FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	18	30

INDEX TO STRUCTURAL PLANS

SHEET NO.	DESCRIPTION
S–1	INDEX AND STRUCTURAL NOTES
S–2	STRUCTURAL NOTES
S–3	CONSTRUCTION NOTES & QUANTITIES
S–4	DEMOLITION PLAN AND SECTIONS
S–5	GENERAL LAYOUT AND LONGITUDINAL ELEVATION
S–6	TRANSVERSE DECK SECTION
S–7	TOP SLAB REINFORCING DECK PLAN
S–8	LONGITUDINAL DECK SECTION, END BEAM AND JOINT DETAIL
S–9	PRESTRESSED PLANK PLAN AND LONGITUDINAL SECTION
S–10	PRESTRESSED PLANK TRANSVERSE SECTIONS AND DETAILS
S–11	APPROACH SLAB AND DETAILS
S–12	BRIDGE GUARDRAIL AND DOWEL DETAIL
S–13	BIKE RAILING SECTIONS AND DETAILS

STRUCTURAL AND CONSTRUCTION NOTES:

CONSTRUCTION SPECIFICATIONS:

State of Hawaii, Department of Transportation Standard Specifications for Road, Bridge, and Public Works Construction, 1994, and Special Provisions prepared for this Project

DESIGN SPECIFICATIONS:

AASHTO LRFD Bridge Design Specifications, 2nd Edition, 1998, including subsequent interim specifications.

DESIGN LOADS:

1. Live Load: HL–93

STRUCTURAL NOTES:

1. Record drawings from Project No. 56A–01–91 and original plans from Lihue Plantation dated November 1920 (redrawn October 1993) on file with HWY–K have been used to prepare the plans. Actual conditions could vary from those indicated on the plans. The Contractor shall verify all existing site conditions, elevations, dimensions, structure configurations, member sizes, and connections prior to commencing the work.

2. The Contractor shall visit the site to determine and observe actual field conditions that could affect his operations prior to submitting a bid.

3. All vertical dimensions are measured plumb, and all horizontal dimensions are measured flat except where otherwise noted.

4. In the event certain features of the construction are not fully shown on the drawing, or called for in the notes or specifications, their construction shall be of the same character as similar conditions that are shown or called out. The construction shall be reviewed and approved by the Engineer.

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

CONCRETE:

1. The concrete for the following elements shall have the following class designations corresponding to 28–day compressive strength (f'c).
   a. Prestressed Planks ———— f'c = 6000 psi
   b. Deck Topping ———— f'c = 4000 psi
   c. Approach Slab ———— f'c = 4000 psi

2. The concrete for the deck topping shall achieve a minimum flexural strength of 500 psi and a minimum compressive strength of 3000 psi in 24 hours and prior to opening the bridge to traffic.

3. The concrete for the approach slab shall achieve a minimum flexural strength of 650 psi prior to opening the bridge to traffic.

4. The minimum cover measured from the surface of the concrete to the face of any reinforcing bar shall be as follows, except as noted otherwise:
   a. Deck Slab Top Bars ———— 2"
   b. Deck Slab Bottom Bars ———— 1 1/2"
   c. Concrete cast against and permanently exposed to earth ———— 3"

5. Unless noted otherwise, chamfer all exposed concrete edges 3/4 inch.

6. Repair concrete and nonshrink grout shall have a minimum compressive strength of 5,000 psi at 28 days, and shall be nonmetallic and nonstaining.

7. For concrete finishes, see Standard Specifications.

REINFORCING STEEL:

1. All reinforcing steel shall conform to the requirements of ASTM A615M and shall be deformed, Grade 60 unless noted otherwise.

2. The reinforcing steel shall be clad with Type 316L austenitic stainless steel meeting ASTM A276. The minimum thickness of the cladding shall be 0.007 inches (0.175mm).

3. The cladding manufacturer shall seal all ends of bars with a Type 316L weld during material fabrication. When bars are cut in the field, the cut end shall be sealed with a Type 316L weld, following manufacturers specifications, or sealed with a high–performance elastomeric sealant filled stainless steel cap. Any breach in the bar cladding shall be sealed with a Type 316L weld, following manufacturer's specifications.

4. All reinforcing steel shall be cold bent with no wrinkling or loss of adhesion of the cladding on the inside radius of the bent portion, and with no cracking of the cladding on the outside radius on the bent portion.

5. All reinforcing steel, anchor bolts, dowels and other embedded items shall be securely tied in place with Type 316L stainless steel tie wire prior to pouring of concrete. All chairs and lifts shall be plastic or Type 316L stainless steel.

6. Splice length for reinforcing steel shall be 52 bar diameters but shall be a minimum 2'–4" unless otherwise noted.

7. All dimensions relating to reinforcing bars are to centers of bars unless noted otherwise.

8. All stainless steel clad reinforcing shall be isolated from direct contact with any adjacent non–stainless steel with 1/8" thick neoprene tubing. The neoprene tubing shall be sized appropriately and slit longitudinally to slip over the stainless steel clad reinforcing.

9. Prestressing strands shall be uncoated, 1/2" diameter 7–wire, low relaxation strands, grade 270 conforming to AASHTO M203.

GLENN H. MIYASATO
LICENSED PROFESSIONAL ENGINEER
No. 8121–S
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY K. Goodin	" 05/18/01
	TRACED BY	"
NOTE BOOK	DESIGNED BY G. Miyasato	" 05/18/01
ukuhkisd.dgn	QUANTITIES BY	"
No.	CHECKED BY	"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INDEX AND STRUCTURAL NOTES
KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M
Scale: As Noted Date: May 2001

SHEET No. S-1 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	19	30

STRUCTURAL STEEL:

1. All structural steel shapes and plates, including bike railing and bridge railing posts, and blocks (with the exception of thrie beam element) shall be Type 316 stainless steel with No. 4 finish meeting ASTM A276 and A479. All bolts, including anchor bolts, nuts, and washers shall be Type 316 stainless steel.

2. Thrie beam element shall conform to AASHTO M180 and shall be double-dipped galvanized after fabrication. Galvanized coating shall meet ASTM A53.

3. Bolt faying surfaces shall be free from debris, dirt, paint, mill scale, and other material prior to assembly.

4. The Contractor shall furnish shop placement and detailed drawings for all structural steel work.

CEMENT RUBBLE MASONRY (CRM):

1. Stones shall be clean, hard, sound, and durable. Each stone, except stones for filling or pinning interstices, shall have a thickness of not less than 6 inches and a width of not less than one and one half times the thickness or 12 inches, whichever is greater.

2. Mortar shall be type "M" conforming to ASTM C270 and have a minimum compressive strength of 2,500 psi at 28 days.

3. Select stones shall be roughly squared and pitched to lines at angles and ends of walls.

4. Stones shall be wet thoroughly before laying.

5. Stone joints shall overlap at least 6 inches and form a firm bond.

6. Horizontal joints in the face of the wall shall not exceed 1 inch in thickness and vertical joints shall not exceed 2 inches in width.

SPALL REPAIR PROCEDURE:

1. The Contractor shall sound all exposed concrete to identify spalls and delaminations.

2. The spalled and delaminated concrete shall be completely removed to sound substrate and beyond the extent of the corroded reinforcing. The contractor shall take the necessary precautions to avoid damaging the underlying sound concrete.

3. The spalled and delaminated edges shall be squared by saw-cutting or chipping to a vertical profile the concrete at the perimeter beyond the removal area to a minimum depth of 3/4 in. Exercise great care to avoid cutting or damaging any existing embedded steel reinforcing in the slab. At areas where concrete cover is less than 3/4 in. over the steel reinforcing, the perimeter shall be carefully saw cut or chipped vertically to a safe depth away from the reinforcing, and the remaining depth chipped away to square the edge. Angles between adjacent saw-cuts around the perimeter shall not be less than 90 degrees and the shape of each patch shall not be irregular.

4. Additional concrete shall be removed to the depth of the saw-cut.

5. For any exposed reinforcement within the repair area, additional concrete shall be removed for a minimum 3/4 in. clear space measured radially around the bars.

6. All exposed concrete surfaces and reinforcing bars in the repair area shall be sandblasted or needle gunned to remove all scale, loose rust, debris and deteriorated concrete. Any areas not patched more than 48 hours after sandblasting shall be resandblasted.

7. Any reinforcement to receive less than 3/4 in. of new concrete cover or which has lost more than 20 percent of its cross-sectional area shall be brought to the attention of the Engineer.

8. The patch area shall be cleaned of all dust and debris just prior to patching with high pressure, oil-free compressed air at a minimum pressure of 100 psi.

9. Epoxy coating for Spall repairs shall be Sikadur 32, Hi-Mod, manufactured by the Sika Chemical Corporation. All exposed steel shall be liberally coated with two coats of epoxy for a minimum dry mil thickness of 10 mils. The coating shall be complete with no skips, pin holes or holidays around the entire surface of the exposed steel. Exercise care to avoid application of the epoxy to the surrounding concrete substrate. Epoxy spillage on adjacent concrete surfaces within the patch area shall be removed completely. The epoxy shall be allowed to set prior to the placement of the repair concrete.

10. Vertical and overhead surfaces shall be formed. Void spaces beyond the edge of the form shall be dry packed in lifts with patch material.

11. Prior to placement of patch material, the exposed concrete surface shall be saturated with no water accumulation on the surface.

12. Cementitious repair mortar for spall repair shall be SikaTop 122 and SikaTop 123 for horizontal and vertical/overhead surfaces, respectively. A slurry coat of the polymer modified cementitous repair mortar having the consistency of a thick cream shall be used to scrub into and prime the saturated surface dry substrate. While the slurry coat is still wet, apply the polymer modified cementitious repair material to fill the voids.

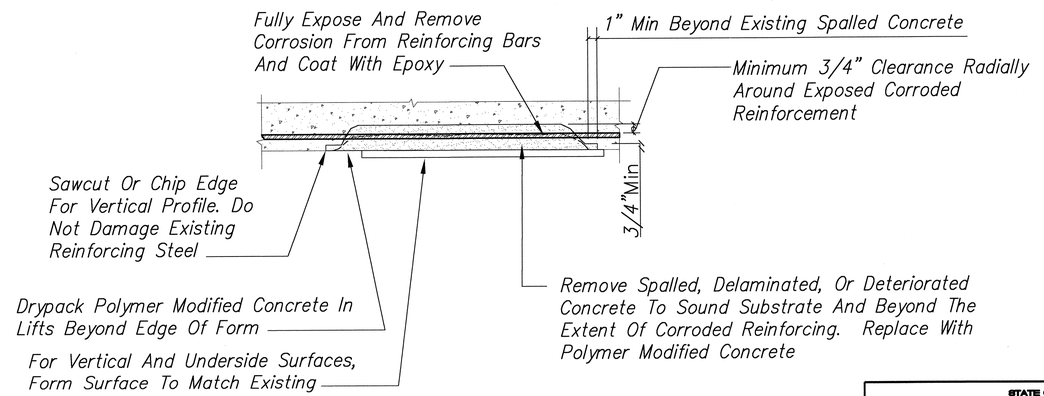
13. For patch depths in excess of 1 in., 3/8 in. aggregates shall be added to the polymer modified cementitious repair mortar used.

14. The repair concrete shall be vibrated, rodded or tamped during placement to consolidate the pour and fill all corners of the patch or form and beneath the reinforcing.

15. The surface finish shall be textured or ground to match adjacent conditions.

16. The repair concrete shall be cured for seven days by covering the surface with a polyethylene sheet over wet burlap.

17. Scaffolding and staging for spall repairs shall be considered incidental to repair cost.



SPALL REPAIR DETAIL — 1 / S2 | S2

Scale: NTS

Note: For Spall Repair Detail at Connection Plate, See Sheet S-3.

