FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	9	27

STRUCTURAL GENERAL NOTES

1. General Specifications: Hawaii Department of Transportation (HDOT), "Standard Specifications for Road and Bridge Construction", 2005, together with Special Provisions prepared for this contract.

2. Design Specifications:

   A. American Association of State Highway and Transportation Officials (AASHTO) 2020 "LRFD Bridge Design Specifications" (Ninth Edition) and its subsequent interim specifications with interim supplements and modifications by the HDOT Highways Division.

   B. HDOT Document "Design Criteria for Bridges and Structures" dated August 8, 2014 and HDOT Memorandum "Changes to Design Criteria for Bridges and Structures" dated January 8, 2018.

3. Materials:

   A. Structural Steel

      (1) All steel shall conform to the following requirements:

Rolled Steel Shapes	
(a) Channels	ASTM A36
(b) Angles	ASTM A36
(c) Plates and All Others	ASTM A36

      (2) All workmanship shall be in accordance with the latest AISC and AWS D1.5.

      (3) All welding, whether shop or field, shall be done by certified welders in conformance with the Bridge Welding Code AWS D1.5 of the American Welding Society. Filler Metal shall have a minimum tensile strength of 70 ksi.

      (4) Field welding to existing steel shall not be permitted unless specifically shown or noted on drawings. See Standard Specifications and Special Provisions for pre-heat and other requirements. Welding shall be performed such that excessive concentrated heat does not warp any new or existing steel pieces being joined.

      (5) Where specified in the contract documents, all steel to steel bolted connections shall be designated as slip-critical. Paint blocking/masking shall be detailed as shown on the plans and the accompanying special provisions. Bolts shall be tightened with the proper amount of pretensioned clamping force.

      (6) All other bolted connections shall be classified as pre-tensioned connections.

3. Materials (Cont.):

      (7) All bolt assemblies which connect steel to steel shall be TnA 144 - Type 1 Grade 144 Torque-and-Angle Fixed-Spline Structural bolt assembly manufactured in accordance with ASTM F3148, unless otherwise noted. Nuts shall conform to ASTM A563 and washers shall conform to ASTM F436. All nuts shall be lubricated with Clean Lube, acrylic latex-based lubricant in accordance with ASTM A563. Bolt, Nut, and Washer Assembly shall be galvanized to a Class 55 thickness in accordance with ASTM B695. Round button head shall be placed on the exterior (visible) face of the connection plate assembly.

      (8) All bolt assemblies shall be touch-up field painted with the specified paint system after assembly.

      (9) See Special Provisions Section 501 for structural steel requirements. All holes shall be prepunched before shop priming and coating steel. Touch-up paint steel in field.

      (10) See Special Provisions Section 697 for painting requirements Shop and field applied paint shall be a 3-coat paint system (zinc primer, epoxy intermediate, and polyurethane topcoat).

      (11) Paint color shall match the color of the existing surrounding bridge members. Paint sheen shall be gloss and color scheme shall be submitted to the Engineer for review and approval.

4. Construction Notes:

   A. Install protective devices to prevent all construction debris and fugitive dust from entering the river and banks. The Contractor shall submit working drawings for the protective devices to the Engineer for approval. Any work involving these protective devices shall be paid for under Item 209.1100 - Installation, Maintenance, Monitoring, and Removal of BMP and Work Platform - Hakalau Bridge. Work shall not begin until the Engineer approves the proposed system.

   B. The Contractor is prohibited from accessing the ground or water under the bridge. This includes the entire area under the bridge within the State Right of Way. All access to the repair sites shall be from the top of the bridge or a temporary work platform. Work Platform shall be paid for under Item 209.1100 - Installation, Maintenance, Monitoring, and Removal of BMP and Work Platform - Hakalau Bridge. There are high contaminants of lead in the soil below the bridge and any contact with the ground is prohibited.

   C. The Contractor shall be entirely responsible for the stability of the bridge and integrity of the members during construction. The addition of temporary bracing prior to the removal and replacement of bridge elements shall be anticipated. At a minimum, the temporary bracing shall have equal or greater strength and stiffness than the member it is replacing. The temporary bracing plan and calculations, stamped by a Structural Engineer, licensed in the State of Hawaii, shall be submitted to the Engineer for review and approval prior to any work being performed.

5. Construction Notes (Cont.):

   D. The Contractor shall field verify all existing conditions, dimensions, and member sizes prior to fabrication of any bridge elements. The Engineer shall be notified immediately regarding any change of conditions or discrepancies between the plans and field investigation.

   E. The structural repair details shown on the plans are based on the Engineer's findings during the latest site investigation. If existing bridge members that are to remain, have deteriorated such they cannot be bolted or welded to, the Engineer shall be notified immediately.

   F. Work platform drawings and calculations, stamped by a Professional Structural Engineer, licensed in the State of Hawaii, shall be submitted to the Engineer for review and approval. Calculations shall include a structural assessment of all bridge components that support any portion of the work platform.

   G. Work platform shall be designed for the actual weights of required construction equipment and material plus the intended design Live Load but not to be less than a minimum uniform 20 pounds per square foot Live Load plus 75 pounds per linear foot Live Load applied at all cantilever edge overhangs. Design for lateral loads in conformance with Section 22 of the AASHTO "Guide Design Specifications for Bridge Temporary Works".

   H. At locations where existing rivets are to be replaced with new High-Strength bolts, new bolt sizes shall match the diameter of the rivets they replace.

   I. The Contractor shall coordinate all traffic control and lane closure requirements with the State DOT Highways Division. The Contractor shall notify the State a minimum of 11 days prior to any requests for traffic control or lane closures. Lane closures may be scheduled on weekdays from 8:30 AM to 3:00 PM.

   J. The Contractor shall be responsible for the cost of all high strength bolting and welding inspection, including any non-destructive testing. Cost shall be incidental to the repair work. Reports shall be submitted to the Engineer for review and approval. All deficient work shall be corrected with no increase in cost to the State.

   K. The Contractor may obtain for review available As-Built drawings of the existing structure from the HDOT Highways Division, Design Branch located at Kakuhihewa Building, Room 609, 601 Kamokila Boulevard, Kapolei, HI 96707.

