FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
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KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
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KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
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BRIDGE GENERAL NOTES

1. General Specifications: Hawaii Standard Specifications for Road and Bridge Construction, 2005, together with Special Provisions prepared for this contract.

2. Design Specifications:
   (A) AASHTO Standard Specifications for Highway Bridges, 17th Edition, subsequent interim specifications with interim supplements and modificaitons by the HDOT Highways Division.
   (B) HDOT Memorandum HWY-DB 2.6843 dated February 14, 2005 with subject title "Design Criteria for Bridge and Structures".
   (C) Temporary shoring and falsework shall follow the AASHTO Guide Design Specifications for Bridge Temporary Works.

3. Loads:
   (A) Live Load: AASHTO HS-20 Truck Loading
   (B) Seismic Loads: Acceleration coefficient - 0.08
   (C) Railing Test Level: TL-2

4. Materials:
   (A) All concrete strengths shall be as noted below:

Item No.	Structural Parts	Classes of Concrete	Compressive Strength f'c (28 Days)
(1)	Prestressed planks	-	6500 PSI
(2)	Drilled shaft caps	-	5000 PSI
(3)	Topping, concrete pads at piers, and end beams	-	5000 PSI
(4)	Retaining wall, barrier wall, fin wall and end post footings	-	5000 PSI
(5)	Retaining walls, barrier walls, fin wall, railings and end posts	-	5000 PSI
(6)	Drilled shafts, including trial and load test shafts	-	4500 PSI
(7)	Approach slab	-	4000 PSI
(8)	Bike path slab	-	4000 PSI
(9)	Except as noted otherwise, all others	A	3000 PSI

All concrete for item nos. 1, 7, 8 and 9 shall have a maximum W/C Ratio of 0.45. The W/C Ratio for Class A concrete shall follow the Specifications. The W/C Ratio for item nos. 2 through 6 shall have a maximum of 0.40.

(B) All reinforcing steel shall be ASTM A 615 Grade 60 unless otherwise noted.
(C) Reinforcing steel shall be ASTM A 706 where welded connections are required.
(D) All stainless steel reinforcing shall be ASTM A955 S31603 Grade 60 deformed stainless steel reinforcing.
(E) All structural steel shall be ASTM A 36 hot dip galvanized after fabrication, unless otherwise noted.

4. Materials Cont.:
(E) Structural steel tubing shall be ASTM A500 Grade B hot dipped galvanized after fabrication, unless otherwise noted. Washer shall be used with bolts and anchor bolts.
(F) All bolts, washers and nuts shall be ASTM A 325 hot dip galvanized after fabrication, unless otherwise specified. Washers shall be used with bolts and anchor bolts.
(G) Stainless steel anchor bolts, nuts, and washers shall be ASTM F593 Group 2 with a minimum ultimate tensile strength of 85 ksi and ASTM F594 Group 2. Stainless steel nuts and washers shall be used with stainless steel bolts and anchor bolts.
(H) Prestressing steel shall be uncoated seven wire low-relaxation strand conforming to ASTM A 416 Grade 270.
(J) Steel casing for drilled shaft shall conform to ASTM A252 Class 1 and need not be galvanized.
(K) All welding shall conform to AWS D1.5 Bridge Welding Code. Unless noted otherwise, all welding shall be shielded arc welding with E70 electrodes.
(L) Fiberglass reinforced platic (FRP) shall conform to specifications Section 720.
(M) A migrating corrosion inhibitor amine carboxylate water-based admixture shall be added to the concrete mix for concrete material (A) item nos. 1, 3, 7, and 8. The minimum dosage shall be 1.5 pints per cubic yard of concrete. The admixture shall not affect the set time of the concrete.
(N) A migrating corrosion inhibitor amine carboxylate water-based admixture shall be added to the dry pack mortar, grout and non-shrink grout. The minimum dosage shall be 10 grams per 0.4 to 0.5 cubic feet of dry pack mortar, grout, or non-shrink grout.

5. Reinforcement:
(A) The covering measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as otherwise shown:
   (1) Deck slabs
      a. Top bars = 2" with a tolerance of - 0 inch to +3/8 inch
      b. Bottom bars = 1 1/4" except as otherwise noted
   (2) Prestressed concrete planks and drilled shaft caps = 1" to stirrups
   (3) Wing walls = 2"
   (4) Drilled shaft cap and beams = 2" to stirrups
   (5) Drilled shafts = 4" to spirals.
   (6) Approach slab top bars = 2"
   Approach slab bottom bars = 3"
   (7) Concrete cast against and permanently exposed to earth = 3"
   (8) All others unless otherwise noted = 2".
   (9) For GFRP bars, cover shall be 1 1/2" unless otherwise noted.
(B) Reinforcing bars shall be detailed in accordance with the latest edition of the A.C.I. Detailing Manual unless otherwise noted.

5. Reinforcement (Cont.):
(C) Minimum clear spacing between parallel bars shall be 1 1/2 times the diameter of bars (for non bundled bars). In no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate or 1 1/2".
(D) All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.
(E) Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of intersections is less than one foot in each direction, in which case alternate intersections shall be tied.
(F) Glass Fiber Reinforced Polymer Rebar
   (1) Glass Fiber Reinforced Polymer (GFRP) rebar shall have a maximum tensile strength of 100 ksi for #4 bar, 95 ksi for #5 bar, and 90 ksi for #6 bar. The allowable stress is equal to 20% of the minimum ultimate tensile strength.
   (2) The modulus of elasticity of the GFRP bar shall be a minimum of 5,900,000 psi.
   (3) Minimum concrete cover for the GFRP bars shall be 3/4" unless otherwise noted.
   (4) Minimum lap splice lengths for the GFRP bars shall be 42 bar diameters unless otherwise noted.
   (5) All GFRP bars shall be securely tied in place.
   (6) The GFRP bars may be cut in the field with a masonry or diamond blade.
   (7) All work including materials and bends shall follow manufacturer's recommendations.

6. Girder Bearings, Hinge Blocks and Creep Blocks:
(A) Top of girder concrete seats receiving elastomeric pads shall be finished with a steel trowel to a smooth level surface to the elevation shown on the plans. Grind down high spots as needed to provide an even bearing surface to 1/16"± tolerance.
(B) Elastomeric pads: To prevent displacement, the bottom of bridge elastomeric bearing pads shall be secured to the concrete seats with adhesive approved with by the Engineer. Elastomeric pads shall conform to Section 712.09(C).

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BRIDGE GENERAL NOTES

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: None Date: May 2008

SHEET No. S0.4 OF 131 SHEETS

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BRIDGE GENERAL NOTES

7. Construction Notes:

(A) The Contractor shall verify all dimensions and site conditions and shall report any discrepancies in writing to the Engineer before commencing work or ordering materials.

(B) The Contractor shall verify all site conditions and not rely upon these plans for existing bridge elevations and azimuths, stream channel location, roads, roadway gutters, curbs and sidewalks, etc.. Conditions may differ from those shown.

(C) The Contractor shall be solely responsible for the protection of adjacent properties, 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.

(D) The Contractor shall verify the location of all utility lines and notify the respective owners before commencing with excavation, and any temporary piling or sheeting.

(E) The Contractor shall submit working drawings and calculations for the proposed bracing/falsework details needed to protect the existing abutments from increases in the existing load due to equipment, drilled shaft rigs, cranes, vehicles and fresh concrete, etc. The drawings and calculations shall be stamped by a licensed Structural Engineer and a licensed Civil Engineer specializing in geotechnical engineering in the State of Hawaii. The above work, including working drawings and calculations, shall be incidental to various Contract items. The drawings and calculations shall be found acceptable by the Engineer before any construction work is to proceed.

(F) In general, top of new concrete deck slab shall be constructed to follow the existing roadway vertical and horizontal curves and superelevations.

(G) The entire length of the bike path shall have a surface texture that complies with American Disabilities Act Accessibility Guidelines Section 4.3.6.

(H) For areas that are not broom finished, the surface of the concrete bike path shall have an abrasive coating according to Specification Section 712.11.

(J) Except as otherwise noted, all vertical dimensions are measured plumb.

(K) For concrete finish see Standard Specifications and Special Provisions.

(L) Construction joints may be relocated or additional ones added subject to the acceptance of the Engineer.

(M) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4" x 3/4".

(N) Drilled holes in existing concrete for reinforcing steel dowels shall not be left unfilled for more than 8 hours. Epoxy in drilled holes shall be able to develop the full strength of the dowels prior to pouring concrete around reinforcing steel dowels or attaching structural steel member to threaded rod dowels. Holes for epoxied dowels shall be 1/8" larger than dowel diameter.

(P) Location of drilled holes for epoxied bolts and dowels shown in plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel and adjust holes in concrete, the Contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars. Final hole locations are subject to the approval of the Engineer.

7. Construction Notes (Cont.):

(Q) Structural steel base plates shall not be fabricated until drilled hole locations are known. Adjustments to the base plates shall be made to accomodate anchor bolts locations and submitted to the Engineer for acceptance.

(R) Where specified that the concrete surface is to be roughened and cleaned the concrete shall be roughened to a full amplitude of 1/4 of an inch.

(S) Aluminum and stainless steel in contact with dissimilar metals shall be separated by neoprene sheets. Such work shall be incidental to the various pay items of work.

(T) The Contractor shall layout reinforcing to avoid conflicts between bars. Special attention shall be given to dowels and reinforcing extending from precast members.

8. General:

(A) All items noted incidental will not be paid for separately.

(B) Standard Plans refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to the corresponding detailed drawings.

(C) Plans of the existing bridge and the foundation report prepared by Geolabs, Inc. dated December 15, 2006, are available for review from the Highways Design Branch located at the State Department of Transportation, Highways Division Kakuhihewa Building, Room 609, 601 Kamokila Boulevard, Kapolei, HI 96707 (Phone number 692-7572).

9. Foundation:

For boring logs and other geotechnical information, see foundation report by Geolabs, Inc. and sheet nos. G1 to G9. Minimum shaft depth and shaft details for drilled shafts are shown on sheet S4.13.

(A) Bearing Capacity

(1) Extreme event limit state = 9,000 pounds per square foot (psf)

(2) Strength limit state = 4,500 psf

(3) Service limit state = 3,000 psf

(B) Friction Factor

(1) Extreme event limit state = 0.35

(2) Strength limit state = 0.28

(C) Active & At-Rest Earth Pressures

(1) Active lateral earth pressure (level backfill conditions) = 40 pounds per cubic foot (pcf) equivalent fluid pressure.

(2) At-rest lateral earth pressure (level backfill conditions) = 56 pcf

(3) Active horizontal earth pressure (2H:1V backfill conditions) = 61 pcf

(4) Active vertical earth pressure (2H:1V backfill conditions) = 31 pcf

9. Foundation (Cont.):

(C) Active & At-Rest Earth Pressures

(5) At-rest horizontal earth pressure (2H:1V backfill conditions) = 86 pcf

(6) At-rest vertical earth pressure (2H:1V backfill conditions) = 39 pcf

(D) Passive Earth Resistance

(1) Extreme event limit state = 250 pcf

(2) Strength limit state = 125 pcf

(E) Lateral Bearing Pressure = 1,000 psf

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BRIDGE GENERAL NOTES

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Wailua Cane Haul Bridge Widening
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SHEET No. S0.5 OF 131 SHEETS

SYMBOLS AND ABBREVIATIONS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	127	284

&	And
@	At
ø	Diameter
≥	Greater Than or Equal to
≤	Less Than or Equal to
#	Number
Abut.	Abutment
Abbr.	Abbreviation
Add.	Additional
Alt.	Alternate
AB	Anchor Bolt
AC	Asphaltic Concrete
Approx.	Approximate
Az.	Azimuth
Bk.	Back
Bal.	Balance
℄	Baseline
Bm.	Beam
Brg., Brgs.	Bearing, Bearings
BVC	Beginning of Vertical Curve
Bet.	Between
BF	Both Faces
BW	Both Ways
BFE	Bottom of Footing Elevation
Bot., Bott., B	Bottom
BOF	Bottom of Footing
Br.	Bridge
Blt.	Bolt
Cant.	Cantilever
CIP	Cast Iron Pipe
℄	Center line
CG	Center of Gravity
cc	Center to Center
Cl.	Class
Clr.	Clearance
CO	Clean Out
Col.	Column
Conc.	Concrete
CBW	Concrete Barrier Wall
CMU	Concrete Masonry Unit
Conn.	Connection
Const.	Construction
CJ	Construction Joint
Cntl. Jt.	Control Joint
CLSM	Controlled Low Strength Material
Cont.	Continuous
CSL	Cross Hole Sonic Loggin
CF	Cubic Feet
CY, Cu. Yd.	Cubic Yard
Det.	Detail
Dia.	Diameter
Diaph.	Diaphragm
Dim.	Dimension
Dist.	Distance
DO	Ditto
Dwls.	Dowels
Dn.	Down
Dbl.	Double
DI	Drain Inlet, Ductile Iron
Dwg., Dwgs.	Drawing, Drawings
DS	Drilled Shaft
E	East
EA, Ea., ea.	Each
EF	Each Face
EFH	Each Face Horizontal
EFV	Each Face Vertical
EW	Each Way
EPE	Existing Edge of Pavement
EPS	Expanded Polystyrene
ES	Edge of Shoulder
Elec.	Electrical
EMH	Electrical Manhole
El., Elev.	Elevation
Emb.	Embankment
EVC	End of Vertical Curve
Eq.	Equal
Est.	Estimated
Exc.	Excavation
Excl.	Excluding
Exist., Ex.	Existing
Exp., (E)	Expansion
EJ	Expansion Joint
Ext.	Exterior
(F)	Flxed
FA	Force account
FB	Flat Bar
FC	Compression Stresses
f'c	Specified Compressive Strength of Concrete at 28 days
f'ci	Specified Compressive Strength of Concrete at Time of Initial
FF	Prestress Far Face. Front Face
Fig.	Figure
Fin. Gr.	Finish Grade
FRP	Fiberglass Reinforced Plastic
FT	Tensile Stresses
Ftg.	Footing
Ft.	Feet, Foot
Ga.	Gage, Gauge
Galv.	Galvanized
G, Gir.	Girder
GDI	Grated Drain Inlet
GFRP	Glass Fiber Reinforced Polymer Rebar
Gr.	Grade
Grd.	Ground
GRP	Grouted Rubble Pavement
Ht.	Height
(H)	Hinge
Horiz., H	Horizontal
HDOT	State of Hawaii Department of Transportation
HDPE	High Density Polyethylene
HS	High strength
HECO	Hawaiian Electric Company
IB	Inbound
In.	Inch
ID	Inside Diameter
IF	Inside Face
Int.	Interior
Inv.	Invert
Jt.	Joint
K	Kips
KF	Kip Foot
KSF	Kips Per Square Foot
KSI	Kips Per Square Inch
KLF	Kips Per Linear Foot
L	Length
lb., lbs., LBS.	Pound, Pounds
Ltg. Std.	Lighting Standard
LF, Lin. Ft.	Linear Feet/Foot
LS	Lump Sum
Longit.	Longitudinal
M	Modified
MH	Manhole
Max.	Maximum
Mech.	Mechanical
Min.	Minimum
Misc.	Miscellaneous
MPH	Miles Per Hour
NF	Near Face
N	North
NIC	Not in Contract
No.	Number
NTS	Not to Scale
O/S	Offset
oc	On Center
Opn'g	Opening
OB	Outbound
OD	Outside Diameter
OG	Outside Girder, Outbound Girder
Perf.	Perforated
PL	Plate
PCC	Portland Cement Concrete
PC	Point of Curvature
PCF	Pounds per Cubic Foot
P(e)	Effective Prestress Force After All Losses
PPM	Parts Per Million
PSF	Pounds per Square Foot
PSI, psi	Pounds per Square Inch
PLF	Pounds per Linear Foot
PI	Point of Intersection of Tangents
PIVC	Point of Intersection of Vertical Curve
PT	Point of Tangency
Pt., Pts.	Point, Points
PRC	Point of Reverse Curvature
PVC	Polyvinyl Chloride
Prestr.	Prestressed
P/S	Prestressed Strands
PB	Pull Box
Rad., R	Radius
RF	Rear Face
Rebar	Reinforcing Bar
Ref.	Reference
Reinf.	Reinforced, Reinforcing, Reinforcement
Req'd.	Required
Ret.	Retaining
ROW	Right of Way
Rdwy.	Roadway
Sect.	Section
SRW	Segmental Retaining Wall
Sht.	Sheet
Sim.	Similar
Sl.	Slope
S	South
Spc., Spg.	Spaces, Spacing
Sprd.	Spread
Spec.	Specification
SF	Square Feet
SY	Square Yard
SS	Stainless Steel
Std.	Standard
Sta.	Station
Stiff.	Stiffener
Stirr.	Stirrup
Stl.	Steel
Str.	Straight
Struct.	Structure
SE	Super Elevation
Symm.	Symmetrical
Tan.	Tangent
TC	Continuity Tendons
Temp.	Temporary
TD	Deck Tendon
Thk.	Thick
T	Top
T&B	Top and Bottom
TCE	Top of Column (and Bent Cap Soffit) Elevation
TOD	Top of Deck
TOP	Top of Pier
TFE	Top of Footing Elevation
Tot.	Total
Transv.	Transverse
TS	Structural Tubing
TSS	Tendon For Girder in Simply Supported Condition
Typ.	Typical
Undergrd.	Underground
Var.	Varies
Vert., V	Vertical
VC	Vertical Curve
W/C	Water/Cement
w/	With
W	West
WWF	Welded Wire Fabric
WW	Wingwall
WP	Work Point, Working Point
WS	Water Surface
Yr.	Year

ORIGINAL PLAN

NOTE BOOK No.

SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

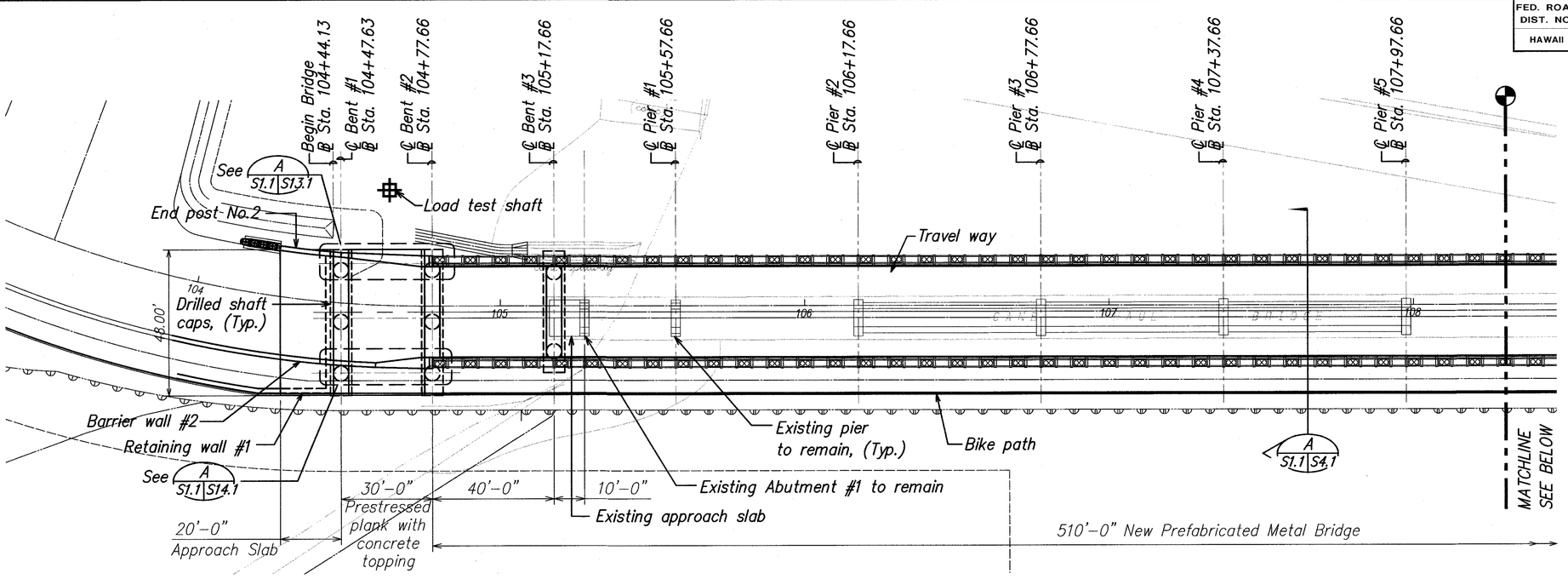
SYMBOLS AND ABBREVIATIONS

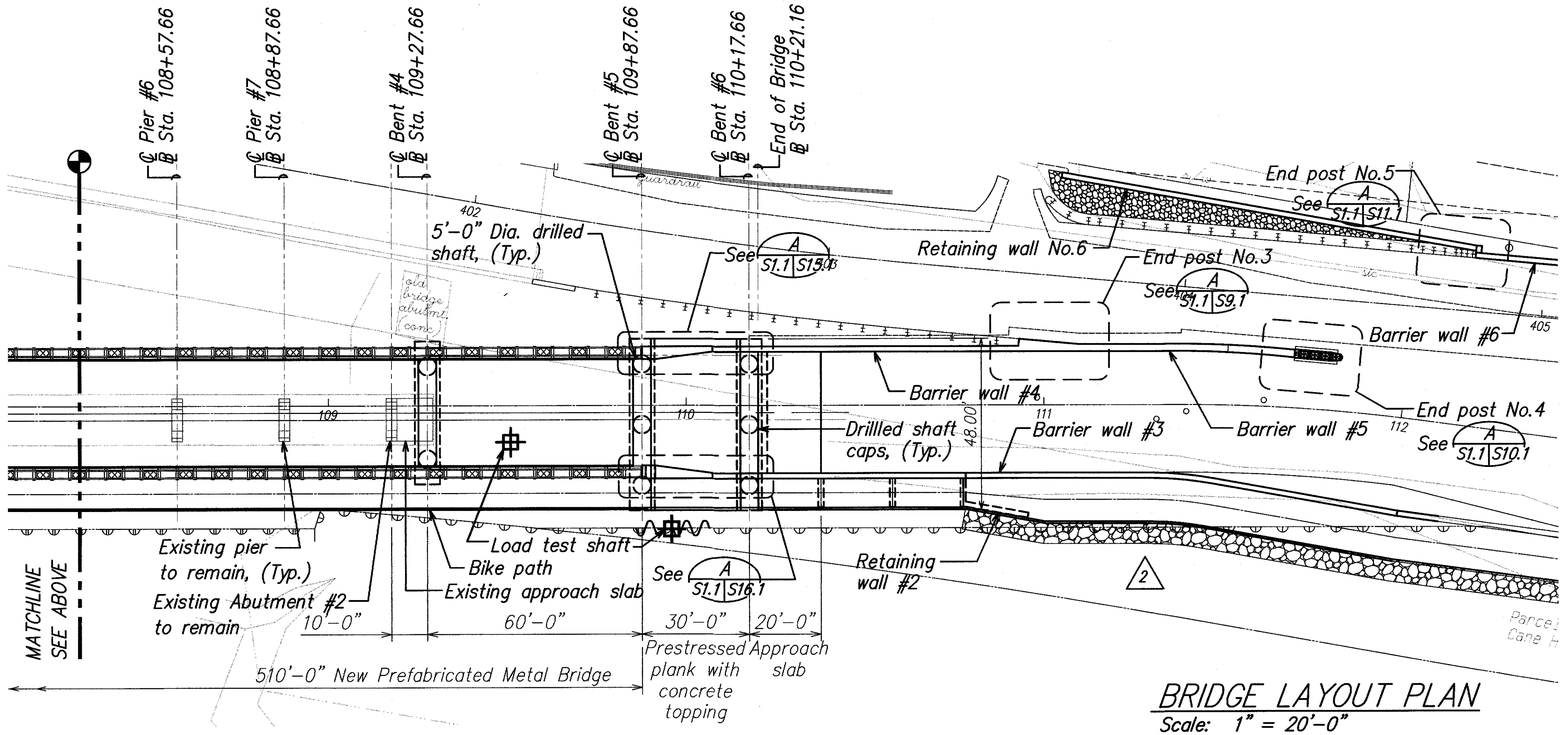
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: None Date: May 2008

SHEET No. S0.6 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 128	284





TRUE NORTH

BRIDGE LAYOUT PLAN
Scale: 1" = 20'-0"

Notes:
1. ℄ Sta. are along new outbound baseline (See sheets no. C3 AND C4)
2. New outbound baseline is not parallel to ℄ of existing bridge.
3. See civil plans for roadwy and bike path elevations.

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Alignment

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE LAYOUT PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S1.1 OF 131 SHEETS

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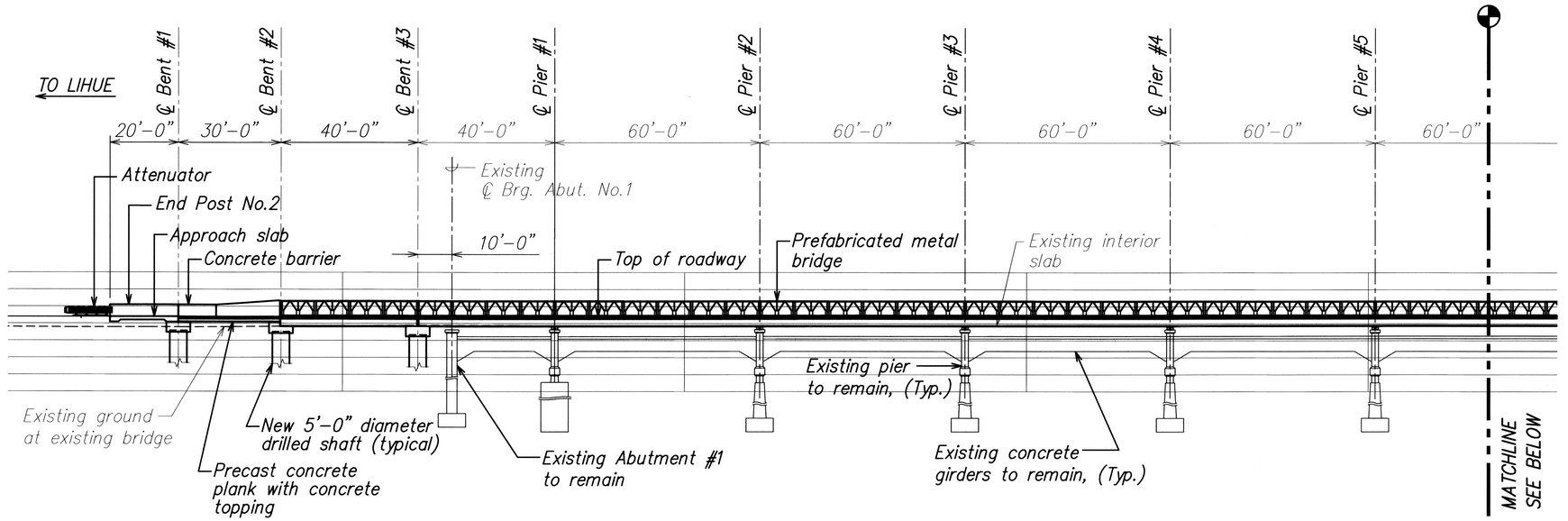
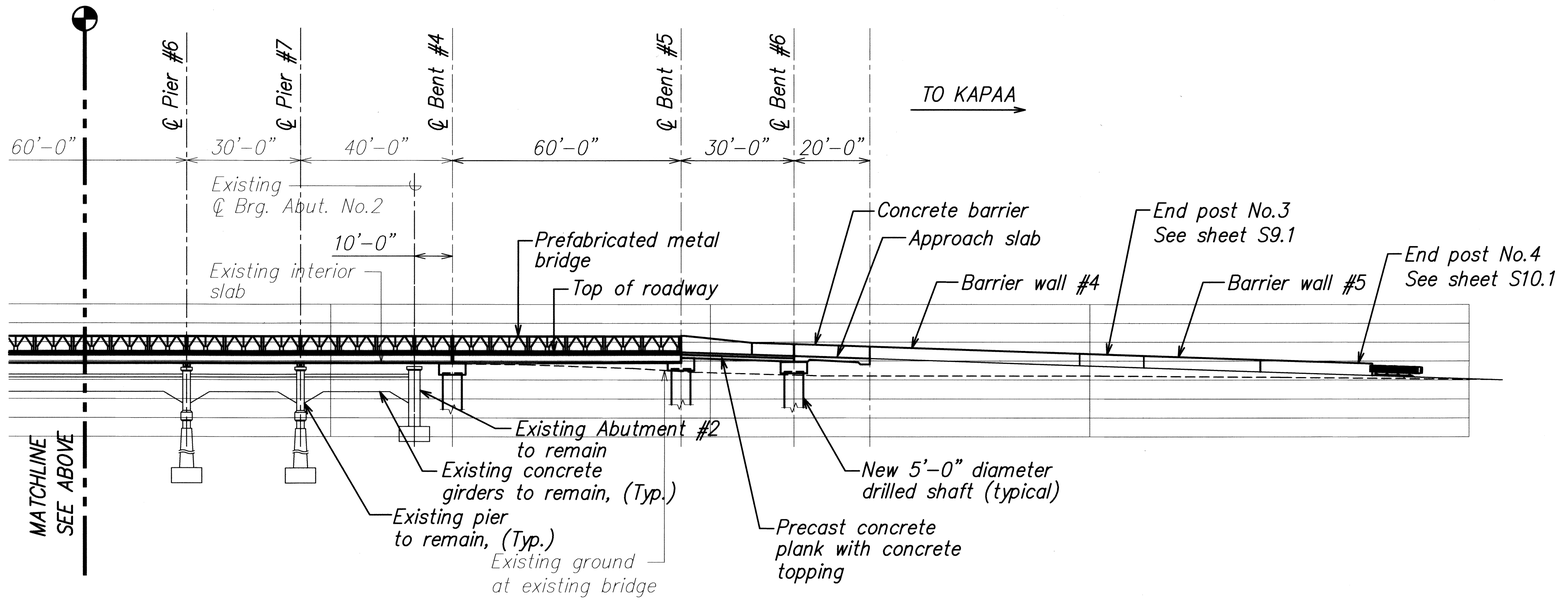
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | NOTE BOOK | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | No.

"AS-BUILT"

C.O. 128

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	129	284





SECTION AT CENTERLINE OF BRIDGE

Scale: 1" = 20'-0"

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

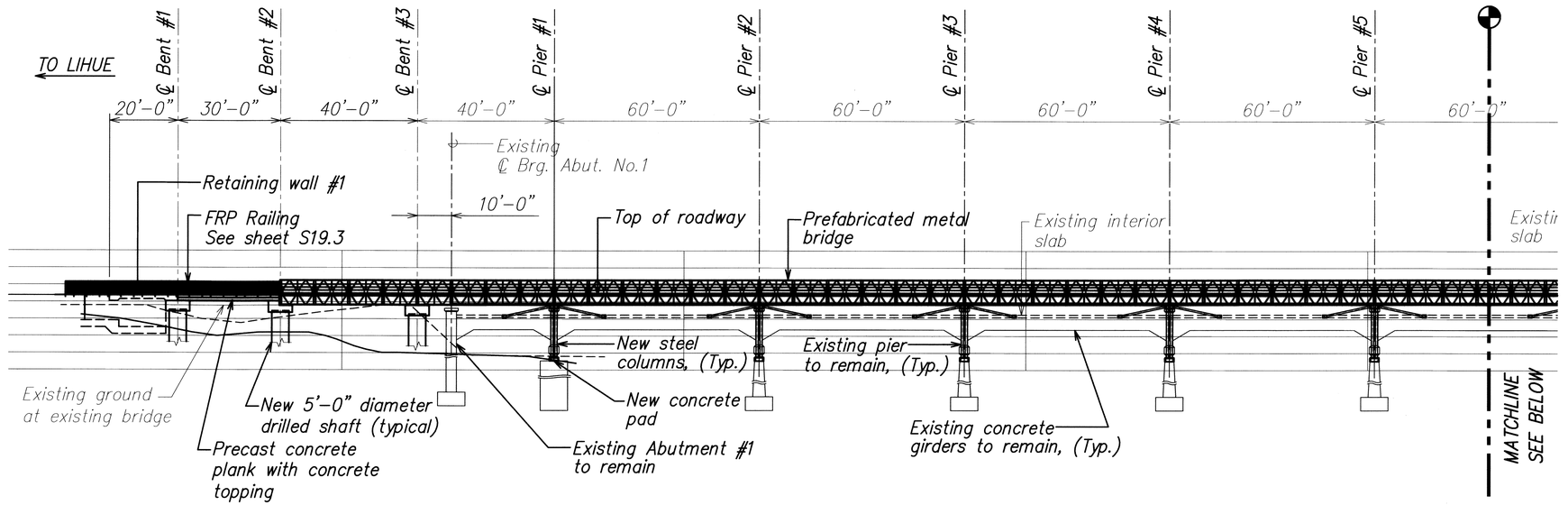
BRIDGE SECTION

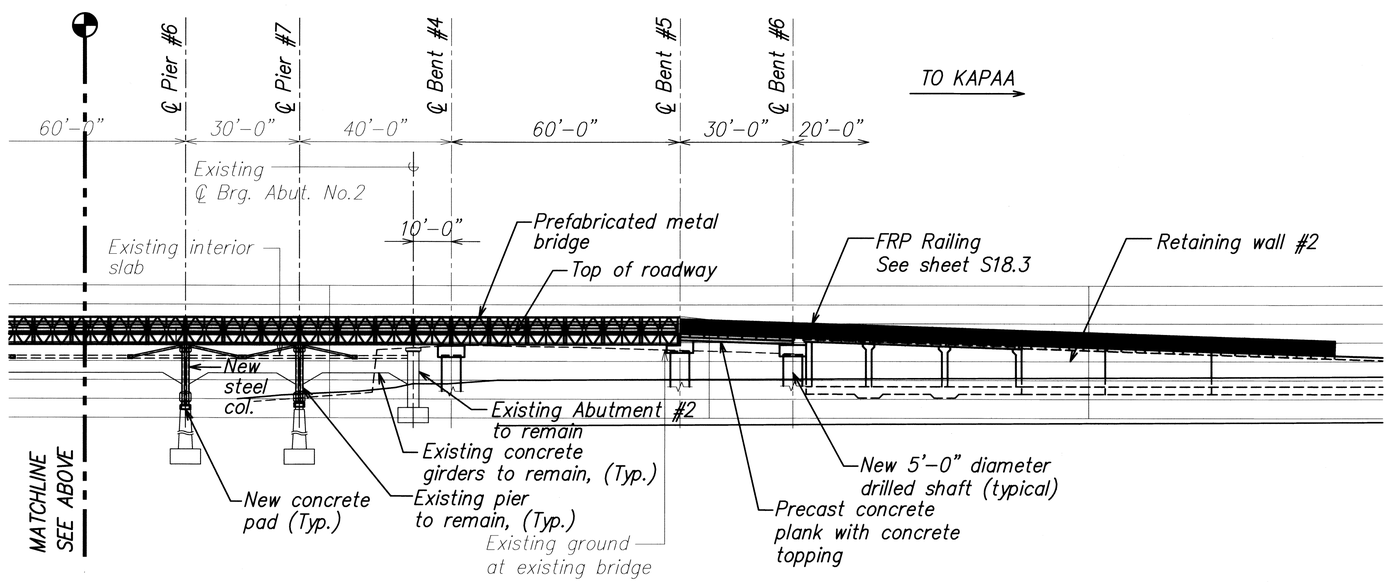
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S1.2 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	130	284





MAKAI ELEVATION
Scale: 1" = 20'-0"

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

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STATE OF HAWAII
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HIGHWAYS DIVISION

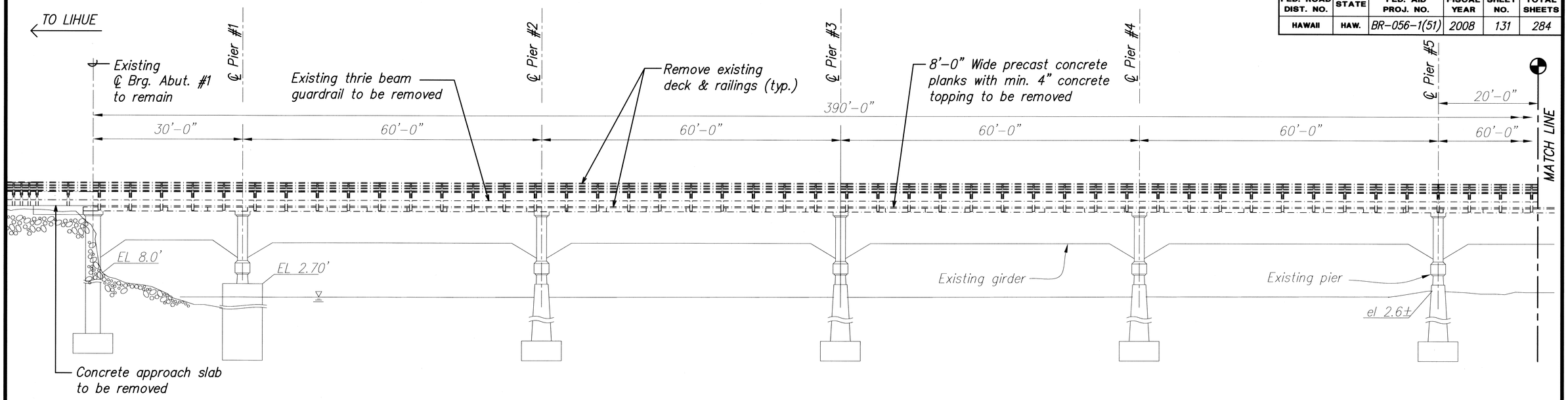
BRIDGE ELEVATION

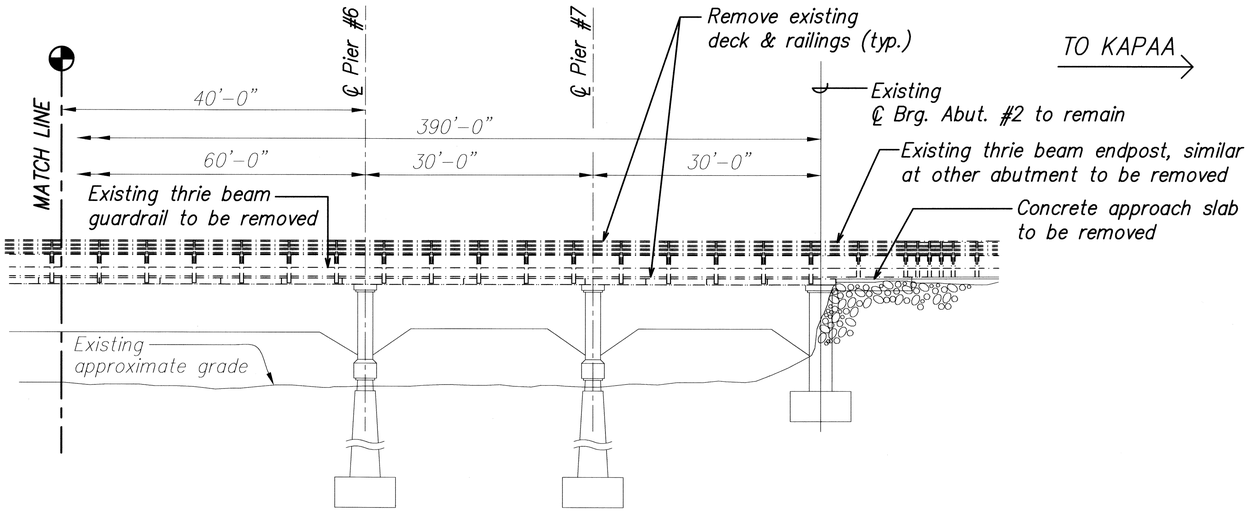
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S1.3 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	131	284





DEMOLITION – ELEVATION

Scale: 1" = 10'-0"

A S2.1 | S2.1

Notes:

1. See sheets S2.2 to S2.8 for existing Wailua Cane Haul Bridge details.
2. During the demolition the existing structure that is to remain shall not be damaged in any way. Blasting shall shall not be used as a removal method. Any damage to the existing structure shall be repaired at the expense of the Contractor.
3. The Contractor shall submit repair and demolition procedures and details to the Engineer for approval. No demolition work shall proceed until approval is given. Concrete shall be sawcut to remove large pieces of concrete; then impact methods shall be used to remove the smaller pieces. The Engineer may limit the energy class and weight of the removal tools if damage to the portions to remain could occur.
4. No debris shall fall in the water. All debris shall be removed from the construction site.
5. Stainless steel railing and hardware shall be removed and delivered to the Kauai District Baseyard. The cost to transport the railing and hardware shall be considered incidental to the removal of the metal railing.

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

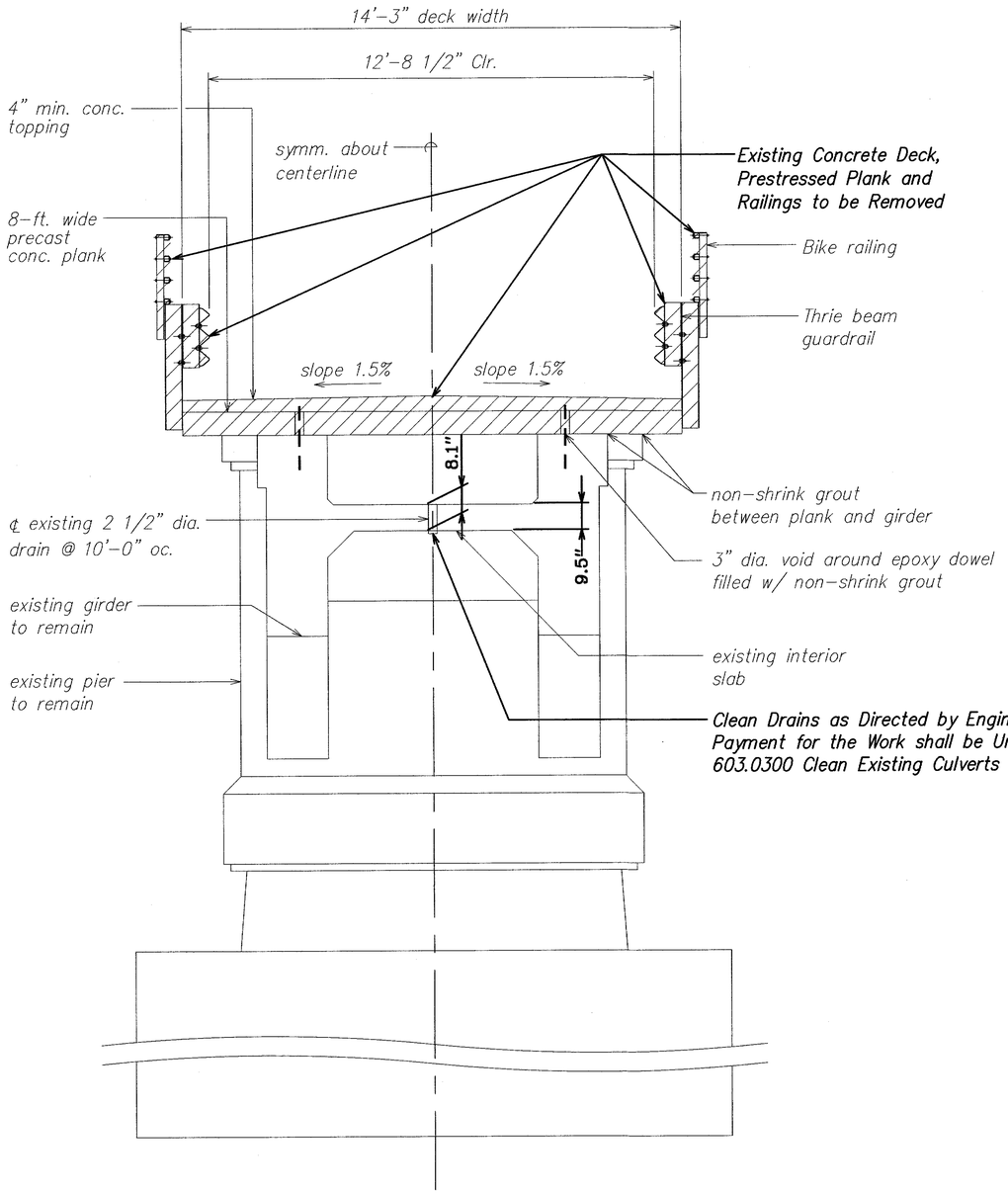
BRIDGE DEMOLITION PLANS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S2.1 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	132	284



EXISTING TYPICAL DECK SECTION (A S2.2 | S2.2)
Scale: 1/2" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
~~∧∧∧∧~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE DEMOLITION PLANS

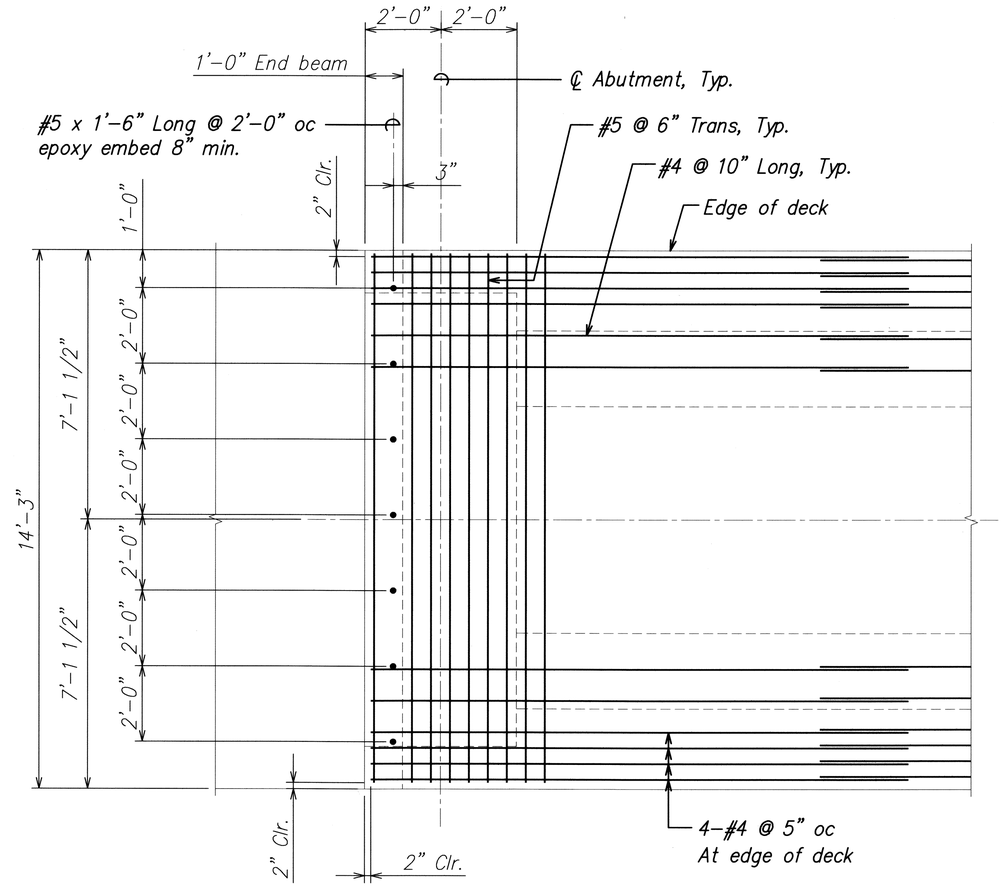
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S2.2 OF 131 SHEETS

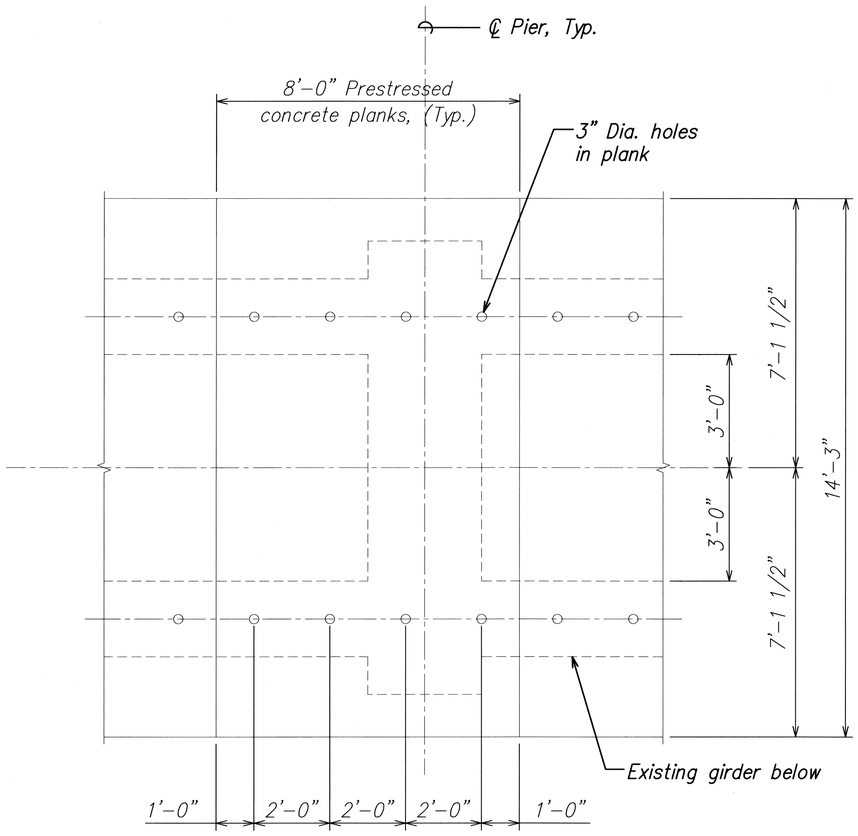
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	133	284



EXISTING TOP SLAB REINFORCING PLAN

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



EXISTING DECK PLAN

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

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

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STATE OF HAWAII
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HIGHWAYS DIVISION

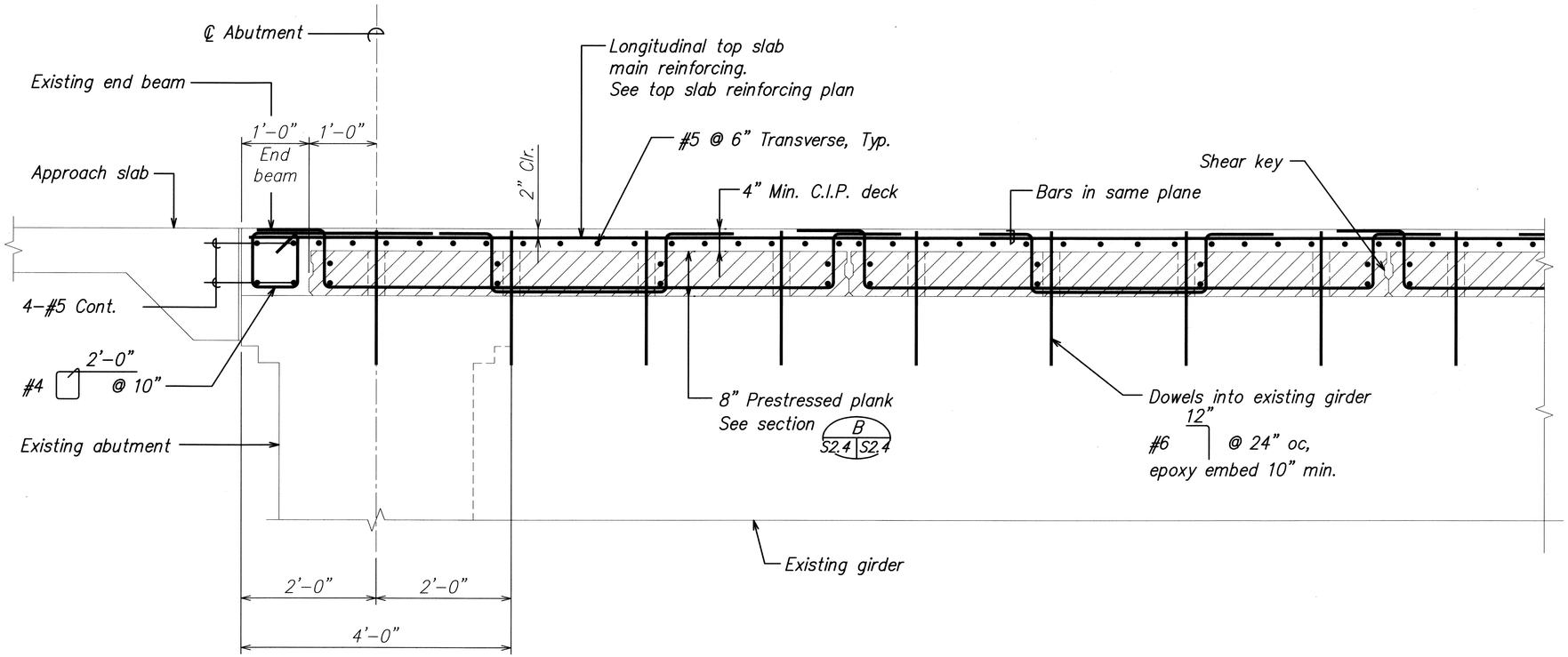
EXISTING BRIDGE DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

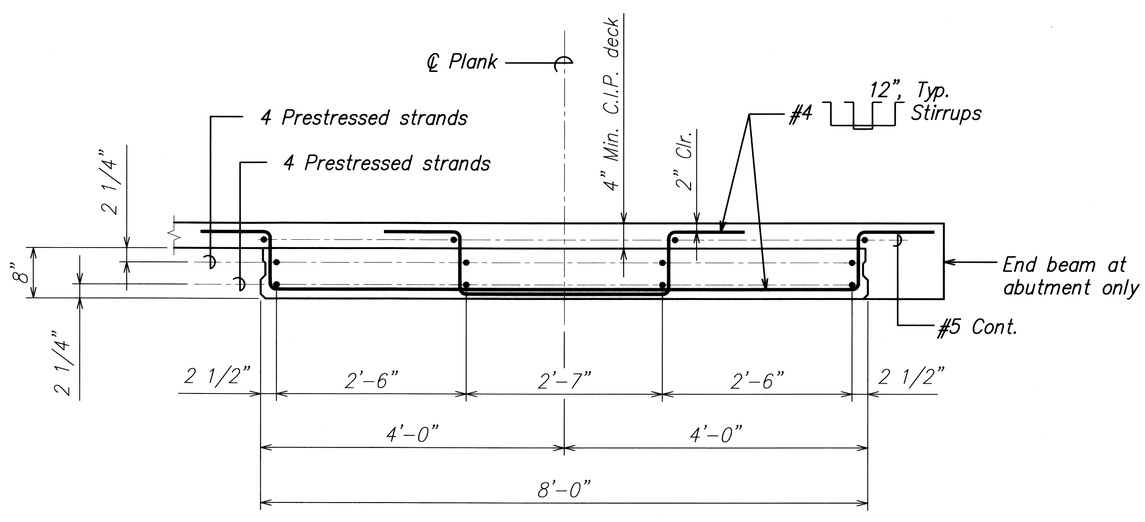
SHEET No. S2.3 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	134	284



TYPICAL EXISTING LONGITUDINAL DECK SECTION A S2.4 S2.4

Scale: 1" = 1'-0"



TYPICAL EXISTING PLANK SECTION B S2.4 S2.4

Scale: 1" = 1'-0"

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

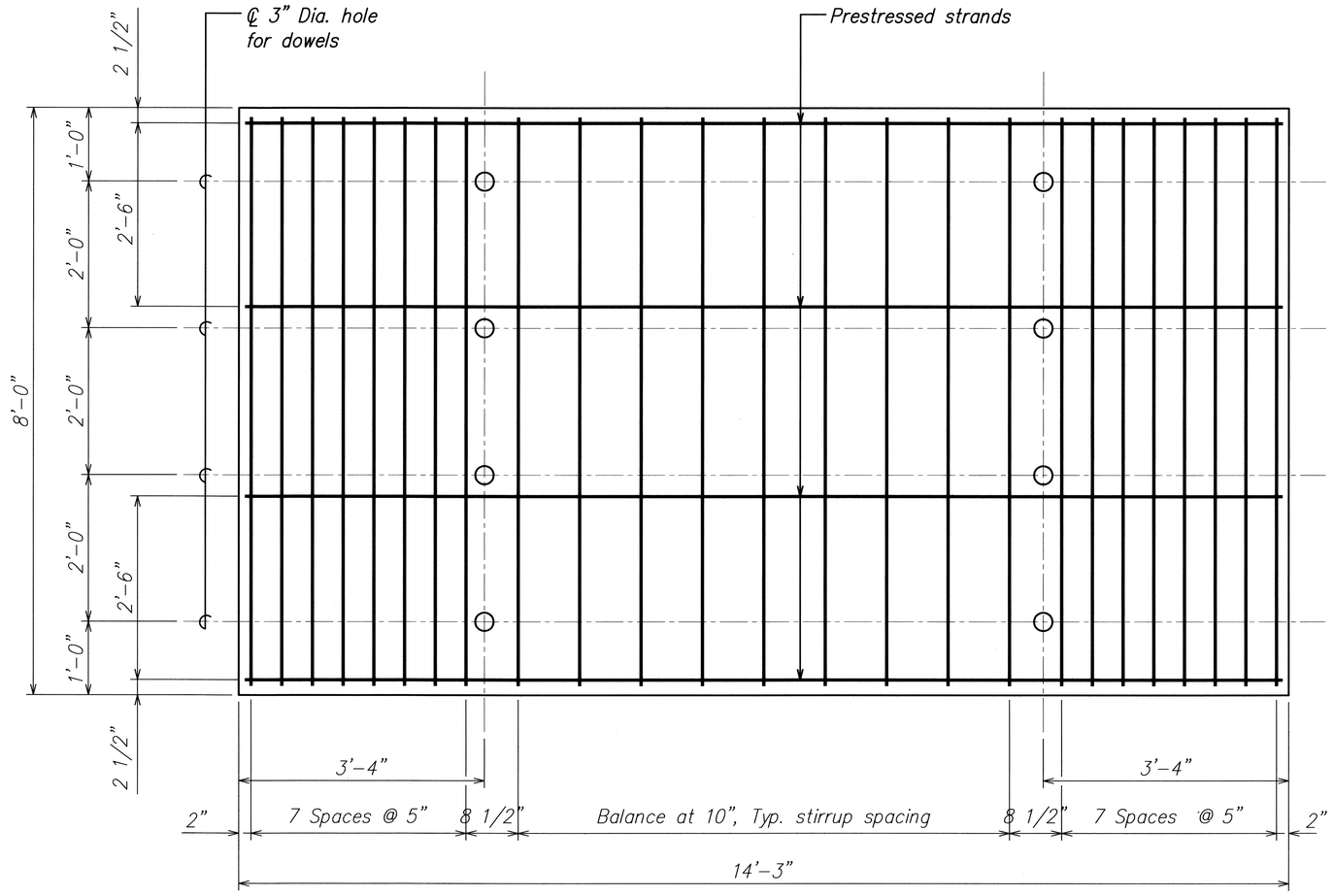
EXISTING BRIDGE DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S2.4 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	135	284



TYPICAL EXISTING PRESTRESSED CONCRETE PLANK

Scale: 1" = 1'-0"

ORIGINAL PLAN

NOTE BOOK No.

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CHECKED BY

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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

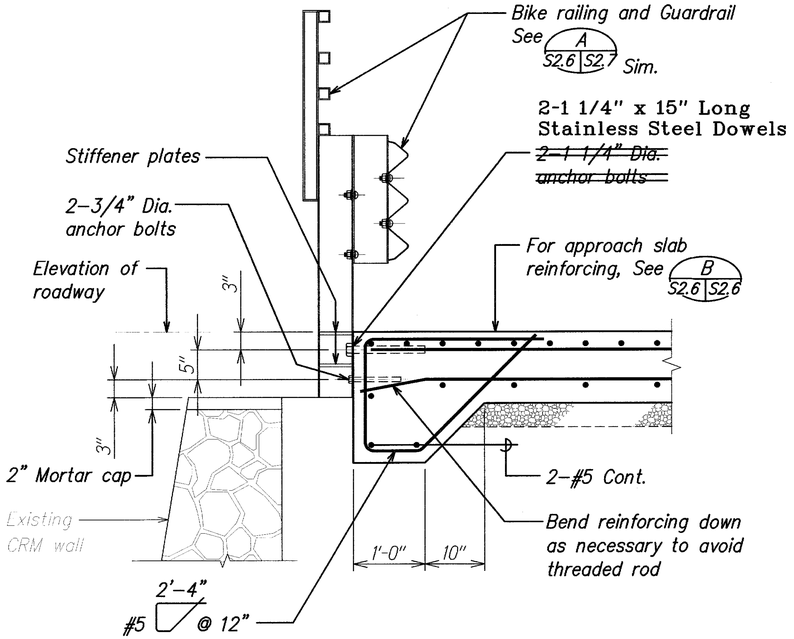
EXISTING BRIDGE DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

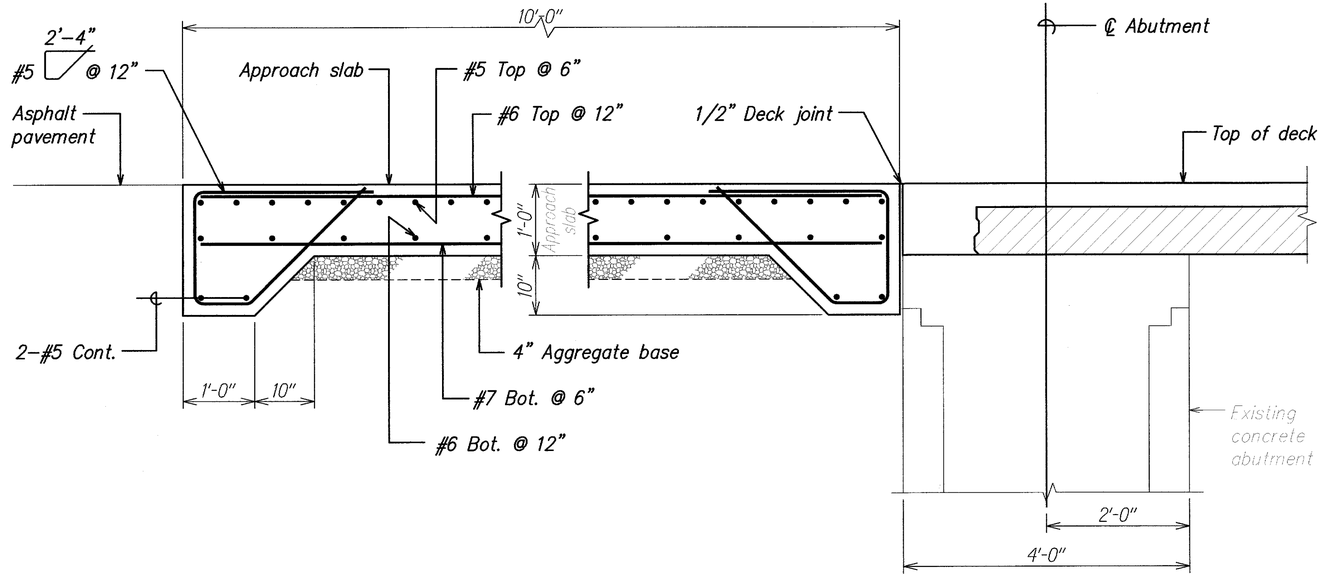
SHEET No. S2.5 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	136	284



TYPICAL END POST SECTION A S2.6 S2.6

Scale: 1" = 1'-0"



TYPICAL EXISTING APPROACH SLAB SECTION B S2.6 S2.6

Scale: 1" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING BRIDGE DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

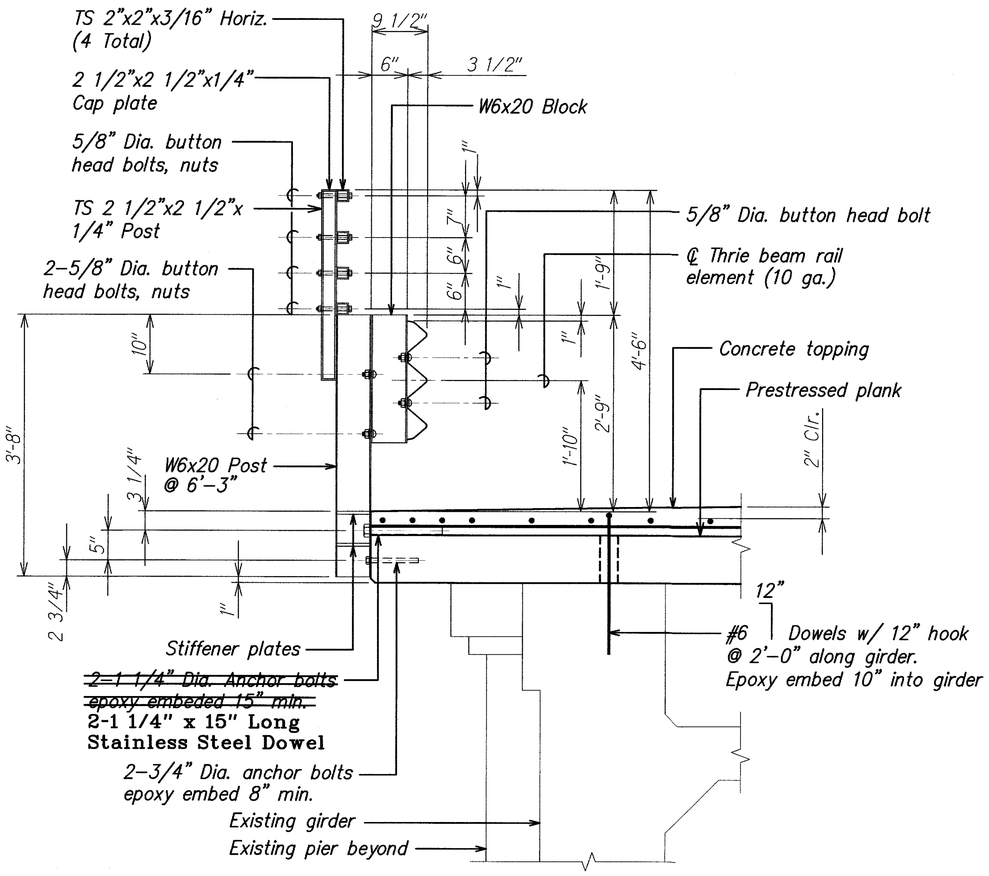
Scale: As Noted Date: May 2008

SHEET No. S2.6 OF 131 SHEETS

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

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	137	284



GUARDRAIL AND BIKE RAILING DETAIL (A)

Scale: 1" = 1'-0"

S2.6 | S2.7

LEGEND FOR AS-BUILT POSTINGS	
~~^^^^~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN | NOTE BOOK | No.

SURVEY PLOTTED BY ____ DATE
DRAWN BY ____ " " "
TRACED BY ____ " " "
DESIGNED BY ____ " " "
QUANTITIES BY ____ " " "
CHECKED BY ____ " " "

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING BRIDGE DETAILS

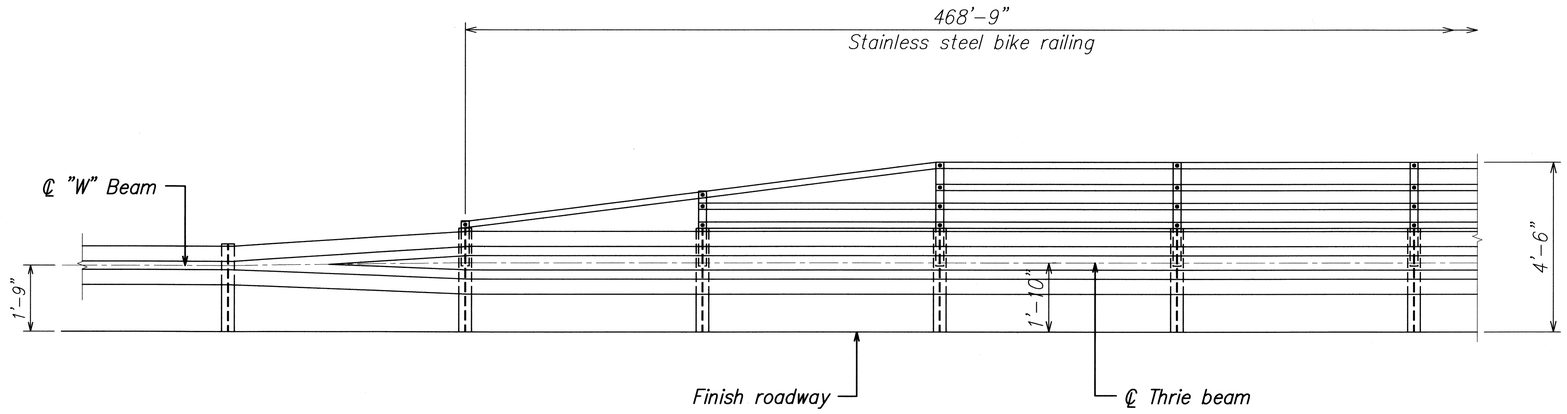
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S2.7 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	138	284



BIKE RAILING END TRANSITION ELEVATION (A S2.8 | S2.8)

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

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

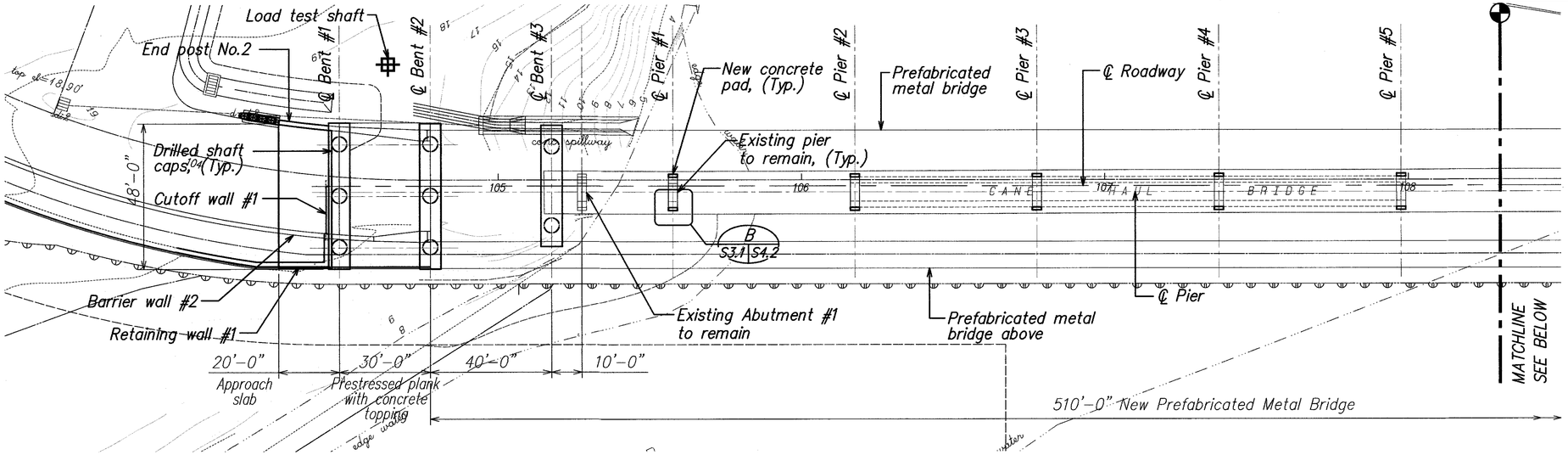
EXISTING BRIDGE DETAILS

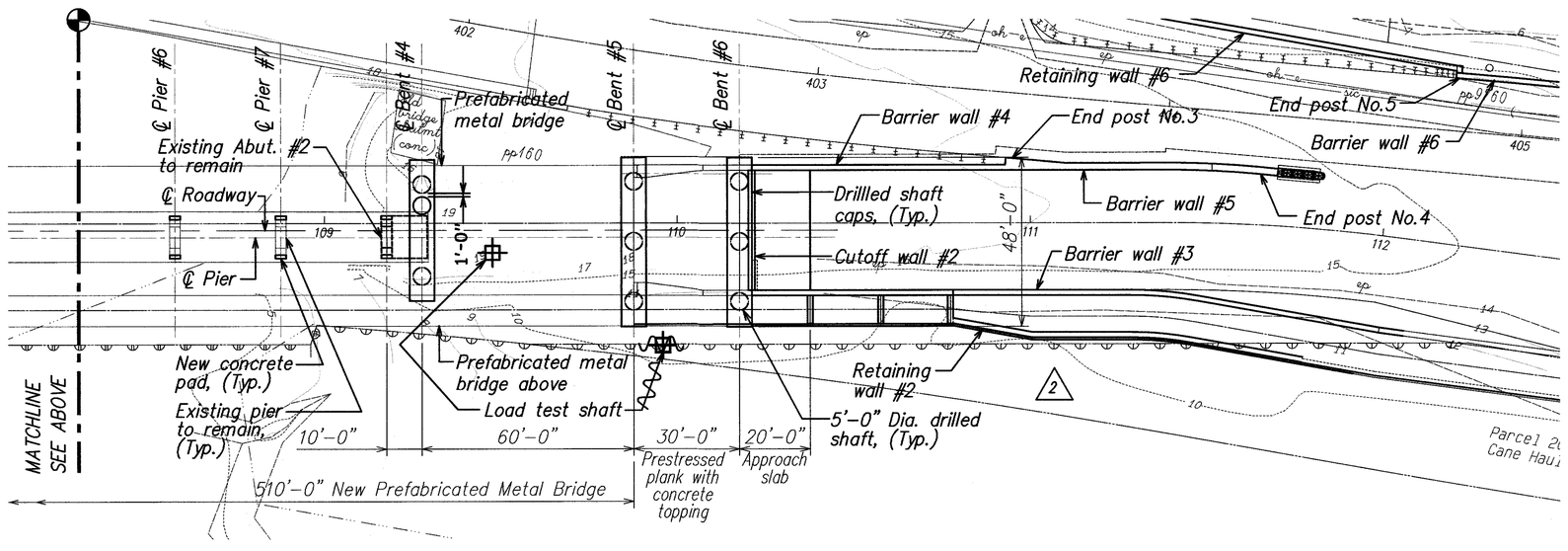
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S2.8 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 139	284





TRUE NORTH

FOUNDATION PLAN
Scale: 1" = 20'-0"

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Alignment

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FOUNDATION PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S3.1 OF 131 SHEETS

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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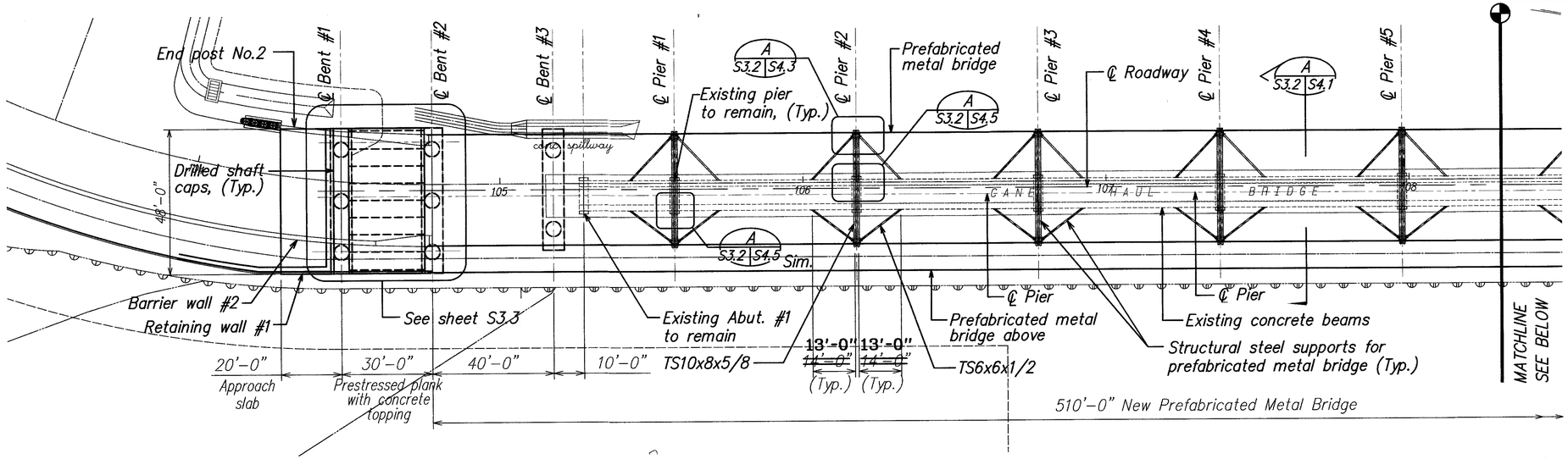
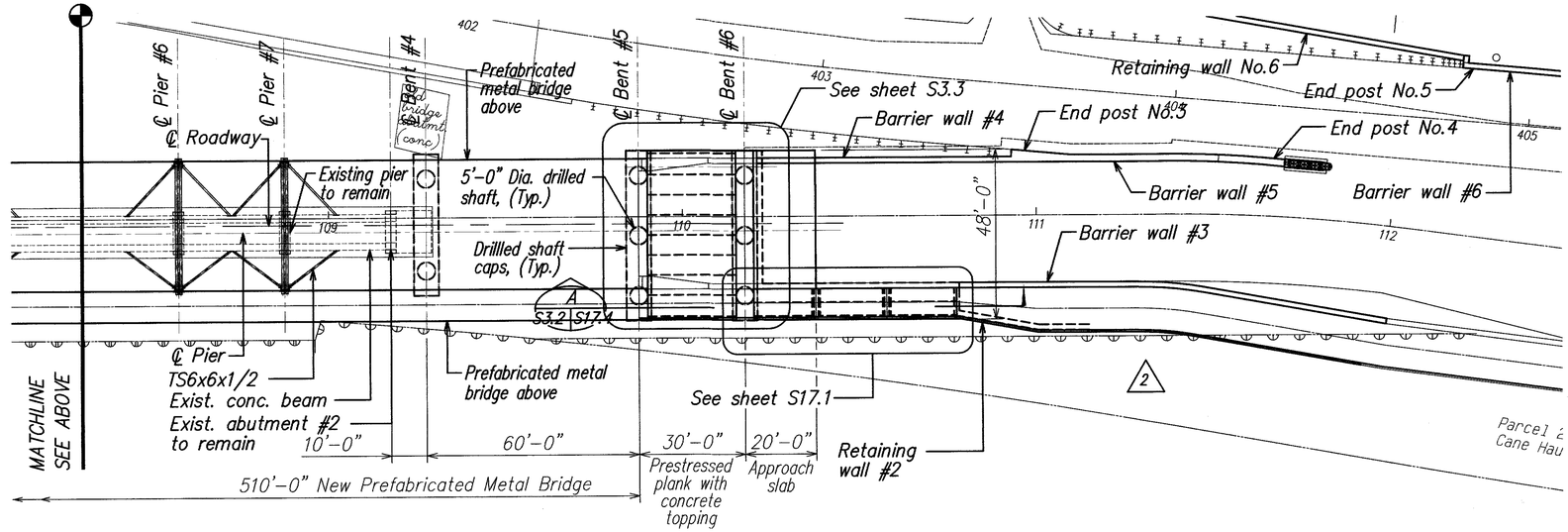
SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

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

"AS-BUILT"
C.O. 139

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 140	284





TRUE NORTH

Note:
1. For plank details, See sheet S5.1 to S5.6.

BRIDGE FRAMING PLAN
Scale: 1" = 20'-0"

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Alignment

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE FRAMING PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S3.2 OF 131 SHEETS

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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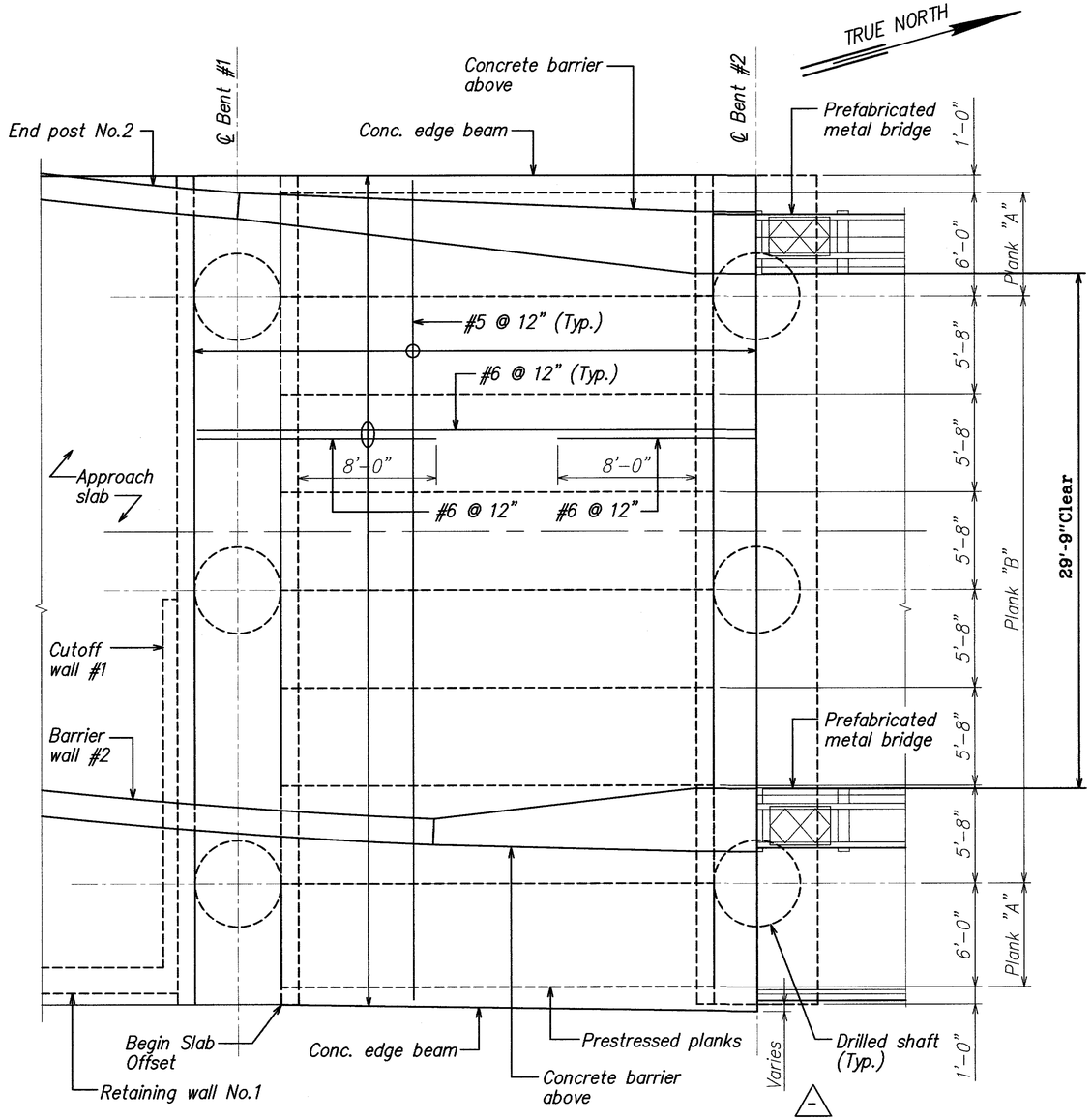
SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

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

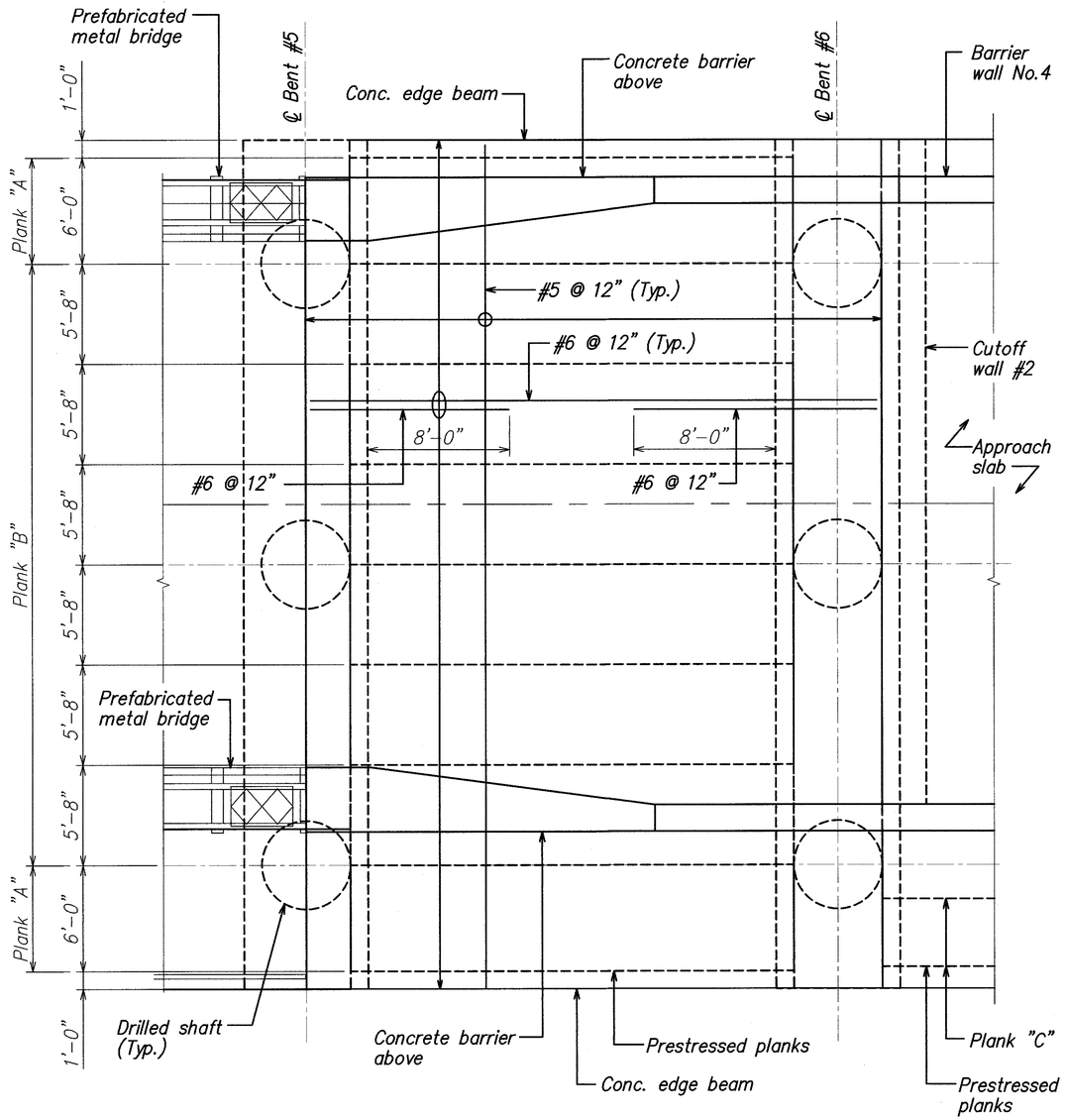
"AS-BUILT"

C.O. 140

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	141	284



DECK FRAMING PLAN A
Scale: 1/4" = 1'-0"
S3.2 | S3.3



DECK FRAMING PLAN B
Scale: 1/4" = 1'-0"
S3.2 | S3.3

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

LEGEND FOR AS-BUILT POSTINGS

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Roadway	Text for as-built posting

DATE	REVISION
12/27/10	(-) Revised Deck Contractor Change

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DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

SIGNATURE — EXPIRATION DATE OF THE LICENSE: 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE FRAMING PLAN

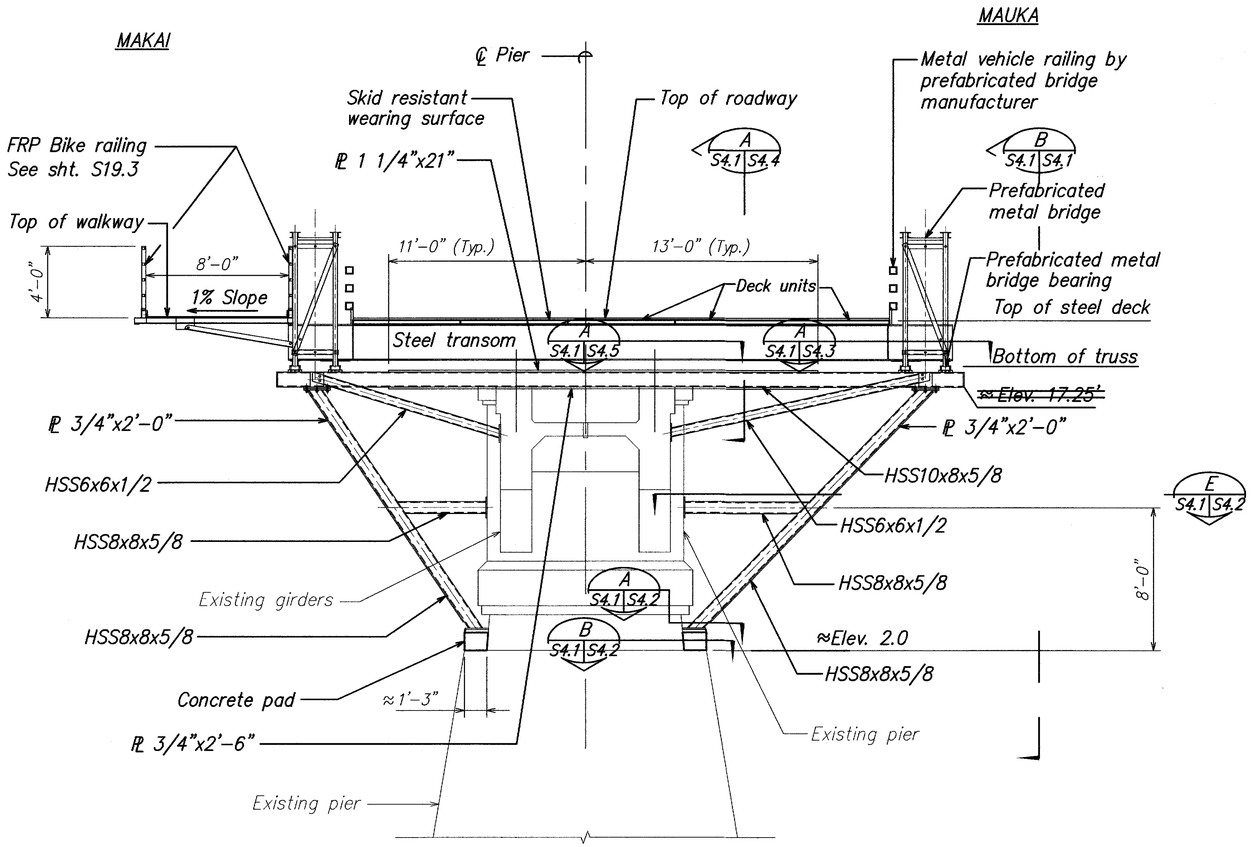
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted — Date: May 2008

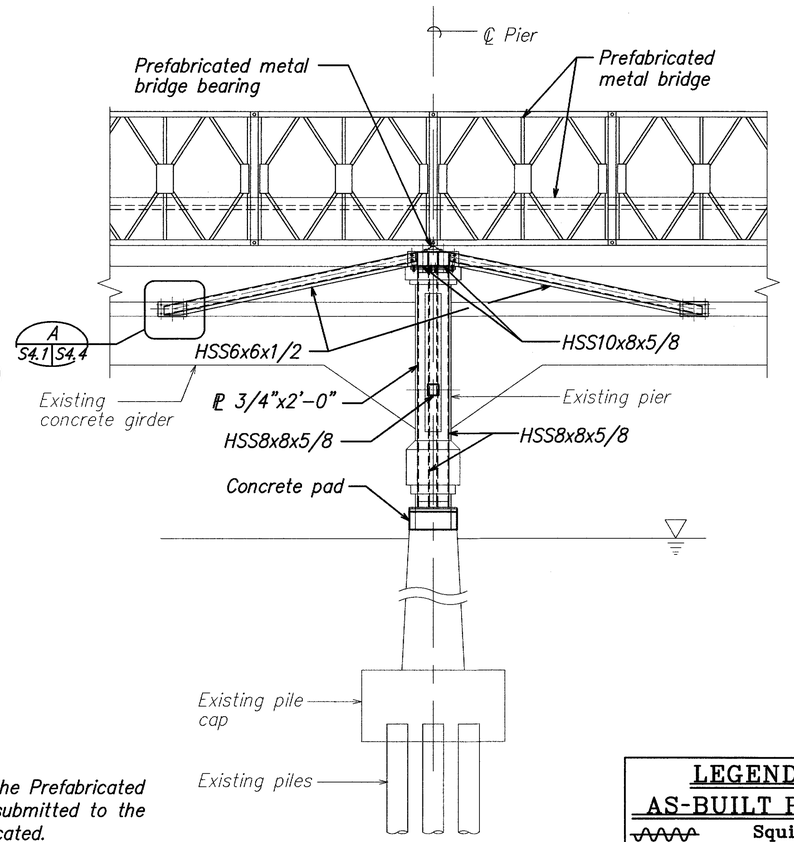
SHEET No. S3.3 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 142	284



TYPICAL SECTION (A S4.1 S4.1 / S3.2)
Scale: 1/4" = 1'-0"



TYPICAL SECTION (B S4.1 S4.1)
Scale: 1/4" = 1'-0"

Notes:

1. Metal vehicle railing shall be supplied by the Prefabricated Bridge Manufacturer and details shall be submitted to the Engineer for acceptance before it is fabricated.
2. The Prefabricated Bridge Manufacturer shall provide supports for the FRP pedestal railing posts. Details shall be submitted to the Engineer for acceptance. This work shall be coordinated with the FRP Bike railing manufacturer. (1)
3. All structural steel including the prefabricated metal bridge shall have paint applied over the hot dipped galvanizing. See Section 501 of the Special Provisions. (1)
   3'-6" x 6"
4. ~~2'-1'-0"x1'-0"~~ Steel plates shall be secured to the prefabricated metal bridge at each end and on both the makai and Mauka sides. One plate shall be hot dipped galvanized (4 each) and ~~the other~~ **one and another shall be hot dipped galvanized and painted (4 each)** plate shall be black (4 each). Plates locations shall be readily accessible and location shall be submitted to Engineer for acceptance. (1)

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
8/7/08	(1) Revised Notes

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S4.1 OF 131 SHEETS

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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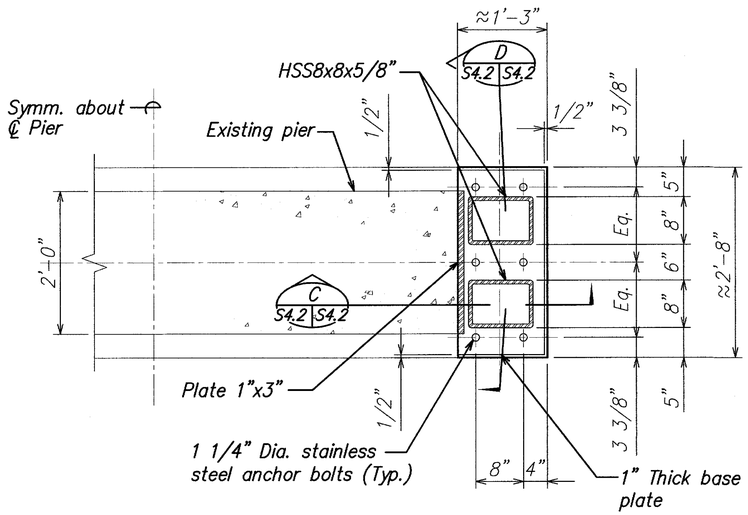
SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

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

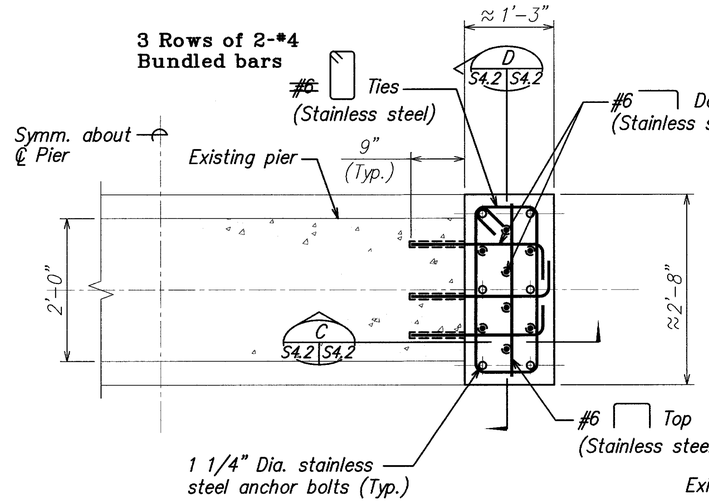
"AS-BUILT"

ADD. 142

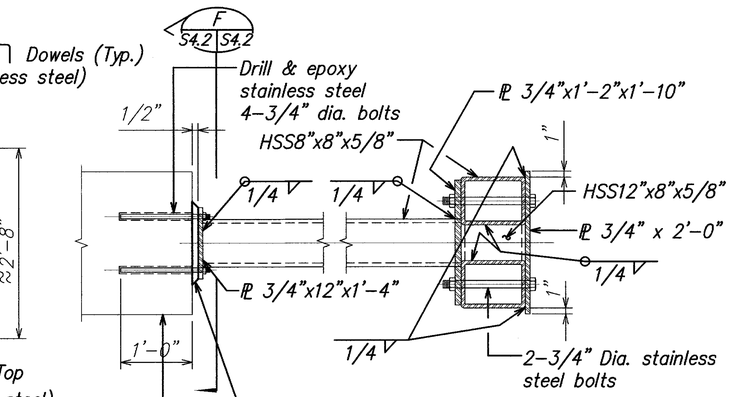
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	143	284



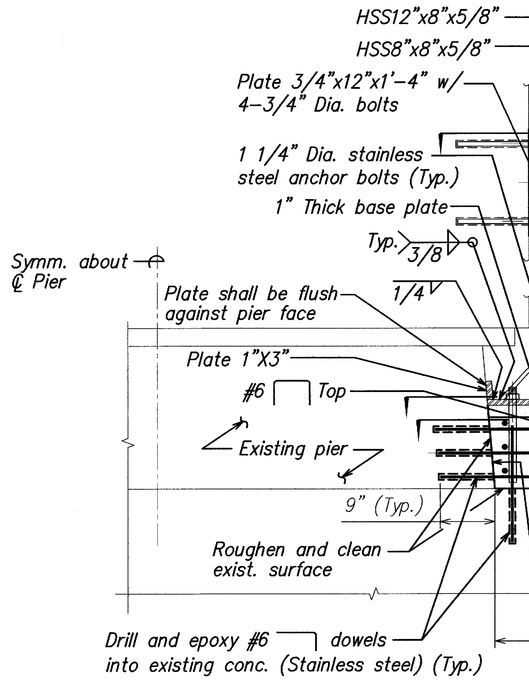
PLAN
Scale: 1" = 1'-0"



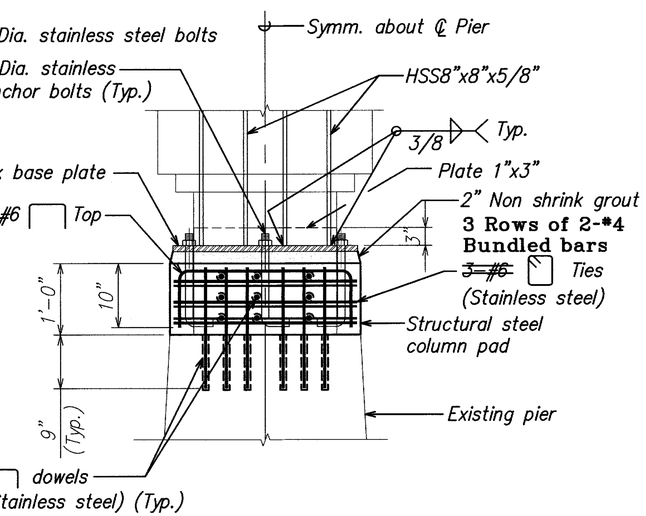
SECTION
Scale: 1" = 1'-0"



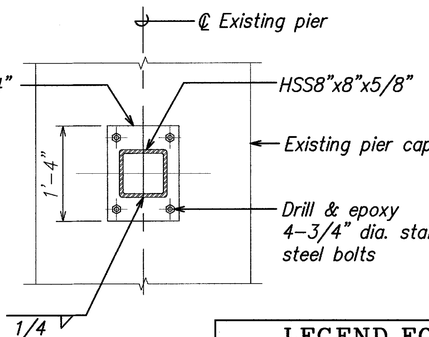
SECTION
Scale: 1" = 1'-0"



SECTION
Scale: 1" = 1'-0"



SECTION
Scale: 1" = 1'-0"



SECTION
Scale: 1" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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SHEET No. S4.2 OF 131 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
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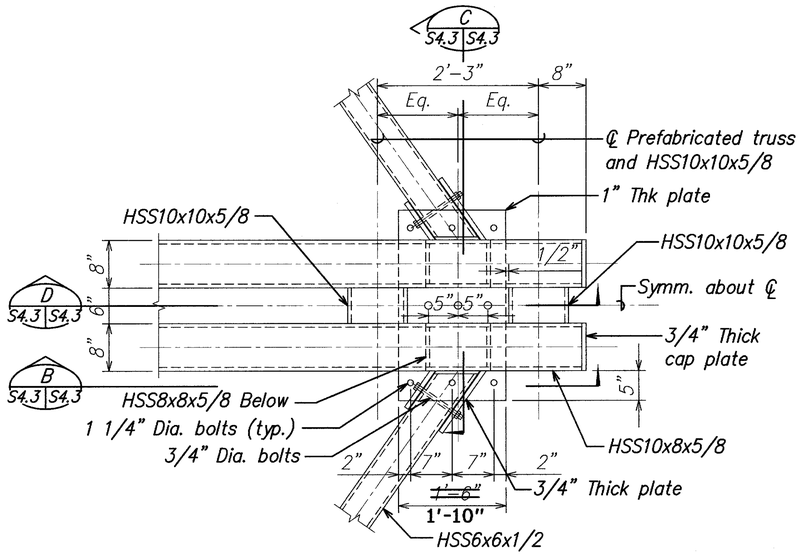
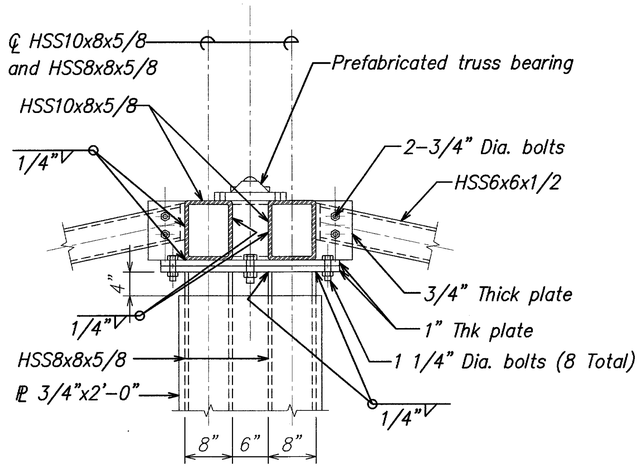
	CHECKED BY	

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	144	284

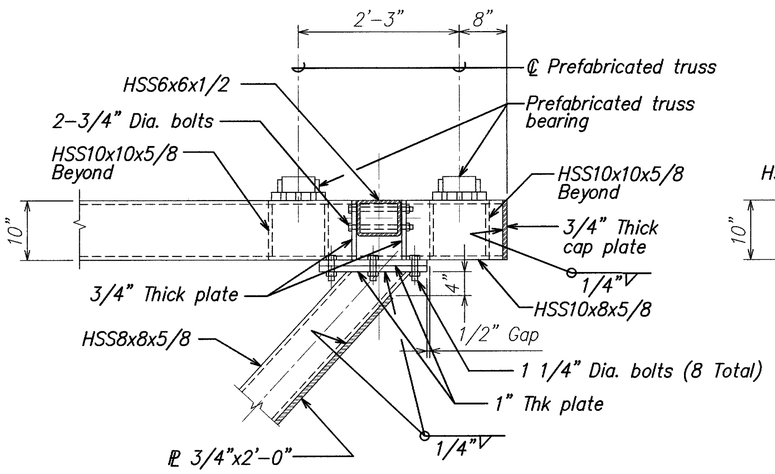


PLAN
Scale: 1" = 1'-0"

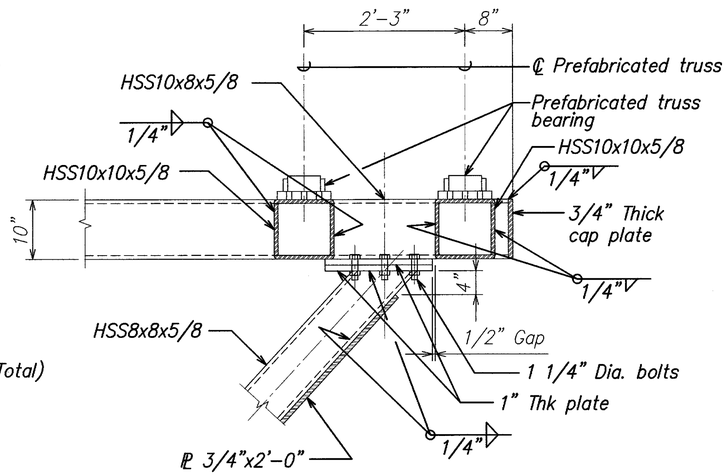


SECTION
Scale: 1" = 1'-0"

NOTE:
Prefabricated steel bridge manufacturer's recommendations shall be followed for connecting the bearing to the supporting structure. Details shall be submitted to the Engineer for approval.



