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| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 30 | 280 |

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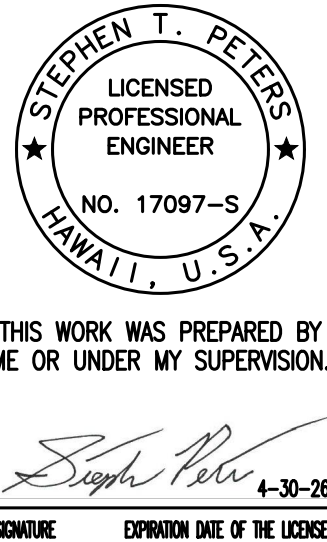
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STEPHEN T. PETERS

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 HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

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HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

Scale: None

Date: Oct. 2024

SHEET No. S0.2

OF 9

SHEETS

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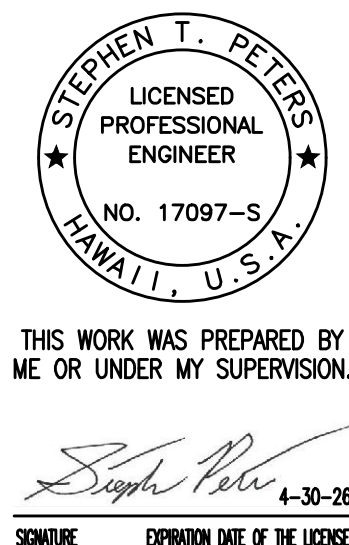
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: None Date: Oct. 2024

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STRUCTURAL GENERAL NOTES

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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1. Standard Specifications:

- A. Hawaii Department of Transportation (HDOT), "Hawaii 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", (9th Edition) and its subsequent interim supplements and as amended by the HDOT Highways Division.
- B. HDOT Document dated August 8, 2014 with subject title "Design Criteria for Bridges and Structures" and HDOT memorandum dated January 8, 2018 with subject title "Changes to Design Criteria for Bridges and Structures".

3. General:

- A. Unless otherwise noted, the Structural General Notes apply to the entire SA and SB series of drawings.
- B. The SA series constitutes the contract drawings related to the permanent rehabilitation of Nanue Stream Bridge. The SB series constitutes the suggested schematic erection drawings related to how the steel members of the bridge trestles will be replaced.
- C. The Contractor is required to perform a thorough survey of existing concrete pedestal foundation limits and elevations including the soffit elevations of each girder line at each bent seat location. An electronic copy of this information shall be submitted to the Engineer for review no later than 45 days prior to initial preparation of the structural steel shop drawings. The Contractor shall anticipate having to perform vegetation removal to obtain survey information. See sht. SA25.
- D. The Contractor is required to retain the services of a Structural Engineer licensed in the State of Hawaii, herein referred to as the Contractor's Engineer. The Contractor's Engineer is responsible for providing a detailed plan for the replacement of the steel trestles. The detailed plan shall include stamped and signed drawings and calculations and shall be submitted to the Engineer for review and approval. The Contractor's Engineer shall be involved throughout the duration of the project and shall be responsible for ensuring construction is in accordance with their design. Cost of steel trestle falsework shall be incidental to Structural Steel.
- E. 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.

3. General (Cont.):

- F. The as-built plans that are applicable to Nanue Stream Bridge include, but are not limited to the following:

| Project No. | Fiscal Year |
|-------------------|-------------|
| (1) SDR 3(9) | 1949 |
| (2) SDR 3(13) | 1950 |
| (3) STP-019-2(36) | 1995 |
| (4) BR-019-2(40) | 1996 |
| (5) BR-019-2(46) | 2000 |
| (6) HWY-H-09-99M | 2005 |
| (7) 19HK-01-22M | 2022 |
| (8) 19H-02-22M | 2022 |

4. Design Loads:

- A. Dead Load: A concrete weight of 160 lbs/cf and steel weight of 490 lbs/cf has been provided for in the design.
- B. Live Load:
AASHTO HL-93 Vehicular Live Loading
40 psf or 300 lb. concentrated on Inspection Walkway
- C. Seismic Loads:
Design Earthquake = 7% Probability of Exceedance in 75 years (1,000-Year Return Period)

| | | |
|---------------------------|------------------|---------------------------|
| $P_{GA} = 0.471\text{ g}$ | $F_{PGA} = 1.00$ | $A_s = 0.471\text{ g}$ |
| $S_s = 0.913\text{ g}$ | $F_a = 1.035$ | $S_{DS} = 0.945\text{ g}$ |
| $S_1 = 0.353\text{ g}$ | $F_v = 1.447$ | $S_{DI} = 0.511\text{ g}$ |
| Site Class = C | Seismic Zone = 4 | |

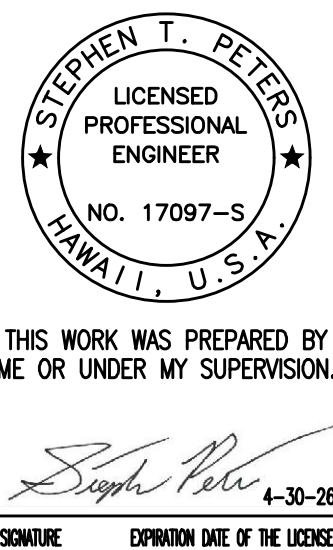
D. Wind Loads:

| | |
|----------------------|--------------|
| $V = 130\text{ mph}$ | $K_z = 1.46$ |
| $G = 1.00$ | $C_D = 1.6$ |

5. Structural Steel:

- A. All steel as shown on the SA series "Contract Drawings" shall conform to the following requirements:

| Item No. | Structural Part | Specification | Yield Strength | CVN Testing |
|----------|--|-------------------------|-----------------------|-------------|
| (1) | Channels for Trestle Braces | ASTM A709 / AASHTO M270 | $f_y = 36\text{ ksi}$ | Yes |
| (2) | Angles for Trestle Braces | ASTM A709 / AASHTO M270 | $f_y = 36\text{ ksi}$ | Yes |
| (3) | Cross Frames, Struts, Lateral Diag. Bracing, Lacing, Batten Plates, Tie Plates, Girder Gusset Plates, Girder Stiffeners, Spacer Plates, Anchor Plates, Fixed Φ Expansion Bearing Plates, All Other Plates | ASTM A709 / AASHTO M270 | $f_y = 36\text{ ksi}$ | No |
| (4) | Col. Seat Plates, Erection Plates, Continuity Plates, Cover Plates, Chair Seat Plates, Chair Stiffener Plates, Shear Plates, Connection Plates | ASTM A709 / AASHTO M270 | $f_y = 50\text{ ksi}$ | No |
| (5) | Col. Webs, Col. Web Splice Plates, Col. Flanges, Col. Flange Splice Plates, Col. Gusset Plates, Col. Stiffener Plates, Base Plates, Continuity Plates | ASTM A709 / AASHTO M270 | $f_y = 50\text{ ksi}$ | Yes |
| (6) | Pipe Extensions | ASTM A53 | $f_y = 36\text{ ksi}$ | No |
| (7) | Utility Brackets | ASTM A240 Type 2205 | $f_y = 65\text{ ksi}$ | No |



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)


Scale: None Date: Oct. 2024

SHEET No. S0.4 OF 9 SHEETS

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A.01 CAD\12-06-24 ADD\NSR-S0004 GENNOTES.DWG PLOT TIME: 12-05-24, 12:29 PM

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5. Structural Steel (Cont.)

- B. All new steel structures shall be ASTM A123 hot-dip zinc galvanized after all fabrication is complete. Protect elements against hydrogen embrittlement in conformance with ASTM A143. Post-galvanizing quenching/passivation shall not be utilized for steel going to paint. Coordinate with coating Contractor.
- C. The steel detailer of the trestle structures shall hold a current National Institute of Steel Detailing (NISD) Senior Detailer - Class I Bridge Certification and shall be submitted to the Engineer for review and approval.
-  D. The steel fabricator of the trestle structures shall hold a current AISC Intermediate (IBR) Bridge Fabricator Certification and shall be submitted to the Engineer for review and approval.
- E. Prior to hot-dip galvanizing, all welding flux and slag shall be completely removed using mechanical methods to ensure proper zinc adhesion.
- F. Vent holes may be provided in members for hot-dip zinc galvanized operation. Size and location of holes shall be determined by galvanizing contractor, unless otherwise shown on the drawings. Vent hole sizes and locations shall be included on the structural steel shop drawings. All holes, other than base plates, and where noted shall be filled with zinc plugs following galvanizing operation.
- G. All damage done to galvanized steel surfaces shall be repaired in accordance with ASTM A780 using the zinc solder method. Zinc rich paint shall not be an acceptable repair procedure
- H. Structural parts designated for CVN Testing shall meet the longitudinal Charpy V-Notch requirements for a non-fracture critical member in Zone 1.
- I. Steel plates for columns shall be cut and fabricated so that the primary direction of rolling is parallel to the column length. For column splice plates, the direction shall be parallel to the direction of the splice. For base plates, the direction shall be parallel to the centerline of the bent.
- J. All holes in steel members shall be be sub-punched and reamed or full size drilled.
- K. All holes for bolted connections shall be standard size unless otherwise shown on the contract drawings.
- L. Bolt assemblies which connect steel to steel shall utilize 7/8" dia. high-strength bolts conforming to ASTM F3125, Grade A325, Type 1, unless otherwise noted. Bolts shall be ordered such that threads are excluded from the shear plane. Bolts shall be snug tightened unless otherwise shown on plans. All pretensioned/ slip-critical bolts shall utilize Direct Tension Indicating (DTI) washers to ensure proper bolt tension. Bolts shall be inspected.
- M. Steel-to-steel bolted joints designated as slip-critical shall be pretensioned bolt assemblies with additional paint masking requirements between the faying surfaces. Provide paint masking details as shown in the contract documents.

5. Structural Steel (Cont.)

- N. All nuts shall be ASTM A563 DH heavy-hex and all hardened washers shall be ASTM F436. All hardened washers shall have a hardness of Rc 38-45. DTI Washer shall be ASTM F959 and shall be installed under the bolt head or nut as shown on the Contract drawings.
- O. Matched Bolt Assemblies shall contain bolt, nut, and washer provided by the same supplier.
- P. Installation of all bolted assemblies shall be in accordance with the latest Research Council of Structural Connections (RCSC) Specifications for Structural Joints Using High-Strength Bolts.
- Q. Anchor bolts which connect steel to concrete shall be high-strength threaded rods conforming to ASTM F1554, Grade 105 and shall be straight rod with anchor plate details at the embedded end as shown in the contract drawings. Anchor bolts shall have CVN Testing performed. Anchor bolts shall be pretensioned by the turn of the nut method. See anchor bolt pretensioning schedule.
- R. All hardware, including bolts, anchor bolts, nuts and hardened washers shall be ASTM F2329 hot-dip zinc galvanized. Hardware shall be centrifugally cleaned post galvanizing. Nut threads shall be tapped oversized prior to galvanizing in accordance with ASTM A563 and are prohibited from being chased following the galvanizing process. DTI washers shall be mechanically zinc galvanized in accordance with ASTM B695, Class 55.
- S. All welding shall conform to the latest ANSI/AASHTO/AWS D1.5 Bridge Welding Code. Welding shall be performed in accordance with a Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) as required in AWS D1.5. The WPS variables shall be within the parameters established by the filler-metal manufacturer.
- T. 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.
- U. All Welder Certifications, WPS's and supporting PQR's shall be submitted to the Engineer for review and approval prior to any welding being performed.
- V. Welding shall be performed in such a manner so as to minimize warping and distortion of steel pieces being joined. Excessive concentrated heat being applied to steel pieces shall be avoided.
- W. All welded connections shall receive full seal welding along all edges of faying surfaces to prevent moisture intrusion.
- X. All weld sizes are shown in inches. No fillet weld (including seal welds) or PJP weld shall be less than 1/4" and 3/16", respectively.

6. Structural Steel (Cont.)

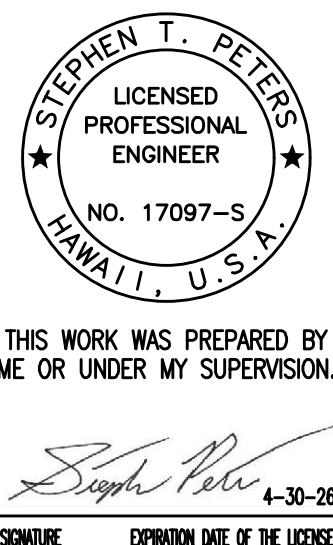
- Y. All welds shall utilize E70XX Electrodes where Shielded Metal Arc Welding (SMAW) is utilized. Where other welding processes are used, filler metal shall have matching strength to base metal.
- Z. Field welding shall not be permitted unless explicitly shown on the contract drawings.
- AA. All welding arc strikes, whether shop or field performed, shall be ground flush to the base metal. Any arc strikes made to the bottom flange of the plate girder shall additionally have magnetic particle inspection and hardness testing performed in accordance with AWS D1.5.
- AB. All existing deformed girder stiffeners shall be cold straightened to bring them back in original alignment over their full height. Cost for this work shall be incidental to the various pay items.
- AC. See Standard Specifications and Special Provisions Section 501 - STEEL STRUCTURES for additional requirements.


6. Concrete:

- A. All concrete strengths shall be as noted below:

| Item No. | Structural Parts | Compressive Strength, f'c (28 Days) | Maximum Water/ Cementitious (W/C) | Maximum Cementitious Material Content (lbs./cy) | Included Admixtures (See Notes Below in This Section) |
|----------|--|--------------------------------------|-----------------------------------|---|---|
| (1) | Foundation Pedestals, Grade Beams, and Cheek Walls | 6,000 psi | 0.40 | 720 | C, D, E |
| (2) | Underwater Concrete | (See Special Provisions Section 615) | | | |
| (3) | VESLMC | (See Special Provisions Section 679) | | | |

- B. The use of calcium chloride in any concrete is prohibited.
- C. A migrating amine carboxylate water-based corrosion inhibiting admixture such as Cortec MCI 2005 NS or approved equal shall be added to the concrete mix. The dosage requirements shall be 24 fluid ounces per cubic yard of concrete.



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| 12/6/24 |  Revised Note |
| DATE | REVISION |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: None Date: Oct. 2024

SHEET No. 50.5 OF 9 SHEETS

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A01 CAD\10-28-24 BID SET\NSR-50004 GENNOTES.DWG PLOT TIME: 10-28-24 6:46 PM

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STRUCTURAL GENERAL NOTES

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 35 | 280 |

6. Concrete: (Cont.)

- D. An alkali-resistant glass macro fiber shall be added to the concrete mix. The fiber shall have an aspect ratio of 67 and a length of 1 1/2". The dosage shall be 15 lbs per cubic yard of concrete.
- E. A shrinkage reducing admixture such as Masterlife SRA 35 or approved equal shall be added to the concrete mix. The dosage requirement shall be 128 fluid ounces per cubic yard of concrete or as approved by the Manufacturer.
- F. Concrete used for shotcrete shall have a minimum compressive strength at 28-days of 5,000 psi and have a maximum 0.45 water to cementitious material ratio and contain 24 oz. per cubic yard of migrating amine carboxylate corrosion inhibiting water-based admixture, Cortec MCI 2005 NS or approved equivalent. A shrinkage reducing admixture, such as Eclipse or Master Life SRA 35 or approved equivalent shall be added at a dosage of 128 oz. per cubic yard. Shotcrete shall contain 7.5 lbs of Strux 90/40 Synthetic Structural Fiber per cubic yard or approved equal.
- G. Contractor is not limited to only adding admixtures listed on these notes. Other admixtures may be added upon approval of the Engineer.
- H. The Contractor has the option to design the concrete for all items to be pumpable and flowable. All concrete shall be designed for minimum segregation and separation.
- I. The surface of all finished concrete/shotcrete that is exposed to the environment with no formwork or that has the formwork removed/stripped within 7-days of concrete placement shall be cured with a topically applied curing agent except for concrete that is underwater.
- J. Topically applied curing agent shall be an exterior grade, zero VOC, water-cure equivalent type, non-film forming, lithium polysilicate based product such as Sinak Lithium Cure or approved equal. Application rates shall be in conformance with the Manufacturer's recommendations.

7. Reinforcement:

- A. Reinforcing steel shall be ASTM A 706, Grade 60 deformed bars unless otherwise noted.
- B. Reinforcing bars shall be detailed in accordance with the latest edition of the American Concrete Institute (ACI) Detailing Manual, unless otherwise noted.
- C. Reinforcing bars shall be placed and installed in accordance with the Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice and CRSI Placing Reinforcing Bars, unless otherwise noted.

7. Reinforcement:

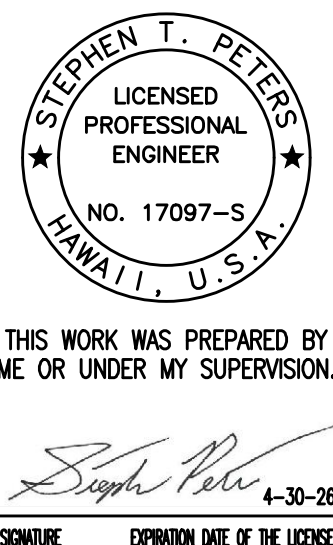
- D. The covering measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as otherwise shown:
- (1) Foundation Pedestals and Grade Beams = 2"
- (2) Abutment Seats = 2"
- (3) Shotcrete = 1 1/2"
- E. No lap splicing for reinforcing bars shall be used. Bars shall be provided full length.
- F. Glass Fiber Reinforced Polymer (GFRP) bars shall conform to ASTM D7957.
- G. All GFRP bars shall be tied securely in place with non-metallic ties.
- H. Minimum clear spacing between parallel bars shall be 1 1/2 times the diameter of 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".
- I. All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.
- J. Reinforcing bars shall be securely tied at all intersections except where the spacing of intersections is less than 1 foot in each direction, in which case alternate intersections shall be tied.
- K. Dissimilar metals in contact shall be avoided where possible. If unavoidable, wrap contact surface with several layers of a dielectric tape such as Teflon or polypropylene. Any type of reinforcing steel in contact with stainless steel shall be considered a dissimilar metal contact.

8. Materials:

- A. A penetrating sealer shall be used to fill cracks on the top of the existing bridge and shall rapidly cure to allow return to traffic within 3 hours. See Section 677 - PENETRATING SEALER FOR BRIDGE DECKS of the Special Provisions.
- B. Hybrid Polymer Concrete (HPC) shall utilize a rapid setting material capable of achieving a compressive strength of 1,000 psi in 3 hours. See Section 678 - HYBRID POLYMER CONCRETE (HPC) of the Special Provisions
- C. Epoxy grout shall be a high performance, three component, pre-packaged material capable of developing a minimum compressive strength of 9,000 psi in 1 day and 15,000 psi in 7 days in accordance with ASTM C579 at 75° F. Compressive Modulus of Elasticity shall be a minimum 2,100,00 psi in accordance with ASTM C579. Material shall be FasTrac CE815 Epoxy Grout or approved equal.

8. Materials (Cont.):

- D. Very Early Latex Modified Concrete (VESLMC) shall be a pre-blended, pre-bagged, shrinkage compensated, fiber-reinforced material with an internal corrosion inhibitor capable of developing 3,000 psi in 3-hrs, such as FasTrac 246 Concrete Mix or approved equal. See Section 679 - VERY EARLY STRENGTH LATEX MODIFIED CONCRETE (VESMLC) of the Special Provisions.
- E. Defective concrete repair mortar shall be a pre-blended, pre-bagged, shrinkage compensated, polymer-modified, fiber-reinforced material with an internal corrosion inhibitor capable of developing 4,500 psi in 24-hrs and 9,000 psi in 28-days, such as FasTrac V/O Mortar or approved equal. See Section 680 - DEFECTIVE CONCRETE REPAIRS of the Special Provisions.
- F. Injectable Epoxy Resin for Crack Repairs shall conform to ASTM C 881, Type IV, Grade 1 and AASHTO M-235. Epoxy Resin shall be able to achieve a 7-day tensile strength of 8,900 psi in accordance with ASTM D-638 and a 2-day bond strength of 2,800 psi in accordance with ASTM C-882. Material shall be Sika Sikadur 35, Hi-Mod LV or approved equal.
- G. For compression seal replacement requirements at deck joints, see Special Provisions Section 515 – DECK EXPANSION JOINTS of the Special Provisions.



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| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | |
| STRUCTURAL GENERAL NOTES | |
| <u>HAWAII BELT ROAD</u> <u>Nanue Stream Bridge Rehabilitation</u> <u>Federal Aid Project No. BR-019-2(077)</u> | |
| Scale: None | Date: Oct. 2024 |
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9. Materials (Cont.):

- H. Elastomeric Bearing Assemblies shall be a manufactured product consisting of a sole plate and masonry plate (if applicable) bonded to a steel reinforced neoprene bearing pad. The steel assembly shall conform to ASTM A709 Grade 50 and shall be hot-dip zinc galvanized in accordance with ASTM A 153. The neoprene bearing pad shall be in accordance with AASHTO M251. The neoprene bearing pad shall come factory vulcanized to the masonry plate. The bearing assembly shall be supplied complete with all drilled/tapped holes, welds, and mounting hardware as well as painted in accordance with the requirements of Section 667 –PREPARATION AND COATING OF GALVANIZED BRIDGE COMPONENTS of the Special Provisions. Submit complete shop drawings for every bearing type and assembly for review and approval.
- I. Inspection grating shall be a 2-inch deep extruded isophthalic polyester resin product with a bonded and baked on quartz grit anti-skid surface. See Section 661 - FIBERGLASS REINFORCED PLASTIC (FRP) GRATING of the Special Provisions.

9. Coating/Painting:

- A. Existing bridge steel members to remain, new non-galvanized steel members (where noted), and ancillary components (as specified) shall receive an abrasive blasted surface preparation in accordance with SSPC-SP10 - Near White Metal. Immediately following blasting, steel surfaces shall be coated with an organic zinc primer, epoxy intermediate, and highly weatherable fluoropolymer top coat. See Section 666 - CLEAN AND PAINT EXISTING BRIDGE STEEL of the Special Provisions.
- B. Field painting shall be conducted by an approved SSPC-QP-1 accredited Contractor.
- C. Unless as otherwise noted, new steel shall be hot-dip zinc galvanized in accordance with ASTM A 123 prior to being coated with an organic zinc primer, epoxy intermediate, and a highly weatherable fluoropolymer top coat. See Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE COMPONENTS of the Special Provisions.
- D. New galvanized steel shall be coated in an approved SSPC-QP-3 accredited shop. Submit written coating procedures to the Engineer for review and approval prior to starting work. Only touch-up coating of new galvanized steel shall be allowed at the construction site except where explicitly otherwise stated.
- E. Stripe coat by brush all edges, crevices, nuts, bolts, weld seams and all metal-to-metal joints using the intermediate paint.
- F. Submit written field and shop coating procedures to the Engineer for review and approval prior to starting work.

STRUCTURAL GENERAL NOTES

9. Coating/Painting (Cont.):

- G. Top coat color shall be according to Federal Standard 595B "Federal Standard Colors". The formulated color of the top coat shall conform to Federal Standard Color 26493, possessing a minimum 80% gloss finish.
- H. The Contractor shall inform the Galvanizer in writing that all structural steel elements will be painted and that no water quenching or use of chromate conversion coating shall be utilized as these processes interfere with paint adhesion and surface preparation.
- I. Bolted joints designated as "slip-critical" shall have members masked for paint as designated in the contract documents. Paint masking details shall be shown on the shop drawings and provided to the paint contractor.
- J. All bolt assemblies shall be touch-up field painted with the specified paint system after assembly.
- K. The containment system utilized for the abrasive blasting, cleaning, and painting work shall be either a Class 1A or Class 2A containment in accordance with the Association for Materials Protection and Performance (AMPP) SSPC-Guide 6. The Contractor shall take all necessary precautions to ensure the environment is protected from fugitive materials. If any breach in the containment were to occur, the Contractor shall immediately halt work and make any necessary repairs. The Contractor is financially liable for any harm to the environment.

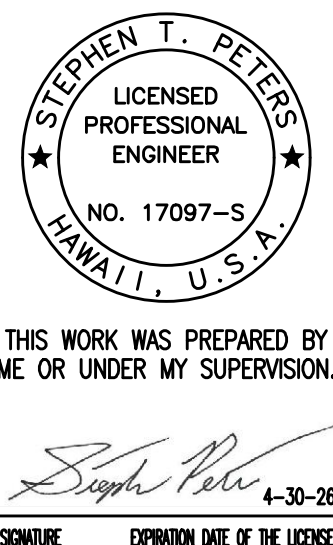
10. Construction Notes:

- A. The Contractor and the Contractor's Engineer shall be entirely responsible for the stability of the bridge and integrity of the members during construction. During phases of construction and prior to making any changes to traffic control patterns, the Contractor shall ensure that all structural members are sound and all bolted/welded connections are complete.
- B. The Contractor's Engineer shall determine the structural adequacy of the bridge throughout all phases of construction, including the various construction equipment that may be used on the bridge deck. For bidding purposes, the Contractor's Engineer should refer to the latest bridge load rating report and bridge inspection report.
- C. The Contractor shall field verify all existing site 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.

10. Construction Notes (Cont.):

- D. The Contractor shall be solely responsible for the protection of adjacent properties, utilities, and existing/new structures from damage due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.
- E. The Contractor shall be aware of the existing overhead power lines located outside the upstream edge of the bridge and running parallel with the roadway.
- F. The Contractor shall be aware that vegetation removal/tree trimming work may be required to perform the necessary bridge work.
- G. The Contractor shall be responsible for the cost of all third party inspection work relating to high strength bolting and welding, including any non-destructive testing. Cost shall be incidental to the associated 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.
- H. Except as otherwise noted, all vertical dimensions are measured plumb.
- I. For concrete finishes see Standard Specifications.
- J. Construction joints may be relocated or additional ones added subject to the acceptance of the Engineer.
- K. Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4" x 3/4".
- L. Location of drilled holes in existing concrete for reinforcing steel dowels as shown on the plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all existing reinforcing steel, anchor bolts, thru bolt holes, etc. using appropriate non-destructive ground penetrating radar techniques and adjust the location of the drilled holes to clear all of them. Final hole locations are subject to the acceptance of the Engineer.

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| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | |
| <u>STRUCTURAL GENERAL NOTES</u> | |
| <u>HAWAII BELT ROAD</u> <u>Nanue Stream Bridge Rehabilitation</u> <u>Federal Aid Project No. BR-019-2(077)</u> | |
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STRUCTURAL GENERAL NOTES

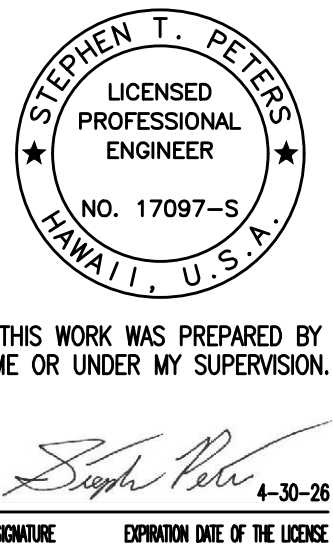
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10. Construction Notes (Cont.):

- M. Epoxy anchoring material shall be an injectable, two-component adhesive that has a current Evaluation Service Report from ICC-ES (International Code Council Evaluation Service Inc.) and has a characteristic uncracked bond strength of at least 1,600 psi for a #5 reinforcing bar at Temperature Range A.
- N. All individuals performing drilled reinforcing dowel work shall hold a current ACI/CRSI Adhesive Anchor Installer certification. Drilling procedures, equipment, material and certifications shall be submitted to the Engineer for approval.
- O. All holes shall be hammer drilled using a hollow bit connected to a vacuum system in accordance with a current Evaluation Service Report from ICC-ES.
- P. All drilled holes shall have dowels installed within same work shift or shall otherwise be completely filled with a patching and repair mortar.
- Q. Contractor shall follow all epoxy anchoring adhesive Manufacturer's Printed Installation Instructions (MPII).
- R. Epoxy shall be allowed to reach full cure, according to the MPII, prior to pouring concrete around reinforcing dowels.
- S. When only portions of concrete are to be demolished, the intersections between the demolished concrete and the concrete that are to remain shall have a 1-inch deep sawcut around the entire perimeter of the demolished area.
- T. All existing concrete substrate surfaces which new concrete is poured against shall be roughened to a minimum 1/4" amplitude and Saturated Surface Dry (SSD) prior to the placement of new concrete.
- U. All existing reinforcing shall remain in place unless otherwise noted. Any existing reinforcing damaged during concrete removal that was not permitted to be removed shall be repaired, with approval from the Engineer, at no cost to the State.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: None Date: Oct. 2024

SHEET No. 50.8 OF 9 SHEETS

DRAWING NAME: Z\00_OBNGONG\23-022-9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-S0009 SYM-ABBR.DWG PLOT TIME: 10-28-24, 2:52 PM

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|----------------|-------------------------------|
| ¢ | And |
| @ | At |
| Ø | Diameter |
| # | Number |
| Ⓢ | Baseline |
| Ⓢ | Centerline |
| AB | Anchor Bolt |
| Abut. | Abutment |
| Abbr. | Abbreviation |
| AC | Asphaltic Concrete |
| Add. | Added, Additional |
| Alt. | Alternate |
| Approx. | Approximate |
| AZ. | Azimuth |
| Bal. | Balance |
| Bet. | Between |
| BF | Back Face, Both Faces |
| B, Bot., Bott. | Bottom |
| Bk. | Back |
| Blt. | Bolt |
| Bm. | Beam |
| BMP | Best Management Practices |
| BOF | Bottom of Footing |
| Br. | Bridge |
| Brg., Brgs. | Bearing, Bearings |
| BVC | Beginning of Vertical Curve |
| BW | Both Ways |
| CBW | Concrete Barrier Wall |
| cc | Center to Center |
| CF | Cubic Feet |
| CFCW | Continuous Flashing |
| | Compound Waterproofing |
| CG | Center of Gravity |
| cgs | Center to Gravity of Strands |
| CIP | Cast in Place, Cast Iron Pipe |
| CJ | Control Joint |
| Constr. Jt. | Construction Joint |
| CJP | Complete Joint Penetration |
| Cl. | Class |
| Clr. | Clearance |
| CLSM | Controlled Low Strength |
| | Material |
| CMU | Concrete Masonry Unit |
| Cntl. Jt. | Control Joint |
| CO | Clean Out |
| Col. | Column |
| Conc. | Concrete |
| Conn. | Connection |
| Const. | Construction |
| Cont. | Continuous |
| CSL | Crosshole Sonic Logging |
| CRM | Cement Rubble Masonry |
| CSP | Concrete Surface Profile |
| CVN | Charpy V-Notch |
| CY, Cu. Yd. | Cubic Yard |
| Dbl. | Double |
| Demo | Demolish, Demolition |

| | |
|--------------|------------------------------|
| Def. | Detail |
| DI | Drain Inlet, Ductile Iron |
| Dia. | Diameter |
| Diag. | Diagonal |
| Diaph. | Diaphragm |
| Dim. | Dimension |
| Dist. | Distance |
| Dn. | Down |
| DO | Ditto |
| DS | Drilled Shaft |
| DTI | Direct Tension Indicating |
| Dwg., Dwgs. | Drawing, Drawings |
| Dwls. | Dowels |
| e | Existing |
| E | East |
| E, (E), Exp. | Expansion Bearing |
| EA, Ea., ea. | Each |
| EF | Each Face |
| EFH | Each Face Horizontal |
| EFV | Each Face Vertical |
| EJ | Expansion Joint |
| El., Elev. | Elevation |
| Elec. | Electrical |
| Emb. | Embedded, Embedment, |
| | Embankment |
| EP | Edge of Pavement |
| EPS | Expanded Polystyrene |
| Eq. | Equal |
| ES | Each Side, Edge of Shoulder |
| Est. | Estimated |
| EVC | End of Vertical Curve |
| EW | Each Way |
| Exc. | Excavation |
| Excl. | Excluding |
| Ex., Exist. | Existing |
| Exp., (E) | Expansion |
| Ext. | Exterior |
| F, (F) | Fixed Bearing |
| FA | Force account |
| FB | Flat Bar |
| FC | Compression Stresses |
| f'c | Specified Strength of |
| | Concrete |
| f'ci | Strength of Concrete at Time |
| | of Initial Prestress |
| FF | Far Face, Front Face |
| Fig. | Figure |
| Fin. Gr. | Finish Grade |
| FRP | Fiberglass Reinforced |
| | Plastic |
| Ft. | Feet, Foot |
| Ftg. | Footing |
| G, Gir. | Girder |
| Ga. | Gage, Gauge |
| Galv. | Galvanized |
| GDI | Grated Drain Inlet |
| GFRP | Glass Fiber Reinforced |
| | Polymer Rebar |
| Gr. | Grade |

| | |
|-----------------|---------------------------|
| Grd. | Ground |
| GRP | Grouted Rubble Pavement |
| H | Height |
| H, (H) | Hinge |
| H, Horiz. | Horizontal |
| HDG | Hot-Dip Zinc Galvanized |
| HDPE | High Density Polyethylene |
| HECO | Hawaiian Electric Company |
| HPC | Hybrid Polymer Concrete |
| HS | High Strength |
| HSS | Hollow Structural Section |
| Hwy. | Highway |
| IB, Inbnd. | Inbound |
| ID | Inside Diameter |
| IF | Inside Face |
| In. | Inch |
| Int. | Interior |
| Inv. | Invert |
| Jt. | Joint |
| K | Kips |
| KF | Kip Foot |
| KLF | Kips Per Linear Foot |
| KSF | Kips Per Square Foot |
| KSI, ksi | Kips Per Square Inch |
| L | Length |
| lb., lbs., LBS. | Pound, Pounds |
| LD | Lontitudinal Direction of |
| | Bridge |
| LF, Lin. Ft. | Linear Feet/Foot |
| LLV | Long Leg Vertical |
| LLBB | Long Legs Back to Back |
| Longit. | Longitudinal |
| LS | Lump Sum |
| M | Modified |
| Max. | Maximum |
| Min. | Minimum |
| Misc. | Miscellaneous |
| MPH | Miles Per Hour |
| MPII | Manufacturer's Printed |
| | Installation Instructions |
| N | North |
| NF | Near Face |
| NIC | Not in Contract |
| No. | Number |
| NTS | Not to Scale |
| OB, Outbnd. | Outbound |
| oc | On Center |
| OD | Outside Diameter |
| OG | Outside Girder, |
| | Outbound Girder |
| OPP H | Opposite Hand |
| OHWM | Ordinary High Water |
| | Mark |
| Opn'g | Opening |


| | |
|-------------|----------------------------|
| O/S | Offset |
| PL | Plate |
| PCC | Portland Cement Concrete |
| PC | Point of Curvature |
| PCF | Pounds per Cubic Foot |
| P(e) | Effective or Working |
| | Prestressing Force |
| Perf. | Perforated |
| PI | Point of Intersection |
| | of Tangents |
| PIVC | Point of Intersection of |
| | Vertical Curve |
| PJP | Partial Joint Penetration |
| PLF, plf | Pounds per Linear Foot |
| PPM | Parts Per Million |
| PQR | Procedure Qualification |
| | Records |
| PRC | Point of Reverse Curvature |
| PVC | Polyvinyl Chloride |
| Prestr. | Prestressed |
| PSF, psf | Pounds per Square Foot |
| PSI, psi | Pounds per Square Inch |
| Pt., Pts. | Point, Points |
| PT | Post Tensioned, Point of |
| | Tangency |
| R, Rad. | Radius |
| Rdwy. | Roadway |
| Rebar | Reinforcing Bar |
| Ref. | Reference |
| Reinf. | Reinforced, Reinforcing, |
| | Reinforcement |
| Req'd. | Required |
| Ret. | Retaining |
| RF | Rear Face |
| ROW | Right of Way |
| RTS | Refer to Sheet |
| S | South |
| Sch. | Schedule |
| SE | Super Elevation |
| Sect. | Section |
| SF, sq. ft. | Square Feet |
| Sht. | Sheet |
| Sim. | Similar |
| Sl. | Slope |
| SLV | Short Leg Vertical |
| SLBB | Short Legs Back to Back |
| SMAW | Shielded Metal Arc Welding |
| Spcs., Spg. | Spaces, Spacing |
| Spec. | Specification |
| SRA | Shrinkage Reducing |
| | Admixture |
| SS | Stainless Steel |
| SSD | Saturated Surface Dry |
| Std. | Standard |
| Sta. | Station |
| Stiff. | Stiffener |
| Stagg. | Staggered |
| Stirr. | Stirrup |
| Stl. | Steel |

| | | | | | |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 38 | 280 |

| | |
|-----------|---------------------------|
| Str. | Straight |
| Struct. | Structure |
| SY | Square Yard |
| Symm. | Symmetrical |
| T | Top |
| T&B | Top and Bottom |
| Tan. | Tangent |
| TBD | To Be Determined |
| TD | Transverse Direction of |
| | Bridge |
| Temp. | Temporary |
| TFE | Top of Footing Elevation |
| Thk. | Thick |
| TOD | Top of Deck |
| Tot. | Total |
| Transv. | Transverse |
| TS | Structural Tubing |
| Typ. | Typical |
| Undergrd. | Underground |
| UNO | Unless Noted Otherwise |
| V, Vert. | Vertical |
| Var. | Varies |
| VC | Vertical Curve |
| VESLMC | Very Early Strength |
| | Latex Modified Concrete |
| W | West |
| w/ | With |
| W/C | Water/Cementitious |
| | Material Ratio |
| WP | Work Point, Working Point |
| WPS | Welding Procedure |
| | Specifications |
| WS | Water Surface |
| WW | Wingwall |
| WWR | Welded Wire Reinforcing |
| Yr. | Year |

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

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HIGHWAYS DIVISION

SYMBOLS AND ABBREVIATIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: None Date: Oct. 2024

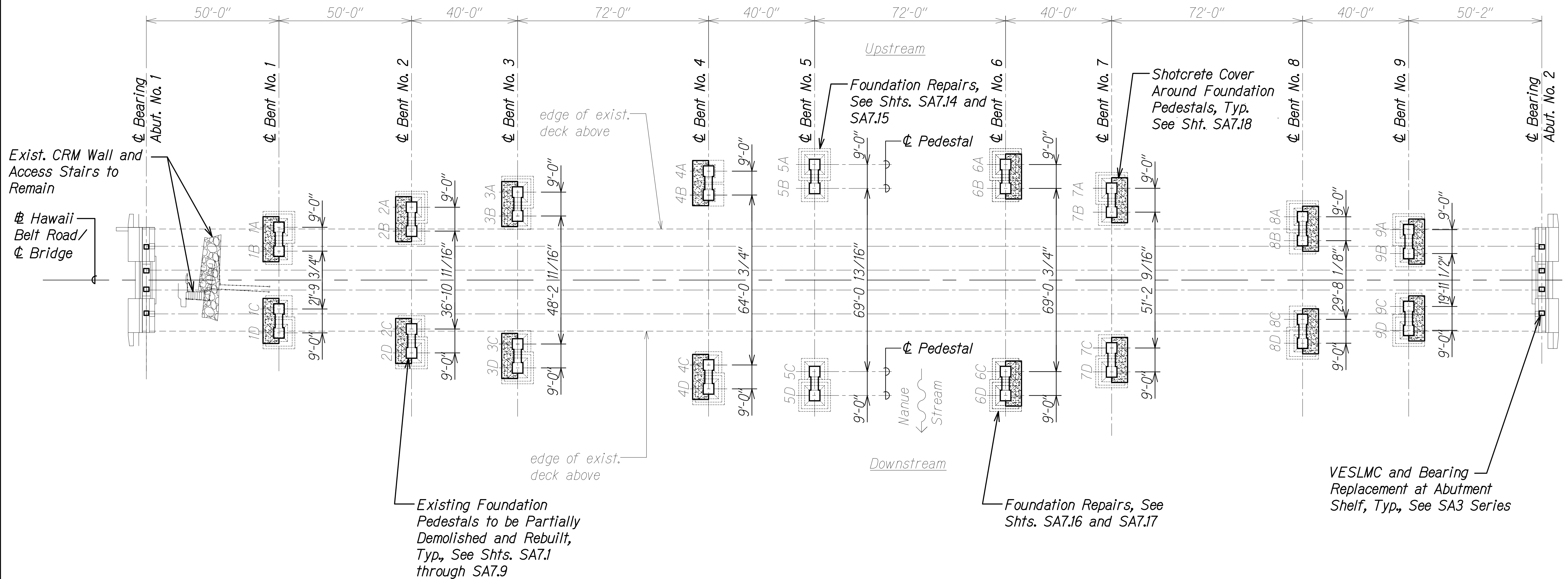
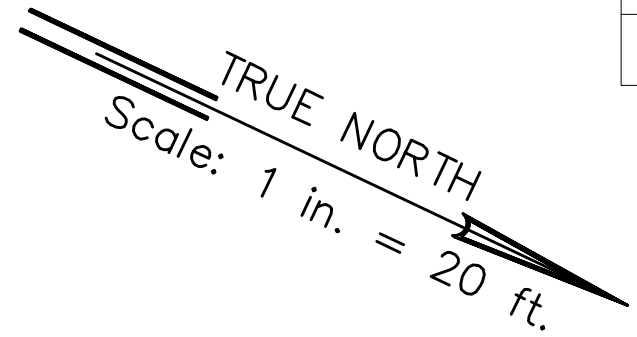
SHEET No. 50.9 OF 9 SHEETS

38

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 40 | 280 |

To Hilo

To Honoka'a

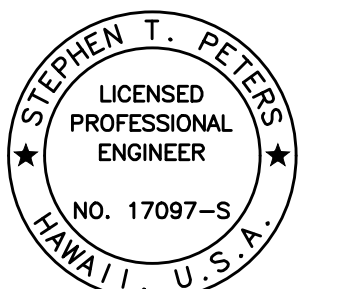


FOUNDATION PLAN

Scale: 1" = 20'-0"

NOTES:

1. Dimensions are from ϕ Pedestal to ϕ Pedestal.
2. Dimensions shown between pedestals at Column Lines B and C are for general reference information only and should not be used for detailing.



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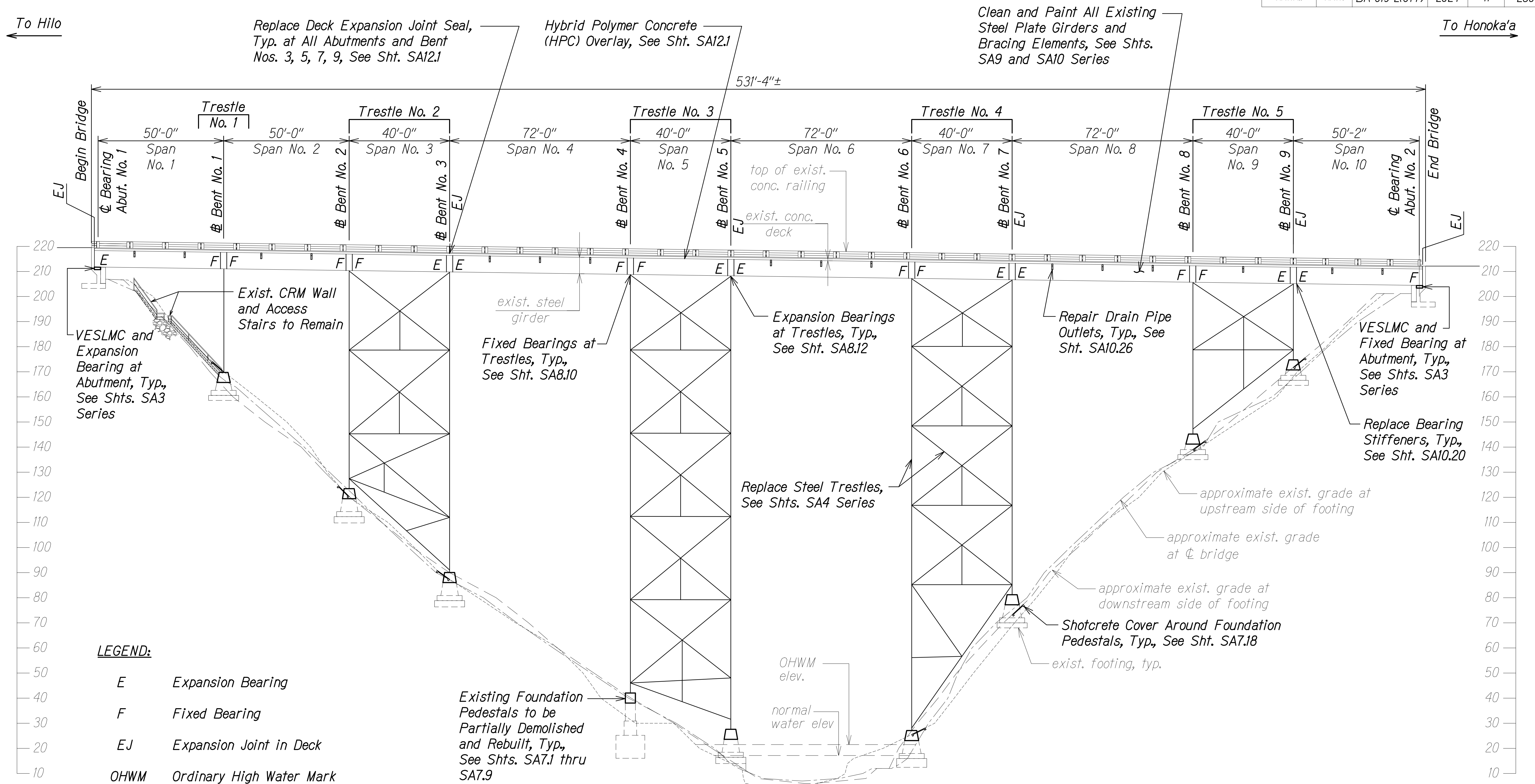
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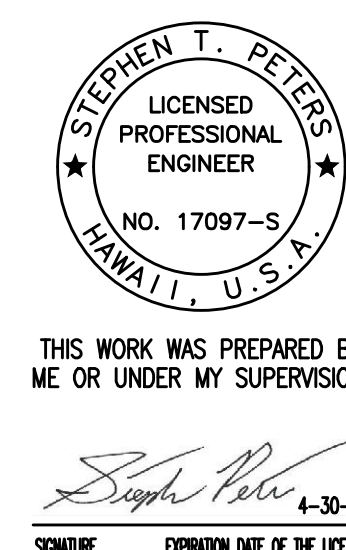
FOUNDATION PLAN
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SAI.2 OF 2 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 41 | 280 |



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



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

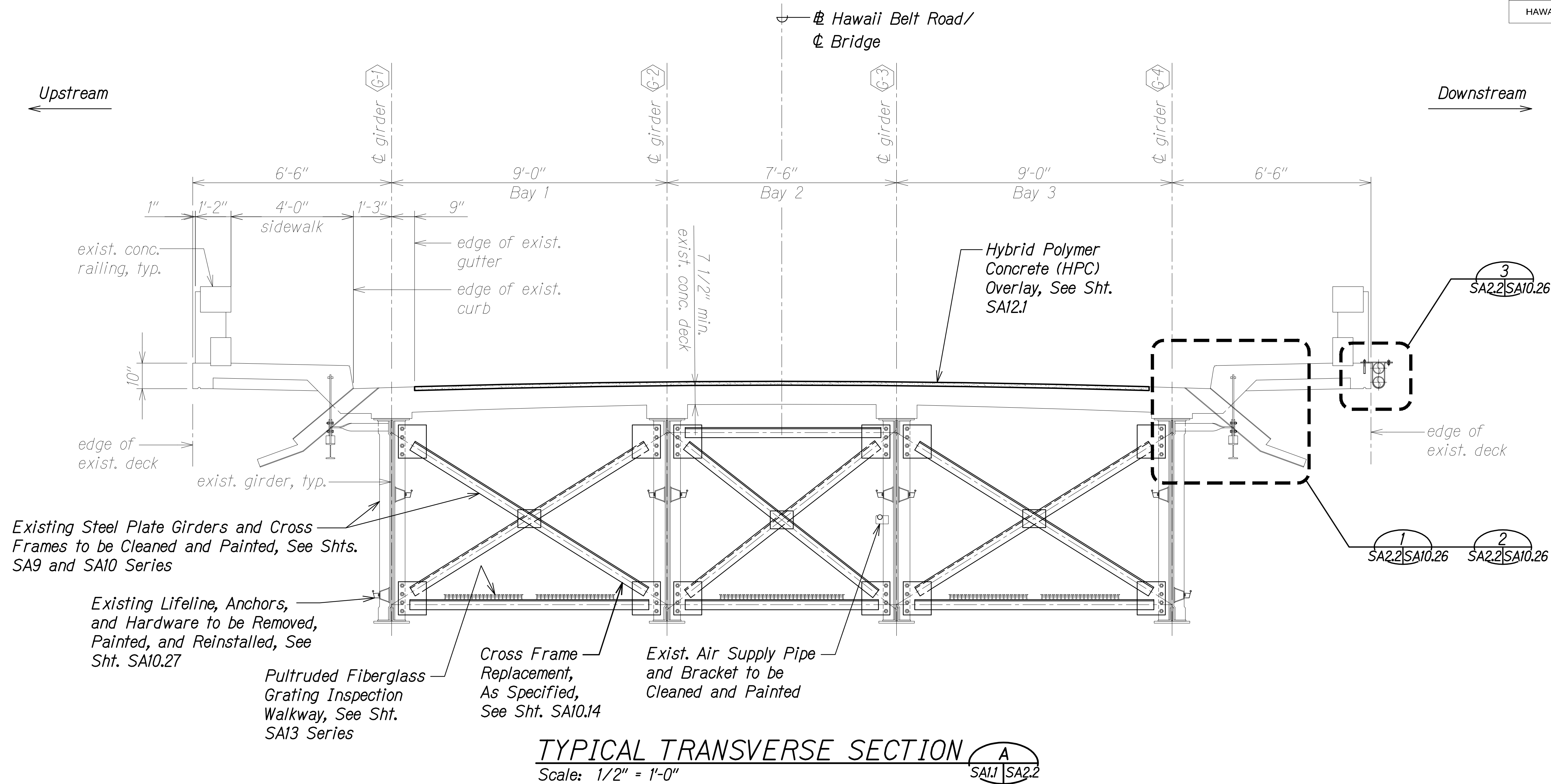
DOWNSTREAM ELEVATION

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

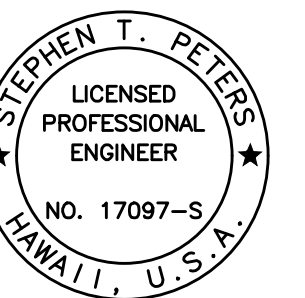
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| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 42 | 280 |



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| | | |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| | TRACED BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
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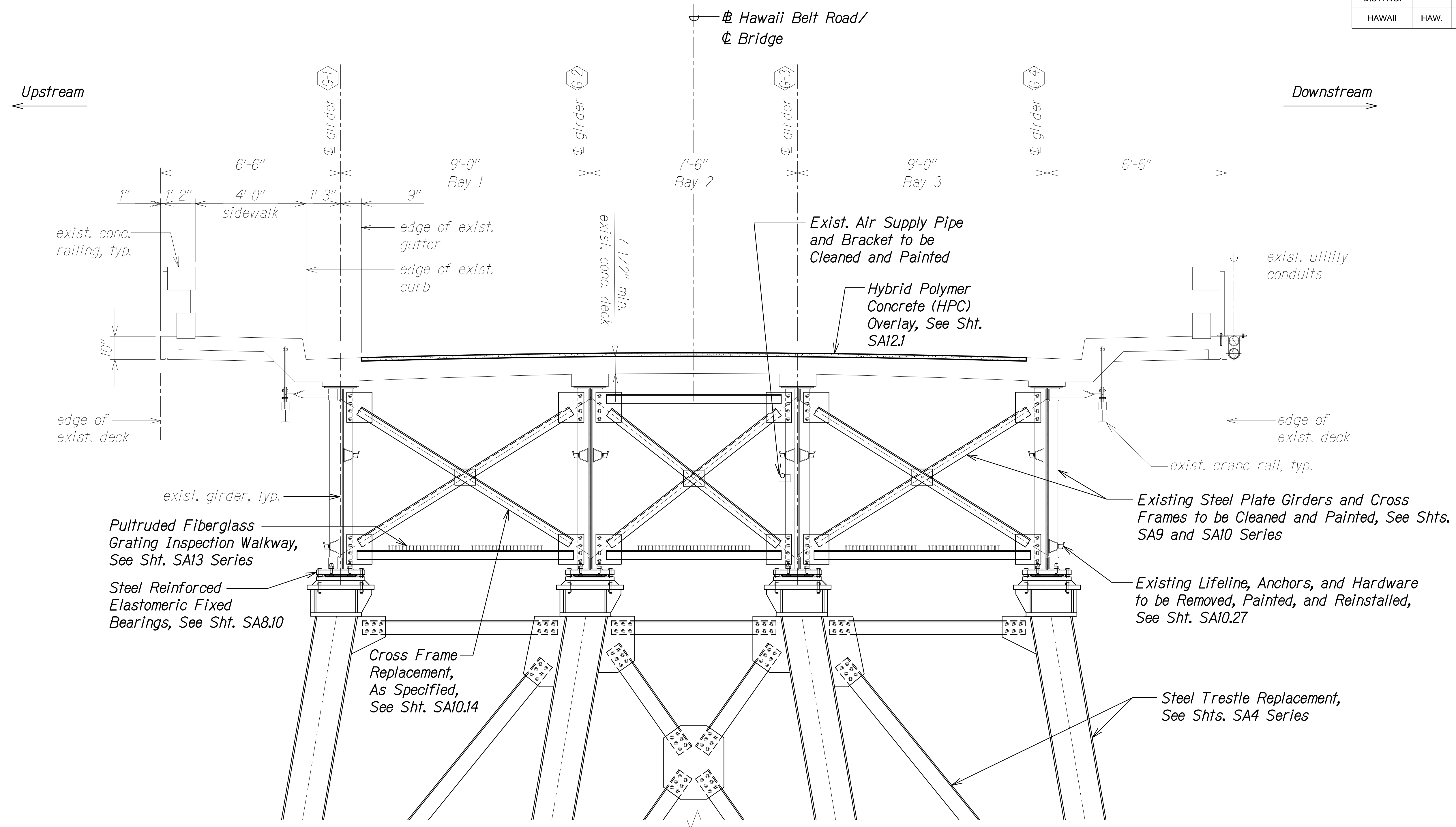
STATE OF HAWAII
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TYPICAL TRANSVERSE SECTION

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA2.2 OF 5 SHEETS

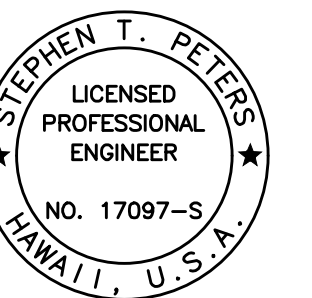
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 43 | 280 |



TRANSVERSE SECTION AT
FIXED BEARING BENTS

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

A
SA1.1 SA2.3



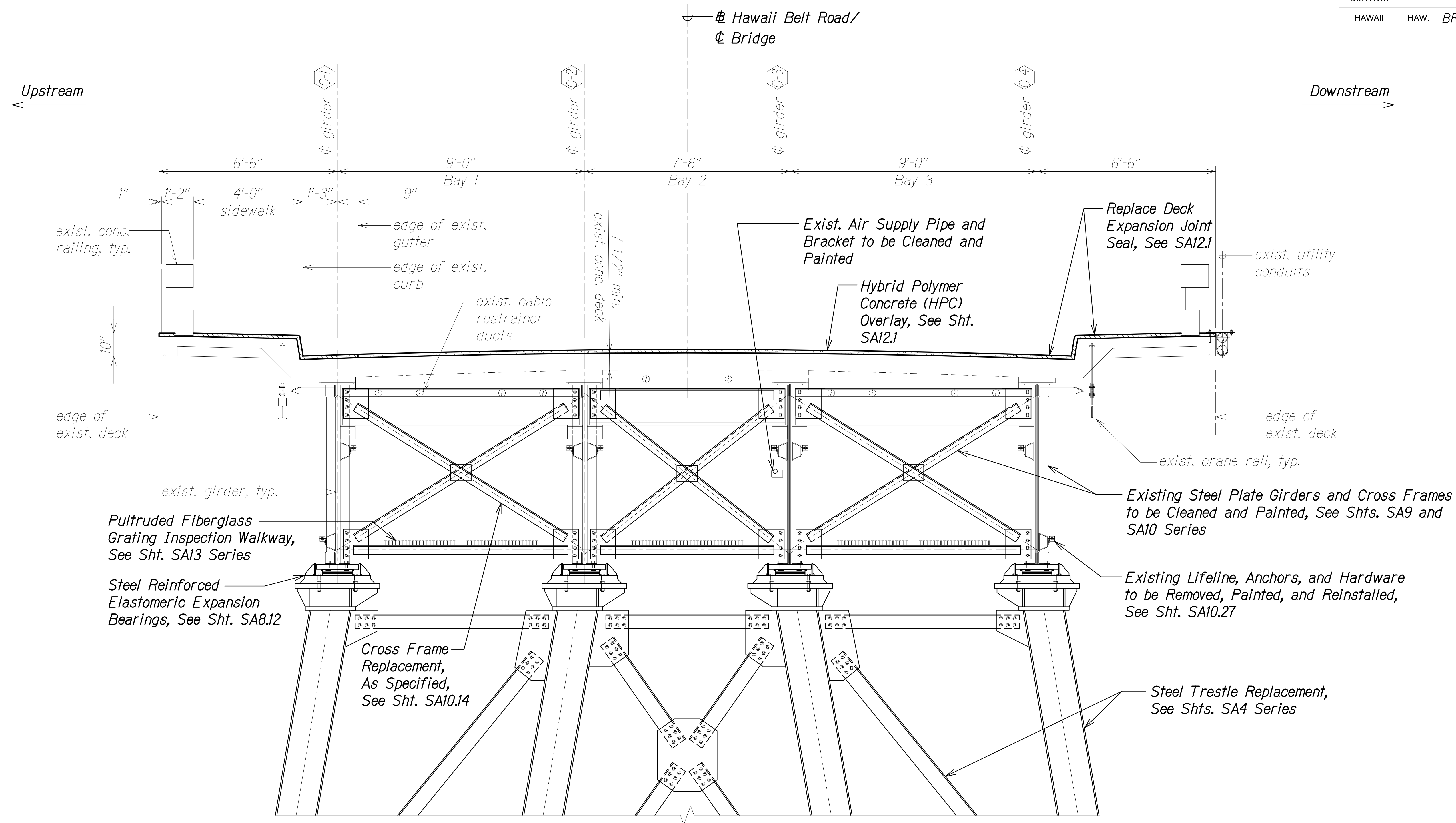
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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TRANSVERSE SECTION
AT FIXED BEARING BENTS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA2.3 OF 5 SHEETS

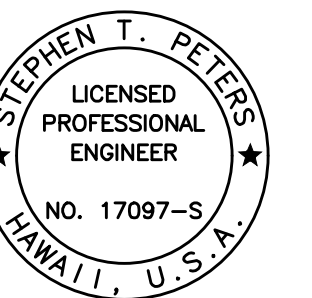
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 44 | 280 |



TRANSVERSE SECTION AT
EXPANSION BEARING BENTS

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

A
SA1.1 SA2.4



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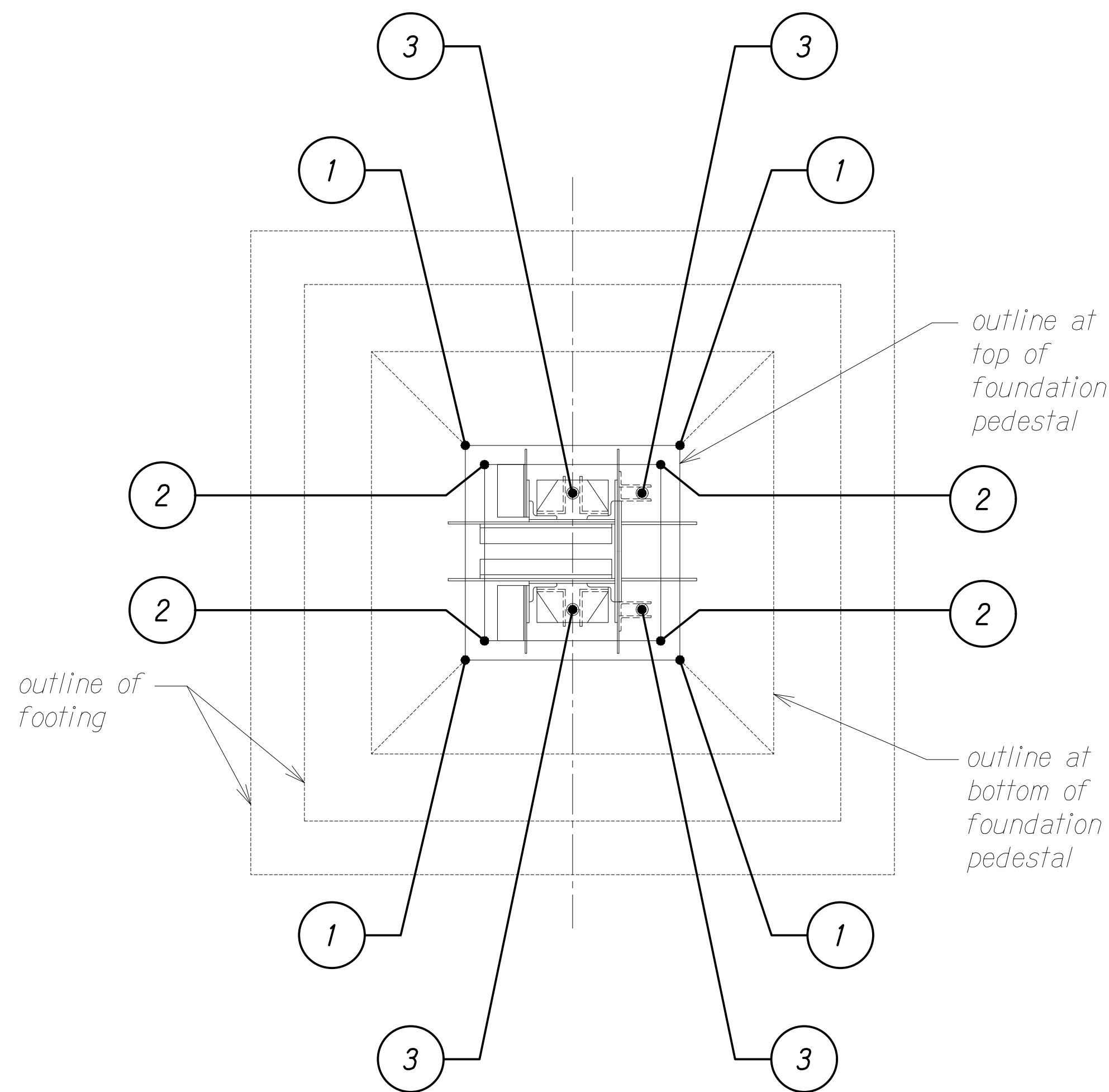
**TRANSVERSE SECTION
AT EXPANSION BEARING BENTS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

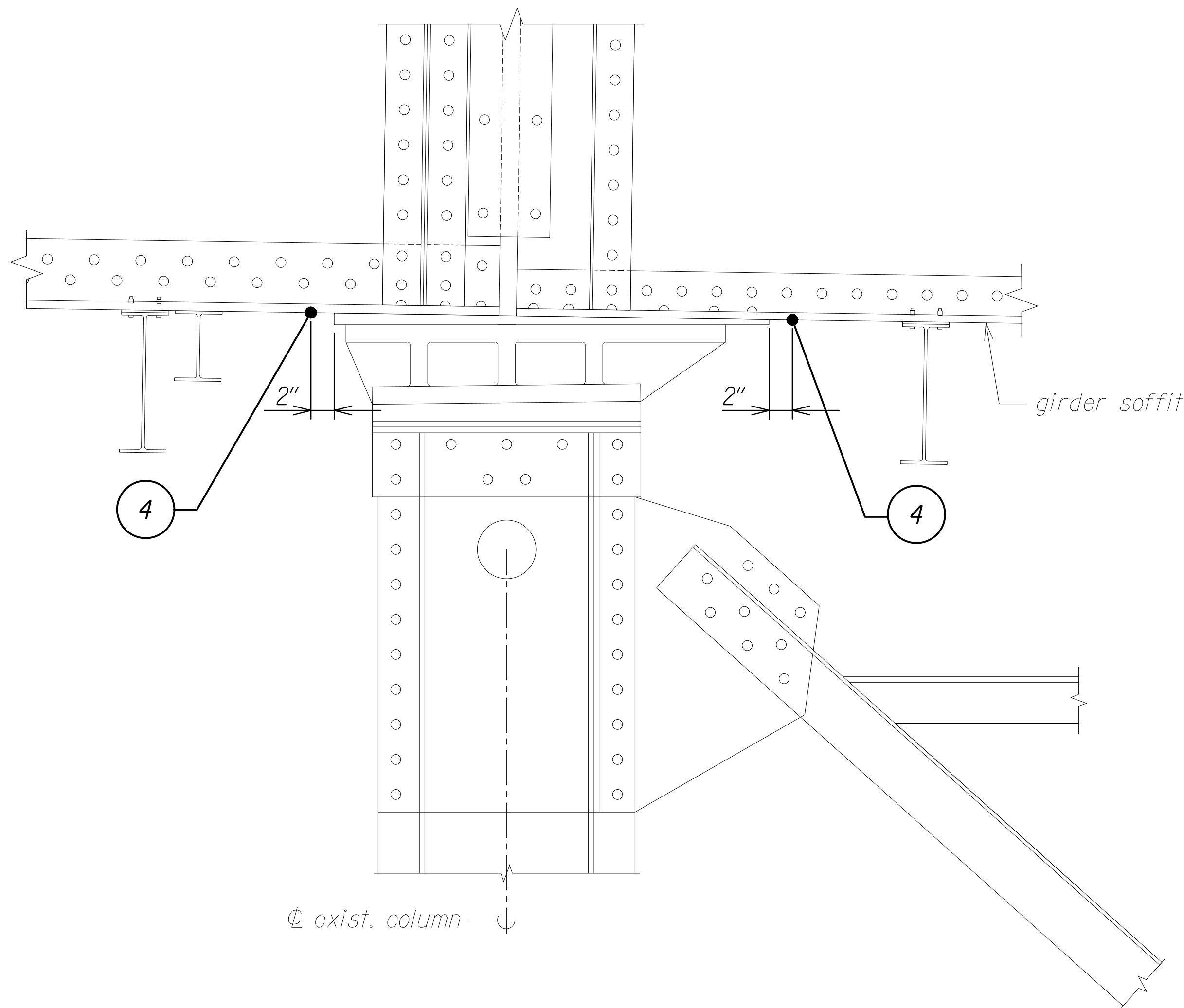
Scale: As Noted Date: Oct. 2024

SHEET No. SA2.4 OF 5 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 45 | 280 |



**SURVEY POINTS AT
FOUNDATION PEDESTAL**
Scale: 1/2" = 1'-0"
SA2.5 SA2.5



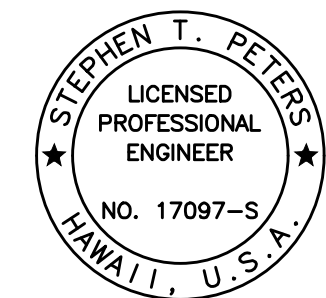
**SURVEY POINTS AT
GIRDER SOFFIT**
Scale: 1 1/2" = 1'-0"
SA2.5 SA2.5

LEGEND:

- 1 Survey Corners at Top of Concrete Foundation Pedestal (Top of Chamfer)
- 2 Survey Corners of Steel Base Plate (Top and Bottom)
- 3 Survey Top of Anchor Bolts
- 4 Survey Soffit of Steel Plate Girder Along Φ (G-1 thru G-4)

NOTES:

1. The Contractor is required to perform a thorough survey of the locations indicated. Cost for the work shall be incidental to the various pay items.
2. Survey shall be performed by a professional land surveyor licensed in the State of Hawaii.
3. Survey information shall be submitted to the Engineer for review as a digital .dwg file no later than 45 days prior to initial preparation of the structural steel shop drawings.
4. Survey shall be performed using Light Detection and Ranging (LiDAR) technology and provide information related to vertical elevation and horizontal alignment.
5. Top of the foundations shall be clear of debris and surrounding areas clear of obstructing vegetation prior to survey.
6. See Civil Drawings - Alignment Plan, for location of surveying control points.



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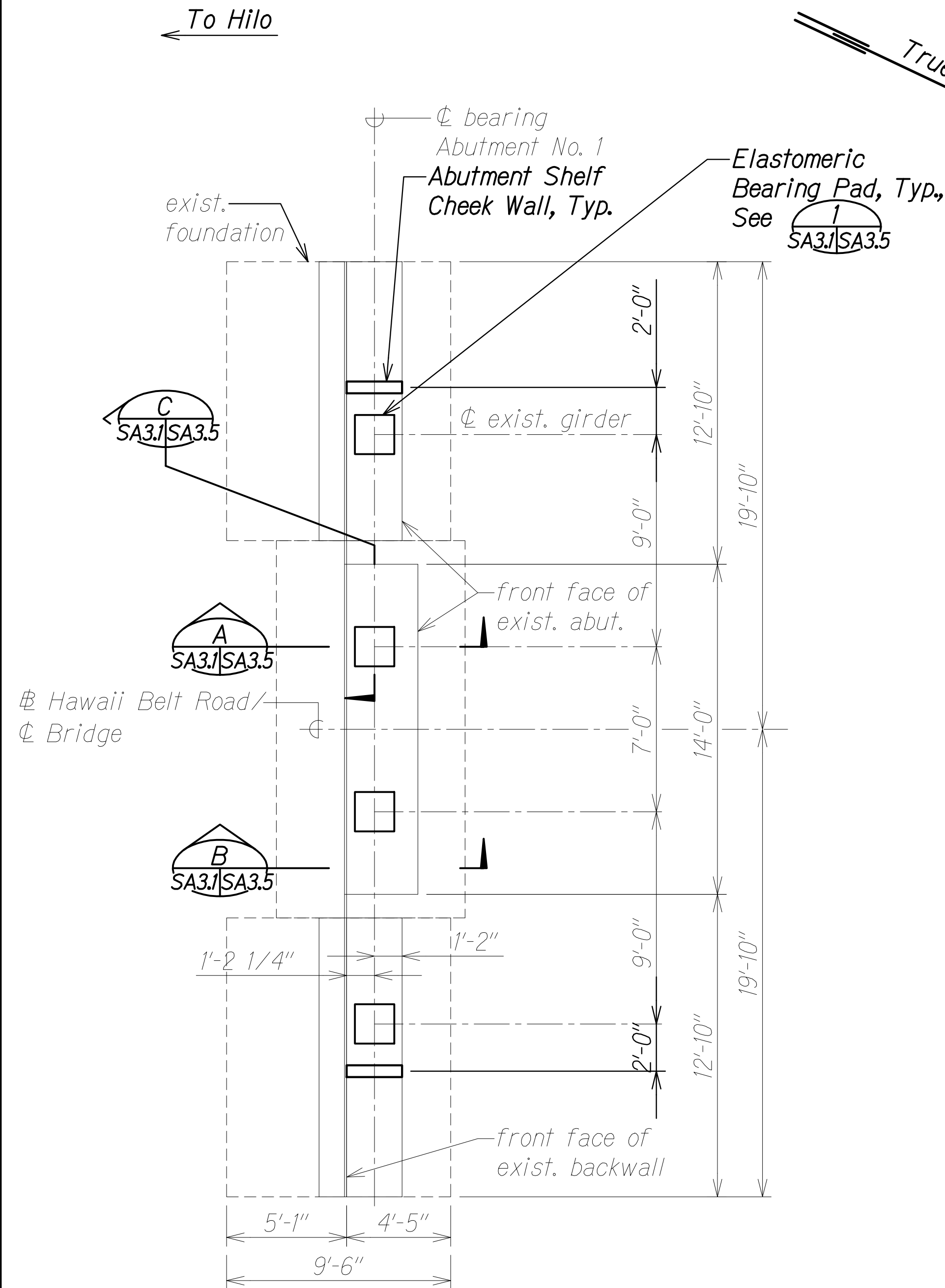
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SURVEY POINTS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA2.5 OF 5 SHEETS

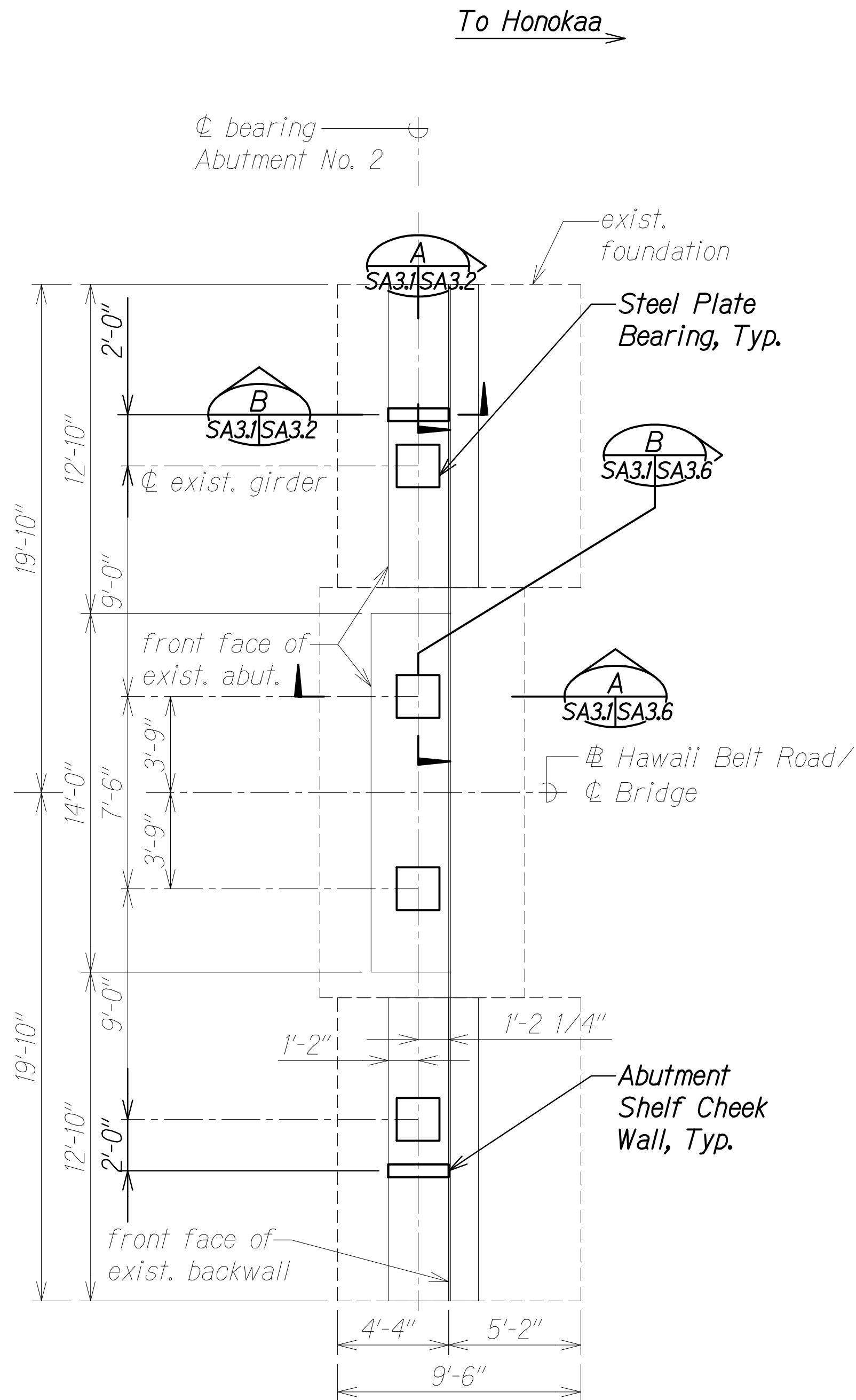
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 46 | 280 |

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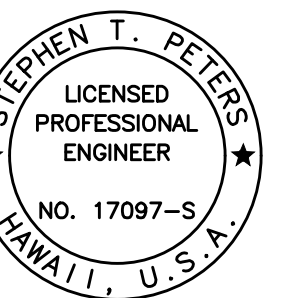
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|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| | TRACED BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |



ABUTMENT NO. 1 PLAN
Scale: 1/4" = 1'-0"



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



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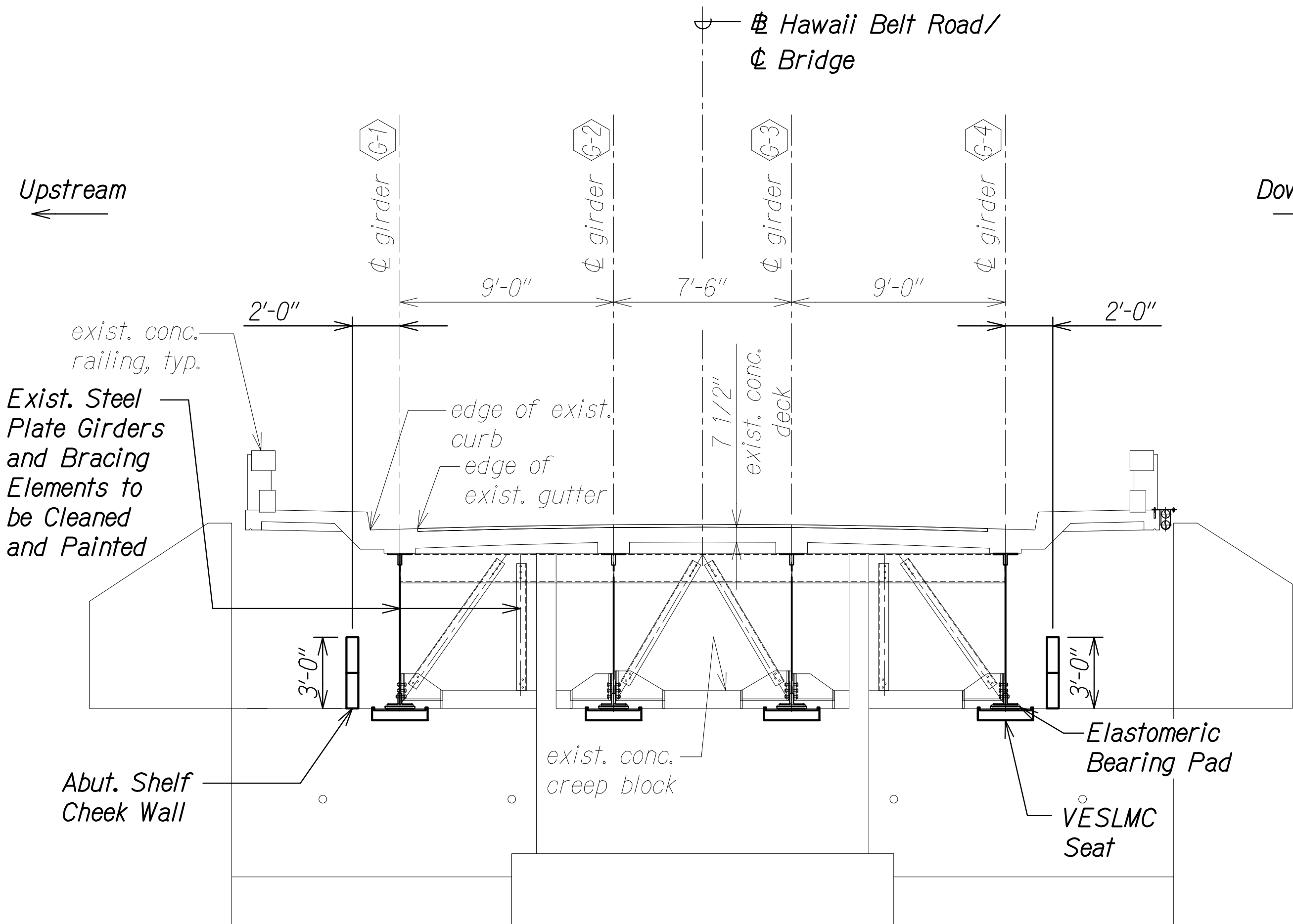
ABUTMENT NOS. 1 AND 2
PLAN

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

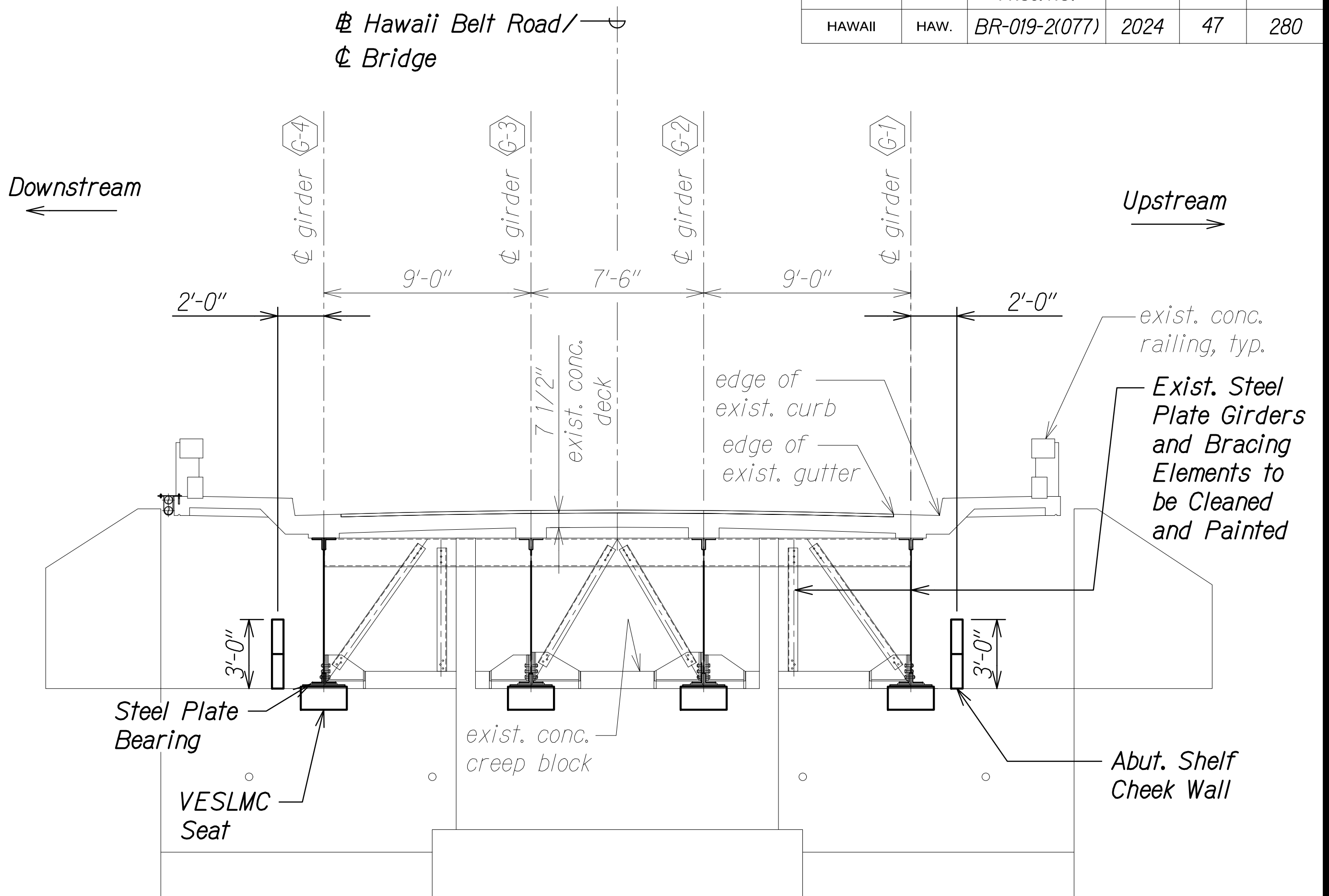
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SHEET No. SA3.1 OF 7 SHEETS

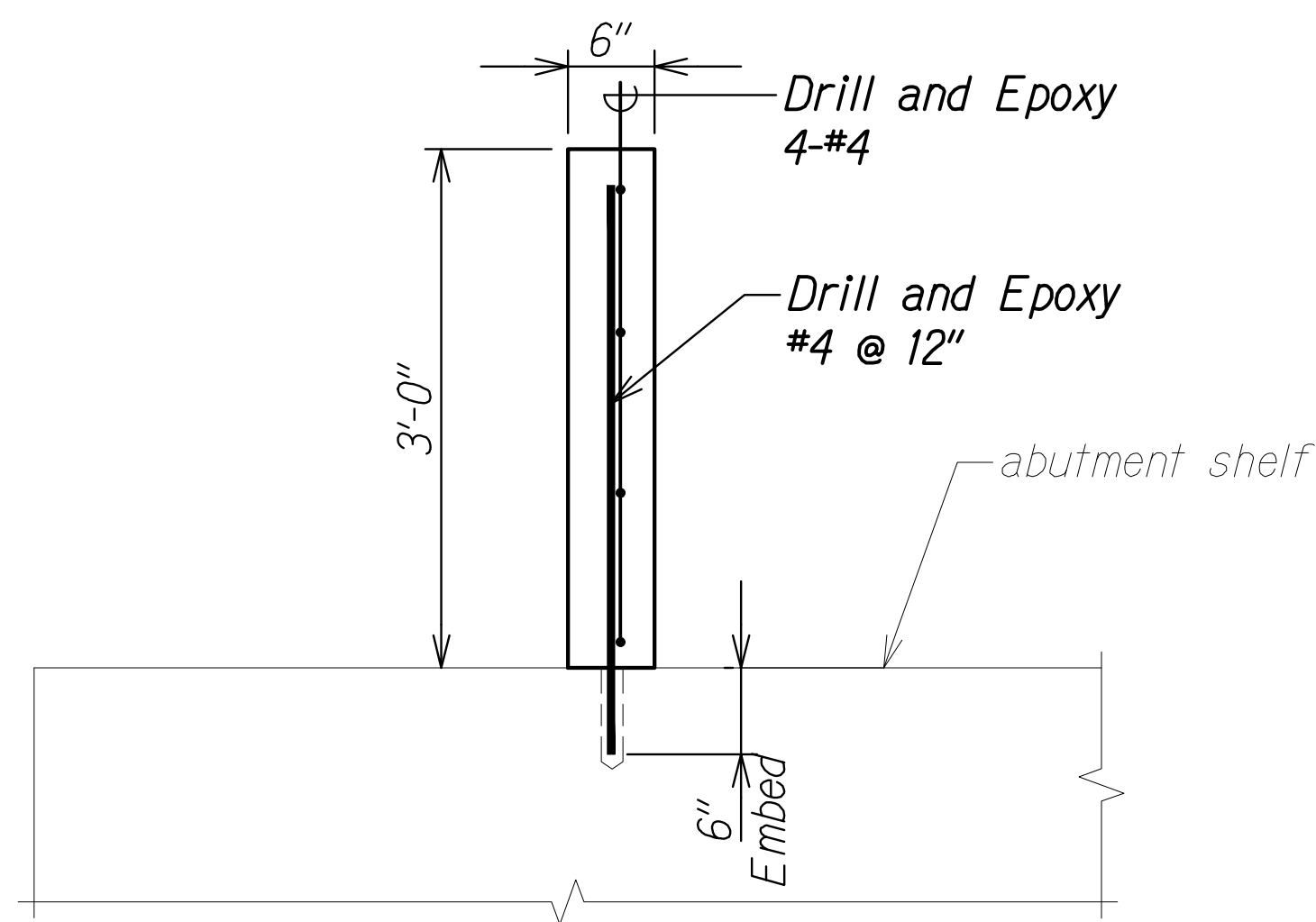
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 47 | 280 |



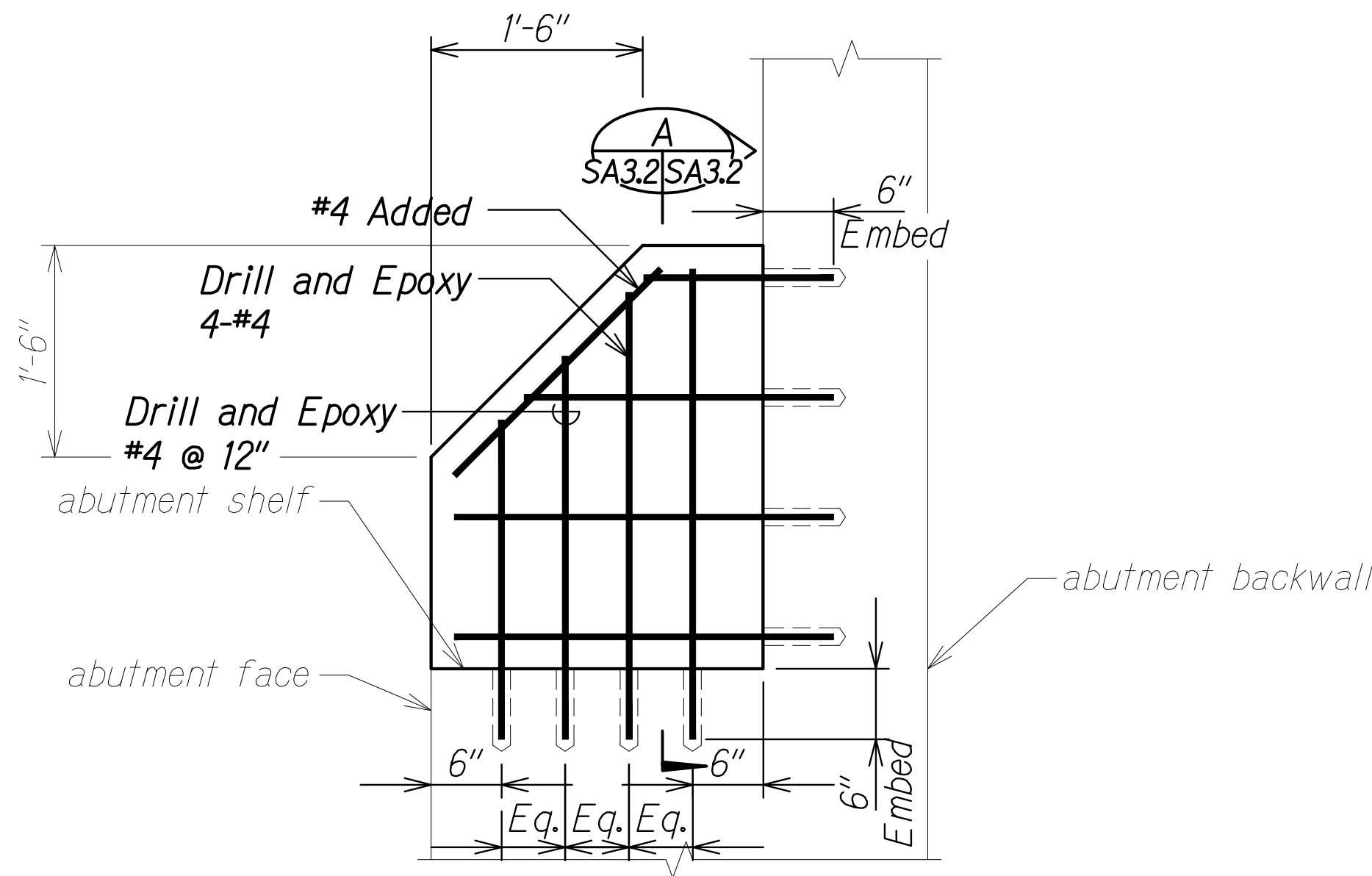
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Scale: 1/4" = 1'-0"



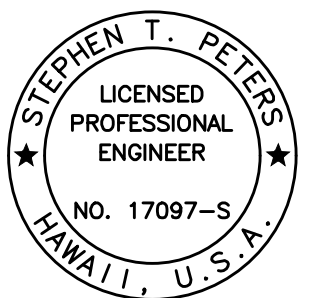
ABUTMENT NO. 2 - ELEVATION
Scale: 1/4" = 1'-0"



ABUTMENT CHEEK WALL SECTION A
Scale: 1" = 1'-0"



ABUTMENT CHEEK WALL SECTION B
Scale: 1" = 1'-0"



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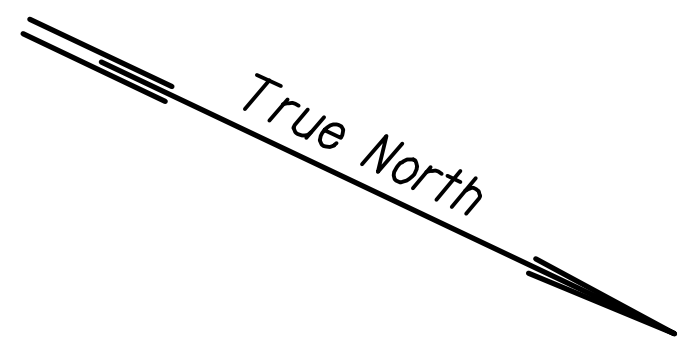
**ABUTMENT NOS. 1 AND 2
ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

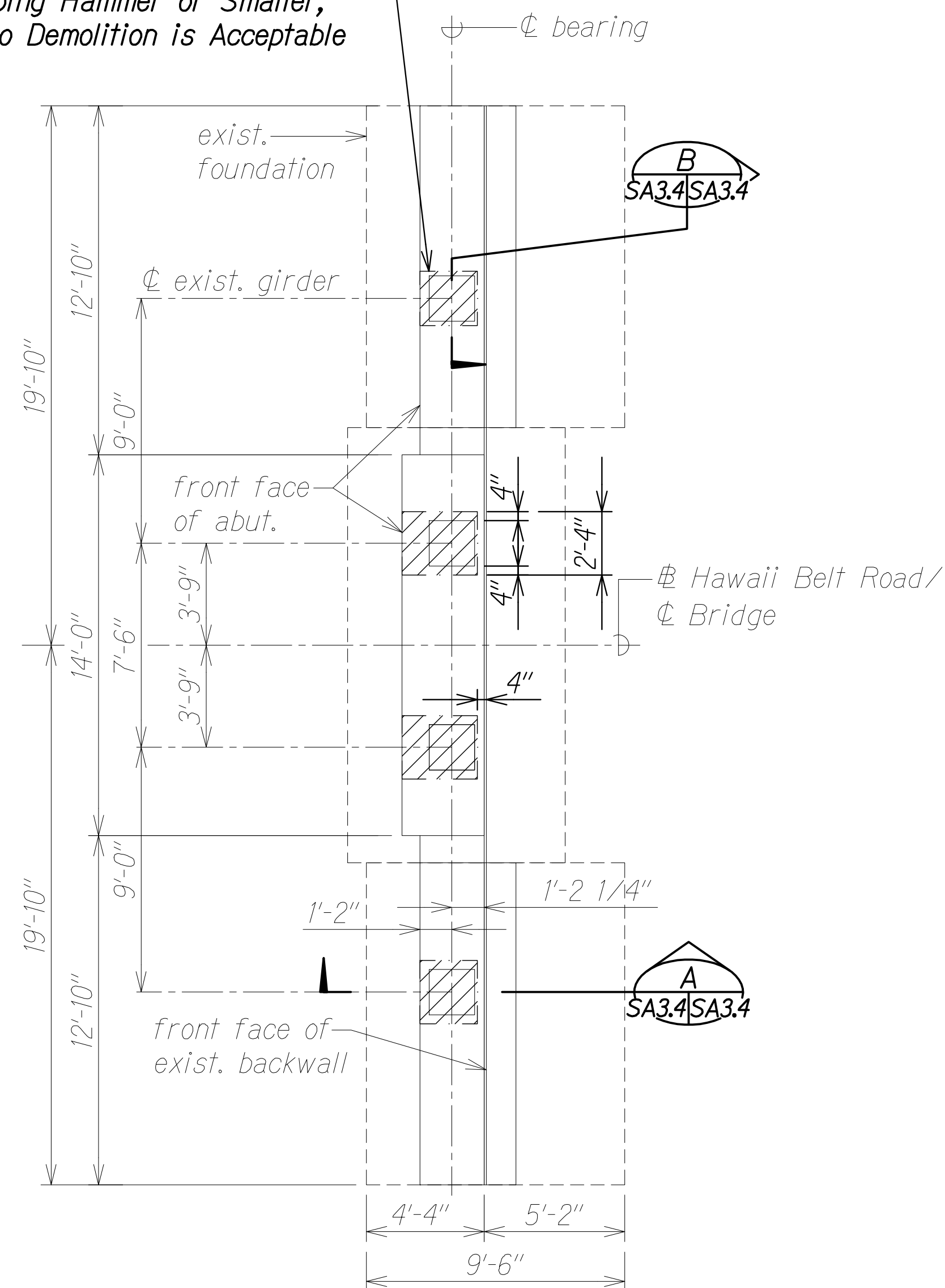
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| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 49 | 280 |



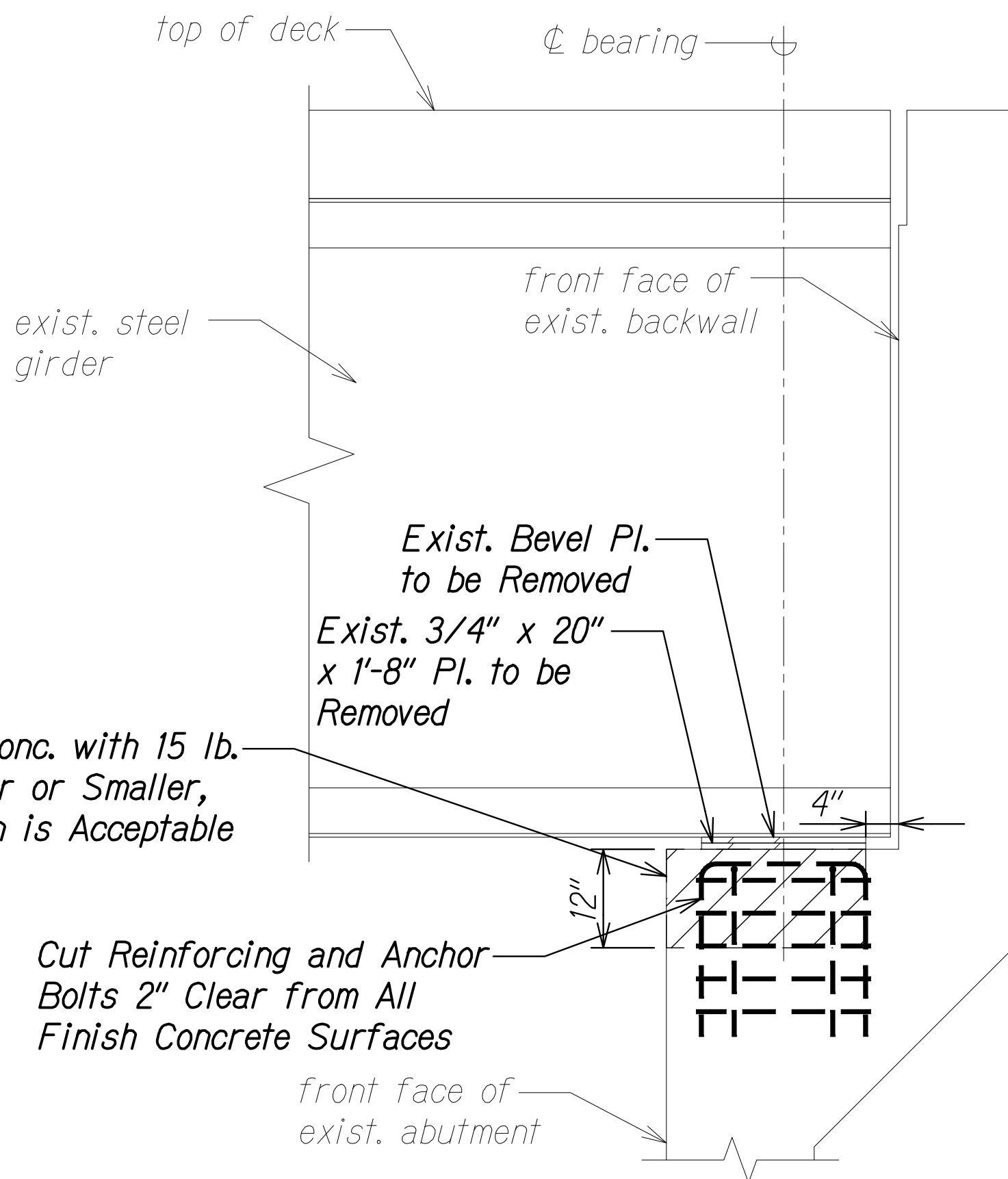
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To Honokaa



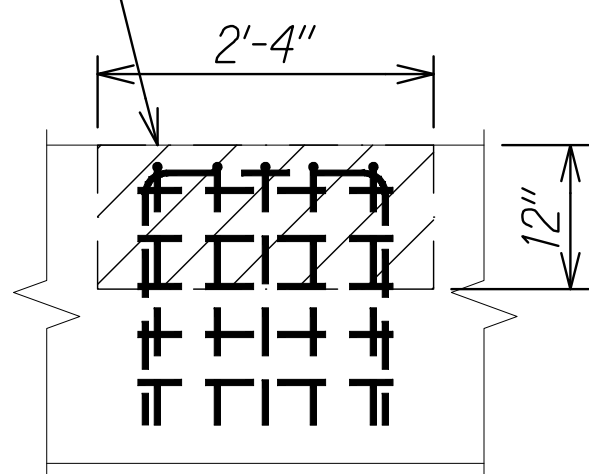
ABUTMENT NO. 2 DEMO PLAN
Scale: 1/4" = 1'-0"

Remove Exist. Conc. with 15 lb. Chipping Hammer or Smaller, Hydro Demolition is Acceptable



SECTION A-A
Scale: 3/4" = 1'-0"

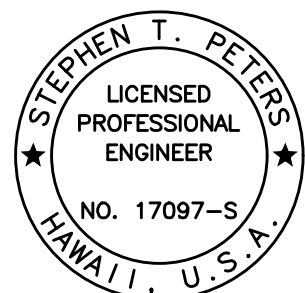
Remove Exist. Conc. with 15 lb. Chipping Hammer or Smaller, Hydro Demolition is Acceptable



SECTION B-B
Scale: 3/4" = 1'-0"

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-S40301-S40307-ABUT.DWG PLOT TIME: 10-26-24, 3:55 PM



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HIGHWAYS DIVISION

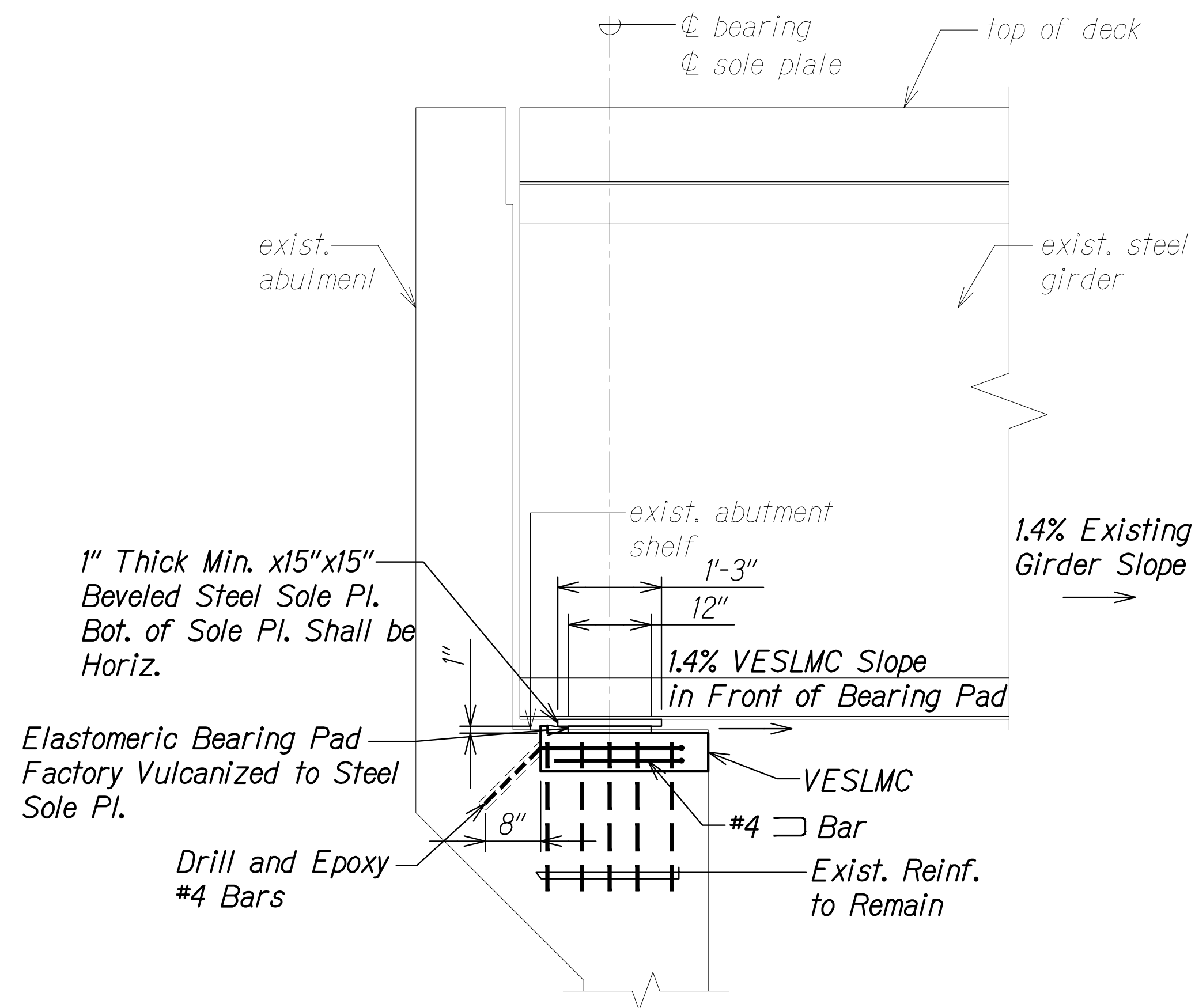
**ABUTMENT NO. 2
DEMO PLAN AND SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

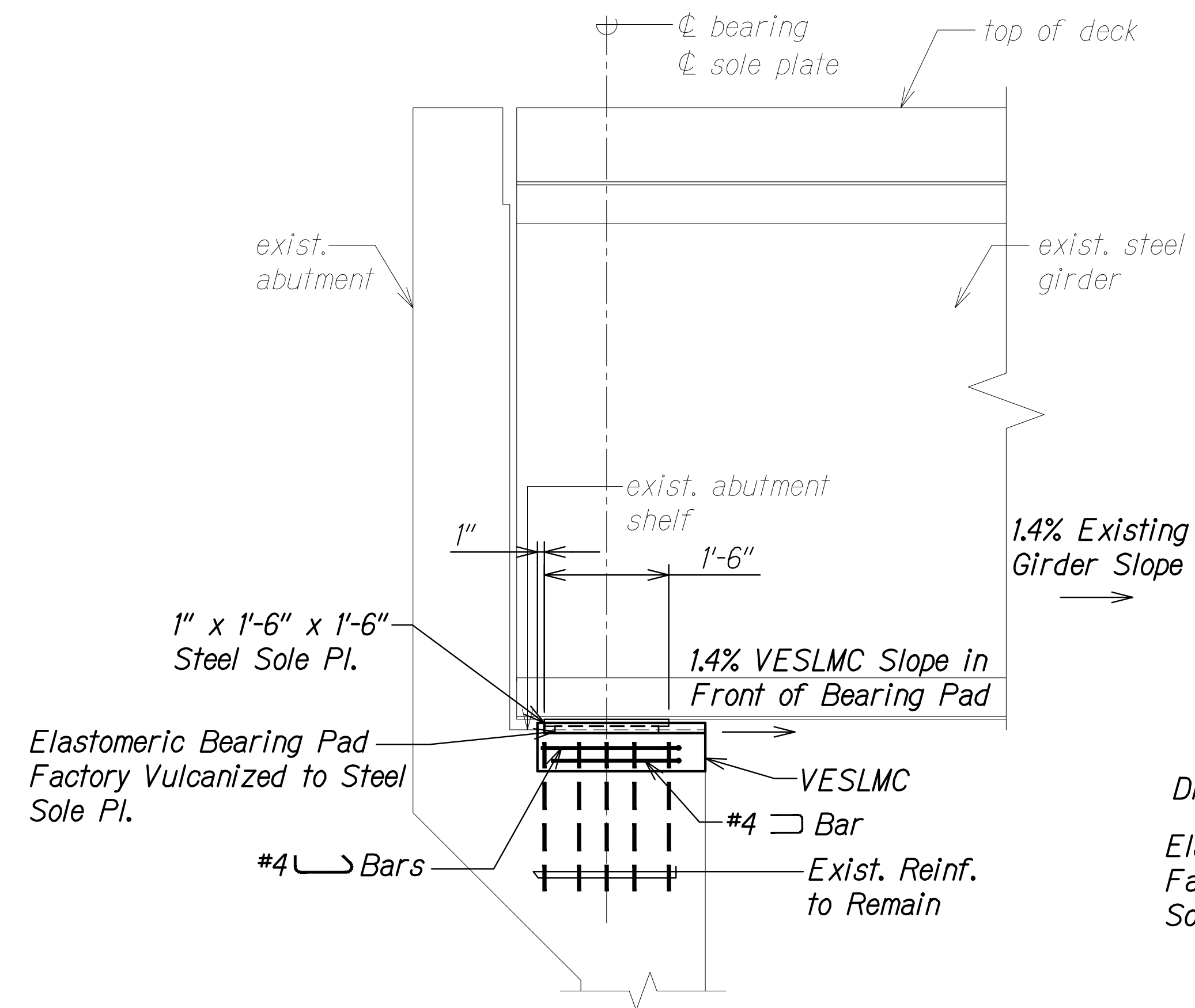
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SHEET No. SA3.4 OF 7 SHEETS

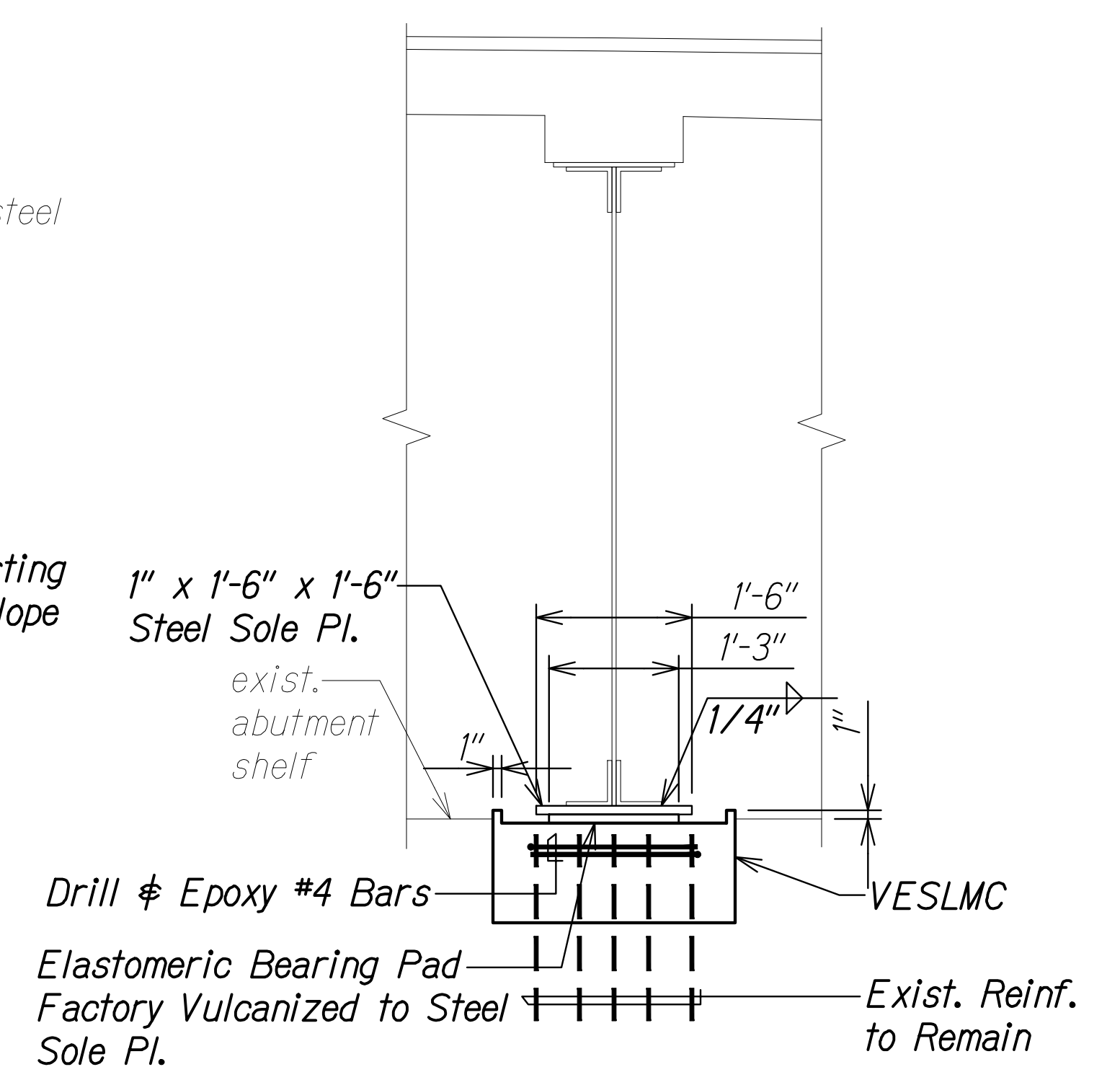
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 50 | 280 |



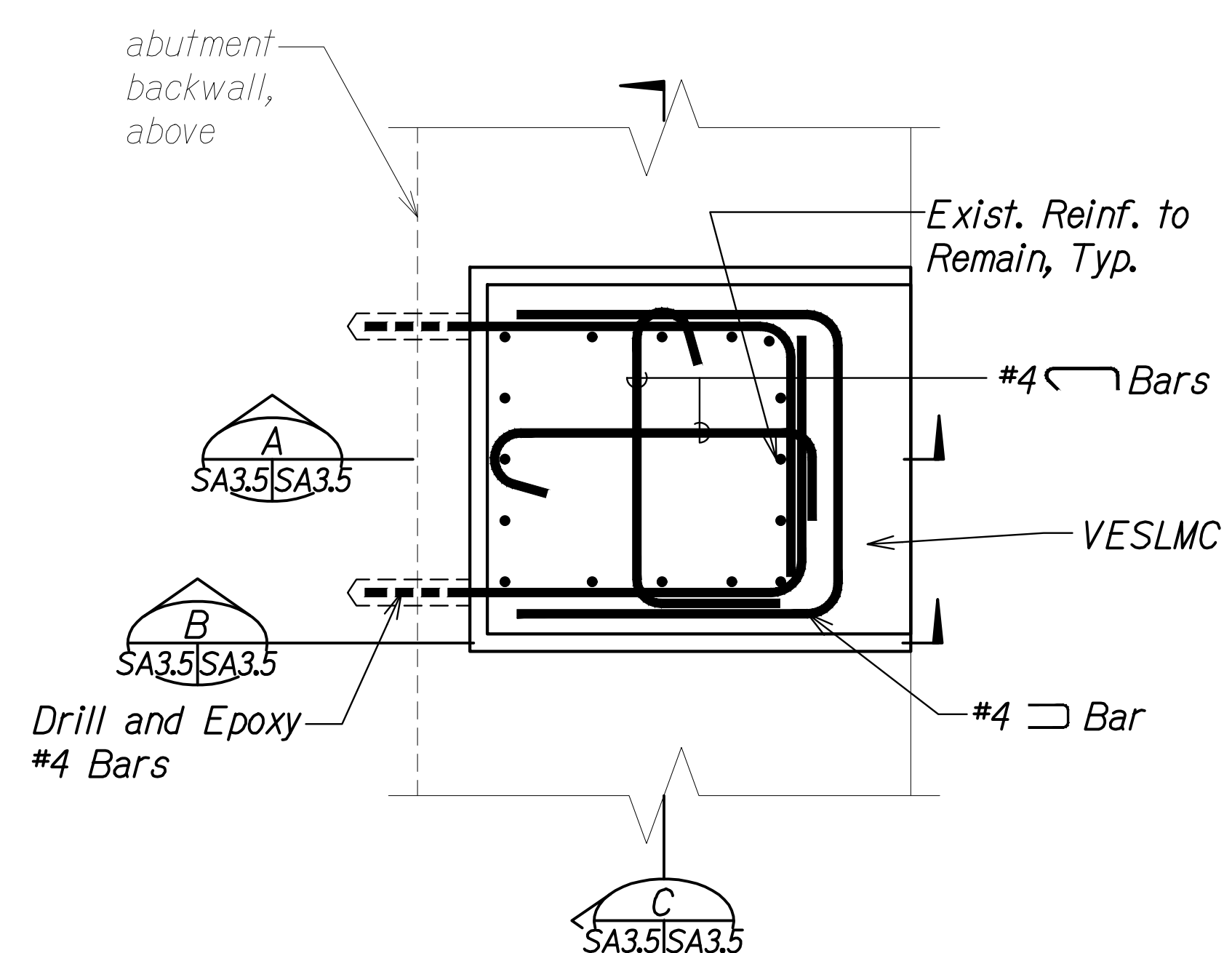
SECTION A
Scale: 3/4" = 1'-0" SA3.1 SA3.5



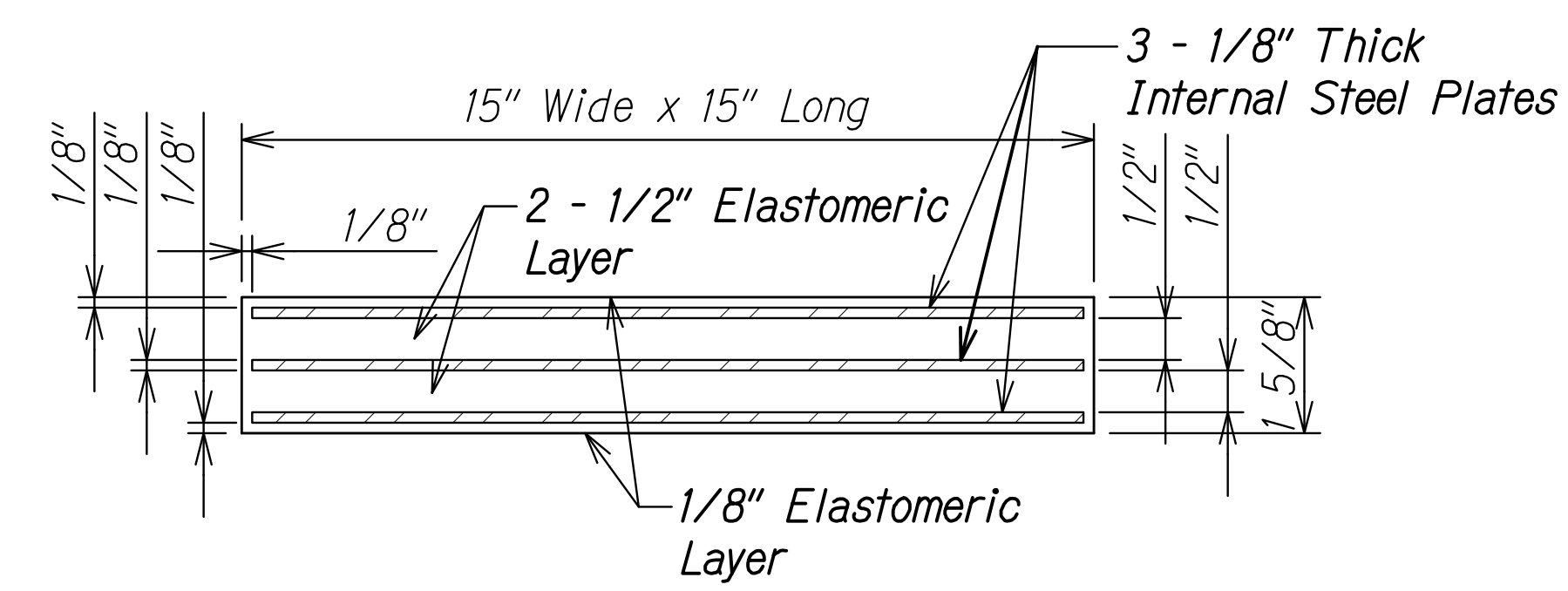
SECTION B
Scale: 3/4" = 1'-0" SA3.1 SA3.5



SECTION C
Scale: 3/4" = 1'-0" SA3.1 SA3.5

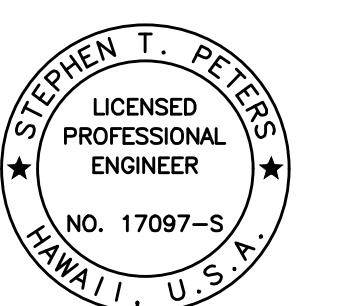


PLAN D
Scale: 1 1/2" = 1'-0" SA3.5 SA3.5



ELASTOMERIC BEARING PAD DETAIL 1
Scale: 6" = 1'-0" SA3.1 SA3.5

- NOTES:**
- VESLMC below bearing pad shall be horizontal and level.
 - Verify all dimensions and slopes in field before fabricating any members.



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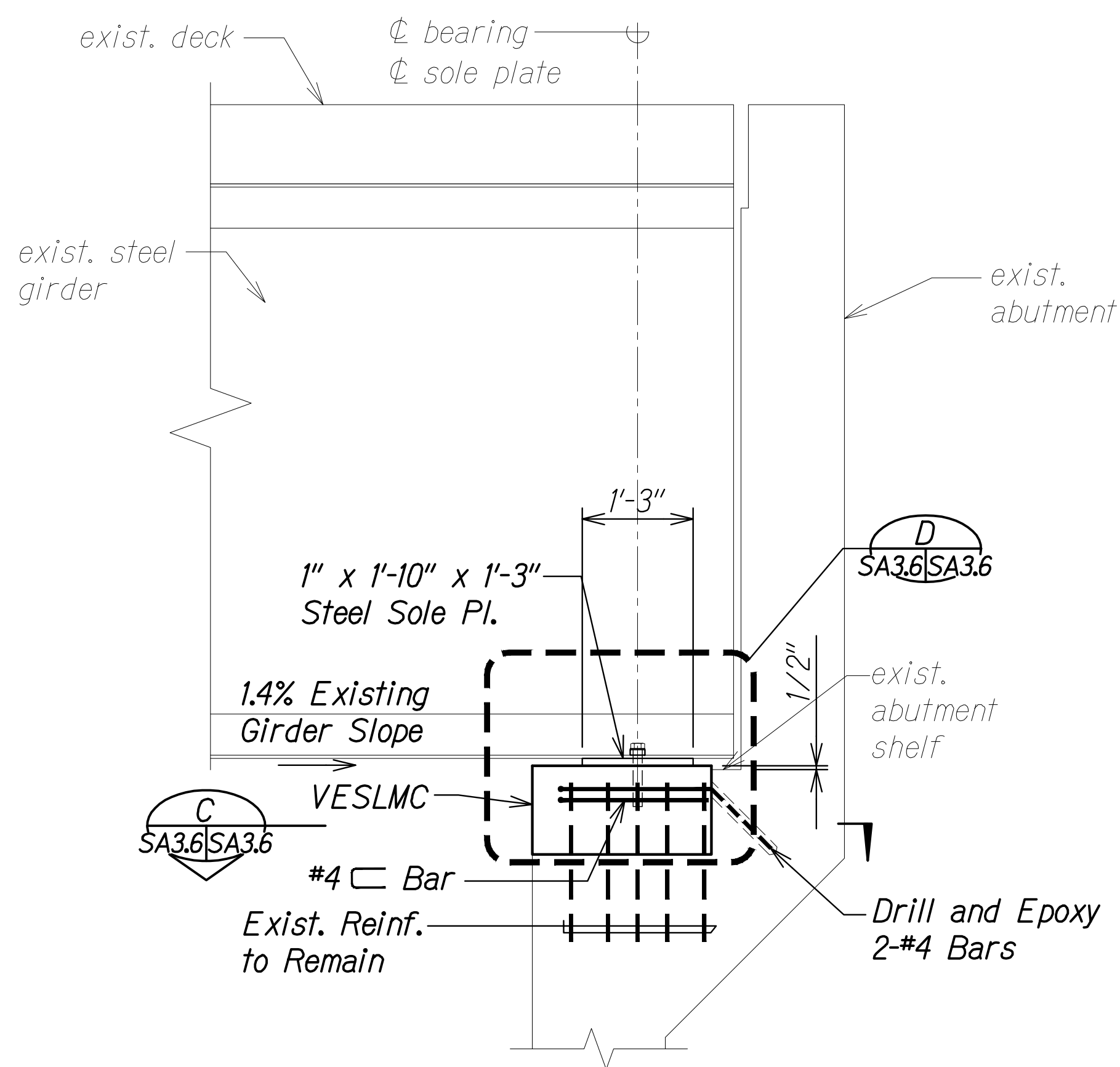
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

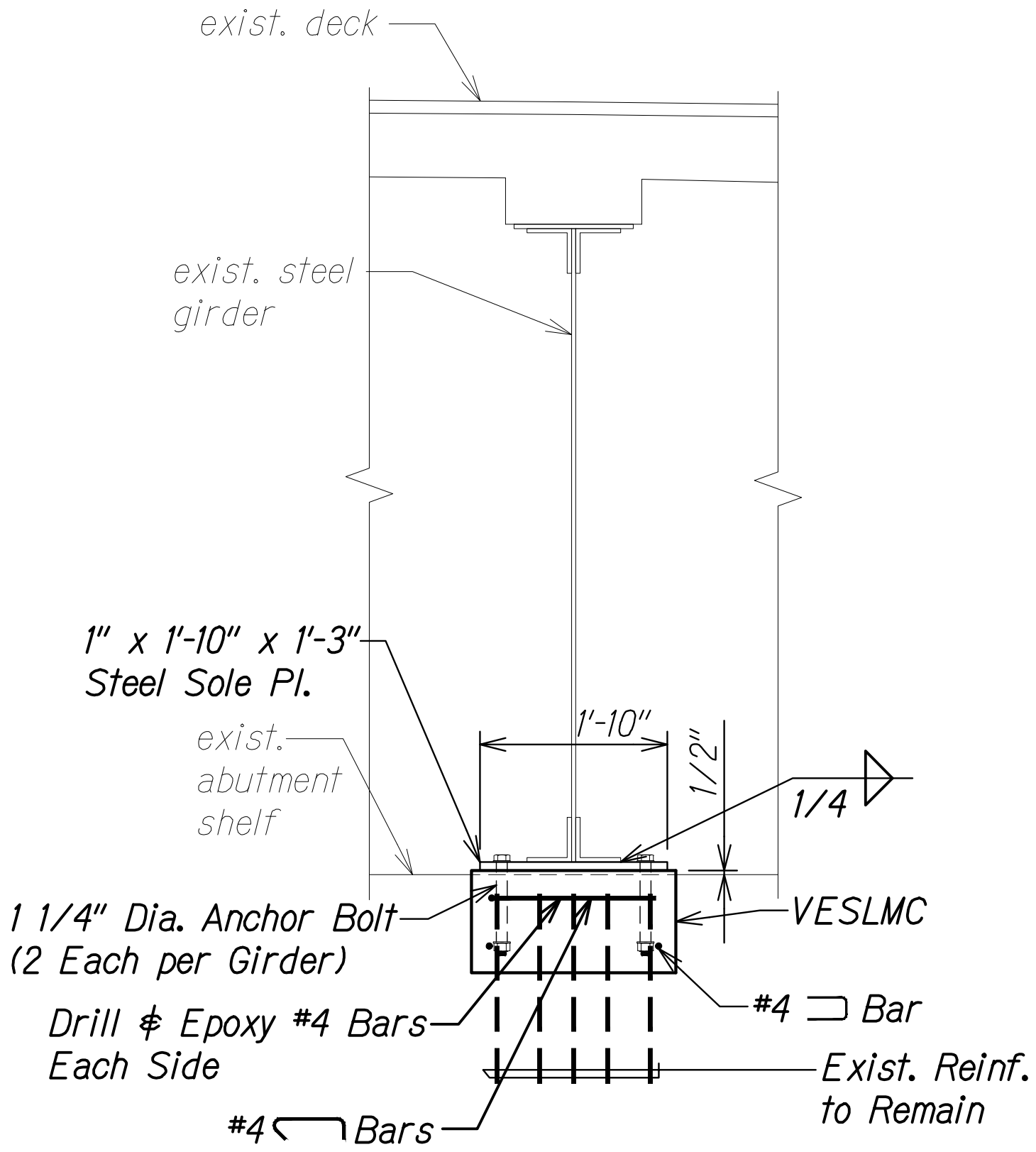
ABUTMENT NO. 1
ABUTMENT SECTIONS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA3.5 OF 7 SHEETS

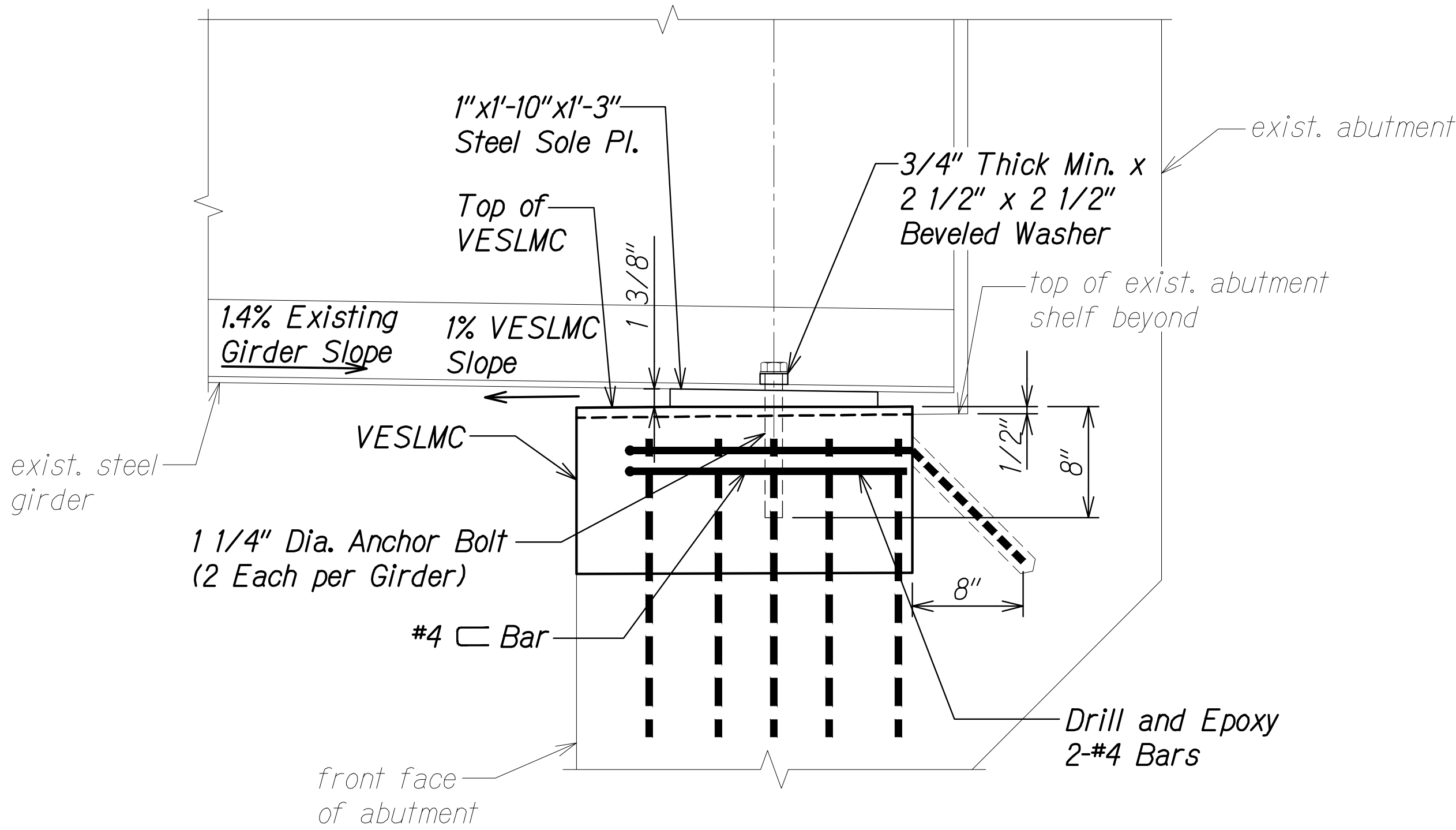
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 51 | 280 |



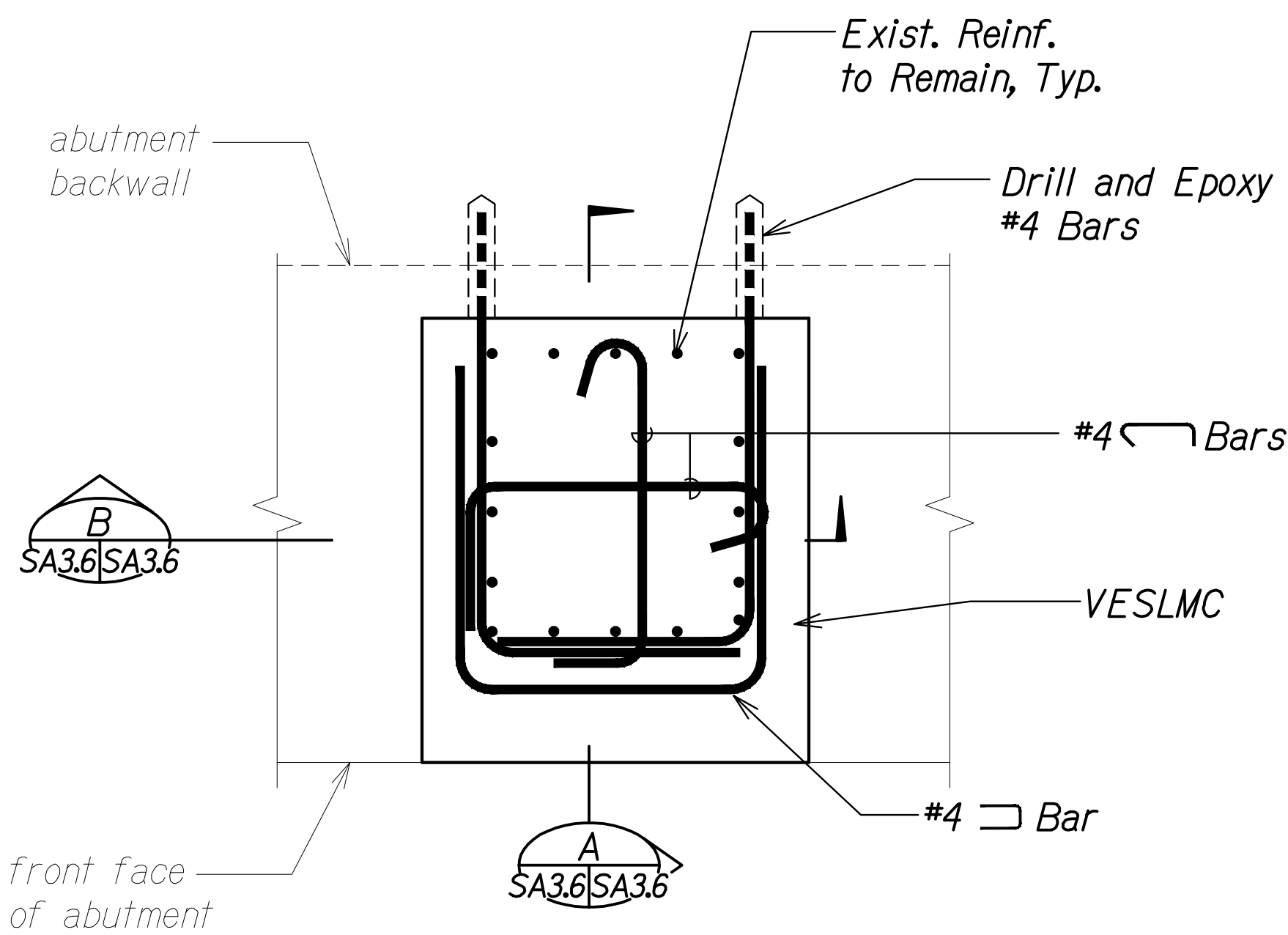
SECTION A
Scale: 3/4" = 1'-0" SA3.1 SA3.6



SECTION B
Scale: 3/4" = 1'-0" SA3.1 SA3.6



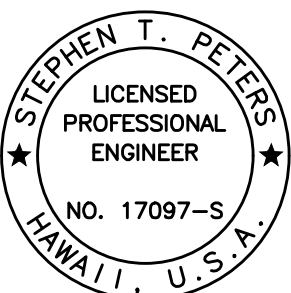
SECTION D
Scale: 1 1/2" = 1'-0" SA3.6 SA3.6



PLAN
Scale: 1 1/2" = 1'-0" SA3.6 SA3.6

NOTES:

1. Verify all dimensions and slopes in field before fabricating any members.
2. Repair all welds to bearing plates with zinc solder in accordance with ASTM A780, Painting of all bearings shall be incidental to Pay Item 666.1000.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ABUTMENT NO. 2
ABUTMENT SECTIONS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA3.6 OF 7 SHEETS

ADD. 51

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\12-06-24 ADD\NSR-SA0301-SA0307 ABUT.DWG PLOT TIME: 12-05-24, 2:28 PM

| | | |
|---------|----------|------------------------------|
| 12/6/24 | 1 | Revised Scale and Added Note |
| DATE | REVISION | |

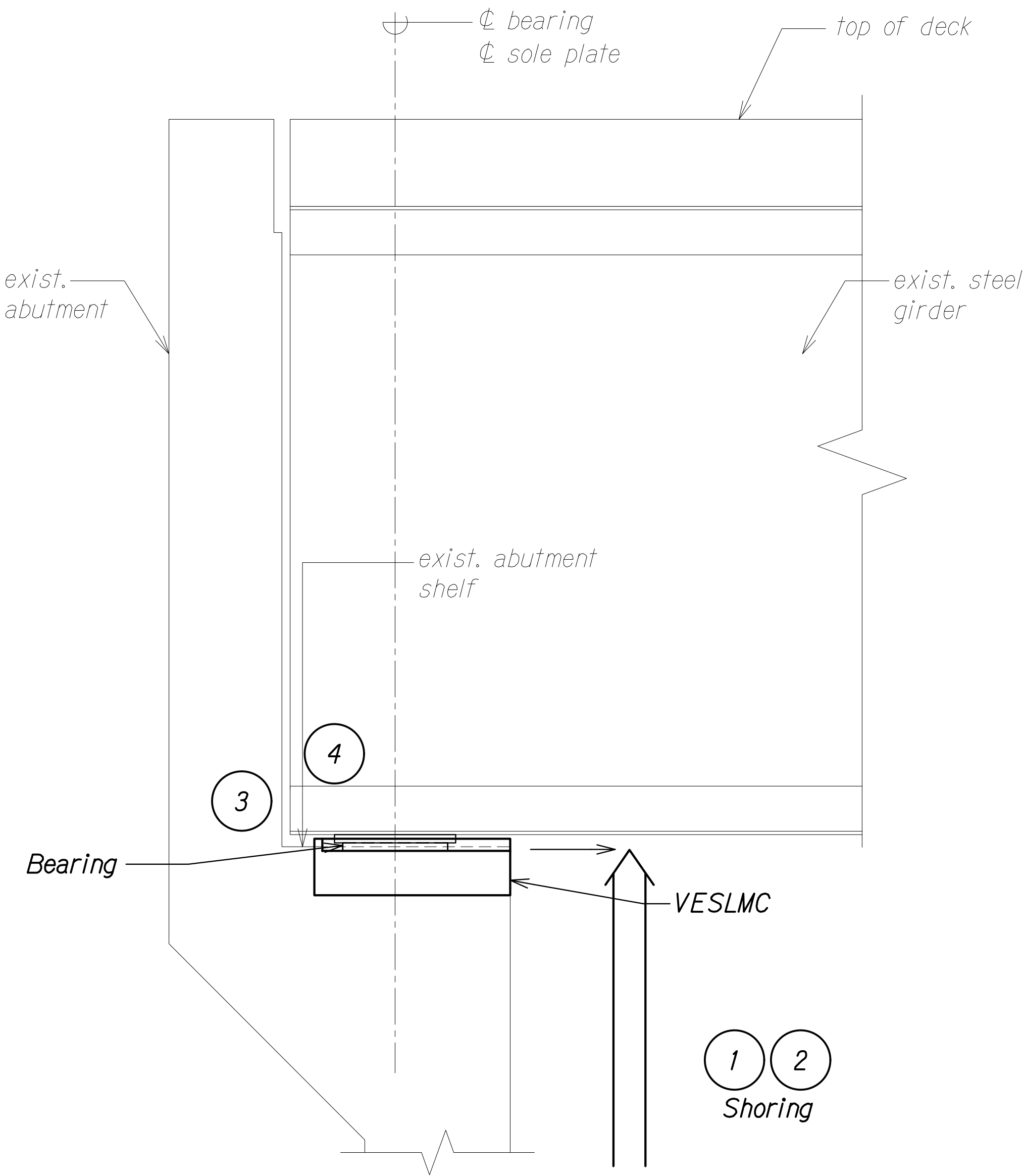
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 52 | 280 |

BEARING REPLACEMENT CONSTRUCTION SEQUENCE:

1. Construct shoring.
2. Raise bridge girders and place on temporary shoring. See Temporary Shoring Notes for criteria.
3. Remove existing bearings. Demo and reconstruct abutment shelf, and install new bearing plates and elastomeric bearings.
4. Lower bridge girders onto new bearings and remove shoring.
5. Final bottom of girder elevations shall match existing bottom of girder elevations.

TEMPORARY SHORING NOTES:

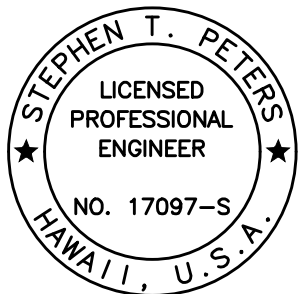
1. All girders at the same abutment shall be raised and lowered at the same time.
2. Bridge girders shall be raised the same amount and not be raised more than 1/2" higher than it's existing elevation.
3. Bearings, jacks, and temporary shoring shall be capable of carrying all dead loads and HL-93 Live Loads. Supports shall be considered Falsework and follow all specifications and criteria listed on Sheet S0.4. A detailed plan with plans and calculations stamped by a Structural Engineer licensed in the State of Hawaii shall be submitted for approval to the Engineer.



