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S5	ELEVATION, SECTION & PAVEMENT RESTORATION DETAIL
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SYMBOLS AND ABBREVIATIONS

Detail or Section designation →

Sheet No. Section is cut or Detail Location

Sheet No. Detail is drawn ←

I.B.	Inbound
Irr.	Irrigation
Jt.	Joint
LC	Length of Curve
LF, Lin. Ft.	Linear Feet
Lg.	Long
Longit.	Longitudinal
L.S.	Lump Sum
Light Std.	Lighting Standard
Max.	Maximum
Min.	Minimum
MP	Mile Post
No., #	Number
N.T.S.	Not To Scale
O.B.	Outbound
o.c.	On Center
O.D.	Outside Dimension
o/s, O/S	Offset
P.C.	Point of Curvature
PL	Plate
R	Radius
Rdwy	Roadway
Ref.	Reference
Reinf.	Reinforcement
Req'd	Required
Sect.	Section
Shi.	Sheet
Specs.	Spaces
Spod.	Spaced
Spog.	Spacing
Sta.	Station
Std.	Standard
Str.	Straight
Struct.	Structural
Symm.	Symmetrical
T#B	Top and Bottom
Thk.	Thick, Thickness
T.O.F.	Top of Footing
TS	Tubular Steel
Typ.	Typical
Var.	Varies
Vert.	Vertical
w/	With

Abut.	Abutment
AB	Anchor Bolt
Alum.	Aluminum
Approx.	Approximate
ℒ	Baseline
Bal.	Balance
Beg.	Begin, Beginning
Blk.	Block
Bm.	Beam
Bof.	Bottom
Brg., Brgs.	Bearing, Bearings
℄	Center Line
Cl., Clr.	Clear
Col.	Column
Conc.	Concrete
Cont.	Continuous
CR	Corrosion Resistant
Def.	Detail
Dia., ø	Diameter
D.I.	Drain Inlet
Dim.	Dimension
Dwg., Dwgs.	Drawing, Drawings
EA, Ea., ea.	Each
E.F.	Each Face
E.W.	Each Way
Elec.	Electrical
Elev.	Elevation
Exist.	Existing
Exp., (E)	Expansion
F.F.	Front Face
Fin.	Finish
Ftg.	Footing
Ga.	Gage, Gauge
Galv.	Galvanized
G.D.I.	Grated Drain Inlet
Gr.	Grade
Horiz.	Horizontal
HS	High Strength
H.W.	Headwall
Hwy.	Highway

DESIGN SPECIFICATIONS:

MATERIALS:

- ### CONSTRUCTION METHODS:

- REFERENCE:

- GENERAL:

- | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII | HAW. | NH-H3-1(78) | 2002 | 6 | 19 |

ESTIMATED QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITIES
206.6010	Structure Excavation for Piers #2 and #4 (210 c.y.)	L.S.	L.S.
206.7210	Structure Backfill for Piers #2 and #4	C.Y.	78
503.1092	Piers #2 and #4, Pier and Footing Retrofit (19 c.y.)	L.S.	L.S.
606.3200	Guardrail Type 3 - Wbeam with Rubrail on Steel Post	L.F.	104
606.4160	Guardrail Type 4 - Concrete Guardrail	L.F.	43
606.5200	State Furnished Portable Concrete Barrier (Intermediate Panel)	EA.	14
609.2150	Concrete Gutter Restoration	L.F.	43
612.0200	Grouted Rubble Slope Protection	C.Y.	104
621.7100	Construction Sign with Two Posts	EA.	4

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612.0200	Grouted Rubble Slope Protection	C.Y.	104
621.7100	Construction Sign with Two Posts	EA.	4

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
N. 3113051	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAILUA INTERCHANGE
SEISMIC RETROFIT
INDEX, ESTIMATED QUANTITIES
STRUCTURAL NOTES AND ABBREVIATIONS
INTERSTATE ROUTE H-3
Fed. Aid Proj. No. NH-H3-(178)
Scale: As Noted Date: Oct. 1991

SHEET No. 51 OF 10 SHEETS

A line with an arrow pointing towards the top right, labeled "True North".

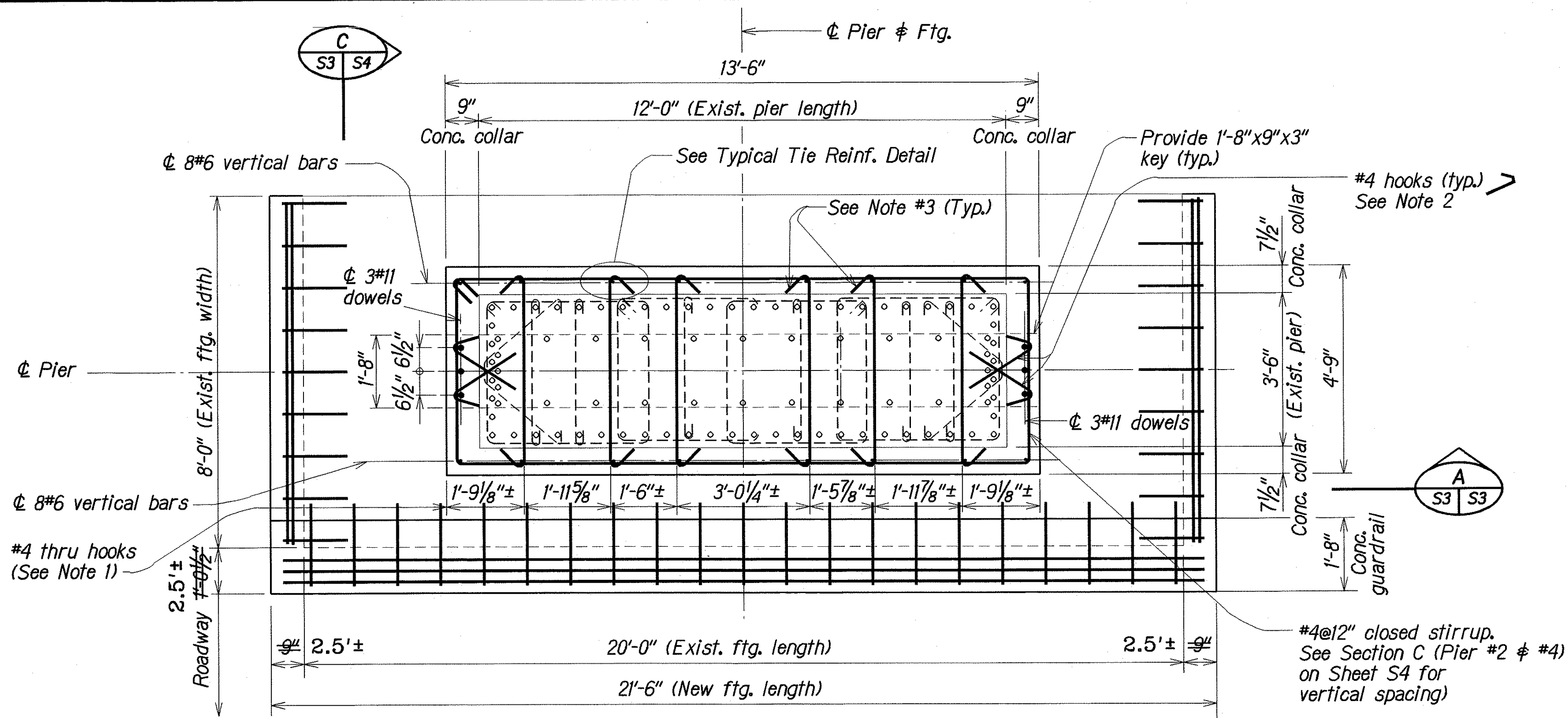


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAILUA INTERCHANGE
SEISMIC RETROFIT
LAYOUT PLAN
INTERSTATE ROUTE H-3
Fed. Aid Project No. NH-H3-1(K78)

Scale: As Noted Date: Oct. 2001

SHEET No. 52 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H3-1(78)	2002	8	19

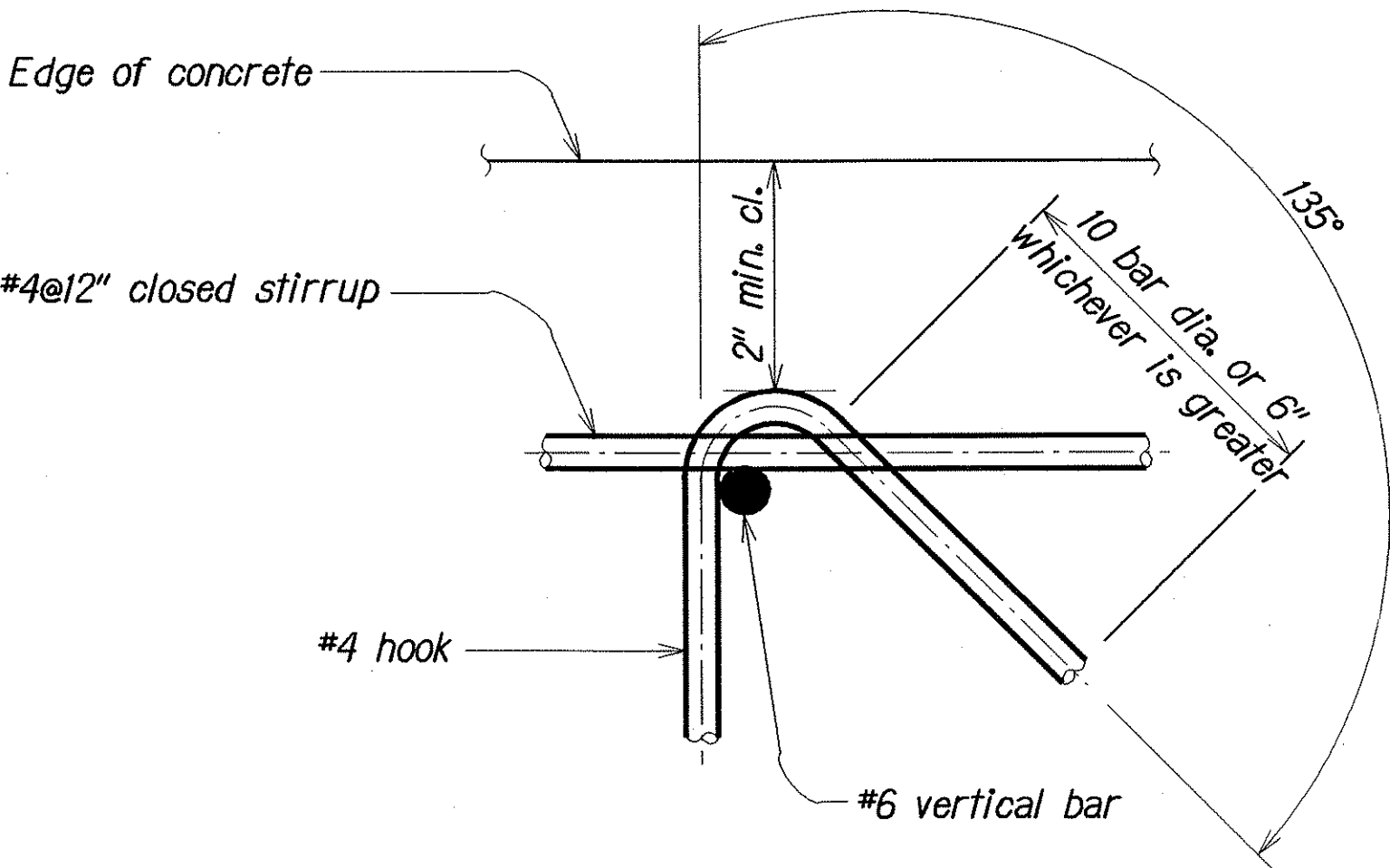


PLAN - PIER #2 & #4

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

NOTE:
See Sht. C.C.O. 8 S-1 for more ftg. extension information.