GLENN H. MIYASATO LICENSED PROFESSIONAL ENGINEER No. 8121-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL NOTES

KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M

Scale: As Noted Date: May 2001

SHEET No. S-2 OF 13 SHEETS

ORIGINAL PLANS | NOTE BOOK unchecked dgn No. | SURVEY PLOTTED BY | DRAWN BY K. Gowdy | TRACED BY | DESIGNED BY G. Miyasato | QUANTITIES BY | CHECKED BY | DATE 05/30/01 | 06/30/01

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2001	ADD. 20	30

DEMOLITION AND CONSTRUCTION NOTES:

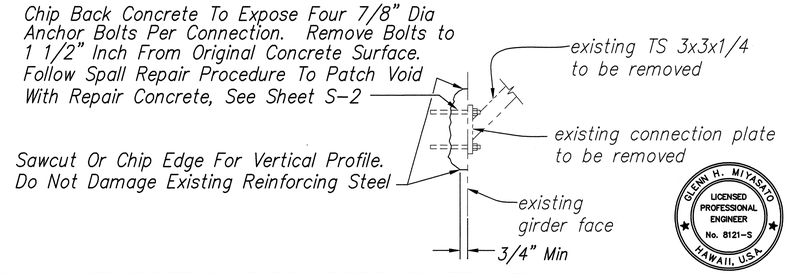
1. The Engineer will permit the closure of the bridge to traffic only on Monday, Tuesday, Wednesday, and Thursday from the hours of 10:00 P.M. to 5:00 A.M. of the following day, and on weekends between the hours of 10:00 P.M. Friday and 5:00 A.M. Monday. Monday through Friday, Contractor's work shall not interfere with contra-flow operations. Contractor will be responsible for paying all cost for overtime charges incurred by State Highway personnel, including the State's Construction Manager overtime charges. (1)
2. The Contractor shall provide permanent guardrails and smooth transitions between existing and new portions of the bridge deck to allow for safe and normal traffic flow during periods when the bridge is open to traffic.
3. The Contractor shall verify the locations of all existing utility lines near the bridge and notify their respective owners before commencing the work.
4. The Contractor is solely responsible for the safety of workers and general public users of the bridge and waterway below at all times during demolition and construction.
5. The Contractor is solely responsible for the protection of new and existing structures, adjacent property and utilities from damage due to demolition and construction, and shall repair any damage at his own expense, to the satisfaction of the Engineer.
6. The methods of demolition and construction, adequacy of falsework and bracing and other temporary work items used in the execution of the work are also solely the Contractor's responsibility. Such measures shall include but are not limited to, shoring and support of existing bridge during construction, shoring for excavation, bracing for forms and scaffolding, and shoring for demolition and construction equipment. The Contractor shall submit shop drawings for erection of falsework, cofferdams and/or other temporary construction to the Engineer for review and approval prior to commencing the work.
7. The Contractor shall prevent debris from falling into Wailua River. Details for the Debris Control Scheme shall be submitted to the Engineer for review and approval prior to commencing the work.
8. The Contractor shall submit actual demolition/construction sequence with detailed descriptions of each work task to the Engineer for review and approval prior to commencing the work.

ANTICIPATED CONSTRUCTION SEQUENCE:

1. The anticipated construction sequence listed below is general in nature and shall be modified by the Contractor as necessary and supplemented with detailed descriptions of each work task.
2. Submit Traffic Control Plan, Temporary Construction Shop Drawings, Debris Control Scheme, and actual Demolition/Construction Sequence to the Engineer for review and approval.
3. Install traffic control and debris control measures.
4. Repair unsound concrete on bridge structure except at top surfaces of girders.
5. Remove metal guardrails, asphalt topping and metal railroad track decking, connection plates, angles and supports.
6. Repair unsound concrete at top surfaces of girders.
7. Drill holes at top surfaces of girders for precast plank dowels. Care shall be taken to avoid damaging existing girder reinforcing.
8. Install precast planks on grout bed.
9. Install dowels and reinforcing steel for concrete topping.
10. Install concrete topping on precast planks. Prior to opening the bridge to traffic, allow concrete topping to attain minimum compressive strength and degree of hardness necessary so that the surface is not damaged by vehicular traffic.
11. Provide temporary guardrails and smooth transitions between existing and new portions of the bridge deck to allow for safe and normal traffic flow during periods when the bridge is open to traffic. No section of incomplete guardrail footing and/or excavation shall be left unsheilded at the end of each work day.
12. Install approach slabs.
13. Install thrie beam guardrails.

ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
202.0410	Removal of Bridge Deck Including A.C. Pavement	Sq Ft	6000
202.0421	Removal of Bridge Guardrails and Steel Posts	Lin Ft	780
411.1117	12-inch Concrete Pavement for Approach Slab	Cu Yd	15
418.1000	4-inch Ultra Thin White Topping	Cu Yd	85
503.1090	Concrete Spall Repair	Sq Ft	1,000
504.7410	Prestressed Concrete Plank	Sq Ft	5,586
507.0100	Stainless Steel Bike Railing With Post	Lin Ft	937.5
602.0091	Reinforcing Steel for Bridge (Incidental)	Lb	18,000
602.0900	Reinforcing Steel for Approach Slab (Incidental)	Lb	3,000
606.3111	Special Design Thrie Beam Guardrail With Strong Post	Lin Ft	962.5
655.1000	Drilling Holes and Installing Dowel Reinforcing Bars	Ea	404



SPALL REPAIR DETAIL AT CONNECTION PLATE 1 (S3|S3)
Scale: 1 1/2" = 1'-0"

GLENN H. MIYASATO LICENSED PROFESSIONAL ENGINEER No. 8121-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

DATE	DESCRIPTION
11-20-01	(1) "Demolition and Construction Notes" Note 1 revised

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION NOTES AND QUANTITIES
KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M

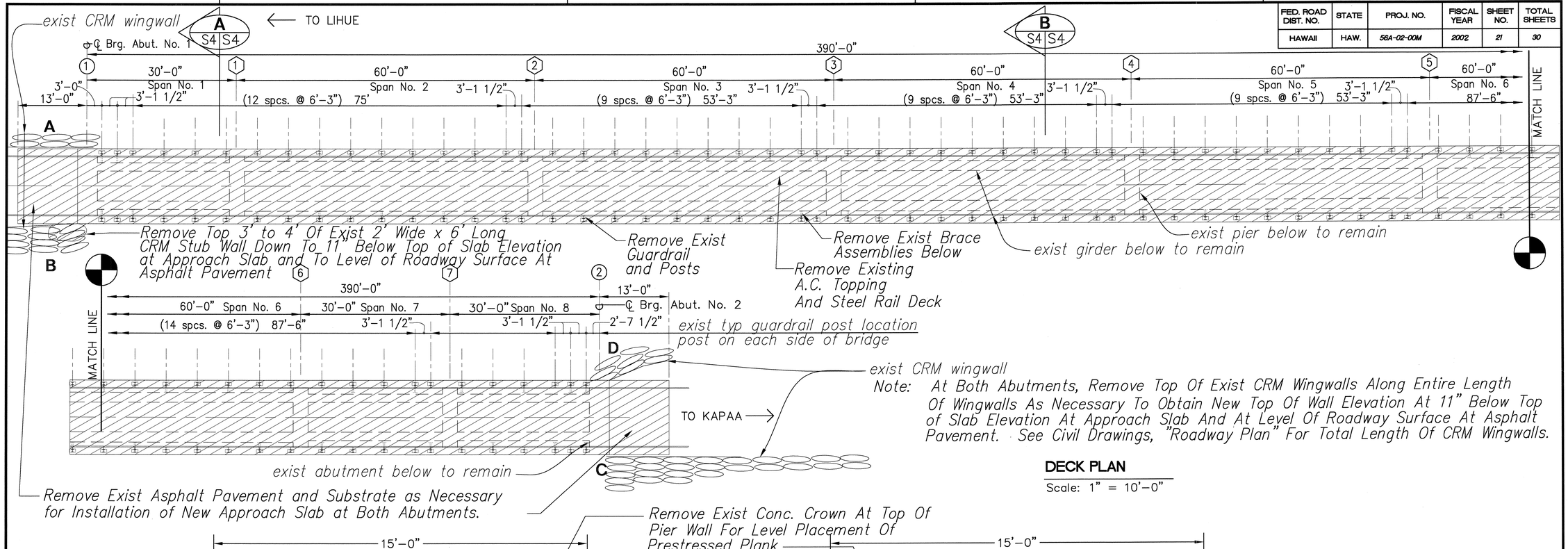
Scale: As Noted Date: May 2001

SHEET No. S-3 OF 13 SHEETS

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY K. Coelho DATE 05/18/01
TRACED BY
DESIGNED BY C. Miyasato DATE 05/18/01
NOTE BOOK
QUANTITIES BY
CHECKED BY
abbdsgn.dgn
No.

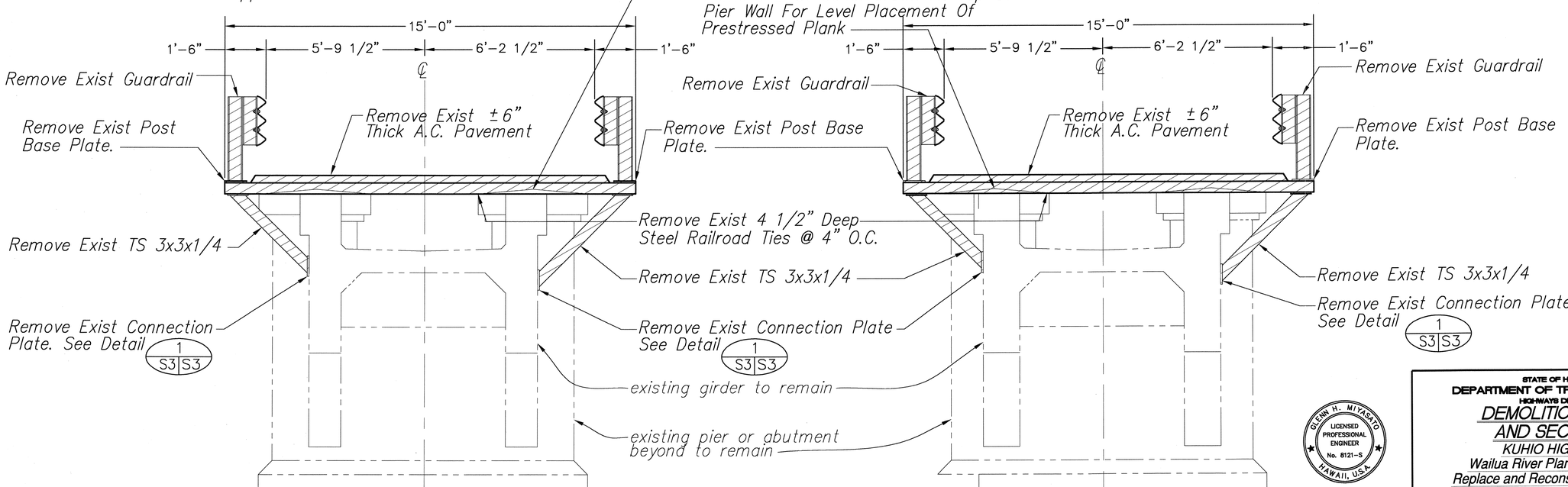
ADD. 20

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	21	30



DECK PLAN

Scale: 1" = 10'-0"



SECTION A SPAN NOS. 1, 7, 8 (30' SPANS)

Scale: 1/2" = 1'-0" S4 S4

SECTION B SPAN NOS. 2, 3, 4, 5, 6 (60' SPANS)