SECTION
Scale: 1" = 1'-0"



SECTION
Scale: 1" = 1'-0"

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

LEGEND FOR AS-BUILT POSTINGS

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Roadway	Text for as-built posting

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

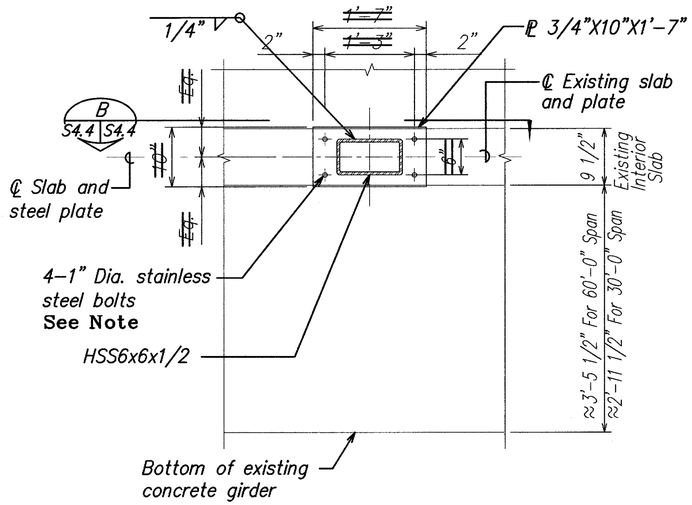
Scale: As Noted Date: May 2008

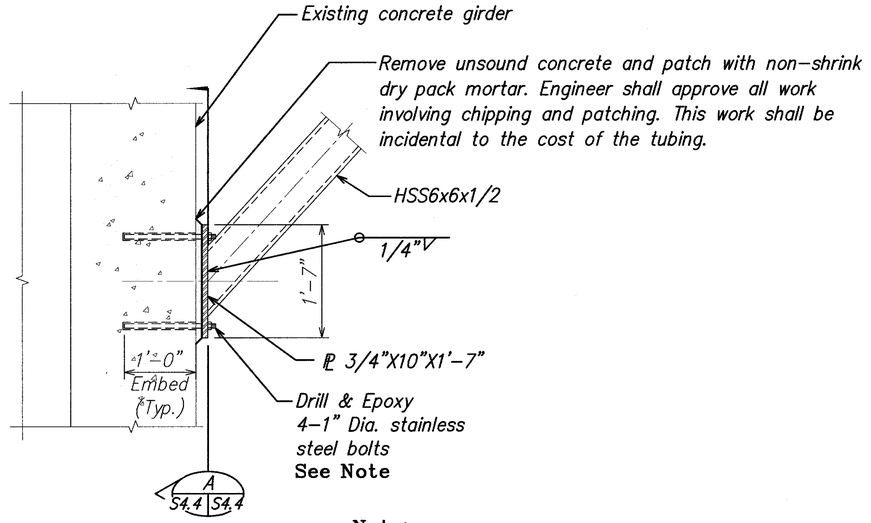
SHEET No. S4.3 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	145	284

See Detail below for Plate dimenstions

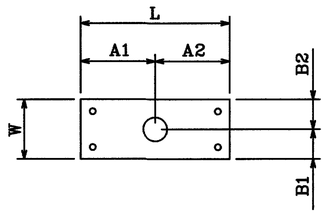




Note:
Install ⅝" Dia. Bolts in place of 1" Dia. Bolts at all Locations Behind Cap Beam Bracing where the angle of the Bracing did not allow for Installation of 1" Bolt.

ELEVATION DIAGONAL BRACING (A S4.1 S4.4 S4.4)
Scale: 1" = 1'-0"

PLAN (B S4.4 S4.4)
Scale: 1" = 1'-0"



Pier	Direction	L	W	A1	A2	B1	B2
1	BR	1'-8 3/4"	1'-0"	10 1/4"	10 1/2"	5"	7"
1	AR	1'-7"	1'-0"	9 1/2"	9 1/2"	5"	7"
1	BL	2'-3"	10"	1'-1 1/2"	1'-1 1/2"	5"	5"
1	AL	2'-1"	10"	11 1/2"	1'-1 1/2"	5"	5"
2	BR	1'-10"	1'-0"	10 1/2"	11 1/2"	7"	5"
2	AR	2'-0"	1'-0"	9 1/2"	1'-2 1/2"	7"	5"
2	BL	2'-3"	10"	1'-1 1/2"	1'-1 1/2"	5"	5"
2	AL	2'-3"	10"	1'-1 1/2"	1'-1 1/2"	5"	5"
3	BR	1'-9"	1'-0"	9 1/2"	11 1/2"	7"	5"
3	AR	1'-8"	11"	9 1/2"	10 1/2"	6"	5"
3	BL	1'-9"	1'-0"	9 1/2"	11 1/2"	7"	5"
3	AL	2'-1"	1'-2"	9 1/2"	1'-3 1/2"	7"	7"
4	BR	1'-11"	10"	9 1/2"	1'-1 1/2"	5"	5"
4	AR	1'-9 3/4"	10"	1'-0 1/4"	9 1/2"	5"	5"
4	BL	2'-1"	10"	1'-1 1/2"	11 1/2"	5"	5"
4	AL	1'-9 3/8"	10"	11"	10 3/8"	5"	5"

Pier	Direction	L	W	A1	A2	B1	B2
5	BR	1'-7"	10"	9 1/2"	9 1/2"	5"	5"
5	AR	1'-9"	10"	9 1/2"	11 1/2"	5"	5"
5	BL	1'-11"	10"	1'-1 1/2"	9 1/2"	5"	5"
5	AL	2'-1"	10 1/4"	9 1/2"	11 1/2"	5 1/4"	5"
6	BR	1'-10 3/4"	11 1/4"	11"	11 3/4"	6 1/4"	5"
6	AR	1'-7"	10 1/2"	9 1/2"	9 1/2"	5 1/2"	5"
6	BL	1'-7"	1'-1 3/8"	9 1/2"	9 1/2"	6 3/8"	7"
6	AL	1'-11"	10"	9 1/2"	1'-1 1/2"	5"	5"
7	BR	1'-7"	10 1/4"	9 1/2"	9 1/2"	5 1/4"	5"
7	AR	1'-7"	10"	9 1/2"	9 1/2"	5"	5"
7	BL	1'-8 1/2"	10"	11"	9 1/2"	5"	5"
7	AL	1'-9"	10"	9 1/2"	11 1/2"	5"	5"

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

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

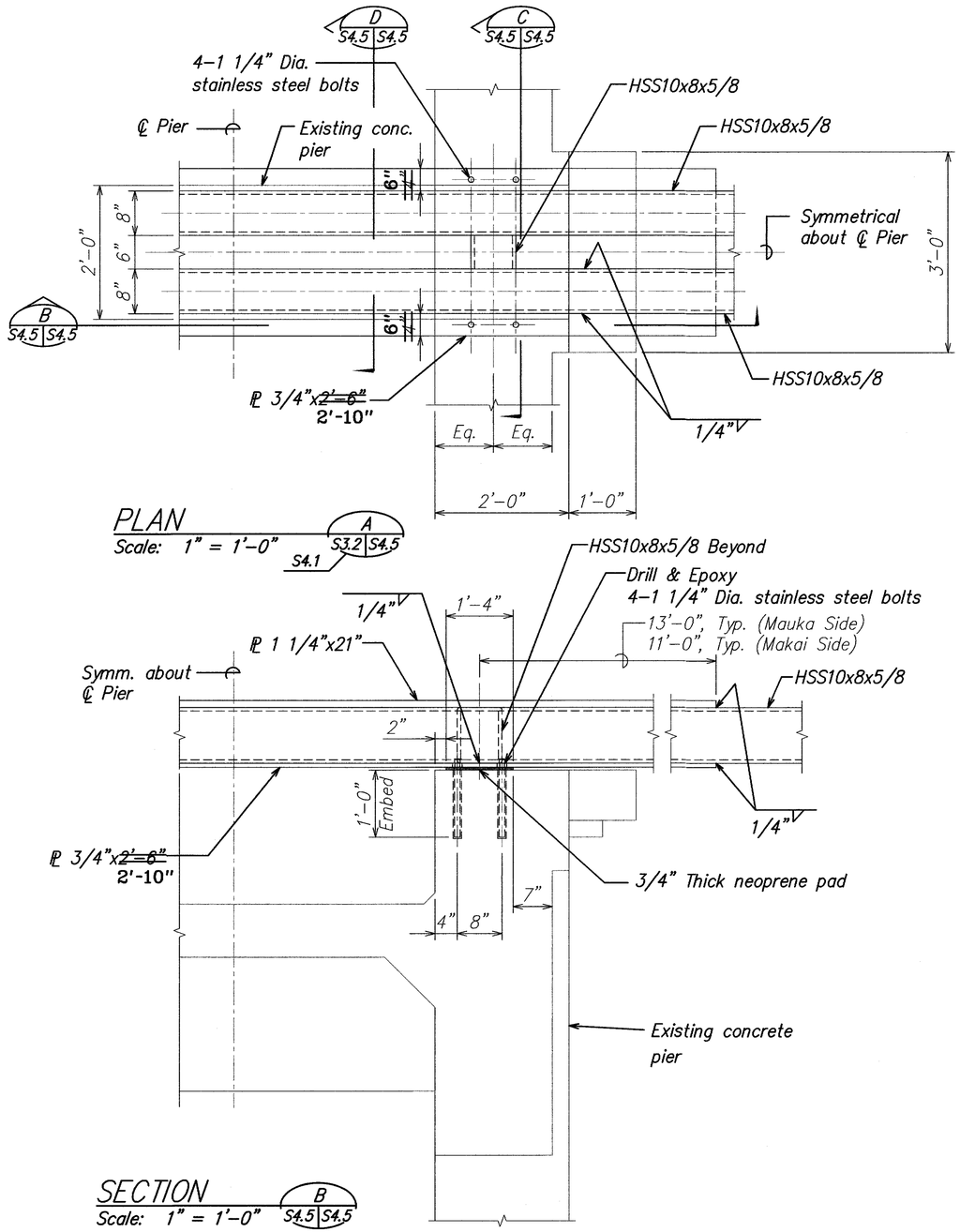
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S4.4 OF 131 SHEETS

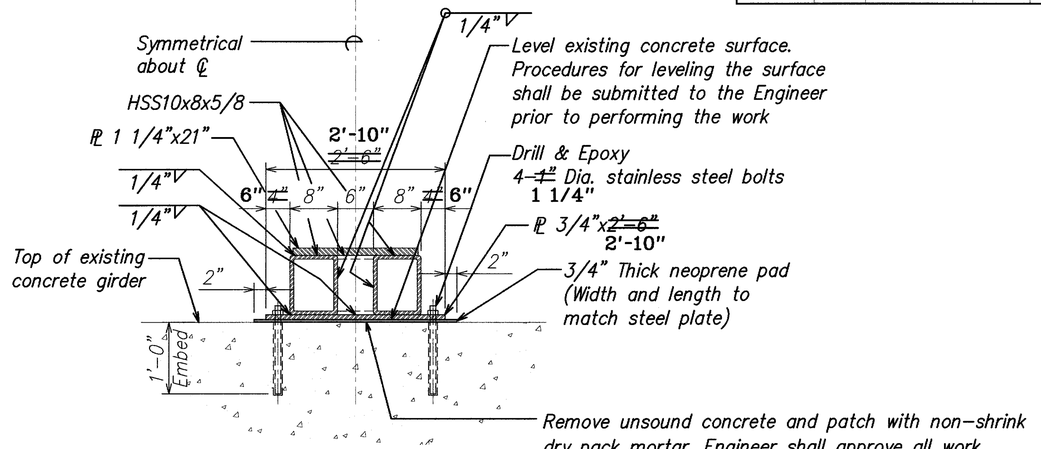
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	146	284

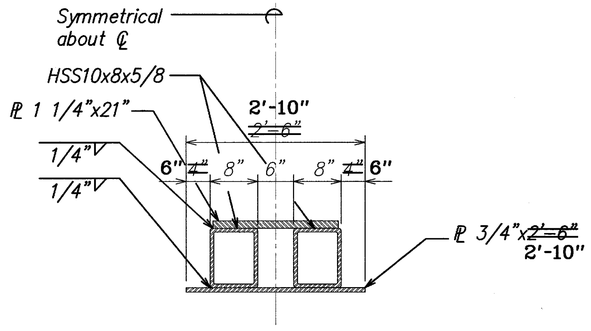


PLAN Scale: 1" = 1'–0" (A S3.2 S4.5; S4.1)

SECTION Scale: 1" = 1'–0" (B S4.5 S4.5)



SECTION Scale: 1" = 1'–0" (C S4.5 S4.5)



TYPICAL SECTION Scale: 1" = 1'–0" (D S4.5 S4.5)

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN — NOTE BOOK — No. ____

SURVEY PLOTTED BY ____ DATE ____
DRAWN BY ____ " " ____
TRACED BY ____ " " ____
DESIGNED BY ____ " " ____
QUANTITIES BY ____ " " ____
CHECKED BY ____ " " ____

DAVID K. FUJIWARA — LICENSED PROFESSIONAL ENGINEER — NO. 8104–S — HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

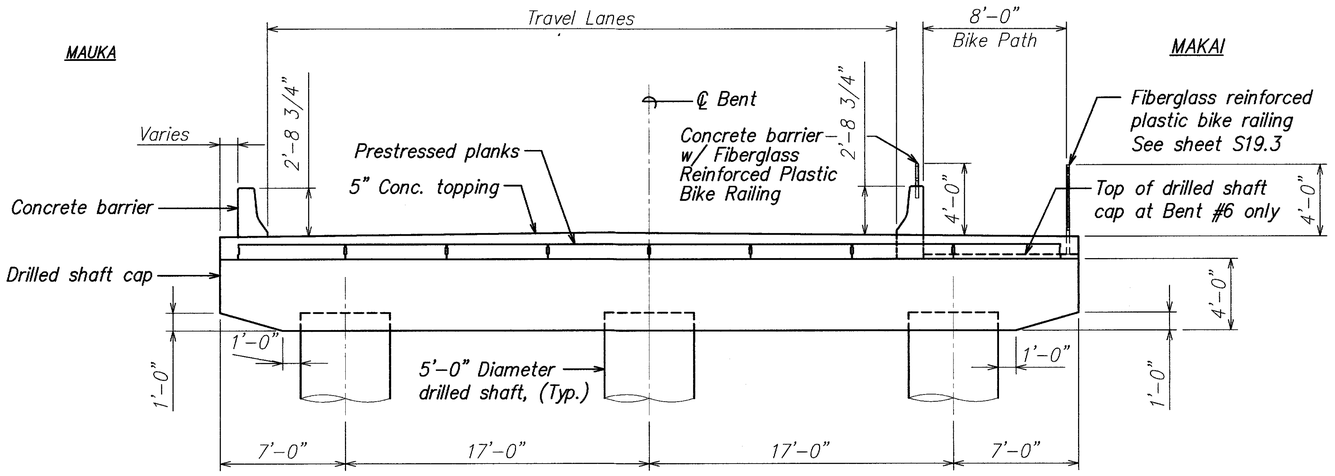
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR–056–1(51)

Scale: As Noted Date: May 2008

SHEET No. S4.5 OF 131 SHEETS

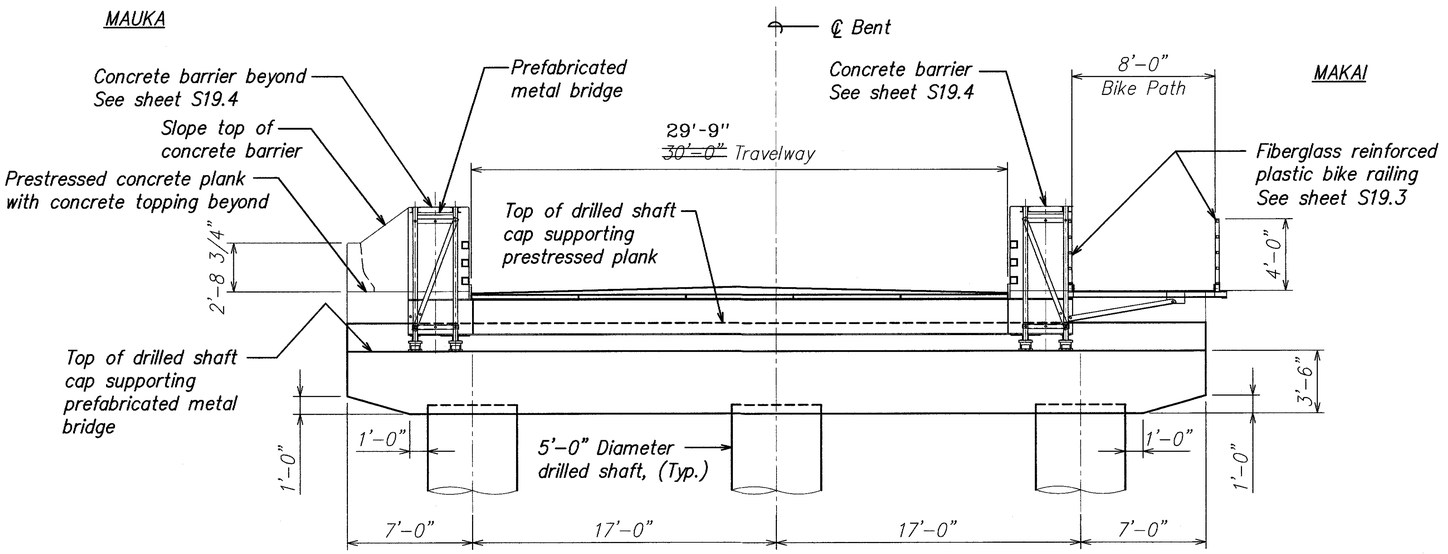
"AS–BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 147	284



2 BENT #1 SECTION (A S4.6 | S4.6)

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



2 BENT #2 SECTION (B S4.6 | S4.6)

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

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

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Titles

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #1 AND BENT #2 2 SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

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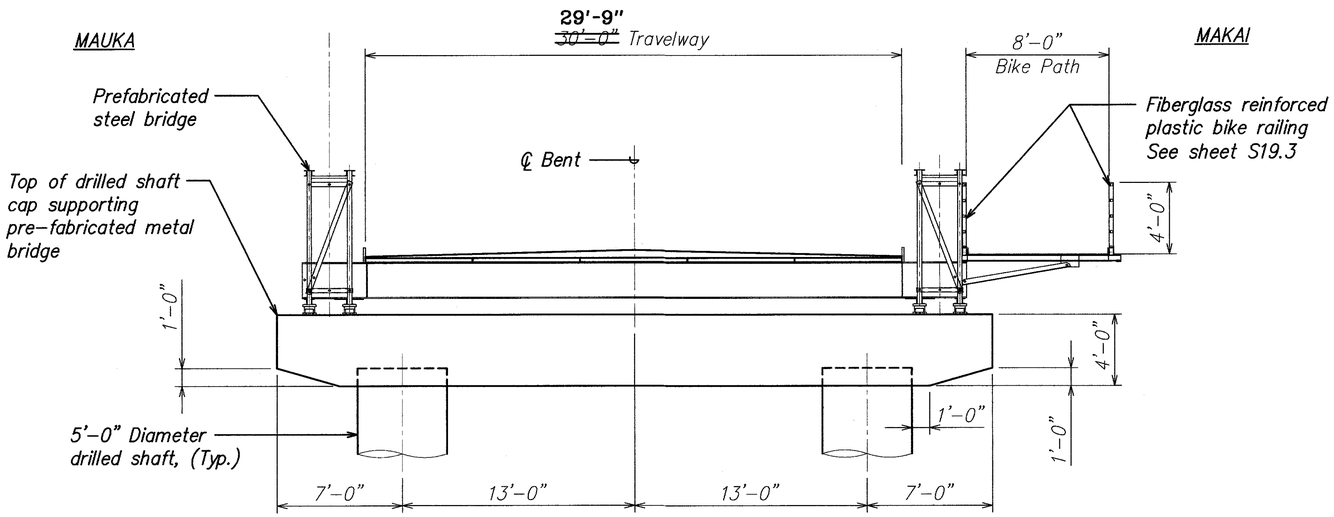
SHEET No. S4.6 OF 131 SHEETS

"AS-BUILT"

C.O. 147

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 148	284



2 BENT #3 SECTION (A S4.7 | S4.7)
Scale: 1/4" = 1'-0"

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY ____ DATE
DRAWN BY "
TRACED BY "
DESIGNED BY "
QUANTITIES BY "
CHECKED BY

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Titles

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #3 SECTION 2

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

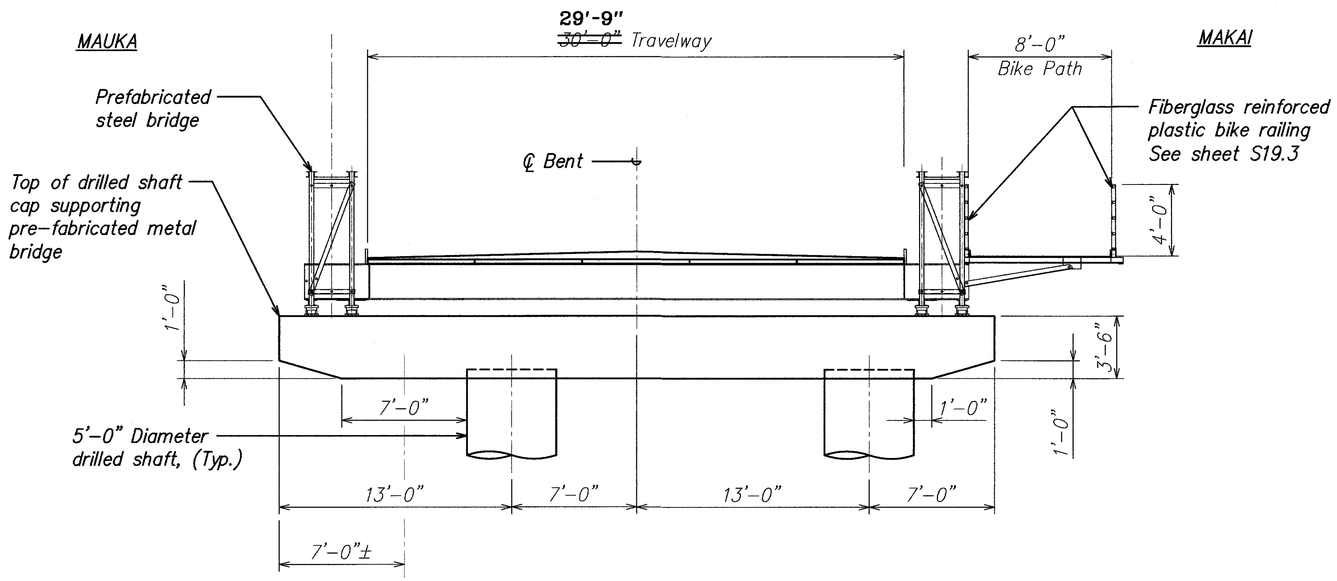
Scale: As Noted Date: May 2008

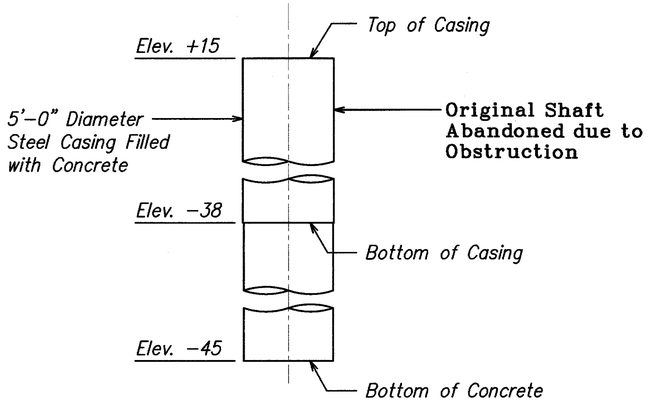
SHEET No. S4.7 OF 131 SHEETS

"AS-BUILT"

C.O. 148

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 148S-1	284





BENT #4 SECTION (A)
Scale: 1/4" = 1'-0"
S4.7A | S4.7A

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #4 SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

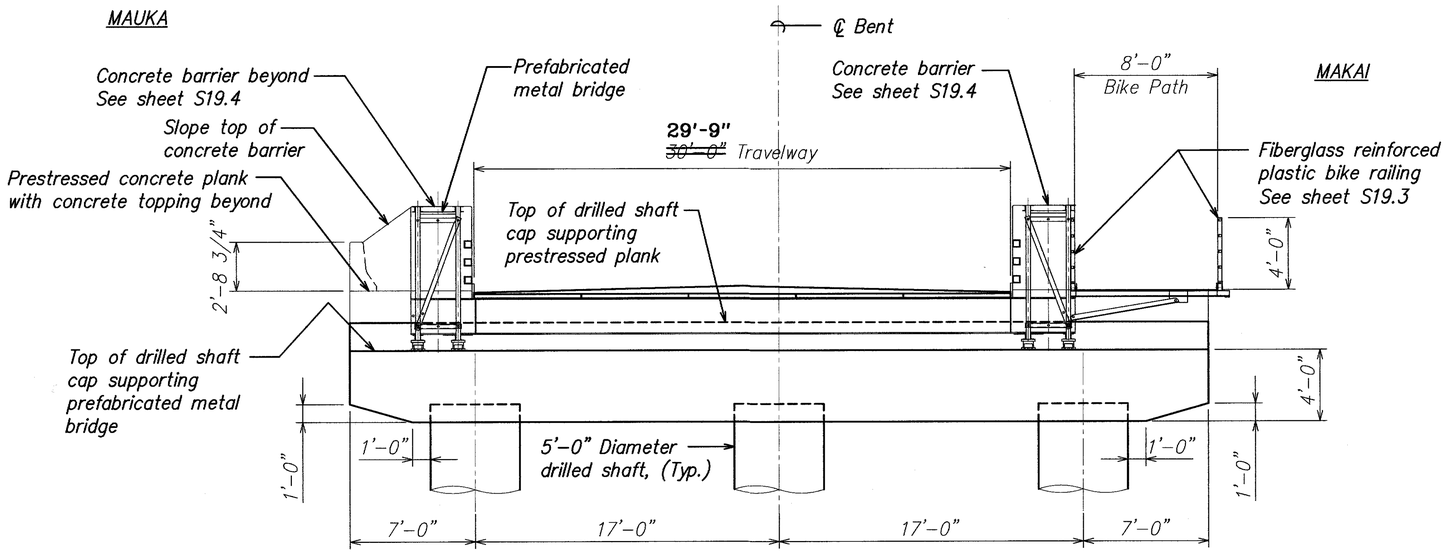
Scale: As Noted Date: May 2008

SHEET No. S4.7A OF 131 SHEETS

"AS-BUILT"

C.O. 148S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 148-2	284



BENT #5 SECTION (B S4.7B | S4.7B)

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

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

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #5 SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

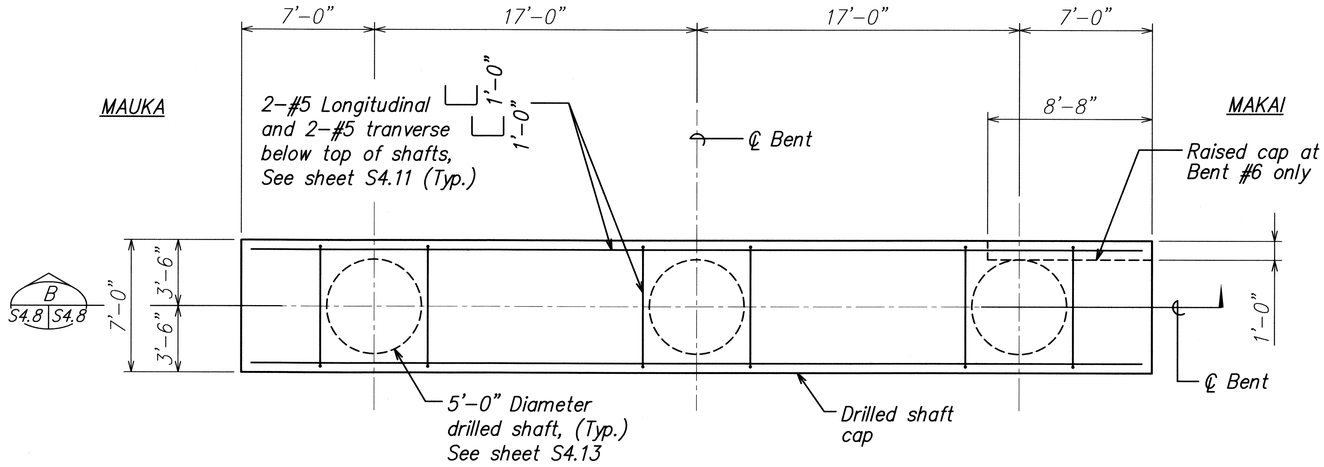
Scale: As Noted Date: May 2008

SHEET No. S4.7B OF 131 SHEETS

"AS-BUILT"

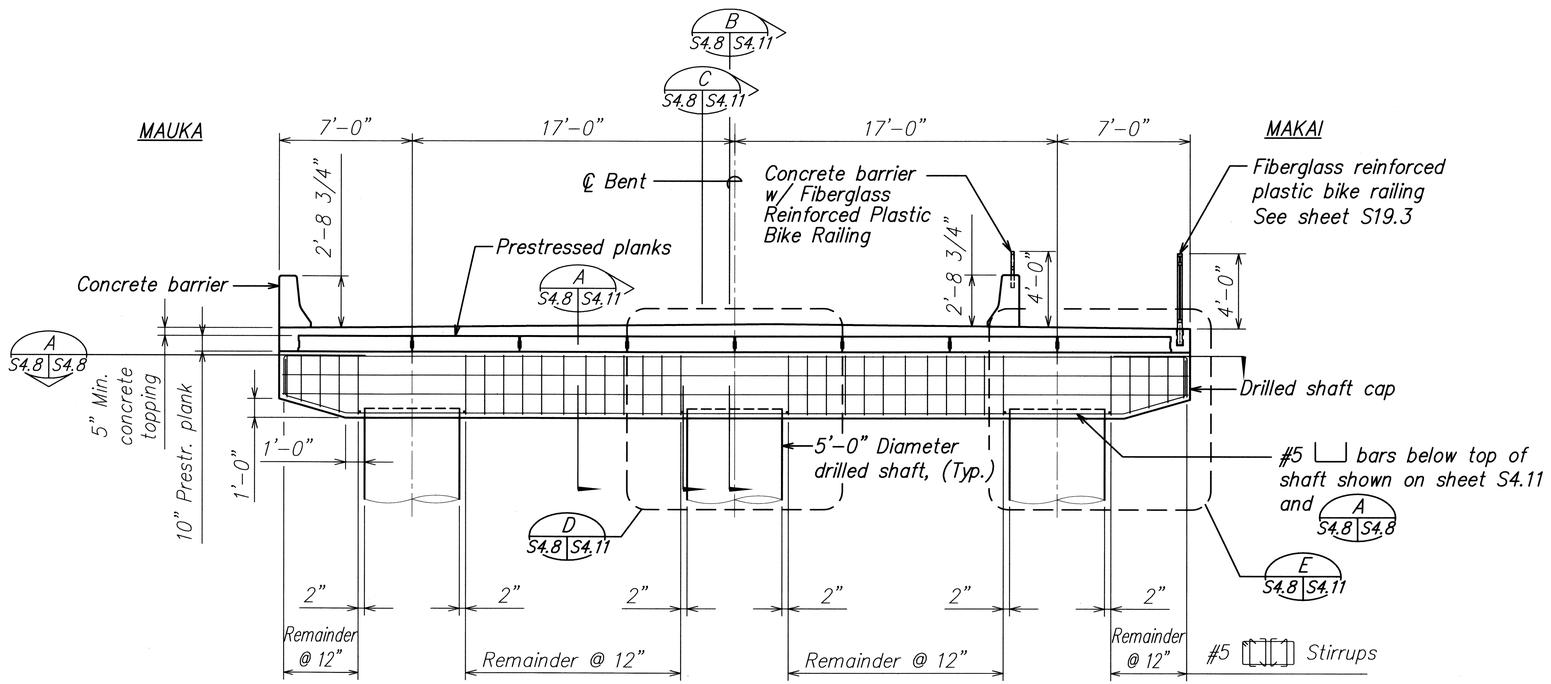
C.O. 148S-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	149	284



PLAN AT BENT #1 AND BENT #6 SIM. A S4.8 S4.8

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



TYPICAL SECTION B S4.8 S4.8

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

ORIGINAL PLAN

NOTE BOOK No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

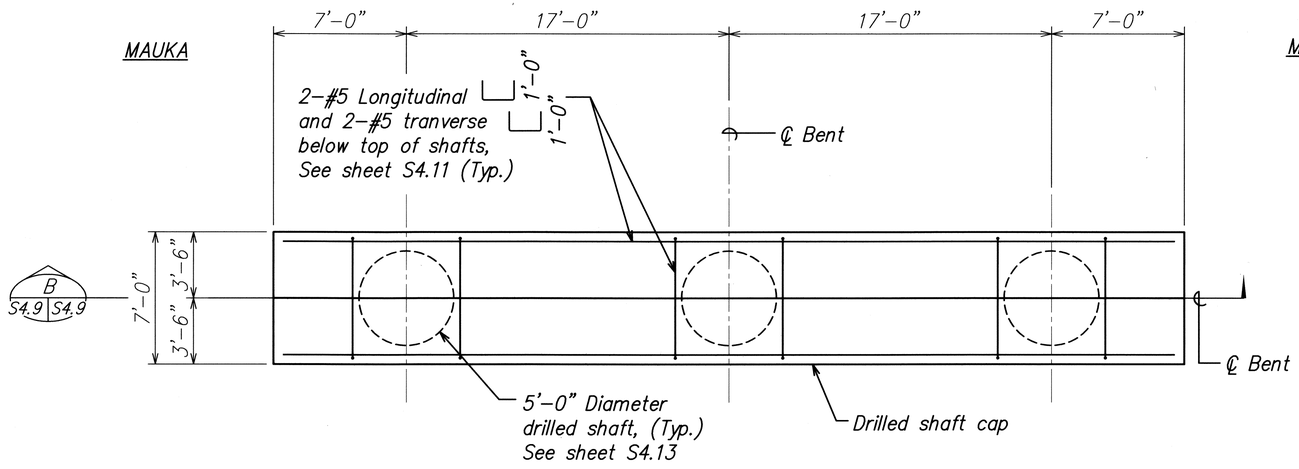
BENT #1 AND BENT #6 SIM.
PLAN AND SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

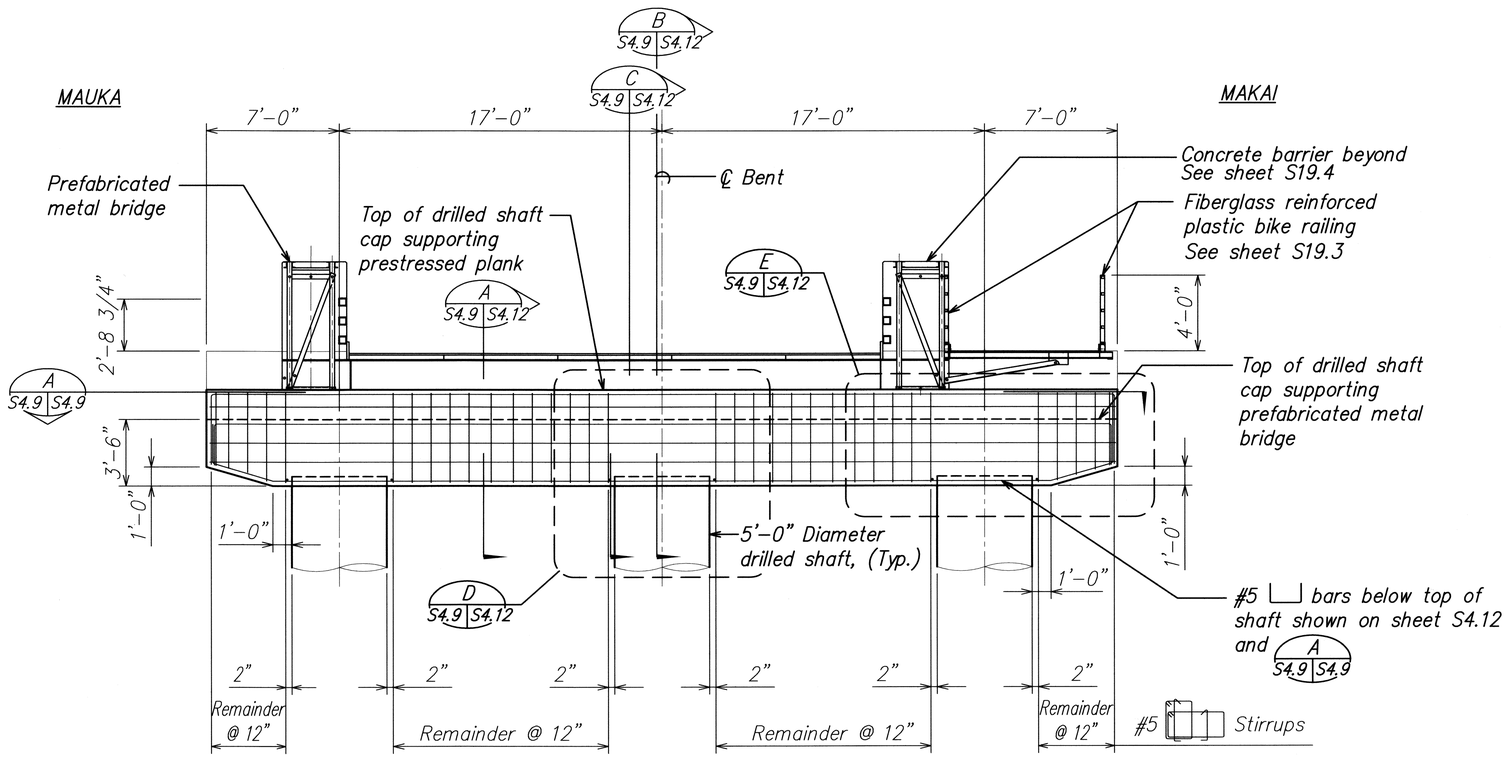
SHEET No. S4.8 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	150	284



PLAN AT BENT #2 AND BENT #5 SIM. (A S4.9 S4.9)

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



TYPICAL SECTION (B S4.9 S4.9)

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

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

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NO. 8104-S
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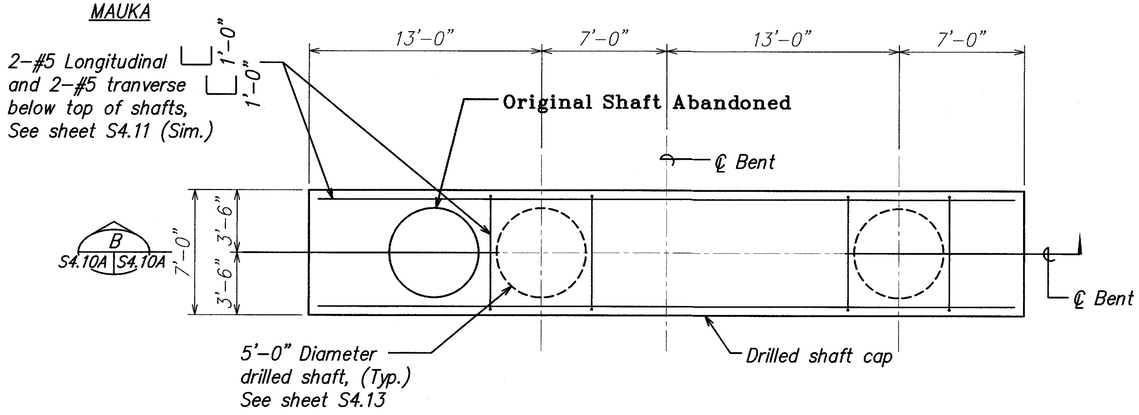
BENT #2 AND BENT #5 SIM.
PLAN AND SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

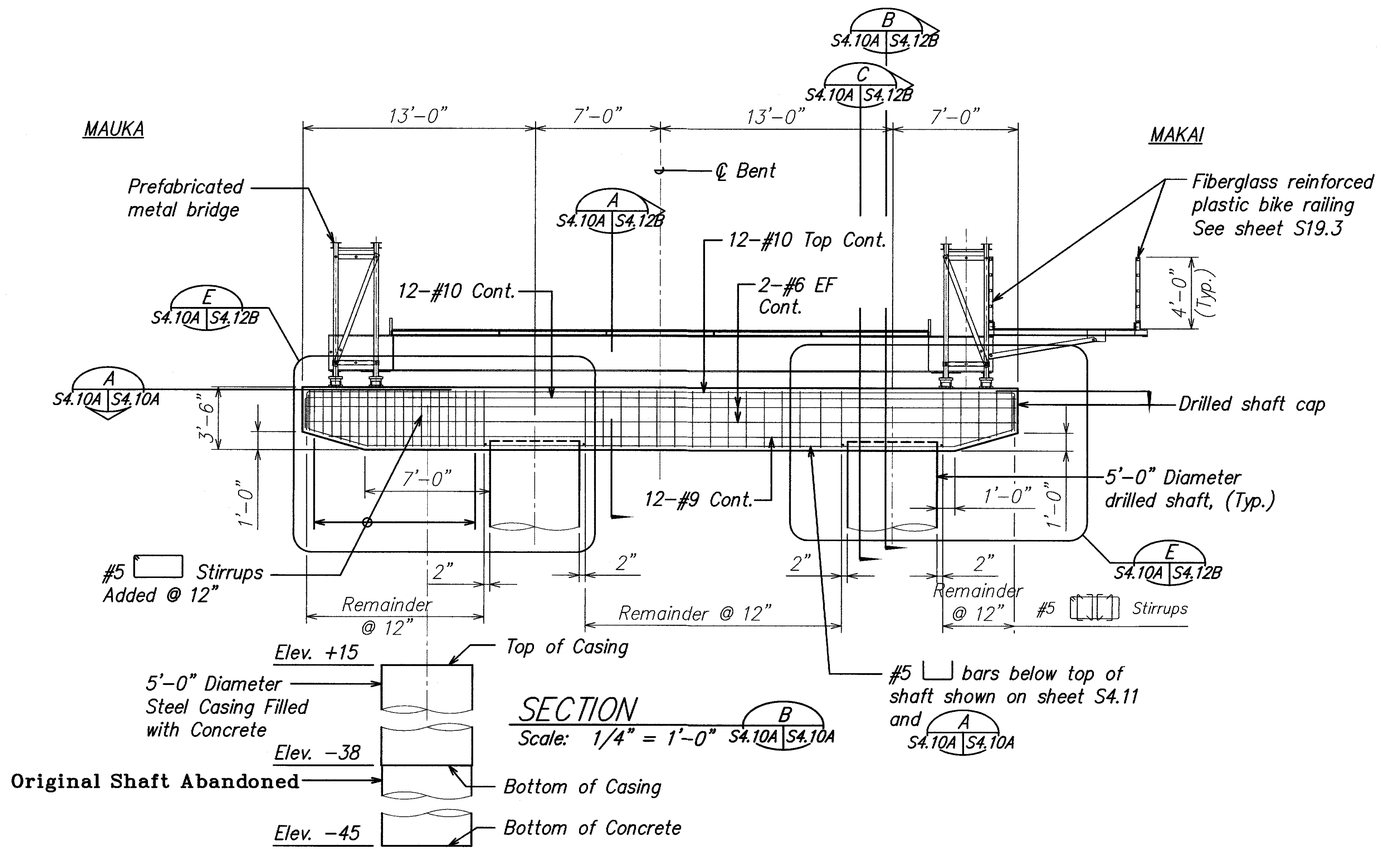
Scale: As Noted Date: May 2008

SHEET No. S4.9 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 151S-1	284



PLAN AT BENT #4 (A S4.10A | S4.10A)
Scale: 1/4" = 1'-0"



SECTION (B S4.10A | S4.10A)
Scale: 1/4" = 1'-0"

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

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #4
PLAN AND SECTION
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

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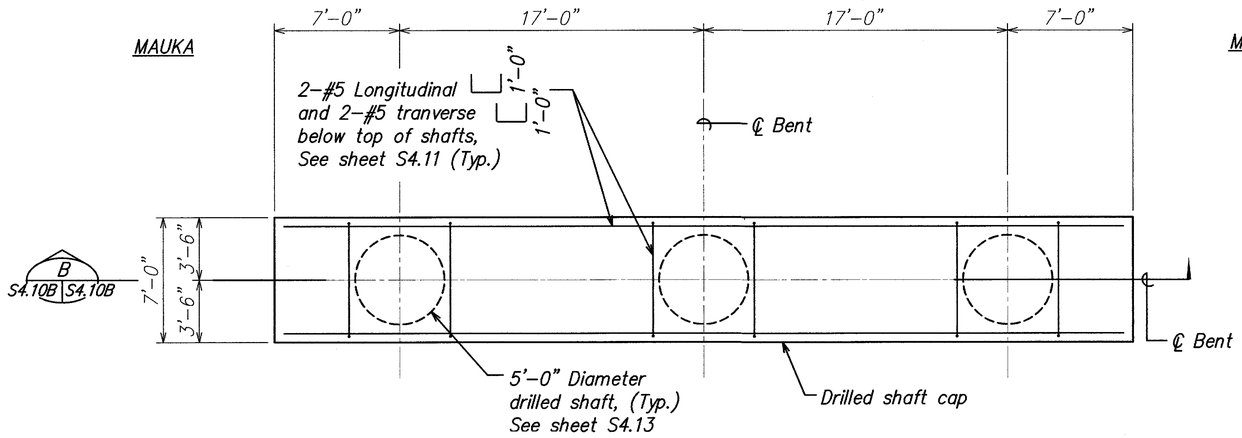
SHEET No. S4.10A OF 131 SHEETS

"AS-BUILT"

C.O. 151S-1

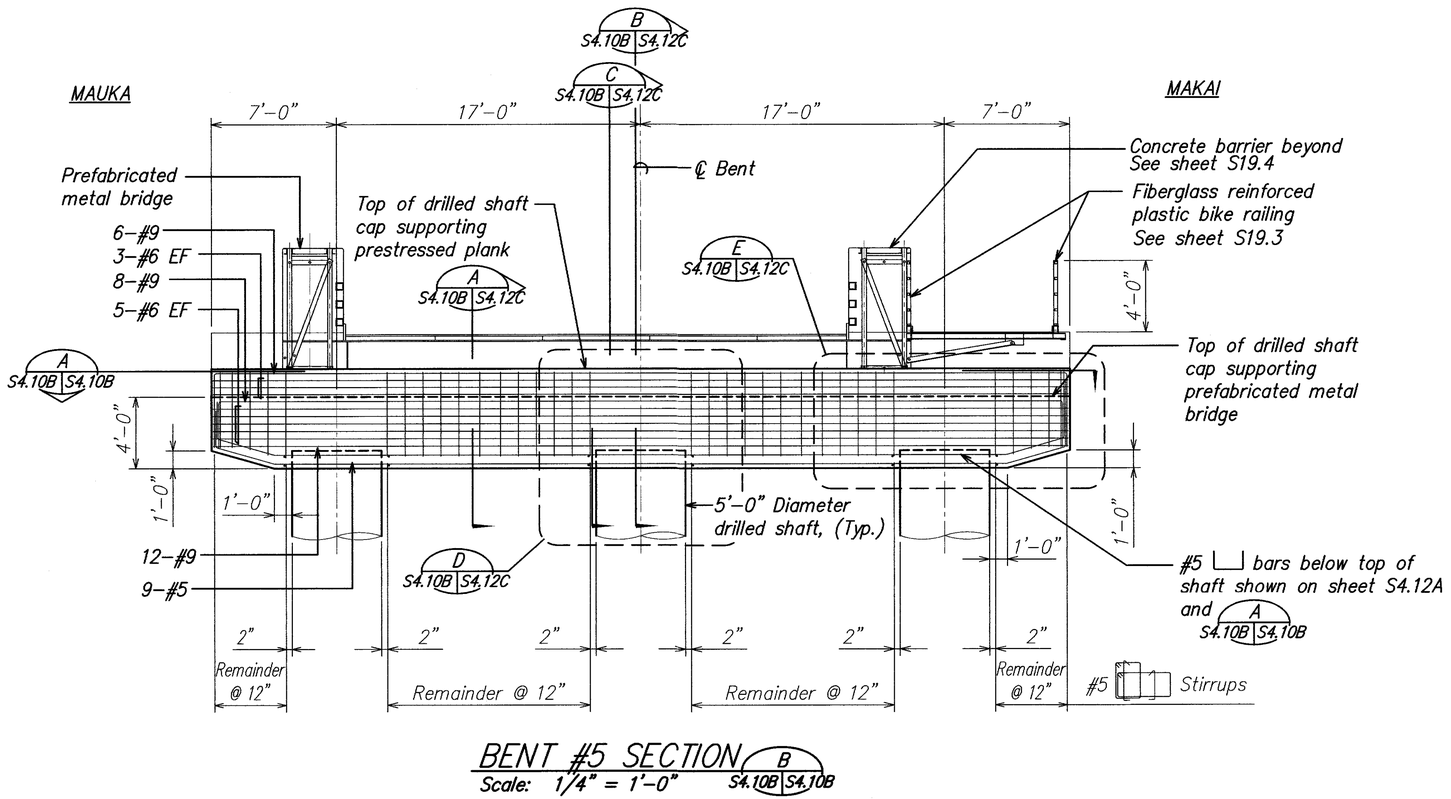
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 151S-2	284



BENT #5

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

A S4.10B | S4.10B



BENT #5 SECTION

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

B S4.10B | S4.10B

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

DATE	REVISION
6/17/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #5
PLAN AND SECTION
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

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HAWAII, U.S.A.

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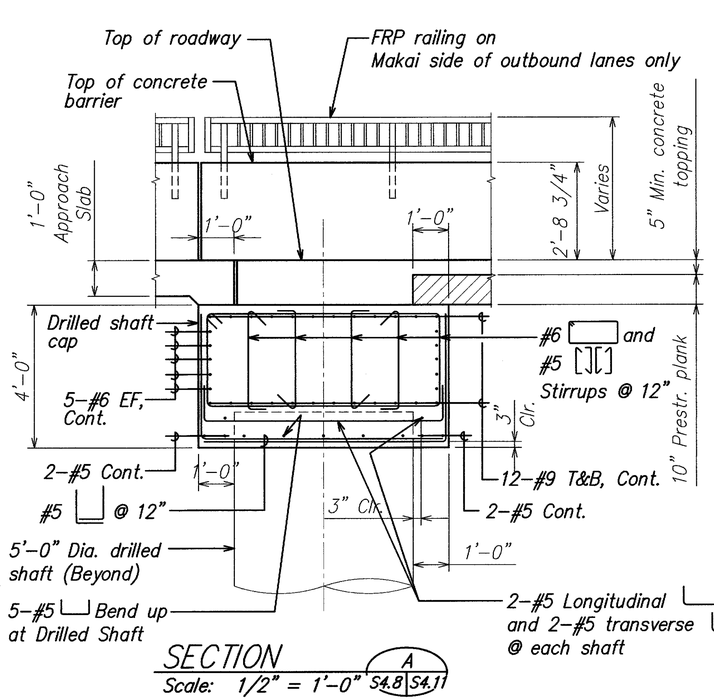
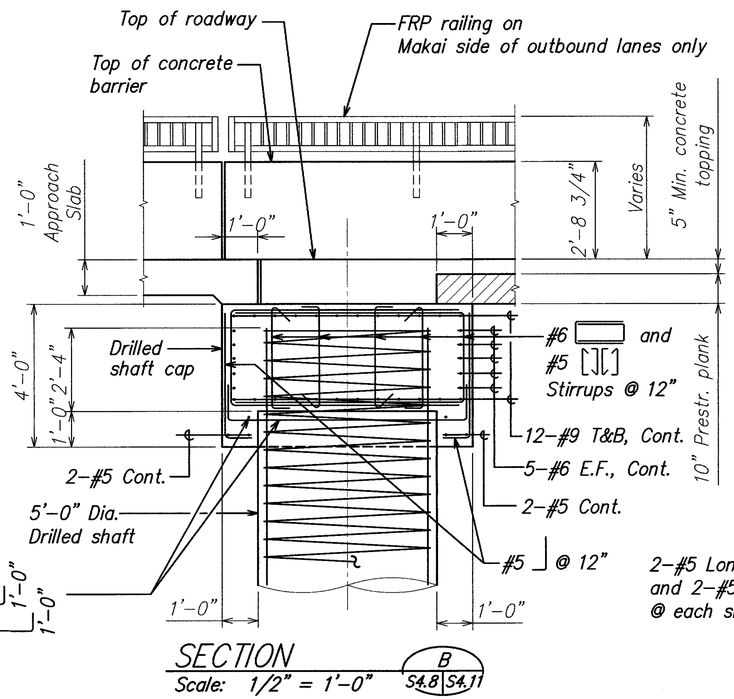
SHEET No. S4.10B OF 131 SHEETS

C.O. 151S-2

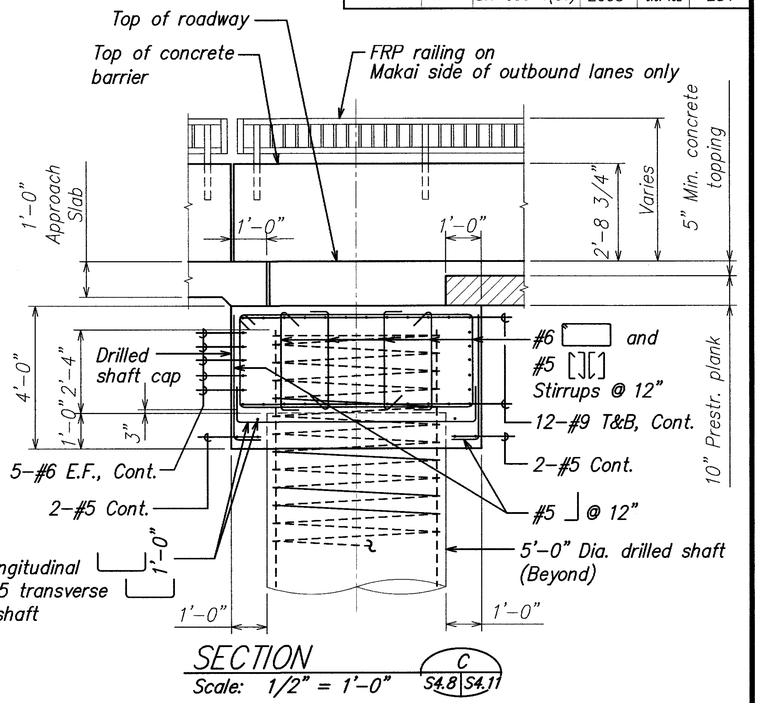
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 152	284



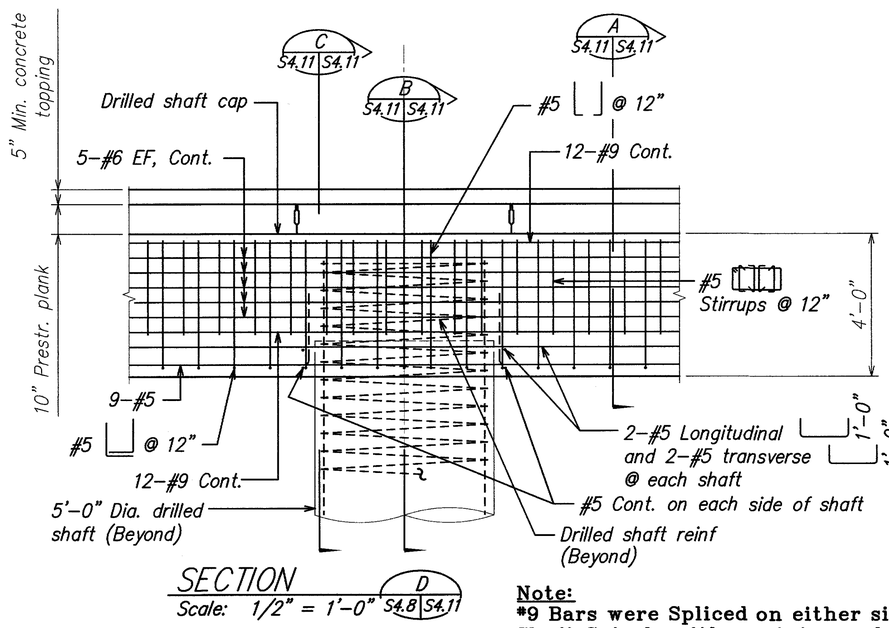
SECTION A
Scale: 1/2" = 1'-0" S4.8 S4.11



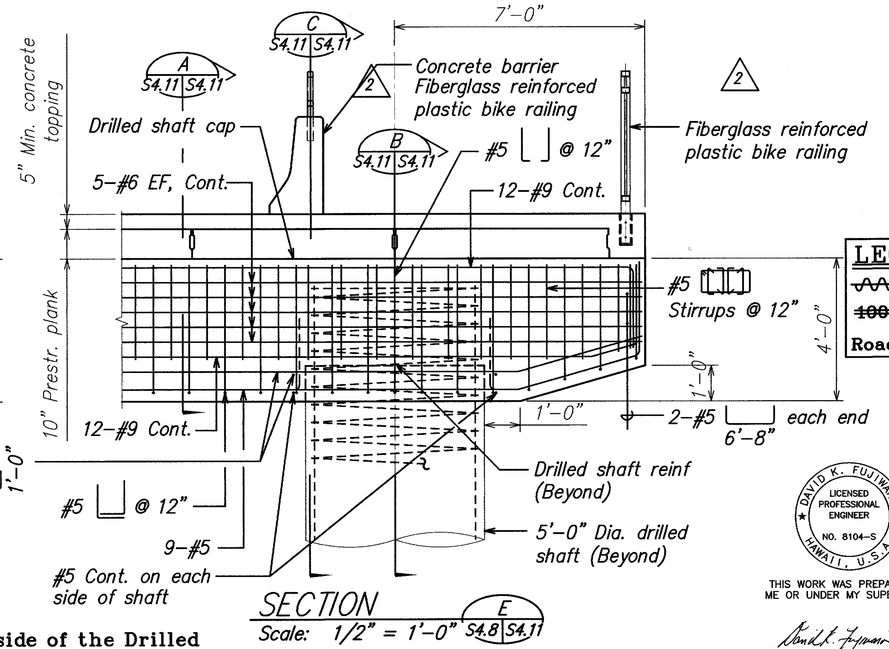
SECTION B
Scale: 1/2" = 1'-0" S4.8 S4.11



SECTION C
Scale: 1/2" = 1'-0" S4.8 S4.11



SECTION D
Scale: 1/2" = 1'-0" S4.8 S4.11



SECTION E
Scale: 1/2" = 1'-0" S4.8 S4.11

Note:
#9 Bars were Spliced on either side of the Drilled Shaft Spirals with a minimum lap length of 50".

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

LEGEND FOR AS-BUILT POSTINGS

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Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawing

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #1 SECTIONS
SOUTH SIDE OF WAILUA RIVER
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

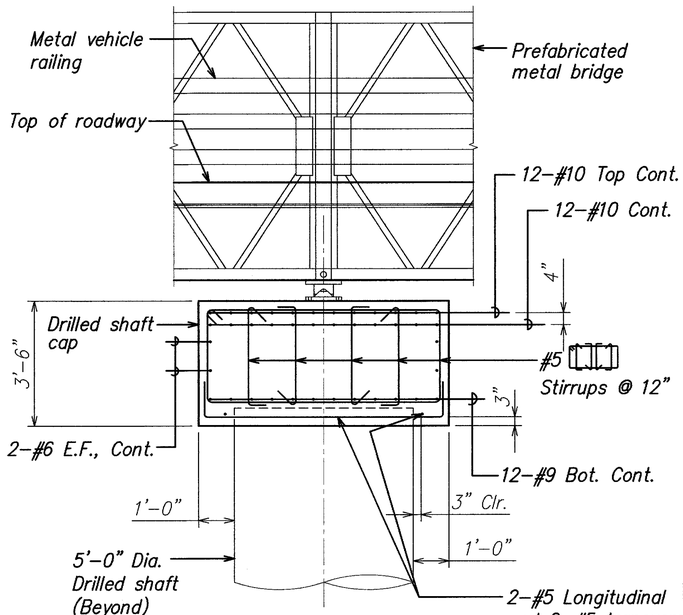
Scale: As Noted Date: May 2008

SHEET No. S4.11 OF 131 SHEETS

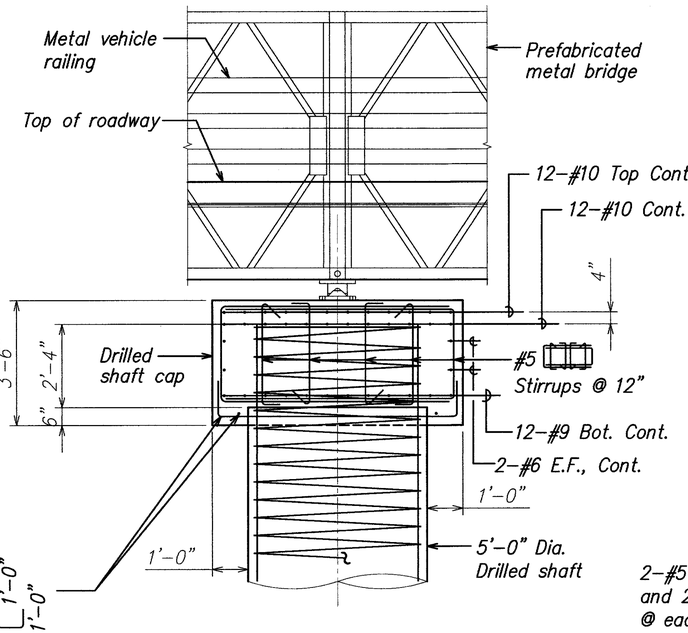
"AS-BUILT"

C.O. 152

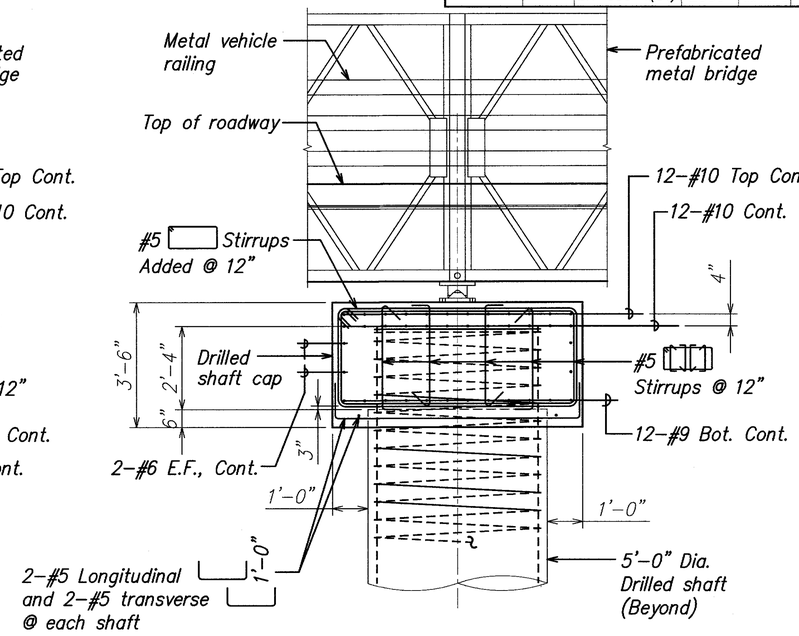
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 153S-2	284



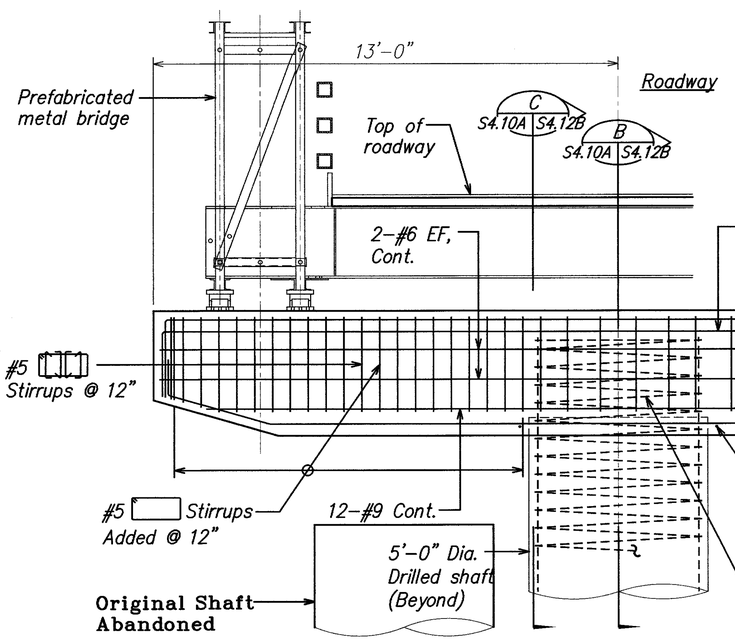
SECTION A
Scale: 1/2" = 1'-0" S4.10A S4.12B



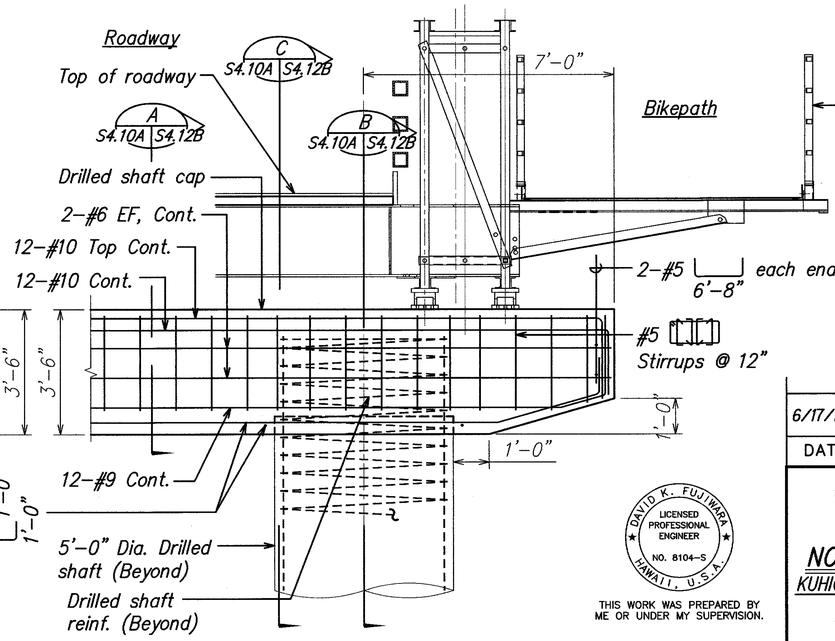
SECTION B
Scale: 1/2" = 1'-0" S4.10A S4.12B



SECTION C
Scale: 1/2" = 1'-0" S4.10A S4.12B



SECTION D
Scale: 1/2" = 1'-0" S4.10A S4.12B



SECTION E
Scale: 1/2" = 1'-0" S4.10A S4.12B

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

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No. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 6-30-10
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LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #4 SECTIONS
NORTH SIDE OF WAILUA RIVER
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

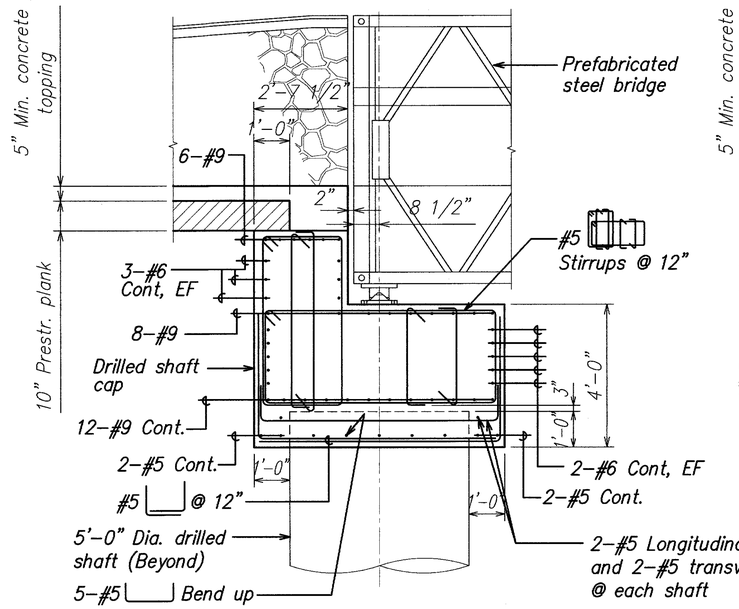
Scale: As Noted Date: May 2008

SHEET No. S4.12B OF 131 SHEETS

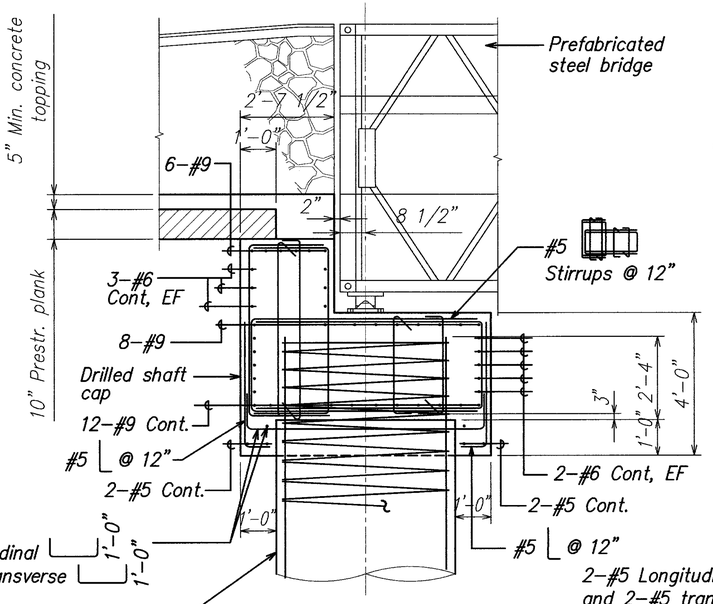
"AS-BUILT"

C.O. 153S-2

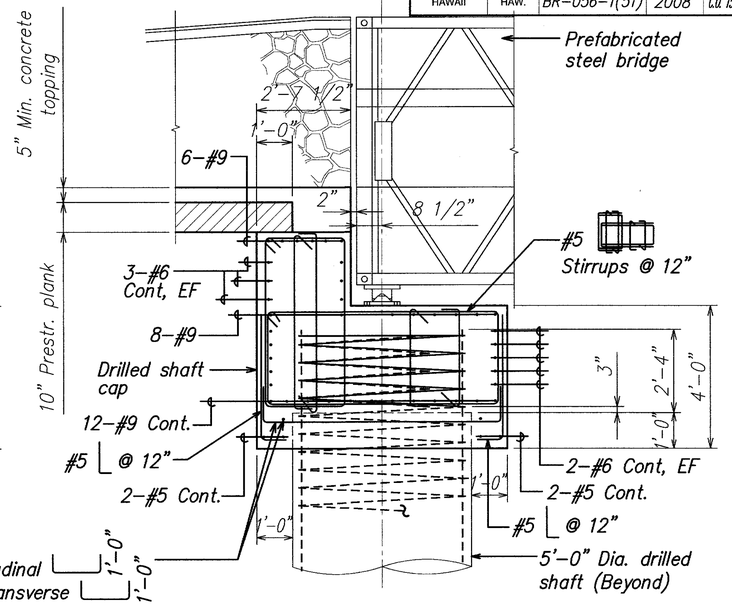
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 153S-3	284



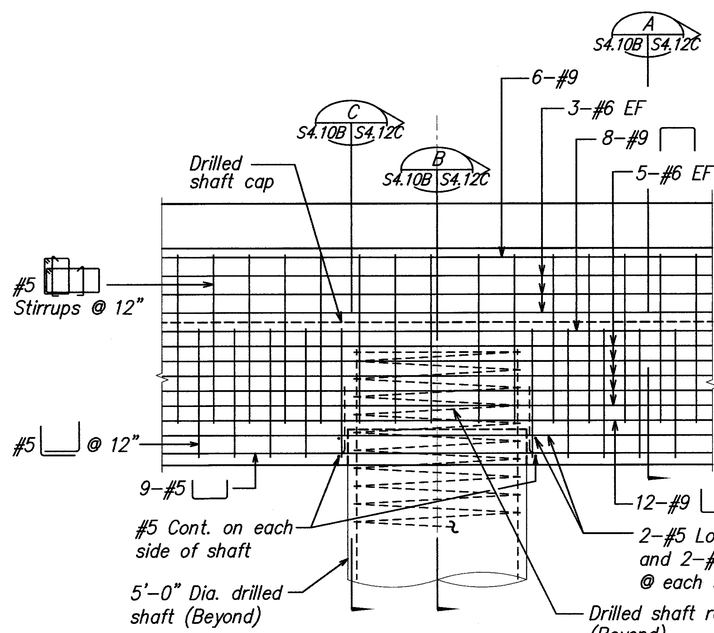
SECTION A
Scale: 1/2" = 1'-0" S4.10B | S4.12C



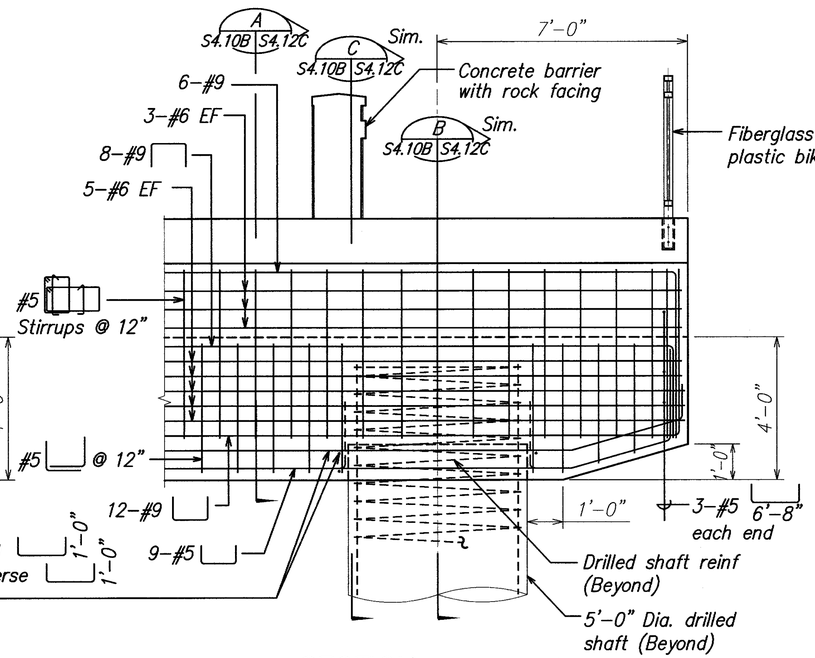
SECTION B
Scale: 1/2" = 1'-0" S4.10B | S4.12C



SECTION C
Scale: 1/2" = 1'-0" S4.10B | S4.12C



SECTION D
Scale: 1/2" = 1'-0" S4.10B | S4.12C



SECTION E
Scale: 1/2" = 1'-0" S4.10B | S4.12C

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

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4-30-10
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DATE	REVISION
11/04/10	1 Field Change For Acrow Bridge Length
6/17/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT #5 SECTIONS

NORTH SIDE OF WAILUA RIVER

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening

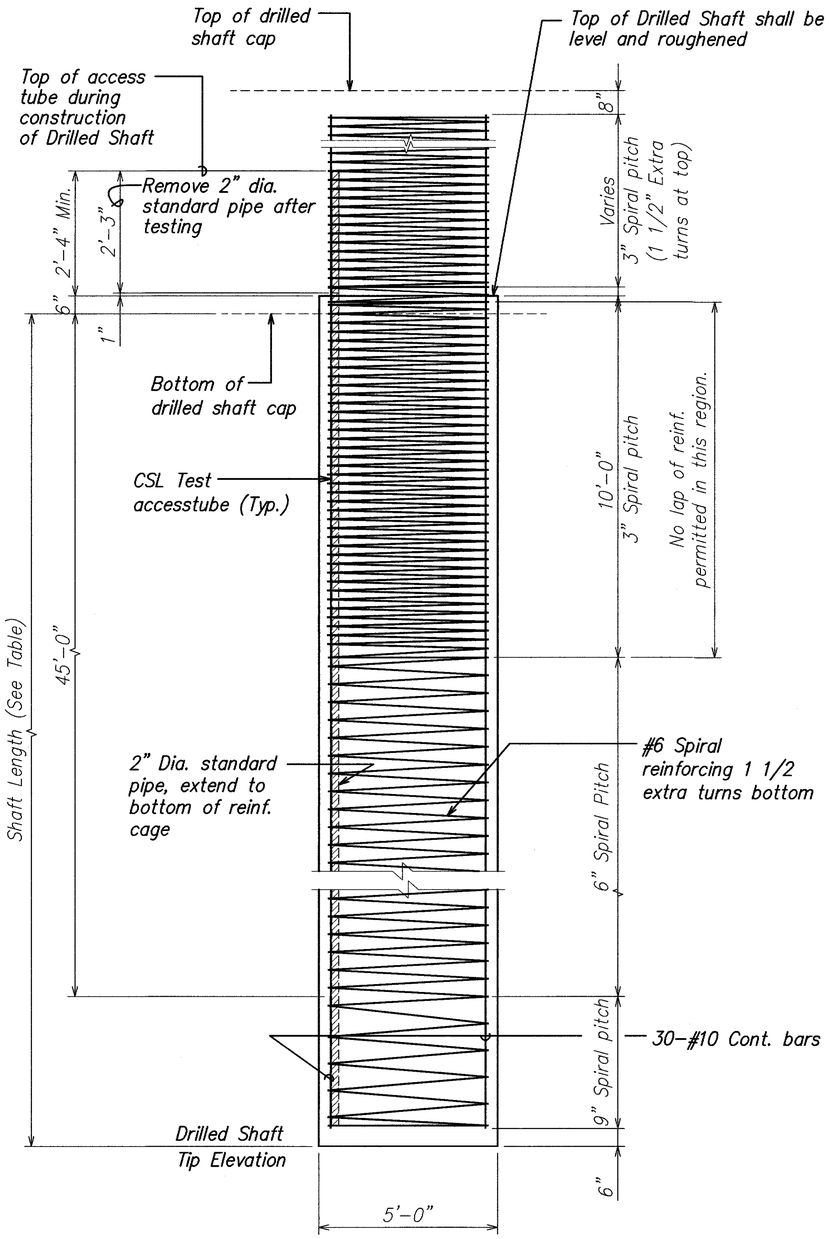
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S4.12C OF 131 SHEETS

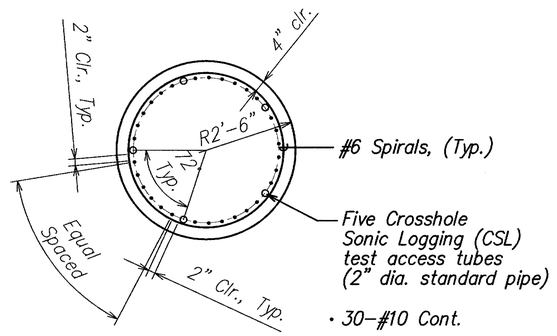
C.O. 153S-3

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	154	284



TYP. DRILLED SHAFT ELEVATION

Not to scale



TYPICAL AT DRILLED SHAFT SECTION

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

SHAFT LENGTH SCHEDULE		
Bent Number	Shaft Diameter	Shaft Length
1	60"	32'-0"
2	60"	32'-0"
3	60"	36'-0"
4	60"	~~66'-0"~~ **94'-0"**
5	60"	86'-0"
6	60"	86'-0"
*Trial shaft	60"	90'-0"

*Trial shaft length shall be measured from the ground surface.

NOTES:

1. See sheet S1.1 for bent numbers.
2. The Contractor shall refer to the Special Provisions Section 511 "DRILLED SHAFT".
3. All excavation and drilling operation for foundations will be monitored by the Engineer.
4. Bottom of Drilled Shaft tip elevations shall be verified by the Engineer prior to installing reinforcing bar cage.
5. Concrete shall not be placed without acceptance of the Engineer.
6. Drilled shaft lengths are estimated. The actual Drilled Shaft lengths will be determined by the Engineer.
7. Shaft within three diameters of an adjacent shaft shall not be drilled within 12 hours of completion of concreting of the adjacent shaft
8. Lap splice length for #10 shall be 6'-5" and for #8 shall be 4'-1".
9. Stagger splice points not more than 33% of total at any section normal to the axis of the number.
10. Minimum of 2'-0" vertically between ends of splice points.
11. Lap splice length for #6 Spiral shall be 3'-8".
12. Concrete spacer blocks shall be used to maintain proper position & clearance of the reinforcement cage within the shaft.
13. Remove portion of CSL test access tubes within drilled shaft cap and completely fill tubes with non-shrink, non-metallic, non-gaseous cementious grout of equal strength as Drilled Shaft prior to footing pour.

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	**Double line for as-built deletion**
Roadway	**Text for as-built posting**

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRILLED SHAFT DETAILS

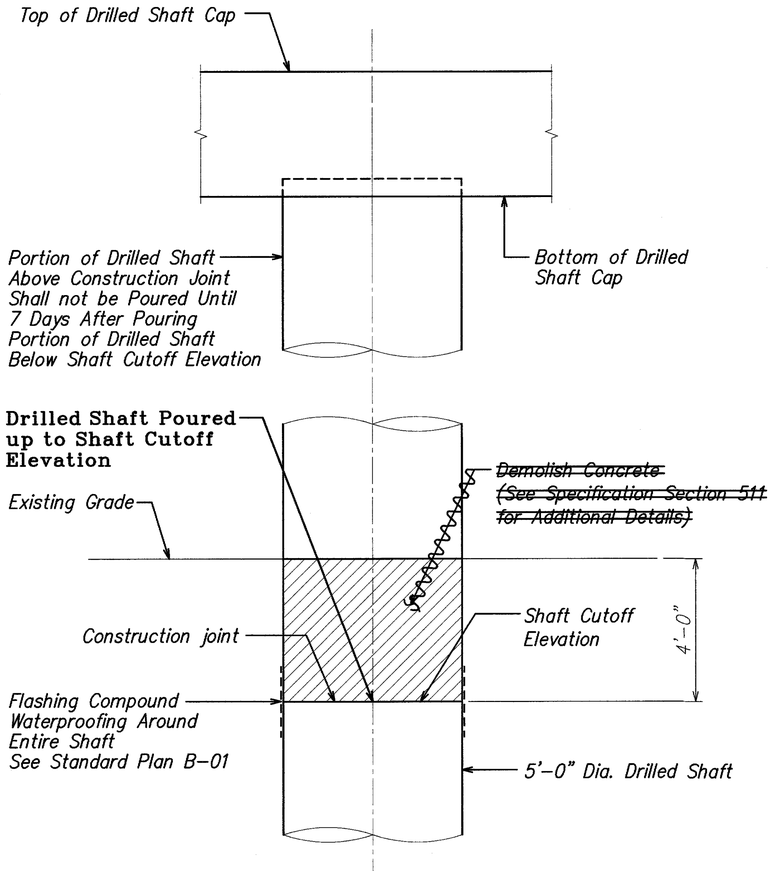
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S4.13 OF 131 SHEETS

"AS-BUILT"

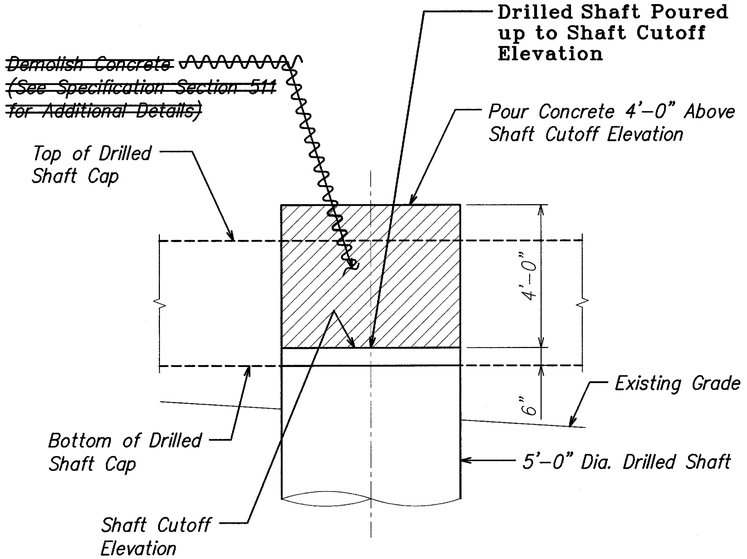
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	155	284



DRILLED SHAFT DETAIL FOR MAKAI SHAFT IN BENTS NO. ~~5 AND 6~~

Scale: Not to scale

2, 5, 6 AND MAUKA SHAFT IN BENT 3



TYPICAL DRILLED SHAFT DETAIL

Scale: Not to scale

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	**Double line for as-built deletion**
Roadway	**Text for as-built posting**

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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	QUANTITIES BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRILLED SHAFT DETAILS

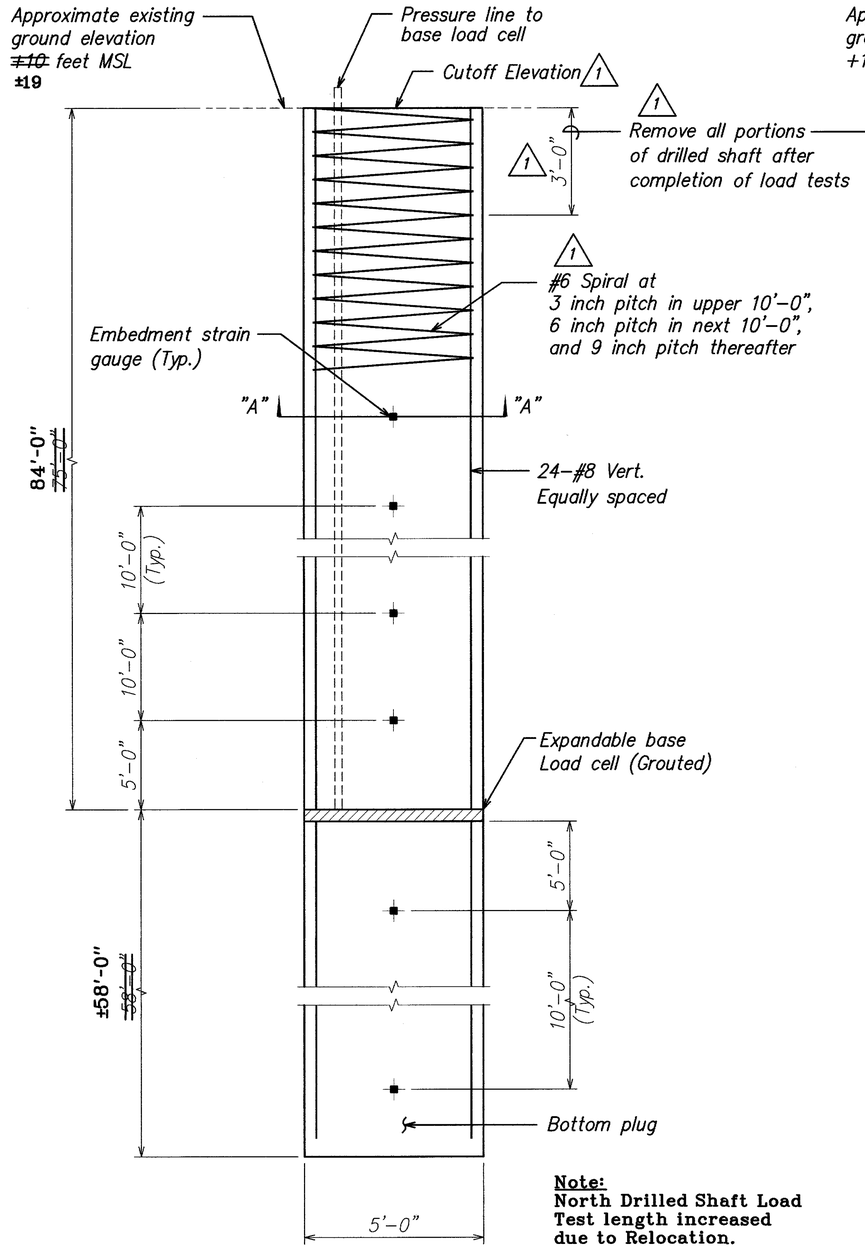
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S4.14 OF 131 SHEETS

"AS-BUILT"

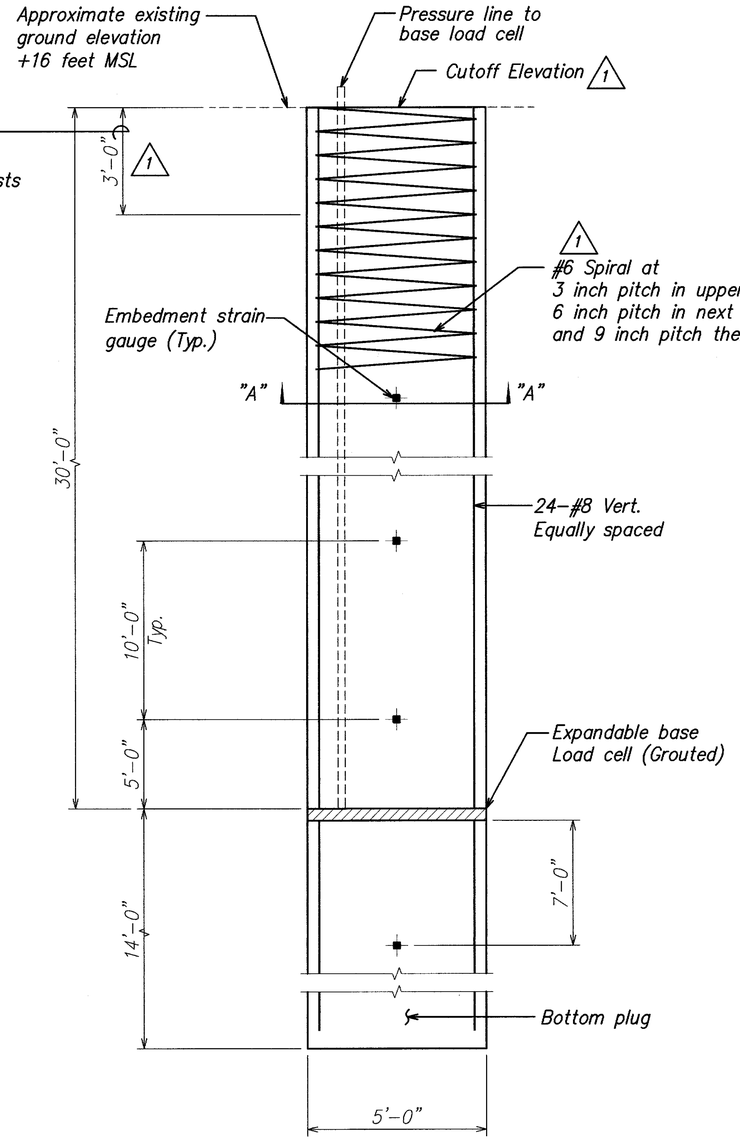
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 156	284



Note:
North Drilled Shaft Load Test length increased due to Relocation.

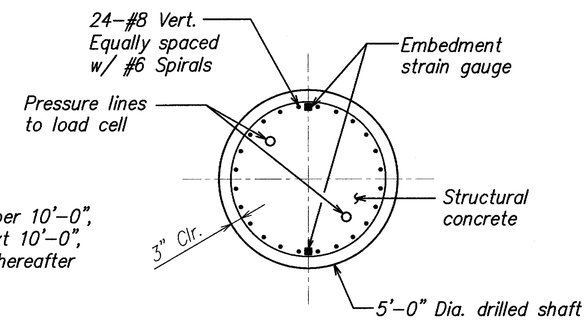
NORTH DRILLED SHAFT LOAD TEST DETAIL

Not to scale



SOUTH DRILLED SHAFT LOAD TEST DETAIL

Not to scale



SECTION "A" - "A"

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

Note:
See sheet nos. EX2 and EX3 for loadtest and trial shaft locations.

LEGEND FOR AS-BUILT POSTINGS	
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~~**100.00**~~	**Double line for as-built deletion**
Roadway	**Text for as-built posting**

DATE	REVISION
8/7/08	1 Revised Notes

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRILLED SHAFT LOAD TEST DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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SHEET No. S4.15 OF 131 SHEETS

ORIGINAL PLAN
NOTE BOOK No.
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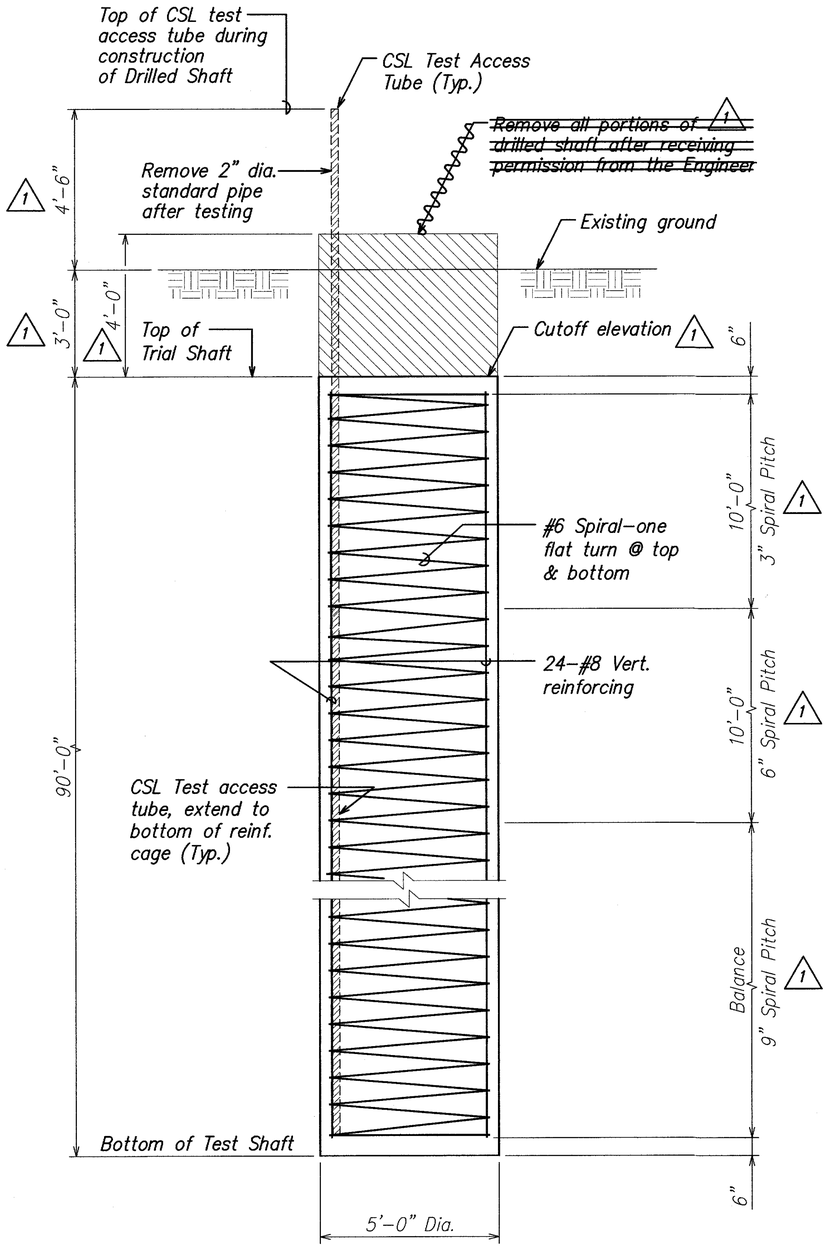
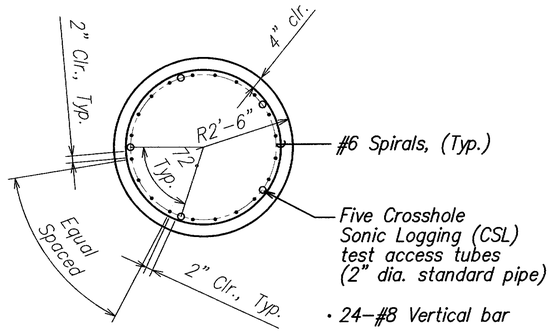
"AS-BUILT"

ADD. 156

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 157	284



TRIAL SHAFT ELEVATION
Not to scale



TRIAL SHAFT SECTION
Scale: 1/2" = 1'-0"

Notes:

1. 1. After receiving permission from the Engineer remove the portion of the CSL test access tubes above the cutoff elevation of the drilled shaft and completely fill pipes with non-shrink grout of equal or greater strength as the drilled shaft.
2. 2. Backfill to existing grade a minimum of 2 days after filling CSL test access tubes with non-shrink grout and after the grout has taken initial set.
3. 3. See Special Provisions for concrete pour and coring above of trial shaft.

