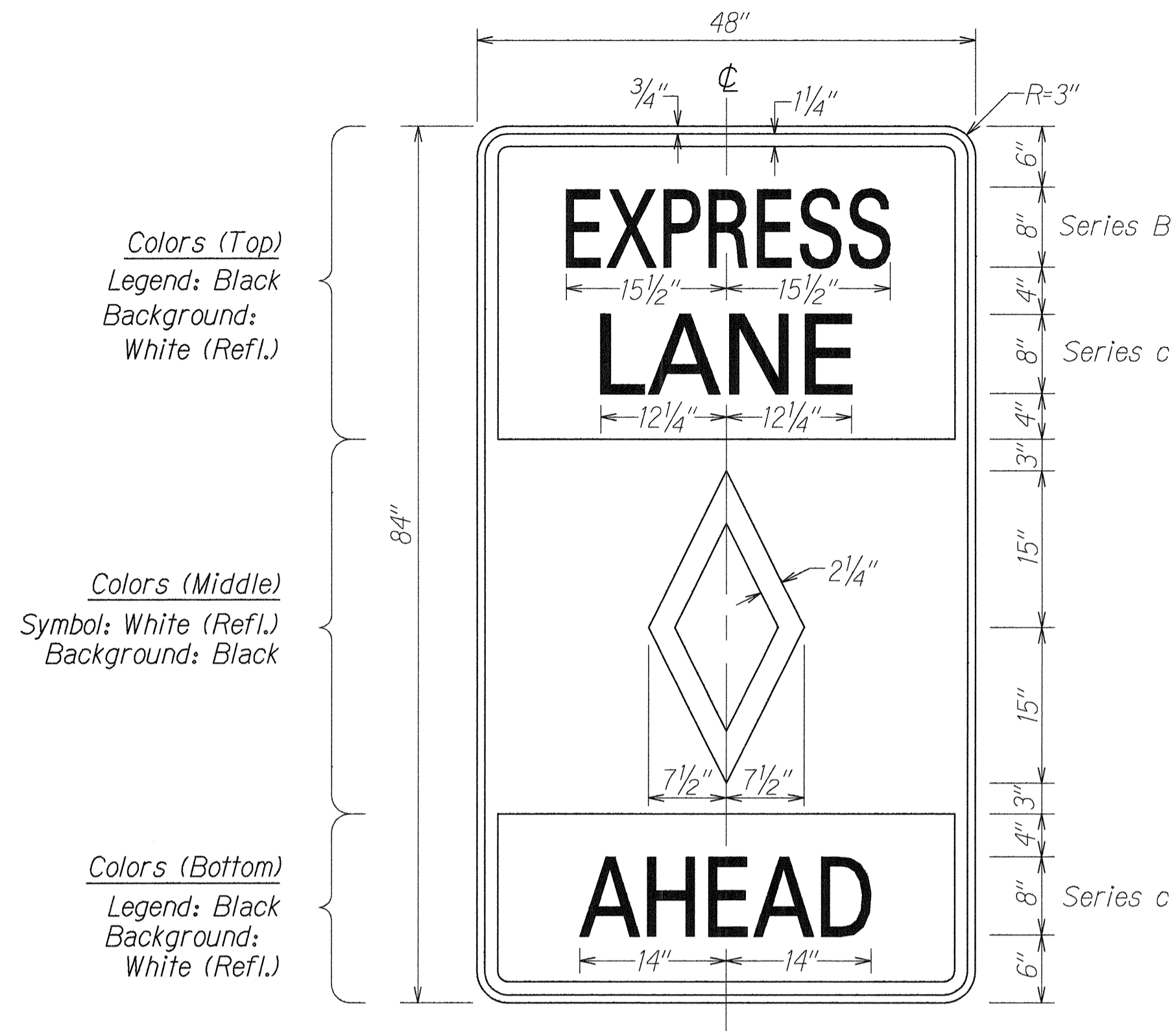
FOUNDATION NOTES:

- Foundation shall be Class B Concrete placed against undisturbed material.
- Backfill shall be complete and adjacent surface improvements prepared prior to erection of the post.
- CIDH = CAST IN DRILLED HOLE

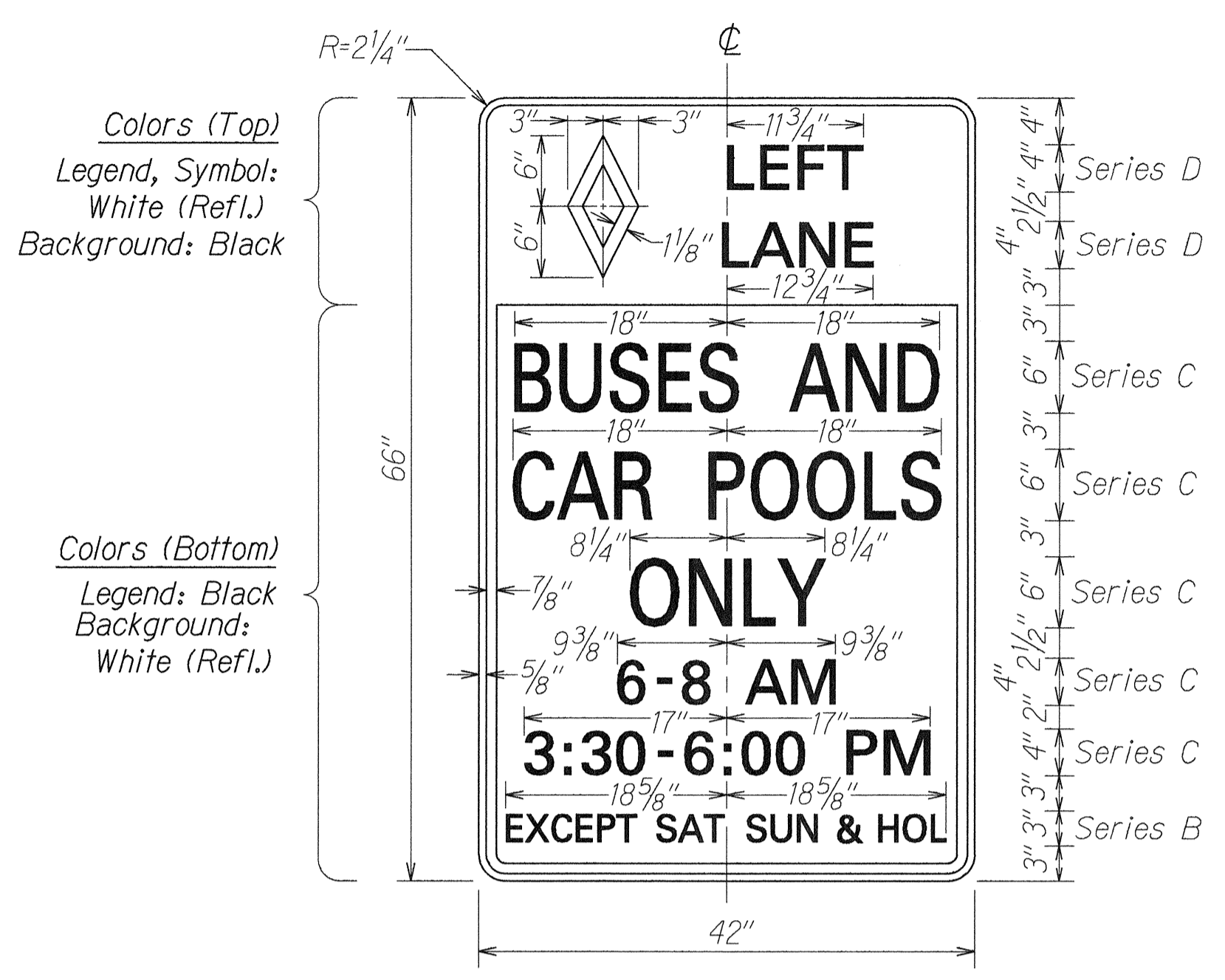
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**EMERGENCY TELEPHONE NOTES & DETAILS**  
INTERSTATE RTE. H-2, HOV LANES, PH. II  
Million Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)  
Not to Scale Date: April, 1992  
SHEET No. 721 OF 33 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

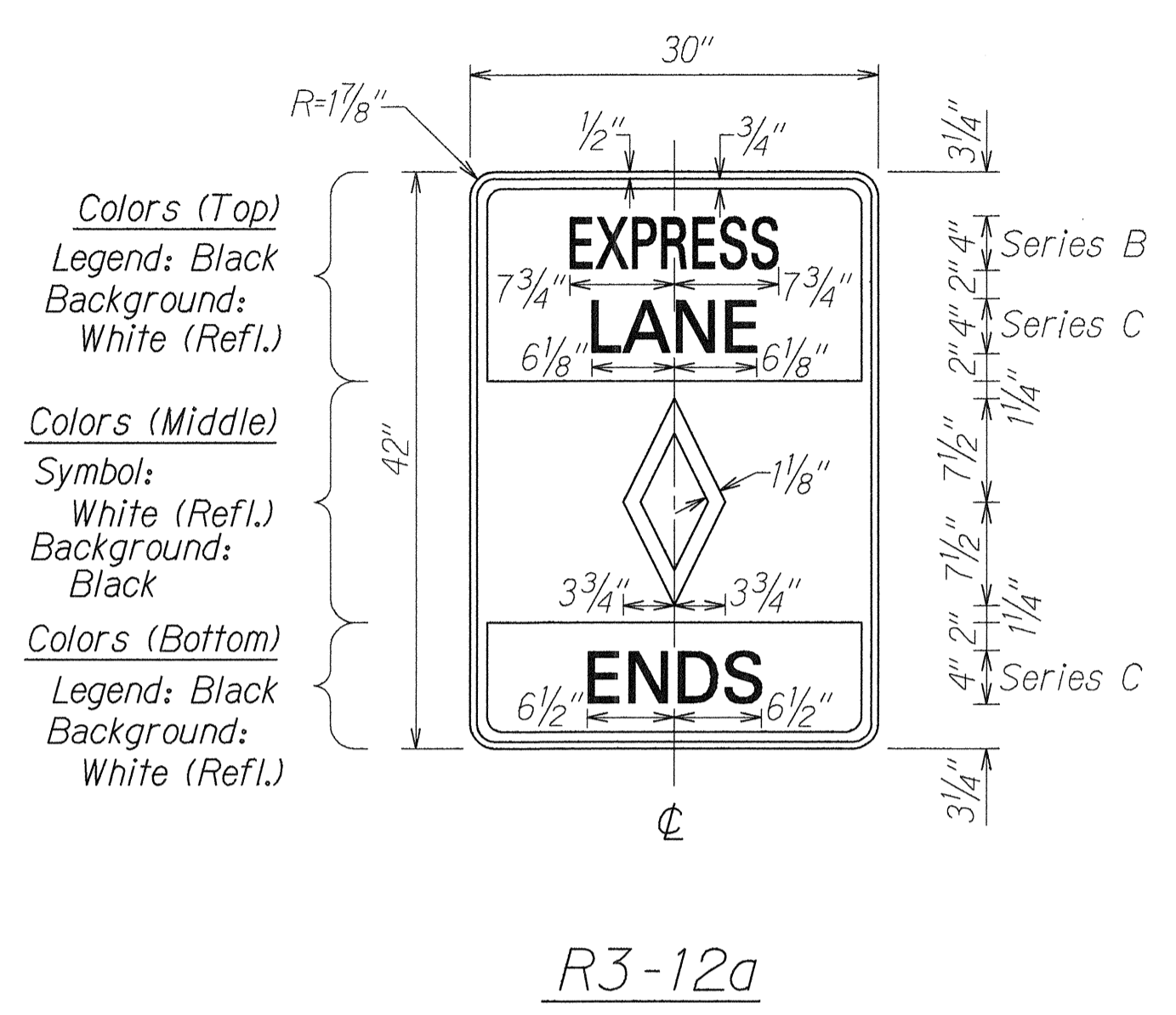
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	162	223