Scale: 1/2" = 1'-0" S4 S4

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE 05/30/01

LICENSED PROFESSIONAL ENGINEER No. 8121-S HAWAII, U.S.A. GLENN H. MIYASATO

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

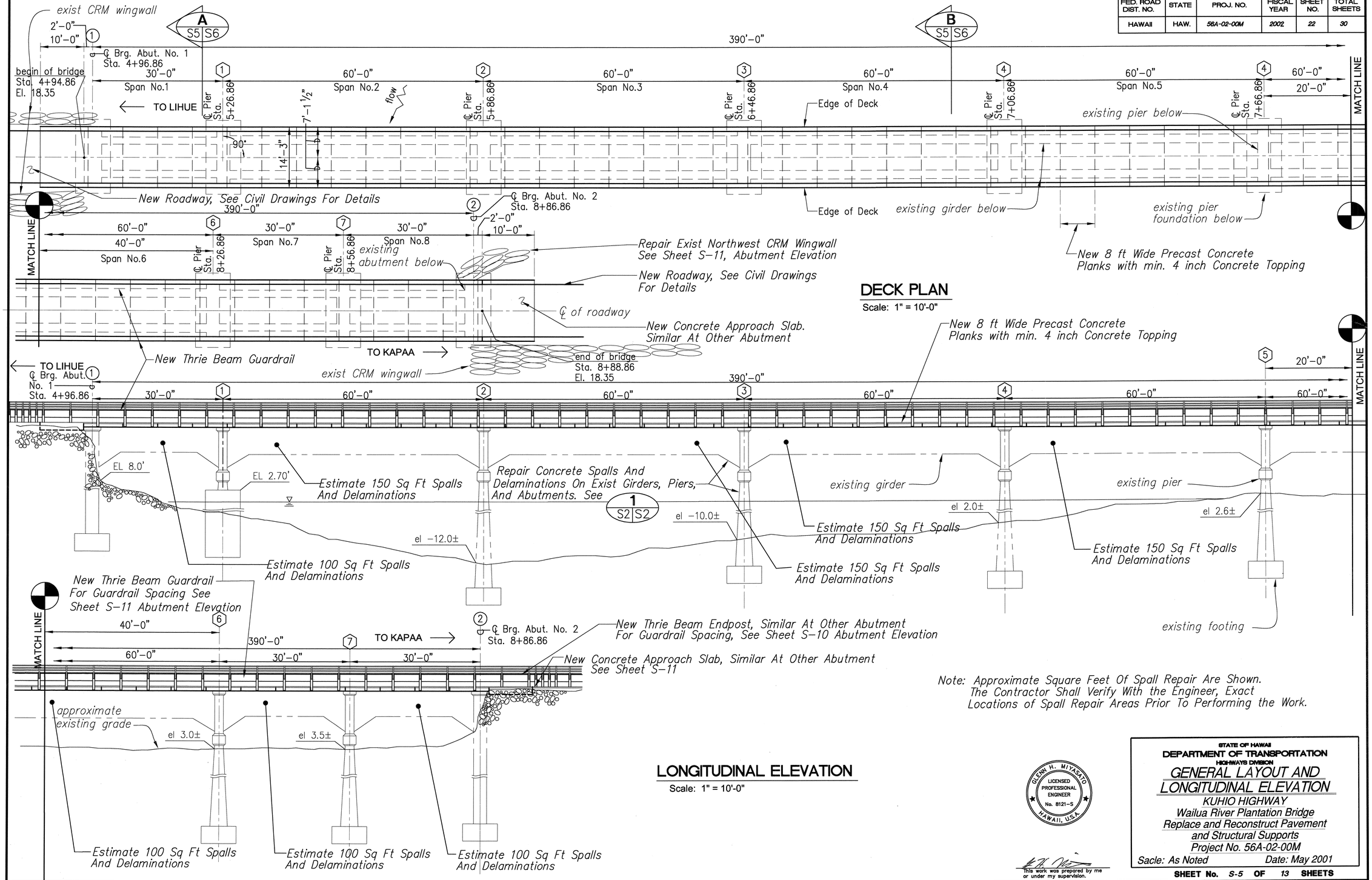
DEMOLITION PLAN AND SECTIONS

KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M

Scale: As Noted Date: May 2001

SHEET No. S-4 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	22	30



Note: Approximate Square Feet Of Spall Repair Are Shown.
The Contractor Shall Verify With the Engineer, Exact
Locations of Spall Repair Areas Prior To Performing the Work.

ORIGINAL PLAN
NOTE BOOK
No. wailuabr1.dgn
SURVEY PLOTTED BY
DRAWN BY X. Castro
TRACED BY
DESIGNED BY C. Higuchi
QUANTITIES BY
CHECKED BY
DATE 05/30/01 05/30/01

GLENN H. MIYASATO
LICENSED PROFESSIONAL ENGINEER
No. 8121–S
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

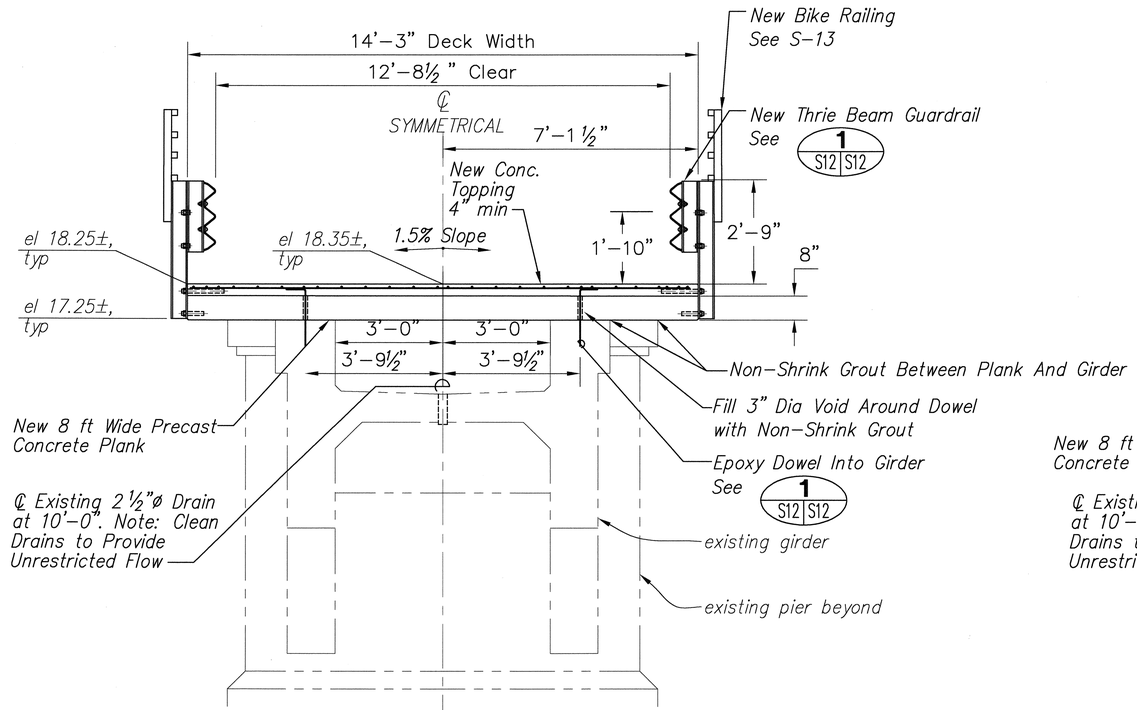
GENERAL LAYOUT AND LONGITUDINAL ELEVATION

KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement
and Structural Supports
Project No. 56A-02-00M

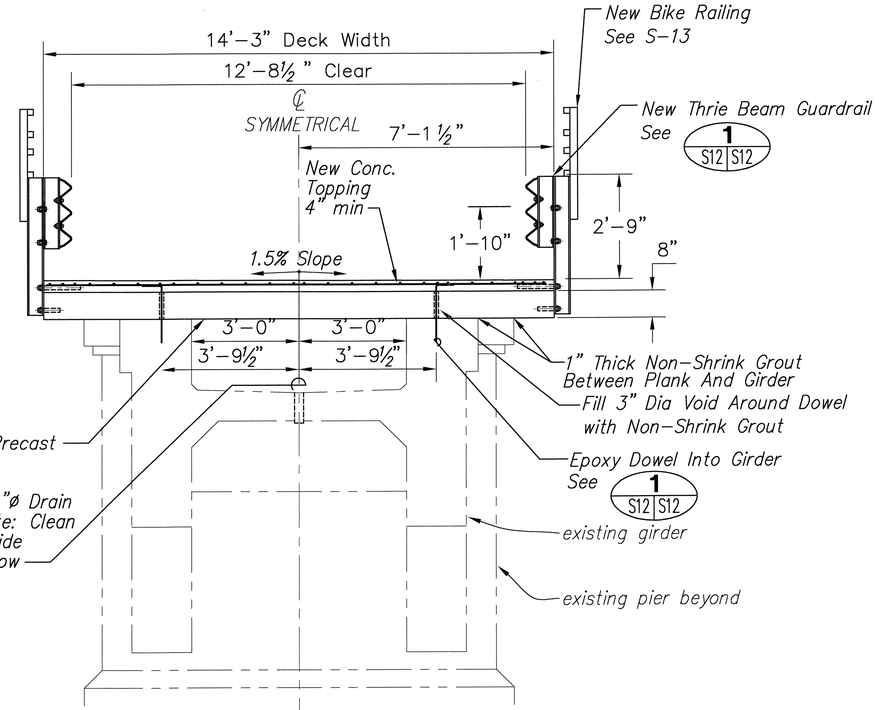
Sacle: As Noted Date: May 2001

SHEET No. S-5 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	23	30



SECTION A SPAN NOS. 1, 7, 8 (30' SPANS)
Scale: 1/2" = 1'-0" S5 S6



SECTION B SPAN NOS. 2, 3, 4, 5, 6 (60' SPANS)
Scale: 1/2" = 1'-0" S5 S6

ORIGINAL PLAN
SURVEY PLOTTED BY — DATE 05/18/01
DRAWN BY J. Cordeiro
TRACED BY
DESIGNED BY C. Miyasato
QUANTITIES BY
CHECKED BY
NOTE BOOK tabulations.dgn
No.

GLENN H. MIYASATO
LICENSED PROFESSIONAL ENGINEER
No. 8121–S
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

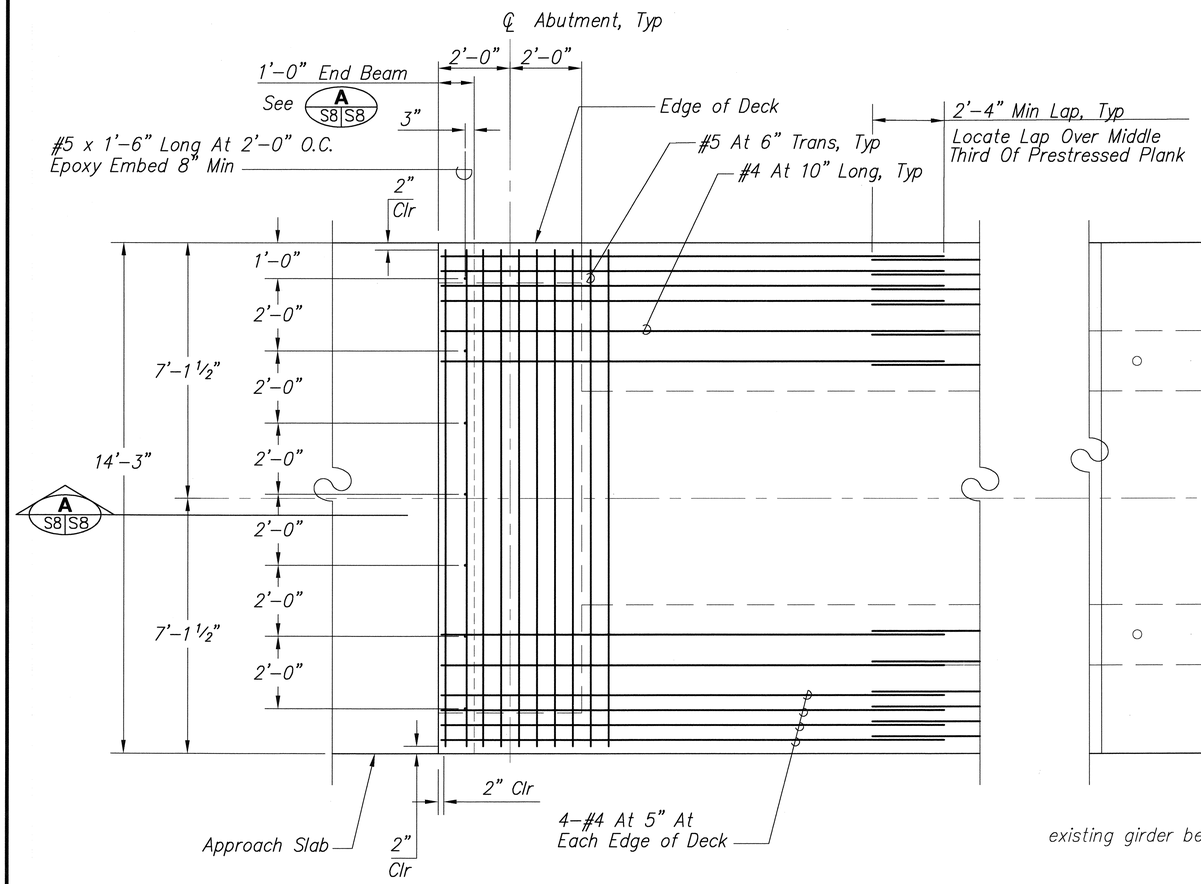
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRANSVERSE DECK SECTION
KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement
and Structural Supports
Project No. 56A-02-00M

