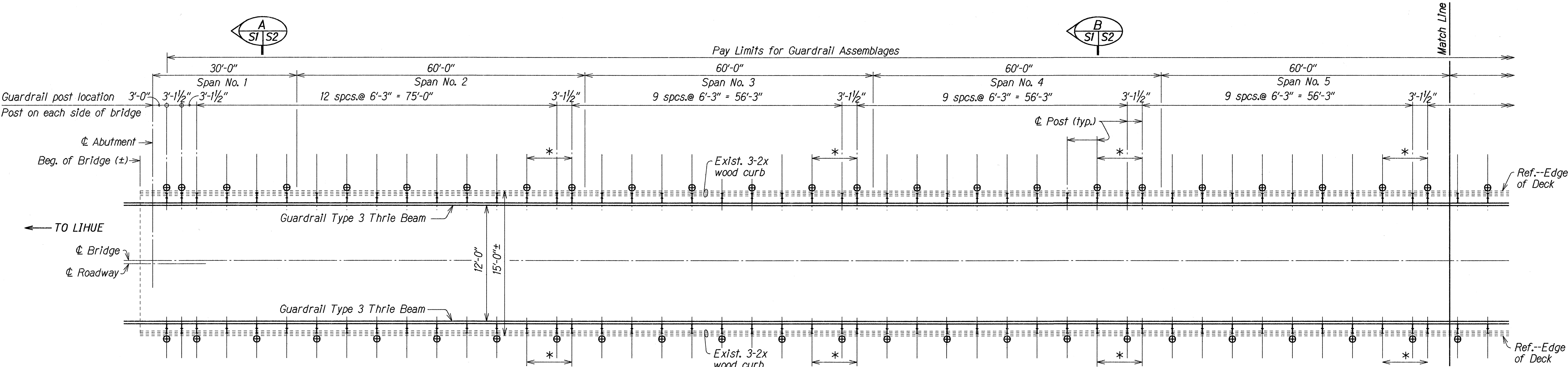


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-01-91	1992	10	17



STRUCTURAL NOTES

DESIGN SPECIFICATIONS:

- AASHTO Standard Specifications for Highway Bridges, 14th Edition, 1989

MATERIALS:

- Structural Steel Plates--ASTM A36
- Structural Steel Tubing--ASTM A500 Grade B
- $\frac{7}{8}$ " ϕ adhesive anchor bolts shall include flat washers and self-locking nuts (or lock washers) and have a tension capacity of 27,000 lbs. and a minimum ultimate shear capacity of 16,600 lbs.

CONSTRUCTION REQUIREMENTS:

- Refer to Hawaii Standard Specifications for Road and Bridge Construction, 1985 and Special Provisions.
- Welding--ANSI/AASHTO/AWS D1.5-88 Bridge Welding Code as amended.
- All structural steel assemblies shall be hot-dipped galvanized after fabrication.
- All adhesive anchor bolts including nuts and washers shall be hot-dipped galvanized.
- Existing railroad steel rails shall be cleaned of rust and foreign substances before base and brace connection plates are welded.
- Repair to galvanized coating due to welding shall conform to Section 501.03(GX2) and include a coating of repair material $\frac{1}{4}$ " minimum beyond welds.
- Post base plates and brace connection plates shall be lengthened when corrosion of steel rails would reduce weld lengths by more than 10%.
- Non-pneumatic drilling equipment shall be used in drilling of holes for the adhesive anchor bolts.
- The Contractor shall be solely responsible for the protection of adjacent property, utilities and existing structure from damage due to construction and shall repair any damage at his own expense, to the satisfaction of the Engineer.
- All items designated for removal shall be removed in such a manner as to prevent any damage to the existing structure.