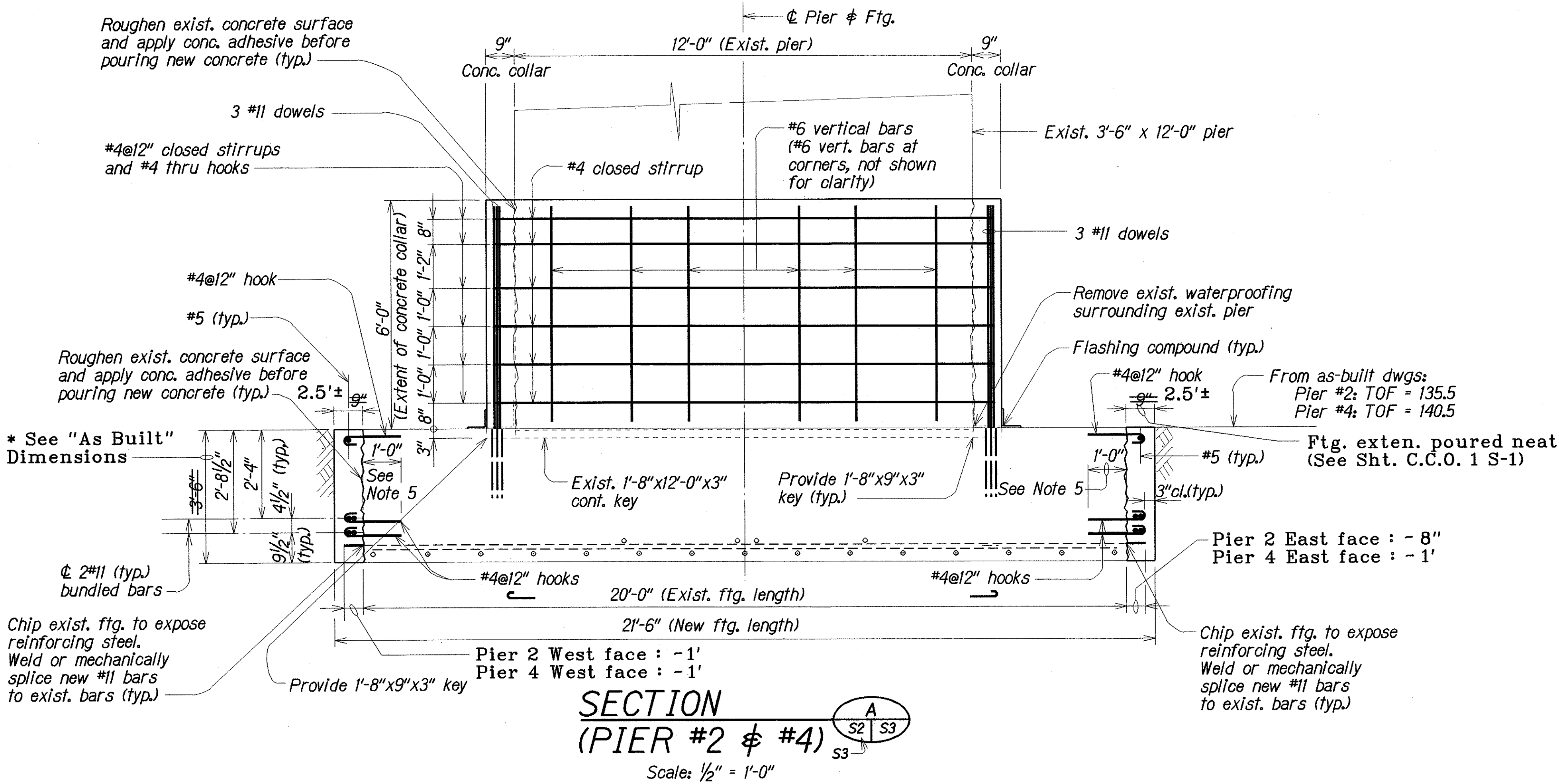
- NOTES:
- To install #4 thru hooks, first chip exist. concrete to expose the outside face of the two exist. adjacent #11 vertical bars. Drill 5/8" thru hole. See Section C (Pier No. 2 & 4) on Sheet S4. One end of hook shall have a shop bent 135° bend. Secure the #4 hook in the thru hole with epoxy adhesive. After sufficient time has elapsed (per manufacturer's recommendations), field bend the other 135° hook. See Section C (Pier #2 & #4) on Sheet S4 for vertical spacing.
 - To install #4 hook, first chip exist. concrete to expose the outside face of the exist. adjacent reinforcing. Drill 5/8" x 1'-0" deep hole for #4 hook. Secure #4 hook with epoxy adhesive.
 - At locations where the 135° hook is close to the exist. pier, chip exist. concrete 2"± to expose the outside face of the exist. reinforcing. Length of removed concrete shall be 6" min.
 - Apply concrete adhesive to all roughened surfaces prior to pouring new concrete.
 - Drill 5/8" x 1'-0" deep hole for #4 hook. Secure #4 hook with epoxy adhesive.
 - Unless otherwise shown, all work shown on this sheet shall be paid for under Item No. 503.1092. See Special Provisions, Section 503 - Concrete Structures for details.



TYPICAL TIE REINFORCEMENT DETAIL

Not To Scale

- * "As Built" Dimensions:
- Pier 2 West side : - 4' at South face to - 3.7' at North face
 - Pier 2 East side : - 4.6' at South face to - 4.5' at North face
 - Pier 4 West side : - 4' at South face to - 3.9' at North face
 - Pier 4 East side : - 4.9' at South face to - 3.7' at North face



SECTION
(PIER #2 & #4)

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

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

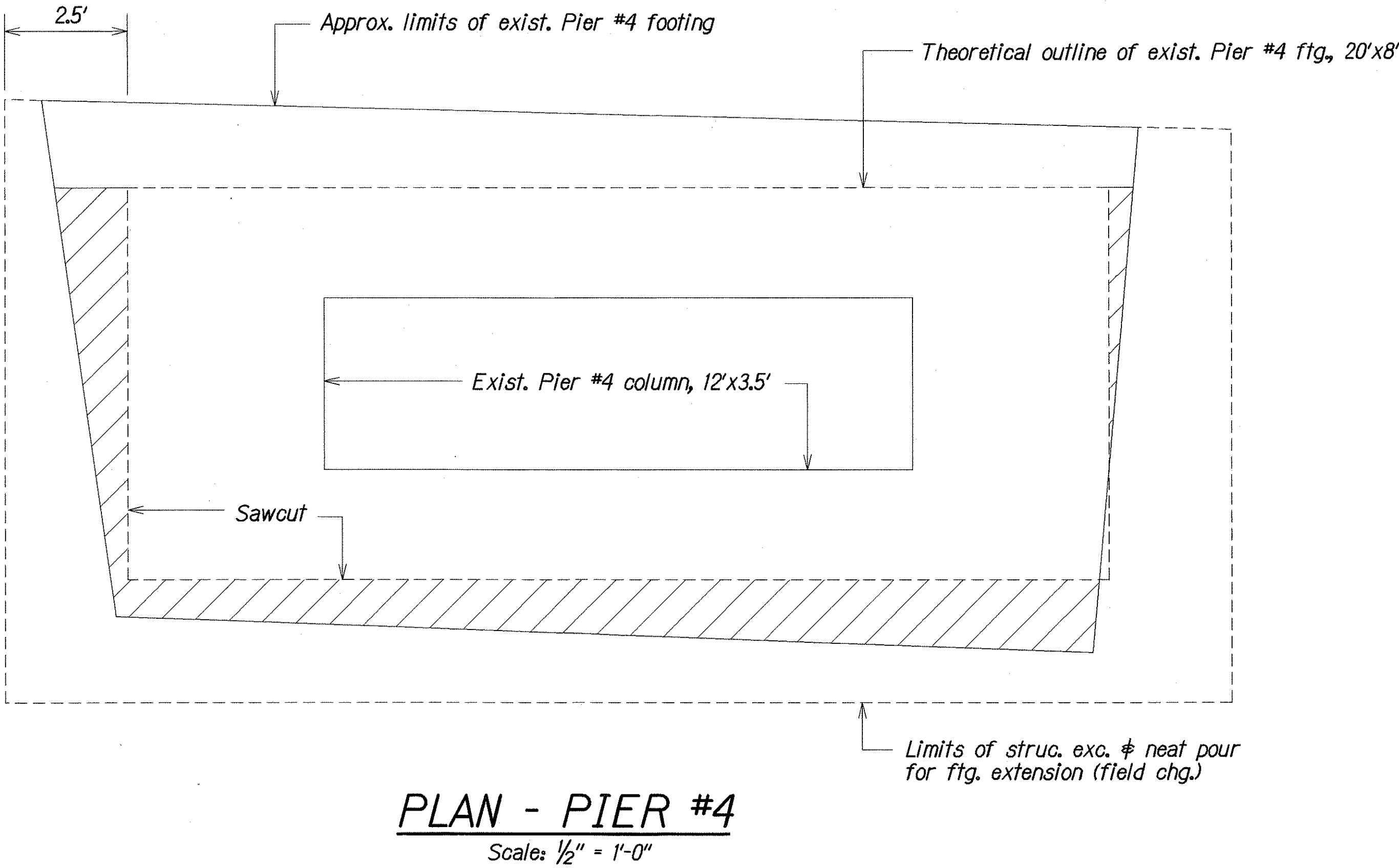
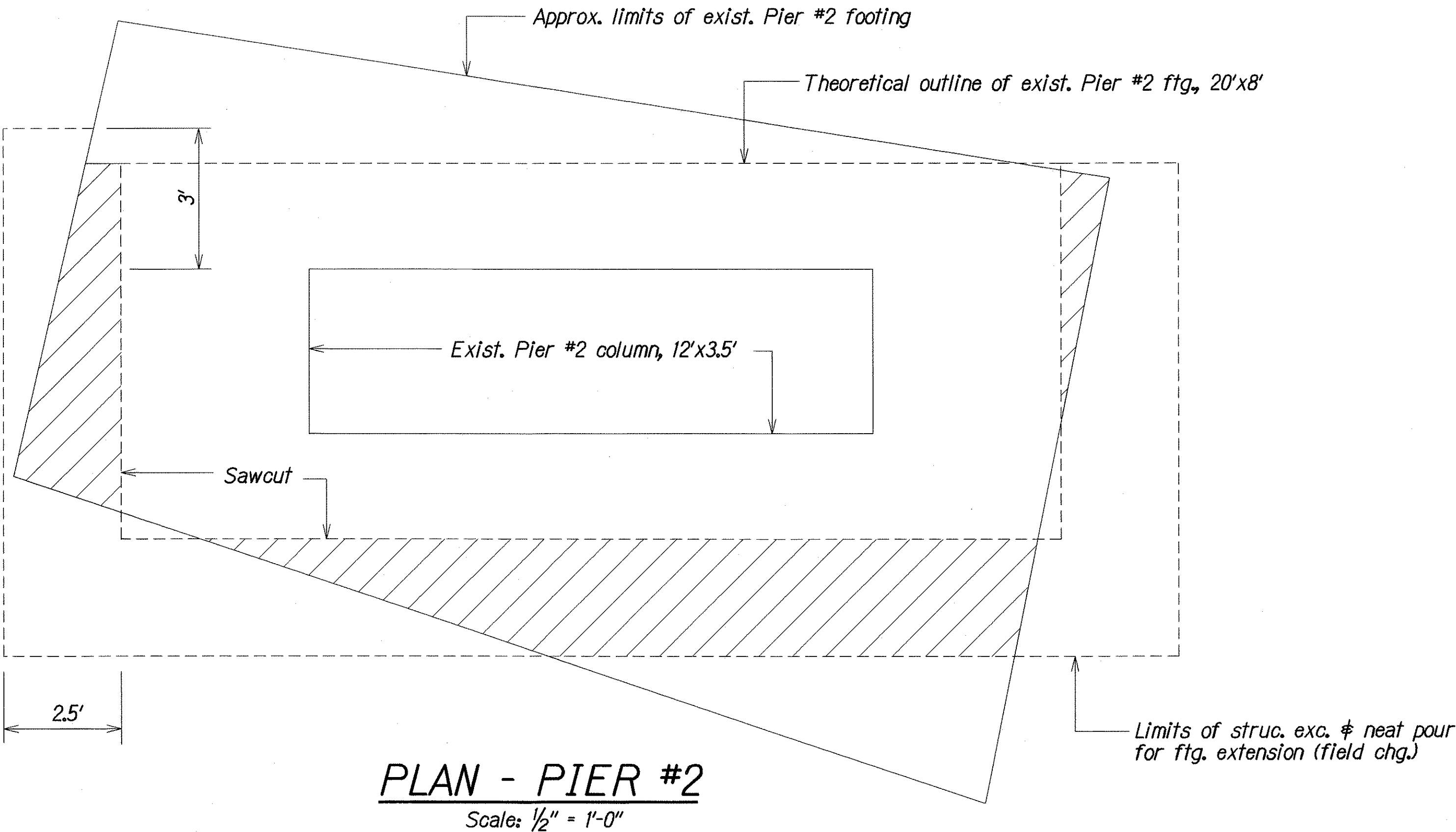
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAILUA INTERCHANGE
SEISMIC RETROFIT
PLAN, SECTION & TIE REINFORCEMENT
DETAIL FOR PIER NO. 2 & 4
INTERSTATE ROUTE H-3
Fed. Aid Project No. NH-H3-1(78)
Scale: As Noted Date: Oct. 2001
SHEET No. S3 OF 10 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H3-1(78)	2004	C.O. 8 S-1	19

