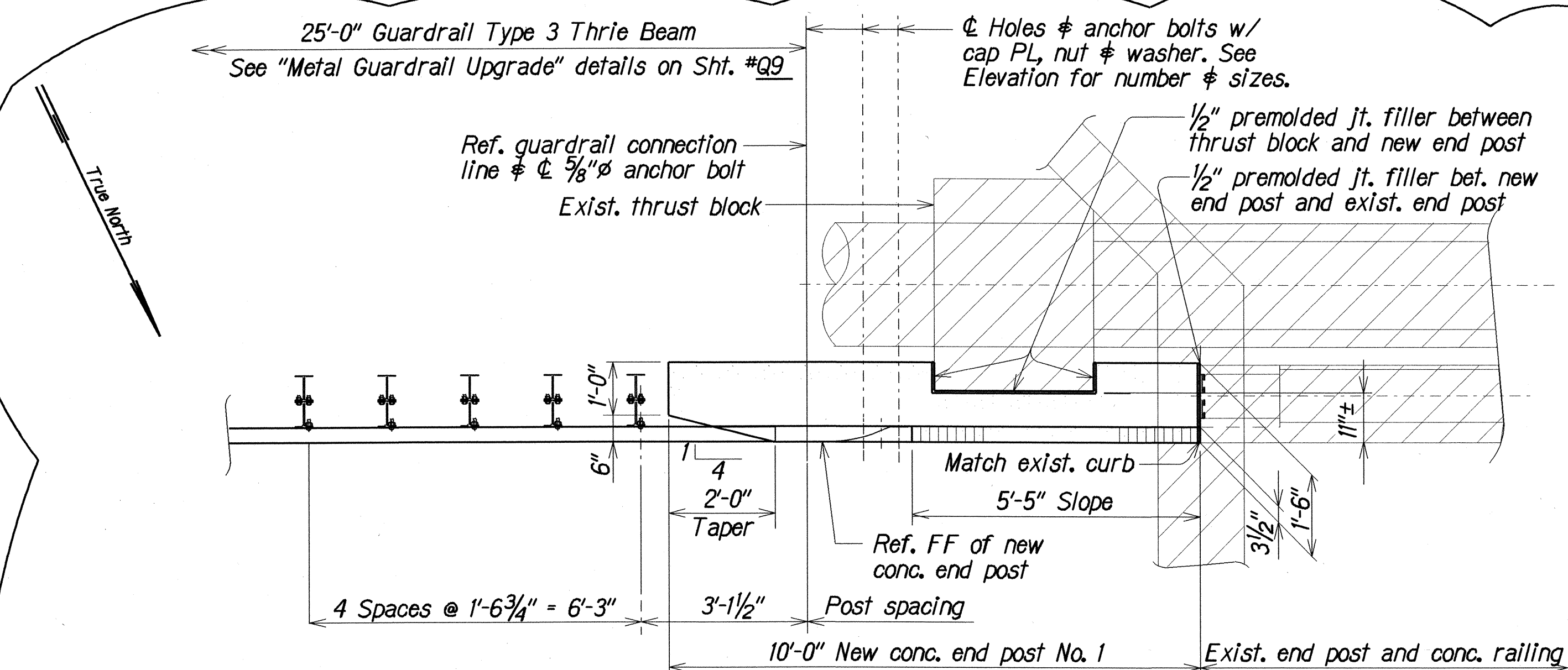