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

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

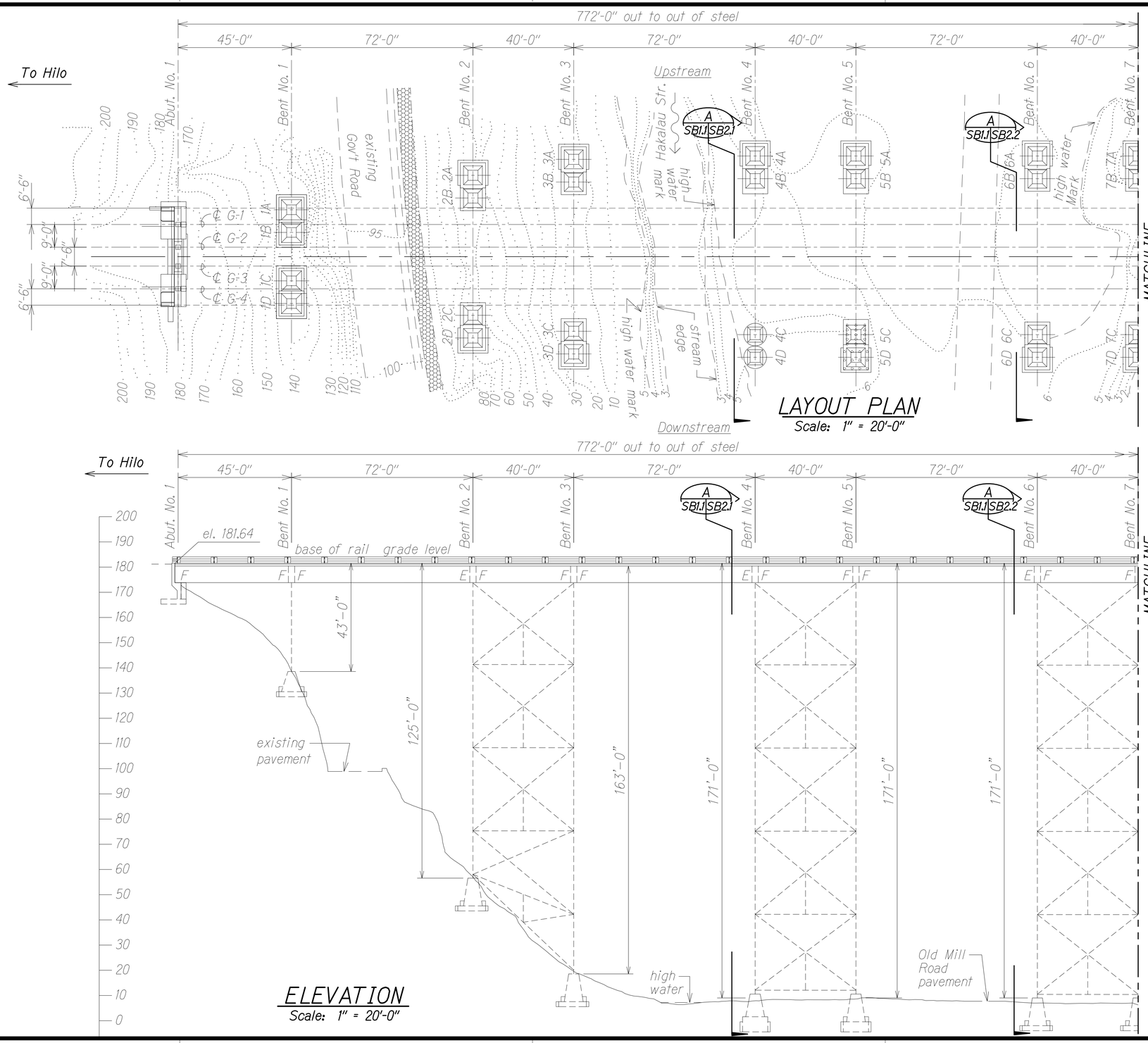
4-30-22
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAKALAU STREAM BRIDGE
STRUCTURAL GENERAL NOTES
HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M
Scale: None Date: Sept. 2021

SHEET No. SB0.1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	10	27



TRUE NORTH
Scale: 1 in. = 20 ft.

Legend:

F Fixed Bearing

E Expansion Bearing

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

DRAWING NAME: Z:\OD ONGOING\20-040.B-CRITICAL RPR WAILUKU-HAKALAU-NANUE\01 CAD\09-27-21 COMBINED\HDR-SB0101 HAK PLAN.DWG PLOT TIME: 09-27-21, 12:49 PM

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

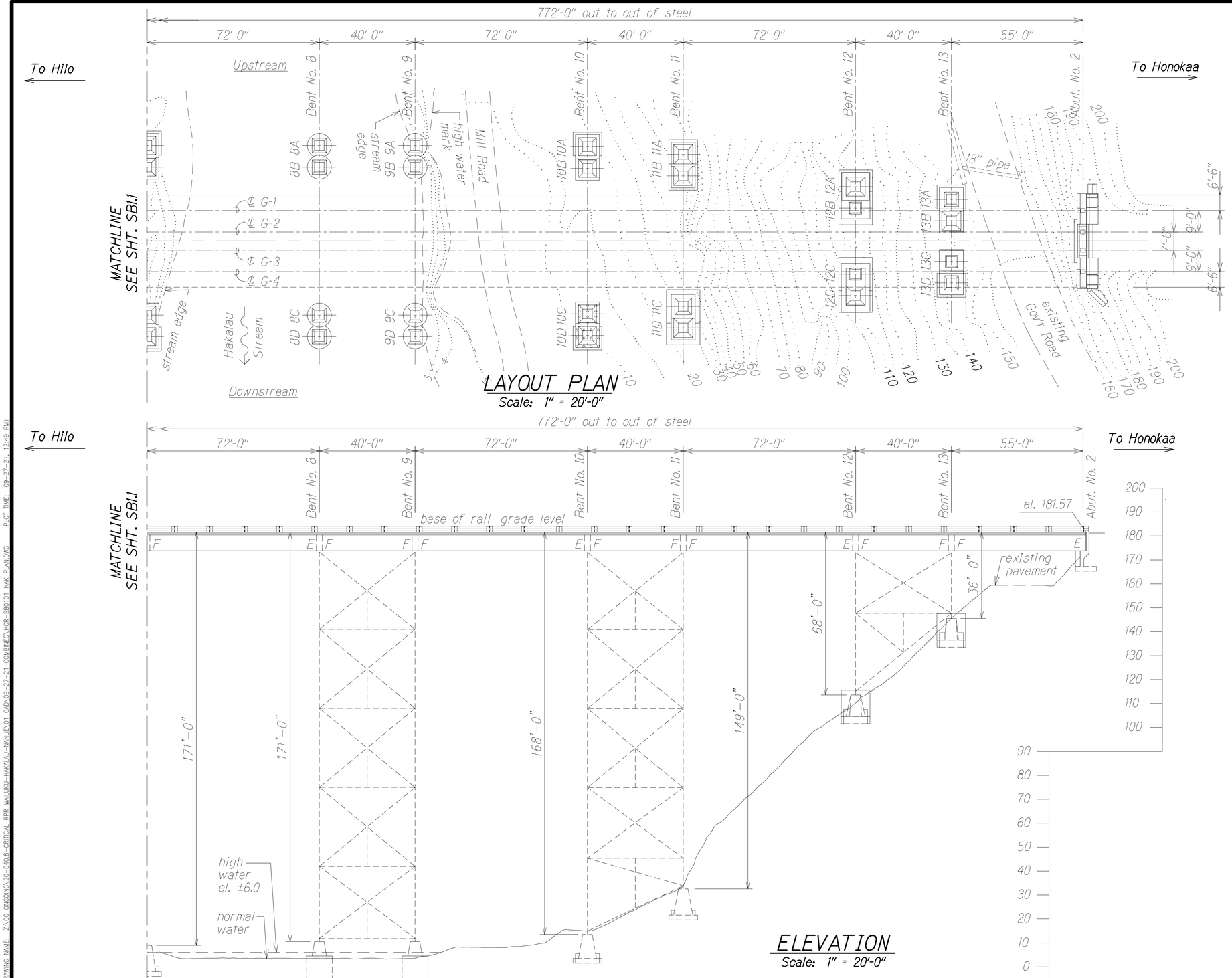
HAKALAU STREAM BRIDGE
LAYOUT PLAN AND ELEVATION

HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M

Scale: As Noted Date: Sept. 2021

SHEET No. SB1.1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	11	27



Legend:

F Fixed Bearing

E Expansion Bearing

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

DRAWING NAME: Z:\OD ONGOING\20-040-B-CRITICAL RPR WAILUKU-HAKALAU-NANUE\01 CAD\09-27-21 COMBINED\HDR-SB0101 HAK PLAN.DWG PLOT TIME: 09-27-21, 12:49 PM)

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAKALAU STREAM BRIDGE
LAYOUT PLAN AND ELEVATION

HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M

Scale: As Noted Date: Sept. 2021

SHEET No. SBI.2 OF 2 SHEETS

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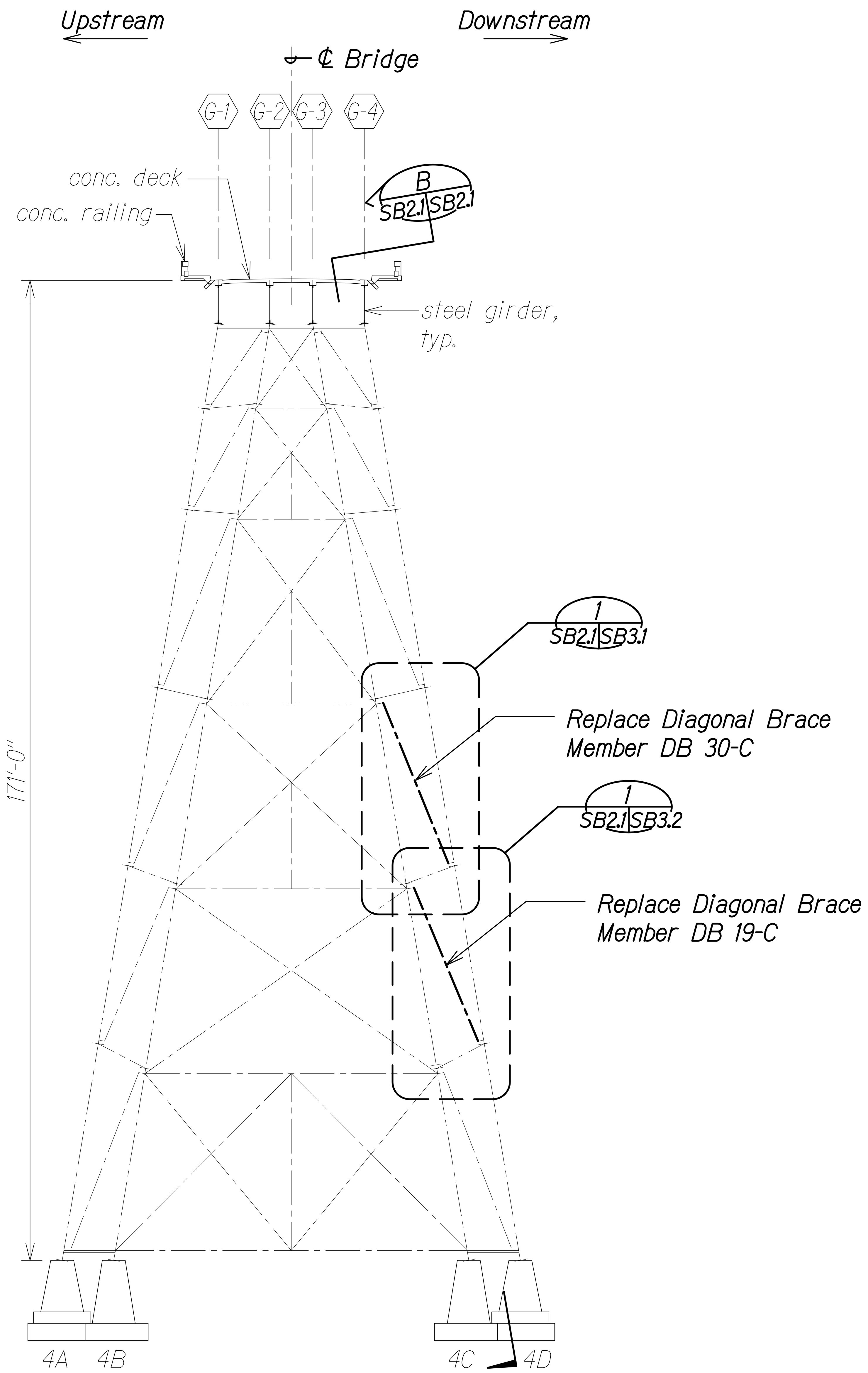
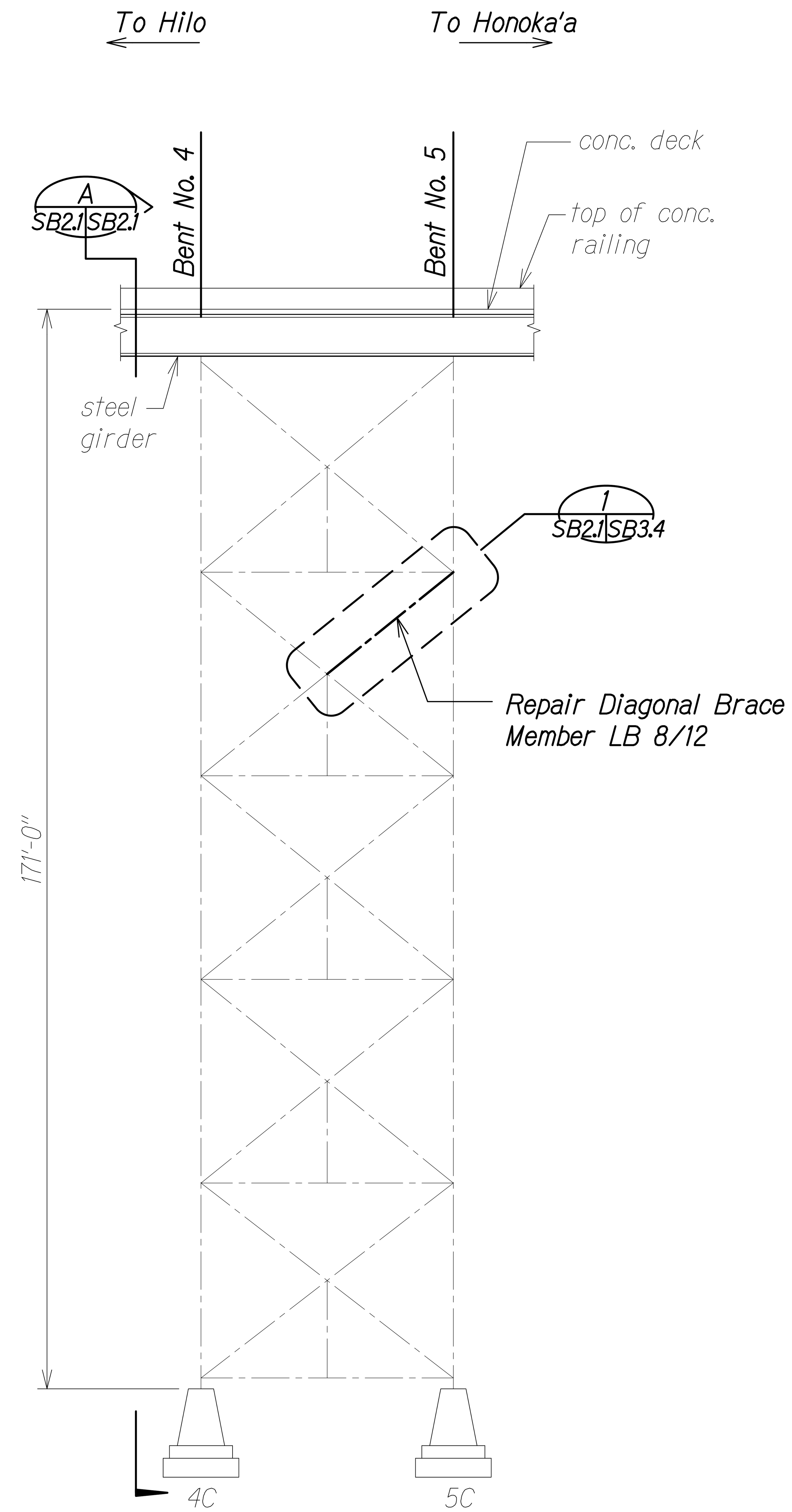
HAWAII	HAW.	19HK-01-22M	2022	12	27



