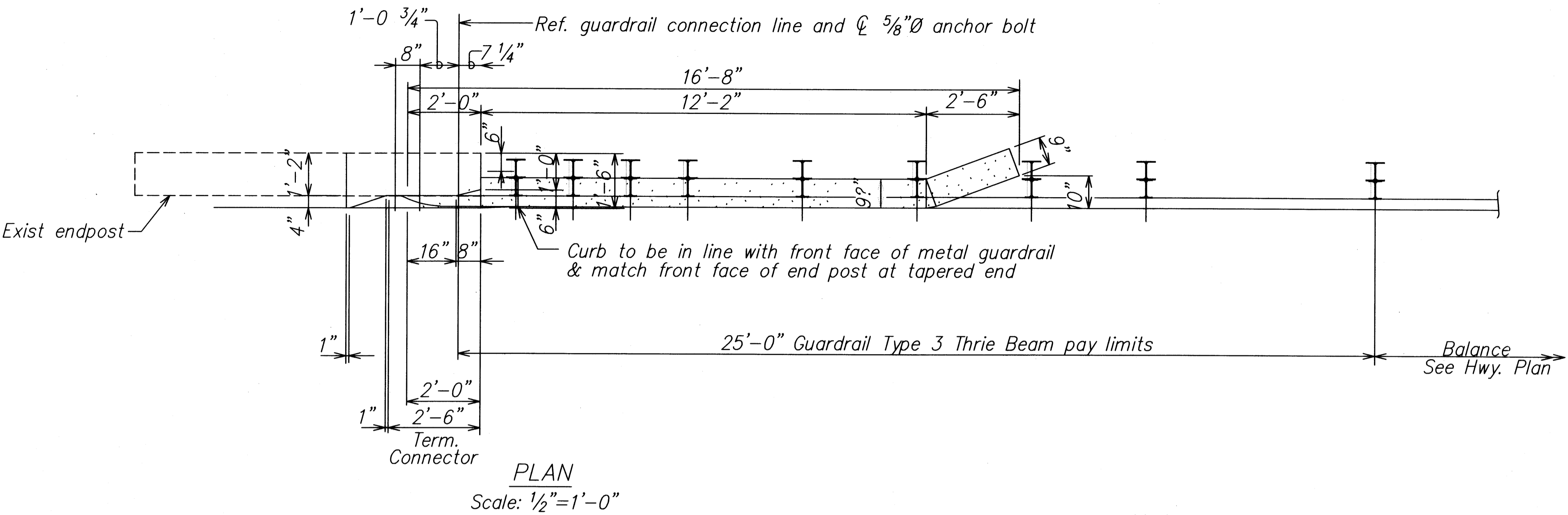
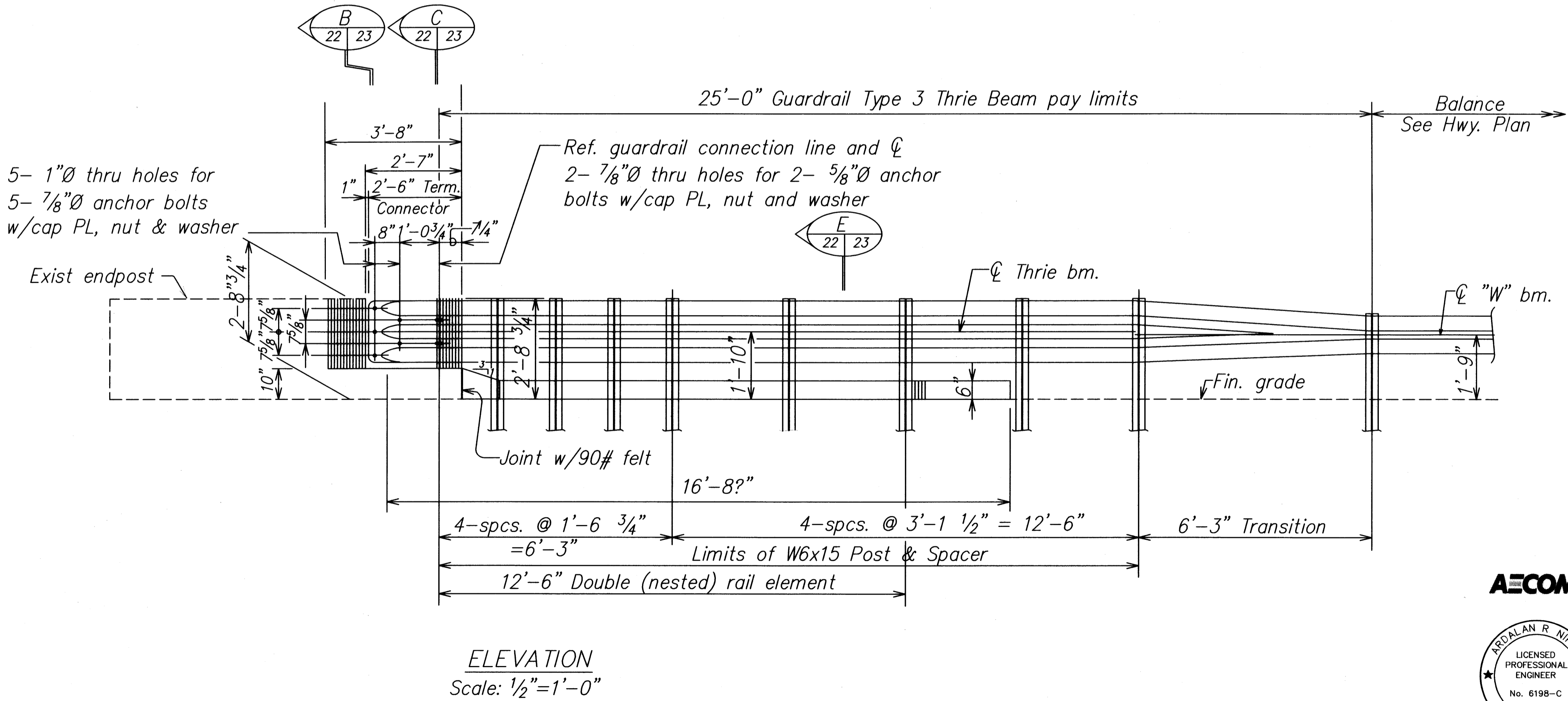


FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	STP-019-2(60)	2010	23	36



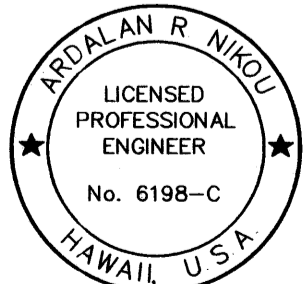
*Note:*  
See Sheet No. 24 for Metal Guardrail Type 3 Thrie Beam and Appurtenances details.