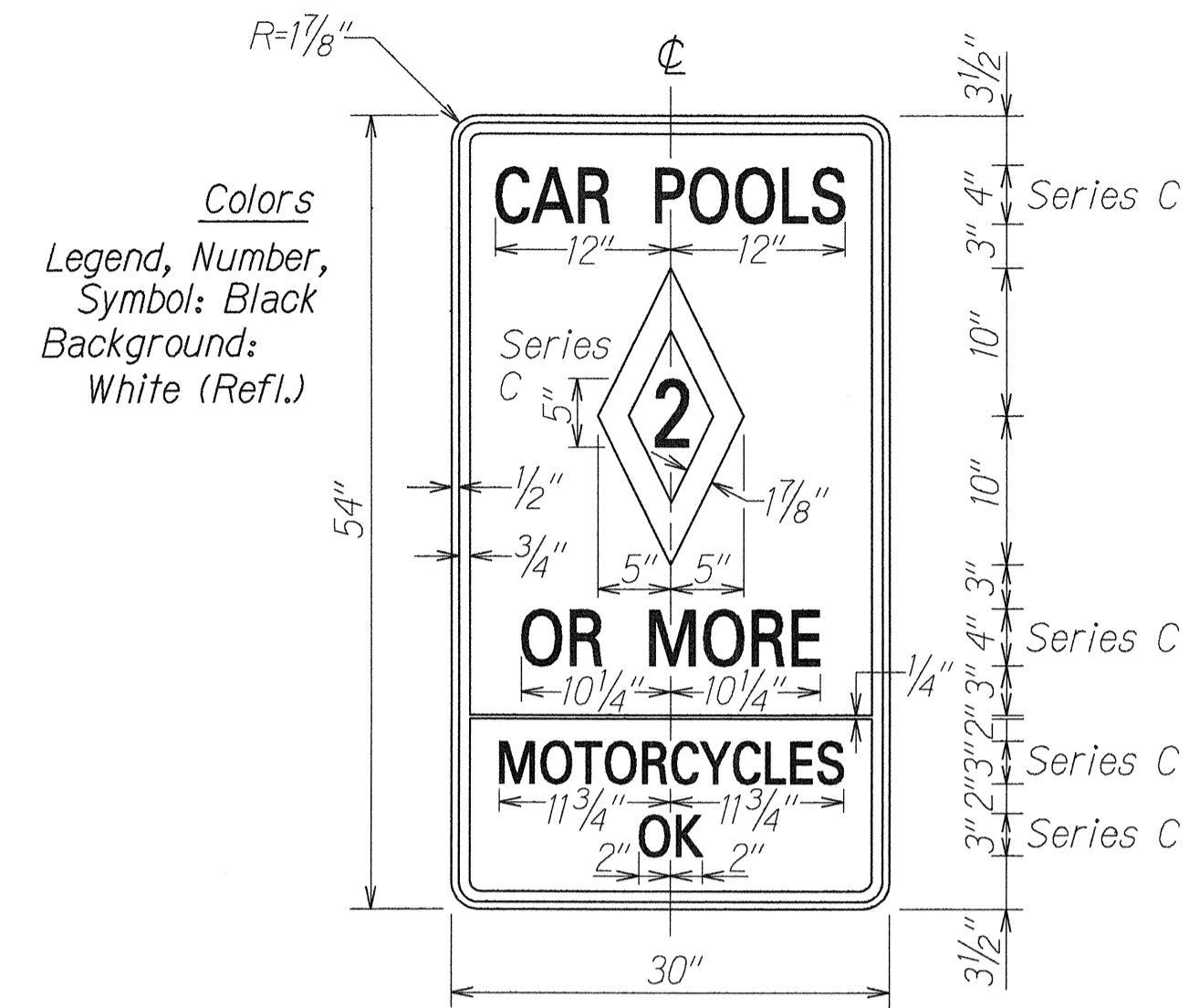
R3-10d



R3-11a

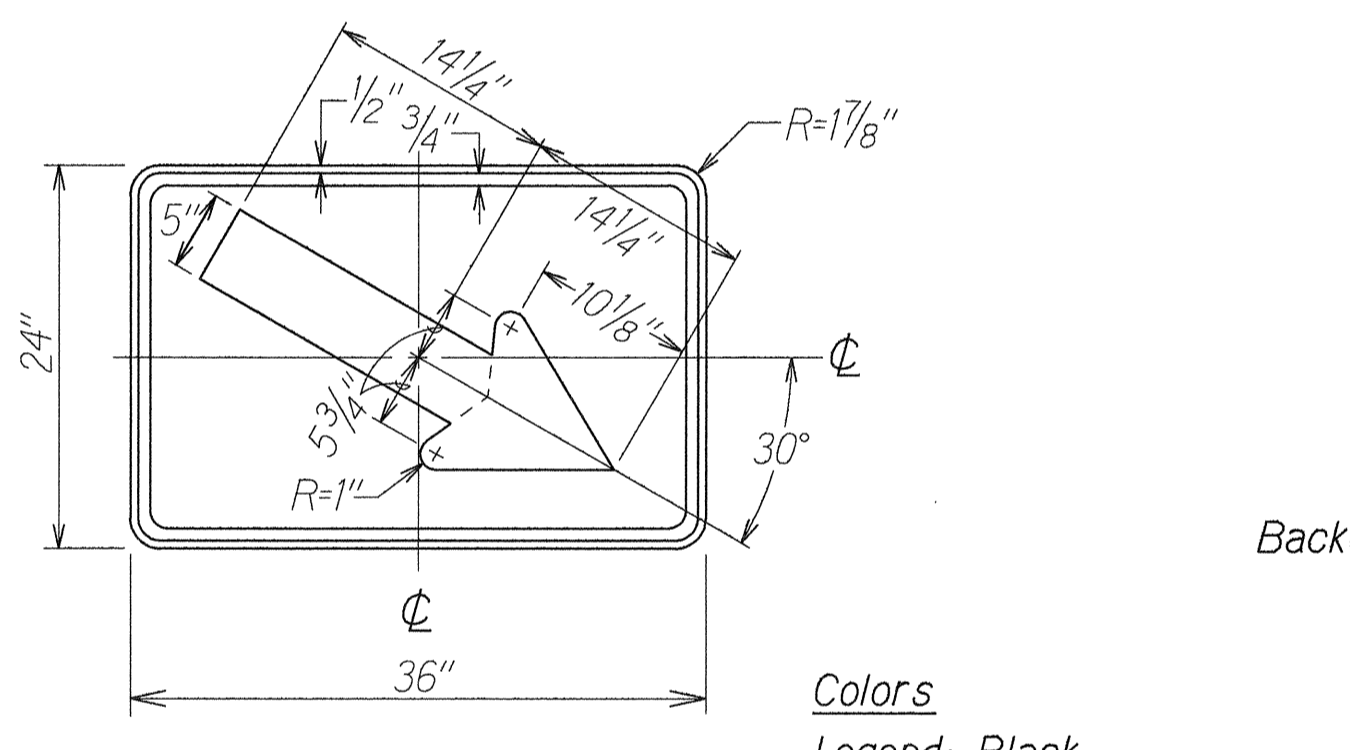


R3-12a

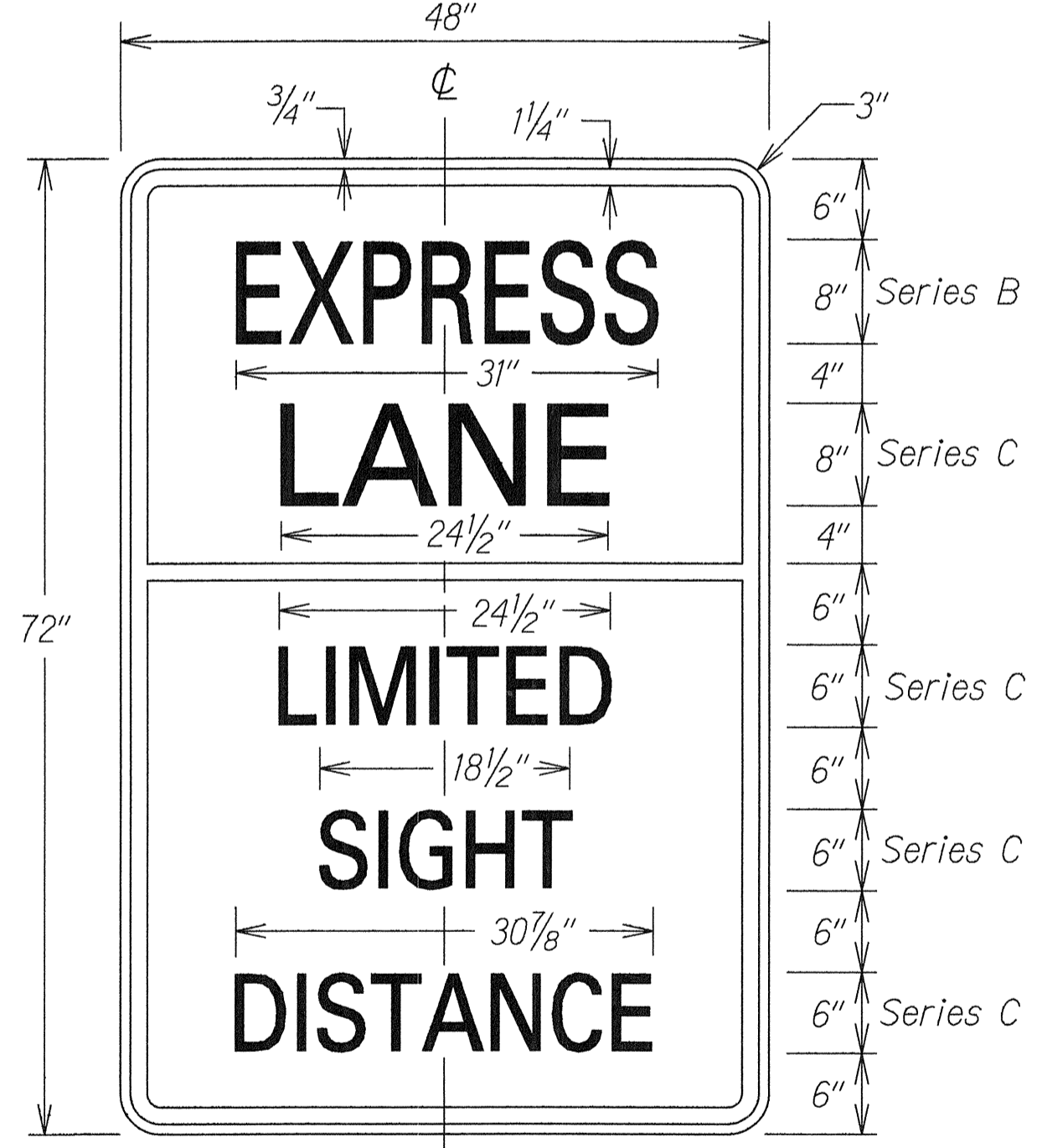


R3-18

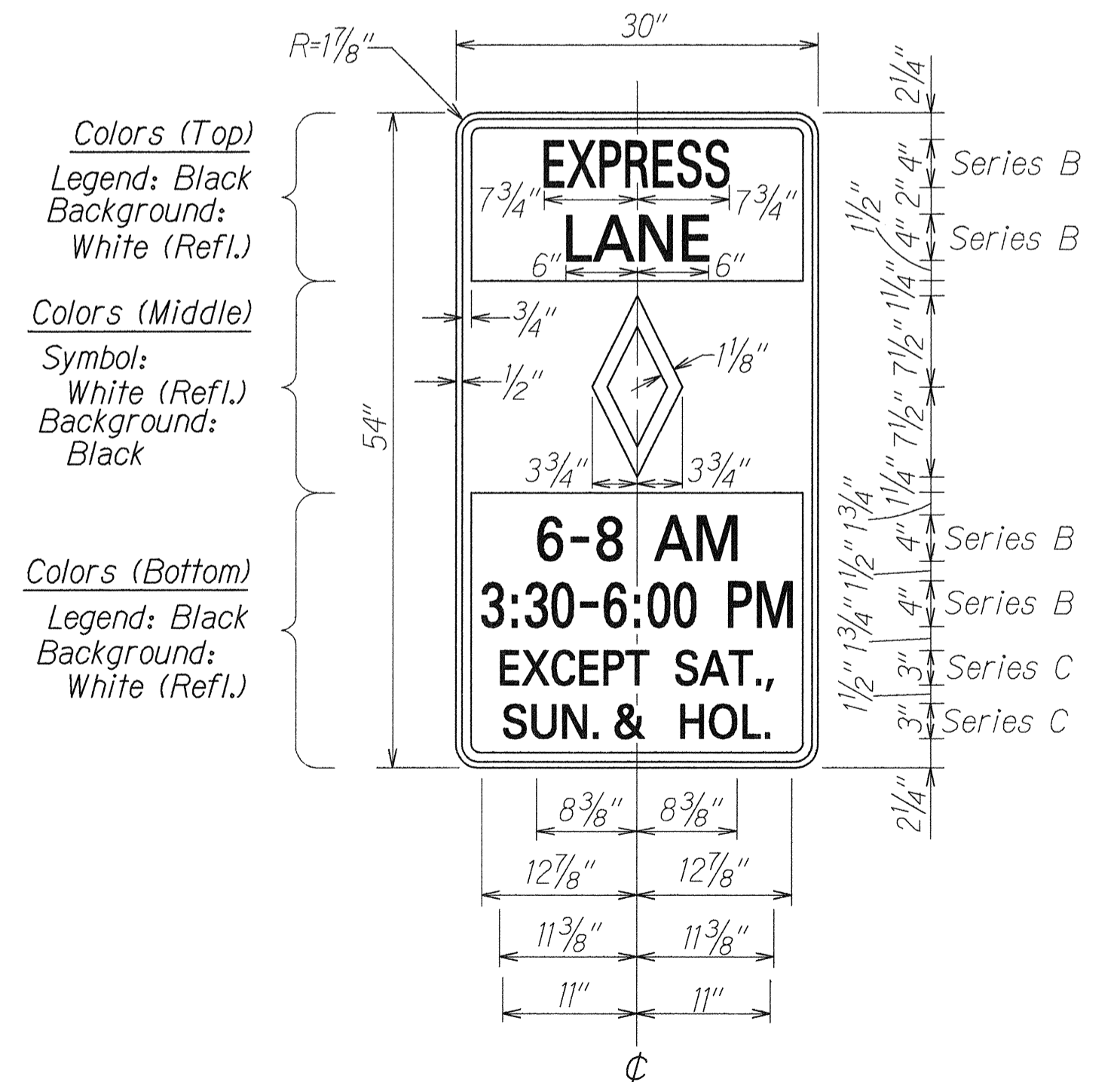
NOTE: For R3-10 Series Signs, Suffixes a, b, c, d, and e are as follows: a-1500 FT. b-1000 FT. c-500 FT. d-AHEAD e-BEGIN.



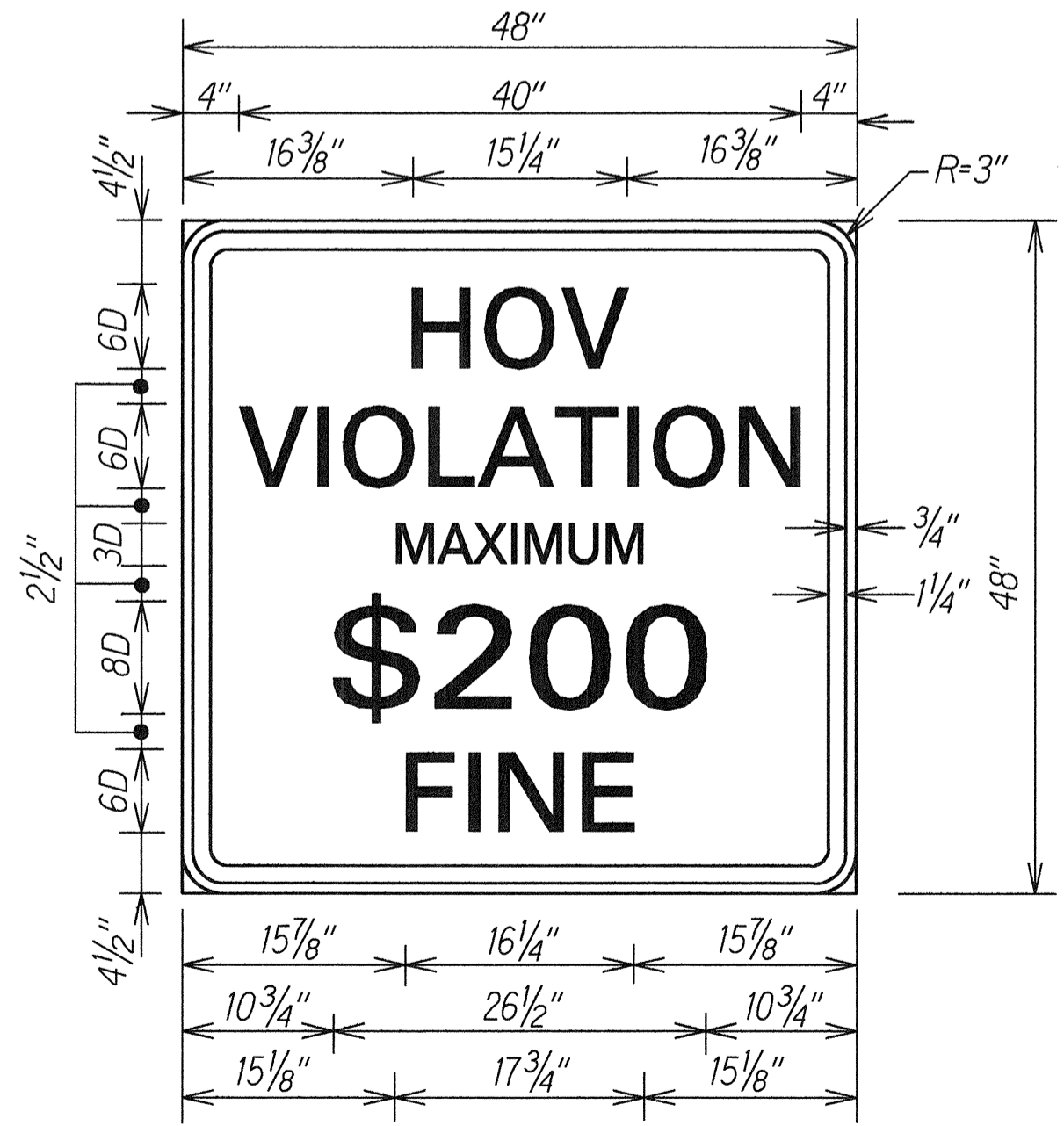
R3-20



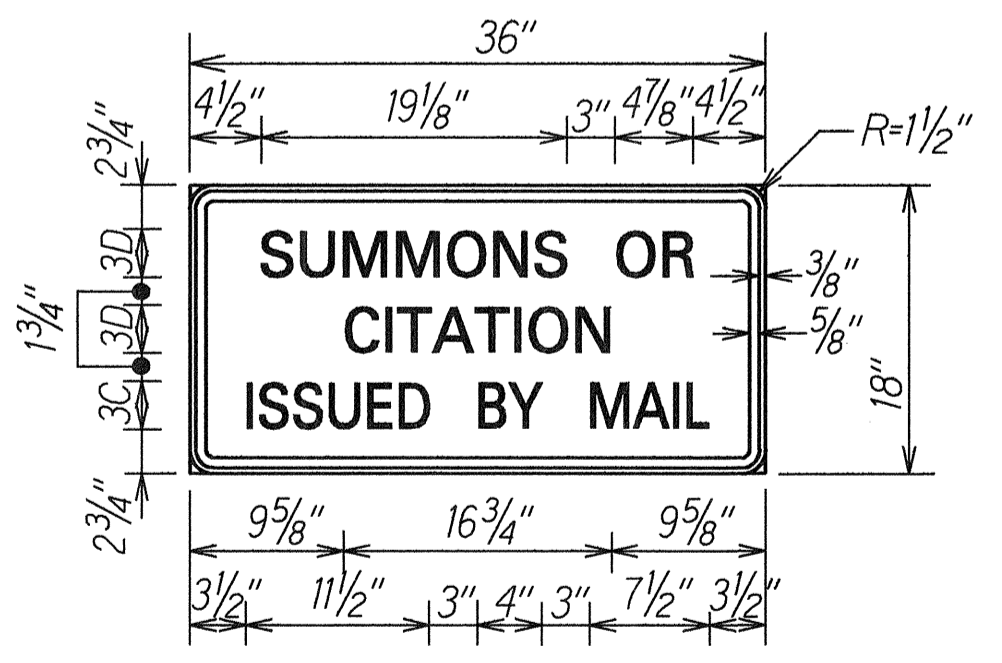
W14-5



R3-19



R3-30



R3-30a

DATE	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
NOTE BOOK	
ORIGINAL PLAN	
NO.	

DATE	REVISION
7/21/94	Added Signs R3-30 and R3-30a

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

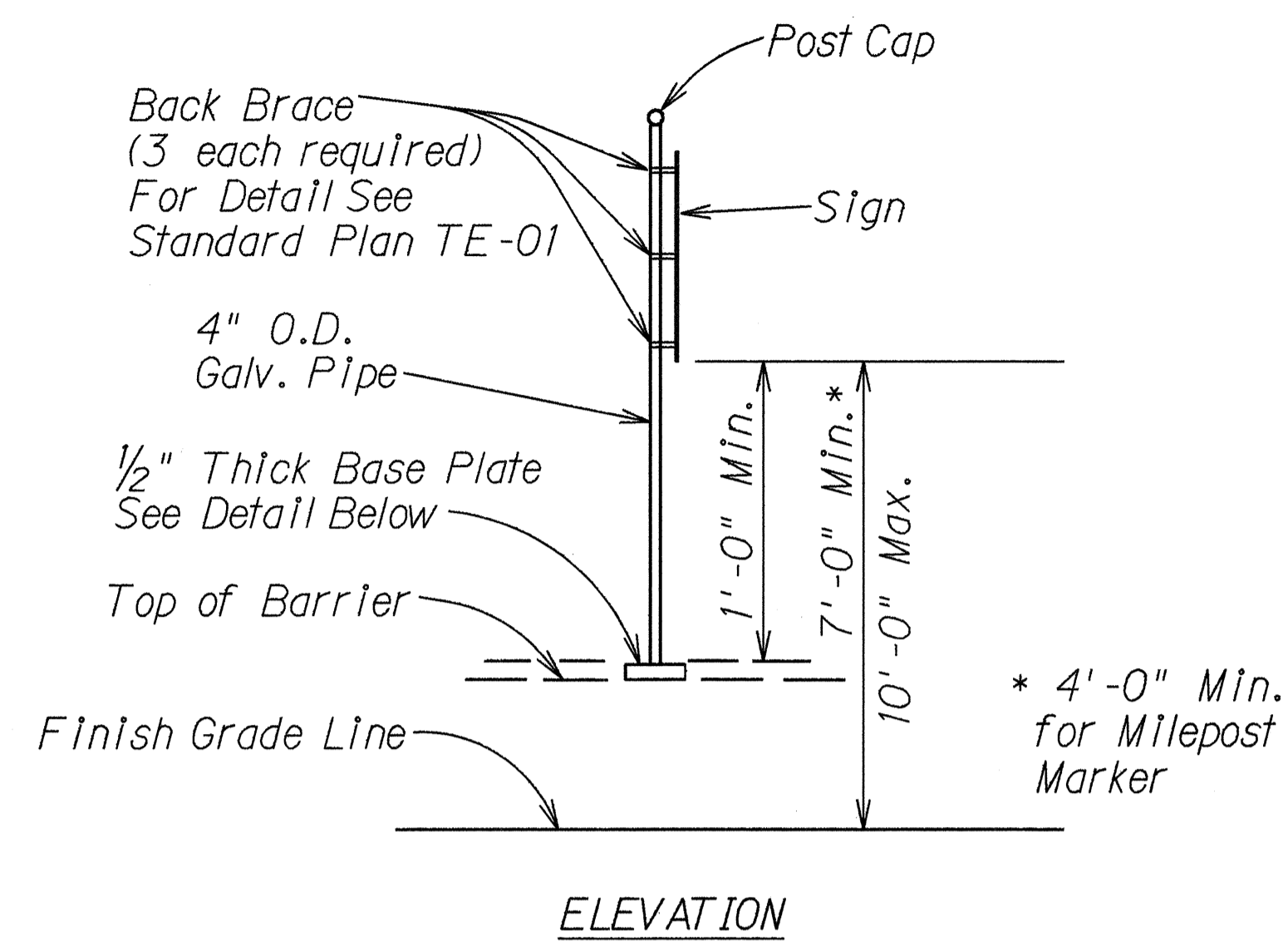
**HOV SIGNING NOTES  
& DETAILS**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Milliani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 1" = 1'-0" Date: Apr 11, 1992

SHEET No. 722 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	163	223



**SIGN MOUNTED ON CONCRETE BARRIER**

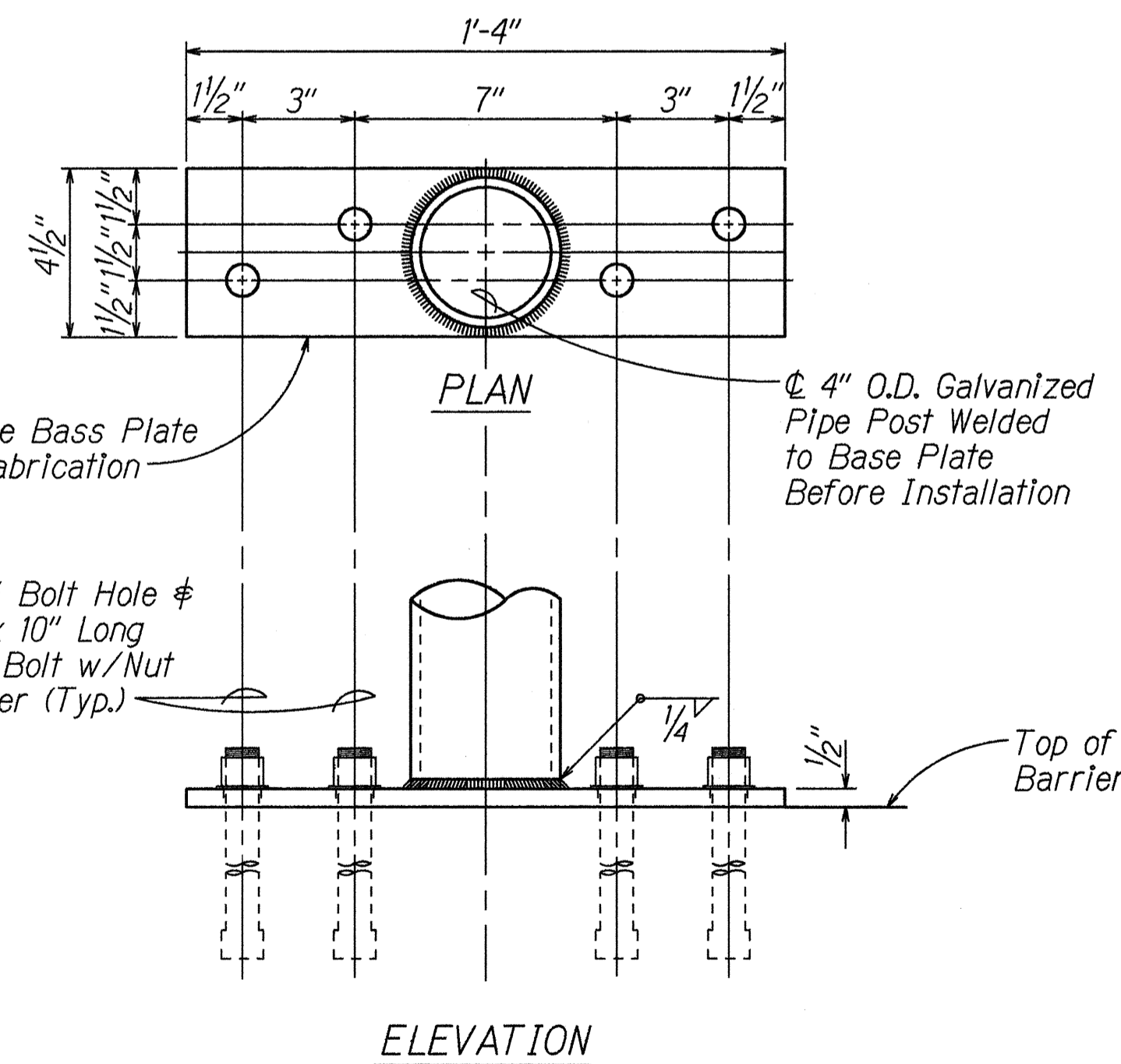
Not to Scale

\* 4'-0" Min. for Milepost Marker

**NOTE**

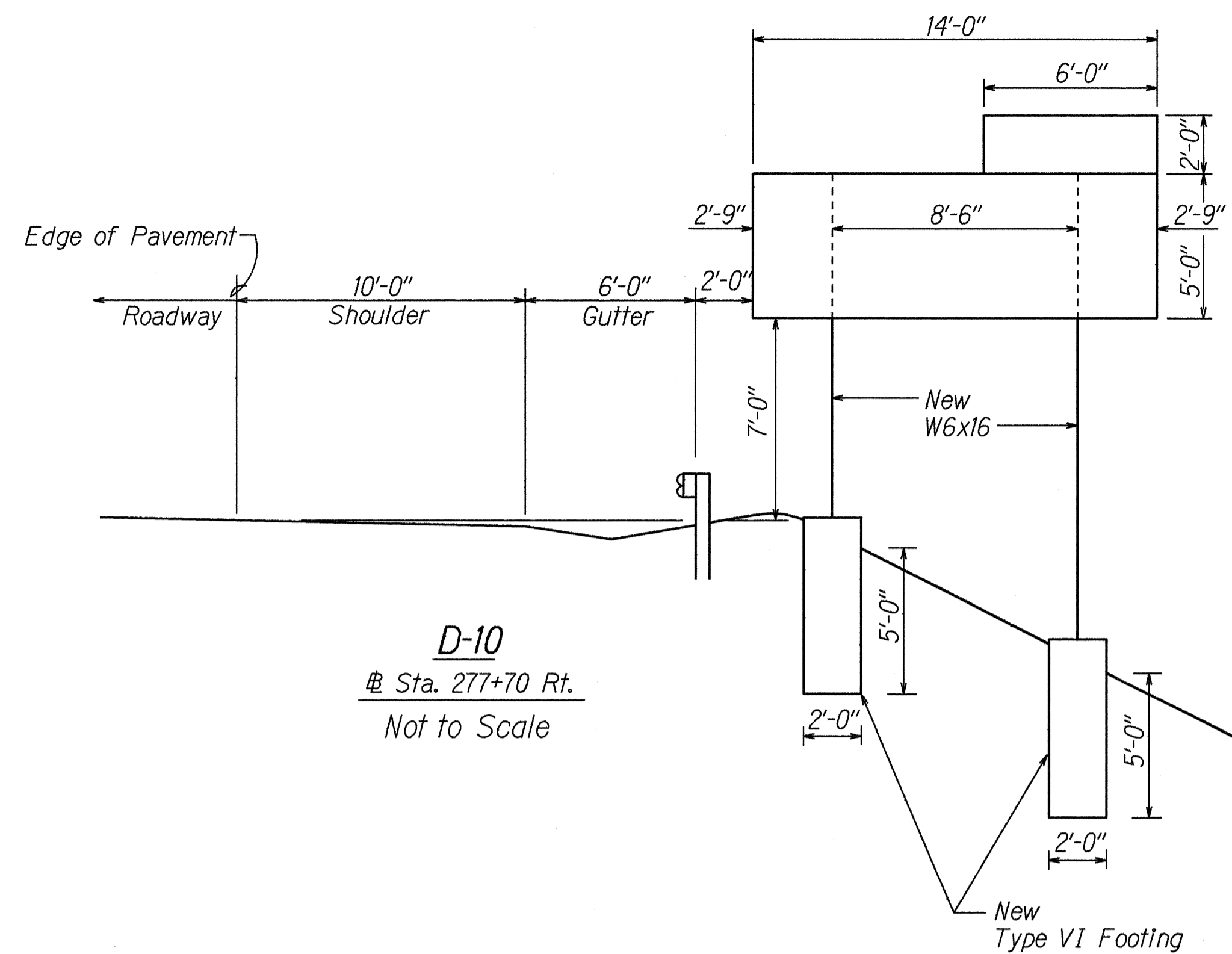
Contractor shall meet both Minimum Height Clearance:

- 1) 1'-0" Minimum from Top of Barrier to bottom of sign
2. 7'-0" or 4'-0" Minimum from Finish Grade Line to bottom of sign

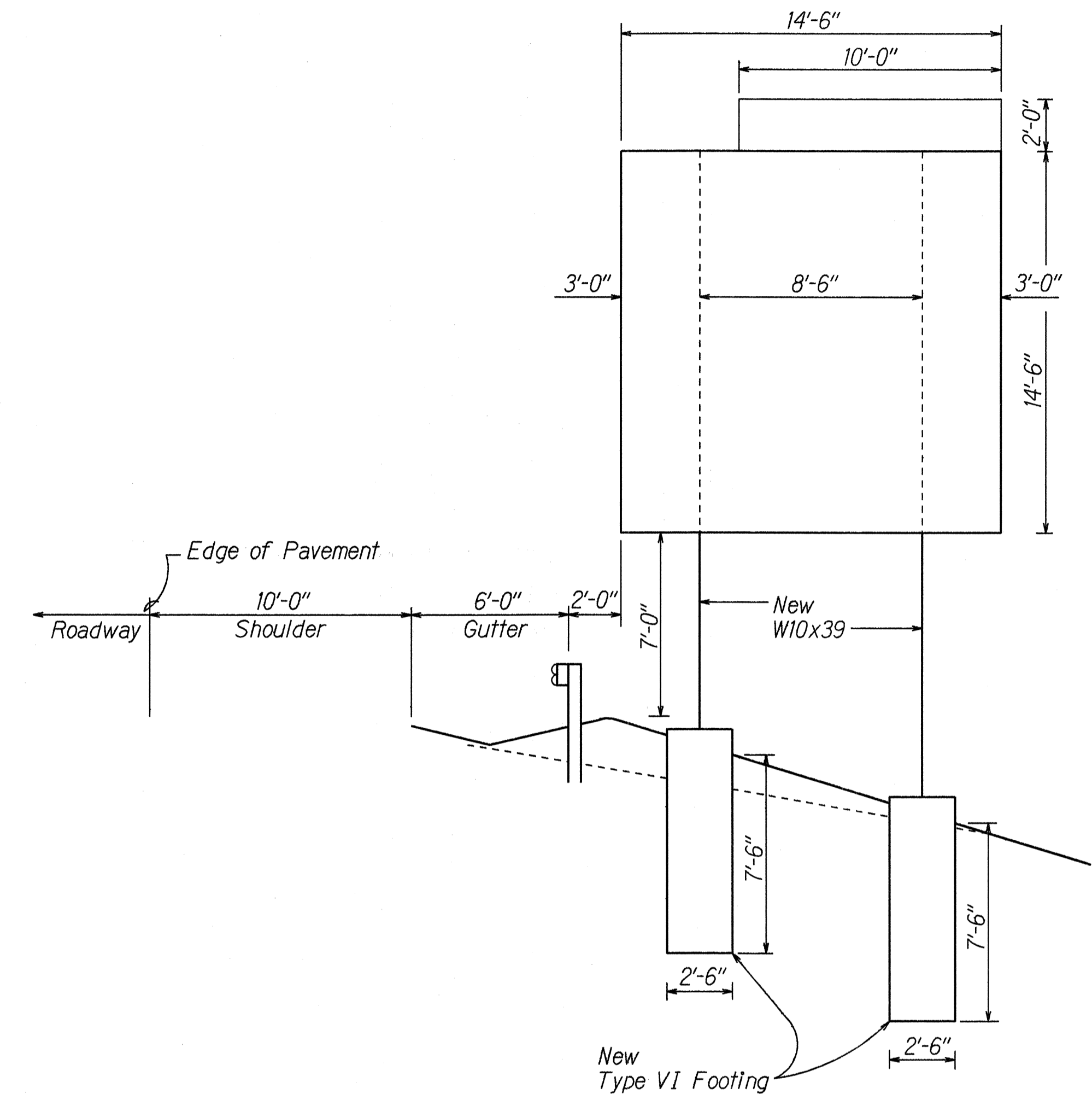


**SIGN POST BASE PLATE DETAIL**

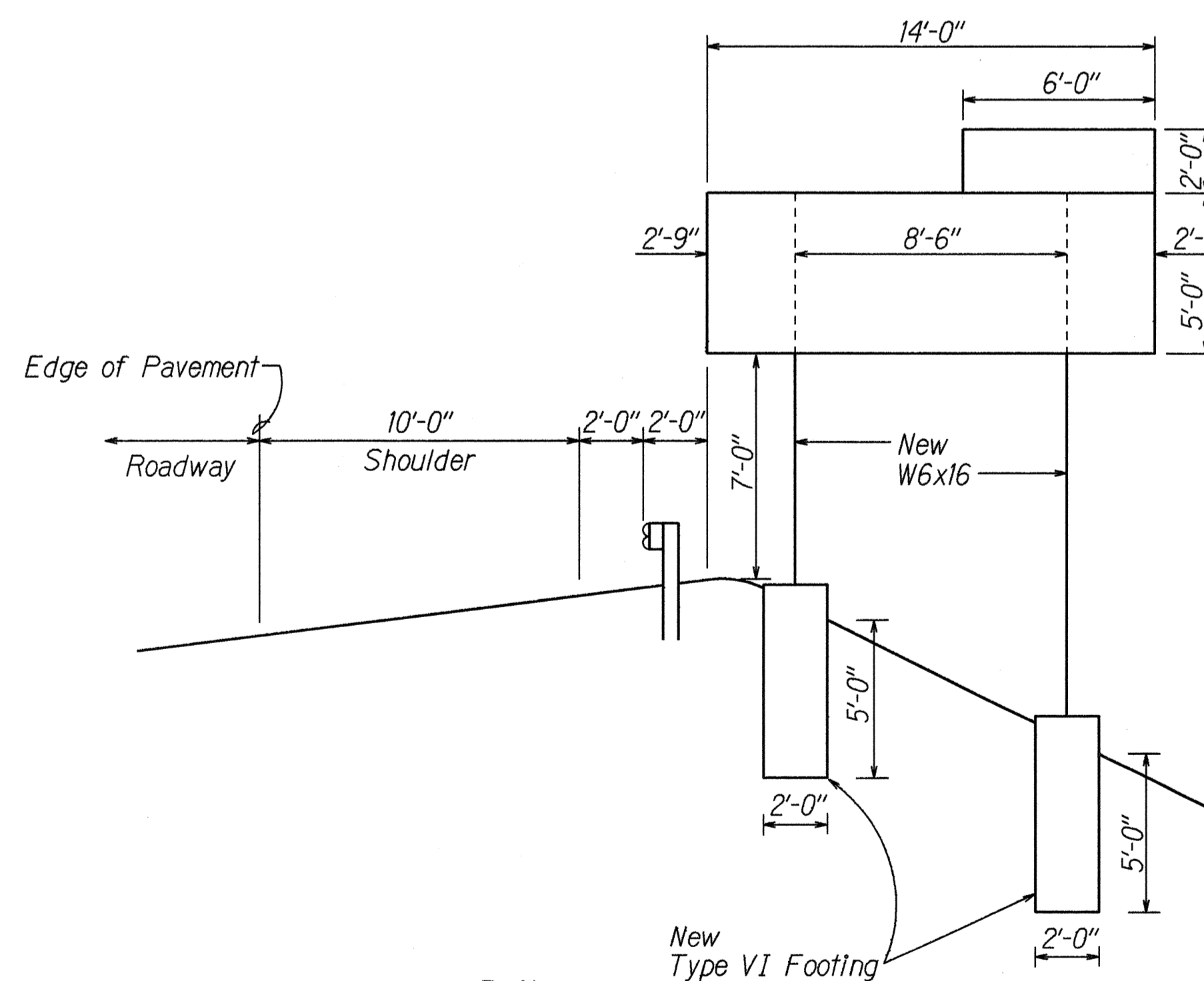
Scale: 3"=1'-0"



**D-10**  
# Sta. 277+70 Rt.  
Not to Scale



**D-30**  
I.B. # Sta. 320+00 Rt.  
Not to Scale



**D-11**  
# Sta. 304+00 Rt.  
Not to Scale

DATE	_____
SURVEY PLOTTED BY	_____
DESIGNED BY	_____
NOTED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
NO.	_____

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

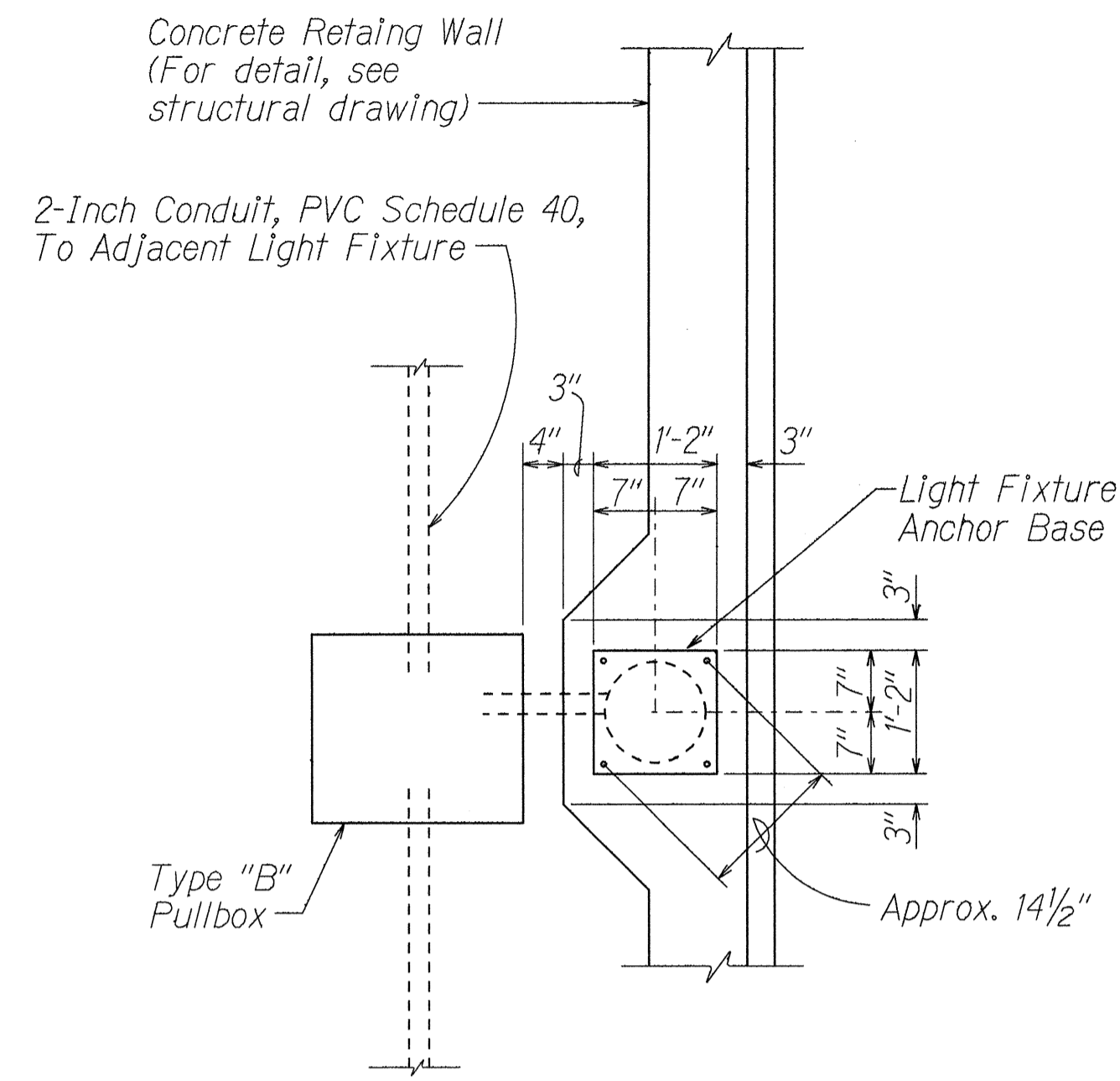
**MISCELLANEOUS SIGN  
DETAILS**

**INTERSTATE RTE. H-2, HOV LANES, PH. II  
Miliiani Interchange to Waipio Interchange  
F.A.I. Project No. IR-H2-1(27)**

Scale: As Shown Date: Apr 11, 1992

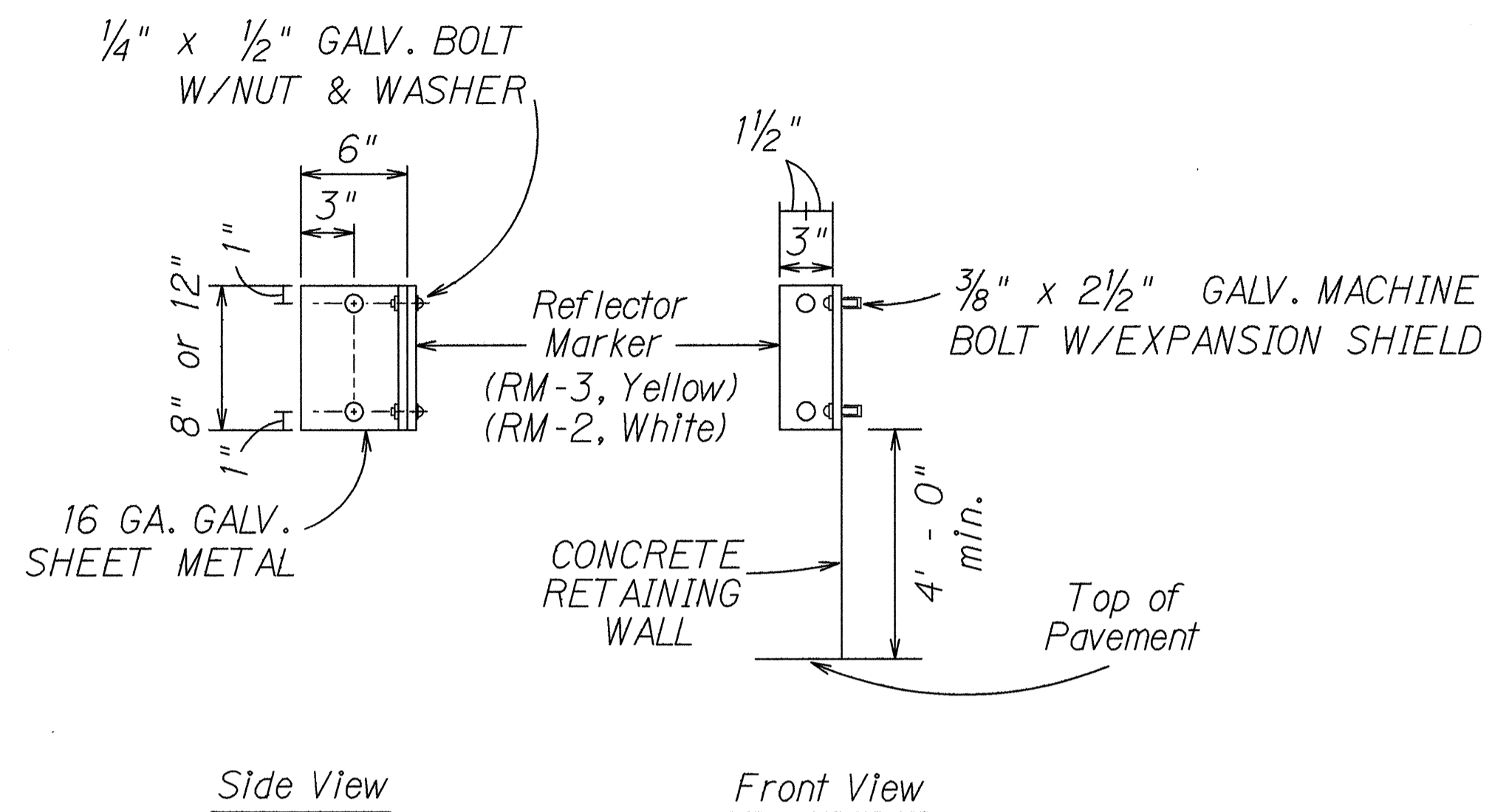
SHEET No. T23 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	164	223