BENT NO. 4 SECTION ELEVATION LOOKING TOWARD HONOKA'A

Scale: 1/16" = 1'-0"

A
SB1.1 | SB2.1
SB2.1



BENT NOS. 4 AND 5 SECTION ELEVATION INTERIOR DOWNSTREAM FACE

Scale: 1/16" = 1'-0"

B
SB2.1 | SB2.1

STEPHEN T. PETERS
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STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAKALAU STREAM BRIDGE SECT.

ELEVS. - BENT NOS. 4 AND 5

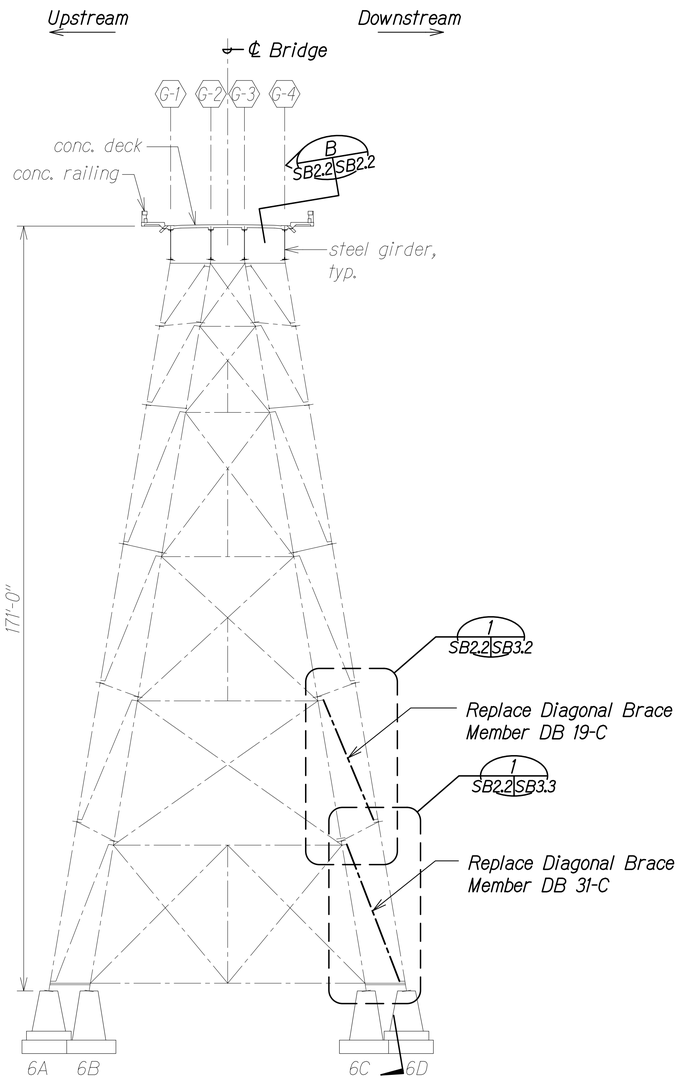
HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M

Scale: As Noted Date: Sept. 2021

SHEET No. SB2.1 OF 2 SHEETS

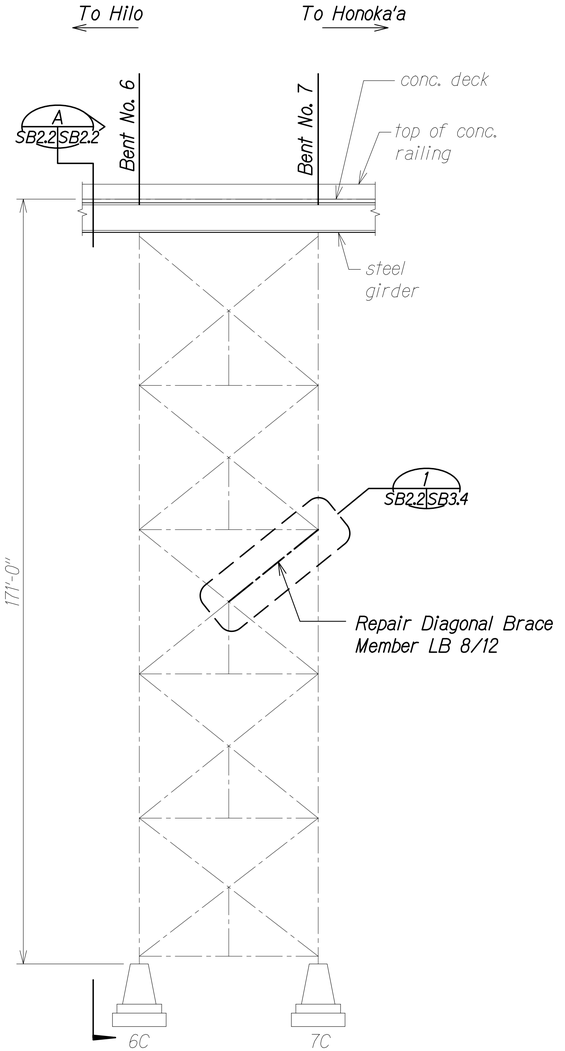
ORIGINAL PLAN	SURVEY PLOTTED BY / DRAWN BY / TRACED BY	DATE
NOTE BOOK	DESIGNED BY / QUANTITIES BY / CHECKED BY	
No.		