SECTION A
Scale: 1" = 1'-0" SA3.7 SA3.7

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0301-SA0307 ABUT.DWG PLOT TIME: 10-28-24, 8:14 PM



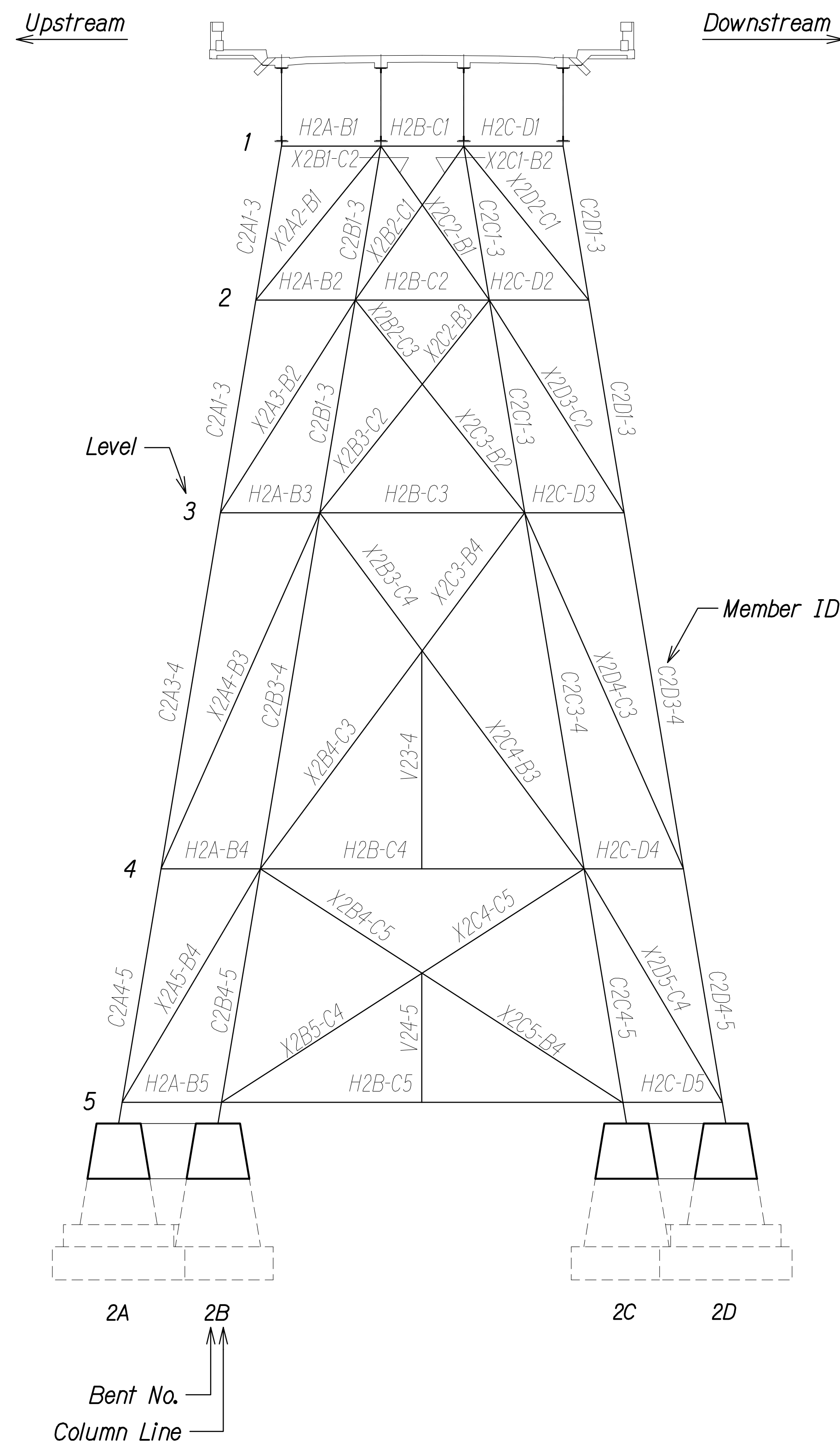
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**BEARING REPLACEMENT
CONSTRUCTION SEQUENCE**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No.SA3.7 OF 7 SHEETS

MEMBER IDENTIFICATION (ID)
LOCATION KEY AT BENTS



MEMBER ID LEGEND

COLUMN ID - SEE SA5.1 - SA5.11

Member Type
"C" = Column

Member ID
C 1 D 1 - 2

Bent No.
Column Line
Level at Top

Level at Bottom

HORIZONTAL BRACE ID - SEE SA5.19 - SA5.22

Member Type
"H" = Horizontal Brace

Member ID
H 1 C - D 2

Bent No.
Column Line
at Left

Level
Column Line
at Right

DIAGONAL BRACE ID - SEE SA5.12 - SA5.18

Member Type
"X" = Diagonal Brace

Member ID
X 1 B 2 - C 3

Bent No.
Column Line Start
Level Start

Level End
Column Line End

VERTICAL BRACE ID - SEE SA5.31 - SA5.32

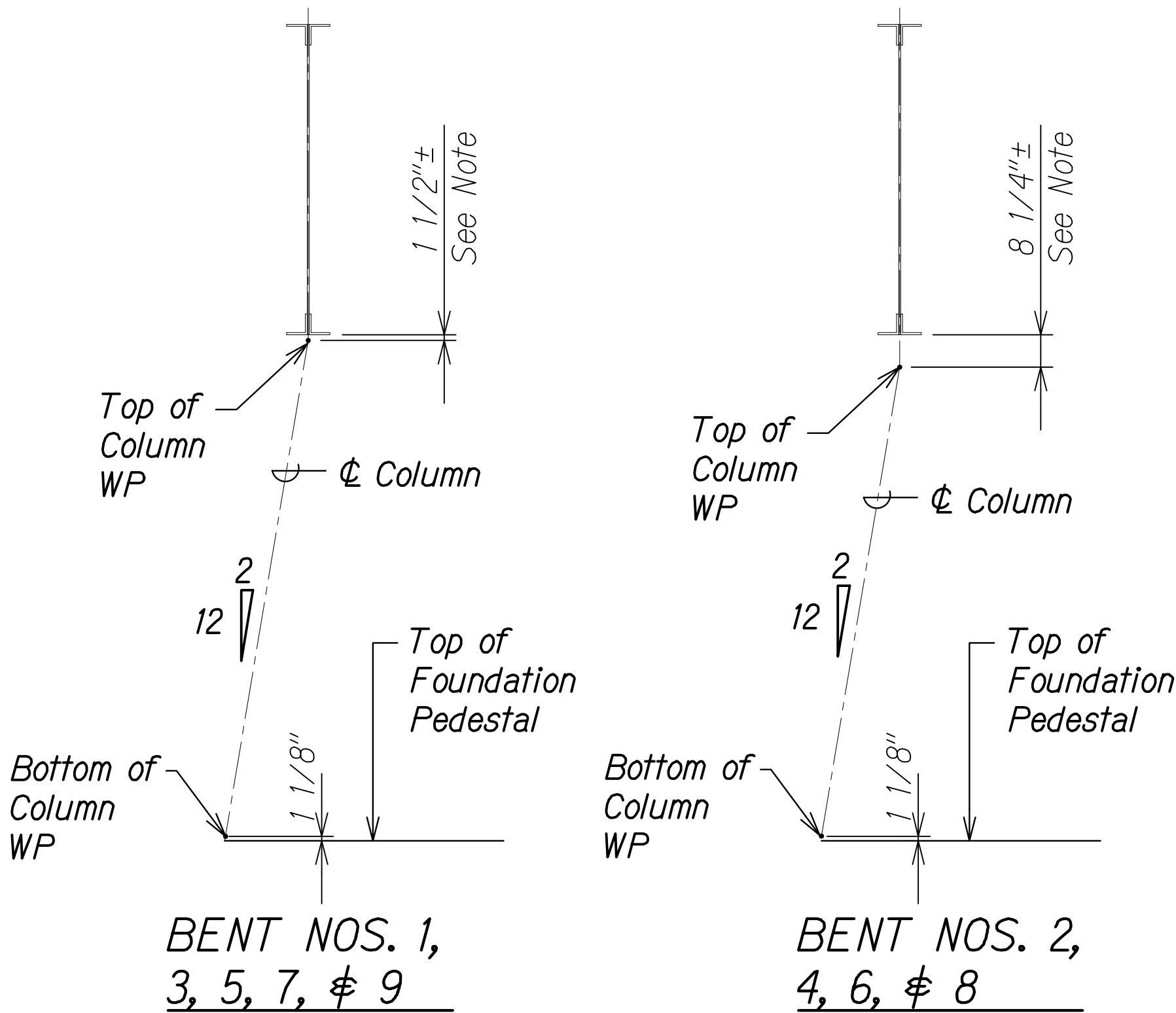
Member Type
"V" = Vertical Brace

Member ID
V 1 2 - 3

Bent No.
Level Above

Level Below

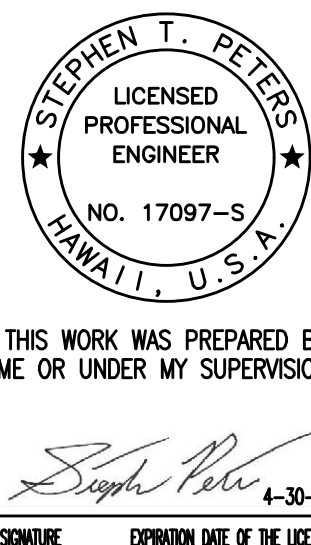
| TOP & BOTTOM OF COLUMN WP SCHEDULE | | |
|------------------------------------|---------------------------|------------------------------|
| LOCATION | WP ELEV. AT TOP OF COLUMN | WP ELEV. AT BOTTOM OF COLUMN |
| Bent No. 1 | 210.7357 | 168.3538 |
| Bent No. 2 | 209.5257 | 121.3538 |
| Bent No. 3 | 209.5257 | 87.3538 |
| Bent No. 4 | 207.9757 | 38.2838 |
| Bent No. 5 | 207.9757 | 23.2738 |
| Bent No. 6 | 206.3857 | 21.6938 |
| Bent No. 7 | 206.3857 | 75.2538 |
| Bent No. 8 | 204.8257 | 138.2938 |
| Bent No. 9 | 204.8257 | 167.4438 |



COLUMN WORK POINT DETAILS

NOTE:

Top of column dimensions are provided for information only and should not be used for detailing purposes.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

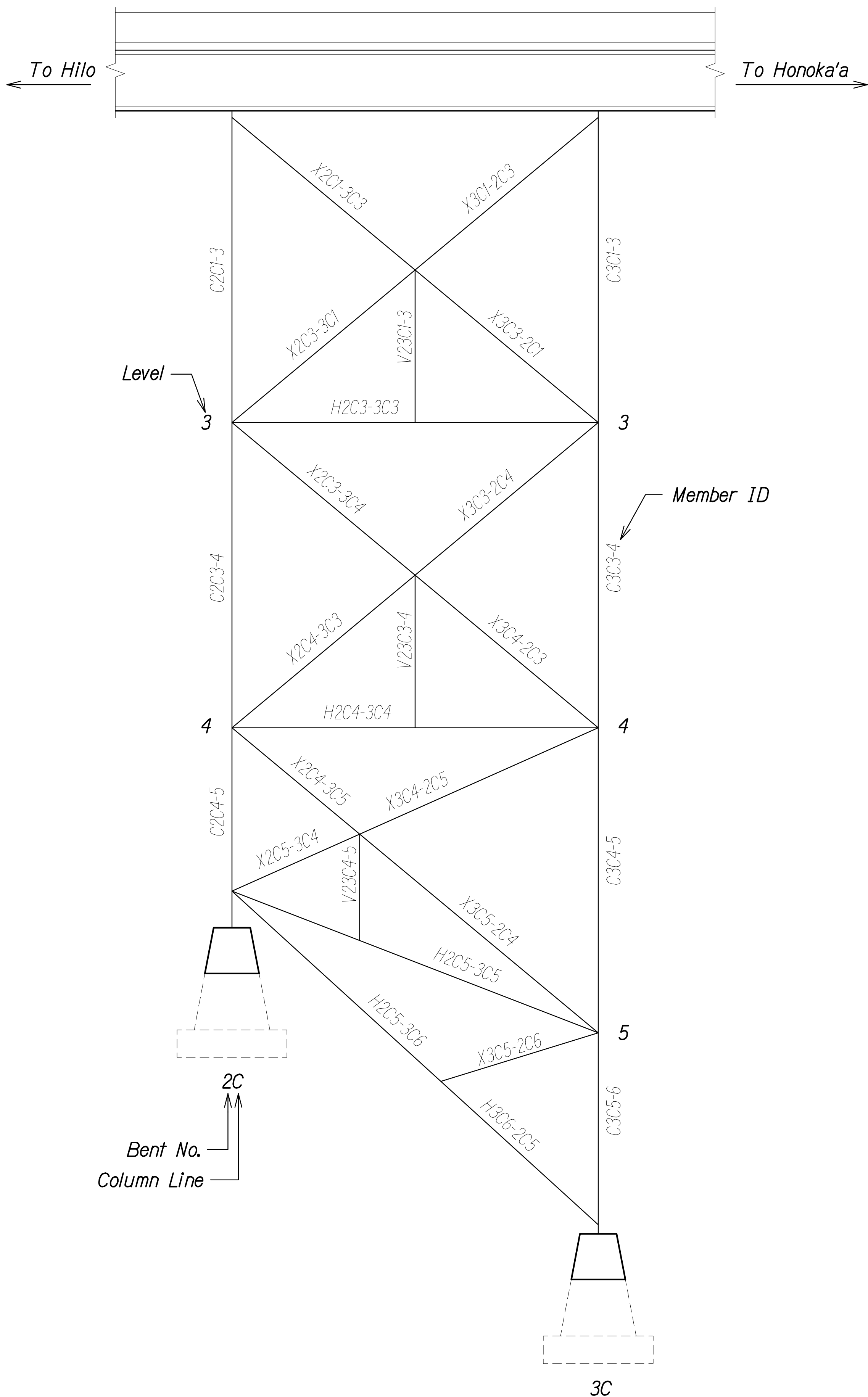
MEMBER ID LOCATION KEY, LEGEND, WP DETAILS & SCHEDULE AT BENTS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

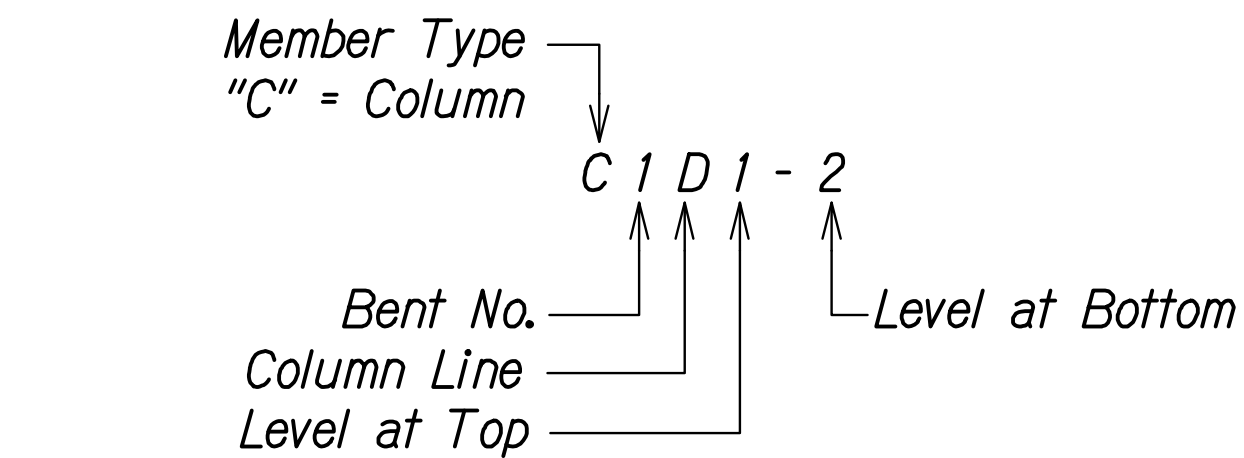
SHEET No. SA4.1 OF 20 SHEETS

MEMBER IDENTIFICATION (ID)
LOCATION KEY AT TRETTLES

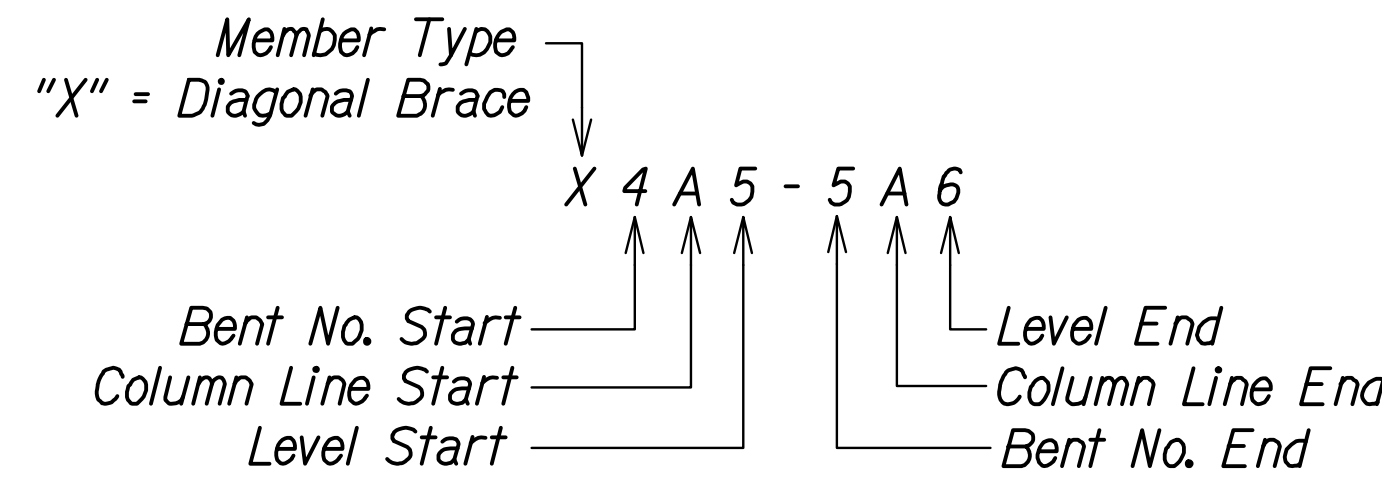


MEMBER ID LEGEND

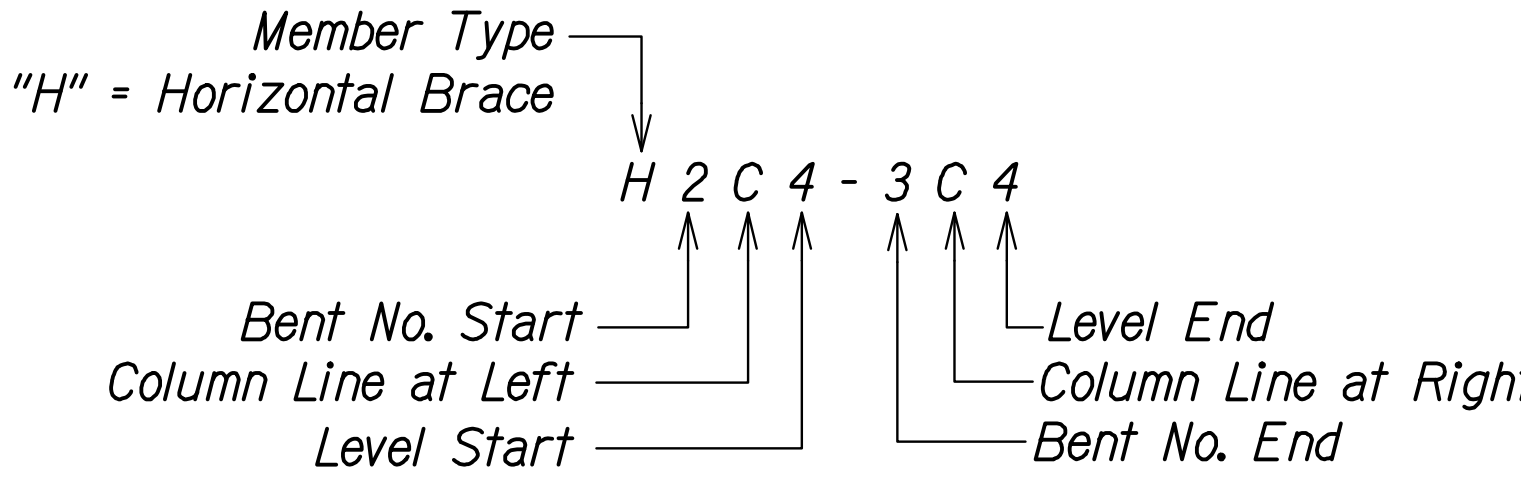
COLUMN ID - SEE SA5.1 - SA5.11



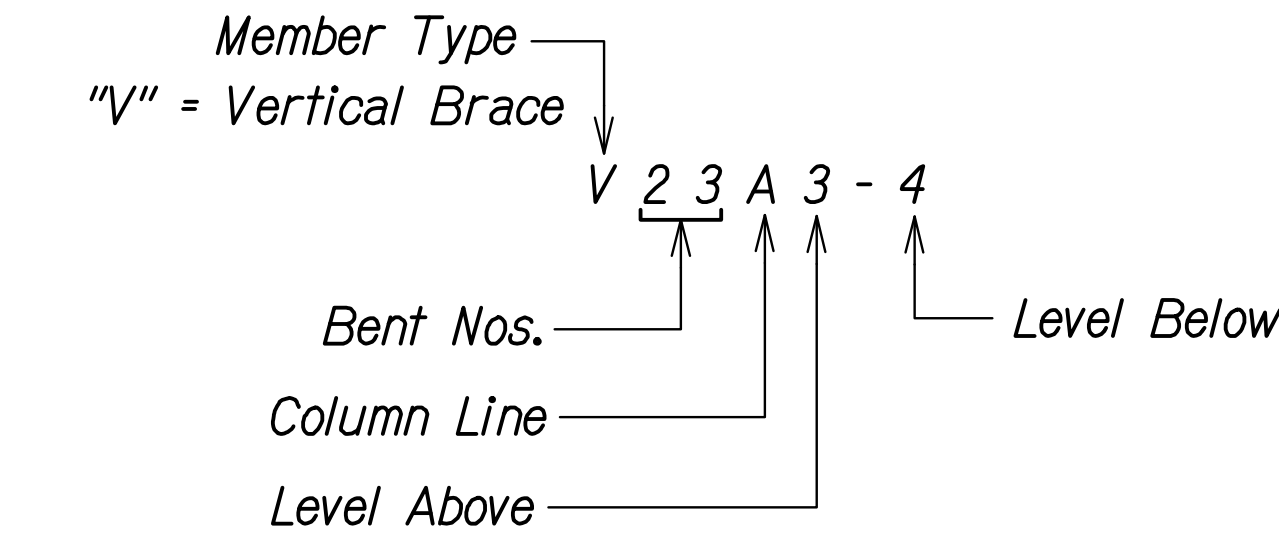
DIAGONAL BRACE ID - SEE SA5.23 - SA5.27



HORIZONTAL BRACE ID - SEE SA5.28 - SA5.30



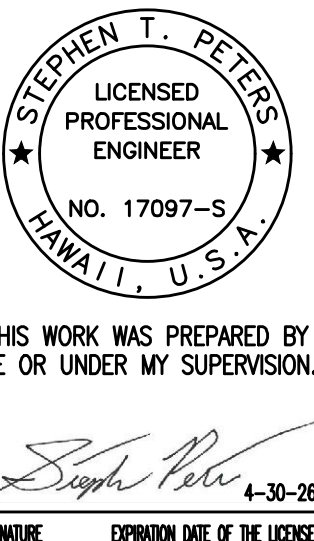
VERTICAL BRACE ID - SEE SA5.33 - SA5.34



| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 54 | 280 |

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24 3:58 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

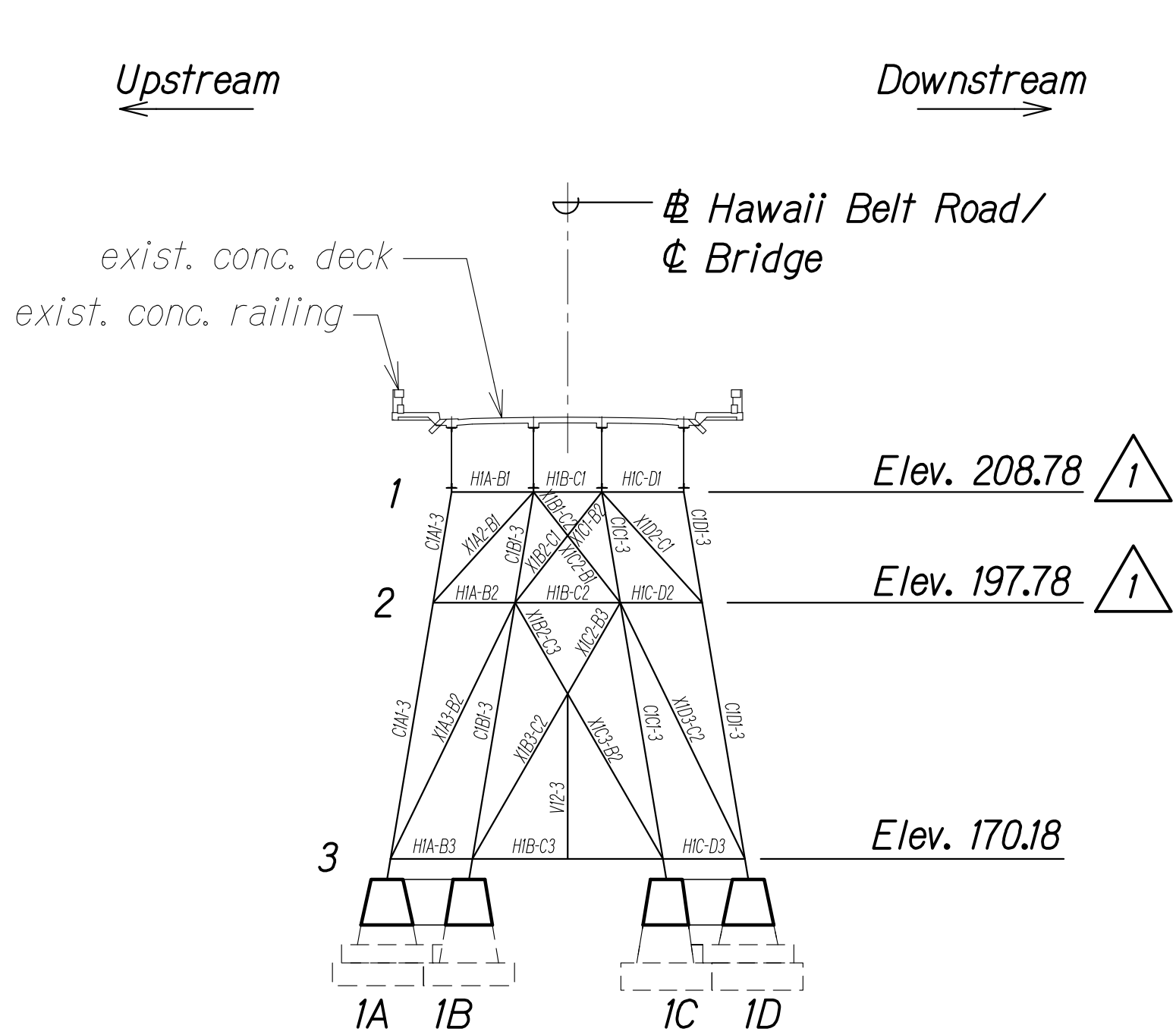
**MEMBER ID LOCATION KEY
AND LEGEND AT TRETTLES**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

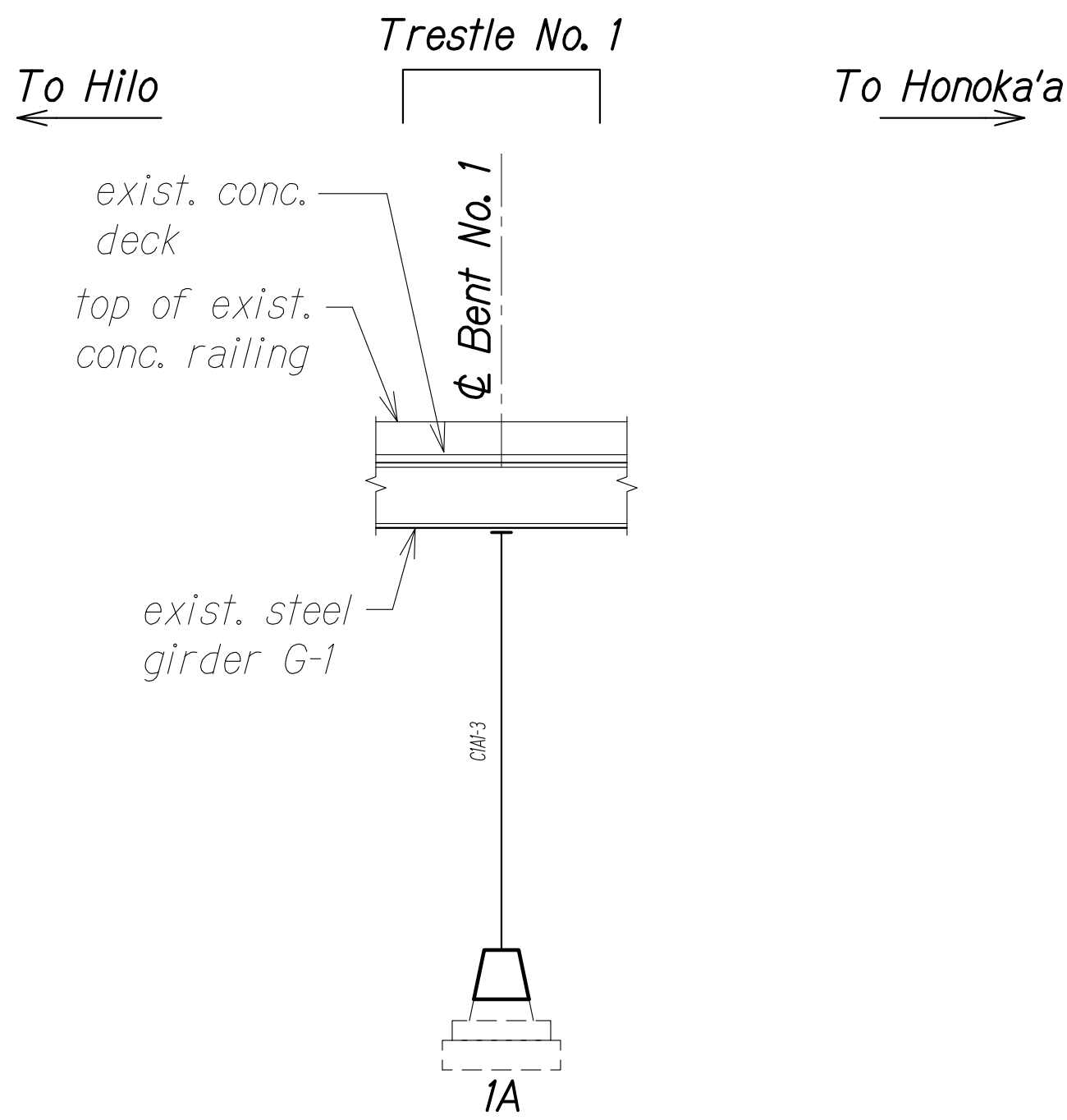
Scale: As Noted Date: Oct. 2024

SHEET No.SA4.2 OF 20 SHEETS

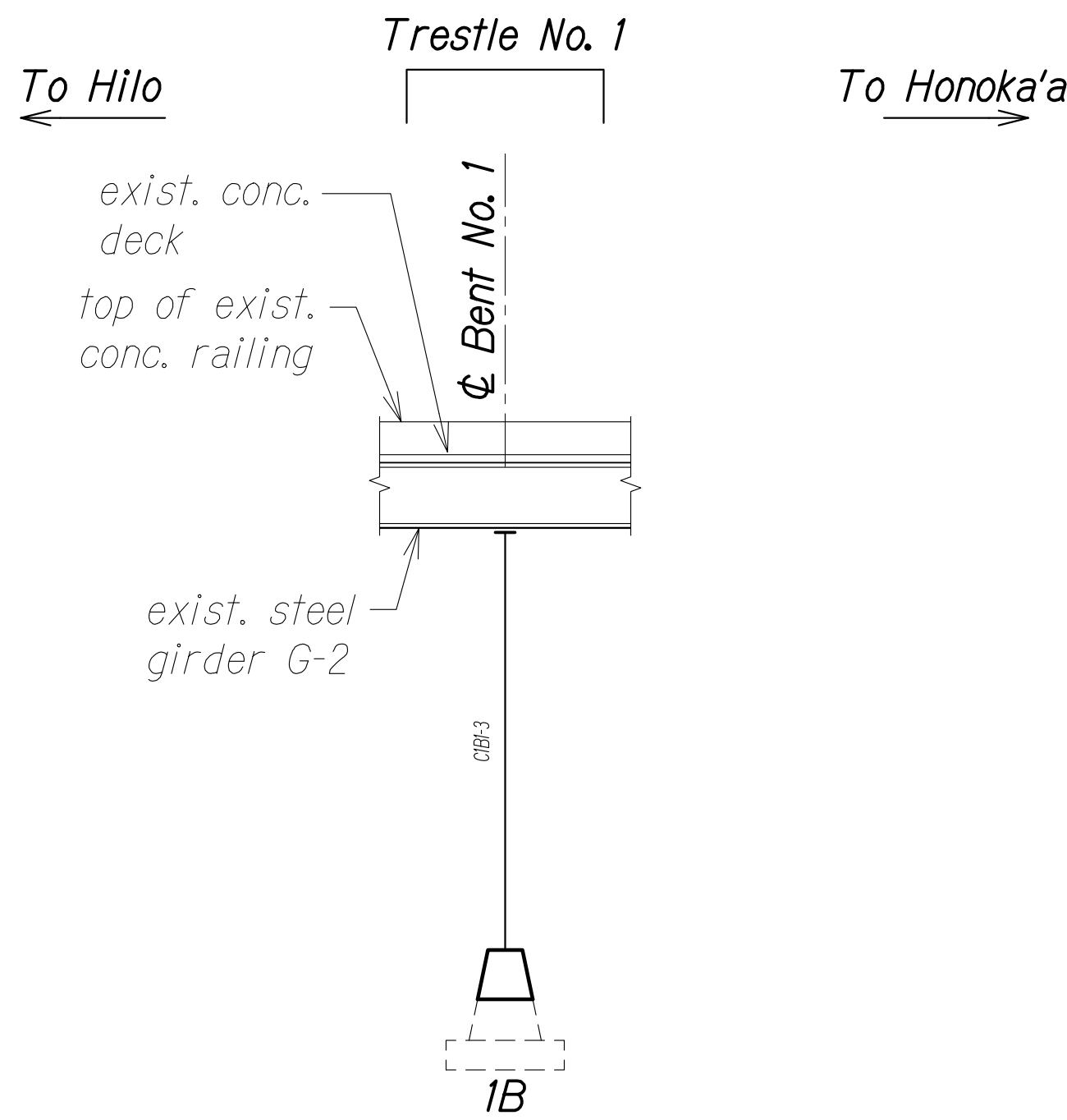
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 55 | 280 |



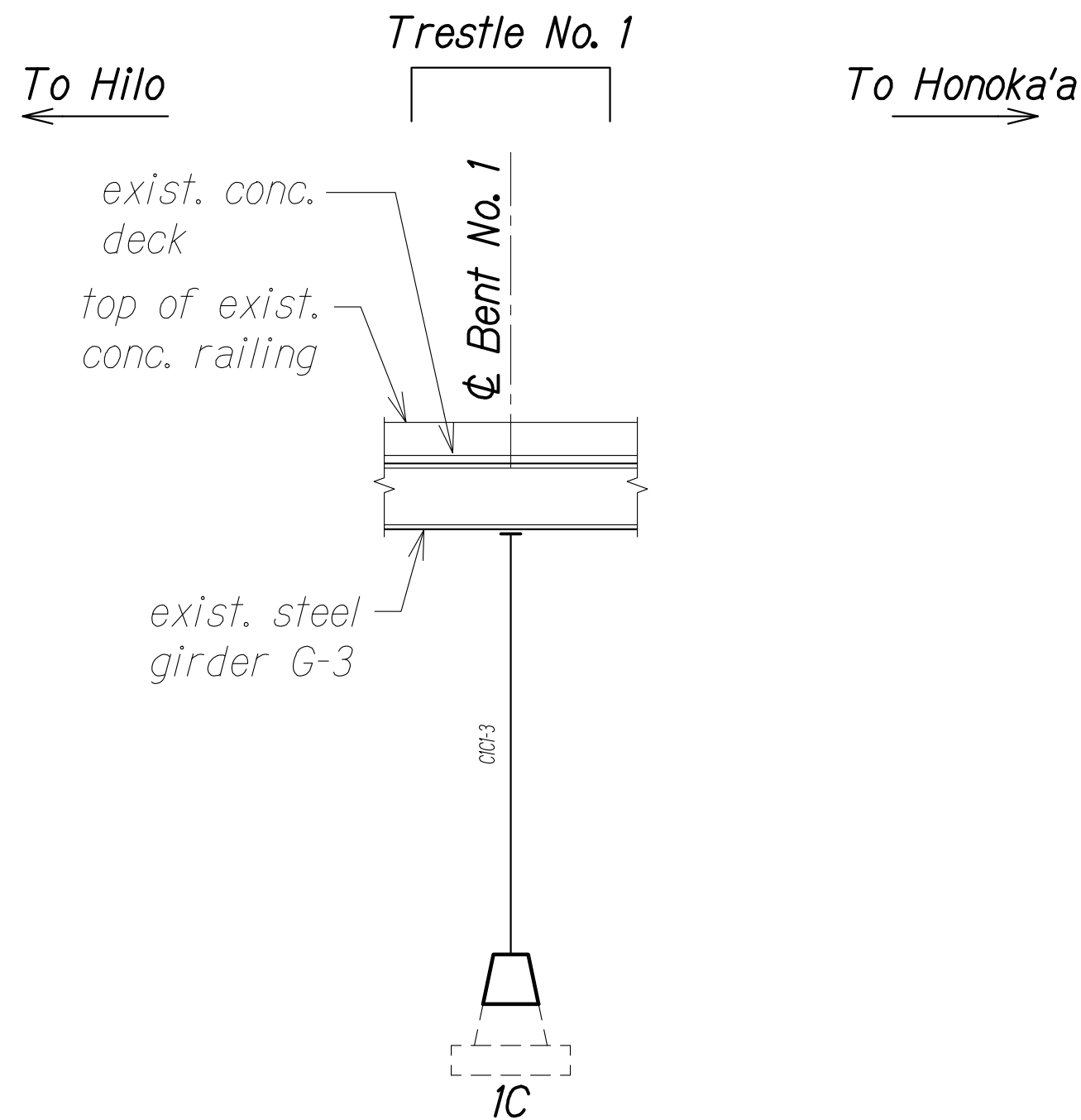
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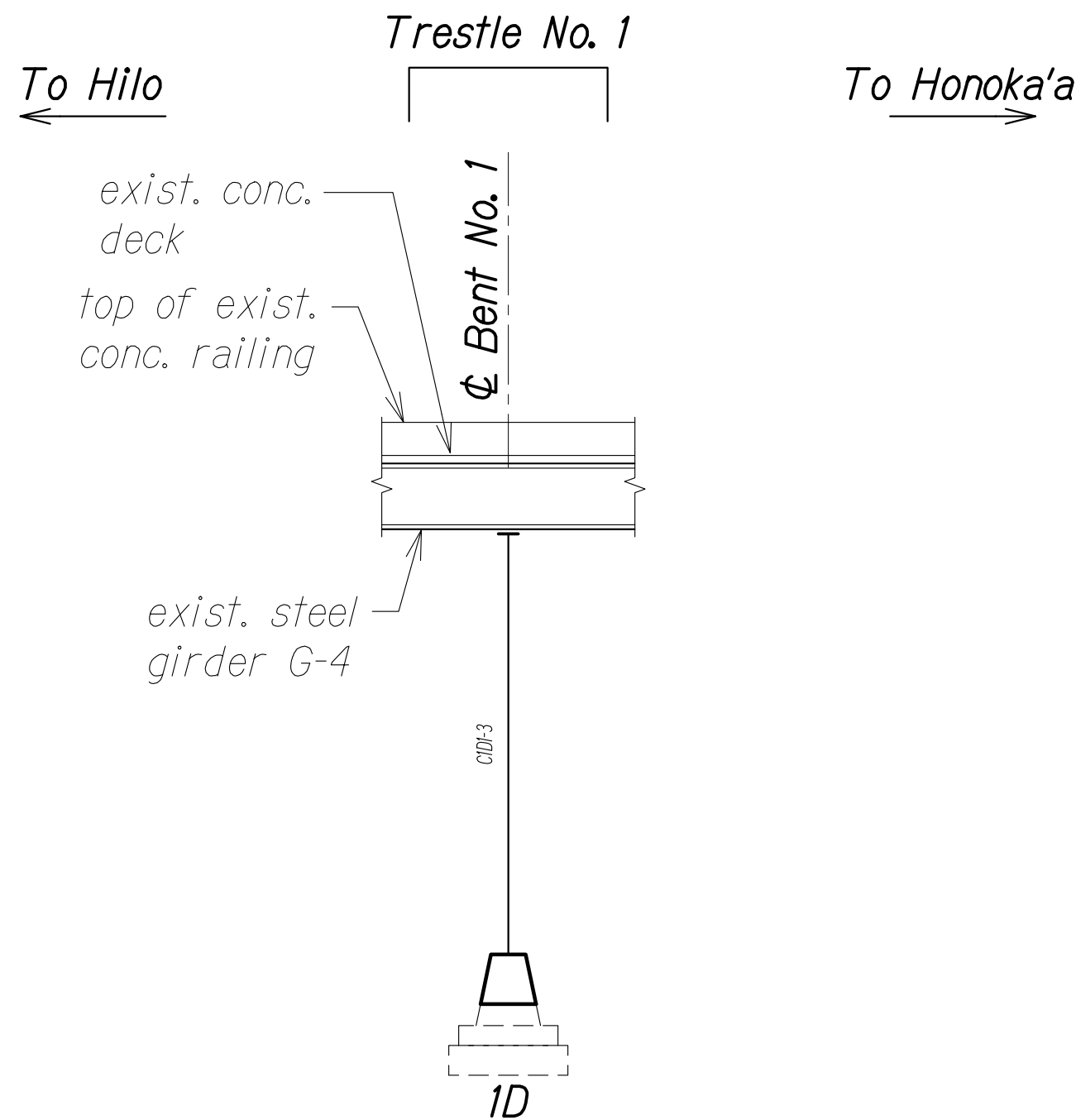
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Scale: 1/16" = 1'-0"



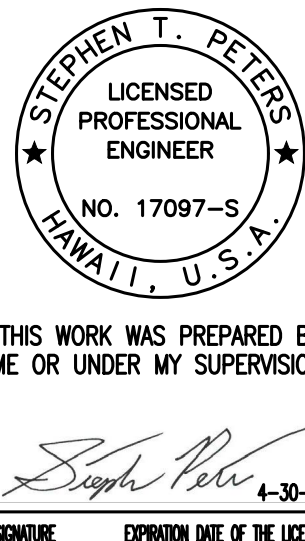
TRESTLE NO. 1 ELEVATION - COLUMN LINE "B"
Scale: 1/16" = 1'-0"



TRESTLE NO. 1 ELEVATION - COLUMN LINE "C"
Scale: 1/16" = 1'-0"

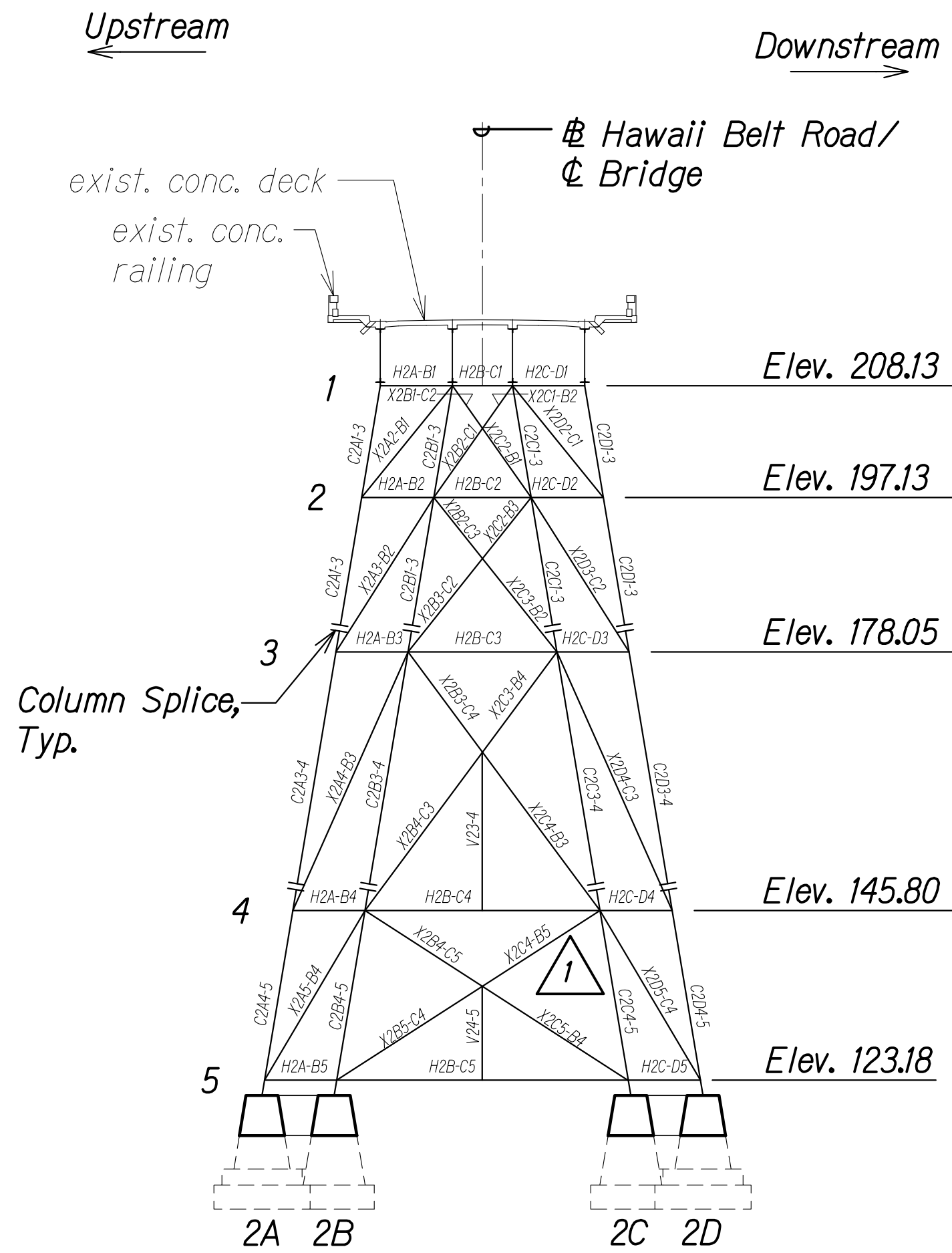


TRESTLE NO. 1 ELEVATION - COLUMN LINE "D"
Scale: 1/16" = 1'-0"



| | | |
|---|---|--------------------|
| 12/6/24 | 1 | Revised Elevations |
| DATE | | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | | |
| BENT NO. 1/TRESTLE NO. 1 MEMBER ELEVATIONS | | |
| HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) | | |
| Scale: As Noted | | Date: Oct. 2024 |
| SHEET No. SA4.3 OF 20 SHEETS | | |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 56 | 280 |

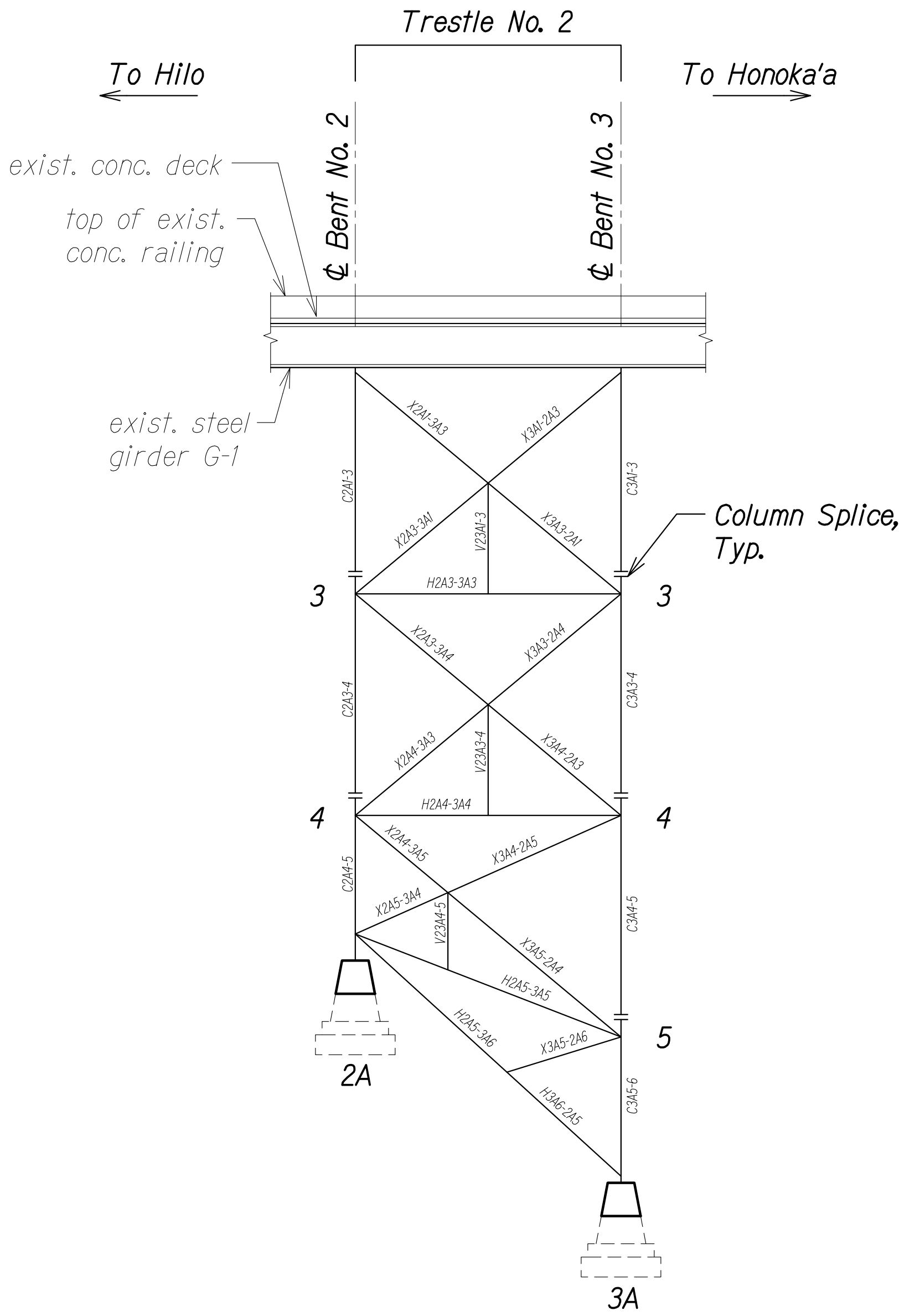


BENT NO. 2 ELEVATION

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

A

SA4.4 SA4.4

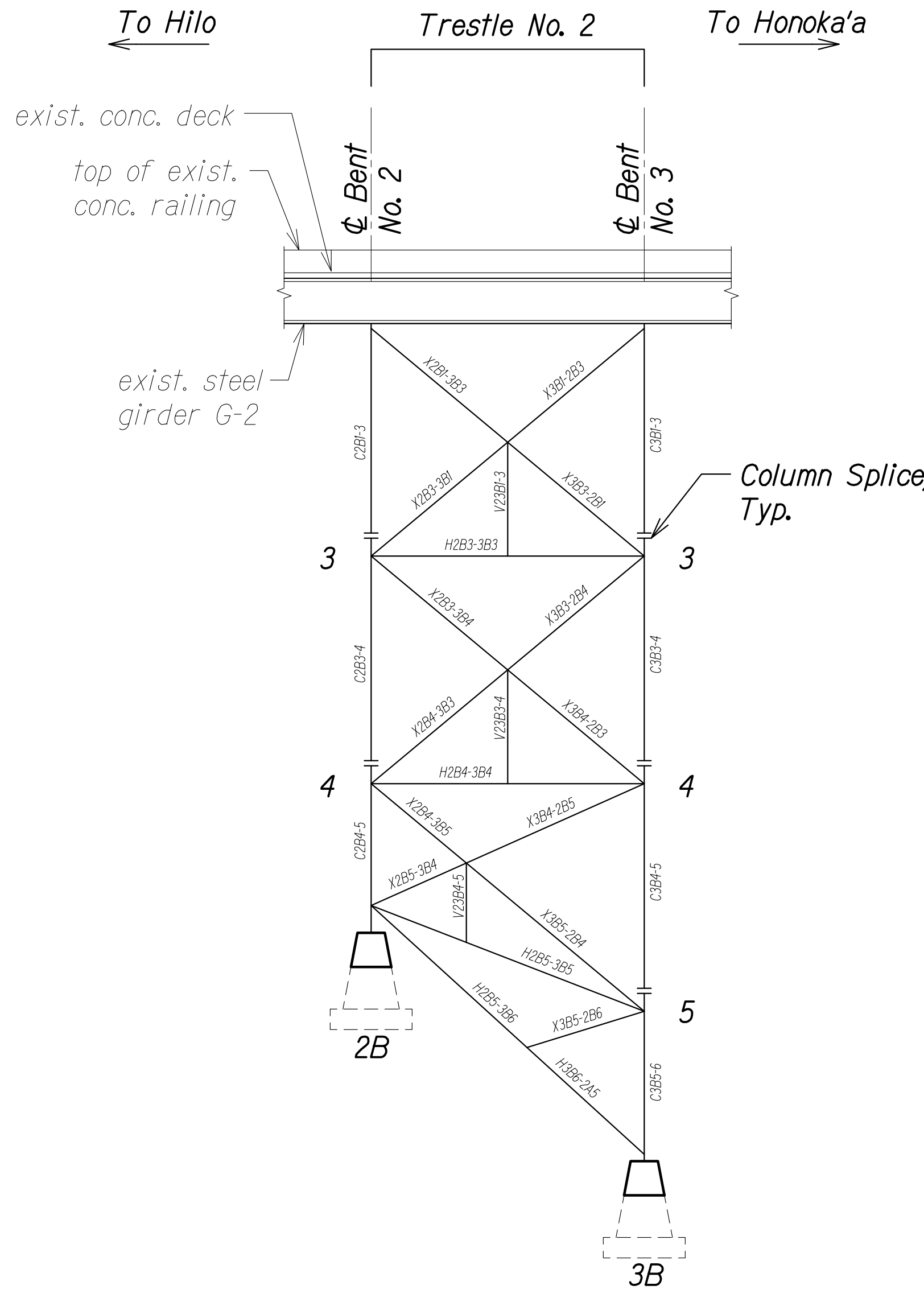


TRESTLE NO. 2 ELEVATION - COLUMN LINE "A"

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

B

SA4.4 SA4.4



TRESTLE NO. 2 ELEVATION - COLUMN LINE "B"

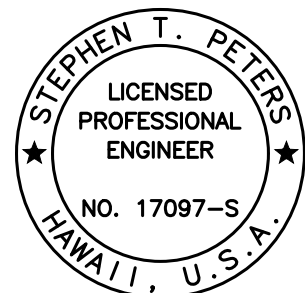
Scale: 1/16" = 1'-0"

C

SA4.4 SA4.4

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\12-06-24 ADD\NSR-SA0401-SA410 BENT-TRESTLES ADD2.DWG PLOT TIME: 12-03-24 9:52 PM



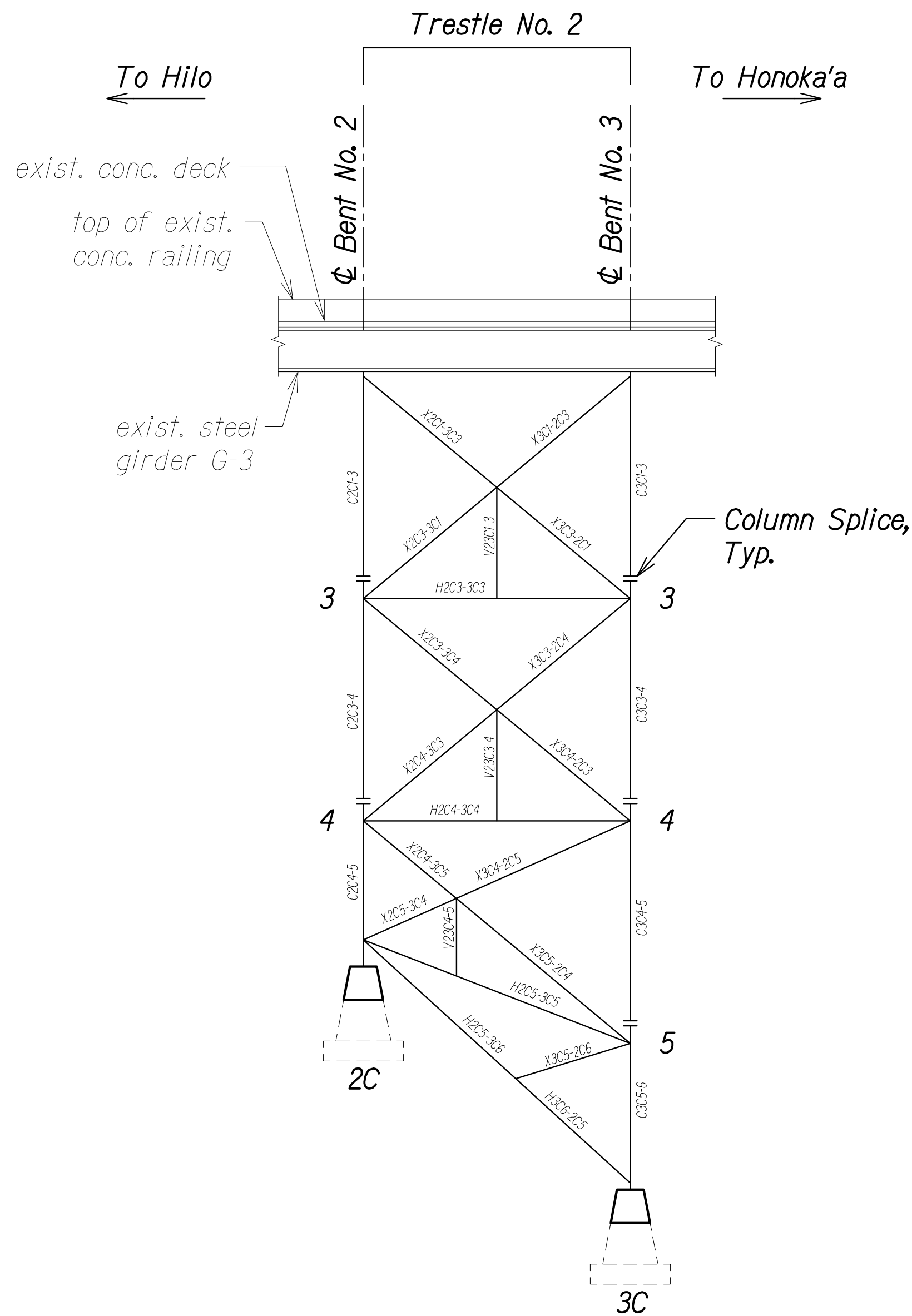
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

| | | |
|--|--------------|-----------------|
| 12/6/24 | <div>1</div> | Revised Label |
| DATE | REVISION | |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | | |
| <u>BENT NO. 2/TRESTLE NO. 2</u> | | |
| <u>MEMBER ELEVATIONS</u> | | |
| HAWAII BELT ROAD | | |
| Nanue Stream Bridge Rehabilitation | | |
| Federal Aid Project No. BR-019-2(077) | | |
| Scale: As Noted | | Date: Oct. 2024 |

SHEET No. SA4.4 OF 20 SHEETS

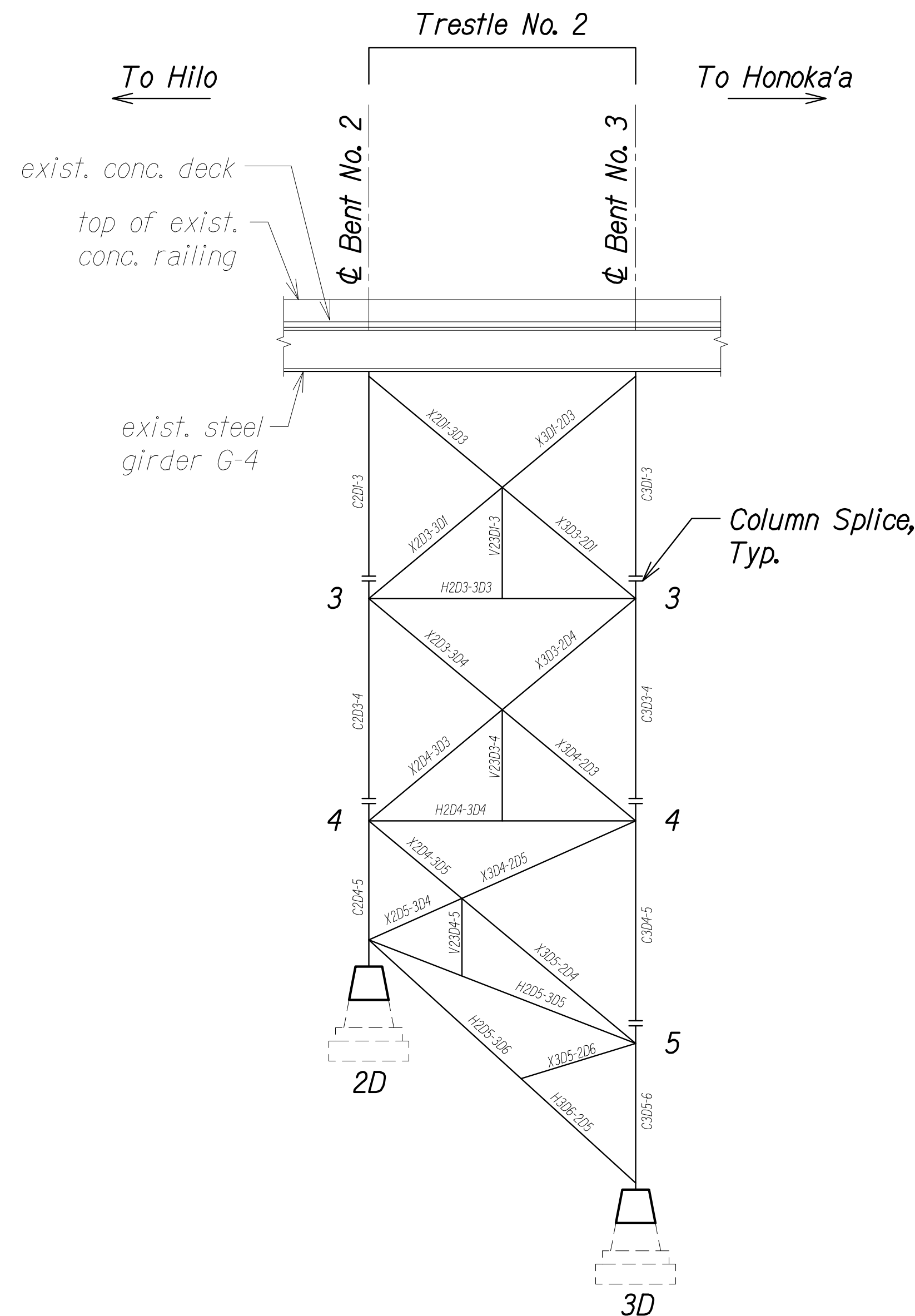
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 57 | 280 |



TRESTLE NO. 2 ELEVATION -
COLUMN LINE "C"

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

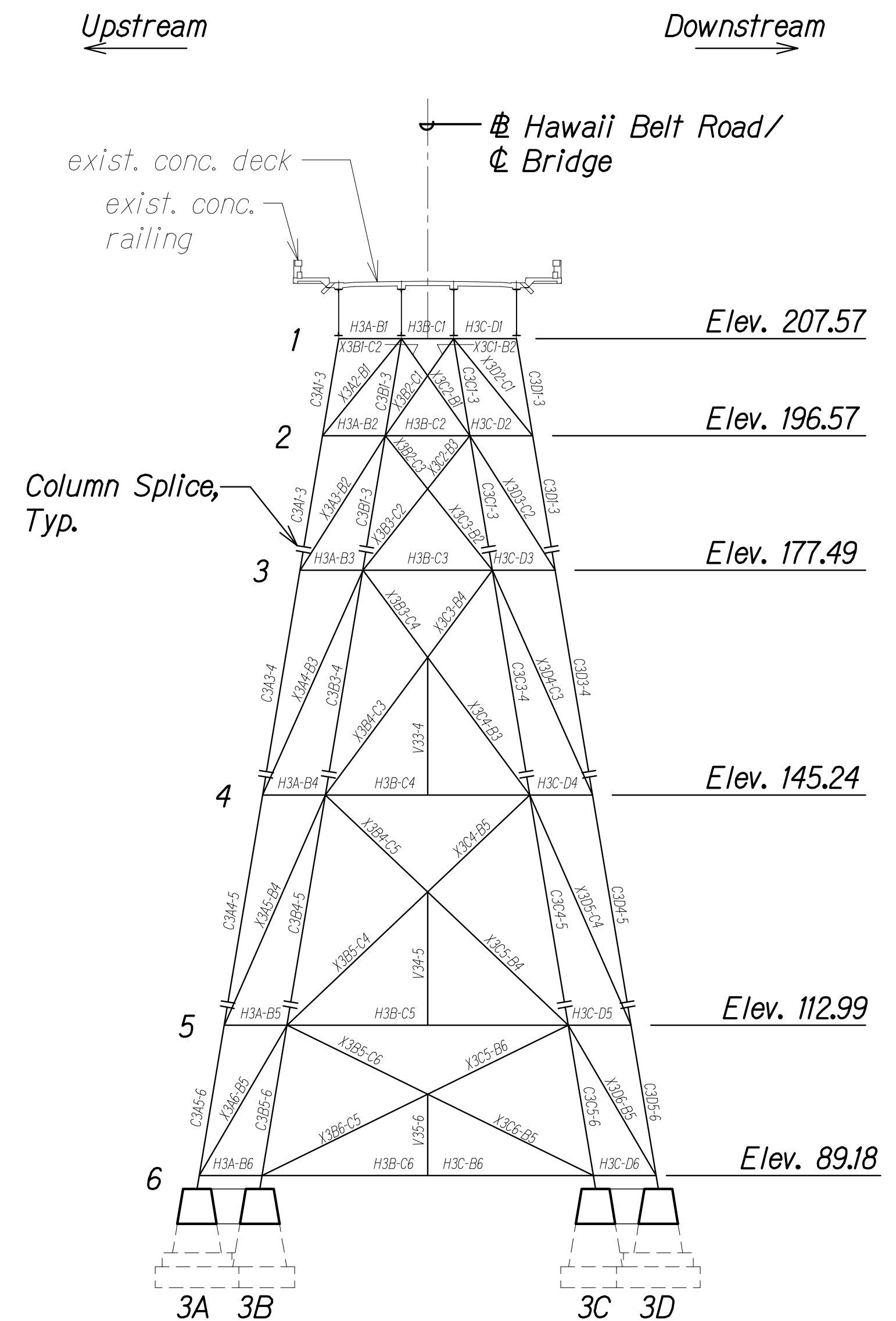
SA4.5 SA4.5



TRESTLE NO. 2 ELEVATION -
COLUMN LINE "D"

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

SA4.5 SA4.5



BENT NO. 3 ELEVATION

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

SA4.5 SA4.5

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24 3:59 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 HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

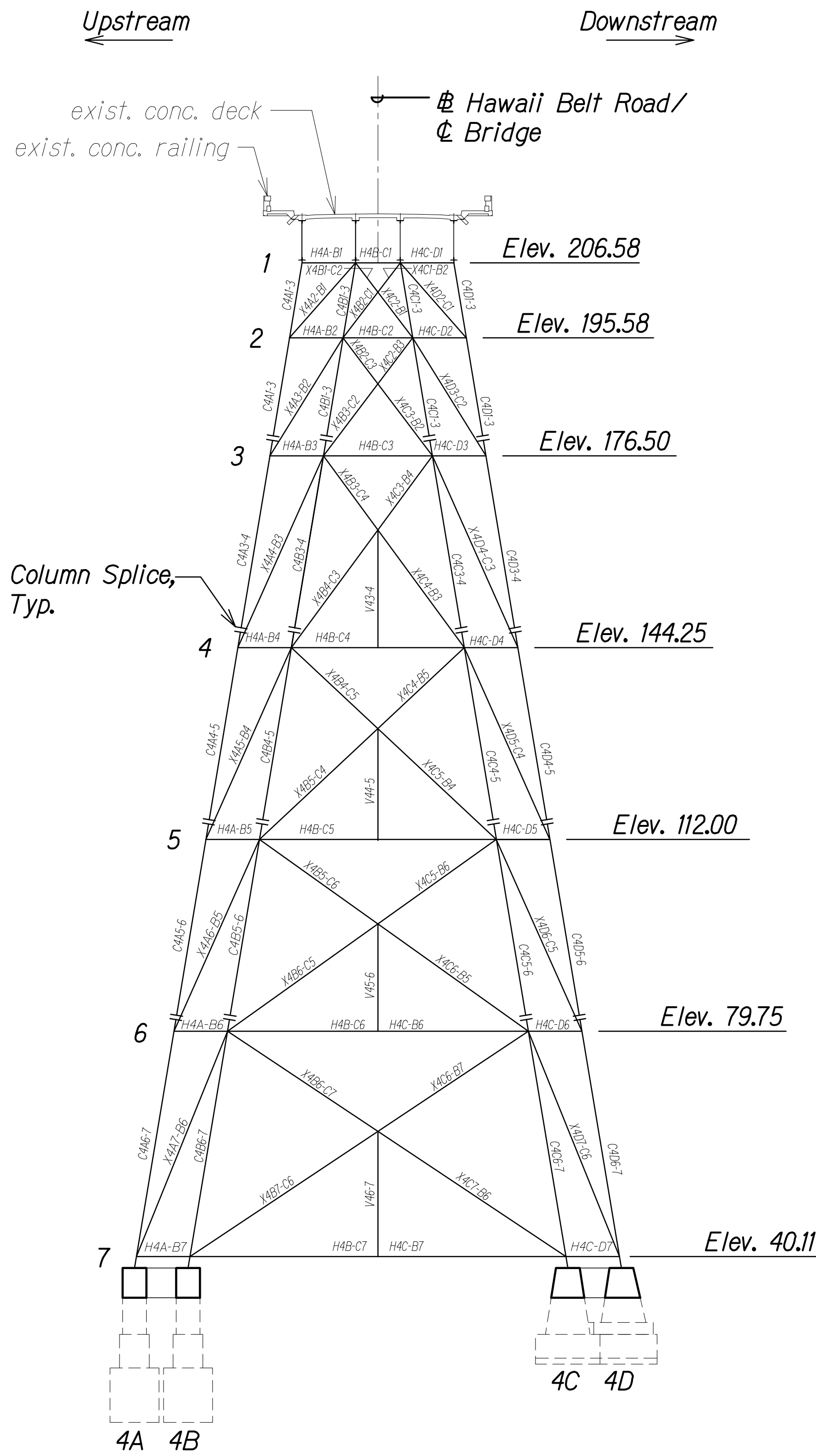
BENT NO. 3/TRESTLE NO. 2
MEMBER ELEVATIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

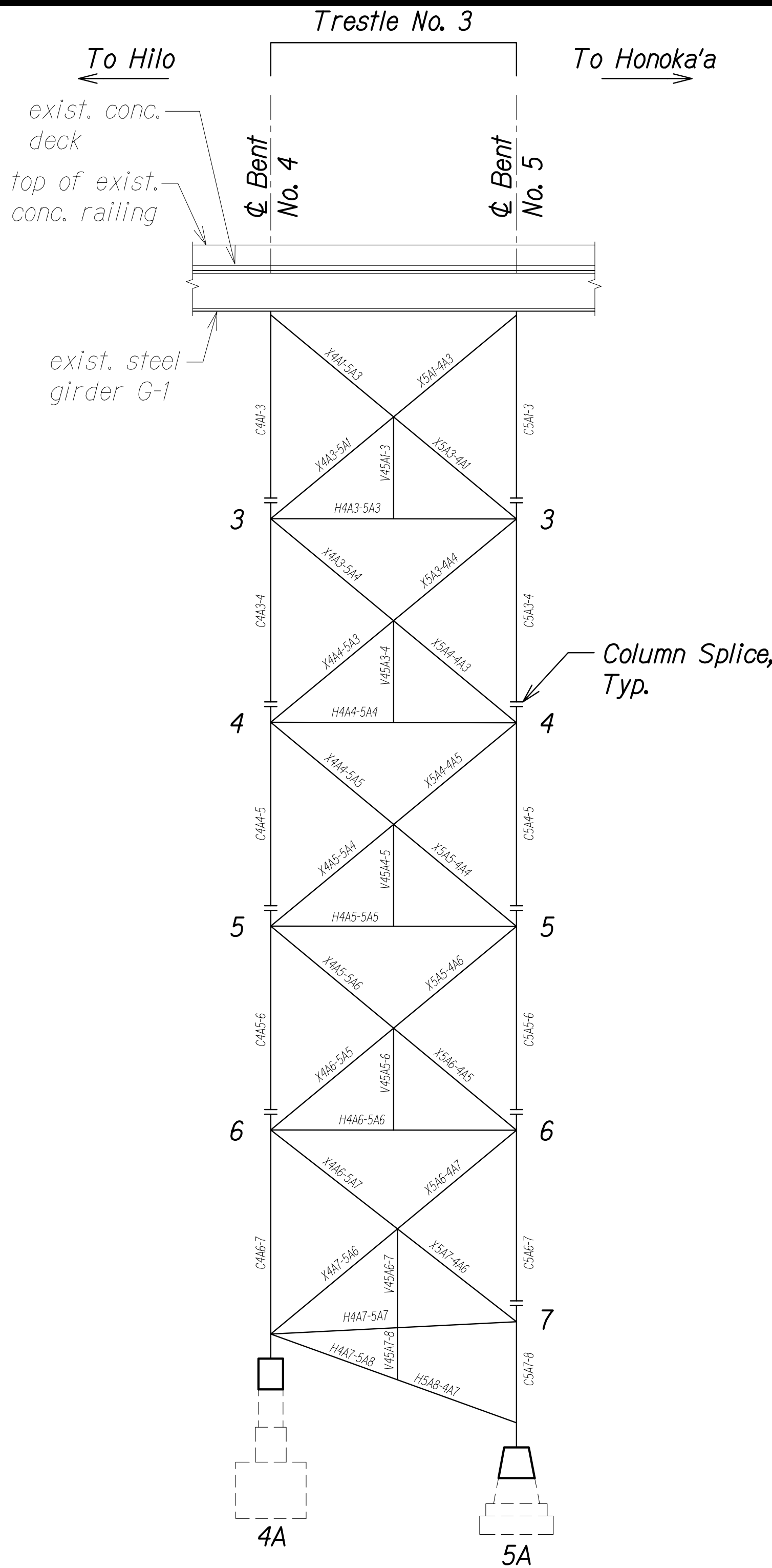
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SHEET No. SA4.5 OF 20 SHEETS

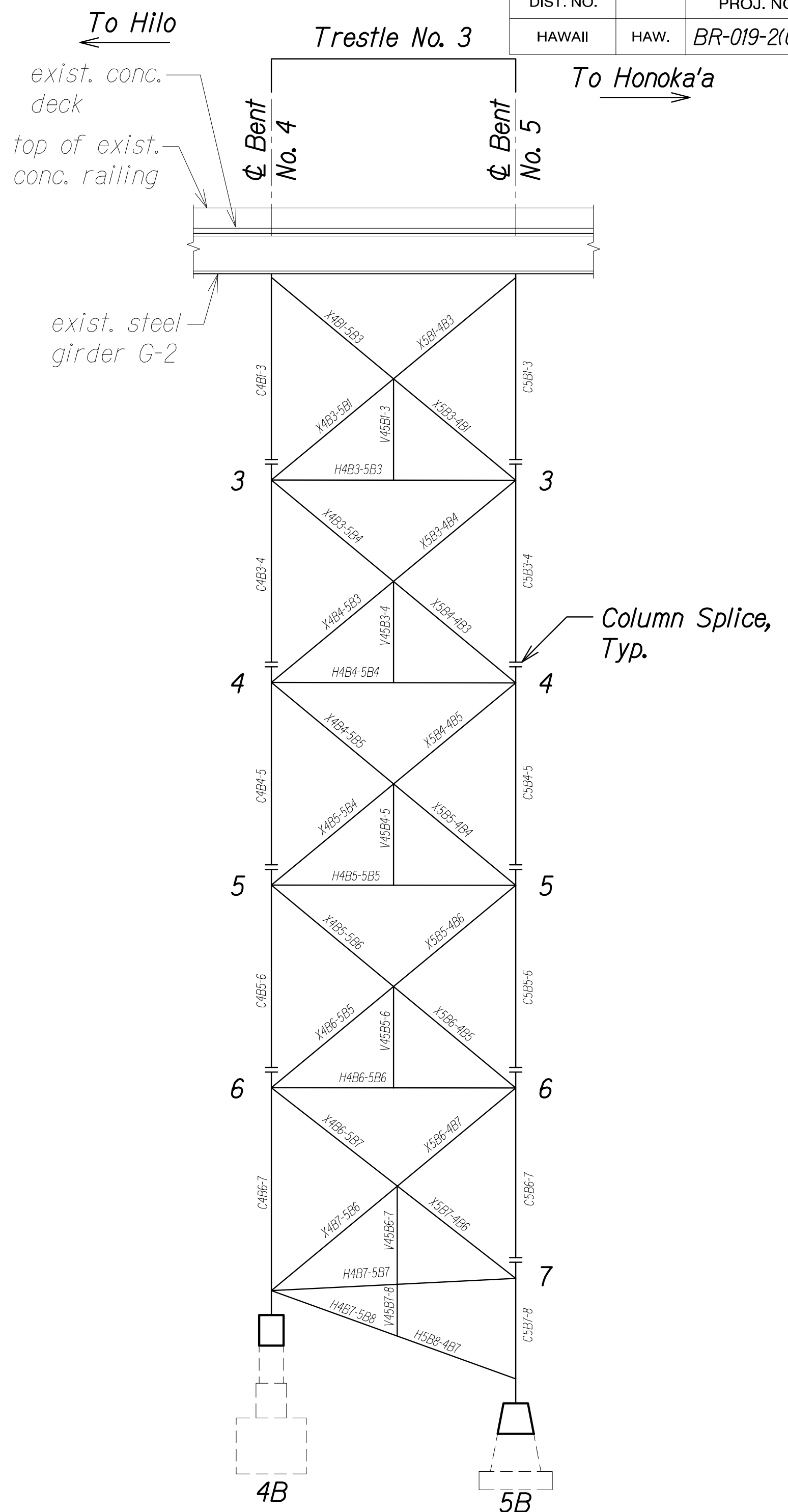
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 58 | 280 |



BENT NO. 4 ELEVATION **A**
Scale: 1/16" = 1'-0" SA4.6 SA4.6



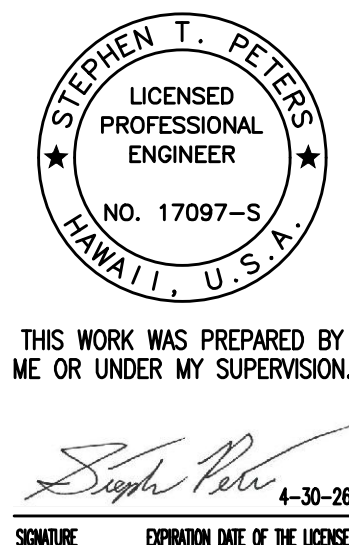
TRESTLE NO. 3 ELEVATION - COLUMN LINE "A" **B**
Scale: 1/16" = 1'-0" SA4.6 SA4.6



TRESTLE NO. 3 ELEVATION - COLUMN LINE "B" **C**
Scale: 1/16" = 1'-0" SA4.6 SA4.6

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\10-28-24 BID SET\NSR-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24 3:59 PM

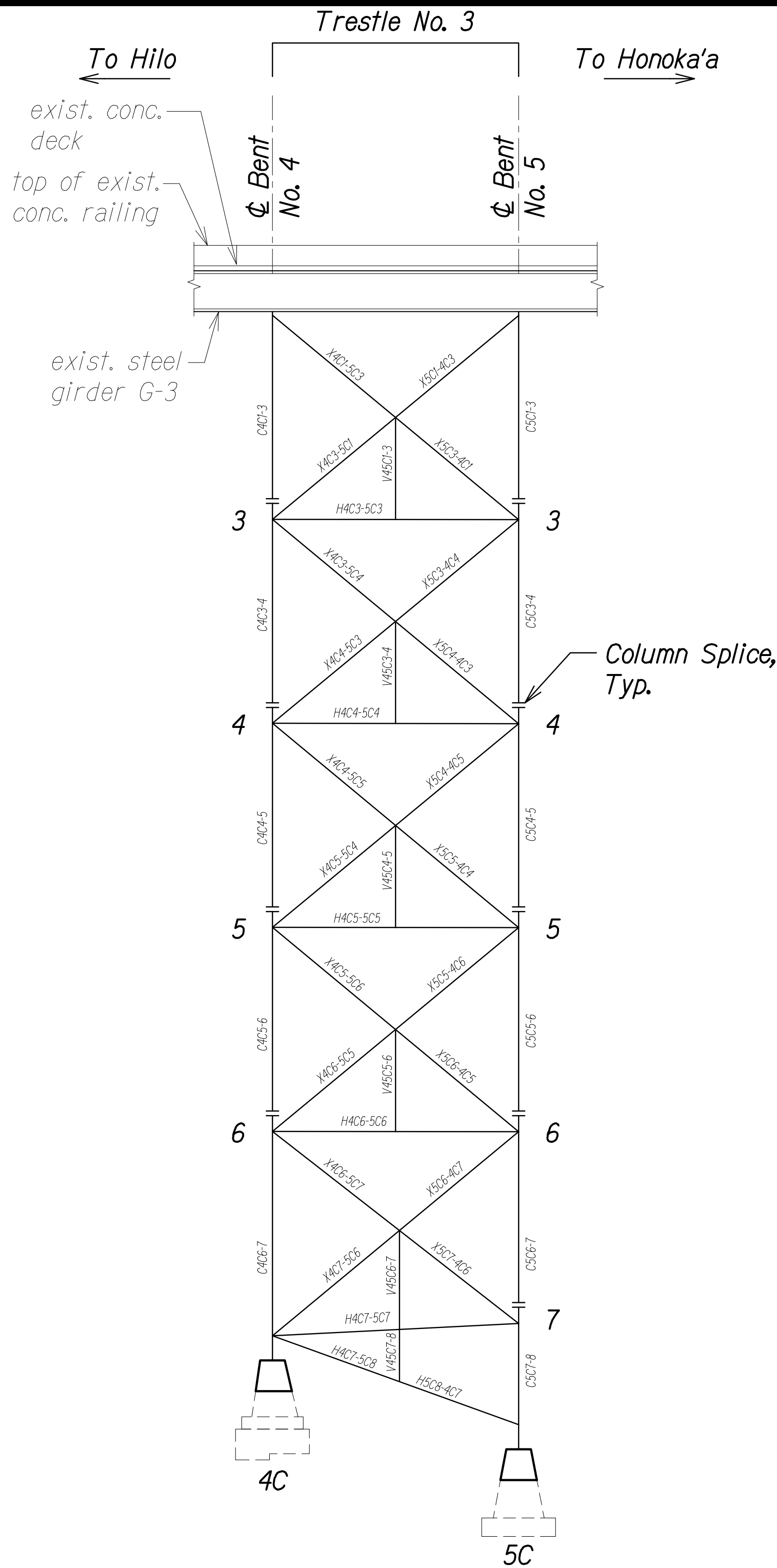


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT NO. 4/TRESTLE NO. 3
MEMBER ELEVATIONS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.6 OF 20 SHEETS

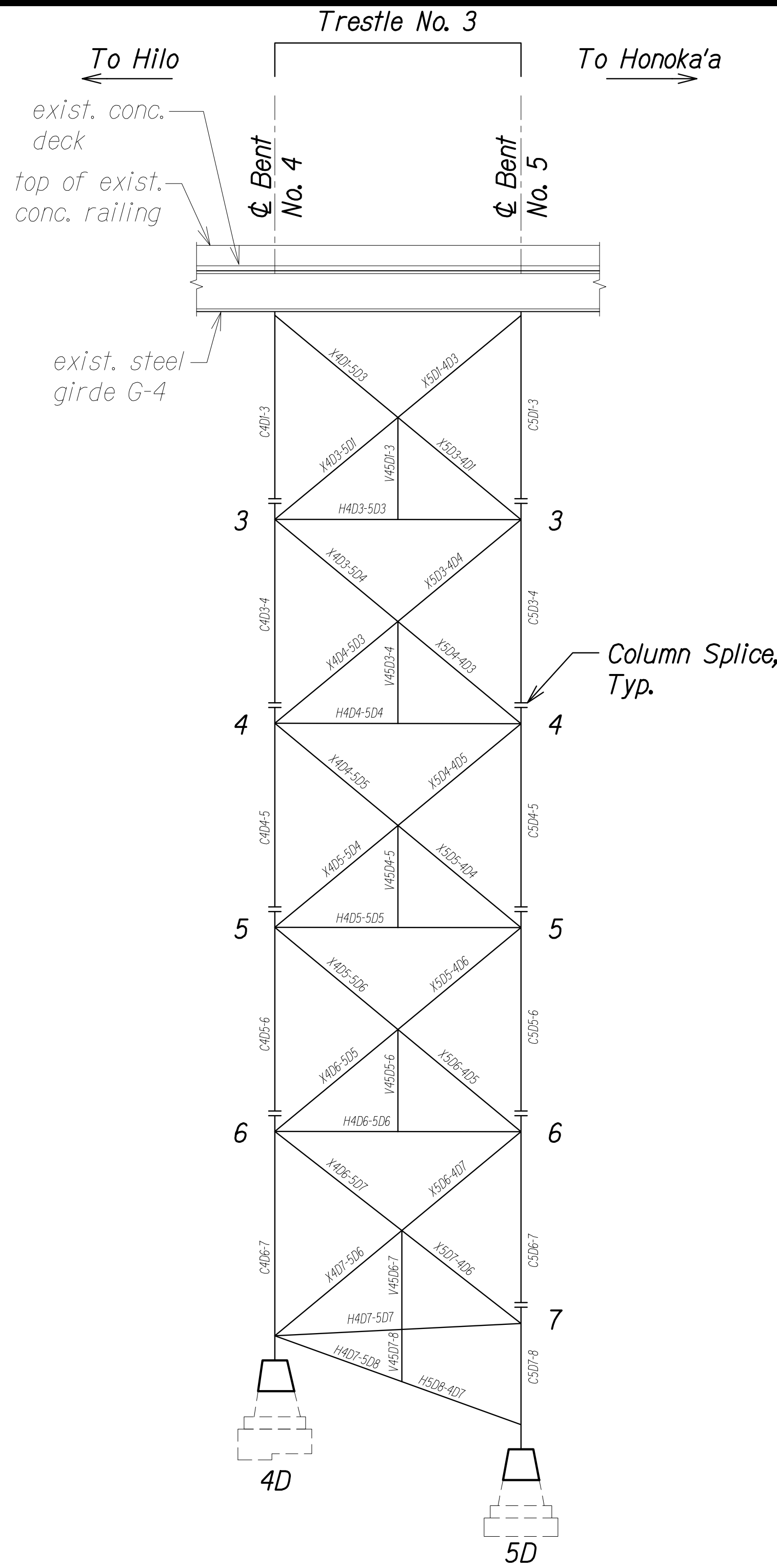
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 59 | 280 |



TRESTLE NO. 3 ELEVATION -
COLUMN LINE "C"

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

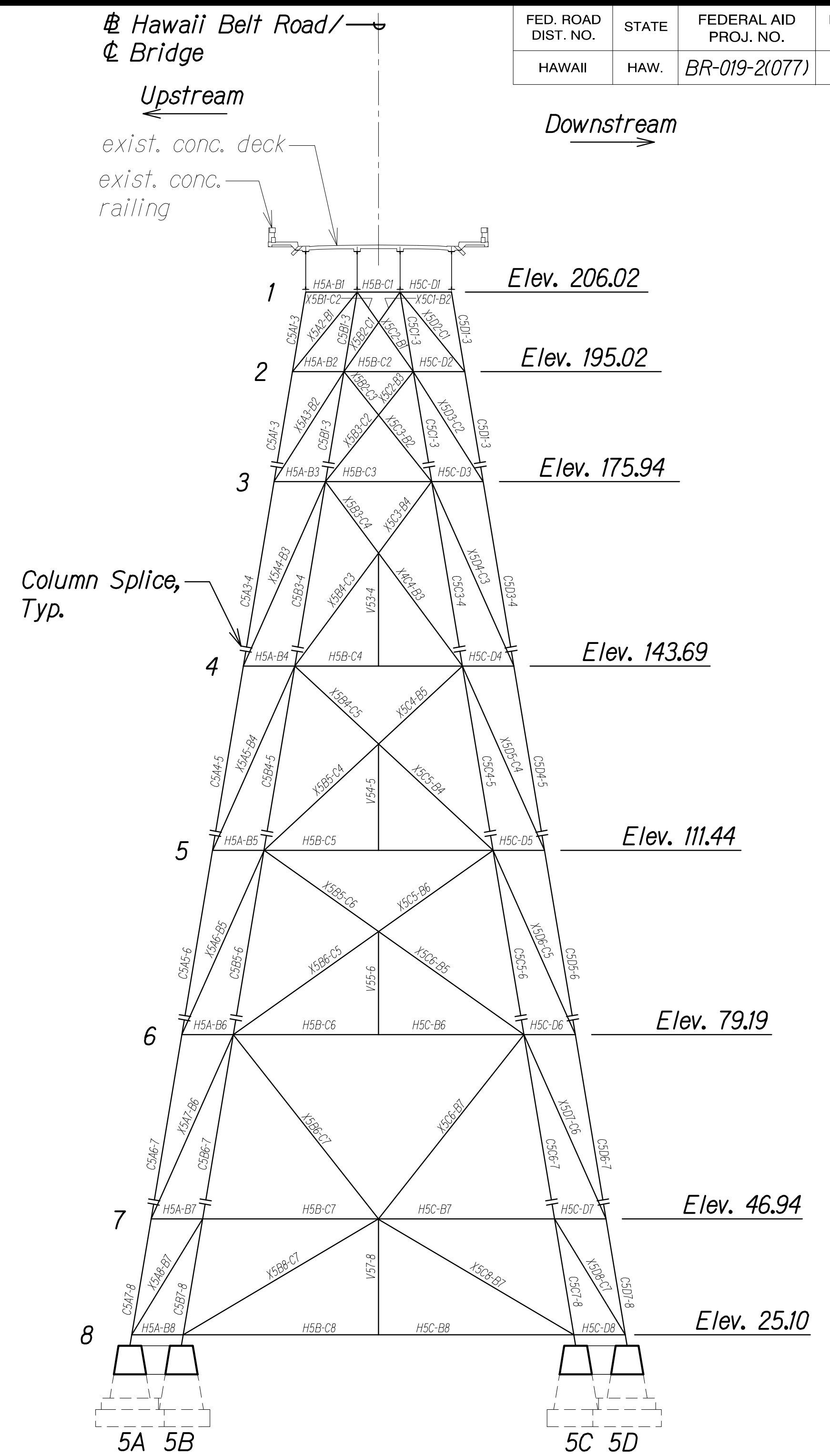
SA4.7 SA4.7



TRESTLE NO. 3 ELEVATION -
COLUMN LINE "D"

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

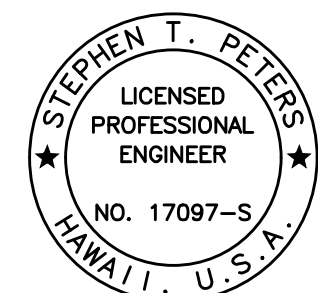
SA4.7 SA4.7



BENT NO. 5 ELEVATION

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

SA4.7 SA4.7



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

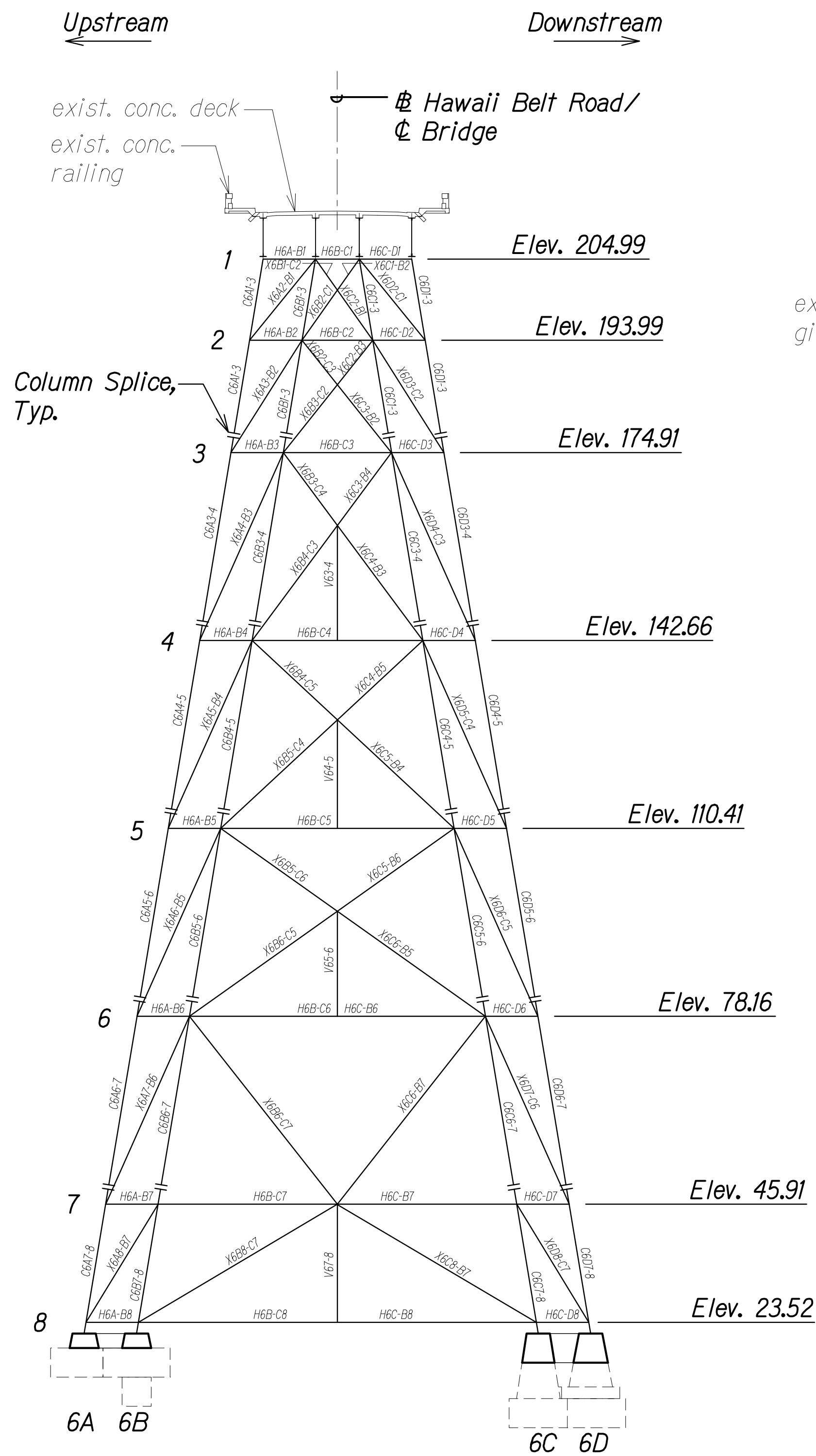
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**BENT NO. 5/TRESTLE NO. 3
MEMBER ELEVATIONS**

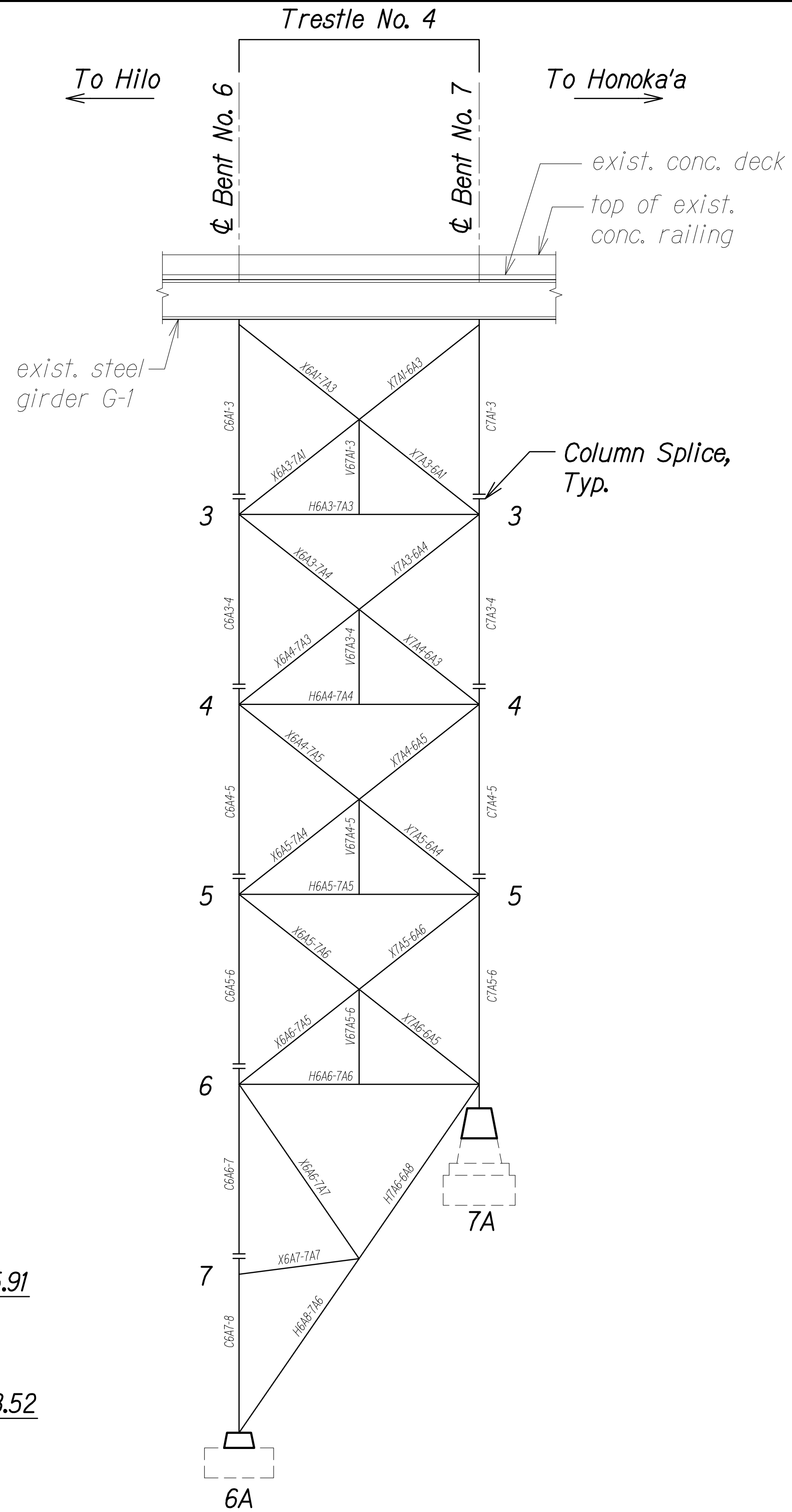
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.7 OF 20 SHEETS

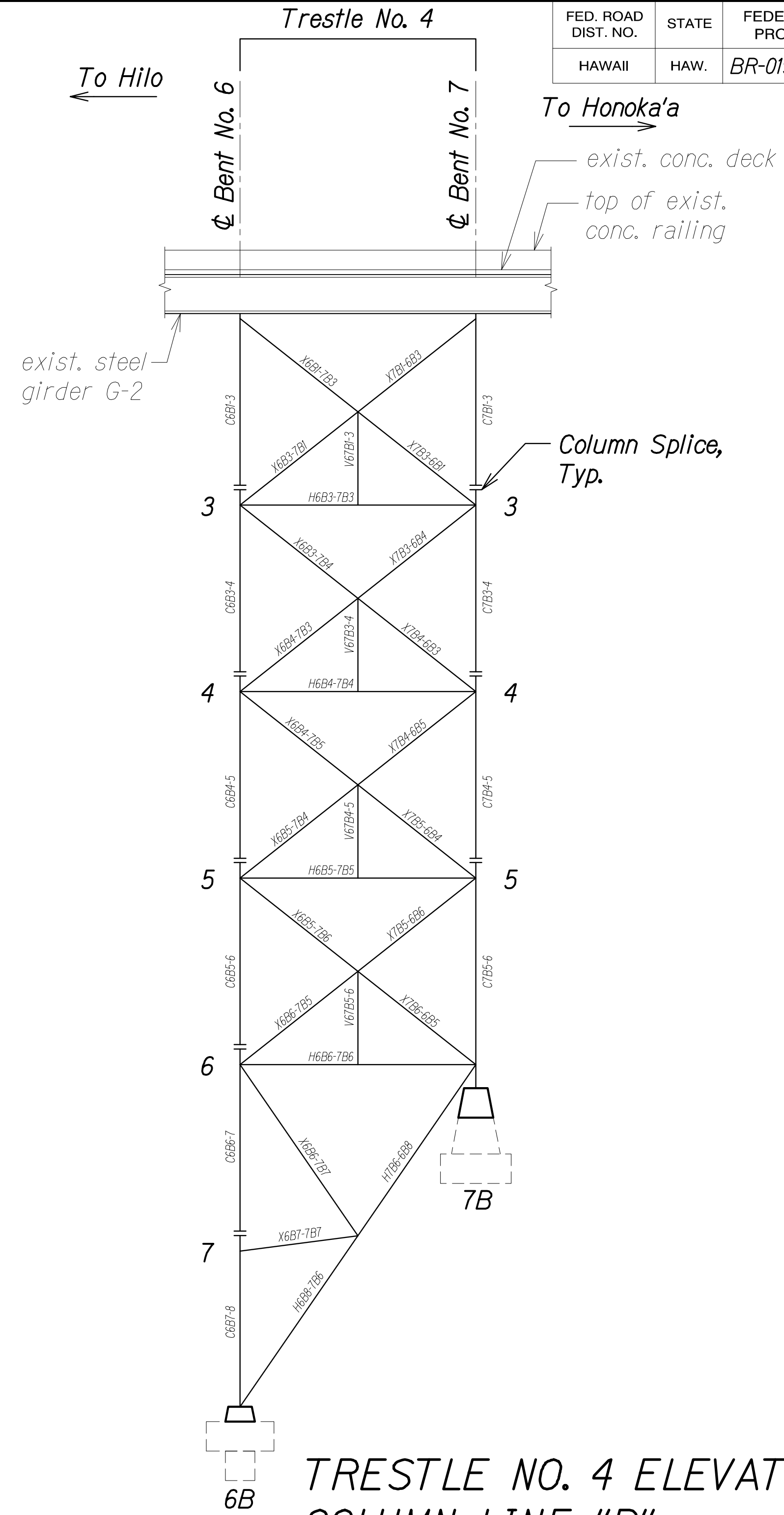
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 60 | 280 |



BENT NO. 6 ELEVATION **A**
Scale: 1/16" = 1'-0" SA4.8 SA4.8



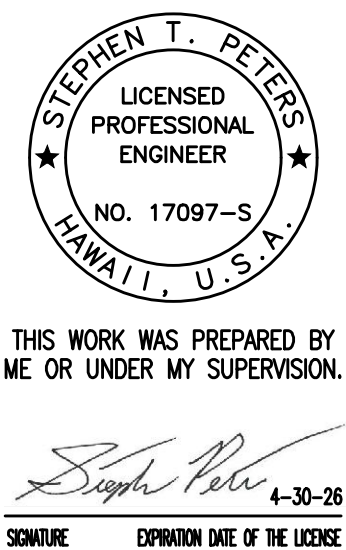
TRESTLE NO. 4 ELEVATION - COLUMN LINE "A" **B**
Scale: 1/16" = 1'-0" SA4.8 SA4.8



TRESTLE NO. 4 ELEVATION - COLUMN LINE "B" **C**
Scale: 1/16" = 1'-0" SA4.8 SA4.8

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24 4:00 PM



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE: Stephen Peters
EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

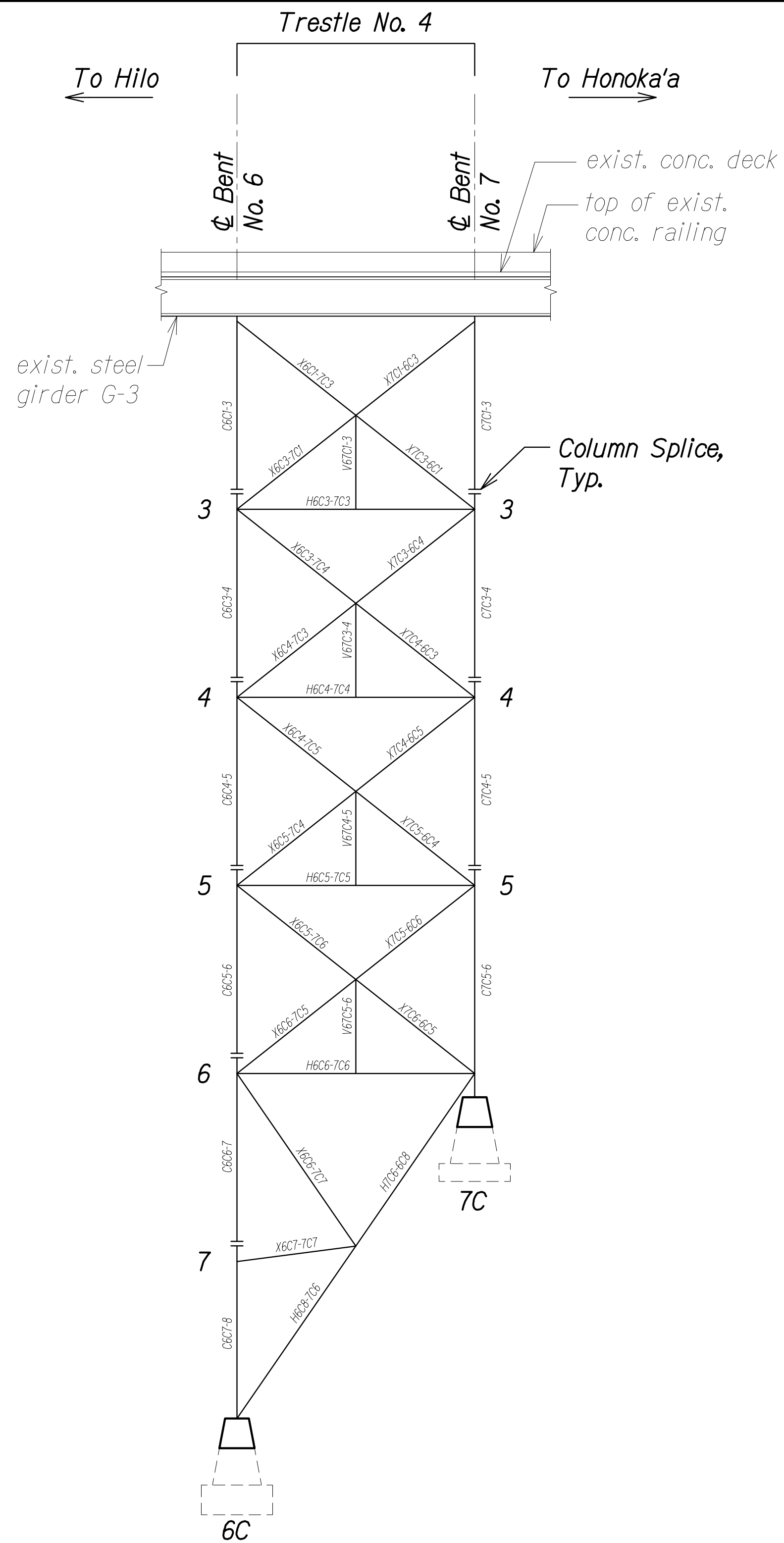
**BENT NO. 6/TRESTLE NO. 4
MEMBER ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA4.8 OF 20 SHEETS

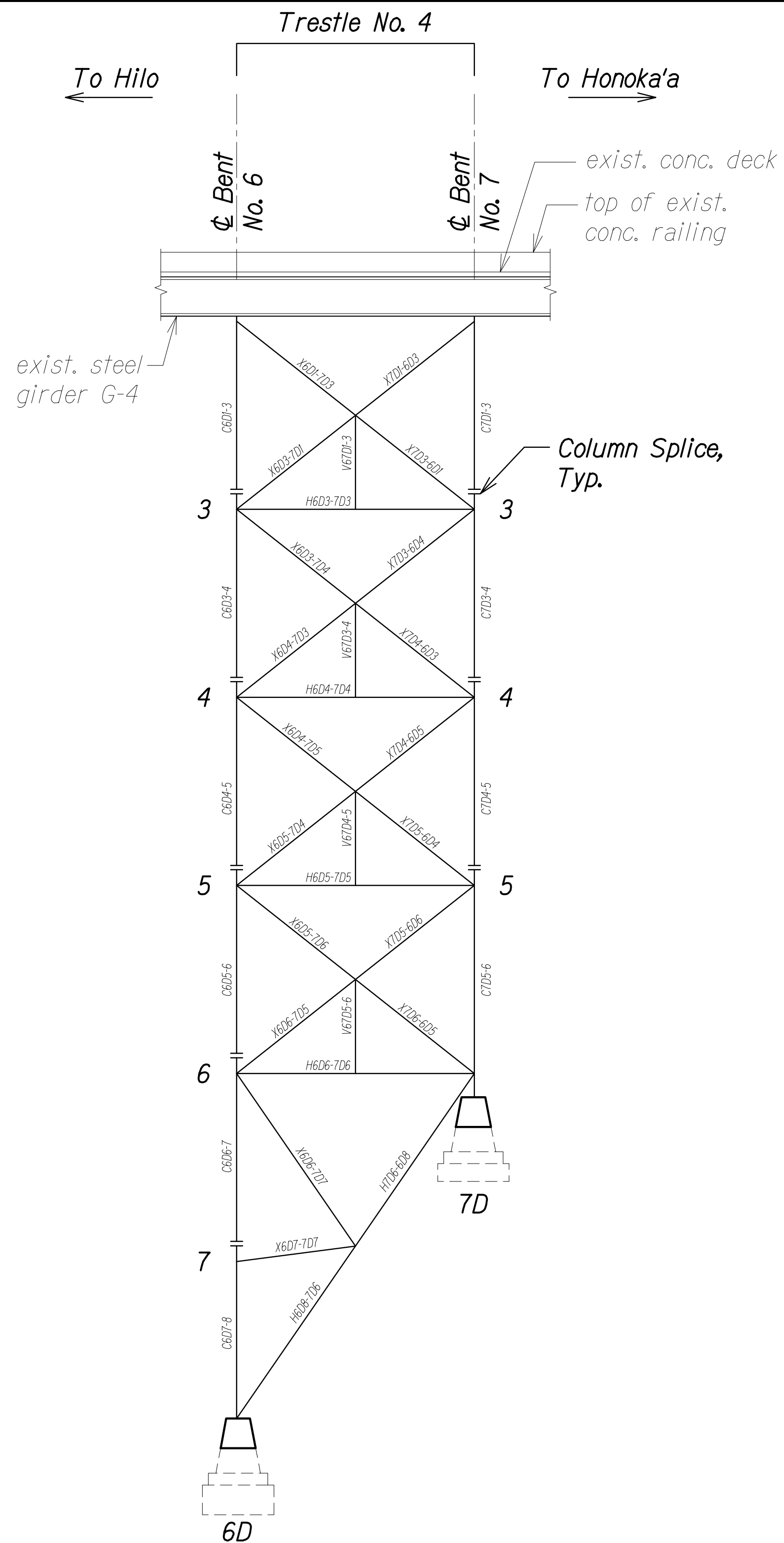
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 61 | 280 |



TRESTLE NO. 4 ELEVATION -
COLUMN LINE "C"

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

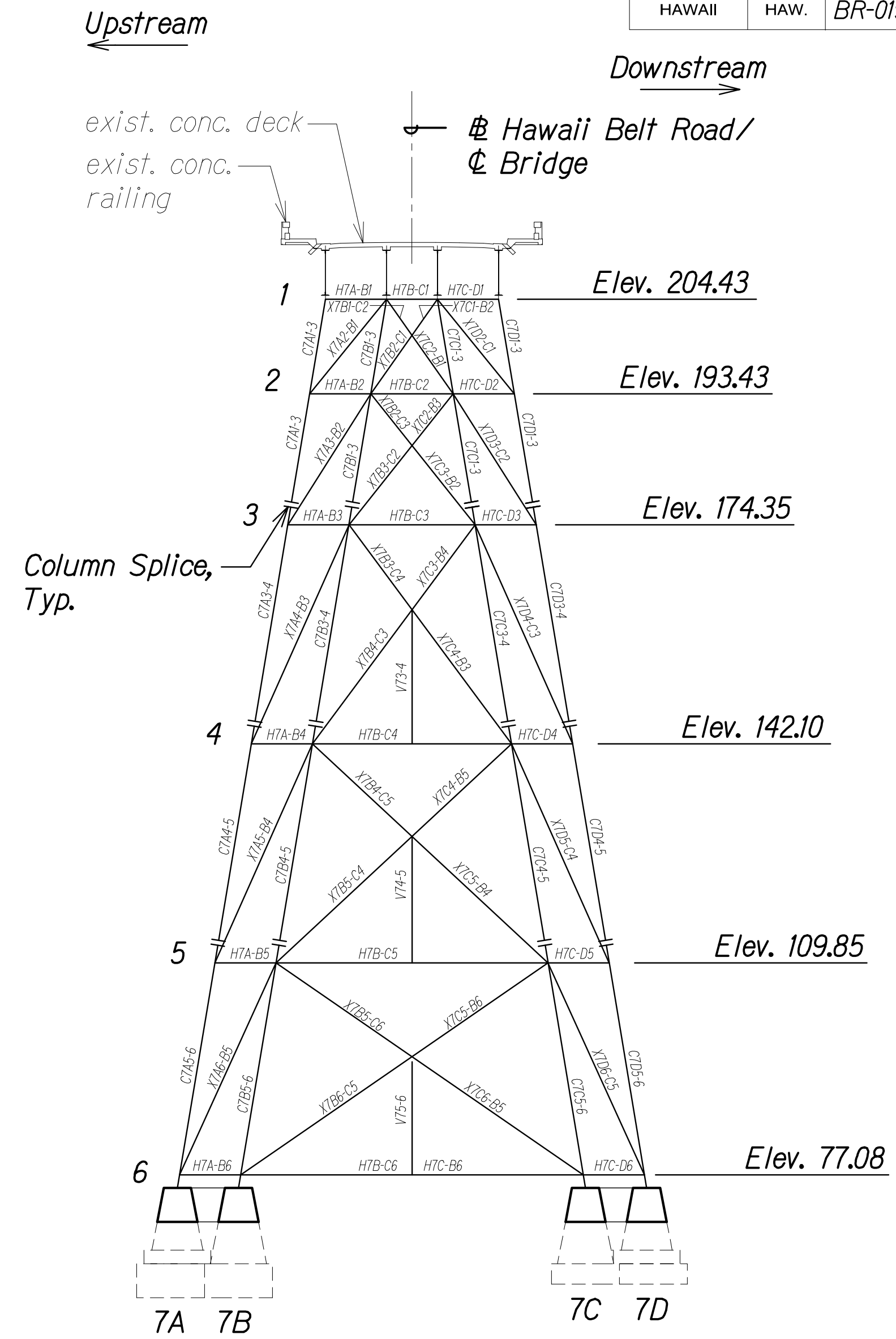
A
SA4.9 SA4.9



TRESTLE NO. 4 ELEVATION -
COLUMN LINE "D"

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

B
SA4.9 SA4.9



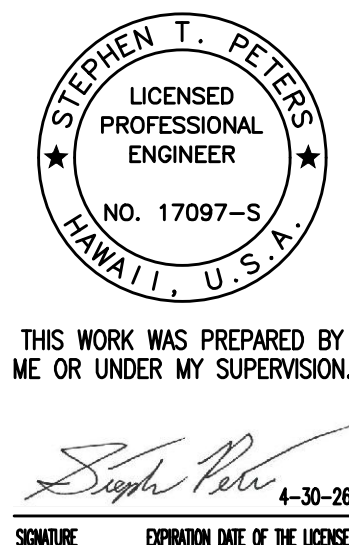
BENT NO. 7 ELEVATION

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

C
SA4.9 SA4.9

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOTHA\01 CAD\10-28-24 BID SET\NSR-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24 4:01 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

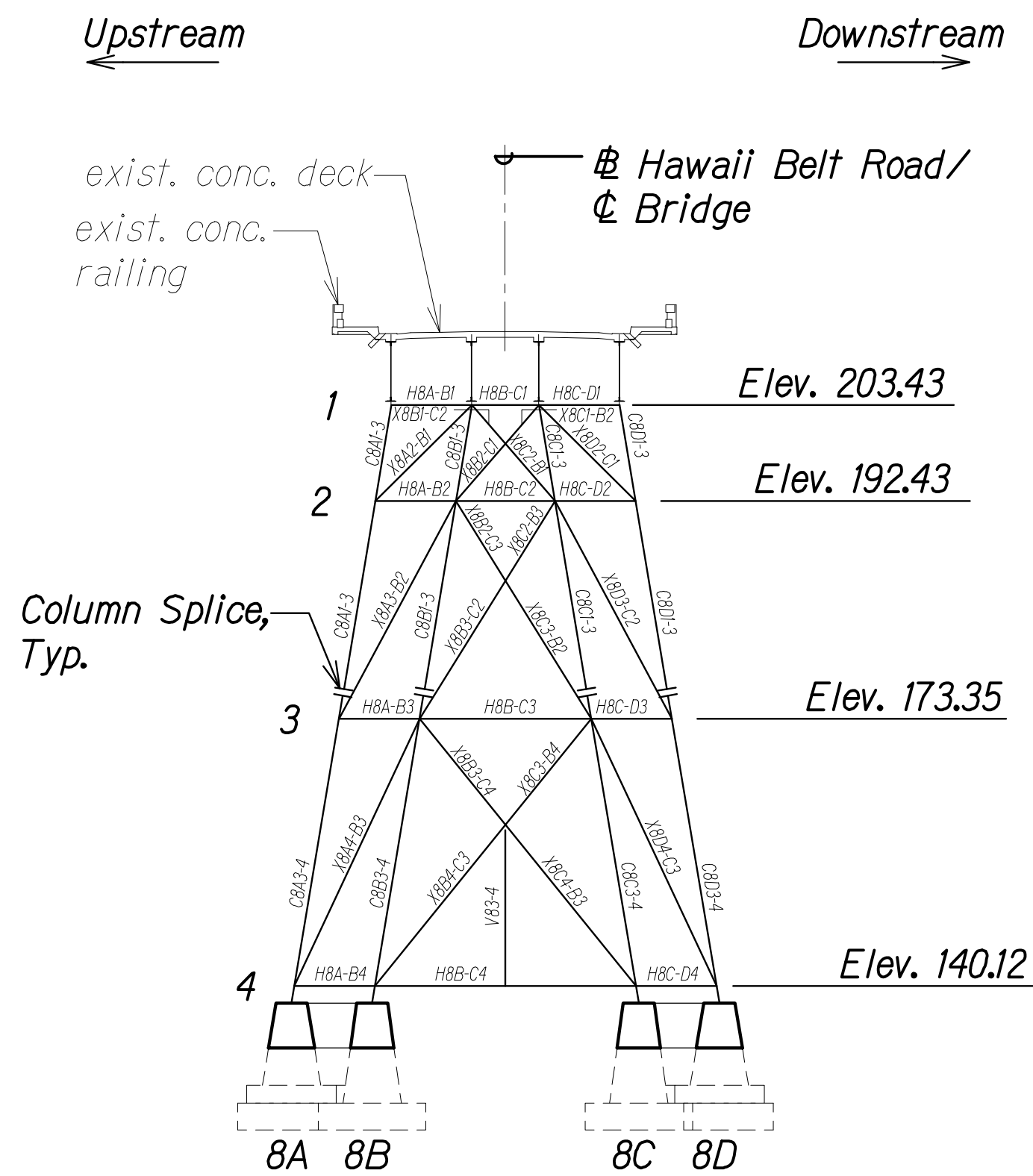
BENT NO. 7/TRESTLE NO. 4
MEMBER ELEVATIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

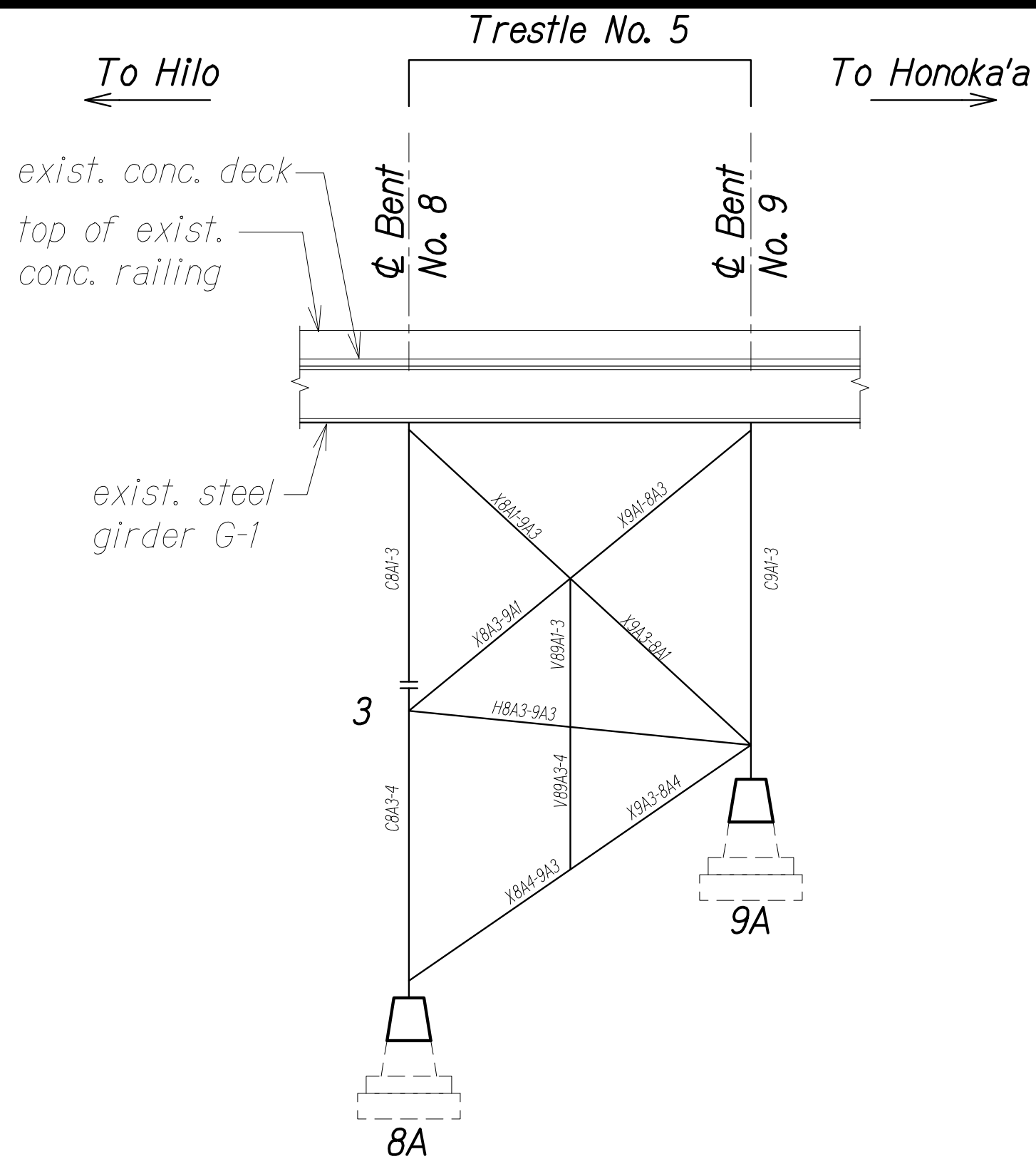
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.9 OF 20 SHEETS

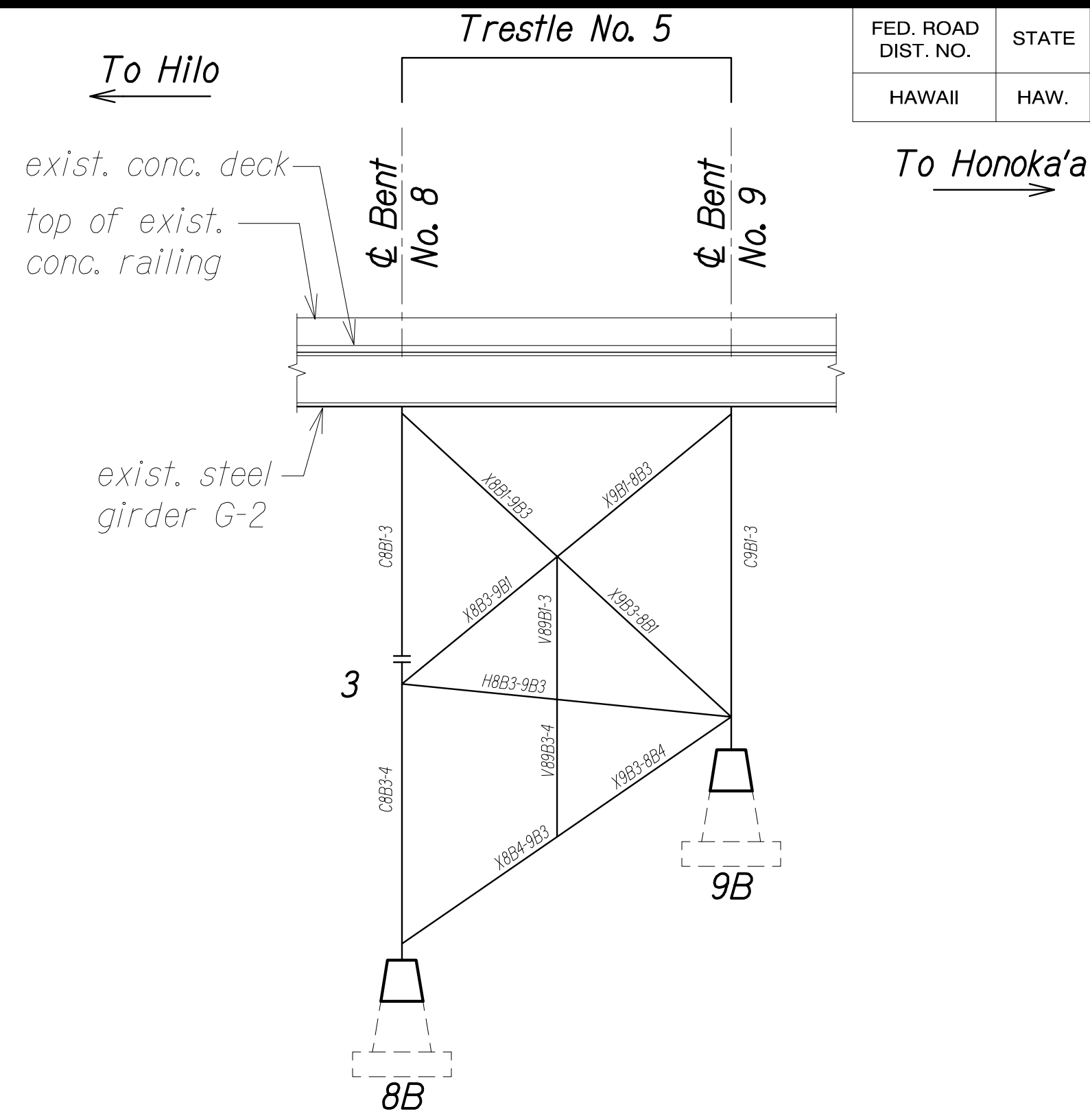
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 62 | 280 |



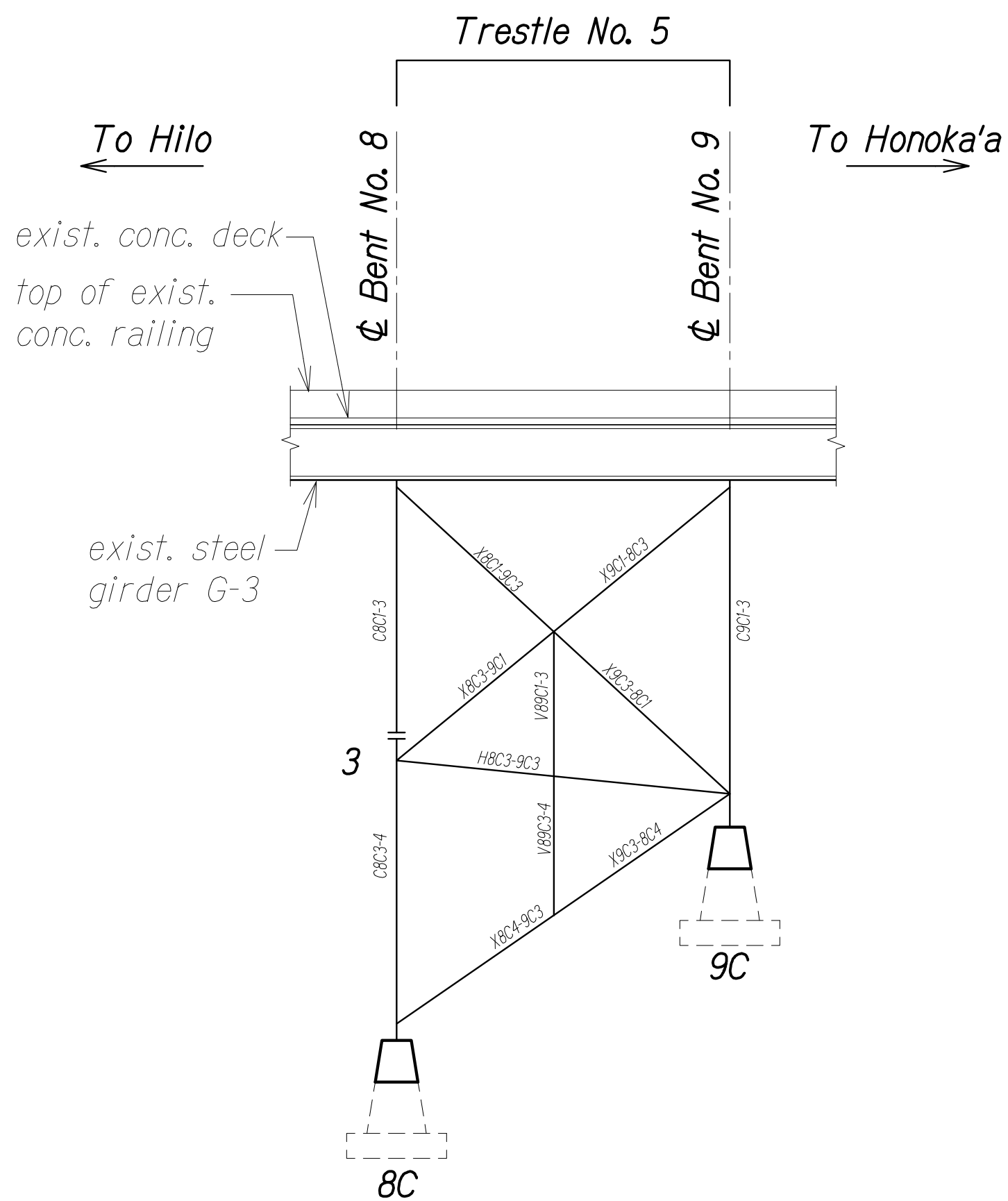
BENT NO. 8 ELEVATION A
Scale: 1/16" = 1'-0" SA4.10 SA4.10



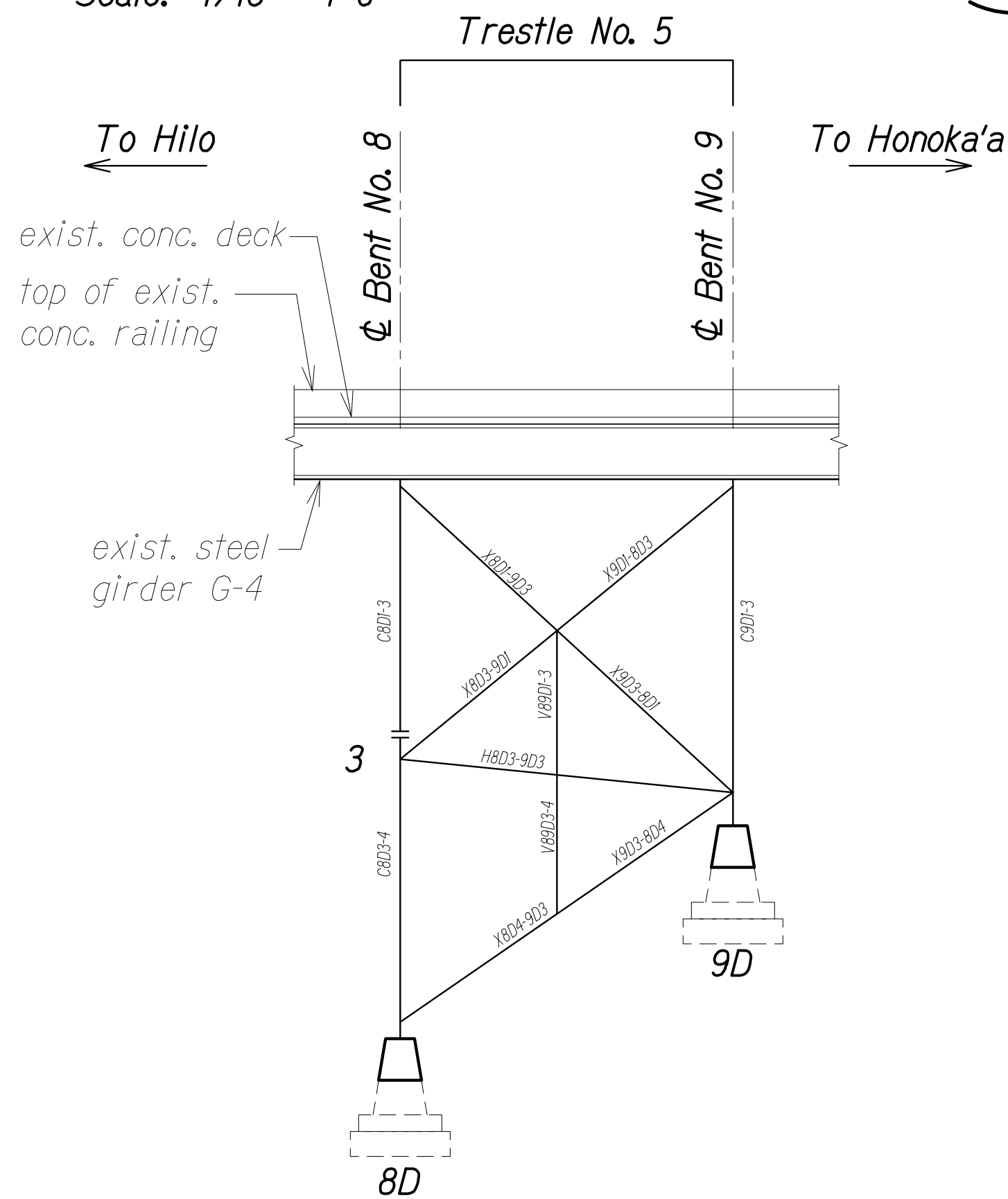
TRESTLE NO. 5 ELEVATION - COLUMN LINE "A" B
Scale: 1/16" = 1'-0" SA4.10 SA4.10



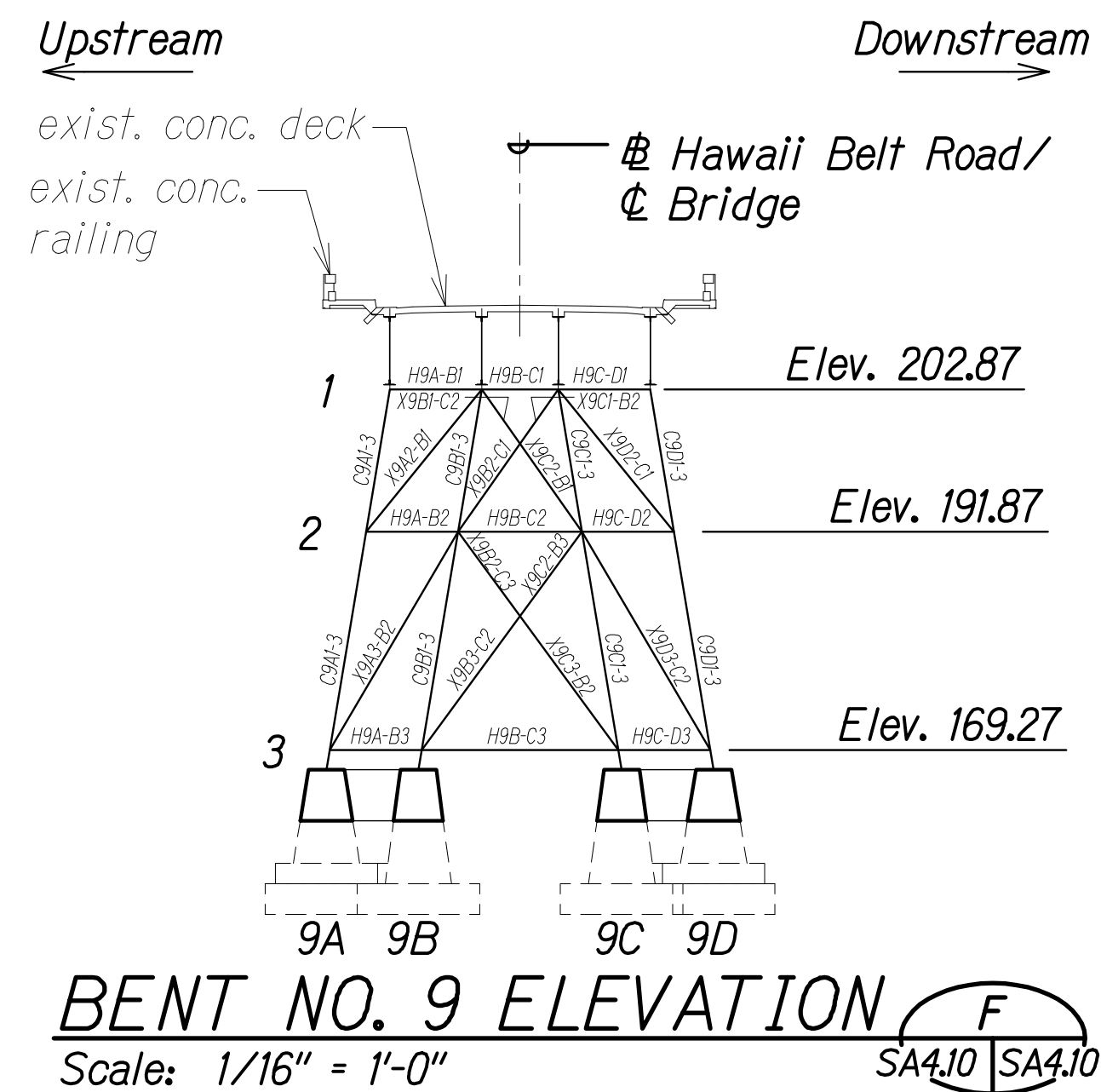
TRESTLE NO. 5 ELEVATION - COLUMN LINE "B" C
Scale: 1/16" = 1'-0" SA4.10 SA4.10



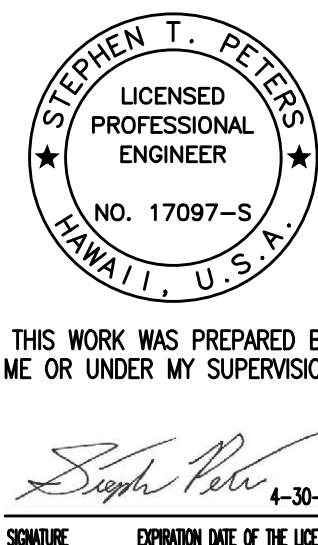
TRESTLE NO. 5 ELEVATION - COLUMN LINE "C" D
Scale: 1/16" = 1'-0" SA4.10 SA4.10



TRESTLE NO. 5 ELEVATION - COLUMN LINE "D" E
Scale: 1/16" = 1'-0" SA4.10 SA4.10



BENT NO. 9 ELEVATION F
Scale: 1/16" = 1'-0" SA4.10 SA4.10



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**BENT NOS. 8 AND 9/TRESTLE NO. 5
MEMBER ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

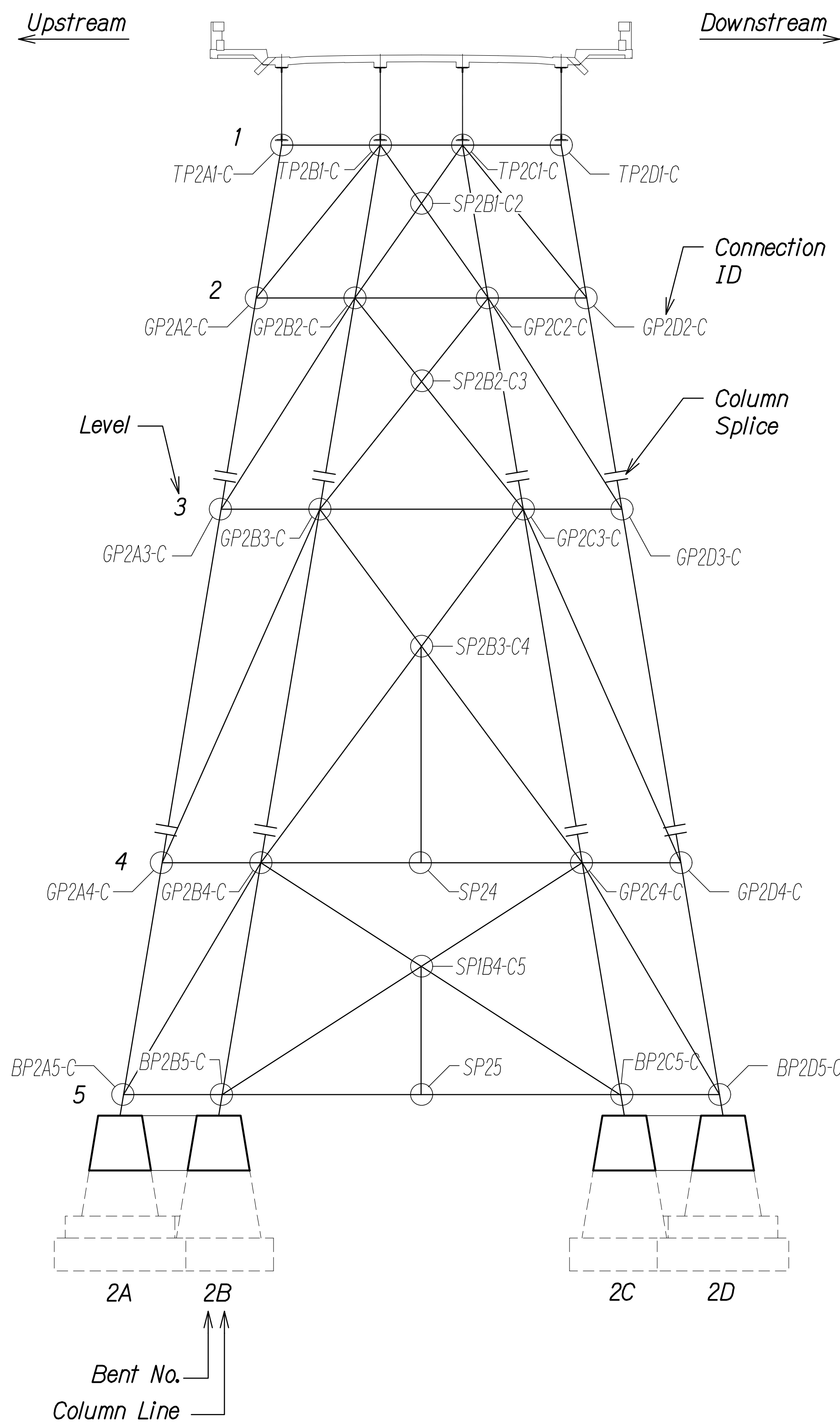
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.10 OF 20 SHEETS

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

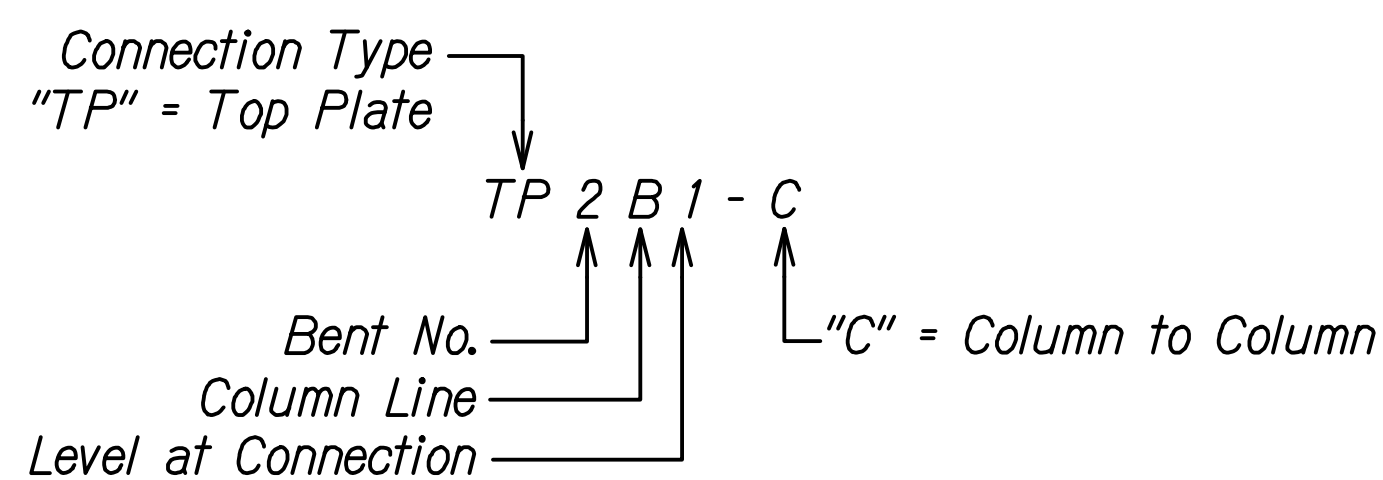
DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SA0401-SA4.10 BENT-TRESTLES.DWG PLOT TIME: 10-28-24 8:20 AM

CONNECTION IDENTIFICATION (ID)
LOCATION KEY AT BENTS

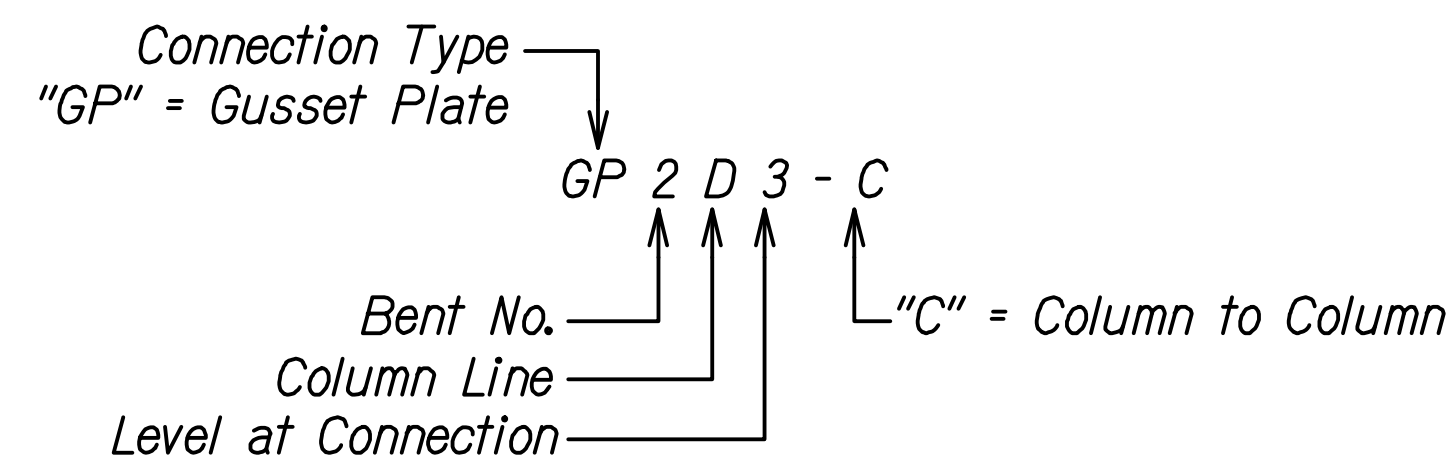


CONNECTION ID LEGEND

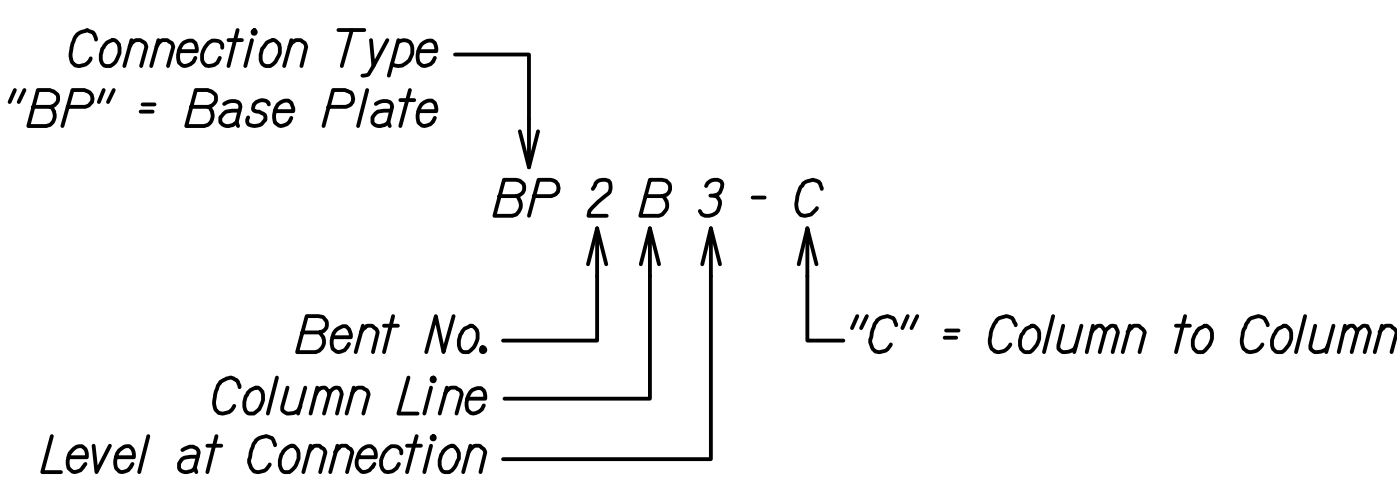
TOP PLATE CONNECTION ID - SEE SCHEDULE SA6.18 - SA6.19



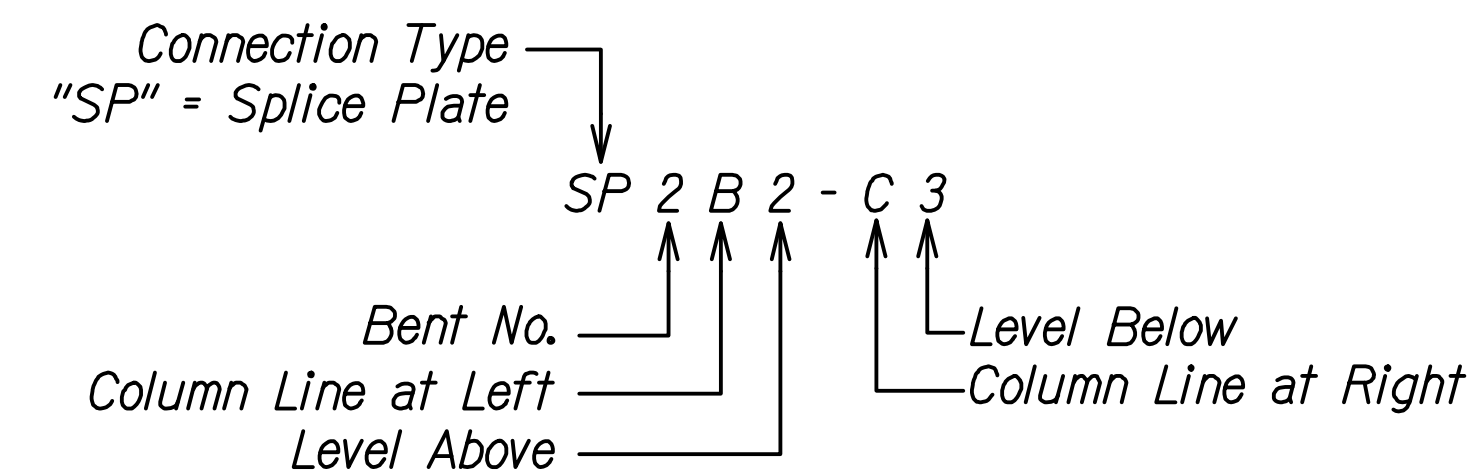
GUSSET PLATE CONNECTION ID - SEE SCHEDULE SA6.18 - SA6.19



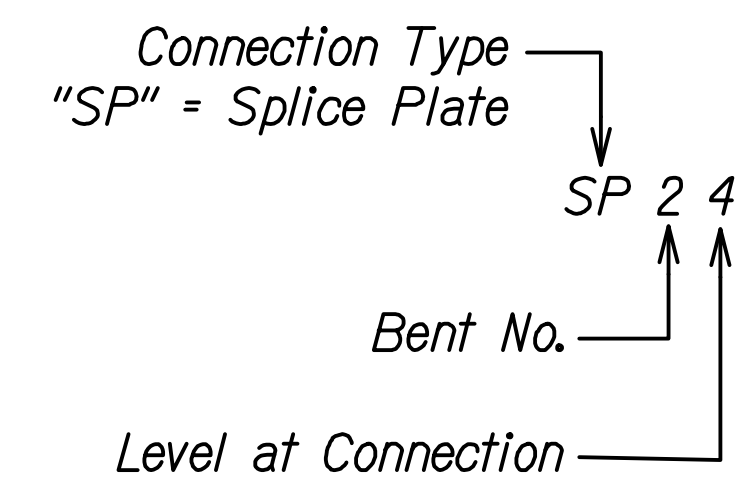
BASE PLATE CONNECTION ID - SEE SCHEDULE SA6.18 - SA6.19



SPLICE PLATE CONNECTION ID - SEE SCHEDULE SA6.18 - SA6.19

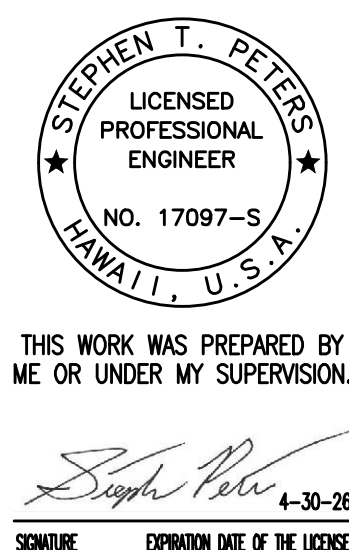


SPLICE PLATE CONNECTION ID - SEE SCHEDULE SA6.18 - SA6.19



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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SA0411-SA0420 BENT CONLDWG PLOT TIME: 10-28-24 4:52 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

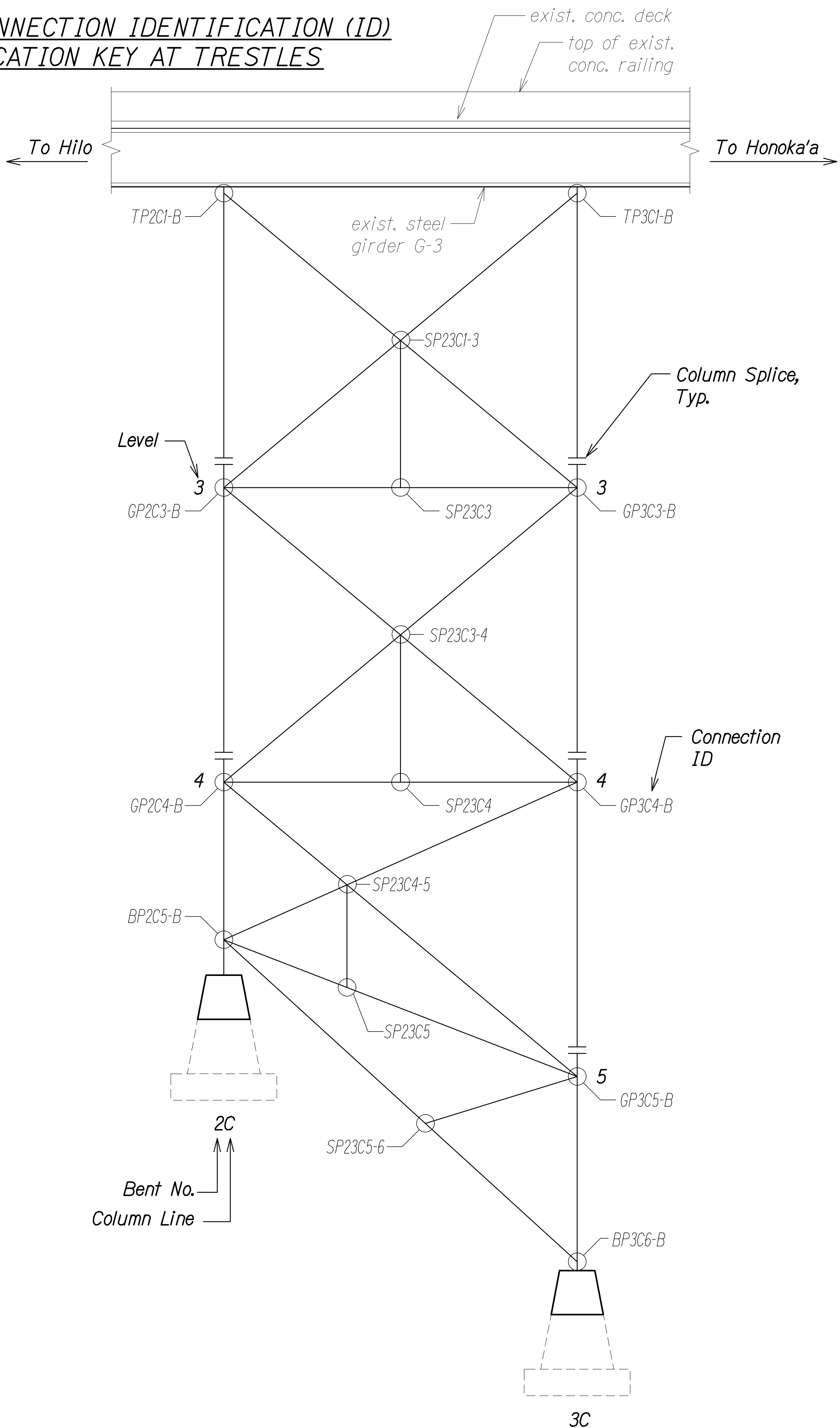
**CONNECTION ID LOCATION KEY
AND LEGEND AT BENTS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