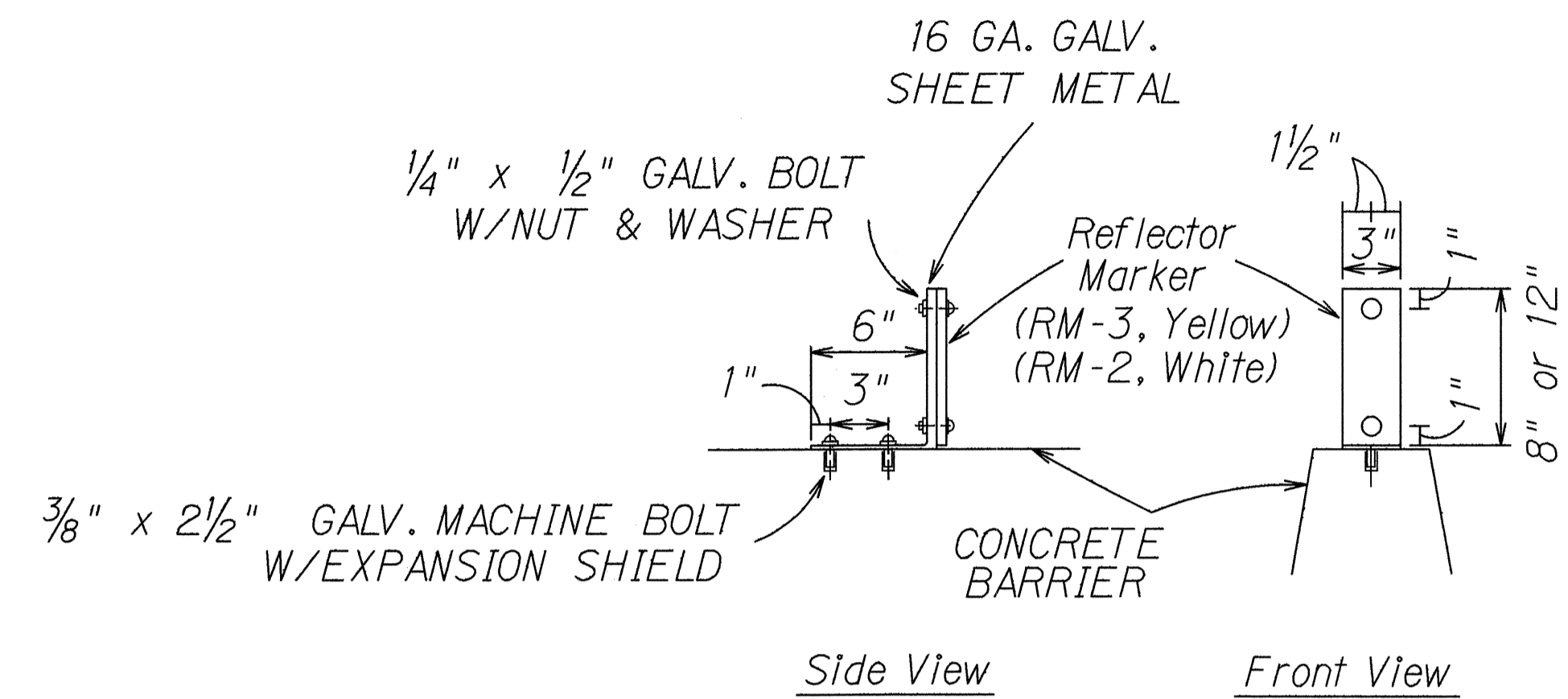
**PLAN**

Not to Scale



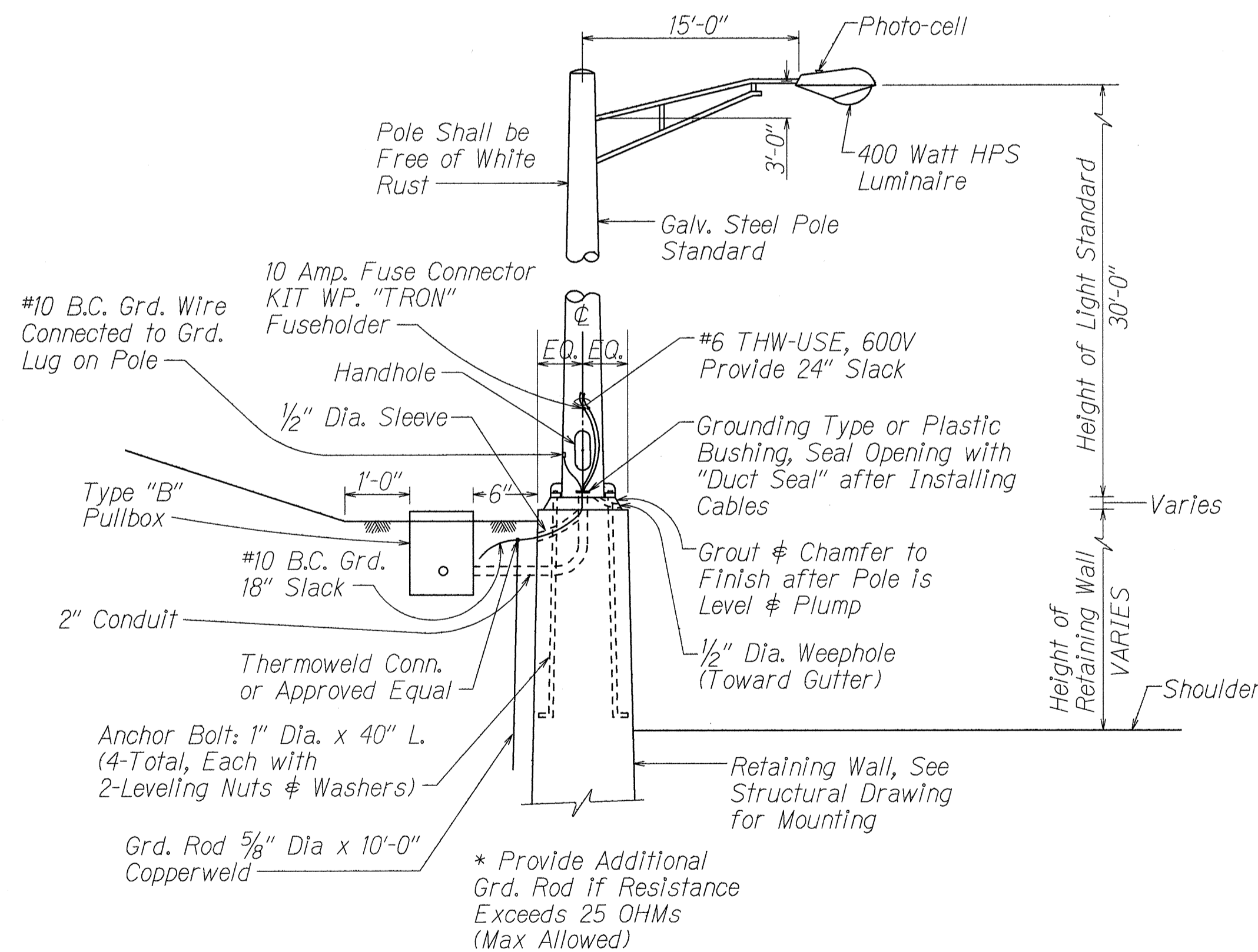
**WALL MOUNTED REFLECTOR MARKER**

Not to Scale



**CONCRETE BARRIER MOUNTED REFLECTOR MARKER**

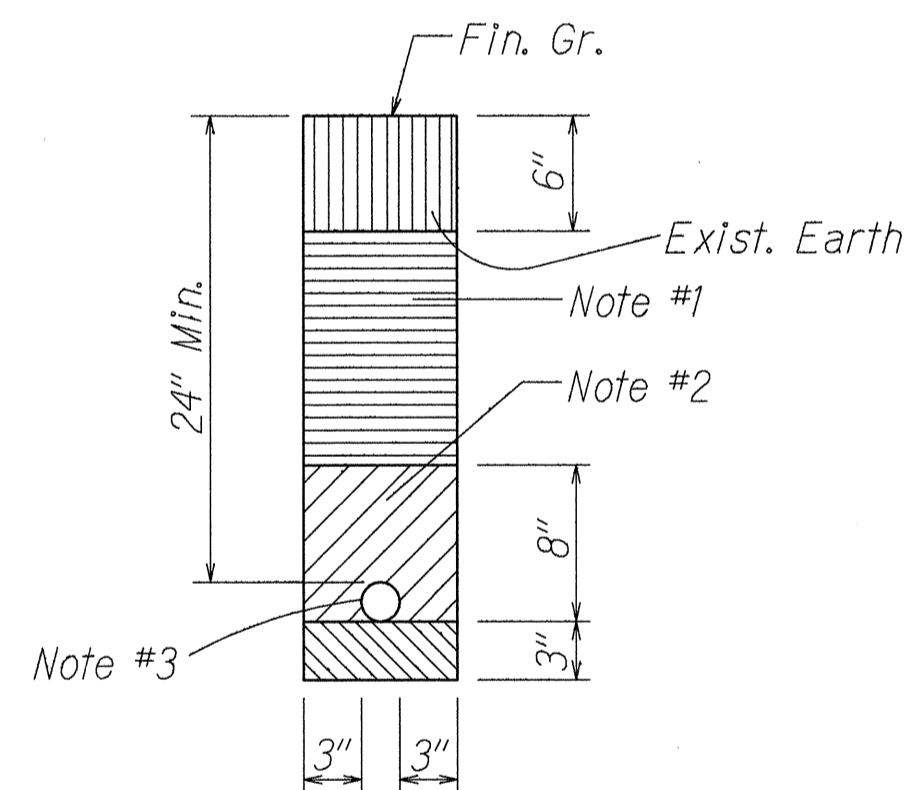
Not to Scale



**ELEVATION**

Not to Scale

**LIGHT STANDARD MOUNTED ON CONCRETE RETAINING WALL**



**HIGHWAY LIGHTING DIRECT BURIED CONDUIT**

Not to Scale

**HIGHWAY LIGHTING DIRECT BURIED CONDUIT NOTES**

- Type "A", backfill, beach sand, earth or earth & gravel. If earth & gravel the max. rock size shall be 1" & the mix. shall not contain more than 50% by vol. of rock particles.
- Type "B", backfill, beach sand, earth or earth & gravel. If earth & gravel the mix. must pass a 1/2" mesh screen & contain not more than 20% by vol. of rock particles.
- Conduit, 2" PVC, sch'd 40 and 2 - #6 Conductor.
- Excavation and backfill for the installation of the New Highway Lighting Conduit shall not be paid for separately but considered incidental to the various highway lighting items.

**HIGHWAY LIGHTING FEEDER SCHEDULE**

DUCT SECTION	RACEWAY	FEEDER ASSIGNMENT
A	1 - 2" PVC, Sch'd 40	2 - #6 Conductor

**HIGHWAY LIGHTING LEGEND**

- New Type "B" Pullbox
- Exst. Pullbox

1/8/93 Change height of Light Standard from 50'-0" to 30'-0"

DATE REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MISCELLANEOUS DETAILS**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Miliiani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Not to Scale Date: April, 1992

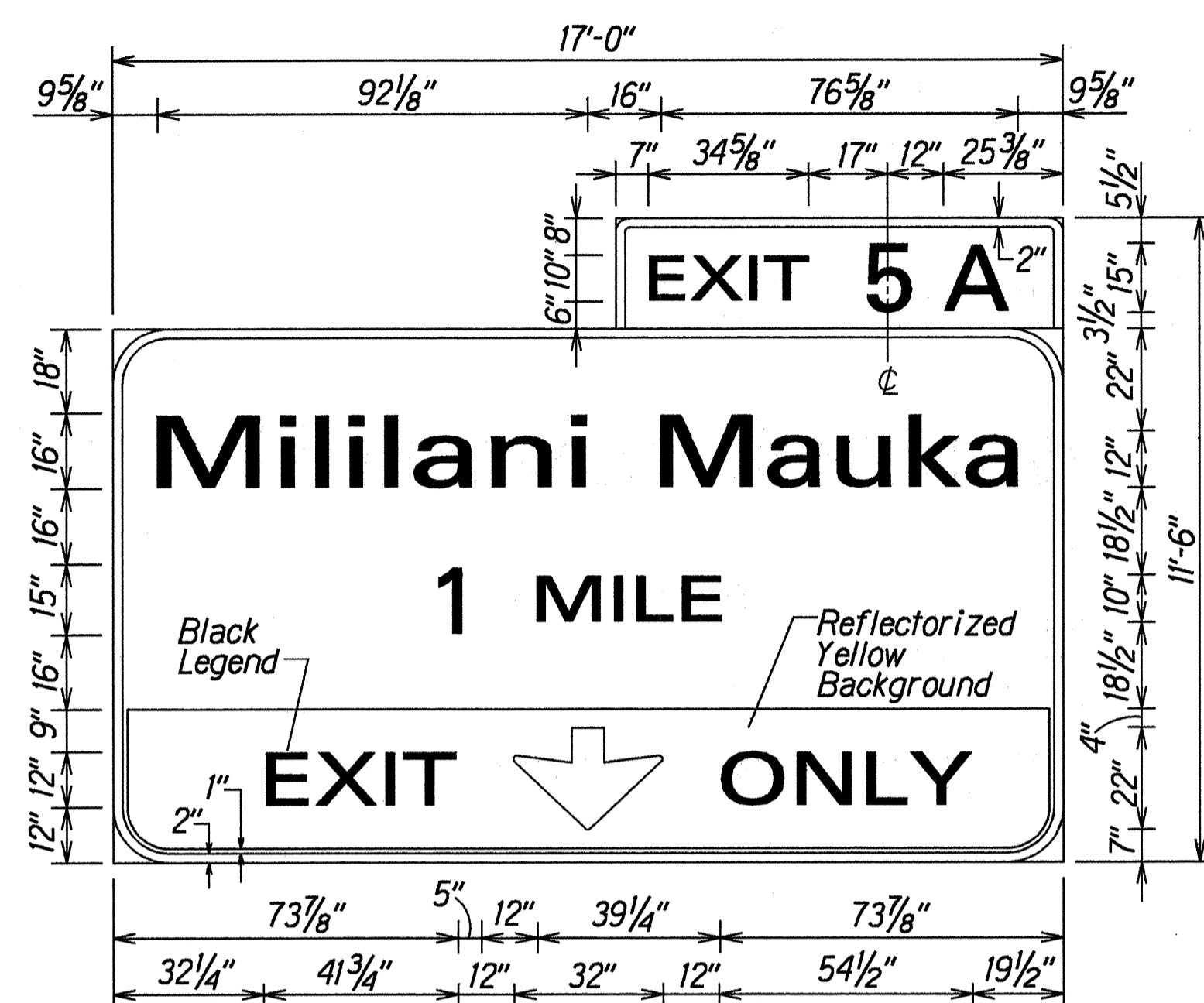
SHEET No. 724 OF 33 SHEETS

SURVEY PLOTTED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 DESIGNED BY \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 QUANTITIES BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 N.

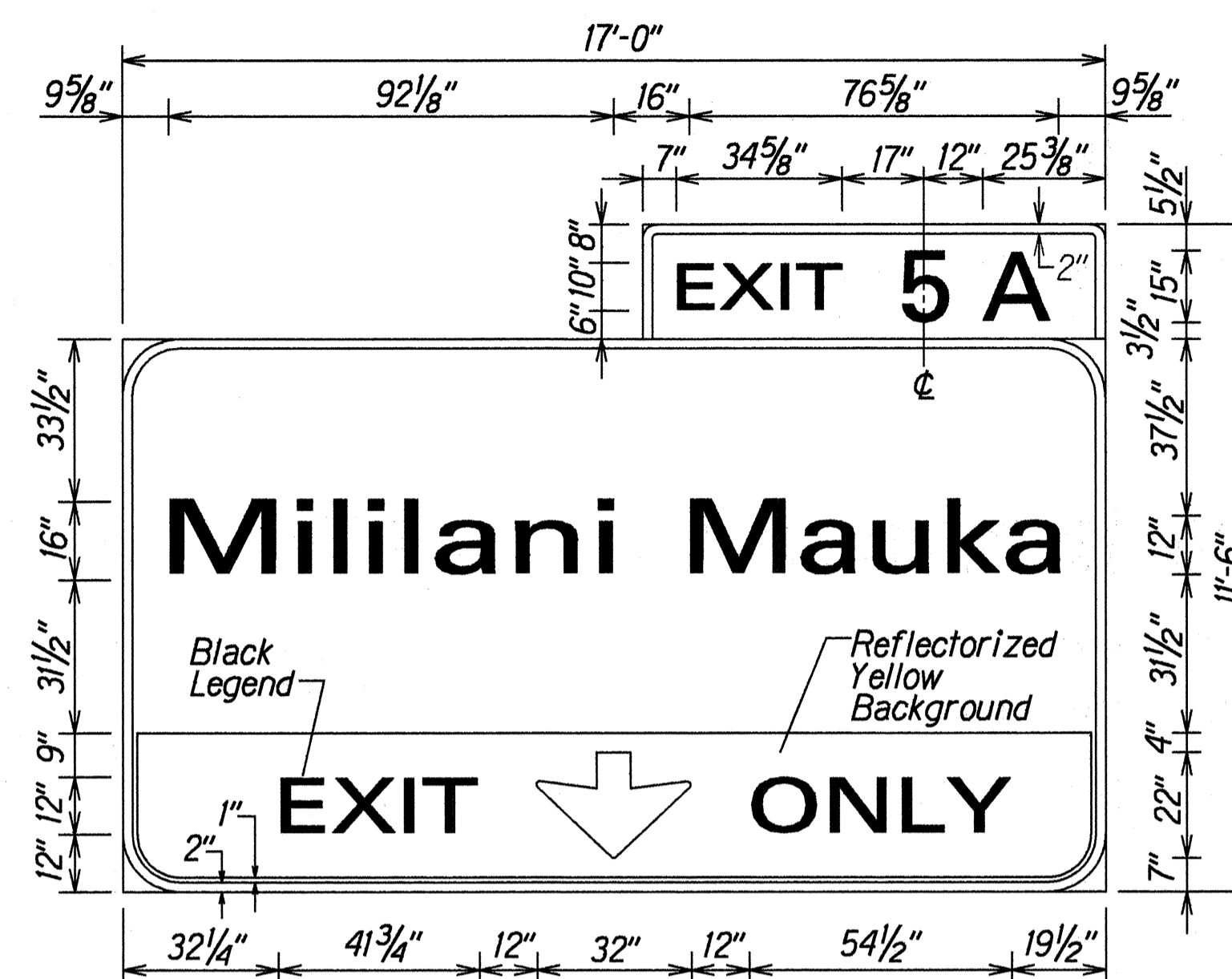
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	165	223

EXPRESSWAY (E) AND DESTINATION (D) SIGN NOTES

- The Contractor shall verify the locations and dimensions of existing Sign Panels and supports.
- New sign panels shall be laminated aluminum or extruded aluminum.
- Letter Size:
  - When letters are all uppercase, use series "E"
  - When initial uppercase letter is used in conjunction with lowercase letters, use series "E"(M) for uppercase
- Contractor shall submit all sign splicing details to the Engineer for approval. All backing for signs 4 feet by 6 feet or less shall be of one sheet.
- The amount and center-to-center spacing of Expressway Sign Luminares shall be in accordance with the luminaire manufacturer's instructions. Maximum center-to-center spacing of luminaires shall be 10-feet.
- Destination Sign Posts shall be as noted on the plans.
- Incidental parts and services, including sign lighting system, not shown on the plans or specified but deemed necessary for the sign installation, shall be furnished and installed by the Contractor as part of the work contracted.
- Removal and disposal of existing sign panels and posts with foundation will not be paid for separately, but shall be considered incidental to various signing items.
- All new Expressway Sign Luminares shall be 175-Watt metal halide.
- The background for "E" & "D" Signs and Exit Number Panels shall be reflectorized with Type III or IV reflective sheeting.
- The message, arrows, and borders for "E" & "D" Signs and Exit Number Panels shall be reflectorized with Type III or IV retroreflective sheeting or with porcelain enameled aluminum cut-outs with acrylic plastic reflex reflectors.



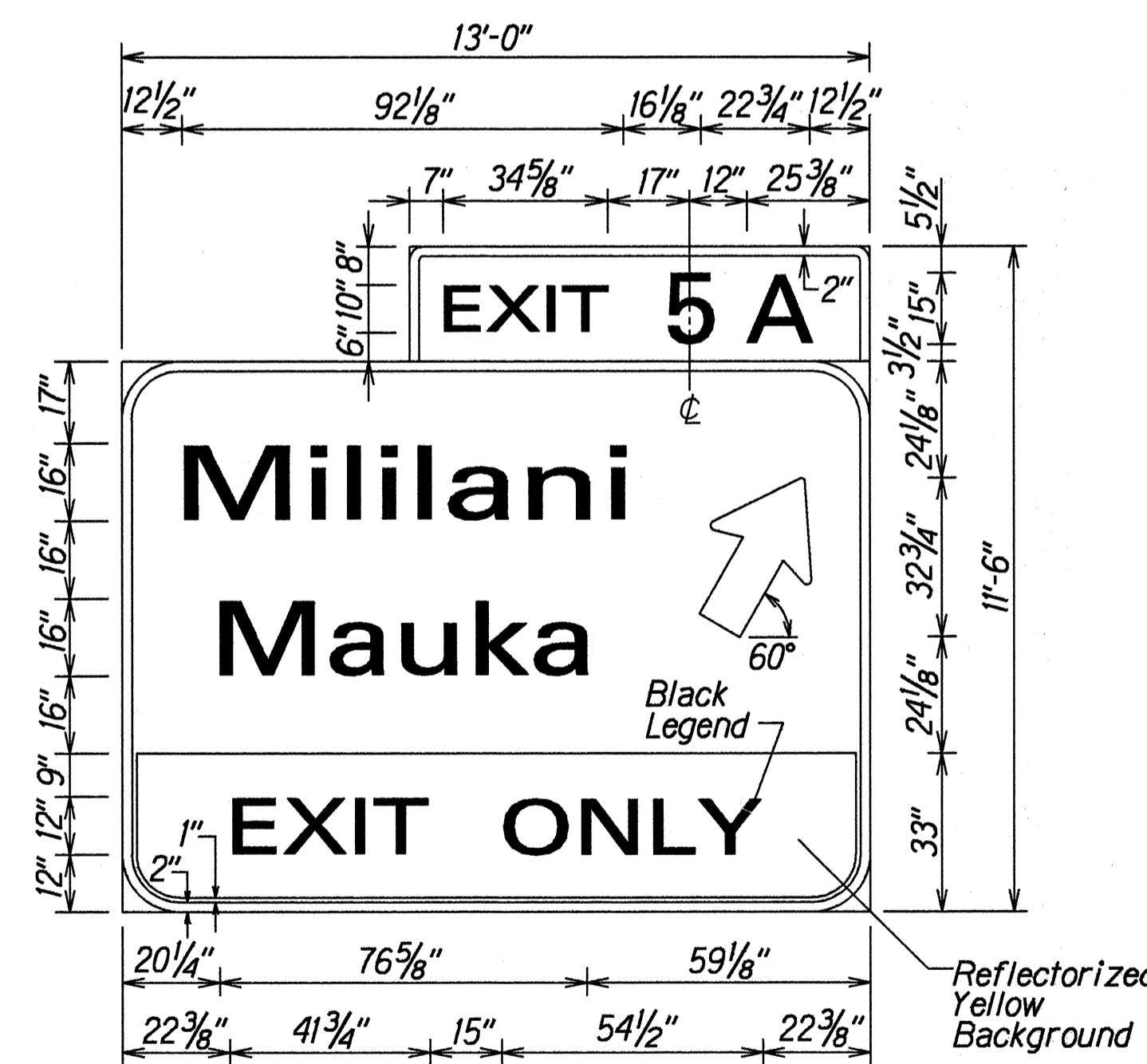
D-4(R)  
# Sta. 265+00 Lt.  
Scale: 3/8"=1'-0"



