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LAYOUT PLAN AND LONGITUDINAL SECTION

GIRDER FRAMING PLAN

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STRUCTURAL NOTES

1. General Specifications:

(A) Hawaii Department of Transportation, Standard Specifications for Road and Bridge Construction, 2005, together with Special Provisions prepared for this contract.

2. Design Specifications:

(A) AASHTO 2004 LRFD Bridge Design Specifications (Third Edition) and its subsequent interim specifications with interim supplements.

3. Materials:

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

Item No.	Structural Parts	Classes of Concrete	Specified Compressive Strength, f'c (28 Days)
(1)	Diaphragm		4000 PSI
(2)	Except as noted otherwise, all others	6 A	3000 PSI
All cor	Except as noted otherwise, all others ncrete with the exception of Class A um W/C Ratio of 0.45. The W/C Ra	concrete sh	all have a

(B) All reinforcing steel shall be ASTM A615 Grade 60 unless otherwise noted.

4. Reinforcement:

- (A) The minimum covering measured from the surface of the concrete to the face of any reinforcing bars shall be 1 ½" unless otherwise noted.
- (B) Minimum clear spacing between parallel bars shall be 1 ½ times the diameter of bars (for non bundled bars). In no case shall the clear distance between the bars be less than 1 ½ times the maximum size of the coarse aggregate or 1 ½".
- (C) All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.
- (D) 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.

5. Construction Notes:

- (A) All deteriorated, cracked or spalled concrete shall be removed and repaired. Damaged areas shall be cleaned and chipped to broken rock. Square cut the perimeters of all spalled areas to be repaired to a minimum depth of $\frac{1}{2}$ ".
- (B) The Engineer shall determine all areas to be repaired and the limits of repair for each area.
- (C) All cracks shall be repaired by epoxy injection under pressure. Seal the surfaces of cracks with Duralcrete gel. Insert 1-way ports. After the gel has set, inject under pressure with Duralcrete LV.
- (D) All spalls shall be repaired with Speedcrete PM (polymer modified). Prepare all areas in conformance with ICRI recommendations. Scrubcoat the contact surfaces with the Speedcrete PM.
- (E) Corroded reinforcing steel shall be cleaned to sound metal and coated with a corrosion inhibitor.
- (F) The recommendation of the manufacturer shall be followed for the carbon fiber wrap, epoxy for the dowels, epoxy for the sealing of cracks, corrosion inhibitor, and material for patching concrete.
- (G) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4"x3/4".



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SIGNATURE EXPIRATION DATE OF THE LICENSE

FED. ROAD

HAW.

DIST. NO.

HAWAII

FED. AID

PROJ. NO.

ER-15(1)

FISCAL SHEET

NO.

YEAR

2007

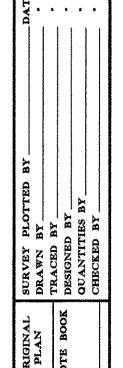
DEPARTMENT OF TRANSPORTATION INDEX TO DRAWINGS AND STRUCTURAL NOTES Akoni Pule Highway