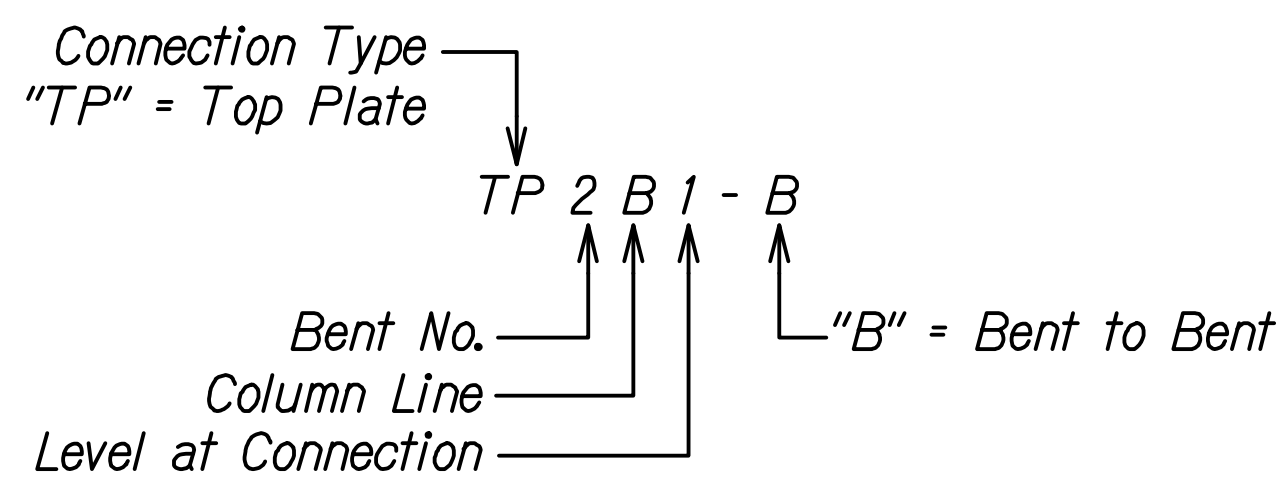
SHEET No. SA4.11 OF 20 SHEETS

CONNECTION IDENTIFICATION (ID)
LOCATION KEY AT TRETTLES

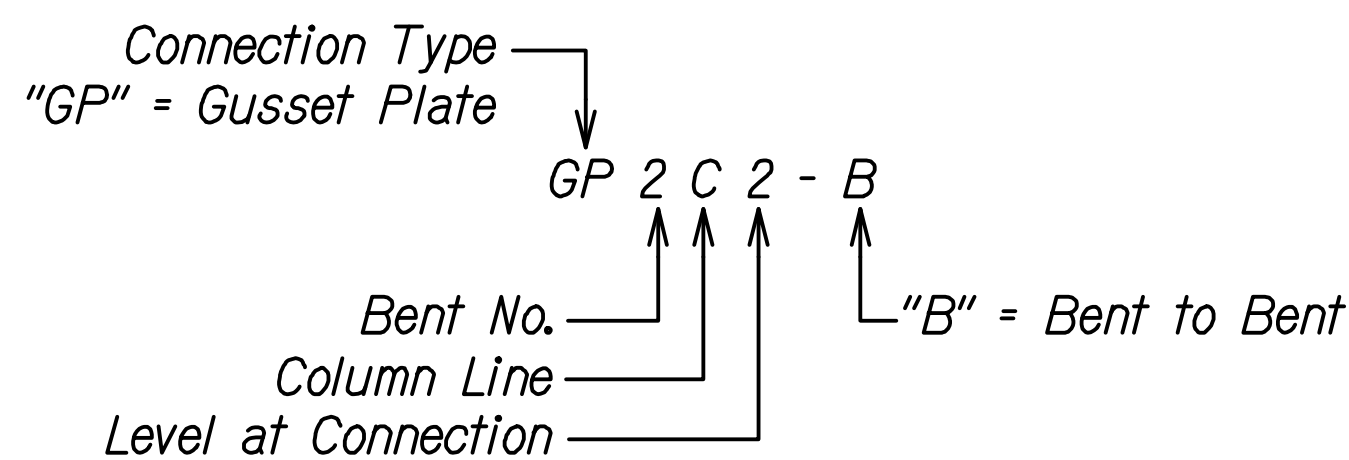


CONNECTION ID LEGEND

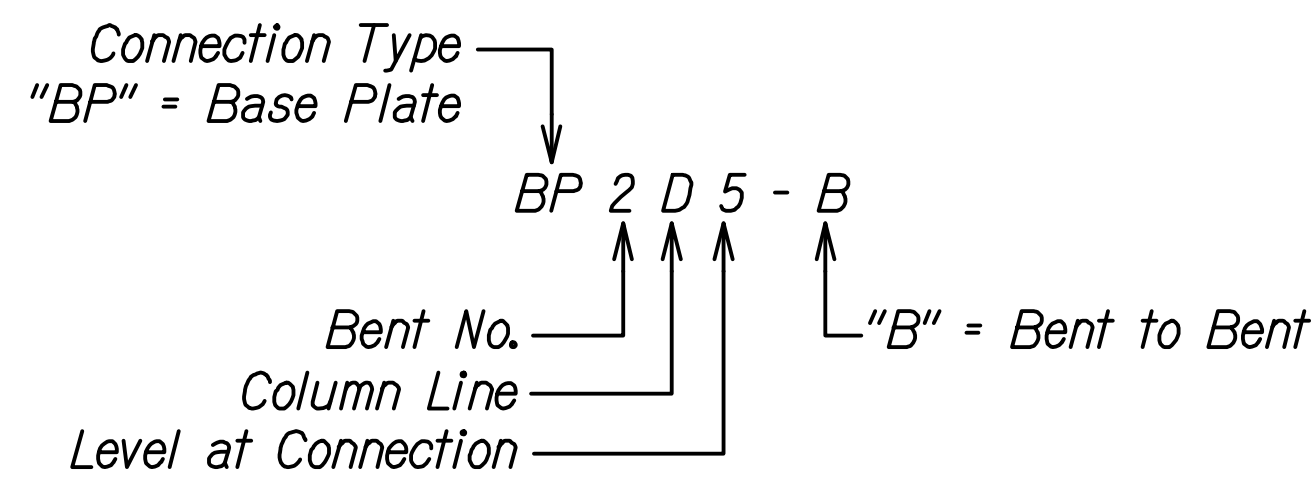
TOP PLATE CONNECTION ID - SEE SCHEDULE SA6.20 - SA6.22



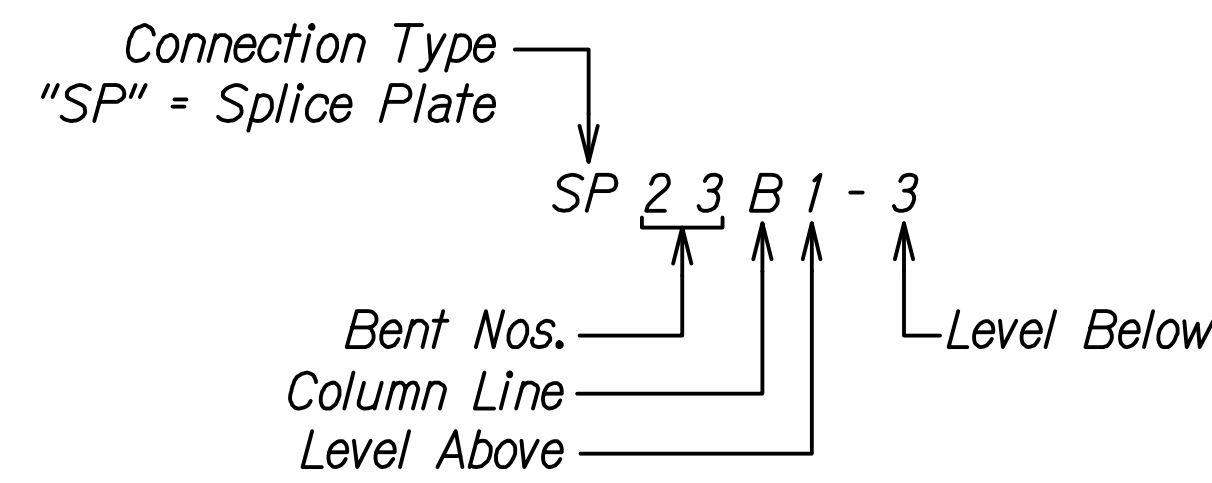
GUSSET PLATE CONNECTION ID - SEE SCHEDULE SA6.20 - SA6.22



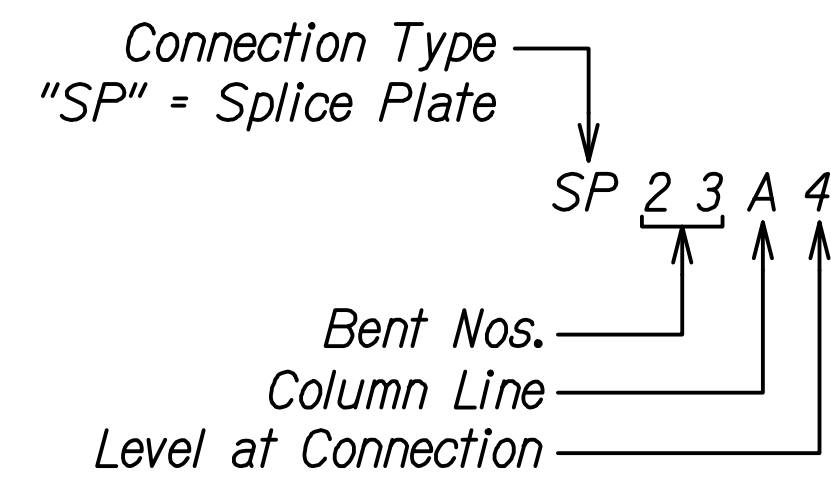
BASE PLATE CONNECTION ID - SEE SCHEDULE SA6.20 - SA6.22



BASE PLATE CONNECTION ID - SEE SCHEDULE SA6.20 - SA6.22



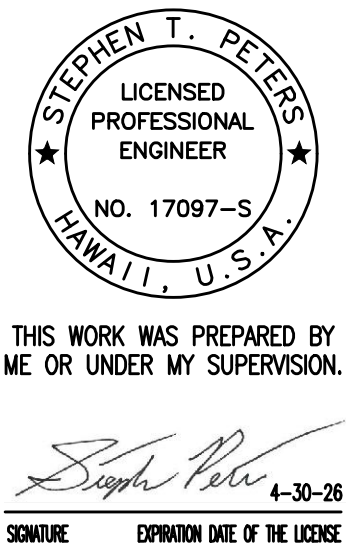
SPLICE PLATE CONNECTION ID - SEE SCHEDULE SA6.20 - SA6.22



| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 64 | 280 |

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0411-SA0420 BENT CONLDWG PLOT TIME: 10-28-24 4:53 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

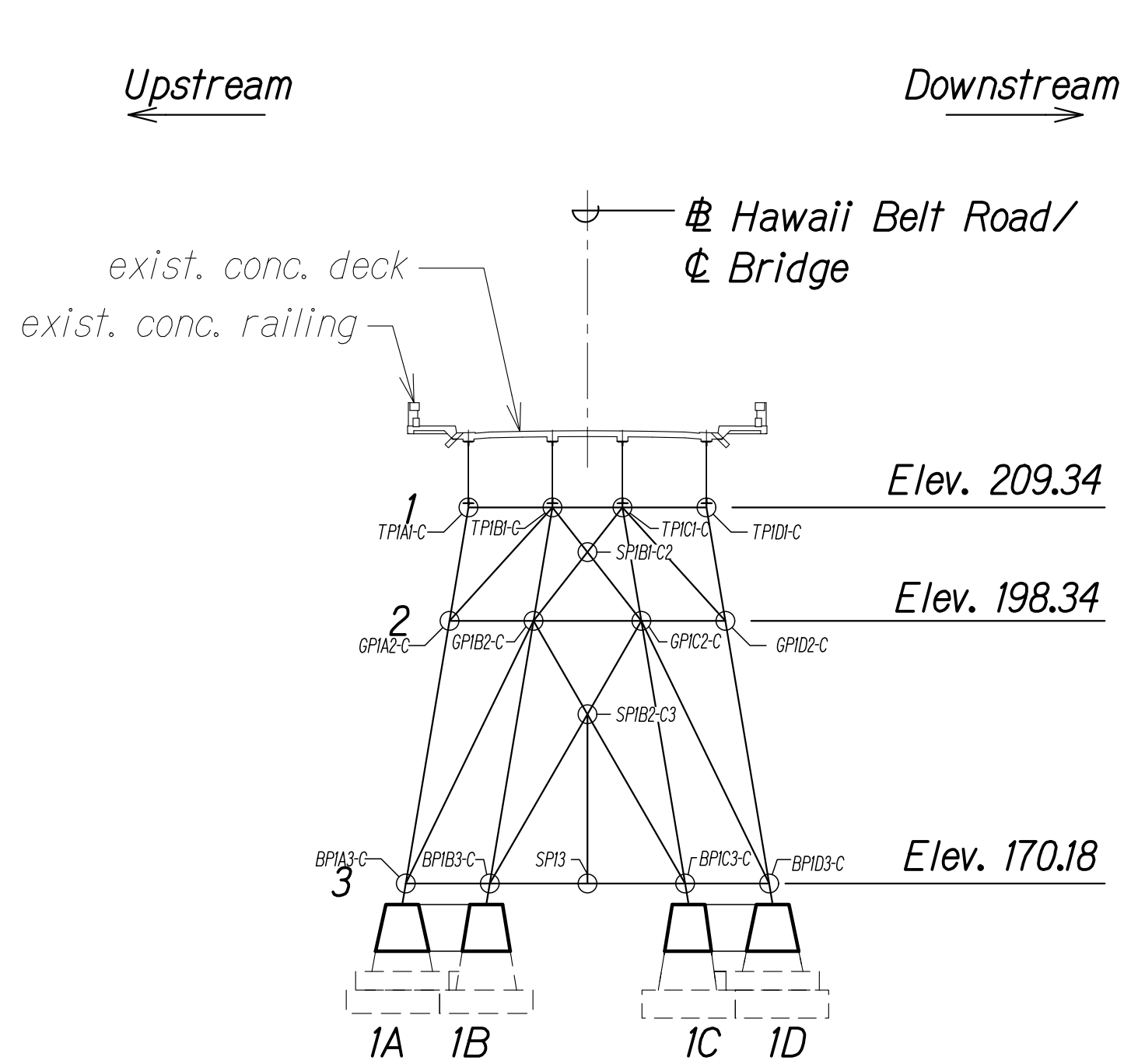
**CONNECTION ID LOCATION KEY
AND LEGEND AT TRETTLES**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

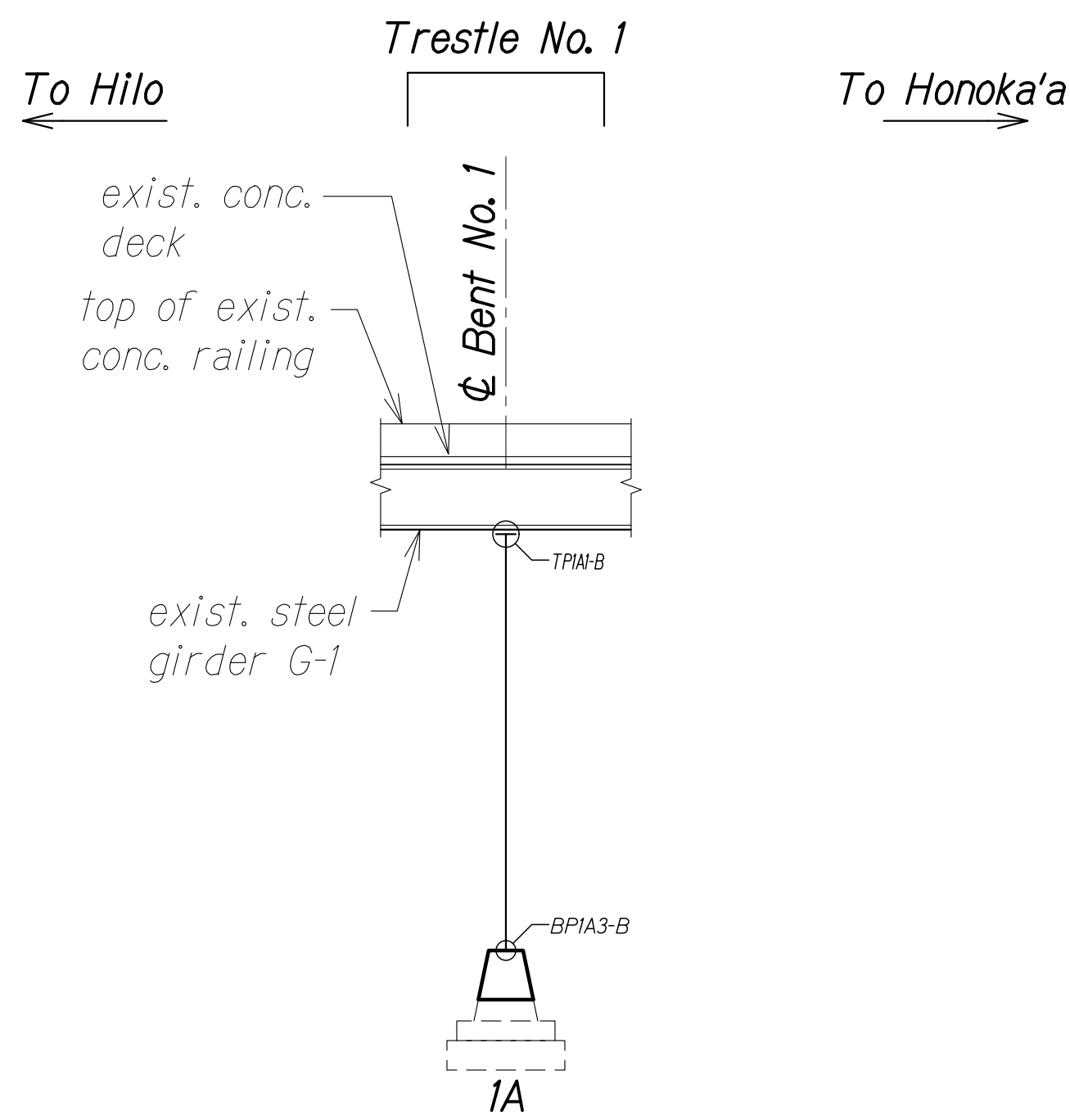
SHEET No.SA4.12 OF 20 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 65 | 280 |



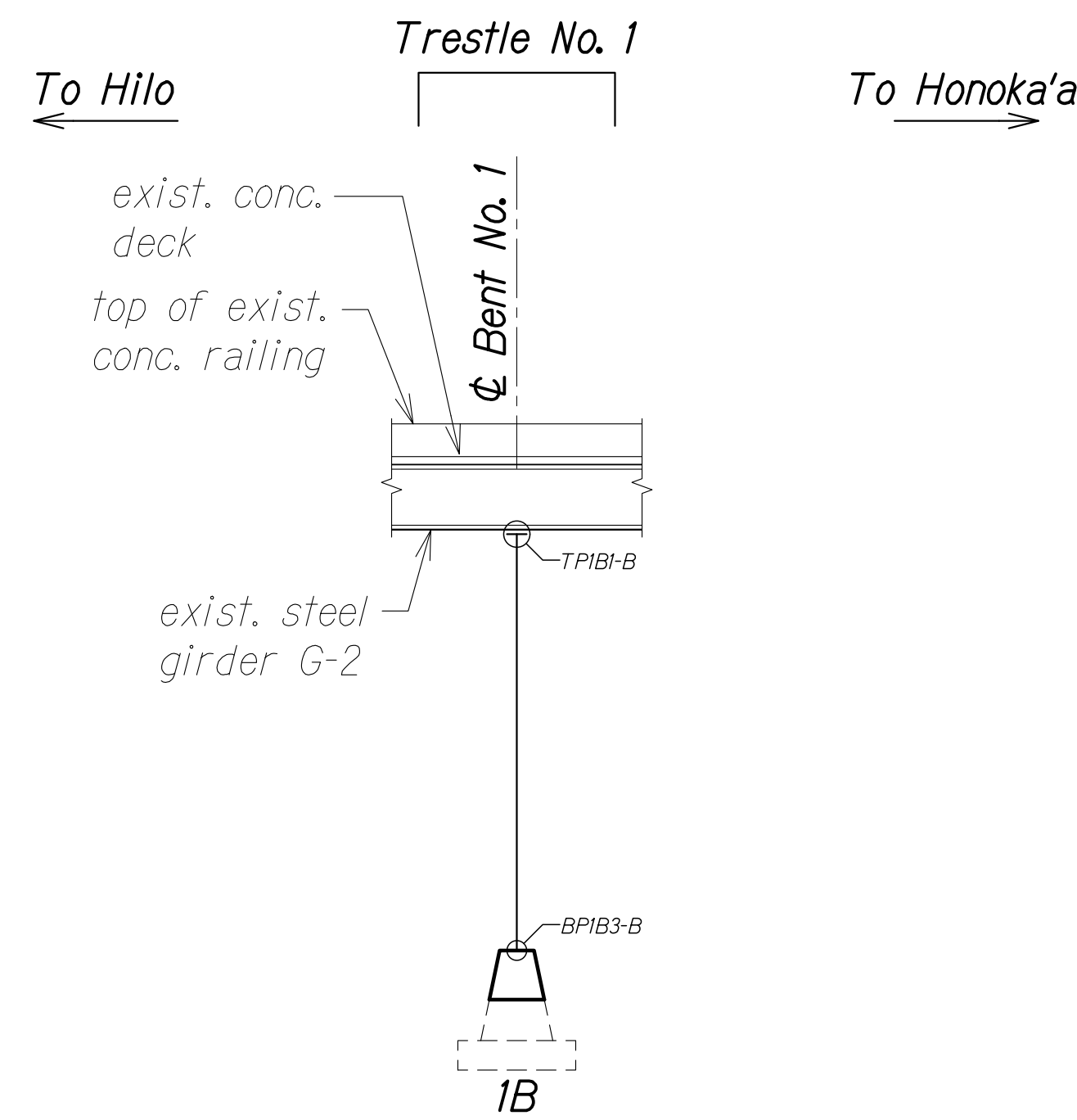
BENT NO. 1 ELEVATION
Scale: 1/16" = 1'-0"

A
SA4.13 SA4.13



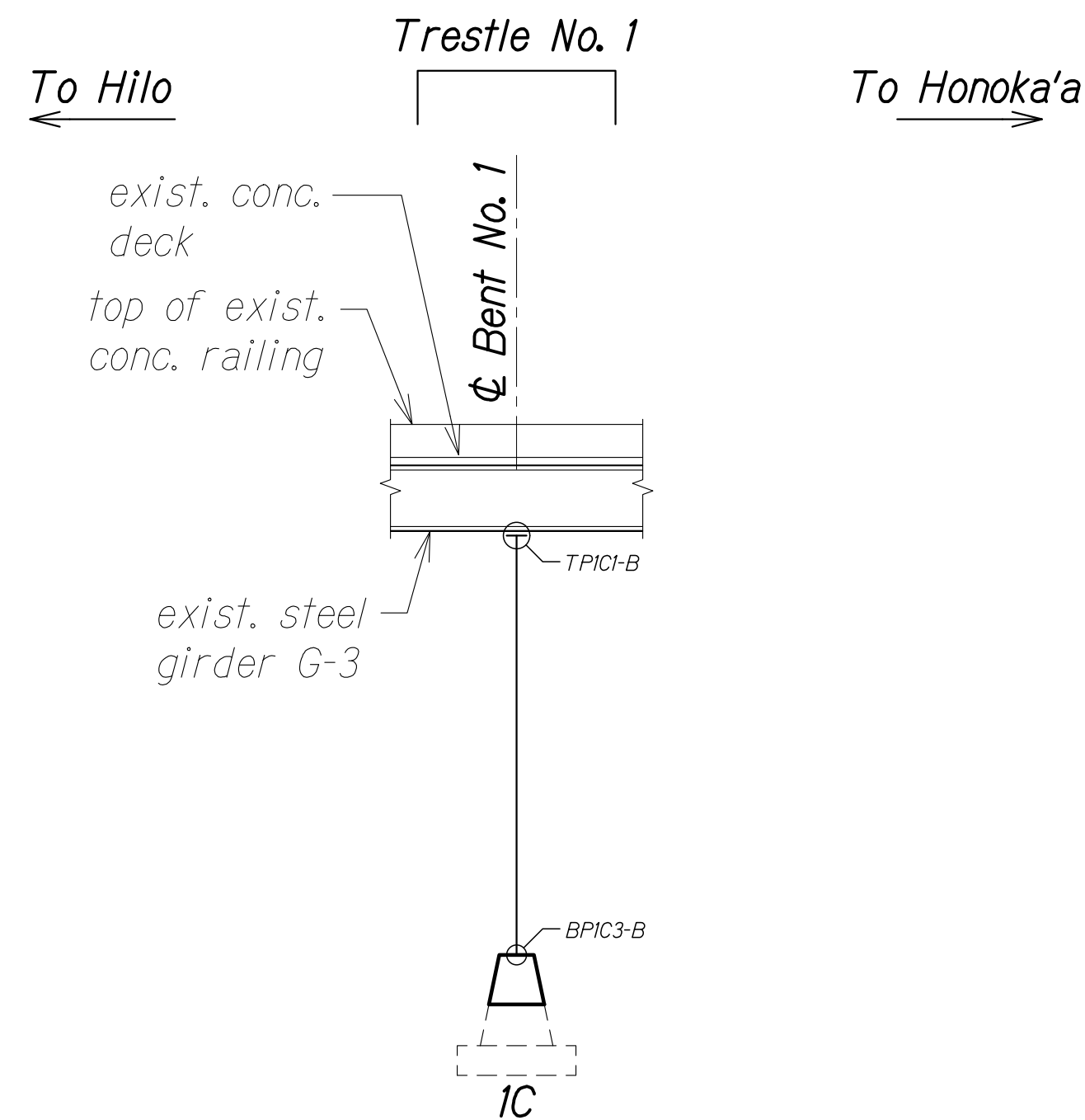
TRESTLE NO. 1 ELEVATION - COLUMN LINE "A"
Scale: 1/16" = 1'-0"

B
SA4.13 SA4.13



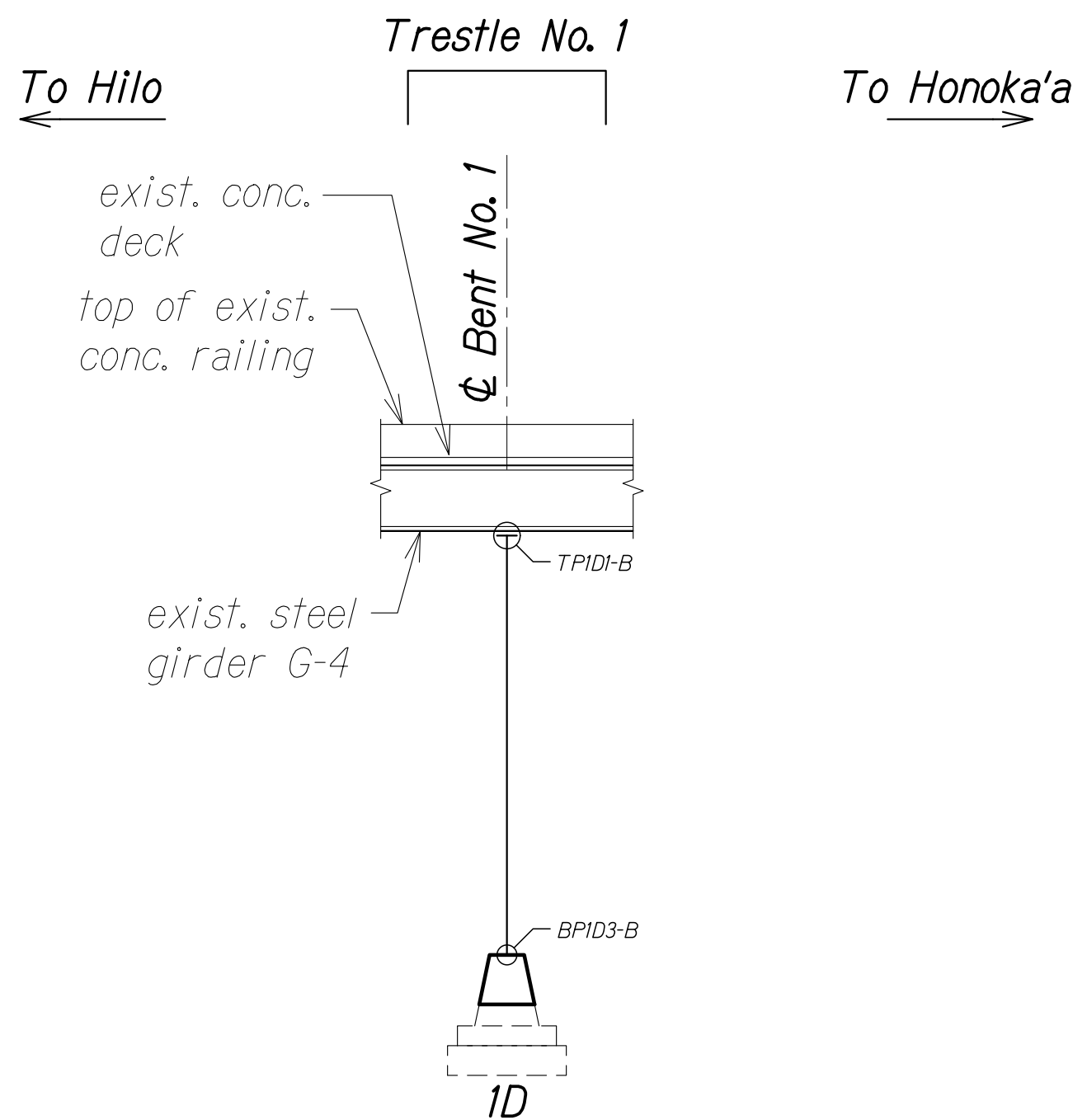
TRESTLE NO. 1 ELEVATION - COLUMN LINE "B"
Scale: 1/16" = 1'-0"

C
SA4.13 SA4.13



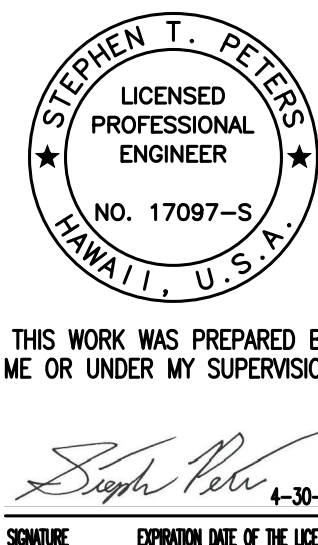
TRESTLE NO. 1 ELEVATION - COLUMN LINE "C"
Scale: 1/16" = 1'-0"

D
SA4.13 SA4.13



TRESTLE NO. 1 ELEVATION - COLUMN LINE "D"
Scale: 1/16" = 1'-0"

E
SA4.13 SA4.13



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**BENT NO. 1/TRESTLE NO. 1
CONNECTION ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

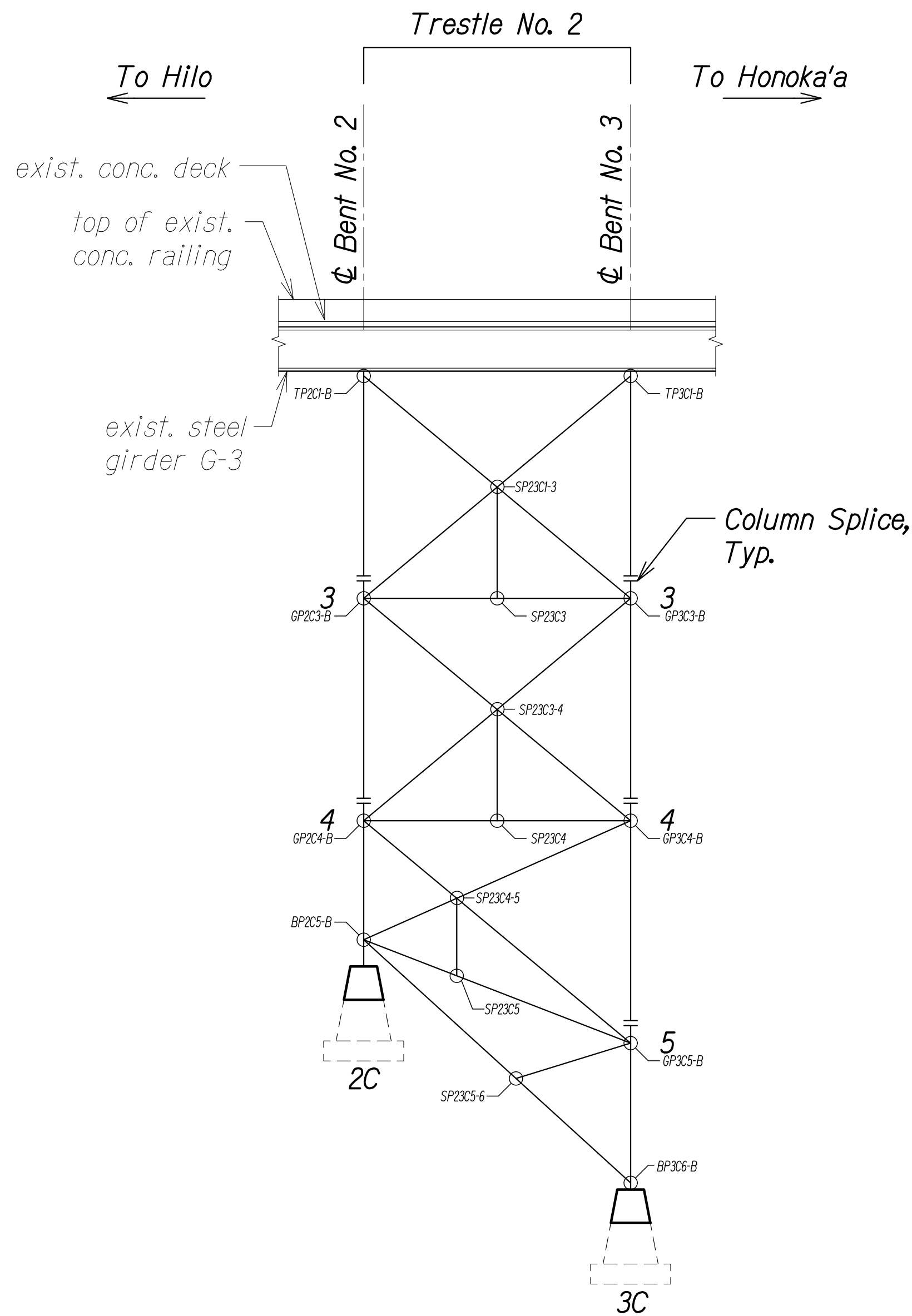
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.13 OF 20 SHEETS

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

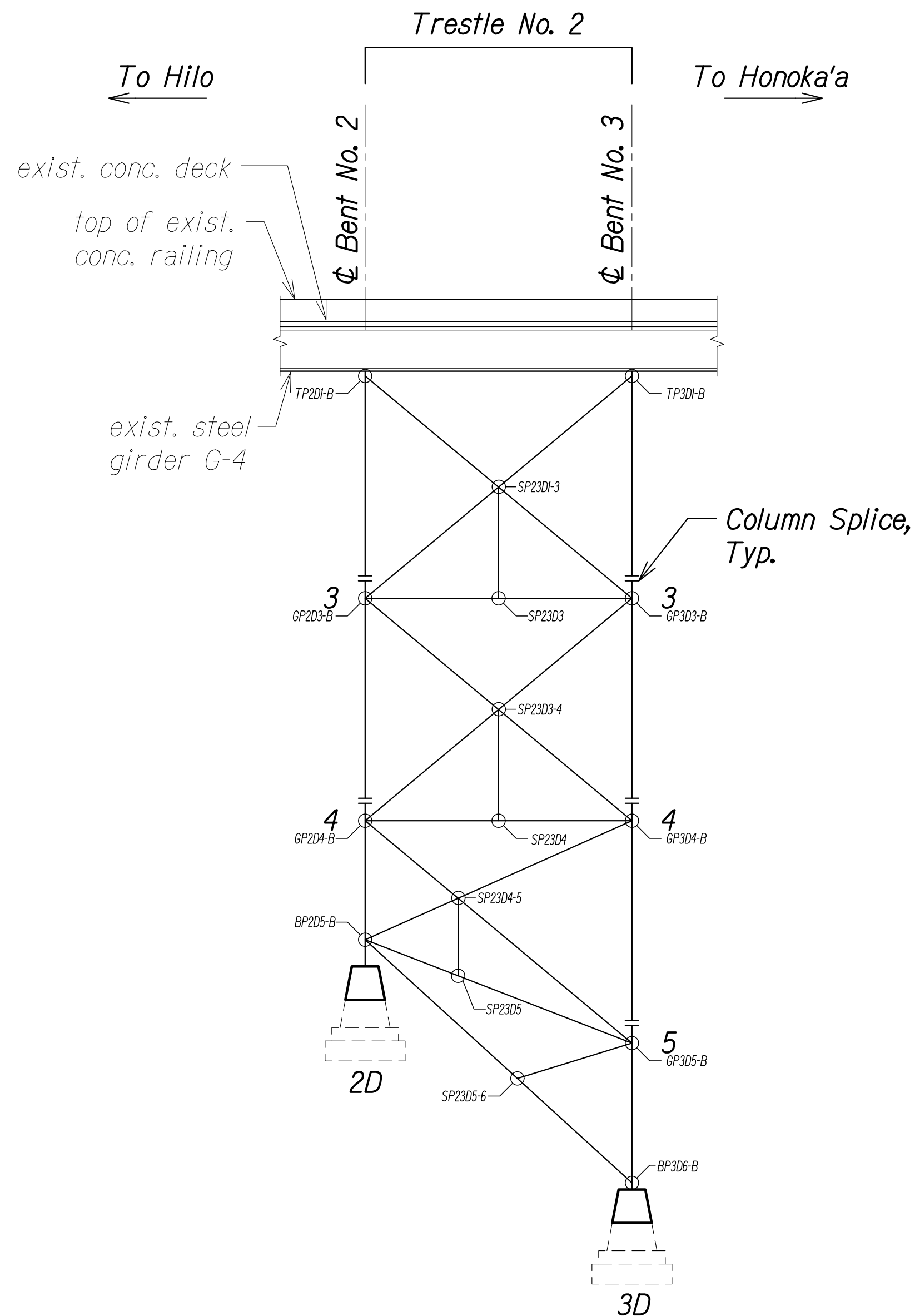
DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A\01 CAD\10-28-24 BID SET\NSR-SA0411-SA0419 BENT CONLDWG PLOT TIME: 10-26-24, 4:02 PM\

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 67 | 280 |



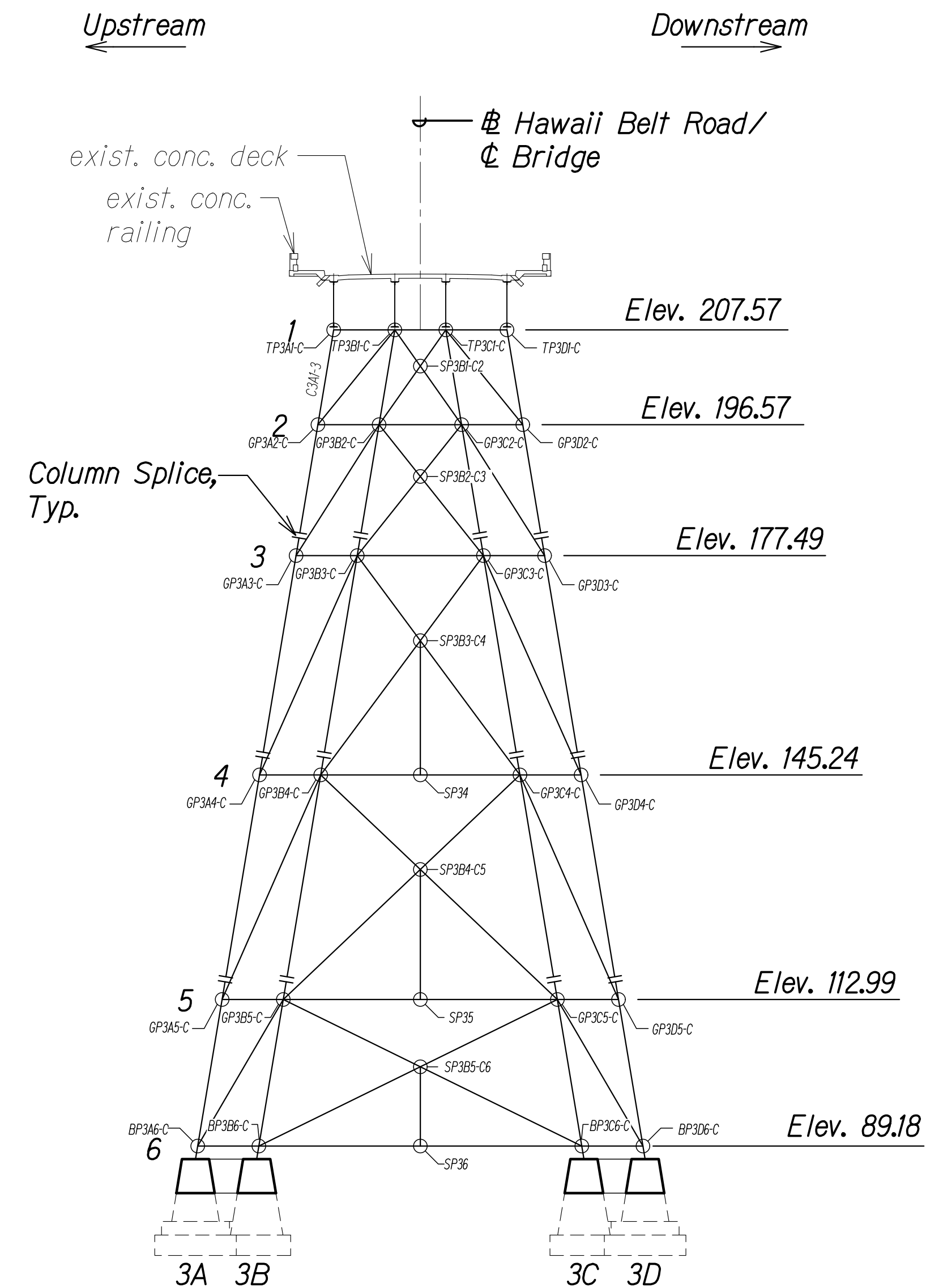
TRESTLE NO. 2 ELEVATION -
COLUMN LINE "C"

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



TRESTLE NO. 2 ELEVATION -
COLUMN LINE "D"

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

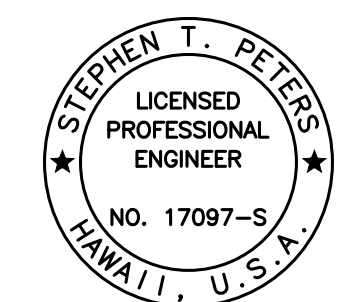


BENT NO. 3 ELEVATION

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

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0411-SA0419 BENT CONLDWG PLOT TIME: 10-26-24, 4:03 PM



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Stephen Peters
SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

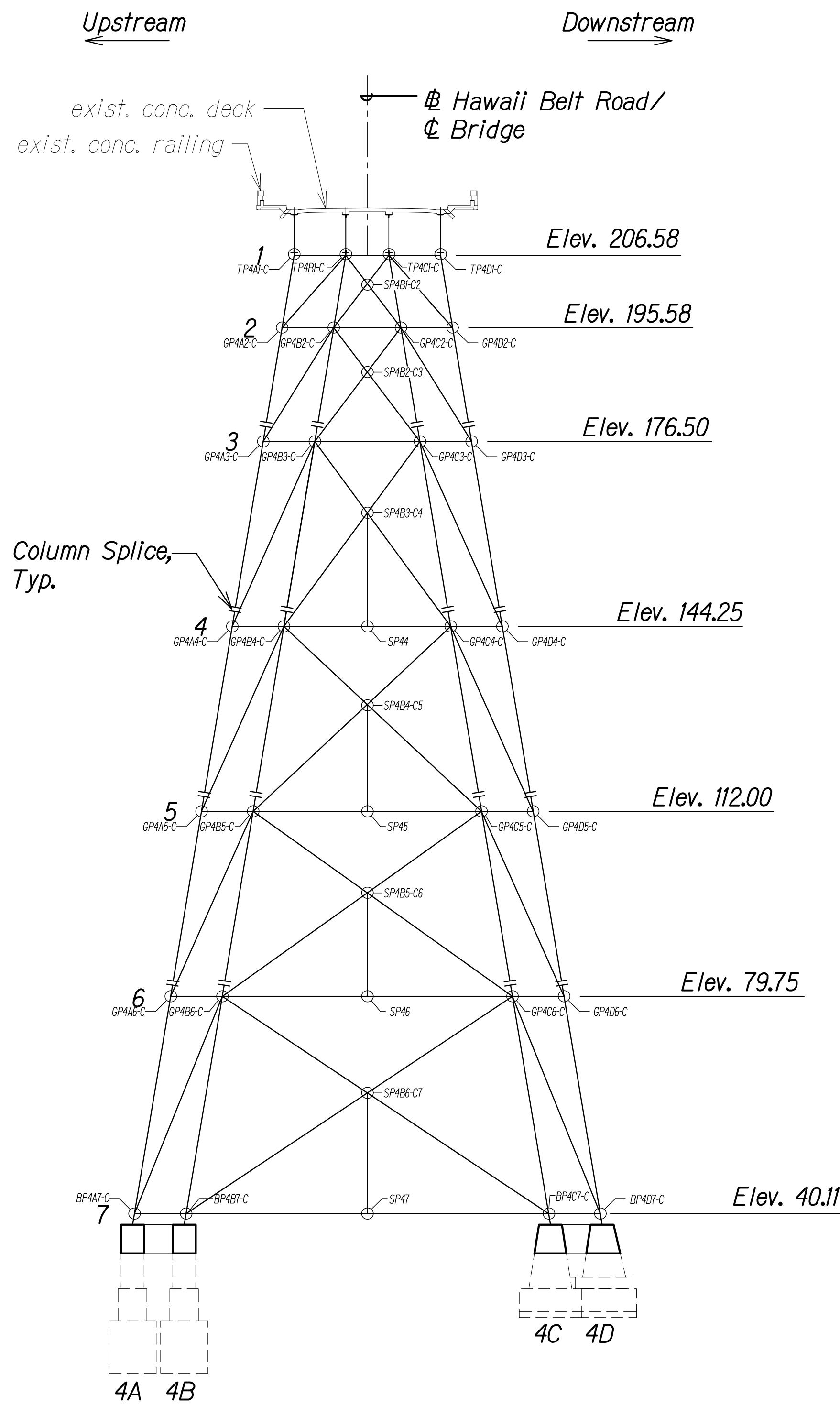
**BENT NO. 3/TRESTLE NO. 2
CONNECTION ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

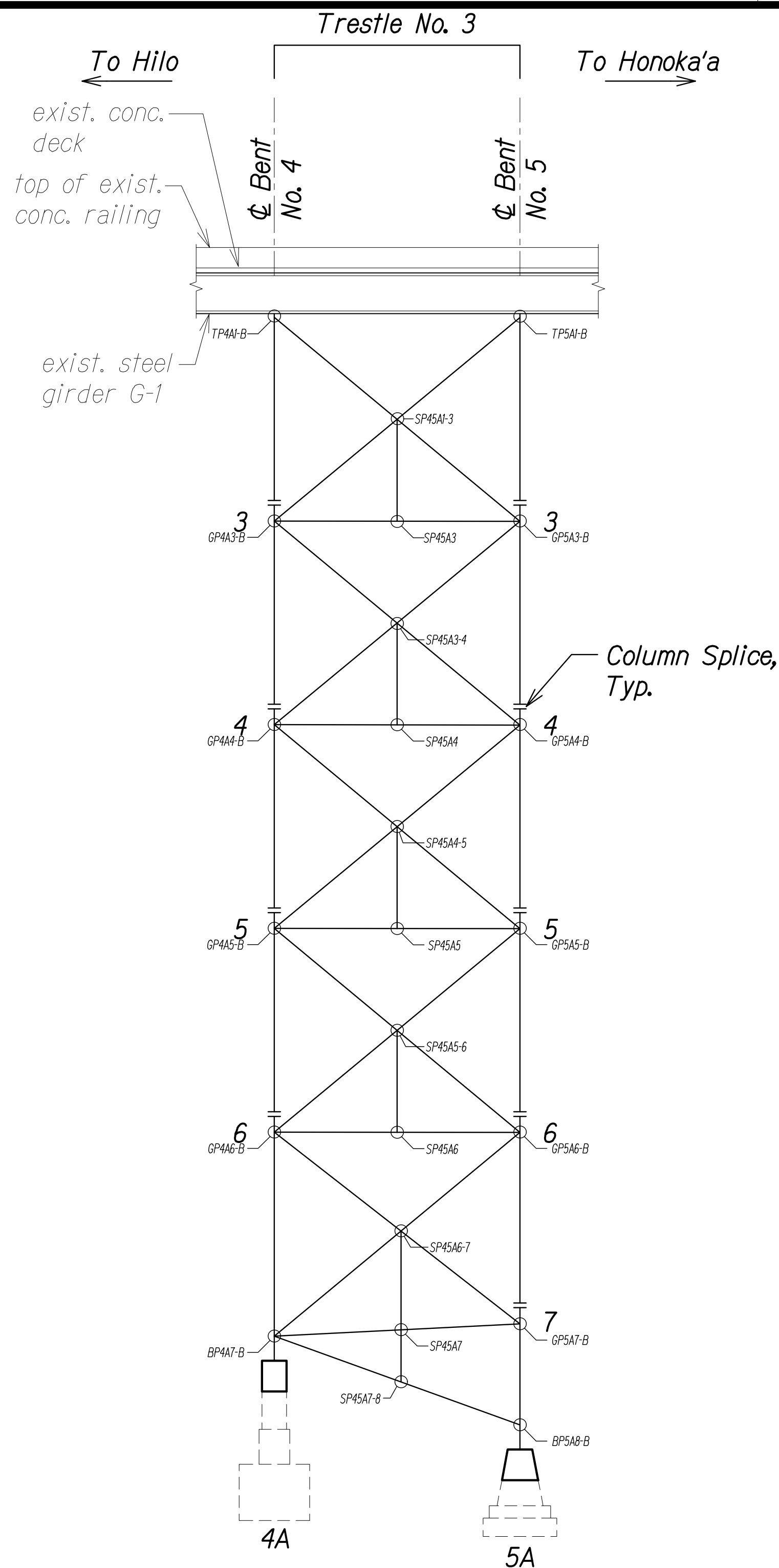
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.15 OF 20 SHEETS

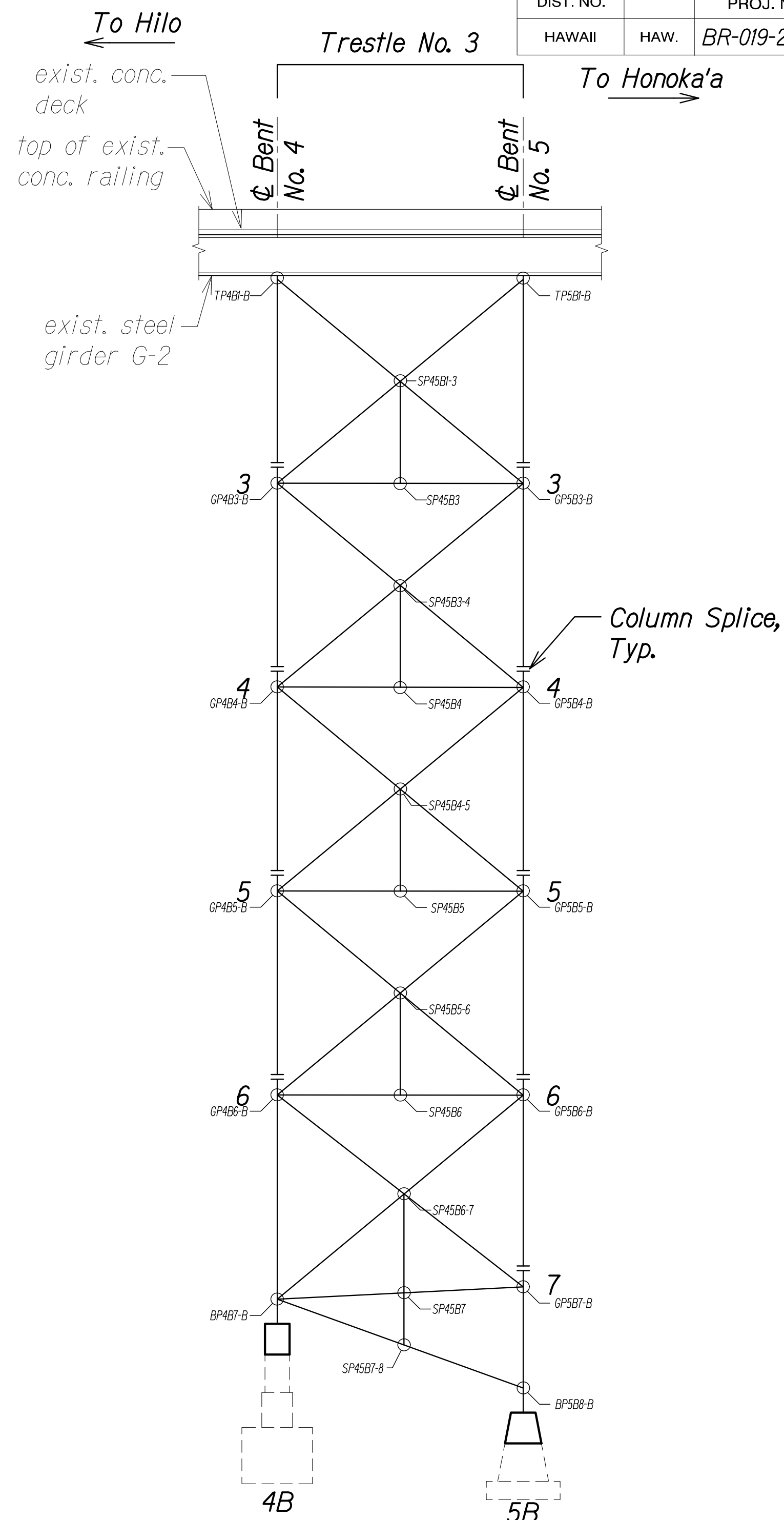
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 68 | 280 |



BENT NO. 4 ELEVATION
Scale: 1/16" = 1'-0" A
SA4.16 SA4.16



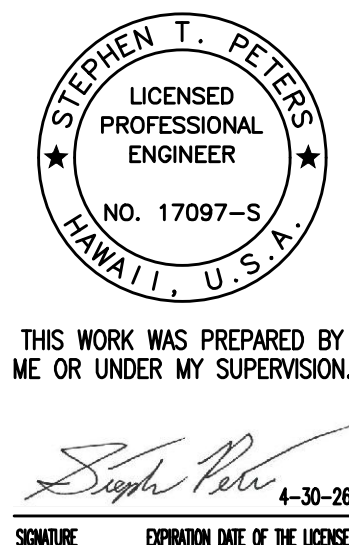
**TRESTLE NO. 3 ELEVATION -
COLUMN LINE "A"**
Scale: 1/16" = 1'-0" B
SA4.16 SA4.16



**TRESTLE NO. 3 ELEVATION -
COLUMN LINE "B"**
Scale: 1/16" = 1'-0" C
SA4.16 SA4.16

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA04.11-SA04.20 BENT CONNLING PLOT TIME: 10-28-24 4:56 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

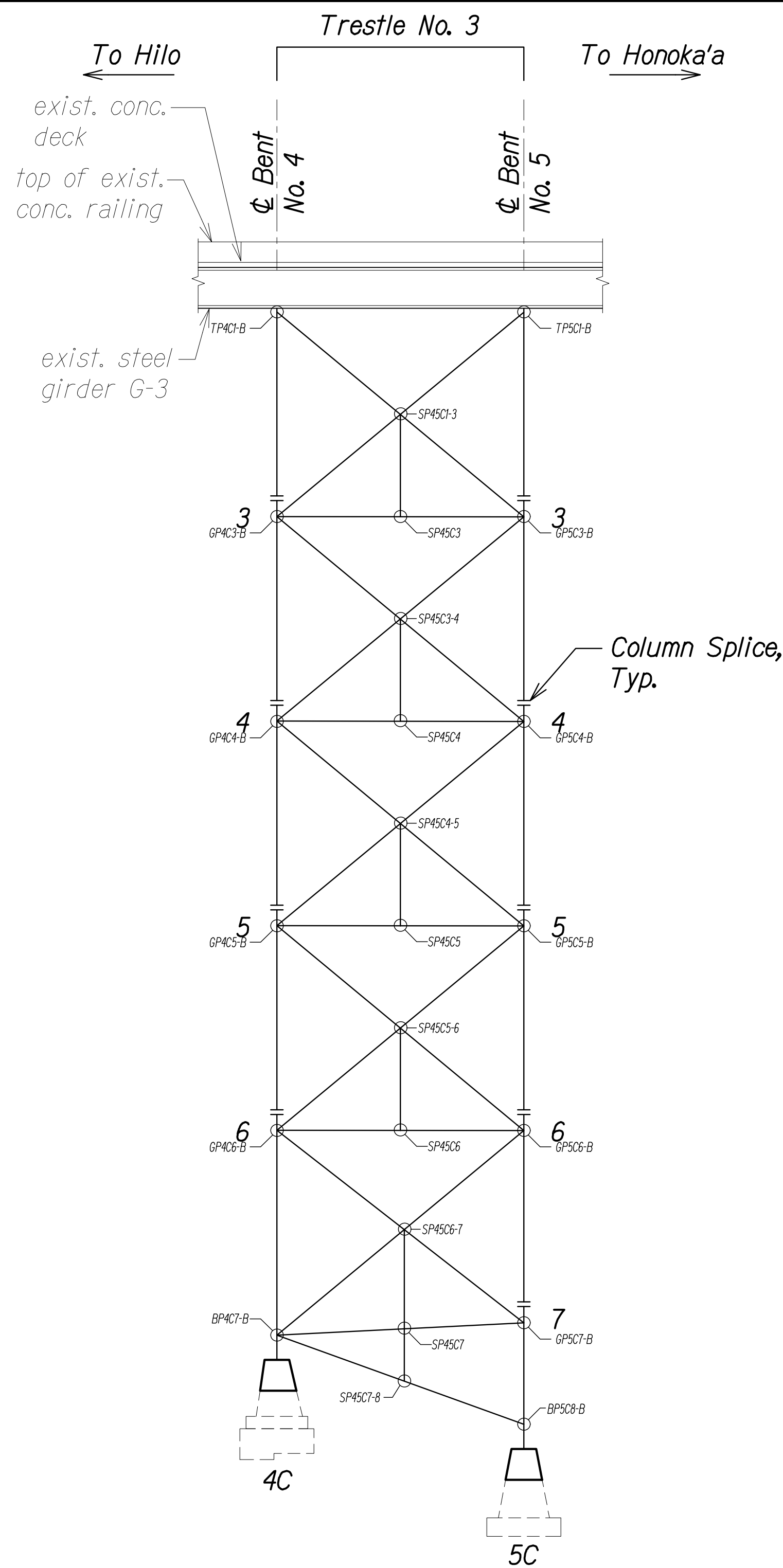
**BENT NO. 4/TRESTLE NO. 3
CONNECTION ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA4.16 OF 20 SHEETS

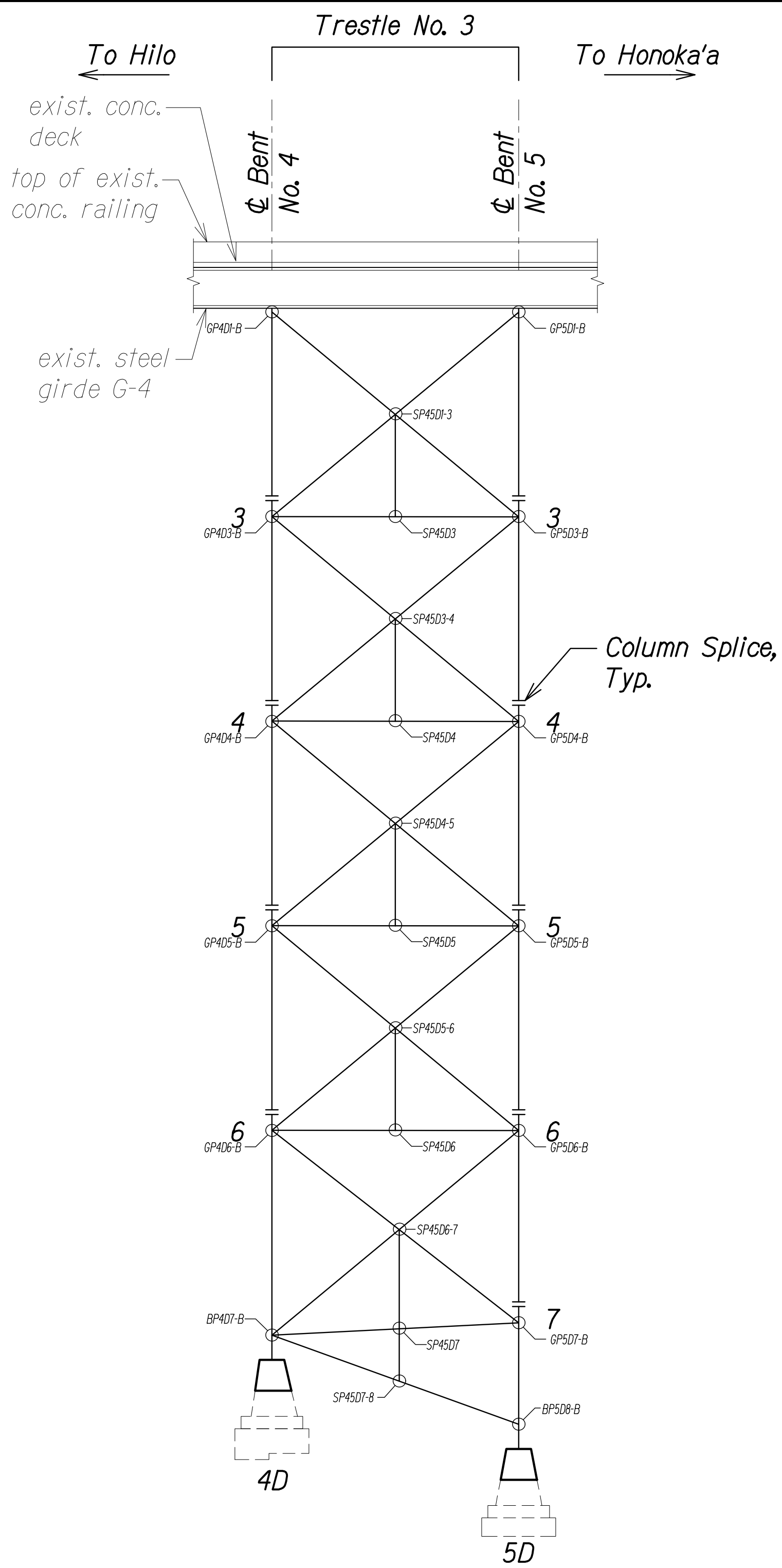
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 69 | 280 |



TRESTLE NO. 3 ELEVATION -
COLUMN LINE "C"

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

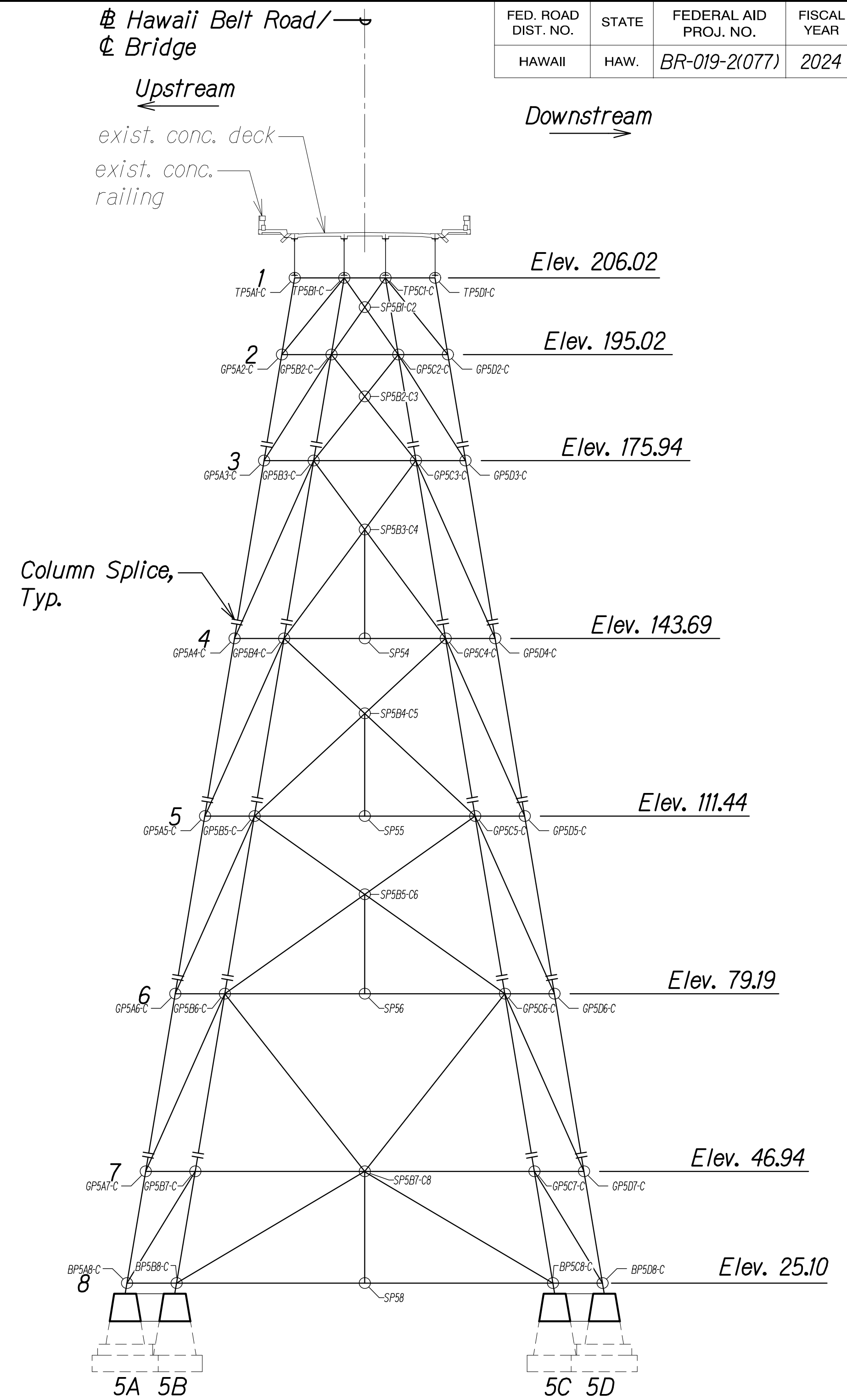
SA4.17 SA4.17



TRESTLE NO. 3 ELEVATION -
COLUMN LINE "D"

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

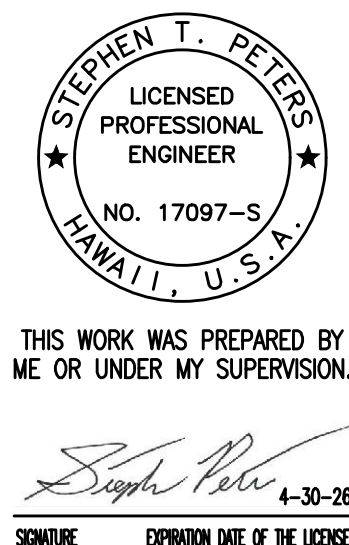
SA4.17 SA4.17



BENT NO. 5 ELEVATION ^C

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

SA4.17 SA4.17



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

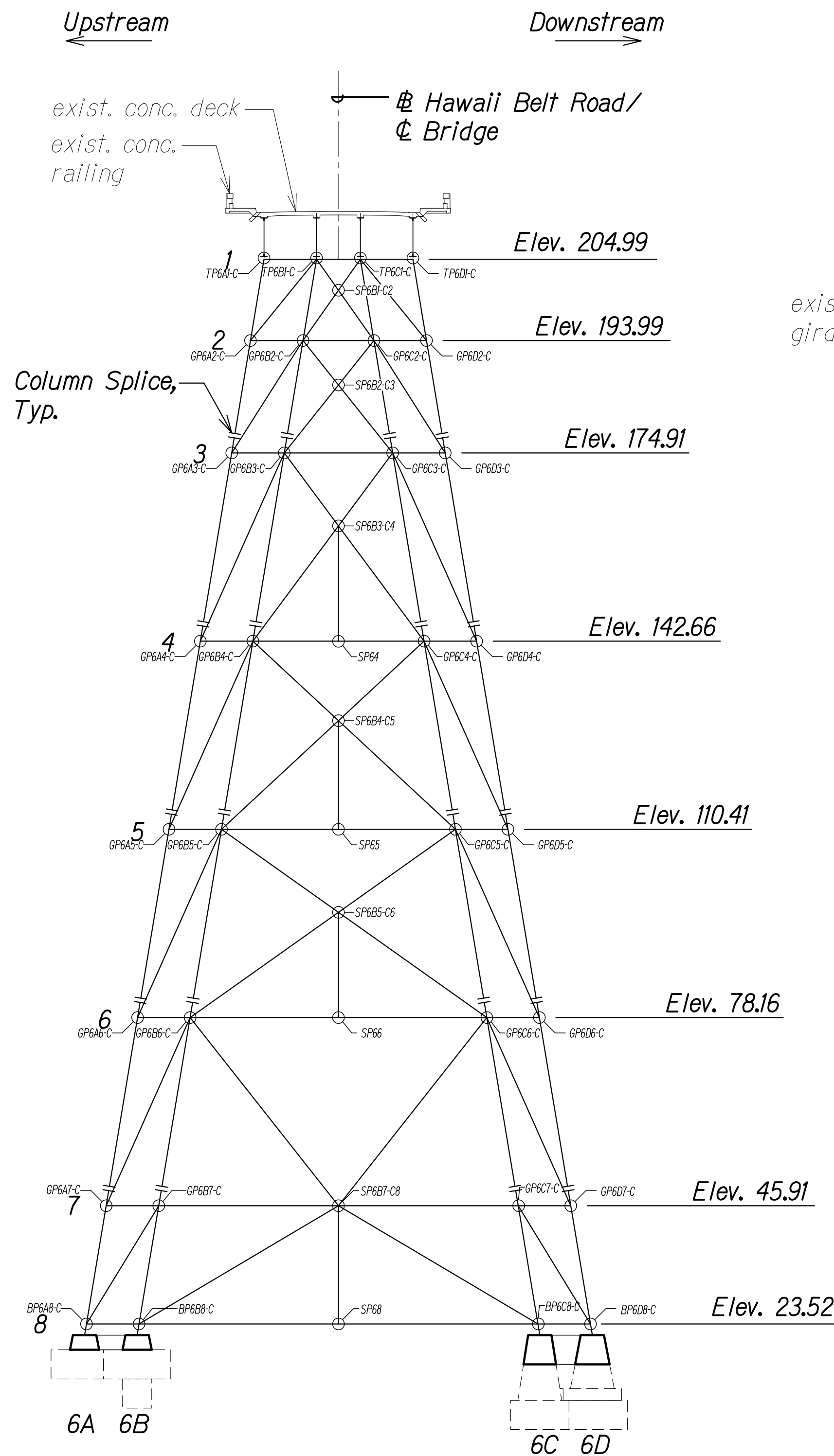
**BENT NO. 5/TRESTLE NO. 3
CONNECTION ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

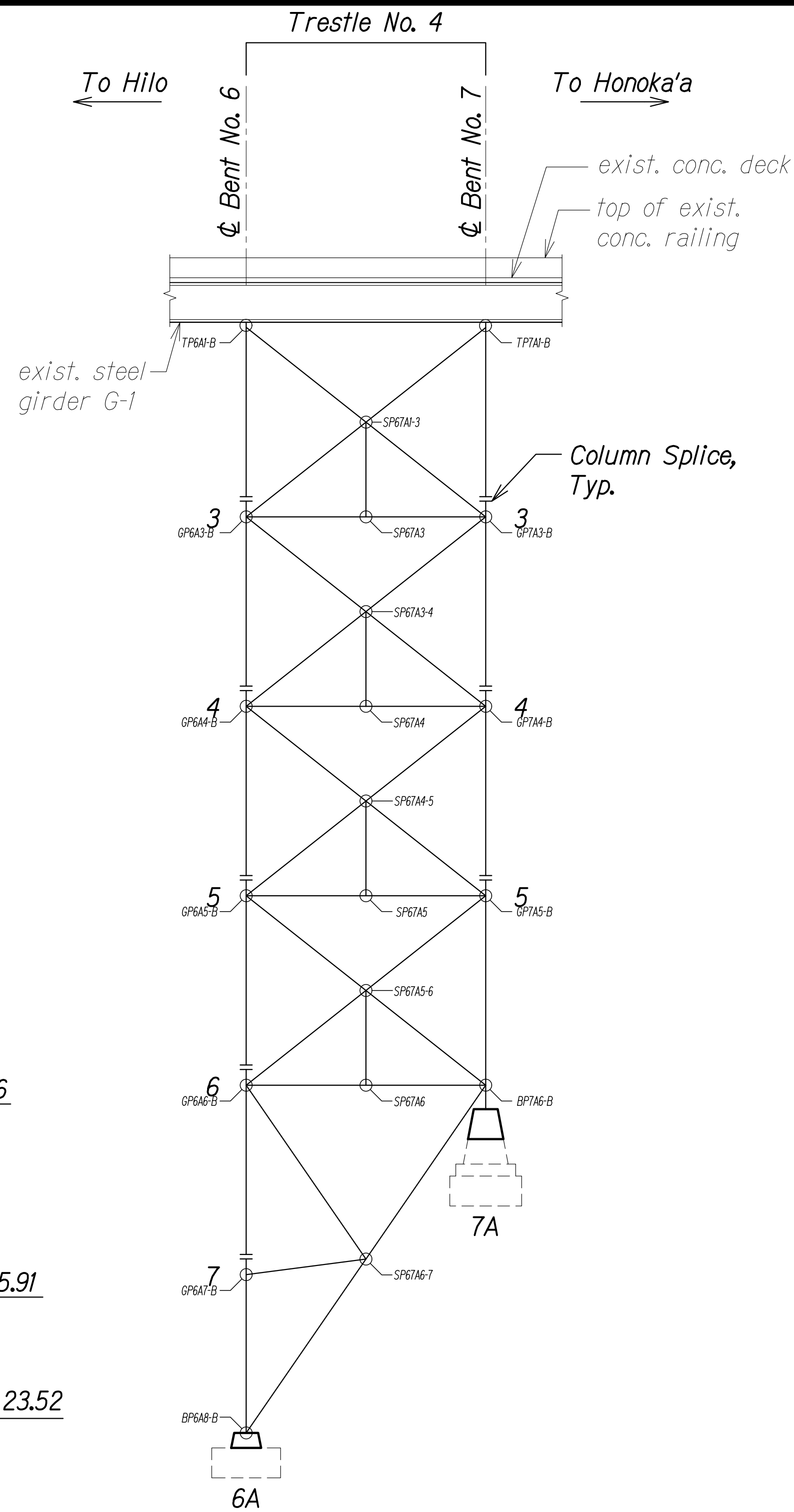
Scale: As Noted Date: Oct. 2024

SHEET No.SA4.17 OF 20 SHEETS

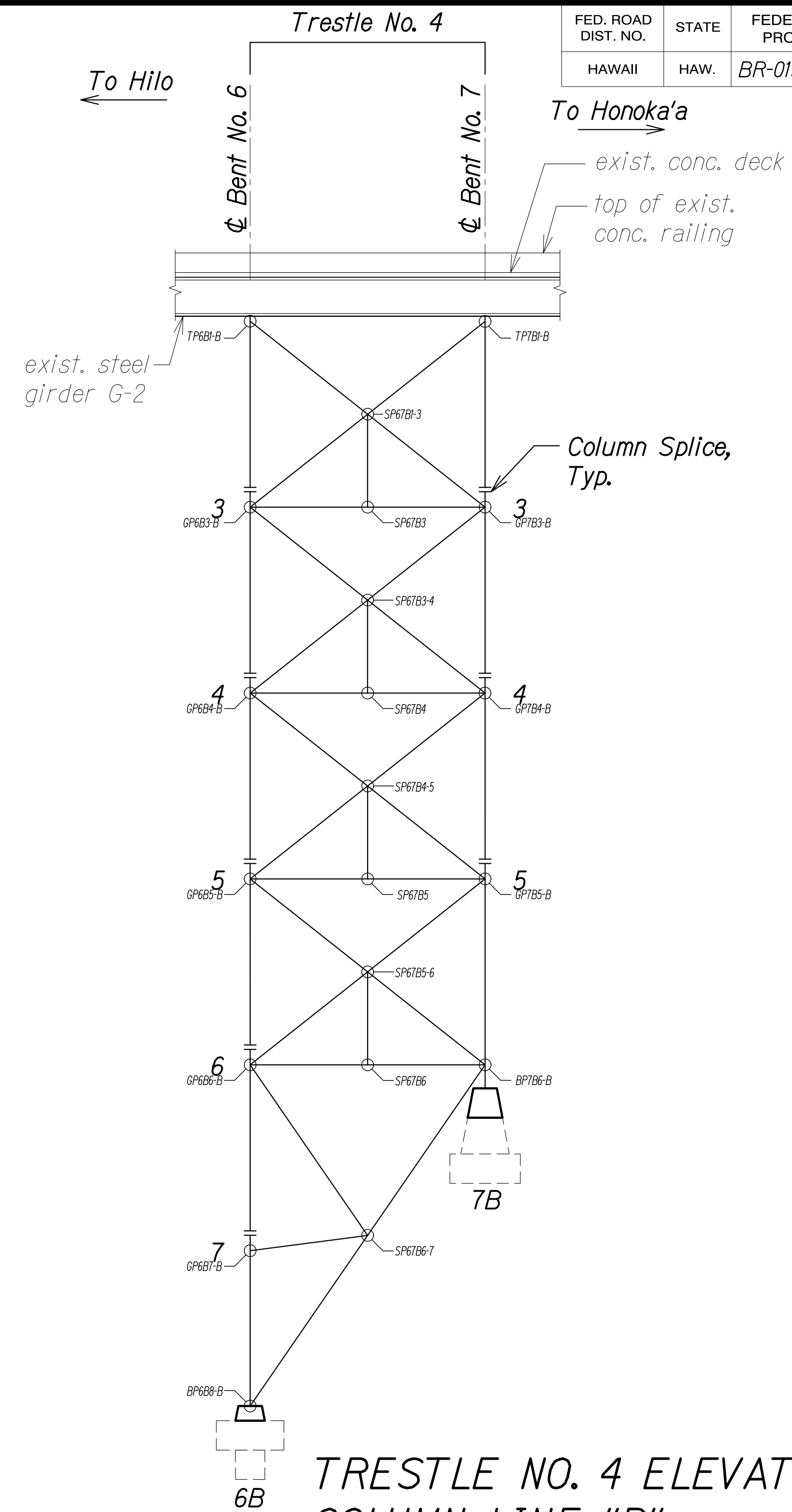
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 70 | 280 |



BENT NO. 6 ELEVATION **A**
Scale: 1/16" = 1'-0" SA4.18 SA4.18



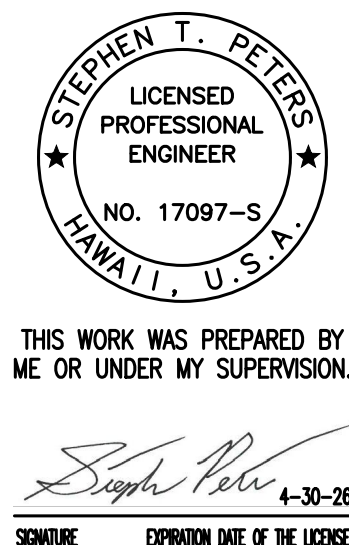
TRESTLE NO. 4 ELEVATION - COLUMN LINE "A" **B**
Scale: 1/16" = 1'-0" SA4.18 SA4.18



TRESTLE NO. 4 ELEVATION - COLUMN LINE "B" **C**
Scale: 1/16" = 1'-0" SA4.18 SA4.18

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\10-28-24 BID SET\NSR-SA0411-SA0419 BENT CONLDWG PLOT TIME: 10-26-24 4:04 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

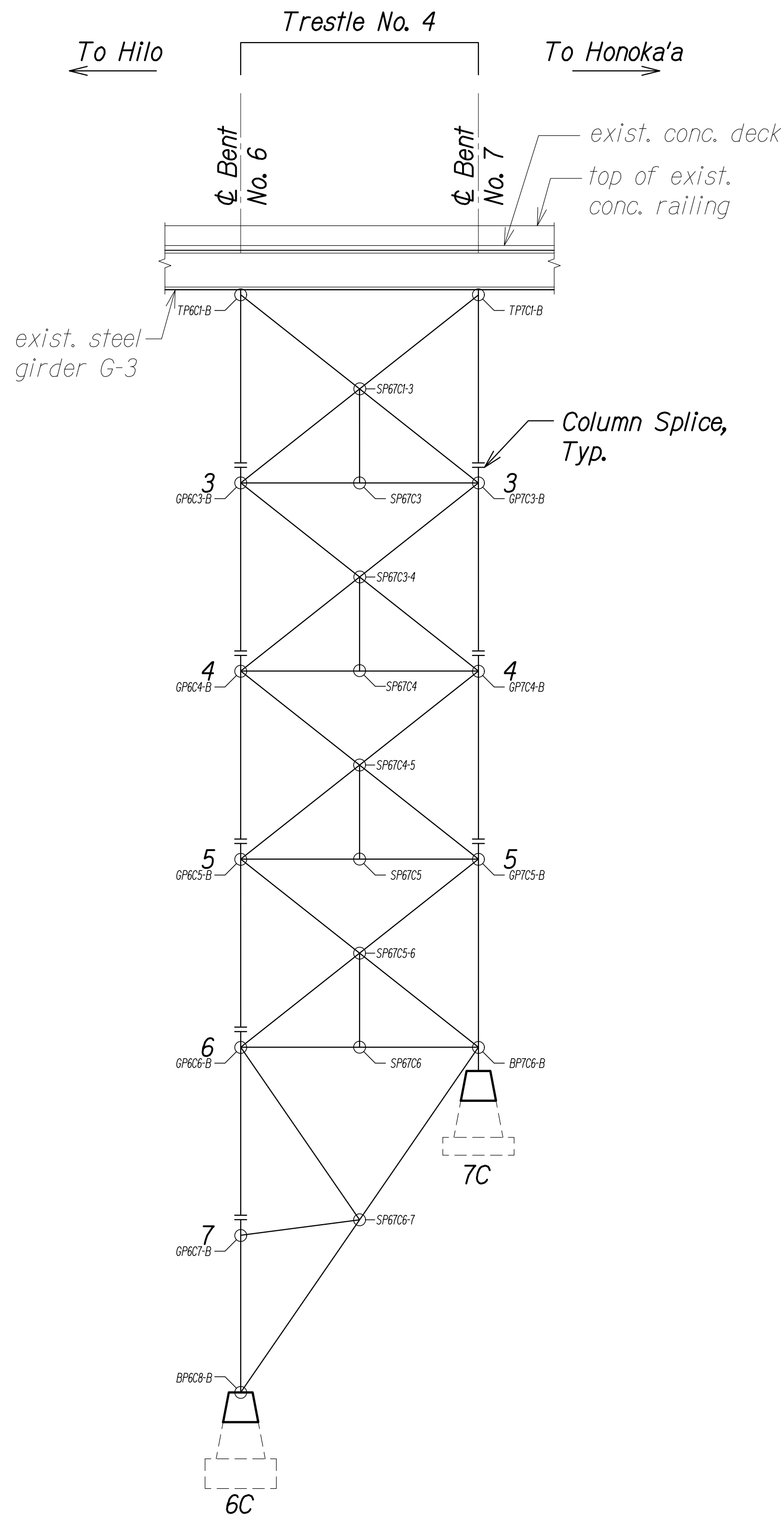
**BENT NO. 6/TRESTLE NO. 4
CONNECTION ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA4.18 OF 20 SHEETS

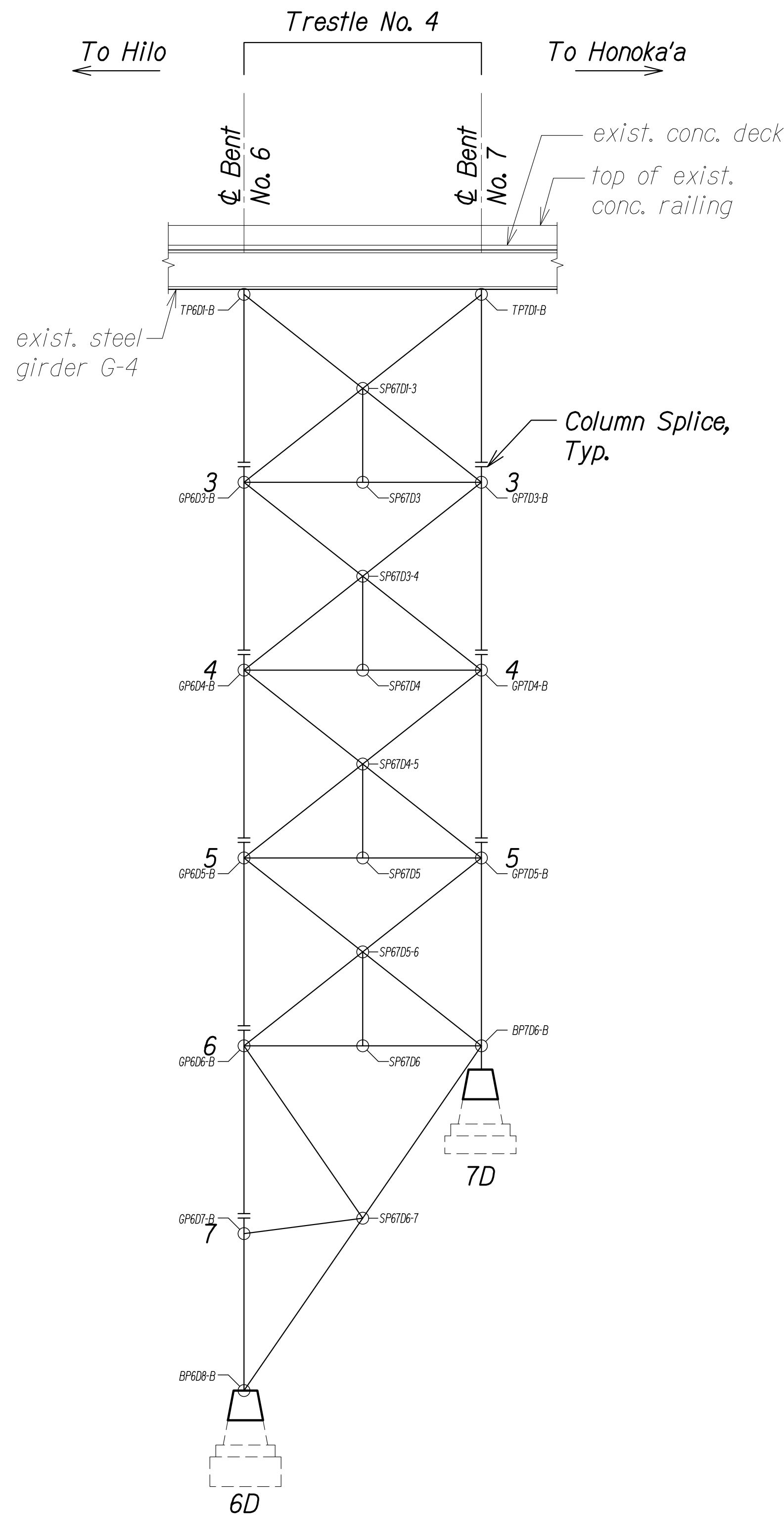
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 71 | 280 |



**TRESTLE NO. 4 ELEVATION -
COLUMN LINE "C"**

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

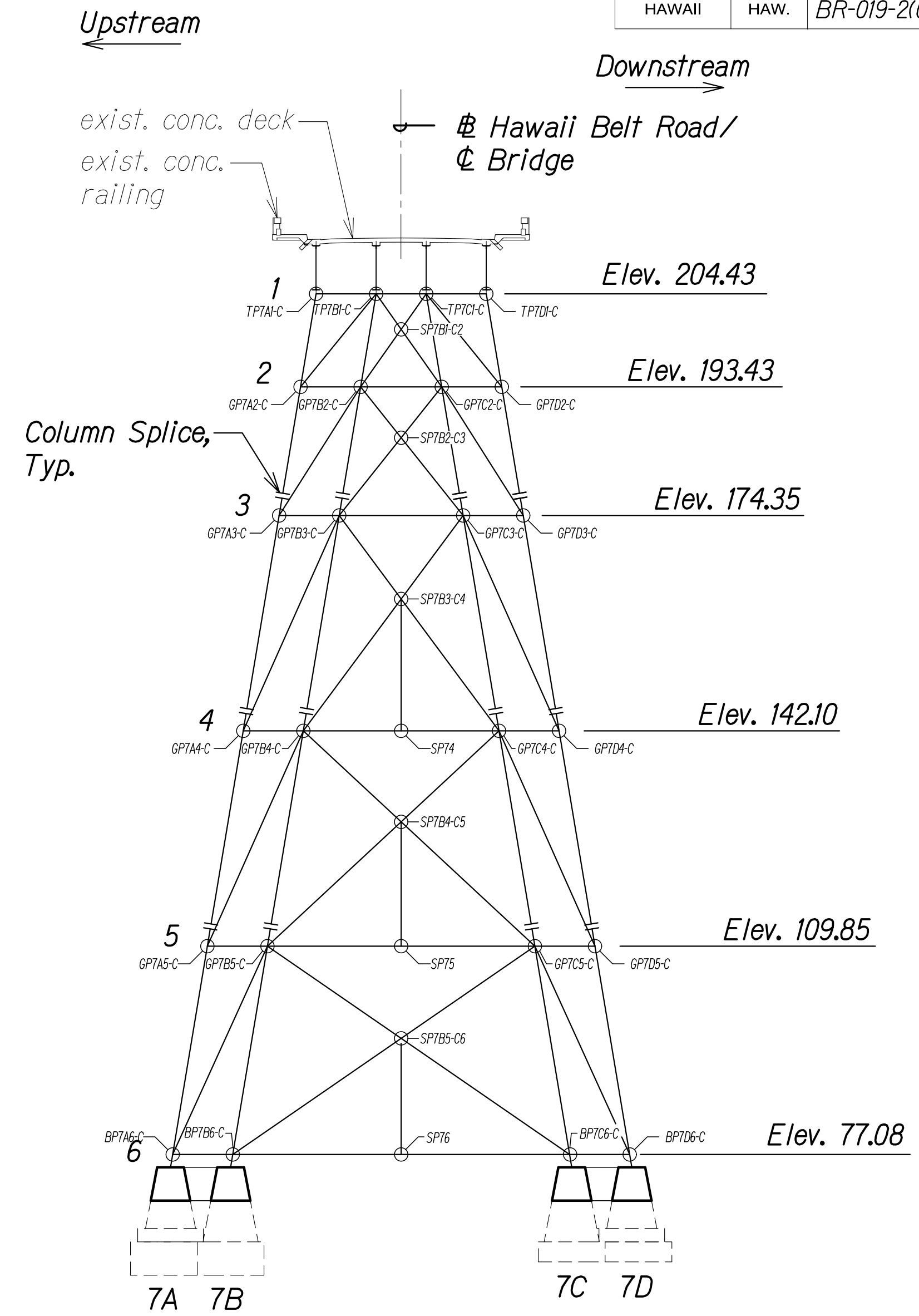
A
SA4.19 SA4.19



**TRESTLE NO. 4 ELEVATION -
COLUMN LINE "D"**

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

B
SA4.19 SA4.19



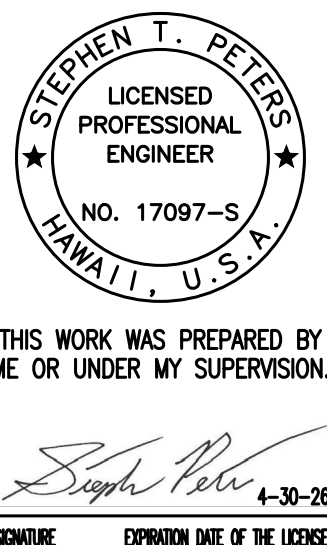
BENT NO. 7 ELEVATION

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

C
SA4.19 SA4.19

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A\01 CAD\10-28-24 BID SET\NSR-SA0411-SA0419 BENT CONLDWG PLOT TIME: 10-26-24, 4:05 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

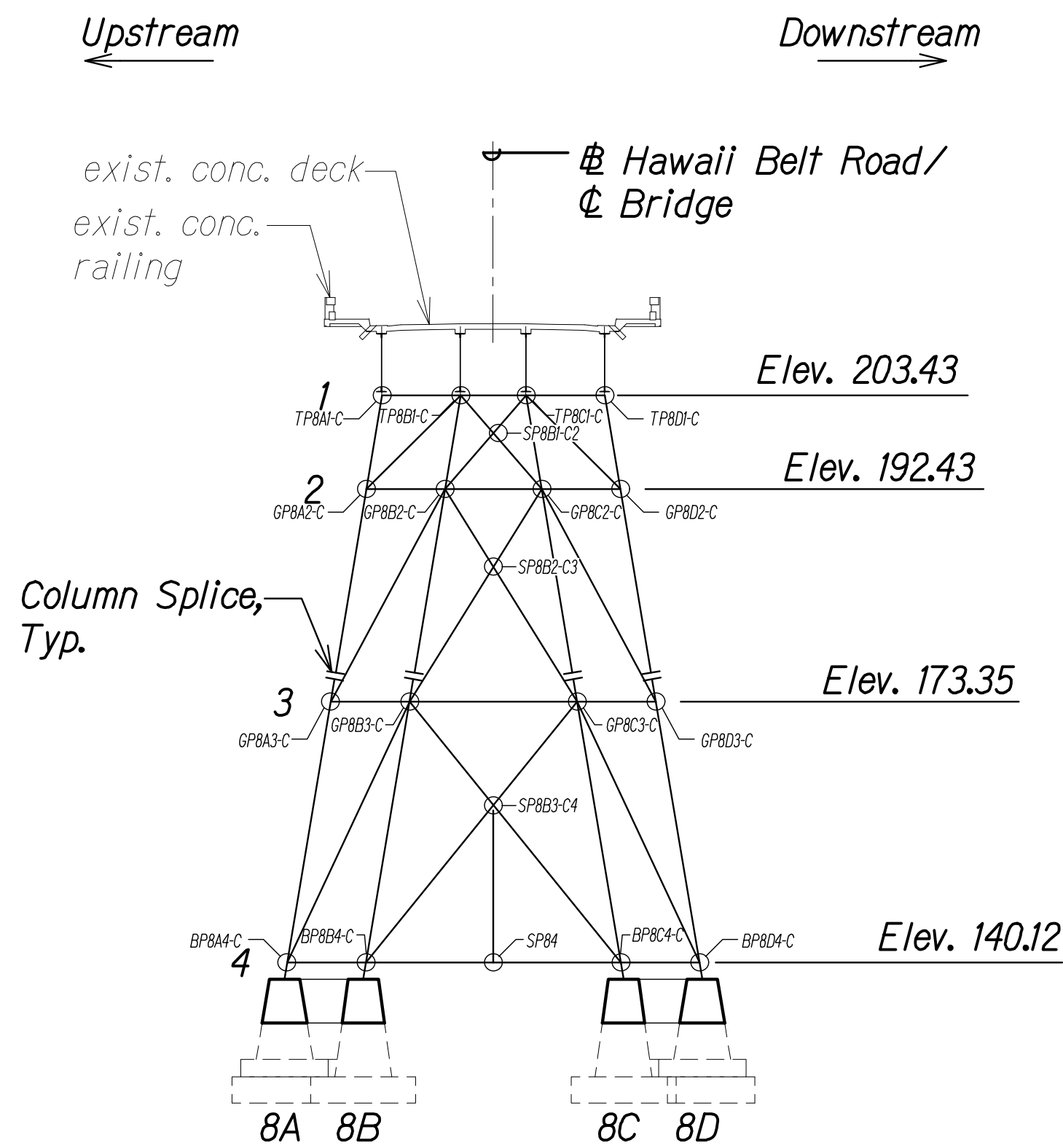
**BENT NO. 7/TRESTLE NO. 4
CONNECTION ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

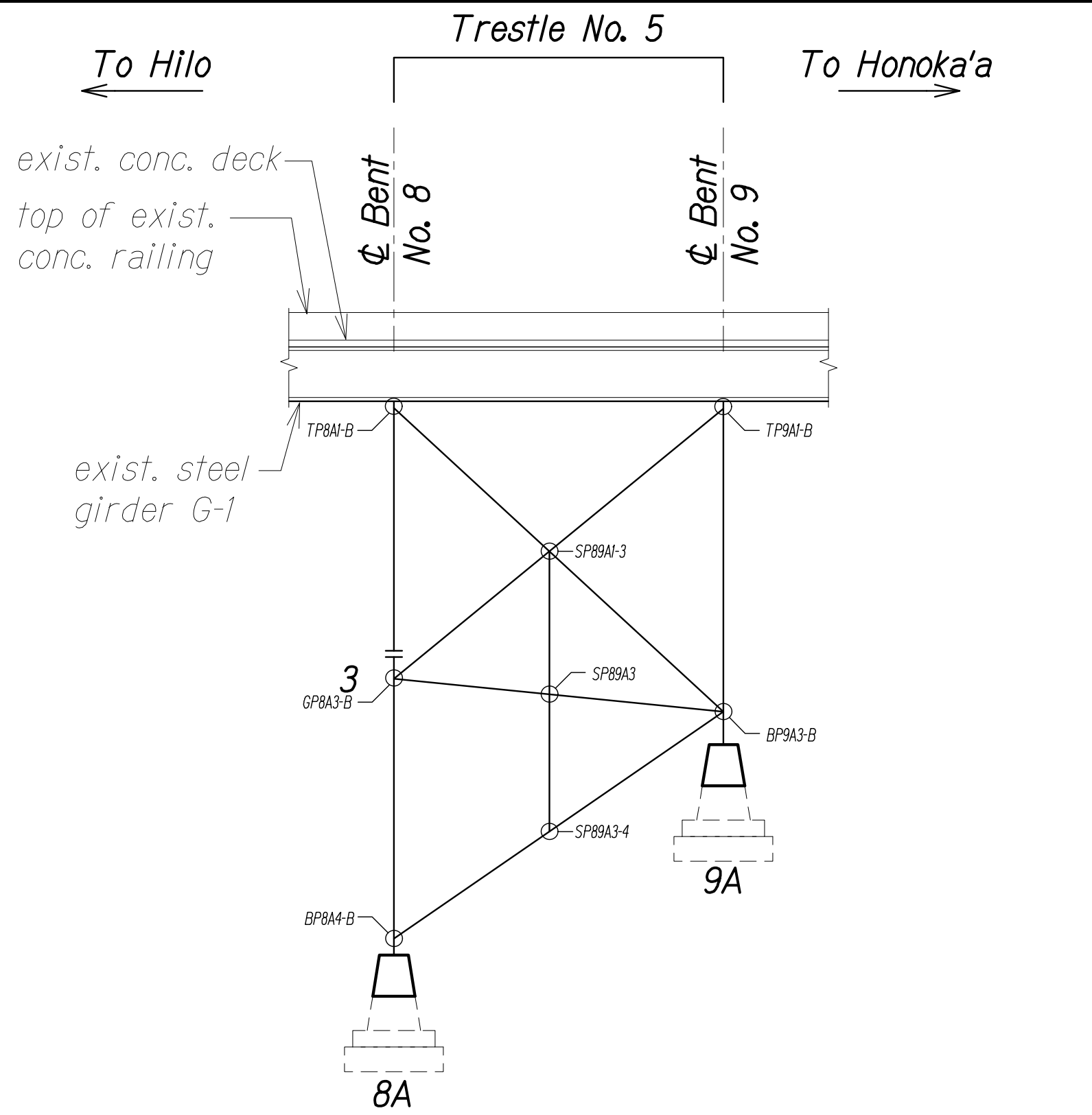
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SHEET No. SA4.19 OF 20 SHEETS

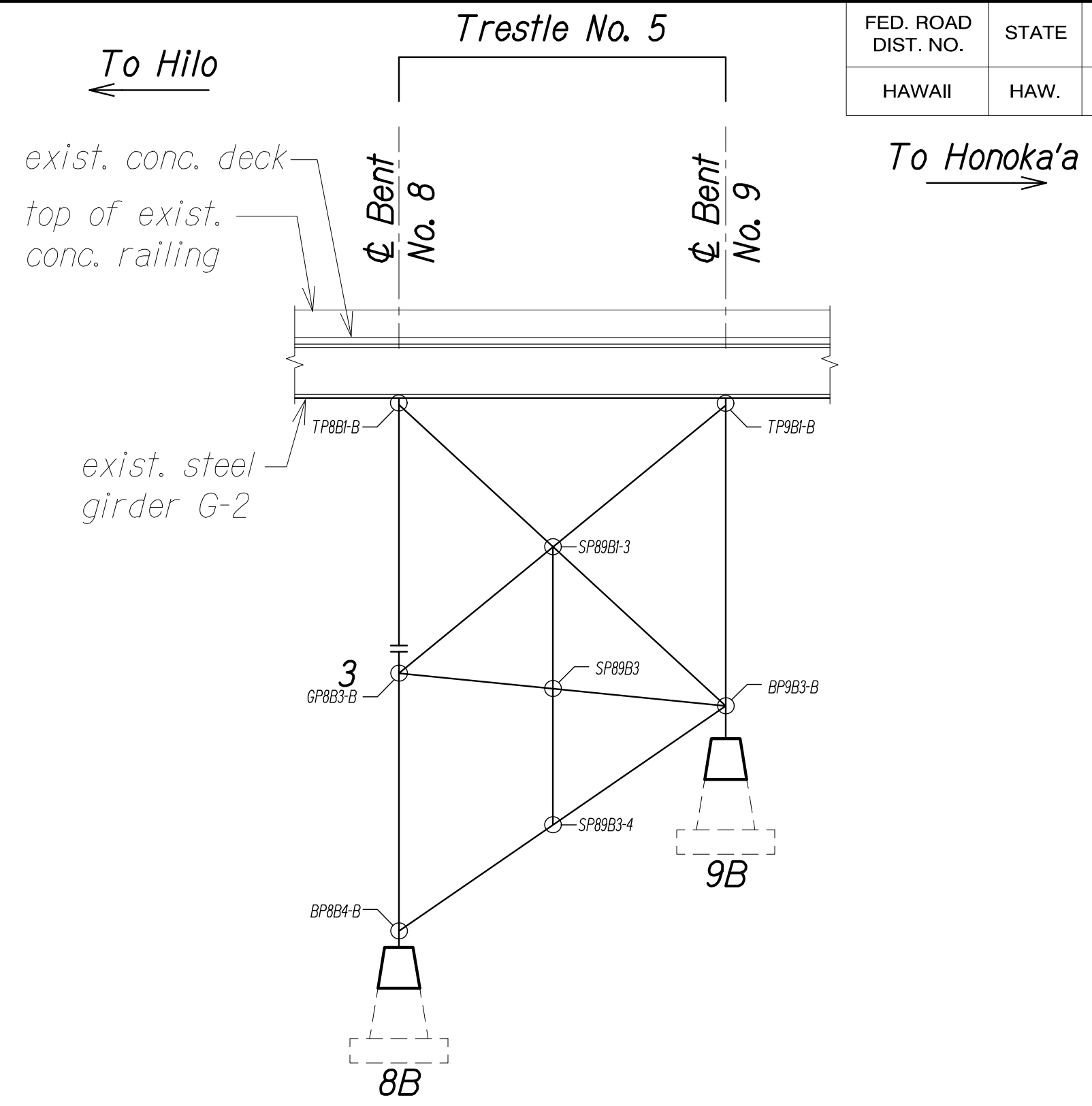
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|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 72 | 280 |



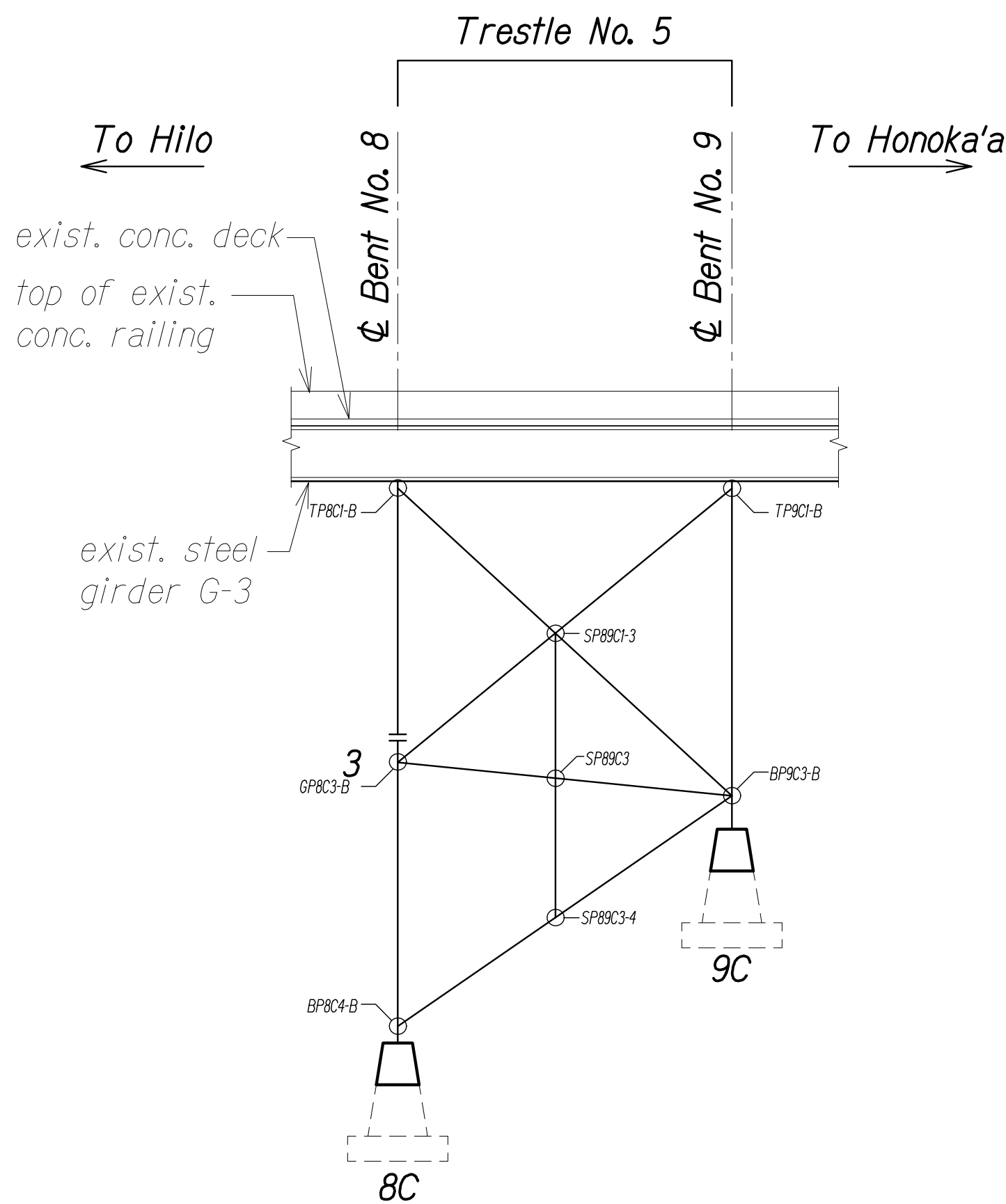
BENT NO. 8 ELEVATION
Scale: 1/16" = 1'-0"
SA4.20 SA4.20



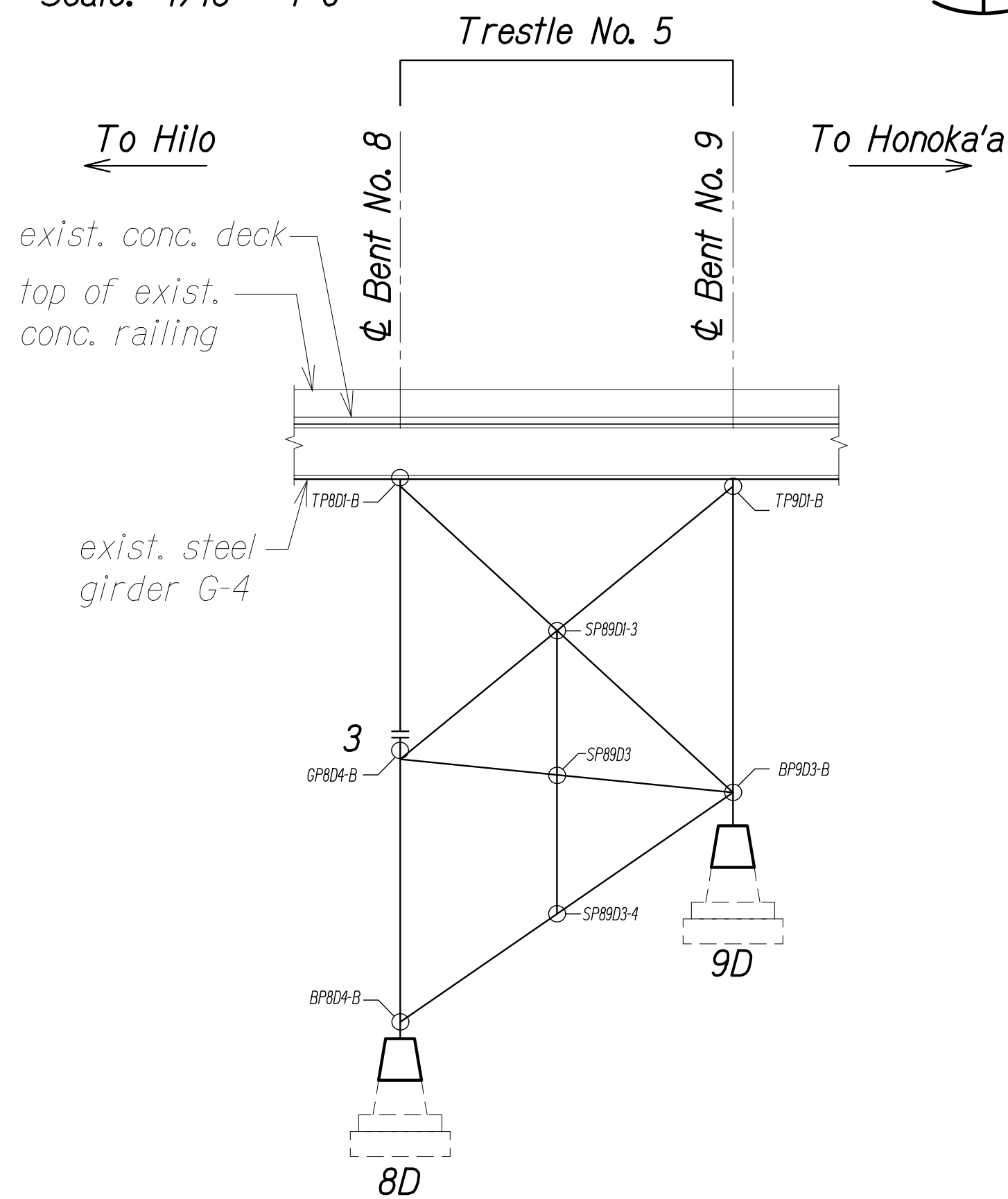
**TRESTLE NO. 5 ELEVATION -
COLUMN LINE "A"**
Scale: 1/16" = 1'-0"
SA4.20 SA4.20



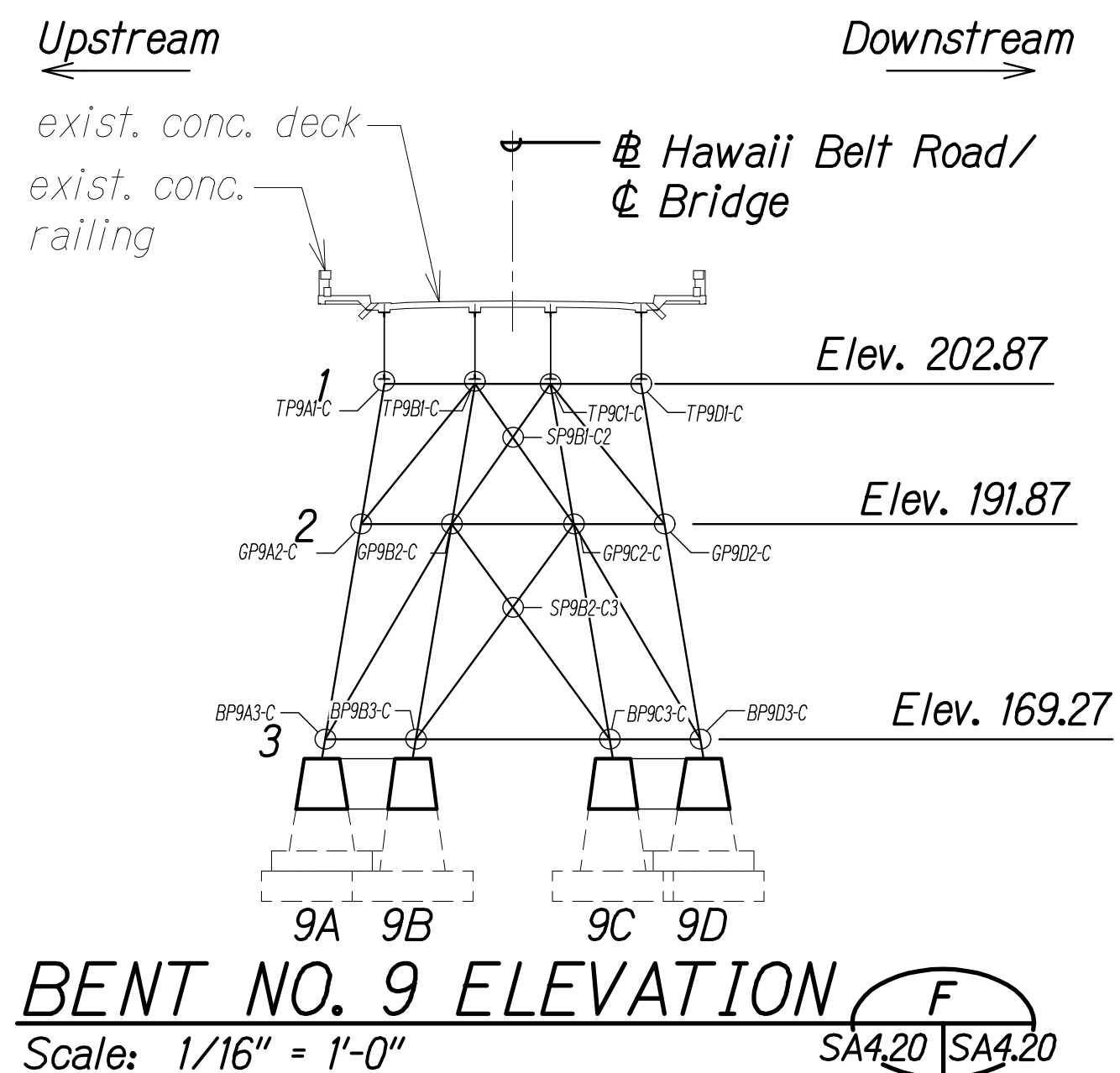
**TRESTLE NO. 5 ELEVATION -
COLUMN LINE "B"**
Scale: 1/16" = 1'-0"
SA4.20 SA4.20



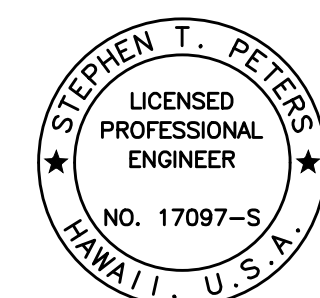
**TRESTLE NO. 5 ELEVATION -
COLUMN LINE "C"**
Scale: 1/16" = 1'-0"
SA4.20 SA4.20



**TRESTLE NO. 5 ELEVATION -
COLUMN LINE "D"**
Scale: 1/16" = 1'-0"
SA4.20 SA4.20



BENT NO. 9 ELEVATION
Scale: 1/16" = 1'-0"
SA4.20 SA4.20



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SIGNATURE
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**BENT NOS. 8 AND 9/TRESTLE NO. 5
CONNECTION ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET NoSA4.20 OF 20 SHEETS

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0411-SA0420 BENT CONLDWG PLOT TIME: 10-28-24 8:22 AM

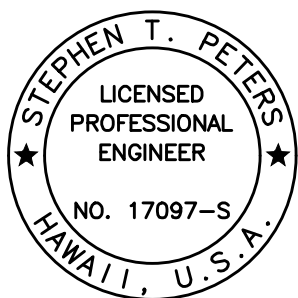
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 73 | 280 |

NOTES:

- Elevations are typical for upper column at Bent Nos. 2, 3, 4, 5, 6, 7, and 8.
- Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
- Extend Continuity Plates beyond limits of Gusset Plates as needed to satisfy lacing criteria.

LACING SPACING SCHEDULE

| LOCATION | "A" |
|------------|-----|
| Bent No. 2 | 5 |
| Bent No. 3 | 5 |
| Bent No. 4 | 5 |
| Bent No. 5 | 5 |
| Bent No. 6 | 5 |
| Bent No. 7 | 5 |
| Bent No. 8 | 4 |



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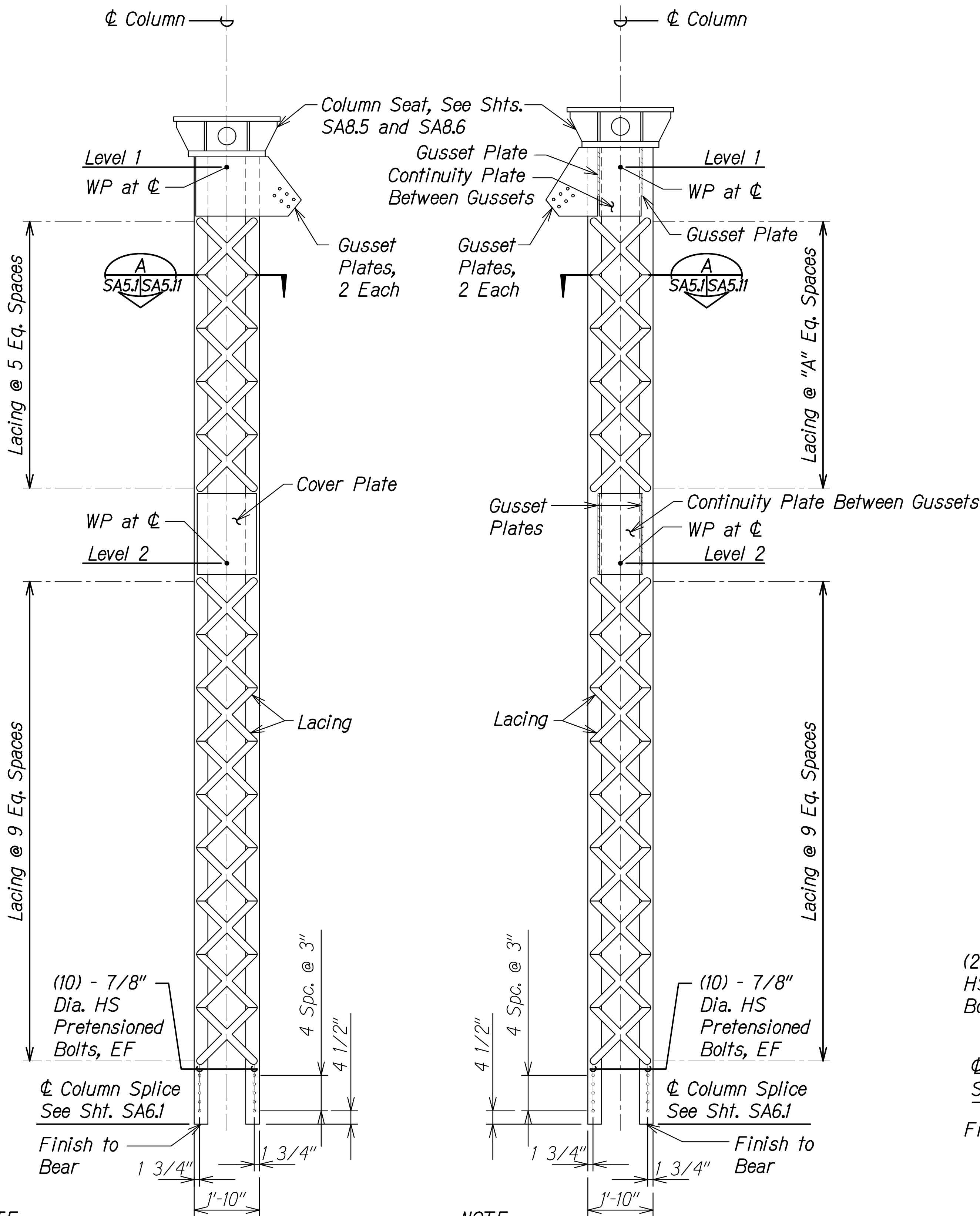
SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UPPER COLUMN ELEVATIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.1 OF 34 SHEETS

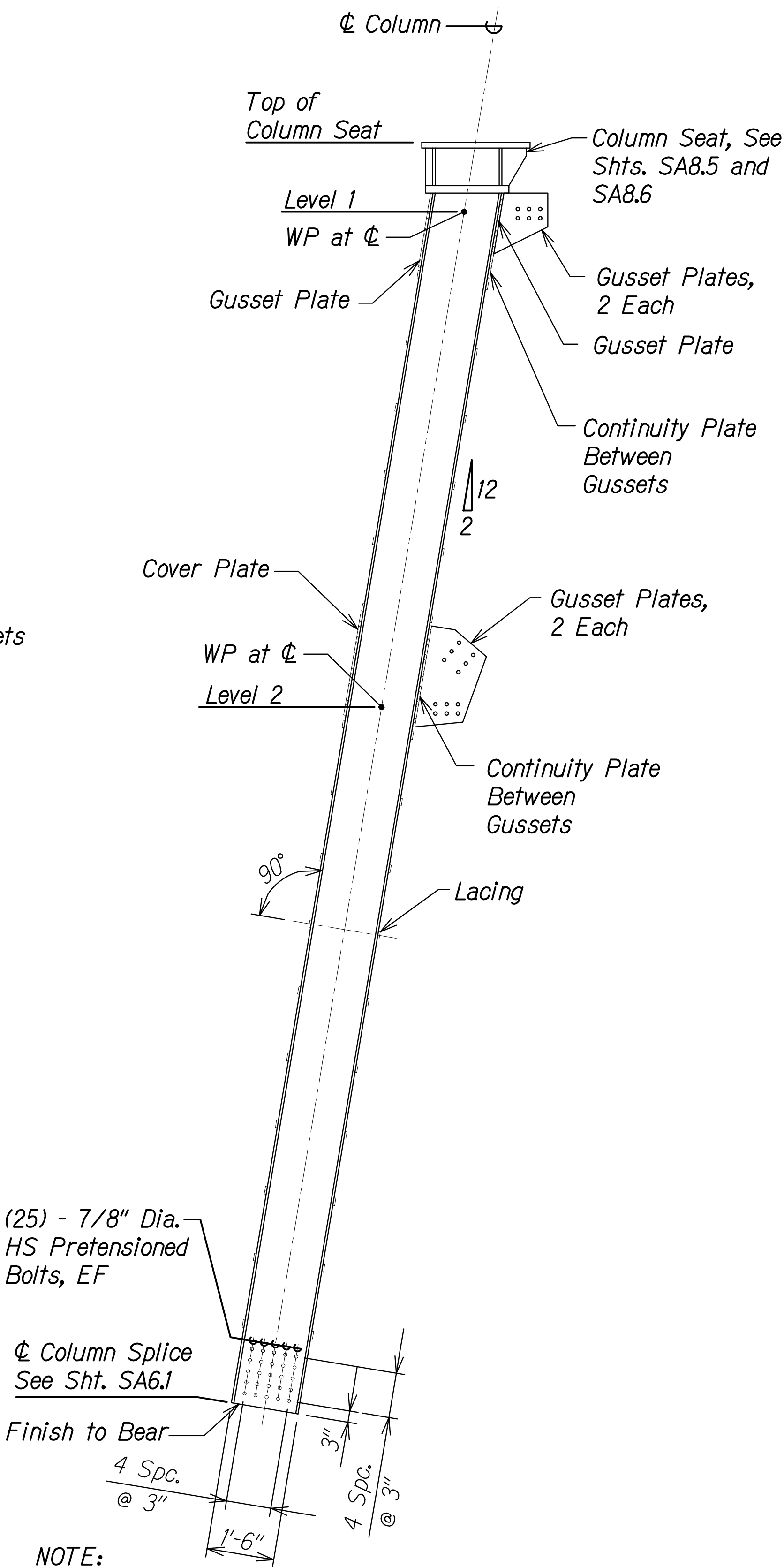


NOTE:
Typical at upstream face of Col. Line A (Bent Nos. 3, 5, ϕ 7) and downstream face of Col. Line D (Bent Nos. 2, 4, 6 ϕ 8). Gusset plates, opp. hand for upstream face of Col. Line A (Bent Nos. 2, 4, 6 ϕ 8) and downstream face of Col. Line D (Bent Nos. 3, 5 ϕ 7).

ELEVATION A
Scale: 1/2" = 1'-0" SA5.1|SA5.1

NOTE:
Typical at downstream face of Col. Line A (Bent Nos. 3, 5, ϕ 7) and upstream face of Col. Line D (Bent Nos. 2, 4, 6 ϕ 8). Gusset plates, opp. hand for downstream face of Col. Line A (Bent Nos. 2, 4, 6 ϕ 8) and upstream face of Col. Line D (Bent Nos. 3, 5, ϕ 7)

ELEVATION B
Scale: 1/2" = 1'-0" SA5.1|SA5.1



NOTE:
Typical Hilo side face of Column Line A and Honoka'a side face of Column Line D. Opp-Hand for Honoka'a side face of Column Line A and Hilo side face of Column Line D.

ELEVATION C
Scale: 1/2" = 1'-0" SA5.1|SA5.1

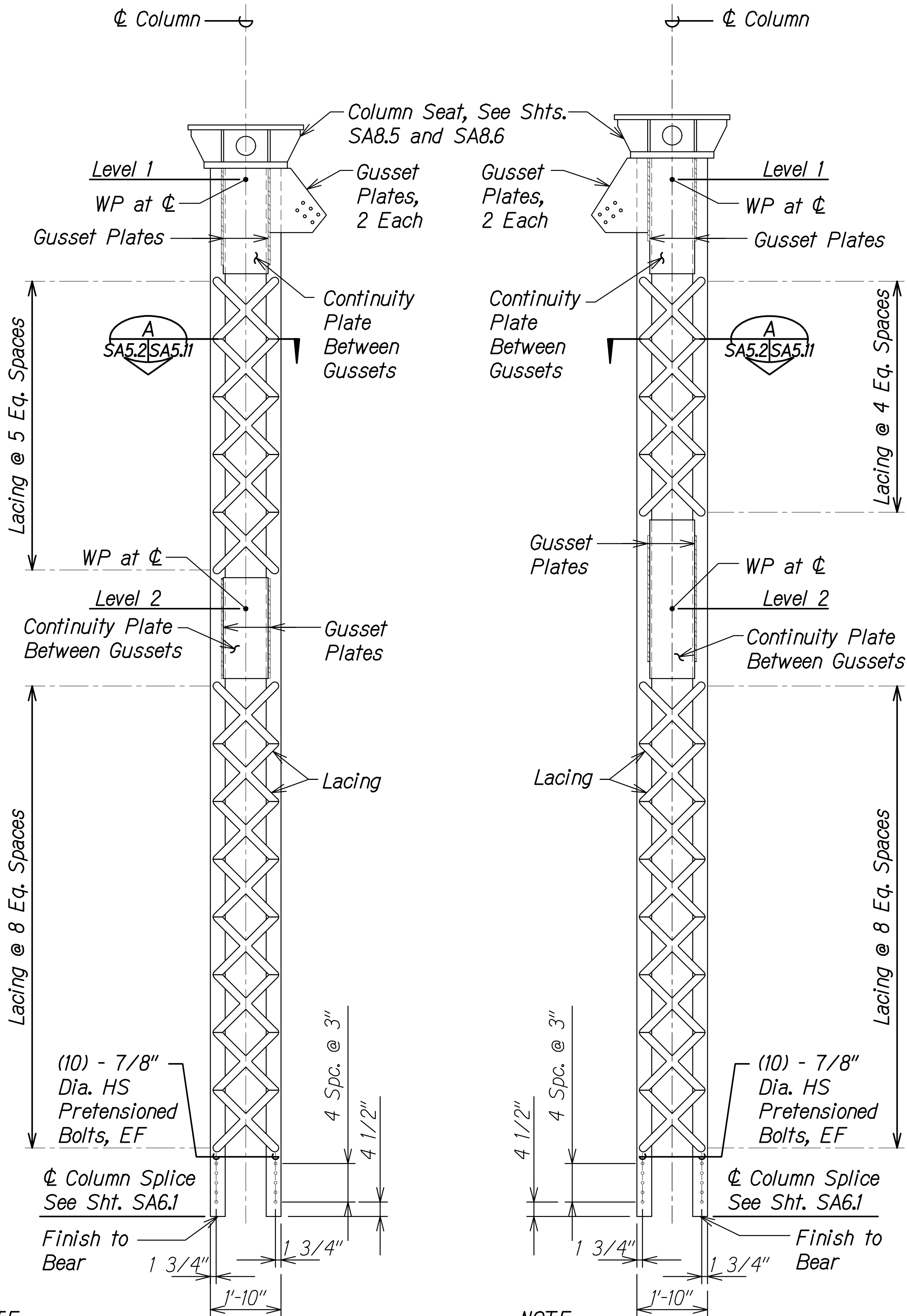
| | |
|-------------------|-------|
| DATE | _____ |
| SURVEY PLOTTED BY | _____ |
| DRAWN BY | _____ |
| TRACED BY | _____ |
| DESIGNED BY | _____ |
| NOTE BOOK | _____ |
| QUANTITIES BY | _____ |
| CHECKED BY | _____ |
| No. | _____ |

DRAWING NAME: ZA-00-ONGONG-23-022-9-NANUE STR BR PF2-DOT-A.01 CAD: 10-28-24 BID SET: NSR-SA0501-SA0510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:23 AM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 74 | 280 |

NOTES:

- Elevations are typical for upper column at Bent Nos. 2, 3, 4, 5, 6, 7, and 8.
- Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
- Extend Continuity Plates above and below Gusset Plates as needed to satisfy lacing criteria.

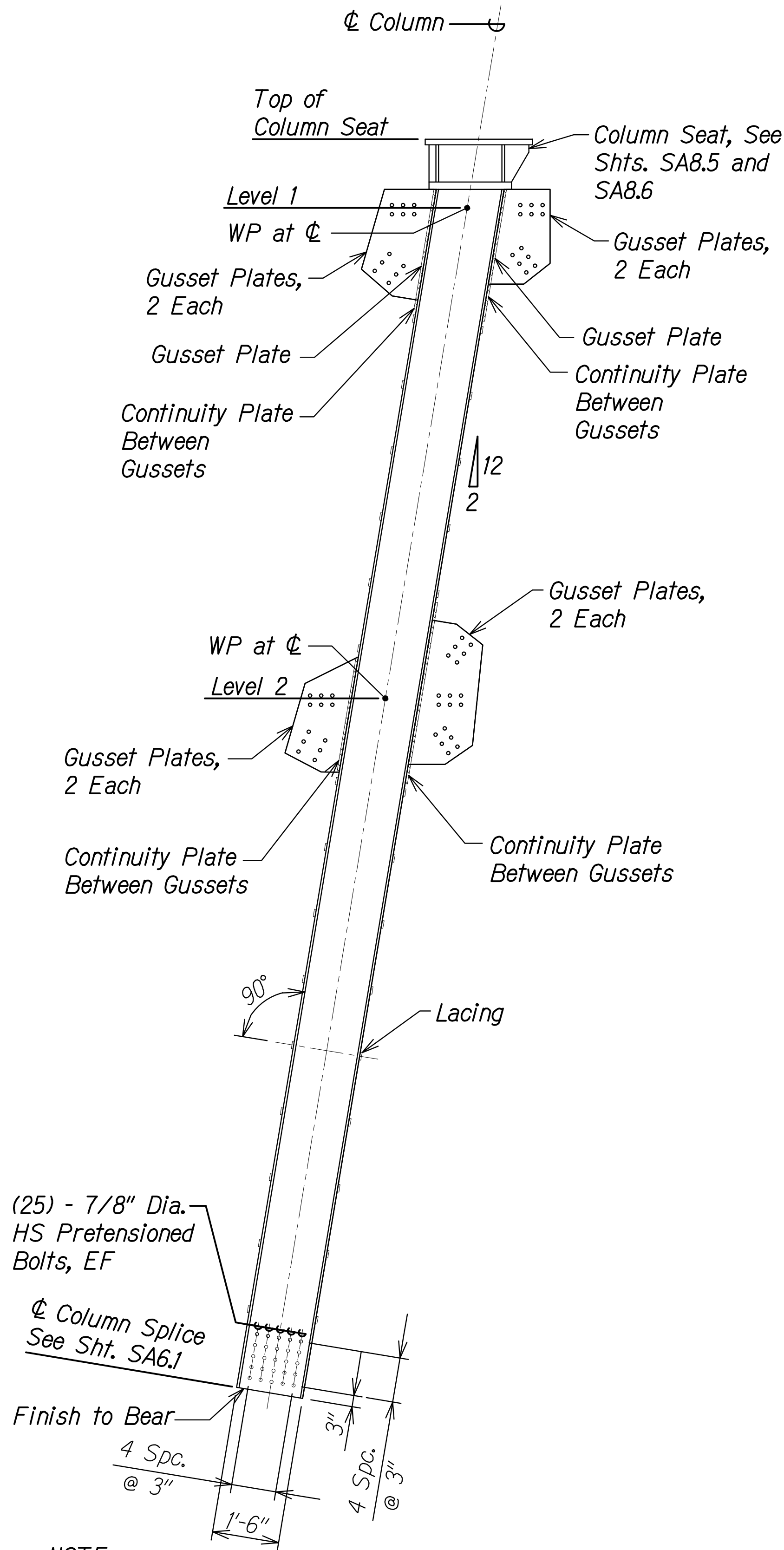


NOTE:
Typical at upstream face of Col. Line B (Bent Nos. 3, 5, ϕ 7) and downstream face of Col. Line C (Bent Nos. 2, 4, 6 ϕ 8). Gusset plates, Opp. Hand for upstream face of Col. Line B (Bent Nos. 2, 4, 6 ϕ 8) and downstream face of Col. Line C (Bent Nos. 3, 5 ϕ 7).

ELEVATION A
Scale: 1/2" = 1'-0" SA5.2|SA5.2

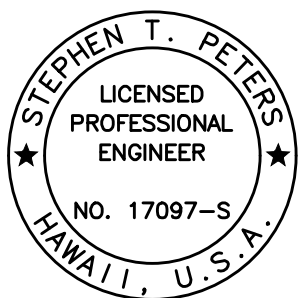
NOTE:
Typical at downstream face of Col. Line B (Bent Nos. 3, 5, ϕ 7) and upstream face of Col. Line C (Bent Nos. 2, 4, 6 ϕ 8). Gusset plates, Opp. Hand for downstream face of Col. Line B (Bent Nos. 2, 4, 6 ϕ 8) and upstream face of Col. Line C (Bent Nos. 3, 5, ϕ 7)

ELEVATION B
Scale: 1/2" = 1'-0" SA5.2|SA5.2



NOTE:
Typical Hilo side face of Column Line B and Honoka'a side face of Column Line C. Opp-Hand for Honoka'a side face of Column Line B and Hilo side face of Column Line C.

ELEVATION C
Scale: 1/2" = 1'-0" SA5.2|SA5.2



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Signature: *Stephen T. Peters*
Date: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UPPER COLUMN ELEVATIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.2 OF 34 SHEETS

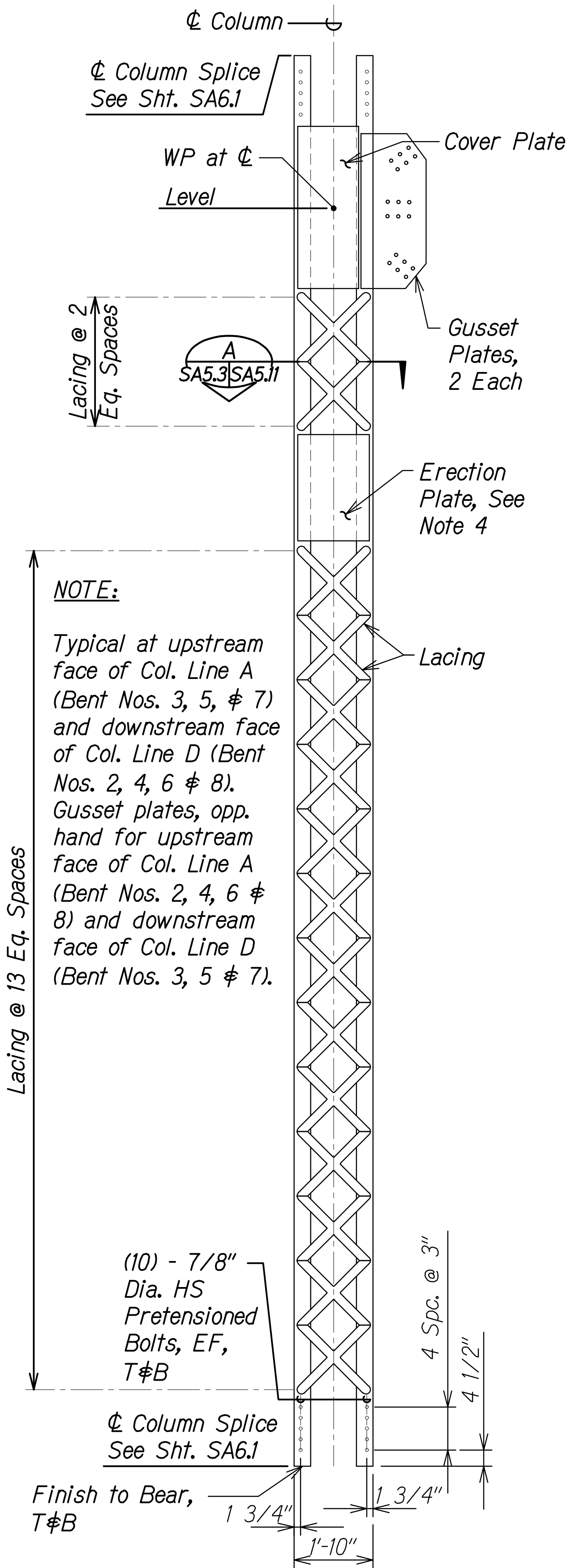
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 75 | 280 |

NOTES:

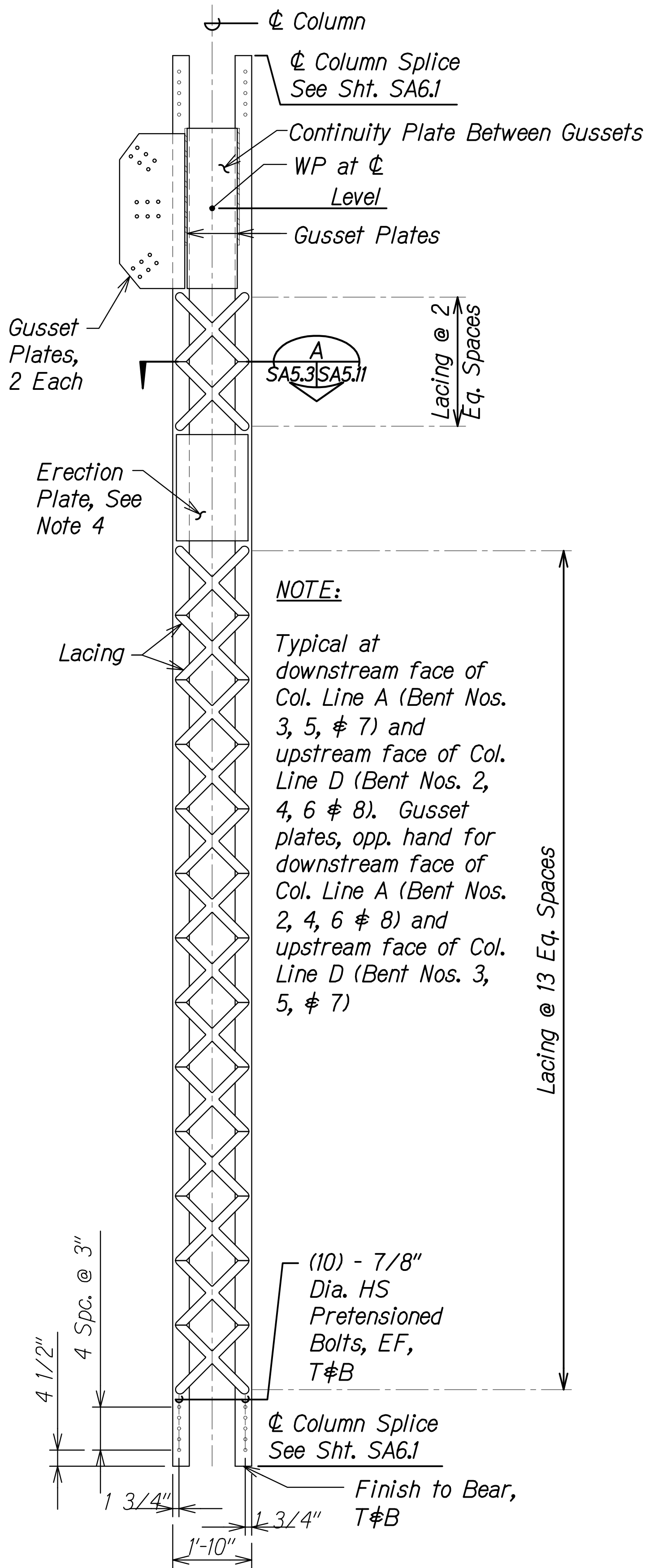
- Elevations are typical for intermediate columns at Bent Nos. 2, 3, 4, 5, 6, 7, and 8.
- Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
- Extend Continuity Plates beyond limits of Gusset Plates as needed to satisfy lacing criteria.
- Erection Plates are provided to aid the Contractor in the construction of the trestles. See SB series. The Contractor's Engineer shall determine the min. necessary size of the plates and any needed pre-drilled holes prior to submittal of the shop drawings. Erection plates shall not be less than 5/8" thick and fully welded on all contact edges. Height of erection plates may vary to satisfy lacing criteria.

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0501-SA0510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:24 AM

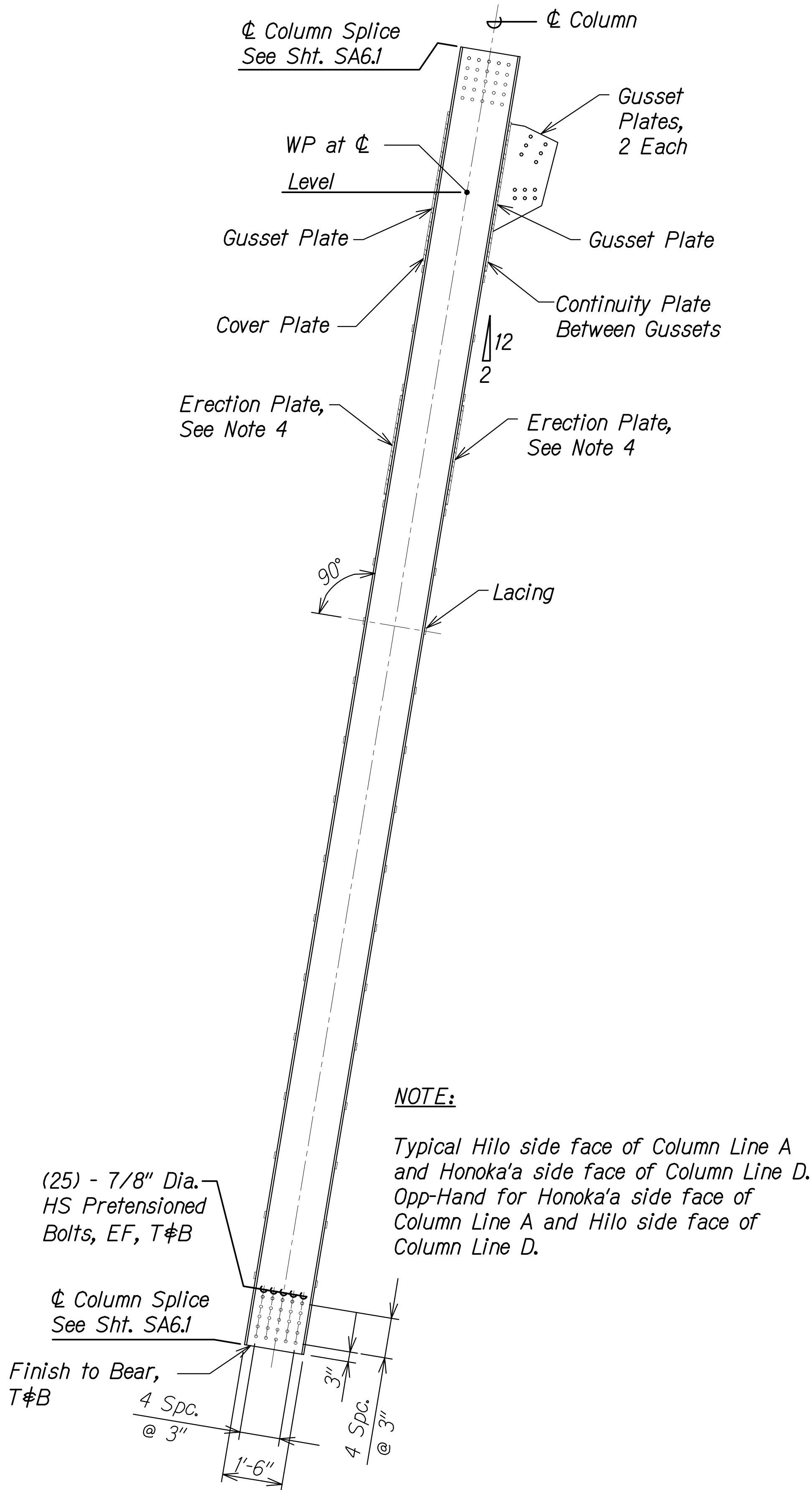
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| | TRACED BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |
| No. | | |



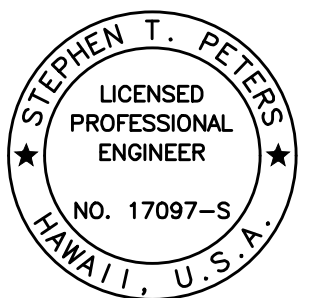
ELEVATION A
Scale: 1/2" = 1'-0" SA5.3|SA5.3



ELEVATION B
Scale: 1/2" = 1'-0" SA5.3|SA5.3



ELEVATION C
Scale: 1/2" = 1'-0" SA5.3|SA5.3



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SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
INTERMEDIATE COLUMN ELEVATIONS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024
SHEET No. SA5.3 OF 34 SHEETS

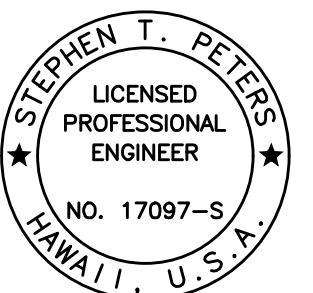
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 77 | 280 |

NOTES:

- Elevations are typical for lower columns at Bent Nos. 2, 3, 4, 5, 6, 7, and 8.
- Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
- Extend Continuity Plates beyond limits of Gusset Plates as needed to satisfy lacing criteria.
- Erection Plates are provided to aid the Contractor in the construction of the trestles. See SB series. The Contractor's Engineer shall determine the min. necessary size of the plates and any needed pre-drilled holes prior to submittal of the shop drawings. Erection plates shall not be less than 5/8" thick and fully welded on all contact edges. Height of erection plates may vary to satisfy lacing criteria.

LACING SPACING SCHEDULE

| LOCATION | "A" |
|------------|-----|
| Bent No. 2 | 8 |
| Bent No. 3 | 9 |
| Bent No. 4 | 20 |
| Bent No. 5 | 9 |
| Bent No. 6 | 9 |
| Bent No. 7 | 15 |
| Bent No. 8 | 16 |



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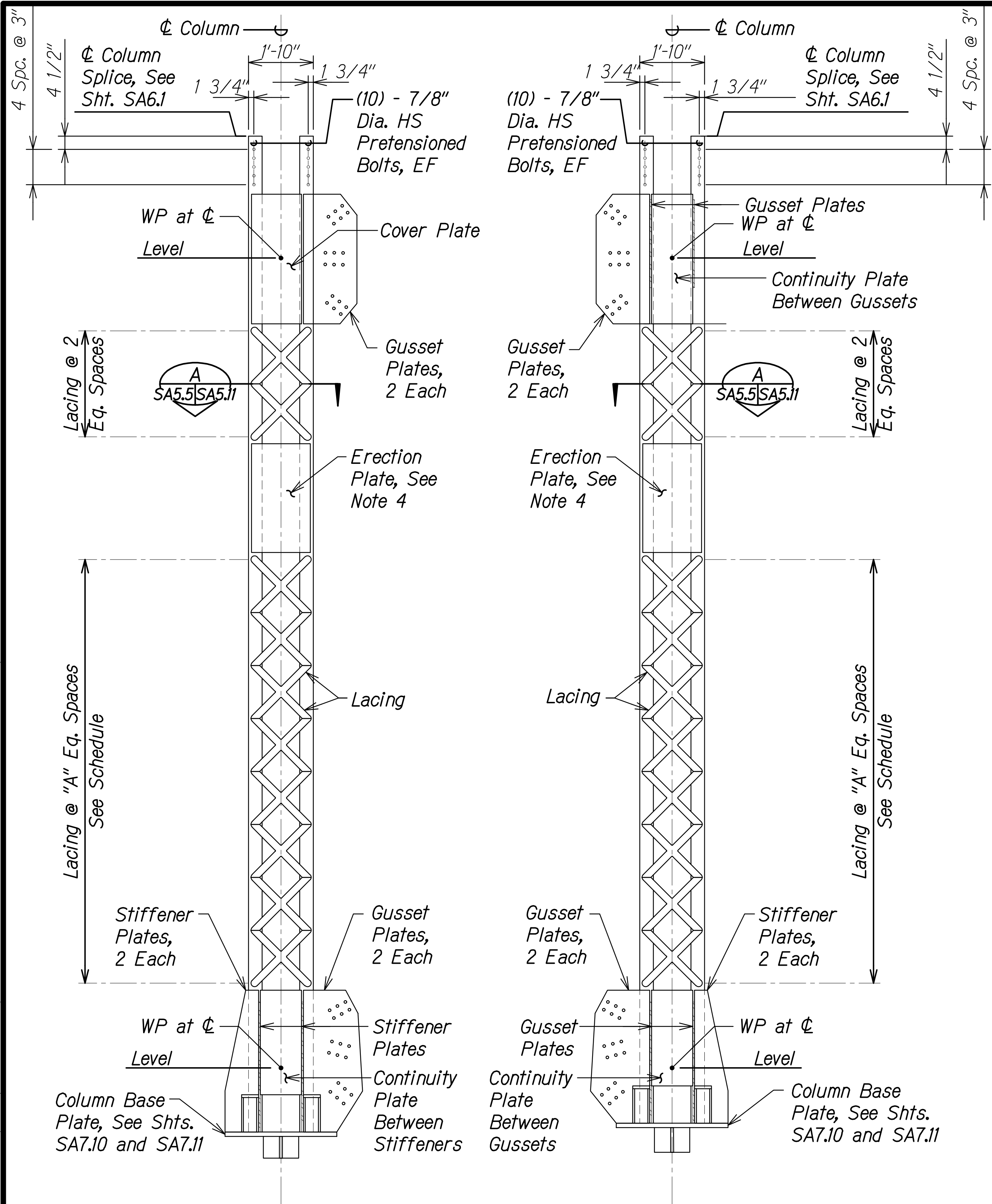
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOWER COLUMN ELEVATIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.5 OF 34 SHEETS



NOTE:

Typical at upstream face of Col. Line A (Bent Nos. 3, 5, ϕ 7) and downstream face of Col. Line D (Bent Nos. 2, 4, 6 ϕ 8). Gusset plates, opp. hand for upstream face of Col. Line A (Bent Nos. 2, 4, 6 ϕ 8) and downstream face of Col. Line D (Bent Nos. 3, 5 ϕ 7).

