

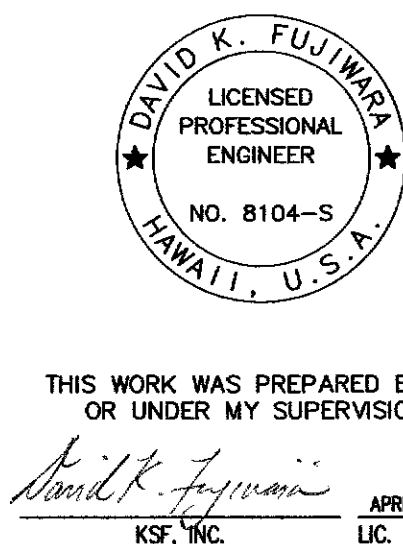
ORIGINAL PLAN	DATE
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No.	

DRAWING NAME: Z:\00 ONGONG\11-007-KUHIO HWY RETC WALLS AT LUMAHAI & WAINIHA\CAD\07-08-13 AS-BUILT\RW-5101 ASB.DWG PLOT TIME: 07-08-13, 11:28 AM

Structural Notes:

- General Specifications: Hawaii Standard Specifications for Road and Bridge, Construction, 2005, together with Special Provisions prepared for this project.
- Design Specifications: AASHTO LRFD Bridge Design Specifications, Third Edition, 2004, including subsequent interim revisions.
- Loads:
 - Railing Test Level = TL-2
 - Retaining wall design parameters
 - Active static earth pressure = 40 pcf (freestanding) and 55 pcf (restrained)
 - Passive earth pressure = 65 pcf (sloping ground conditions)
 - Coefficient of friction = 0.49
- Materials:
 - Minimum concrete compressive strength (at 28 days) shall be 4,000 psi.
 - Barrier A, Barrier B and Footing concrete mix shall be f'(c) = a minimum of 4,000 psi and have a maximum 0.45 water to cement ratio and contain 1.5 pints per cubic yard of amine carboxylate based Corrosion Inhibitor, Cortec MCI 2005NS or approved equal. A shrinkage reducing admixture, such as Eclipse or Tetraguard AS 20, shall be added at a dosage of 1 gallon per cubic yard as recommended by the manufacturer. The concrete shall contain 2 pounds per cubic yard of 1" long Alkali-Resistant Glass Fiber.
 - Shotcrete mix shall be f'(c) = 4,000 psi 3/8" shotcrete, 0.45 maximum water/cement ratio containing 2 pounds of 1" long Alkali-Resistant Glass Fiber or approved equal and 24 oz. of Cortec MCI 2005 NS per cubic yard. 7% Air minimum measured at truck or mixer.
 - Soil Nail Grout shall be f'(c) = 4000 psi, maximum 0.36% W/C ratio.
 - Use 94 lbs. of TYPE I/II cement, 4 gallons of water, 3-6 lbs. of Flowcable Admixture or approved equal and 1 oz. of Cortec MCI 2005NS Corrosion Inhibitor or approved equal.
 - Glenium 3030 or approved equal may be used as a high range water reducer for workability as needed.
 - Grout shall be stable (bleed less than 2%) per ASTM C940.
 - Concrete shall be cured using Sinak Lithium Cure at a coverage rate of no more than 200 sq. ft. per gallon for the shotcrete and no more than 400 sq. ft. per gallon for all other concrete. Cure shall be applied to all concrete exposed within 7 days of placement.
 - Reinforcing steel shall conform to ASTM A615, Grade 60 unless otherwise noted.
 - Stainless steel plates, rods, anchor bolts, and shapes shall be Type 316 or 316L. Welding of stainless steel shall be in accordance with the latest edition of AWS D1.6 "Structural Welding Code - Stainless Steel."
 - Geogrid fabric shall be as specified in the Special Provisions.
 - Glass Fiber Reinforced Polymer Bar:
 - Glass Fiber Reinforced Polymer (GFRP) rebar shall have a minimum tensile strength of 110 ksi for #4 bar and smaller. All others shall have a minimum tensile strength of 95 ksi. The allowable stress is equal to 1/4 of the tensile strength.
 - The modulus of elasticity of the GFRP bar shall be a minimum of 5,900,000 psi.
 - Minimum concrete cover for the GFRP bars shall be 3/4" unless otherwise noted.
 - Minimum lap splice lengths for the GFRP bars shall be 42 bar diameters unless otherwise noted.
 - All GFRP bars shall be securely tied in place.
 - The GFRP bars may be cut in the field with a masonry or diamond blade.
 - All work including materials and bends shall follow Manufacturer's recommendations.
- Reinforcement:
 - Unless otherwise noted, the covering measured from the surface of the concrete to the face of any reinforcing bars shall be as follows:
 - Formed surfaces exposed to earth or weather = 2" clear
 - Bottom and sides of footings and where concrete is deposited below grade = 3" clear

- Reinforcement (Cont.):
 - Reinforcing bars shall be detailed in accordance with AASHTO LRFD Bridge Design Specifications, Third Edition, 2004, including subsequent interim revisions, unless otherwise noted.
 - Minimum clear spacing between parallel bars shall be 1/2 times the maximum size of the coarse aggregate or 1/2 inches, whichever is greater.
 - Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of the intersections is less than 12 inches in each direction, in which case alternate intersections shall be tied.
 - General Construction Notes:
 - See 2005 Standard Specifications and Special Provisions.
 - The Contractor shall comply with all applicable permits for this project. In addition, the Contractor shall comply with all applicable laws of the Federal, State, and County governments.
 - Unless otherwise noted, all vertical dimensions are measured plumb.
 - The Contractor shall verify all site conditions before commencing the work of excavation.
 - For concrete finish, see Standard Specifications and Special Provisions.
 - Unless otherwise noted, all exposed concrete surfaces shall be chamfered 3/4" x 3/4".
 - Textured concrete railing shall be textured and stained as specified in Section 507 of the Special Provisions.
 - The Contractor is notified of the existence of weight-posted one-lane bridges along Kuhio Highway (Route 560). Current weight limits are 15 tons at Hanalei Bridge and 8 tons for 3 bridges between Hanalei shall apply for an oversize/overweight/vehicle/load permit for each affected vehicle, equipment, and/or load at the State Highways Division Office (Ph. 241-3000). The State reserves the right to disallow crossing of these bridges by loads exceeding the posted weight limits.
- W-Beam and T101 Guardrail Notes:
- All elements of the W-beam and T101 guardrails shall be shop coated as specified in Section 606 of the Special Provisions.
 - The Contractor shall furnish to the State 12 additional W-beam sections and 4 additional strong posts at the drop off location determined by the Engineer. The additional 12 each W-beam sections and 4 each strong posts including transport and drop-off shall be included in the lump sum price for Item No. 606.3000 Guardrail Type 3 W-beam with strong post. All elements shall be shop coated as specified in Section 606 of the Special Provisions.
 - T101 guardrail member shall be extended and connected to at least the first soil embedded post at each end of the guardrail. More such posts shall be used to utilize 25' standard sections.
 - Face of guardrail and posts shall be vertical transversely unless otherwise approved by the Engineer. Grout may be used under base plates, if necessary.
 - All posts, W-beam, pipe, sheet metal, bolts, nuts, washers, and base plates are considered as parts of the guardrail for payment.
 - Submit 6 each sets of sufficiently detailed shop drawings for all T101 hardware for Engineer's review and acceptance prior to installation.
 - Average weight of guardrail (6'-3" post spacing) = 23 plf.
 - 8 5/8" splice nuts shall be tacked to bent sheet metal positioners as shown. Other suitable positioning methods or devices may be substituted. The complete splice shall have 16 bolts. Each bolt will include a 1 3/4" x 3/16" plate washer or a 1 3/4" O.D. washer.
 - Maintain 6'-3" post spacing wherever possible for use with nominal 25'-0" W-beam sections (26'-0 1/2" overall).



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Roadway	Text for as-built posting

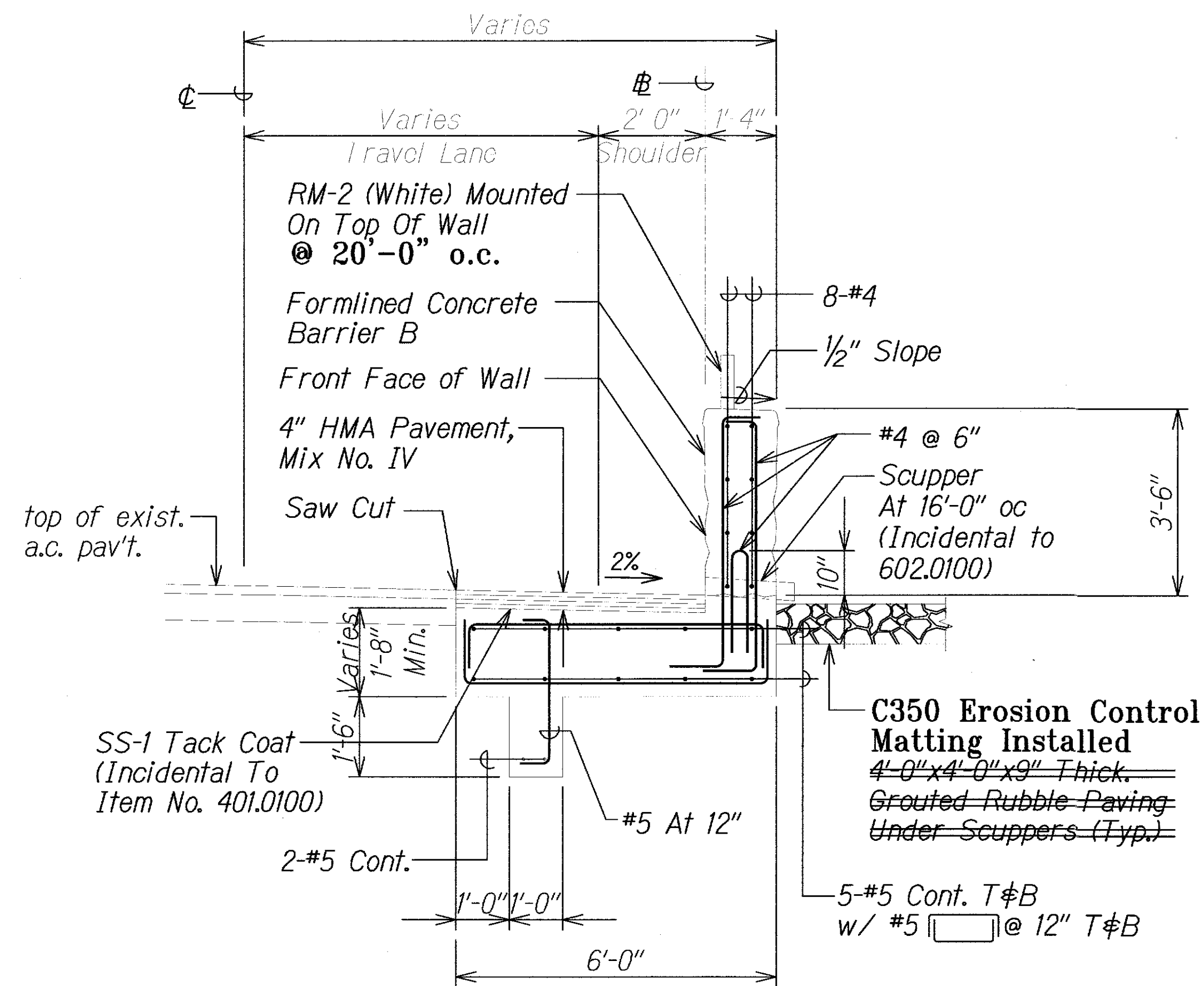
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STRUCTURAL NOTES	
KUHIO HIGHWAY	
Retaining Walls At Lumahai And Wainiha	
Project No. 560A-03-96	
Scale: None	Date: June 15, 2011
SHEET No. SI OF 1 SHEETS	

"AS-BUILT"

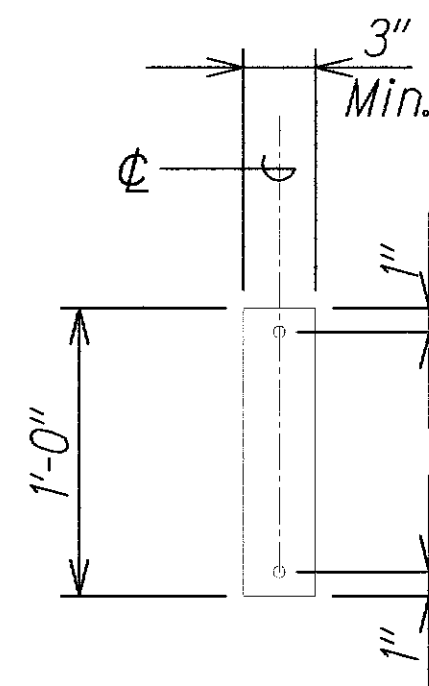
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FINAL

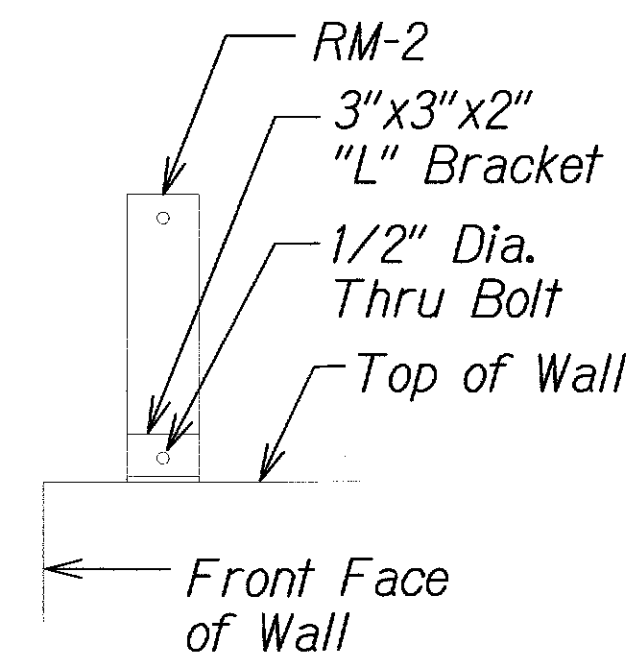
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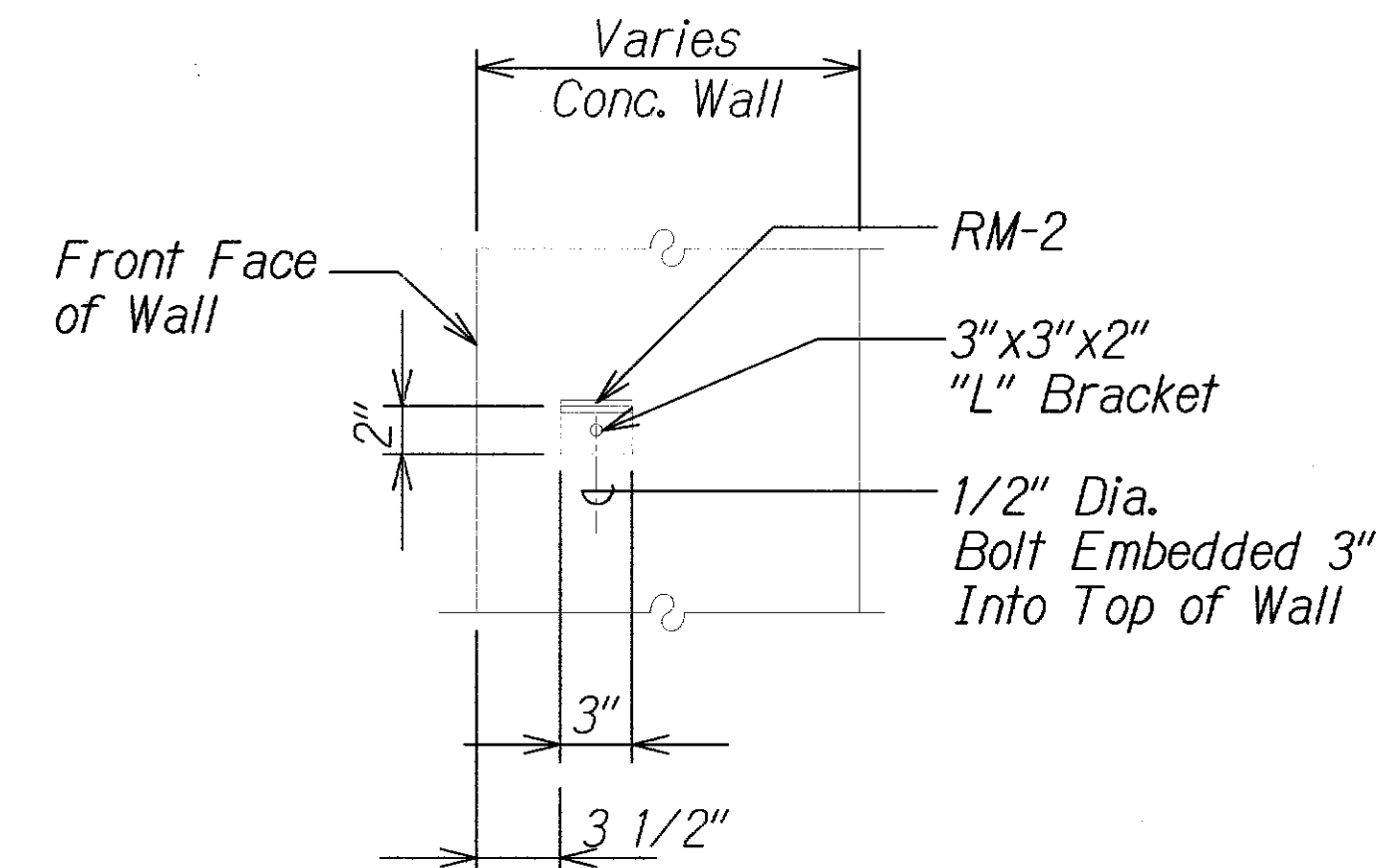
TYPICAL SECTION A
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CONCRETE RAILING
Sta. 5+40 to Sta. 5+87.15



RM-2 (WHITE)

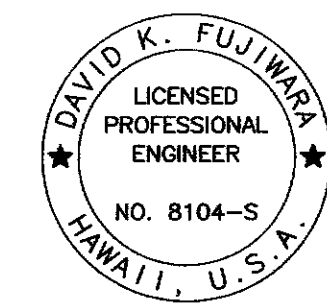


RM-2 MOUNTED ON WALL



TOP VIEW

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



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KSF, INC. APRIL 30, 2012 LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL WALL SECTION AND DETAIL
KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96
Scale: As Shown Date: June 15, 2011
SHEET No. S21 OF 4 SHEETS

"AS-BUILT"

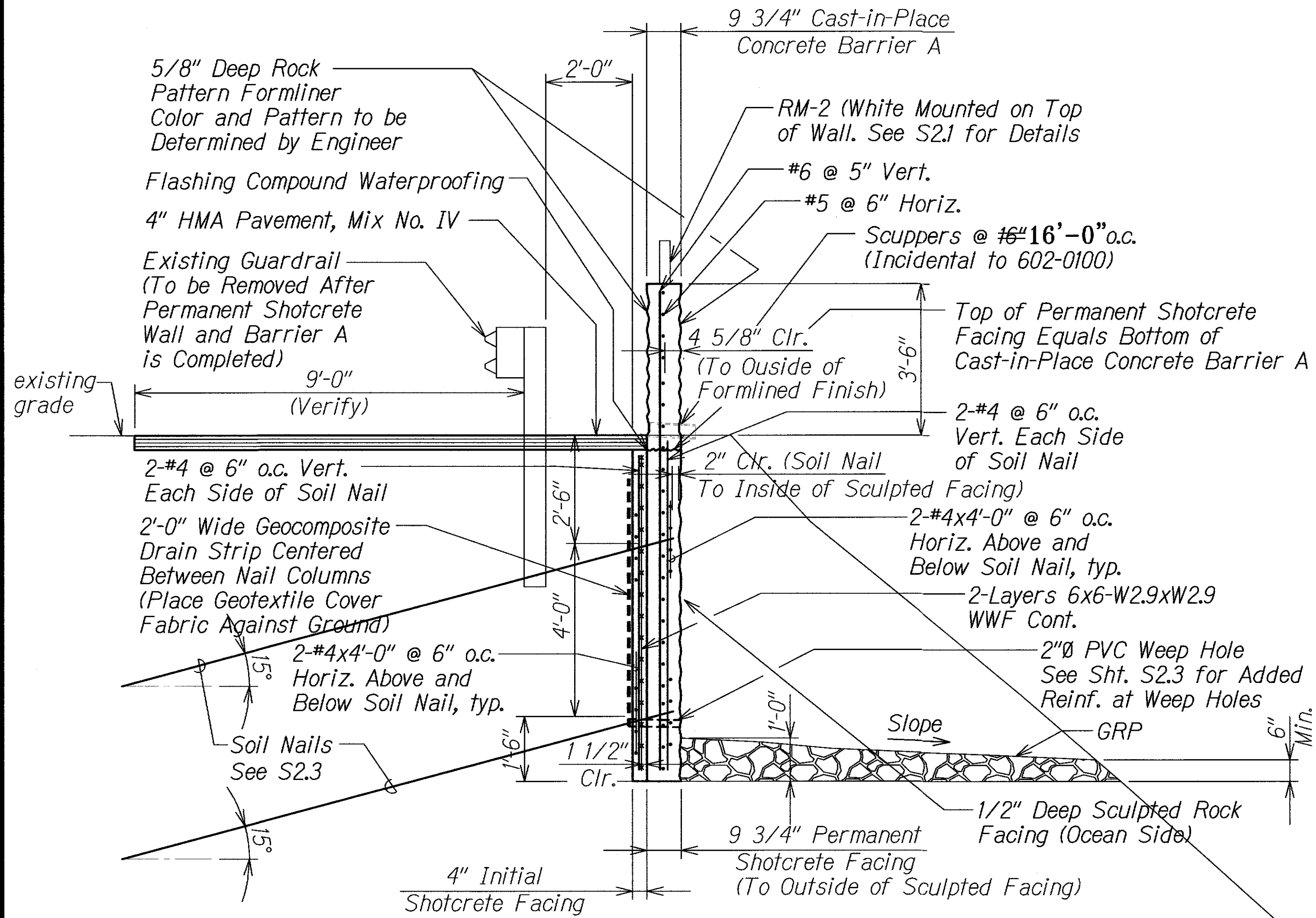
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ORIGINAL PLAN	DATE
NOTED BOOK	
NO.	