BRIDGE ENDPOST CONNECTION PLAN AND ELEVATION

*Note:*  
Adapted from HDOT Standard Drawing for Modified Type "A" Endpost, Sheet Q2

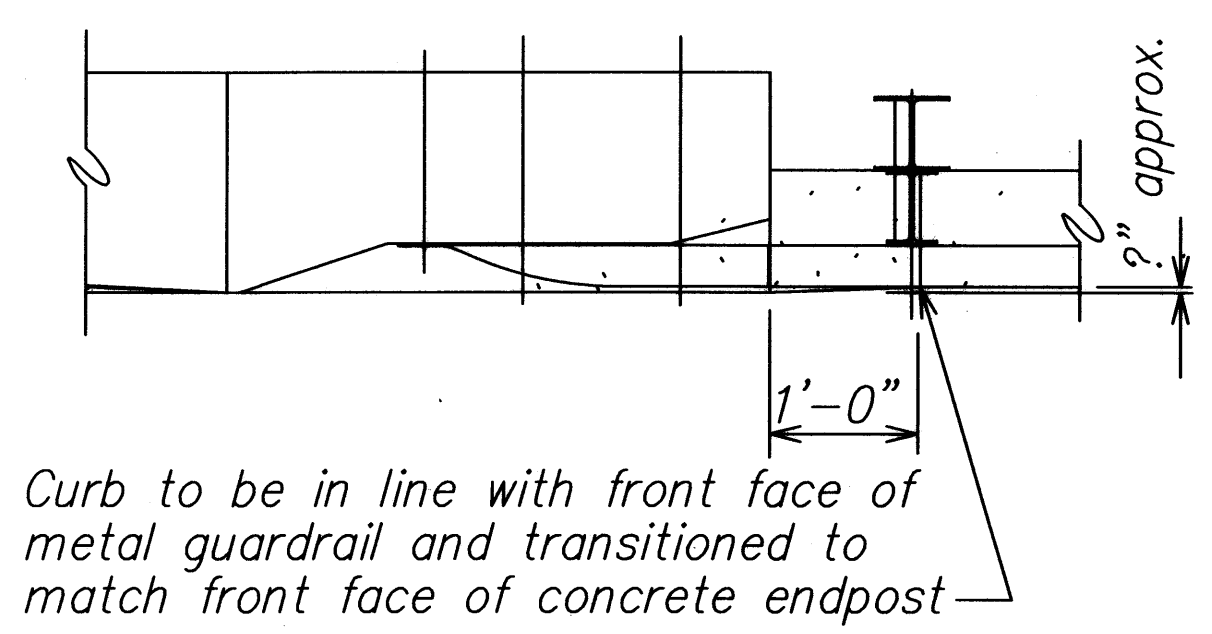
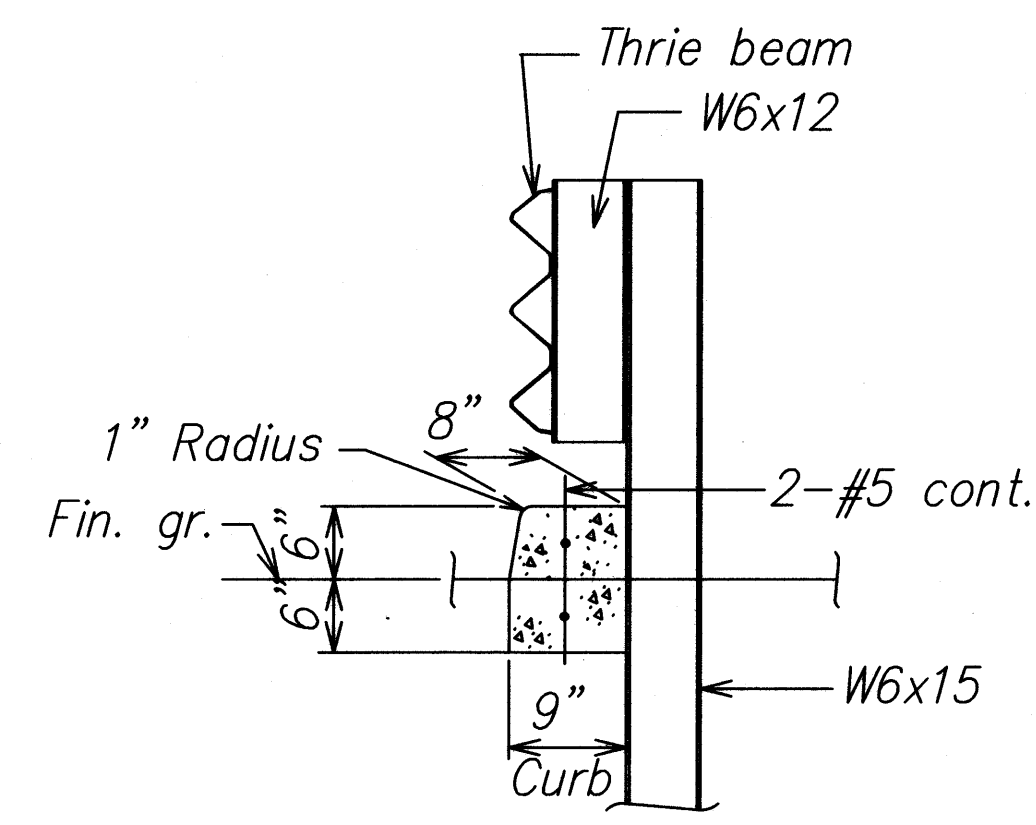
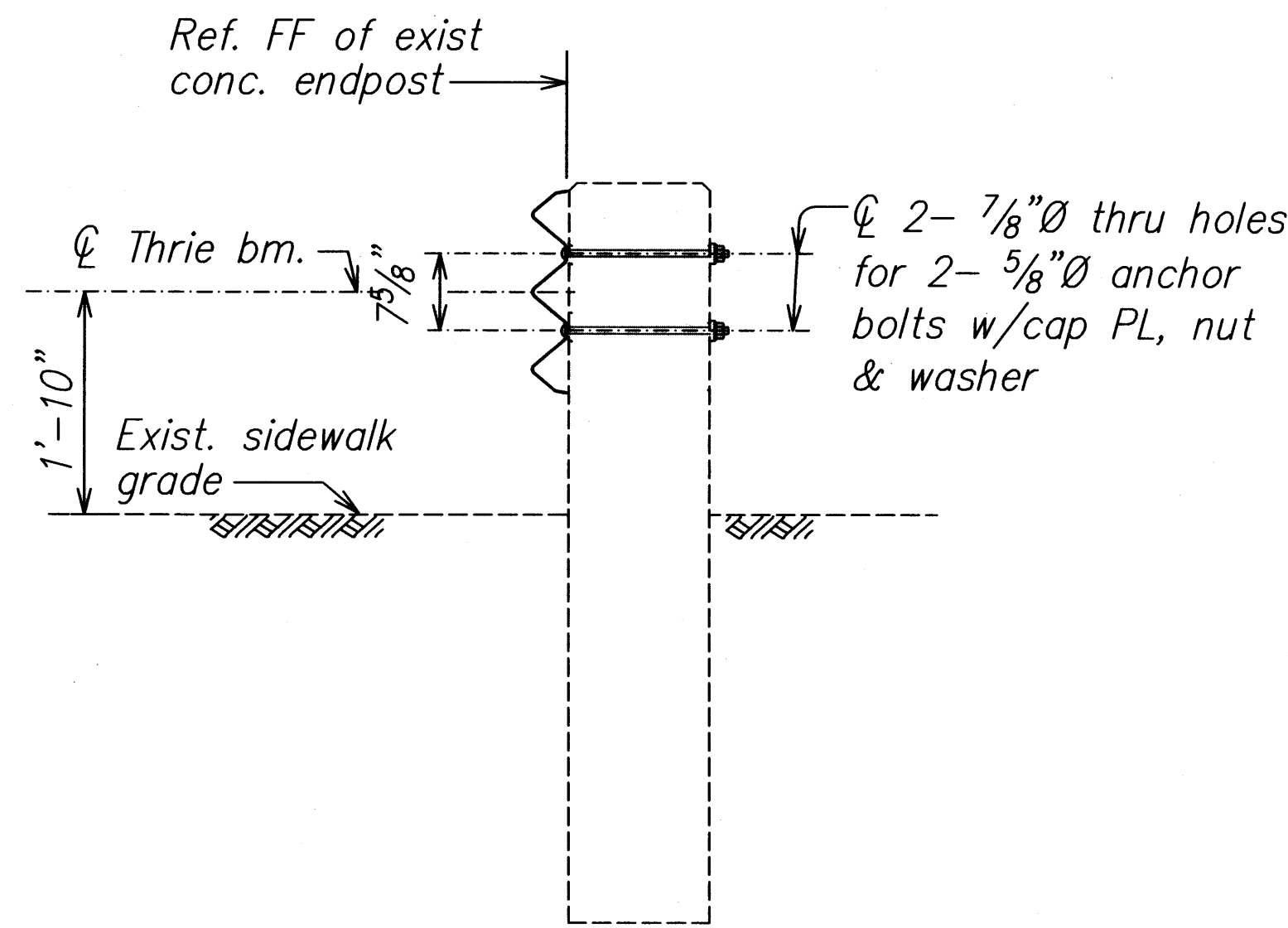
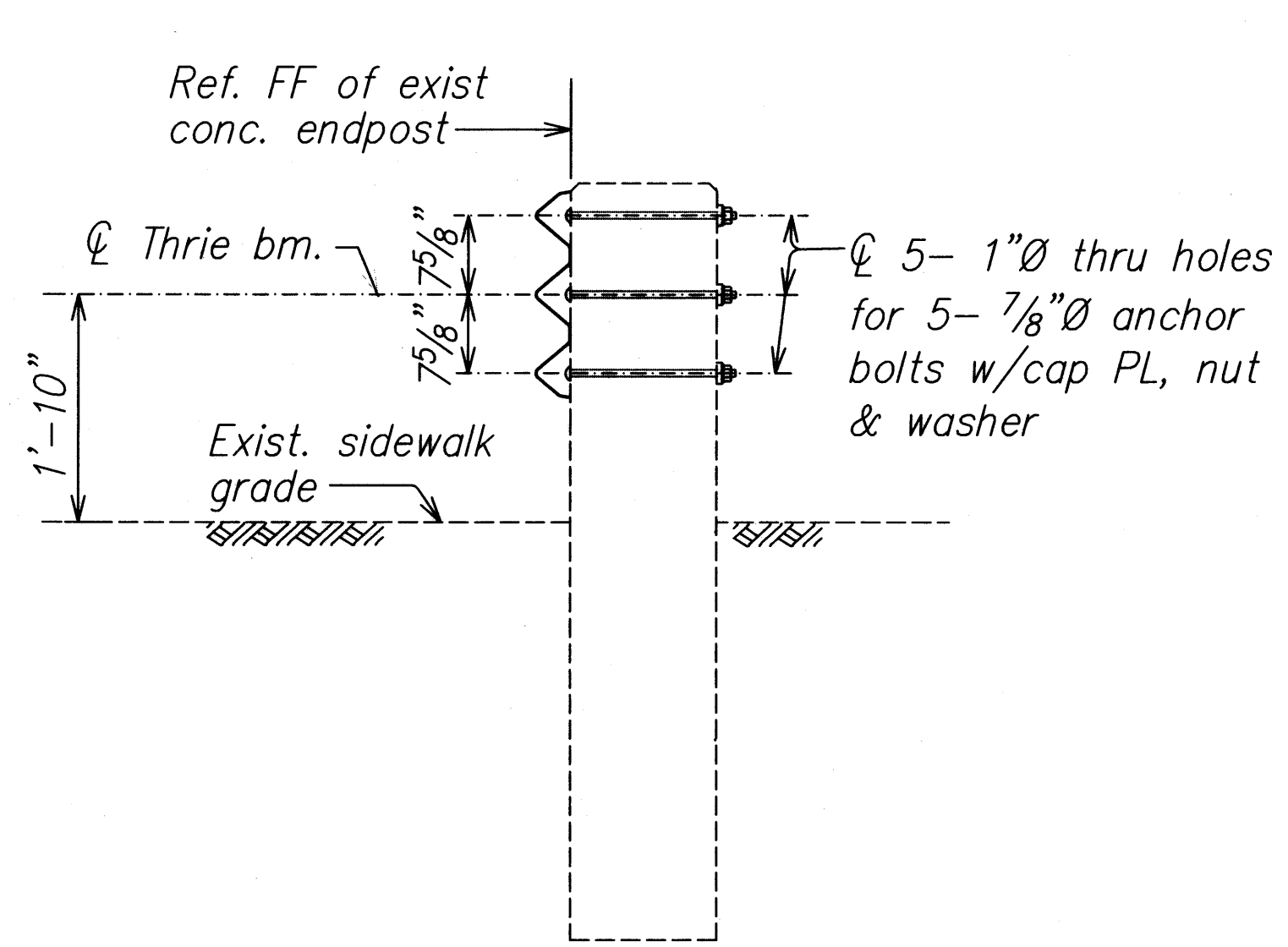
AECOM