ELEVATION A
Scale: 1/2" = 1'-0" SA5.5|SA5.5

NOTE:

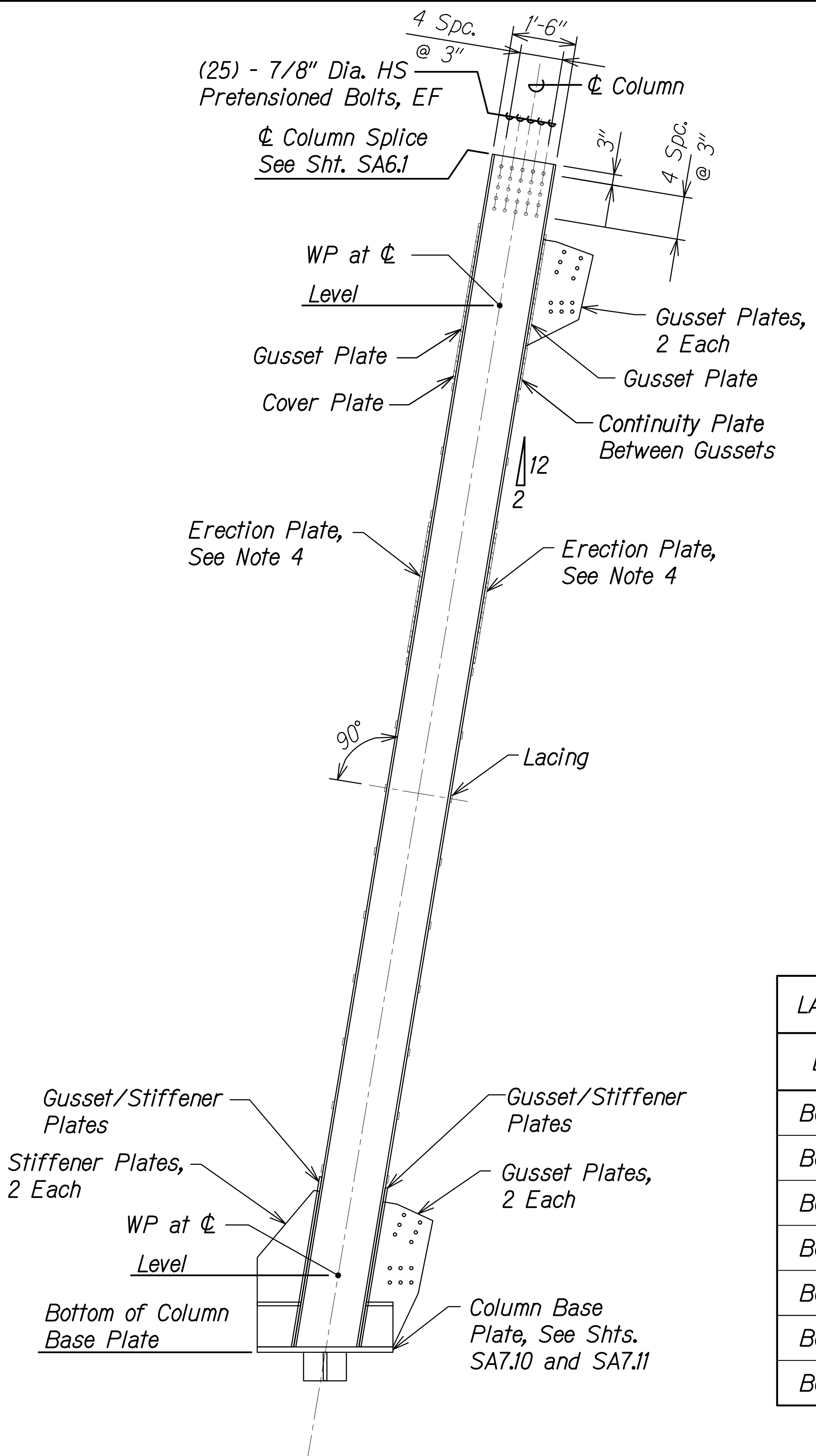
Typical at downstream face of Col. Line A (Bent Nos. 3, 5, ϕ 7) and upstream face of Col. Line D (Bent Nos. 2, 4, 6 ϕ 8). Gusset plates, opp. hand for downstream face of Col. Line A (Bent Nos. 2, 4, 6 ϕ 8) and upstream face of Col. Line D (Bent Nos. 3, 5, ϕ 7)

ELEVATION B
Scale: 1/2" = 1'-0" SA5.5|SA5.5

NOTE:

Typical Hilo side face of Column Line A and Honoka'a side face of Column Line D. Opp-Hand for Honoka'a side face of Column Line A and Hilo side face of Column Line D.

ELEVATION C
Scale: 1/2" = 1'-0" SA5.5|SA5.5



| | |
|-------------------|-------|
| DATE | _____ |
| SURVEY PLOTTED BY | _____ |
| DRAWN BY | _____ |
| TRACED BY | _____ |
| DESIGNED BY | _____ |
| QUANTITIES BY | _____ |
| CHECKED BY | _____ |
| NOTE BOOK | _____ |
| No. | _____ |

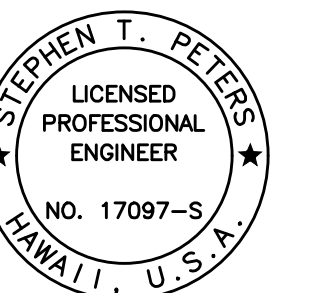
DRAWING NAME: ZA-00-ONGONG-23-022-9-NANUE STR BR PF2-DOT-A.01 CAD\10-28-24 BID SET\NSR-SA0501-SA0510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:25 AM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 78 | 280 |

NOTES:

- Elevations are typical for lower columns at Bent Nos. 2, 3, 4, 5, 6, 7, and 8.
- Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
- Extend Continuity Plates beyond limits of Gusset Plates as needed to satisfy lacing criteria.
- Erection Plates are provided to aid the Contractor in the construction of the trestles. See SB series. The Contractor's Engineer shall determine the min. necessary size of the plates and any needed pre-drilled holes prior to submittal of the shop drawings. Erection plates shall not be less than 5/8" thick and fully welded on all contact edges. Height of erection plates may vary to satisfy lacing criteria.

| LACING SPACING SCHEDULE | | |
|-------------------------|-----|-----|
| LOCATION | "A" | "B" |
| Bent No. 2 | 8 | 2 |
| Bent No. 3 | 9 | 2 |
| Bent No. 4 | 20 | 2 |
| Bent No. 5 | 9 | 1 |
| Bent No. 6 | 9 | 1 |
| Bent No. 7 | 15 | 2 |
| Bent No. 8 | 16 | 2 |



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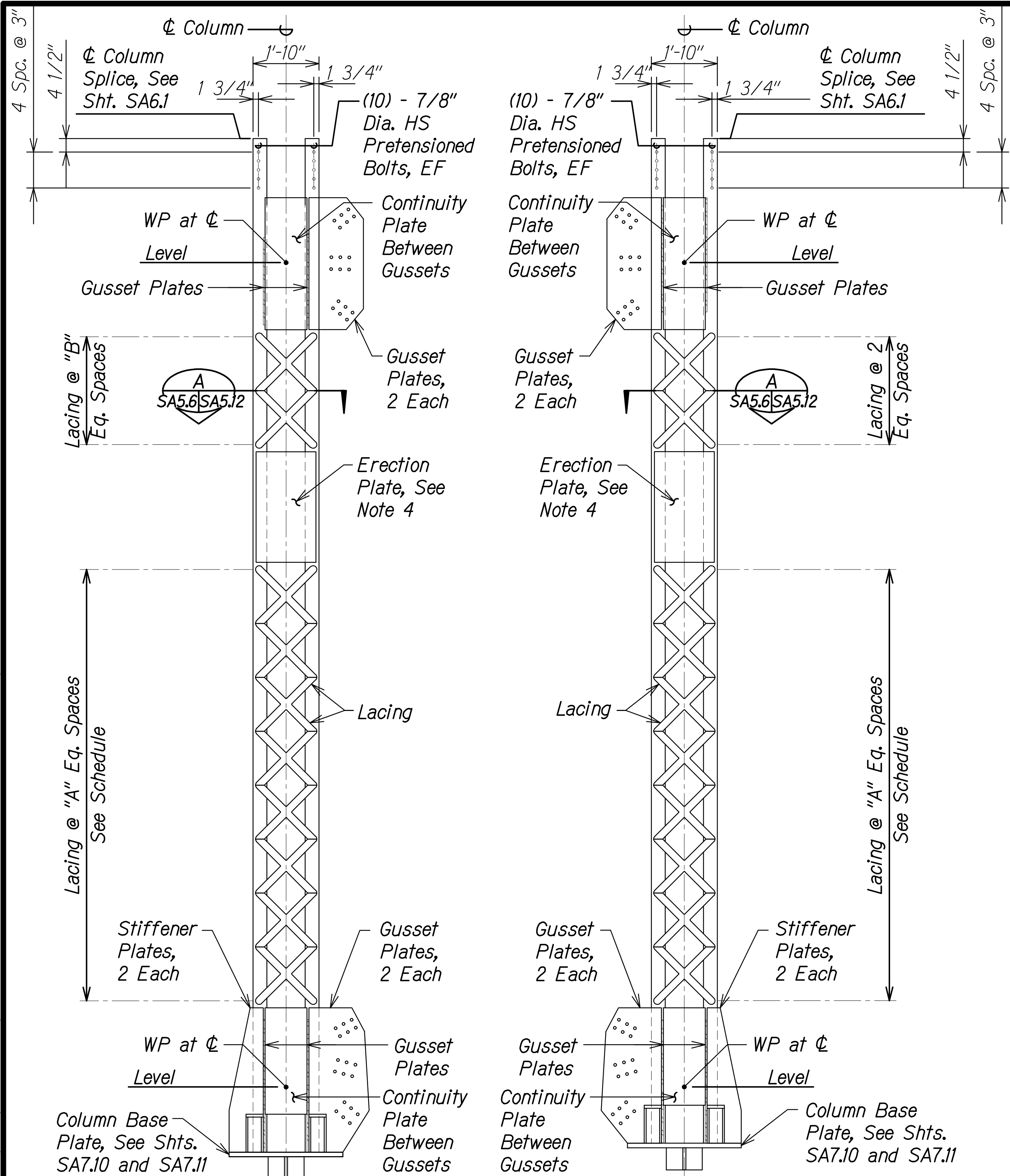
SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOWER COLUMN ELEVATIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.6 OF 34 SHEETS



NOTE:

Typical at upstream face of Col. Line B (Bent Nos. 3, 5, ϕ 7) and downstream face of Col. Line C (Bent Nos. 2, 4, 6 ϕ 8). Gusset plates, Opp. Hand for upstream face of Col. Line B (Bent Nos. 2, 4, 6 ϕ 8) and downstream face of Col. Line C (Bent Nos. 3, 5 ϕ 7).

ELEVATION A
Scale: 1/2" = 1'-0" SA5.6/SA5.6

NOTE:

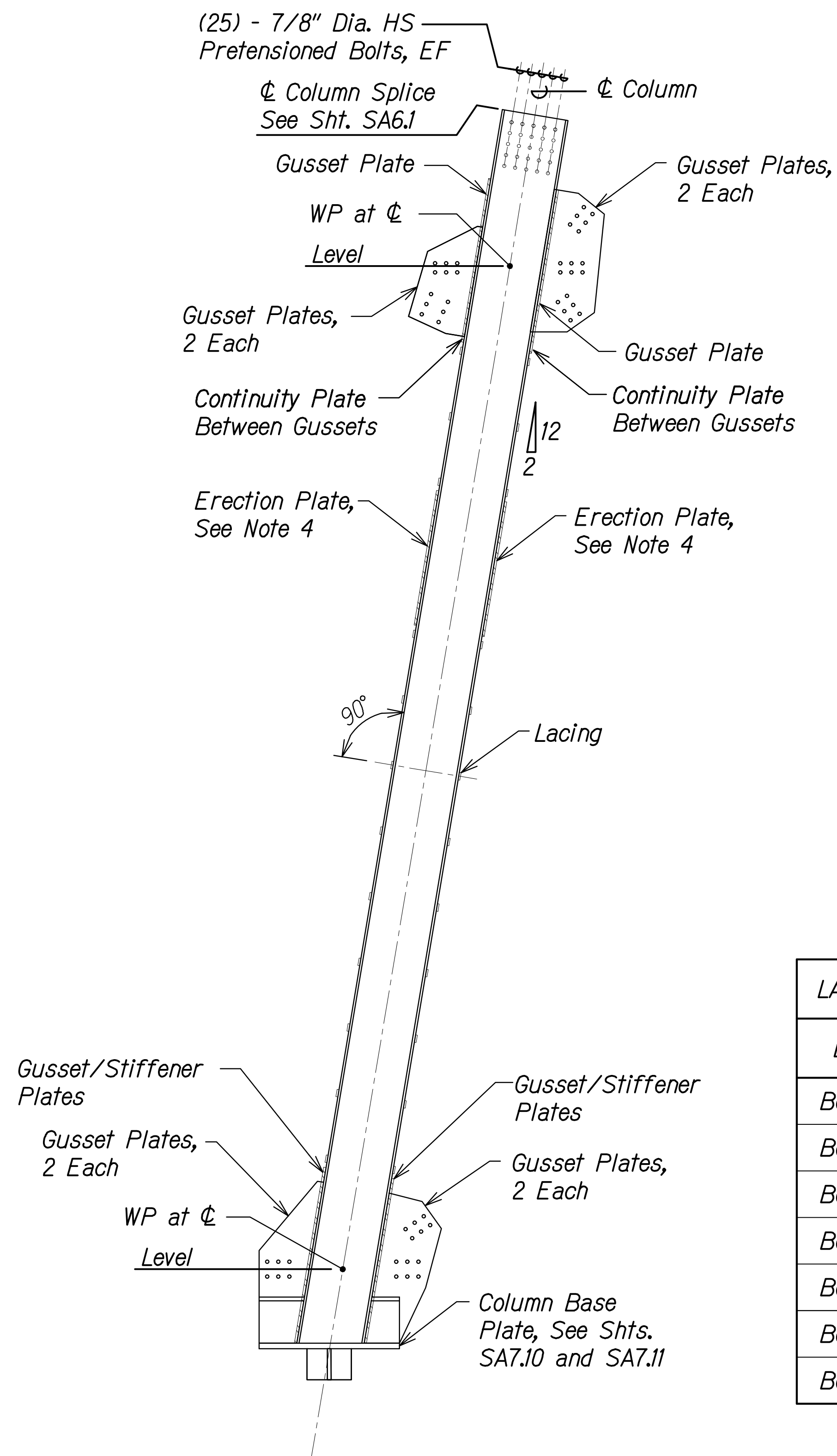
Typical at downstream face of Col. Line B (Bent Nos. 3, 5, ϕ 7) and upstream face of Col. Line C (Bent Nos. 2, 4, 6 ϕ 8). Gusset plates, Opp. Hand for downstream face of Col. Line B (Bent Nos. 2, 4, 6 ϕ 8) and upstream face of Col. Line C (Bent Nos. 3, 5, ϕ 7)

ELEVATION B
Scale: 1/2" = 1'-0" SA5.6/SA5.6

NOTE:

Typical Hilo side face of Column Line B and Honoka'a side face of Column Line C. Opp-Hand for Honoka'a side face of Column Line B and Hilo side face of Column Line C.

ELEVATION C
Scale: 1/2" = 1'-0" SA5.6/SA5.6



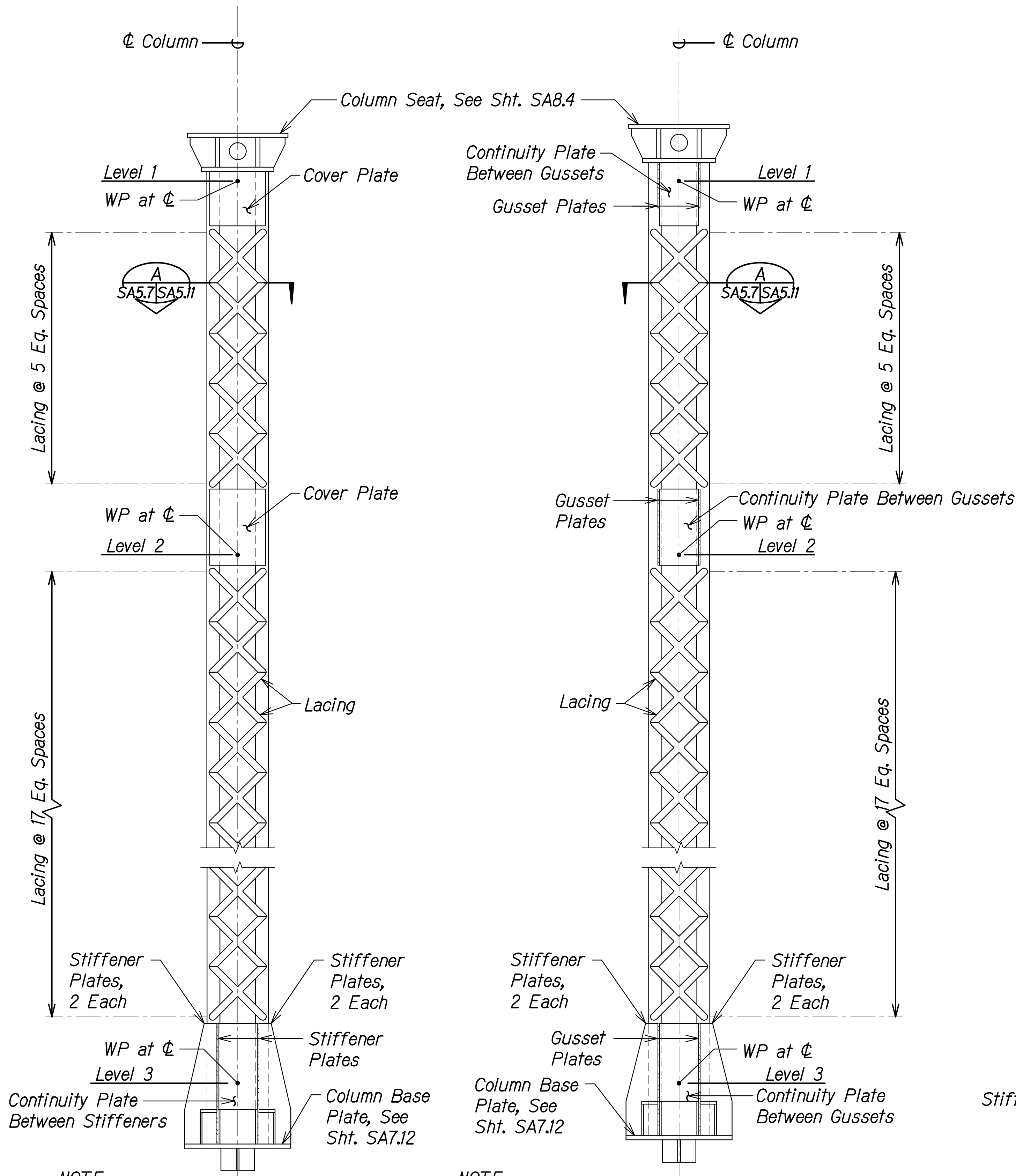
| | |
|-------------------|-------|
| DATE | _____ |
| SURVEY PLOTTED BY | _____ |
| DRAWN BY | _____ |
| TRACED BY | _____ |
| DESIGNED BY | _____ |
| QUANTITIES BY | _____ |
| CHECKED BY | _____ |
| ORIGINAL PLAN | _____ |
| NOTE BOOK | _____ |
| No. | _____ |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SA0501-SA0510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:26 AM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 79 | 280 |

NOTES:

1. Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
2. Extend Continuity Plates beyond limits of Gusset Plates as needed to satisfy lacing criteria.



NOTE:

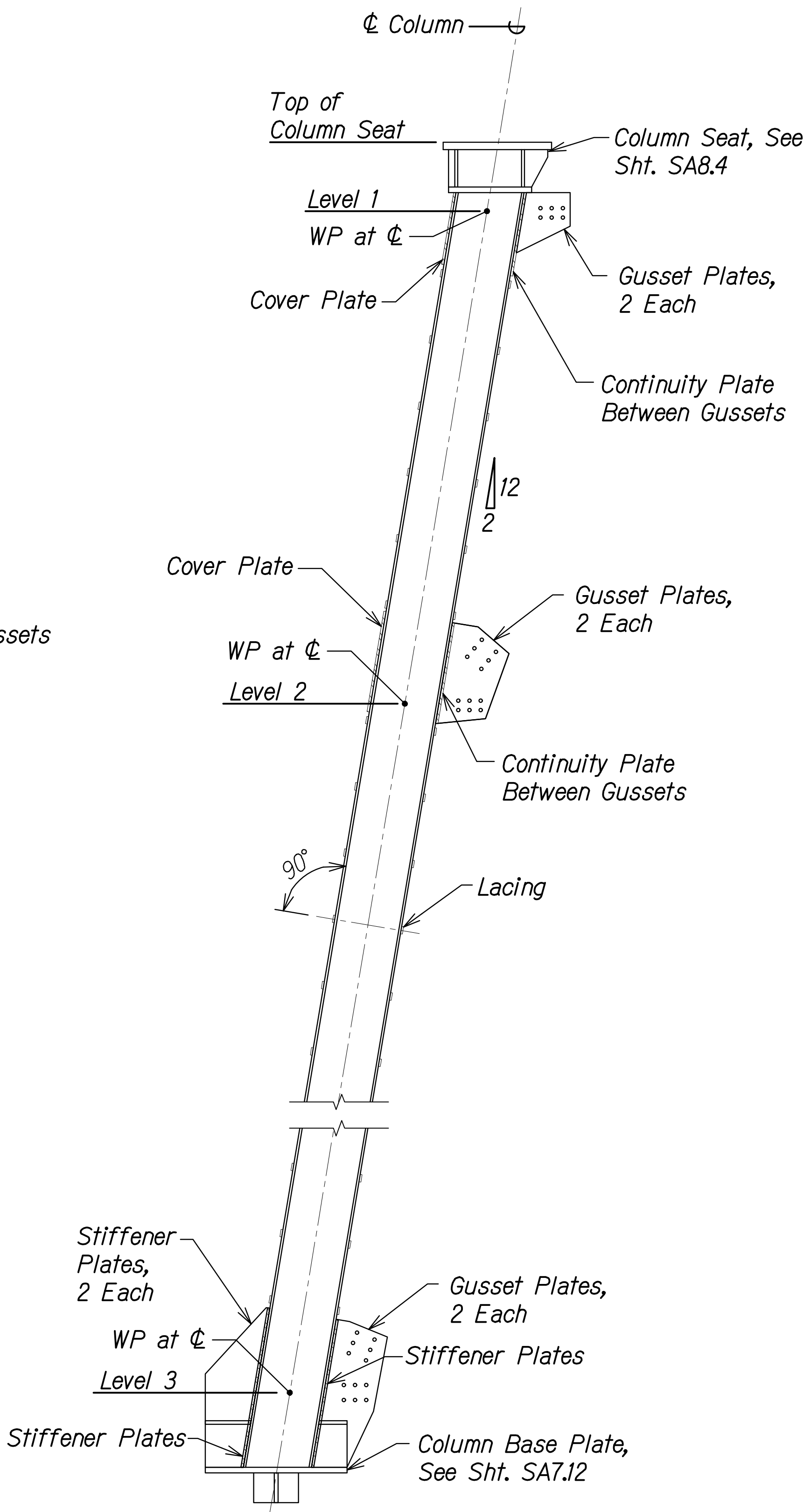
Typical at upstream face of Column Line A and downstream face of Column Line D.

ELEVATION A
Scale: 1/2" = 1'-0" SA5.7|SA5.7

NOTE:

Typical at downstream face of Column Line A and upstream face of Column Line D.

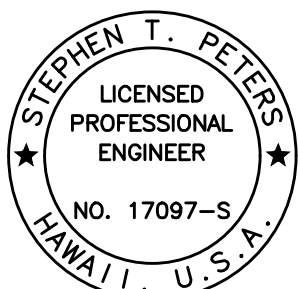
ELEVATION B
Scale: 1/2" = 1'-0" SA5.7|SA5.7



NOTE:

Typical Hilo side face of Column Line A and Honoka'a side face of Column Line D. Opp-Hand for Honoka'a side face of Column Line A and Hilo side face of Column Line D.

ELEVATION C
Scale: 1/2" = 1'-0" SA5.7|SA5.7



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SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

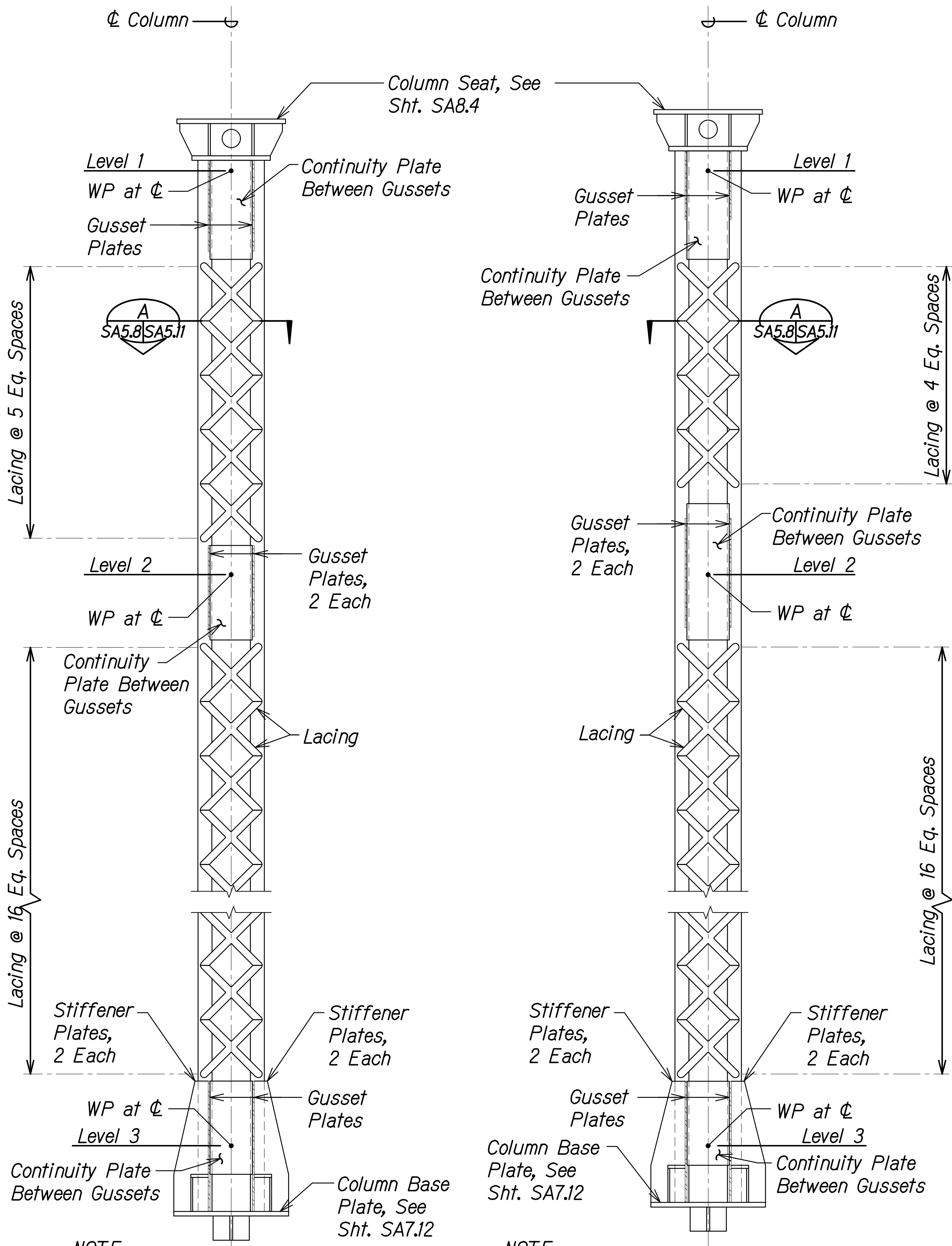
BENT NO. 1
COLUMN ELEVATIONS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No.SA5.7 OF 34 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 80 | 280 |

NOTES:

1. Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
2. Extend Continuity Plates beyond limits of Gusset Plates as needed to satisfy lacing criteria.



NOTE:

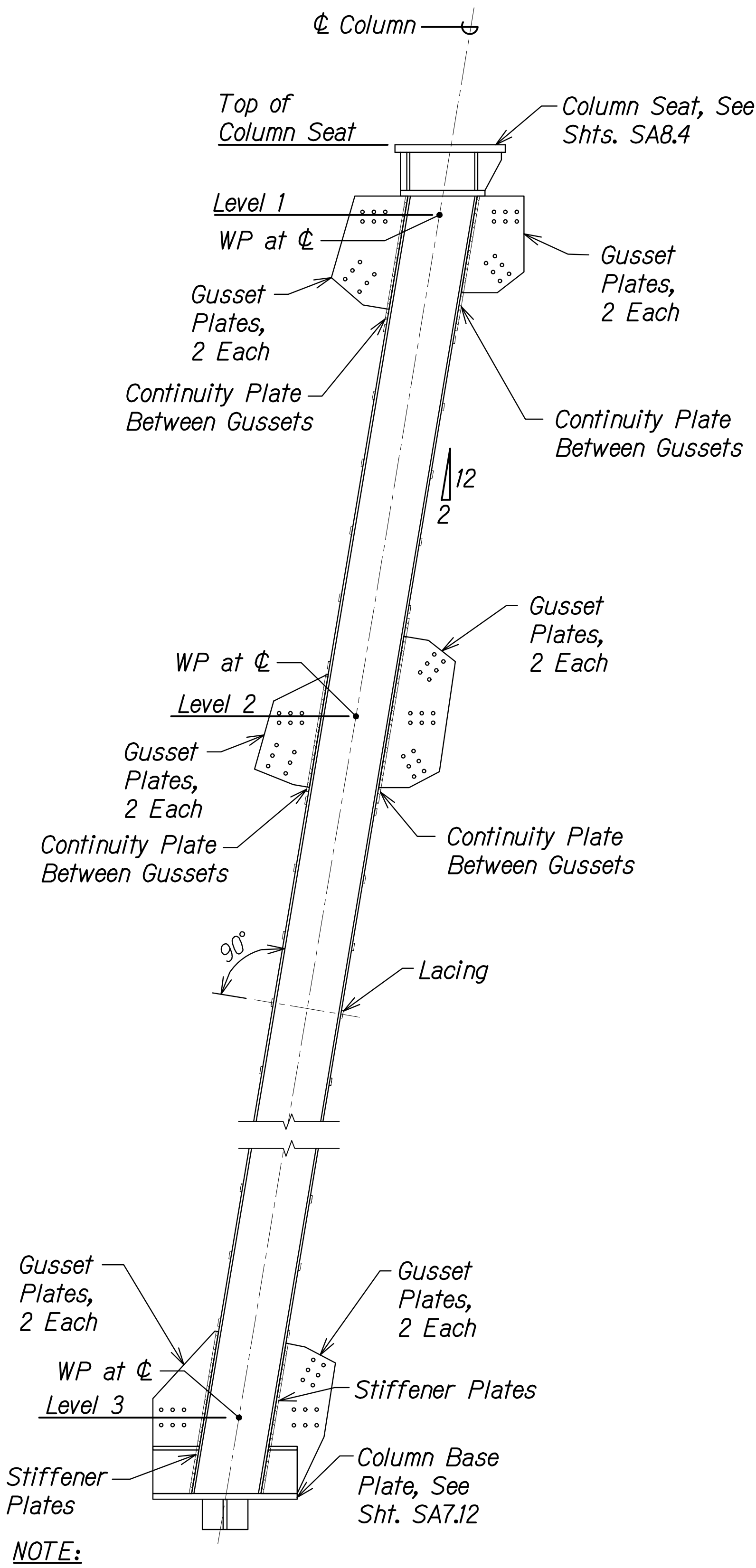
Typical at upstream face of Column Line B and downstream face of Column Line C.

ELEVATION A
Scale: 1/2" = 1'-0" SA5.8|SA5.8

NOTE:

Typical at downstream face of Column Line B and upstream face of Column Line C.

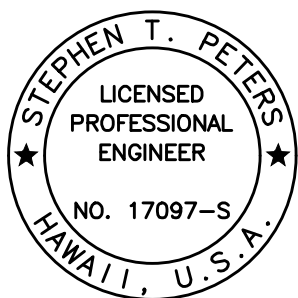
ELEVATION B
Scale: 1/2" = 1'-0" SA5.8|SA5.8



NOTE:

Typical Hilo side face of Column Line B and Honoka'a side face of Column Line C. Opp-Hand for Honoka'a side face of Column Line B and Hilo side face of Column Line C.

ELEVATION C
Scale: 1/2" = 1'-0" SA5.8|SA5.8



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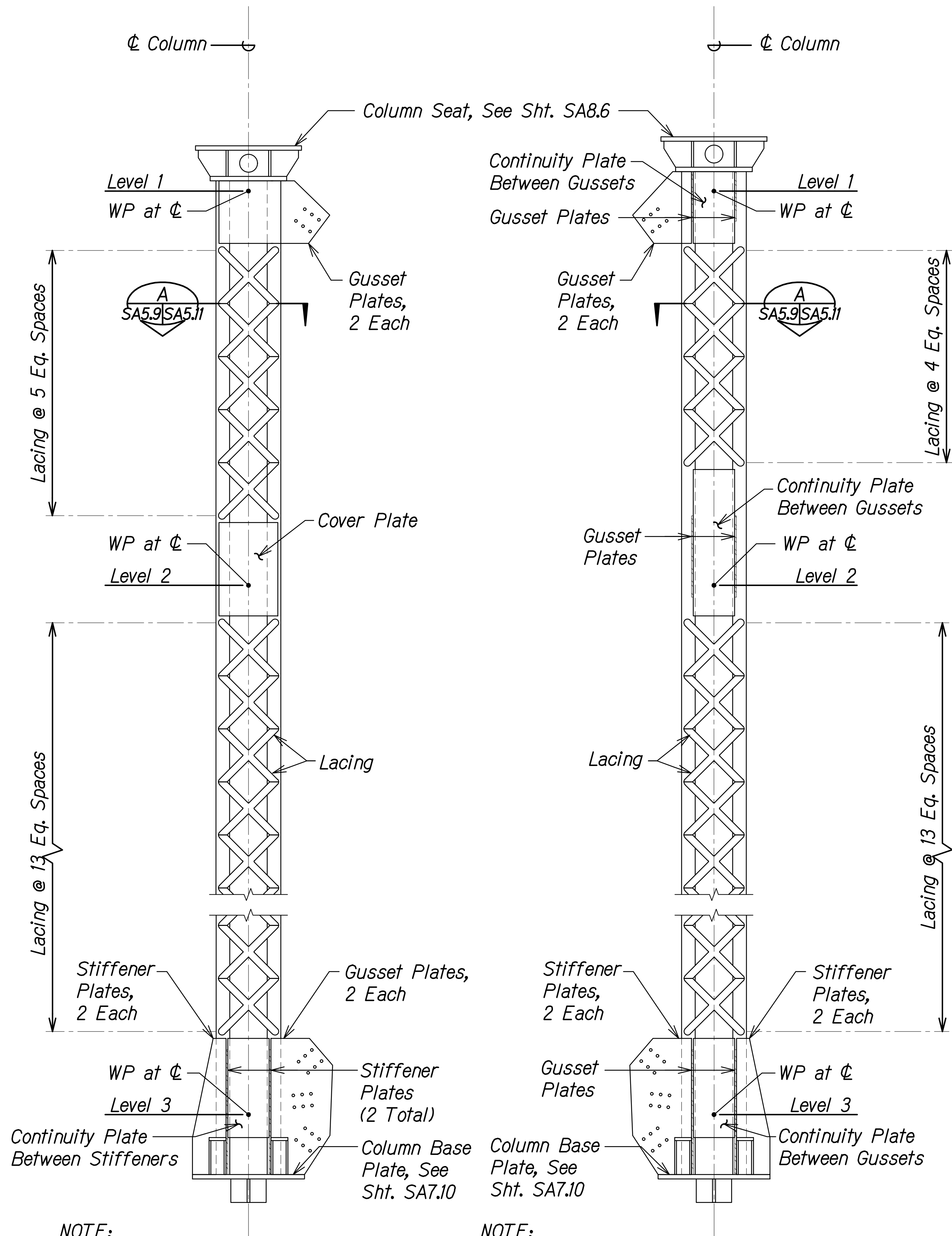
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BENT NO. 1
COLUMN ELEVATIONS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024
SHEET No. SA5.8 OF 34 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 81 | 280 |

NOTES:

1. Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
2. Extend Continuity Plates beyond limits of Gusset Plates as needed to satisfy lacing criteria.



NOTE:

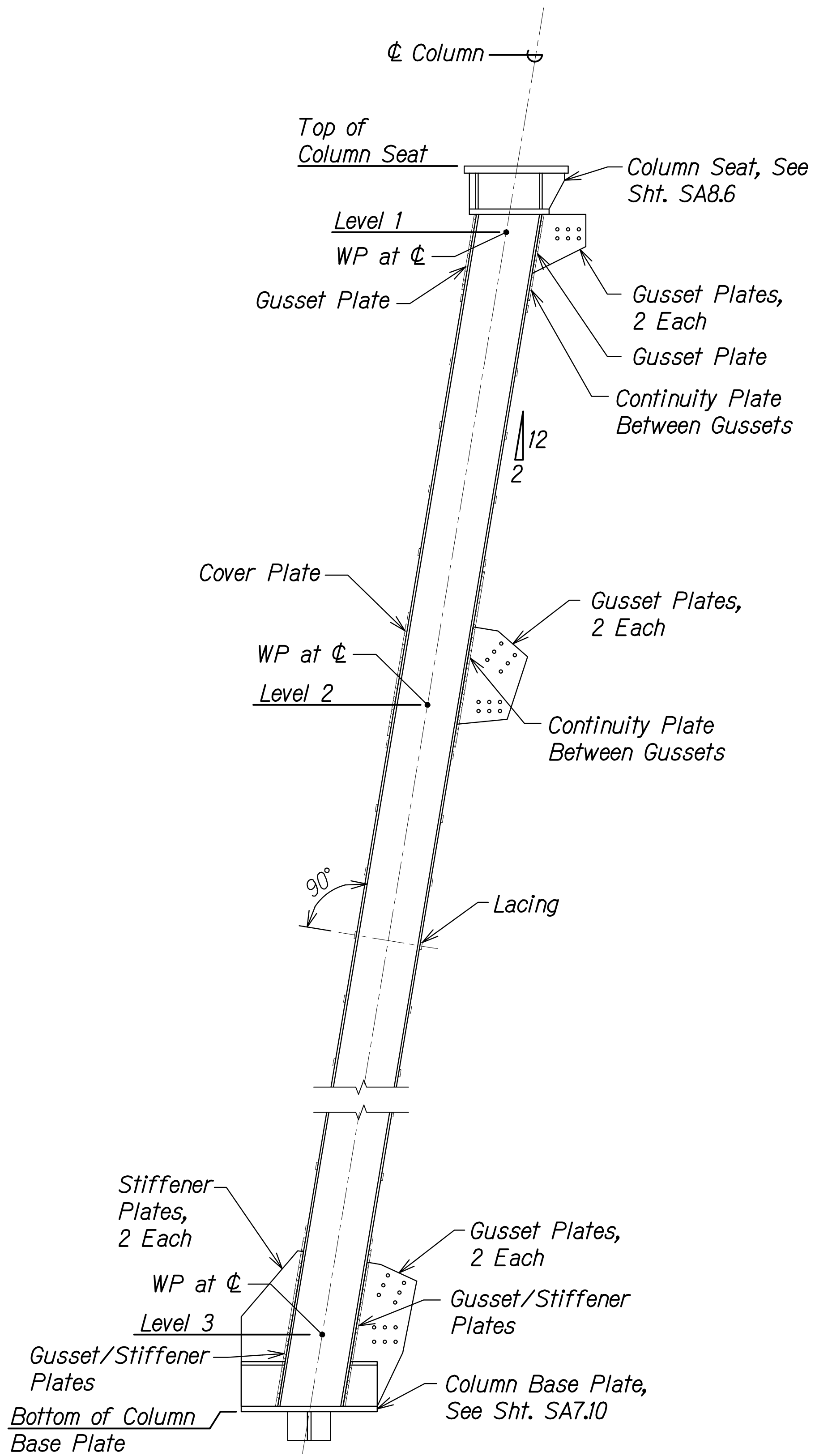
Typical at upstream face of Column Line A. Gusset plates, opp. hand for downstream face of Column Line D.

ELEVATION A
Scale: 1/2" = 1'-0" SA5.9|SA5.9

NOTE:

Typical at downstream face of Column Line A. Gusset plates, opp. hand for upstream face of Column Line D.

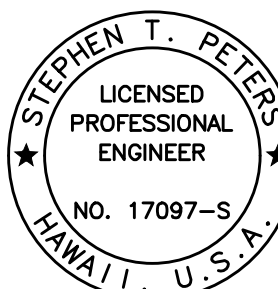
ELEVATION B
Scale: 1/2" = 1'-0" SA5.9|SA5.9



NOTE:

Typical Hilo side face of Column Line A and Honoka'a side face of Column Line D. Opp-Hand for Honoka'a side face of Column Line A and Hilo side face of Column Line D.

ELEVATION C
Scale: 1/2" = 1'-0" SA5.9|SA5.9



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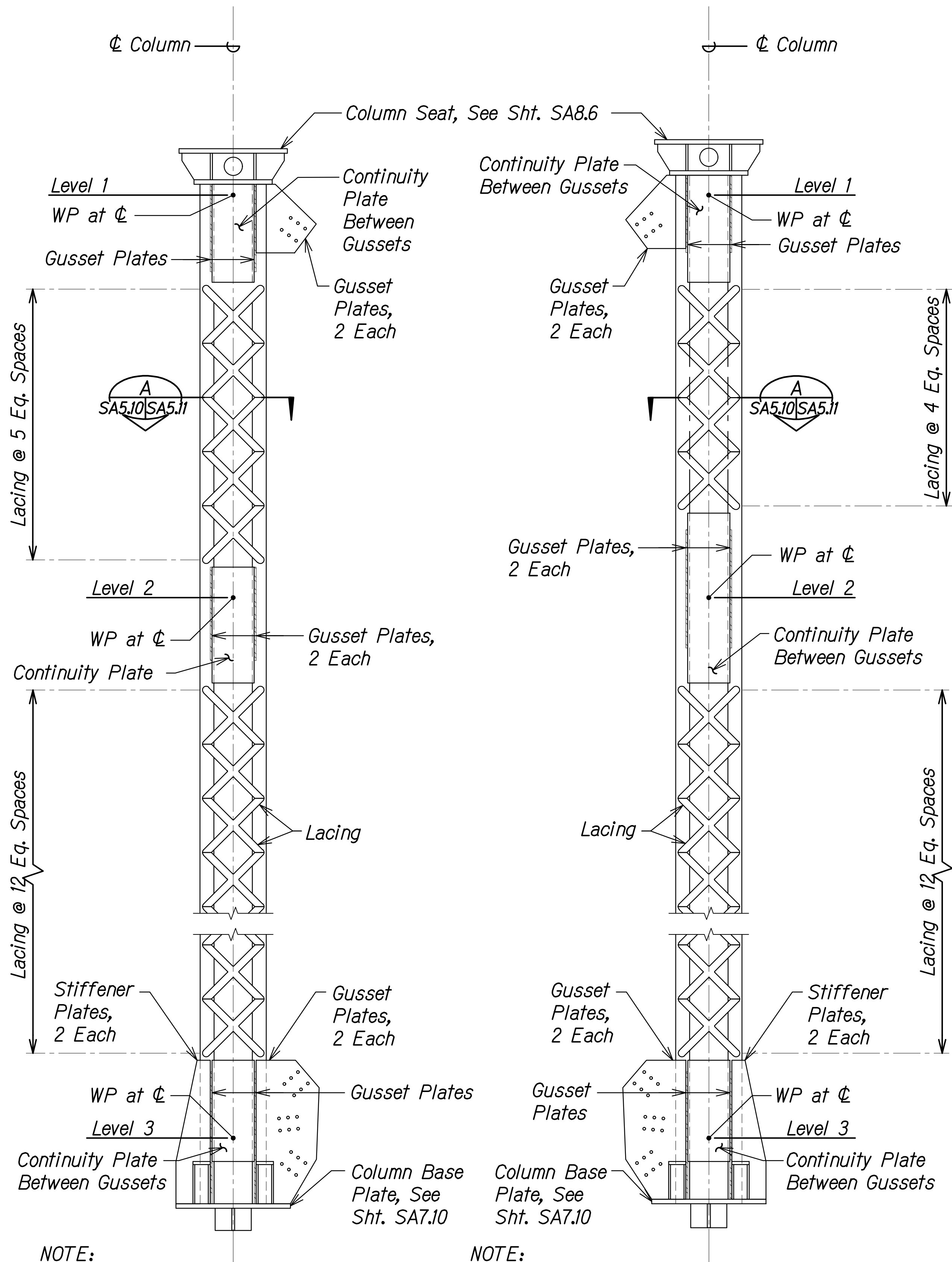
Signature: Stephen T. Peters
Date: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BENT NO. 9
COLUMN ELEVATIONS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024
SHEET No. SA5.9 OF 34 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 82 | 280 |

NOTES:

1. Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ϕ of column.
2. Extend Continuity Plates beyond limits of Gusset Plates as needed to satisfy lacing criteria.



NOTE:

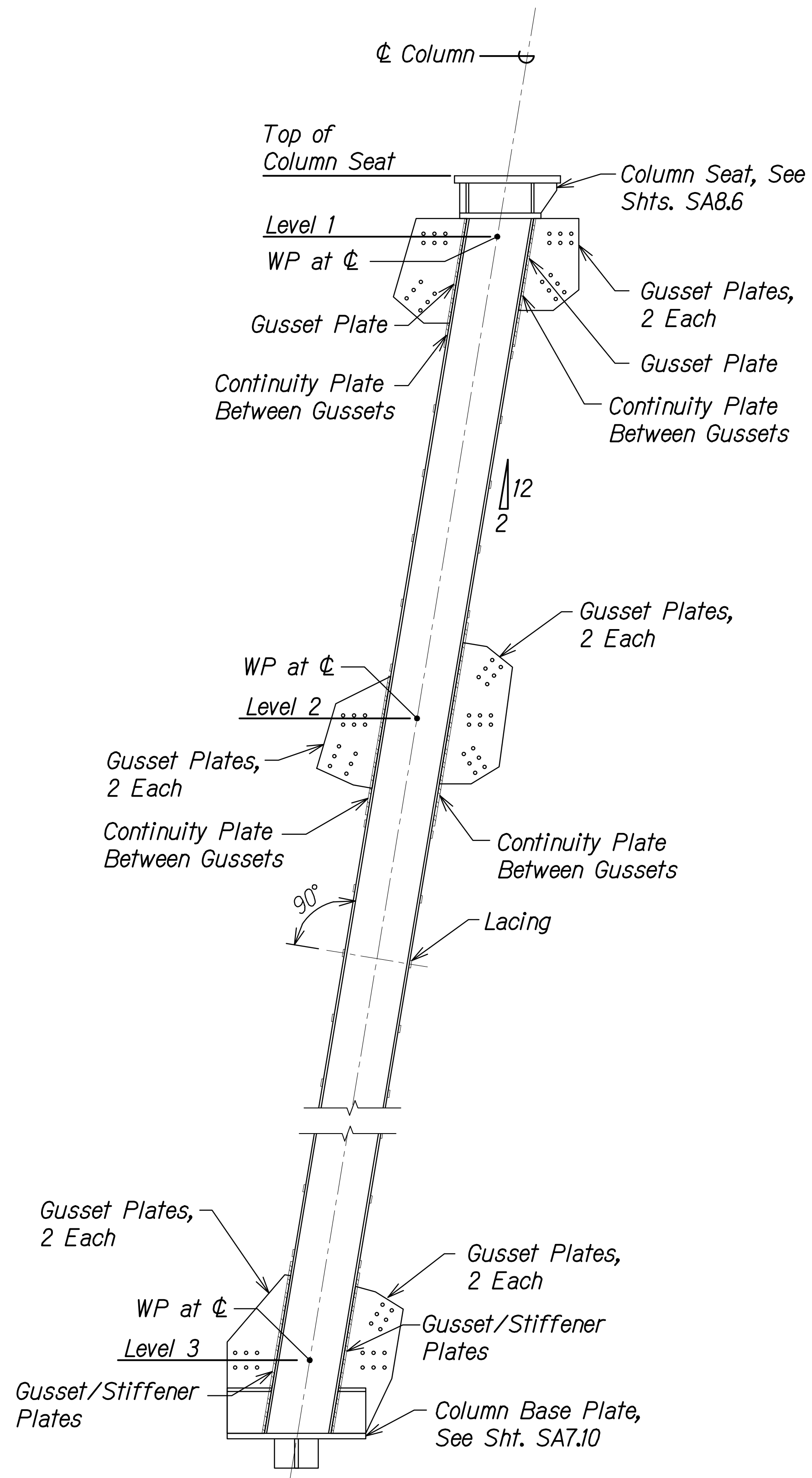
Typical at upstream face of Column Line B. Gusset plates, opp. hand for downstream face of Column Line C.

ELEVATION A
Scale: 1/2" = 1'-0" SA5.10|SA5.11

NOTE:

Typical at downstream face of Column Line B. Gusset plates, opp. hand for upstream face of Column Line C.

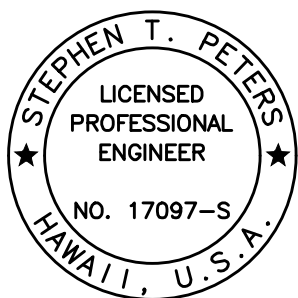
ELEVATION B
Scale: 1/2" = 1'-0" SA5.10|SA5.11



NOTE:

Typical Hilo side face of Column Line B and Honoka'a side face of Column Line C. Opp-Hand for Honoka'a side face of Column Line B and Hilo side face of Column Line C.

ELEVATION C
Scale: 1/2" = 1'-0" SA5.10|SA5.11

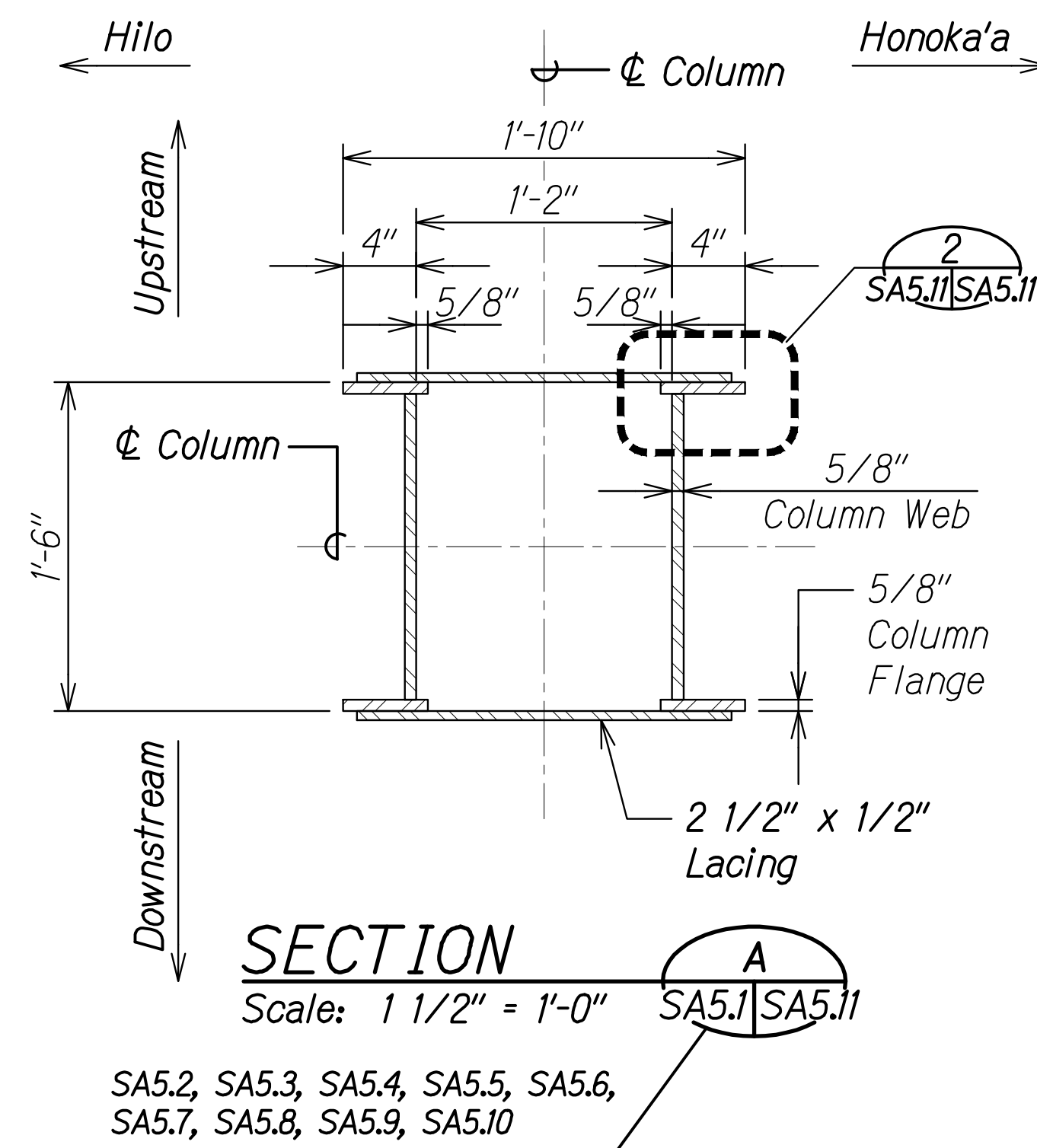


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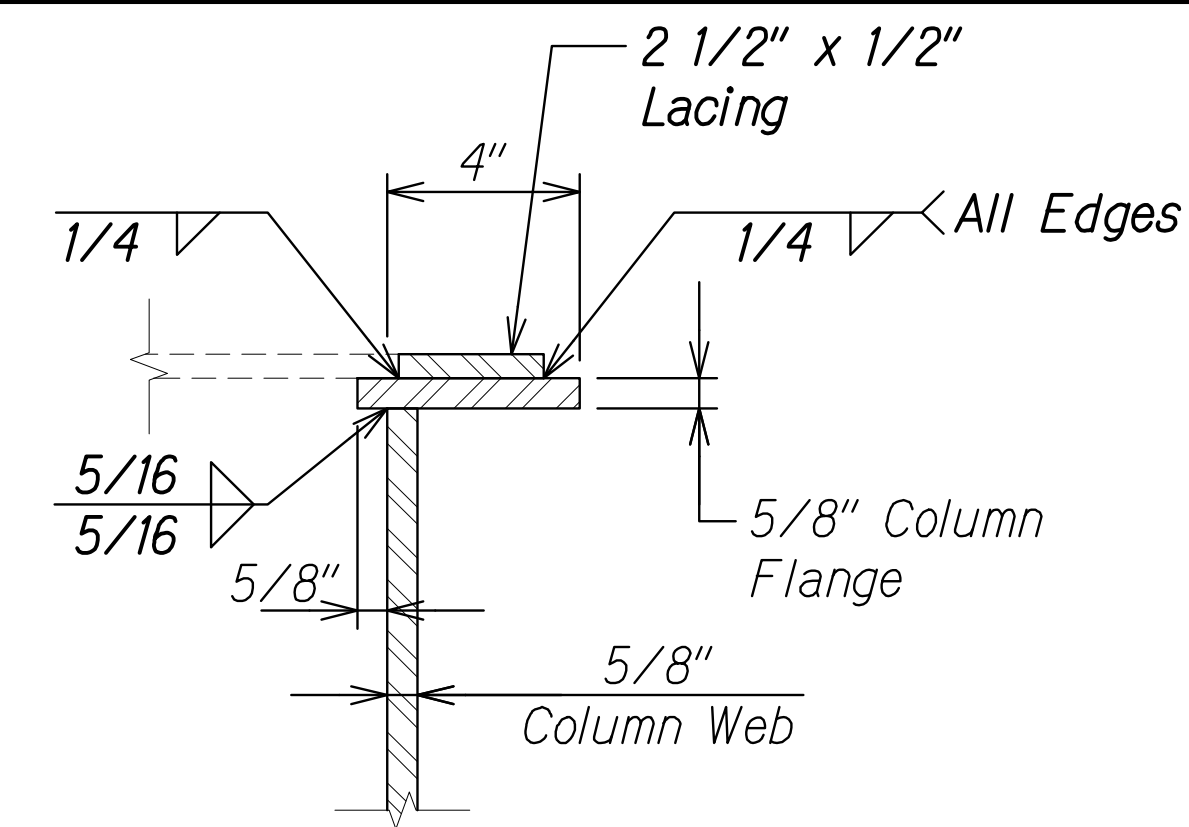
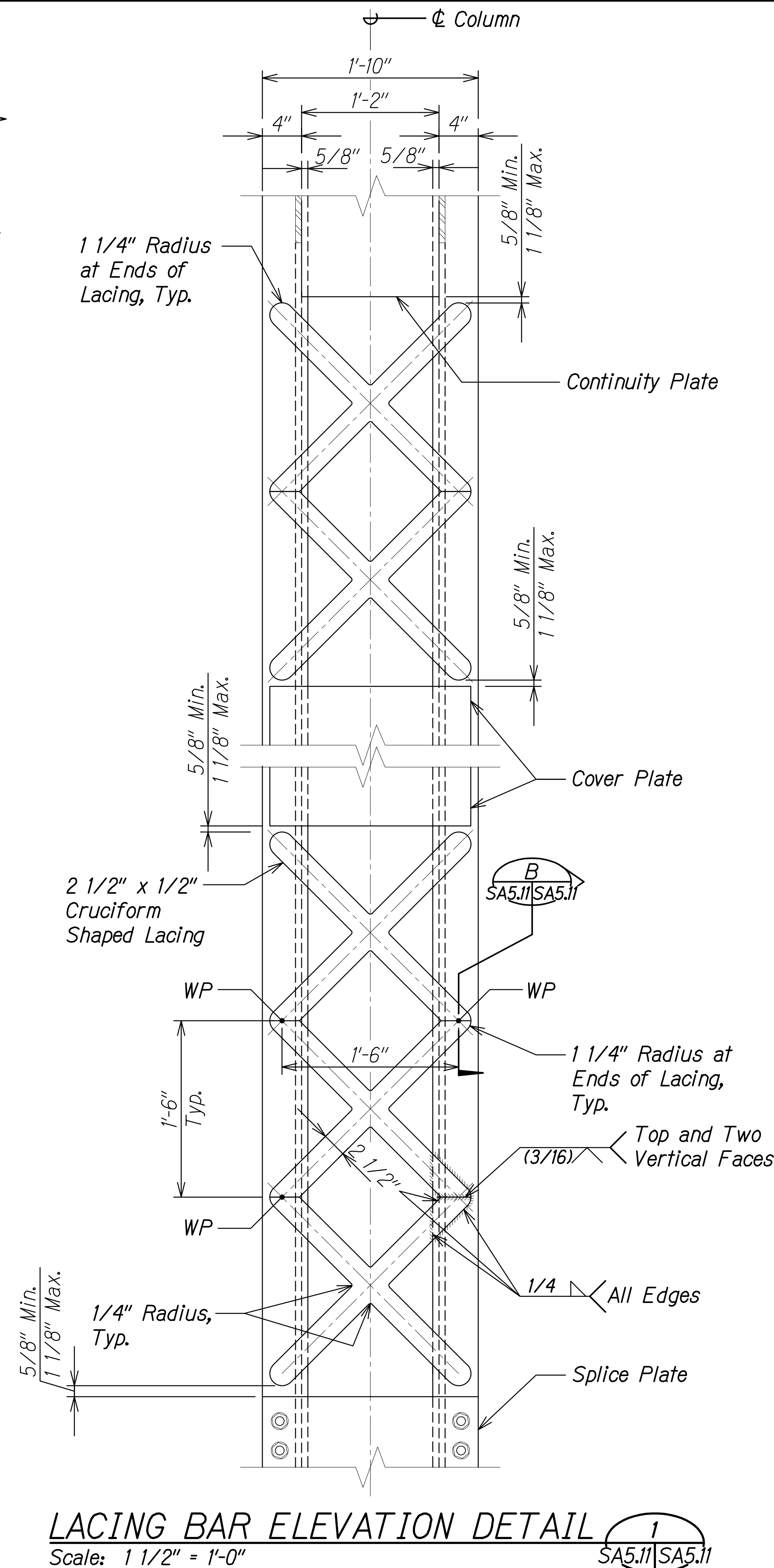
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BENT NO. 9
COLUMN ELEVATIONS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024
SHEET No. SA5.10 OF 34 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 83 | 280 |

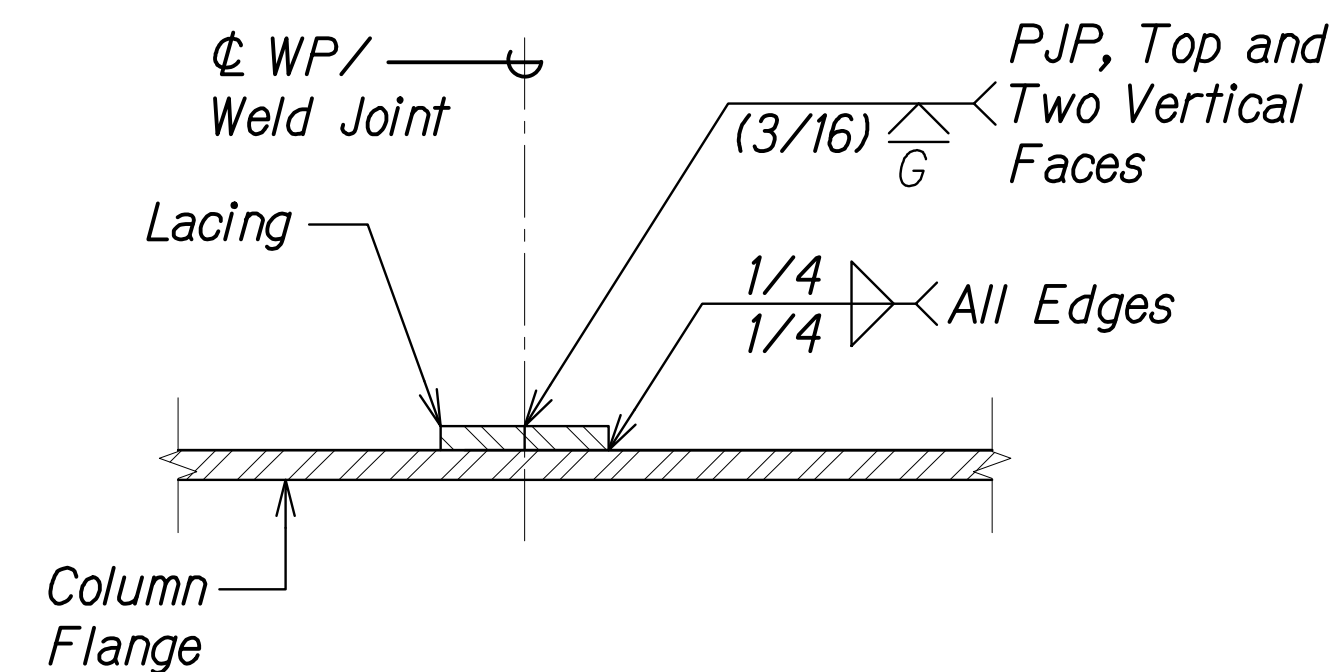


NOTES:

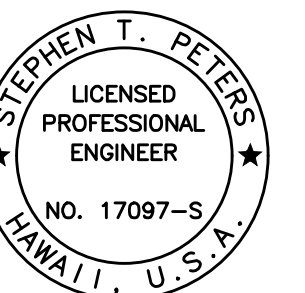
- Lacing shall be cut in cruciform shapes. At Contractor's option, multiple interconnecting cruciforms may be fabricated to eliminate PJP butt weld at WP.
- All welded connections shall receive full seal welding along all edges of faying surfaces to prevent moisture intrusion.



DETAIL 2
Scale: 3" = 1'-0" SA5.11 SA5.12



SECTION B
Scale: 3" = 1'-0" SA5.11 SA5.12



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EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COLUMN SECTIONS AND DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA5.11 OF 34 SHEETS

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 85 | 280 |

BENT UPPER INTERIOR DIAGONAL BRACE SCHEDULE

| | | | | |
|------------|-----------|-------|---------------------|---|
| BENT NO. 1 | MEMBER ID | "A" | BATTEN PLATE SPACES | |
| | X1B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X1C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X1B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X1C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X1B2-C3 | 1'-6" | 4 Eq. Spaces | |
| | X1C2-B3 | 1'-6" | 4 Eq. Spaces | |
| | X1B3-C2 | 1'-6" | 9 Eq. Spaces | |
| | X1C3-B2 | 1'-6" | 9 Eq. Spaces | |
| BENT NO. 2 | X2B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X2C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X2B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X2C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X2B2-C3 | 1'-6" | 3 Eq. Spaces | |
| | X2C2-B3 | 1'-6" | 3 Eq. Spaces | |
| | X2B3-C2 | 1'-6" | 6 Eq. Spaces | |
| | X2C3-B2 | 1'-6" | 6 Eq. Spaces | |
| | X2B3-C4 | 1'-6" | 6 Eq. Spaces | |
| | X2C3-B4 | 1'-6" | 6 Eq. Spaces | |
| | X2B4-C3 | 1'-6" | 11 Eq. Spaces | |
| | X2C4-B3 | 1'-6" | 11 Eq. Spaces | |
| | X2B4-C5 | 1'-6" | 7 Eq. Spaces | |
| | X2C4-B5 | 1'-6" | 7 Eq. Spaces | 1 |
| | X2B5-C4 | 1'-6" | 10 Eq. Spaces | |
| | X2C5-B4 | 1'-6" | 10 Eq. Spaces | |
| BENT NO. 3 | X3B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X3C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X3B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X3C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X3B2-C3 | 1'-6" | 3 Eq. Spaces | |
| | X3C2-B3 | 1'-6" | 3 Eq. Spaces | |
| | X3B3-C2 | 1'-6" | 6 Eq. Spaces | |
| | X3C3-B2 | 1'-6" | 6 Eq. Spaces | |
| | X3B3-C4 | 1'-6" | 6 Eq. Spaces | |
| | X3C3-B4 | 1'-6" | 6 Eq. Spaces | |
| | X3B4-C3 | 1'-6" | 11 Eq. Spaces | |
| | X3C4-B3 | 1'-6" | 11 Eq. Spaces | |
| | X3B4-C5 | 1'-6" | 9 Eq. Spaces | |
| | X3C4-B5 | 1'-6" | 9 Eq. Spaces | |
| | X3B5-C4 | 1'-6" | 12 Eq. Spaces | |
| | X3C5-B4 | 1'-6" | 12 Eq. Spaces | |
| | X3B4-C6 | 1'-6" | 10 Eq. Spaces | |
| | X3C5-B6 | 1'-6" | 10 Eq. Spaces | |
| | X3B6-C5 | 1'-6" | 12 Eq. Spaces | |
| | X3C6-B5 | 1'-6" | 12 Eq. Spaces | |

BENT UPPER INTERIOR DIAGONAL BRACE SCHEDULE

| | | | | |
|------------|-----------|-------|---------------------|---|
| BENT NO. 4 | MEMBER ID | "A" | BATTEN PLATE SPACES | |
| | X4B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X4C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X4B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X4C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X4B2-C3 | 1'-6" | 3 Eq. Spaces | |
| | X4C2-B3 | 1'-6" | 3 Eq. Spaces | |
| | X4B3-C2 | 1'-6" | 6 Eq. Spaces | |
| | X4C3-B2 | 1'-6" | 6 Eq. Spaces | |
| | X4B3-C4 | 1'-6" | 6 Eq. Spaces | |
| | X4C3-B4 | 1'-6" | 6 Eq. Spaces | |
| | X4B4-C3 | 1'-6" | 11 Eq. Spaces | |
| | X4C4-B3 | 1'-6" | 11 Eq. Spaces | |
| | X4B4-C5 | 1'-6" | 9 Eq. Spaces | |
| | X4C4-B5 | 1'-6" | 9 Eq. Spaces | |
| | X4B5-C4 | 1'-6" | 12 Eq. Spaces | |
| BENT NO. 5 | X5B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X5C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X5B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X5C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X5B2-C3 | 1'-6" | 3 Eq. Spaces | |
| | X5C2-B3 | 1'-6" | 3 Eq. Spaces | |
| | X5B3-C2 | 1'-6" | 6 Eq. Spaces | |
| | X5C3-B2 | 1'-6" | 6 Eq. Spaces | |
| | X5B3-C4 | 1'-6" | 6 Eq. Spaces | |
| | X5C3-B4 | 1'-6" | 6 Eq. Spaces | |
| | X5B4-C3 | 1'-6" | 11 Eq. Spaces | |
| | X4C4-B3 | 1'-6" | 11 Eq. Spaces | |
| | X5B4-C5 | 1'-6" | 9 Eq. Spaces | |
| | X5C4-B5 | 1'-6" | 9 Eq. Spaces | |
| | X5B5-C4 | 1'-6" | 12 Eq. Spaces | |
| | X5C5-B4 | 1'-6" | 12 Eq. Spaces | |
| | X5B5-C6 | 1'-6" | 11 Eq. Spaces | |
| | X5C5-B6 | 1'-6" | 11 Eq. Spaces | |
| | X5B6-C5 | 1'-6" | 14 Eq. Spaces | |
| | X5C6-B5 | 1'-6" | 14 Eq. Spaces | |
| | | | | |
| | | | | |

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A\01 CAD\12-06-24 ADD\NSR-SAG512 DIAG BRACE DTLS ADD2.DWG PLOT TIME: 12-03-24, 10:03 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

4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

| | | |
|---------|----------|---------------------|
| 12/6/24 | 1 | Revised Table Value |
| DATE | REVISION | |

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

DIAGONAL BRACE SCHEDULE

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

Scale: As Noted

Date: Oct. 2024

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 86 | 280 |

BENT UPPER INTERIOR DIAGONAL BRACE SCHEDULE

| BENT NO. 6 | MEMBER ID | "A" | BATTEN PLATE SPACES | |
|------------|-----------|-------|---------------------|---|
| | X6B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X6C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X6B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X6C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X6B2-C3 | 1'-6" | 3 Eq. Spaces | |
| | X6C2-B3 | 1'-6" | 3 Eq. Spaces | |
| | X6B3-C2 | 1'-6" | 6 Eq. Spaces | |
| | X6C3-B2 | 1'-6" | 6 Eq. Spaces | |
| | X6B3-C4 | 1'-6" | 6 Eq. Spaces | |
| | X6C3-B4 | 1'-6" | 6 Eq. Spaces | |
| | X6B4-C3 | 1'-6" | 11 Eq. Spaces | |
| | X6C4-B3 | 1'-6" | 11 Eq. Spaces | |
| | X6B4-C5 | 1'-6" | 9 Eq. Spaces | |
| | X6C4-B5 | 1'-6" | 9 Eq. Spaces | |
| | X6B5-C4 | 1'-6" | 12 Eq. Spaces | |
| | X6C5-B4 | 1'-6" | 12 Eq. Spaces | |
| | X6B5-C6 | 1'-6" | 11 Eq. Spaces | |
| | X6C5-B6 | 1'-6" | 11 Eq. Spaces | |
| | X6B6-C5 | 1'-6" | 14 Eq. Spaces | |
| | X6C6-B5 | 1'-6" | 14 Eq. Spaces | |
| BENT NO. 7 | X7B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X7C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X7B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X7C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X7B2-C3 | 1'-6" | 3 Eq. Spaces | |
| | X7C2-B3 | 1'-6" | 3 Eq. Spaces | |
| | X7B3-C2 | 1'-6" | 6 Eq. Spaces | |
| | X7C3-B2 | 1'-6" | 6 Eq. Spaces | |
| | X7B3-C4 | 1'-6" | 6 Eq. Spaces | |
| | X7C3-B4 | 1'-6" | 6 Eq. Spaces | |
| | X7B4-C3 | 1'-6" | 11 Eq. Spaces | |
| | X7C4-B3 | 1'-6" | 11 Eq. Spaces | |
| | X7B4-C5 | 1'-6" | 9 Eq. Spaces | |
| | X7C4-B5 | 1'-6" | 9 Eq. Spaces | |
| | X7B5-C4 | 1'-6" | 12 Eq. Spaces | |
| | X7C5-B4 | 1'-6" | 12 Eq. Spaces | |
| | X7B5-C6 | 1'-6" | 11 Eq. Spaces | |
| | X7C5-B6 | 1'-6" | 11 Eq. Spaces | |
| | X7B6-C5 | 1'-6" | 14 Eq. Spaces | |
| | X7C6-B5 | 1'-6" | 14 Eq. Spaces | |

BENT UPPER INTERIOR DIAGONAL BRACE SCHEDULE

| BENT NO. 8 | MEMBER ID | "A" | BATTEN PLATE SPACES | |
|------------|-----------|-------|---------------------|---|
| | X8B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X8C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X8B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X8C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X8B2-C3 | 1'-6" | 3 Eq. Spaces | |
| | X8C2-B3 | 1'-6" | 3 Eq. Spaces | |
| | X8B3-C2 | 1'-6" | 6 Eq. Spaces | |
| | X8C3-B2 | 1'-6" | 6 Eq. Spaces | |
| | X8B3-C4 | 1'-6" | 6 Eq. Spaces | |
| | X8C3-B4 | 1'-6" | 6 Eq. Spaces | |
| | X8B4-C3 | 1'-6" | 11 Eq. Spaces | |
| | C8C4-B3 | 1'-6" | 11 Eq. Spaces | |
| BENT NO. 9 | X9B1-C2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X9C1-B2 | 1'-6" | 1 Eq. Spaces | 1 |
| | X9B2-C1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X9C2-B1 | 1'-6" | 2 Eq. Spaces | 1 |
| | X9B2-C3 | 1'-6" | 4 Eq. Spaces | |
| | X9C2-B3 | 1'-6" | 4 Eq. Spaces | |
| | X9B3-C2 | 1'-6" | 7 Eq. Spaces | |
| | X9C3-B2 | 1'-6" | 7 Eq. Spaces | |

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOHA\01 CAD\12-06-24 ADD\NSR-SAG512 DIAG BRACE DTLS ADD2.DWG PLOT TIME: 12-03-24, 10:05 PM

STEPHEN T. PETERS

LICENSED PROFESSIONAL ENGINEER

NO. 17097-S

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

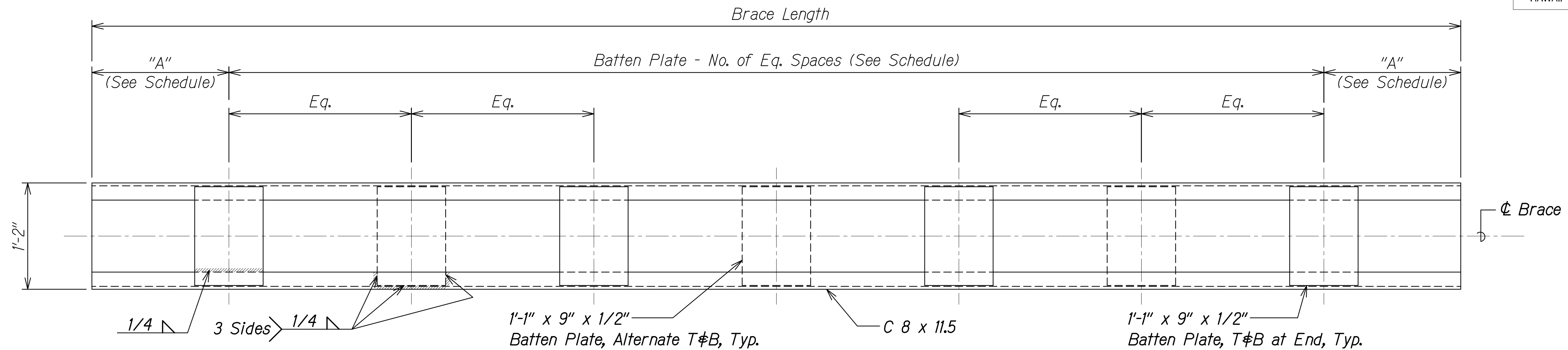
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4-30-26

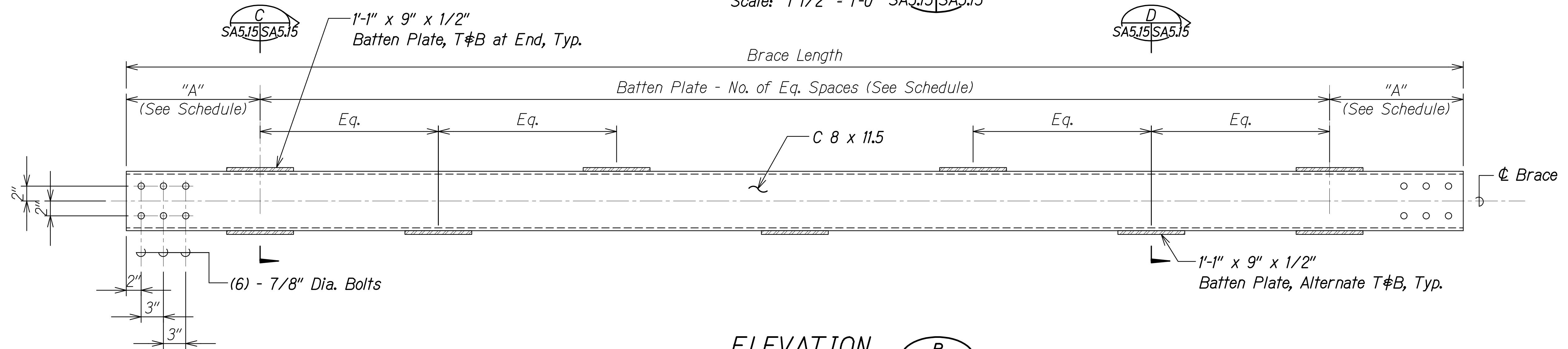
SIGNATURE EXPIRATION DATE OF THE LICENSE

| | | |
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| 12/6/24 | 1 | Revised Table Value |
| DATE | REVISION | |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | | |
| DIAGONAL BRACE SCHEDULE | | |
| HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) | | |
| Scale: As Noted | | Date: Oct. 2024 |
| SHEET No.SA5.14 OF 34 SHEETS | | |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 87 | 280 |



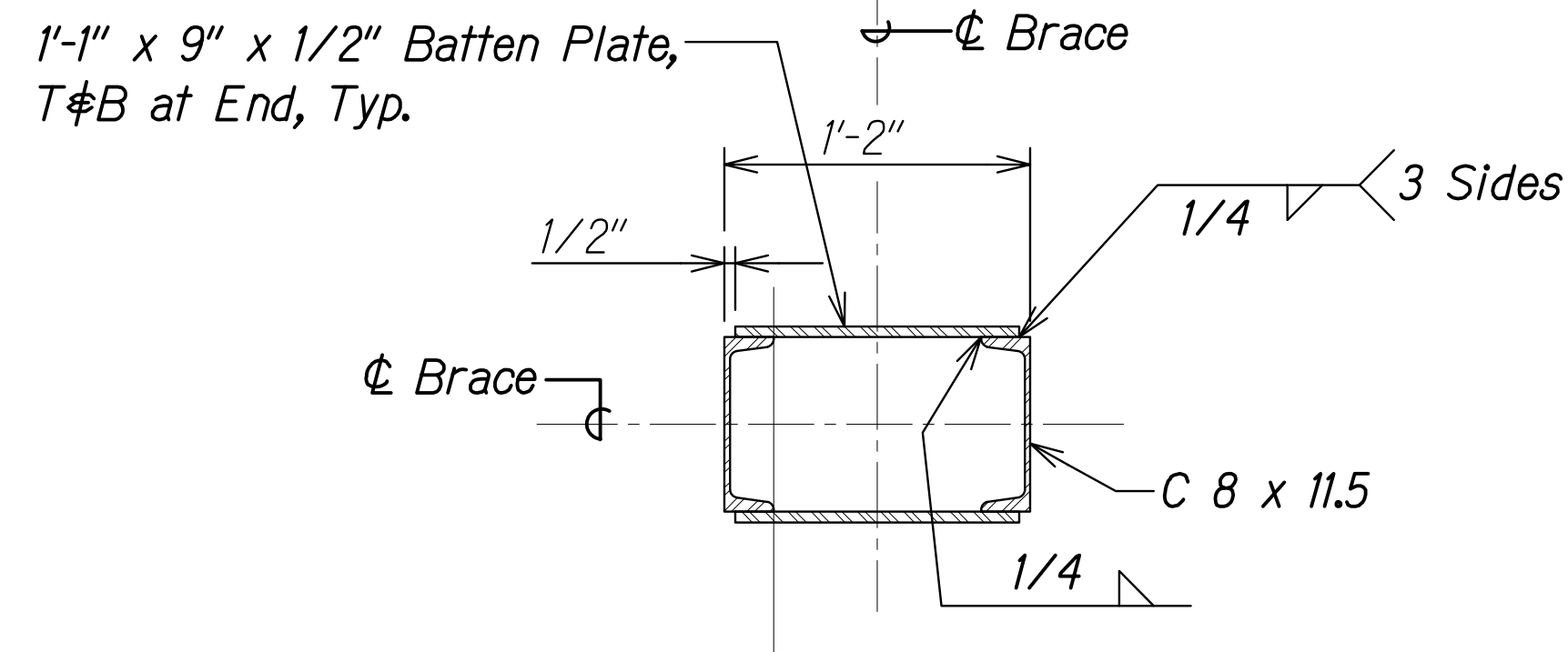
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Scale: 1 1/2" = 1'-0" SA5.15 SA5.15



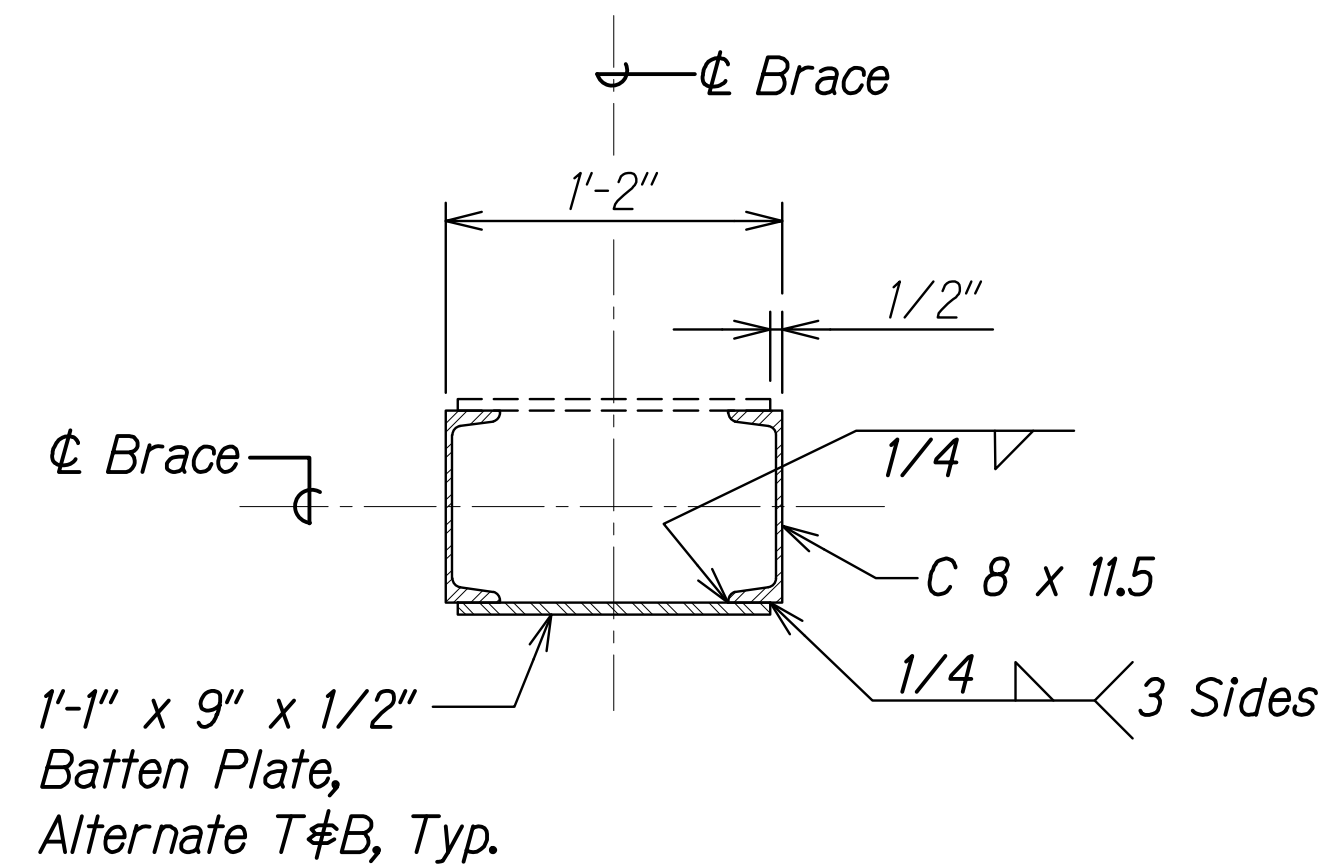
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NOTE:

Steel detailer to determine all lengths not shown on brace plans and schedule.

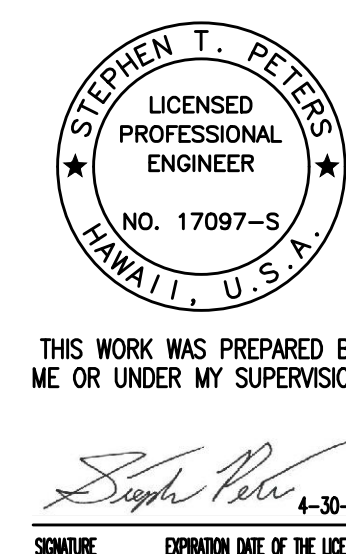


SECTION C
Scale: 1 1/2" = 1'-0" SA5.15 SA5.15



SECTION D
Scale: 1 1/2" = 1'-0" SA5.15 SA5.15

BENT LOWER INTERIOR DIAGONAL BRACE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**DIAGONAL BRACE PLAN,
ELEVATION AND SECTION**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No.SA5.15 OF 34 SHEETS

| | | | | | |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 88 | 280 |

| BENT LOWER INTERIOR DIAGONAL BRACE SCHEDULE | | | |
|---|-----------|-------|------------------------|
| BENT NO. 4 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | X4B6-C7 | 1'-6" | 14 Eq. Spaces |
| | X4C6-B7 | 1'-6" | 14 Eq. Spaces |
| | X4B7-C6 | 1'-6" | 18 Eq. Spaces |
| | X4C7-B6 | 1'-6" | 18 Eq. Spaces |
| BENT NO. 5 | X5B6-C7 | 1'-6" | 20 Eq. Spaces |
| | X5C6-B7 | 1'-6" | 20 Eq. Spaces |
| | X5B8-C7 | 1'-6" | 18 Eq. Spaces |
| | X5C8-B7 | 1'-6" | 18 Eq. Spaces |
| | | | |
| | | | |
| | | | |
| | | | |
| BENT NO. 6 | X6B6-C7 | 1'-6" | 20 Eq. Spaces |
| | X6C6-B7 | 1'-6" | 20 Eq. Spaces |
| | X6B8-C7 | 1'-6" | 18 Eq. Spaces |
| | X6C8-B7 | 1'-6" | 18 Eq. Spaces |
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|------------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| | DRAWN BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| NOTE BOOK | CHECKED BY | |
| | No. | |

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STEPHEN T. PETERS

LICENSED
PROFESSIONAL
ENGINEER

NO. 17097-S

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Signature

4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

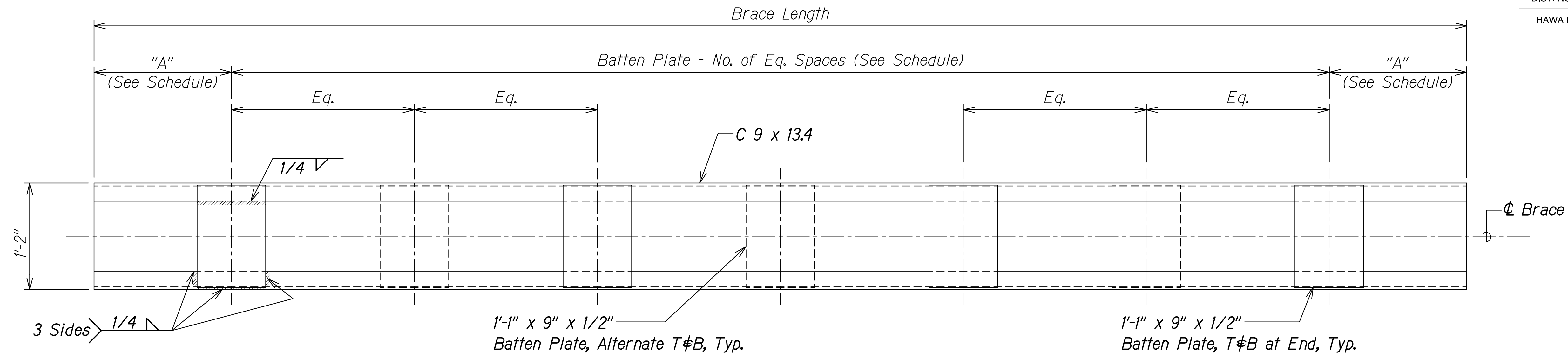
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| 12/6/24 | 1 | Revised Table Value |
| DATE | REVISION | |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

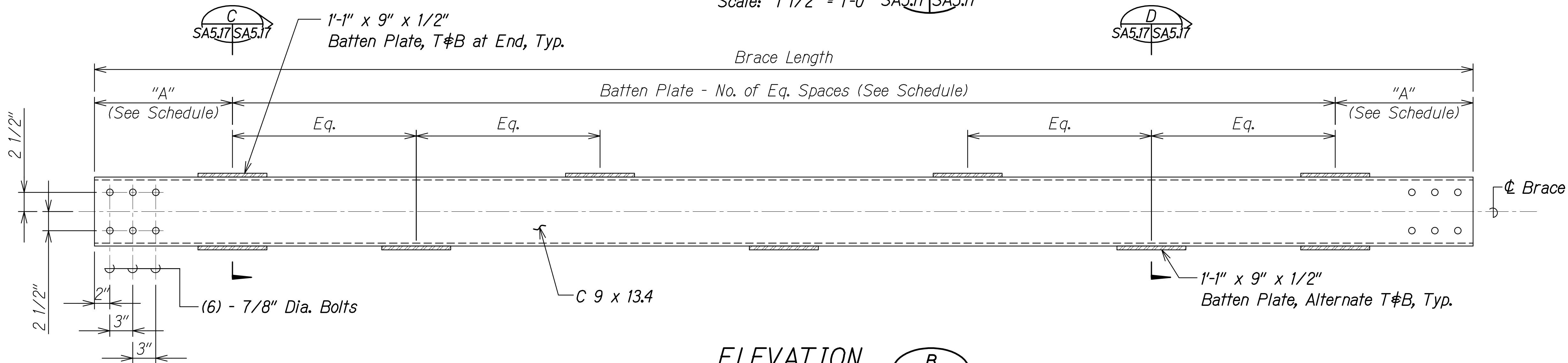
DIAGONAL BRACE SCHEDULE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 89 | 280 |



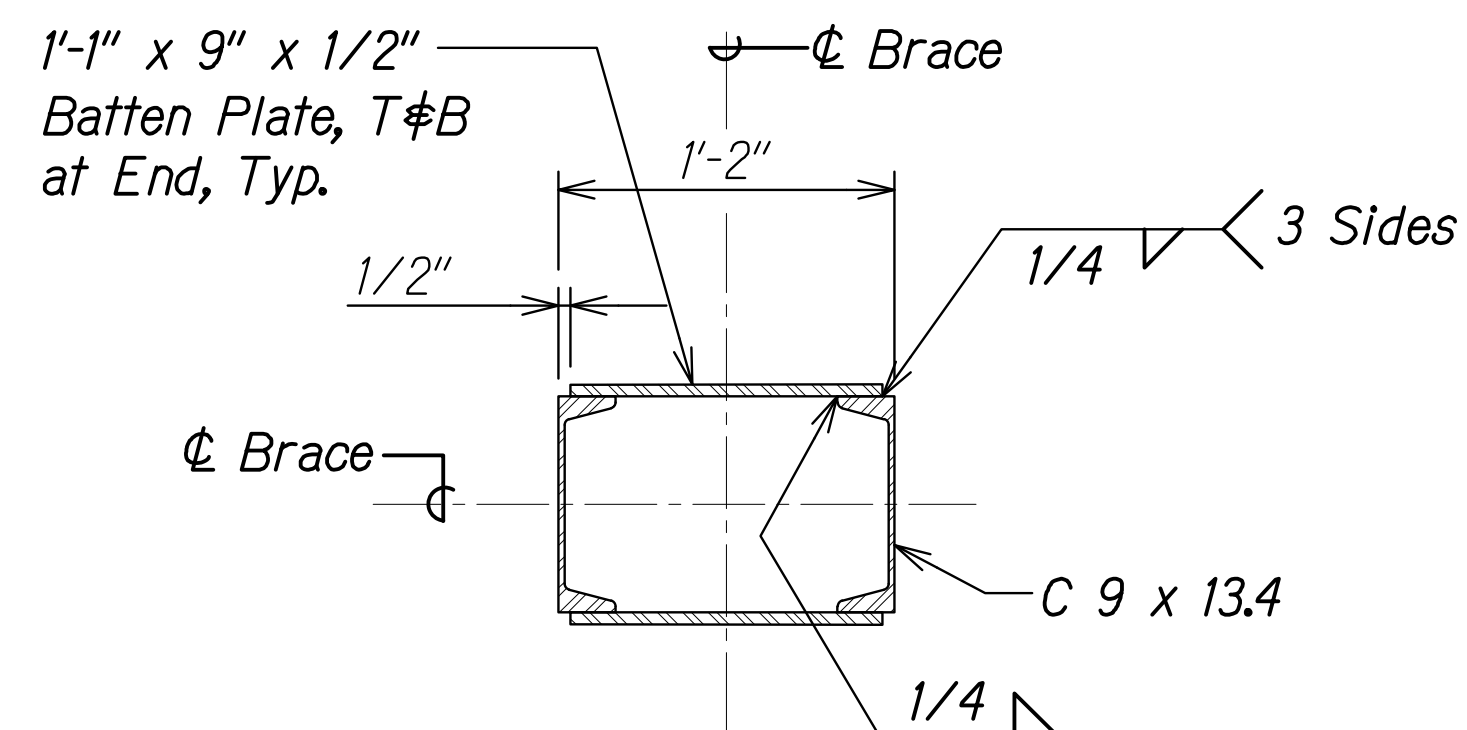
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Scale: 1 1/2" = 1'-0" SA5.17 SA5.17



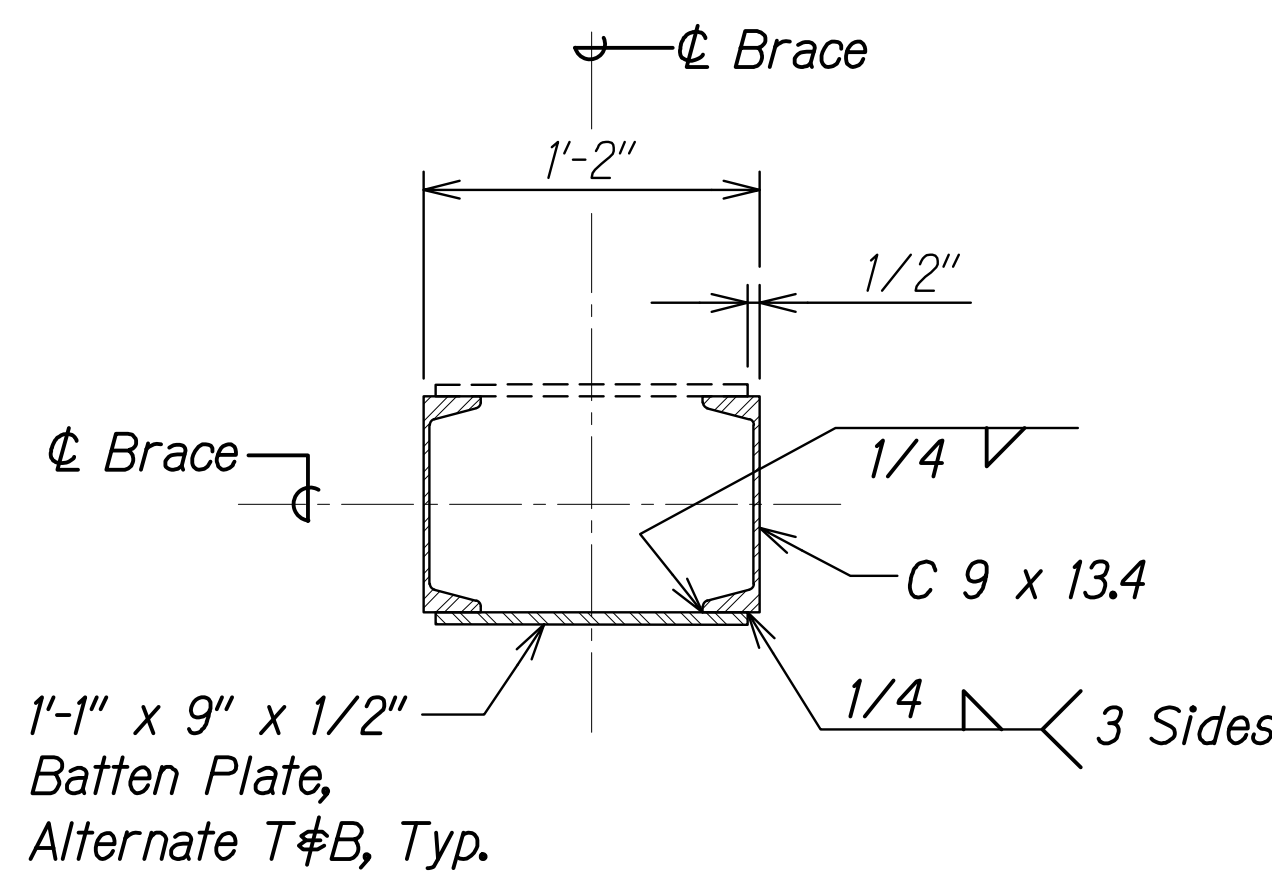
ELEVATION
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NOTE:

Steel detailer to determine all lengths not shown on brace plans and schedule.

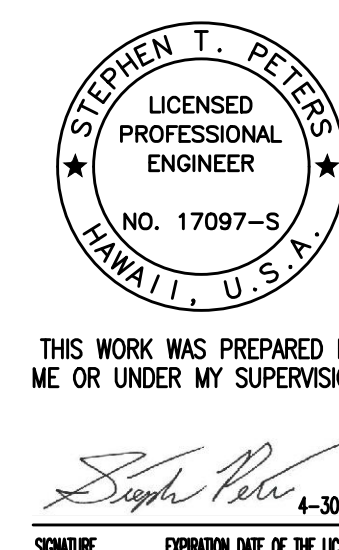


SECTION C
Scale: 1 1/2" = 1'-0" SA5.17 SA5.17



SECTION D
Scale: 1 1/2" = 1'-0" SA5.17 SA5.17

BENT EXTERIOR DIAGONAL BRACE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**DIAGONAL BRACE PLAN,
ELEVATION AND SECTION**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No.SA5.17 OF 34 SHEETS

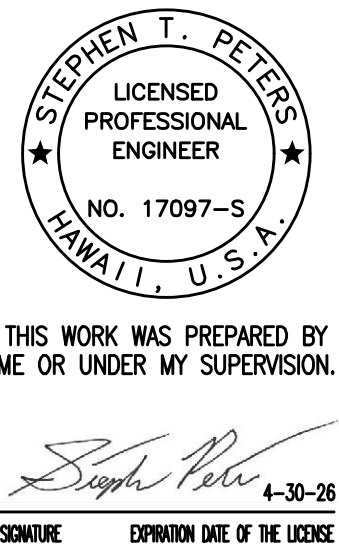
| BENT EXTERIOR DIAGONAL BRACE SCHEDULE | | | |
|---------------------------------------|-----------|-------|------------------------|
| BENT NO. 1 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | X1A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X1D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X1A3-B2 | 1'-6" | 14 Eq. Spcs |
| | X1D3-C2 | 1'-6" | 14 Eq. Spcs |
| BENT NO. 2 | X2A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X2D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X2A3-B2 | 1'-6" | 10 Eq. Spcs |
| | X2D3-C2 | 1'-6" | 10 Eq. Spcs |
| | X2A4-B3 | 1'-6" | 18 Eq. Spcs |
| | X2D4-C3 | 1'-6" | 18 Eq. Spcs |
| | X2A5-B4 | 1'-6" | 12 Eq. Spcs |
| | X2D5-C4 | 1'-6" | 12 Eq. Spcs |
| BENT NO. 3 | X3A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X3D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X3A3-B2 | 1'-6" | 10 Eq. Spcs |
| | X3D3-C2 | 1'-6" | 10 Eq. Spcs |
| | X3A4-B3 | 1'-6" | 18 Eq. Spcs |
| | X3D4-C3 | 1'-6" | 18 Eq. Spcs |
| | X3A5-B4 | 1'-6" | 18 Eq. Spcs |
| | X3D5-C4 | 1'-6" | 18 Eq. Spcs |
| | X3A6-B5 | 1'-6" | 12 Eq. Spcs |
| BENT NO. 4 | X4A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X4D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X4A3-B2 | 1'-6" | 10 Eq. Spcs |
| | X4D3-C2 | 1'-6" | 10 Eq. Spcs |
| | X4A4-B3 | 1'-6" | 18 Eq. Spcs |
| | X4D4-C3 | 1'-6" | 18 Eq. Spcs |
| | X4A5-B4 | 1'-6" | 18 Eq. Spcs |
| | X4D5-C4 | 1'-6" | 18 Eq. Spcs |
| | X4A6-B5 | 1'-6" | 18 Eq. Spcs |
| | X4D6-C5 | 1'-6" | 18 Eq. Spcs |
| | X4A7-B6 | 1'-6" | 22 Eq. Spcs |
| | X4D7-C6 | 1'-6" | 22 Eq. Spcs |
| | | | |
| | | | |
| | | | |

| BENT EXTERIOR DIAGONAL BRACE SCHEDULE | | | |
|---------------------------------------|-----------|-------|------------------------|
| BENT NO. 5 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | X5A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X5D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X5A3-B2 | 1'-6" | 10 Eq. Spcs |
| | X5D3-C2 | 1'-6" | 10 Eq. Spcs |
| | X5A4-B3 | 1'-6" | 18 Eq. Spcs |
| | X5D4-C3 | 1'-6" | 18 Eq. Spcs |
| | X5A5-B4 | 1'-6" | 18 Eq. Spcs |
| | X5D5-C4 | 1'-6" | 18 Eq. Spcs |
| | X5A6-B5 | 1'-6" | 18 Eq. Spcs |
| | X5D6-C5 | 1'-6" | 18 Eq. Spcs |
| | X5A7-B6 | 1'-6" | 18 Eq. Spcs |
| | X5D7-C6 | 1'-6" | 18 Eq. Spcs |
| BENT NO. 6 | X6A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X6D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X6A3-B2 | 1'-6" | 10 Eq. Spcs |
| | X6D3-C2 | 1'-6" | 10 Eq. Spcs |
| | X6A4-B3 | 1'-6" | 18 Eq. Spcs |
| | X6D4-C3 | 1'-6" | 18 Eq. Spcs |
| | X6A5-B4 | 1'-6" | 18 Eq. Spcs |
| | X6D5-C4 | 1'-6" | 18 Eq. Spcs |
| | X6A6-B5 | 1'-6" | 18 Eq. Spcs |
| | X6D6-C5 | 1'-6" | 18 Eq. Spcs |
| | X6A7-B6 | 1'-6" | 18 Eq. Spcs |
| | X6D7-C6 | 1'-6" | 18 Eq. Spcs |
| BENT NO. 7 | X7A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X7D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X7A3-B2 | 1'-6" | 10 Eq. Spcs |
| | X7D3-C2 | 1'-6" | 10 Eq. Spcs |
| | X7A4-B3 | 1'-6" | 18 Eq. Spcs |
| | X7D4-C3 | 1'-6" | 18 Eq. Spcs |
| | X7A5-B4 | 1'-6" | 18 Eq. Spcs |
| | X7D5-C4 | 1'-6" | 18 Eq. Spcs |
| BENT NO. 8 | X8A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X8D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X8A3-B2 | 1'-6" | 10 Eq. Spcs |
| BENT NO. 9 | X9A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X9D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X9A3-B2 | 1'-6" | 12 Eq. Spcs |
| | X9D3-C2 | 1'-6" | 12 Eq. Spcs |
| | | | |

| BENT EXTERIOR DIAGONAL BRACE SCHEDULE | | | |
|---------------------------------------|-----------|-------|------------------------|
| BENT NO. 8 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | X8A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X8D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X8A3-B2 | 1'-6" | 10 Eq. Spcs |
| | X8D3-C2 | 1'-6" | 10 Eq. Spcs |
| | X8A4-B3 | 1'-6" | 18 Eq. Spcs |
| BENT NO. 9 | X8D4-C3 | 1'-6" | 18 Eq. Spcs |
| | X9A2-B1 | 1'-6" | 6 Eq. Spcs |
| | X9D2-C1 | 1'-6" | 6 Eq. Spcs |
| | X9A3-B2 | 1'-6" | 12 Eq. Spcs |
| | X9D3-C2 | 1'-6" | 12 Eq. Spcs |
| | | | |
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|------------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| | DRAWN BY | |
| | TRACED BY | |
| | DESIGNED BY | |
| NOTE BOOK | QUANTITIES BY | |
| | CHECKED BY | |
| No. | | |

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

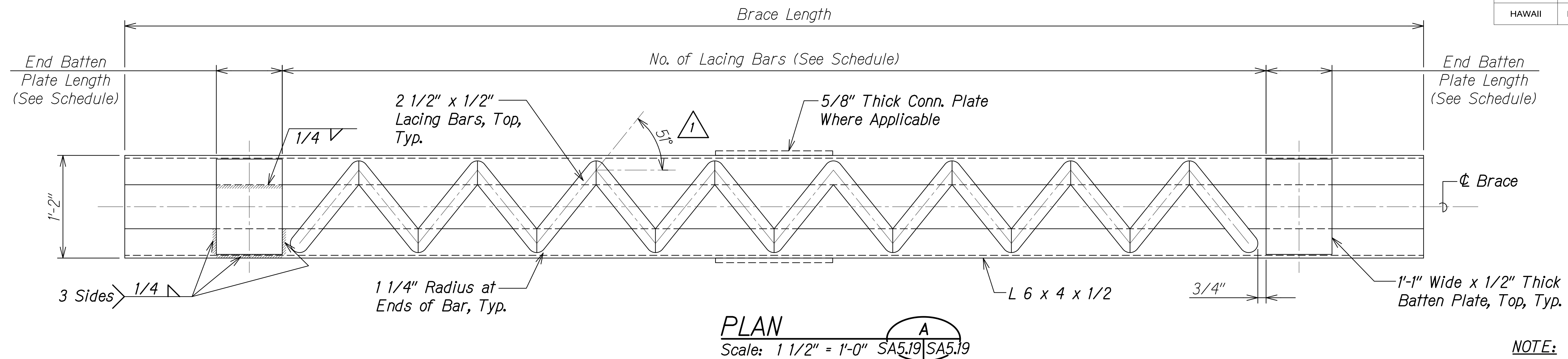
DIAGONAL BRACE SCHEDULE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

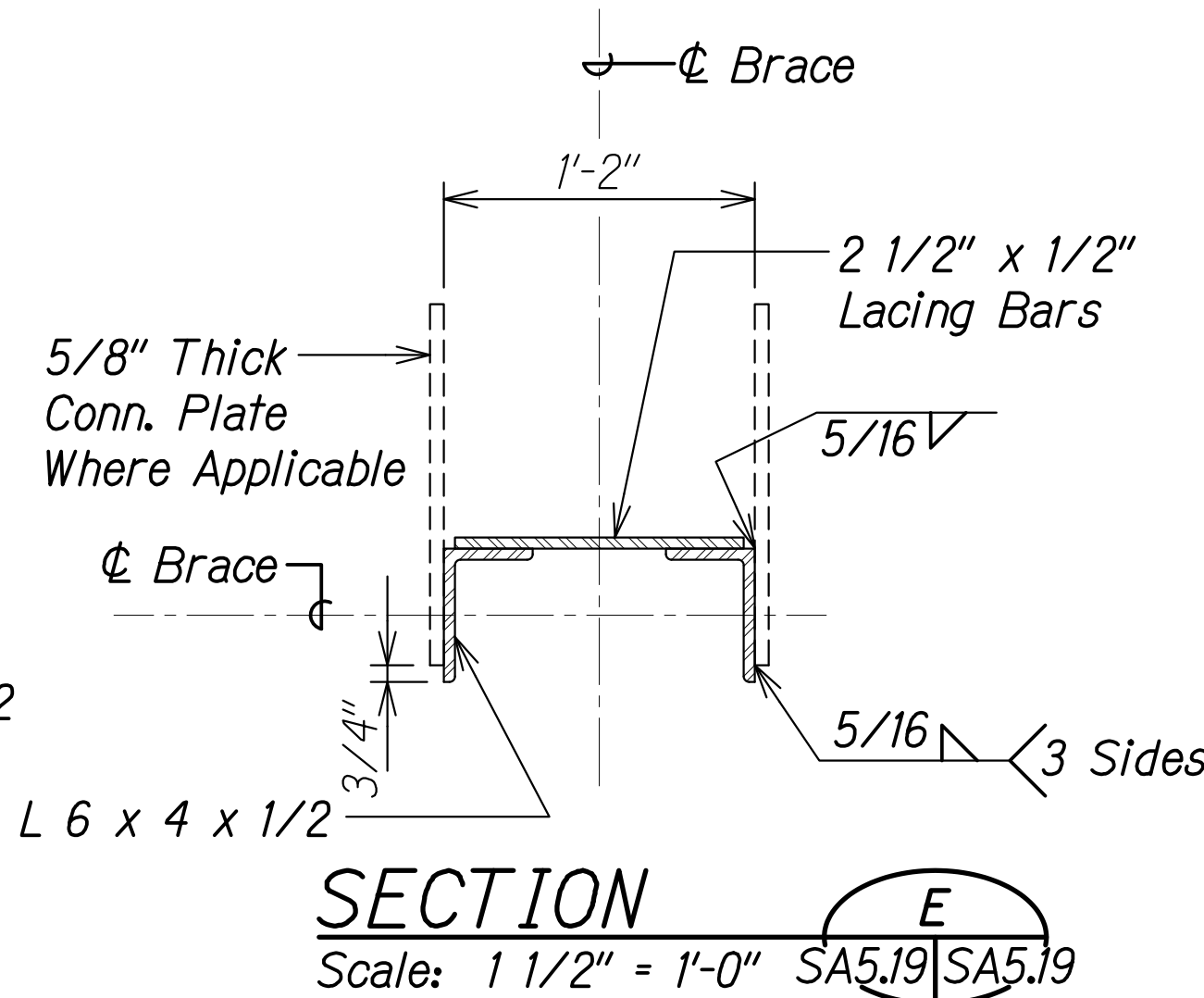
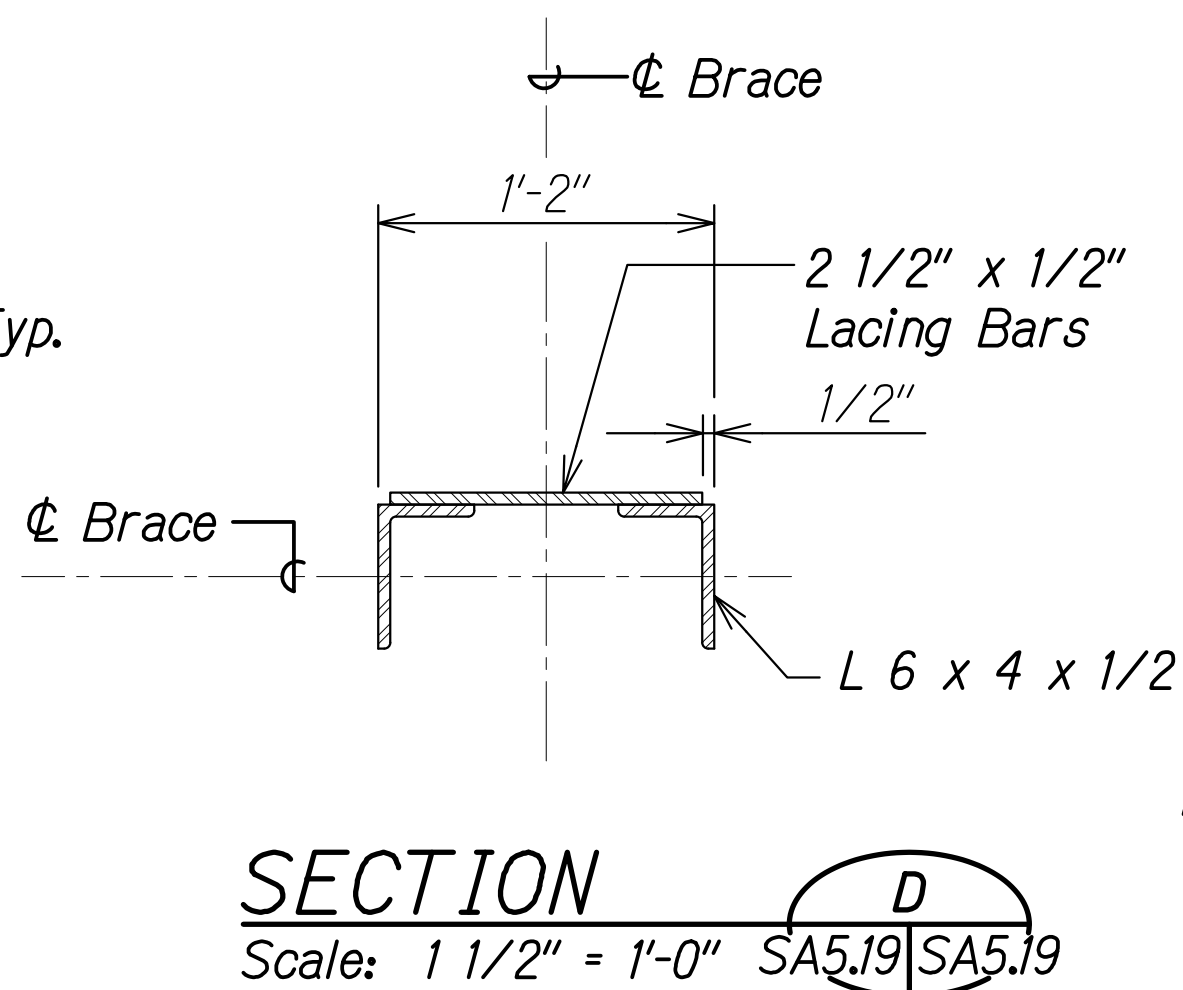
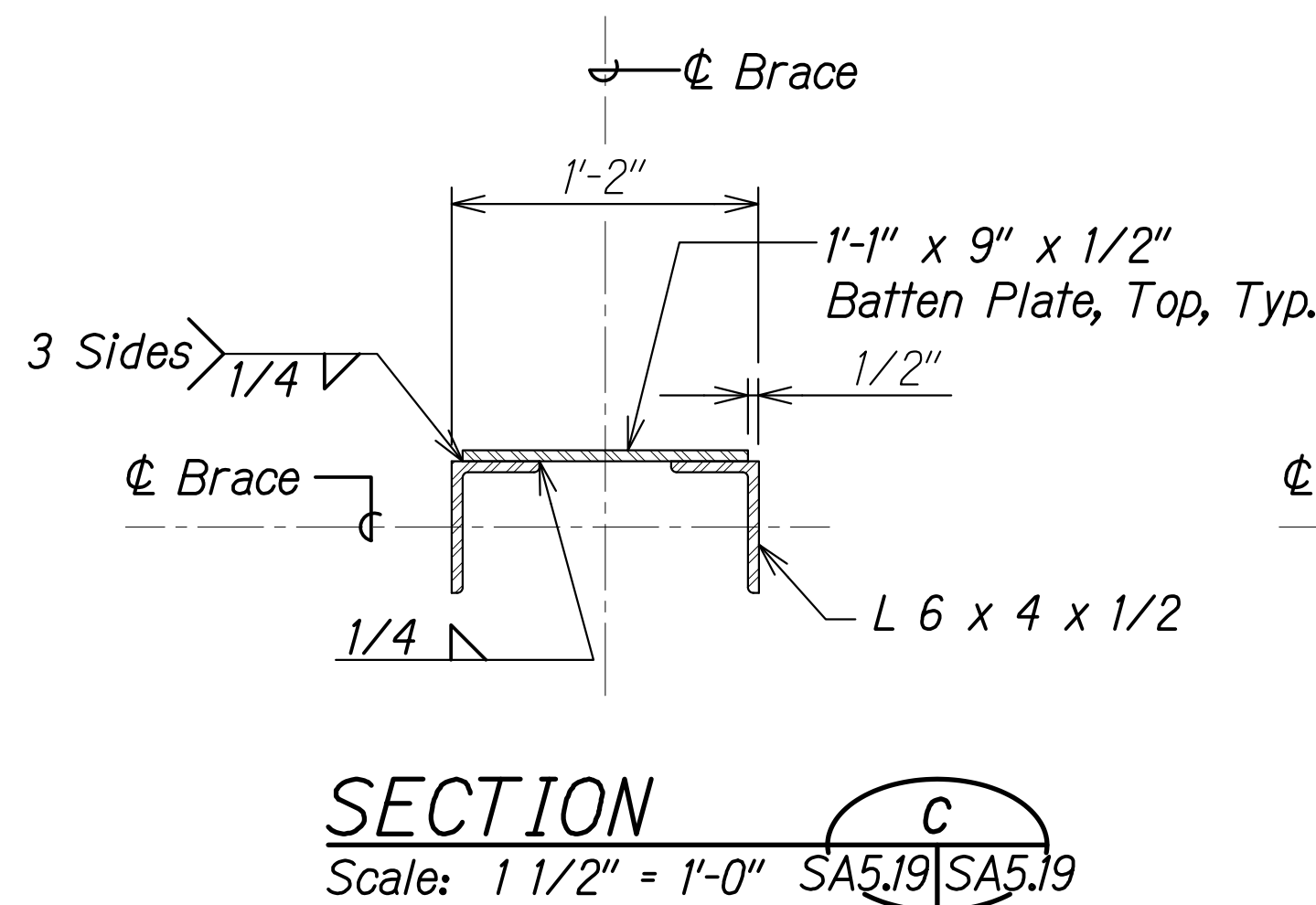
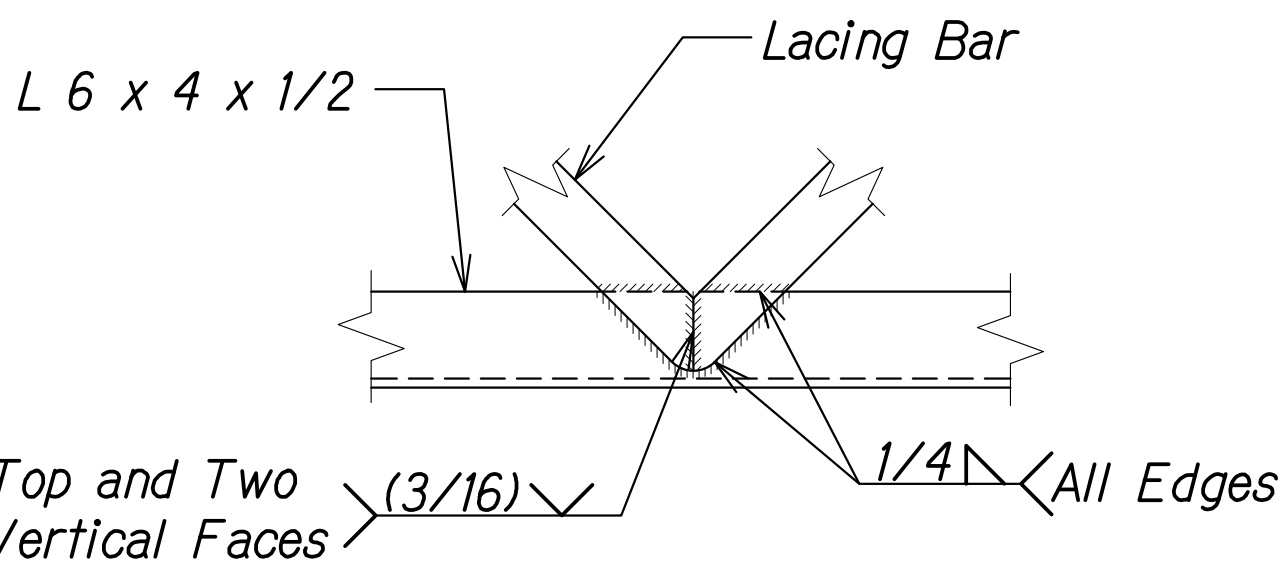
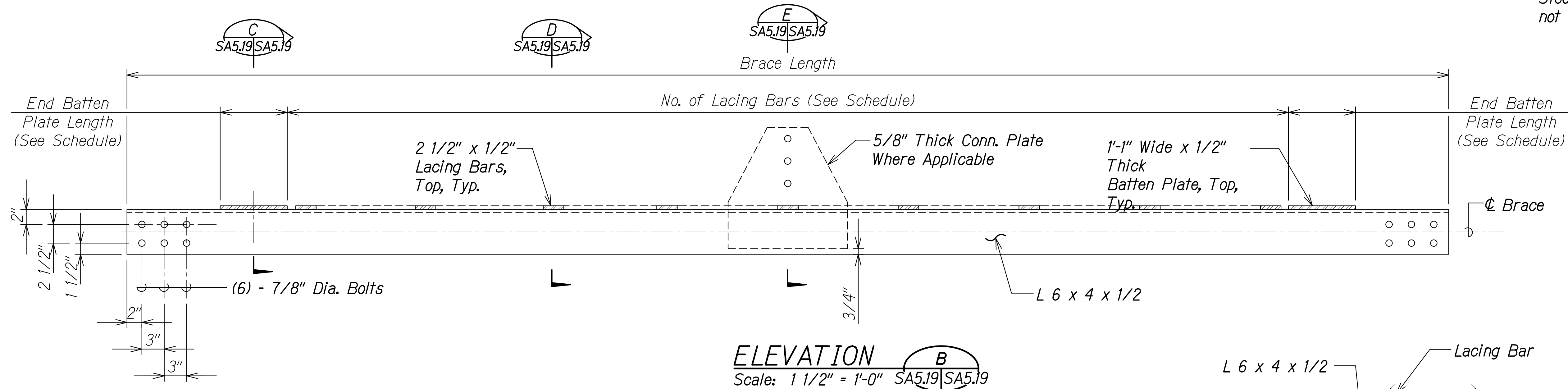
SHEET No.SA5.18 OF 34 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 91 | 280 |



NOTE:

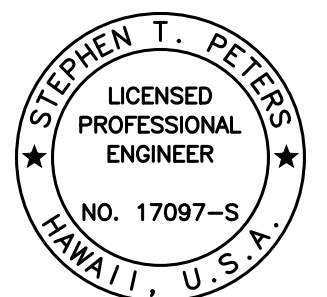
Steel detailer to determine all lengths not shown on brace plans and schedule.



DETAIL

Scale: 1 1/2" = 1'-0" SA5.19 SA5.19

1




THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: Stephen T. Peters

4-30-26

EXPIRATION DATE OF THE LICENSE

| | | |
|---------|---|-------------------|
| 12/6/24 |  | Revised Dimension |
| DATE | REVISION | |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HORIZONTAL BRACE PLAN,
ELEVATION AND SECTION


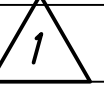
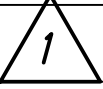
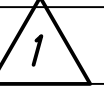
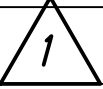
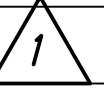
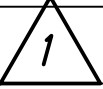
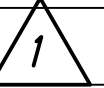
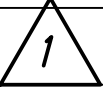



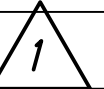
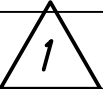
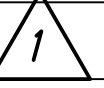
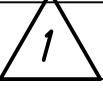

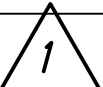


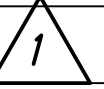
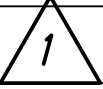

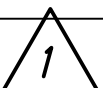


HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)



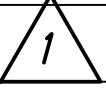
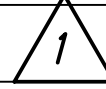
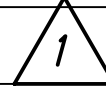




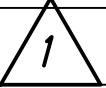
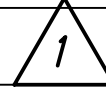
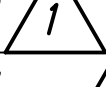
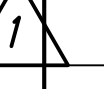

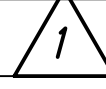
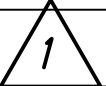
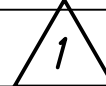
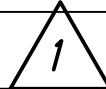
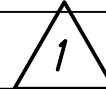
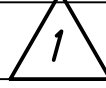
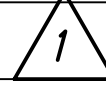

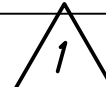




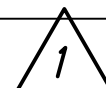


Scale: As Noted Date: Oct. 2024

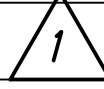
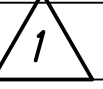


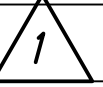
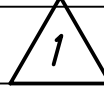
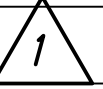


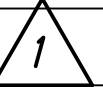
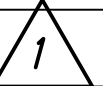


SHEET No. SA5.19 OF 34 SHEETS


| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 92 | 280 |

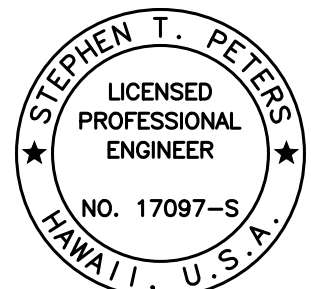
BENT UPPER HORIZONTAL BRACE SCHEDULE


| | | | |
|------------|-----------|--|--|
| BENT NO. 1 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars |
| | H1A-B1 | 0'-10" | 4 |
| | H1B-C1 | 0'-9" | 2  |
| | H1C-D1 | 0'-10" | 4 |
| | H1A-B2 | 0'-10" | 4 |
| | H1B-C2 | 1'-5"  | 4  |
| | H1C-D2 | 0'-10" | 4 |
| BENT NO. 2 | H2A-B1 | 0'-10" | 4 |
| | H2B-C1 | 0'-8"  | 2  |
| | H2C-D1 | 0'-10" | 4 |
| | H2A-B2 | 0'-9"  | 6  |
| | H2B-C2 | 0'-10" | 8 |
| | H2C-D2 | 0'-10" | 4 |
| | H2A-B3 | 0'-10" | 4 |
| | H2B-C3 | 0'-8"  | 14  |
| | H2C-D3 | 0'-10" | 4 |
| | H2A-B4 | 0'-10" | 4 |
| | H2B-C4 | 0'-9"  | 26  |
| | H2C-D4 | 0'-10" | 4 |
| BENT NO. 3 | H3A-B1 | 0'-10" | 4 |
| | H3B-C1 | 0'-9" | 2  |
| | H3C-D1 | 0'-10" | 4 |
| | H3A-B2 | 0'-10" | 4 |
| | H3B-C2 | 1'-5"  | 4  |
| | H3C-D2 | 0'-10" | 4 |
| | H3A-B3 | 0'-10" | 4 |
| | H3B-C3 | 1'-3"  | 12  |
| | H3C-D3 | 0'-10" | 4 |
| | H3A-B4 | 0'-10" | 4 |
| | H3B-C4 | 0'-10"  | 26  |
| | H3C-D4 | 0'-10" | 4 |
| | H3A-B5 | 0'-10" | 4 |
| | H3B-C5 | 1'-2"  | 38  |
| | H3C-D5 | 0'-10" | 4 |
| BENT NO. 4 | H4A-B1 | 0'-10" | 4 |
| | H4B-C1 | 0'-8"  | 2  |
| | H4C-D1 | 0'-10" | 4 |
| | H4A-B2 | 0'-10" | 4 |
| | H4B-C2 | 0'-9"  | 6  |
| | H4C-D2 | 0'-10" | 4 |
| | H4A-B3 | 0'-10" | 4 |
| | H4B-C3 | 0'-8"  | 14  |
| | H4C-D3 | 0'-10" | 4 |

| | | | |
|------------|--|---|--|
| BENT NO. 4 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars |
| | H4A-B4 | 0'-10" | 4 |
| | H4B-C4 | 0'-9"  | 26  |
| | H4C-D4 | 0'-10" | 4 |
| | H4A-B5 | 0'-10" | 4 |
| | H4B-C5 | 1'-3"  | 38  |
| | H4C-D5 | 0'-10" | 4 |
| BENT NO. 5 | H5A-B1 | 0'-10" | 4 |
| | H5B-C1 | 0'-9" | 2  |
| | H5C-D1 | 0'-10" | 4 |
| | H5A-B2 | 0'-10" | 4 |
| | H5B-C2 | 1'-5"  | 4  |
| | H5C-D2 | 0'-10" | 4 |
| | H5A-B3  | 0'-10" | 4 |
| | H5B-C3  | 1'-3"  | 12  |
| | H5C-D3  | 0'-10" | 4 |
| | H5A-B4  | 0'-10" | 4 |
| | H5B-C4 | 0'-10"  | 26  |
| | H5C-D4 | 0'-10" | 4 |
| | H5A-B5 | 0'-10" | 4 |
| | H5B-C5 | 1'-5"  | 38  |
| | H5C-D5 | 0'-10" | 4 |
| BENT NO. 6 | H6A-B1 | 0'-10" | 4 |
| | H6B-C1 | 0'-8"  | 2  |
| | H6C-D1 | 0'-10" | 4 |
| | H6A-B2 | 0'-10" | 4 |
| | H6B-C2 | 0'-9"  | 6  |
| | H6C-D2 | 0'-10" | 4 |
| | H6A-B3 | 0'-10" | 4 |
| | H6B-C3 | 0'-8"  | 14  |
| | H6C-D3 | 0'-10" | 4 |
| | H6A-B4 | 0'-10" | 4 |
| | H6B-C4 | 0'-9"  | 26  |
| | H6C-D4 | 0'-10" | 4 |
| | H6A-B5 | 0'-10" | 4 |
| | H6B-C5 | 1'-3"  | 38  |
| | H6C-D5 | 0'-10" | 4 |
| BENT NO. 7 | H7A-B1 | 0'-10" | 4 |
| | H7B-C1 | 0'-9" | 2  |
| | H7C-D1 | 0'-10" | 4 |
| | H7A-B2 | 0'-10" | 4 |
| | H7B-C2 | 1'-5"  | 4  |
| | H7C-D2 | 0'-10" | 4 |
| BENT NO. 7 | H7A-B3 | 0'-10" | 4 |

| | | | |
|------------|-----------|---|---|
| BENT NO. 7 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars |
| | H7B-C3 | 1'-3"  | 12  |
| | H7C-D3 | 0'-10" | 4 |
| | H7A-B4 | 0'-10" | 4 |
| | H7B-C4 | 0'-10"  | 26  |
| | H7C-D4 | 0'-10" | 4 |
| BENT NO. 8 | H7A-B5 | 0'-10" | 4 |
| | H7B-C5 | 0'-9" | 40  |
| | H7C-D5 | 0'-10" | 4 |
| | H8A-B1 | 0'-10" | 4 |
| | H8B-C1 | 0'-8"  | 2  |
| | H8C-D1 | 0'-10" | 4 |
| BENT NO. 9 | H8A-B2 | 0'-10" | 4 |
| | H8B-C2 | 0'-9"  | 6  |
| | H8C-D2 | 0'-10" | 4 |
| | H8A-B3 | 0'-10" | 4 |
| | H8B-C3 | 1'-2" | 12  |
| | H8C-D3 | 0'-10" | 4 |
| BENT NO. 9 | H9A-B1 | 0'-10" | 4 |
| | H9B-C1 | 0'-9" | 2  |
| | H9C-D1 | 0'-10" | 4 |
| | H9A-B2 | 0'-10" | 4 |
| | H9B-C2 | 1'-5"  | 4  |
| BENT NO. 9 | H9C-D2 | 0'-10" | 4 |

| | |
|---------|---|
| 12/6/24 |  Revised Table Value |
| DATE | REVISION |



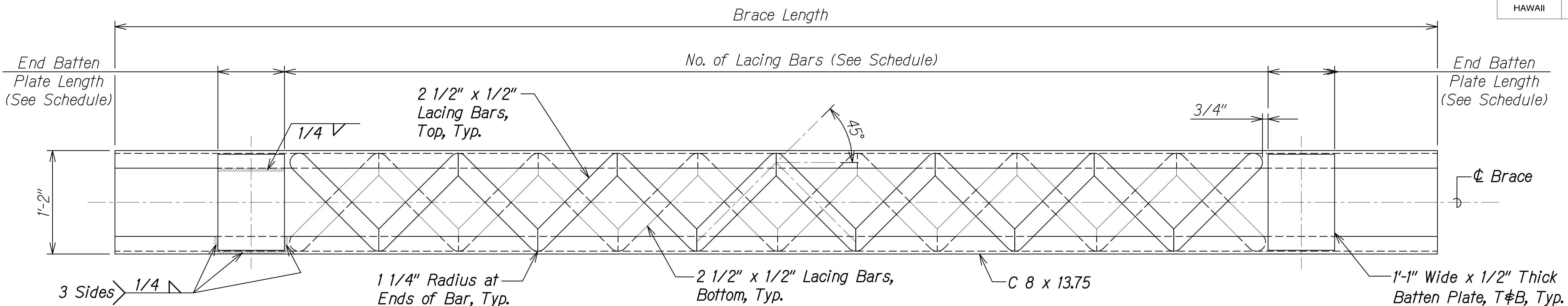
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

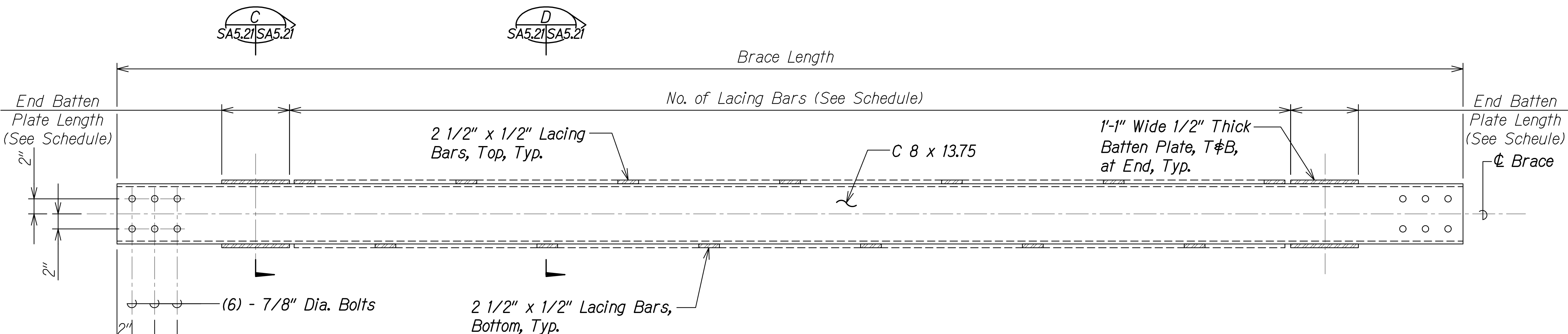
HORIZONTAL BRACE SCHEDULE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 93 | 280 |



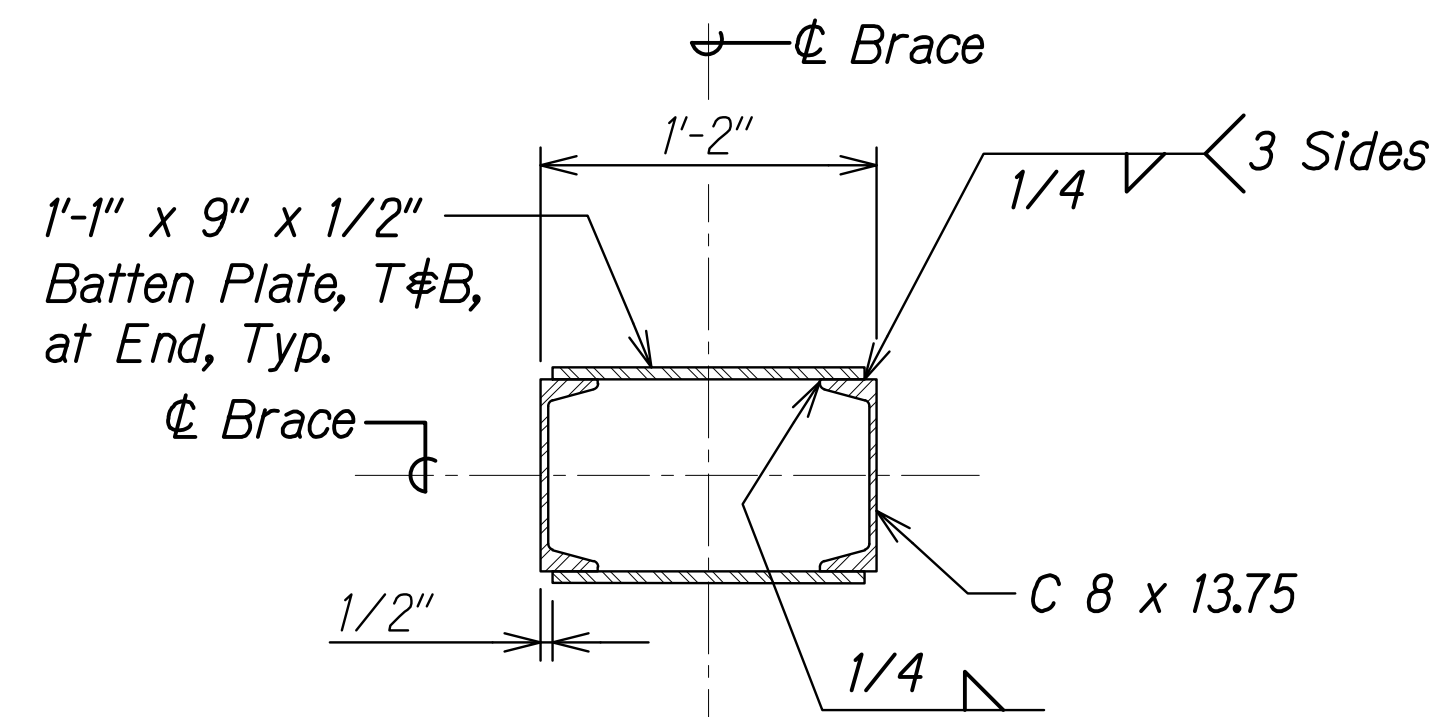
PLAN
Scale: 1 1/2" = 1'-0" SA5.21 SA5.21



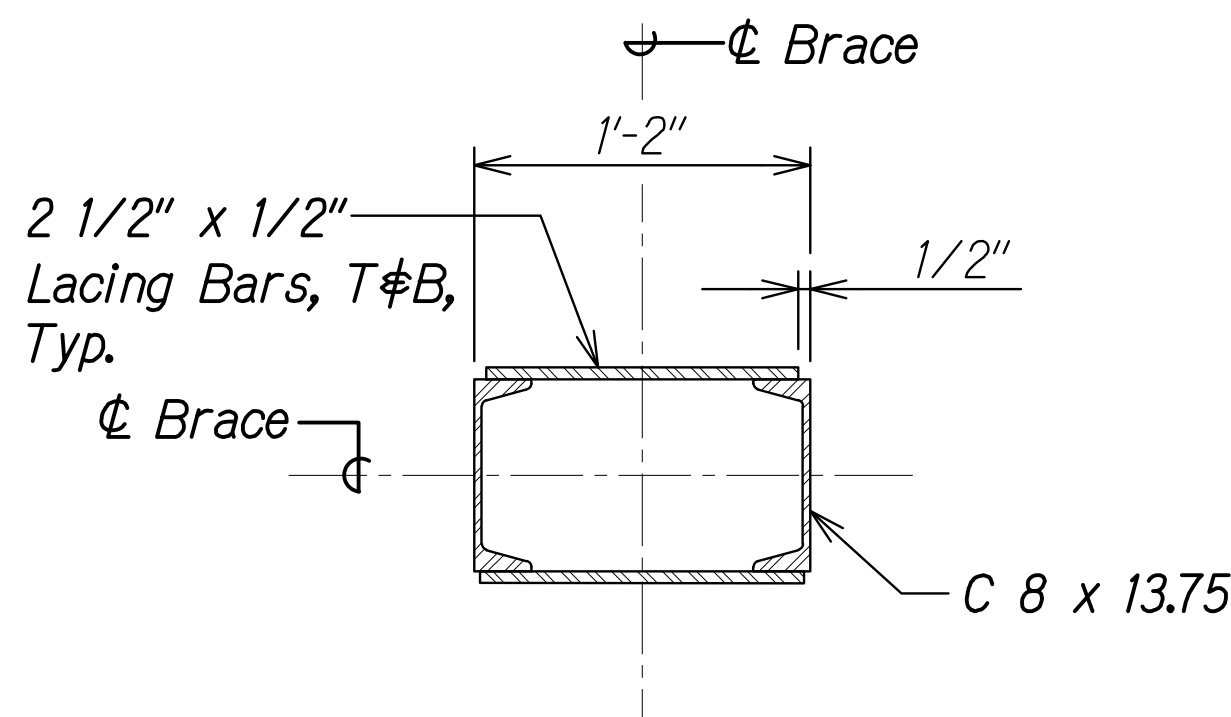
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NOTE:

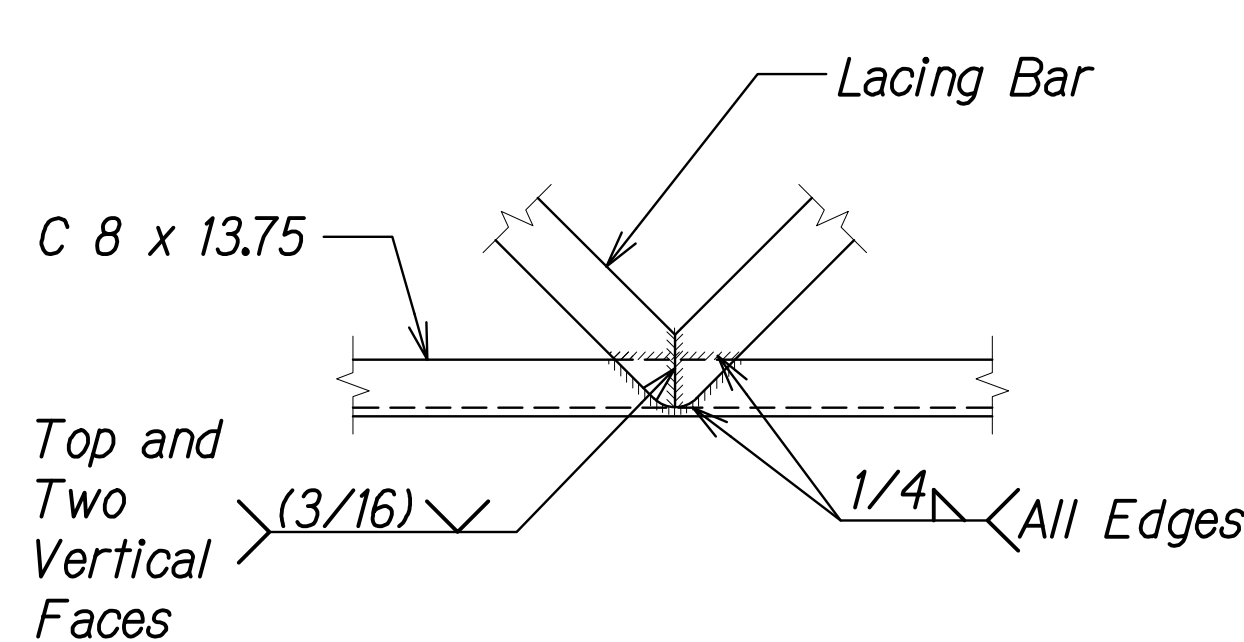
Steel detailer to determine all lengths not shown on brace plans and schedule.



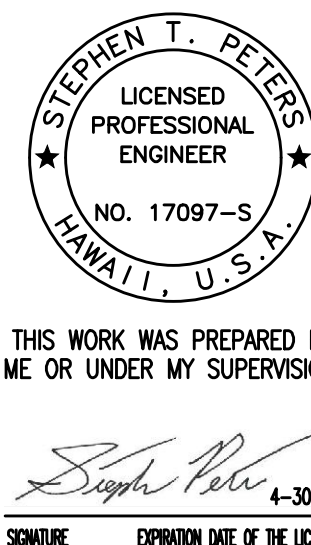
SECTION C
Scale: 1 1/2" = 1'-0" SA5.21 SA5.21



SECTION D
Scale: 1 1/2" = 1'-0" SA5.21 SA5.21



DETAIL 1
Scale: 1 1/2" = 1'-0" SA5.21 SA5.21



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION






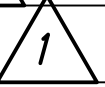



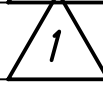




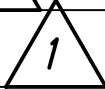
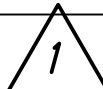

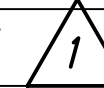
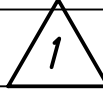
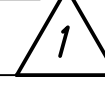
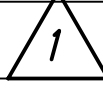
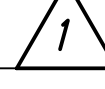

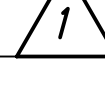
**HORIZONTAL BRACE PLAN,
ELEVATION AND SECTION**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

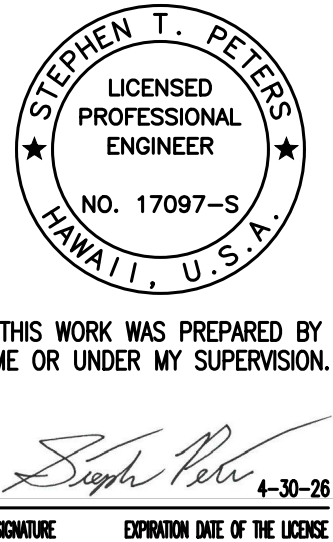
SHEET No.SA5.21 OF 34 SHEETS


| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 94 | 280 |

| BENT LOWER HORIZONTAL BRACE SCHEDULE | | | | | | | |
|--------------------------------------|-----------|---|--------------------|------------|------------|---|--------------------|
| BENT NO. 1 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars | BENT NO. 6 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars |
| | H1A-B3 | 0'-8" | 4 | | H6A-B6 | 0'-8" | 4 |
| | H1B-C3 | 1'-4"  | 16 | | H6B-C6 | 1'-1"  | 22 |
| | H1C-D3 | 0'-8" | 4 | | H6C-B6 | 1'-1"  | 22 |
| | | | | | H6C-D6 | 0'-8" | 4 |
| | | | | | H6A-B7 | 0'-8" | 4 |
| BENT NO. 2 | H2A-B5 | 0'-8" | 4 | | H6B-C7 | 1'-5"  | 28 |
| | H2B-C5 | 1'-6"  | 34 | | H6C-B7 | 1'-5"  | 28 |
| | H2C-D5 | 0'-8" | 4 | | H6C-D7 | 0'-8" | 4 |
| | | | | | H6A-B8 | 0'-8" | 4 |
| | | | | | H6B-C8 | 0'-11"  | 34 |
| | | | | | H6C-B8 | 0'-11"  | 34 |
| BENT NO. 3 | H3A-B6 | 0'-8" | 4 | | H6C-D8 | 0'-8" | 4 |
| | H3B-C6 | 0'-9"  | 22 | | BENT NO. 7 | H7A-B6 | 0'-8" |
| | H3C-B6 | 0'-9"  | 22 | H7B-C6 | | 1'-2"  | 22 |
| | H3C-D6 | 0'-8" | 4 | H7C-B6 | | 1'-2"  | 22 |
| | | | | H7C-D6 | | 0'-8" | 4 |
| | | | | | | | |
| BENT NO. 4 | H4A-B6 | 0'-8" | 4 | BENT NO. 8 | | H8A-B4 | 0'-8" |
| | H4B-C6 | 1'-3"  | 22 | | H8B-C4 | 1'-2"  | 26 |
| | H4C-B6 | 1'-3"  | 22 | | H8C-D4 | 0'-8" | 4 |
| | H4C-D6 | 0'-8" | 4 | | | | |
| | H4A-B7 | 0'-8" | 4 | | | | |
| | H4B-C7 | 1'-5"  | 30 | | | | |
| | H4C-B7 | 1'-5"  | 30 | BENT NO. 9 | H9A-B3 | 0'-8" | 4 |
| | H4C-D7 | 0'-8" | 4 | | H9B-C3 | 1'-4"  | 14 |
| BENT NO. 5 | H5A-B6 | 0'-8" | 4 | | H9C-D3 | 0'-8" | 4 |
| | H5B-C6 | 1'-2"  | 22 | | | | |
| | H5C-B6 | 1'-2"  | 22 | | | | |
| | H5C-D6 | 0'-8" | 4 | | | | |
| | H5A-B7 | 0'-8" | 4 | | | | |
| | H5B-C7 | 1'-3"  | 28 | | | | |
| | H5C-B7 | 1'-3"  | 28 | | | | |
| | H5C-D7 | 0'-8" | 4 | | | | |
| | H5A-B8 | 0'-8" | 4 | | | | |
| | H5B-C8 | 1'-5"  | 32 | | | | |
| | H5C-B8 | 1'-5"  | 32 | | | | |
| | H5C-D8 | 0'-8" | 4 | | | | |

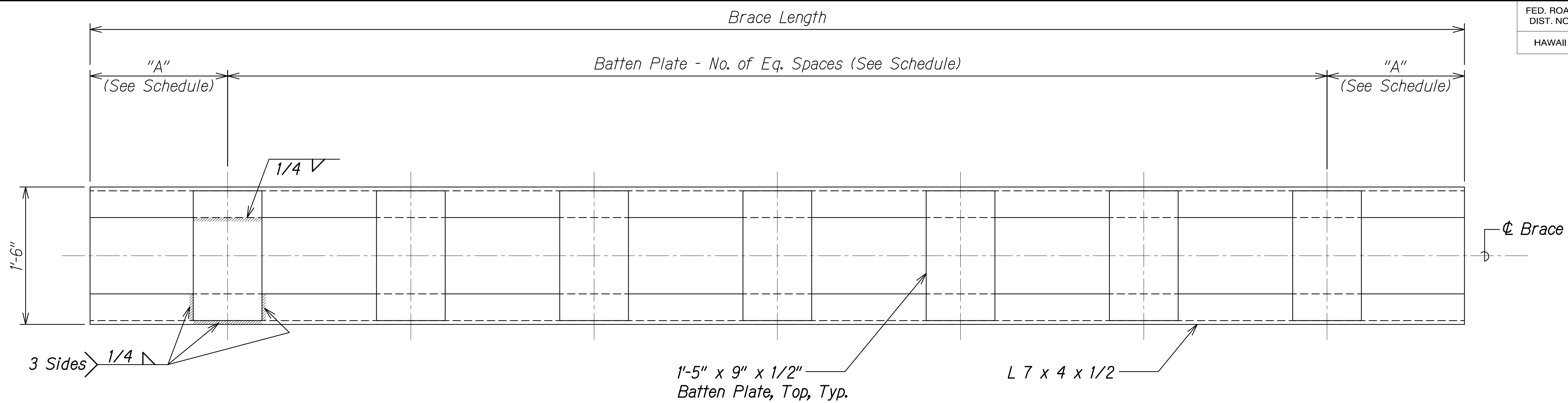
| | | |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| No. | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\12-06-24 ADD\NSR-SAG612 DIAG BRACE DTLS ADD2.DWG PLOT TIME: 12-03-24, 10:08 PM)

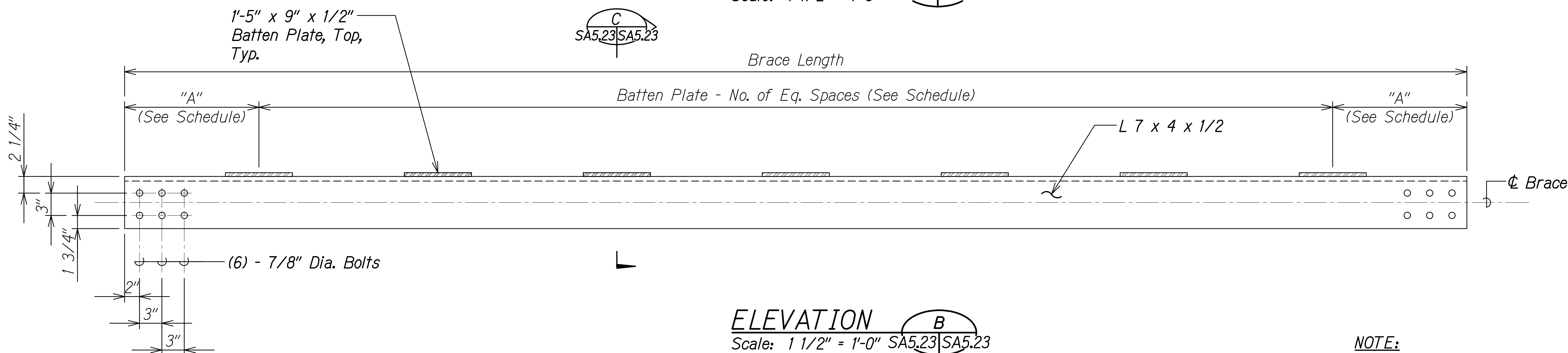


| | |
|---|---|
| 12/6/24 |  Revised Table Value |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | |
| HORIZONTAL BRACE SCHEDULE | |
| HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) | |
| Scale: As Noted | Date: Oct. 2024 |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 95 | 280 |

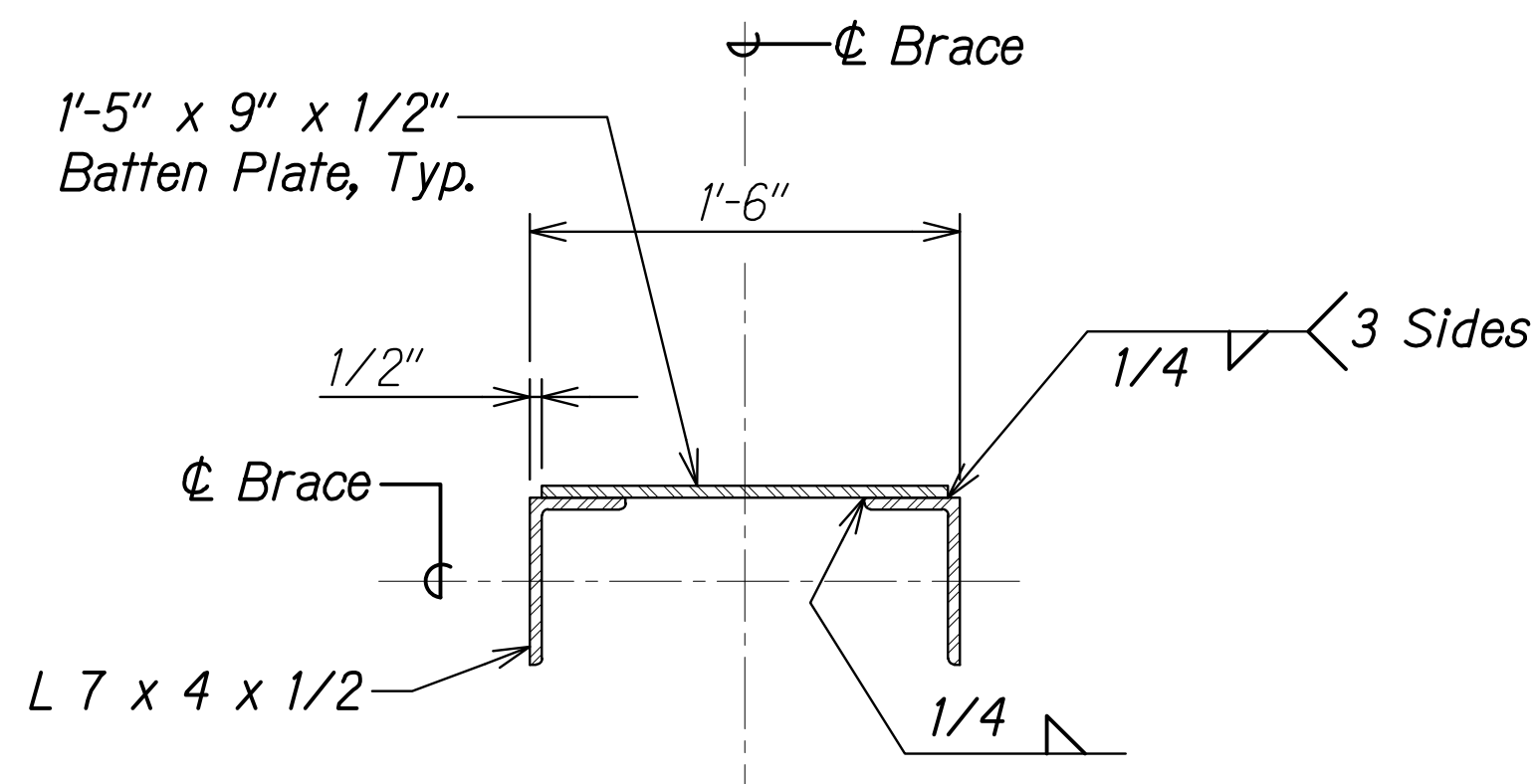


PLAN
Scale: 1 1/2" = 1'-0" SA5.23 SA5.23



ELEVATION
Scale: 1 1/2" = 1'-0" SA5.23 SA5.23

NOTE:
Steel detailer to determine all lengths not shown on brace plans and schedule.