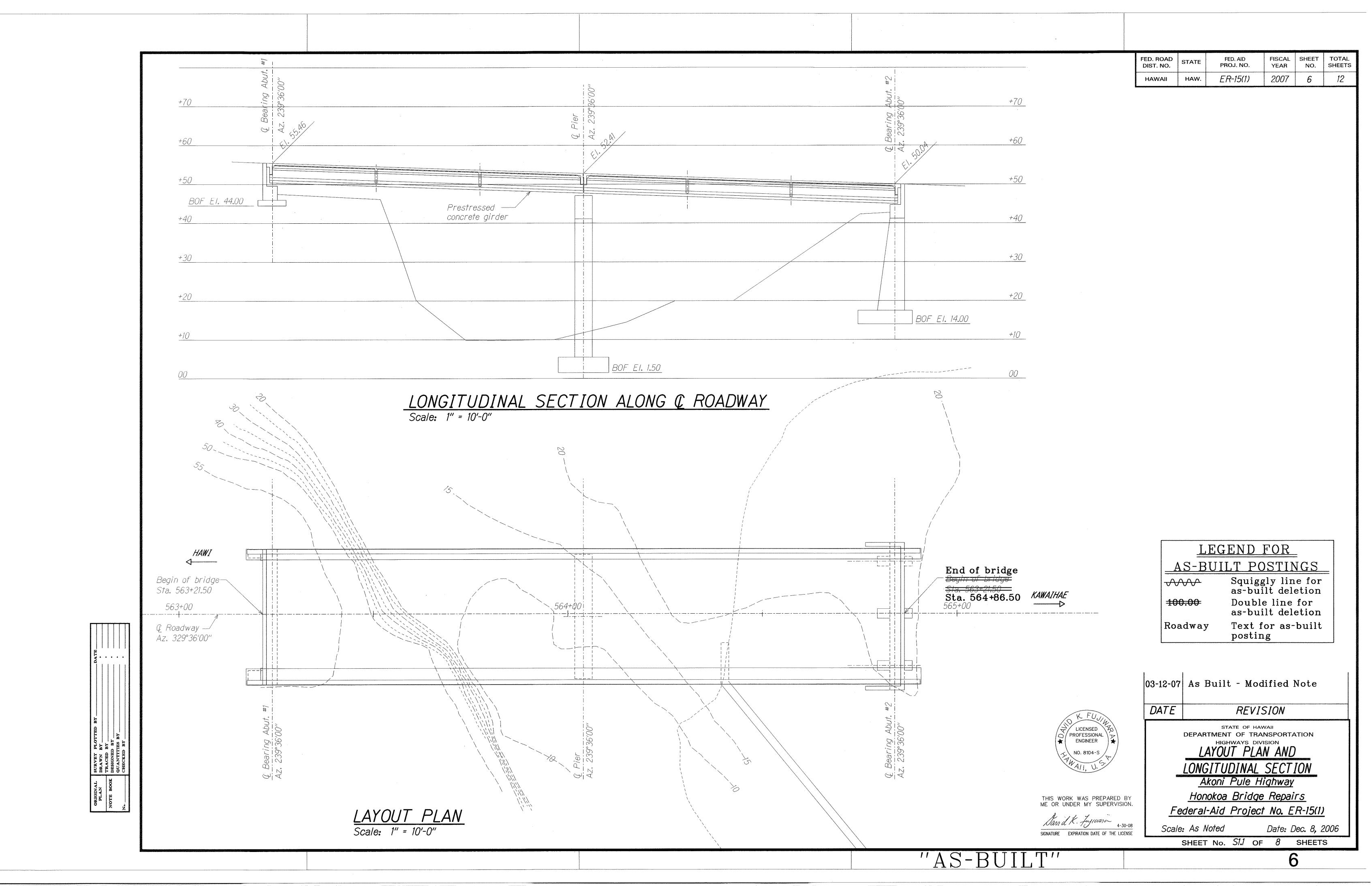
STATE OF HAWAII

Honokoa Bridge Repairs Federal-Aid Project No. ER-15(1)