NOTES:

1. Sawcut and remove conc. in hatched areas in accordance with Structural Notes on Plan Sht. 6



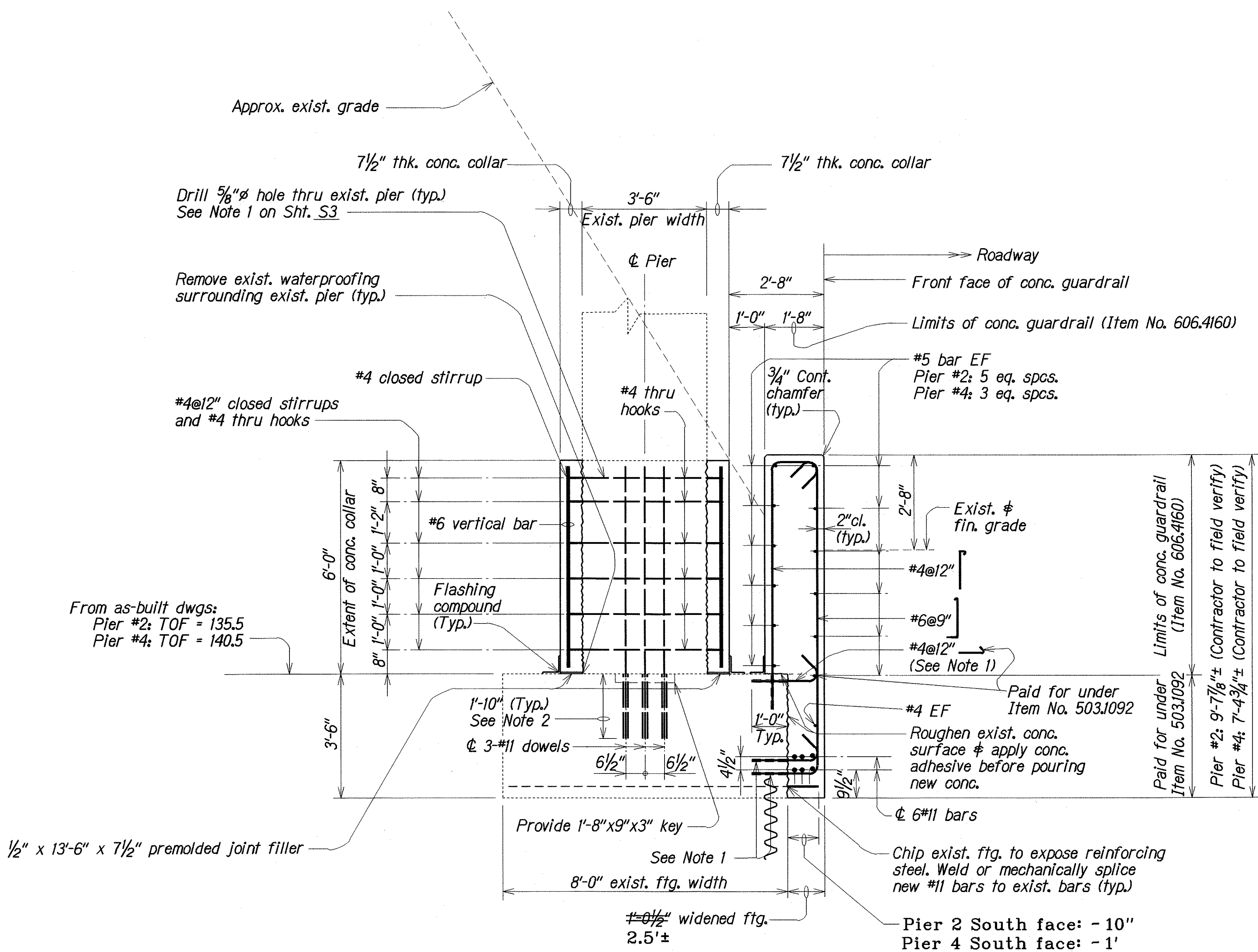
Note: This tracing was prepared during "As Built" posting.

3/25/04	Added supplementary sheet for change order C.C.O. No. 1 dated 11/24/02.
DATE	REVISIONS
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION KAILUA INTERCHANGE SEISMIC RETROFIT PLANS - PIER NOS. 2 & 4 INTERSTATE ROUTE H-3 Fed. Aid Project No. NH-H3-1(78)	
Scale: As Noted	Date: Mar. 2004
SHEET No. S3a OF 10 SHEETS	

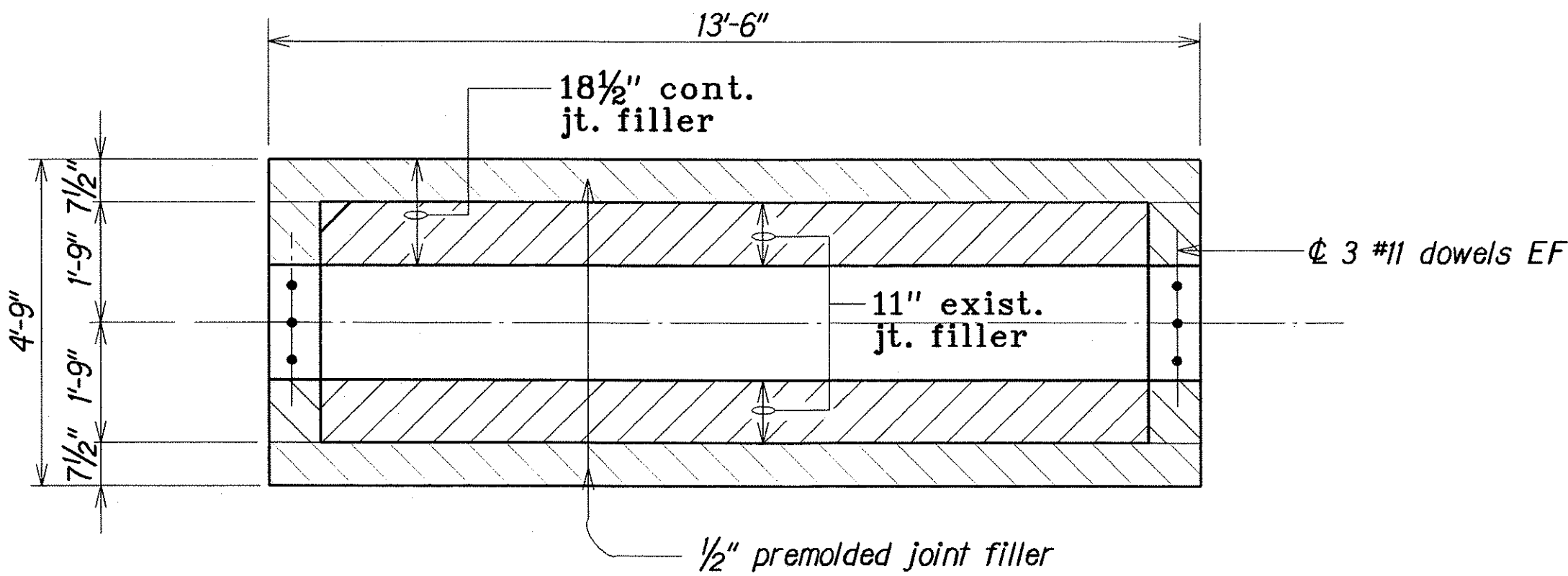
"AS-BUILT"

C.O. 8 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H3-1(78)	2002	9	19



- NOTES:
1. Drill 5/8" ø x 1'-0" deep hole for #4 hook. Secure #4 hook with epoxy adhesive.
 2. Drill 1 9/16" ø x 1'-10" deep hole for #11 rebar. Secure #11 rebar with epoxy adhesive.
 3. Unless otherwise shown, all work shown on this sheet shall be paid for under Item No. 503.1092. See Special Provisions, Section 503 - Concrete Structures for details.