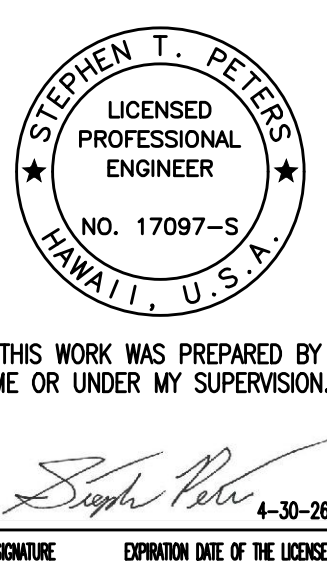


SECTION
Scale: 1 1/2" = 1'-0" SA5.23 SA5.23

BENT-TO-BENT DIAGONAL BRACE

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-S0512 DIAG BRACE.DTL.DWG PLOT TIME: 10-28-24 4:43 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**DIAGONAL BRACE PLAN,
ELEVATION AND SECTION**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET NoSA5.23 OF 34 SHEETS

BENT-TO-BENT DIAGONAL BRACE SCHEDULE

| TRESTLE NO. 2 | MEMBER ID | "A" | BATTEN PLATE SPACES |
|---------------|-----------|-------|---------------------|
| | X2A1-3A3 | 1'-6" | 11 Eq. Spaces |
| | X2B1-3B3 | 1'-6" | 11 Eq. Spaces |
| | X2C1-3C3 | 1'-6" | 11 Eq. Spaces |
| | X2D1-3D3 | 1'-6" | 11 Eq. Spaces |
| | X3A1-2A3 | 1'-6" | 11 Eq. Spaces |
| | X3B1-2B3 | 1'-6" | 11 Eq. Spaces |
| | X3C1-2C3 | 1'-6" | 11 Eq. Spaces |
| | X3D1-2D3 | 1'-6" | 11 Eq. Spaces |
| | X2A3-3A1 | 1'-6" | 11 Eq. Spaces |
| | X2B3-3B1 | 1'-6" | 11 Eq. Spaces |
| | X2C3-3C1 | 1'-6" | 11 Eq. Spaces |
| | X2D3-3D1 | 1'-6" | 11 Eq. Spaces |
| | X3A3-2A1 | 1'-6" | 11 Eq. Spaces |
| | X3B3-2B1 | 1'-6" | 11 Eq. Spaces |
| | X3C3-2C1 | 1'-6" | 11 Eq. Spaces |
| | X3D3-2D1 | 1'-6" | 11 Eq. Spaces |
| | X2A3-3A4 | 1'-6" | 11 Eq. Spaces |
| | X2B3-3B4 | 1'-6" | 11 Eq. Spaces |
| | X2C3-3C4 | 1'-6" | 11 Eq. Spaces |
| | X2D3-3D4 | 1'-6" | 11 Eq. Spaces |
| | X3A3-2A4 | 1'-6" | 11 Eq. Spaces |
| | X3B3-2B4 | 1'-6" | 11 Eq. Spaces |
| | X3C3-2C4 | 1'-6" | 11 Eq. Spaces |
| | X3D3-2D4 | 1'-6" | 11 Eq. Spaces |
| | X2A4-3A3 | 1'-6" | 11 Eq. Spaces |
| | X2B4-3B3 | 1'-6" | 11 Eq. Spaces |
| | X2C4-3C3 | 1'-6" | 11 Eq. Spaces |
| | X2D4-3D3 | 1'-6" | 11 Eq. Spaces |
| | X3A4-2A3 | 1'-6" | 11 Eq. Spaces |
| | X3B4-2B3 | 1'-6" | 11 Eq. Spaces |
| | X3C4-2C3 | 1'-6" | 11 Eq. Spaces |
| | X3D4-2D3 | 1'-6" | 11 Eq. Spaces |
| | X2A4-3A5 | 1'-6" | 9 Eq. Spaces |
| | X2B4-3B5 | 1'-6" | 9 Eq. Spaces |
| | X2C4-3C5 | 1'-6" | 9 Eq. Spaces |
| | X2D4-3D5 | 1'-6" | 9 Eq. Spaces |
| | X3A4-2A5 | 1'-6" | 12 Eq. Spaces |
| | X3B4-2B5 | 1'-6" | 12 Eq. Spaces |
| | X3C4-2C5 | 1'-6" | 12 Eq. Spaces |
| | X3D4-2D5 | 1'-6" | 12 Eq. Spaces |
| | X2A5-3A4 | 1'-6" | 8 Eq. Spaces |
| | X2B5-3B4 | 1'-6" | 8 Eq. Spaces |
| | X2C5-3C4 | 1'-6" | 8 Eq. Spaces |
| | X2D5-3D4 | 1'-6" | 8 Eq. Spaces |
| | X3A5-2A4 | 1'-6" | 14 Eq. Spaces |
| | X3B5-2B4 | 1'-6" | 14 Eq. Spaces |

BENT-TO-BENT DIAGONAL BRACE SCHEDULE

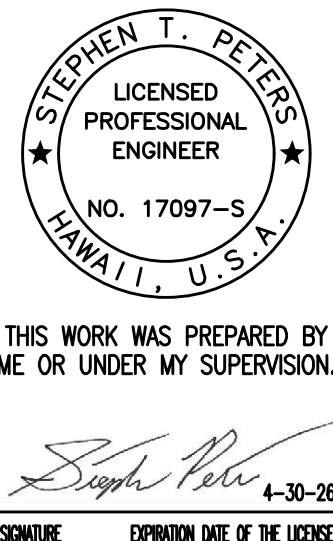
| TRESTLE NO. 2 | MEMBER ID | "A" | BATTEN PLATE SPACES |
|---------------|-----------|-------|---------------------|
| | X3C5-2C4 | 1'-6" | 14 Eq. Spaces |
| | X3D5-2D4 | 1'-6" | 14 Eq. Spaces |
| | X3A5-2A6 | 1'-6" | 9 Eq. Spaces |
| | X3B5-2B6 | 1'-6" | 9 Eq. Spaces |
| | X3C5-2C6 | 1'-6" | 9 Eq. Spaces |
| | X3D5-2D6 | 1'-6" | 9 Eq. Spaces |
| TRESTLE NO. 3 | X4A1-5A3 | 1'-6" | 11 Eq. Spaces |
| | X4B1-5B3 | 1'-6" | 11 Eq. Spaces |
| | X4C1-5C3 | 1'-6" | 11 Eq. Spaces |
| | X4D1-5D3 | 1'-6" | 11 Eq. Spaces |
| | X5A1-4A3 | 1'-6" | 11 Eq. Spaces |
| | X5B1-4B3 | 1'-6" | 11 Eq. Spaces |
| | X5C1-4C3 | 1'-6" | 11 Eq. Spaces |
| | X5D1-4D3 | 1'-6" | 11 Eq. Spaces |
| | X4A3-5A1 | 1'-6" | 11 Eq. Spaces |
| | X4B3-5B1 | 1'-6" | 11 Eq. Spaces |
| | X4C3-5C1 | 1'-6" | 11 Eq. Spaces |
| | X4D3-5D1 | 1'-6" | 11 Eq. Spaces |
| | X5A3-4A1 | 1'-6" | 11 Eq. Spaces |
| | X5B3-4B1 | 1'-6" | 11 Eq. Spaces |
| | X5C3-4C1 | 1'-6" | 11 Eq. Spaces |
| | X5D3-4D1 | 1'-6" | 11 Eq. Spaces |
| | X4A3-5A4 | 1'-6" | 11 Eq. Spaces |
| | X4B3-5B4 | 1'-6" | 11 Eq. Spaces |
| | X4C3-5C4 | 1'-6" | 11 Eq. Spaces |
| | X4D3-5D4 | 1'-6" | 11 Eq. Spaces |
| | X5A3-4A4 | 1'-6" | 11 Eq. Spaces |
| | X5B3-4B4 | 1'-6" | 11 Eq. Spaces |
| | X5C3-4C4 | 1'-6" | 11 Eq. Spaces |
| | X5D3-4D4 | 1'-6" | 11 Eq. Spaces |
| | X4A4-5A3 | 1'-6" | 11 Eq. Spaces |
| | X4B4-5B3 | 1'-6" | 11 Eq. Spaces |
| | X4C4-5C3 | 1'-6" | 11 Eq. Spaces |
| | X4D4-5D3 | 1'-6" | 11 Eq. Spaces |
| | X5A4-4A3 | 1'-6" | 11 Eq. Spaces |
| | X5B4-4B3 | 1'-6" | 11 Eq. Spaces |
| | X5C4-4C3 | 1'-6" | 11 Eq. Spaces |
| | X5D4-4D3 | 1'-6" | 11 Eq. Spaces |
| | X4A4-5A5 | 1'-6" | 11 Eq. Spaces |
| | X4B4-5B5 | 1'-6" | 11 Eq. Spaces |
| | X4C4-5C5 | 1'-6" | 11 Eq. Spaces |
| | X4D4-5D5 | 1'-6" | 11 Eq. Spaces |
| | X5A4-4A5 | 1'-6" | 11 Eq. Spaces |
| | X5B4-4B5 | 1'-6" | 11 Eq. Spaces |
| | X5C4-4C5 | 1'-6" | 11 Eq. Spaces |

BENT-TO-BENT DIAGONAL BRACE SCHEDULE

| TRESTLE NO. 3 | MEMBER ID | "A" | BATTEN PLATE SPACES |
|---------------|-----------|-------|---------------------|
| | X5D4-4D5 | 1'-6" | 11 Eq. Spaces |
| | X4A5-5A4 | 1'-6" | 11 Eq. Spaces |
| | X4B5-5B4 | 1'-6" | 11 Eq. Spaces |
| | X4C5-5C4 | 1'-6" | 11 Eq. Spaces |
| | X4D5-5D4 | 1'-6" | 11 Eq. Spaces |
| | X5A5-4A4 | 1'-6" | 11 Eq. Spaces |
| | X5B5-4B4 | 1'-6" | 11 Eq. Spaces |
| | X5C5-4C4 | 1'-6" | 11 Eq. Spaces |
| | X5D5-4D4 | 1'-6" | 11 Eq. Spaces |
| | X4A5-5A6 | 1'-6" | 11 Eq. Spaces |
| | X4B5-5B6 | 1'-6" | 11 Eq. Spaces |
| | X4C5-5C6 | 1'-6" | 11 Eq. Spaces |
| | X4D5-5D6 | 1'-6" | 11 Eq. Spaces |
| | X5A5-4A6 | 1'-6" | 11 Eq. Spaces |
| | X5B5-4B6 | 1'-6" | 11 Eq. Spaces |
| | X5C5-4C6 | 1'-6" | 11 Eq. Spaces |
| | X5D5-4D6 | 1'-6" | 11 Eq. Spaces |
| | X4A6-5A5 | 1'-6" | 11 Eq. Spaces |
| | X4B6-5B5 | 1'-6" | 11 Eq. Spaces |
| | X4C6-5C5 | 1'-6" | 11 Eq. Spaces |
| | X4D6-5D5 | 1'-6" | 11 Eq. Spaces |
| | X5A6-4A5 | 1'-6" | 11 Eq. Spaces |
| | X5B6-4B5 | 1'-6" | 11 Eq. Spaces |
| | X5C6-4C5 | 1'-6" | 11 Eq. Spaces |
| | X5D6-4D5 | 1'-6" | 11 Eq. Spaces |
| | X4A6-5A7 | 1'-6" | 13 Eq. Spaces |
| | X4B6-5B7 | 1'-6" | 13 Eq. Spaces |
| | X4C6-5C7 | 1'-6" | 13 Eq. Spaces |
| | X4D6-5D7 | 1'-6" | 13 Eq. Spaces |
| | X5A6-4A7 | 1'-6" | 11 Eq. Spaces |
| | X5B6-4B7 | 1'-6" | 11 Eq. Spaces |
| | X5C6-4C7 | 1'-6" | 11 Eq. Spaces |
| | X5D6-4D7 | 1'-6" | 11 Eq. Spaces |
| | X4A7-5A6 | 1'-6" | 14 Eq. Spaces |
| | X4B7-5B6 | 1'-6" | 14 Eq. Spaces |
| | X4C7-5C6 | 1'-6" | 14 Eq. Spaces |

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

DRAWING NAME: Z:\00_OBGOING\23-022.9-NANUE STR BR FE2-DOTHA\01 CAD\10-28-24 BID SET\NSR-S00512 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24 4:45 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DIAGONAL BRACE SCHEDULE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET NoSA5.24 OF 34 SHEETS

| | | | | | |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 97 | 280 |

BENT-TO-BENT DIAGONAL BRACE SCHEDULE

| TRESTLE NO. 3 | MEMBER ID | "A" | BATTEN PLATE SPACES |
|---------------|-----------|-------|------------------------|
| | X4D7-5D6 | 1'-6" | 14 Eq. Spaces |
| | X5A7-4A6 | 1'-6" | 10 Eq. Spaces |
| | X5B7-4B6 | 1'-6" | 10 Eq. Spaces |
| | X5C7-4C6 | 1'-6" | 10 Eq. Spaces |
| | X5D7-4D6 | 1'-6" | 10 Eq. Spaces |
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| TRESTLE NO. 4 | X6A1-7A3 | 1'-6" | 11 Eq. Spaces |
| | X6B1-7B3 | 1'-6" | 11 Eq. Spaces |
| | X6C1-7C3 | 1'-6" | 11 Eq. Spaces |
| | X6D1-7D3 | 1'-6" | 11 Eq. Spaces |
| | X7A1-6A3 | 1'-6" | 11 Eq. Spaces |
| | X7B1-6B3 | 1'-6" | 11 Eq. Spaces |
| | X7C1-6C3 | 1'-6" | 11 Eq. Spaces |
| | X7D1-6D3 | 1'-6" | 11 Eq. Spaces |
| | X6A3-7A1 | 1'-6" | 11 Eq. Spaces |
| | X6B3-7B1 | 1'-6" | 11 Eq. Spaces |
| | X6C3-7C1 | 1'-6" | 11 Eq. Spaces |
| | X6D3-7D1 | 1'-6" | 11 Eq. Spaces |
| | X7A3-6A1 | 1'-6" | 11 Eq. Spaces |
| | X7B3-6B1 | 1'-6" | 11 Eq. Spaces |
| | X7C3-6C1 | 1'-6" | 11 Eq. Spaces |
| | X7D3-6D1 | 1'-6" | 11 Eq. Spaces |
| | X6A3-7A4 | 1'-6" | 11 Eq. Spaces |
| | X6B3-7B4 | 1'-6" | 11 Eq. Spaces |
| | X6C3-7C4 | 1'-6" | 11 Eq. Spaces |
| | X6D3-7D4 | 1'-6" | 11 Eq. Spaces |
| | X7A3-6A4 | 1'-6" | 11 Eq. Spaces |
| | X7B3-6B4 | 1'-6" | 11 Eq. Spaces |
| | X7C3-6C4 | 1'-6" | 11 Eq. Spaces |
| | X7D3-6D4 | 1'-6" | 11 Eq. Spaces |
| | X6A4-7A3 | 1'-6" | 11 Eq. Spaces |
| | X6B4-7B3 | 1'-6" | 11 Eq. Spaces |
| | X6C4-7C3 | 1'-6" | 11 Eq. Spaces |
| | X6D4-7D3 | 1'-6" | 11 Eq. Spaces |
| | X7A4-6A3 | 1'-6" | 11 Eq. Spaces |
| | X7B4-6B3 | 1'-6" | 11 Eq. Spaces |
| | X7C4-6C3 | 1'-6" | 11 Eq. Spaces |
| | X7D4-6D3 | 1'-6" | 11 Eq. Spaces |

BENT-TO-BENT DIAGONAL BRACE SCHEDULE

| TRESTLE NO. 4 | MEMBER ID | "A" | BATTEN PLATE SPACES |
|---------------|-----------|-------|------------------------|
| | X6A4-7A5 | 1'-6" | 11 Eq. Spaces |
| | X6B4-7B5 | 1'-6" | 11 Eq. Spaces |
| | X6C4-7C5 | 1'-6" | 11 Eq. Spaces |
| | X6D4-7D5 | 1'-6" | 11 Eq. Spaces |
| | X7A4-6A5 | 1'-6" | 11 Eq. Spaces |
| | X7B4-6B5 | 1'-6" | 11 Eq. Spaces |
| | X7C4-6C5 | 1'-6" | 11 Eq. Spaces |
| | X7D4-6D5 | 1'-6" | 11 Eq. Spaces |
| | X6A5-7A4 | 1'-6" | 11 Eq. Spaces |
| | X6B5-7B4 | 1'-6" | 11 Eq. Spaces |
| | X6C5-7C4 | 1'-6" | 11 Eq. Spaces |
| | X6D5-7D4 | 1'-6" | 11 Eq. Spaces |
| | X7A5-6A4 | 1'-6" | 11 Eq. Spaces |
| | X7B5-6B4 | 1'-6" | 11 Eq. Spaces |
| | X7C5-6C4 | 1'-6" | 11 Eq. Spaces |
| | X7D5-6D4 | 1'-6" | 11 Eq. Spaces |
| | X6A5-7A6 | 1'-6" | 11 Eq. Spaces |
| | X6B5-7B6 | 1'-6" | 11 Eq. Spaces |
| | X6C5-7C6 | 1'-6" | 11 Eq. Spaces |
| | X6D5-7D6 | 1'-6" | 11 Eq. Spaces |
| | X7A5-6A6 | 1'-6" | 11 Eq. Spaces |
| | X7B5-6B6 | 1'-6" | 11 Eq. Spaces |
| | X7C5-6C6 | 1'-6" | 11 Eq. Spaces |
| | X7D5-6D6 | 1'-6" | 11 Eq. Spaces |
| | X6A6-7A5 | 1'-6" | 11 Eq. Spaces |
| | X6B6-7B5 | 1'-6" | 11 Eq. Spaces |
| | X6C6-7C5 | 1'-6" | 11 Eq. Spaces |
| | X6D6-7D5 | 1'-6" | 11 Eq. Spaces |
| | X7A6-6A5 | 1'-6" | 11 Eq. Spaces |
| | X7B6-6B5 | 1'-6" | 11 Eq. Spaces |
| | X7C6-6C5 | 1'-6" | 11 Eq. Spaces |
| | X7D6-6D5 | 1'-6" | 11 Eq. Spaces |
| | X6A6-7A7 | 1'-6" | 16 Eq. Spaces |
| | X6B6-7B7 | 1'-6" | 16 Eq. Spaces |
| | X6C6-7C7 | 1'-6" | 16 Eq. Spaces |
| | X6D6-7D7 | 1'-6" | 16 Eq. Spaces |
| | X6A7-7A7 | 1'-6" | 9 Eq. Spaces |
| | X6B7-7B7 | 1'-6" | 9 Eq. Spaces |
| | X6C7-7C7 | 1'-6" | 9 Eq. Spaces |
| | X6D7-7D7 | 1'-6" | 9 Eq. Spaces |
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|------------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| | DRAWN BY | |
| | DESIGNED BY | |
| | NOTED BY | |
| NOTE BOOK | QUANTITIES BY | |
| | CHECKED BY | |
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| No. | | |

DRAWING NAME: Z:\00_OBGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\10-28-24 BID SET\NSR-S00512 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24 4:44 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

4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

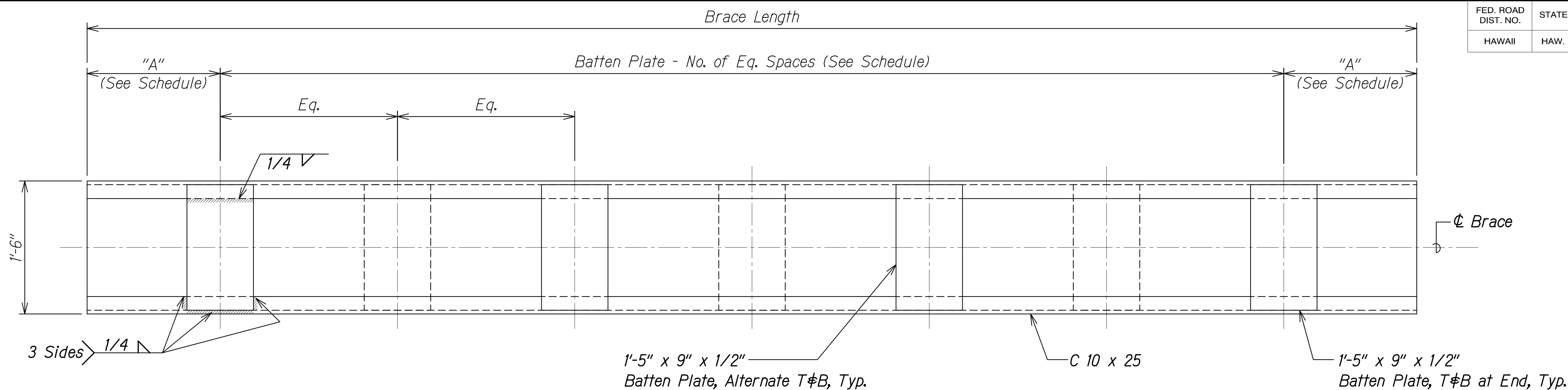
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DIAGONAL BRACE SCHEDULE

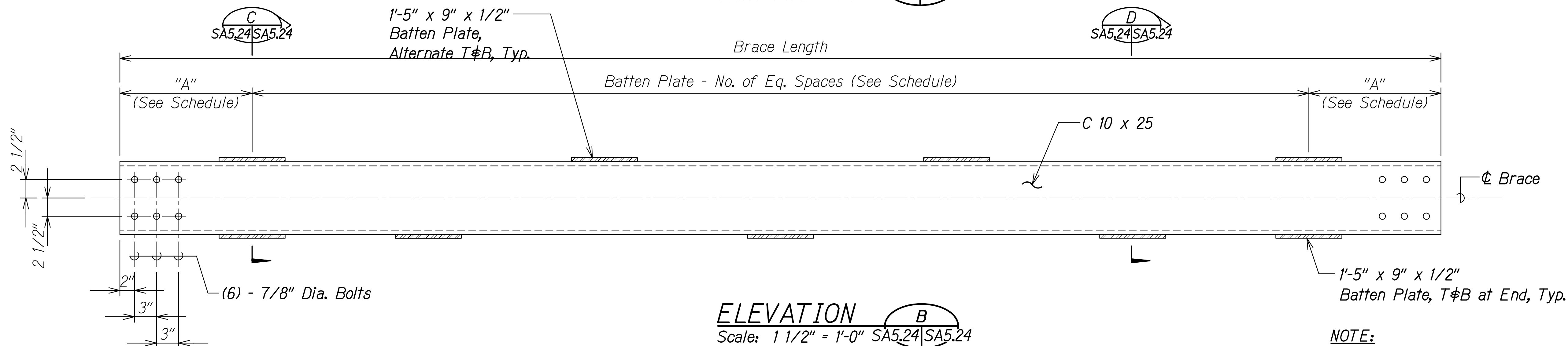
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSA5.25 OF 34 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 98 | 280 |

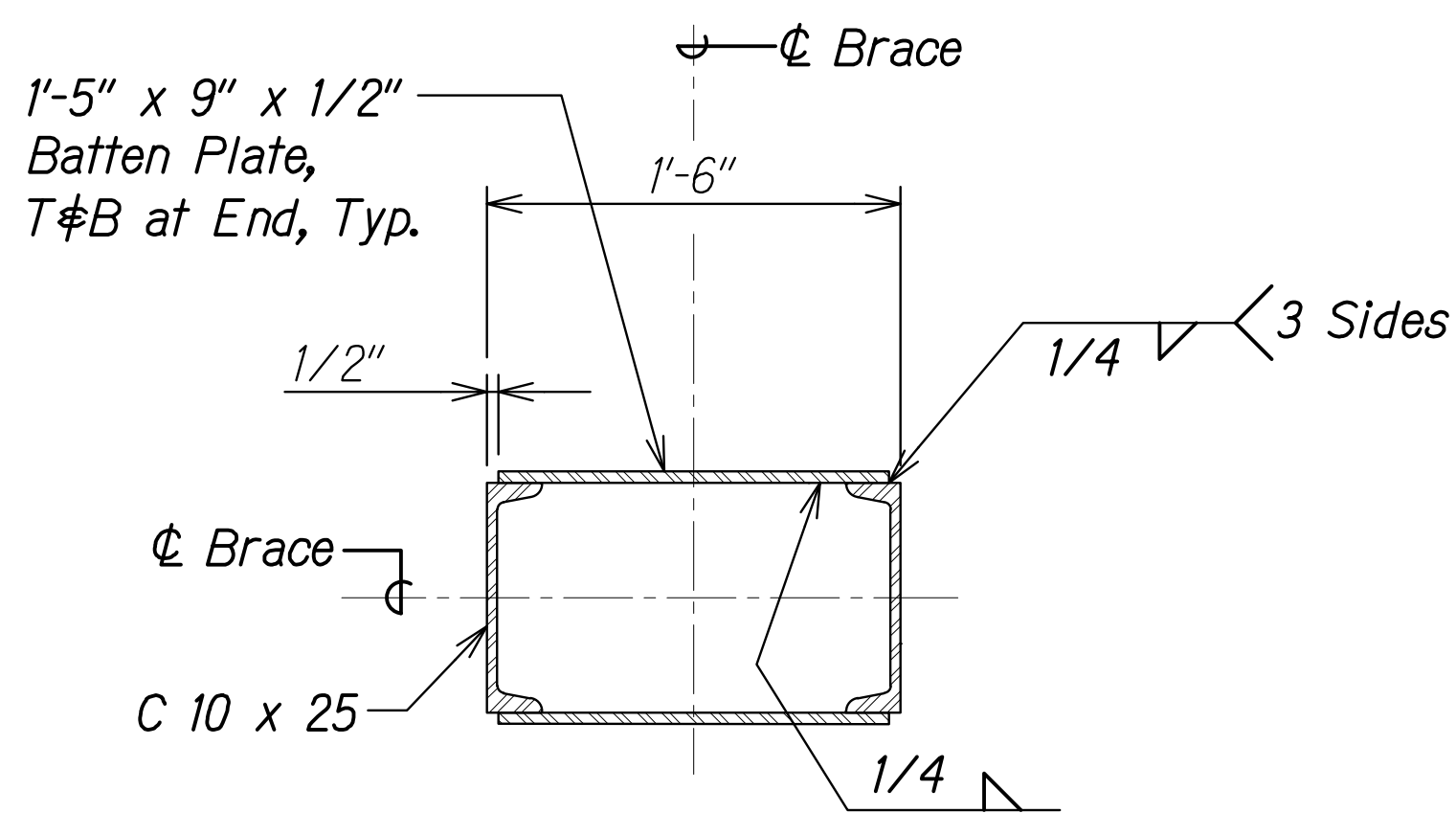


PLAN
Scale: 1 1/2" = 1'-0" SA5.24 SA5.24

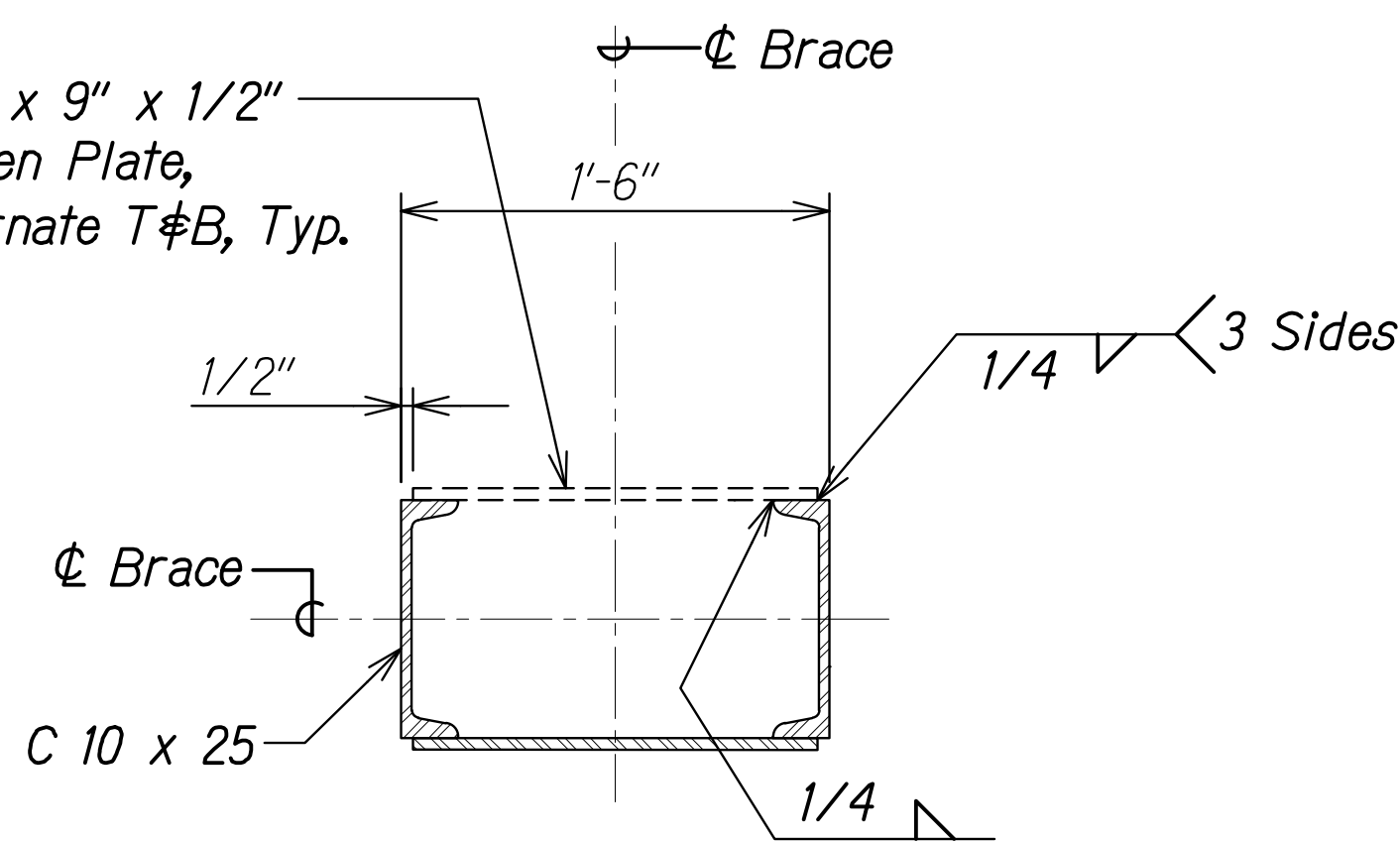


NOTE:

Steel detailer to determine all lengths not shown on brace plans and schedule.



SECTION C
Scale: 1 1/2" = 1'-0" SA5.24 SA5.24



SECTION D
Scale: 1 1/2" = 1'-0" SA5.24 SA5.24

TRESTLE NO. 5 DIAGONAL BRACE

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 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**DIAGONAL BRACE PLAN,
ELEVATION AND SECTION**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSA5.26 OF 34 SHEETS

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 99 | 280 |

| TRESTLE NO. 5 DIAGONAL BRACE SCHEDULE | | | |
|---------------------------------------|-----------|-------|----------------------------|
| TRESTLE NO. 5 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | X8A1-9A3 | 1'-6" | 12 Eq. Spaces <div>1</div> |
| | X8B1-9B3 | 1'-6" | 12 Eq. Spaces <div>1</div> |
| | X8C1-9C3 | 1'-6" | 12 Eq. Spaces <div>1</div> |
| | X8D1-9D3 | 1'-6" | 12 Eq. Spaces <div>1</div> |
| | X9A1-8A3 | 1'-6" | 12 Eq. Spaces |
| | X9B1-8B3 | 1'-6" | 12 Eq. Spaces |
| | X9C1-8C3 | 1'-6" | 12 Eq. Spaces |
| | X9D1-8D3 | 1'-6" | 12 Eq. Spaces |
| | X8A3-9A1 | 1'-6" | 10 Eq. Spaces |
| | X8B3-9B1 | 1'-6" | 10 Eq. Spaces |
| | X8C3-9C1 | 1'-6" | 10 Eq. Spaces |
| | X8D3-9D1 | 1'-6" | 10 Eq. Spaces |
| | X9A3-8A1 | 1'-6" | 12 Eq. Spaces |
| | X9B3-8B1 | 1'-6" | 12 Eq. Spaces |
| | X9C3-8C1 | 1'-6" | 12 Eq. Spaces |
| | X9D3-8D1 | 1'-6" | 12 Eq. Spaces |
| | X8A4-9A3 | 1'-6" | 12 Eq. Spaces <div>1</div> |
| | X8B4-9B3 | 1'-6" | 12 Eq. Spaces <div>1</div> |
| | X8C4-9C3 | 1'-6" | 12 Eq. Spaces <div>1</div> |
| | X8D4-9D3 | 1'-6" | 12 Eq. Spaces <div>1</div> |
| | X9A3-8A4 | 1'-6" | 12 Eq. Spaces |
| | X9B3-8B4 | 1'-6" | 12 Eq. Spaces |
| | X9C3-8C4 | 1'-6" | 12 Eq. Spaces |
| | X9D3-8D4 | 1'-6" | 12 Eq. Spaces |
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|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| | DRAWN BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| NOTE BOOK | CHECKED BY | |
| | No. | |

DRAWING NAME: Z:\00_OINGONG\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\12-06-24 ADD\NSR-SAG512 DIAG BRACE DTLS ADD2.DWG PLOT TIME: 12-03-24, 10:09 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

4-30-26

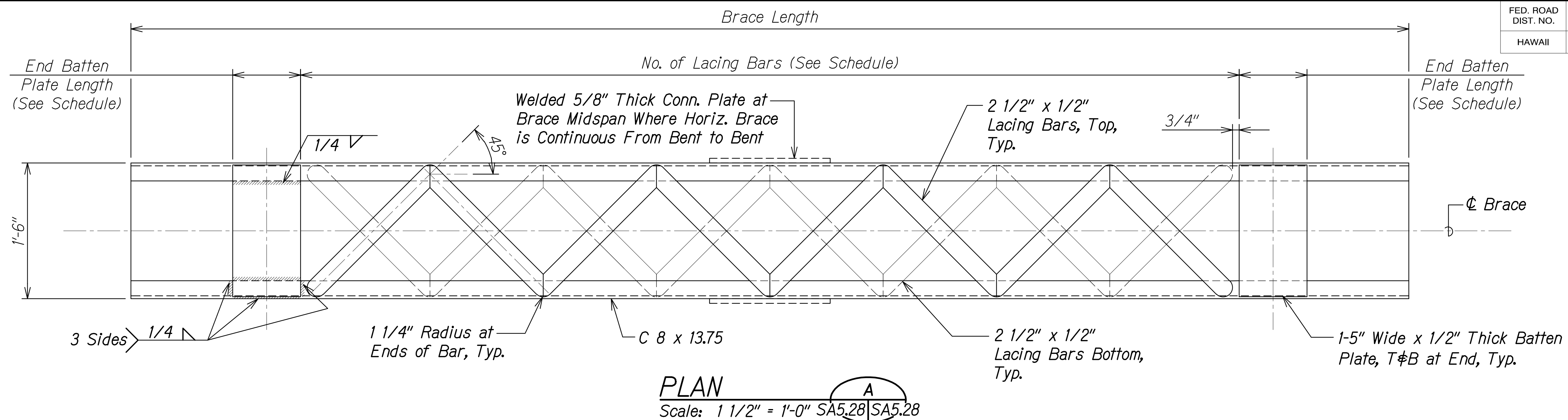
SIGNATURE

EXPIRATION DATE OF THE LICENSE

| | |
|---|----------------------------------|
| 12/6/24 | <div>1</div> Revised Table Value |
| DATE | REVISION |
| <div>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</div> <div>DIAGONAL BRACE SCHEDULE</div> <div>HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024</div> | |
| SHEET NoSA5.27 OF 34 SHEETS | |

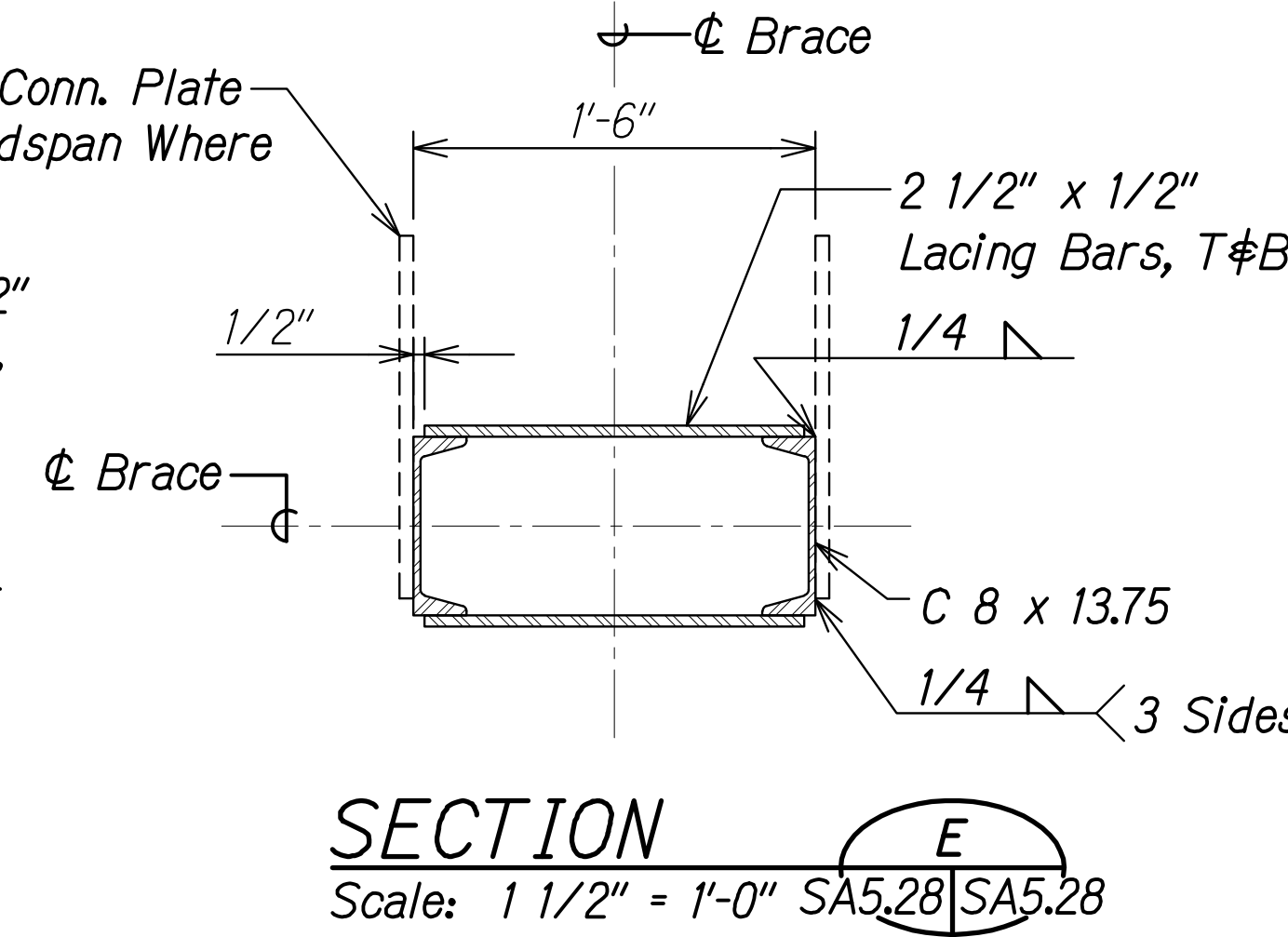
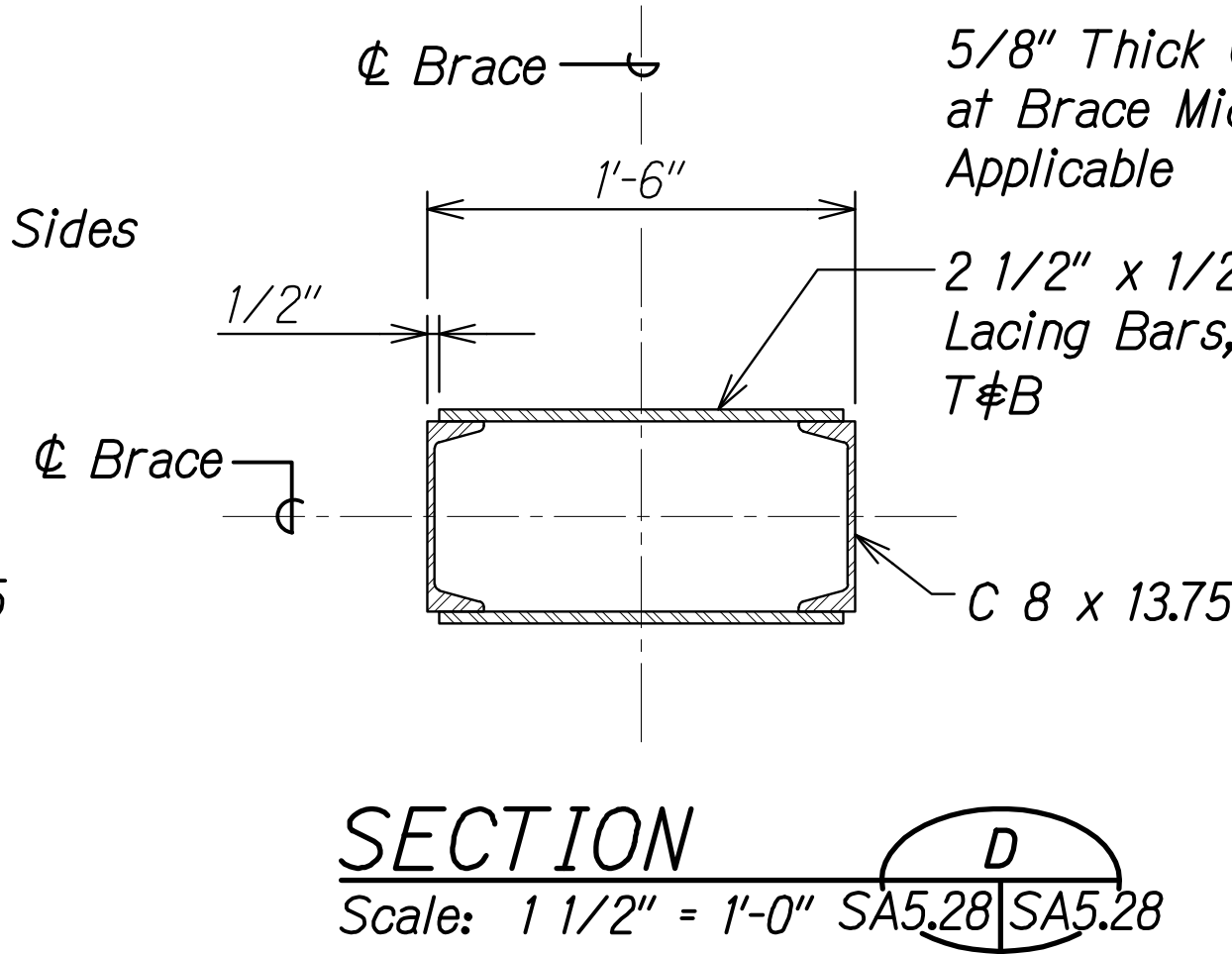
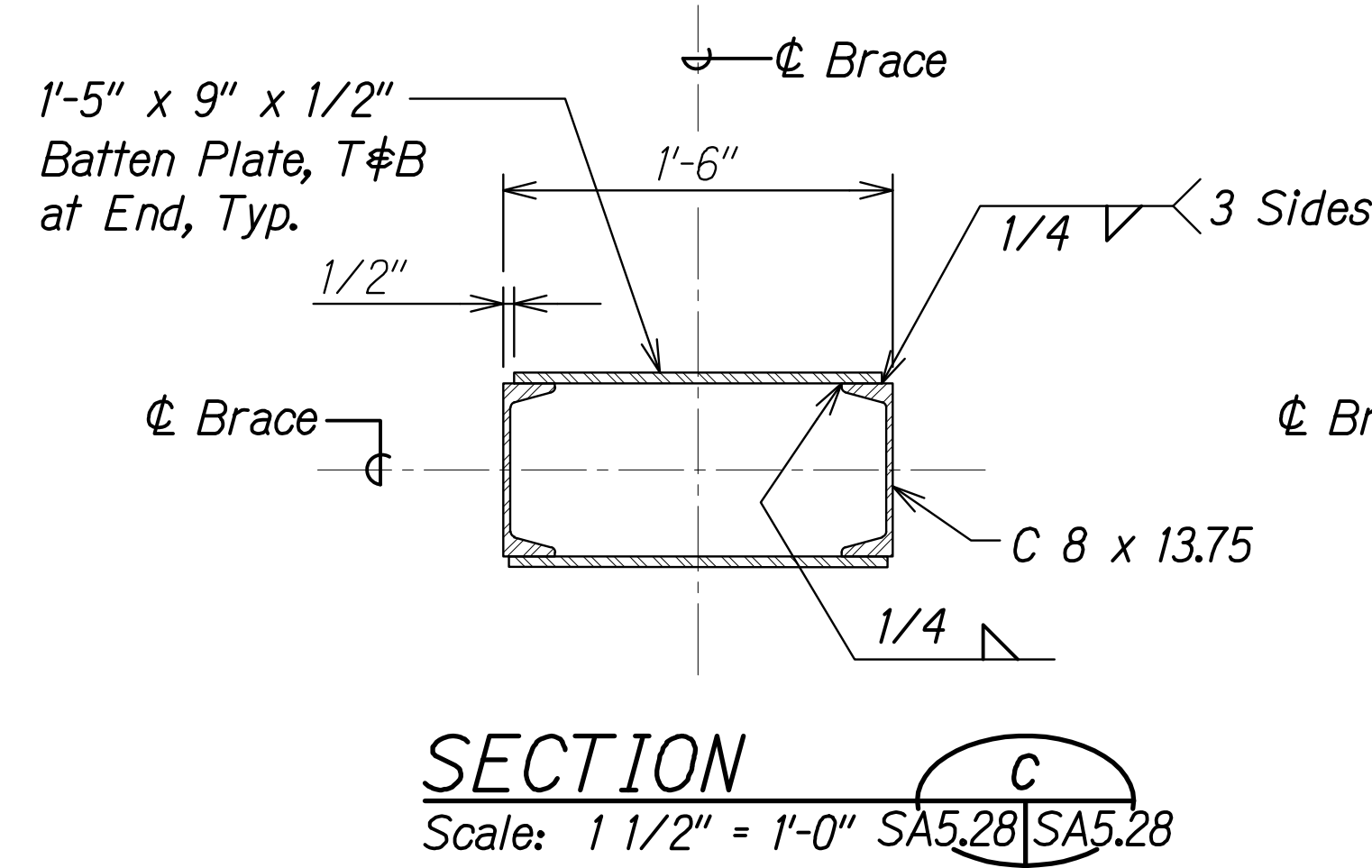
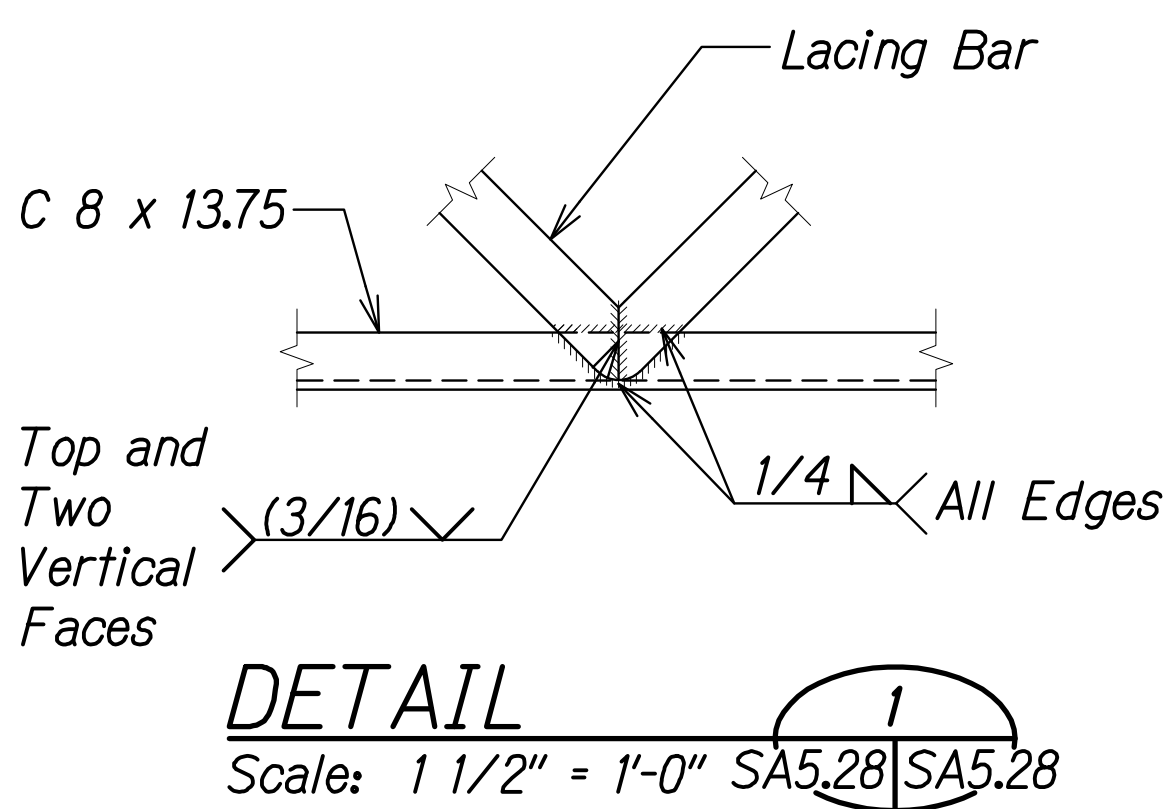
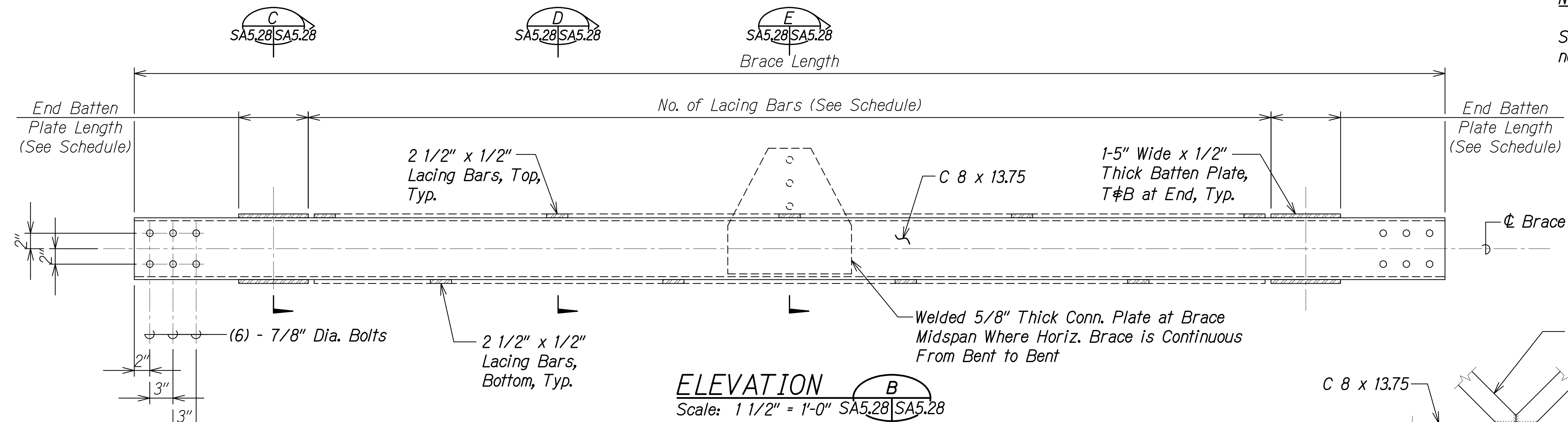
ADD. 99

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 100 | 280 |



NOTE:

Steel detailer to determine all lengths not shown on brace plans and schedule.



BENT-TO-BENT HORIZONTAL BRACE

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: Stephen Peters
4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**HORIZONTAL BRACE PLAN,
ELEVATION AND SECTION**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

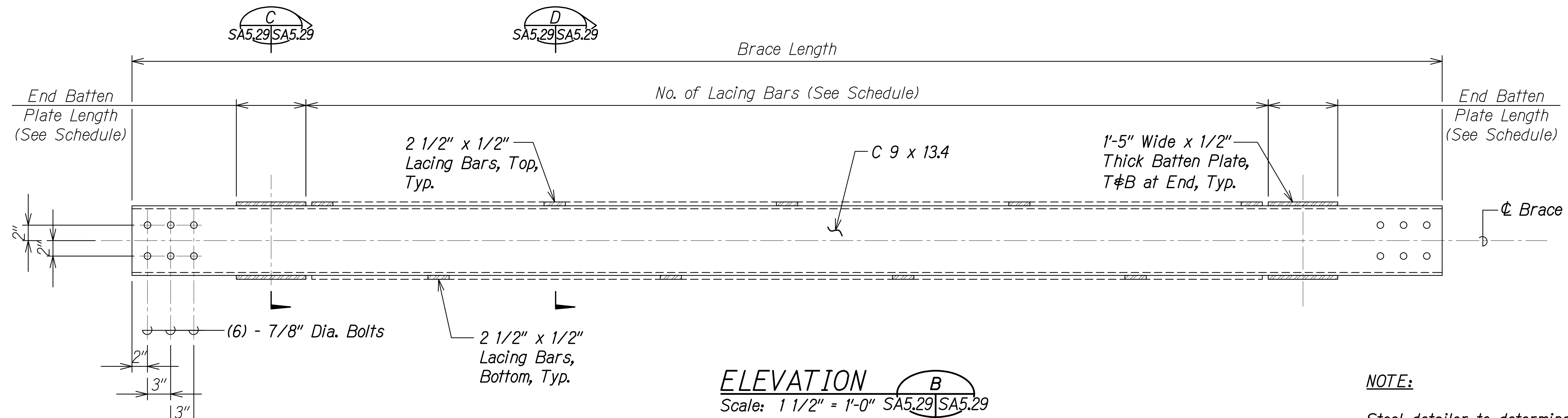
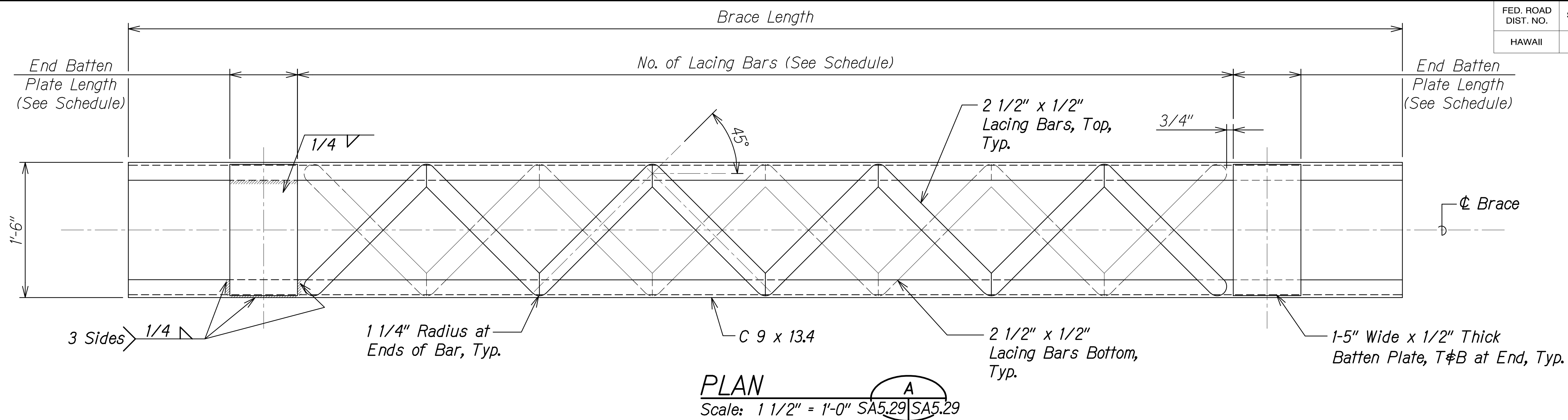
Scale: As Noted Date: Oct. 2024

SHEET NoSA5.28 OF 34 SHEETS

| | |
|-------------------|-------|
| DATE | _____ |
| SURVEY PLOTTED BY | _____ |
| PLAN | _____ |
| DESIGNED BY | _____ |
| NOTE BOOK | _____ |
| QUANTITIES BY | _____ |
| CHECKED BY | _____ |
| No. | _____ |

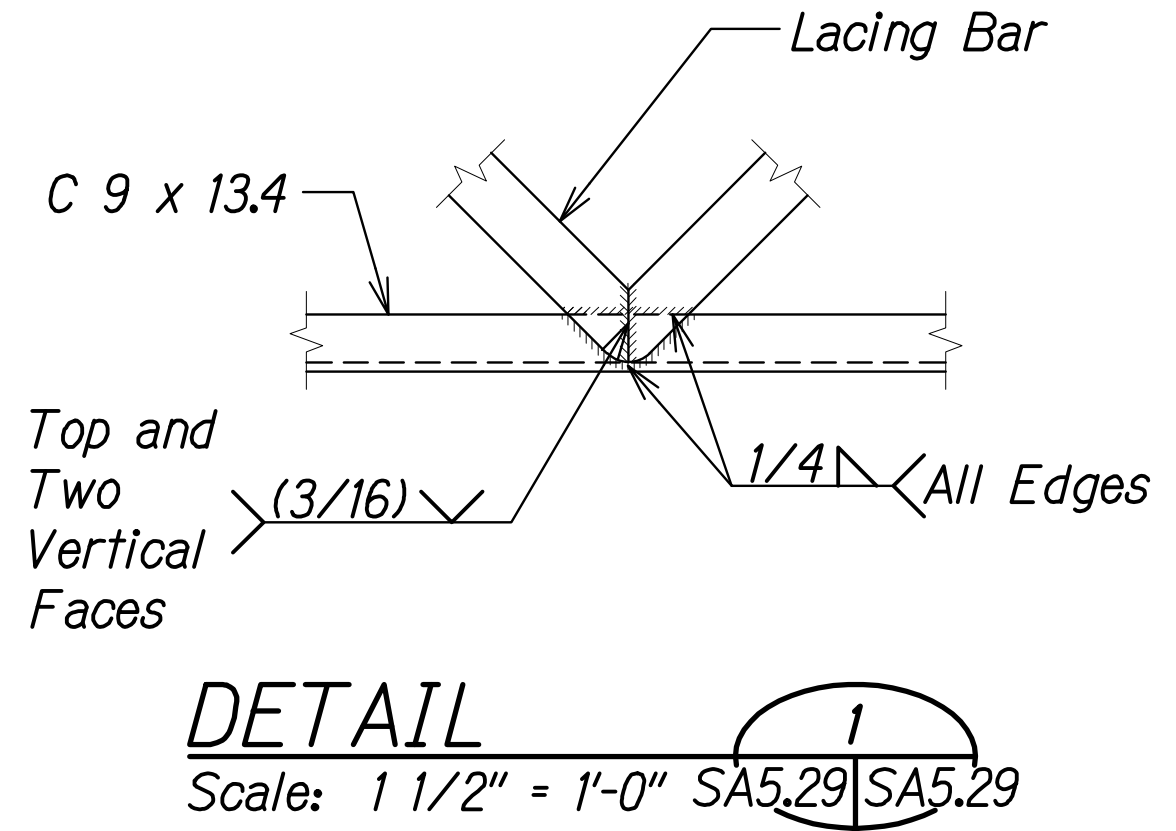
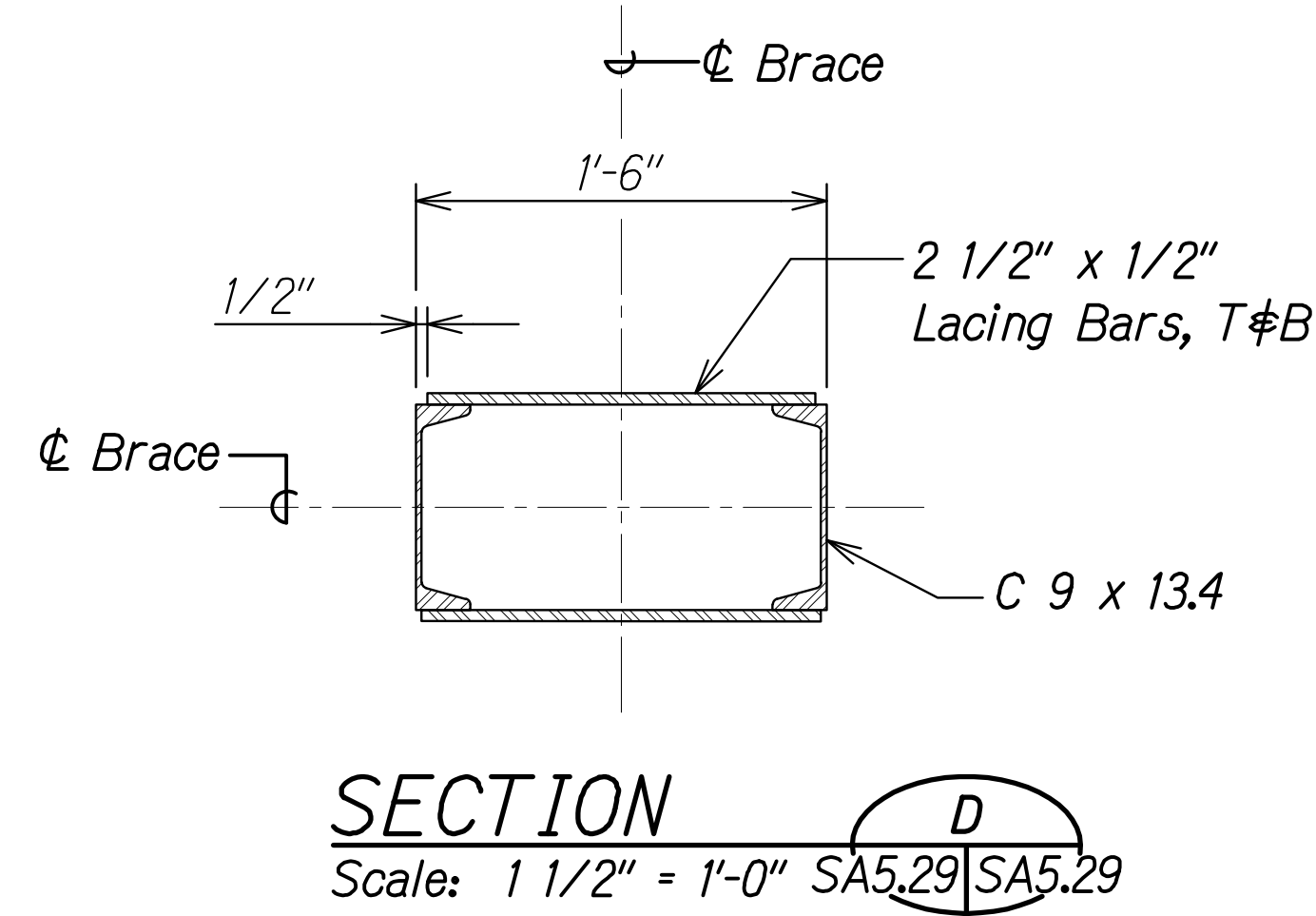
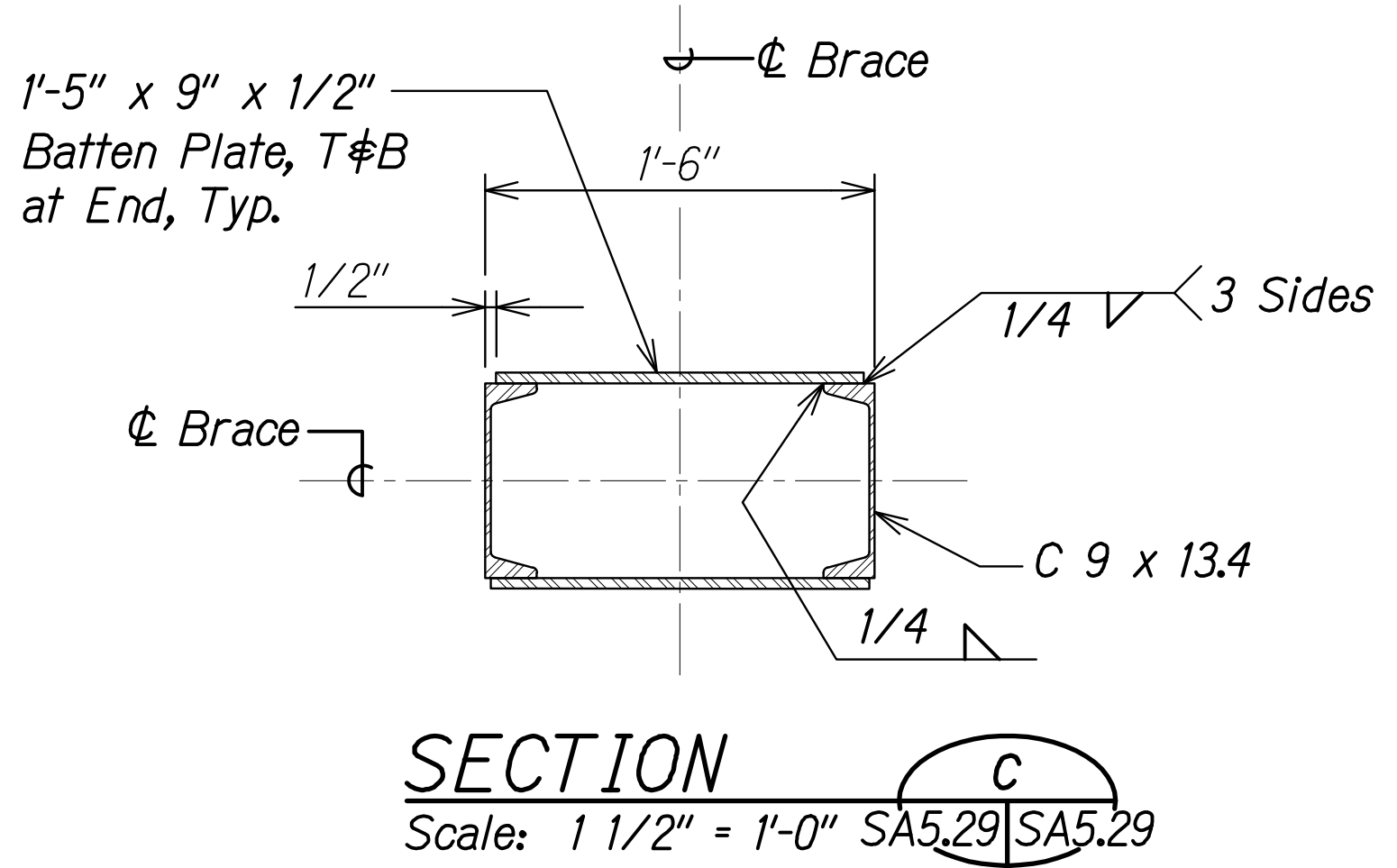
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| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 101 | 280 |



NOTE:

Steel detailer to determine all lengths not shown on brace plans and schedule.



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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature

4-30-26

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HORIZONTAL BRACE PLAN, ELEVATION AND SECTION

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET NoSA5.29 OF 34 SHEETS

TRESTLE NO. 4 BOTTOM HORIZONTAL BRACE

| | | | | | |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 102 | 280 |

BENT-TO-BENT HORIZONTAL BRACE SCHEDULE

| | | | | | | | | | | | |
|---------------|-----------|----------------------------|-----------------------|---------------|-----------|----------------------------|-----------------------|---------------|-----------|----------------------------|-----------------------|
| TRESTLE NO. 2 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars | TRESTLE NO. 3 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars | TRESTLE NO. 4 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars |
| | H2A3-3A3 | 1'-2" | 26 | | H4A3-5A3 | 1'-2" | 26 | | H6A3-7A3 | 1'-2" | 26 |
| | H2B3-3B3 | 1'-2" | 26 | | H4B3-5B3 | 1'-2" | 26 | | H6B3-7B3 | 1'-2" | 26 |
| | H2C3-3C3 | 1'-2" | 26 | | H4C3-5C3 | 1'-2" | 26 | | H6C3-7C3 | 1'-2" | 26 |
| | H2D3-3D3 | 1'-2" | 26 | | H4D3-5D3 | 1'-2" | 26 | | H6D3-7D3 | 1'-2" | 26 |
| | H2A4-3A4 | 1'-2" | 26 | | H4A4-5A4 | 1'-2" | 26 | | H6A4-7A4 | 1'-2" | 26 |
| | H2B4-3B4 | 1'-2" | 26 | | H4B4-5B4 | 1'-2" | 26 | | H6B4-7B4 | 1'-2" | 26 |
| | H2C4-3C4 | 1'-2" | 26 | | H4C4-5C4 | 1'-2" | 26 | | H6C4-7C4 | 1'-2" | 26 |
| | H2D4-3D4 | 1'-2" | 26 | | H4D4-5D4 | 1'-2" | 26 | | H6D4-7D4 | 1'-2" | 26 |
| | H2A5-3A5 | 0'-8" | 28 | | H4A5-5A5 | 1'-2" | 26 | | H6A5-7A5 | 1'-2" | 26 |
| | H2B5-3B5 | 0'-8" | 28 | | H4B5-5B5 | 1'-2" | 26 | | H6B5-7B5 | 1'-2" | 26 |
| | H2C5-3C5 | 0'-8" | 28 | | H4C5-5C5 | 1'-2" | 26 | | H6C5-7C5 | 1'-2" | 26 |
| | H2D5-3D5 | 0'-8" | 28 | | H4D5-5D5 | 1'-2" | 26 | | H6D5-7D5 | 1'-2" | 26 |
| | H2A5-3A6 | 1'-3" | 16 | | H4A6-5A6 | 1'-2" | 26 | | H6A6-7A6 | 1'-2" | 26 |
| | H2B5-3B6 | 1'-3" | 16 | | H4B6-5B6 | 1'-2" | 26 | | H6B6-7B6 | 1'-2" | 26 |
| | H2C5-3C6 | 1'-3" | 16 | | H4C6-5C6 | 1'-2" | 26 | | H6C6-7C6 | 1'-2" | 26 |
| | H2D5-3D6 | 1'-3" | 16 | | H4D6-5D6 | 1'-2" | 26 | | H6D6-7D6 | 1'-2" | 26 |
| | H3A6-2A5 | 1'-3" | 16 | | H4A7-5A7 | 1'-4" | 26 | TRESTLE NO. 5 | | | |
| | H3B6-2B5 | 1'-3" | 16 | | H4B7-5B7 | 1'-4" | 26 | | H8A3-9A3 | 1'-2" | 26 |
| | H3C6-2C5 | 1'-3" | 16 | | H4C7-5C7 | 1'-4" | 26 | | H8B3-9B3 | 1'-2" | 26 |
| | H3D6-2D5 | 1'-3" | 16 | | H4D7-5D7 | 1'-4" | 26 | | H8C3-9C3 | 1'-2" | 26 |
| | | | | | H4A7-5A8 | 1'-0" | 14 | | H8D3-9D3 | 1'-2" | 26 |
| | | | | | H4B7-5B8 | 1'-0" | 14 | | | | |
| | | | | | H4C7-5C8 | 1'-0" | 14 | | | | |
| | | | | | H4D7-5D8 | 1'-0" | 14 | | | | |
| | | | | | H5A8-4A7 | 1'-4" | 10 | | | | |
| | | | | | H5B8-4B7 | 1'-4" | 10 | | | | |
| | | | | | H5C8-4C7 | 1'-4" | 10 | | | | |
| | | | | | H5D8-4D7 | 1'-4" | 10 | | | | |
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TRESTLE NO. 4 BOTTOM
HORIZONTAL BRACE SCHEDULE


| | | | |
|---------------|-----------|----------------------------|-----------------------|
| TRESTLE NO. 4 | MEMBER ID | End Batten Plate Length | No. of Lacing Bars |
| | H6A8-7A6 | 1'-2" | 22 |
| | H6B8-7B6 | 1'-2" | 22 |
| | H6C8-7C6 | 1'-2" | 22 |
| | H6D8-7D6 | 1'-2" | 22 |
| | | | |
| | H7A6-6A8 | 1'-0" | 22 |
| | H7B6-6B8 | 1'-0" | 22 |
| | H7C6-6C8 | 1'-0" | 22 |
| | H7D6-6D8 | 1'-0" | 22 |
| | | | |
| | | | |

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOTHA\01 CAD\10-28-24 BID SET\NSR-S00512 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24 4:47 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 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HORIZONTAL BRACE SCHEDULE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSA5.30 OF 34 SHEETS

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 104 | 280 |

| BENT VERTICAL BRACE SCHEDULE | | | |
|------------------------------|-----------|-------|---------------------|
| BENT NO. 1 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | V12-3 | 1'-6" | 7 Eq. Spaces |
| | | | |
| | | | |
| | | | |
| BENT NO. 2 | V23-4 | 1'-6" | 8 Eq. Spaces |
| | V24-5 | 1'-6" | 5 Eq. Spaces |
| | | | |
| | | | |
| | | | |
| BENT NO. 3 | V33-4 | 1'-6" | 8 Eq. Spaces |
| | V34-5 | 1'-6" | 8 Eq. Spaces |
| | V35-6 | 1'-6" | 5 Eq. Spaces |
| | | | |
| | | | |
| BENT NO. 4 | V43-4 | 1'-6" | 8 Eq. Spaces |
| | V44-5 | 1'-6" | 8 Eq. Spaces |
| | V45-6 | 1'-6" | 7 Eq. Spaces |
| | V46-7 | 1'-6" | 10 Eq. Spaces |
| | | | |
| BENT NO. 5 | V53-4 | 1'-6" | 8 Eq. Spaces |
| | V54-5 | 1'-6" | 8 Eq. Spaces |
| | V55-6 | 1'-6" | 7 Eq. Spaces |
| | V57-8 | 1'-6" | 9 Eq. Spaces |
| | | | |

| BENT VERTICAL BRACE SCHEDULE | | | |
|------------------------------|-----------|-------|---------------------|
| BENT NO. 6 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | V63-4 | 1'-6" | 8 Eq. Spaces |
| | V64-5 | 1'-6" | 8 Eq. Spaces |
| | V65-6 | 1'-6" | 7 Eq. Spaces |
| | V67-8 | 1'-6" | 9 Eq. Spaces |
| BENT NO. 7 | V73-4 | 1'-6" | 8 Eq. Spaces |
| | V74-5 | 1'-6" | 8 Eq. Spaces |
| | V75-6 | 1'-6" | 7 Eq. Spaces |
| | | | |
| | | | |
| BENT NO. 8 | V83-4 | 1'-6" | 8 Eq. Spaces |
| | | | |
| | | | |
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|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| | DRAWN BY | |
| | TRACED BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| NOTE BOOK | | |
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| No. | | |
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DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\10-28-24 BID SET\NSR-SA0512 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:48 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

4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

VERTICAL BRACE SCHEDULE

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

Scale: As Noted

Date: Oct. 2024

SHEET NoSA5.32 OF 34 SHEETS

104

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 106 | 280 |

| BENT VERTICAL BRACE SCHEDULE | | | |
|------------------------------|-----------|-------|---------------------|
| TRESTLE NO. 2 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | V23A1-3 | 1'-6" | 6 Eq. Spaces |
| | V23B1-3 | 1'-6" | 6 Eq. Spaces |
| | V23C1-3 | 1'-6" | 6 Eq. Spaces |
| | V23D1-3 | 1'-6" | 6 Eq. Spaces |
| | V23A3-4 | 1'-6" | 6 Eq. Spaces |
| | V23B3-4 | 1'-6" | 6 Eq. Spaces |
| | V23C3-4 | 1'-6" | 6 Eq. Spaces |
| | V23D3-4 | 1'-6" | 6 Eq. Spaces |
| | V23A4-5 | 1'-6" | 5 Eq. Spaces |
| | V23B4-5 | 1'-6" | 5 Eq. Spaces |
| | V23C4-5 | 1'-6" | 5 Eq. Spaces |
| | V23D4-5 | 1'-6" | 5 Eq. Spaces |
| | | | |
| | | | |
| TRESTLE NO. 3 | V45A1-3 | 1'-6" | 6 Eq. Spaces |
| | V45B1-3 | 1'-6" | 6 Eq. Spaces |
| | V45C1-3 | 1'-6" | 6 Eq. Spaces |
| | V45D1-3 | 1'-6" | 6 Eq. Spaces |
| | V45A3-4 | 1'-6" | 6 Eq. Spaces |
| | V45B3-4 | 1'-6" | 6 Eq. Spaces |
| | V45C3-4 | 1'-6" | 6 Eq. Spaces |
| | V45D3-4 | 1'-6" | 6 Eq. Spaces |
| | V45A4-5 | 1'-6" | 6 Eq. Spaces |
| | V45B4-5 | 1'-6" | 6 Eq. Spaces |
| | V45C4-5 | 1'-6" | 6 Eq. Spaces |
| | V45D4-5 | 1'-6" | 6 Eq. Spaces |
| | V45A5-6 | 1'-6" | 6 Eq. Spaces |
| | V45B5-6 | 1'-6" | 6 Eq. Spaces |
| | V45C5-6 | 1'-6" | 6 Eq. Spaces |
| | V45D5-6 | 1'-6" | 6 Eq. Spaces |
| | V45A6-7 | 1'-6" | 7 Eq. Spaces |
| | V45B6-7 | 1'-6" | 7 Eq. Spaces |
| | V45C6-7 | 1'-6" | 7 Eq. Spaces |
| | V45D6-7 | 1'-6" | 7 Eq. Spaces |
| | V45A7-8 | 1'-6" | 5 Eq. Spaces |
| | V45B7-8 | 1'-6" | 5 Eq. Spaces |
| | V45C7-8 | 1'-6" | 5 Eq. Spaces |
| | V45D7-8 | 1'-6" | 5 Eq. Spaces |

| BENT VERTICAL BRACE SCHEDULE | | | |
|------------------------------|-----------|-------|---------------------|
| TRESTLE NO. 4 | MEMBER ID | "A" | BATTEN PLATE SPACES |
| | V67A1-3 | 1'-6" | 6 Eq. Spaces |
| | V67B1-3 | 1'-6" | 6 Eq. Spaces |
| | V67C1-3 | 1'-6" | 6 Eq. Spaces |
| | V67D1-3 | 1'-6" | 6 Eq. Spaces |
| | V67A3-4 | 1'-6" | 6 Eq. Spaces |
| | V67B3-4 | 1'-6" | 6 Eq. Spaces |
| | V67C3-4 | 1'-6" | 6 Eq. Spaces |
| | V67D3-4 | 1'-6" | 6 Eq. Spaces |
| | V67A4-5 | 1'-6" | 6 Eq. Spaces |
| | V67B4-5 | 1'-6" | 6 Eq. Spaces |
| | V67C4-5 | 1'-6" | 6 Eq. Spaces |
| | V67D4-5 | 1'-6" | 6 Eq. Spaces |
| | V67A5-6 | 1'-6" | 6 Eq. Spaces |
| | V67B5-6 | 1'-6" | 6 Eq. Spaces |
| | V67C5-6 | 1'-6" | 6 Eq. Spaces |
| | V67D5-6 | 1'-6" | 6 Eq. Spaces |
| | | | |
| TRESTLE NO. 5 | V89A1-3 | 1'-6" | 6 Eq. Spaces |
| | V89B1-3 | 1'-6" | 6 Eq. Spaces |
| | V89C1-3 | 1'-6" | 6 Eq. Spaces |
| | V89D1-3 | 1'-6" | 6 Eq. Spaces |
| | V89A3-4 | 1'-6" | 7 Eq. Spaces |
| | V89B3-4 | 1'-6" | 7 Eq. Spaces |
| | V89C3-4 | 1'-6" | 7 Eq. Spaces |
| | V89D3-4 | 1'-6" | 7 Eq. Spaces |

| | | |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| | DRAWN BY | |
| | DESIGNED BY | |
| | NOTED BY | |
| NOTE BOOK | QUANTITIES BY | |
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DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-S00512 DIAG BRACE DTL5.DWG PLOT TIME: 10-28-24 4:49 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

4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

VERTICAL BRACE SCHEDULE

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

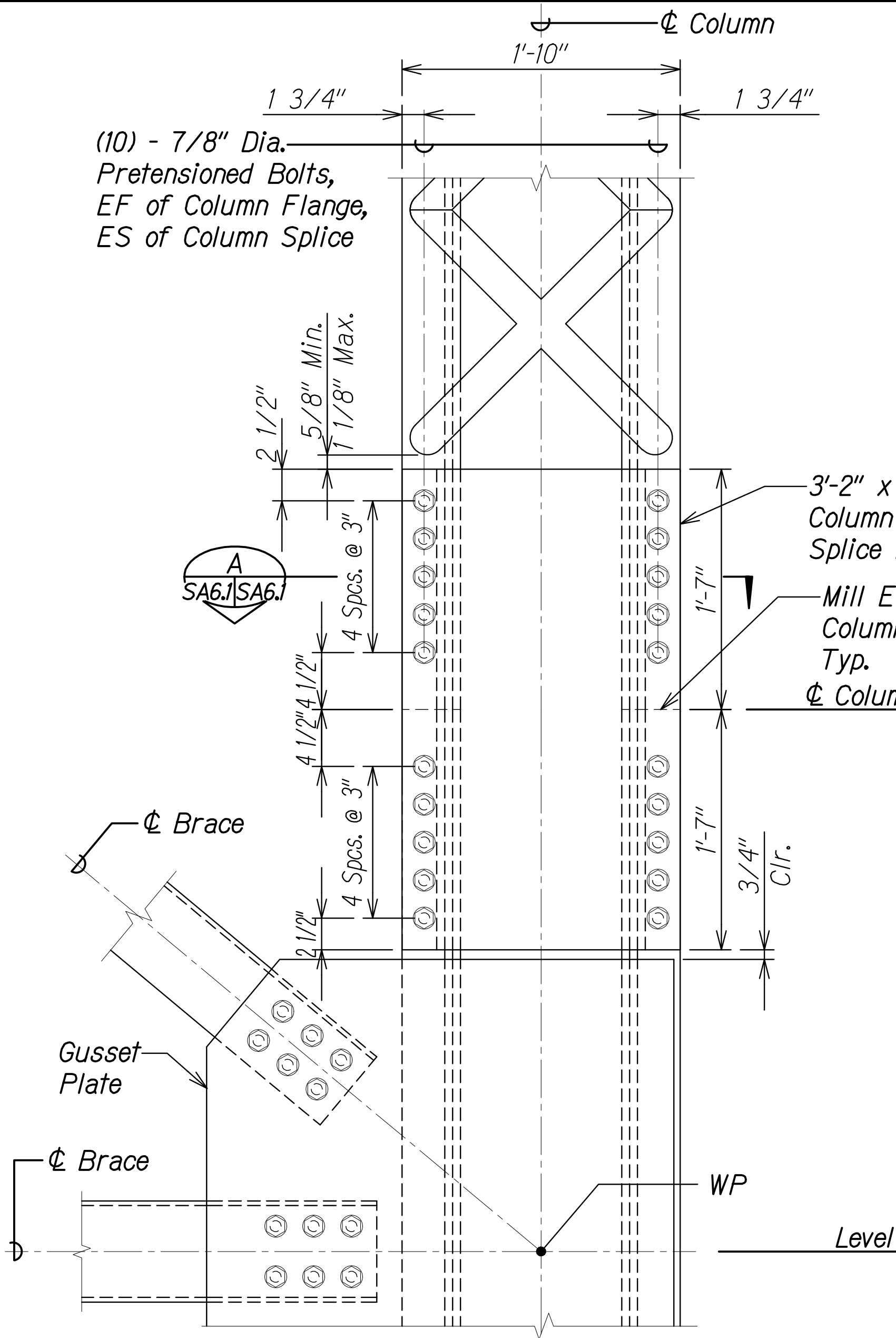
Federal Aid Project No. BR-019-2(077)

Scale: As Noted

Date: Oct. 2024

SHEET NoSA5.34 OF 34 SHEETS

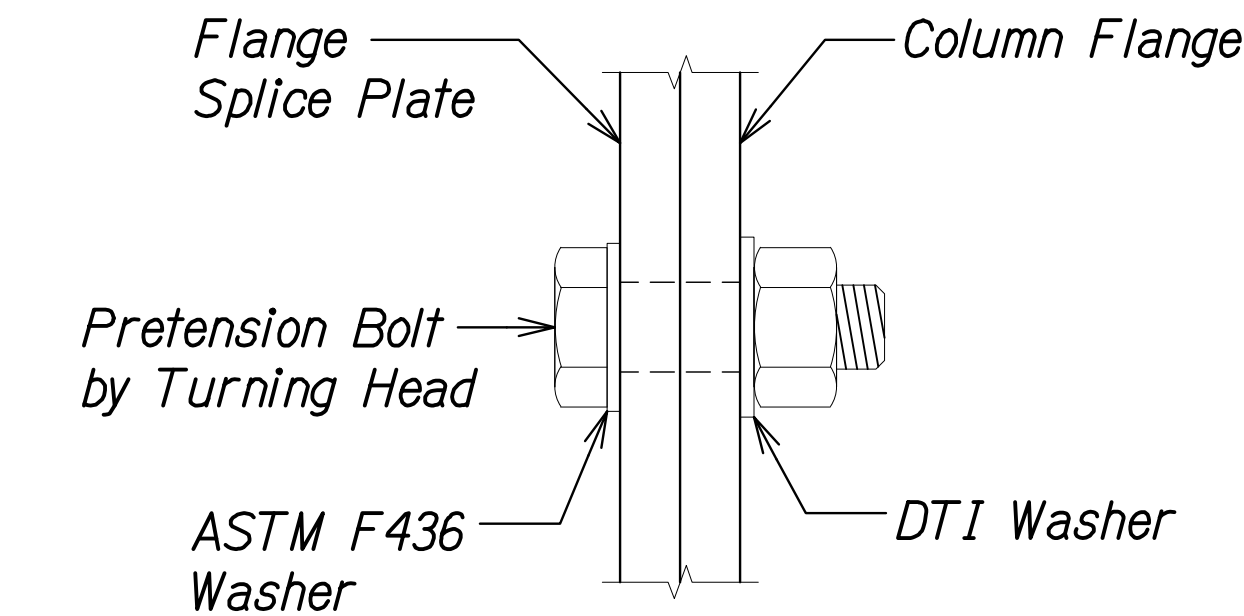
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 107 | 280 |



COLUMN FLANGE SPLICE - CONNECTION DETAIL

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

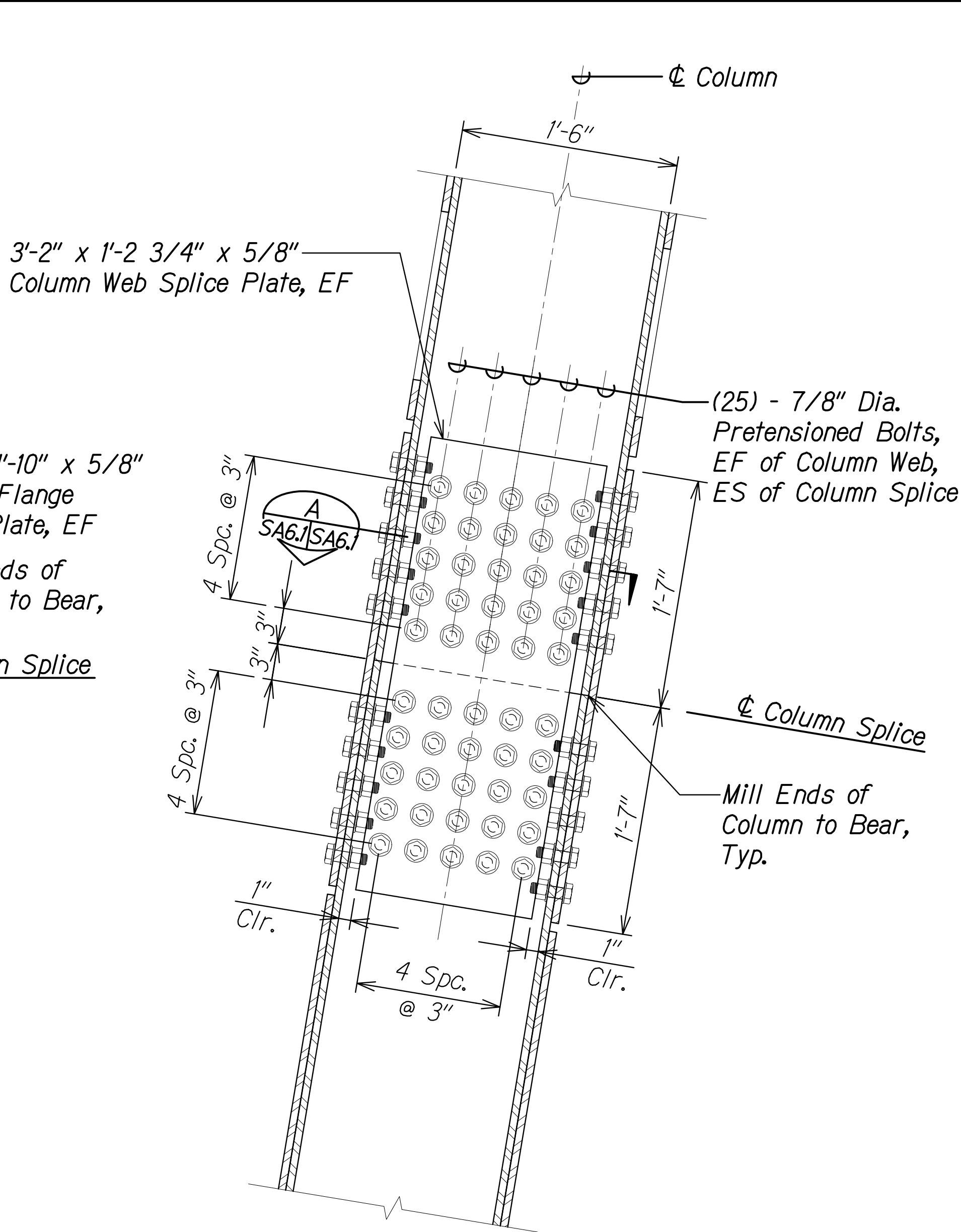
1
SA6.1 SA6.1



COLUMN FLANGE SPLICE BOLT CONNECTION DETAIL

Scale: 6" = 1'-0"

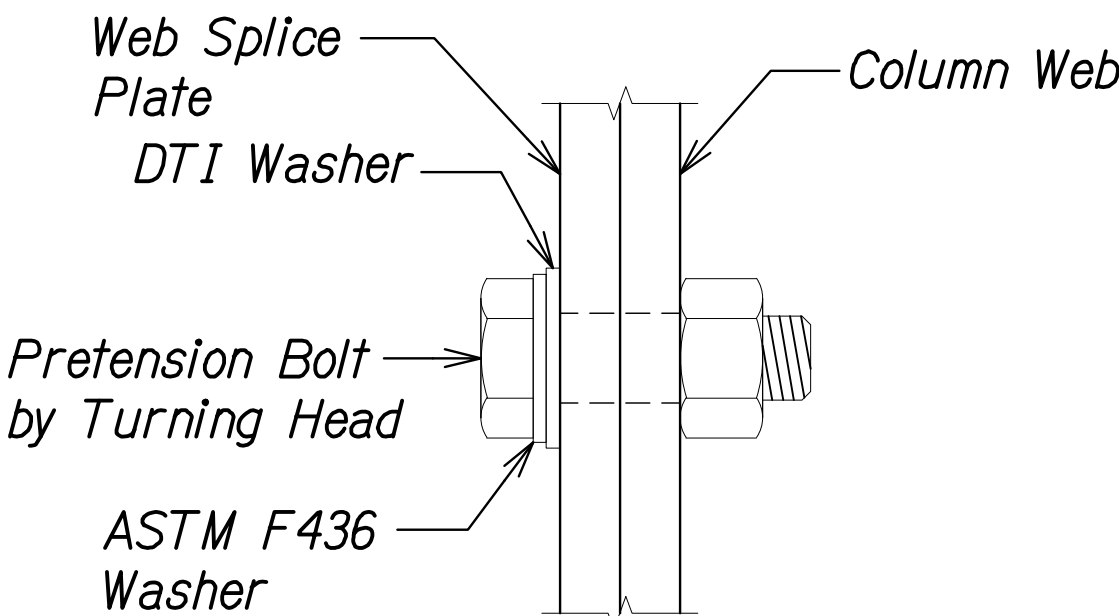
3
SA6.1 SA6.1



COLUMN WEB SPLICE - CONNECTION DETAIL

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

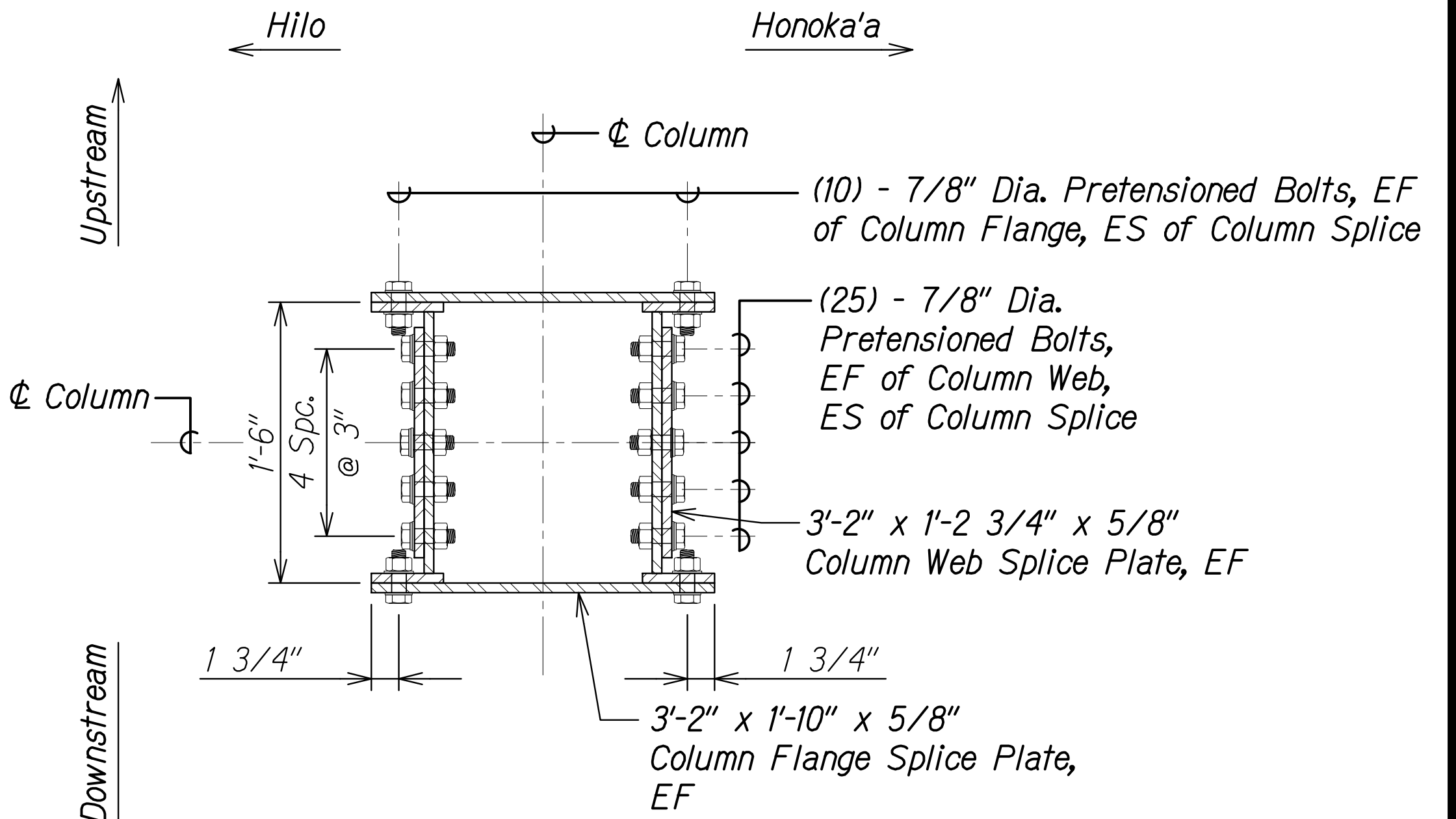
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SA6.1 SA6.1



COLUMN WEB SPLICE BOLT CONNECTION DETAIL

Scale: 6" = 1'-0"

4
SA6.1 SA6.1



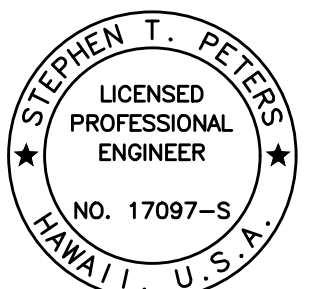
SECTION

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

A
SA6.1 SA6.1

NOTE:

After erection, touch-up paint ends of all bolts/nuts/washers.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

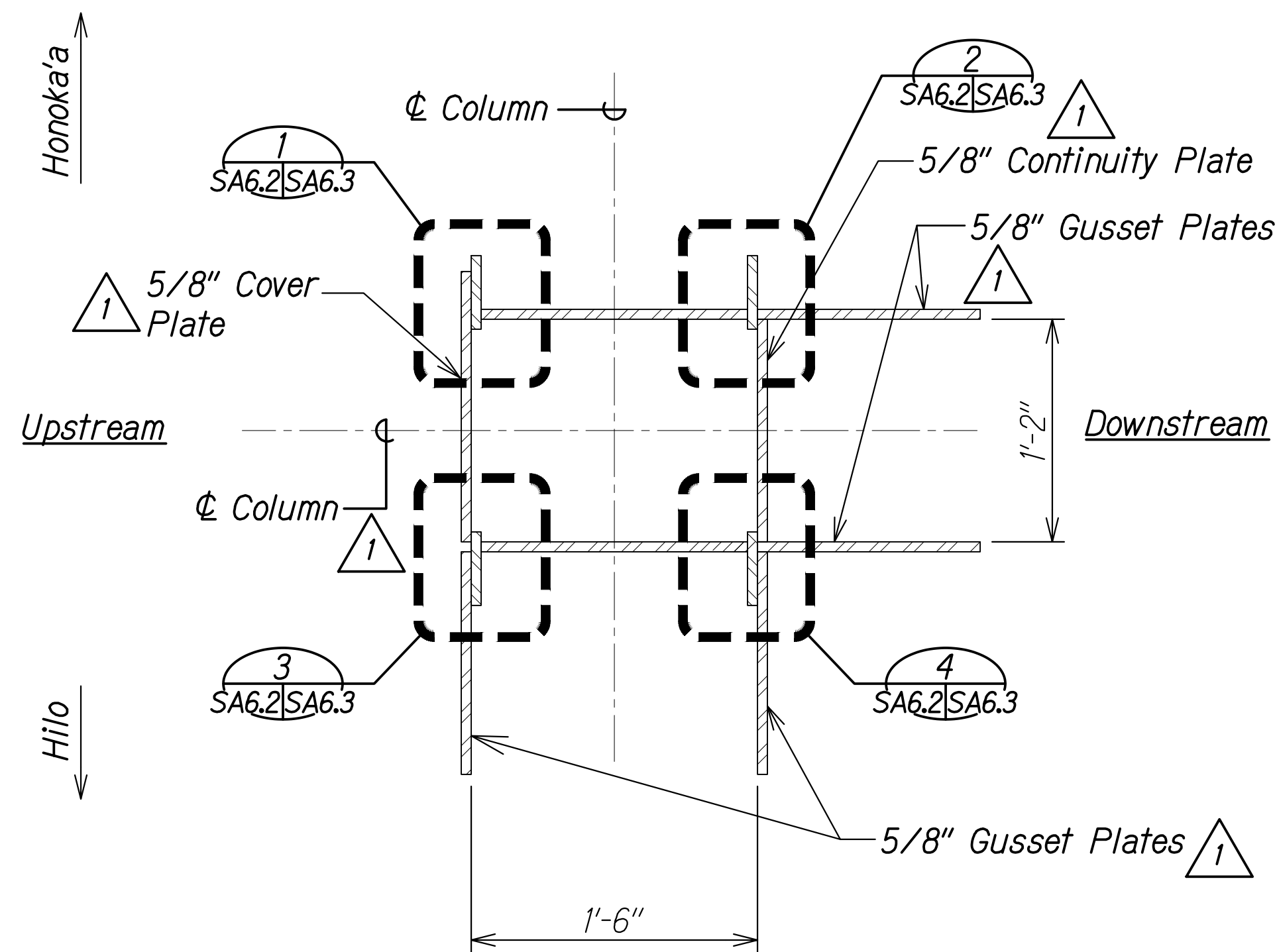
COLUMN SPLICE CONNECTION DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

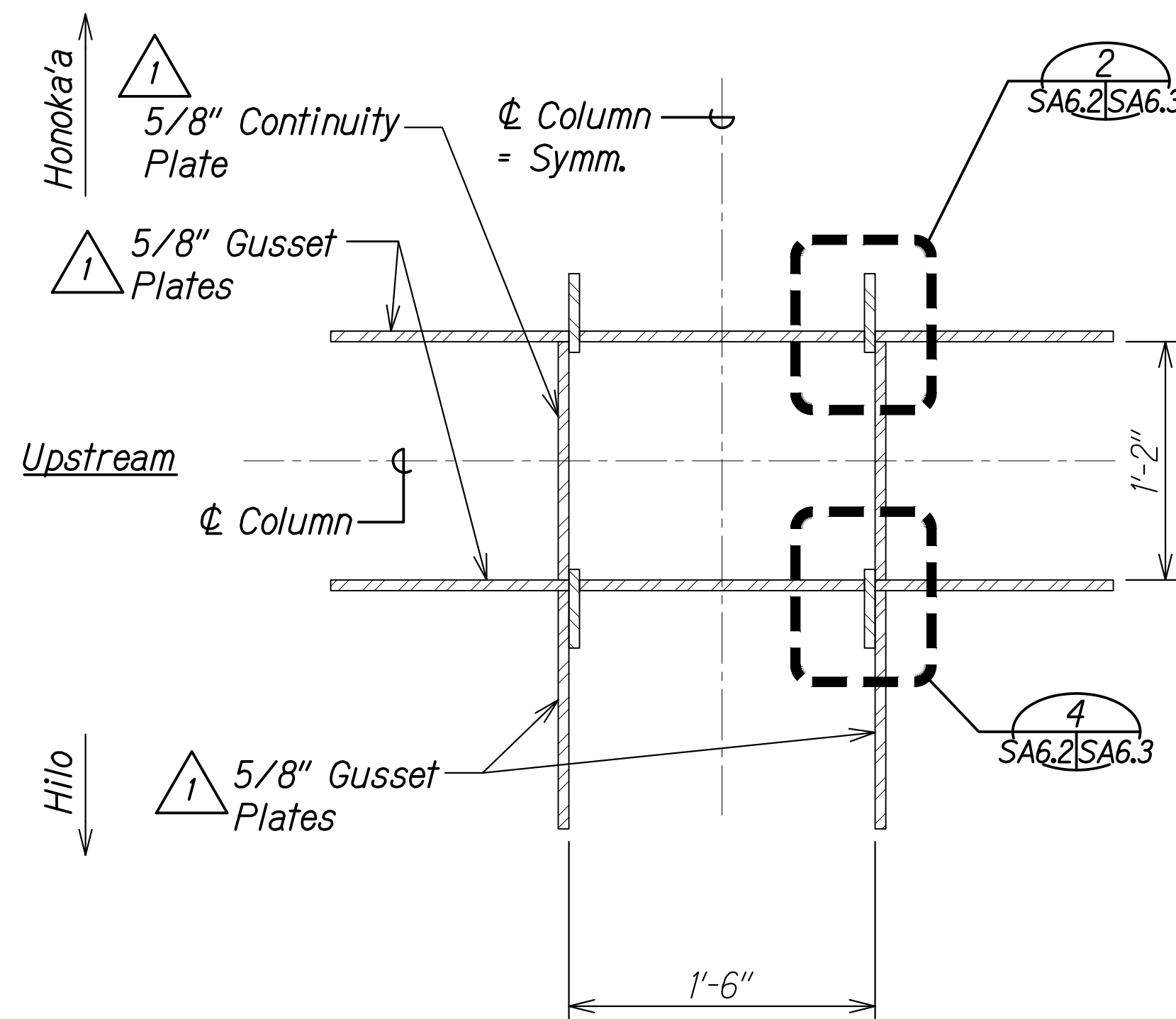
Scale: As Noted Date: Oct. 2024

SHEET No. SA6.1 OF 22 SHEETS

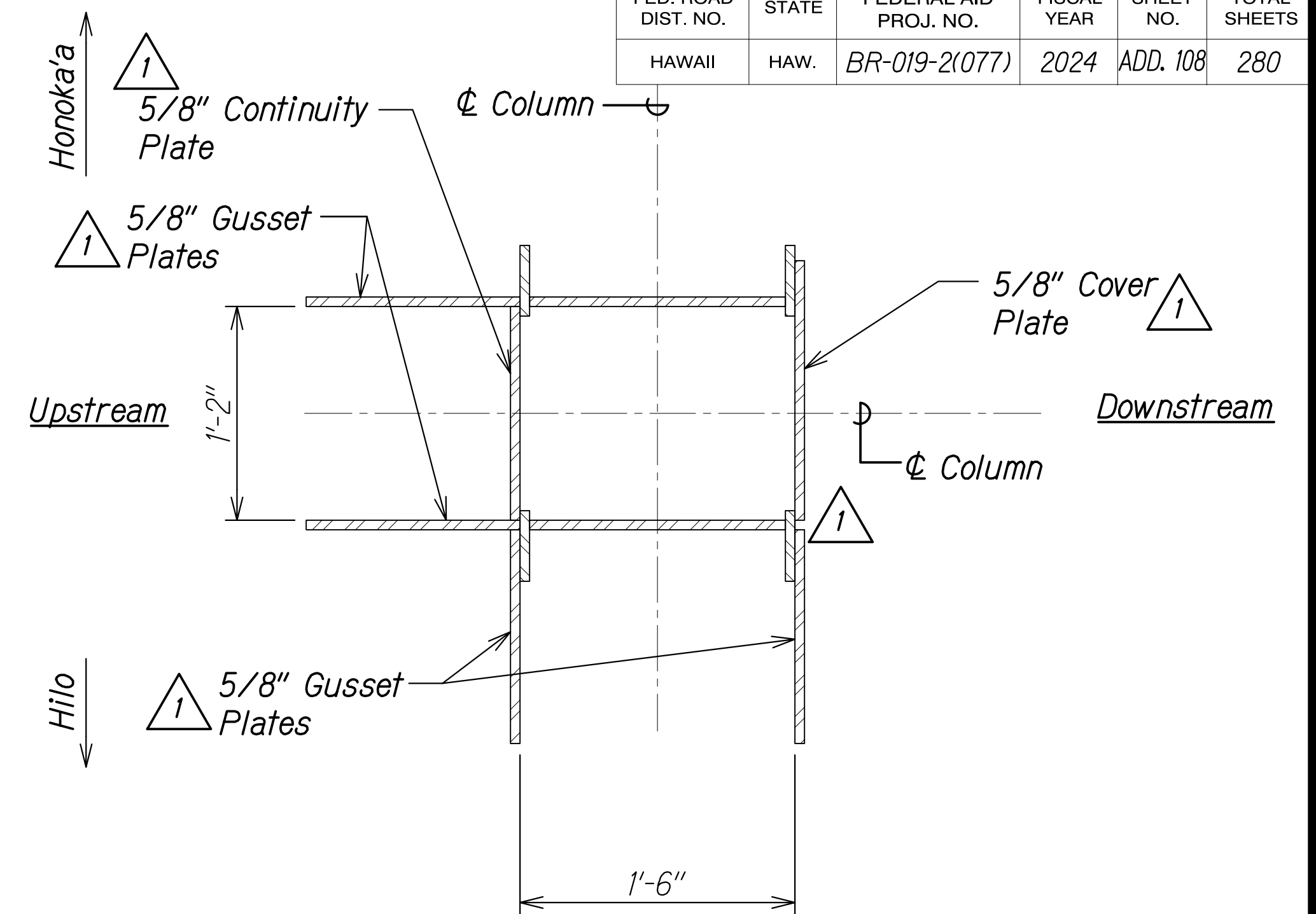
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 108 | 280 |



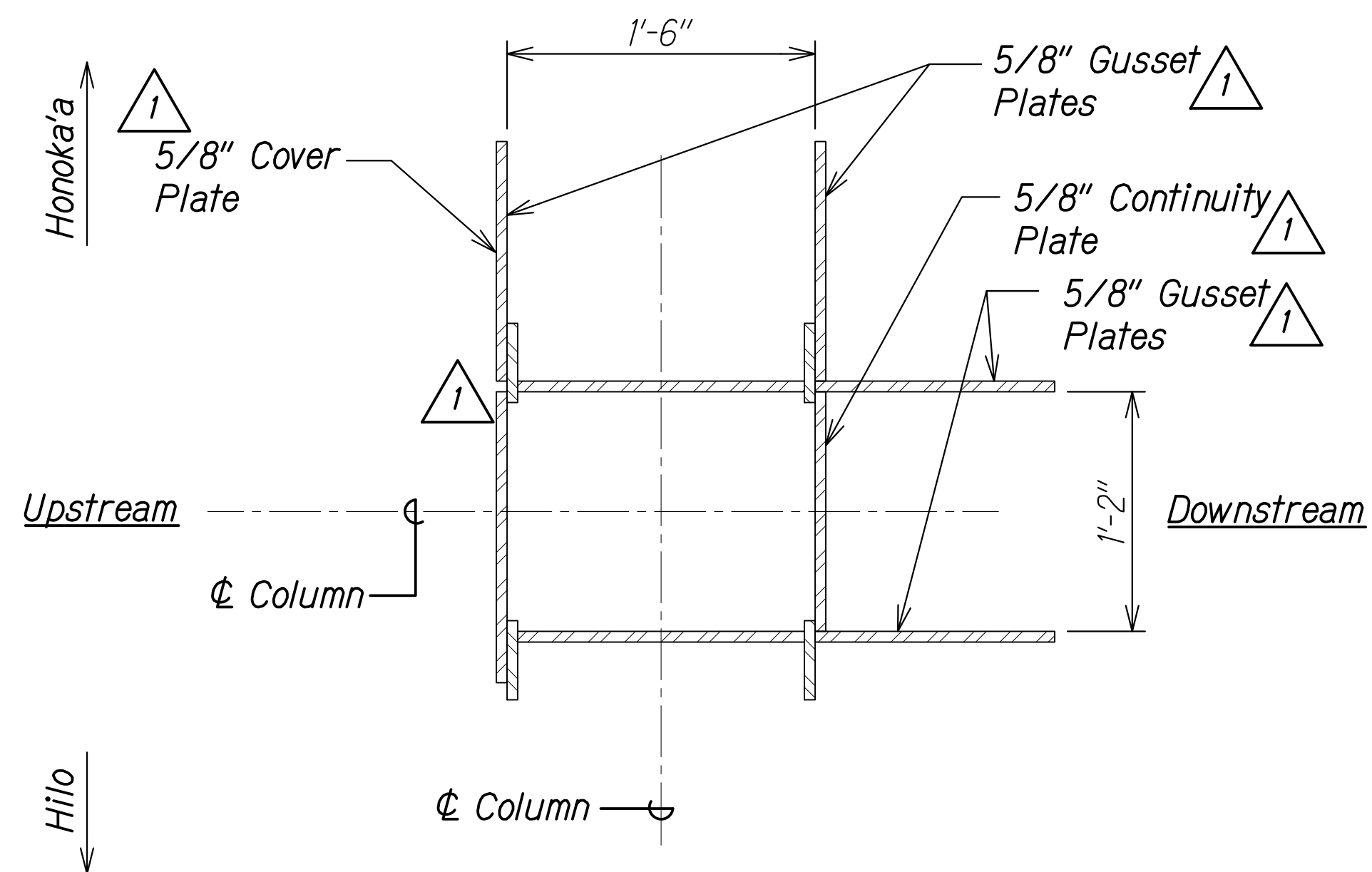
PLAN DETAIL A
Scale: 1 1/2" = 1'-0" SA6.2/SA6.2



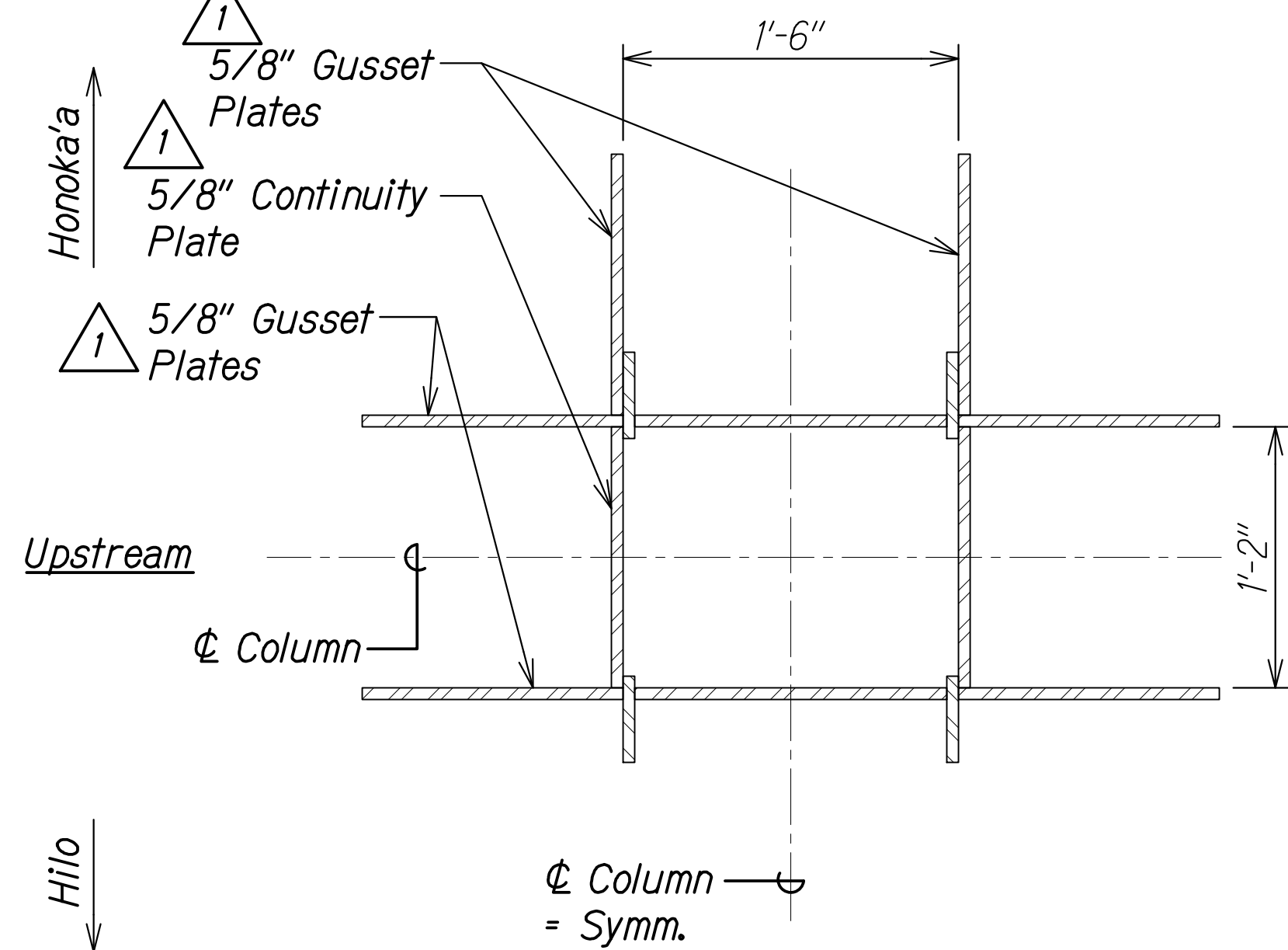
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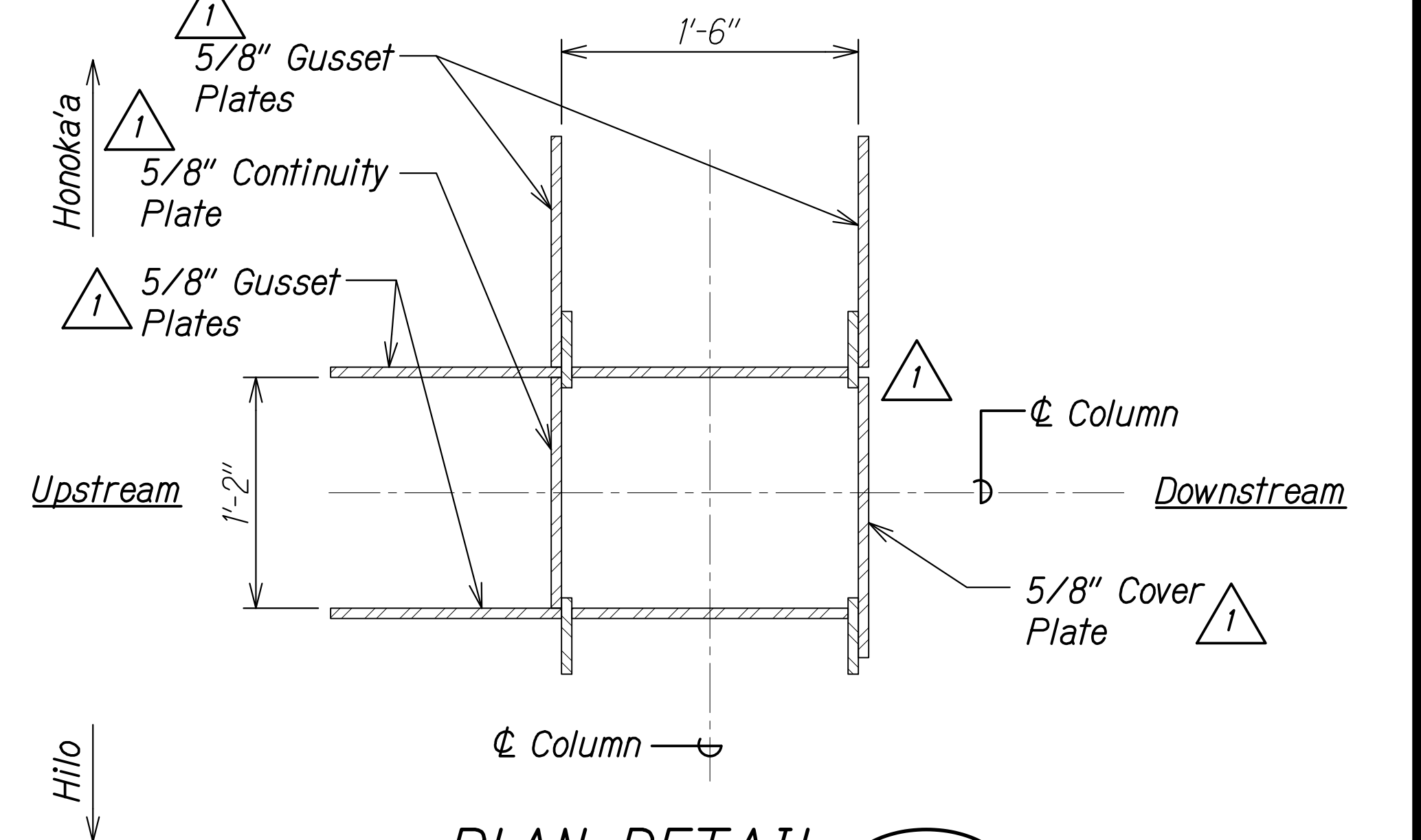
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PLAN DETAIL D
Scale: 1 1/2" = 1'-0" SA6.2/SA6.2



PLAN DETAIL E
Scale: 1 1/2" = 1'-0" SA6.2/SA6.2

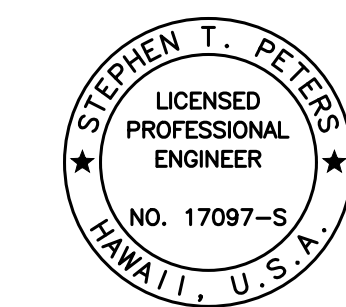


PLAN DETAIL F
Scale: 1 1/2" = 1'-0" SA6.2/SA6.2

NOTE:

Brace not shown for clarity.

| | |
|---------|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

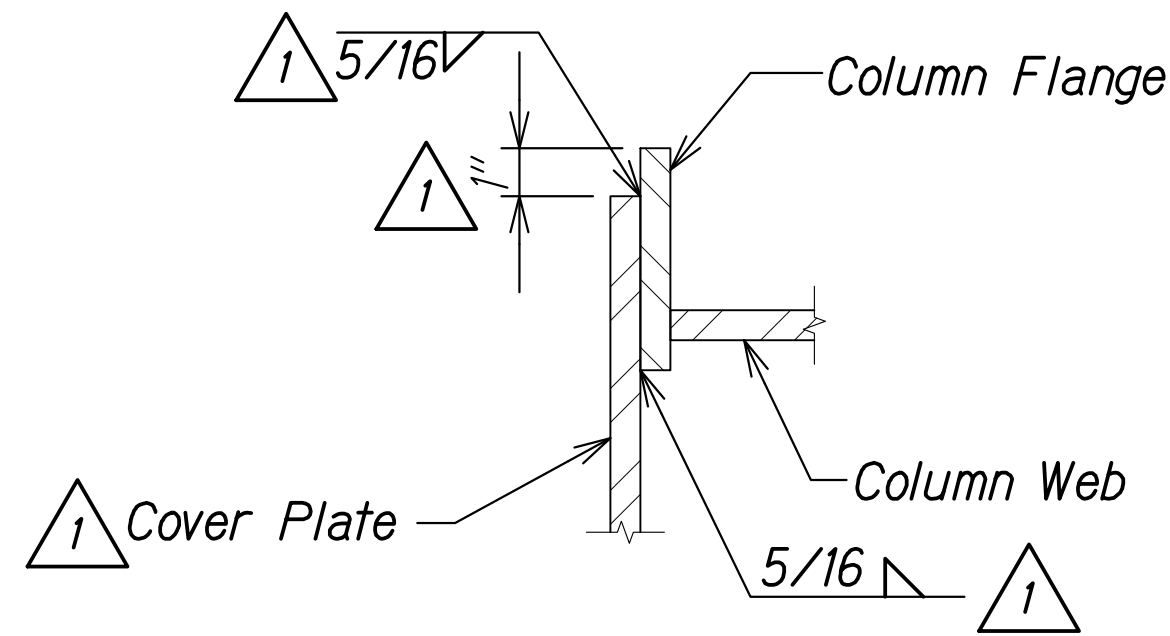
**COLUMN TO BRACE
CONNECTION DETAILS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

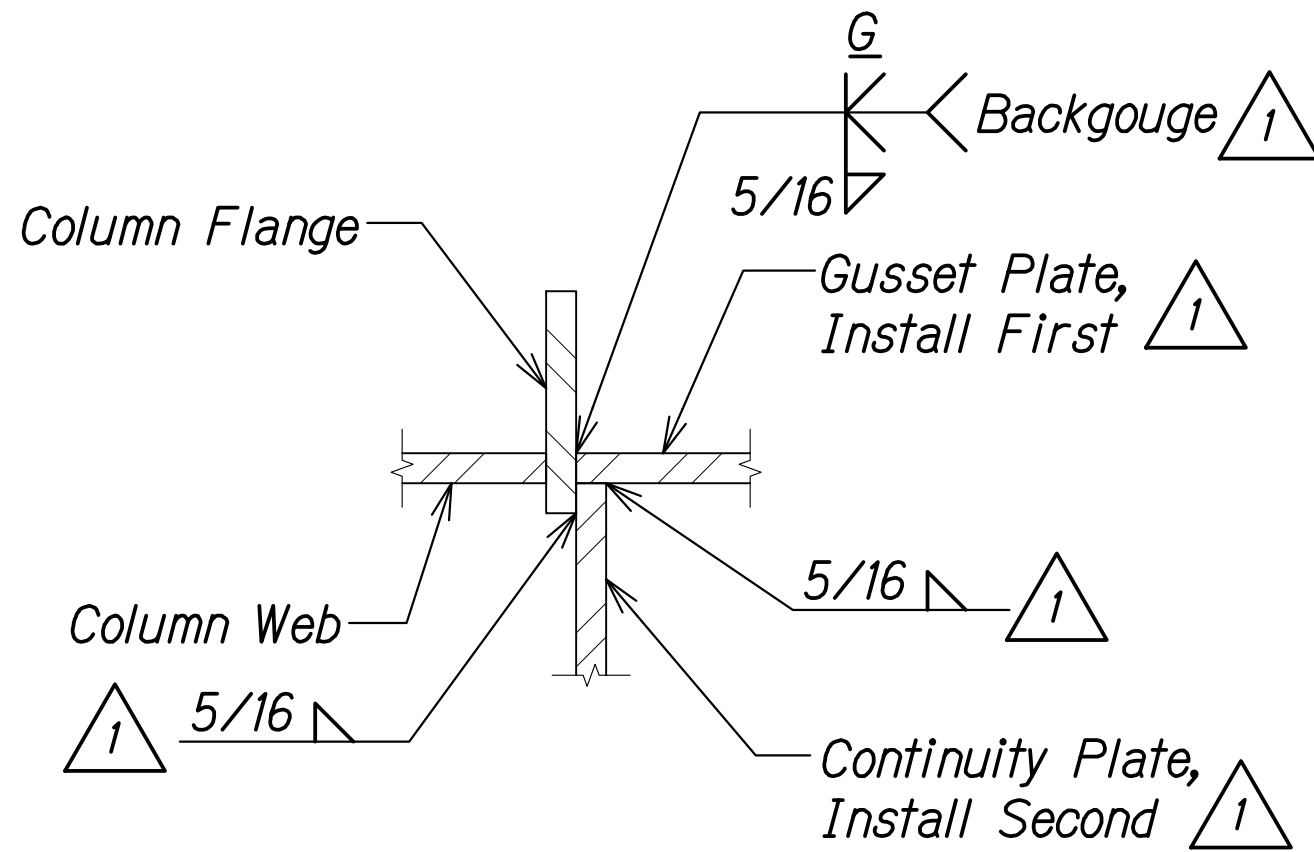
Scale: As Noted Date: Oct. 2024

SHEET No. SA6.2 OF 22 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 109 | 280 |

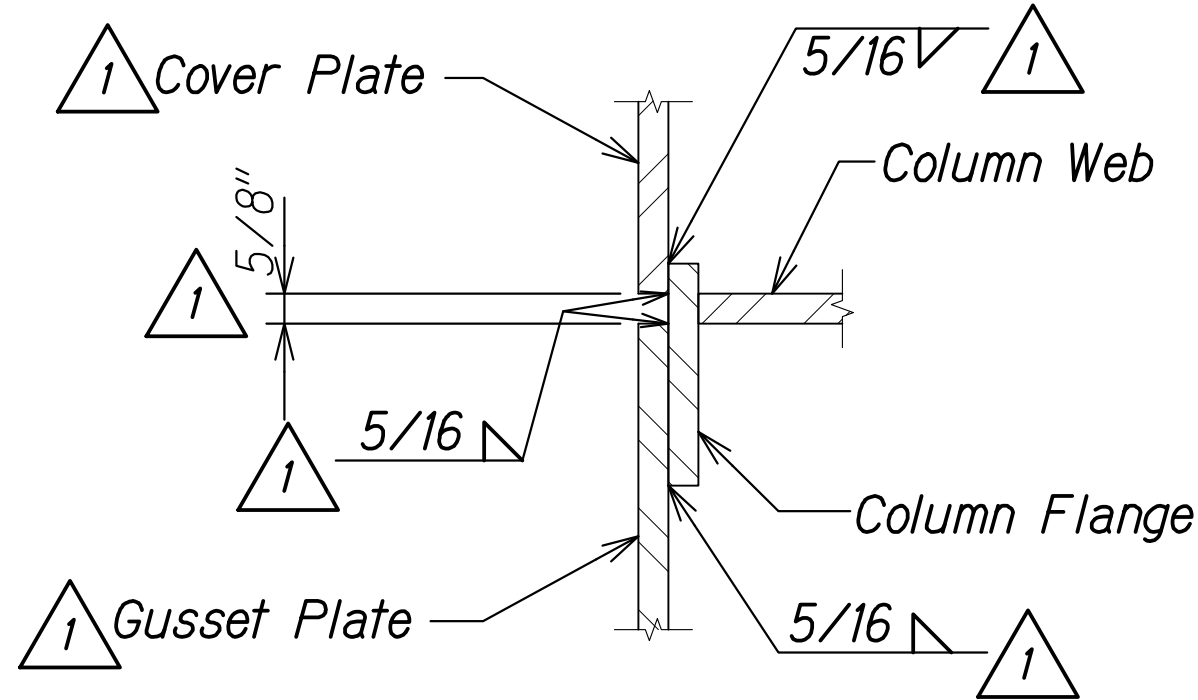


DETAIL 1
Scale: 3" = 1'-0" SA6.2|SA6.3

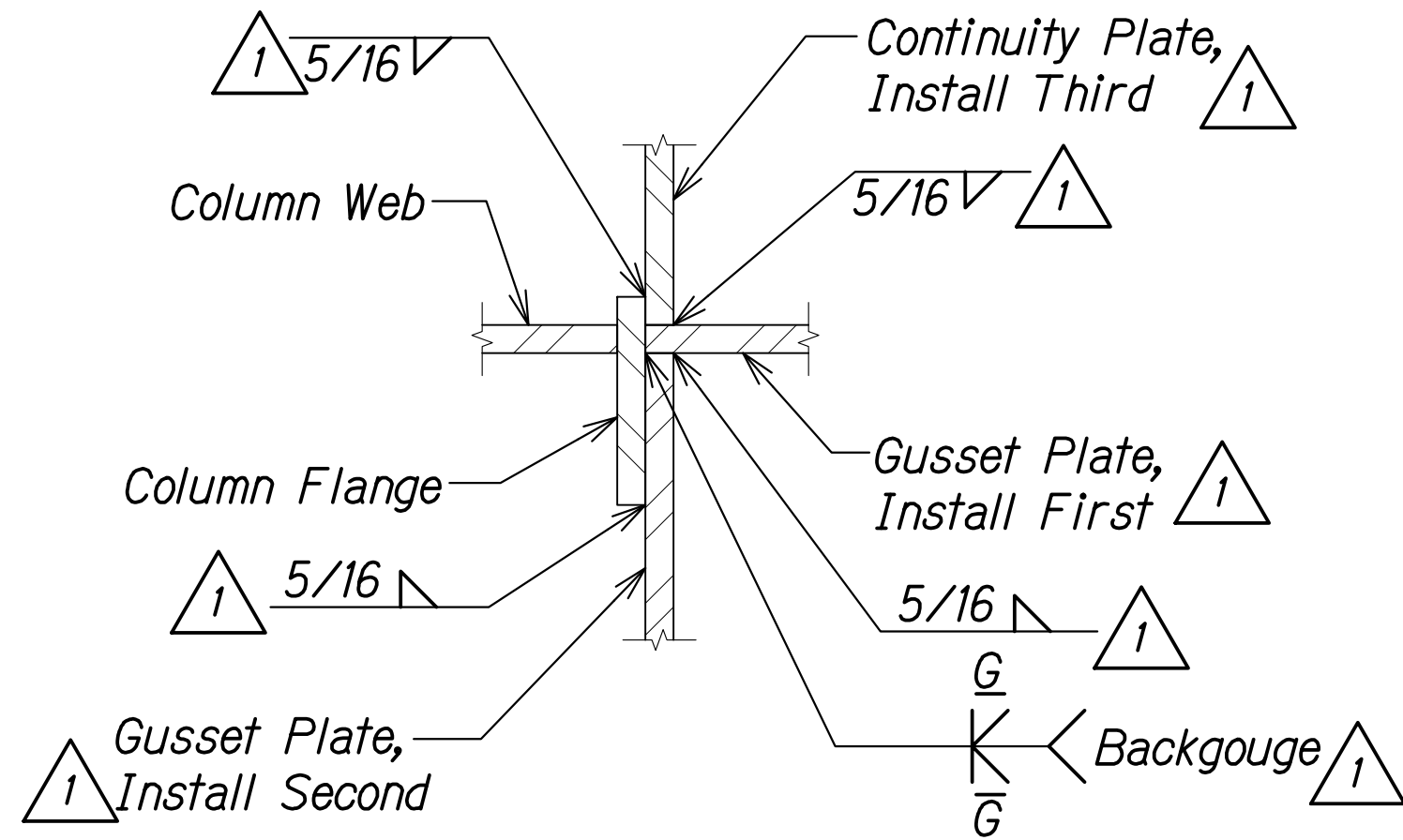


DETAIL 2
Scale: 3" = 1'-0" SA6.2|SA6.3

NOTE:
All gusset/cover/continuity/stiffener plates shall receive return fillet welds across the top and bottom connection at faying edge with column flange and column seat to provide a full seal weld to prevent moisture intrusion.



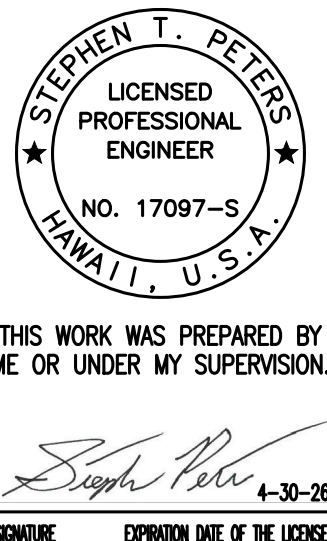
DETAIL 3
Scale: 3" = 1'-0" SA6.2|SA6.3



DETAIL 4
Scale: 3" = 1'-0" SA6.2|SA6.3

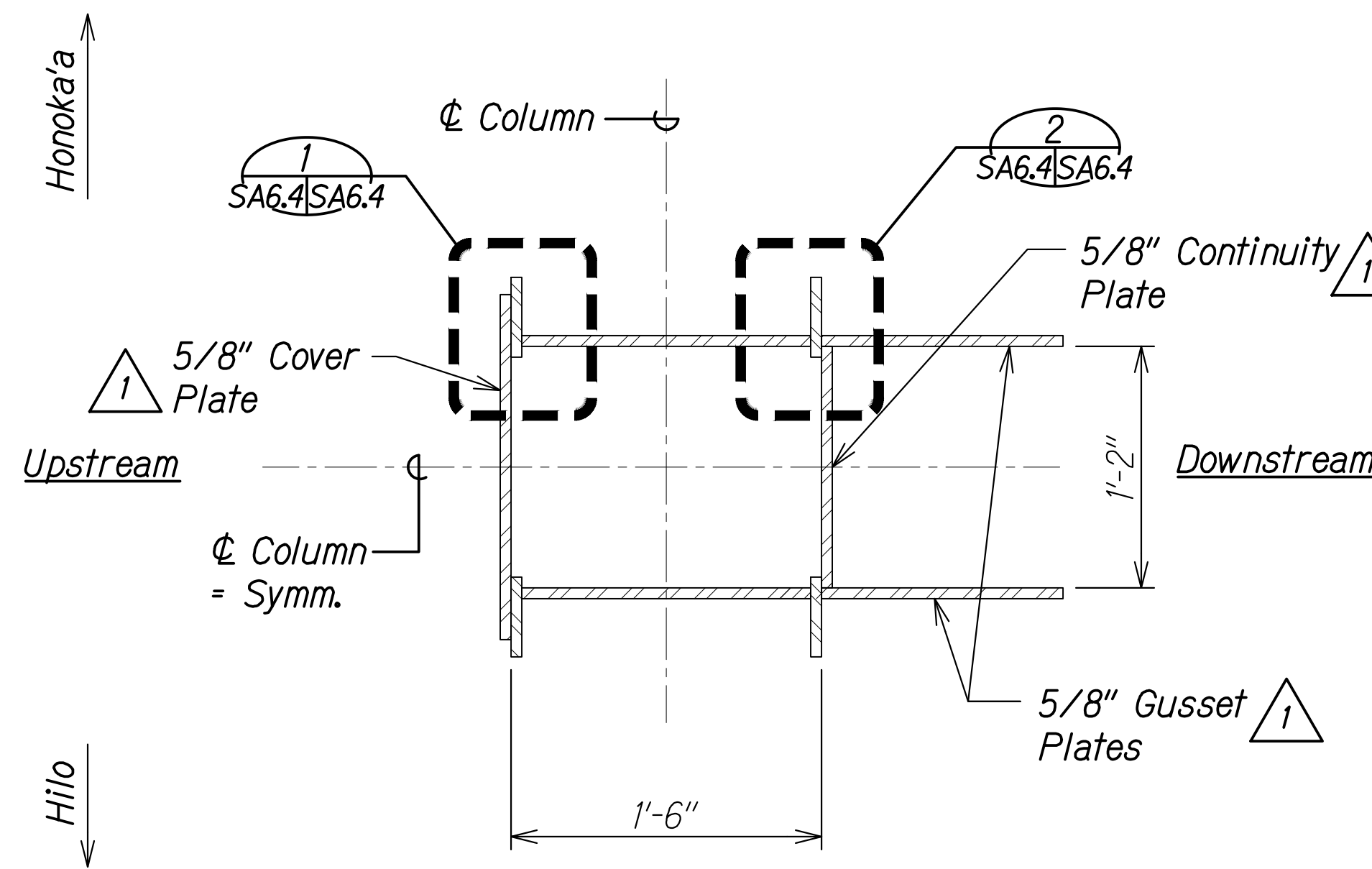
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|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| No. | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\12-06-24 ADD\NSR-SAG602-SAG617 CONN DTL'S ADD2.DWG PLOT TIME: 12-05-24 1:11 PM

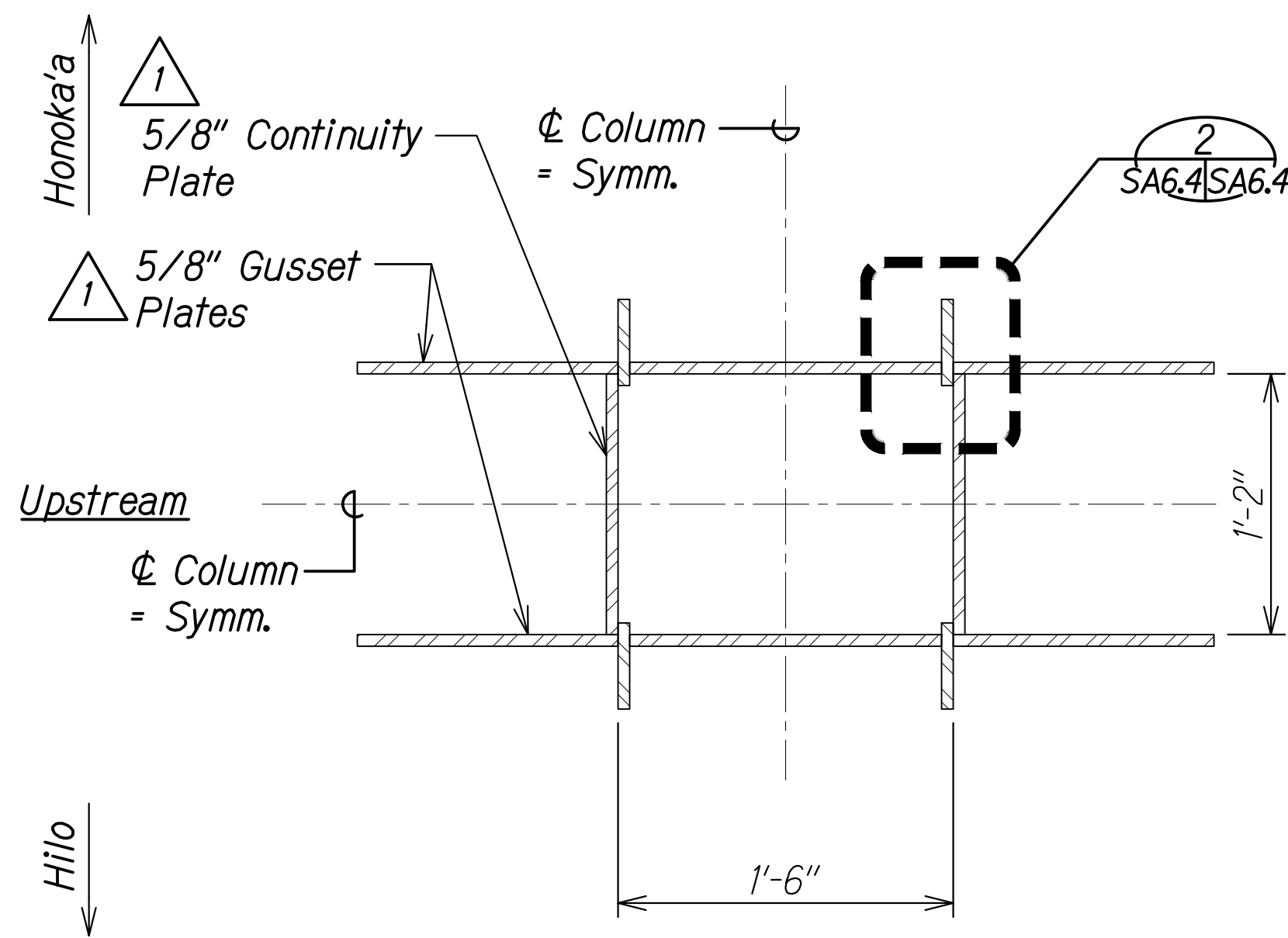


| | | |
|---|----------|---------------------------------|
| 12/6/24 | 1 | Revised Callouts and Added Note |
| DATE | REVISION | |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION COLUMN TO BRACE CONNECTION DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | | |
| SHEET No. SA6.3 OF 22 SHEETS | | |

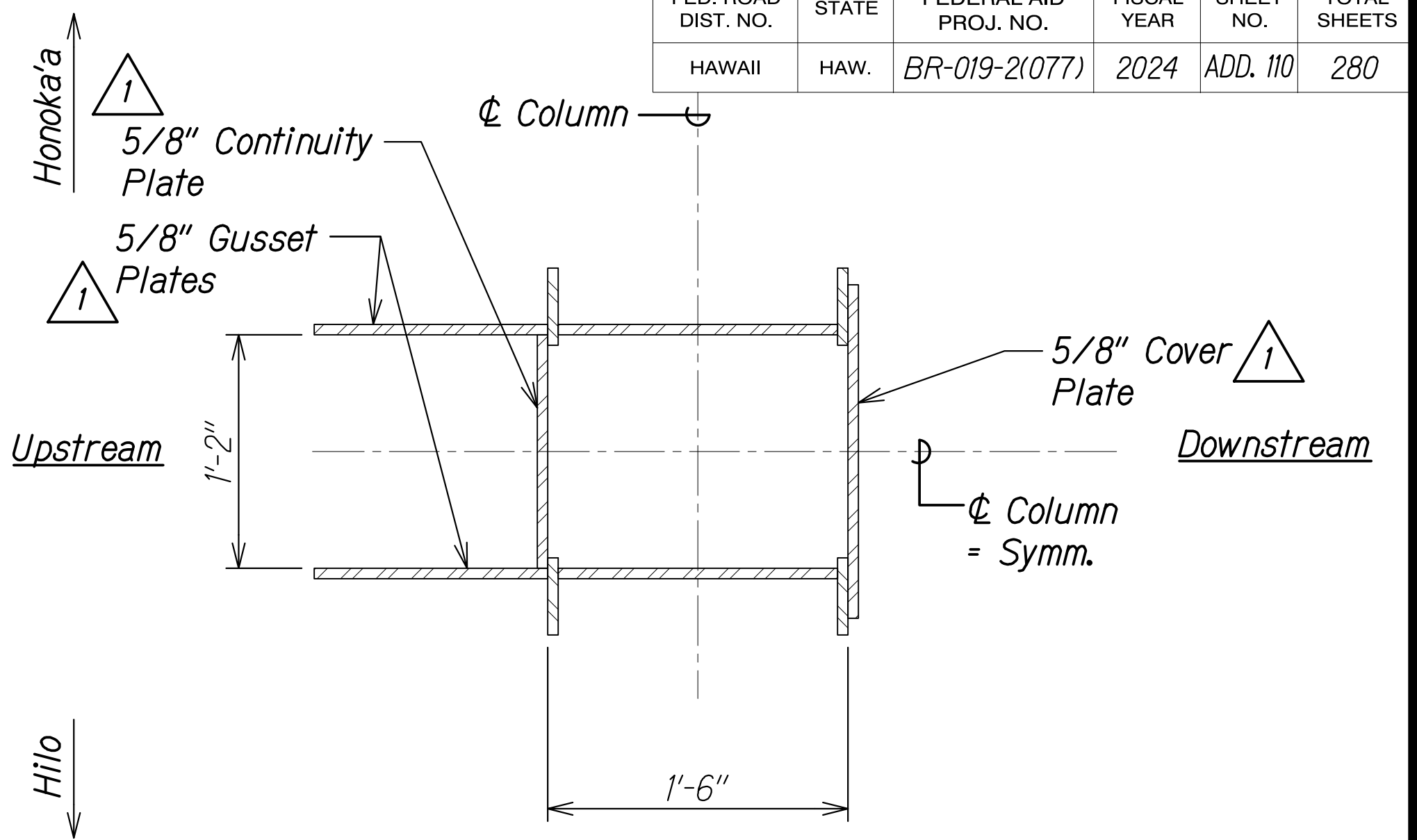
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 110 | 280 |



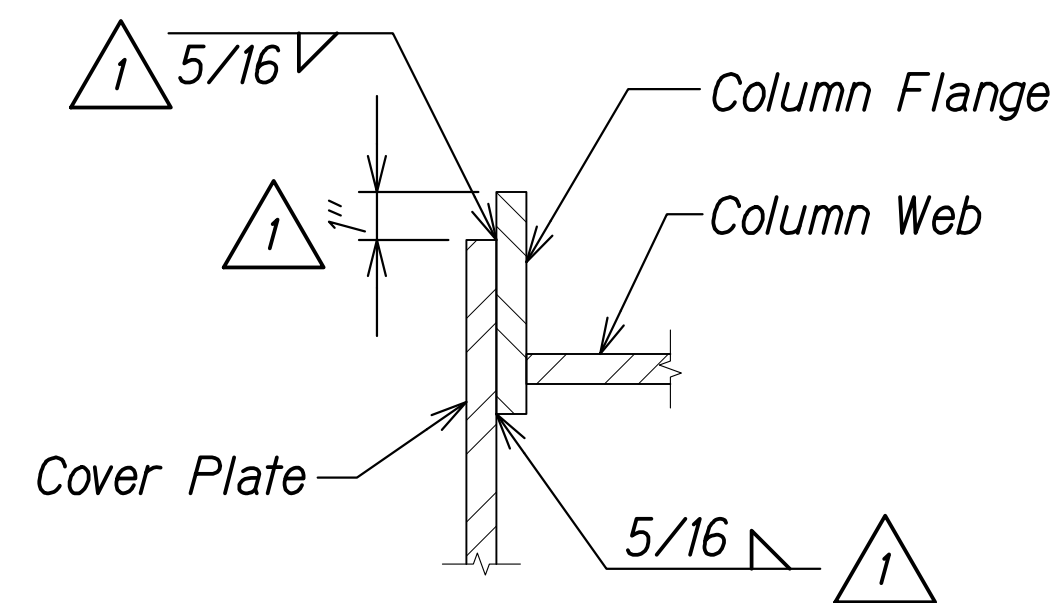
PLAN DETAIL A
Scale: 1 1/2" = 1'-0" SA6.4 SA6.4



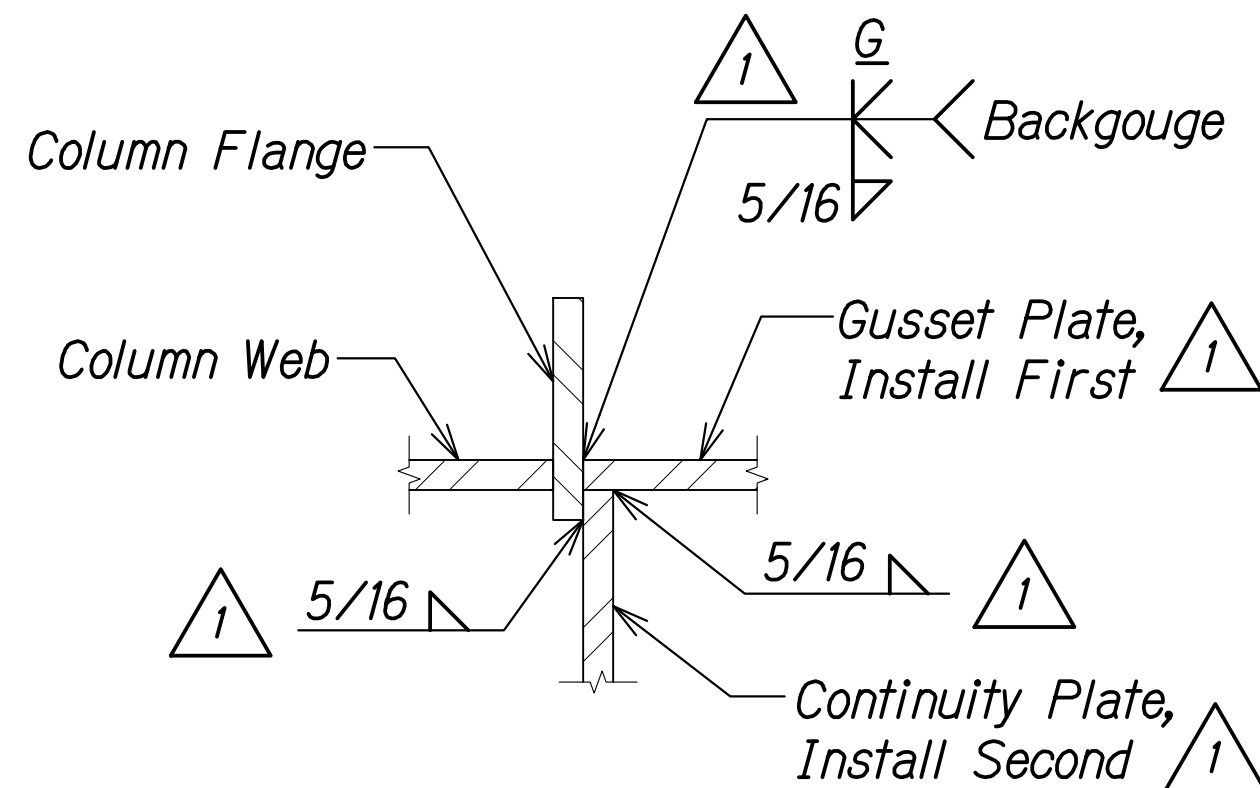
PLAN DETAIL B
Scale: 1 1/2" = 1'-0" SA6.4 SA6.4



PLAN DETAIL C
Scale: 1 1/2" = 1'-0" SA6.4 SA6.4



DETAIL 1
Scale: 3" = 1'-0" SA6.4 SA6.4



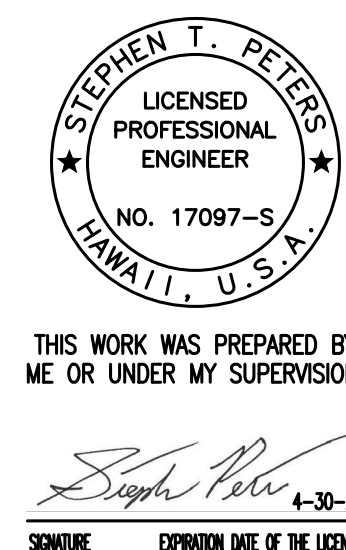
DETAIL 2
Scale: 3" = 1'-0" SA6.4 SA6.4

NOTE:

All gusset/cover/continuity/stiffener plates shall receive return fillet welds across the top and bottom connection at faying edge with column flange and column seat to provide a full seal weld to prevent moisture intrusion.