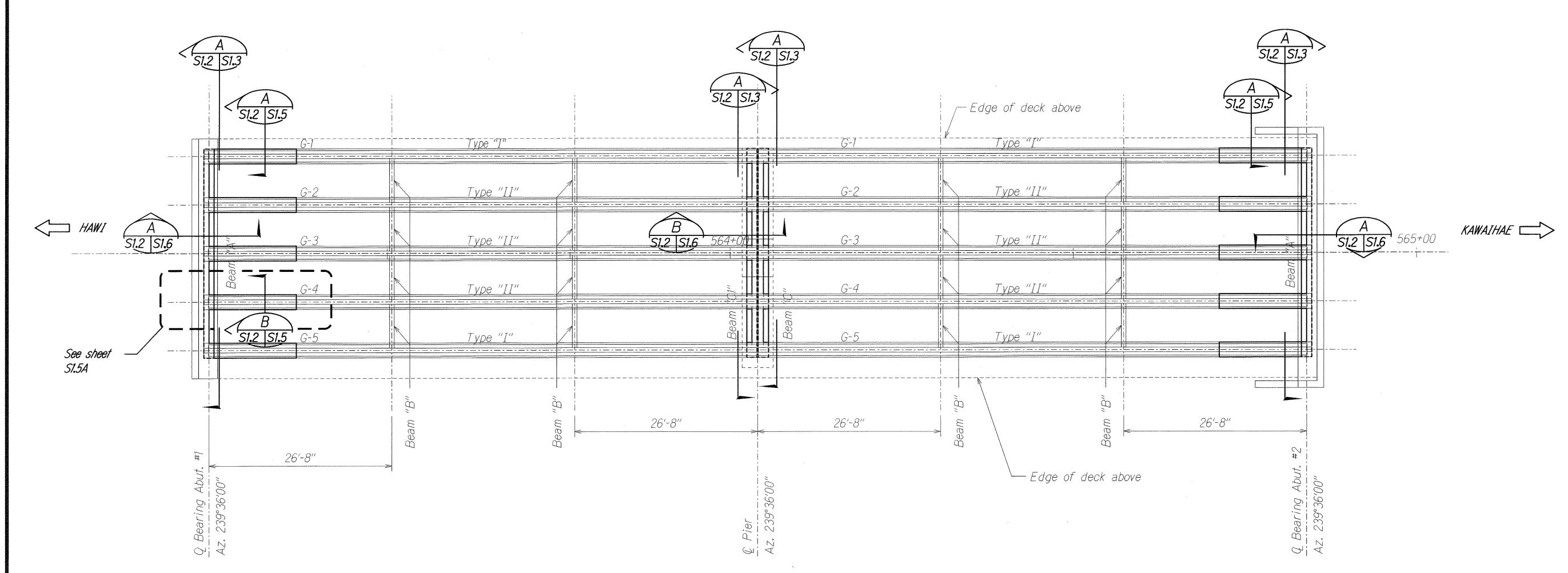
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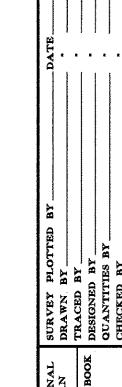


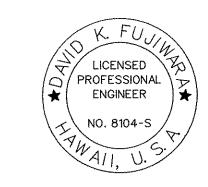
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HAWAII	HAW.	ER-15(1)	2007	7	12



GIRDER FRAMING PLAN

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





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Signature Expiration date of the License

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GIRDER FRAMING PLAN

Akoni Pule Highway

Honokoa Bridge Repairs

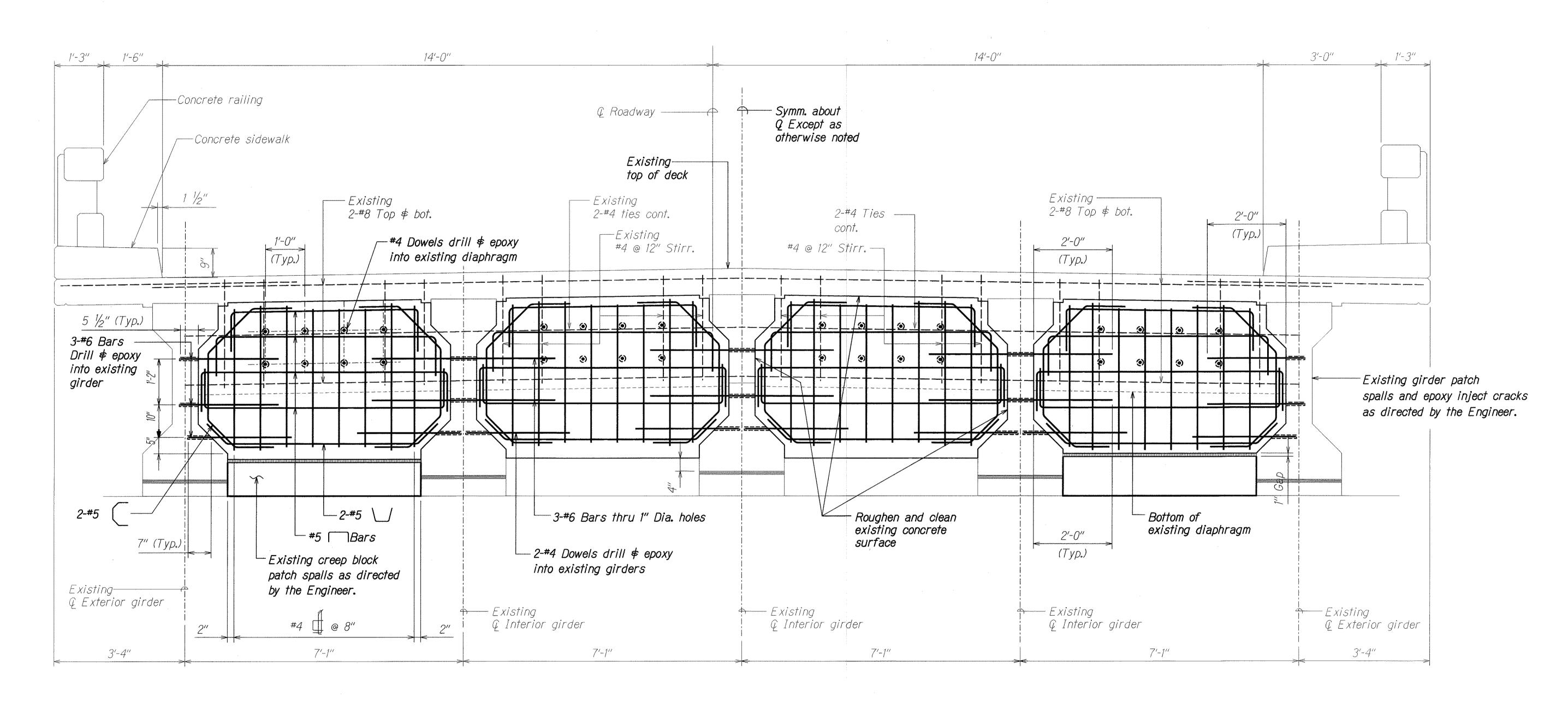
Federal-Aid Project No. ER-15(1)