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	13	27



BENT NO. 6 SECTION ELEVATION
LOOKING TOWARD HONOKA'A
Scale: 1/16" = 1'-0"

A
SB1.1 SB2.2
SB2.2



BENT NOS. 6 AND 7 SECTION ELEVATION
INTERIOR DOWNSTREAM FACE
Scale: 1/16" = 1'-0"

B
SB2.2 SB2.2

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: Z:\OD ONGOING\29-040.8-CRITICAL RFP WAILUKU-HAKALAU-NANUE\01 CAD\09-27-21 COMBINED\HDR-SB0201 HAK BENTS.DWG PLOT TIME: 09-27-21, 12:51 PM

STEPHEN T. PETERS
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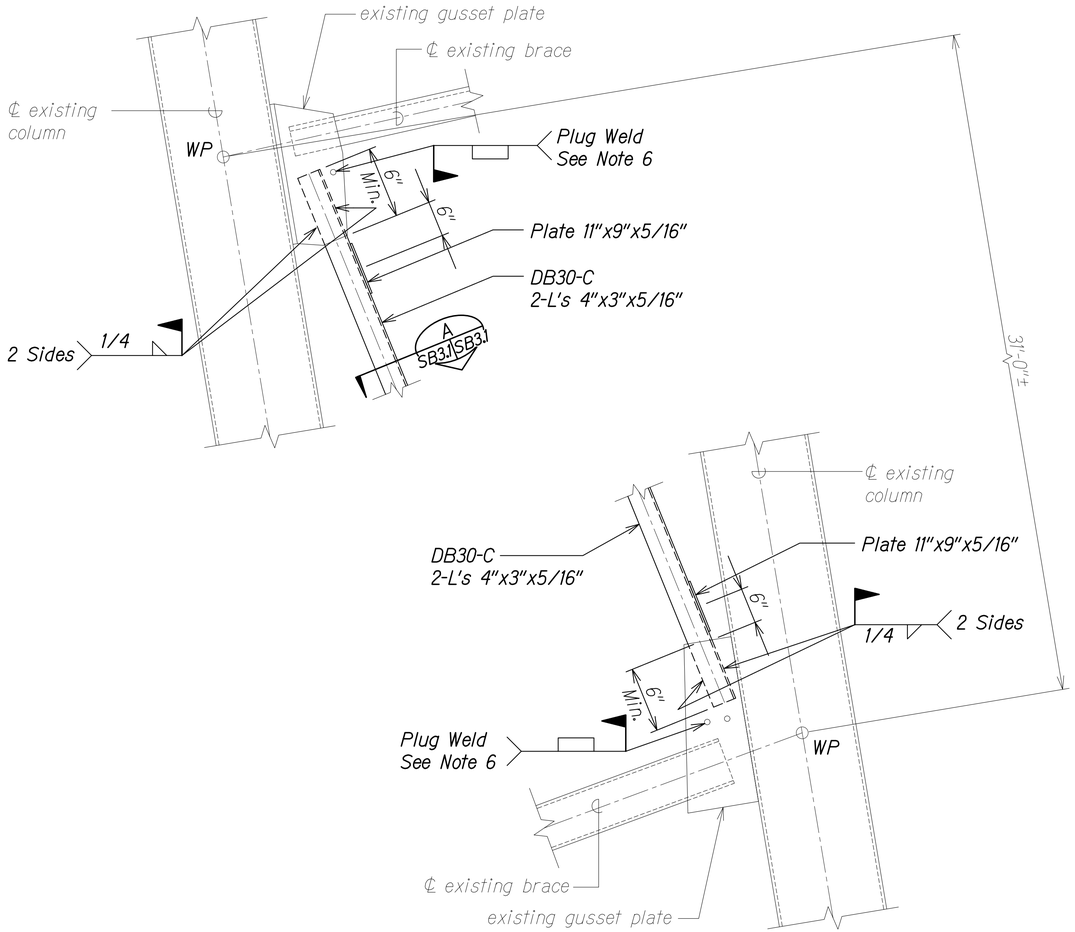
STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAKALAU STREAM BRIDGE SECT. ELEVS. - BENT NOS. 6 AND 7

HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M
Scale: As Noted Date: Sept. 2021

SHEET No. SB2.2 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	14	27



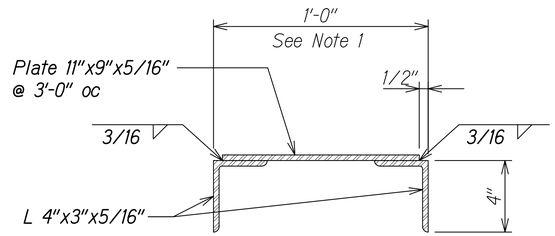
MEMBER DB30-C REPAIR DETAIL

Scale: 1" = 1'-0"

1 SB2.1 SB3.1

Notes:

1. *Contractor to verify dimensions. See Structural General Notes Sht. SB0.1, Note 4.D.*
2. *Contractor shall inspect existing gusset plate. If the structural integrity of the gusset plate is in question or welding to the gusset plate is not possible, the Engineer shall be immediately notified.*
3. *The Engineer will determine if the gusset plate is reusable or if a doubler plate is required. As applicable, weld doubler plate to exterior face of gusset plate. For doubler plate detail, see Sht. SB3.5.*
4. *Contractor shall install all necessary temporary bracing prior to removal of existing members. See Structural General Notes, Sht. SB0.1 Note 4.C.*
5. *Grind welds off of backside of gusset plate after removal of diagonal members. Remove any bolts or rivets.*
6. *Clean surfaces of existing gusset plate of paint, rust, and scale. Follow paint manufacturer's requirements for surface preparation. Plug weld all unused holes in gusset plate.*
7. *Fabricate new diagonal brace member DB30-C. Contractor to determine lengths of new members. Shop paint diagonal brace member. Hold paint 6" back from edge of gusset plate.*
8. *Install new diagonal brace member. Note: Temporary holes for erection bolts may be installed at Contractor's option. After member is installed, temporary erection bolt holes shall be plug welded.*
9. *Weld new diagonal member to inside face of gusset plate.*
10. *Field apply specified paint system to all unpainted and clean surfaces of diagonal brace member and gusset plates.*



DB30-C SECTION

Scale: 3" = 1'-0"

A SB3.1 SB3.1

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
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DRAWING NAME: Z:\OD ENGINEERING\25-040.8-CRITICAL RPR BRIDGES-HAKALAU-NANUE\01 CAD\09-27-21 COMBINED\HCR-SB0301 HAK CONN DTLS.DWG PLOT TIME: 09-27-21, 12:57 PM)

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

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STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