Scale: As Noted Date: May 2001

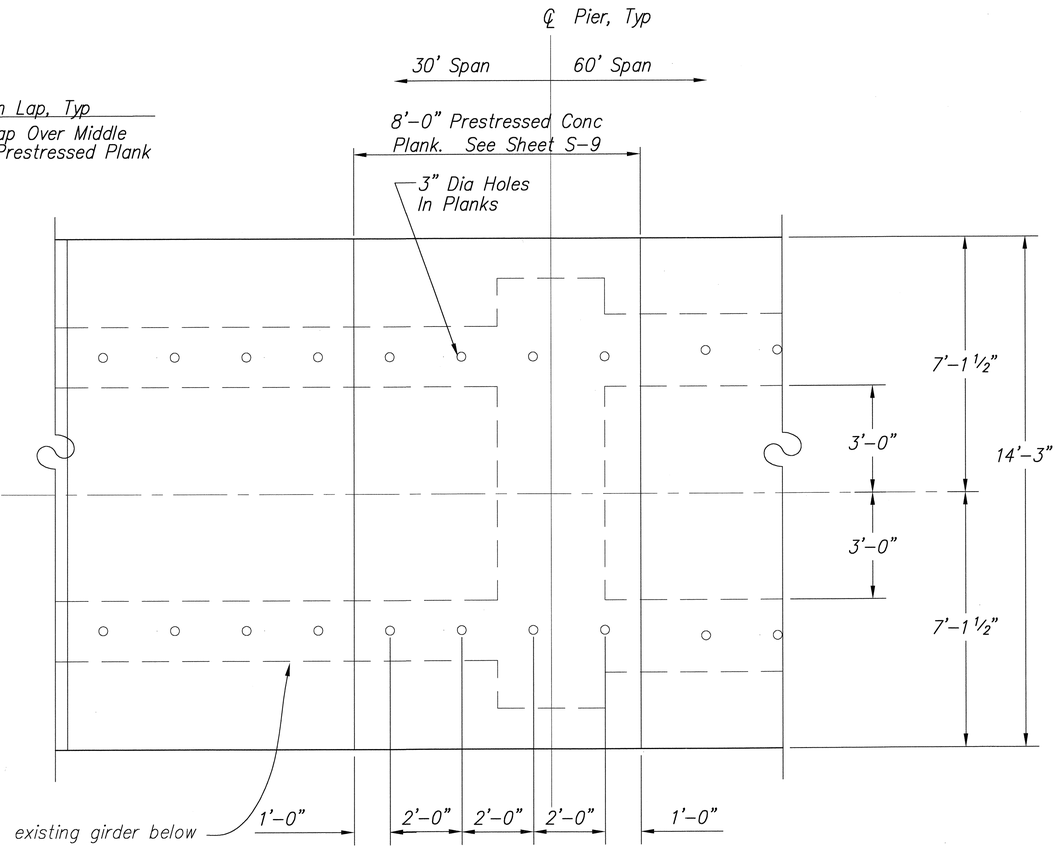
SHEET No. S-6 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	24	30



TOP SLAB REINFORCING PLAN

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



DECK PLAN

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

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY K. Kodera
NOTE BOOK
TRACED BY
DESIGNED BY C. Miyasato
QUANTITIES BY
CHECKED BY
DATE 05/30/01 05/30/01
tshwkbkcp.dgn
No.

GLENN H. MIYASATO
LICENSED PROFESSIONAL ENGINEER
No. 8121-S
HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

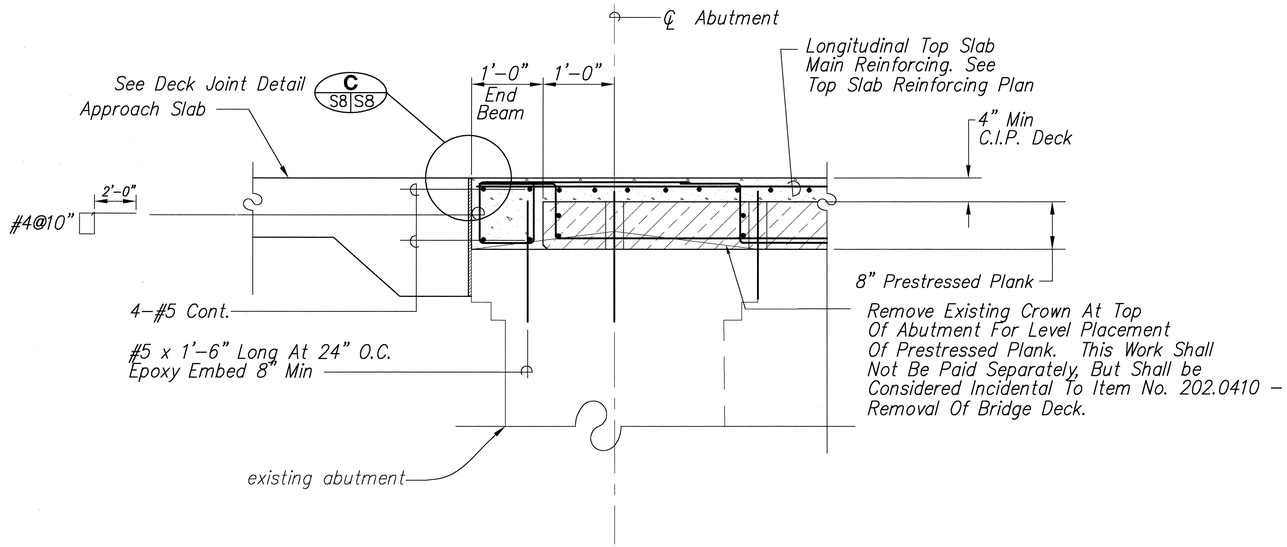
TOP SLAB REINFORCING DECK PLAN

KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement
and Structural Supports
Project No. 56A-02-00M

Scale: As Noted Date: May 2001

SHEET No. S-7 OF 13 SHEETS

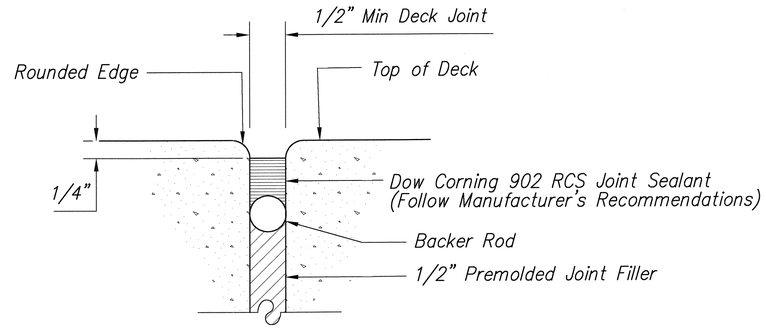
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	25	30



END BEAM SECTION

Scale: 1" = 1'-0"

A S8 S8

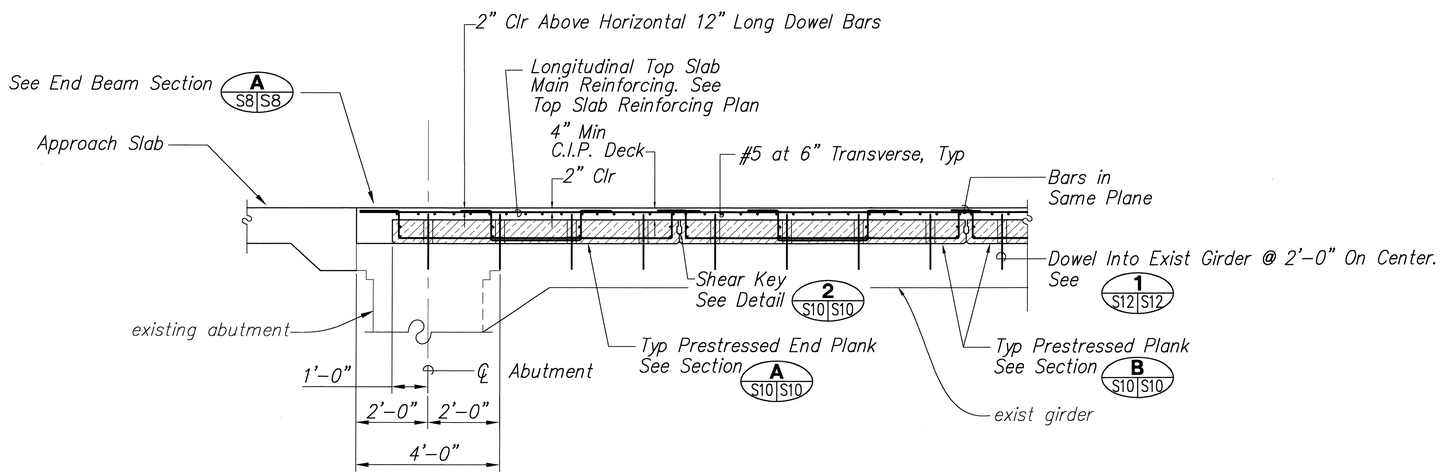


DECK JOINT DETAIL

Scale: NTS

C S8 S8

Note: New Deck Joints (2 each) And All Associated Labor And Materials Shall Not Be Paid For Separately, But Shall Be Considered Incidental To Item No. 411.1117 - 12-Inch Concrete Pavement For Approach Slab



TYPICAL LONGITUDINAL DECK SECTION

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

B S8 S8

ORIGINAL PLAN		
NOTE BOOK	ukakkcp.dgn	
No.		
SURVEY PLOTTED BY		
DRAWN BY	K. Souza	DATE 05/30/01
TRACED BY		
DESIGNED BY	C. Miyasato	05/30/01
QUANTITIES BY		
CHECKED BY		

