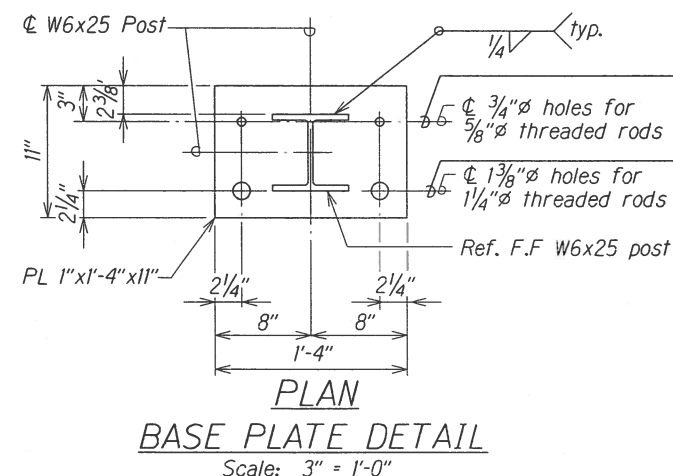
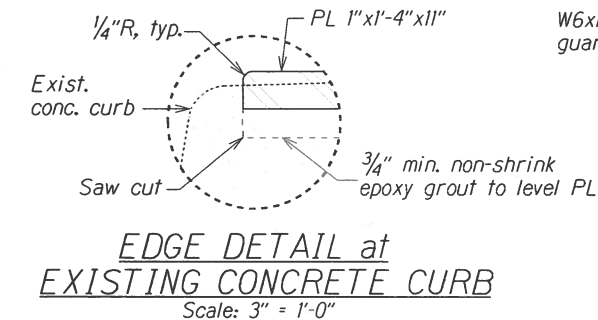
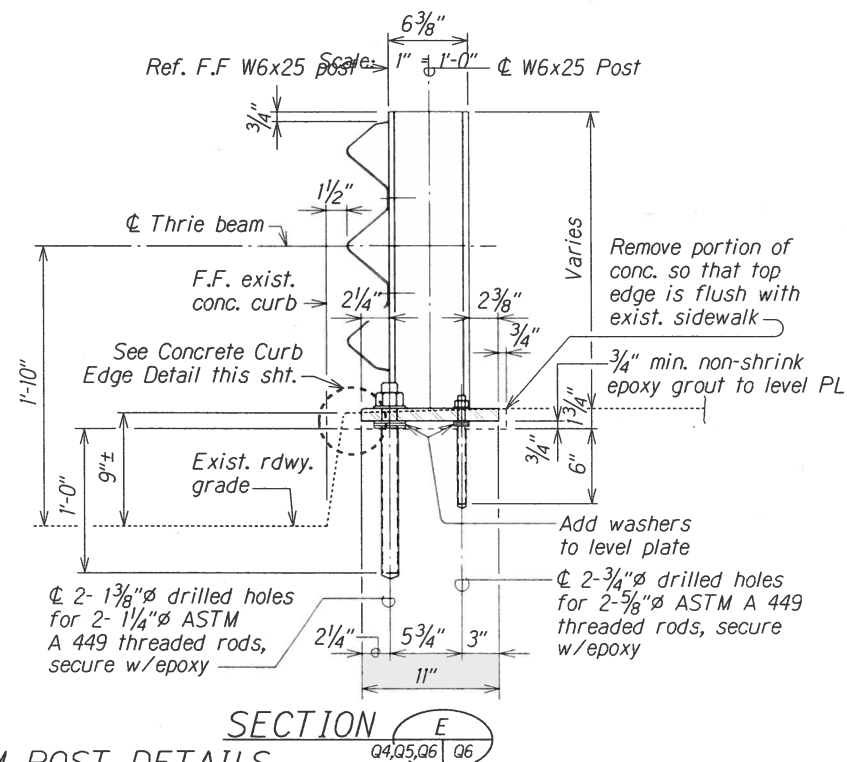
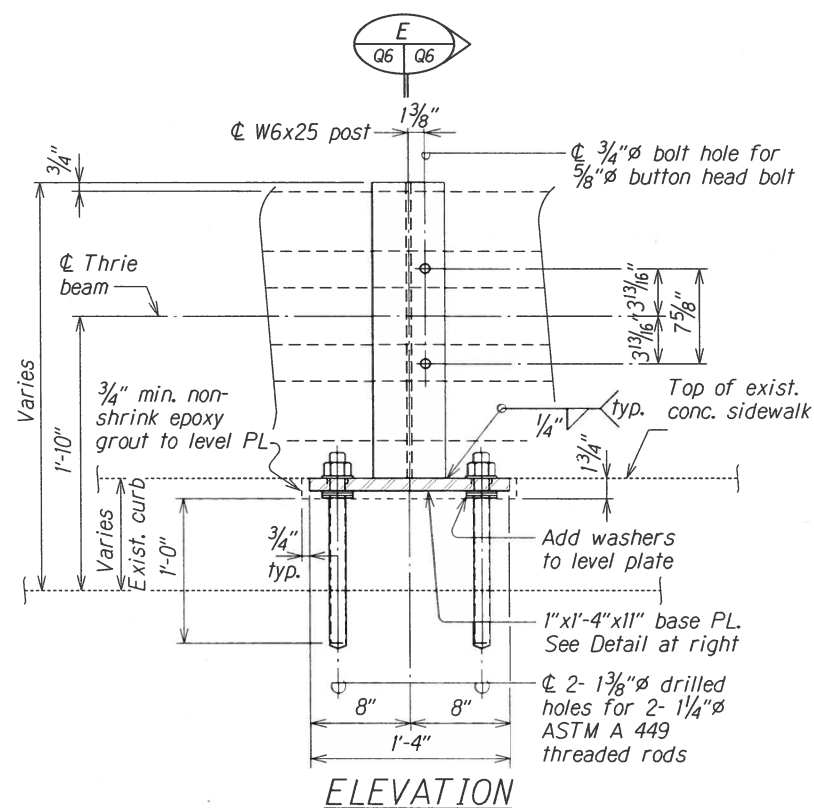
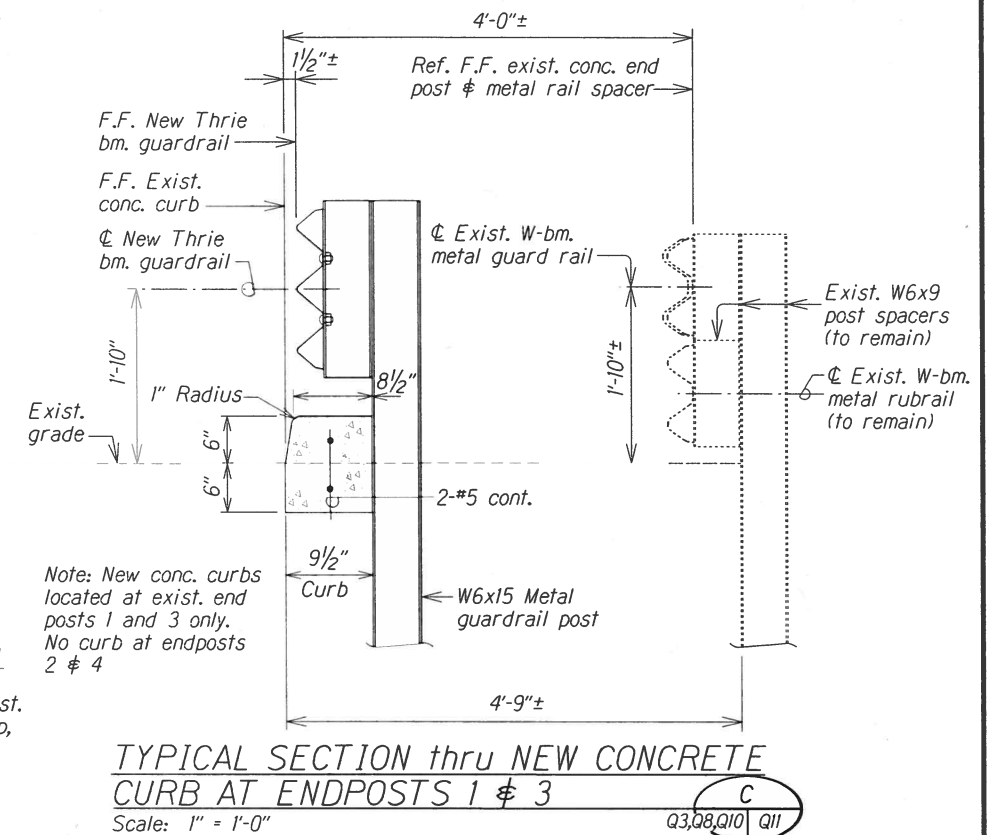
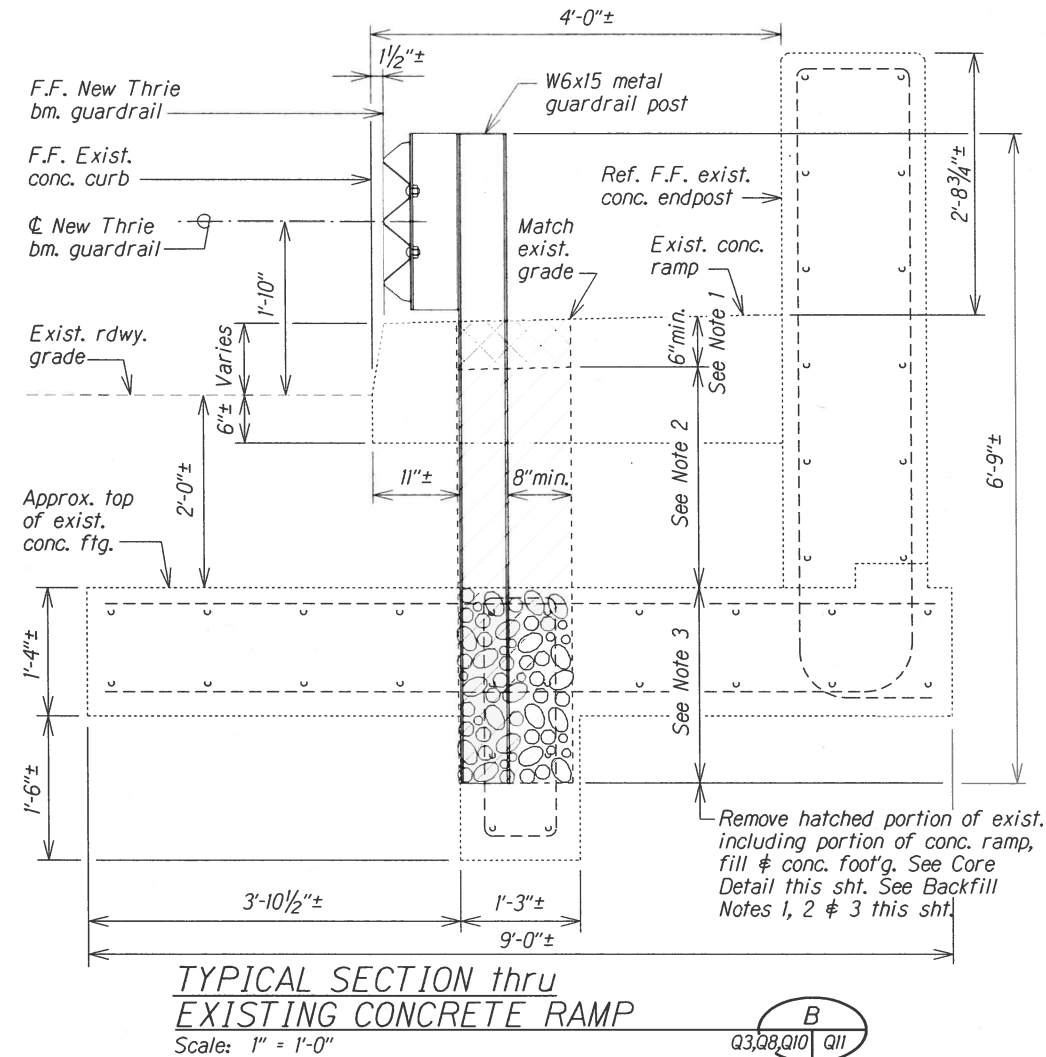
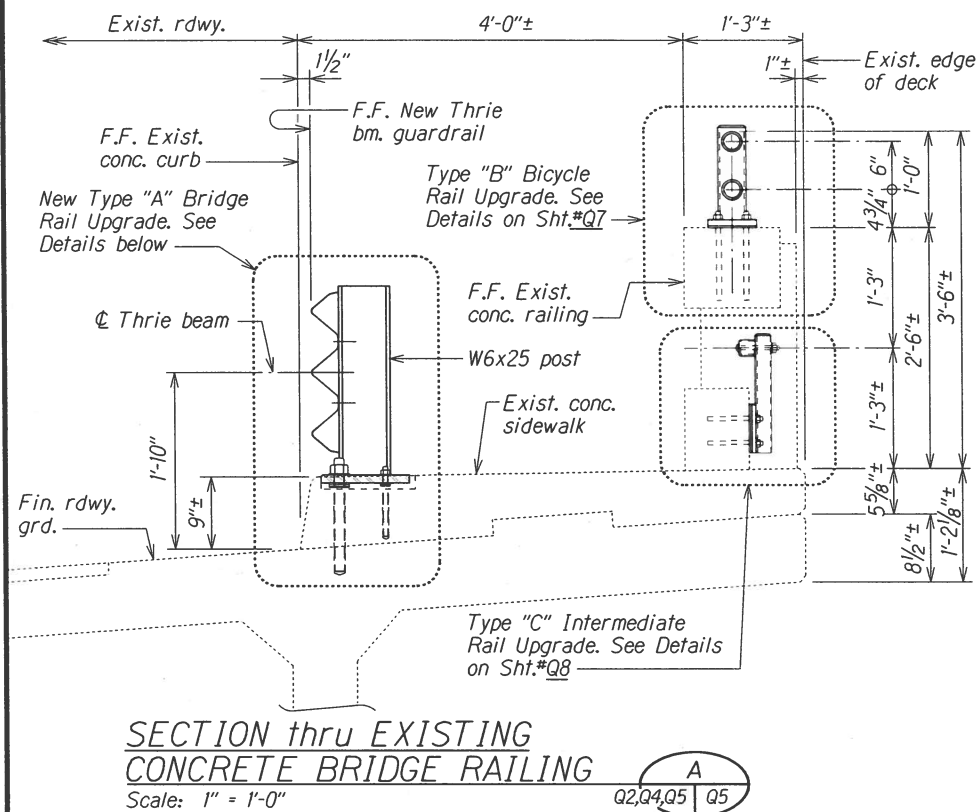
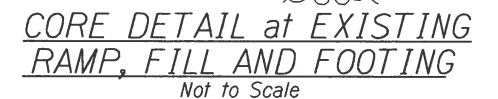