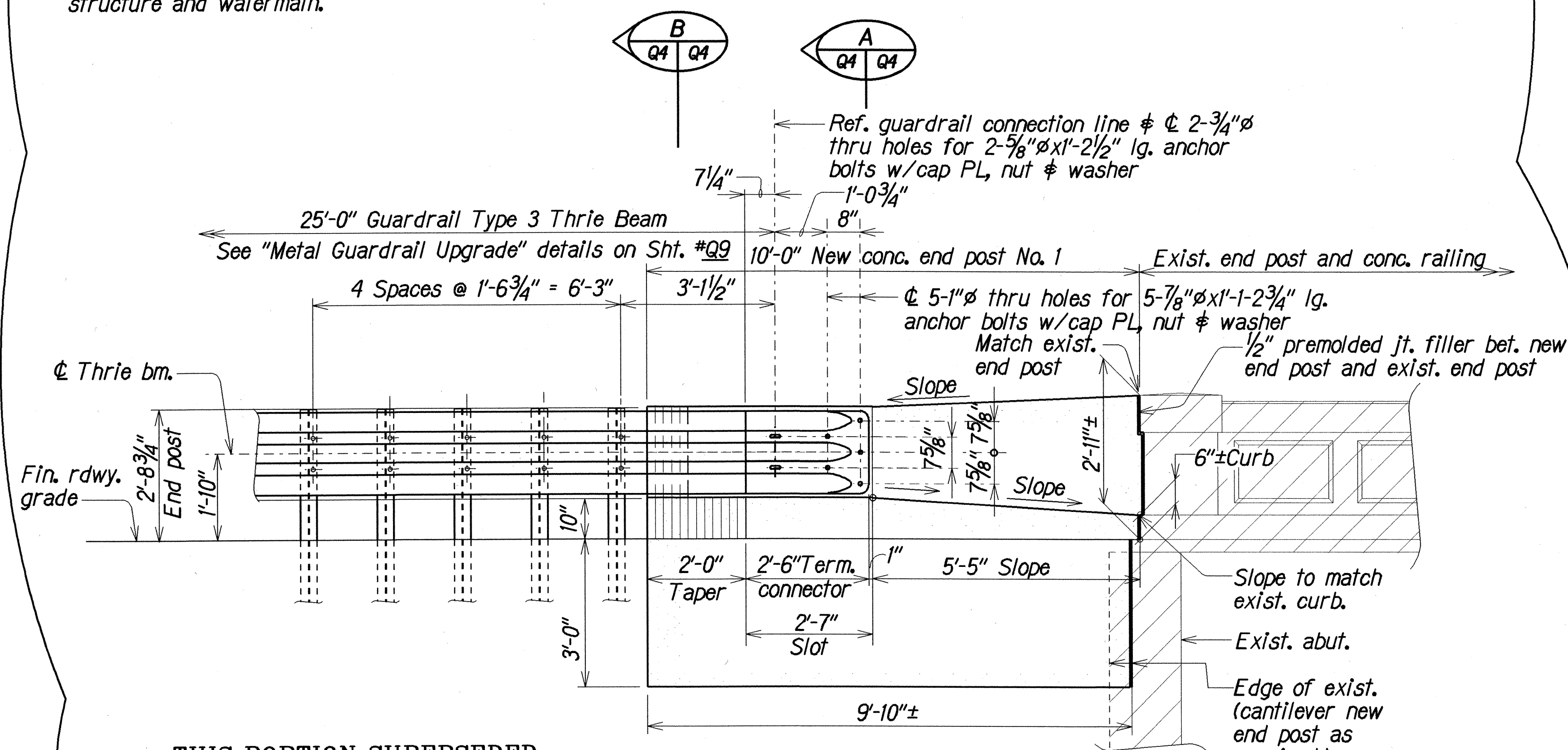