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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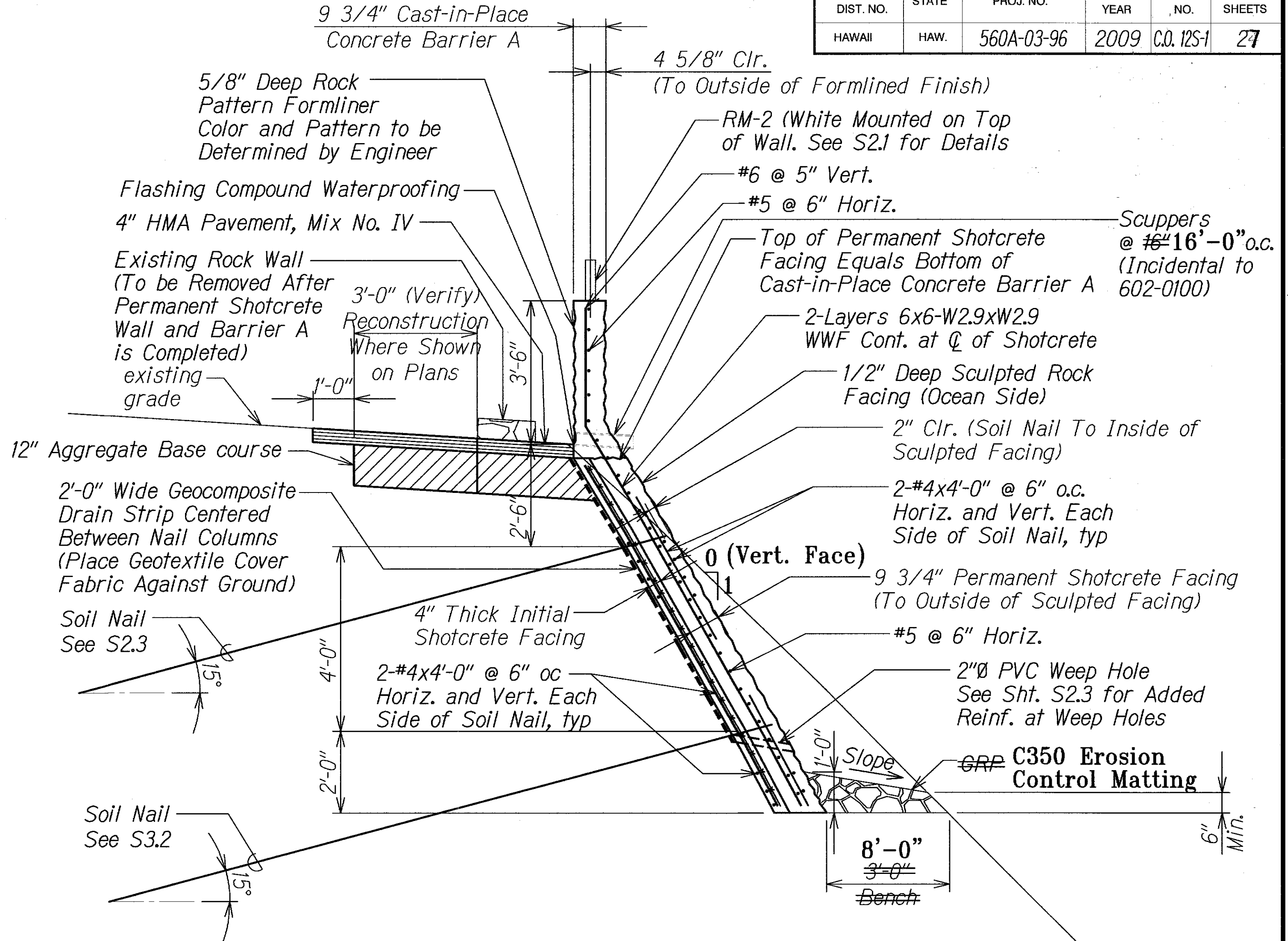


SECTION - SHOTCRETE WALL (TYPE 1)
STA. 4+70 TO # STA. 5+40

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

A
S22 | S22

- Notes:**
1. Wire Mesh shall be Hot Dip Galvanized.
 2. See S1.1, Section 4.A.(1) for Shotcrete requirements.
 3. Color and pattern of all exposed concrete faces shall be determined by the Engineer.



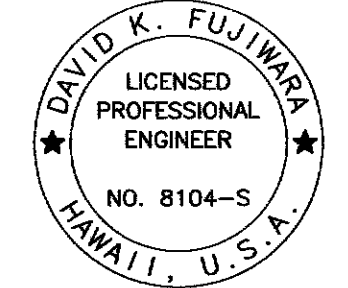
SECTION - SHOTCRETE WALL (TYPE 2)
STA. 5+87.15 TO # STA. 8+58.08

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

B
S22 | S22

LEGEND FOR AS-BUILT POSTINGS

- Squiggly line for as-built deletion
- Double line for as-built deletion
- Roadway
- Text for as-built posting



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

SHOTCRETE WALL SECTIONS

KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96

Scale: As Shown Date: June 15, 2011

SHEET No. S22 OF 4 SHEETS

"AS-BUILT"

C.O. 12S-1

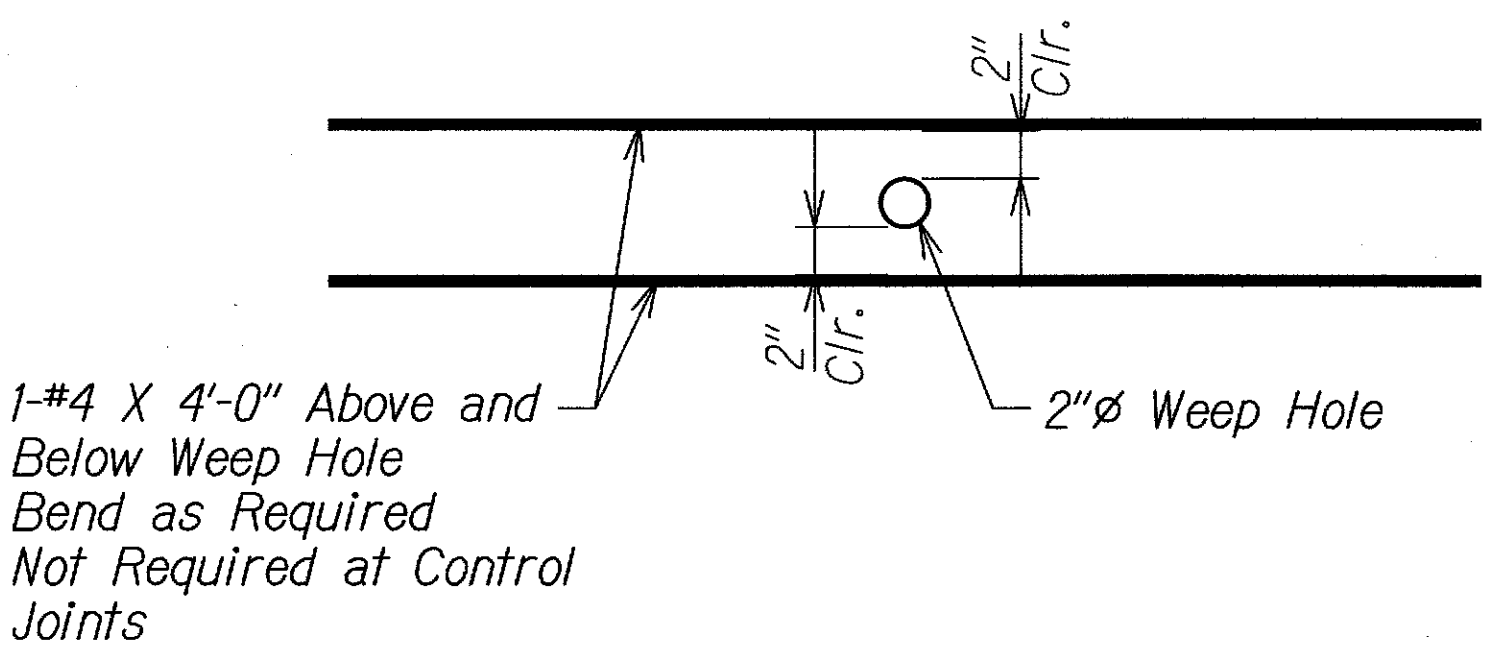
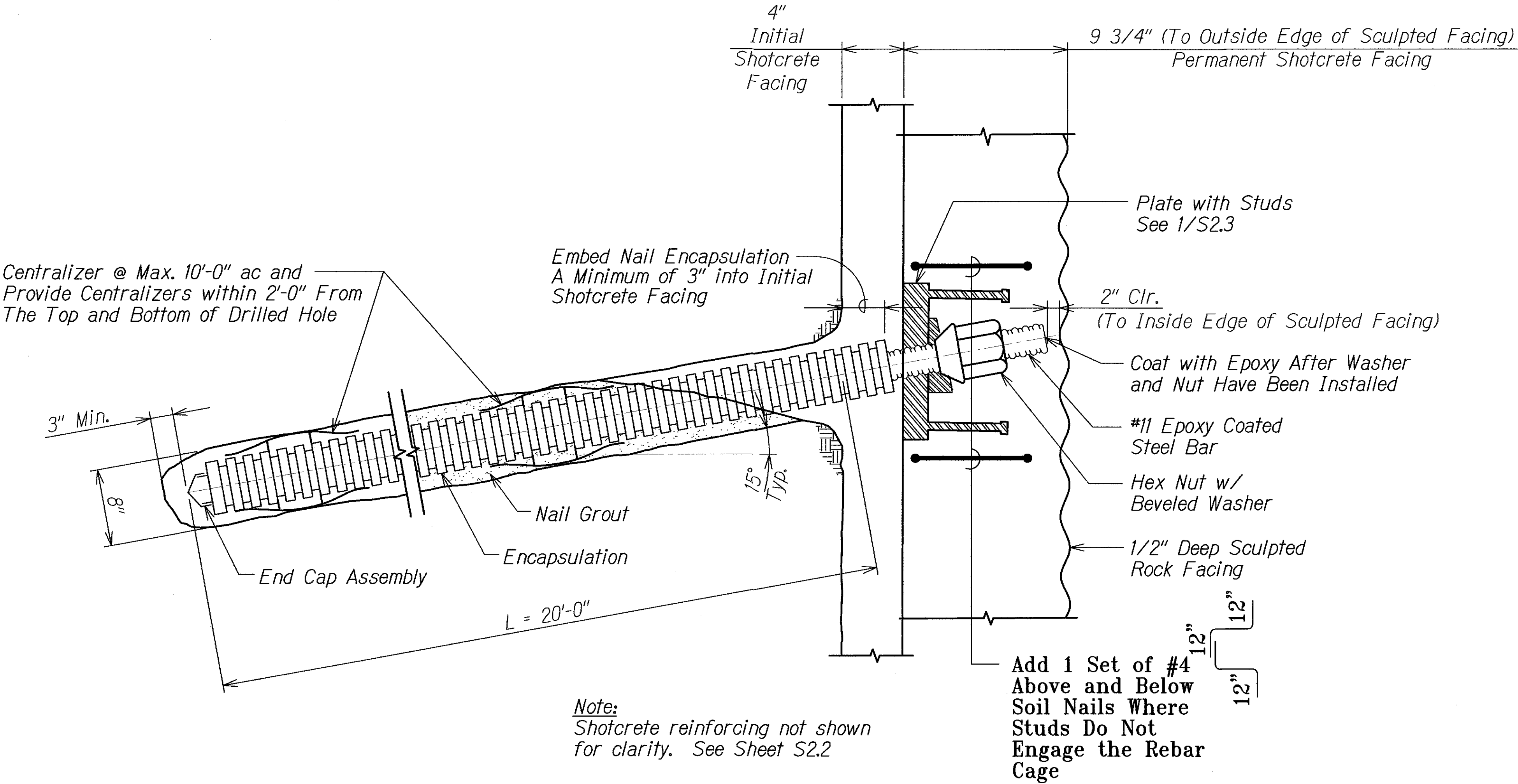
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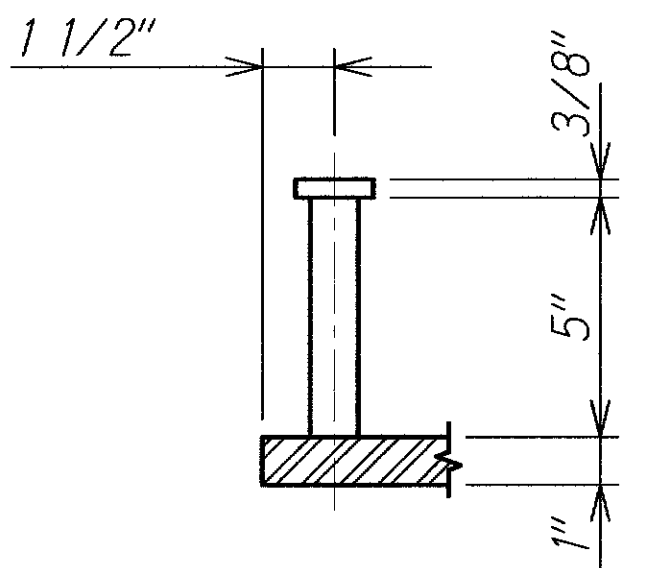
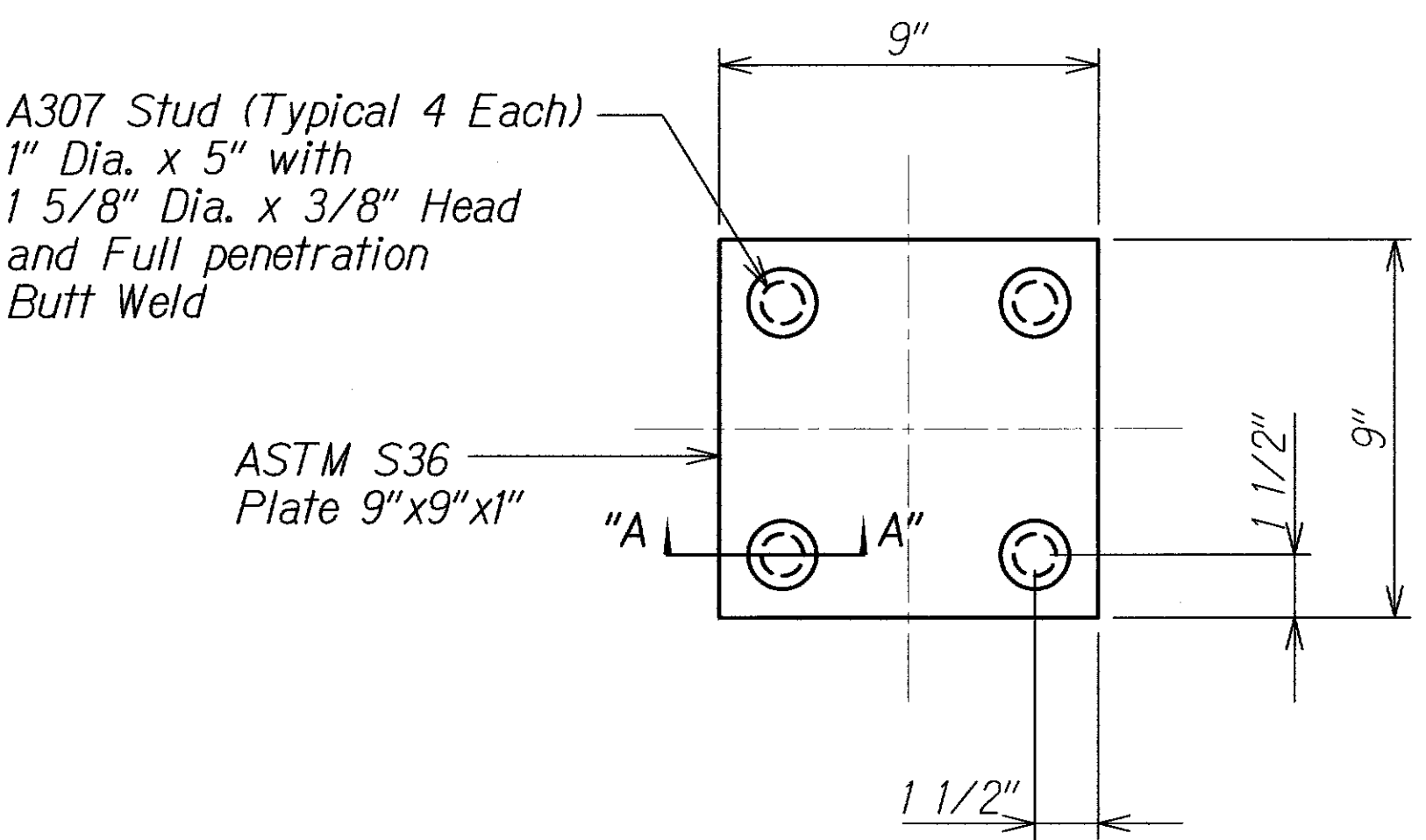
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HAWAII	HAW.	560A-03-96	2009	C.O. 12S-2	27

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ADDED REINF AT WEEP HOLE
Scale: 1 1/2" = 1'-0"

ENCAPSULATED PRODUCTION SOIL NAIL DETAIL
Scale: 1 1/2" = 1'-0"

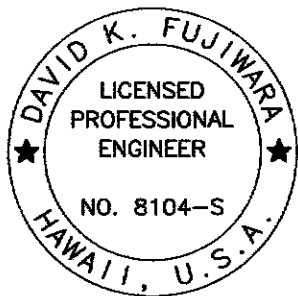


SECTION "A - A"

NOTE:
All nuts, washers, plates and studs shall be hot dip galvanized after fabrication.

CONNECTION PLATE WITH STUD DETAIL
Scale: 3" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
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	Text for as-built posting



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LIC. EXP. DATE

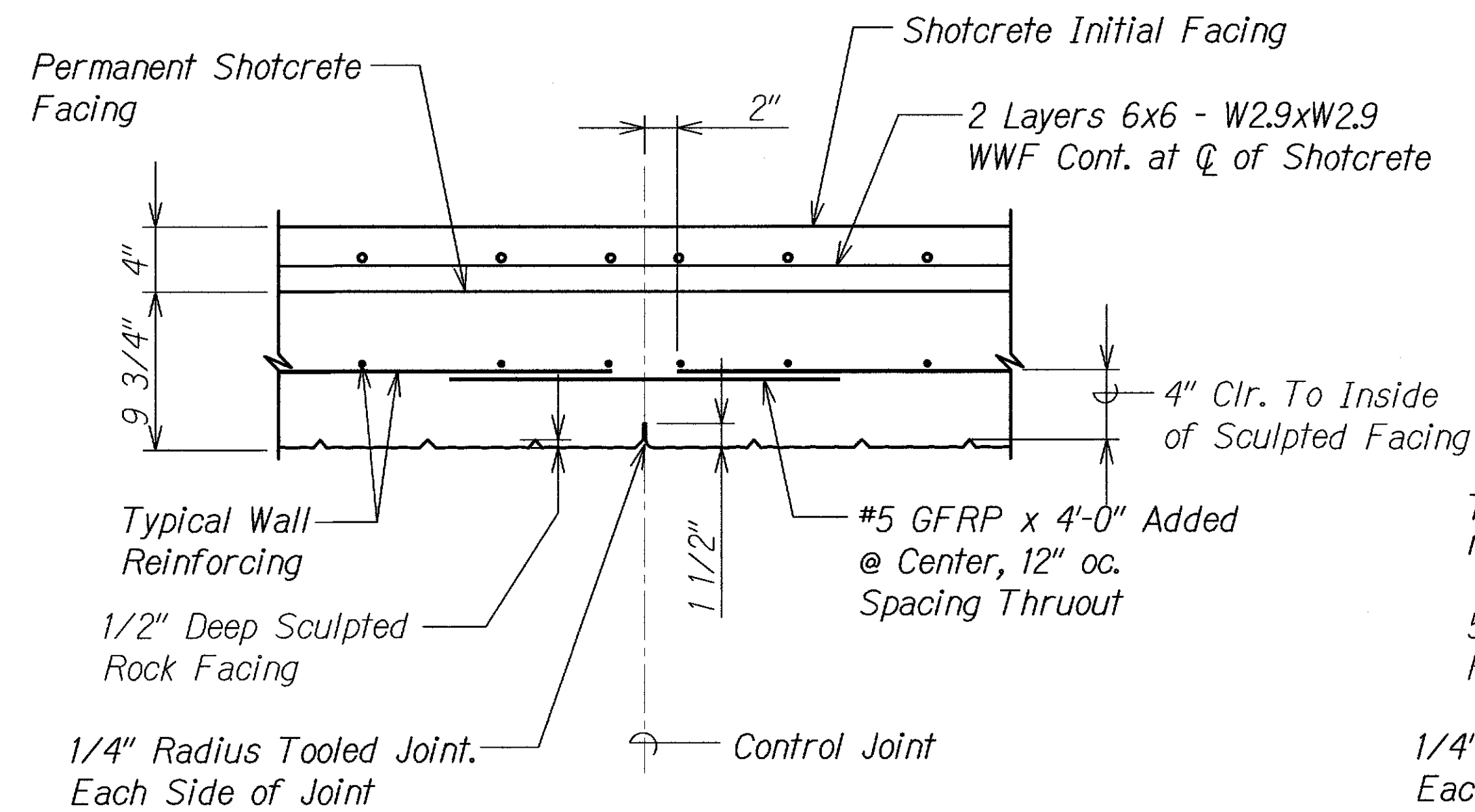
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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SOIL NAIL SHOTCRETE WALL
SECTION AND DETAIL
KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96
Scale: As Shown Date: June 15, 2011
SHEET No. S2.3 OF 4 SHEETS