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(71)	2018	XX	XX



- BACKFILL NOTES:
1. Backfill w/2-Sack Grout Fill or HDOT-Approved CLSM (6"min.), shown thus
 2. Backfill w/Soil, shown thus
 3. Backfill w/ASTM C33 Course Aggregate, Size No. 57, shown thus



$\varnothing \frac{3}{4}$ " x $\frac{7}{8}$ " $\varnothing$ short slotted holes for $\frac{7}{8}$ " $\varnothing$ threaded rods. Kaumoali Bridge Base Plate Joint Detail.
 $\varnothing \frac{13}{8}$ " x $\frac{15}{8}$ " short slotted holes for $\frac{11}{4}$ " $\varnothing$ threaded rods. Kaumoali Bridge Base Plate Joint Detail.

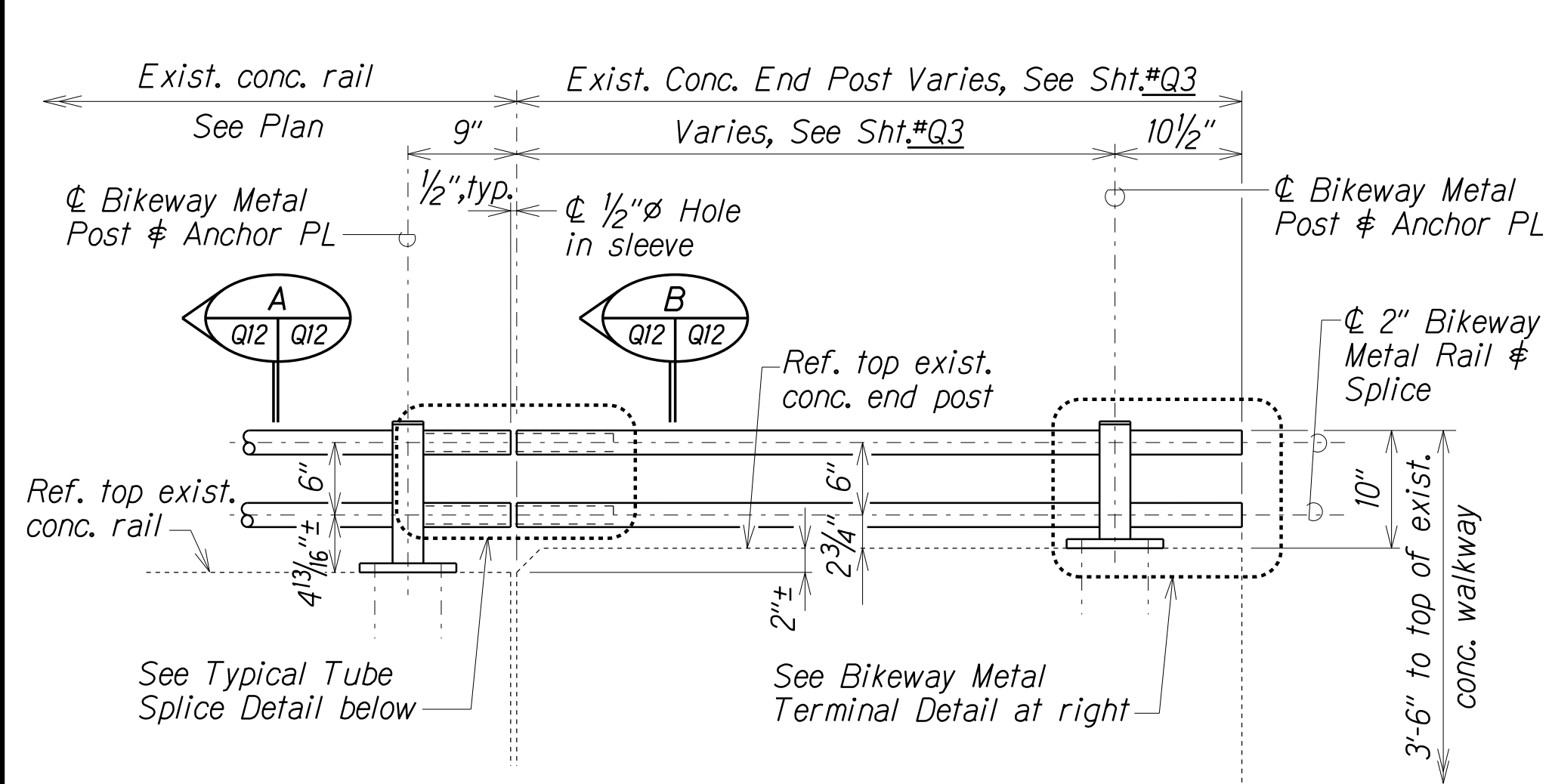
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPE "A" BRIDGE RAIL UPGRADE
SECTIONS and DETAILS
HAWAII BELT ROAD GUARDRAIL and
SHOULDER IMPROVEMENTS
Vicinity of Kalopa Bridge and Kaunaloa Bridge to E. Paauilo Bridge
Fed. Aid Project No. NH-019-271)
Scale: As Noted Date: Nov. 1978