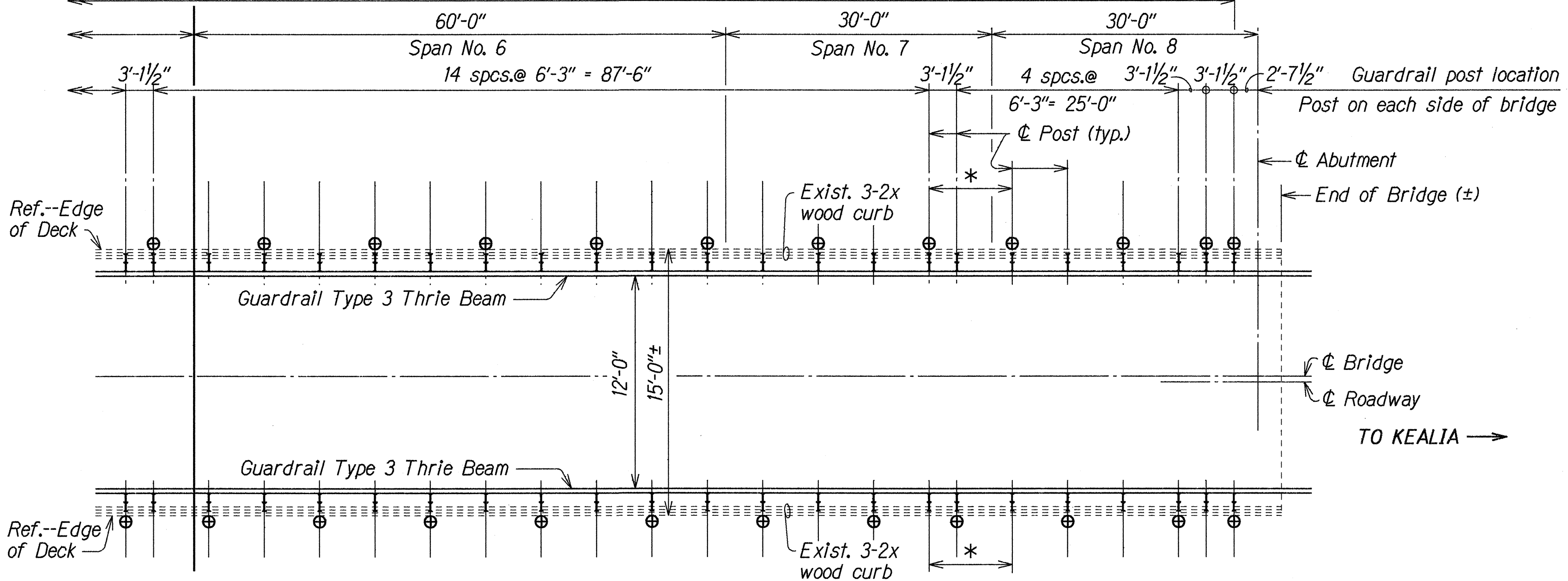
GENERAL:

- The Contractor shall verify all grades and dimensions before commencing with any work.
- The Contractor shall verify the location of all existing utility lines near bridge and notify their respective owners before commencing with work.
- Removal and repair of existing wood curb, post and wearing surface necessary to install Post Base Plate shall be incidental to Guardrail Assemblage.
- All items noted incidental will not be paid for separately.

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
501.0300	Brace Assemblage	Each	134 ea.
606.5000	Guardrail Assemblage	Lin. Ft.	708.75 l.f.

LAYOUT PLAN

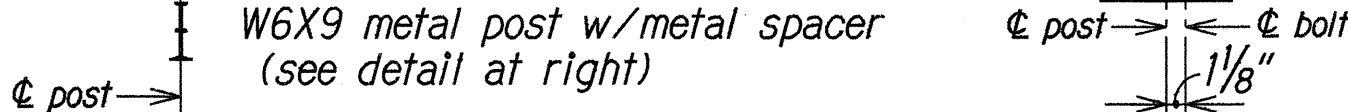


LAYOUT PLAN

Scale: 1" = 10' (Longit.)
1" = 5' (Trans.)