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
8/7/08	1 Revised and Added Note

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRIAL SHAFT DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

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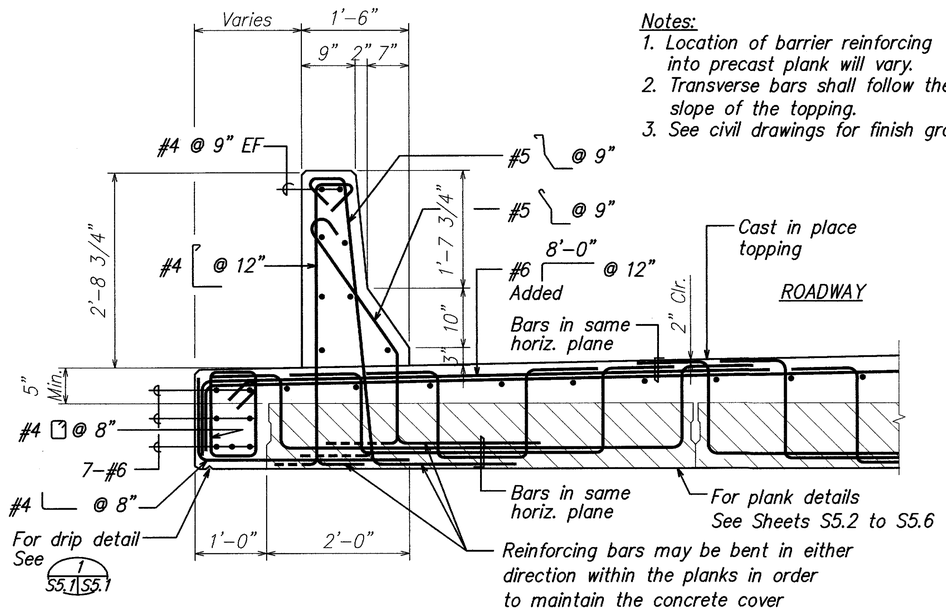
SHEET No. S4.16 OF 131 SHEETS

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

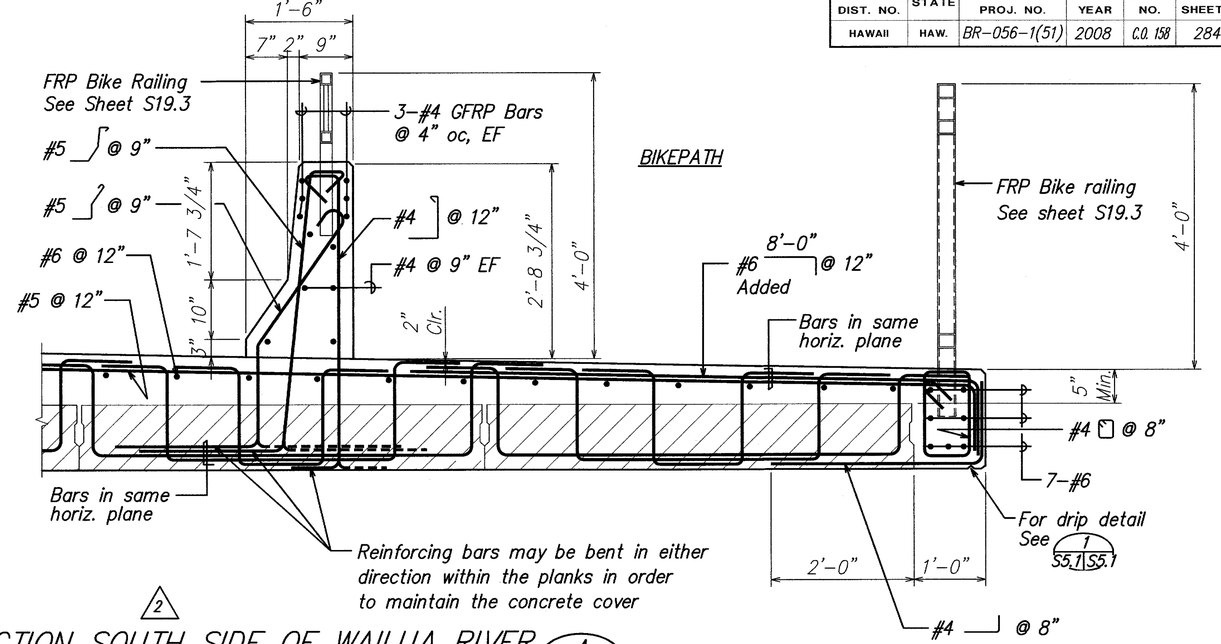
"AS-BUILT"

ADD. 157

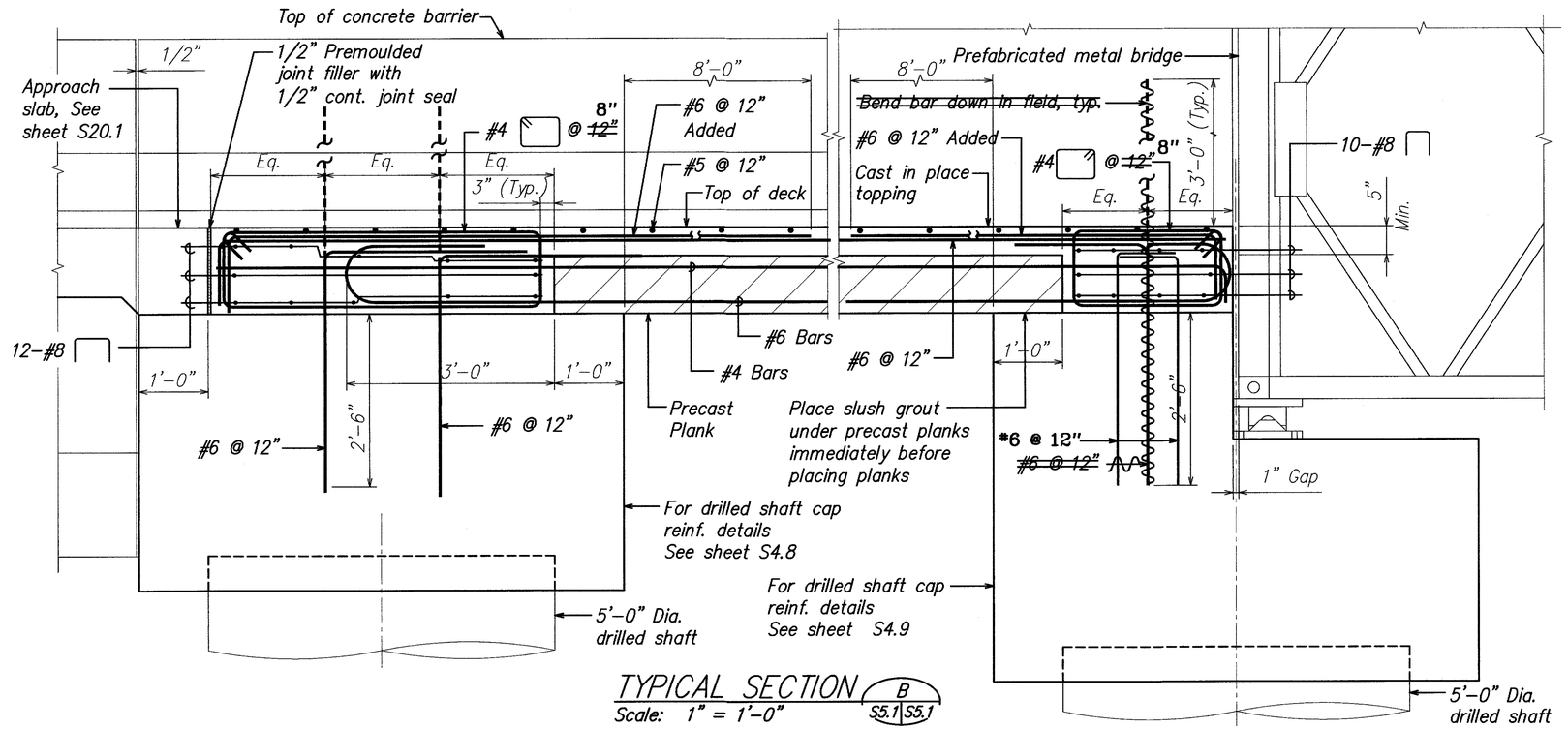
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 158	284



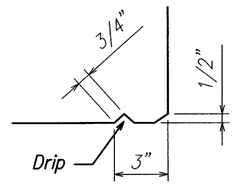
Notes:
1. Location of barrier reinforcing into precast plank will vary.
2. Transverse bars shall follow the slope of the topping.
3. See civil drawings for finish grade.



2 TYPICAL SECTION SOUTH SIDE OF WAILUA RIVER (A S5.1 S5.1)
Scale: 1" = 1'-0"



TYPICAL SECTION (B S5.1 S5.1)
Scale: 1" = 1'-0"



DRIP DETAIL (1 S5.1 S5.1)
Not to scale
S5.1A, S17.9

2

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Title

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DECK SECTIONS 2
SOUTH SIDE OF WAILUA RIVER
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S5.1 OF 131 SHEETS

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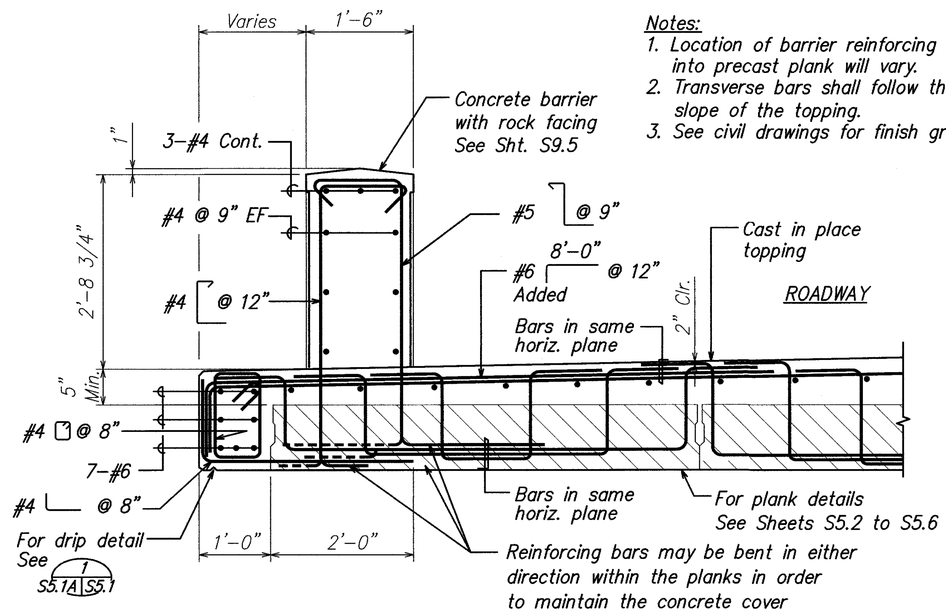
	QUANTITIES BY	
	CHECKED BY	

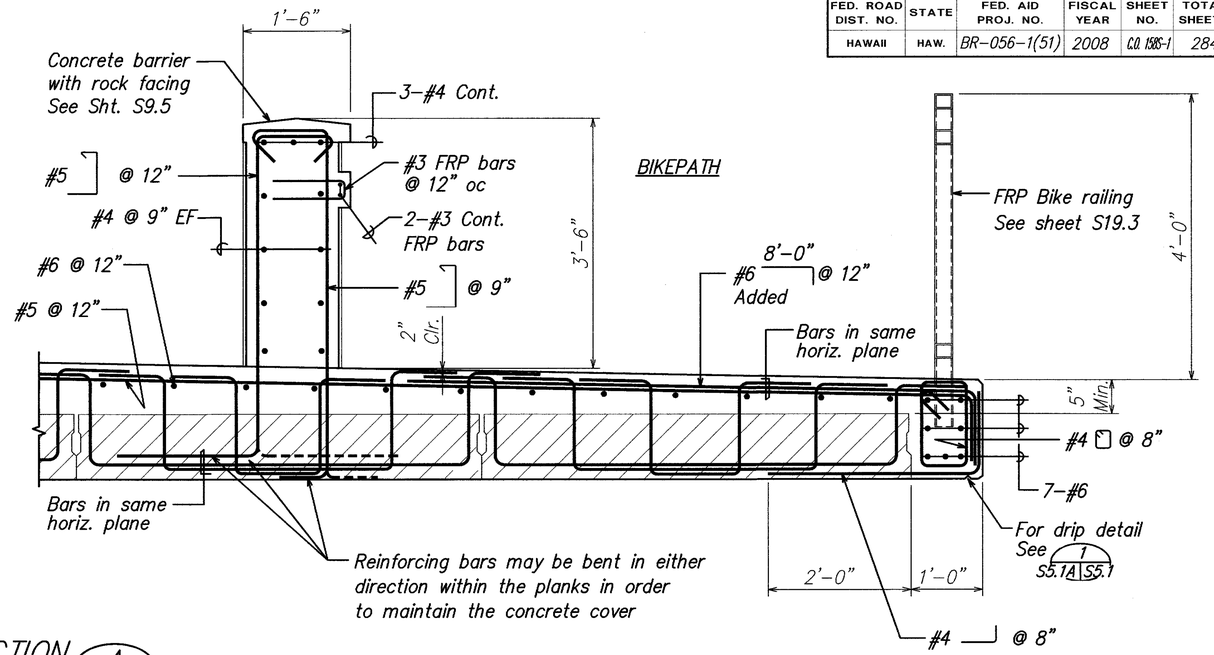
"AS-BUILT"

C.O. 158

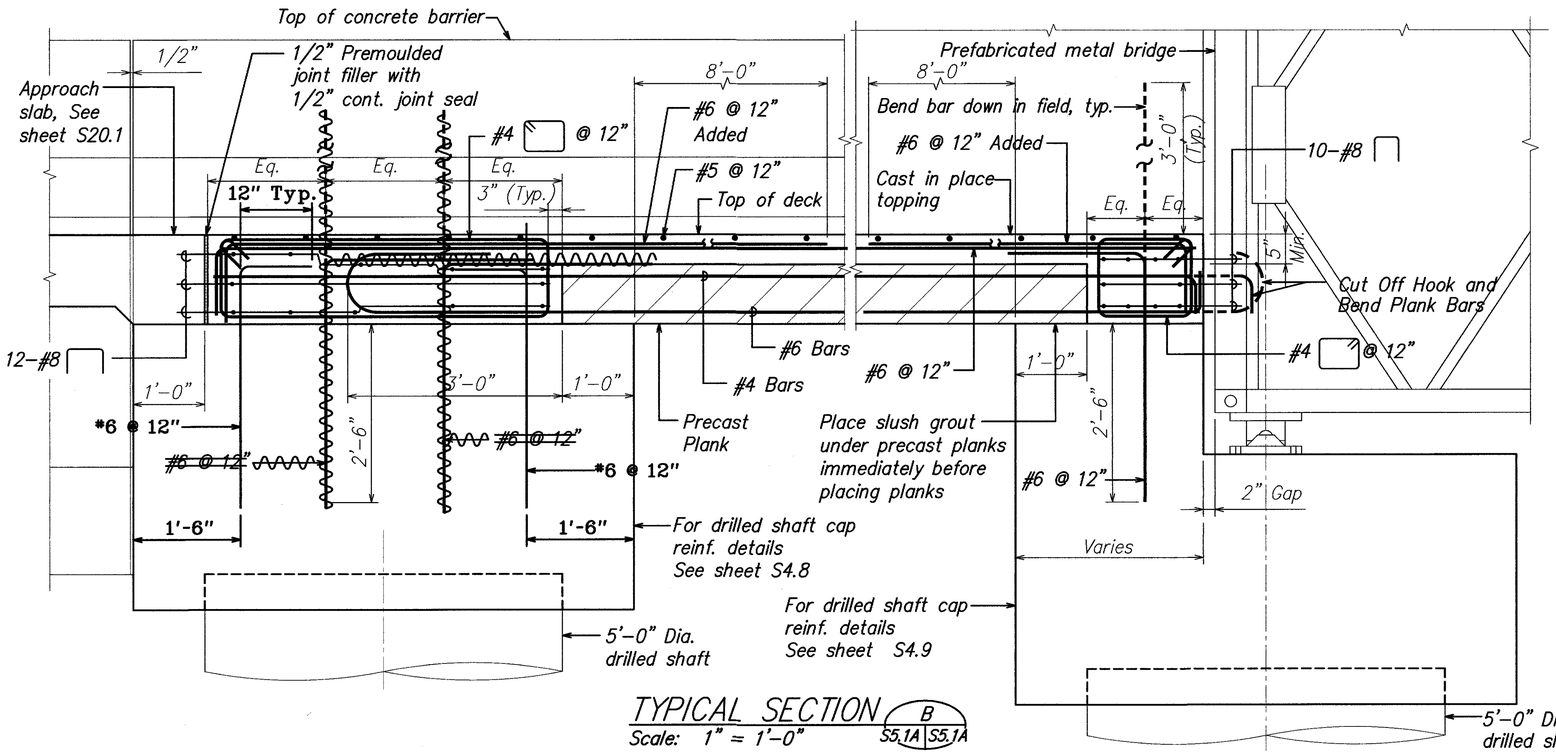
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 158S-1	284



Notes:
1. Location of barrier reinforcing into precast plank will vary.
2. Transverse bars shall follow the slope of the topping.
3. See civil drawings for finish grade.



TYPICAL SECTION A
Scale: 1" = 1'-0" — S5.1A | S5.1A



TYPICAL SECTION B
Scale: 1" = 1'-0" — S5.1A | S5.1A

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
06/17/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DECK SECTIONS
NORTH SIDE OF WAILUA RIVER
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted — Date: May 2008

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SHEET No. S5.1A OF 131 SHEETS

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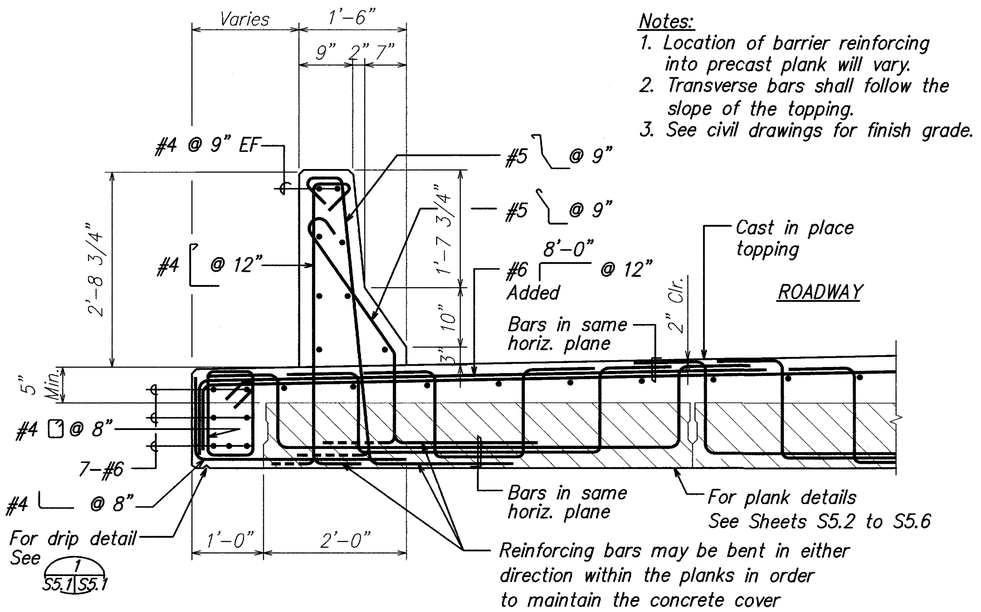
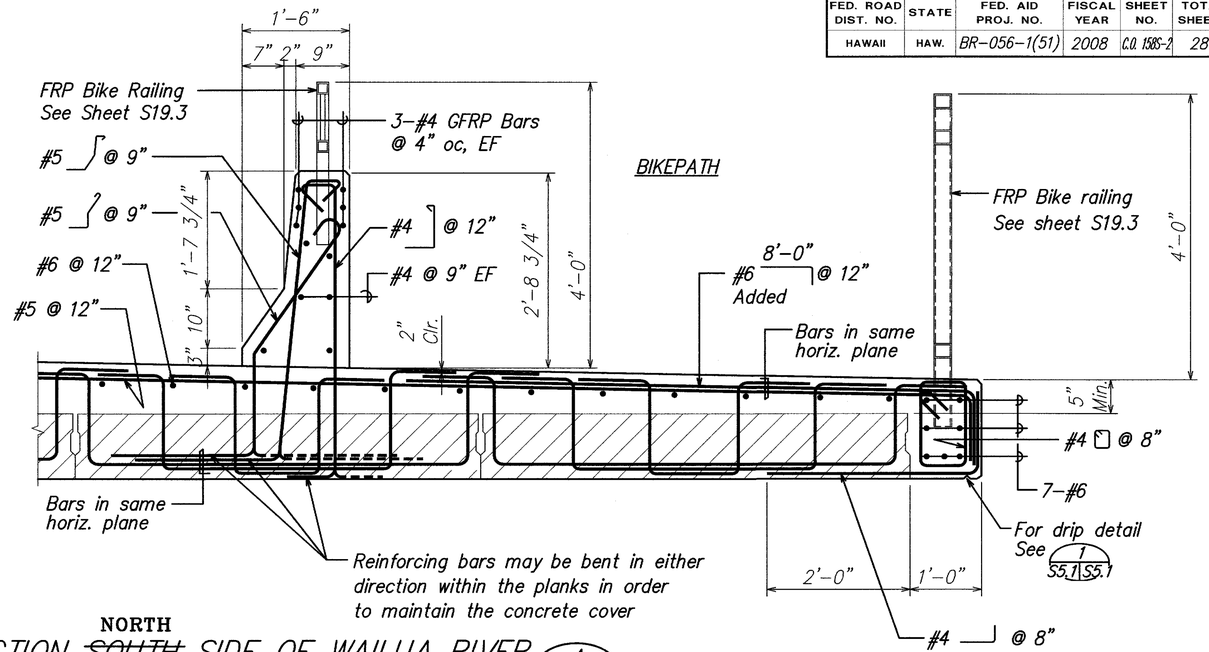
"AS-BUILT"

C.O. 158S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 158S-2	284

Notes:
1. Location of barrier reinforcing into precast plank will vary.
2. Transverse bars shall follow the slope of the topping.
3. See civil drawings for finish grade.

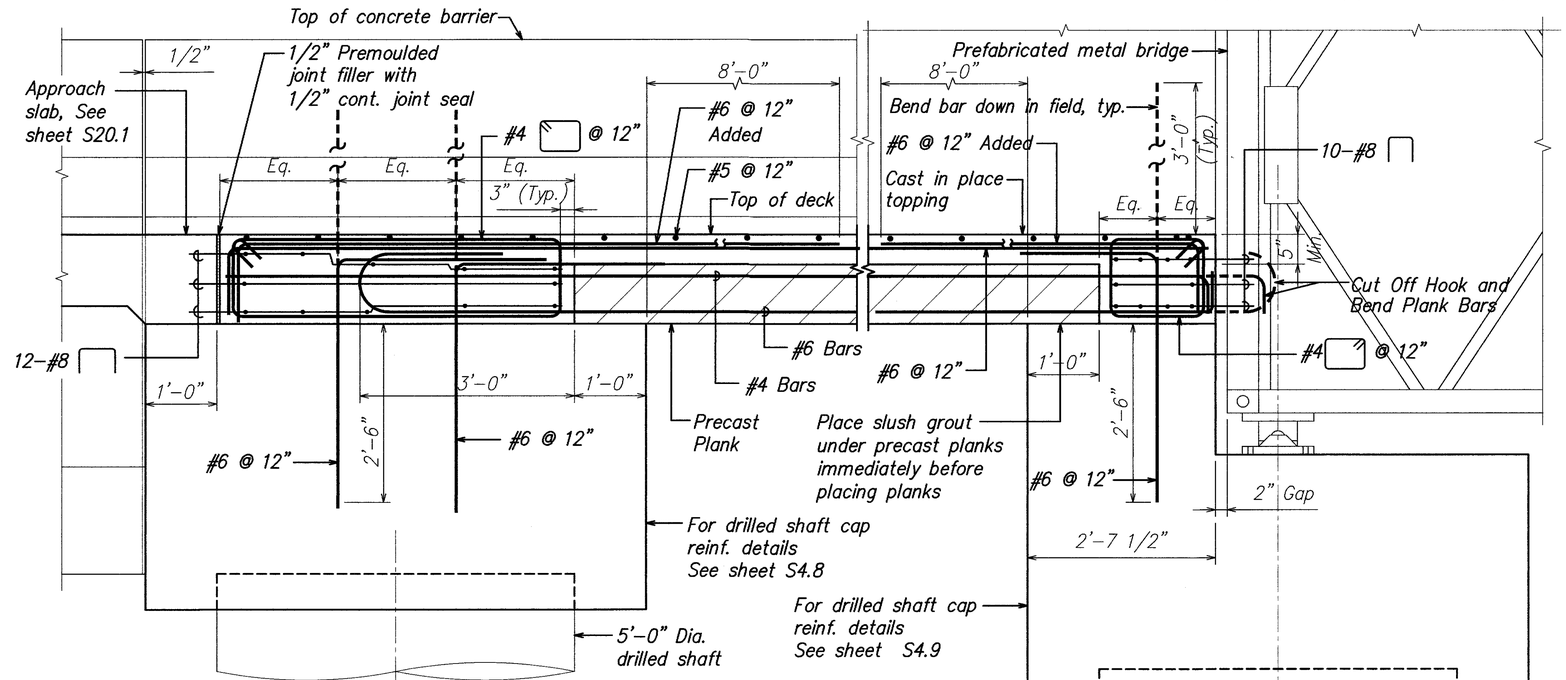




NORTH

TYPICAL SECTION ~~SOUTH~~ SIDE OF WAILUA RIVER (A S5.1B | S5.1B)

Scale: 1" = 1'-0"



TYPICAL SECTION (B S5.1B | S5.1B)

Scale: 1" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
11/04/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DECK SECTIONS NORTH SIDE OF WAILUA RIVER

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S5.1B OF 131 SHEETS

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

"AS-BUILT"

C.O. 158S-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	159	284

PRESTRESSED PLANK NOTES

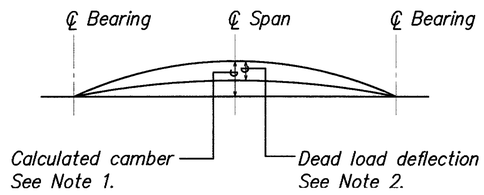
1. Prestressed concrete 28 day strength f'c = 6,500 psi.
   Prestressed concrete strength at time of release fci = 5,000 psi.
2. Pretensioned strands shall be 7 wire 1/2" dia. low relaxation steel strands conforming to ASTM A416 Grade 270. P(e) = Working force.
3. Non-prestressed reinforcing steel shall be deform Grade 60 bars conforming to ASTM A615.
4. Strand pattern shall be symmetrical about the longitudinal ℄ of the plank.
5. Strand release sequence shall not induce any lateral deflection of the plank.
6. Contractor shall submit shop drawings indicating proposed strand pattern, releasing sequence, reinforcing details & hold down device details to the Engineer prior to fabrication.
7. During curing, care shall be taken to avoid any lateral deflection of the plank due to improper orientation. Steam curing may be used to accelerate strength gain.
8. Lifting devices shall be placed as close as possible to the centerline of bearings of the plank. Details and locations of lifting devices shall be submitted to the Engineer for acceptance. Included in the submittal shall be details of how lifting devices shall be repaired or how the planks will be placed if the lifting devices are not repaired.
   Such acceptance does not relieve the Contractor of his responsibilities if plank is damaged due to failure of the lifting device.
9. See Sheets S3.3 and S17.1 for location of plank mark designation.
10. All lifting devices shall be inspected for damage and suitability of use before each lift. If lifting device is not suitable for lifting, submit alternate lifting method to Engineer for review and acceptance.
    Planks shall not be lifting until alternate lifting method is acceptance.

PLANK TYPE, CAMBER AND DEAD LOAD DEFLECTION SCHEDULE

Plank Mark	Plank Length	Plank Thickness	Plank Type	Initial Camber	Dead Load Deflection
Plank "A"	25'-0"	10"	Exterior	0.40"	-0.26"
Plank "B"	25'-0"	10"	Interior	0.40"	-0.20"
Plank "C"	16'-9"	7"	Typical	0.15"	-0.12"
Plank "D"	18'-6 1/8" ~~18'-6"~~	7"	Typical	0.10"	-0.20"
Plank "E"	**18'-6 7/16"**	**7"**	**Typical**	**0.10"**	**-0.20"**

PLANK CAMBER NOTES:

1. The initial camber includes the effect of the initial prestress force and the weight of the plank after removal from the bed. Positive values shown for initial camber indicate a net upward deflection. The initial camber value should be multiplied by a factor of 2 to approximate the effect of camber growth and concrete creep. The camber immediately prior to deck pour shall not exceed the initial camber multiplied by a factor of 2 plus a one-inch tolerance.
2. The dead load deflection is the approximate vetical deflection due to the effect of the weight of the topping.
3. Contractor shall camber the deck form work as required to account for the calculated dead load deflection in order to provide the specified finish deck elevations.
4. All camber and deflections are in inches.
5. Check camber at jobsite upon arrival at jobsite and at 1 week prior to installation. Submit measurements to Engineer.



PLANK CAMBER DIAGRAM

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

LEGEND FOR AS-BUILT POSTINGS

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Roadway	**Text for as-built posting**

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRECAST PLANK NOTES

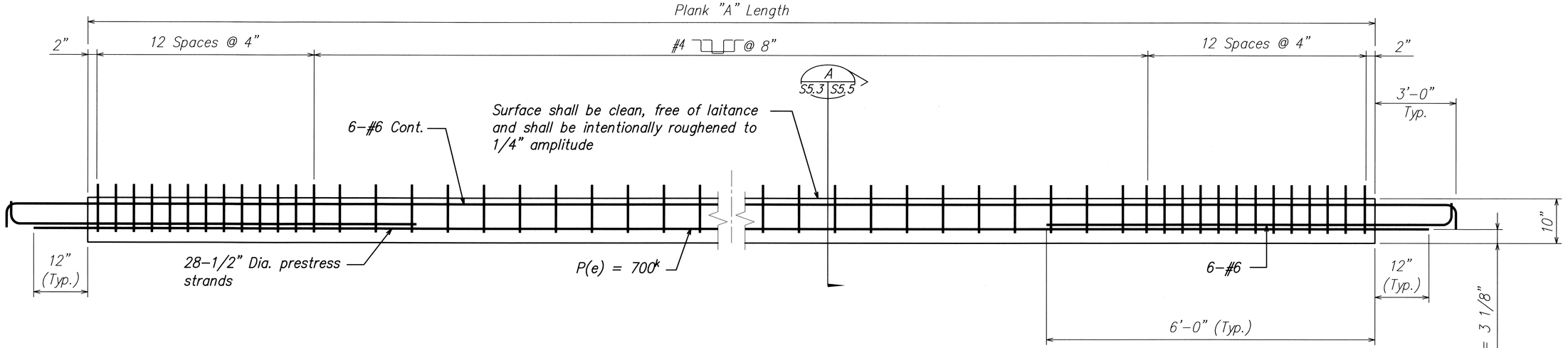
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S5.2 OF 131 SHEETS

"AS-BUILT"

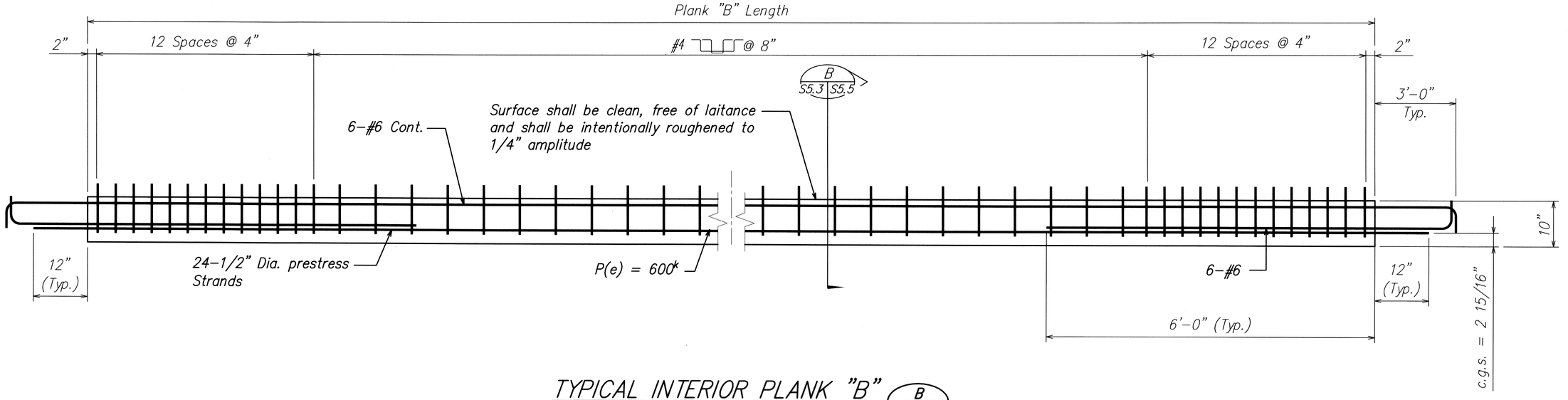
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	160	284



TYPICAL EXTERIOR PLANK "A"

A S5.3 S5.3

Scale: 1" = 1'-0"



TYPICAL INTERIOR PLANK "B"

B S5.3 S5.3

Scale: 1" = 1'-0"

NOTE:

See sheets S3.2 for location and S5.2 for additional details.

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

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PRECAST PLANK "A" AND "B" SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

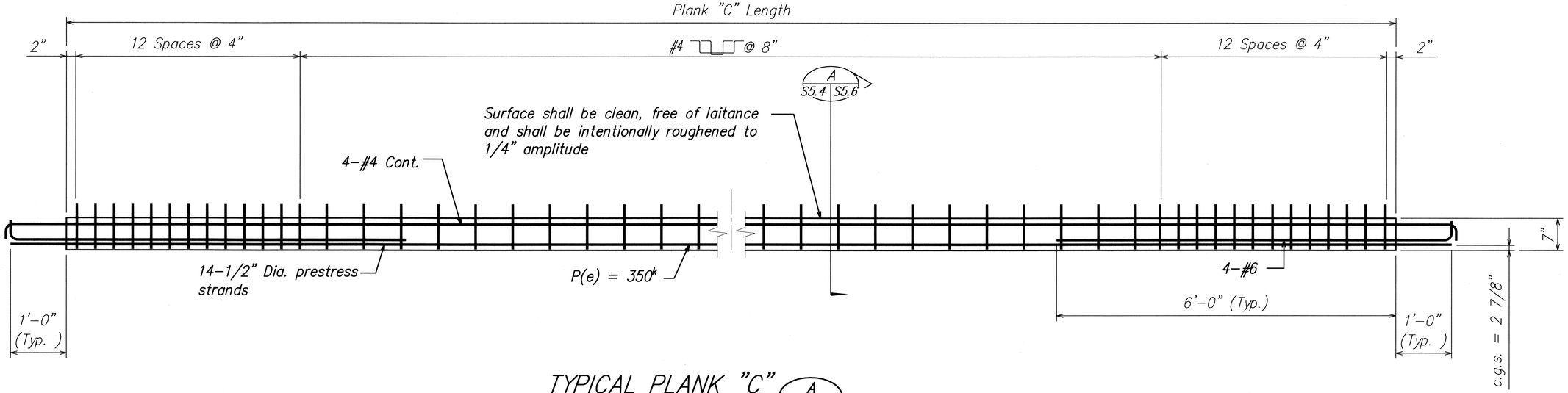
Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S5.3 OF 131 SHEETS

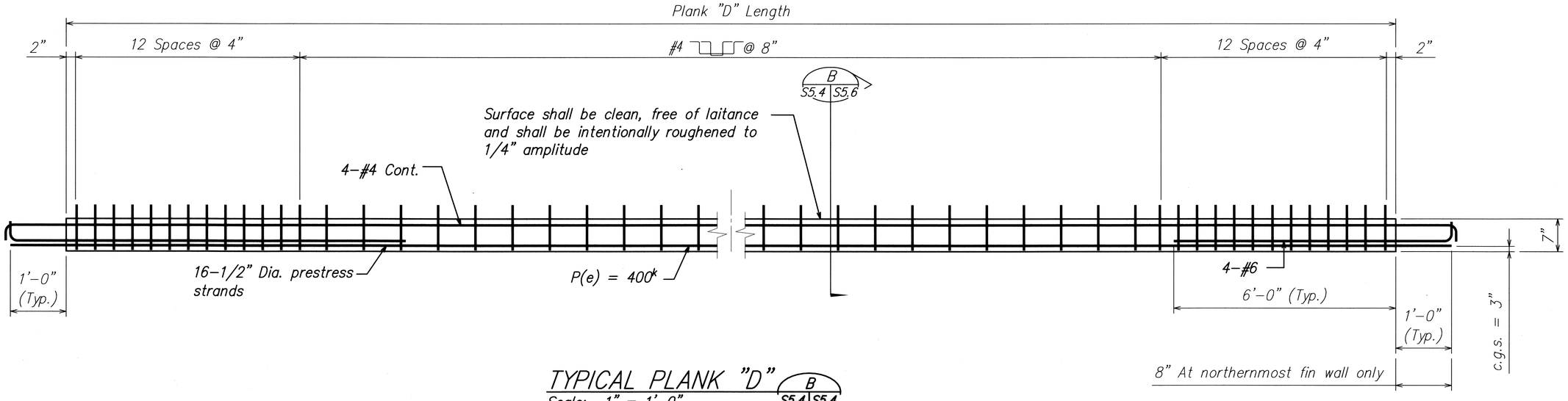
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	161	284



TYPICAL PLANK "C"

A S5.4 | S5.4

Scale: 1" = 1'-0"



TYPICAL PLANK "D"

B S5.4 | S5.4

Scale: 1" = 1'-0"

NOTE:

See sheets S3.2 for location and S5.2 for additional details.

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PRECAST PLANK "C" AND "D" SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening

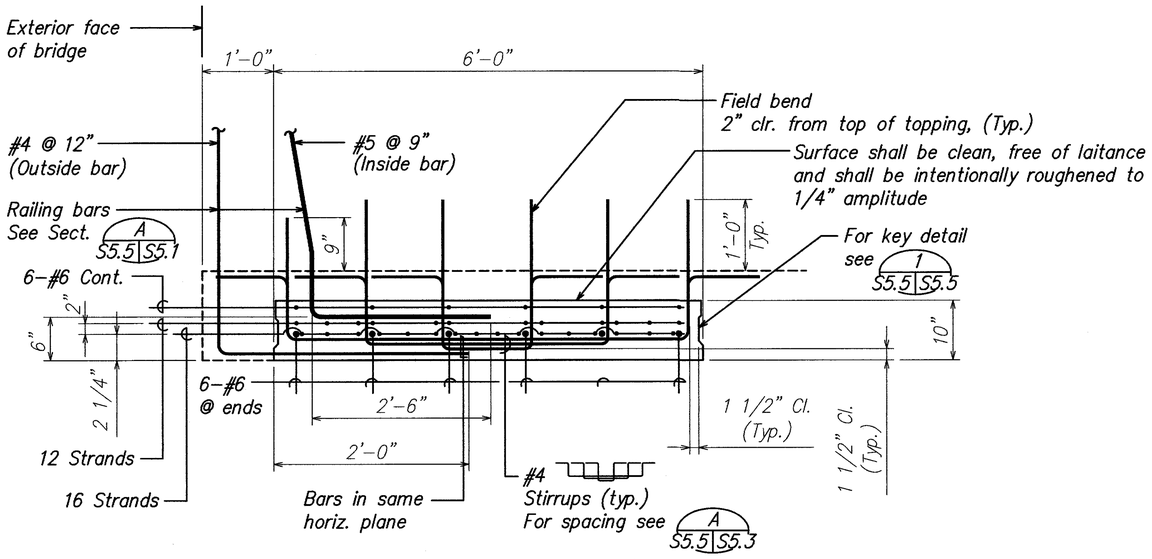
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S5.4 OF 131 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	162	284

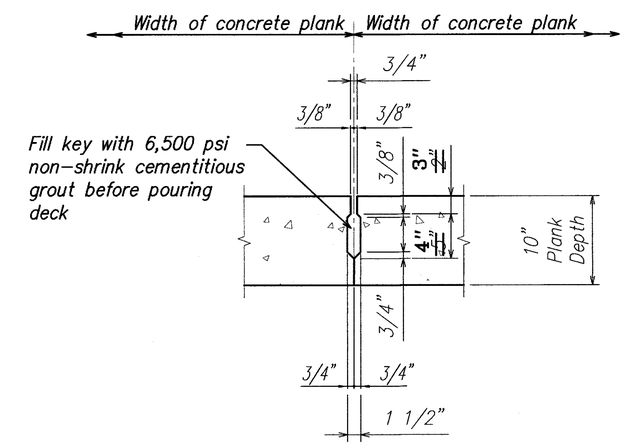


TYPICAL EXTERIOR PLANK "A"

A S5.3 | S5.5

Scale: 1" = 1'-0"

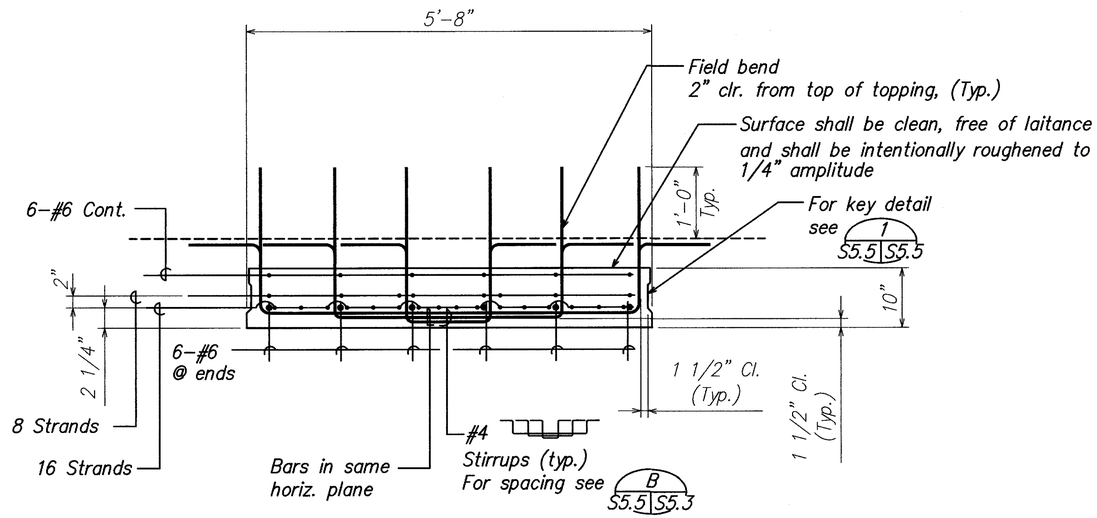
Note:
Railing reinforcing bar locations vary.



KEY DETAIL

1 S5.5 | S5.5

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



TYPICAL INTERIOR PLANK "B"

B S5.3 | S5.5

Scale: 1" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
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PRECAST PLANK "A" AND "B" SECTIONS AND DETAIL

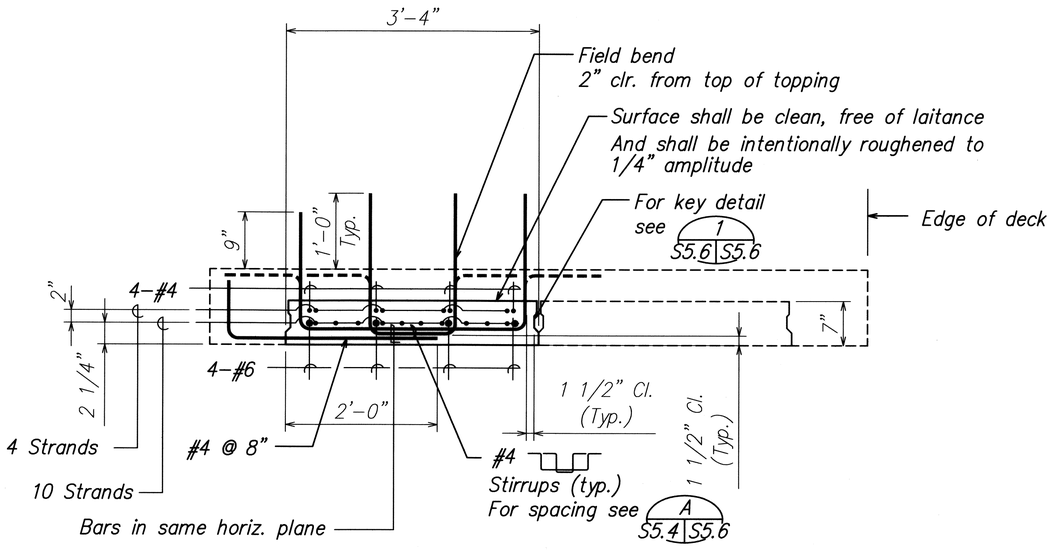
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

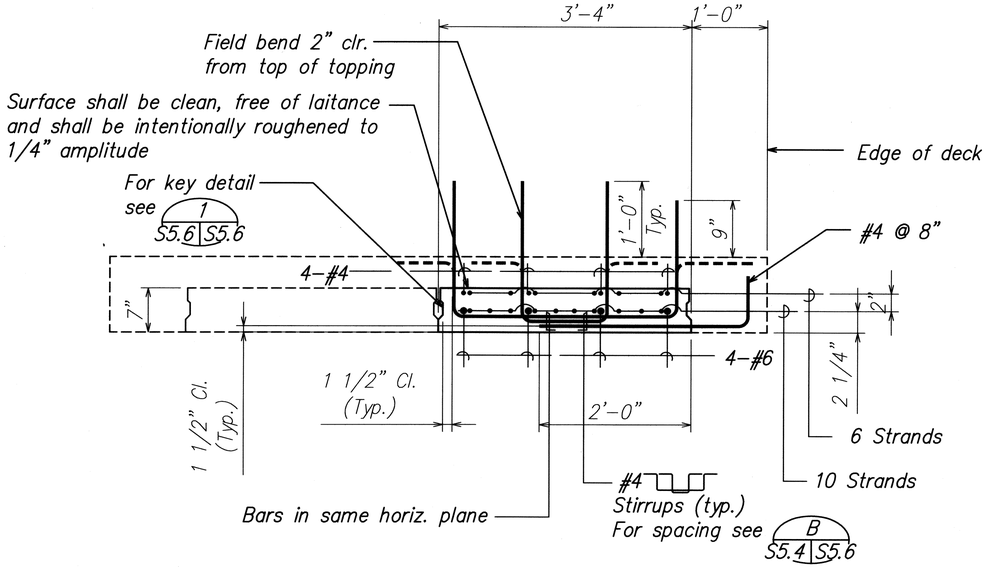
SHEET No. S5.5 OF 131 SHEETS

"AS-BUILT"

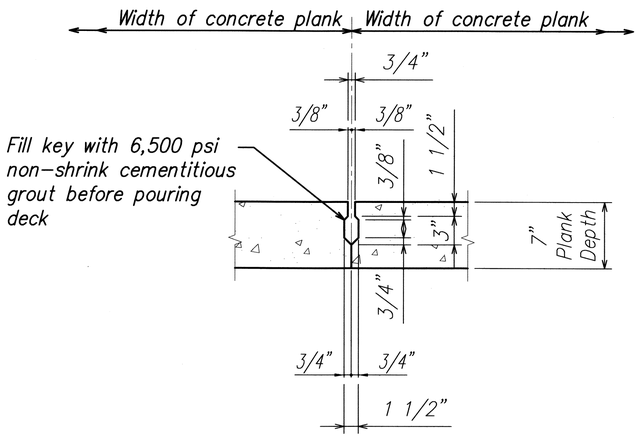
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	163	284



TYPICAL PLANK "C" (A S5.4 | S5.6)
Scale: 1" = 1'-0"



TYPICAL PLANK "D" (B S5.4 | S5.6)
Scale: 1" = 1'-0"



KEY DETAIL (1 S5.6 | S5.6)
Scale: 1 1/2" = 1'-0"

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
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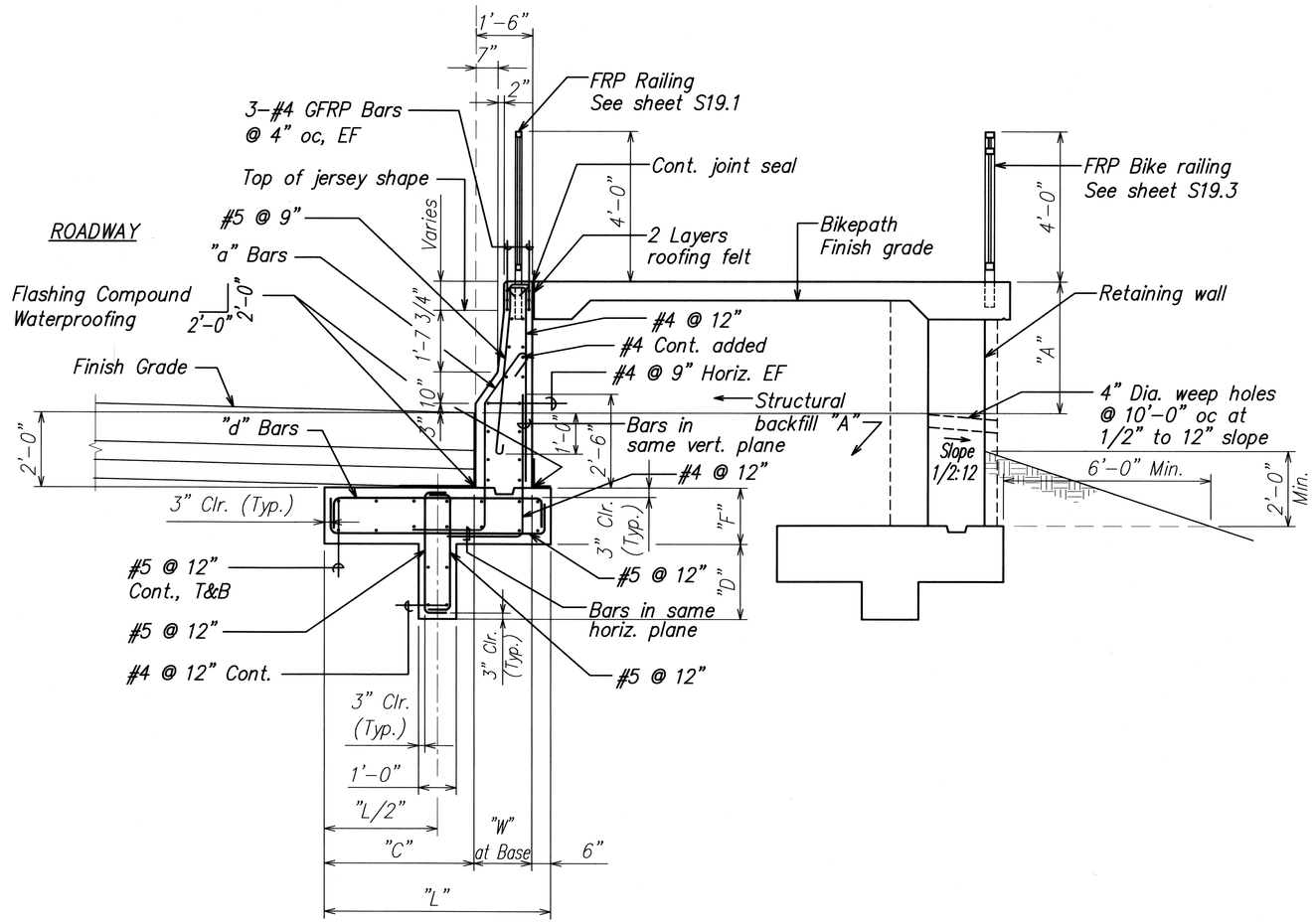
PRECAST PLANK "C" AND "D" SECTIONS AND DETAIL

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S5.6 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	164	284



BARRIER WALLS #1 AND #3 SECTION (A S6.1|S6.1)

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

DIMENSIONS AND REINFORCING STEEL FOR BARRIER WALLS #1 AND #3	
Stem Design Height – "A"	< 2'-0"
Footing Width – "L"	5'-0"
Heel – "C"	3'-0"
Stem Thickness (at Base) – "W"	1'-6"
Footing Depth – "F"	1'-6"
Key Depth – "D"	–
"a" Bars	#5 @ 9"
"d" Bars	#5 @ 9"

DIMENSIONS AND REINFORCING STEEL FOR BARRIER WALL #1	
Stem Design Height – "A"	2'-0" ≤ A ≤ 3'-6"
Footing Width – "L"	6'-0"
Heal – "C"	4'-0"
Stem Thickness (at Base) – "W"	1'-6"
Footing Depth – "F"	1'-6"
Key Depth – "D"	1'-0"
"a" Bars	#5 @ 9"
"d" Bars	#5 @ 9"

Notes:

1. The minimum height of the barrier is 2'-8 3/4". If the bike path finish grade is higher than 2'-8 3/4", the top of barrier elevation shall match bike path finish grade.
2. Expansion joints in bikepath slab shall line up with expansion joints in walls.
3. See Civil plans for wall locations.
4. Key at top of footing to be 2" deep x 1/3 stem width.
5. Concrete barrier wall be considered part of the wall and the cost shall be considered incidental to Section 503 – Concrete for Barrier Wall and Section 602 – Reinforcing Steel for Barrier Wall.
6. See sheet S6.9 and S6.10 for typical wall and footing details.

ORIGINAL PLAN
NOTE BOOK No.
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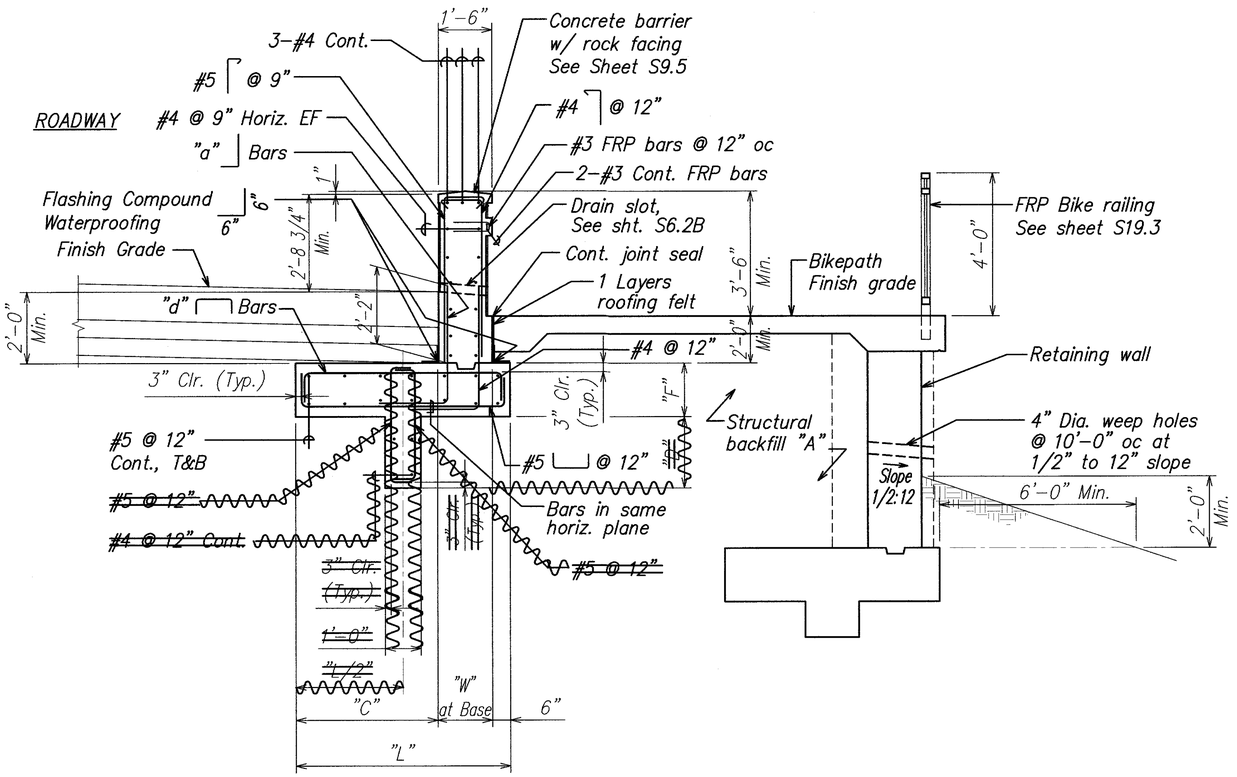
BARRIER WALLS #1 AND #3
SECTION AND DETAIL
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S6.1 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	CO. 165S-1	284

DIMENSIONS AND REINFORCING STEEL FOR BARRIER WALL #3	
Footing Width – "L"	5'-0"
Heel – "C"	3'-0"
Stem Thickness (at Base) – "W"	1'-6"
Footing Depth – "F"	1'-6"
Key Depth – "D"	–
"a" Bars	#5 @ 9"
"d" Bars	#5 @ 9"



BARRIER WALL #3 SECTION (A | S6.2A | S6.2A)

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

Notes:

1. Expansion joints in bikepath slab shall line up with expansion joints in walls.
2. See Civil plans for wall locations.
3. Key at top of footing to be 2" deep x 1/3 stem width.
4. Concrete barrier wall be considered part of the wall and the cost shall be considered incidental to Section 503 – Concrete for Barrier Wall and Section 602 – Reinforcing Steel for Barrier Wall.
5. See sheet S6.9 and S6.20 for typical wall and footing details.

ORIGINAL PLAN | NOTE BOOK | No.

SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

LEGEND FOR AS-BUILT POSTINGS

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Roadway	Text for as-built posting

DATE	REVISION
9/9/10	2 New Sheet

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BARRIER WALL #3 SECTION AND DETAIL

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

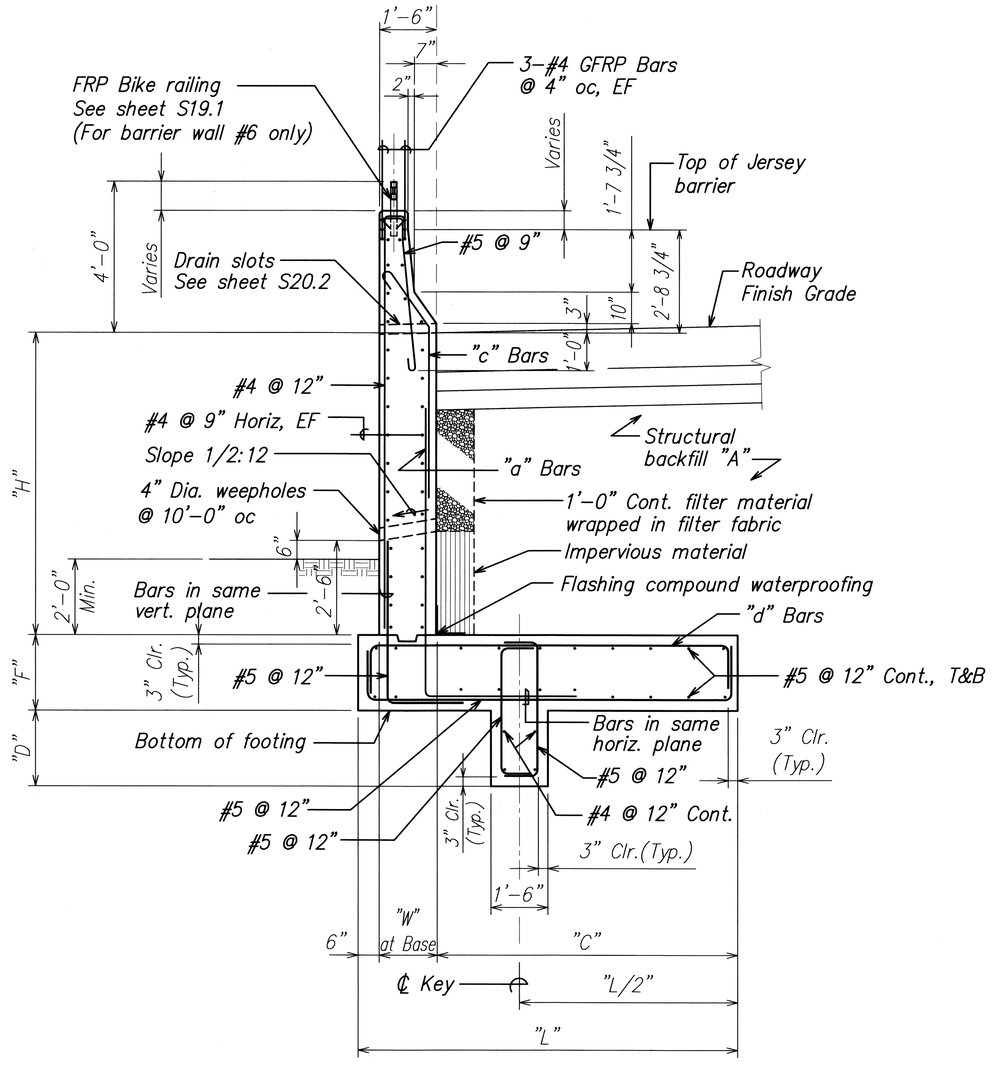
Scale: As Noted Date: May 2008

SHEET No. S6.2A OF 131 SHEETS

"AS-BUILT"

C.O. 165S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	166	284



BARRIER WALLS #4 AND #6 SECTION (A S6.3 | S6.3)

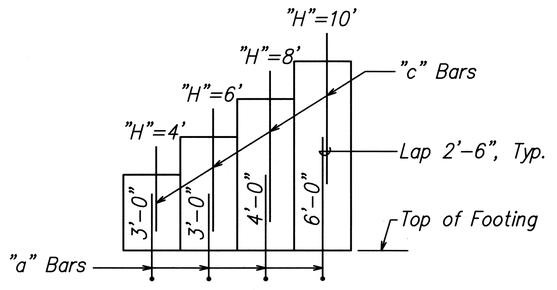
Scale: 1/2" = 1'-0"

DIMENSIONS AND REINFORCING STEEL FOR BARRIER WALLS #4 AND #6

Stem Design Height – "H"	≤ 4'-0"	≤ 6'-0"	≤ 8'-0"	≤ 10'-0"
Footing Width – "L"	5'-0"	6'-0"	7'-0"	8'-6"
Heel – "C"	3'-0"	4'-0"	5'-0"	6'-6"
Stem Thickness (at Base) – "W"	1'-6"	1'-6"	1'-6"	1'-6"
Footing Depth – "F"	1'-6"	1'-6"	1'-6"	1'-6"
Key Depth – "D"	–	0'-6"	1'-0"	2'-0"
"a" Bars	#5 @ 9"	#5 @ 9"	#6 @ 9"	#6 @ 9"
"b" Bars	–	–	–	–
"c" Bars	#5 @ 9"	#5 @ 9"	#5 @ 9"	#5 @ 9"
"d" Bars	#5 @ 9"	#5 @ 9"	#6 @ 12"	#7 @ 12"

Notes:

1. Spacing of "a" bars given in table is at base of stem with repeating placement pattern as indicated.
2. Dimension next to "a" bars indicates distance from top of footing to upper end of bars.
3. Key at top of footing to be 2" deep x 1/3 stem width.
4. See Civil plans for wall locations.
5. Concrete barrier shall be considered part of the wall and the cost shall be considered incidental to Section 503 – Concrete for Barrier Wall and Section 602 – Reinforcing Steel for Barrier Wall.
6. See sheets S6.9 and S6.10 for typical wall and footing details.



VERTICAL REINFORCING STEEL ARRANGEMENT (B S6.3 | S6.3)

Not to scale

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

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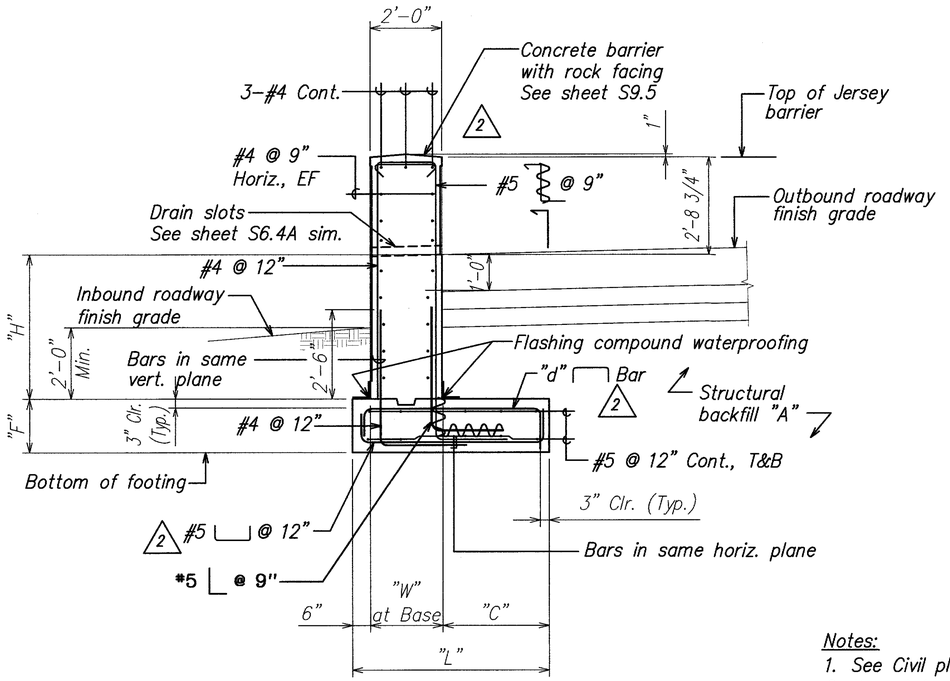
BARRIER WALLS #4 AND #6
SECTION AND DETAIL
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S6.3 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 167	284



BARRIER WALL #5 SECTION (A S6.4 | S6.4)
Scale: 1/2" = 1'-0"

DIMENSIONS AND REINFORCING STEEL FOR BARRIER WALL #5	
Stem Design Height – "H"	≤ 4'-3"
Footing Width – "L"	5'-0"
Heel – "C"	2'-6"
Stem Thickness (at Base) – "W"	2'-0'
Footing Depth – "F"	1'-6"
Key Depth – "D"	–
"a" Bars	–
"b" Bars	–
"c" Bars	–
"d" Bars	#5 @ 9"

Notes:
1. See Civil plans for wall location.
2. Key at top of footing to be 2" deep x 1/3 stem width.
3. Concrete barrier shall be considered part of the wall and the cost shall be considered incidental to Section 503 – Concrete for Barrier Wall and Section 602 – Reinforcing Steel for Barrier Wall.
4. See sheets S6.9 and S6.10 for typical wall and footing details.

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

DATE	REVISION
6/17/10	2 Revised Drawing

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

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HIGHWAYS DIVISION

BARRIER WALL #5
SECTION AND DETAIL

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

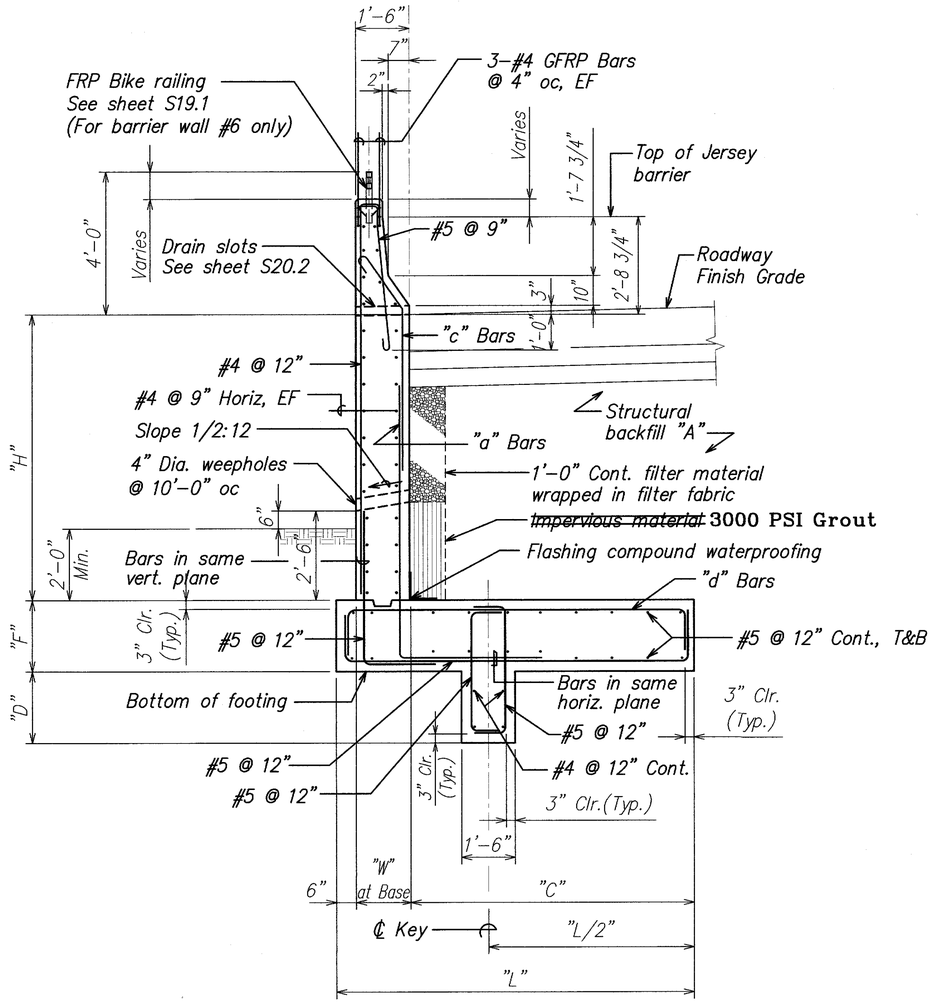
Scale: As Noted Date: May 2008

SHEET No. S6.4 OF 131 SHEETS

"AS-BUILT"

C.O. 167

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 167S-2	284



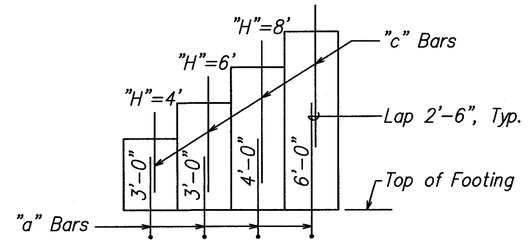
BARRIER WALL #6 SECTION (A S6.3|S6.3)
Scale: 1/2" = 1'-0"

DIMENSIONS AND REINFORCING STEEL FOR BARRIER WALL #6

Stem Design Height – "H"	≤ 4'-0"	≤ 6'-0"	≤ 8'-0"	≤ 10'-0"
Footing Width – "L"	5'-0"	6'-0"	7'-0"	8'-6"
Heel – "C"	3'-0"	4'-0"	5'-0"	6'-6"
Stem Thickness (at Base) – "W"	1'-6"	1'-6"	1'-6"	1'-6"
Footing Depth – "F"	1'-6"	1'-6"	1'-6"	1'-6"
Key Depth – "D"	–	0'-6"	1'-0"	2'-0"
"a" Bars	#5 @ 9"	#5 @ 9"	#6 @ 9"	#6 @ 9"
"b" Bars	–	–	–	–
"c" Bars	#5 @ 9"	#5 @ 9"	#5 @ 9"	#5 @ 9"
"d" Bars	#5 @ 9"	#5 @ 9"	#6 @ 12"	#7 @ 12"

Notes:

1. Spacing of "a" bars given in table is at base of stem with repeating placement pattern as indicated.
2. Dimension next to "a" bars indicates distance from top of footing to upper end of bars.
3. Key at top of footing to be 2" deep x 1/3 stem width.
4. See Civil plans for wall locations.
5. Concrete barrier shall be considered part of the wall and the cost shall be considered incidental to Section 503 – Concrete for Barrier Wall and Section 602 – Reinforcing Steel for Barrier Wall.
6. See sheets S6.9 and S6.10 for typical wall and footing details.



VERTICAL REINFORCING STEEL ARRANGEMENT (B S6.3|S6.3)
Not to scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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Roadway	Text for as-built posting

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4-30-10
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DATE	REVISION
6/17/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BARRIER WALL #6
SECTION AND DETAIL
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

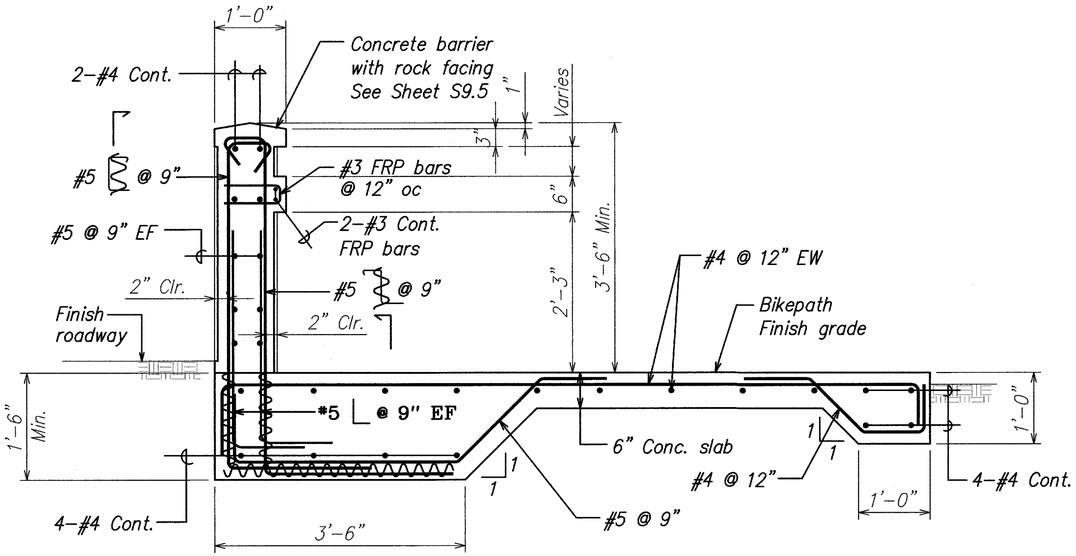
Scale: As Noted Date: May 2008

SHEET No. S6.4B OF 131 SHEETS

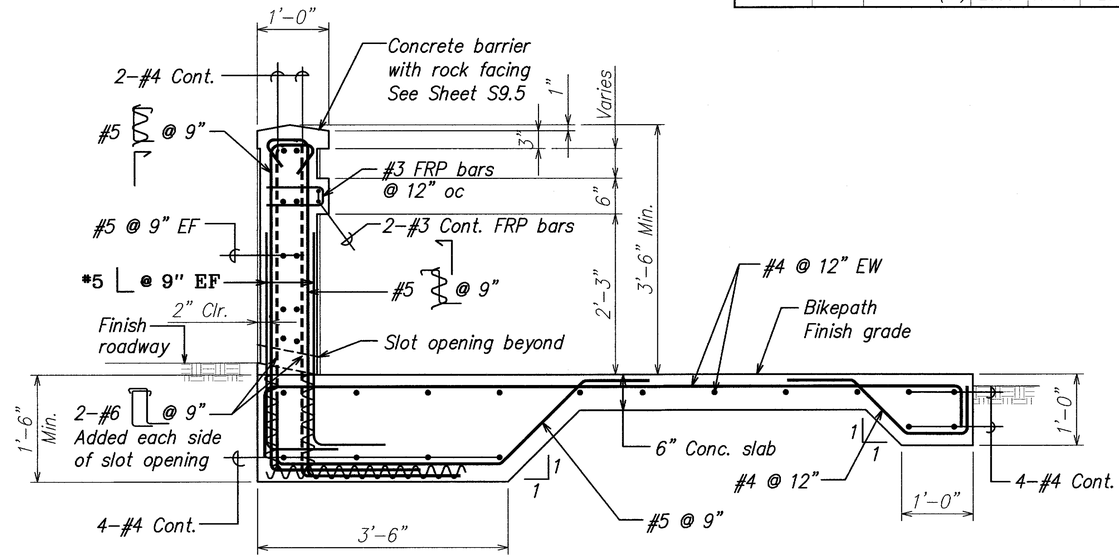
"AS-BUILT"

C.O. 167S-2

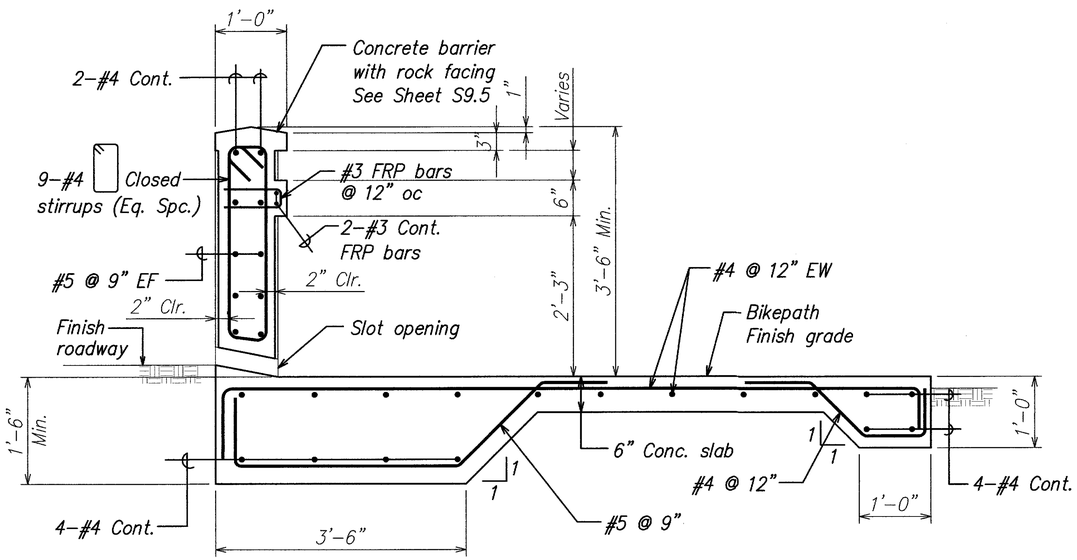
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 167S-4	284



SECTION A
Scale: 1" = 1'-0" S6.4C | S6.4D



SECTION B
Scale: 1" = 1'-0" S6.4C | S6.4D



SECTION C
Scale: 1" = 1'-0" S6.4C | S6.4D

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

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Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

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NO. 8104-S
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BARRIER WALL #7

SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

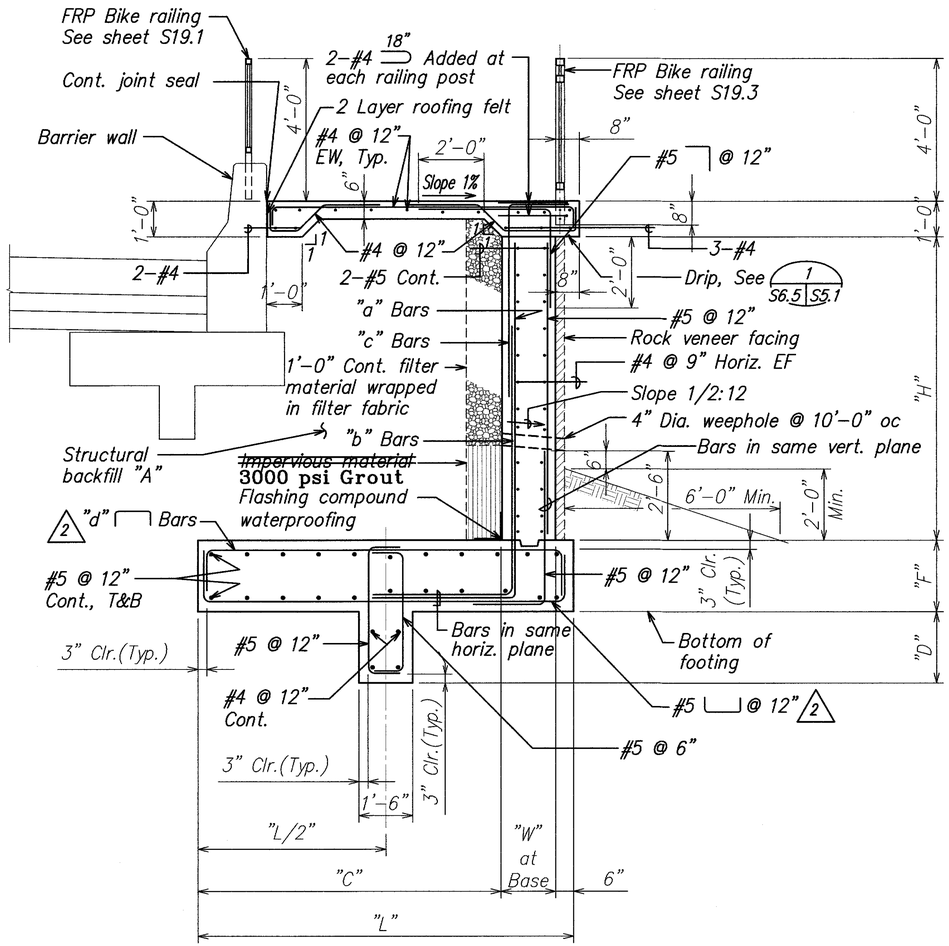
Scale: As Noted Date: May 2008

SHEET No. S6.4D OF 131 SHEETS

"AS-BUILT"

C.O. 167S-4

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 168	284



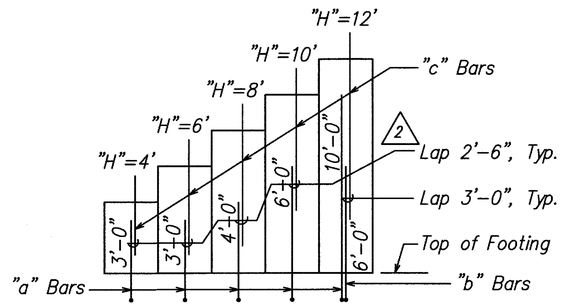
2 RETAINING WALL #1 SECTION A S6.5 S6.5
Scale: 1/2" = 1'-0"

DIMENSIONS AND REINFORCING STEEL 2 FOR RETAINING WALL #1

Stem Design Height – "H"	≤ 4'-0"	≤ 6'-0"	≤ 8'-0"	≤ 10'-0"	≤ 12'-0"
Footing Width – "L"	5'-0"	6-0"	8'-0"	9'-6"	11'-6"
Heel – "C"	3'-6"	4'-6"	6'-0"	7'-6"	9'-6"
Stem Thickness (at Base) – "W"	1'-0"	1'-0"	1'-6"	1'-6"	1'-6"
Footing Depth – "F"	1'-0"	1'-6"	1'-6"	2'-0"	2'-0"
Key Depth – "D"	0'-6"	1'-6"	1'-6"	2'-0"	2'-6"
"a" Bars	#5 @ 12"	#6 @ 12"	#6 @ 9"	#6 @ 9"	#7 @ 18"
"b" Bars	–	–	–	–	#7 @ 18"
"c" Bars	#5 @ 12"	#5 @ 12"	#5 @ 9"	#5 @ 9"	#5 @ 9"
"d" Bars	#5 @ 12"	#6 @ 12"	#6 @ 12"	#7 @ 12"	#7 @ 12"

Notes:

1. Spacing of "a" bars and "b" bars given in table is at base of stem with repeating placement pattern as indicated.
2. Dimension next to "a" and "b" bars indicates distance from top of footing to upper end of bars.
3. Key at top of footing to be 2" deep x 1/3 stem width.
4. See Civil plans for all locations.
5. Expansion joints in bikepath slab shall line up with expansion joints in walls.
6. See sheets S6.9 and S6.10 for typical wall and footing details.



VERTICAL REINFORCING STEEL ARRANGEMENT B S6.5 S6.5
Not to scale

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

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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DATE	REVISION
6/17/10	2 Revised Titles

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL #1 2

SECTION AND DETAIL

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

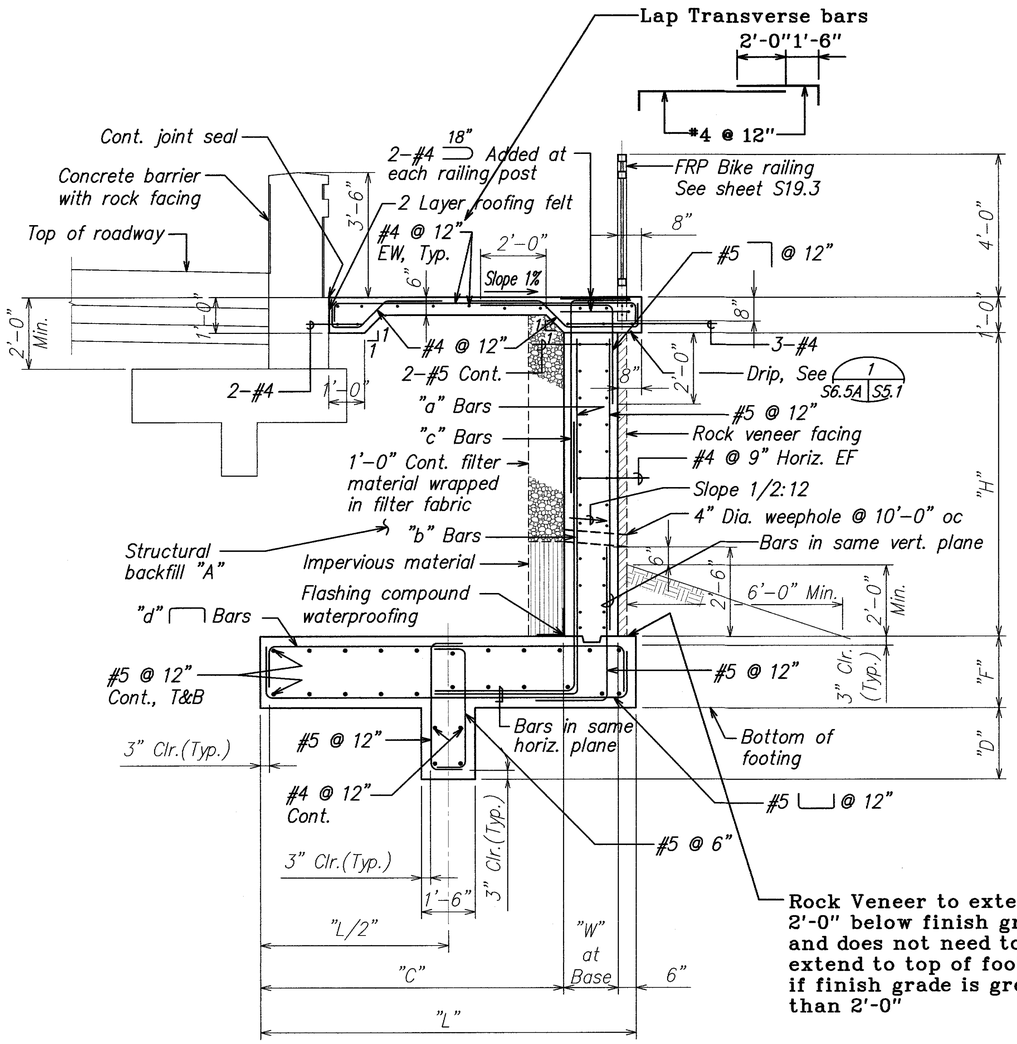
Scale: As Noted Date: May 2008

SHEET No. S6.5 OF 131 SHEETS

"AS-BUILT"

C.O. 168

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 168S-1	284



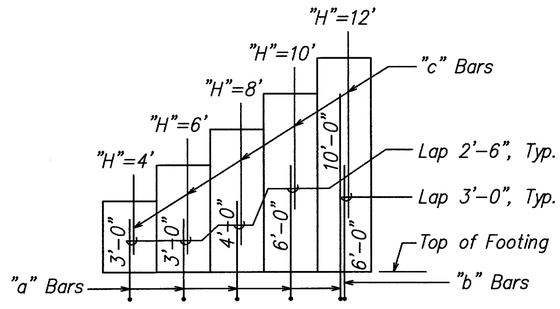
RETAINING WALL #2 SECTION A S6.5A | S6.5A
Scale: 1/2" = 1'-0"

DIMENSIONS AND REINFORCING STEEL FOR RETAINING WALL #2

Stem Design Height – "H"	≤ 4'-0"	≤ 6'-0"	≤ 8'-0"	≤ 10'-0"	≤ 12'-0"
Footing Width – "L"	5'-0"	6-0"	8'-0"	9'-6"	11'-6"
Heel – "C"	3'-6"	4'-6"	6'-0"	7'-6"	9'-6"
Stem Thickness (at Base) – "W"	1'-0"	1'-0"	1'-6"	1'-6"	1'-6"
Footing Depth – "F"	1'-0"	1'-6"	1'-6"	2'-0"	2'-0"
Key Depth – "D"	0'-6"	1'-6"	1'-6"	2'-0"	2'-6"
"a" Bars	#5 @ 12"	#6 @ 12"	#6 @ 9"	#6 @ 9"	#7 @ 18"
"b" Bars	–	–	–	–	#7 @ 18"
"c" Bars	#5 @ 12"	#5 @ 12"	#5 @ 9"	#5 @ 9"	#5 @ 9"
"d" Bars	#5 @ 12"	#6 @ 12"	#6 @ 12"	#7 @ 12"	#7 @ 12"

Notes:

1. Spacing of "a" bars and "b" bars given in table is at base of stem with repeating placement pattern as indicated.
2. Dimension next to "a" and "b" bars indicates distance from top of footing to upper end of bars.
3. Key at top of footing to be 2" deep x 1/3 stem width.
4. See Civil plans for all locations.
5. Expansion joints in bikepath slab shall line up with expansion joints in walls.
6. See sheets S6.9 and S6.10 for typical wall and footing details.



VERTICAL REINFORCING STEEL ARRANGEMENT B S6.5A | S6.5A
Not to scale

ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
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Roadway	Text for as-built posting

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DATE	REVISION
6/17/10	2 New Sheet

RETAINING WALL #2
SECTION AND DETAIL
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

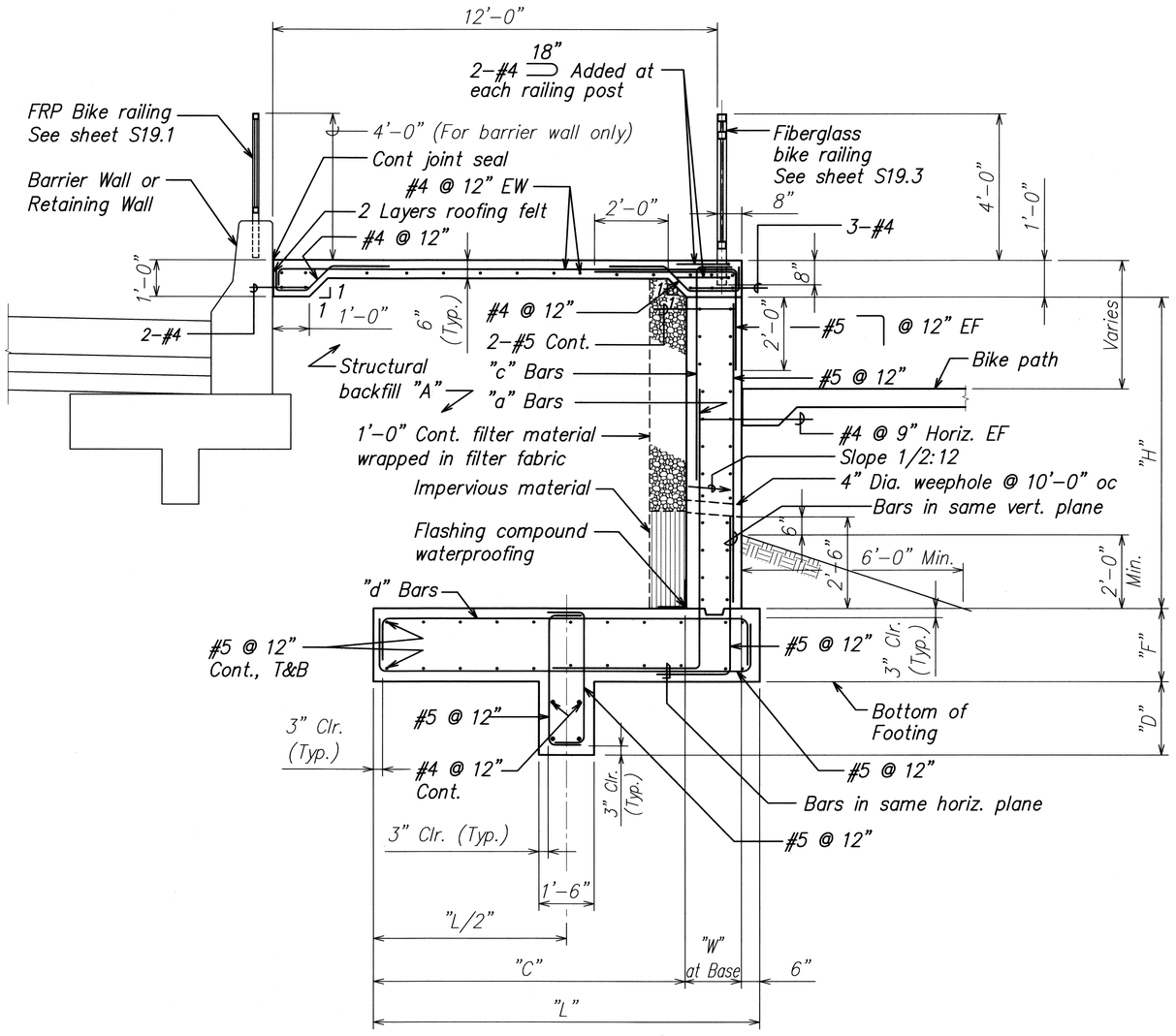
Scale: As Noted Date: May 2008

SHEET No. S6.5A OF 131 SHEETS

"AS-BUILT"

C.O. 168S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	169	284



RETAINING WALLS #3 AND #5 SECTION (A S6.6|S6.6)

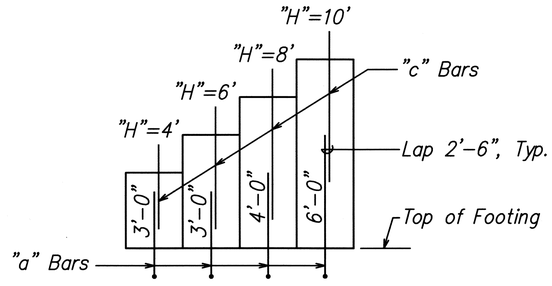
Scale: 1/2" = 1'-0"

DIMENSIONS AND REINFORCING STEEL FOR RETAINING WALLS #3 AND #5

Stem Design Height – "H"	≤ 4'-0"	≤ 6'-0"	≤ 8'-0"	≤ 10'-0"
Footing Width – "L"	5'-0"	6-0"	8'-0"	9'-6"
Heel – "C"	3'-6"	4'-6"	6'-0"	7'-6"
Stem Thickness (at Base) – "W"	1'-0"	1'-0"	1'-6"	1'-6"
Footing Depth – "F"	1'-0"	1'-6"	1'-6"	2'-0"
Key Depth – "D"	0'-6"	1'-6"	1'-6"	2'-0"
"a" Bars	#5 @ 12"	#6 @ 12"	#6 @ 9"	#6 @ 9"
"b" Bars	–	–	–	–
"c" Bars	#5 @ 12"	#5 @ 12"	#5 @ 9"	#5 @ 9"
"d" Bars	#5 @ 12"	#6 @ 12"	#6 @ 12"	#7 @ 12"

Notes:

1. Spacing of "a" bars given in table is at base of stem with repeating placement pattern as indicated.
2. Dimension next to "a" bar indicates distance from top of footing to upper end of bars.
3. Key at top of footing to be 2" deep x 1/3 stem width.
4. See Civil plans for wall locations.
5. Expansion joints in bikepath slab shall line up with expansion joints in walls.
6. See sheets S6.9 and S6.10 for typical wall and footing details.



VERTICAL REINFORCING STEEL ARRANGEMENT (B S6.6|S6.6)

Not to scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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STATE OF HAWAII
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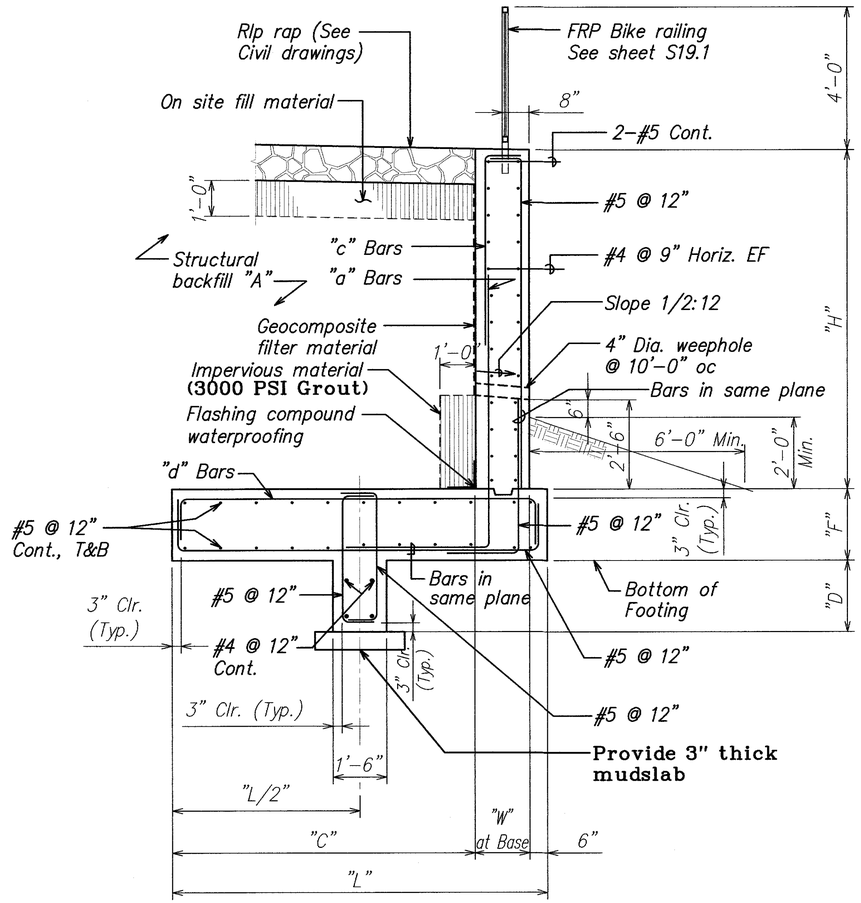
HIGHWAYS DIVISION

RETAINING WALLS #3 AND #5
SECTION AND DETAIL
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S6.6 OF 131 SHEETS

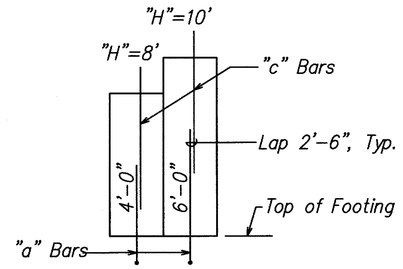
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	170	284



RETAINING WALL #6 SECTION (A S6.7|S6.7)
Scale: 1/2" = 1'-0"

DIMENSIONS AND REINFORCING STEEL FOR RETAINING WALL #6		
Stem Design Height – "H"	≤ 8'-0"	≤ 10'-0"
Footing Width – "L"	8'-0"	9'-6"
Heel – "C"	6'-0"	7'-6"
Stem Thickness (at Base) – "W"	1'-6"	1'-6"
Footing Depth – "F"	1'-6"	2'-0"
Key Depth – "D"	1'-6"	~~2'-0"~~ 1'-3"
"a" Bars	#6 @ 9"	#6 @ 9"
"b" Bars	–	–
"c" Bars	#5 @ 9"	#5 @ 9"
"d" Bars	#6 @ 12"	#7 @ 12"

Notes:
1. Spacing of "a" bars given in table is at base of stem with repeating placement pattern as indicated.
2. Dimension next to "a" bars indicates distance from top of footing to upper end of bars.
3. Key at top of footing to be 2" deep x 1/3 stem width.
4. See Civil plans for wall locations.
5. See sheets S6.9 and S6.10 for typical wall and footing details.



VERTICAL REINFORCING STEEL ARRANGEMENT (B S6.7|S6.7)
Not to scale

Note:
See Civil plans for wall locations.

EUCON 37 Superplasticizer is acceptable for retaining wall #6 only.

ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
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Roadway	Text for as-built posting

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL #6
SECTION AND DETAIL

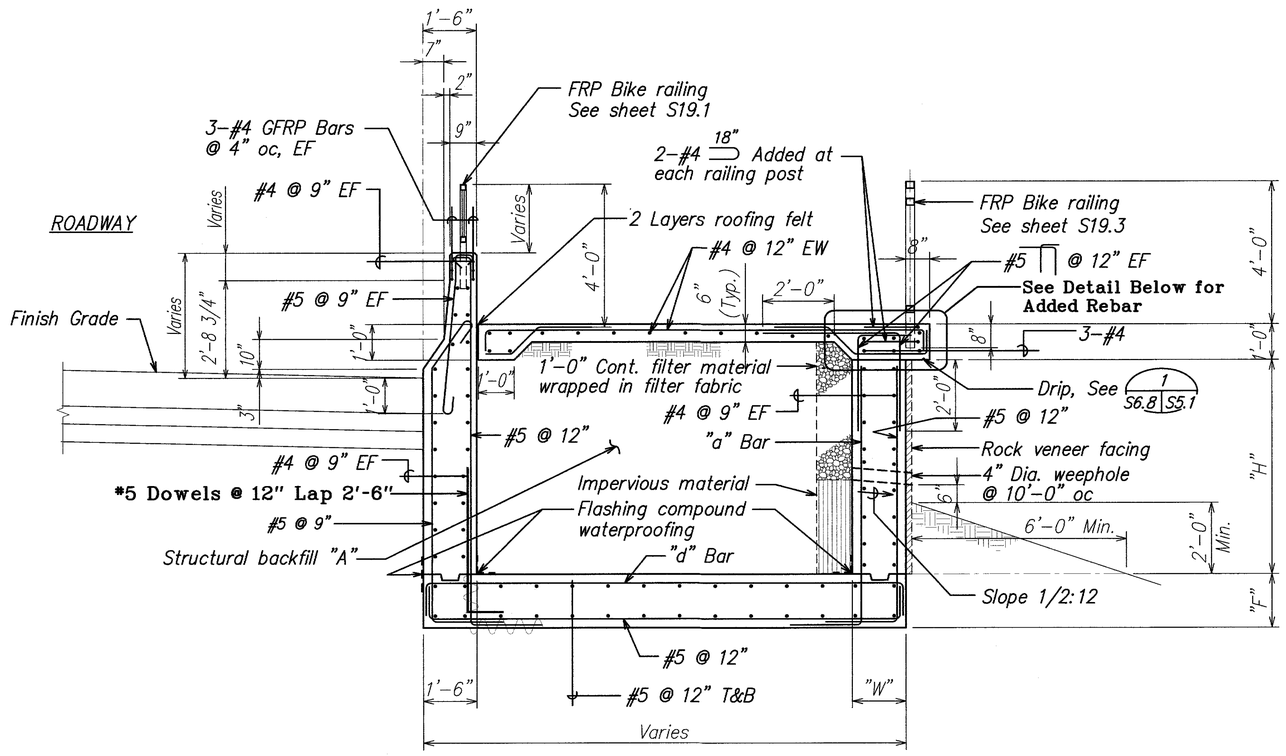
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S6.7 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	171	284



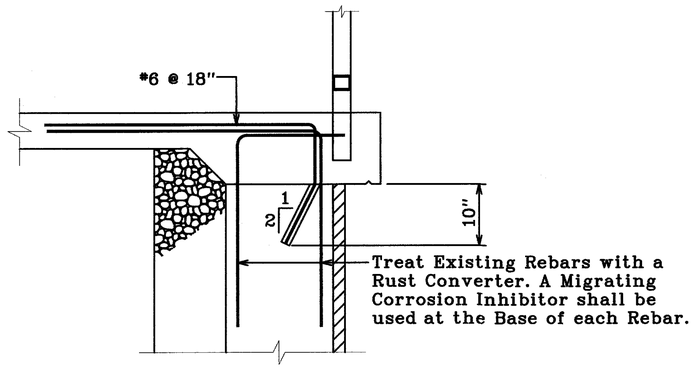
BARRIER AND RETAINING COMBINATION WALL SECTION (A S6.8 | S6.8)

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

DIMENSIONS AND REINFORCING STEEL FOR COMBINATION WALL				
Stem Design Height – "H"	≤ 4'-0"	≤ 6'-0"	≤ 8'-0"	≤ 10'-0"
Stem Thickness (at Base) – "W"	1'-0"	1'-0"	1'-6"	1'-6"
Footing Depth – "F"	1'-0"	1'-6"	1'-6"	2'-0"
"a" Bars	#5 @ 12"	#6 @ 12"	#6 @ 9"	#6 @ 9"
"d" Bars	#5 @ 12"	#6 @ 12"	#6 @ 12"	#7 @ 12"

Notes:

1. The minimum height of the barrier is 2'-8 3/4". If the bike path finish grade is higher than 2'-8 3/4", the top of barrier elevation shall match bike path finish grade.
2. Expansion joints in bikepath slab shall line up with expansion joints in walls. In addition an expansion joint shall be located at the ends of the barrier and retaining combination wall.
3. See Civil plans for wall locations.
4. Key at top of footing to be 2" deep x 1/3 stem width.
5. Concrete barrier wall be considered part of the wall and the cost shall be considered incidental to Section 503 – Concrete for Combination Wall and Section 602 – Reinforcing Steel for Combination Wall.
6. See sheets S6.9 and S6.10 for typical wall and footing details.