SHEET No. 011 OF 27 SHEETS

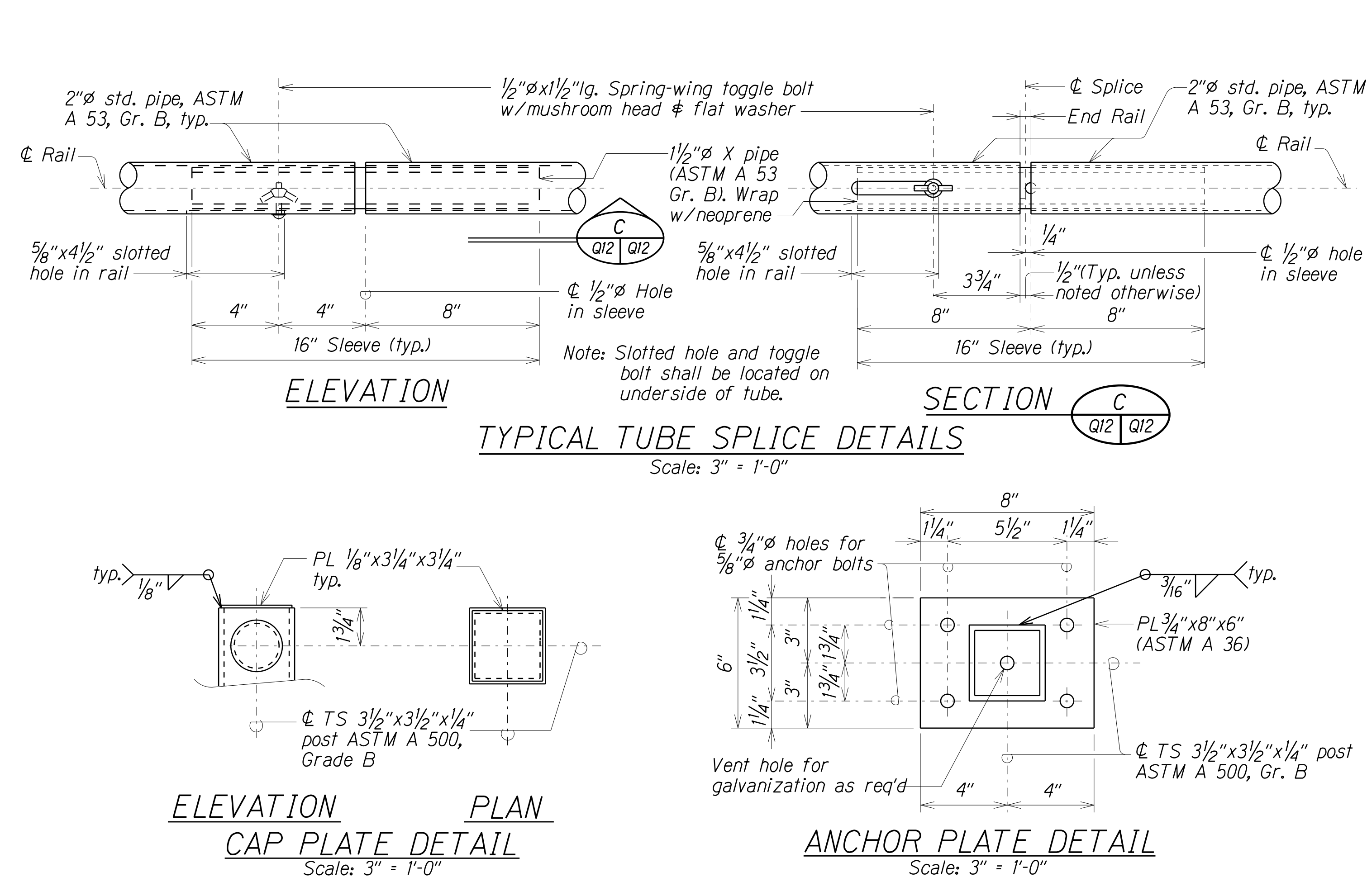
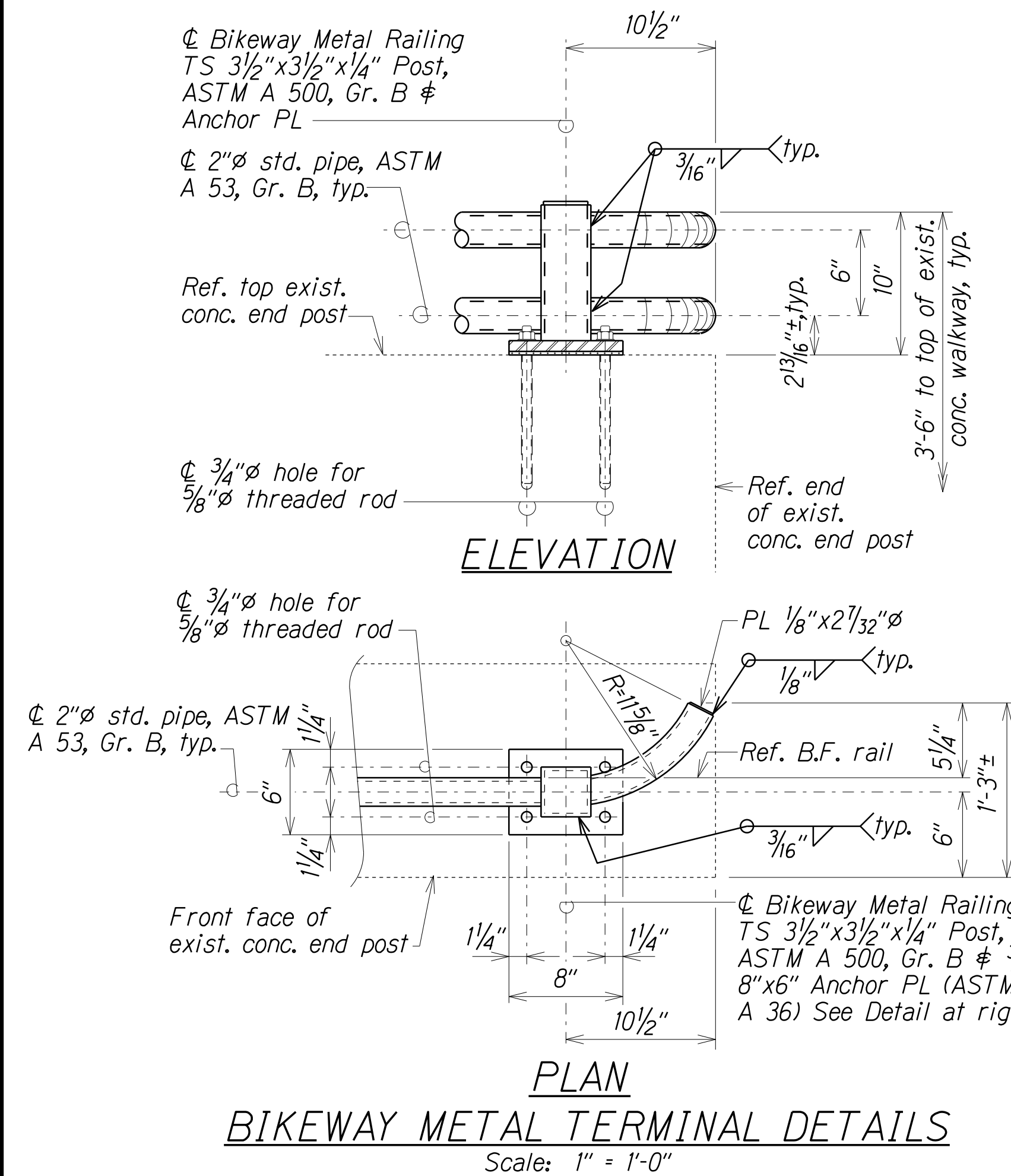
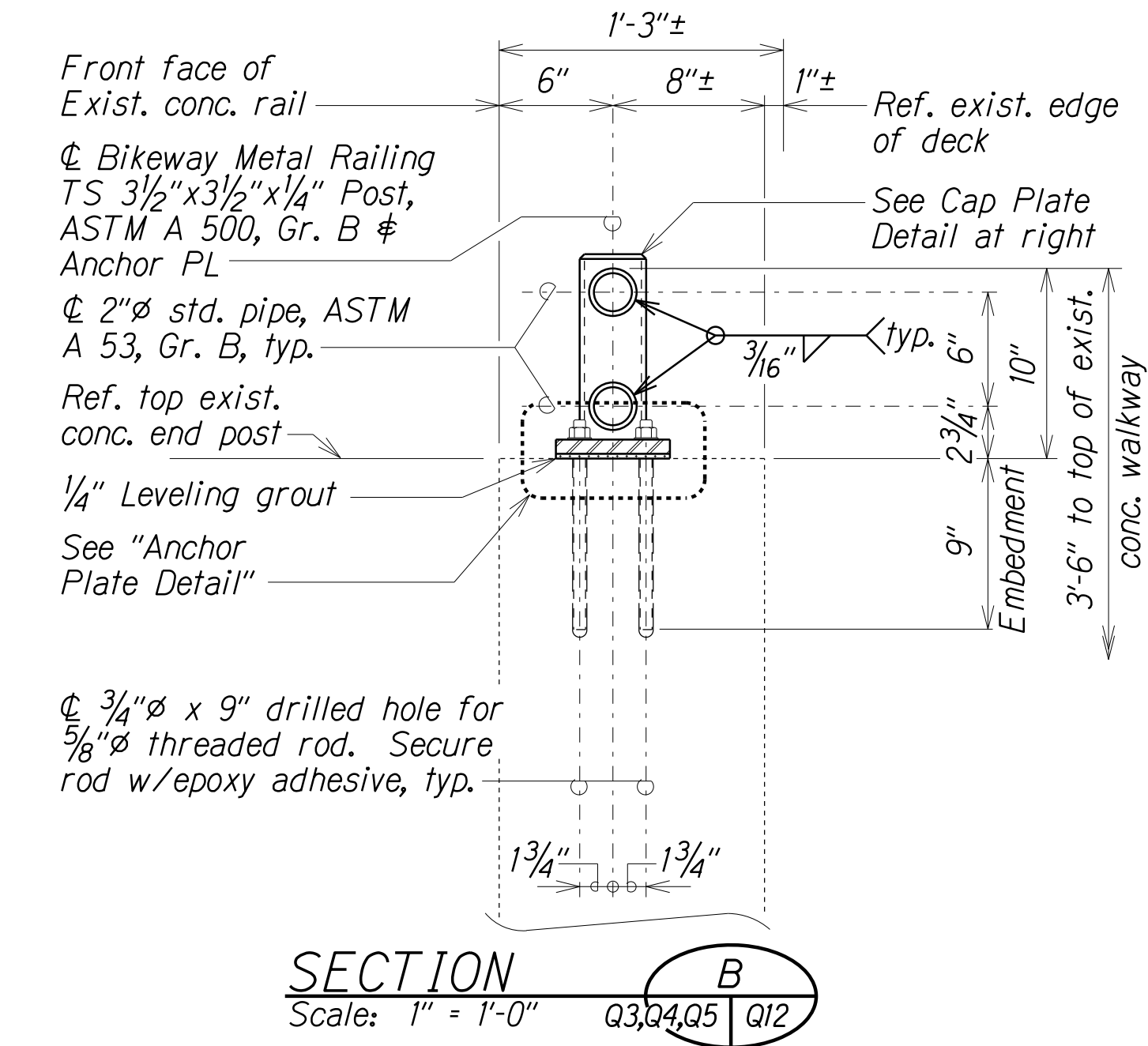
