

MATERIALS:

- A. Reinforced Concrete: Class A (f'c = 4,000 psi min. at 28-days)
- B. Reinforced Steel: ASTM A 615, Grade 60
- C. Admixture in Concrete: See Special Provisions
- D. All expansion and premolded joint filler shall be incidental to concrete and will not be paid for separately.
- E. All structural steel shall be ASTM A 36, hot-dip galvanized after fabrication.
- F. All anchor bolts, nuts and washers shall be ASTM A 325, hot-dip galvanized after fabrication, unless noted otherwise.
- G. All welding shall be in accordance with the current edition of Reinforcing Steel Welding Code AWS D 1.4.

CONSTRUCTION REQUIREMENTS:

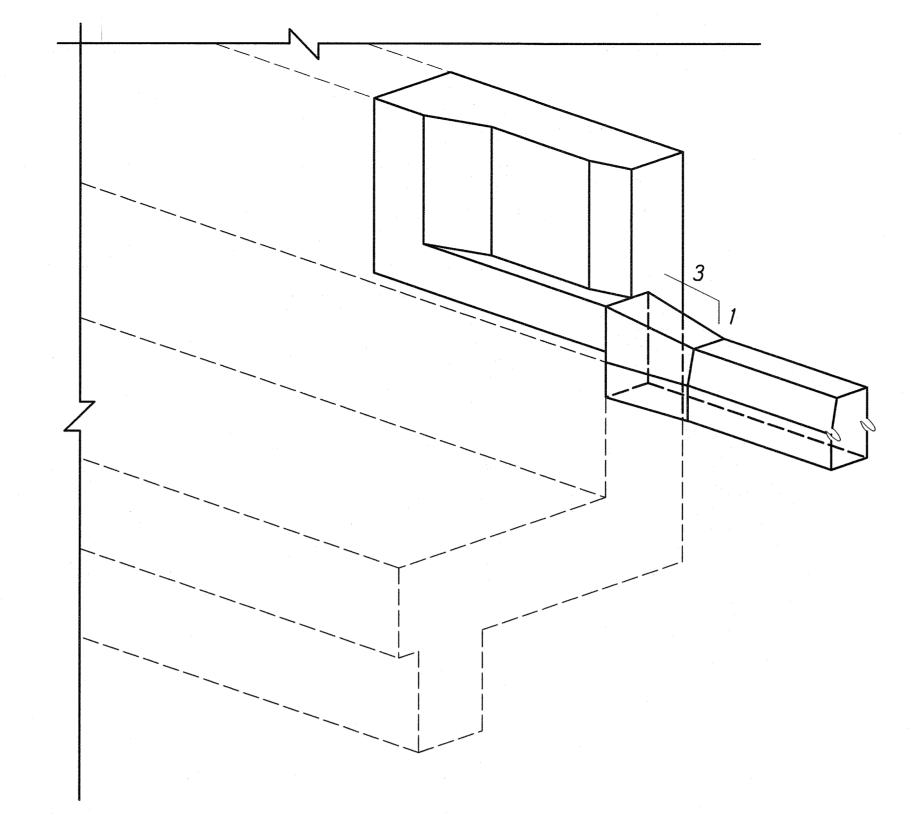
- A. Refer to Hawaii Standard Specifications for Road, Bridge and Public Works Construction, (Hawaii 1994 edition and Special Provisions).
- B. Except as noted otherwise, all vertical dimensions are measured plumb.
- C. For steel reinforcing, stagger all splices where possible.
- D. Steel reinforcing shall be supported, bent and placed as per the ACI Detailing Manual, 1994.
- E. For cast-in-place concrete, minimum reinforcement cover: Concrete cast against earth: 3"
- F. At time concrete is placed, reinforcing shall be free from mud, oil latance or other coatings adversely affecting bond capacity.