PIER BASE HINGE DETAIL
Scale: 1/2" = 1'-0"

SECTION
(PIER #2 & #4)
Scale: 1/2" = 1'-0"

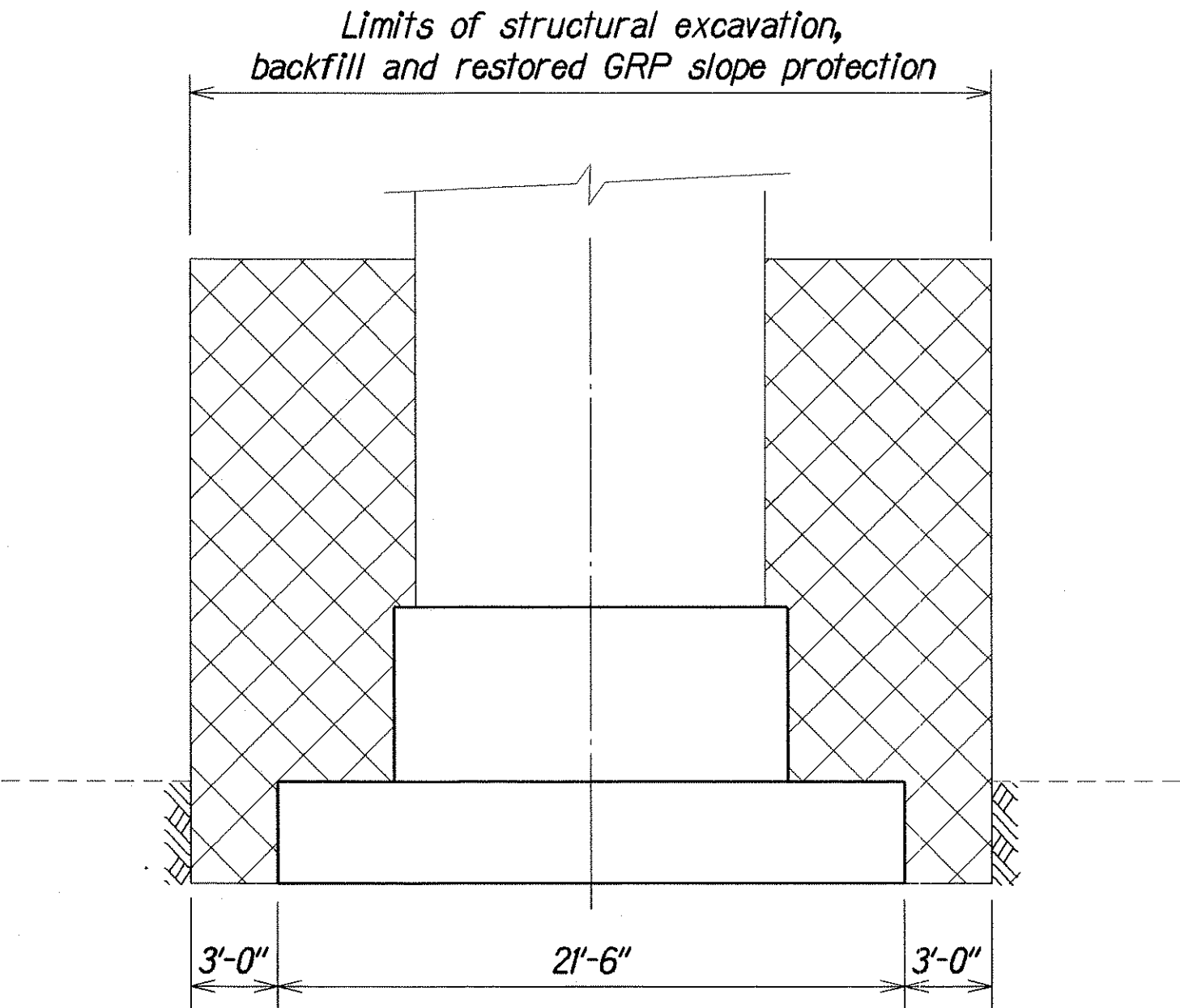
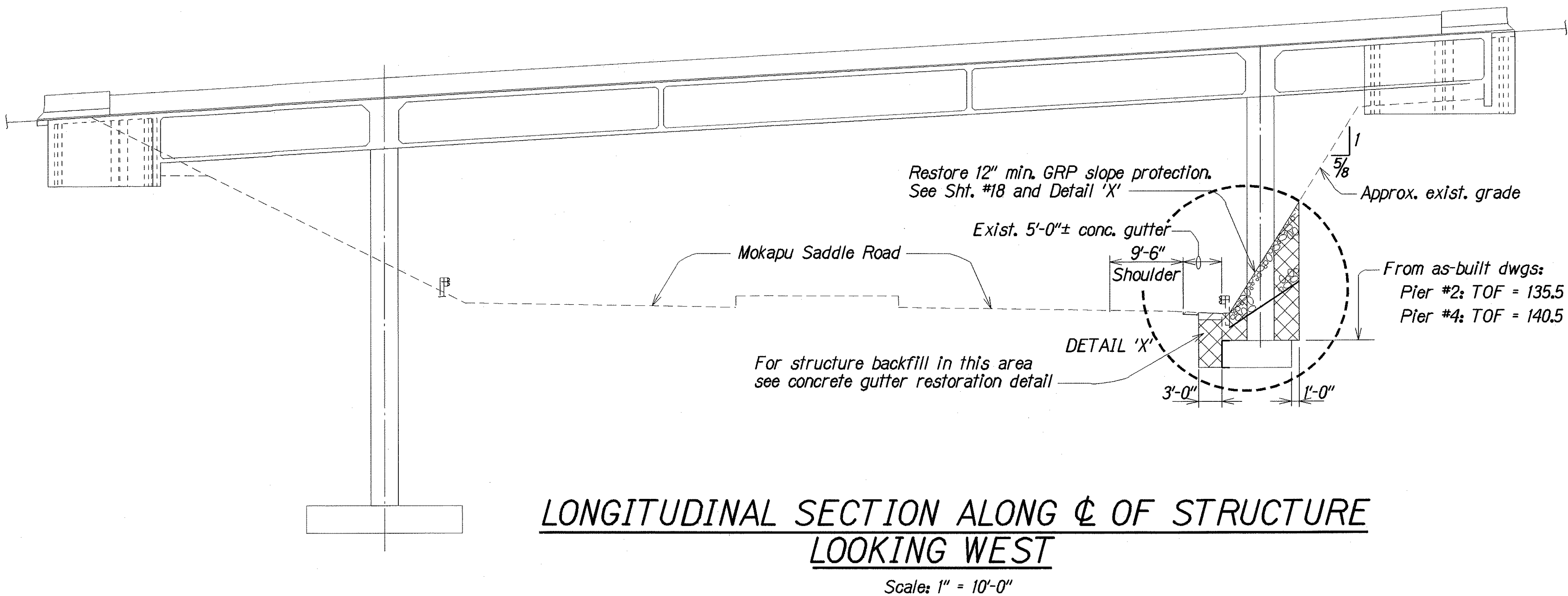
LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAILUA INTERCHANGE
SEISMIC RETROFIT
SECTION # PIER BASE HINGE DETAIL
FOR PIER NO. 2 & 4
INTERSTATE ROUTE H-3
Fed. Aid Project No. NH-H3-1(78)