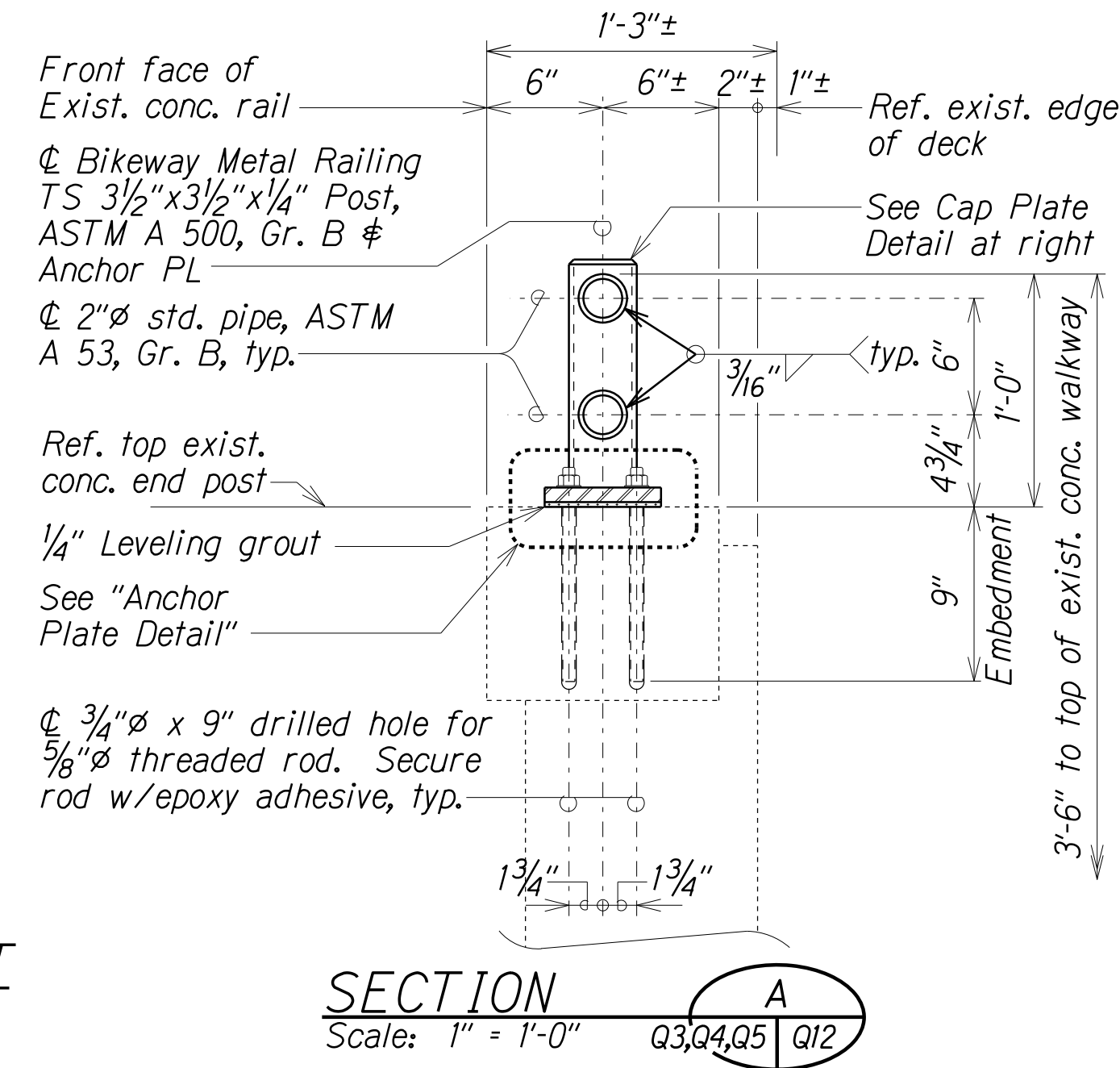
SECTIONS and DETAILS -- TYPE "A" BRIDGE RAIL UPGRADE, KALOPA, KAUMOALI and WAIPUNAHINA BRIDGES