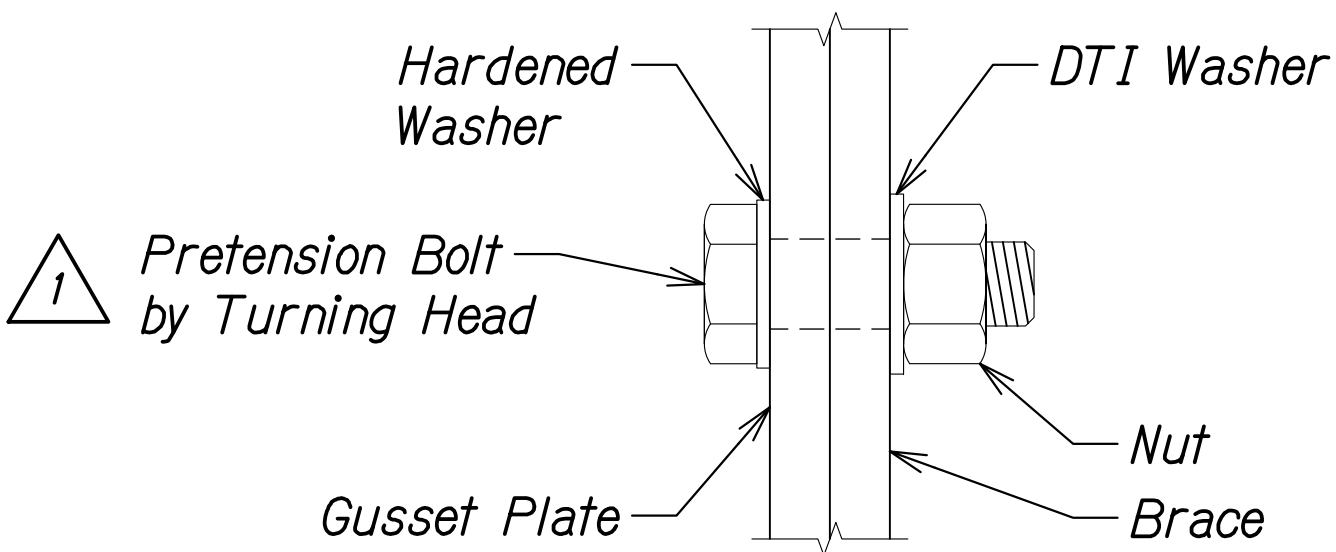
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|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| No. | DESIGNED BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\12-06-24 ADD\NSR-SA6602-SA6617 CONN DTL5 ADD2.DWG PLOT TIME: 12-05-24 1:11 PM



| | | |
|---|----------|---|
| 12/6/24 | 1 | Revised Callouts and Added Dimensions & Notes |
| DATE | REVISION | |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION COLUMN TO BRACE CONNECTION DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | | |
| SHEET No. SA6.4 OF 22 SHEETS | | |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 111 | 280 |

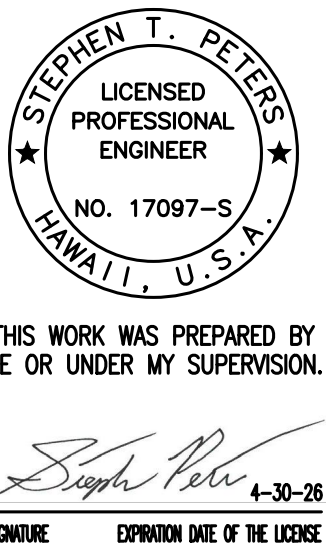


**TYPICAL BRACE
BOLT CONNECTION DETAIL** 5
Scale: 6" = 1'-0" SA6.5 SA6.5

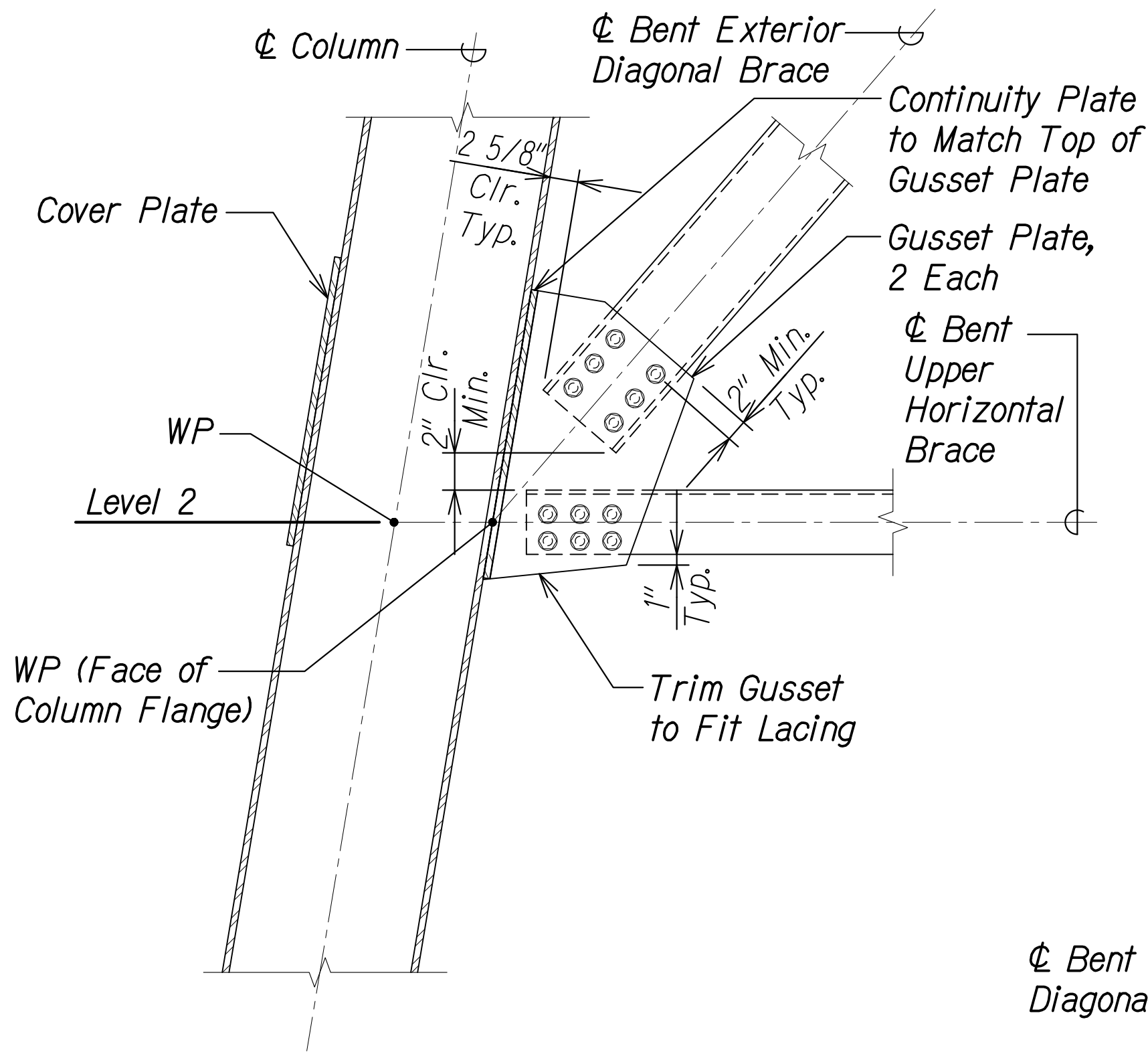
NOTES:

- The Contractor's Steel Detailer is responsible for determining the actual size of each gusset/continuity/cover plate based on the information provided in the Contract Drawings.
- All bolted connections for horizontal and diagonal braces, as detailed on this sheet, shall be pretensioned.
- After erection, touch-up paint the ends of all bolts/nuts/washers.
- Batten plates and lacing not shown for clarity.
- See Schedule on sheet SA6.6 for WP offsets.

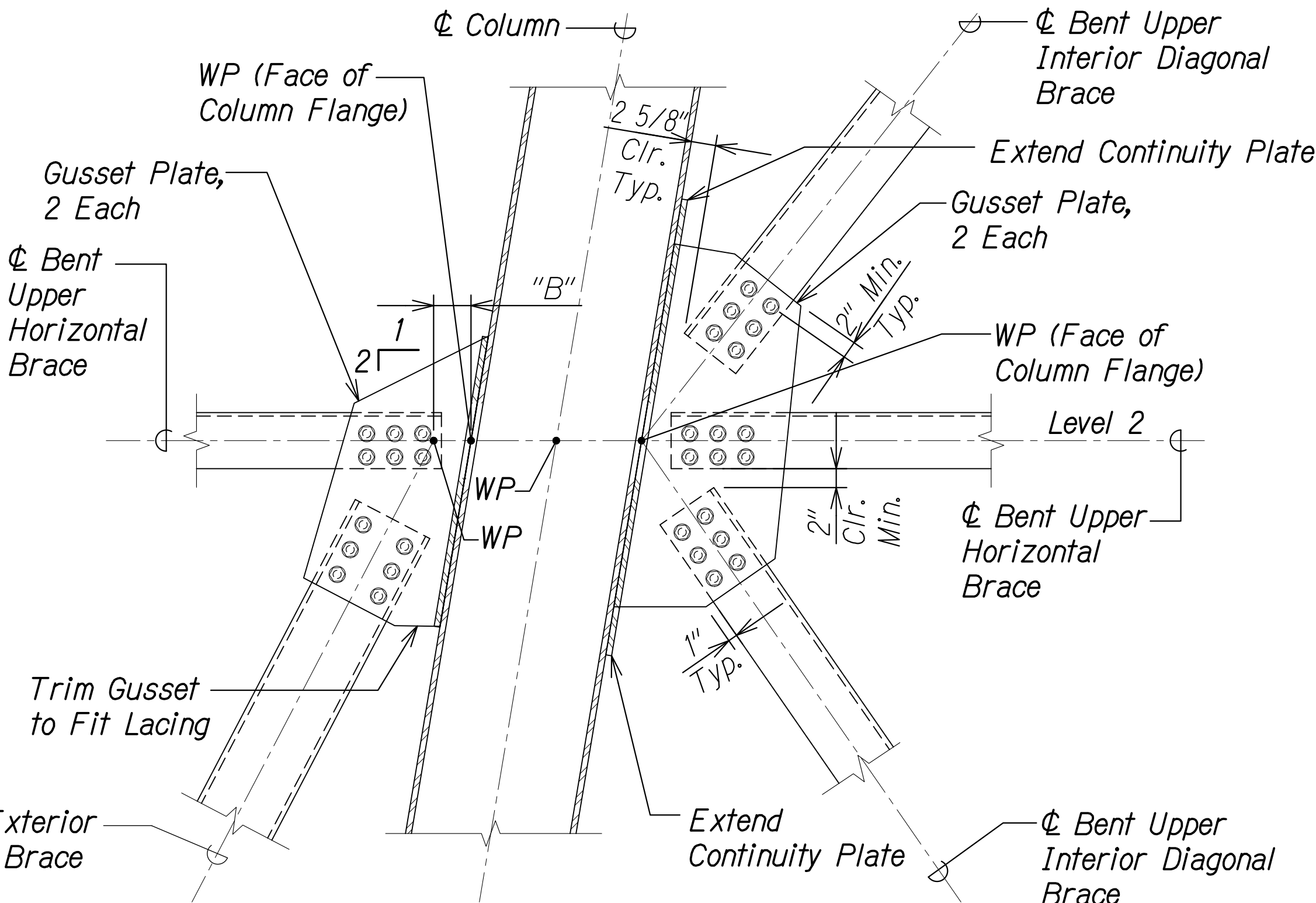
| 12/6/24 | 1 | Revised Details & Added Notes |
|---------|---|-------------------------------|
| DATE | | REVISION |



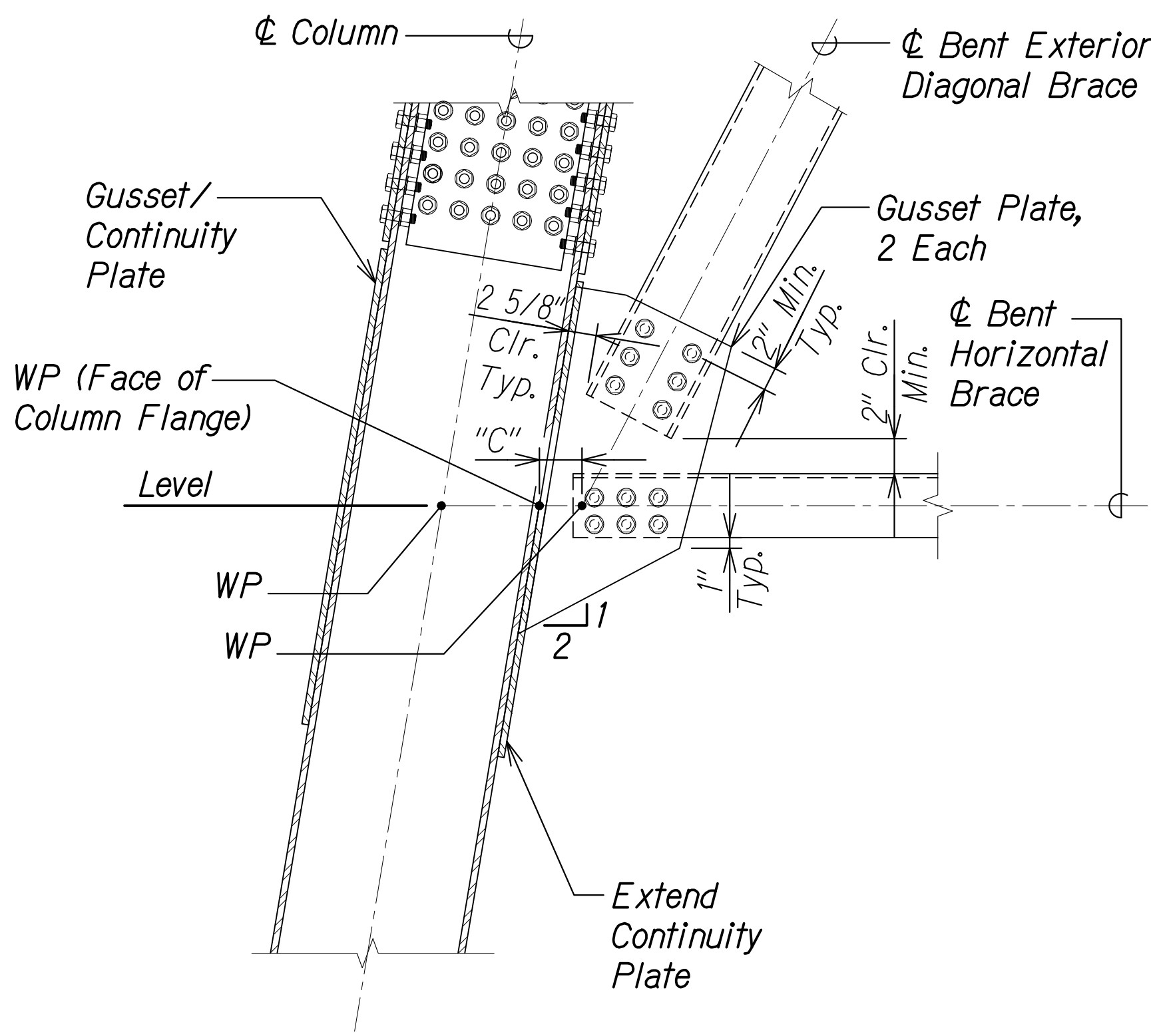
| | |
|--|-----------------|
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | |
| COLUMN TO BRACE CONNECTION DETAILS | |
| HAWAII BELT ROAD | |
| Nanue Stream Bridge Rehabilitation | |
| Federal Aid Project No. BR-019-2(077) | |
| Scale: As Noted | Date: Oct. 2024 |



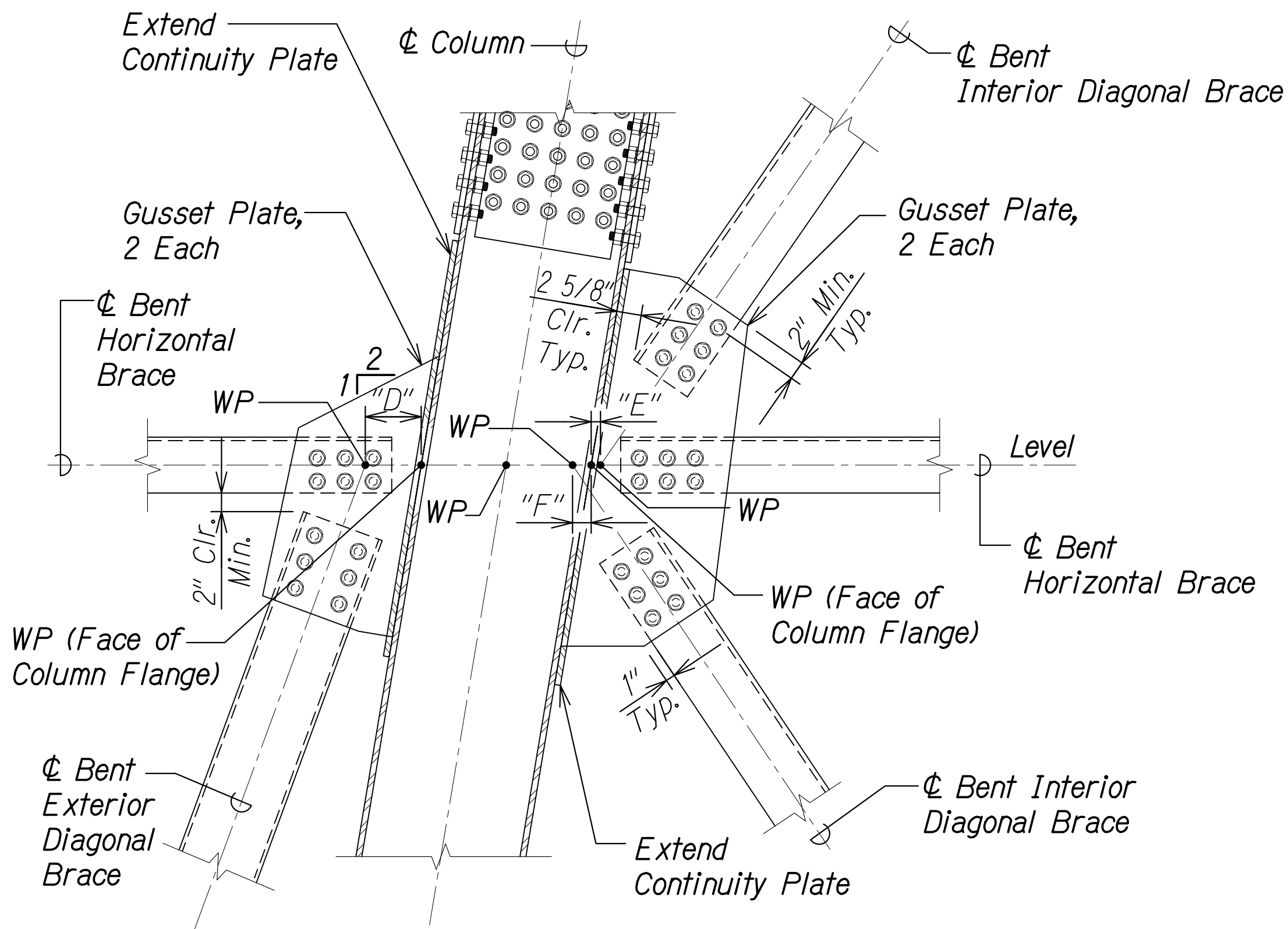
**EXTERIOR COLUMN TO BRACE
CONNECTION DETAIL** 1
Scale: 1" = 1'-0" SA6.5 SA6.5



**INTERIOR COLUMN TO BRACE
CONNECTION DETAIL** 2
Scale: 1" = 1'-0" SA6.5 SA6.5



**EXTERIOR COLUMN TO BRACE
CONNECTION DETAIL** 3
Scale: 1" = 1'-0" SA6.5 SA6.5

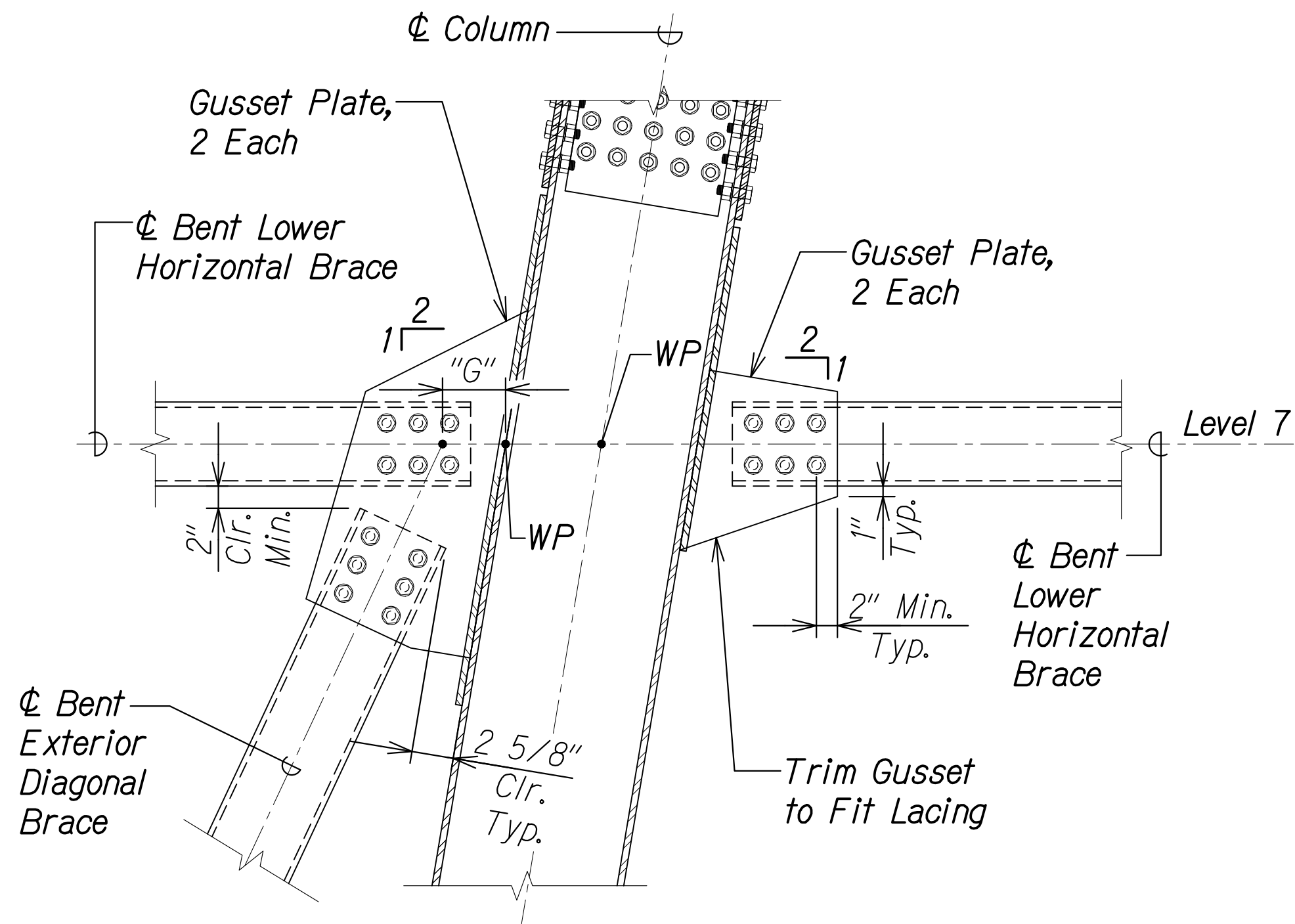


**INTERIOR COLUMN TO BRACE
CONNECTION DETAIL** 4
Scale: 1" = 1'-0" SA6.5 SA6.5

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

DRAWING NAME: Z:\00_Ongoing\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\12-06-24 ADD\NSR-SA6602-SA6617 CONN DTL'S ADD2.DWG PLOT TIME: 12-03-24 10:14 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 112 | 280 |



INTERIOR COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"



NOTES:

- The Contractor's Steel Detailer is responsible for determining the actual size of each gusset/continuity/cover plate based on the information provided in the Contract Drawings.
- All bolted connections for horizontal and diagonal braces, as detailed on this sheet, shall be pretensioned.
- After erection, touch-up paint the ends of all bolts/nuts/washers.
- Batten plates and lacing not shown for clarity.

WP OFFSET SCHEDULE

| LOCATION | | "B" | "C" | "D" | "E" | "F" | "G" |
|----------|--------------------------------------|-----|-----|-----|-----|-----|-----|
| Level 2 | Bent Nos. 1 ϕ 9 | 6" | - | - | - | - | - |
| | Bent Nos. 2, 3, 4, 5, 6, 7, ϕ 8 | 4" | - | - | - | - | - |
| Level 3 | Bent Nos. 2, 3, 4, 5, 6, 7, ϕ 8 | - | 4" | 6" | 1" | 0" | - |
| Level 4 | Bent Nos. 2, 3, 4, 5, 6, ϕ 7 | - | 6" | 6" | 3" | 0" | - |
| Level 5 | Bent Nos. 3, 4, 5, 6, ϕ 7 | - | 6" | 6" | 0" | 8" | - |
| Level 6 | Bent No. 4 | - | 6" | 6" | -5" | 8" | - |
| | Bent Nos. 5 ϕ 6 | - | 6" | 6" | -5" | 2" | - |
| Level 7 | Bent Nos. 5, ϕ 6 | - | 6" | - | - | - | 6" |

12/6/24

DATE

1 Revised Detail & Schedule, and Added Notes

REVISION

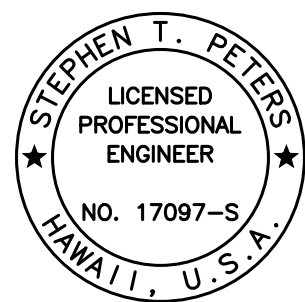
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COLUMN TO BRACE
CONNECTION DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA6.6 OF 22 SHEETS



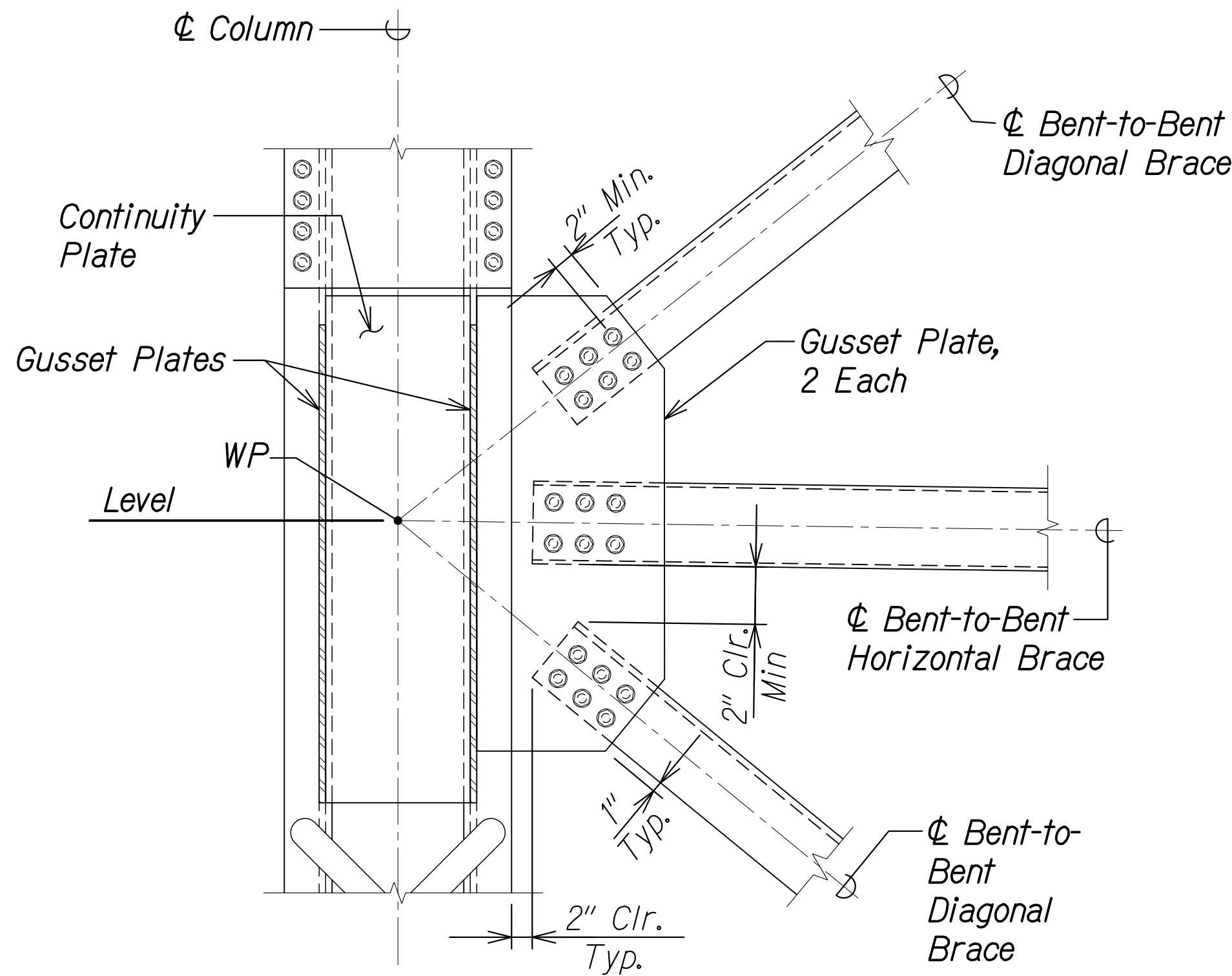
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Signature
EXPIRATION DATE OF THE LICENSE 4-30-26

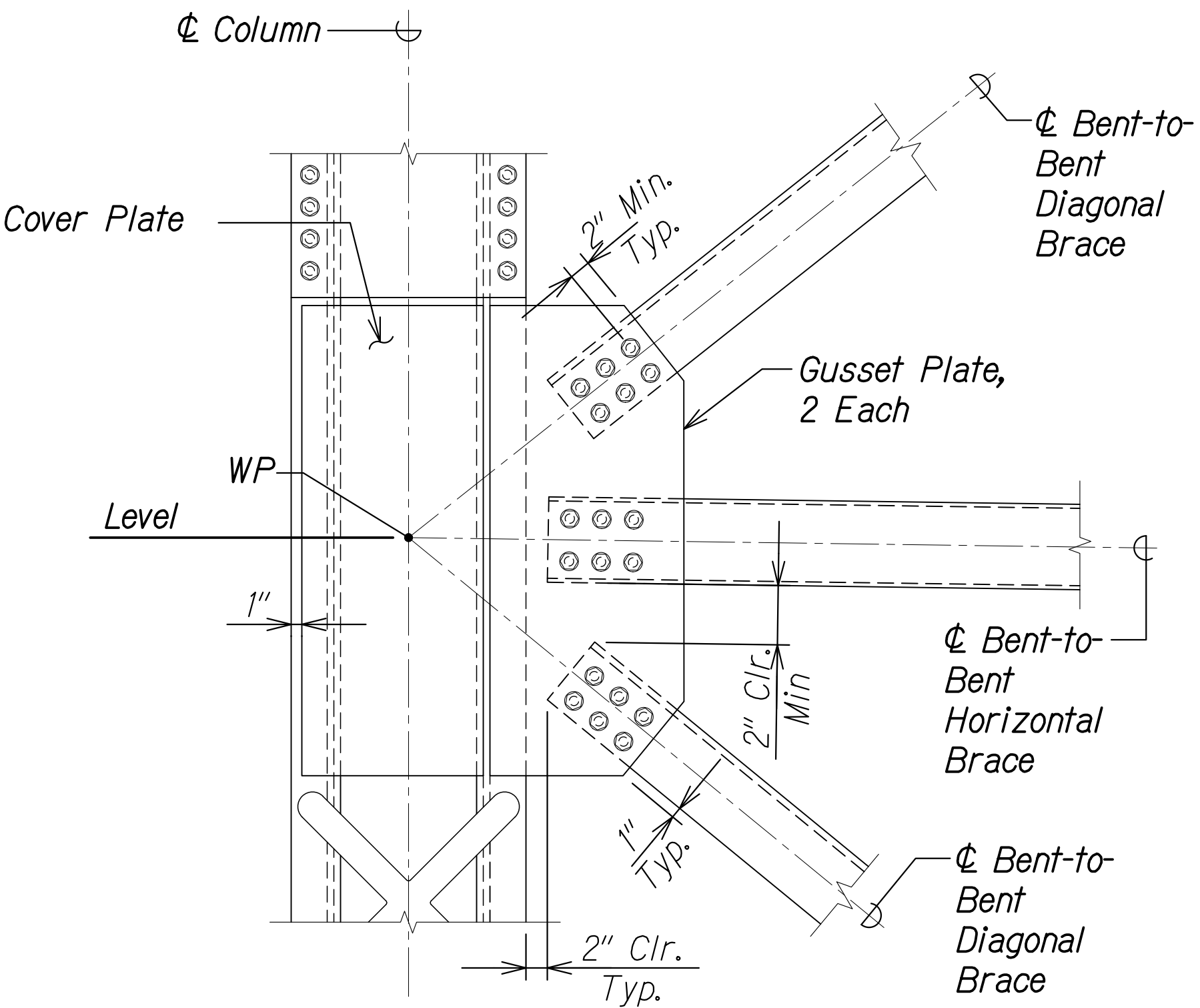
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 113 | 280 |

1 NOTES:

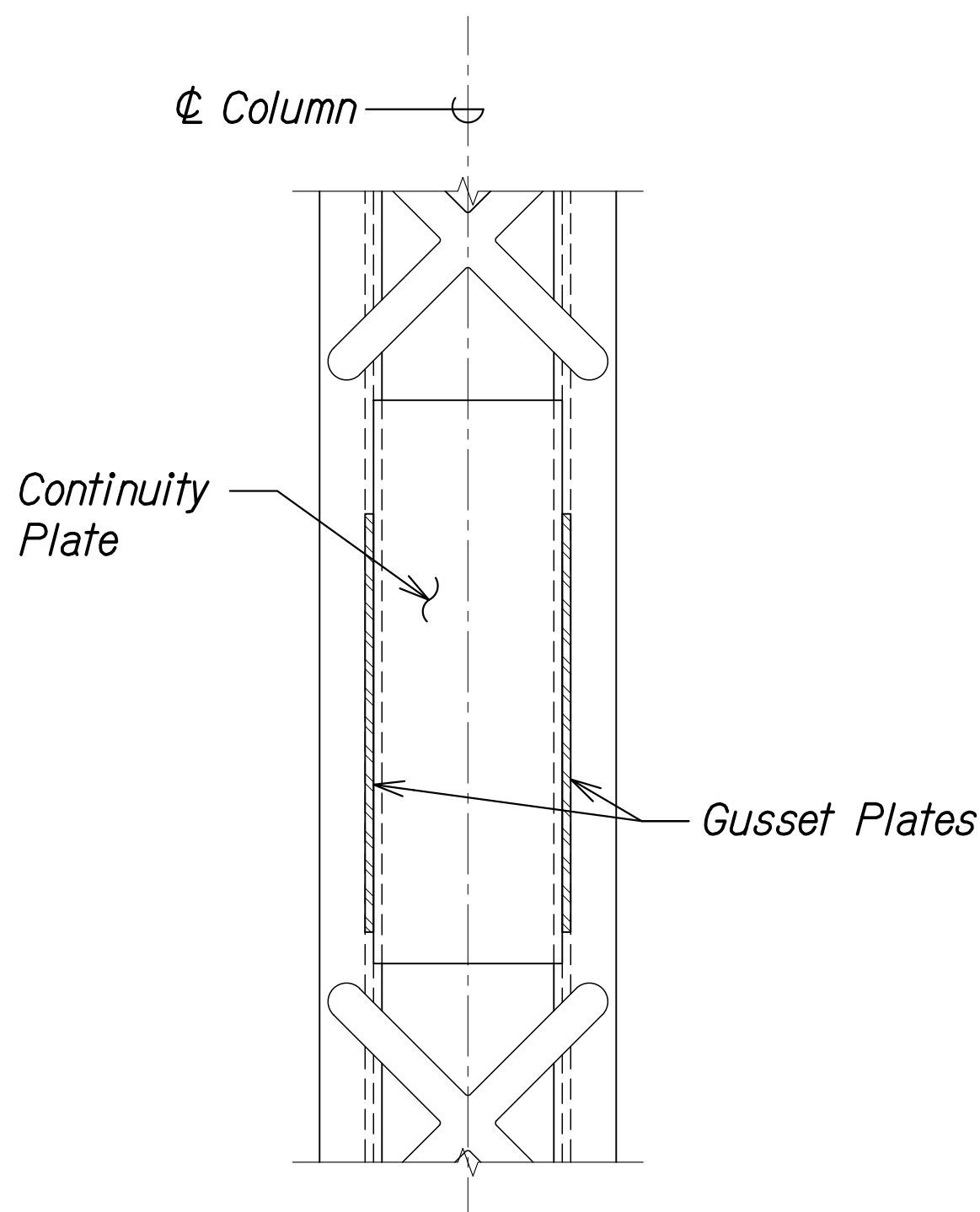
1. The Contractor's Steel Detailer is responsible for determining the actual size of each gusset/continuity/cover plate based on the information provided in the Contract Drawings.
2. All bolted connections for horizontal and diagonal braces, as detailed on this sheet, shall be pretensioned.
3. After erection, touch-up paint the ends of all bolts/nuts/washers.
4. Batten plates and lacing on braces not shown for clarity.



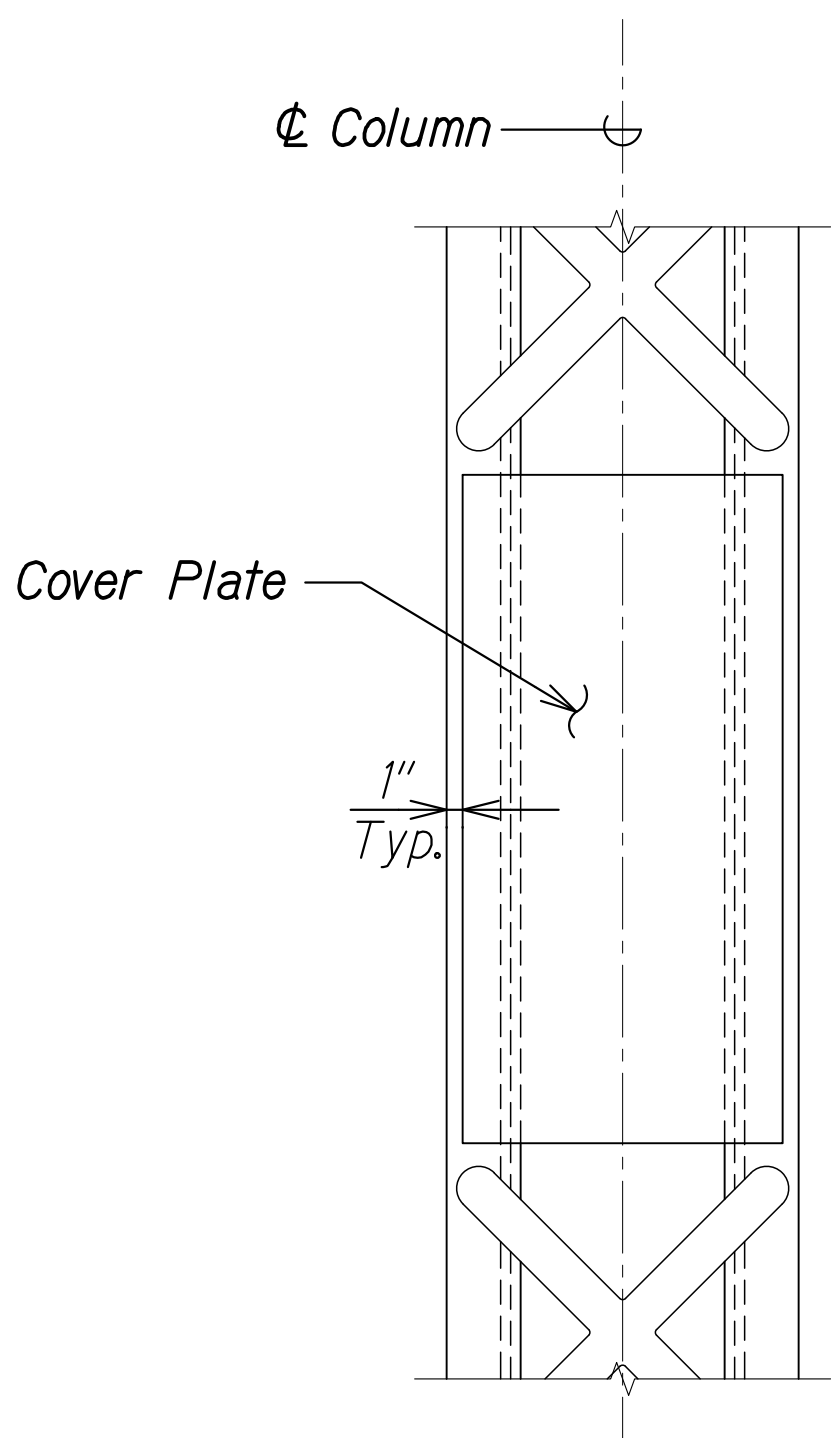
COLUMN TO BRACE
CONNECTION DETAIL 1
Scale: 1" = 1'-0" SA6.7 SA6.7 1



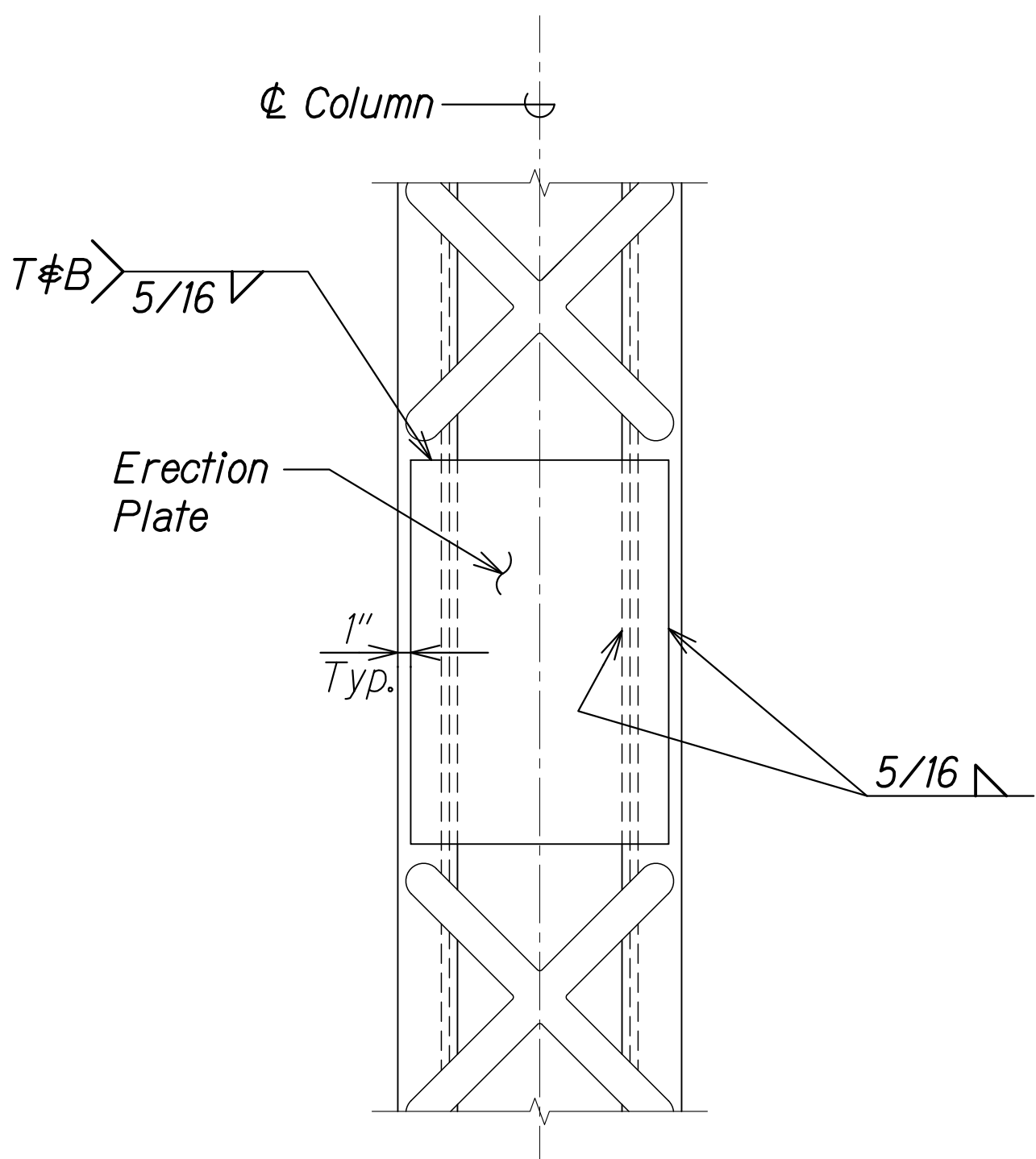
COLUMN TO BRACE
CONNECTION DETAIL 2
Scale: 1" = 1'-0" SA6.7 SA6.7 1



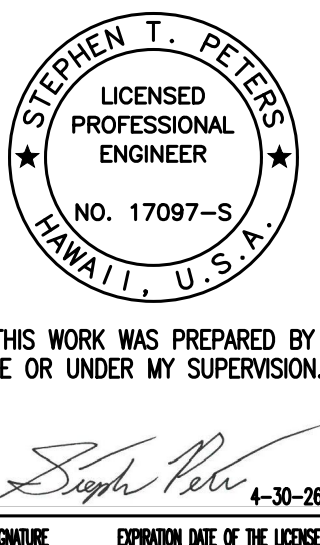
COLUMN TO BRACE
CONNECTION DETAIL 3
Scale: 1" = 1'-0" SA6.7 SA6.7 1



COVER PLATE
CONNECTION DETAIL 4
Scale: 1" = 1'-0" SA6.7 SA6.7 1



ERECTION PLATE
CONNECTION DETAIL 5
Scale: 1" = 1'-0" SA6.7 SA6.7 1



| DATE | REVISION |
|---------|---------------------------------|
| 12/6/24 | 1 Revised Details & Added Notes |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**COLUMN TO BRACE
CONNECTION DETAILS**

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA6.7 OF 22 SHEETS

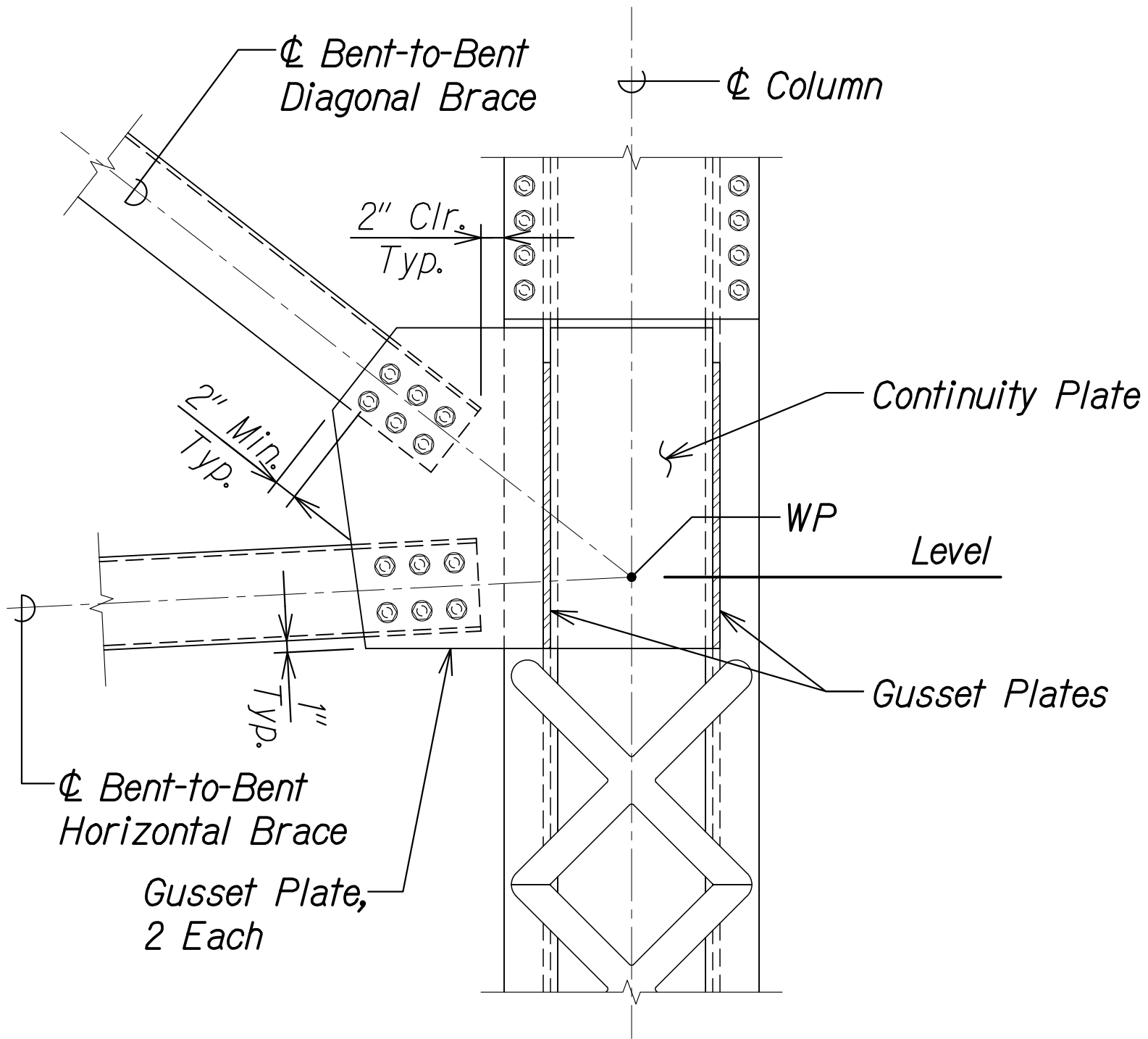
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 114 | 280 |

NOTES:

- The Contractor's Steel Detailer is responsible for determining the actual size of each gusset/continuity/cover plate based on the information provided in the Contract Drawings.
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- After erection, touch-up paint the ends of all bolts/nuts/washers.
- Batten plates and lacing on bracing not shown for clarity.

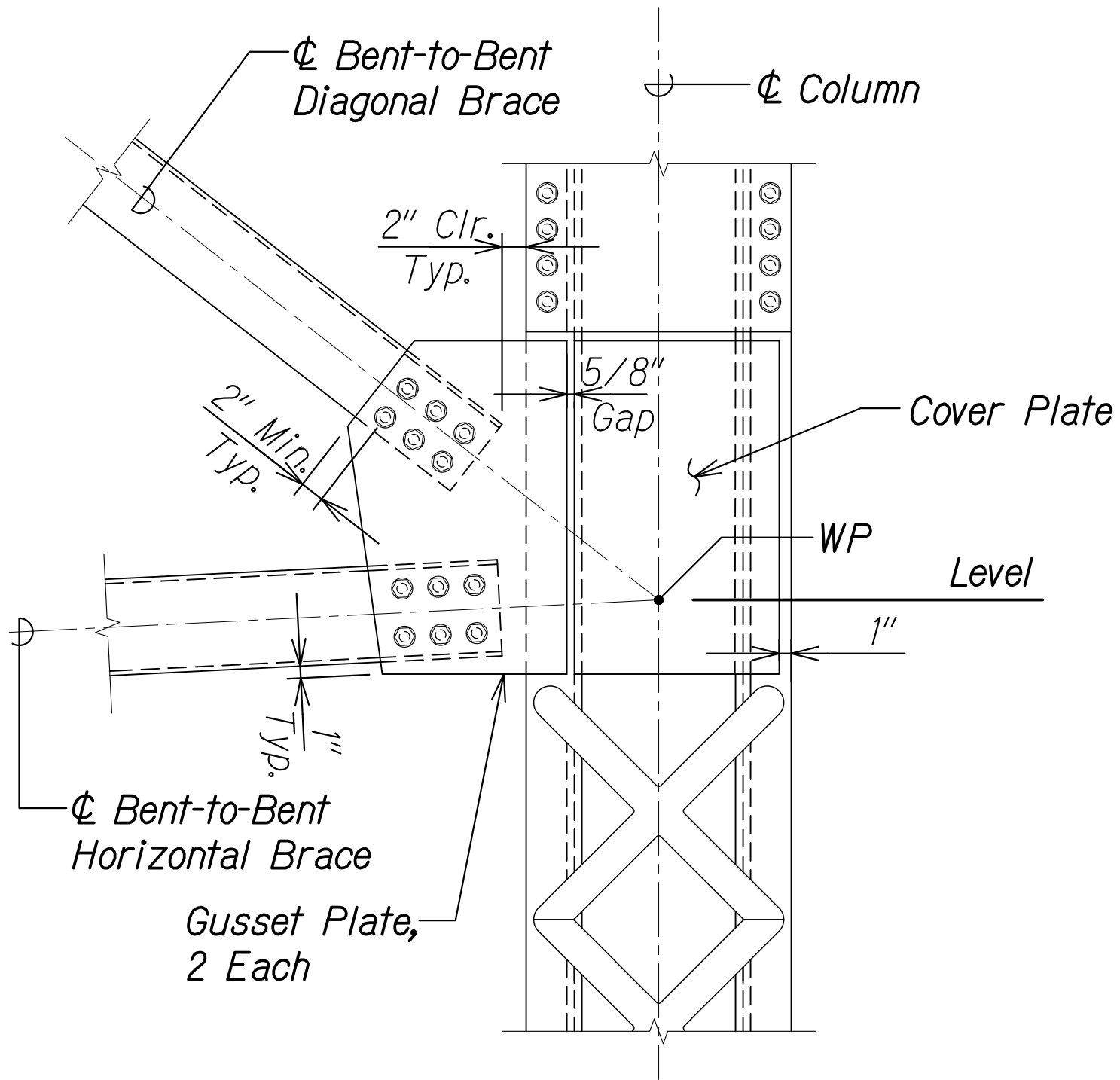


| WP OFFSET SCHEDULE | | | |
|--------------------|------------|-----|-----|
| LOCATION | | "H" | "J" |
| Level 5 | Bent No. 3 | 4" | 2" |



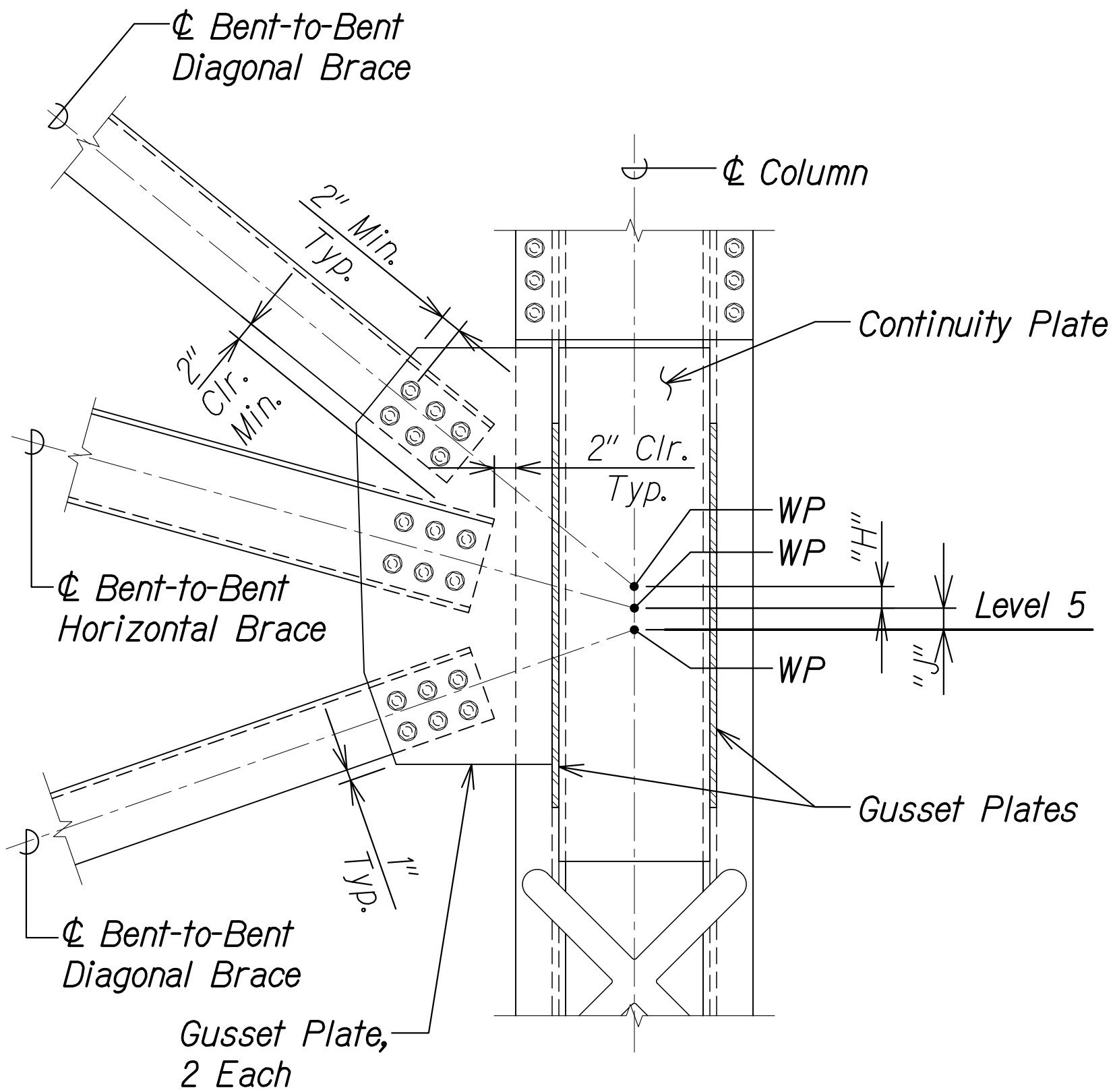
**COLUMN TO BRACE
CONNECTION DETAIL**

Scale: 1" = 1'-0"



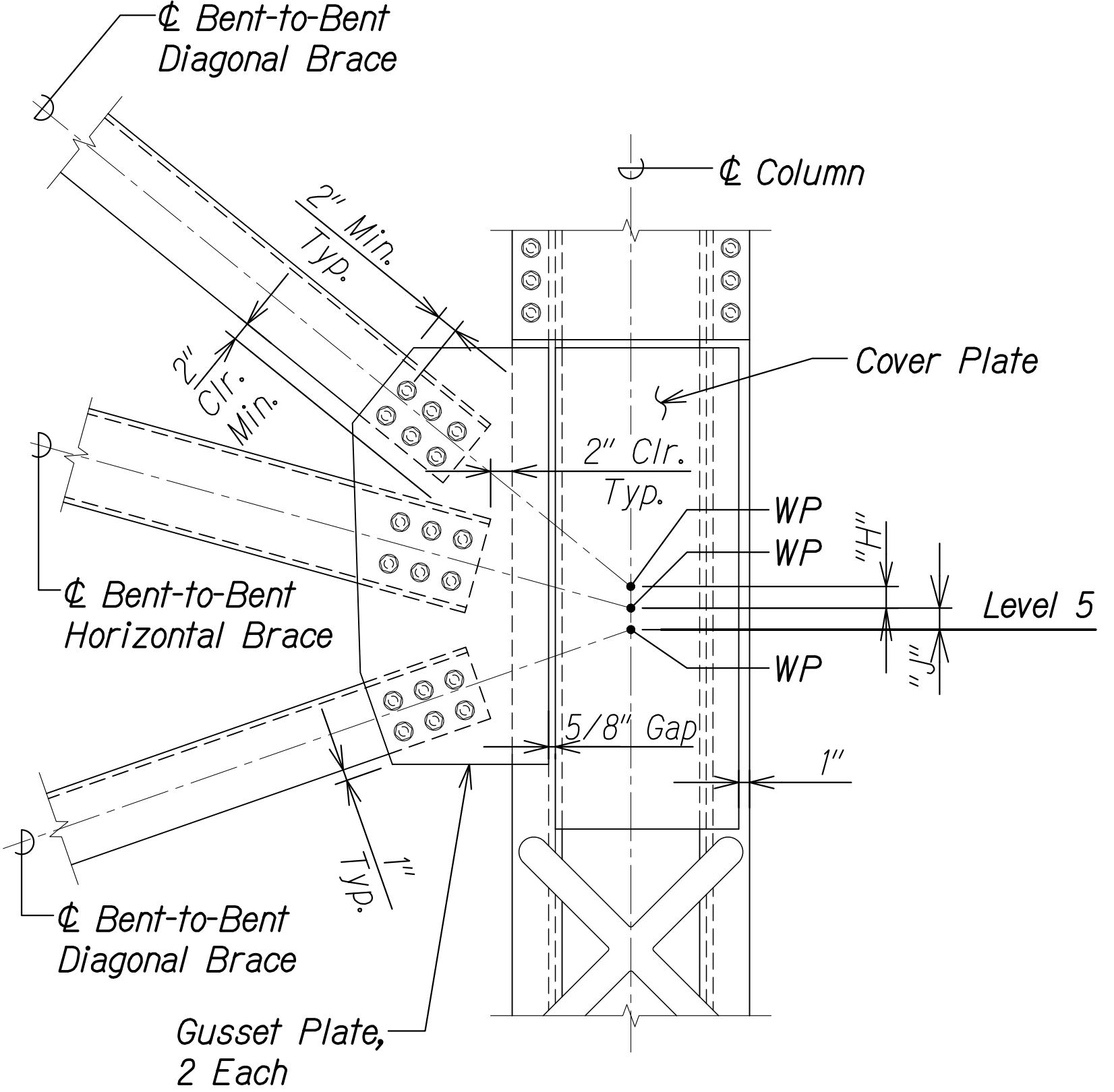
**COLUMN TO BRACE
CONNECTION DETAIL**

Scale: 1" = 1'-0"



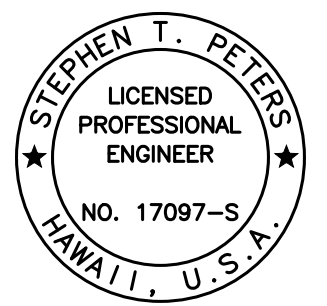
**COLUMN TO BRACE
CONNECTION DETAIL**

Scale: 1" = 1'-0"



**COLUMN TO BRACE
CONNECTION DETAIL**

Scale: 1" = 1'-0"



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
SIGNATURE: *Stephen T. Peters*
EXPIRATION DATE OF THE LICENSE: 4-30-26

| | | |
|---------|----------|--|
| 12/6/24 | 1 | Revised Details & Added Notes & Schedule |
| DATE | REVISION | |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**COLUMN TO BRACE
CONNECTION DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

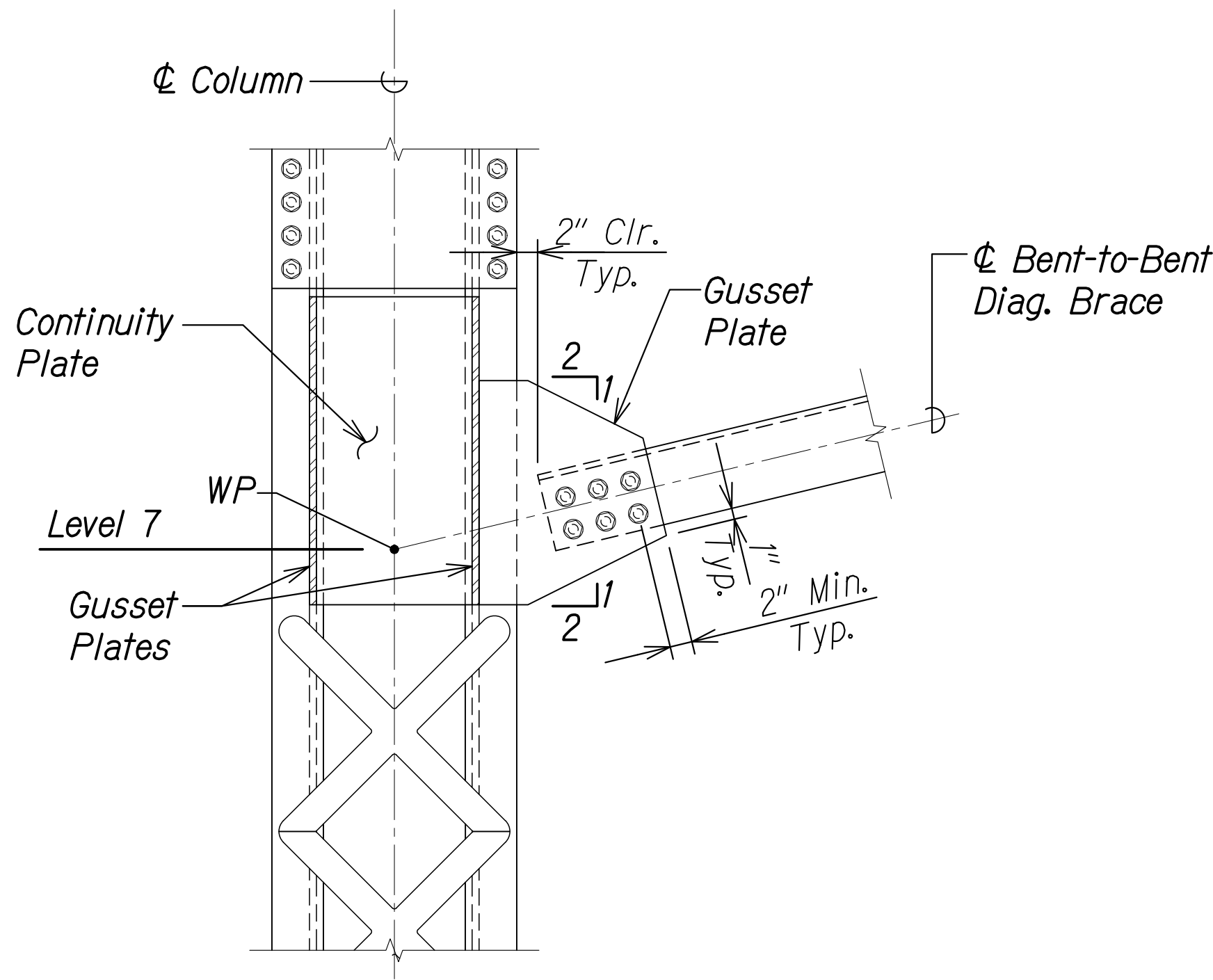
| | |
|---------------|------|
| ORIGINAL PLAN | DATE |
| NOTE BOOK | |
| QUANTITIES BY | |
| CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOTHA\01 CAD\12-06-24 ADD\NSR-SA6602-SA6617 CONN DTL'S ADD2.DWG PLOT TIME: 12-05-24 3:35 PM

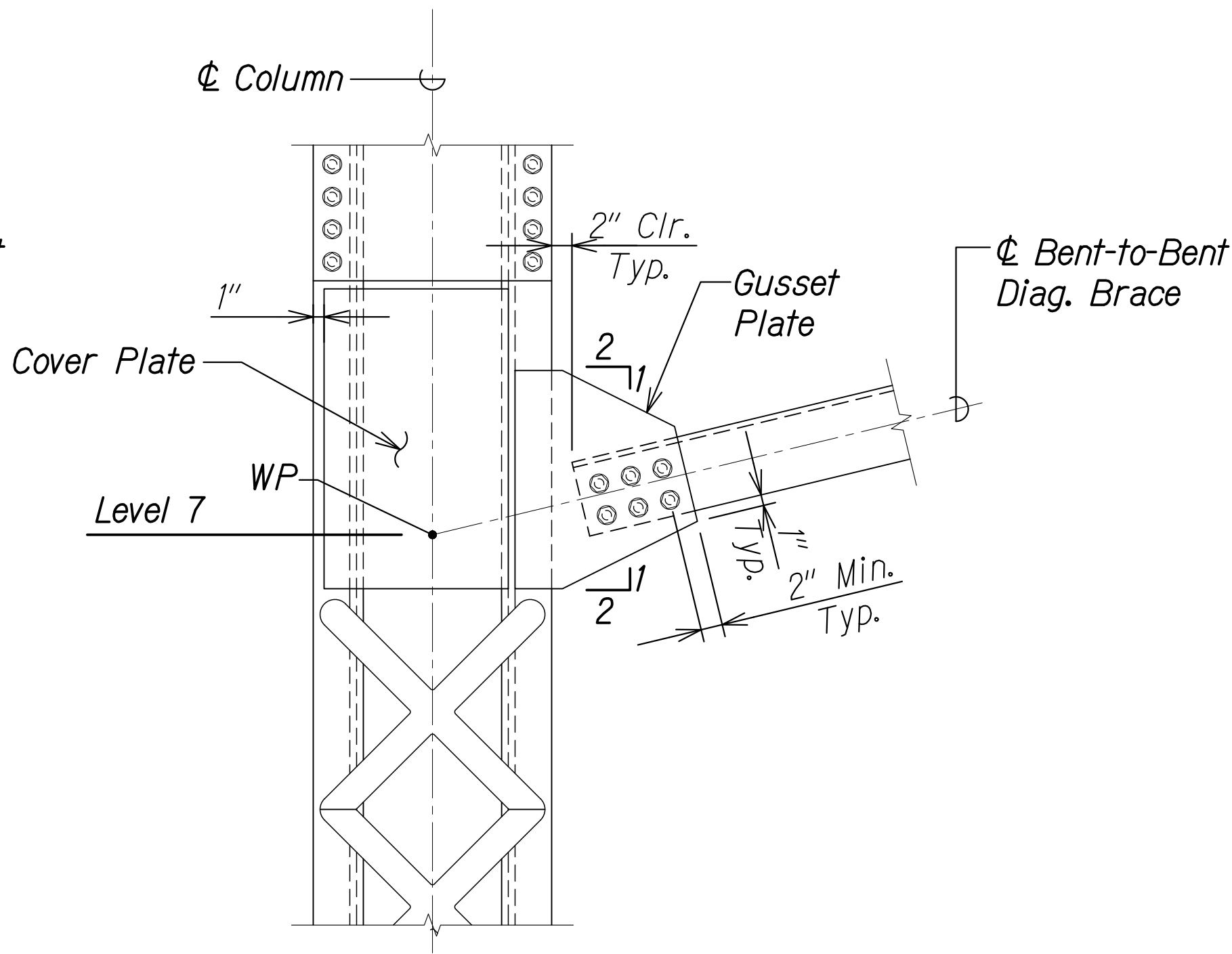
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 115 | 280 |

NOTES:

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- After erection, touch-up paint the ends of all bolts/nuts/washers.
- Batten plates and lacing on braces not shown for clarity.

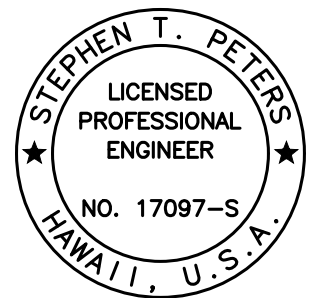


**COLUMN TO BRACE
CONNECTION DETAIL**
Scale: 1" = 1'-0"
SA6.9 SA6.9 1



**COLUMN TO BRACE
CONNECTION DETAIL**
Scale: 1" = 1'-0"
SA6.9 SA6.9 1

| DATE | REVISION |
|---------|-----------------------------------|
| 12/6/24 | 1 Revised Details and Added Notes |



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Stephen T. Peters
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**COLUMN TO BRACE
CONNECTION DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

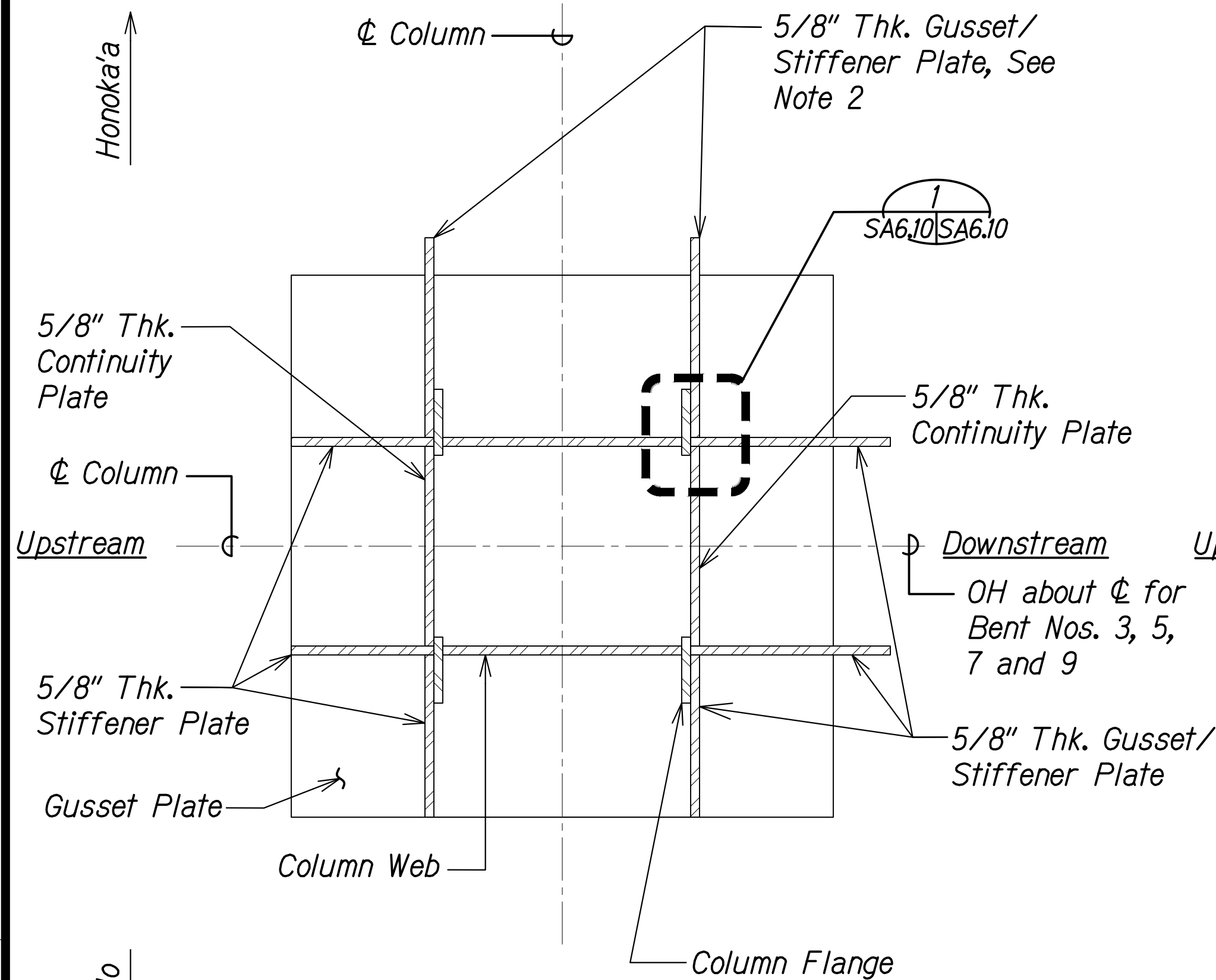
SHEET No. SA6.9 OF 22 SHEETS

ADD. 115

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOTHA\01 CAD\12-06-24 ADD\NSR-SA6602-SAG617 CONN DTL'S ADD2.DWG PLOT TIME: 12-03-24 10:16 PM

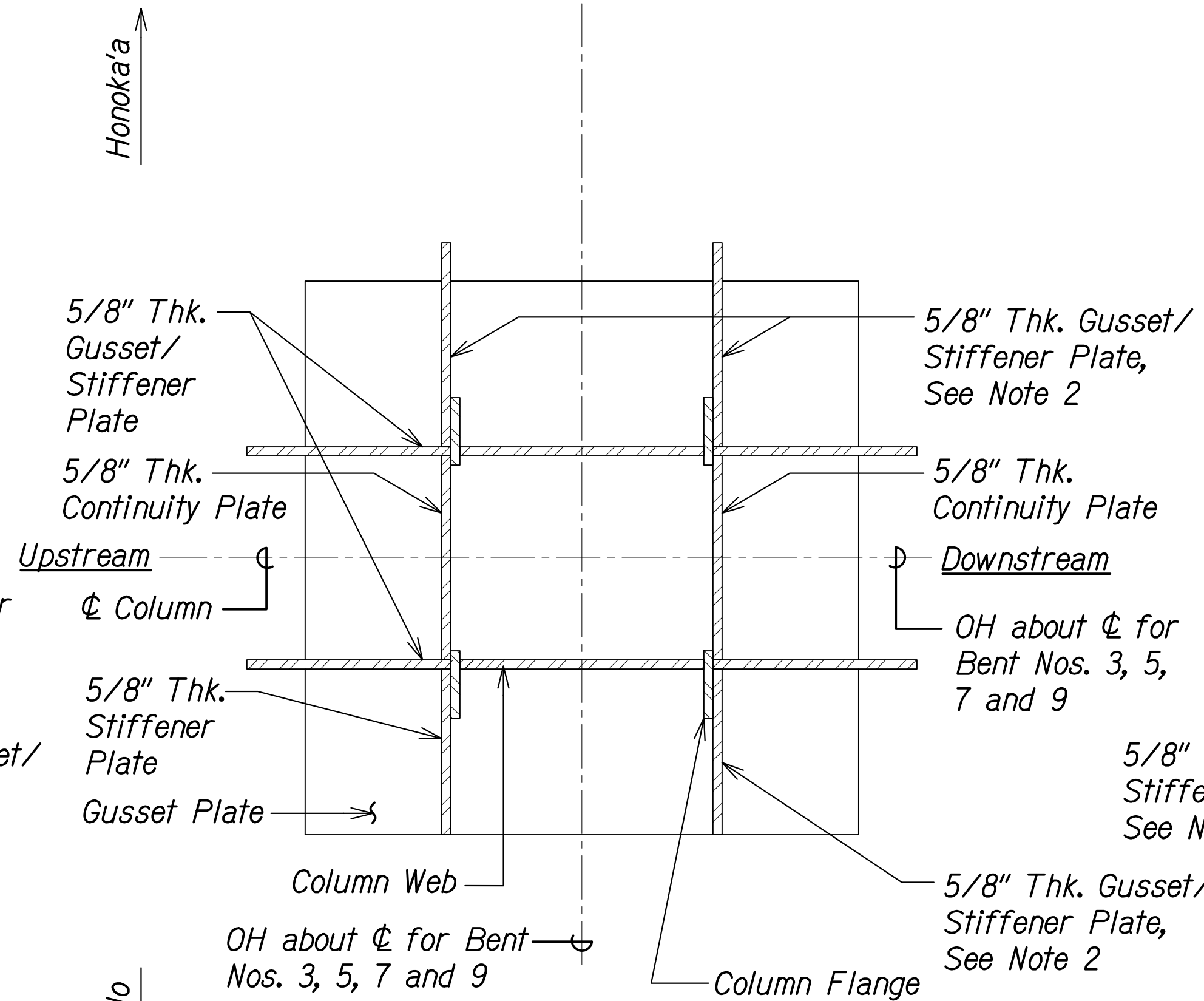
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 116 | 280 |



BASE COLUMN TO BRACE
PLAN AT BENT EXTERIOR

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

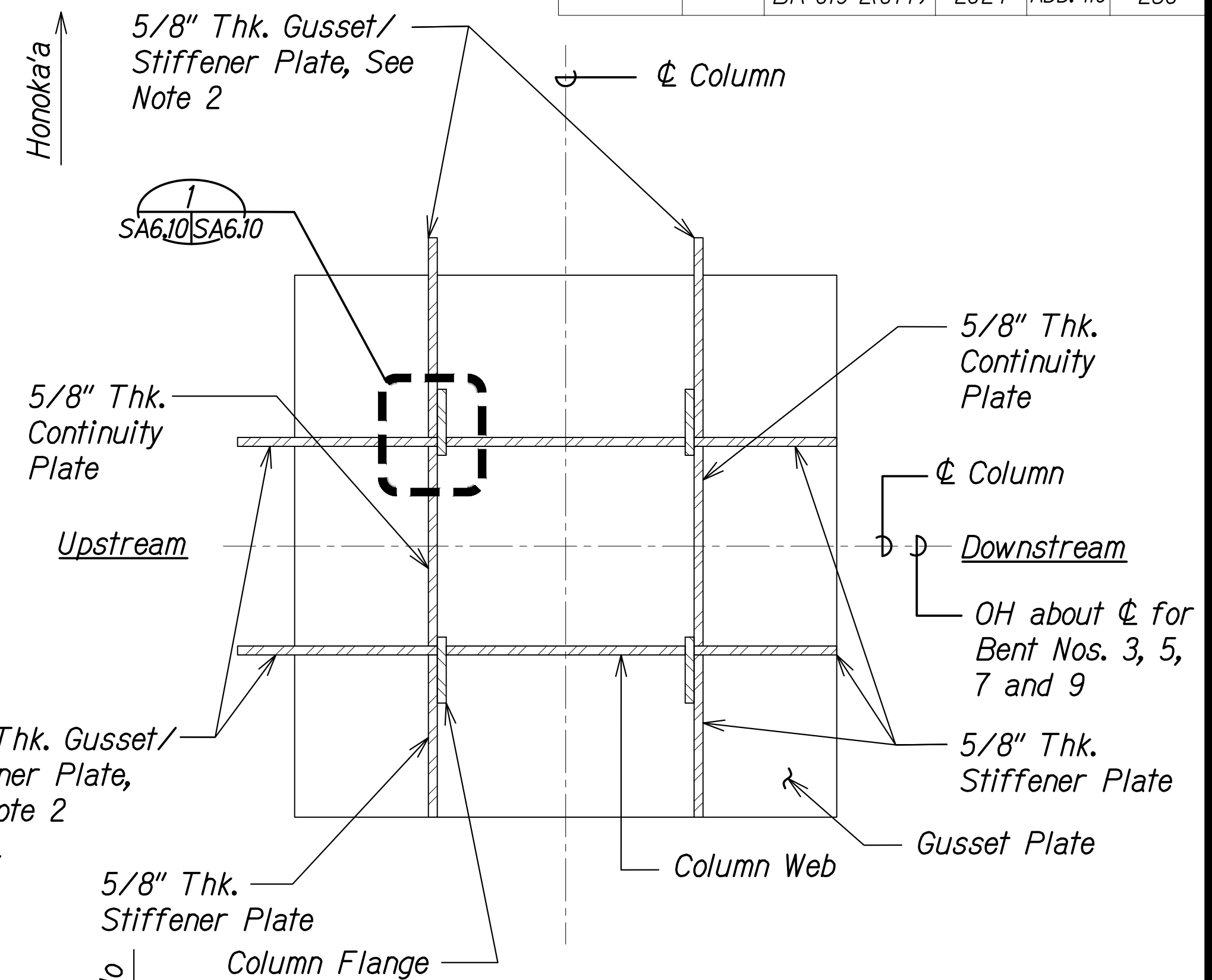
SA6.10|SA6.10 1



BASE COLUMN TO BRACE
PLAN AT BENT INTERIOR

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

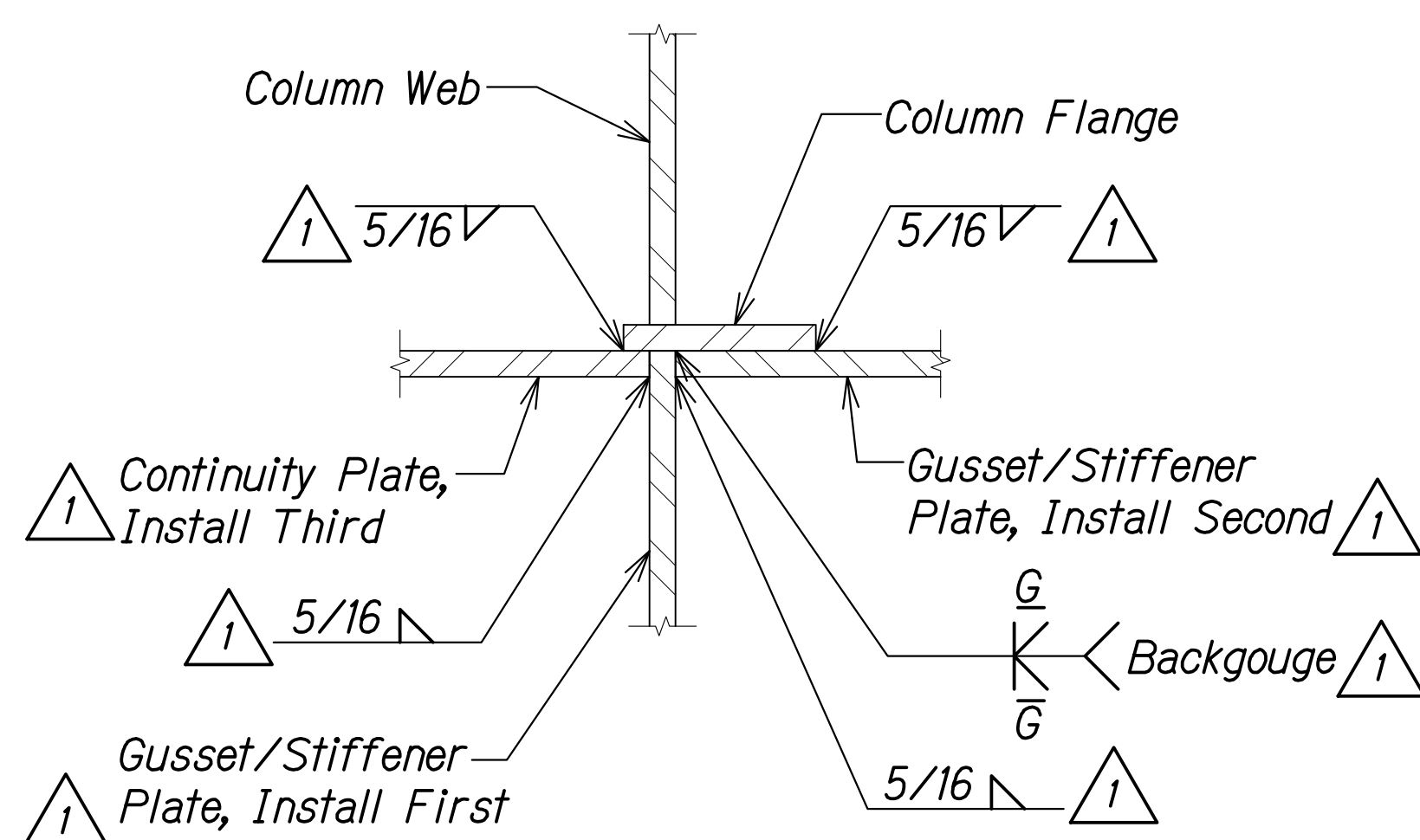
SA6.10|SA6.10 1



BASE COLUMN TO BRACE
PLAN AT BENT EXTERIOR

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

SA6.10|SA6.10 1



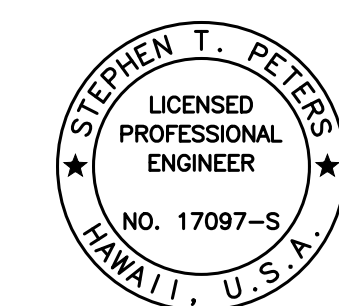
DETAIL

Scale: 3" = 1'-0"

SA6.10|SA6.10 1

1 NOTES:

- All gusset/cover/continuity/stiffener plates shall receive return fillet welds across the top and bottom connection at faying edge with column flange and base plate to provide a full seal weld to prevent moisture intrusion.
- 5/8" thick stiffener Plate at Bent No. 1.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE EXPIRATION DATE OF THE LICENSE

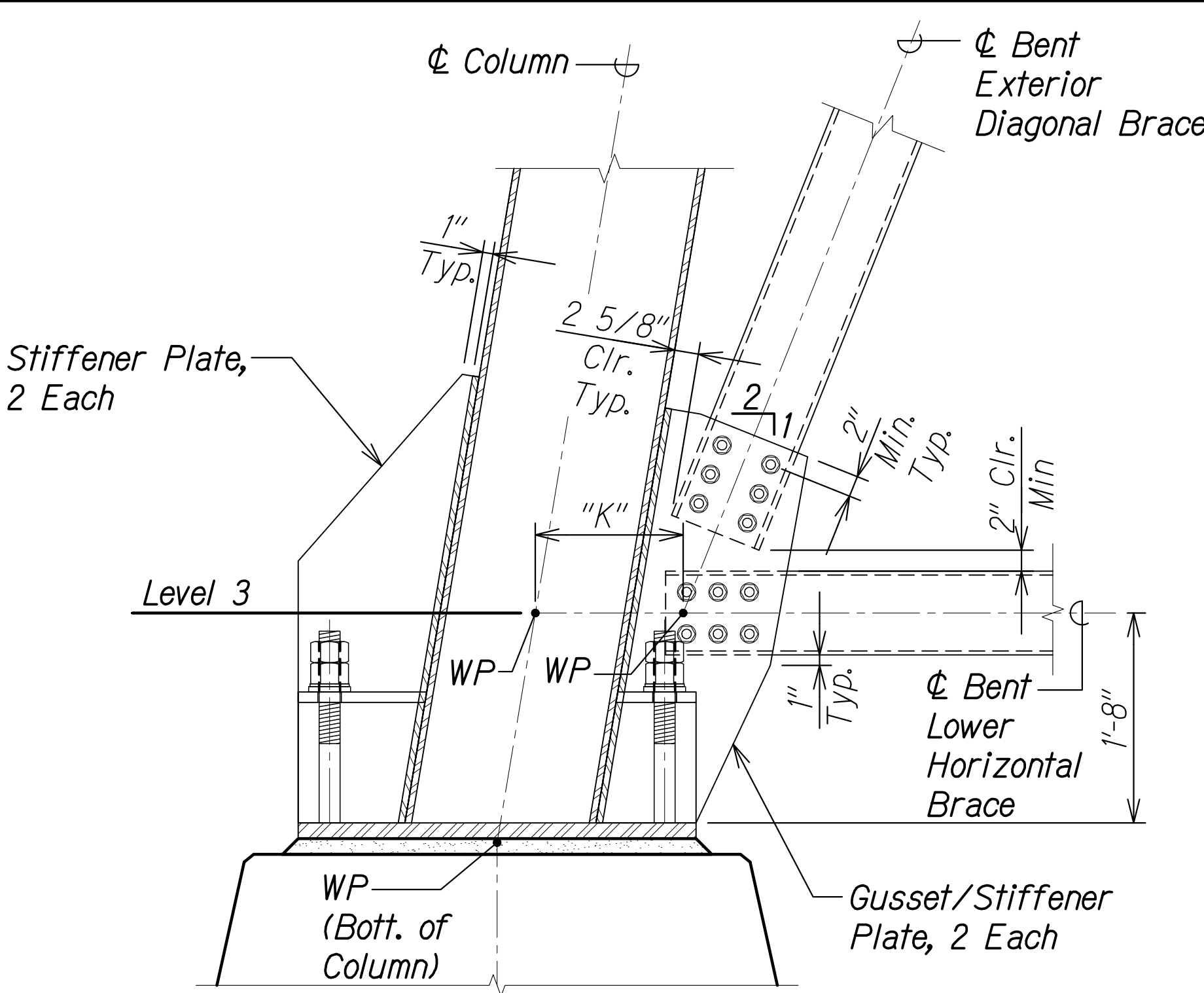
| | | |
|--|----------|-------------------------------|
| 12/6/24 | 1 | Revised Details & Added Notes |
| DATE | REVISION | |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION BASE COLUMN TO BRACE CONNECTION DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | | |
| SHEET No. SA6.10 OF 22 SHEETS | | |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 117 | 280 |



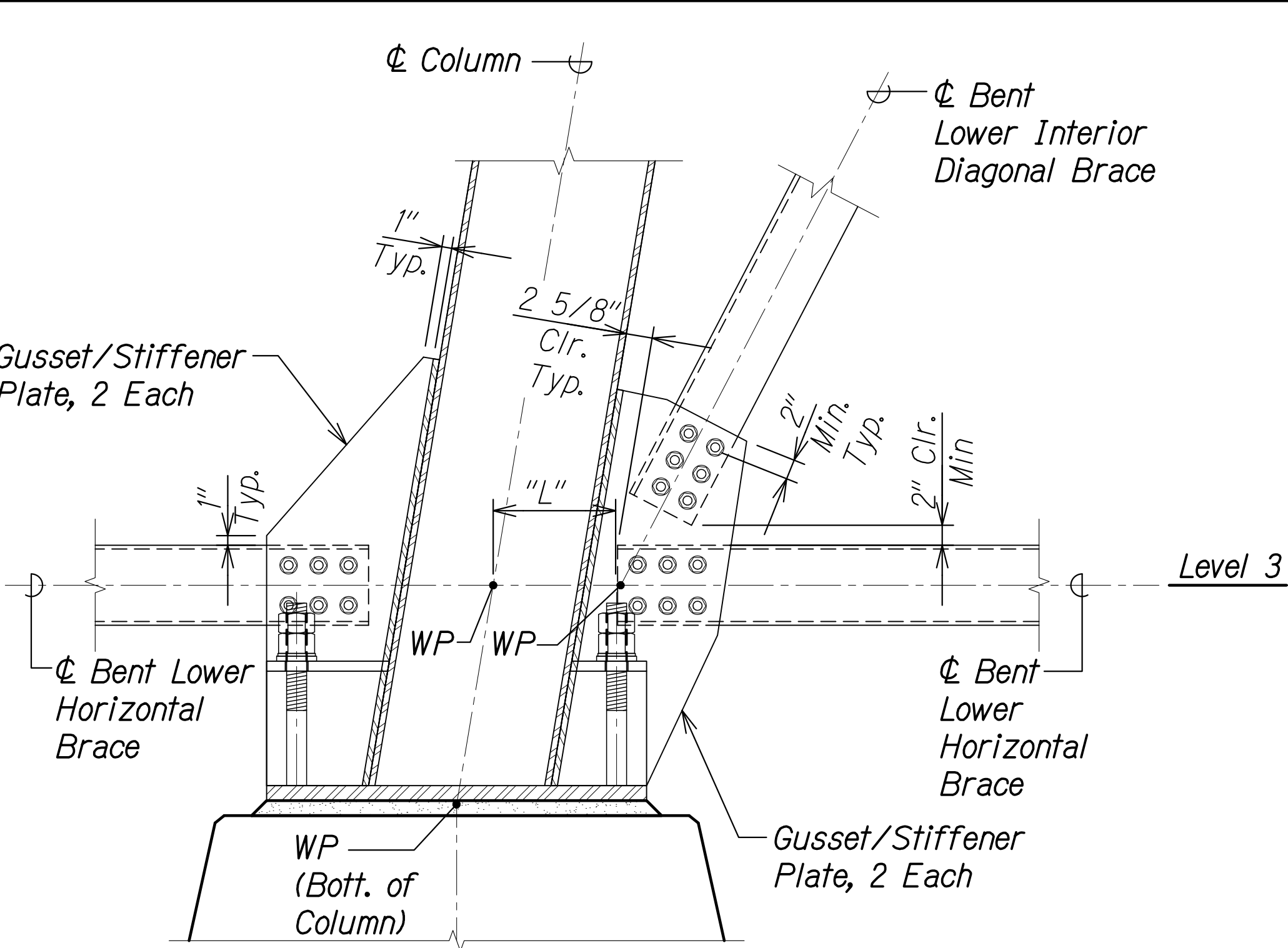
NOTES:

1. The Contractor's Steel Detailer is responsible for determining the actual size of each gusset/continuity/cover plate based on the information provided in the Contract Drawings.
2. All bolted connections for horizontal and diagonal braces, as detailed on this sheet, shall be pretensioned.
3. After erection, touch-up paint the ends of all bolts/nuts/washers.
4. Batten plates and lacing not shown for clarity.
5. See Schedule on sheet SA6.12 for WP offsets.



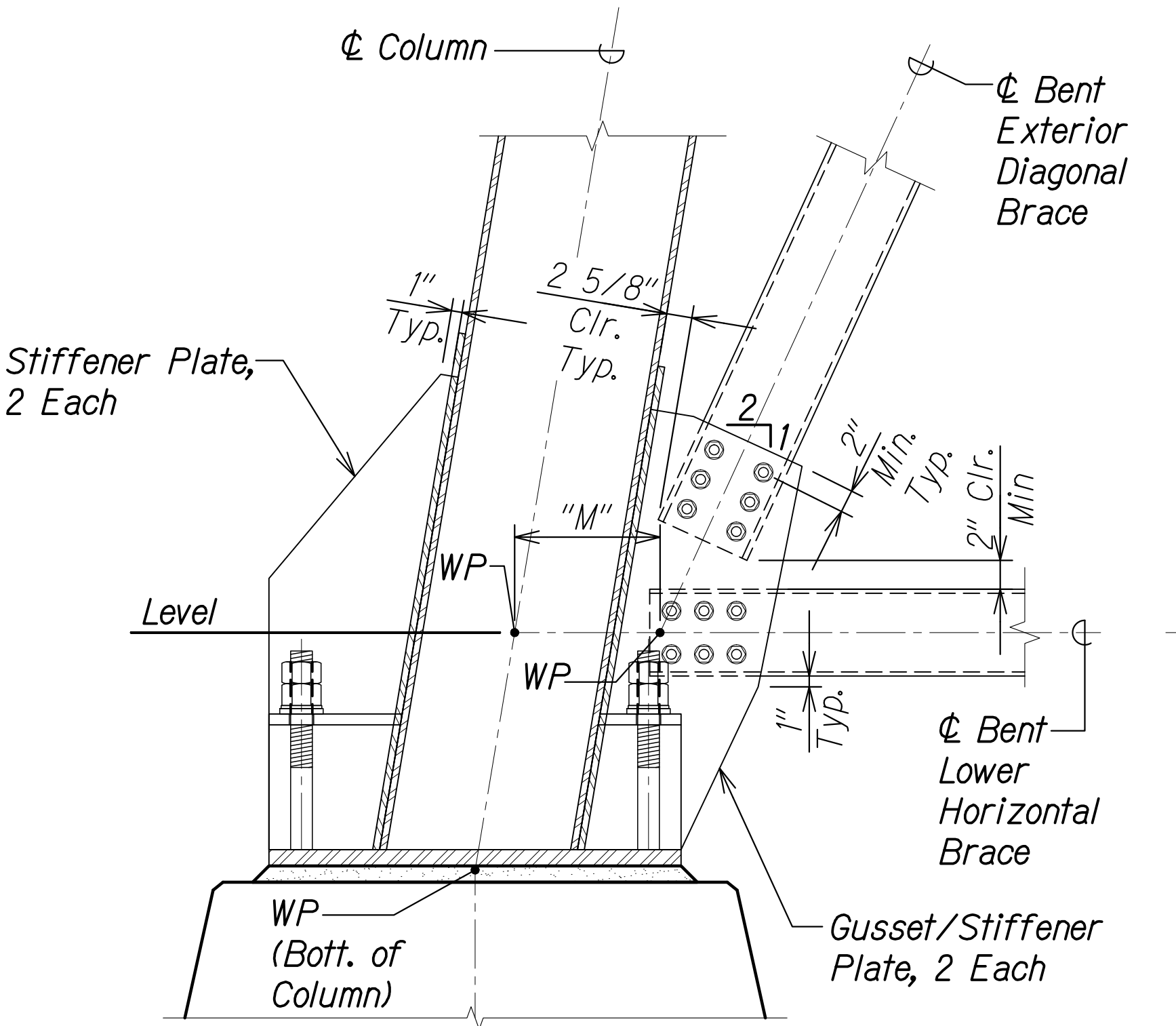
EXT. BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"



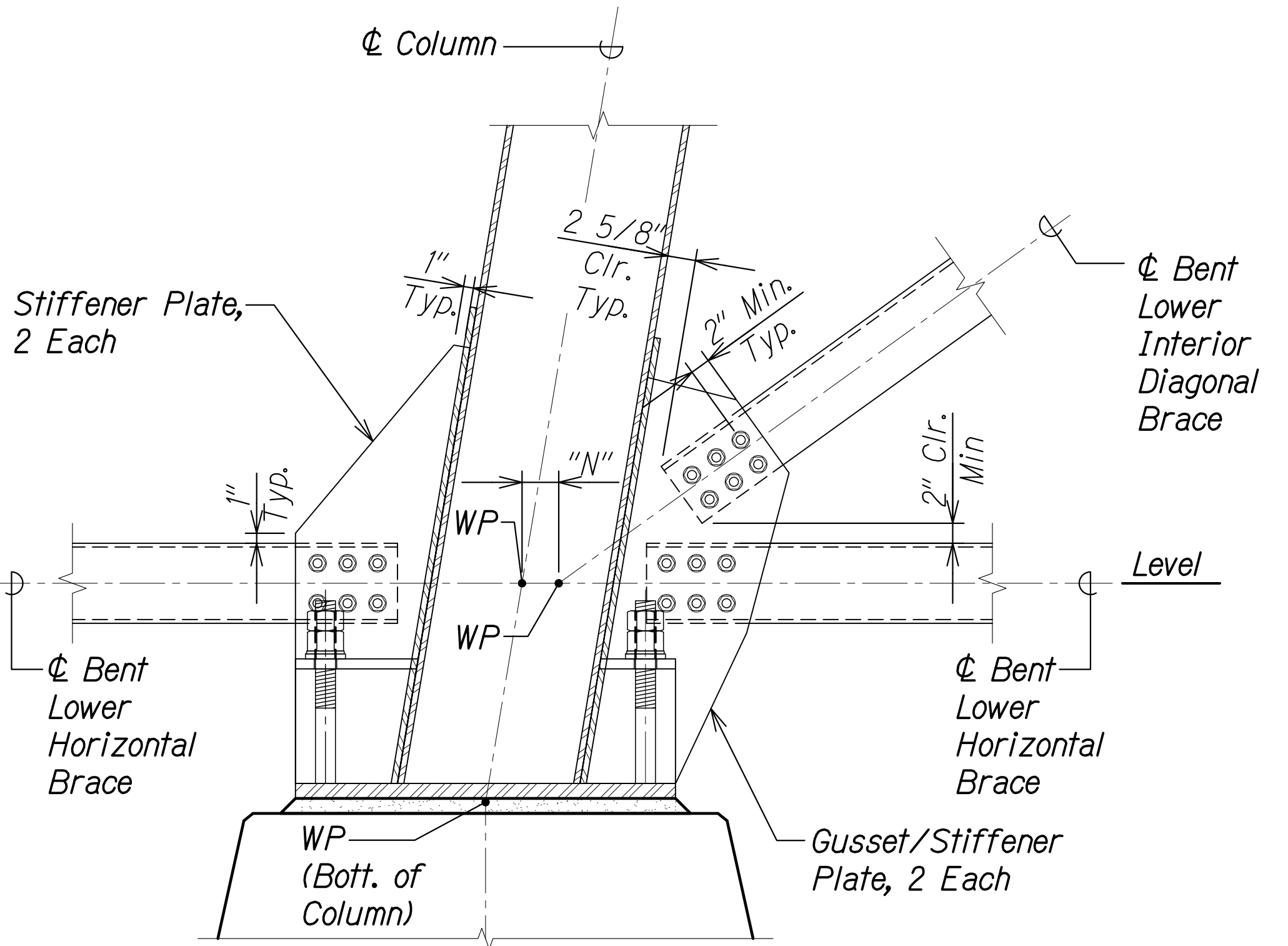
INT. BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"



EXT. BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

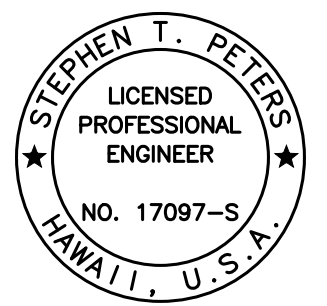


INT. BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"



| | | |
|---------|----------|-------------------------------|
| 12/6/24 | 1 | Revised Details & Added Notes |
| DATE | REVISION | |



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ME OR UNDER MY SUPERVISION.
SIGNATURE
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**BASE COLUMN TO BRACE
CONNECTION DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| | |
|-------------------|--|
| DATE | 12-05-24 |
| SURVEY PLOTTED BY | ADDX NSR-SA6602-SA6617 CONN DTL'S ADD2.DWG |
| DRAWN BY | |
| DESIGNED BY | |
| NOTE BOOK | |
| QUANTITIES BY | |
| CHECKED BY | |
| No. | |

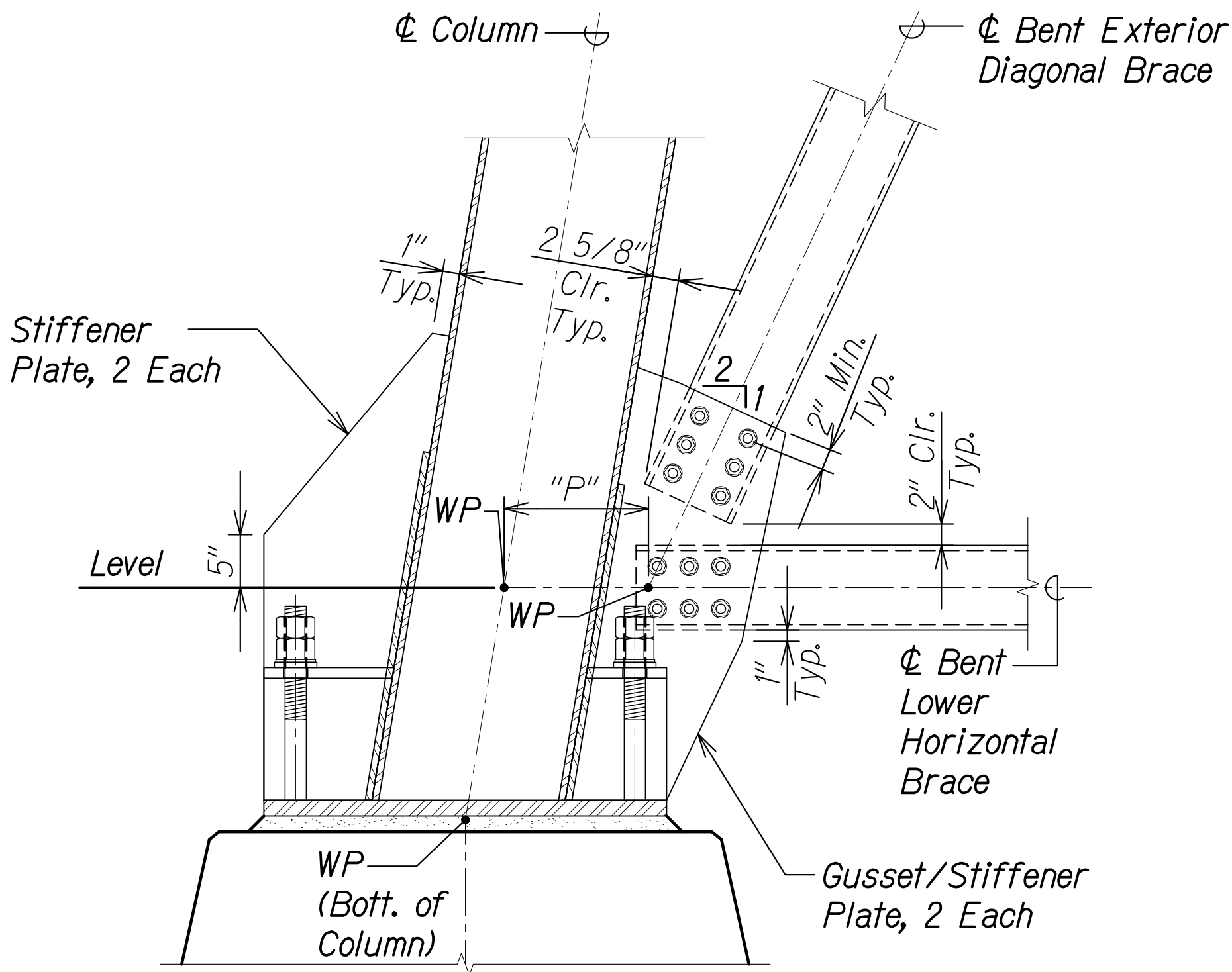
DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\12-06-24 ADDX NSR-SA6602-SA6617 CONN DTL'S ADD2.DWG PLOT TIME: 12-05-24 1:27 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 118 | 280 |



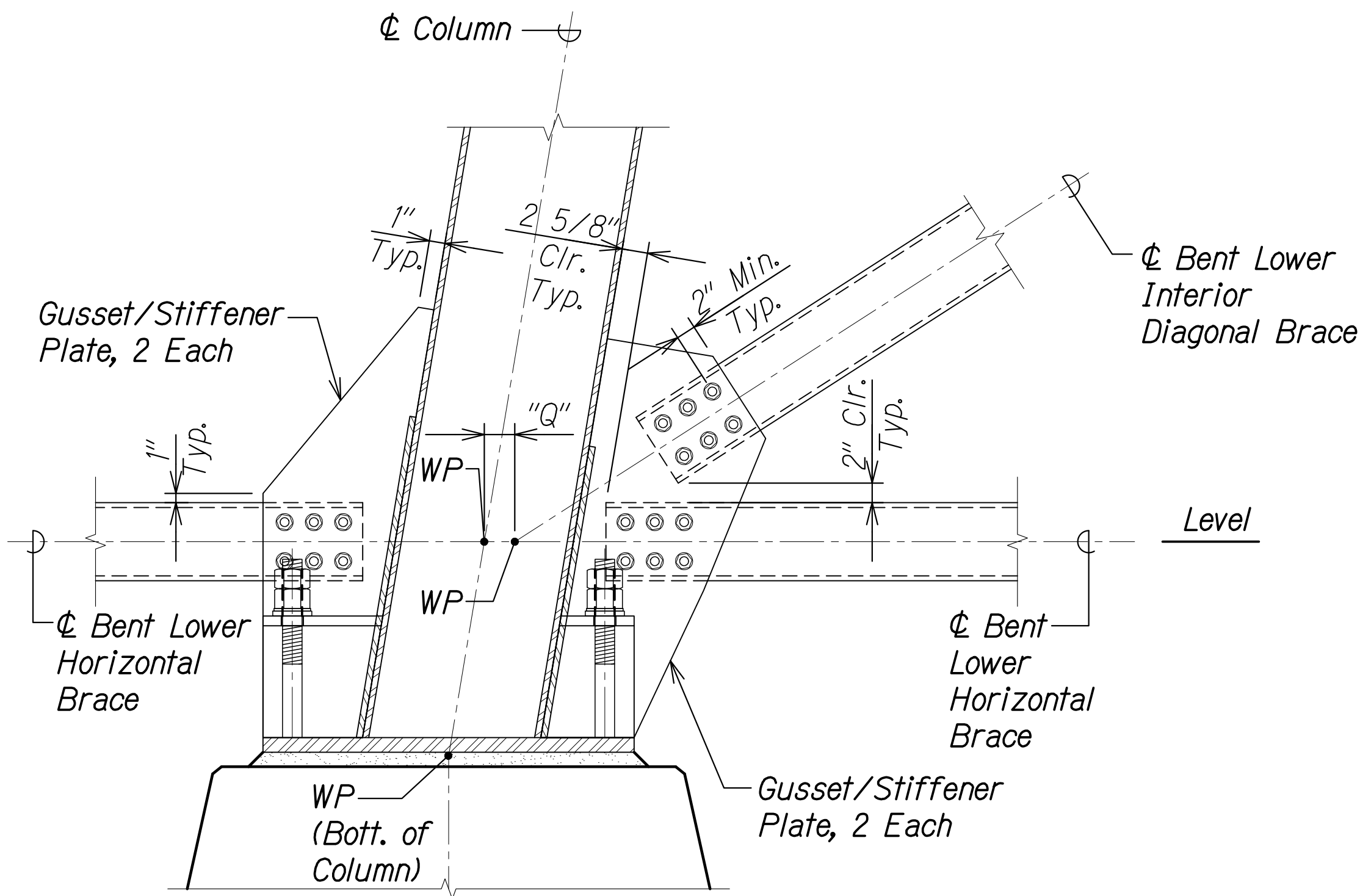
NOTES:

- The Contractor's Steel Detailer is responsible for determining the actual size of each gusset/continuity/cover plate based on the information provided in the Contract Drawings.
- All bolted connections for horizontal and diagonal braces, as detailed on this sheet, shall be pretensioned.
- After erection, touch-up paint the ends of all bolts/nuts/washers.
- Batten plates and lacing not shown for clarity.



EXT. BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"



INT. BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

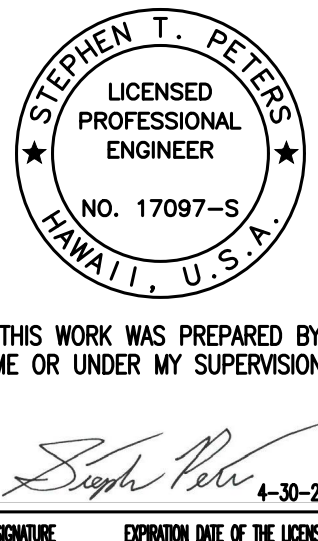



| WP OFFSET SCHEDULE | | | | | | |
|--------------------|---------|---------|---------|---------|---------|---------|
| LOCATION | "K" | "L" | "M" | "N" | "P" | "Q" |
| Bent No. 1 | 14 1/4" | 12 3/4" | - | - | - | - |
| Bent No. 2 | - | - | 13 1/2" | 3 3/4" | - | - |
| Bent No. 3 | - | - | - | - | 14" | 0" |
| Bent No. 4 | - | - | 15 1/2" | 2 1/2" | - | - |
| Bent No. 5 | - | - | - | - | 13 1/2" | 3" |
| Bent No. 6 | - | - | - | - | 13 1/2" | 3" |
| Bent No. 7 | - | - | 15" | 4" | - | - |
| Bent No. 8 | - | - | - | - | 15 1/4" | 12 1/2" |
| Bent No. 9 | - | - | 13 1/2" | 11 3/4" | - | - |



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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A01 CAD\12-06-24 ADD\NSR-SA6602-SA6617 CONN DTL5 ADD2.DWG PLOT TIME: 12-05-24 1:31 PM

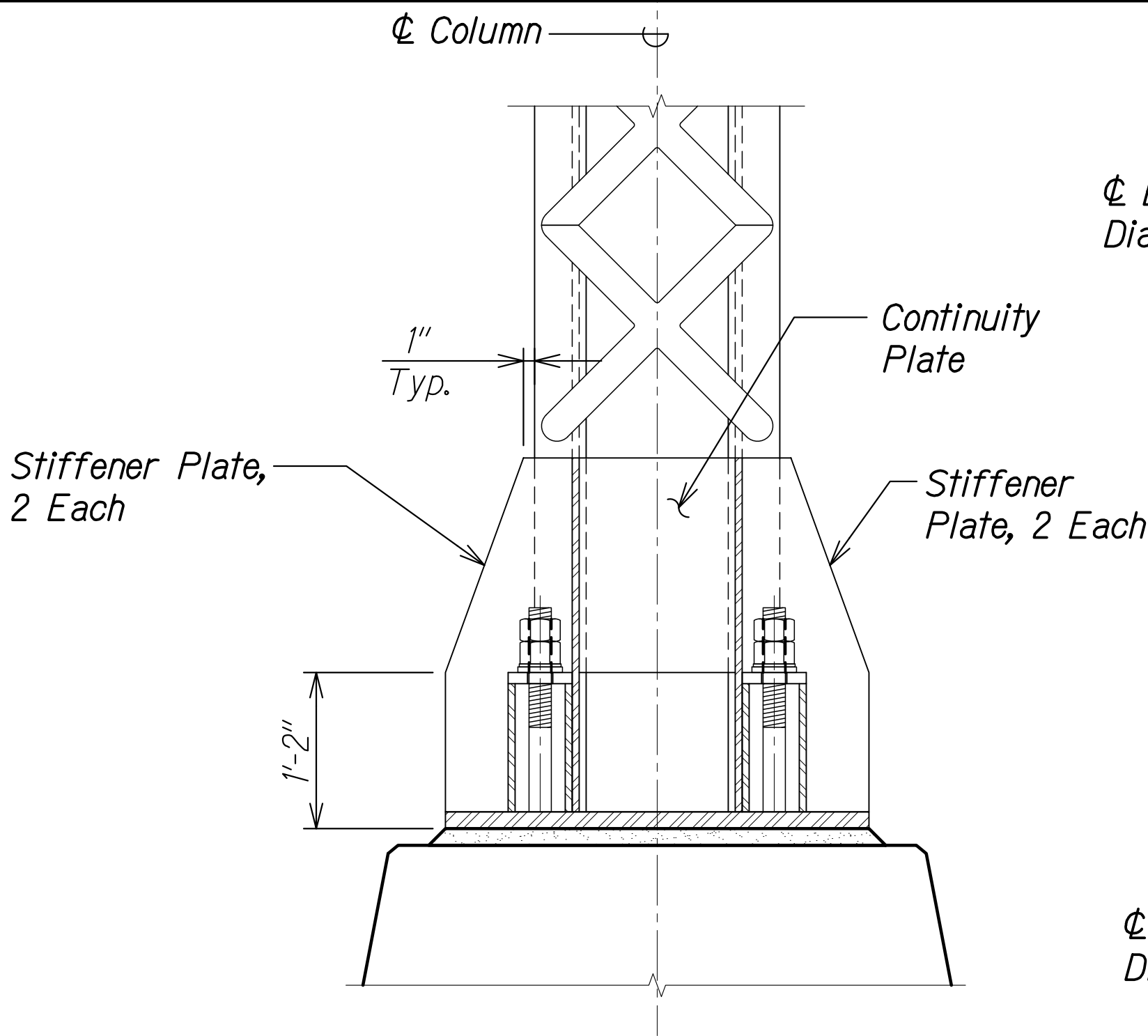


| | | |
|---|---|---|
| 12/6/24 |  | Revised Details and Added Notes & Schedule |
| DATE | REVISION | |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>BASE COLUMN TO BRACE</u> <u>CONNECTION DETAILS</u> HAWAII BELT ROAD <i>Nanue Stream Bridge Rehabilitation</i> <i>Federal Aid Project No. BR-019-2(077)</i> <i>Scale: As Noted</i> <i>Date: Oct. 2024</i> | | |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 119 | 280 |

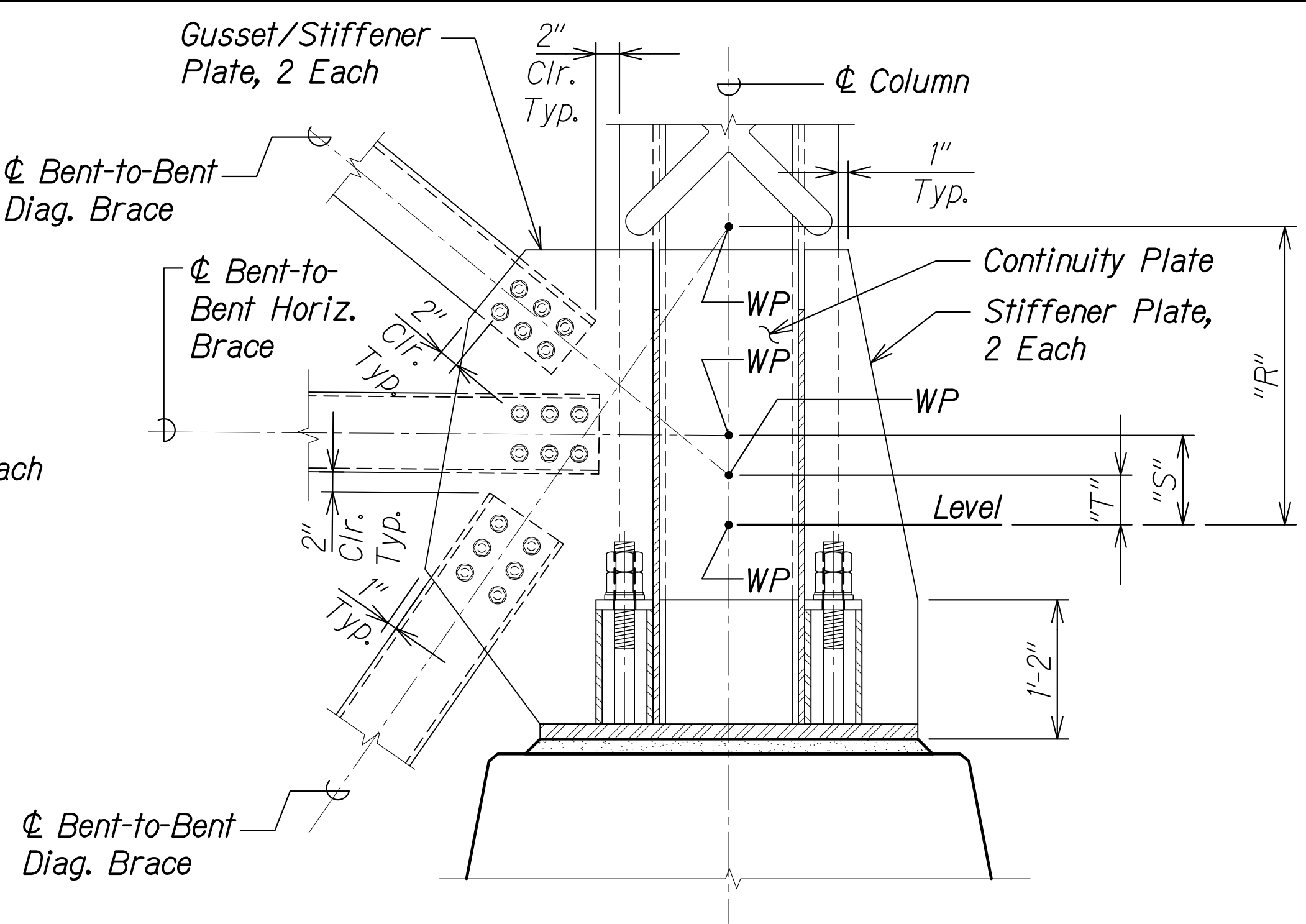
1 NOTES:

- The Contractor's Steel Detailer is responsible for determining the actual size of each gusset/continuity/cover plate based on the information provided in the Contract Drawings.
- All bolted connections for horizontal and diagonal braces, as detailed on this sheet, shall be prefensioned.
- After erection, touch-up paint ends of all bolts/nuts/washers.
- Batten plates and lacing on bracing not shown for clarity.



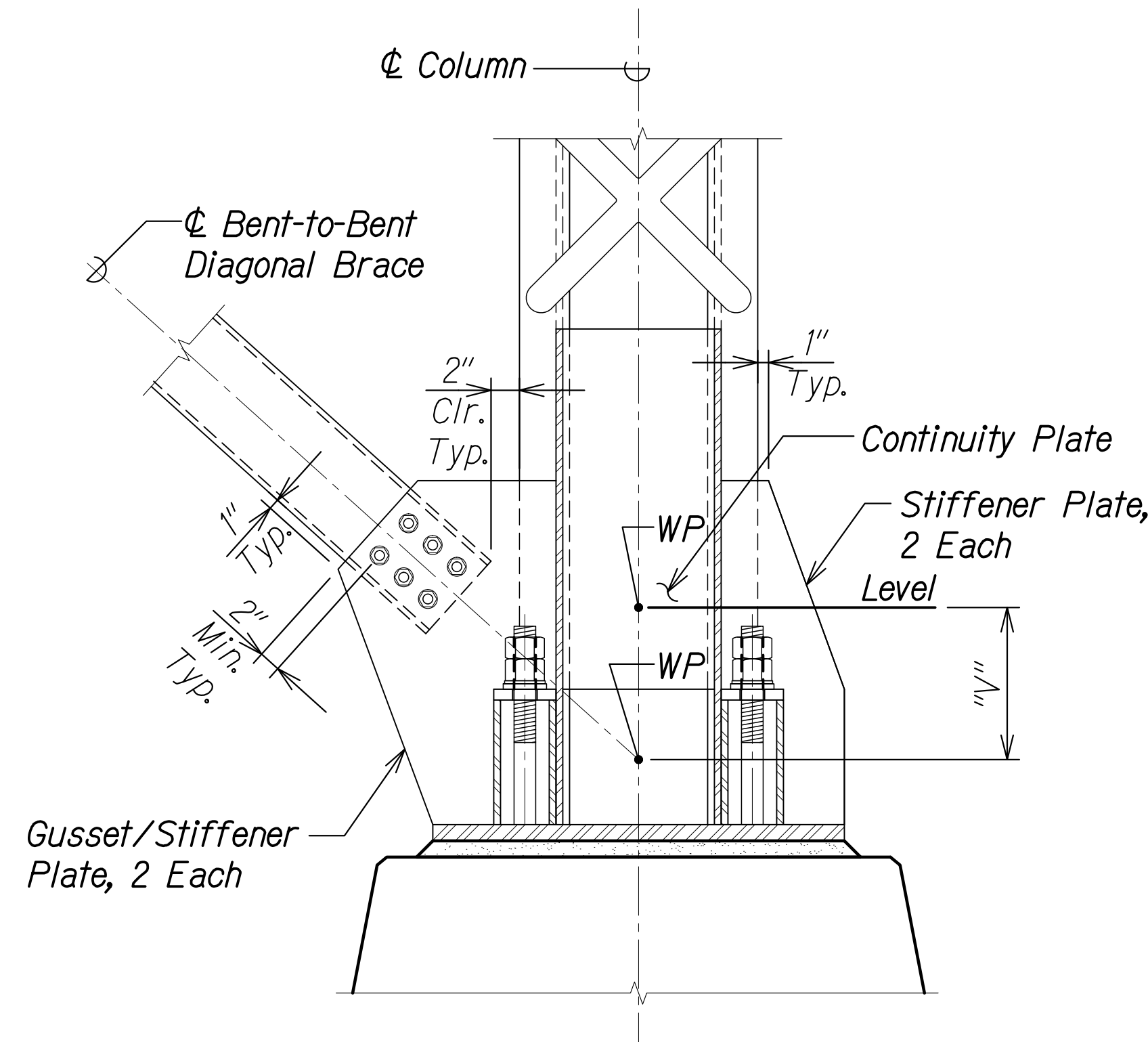
BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"



BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

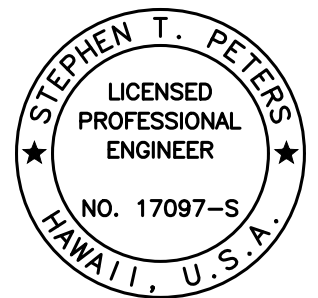


BASE COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"



| WP OFFSET SCHEDULE | | | | |
|--------------------|-----|-----|-----|-----|
| LOCATION | "R" | "S" | "T" | "V" |
| Bent No. 2 | 10" | 12" | 10" | - |
| Bent No. 3 | - | - | - | 14" |
| Bent No. 4 | 0" | 2" | 2" | - |
| Bent No. 5 | - | - | - | 5" |
| Bent No. 6 | - | - | - | 20" |
| Bent No. 7 | 30" | 9" | 5" | - |
| Bent No. 8 | - | - | - | 15" |
| Bent No. 9 | 7" | 3" | 0" | - |



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
SIGNATURE: *Stephen T. Peters*
EXPIRATION DATE OF THE LICENSE: 4-30-26

| | | |
|---------|----------|---|
| 12/6/24 | 1 | Revised Details and Added Notes & Schedule |
| DATE | REVISION | |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BASE COLUMN TO BRACE
CONNECTION DETAILS

HAWAII BELT ROAD

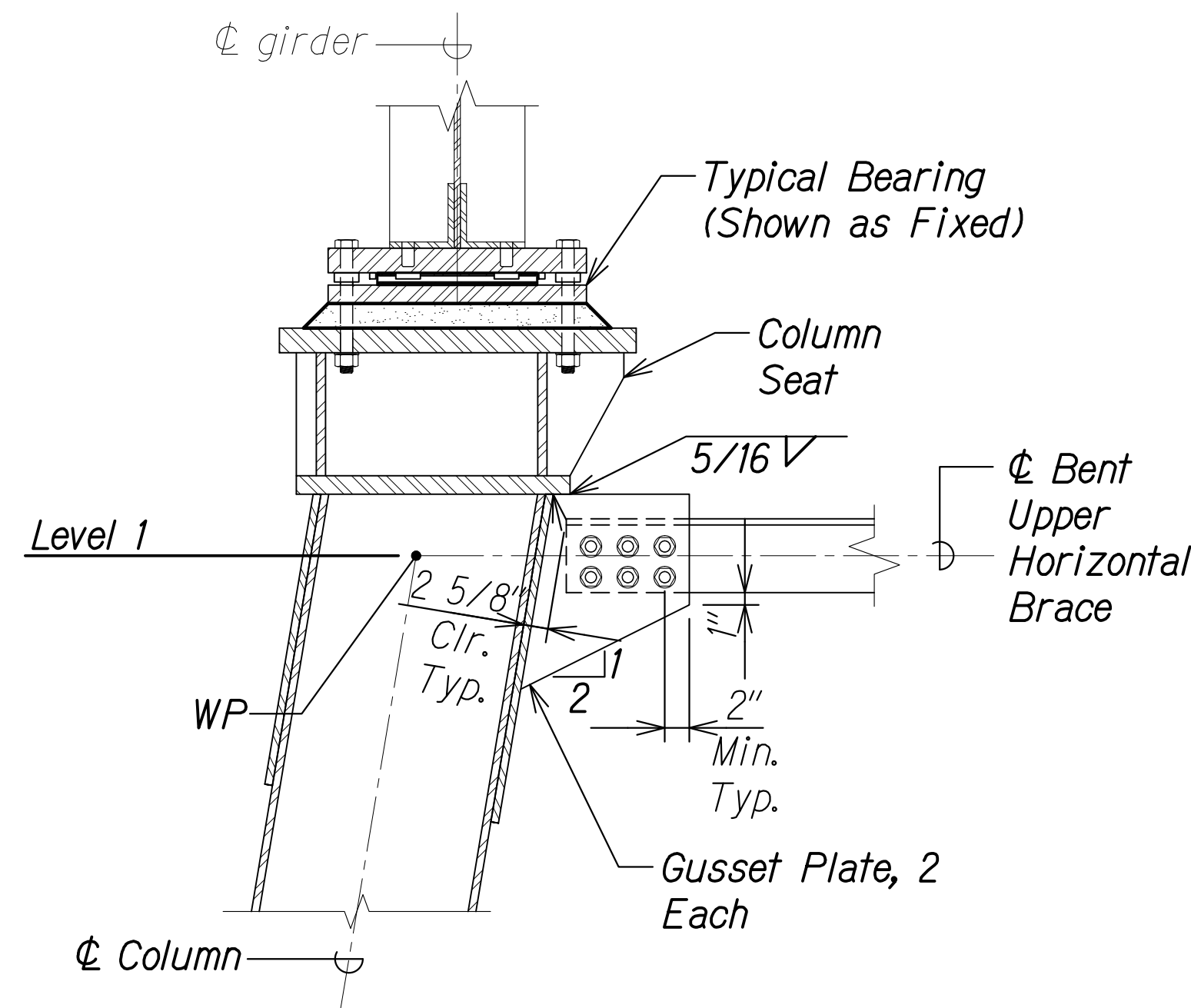
Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA6.13 OF 22 SHEETS

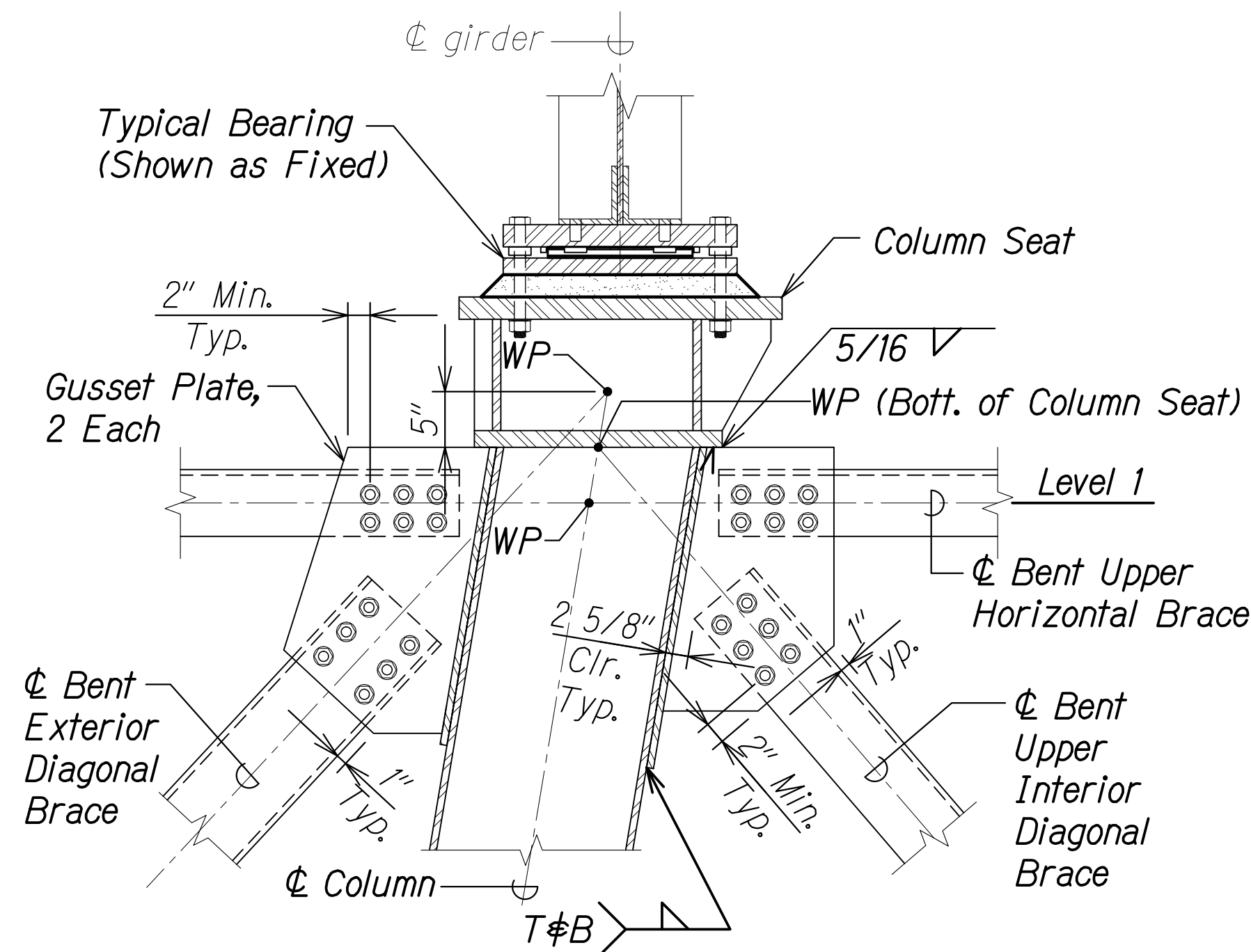
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 120 | 280 |



EXT. TOP COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

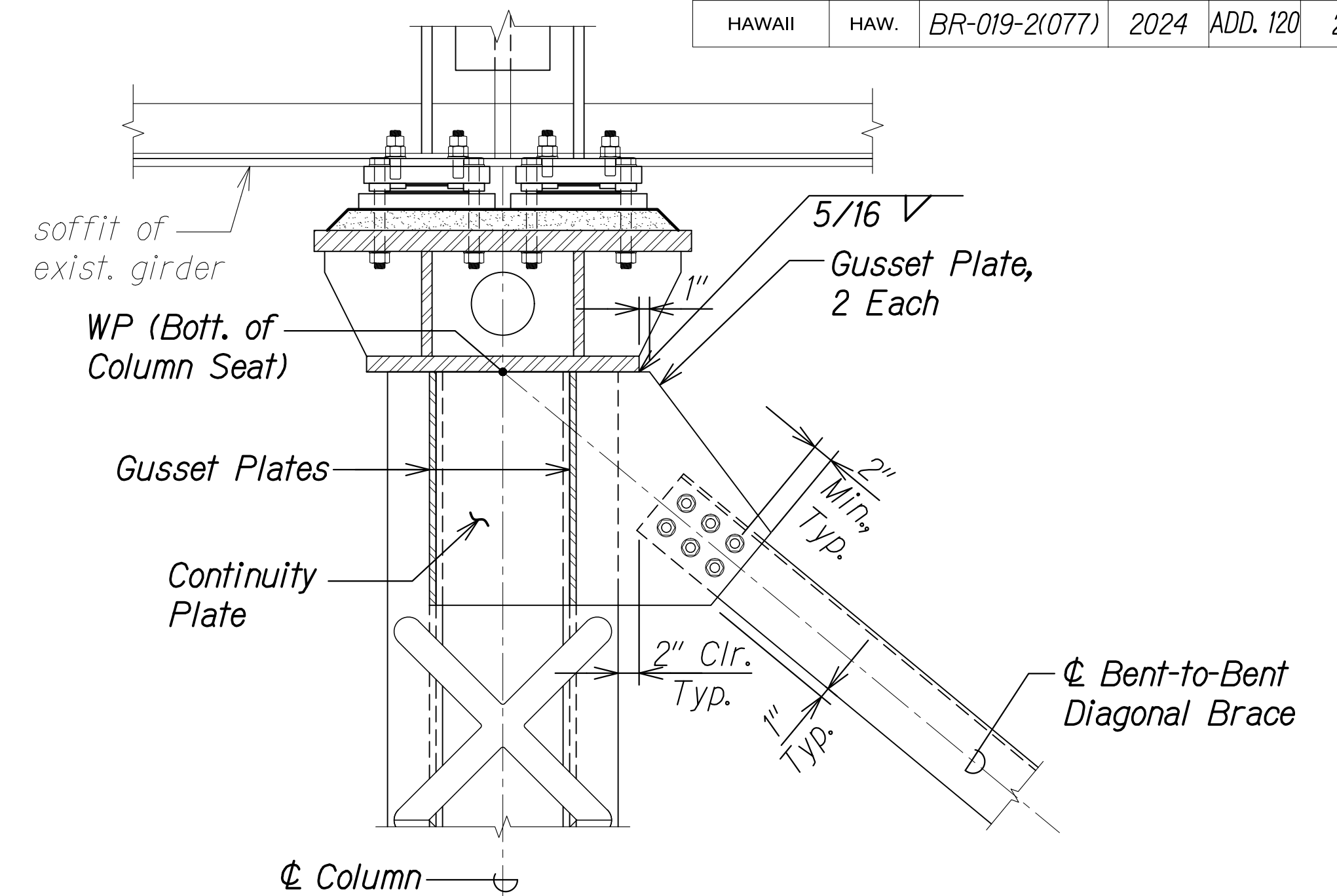
SA6.14 SA6.14 1



INT. TOP COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

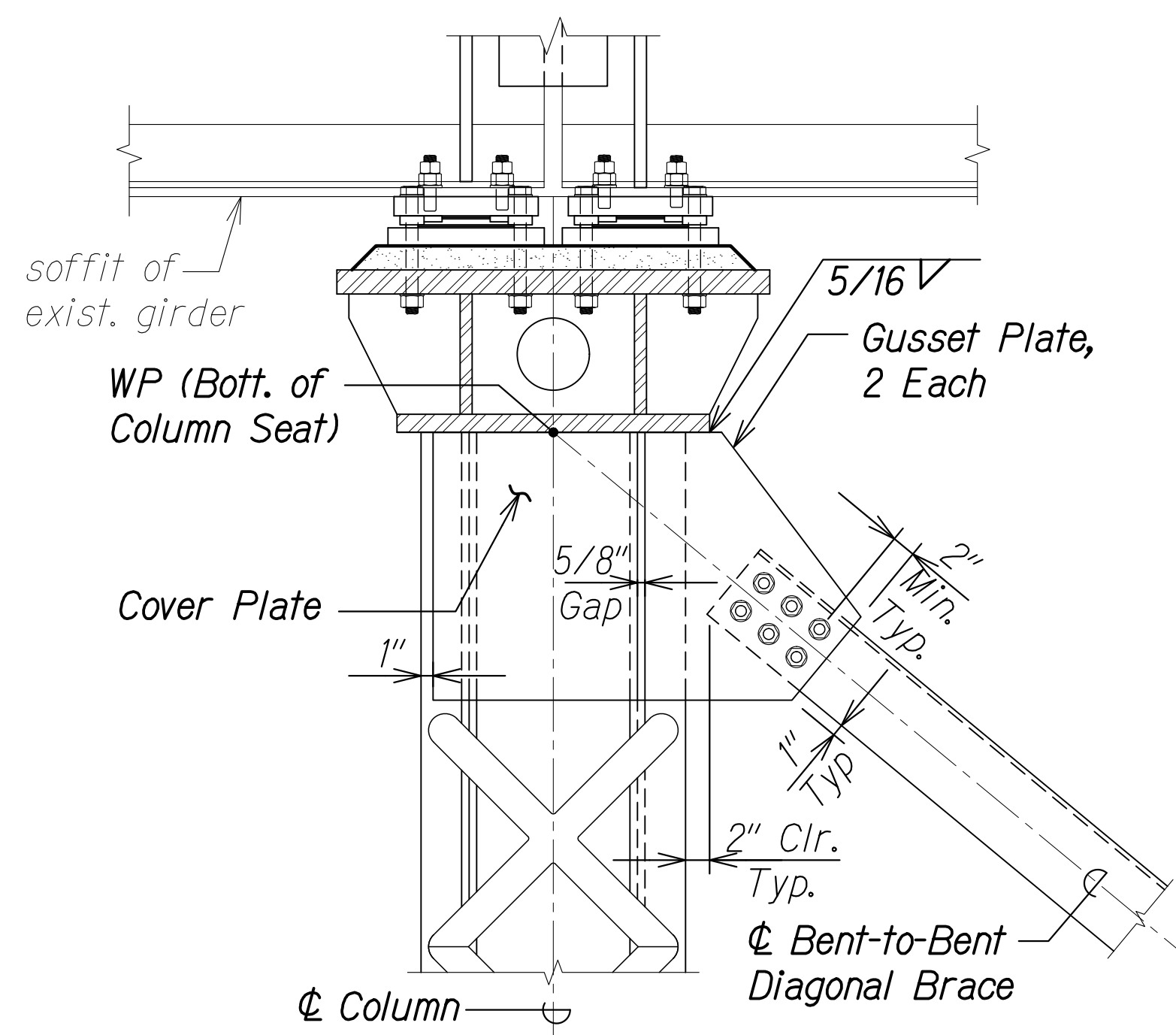
SA6.14 SA6.14 1



TOP COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

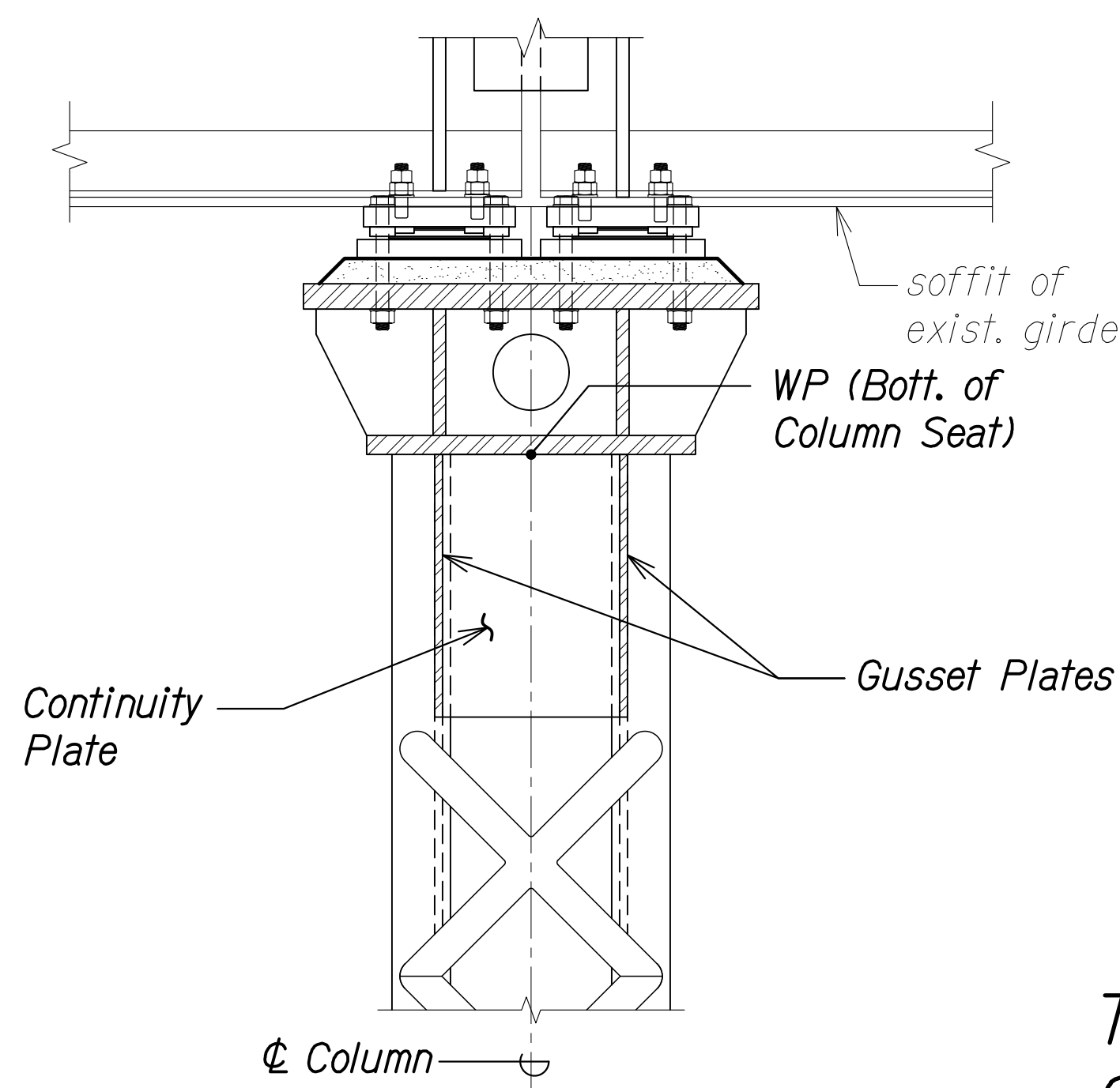
SA6.14 SA6.14 1



TOP COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

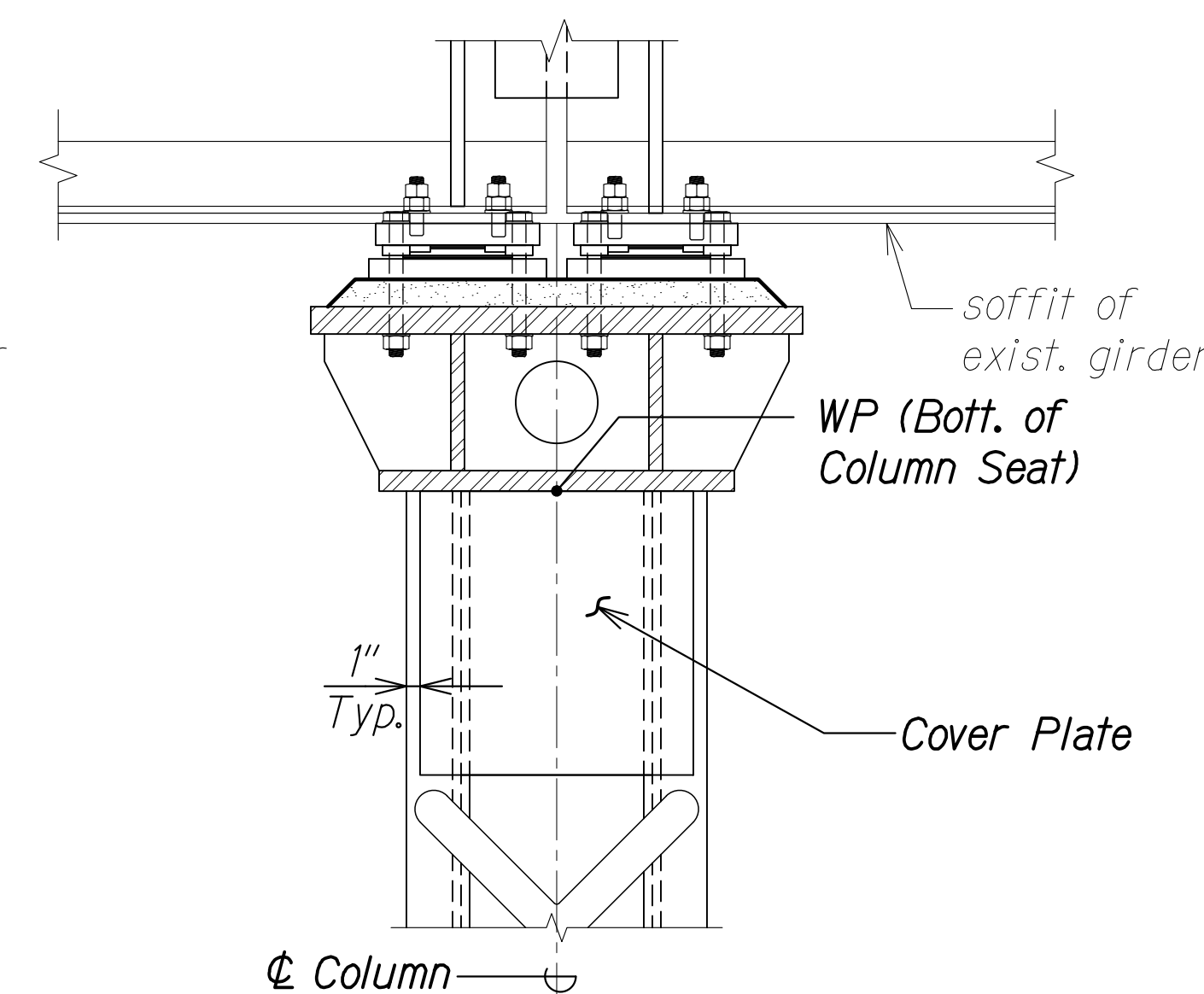
SA6.14 SA6.14 1



TOP COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

SA6.14 SA6.14 1



TOP COLUMN TO BRACE
CONNECTION DETAIL

Scale: 1" = 1'-0"

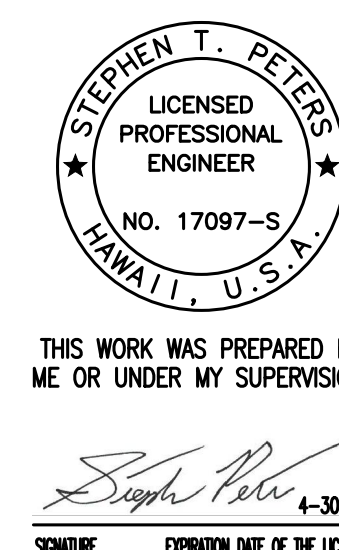
SA6.14 SA6.14 1

NOTES:

- The Contractor's Steel Detailer is responsible for determining the actual size of each gusset/continuity/cover plate based on the information provided in the Contract Drawings.
- All bolted connections for horizontal and diagonal braces, as detailed on this sheet, shall be pretensioned.
- After erection, touch-up paint the ends of all bolts/nuts/washers.
- Batten plates and lacing on braces not shown for clarity.