Scale: As Noted
Date: Oct. 2001

ORIGINAL PLAN	DATE
DESIGNED BY	DATE
TRACED BY	DATE
NOTED BY	DATE
CHECKED BY	DATE

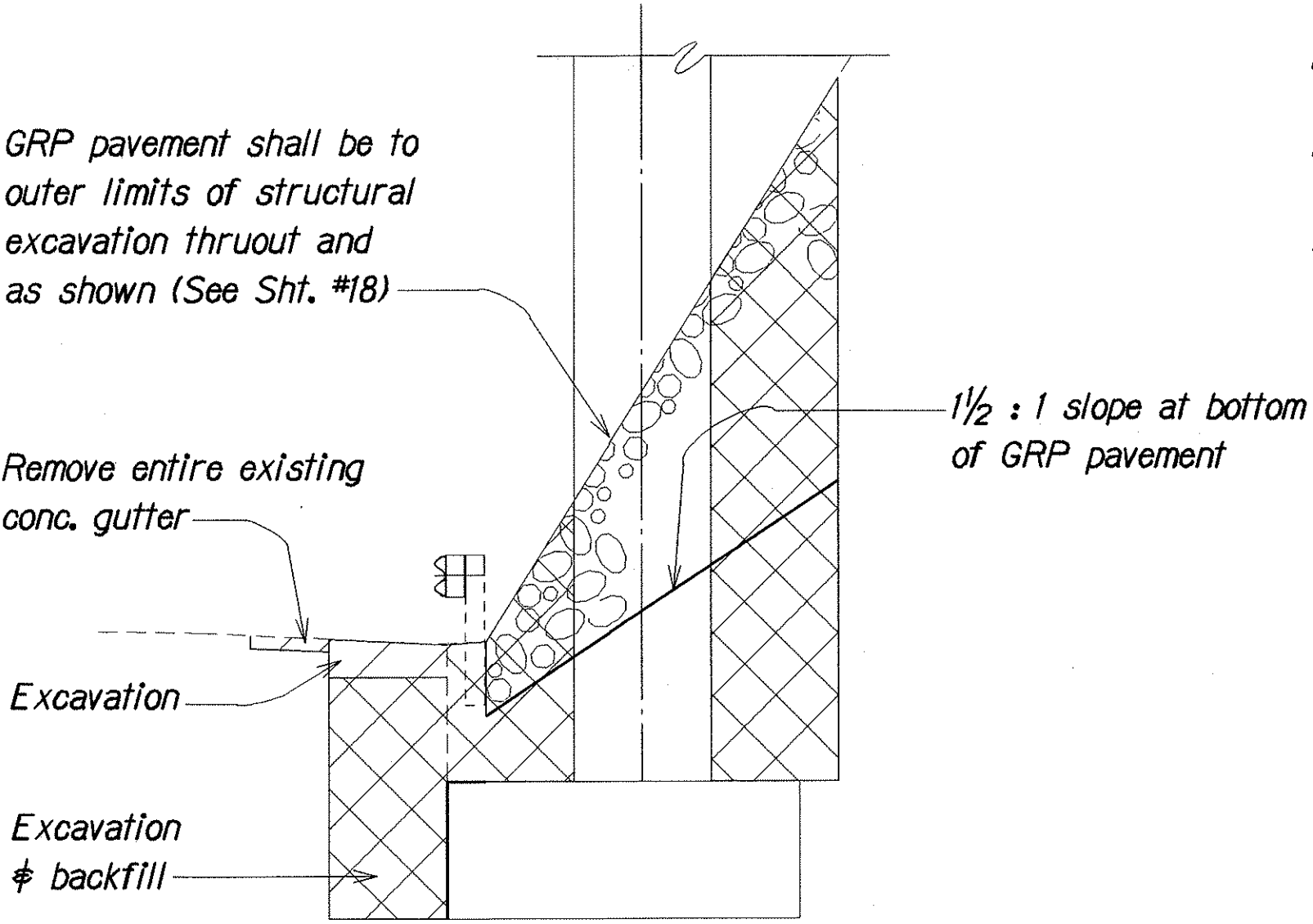
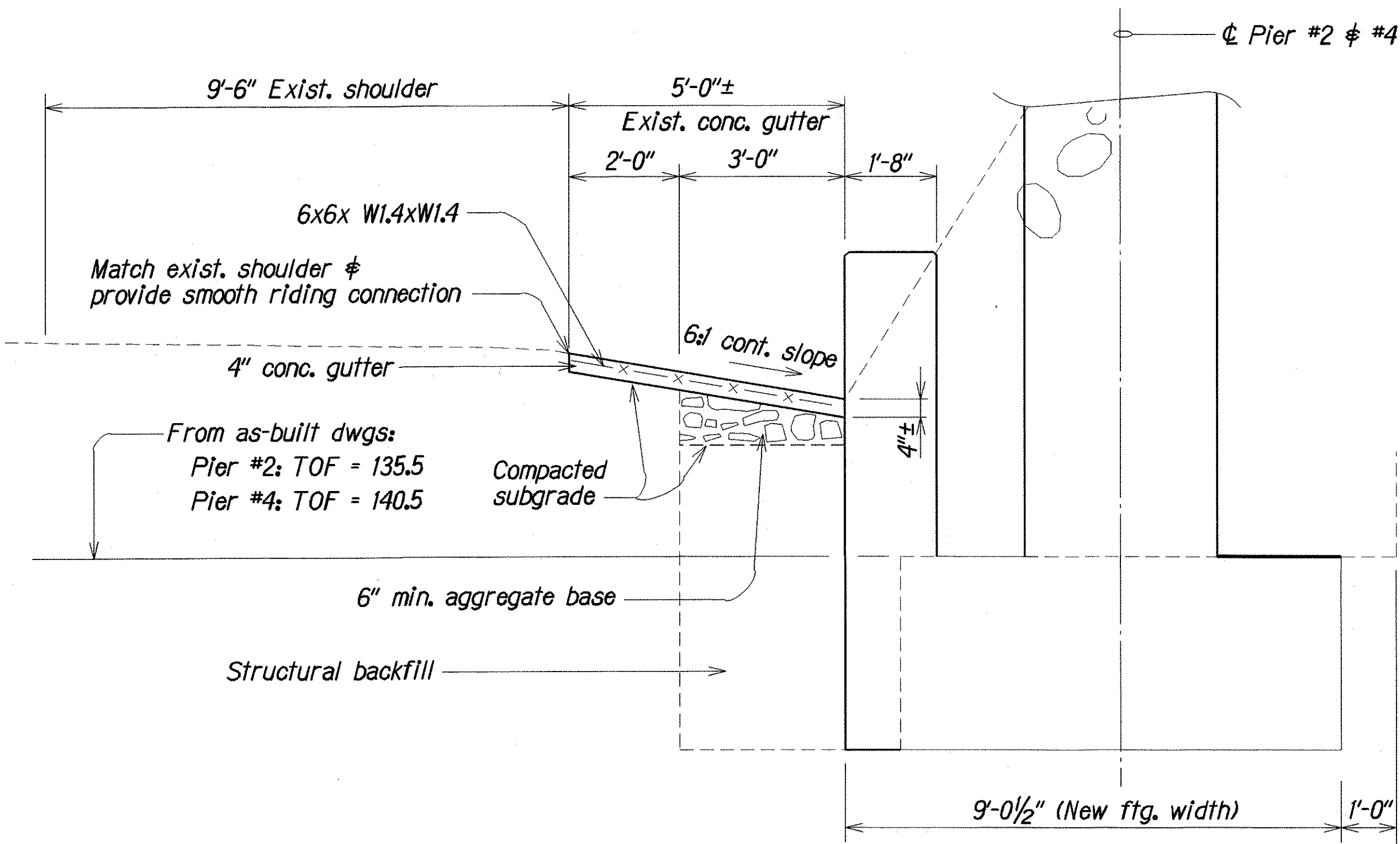
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H3-1(78)	2002	10	19



**TYPICAL EXCAVATION AND BACKFILL
PAY LIMITS (PIERS #2 & #4)**

NOTES:

1. Structure excavation is shown thus
2. Structure backfill is shown thus
3. The Contractor shall submit shop drawings to the Engineer for the Excavation and Shoring system for the slope adjacent to Pier #2 and #4. See Special Provisions, Section 206 for requirements.



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	OCT 2001
QUANTITIES BY	CHECKED BY	OCT 2001
		OCT 2001

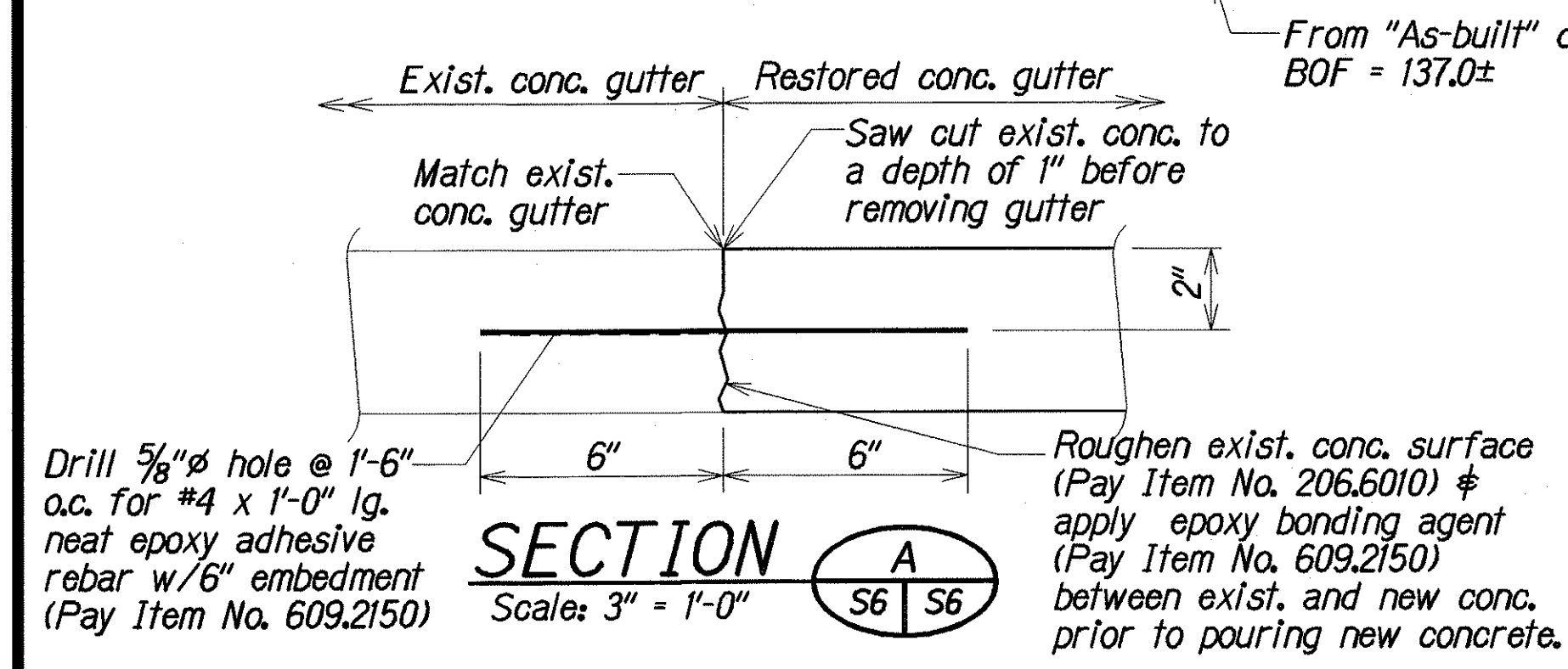
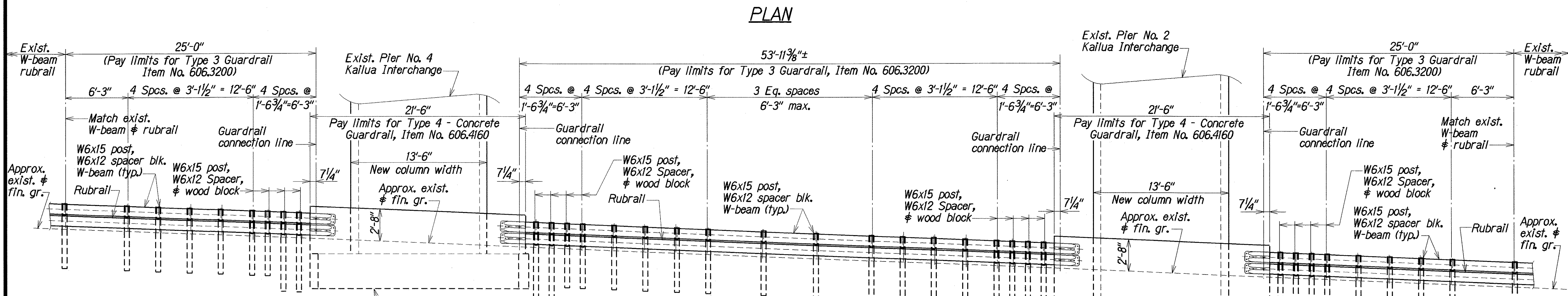
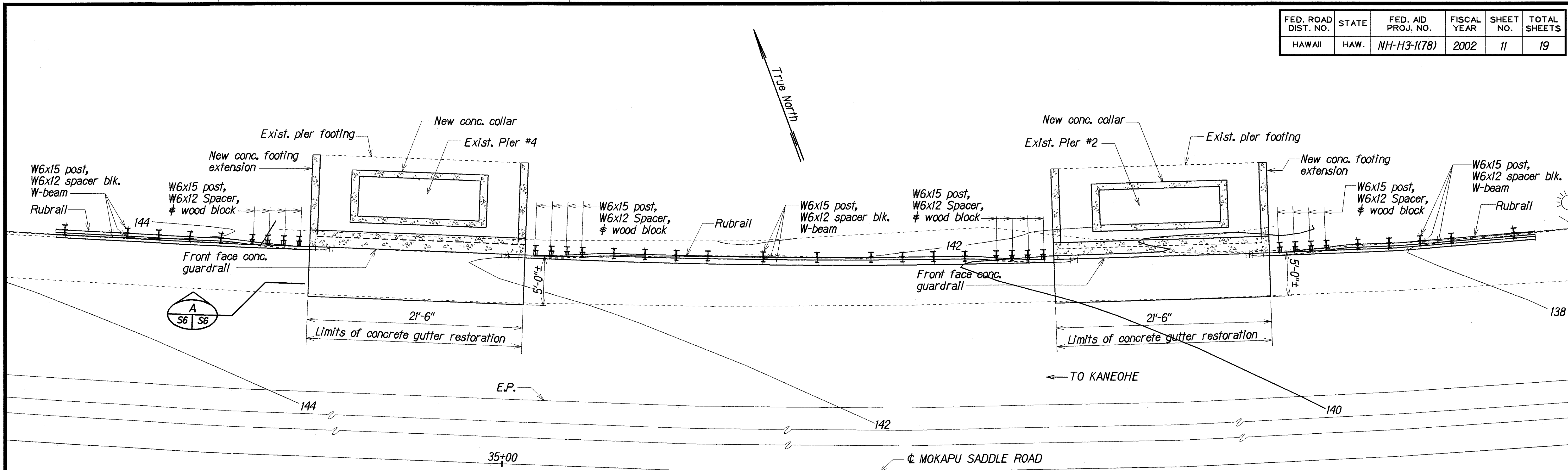
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAILUA INTERCHANGE
SEISMIC RETROFIT
ELEVATION SECTION &
PAVEMENT RESTORATION DETAIL
INTERSTATE ROUTE H-3
Fed. Aid Project No. NH-H3-1(78)