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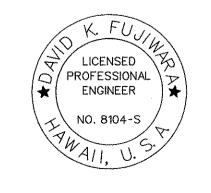
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HAWAII	HAW.	ER-15(1)	2007	8	12







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TYPICAL BEAM SECTION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

Akoni Pule Highway Honokoa Bridge Repairs Federal-Aid Project No. ER-15(1)

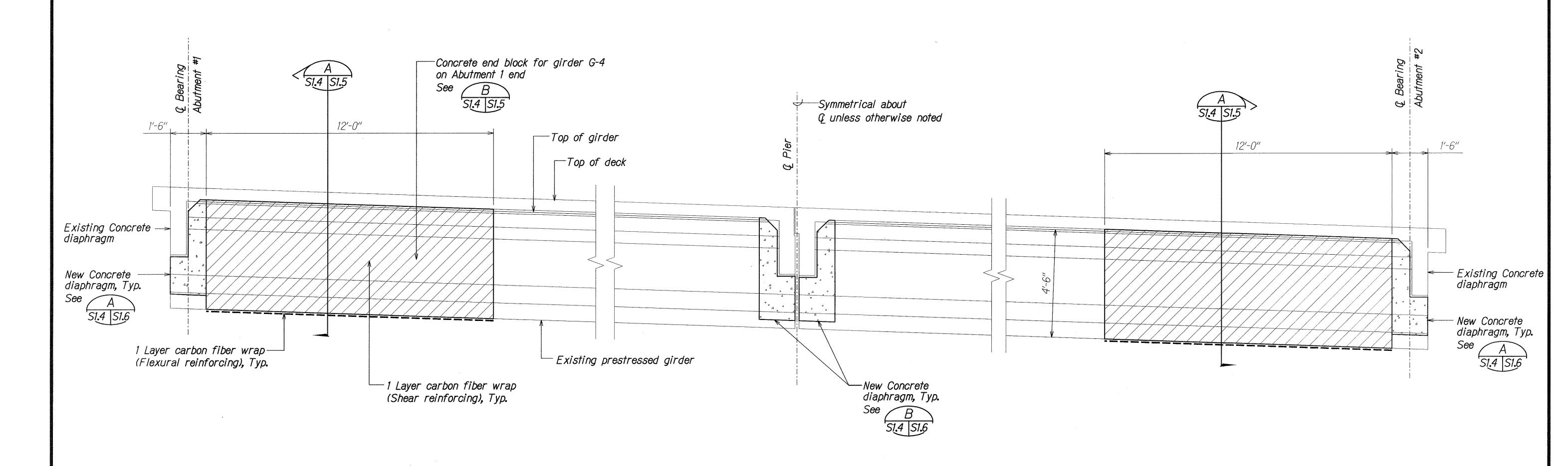
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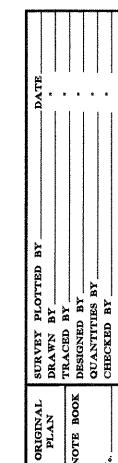
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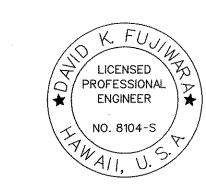
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HAWAII	HAW.	ER-15(1)	2007	9	12	