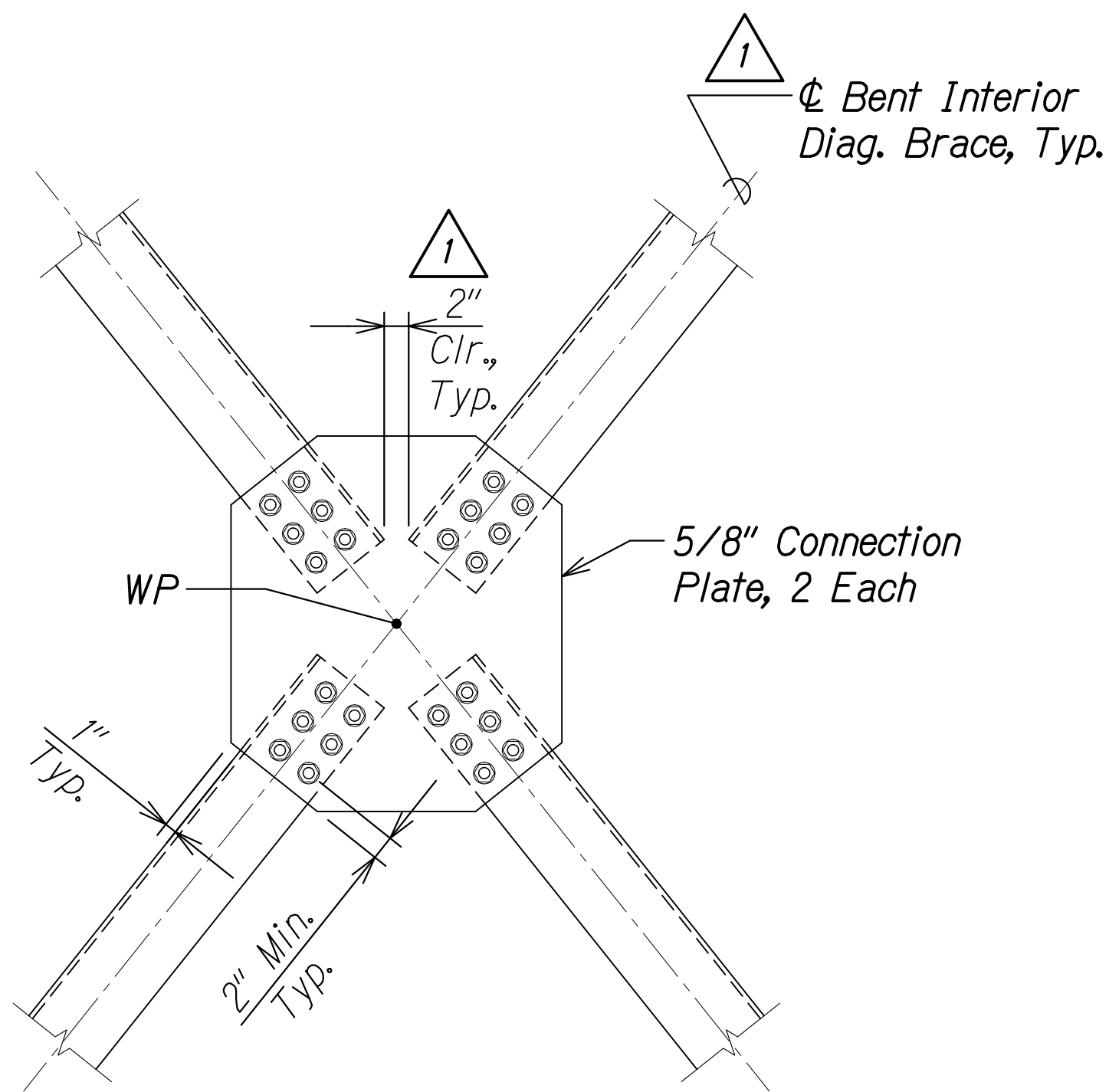
| | |
|-------------------|-------|
| DATE | _____ |
| SURVEY PLOTTED BY | _____ |
| DRAWN BY | _____ |
| DESIGNED BY | _____ |
| QUANTITIES BY | _____ |
| CHECKED BY | _____ |
| ORIGINAL PLAN | _____ |
| NOTE BOOK | _____ |
| No. | _____ |

DRAWING NAME: Z:\00_OGONGONG\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\12-06-24 ADD\NSR-SA6602-SA6617 CONN DTL5 ADD2.DWG PLOT TIME: 12-05-24 3:36 PM

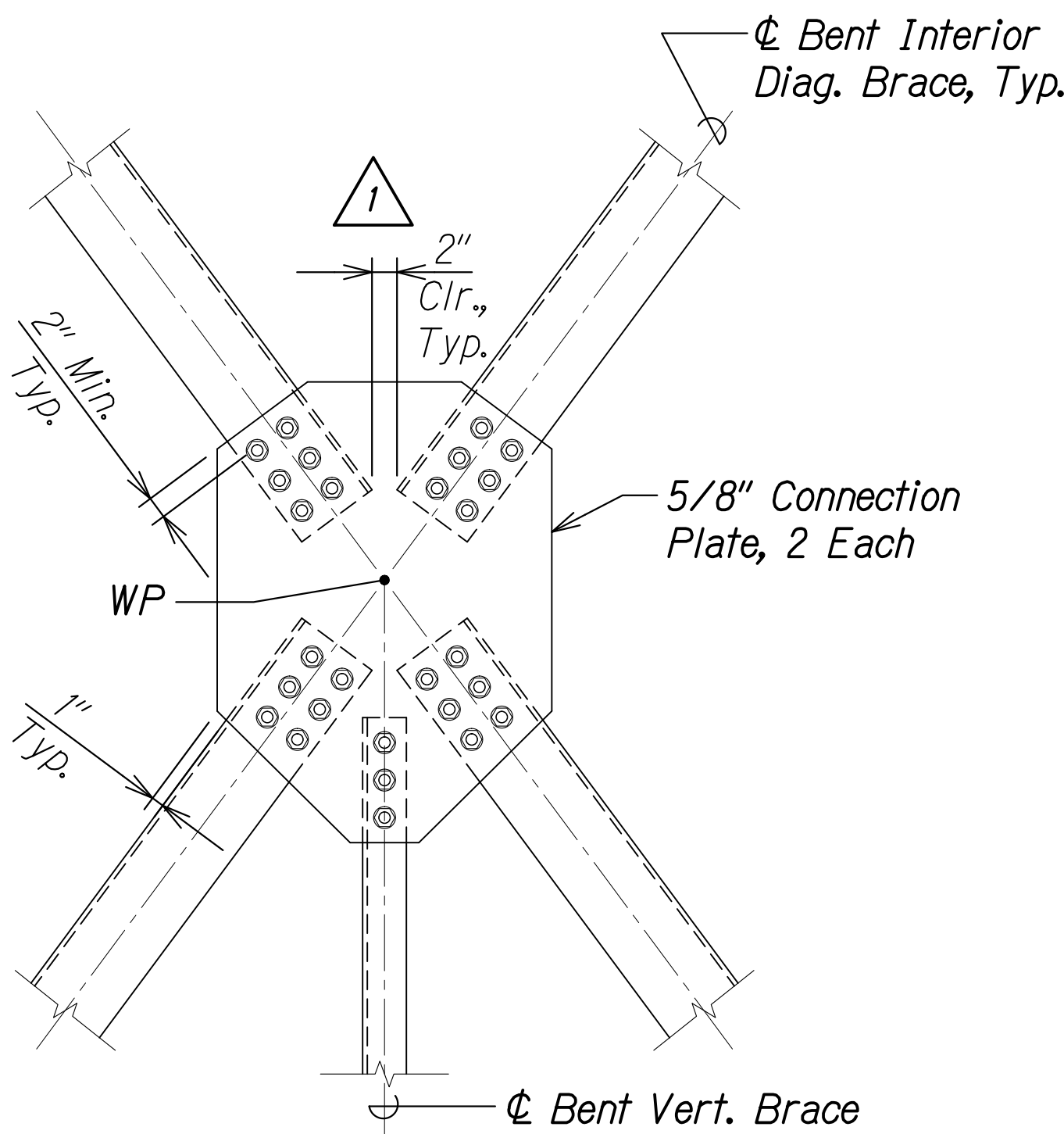


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|--|----------|-------------------------------|
| 12/6/24 | 1 | Revised Details & Added Notes |
| DATE | REVISION | |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TOP COLUMN TO BRACE CONNECTION DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | | |
| SHEET No.SA6.14 OF 22 SHEETS | | |

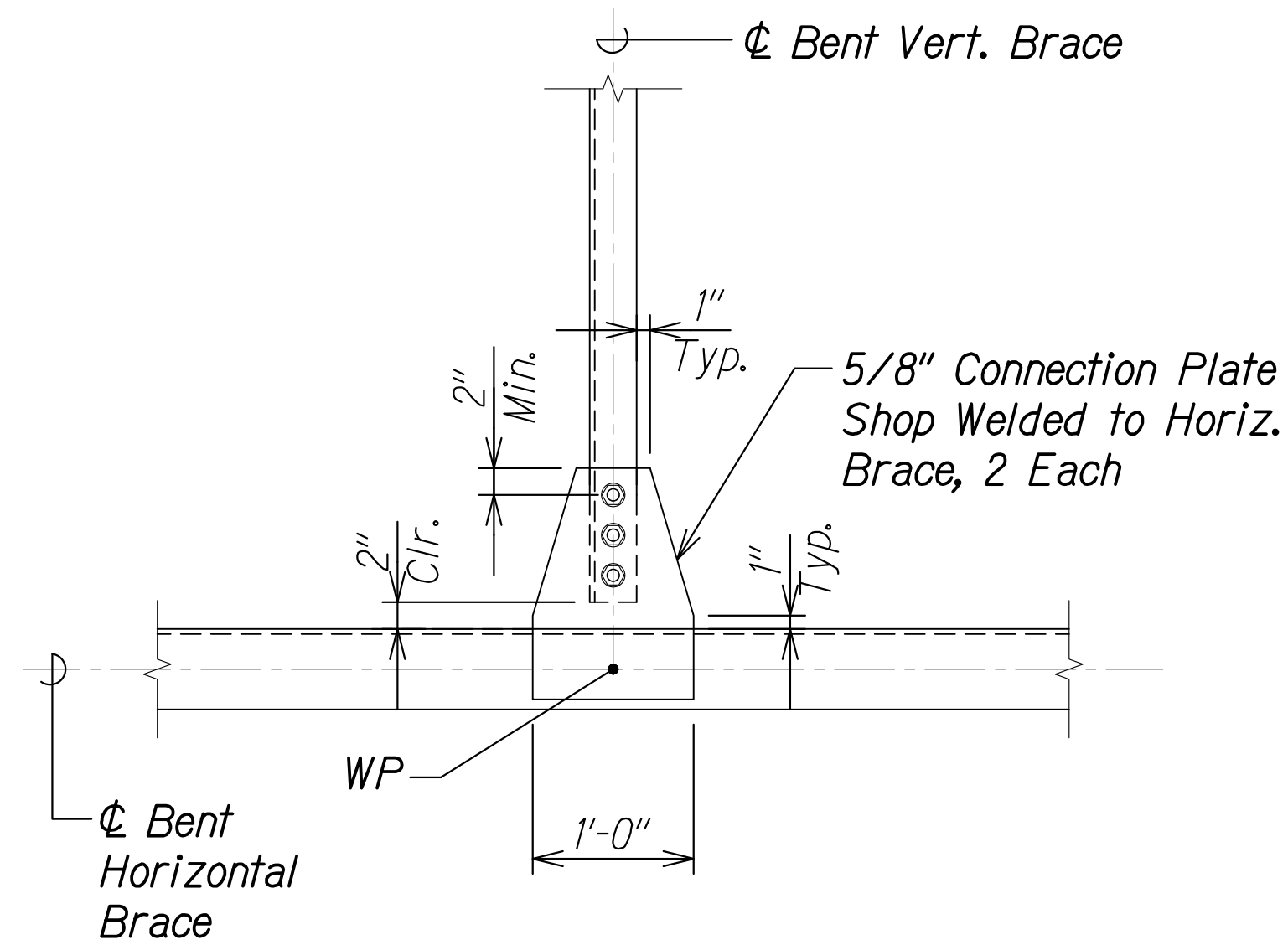
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 121 | 280 |



**BRACE TO BRACE
CONNECTION DETAIL** 1
Scale: 1" = 1'-0" SA6.15 SA6.15

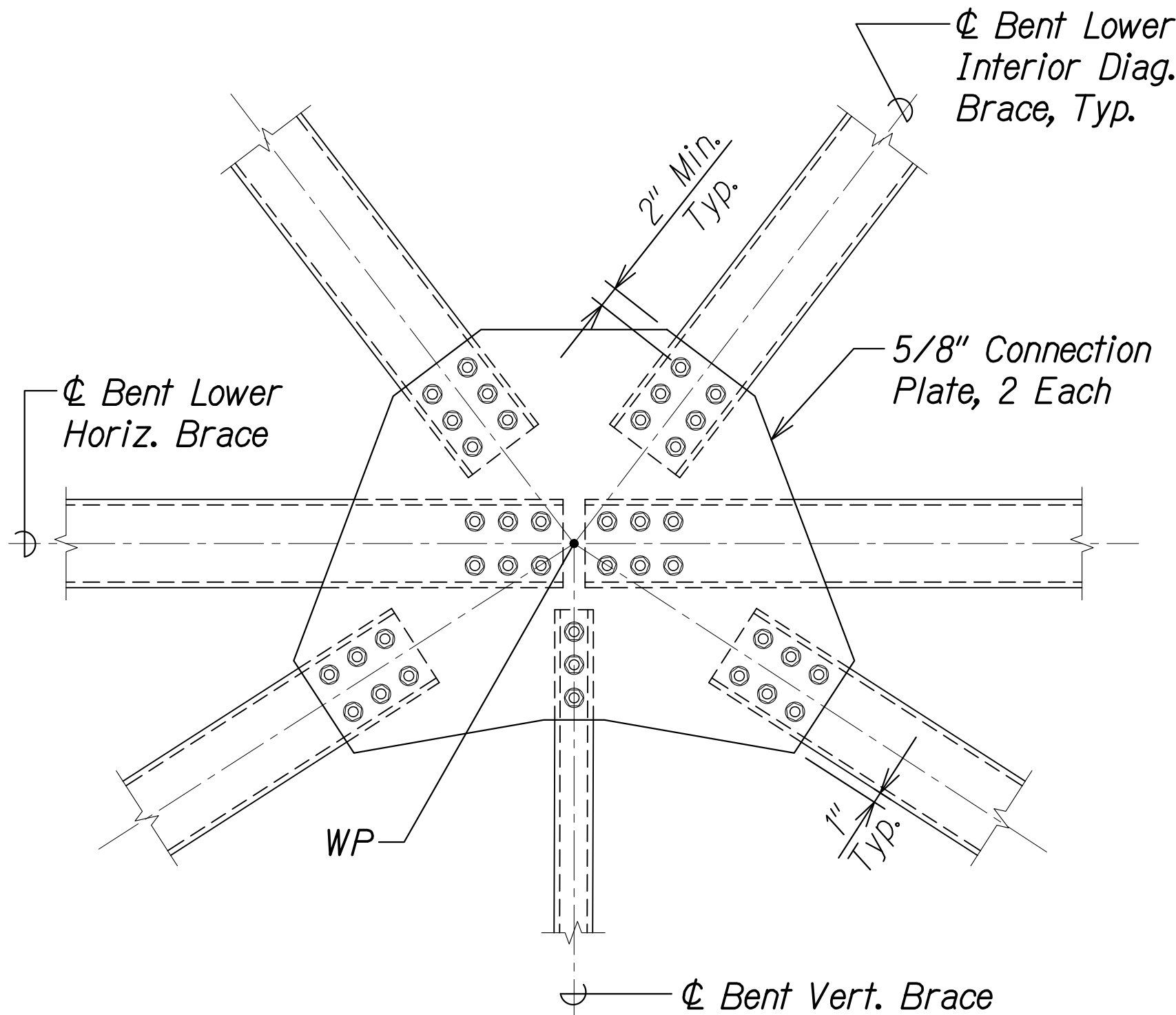


**BRACE TO BRACE
CONNECTION DETAIL** 2
Scale: 1" = 1'-0" SA6.15 SA6.15

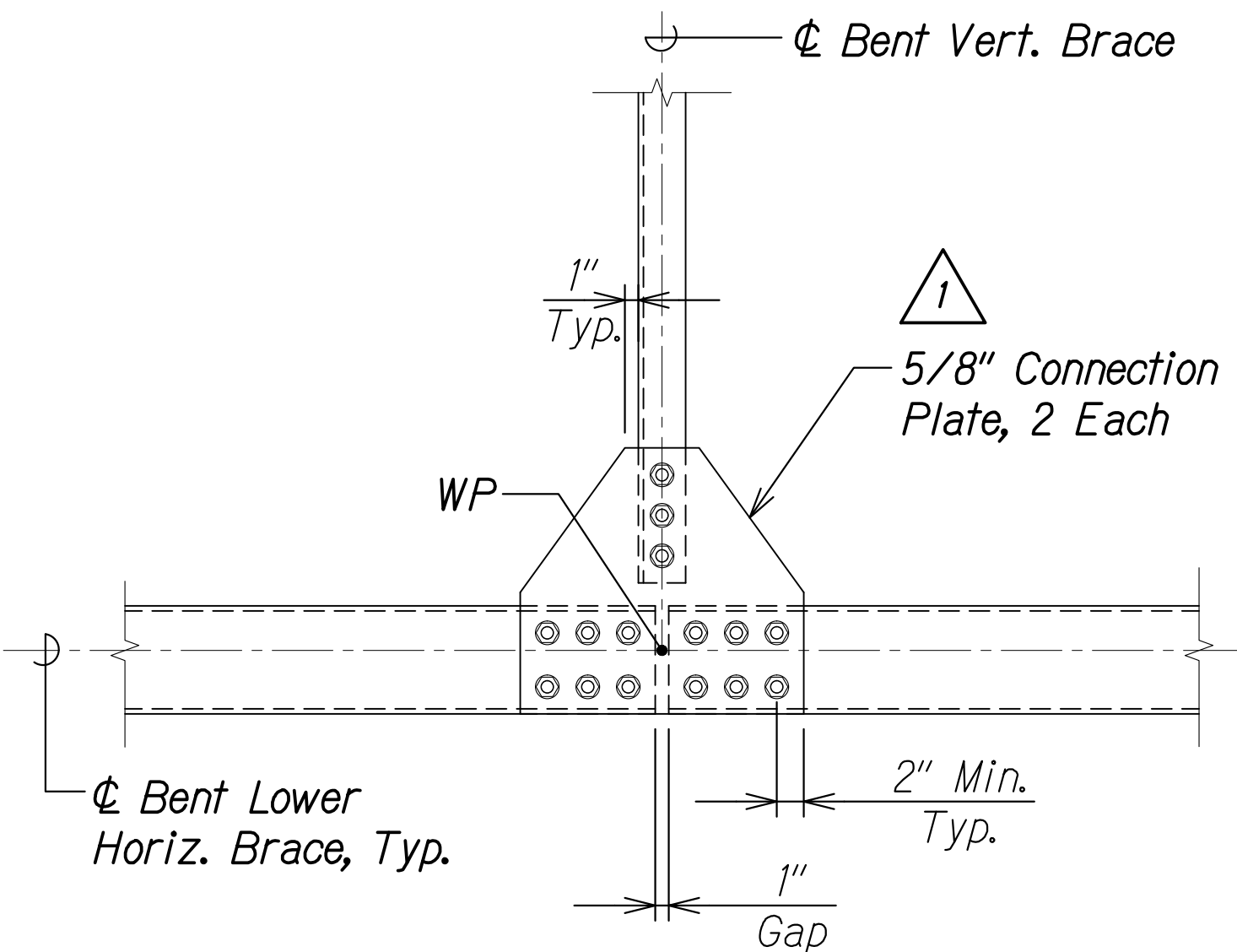


**BRACE TO BRACE
CONNECTION DETAIL** 3
Scale: 1" = 1'-0" SA6.15 SA6.15

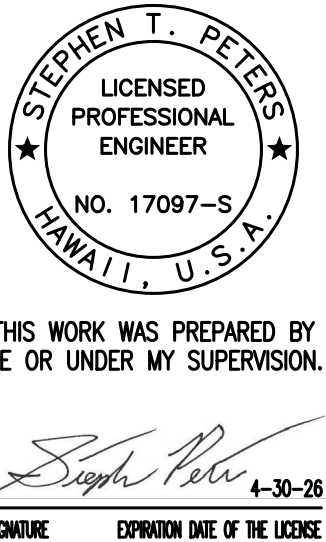
- NOTES:**
- The Contractor's Steel Detailer is responsible for determining the actual size of each connection plate based on the information provided in the Contract Drawings.
 - All bolted connections for horizontal and diagonal braces, as detailed on this sheet, shall be pretensioned.
 - After erection, touch-up paint the ends of all bolts/nuts/washers.
 - Batten plates and lacing on braces not shown for clarity.



**BRACE TO BRACE
CONNECTION DETAIL** 4
Scale: 1" = 1'-0" SA6.15 SA6.15

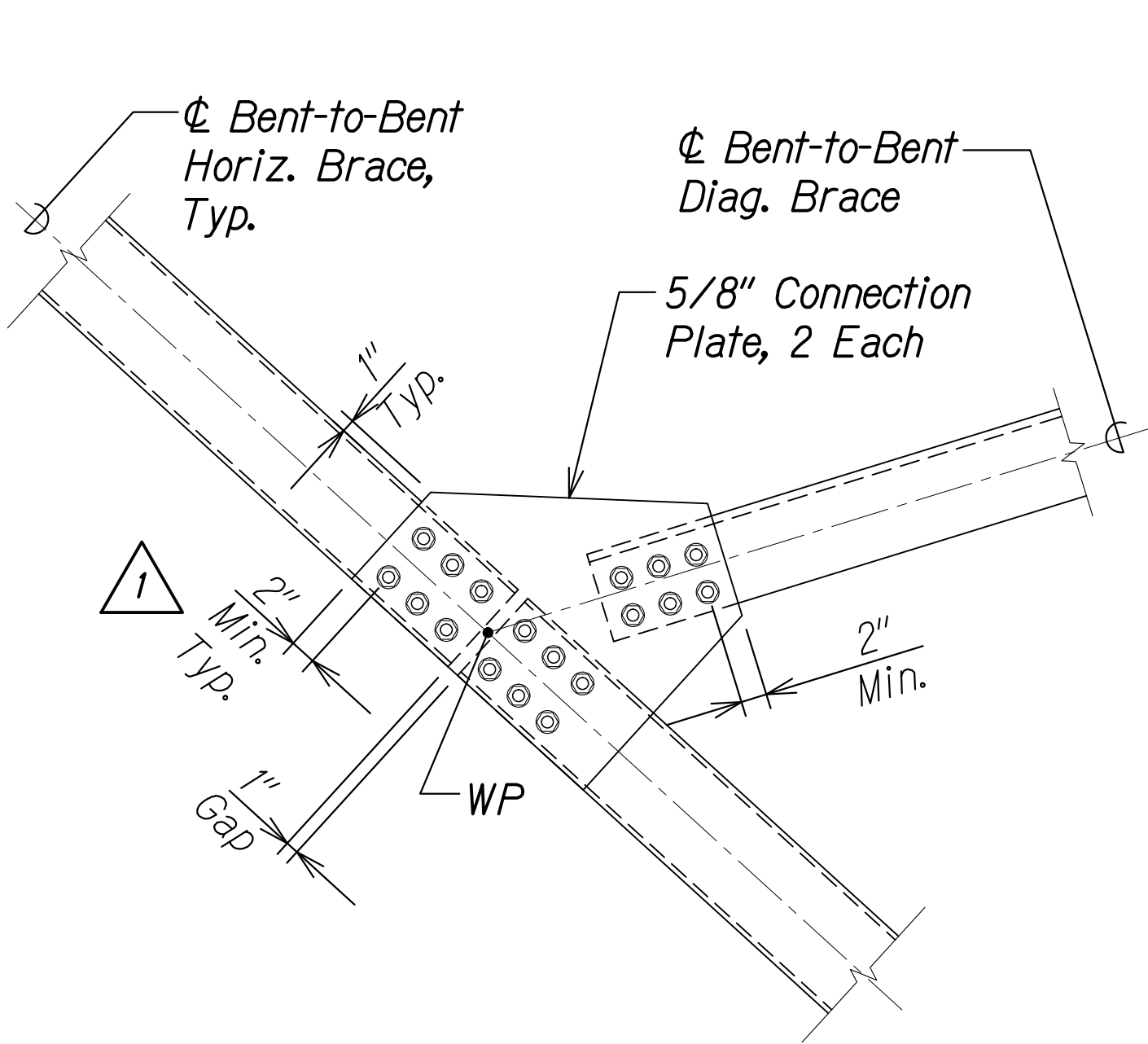


**BRACE TO BRACE
CONNECTION DETAIL** 5
Scale: 1" = 1'-0" SA6.15 SA6.15

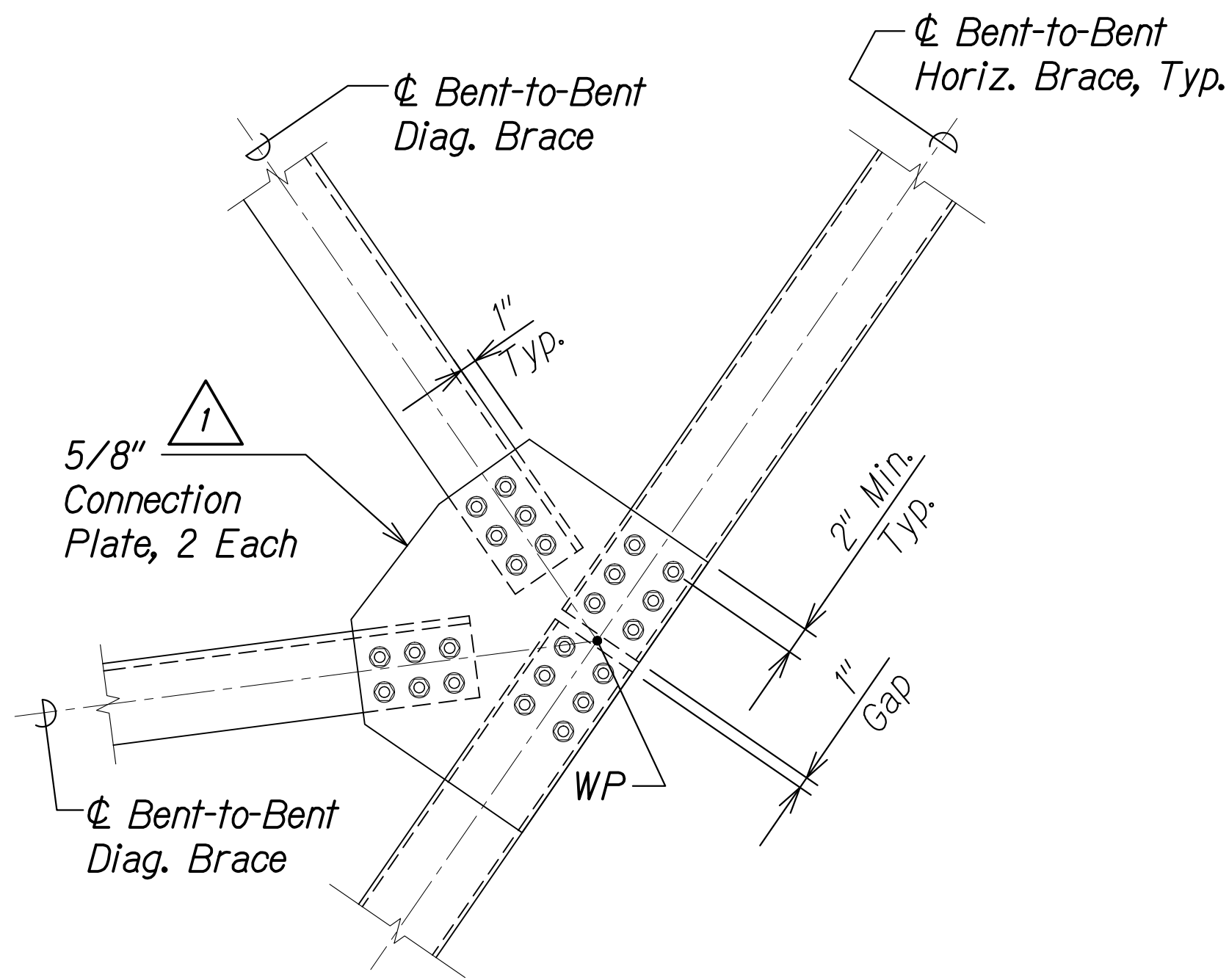


| | |
|--|---|
| 12/6/24 | 1 Revised Details & Added Notes |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION BRACE TO BRACE CONNECTION DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET No.SA6.15 OF 22 SHEETS | |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 123 | 280 |



BRACE TO BRACE
CONNECTION DETAIL 1
Scale: 1" = 1'-0" SA6.17 SA6.17



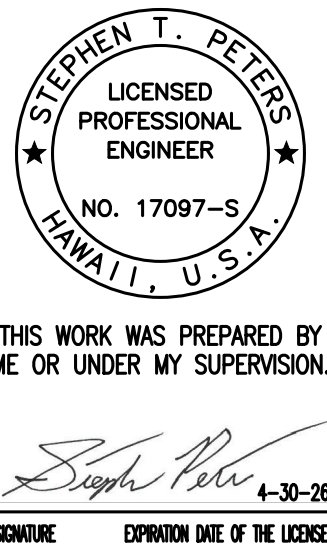
BRACE TO BRACE
CONNECTION DETAIL 2
Scale: 1" = 1'-0" SA6.17 SA6.17

1 NOTES:

1. The Contractor's Steel Detailer is responsible for determining the actual size of each connection plate based on the information provided in the Contract Drawings.
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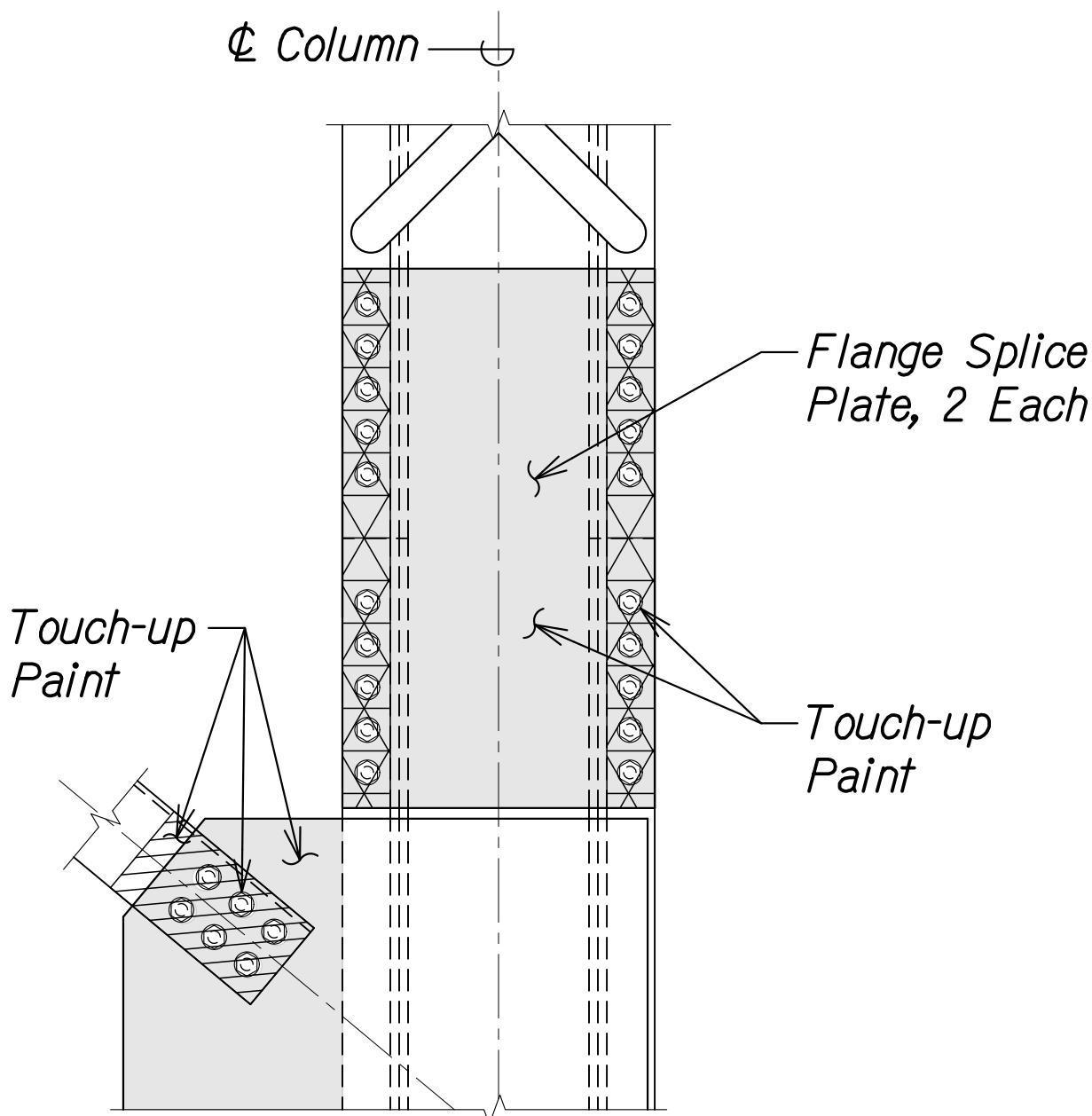
| | | |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\12-06-24 ADD\NSR-SA6602-SA6617 CONN DTL'S ADD2.DWG PLOT TIME: 12-05-24 1:33 PM

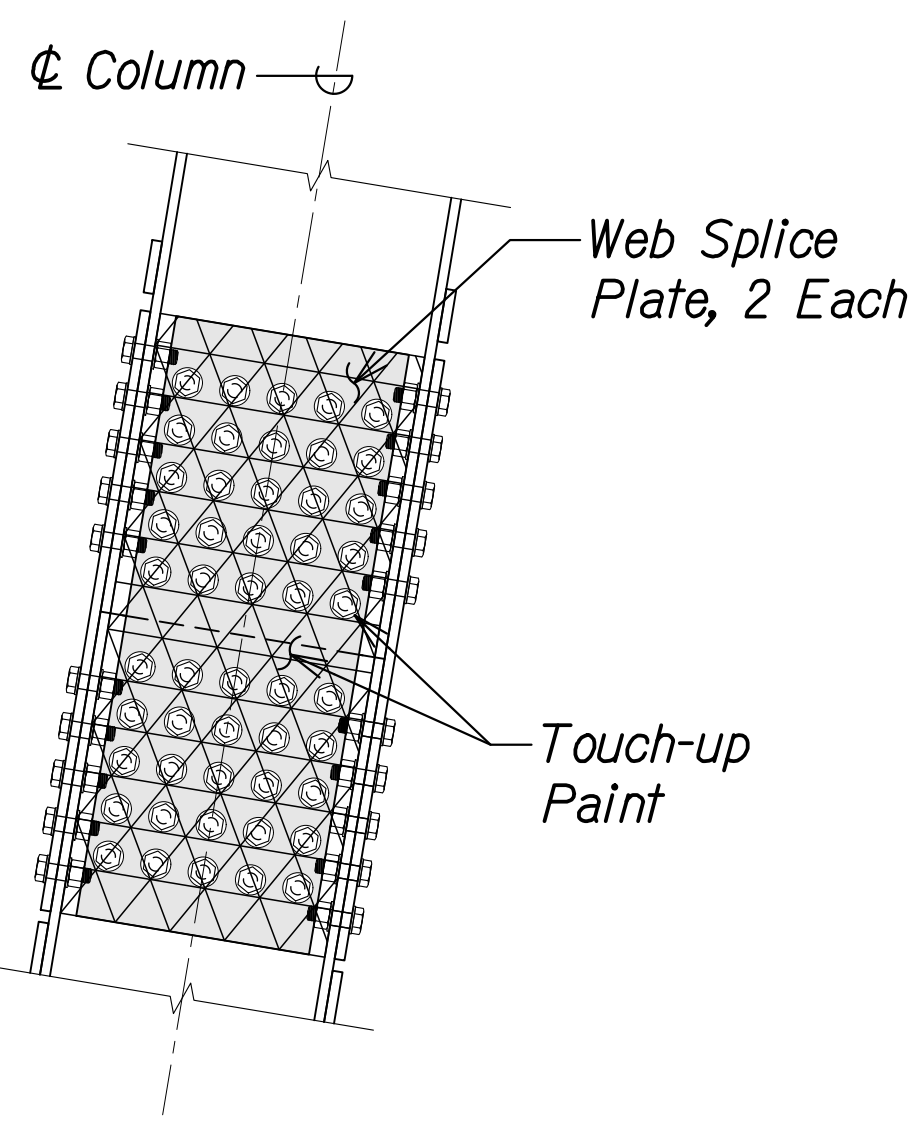


| | |
|--|---|
| 12/6/24 | 1 Revised Details & Added Notes |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION BRACE TO BRACE CONNECTION DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET No.SA6.17 OF 22 SHEETS | |

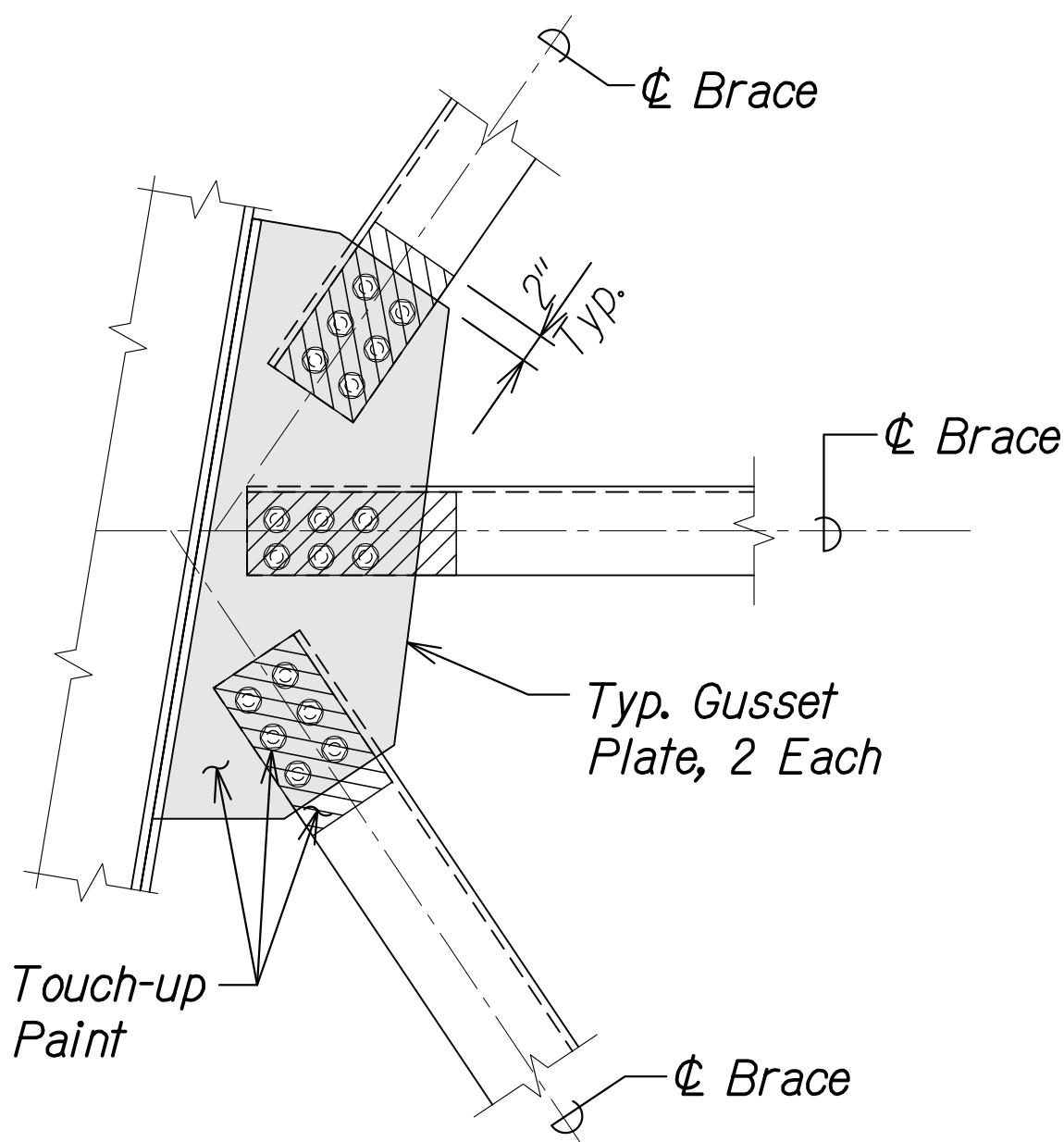
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-------------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 123S-1 | 280 |



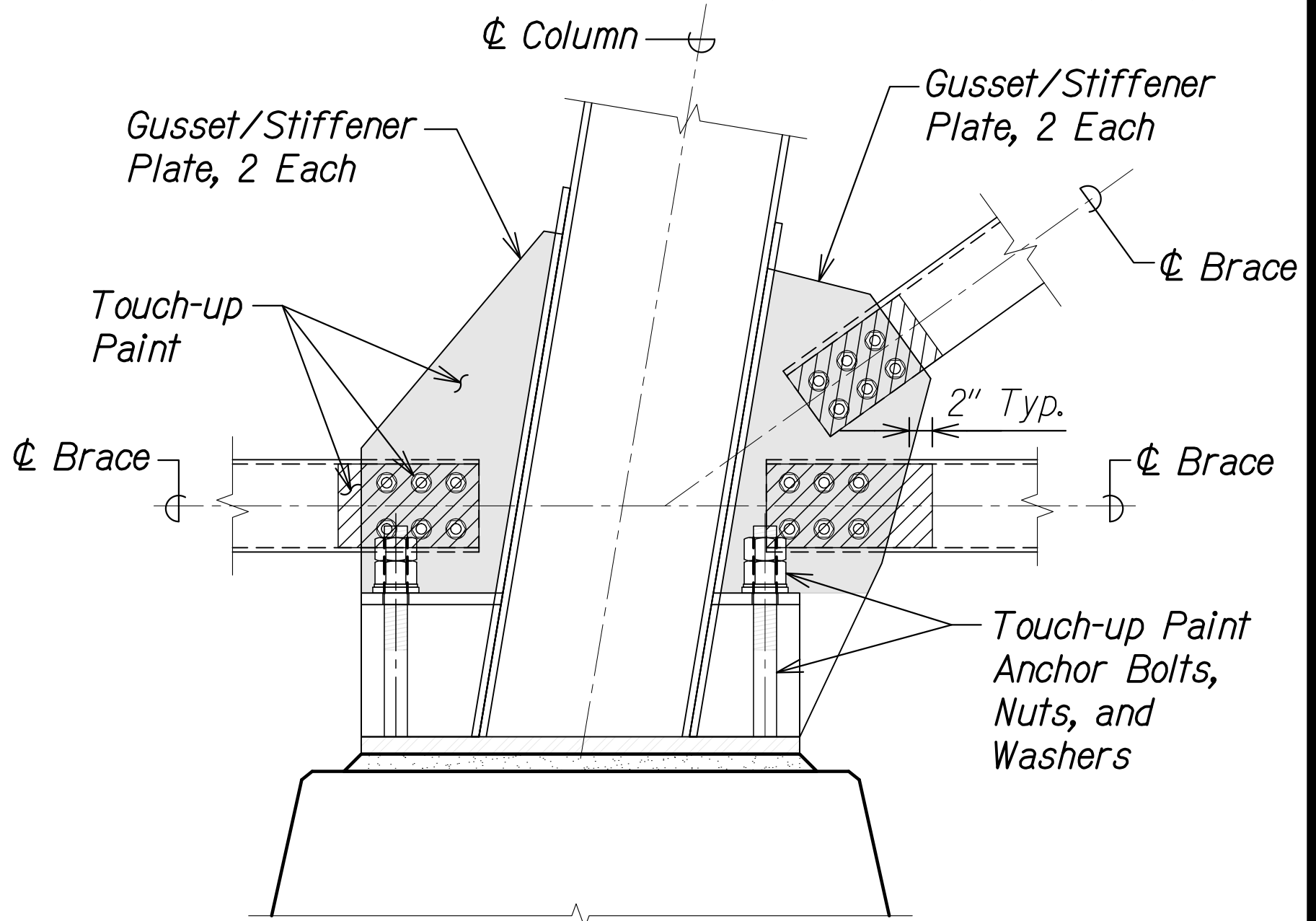
**COLUMN FLANGE SPLICE
PAINT BLOCKING DETAIL**
Scale: 1" = 1'-0"
SA6.17A SA6.7A



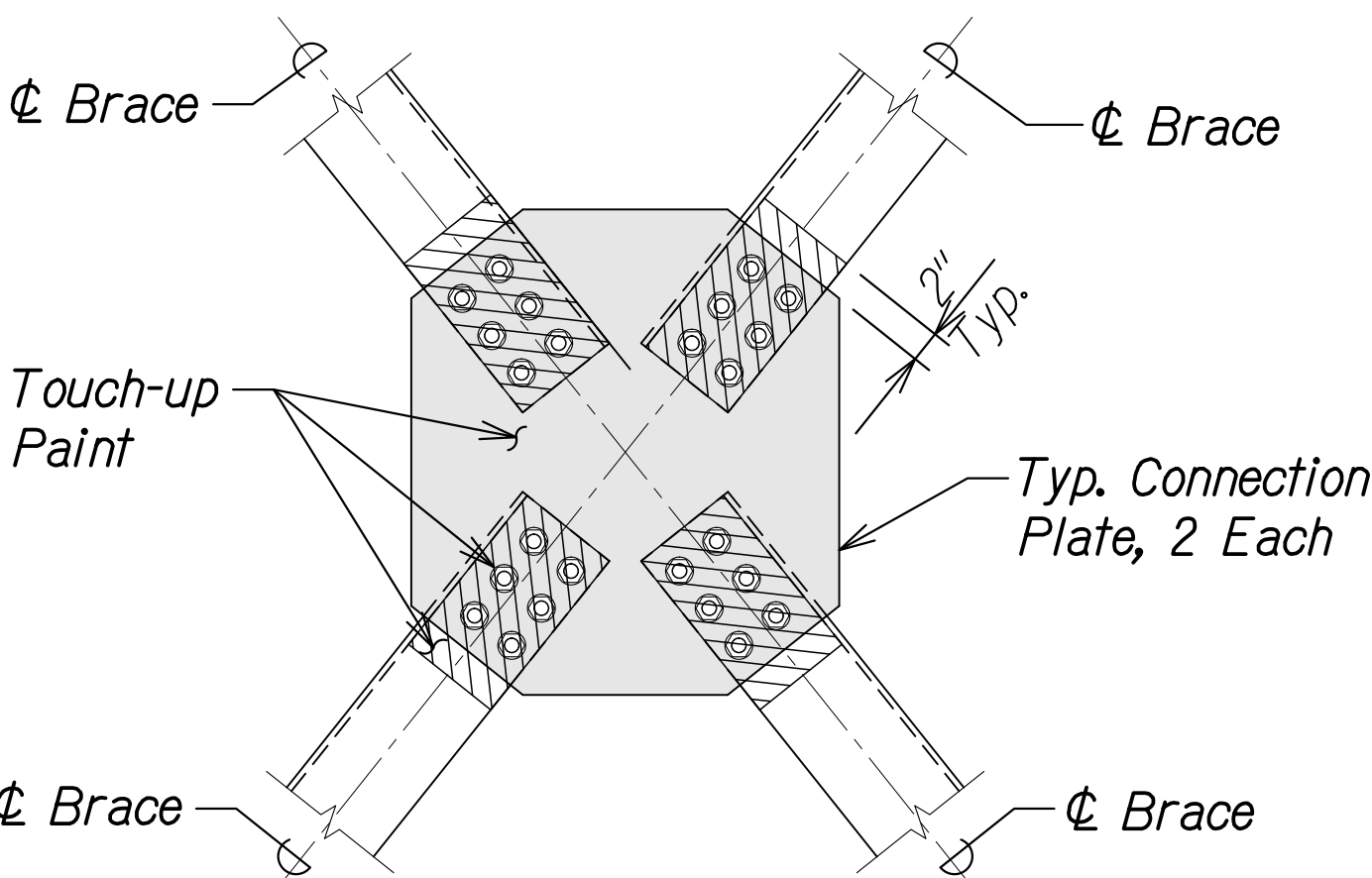
**COLUMN WEB SPLICE
PAINT BLOCKING DETAIL**
Scale: 1" = 1'-0"
SA6.17A SA6.7A



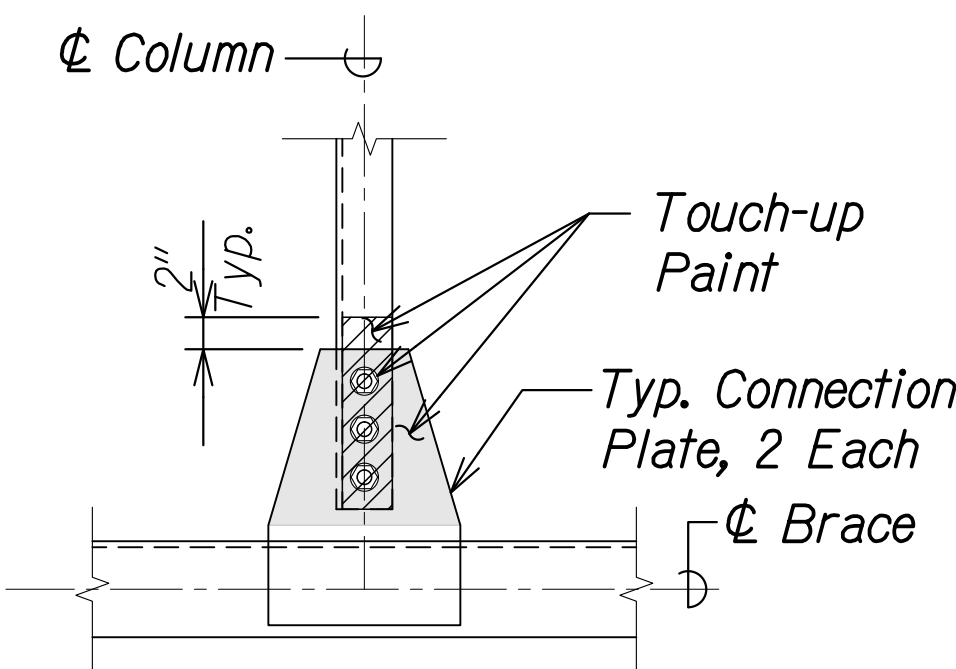
**TYP. GUSSET PLATE
PAINT BLOCKING DETAIL**
Scale: 1" = 1'-0"
SA6.17A SA6.7A



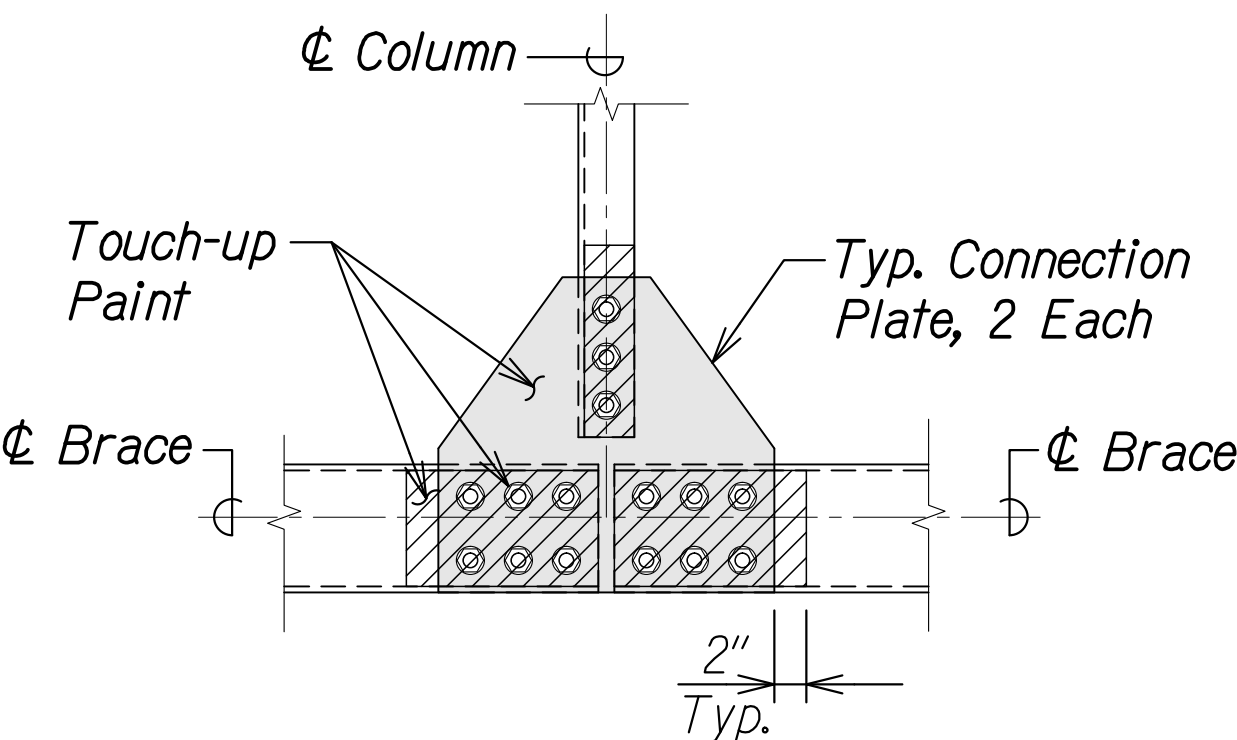
**BASE COLUMN GUSSET PLATE
PAINT BLOCKING DETAIL**
Scale: 1" = 1'-0"
SA6.17A SA6.17A



**TYP. CONNECTION PLATE
PAINT BLOCKING DETAIL**
Scale: 1" = 1'-0"
SA6.17A SA6.17A



**CONNECTION PLATE
PAINT BLOCKING DETAIL**
Scale: 1" = 1'-0"
SA6.17A SA6.17A



**CONNECTION PLATE
PAINT BLOCKING DETAIL**
Scale: 1" = 1'-0"
SA6.17A SA6.17A

PAINT BLOCKING LEGEND

- Mask Outside Face of Splice/Gusset/Connection Plate Only. No Shop Application of Topcoat. Field Touch-up Paint Intermediate and Topcoat After Bolt Installation
- Mask Inside Face of Brace Only. No Shop Application of Topcoat. Field Touch-up Paint Intermediate and Topcoat After Bolt Installation
- Mask Inside Face of Column Flange and Column Web Only. No Shop Application of Topcoat. Field Touch-up Paint Intermediate and Topcoat After Bolt Installation

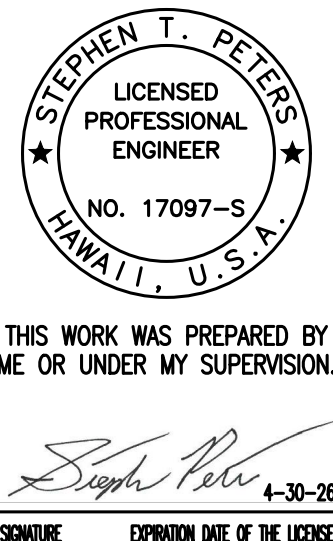
NOTES:

- Paint blocking details are typical for all bolted connections at bridge trestle.
- See Special Provisions Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL for requirements pertaining to touch-up painting of field bolted connections at trestles.
- Work for touch-up painting of field bolted connections at trestles shall be covered under Pay Item 667.3000.

| | |
|---------------|---------------|
| DATE | DATE |
| DESIGNED BY | DESIGNED BY |
| TRACED BY | TRACED BY |
| QUANTITIES BY | QUANTITIES BY |
| CHECKED BY | CHECKED BY |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\12-06-24 ADD\NSR-SA6602-SA6617 CONN DTL'S ADD2.DWG PLOT TIME: 12-05-24 2:05 PM

| | |
|---------|-------------|
| 12/6/24 | 1 New Sheet |
| DATE | REVISION |



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PAINT BLOCKING DETAILS
AT BOLTED CONNECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA6.17A OF 22 SHEETS

| | | | | | |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 124 | 280 |

CONNECTION REFERENCE SCHEDULE

| CONNECTION ID | | | | PLAN DETAILS | | | | ELEV. DETAILS | | | | | | | |
|---------------|----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------|--------------|---------------|------------|----------|--------------|---------------|
| BENT NO. 1 | TP1A1-C | A/SA6.4 | 1/SA6.14 | BENT NO. 2 | BP2A5-C | A/SA6.10 | 3/SA6.11 | BENT NO. 4 | TP4A1-C | D/SA6.2 | 1/SA6.14 | BENT NO. 5 | TP5A1-C | A/SA6.2 | 1/SA6.14 |
| | TP1B1-C | B/SA6.4 | 2/SA6.14 | | BP2B5-C | B/SA6.10 | 4/SA6.11 | | TP4B1-C | E/SA6.2 | 2/SA6.14 | | TP5B1-C | B/SA6.2 | 2/SA6.14 |
| | TP1C1-C | B/SA6.4 | 2/SA6.14 (OH) | | SP25 | - | 3/SA6.15 | | TP4C1-C | E/SA6.2 | 2/SA6.14 (OH) | | TP5C1-C | B/SA6.2 | 2/SA6.14 (OH) |
| | TP1D1-C | C/SA6.4 | 1/SA6.14 (OH) | | BP2C5-C | B/SA6.10 | 4/SA6.11 (OH) | | TP4D1-C | F/SA6.2 | 1/SA6.14 (OH) | | TP5D1-C | C/SA6.2 | 1/SA6.14 (OH) |
| | SP1B1-C2 | - | 1/SA6.15 | | BP2D5-C | C/SA6.10 | 3/SA6.11 (OH) | | SP4B1-C2 | - | 1/SA6.15 | | SP5B1-C2 | - | 1/SA6.15 |
| | | | | | | | | | | | | | | | |
| | GP1A2-C | A/SA6.4 | 1/SA6.5 | | | | | | GP4A2-C | A/SA6.4 | 1/SA6.5 | | GP5A2-C | A/SA6.4 | 1/SA6.5 |
| | GP1B2-C | B/SA6.4 | 2/SA6.5 | TP3A1-C | A/SA6.2 | 1/SA6.14 | GP4B2-C | | B/SA6.4 | 2/SA6.5 | GP5B2-C | | B/SA6.4 | 2/SA6.5 | |
| | GP1C2-C | B/SA6.4 | 2/SA6.5 (OH) | TP3B1-C | B/SA6.2 | 2/SA6.14 | GP4C2-C | | B/SA6.4 | 2/SA6.5 (OH) | GP5C2-C | | B/SA6.4 | 2/SA6.5 (OH) | |
| | GP1D2-C | C/SA6.4 | 1/SA6.5 (OH) | TP3C1-C | B/SA6.2 | 2/SA6.14 (OH) | GP4D2-C | | C/SA6.4 | 1/SA6.5 (OH) | GP5D2-C | | C/SA6.4 | 1/SA6.5 (OH) | |
| SP1B2-C3 | - | 2/SA6.15 | TP3D1-C | C/SA6.2 | 1/SA6.14 (OH) | SP4B2-C3 | - | 1/SA6.15 | SP5B2-C3 | - | 1/SA6.15 | | | | |
| | | | SP3B1-C2 | - | 1/SA6.15 | | | | | | | | | | |
| BP1A3-C | C/SA6.10 | 1/SA6.11 | GP3A2-C | A/SA6.4 | 1/SA6.5 | GP4A3-C | D/SA6.2 | C/SA6.5 | GP5A3-C | A/SA6.2 | C/SA6.5 | | | | |
| BP1B3-C | B/SA6.10 | 2/SA6.11 | GP3B2-C | B/SA6.4 | 2/SA6.5 | GP4B3-C | E/SA6.2 | C/SA6.5 | GP5B3-C | B/SA6.2 | C/SA6.5 | | | | |
| SP13 | - | 3/SA6.15 | GP3C2-C | B/SA6.4 | 2/SA6.5 (OH) | GP4C3-C | E/SA6.2 | C/SA6.5 (OH) | GP5C3-C | B/SA6.2 | C/SA6.5 (OH) | | | | |
| BP1C3-C | B/SA6.10 | 2/SA6.11 (OH) | GP3D2-C | C/SA6.4 | 1/SA6.5 (OH) | GP4D3-C | F/SA6.2 | C/SA6.5 (OH) | GP5D3-C | C/SA6.2 | C/SA6.5 (OH) | | | | |
| BP1D3-C | C/SA6.10 | 1/SA6.11 (OH) | SP3B2-C3 | - | 1/SA6.15 | SP4B3-C4 | - | 2/SA6.15 | SP5B3-C4 | - | 2/SA6.15 | | | | |
| | | | | | | | | | | | | | | | |
| TP2A1-C | D/SA6.2 | 1/SA6.14 | BENT NO. 3 | GP3A3-C | A/SA6.4 | C/SA6.5 | BENT NO. 4 | GP4A4-C | D/SA6.2 | C/SA6.5 | BENT NO. 5 | GP5A4-C | A/SA6.2 | C/SA6.5 | |
| TP2B1-C | E/SA6.2 | 2/SA6.14 | | GP3B3-C | B/SA6.4 | C/SA6.5 | | GP4B4-C | E/SA6.2 | C/SA6.5 | | GP5B4-C | B/SA6.2 | C/SA6.5 | |
| TP2C1-C | E/SA6.2 | 2/SA6.14 (OH) | | GP3C3-C | B/SA6.4 | C/SA6.5 (OH) | | SP44 | - | 3/SA6.15 | | SP54 | - | 3/SA6.15 | |
| TP2D1-C | F/SA6.2 | 1/SA6.14 (OH) | | GP3D3-C | C/SA6.4 | C/SA6.5 (OH) | | GP4C4-C | E/SA6.2 | C/SA6.5 (OH) | | GP5C4-C | B/SA6.2 | C/SA6.5 (OH) | |
| SP2B1-C2 | - | 1/SA6.15 | | SP3B3-C4 | - | 2/SA6.15 | | GP4D4-C | F/SA6.2 | C/SA6.5 (OH) | | GP5D4-C | C/SA6.2 | C/SA6.5 (OH) | |
| | | | | | | | | SP4B4-C5 | - | 2/SA6.15 | | SP5B4-C5 | - | 2/SA6.15 | |
| GP2A2-C | A/SA6.4 | 1/SA6.5 | | GP3A4-C | A/SA6.2 | C/SA6.5 | | | | | | | | | |
| GP2B2-C | B/SA6.4 | 2/SA6.5 | | GP3B4-C | B/SA6.2 | C/SA6.5 | | GP4A5-C | D/SA6.2 | C/SA6.5 | | GP5A5-C | A/SA6.2 | C/SA6.5 | |
| GP2C2-C | B/SA6.4 | 2/SA6.5 (OH) | | SP34 | - | 3/SA6.15 | | GP4B5-C | E/SA6.2 | C/SA6.5 | | GP5B5-C | B/SA6.2 | C/SA6.5 | |
| GP2D2-C | C/SA6.4 | 1/SA6.5 (OH) | | GP3C4-C | B/SA6.2 | C/SA6.5 (OH) | | SP45 | - | 3/SA6.15 | | SP55 | - | 3/SA6.15 | |
| SP2B2-C3 | - | 1/SA6.15 | | GP3D4-C | C/SA6.2 | C/SA6.5 (OH) | | GP4C5-C | E/SA6.2 | C/SA6.5 (OH) | | GP5C5-C | B/SA6.2 | C/SA6.5 (OH) | |
| | | | | SP3B4-C5 | - | 2/SA6.15 | | GP4D5-C | F/SA6.2 | C/SA6.5 (OH) | | GP5D5-C | C/SA6.2 | C/SA6.5 (OH) | |
| GP2A3-C | D/SA6.2 | C/SA6.5 | | | | | | SP4B5-C6 | - | 2/SA6.15 | | SP5B5-C6 | - | 2/SA6.15 | |
| GP2B3-C | E/SA6.2 | C/SA6.5 | | GP3A5-C | A/SA6.2 | C/SA6.5 | | | | | | | | | |
| GP2C3-C | E/SA6.2 | C/SA6.5 (OH) | | GP3B5-C | B/SA6.2 | C/SA6.5 | | GP4A6-C | D/SA6.2 | 3/SA6.5 | | | | | |
| GP2D3-C | F/SA6.2 | C/SA6.5 (OH) | | SP35 | - | 3/SA6.15 | | GP4B6-C | E/SA6.2 | 4/SA6.5 | | | | | |
| SP2B3-C4 | - | 2/SA6.15 | | GP3C5-C | B/SA6.2 | C/SA6.5 (OH) | | SP46 | - | 5/SA6.15 | | | | | |
| | | | | GP3D5-C | C/SA6.2 | C/SA6.5 (OH) | | GP4C6-C | E/SA6.2 | 4/SA6.5 (OH) | | | | | |
| GP2A4-C | D/SA6.2 | C/SA6.5 | SP3B5-C6 | - | 2/SA6.15 | GP4D6-C | F/SA6.2 | 3/SA6.5 (OH) | | | | | | | |
| GP2B4-C | E/SA6.2 | C/SA6.5 | | | | SP4B6-C7 | - | 2/SA6.15 | | | | | | | |
| SP24 | - | 3/SA6.15 | BP3A6-C | A/SA6.10 (OH) | 1/SA6.12 | | | | | | | | | | |
| GP2C4-C | E/SA6.2 | C/SA6.5 (OH) | BP3B6-C | B/SA6.10 (OH) | 2/SA6.12 | BP4A7-C | A/SA6.10 | 3/SA6.11 | | | | | | | |
| GP2D4-C | F/SA6.2 | C/SA6.5 (OH) | SP36 | - | 5/SA6.15 | BP4B7-C | B/SA6.10 | 4/SA6.11 | | | | | | | |
| SP2B4-C5 | - | 2/SA6.15 | BP3C6-C | B/SA6.10 (OH) | 2/SA6.12 (OH) | SP47 | - | 5/SA6.15 | | | | | | | |
| | | | BP3D6-C | C/SA6.10 (OH) | 1/SA6.12 (OH) | BP4C7-C | B/SA6.10 | 4/SA6.11 (OH) | | | | | | | |
| | | | | | | BP4D7-C | C/SA6.10 | 3/SA6.11 (OH) | | | | | | | |

STEPHEN T. PETERS

LICENSED PROFESSIONAL ENGINEER

NO. 17097-S

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature

4-30-26

SIGNATURE

EXPIRATION DATE OF THE LICENSE

12/6/24

C/SA6.5

Revised Table Values

DATE

REVISION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

CONNECTION REFERENCE

SCHEDULE

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

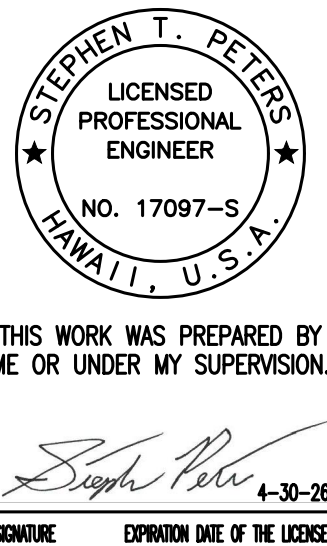
Scale: As Noted

Date: Oct. 2024

SHEET No.SA618 OF 22 SHEETS

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A\01 CAD\12-06-24 ADD\NSR-SA0618-SA0622 CON DTLS SCHED ADD2.DWG PLOT TIME: 12-03-24, 10:26 PM



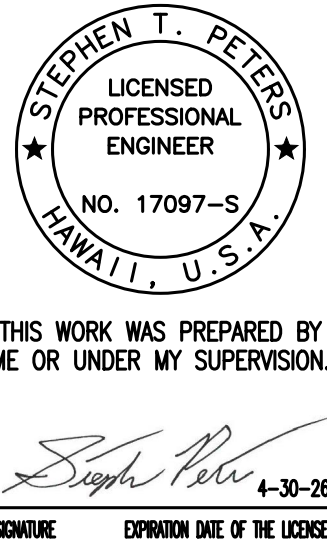
| | |
|--|------------------------------------|
| 12/6/24 | $\triangle 1$ Revised Table Values |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION CONNECTION REFERENCE SCHEDULE HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET No.SA6.18 OF 22 SHEETS | |

CONNECTION REFERENCE SCHEDULE

| | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS |
|------------|---------------|-----------------------------|----------------------------|------------|---------------|------------------------|----------------------------|------------|---------------|------------------------|----------------------------|------------|---------------|-----------------------------|---------------|
| BENT NO. 5 | GP5A6-C | A/SA6.2 | 3/SA6.5 | BENT NO. 6 | GP6A5-C | D/SA6.2 | $\triangle 1$ 3/SA6.5 | BENT NO. 7 | GP7A4-C | A/SA6.2 | $\triangle 1$ 3/SA6.5 | BENT NO. 9 | TP9A1-C | A/SA6.2 | 1/SA6.14 |
| | GP5B6-C | B/SA6.2 | 4/SA6.5 | | GP6B5-C | E/SA6.2 | $\triangle 1$ 4/SA6.5 | | GP7B4-C | B/SA6.2 | $\triangle 1$ 4/SA6.5 | | TP9B1-C | B/SA6.2 | 2/SA6.14 |
| | SP56 | - | 5/SA6.15 | | SP65 | - | 3/SA6.15 | | SP74 | - | 3/SA6.15 | | TP9C1-C | B/SA6.2 | 2/SA6.14 (OH) |
| | GP5C6-C | B/SA6.2 | 4/SA6.5 (OH) | | GP6C5-C | E/SA6.2 | $\triangle 1$ 4/SA6.5 (OH) | | GP7C4-C | B/SA6.2 | $\triangle 1$ 4/SA6.5 (OH) | | TP9D1-C | C/SA6.2 | 1/SA6.14 (OH) |
| | GP5D6-C | C/SA6.2 | 3/SA6.5 (OH) | | GP6D5-C | F/SA6.2 | $\triangle 1$ 3/SA6.5 (OH) | | GP7D4-C | C/SA6.2 | $\triangle 1$ 3/SA6.5 (OH) | | SP9B1-C2 | - | 1/SA6.15 |
| | | | | | SP6B5-C6 | - | 2/SA6.15 | | SP7B4-C5 | - | 2/SA6.15 | | | | |
| | GP5A7-C | A/SA6.2 | 3/SA6.5 | | | | | | | | | | GP9A2-C | A/SA6.4 | 1/SA6.5 |
| | GP5B7-C | B/SA6.2 | 1/SA6.6 | | GP6A6-C | D/SA6.2 | 3/SA6.5 | | GP7A5-C | A/SA6.2 | $\triangle 1$ 3/SA6.5 | | GP9B2-C | B/SA6.4 | 2/SA6.5 |
| | SP5B7-C8 | - | 4/SA6.15 | | GP6B6-C | E/SA6.2 | 4/SA6.5 | | GP7B5-C | B/SA6.2 | $\triangle 1$ 4/SA6.5 | | GP9C2-C | B/SA6.4 | 2/SA6.5 (OH) |
| | GP5C7-C | B/SA6.2 | 1/SA6.6 (OH) | | SP66 | - | 5/SA6.15 | | SP75 | - | 3/SA6.15 | | GP9D2-C | C/SA6.4 | 1/SA6.5 (OH) |
| | GP5D7-C | C/SA6.2 | 3/SA6.5 (OH) | | GP6C6-C | E/SA6.2 | 4/SA6.5 (OH) | | GP7C5-C | B/SA6.2 | $\triangle 1$ 4/SA6.5 (OH) | | SP9B2-C3 | - | 1/SA6.15 |
| | | | | | GP6D6-C | F/SA6.2 | 3/SA6.5 (OH) | | GP7D5-C | C/SA6.2 | $\triangle 1$ 3/SA6.5 (OH) | | | | |
| | BP5A8-C | A/SA6.10 (OH) | 1/SA6.12 | | | | | | SP7B5-C6 | - | 2/SA6.15 | | BP9A3-C | A/SA6.10 (OH) | 3/SA6.11 |
| | BP5B8-C | B/SA6.10 (OH) | 2/SA6.12 | | GP6A7-C | D/SA6.2 | 3/SA6.5 | | | | | | BP9B3-C | B/SA6.10 (OH) | 4/SA6.11 |
| | SP58 | - | 5/SA6.15 | | GP6B7-C | E/SA6.2 | 1/SA6.6 | | BP7A6-C | A/SA6.10 (OH) | 3/SA6.11 | | BP9C3-C | B/SA6.10 (OH) | 4/SA6.11 (OH) |
| | BP5C8-C | B/SA6.10 (OH) | 2/SA6.12 (OH) | | SP6B7-C8 | - | 4/SA6.15 | | BP7B6-C | B/SA6.10 (OH) | 4/SA6.11 | | BP9D3-C | $\triangle 1$ C/SA6.10 (OH) | 3/SA6.11 (OH) |
| | BP5D8-C | $\triangle 1$ C/SA6.10 (OH) | 1/SA6.12 (OH) | | GP6C7-C | E/SA6.2 | 1/SA6.6 (OH) | | SP76 | - | 5/SA6.15 | | | | |
| | | | | | GP6D7-C | F/SA6.2 | 3/SA6.5 (OH) | | BP7C6-C | B/SA6.10 (OH) | 4/SA6.11 (OH) | | | | |
| BENT NO. 6 | | | | BENT NO. 7 | | | | BENT NO. 8 | | | | BENT NO. 9 | | | |
| | TP6A1-C | D/SA6.2 | 1/SA6.14 | | BP6A8-C | A/SA6.10 | 1/SA6.12 | | TP8A1-C | D/SA6.2 | 1/SA6.14 | | | | |
| | TP6B1-C | E/SA6.2 | 2/SA6.14 | | BP6B8-C | B/SA6.10 | 2/SA6.12 | | TP8B1-C | E/SA6.2 | 2/SA6.14 | | | | |
| | TP6C1-C | E/SA6.2 | 2/SA6.14 (OH) | | SP68 | - | 5/SA6.15 | | TP8C1-C | E/SA6.2 | 2/SA6.14 (OH) | | | | |
| | TP6D1-C | F/SA6.2 | 1/SA6.14 (OH) | | BP6C8-C | B/SA6.10 | 2/SA6.12 (OH) | | TP8D1-C | F/SA6.2 | 1/SA6.14 (OH) | | | | |
| | SP6B1-C2 | - | 1/SA6.15 | | BP6D8-C | $\triangle 1$ C/SA6.10 | 1/SA6.12 (OH) | | SP8B1-C2 | - | 1/SA6.15 | | | | |
| | | | | | | | | | | | | | | | |
| | GP6A2-C | A/SA6.4 | 1/SA6.5 | | TP7A1-C | A/SA6.2 | 1/SA6.14 | | GP8A2-C | A/SA6.4 | 1/SA6.5 | | | | |
| | GP6B2-C | B/SA6.4 | 2/SA6.5 | | TP7B1-C | B/SA6.2 | 2/SA6.14 | | GP8B2-C | B/SA6.4 | 2/SA6.5 | | | | |
| | GP6C2-C | B/SA6.4 | 2/SA6.5 (OH) | | TP7C1-C | B/SA6.2 | 2/SA6.14 (OH) | | GP8C2-C | B/SA6.4 | 2/SA6.5 (OH) | | | | |
| | GP6D2-C | C/SA6.4 | 1/SA6.5 (OH) | | TP7D1-C | C/SA6.2 | 1/SA6.14 (OH) | | GP8D2-C | C/SA6.4 | 1/SA6.5 (OH) | | | | |
| | SP6B2-C3 | - | 1/SA6.15 | | SP7B1-C2 | - | 1/SA6.15 | | SP8B2-C3 | - | 1/SA6.15 | | | | |
| | | | | | | | | | | | | | | | |
| | GP6A3-C | D/SA6.2 | $\triangle 1$ 3/SA6.5 | | GP7A2-C | A/SA6.4 | 1/SA6.5 | | GP8A3-C | D/SA6.2 | $\triangle 1$ 3/SA6.5 | | | | |
| | GP6B3-C | E/SA6.2 | $\triangle 1$ 4/SA6.5 | | GP7B2-C | B/SA6.4 | 2/SA6.5 | | GP8B3-C | E/SA6.2 | $\triangle 1$ 4/SA6.5 | | | | |
| | GP6C3-C | E/SA6.2 | $\triangle 1$ 4/SA6.5 (OH) | | GP7C2-C | B/SA6.4 | 2/SA6.5 (OH) | | GP8C3-C | E/SA6.2 | $\triangle 1$ 4/SA6.5 (OH) | | | | |
| | GP6D3-C | F/SA6.2 | $\triangle 1$ 3/SA6.5 (OH) | | GP7D2-C | C/SA6.4 | 1/SA6.5 (OH) | | GP8D3-C | F/SA6.2 | $\triangle 1$ 3/SA6.5 (OH) | | | | |
| | SP6B3-C4 | - | 2/SA6.15 | | SP7B2-C3 | - | 1/SA6.15 | | SP8B3-C4 | - | 2/SA6.15 | | | | |
| BENT NO. 6 | | | | BENT NO. 7 | | | | BENT NO. 8 | | | | BENT NO. 9 | | | |
| | GP6A4-C | D/SA6.2 | $\triangle 1$ 3/SA6.5 | | GP7A3-C | A/SA6.2 | $\triangle 1$ 3/SA6.5 | | BP8A4-C | A/SA6.10 | 1/SA6.12 | | | | |
| | GP6B4-C | E/SA6.2 | $\triangle 1$ 4/SA6.5 | | GP7B3-C | B/SA6.2 | $\triangle 1$ 4/SA6.5 | | BP8B4-C | B/SA6.10 | 2/SA6.12 | | | | |
| | SP64 | - | 3/SA6.15 | | GP7C3-C | B/SA6.2 | $\triangle 1$ 4/SA6.5 (OH) | | SP84 | - | 3/SA6.15 | | | | |
| | GP6C4-C | E/SA6.2 | $\triangle 1$ 4/SA6.5 (OH) | | GP7D3-C | C/SA6.2 | $\triangle 1$ 3/SA6.5 (OH) | | BP8C4-C | B/SA6.10 | 2/SA6.12 (OH) | | | | |
| | GP6D4-C | F/SA6.2 | $\triangle 1$ 3/SA6.5 (OH) | | SP7B3-C4 | - | 2/SA6.15 | | BP8D4-C | $\triangle 1$ C/SA6.10 | 1/SA6.12 (OH) | | | | |
| | SP6B4-C5 | - | 2/SA6.15 | | | | | | | | | | | | |
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00_ONGOING\23-022-9-NANUE STR BR FE2-DOT\A\01 CAD\12-06-24 ADD\NSR-SA0618-SA0622 CON DTLS SCHD ADD2.DWG PLOT TIME: 12-03-24, 10:27 PM



| | |
|--|------------------------------------|
| 12/6/24 | $\triangle 1$ Revised Table Values |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION CONNECTION REFERENCE SCHEDULE HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET No.SA6.19 OF 22 SHEETS | |

| | | | | | |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 126 | 280 |

CONNECTION REFERENCE SCHEDULE

| | | | | | | | | | | | | | | | | | | | | | |
|---|---------------|---------------------|---------------|---------------|---------------------------------|---------------|---------------|---------------|---------------------------------|---------------------------------|--------------------------|---------------|---------------|---------------------------------|---------------------------------|---------------|---------------------|---------------------------------|----------|----------|---------------------|
| TRESTLE NO. 1 - COL. LINE "A", "B", "C" AND "D" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | TRESTLE NO. 2 - COLUMN LINE "B" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | TRESTLE NO. 2 - COLUMN LINE "D" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | TRESTLE NO. 3 - COLUMN LINE "B" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | | |
| | | | UPSTREAM | DOWNSTREAM | | | | | | | | | UPSTREAM | DOWNSTREAM | | | | | | | |
| | TP1A1-B | A/SA6.4 | 6/SA6.14 | 5/SA6.14 | | GP2B4-B | E/SA6.2 | 1/SA6.7 | GP2D4-B | | F/SA6.2 | 1/SA6.7 | 2/SA6.7 | TP4B1-B | | E/SA6.2 | 3/SA6.14 | | | | |
| | BP1A3-B | ∇ 1 A/SA6.10 | 1/SA6.13 | 1/SA6.13 | | SP23B4 | - | 3/SA6.16 | SP23D4 | | - | 3/SA6.16 | 3/SA6.16 | TP5B1-B | | B/SA6.2 | 3/SA6.14 (OH) | | | | |
| | | | | | | GP3B4-B | B/SA6.2 | 1/SA6.7 (OH) | GP3D4-B | | C/SA6.2 | 1/SA6.7 (OH) | 2/SA6.7 (OH) | SP45B1-3 | | - | 1/SA6.16 | | | | |
| | TP1B1-B | B/SA6.4 | 5/SA6.14 | 5/SA6.14 | | SP23B4-5 | - | 1/SA6.16 | SP23D4-5 | | - | 1/SA6.16 | 1/SA6.16 | | | | | | | | |
| | BP1B3-B | ∇ 1 B/SA6.10 | 1/SA6.13 | 1/SA6.13 | | | | | | | | | | GP4B3-B | | E/SA6.2 | 1/SA6.7 | | | | |
| | | | | | | BP2B5-B | B/SA6.10 | 2/SA6.13 (OH) | BP2D5-B | | ∇ 1 C/SA6.10 | 2/SA6.13 (OH) | 2/SA6.13 (OH) | SP45B3 | | - | 3/SA6.16 | | | | |
| | TP1C1-B | B/SA6.4 | 5/SA6.14 | 5/SA6.14 | | SP23B5 | - | 5/SA6.16 | SP23D5 | | - | 5/SA6.16 | 5/SA6.16 | GP5B3-B | | B/SA6.2 | 1/SA6.7 (OH) | | | | |
| | BP1C3-B | ∇ 1 B/SA6.10 | 1/SA6.13 | 1/SA6.13 | | GP3B5-B | B/SA6.2 | 3/SA6.8 | GP3D5-B | | C/SA6.2 | 3/SA6.8 | 4/SA6.8 | SP45B3-4 | | - | 1/SA6.16 | | | | |
| | | | | | | SP23B5-6 | - | 1/SA6.17 | SP23D5-6 | | - | 1/SA6.17 | 1/SA6.17 | | | | | | | | |
| | TP1D1-B | C/SA6.4 | 5/SA6.14 | 6/SA6.14 | | | | | | | | | | GP4B4-B | | E/SA6.2 | 1/SA6.7 | | | | |
| | BP1D3-B | ∇ 1 C/SA6.10 | 1/SA6.13 | 1/SA6.13 | | BP3B6-B | B/SA6.10 (OH) | 3/SA6.13 | BP3D6-B | | ∇ 1 C/SA6.10 (OH) | 3/SA6.13 | 3/SA6.13 | SP45B4 | | - | 3/SA6.16 | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| TRESTLE NO. 2 - COLUMN LINE "A" | TP2A1-B | D/SA6.2 | 4/SA6.14 | 3/SA6.14 | TRESTLE NO. 2 - COLUMN LINE "C" | TP2C1-B | E/SA6.2 | 3/SA6.14 | TRESTLE NO. 3 - COLUMN LINE "A" | TP4A1-B | D/SA6.2 | 4/SA6.14 | 3/SA6.14 | TRESTLE NO. 3 - COLUMN LINE "B" | GP4B5-B | E/SA6.2 | 1/SA6.7 | TRESTLE NO. 3 - COLUMN LINE "B" | GP4B5-B | E/SA6.2 | 1/SA6.7 |
| | TP3A1-B | A/SA6.2 | 4/SA6.14 (OH) | 3/SA6.14 (OH) | | TP3C1-B | B/SA6.2 | 3/SA6.14 (OH) | | TP5A1-B | A/SA6.2 | 4/SA6.14 (OH) | 3/SA6.14 (OH) | | SP45B5 | - | 3/SA6.16 | | SP45B5 | - | 3/SA6.16 |
| | SP23A1-3 | - | 1/SA6.16 | 1/SA6.16 | | SP23C1-3 | - | 1/SA6.16 | | SP45A1-3 | - | 1/SA6.16 | 1/SA6.16 | | GP5B5-B | B/SA6.2 | 1/SA6.7 (OH) | | GP5B5-B | B/SA6.2 | 1/SA6.7 (OH) |
| | | | | | | | | | | | | | | | SP45B5-6 | - | 1/SA6.16 | | SP45B5-6 | - | 1/SA6.16 |
| | GP2A3-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 | | GP2C3-B | E/SA6.2 | 1/SA6.7 | | GP4A3-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 | | | | | | | | |
| | SP23A3 | - | 3/SA6.16 | 3/SA6.16 | | SP23C3 | - | 3/SA6.16 | | SP45A3 | - | 3/SA6.16 | 3/SA6.16 | | GP4B6-B | E/SA6.2 | 1/SA6.7 | | GP4B6-B | E/SA6.2 | 1/SA6.7 |
| | GP3A3-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) | | GP3C3-B | B/SA6.2 | 1/SA6.7 (OH) | | GP5A3-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) | | SP45B6 | - | 3/SA6.16 | | SP45B6 | - | 3/SA6.16 |
| | SP23A3-4 | - | 1/SA6.16 | 1/SA6.16 | | SP23C3-4 | - | 1/SA6.16 | | SP45A3-4 | - | 1/SA6.16 | 1/SA6.16 | | GP5B6-B | B/SA6.2 | 1/SA6.7 (OH) | | GP5B6-B | B/SA6.2 | 1/SA6.7 (OH) |
| | | | | | | | | | | | | | | | SP45B6-7 | - | 1/SA6.16 | | SP45B6-7 | - | 1/SA6.16 |
| | GP2A4-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 | | GP2C4-B | E/SA6.2 | 1/SA6.7 | | GP4A4-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 | | | | | | | | |
| | SP23A4 | - | 3/SA6.16 | 3/SA6.16 | | SP23C4 | - | 3/SA6.16 | | SP45A4 | - | 3/SA6.16 | 3/SA6.16 | | BP4B7-B | B/SA6.10 | 2/SA6.13 (OH) | | BP4B7-B | B/SA6.10 | 2/SA6.13 (OH) |
| | GP3A4-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) | | GP3C4-B | B/SA6.2 | 1/SA6.7 (OH) | | GP5A4-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) | | SP45B7 | - | ∇ 1 2/SA6.16 | | SP45B7 | - | ∇ 1 2/SA6.16 |
| | SP23A4-5 | - | 1/SA6.16 | 1/SA6.16 | | SP23C4-5 | - | 1/SA6.16 | | SP45A4-5 | - | 1/SA6.16 | 1/SA6.16 | | GP5B7-B | B/SA6.2 | 1/SA6.8 | | GP5B7-B | B/SA6.2 | 1/SA6.8 |
| | | | | | | | | | | | SP45B7-8 | - | 4/SA6.16 | SP45B7-8 | - | 4/SA6.16 | | | | | |
| BP2A5-B | A/SA6.10 | 2/SA6.13 (OH) | 2/SA6.13 (OH) | BP2C5-B | B/SA6.10 | 2/SA6.13 (OH) | GP4A5-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 | | | | | | | | | | | |
| SP23A5 | - | 5/SA6.16 | 5/SA6.16 | SP23C5 | - | 5/SA6.16 | SP45A5 | - | 3/SA6.16 | 3/SA6.16 | | | | | | | | | | | |
| GP3A5-B | A/SA6.2 | 4/SA6.8 | 3/SA6.8 | GP3C5-B | B/SA6.2 | 3/SA6.8 | GP5A5-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) | | | | | | | | | | | |
| SP23A5-6 | - | 1/SA6.17 | 1/SA6.17 | SP23C5-6 | - | 1/SA6.17 | SP45A5-6 | - | 1/SA6.16 | 1/SA6.16 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| BP3A6-B | A/SA6.10 (OH) | 3/SA6.13 | 3/SA6.13 | BP3C6-B | B/SA6.10 (OH) | 3/SA6.13 | GP4A6-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 | | | | | | | | | | | |
| | | | | | | | SP45A6 | - | 3/SA6.16 | 3/SA6.16 | | | | | | | | | | | |
| | | | | | | | GP5A6-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) | | | | | | | | | | | |
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| TRESTLE NO. 2 - COL. LINE "B" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | TRESTLE NO. 2 - COL. LINE "D" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | TRESTLE NO. 3 - COLUMN LINE "A" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | TRESTLE NO. 3 - COLUMN LINE "B" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | TP2B1-B | E/SA6.2 | 3/SA6.14 | | | TP2D1-B | F/SA6.2 | 3/SA6.14 | 4/SA6.14 | | BP4A7-B | A/SA6.10 | 2/SA6.13 (OH) | 2/SA6.13 (OH) | | | | | | | |
| | TP3B1-B | B/SA6.2 | 3/SA6.14 (OH) | | | TP3D1-B | C/SA6.2 | 3/SA6.14 (OH) | 4/SA6.14 (OH) | | SP45A7 | - | 2/SA6.16 | 2/SA6.16 | | | | | | | |
| | SP23B1-3 | - | 1/SA6.16 | | | SP23D1-3 | - | 1/SA6.16 | 1/SA6.16 | | GP5A7-B | A/SA6.2 | 2/SA6.8 | 1/SA6.8 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | GP2B3-B | E/SA6.2 | 1/SA6.7 | | | GP2D3-B | F/SA6.2 | 1/SA6.7 | 2/SA6.7 | | SP45A7-8 | - | 4/SA6.16 | 4/SA6.16 | | | | | | | |
| | SP23B3 | - | 3/SA6.16 | | | SP23D3 | - | 3/SA6.16 | 3/SA6.16 | | | | | | | | | | | | |
| | GP3B3-B | B/SA6.2 | 1/SA6.7 (OH) | | | GP3D3-B | C/SA6.2 | 1/SA6.7 (OH) | 2/SA6.7 (OH) | | BP5A8-B | A/SA6.10 (OH) | 3/SA6.13 | 3/SA6.13 | | | | | | | |
| | SP23B3-4 | - | 1/SA6.16 | | | SP23D3-4 | - | 1/SA6.16 | 1/SA6.16 | | | | | | | | | | | | |
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STEPHEN T. PETERS

LICENSED PROFESSIONAL ENGINEER

NO. 17097-S

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

12/6/24

∇ 1 Revised Table Values

DATE

REVISION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

CONNECTION REFERENCE

SCHEDULE

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

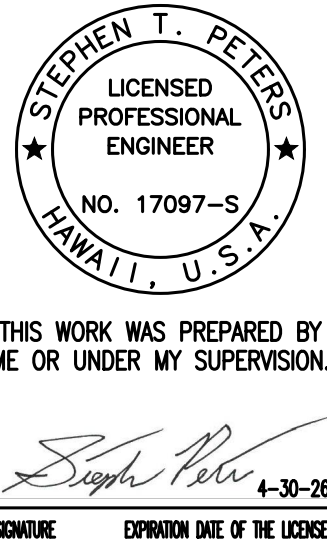
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Date: Oct. 2024

SHEET NoSA6.20 OF 22 SHEETS


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| 12/6/24 | ∇ 1 Revised Table Values |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION CONNECTION REFERENCE SCHEDULE HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET NoSA6.20 OF 22 SHEETS | |

CONNECTION REFERENCE SCHEDULE

| TRESTLE NO. 3 - COLUMN LINE "C" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | TRESTLE NO. 3 - COLUMN LINE "D" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | | TRESTLE NO. 4 - COLUMN LINE "A" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS | |
|---------------------------------|---------------|---------------|---------------|--|---------------|---------------|---------------|---------------|---------------------------------|---------------|---------------|---------------|---------------|
| | | | | | | | UPSTREAM | DOWNSTREAM | | | | UPSTREAM | DOWNSTREAM |
| | TP4C1-B | E/SA6.2 | 3/SA6.14 | | TP4D1-B | F/SA6.2 | 3/SA6.14 | 4/SA6.14 | | TP6A1-B | D/SA6.2 | 4/SA6.14 | 3/SA6.14 |
| | TP5C1-B | B/SA6.2 | 3/SA6.14 (OH) | | TP5D1-B | C/SA6.2 | 3/SA6.14 (OH) | 4/SA6.14 (OH) | | TP7A1-B | A/SA6.2 | 4/SA6.14 (OH) | 3/SA6.14 (OH) |
| | SP45C1-3 | - | 1/SA6.16 | | SP45D1-3 | - | 1/SA6.16 | 1/SA6.16 | | SP67A1-3 | - | 1/SA6.16 | 1/SA6.16 |
| | | | | | | | | | | | | | |
| | GP4C3-B | E/SA6.2 | 1/SA6.7 | | GP4D3-B | F/SA6.2 | 1/SA6.7 | 2/SA6.7 | | GP6A3-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 |
| | SP45C3 | - | 3/SA6.16 | | SP45D3 | - | 3/SA6.16 | 3/SA6.16 | | SP67A3 | - | 3/SA6.16 | 3/SA6.16 |
| | GP5C3-B | B/SA6.2 | 1/SA6.7 (OH) | | GP5D3-B | C/SA6.2 | 1/SA6.7 (OH) | 2/SA6.7 (OH) | | GP7A3-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) |
| | SP45C3-4 | - | 1/SA6.16 | | SP45D3-4 | - | 1/SA6.16 | 1/SA6.16 | | SP67A3-4 | - | 1/SA6.16 | 1/SA6.16 |
| | | | | | | | | | | | | | |
| | GP4C4-B | E/SA6.2 | 1/SA6.7 | | GP4D4-B | F/SA6.2 | 1/SA6.7 | 2/SA6.7 | | GP6A4-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 |
| | SP45C4 | - | 3/SA6.16 | | SP45D4 | - | 3/SA6.16 | 3/SA6.16 | | SP67A4 | - | 3/SA6.16 | 3/SA6.16 |
| | GP5C4-B | B/SA6.2 | 1/SA6.7 (OH) | | GP5D4-B | C/SA6.2 | 1/SA6.7 (OH) | 2/SA6.7 (OH) | | GP7A4-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) |
| | SP45C4-5 | - | 1/SA6.16 | | SP45D4-5 | - | 1/SA6.16 | 1/SA6.16 | | SP67A4-5 | - | 1/SA6.16 | 1/SA6.16 |
| | | | | | | | | | | | | | |
| | GP4C5-B | E/SA6.2 | 1/SA6.7 | | GP4D5-B | F/SA6.2 | 1/SA6.7 | 2/SA6.7 | | GP6A5-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 |
| | SP45C5 | - | 3/SA6.16 | | SP45D5 | - | 3/SA6.16 | 3/SA6.16 | | SP67A5 | - | 3/SA6.16 | 3/SA6.16 |
| | GP5C5-B | B/SA6.2 | 1/SA6.7 (OH) | | GP5D5-B | C/SA6.2 | 1/SA6.7 (OH) | 2/SA6.7 (OH) | | GP7A5-B | A/SA6.2 | 2/SA6.7 (OH) | 1/SA6.7 (OH) |
| | SP45C5-6 | - | 1/SA6.16 | | SP45D5-6 | - | 1/SA6.16 | 1/SA6.16 | | SP67A5-6 | - | 1/SA6.16 | 1/SA6.16 |
| | | | | | | | | | | | | | |
| | GP4C6-B | E/SA6.2 | 1/SA6.7 | | GP4D6-B | F/SA6.2 | 1/SA6.7 | 2/SA6.7 | | GP6A6-B | D/SA6.2 | 2/SA6.7 | 1/SA6.7 |
| | SP45C6 | - | 3/SA6.16 | | SP45D6 | - | 3/SA6.16 | 3/SA6.16 | | SP67A6 | - | 3/SA6.16 | 3/SA6.16 |
| | GP5C6-B | B/SA6.2 | 1/SA6.7 (OH) | | GP5D6-B | C/SA6.2 | 1/SA6.7 (OH) | 2/SA6.7 (OH) | | BP7A6-B | A/SA6.10 (OH) | 2/SA6.13 | 2/SA6.13 |
| SP45C6-7 | - | 1/SA6.16 | SP45D6-7 | - | 1/SA6.16 | 1/SA6.16 | | | | | | | |
| | | | | | | | | | | | | | |
| BP4C7-B | B/SA6.10 | 2/SA6.13 (OH) | BP4D7-B |  C/SA6.10 | 2/SA6.13 (OH) | 2/SA6.13 (OH) | GP6A7-B | D/SA6.2 | 2/SA6.9 | 1/SA6.9 | | | |
| SP45C7 | - | 2/SA6.16 | SP45D7 | - | 2/SA6.16 | 2/SA6.16 | SP67A6-7 | - | 2/SA6.17 | 2/SA6.17 | | | |
| GP5C7-B | B/SA6.2 | 1/SA6.8 | GP5D7-B | C/SA6.2 | 1/SA6.8 | 2/SA6.8 | | | | | | | |
| SP45C7-8 | - | 4/SA6.16 | SP45D7-8 | - | 4/SA6.16 | 4/SA6.16 | BP6A8-B | A/SA6.10 | 3/SA6.13 (OH) | 3/SA6.13 (OH) | | | |
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| TRESTLE NO. 4 - COLUMN LINE "B" | CONNECTION ID | PLAN DETAILS | ELEV. DETAILS |
|---------------------------------|---------------|---------------|---------------|
| | | | |
| | | | |
| | TP6B1-B | E/SA6.2 | 3/SA6.14 |
| | TP7B1-B | B/SA6.2 | 3/SA6.14 (OH) |
| | SP67B1-3 | - | 1/SA6.16 |
| | | | |
| | GP6B3-B | E/SA6.2 | 1/SA6.7 |
| | SP67B3 | - | 3/SA6.16 |
| | GP7B3-B | B/SA6.2 | 1/SA6.7 (OH) |
| | SP67B3-4 | - | 1/SA6.16 |
| | | | |
| | GP6B4-B | E/SA6.2 | 1/SA6.7 |
| | SP67B4 | - | 3/SA6.16 |
| | GP7B4-B | B/SA6.2 | 1/SA6.7 (OH) |
| | SP67B4-5 | - | 1/SA6.16 |
| | | | |
| | GP6B5-B | E/SA6.2 | 1/SA6.7 |
| | SP67B5 | - | 3/SA6.16 |
| | GP7B5-B | B/SA6.2 | 1/SA6.7 (OH) |
| | SP67B5-6 | - | 1/SA6.16 |
| | | | |
| | GP6B6-B | E/SA6.2 | 1/SA6.7 |
| | SP67B6 | - | 3/SA6.16 |
| | BP7B6-B | B/SA6.10 (OH) | 2/SA6.13 |
| | | | |
| | GP6B7-B | E/SA6.2 | 1/SA6.9 |
| | SP67B6-7 | - | 2/SA6.17 |
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| No. | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00_OINGONG\23-022-9-NANUE STR BR PF2-DOT\A\01 CAD\12-06-24 ADD\NSR-SA618-SA622 CON DTLS SCHD ADD2.DWG PLOT TIME: 12-03-24, 10:28 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

4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

| | |
|---------|------------------------|
| 12/6/24 | 1 Revised Table Values |
| DATE | REVISION |

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

CONNECTION REFERENCE SCHEDULE

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

Scale: As Noted

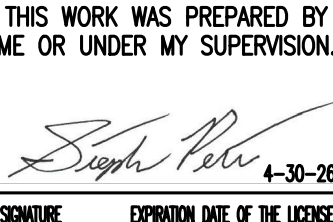
Date: Oct. 2024


SHEET No.SA6.2I OF 22 SHEETS

CONNECTION REFERENCE SCHEDULE

[illegible]

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|----------|--|
| 12/26/24 |  Revised Table Values |
| DATE | REVISION |

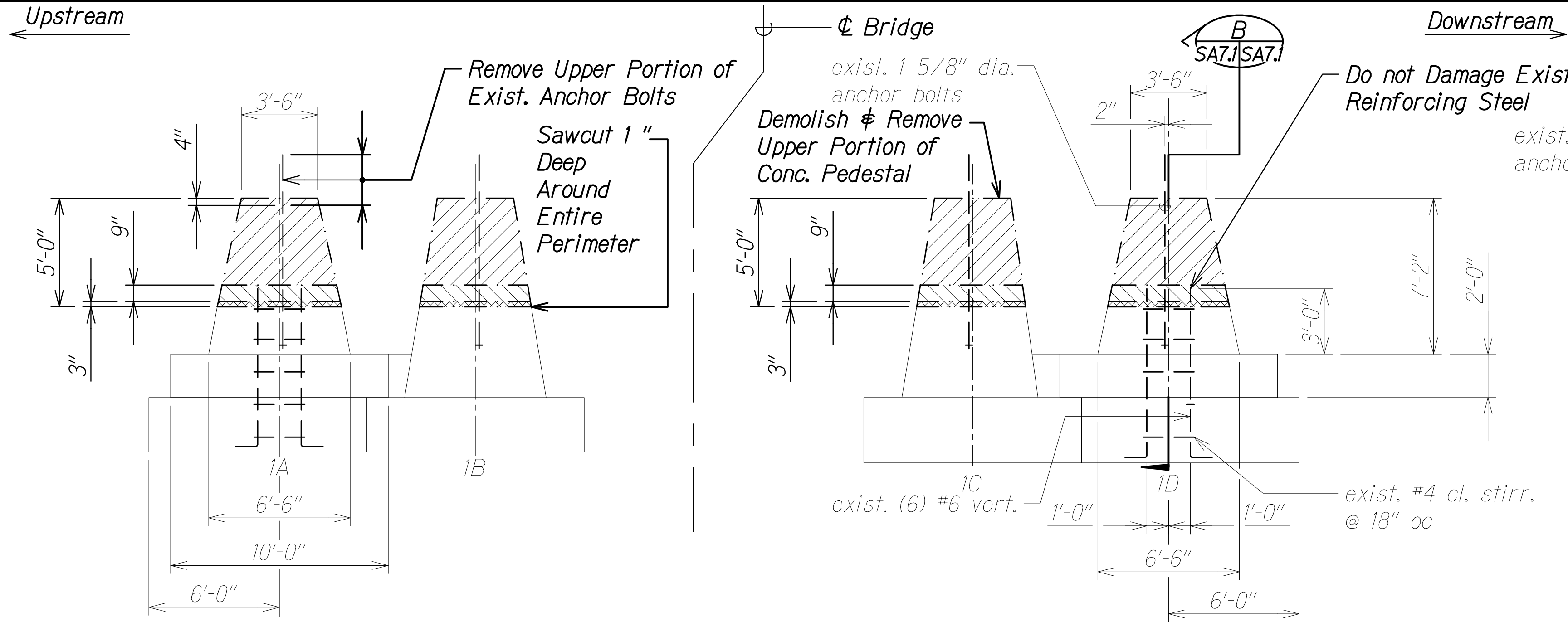
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONNECTION REFERENCE
SCHEDULE

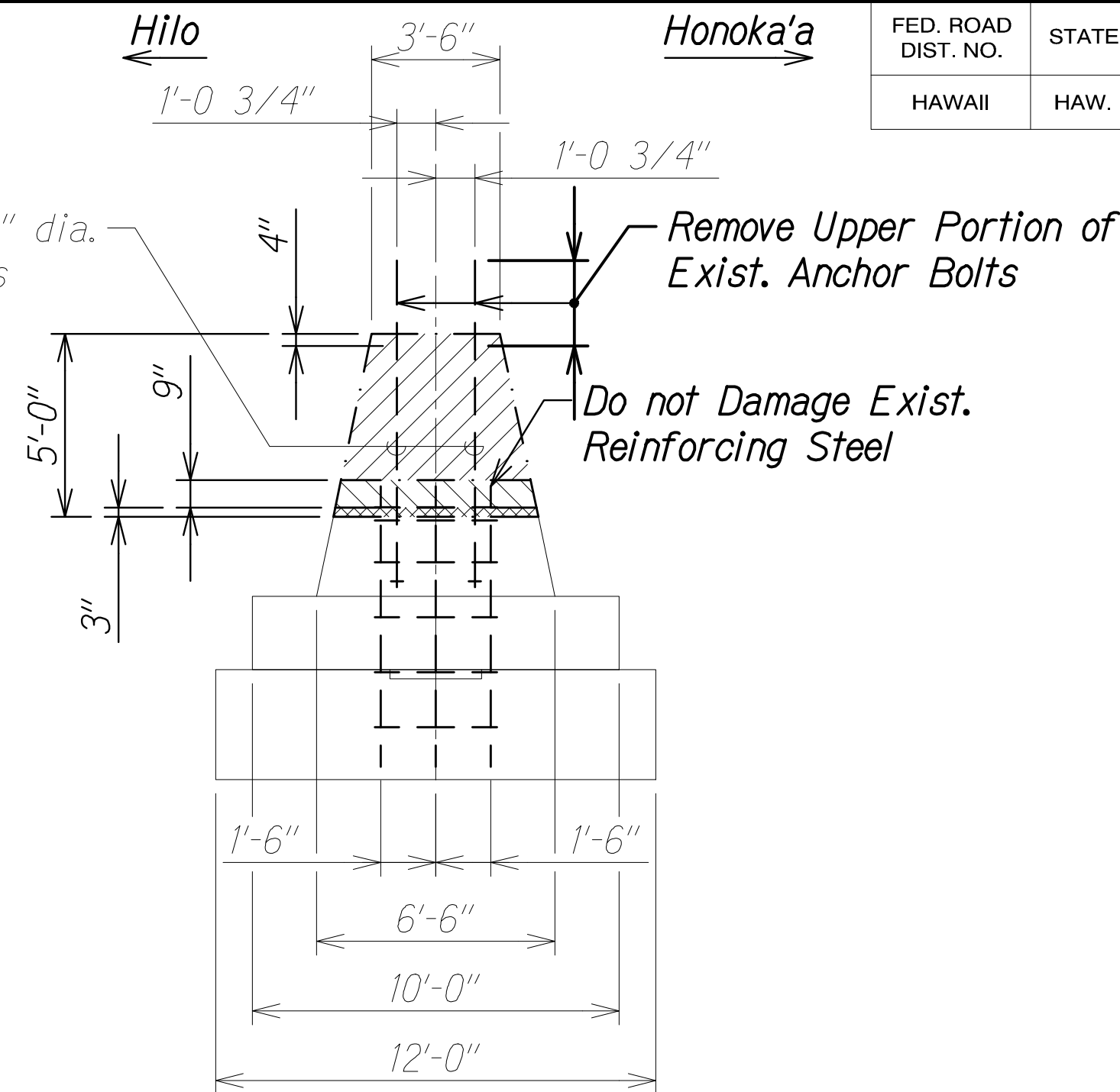
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

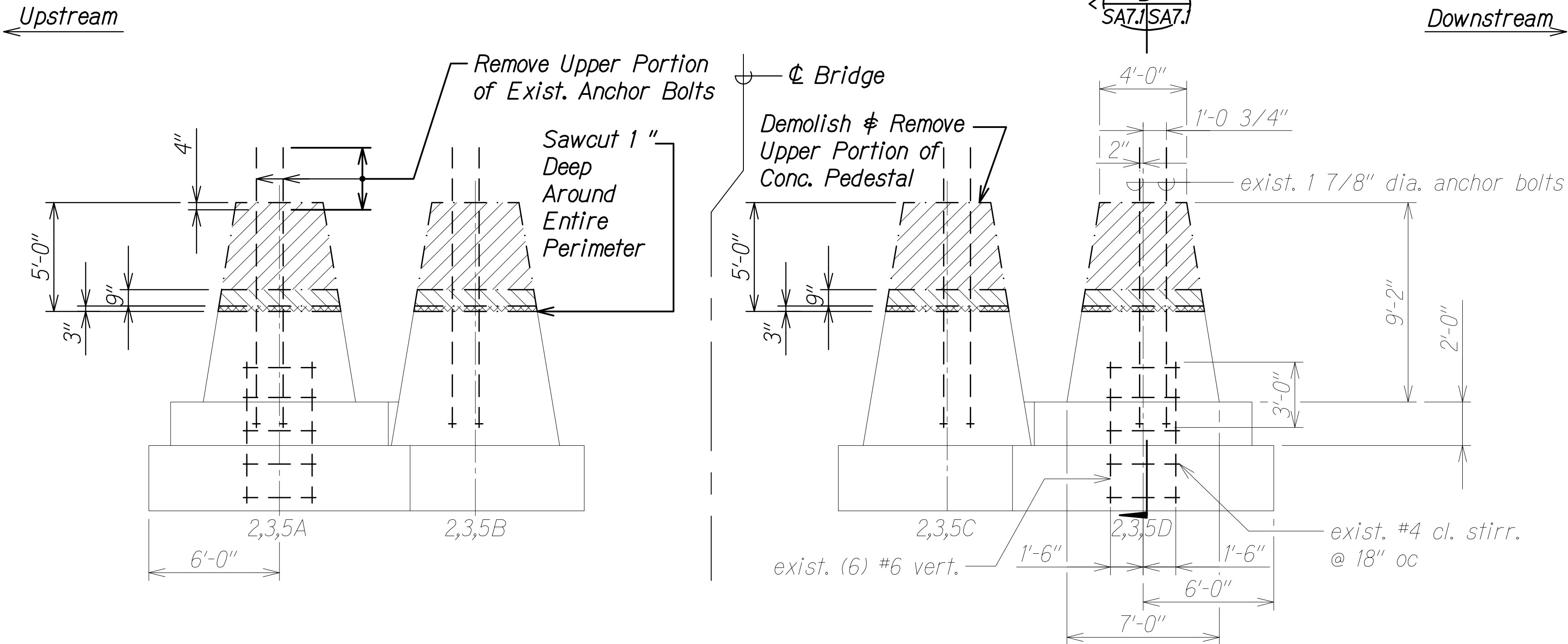
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 129 | 280 |



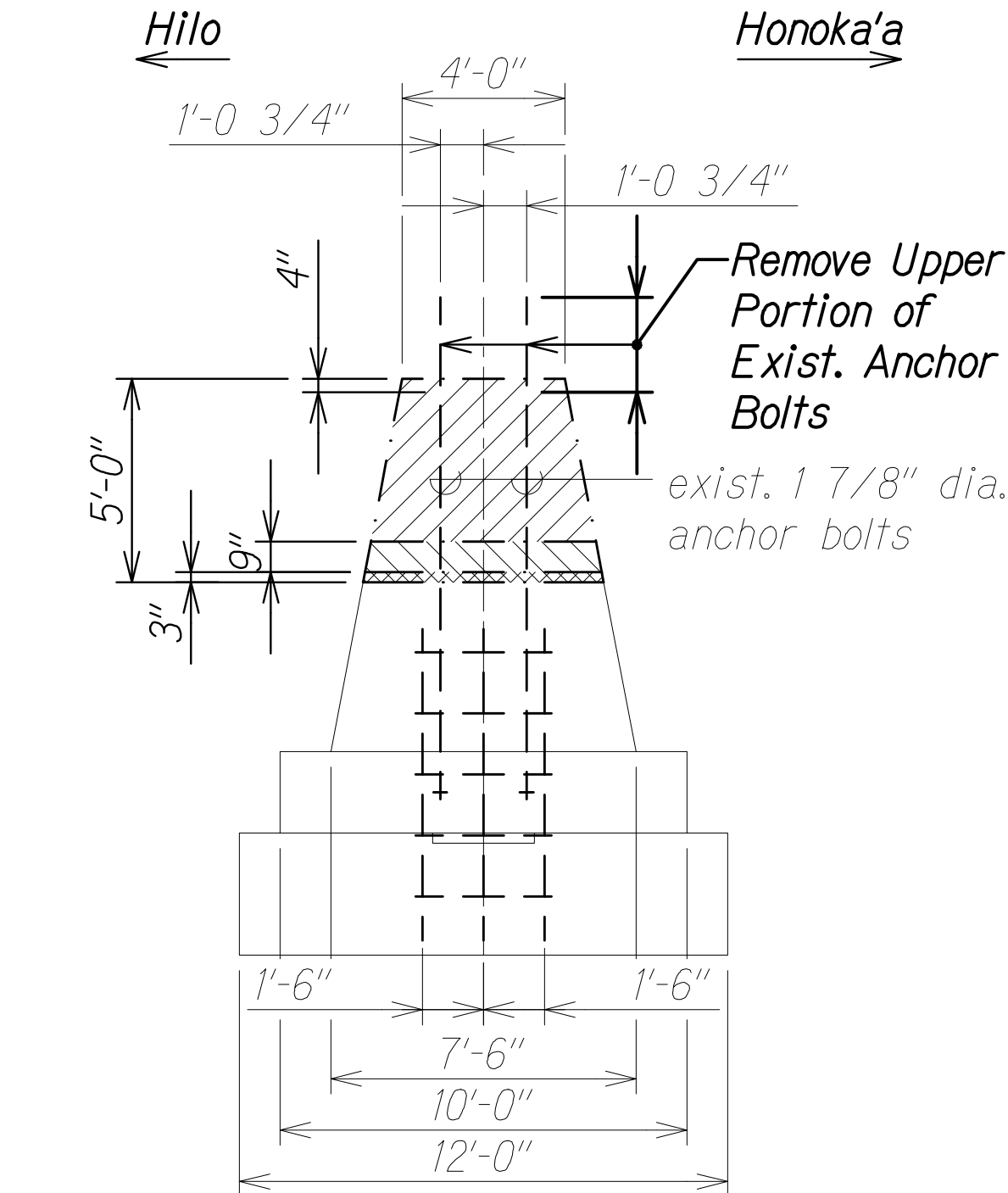
BENT NO. 1 FOUNDATION - DEMOLITION ELEVATION
Scale: 1/4" = 1'-0"



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



BENT NOS. 2, 3, & 5 FOUNDATION - DEMOLITION ELEVATION
Scale: 1/4" = 1'-0"



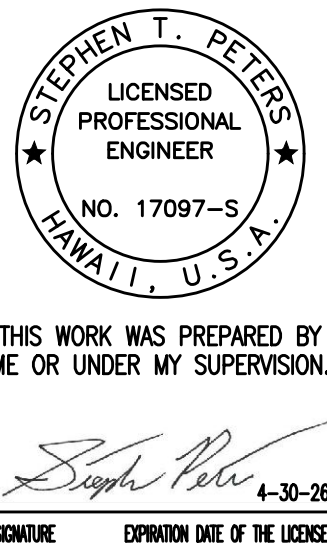
DEMOLITION SECTION
Scale: 1/4" = 1'-0"

LEGEND

- Demolish and Remove
- Demolish and Remove with No Larger Than a 30-Lb Pneumatic Demolition Hammer
- Demolish and Remove with No Larger Than a 15-Lb Pneumatic Demolition Hammer

NOTES:

- The Contractor shall not damage, demolish, or remove any existing reinforcing steel or anchor bolts, unless explicitly shown.
- If reinforcing steel is encountered within the demolition limits and is not shown on the contract drawings, inform the Engineer immediately.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

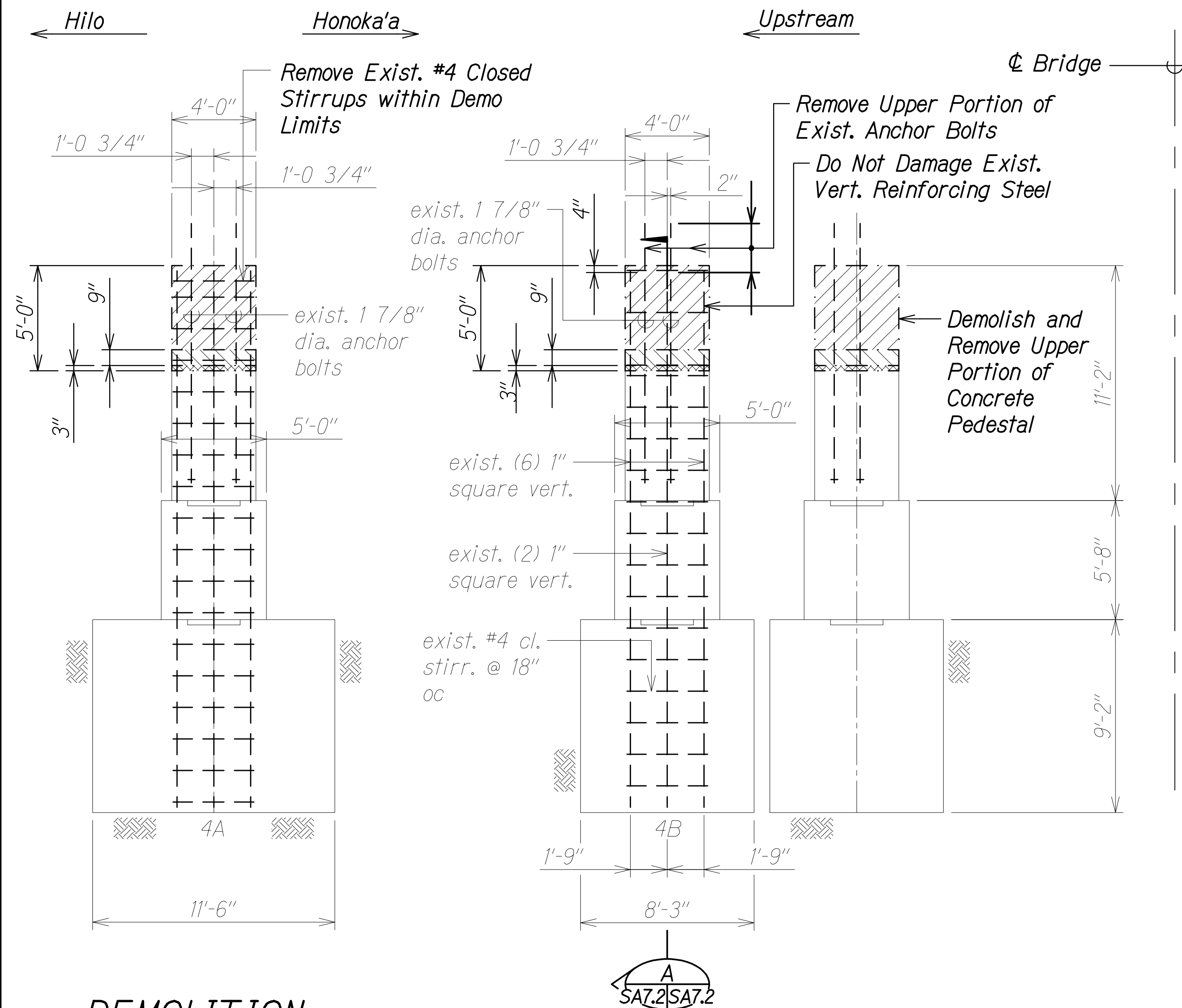
**FOUNDATION DEMOLITION
ELEVATIONS AND SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

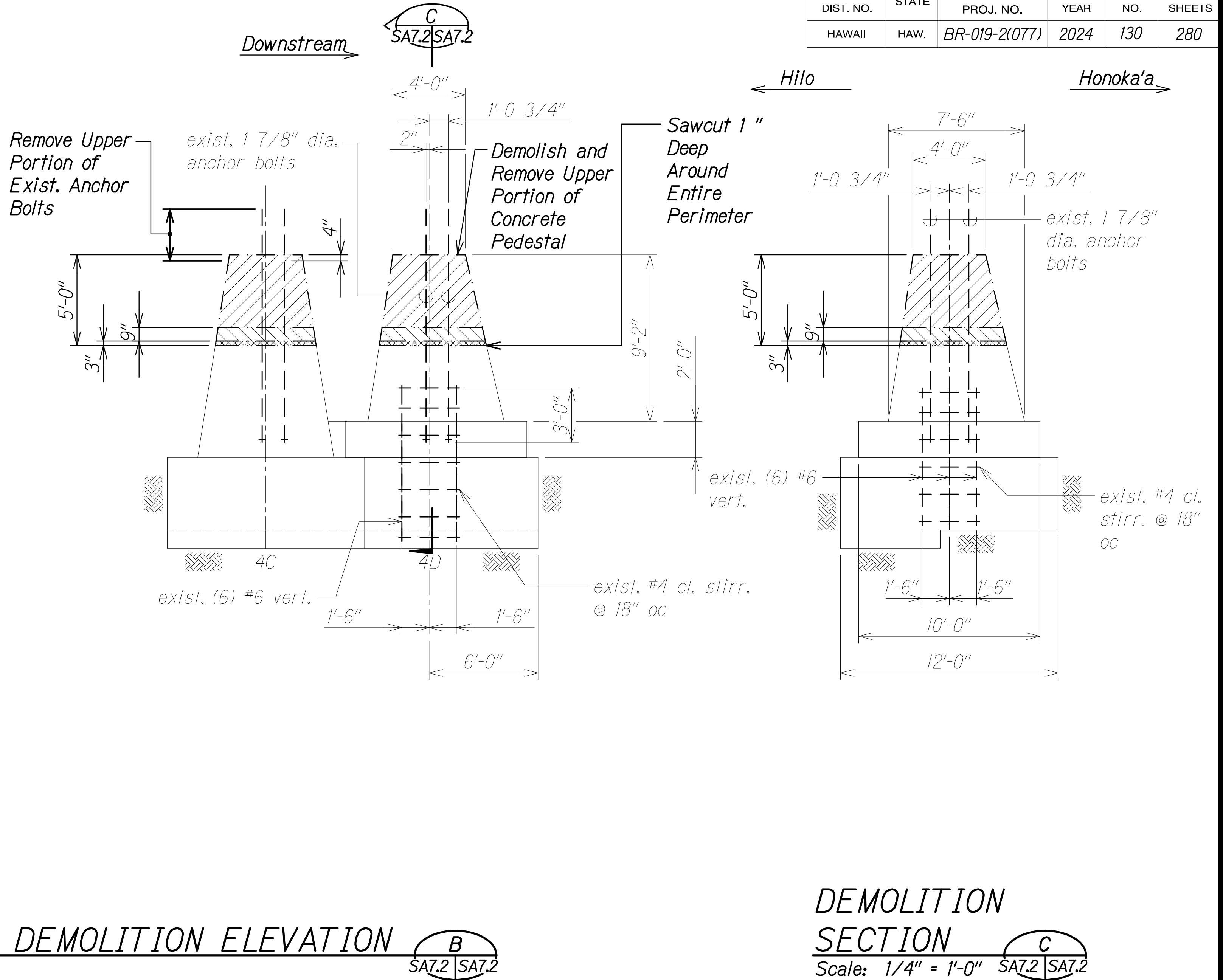
SHEET No. SA7.I OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 130 | 280 |



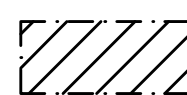
DEMOLITION SECTION A
Scale: 1/4" = 1'-0" SA7.2 SA7.2

BENT NO. 4 FOUNDATION - DEMOLITION ELEVATION B
Scale: 1/4" = 1'-0" SA7.2 SA7.2



DEMOLITION SECTION C
Scale: 1/4" = 1'-0" SA7.2 SA7.2

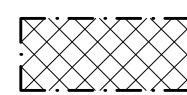
LEGEND



Demolish and Remove



Demolish and Remove with
No Larger Than a 30-Lb
Pneumatic Demolition Hammer



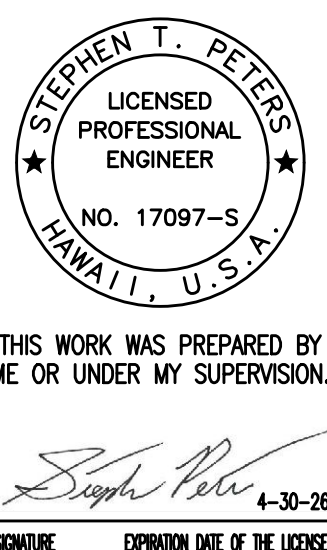
Demolish and Remove with No
Larger Than a 15-Lb
Pneumatic Demolition Hammer

NOTES:

- The Contractor shall not damage, demolish, or remove any existing reinforcing steel or anchor bolts, unless explicitly shown.
- If reinforcing steel is encountered within the demolition limits and is not shown on the contract drawings, inform the Engineer immediately.

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOTHA.01 CAD\10-28-24 BID SET\NSR-SA0701-SA0705 DEMO FDN.DWG PLOT TIME: 10-28-24, 8:44 AM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

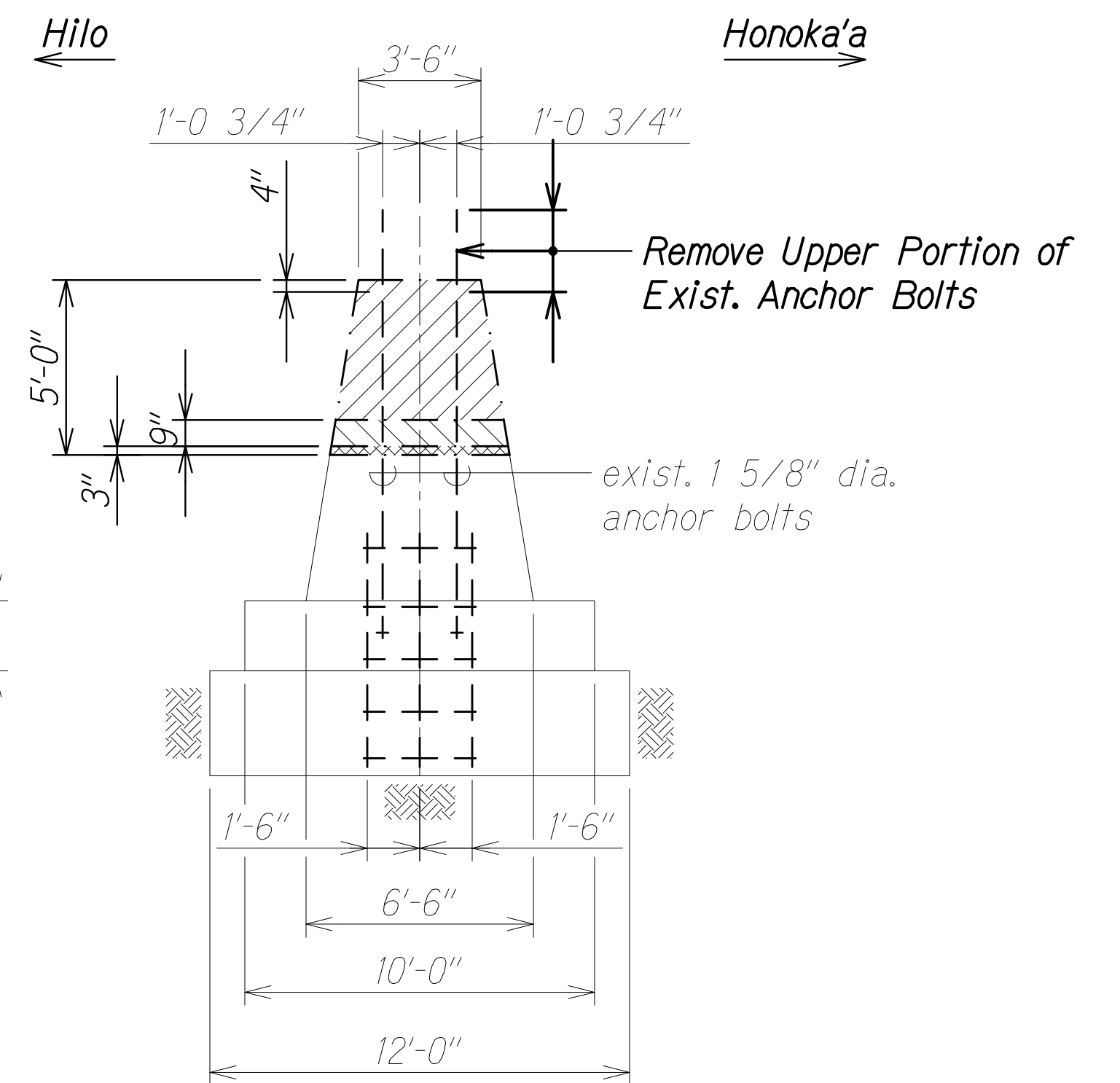
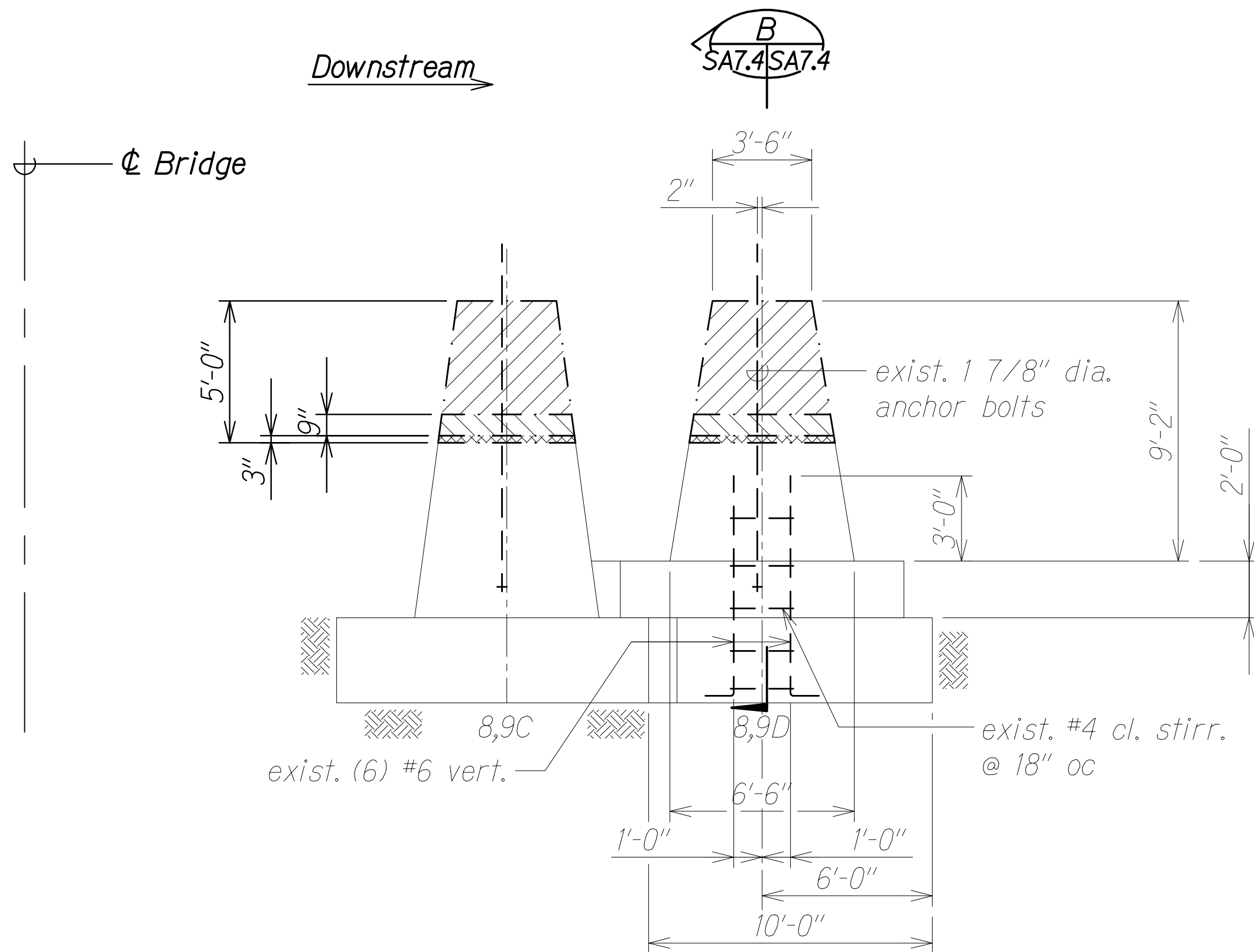
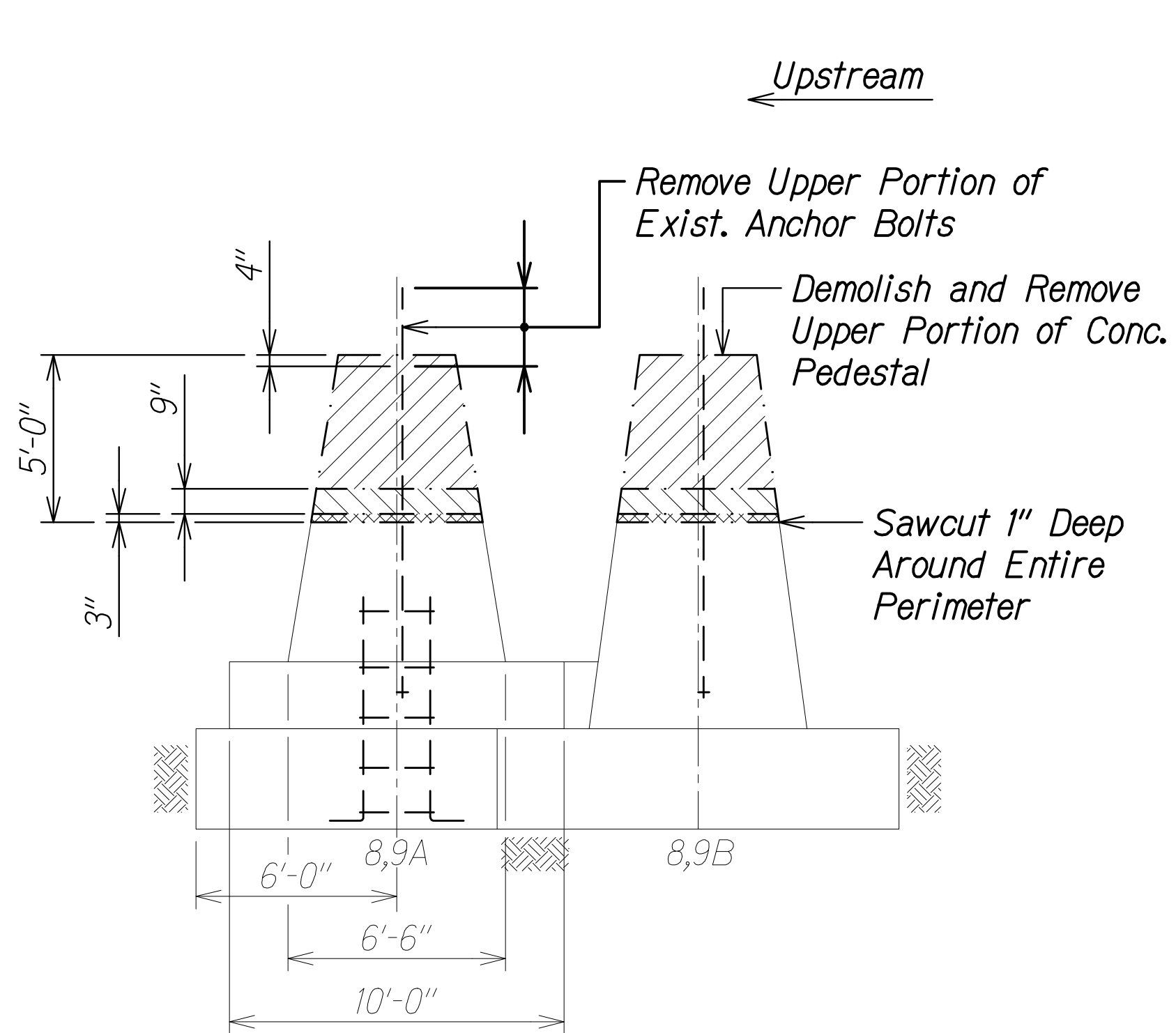
**FOUNDATION DEMOLITION
ELEVATIONS AND SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA7.2 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 132 | 280 |



BENT NOS. 8 AND 9 FOUNDATION - DEMOLITION ELEVATION

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

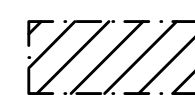
A
SA7.4 SA7.4

DEMOLITION SECTION

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

B
SA7.4 SA7.4

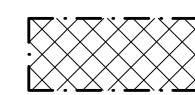
LEGEND



Demolish and Remove



Demolish and Remove with
No Larger Than a 30-Lb
Pneumatic Demolition Hammer



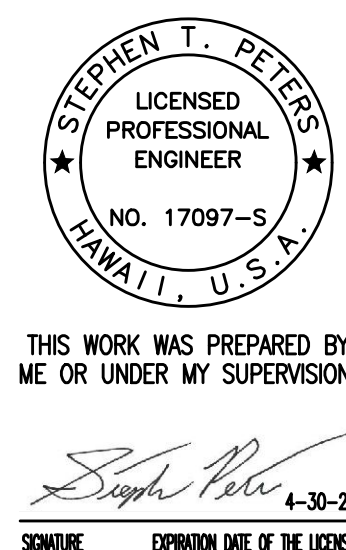
Demolish and Remove with No
Larger Than a 15-Lb
Pneumatic Demolition Hammer

NOTES:

- The Contractor shall not damage, demolish, or remove any existing reinforcing steel or anchor bolts, unless explicitly shown.
- If reinforcing steel is encountered within the demolition limits and is not shown on the contract drawings, inform the Engineer immediately.

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOTHA.01 CAD\10-28-24 BID SET\NSR-SA0701-SA0705 DEMO FDN.DWG PLOT TIME: 10-28-24, 4:30 PM



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ME OR UNDER MY SUPERVISION.
Signature: Stephen T. Peters
4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

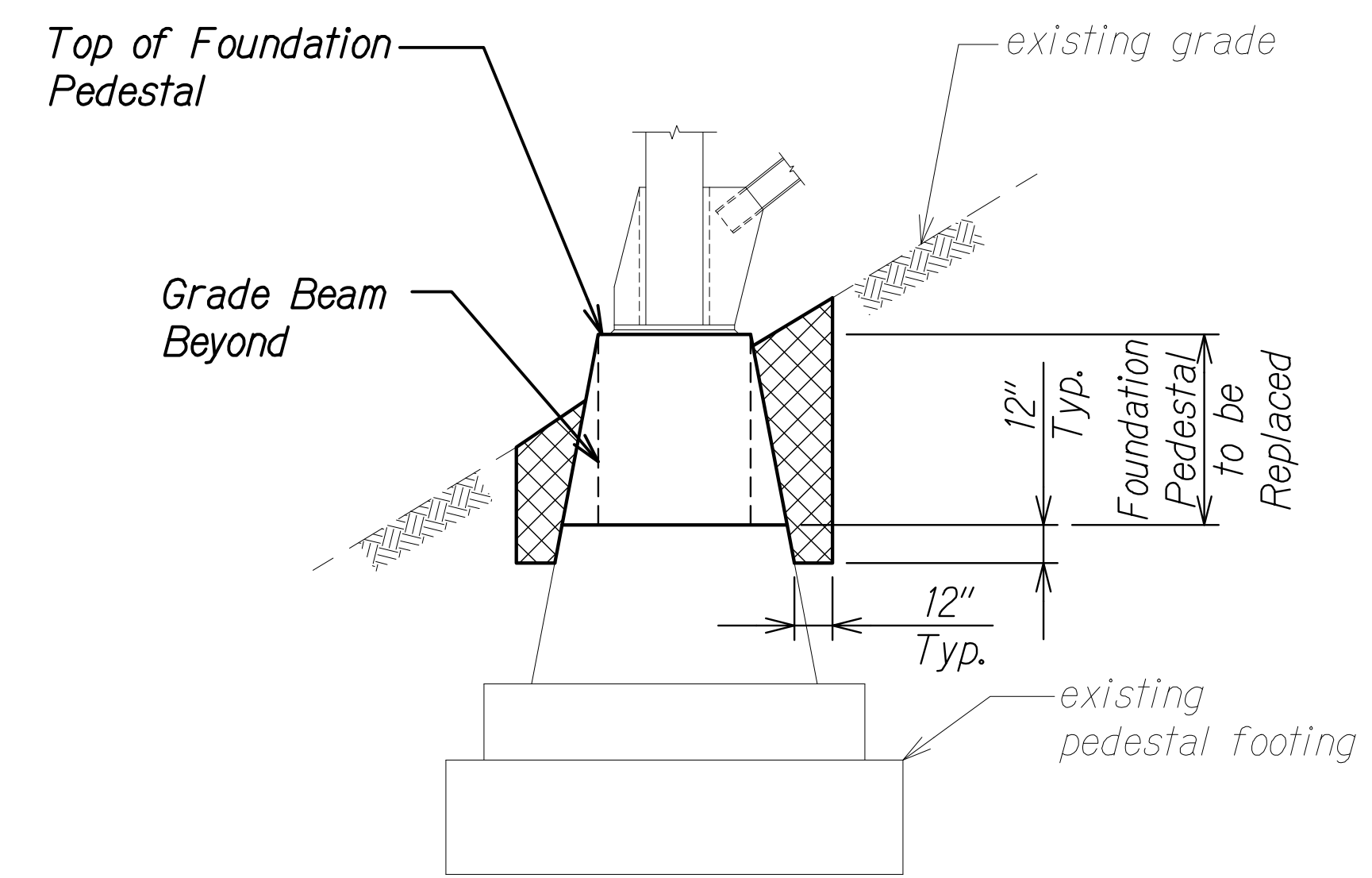
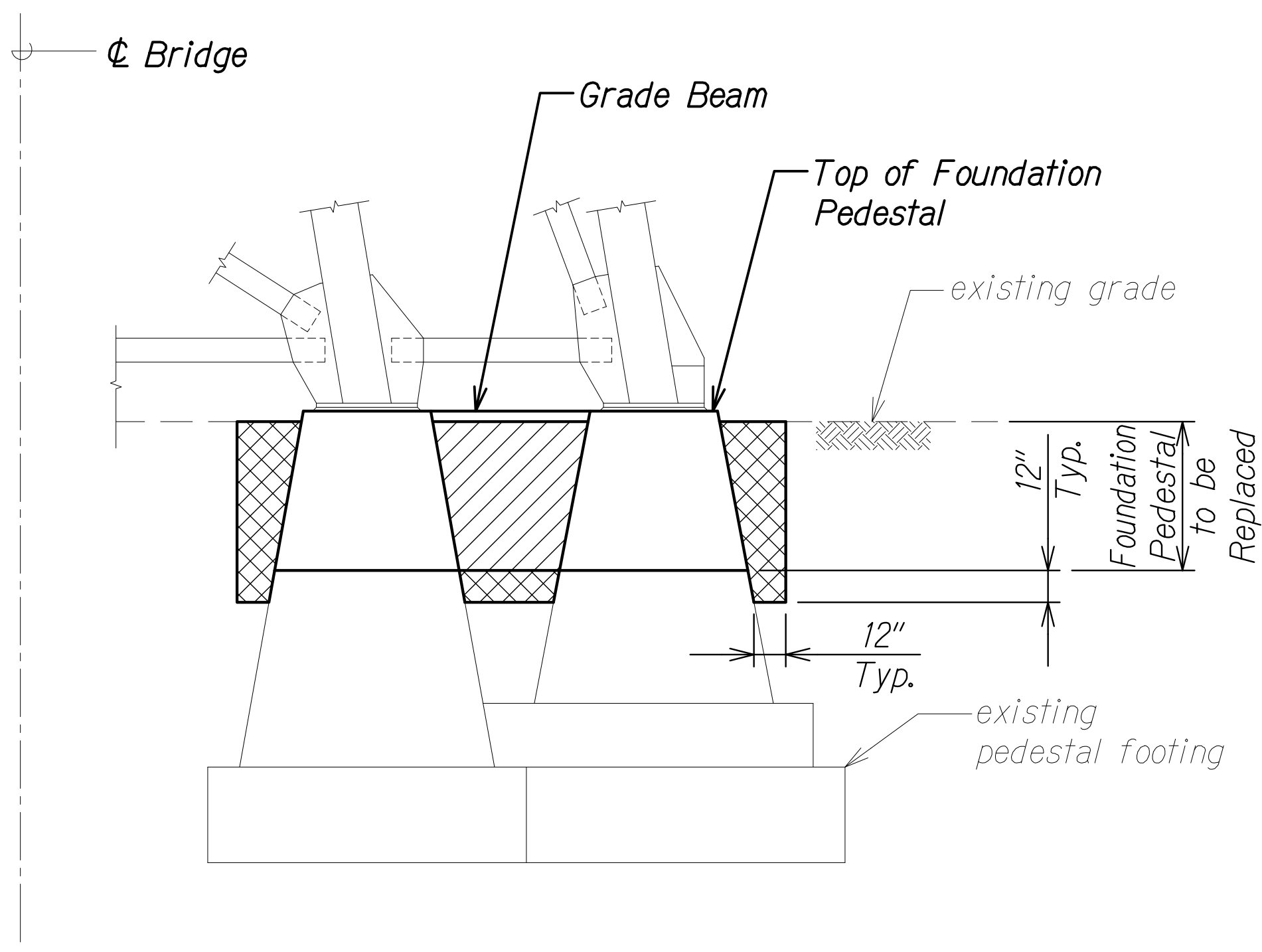
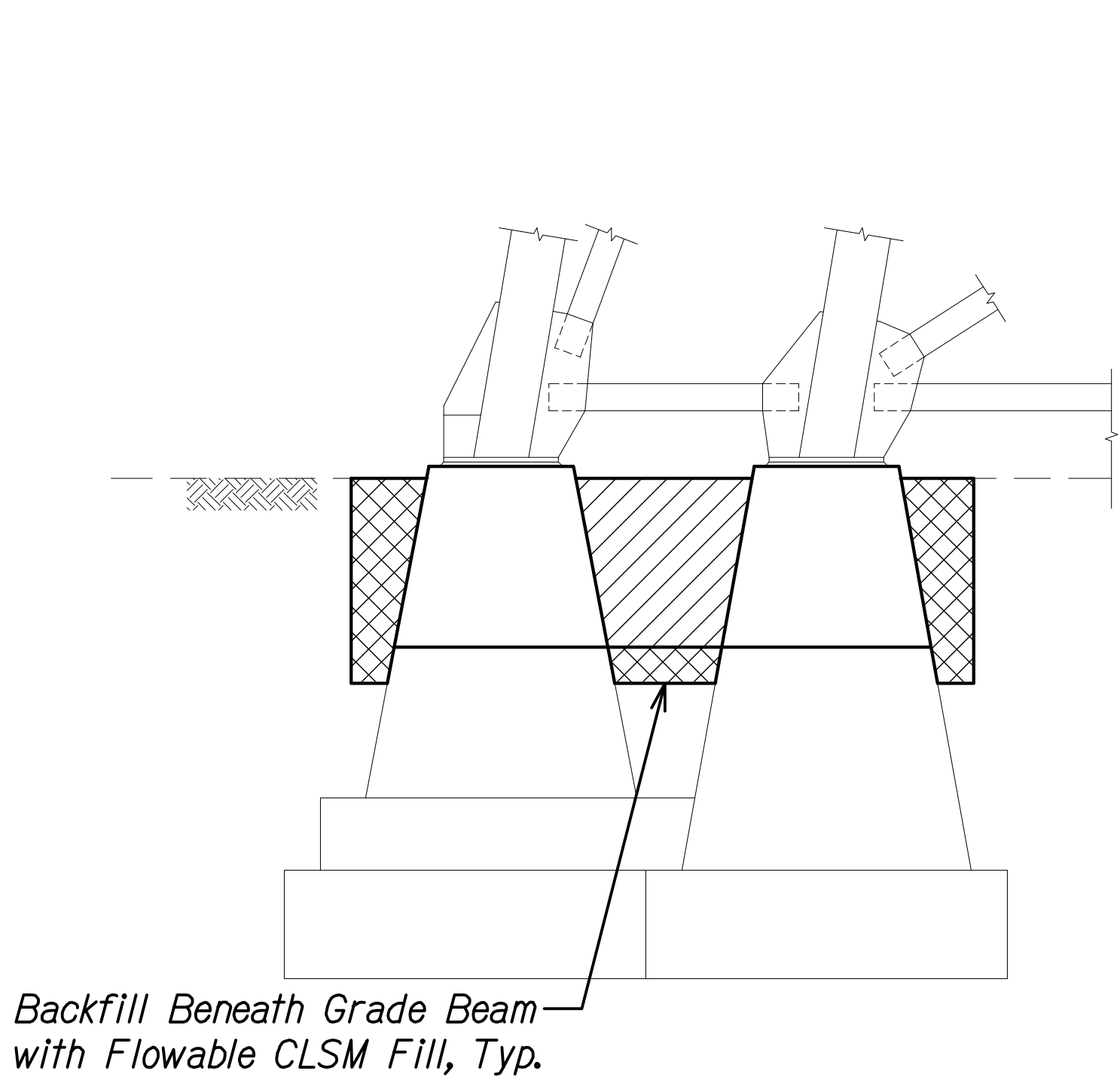
**FOUNDATION DEMOLITION
ELEVATIONS AND SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA7.4 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 133 | 280 |



**EXCAVATION/BACKFILL PAY LIMITS
AT TYPICAL FOUNDATION PEDESTAL**

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

A
SA7.5|SA7.5

**EXCAVATION/BACKFILL PAY LIMITS
AT TYPICAL FOUNDATION PEDESTAL**

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

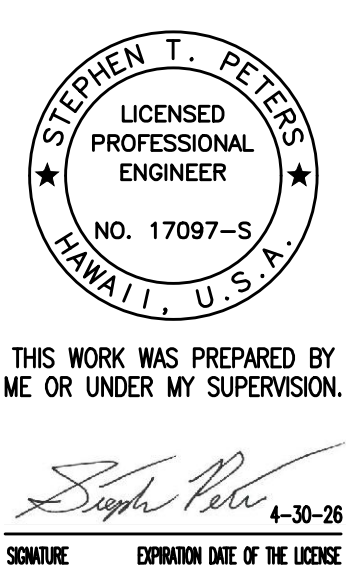
B
SA7.5|SA7.5

- LEGEND:**
- Structure Excavation
 - Structure Backfill

- NOTES:**
- Structure excavation/backfill pay limits shown shall be the basis for the measurement and payment of items associated with Section 205 - EXCAVATION AND BACKFILL FOR BRIDGE AND RETAINING STRUCTURES of the Special Provisions.
 - Actual structure excavation/backfill outside of the pay limits is permitted but will not be covered for measurement and payment.
 - Pay limits are shown for typical conditions. Due to variations in the existing grade elevations, some foundation locations will require no excavation/backfill.
 - It is acceptable to use structure excavation soil material as structure backfill so long as the material is compacted in accordance with the specifications.