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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BARRIER AND RETAINING WALL #1

COMBINATION SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S6.8 OF 131 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
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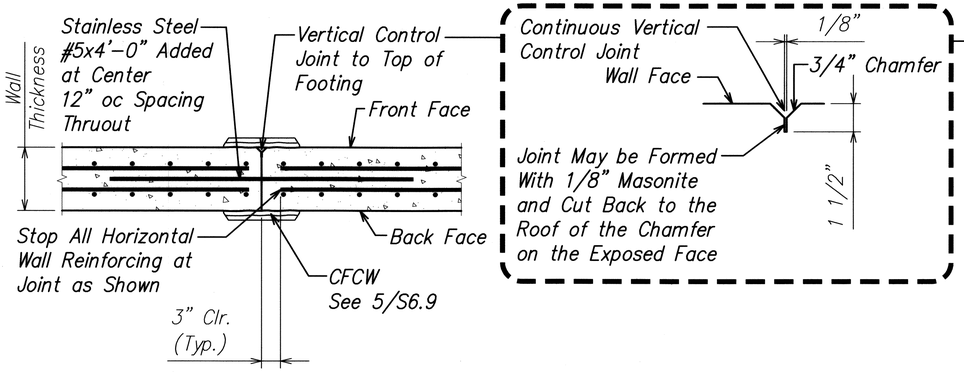
"AS-BUILT"

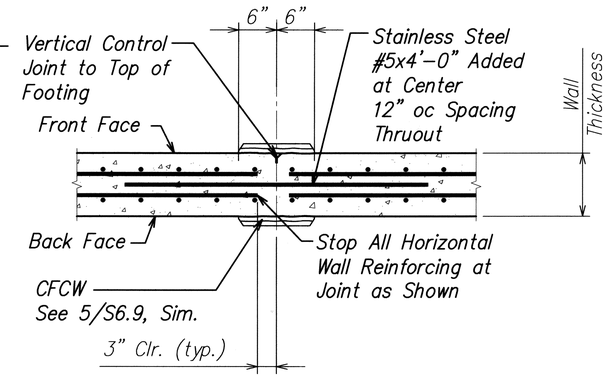
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	172	284



DOUBLE CURTAIN

CONSTRUCTION JOINT AT CONTROL JOINT LOCATION (1 S6.9 S6.9)

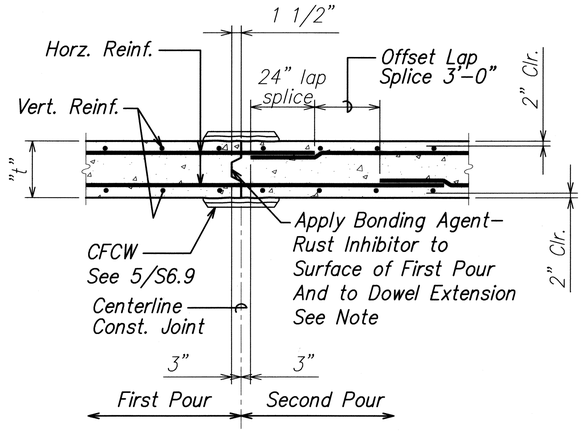
Scale: 1" = 1'-0"



DOUBLE CURTAIN

TYPICAL WALL VERTICAL CONTROL JOINT DETAIL (2 S6.9 S6.9)

Scale: 1" = 1'-0"

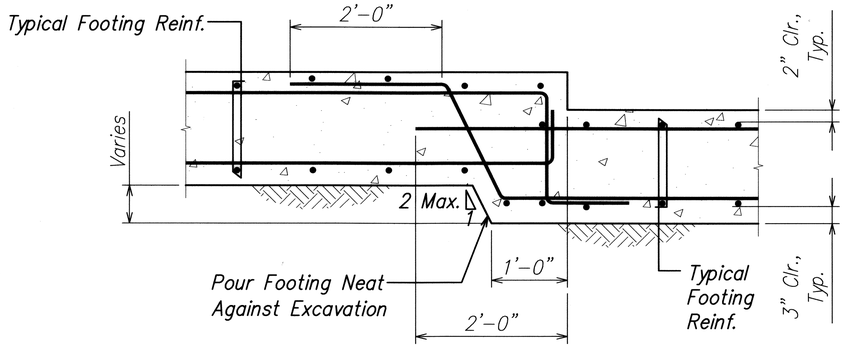


DOUBLE CURTAIN

Note: Use 1 1/2" Deep X "t"/3 Keys.

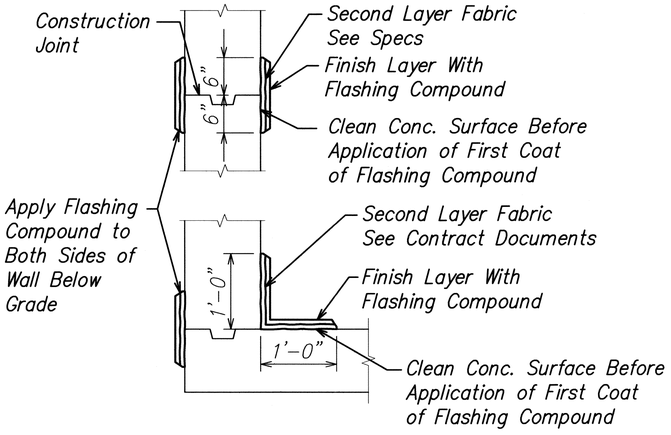
TYPICAL WALL VERTICAL CONSTRUCTION JOINT DETAIL (3 S6.9 S6.9)

Scale: 1" = 1'-0"



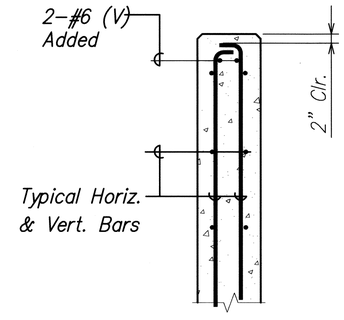
TYPICAL WALL STEP FOOTING DETAIL (4 S6.9 S6.9)

Scale: 1" = 1'-0"



TYP. CONTINUOUS FLASHING COMPOUND WATERPROOFING (CFCW) DETAILS) (5 S6.9 S6.9)

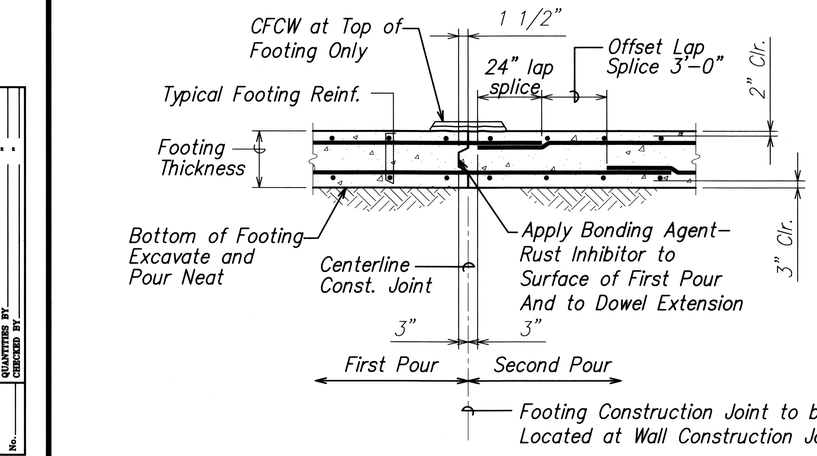
Scale: 1" = 1'-0"



DOUBLE CURTAIN

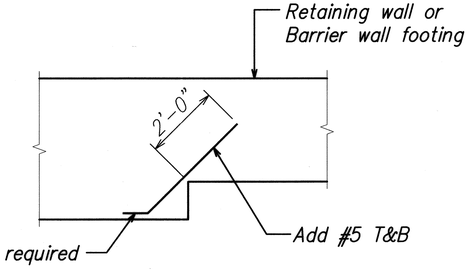
CONCRETE WALL ENDS (6 S6.9 S6.9)

Scale: 1" = 1'-0"



TYPICAL FOOTING CONSTRUCTION JOINT DETAIL (7 S6.9 S6.9)

Scale: 1" = 1'-0"



TYPICAL FOOTING CORNER PLAN DETAIL

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

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David K. Fujiwara 4-30-10
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

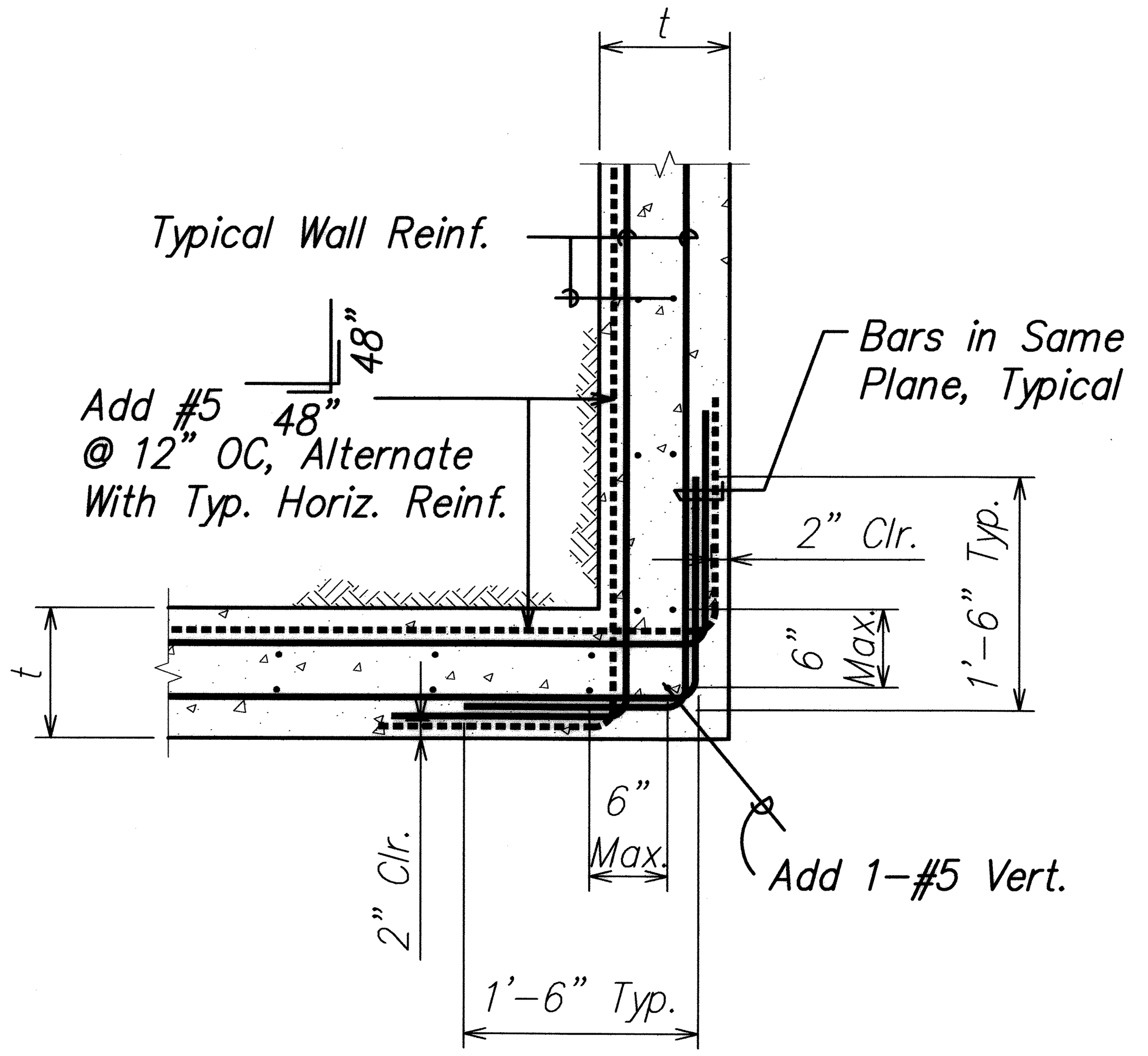
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: Date: May 2008

SHEET No. S6.9 OF 131 SHEETS

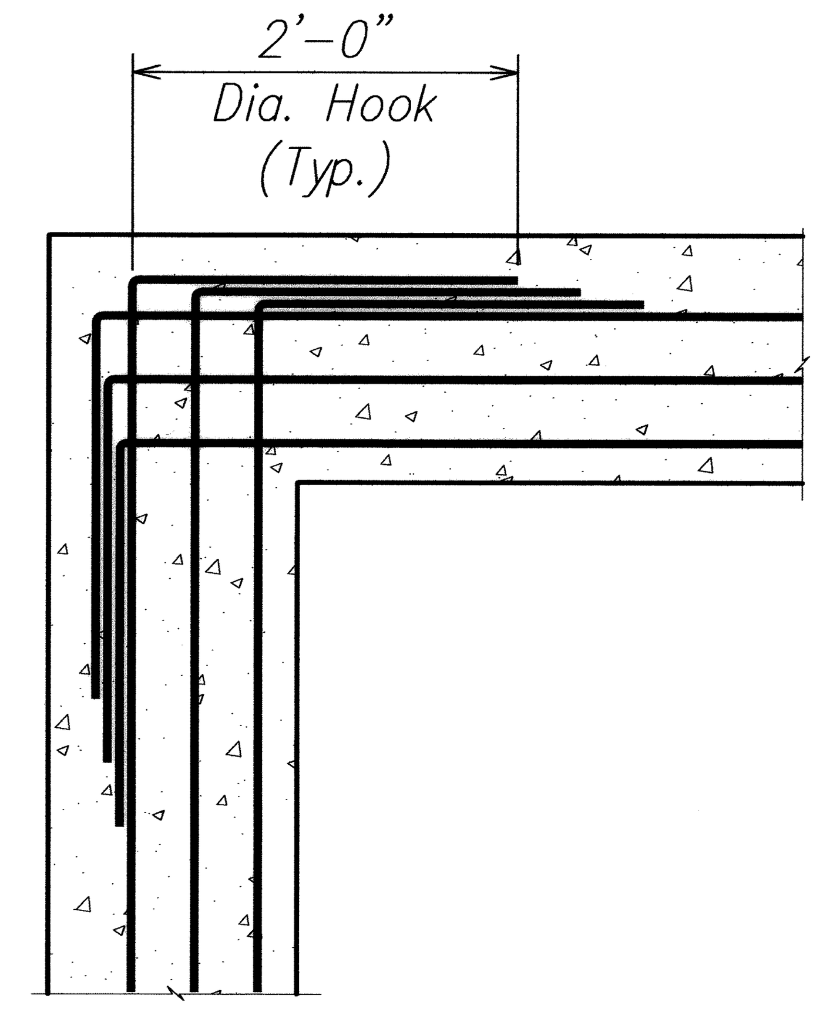
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NOTE BOOK | No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	173	284



TYP. WALL CORNER REINFORCEMENT LAPPING (DOUBLE CURTAIN) 1 S6.10 | S6.10

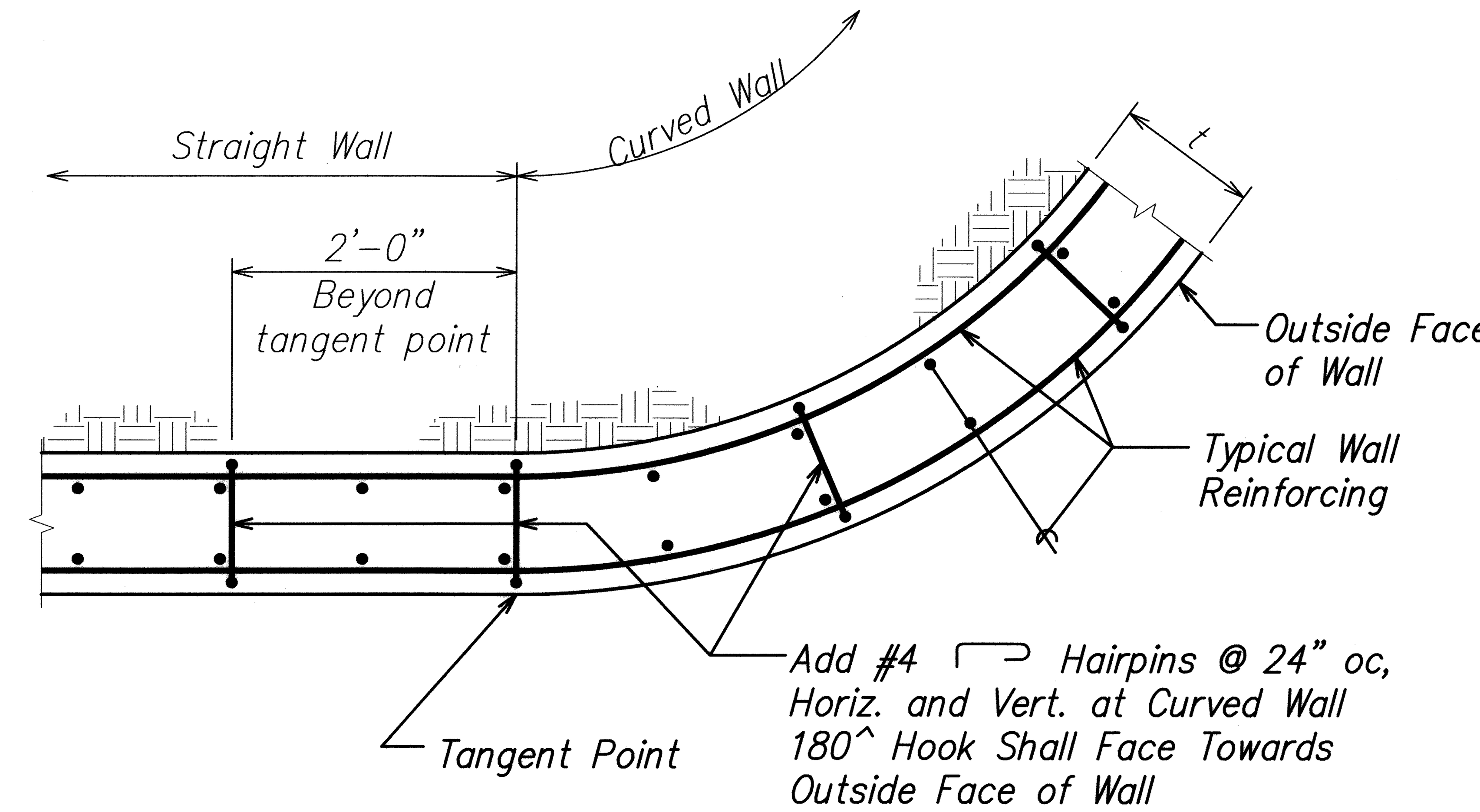
Scale: 1" = 1'-0"



AT CORNERS

TYPICAL WALL FOOTING DETAIL 2 S6.10 | S6.10

Scale: 1" = 1'-0"

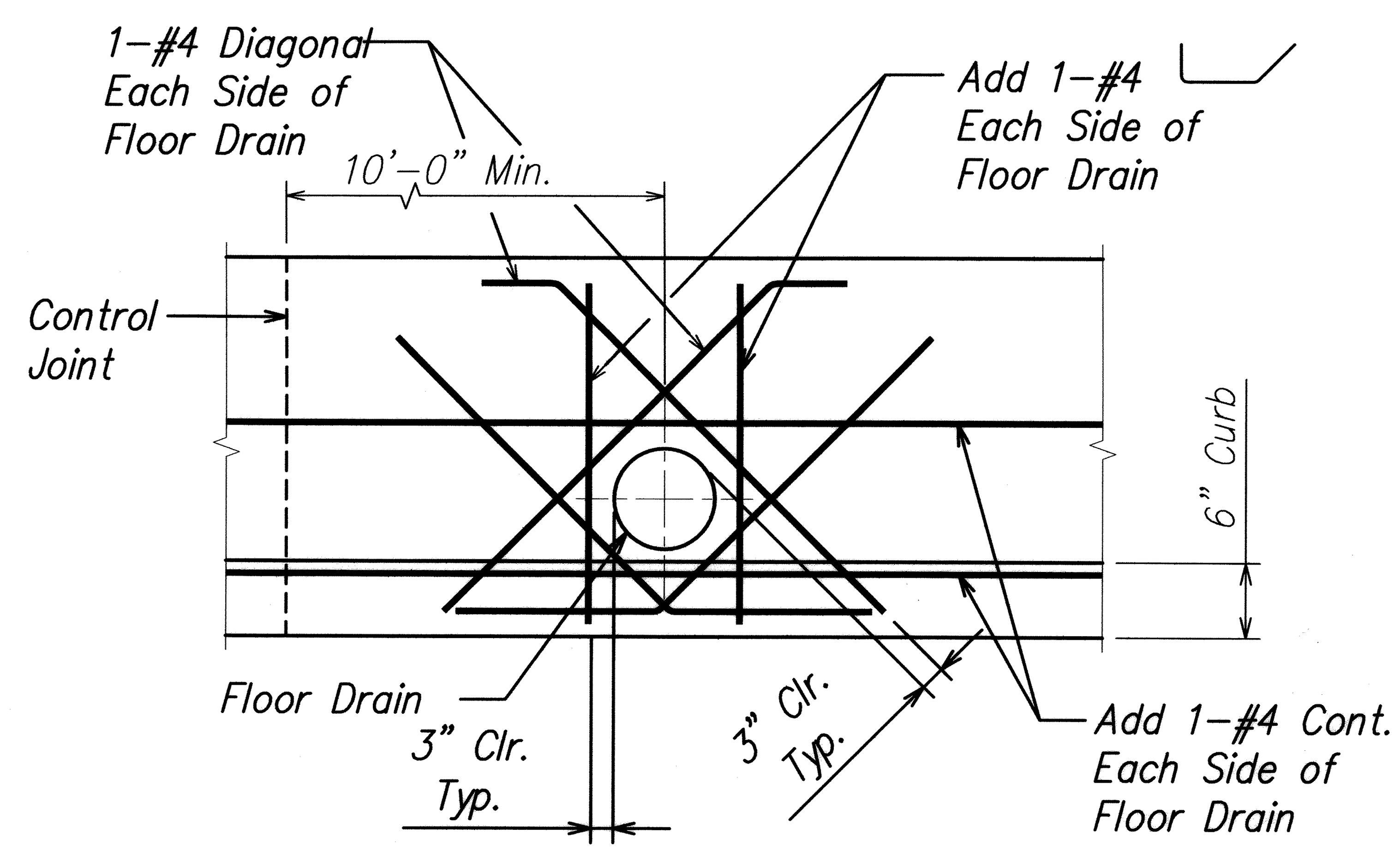


ADDED REINFORCING AT CURVED WALL 3 S6.10 | S6.10

Scale: 1" = 1'-0"

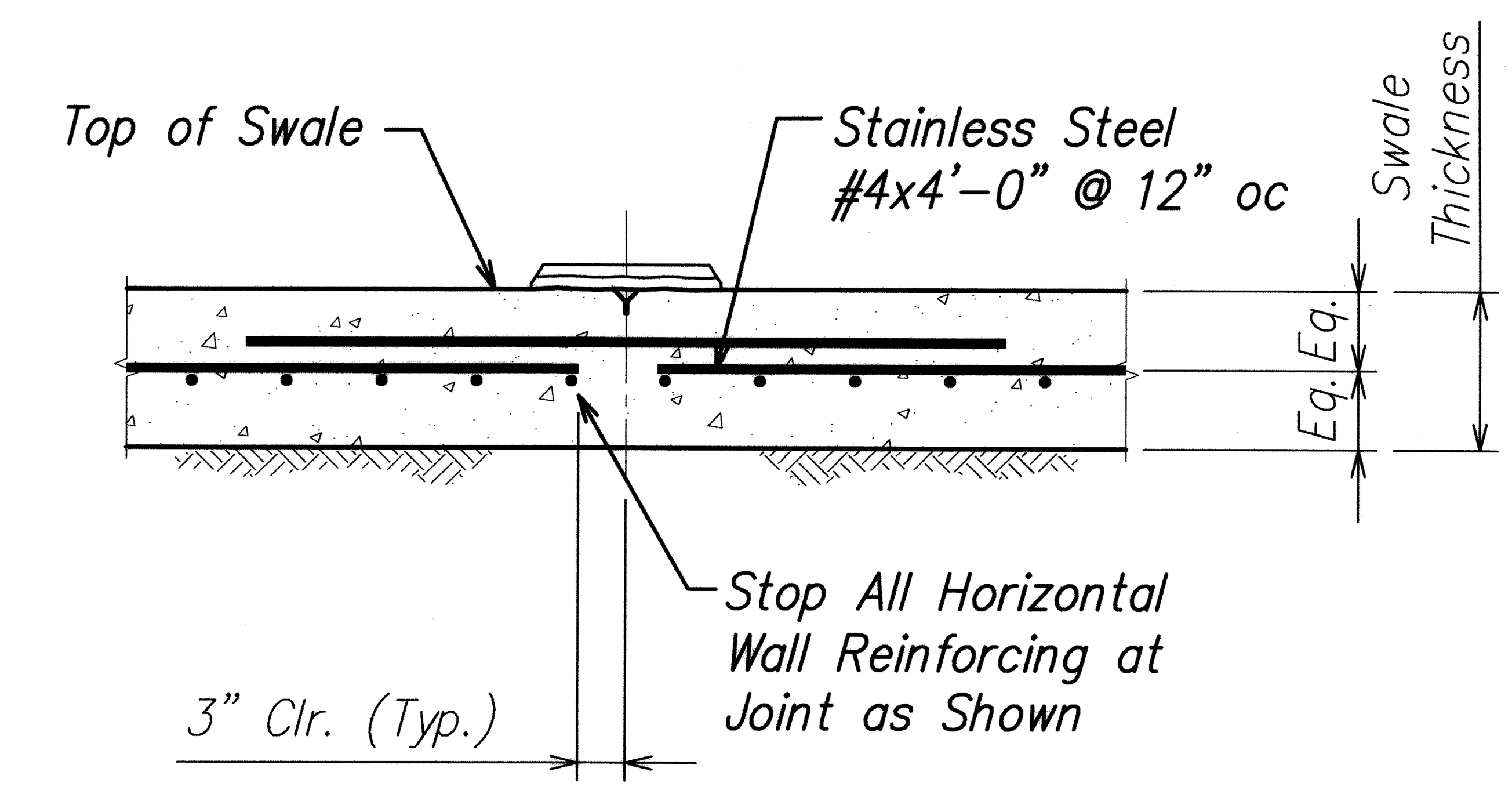
Lap Length of Vert. Reinf. in Wall	
Bar Size	L
#4	2'-0"
#5	2'-6"
#6	3'-0"
#7	4'-6"
#8	5'-2"
#9	5'-10"

Unless Otherwise Noted



ADDED REINFORCING AT FLOOR DRAIN WITHIN SWALE 4 S6.10 | S6.10

Scale: 1" = 1'-0"



TYPICAL SWALE CONTROL JOINT DETAIL 5 S6.10 | S6.10

Scale: 1" = 1'-0"

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

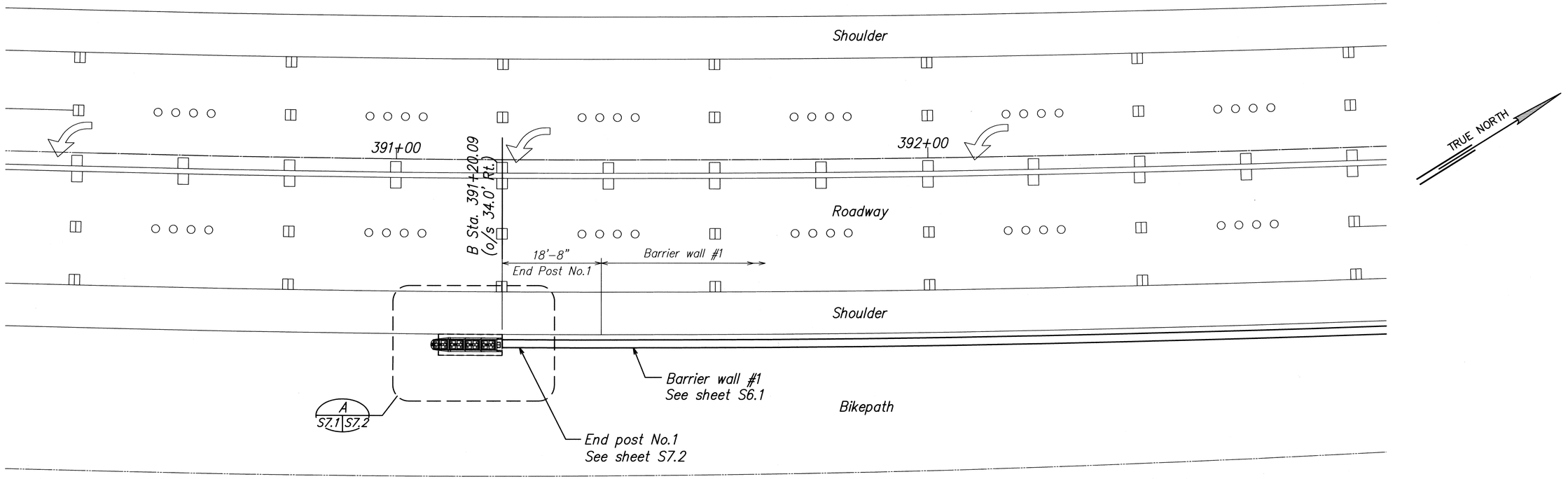
TYPICAL DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: Date: May 2008

SHEET No. S6.10 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	174	284



END POST NO.1 PLAN

SCALE: 1" = 10'

ORIGINAL PLAN

NOTE BOOK No.

SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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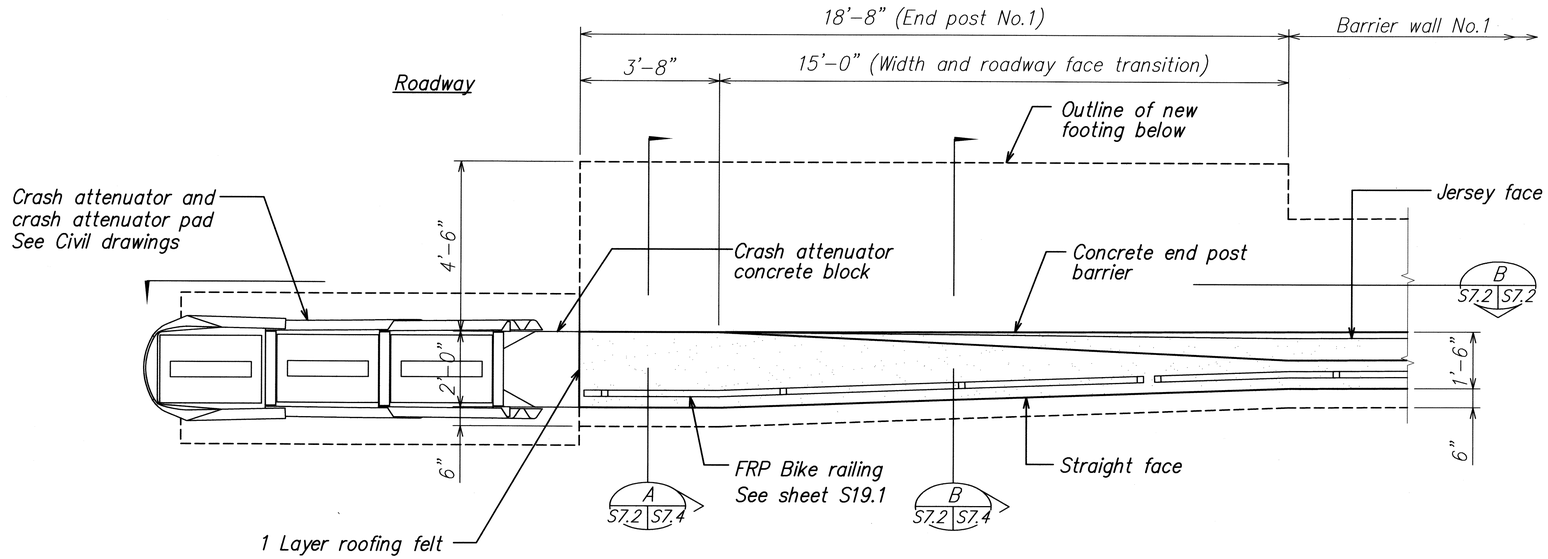
END POST NO.1 PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

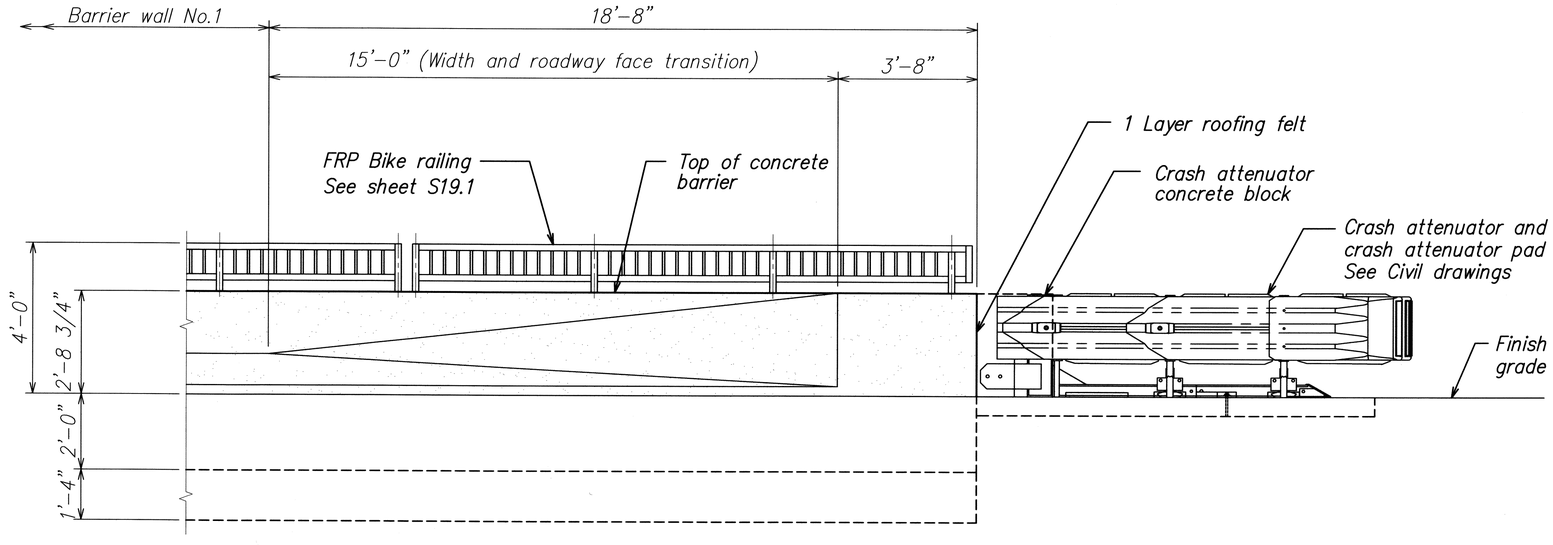
Scale: As Noted Date: May 2008

SHEET No. S7.1 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	175	284



END POST NO.1 PLAN (A S7.1 S7.2)
Scale: 1/2" = 1'-0"



END POST NO.1 ELEVATION (B S7.2 S7.2)
Scale: 1/2" = 1'-0"

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

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

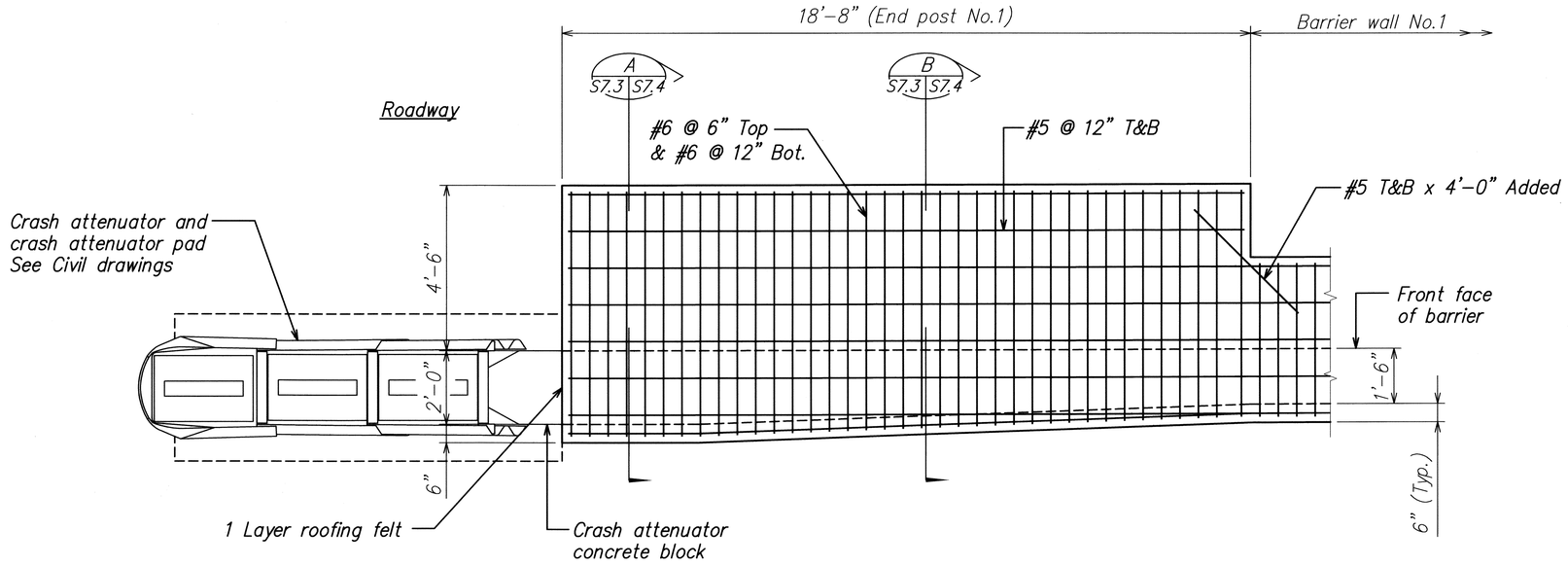
END POST NO.1 PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S7.2 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	176	284



END POST NO.1 FOUNDATION PLAN

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

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

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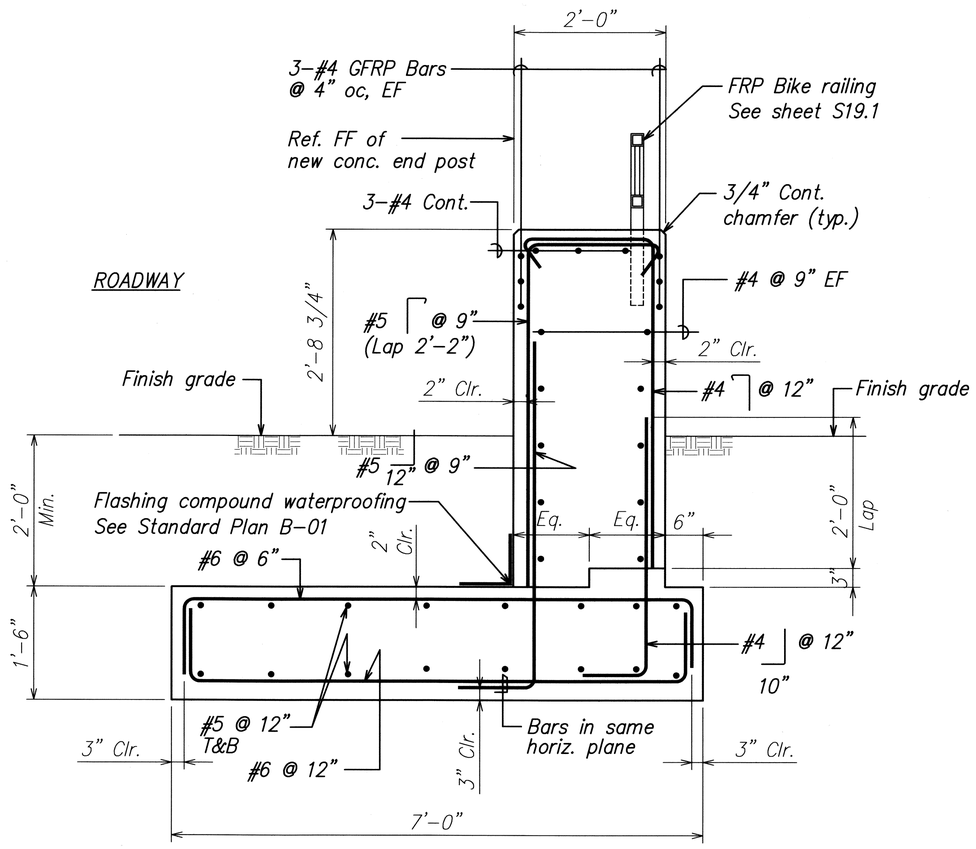
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.1
FOUNDATION PLAN
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

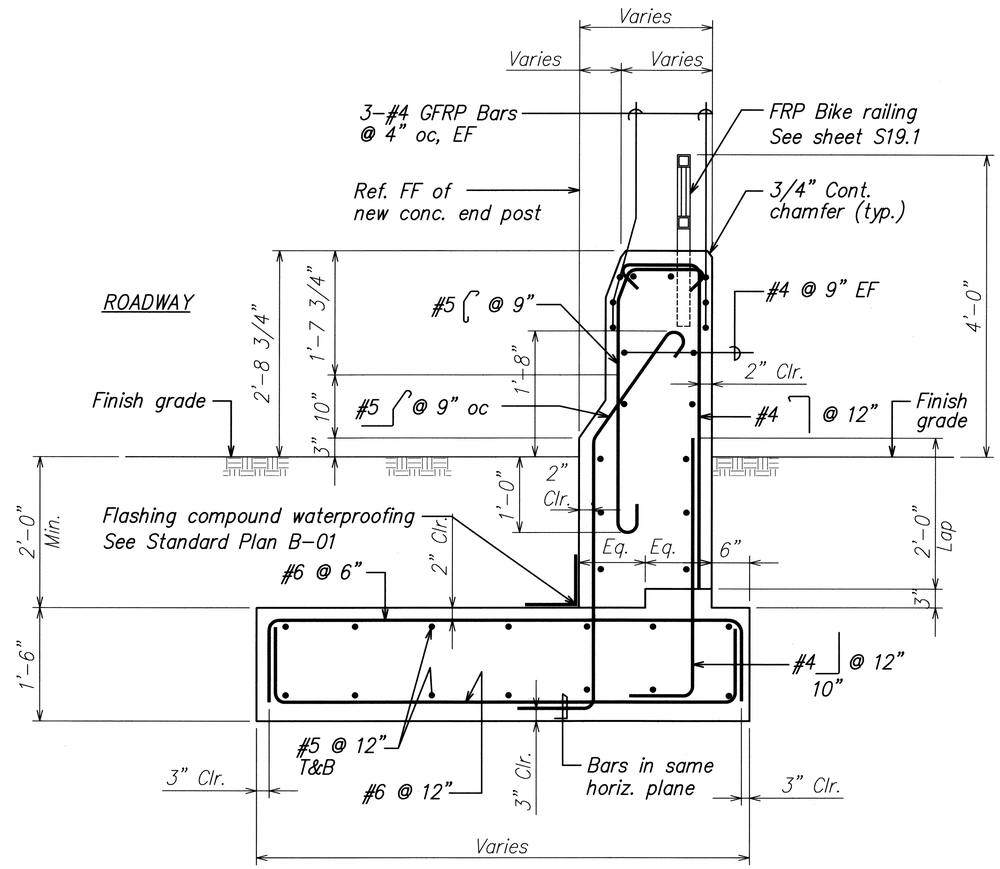
Scale: As Noted Date: May 2008

SHEET No. S7.3 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	177	284



SECTION A
Scale: 1" = 1'-0"
S7.2 | S7.4



SECTION B
Scale: 1" = 1'-0"
S7.2 | S7.4

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

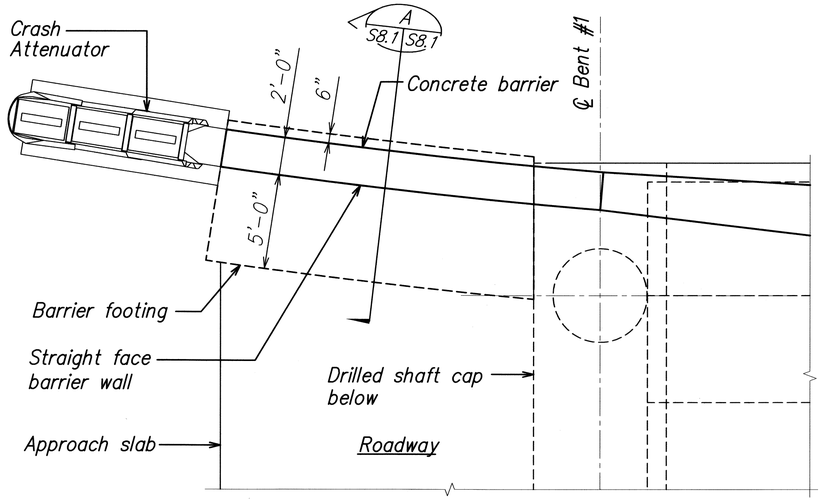
END POST NO.1
SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

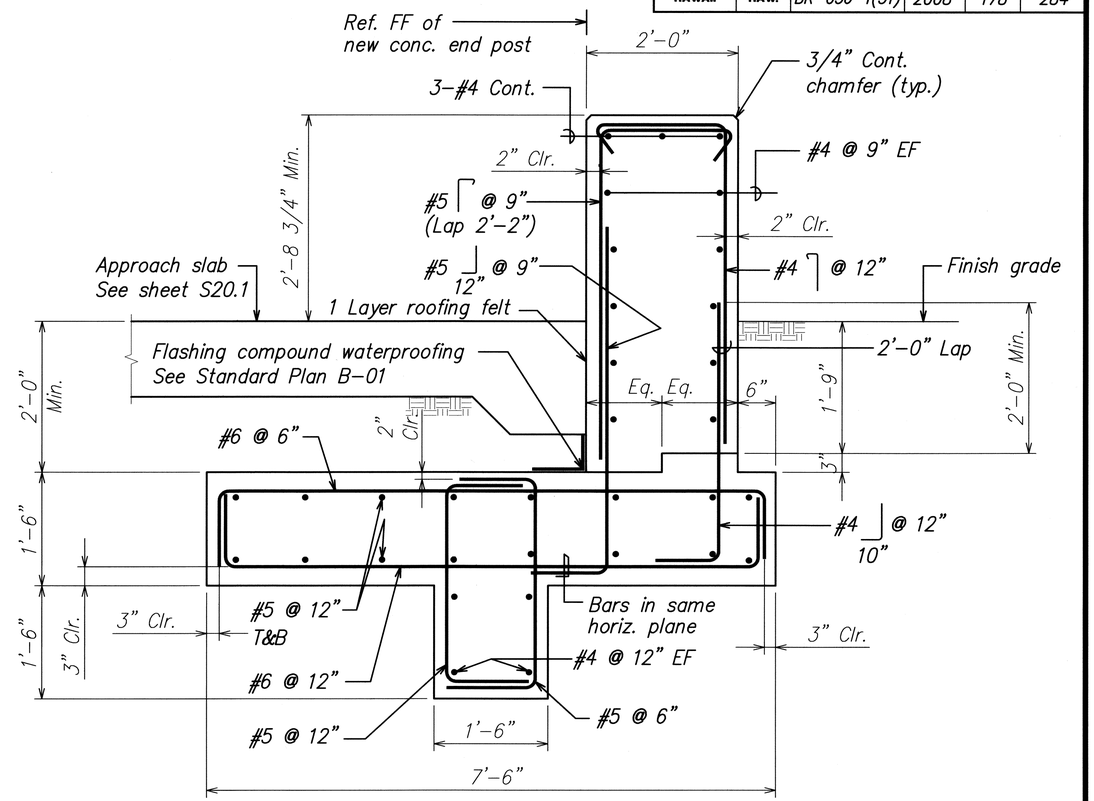
SHEET No. S7.4 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	178	284

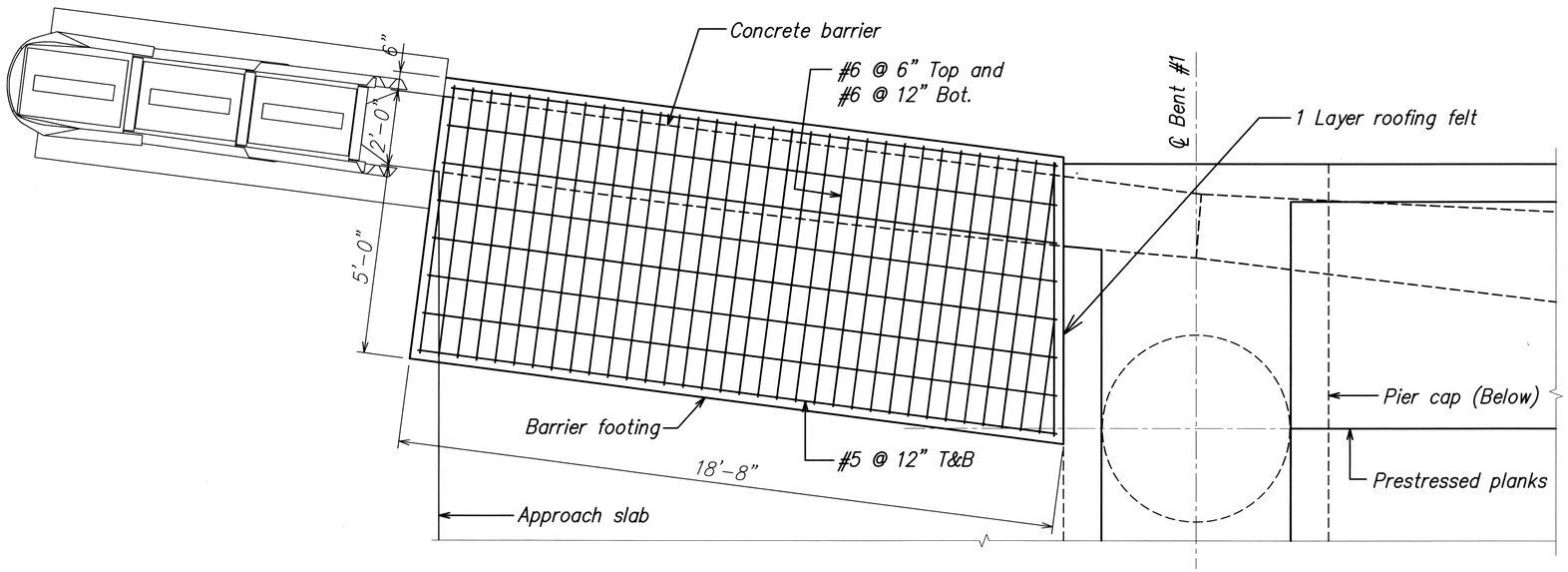


END POST NO.2 PLAN
Scale: 1/4" = 1'-0"

TRUE NORTH



SECTION
A S8.1 S8.1
Scale: 1" = 1'-0"



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

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

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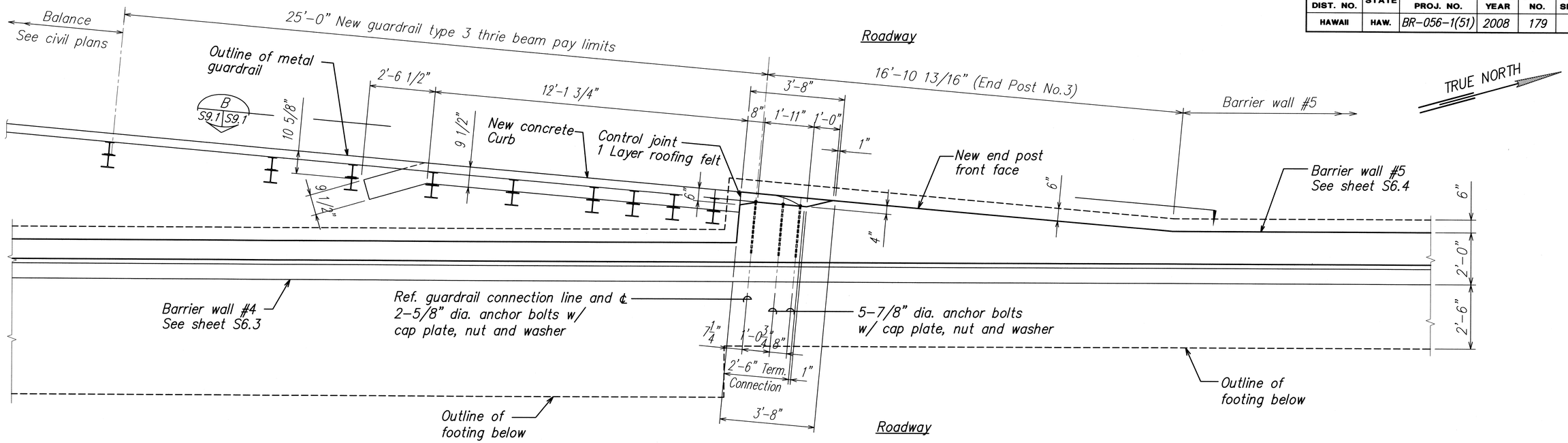
HIGHWAYS DIVISION

END POST NO.2
PLAN AND FOUNDATION PLAN
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

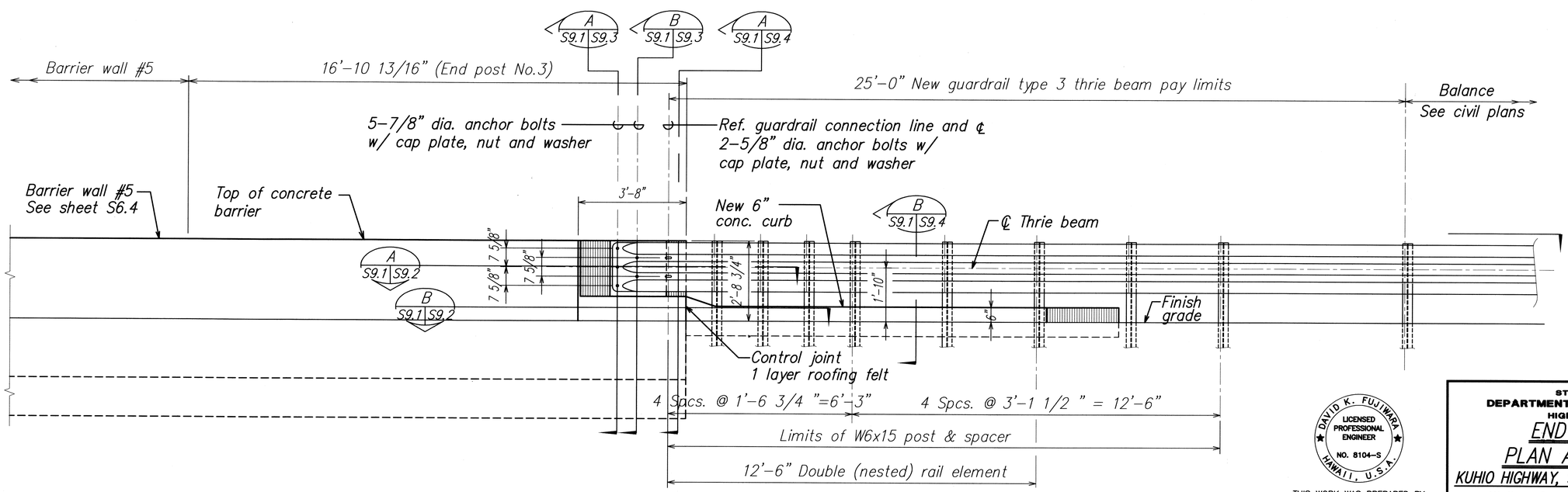
Scale: As Noted Date: May 2008

SHEET No. S8.1 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	179	284



END POST NO.3 PLAN (A S1.1 S9.1)
Scale: 1/2" = 1'-0"



END POST NO.3 ELEVATION (B S9.1 S9.1)
Scale: 1/2" = 1'-0"

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

DAVID K. FUJIWARA
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NO. 8104-S
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

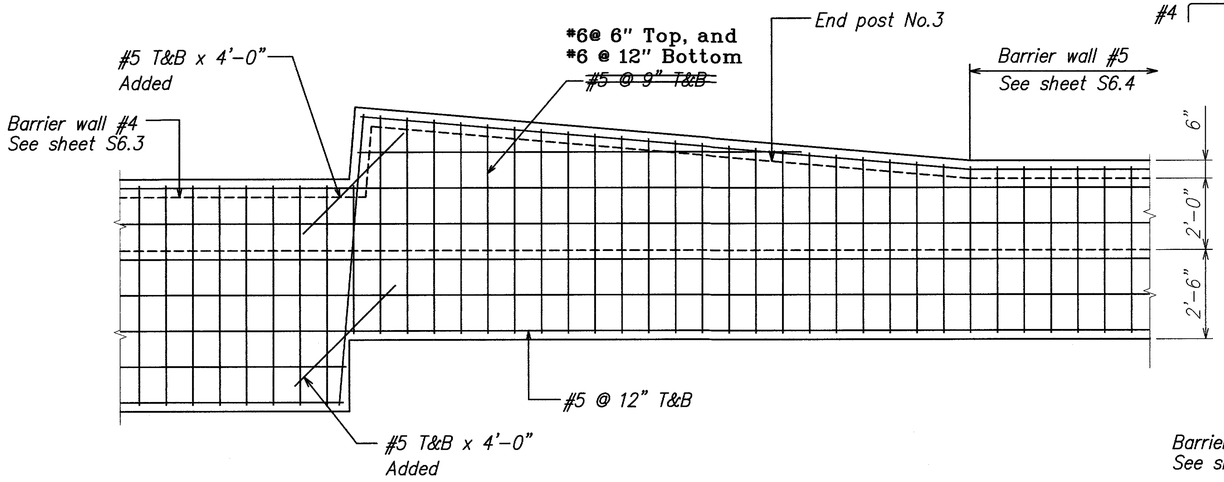
END POST NO.3 PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

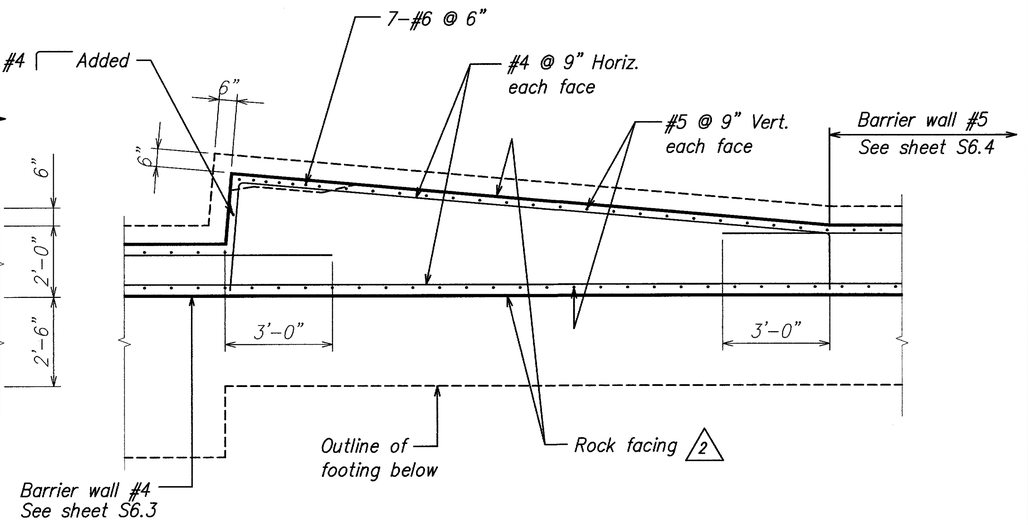
SHEET No. S9.1 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 180	284



END POST NO.3 FOUNDATION PLAN

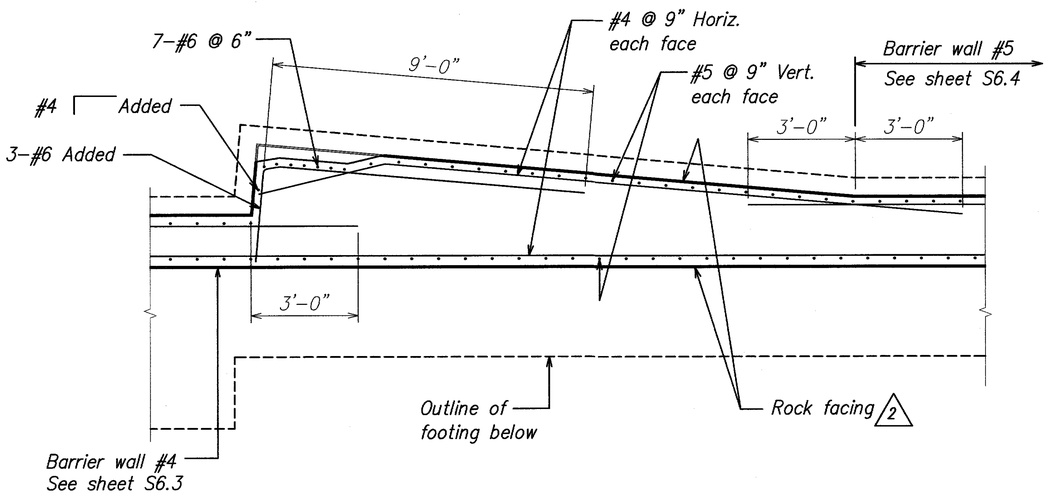
Scale: 1/2" = 1'-0"



END POST NO.3 SECTION A

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

S9.1 | S9.2



END POST NO.3 SECTION B

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

S9.1 | S9.2

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawings

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.3 PLAN AND SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

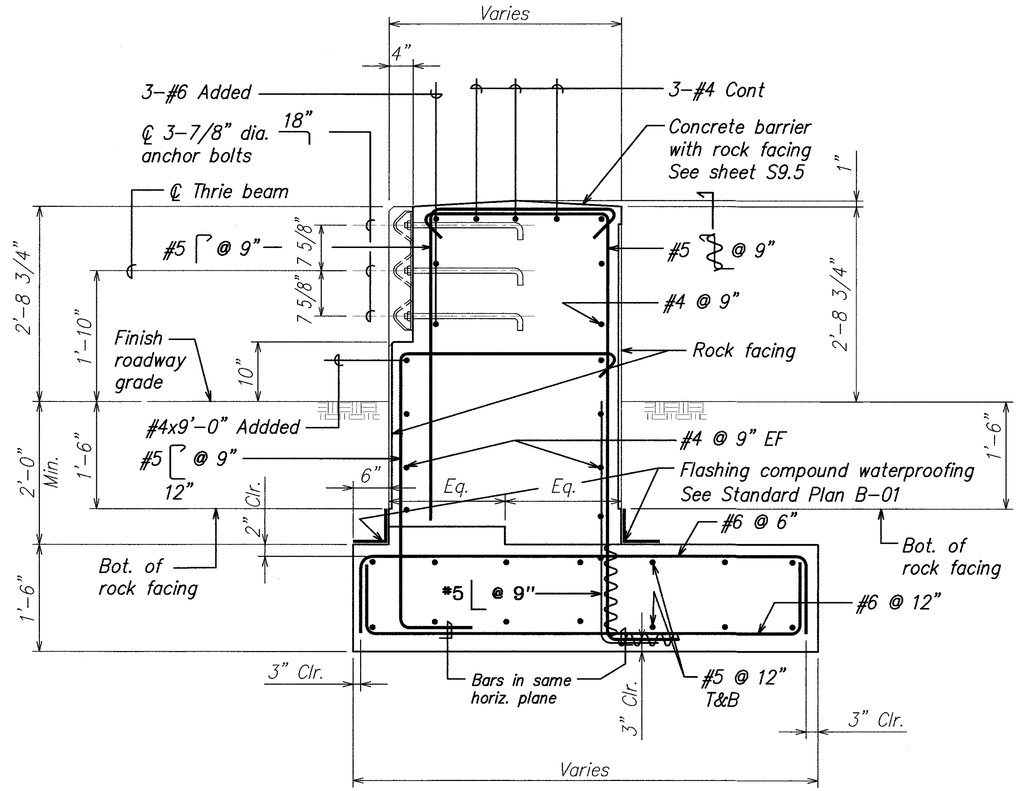
Scale: As Noted — Date: May 2008

SHEET No. S9.2 OF 131 SHEETS

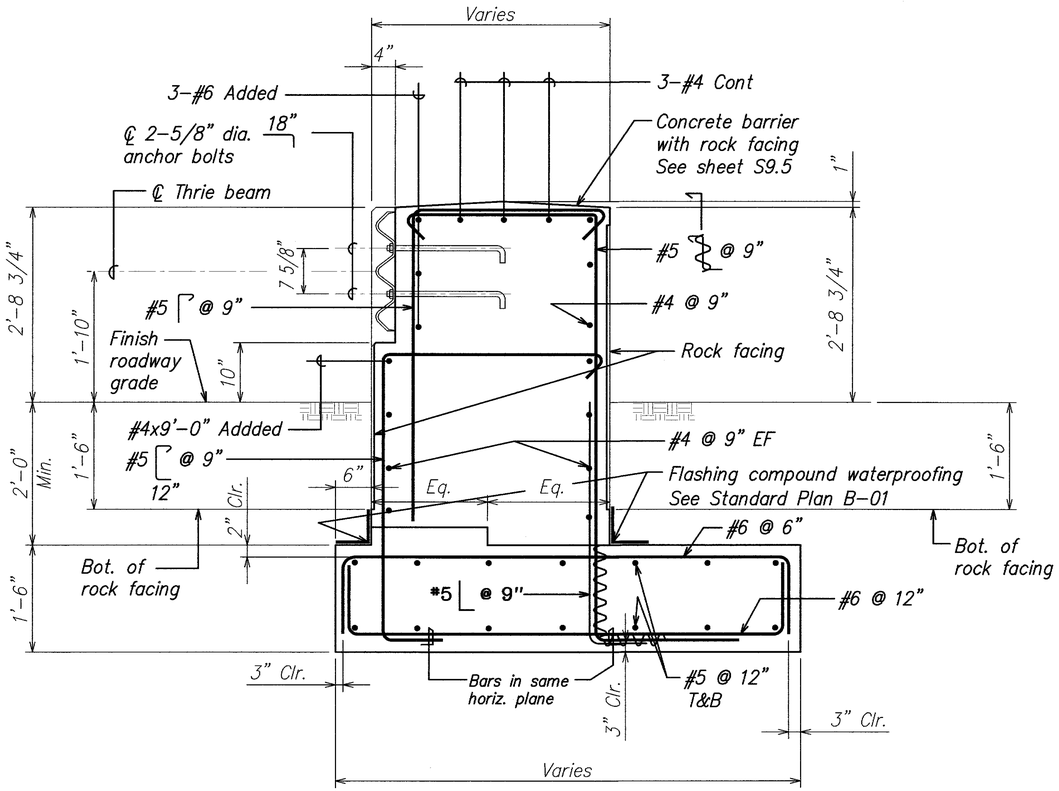
"AS-BUILT"

C.O. 180

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 181	284



SECTION A
Scale: 1" = 1'-0"
S9.1 | S9.3



SECTION B
Scale: 1" = 1'-0"
S9.1 | S9.3

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawings

DAVID K. FUJIWARA
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.3
SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S9.3 OF 131 SHEETS

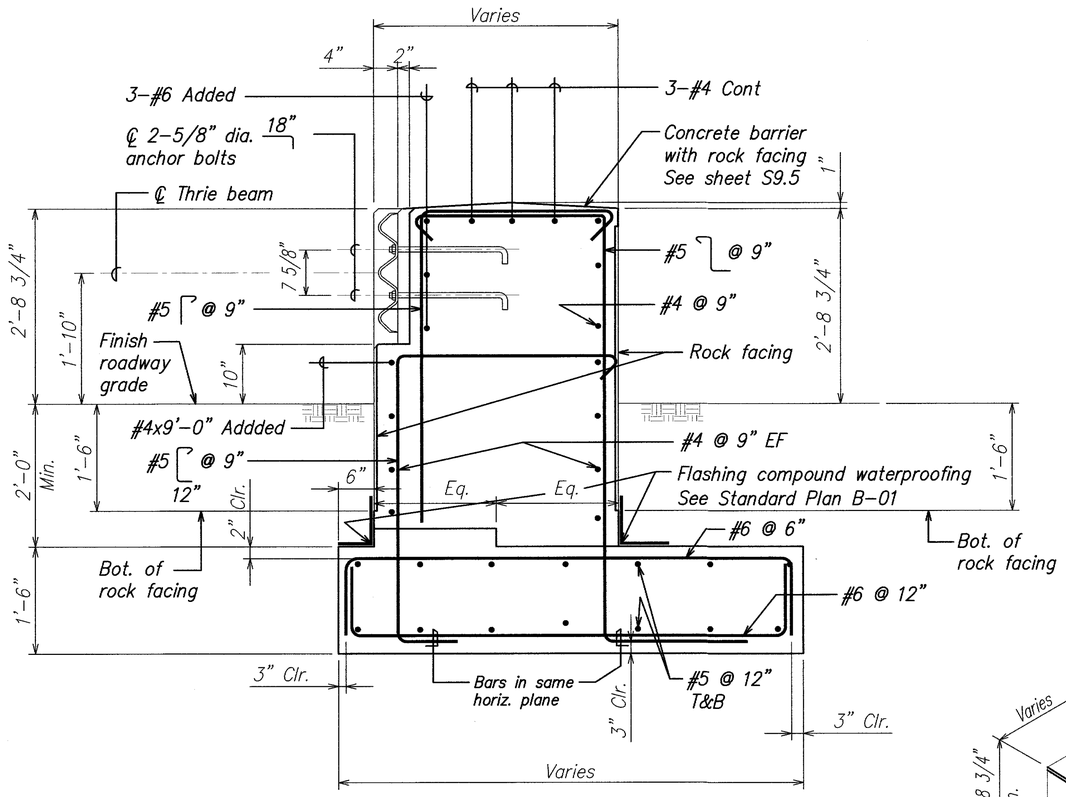
ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

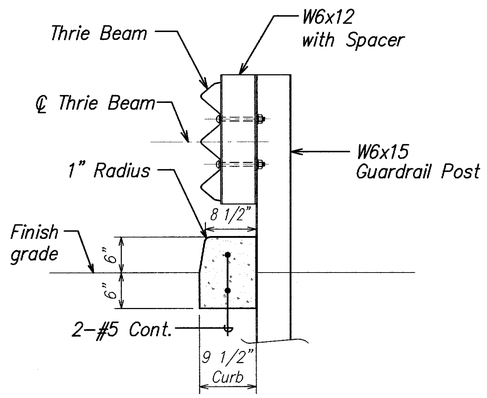
"AS-BUILT"

C.O. 181

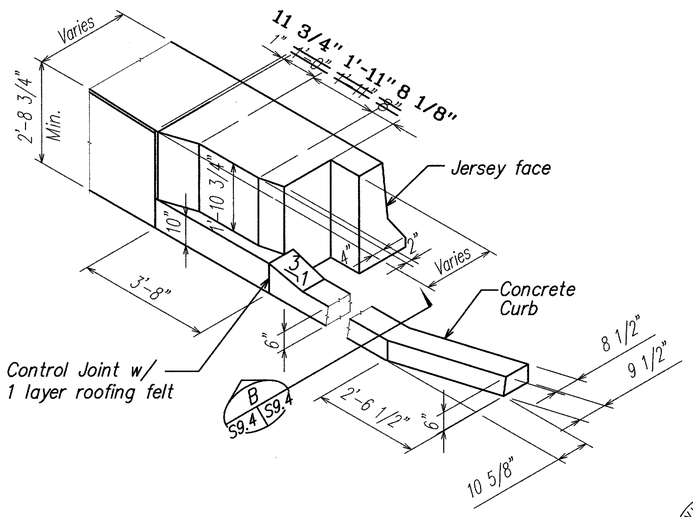
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 182	284



SECTION A
Scale: 1" = 1'-0"
S9.1 S9.4



SECTION B
Scale: 1" = 1'-0"
S9.1 S9.4



END POST DETAIL 1
Not to scale
S9.4 S9.4

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawings

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.3
SECTIONS AND DETAIL

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S9.4 OF 131 SHEETS

DAVID K. FUJIWARA
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NO. 8104-S
HAWAII, U.S.A.

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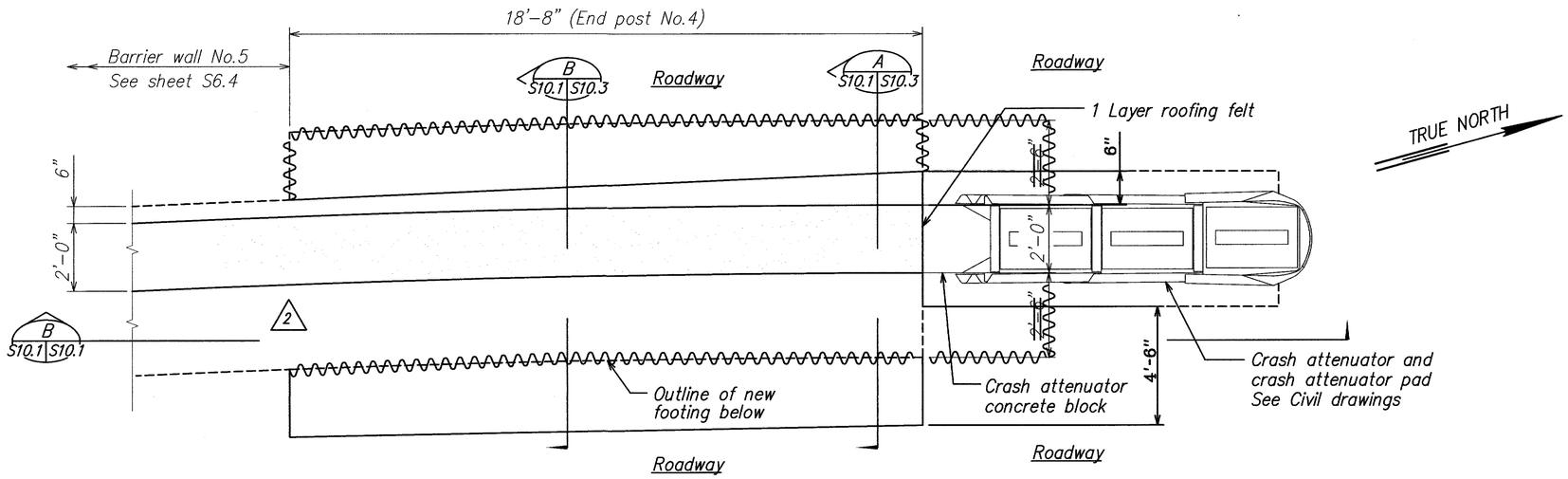
SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

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

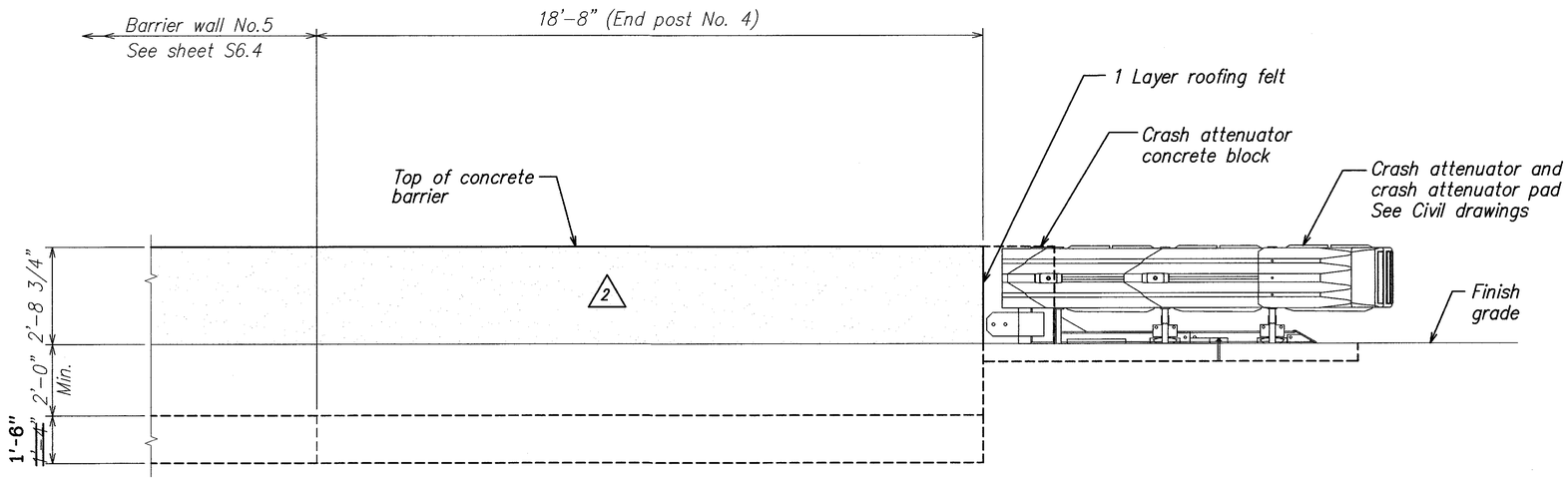
"AS-BUILT"

C.O. 182

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 183	284



END POST NO.4 PLAN (A S8.1 S10.1)
Scale: 1/2" = 1'-0"



END POST NO.4 ELEVATION (B S10.1 S10.1)
Scale: 1/2" = 1'-0"

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawings

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.4 PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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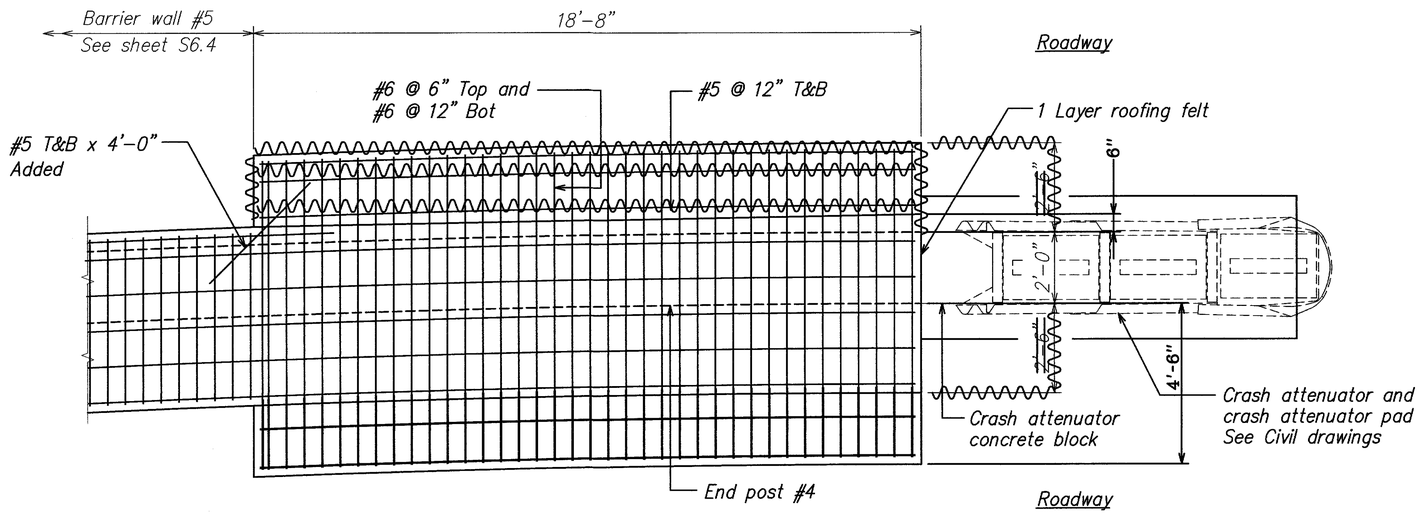
SHEET No. S10.1 OF 131 SHEETS

"AS-BUILT"

C.O. 183

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	184	284



END POST NO.4 FOUNDATION PLAN

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

LEGEND FOR AS-BUILT POSTINGS	
~~^^^^~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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

DAVID K. FUJIWARA
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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

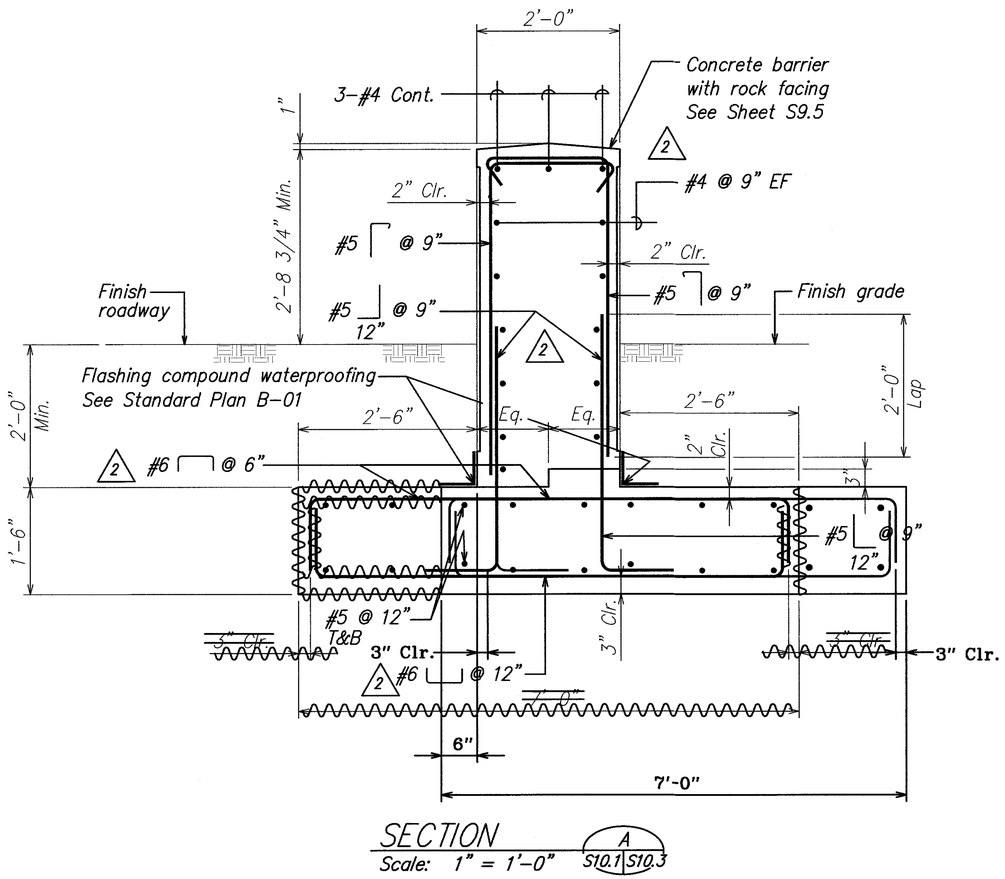
END POST NO.4
PLAN
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S10.2 OF 131 SHEETS

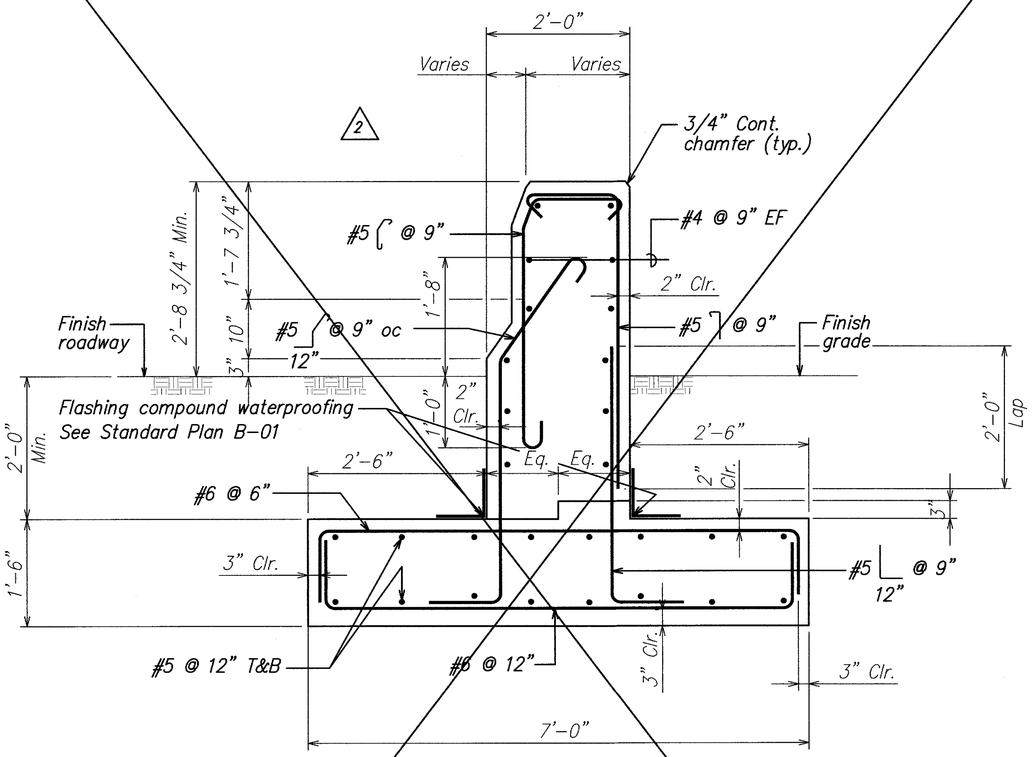
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 185	284



SECTION A S10.1 S10.3
Scale: 1" = 1'-0"

N. I. C.



SECTION B S10.1 S10.3
Scale: 1" = 1'-0"

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawing and Delete Detail

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.4
SECTIONS
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

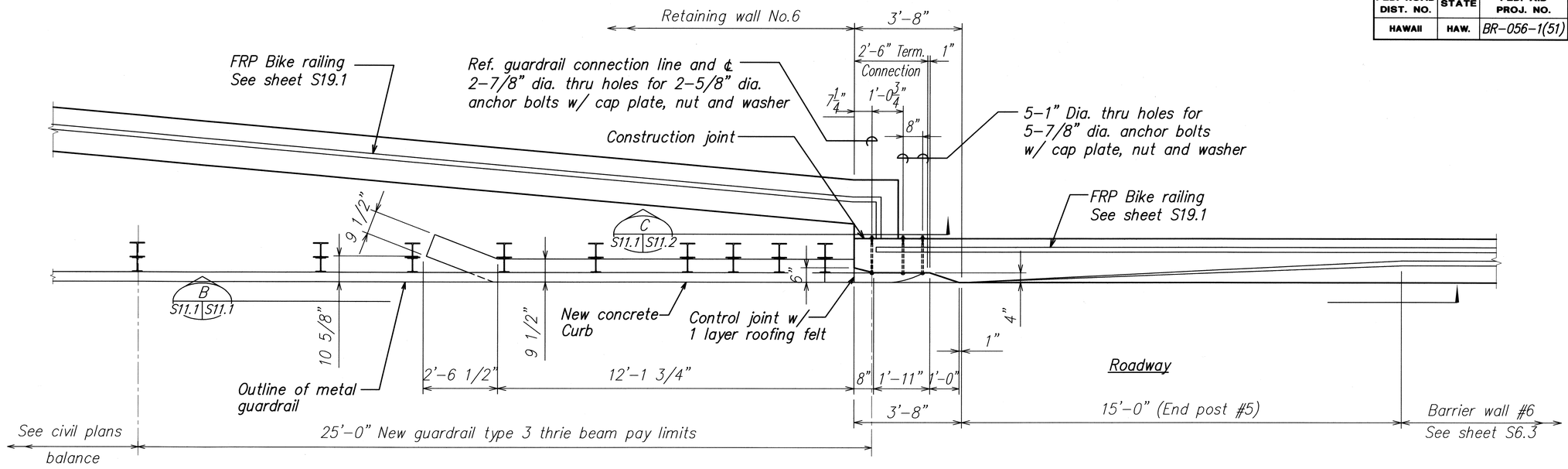
Scale: As Noted Date: May 2008

SHEET No. S10.3 OF 131 SHEETS

"AS-BUILT"

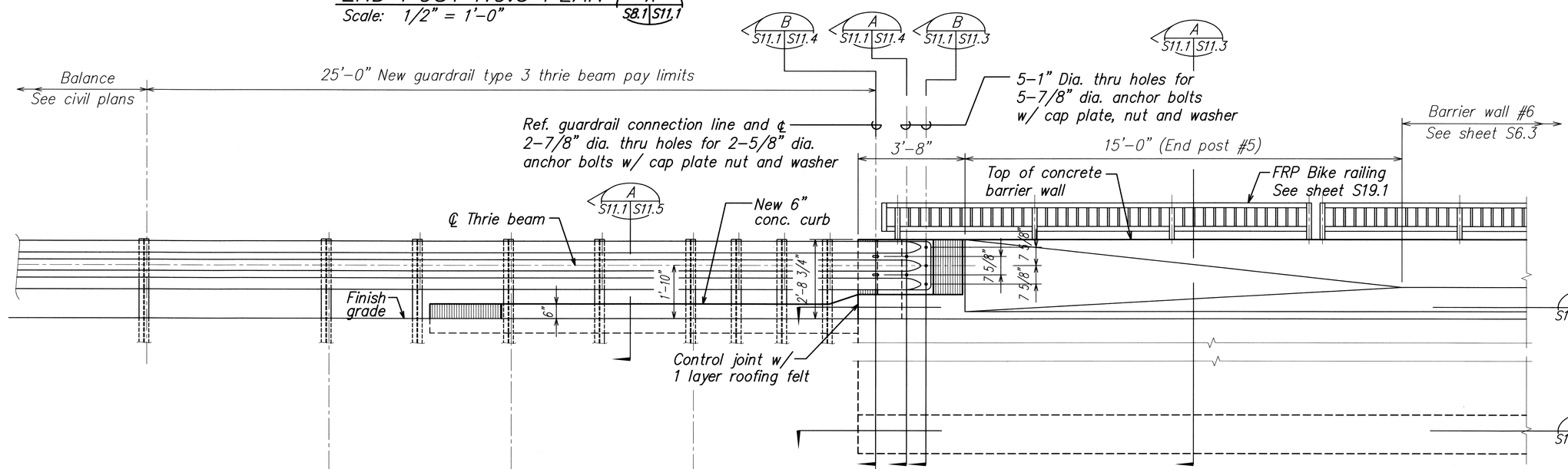
C.O. 185

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	186	284



END POST NO.5 PLAN (A S8.1 S11.1)

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



END POST NO.5 ELEVATION (B S11.1 S11.1)

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

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

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David K. Fujiwara 4-30-10
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

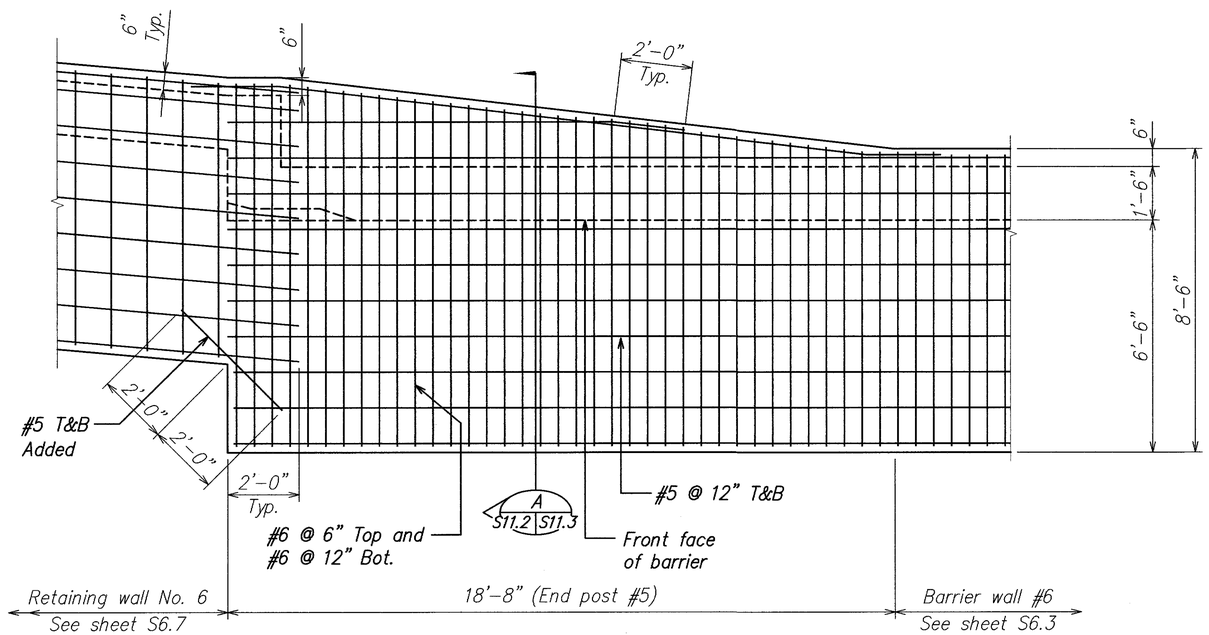
END POST NO.5 PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

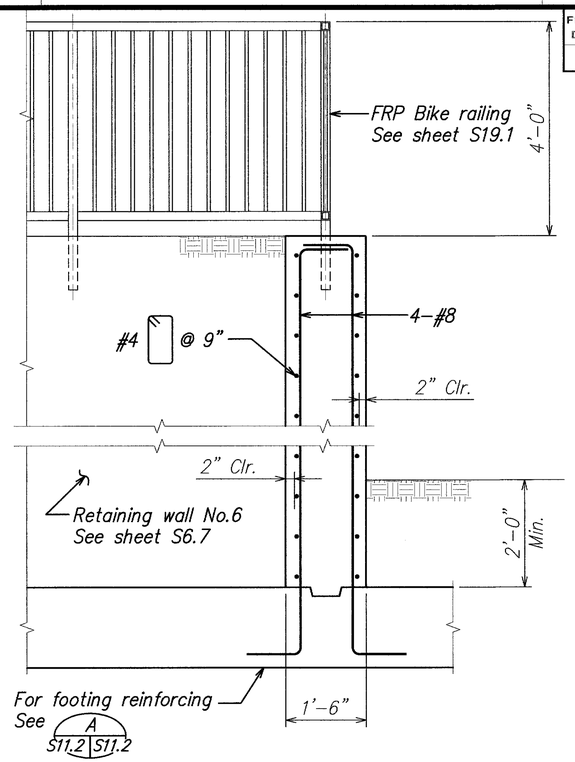
SHEET No. S11.1 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	187	284



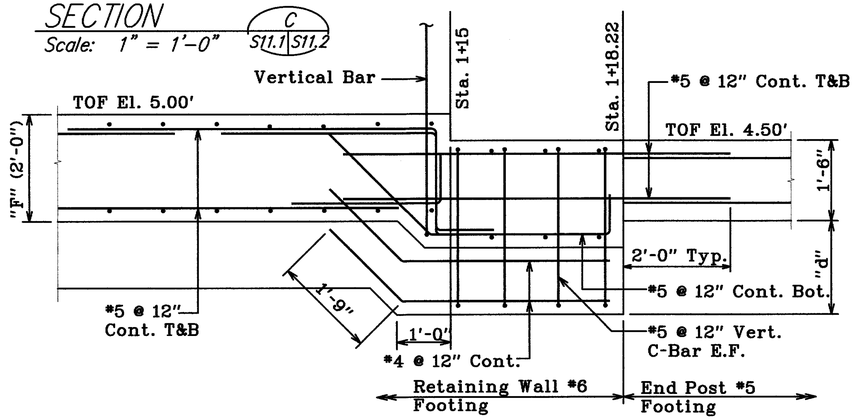
END POST NO.5 FOUNDATION PLAN (A S11.1 S11.2)

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

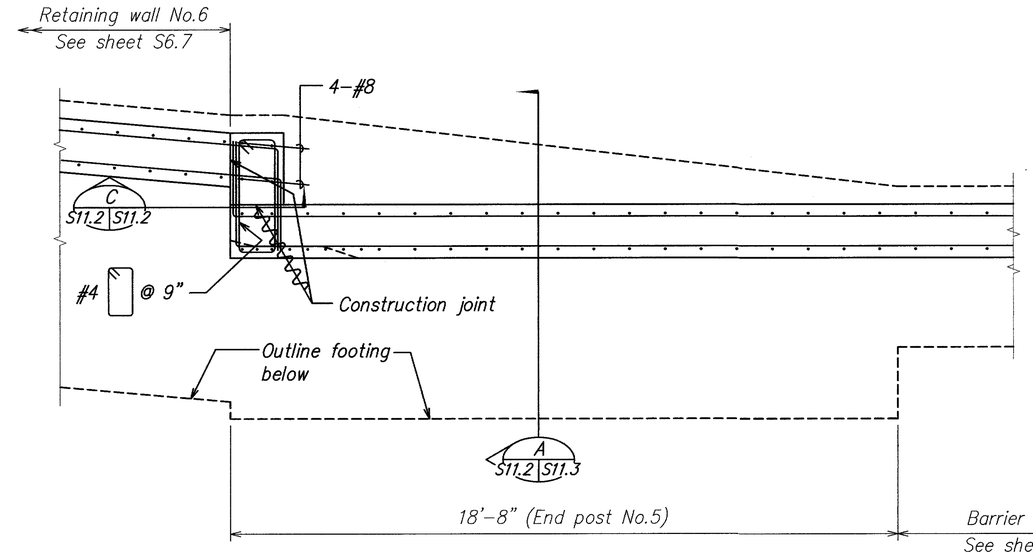


SECTION (C S11.1 S11.2)

Scale: 1" = 1'-0"



CONTINUOUS FOOTING ELEVATION
Scale: 3/4"=1'-0"



SECTION (B S11.1 S11.2)

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

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

LEGEND FOR AS-BUILT POSTINGS

~~^^^^~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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SIGNATURE — 4-30-10 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.5
PLAN AND SECTIONS

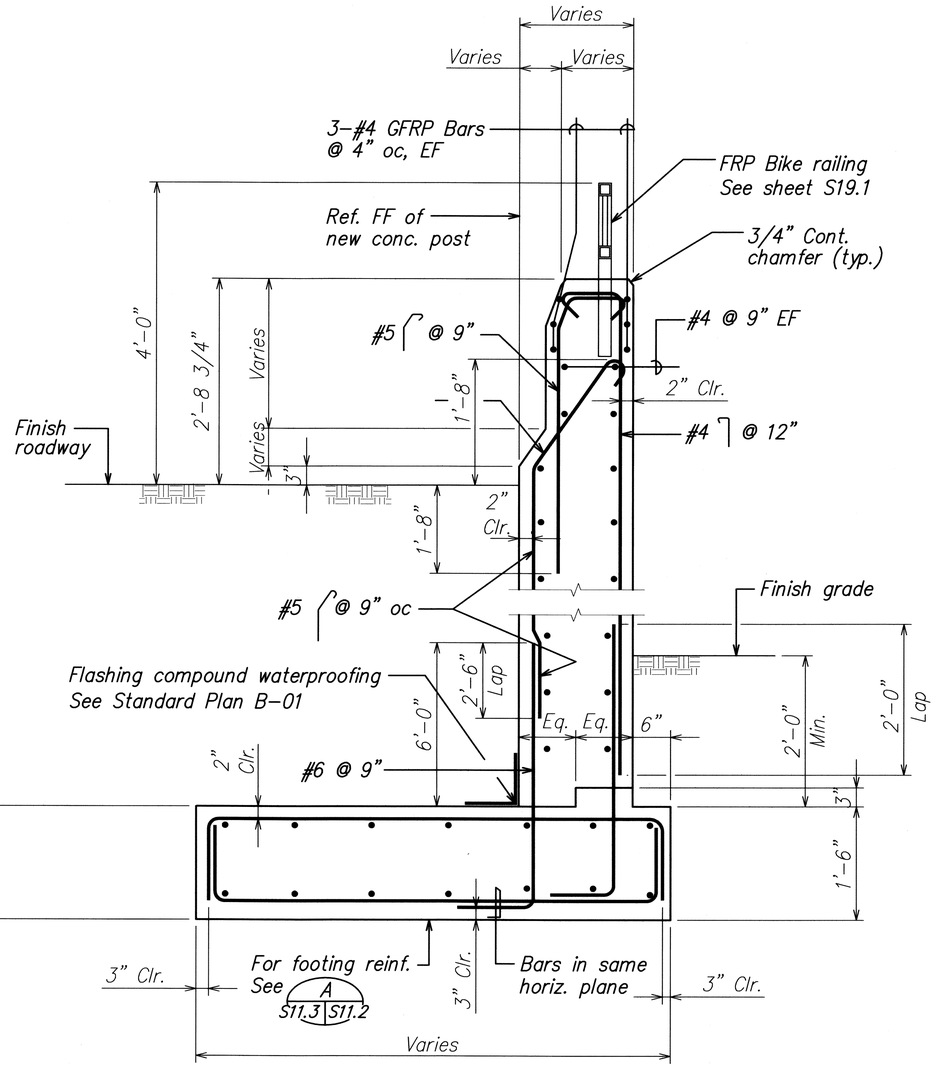
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted — Date: May 2008

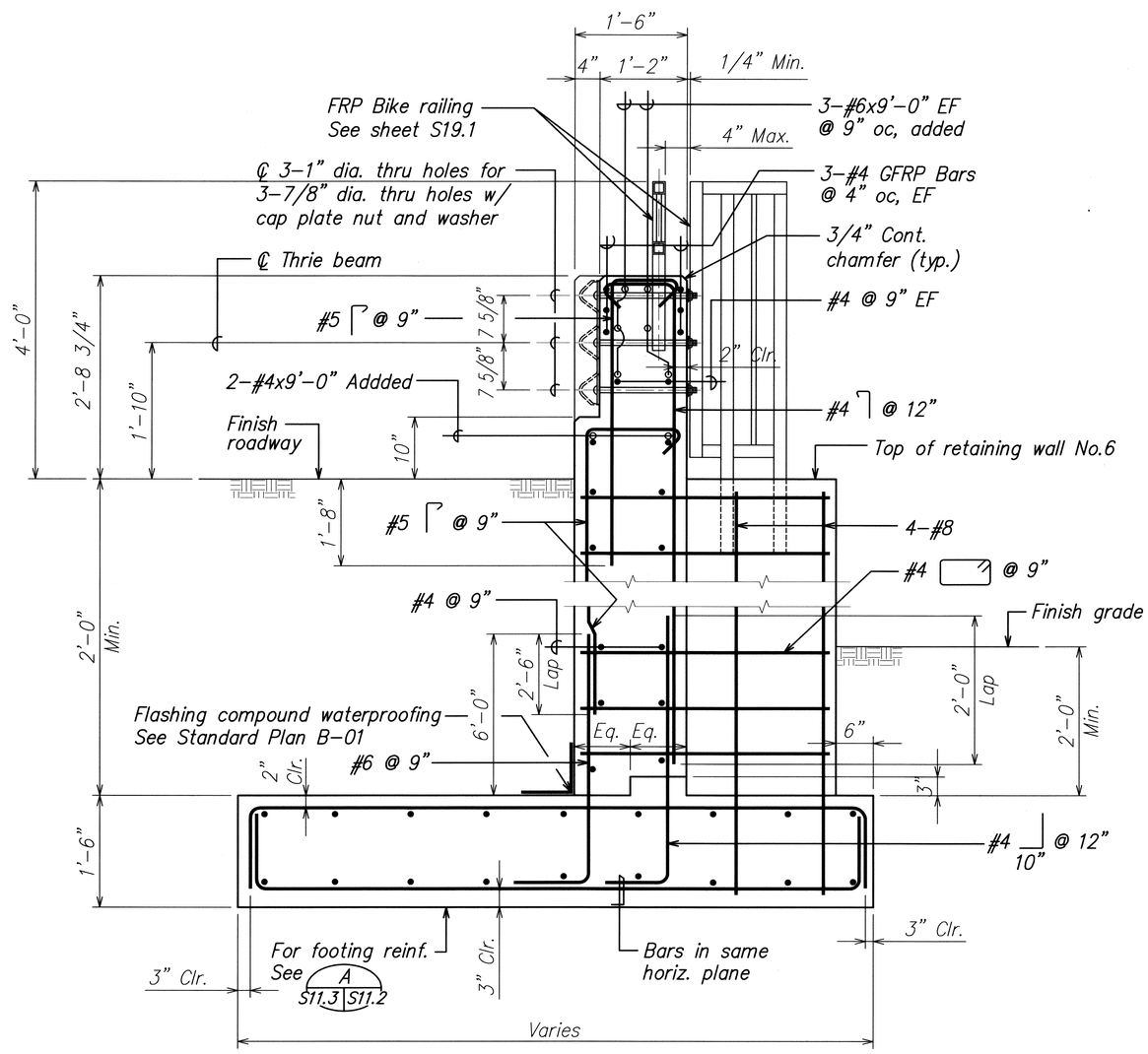
SHEET No. S11.2 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	188	284