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83D-01-96M	1996	30	50



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

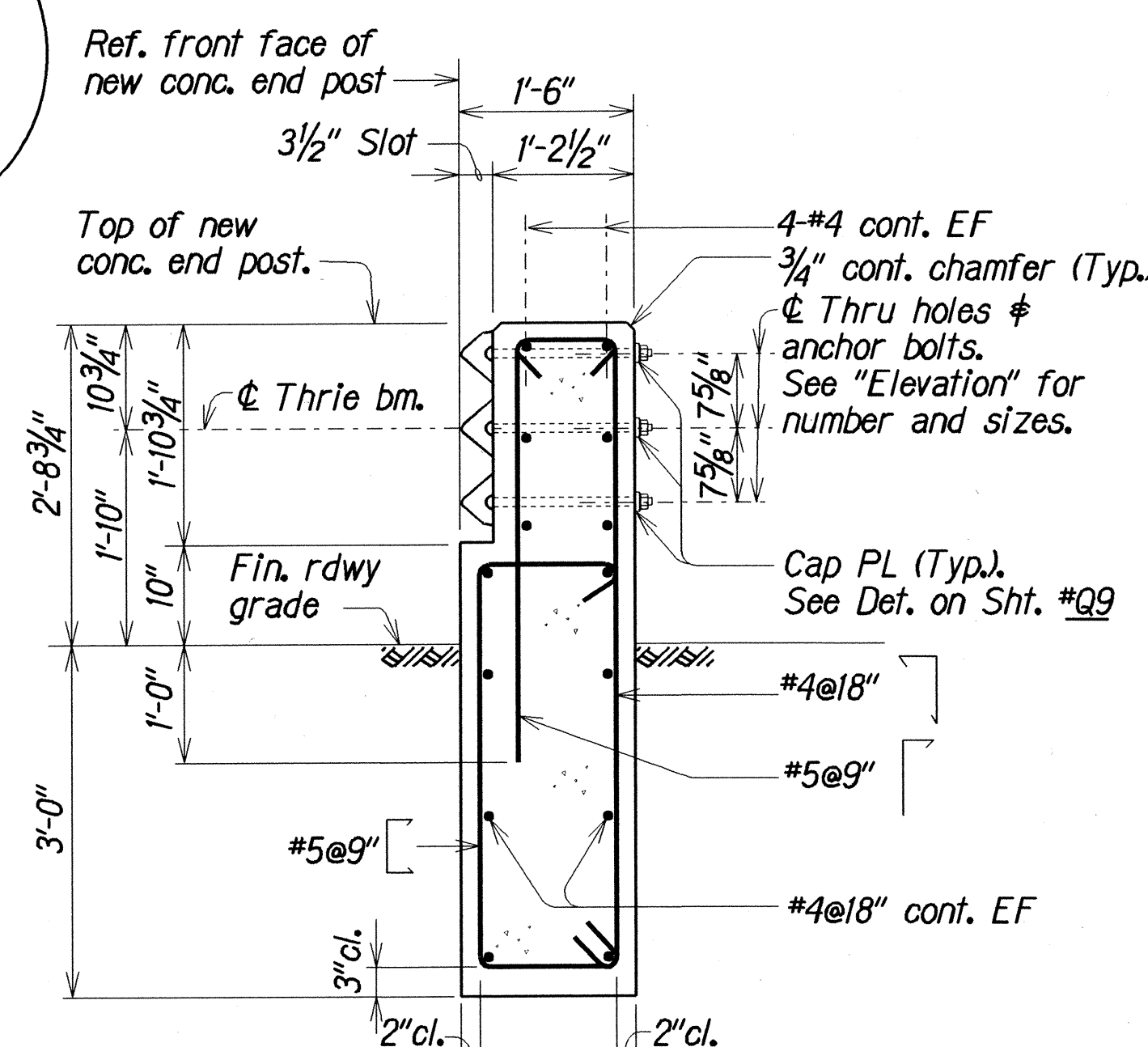
NOTE:
1. Hatched area denote limits of existing concrete structure and watermain.