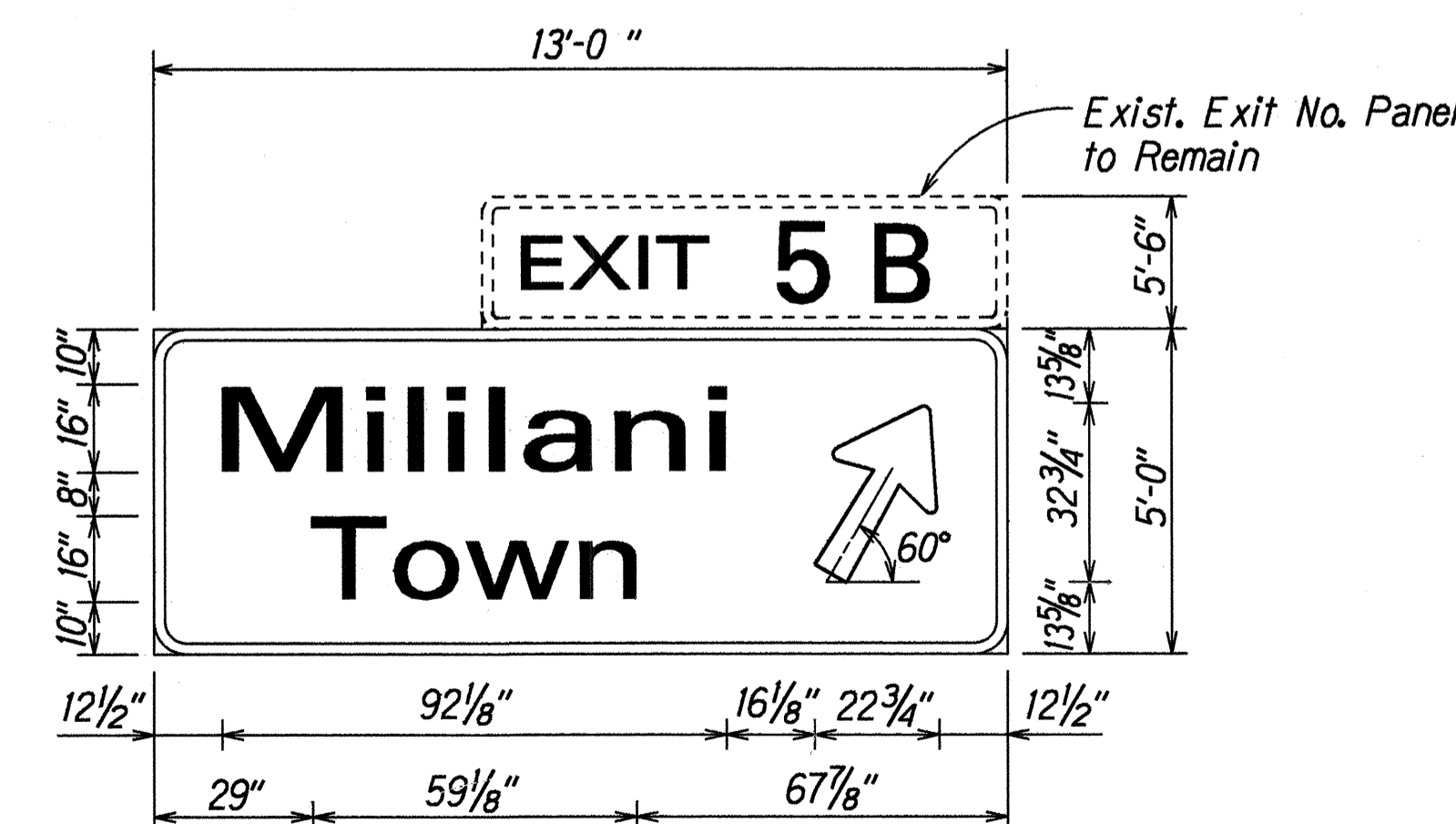
D-5  
# Sta. 246+95 Lt.  
Scale: 3/8"=1'-0"



E-6(L) # D-4(L)  
O.B. # Sta. 208+85 # Sta. 265+00 Lt.  
Scale: 3/8"=1'-0"



E-6(R)  
O.B. # Sta. 208+85  
Scale: 3/8"=1'-0"



D-6  
Scale: 3/8"=1'-0"

Note: Sign D-6 shall be an overlay over the existing sign panel.

DATE	REVISION
11/17/94	Added Sign D-6

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**EXPRESSWAY & DESTINATION  
SIGN DETAILS & NOTES**

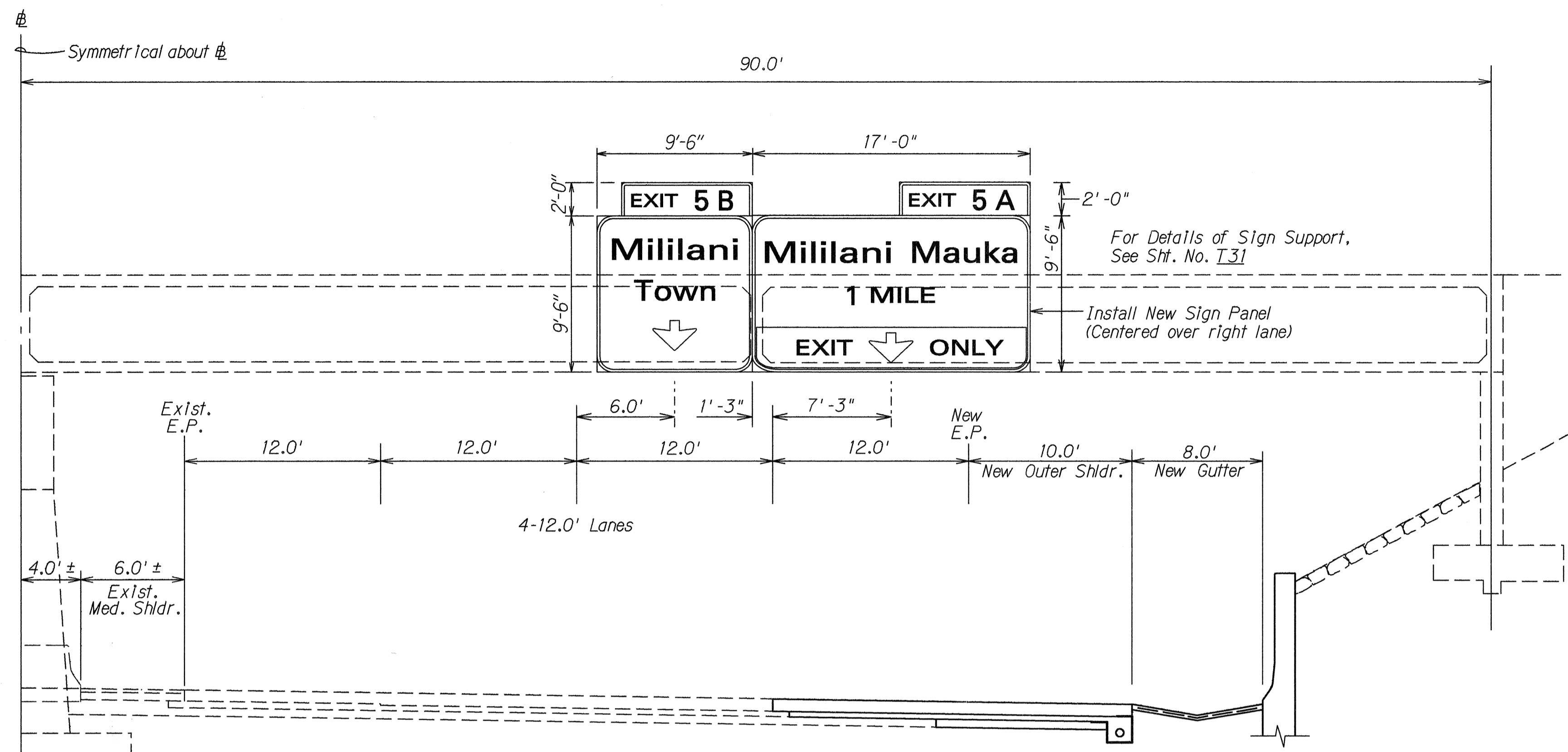
INTERSTATE RTE. H-2, HOV LANES, PH. II  
Mililani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Scale: As Shown Date: Apr 11, 1992  
SHEET No. T25 OF 33 SHEETS

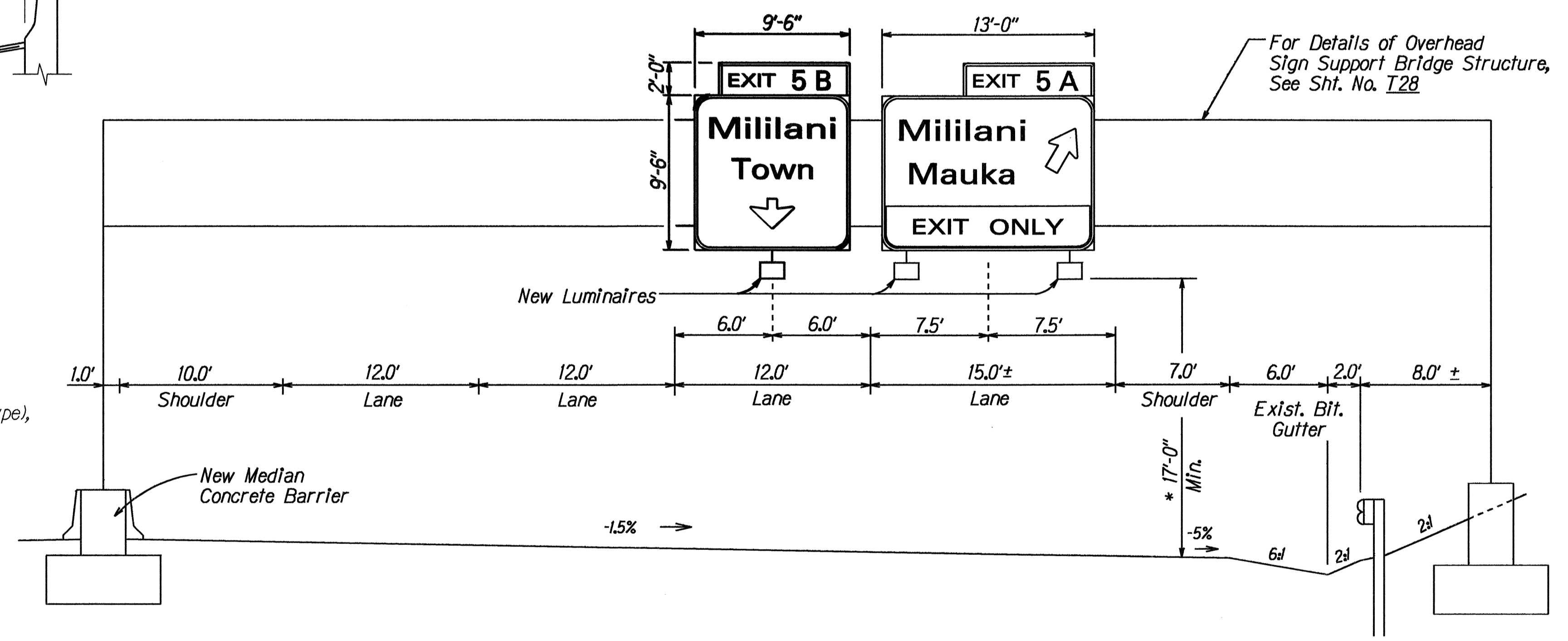
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
NOTES TO FILE	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	166	223

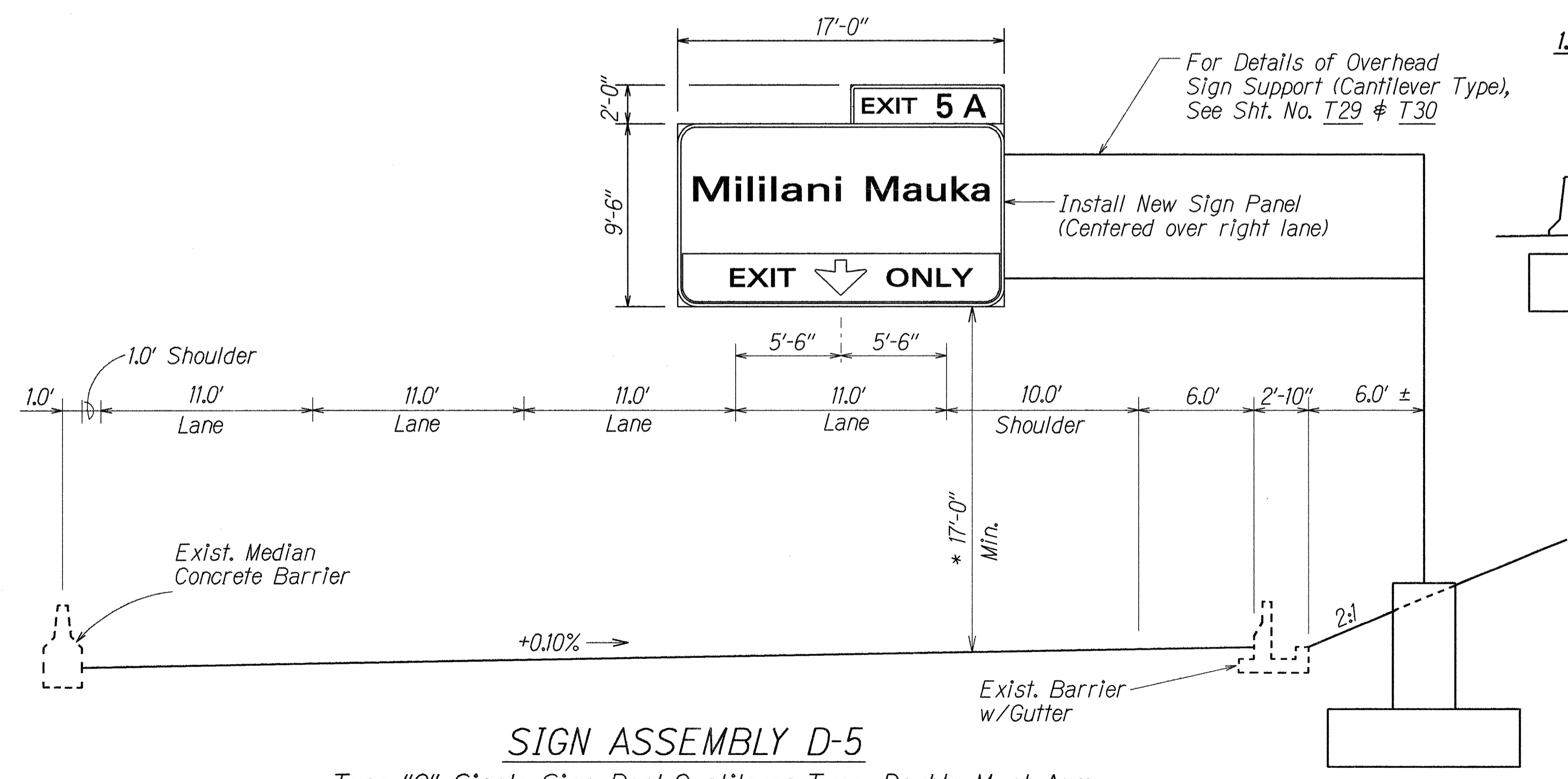
DATE	REVISION	APP'D.
10/29/92	Changed Type "F" Sign Support to Type "D" Sign Support for Sign Assembly E-6(L&R) per Addendum No. 2	



**SIGN ASSEMBLY D-4 (L & R)**  
 PINEAPPLE RD. SEPARATION @ STA. 265+00 Lt.  
 Scale: 3/16"=1'-0"



**SIGN ASSEMBLY E-6(L & R)**  
 Type "D" Sign Support Bridge Structure w/New Sign Bracket Assembly  
 O.B. Sta. 208+85  
 Scale: 3/16"=1'-0"



**SIGN ASSEMBLY D-5**  
 Type "C" Single Sign Post-Cantilever Type, Double Mast Arm  
 Sta. 246+95 Lt.  
 Scale: 3/16"=1'-0"

DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**FRAME LAYOUT DETAIL**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
 Mililani Interchange to Waipio Interchange  
 F.A.I. PROJECT NO. IR-H2-1(27)

Scale: 3/16"=1'-0" Date: April, 1992  
 SHEET No. T26 OF 33 SHEETS

# STRUCTURAL NOTES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1R-H2-1(27)	1992	ADD. 167	223

## DESIGN SPECIFICATIONS

AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals 1985 as amended.  
 AASHTO Standard Specification for Highway Bridges (14th edition) including interim specifications: 1990 & 1991.

## ALLOWABLE DESIGN STRESSES:

1. Reinforced concrete: Class A:  $f_c = 0.4 f'_c = 1,200$  psi
2. Reinforcing steel:  $f_s = 20,000$  psi for Grade 40  
24,000 psi for Grade 60

## MATERIALS:

1. Reinforced concrete: Class A, except as noted otherwise.
2. Reinforced steel: ASTM A 615 Grade 40, except when Grade 60 is specified
3. Tapered arms and post ASTM A 570 Grade 40  
A 611 Grade D
4. Except as noted otherwise, all structural steel plates and shapes shall conform to ASTM A 36 with  $F_y = 36,000$  psi.
5. All steel components to be hot-dip galvanized according to the requirements of ASTM A 123 and ASTM A 153 as applicable.
6. All aluminum to steel connectors to be stainless steel (300 series).
7. All sign support and bracket components shall be painted with dark green enamel paint.
8. Grout under base plate shall be non-metallic non-shrink grout.
9. Aluminum tees or angles used to brace the sign panel as shown in Standard Plan TE-25 shall conform to ASTM B 308.

## CONSTRUCTION REQUIREMENTS:

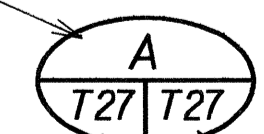
1. Refer to Standard Specifications for Road and Bridge Construction, (Hawaii 1985 Edition) and Special Provisions.
2. Shift footing reinforcement when it interferes with vertical column reinforcement.
3. Except as noted otherwise, all vertical dimensions are measured plumb.
4. For details of aluminum mountings, see Standard Plan TE-25.
5. All aluminum in contact with steel or concrete shall be properly protected to prevent corrosion by means of insulating materials, such as elastomeric pads.

## GENERAL:

1. Refer to Standard Plans for additional details and notes not covered by details and typical drawings.
2. The Contractor shall verify all grades and dimensions before commencing with any work.
3. The Contractor shall verify the locations of all existing utility lines near structures and notify their respective owners before commencing with work.
4. The Contractor shall be solely responsible for the protection of adjacent property, utilities, existing and new structures, pipes, ducts, etc. from damage due to construction and shall repair any damage at his own expense, to the satisfaction of the Engineer. He shall conduct his work in such a manner, providing temporary shoring or other measures as may be necessary, as to insure the safety of all concerned.
5. Spread footing shall be excavated and poured to neat lines as called for on the plans by maintaining as near a vertical cut as possible and it shall be the Contractor's responsibility to maintain the stability of the existing roadway prism throughout the course of work.
6. In the event of over-excavation, the space between the footing and ground shall be filled with a minimum of Class D concrete at the Contractor's expense and as directed by the Engineer.

## SYMBOLS AND ABBREVIATIONS:

Detail or section designation



Sheet number section is cut or detail location

Sheet number detail is drawn on

## ESTIMATED QUANTITIES

DESCRIPTION	UNIT	SIGN D-4	SIGN D-5	SIGN E-6	TOTAL
Structure Excavation	Cu. Yd.	-	65	46	111
Structural Steel for Sign Supports	Lb.	1,650	8,170	13,100	22,920
Class A Concrete in Footings & Pedestals	Cu. Yd.	-	22	24	46
Reinforcing Steel for Footing & Pedestal	Lb.	-	2,850	1,750	4,600
Adhesive Anchors & Drilled Holes for Sign D-4	Each	40	-	-	40

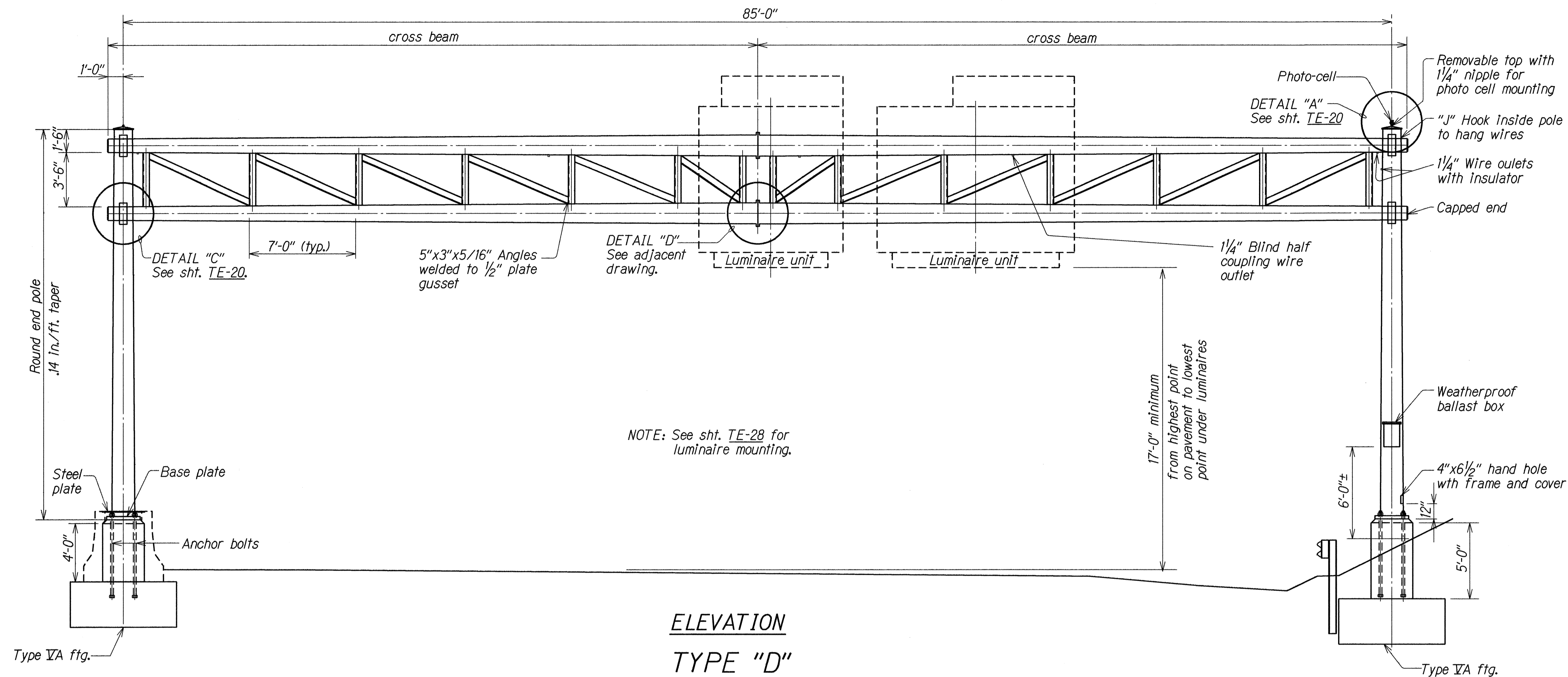
Payment for the Overhead Sign Support and Overhead Sign Support Structures for Signs D-4(L & R), D-5, and E-6(L & R) shall be paid for on a lump sum basis per each overhead sign support (Item Nos. 621.1500, 621.1510, & 621.1520). The lump sum cost shall include all required labor, materials, equipment, and incidentals necessary for the installation of the new overhead sign support and overhead sign structures. The estimated quantities listed above are for assisting the contractor's bid calculations. The lump sum cost for Sign D-4 (L & R) shall also include payment for the adhesive anchors, drilled holes, etc., which is necessary for the installation of the overhead sign support. The lump sum cost for Sign D-5 and E-6 (L & R) shall also include payment for all excavation, reinforcing steel, concrete, etc., which is necessary for the installation of the overhead sign structures.

