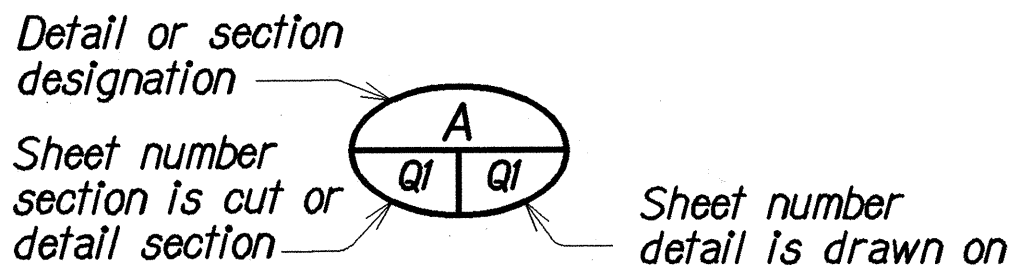


INDEX TO DRAWINGS	
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Q1	INDEX, GENERAL NOTES, ESTIMATED QUANTIIES, ABBREVIATIONS AND SYMBOLS
Q2	DEMOLITION PLAN AND SECTION
Q3	LAYOUT PLAN - RAILING UPGRADE AND LONGITUDINAL SECTION
Q4	TYPICAL TYPE "B" UPGRADE DETAILS - CONCRETE BRIDGE RAIL
Q5	TYPE "A" ENDPPOST AND TYPE "B" BRIDGE RAILING UPGRADES
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Q8	TYPICAL TYPE "B" UPGRADE DETAILS - BIKEWAY METAL RAILING
Q9	METAL GUARDRAIL DETAILS
Q10	METAL GUARDRAIL TYPE 3 THRIE BEAM AND APPURTENANCES DETAILS
ESI	WAIHEE RIVER BRIDGE
ES2	WAIHEE RIVER BRIDGE
ES3	WAIHEE RIVER BRIDGE
ES4	WAIHEE RIVER BRIDGE
ES5	WAIHEE RIVER BRIDGE
ES6	STANDARD DETAILS METAL BRIDGE RAILING

ABBREVIATIONS

AB	Anchor Bolt	FF	Front Face	PL	Plate
Abut.	Abutment	Fin.	Finish		
Approx.	Approximate	Ftg.	Footing	R	Radius
Ⓔ	Baseline	Ga.	Gage, gauge	Rdwy.	Roadway
Beg.	BegIn, Beginning	Galv.	Galvanized	Ref.	Reference
Bm.	Beam	Gr.	Grade	Req'd	Required
Br.	Bridge			Reinf.	Reinforcing
Ⓒ	Center line	Horiz.	Horizontal	Sect.	Section
Cl.	Clear	HS	High Strength	Shld.	Shoulder
Col.	Column			Sht.	Sheet
Conc.	Concrete			Sp.	Space
Cont.	Continuous	Jt.	Joint	Spcg.	Spacing
CR	Corrosion Resistant			Sta.	Station
Def.	Detail	L	Length	Std.	Standard
Dia.	Diameter	LC	Length of Curve	Struct.	Structural
		Lg.	Long	Symm.	Symmetrical
Ea.	Each	Longit.	Longitudinal	T&B	Top and Bottom
EF	Each Face	Max.	Maximum	Thk.	Thick
Elev.	Elevation	Min.	Minimum	TS	Tubular Steel
Eq.	Equal			Typ.	Typical
Exist.	Existing	No.	Number	Vert.	Vertical
Exp.	Expansion			w/	with
E.W.	Each Way	oc	On Center		

SYMBOLS



GENERAL NOTES

DESIGN SPECIFICATIONS - AASHTO:

- AASHTO LRFD Bridge Design Specifications, 1998, with 1999 and 2000 Interim revisions.

MATERIALS:

- Reinforced concrete for bridge railing & endpost: f'c = 4,000 psi
- Reinforcing steel: ASTM A 615, Grade 60.
- Admixture in concrete: See Special Provisions
- All expansion, control, premolded joint filler, reinforcement and dowels shall be incidental to concrete and will not be paid for separately.
- All structural steel shall be ASTM A 36 hot-dip galvanized after fabrication, unless otherwise noted.
- All anchor bolts, washers and nuts shall be AASHTO M 164, hot-dip galvanized after fabrication, unless noted otherwise.
- All welding shall be in accordance with the current edition of Structural Steel Welding Code AWS D 1.1. Welding electrodes for structural steel shall be E 70.
- Epoxy shall be "Double Cartridge" type with static mixer. Epoxies that require manual measuring or mixing will not be allowed. Epoxy shall meet the requirements of ASTM C 881, Type IV, Grade 3, Class C.
- Dowels. Stainless Steel AISI 316L grade dowels shall either conform to ASTM A 955 Grade 60 or be stainless steel AISI 316L grade, clad dowels which meet the requirements of ASTM A 955 Grade 60 and have an average cladding thickness of 0.04 inches. If clad dowels are used then the ends of the dowels shall be sealed with epoxy as per Section 11 of ASTM A755. Dowels, stainless steel shall be incidental to bridge railing upgrade and will not be paid for separately.
- Concrete bridge deck repair: Two component polymer modified mortar conform to Std. Spec. Sect. 712.80.

CONSTRUCTION METHODS:

- The Contractor shall verify the locations of all existing utility lines and notify their respective owners before commencing with any work.
- The Contractor shall verify all grades and dimensions in the field before commencing with any work.
- Refer to Hawaii Standard Specifications for Road, Bridge and Public Works Construction, 1994 Edition and Special Provisions.
- Except as noted otherwise, all dimensions are measured plumb.
- Steel reinforcing shall be supported, bent and placed as per the ACI Detailing Manual, 1994.
- The minimum cover measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as noted otherwise:
 - Concrete cast or finished to a smooth surface: 2"
 - Concrete cast against and permanently exposed to earth: 3"
- At time concrete is placed, reinforcing shall be free from mud, oil, laltance or other coatings adversely affecting bond capacity.
- Reinforcement, dowels and other embedded items shall be positively secured before pouring.
- All existing reinforcing and anchor bolts that can be incorporated in the new work shall be cleaned before being utilized in the new work.
- All existing concrete faces receiving new concrete in the finish product shall be roughened to a min. 1/4" amplitude and cleaned prior to placement of the new pour.
- Existing structure that will be removed is shown by hatched lines. Limits of removal of existing structure shown by hatched lines. Removal shall be done in such a manner as to preclude any damage to the existing reinforcing and concrete to remain. Large vibratory type of equipment will not be permitted in the removal operation, nor for drilling of holes. Only small vibratory hand tools approved by the Engineer will be allowed. Any damage to the existing structure due to the Contractor's operation or negligence shall be repaired at his expense with no additional cost to the State, and to the satisfaction of the Engineer.
- Large Impacting or vibratory type equipment will not be permitted in the drilling of holes.
- All dimensions relating to reinforcing bars (e.g. spacing of bars, etc.) are to centers of bars unless noted otherwise.
- All existing reinforcing that can be incorporated in the new work shall be cleaned before being utilized in the new work.
- All footings shall bear on firm undisturbed natural soils or properly compacted structural fill.

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HAWAII	HAW.	STP-0900(60)	2002	15	33

REFERENCE:

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

GENERAL:

- All items noted incidental will not be paid for separately.
- Excavating, demolishing and/or disposing existing concrete endpost and backfilling for new concrete endpost shall not be paid for separately but shall be considered incidental to Item No. 507.7600 - Type "A" Endpost Upgrade. Demolishing and / or disposing existing bridge railing, sidewalk, and curb shall not be paid for separately, but shall be considered incidental to Item No. 507.7610 - Type "B" Bridge Railing Upgrade.
- The Contractor shall be solely responsible for the protection of adjacent property, utilities and existing and new structures from damage due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer. He shall conduct his work in such a manner and provide such temporary shoring or other measures as may be necessary to insure the safety of all concerned and to protect existing structures.
- Unless noted otherwise, chamfer all exposed concrete edges three-quarters (3/4) of an inch.

TRAFFIC CONTROL:

- The Contractor's attention is called to the traffic control costs for constructing the end post and bridge railing work. Such costs are incidental to the End Post or Bridge Railing Upgrade pay item. No separate payment for such traffic control is provided under Section 645 - Traffic Control Devices.
- During working hours, traffic control may be covered by the one lane traffic control plan described in Section 645 - Traffic Control Devices. However, during non-working hours, additional provisions for safely maintaining traffic shall be required. For example, portable traffic signals to control traffic. Another means to control traffic would be to fully illuminate the site, illuminate approach warning signs, and provide flashing warning lights and flagmen on both approaches.
- If there are any dropoffs next to the traveled way of more than two inches in height, portable concrete barriers or other approved crashworthy barriers shall be required to separate public traffic from the dropoff area.
- The Contractor shall submit a specific site traffic control plan to the Engineer for acceptance. The Traffic control plan shall include a layout showing the locations of all traffic control devices and crashworthy barriers, the Notice to Motorists, and the proposed work schedule.

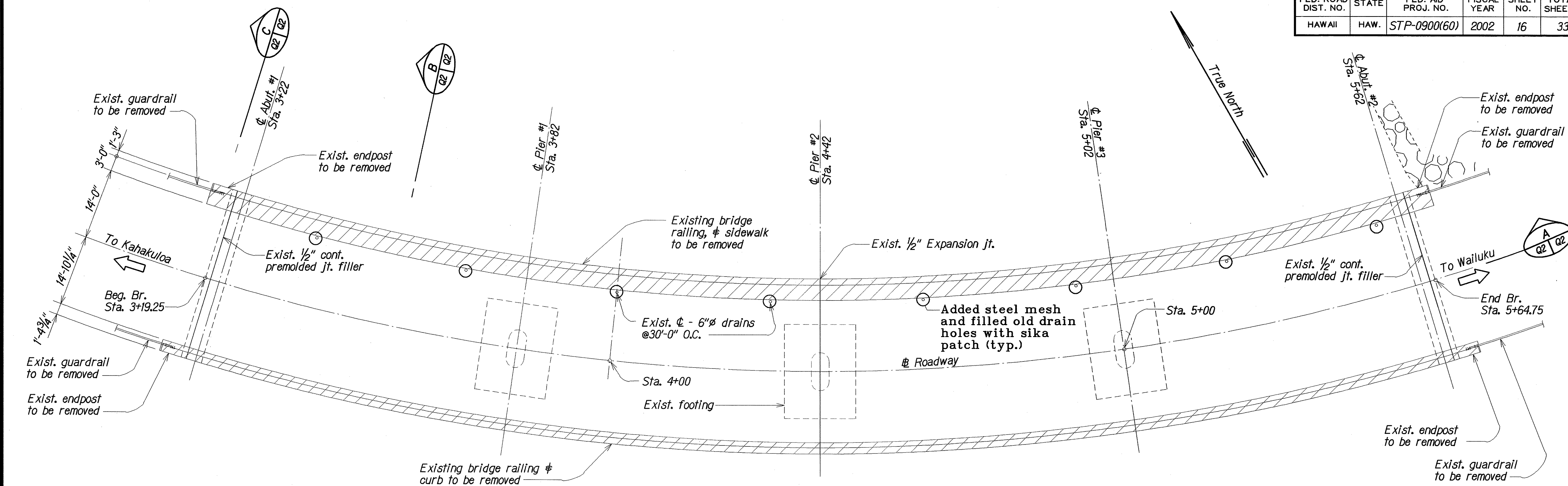
ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITIES
507.7600	Type "A" Endpost Upgrade	Each	4 ea.
507.7610	Type "B" Bridge Railing Upgrade	Lin. Ft.	486
509J000	Bridge Deck Repair	S. F.	640
606.3112	Guard Rail, Type 3 Thrie Beam Transition to Endpost	Lin. Ft.	100

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIHEE RIVER BRIDGE
INDEX, GENERAL NOTES, ESTIMATED
QUANTITIES, ABBREVIATIONS AND SYMBOLS
HALEAKALA HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
Halimalie Road to Kula Highway &
KAHEKILI HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
at Waihee Bridge and Approaches
Fed. Aid Proj. No. STP-0900(60)
Scale: As Noted Date: Mar. 2001

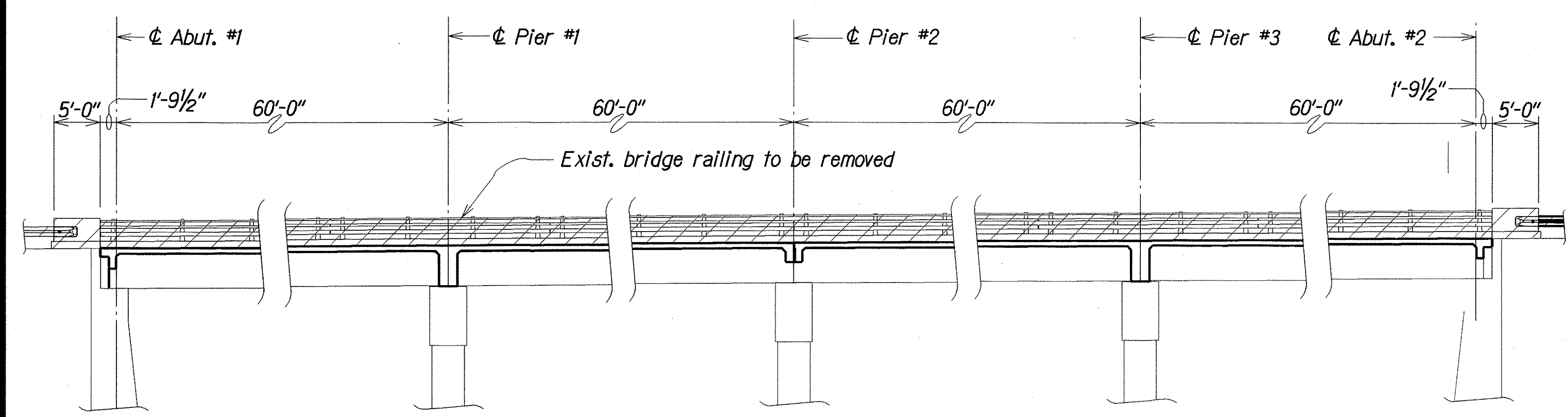
SHEET No. Q1 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	16	33



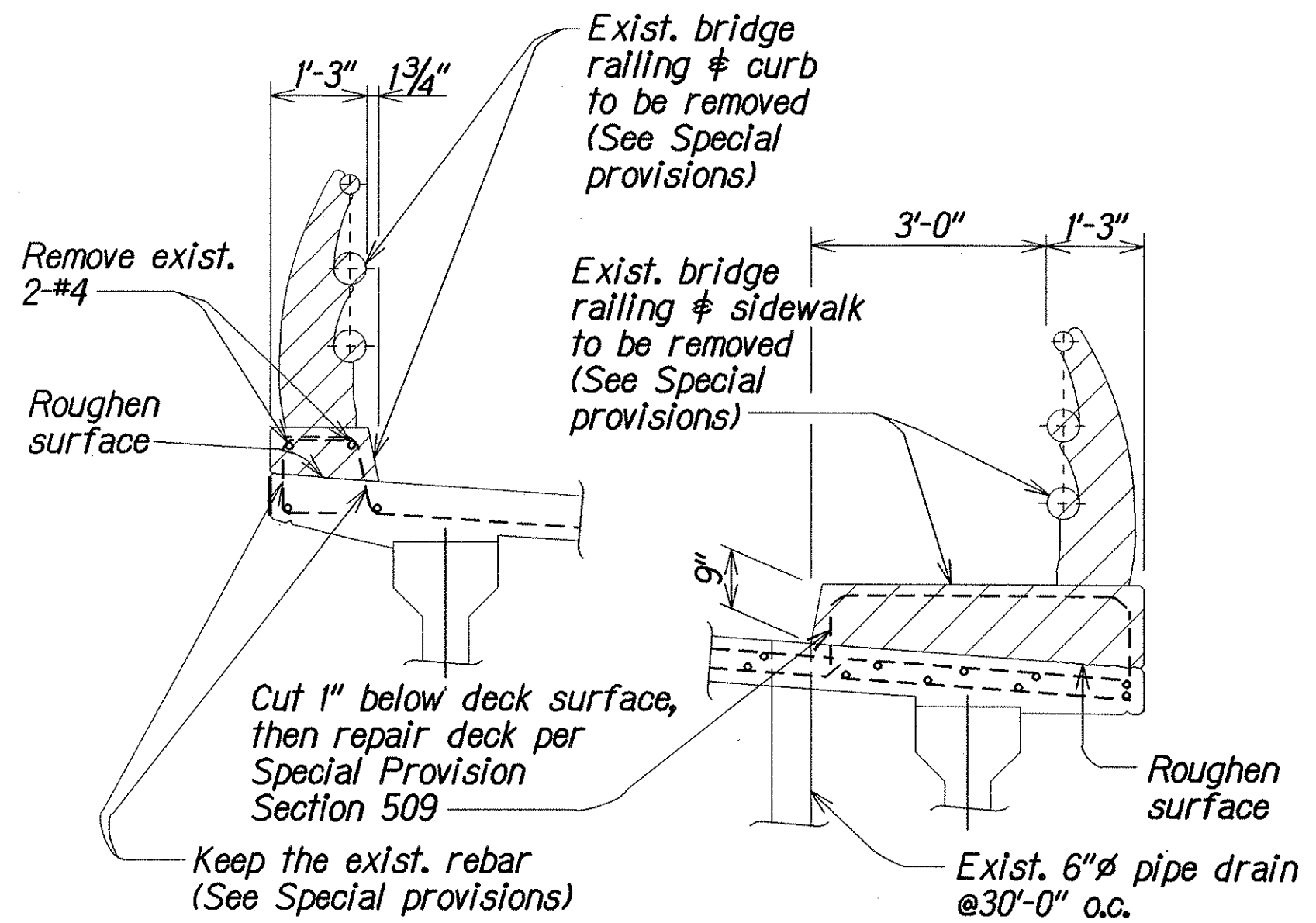
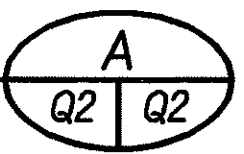
PLAN

Scale : 1" = 10'-0"



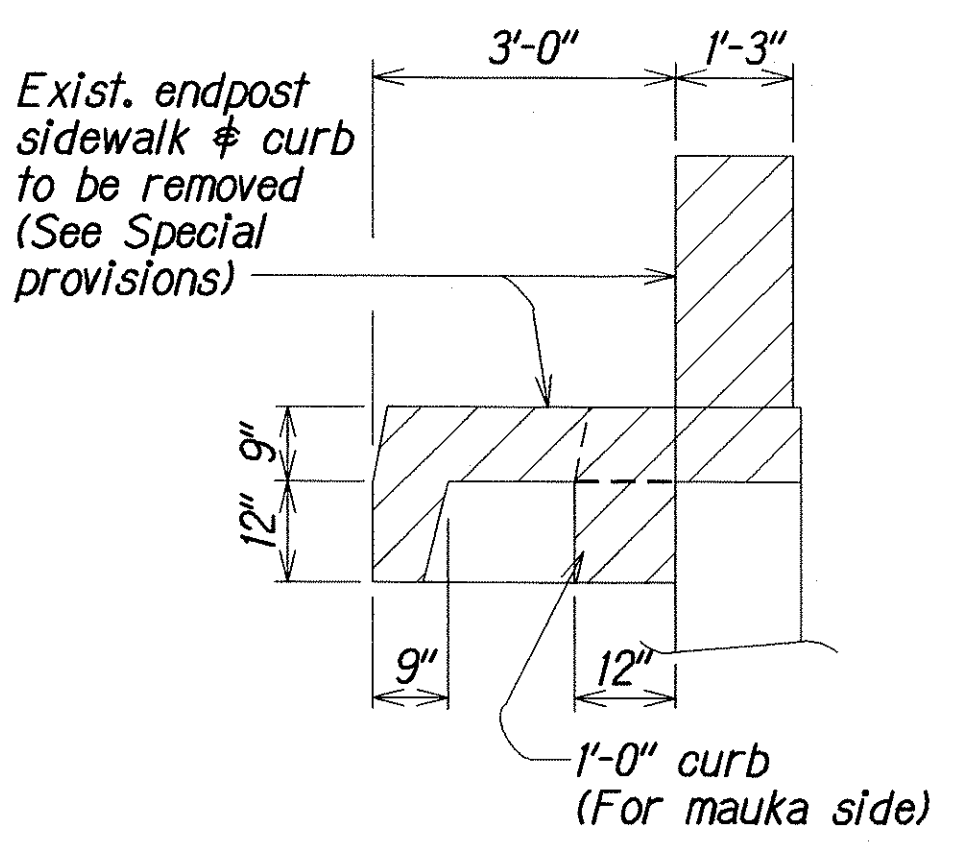
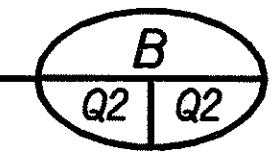
LONGITUDINAL SECTION

Scale : 1" = 10'-0"



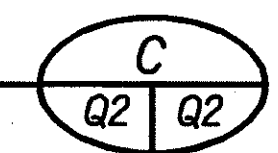
SECTION B

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



SECTION C

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



DEMOLITION OF EXISTING ENDPOST, BRIDGE RAILING, SIDEWALK AND CURB

LEGEND:

Denotes existing structure to be removed and disposed.