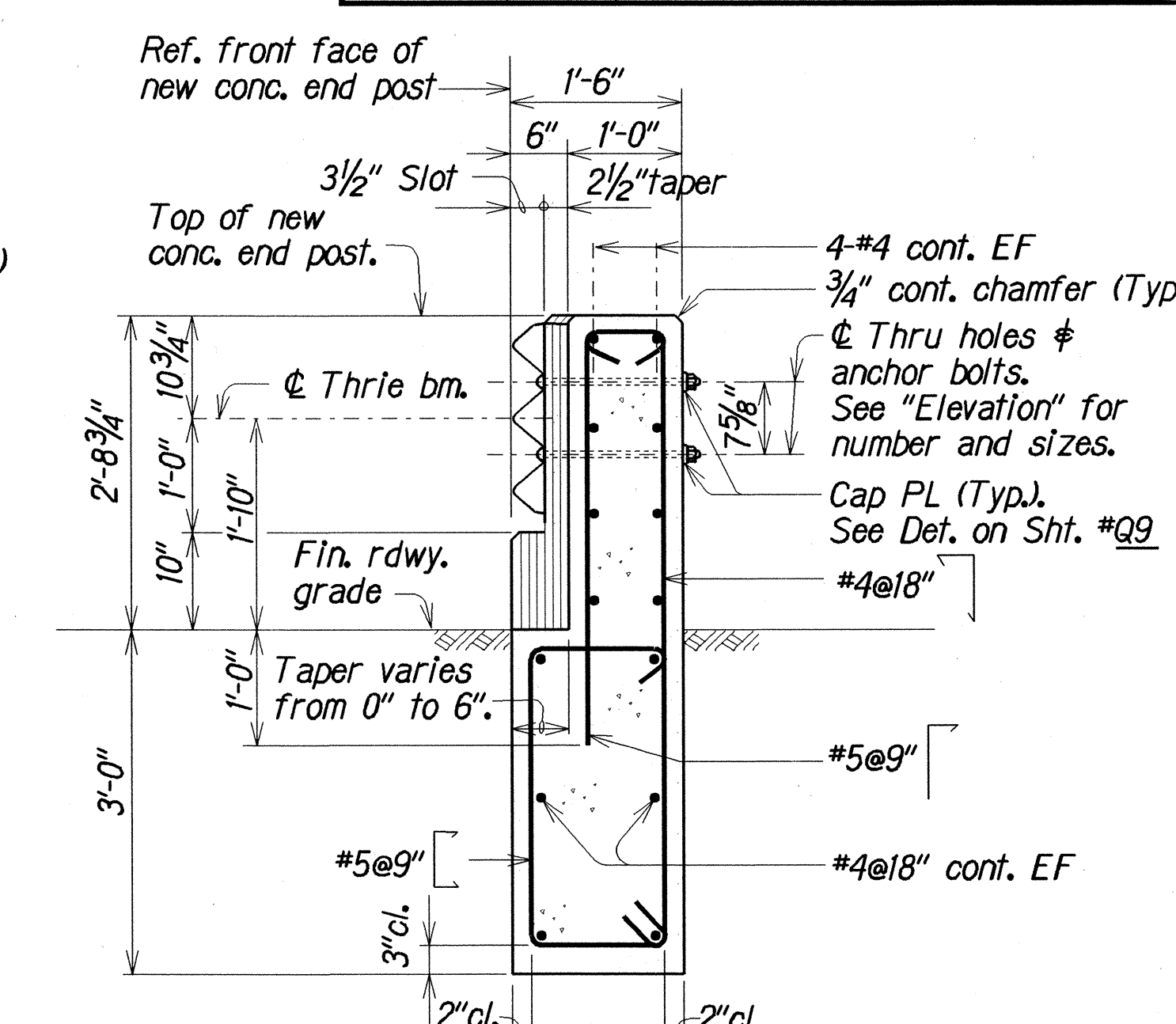
PART ELEVATION
Scale: 1/2"=1'-0"

THIS PORTION SUPERSEDED.
SEE SHEET 30S-1 FOR REVISIONS.