SYMBOLS:

- ⊕ Brace Assemblages below guardrail posts (alternating as shown)
- * Non-standard rail length
- W6X9 metal post w/ metal spacer (see detail at right)

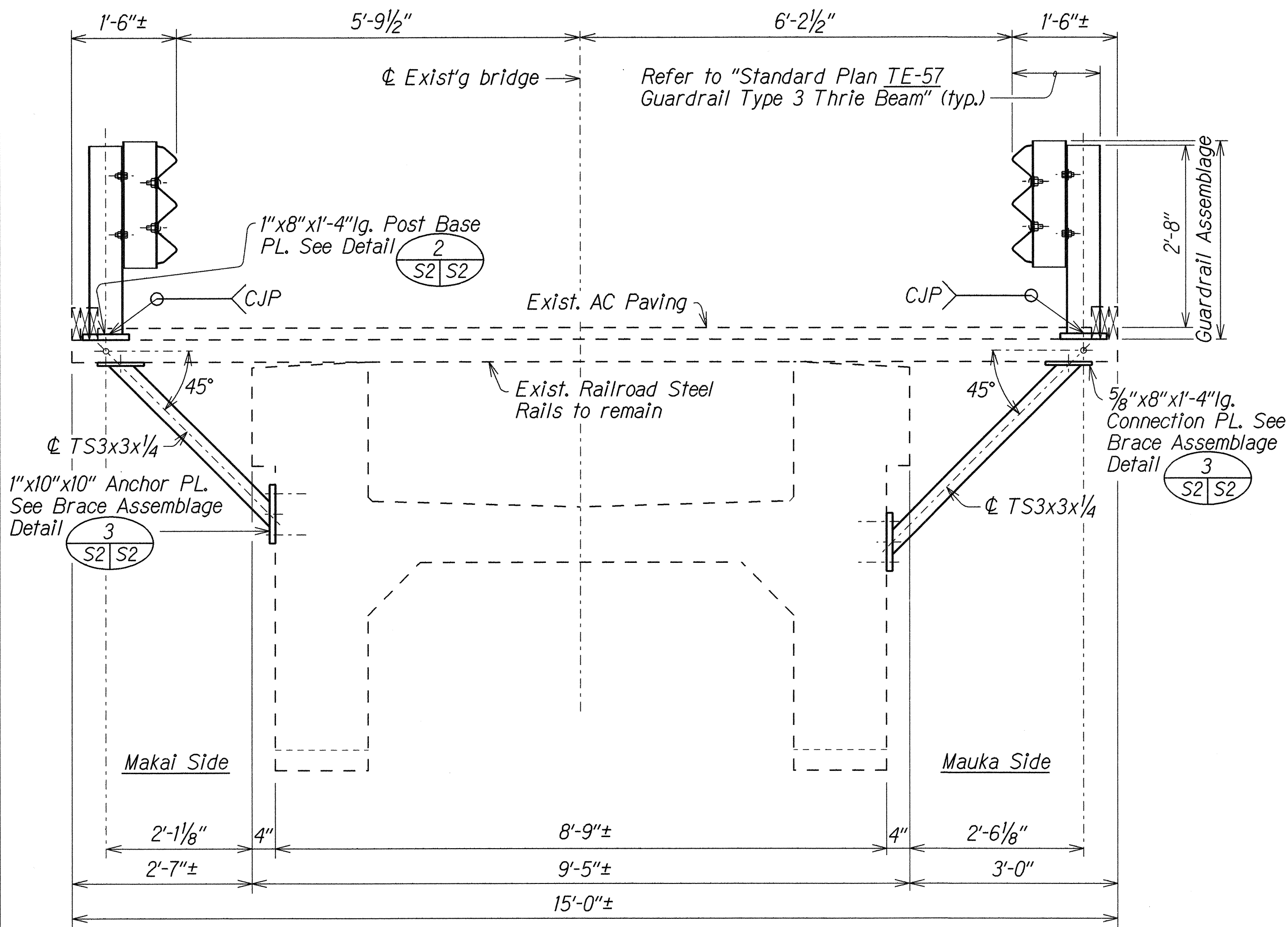