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

WAIHEE RIVER BRIDGE

DEMOLITION PLAN AND SECTIONS

HALEAKALA HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
Haliimaile Road to Kula Highway &
KAHEKILI HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
at Waihee Bridge and Approaches
Fed. Aid Proj. No. STP-0900(60)

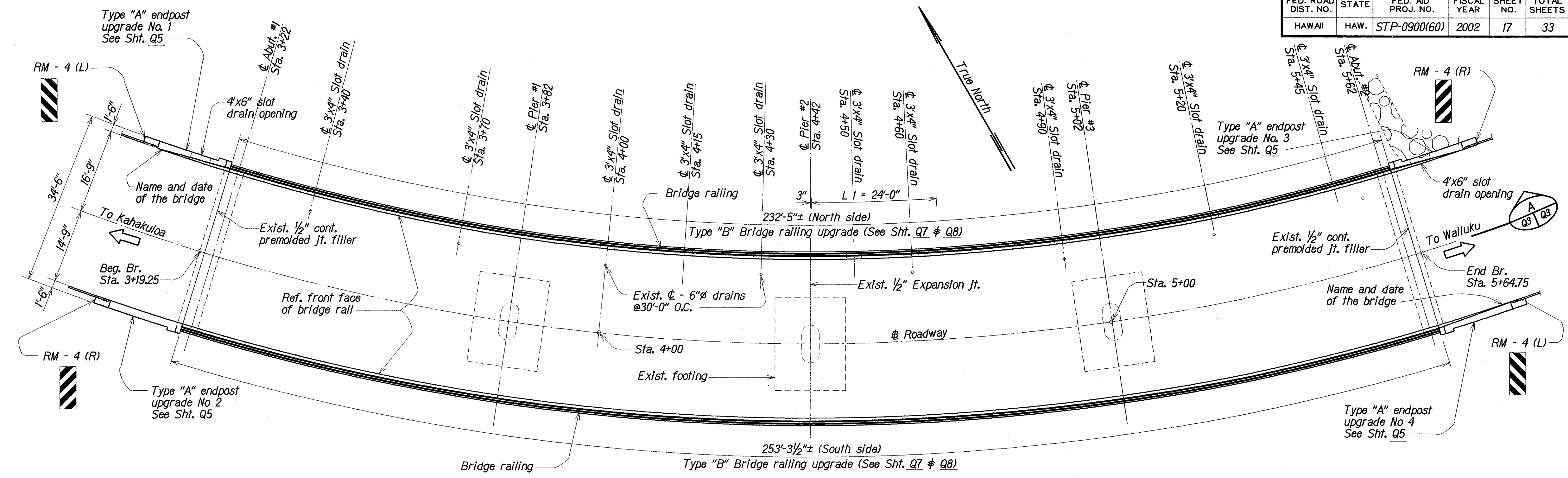
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Date: Mar, 2001

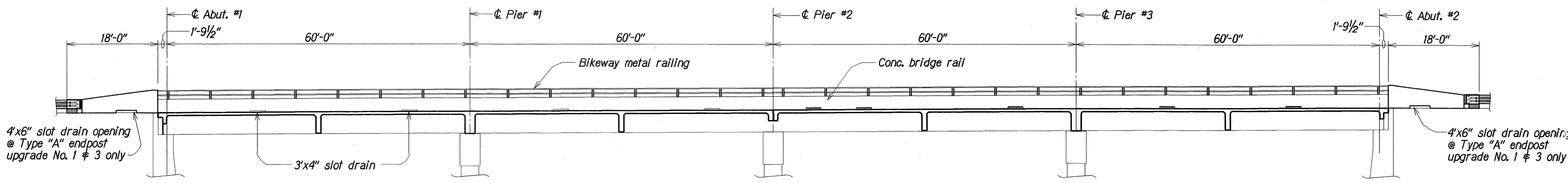
SHEET No. Q2 OF 10 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	17	33



LAYOUT PLAN



LONGITUDINAL SECTION

WAIHEE STREAM BRIDGE RAILING UPGRADE

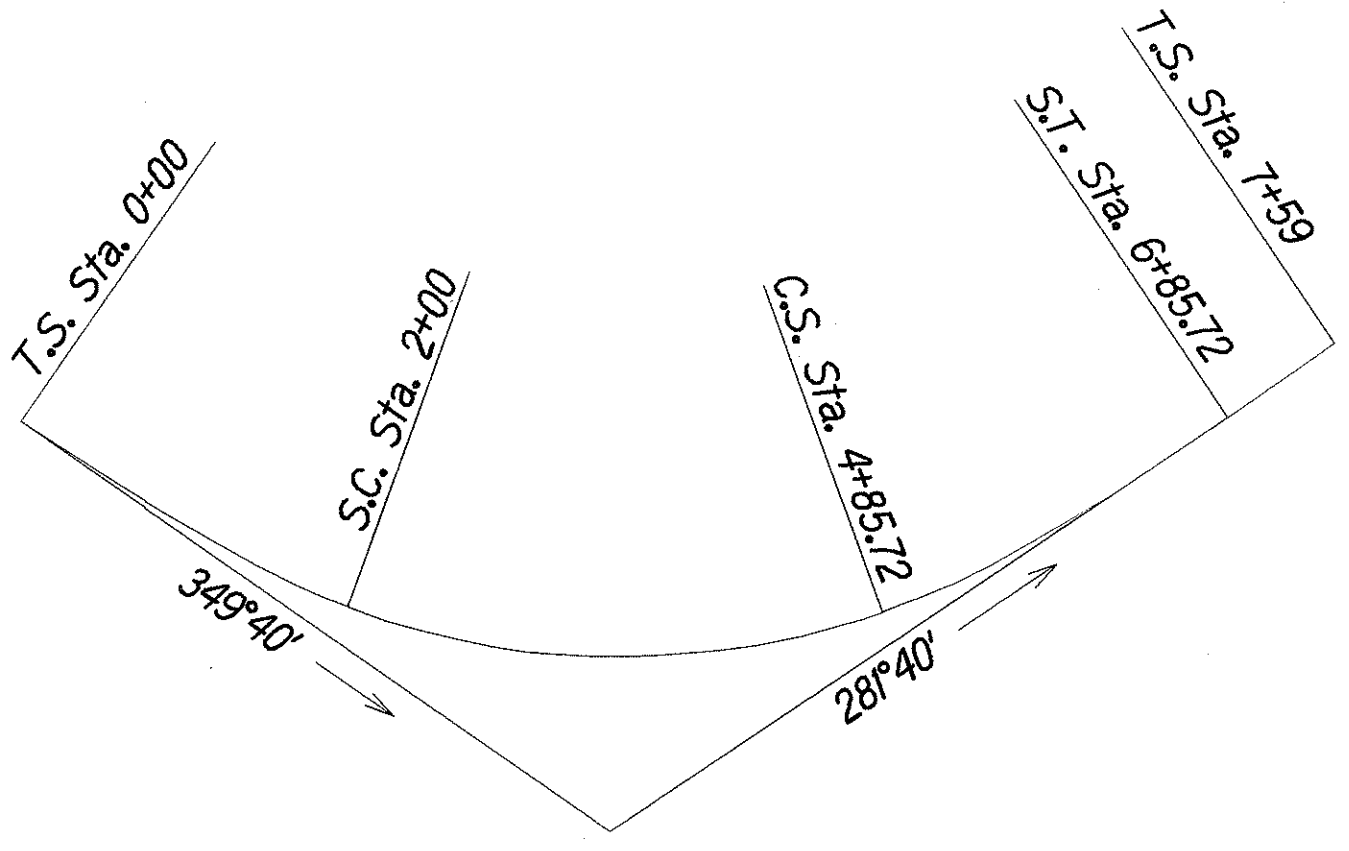
Scale : 1" = 10'-0"

Curve Data

- $\Delta = 68^{\circ}00'$
- $D_c = 14^{\circ}00'$
- $R_c = 409.26'$
- $L_s = 200.00'$
- $T_s = 378.59'$
- $X_c = 198.81'$
- $Y_c = 16.22'$
- $L_c = 285.72'$
- $LT. = 133.75'$
- $S.T. = 67.05'$
- $\theta_c = 14^{\circ}00'$
- $S/E = 0.10'/ft.$

HORIZONTAL CURVE DATA

Not to Scale



STRIPING NOTES:

- Add new 4-inch pavement striping between Sta. 3+22 to Sta. 5+62
- Add new double 4-inch pavement striping between Sta. 3+22 to 5+62.
- Provide Type "C" and Type "H" pavement markers between Sta. 3+22 to Sta. 5+62.

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

WAIHEE RIVER BRIDGE
LAYOUT PLAN - RAILING UPGRADE
AND LONGITUDINAL SECTION

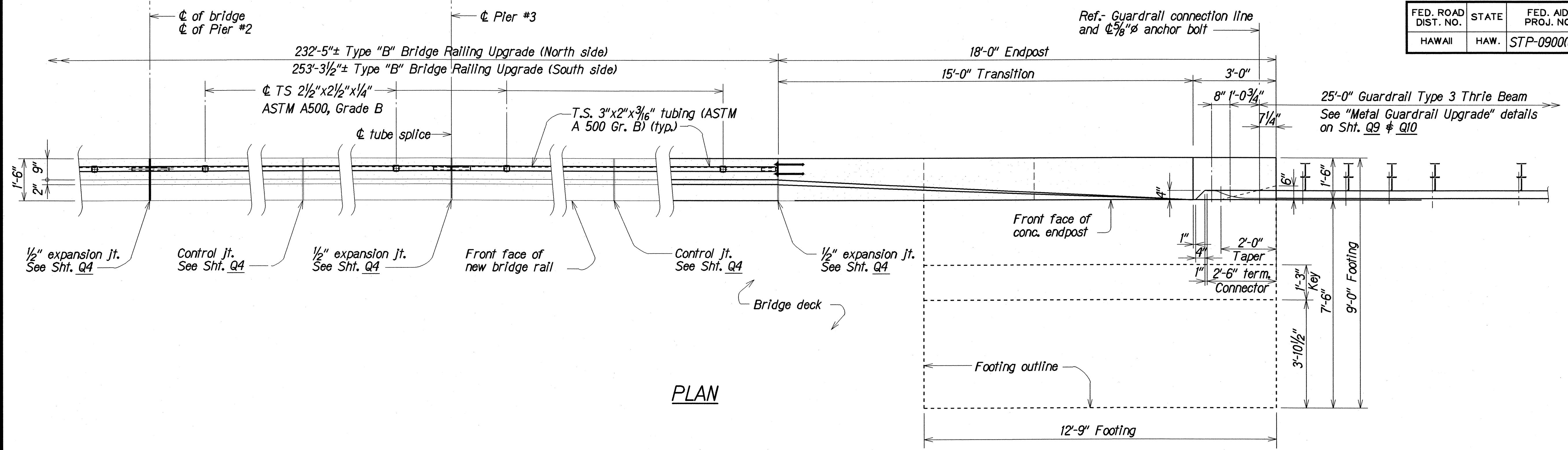
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Haliimaile Road to Kula Highway &
KAHEKILL HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
at Waihee Bridge and Approaches
Fed. Aid Proj. No. STP-0900(60)

Scale: As Noted Date: Mar, 2001

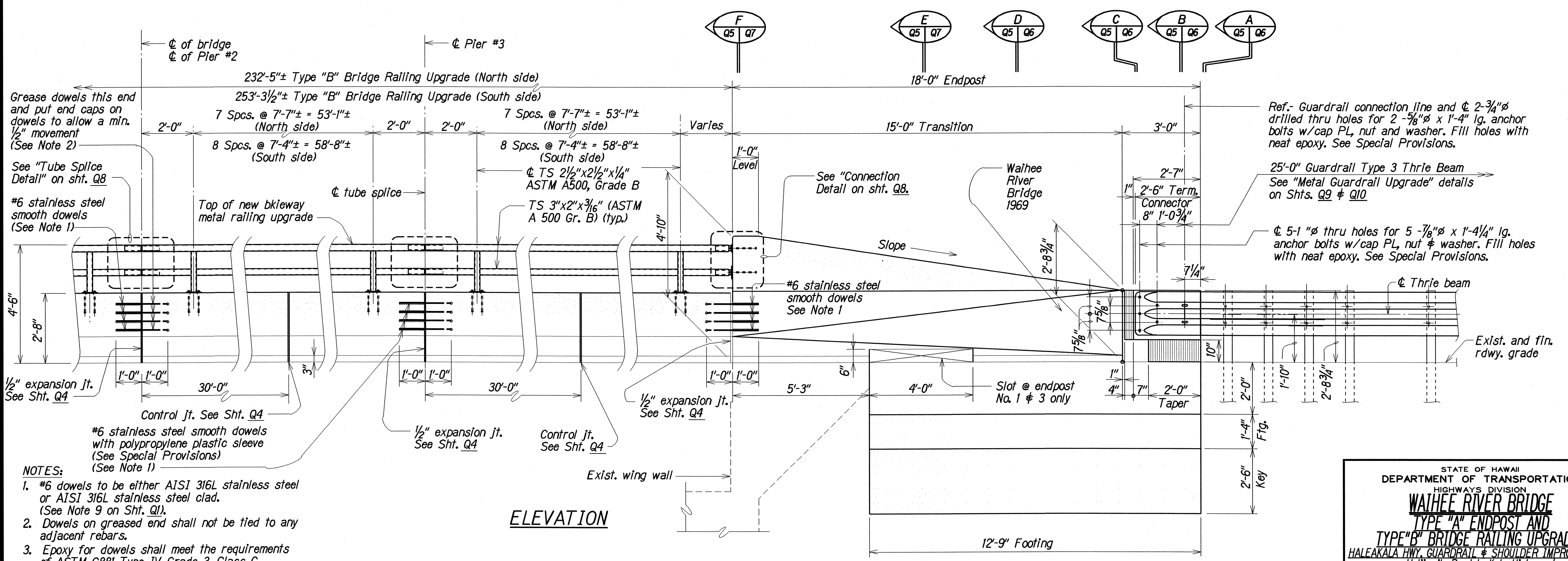
SHEET No. Q3 OF 10 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	19	33



PLAN



ELEVATION

TYPE "A" ENDPOST AND TYPE "B" BRIDGE RAILING UPGRADES

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

- NOTES:
- #6 dowels to be either AISI 316L stainless steel or AISI 316L stainless steel clad. (See Note 9 on Sht. Q1).
 - Dowels on greased end shall not be tied to any adjacent rebars.
 - Epoxy for dowels shall meet the requirements of ASTM C881 Type IV Grade 3, Class C.
 - Holes for dowels shall be 1/8" ø or as recommended by epoxy manufacturer.
 - Holes shall be blown clean with compressed air, brushed, then blown clean again with compressed air prior to placement of epoxy.

DESIGNED BY	DATE
TRACED BY	Mar. 2001
NOTED BY	Mar. 2001
QUANTITIES BY	Mar. 2001
CHECKED BY	Mar. 2001

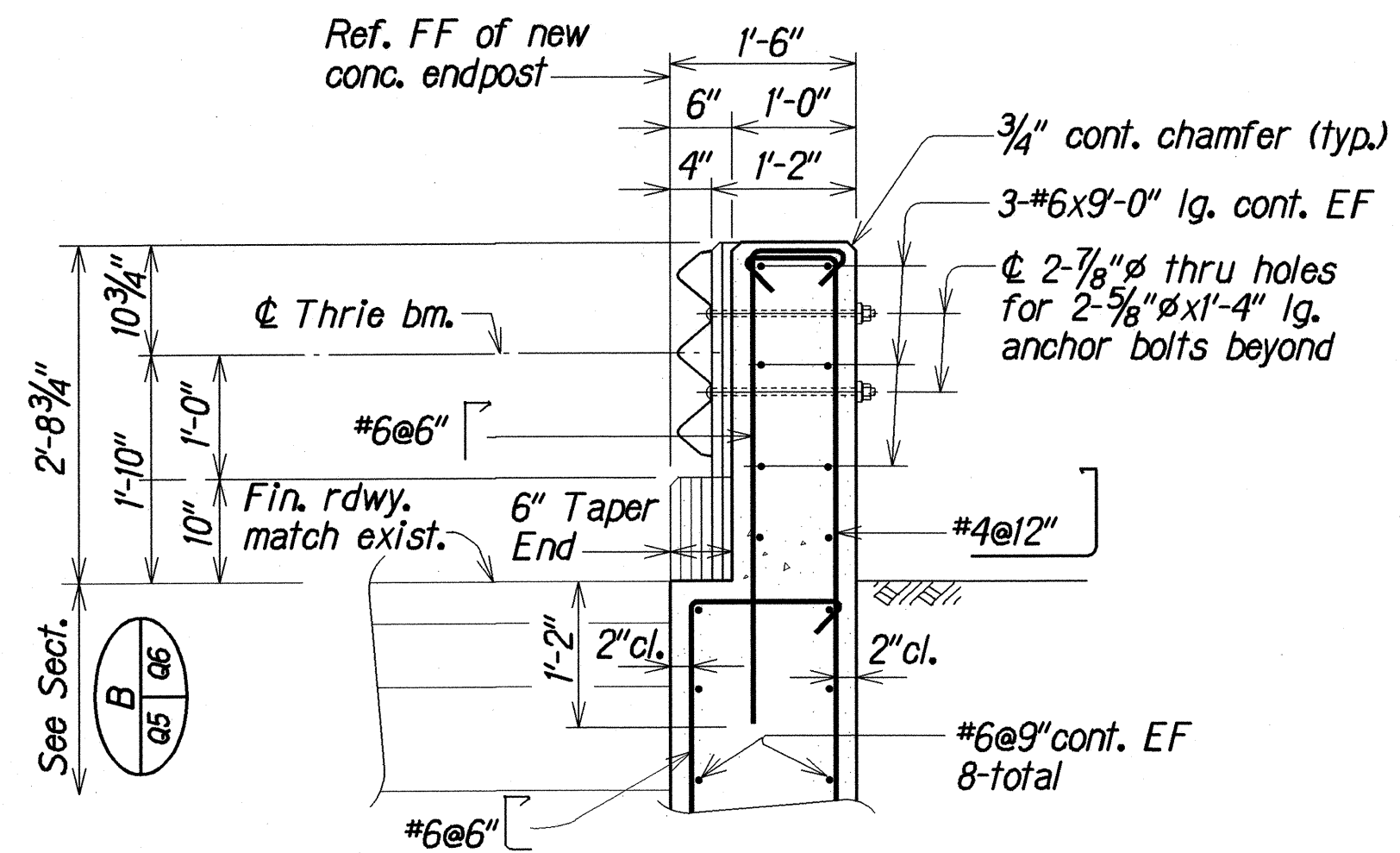
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIHEE RIVER BRIDGE
TYPE "A" ENDPOST AND
TYPE "B" BRIDGE RAILING UPGRADES