GLENN H. MIYASATO LICENSED PROFESSIONAL ENGINEER No. 8121-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

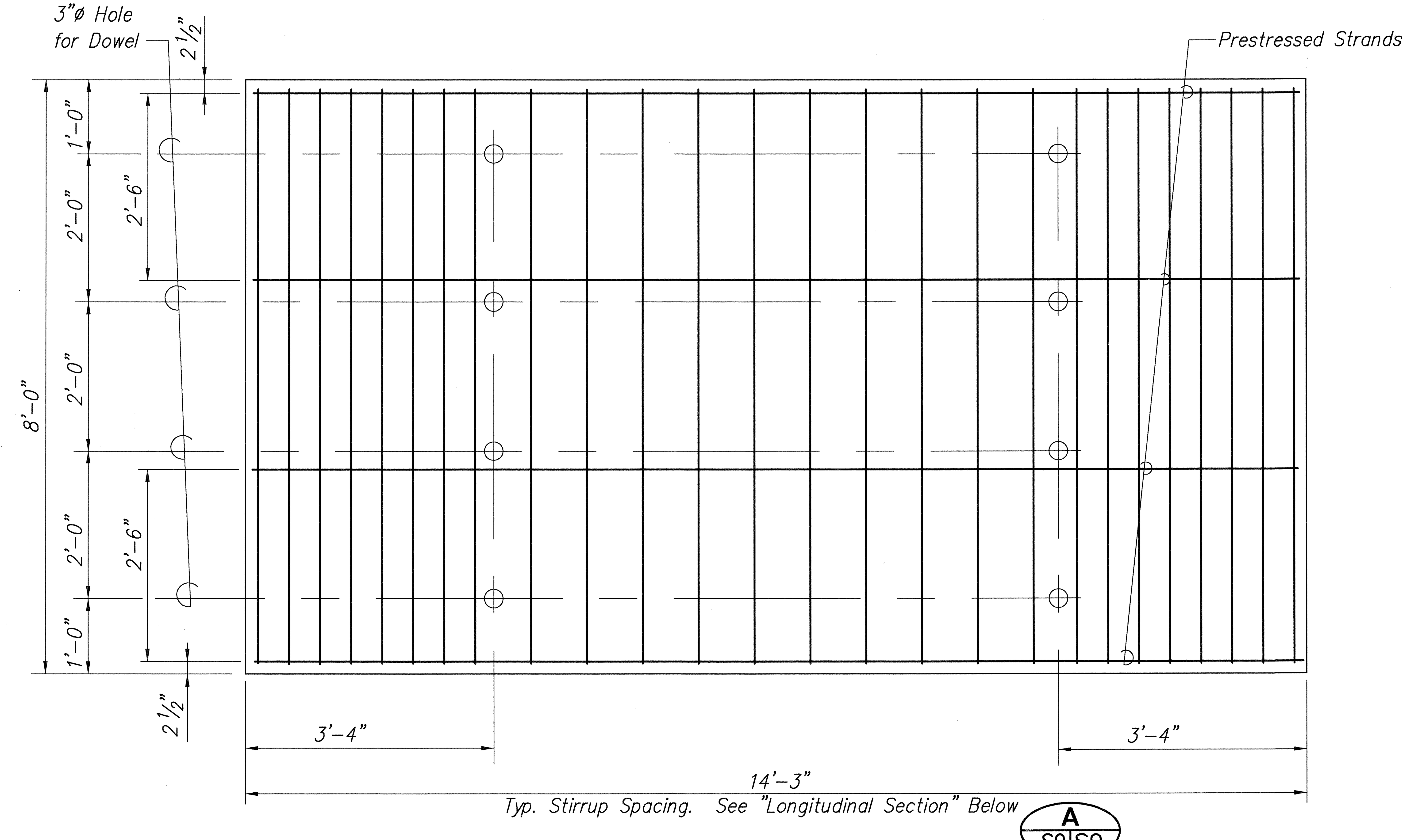
LONGITUDINAL DECK SECTION END BEAM AND JOINT DETAIL

KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M

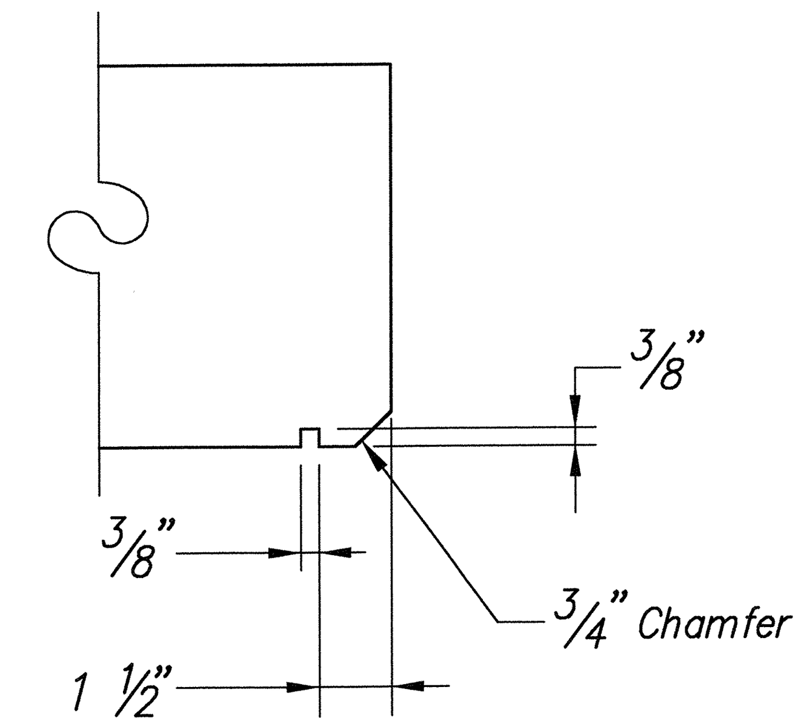
Scale: As Noted Date: May 2001

SHEET No. S-8 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	26	30

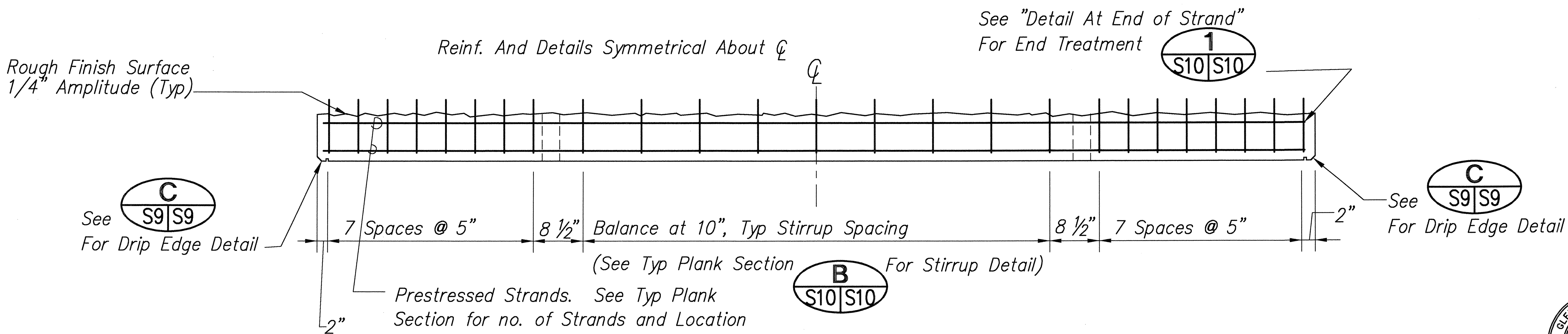


PLAN



DRIP EDGE DETAIL (C S9|S9)

Scale: 3" = 1'-0"



LONGITUDINAL SECTION (A S9|S9)

TYPICAL PRESTRESSED CONCRETE PLANK

Scale: 1" = 1'-0"

GLENN H. MIYASATO LICENSED PROFESSIONAL ENGINEER No. 8121-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRESTRESSED PLANK PLAN AND LONGITUDINAL SECTION

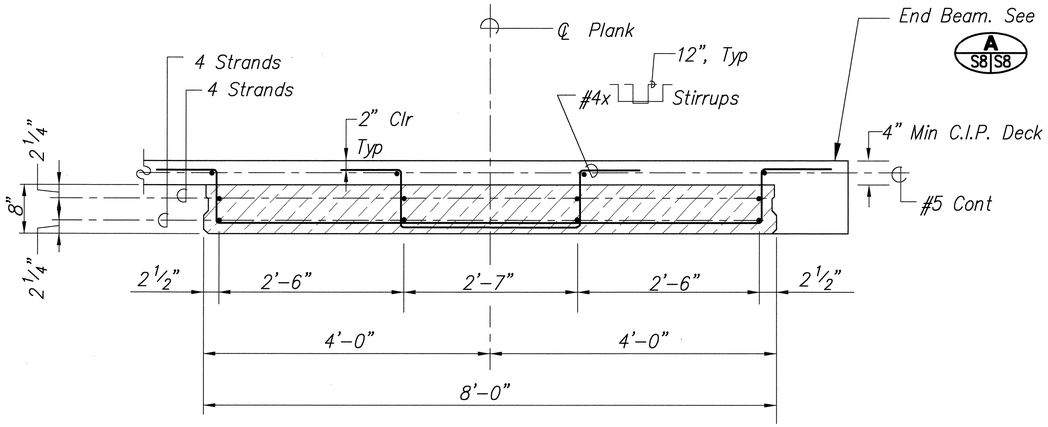
KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M

Scale: As Noted   Date: May 2001

SHEET No. S-9 OF 13 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY K. Goodin | TRACED BY | DESIGNED BY G. Miyasato | QUANTITIES BY | CHECKED BY | DATE 05/18/01
NOTE BOOK | No.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	27	30



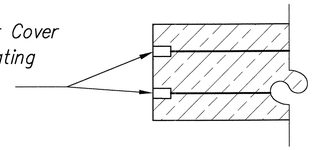
TYPICAL END PLANK TRANSVERSE SECTION

A S10|S10

Scale: 1" = 1'-0"

NOTES:

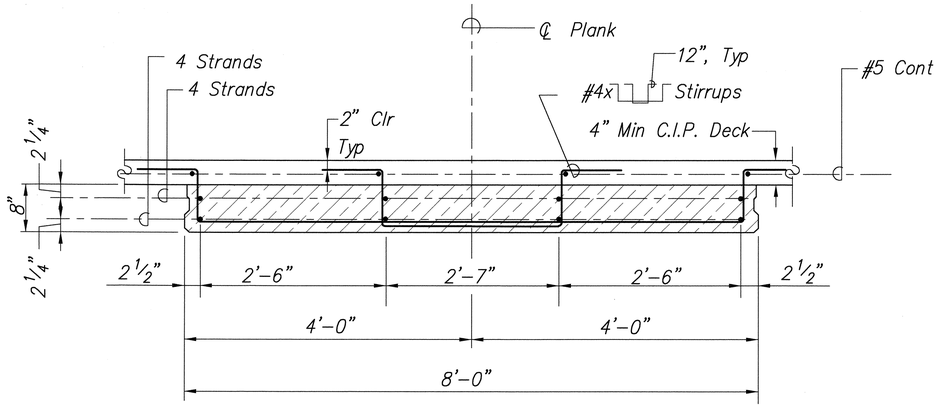
1. All reinforcing steel in concrete planks shall be incidential to prestressed concrete planks and will not be paid for separately.
   Reinforcing Steel: Grade 60, Stainless Steel Clad
2. Prestressed Concrete Planks:
   f'c = 6,000 psi at 28 days
   f'c = 4,000 psi at transfer
3. Prestressed Strands: Uncoated ½"ø 270 ksi, 7 Wire Low relaxation strand
4. Prestress at transfer shall be 0.70 f's
5. Final design stress is based on loss of 45,000 psi.



DETAIL AT END OF STRAND

1 S10|S10

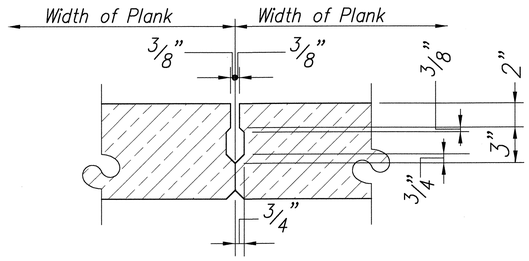
Scale: NTS



TYPICAL INTERIOR PLANK TRANSVERSE SECTION

B S10|S10

Scale: 1" = 1'-0"



Continuous Space Between Planks Shall Be Filled With Grout After All Planks Are In Place And Connected, And Before Placing Ultra Thin White Topping Concrete Deck Slab. The Grout Shall Be Of Shrinkage Compensating Type And Shall Be Approved By The Engineer.

DETAIL OF KEY

2 S10|S10

Scale: NTS

ORIGINAL PLAN	
NOTE BOOK	uhwk/pp/dgm
SURVEY PLOTTED BY	
DRAWN BY	K. Coelho
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
DATE	05/30/01
"	"
"	05/30/01
"	"
"	"
No.	

GLENN H. MIYASATO LICENSED PROFESSIONAL ENGINEER No. 8121-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRESTRESSED PLANK TRANSVERSE SECTIONS AND DETAILS

KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M

Scale: As Noted Date: May 2001

SHEET No. S-10 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	28	30

Note:
Remove Existing A.C. Pavement And Base. Depth Of Excavation Varies From 12" To 16"

See Civil Drawings for Transition to Asphalt Concrete Pavement

Asphalt Pavement

#5 at 12"

2-#5 Cont

2'-4" Lap

#5 Top At 6"

#6 Top At 12"

#7 Bottom at 6"

#6 Bottom At 12"

10"

1'-0"

4" Aggregate Base

12" Thick Approach Slab

B S11|S11

10'-0"

1/2" Deck Joint. See C S8|S8

℄ Abutment

Remove Existing Crown At Top Of Abutment For Level Placement Of Prestressed Plank (Incidental)

Top of Deck

10" 12"

exist concrete girder

exist concrete abutment

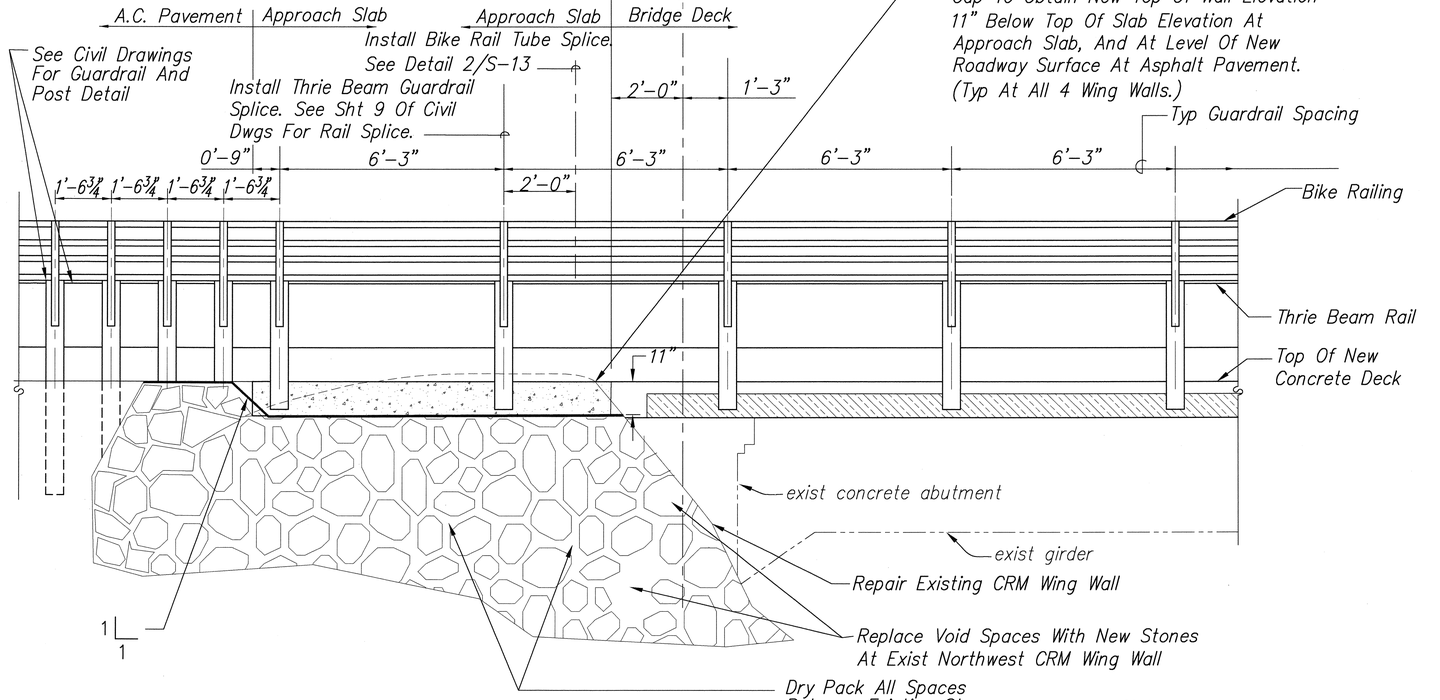
2'-0"

4'-0"

Note:
See Civil drawings for approach slab slope and elevation.