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

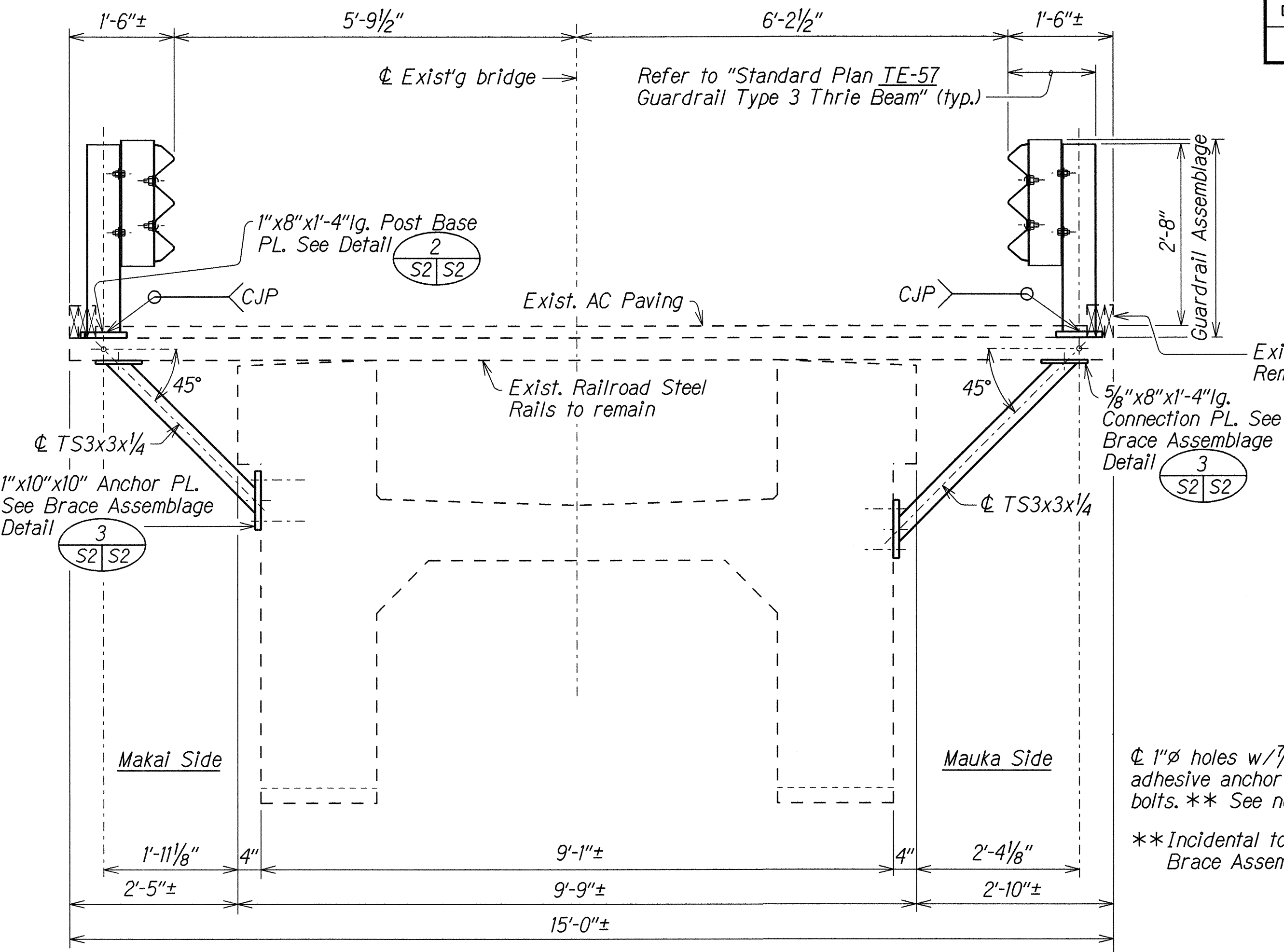
RAILROAD BRIDGE GUARDRAIL DETAILS
KUHIO HIGHWAY IMPROVEMENTS--LEHO DRIVE TO HALEILIO ROAD
Project No. 56A-01-91