TYPICAL GIRDER DETAIL

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





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Januar A. Jujiwasa

4-30-08

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL GIRDER DETAIL

Akoni Pule Highway

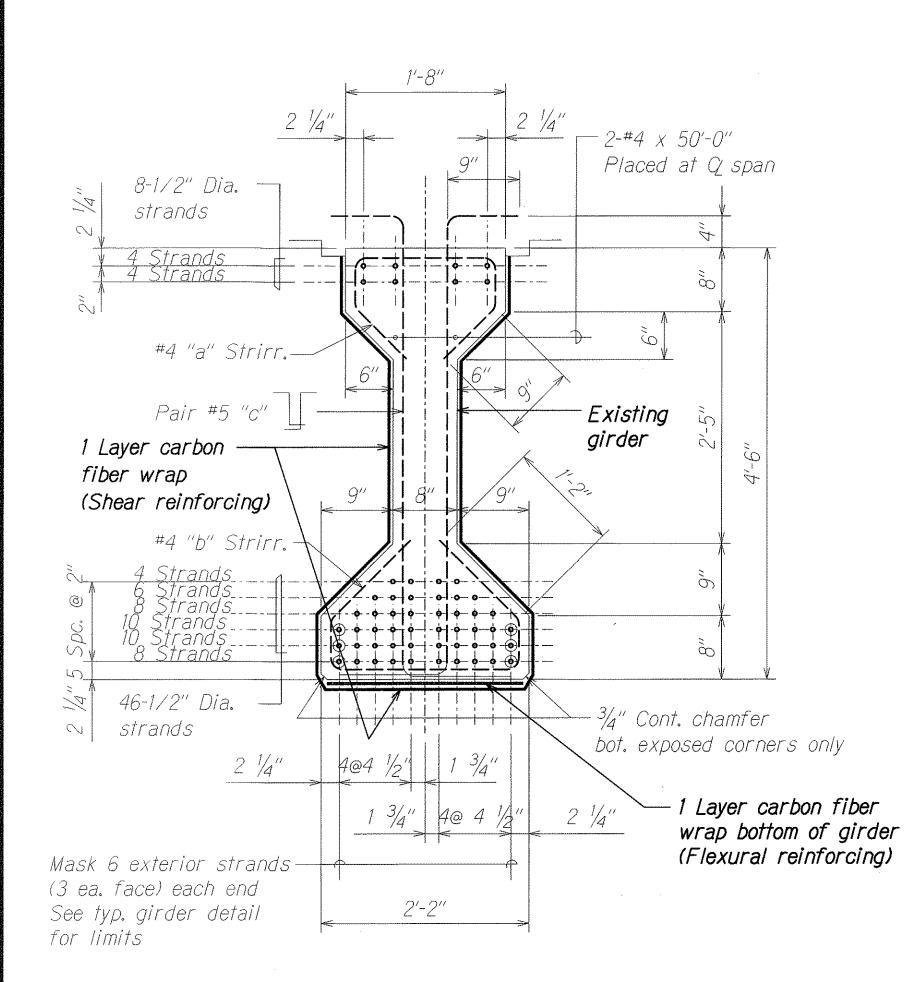
Honokoa Bridge Repairs

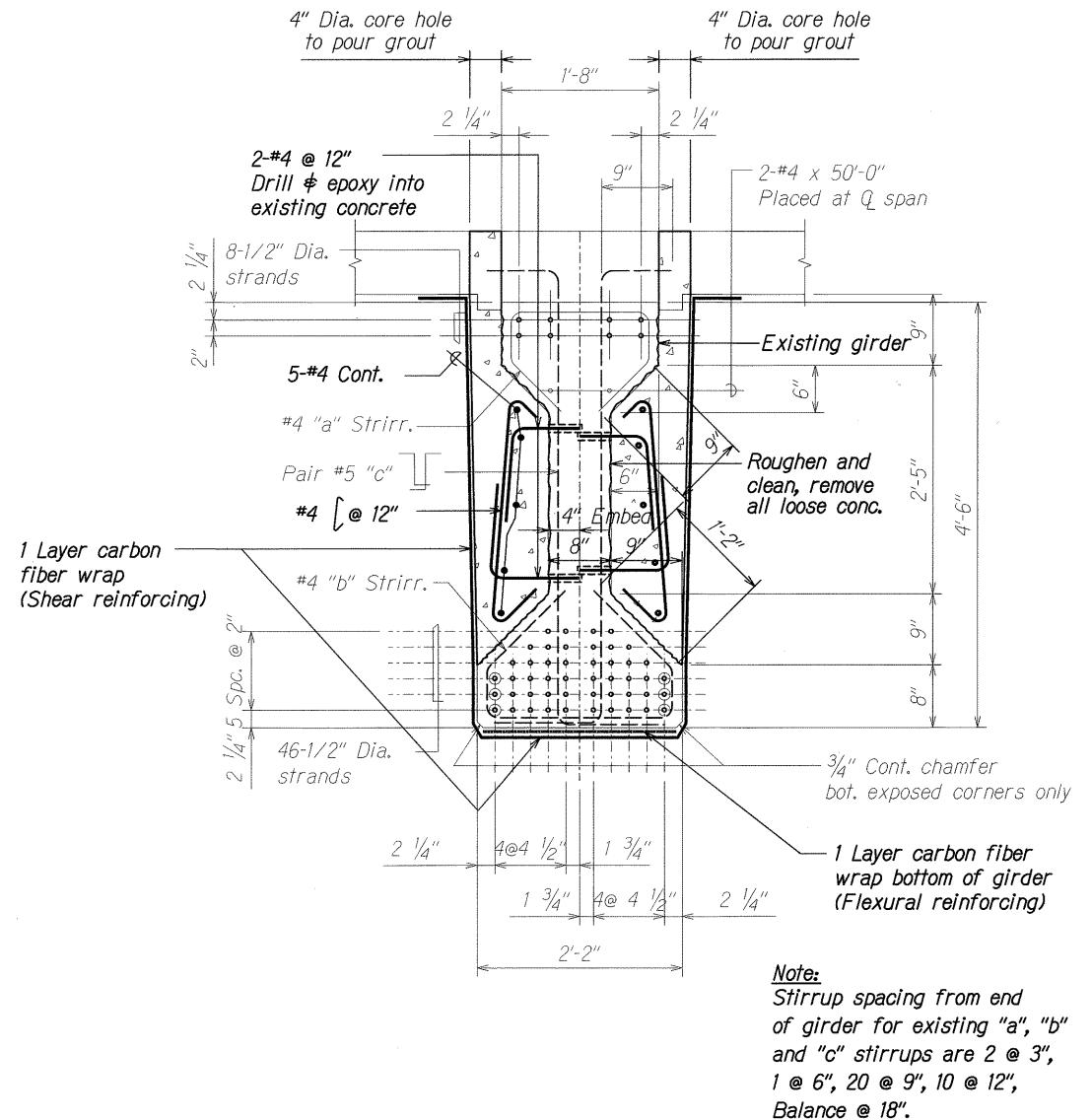
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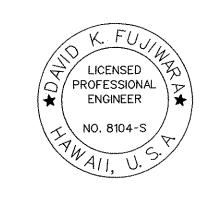
TYPICAL GIRDER SECTION A

SI.2, SI.4 SI.5

G-4 GIRDER (ABUTMENT 1 END ONLY) B

SCALE: 1" = 1'-0"

SI.2, SI.4 SI.5



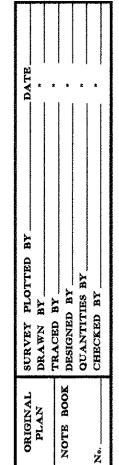
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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