The New Sign Panels (Item Nos. 621.0100, 621.0200, & 621.0300) shall be paid for separately. Also, the New Expressway Sign Lighting System (Item No. 622.2000) for Sign E-6(L & R) shall be paid for separately.

DATE	XXX 1991
SURVEY PLOTTED BY	TKM
DRAWN BY	TKM
DESIGNED BY	SA
CHECKED BY	SA
No. odd sheets	XXX 1991

 8/6/92	Revised payment description for overhead sign support and overhead sign support structures
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <h3 style="margin: 0;">OVERHEAD SIGN SUPPORTS</h3> <h4 style="margin: 0;">STRUCTURAL NOTES</h4> INTERSTATE ROUTE H-2, HOV LANES, PHASE II WILLIAMS INTERCHANGE TO WAIPIO INTERCHANGE Project No. 1R-H2-1(27)	
Scale: As Noted	Date: Apr. 1992

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	168	223



**ELEVATION**  
**TYPE "D"**  
**TWO-TUBE TRUSS - SPAN TYPE**  
Scale: 1/4"=1'-0"

FOUNDATION SCHEDULE FOR SIGN E-6 (L & R) AT STA. 208+85									
Type	Dimension		Depth	Bot. Reinf.		Top Reinf.		Pedestal	
	A	B		L.W.	S.W.	L.W.	S.W.	Size	Vert. Reinf.
VA	14'-0"	7'-0"	3'-0"	8-#11	19-#4	#5@12	#4@12	2'-9"	10-#11

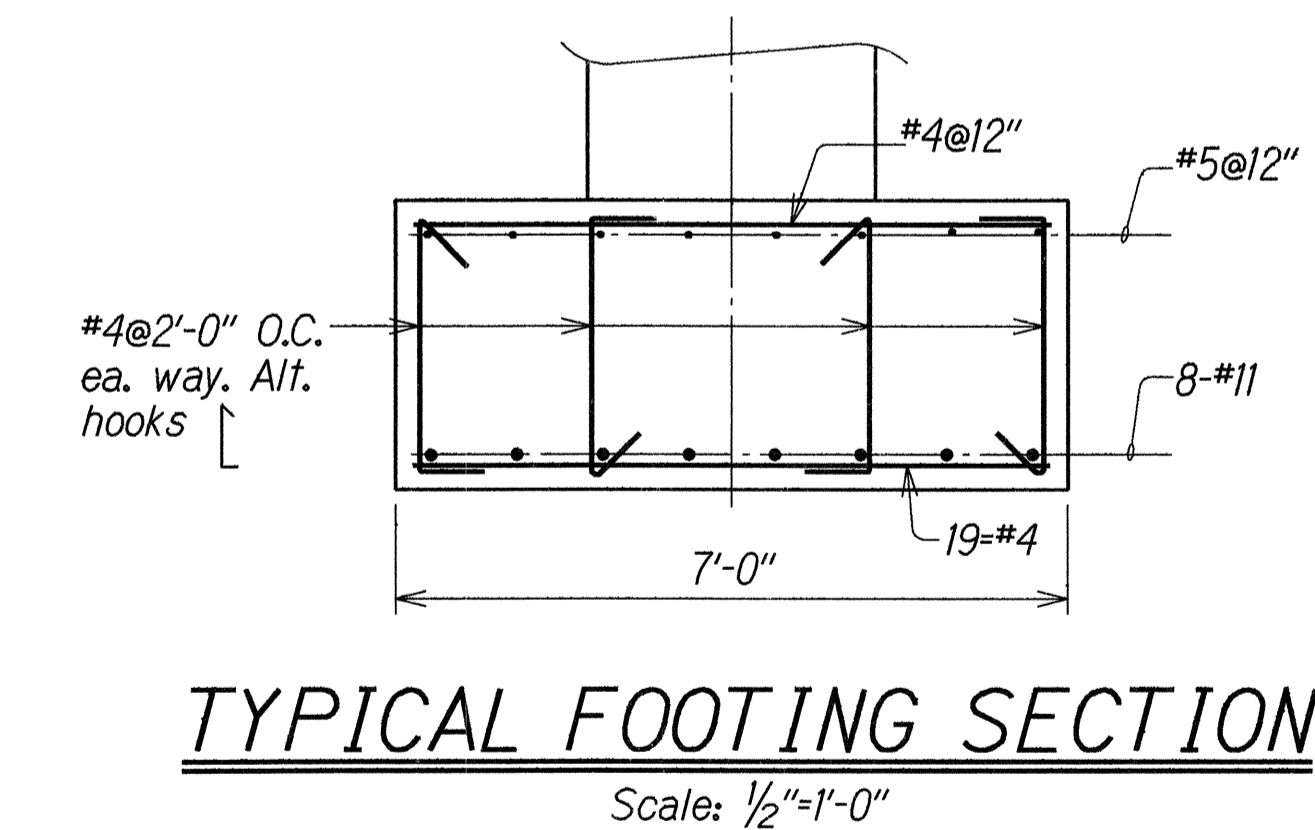
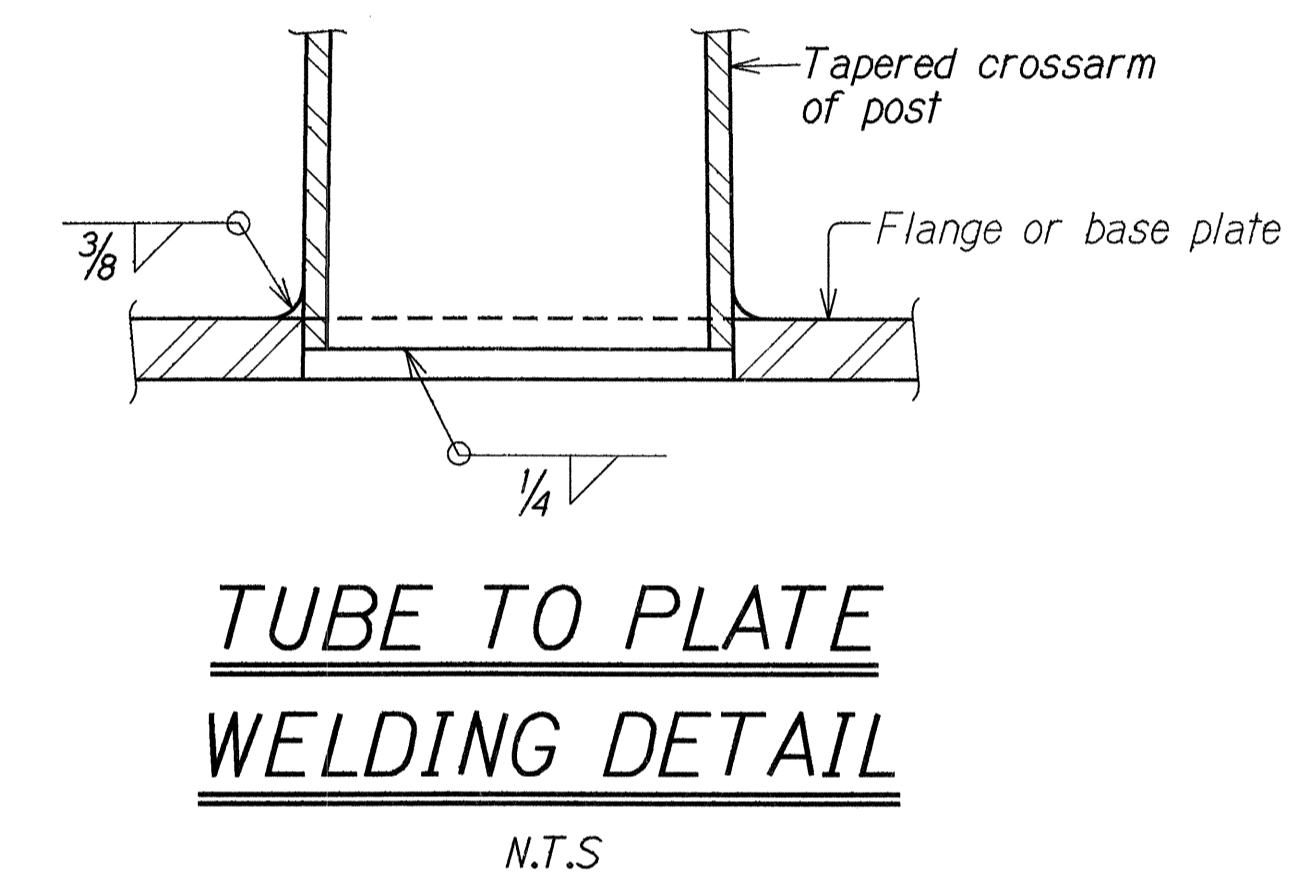
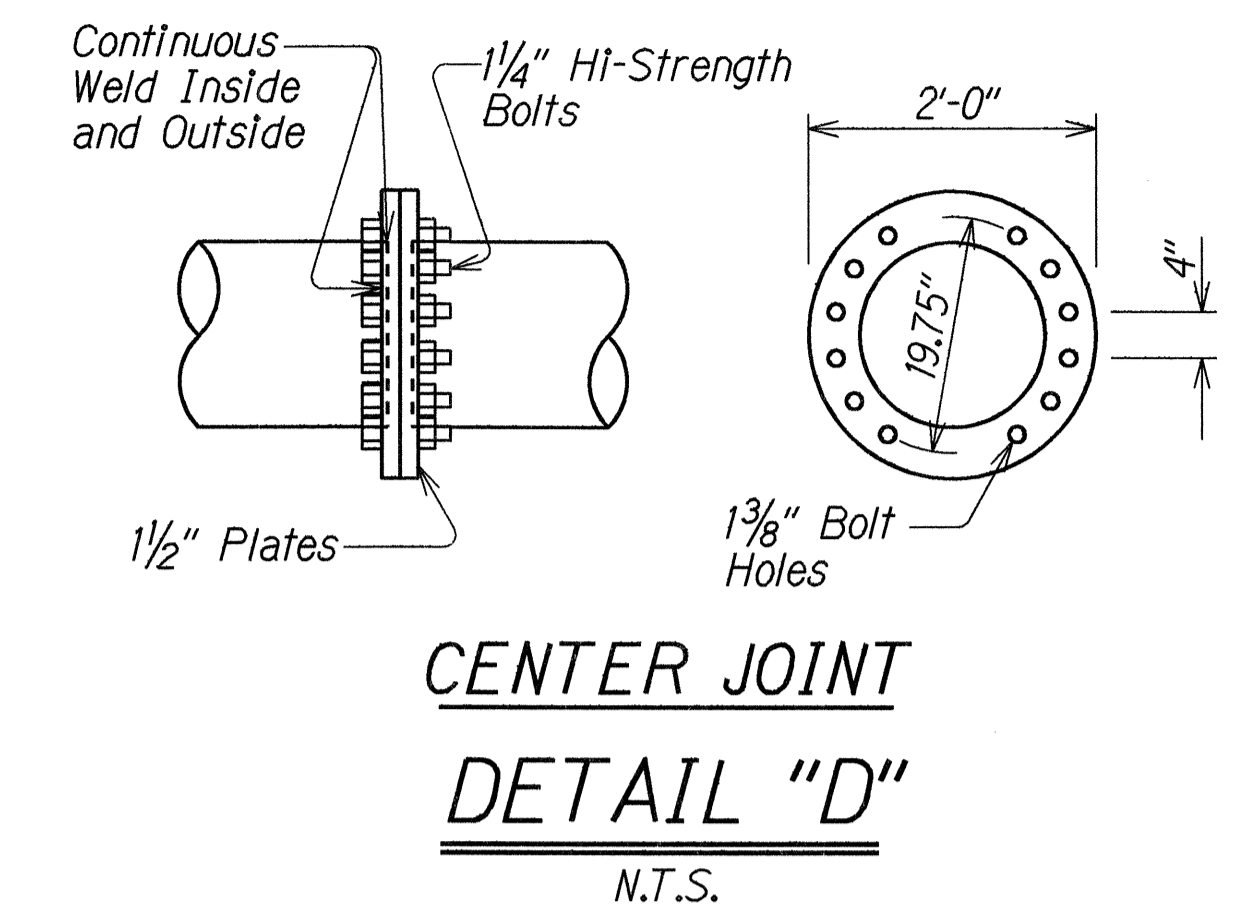
Notes: For further details, see Standard sht. TE-22.

BASE PLATE SCHEDULE								Bolt Dia.
B	C	F	H	P	R	S	T	
25 1/2"	33"	18"	2 7/8"	4 3/4"	5 1/2"	26 1/2"	2 1/2"	2 1/4"

NOTE: Bolts to be galvanized ASTM A 307  
For further detail,  
see Standard sht. TE-22.

TYPE "D": TWO-TUBE TRUSS				
SIGN NO.	O.B. STATION	CROSS BEAMS	POST LEFT & RIGHT	BASE PLATE
E-6 (L&R)	208+85	0 ga. 16.5" O.D.	0 ga. 18" O.D.	26 1/2" x 26 1/2" x 2 1/2"

NOTE: For further detail  
see Standard sht. TE-20



**TYPICAL FOOTING SECTION**  
Scale: 1/2"=1'-0"

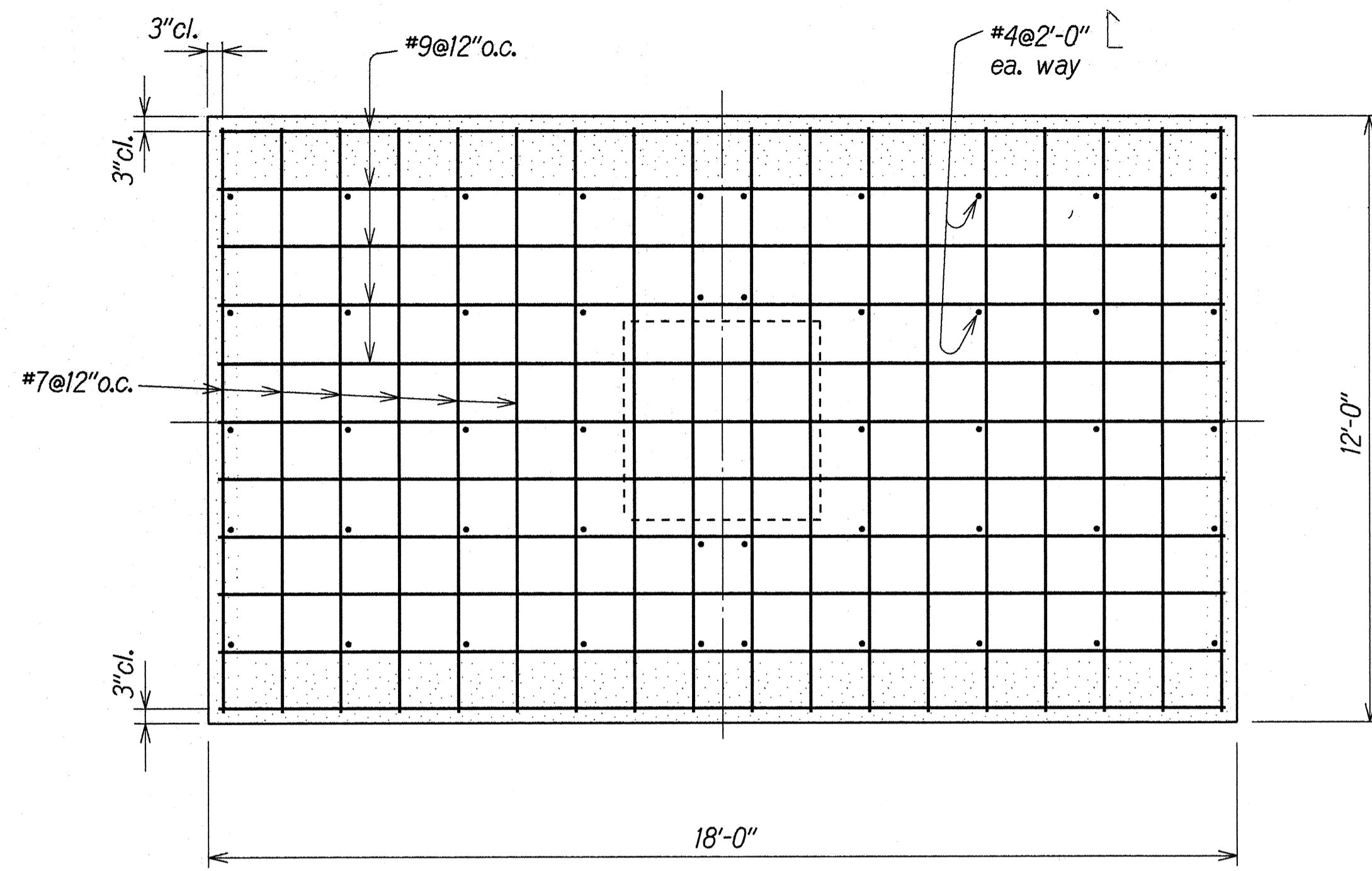
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SIGN E-6 (L & R)**  
**OVERHEAD SIGN SUPPORT - TYPE "D"**  
**ELEVATION, DETAILS AND SCHEDULES**  
INTERSTATE ROUTE H-2, HOV LANES, PHASE II  
MILLANI INTERCHANGE TO WAIPIO INTERCHANGE  
Project No. IR-H2-1(27)  
Scale: As Noted Date: Apr, 1992