REFERENCE:

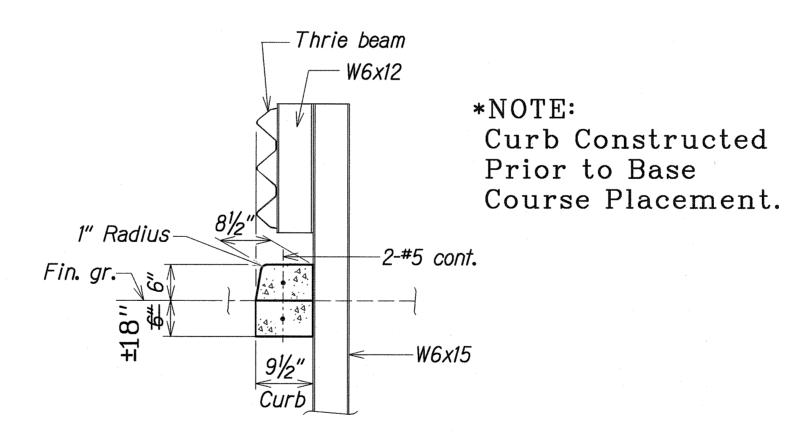
A. Refer to Standard Plans for additional details and notes not covered by details and typical drawings.

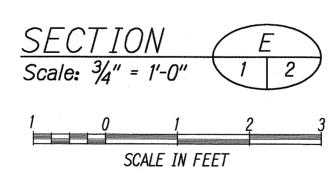
GENERAL:

Unless noted otherwise, chamfer all exposed concrete edges three-quarters (3/4) of an inch.



PARTIAL ISOMETRIC VIEW ENDPOST Not to Scale





LEGEND FOR AS-BUILT POSTINGS Squiggly line for as-built deletion **√√√**

Double line for as-built deletion

Text for as-built Roadway posting

EXPIRATION DATE OF THE LICENSE (4/30/10) LICENSED / PROFESSIONAL THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION CONCRETE WALL AND

STATE OF HAWAII

FISCAL SHEET YEAR NO.

2005

TOTAL SHEETS

25

FED. AID PROJ. NO.

580A-01-02

FED. ROAD DIST. NO.

HAWAII

HAW.

TYPE 3 THRIE BEAM CONNECTION

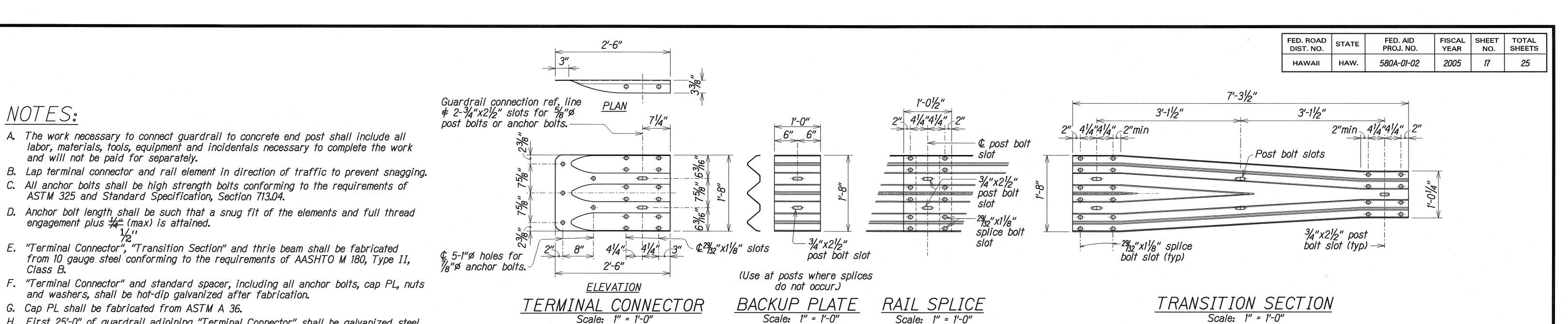
KUAMOO ROAD RETAINING WALL IN THE VICINITY OF M.P. 1.1 PROJECT NO. 580A-01-02

SCALE: As Noted 2 of 3 SHEET No.