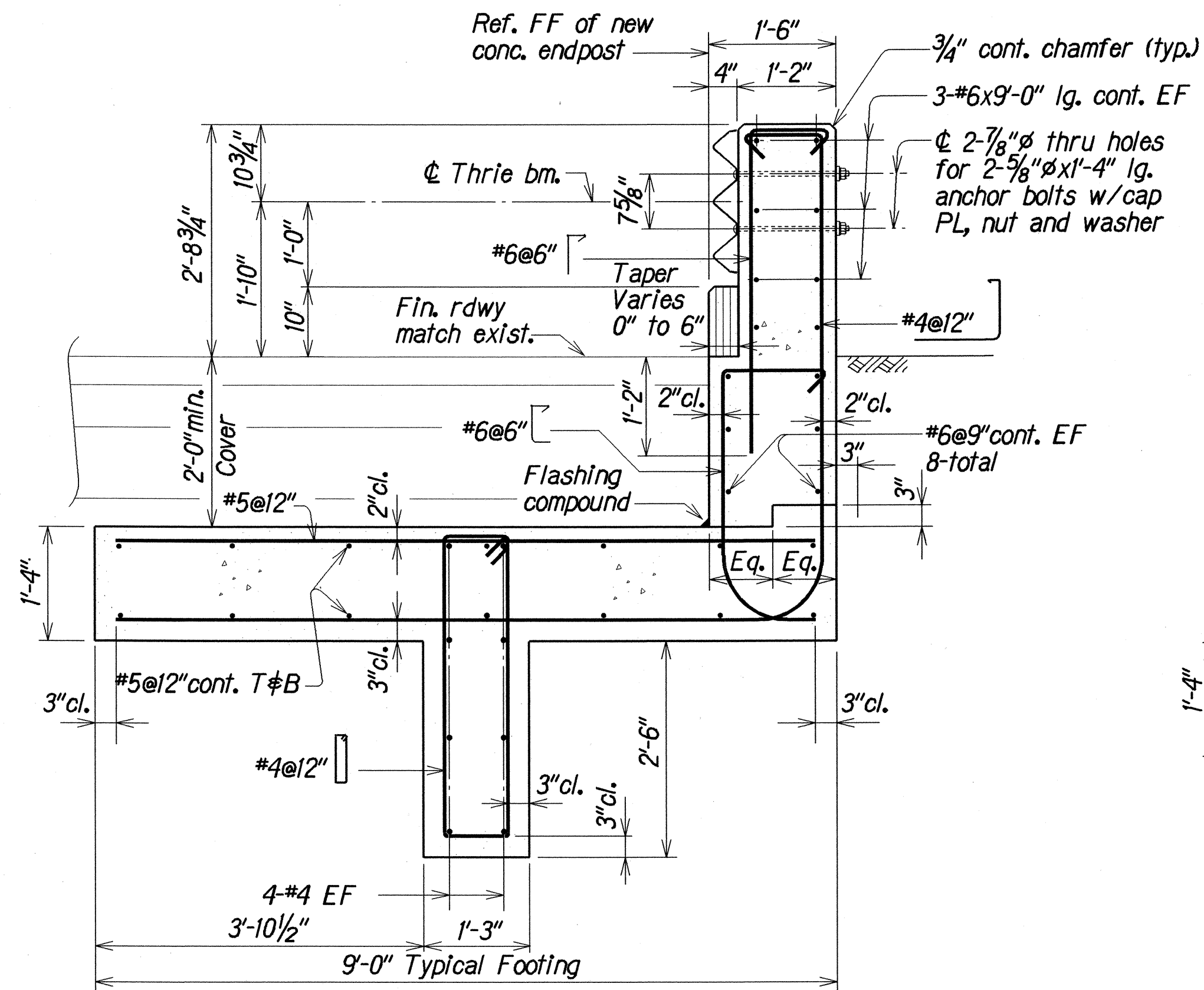
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Hailuailu Road To Kuia Highway &
KAHEKILI HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
at Waihee Bridge and Approaches
Fed. Aid Proj. No. STP-0900(60)

Scale: As Noted Date: Mar. 2001

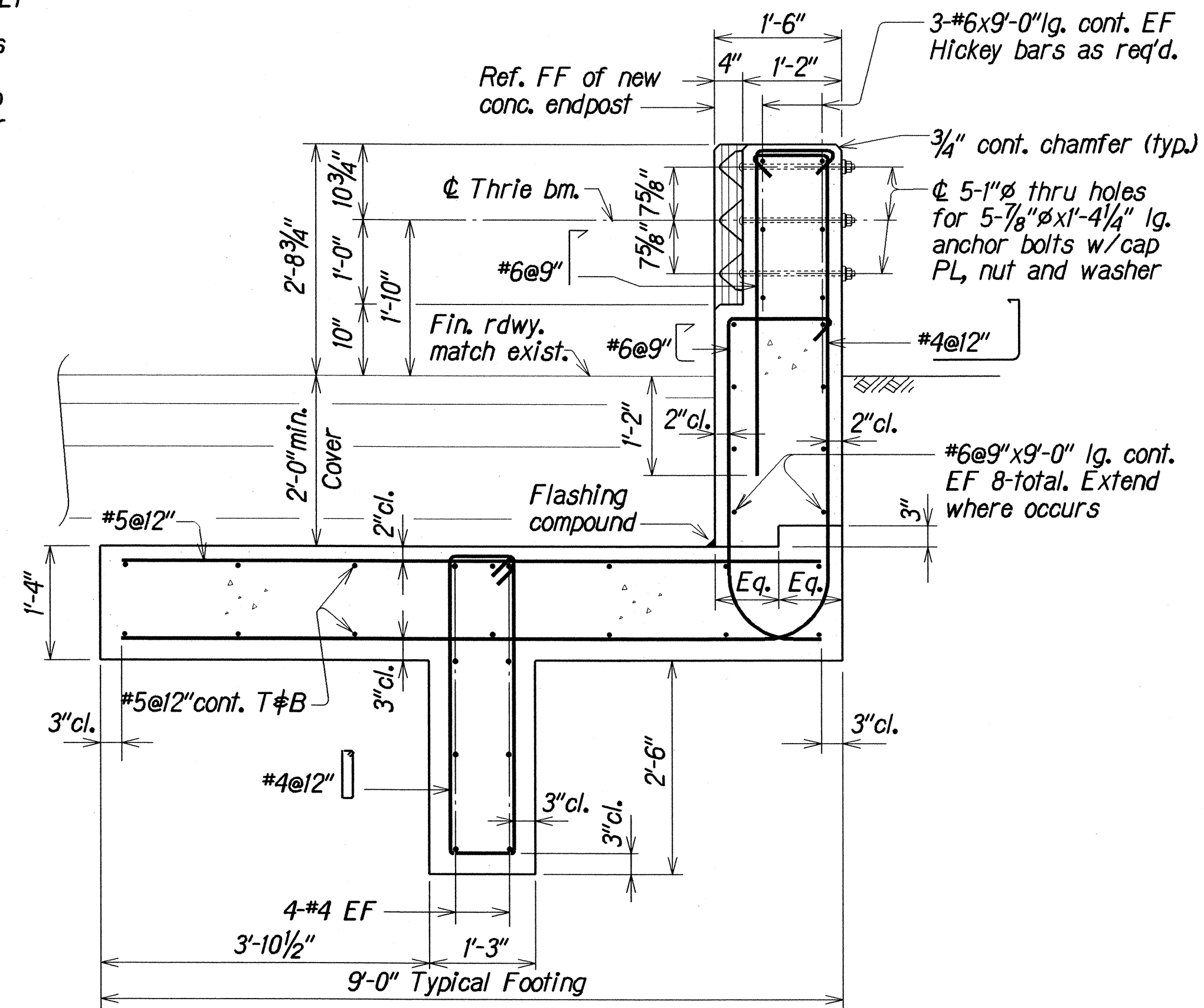
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HAWAII	HAW.	STP-0900(60)	2002	20	33



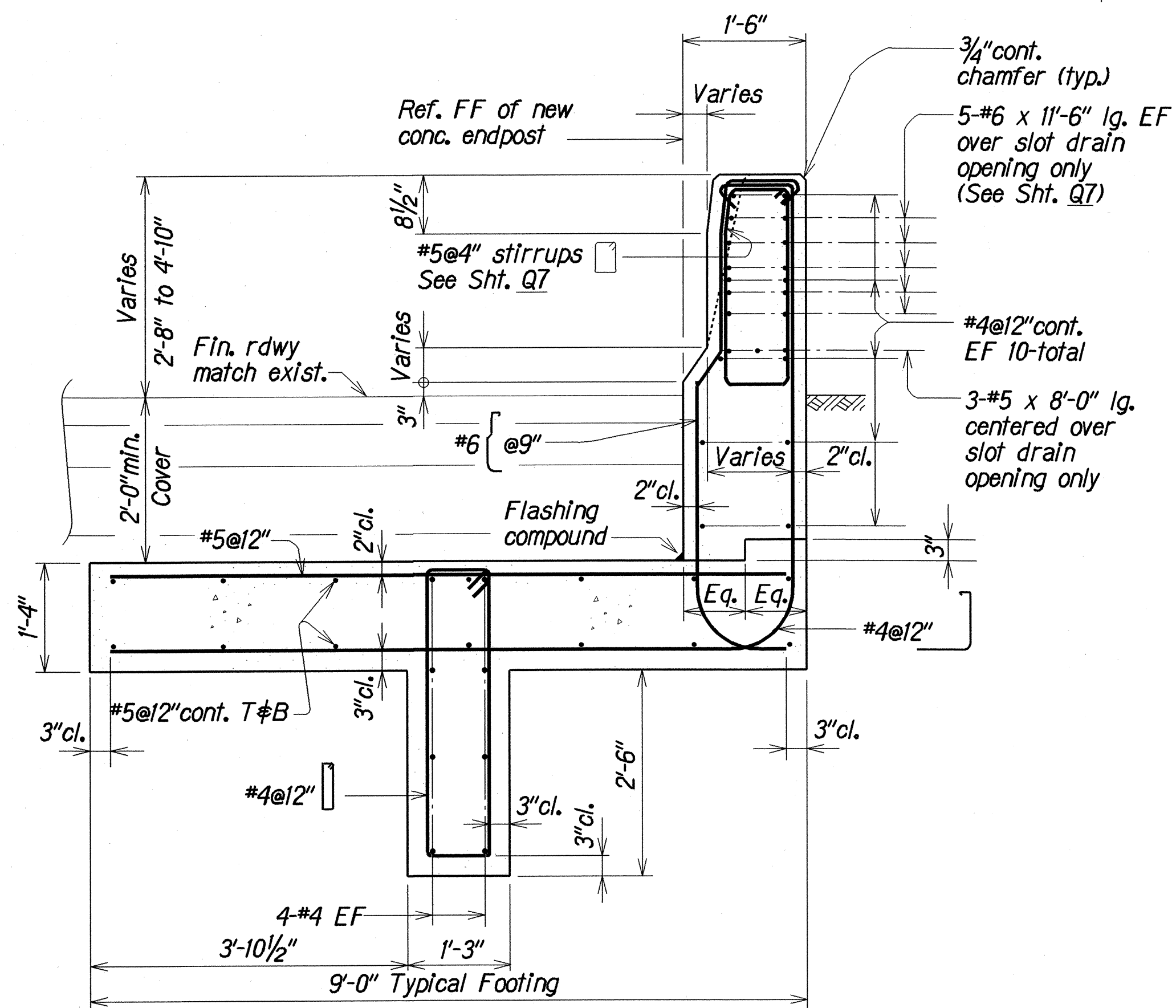
SECTION A
Scale: 3/4" = 1'-0"



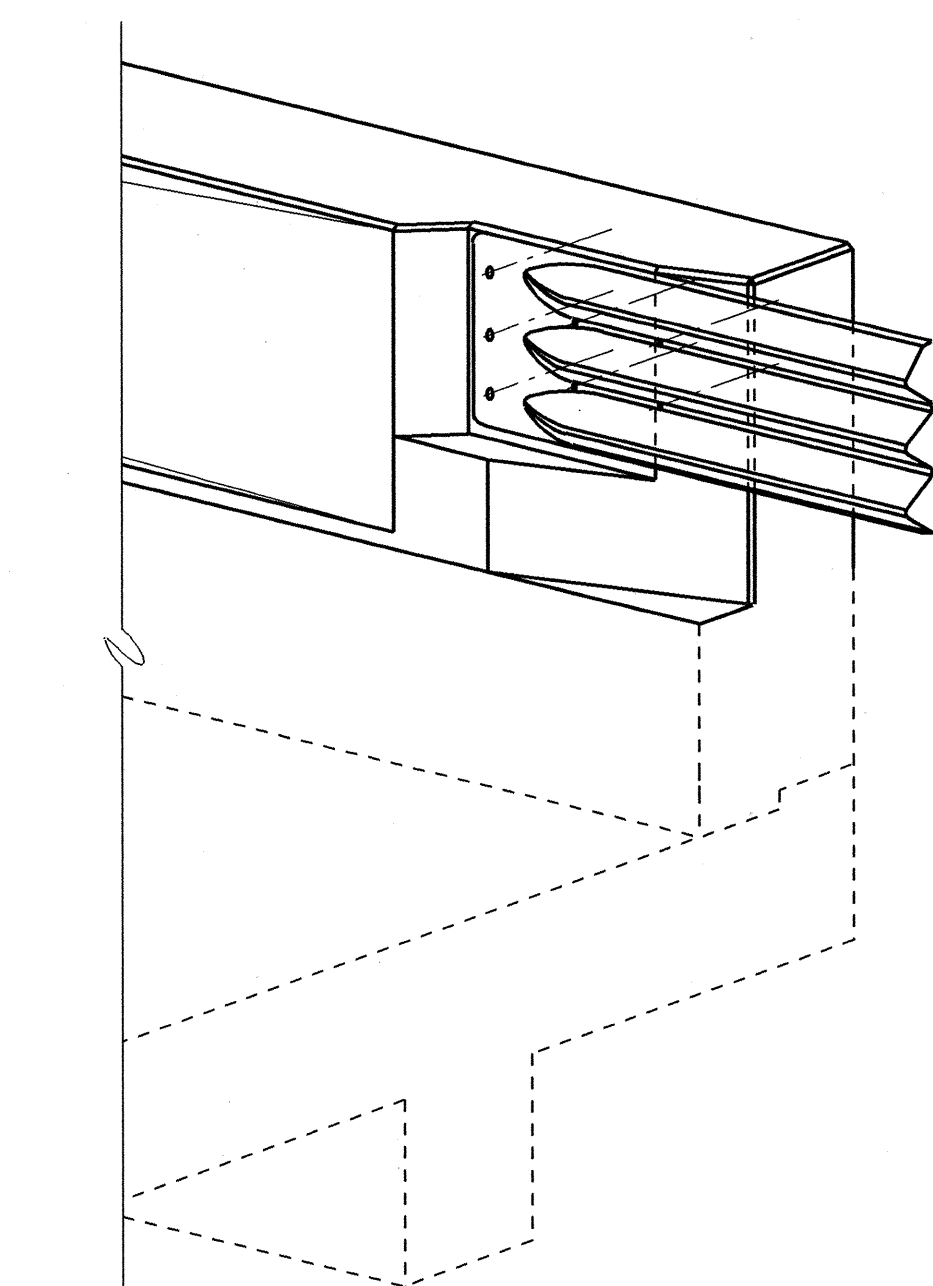
SECTION B
Scale: 3/4" = 1'-0"



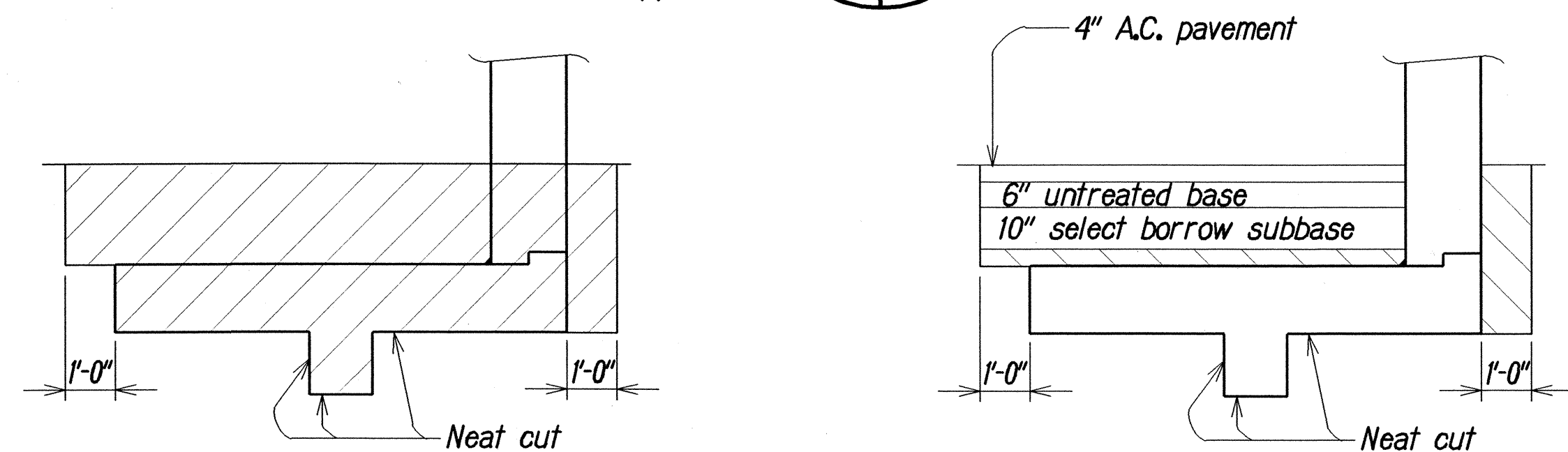
SECTION C
Scale: 3/4" = 1'-0"



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



PARTIAL ISOMETRIC VIEW -
TYPE "A" ENDPOST UPGRADE
Not To Scale



TYPICAL STRUCTURE EXCAVATION AND BACKFILL

Scale: 3/8" = 1'-0"

NOTE:

Structure excavation shown thus

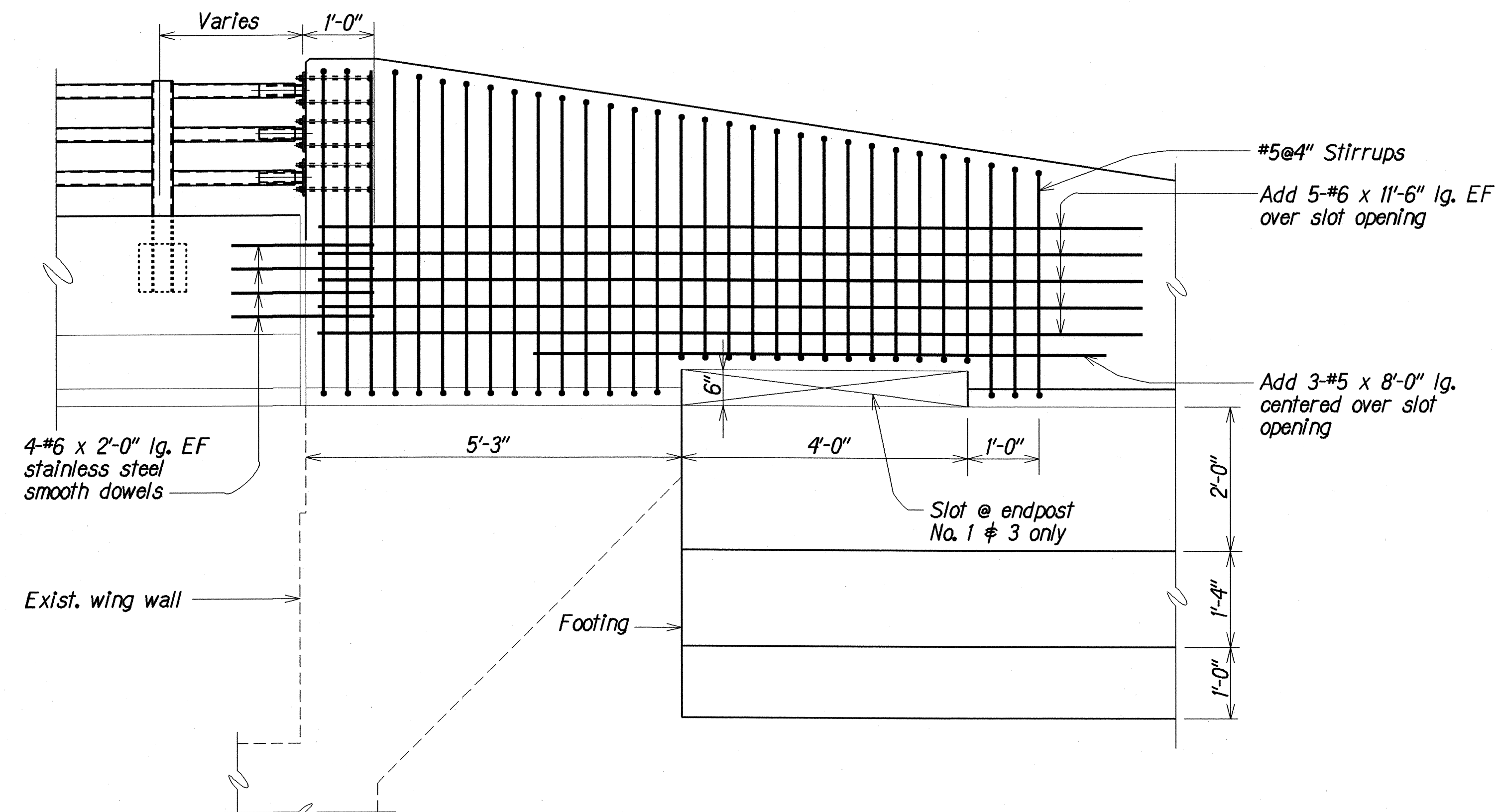
Structure backfill shown thus

Structure backfill material shall conform to glassphalt base course. See Section 312 of Standard Specifications. For details of pavement restoration, see Hwy dwgs. Pavement restoration shall be incidental to Item 507.7600 Type "A" Endpost Upgrade.