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

BRIDGE ENDPOST CONNECTION  
DETAILS, PLAN and ELEVATION  
HAWAII BELT ROAD DRAINAGE  
IMPROVEMENTS, HAKALAU BRIDGE  
FEDERAL-AID PROJECT NO. STP-019-2(60)  
Scale: As Noted Date: July 2010

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	STP-019-2(60)	2010	24	36



TYPICAL SECTIONS – ENDPOST DETAILS

ORIGINAL PLAN	DATE
NOTED BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE
NO.	

Note:  
Adapted from HDOT Standard Drawing for Modified Type "A" Endpost, Sheet Q3

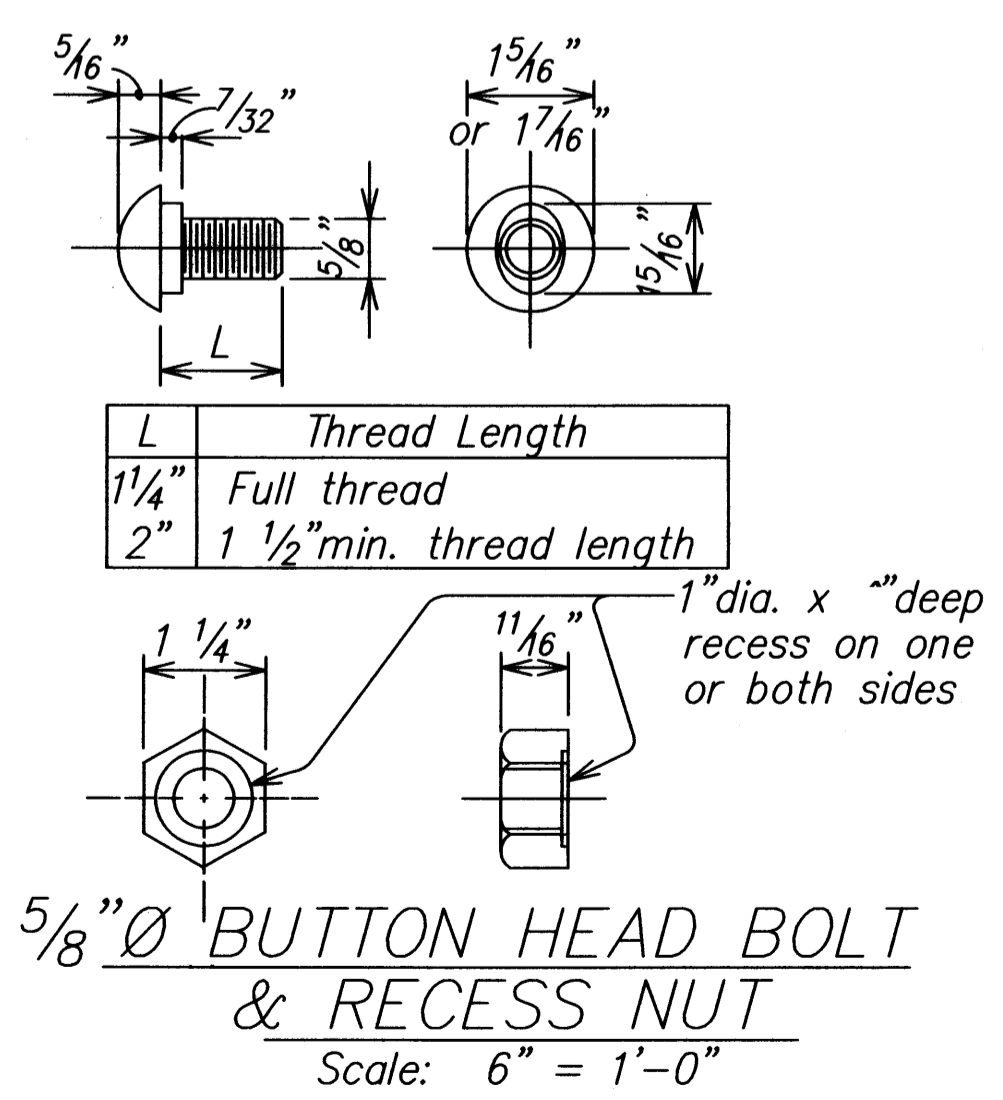
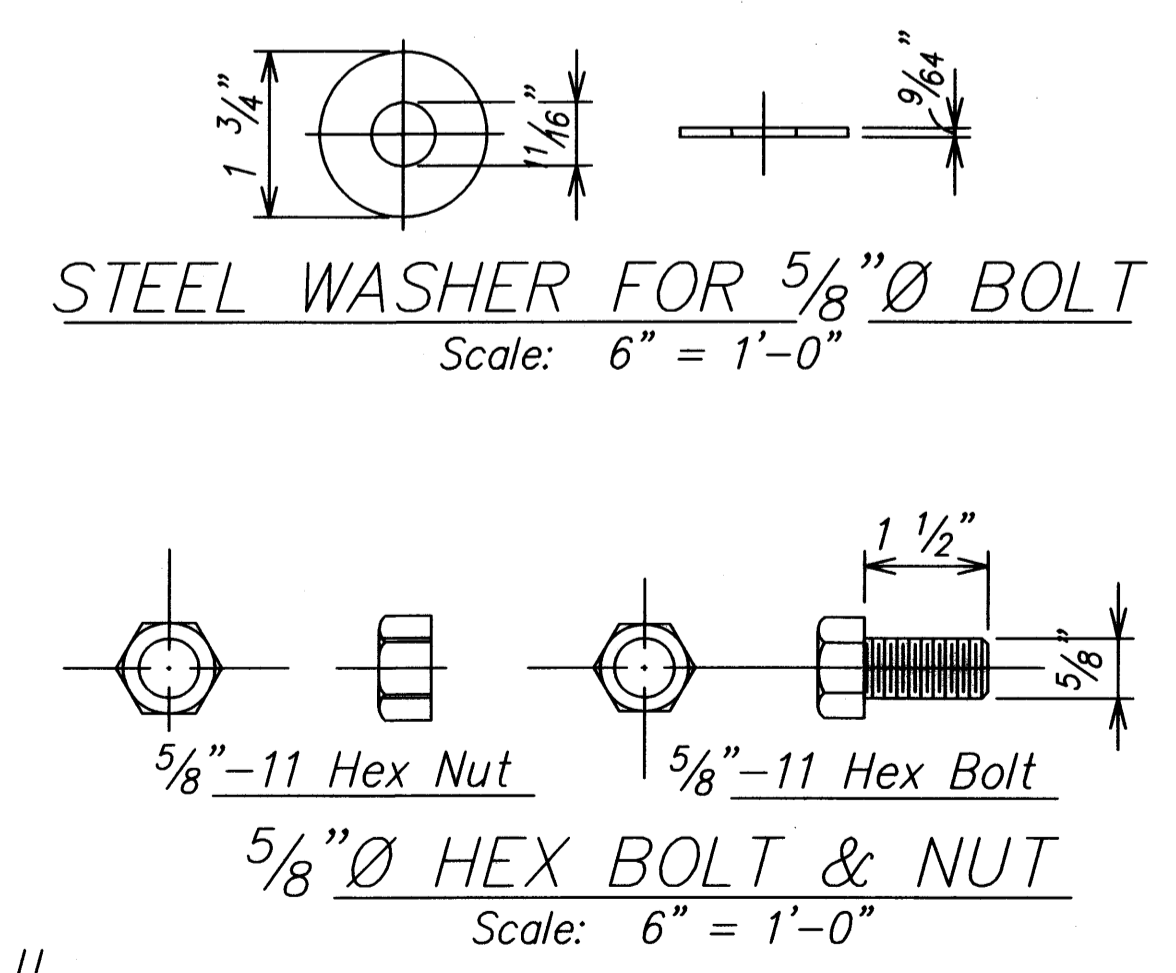
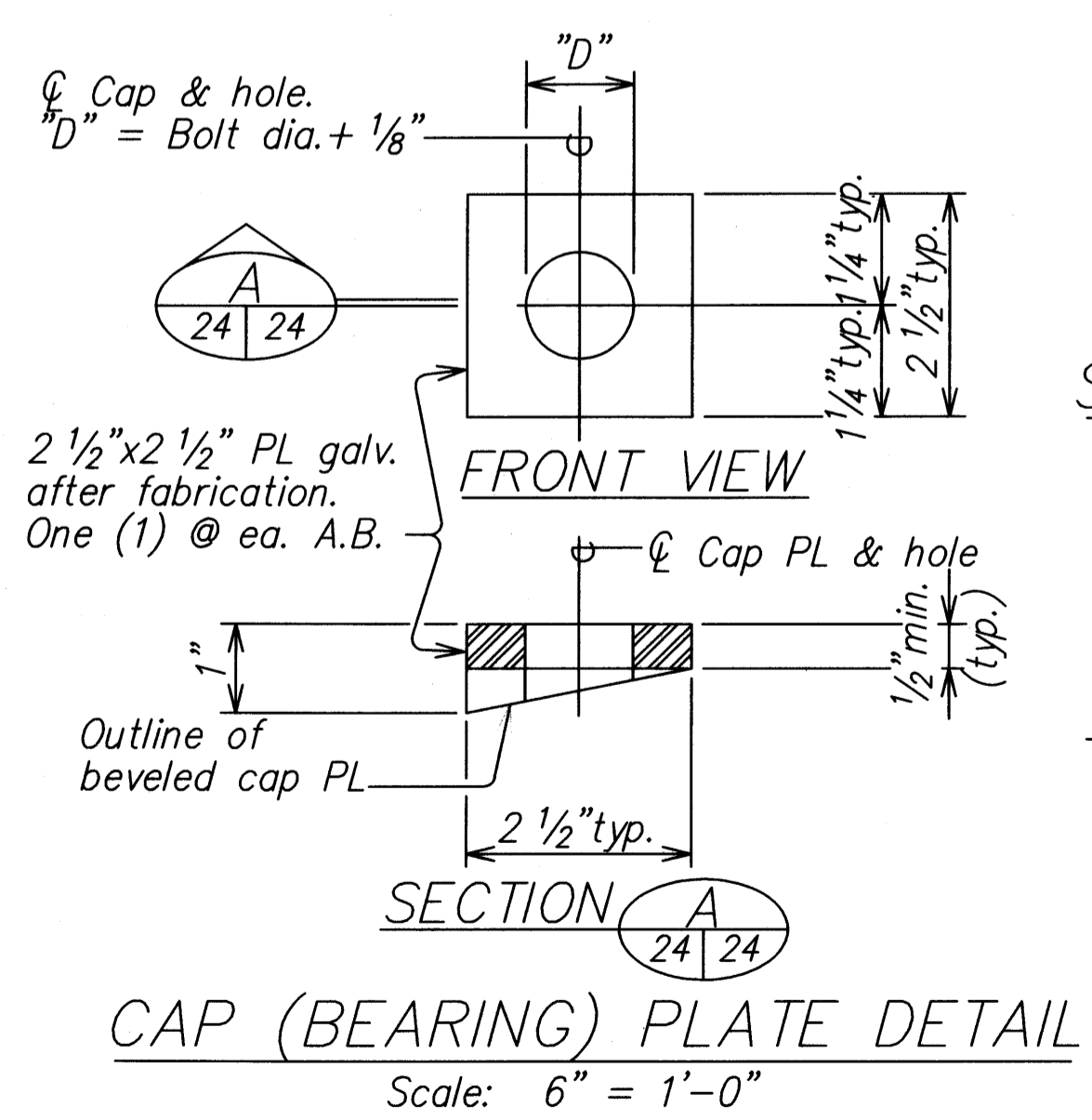
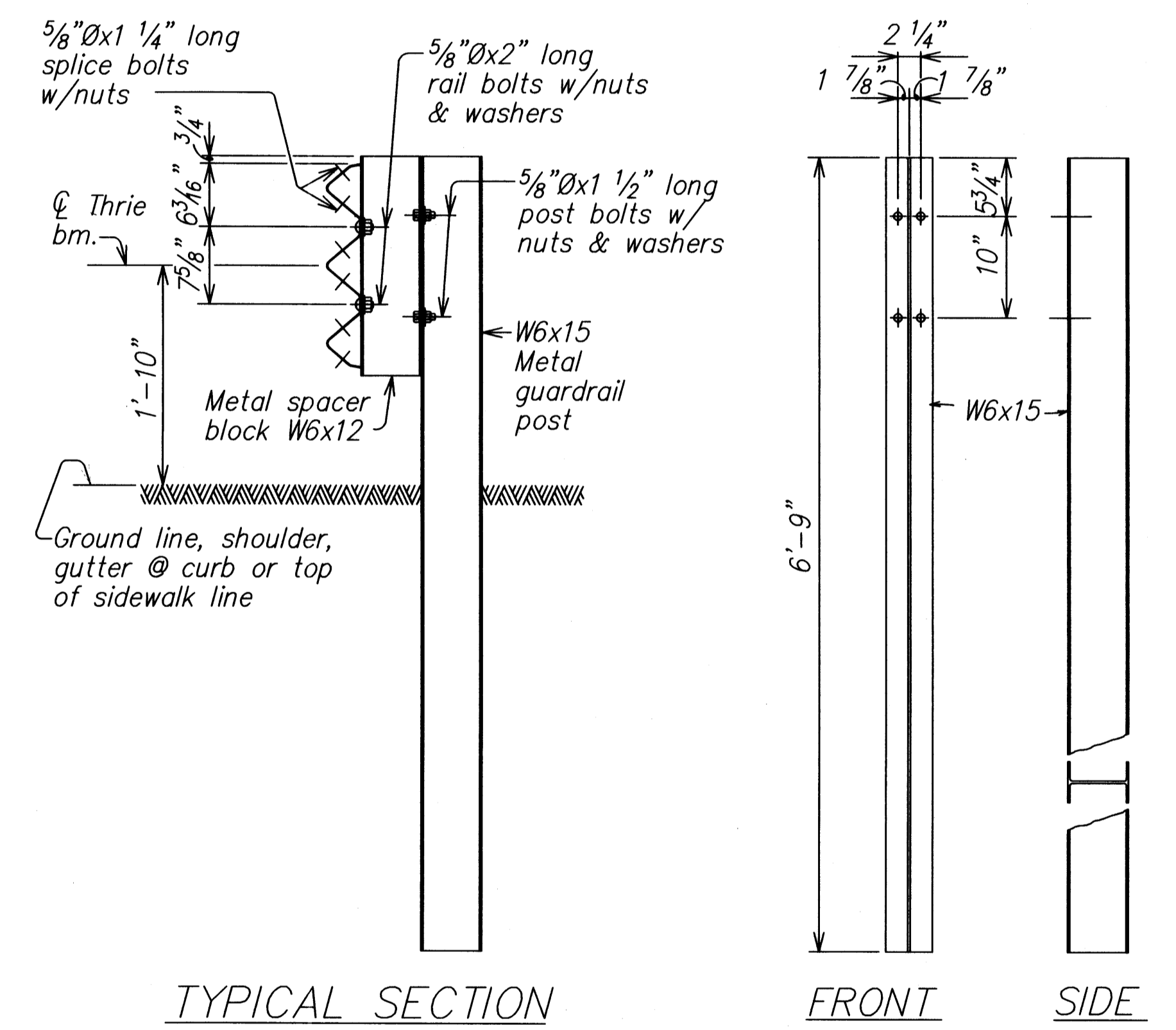
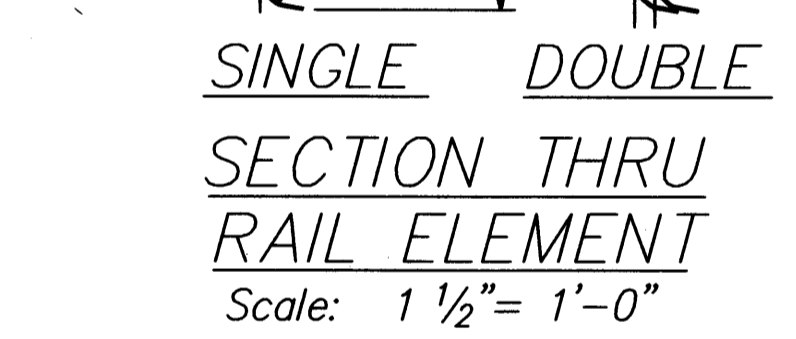
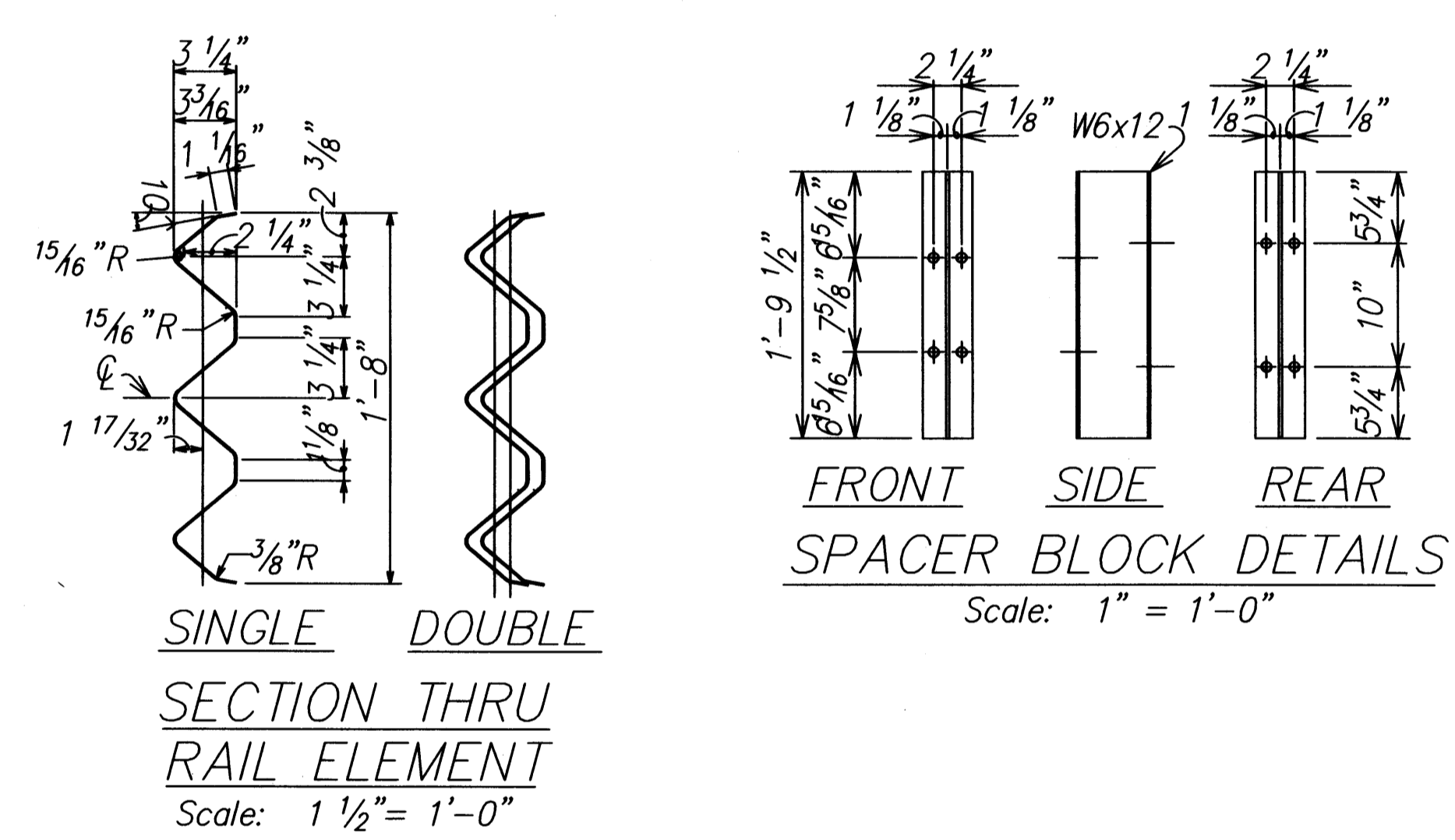
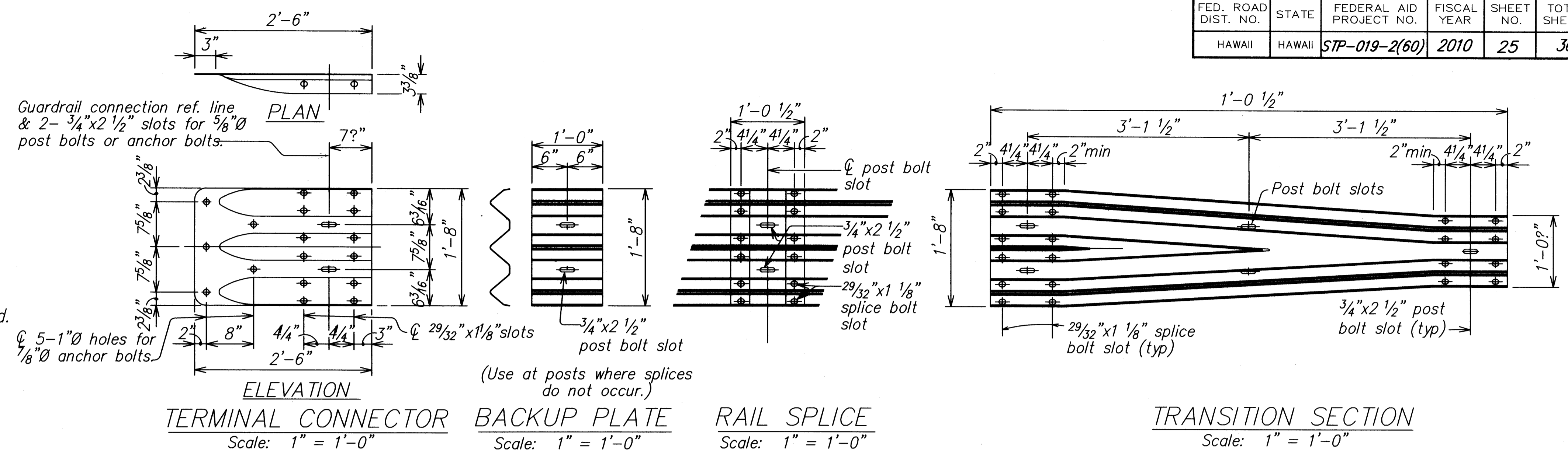