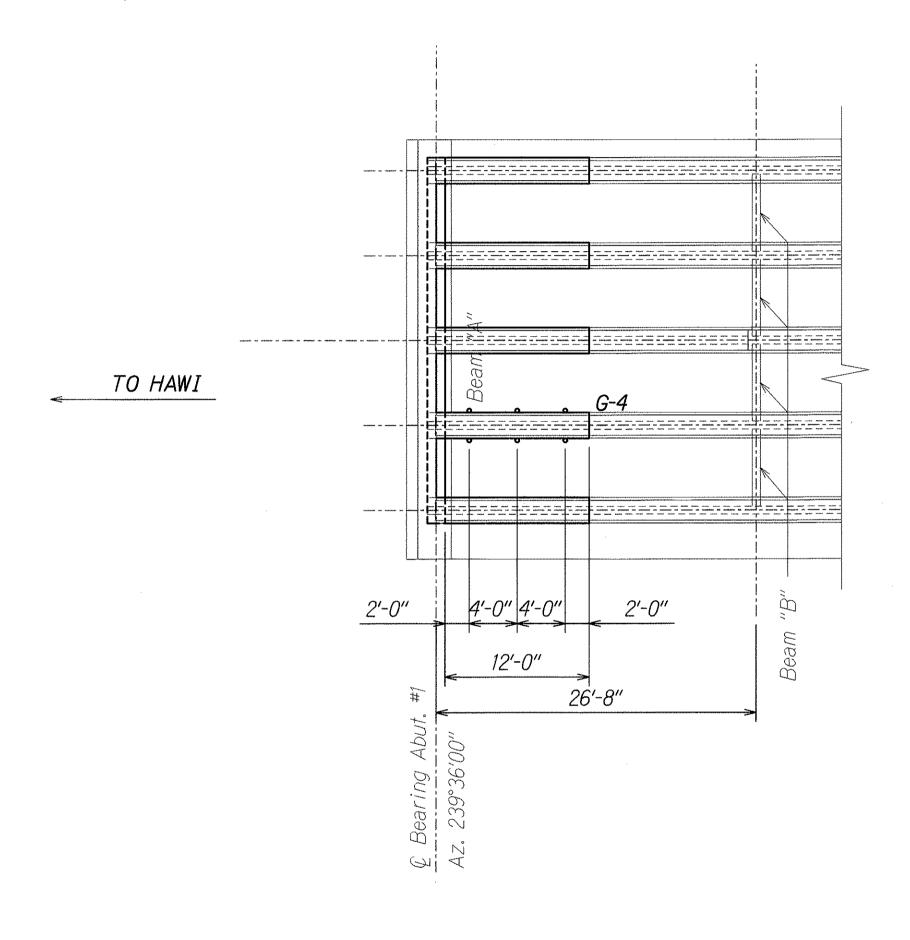
GIRDER SECTIONS

Akoni Pule Highway Honokoa Bridge Repairs Federal-Aid Project No. ER-15(1)

Scale: As Noted



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HAWAII	HAW.	ER-15(1)	2007	11	12	



4" Dia. core hole @ 4'-0" o.c. 3 each / side of G4 girder - Roughen existing 6. girder surface

Girder G4 Repair Notes: (Abutment #1, Hawi End Only)

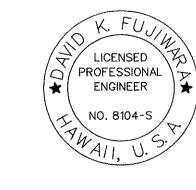
- 1. Chip girder G4 to remove all loose concrete.
- 2. Roughen the surface of girder G4 which will be in contact with the repair grout by bush hammering. (Roughen each side of girder for a distance of 12' from the new diaphragm at Abutment #1)
- 3. Embed rebar dowels 4" into the web of girder G4 using a 2 component epoxy.
- 4. Brush on Tammsweld bonding agent onto the roughened girder surfaces.
- 5. Close forms and pour repair material from the bridge deck through 3 ea x 4" diameter cored holes spaced 4' apart on each side of the girder. The repair material shall be Tamms NC Grout extended with pea gravel. Add water and mix in accordance with the manufacturere's recommendations. A technical representative from Tamms shall be on site to assist.
- Periodically tap the forms with a hammer during the pour to assure consolidation of the grout.
- 7. Both lanes may be opened to traffic 48 hours after completion of the grout pour.

G-4 GIRDER (ABUTMENT 1 END ONLY) A

SCALE: 1" = 1'-0"

SI.5A SI.5A

PARTIAL GIRDER FRAMING PLAN SCALE: 1/8" = 1'-0"