nas-bulli

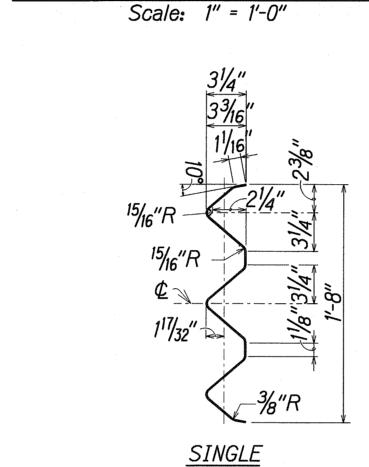
SHEETS

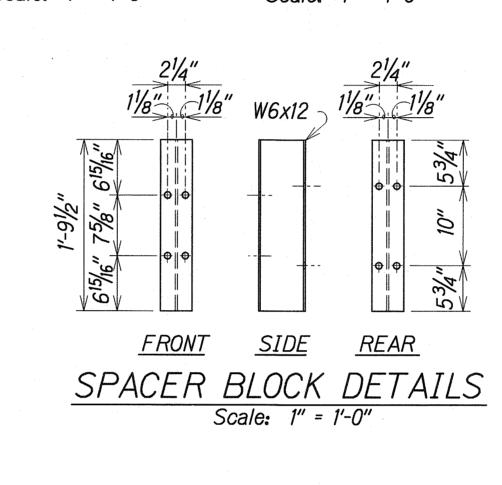
DATE: SEPT 2005

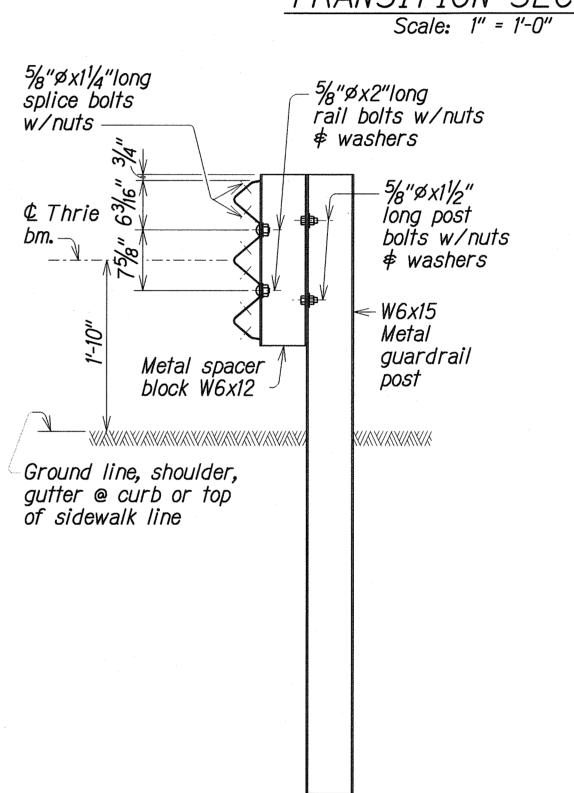


F. "Terminal Connector" and standard spacer, including all anchor bolts, cap PL, nuts and washers, shall be hot-dip galvanized after fabrication. G. Cap PL shall be fabricated from ASTM A 36. H. First 25'-0" of guardrail adjoining "Terminal Connector" shall be galvanized steel and supports spaced as 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. 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. 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.







TYPICAL SECTION

CRM 4

in Existing Detail C/S-4

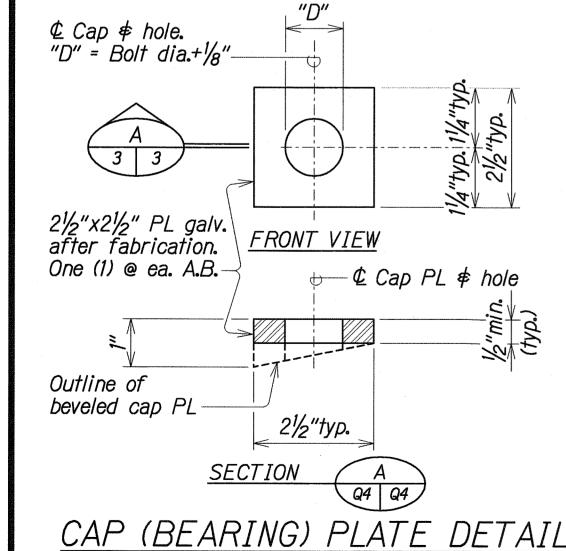
*Modified when E See Structural

FRONT

POST DETAILS

Scale: 1" = 1'-0"