ORIGINAL PLAN	DATE
NOTED BY	DATE
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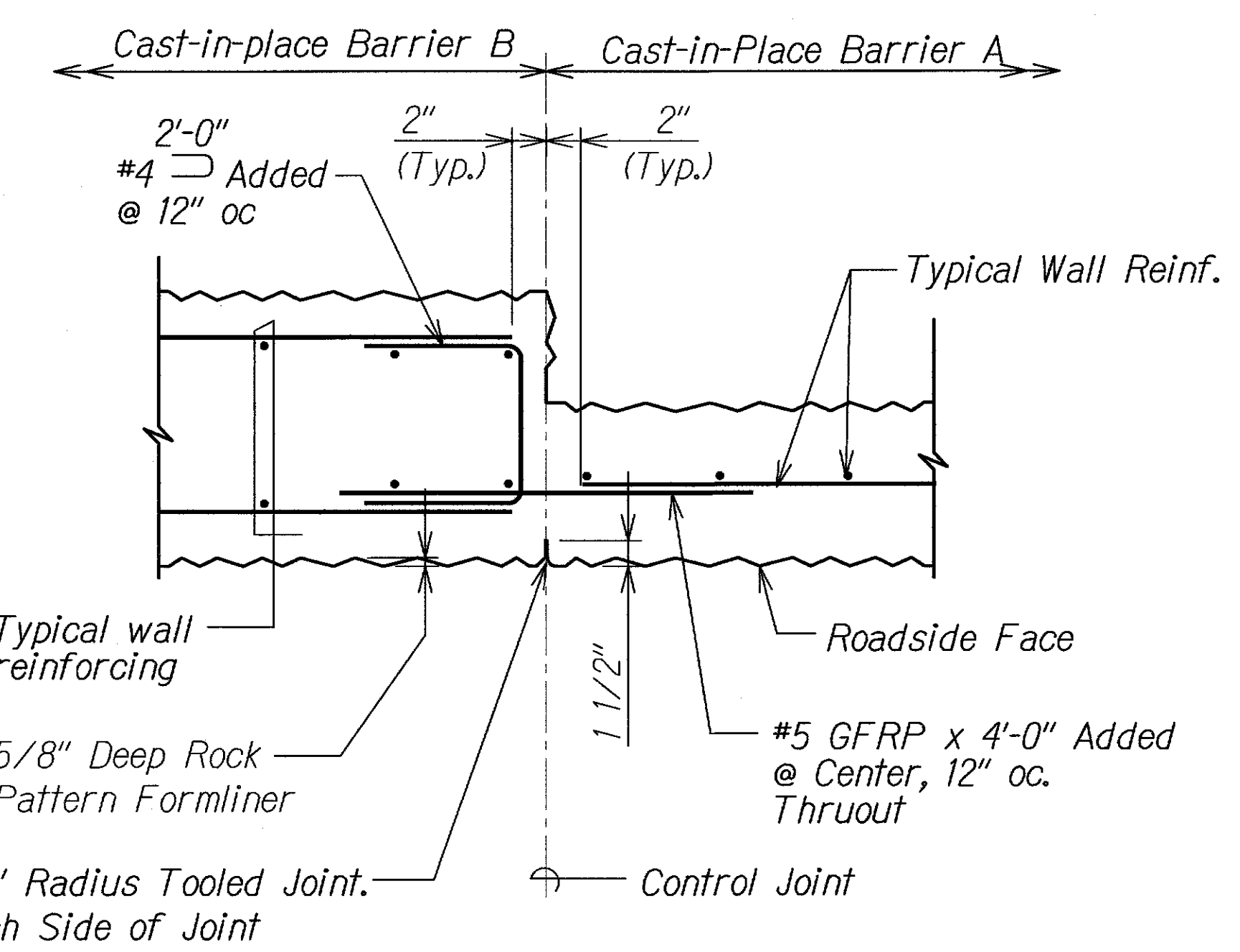
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TYPICAL CONTROL JOINTS AT SHOTCRETE WALL

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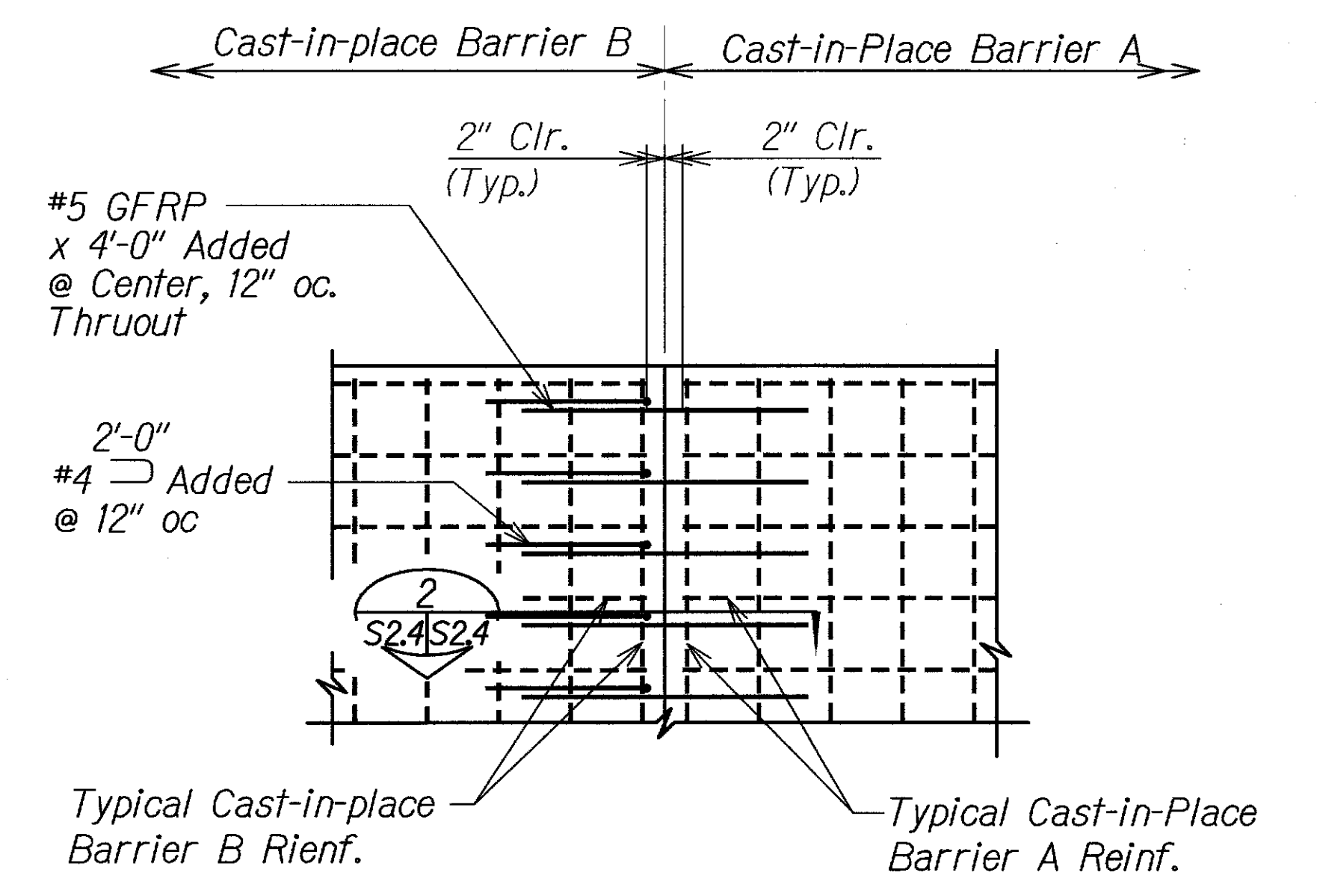
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S24 | S24



TYPICAL WALL VERTICAL CONTROL JOINTS AT BARRIER A AND BARRIER B

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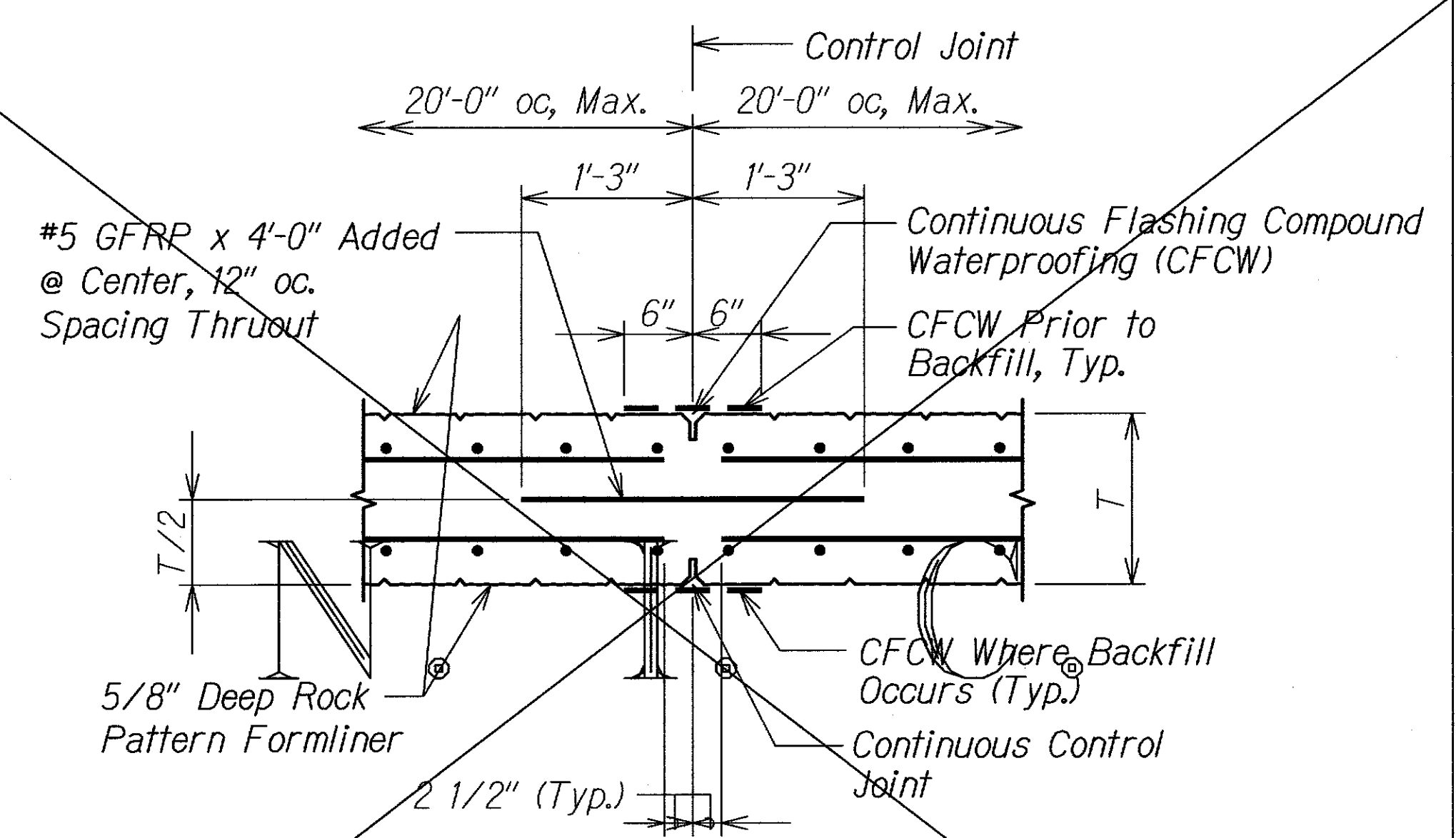
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S24 | S24



WALL ELEVATION AT BARRIER A AND BARRIER B INTERFACE

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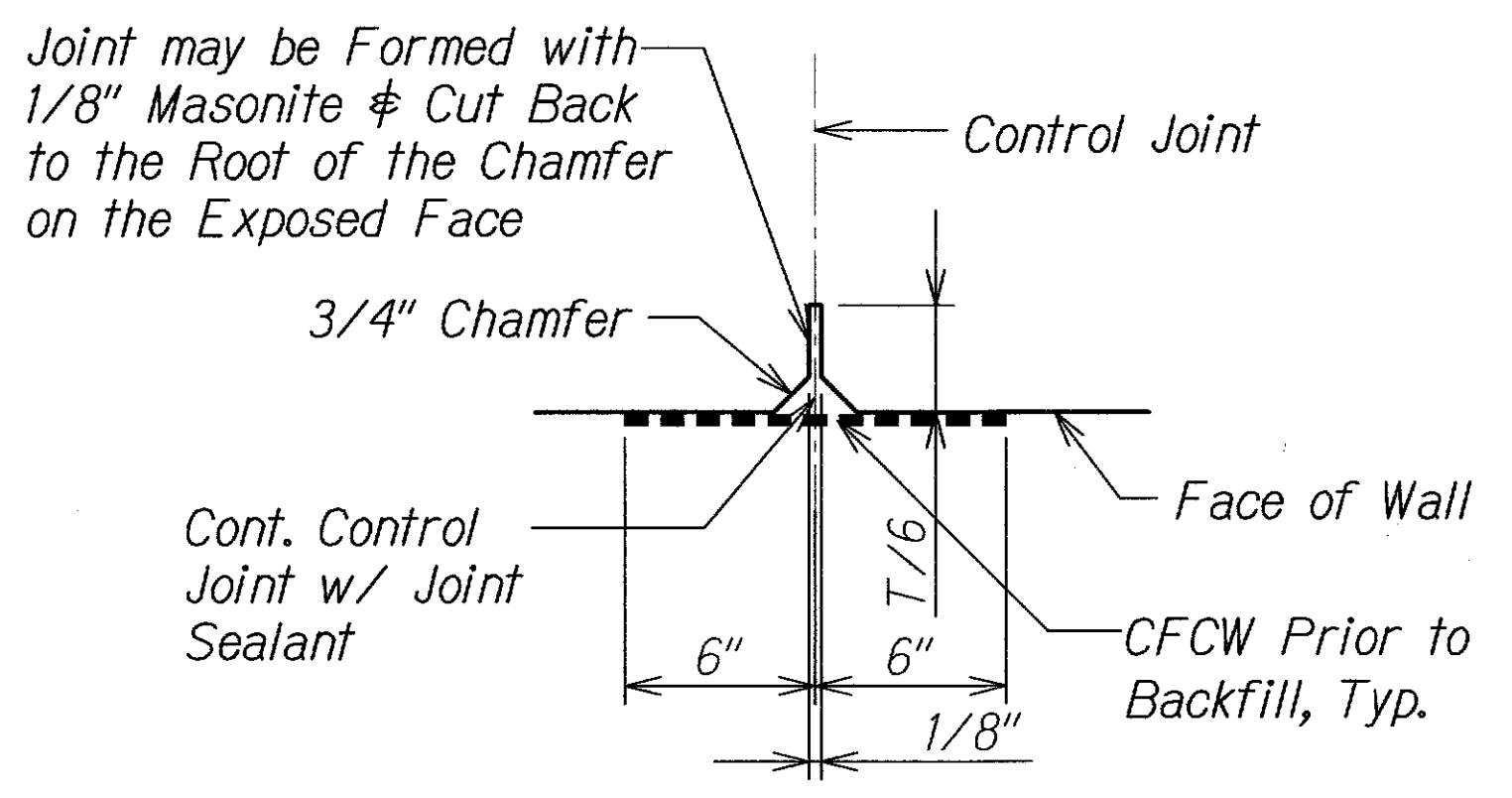
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S24 | S24



TYPICAL CONTROL JOINT AT CAST-IN-PLACE BARRIER B

Scale: 1" = 1'-0"

4
S24 | S24

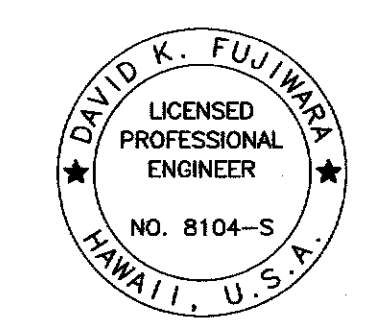


CONTROL JOINT DETAIL

Scale: 3" = 1'-0"

5
S24 | S24

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APRIL 30, 2012

LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SHOTCRETE WALL CONTROL JOINT DETAIL

KUHIO HIGHWAY

Retaining Walls At Lumahai And Wainiha

Project No. 560A-03-96

Scale: As Shown

Date: June 15, 2011

SHEET No. S24 OF 4 SHEETS

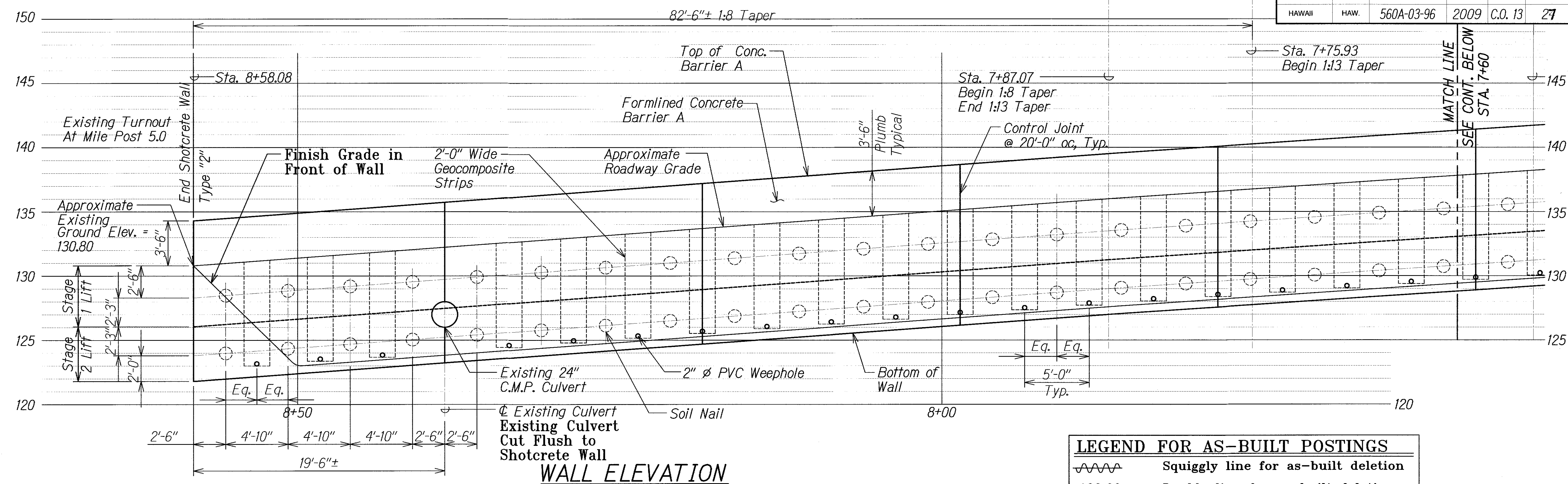
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C.O. 12S-3

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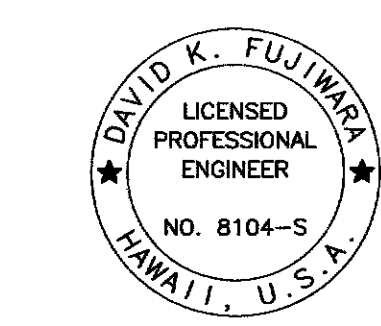
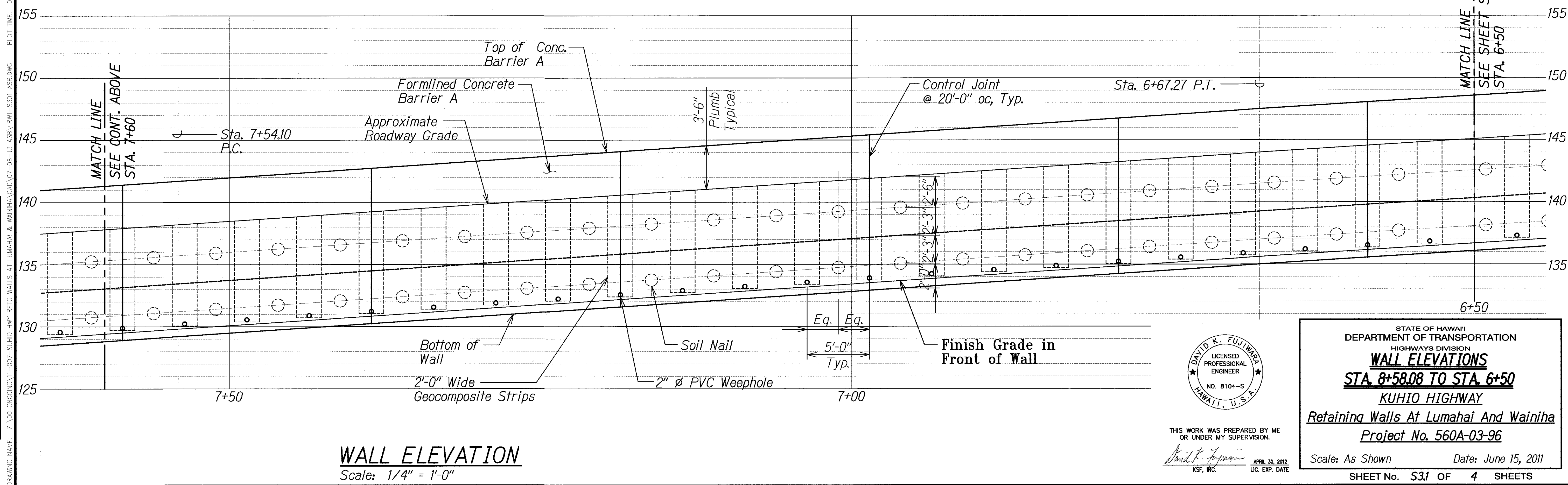
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Roadway	Text for as-built posting

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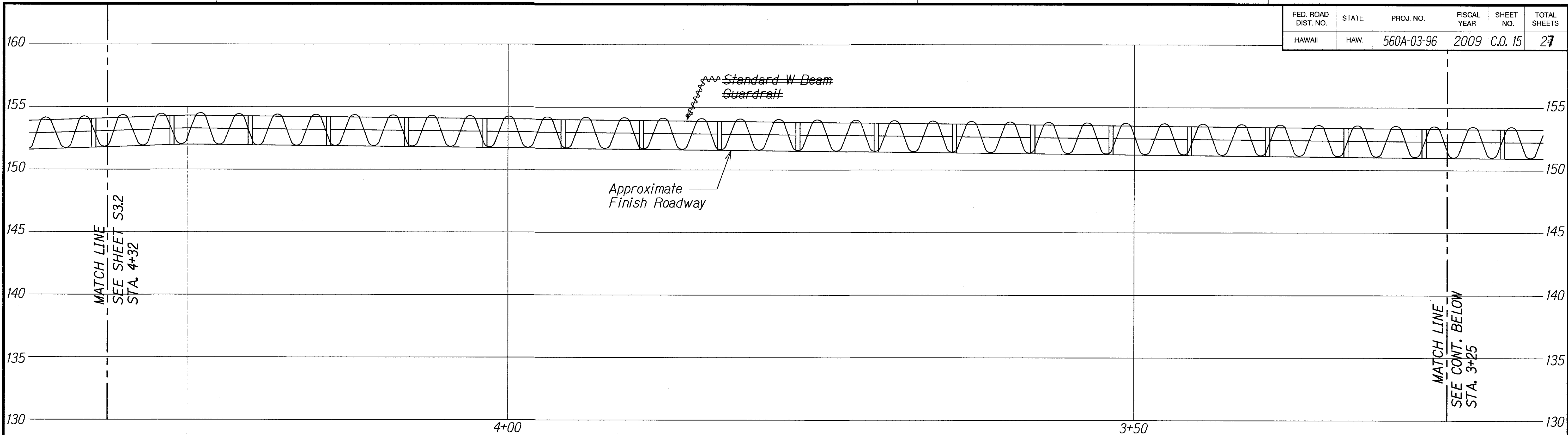