TYPICAL APPROACH SLAB SECTION A S11|S11

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

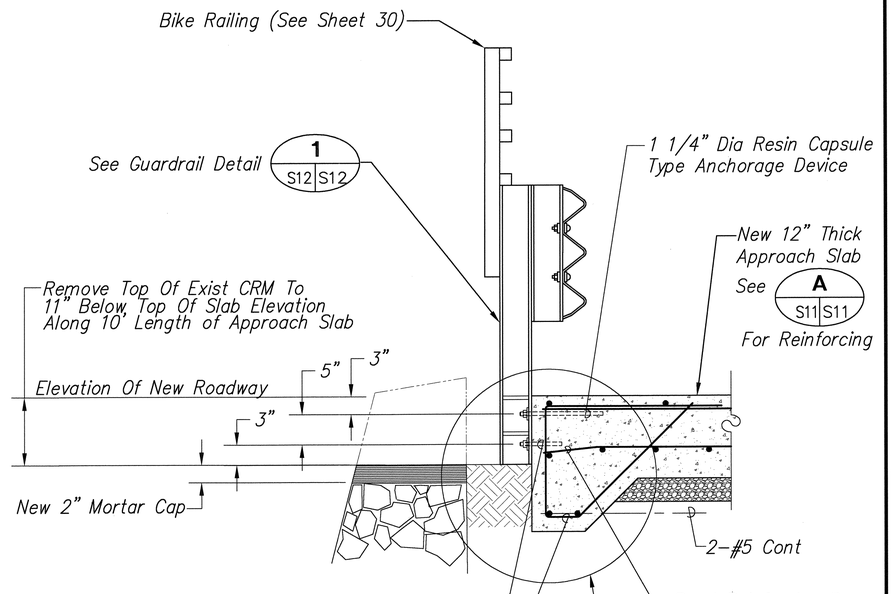


TYPICAL ABUTMENT ELEVATION

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

Remove Top 12" To 30" Of Top Of Exist CRM Wingwalls, And Install New 2" Mortar Cap To Obtain New Top Of Wall Elevation 11" Below Top Of Slab Elevation At Approach Slab, And At Level Of New Roadway Surface At Asphalt Pavement. (Typ At All 4 Wing Walls.)

Note:
The Contractor Shall Verify With The Engineer, Locations Of CRM Repairs Prior To Performing The Work.



Notes:

1. Set threaded rods in concrete slab with a dual cartridge epoxy adhesive or other system as approved by the Engineer. Embed anchors to achieve ultimate tension capacity. (See Manufacturer's specifications). Avoid damaging reinforcing steel during rod installation.

2. Provide 2" Minimum Concrete Cover Over Top Reinforcing Steel.

END RAIL POST SECTION B S11|S11

Scale: 1" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY K. Castro	05/19/01
NOTE BOOK	TRACED BY	
	DESIGNED BY C. Miyasato	05/19/01
	QUANTITIES BY	
No.	CHECKED BY	

GLENN H. MIYASATO LICENSED PROFESSIONAL ENGINEER No. 8121-S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

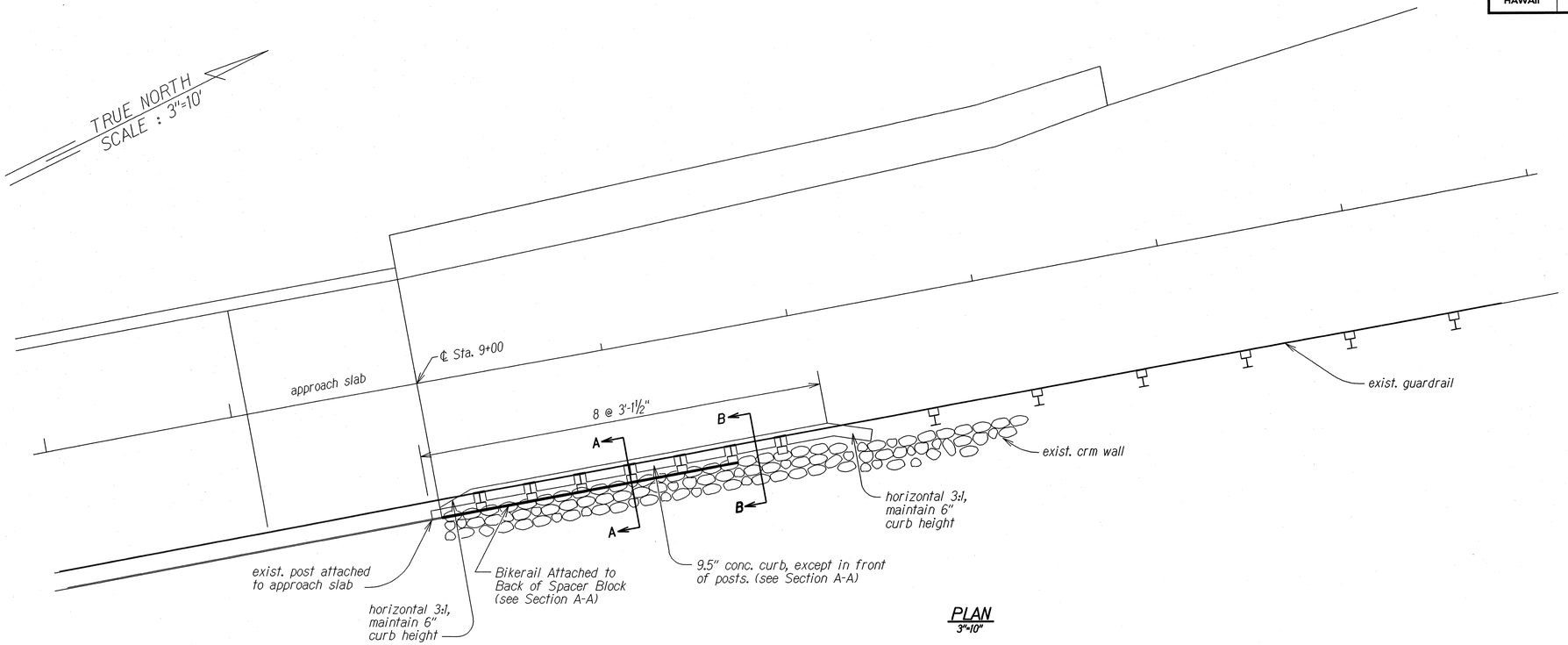
APPROACH SLAB AND DETAILS

KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M

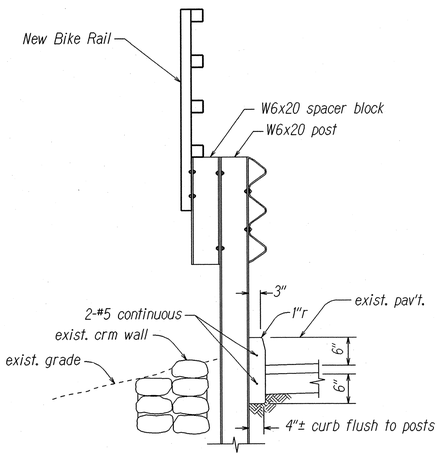
Scale: As Noted Date: May 2001

SHEET No. S-11 OF 13 SHEETS

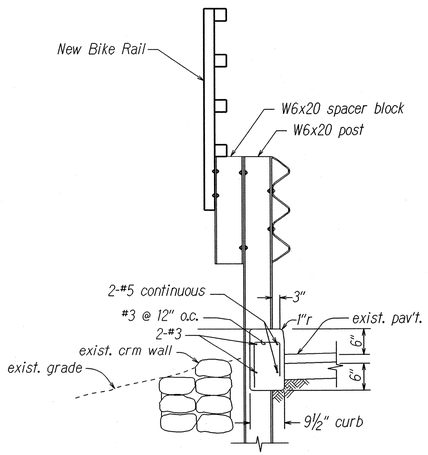
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2003	28S-1	30



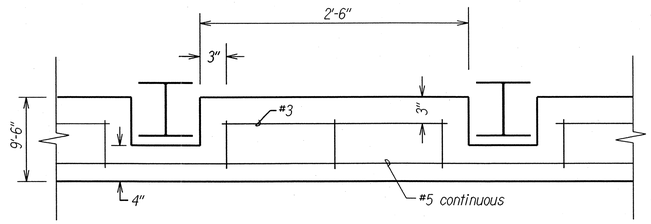
PLAN
3"=10"



SECTION A-A
Not to Scale



SECTION B-B
Not to Scale



CURB PLAN
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 4/10/03
	DRAWN BY JW	
NOTE BOOK dt3.stw	TRACED BY JW	
	DESIGNED BY	
	QUANTITIES BY	
S:\eg\rail\dgn	CHECKED BY	

THIS SHEET PREPARED
DURING "AS-BUILT" POSTING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REVISED GUARDRAIL TRANSITION

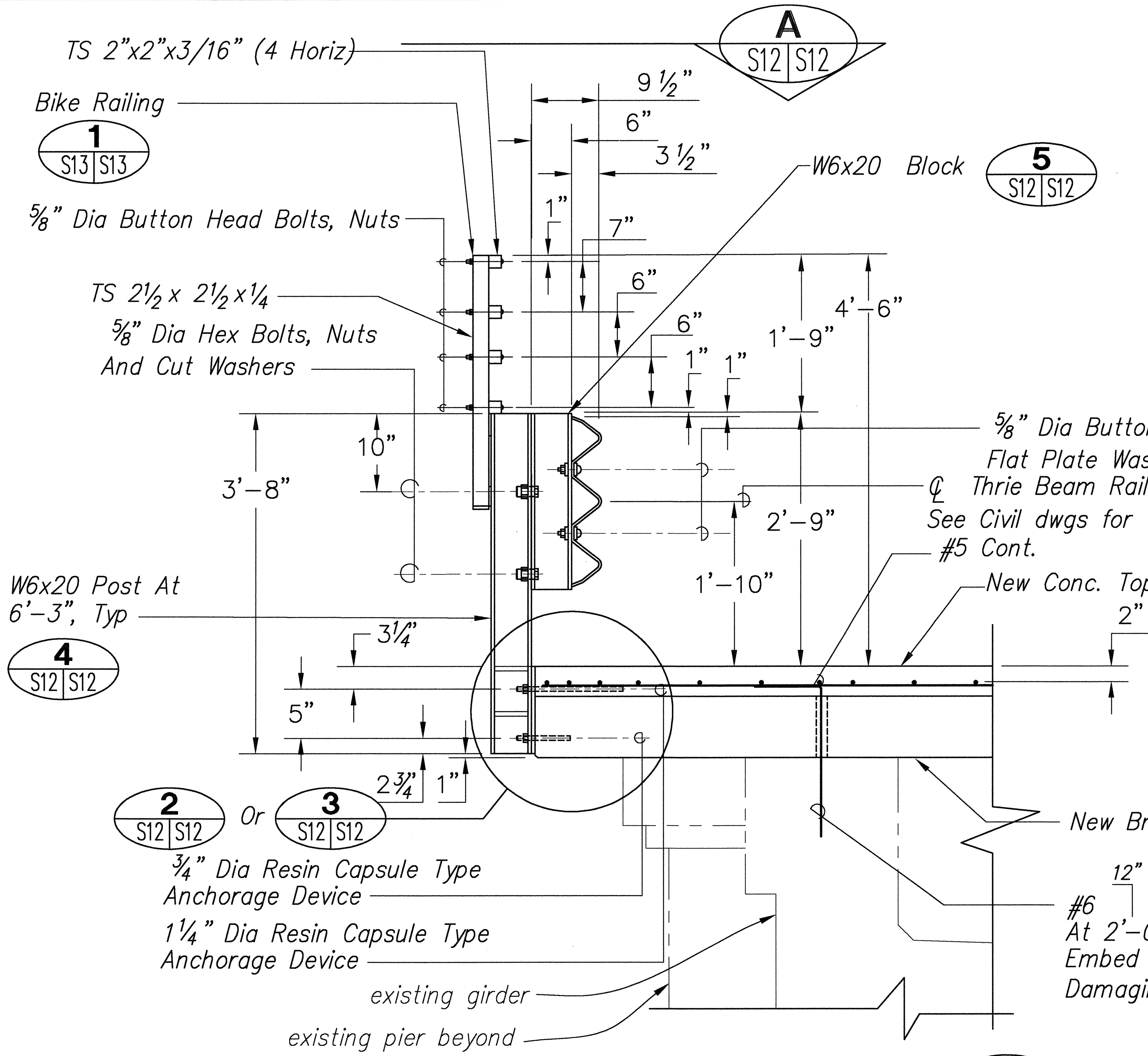
KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement
and Structural Supports
Project No. 56A-02-00M