SECTION A
Scale: 1" = 1'-0" S11.1 S11.3



SECTION B
Scale: 1" = 1'-0" S11.1 S11.3

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
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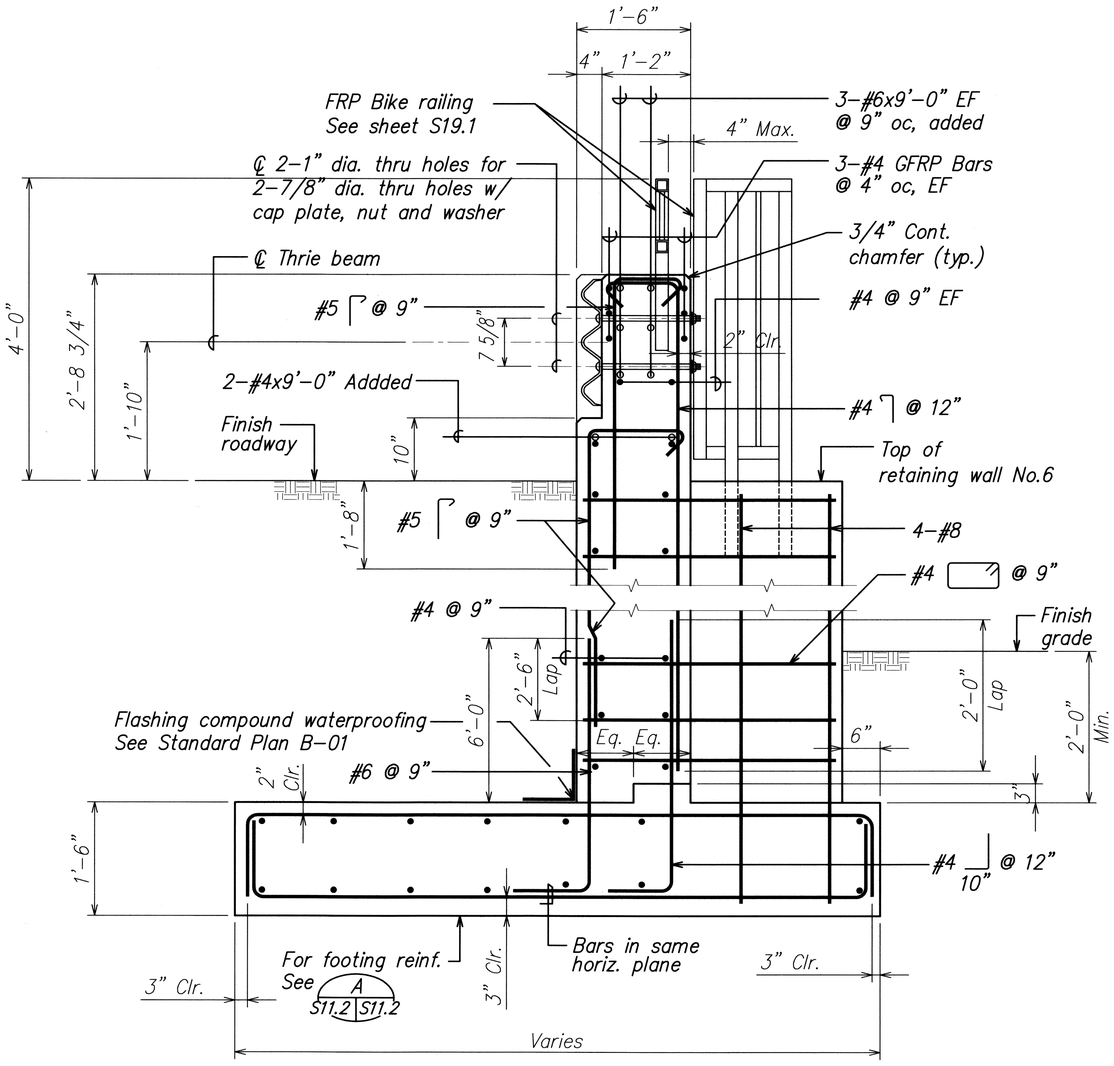
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.5
SECTIONS
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

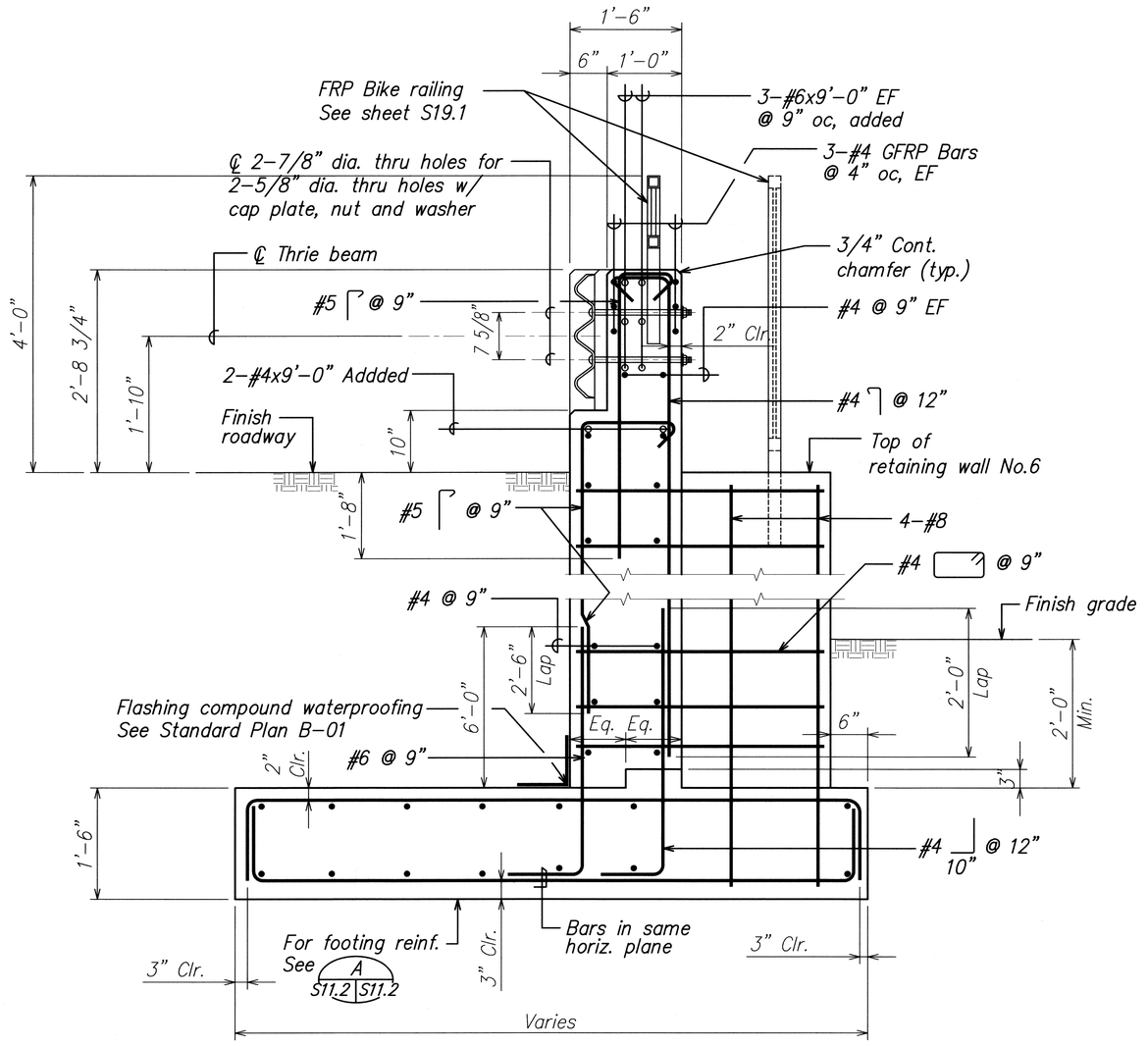
Scale: As Noted Date: May 2008

SHEET No. S11.3 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	189	284



SECTION A
Scale: 1" = 1'-0" S11.1 | S11.4



SECTION B
Scale: 1" = 1'-0" S11.1 | S11.4

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

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DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

David K. Fujiwara 4-30-10
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

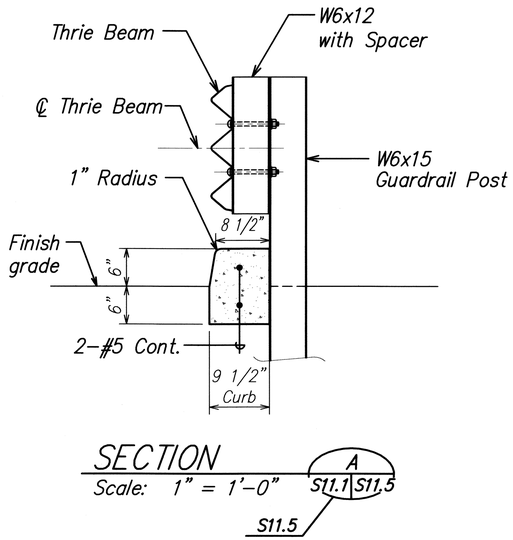
END POST NO.5
SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

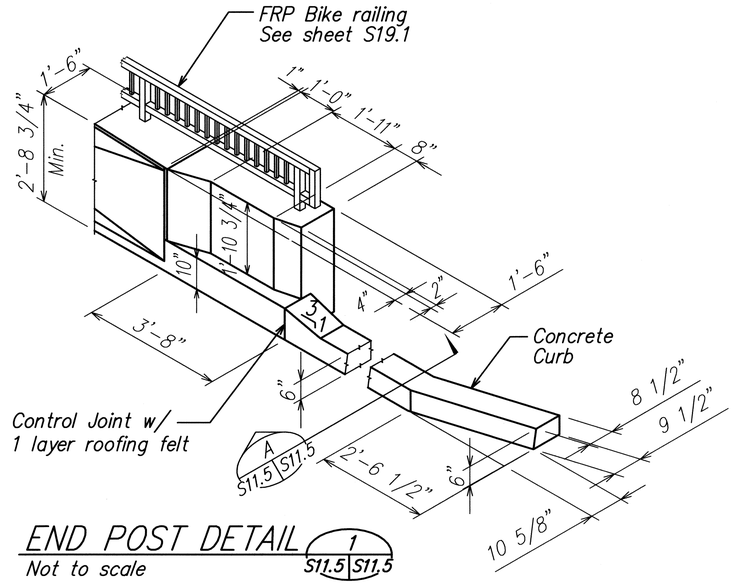
Scale: As Noted Date: May 2008

SHEET No. S11.4 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	190	284



SECTION
Scale: 1" = 1'-0"
A S11.1 S11.5
S11.5



END POST DETAIL
Not to scale
1
S11.5 S11.5

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

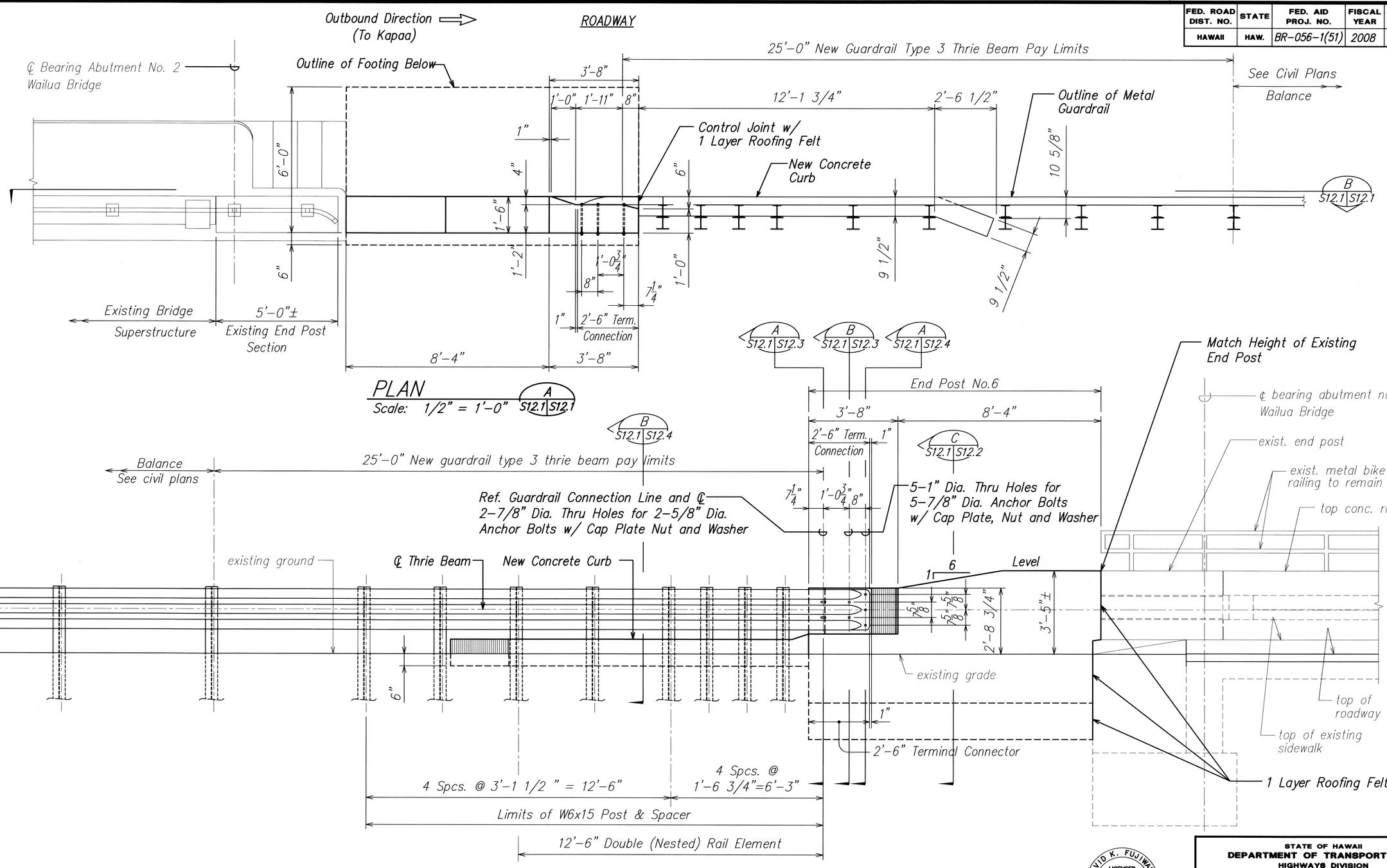
END POST NO.5
SECTION AND DETAIL

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S11.5 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	191	284



ELEVATION (LOOKING FROM INBOUND LANES)
Scale: 1/2" = 1'-0"
B S12.1 S12.1

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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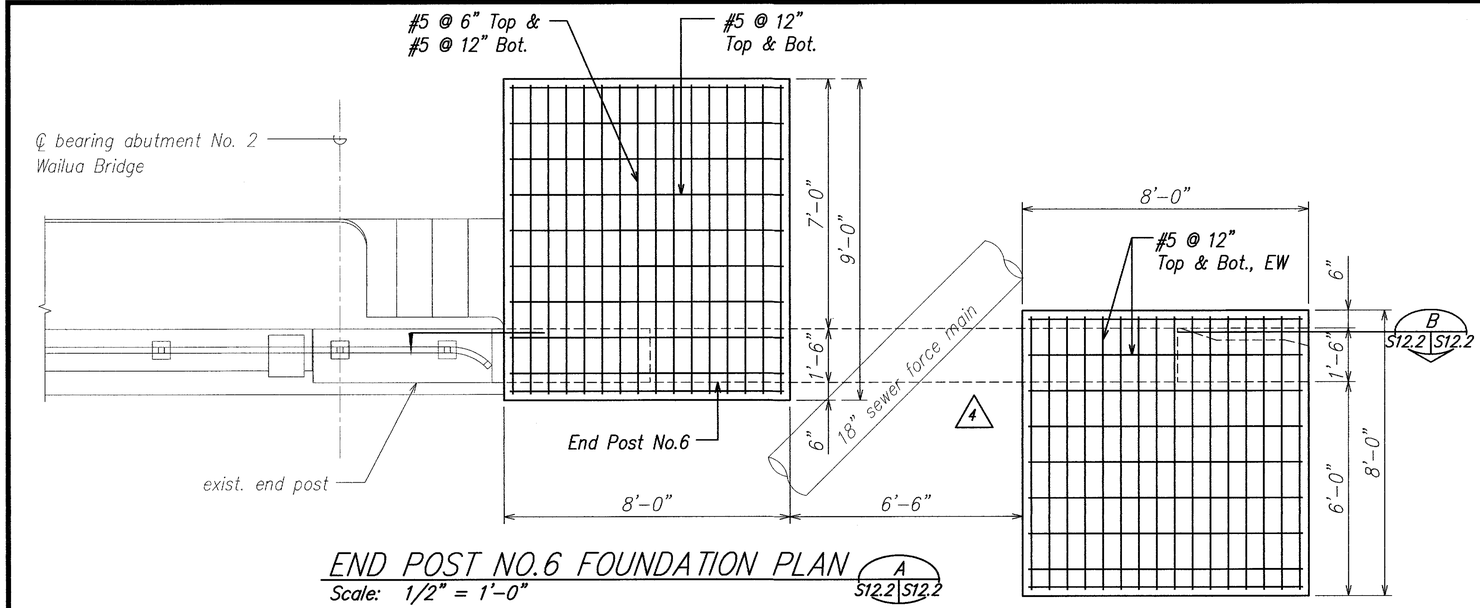
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.6
PLAN AND ELEVATION
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

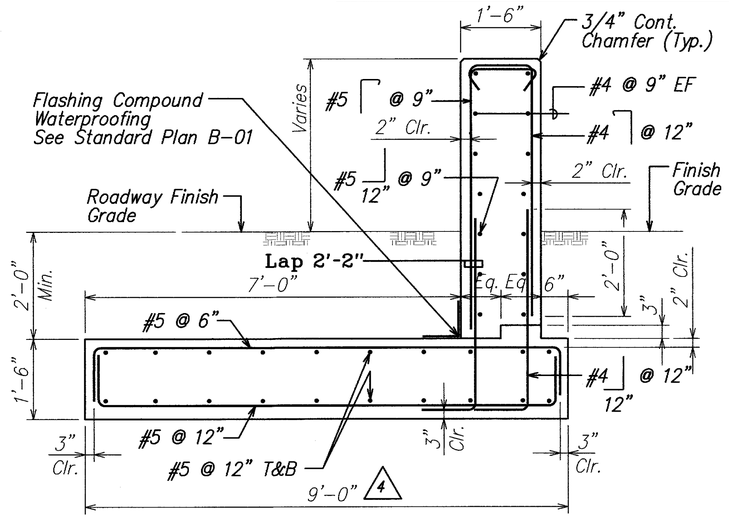
Scale: As Noted Date: May 2008

SHEET No. S12.1 OF 131 SHEETS

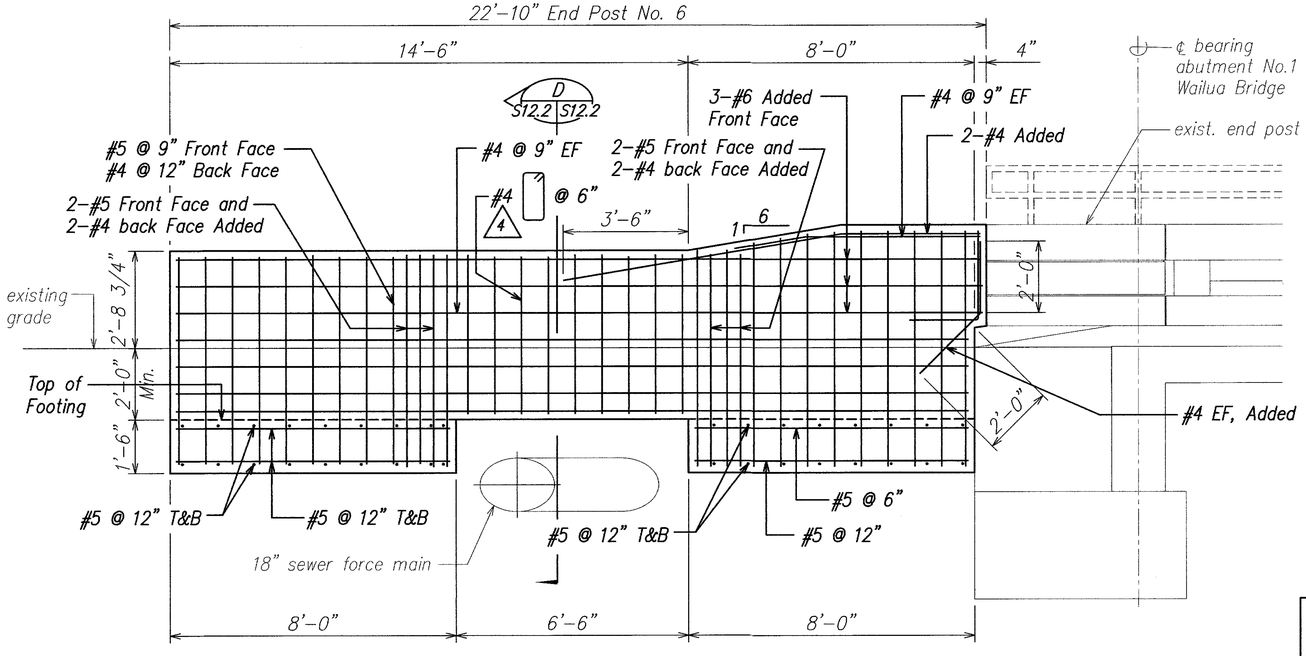
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 192	284



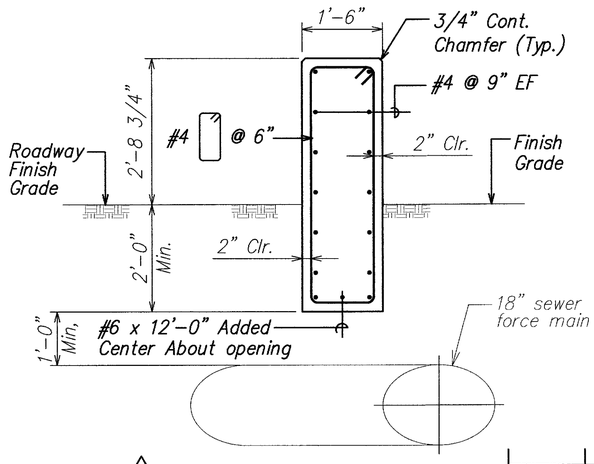
END POST NO.6 FOUNDATION PLAN (A S12.2 S12.2)
Scale: 1/2" = 1'-0"



SECTION (C S12.1 S12.2)
Scale: 3/4" = 1'-0"



SECTION (B S12.2 S12.2)
Scale: 1/2" = 1'-0"



4 SECTION (D S12.1 S12.2)
Scale: 3/4" = 1'-0"

DATE	REVISION
4/13/11	4 Revised Drawings and New Section

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.6 FOUNDATION PLAN & SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

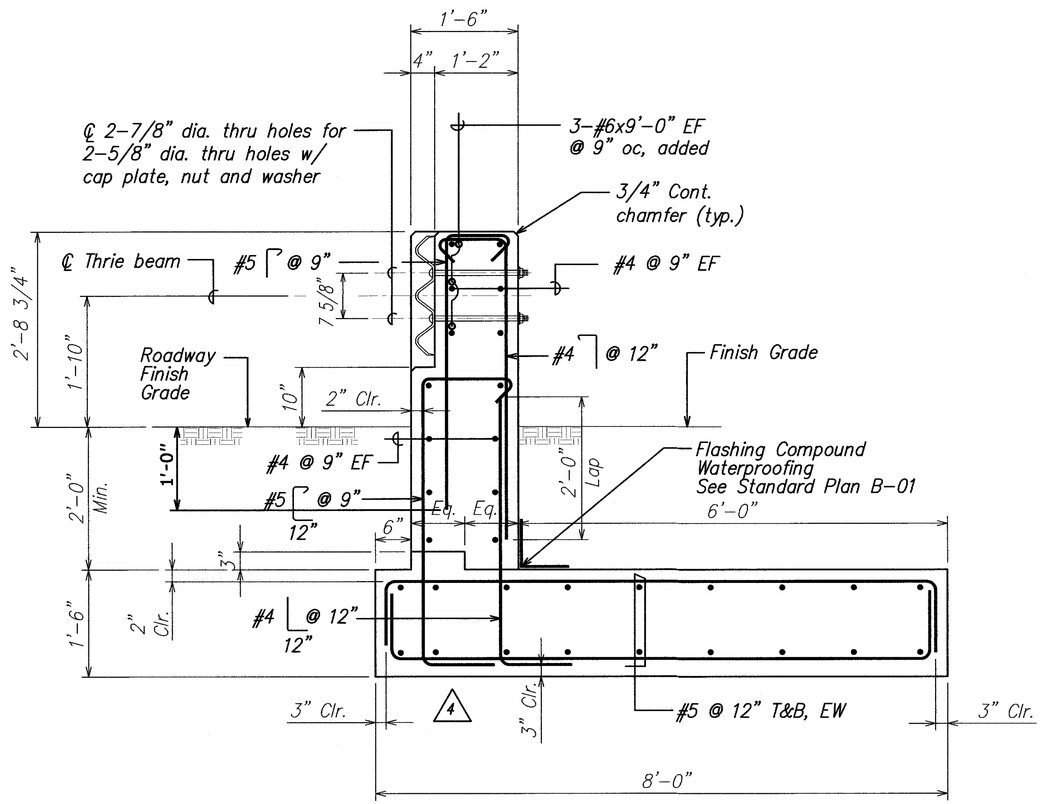
Scale: As Noted Date: May 2008

SHEET No. S12.2 OF 131 SHEETS

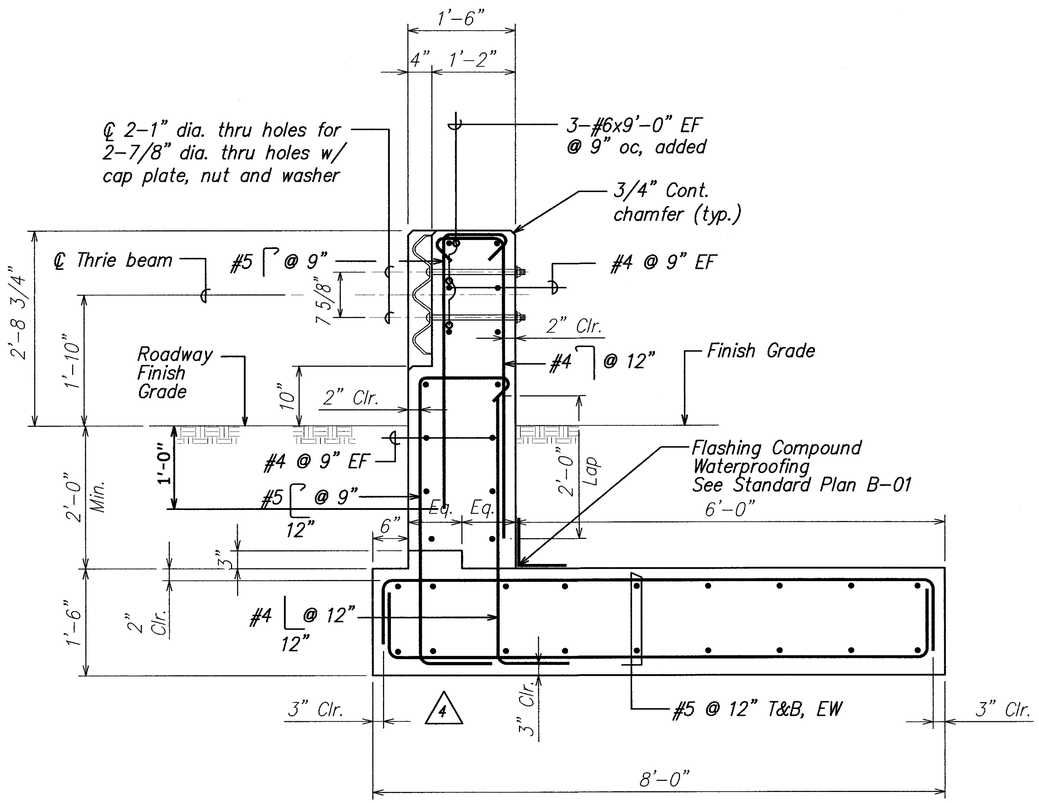
"AS-BUILT"

C.O. 192

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 193	284



SECTION A S12.1 S12.3
Scale: 1" = 1'-0"



SECTION B S12.1 S12.3
Scale: 1" = 1'-0"

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
4/13/11	4 Revised Drawings

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DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.6
SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

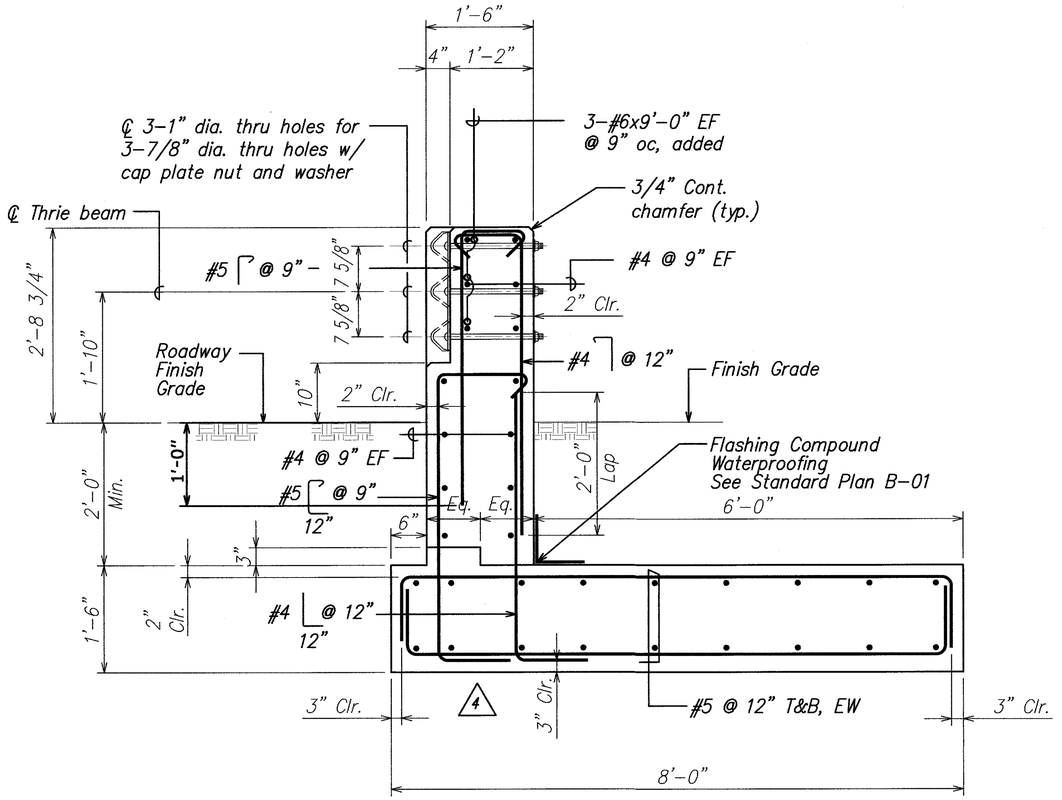
Scale: As Noted Date: May 2008

SHEET No. S12.3 OF 131 SHEETS

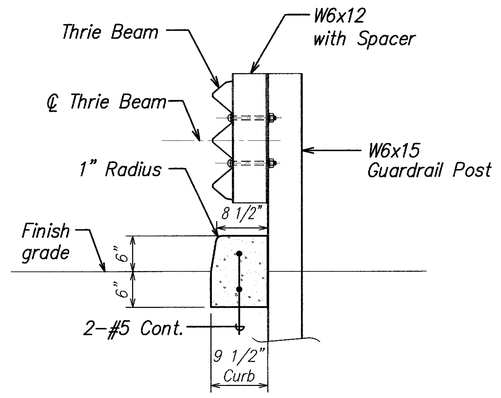
"AS-BUILT"

C.O. 193

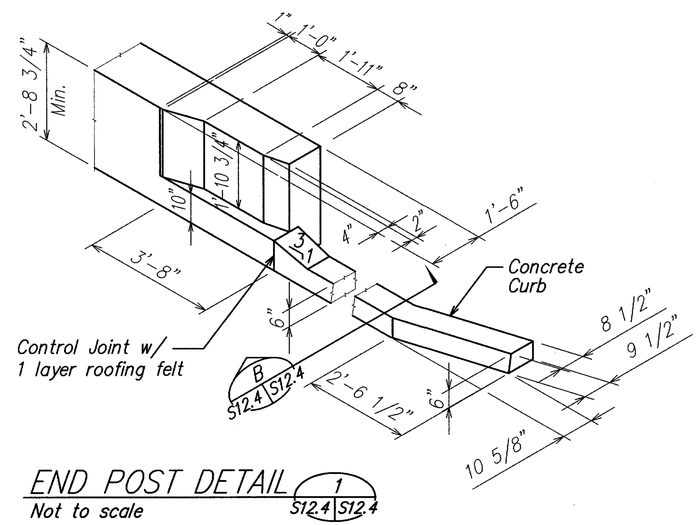
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 194	284



SECTION (A S12.1 S12.4)
Scale: 1" = 1'-0"



SECTION (B S12.1 S12.4)
Scale: 1" = 1'-0"
S12.4



END POST DETAIL (1 S12.4 S12.4)
Not to scale

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
4/13/11	4 Revised Drawings and New Detail

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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SIGNATURE — EXPIRATION DATE OF THE LICENSE: 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.6
SECTIONS AND DETAIL
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

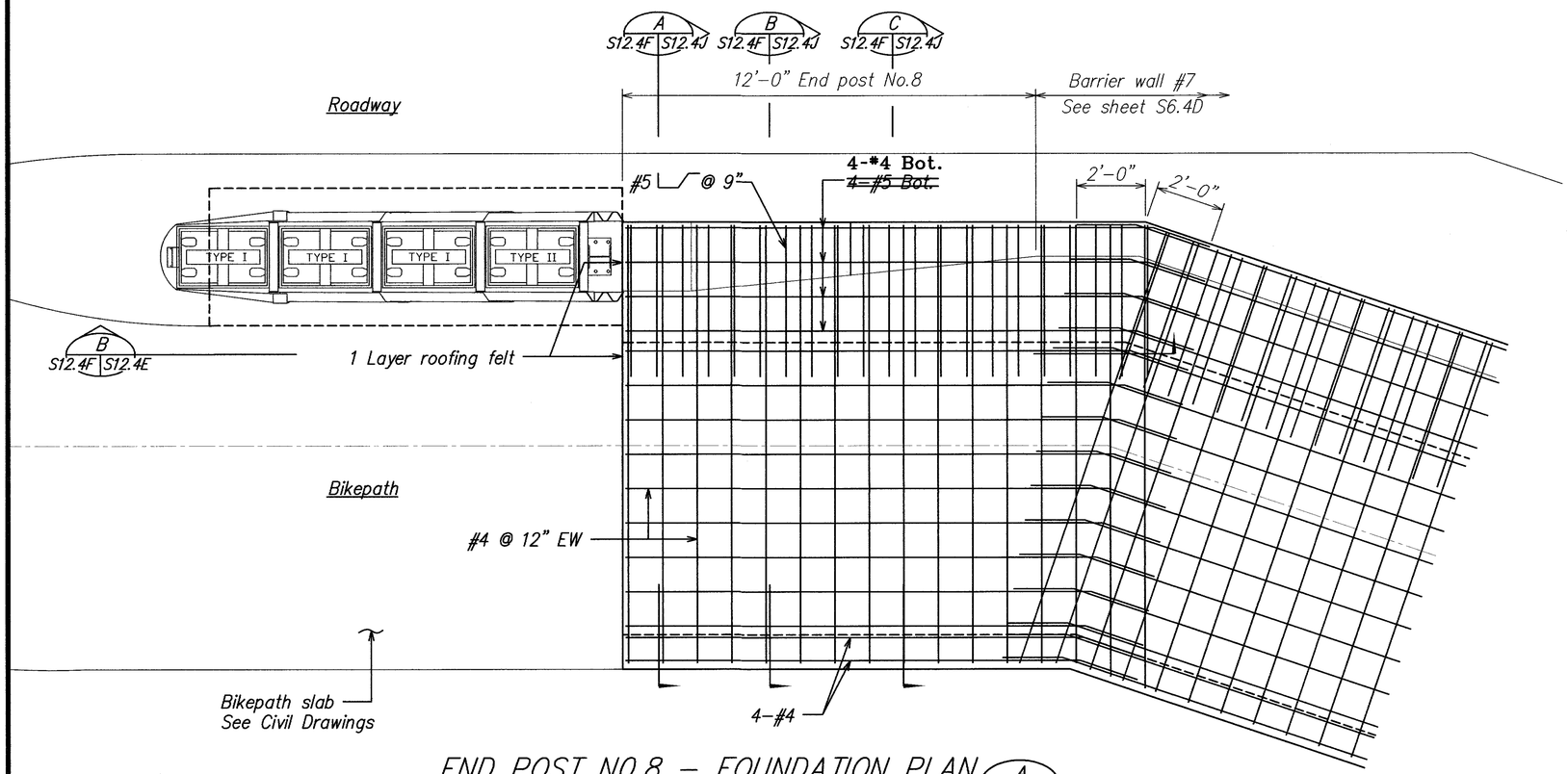
Scale: As Noted — Date: May 2008

SHEET No. S12.4 OF 131 SHEETS

"AS-BUILT"

C.O. 194

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	CO. 194S-6	284



END POST NO.8 – FOUNDATION PLAN (A S12.4F S12.4F)
Scale: 1/2" = 1'-0"

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.8
FOUNDATION PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

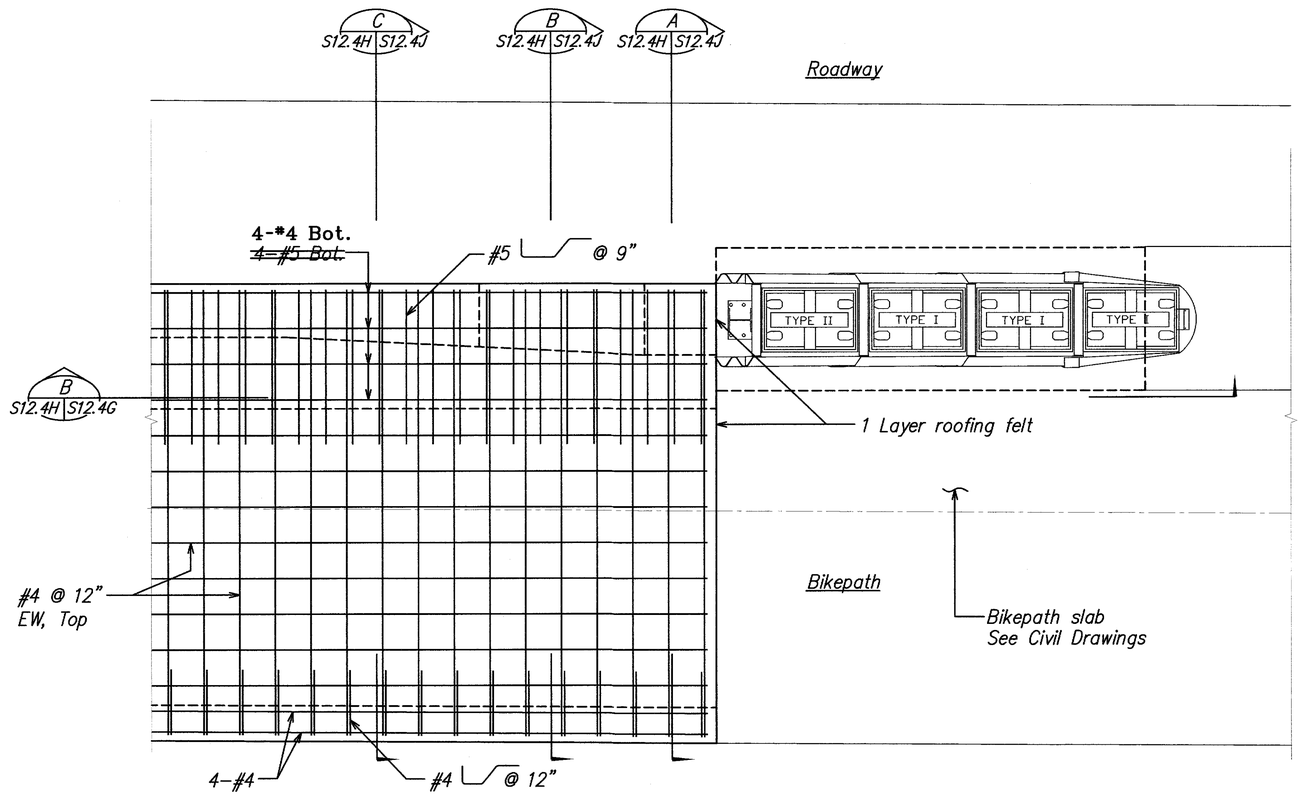
Scale: As Noted Date: May 2008

SHEET No. S12.4F OF 131 SHEETS

"AS-BUILT"

C.O. 194S-6

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 194S-8	284



END POST NO.9 – FOUNDATION PLAN (A S12.4H S12.4H)

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

LEGEND FOR AS-BUILT POSTINGS	
~~∧∧∧∧~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POST NO.9
FOUNDATION PLAN
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S12.4H OF 131 SHEETS

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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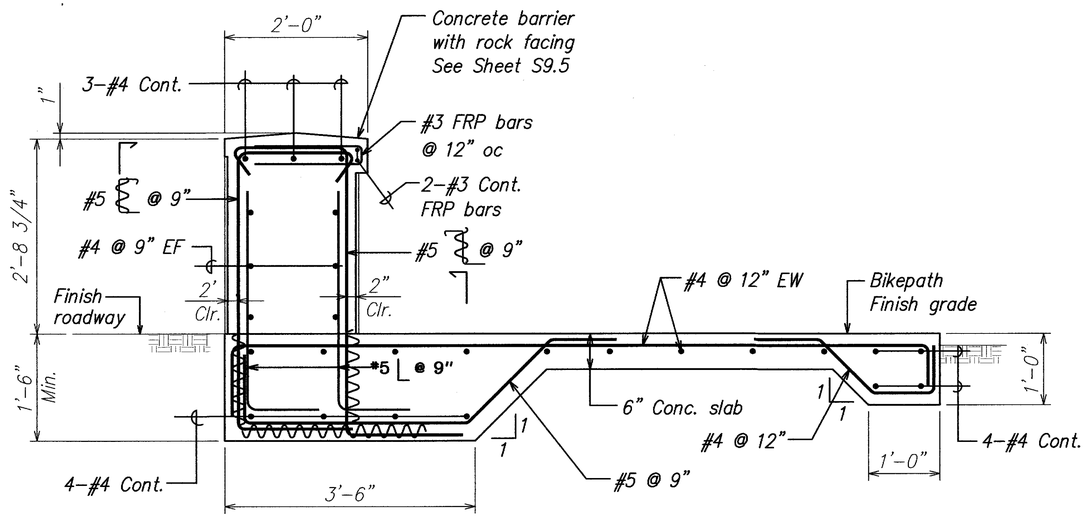
SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

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

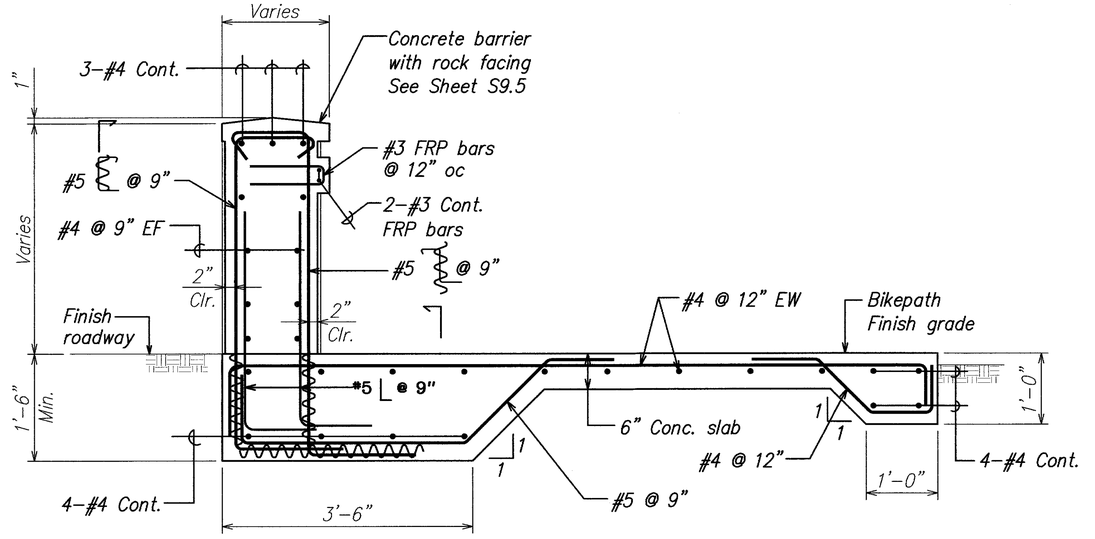
"AS-BUILT"

C.O. 194S-8

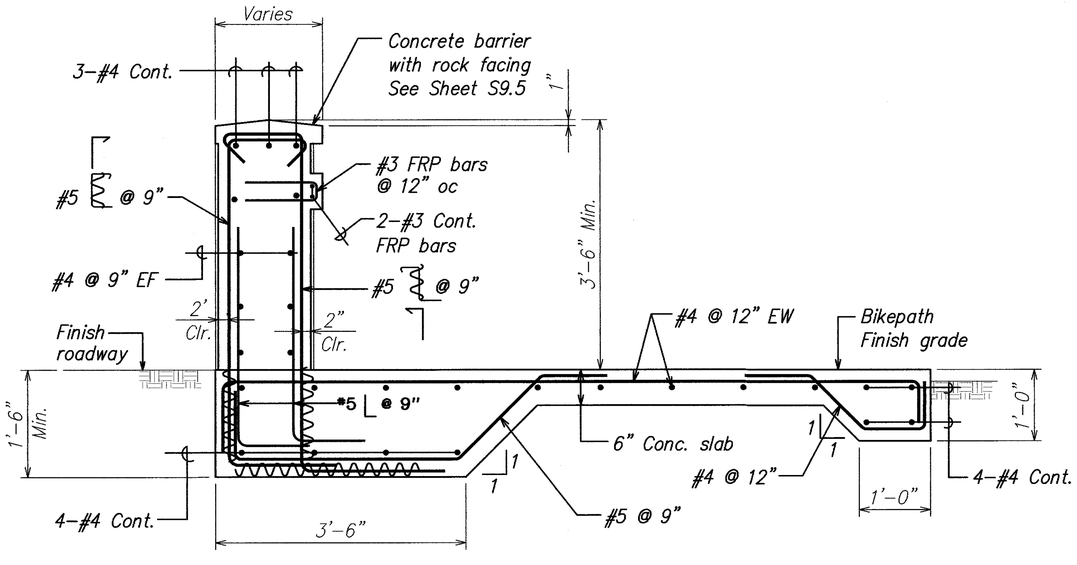
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 194S-9	284



SECTION A
Scale: 1" = 1'-0" S12.4E | S12.4J | S12.4G



SECTION B
Scale: 1" = 1'-0" S12.4E | S12.4J | S12.4G



SECTION C
Scale: 1" = 1'-0" S12.4E | S12.4J | S12.4G

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

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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SIGNATURE — EXPIRATION DATE OF THE LICENSE 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

END POSTS NO.8 AND NO.9
SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

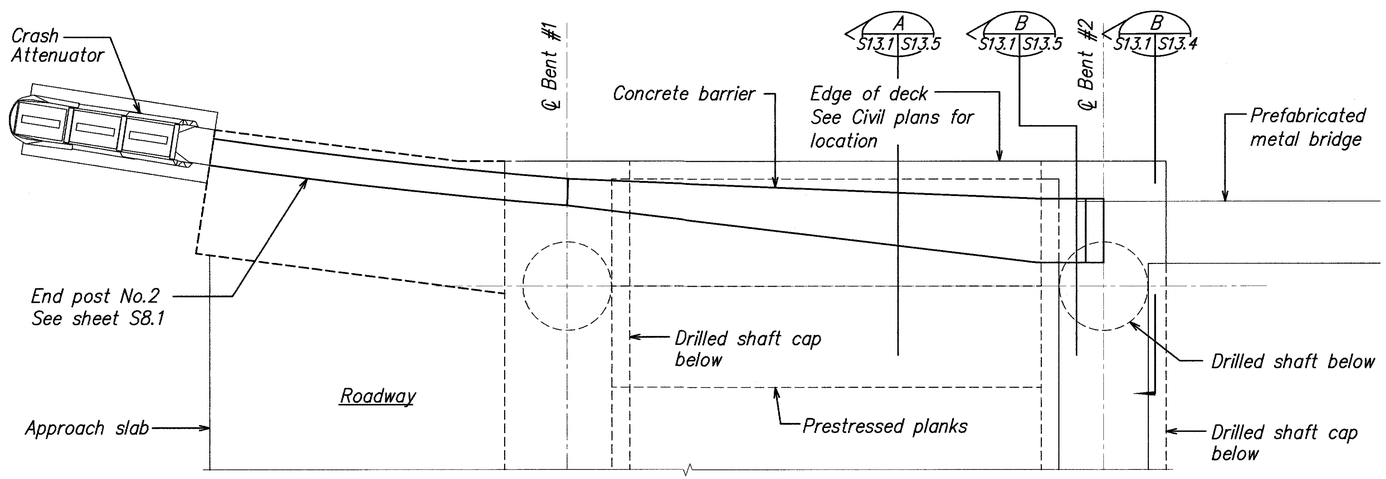
Scale: As Noted — Date: May 2008

SHEET No. S12.4J OF 131 SHEETS

"AS-BUILT"

C.O. 194S-9

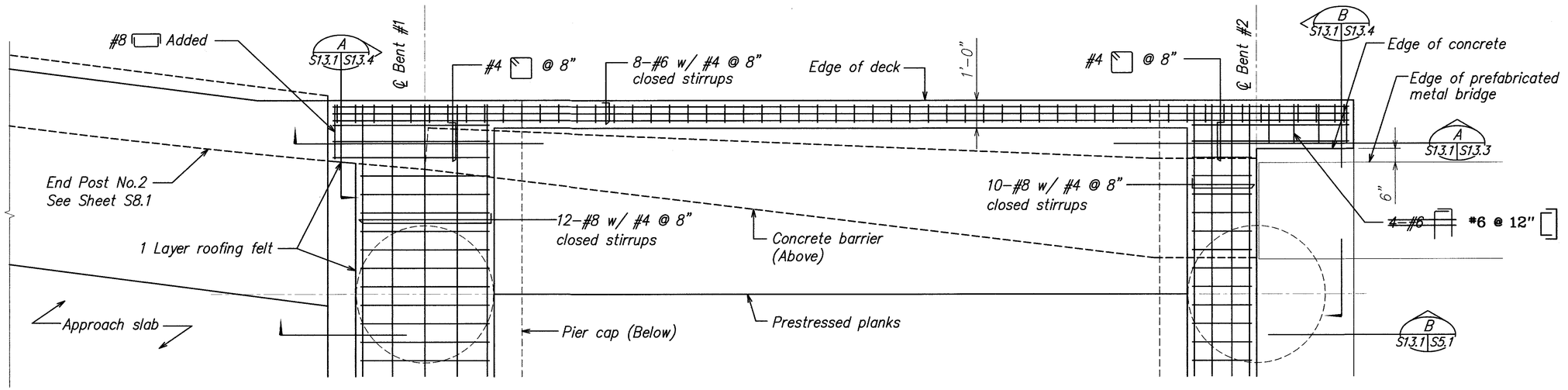
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	195	284



TRUE NORTH

SOUTH SIDE MAUKA – PLAN (A S1.1 S13.1)

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



SECTION (B S13.1 S13.1)

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

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

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOUTH SIDE MAUKA – PLANS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening

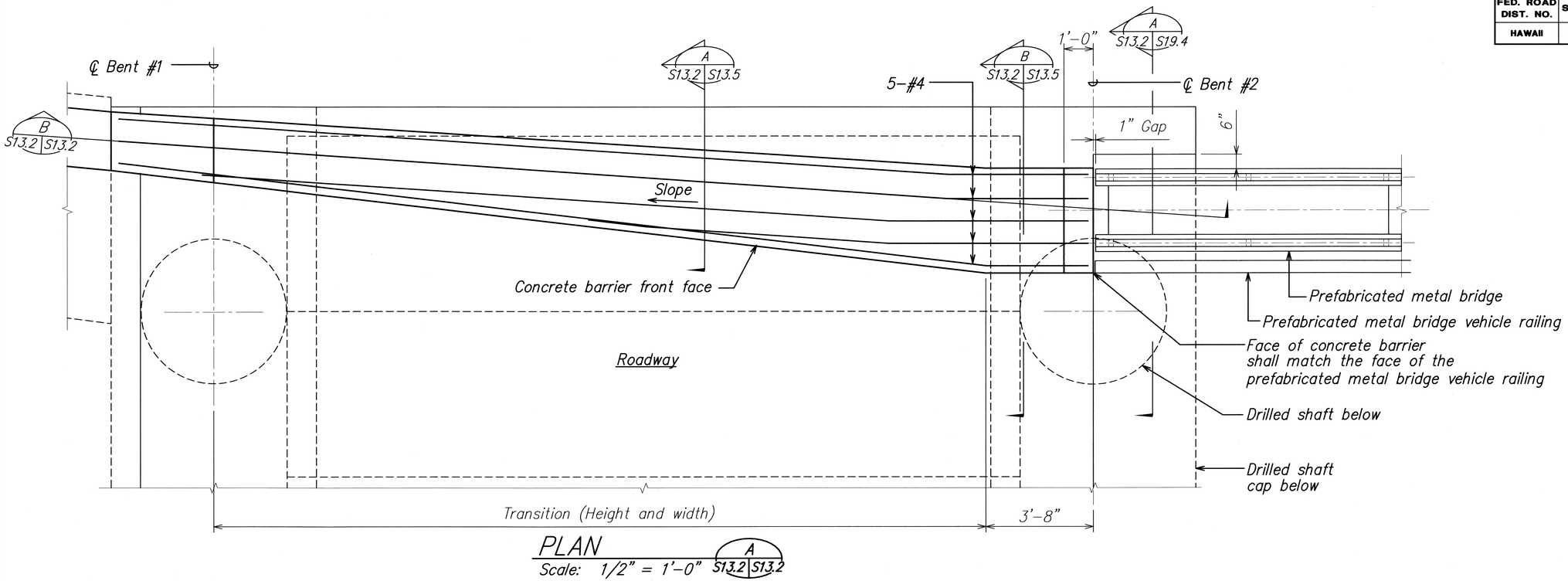
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

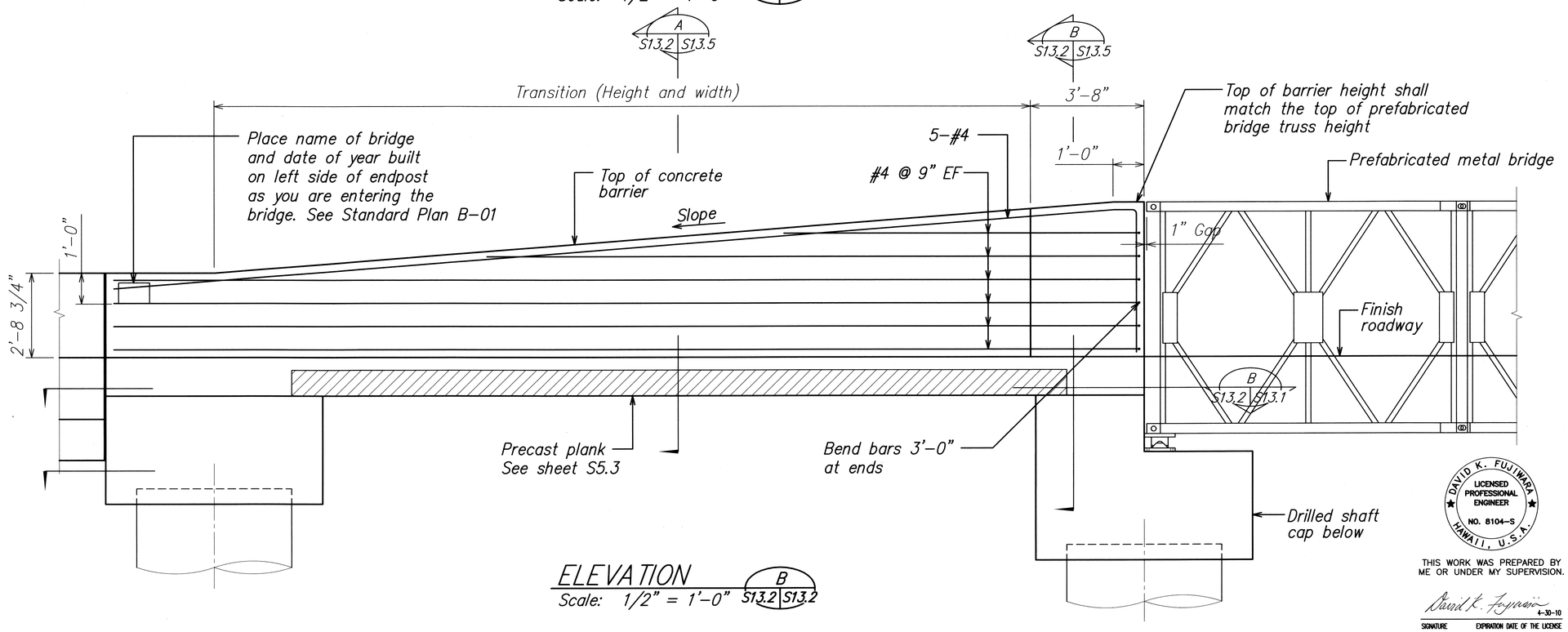
SHEET No. S13.1 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	196	284



PLAN (A S13.2 S13.2)
Scale: 1/2" = 1'-0"



ELEVATION (B S13.2 S13.2)
Scale: 1/2" = 1'-0"

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

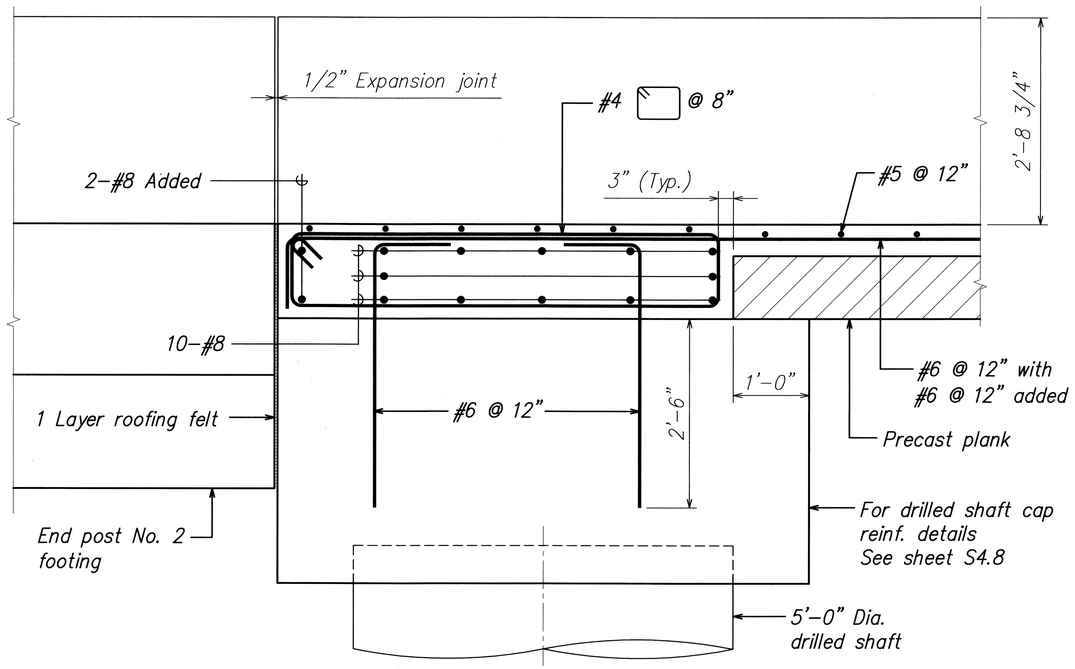
SOUTH SIDE MAUKA – PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

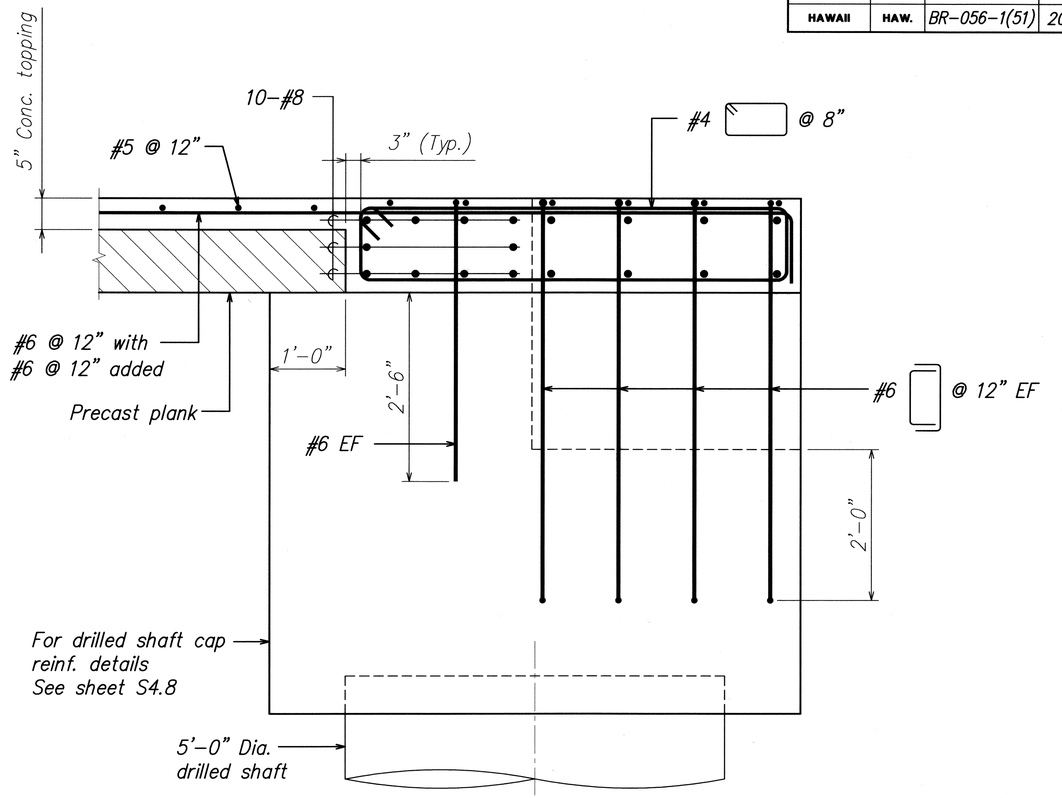
Scale: As Noted Date: May 2008

SHEET No. S13.2 OF 131 SHEETS

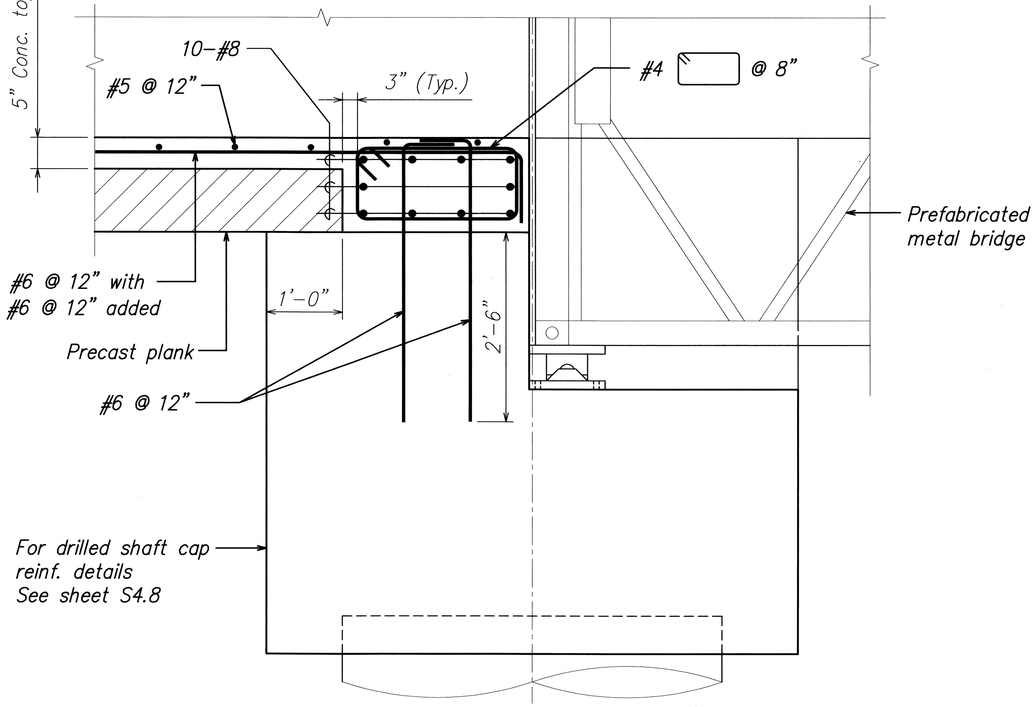
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	197	284



SECTION A
Scale: 1" = 1'-0" S13.1 S13.3



SECTION B
Scale: 1" = 1'-0" S13.1 S13.3



SECTION C
Scale: 1" = 1'-0" S13.1 S13.3
S14.2, S15.2, S16.2

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

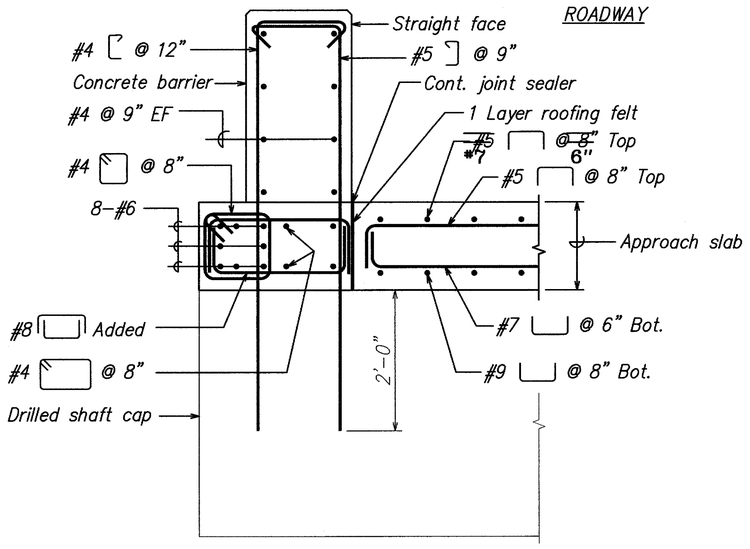
SOUTH SIDE MAUKA - SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

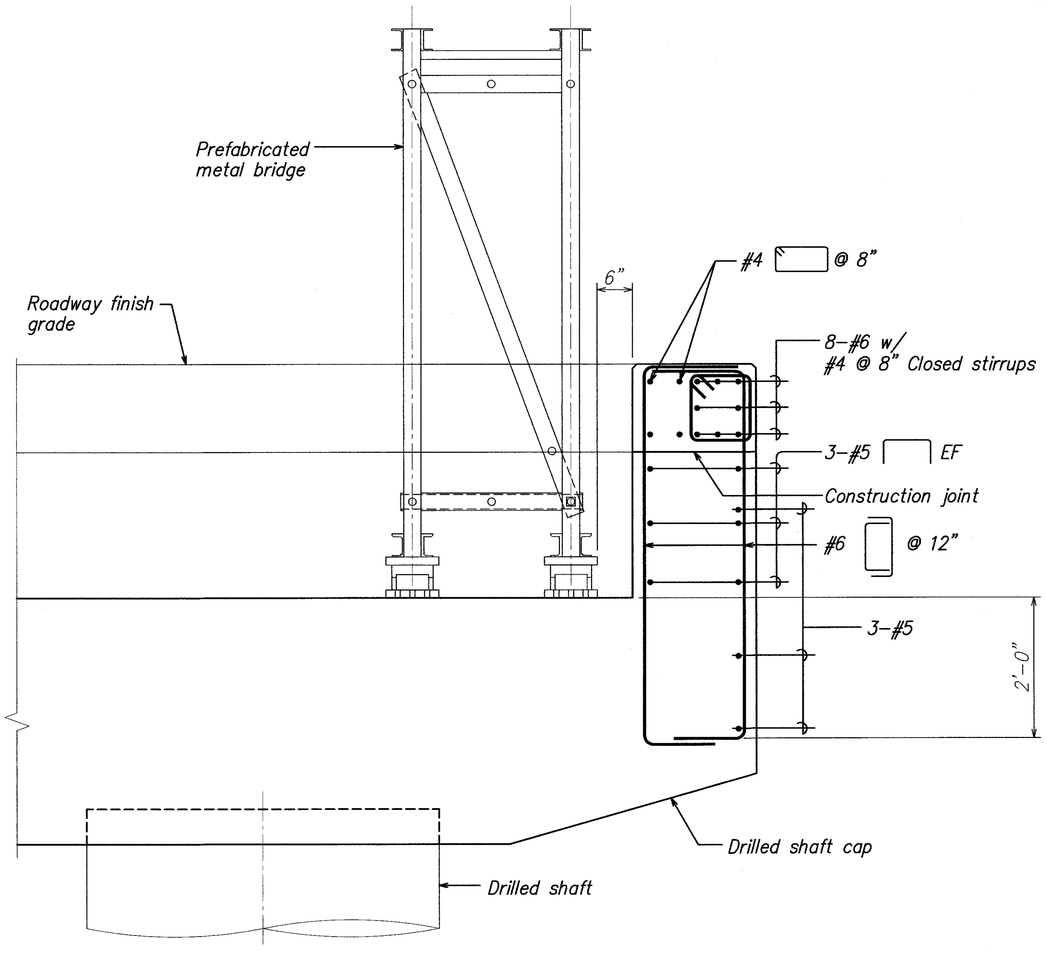
Scale: As Noted Date: May 2008

SHEET No. S13.3 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	198	284



SECTION A
Scale: 1" = 1'-0"
S13.1 | S13.4



SECTION B
Scale: 1" = 1'-0"
S13.1 | S13.4

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOUTH SIDE MAUKA - SECTIONS

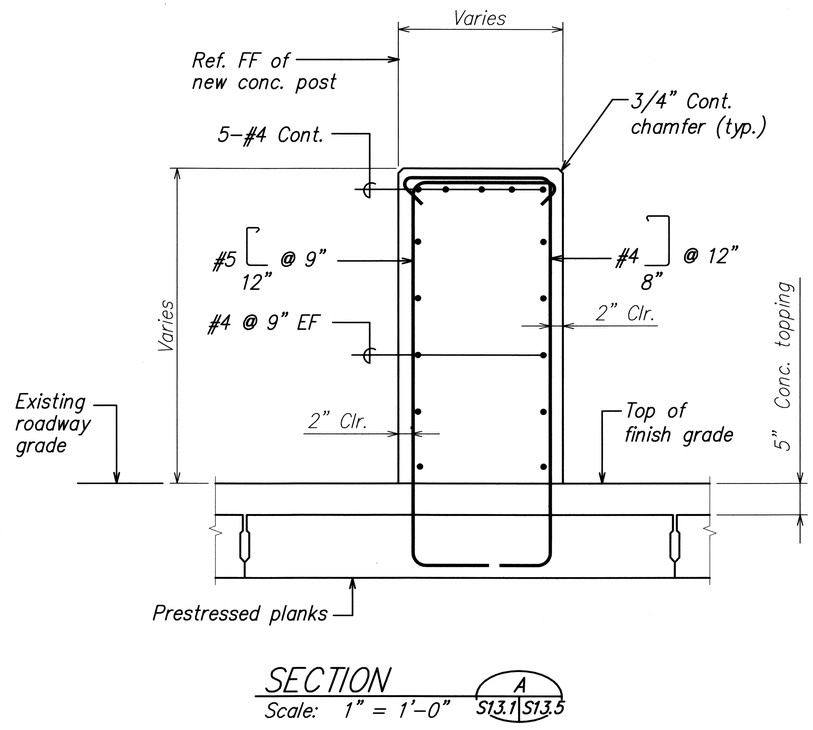
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

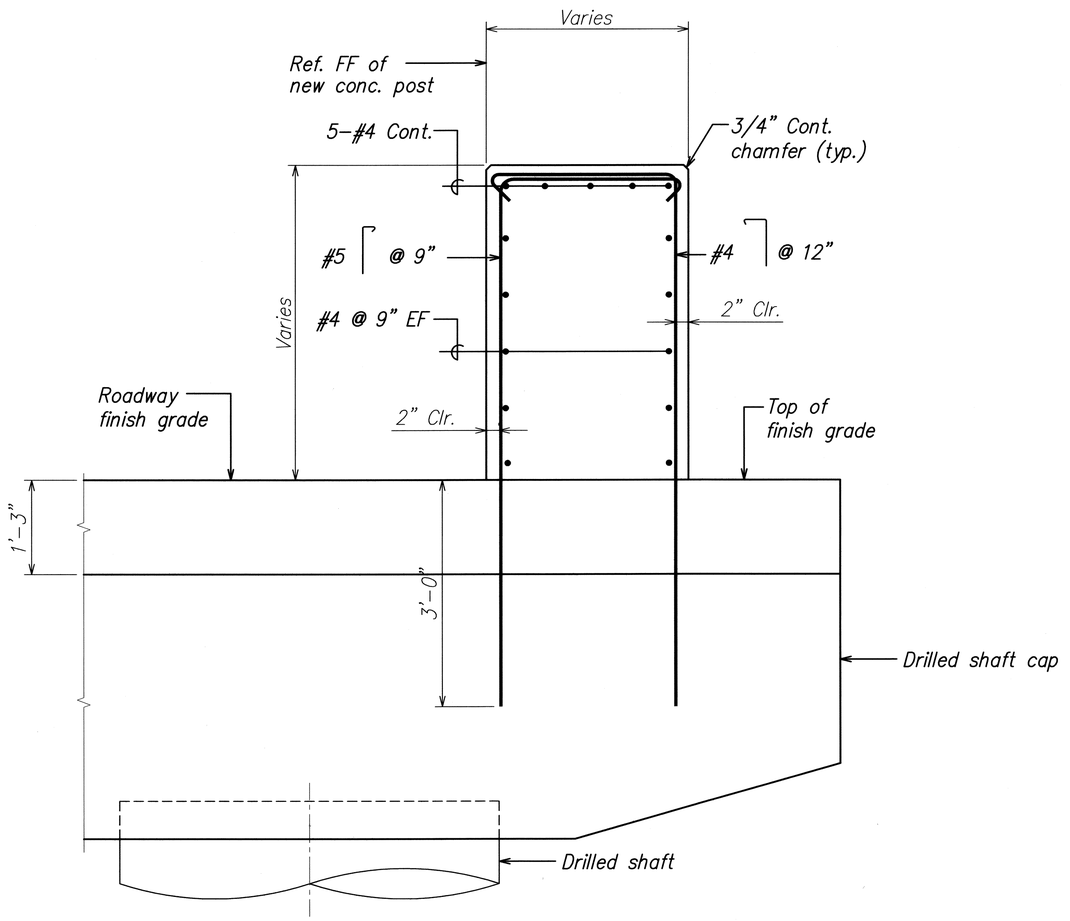
SHEET No. S13.4 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	199	284



SECTION A
Scale: 1" = 1'-0"
S13.1 | S13.5



SECTION B
Scale: 1" = 1'-0"
S13.1 | S13.5

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

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DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

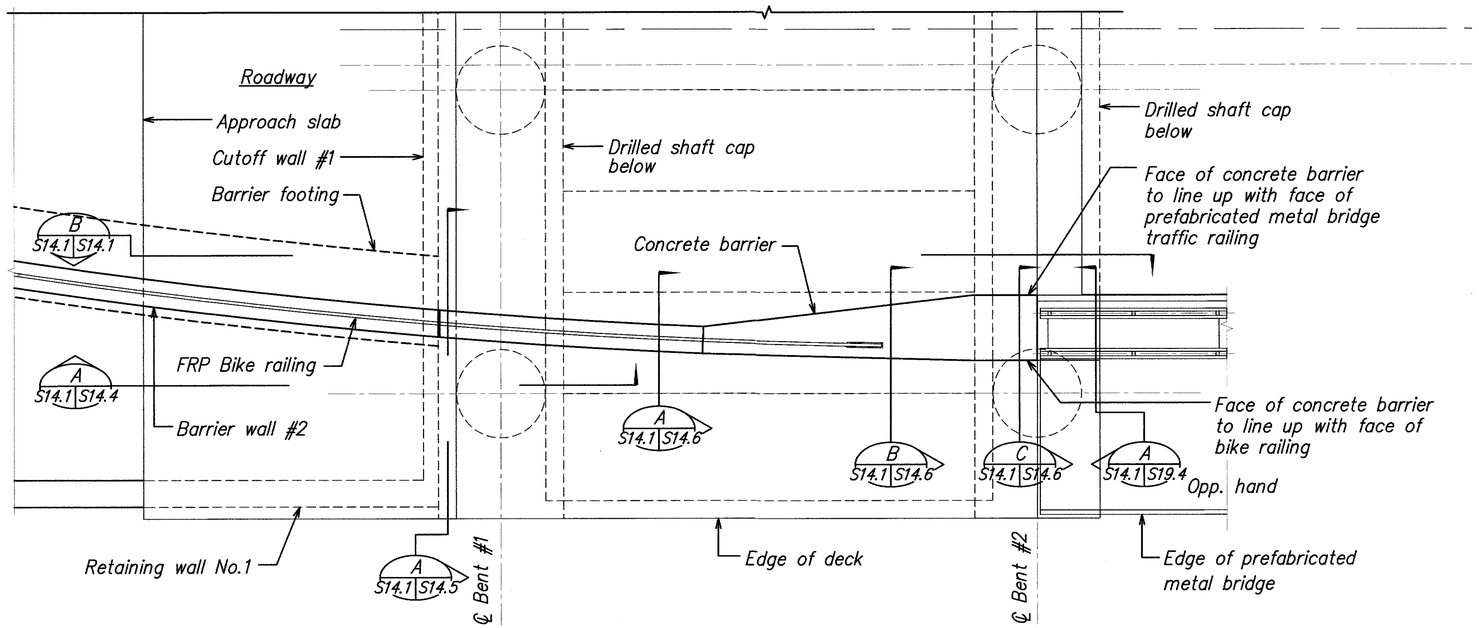
SOUTH SIDE MAUKA - SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

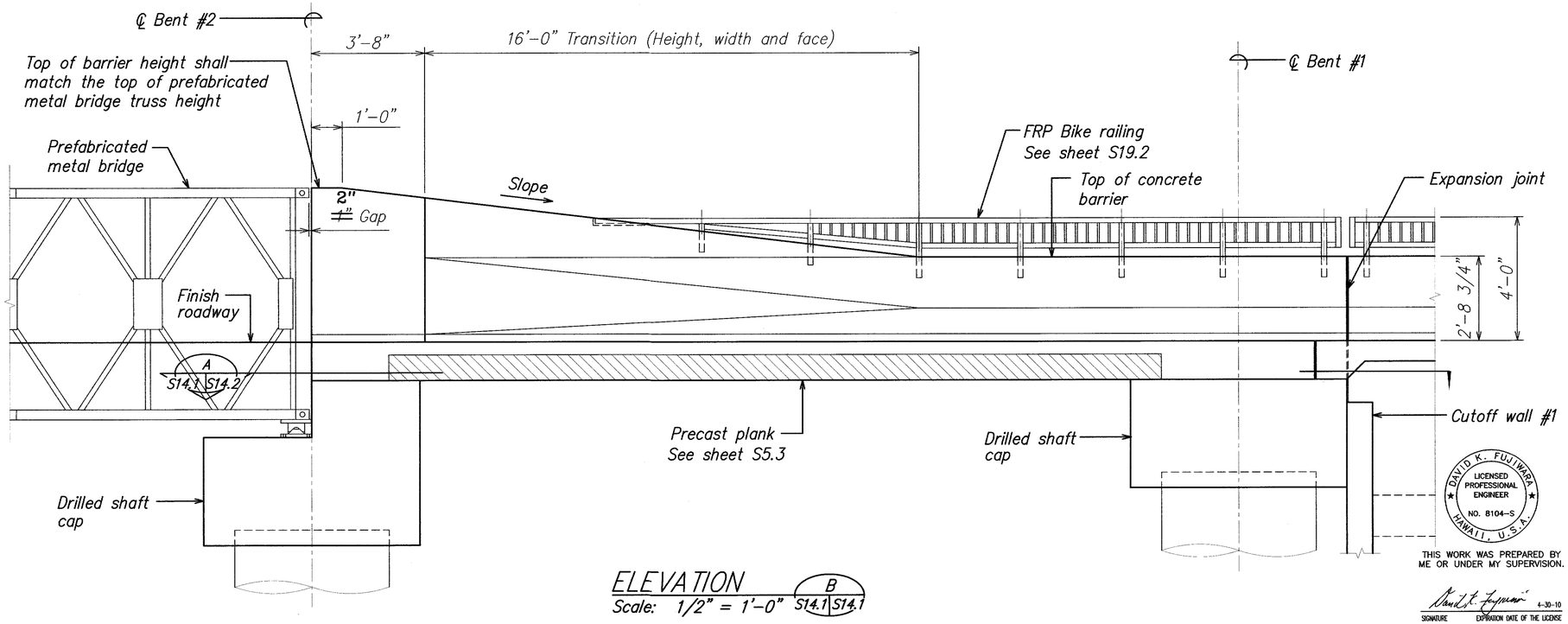
SHEET No. S13.5 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	200	284



SOUTH SIDE MAKAI PLAN (A S1.1 S14.1)
Scale: 1/4" = 1'-0"

TRUE NORTH



ELEVATION (B S14.1 S14.1)
Scale: 1/2" = 1'-0"

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

LEGEND FOR AS-BUILT POSTINGS

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Roadway	Text for as-built posting

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOUTH SIDE MAKAI - PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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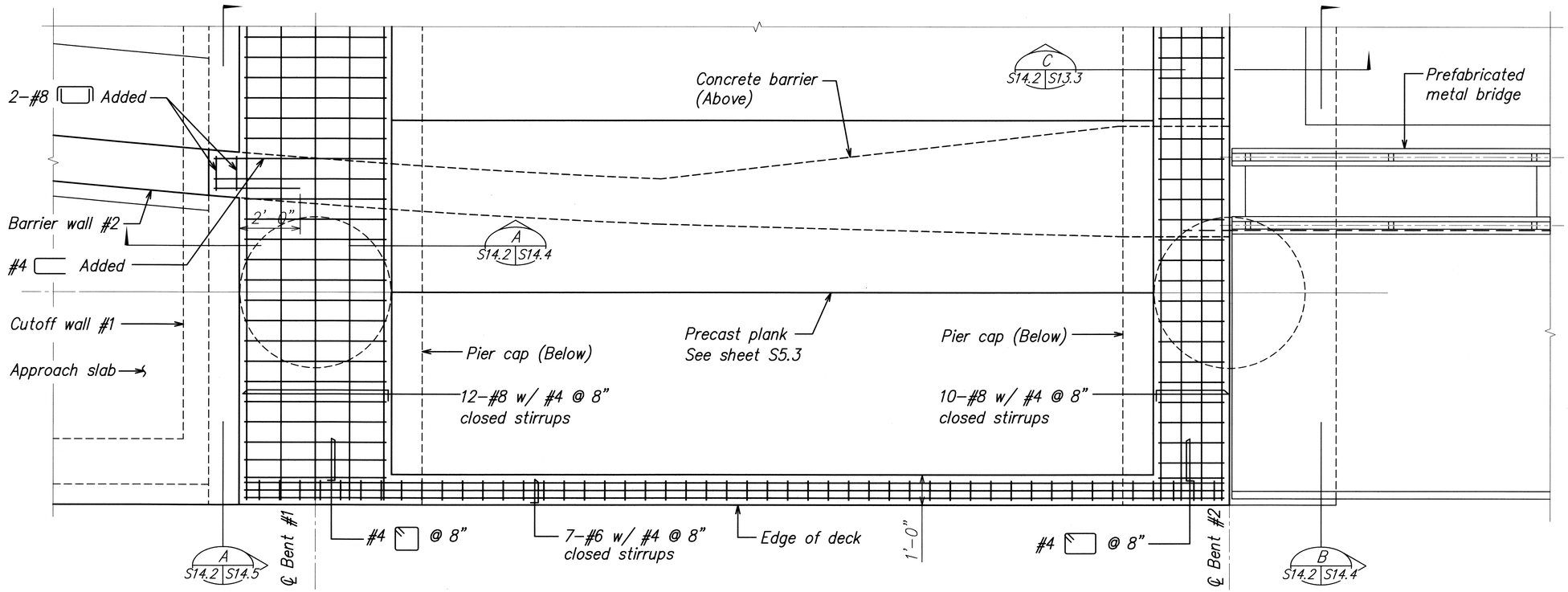
SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

SHEET No. S14.1 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	201	284



PLAN (A S14.1 S14.2)
Scale: 1/2" = 1'-0"

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

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

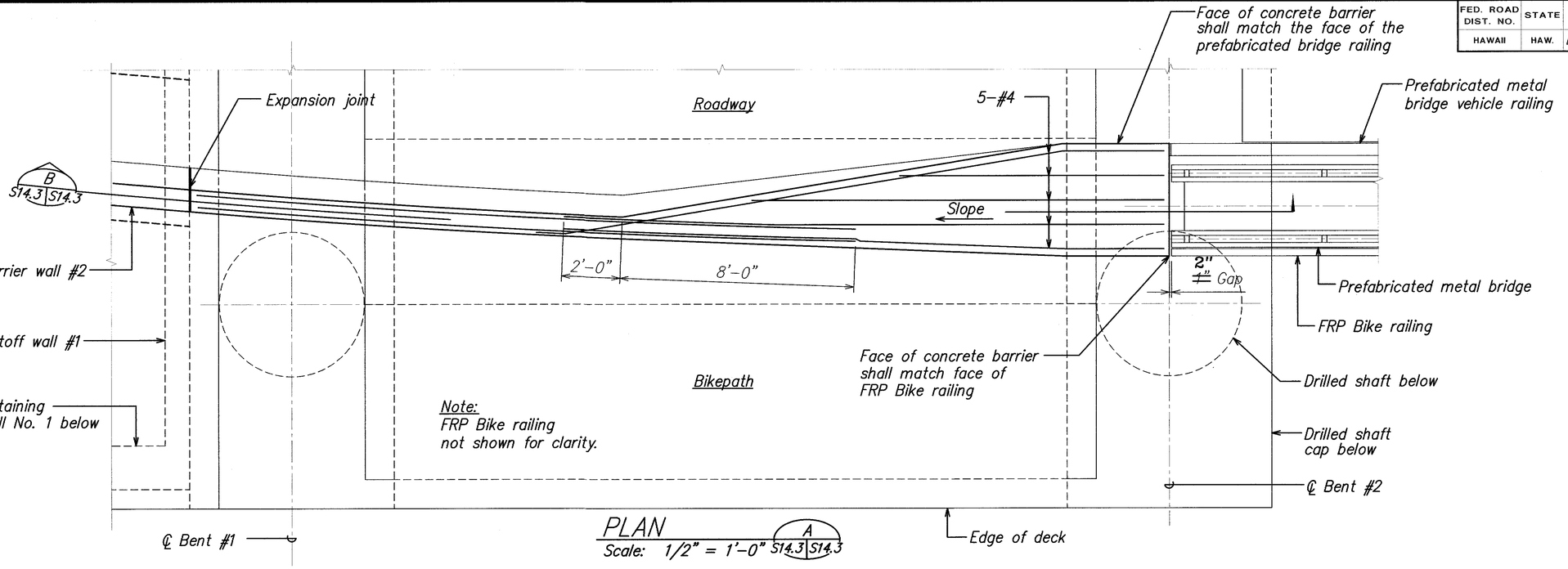
SOUTH SIDE MAKAI - PLAN

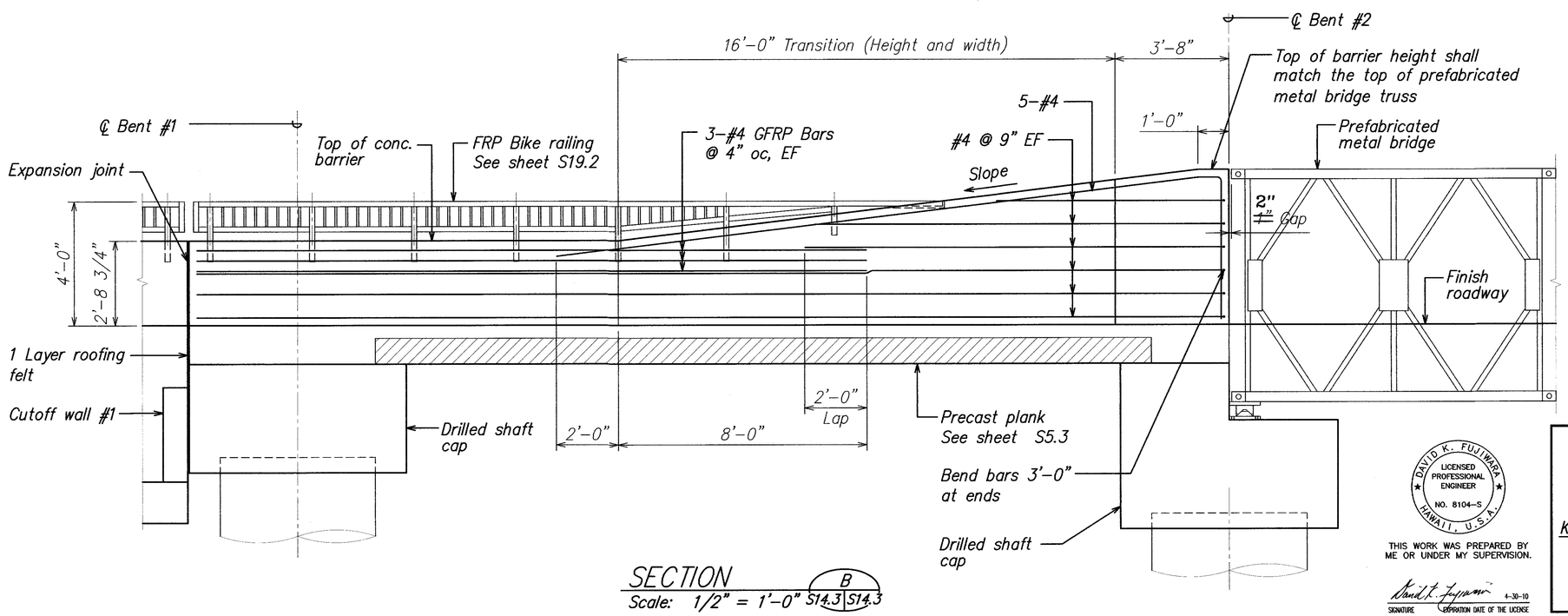
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S14.2 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	202	284





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

LEGEND FOR AS-BUILT POSTINGS

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Roadway	Text for as-built posting

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SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOUTH SIDE MAKAI SECTIONS

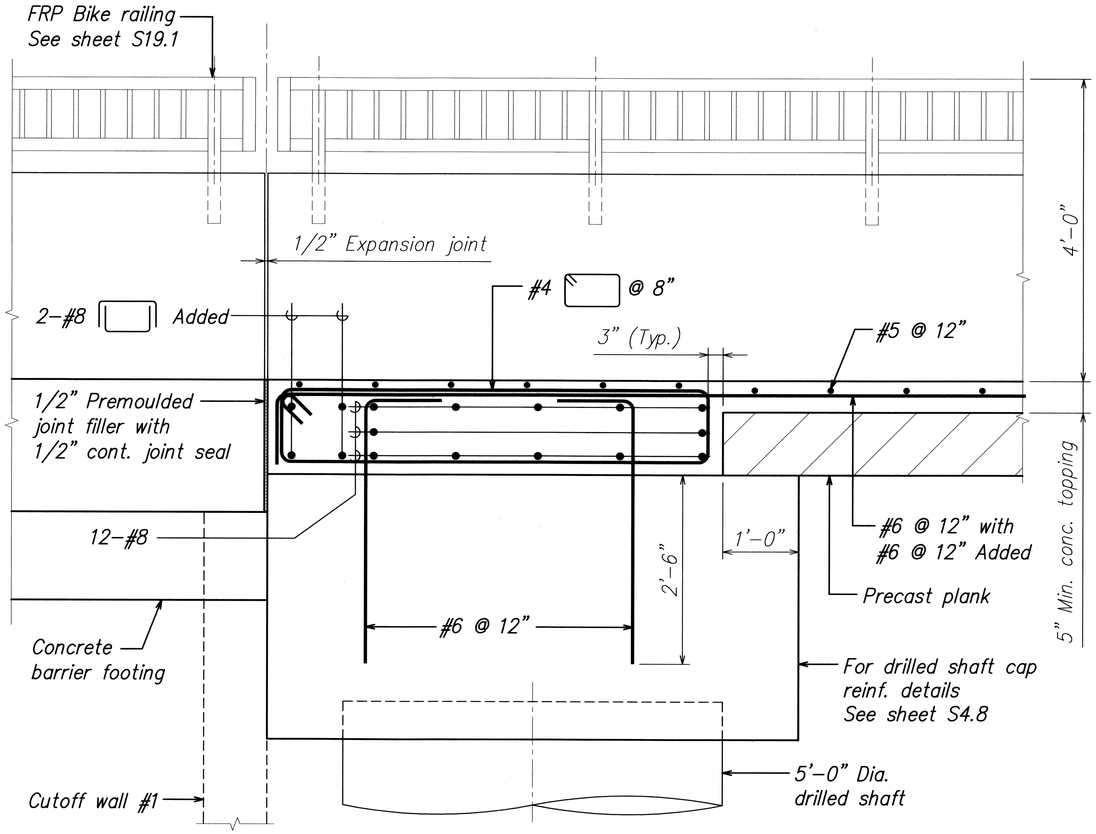
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

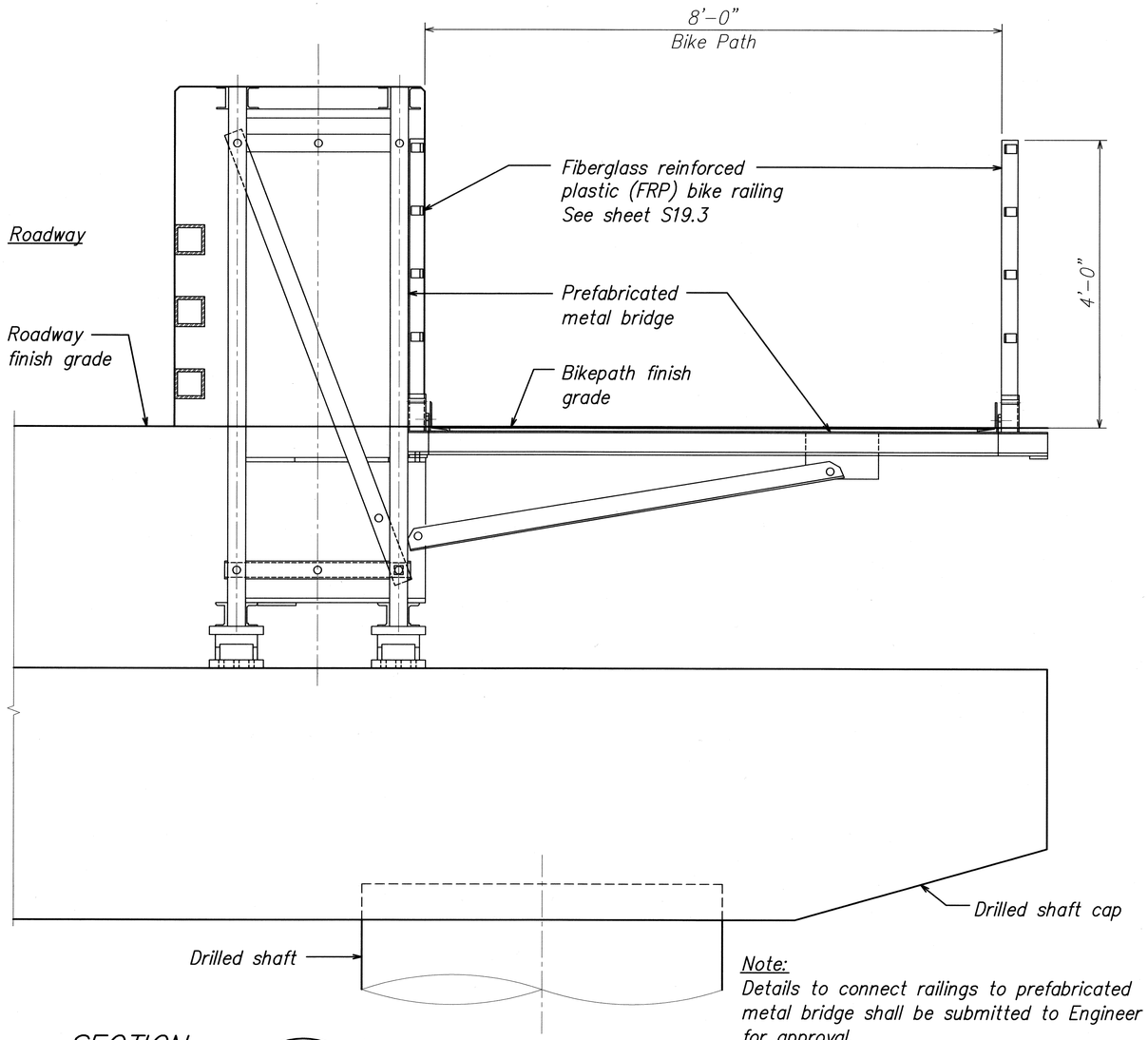
SHEET No. S14.3 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	203	284



TYPICAL SECTION A
Scale: 1" = 1'-0"
S14.1 S14.4 S14.2



SECTION B
Scale: 1" = 1'-0"
S14.2 S14.4

Note:
Details to connect railings to prefabricated metal bridge shall be submitted to Engineer for approval.

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE DEC.2000

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

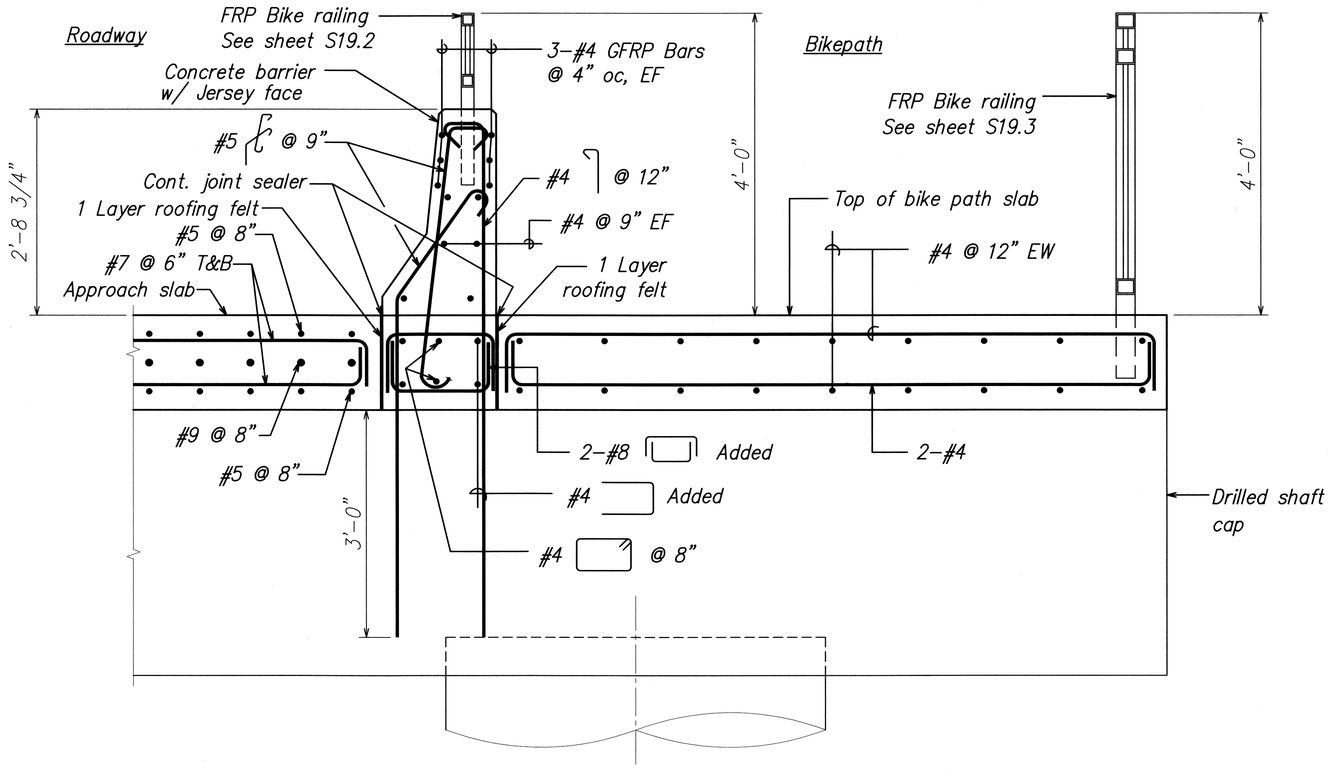
SOUTH SIDE MAKAI - SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S14.4 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	204	284



TYPICAL SECTION A
Scale: 1" = 1'-0"

S14.1 | S14.5

S14.2

ORIGINAL PLAN

NOTE BOOK No.