Scale: As Noted
Date: Oct, 2001

SHEET No. S5 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H3-1(78)	2002	11	19



TYPICAL DETAIL FOR EXIST. CONCRETE GUTTER TO RESTORED CONCRETE GUTTER

GUARDRAILS - TYPES 3 & 4
Scale: 1" = 5'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

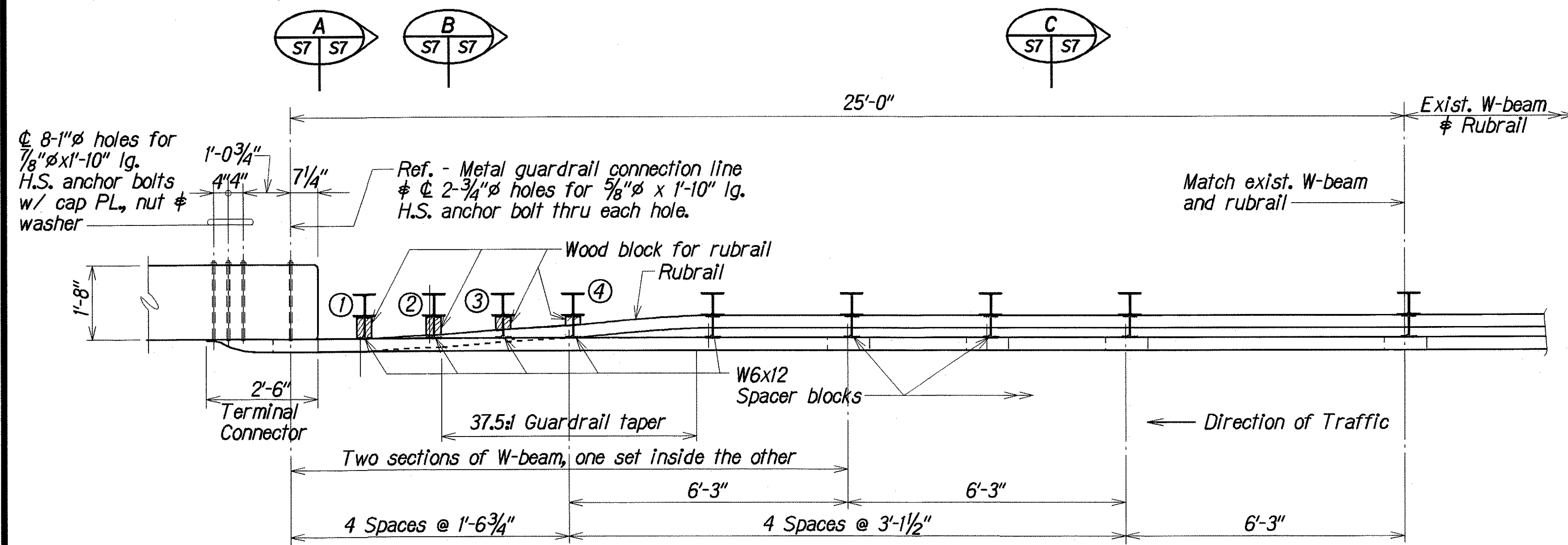
**KAILUA INTERCHANGE
SEISMIC RETROFIT**

GUARDRAILS - TYPES 3 & 4, PLAN & ELEVATION
INTERSTATE ROUTE H-3
Fed. Aid Project No. NH-H3-1(78)

Scale: As Noted Date: Oct. 2001

SHEET No. S6 OF 10 SHEETS

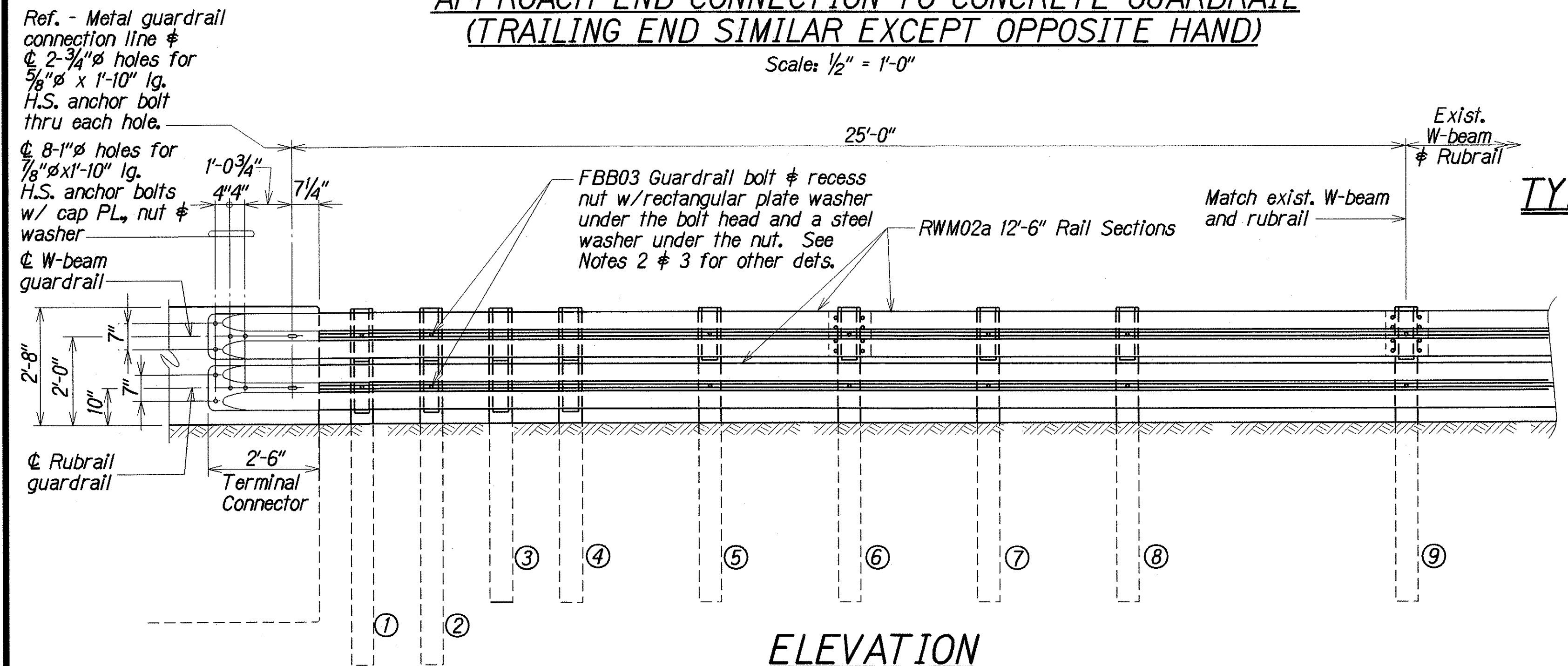
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H3-1(78)	2002	12	19



PLAN

APPROACH END CONNECTION TO CONCRETE GUARDRAIL (TRAILING END SIMILAR EXCEPT OPPOSITE HAND)

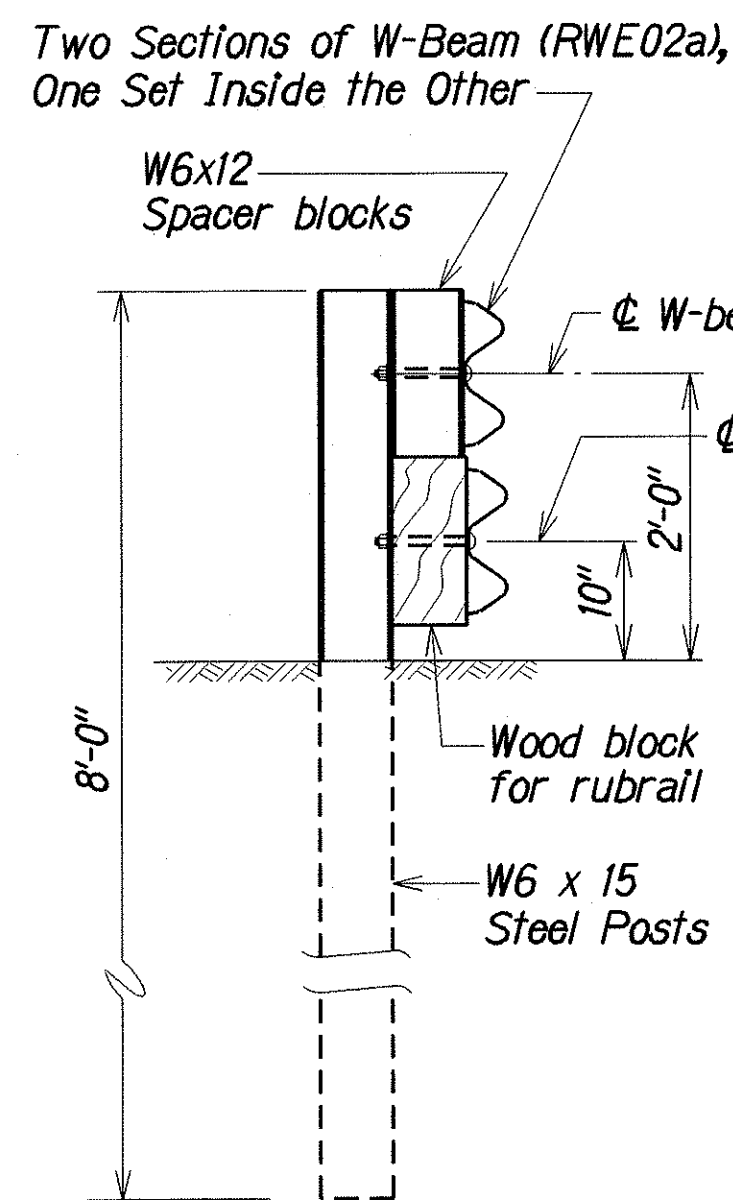
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ELEVATION