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KSF, INC. APRIL 30, 2012
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WALL ELEVATIONS
STA. 8+58.08 TO STA. 6+50
KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96
Scale: As Shown Date: June 15, 2011
SHEET No. S31 OF 4 SHEETS

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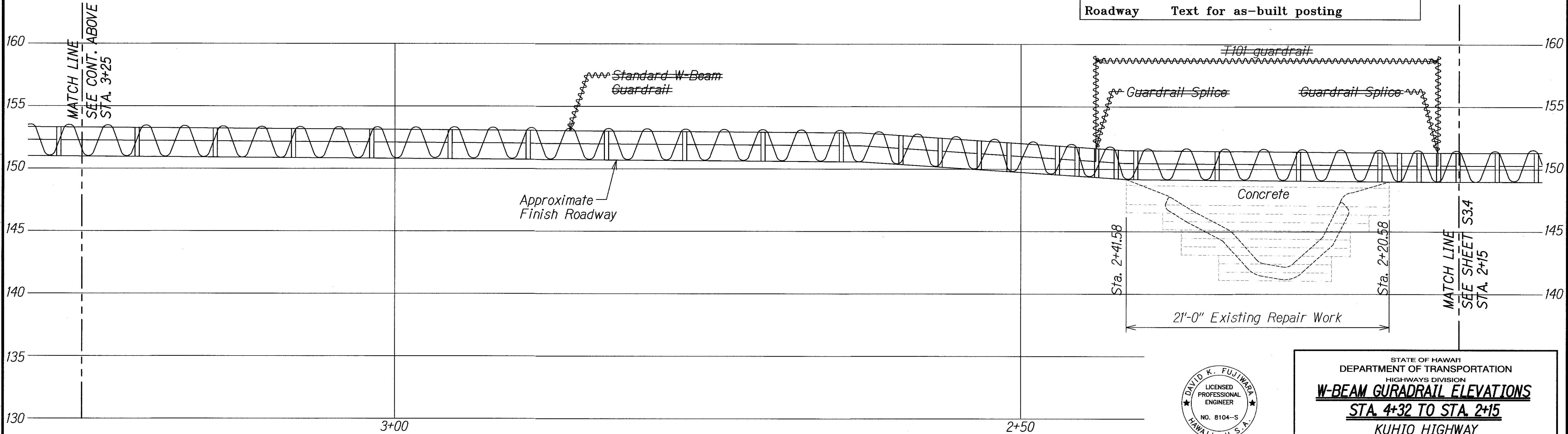
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ELEVATION - W-BEAM GUARDRAIL
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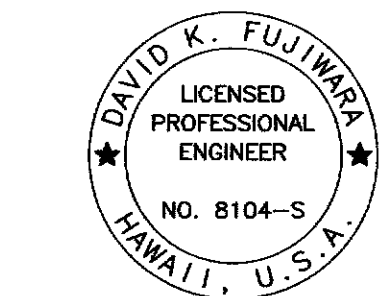
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- Roadway Text for as-built posting



ELEVATION - W-BEAM GUARDRAIL
Scale: 1/4" = 1'-0"

5/16/11	4 Revised Note
DATE	REVISION



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LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
W-BEAM GUARDRAIL ELEVATIONS
STA. 4+32 TO STA. 2+15
KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96
Scale: As Shown Date: June 15, 2011
SHEET No. S33 OF 4 SHEETS

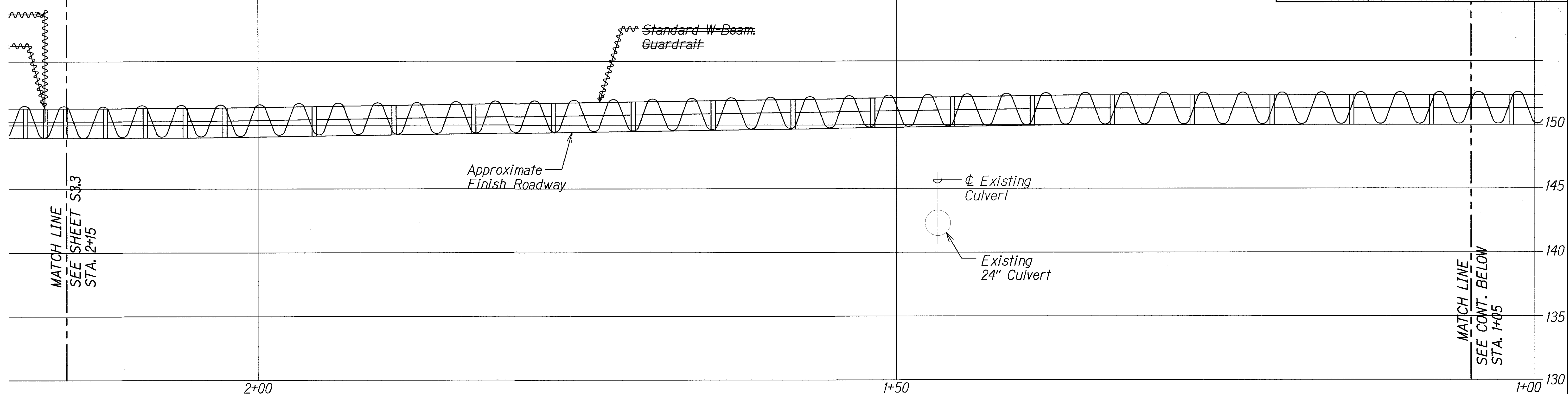
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C.O. 15

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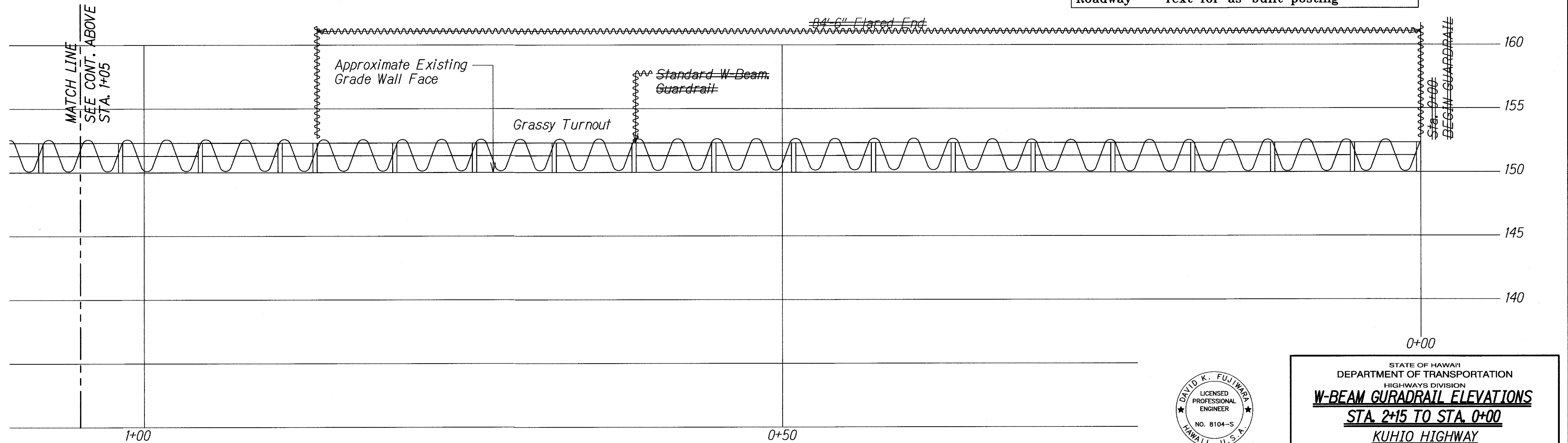
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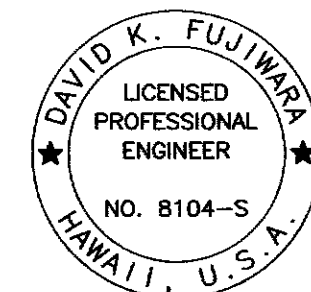


ELEVATION - W-BEAM GUARDRAIL
Scale: 1/4" = 1'-0"

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



ELEVATION - W-BEAM GUARDRAIL
Scale: 1/4" = 1'-0"



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KSF, INC. APRIL 30, 2012
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
W-BEAM GUARDRAIL ELEVATIONS
STA. 2+15 TO STA. 0+00
KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96
Scale: As Shown Date: June 15, 2011
SHEET No. S34 OF 4 SHEETS

"AS-BUILT"

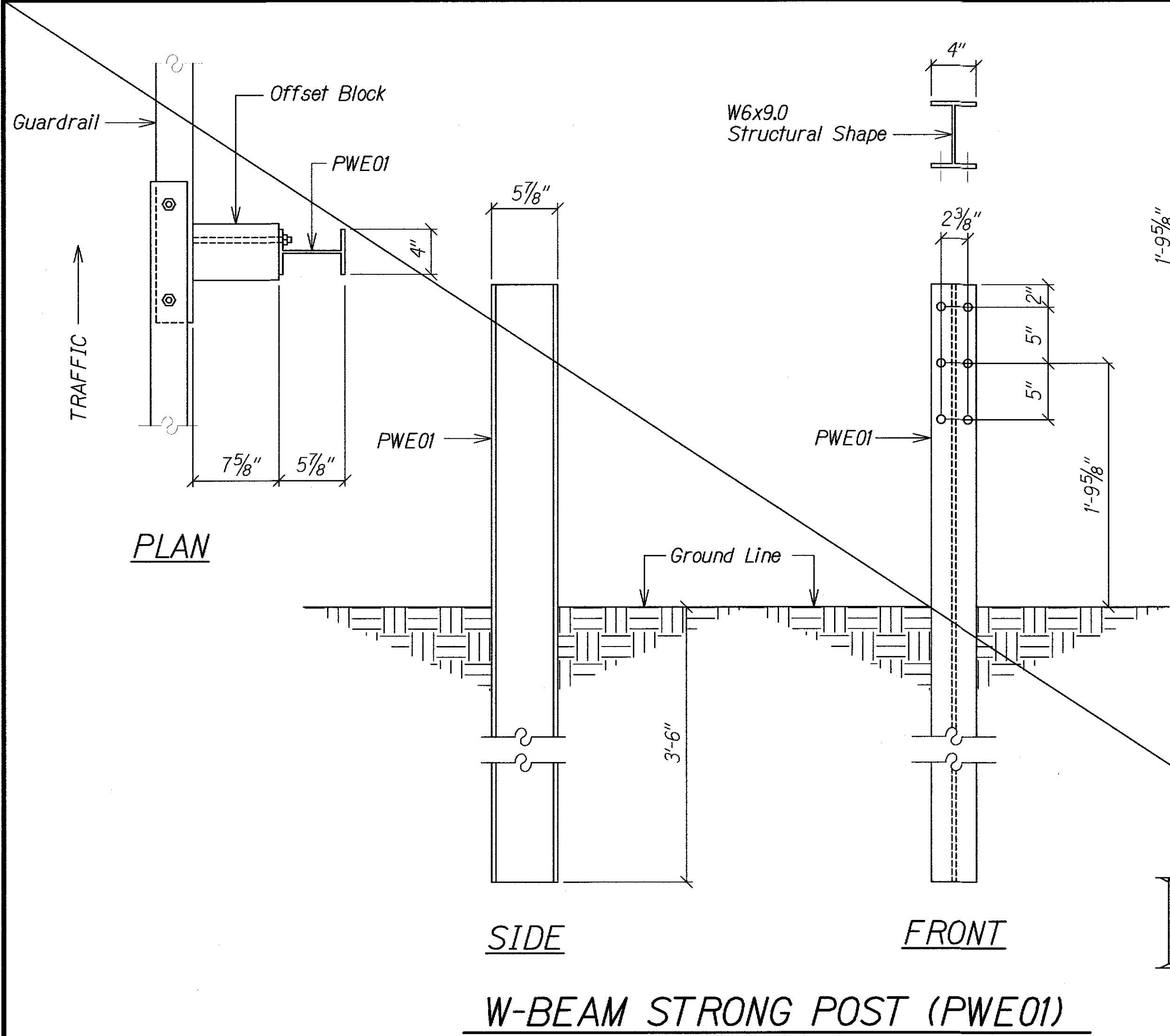
C.O. 16

ORIGINAL PLAN	DATE
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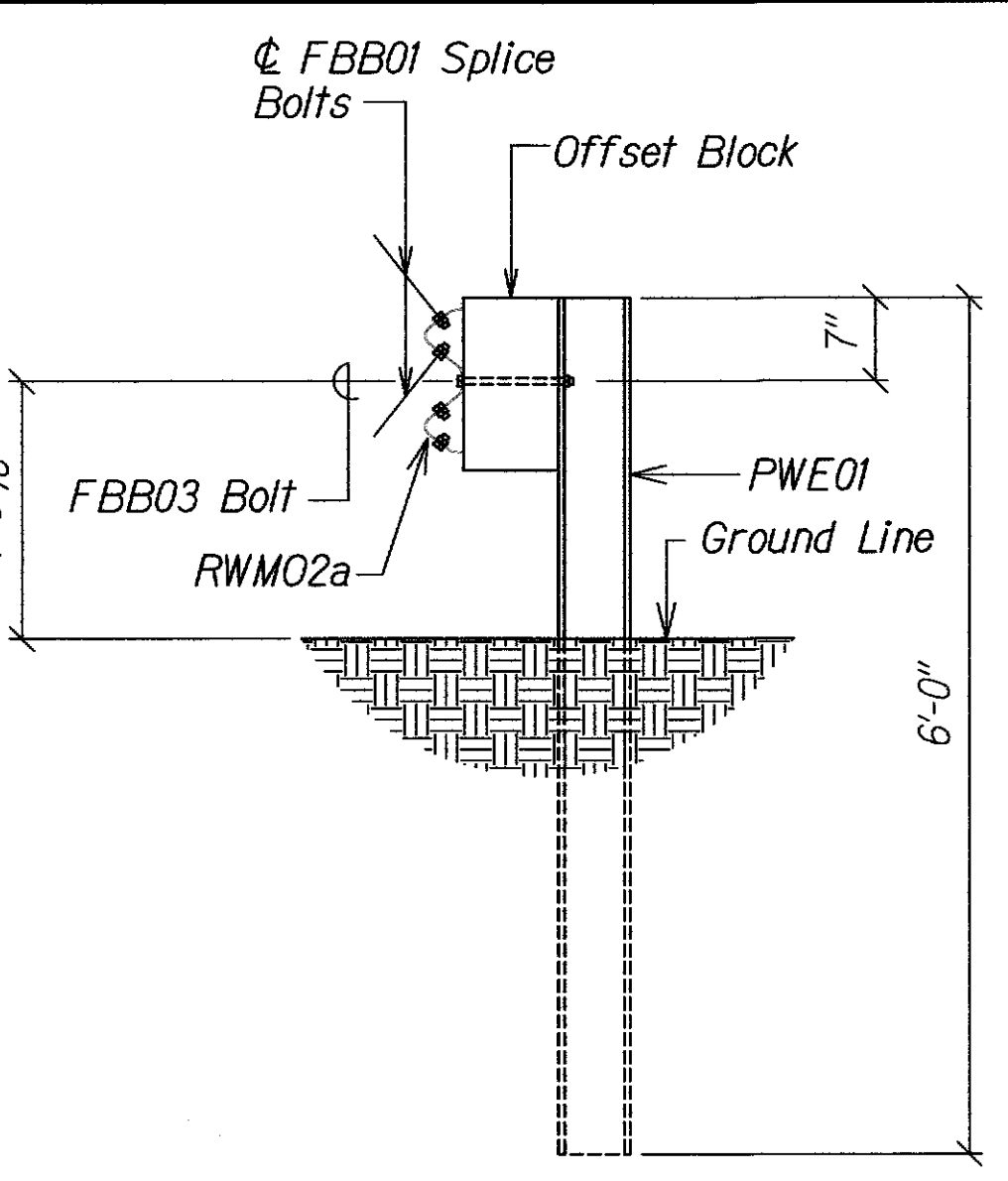
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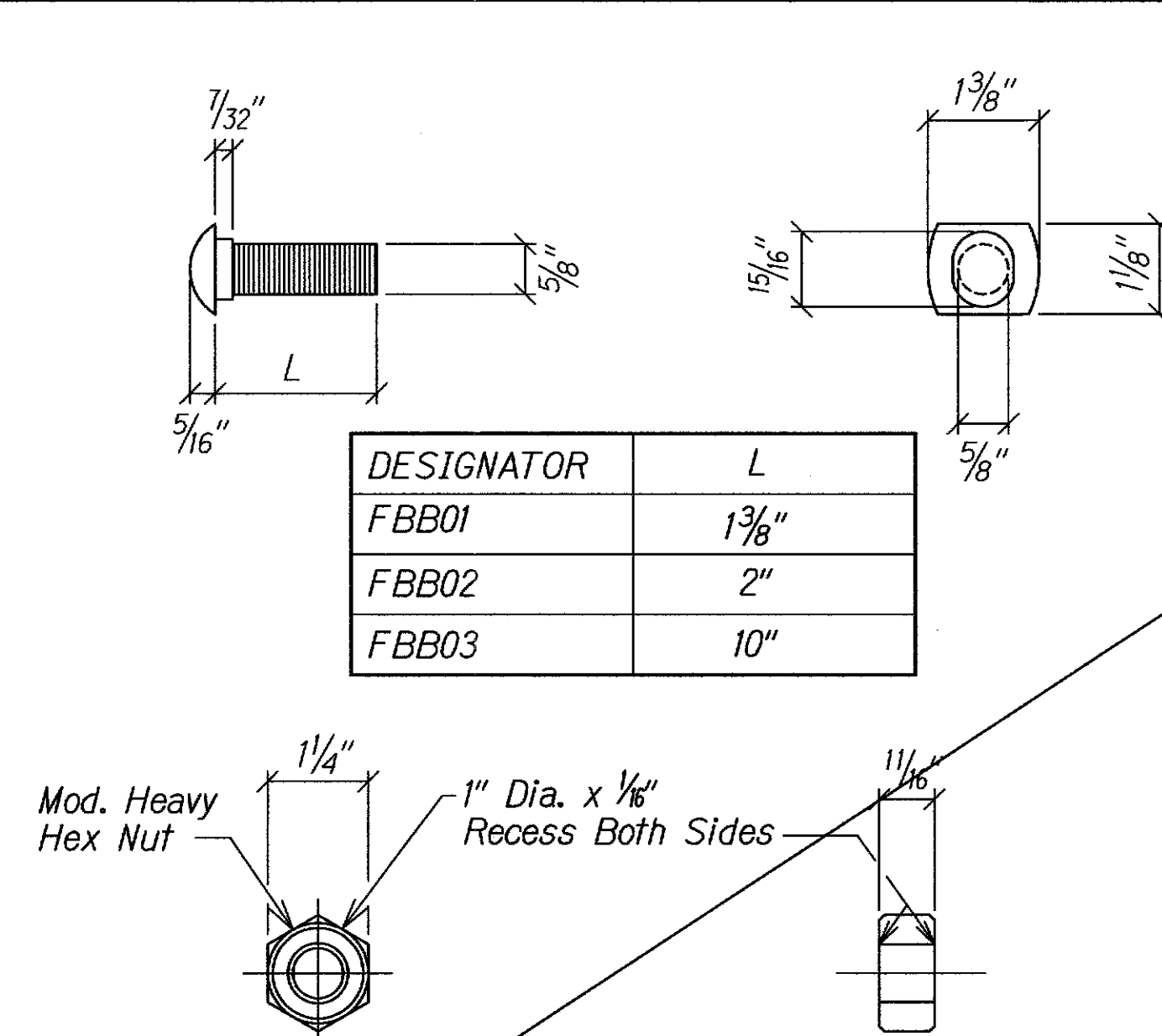
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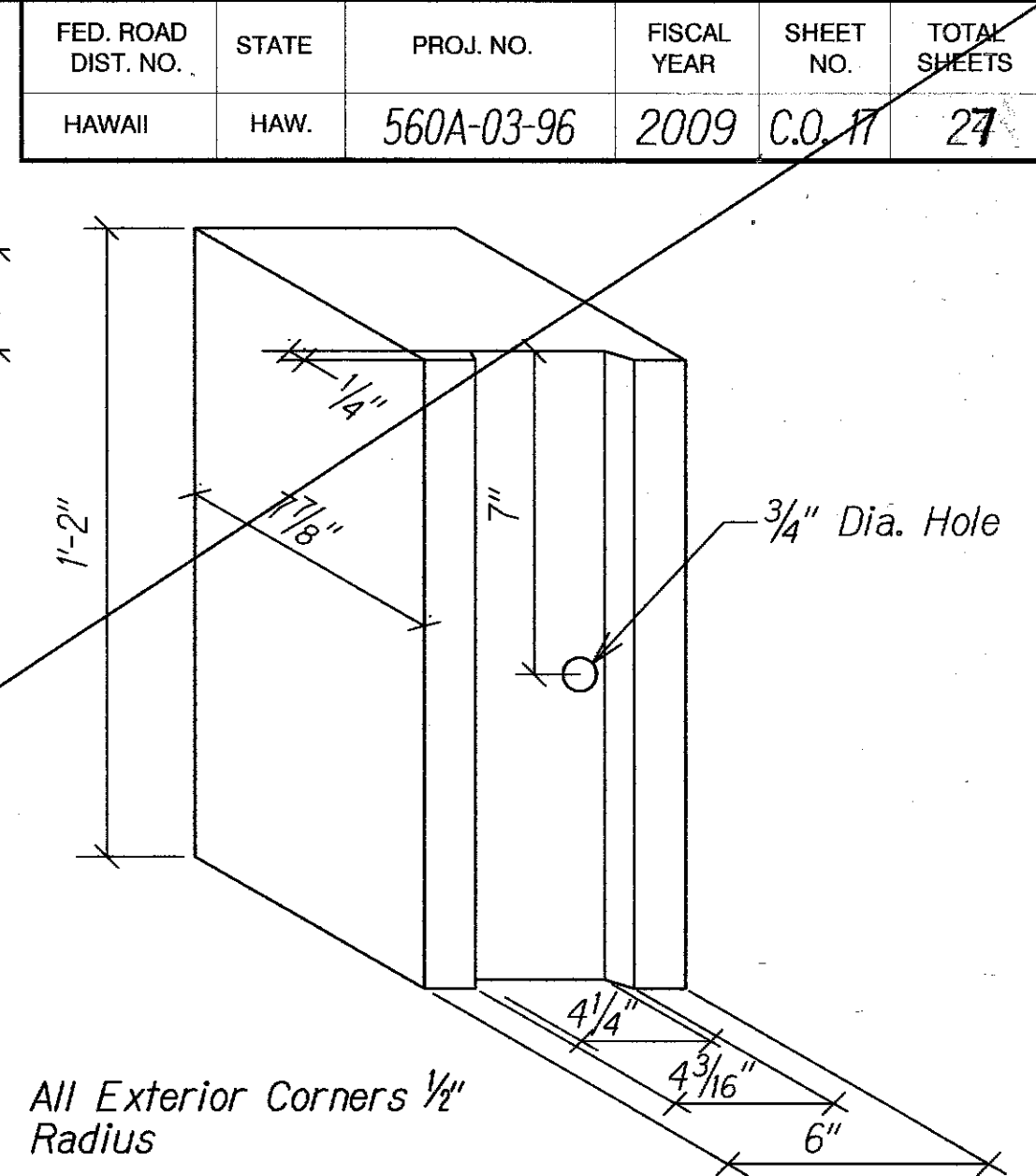
W-BEAM STRONG POST (PWE01)