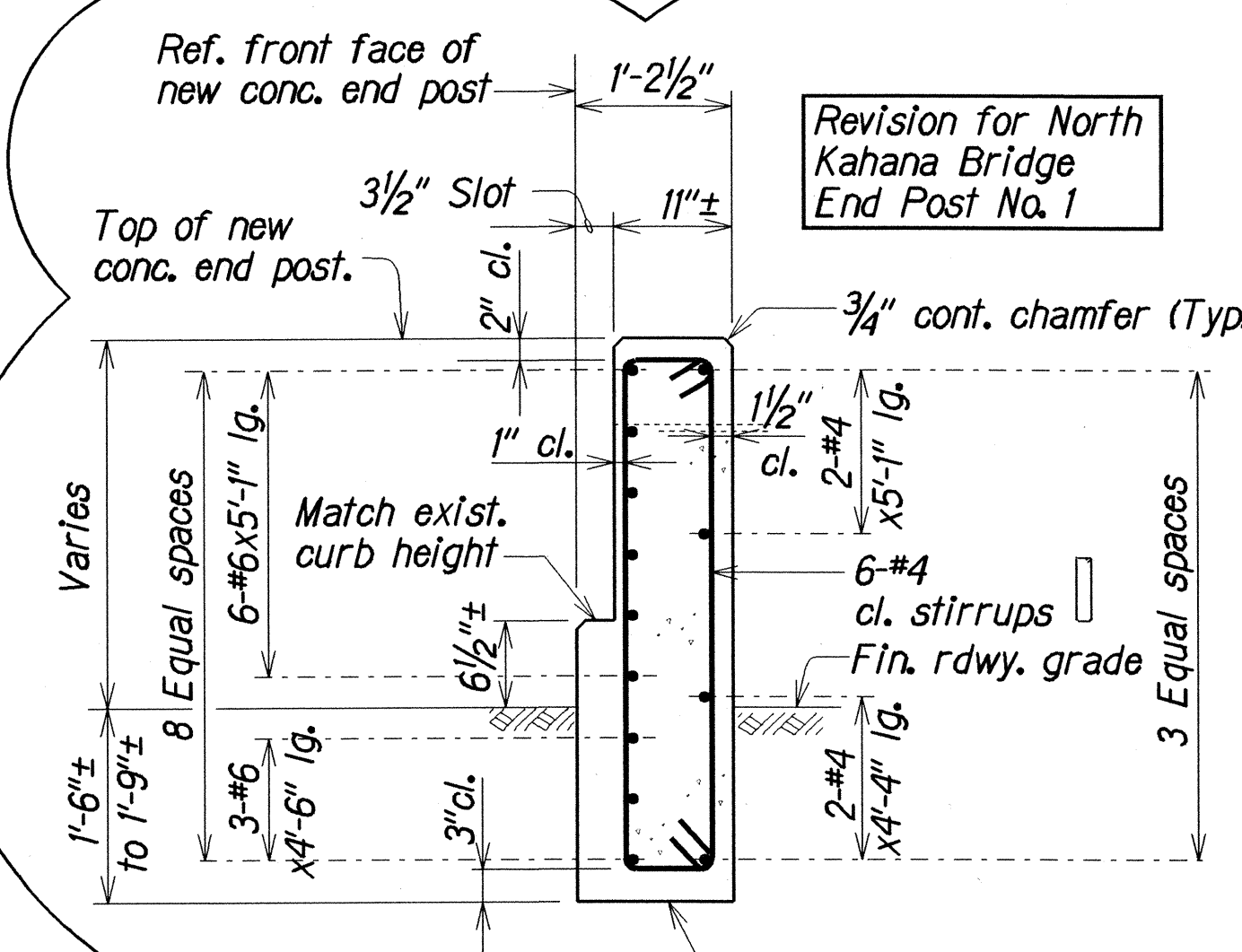
TYPE "C" UPGRADE AT NORTH KAHANA BRIDGE (END POST NO. 2) (END POST NO. 1 SIMILAR EXCEPT OPPOSITE HAND)



SECTION A
Scale: 3/4"=1'-0"