Scale: As Noted
Date: Nov, 1991

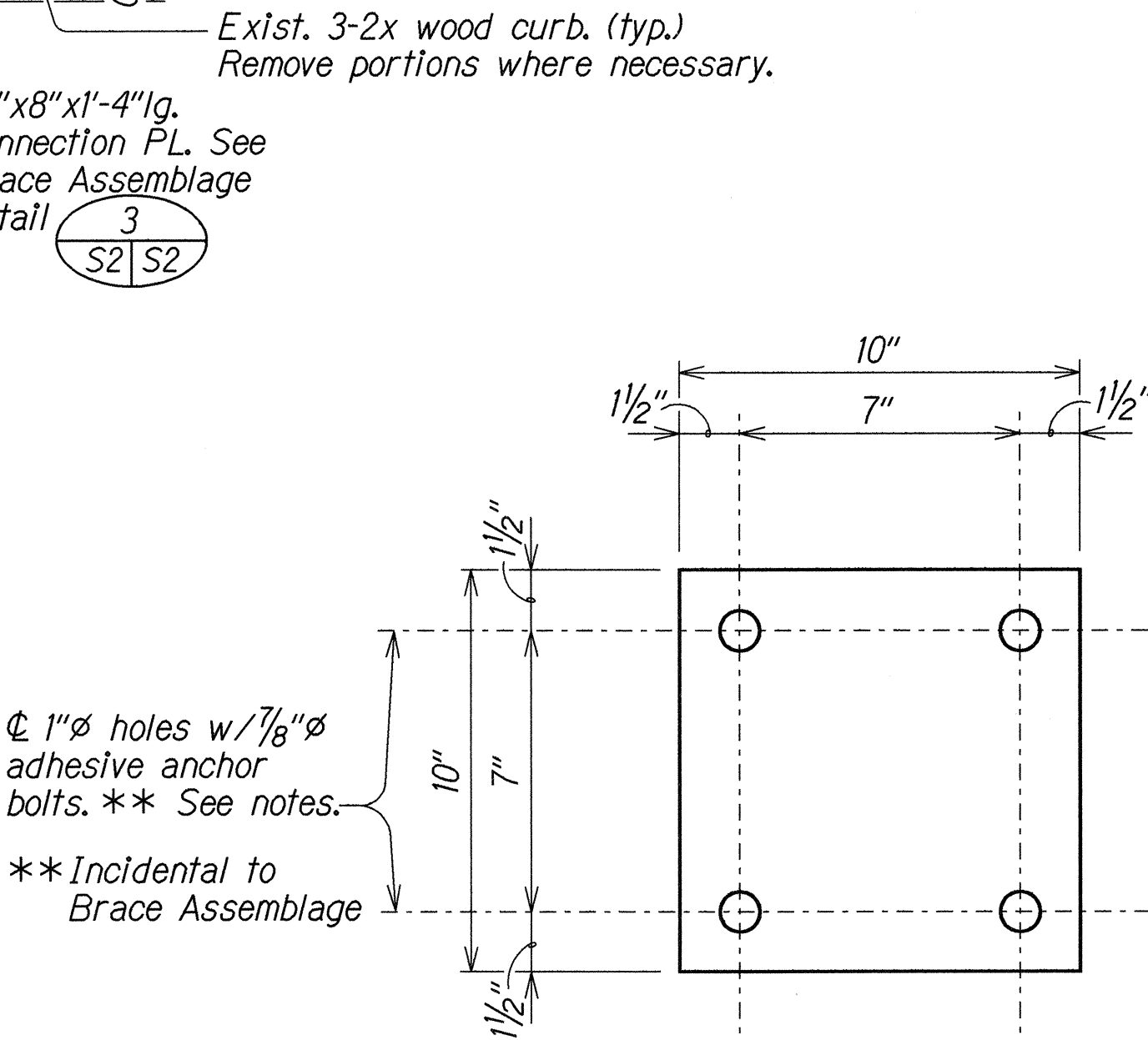
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-01-91	1992	11	17