Scale: As Shown Date: May, 2001

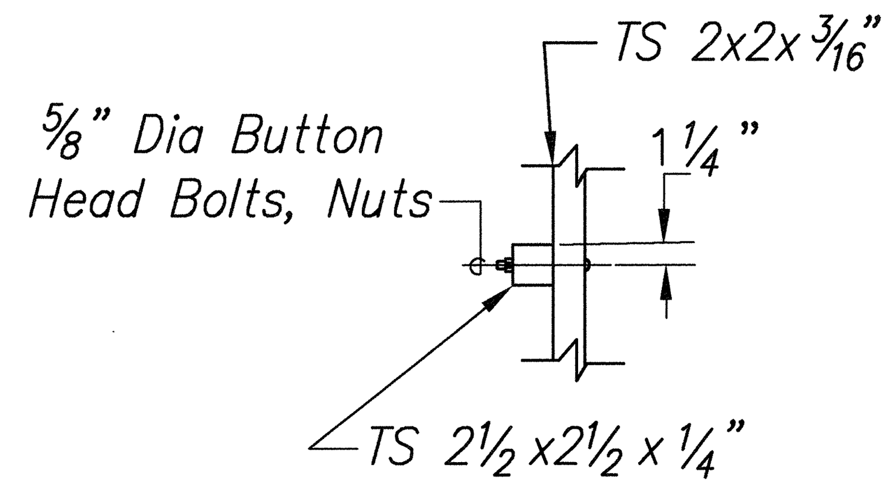
SHEET No. 1 OF 1 SHEETS

28S-1

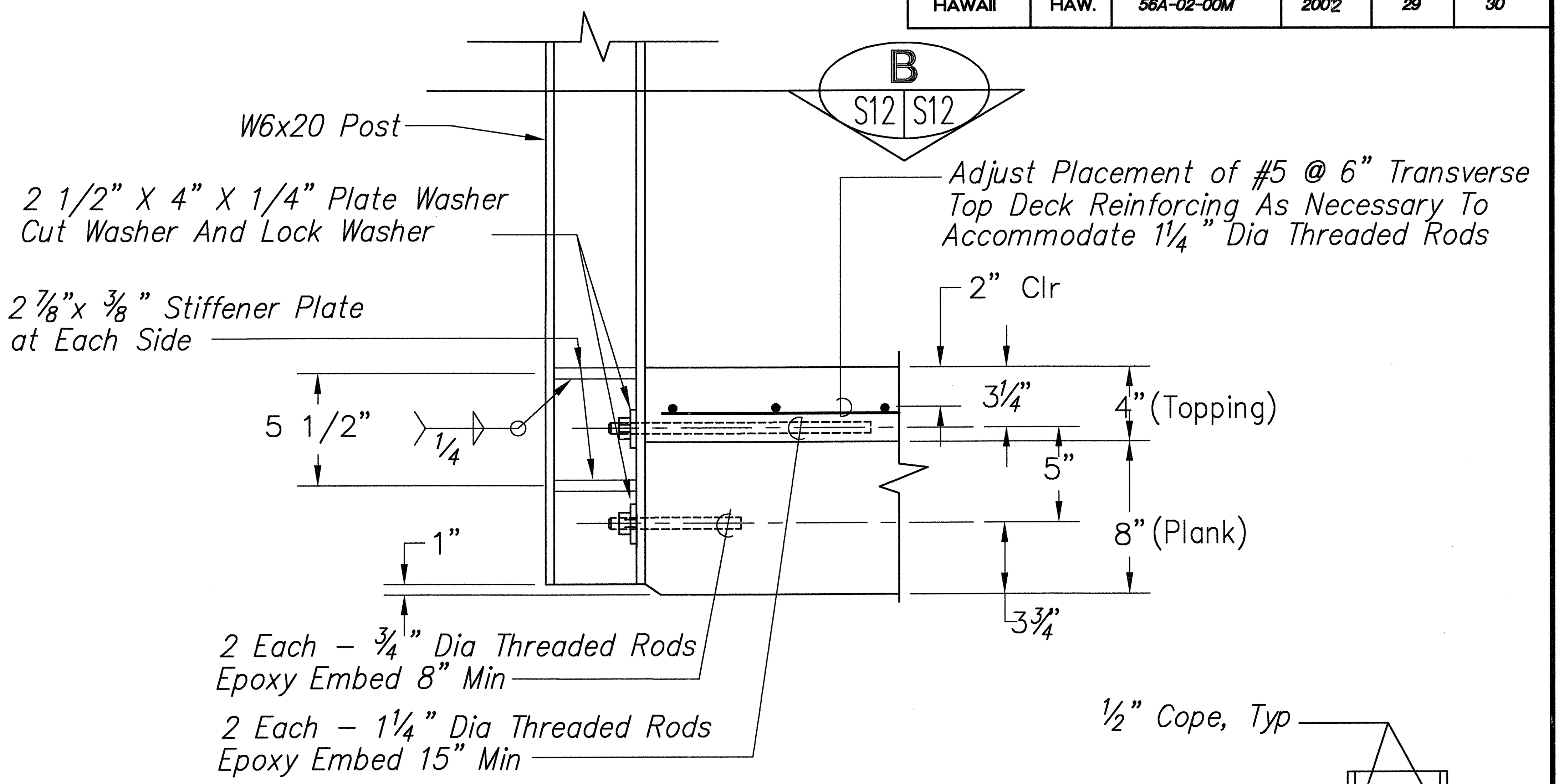
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	29	30



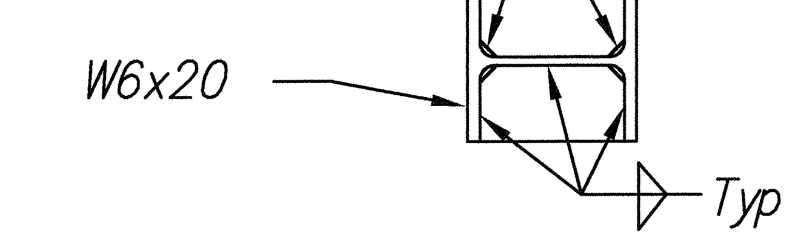
GUARDRAIL AND DOWEL DETAIL 1 S12 S12
Scale: 1" = 1'-0"



SECTION A S12 S12
Scale: NTS

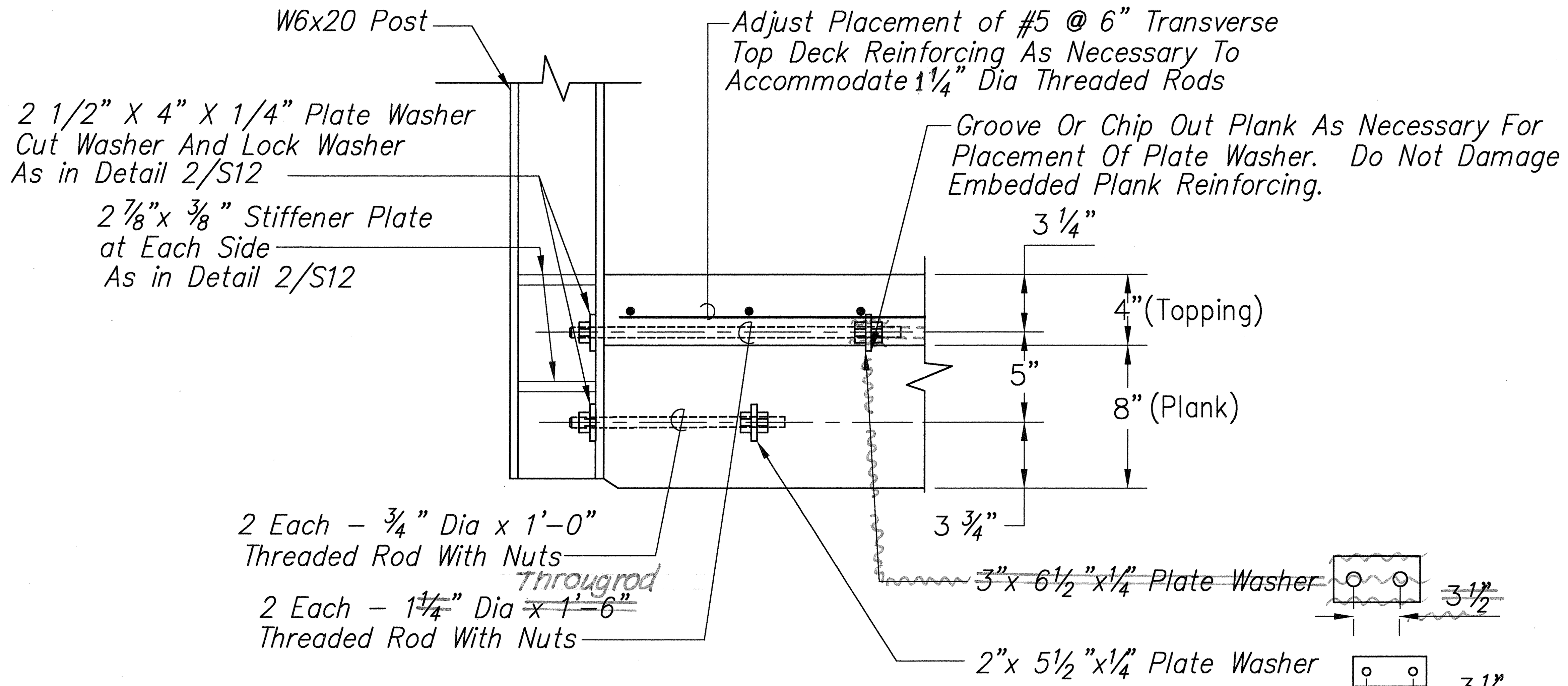


Note: Set threaded rods in concrete slab with a dual cartridge epoxy adhesive or other system as approved by the Engineer. Embed rods to achive ultimate tension capacity. (See manufacturer's specifications) Avoid damaging reinforcing steel and prestressed strands during rod installation.