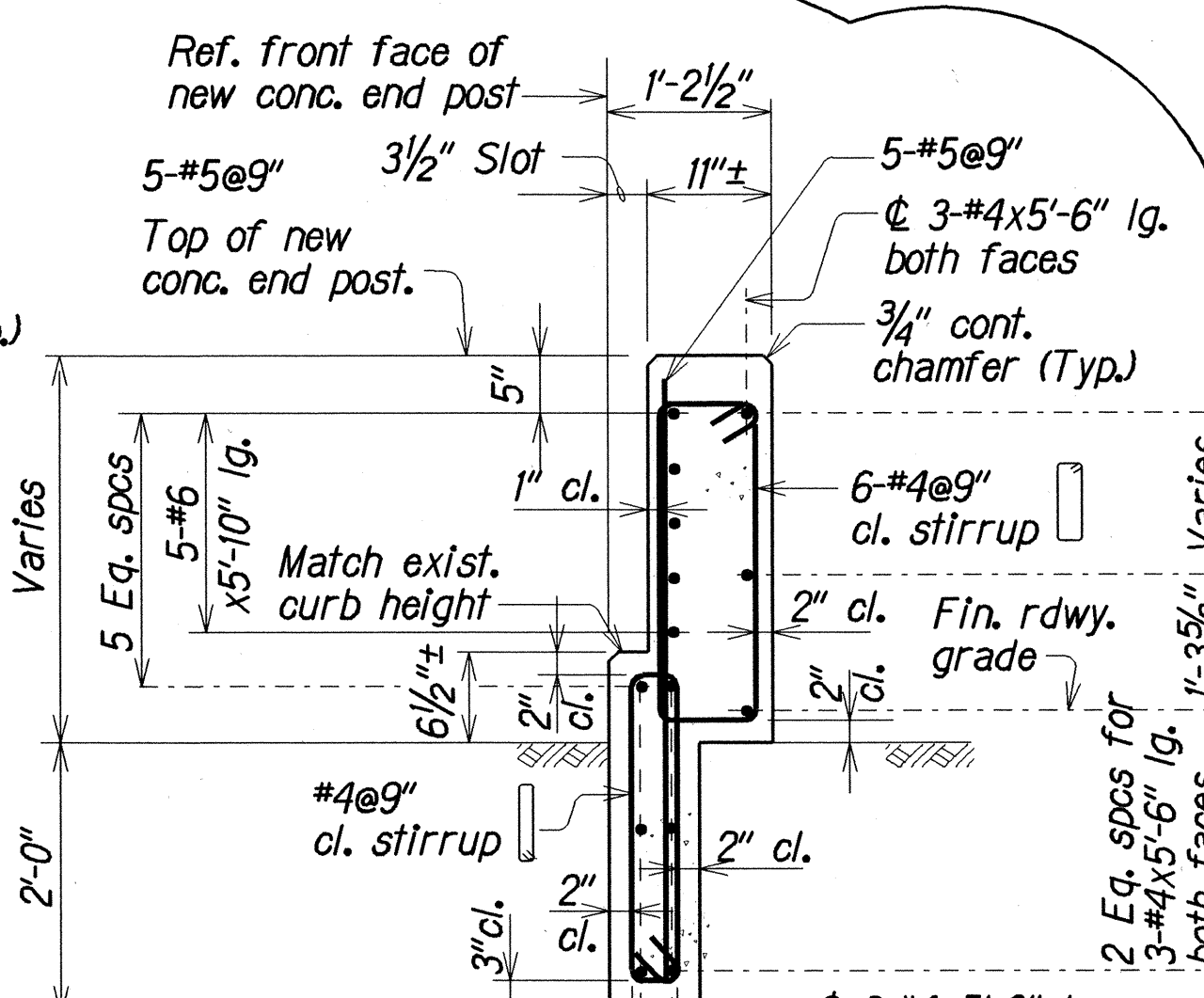


SECTION B
Scale: 3/4"=1'-0"



SECTION C
Scale: 3/4"=1'-0"

Provide 2 layers asphalt roofing paper ASTM D224, Type II between new conc. and exist. conc.
"AS BUILT" DETAIL ADDITIONS FOR CLARITY.



SECTION C
Scale: 3/4"=1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
NORTH KAHANA BRIDGE
TYPE "C" UPGRADE - END POST CONNECTION
KAMEHAMEHA HIGHWAY RESURFACING
Crouching Lion to Puhihi Street
Project No. 83D-01-96M

Scale: As Noted Date: May 1996

SHEET No. Q4 OF 9 SHEETS

"AS-BUILT"

30

ORIGINAL PLAN	DATE	10/1/96
DRAWN BY	LMH	
DESIGNED BY	JFU	
CHECKED BY	JFU	
NOTED BY	JFU	
QUANTITIES BY	JFU	
CHECKED BY	JFU	

db3/ust2/lhm/nkam/nkam/q41f.dgn

25'-0" Guardrail Type 3 Thrie Beam
See "Metal Guardrail Upgrade" details on Sht. #Q9

Ref. guardrail connection line ϕ $\frac{5}{8}$ " ϕ anchor bolt

$\frac{1}{2}$ " premolded jt. filler between thrust block and new end post

Exist. thrust block

$\frac{1}{2}$ " premolded jt. filler bet. new end post and exist. end post

ϕ Holes ϕ anchor bolts w/ cap PL, nut ϕ washer. See Elevation for number ϕ sizes.