STATE OF HAWAII
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HIGHWAYS DIVISION
WAIHEE RIVER BRIDGE
TYPICAL TYPE "A" UPGRADE DETAILS -
END POST
HALEAKALA HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
Haliimaile Road to Kula Highway &
KAHEKILI HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
at Waihee Bridge and Approaches
Fed. Aid Proj. No. STP-0900(60)
Scale: As Noted Date: Mar. 2001

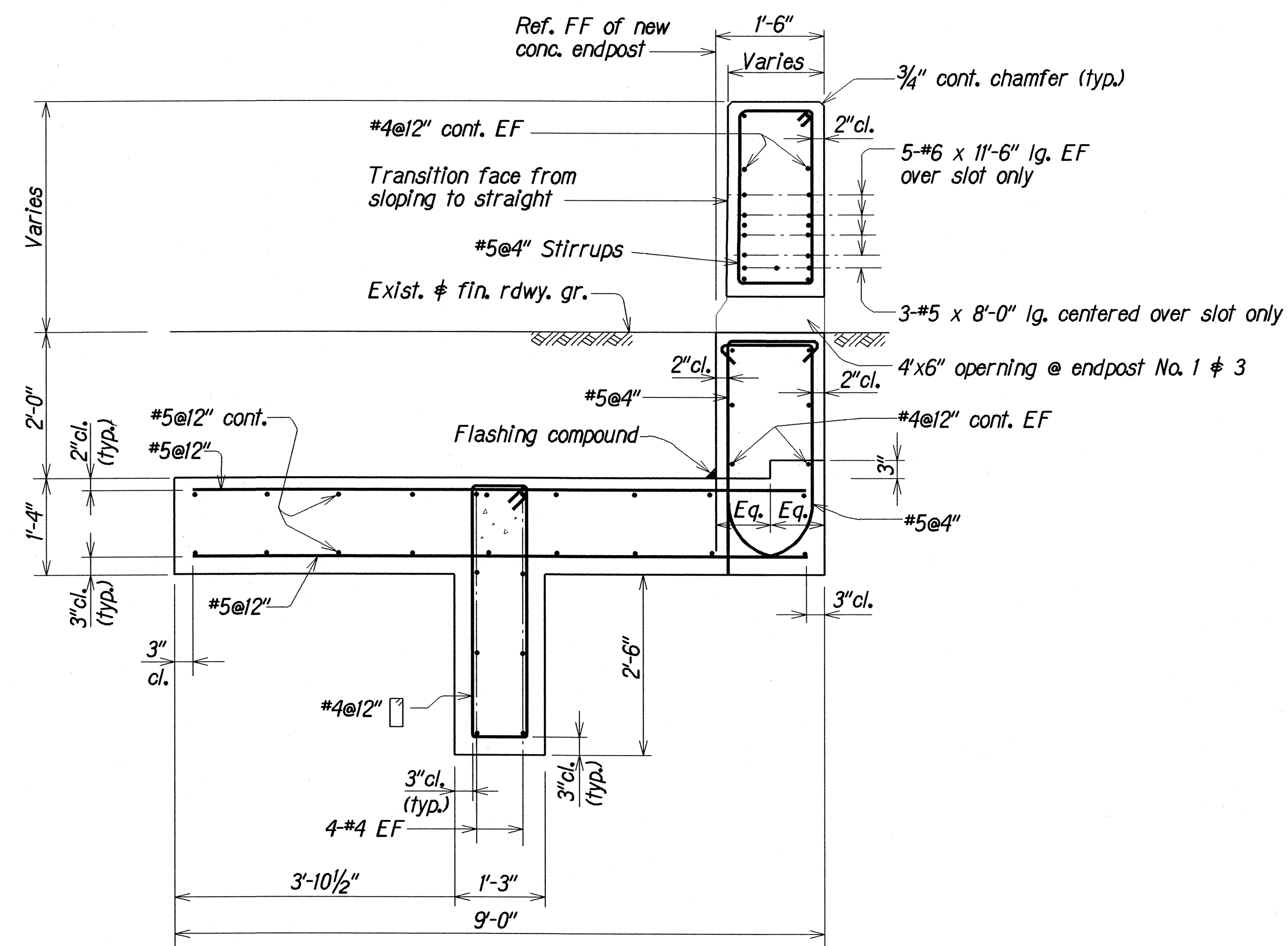
SHEET No. Q6 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	21	33

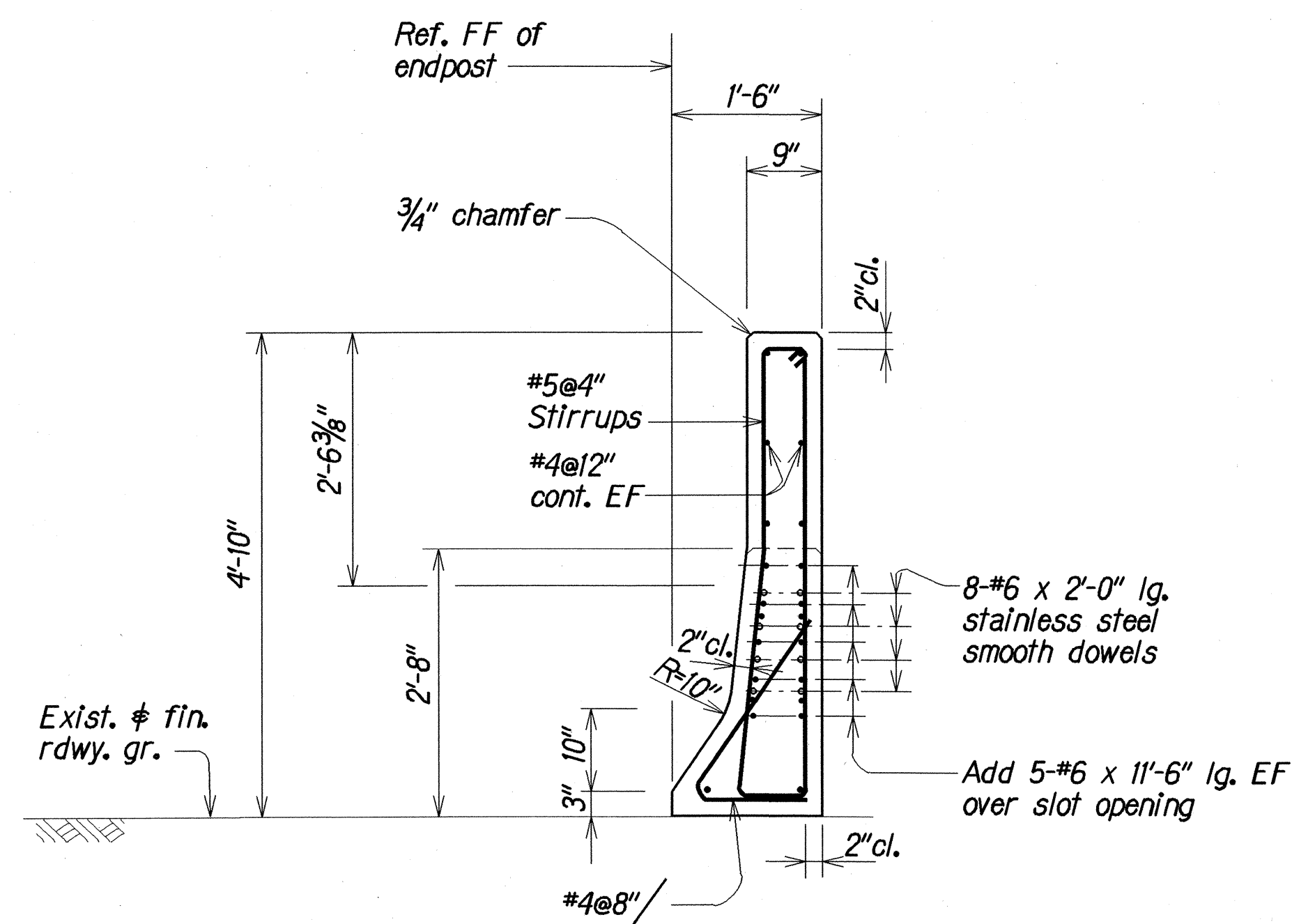


PART ELEVATION OF ENDPOST NO. 1 & 3

Scale: $\frac{3}{4}$ "=1'-0"



SECTION E
Scale: $\frac{3}{4}$ "=1'-0"



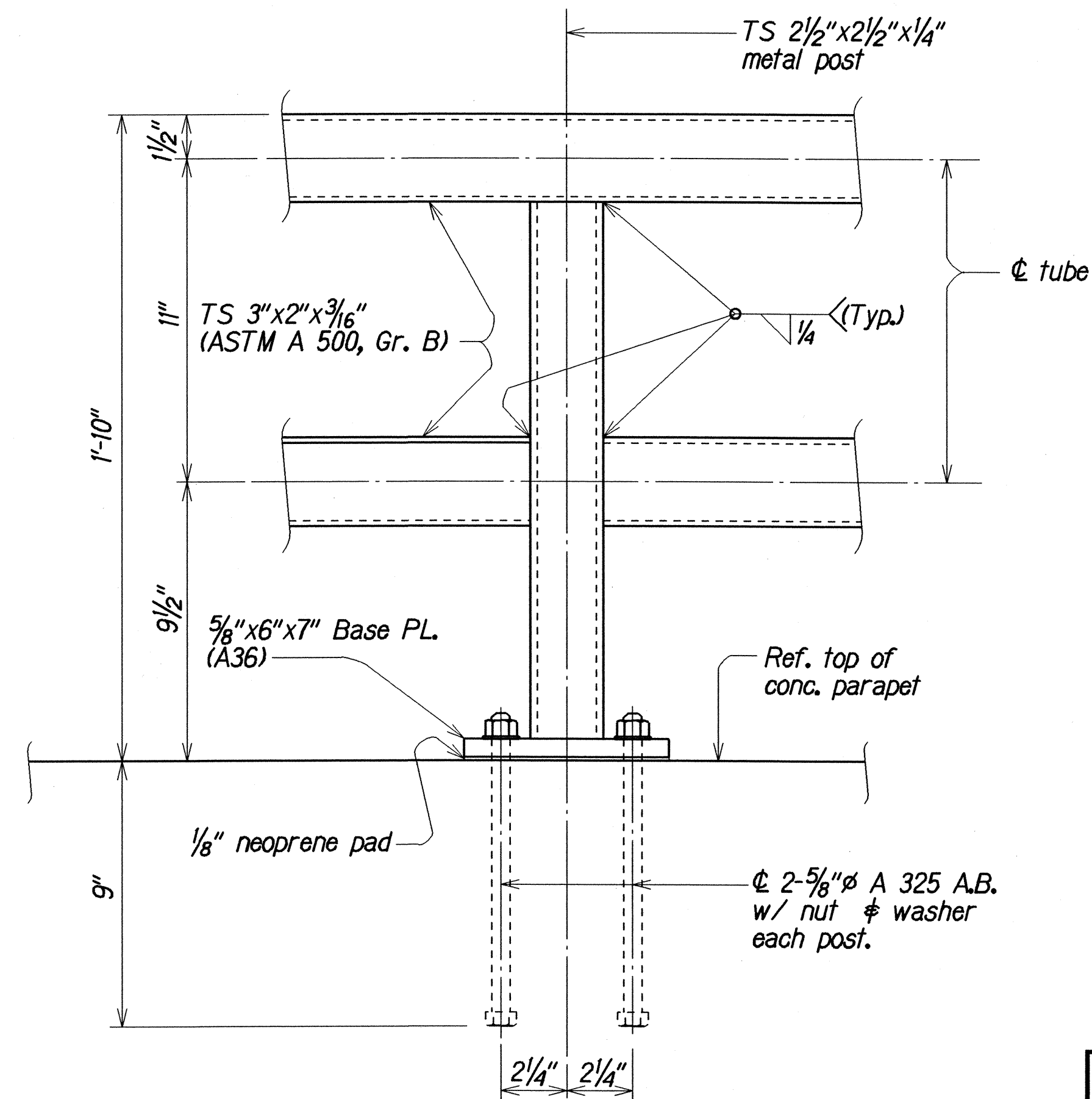
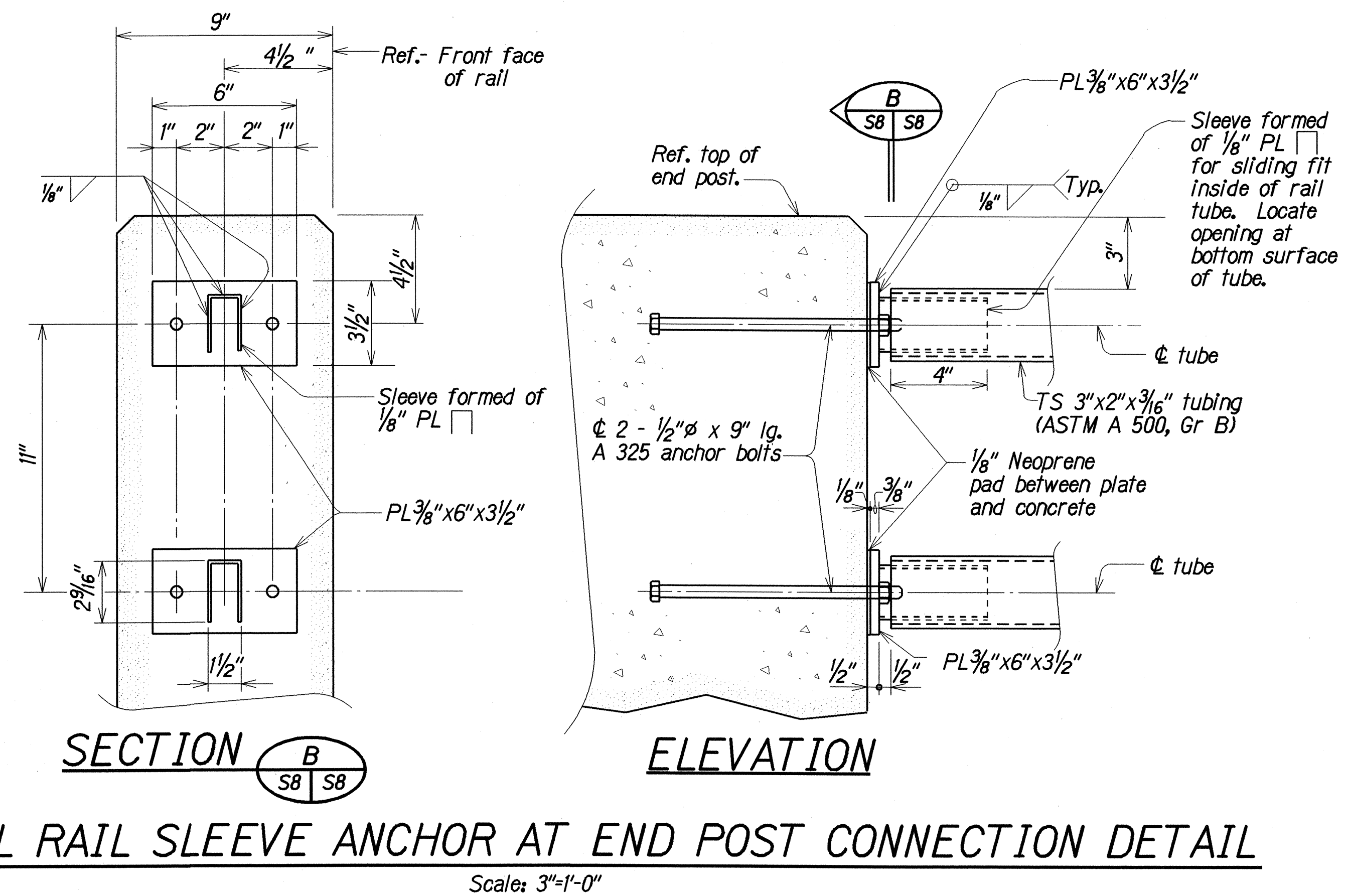
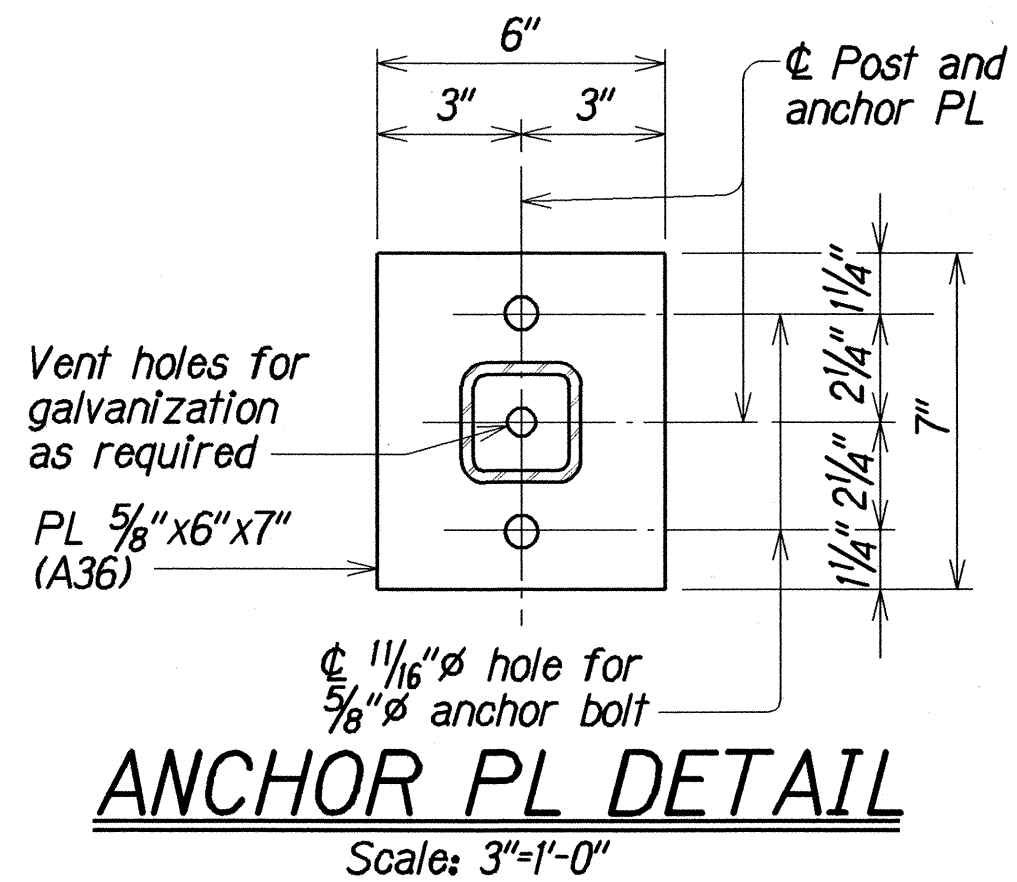
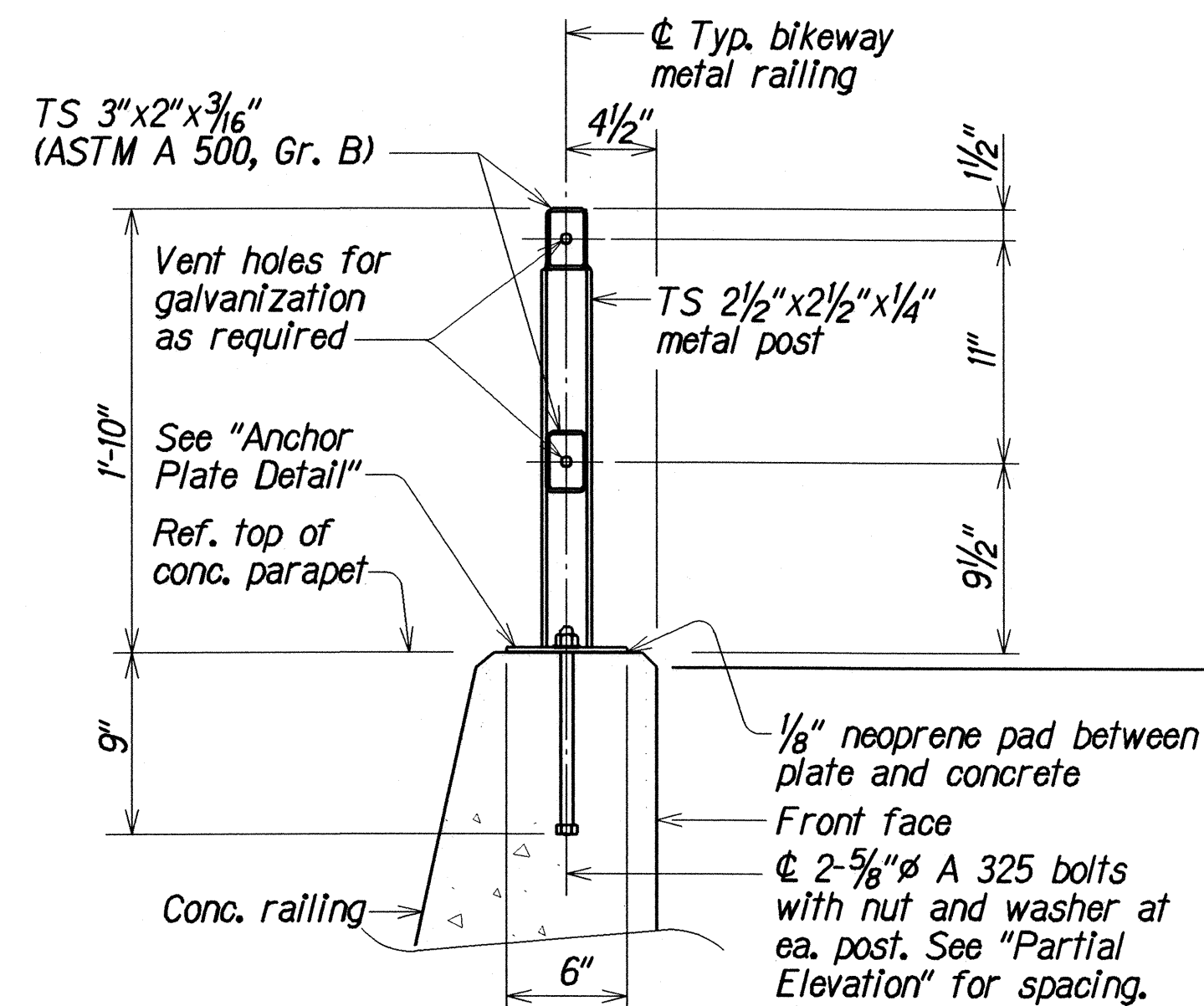
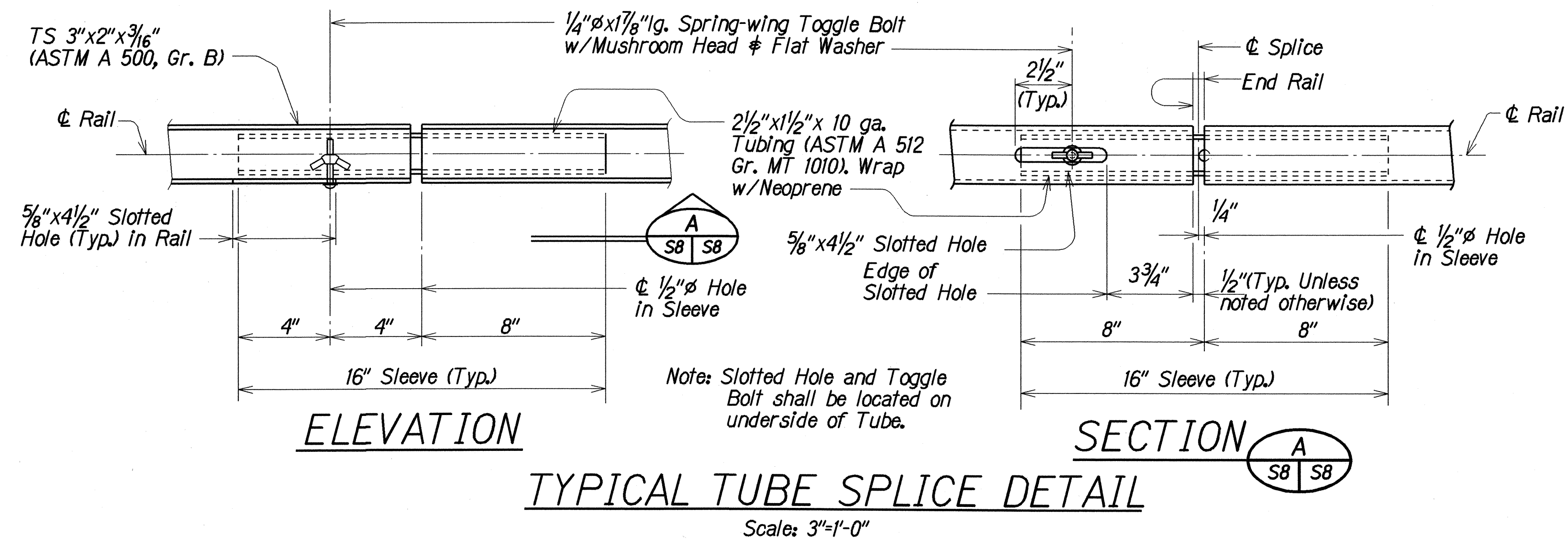
SECTION F
Scale: $\frac{3}{4}$ "=1'-0"