SHEET No. T28 OF 33 SHEETS

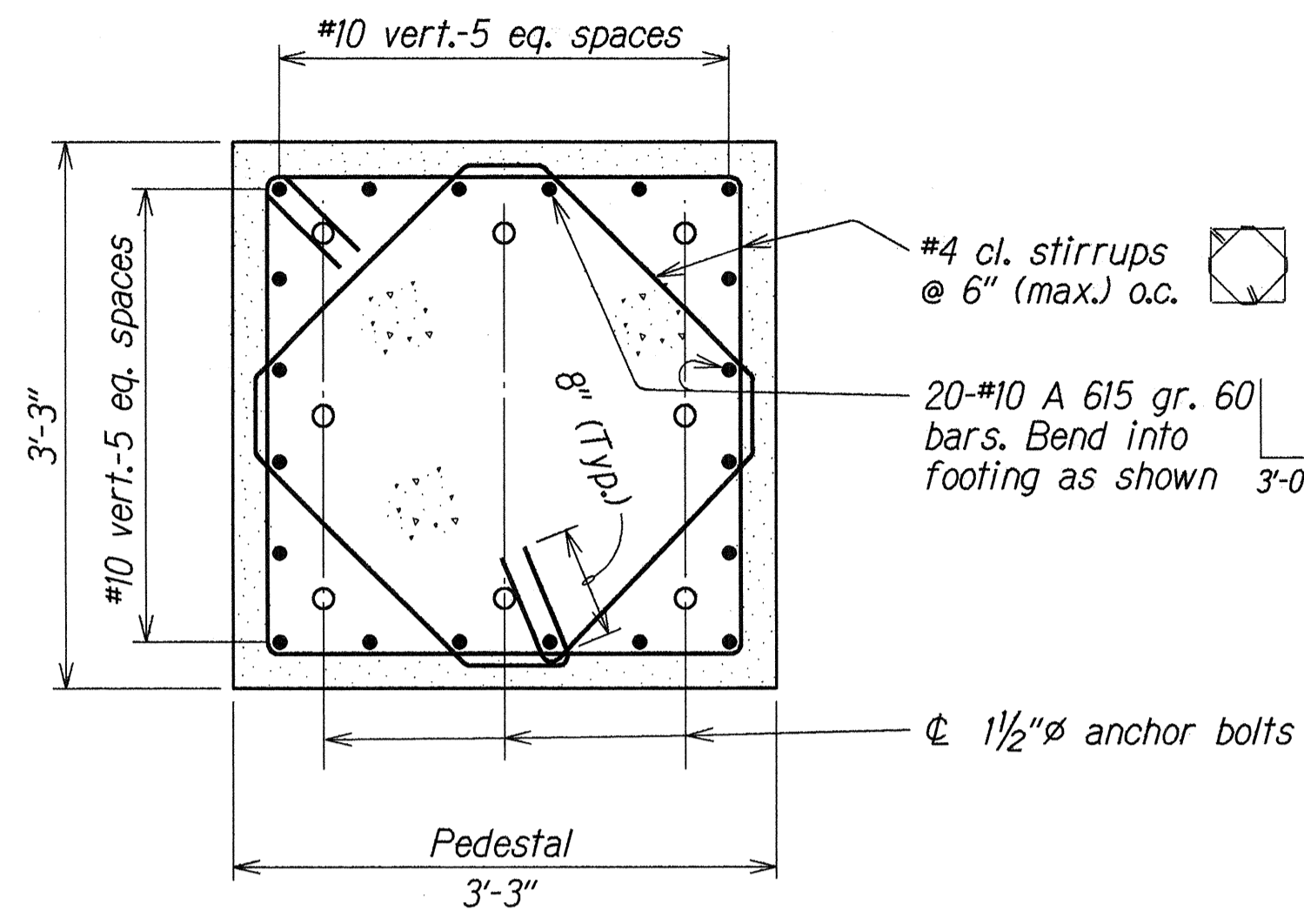
SURVEY PLOTTED BY: LJA  
 DATE: MAR 1992  
 DRAWN BY: LJA  
 DESIGNED BY: DKT  
 QUANTITIES BY: XXX  
 CHECKED BY: XXX  
 ORIGINAL PLAN: No. Signed: LJA



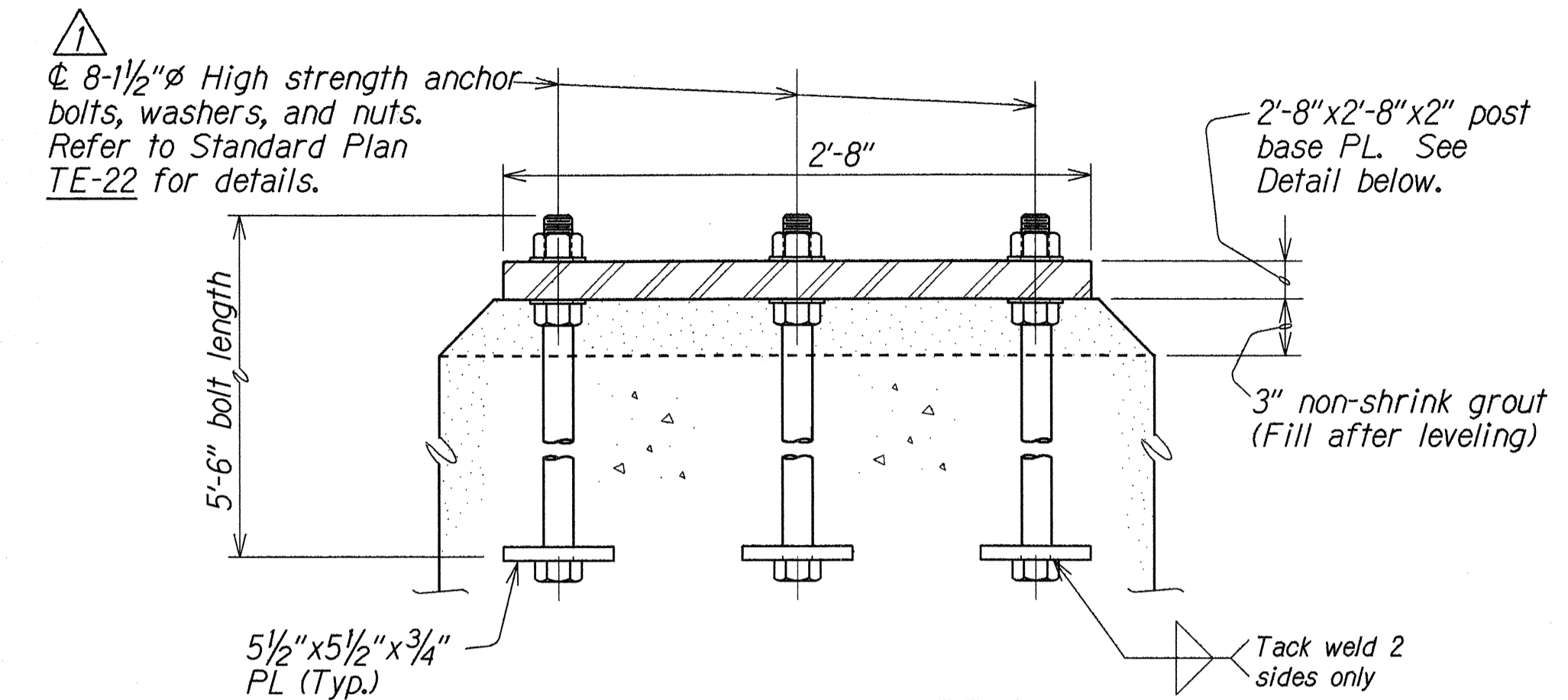
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	CO ADD. 170	223



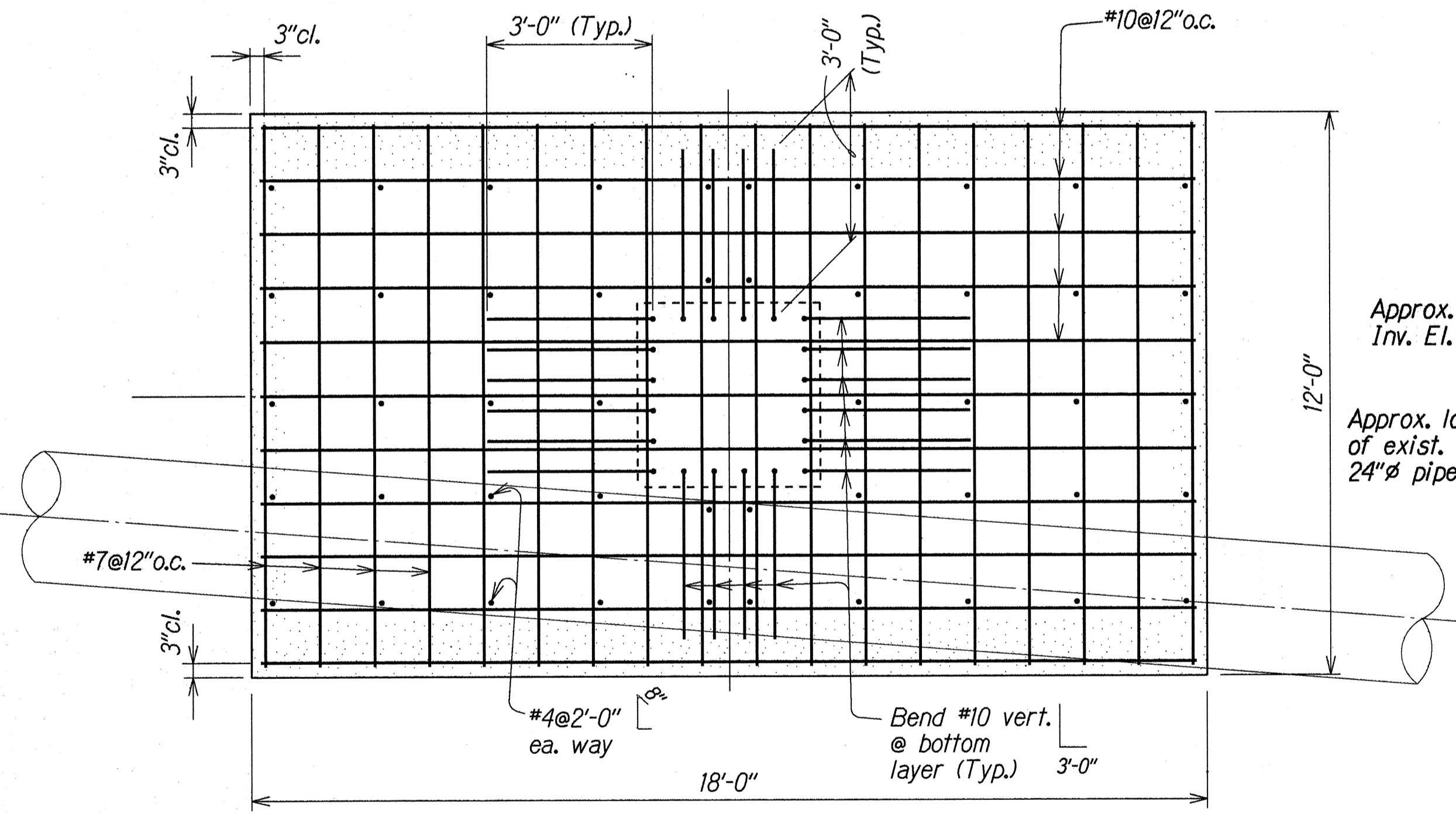
**2 TOP FOOTING REINFORCEMENT**  
Scale: 1/2"=1'-0"



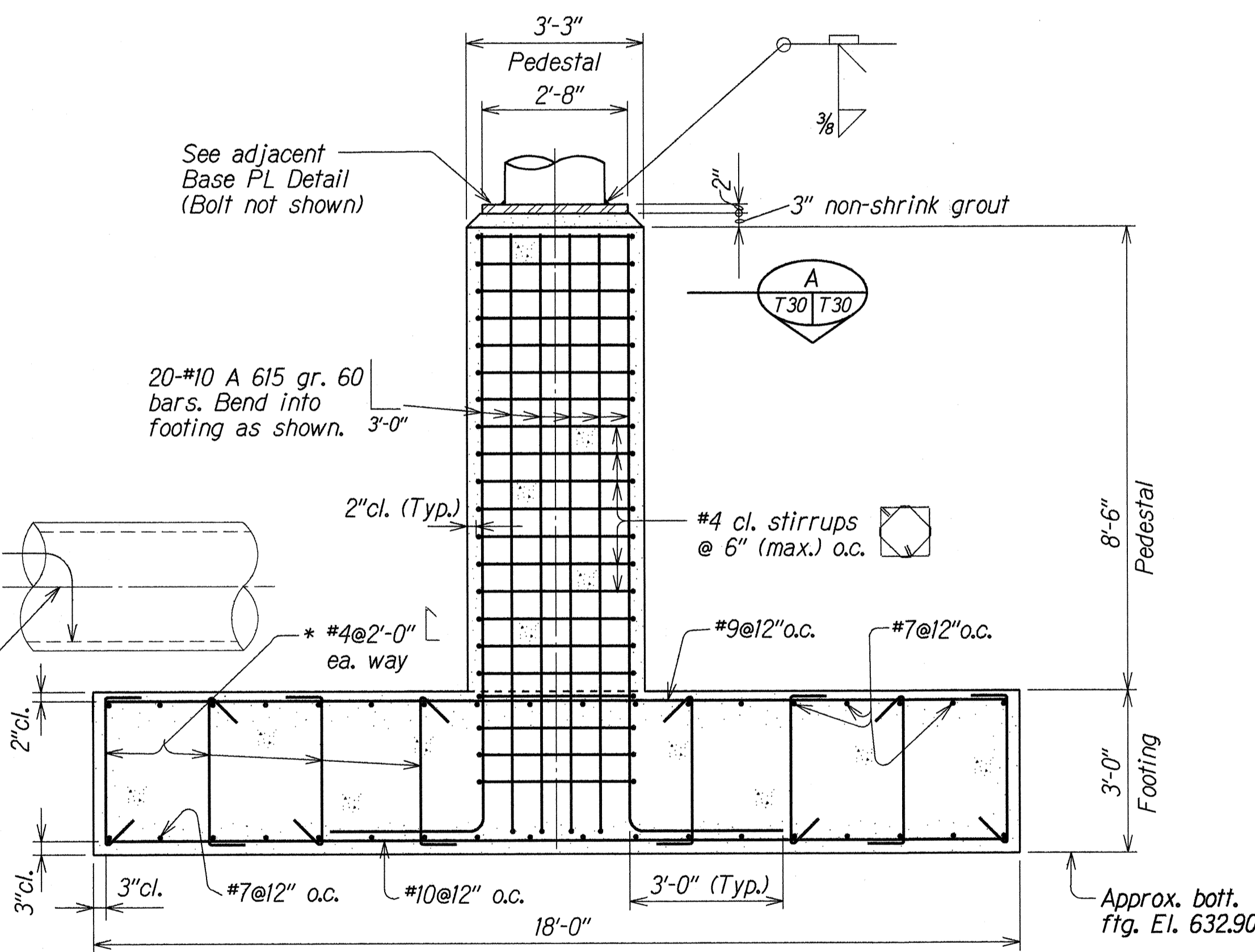
**SECTION A**  
T30 | T30  
Scale: 1"=1'-0"



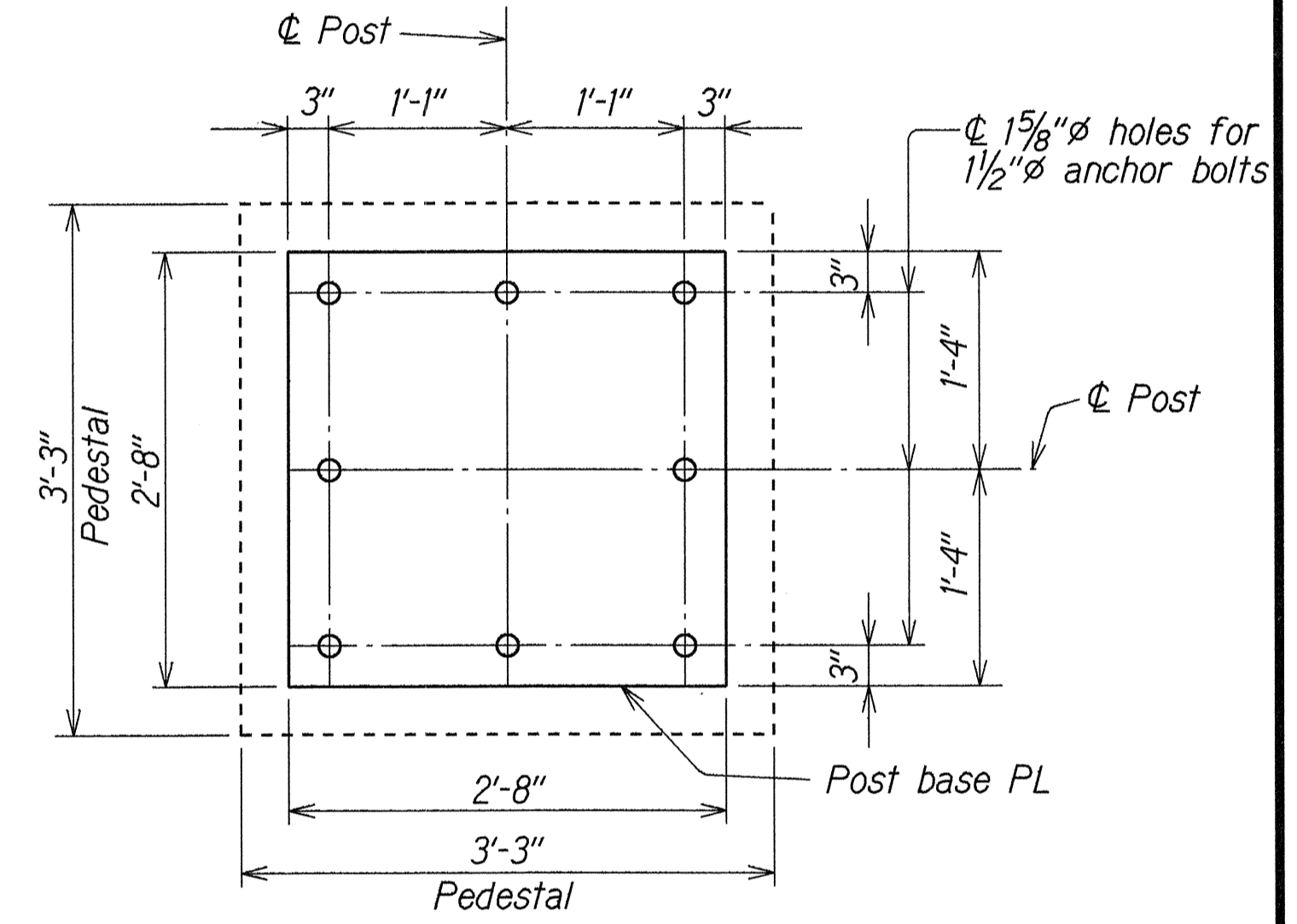
**ANCHOR BOLT DETAIL**  
Scale: 1/2"=1'-0"



**2 BOTTOM FOOTING REINFORCEMENT**  
Scale: 1/2"=1'-0"



**2 LONGITUDINAL SECTION THRU CONCRETE PEDESTAL**  
Scale: 1/2"=1'-0"



**BASE PLATE DETAIL**  
Scale: 1"=1'-0"

\* Alternate 135° & 90° hooks both ways horizontally.

**CONCRETE FOOTING AND PEDESTAL REINFORCEMENT**

DATE	DATE
MAR 1992	MAR 1992
TKM	SA
SA	SA
SA	SA
SA	SA

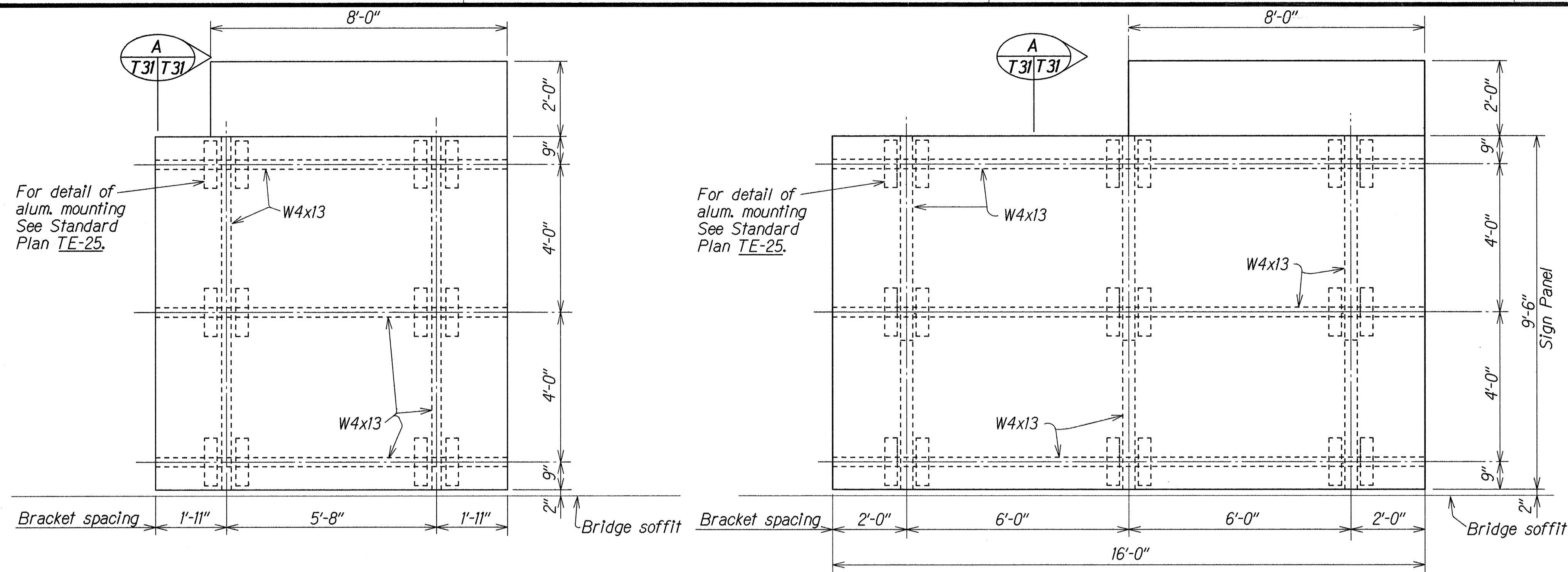
9/19/94	Revised footing & pedestal dimensions and reinforcing size.
8/6/92	Revised the description of the Anchor Bolt Detail.
DATE	REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGN D-5**  
**CONCRETE FOOTING AND PEDESTAL DETAILS**  
INTERSTATE ROUTE H-2, HOV LANES, PHASE II  
MILLIAMI INTERCHANGE TO WAIPIO INTERCHANGE  
Project No. IR-H2-1(27)