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(71)	2018	53	68



PARTIAL ELEVATION--BICYCLE RAIL at CONCRETE END POST
Not to Scale



TYPE "B" BICYCLE RAIL UPGRADE DETAILS KALOPA, KAUMOALI and WAIPUNAHINA BRIDGES

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	APR 2011
DESIGNED BY	CHECKED BY	
sk01000.qld		

dw47/ds/ust2/ksg/jlu/kalopa/

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPE "B" BICYCLE RAIL UPGRADE DETAILS

HAWAII BELT ROAD GUARDRAIL AND

SHOULDER IMPROVEMENTS

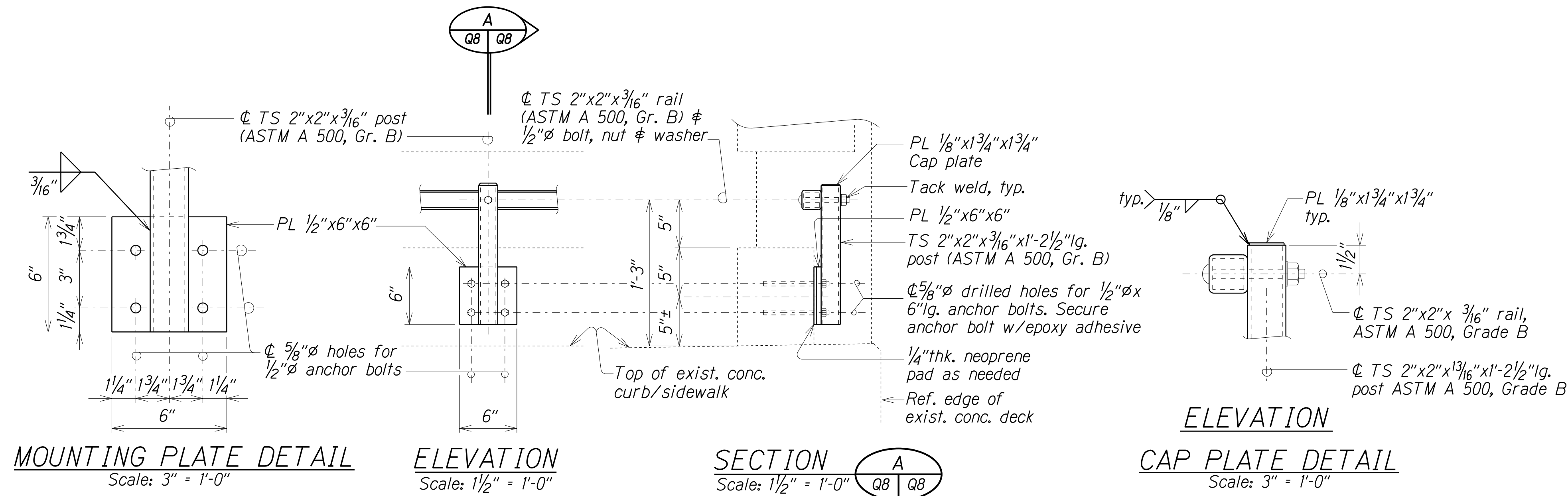
Vicinity of Kalopa Bridge and Kaumoali Bridge to E. Paauilo Bridge

Federal-Aid Project No. NH-019-2(71)