DESIGNED BY	DATE
DRAWN BY	MAR. 2001
CHECKED BY	MAR. 2001
NOTED BY	MAR. 2001
QUANTITY BY	MAR. 2001
CHECKED BY	MAR. 2001

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION WAIHEE RIVER BRIDGE TYPICAL TYPE "A" UPGRADE DETAILS - ENDPOST NO. 1 & 3 HALEAKALA HWY. GUARDRAIL & SHOULDER IMPROVEMENTS Halimalle Road to Kula Highway & KAHEKILI HWY. GUARDRAIL & SHOULDER IMPROVEMENTS at Waihee Bridge and Approaches Fed. Aid Proj. No. STP-0900(60) Scale: As Noted Date: Mar. 2001

SHEET No. Q7 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	22	33

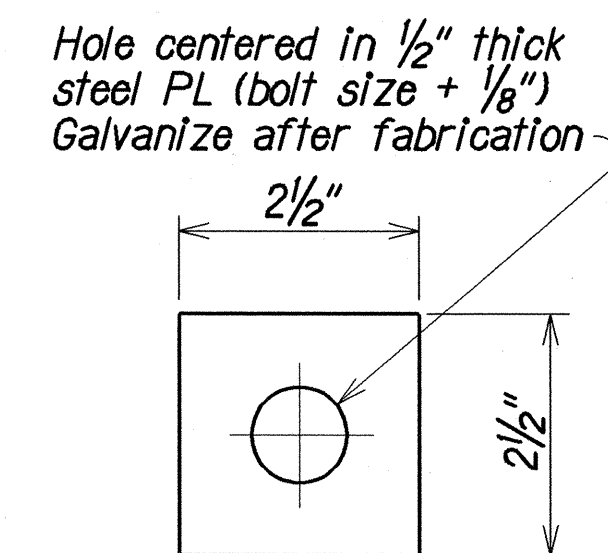
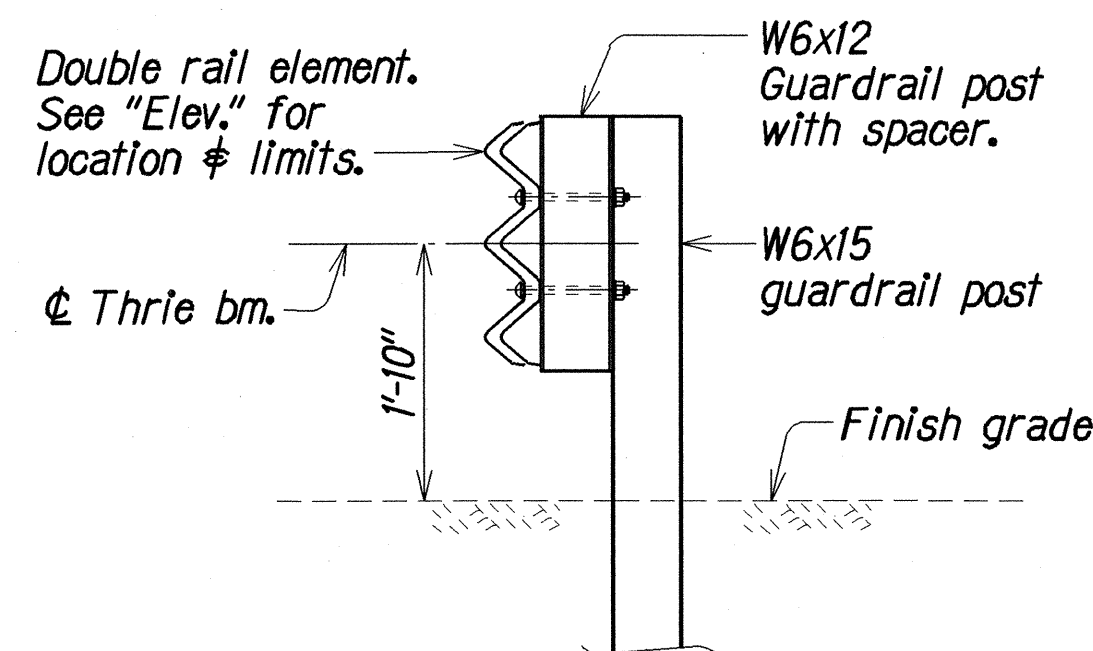
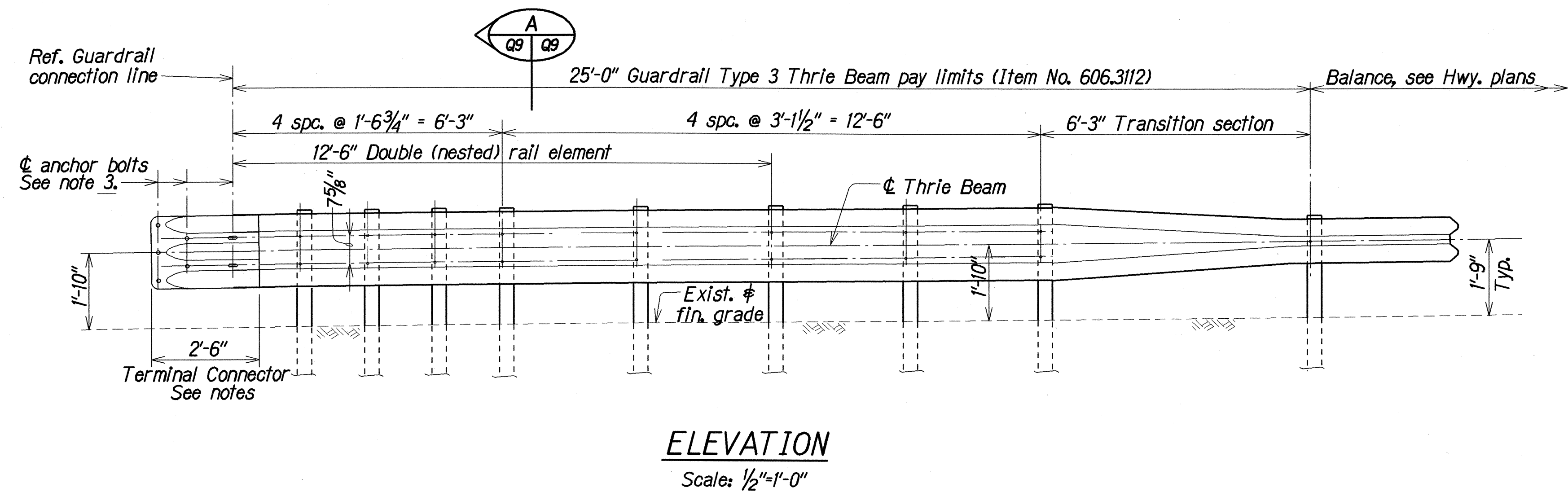


TYPICAL TYPE "B" UPGRADE DETAILS - BIKEWAY METAL RAILING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIHEE RIVER BRIDGE
TYPICAL TYPE "B" UPGRADE DETAILS -
BIKEWAY METAL RAILING
HALEAKALA HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
HAILIMALE ROAD TO KULA HIGHWAY &
KAHEKILI HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
at Waihee Bridge and Approaches
Scale: As Noted Fed. Aid Proj. No. STP-0900(60) Date: Sept. 2001

SHEET No. S8 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	23	33



TYPICAL TYPE 3 THRIE BEAM METAL GUARDRAIL UPGRADE FOR ENDPOST UPGRADE

NOTES:

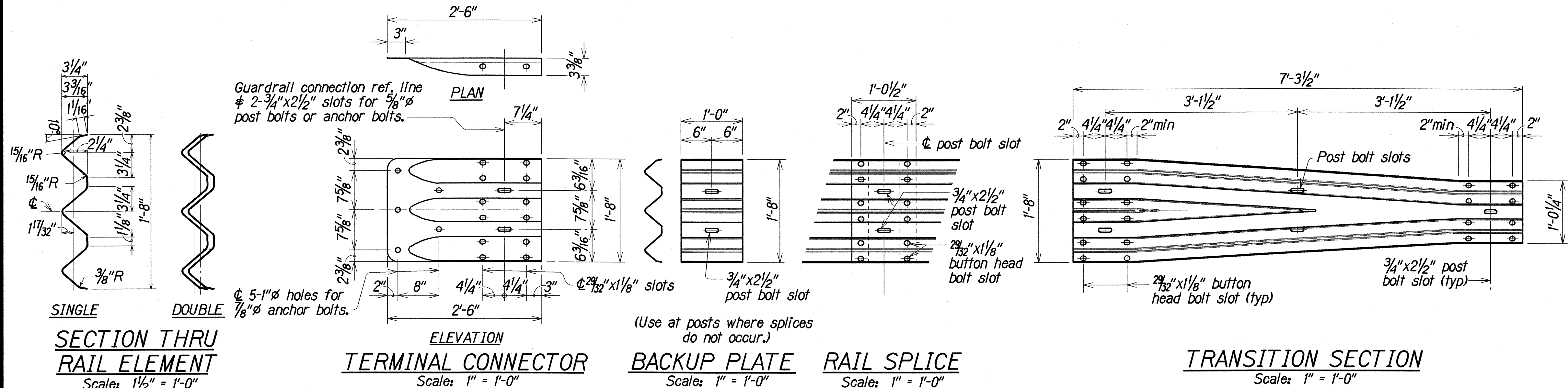
- The work necessary to connect guardrail to concrete endpost shall include all labor, materials, tools, equipment and incidentals necessary to complete the work and shall be incidental to Item No. 606.3112, Guardrail Type 3 Thrie Beam on Steel Post and will not be paid for separately.
- See "General Notes" on Sht. Q1 for additional guardrail and drilling information.
- All anchor bolts shall be high strength bolts conforming to the requirements of AASHTO M 164. See Special Provisions.
- Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus 1/4" (max) is attained.
- Terminal connector, Thrie Beam Metal Guardrail and Transition Section shall be fabricated from 10 gauge steel conforming to the requirements of AASHTO M 180 and shall be hot-dip galvanized after fabrication.
- Guardrail post and spacer block including all anchor bolts, cap PL, bolts, nuts, and washers shall be hot-dip galvanized after fabrication.
- Cap PL shall be fabricated from ASTM A 36.
- 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.
- Where double (nested) beam occur, 12" "Back-up Plate" not required.
- Heads of through anchor bolts shall be placed on the traffic side of the rail.
- Drilling of through holes shall be done in such a manner as to prevent cone puncturing of the daylighting end.