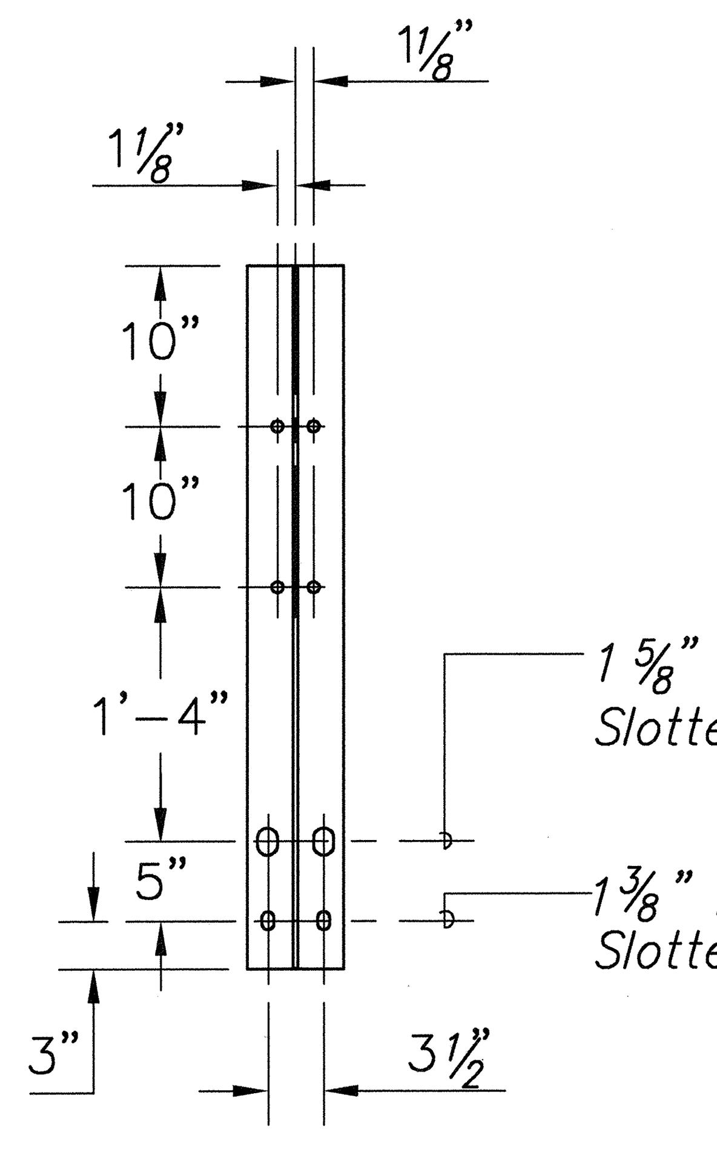


SECTION B S12 S12
Scale: NTS

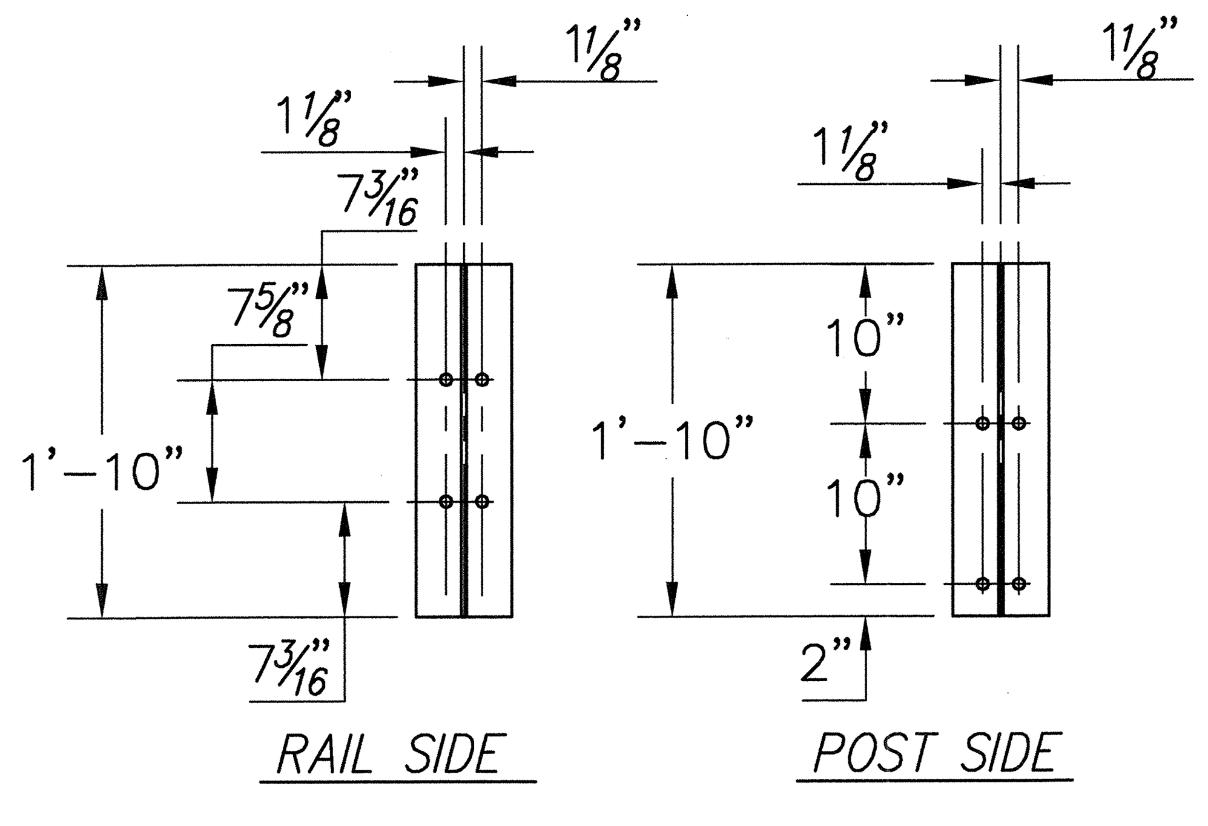
GUARDRAIL POST CONNECTION DETAIL 2 S12 S12
Not to Scale



POST ANCHORAGE - CAST IN PLACE ALTERNATIVE 3 S12 S12
Not to Scale



POST DETAIL 4 S12 S12
Scale: 1" = 1'-0"



BLOCK DETAIL 5 S12 S12
Scale: 1" = 1'-0"

Note:
1. Rail Mounts To Block With Bolts On Approaching Traffic Side Of Block And Post Web.
2. Post Shall Be Vertical
3. Bolt Nuts Shall Be Wrench Tight

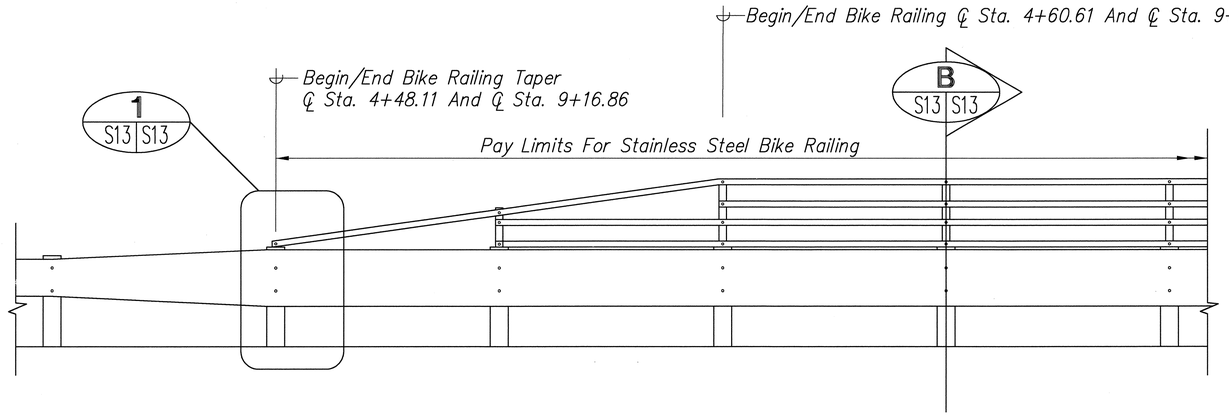
GLENN H. MIYASATO LICENSED PROFESSIONAL ENGINEER No. 8121–S HAWAII, U.S.A.
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BRIDGE GUARDRAIL AND AND DOWEL DETAIL
KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement and Structural Supports
Project No. 56A-02-00M
Scale: As Noted Date: May 2001
SHEET No. S-12 OF 13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	K. Goodin	05/18/01
	TRACED BY		
NOTE BOOK	DESIGNED BY	G. Miyasato	05/18/01
	QUANTITIES BY		
No.	CHECKED BY		

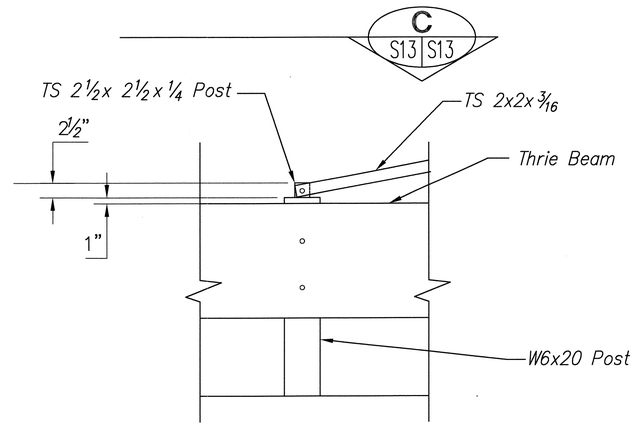
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56A-02-00M	2002	30	30



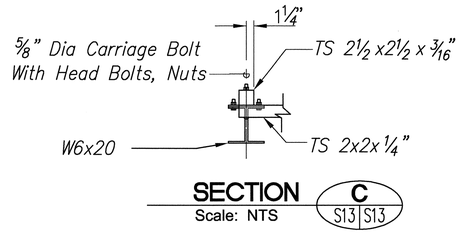
BIKE RAILING END TRANSITION ELEVATION

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



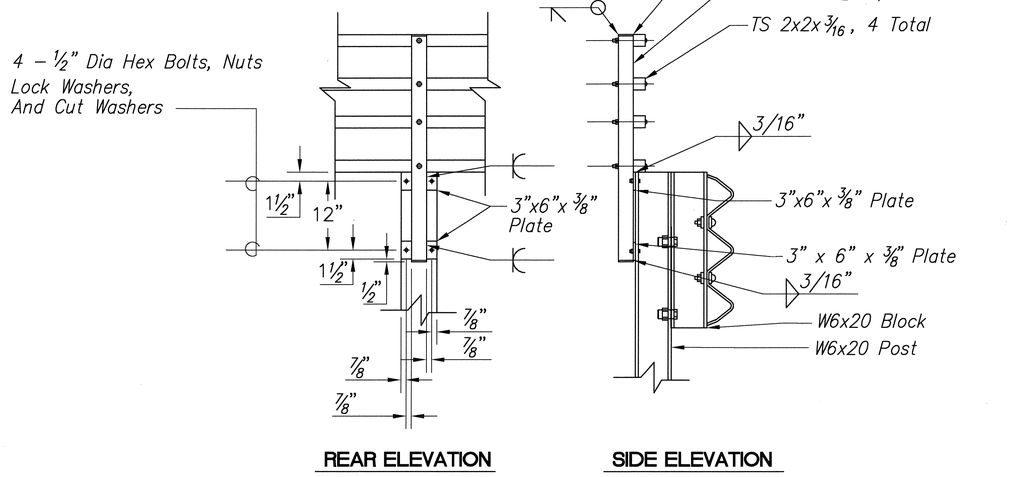
BIKE RAILING END DETAIL 1 S13 S13

Scale: 1" = 1'-0"



SECTION C S13 S13

Scale: NTS

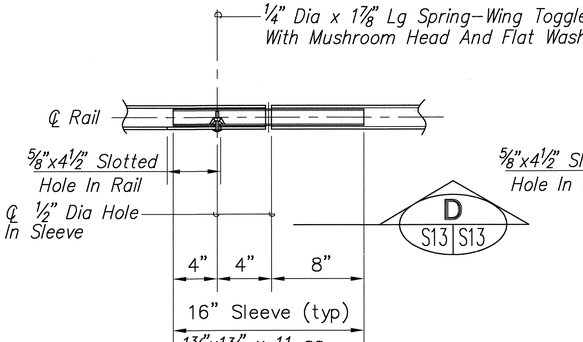


REAR ELEVATION

SIDE ELEVATION

BIKE RAILING POST CONNECTION DETAIL B S12 S13

Scale: 1" = 1'-0"



ELEVATION

Scale: NTS

SECTION D S13 S13

Scale: NTS

TYPICAL TUBE SPLICE DETAIL 2 S13 S13

Scale: NTS

Note: Tube Splice Detail Shall Occur At Sta. 4+91.86 And 8+91.86 At Bike Railings On Both Sides Of The Bridge

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK shakbr-dgm	DRAWN BY K. Seelim	05/30/01
No.	TRACED BY	05/30/01
	DESIGNED BY C. Miyasato	
	QUANTITIES BY	
	CHECKED BY	

GLENN H. MIYASATO LICENSED PROFESSIONAL ENGINEER No. 8121–S HAWAII, U.S.A.

This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BIKE RAILING SECTIONS AND DETAILS

KUHIO HIGHWAY
Wailua River Plantation Bridge
Replace and Reconstruct Pavement
and Structural Supports
Project No. 56A-02-00M

Scale: As Noted Date: May 2001

SHEET No. S-13 OF 13 SHEETS