Scale: As Noted

Date: Nov., 2018

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(71)	2018	54	68



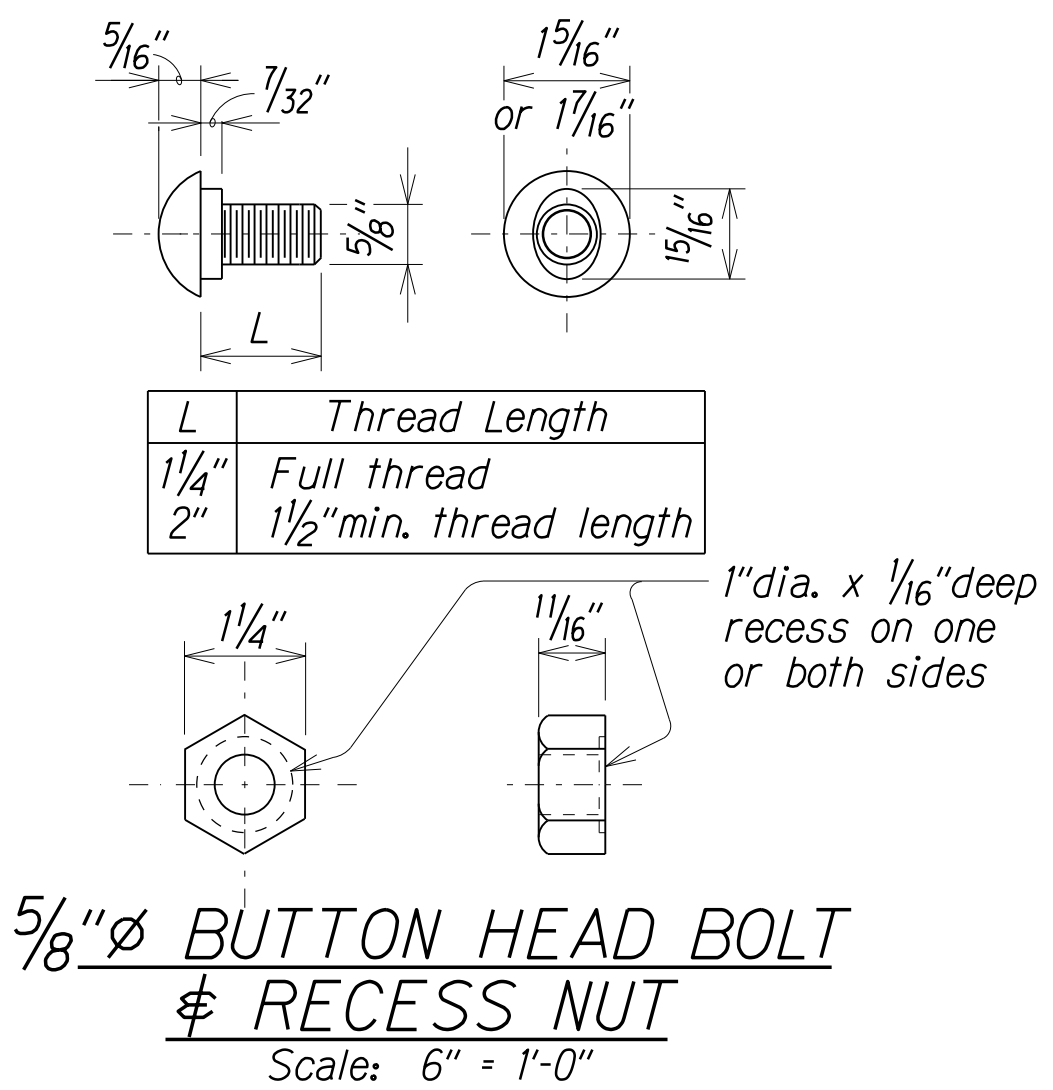
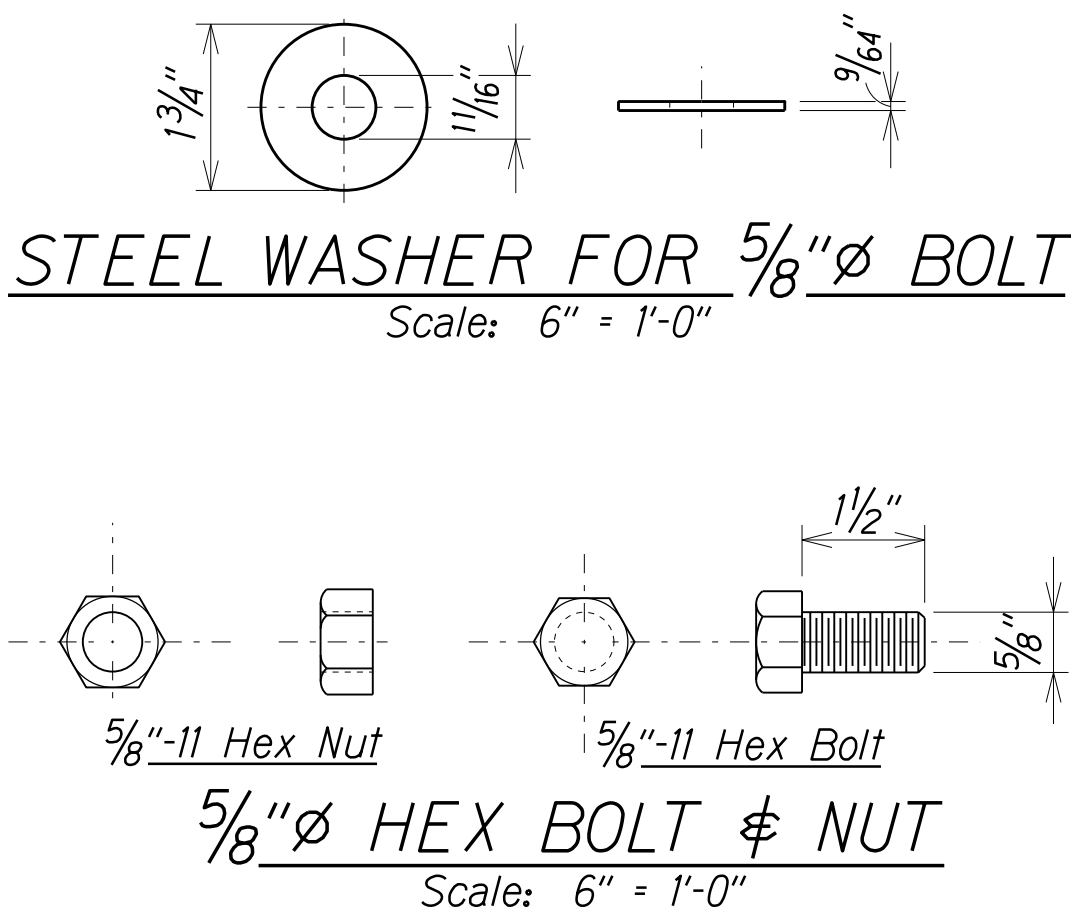
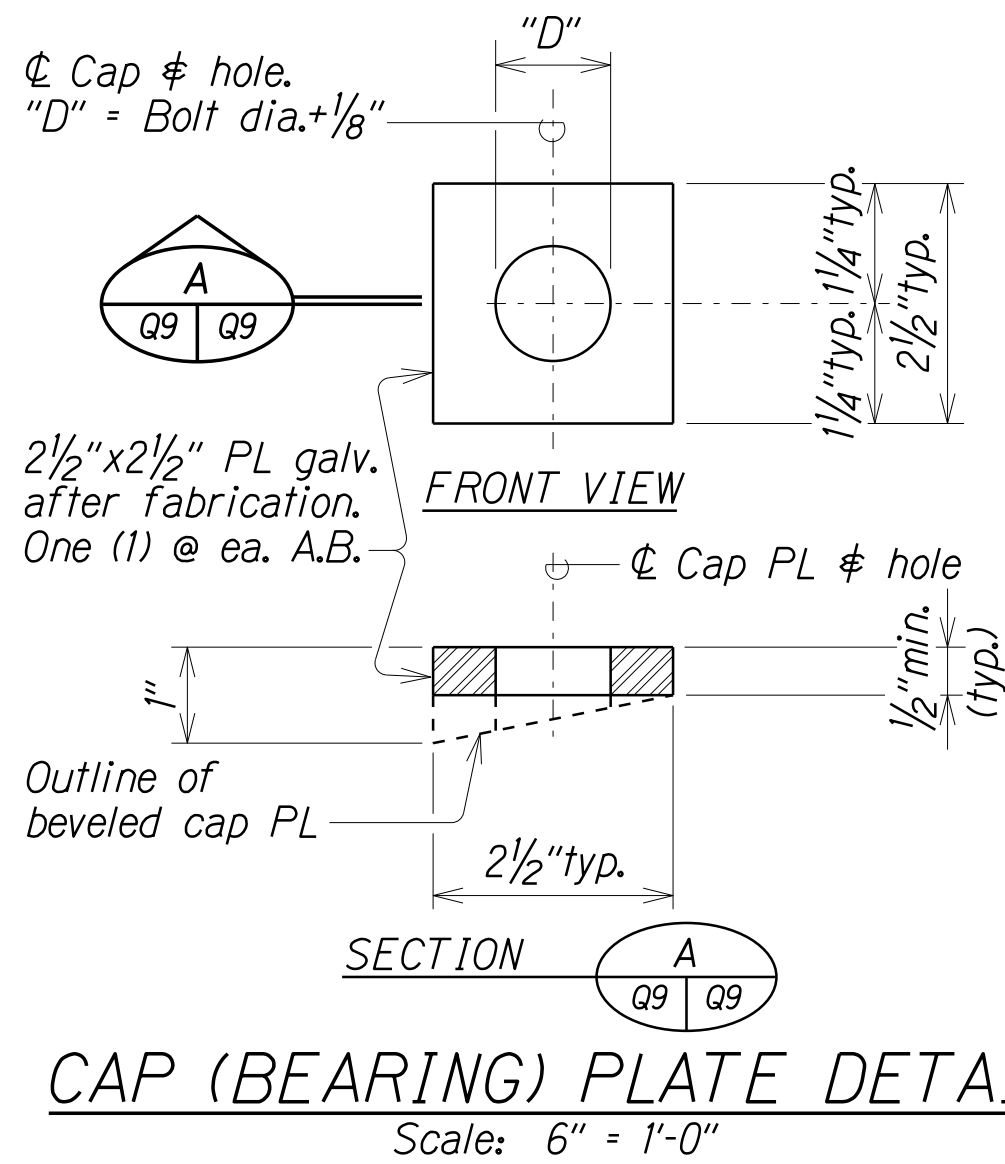