DESIGNED BY	DATE
TRACED BY	Mar. 2001
DESIGNED BY	Mar. 2001
QUANTITIES BY	Mar. 2001
CHECKED BY	Mar. 2001

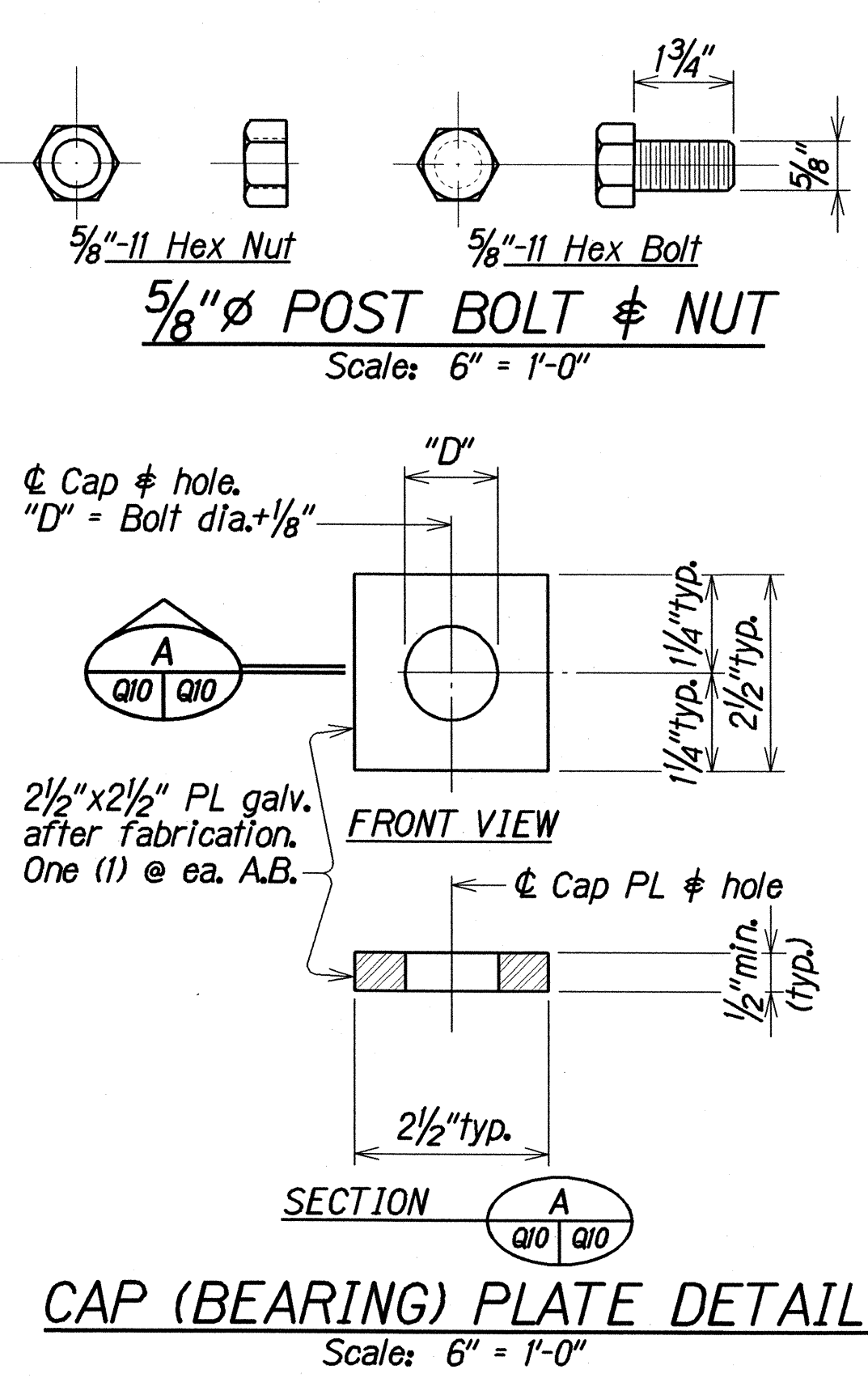
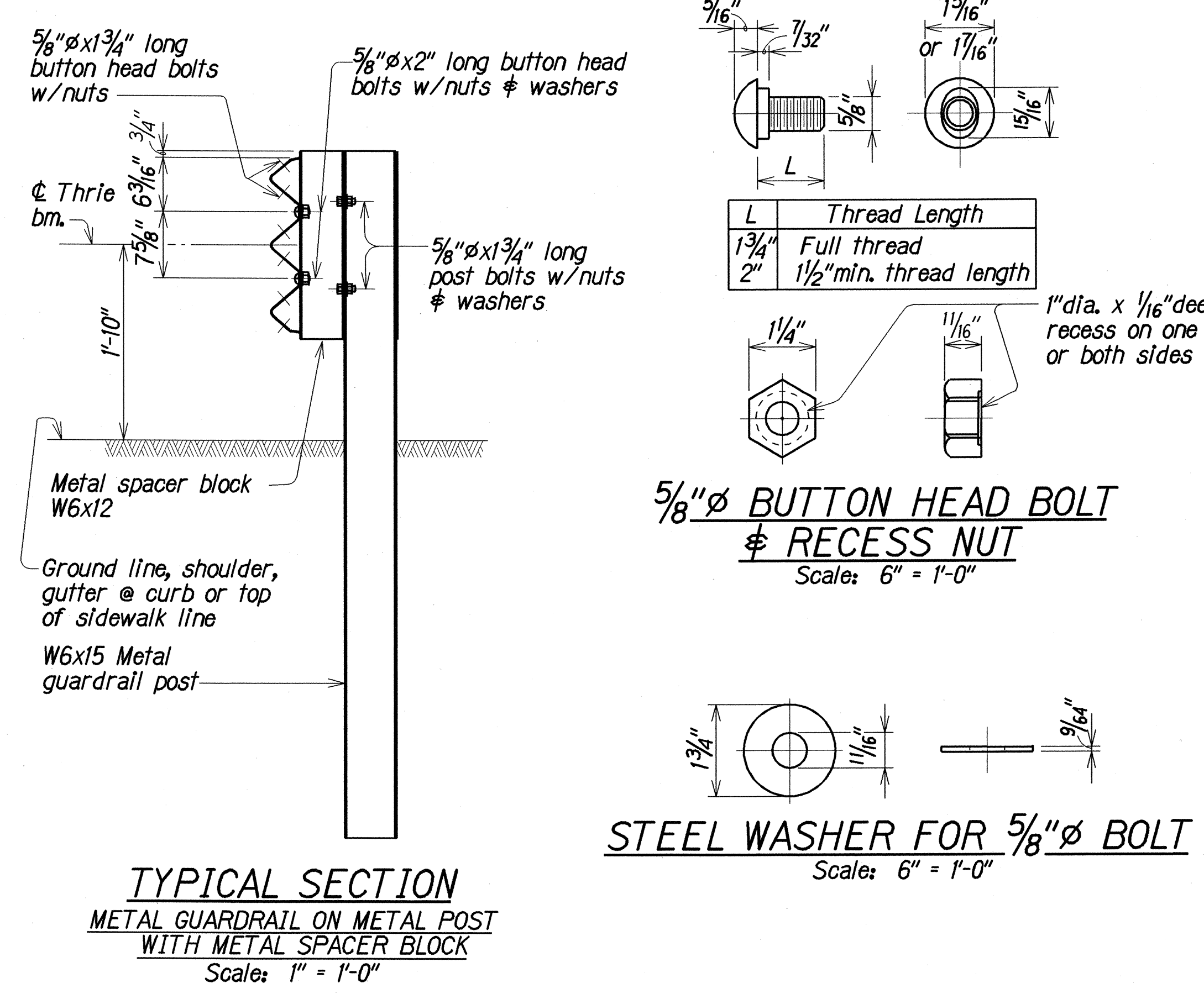
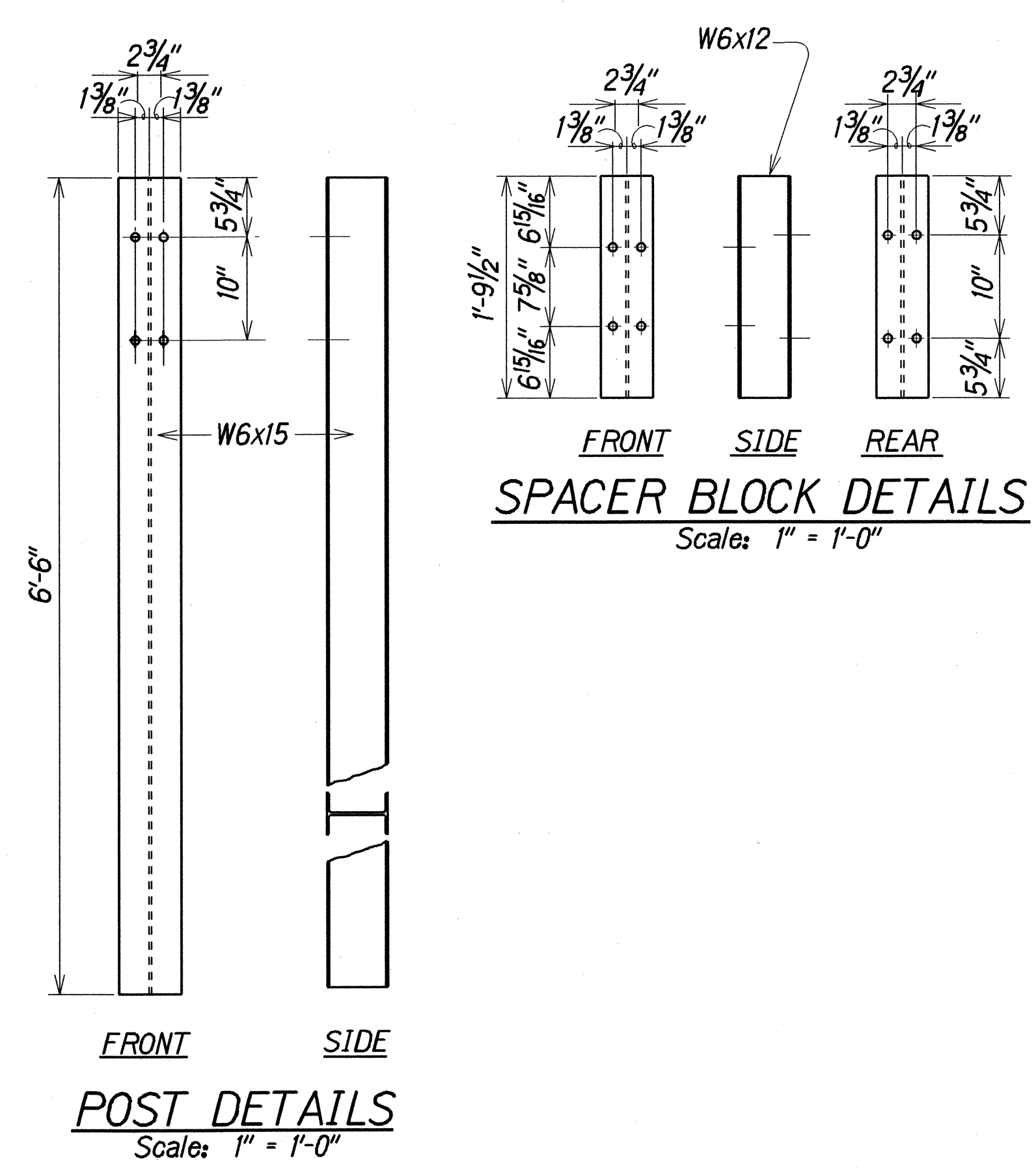
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION WAIHEE RIVER BRIDGE METAL GUARDRAIL DETAILS HALEAKALA HWY. GUARDRAIL & SHOULDER IMPROVEMENTS Haliimalie Road to Kula Highway & KAHEKILI HWY. GUARDRAIL & SHOULDER IMPROVEMENTS at Waihee Bridge and Approaches Fed. Aid Proj. No. STP-0900(60) Scale: As Noted Date: Mar. 2001
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SHEET No. Q9 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	24	33



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



METAL GUARDRAIL TYPE 3 THRIE BEAM AND APPURTENANCES DETAILS

DESIGNED BY	DATE
DRAWN BY	Mar. 2002
CHECKED BY	Mar. 2002
APPROVED BY	Mar. 2002

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIHEE RIVER BRIDGE
METAL GUARDRAIL TYPE 3 THRIE BEAM AND APPURTENANCES DETAILS
HALEAKALA HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
Halimaile Road to Kula Highway &
KAHEKILI HWY. GUARDRAIL & SHOULDER IMPROVEMENTS
at Waihee Bridge and Approaches
Fed. Aid Proj. No. STP-0900(60)
Scale: As Noted Date: Mar. 2001

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	25	33	HAWAII	HAW.	STP-0900(60)	2002	25	33

GENERAL NOTES

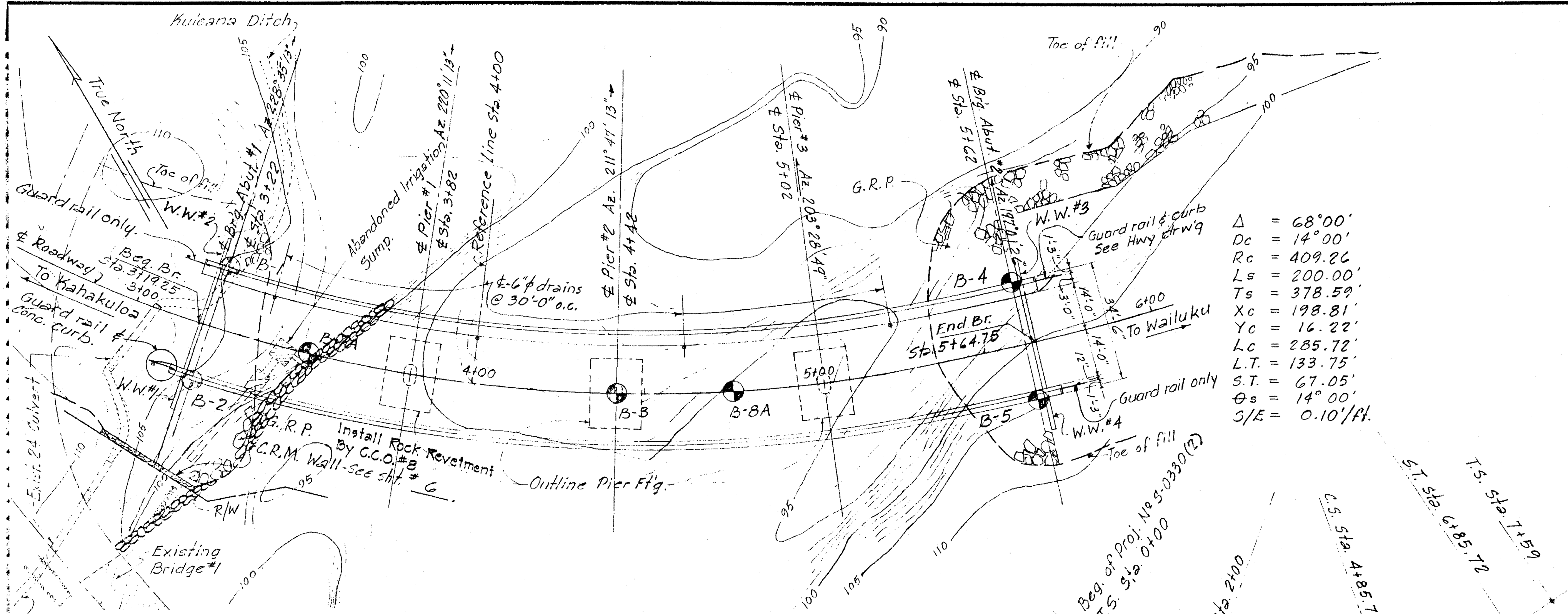
DESIGN LOAD: HS20-44
DESIGN SPECIFICATIONS:
AASHTO Specifications for Highway Bridges (8th Edition with subsequent additions and modifications).
DESIGN STRESSES:
R.C. Beams and Slabs. Except as otherwise noted, see AASHTO Specifications and the Special Provisions.

$f_c = 1,200$ p.s.i.
 $n = 10$
 $f_s = 20,000$ p.s.i.
PRESTRESSED BEAMS:
 $f'_c = 5,500$ p.s.i.
 $f'_{ci} = 4,000$ p.s.i.
 $\frac{1}{2}$ " 7 wire strands.
Tension Load = 25,200 lbs.
Design Load = 20,160 lbs.

- MATERIALS:
- All concrete shall be Class A-1, except as otherwise noted on the plans. See Special Provisions for concrete for prestressed beams.
 - See Special Provisions for Admixture in concrete.
 - Neoprene Pads shall be incidental to prestressed beams and will not be paid for separately.
- CONSTRUCTION METHOD:
- See Standard Specifications and Special Provisions.
 - Over excavation beyond the elevations indicated on the plans for the bottom of footings shall be backfilled with a minimum of Class D concrete at the Contractor's expense and as directed by the Engineer.
 - Roadway embankment at abutments shall be placed uniformly and simultaneously around the structure, up to the bottom of the abutment cap, and shall be complete in place before the abutment cap is placed. Unequal earth pressure on the abutment columns shall be kept to a minimum.
 - The prestressed girders shall not be placed on the abutments until the embankment and fill behind wingwalls are complete in place.
 - See Special Provisions for concrete finish. Concrete Seats and Creep Blocks shall be poured monolithically with abutment sections. Seats shall be finished, level and true to elevations.
 - Forms for prestressed concrete beams shall be removed and the beams inspected before the strands are cut.
 - Neoprene Pads shall be secured against displacement by adhesives, approved by the Engineer.

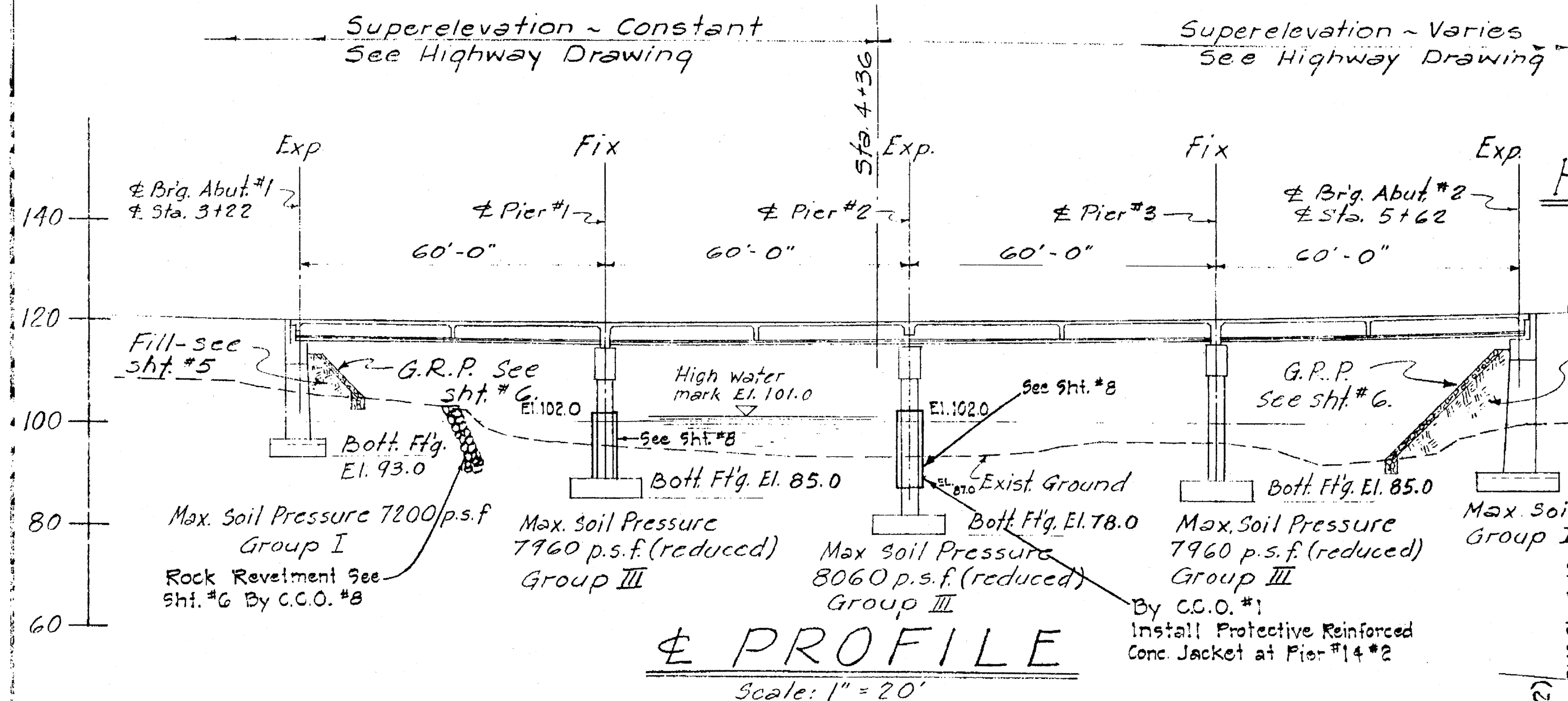
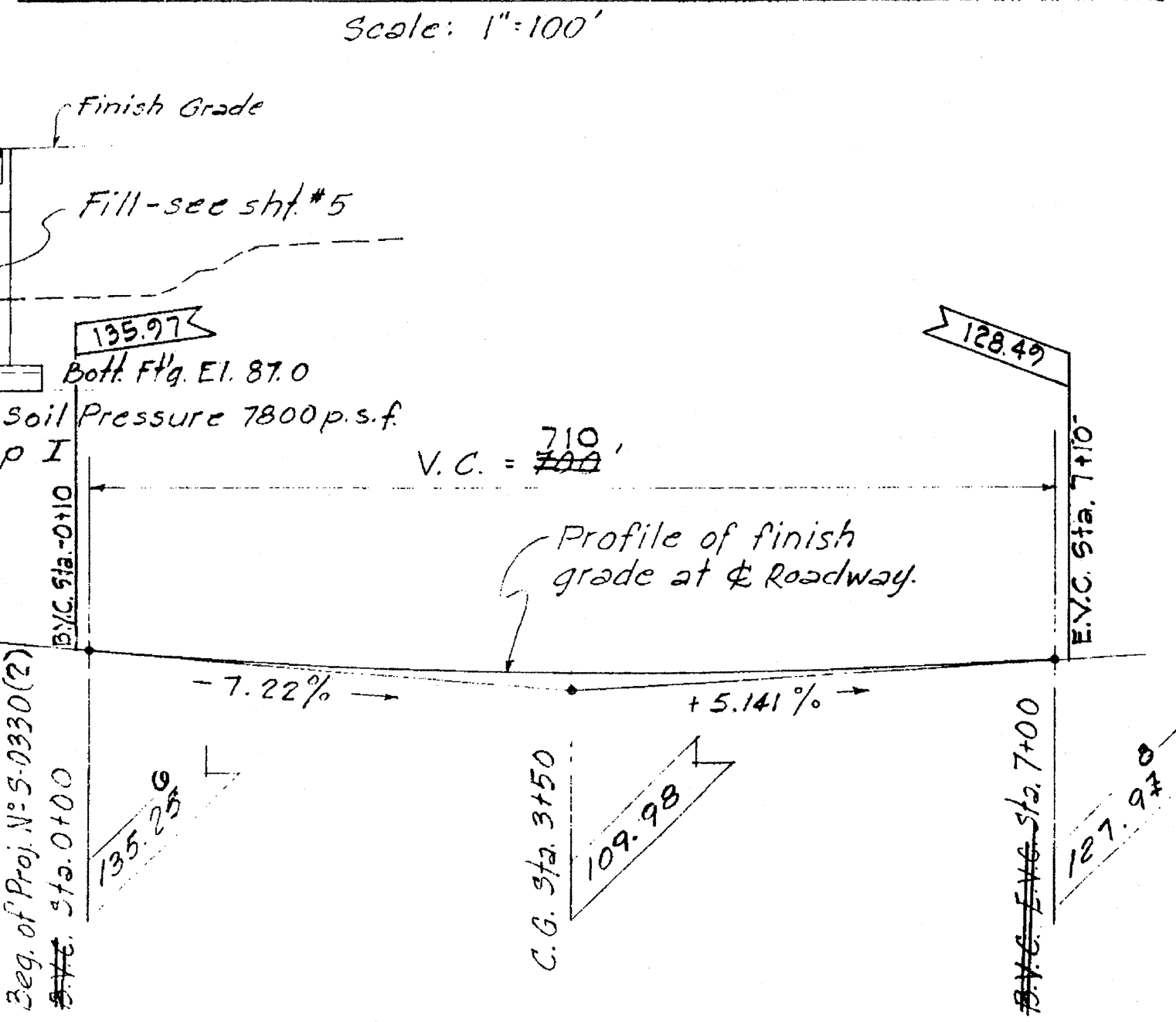
ESTIMATED QUANTITIES		
Class A-1 Concrete	Lump Sum	765.5
Reinf. Steel	Lump Sum	183.85
Structural Excavation		973.4
G.R.P.		266.42
Metal Railing		486 lin. ft.
Prestressed Girder		1,195 lin. ft.
C.R.M.		29.07

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIHEE RIVER BRIDGE
Kahekili Highway — Maui
Scale as shown Proj. No. STP-0900(60)
May 1966
SHEET No. 7 OF 15 SHEETS



- Notes:
- For "Boring Log" see sht. #15.
 - For G.R.P. Limits & details, see sht. #6.