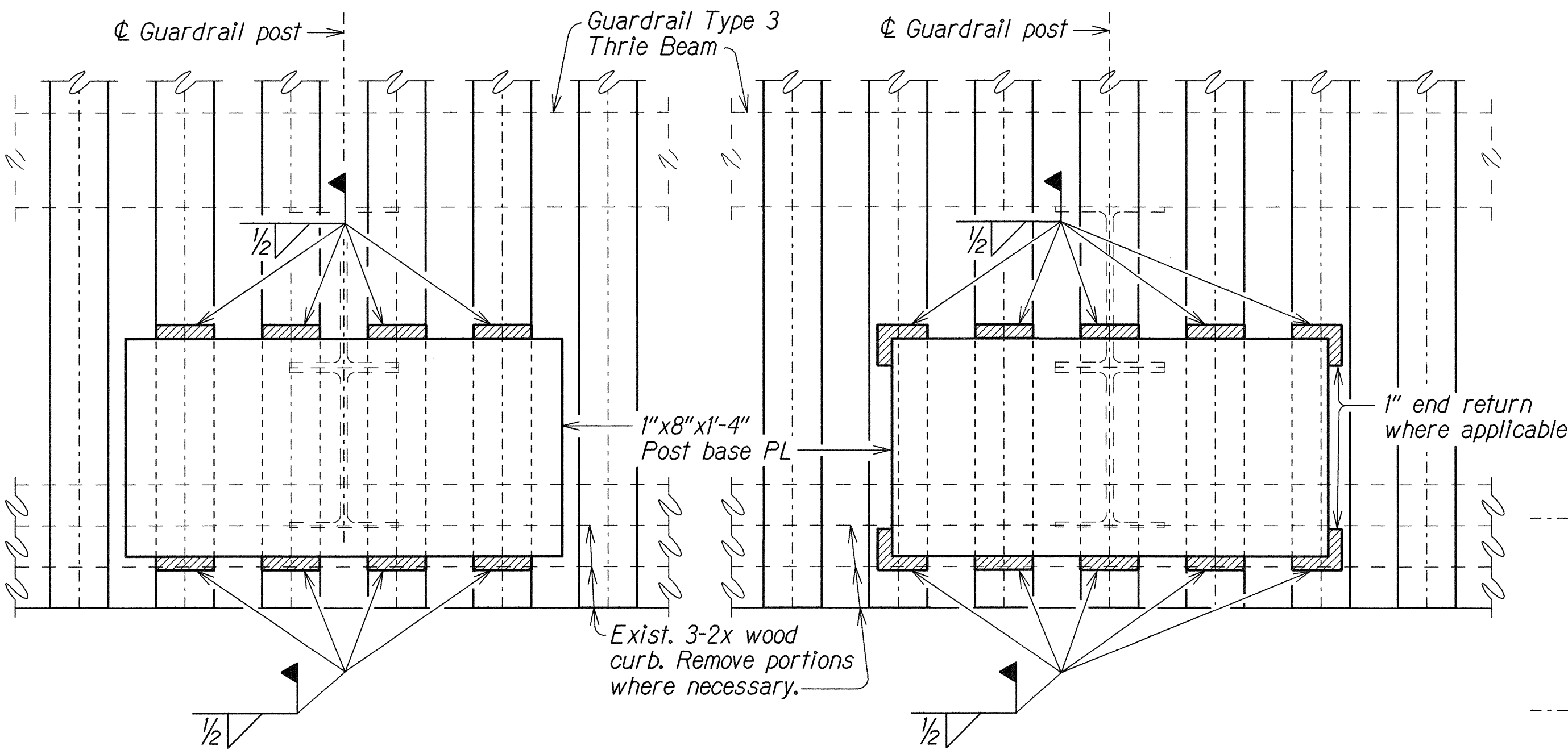
SECTION **A** @ SPAN NOS. 1, 7, & 8 (30' SPANS)
Scale: 3/4" = 1'-0"