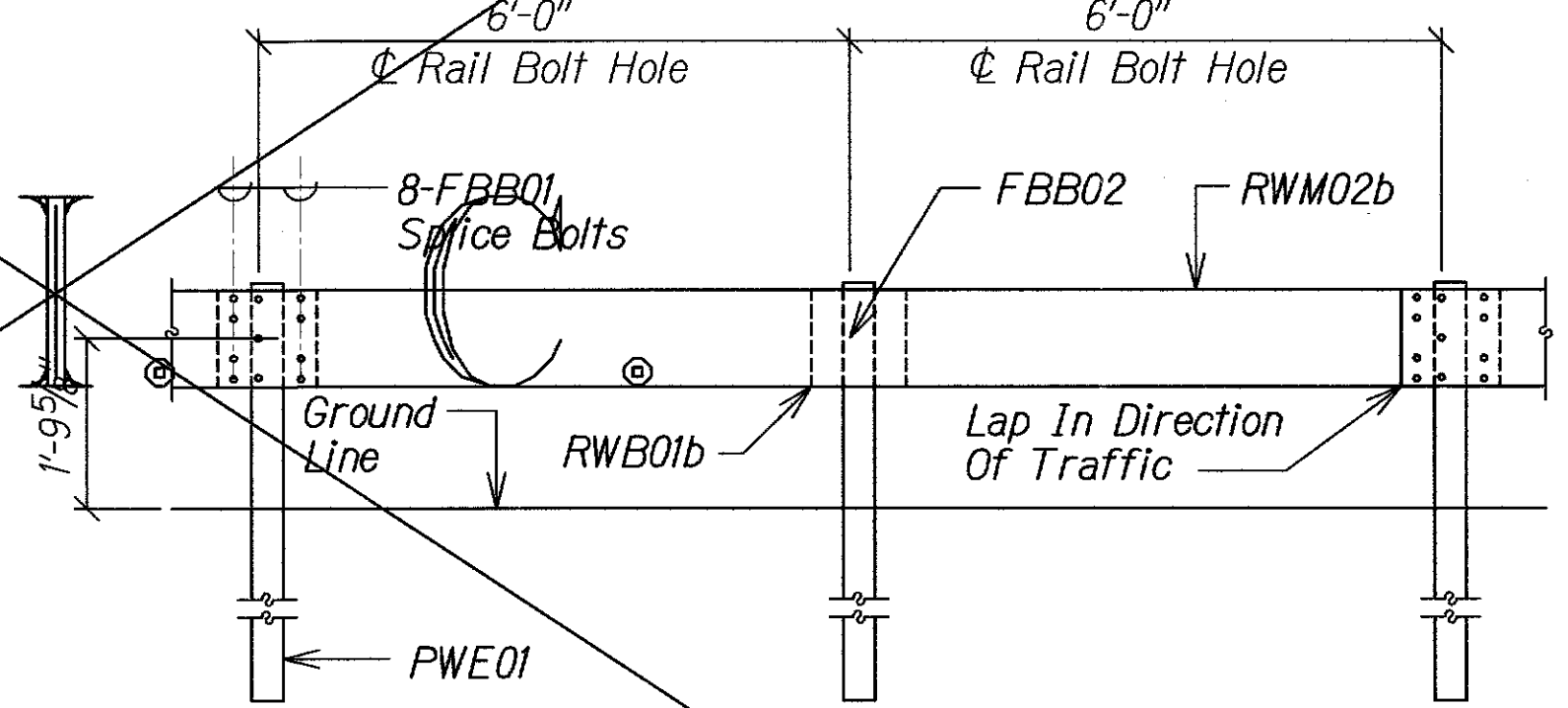
STRONG POST W-BEAM GUARDRAIL (SGR04a)



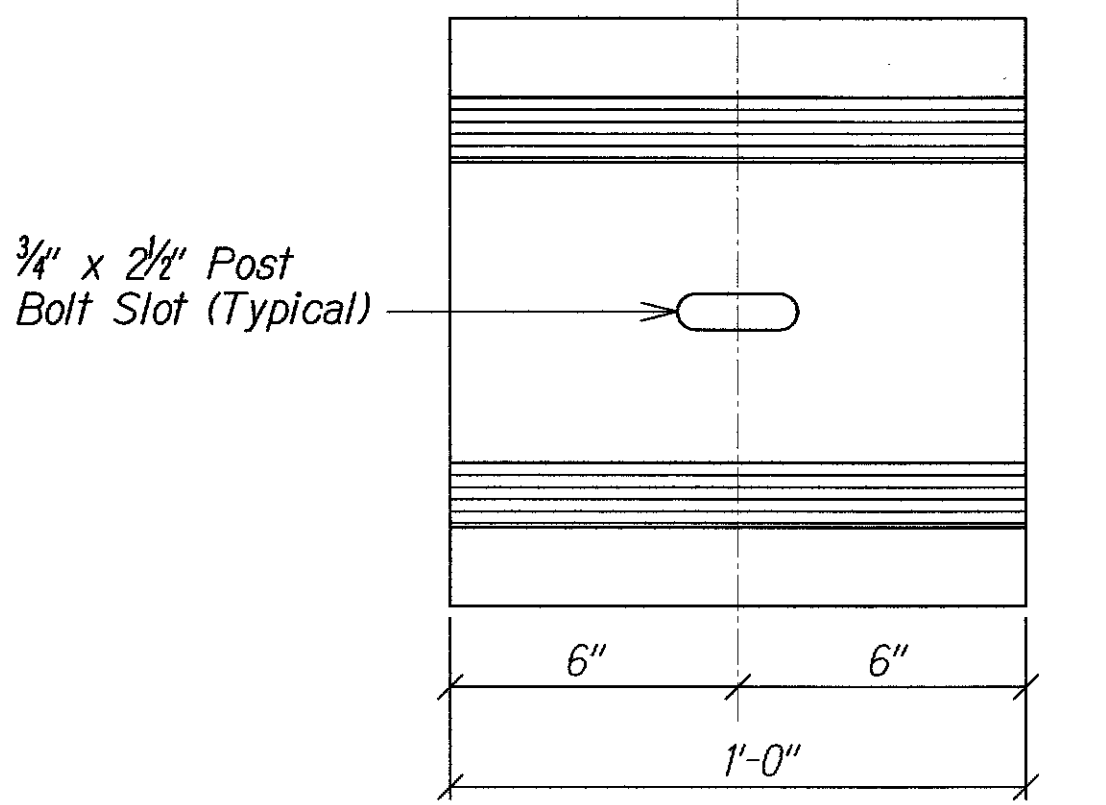
GUARDRAIL BOLTS AND RECESSED NUT



RECYCLED POLYETHYLENE OFFSET BLOCK (TYPE II)

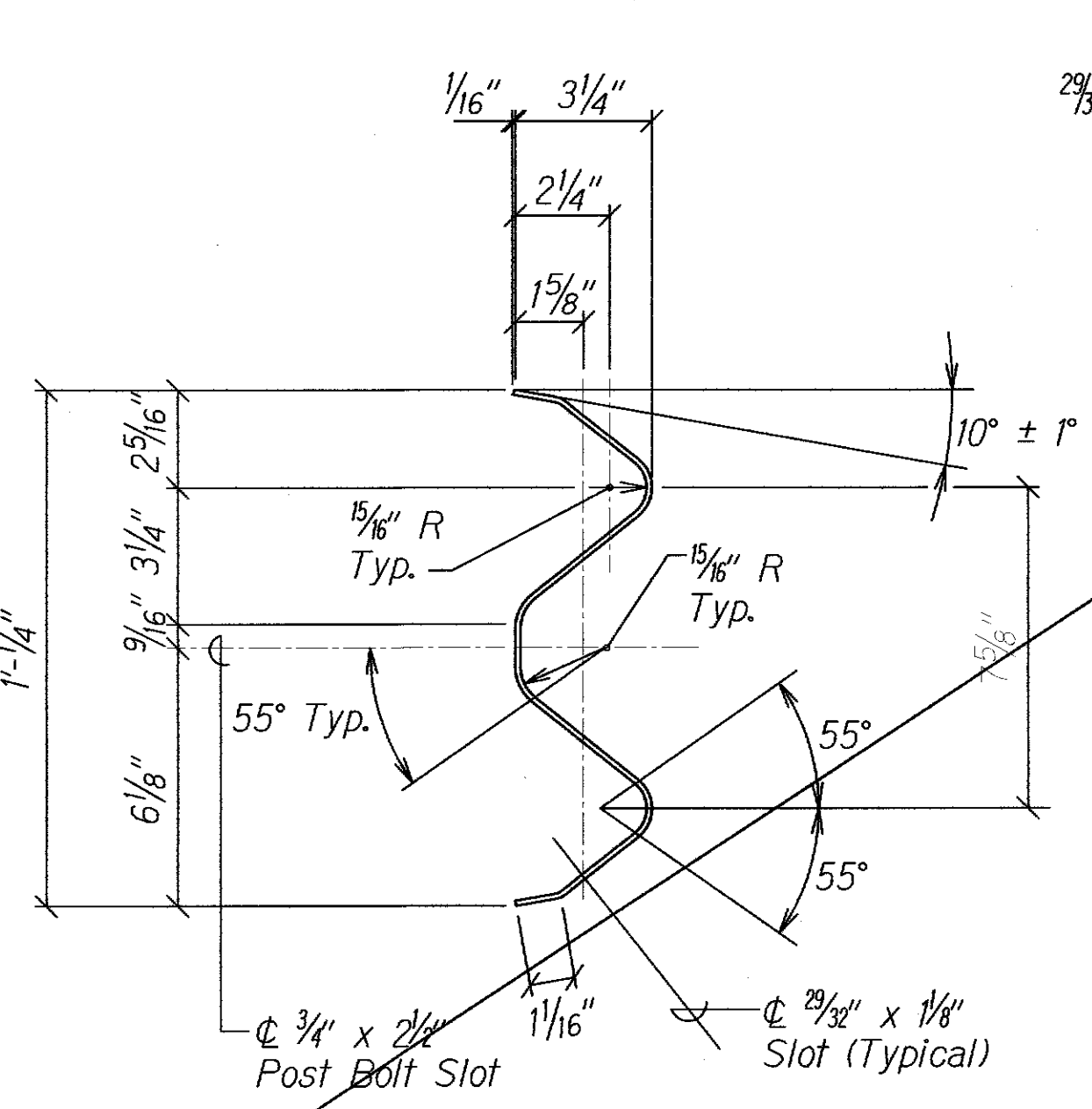


STRONG POST W-BEAM GUARDRAIL WITH RECYCLED POLYETHYLENE OFFSET BLOCK

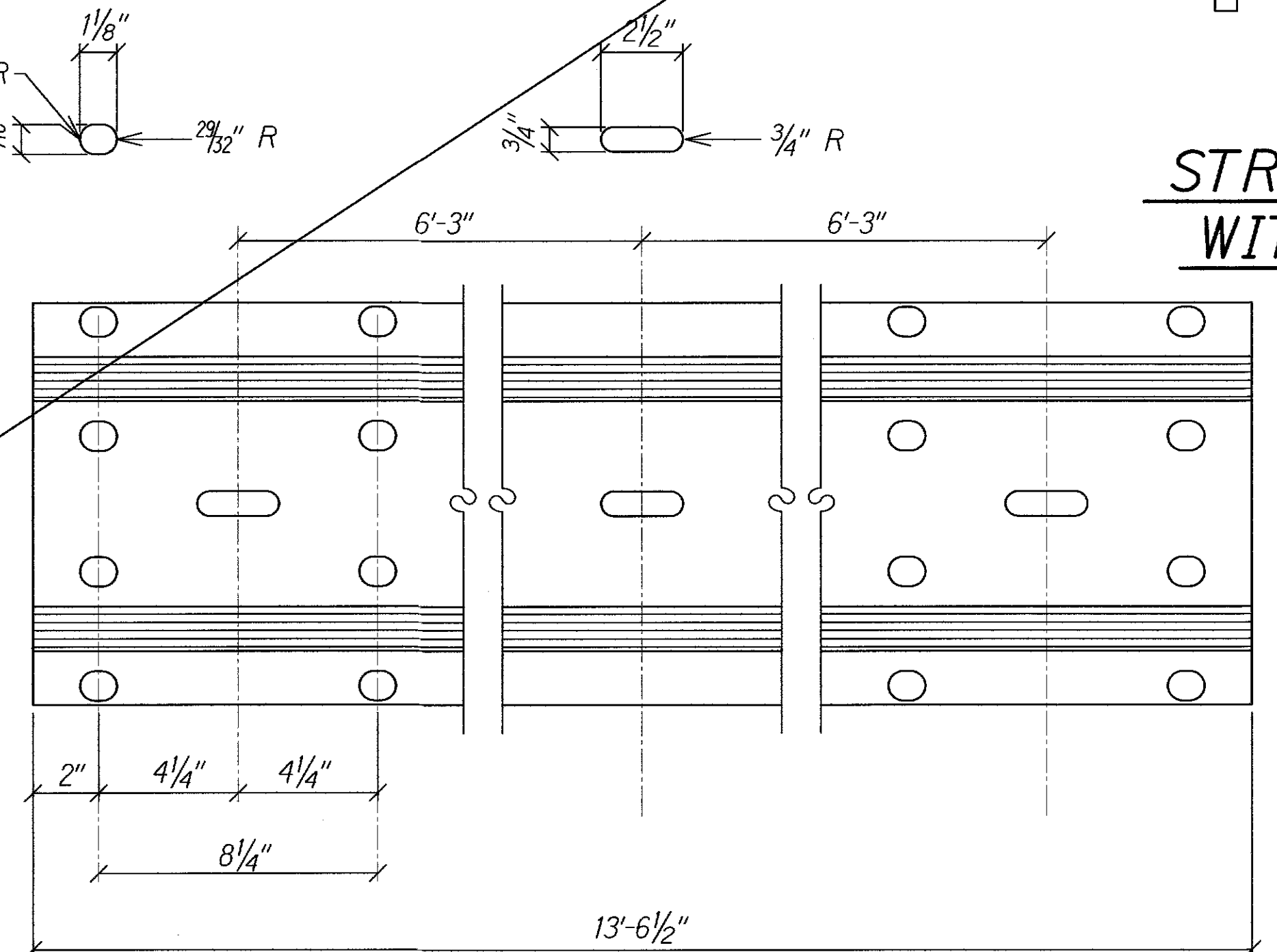


DESIGNATOR	BASE METAL THICKNESS
RWB01b	11/128"

W-BEAM BACK-UP-PLATE (RWB01b)



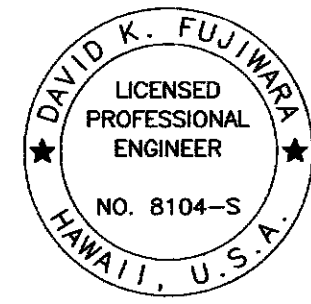
DESIGNATOR	BASE METAL THICKNESS
RWM02b	17/128"



2 SPACE W-BEAM GUARDRAIL (RWM02b)

DATE	
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	

DRAWING NAME: 2-100-010000-11-007-KUHIO HWY RETG WALLS AT LUMAHAI & WAINIHA CAD: 07-08-13 ASB/PLW-5401-405 ASB/DWG PLOT TIME: 07-08-13 3:48 PM



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David K. Fujiwara
KSF, INC.
APRIL 30, 2012
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL W-BEAM DETAIL

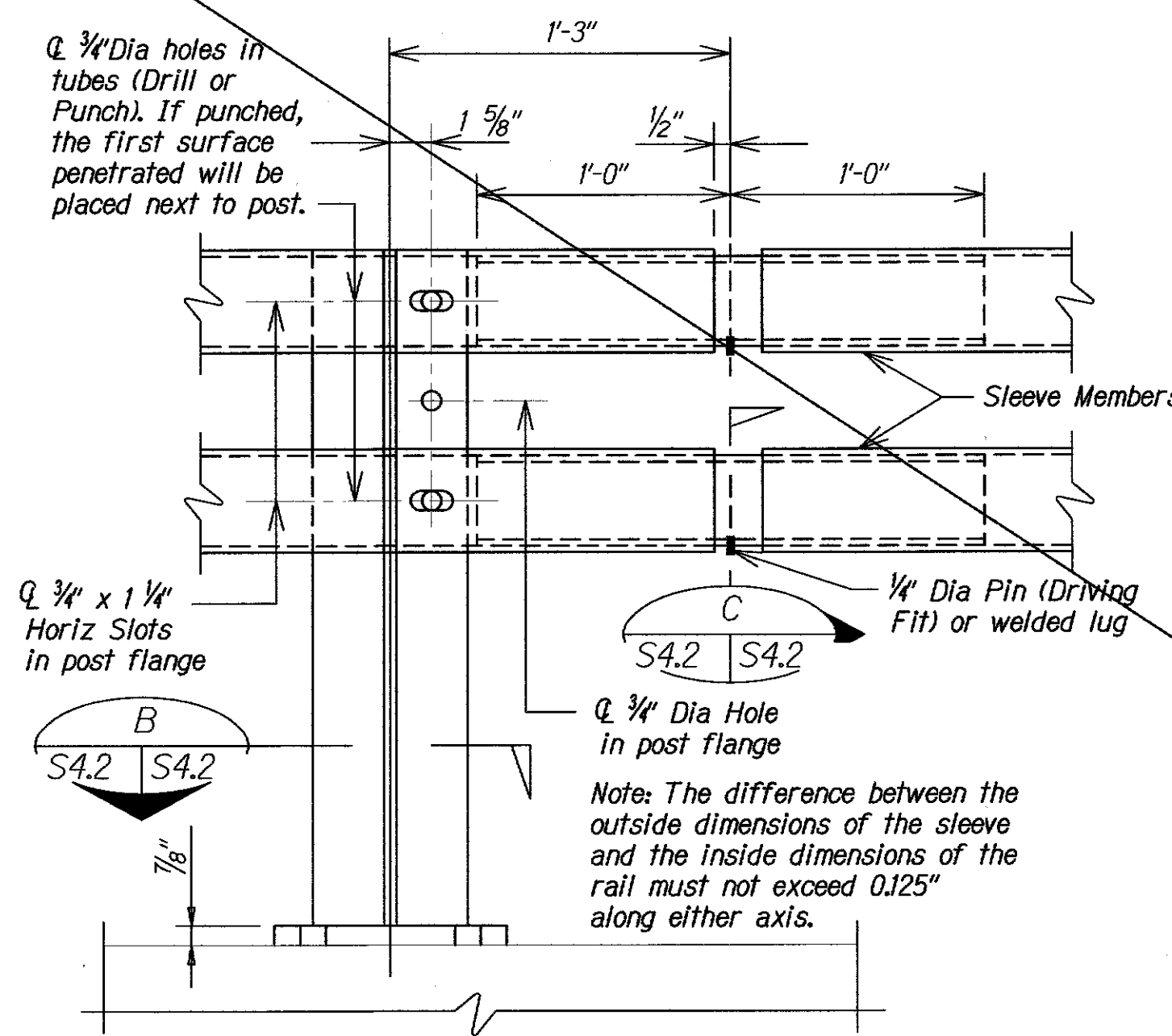
KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96