HORIZONTAL CURVE DATA



SLAB CAMBER DIAGRAM EACH SPAN

No Scale

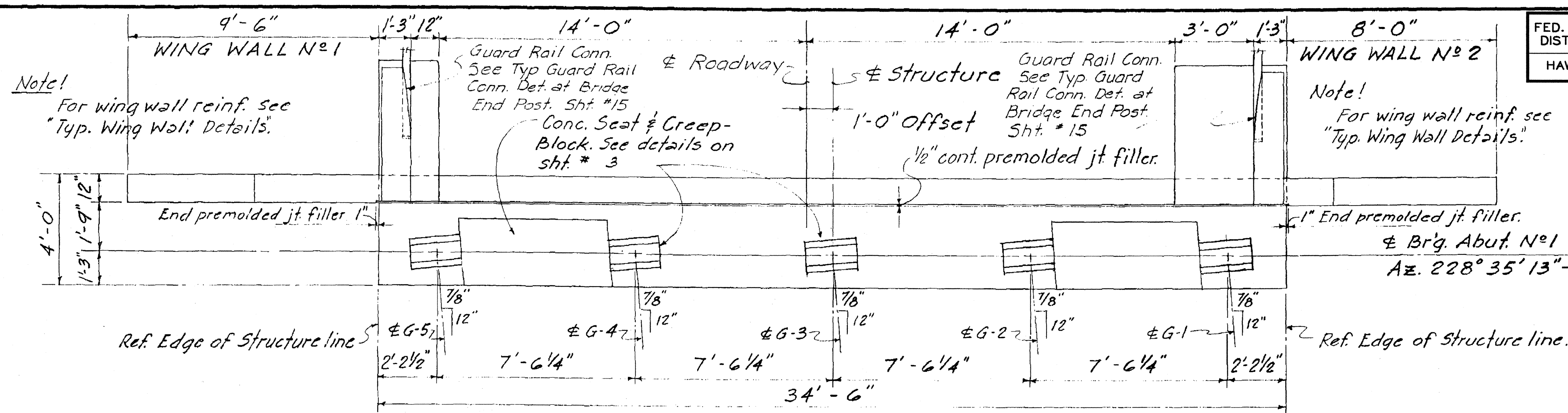
700' VERTICAL CURVE DIAGRAM

Scale: 1" = 100'

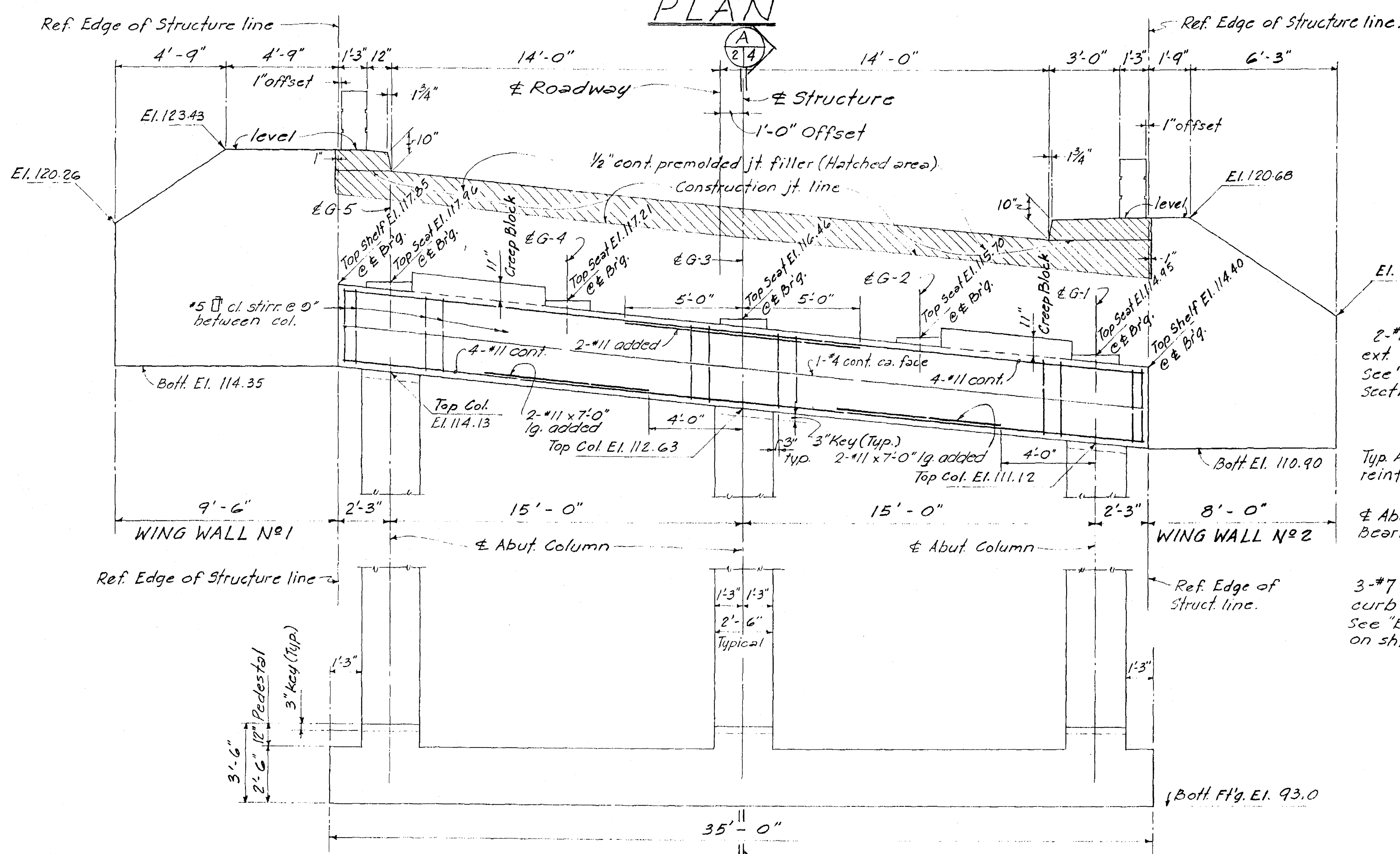
FOR INFORMATION ONLY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	26	33

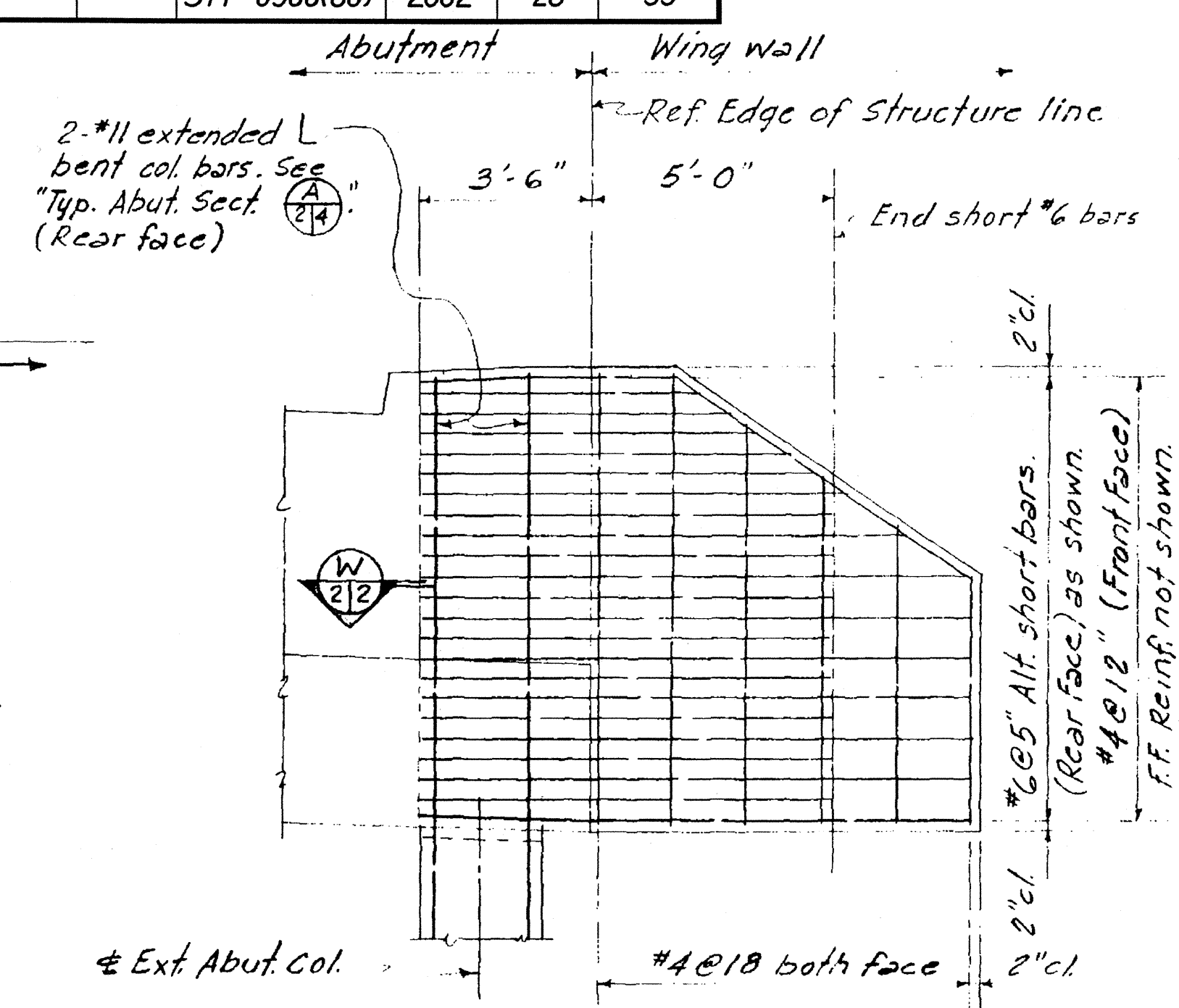
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	26	33



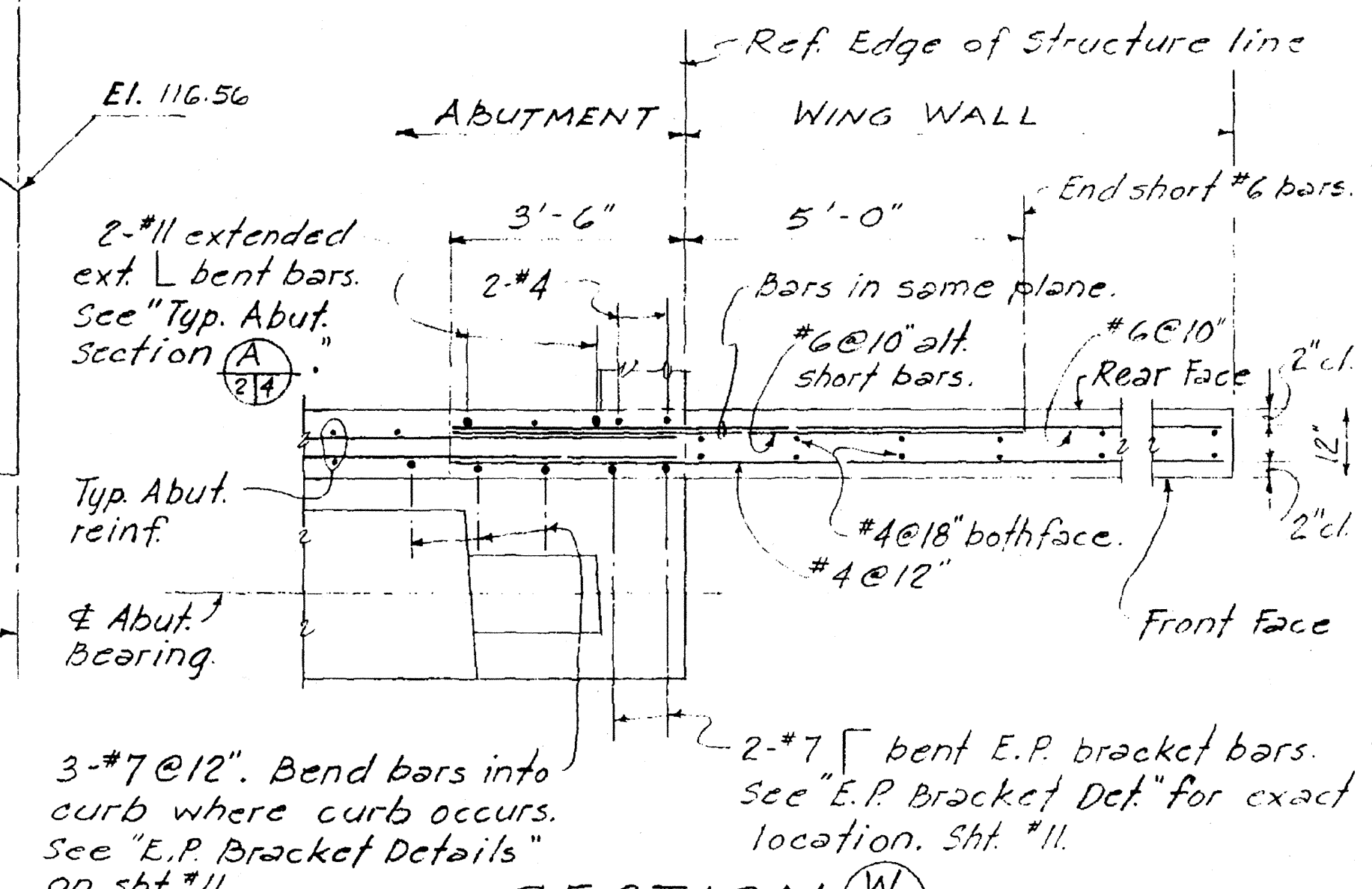
PLAN



ELEVATION - ABUT. N°1
Scale: 3/8"=1'-0"



ELEVATION
Scale: 3/8"=1'-0"



SECTION W 2/2
Scale: 1/2"=1'-0"
TYPICAL WING WALL REINF. DETAILS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIHEE RIVER BRIDGE

Kahakili Highway — Maui

Scale as shown Proj. No. STP-0900(60)