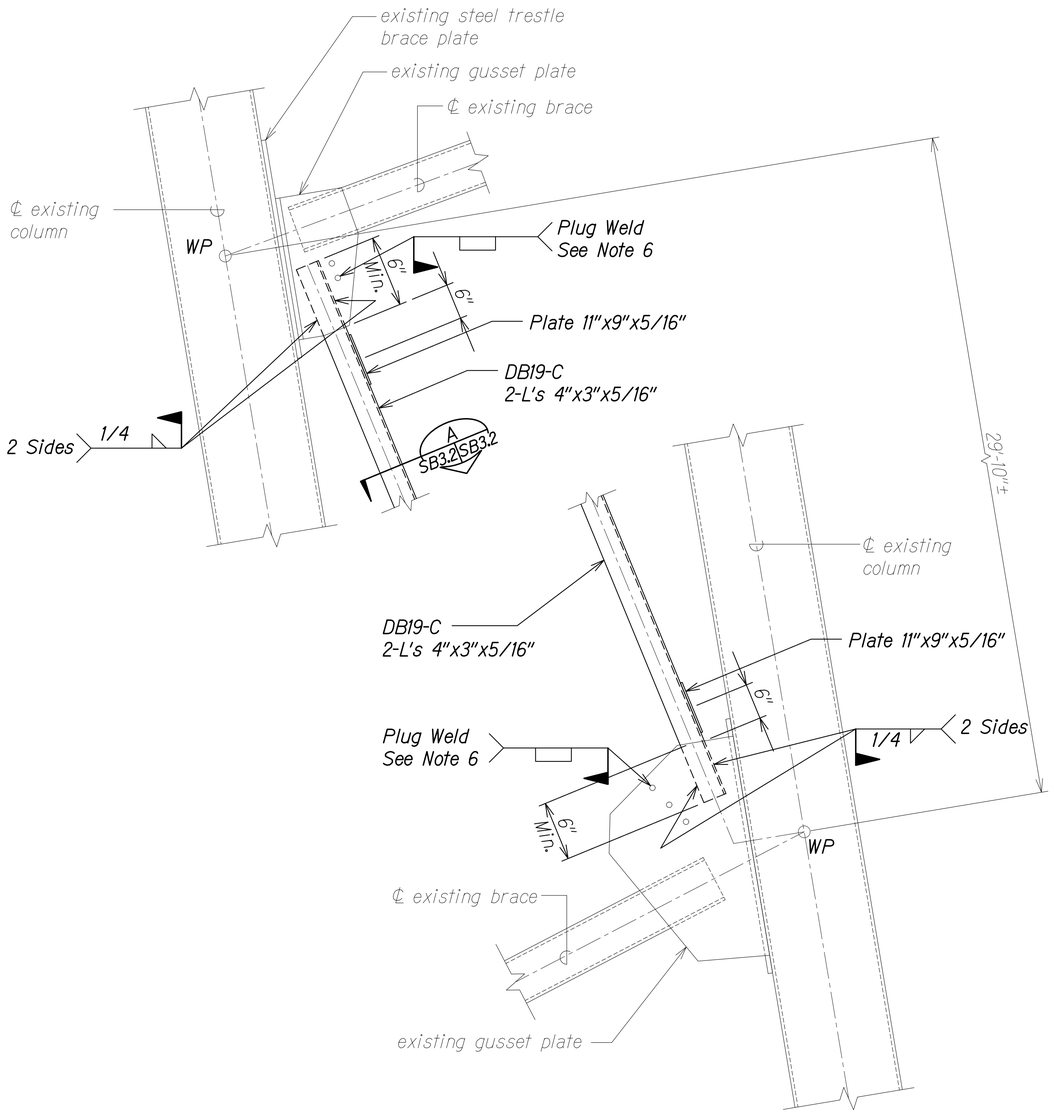
HAKALAU STREAM BRIDGE SECTION AND DETAIL

HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M

Scale: As Noted Date: Sept. 2021

SHEET No. SB3.1 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	15	27



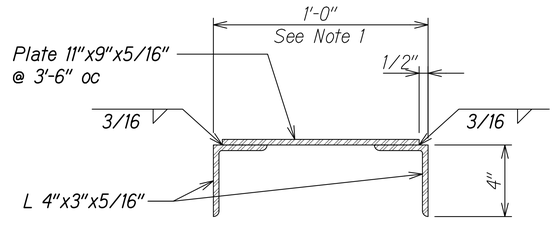
MEMBER DB19-C REPAIR DETAIL

Scale: 1" = 1'-0"

1 SB2.1 SB3.2 SB2.2

Notes:

1. Contractor to verify dimensions. See Structural General Notes Sht. SB0.1, Note 4.D.
2. Contractor shall inspect existing gusset plate. If the structural integrity of the gusset plate is in question or welding to the gusset plate is not possible, the Engineer shall be immediately notified.
3. The Engineer will determine if the gusset plate is reusable or if a doubler plate is required. As applicable, weld doubler plate to exterior face of gusset plate. For doubler plate detail, see Sht. SB3.5.
4. Contractor shall install all necessary temporary bracing prior to removal of existing members. See Structural General Notes, Sht. SB0.1 Note 4.C.
5. Grind welds off of backside of gusset plate after removal of diagonal members. Remove any bolts or rivets.
6. Clean surfaces of existing gusset plate of paint, rust, and scale. Follow paint manufacturer's requirements for surface preparation. Plug weld all unused holes in gusset plate.
7. Fabricate new diagonal brace member DB19-C. Contractor to determine lengths of new members. Shop paint diagonal brace member. Hold paint 6" back from edge of gusset plate.
8. Install new diagonal brace member. Note: Temporary holes for erection bolts may be installed at Contractor's option. After member is installed, temporary erection bolt holes shall be plug welded.
9. Weld new diagonal member to inside face of gusset plate.
10. Field apply specified paint system to all unpainted and clean surfaces of diagonal brace member and gusset plates.



DB19-C SECTION

Scale: 3" = 1'-0"

A SB3.2 SB3.2

STEPHEN T. PETERS LICENSED PROFESSIONAL ENGINEER NO. 17097-S HAWAII, U.S.A.

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SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAKALAU STREAM BRIDGE SECTION AND DETAIL

HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M

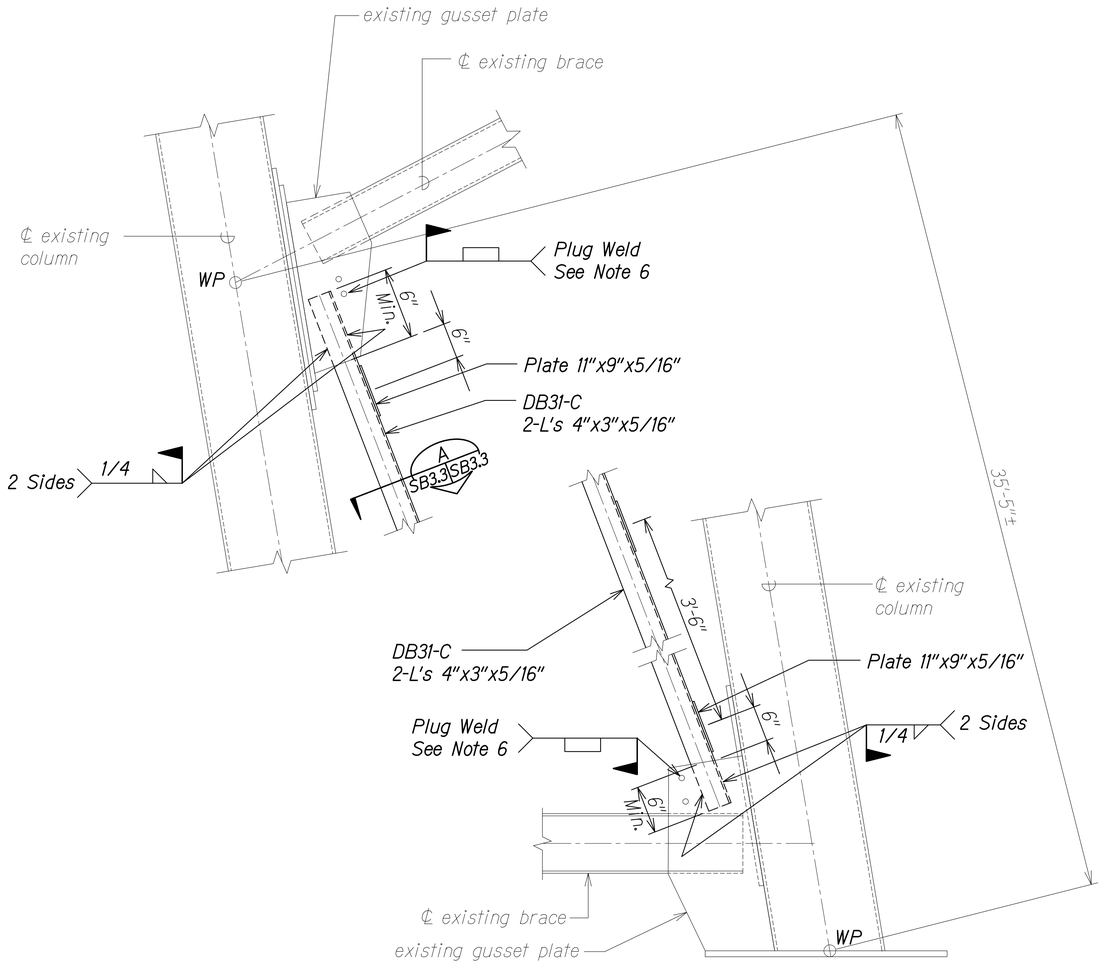
Scale: As Noted Date: Sept. 2021

SHEET No. SB3.2 OF 5 SHEETS

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

BRWING NAME: Z:\OD ONGOING\20-040.6-CRITICAL RPR WAILUKU-HAKALAU-NANUE\01 CAD\09-27-21 COMBINED\HCR_SB0301 HAK CONN DTLS.DWG PLOT TIME: 09-27-21, 12:58 PM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	16	27



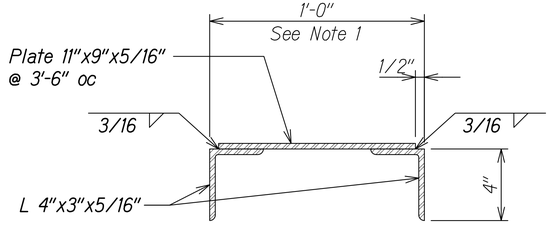
MEMBER DB31-C REPAIR DETAIL

1 SB2.2 SB3.3

Scale: 1" = 1'-0"

Notes:

1. *Contractor to verify dimensions. See Structural General Notes Sht. SB0.1, Note 4.D.*
2. *Contractor shall inspect existing gusset plate. If the structural integrity of the gusset plate is in question or welding to the gusset plate is not possible, the Engineer shall be immediately notified.*
3. *The Engineer will determine if the gusset plate is reusable or if a doubler plate is required. As applicable, weld doubler plate to exterior face of gusset plate. For doubler plate detail, see Sht. SB3.5.*
4. *Contractor shall install all necessary temporary bracing prior to removal of existing members. See Structural General Notes, Sht. SB0.1 Note 4.C.*
5. *Grind welds off of backside of gusset plate after removal of diagonal members. Remove any bolts or rivets.*
6. *Clean surfaces of existing gusset plate of paint, rust, and scale. Follow paint manufacturer's requirements for surface preparation. Plug weld all unused holes in gusset plate.*
7. *Fabricate new diagonal brace member DB31-C. Contractor to determine lengths of new members. Shop paint diagonal brace member. Hold paint 6" back from edge of gusset plate.*
8. *Install new diagonal brace member. Note: Temporary holes for erection bolts may be installed at Contractor's option. After member is installed, temporary erection bolt holes shall be plug welded.*
9. *Weld new diagonal member to inside face of gusset plate.*
10. *Field apply specified paint system to all unpainted and clean surfaces of diagonal brace member and gusset plates.*



DB31-C SECTION

A SB3.3 SB3.3

Scale: 3" = 1'-0"

STEPHEN T. PETERS LICENSED PROFESSIONAL ENGINEER NO. 17097-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAKALAU STREAM BRIDGE SECTION AND DETAIL

HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M

Scale: As Noted Date: Sept. 2021

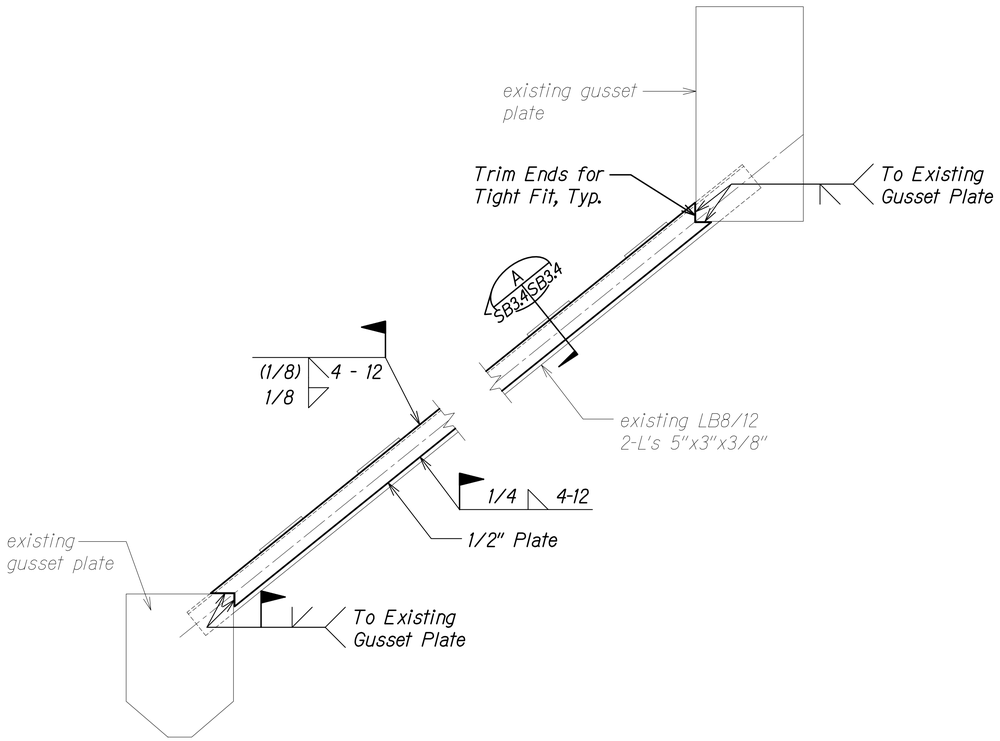
SHEET No. SB3.3 OF 5 SHEETS

ORIGINAL PLAN | NOTE BOOK No. ____

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

DRAWING NAME: Z:\OD ONGOING\20-640\B-CRITICAL RPR WAILUKU-HAKALAU-NANUE\01 CAD\09-27-21 COMBINED HDR-SB0301 HAK CONN DTLS.DWG PLOT TIME: 09-27-21, 12:59 PM)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	17	27