Scale: As Shown Date: June 15, 2011
SHEET No. 54J OF 5 SHEETS

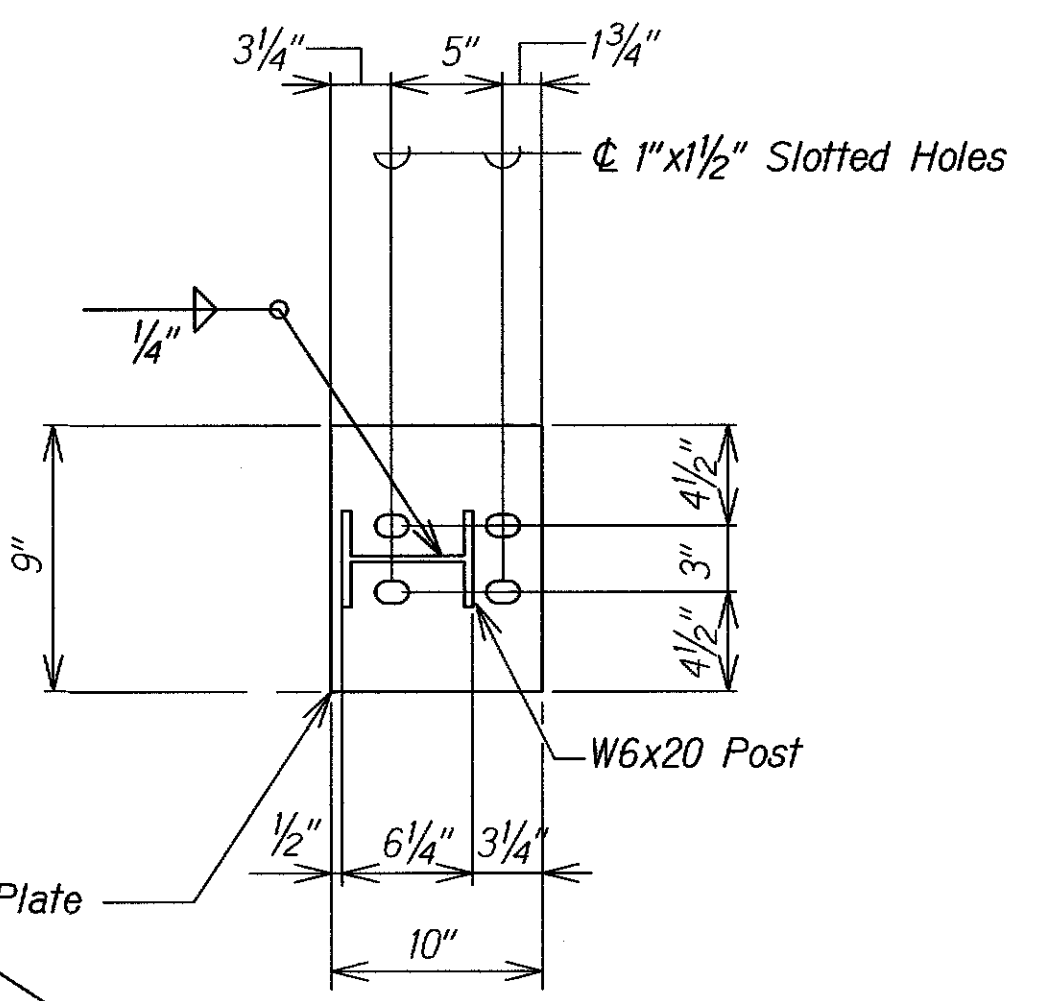
"AS-BUILT"

C.O. 17

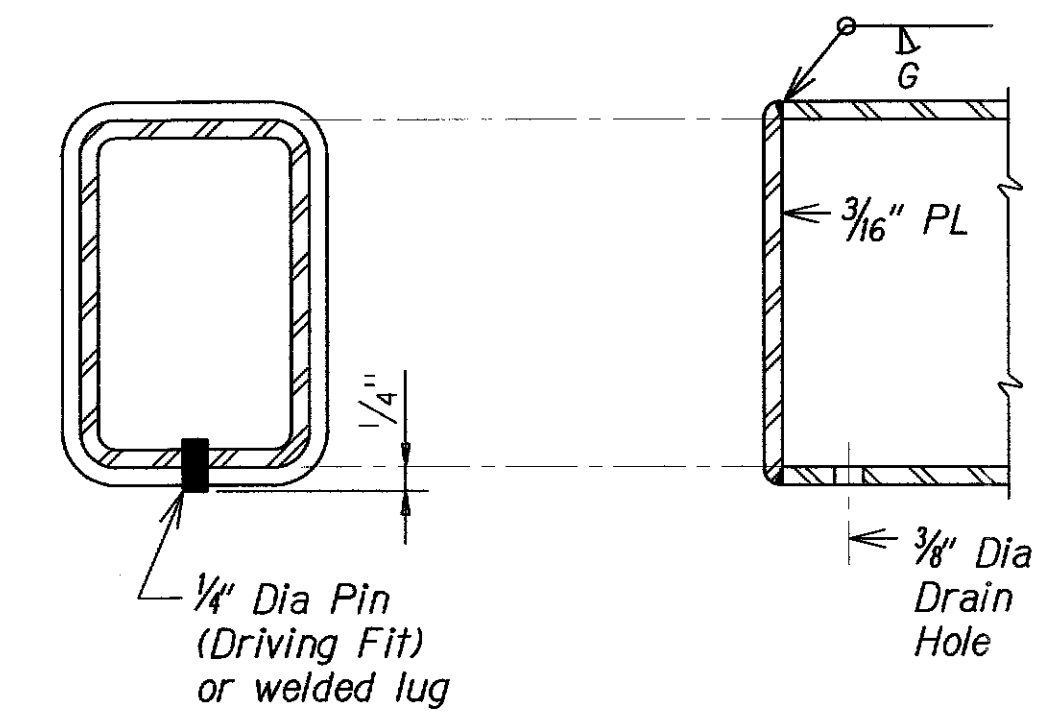
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	560A-03-96	2009	C.O. 18	27



TUBE SPLICE DETAIL
Scale: Not to Scale

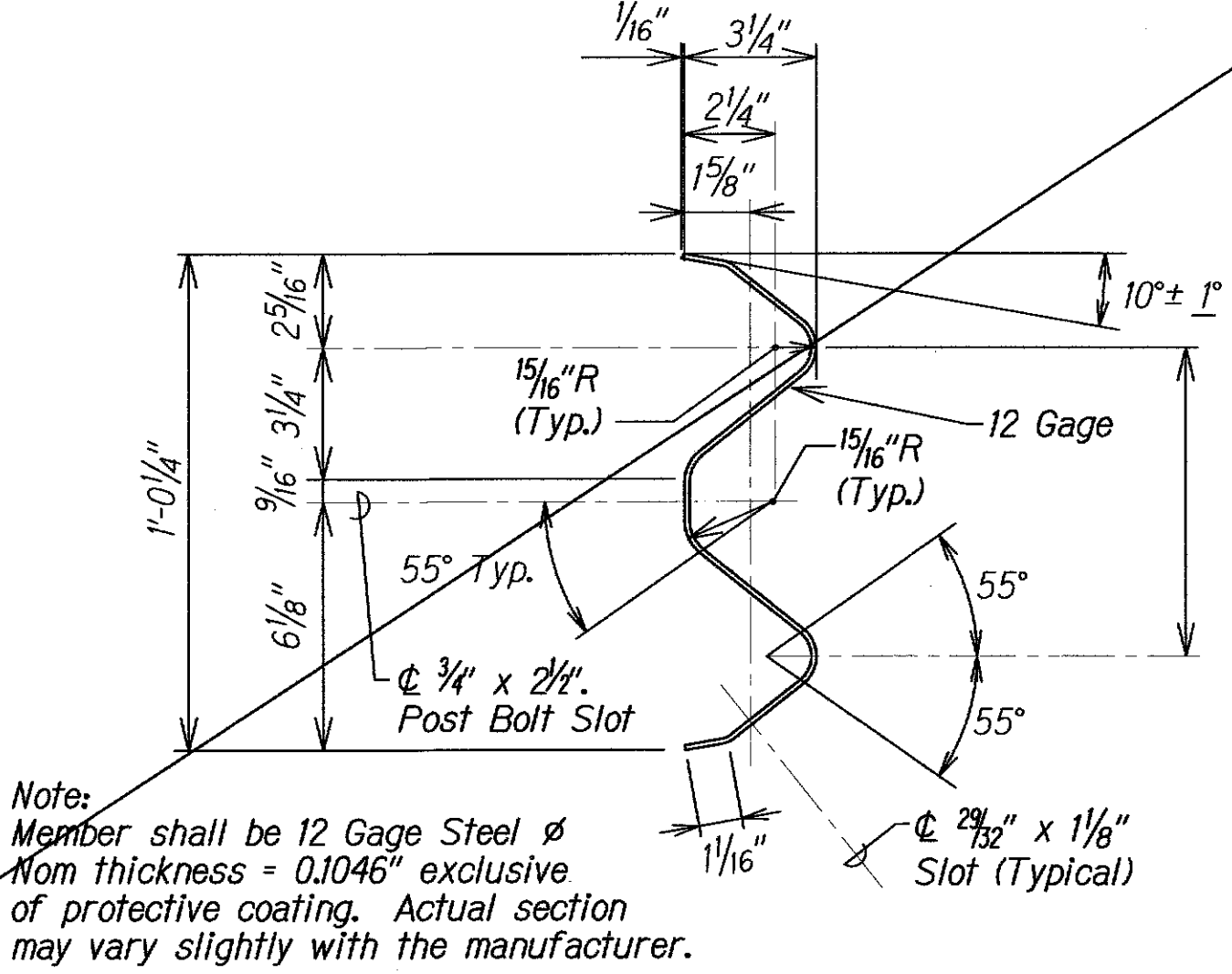


BASE PLATE DETAIL
Scale: 1 1/2" = 1'-0"

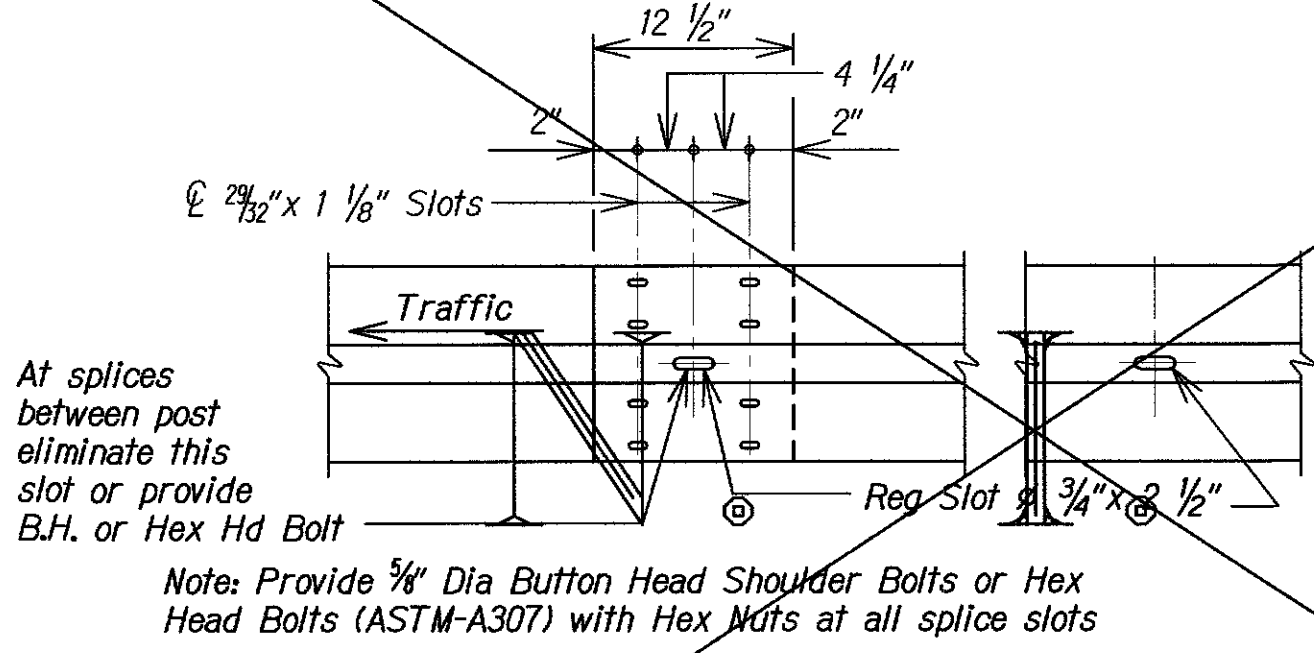


SECTION C
Scale: Not to Scale

RAIL CAP
Scale: Not to Scale



W-BEAM SECTION
TYPICAL T101 GUARDRAIL DETAILS
No Scale



W-BEAM DETAILS
Scale: Not to Scale

Construction Notes:

Face of rail and posts must be vertical transversely unless otherwise approved by the Engineer. Posts must be perpendicular to adjacent roadway grade. Use epoxy mortar under post base plates if gaps larger than 1 1/16" exist.

Material Notes:

All steel components except reinforcing must be shop coated. Anchor bolts must be 1/4" diameter ASTM A307 grade A bolts (or A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt (1 1/4" o.d. or 2" o.d. as directed by the Engineer). Clipped washers may be used as necessary. Threaded rods may be 0.781" minimum diameter with rolled threads. Nuts must conform to A563 requirements.

General Notes:

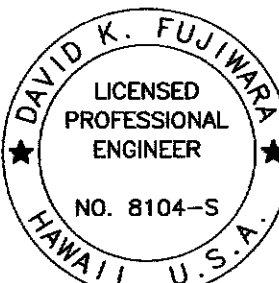
Shop Drawings to be submitted to the Engineer for approval are required only for the proposed rail splices at expansion joints greater than 1/4". For rails not requiring shop drawings, erection drawings showing splice locations must be submitted to the Engineer for approval. Average weight of railing (6'-3" post spacing and no overlay) = 23 plf.

Design / Repair Criteria:

The posts of this rail are designed to break away on impact from an errant vehicle. The rail is designed to deflect approximately two to three feet as it contains and redirects the errant vehicle. This rail may not be installed on top of or behind curbs that project above finished grade. Fully anchored guardrail must be attached to end of rail. Repairs to impact-damaged post/baseplate units are not permitted. All impact-damaged posts must be replaced with a new post/baseplate unit.

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

DRAWING NAME: 21-00-000000-11-007-KUHIO HWY RETG WALLS AT LUMAHAI & WAINIHA, C.O. 07-08-13 ASD/URW-S401-005 ASD/DWG PLOT TIME: 07-08-13 3:48 PM



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APRIL 30, 2012
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

T101 RAILING DETAILS

KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96

Scale: As Shown Date: June 15, 2011

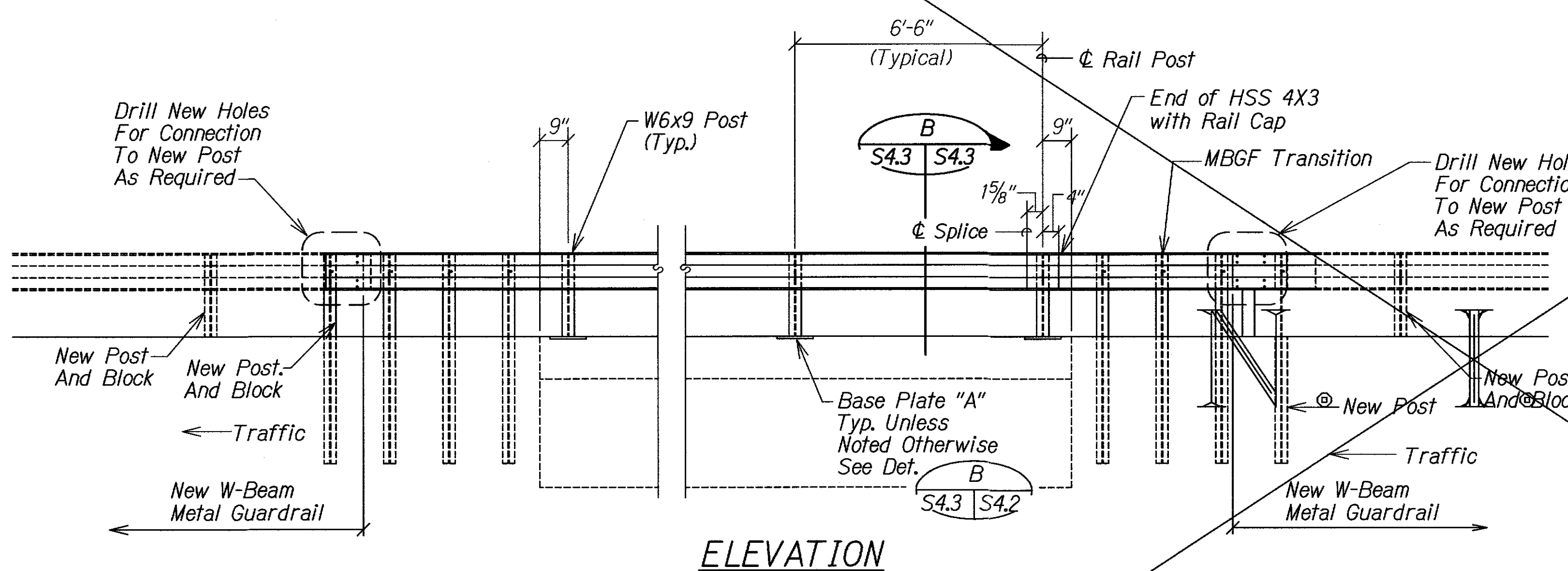
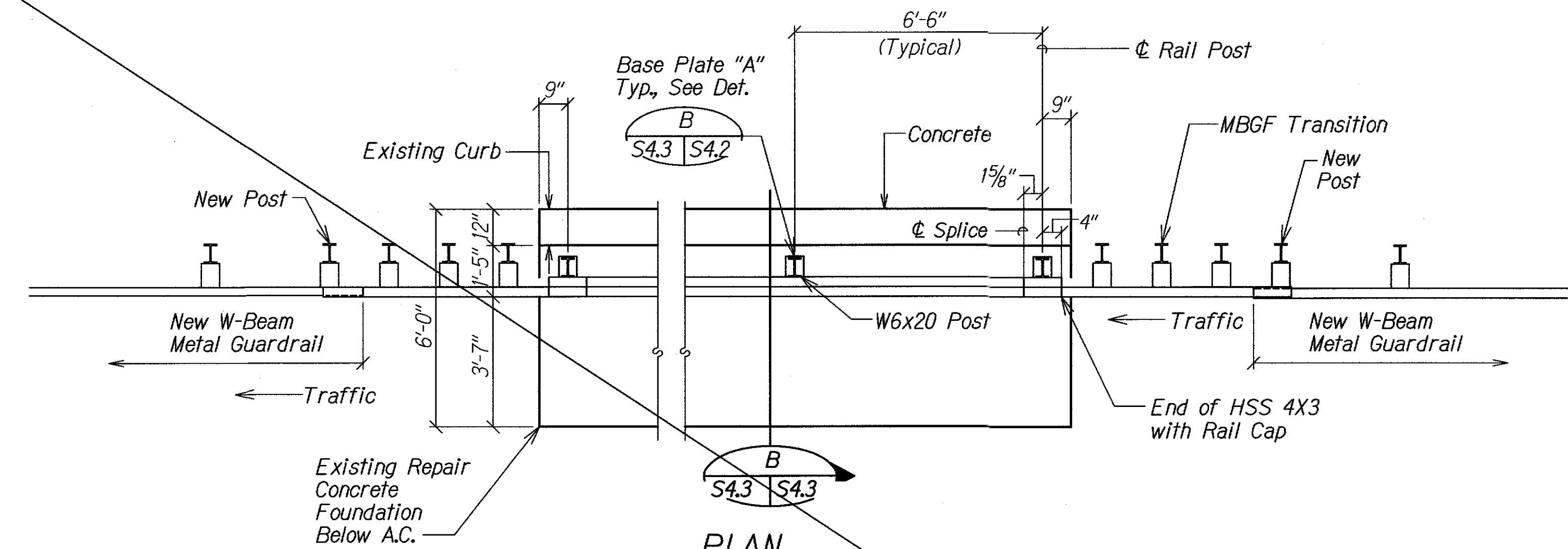
SHEET No. S42 OF 5 SHEETS

"AS-BUILT"

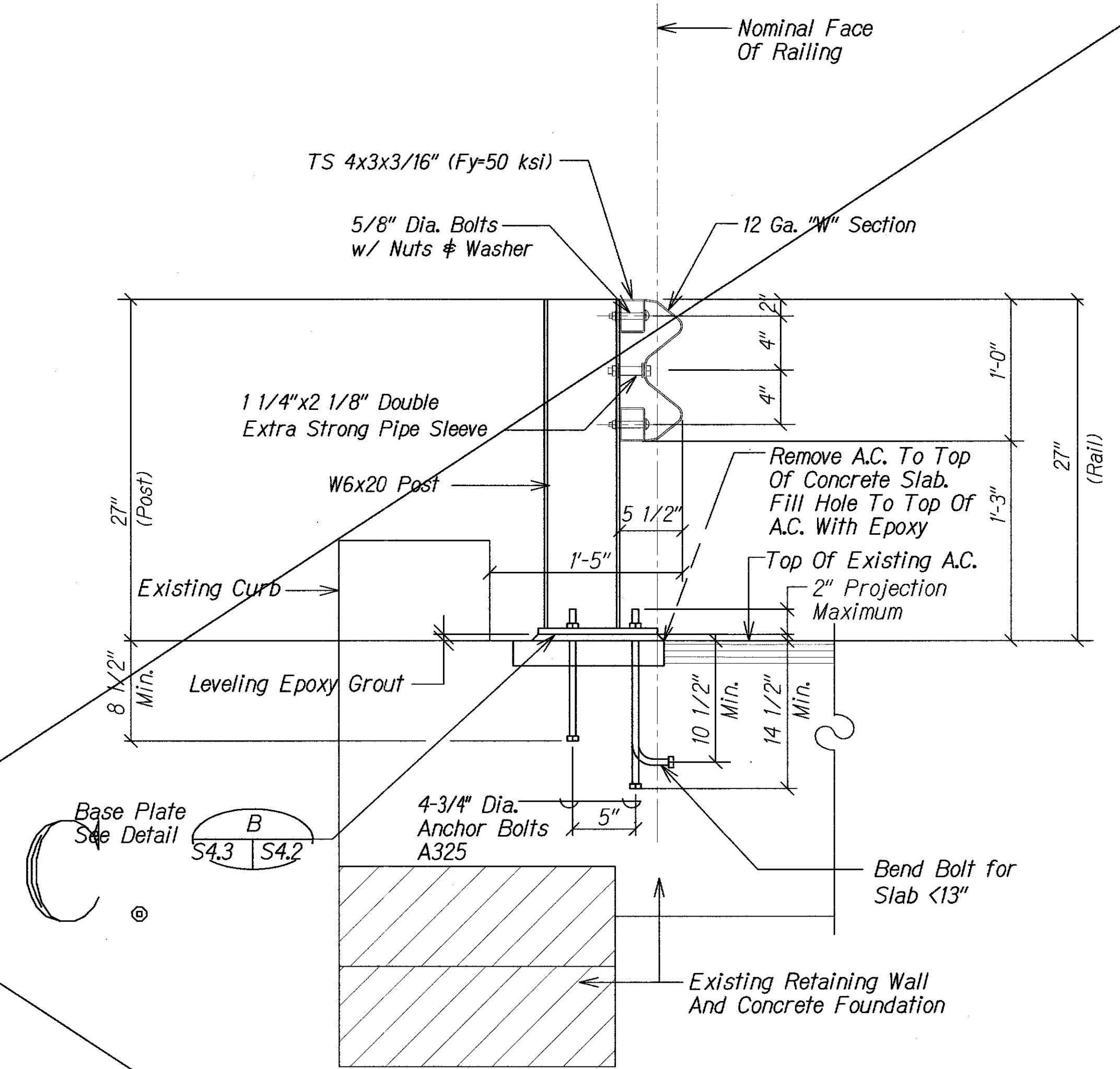
C.O. 18

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	560A-03-96	2009	C.O. 19	27

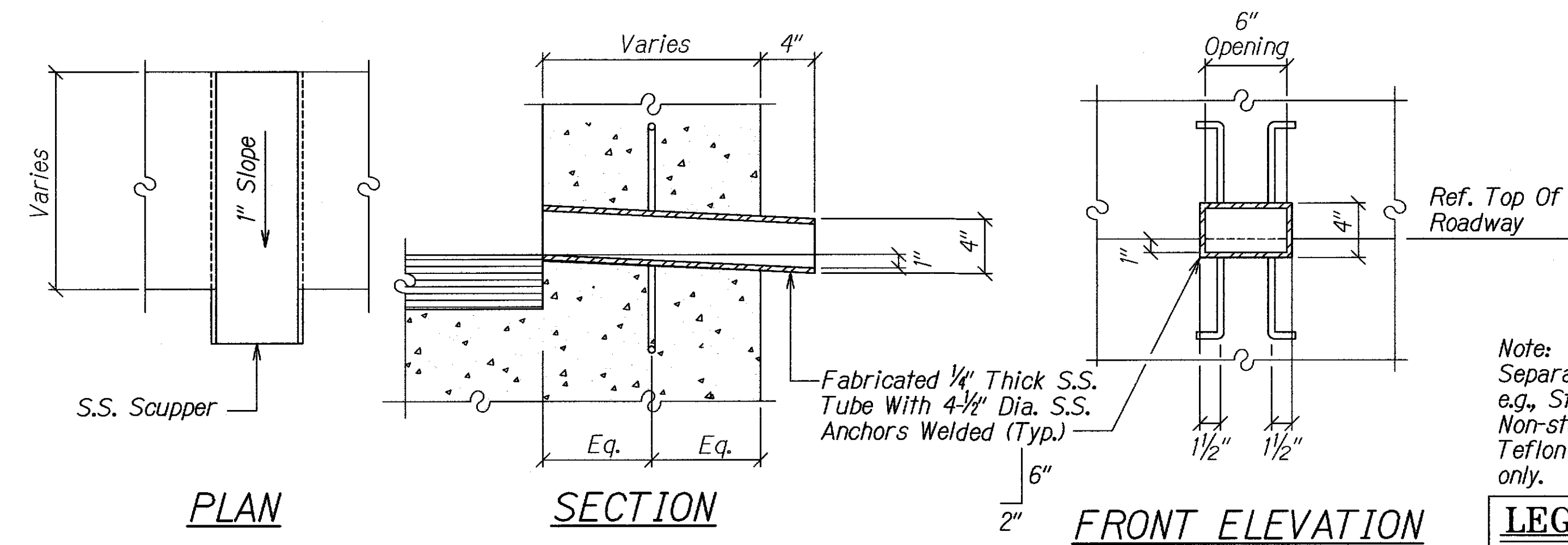
FINAL



W-BEAM TO T101 GUARDRAIL SPLICE
Scale: 3/8"=1'-0"