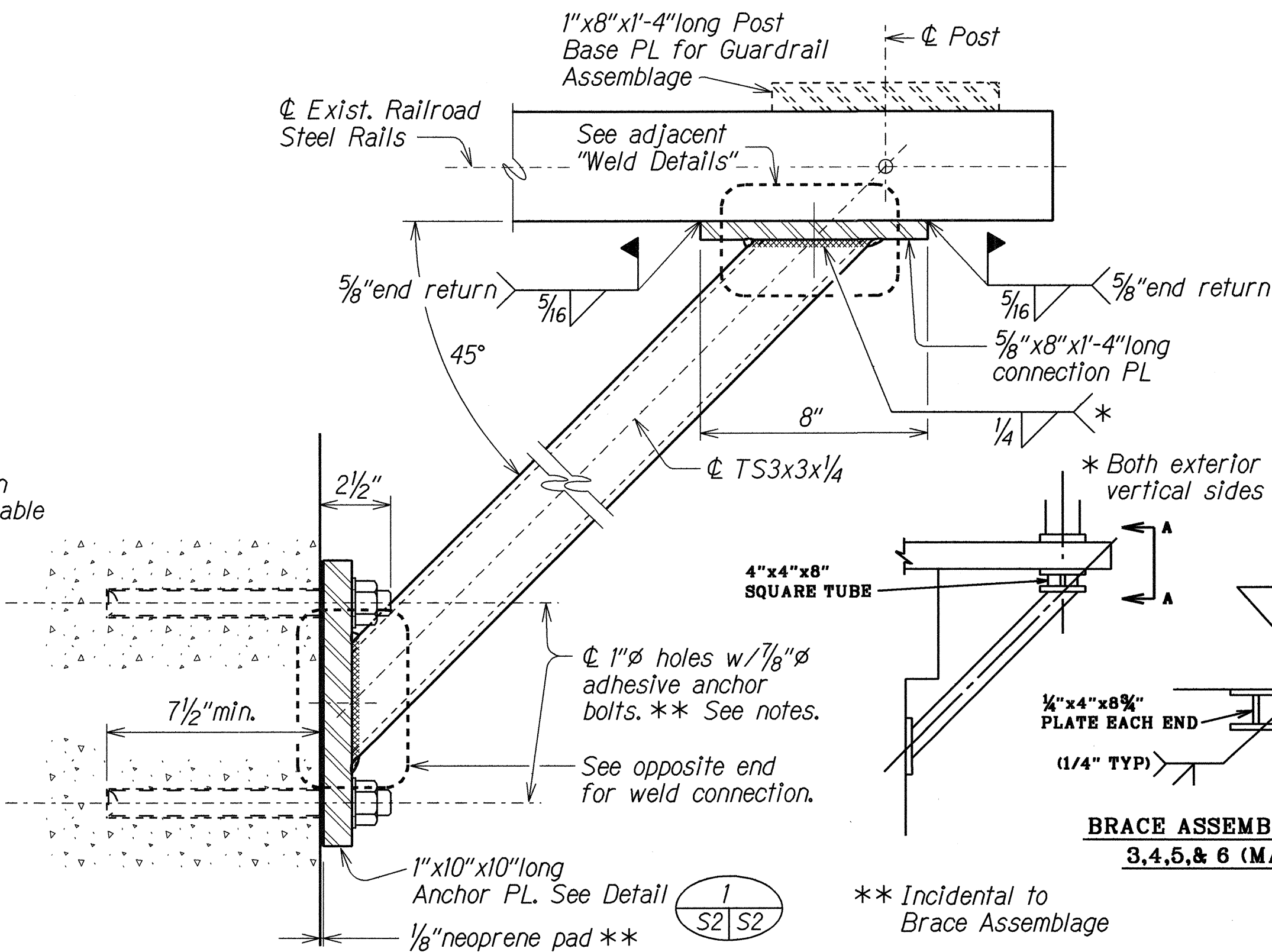
SECTION **B** @ SPAN NOS. 2, 3, 4, 5 & 6 (60' SPANS)
Scale: 3/4" = 1'-0"