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DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE DEC/2000

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOUTH SIDE MAKAI - SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

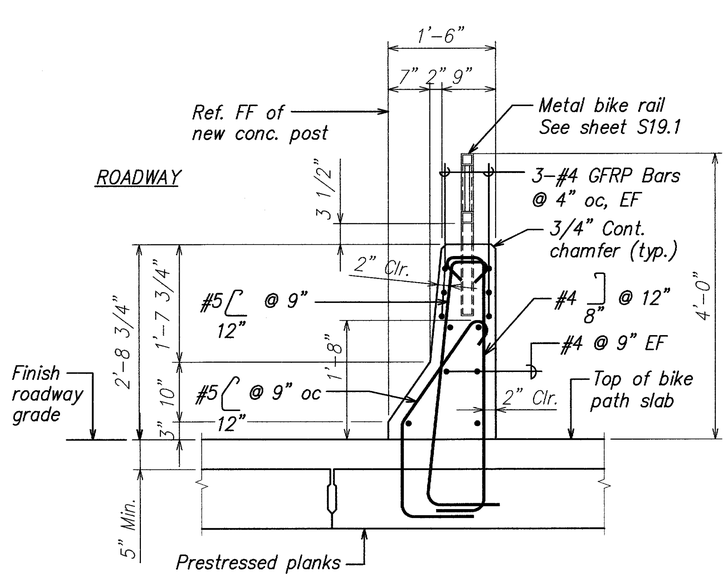
Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

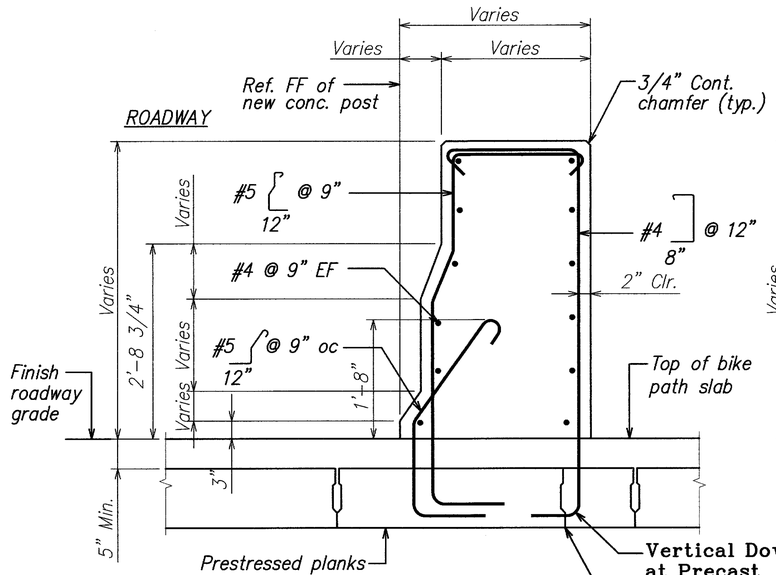
Scale: As Noted Date: May 2008

SHEET No. S14.5 OF 131 SHEETS

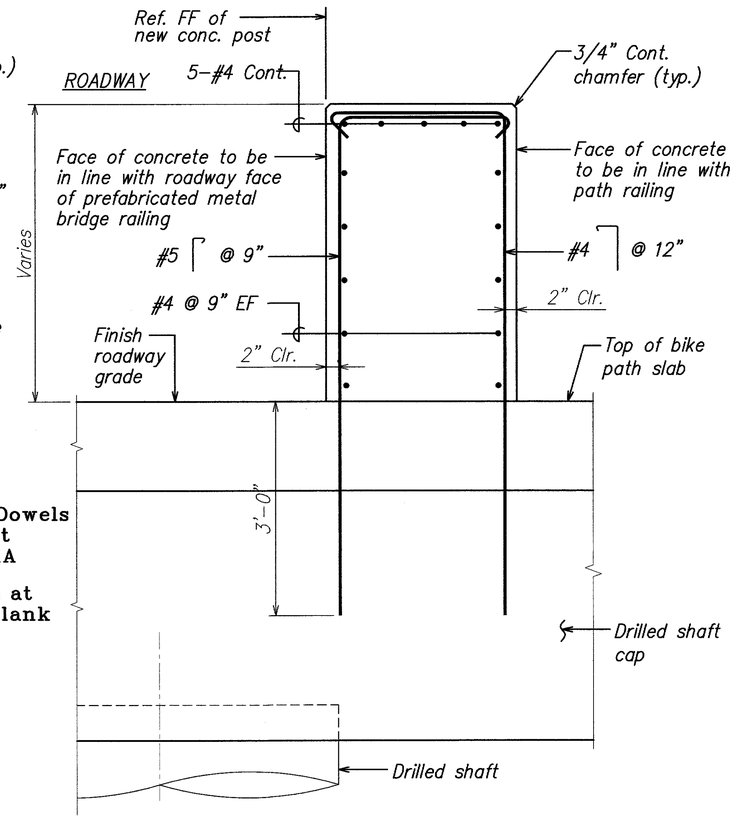
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	205	284



SECTION A
Scale: 1" = 1'-0" S14.1 | S14.6



SECTION B
Scale: 1" = 1'-0" S14.1 | S14.6



SECTION C
Scale: 1" = 1'-0" S14.1 | S14.6

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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

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STATE OF HAWAII
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HIGHWAYS DIVISION

SOUTH SIDE MAKAI - SECTIONS

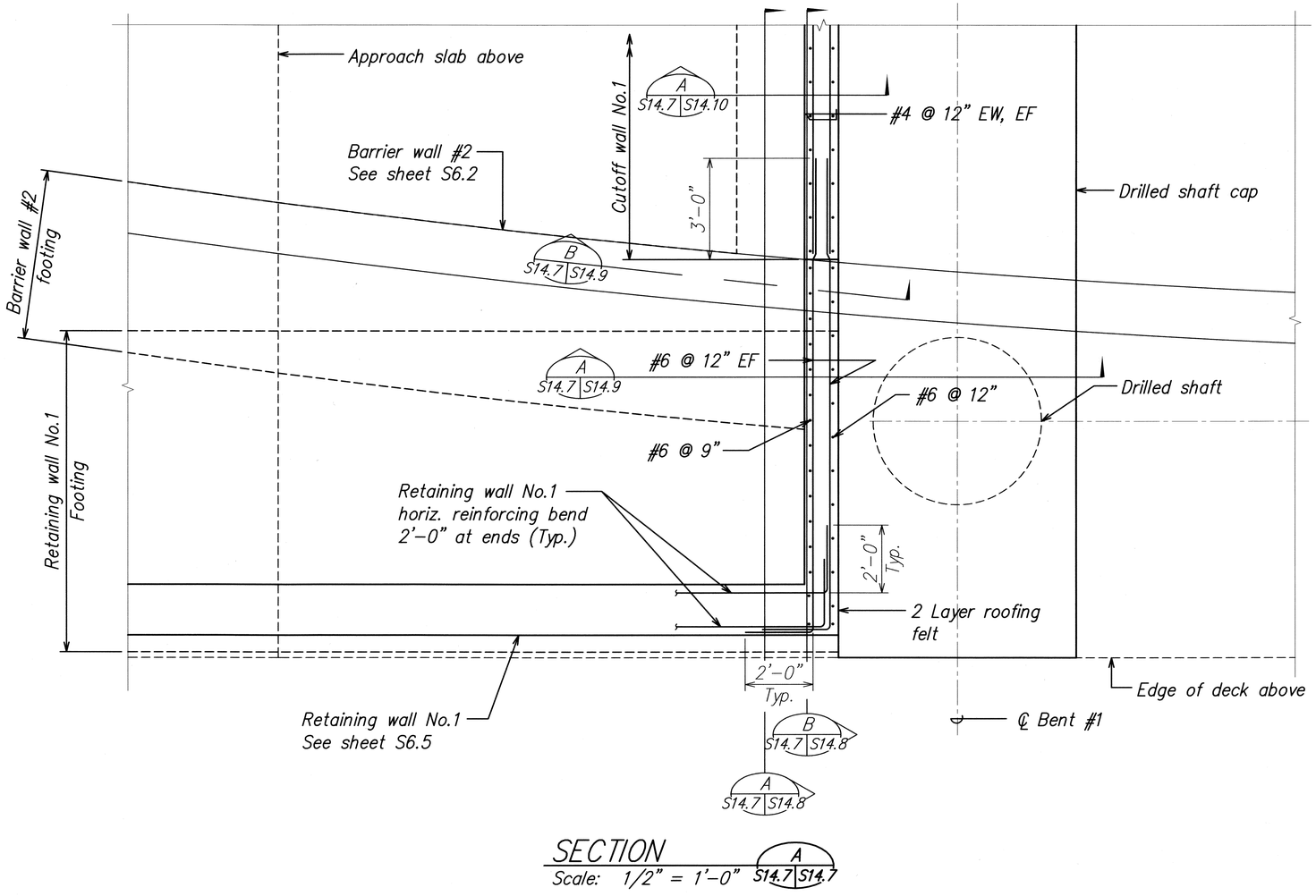
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S14.6 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	206	284



SECTION A S14.7 S14.7
Scale: 1/2" = 1'-0"

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

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STATE OF HAWAII
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HIGHWAYS DIVISION

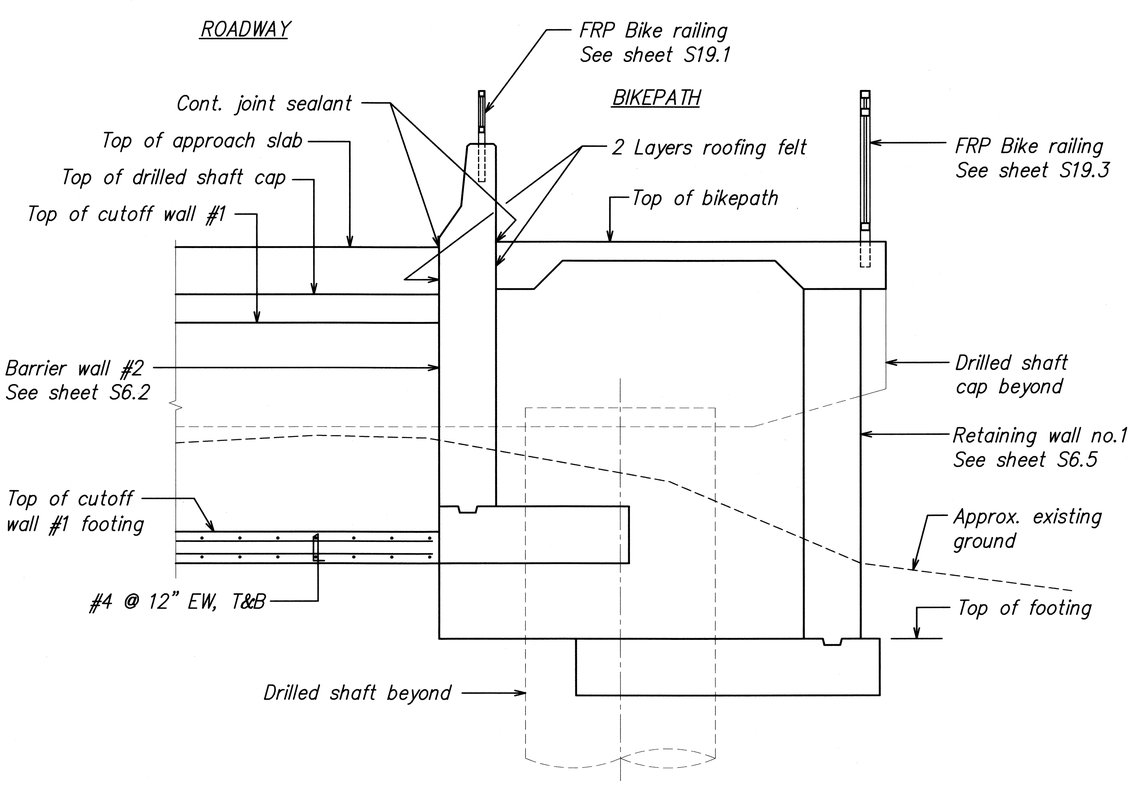
SOUTH SIDE MAKAI - SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

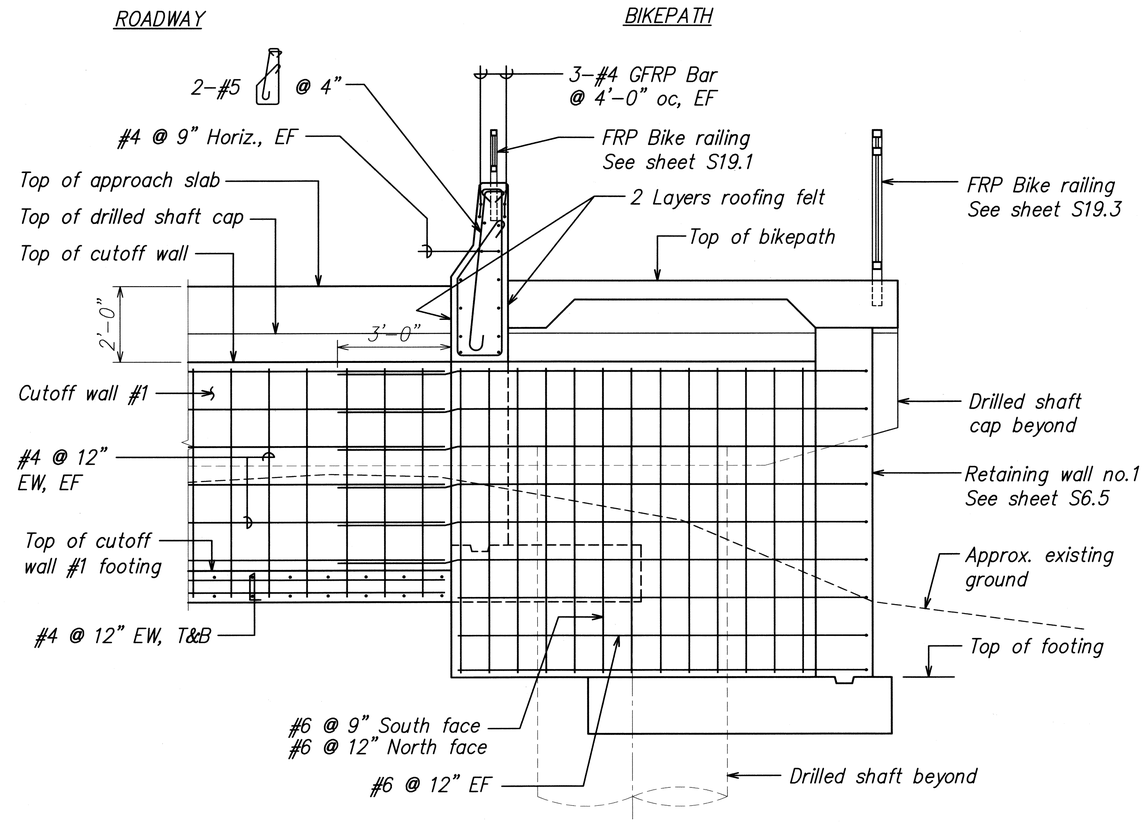
Scale: As Noted Date: May 2008

SHEET No. S14.7 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	207	284



SECTION A
Scale: 1/2" = 1'-0" S14.7 | S14.8



SECTION B
Scale: 1/2" = 1'-0" S14.7 | S14.8

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

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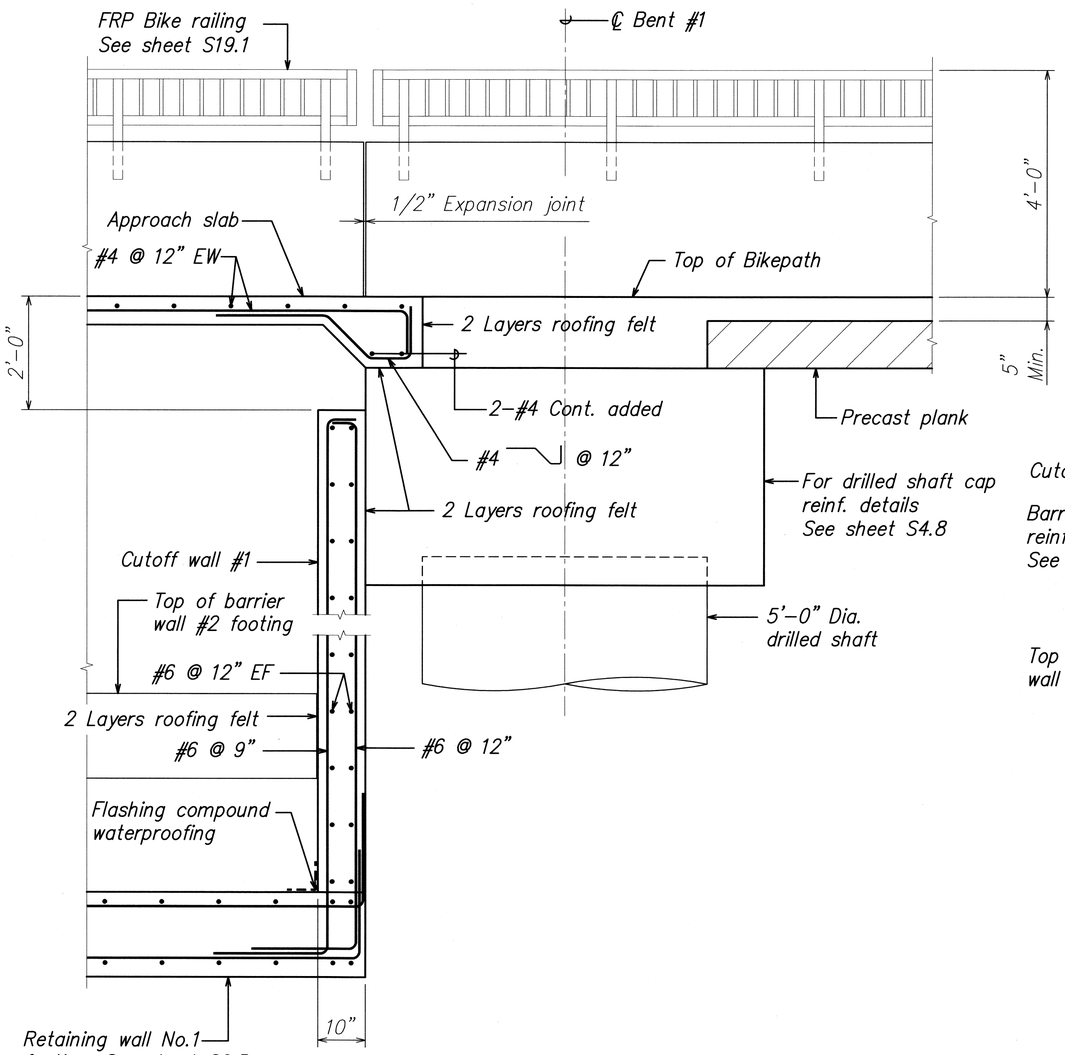
SOUTH SIDE MAKAI - SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

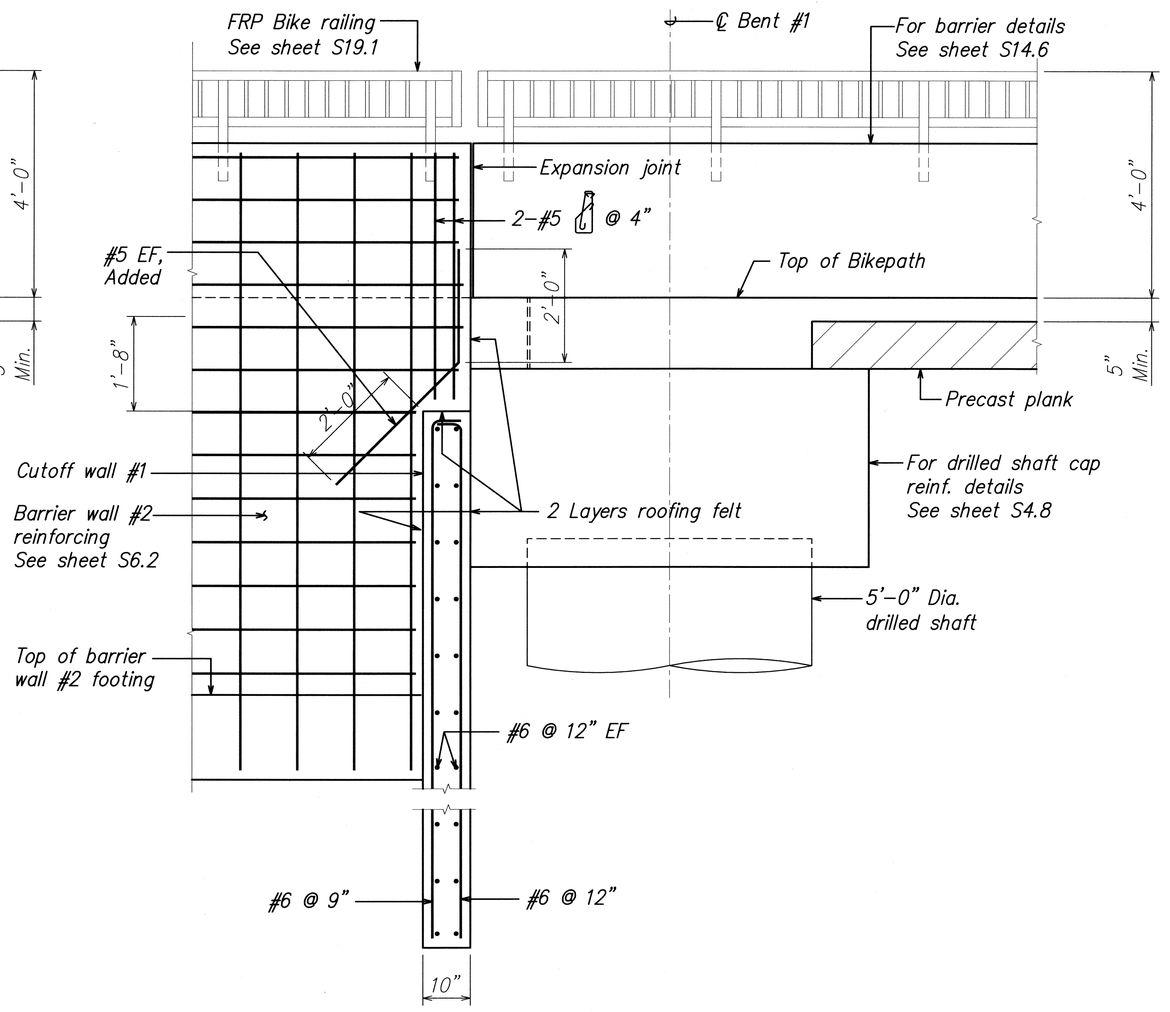
Scale: As Noted Date: May 2008

SHEET No. S14.8 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	208	284



TYPICAL SECTION A
Scale: 3/4" = 1'-0"
S14.7 | S14.9



TYPICAL SECTION B
Scale: 3/4" = 1'-0"
S14.7 | S14.9

ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY
DRAWN BY
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DESIGNED BY
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CHECKED BY
DATE DEC 2009

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOUTH SIDE MAKAI – SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

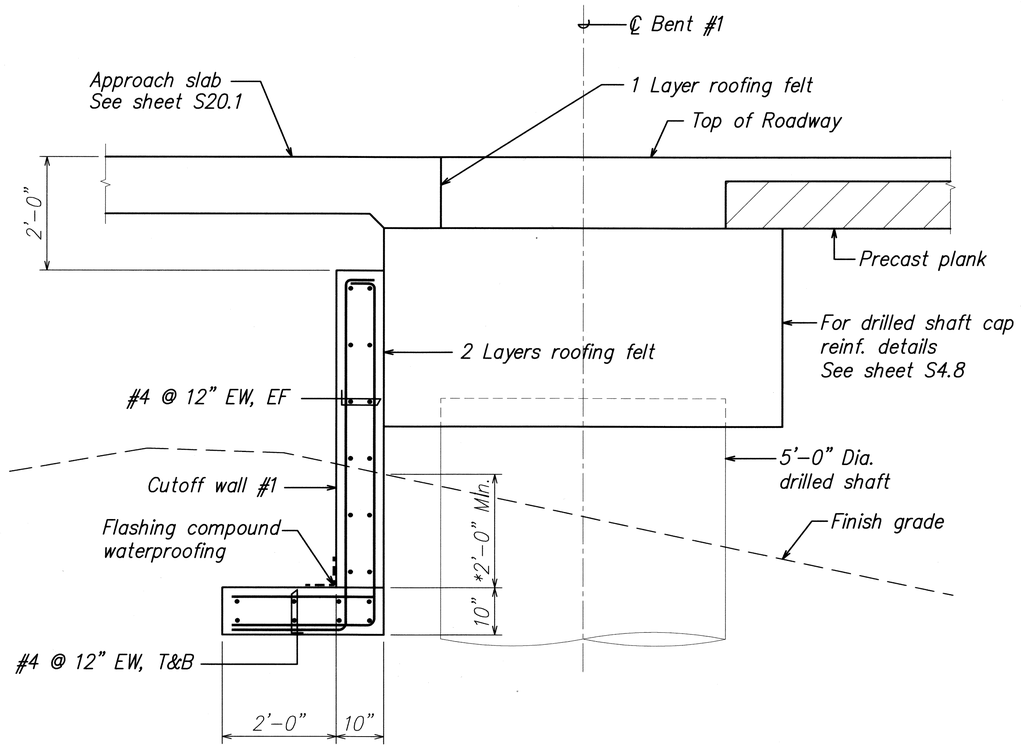
Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S14.9 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	209	284



*The top of footing shall be a minimum of 2'-0" from the top of the finish grade in front of the wall or 2'-0" from the top of the drilled shaft cap whichever is lower in elevation.

TYPICAL SECTION A
Scale: 3/4" = 1'-0"
S14.7 | S14.10

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

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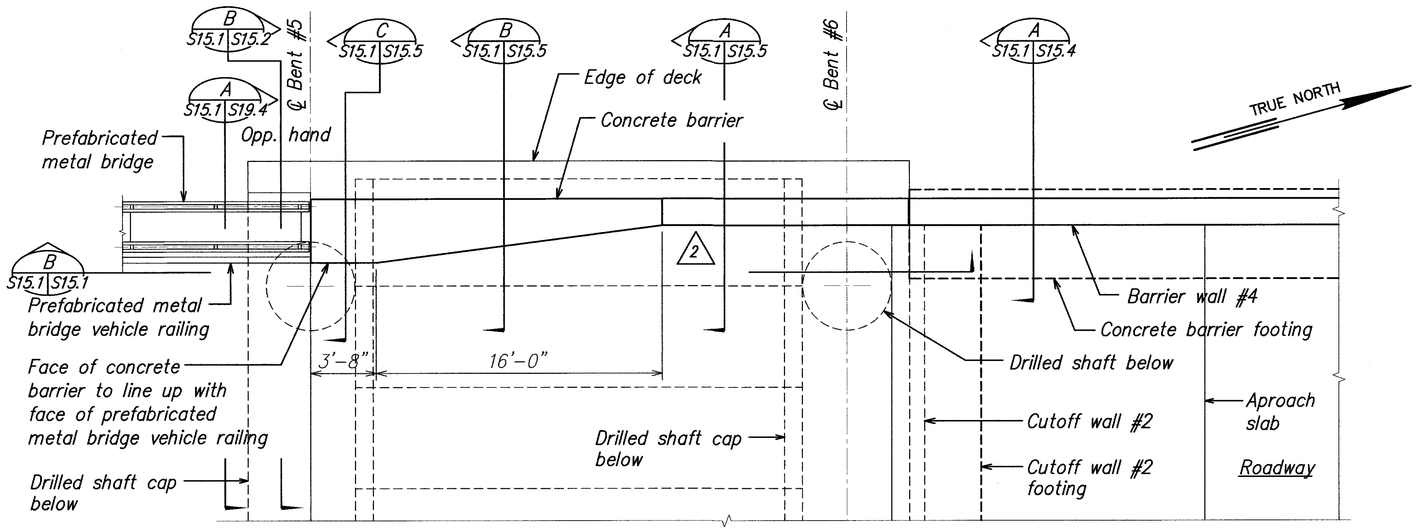
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SOUTH SIDE MAKAI - SECTION
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)
Scale: As Noted Date: May 2008

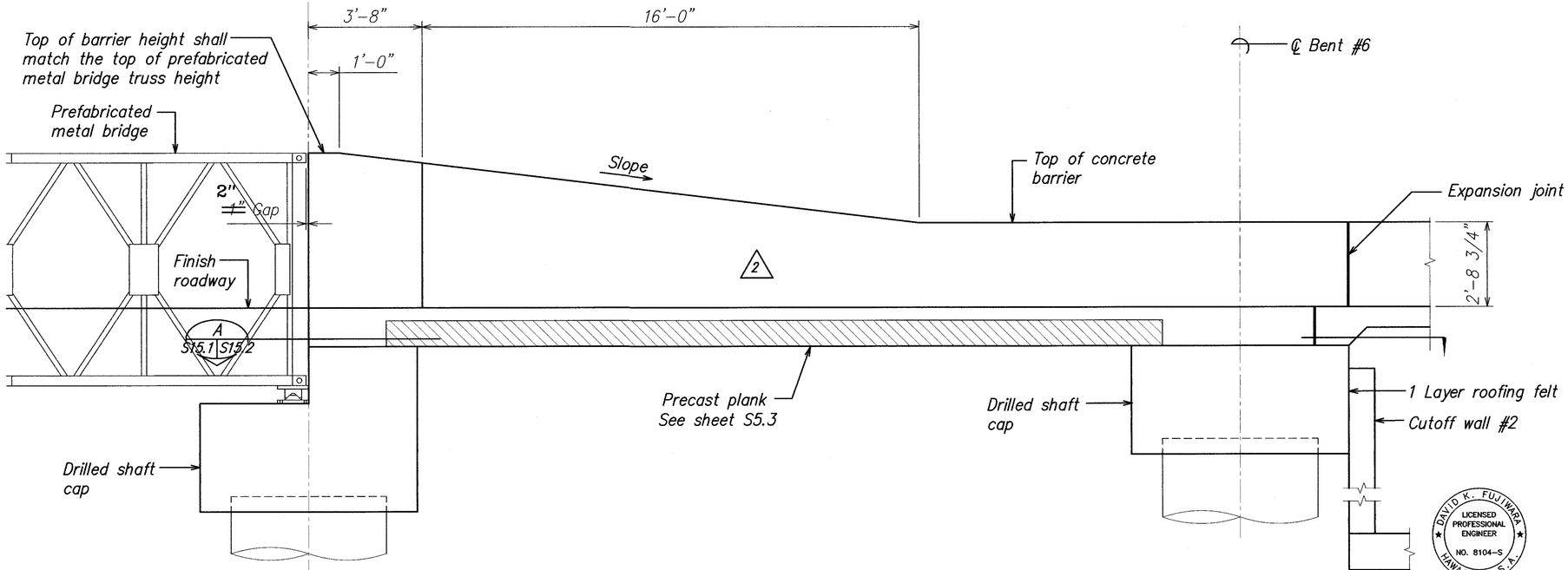
SHEET No. S14.10 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 210	284



NORTH SIDE MAUKA PLAN (A S1.1 S15.1)

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



ELEVATION (B S15.1 S15.1)

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

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawing

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH SIDE MAUKA - PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

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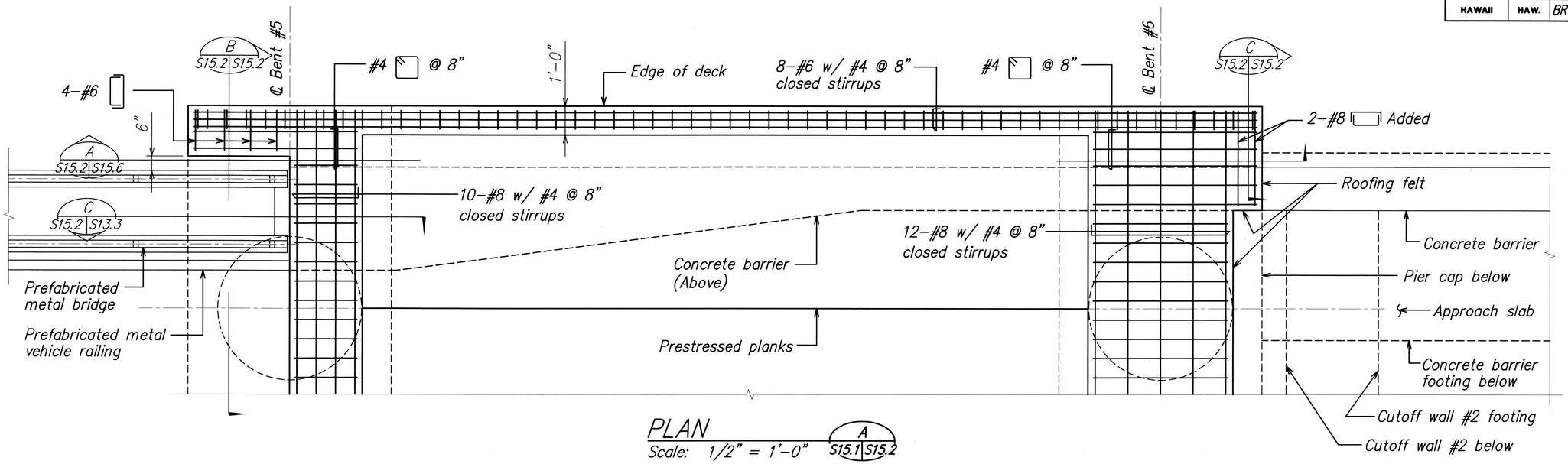
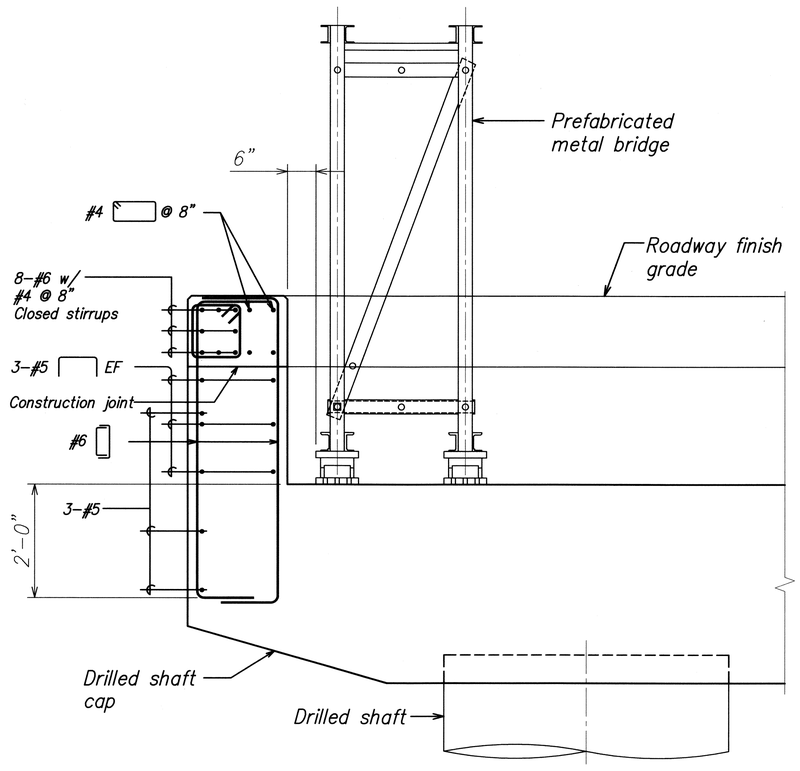
SHEET No. S15.1 OF 131 SHEETS

"AS-BUILT" C.O. 210

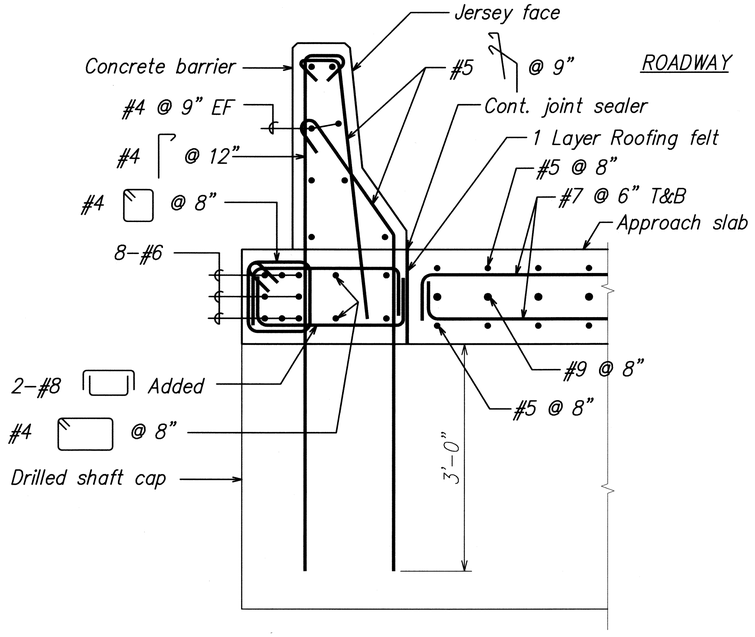
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	211	284



PLAN
Scale: 1/2" = 1'-0"
A S15.1 S15.2



SECTION
Scale: 1" = 1'-0"
B S15.1 S15.2
S15.2



TYPICAL SECTION
Scale: 1" = 1'-0"
C S15.2 S15.2

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH SIDE MAUKA - PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S15.2 OF 131 SHEETS

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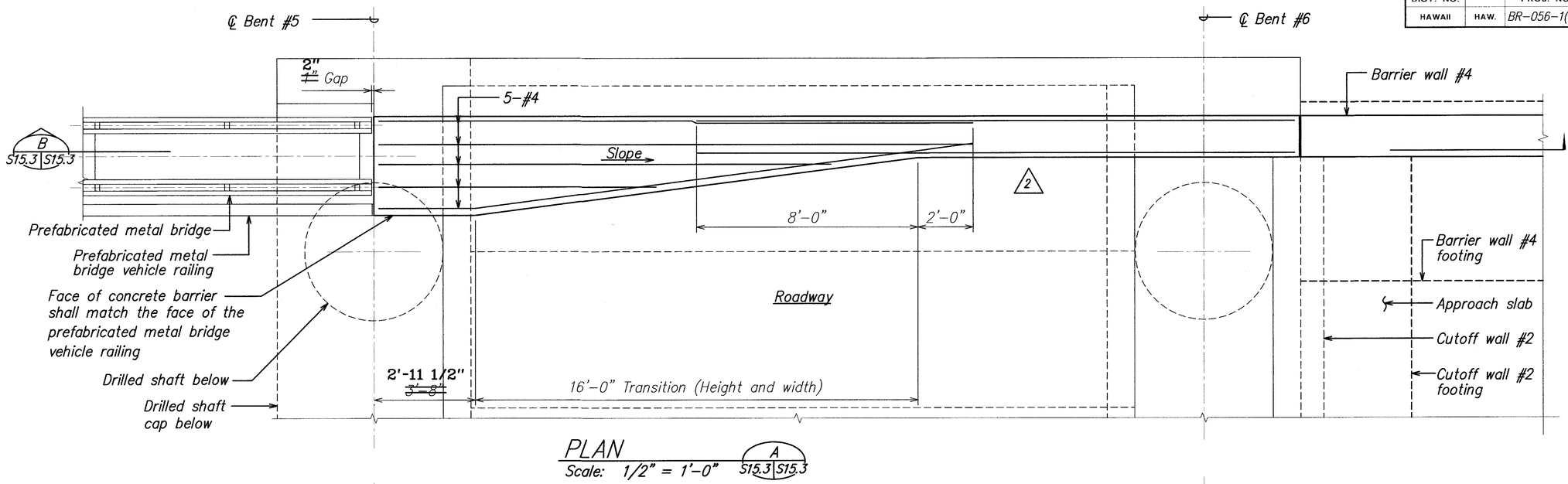
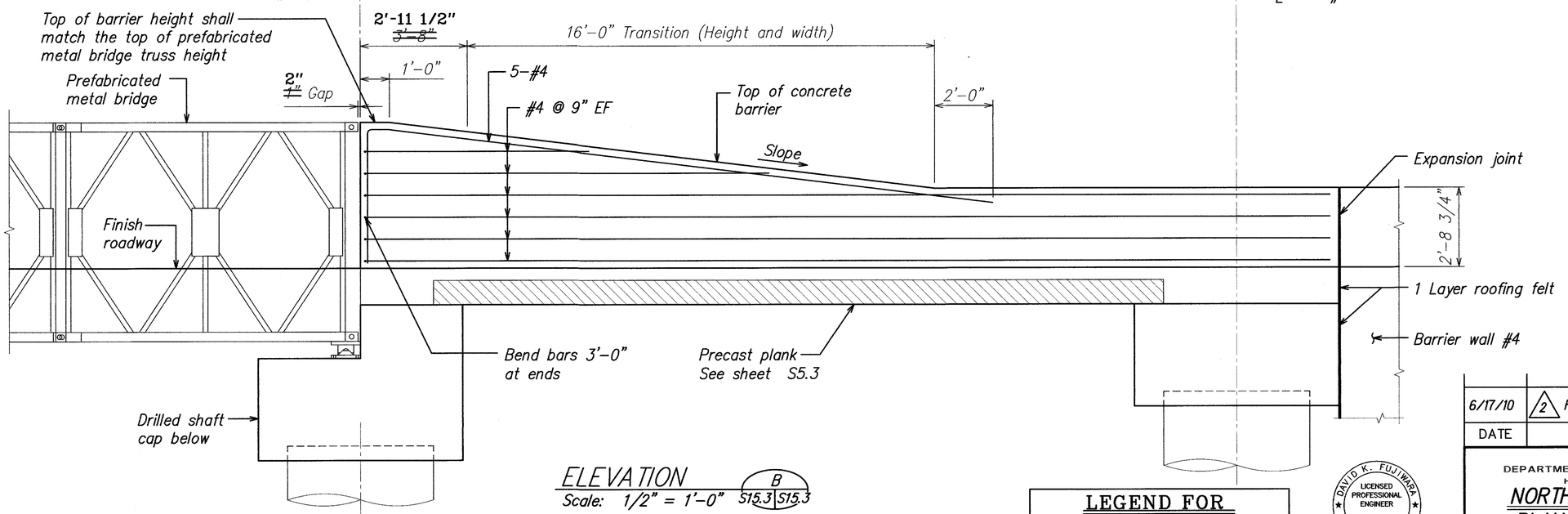
DESIGNED BY
QUANTITIES BY
CHECKED BY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 212	284



PLAN
Scale: 1/2" = 1'-0"
A S15.3 S15.3



ELEVATION
Scale: 1/2" = 1'-0"
B S15.3 S15.3

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

LEGEND FOR AS-BUILT POSTINGS

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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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NO. 8104-S
HAWAII, U.S.A.

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DATE	REVISION
6/17/10	2 Revised Drawing

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH SIDE MAUKA - PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

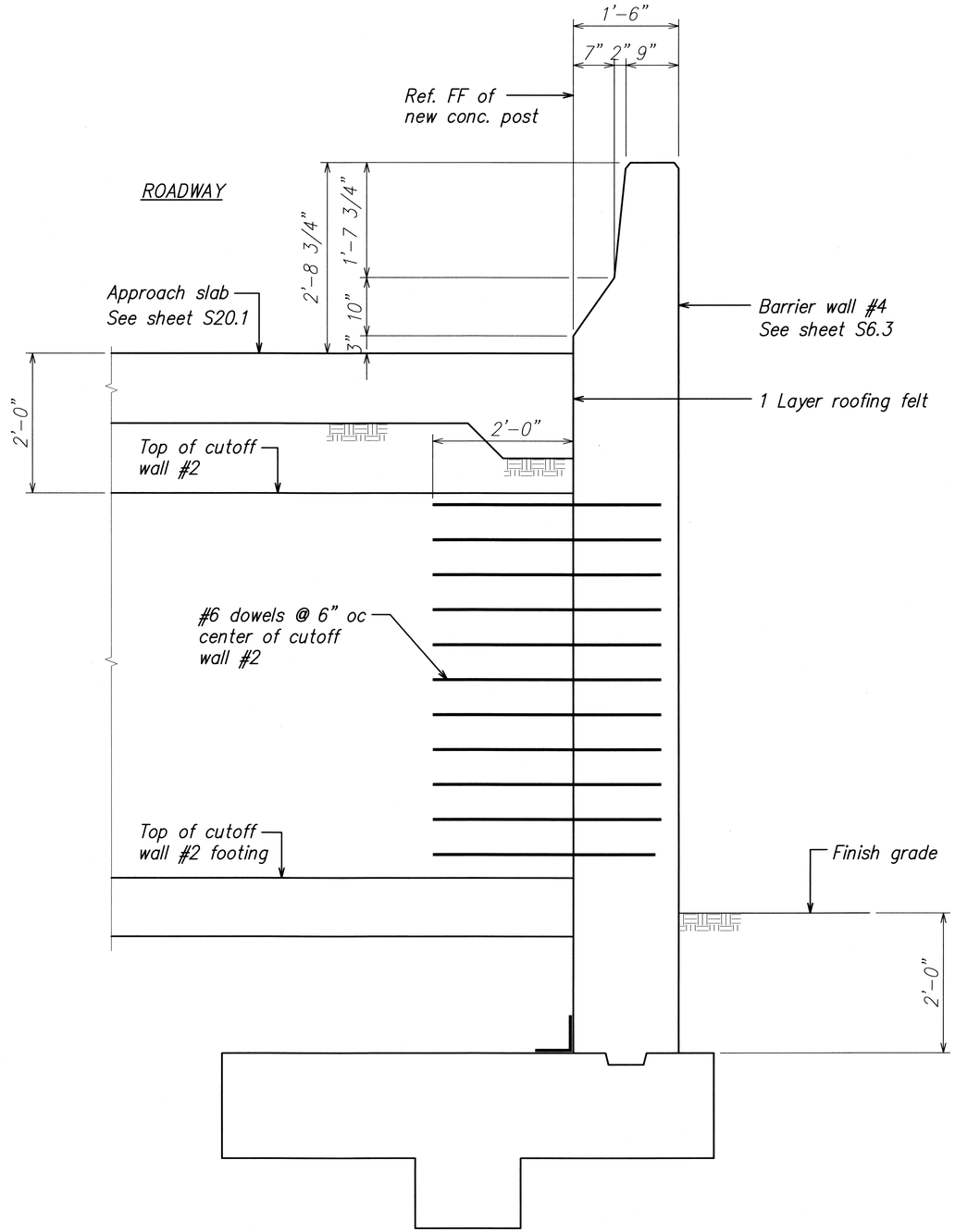
Scale: As Noted Date: May 2008

SHEET No. S15.3 OF 131 SHEETS

"AS-BUILT"

C.O. 212

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	213	284



SECTION
Scale: 1" = 1'-0"

A
S15.1 | S15.4

ORIGINAL PLAN
NOTE BOOK No.

SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

DAVID K. FUJIWARA
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NO. 8104-S
HAWAII, U.S.A.

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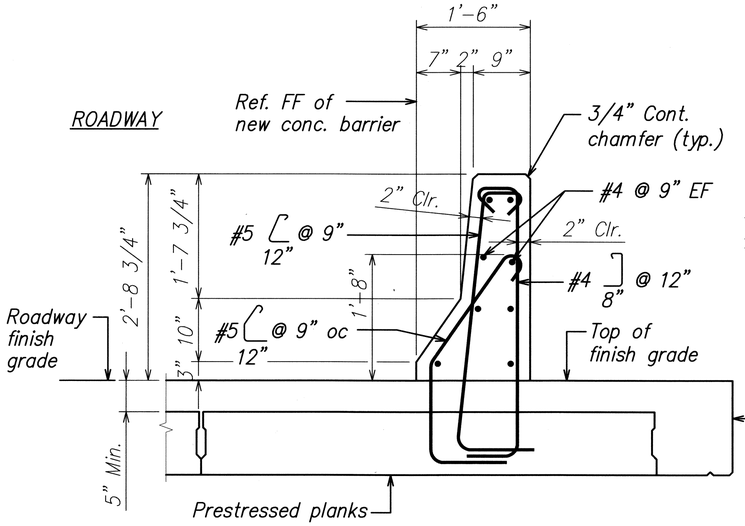
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH SIDE MAUKA - SECTION
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

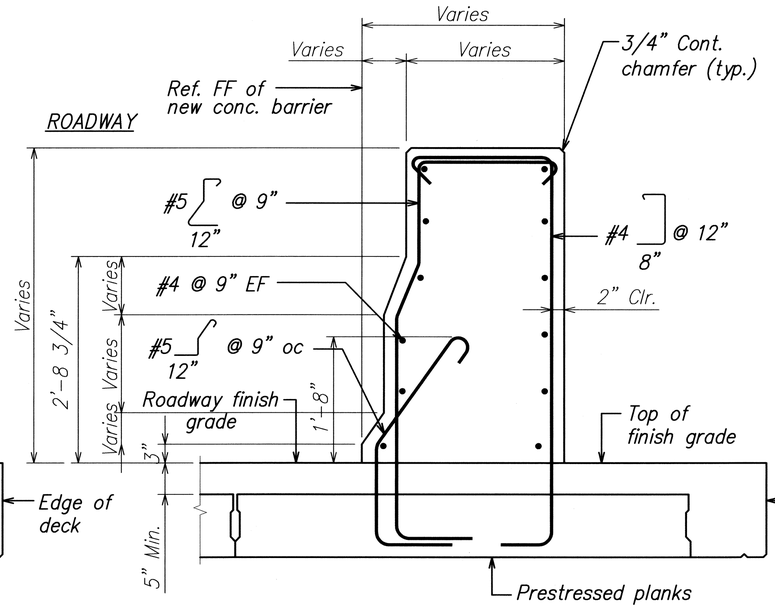
Scale: As Noted Date: May 2008

SHEET No. S15.4 OF 131 SHEETS

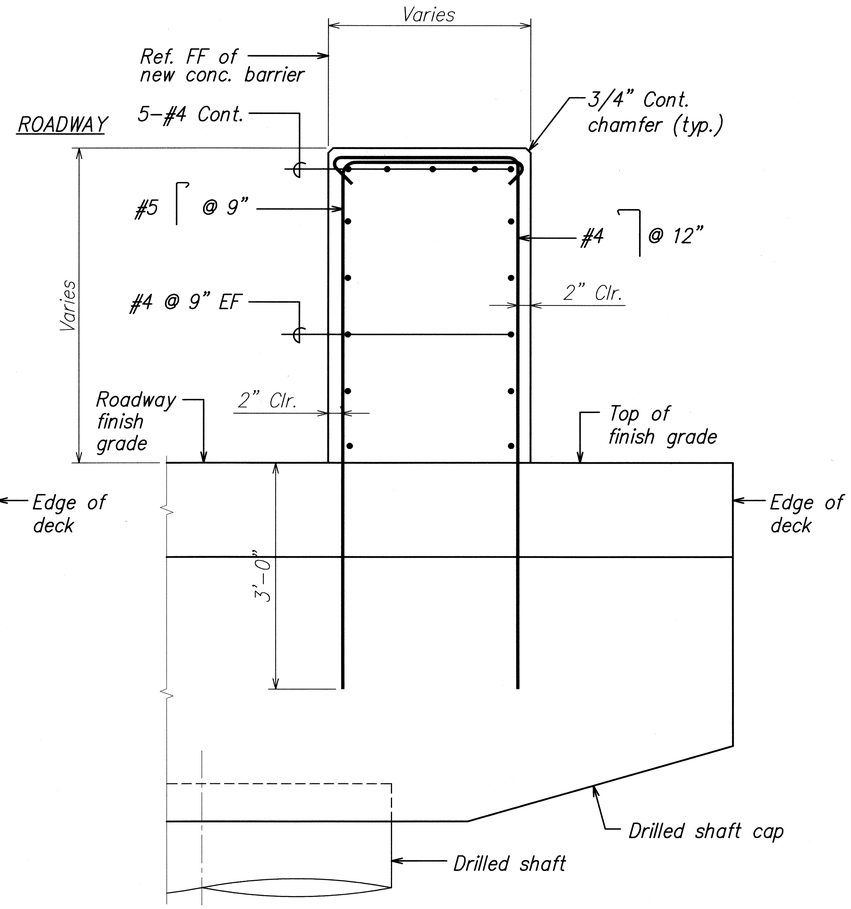
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	214	284



SECTION A
Scale: 1" = 1'-0" S15.1 S15.5



SECTION B
Scale: 1" = 1'-0" S15.1 S15.5



SECTION C
Scale: 1" = 1'-0" S15.1 S15.5

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

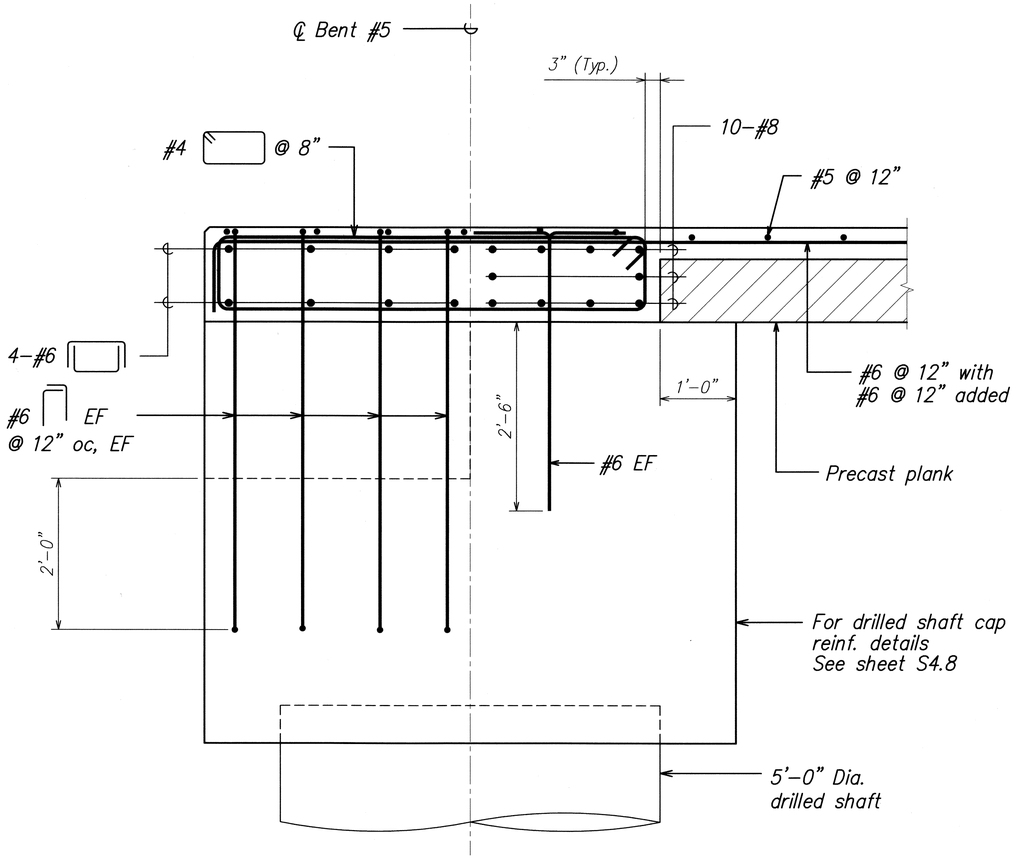
NORTH SIDE MAUKA - SECTIONS

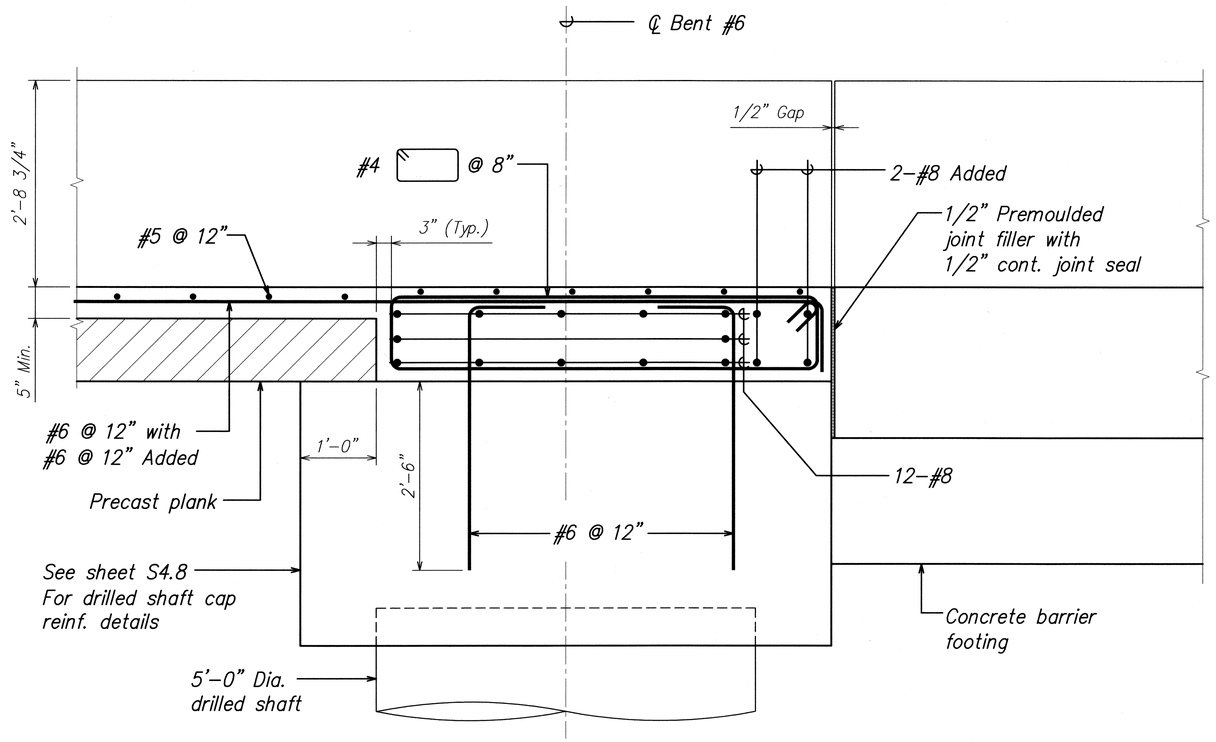
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S15.5 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	215	284





TYPICAL SECTION A

Scale: 1" = 1'-0"

S15.2 | S15.6

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
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TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE DEC 2000

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH SIDE MAUKA - SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

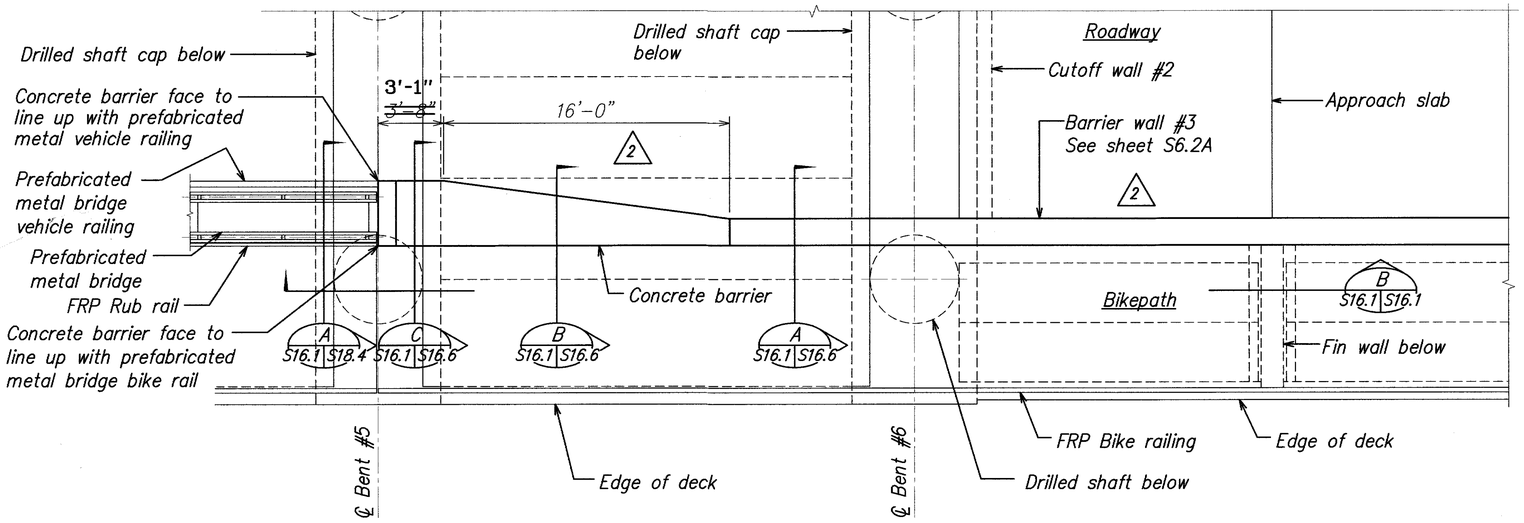
Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

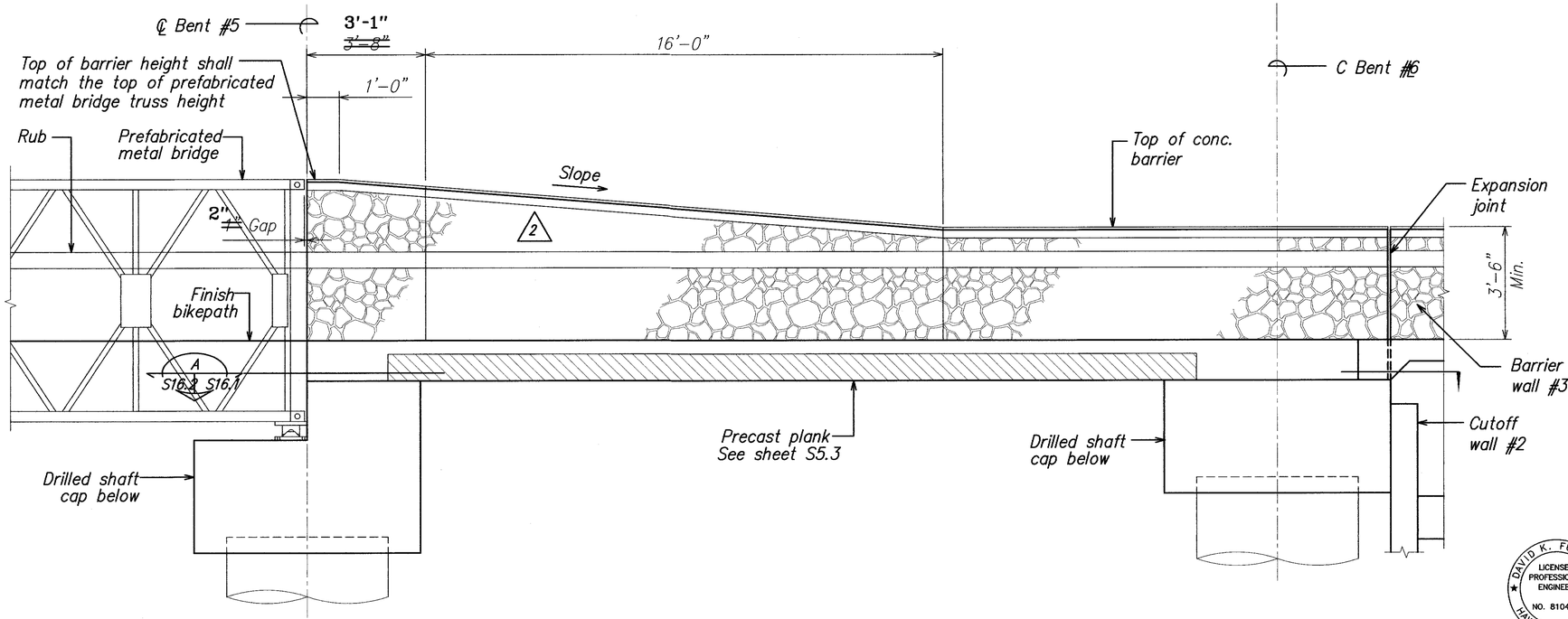
Scale: As Noted Date: May 2008

SHEET No. S15.6 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 216	284



NORTH SIDE MAKAI PLAN (A S1.1 S16.1)
Scale: 1/4" = 1'-0"



ELEVATION (B S16.1 S16.1)
Scale: 1/2" = 1'-0"

TRUE NORTH

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawing

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH SIDE MAKAI - PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S16.1 OF 131 SHEETS

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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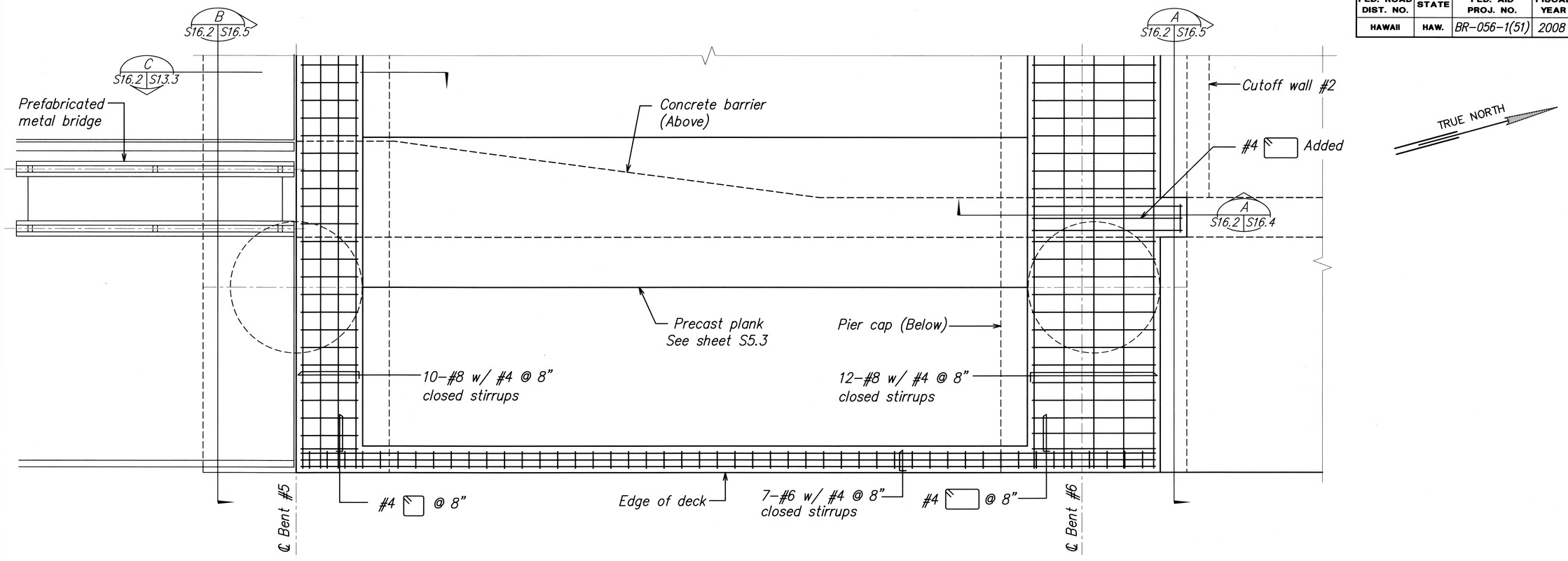
SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

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

"AS-BUILT"

C.O. 216

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	217	284



NORTH SIDE MAKAI PLAN (A S16.1 S16.2)
Scale: 1/2" = 1'-0"

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

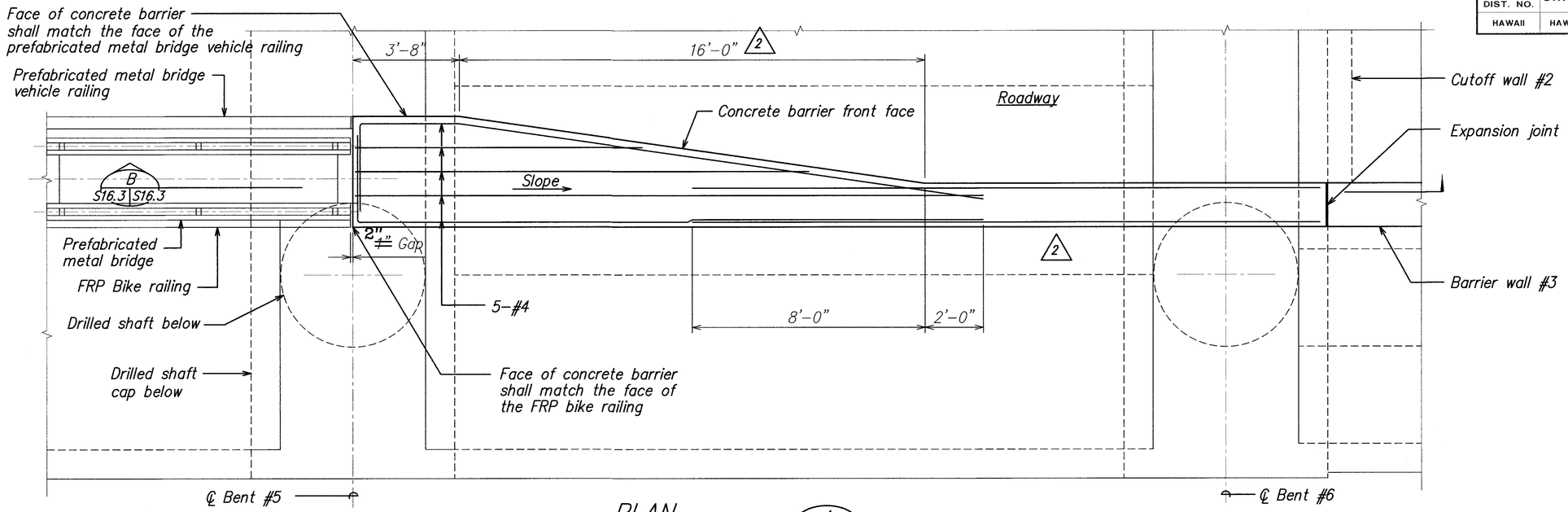
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH SIDE MAKAI - PLAN
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

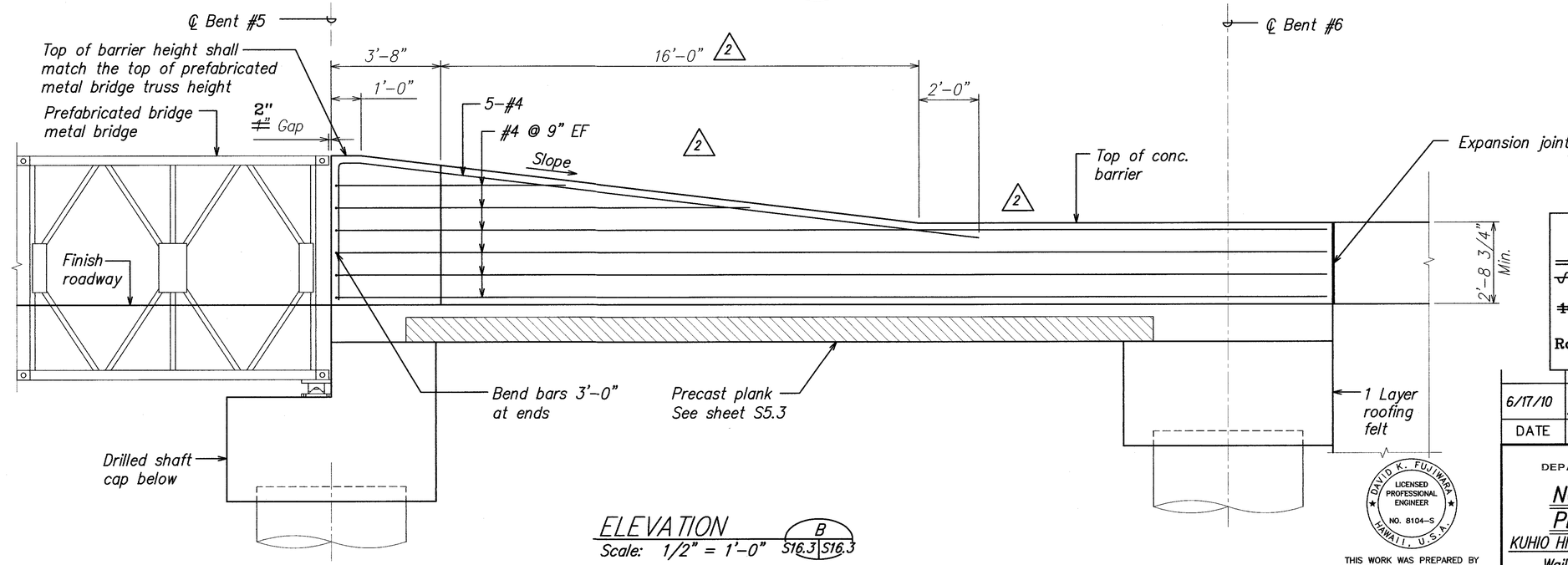
Scale: As Noted Date: May 2008

SHEET No. S16.2 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 218	284



PLAN
Scale: 1/2" = 1'-0"
A S16.3 S16.3



ELEVATION
Scale: 1/2" = 1'-0"
B S16.3 S16.3

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawing

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH SIDE MAKAI - PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S16.3 OF 131 SHEETS

DAVID K. FUJIWARA
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NO. 8104-S
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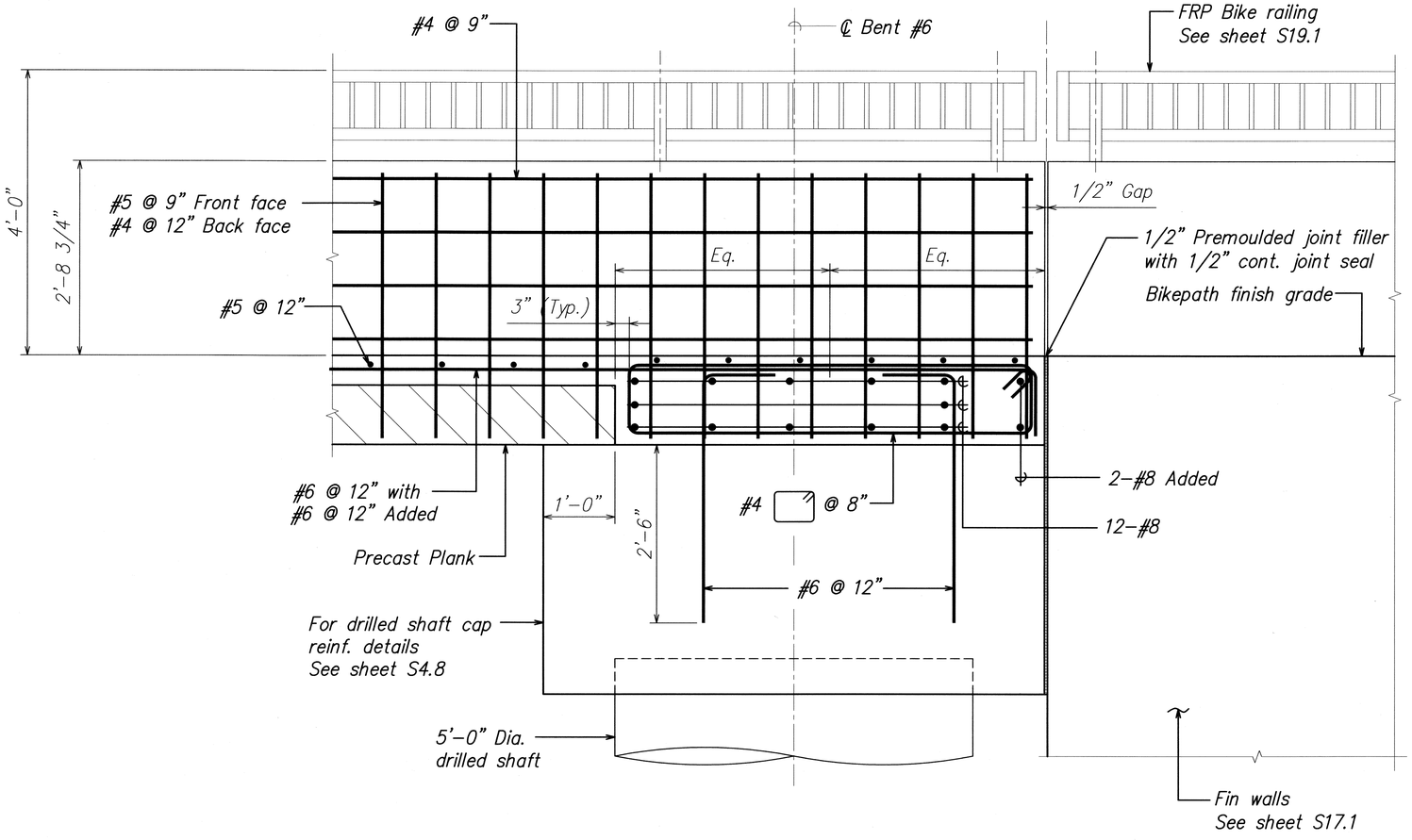
ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

"AS-BUILT"

C.O. 218

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	219	284



TYPICAL SECTION A
Scale: 1" = 1'-0" S16.2 | S16.4

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE DEC.2000
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DAVID K. FUJIWARA
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NO. 8104-S
HAWAII, U.S.A.

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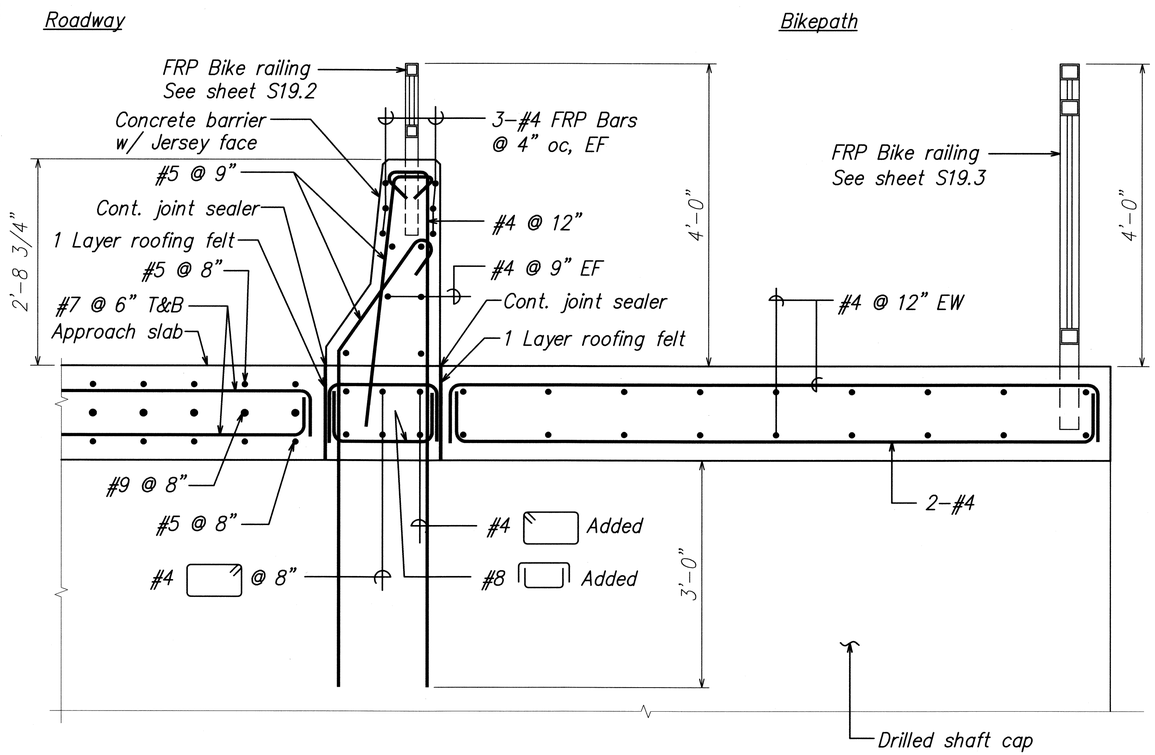
David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

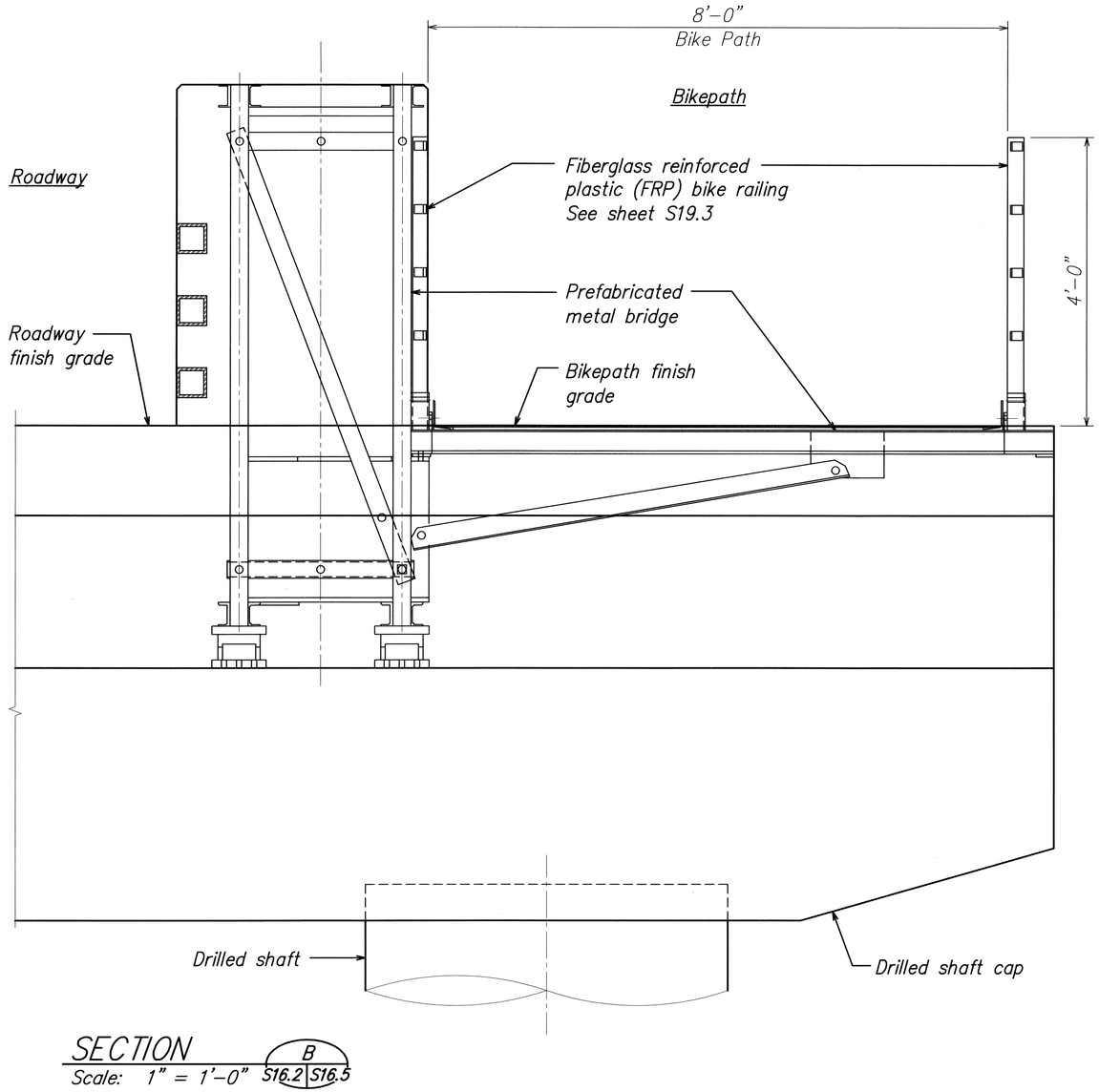
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
NORTH SIDE MAKAI -
SECTION
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)
Scale: As Noted Date: May 2008

SHEET No. S16.4 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	220	284



TYPICAL SECTION A
Scale: 1" = 1'-0" S16.2 S16.5



SECTION B
Scale: 1" = 1'-0" S16.2 S16.5

Note:
Details to connect railings to prefabricated metal bridge shall be submitted to Engineer for approval.

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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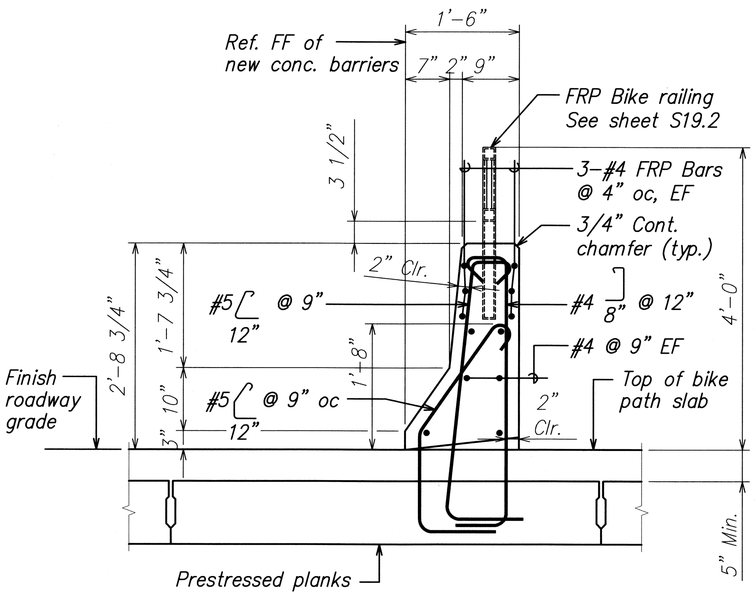
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
NORTH SIDE MAKAI –
SECTIONS
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)
Scale: As Noted Date: May 2008

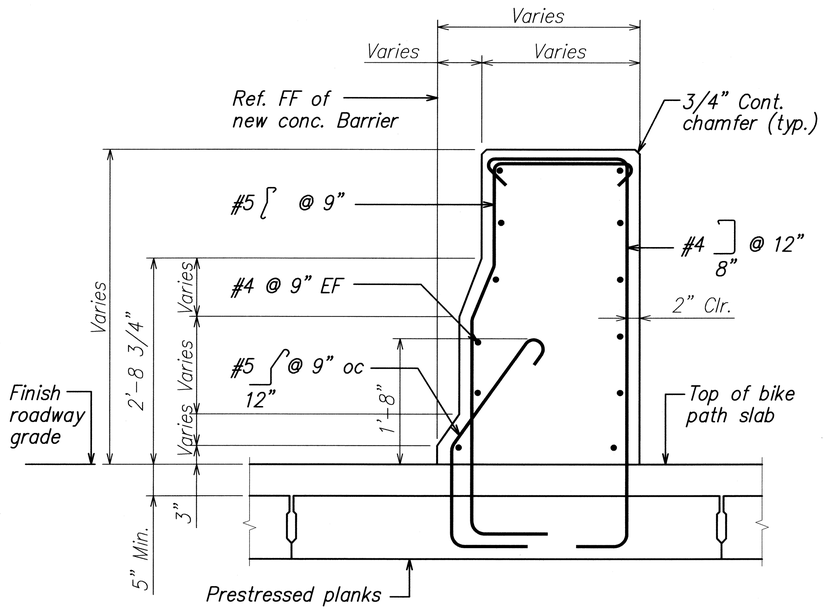
SHEET No. S16.5 OF 131 SHEETS

ORIGINAL PLAN
NOTE BOOK No.
SURVEY, PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE DEC. 2000

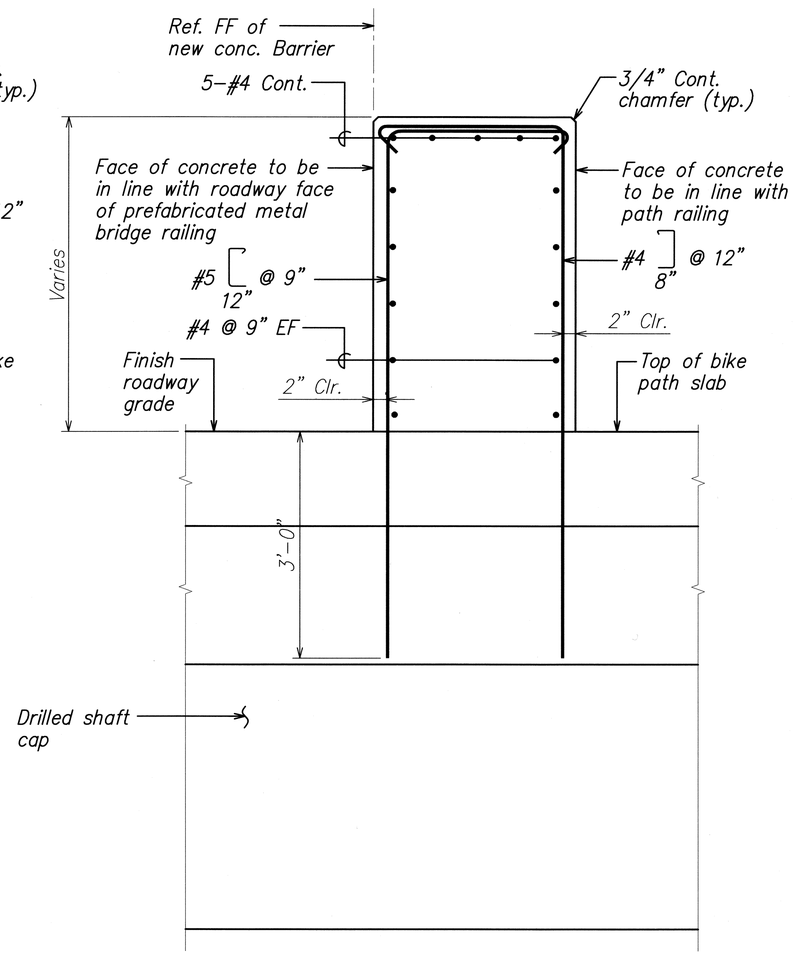
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	221	284



SECTION A
Scale: 1" = 1'-0" S16.1 S16.6



SECTION B
Scale: 1" = 1'-0" S16.1 S16.6



SECTION C
Scale: 1" = 1'-0" S16.1 S16.6

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

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NO. 8104-S
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

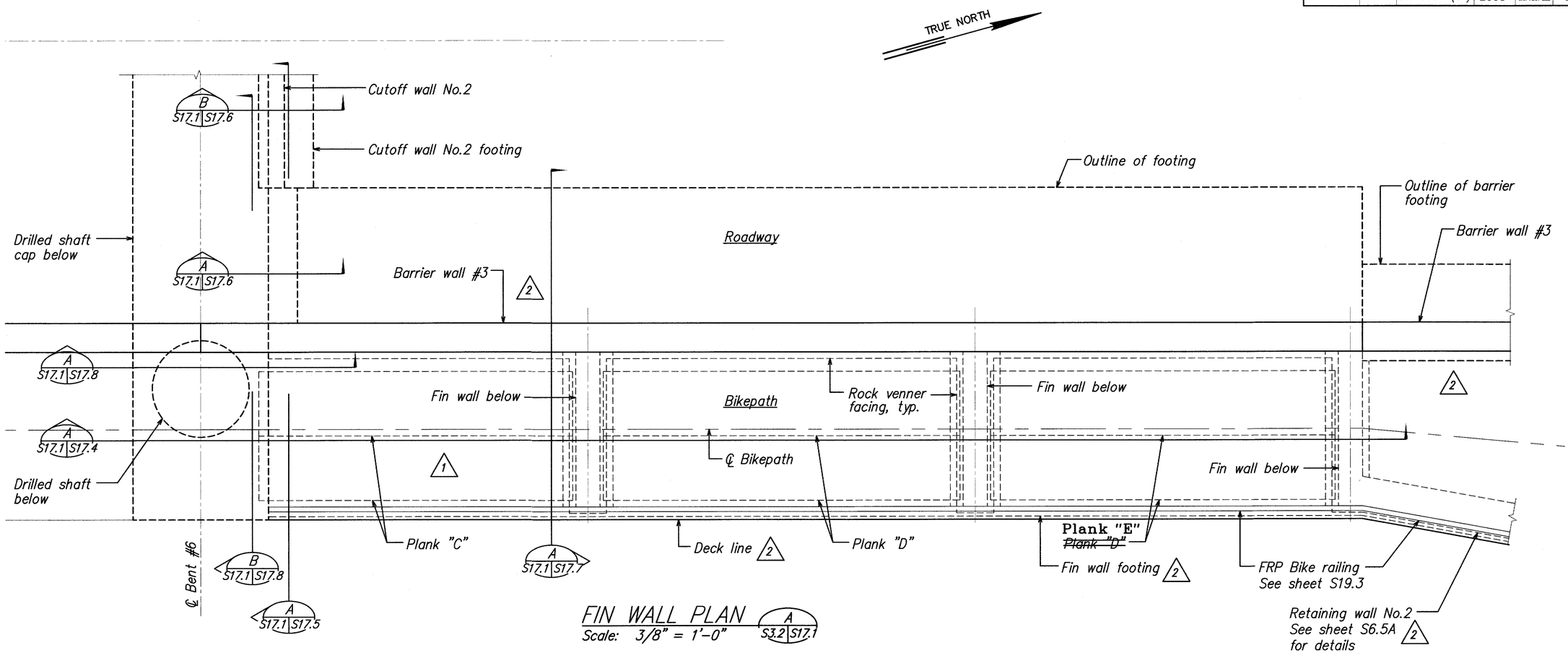
NORTH SIDE MAKAI - SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S16.6 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. ADD. 222	284



FIN WALL PLAN
Scale: 3/8" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS

~~^^^^~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawings
8/7/08	1 Remove Section Cut

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S17.1 OF 131 SHEETS

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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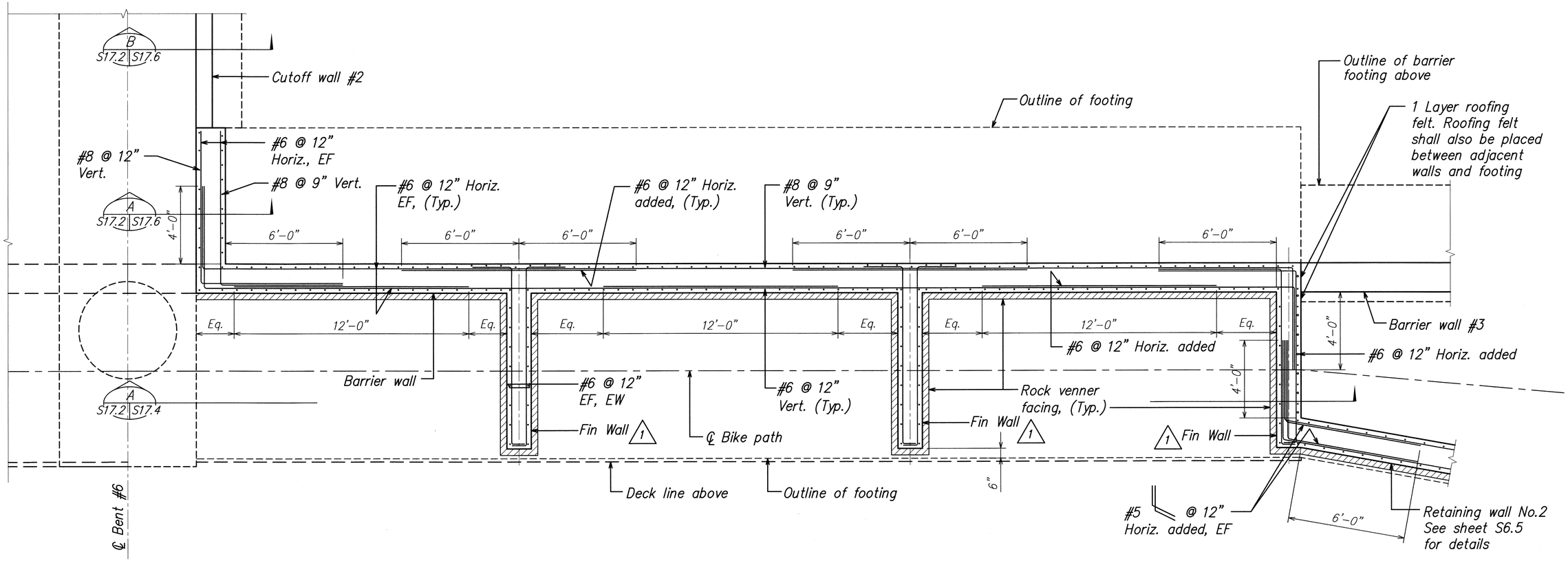
SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE DEC2000
DRAWN BY KSF
TRACED BY KSF
DESIGNED BY KSF
QUANTITIES BY
CHECKED BY

"AS-BUILT"

C.O. ADD. 222

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD.223	284



FIN WALL PLAN

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

A S17.2 S17.2

ORIGINAL PLAN	NOTE BOOK	No.
SURVEY PLOTTED BY		
DRAWN BY		
TRACED BY		
DESIGNED BY		
QUANTITIES BY		
CHECKED BY		
DATE DEC/2000		

DATE	REVISION
8/7/08	1 Added Notes

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WALL PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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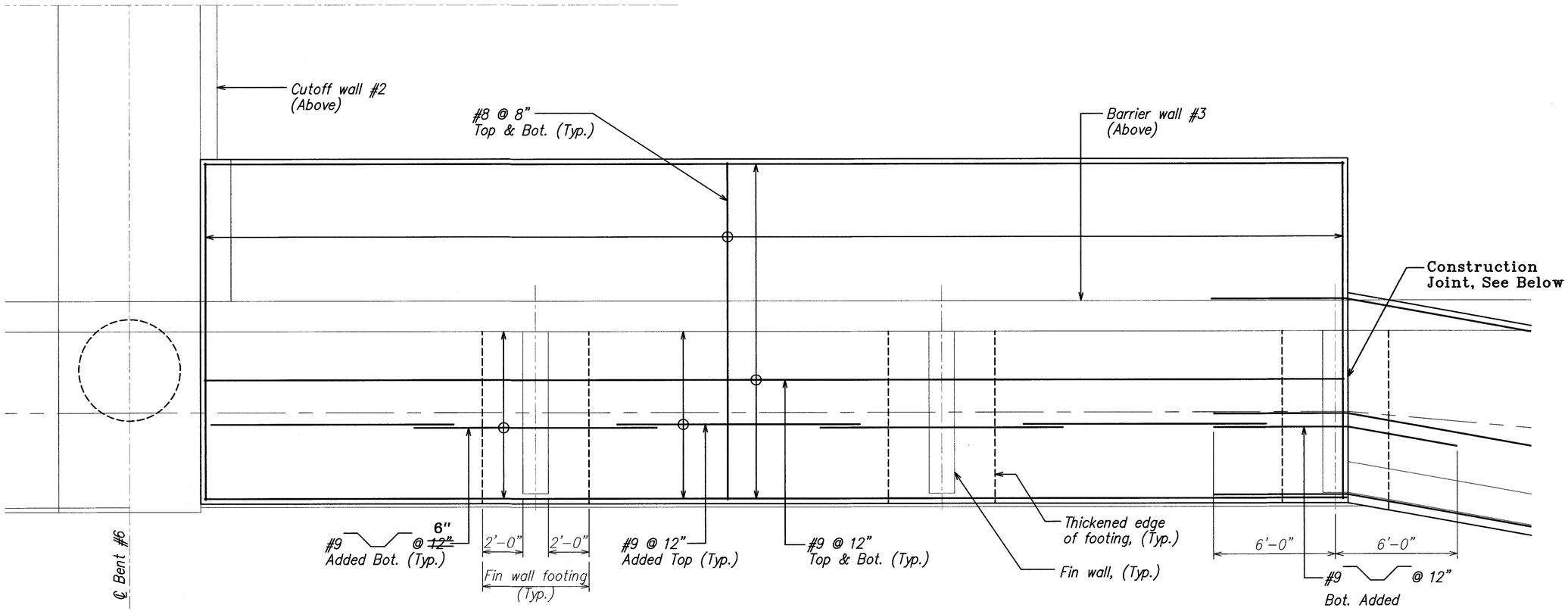
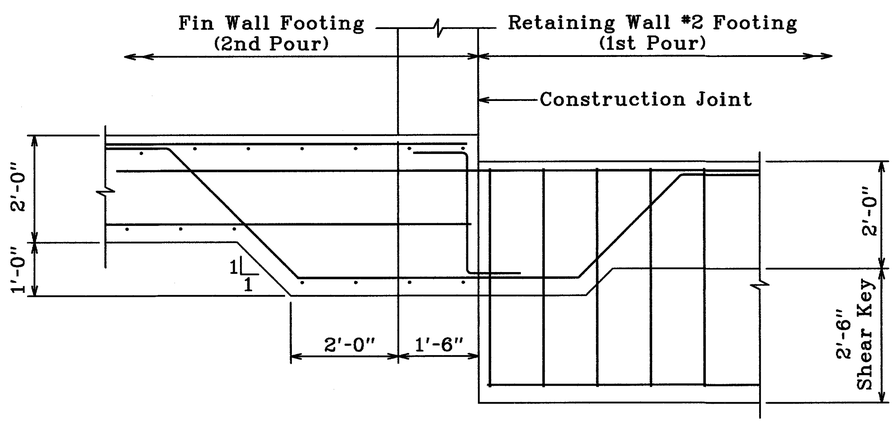
SHEET No. S17.2 OF 131 SHEETS

ADD. 223

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	224	284



FIN WALL FOUNDATION PLAN (A S17.3 | S17.3)
Scale: 3/8" = 1'-0"



LEGEND FOR AS-BUILT POSTINGS	
∧∧∧∧	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE DEC2000
NOTE BOOK	DRAWN BY GM	" " "
No.	TRACED BY	" " "
	DESIGNED BY KSF	" " "
	QUANTITIES BY	" " "
	CHECKED BY	" " "

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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FOUNDATION PLAN

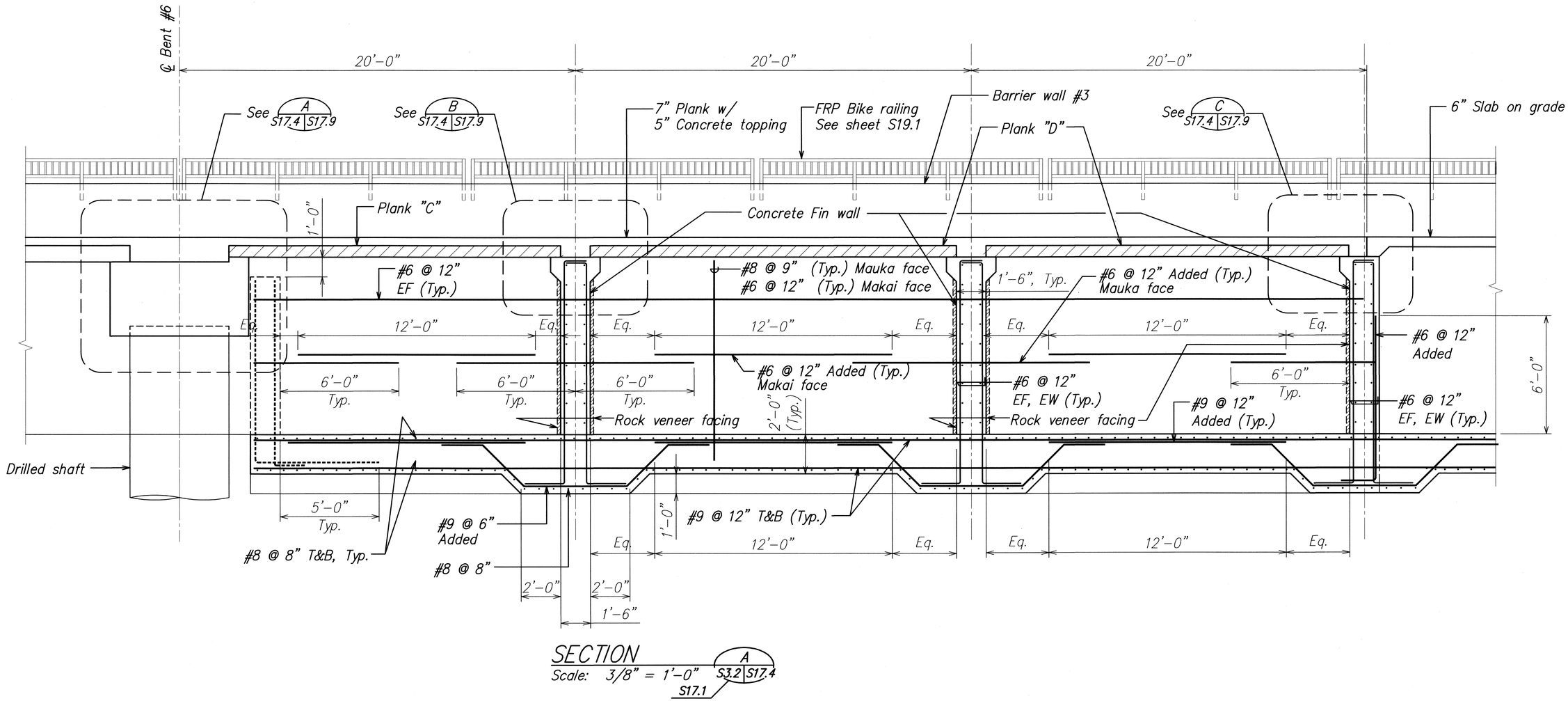
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S17.3 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	225	284



SECTION

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

A S3.2 S17.4 S17.1

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE DEC. 2000
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

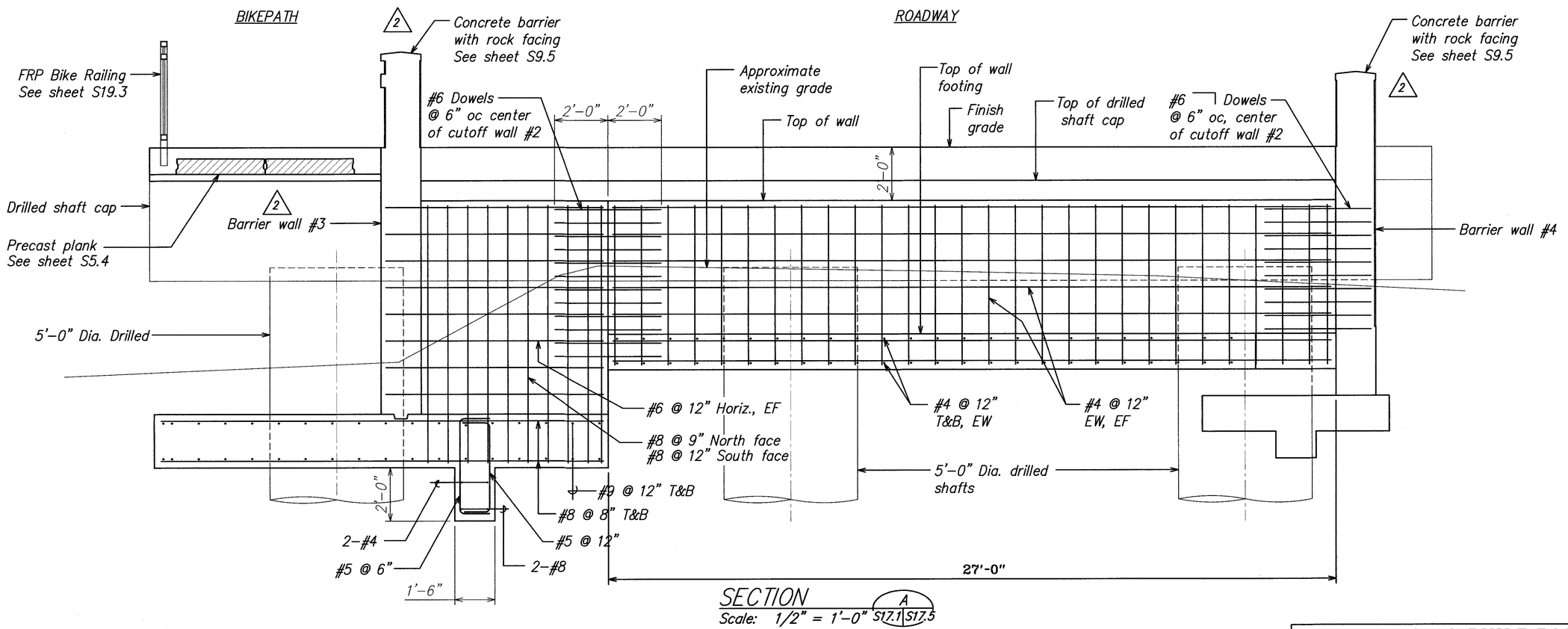
SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S17.4 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 226	284



SECTION (A S17.1 S17.5)
Scale: 1/2" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawings

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

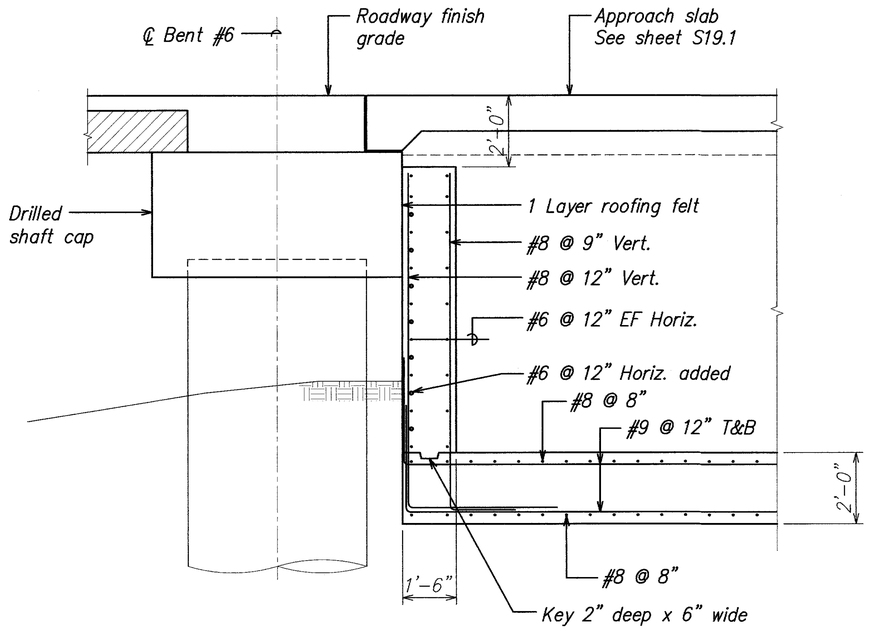
SHEET No. S17.5 OF 131 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE DEC2000
NOTE BOOK	DRAWN BY KSY	
No.	TRACED BY " "	
	DESIGNED BY " "	
	QUANTITIES BY " "	
	CHECKED BY " "	

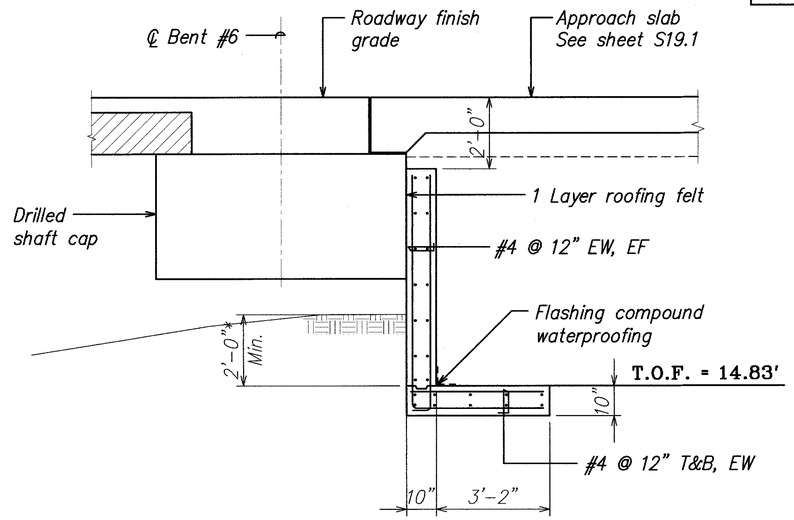
"AS-BUILT"

C.O. 226

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	227	284



SECTION A
Scale: 1/2" = 1'-0"
S17.1 | S17.6 | S17.2



* The top of footing shall be a minimum of 2'-0" from the top of finish grade in front of the wall or 2'-0" from the bottom of the drilled shaft cap whichever is lower in elevation.