True North

#4 bar, see Sect. $\frac{D}{Q4A \quad Q4}$

#6 bar, see Sect. $\frac{D}{Q4A \quad Q4}$

6-#4@9" cl. stirrups

10-#4" cl. stirrups

Match exist. curb

5-#4@9" cl. stirrups

5-#5@9"

4'-8" $\pm$

5'-5" Slope

4 Spaces @ 1'-6 $\frac{3}{4}$ " = 6'-3"

3'-1 $\frac{1}{2}$ " Post spacing

10'-0" New conc. end post No. 2

Exist. end post and conc. railing

1'-0" 6" 1' 4" 2'-0" Taper

Ref. FF of new conc. end post

#4 bar, see Sect. $\frac{D}{Q4A \quad Q4}$

1'-2 $\frac{1}{4}$ " 1'-4 $\frac{1}{2}$ " 4'-8" $\pm$ 5'-5" Slope

3 $\frac{1}{2}$ " 11" $\pm$ 1'-2 $\frac{1}{2}$ "

[illegible]

25'-0" Guardrail Type 3 Thrive Beam
See "Metal Guardrail Upgrade"
details on Sht. #Q9.

⌀ Holes ⌀ anchor bolts w/
cap PL, nut ⌀ washer. See
Elevation for number ⌀ sizes.

1/2" premolded jt. filler bet. new
end post and exist. end post

10 1/4" 6-#4@9"
cl. stirrups

Match exist.
curb

1'-2 1/4" 5-#4@9" cl.
stirrups

4'-0"±

5'-5" Slope

Post spacing 3'-1 1/2"

10'-0" New conc. end post No. 1

Ref. guardrail connection
line ⌀ 5/8" ⌀ anchor bolt

1/2" premolded jt. filler between
thrust block and new end post

Exist. thrust block

#4 bar, see Sect. C
Q4A Q4

#6 bar, see Sect. C
Q4A Q4

1'-2 1/2" 3 1/2" 1 1/2"

4'-0"±

5'-5" Slope

Post spacing 3'-1 1/2"

4 Spaces @ 1'-6 3/4" = 6'-3"

Ref. FF of new
conc. end post

True North

The diagram illustrates the connection between an existing concrete abutment and a new guardrail system. Key features include:

- Guardrail Type:** 25'-0" Guardrail Type 3 Thrie Beam.
- Connection Details:**
 - Ref. guardrail connection line ϕ & $2\frac{3}{4}" \phi$ thru holes for $2\frac{5}{8}" \phi \times 1\frac{1}{2}"$ lg. anchor bolts w/cap PL, nut & washer.
 - Match exist. end post.
 - Slope to match exist. curb.
 - Edge of exist. (cantilever new end post as required.)
 - $\frac{1}{2}$ " premolded jt. filler bet. new end post and exist. end post.
- Dimensions:**
 - 6"± Curb
 - 2'-11"±
 - 75'± 5"
 - 75'± 5"
 - 1'-6"
 - 5'-5" Slope
 - 1'-9"
 - 2'-6" Term. connector
 - 2'-7" Slot
 - 2'-0" Taper
 - 3'-0"
 - 1'-10"
 - 2'-8 3/4"
 - End post
 - Fin. rdwy. grade
 - 9'-10"±
- Labels:**
 - Exist. end post and conc. railing
 - 10'-0" New conc. end post No. 1
 - See "Metal Guardrail Upgrade" details on Sht. #Q9
 - 4 Spaces @ 1'-6 3/4" = 6'-3"
 - Thrie bm.

30 S-1

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DRAWN BY	LMA	FEB 2007
NOTE BOOK		
DESIGNED BY	JFU	FEB 2007
QUANTITIES BY	JFU	FEB 2007
CHECKED BY	DCO	FEB 2007
No.		