W6x15



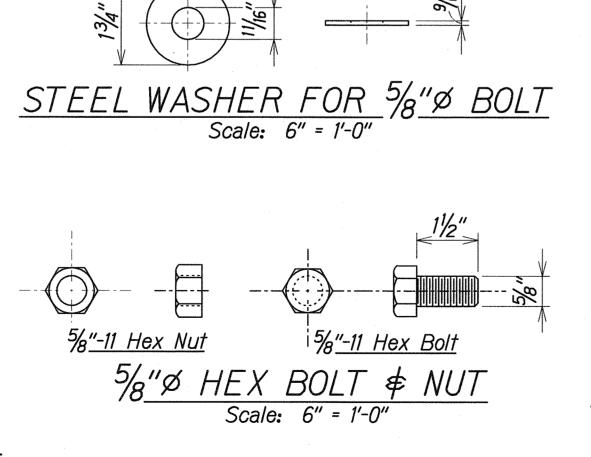
Scale: 6" = 1'-0"

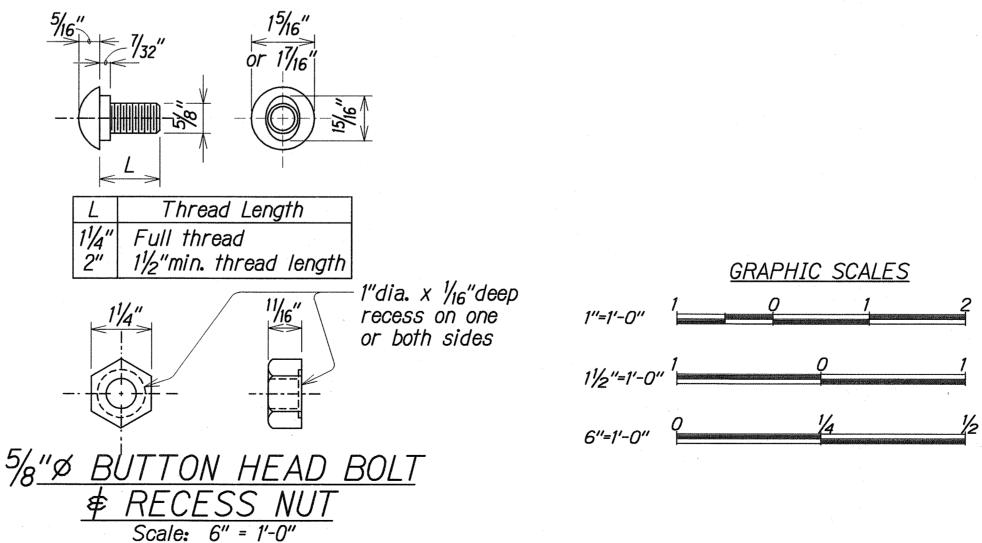
NOTES:

Class B.

and will not be paid for separately.

engagement plus ## (max) is attained.





DOUBLE

SECTION THRU

RAIL ELEMENT

Scale: 11/2" = 1'-0"

<u>METAL GUARDRAIL ON METAL POST</u> <u>WITH METAL SPACER BLOCK</u> Scale: 1" = 1'-0" LEGEND FOR AS-BUILT POSTINGS Squiggly line for as-built deletion **~~~~** Double line for 100.00 as-built deletion Text for as-built Roadway posting

EXPIRATION DATE OF THE LICENSE (4/30/10)

LICENSED PROFESSIONAL

ENGINEER

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION CONCRETE WALL AND

<u>SIDE</u>

TYPE 3 THRIE BEAM CONNECTION KUAMOO ROAD RETAINING WALL

IN THE VICINITY OF M.P. 1.1 PROJECT NO. 580A-01-02

SCALE: NOT TO SCALE DATE: SEPT 2005 3SHEETS SHEET No. 3 of

<u>METAL GUARDRAIL TYPE 3 THRIE BEAM AND APPURTENANCES DETAILS</u>

SURVEY PLOT
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES B
CHECKED BY

"AS-BUILT"