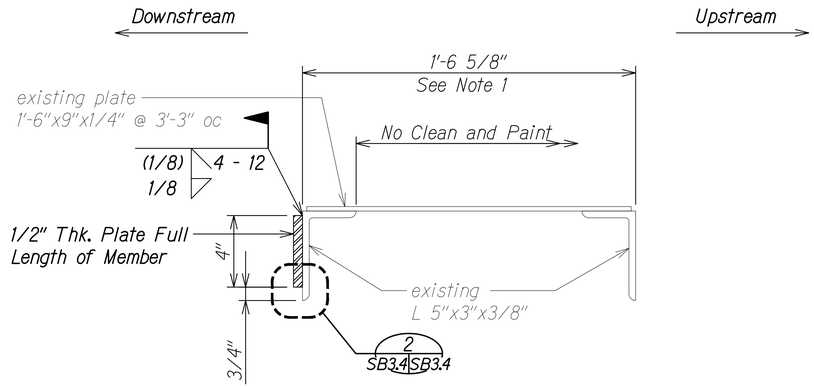
MEMBER LB8/12 REPAIR DETAIL

Scale: 1" = 1'-0"

1 SB2.1 SB3.4 SB2.2

Notes:

1. Contractor to verify dimensions. See Structural General Notes Sht. SB0.1, Note 4.D.
2. Remove any existing steel plate patch repairs covering corrosion holes. Clean surfaces of existing member LB8/12 of existing paint, rust and scale. Follow paint manufacturer's requirements for surface preparation.
3. Install and weld new cover plate to exterior face of downstream angle leg.
   Note: Welding shall be done in a manner that does not warp plates or angle. Plate shall be welded to sound base material.
4. Field apply specified paint system to all unpainted and cleaned surfaces.



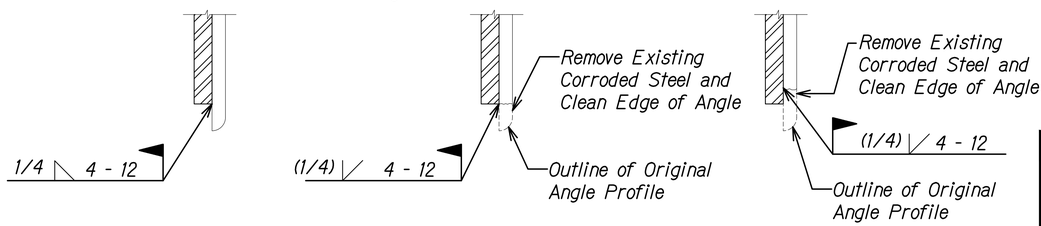
MEMBER LB8/12 REPAIR SECTION

Scale: 3" = 1'-0"

A SB3.4 SB3.4

Note:

Weld detail at bottom of angle vertical leg depends on existing condition and level of corrosion.



MINIMAL CORROSION MODERATE CORROSION SEVERE CORROSION

DETAIL

Scale: 6" = 1'-0"

2 SB3.4 SB3.4

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAKALAU STREAM BRIDGE SECTION AND DETAIL

HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M

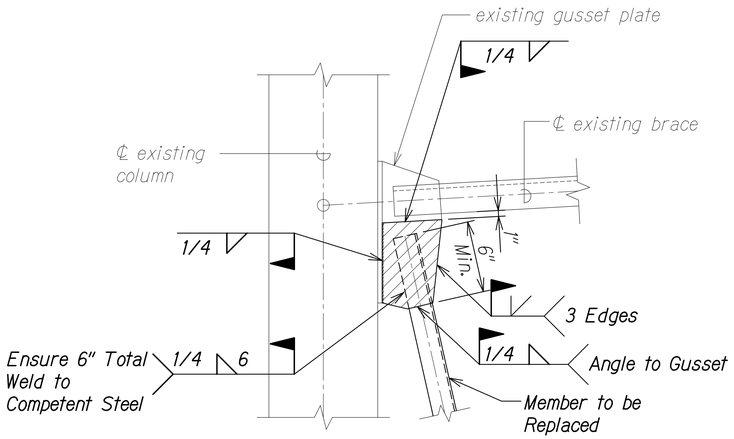
Scale: As Noted Date: Sept. 2021

SHEET No. SB3.4 OF 5 SHEETS

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

DRAWING NAME: Z:\JOB ORDERS\20-040\8-CRITICAL RPR WAILUKU-HAKALAU-NANUE\01 CAD\09-28-21 REVISED TITLE SHEET\HCR-SB0301 HAK CONN DTLS.DWG PLOT TIME: 09-28-21 4:16 PM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19HK-01-22M	2022	18	27



DOUBLER PLATE DETAIL

Scale: 1" = 1'-0"

1 SB3.5 | SB3.5

Legend:

3/8" Thick Doubler Plate Welded to Exterior Face of Existing Gusset Plate

Notes:

1. Doubler plate detail shows the limits of a potential added doubler plate.
2. Doubler plate shall be added at gusset plate locations that have areas of more than 25 percent section loss. See Detail 1/SB3.5
3. Contractor shall perform inspection of existing gusset plates to determine condition and applicability of doubler plate with approval from the Engineer. If required, work shall be paid for under Item 501.2200 - Doubler Plates - Hakalau Bridge.
4. Contractor shall determine necessary dimensions of the double plate based on in-field measurements of the existing gusset plate to match.

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

DRAWING NAME: Z:\JOB ONGOING\20-040.8-CRITICAL RPR WAILUKU-HAKALAU-NANUE\01 CAD\09-27-21 COMBINED\HSR-SB0301 HAK CONN DTLS.DWG PLOT TIME: 09-27-21, 1:01 PM

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAKALAU STREAM BRIDGE DETAIL

HAWAII BELT ROAD
HAMAKUA COAST BRIDGE REPAIRS
(WAILUKU, HAKALAU AND NANUE STREAM BRIDGES)
Project No. 19HK-01-22M

Scale: As Noted Date: Sept. 2021

SHEET No. SB3.5 OF 5 SHEETS