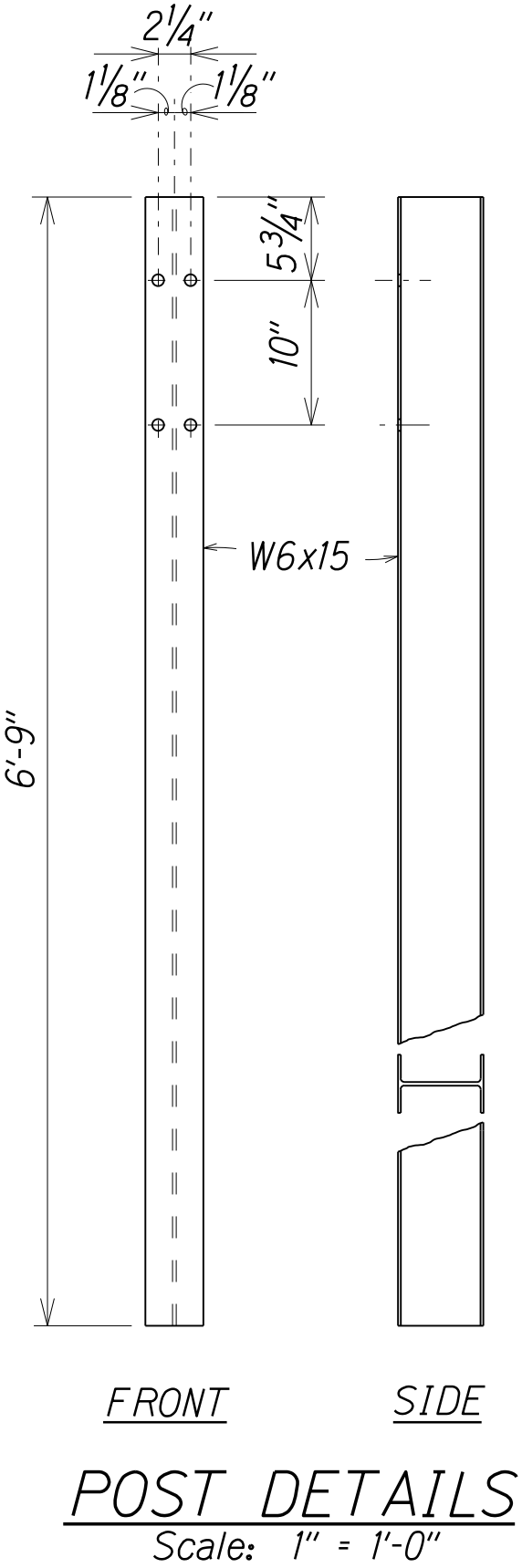
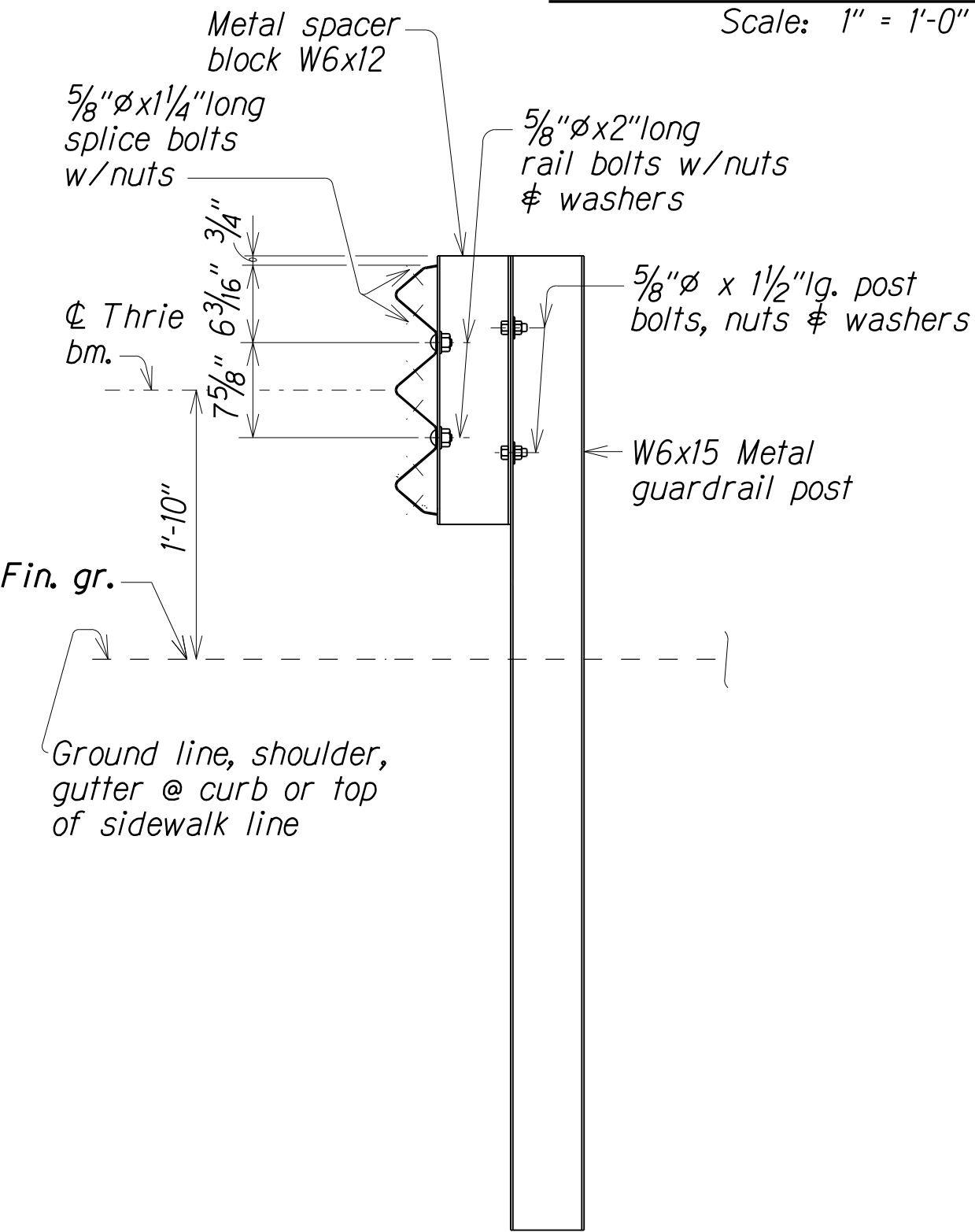
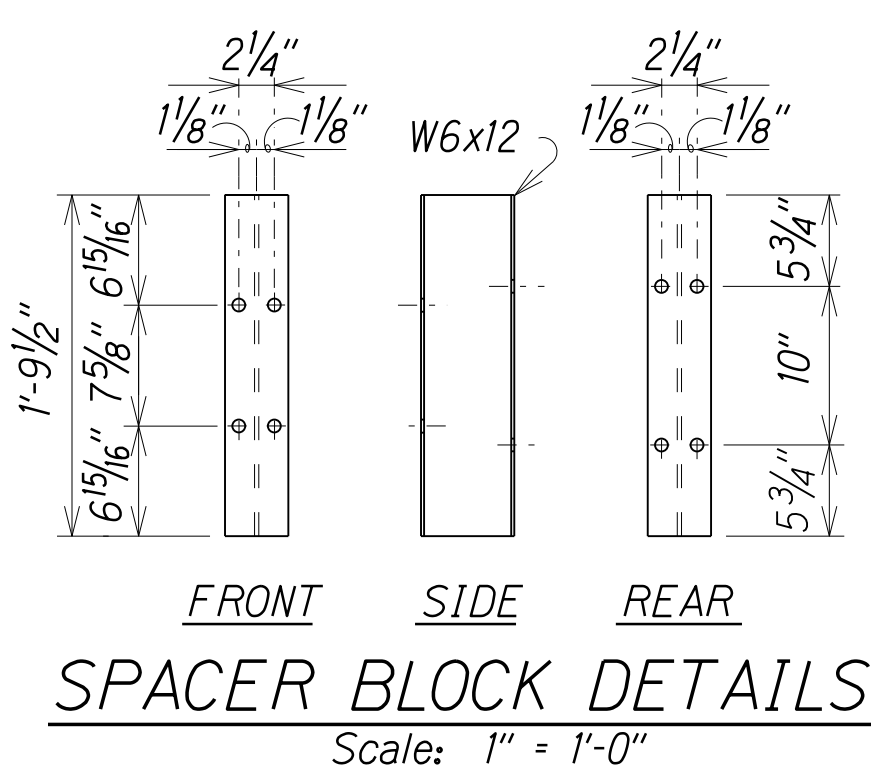
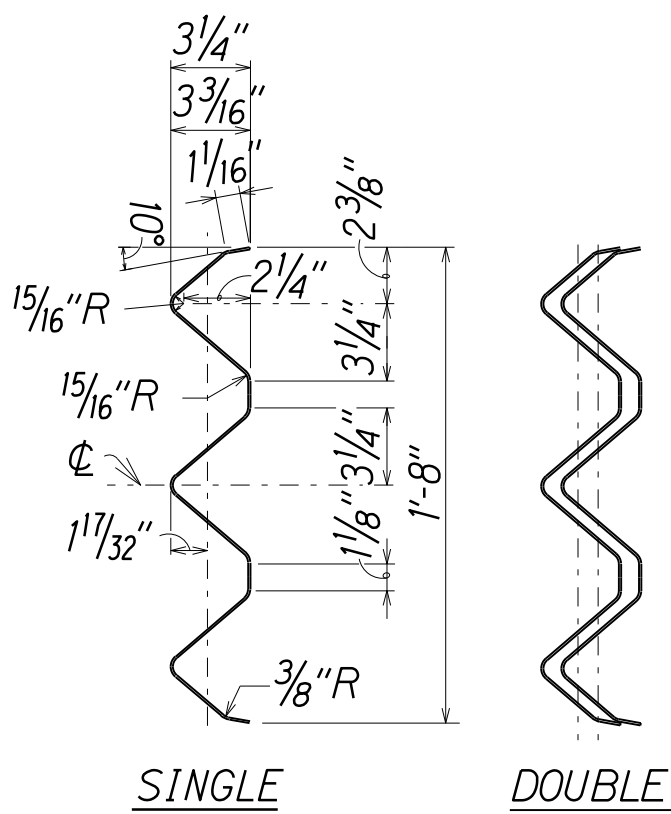
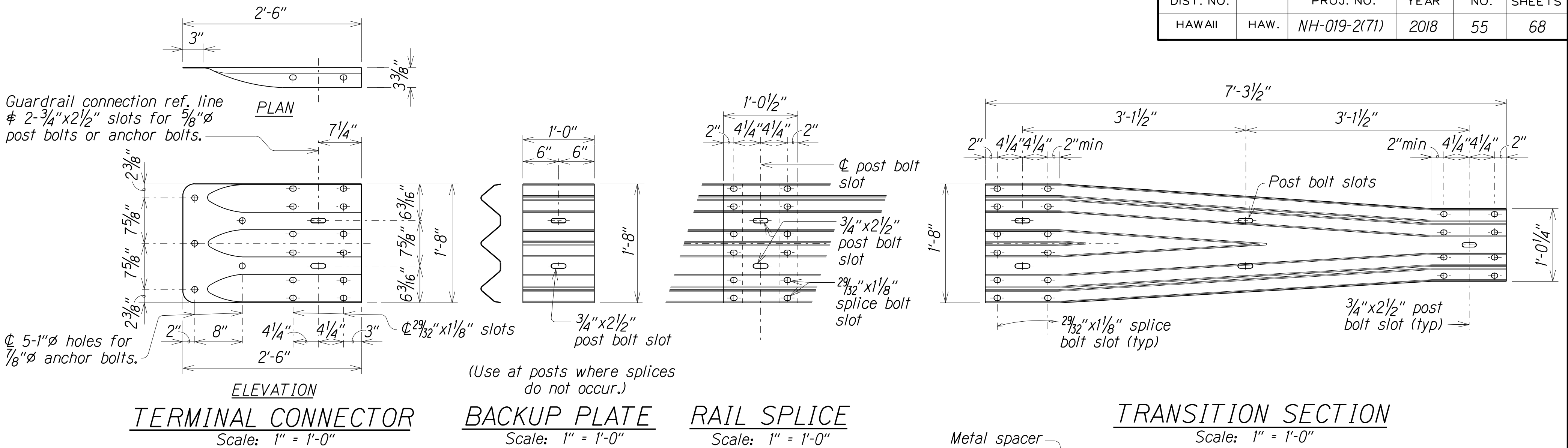
TYPE "C" INTERMEDIATE RAIL UPGRADE DETAILS