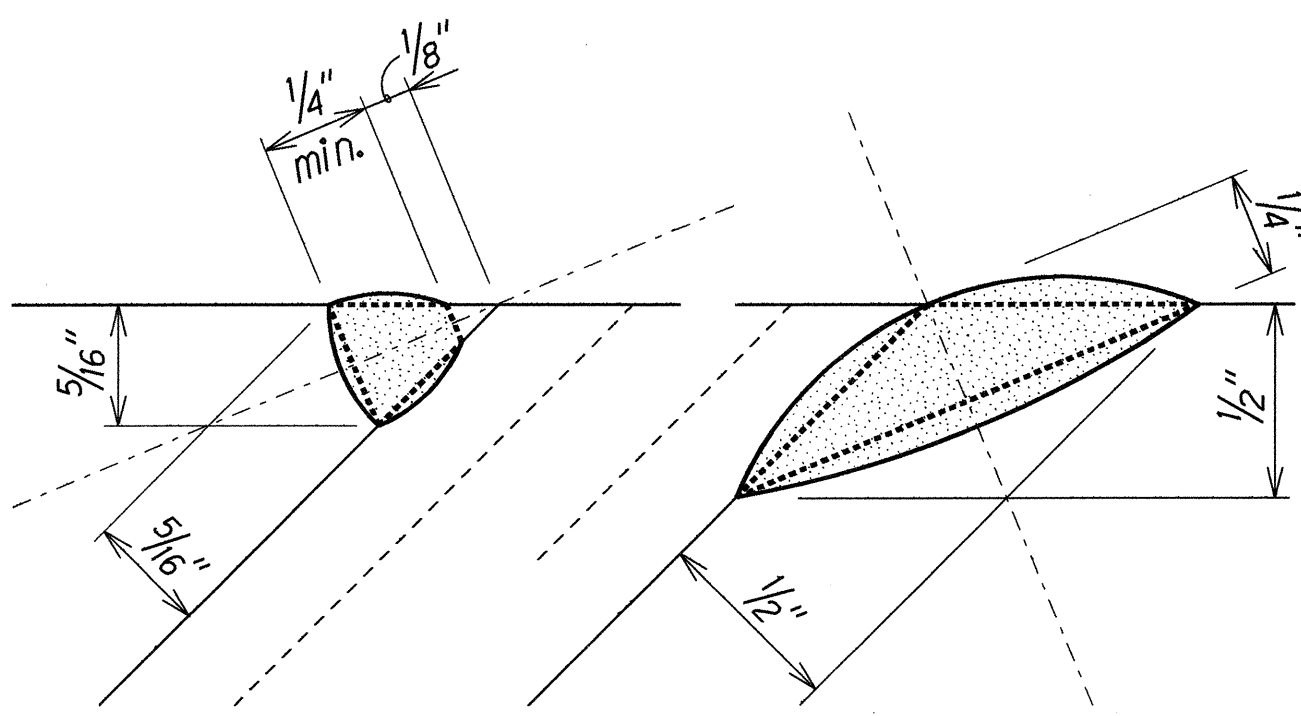
ANCHOR PLATE DETAIL **1**
Scale: 3" = 1'-0"



POST BASE PLATE WELD DETAIL **2**
Scale: 3" = 1'-0"



BRACE ASSEMBLY DETAIL **3**
Scale: 3" = 1'-0"



WELD DETAILS
Not to Scale

LEGEND FOR AS-BUILT POSTINGS
~~~~~ Squiggly line for as-built deletion
===== Double line for as-built deletion
Text for as-built posting

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**RAILROAD BRIDGE GUARDRAIL DETAILS**  
KUHIO HIGHWAY IMPROVEMENTS-LEHO DRIVE TO HALEILO ROAD  
Project No. 56A-01-91

Scales: As Noted Date: Nov. 1991

SHEET No. S2 OF 2 SHEETS

AS-BUILT

11