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

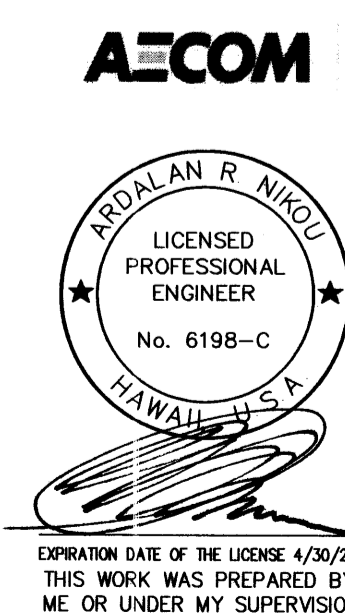
BRIDGE ENDPOST CONNECTION  
DETAILS and TYPICAL SECTIONS  
HAWAII BELT ROAD DRAINAGE  
IMPROVEMENTS, HAKALAU BRIDGE  
FEDERAL-AID PROJECT NO. STP-019-2(60)  
Scale: As Noted Date: July 2010

NOTES:

- A. The work necessary to connect guardrail to concrete end post shall include all labor, materials, tools, equipment and incidentals necessary to complete the work and will not be paid for separately.
- B. Lap terminal connector and rail element in direction of traffic to prevent snagging.
- C. All anchor bolts shall be high strength bolts conforming to the requirements of ASTM 325 and Standard Specification, Section 713.04.
- D. Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus 1" (max) is attained.
- E. "Terminal Connector", "Transition Section" and thrie beam shall be fabricated from 10 gauge steel conforming to the requirements of AASHTO M 180, Type II, Class B.
- F. "Terminal Connector" and standard spacer, including all anchor bolts, cap PL, nuts and washers, shall be hot-dip galvanized after fabrication.
- G. Cap PL shall be fabricated from ASTM A 36.
- H. First 25'-0" of guardrail adjoining "Terminal Connector" shall be galvanized steel and supports spaced as shown on the detail drawings. This section of rail shall be placed on tangent to end post or parallel to roadway, unless conditions at site renders it impossible to do so. Flare point to be determined in field.
- I. Double (nest 1st panel) thrie beam elements at all end post connections, except on highways with one-way traffic pattern, use single thrie beam elements at end post on trailing end only.
- J. Where double (nested) beam occur, 12" "Back-up Plate" not required.
- K. Heads of through anchor bolts shall be placed on the traffic side of the rail.
- L. All steel shapes, rails and plates shall conform to ASTM A 36 specifications.



Note:  
Adapted from HDOT Standard  
Drawing for Modified Type "A"  
Endpost, Sheet Q4



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**METAL GUARDRAIL TYPE 3**  
**THRIE BEAM DETAILS**

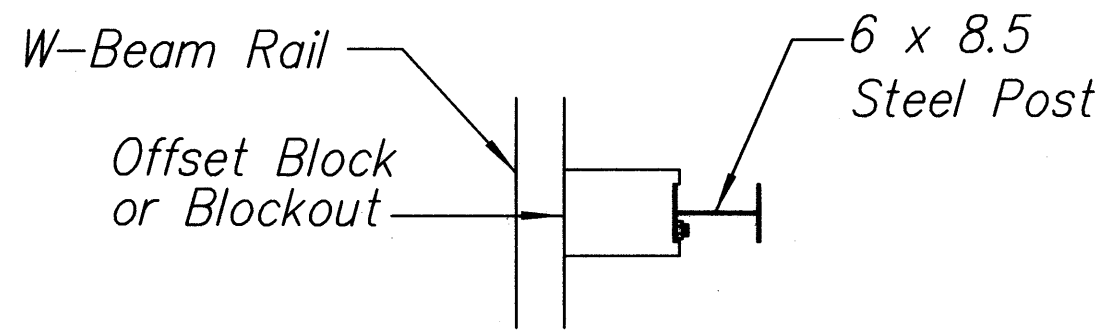
HAWAII BELT ROAD DRAINAGE  
IMPROVEMENTS, HAKALAU BRIDGE  
FEDERAL-AID PROJECT NO. STP-019-2(60)