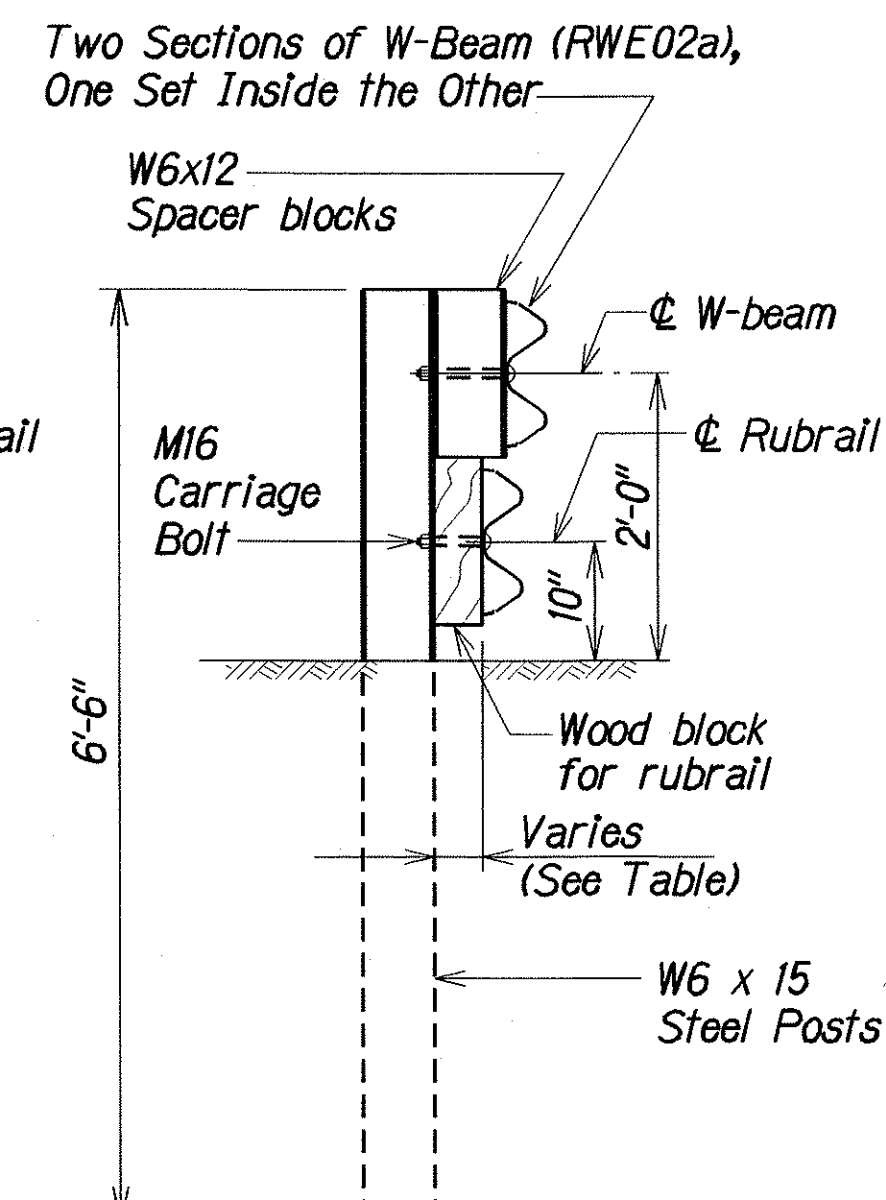
APPROACH END CONNECTION TO CONCRETE GUARDRAIL (TRAILING END SIMILAR EXCEPT OPPOSITE HAND)

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



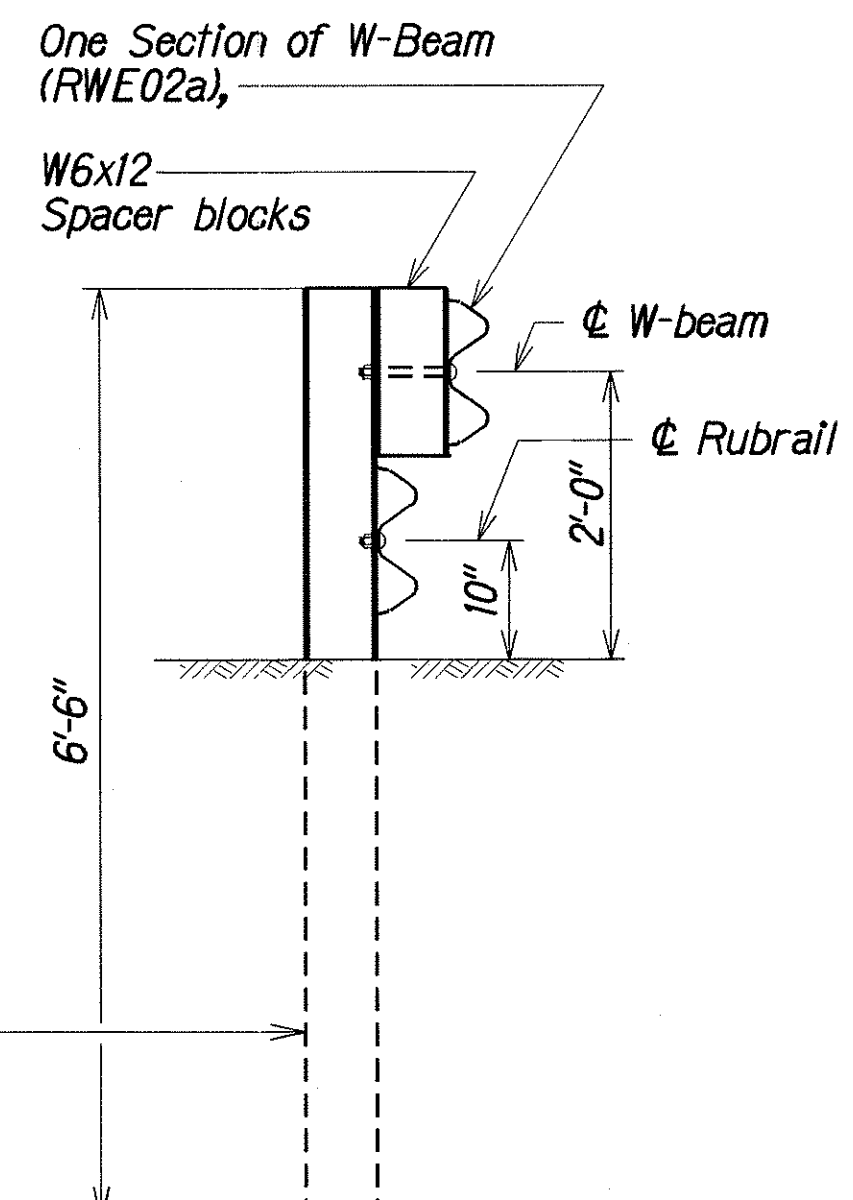
SECTION A

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



SECTION B

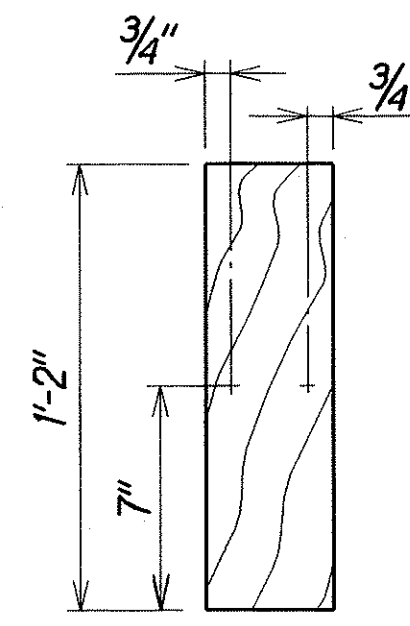
Scale: 3/4" = 1'-0"



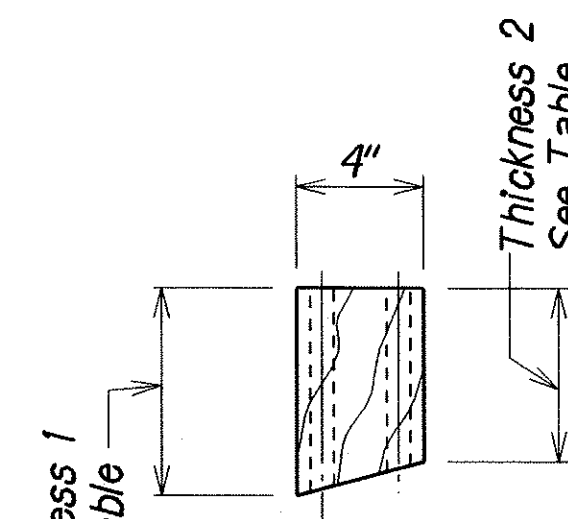
SECTION C

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

TYP. AT POSTS 1 & 2 TYP. AT POSTS 3 & 4



ELEVATION



PLAN

WOOD BLOCK FOR RUBRAIL

WOOD BLOCKS FOR RUBRAIL 14" X 4"		
POST	THICKNESS 1	THICKNESS 2
①	6 1/2"	6 1/4"
②	5 1/8"	4 7/8"
③	3 7/8"	3 5/8"
④	2 5/8"	2 3/8"

NOTES:

- Standard barrier hardware has been used to develop this guardrail transition. Designations provided related to standard elements detailed in "A Guide on Standardized Highway Barrier Rail Hardware", 1995, AASHTO-AGC-ARBTA Joint Committee.
- For approach end connection to concrete guardrail, do not bolt nested W-beam guardrail to posts and blocks on posts 1, 2, 3 and 5. Bolt blocks directly to posts.
- For trailing end connection to concrete guardrail, do not bolt W-beam and rubrail guardrail to posts and blocks on post 3 and 4. Bolt blocks directly to posts.
- Use of plate washer (FWROI) is optional.