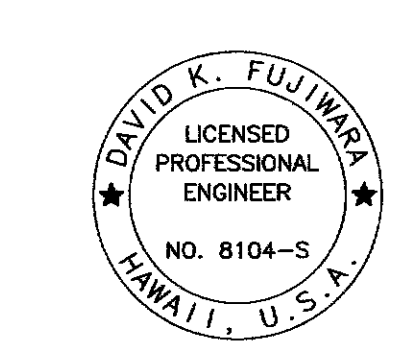
SECTION THRU T-101 GUARDRAIL AT EXISTING REPAIR
SCALE: 1 1/2"=1'-0"



SCUPPER DETAIL
SCALE: 1 1/2"=1'-0"

Note:
Separate dissimilar metals,
e.g., Stainless Steel and
Non-stainless Steel with
Teflon tape at contact area
only.

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



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LIC. EXP. DATE

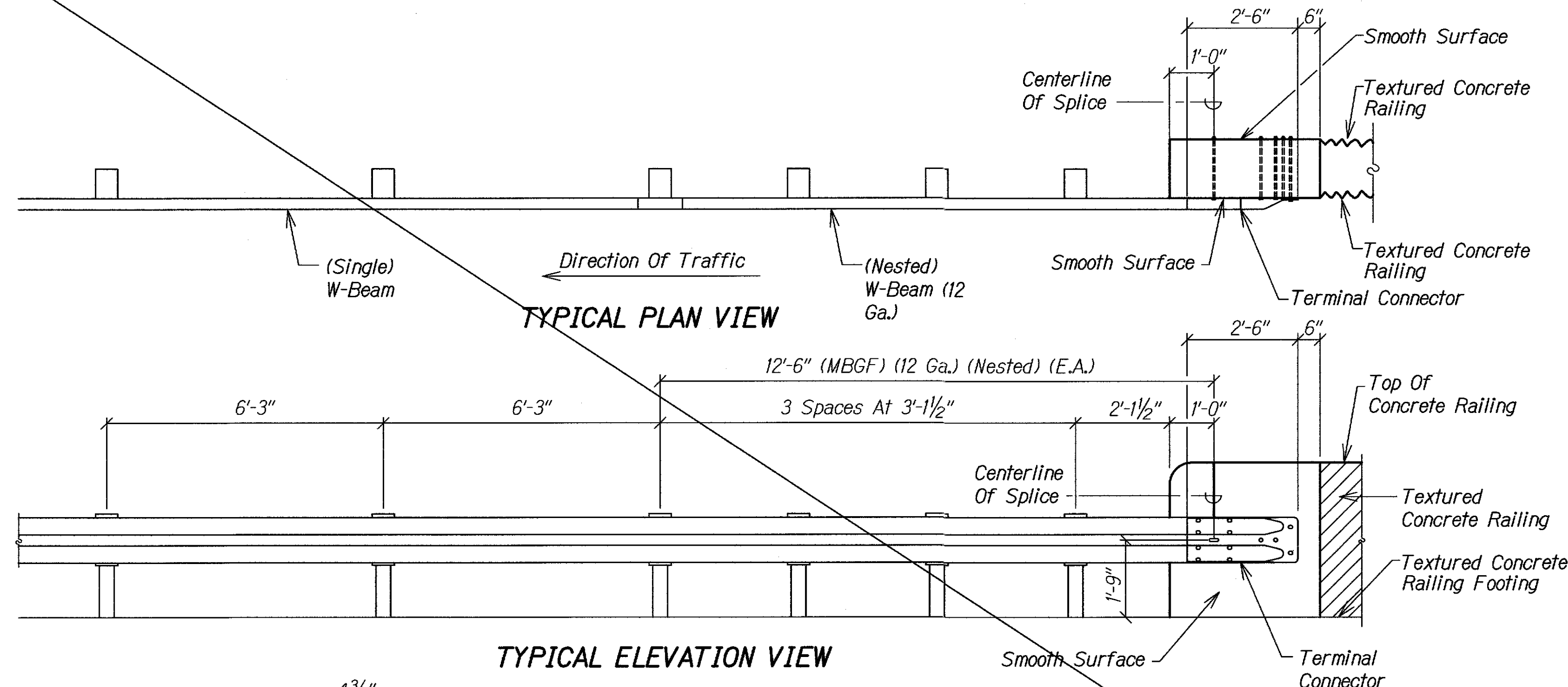
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
T101 RAILING
AND SCUPPER DETAILS
KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96
Scale: As Shown Date: June 15, 2011
SHEET No. S43 OF 5 SHEETS

"AS-BUILT"

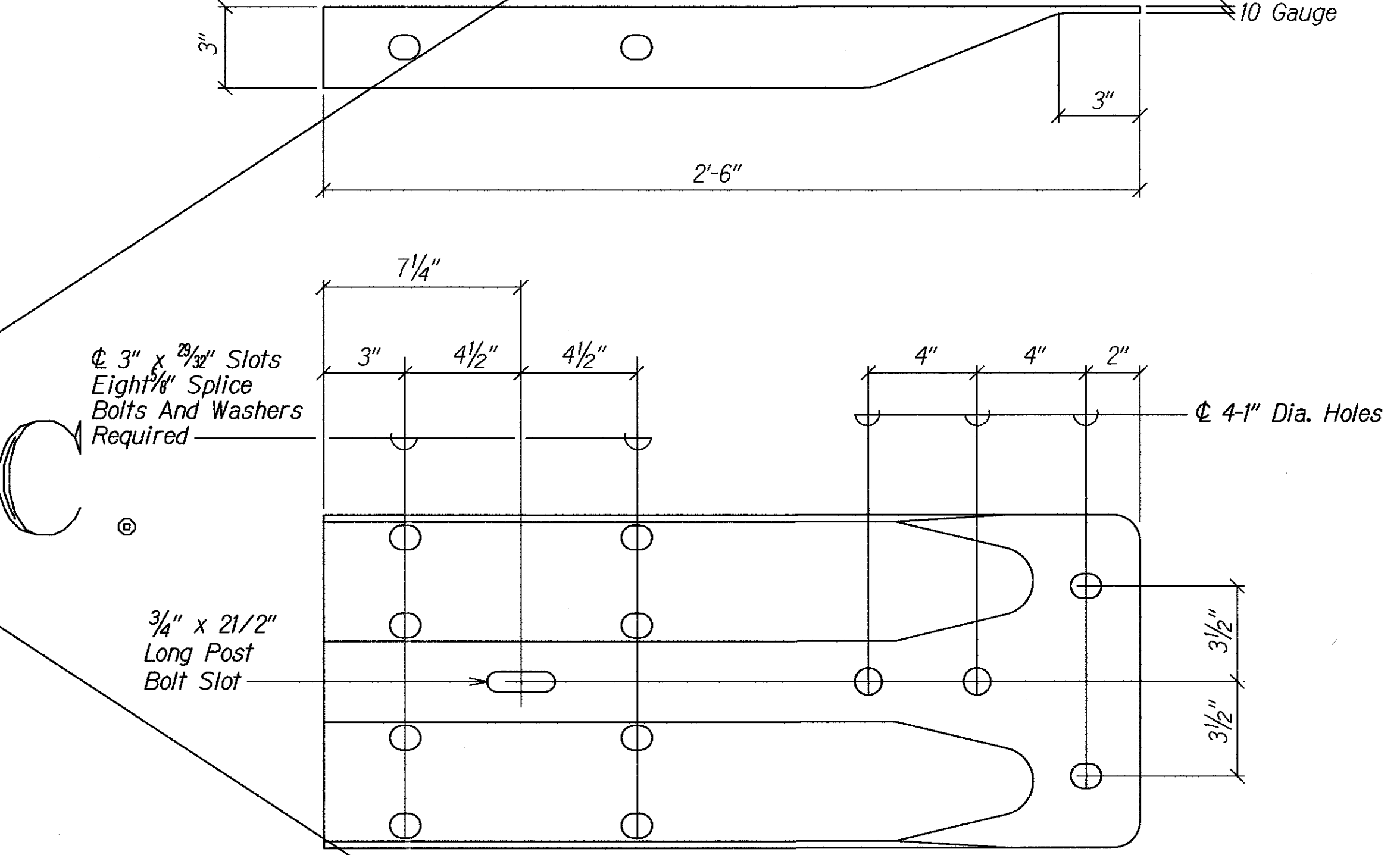
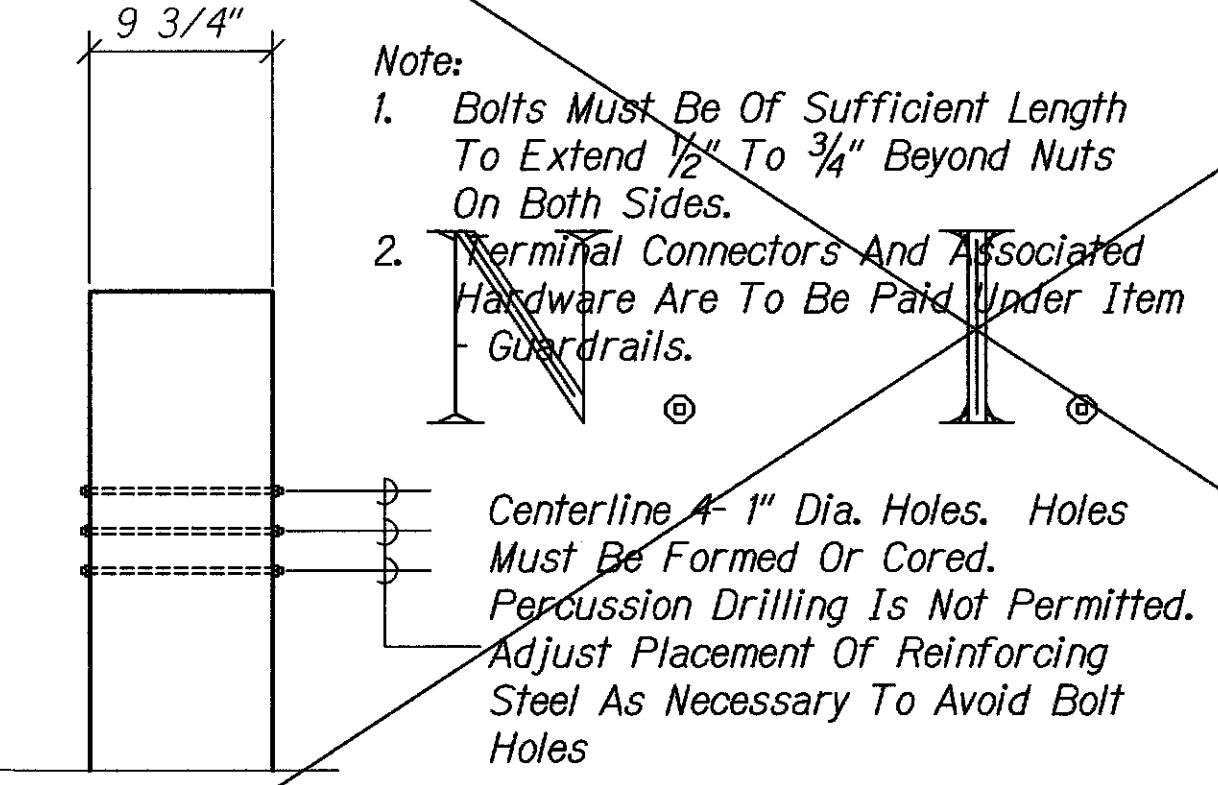
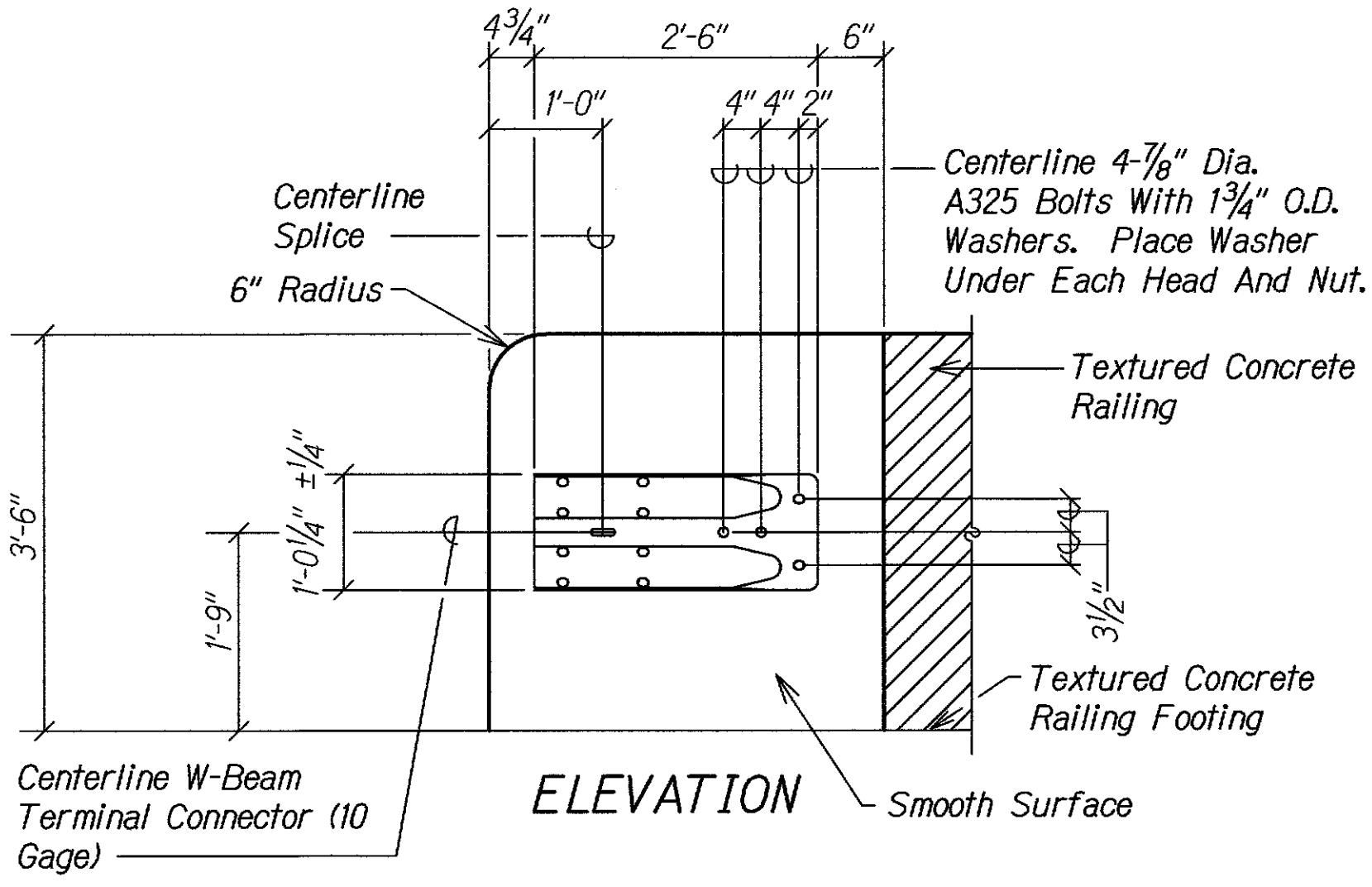
C.O. 19

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

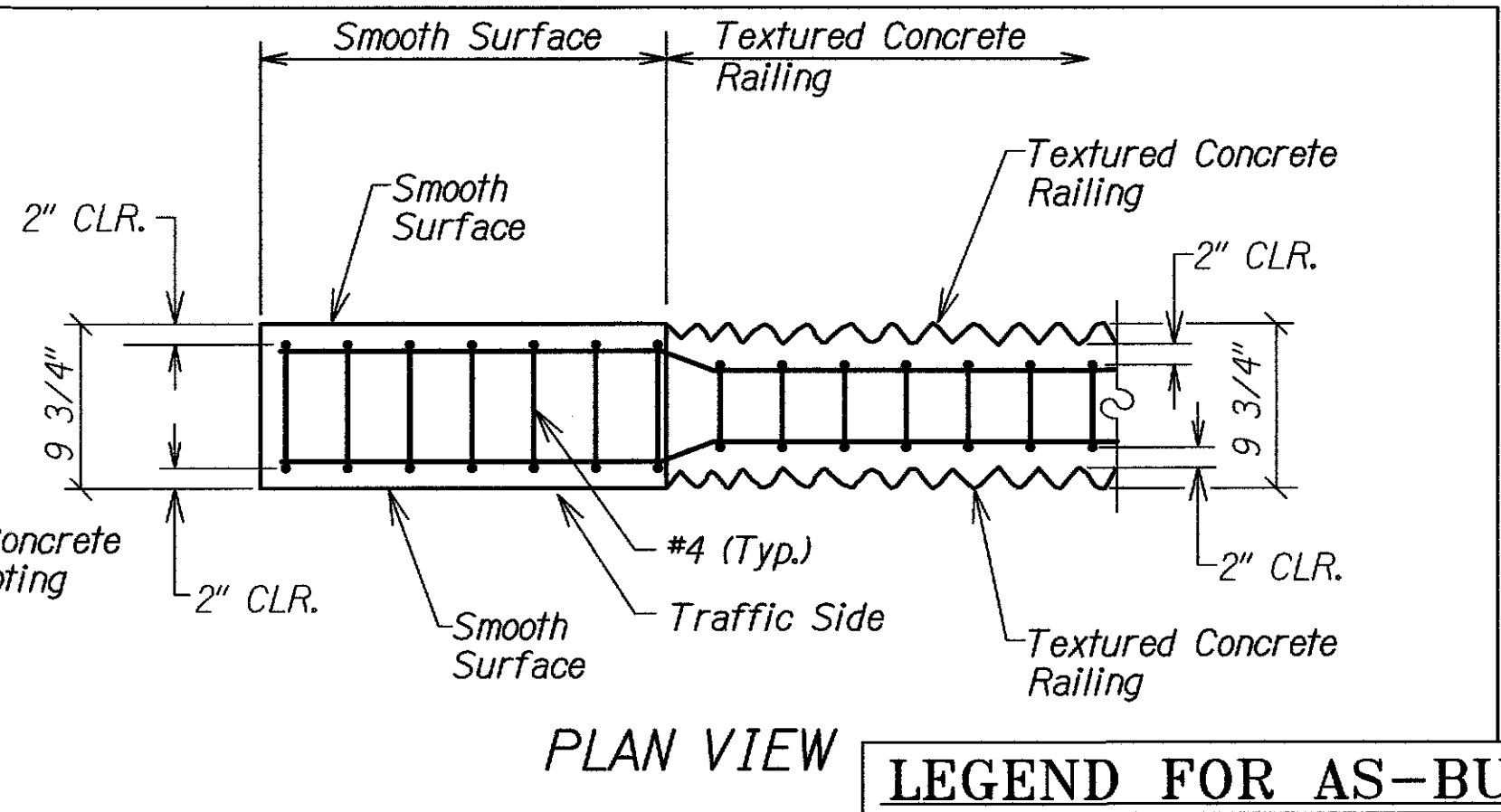
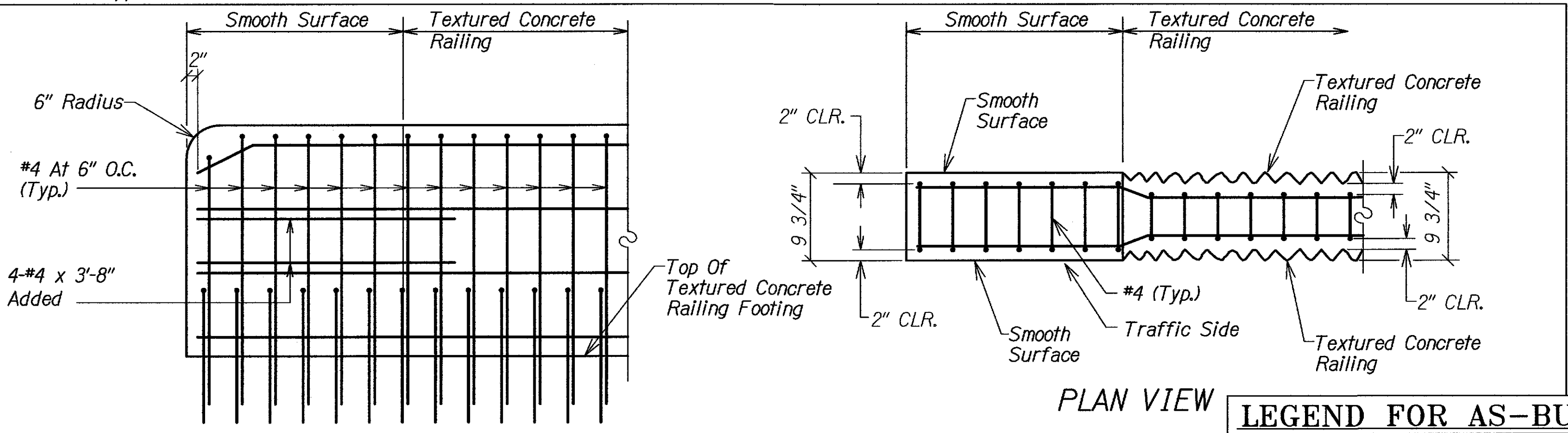
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- GENERAL NOTES**
1. Rail Element Shall Meet All Requirements Of AASHTO M-180 Except As Modified On The Plans.
 2. Button Head Post Bolts (A307) Shall Be Of Sufficient Length To Extend Through The Full Thickness Of The Nut And No More Than 3/4" Beyond It.. Button Head Splice Bolts (A307) Are 5/8" x 1 1/4" With A 5/8" Double Recessed Nut. Galvanized Fittings (Bolts, Nuts, And Washers) Shall Be In Accordance With Item, "Metal For Structures". Fittings Shall Be Subsidiary To The Bid Item Requiring Construction Of Transition.
 3. Crown Will Be Widened To Accomodate Transitions.
 4. Refer To MBGF Standard Sheet For Additional Details.
 5. Payment For Metal Beam Guardrail Transition (MBGF (TL2) Shall Be Paid For Under Item - Guardrails.