Scale: As Noted Date: July 2010

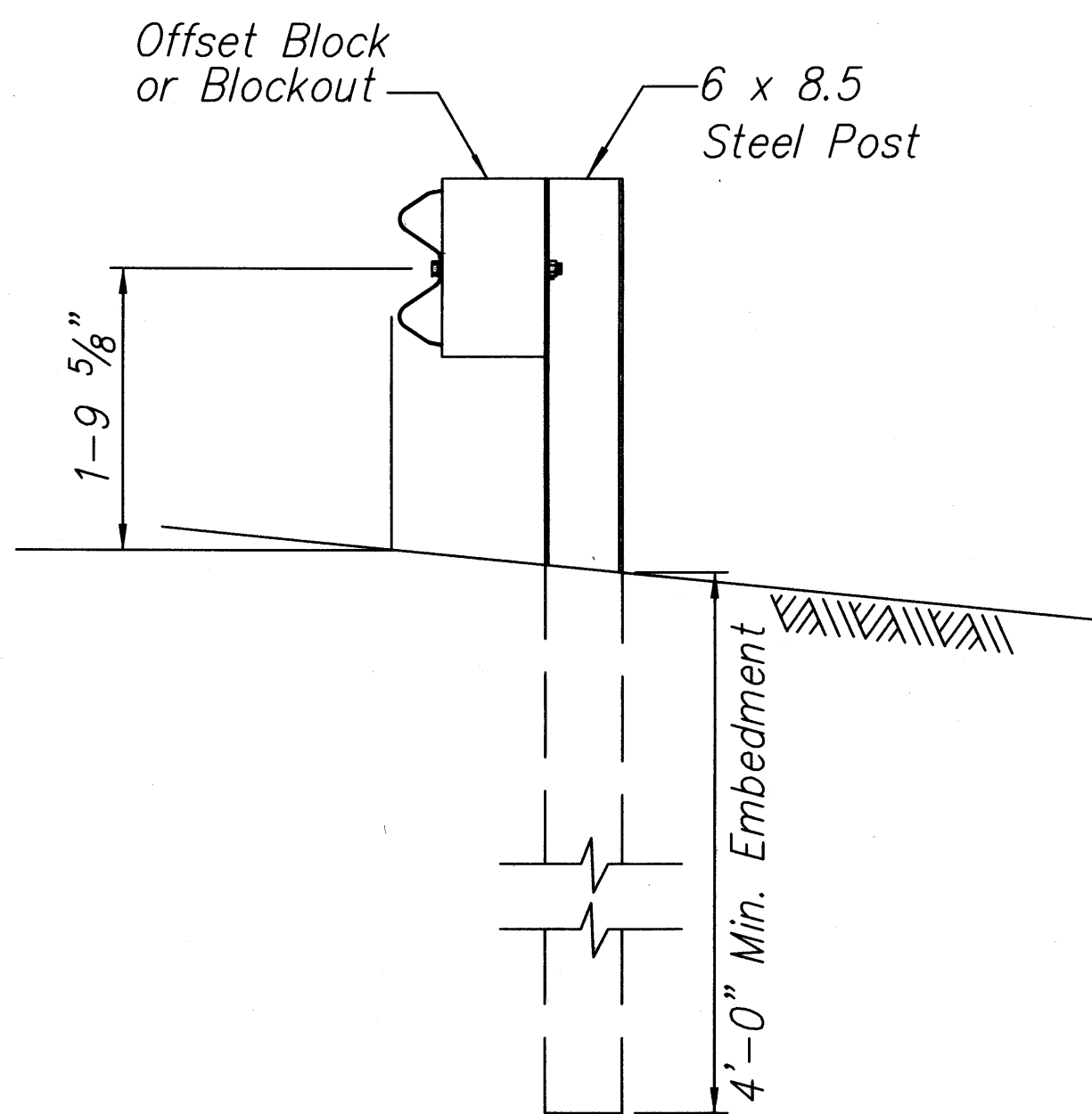
SHEET No. 3 OF 6 SHEETS



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	STP-019-2(60)	2010	27	36

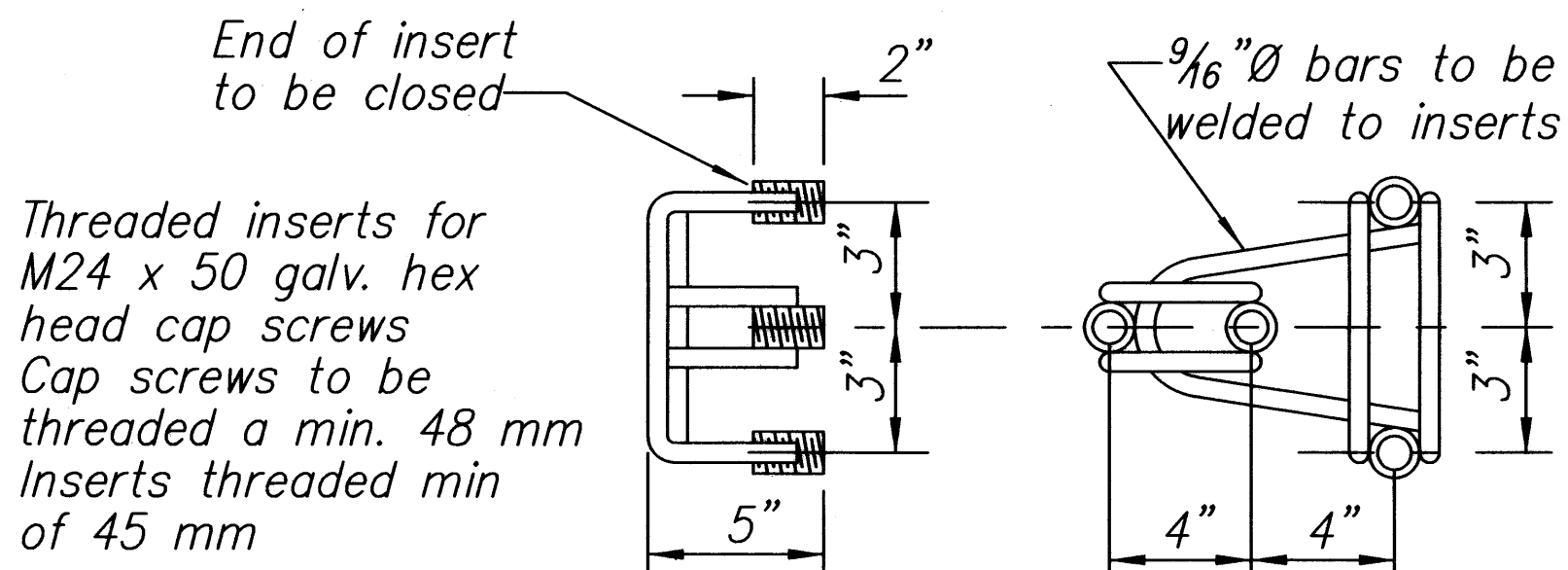


Plan

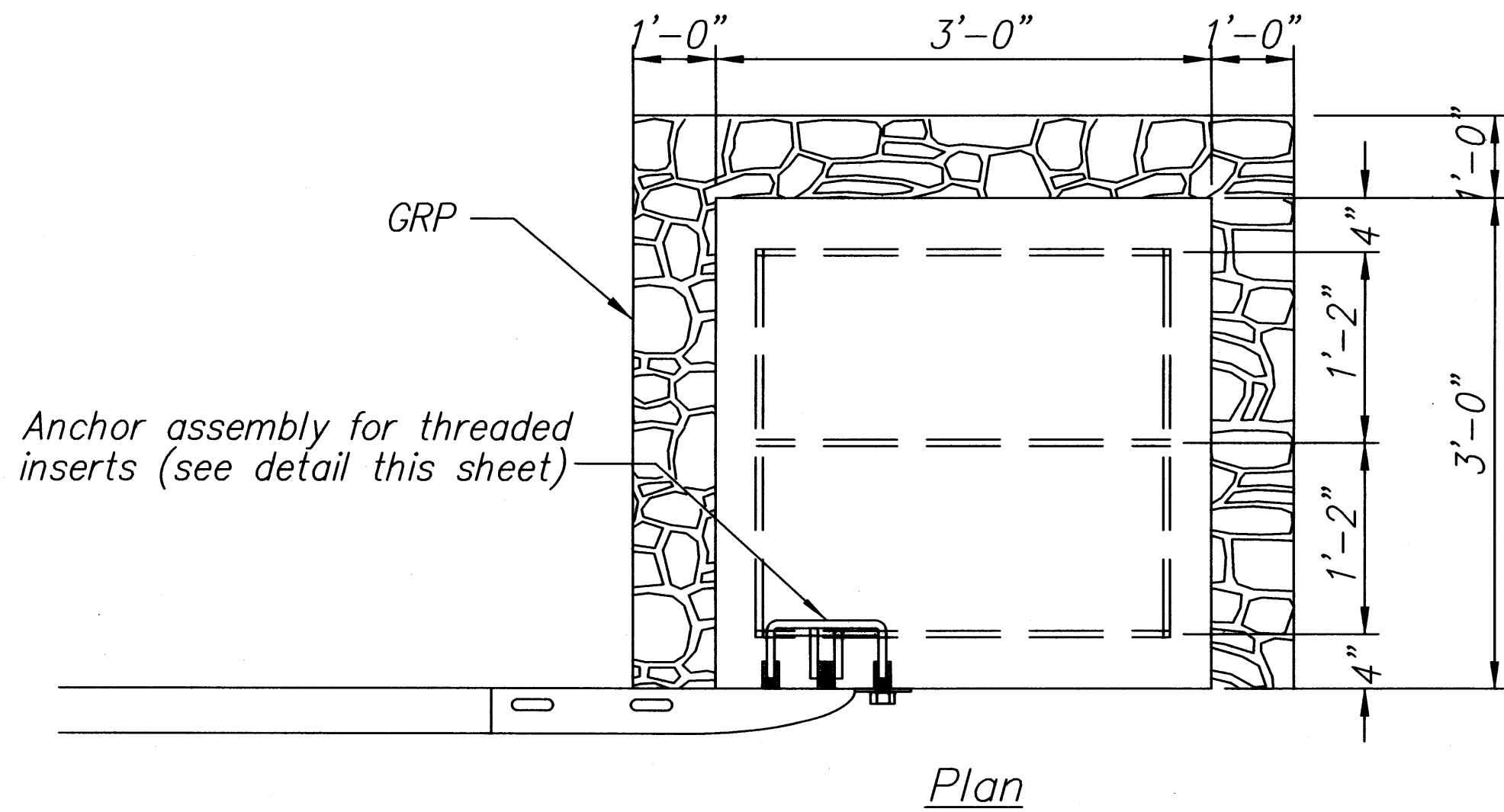


Elevation

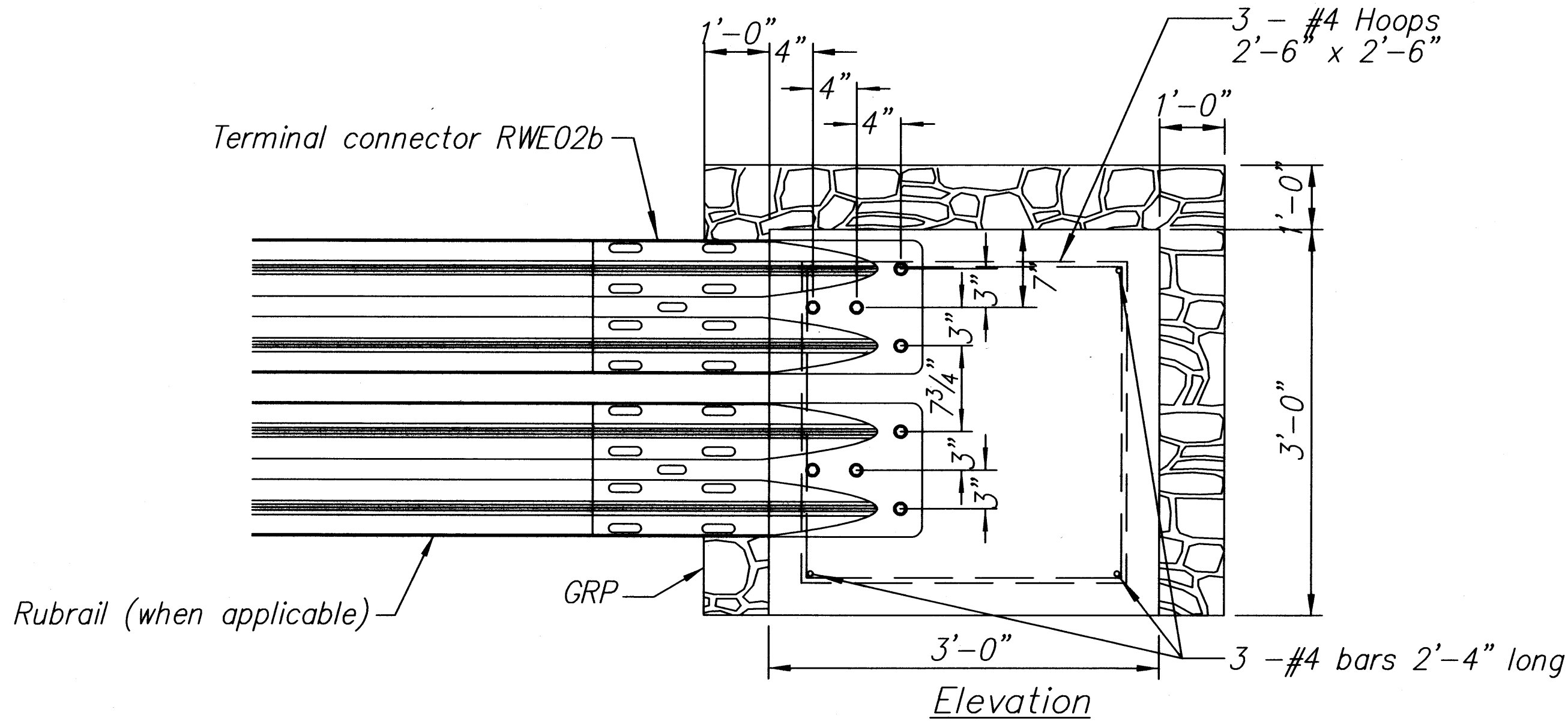
STRONG POST W-BEAM GUARDRAIL



ANCHOR ASSEMBLY  
CONCRETE BLOCK ANCHOR



Plan



CONCRETE BLOCK ANCHOR  
(3' X 3' X 3')

BACKSLOPE ANCHOR TERMINAL END ANCHORAGE DETAILS  
MODIFIED TYPE "A-1" FLARE

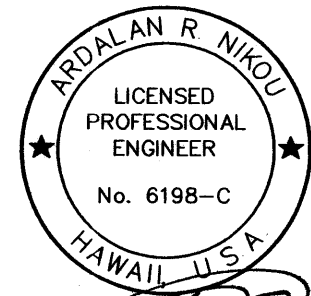
Note:

All fasteners, posts, blocks and rail elements shall conform to the latest edition and amendments of "A Guide to Standardized Highway Barrier Rail Hardware," a report prepared and approved by the AASHTO-AGCARTBA Joint Cooperative Committee and HDOT's Statewide Guideline for Permanent Highway Safety Hardware.

Note:

Adapted from HDOT Standard Drawing for Modified Type "A-1" Flare, Sheet B-10B

**AECOM**



EXPIRATION DATE OF THE LICENSE 4/30/2012  
THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**MODIFIED TYPE "A-1" FLARE**  
  
HAWAII BELT ROAD DRAINAGE  
IMPROVEMENTS, HAKALAU BRIDGE  
FEDERAL-AID PROJECT NO. STP-019-2(60)  
Scale: As Noted Date: July 2010

SHEET No. 5 OF 6 SHEETS

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

P:\1\14418-001\14418-001.dwg 08/02/10 7:17 AM hawaind001