SECTION B
Scale: 1/2" = 1'-0"
S17.1 | S17.6 | S17.2

LEGEND FOR AS-BUILT POSTINGS	
~~∧∧∧∧~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE DEC2000
NOTE BOOK	DRAWN BY VSY	" "
No.	TRACED BY	" "
	DESIGNED BY	" "
	QUANTITIES BY	" "
	CHECKED BY	" "

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NO. 8104-S
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SECTIONS

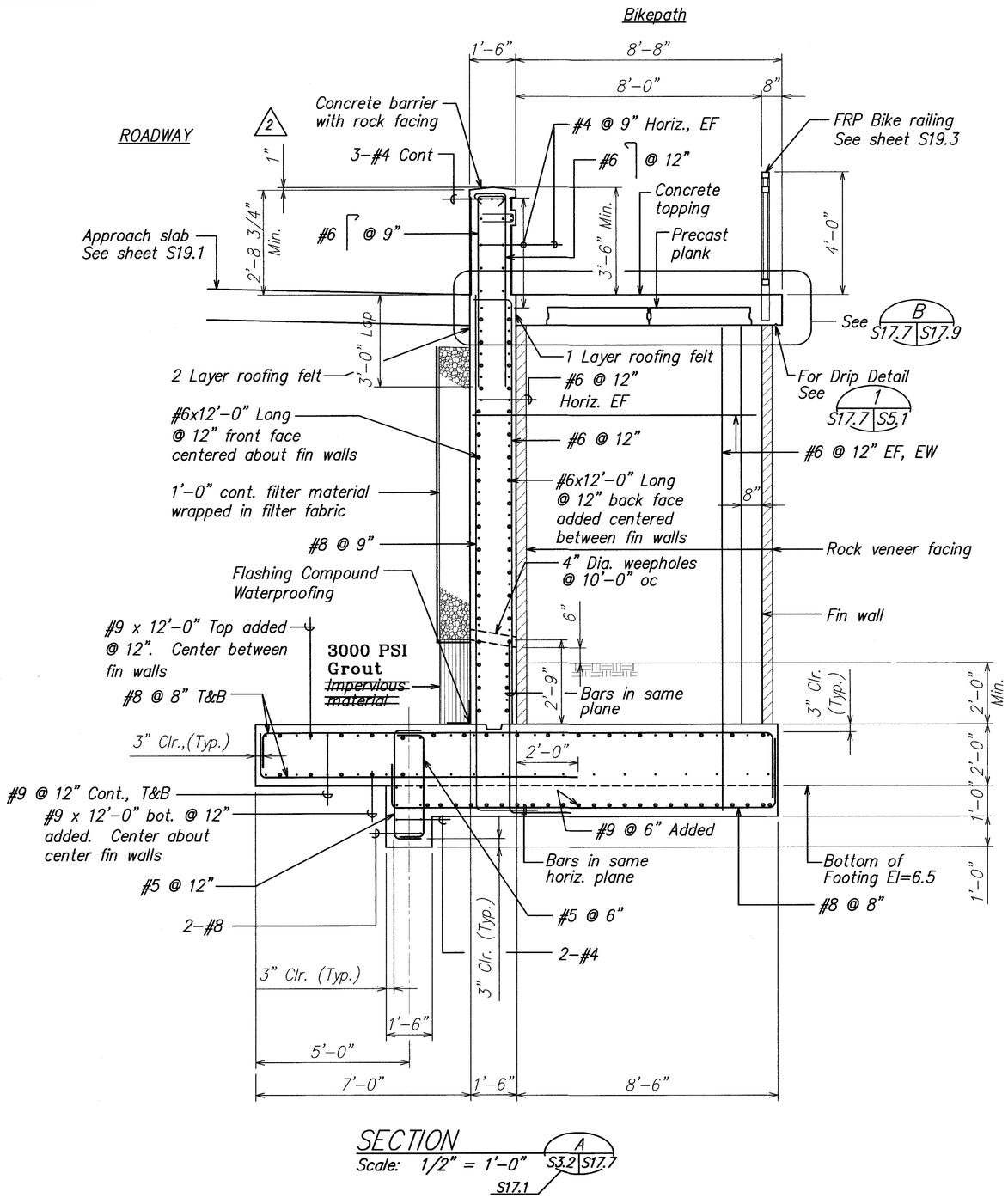
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S17.6 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 228	284



SECTION
Scale: 1/2" = 1'-0"
A S3.2 S17.7
S17.1

LEGEND FOR AS-BUILT POSTINGS	
~~^^^^~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 Revised Drawings

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S17.7 OF 131 SHEETS

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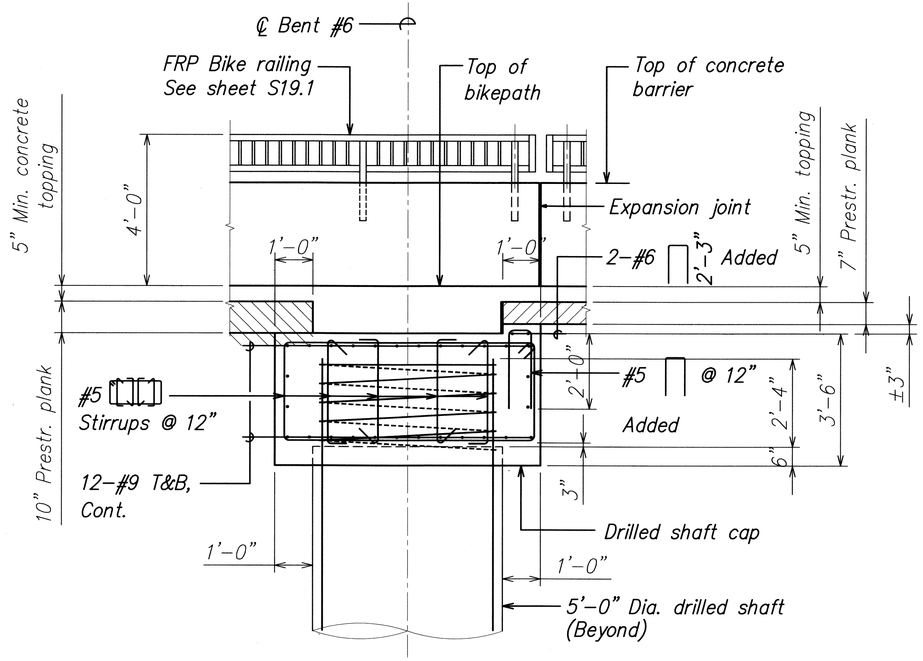
ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

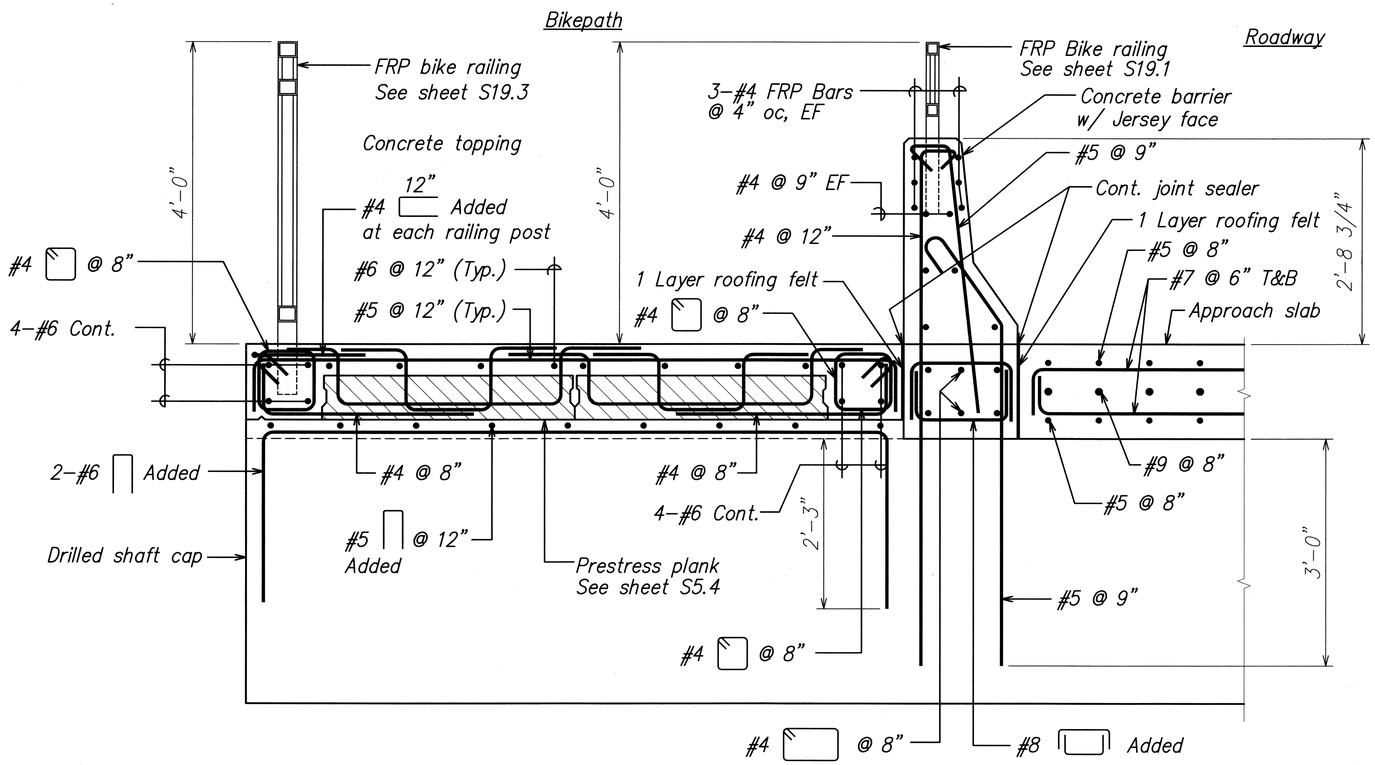
"AS-BUILT"

C.O. 228

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	229	284



SECTION
Scale: 1/2" = 1'-0"
A S17.1 S17.8



TYPICAL SECTION
Scale: 1" = 1'-0"
B S17.1 S17.8

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY, PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE DEC 2000

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

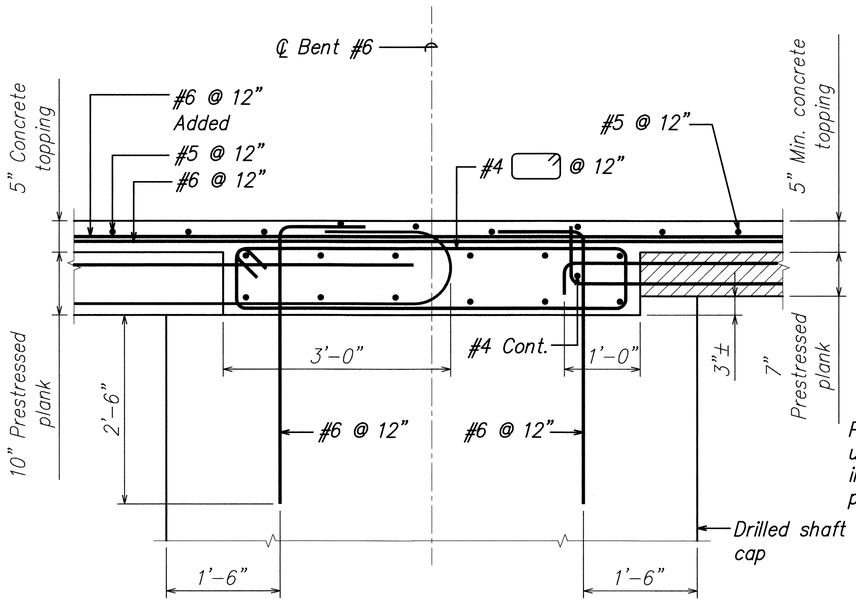
SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: Date: May 2008

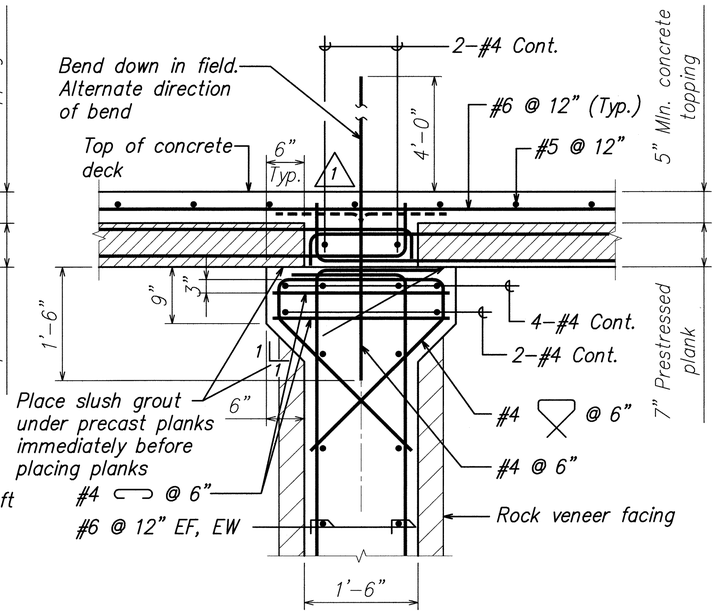
SHEET No. S17.8 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 230	284

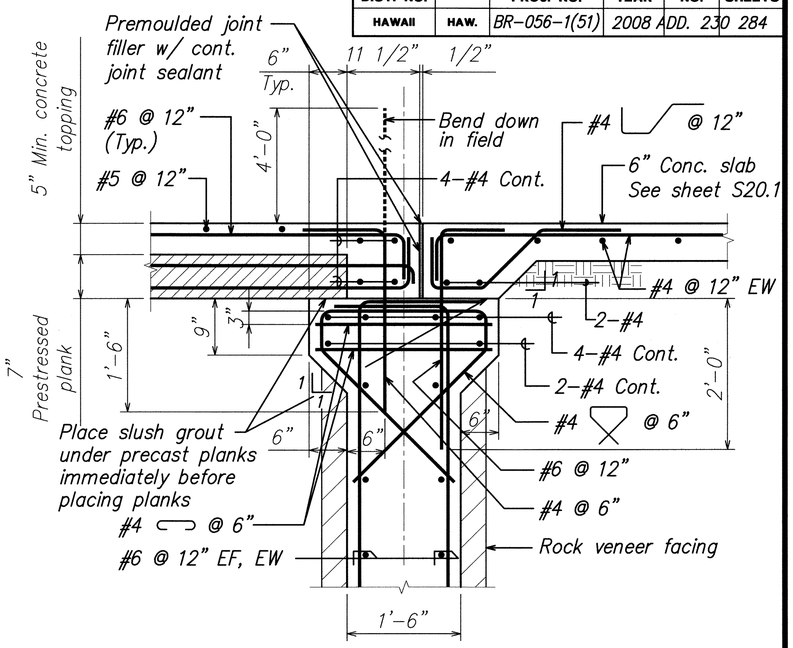


SECTION A
Scale: 1" = 1'-0"
S17.4 | S17.9

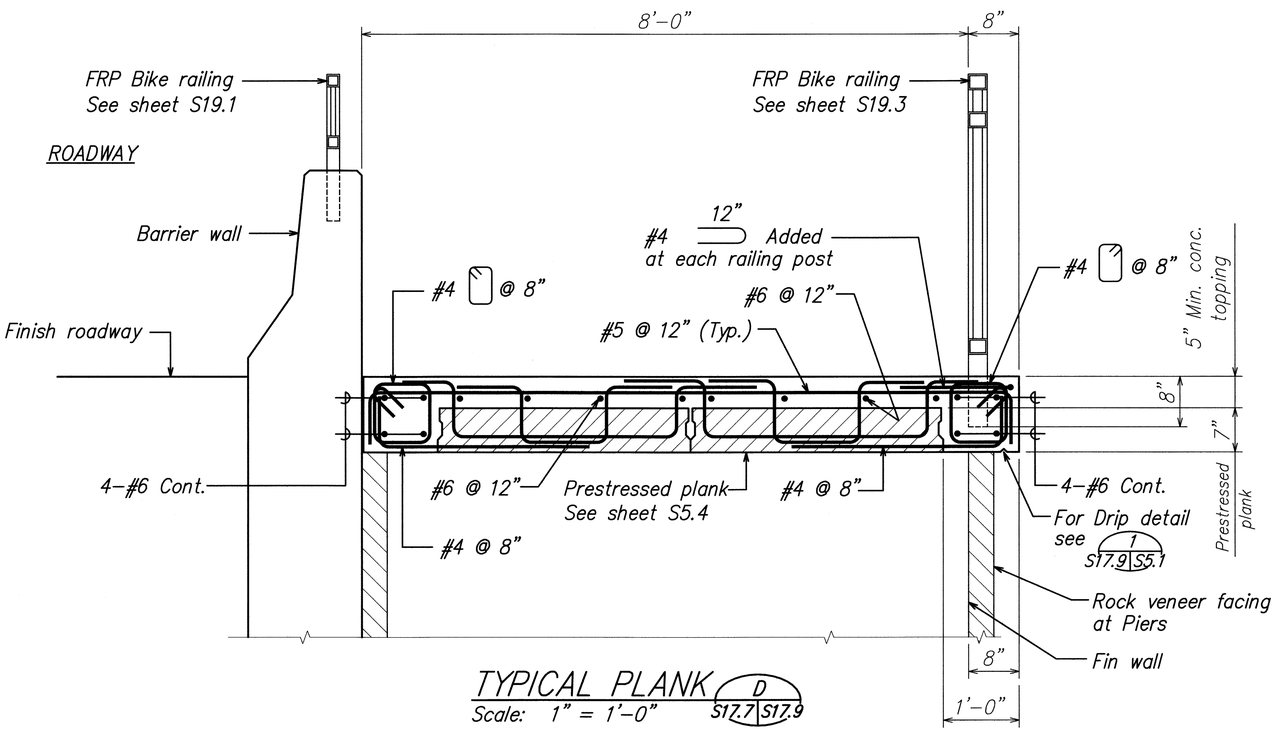
NOTE:
The Contractor shall consider camber at the prestressed members in calculating seat elevations.



SECTION B
Scale: 1" = 1'-0"
S17.4 | S17.9



SECTION C
Scale: 1" = 1'-0"
S17.4 | S17.9



TYPICAL PLANK D
Scale: 1" = 1'-0"
S17.7 | S17.9

ORIGINAL PLAN
NOTE BOOK No.
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DATE	REVISION
8/7/08	1 Revised Reinforcing

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SECTIONS

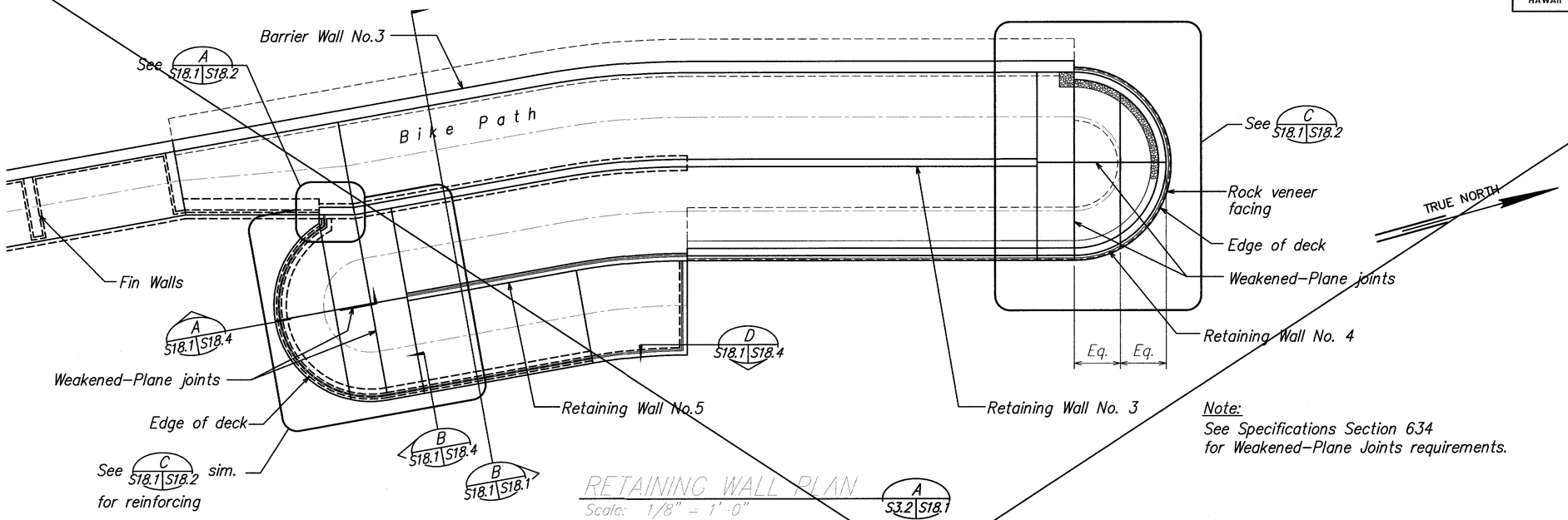
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S17.9 OF 131 SHEETS

ADD. 230

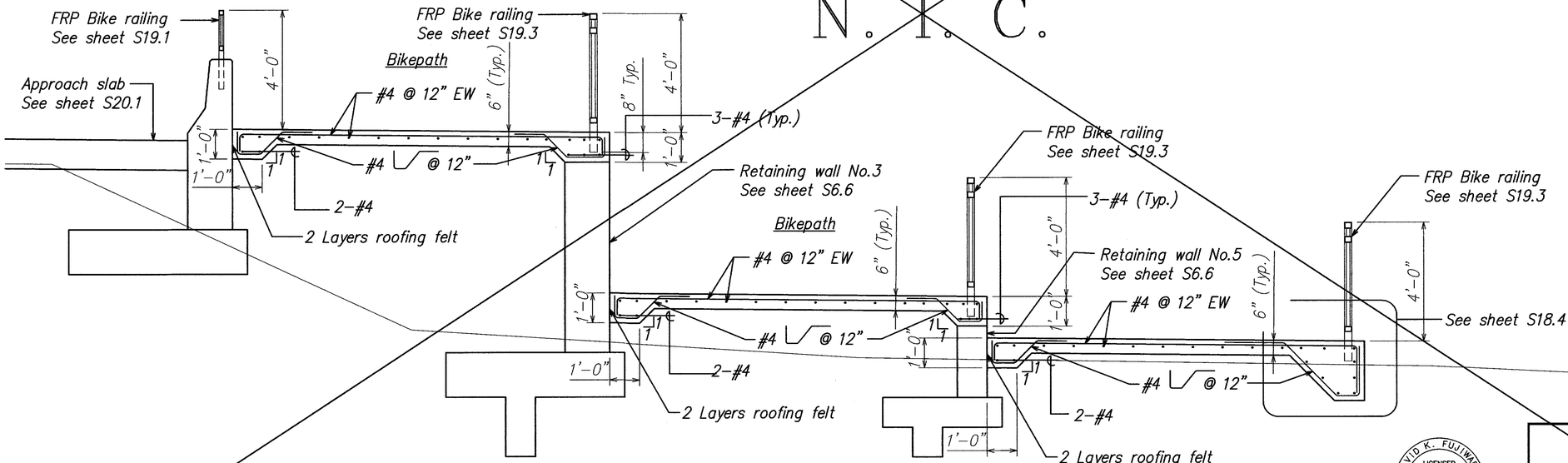
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	231	284



RETAINING WALL PLAN (A S3.2 S18.1)
Scale: 1/8" = 1'-0"

N. I. C.

Note:
See Specifications Section 634 for Weakened-Plane Joints requirements.



SECTION B S18.1 S18.1
Scale: 1/2" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL PLANS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

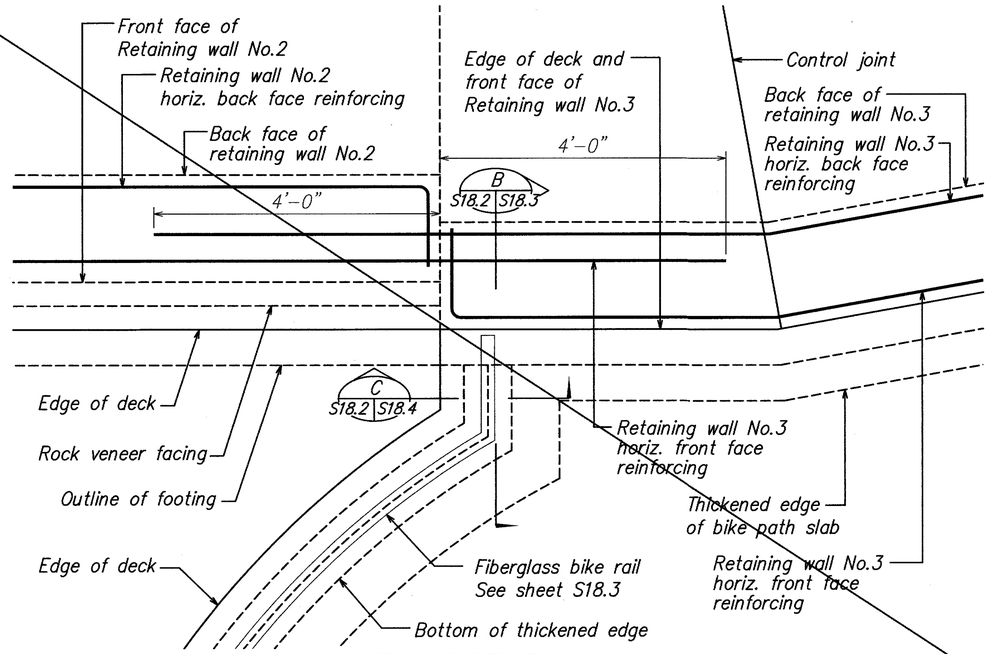
Scale: As Noted — Date: May 2008

SHEET No. S18.1 OF 131 SHEETS

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

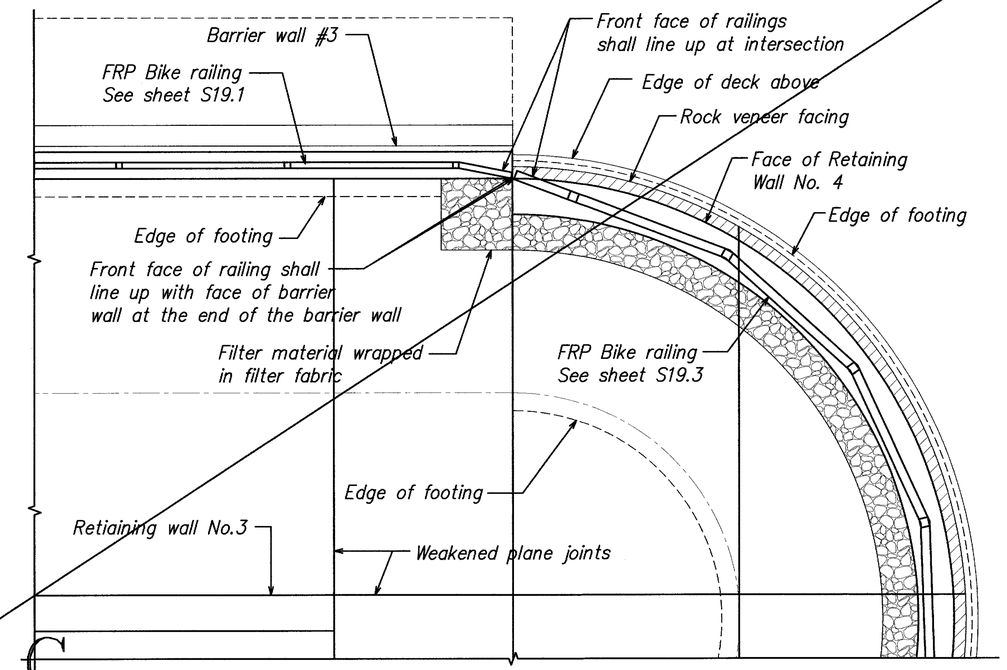
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	232	284

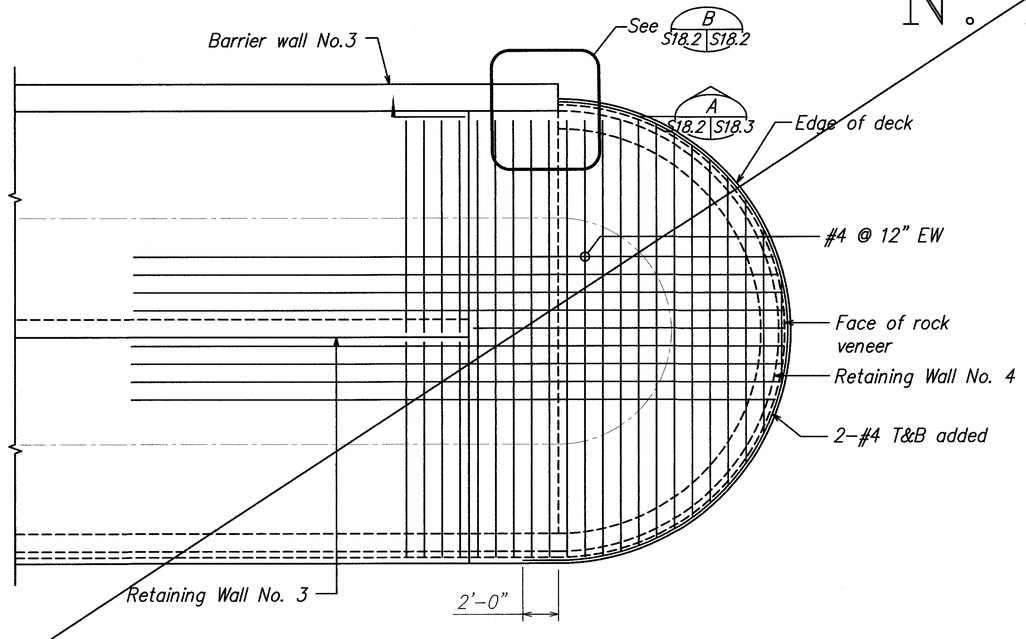


ENLARGEMENT A S18.1 S18.2
Scale: 1" = 1'-0"

N.T.C.



RETAINING WALL PLAN B S18.2 S18.2
Scale: 1/2" = 1'-0"



SLAB REINFORCING PLAN C S18.1 S18.2
Scale: 1/4" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
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~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL PLANS

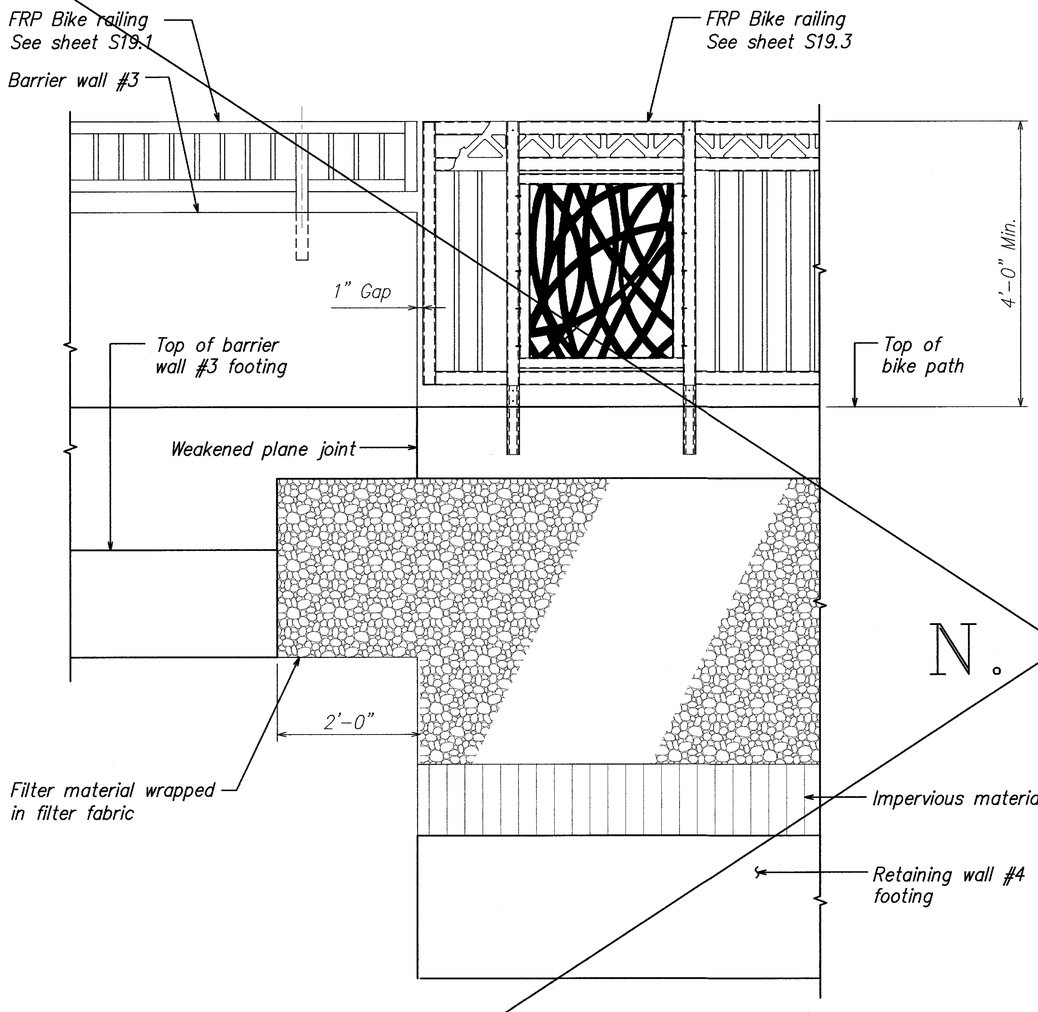
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S18.2 OF 131 SHEETS

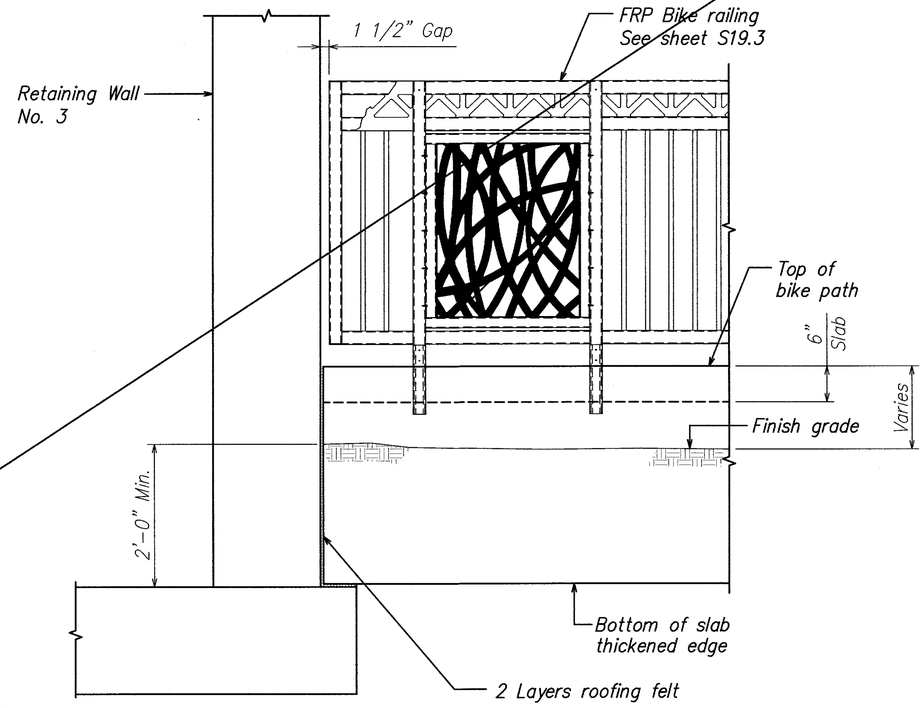
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	233	284



SECTION A
Scale: 1" = 1'-0"
S18.2 | S18.3

N. I. C.



SECTION B
Scale: 1" = 1'-0"
S18.2 | S18.3

LEGEND FOR AS-BUILT POSTINGS

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

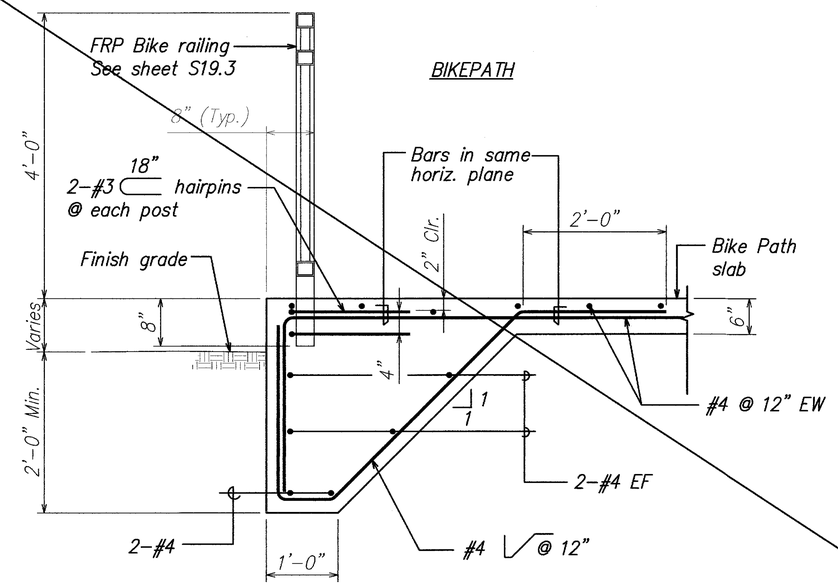
Scale: As Noted Date: May 2008

SHEET No. S18.3 OF 131 SHEETS

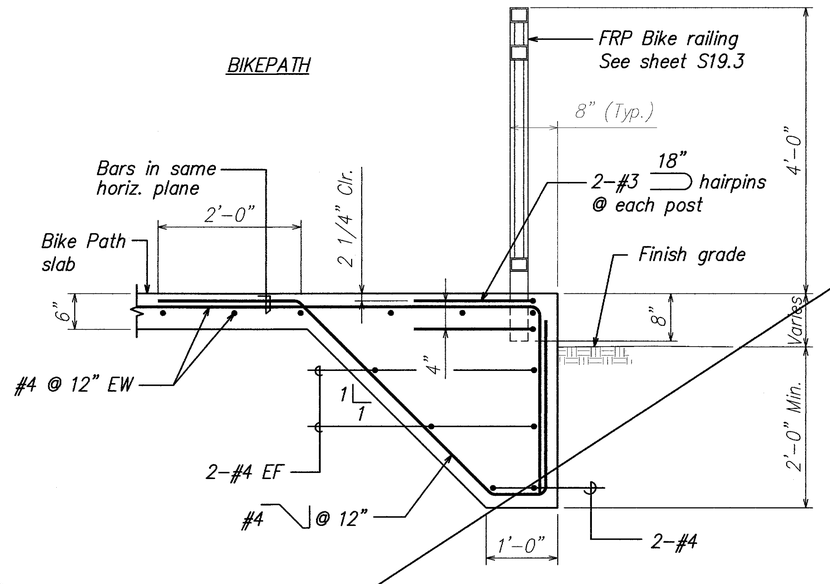
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	"
No.	TRACED BY	"
	DESIGNED BY	"
	QUANTITIES BY	"
	CHECKED BY	"

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	234	284

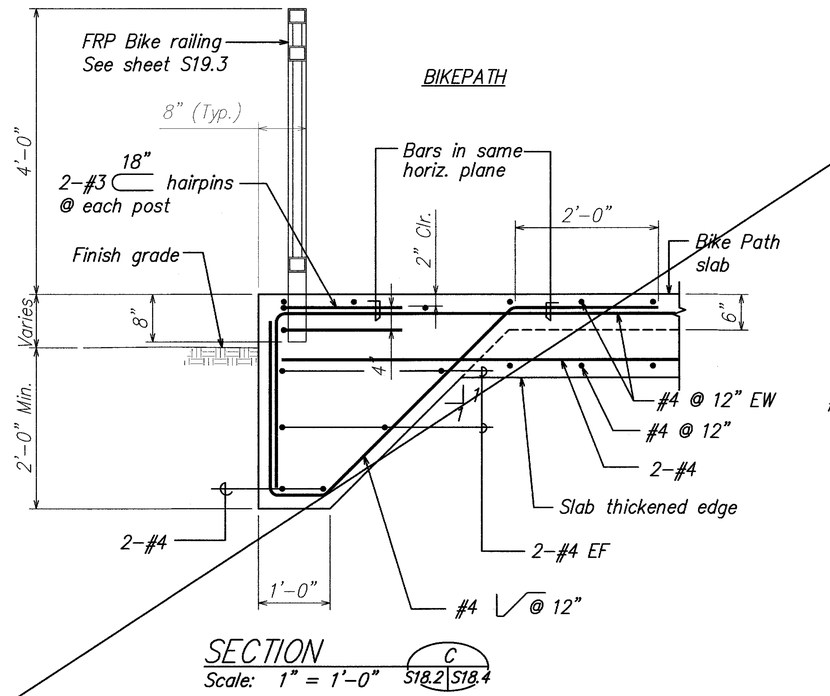


SECTION A
Scale: 1" = 1'-0"
S18.1 | S18.4

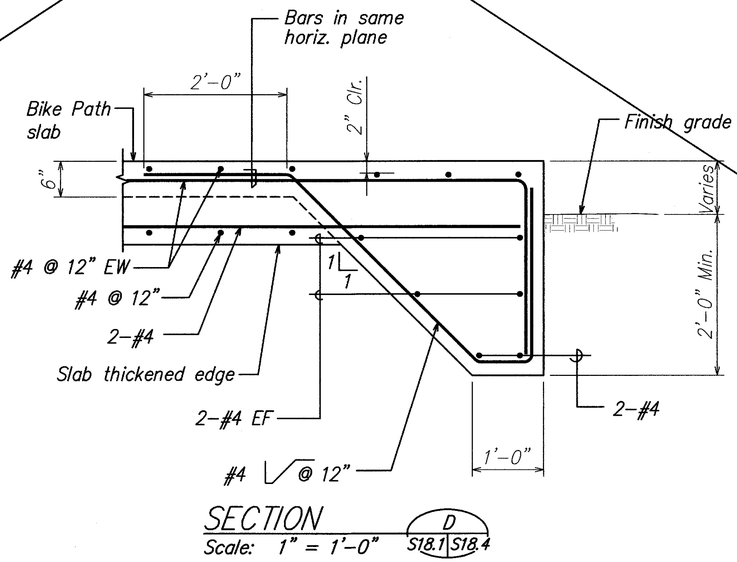


SECTION B
Scale: 1" = 1'-0"
S18.1 | S18.4

N. I. C.



SECTION C
Scale: 1" = 1'-0"
S18.2 | S18.4



SECTION D
Scale: 1" = 1'-0"
S18.1 | S18.4

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SECTIONS

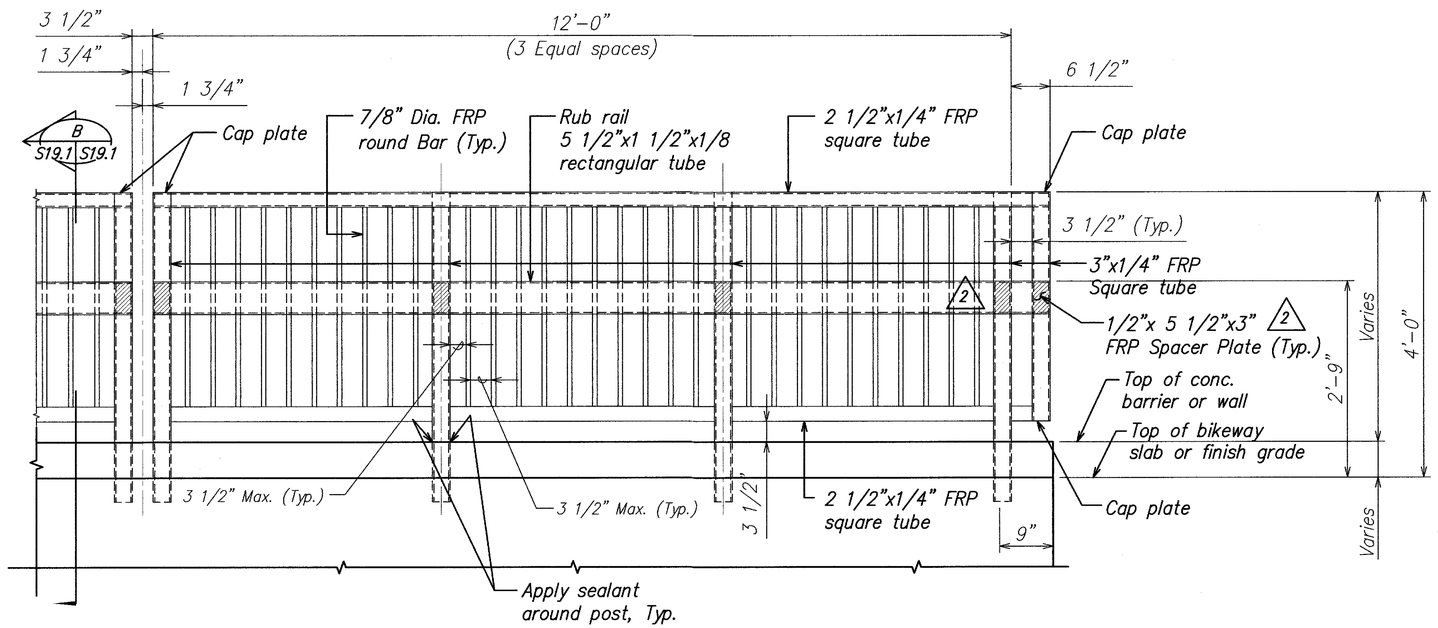
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

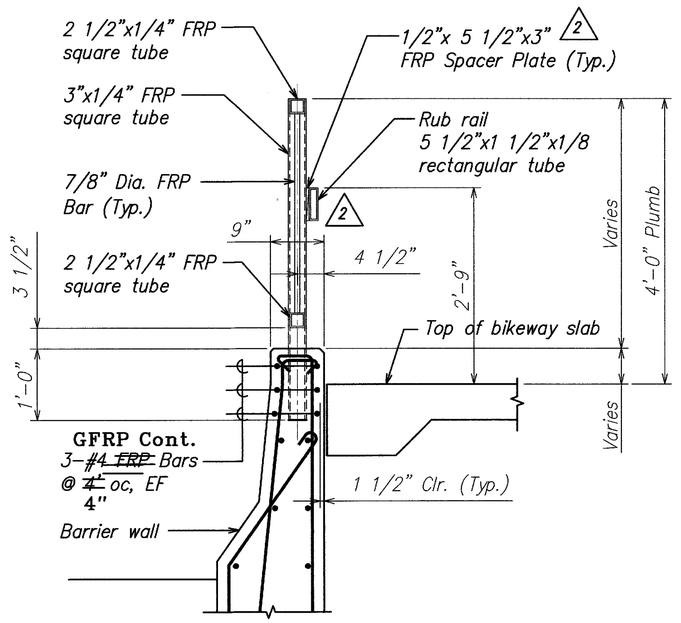
SHEET No. S18.4 OF 131 SHEETS

"AS-BUILT"

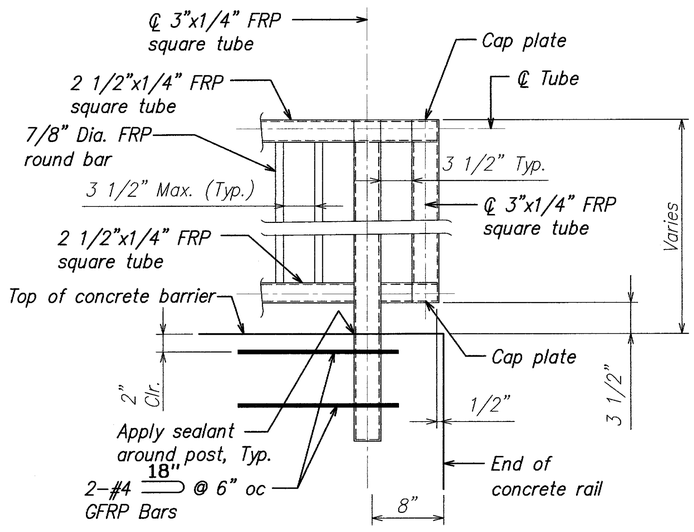
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 235	284



ELEVATION – FRP BIKE RAILING AT TYPICAL BARRIER (A S19.1 S19.1)
Scale: 1" = 1'-0"



TYPICAL RAILING SECTION (B S19.1 S19.1)
Scale: 1" = 1'-0"



ELEVATION – END CONDITION FRP BIKE RAILING ON BARRIER (C S19.1 S19.1)
Scale: 1 1/2" = 1'-0"

Notes:
1. Height of railing shall be 4'-0" above finish grade adjacent to the railing.
2. Expansion joints in the walls or barriers shall match railing joints.

LEGEND FOR AS-BUILT POSTINGS	
∿∿∿	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
9/8/10	2 Revised Drawings

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FRP BIKE RAILING ELEVATION AND SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S19.1 OF 131 SHEETS

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DESIGNED BY
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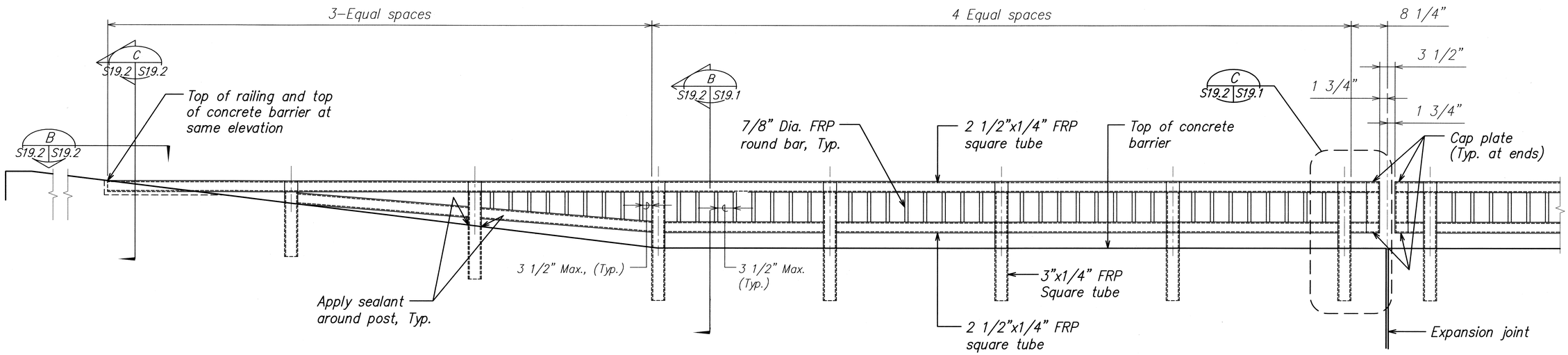
"AS-BUILT"

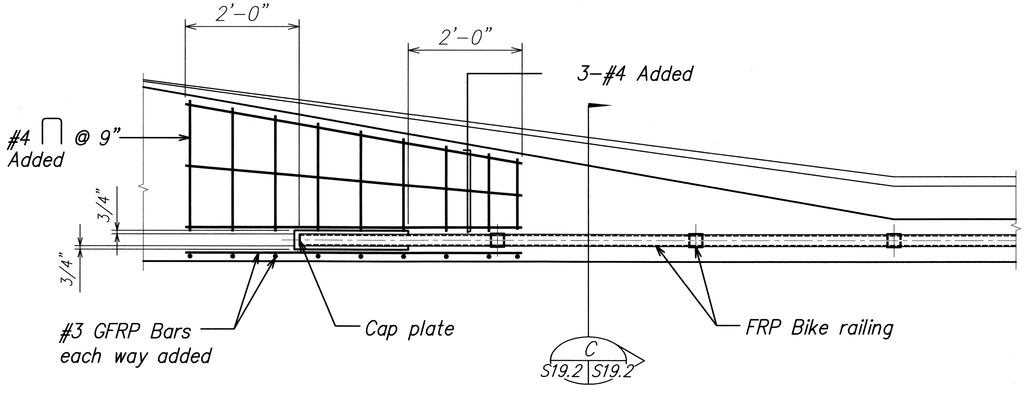
C.O. 235

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	236	284



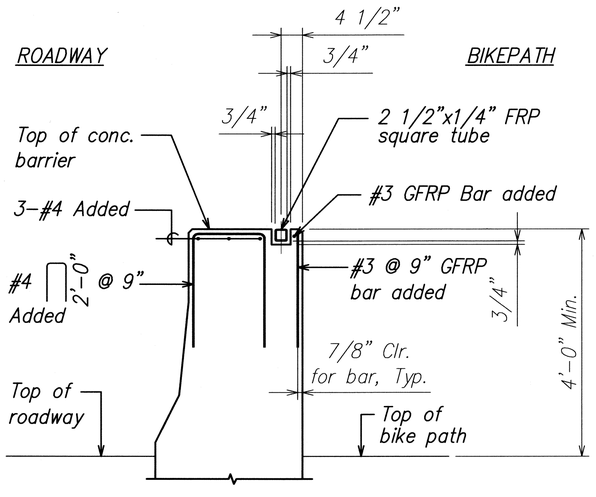
ELEVATION – FRP BIKE RAILING AT SLOPE TOP BARRIER (A S19.2 S19.2)

Scale: 1" = 1'–0"



PLAN (B S13.1 S19.2 / S19.2)

Scale: 3/4" = 1'–0"



SECTION (C S19.2 S19.2)

Scale: 3/4" = 1'–0"

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NOTE BOOK	TRACED BY	
No.	DESIGNED BY	
	QUANTITIES BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FRP BIKE RAILING ELEVATION AND SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

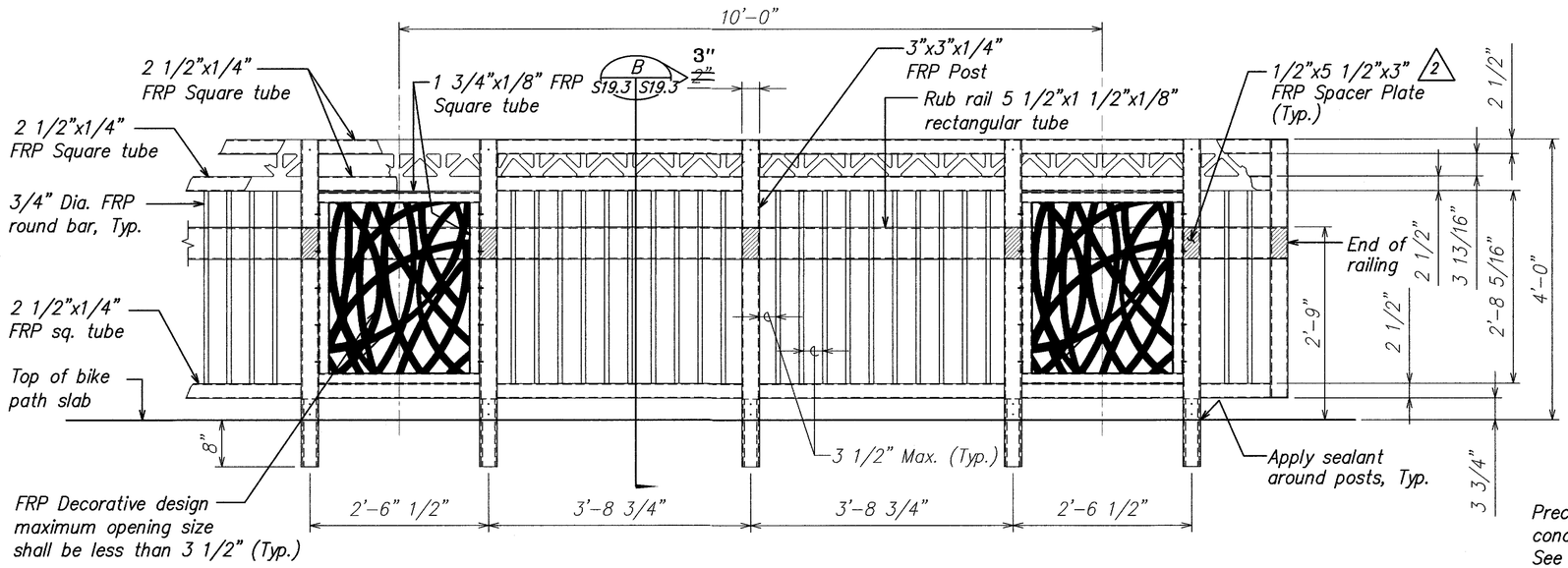
Wailua Cane Haul Bridge Widening

Project No. BR–056–1(51)

Scale: As Noted Date: May 2008

SHEET No. S19.2 OF 131 SHEETS

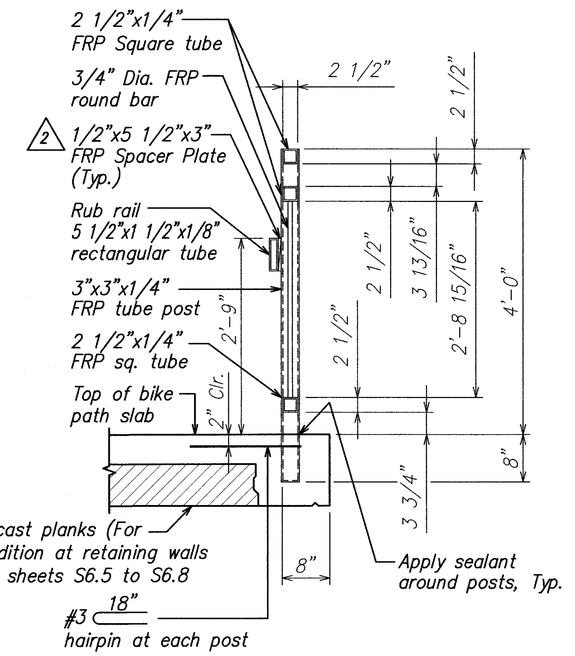
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 237	284



FIBERGLASS REINFORCED PLASTIC (FRP) BIKE RAILING – ELEVATION

Scale: 1" = 1'-0"

A S19.3 S19.3



TYPICAL FIBERGLASS REINFORCED PLASTIC (FRP) BIKE RAILING – SECTION

Scale: 1" = 1'-0"

B S19.3 S19.3

Notes:
1. Height of railing shall be 4'-0" above finish grade adjacent to the railing.
2. Expansion joints in the walls or barriers shall match railing joints.

LEGEND FOR AS-BUILT POSTINGS	
~~^^^^~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
9/8/10	2 Revised Drawings

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FRP BIKE RAILING DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S19.3 OF 131 SHEETS

ORIGINAL PLAN | NOTE BOOK | No.

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QUANTITIES BY
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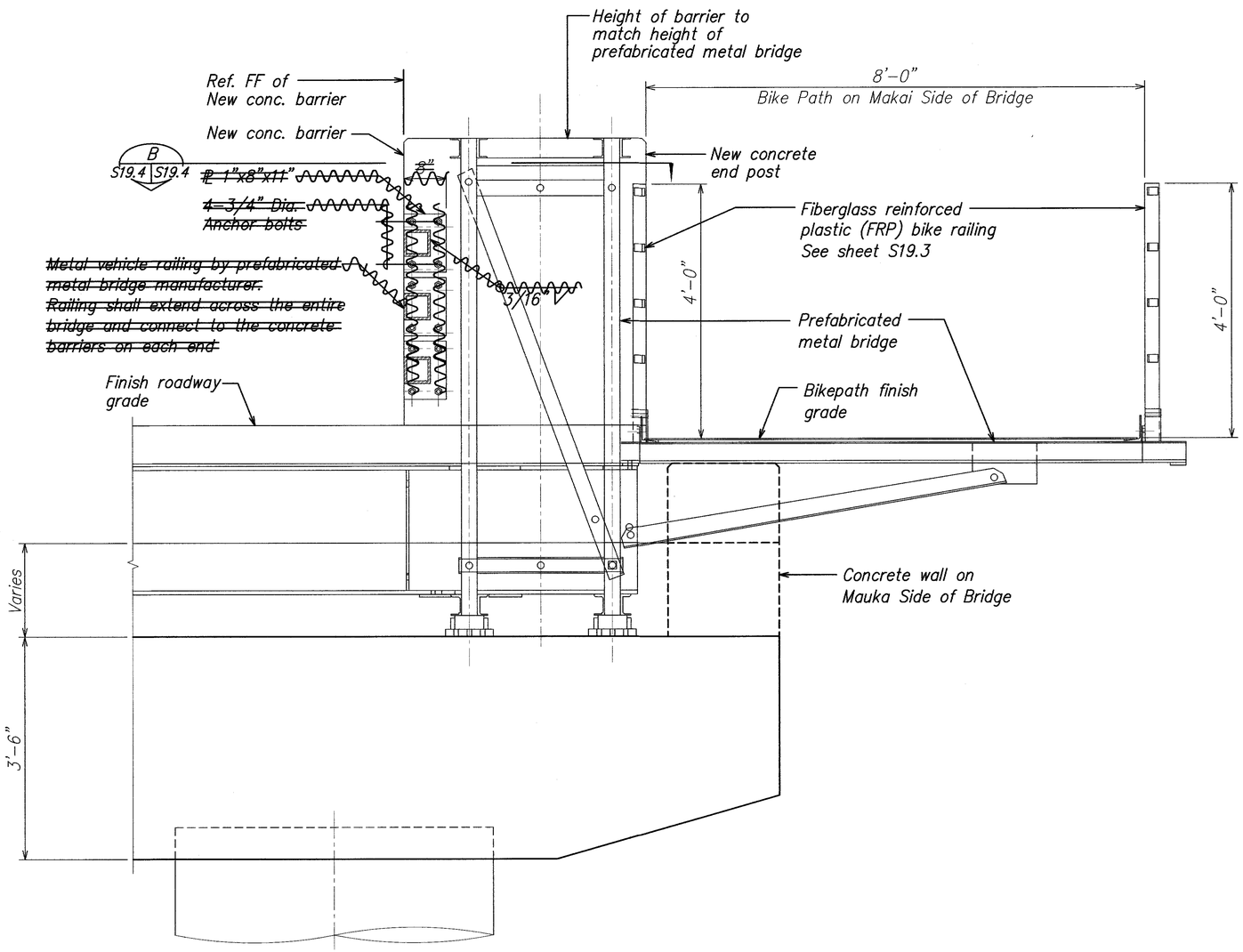
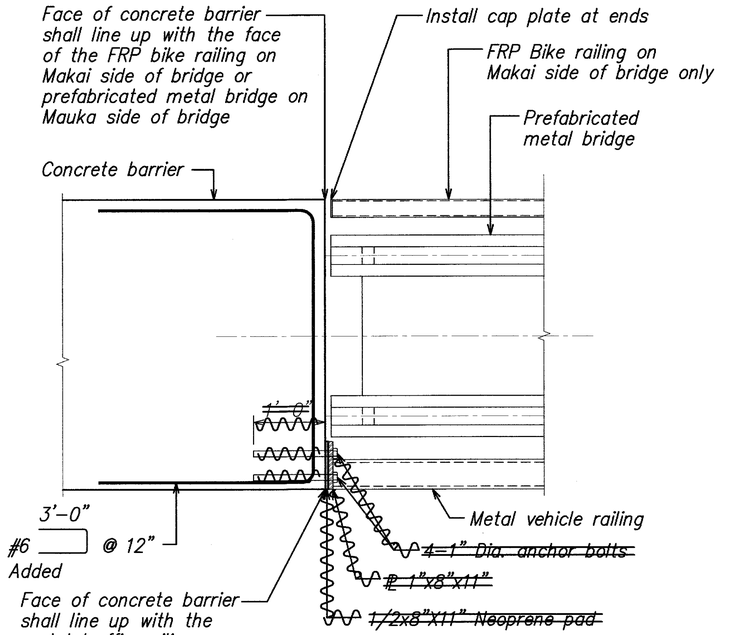
"AS-BUILT"

C.O. 237

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	238	284



SECTION (A) S12.2 | S19.4
Scale: 1" = 1'-0"
S13.1, S14.1, S15.1



SECTION (B) S19.4 | S19.4
Scale: 1" = 1'-0"

Notes:

1. Expansion joints in the bridge and railings shall be provided to account for movements described in the contract documents.
2. Expansion joints seals shall be considered part of the prefabricated metal bridge design and its cost shall considered included in the contract price of Specifications Section 660 – Prefabricated Metal Bridge.

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

LEGEND FOR AS-BUILT POSTINGS

~~Squiggly~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PREFABRICATED BRIDGE TRAFFIC RAILING SECTIONS

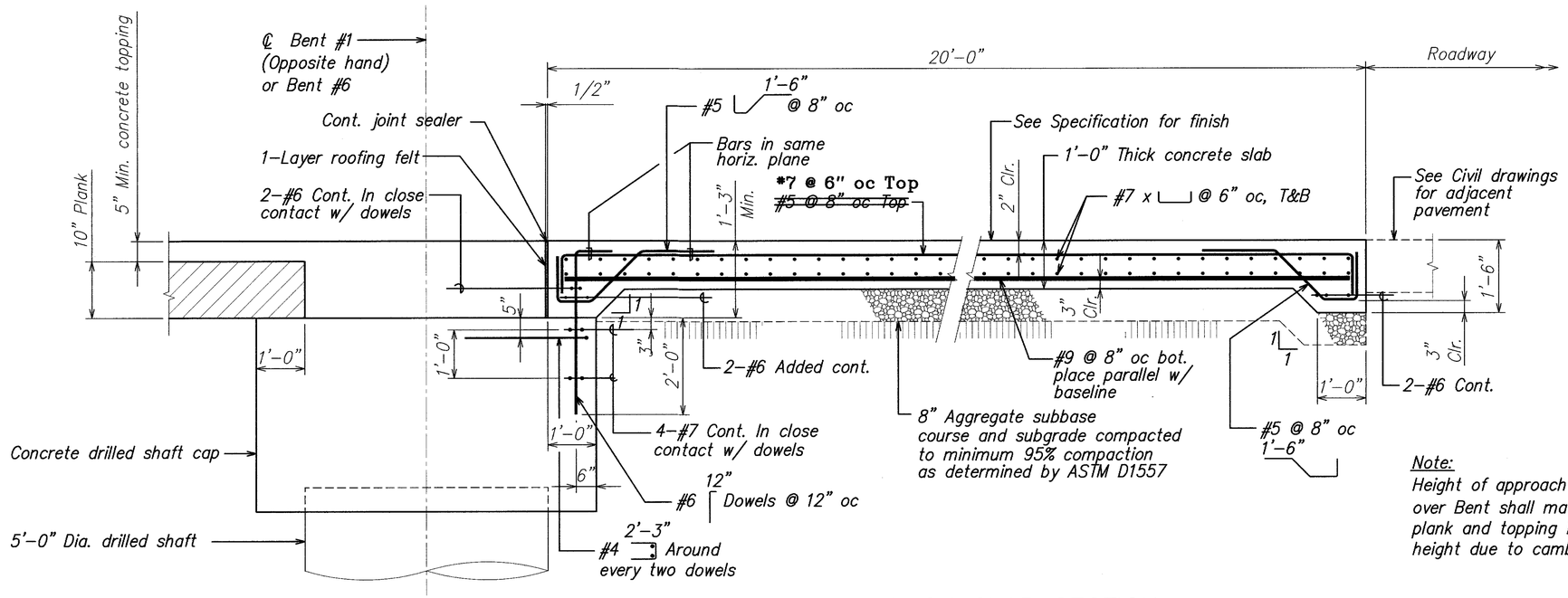
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S19.4 OF 131 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	239	284

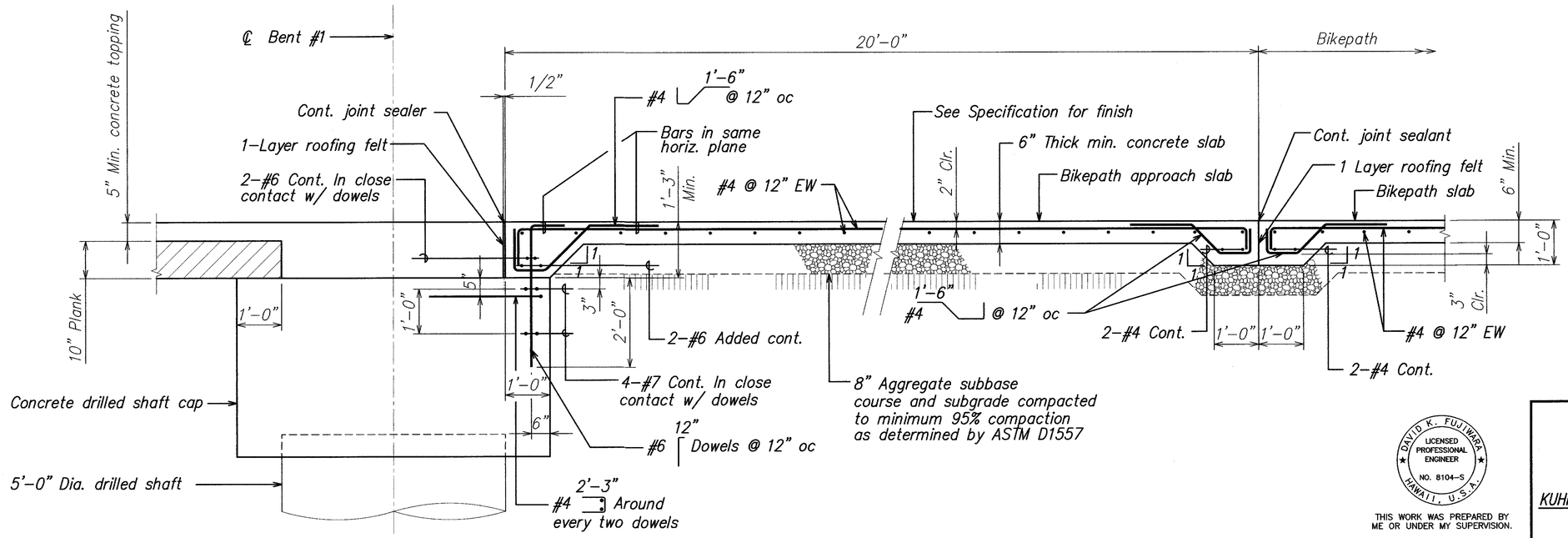


TYPICAL APPROACH SLAB SECTION

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

A S20.1 S20.1

Note:
Height of approach slab thickened edge over Bent shall match the height of the plank and topping including the increased height due to camber.



TYPICAL BIKEPATH APPROACH SLAB SECTION

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

B S20.1 S20.1

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

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DAVID K. FUJIWARA
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NO. 8104-S
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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

APPROACH SLAB

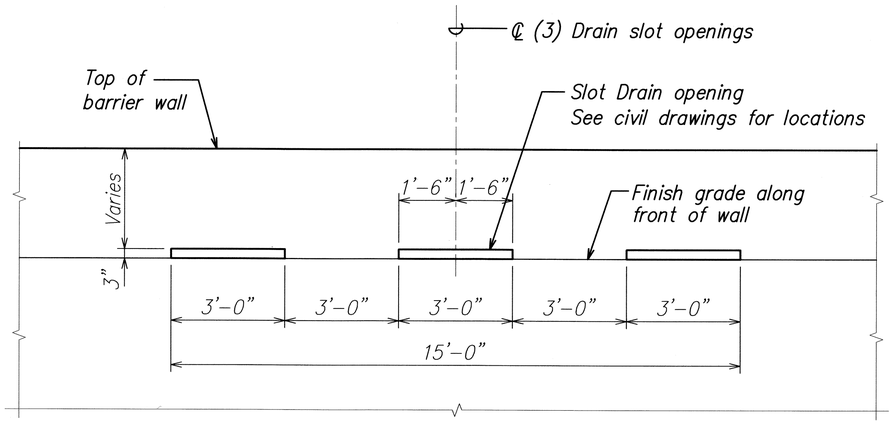
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S20.1 OF 131 SHEETS

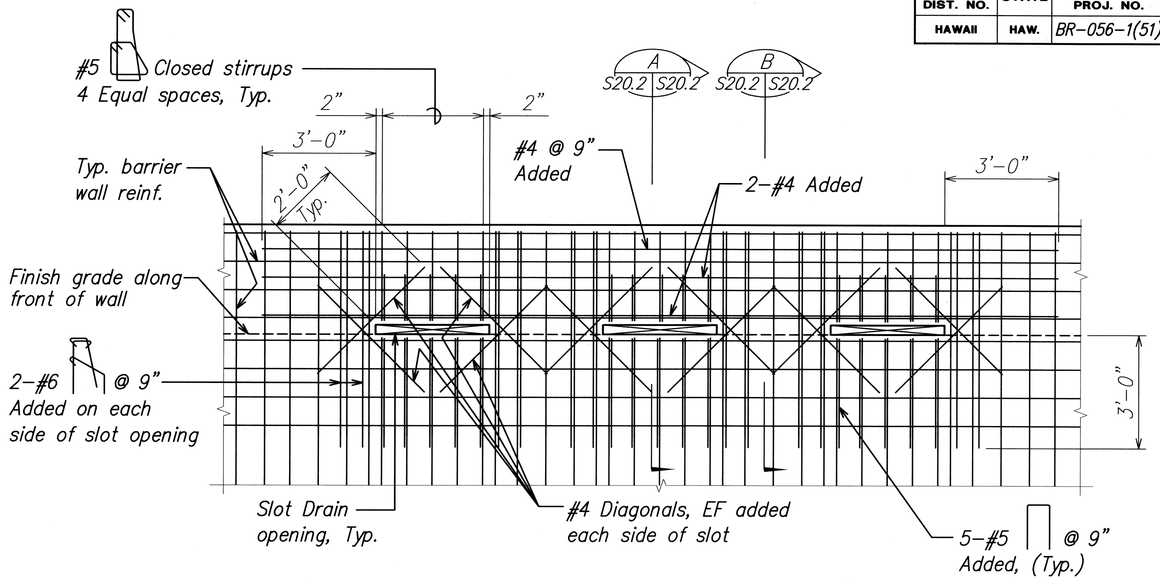
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	240	284



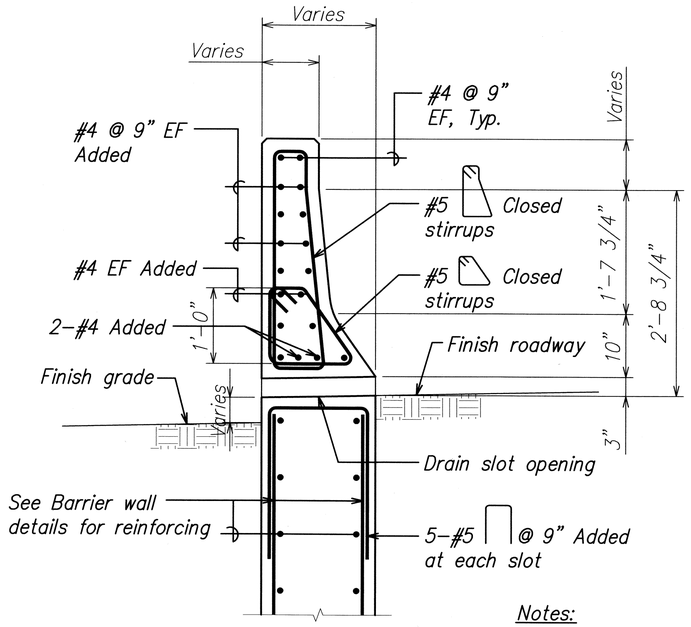
TYPICAL BARRIER WALL
DRAIN SLOT OPENINGS – ELEVATION

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



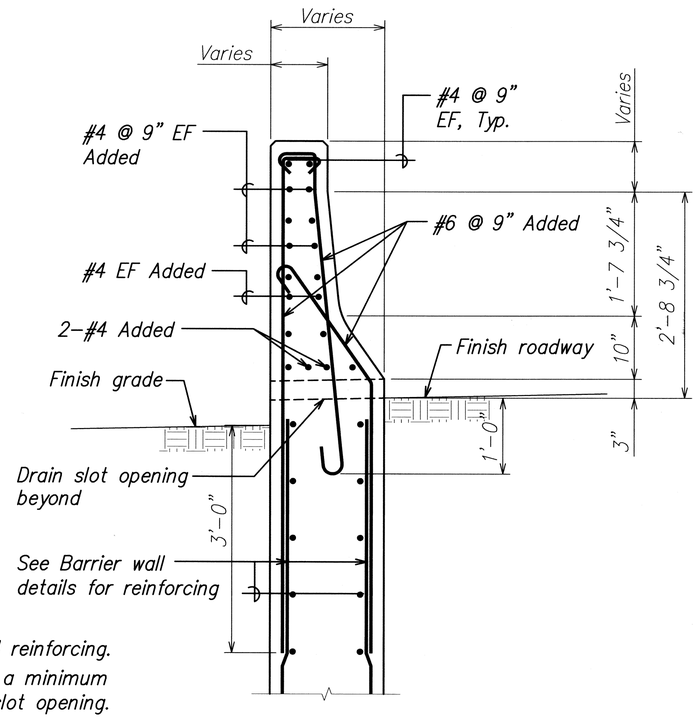
TYPICAL BARRIER WALL
DRAIN SLOT OPENINGS – SECTION

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



SECTION A

Scale: 1" = 1'-0" S20.2 | S20.2



SECTION B

Scale: 1" = 1'-0" S20.2 | S20.2

Notes:

1. See barrier wall details for typical reinforcing.
2. Expansion joints shall be located a minimum of 5 feet from any part of the slot opening.
3. See Civil Plans for drain slot locations.

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

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE — EXPIRATION DATE OF THE LICENSE: 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL BARRIER WALL DRAIN SLOT OPENINGS ELEVATION AND SECTIONS
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S20.2 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	241	284

WATERLINE THRUST BLOCK SCHEDULE

Type	Nominal water main Pipe diameter (inches)			Thrust block dimensions					Reinforcement		Details	Waterline stations
				A	B	C	D1	D2	"a" BARS	"b" BARS		0+00 TO 0+99
Horiz. Bends	16	BENDS	1/32	2"-6"	1'-0"	1'-0"	1'-3"	1'-3"	#5 @ 12"	#5 @ 12"	A/S19.4	0+58
	16		1/8	5'-10"	1'-6"	1'-0"	2'-0"	2'-0"	#5 @ 10"	#5 @ 12"	A/S19.4	0+82.5
Horiz. Bends With Struc. Struts	16	BENDS	1/32	2"-6"	-	-	1'-3"	1'-3"	#5 @ 12"	#5 @ 12"	C/S19.4	0+00
	16		1/8	5'-10"	-	-	2'-0"	2'-0"	#5 @ 12"	#5 @ 12"	C/S19.4	0+99
Cap W/4" C.O.	16	-		6'-0"	2'-0"	2'-6"	2'-0"	2'-6"	#5 @ 12"	#5 @ 12"	E/S19.4	0+00, 0+99

* Notes:
1. Waterline test pressure = 150 psi
2. Unless otherwise noted, stations shown are for waterline (WL)

SEWERLINE THRUST BLOCK SCHEDULE

Type	Nominal sewer main Pipe diameter (inches)			Thrust block dimensions					Reinforcement		Details	Sewerline stations
				A	B	C	D1	D2	"a" BARS	"b" BARS		0+00 TO 1+93.72
Horiz. Bends	18	BENDS	1/8	8'-4"	1'-9"	1'-0"	3'-0"	3'-0"	#5 @ 12"	#5 @ 12"	A/S19.4	0+21.45
Horiz. Bends With Struc. Struts	18	BENDS	1/8	8'-4"	-	-	3'-0"	3'-0"	#5 @ 12"	#5 @ 12"	C/S19.4	0+03
Cap W/4" C.O.	18	-		8'-0"	3'-6"	4'-0"	2'-0"	4'-6"	#5 @ 12"	#5 @ 12"	E/S19.4	0+00, 2+01.2
	10	-		4'-4"	2'-0"	2'-6"	2'-0"	2'-0"	#5 @ 12"	#5 @ 12"	E/S19.4	0+52.5

* Notes:
1. Sewerline test pressure = 250 psi
2. Unless otherwise noted, stations shown are for sewerline - A (SL-A)

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

for Bruce Inouye
Manager and Chief Engineer
Dept. of Water, County of Kauai

5/16/08
Date

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

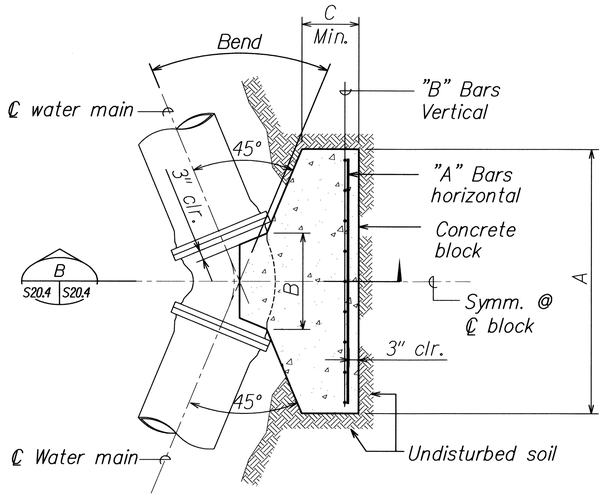
THRUST BLOCK SCHEDULES

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: None Date: May 2008

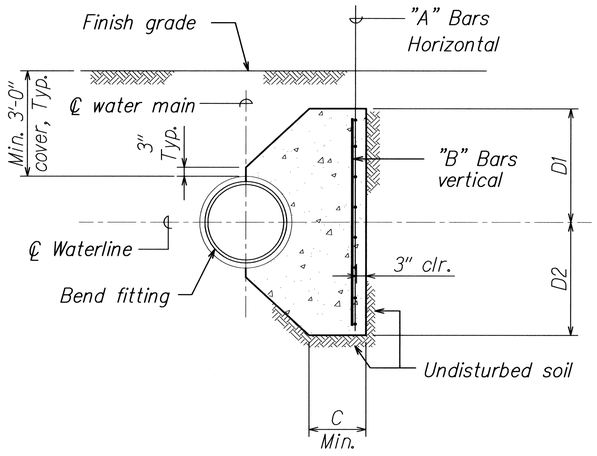
SHEET No. S20.3 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	242	284



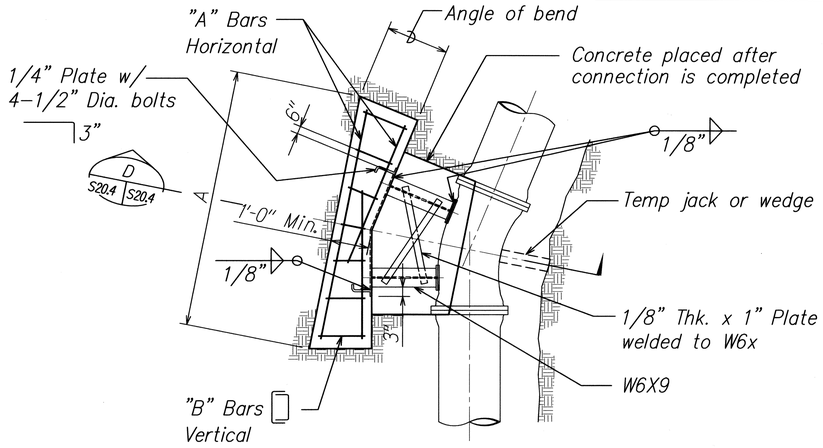
HORIZONTAL BEND PLAN (A) S20.4 | S20.4

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



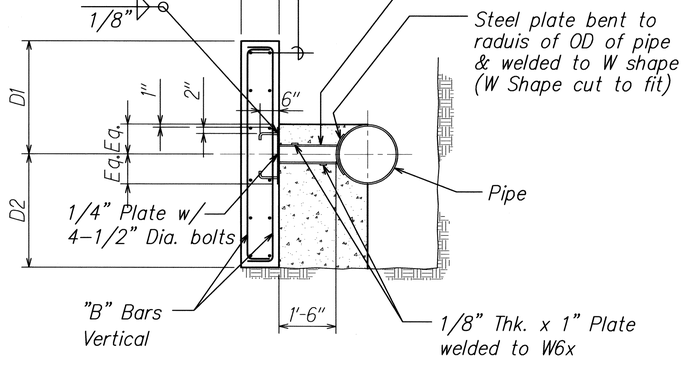
HORIZONTAL BEND SECTION (B) S20.4 | S20.4

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



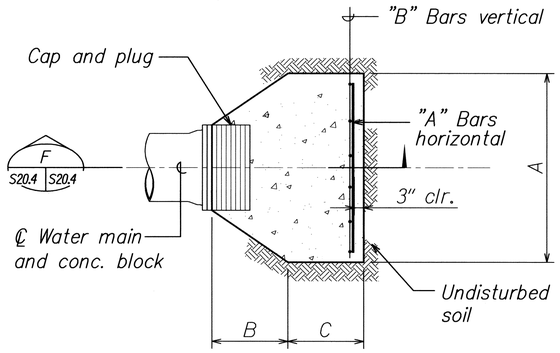
HORIZONTAL BEND PLAN (C) S20.4 | S20.4

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



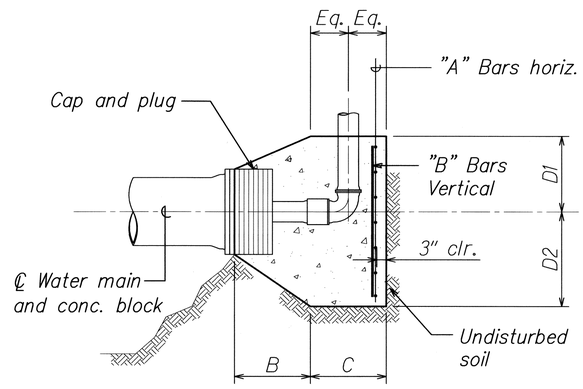
THRUST BLOCK SECTION (D) S20.4 | S20.4

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



CAP / CLEANOUT PLAN (E) S20.4 | S20.4

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



CAP / CLEANOUT SECTION (F) S20.4 | S20.4

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

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

For Bruce Inouye
Manager and Chief Engineer
Dept. of Water, County of Kauai

5/16/08
Date

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara
SIGNATURE

4-30-10
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

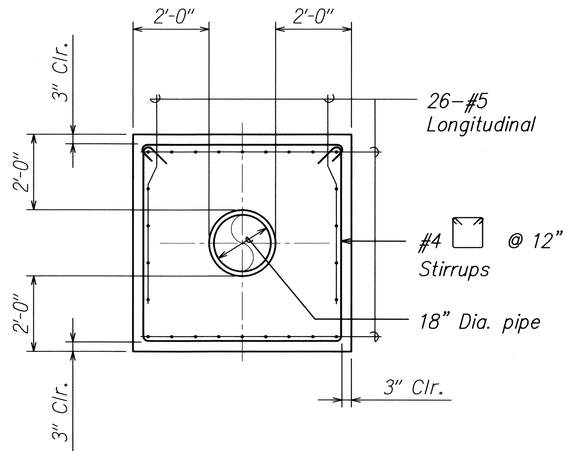
TYPICAL THRUST BLOCK PLANS AND SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

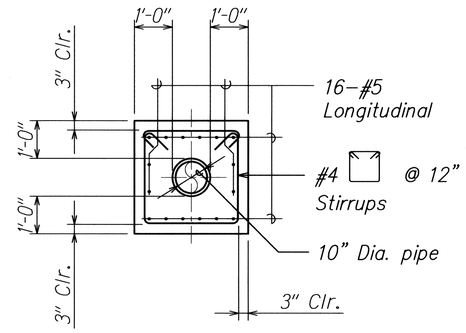
Scale: As Noted Date: May 2008

SHEET No. S20.4 OF 131 SHEETS

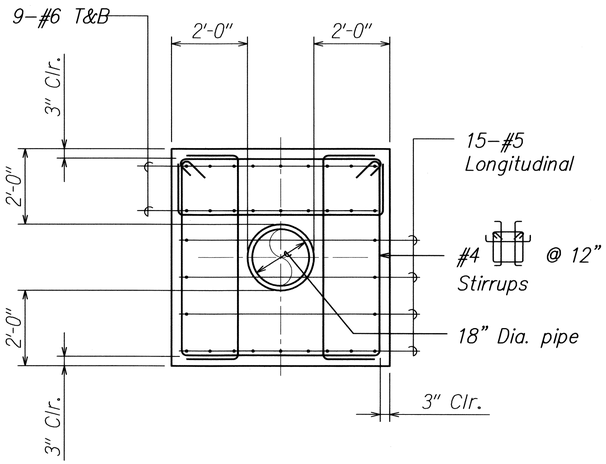
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	243	284



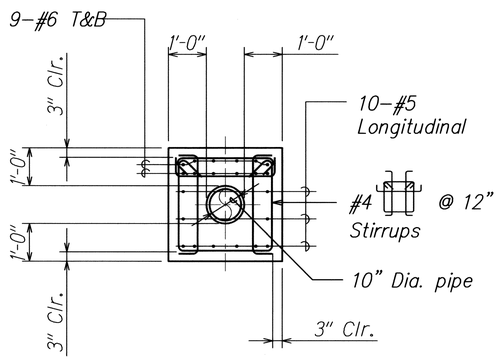
PIPE JACKET TYPICAL SECTION A
Scale: 1/2" = 1'-0"
S20.7 | S20.5
S20.7



PIPE JACKET TYPICAL SECTION B
Scale: 1/2" = 1'-0"
S20.6 | S20.5
S20.7



PIPE JACKET SECTION AT TOP VERTICAL BEND C
Scale: 1/2" = 1'-0"
S20.7 | S20.5



PIPE JACKET SECTION AT TOP VERTICAL BEND D
Scale: 1/2" = 1'-0"
S20.7 | S20.5

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

For Manager and Chief Engineer
Dept. of Water, County of Kauai
5/16/08
Date

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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4-30-10
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

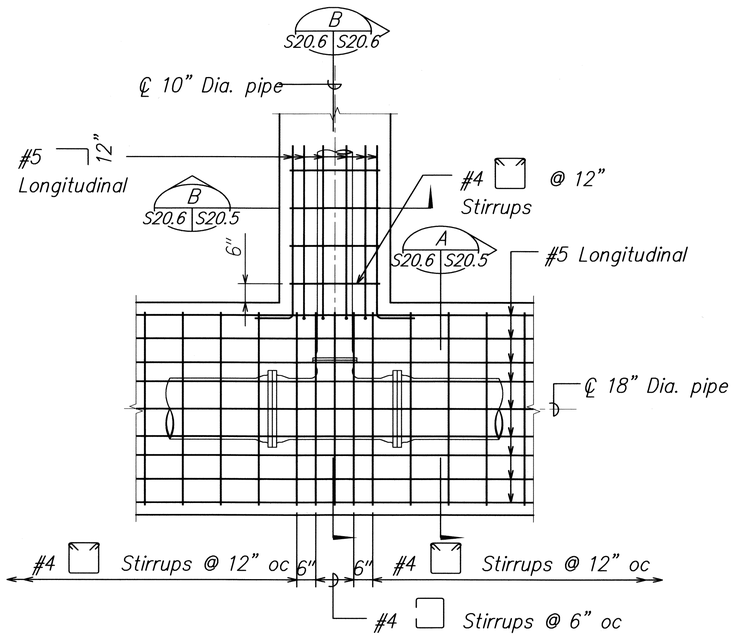
TYPICAL CONCRETE JACKET SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

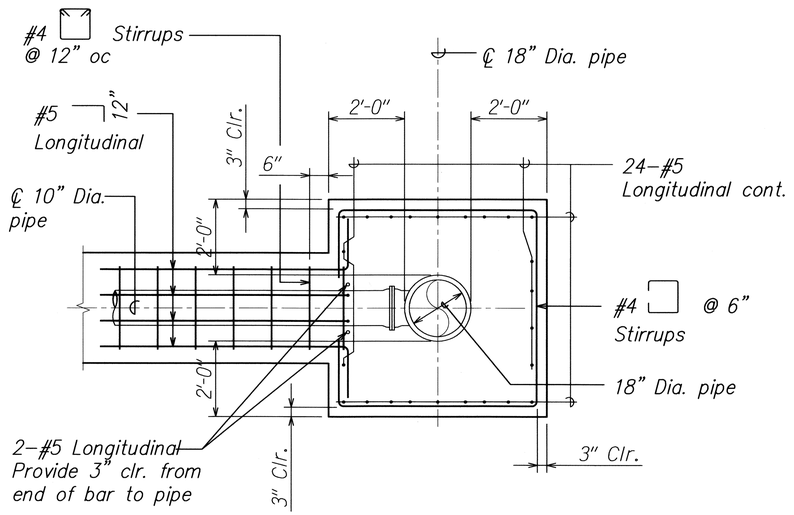
SHEET No. S20.5 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	244	284



PIPE JACKET PLAN AT TEE (A S20.6 S20.6)

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



PIPE JACKET SECTION AT TEE (B S20.6 S20.6)

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

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

Brian Inouye
For Manager and Chief Engineer
Dept. of Water, County of Kauai

5/16/08
Date

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONCRETE PLAN AND SECTION AT TEE

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

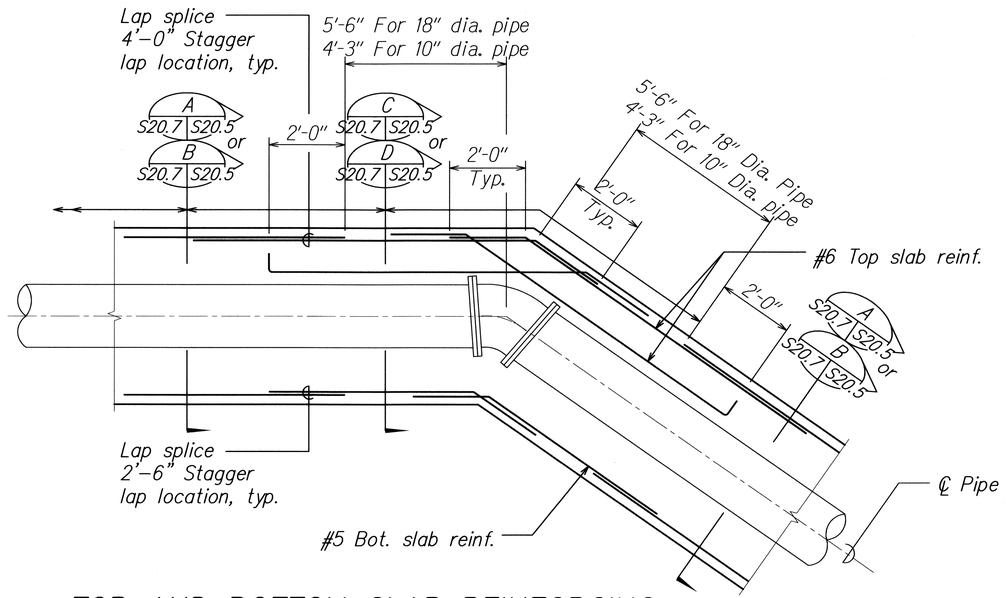
Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S20.6 OF 131 SHEETS

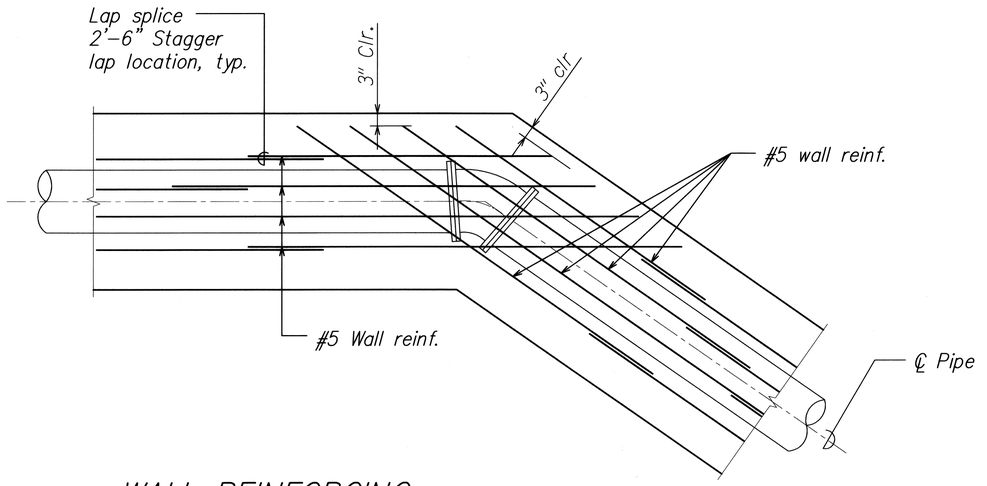
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	245	284



TOP AND BOTTOM SLAB REINFORCING AT TOP OF VERTICAL BEND

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

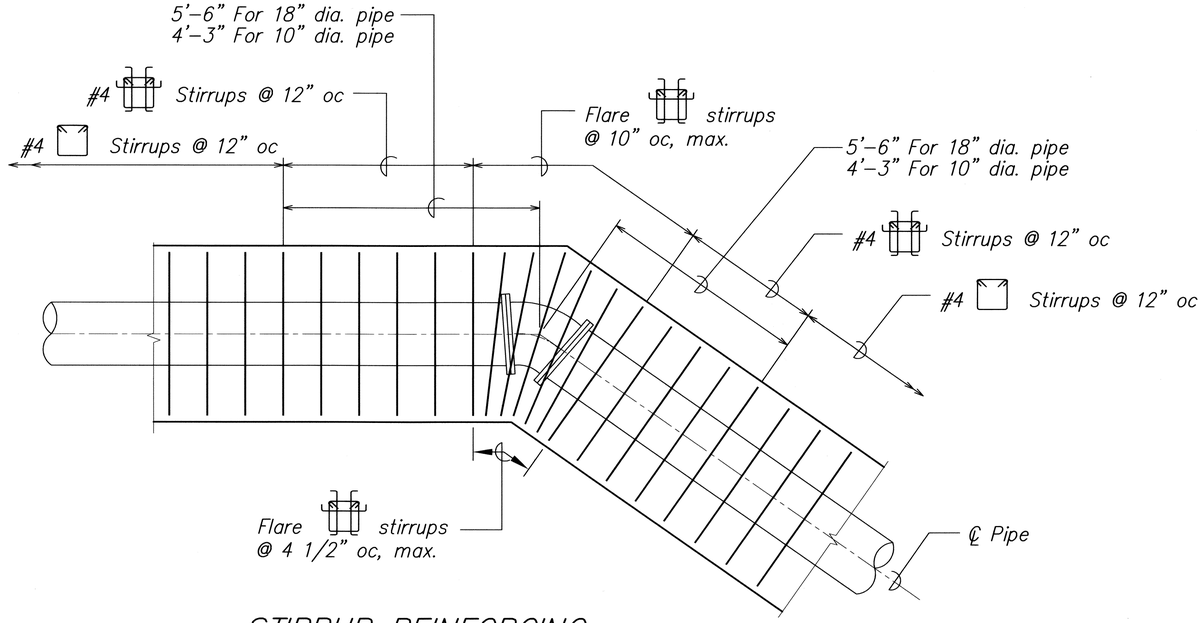
A S20.7 S20.7



WALL REINFORCING AT TOP OF VERTICAL BEND

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

B S20.7 S20.7



STIRRUP REINFORCING AT TOP OF VERTICAL BEND

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

C S20.7 S20.7

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

For Brian Inouye
Manager and Chief Engineer
Dept. of Water, County of Kauai

5/16/08
Date

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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

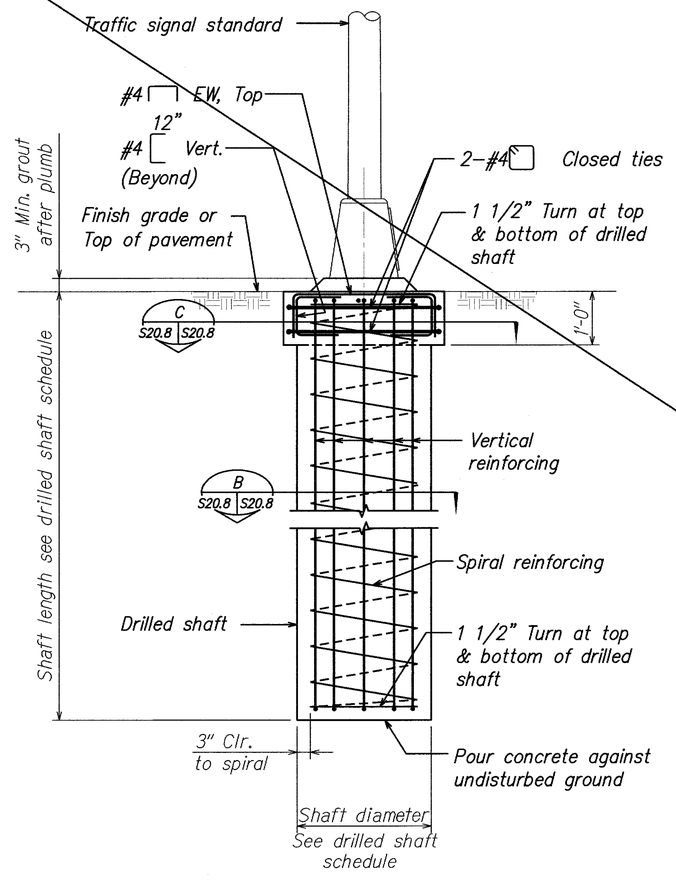
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONCRETE SECTIONS
AT TOP VERTICAL BEND
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

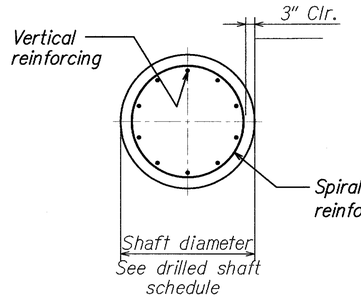
Scale: As Noted Date: May 2008

SHEET No. S20.7 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	246	284

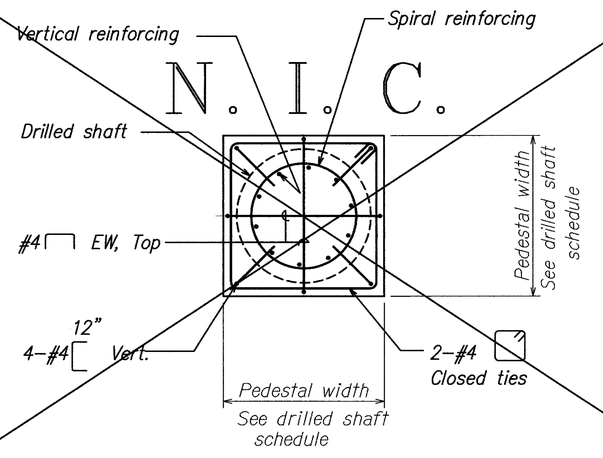


TYPICAL POLE FOUNDATION (A S20.8 S20.8)
Scale: 3/4" = 1'-0"



SECTION (C S20.8 S20.8)
Scale: 3/4" = 1'-0"

Notes:
1. See civil drawings for additional details.
2. Traffic signal standard manufacturer's recommendations shall be followed.