May 1966

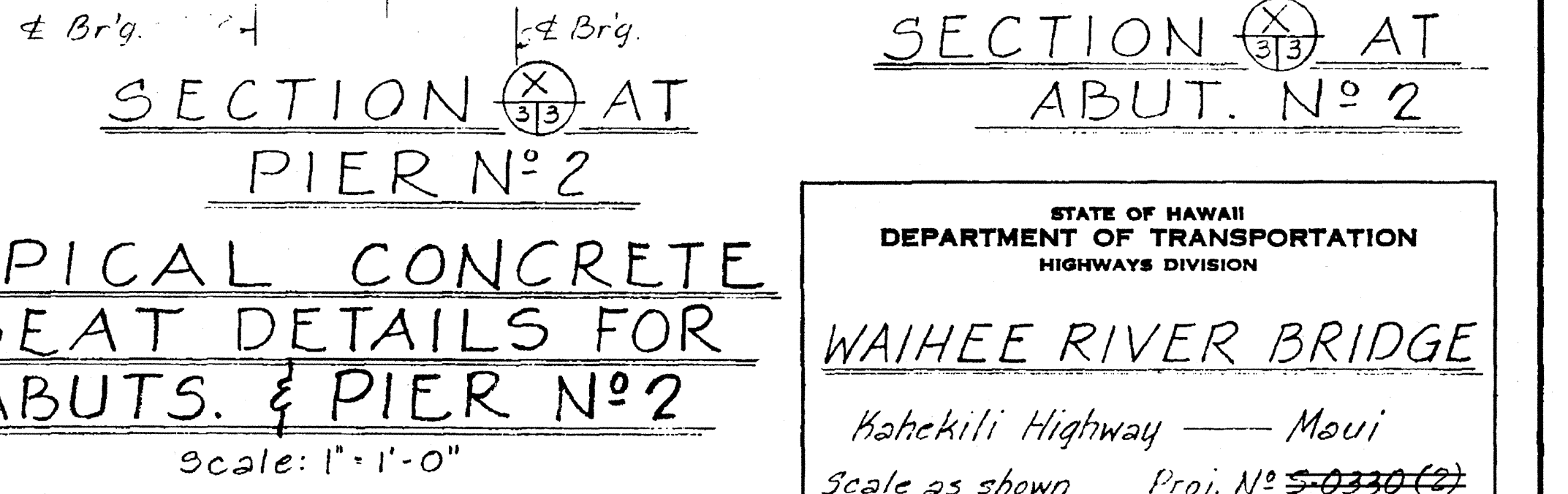
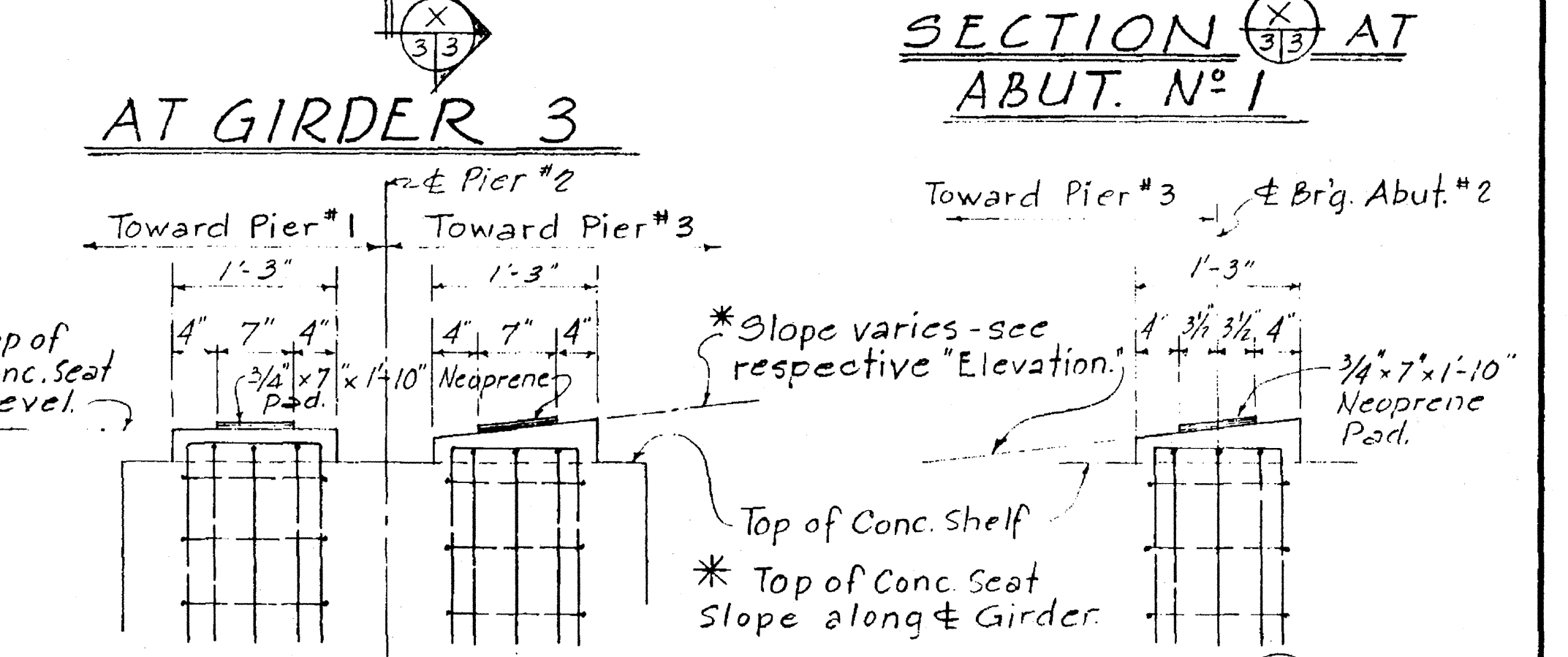
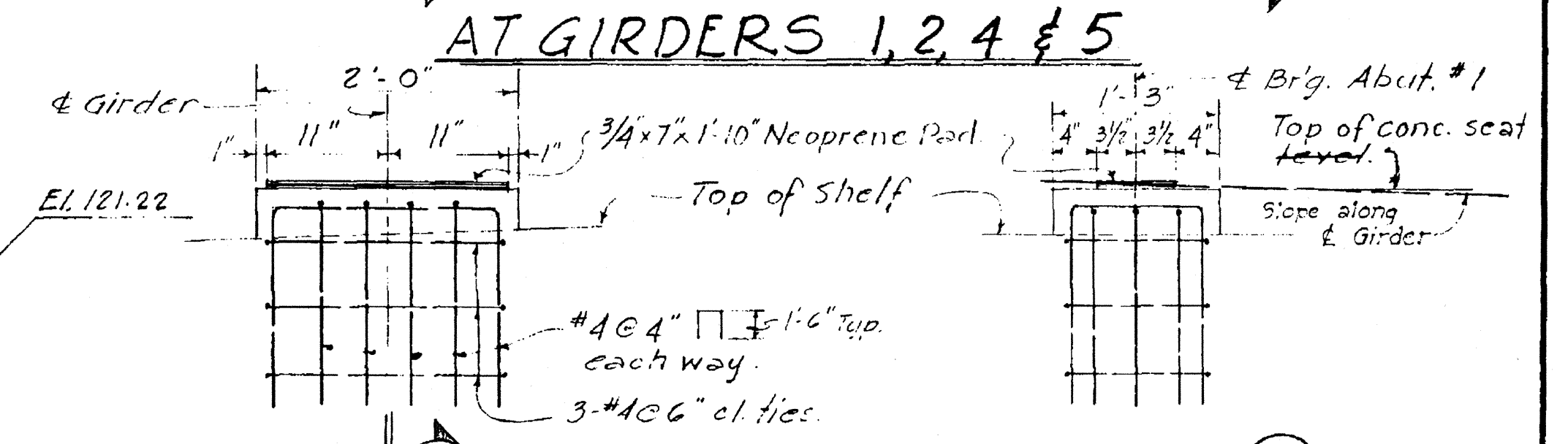
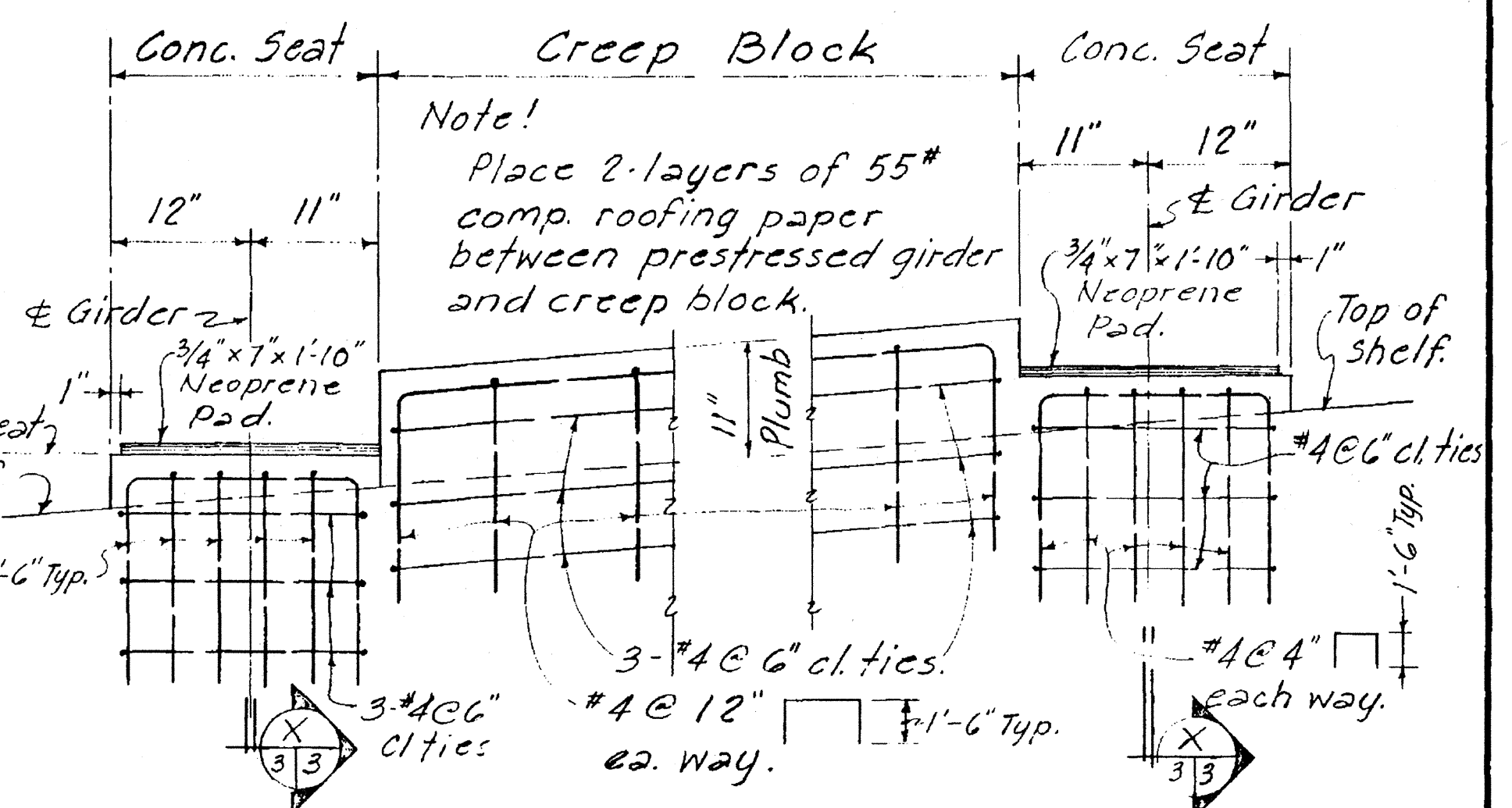
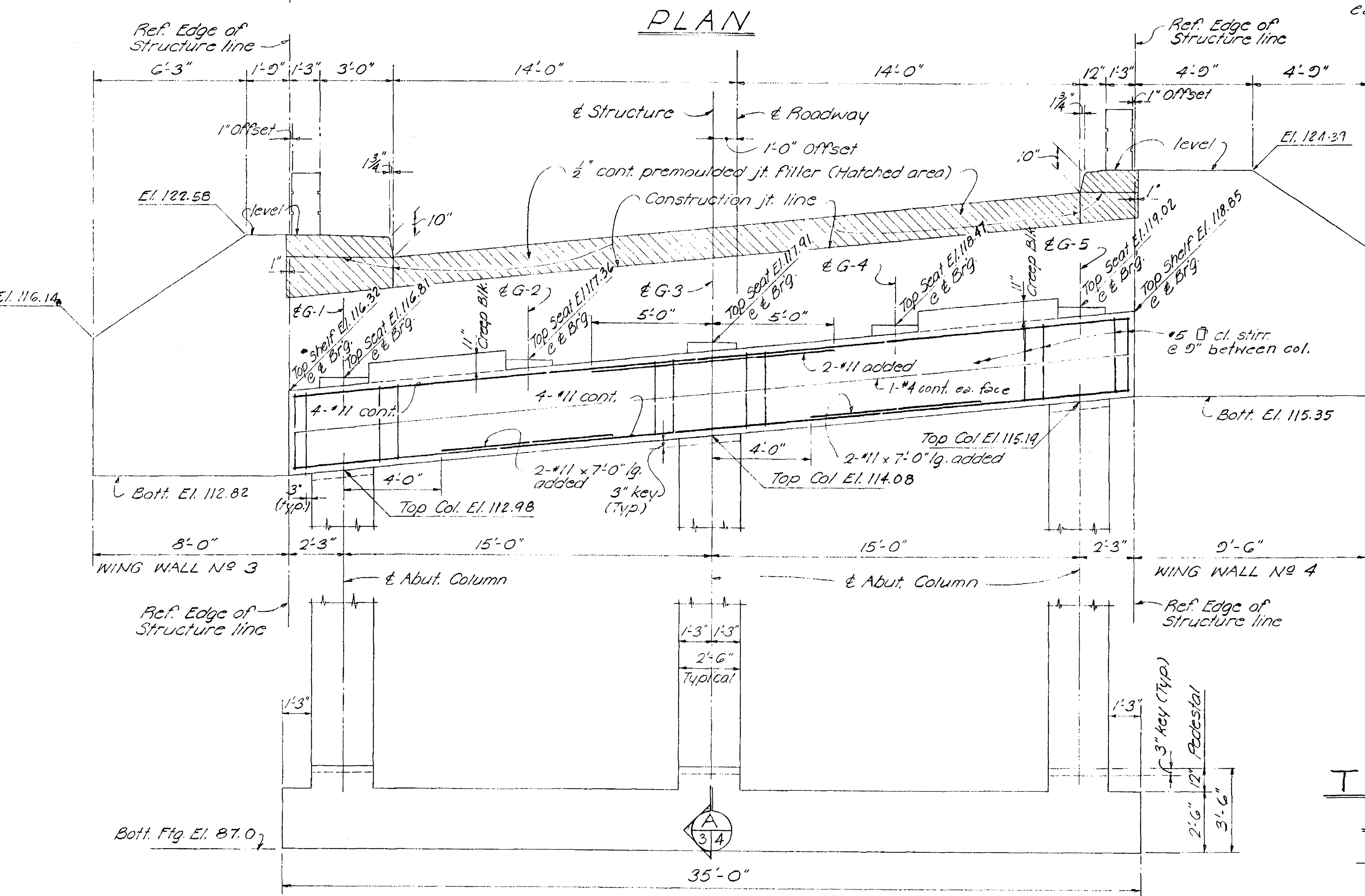
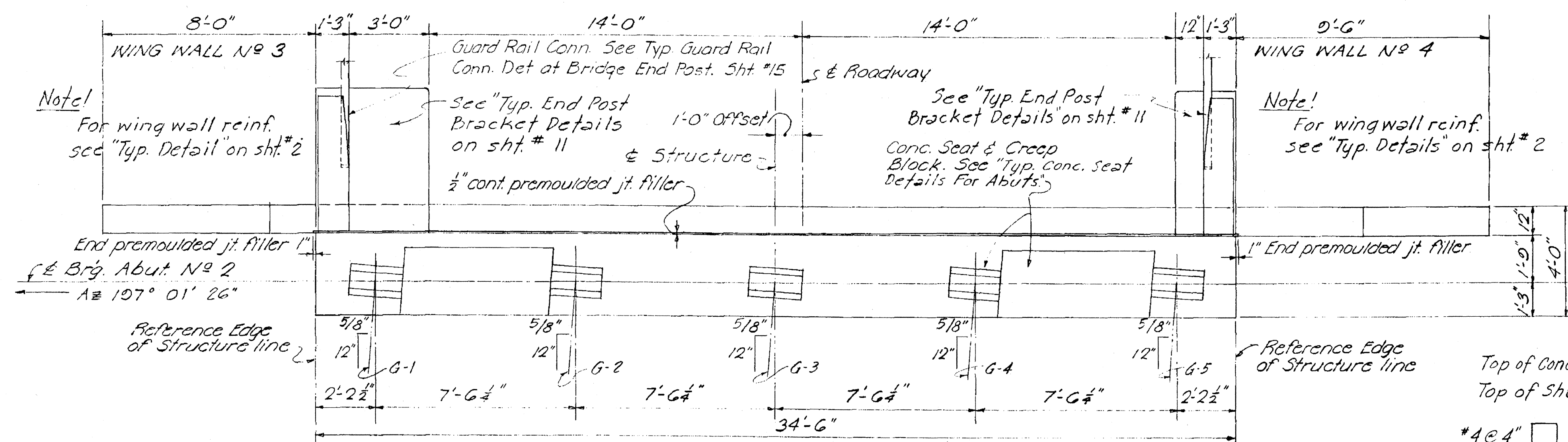
ES2 6

SHEET No. 2 OF 2 SHEETS

FOR INFORMATION ONLY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	27	33

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	27	33



ELEVATION - ABUTMENT N° 2
Scale: 3/8" = 1'-0"

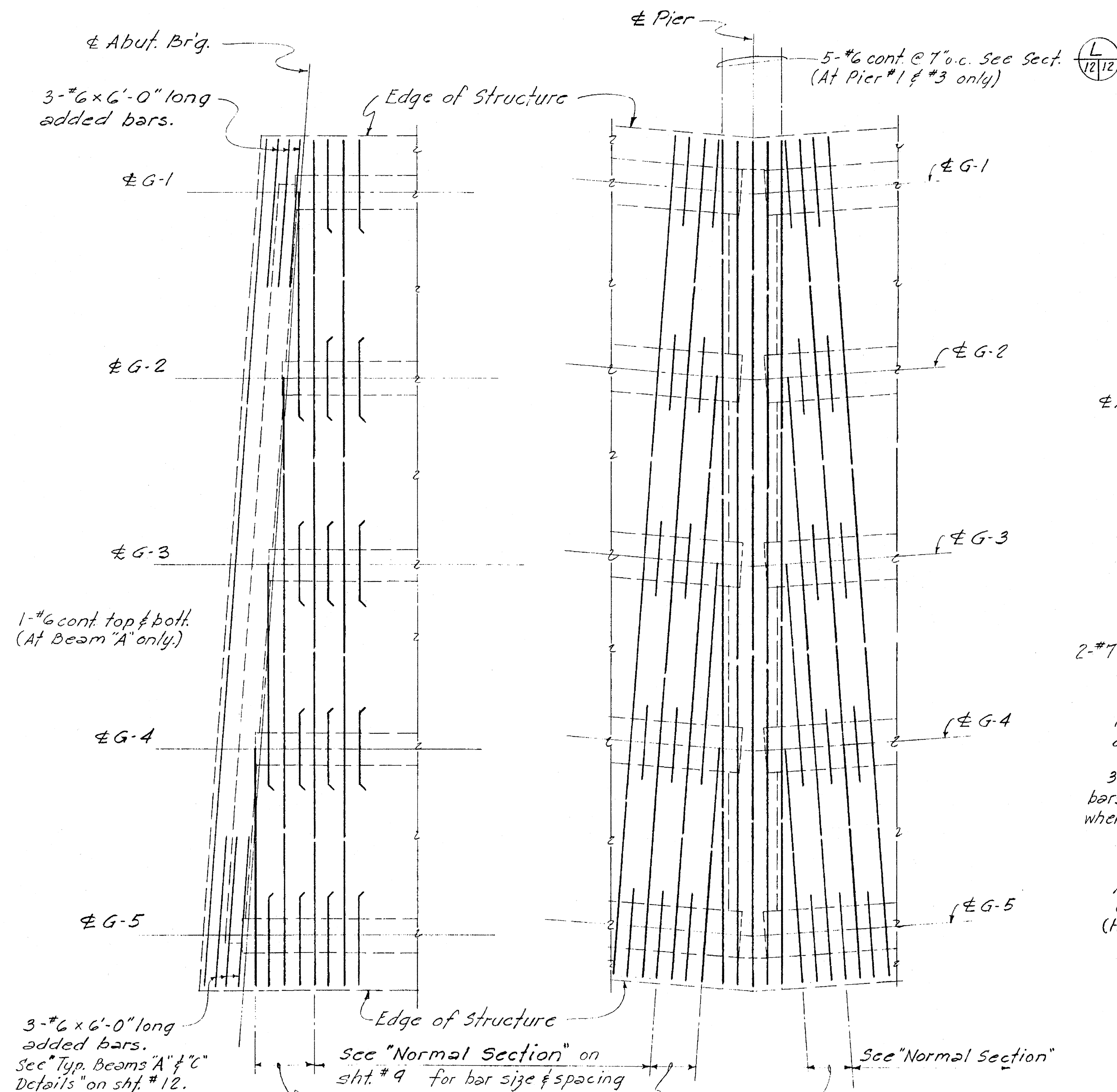
TYPICAL CONCRETE SEAT DETAILS FOR ABUTS. & PIER N° 2
Scale: 1" = 1'-0"

FOR INFORMATION ONLY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIHEE RIVER BRIDGE
Kahekili Highway — Maui
Scale as shown Proj. N° S-0330(2)
STP-0900(60)
May 1966
FS3 6
SHEET No. 3 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	29	33

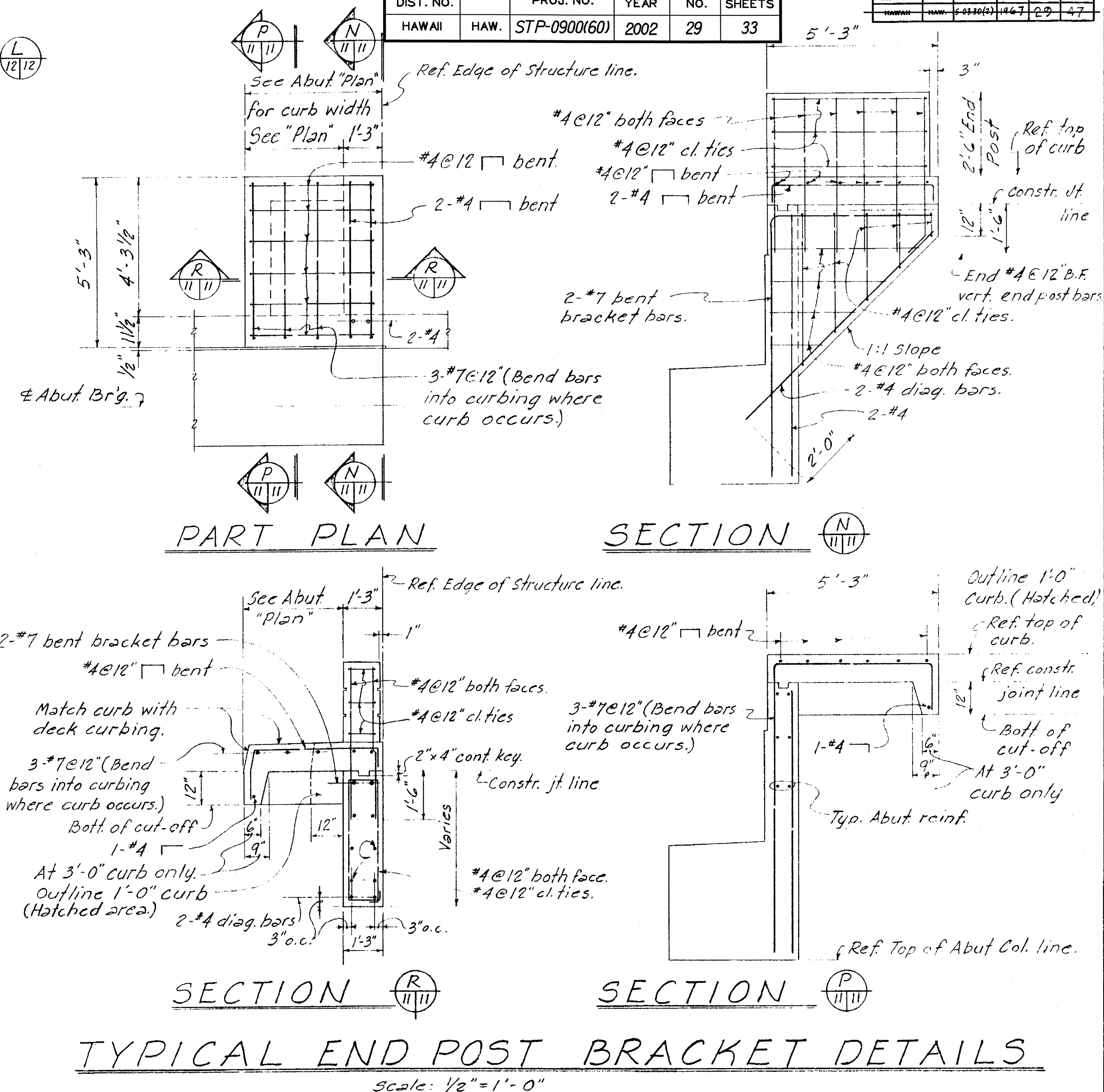
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0900(60)	2002	29	33



AT ABUT. ENDS

AT PIERS

PART PLAN - TYPICAL ARRANGEMENT OF TRANSVERSED SLAB REINF. AT SKEWED ENDS



FOR INFORMATION ONLY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIHEE RIVER BRIDGE

Kahekili Highway — Maui

Scale as shown Proj. No. STP-0900(60)

May 1966

ES 6

SHEET No. 29 OF 33 SHEETS