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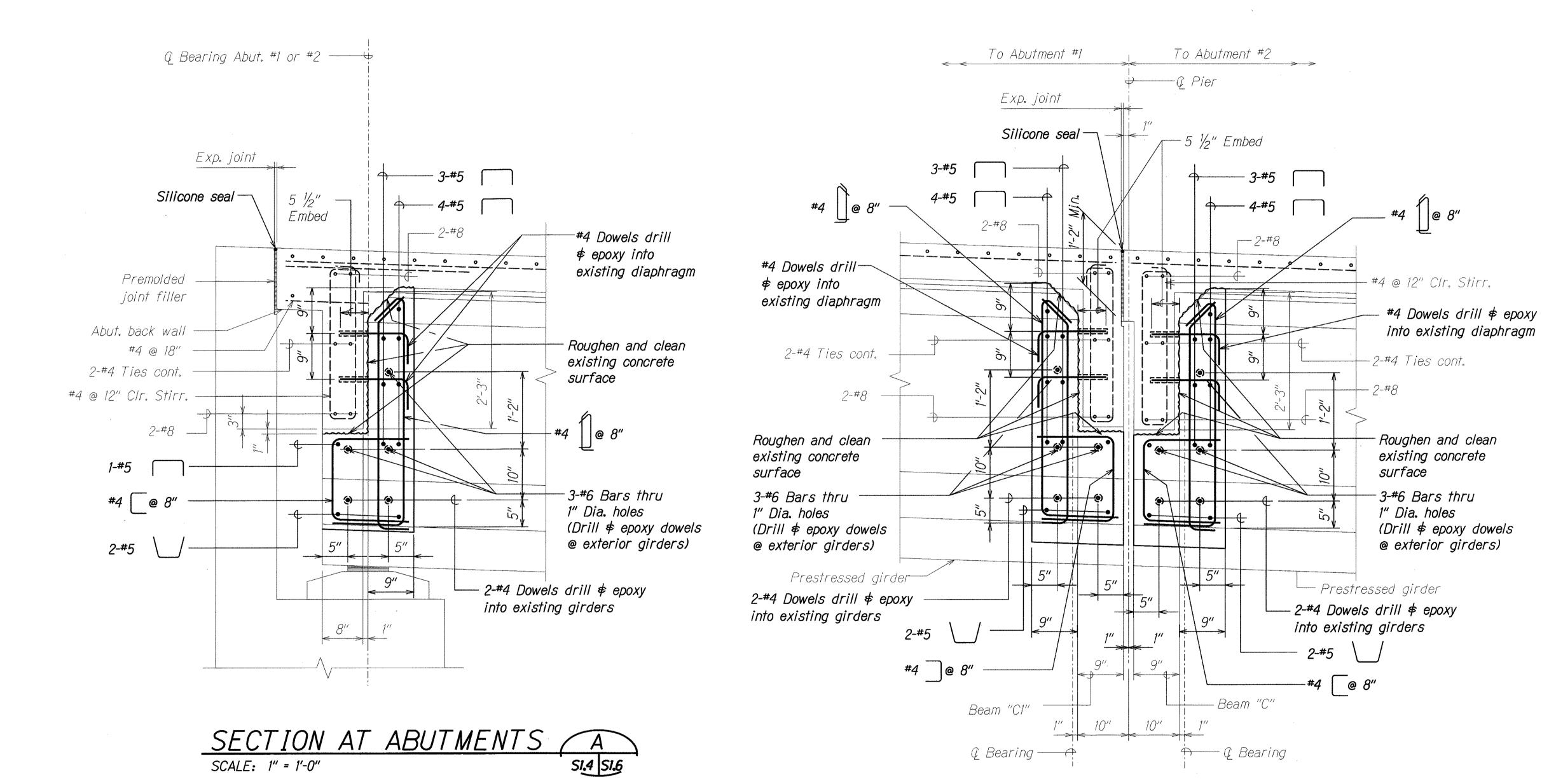
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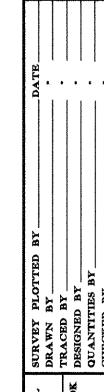
GIRDER FRAMING PLAN AND G4 REPAIR Akoni Pule Highway

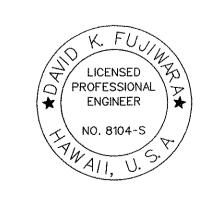
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Date: Dec. 8, 2006 Scale: As Noted SHEET No. S1.5A OF 8

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
HAWAII	HAW.	ER-15(1)	2007	12	12







SECTION AT PIER B

SCALE: 1" = 1'-0"

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DIAPHRAGM SECTIONS

Akoni Pule Highway

Honokoa Bridge Repairs

Federal-Aid Project No. ER-15(1)

Scale: As Noted

Date: Dec. 8, 2006

SHEET No. S1.6 OF 8 SHEETS