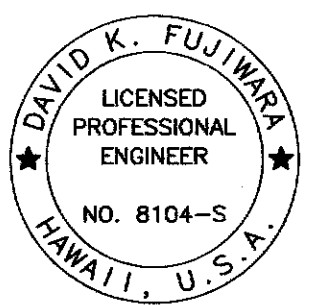


TL-2 TERMINAL CONNECTION DETAILS
Scale: 3/4" = 1'-0"



LEGEND FOR AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting



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APRIL 30, 2012
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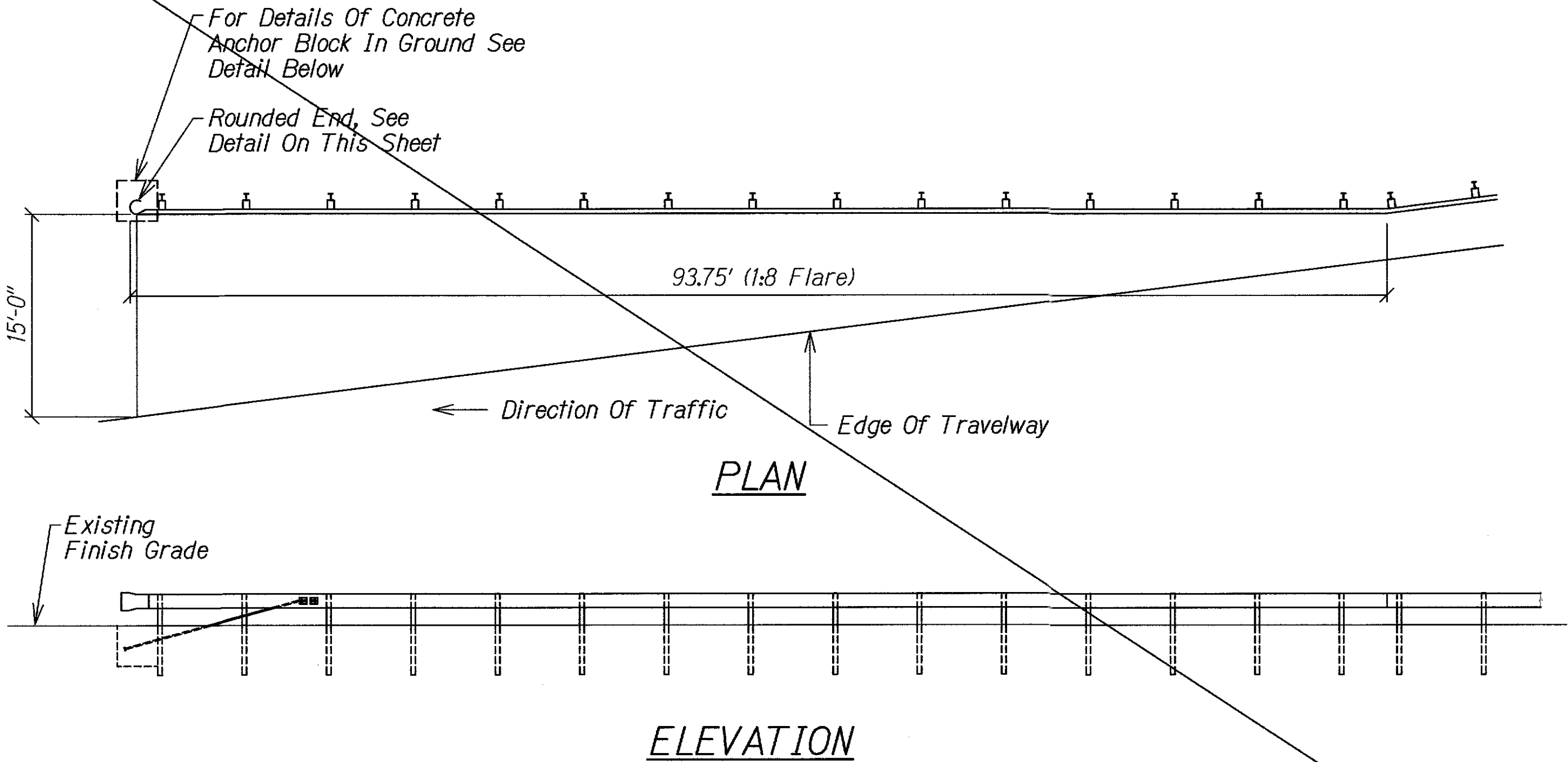
END OF CONC. WALL DETAIL

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
W-BEAM TO CONCRETE RAILING CONNECTION DETAILS
KUHIO HIGHWAY
Retaining Walls At Lumahai And Wainiha
Project No. 560A-03-96
Scale: As Shown Date: June 15, 2011
SHEET No. 544 OF 5 SHEETS

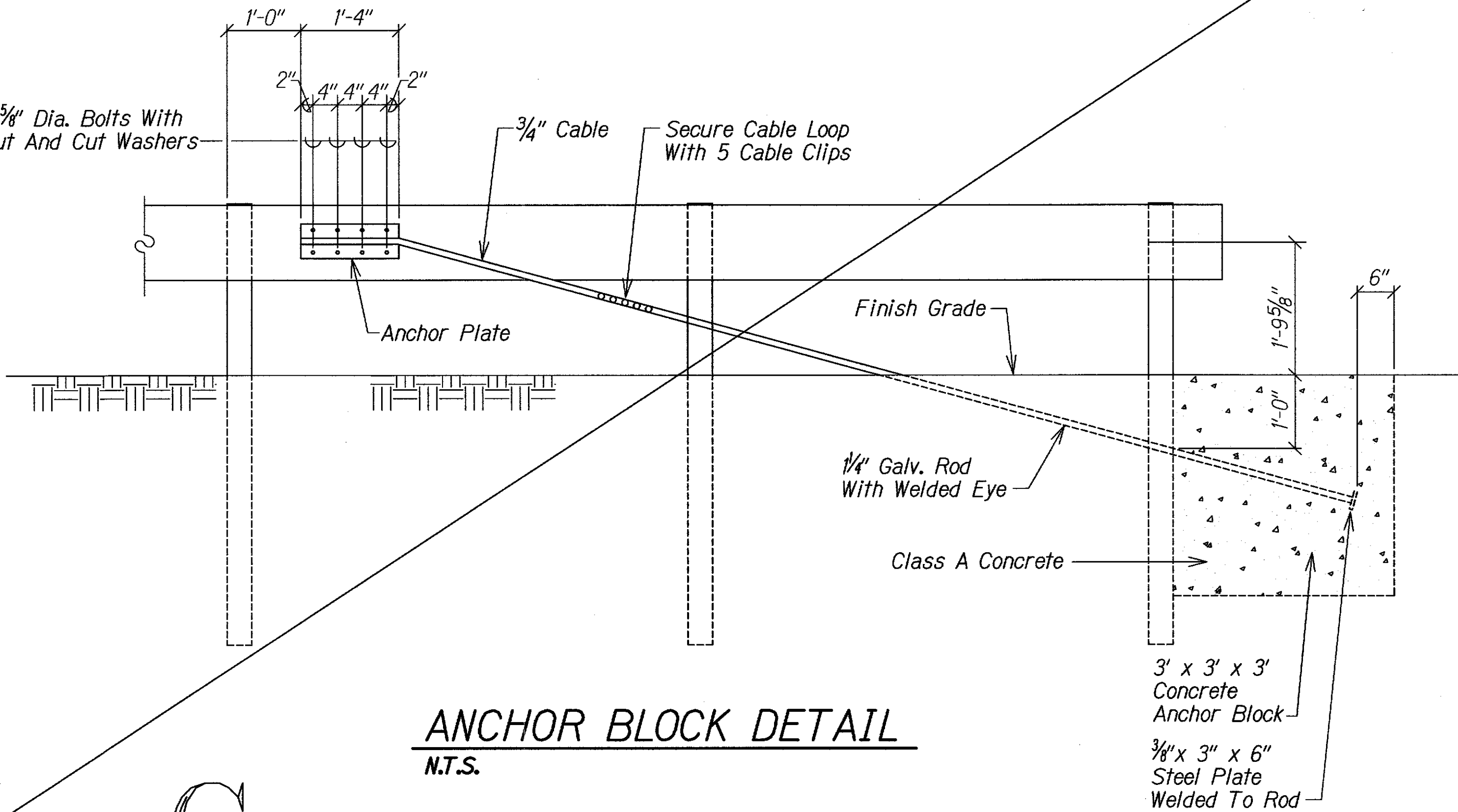
SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

DRAWING NAME: Z:\CO CONCRETE\11-007-KUHIO HWY RETC WALLS AT LUMAHAI & WAINIHA\CAD\07-08-13 ASE\VIEW-5401-405 ASE.DWG PLOT TIME: 07-08-13 3:48 PM

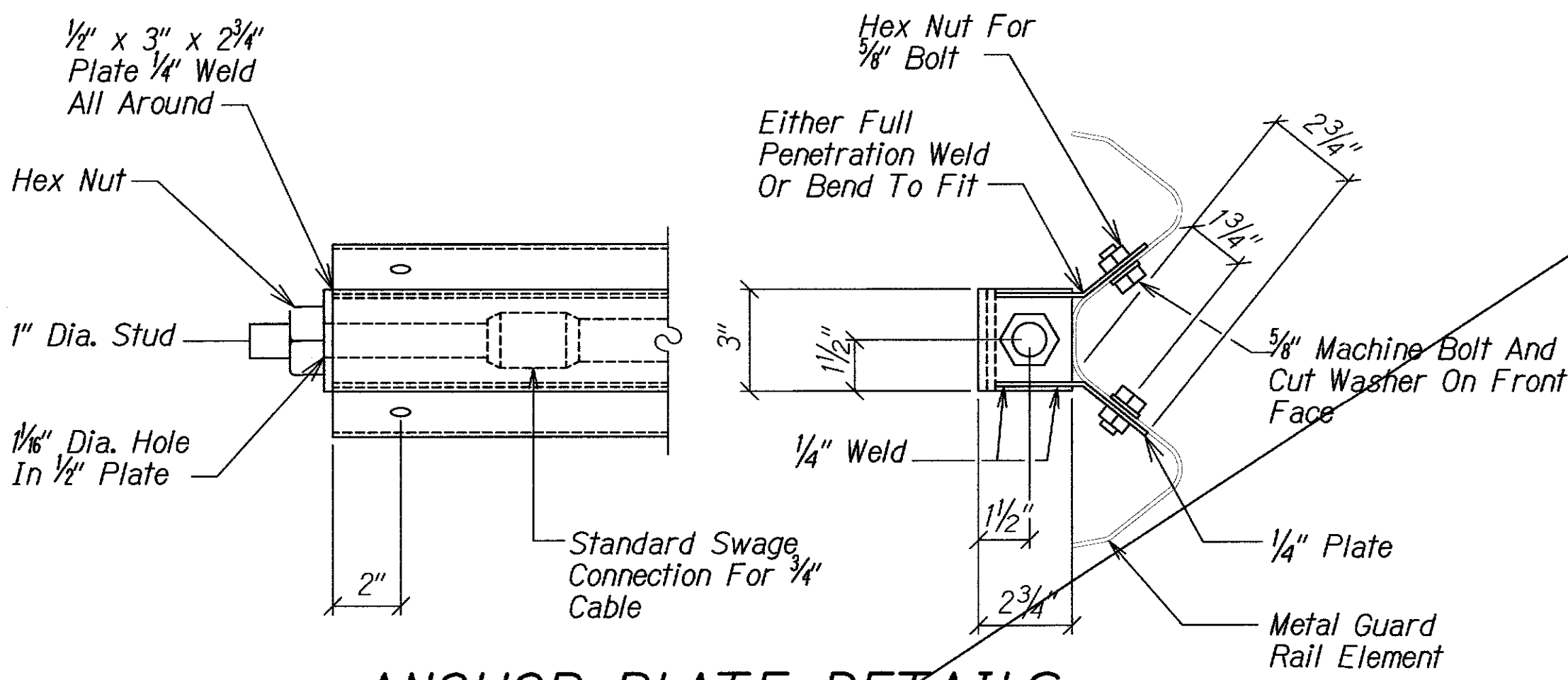
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	560A-03-96	2009	C.O. 21	27



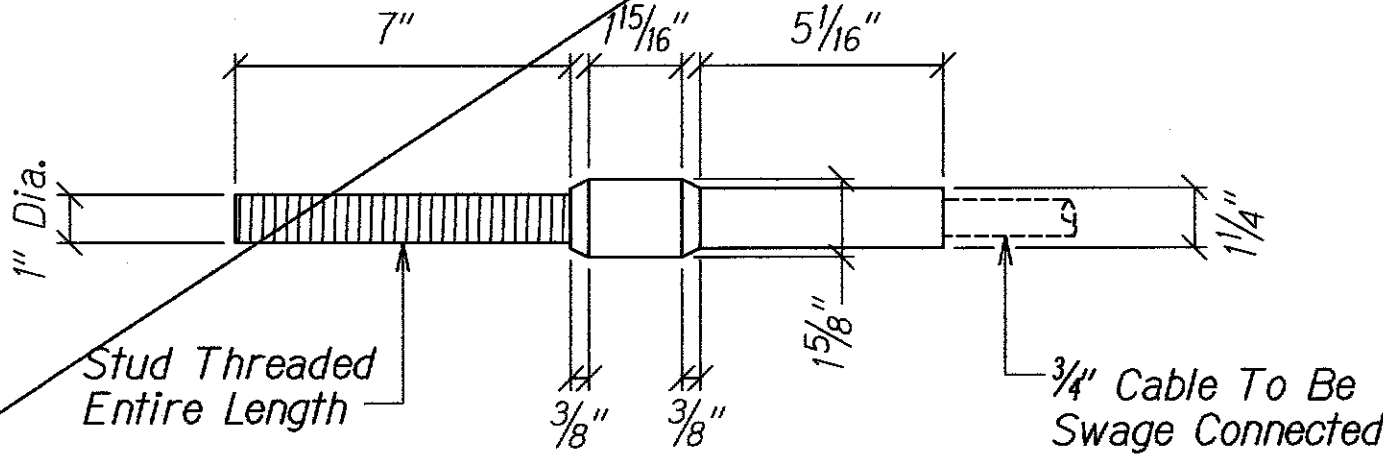
TERMINAL SECTION MODIFIED TYPE "G" WITH ROUNDED END
N.T.S.



ANCHOR BLOCK DETAIL
N.T.S.

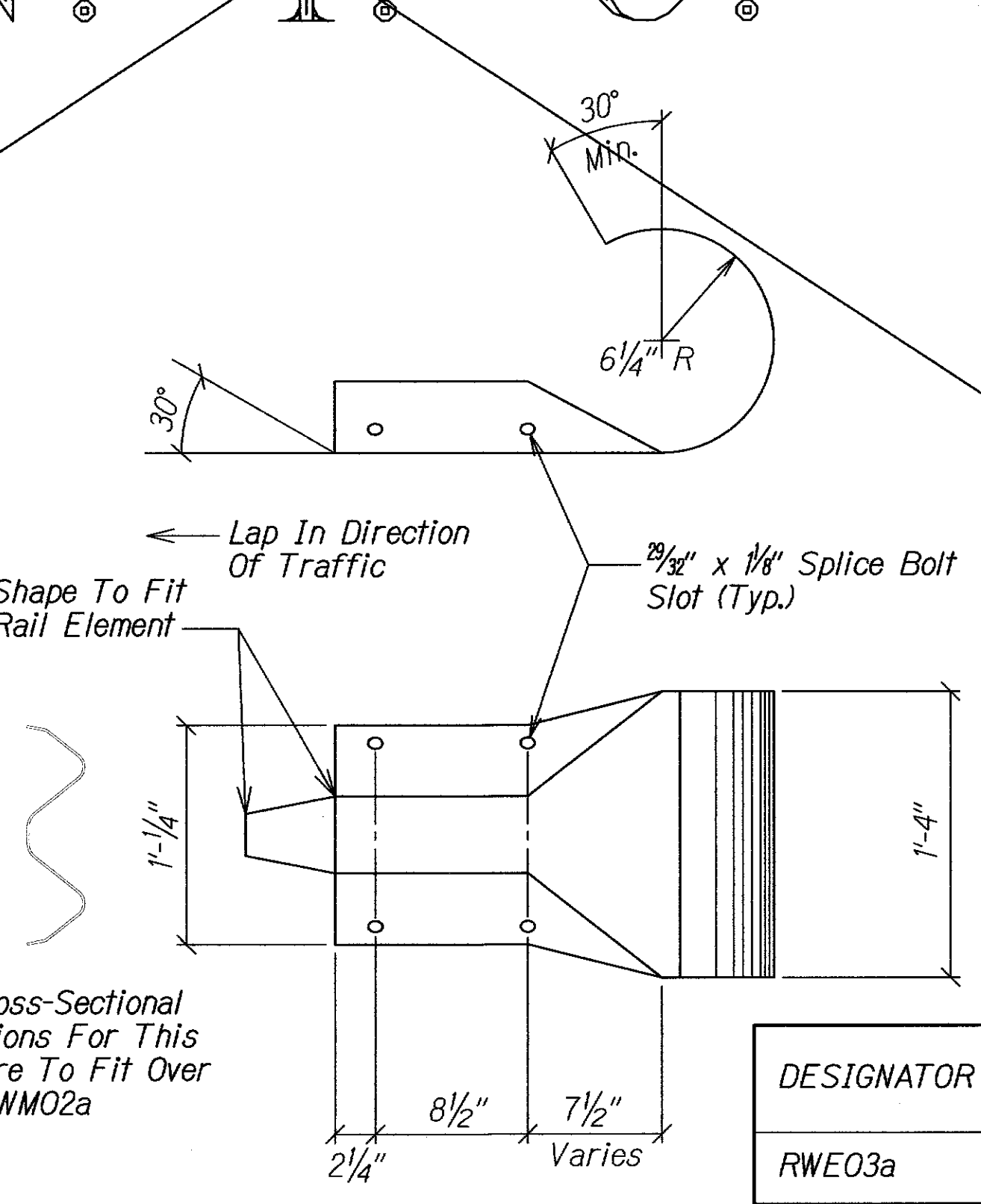


ANCHOR PLATE DETAILS
N.T.S.



STANDARD SWAGED FITTING AND STUD
N.T.S.

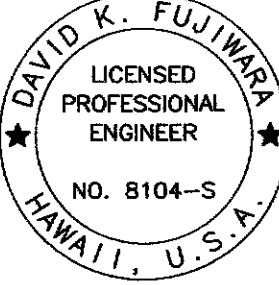
N. I. C.



W-BEAM END SECTION (ROUNDED RWE03A)
N.T.S.

- Notes:
- During Construction, The Contractor Shall Lay Out The Proposed Type "G" Modified Terminal Section And Receive Approval From The Construction Engineer Prior To Installation.
 - Strong Post, Offset Block Or Blockout, And W-Beam Shall Be Paid Under Item No. 606.3000 - Guardrail Type W-Beam With Strong Post.
 - Concrete Anchor Block, Excavation, Anchor Rod, Rounded End And Miscellaneous Appurtenances Necessary To Anchor The Guardrail Ends Shall Be Paid Under Item No. 606.7010 - Terminal Section, Modified Type "G" With Rounded End.

DESIGNATOR	BASE METAL THICKNESS
RWE03a	12 Gauge



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APRIL 30, 2012
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MODIFIED TYPE "G"
TERMINAL SECTION
KUHO HIGHWAY
Retaining Walls At Lumahei And Wainiha
Project No. 560A-03-96
Scale: As Shown
Date: June 15, 2011
SHEET No. 545 OF 5 SHEETS

"AS-BUILT"

C.O. 21