SECTION (C S20.8 S20.8)
Scale: 3/4" = 1'-0"

Note:

1. **Type II Traffic Signal Standard Footing Installed per Standard Plan Sheet TE-33.**

Drilled Shaft Schedule

	Shaft diameter inch	Shaft Length feet	Pedestal Width inch	Vertical reinforcing	Spiral reinforcing
Type II Traffic Signal Standard	36	12	42	12-#8	#5 @ 6"

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLANS — SURVEY PLOTTED BY — DRAWN BY — TRACED BY — DESIGNED BY — QUANTITIES BY — CHECKED BY — DATE
NOTE BOOK — No.

DAVID K. FUJIWARA — LICENSED PROFESSIONAL ENGINEER — NO. 8104-S — HAWAII, U.S.A.

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SIGNATURE — 4-30-10 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SIGNAL LIGHT POLE FOUNDATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

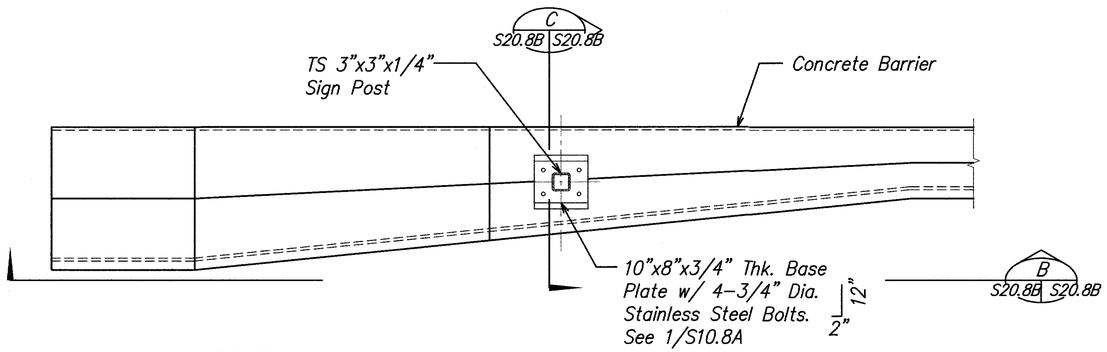
Scale: As Noted — Date: May 2008

SHEET No. S20.8 OF 131 SHEETS

"AS-BUILT"

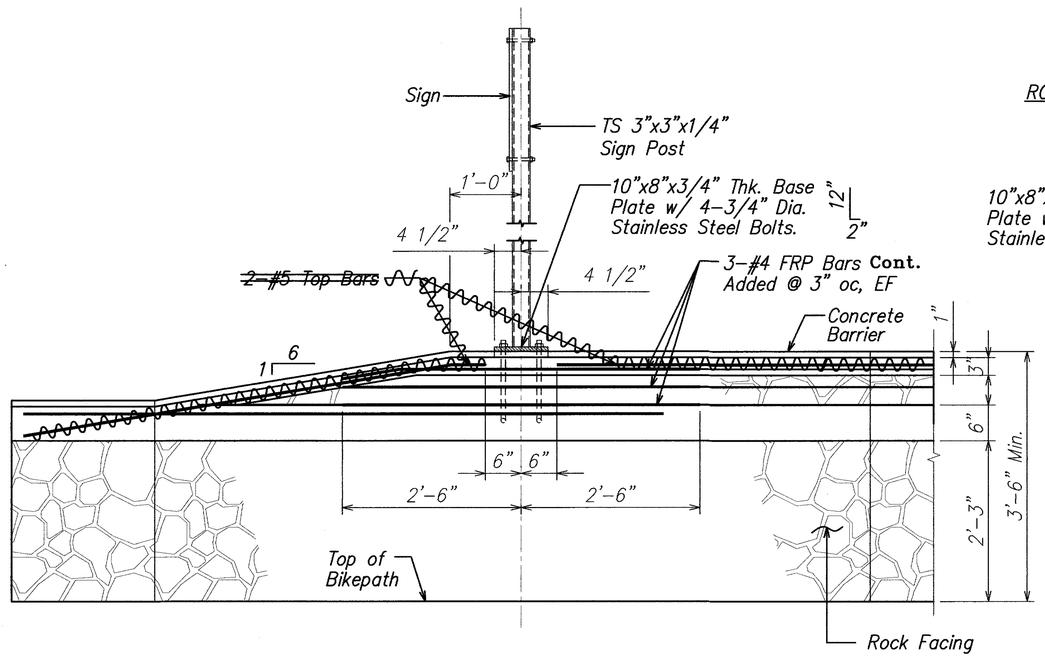
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 246S-2	284

ROADWAY



BIKE PATH

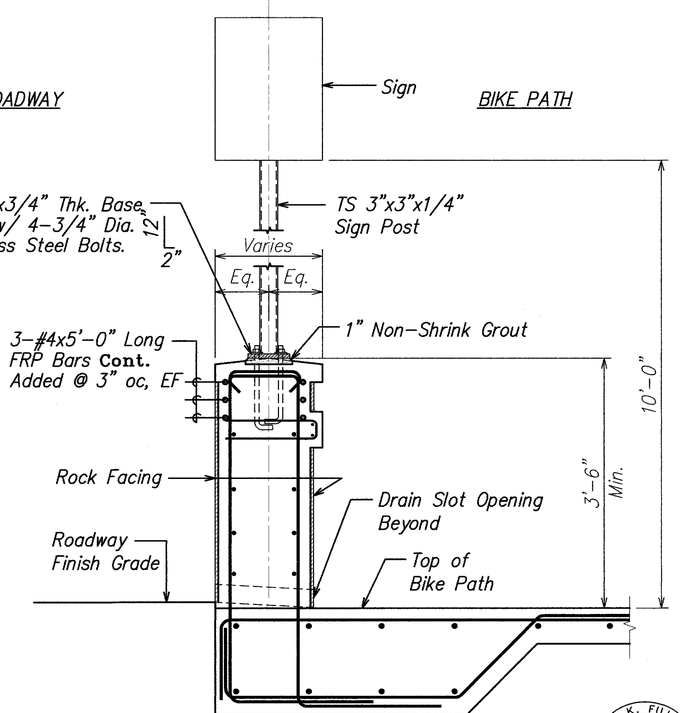
PLAN
Scale: 1" = 1'-0"



ELEVATION
Scale: 1" = 1'-0"

Note:
For typical barrier reinforcing and dimensions. See sheet S1.10.

ROADWAY



BIKE PATH

SECTION
Scale: 1" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS

~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
6/17/10	2 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGNAGE DETAIL AT END POST

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S20.8B OF 131 SHEETS

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NO. 8104-S
HAWAII, U.S.A.

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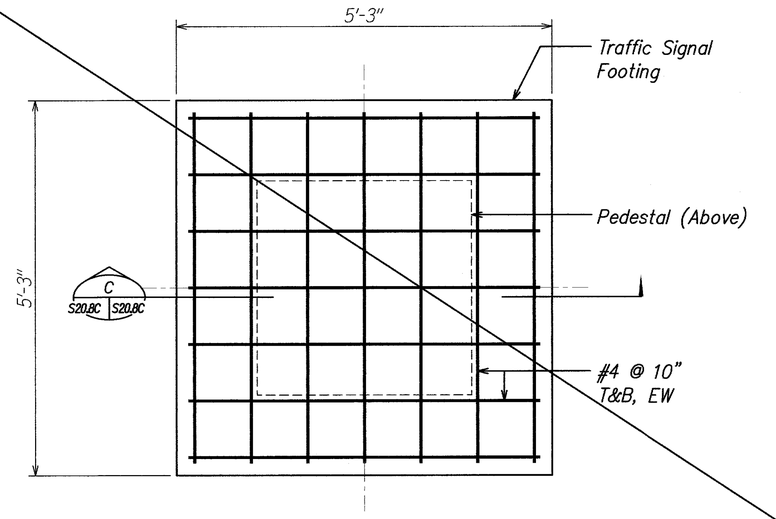
ORIGINAL PLANS | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

"AS-BUILT"

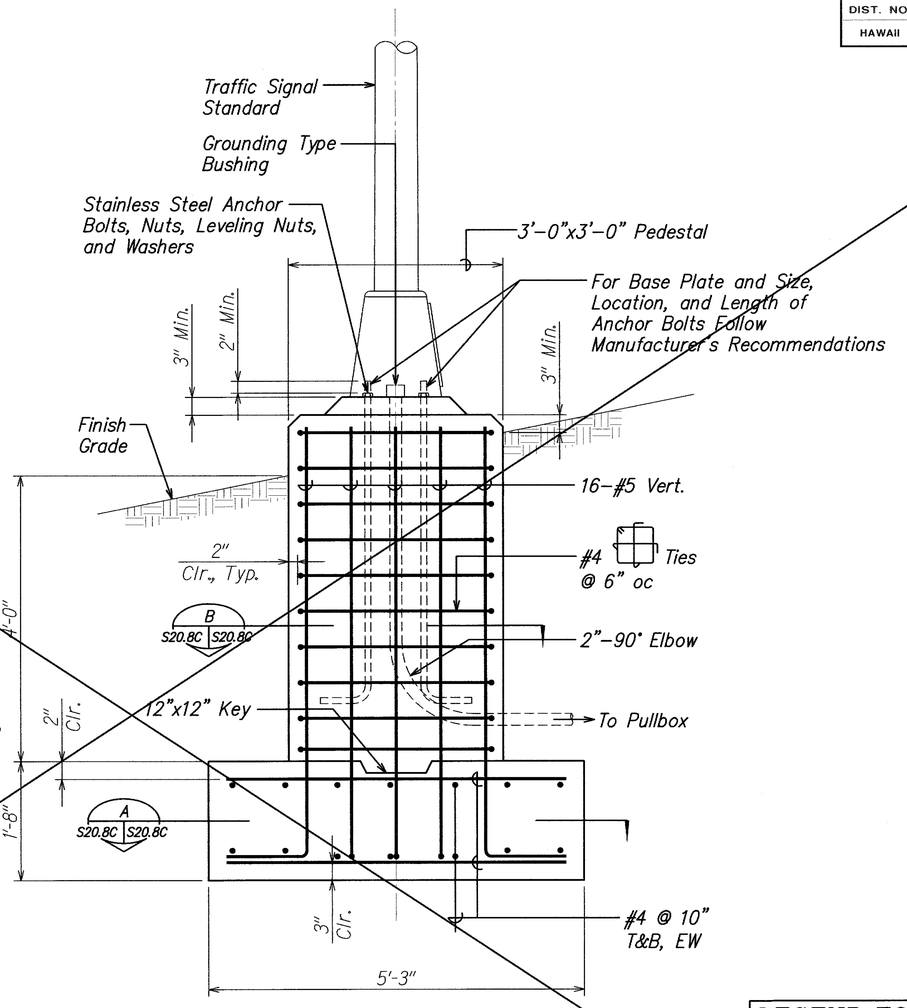
C.O. 246S-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	CO 246S-3	284

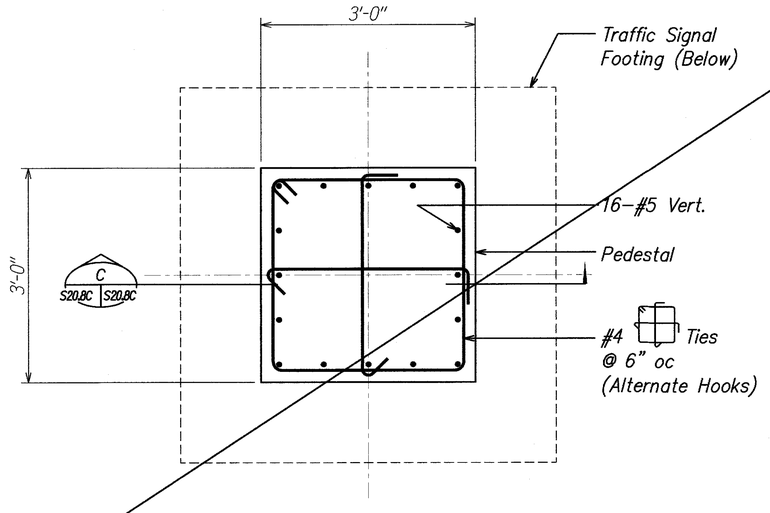


SECTION
Scale: 1" = 1'-0"
A S20.8C S20.8C

N. I. C.



SECTION
Scale: 1" = 1'-0"
C S20.8C S20.8C



SECTION
Scale: 1" = 1'-0"
B S20.8C S20.8C

TYPE II TRAFFIC SIGNAL POLE W/ 45 FOOT MAST ARM

LEGEND FOR AS-BUILT POSTINGS	
~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
10/22/10	3 New Sheet

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TYPE II TRAFFIC SIGNAL LIGHT POLE FOUNDATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

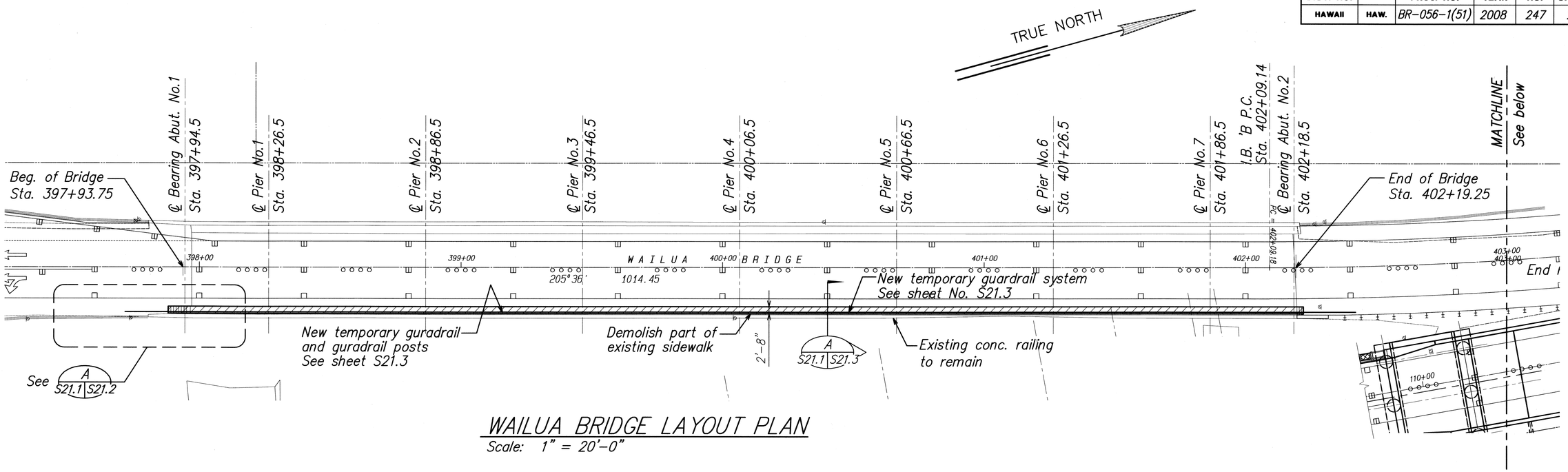
SHEET No. S20.8C OF 131 SHEETS

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

"AS-BUILT"

C.O. 246S-3

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	247	284



WAILUA BRIDGE LAYOUT PLAN

Scale: 1" = 20'-0"

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

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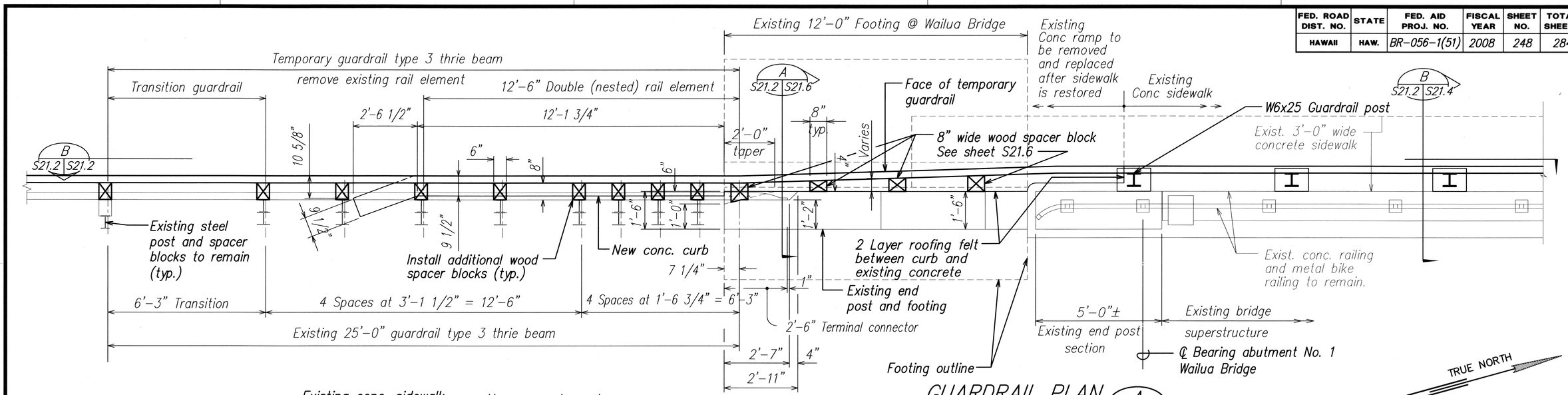
WAILUA BRIDGE LAYOUT PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

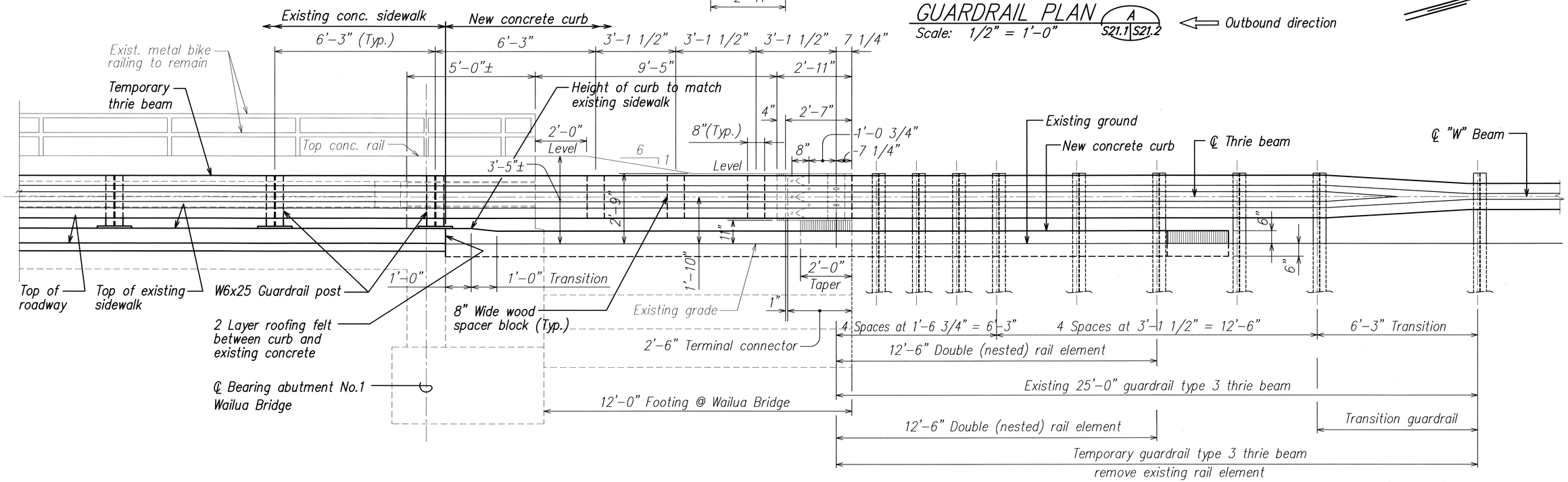
Scale: As Noted Date: May 2008

SHEET No. S21.1 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	248	284



GUARDRAIL PLAN
A S21.1 S21.2
Scale: 1/2" = 1'-0"



GUARDRAIL ELEVATION
B S21.2 S21.2
Scale: 1/2" = 1'-0"

Note:
See civil drawings for additional details.

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

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STATE OF HAWAII
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HIGHWAYS DIVISION

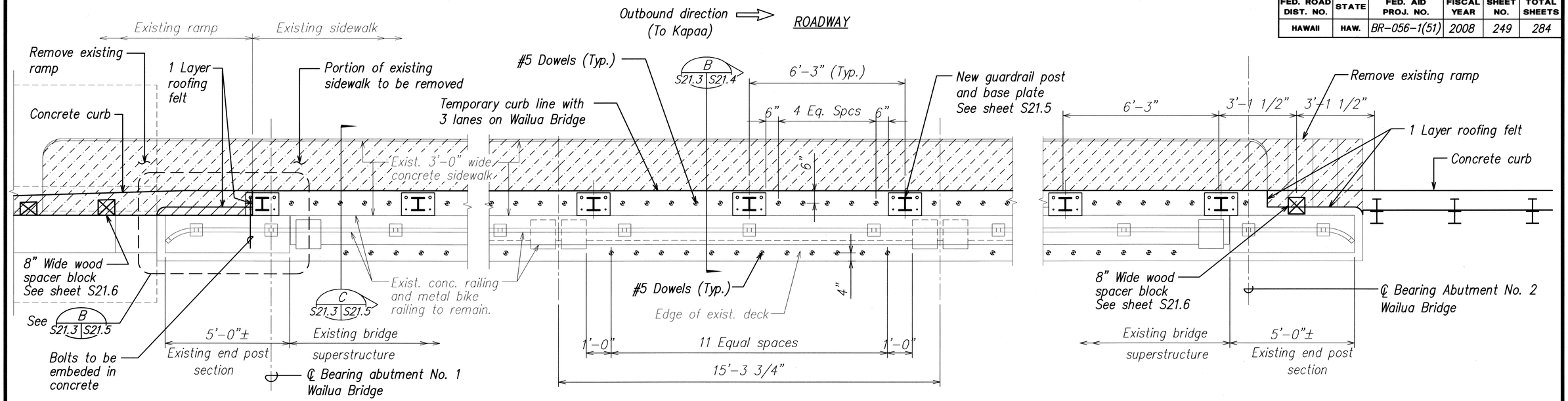
GUARDRAIL PLAN AND ELEVATION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

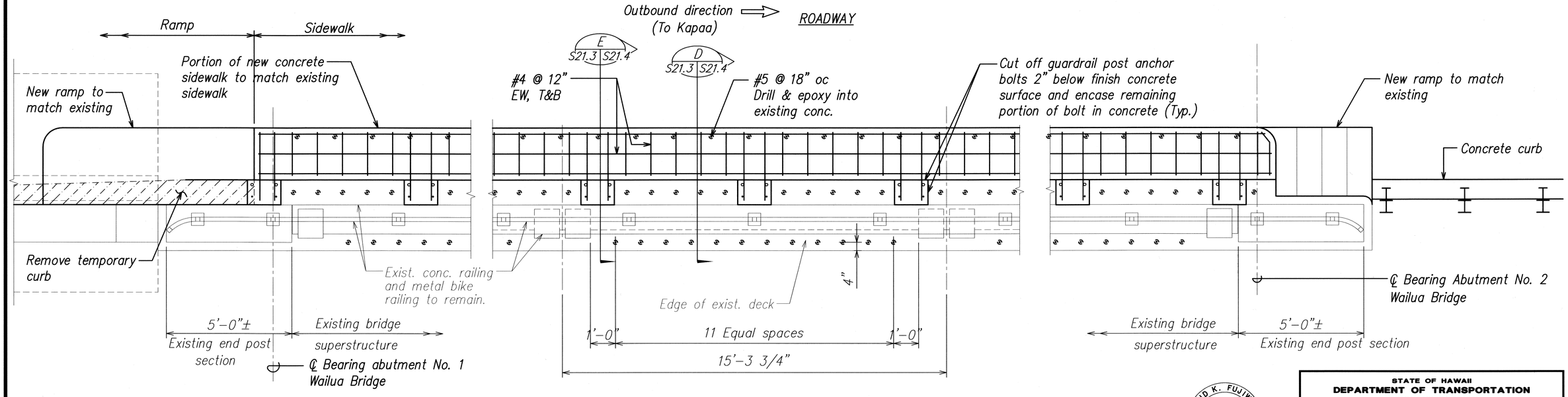
SHEET No. S21.2 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	249	284



TEMPORARY CONDITION WITH 3 LANES ON WAILUA BRIDGE A S21.3 S21.3

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



FINAL CONDITION ON WAILUA BRIDGE B S21.3 S21.3

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

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

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STATE OF HAWAII
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TYPICAL TEMPORARY GUARDRAIL PLAN & FINAL CONDITION ON WAILUA BRIDGE PLAN

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

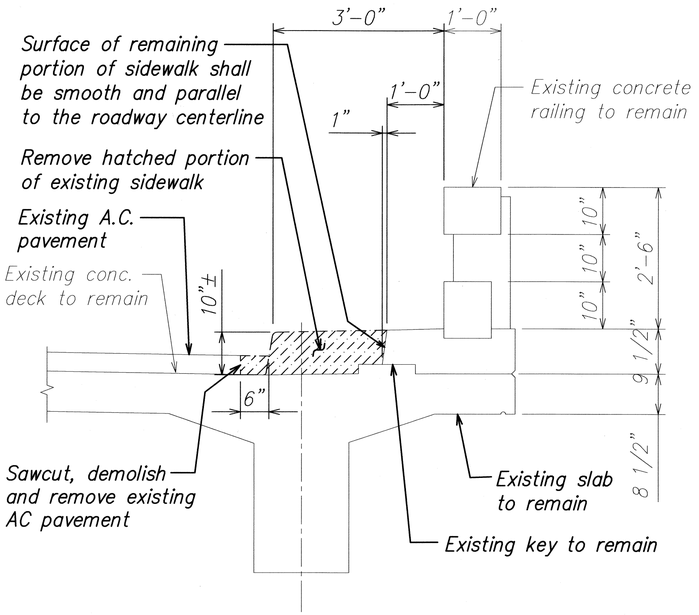
Wailua Cane Haul Bridge Widening

Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

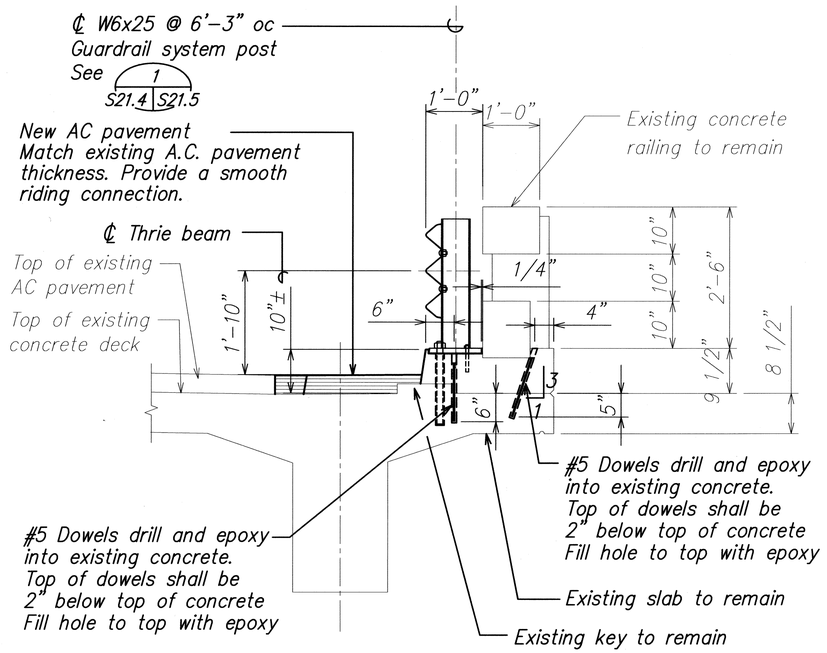
SHEET No. S21.3 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	250	284



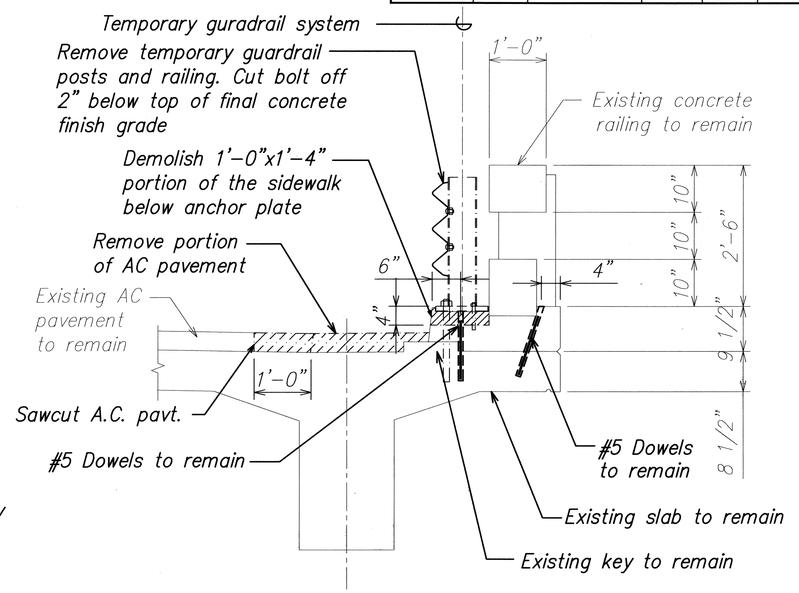
EXISTING SIDEWALK DEMOLITION SECTION (A S21.1 | S21.4)

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



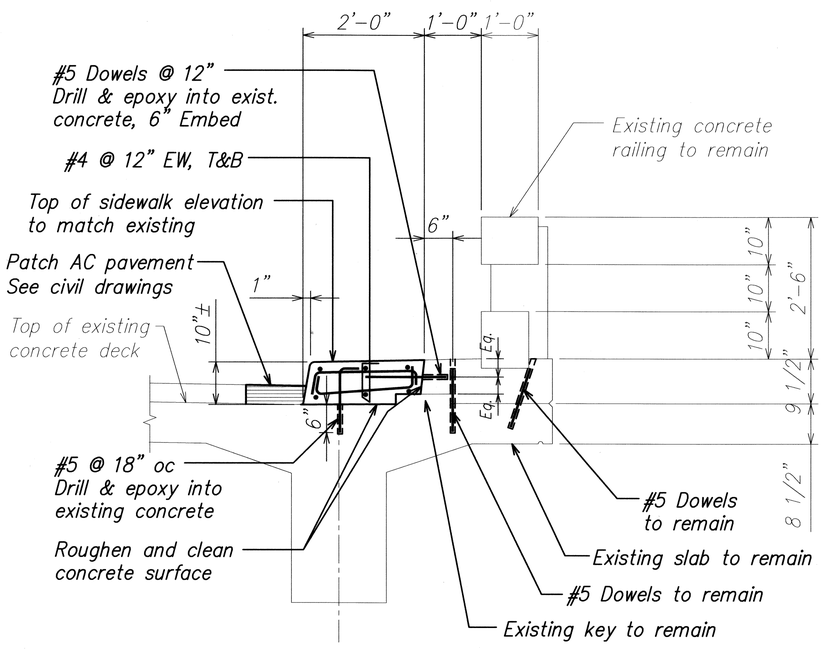
TEMPORARY SIDEWALK RAILING SECTION (B S21.4 | S21.4)

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



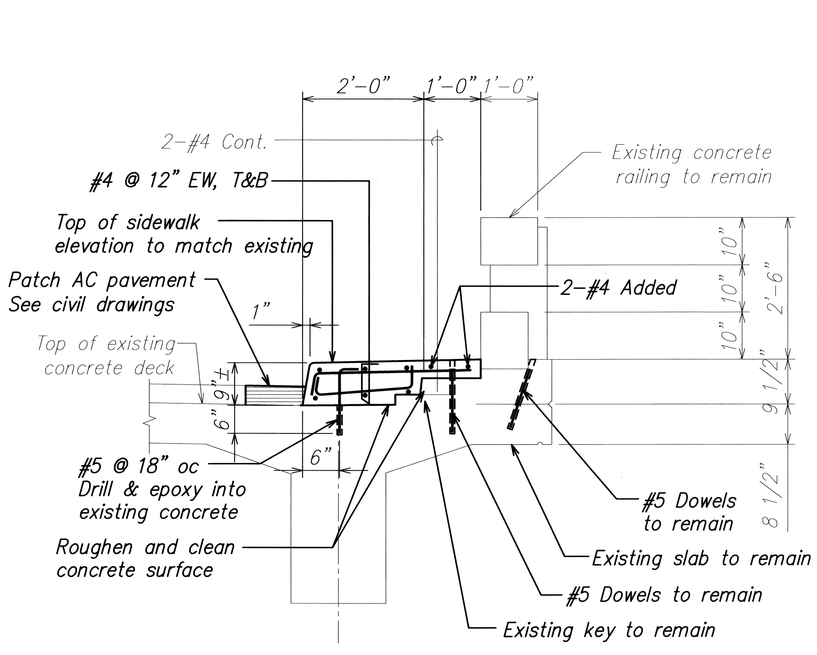
METAL RAILING DEMOLITION SECTION (C S21.4 | S21.4)

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



FINAL SIDEWALK RAILING SECTION (D S21.3 | S21.4)

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



FINAL SIDEWALK RAILING SECTION (E S21.3 | S21.4)

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

Notes:

1. See sheet S2.1 for additional demolition notes.
2. Base plates shall not be placed over a joint. Contractor shall layout posts and adjust locations to miss joints. Submit final locations of posts to the Engineer for approval.
3. Expansions joints in the thrie beam railing shall match the expansion joints in the bridge.

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

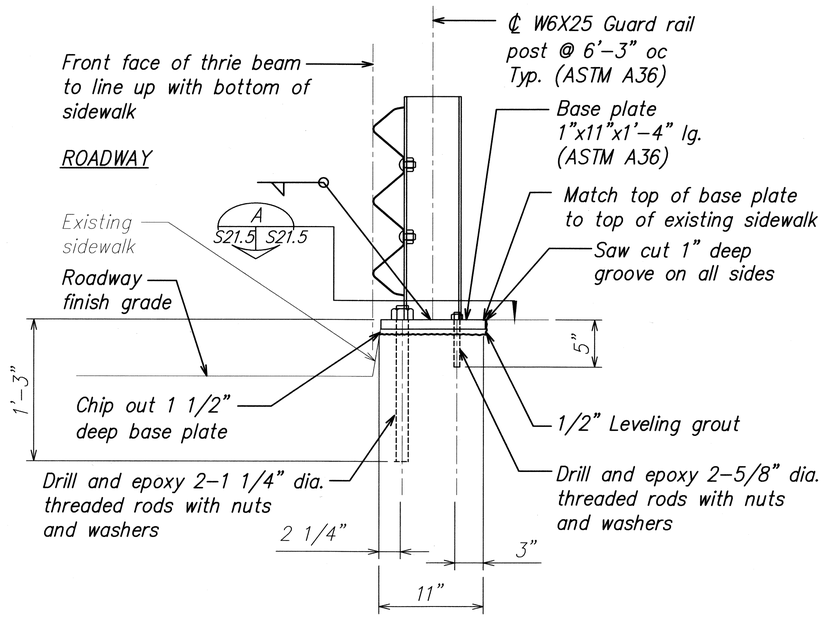
SIDEWALK AND GUARDRAIL SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S21.4 OF 131 SHEETS

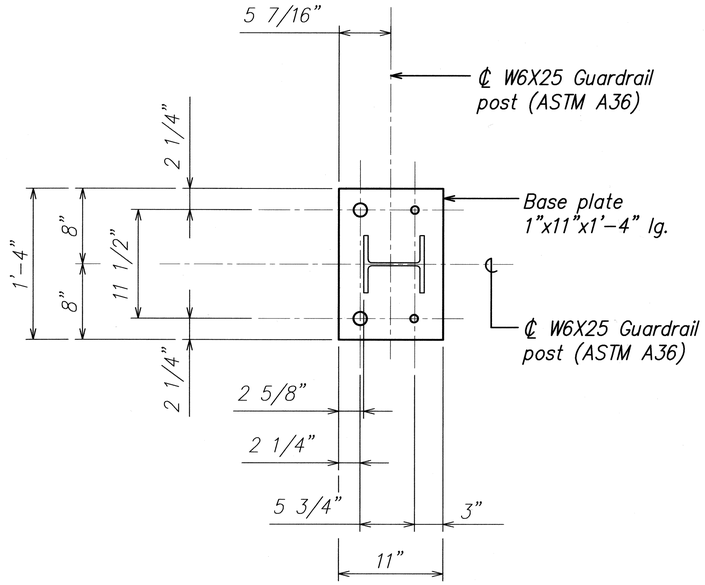
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	251	284



THRIE BEAM METAL RAILING DETAILS

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

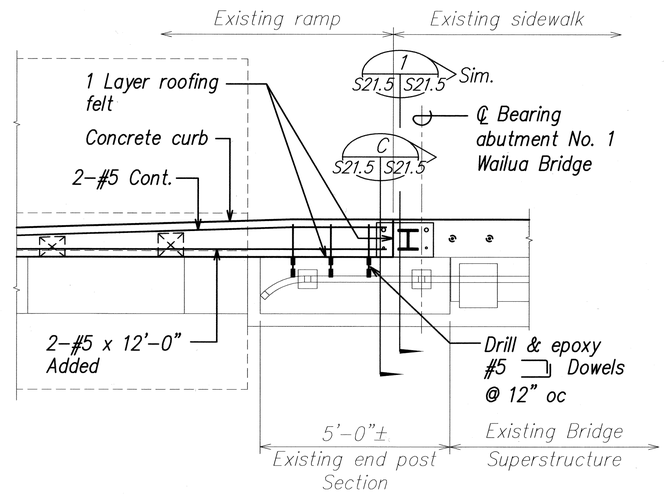
1 S21.4 S21.5



PLAN - BASE PLATE

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

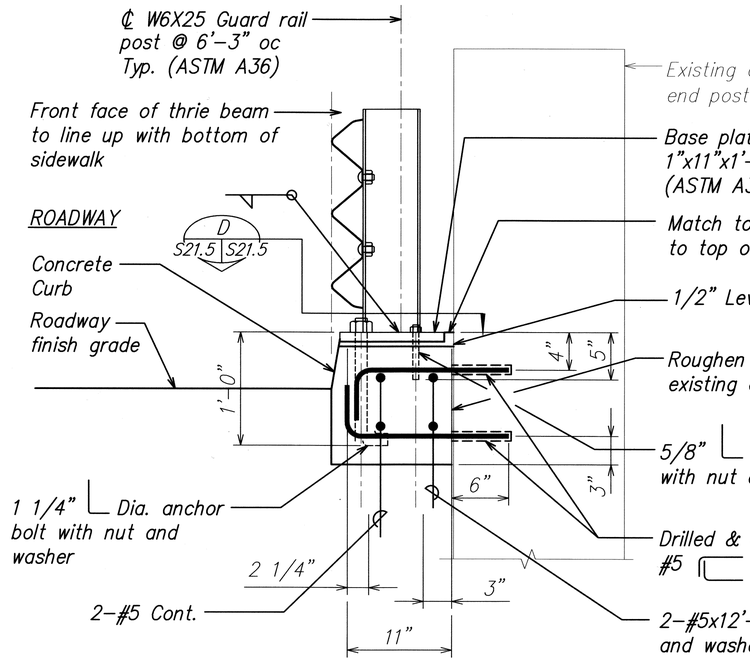
A S21.5 S21.5



SECTION

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

B S21.3 S21.5

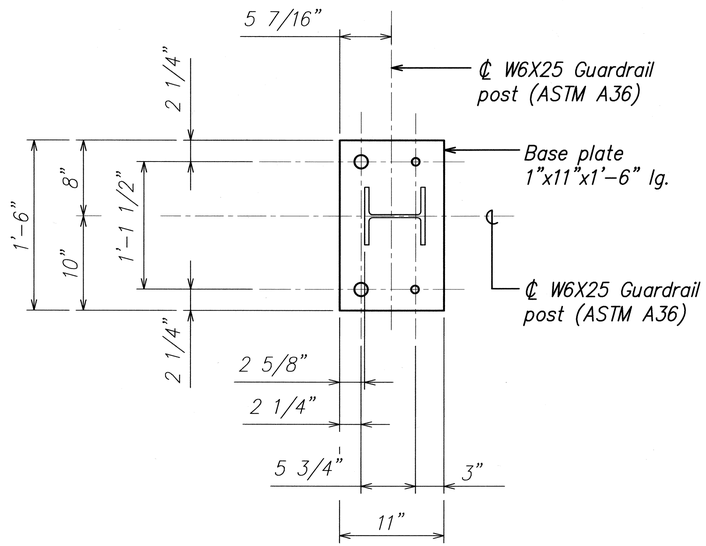


THRIE BEAM METAL RAILING DETAILS

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

C S21.3 S21.5

S21.5



PLAN - BASE PLATE

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

D S21.5 S21.5

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STATE OF HAWAII
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HIGHWAYS DIVISION

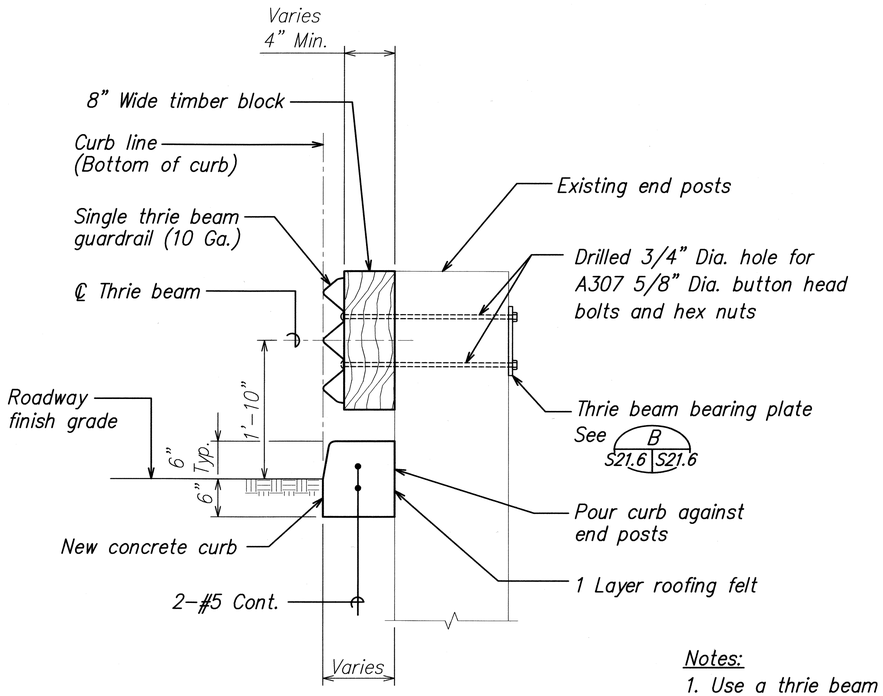
GUARDRAIL DETAIL

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

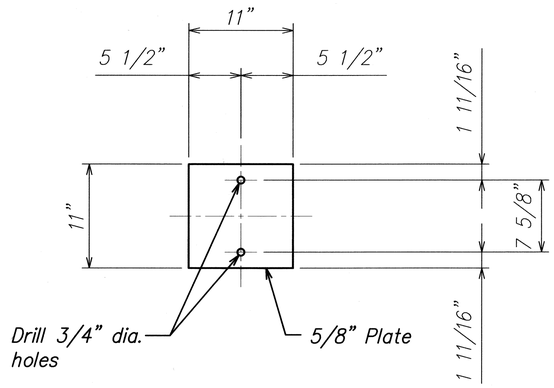
Scale: As Noted Date: May 2008

SHEET No. S21.5 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	252	284



SECTION A
Scale: 1" = 1'-0" S21.2 S21.6



THRIE BEAM BEARING PLATE DETAIL B
Scale: 1 1/2" = 1'-0" S21.6 S21.6

Notes:

1. Use a thrie beam expansion section at bridge expansion joints.
2. Place guardrail reflector in the upper valley of the thrie beam every fifth post.
3. Timber block shall be 1 piece and the thickness shall be adjusted to allow face of the thrie beam to be flush with timber block. Timber block shall be Douglas Fir No.2 or better.
4. The minimum thickness of the timber block shall be 4".
5. The entire back side of the timber block shall be flush with the existing end post.
6. Wood grain shall be vetical.
7. After Wailua Bridge is restored to lanes and the existing sidewalk is restored to its original condition. The concrete curb, wood blocks, and guardrails shall be removed. Holes for the 5/8" dia. bolts shall be filled with 4,000 psi non shrink grout.

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

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NO. 8104-S
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

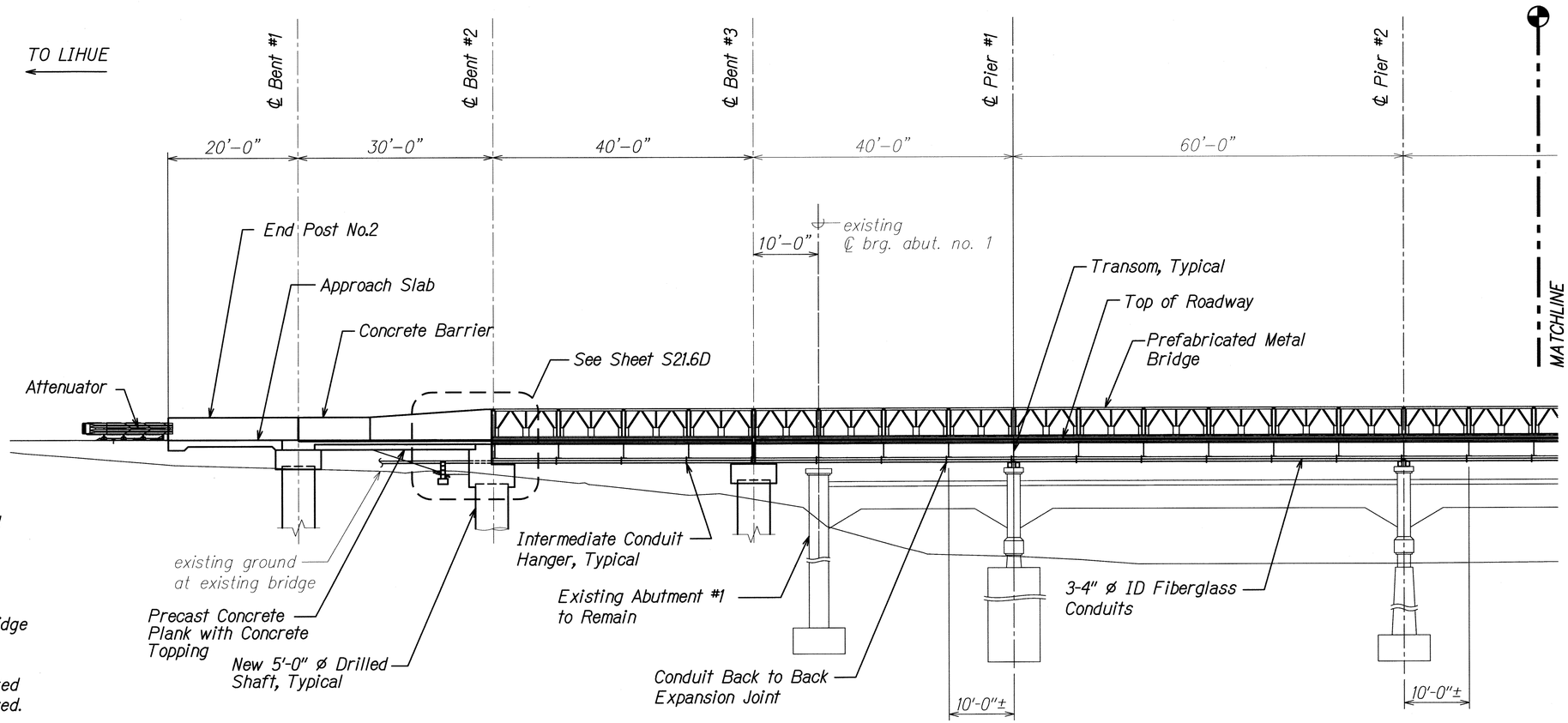
GUARDRAIL DETAIL

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S21.6 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-1	284



SECTION AT CENTERLINE OF BRIDGE

Scale: 1" = 10'-0"

NOTES:

1. The recommendations of the Fiberglass pipe manufacturer shall be followed.
2. The work involving the conduits shall be coordinated with the Prefabricated Metal Bridge work. All fabrication work necessary for the installation of the conduits shall be done prior to hot dip galvanizing of the Prefabricated Metal Bridge members. Prefabricated Metal Bridge shall be designed to carry all additional loads.
3. Design guidelines and specifications stated on sheets S0.4 and S0.5 shall be followed.
4. All elements shall be made of highly corrosion resistant materials.
5. Each fiberglass pipe shall be able to span the unsupported distances shown on the plans while carrying a total load of 7 pounds per linear foot.
6. The fiberglass bracket and clevises shall be capable of supporting a 20 pounds per foot load due to the conduits, cables and fittings and shall be highly resistant to UV, Chemicals and other elements in the environment that they may come in contact with.
7. All joints with the exception of the expansion joints shall be sealed with adhesives and shall be able to resist a pullout force of 2000 lbs.
8. All hardware shall be Stainless Steel ASTM F593 Group 2 and ASTM F594 Group 2.
9. Stainless Steel shall be separated from dissimilar metals by a neoprene sheet.
10. Submit 10 sets of shop drawings showing all details including but not limited to pipe layout, fittings locations, brackets, and joints to the Engineer for approval.

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY
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DATE	REVISION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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BRIDGE SECTION

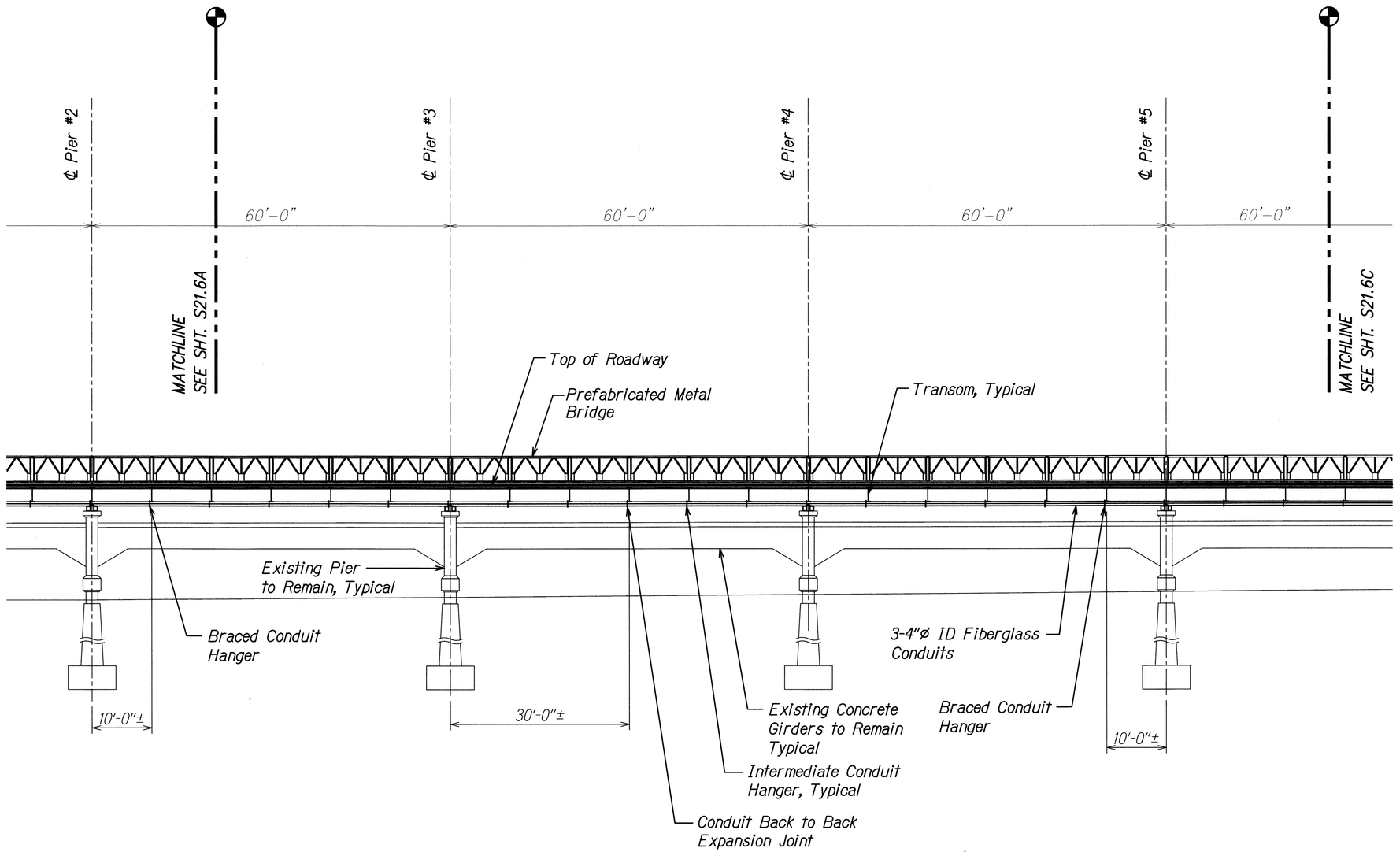
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S21.6A OF 131 SHEETS

ADD. 252 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-1	284



SECTION AT CENTERLINE OF BRIDGE

Scale: 1" = 10'-0"

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
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NO. 8104-S
HAWAII, U.S.A.

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DATE	REVISION
8/7/08	1 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE SECTION

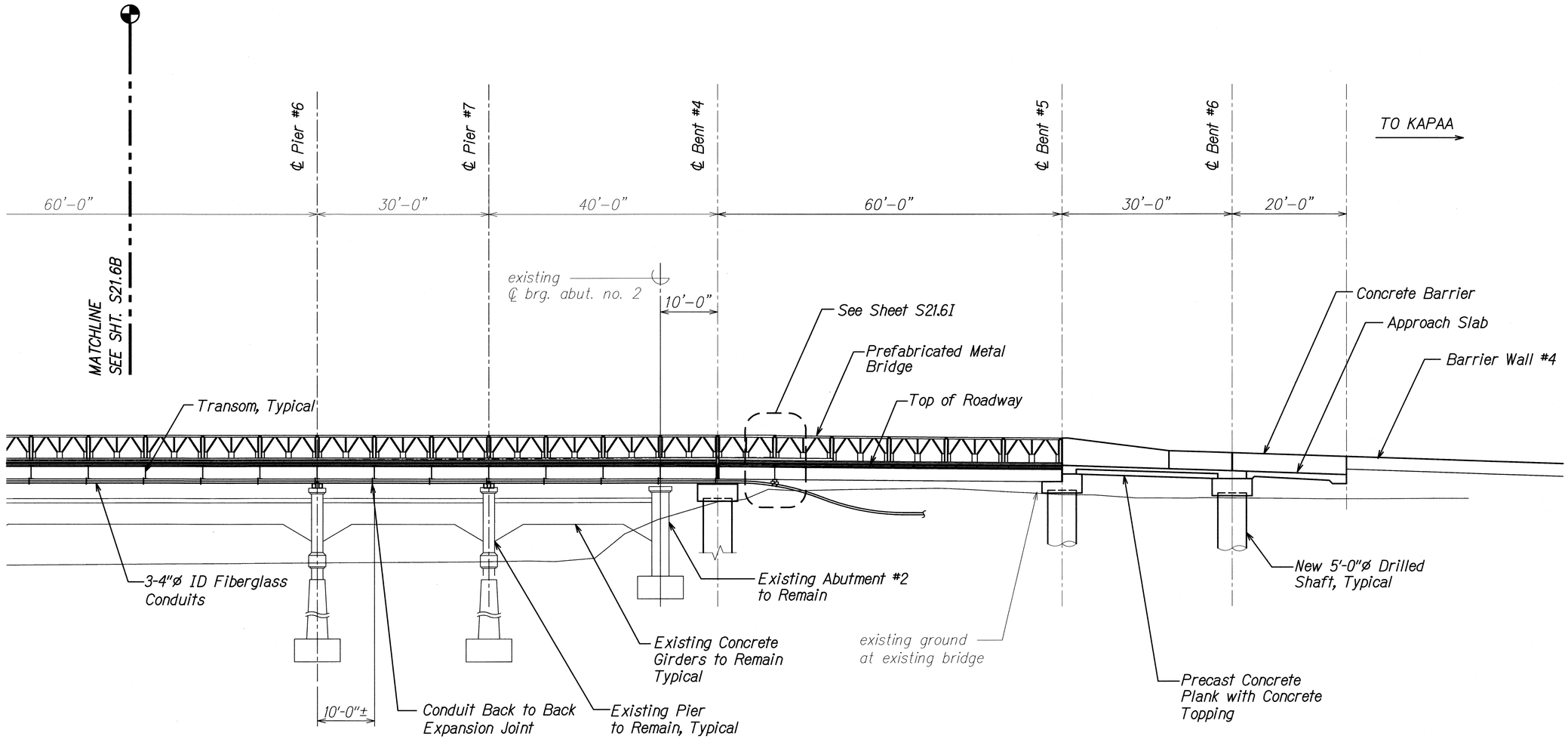
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S21.6B OF 131 SHEETS

ADD. 252 S-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-3	284



SECTION AT CENTERLINE OF BRIDGE

Scale: 1" = 10'-0"

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

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David K. Fujiwara 4-30-10

SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
8/7/08	1 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE SECTION

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

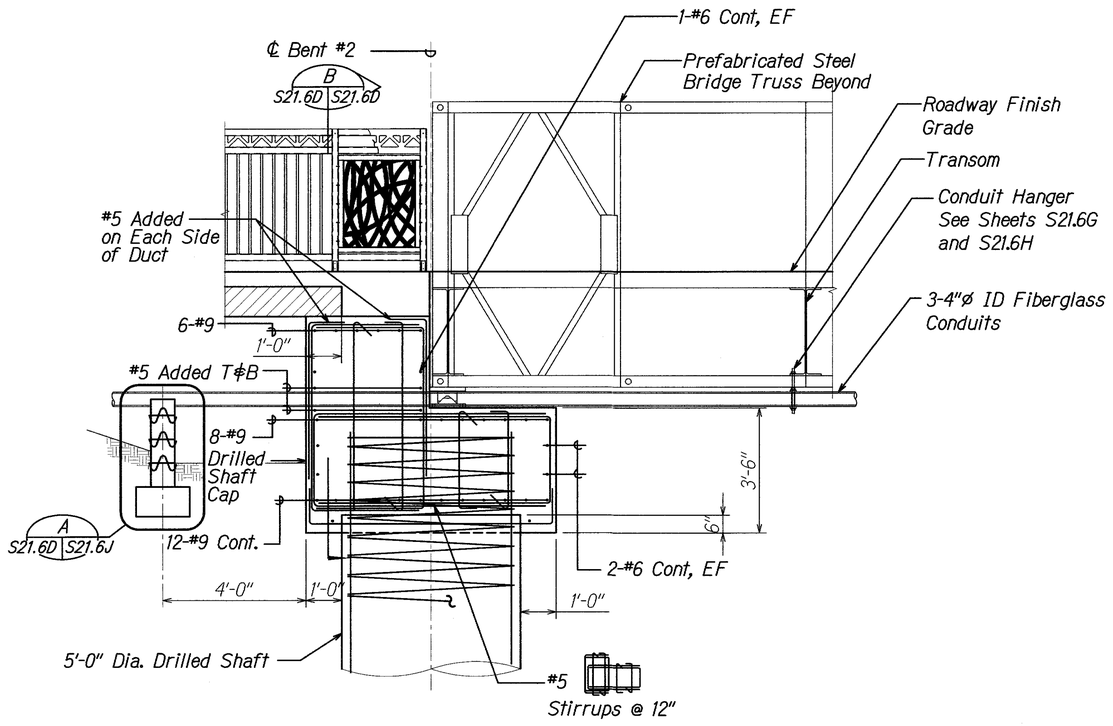
Scale: As Noted Date: May 2008

SHEET No. S21.6C OF 131 SHEETS

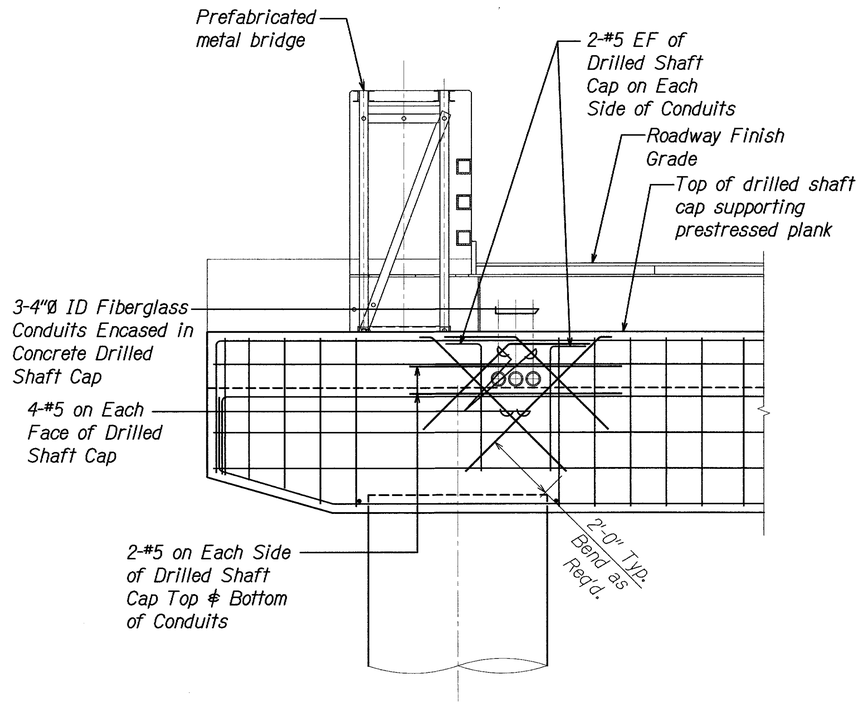
ADD. 252 S-3

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-4	284

MAUKA



TYPICAL SECTION A
Scale: 1/2" = 1'-0"
S21.6A S21.6D



TYPICAL SECTION B
Scale: 1/2" = 1'-0"
S21.6D S21.6D

LEGEND FOR AS-BUILT POSTINGS	
∿∿∿∿	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
8/7/08	1 New Sheet

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 4-30-10 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

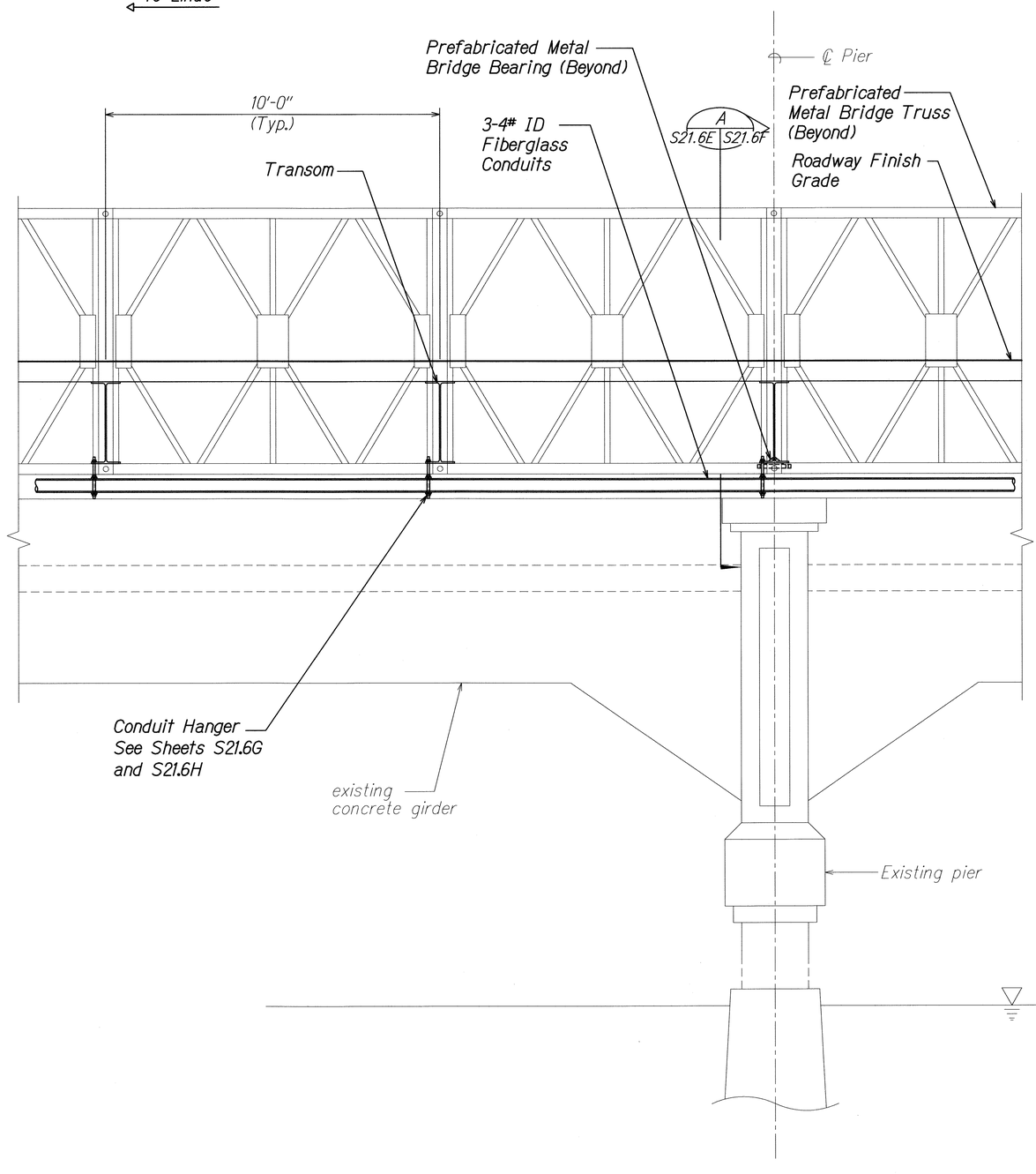
SHEET No. S21.6D OF 131 SHEETS

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

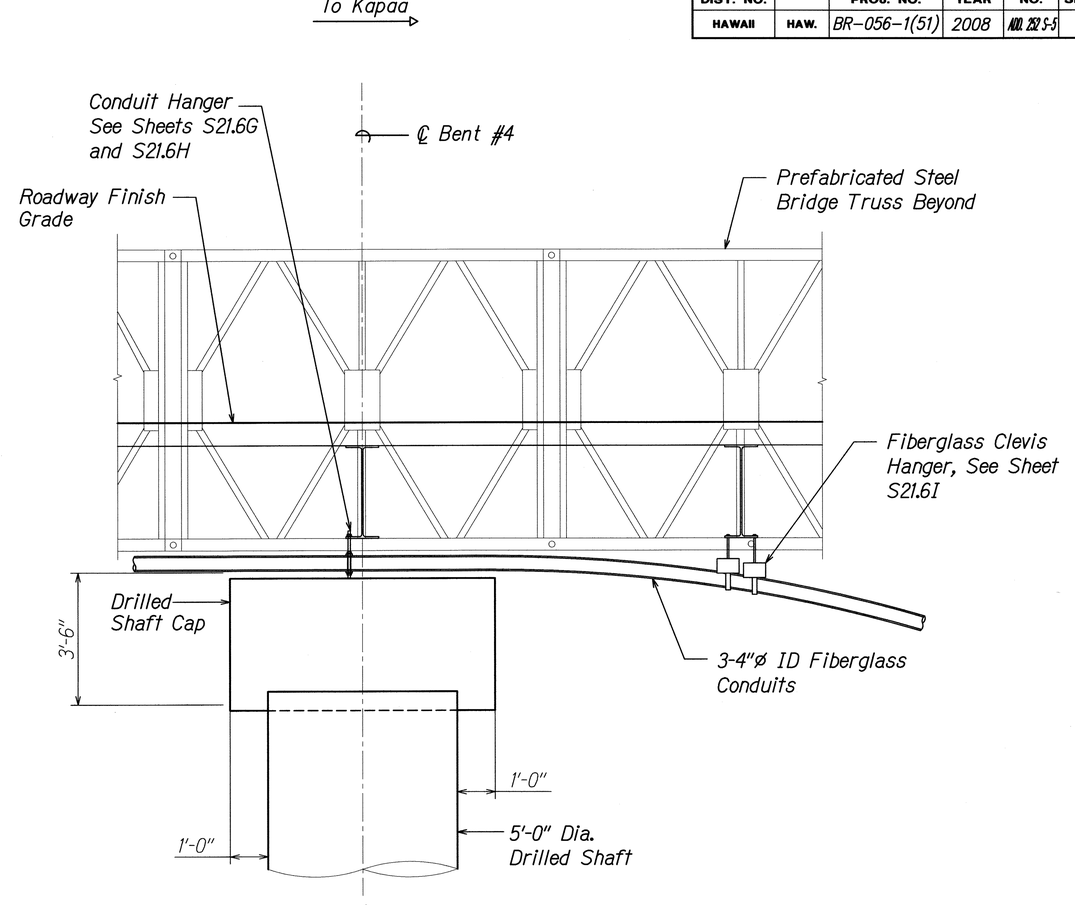
"AS-BUILT"

ADD. 252 S-4

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-5	284



TYPICAL SECTION A S21.6E S21.6E
Scale: 1/2" = 1'-0"



SECTION B S21.6E S21.6E
Scale: 1/2" = 1'-0"

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

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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David K. Fujiwara 4-30-10
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DATE	REVISION
8/7/08	1 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

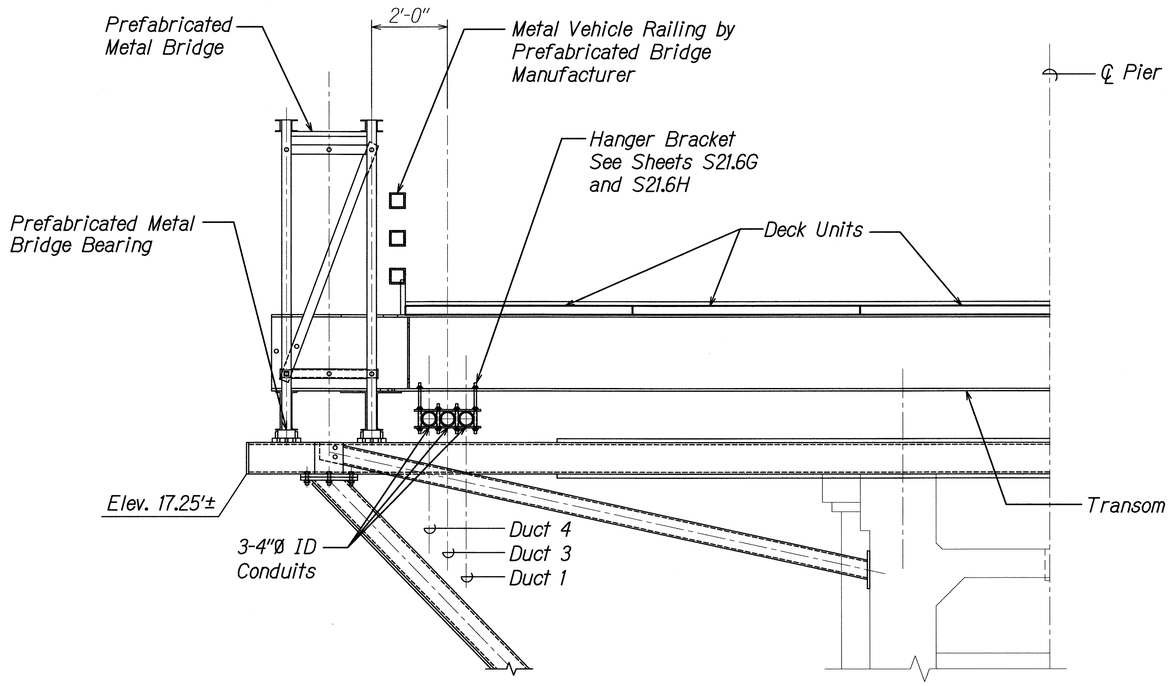
Scale: As Noted Date: May 2008

SHEET No. S21.6E OF 131 SHEETS

ADD. 252 S-5

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-6	284

MAUKA



TYPICAL SECTION (A)
Scale: 1/2" = 1'-0"

S21.6E | S21.6F

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

DAVID K. FUJIWARA
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NO. 8104-S
HAWAII, U.S.A.

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DATE	REVISION
8/7/08	1 New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SECTION

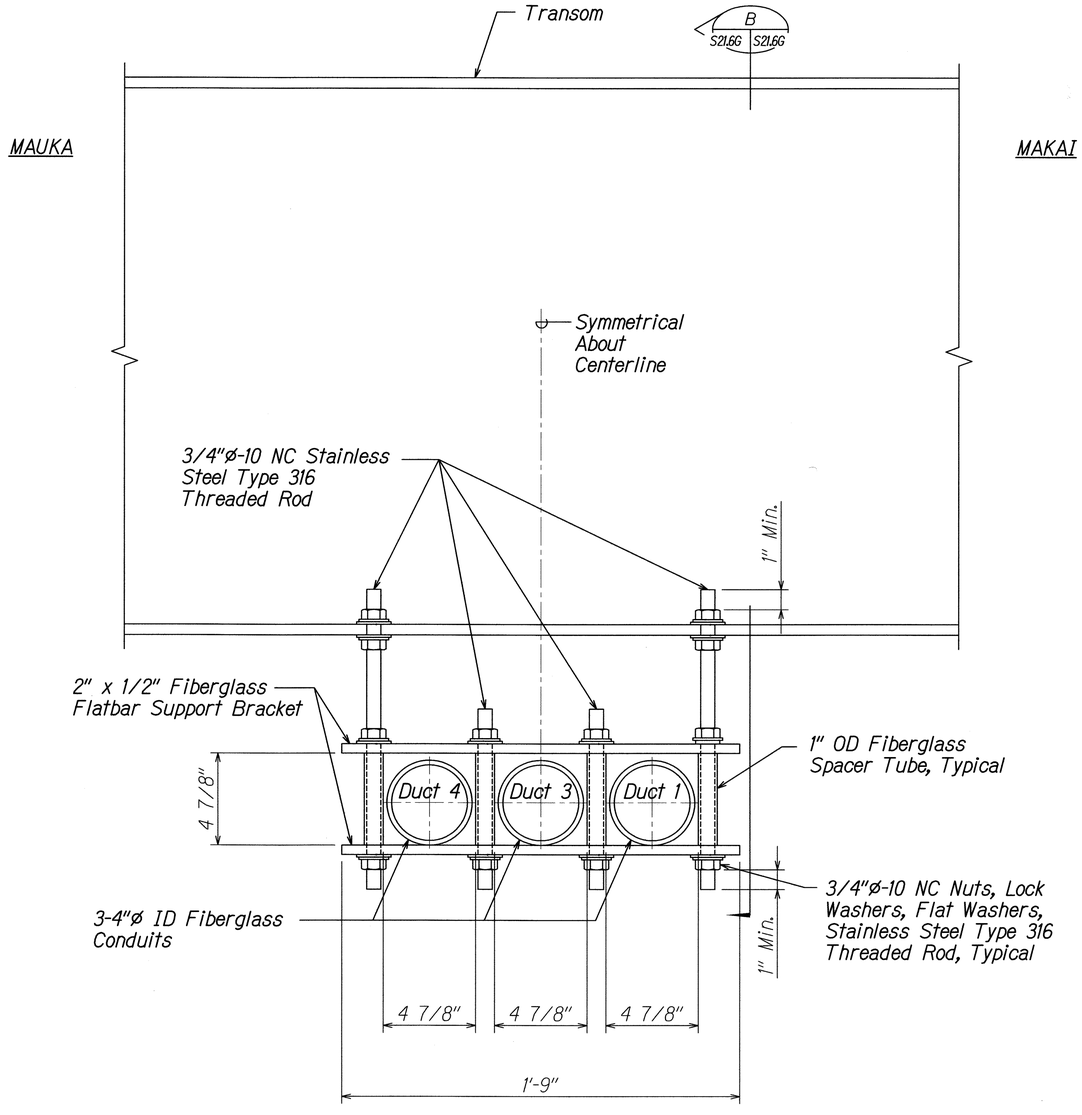
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S21.6F OF 131 SHEETS

ADD. 252 S-6

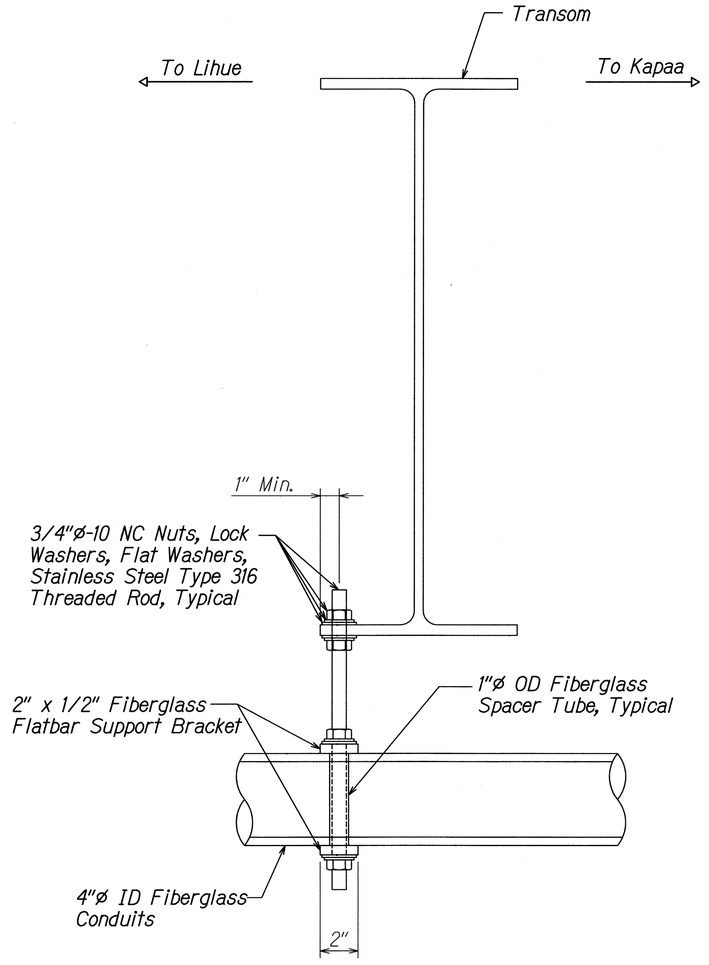
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-7	284



TYPICAL INTERMEDIATE HANGER SECTION

Scale: 3" = 1'-0"

A S21.6D, S21.6E, S21.6F, S21.6G



TYPICAL INTERMEDIATE HANGER SECTION

Scale: 3" = 1'-0"

B S21.6G S21.6G

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

DATE	REVISION
8/7/08	1 New Sheet

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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SIGNATURE — EXPIRATION DATE OF THE LICENSE 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIPE HANGER SECTIONS

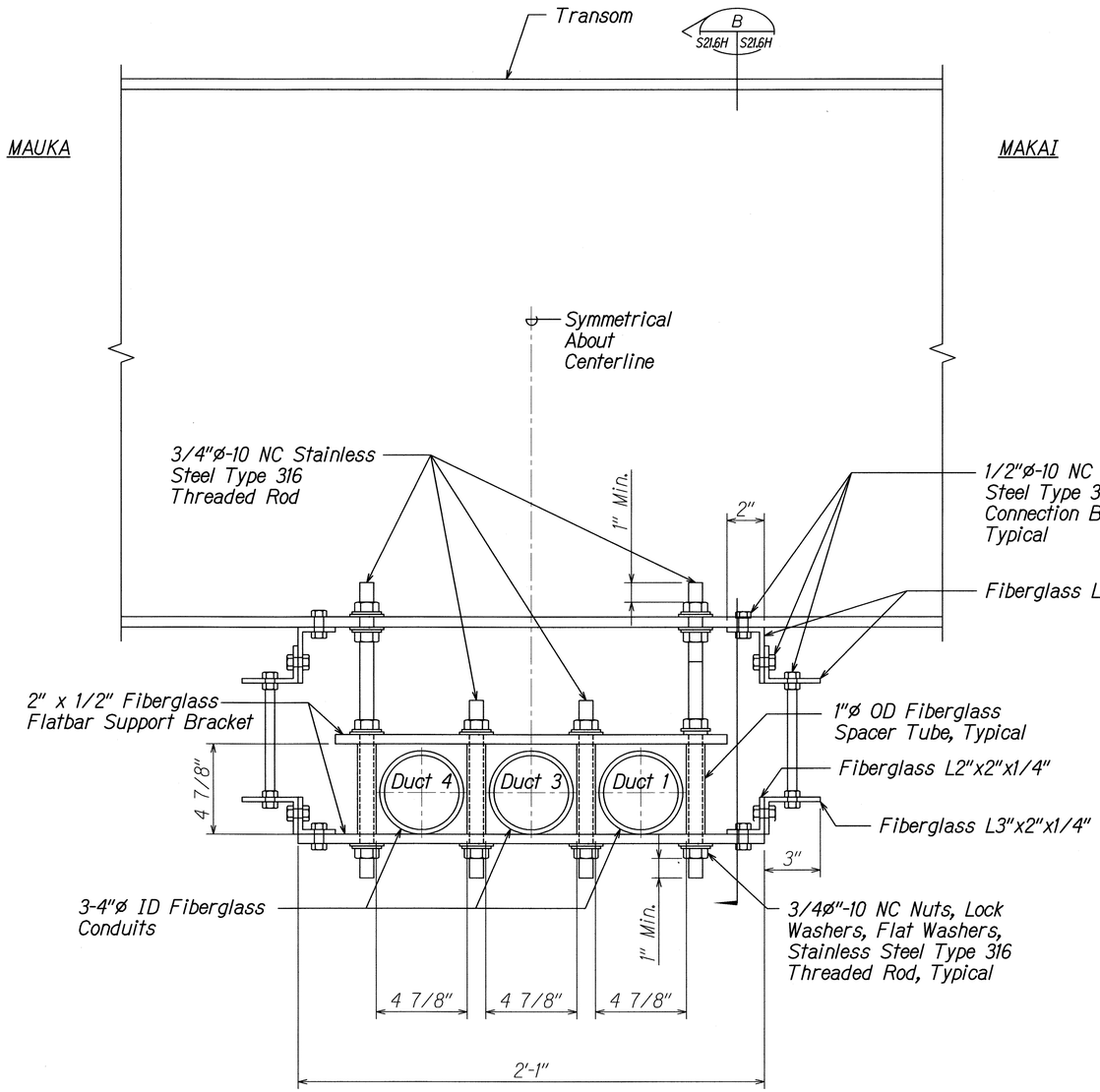
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S21.6G OF 131 SHEETS

ADD. 252 S-7

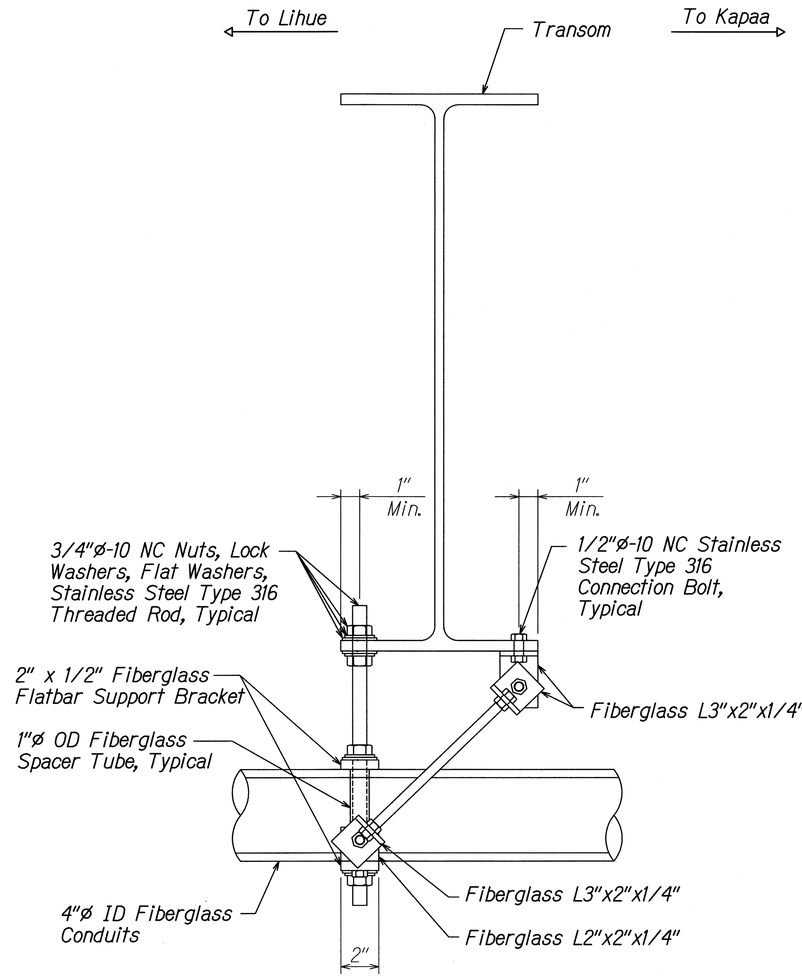
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-8	284



TYPICAL BRACED HANGER SECTION

Scale: 3" = 1'-0"

A S21.6D, S21.6E, S21.6F | S21.6H



TYPICAL BRACED HANGER SECTION

Scale: 3" = 1'-0"

B S21.6H | S21.6H

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

NOTE BOOK | No.

DATE	REVISION
8/7/08	1 New Sheet

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DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

SIGNATURE — EXPIRATION DATE OF THE LICENSE 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIPE HANGER SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

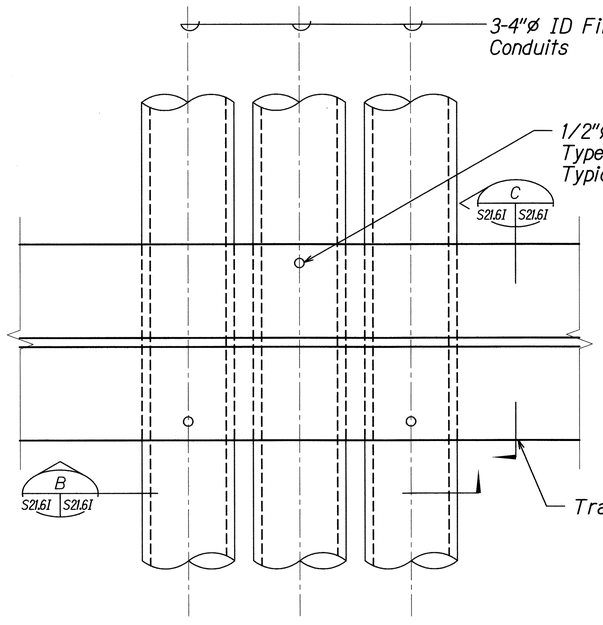
Scale: As Noted Date: May 2008

SHEET No. S21.6H OF 131 SHEETS

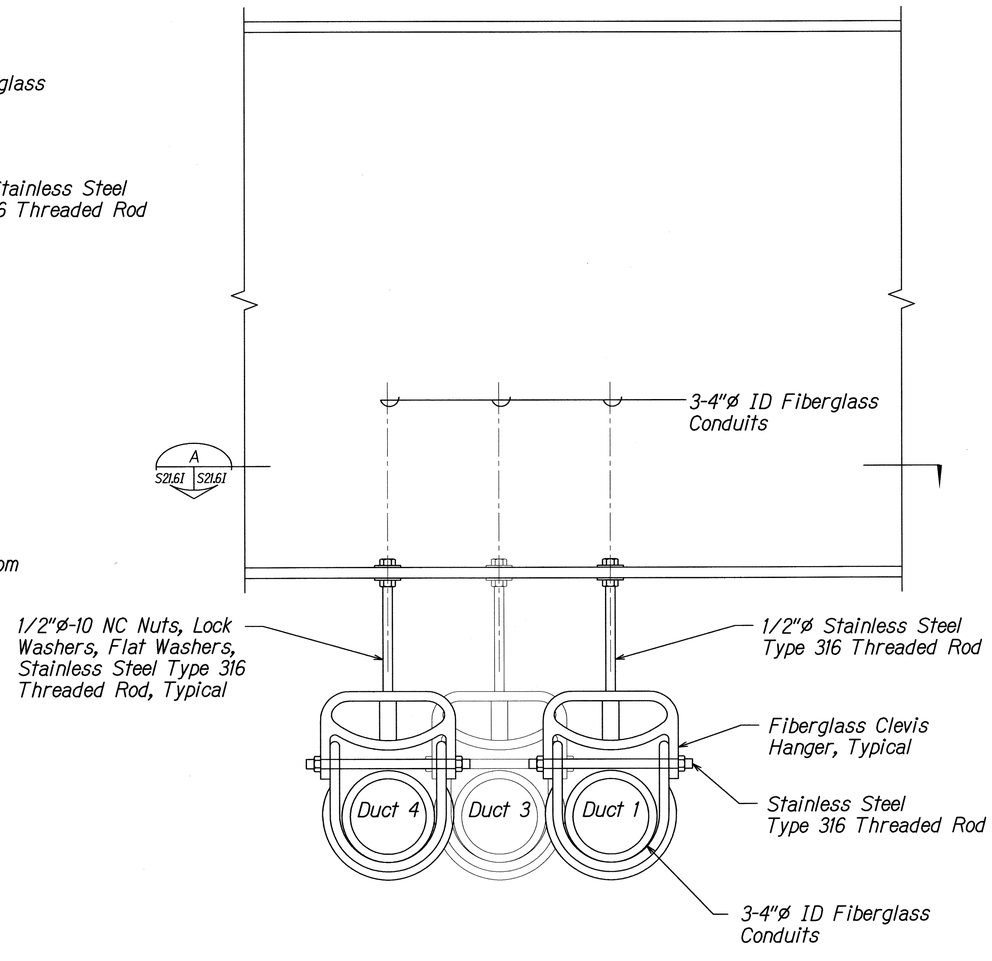
ADD. 252 S-8

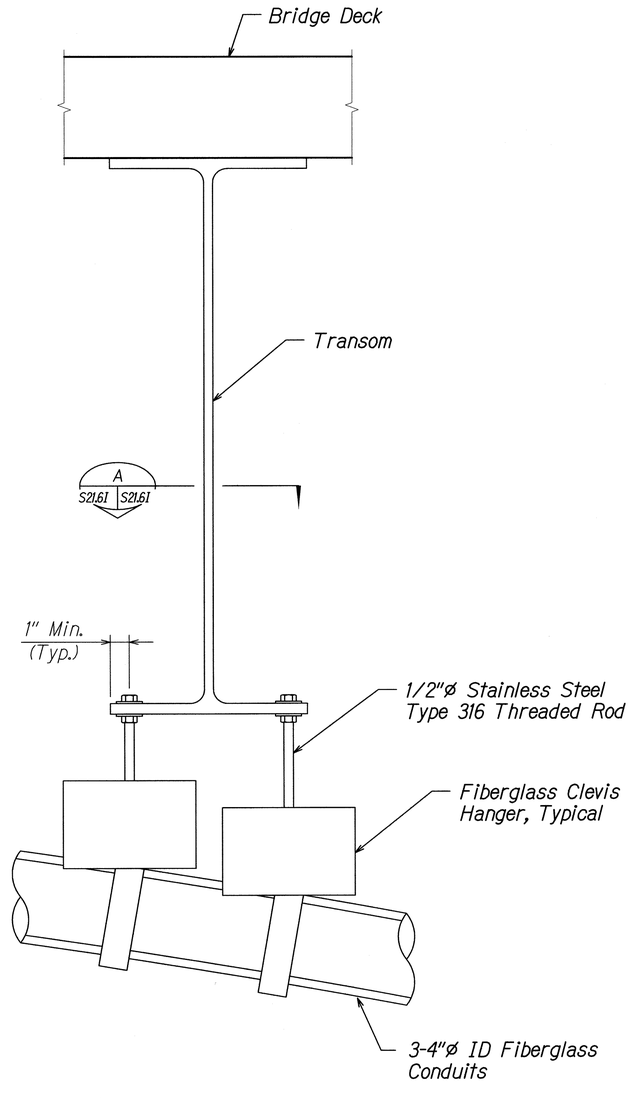
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	ADD. 252 S-9	284

Kapaa



Lihue





TYPICAL HANGER PLAN

Scale: 3" = 1'-0"

A S21.6E | S21.61

TYPICAL HANGER SECTION

Scale: 3" = 1'-0"

B S21.61 | S21.61

TYPICAL HANGER SECTION

Scale: 3" = 1'-0"

C S21.61 | S21.61 — S21.6C

ORIGINAL PLAN | NOTE BOOK | No.

SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DATE	REVISION
8/7/08	1 New Sheet

DAVID K. FUJIWARA — LICENSED PROFESSIONAL ENGINEER — NO. 8104-S — HAWAII, U.S.A.

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SIGNATURE — EXPIRATION DATE OF THE LICENSE 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIPE HANGER SECTIONS

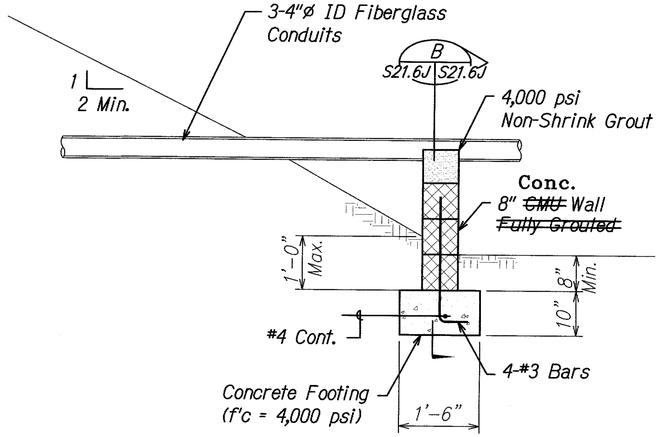
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted — Date: May 2008

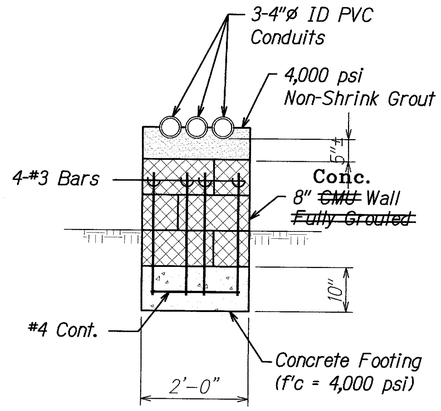
SHEET No. S21.61 OF 131 SHEETS

ADD. 252 S-9

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	~~100 252 S-10~~	284



SECTION A
Scale: 3/4" = 1'-0" S21.6D S21.6J



SECTION B
Scale: 3/4" = 1'-0" S21.6J S21.6J

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

LEGEND FOR AS-BUILT POSTINGS

~~^^^^~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REVISION
8/7/08	1 New Sheet

DAVID K. FUJIWARA
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David K. Fujiwara 4-30-10
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Project No. BR-056-1(51)

Scale: As Noted Date: May 2008

SHEET No. S21.6J OF 131 SHEETS

"AS-BUILT"

ADD. 252 S-10