TYPE "C" INTERMEDIATE RAIL UPGRADE DETAILS
KALOPA, KAUMOALI and WAIPUNAHINA BRIDGES

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	APR 2018
	DESIGNED BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TYPE "C" INTERMEDIATE RAIL
UPGRADE DETAILS**
HAWAII BELT ROAD GUARDRAIL AND
SHOULDER IMPROVEMENTS
Vicinity of Kalopa Bridge and Kaumoali Bridge to E. Paauilo Bridge
Federal-Aid Project No. NH-019-2(71)
Scale: As Noted Date: Nov., 2018

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(71)	2018	55	68



METAL GUARDRAIL TYPE 3 THRIE BEAM and APPURTENANCES DETAILS KALOPA, KAUMOALI and WAIPUNAHINA BRIDGES

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

METAL GUARDRAIL TYPE 3 THRIE BEAM

and APPURTENANCES DETAILS

HAWAII BELT ROAD GUARDRAIL AND

SHOULDER IMPROVEMENTS

Vicinity of Kalopa Bridge and Kaumoali Bridge to E. Paauilo Bridge

Federal-Aid Proj. No. NH-019-2(71)

Scale: As Noted

Date: Nov., 2018

SHEET No. Q14 OF 27 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	APR 2011
DESIGNED BY	CHECKED BY	
SKETCHED BY		

cb4/ds/usr2/ksg/jlv/kalopa/