Scale: As Noted Date: Apr. 1992

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1R-H2-1(27)	1992	171	223

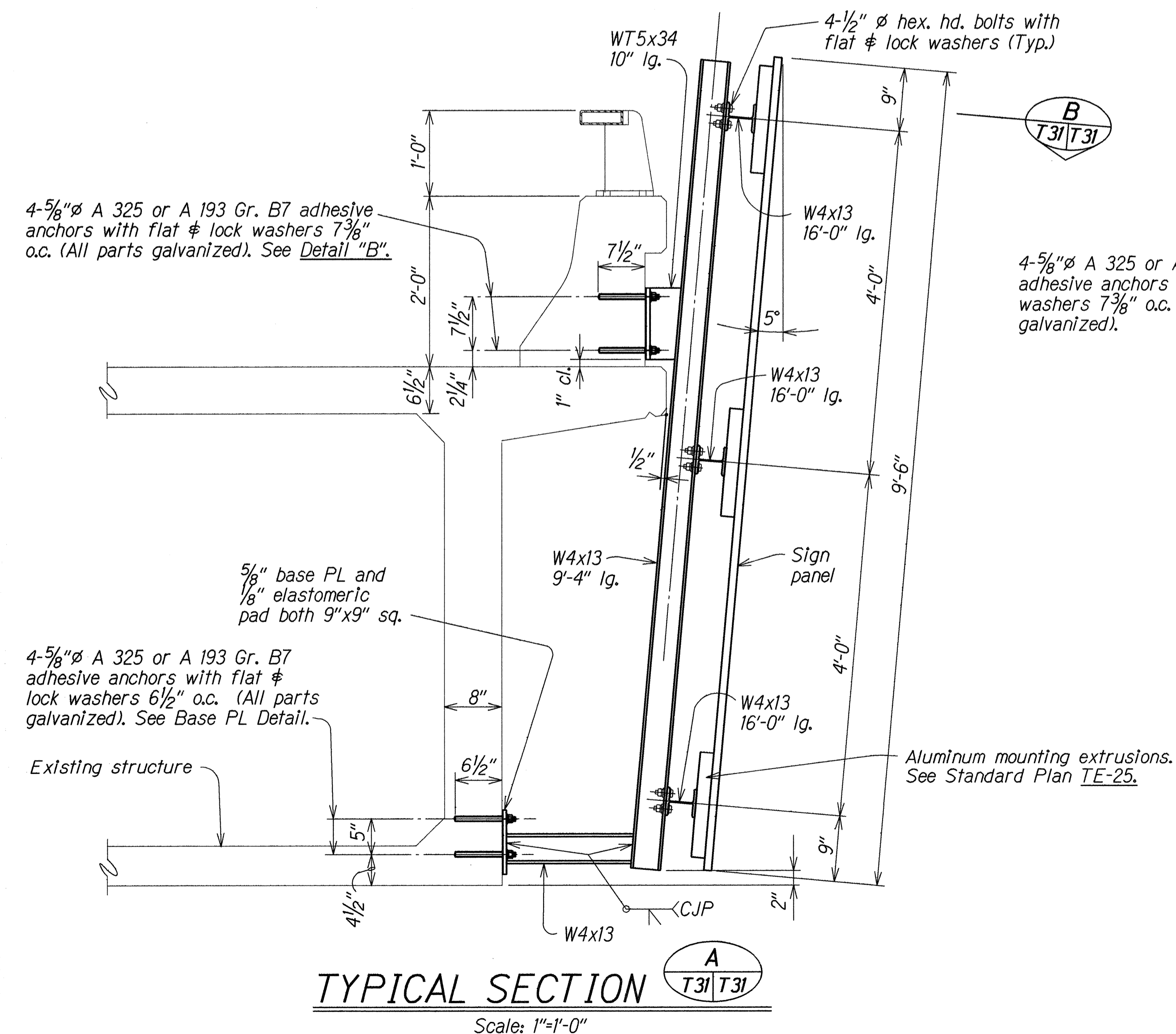


**BRACKET PLACEMENT DIAGRAM - SIGN D4 (L & R)**

Scale: 1/2"=1'-0"

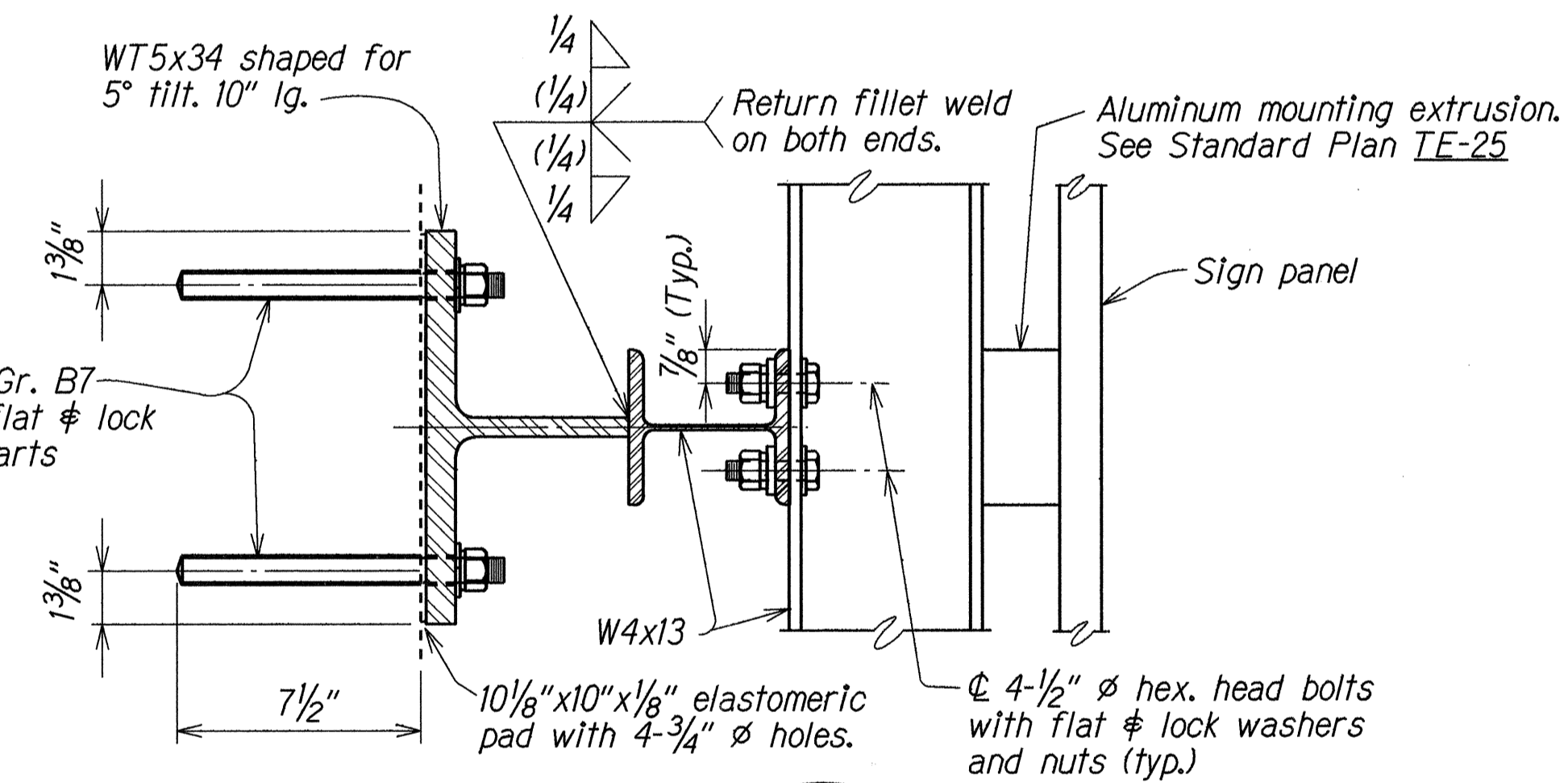
**NOTES:**

- Contractor shall verify dimensions on existing structure before fabricating new brackets.
- High impact drills will not be permitted for drilling anchor bolt holes.
- 5/8" adhesive anchors shall have a minimum allowable tensile bond strength of 7,300 lb. and a minimum allowable shear strength of 4,900 lb. for fully threaded ASTM A 325 or ASTM A 193 grade B7 bolts when tested in concrete with f'c=3,500 psi and 7 1/2" embedment length.
- Brackets shall be steel shapes and plates conforming to ASTM A 36.



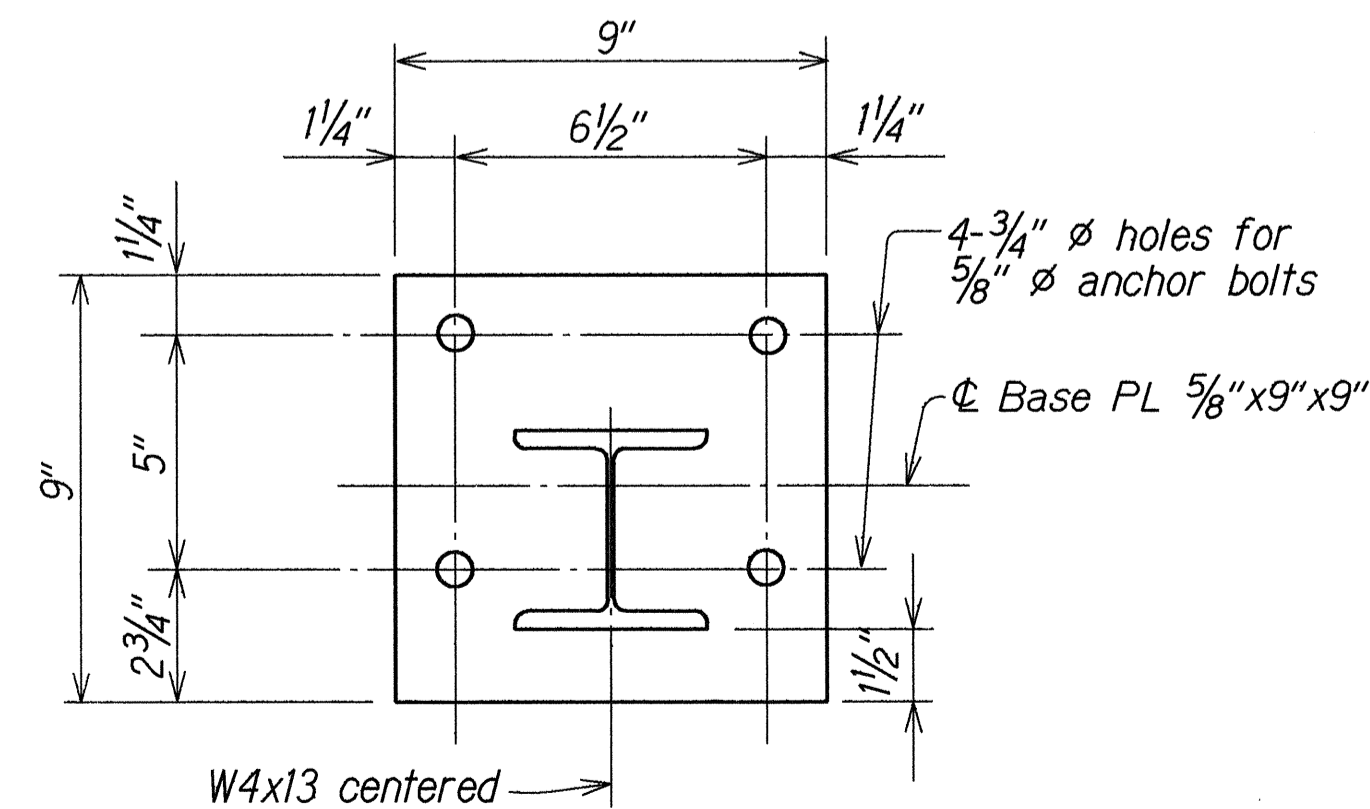
**TYPICAL SECTION**

Scale: 1"=1'-0"



**DETAIL B**

Scale: 3"=1'-0"



**TYPICAL BASE PL DETAIL**

Scale: 3"=1'-0"

DESIGNED BY	DATE
DRAWN BY	5-80-1991
CHECKED BY	5-80-1991
IN CHARGE	5-80-1991

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SIGN D-4**  
**PINEAPPLE ROAD SEPARATION**  
**SUPPORT BRACKET DETAILS**  
INTERSTATE ROUTE H-2, HOV LANES PHASE II  
MILILANI I.C. TO WAIPIO I.C.  
F.A.I. Project No. 1R-H2-1(27)  
Scale: As Noted Date: April, 1992  
SHEET No. T31 OF 33 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED	DESIGNED BY	
NOTES BOOK	QUANTITIES BY	
N.	CHECKED BY	

EXPRESS LANE SIGN SUMMARY

SIGN NO.	LOCATION	QUANTITY					
		10 SQ. FT. OR LESS			GREATER THAN 10 SQ. FT.		
		W/Post	W/O Post	Median Concrete Barrier	W/Posts	W/O Post	Median Concrete Barrier
R3-10d	☐ Sta. 175+30 Rt.				1*		
R3-10b & R3-20	☐ Sta. 185+30 Rt.		1		1*		
R3-10c & R3-20	☐ Sta. 189+55 Rt.		1				1**
R3-10e & R3-20	☐ Sta. 195+30 Lt.		1				1**
R3-11a	I.B. ☐ Sta. 200+30 Lt.						1
R3-18 & R3-12a	O.B. ☐ Sta. 208+85 Rt.		1***				
R3-18	O.B. ☐ Sta. 211+00 Rt.						1
R3-19 & R3-11a	O.B. ☐ Sta. 215+00 Rt.						1
R3-18	I.B. ☐ Sta. 218+55 Lt.						1
R3-11a & R3-19	☐ Sta. 250+80						1
R3-18	☐ Sta. 256+50						1
R3-19 & R3-11a	☐ Sta. 259+30						1
W14-5	☐ Sta. 266+10						1
R3-18	☐ Sta. 271+80						1
R3-11a & R3-19	☐ Sta. 280+30						1
R3-18	☐ Sta. 288+80						1
R3-19 & R3-11a	☐ Sta. 297+30						1
R3-18	O.B. ☐ Sta. 306+20 Rt.				1		
R3-18	I.B. ☐ Sta. 309+90 Lt.				1		
R3-11a	I.B. ☐ Sta. 318+30 Lt.				1		
R3-19	O.B. ☐ Sta. 318+55 Rt.				1		
R3-18	I.B. ☐ Sta. 325+80 Lt.				1		
R3-18	O.B. ☐ Sta. 327+20 Rt.				1		
R3-19	I.B. ☐ Sta. 333+30 Lt.				1		
R3-11a	O.B. ☐ Sta. 339+70 Rt.				1		
R3-18	I.B. ☐ Sta. 340+70 Lt.				1		
R3-11a & R3-18	O.B. ☐ Sta. 345+30 Rt.						1
R3-19 & R3-18	O.B. ☐ Sta. 355+20						1
R3-19 & R3-18	O.B. ☐ Sta. 367+45 Rt.				1		
R3-18	I.B. ☐ Sta. 375+00 Lt.				1		
R3-11a	O.B. ☐ Sta. 376+00 Rt.				1+		
R3-11a	I.B. ☐ Sta. 382+00 Lt.				1*		
R3-18	O.B. ☐ Sta. 382+00 Rt.				1*		
R3-18	I.B. ☐ Sta. 389+50 Lt.				1*		
R3-19	O.B. ☐ Sta. 389+95 Rt.				1*		
R3-19	I.B. ☐ Sta. 398+00 Lt.				1*		
R3-18	O.B. ☐ Sta. 398+00 Rt.				1*		
TOTAL		0	3	0	11	8*	14
				1***			2**

\* Relocate Existing Sign w/New Posts  
 \*\* Relocate Existing Sign w/New Post on Median Concrete Barrier  
 \*\*\* Relocate Existing Sign on Existing Post  
 + Exist. Sign w/Posts to Remain

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(27)	1992	172	223

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**HOV SIGN SUMMARY**

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Mililani Interchange to Waipio Interchange  
 F.A.I. PROJECT NO. IR-H2-1(27)



Date: April, 1992

SHEET No. T32 OF 33 SHEETS

### PAVEMENT MARKING SUMMARY

DESCRIPTION	QUANTITY
<b>PAVEMENT MARKERS</b>	
TYPE A _____	10,592 Ea.
TYPE CL _____	3,960 Ea.
TYPE HL _____	1,046 Ea.
<b>TAPE - TYPE I OR THERMOPLASTIC EXTRUSION</b>	
4-INCH PAVEMENT STRIPE (WHITE) _____	4,095 LIn. Ft.
8-INCH PAVEMENT STRIPE (WHITE) _____	300 LIn. Ft.
PAVEMENT DIAMOND _____	40 Ea.
<b>TAPE - TYPE II OR THERMOPLASTIC EXTRUSION</b>	
4-INCH PAVEMENT STRIPE (WHITE) _____	27,985 LIn. Ft.
4-INCH PAVEMENT STRIPE (YELLOW) _____	35,060 LIn. Ft.
8-INCH PAVEMENT STRIPE (WHITE) _____	12,120 LIn. Ft.
8-INCH PAVEMENT STRIPE (YELLOW) _____	7,180 LIn. Ft.
12-INCH PAVEMENT STRIPE (WHITE) _____	990 LIn. Ft.
<b>THERMOPLASTIC EXTRUSION</b>	
4-INCH PAVEMENT STRIPE (WHITE) _____	850 LIn. Ft.
8-INCH PAVEMENT STRIPE (WHITE) _____	2,730 LIn. Ft.

### TRAFFIC SIGN SUMMARY

SIGN NO.	MESSAGE	QUANTITY					
		10 SQ. FT. OR LESS			GREATER THAN 10 SQ. FT.		
		W/POST	W/O POST	CONCRETE BARRIER	W/POST	W/O POST	CONCRETE BARRIER
R2-1(55)-A	SPEED LIMIT 55				4**		
R3-4-A	 NO U TURN				1*		
R4-3-A	SLOWER TRAFFIC KEEP RIGHT						1***
R7-4-A	NO STOPPING OR STANDING	1*					
R11-1	KEEP OFF MEDIAN				1*		
W13-2(25)	EXIT 25 MPH					1#	
D9-1b	 1/4 MILE			2			
D9-1c	EMERGENCY PHONE		2				
TOTAL		1	2	2	6	1	1

- \* Relocate Exist. Sign w/New Post(s)
- \*\* Relocate 3 Exist. Signs w/New Posts & Install 1 New Sign w/New Posts
- \*\*\* Relocate Exist. Sign w/New Post on Concrete Barrier
- # Relocate Exist. Sign on Exist. Post

### CONSTRUCTION SIGN SUMMARY

SIGN NO.	LOCATION	MESSAGE	W/POST(S)	W/O POST
CW20-1d	Sta. 184+80 Rt.	ROAD CONSTRUCTION AHEAD	2	
CG20-2	Sta. 184+80 Lt.	END CONSTRUCTION	2	
CG20-2	Ramp A Sta. 23+40 Lt.	END CONSTRUCTION		1
CG20-1(4)	Sta. 189+80 Rt.	ROAD CONSTRUCTION NEXT 4 MILES	2	
CG20-2	Ramp HM-1 Sta. 19+40 Lt.	END CONSTRUCTION		1
CW20-1d	Ramp MH-1 Sta. 17+90 Lt.	ROAD CONSTRUCTION AHEAD		1
CG20-2	Ramp WG-3 Sta. 15+60 Lt.	END CONSTRUCTION		1
CW20-1d	Ramp WG-4 Sta. 4+30 Rt.	ROAD CONSTRUCTION AHEAD		1
CW20-1d	Ramp WG-2 Sta. 5+80 Rt.	ROAD CONSTRUCTION AHEAD		1
CG20-2	Ramp WG-1 Sta. 10+60 Lt.	END CONSTRUCTION		1
CG20-1(4)	O.B. Sta. 400+05 Rt. & Lt.	ROAD CONSTRUCTION NEXT 4 MILES	2	
CG20-2	I.B. Sta. 403+20 Rt.	END CONSTRUCTION	1	
CW20-1d	O.B. Sta. 403+10 Lt.	ROAD CONSTRUCTION AHEAD	1	
TOTAL			10	7



### MILEPOST MARKER SUMMARY

M.P. NO.	LOCATION	QUANTITY	
		W/POST	CONCRETE BARRIER
5	I.B. Sta. 216+45 Rt.	1	
5	O.B. Sta. 216+45 Lt.		1
4	Sta. 271+05 Rt. & Lt.	2	
3	I.B. Sta. 323+90 Rt. & Lt.	2	
3	O.B. Sta. 323+60 Rt. & Lt.	1	1
TOTAL		6	2

### REFLECTOR MARKER SUMMARY

TYPE	QUANTITY									
	W/O POST		W/POST		W/FLEXIBLE DELINEATOR (TYPE B)		CONCRETE BARRIER		CONCRETE RETAINING WALL	
	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE
RM-2	0	0	0	26	93	37	0	46	0	10
RM-3	26	0	0	0	0	0	0	0	0	0

### ROUTE MARKER SUMMARY

SIGN ASSEMBLY	SIGN NO. AND MESSAGE	TYPE A ASSEMBLY	
		W/POST	CONCRETE BARRIER
IRM-1	 IM3-3-A IM-1(2)	1	
IRM-2	 IM3-1-A IM-1(2)		1
TOTAL		1	1

STATE OF HAWAII  
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### TRAFFIC SUMMARIES

INTERSTATE RTE. H-2, HOV LANES, PH. II  
Miliiani Interchange to Waipio Interchange  
F.A.I. PROJECT NO. IR-H2-1(27)

Date: Apr 11, 1992