- Offset drill wood blocks for rubrail to sit squarely on the post flange for posts 1 through 4. Secure blocks to posts 1 through 3 with M15 carriage bolts.
- Posts 1, 2, 3, 4 and 6 require an additional hole to attach to lower blocks and/or rubrail.
- At post 7 back-up plate bolted to block only.
- Posts 1 and 2 are W6x15 x 8'-0". Posts 3 thru 9 are W6x15 x 6'-6".
- Unless otherwise shown, all work on sheets 12 & 13 (including Terminal Connectors) shall be paid for under Item No. 606.3200 - Guardrail Type 3 - Wbeam with rubrail on steel post.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**KAILUA INTERCHANGE
SEISMIC RETROFIT
GUARDRAIL CONNECTION
PLAN, ELEVATION AND DETAILS**
INTERSTATE ROUTE H-3
Fed. Aid Project No. NH-H3-1(78)
Scale: As Noted Date: Oct. 2001

SHEET No. 57 OF 10 SHEETS

NOTES:

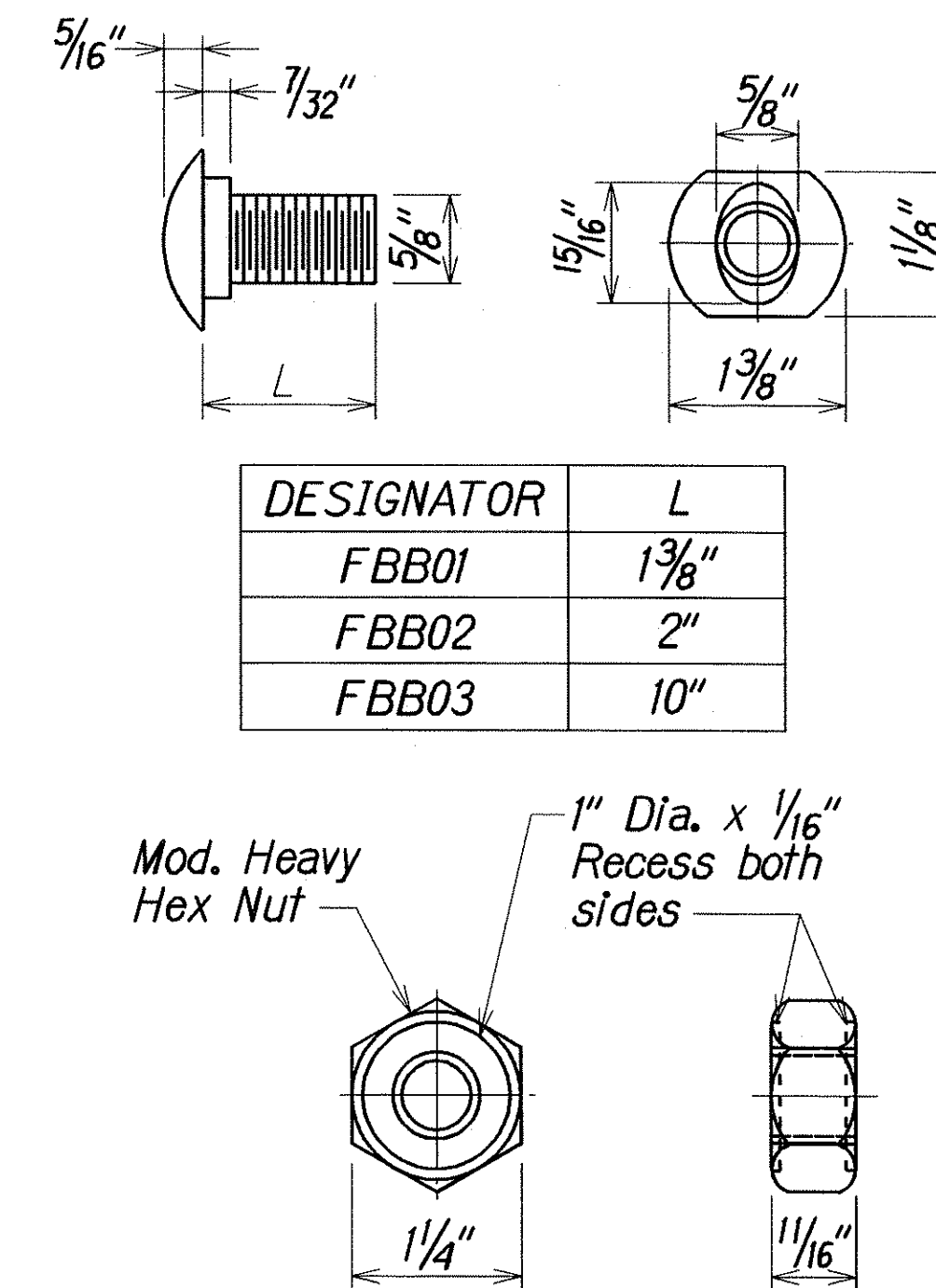
Bolt length varies and shall be verified in the field. Dimensions shown are approximate.

15/16" 9/16" 15/16" As req'd 5/8"

5/8"-11 Hex Nut 5/8"-11 Hex Bolt

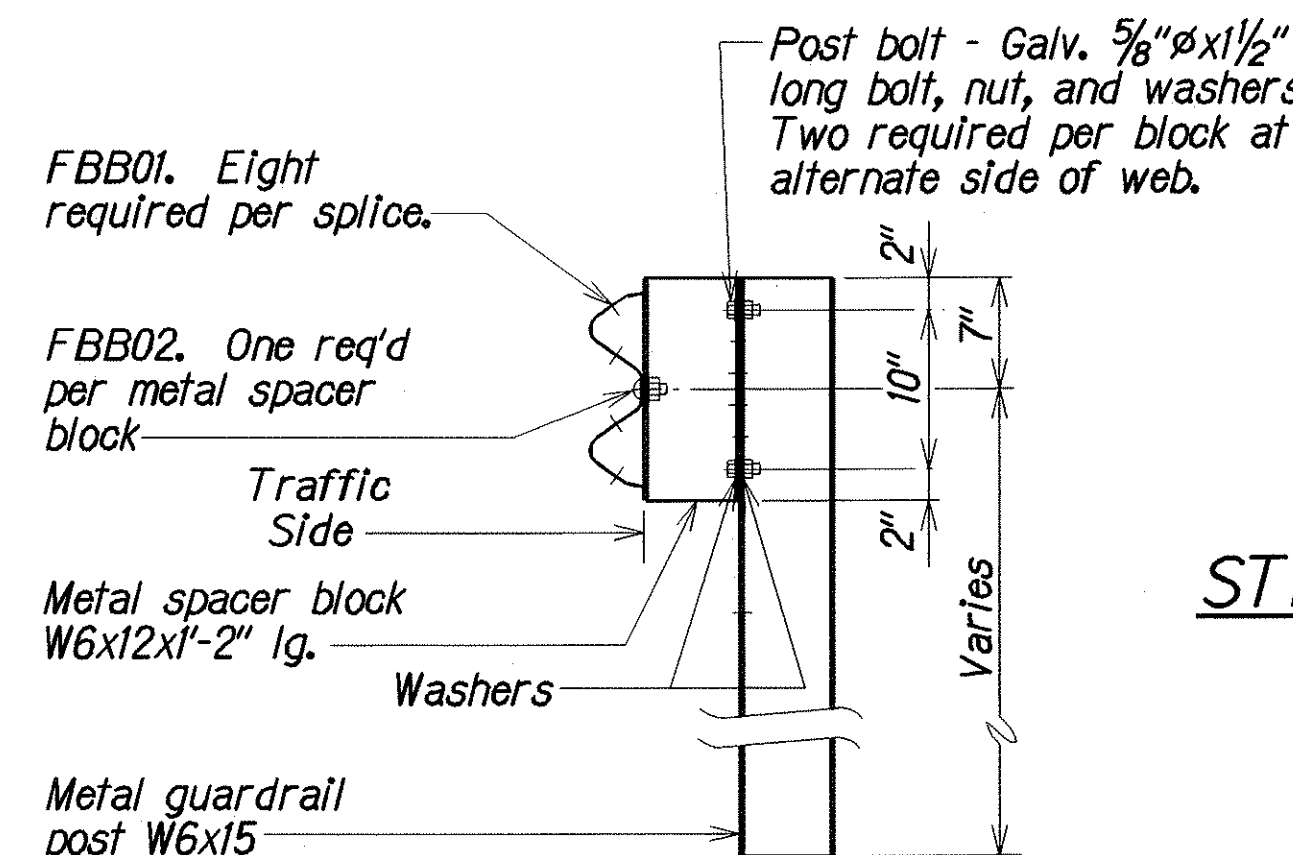
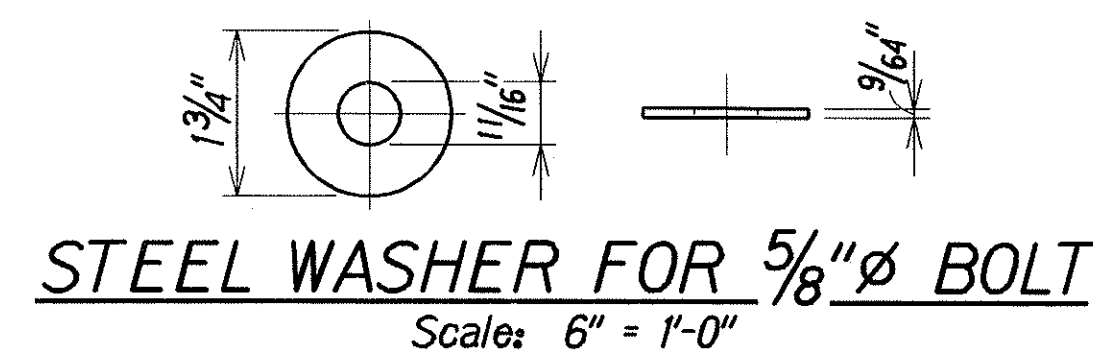
5/8"Ø POST BOLT & NUT

Scale: 6" = 1'-0"



DESIGNATOR	L
FBB01	1 $\frac{3}{8}$ "
FBB02	2"
FBB03	10"

GUARDRAIL BOLTS AND
RECESSED NUT



TYPICAL SECTION
METAL GUARDRAIL ON METAL POST
WITH METAL SPACER BLOCK
Scale: 1" = 1'-0"

METAL GUARDRAIL TYPE 3 W-BEAM AND APPURTENANCES DETAILS

NOTE: Scale: 1" = 1'-0"
All holes $1\frac{3}{16}" \varnothing$. Bolt hole pattern is symmetrical with respect to the vertical axis of the post.

NOTE:

1. Standard barrier hardware has been used to develop this guardrail transition. Designations provided related to standard elements detailed in "A Guide on Standardized Highway Barrier Rail Hardware", 1995, AASHTO-AGC-ARBTA Joint Committee.

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	_____
	DESIGNED BY _____	_____
	QUANTITIES BY _____	_____
	CHECKED BY _____	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAILUA INTERCHANGE
SEISMIC RETROFIT
METAL GUARDRAIL TYPE 3 W-BEAM
APPURTENANCES DETAILS
INTERSTATE ROUTE H-3
Fed. Aid Project No. NH-H3-1(78)

Scale: As Noted Date: Oct. 2001

SHEET No. 58 OF 10 SHEETS