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0701-SA0705 DEMO FDN.DWG PLOT TIME: 10-28-24, 11:34 AM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXCAVATION/BACKFILL PAY LIMITS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

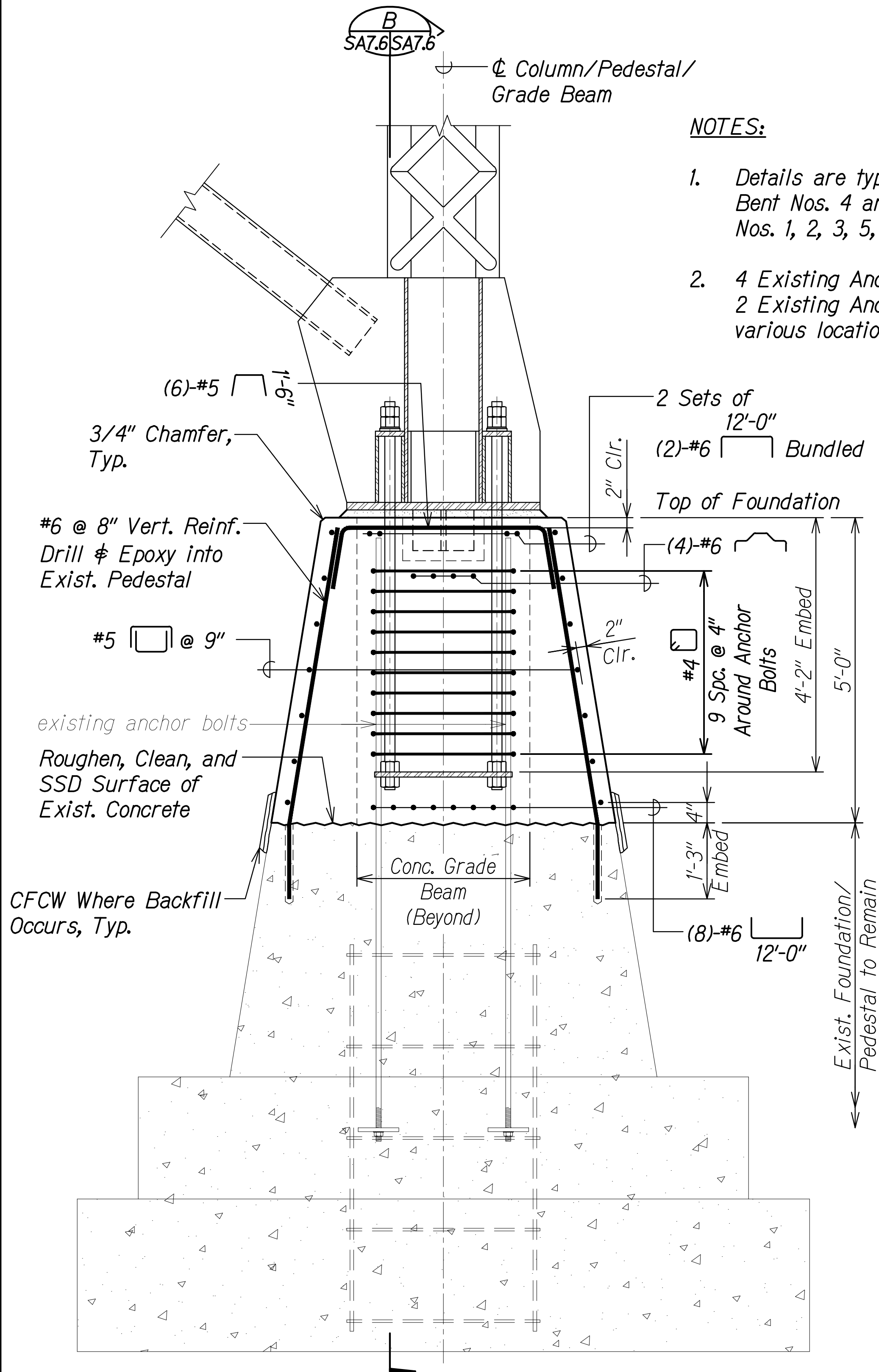
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.5 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 134 | 280 |

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT101 CAD\10-28-24 BID SET\NSR-SA0706-SA0708 PED REIN.DWG PLOT TIME: 10-28-24, 11:35 AM

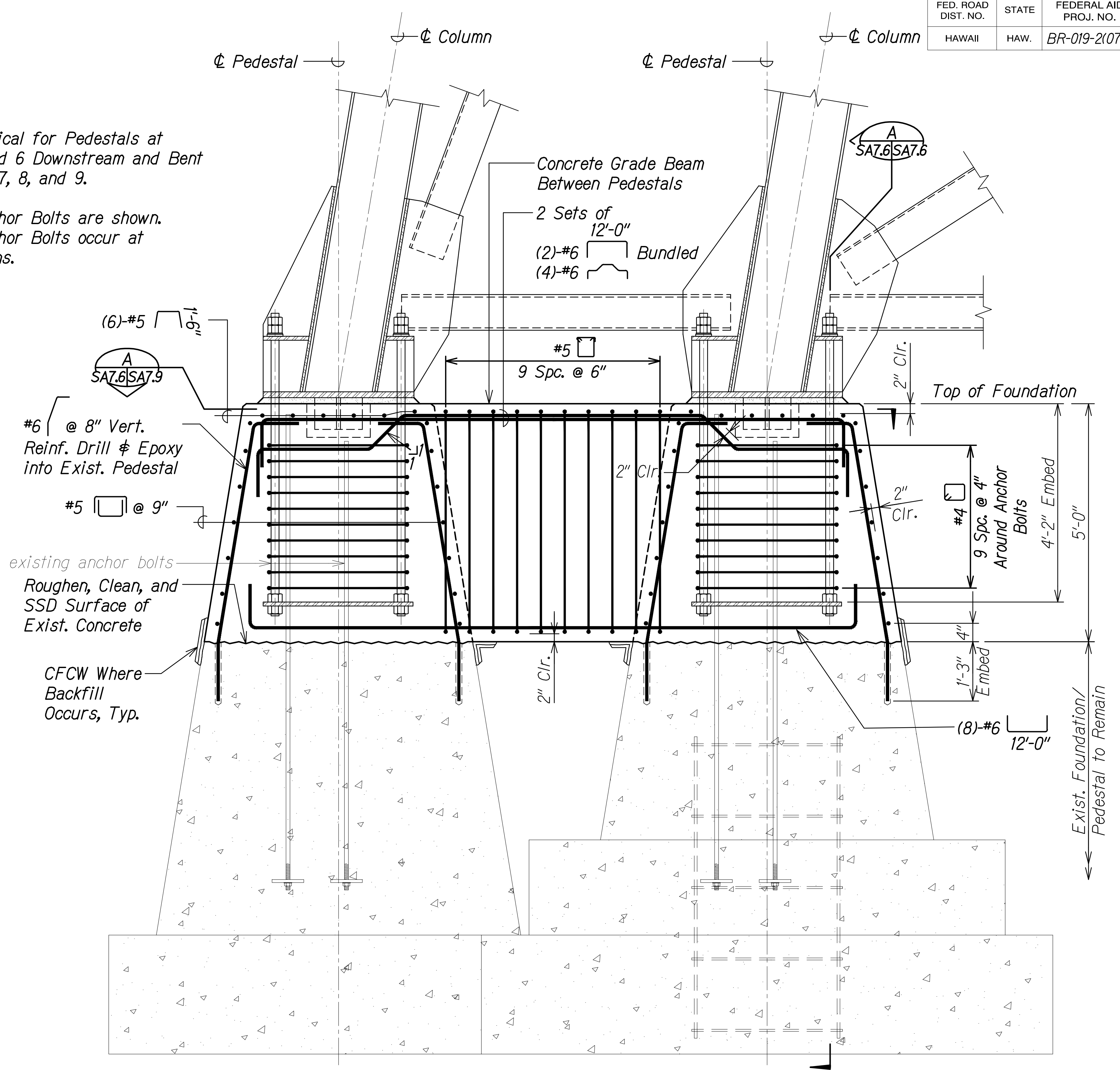
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| No. | DESIGNED BY | |
| | QUANTITIES BY | |
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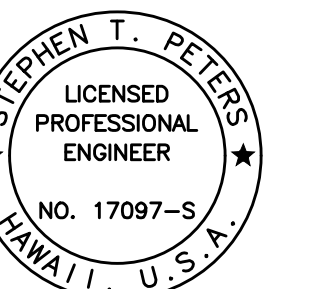
**TYPICAL FOUNDATION
PEDESTAL REINFORCING SECTION A**
Scale: 3/4" = 1'-0" SA7.6 SA7.6

NOTES:

- Details are typical for Pedestals at Bent Nos. 4 and 6 Downstream and Bent Nos. 1, 2, 3, 5, 7, 8, and 9.
- 4 Existing Anchor Bolts are shown. 2 Existing Anchor Bolts occur at various locations.



**TYPICAL FOUNDATION
PEDESTAL REINFORCING SECTION B**
Scale: 3/4" = 1'-0" SA7.6 SA7.6



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SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

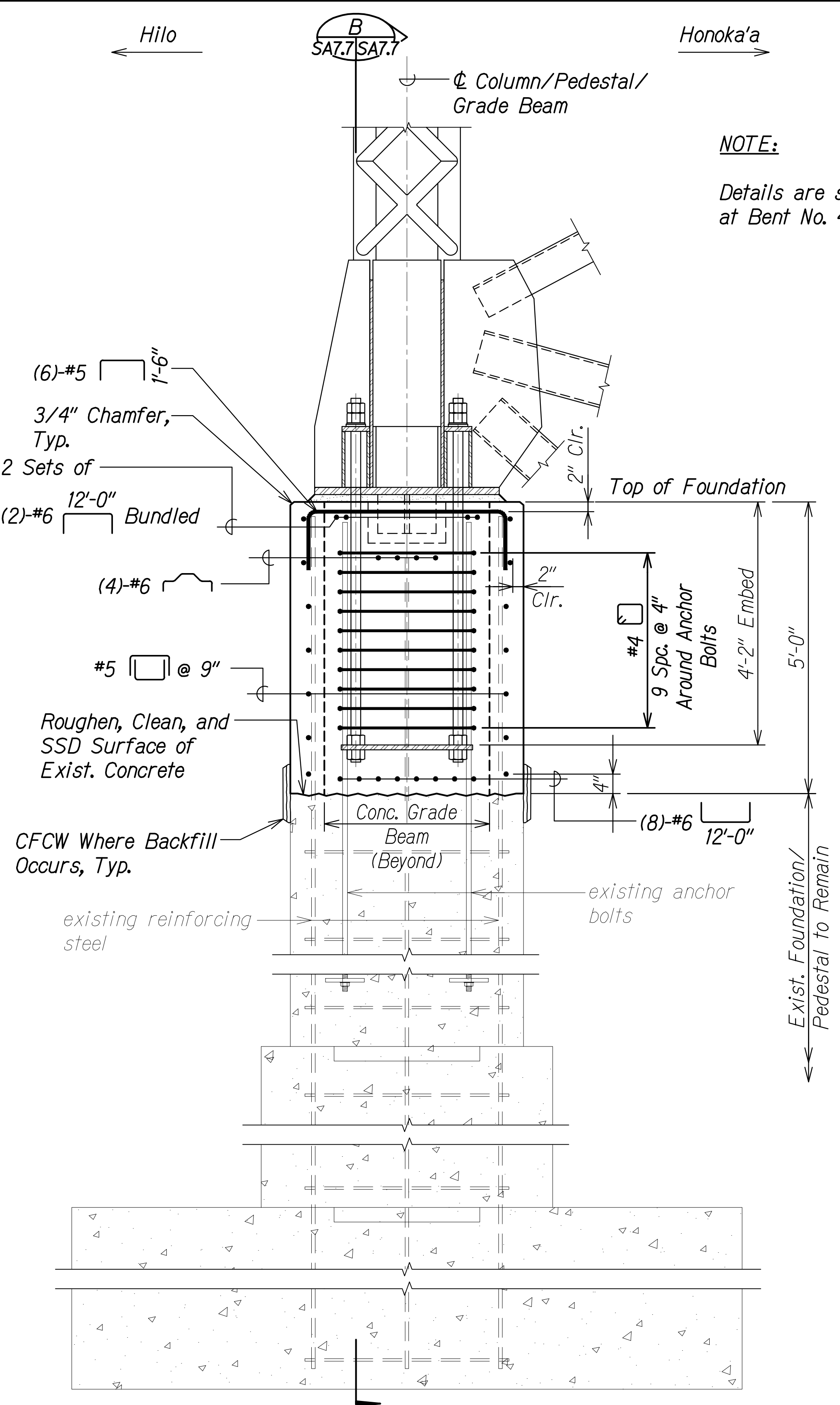
**TYPICAL FOUNDATION
REINFORCING SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

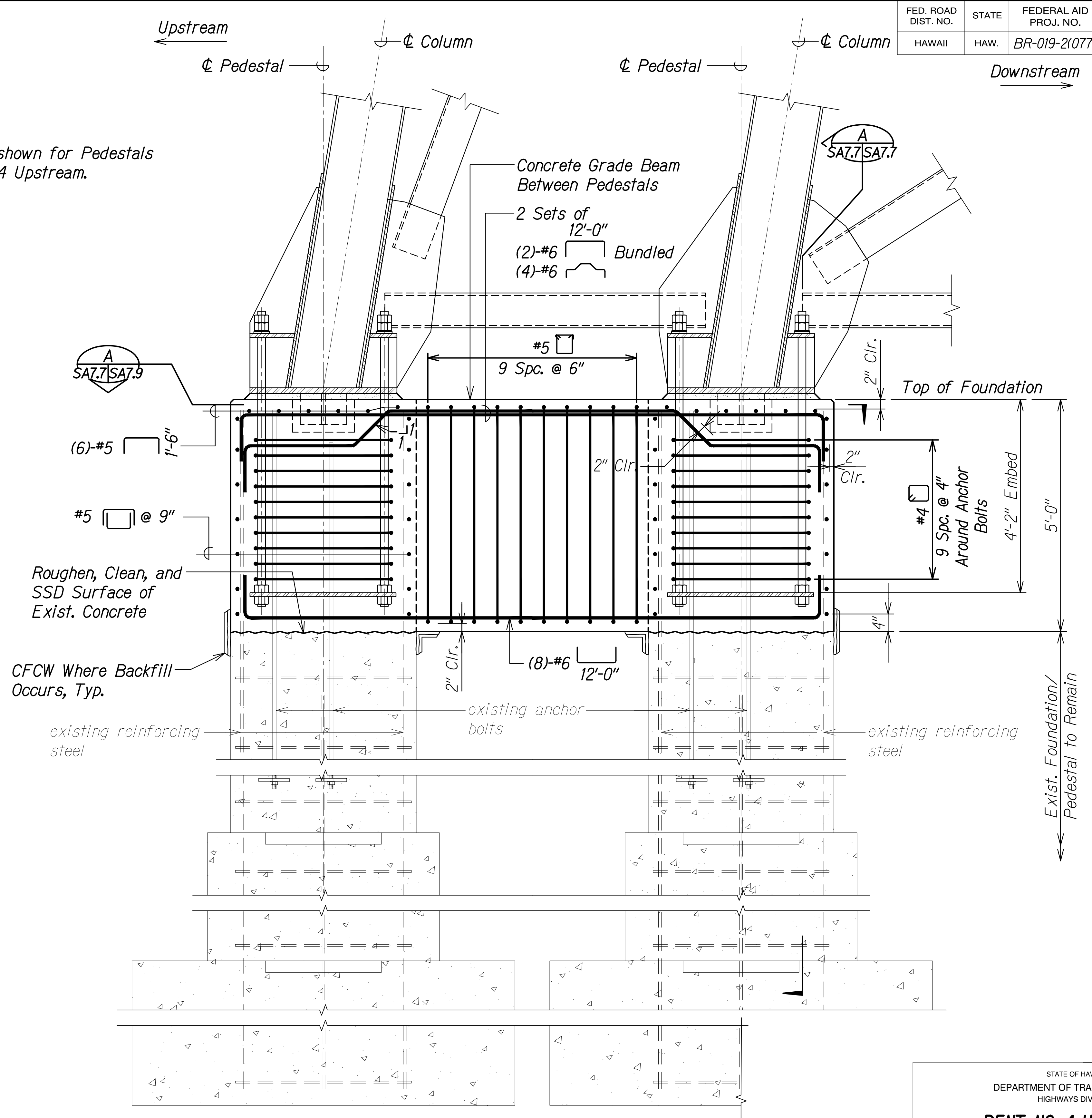
SHEET No. SA7.6 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 135 | 280 |



NOTE:
Details are shown for Pedestals at Bent No. 4 Upstream.

FOUNDATION PEDESTAL REINFORCING SECTION
Scale: 3/4" = 1'-0"
SA7.7|SA7.7



FOUNDATION PEDESTAL REINFORCING SECTION
Scale: 3/4" = 1'-0"
SA7.7|SA7.7

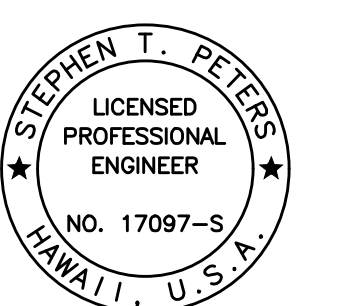
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT NO. 4 UPSTREAM
FOUNDATION REINFORCING SECTIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

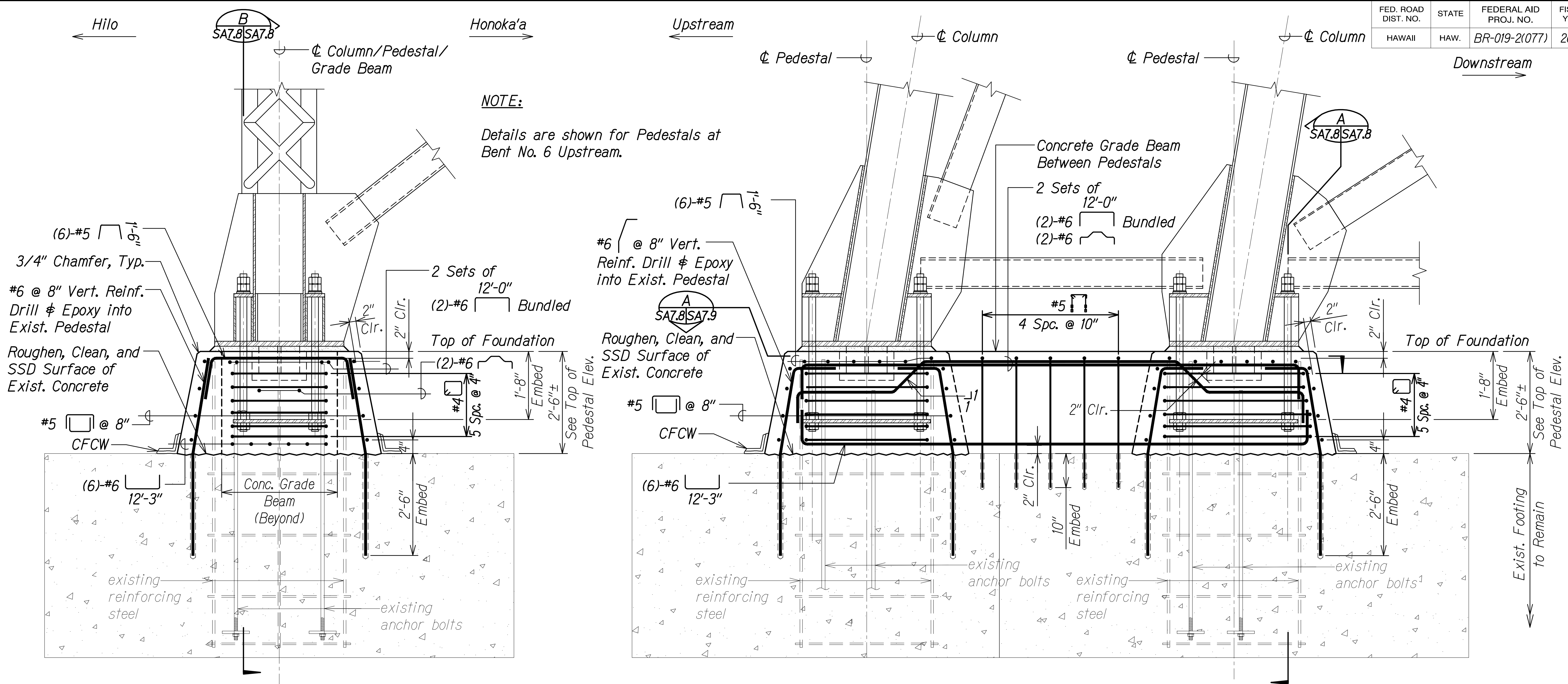
SHEET No.SA7.7 OF 18 SHEETS



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Signature: Stephen T. Peters
4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 136 | 280 |

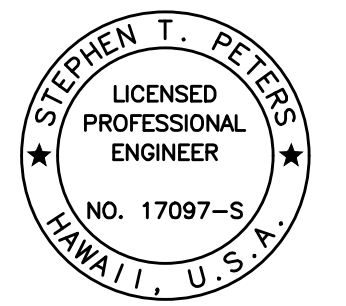


FOUNDATION PEDESTAL
REINFORCING SECTION A
Scale: 3/4" = 1'-0" SA7.8 SA7.8

FOUNDATION PEDESTAL
REINFORCING SECTION B
Scale: 3/4" = 1'-0" SA7.8 SA7.8

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|---------------|------|
| ORIGINAL PLAN | DATE |
| NOTE BOOK | |
| DESIGNED BY | |
| QUANTITIES BY | |
| CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SA0706-SA0708-PED REIN.DWG PLOT TIME: 10-28-24, 11:36 AM



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SIGNATURE: [Signature] EXPIRATION DATE OF THE LICENSE: 4-30-26

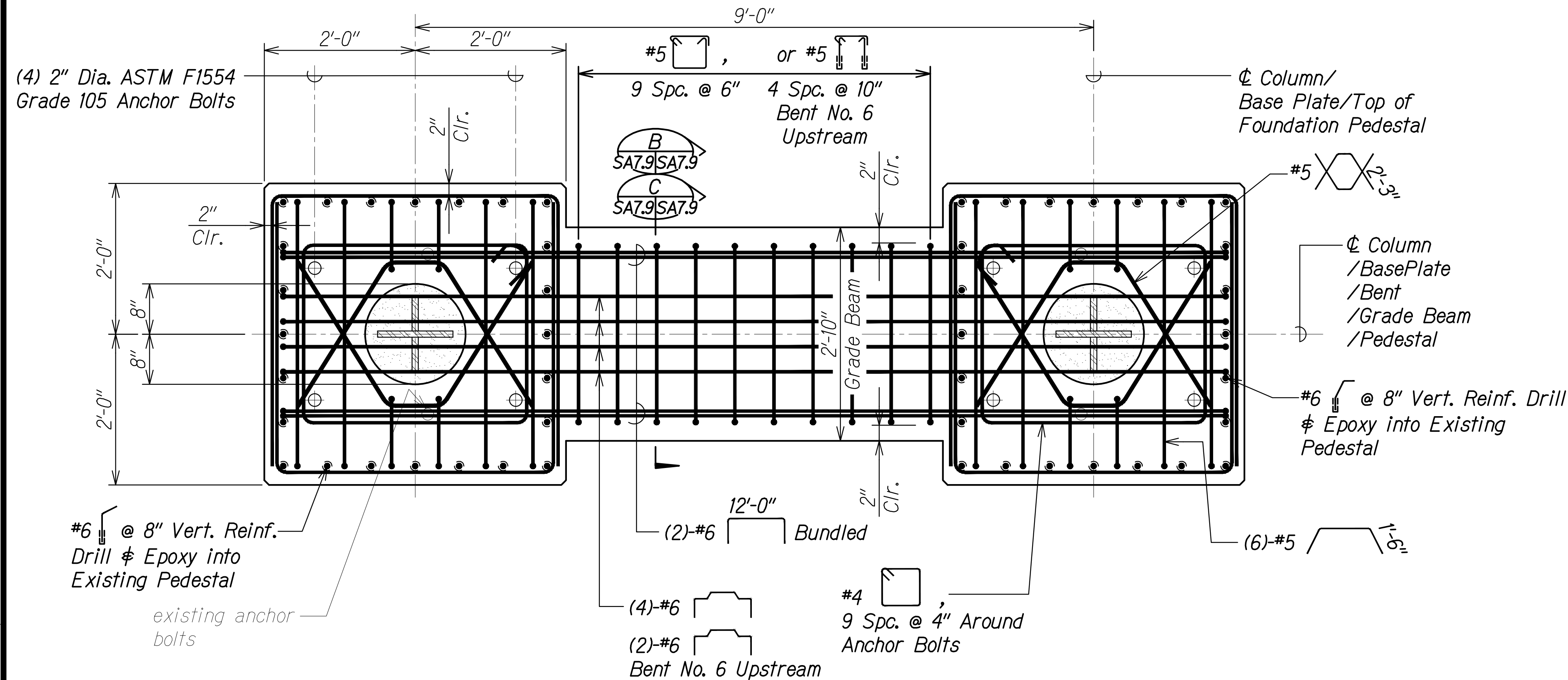
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT NO. 6 UPSTREAM
FOUNDATION REINFORCING SECTIONS

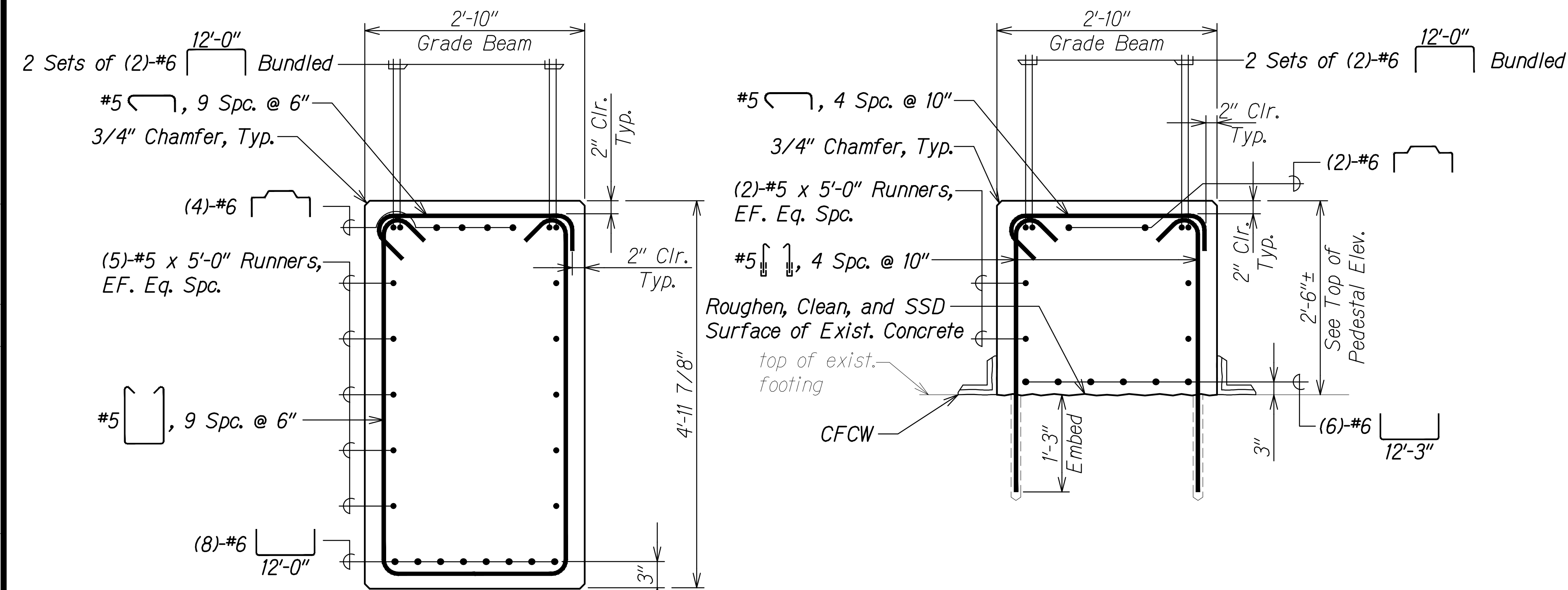
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.8 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 137 | 280 |



SECTION A
Scale: 1" = 1'-0"
SA7.6 SA7.9

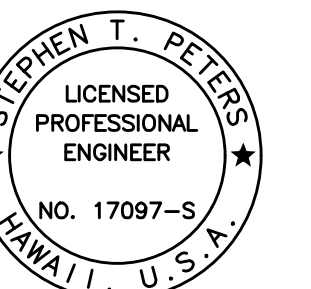


SECTION B
Scale: 1" = 1'-0"
SA7.9 SA7.9

SECTION C
Scale: 1" = 1'-0"
SA7.9 SA7.9

NOTE:

Surface of concrete shall be prepared using primer as recommended by Manufacturer.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

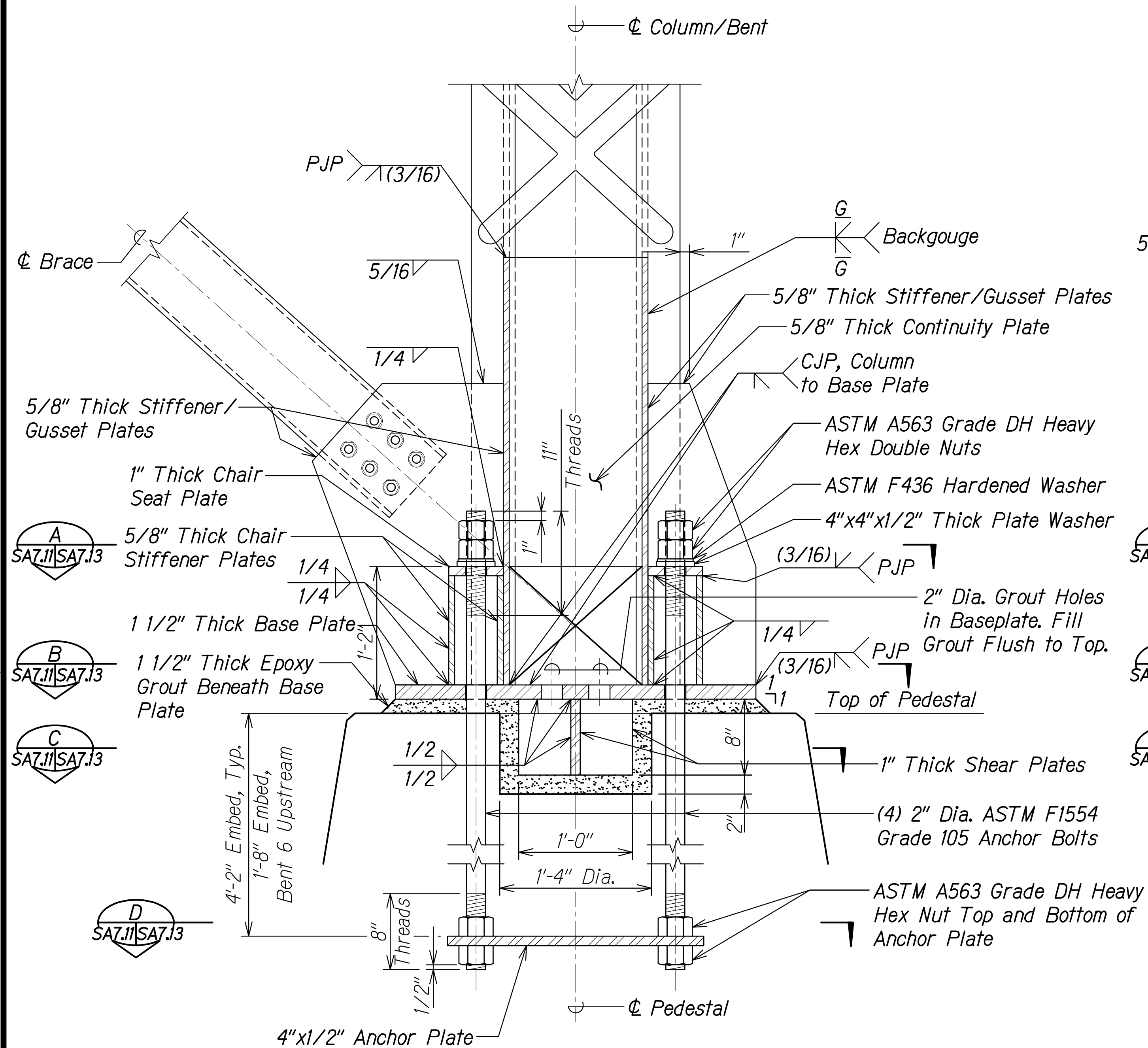
**PEDESTAL/GRADE BEAM
REINFORCING SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA7.9 OF 18 SHEETS

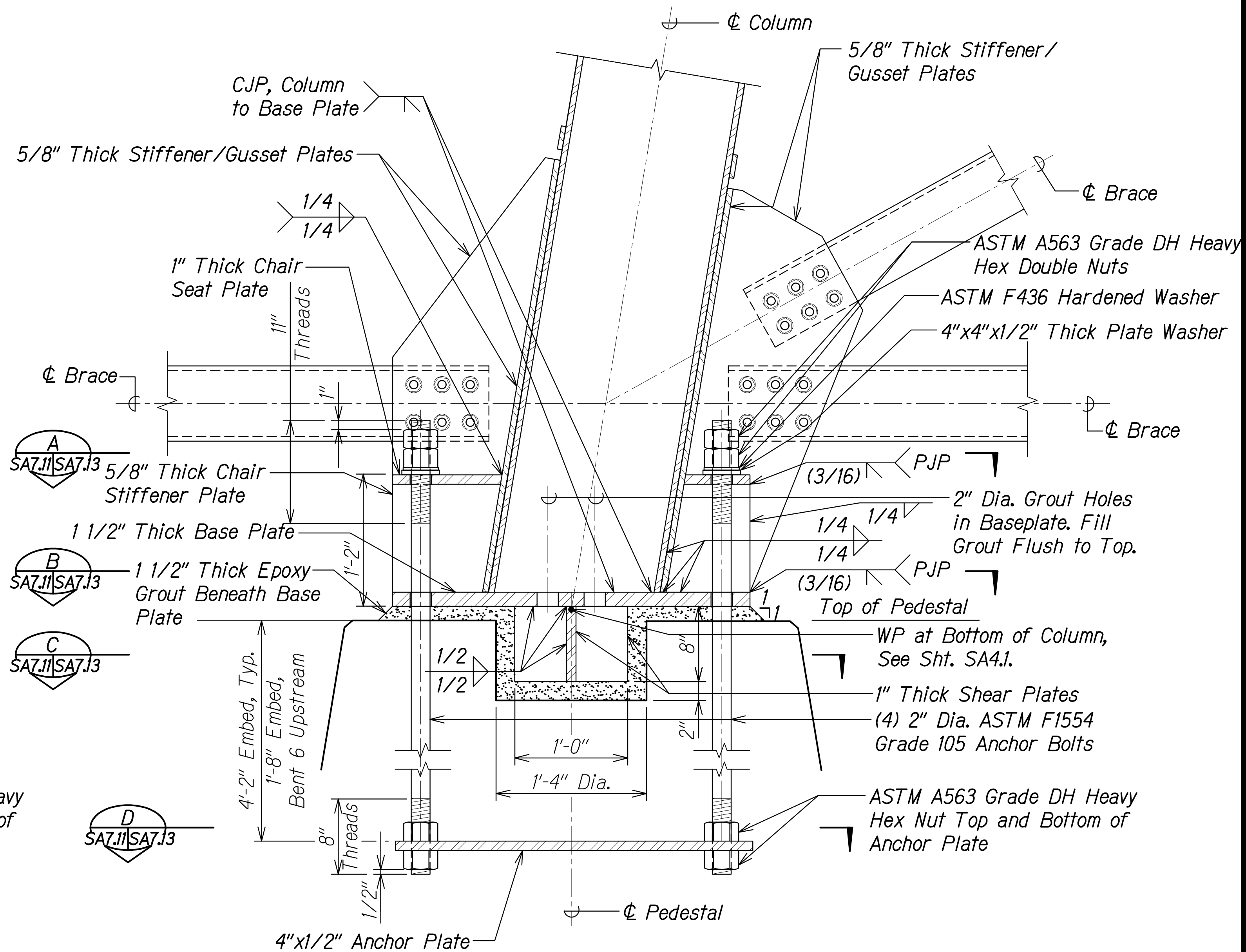
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 139 | 280 |



COLUMN BASE PLATE AND ANCHOR BOLT DETAIL

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

1
SA7.11|SA7.11



COLUMN BASE PLATE AND ANCHOR BOLT DETAIL

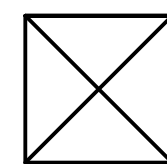
Scale: 1 1/2" = 1'-0"

2
SA7.11|SA7.11

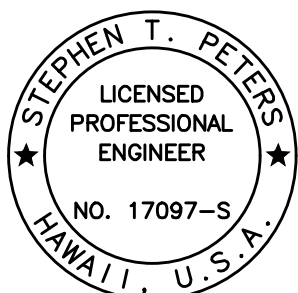
NOTES:

- Details are typical for Bent Nos. 3, 5, 6, and 8.
- All welded connections shall receive full seal welding along all edges of faying surfaces to prevent moisture intrusion.
- The upper 2'-6" of anchor bolts shall be shop painted.
- Anchor bolts shall be shipped fastened to the bottom anchor plate and a temporary steel top template to ensure proper layout during installation.
- Anchor bolts shall be installed with misalignments of less than 1:40 from vertical. After installation, firm contact shall exist between the anchor bolt, nuts, washers, and seat plate.
- Touch-up paint nuts, washers, and ends of anchor bolts after installation.
- Caulk annulus between anchor bolt and baseplate with a two-component, 100% solids, aliphatic polyurea joint sealer.

LEGEND:



Omit continuity plate at base of column.



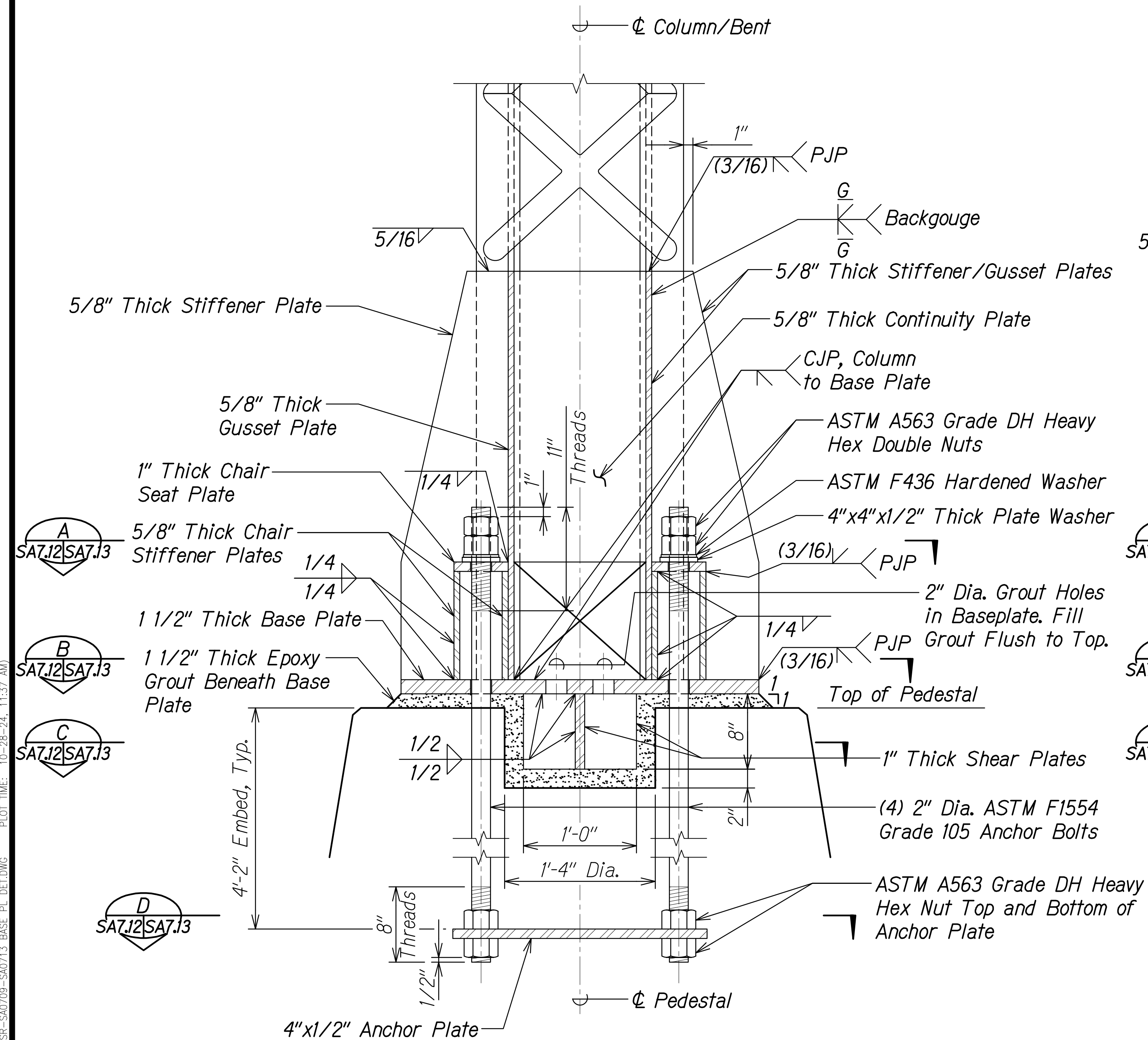
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**COLUMN BASE PLATE
AND ANCHOR BOLT DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.11 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 140 | 280 |



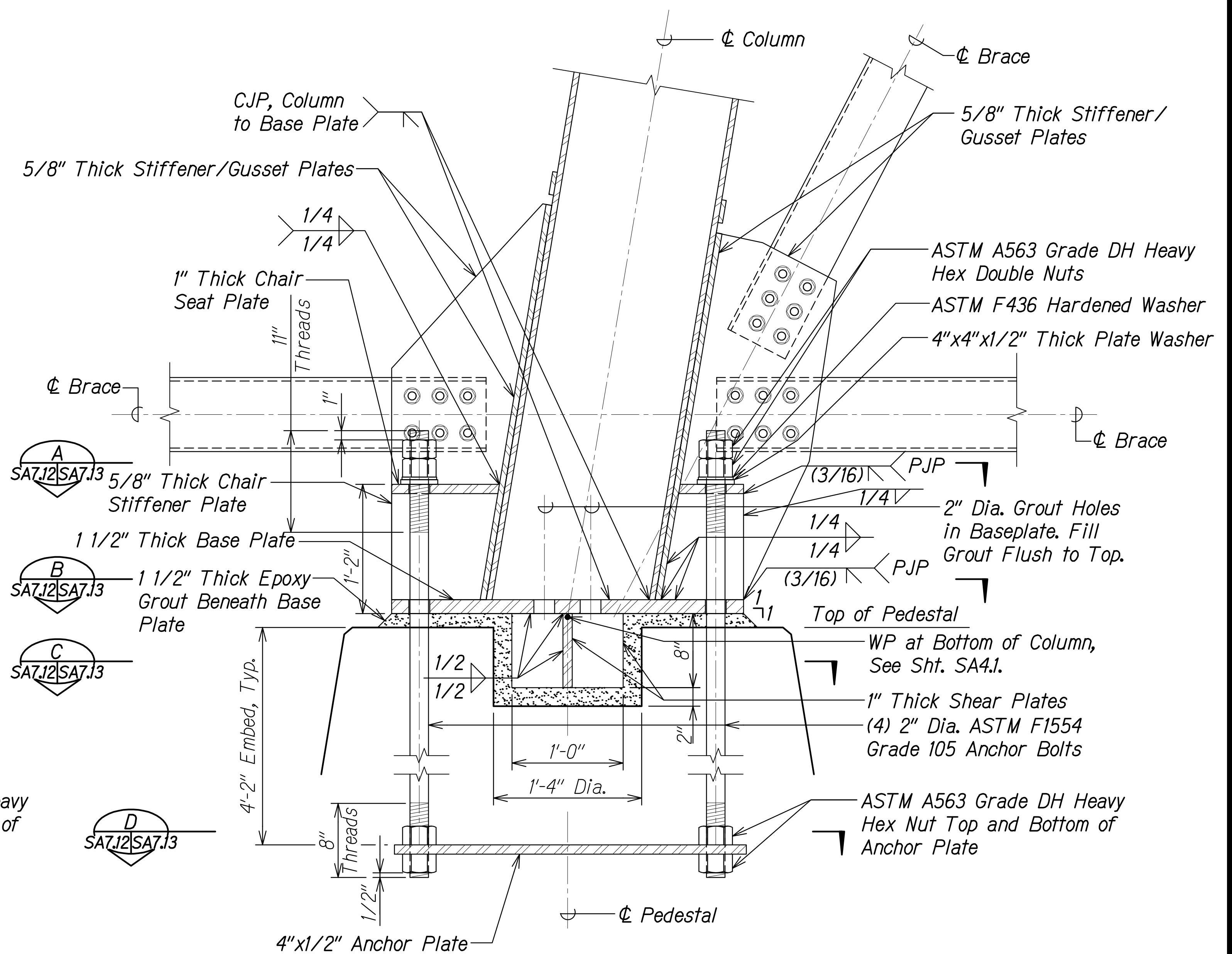
COLUMN BASE PLATE AND ANCHOR BOLT DETAIL 1

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

SA7.12/SA7.12

NOTES:

- Details are typical for Bent No. 1.
- All welded connections shall receive full seal welding along all edges of faying surfaces to prevent moisture intrusion.
- The upper 2'-6" of anchor bolts shall be shop painted.
- Anchor bolts shall be shipped fastened to the bottom anchor plate and a temporary steel top template to ensure proper layout during installation.
- Anchor bolts shall be installed with misalignments of less than 1:40 from vertical. After installation, firm contact shall exist between the anchor bolt, nuts, washers, and seat plate.
- Touch-up paint nuts, washers, and ends of anchor bolts after installation.
- Caulk annulus between anchor bolt and baseplate with a two-component, 100% solids, aliphatic polyurea joint sealer.

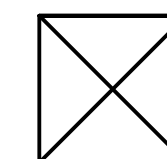


COLUMN BASE PLATE AND ANCHOR BOLT DETAIL 2

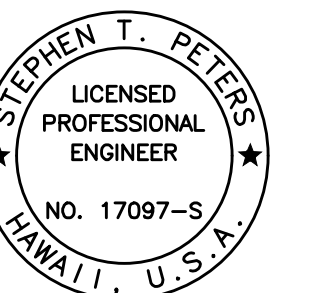
Scale: 1 1/2" = 1'-0"

SA7.12/SA7.12

LEGEND:



Omit continuity plate at base of column.

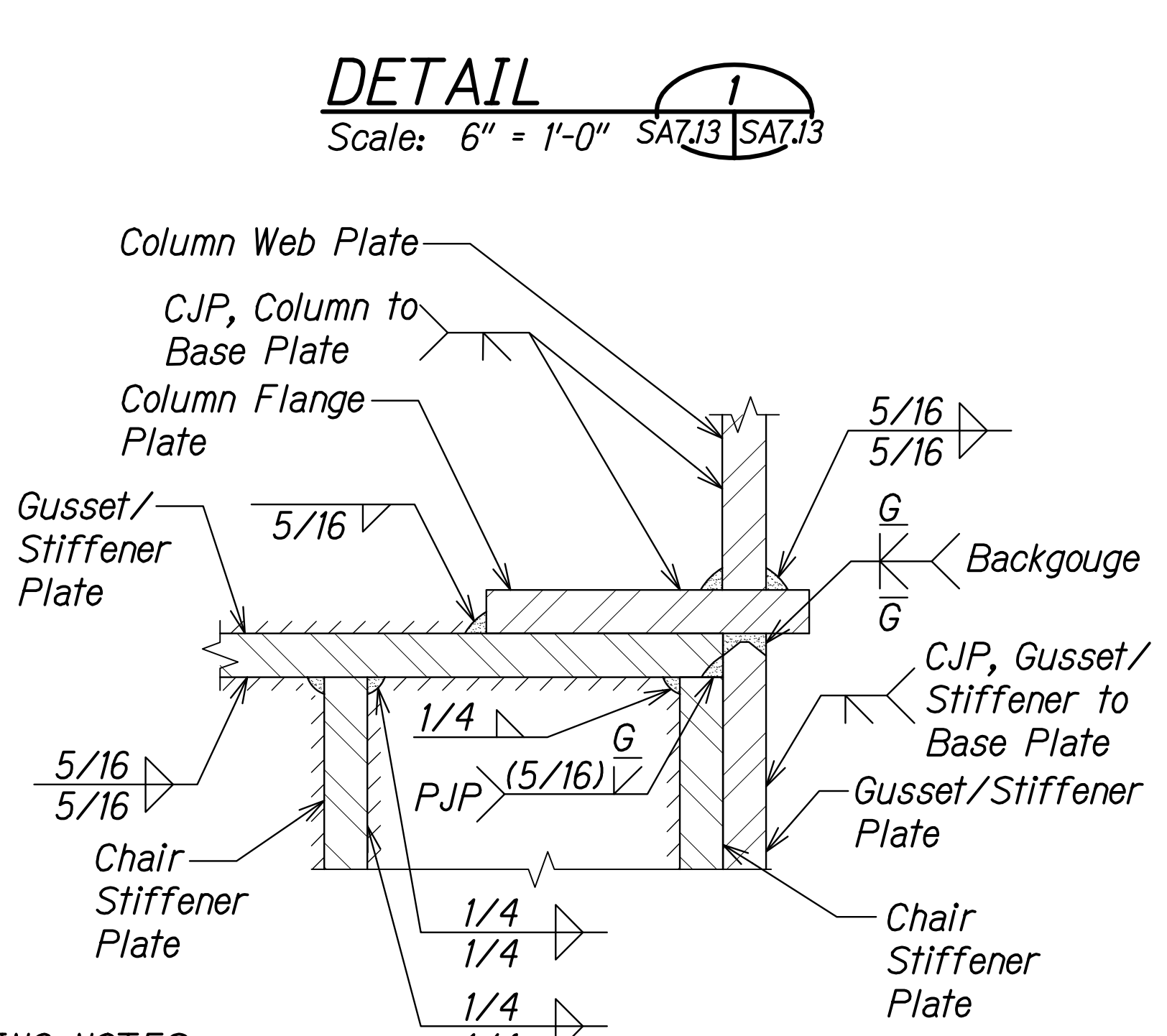
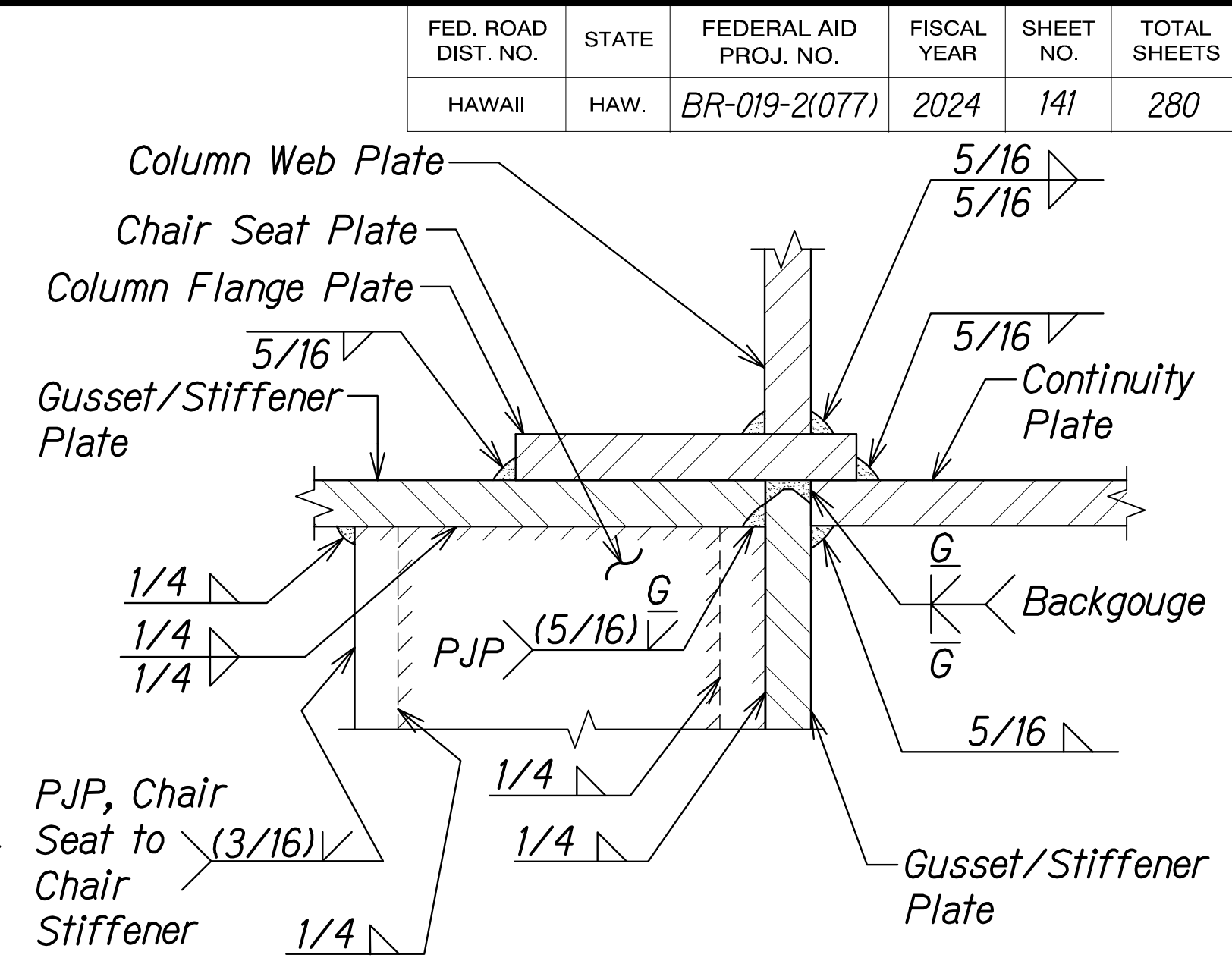
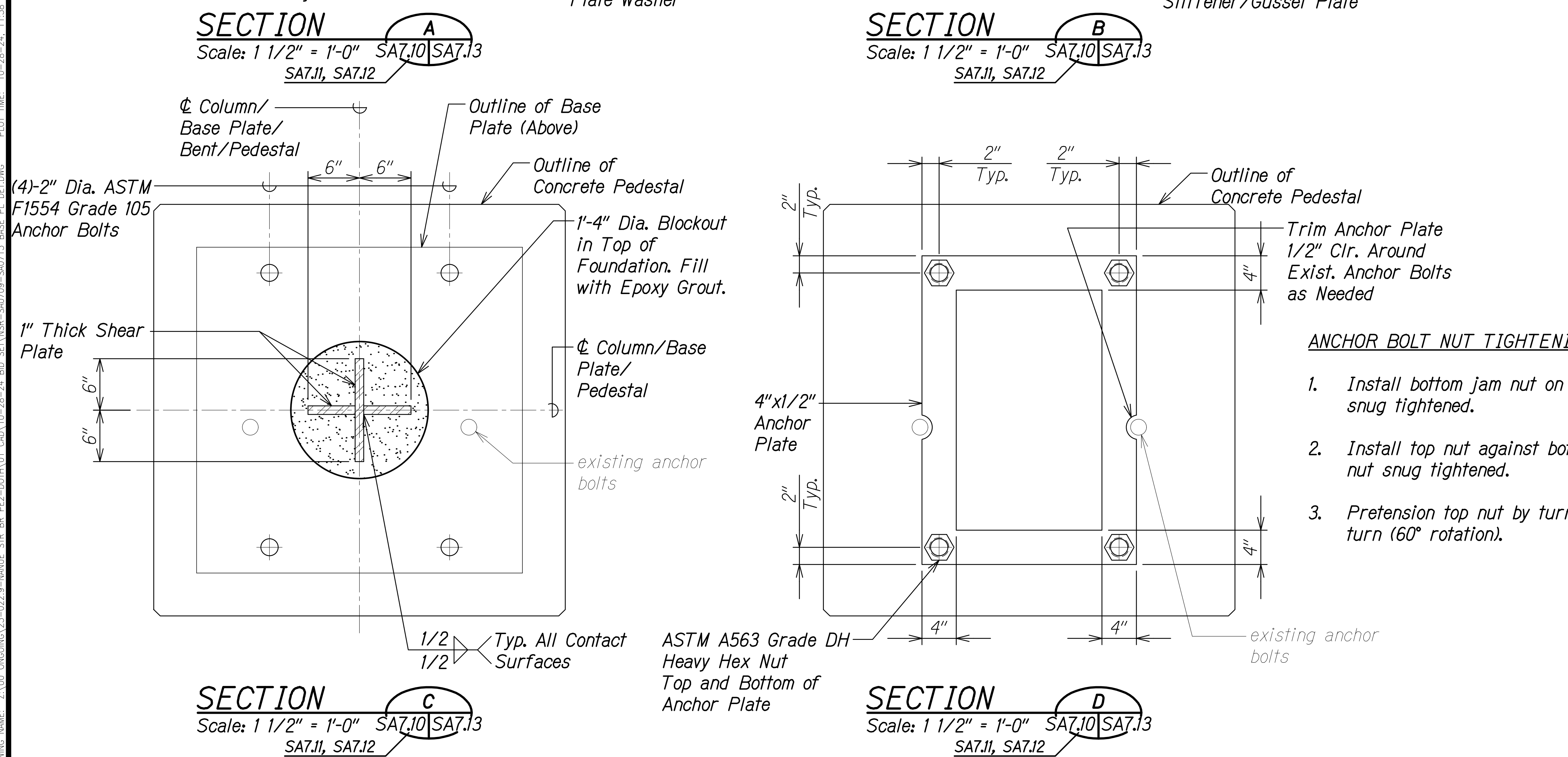
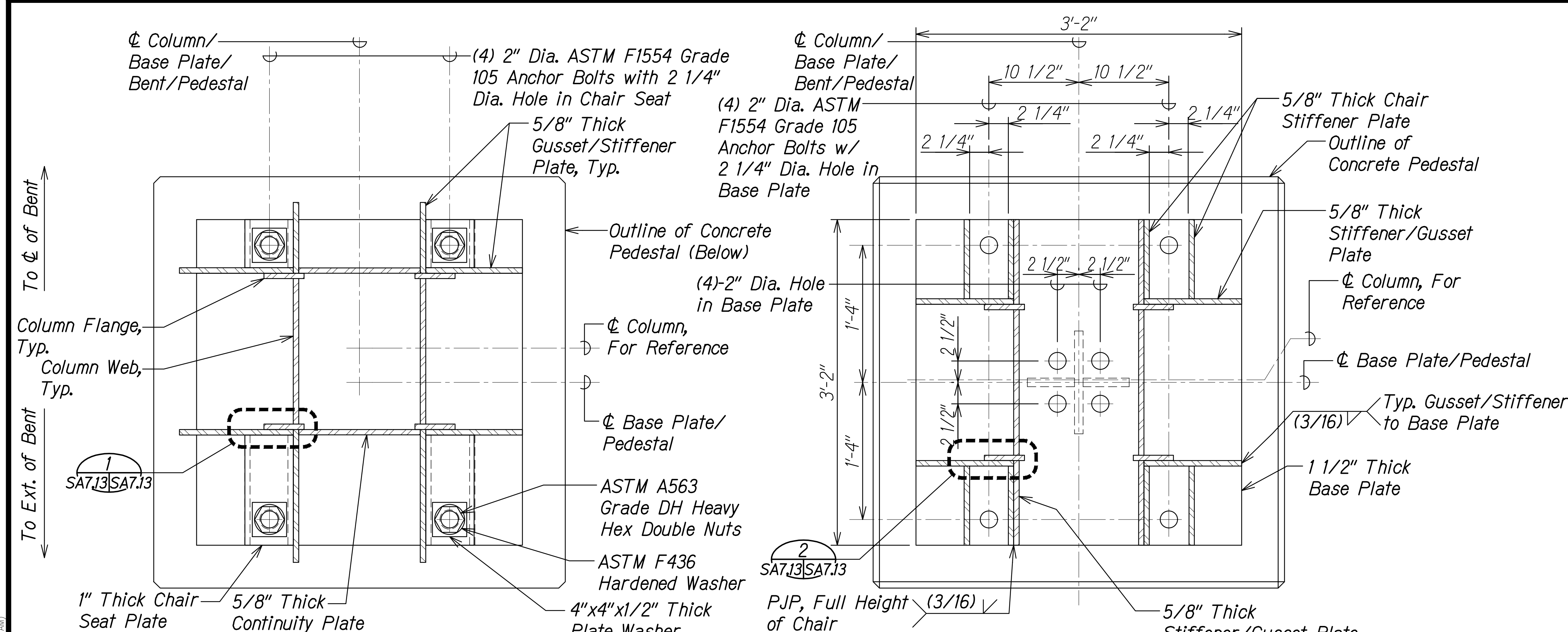


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SIGNATURE: Stephen T. Peters
EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**COLUMN BASE PLATE
AND ANCHOR BOLT DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024
SHEET No. SA7.12 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 141 | 280 |



- ANCHOR BOLT NUT TIGHTENING NOTES:**
1. Install bottom jam nut on chair seat snug tightened.
 2. Install top nut against bottom jam nut snug tightened.
 3. Pretension top nut by turning 1/6 turn (60° rotation).

DETAIL 2
Scale: 6" = 1'-0" SA7.13 SA7.13

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**COLUMN BASE PLATE
AND ANCHOR BOLT SECTIONS**

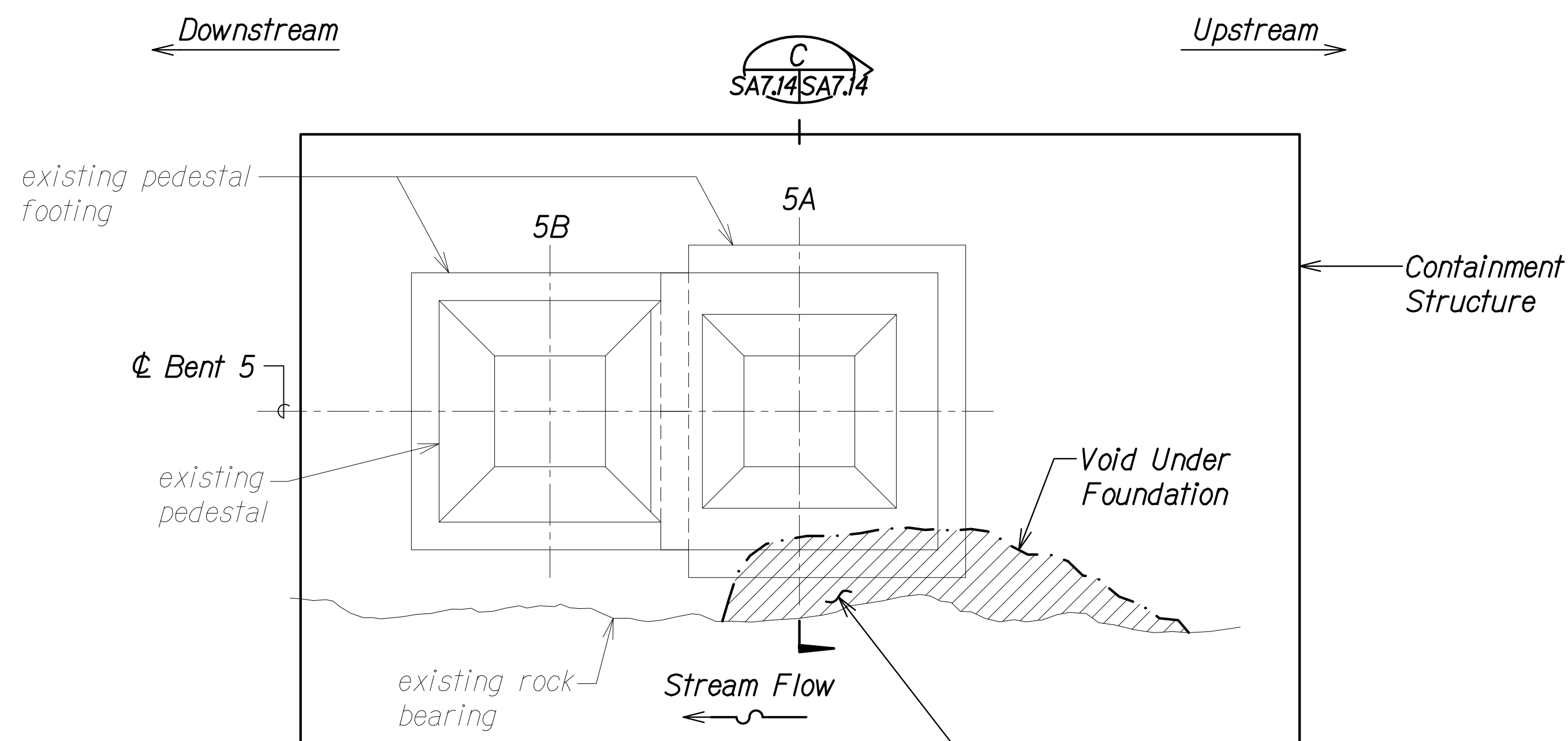
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.13 OF 18 SHEETS

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SA0709-SA0713 BASE PL DETWING PLOT TIME: 10-28-24, 11:38 AM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 142 | 280 |



PLAN

Scale: 1/4" = 1'-0" SA7.14 SA7.14

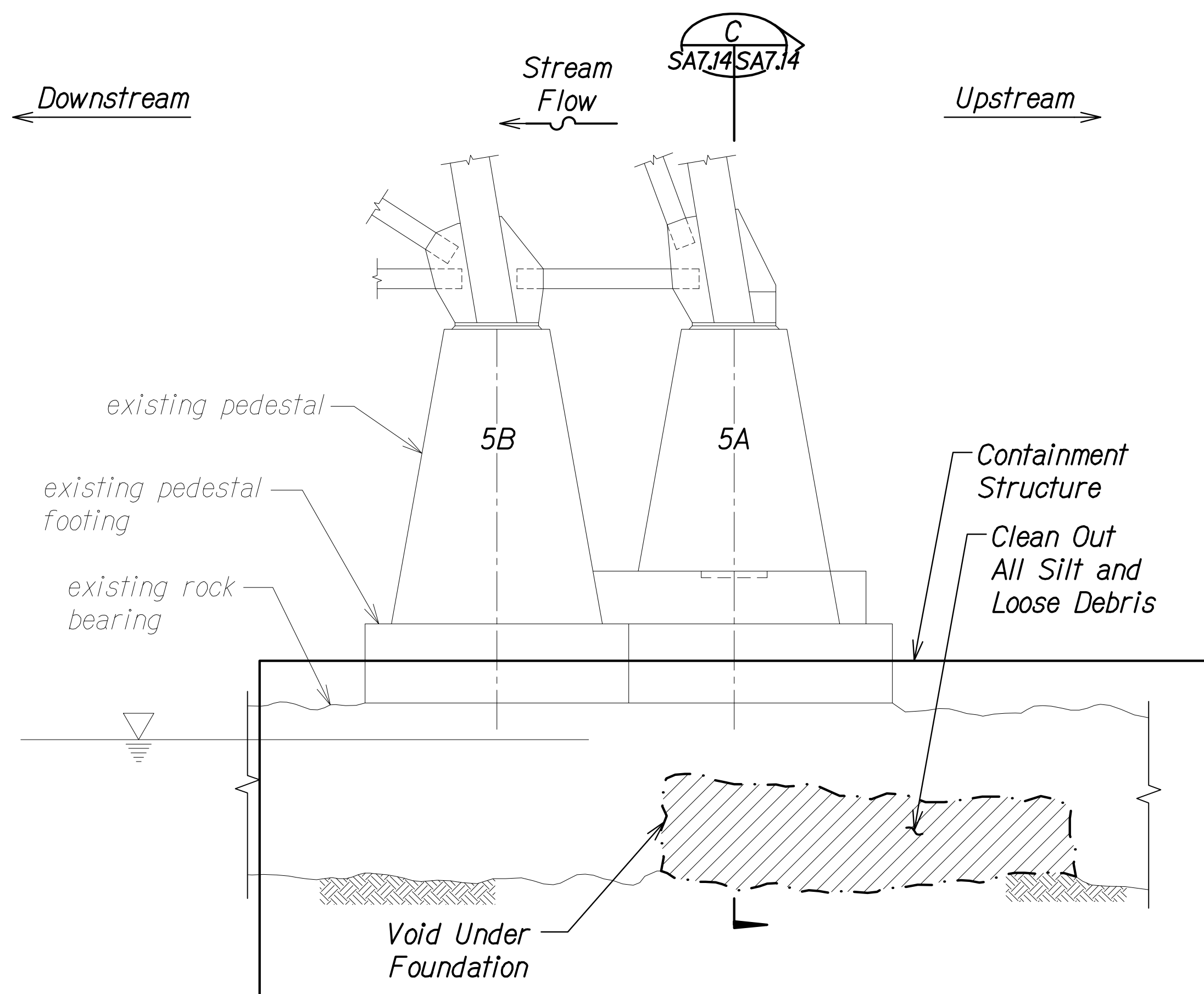
Clean Out All Silt and Loose Debris. Remove All Deleterious Material and Organic Growth From Surface of Footing/Rock, Typ.

LEGEND:

Void Under Foundation

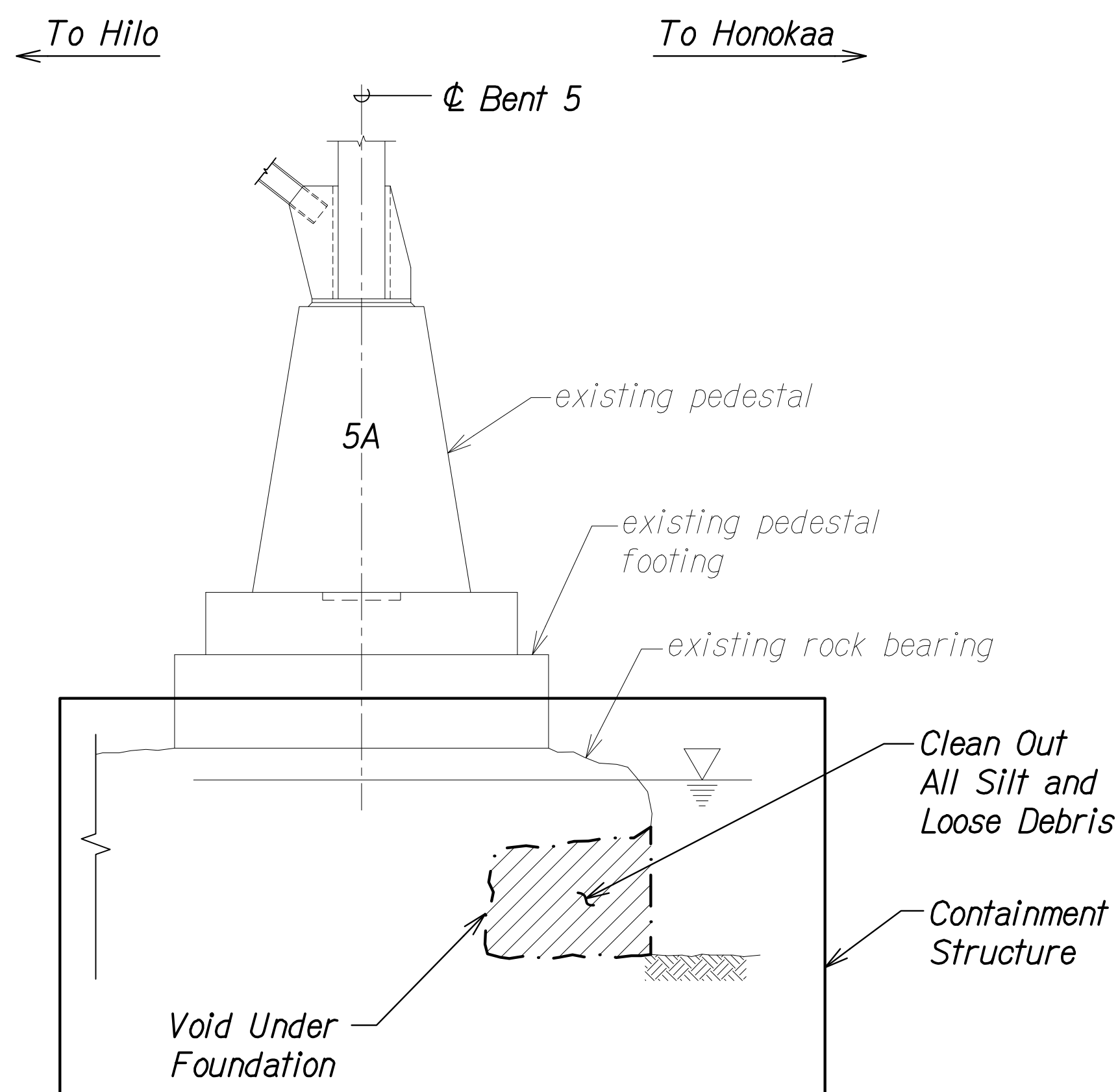
NOTES:

1. Containment structure shall prevent all construction debris and existing waste material from entering the river and banks. The Contractor shall submit working drawings for the containment structure to the Engineer for Approval. See Special Provisions Section 209 for requirements.
2. Clean out all silt and loose debris from voids. Remove all deleterious material and organic growth from footing/rock surfaces by high-pressure water blasting.
3. Repairs shall be conducted prior to replacement of steel bents.
4. Approximate existing scour conditions are based on Underwater Bridge Inspection done on March 1, 2023. Contractor shall field verify all existing dimensions and elevations prior to construction.



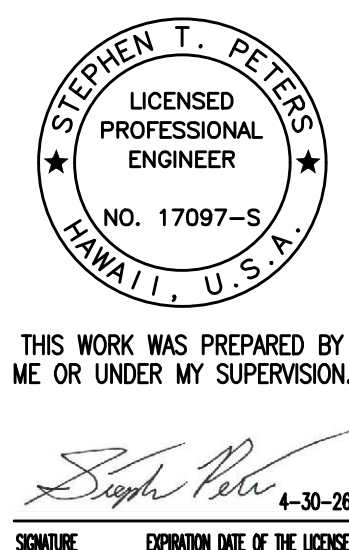
ELEVATION

Scale: 1/4" = 1'-0" SA7.14 SA7.14



SECTION

Scale: 1/4" = 1'-0" SA7.14 SA7.14



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

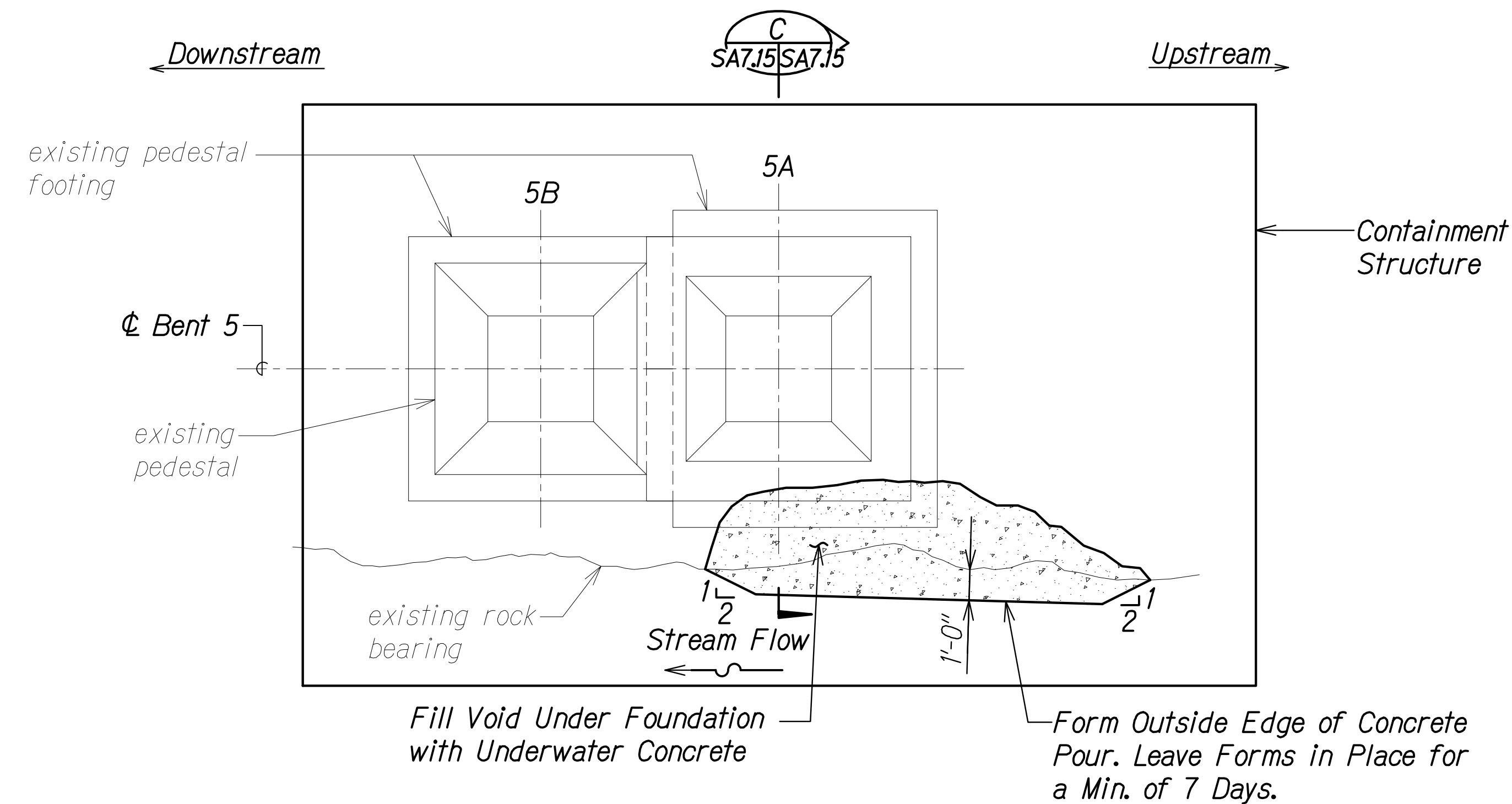
BENT NO. 5 FOOTING
PLAN, ELEVATION, AND SECTION

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA7.14 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 143 | 280 |



LEGEND:

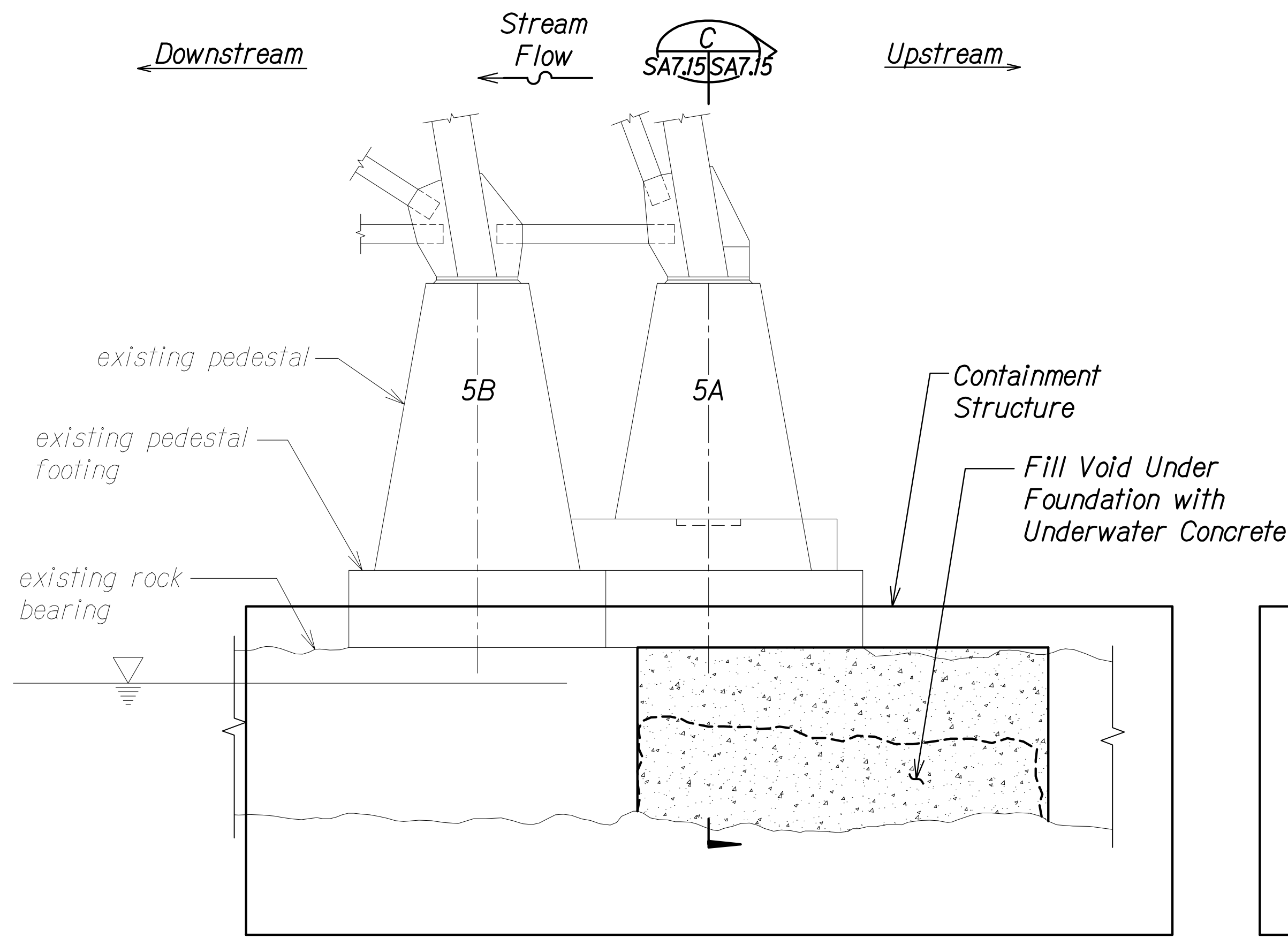
 Under Water Concrete = Approx. 200 CF

NOTE:

Traffic control plan with Mauka lane closures shall be in effect prior to placing underwater concrete and a minimum of 3 days after completion of placing underwater concrete. Traffic control plan shall transition to Reduced Speed Traffic Control Plan after the 3 days and shall be in effect a minimum of 4 additional days. See Sheets T-5 thru T-8 for Traffic Control Plans.

PLAN VIEW

Scale: 1/4" = 1'-0" SA7.15 SA7.15

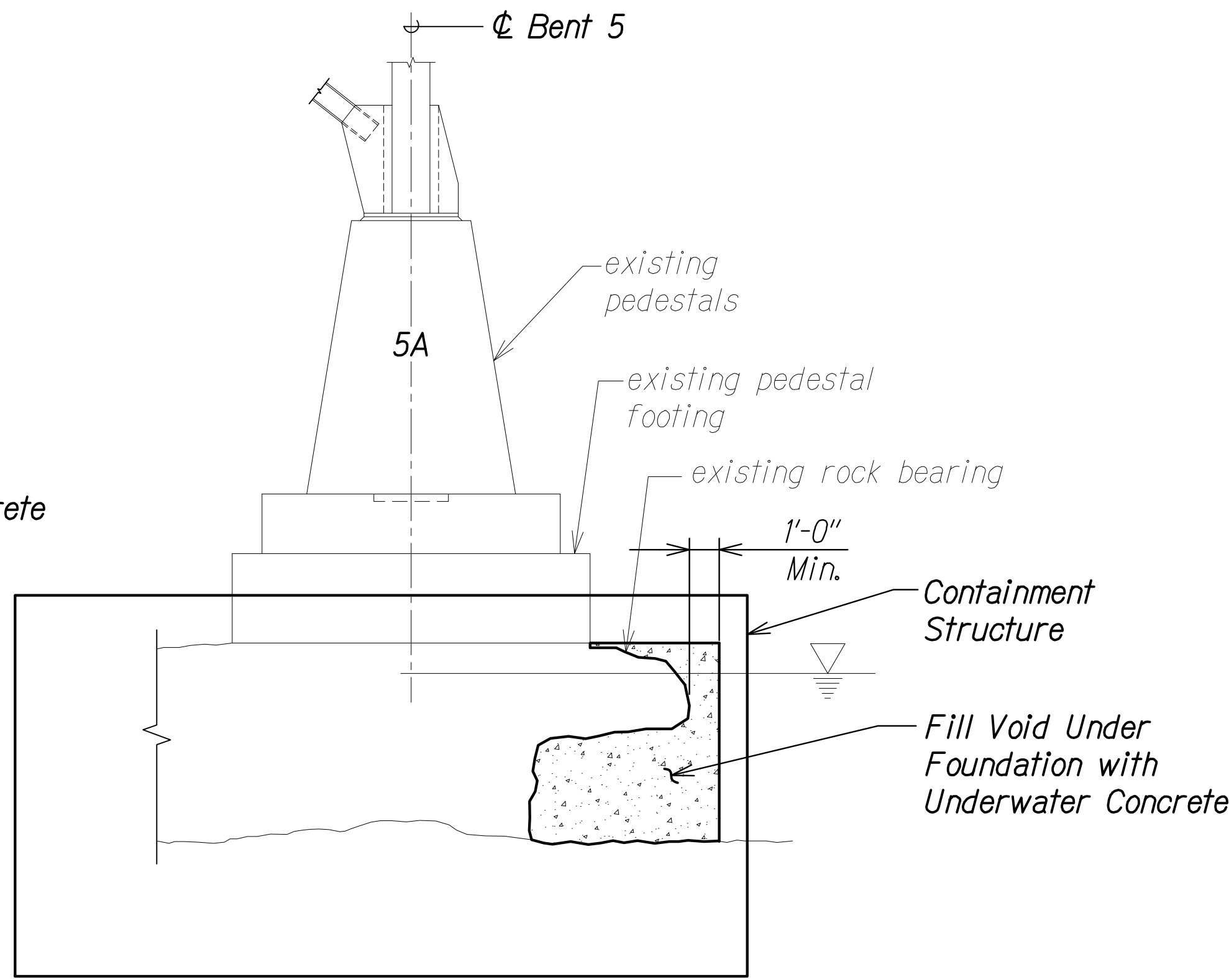


ELEVATION VIEW

Scale: 1/4" = 1'-0" SA7.15 SA7.15

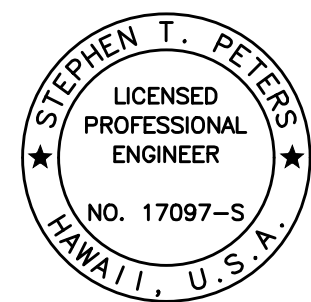
To Hilo

To Honokaa



SECTION VIEW

Scale: 1/4" = 1'-0" SA7.15 SA7.15



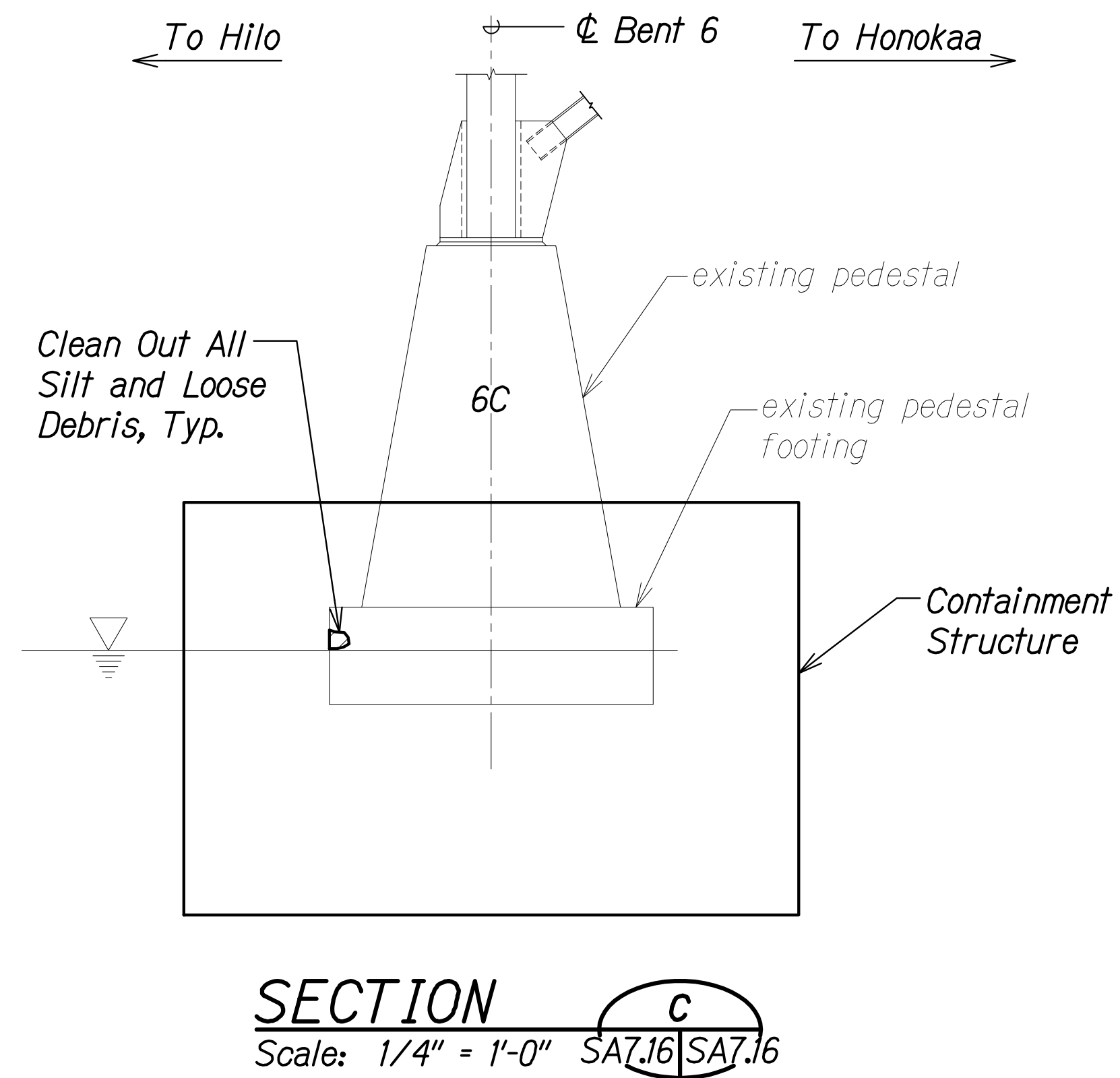
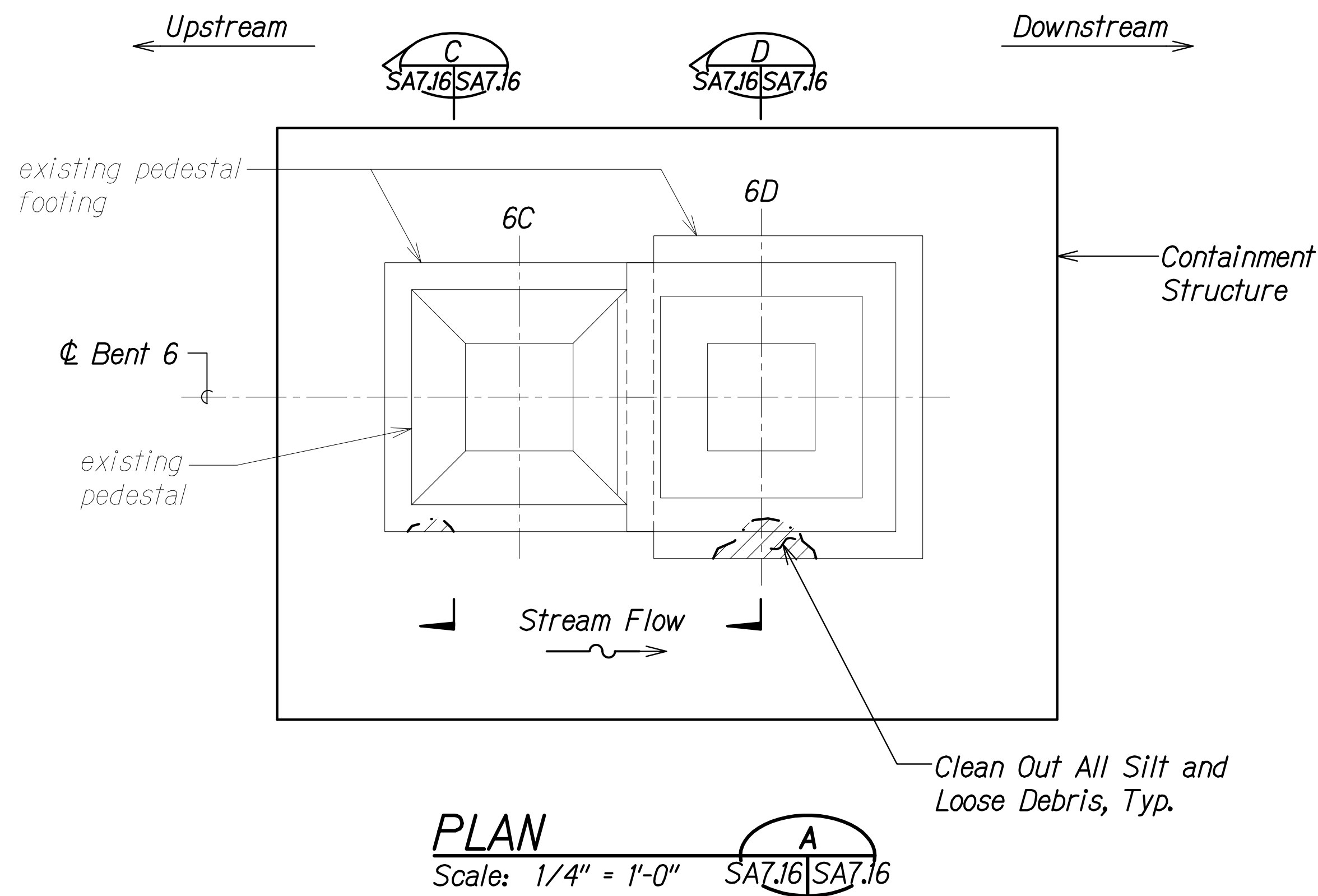
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BENT NO. 5 FOOTING
PLAN, ELEVATION, AND SECTION
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.15 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 144 | 280 |



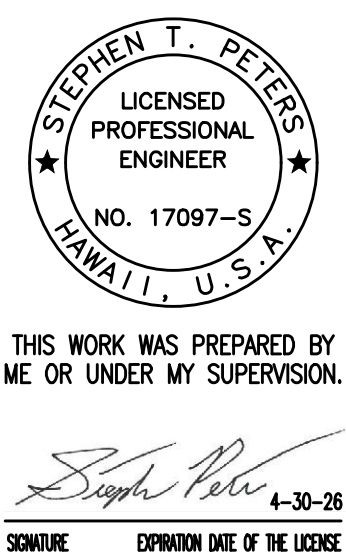
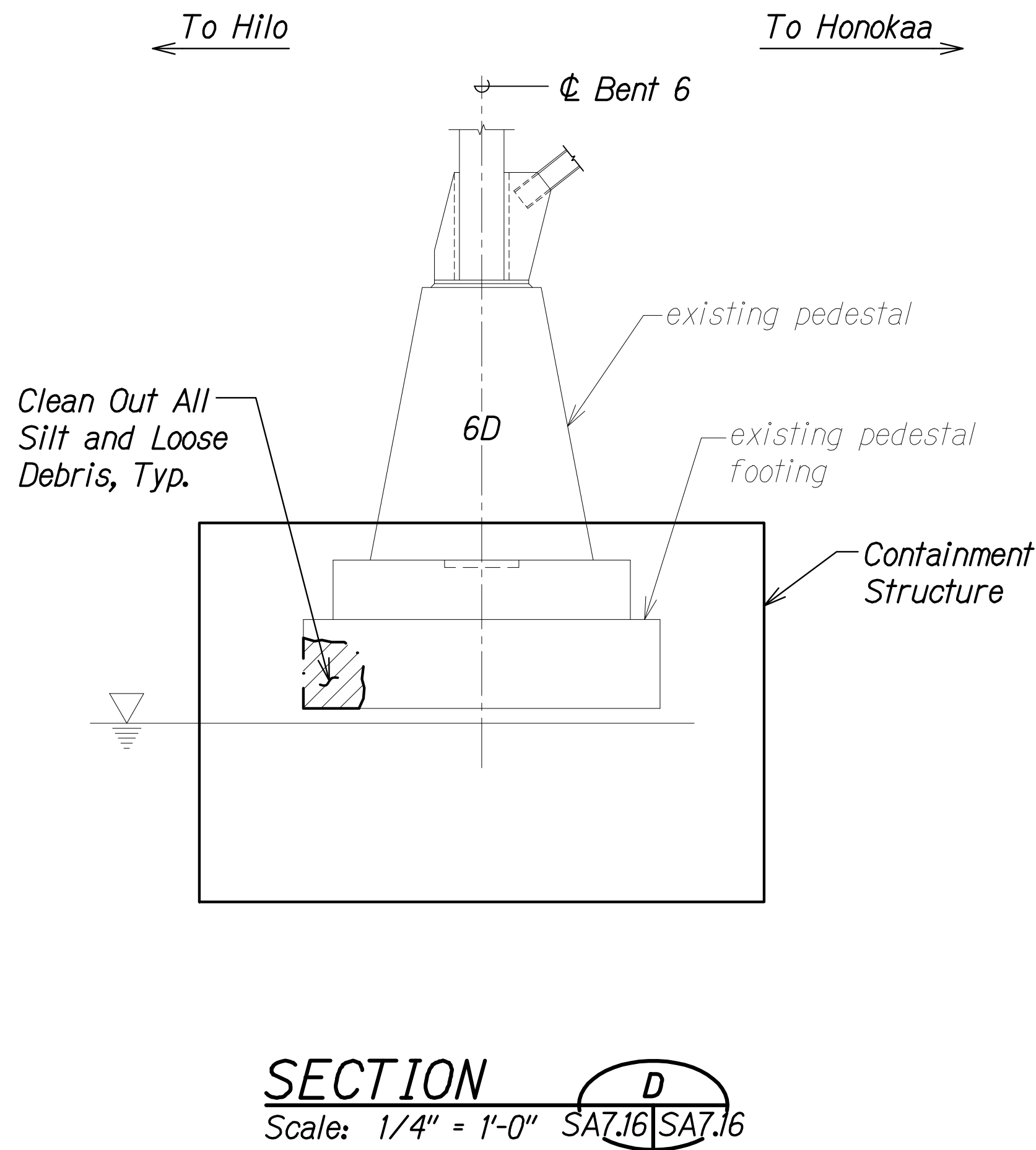
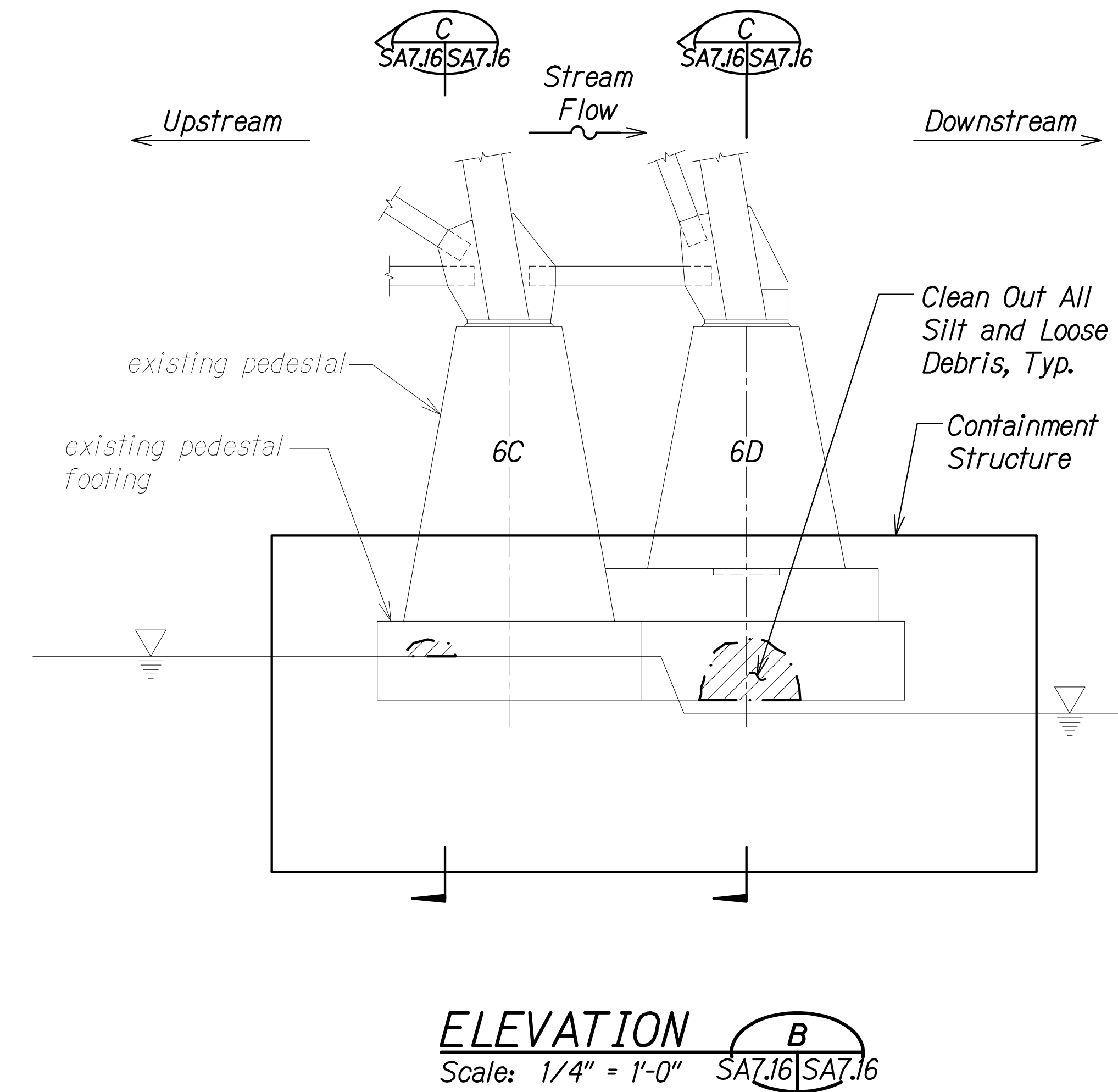
LEGEND:



Void Under Foundation

NOTES:

1. Containment structure shall prevent all construction debris and existing waste material from entering the river and banks. The Contractor shall submit working drawings for the containment structure to the Engineer for Approval. See Special Provisions Section 209 for requirements.
2. Clean out all silt and loose debris from voids. Remove all deleterious material and organic growth from footing/rock surfaces by high-pressure water blasting.
3. Repairs shall be conducted prior to replacement of steel bents.
4. Approximate existing scour conditions are based on Underwater Bridge Inspection done on March 1, 2023. Contractor shall field verify all existing dimensions and elevations prior to construction.



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SIGNATURE
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

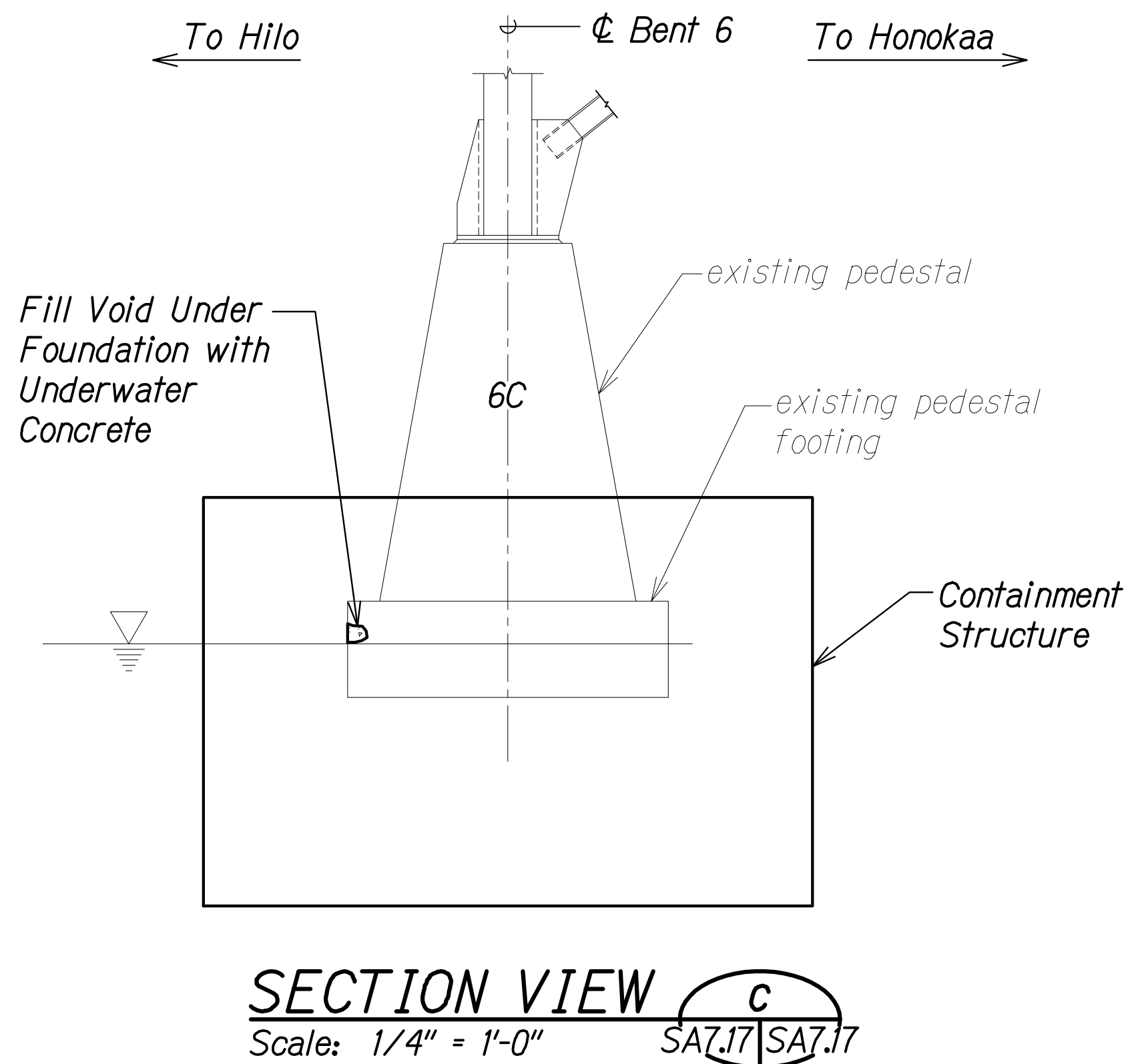
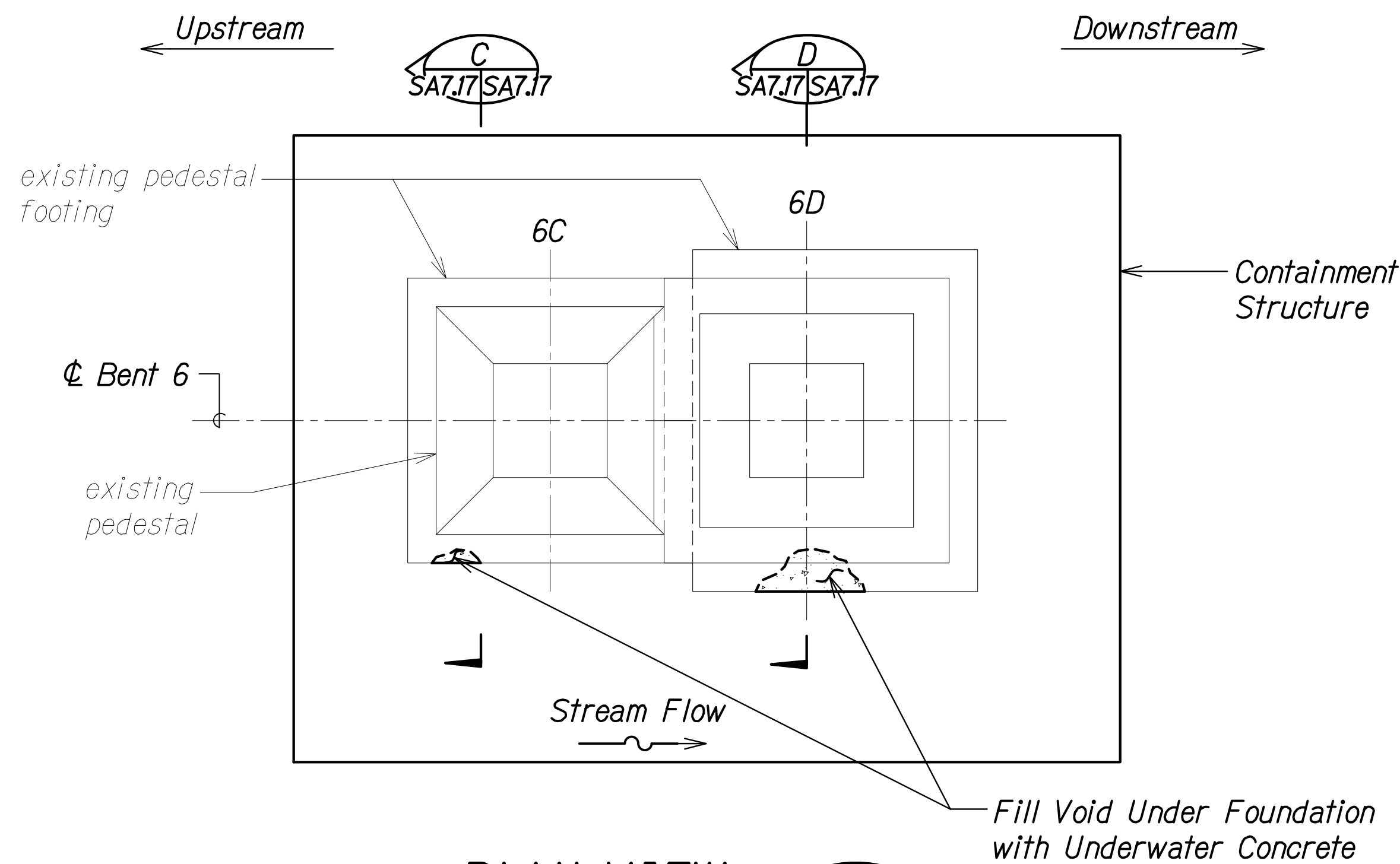
BENT NO. 6 FOOTING
PLAN, ELEVATION, AND SECTION

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

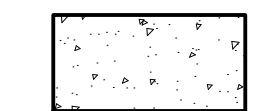
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.16 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 145 | 280 |



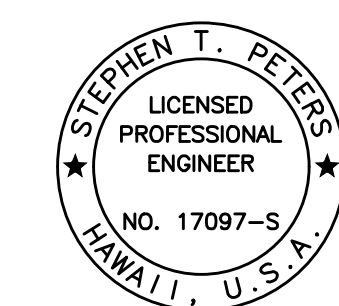
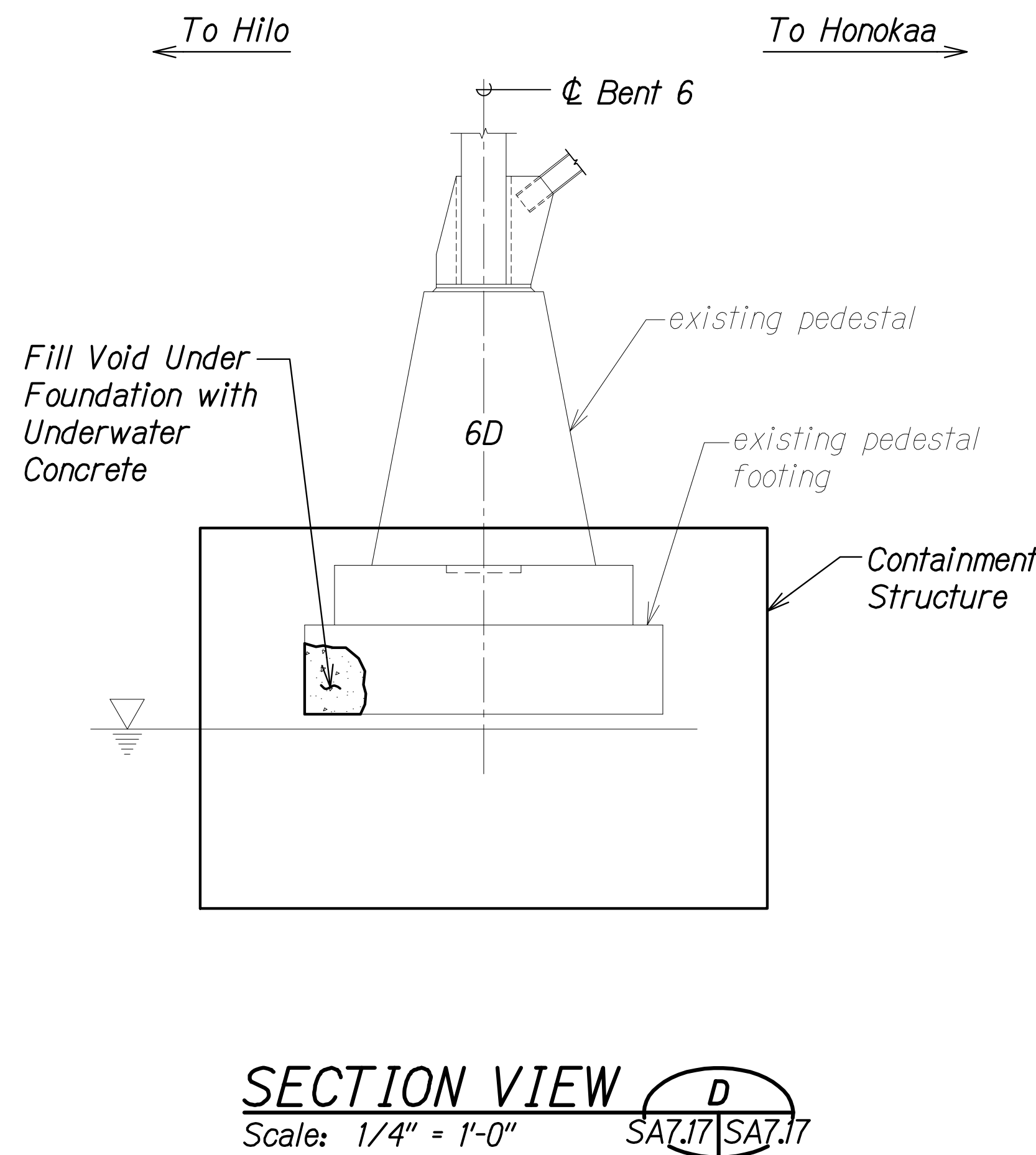
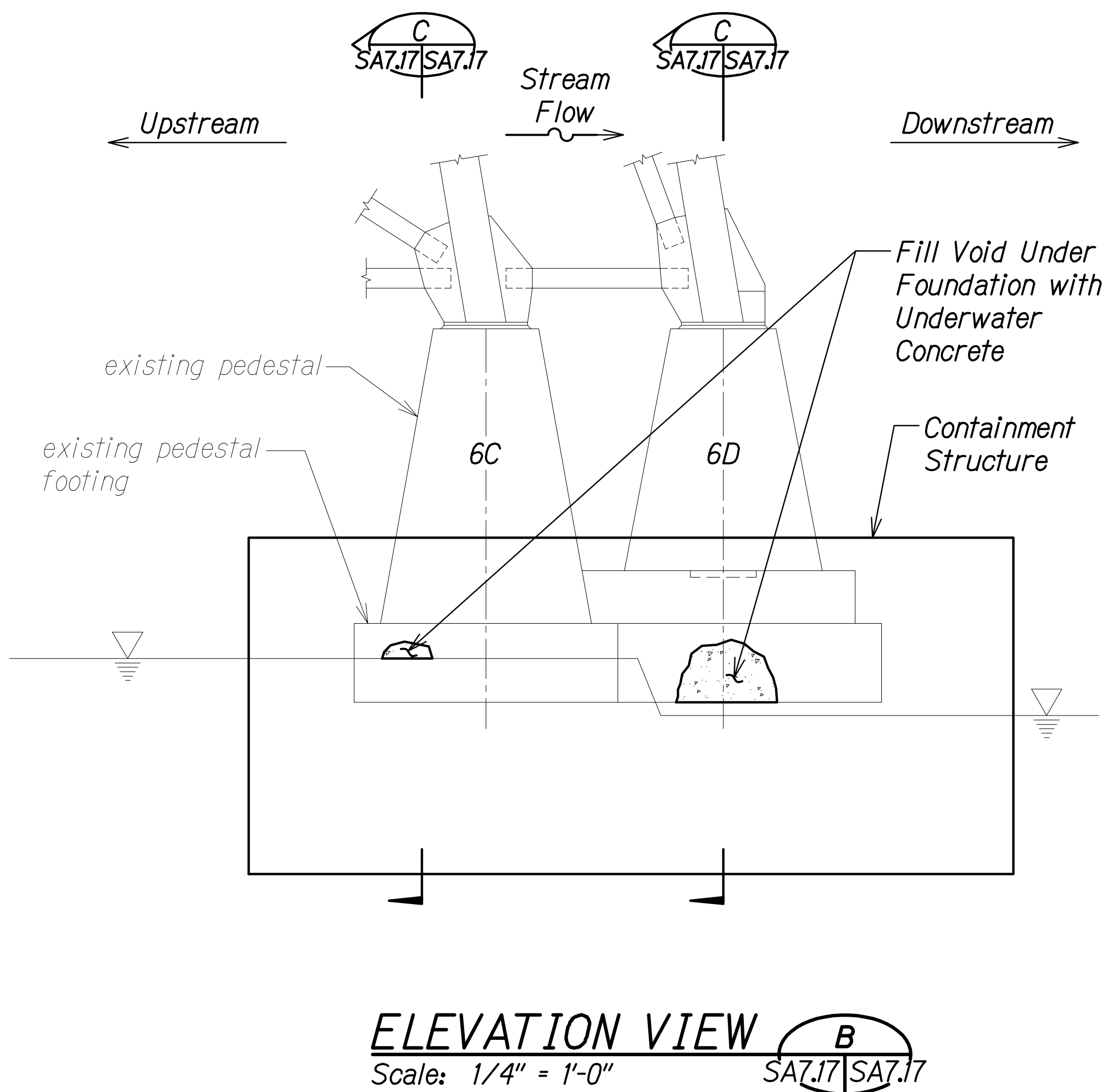
LEGEND:



Under Water Concrete = Approx. 12 CF

NOTE:

Traffic control plan with Makai lane closures shall be in effect prior to placing underwater concrete and a minimum of 3 days after completion of placing underwater concrete. Traffic control plan shall transition to Reduced Speed Traffic Control Plan after the 3 days and shall be in effect a minimum of 4 additional days. See Sheets T-5 thru T-8 for Traffic Control Plans.



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Stephen T. Peters
SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

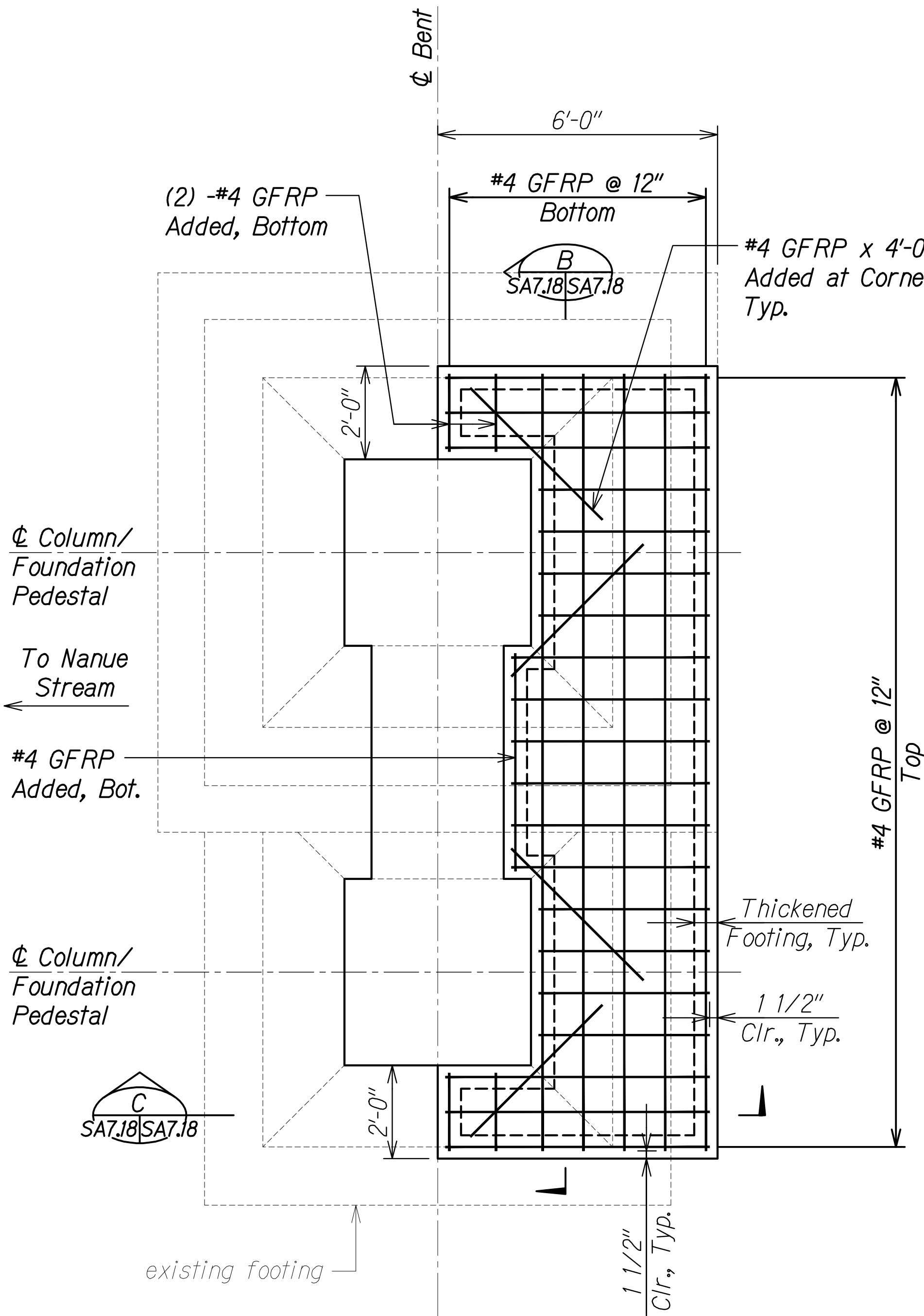
BENT NO. 6 FOOTING
PLAN, ELEVATION, AND SECTION

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA7.17 OF 18 SHEETS

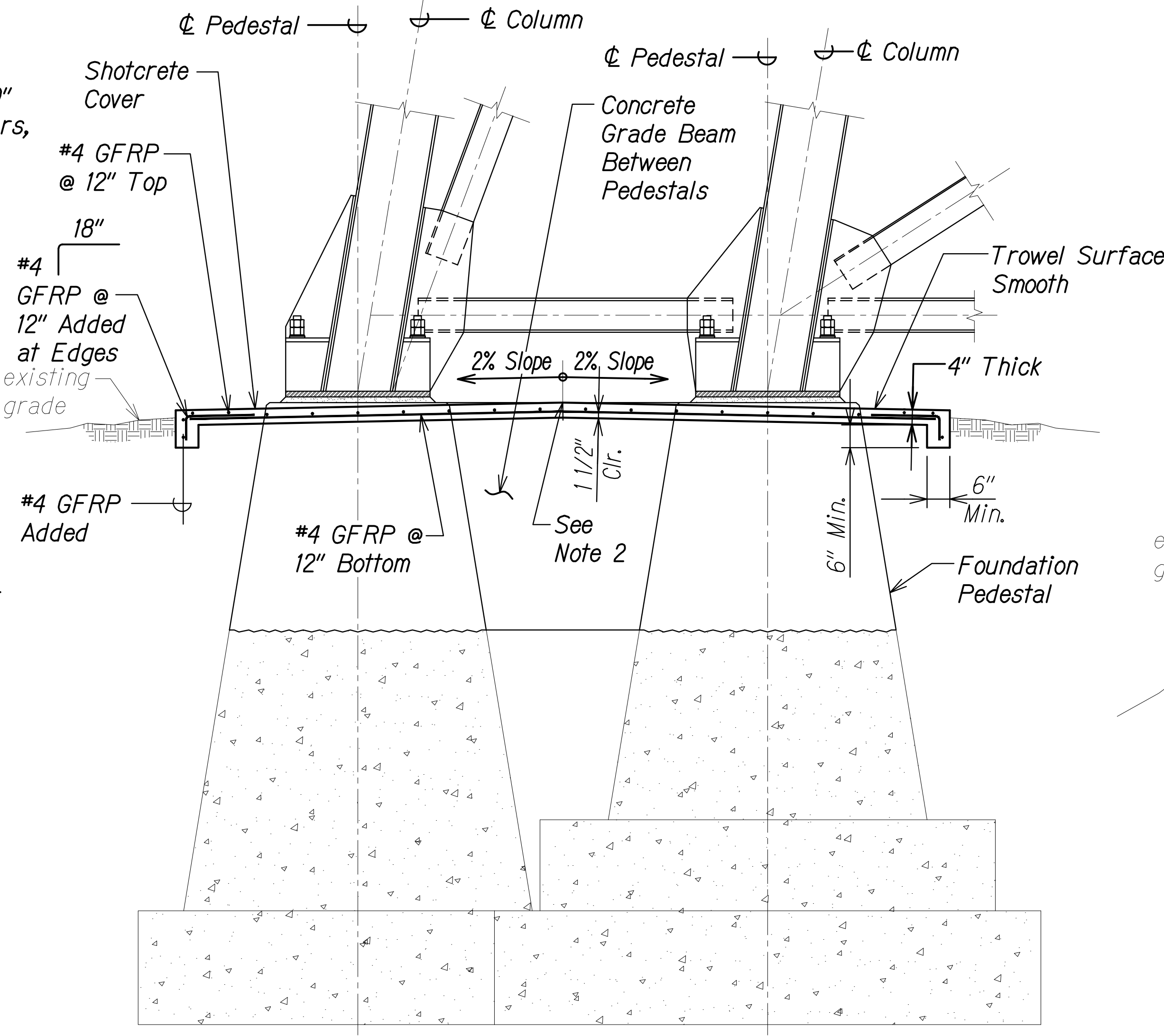
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 146 | 280 |



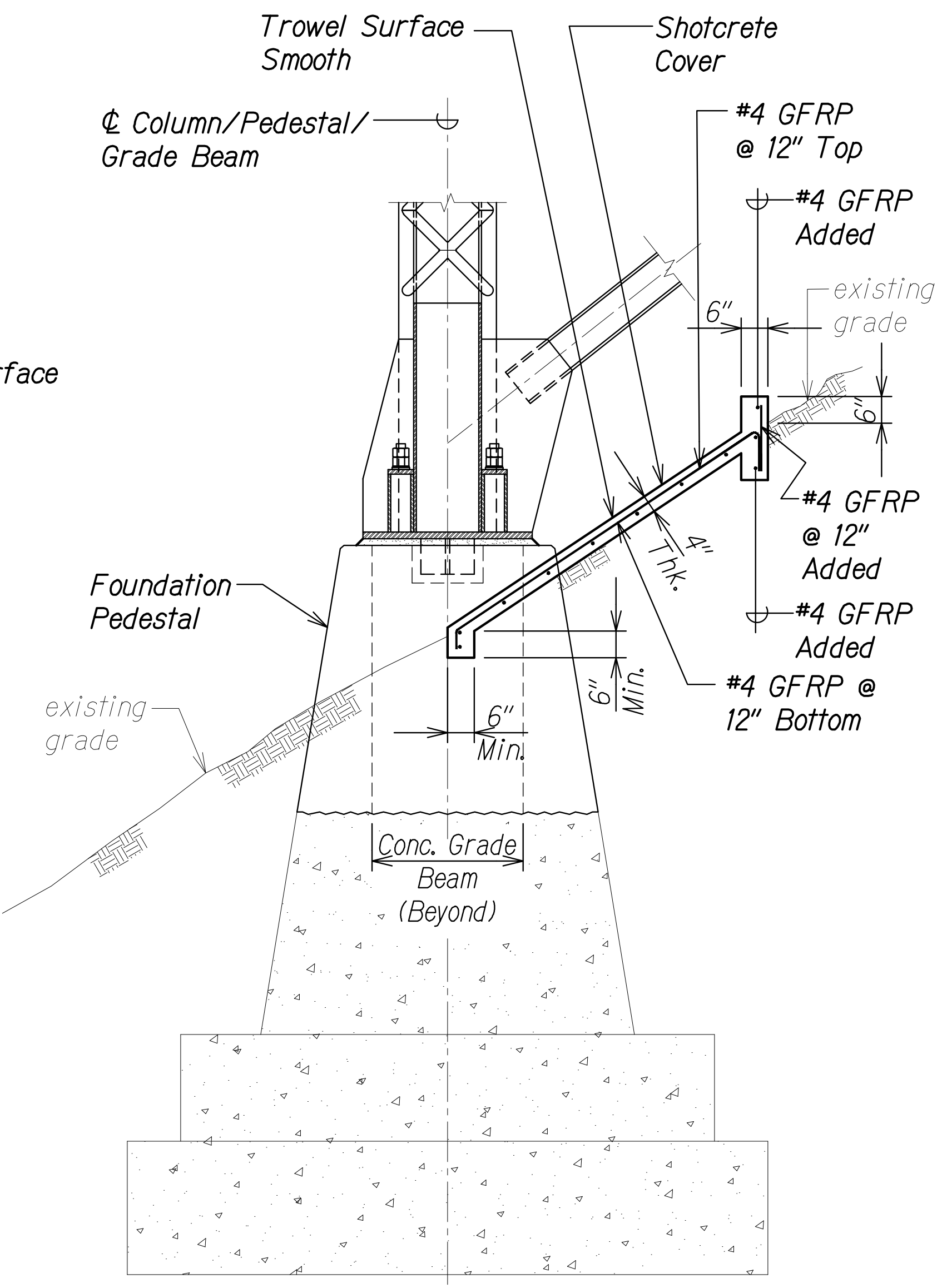
SHOTCRETE COVER REINFORCING PLAN
Scale: 1/2" = 1'-0"

NOTES:

- Foundation pedestal elevations are shown typical. Elevation of shotcrete cover may vary by Bent.
- Grade backfill material around pedestal foundation to accommodate 2% cross slope crowned at the midspan of the grade beam. Where practical, shotcrete crown shall match top elevation of grade beam. At other locations, maintain minimum 1'-6" from top elevation of grade beam to shotcrete crown.
- Isolate concrete foundation pedestals from shotcrete using 1-layer No. 15 asphalt roofing felt.
- Steel columns, base plates, and braces shall be shielded from rebound during shotcrete application.



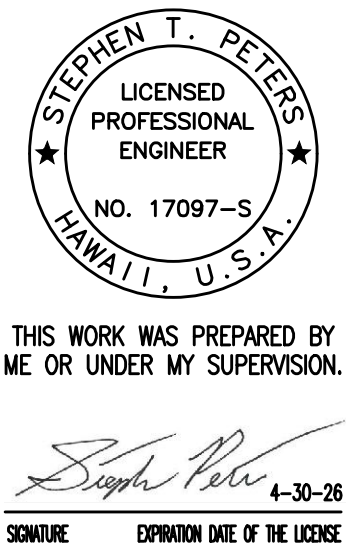
TYPICAL FOUNDATION PEDESTAL ELEVATION AT SHOTCRETE COVER
Scale: 1/2" = 1'-0"



TYPICAL FOUNDATION PEDESTAL SECTION AT SHOTCRETE COVER
Scale: 1/2" = 1'-0"

| | |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DRAWN BY | |
| DESIGNED BY | |
| QUANTITIES BY | |
| CHECKED BY | |
| NO. | |

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA0718 SHOTCRETE.DWG PLOT TIME: 10-26-24 4:38 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**SHOTCRETE COVER PLAN
AND SECTIONS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 147 | 280 |

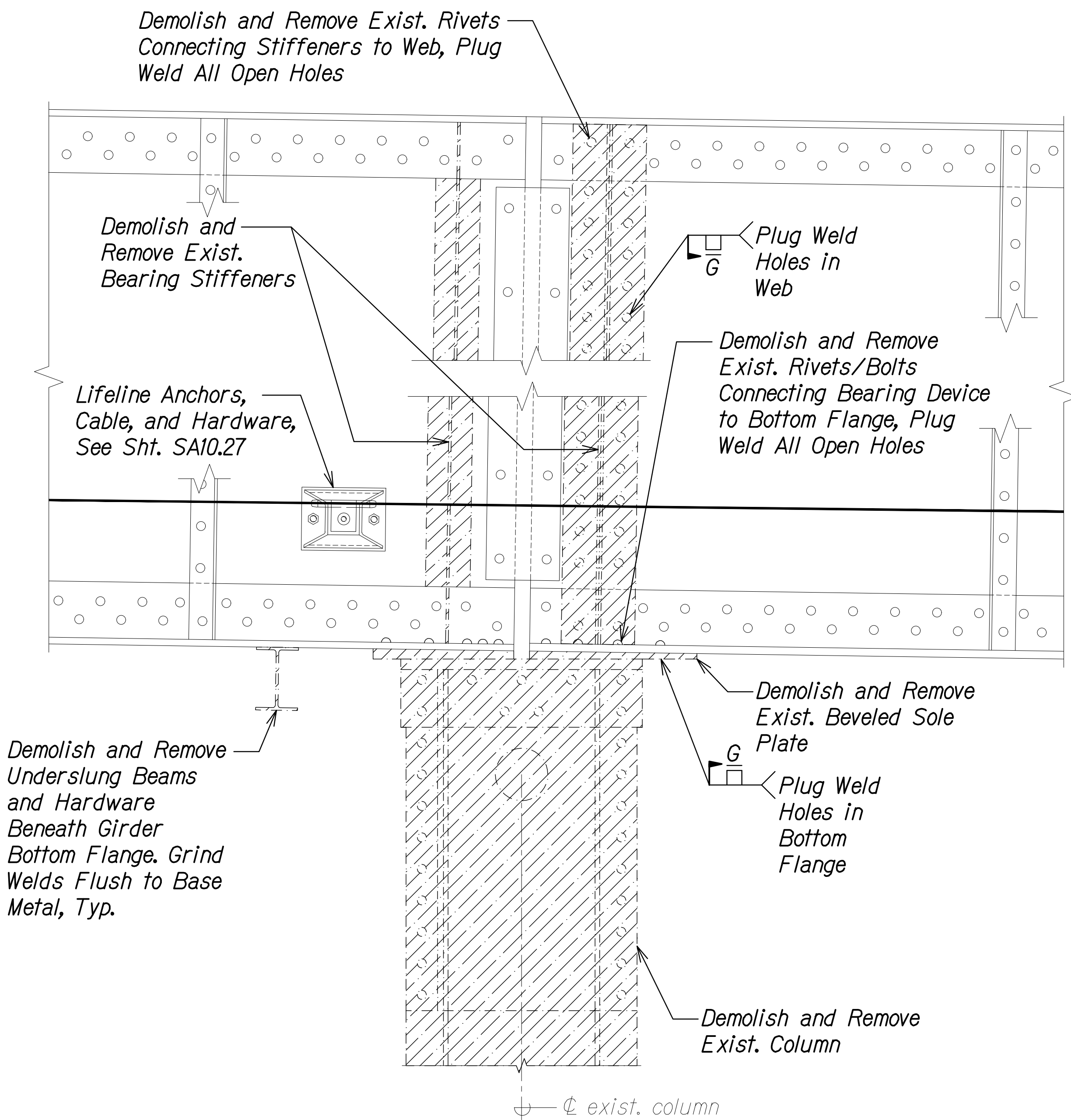
LEGEND:



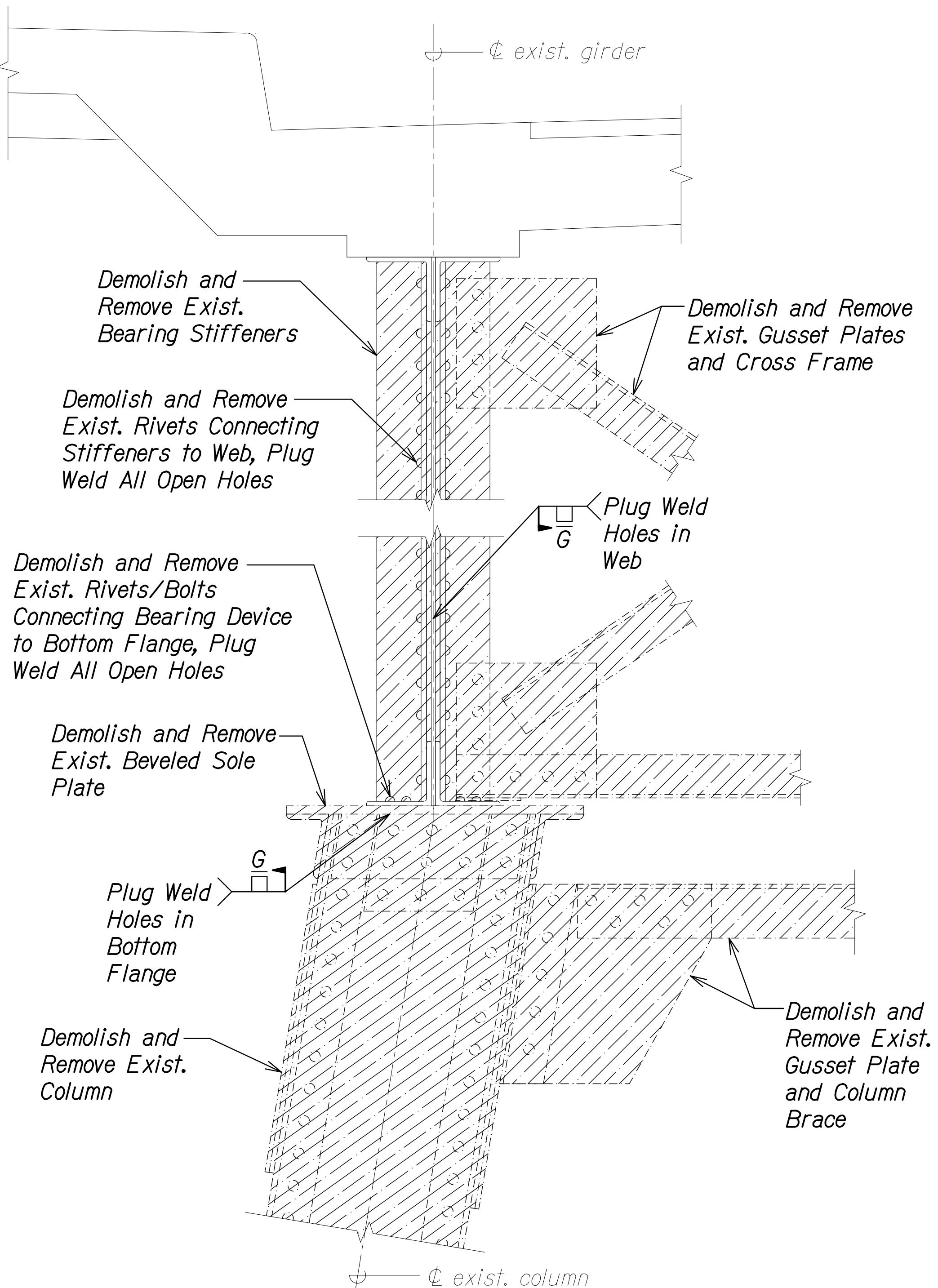
Demolish and Remove

NOTES:

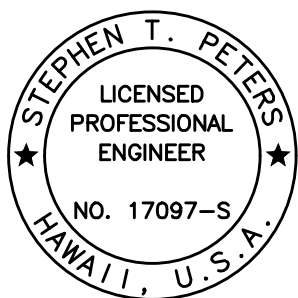
1. After column and stiffener removal, plug weld all open rivet/bolt holes.
2. Grind all welds within the demolition limits flush to the base metal.
3. Demolition and removal of bearing stiffeners and underslung beams shall be covered under Pay Item 202.5000.
4. Demolition and removal of columns and column braces shall be covered under Pay Item 501.1000.



BENT NO. 1
TOP OF COLUMN DEMO ELEVATION
Scale: 1 1/2" = 1'-0"
SA8.1 SA8.1



BENT NO. 1
TOP OF COLUMN DEMO ELEVATION
Scale: 1 1/2" = 1'-0"
SA8.1 SA8.1



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Signature: *Stephen T. Peters*
4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

BENT NO. 1 TOP OF COLUMN
DEMOLITION ELEVATIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.1 OF 13 SHEETS

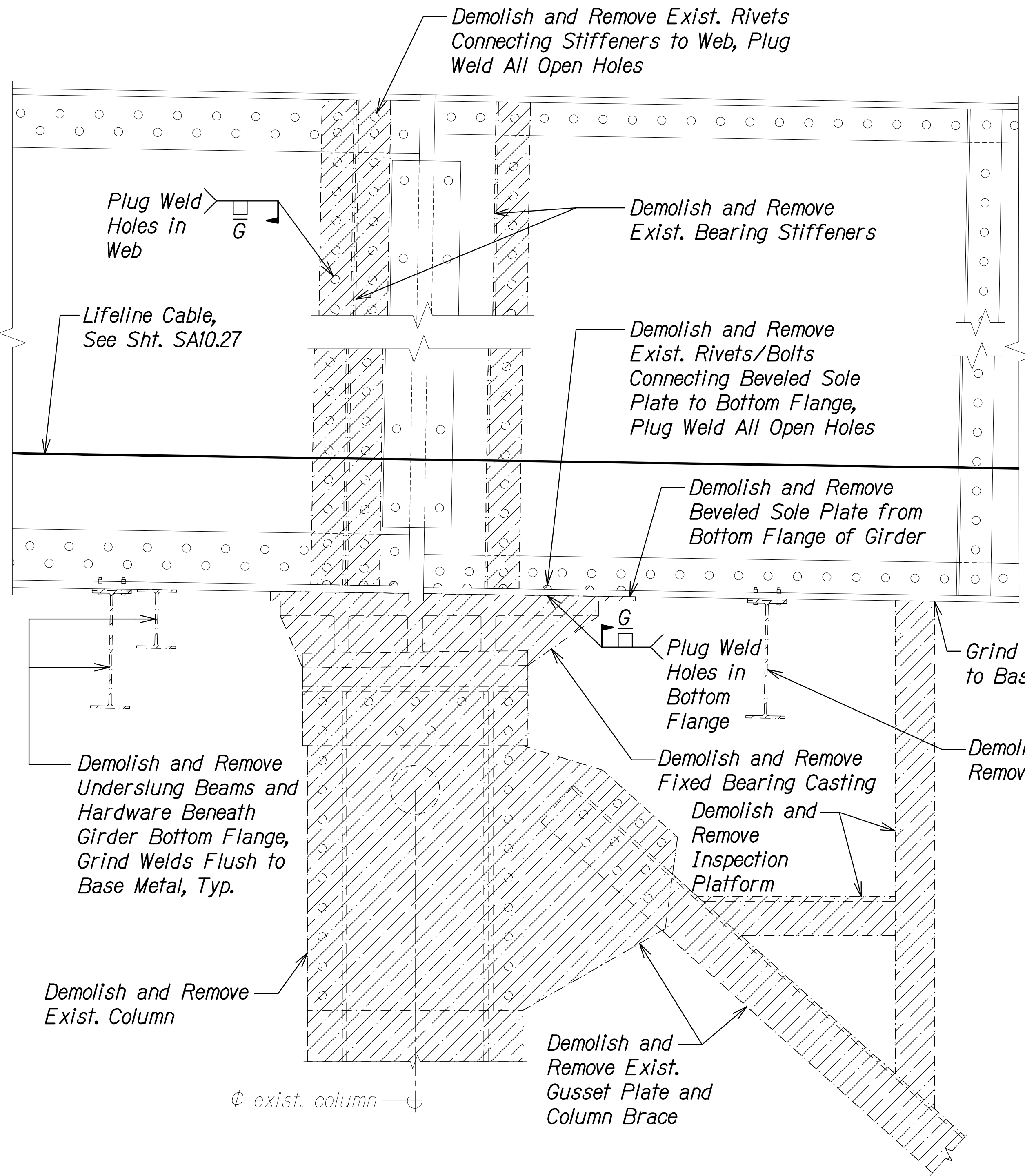
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 148 | 280 |

LEGEND:

 Demolish and Remove

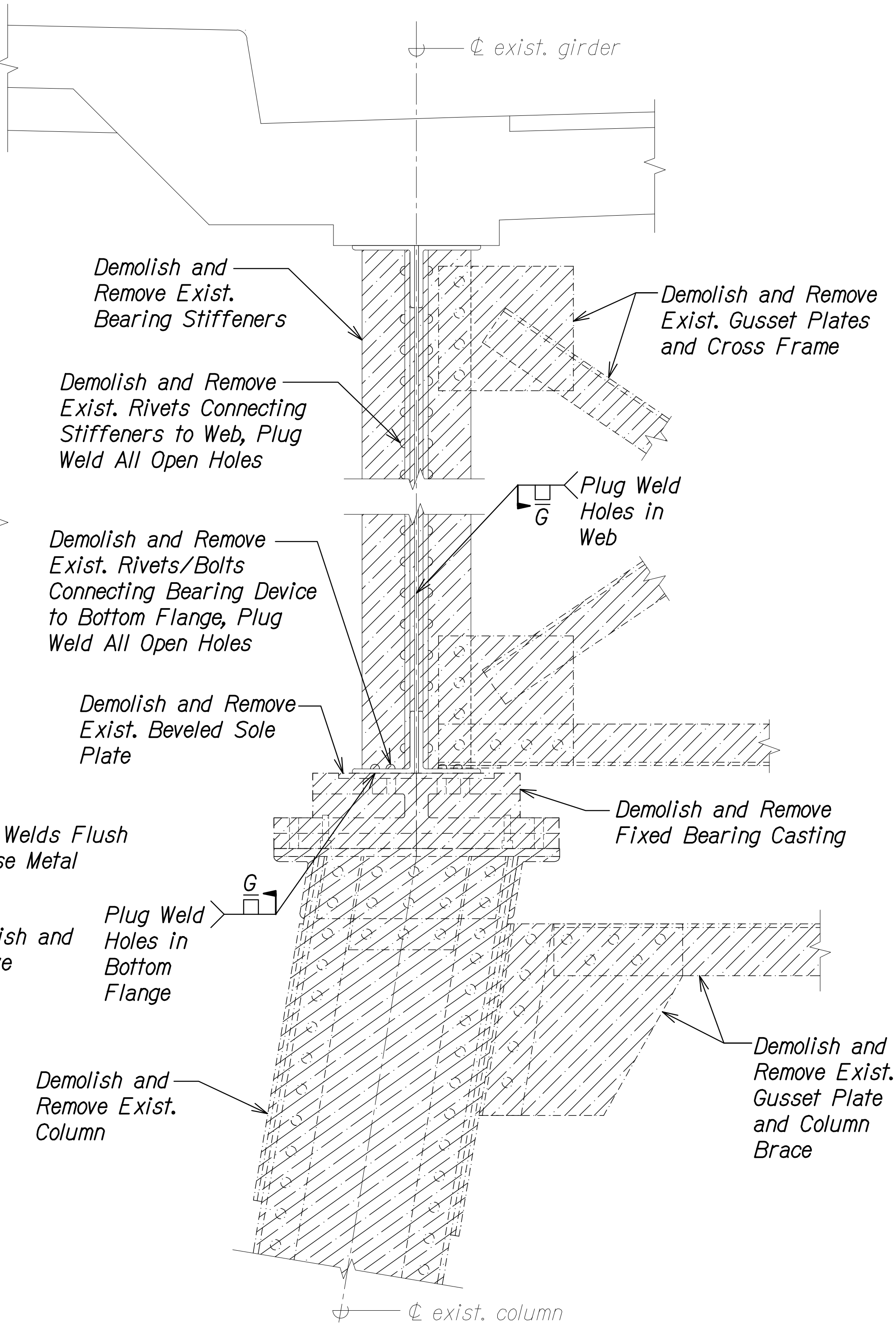
NOTES:

- After column and stiffener removal, plug weld all open rivet/bolt holes.
- Grind all welds within the demolition limits flush to the base metal.
- Demolition and removal of bearing stiffeners, underslung beams, and inspection platform shall be covered under Pay Item 202.5000.
- Demolition and removal of columns and column braces shall be covered under Pay Items 501.1010, 501.1020, 501.1030, and 501.1040.
- Demo elevation shown for Bent Nos. 2, 4, 6, and 8.



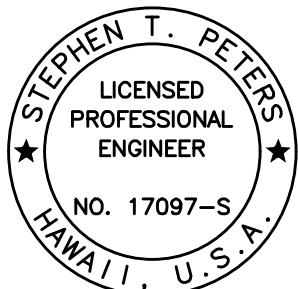
**FIXED BEARING
TOP OF COLUMN DEMO ELEVATION**
Scale: 1 1/2" = 1'-0"
A
SA8.2 SA8.2

**FIXED BEARING
TOP OF COLUMN DEMO ELEVATION**
Scale: 1 1/2" = 1'-0"
B
SA8.2 SA8.2



| | |
|---------------|------|
| ORIGINAL PLAN | DATE |
| NO. | |

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SA0801-SA0803 DEMO DET.DWG PLOT TIME: 10-28-24, 8:46 PM



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SIGNATURE:  4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**FIXED BEARING TOP OF COLUMN
DEMOLITION ELEVATIONS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.2 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 149 | 280 |

LEGEND:

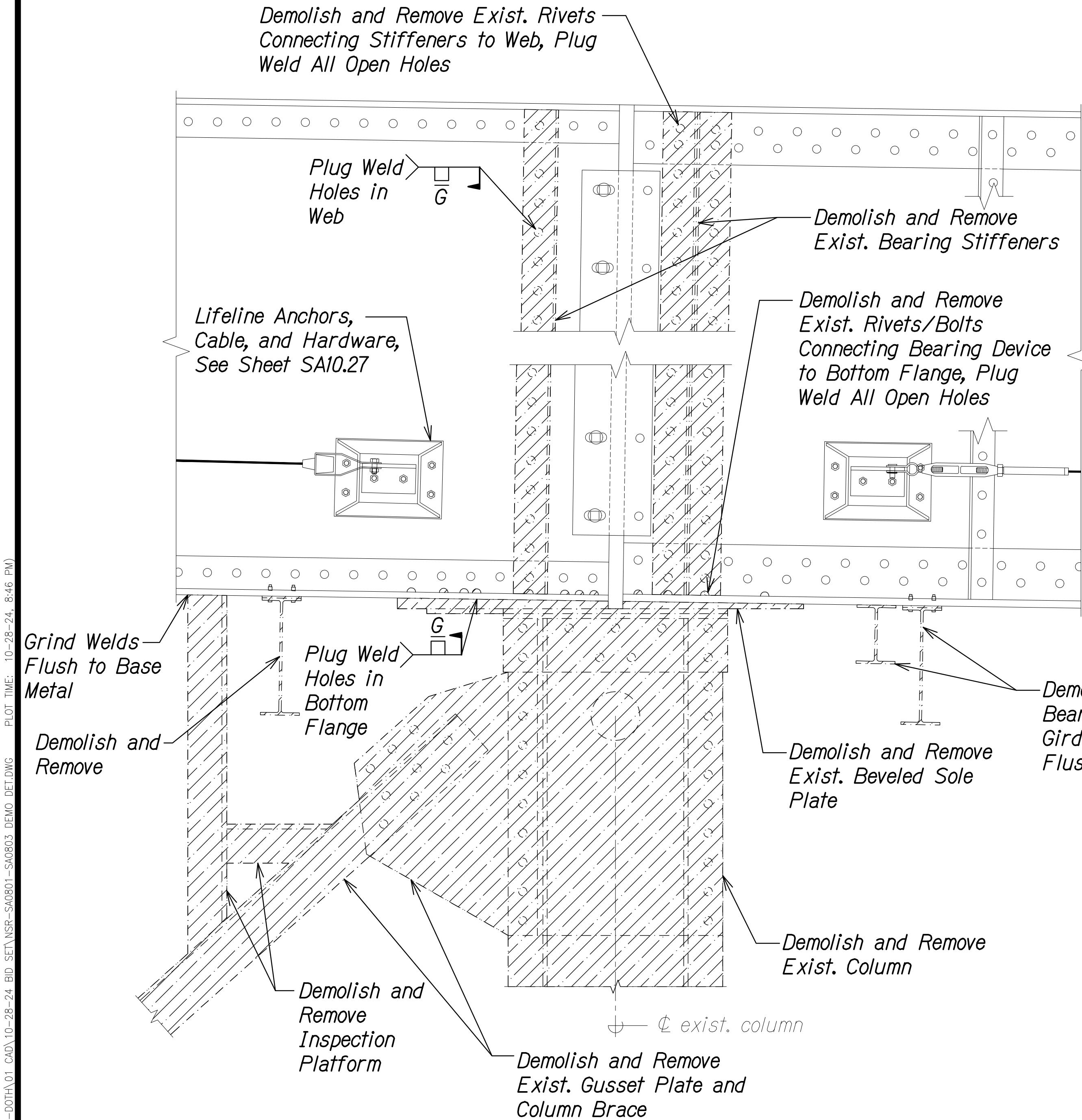
 Demolish and Remove

NOTES:

1. After column and stiffener removal, plug weld all open rivet/bolt holes.
2. Grind all welds within the demolition limits flush to the base metal.
3. Demolition and removal of bearing stiffeners, underslung beams, and inspection platform shall be covered under Pay Item 202.5000.
4. Demolition and removal of columns and column braces shall be covered under Pay Items 501.1010, 501.1020, 501.1030, and 501.1040.
5. Demo elevation shown for Bent Nos. 3, 5, 7, and 9.

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SA0801-SA0803 DEMO DET.DWG PLOT TIME: 10-28-24, 8:46 PM

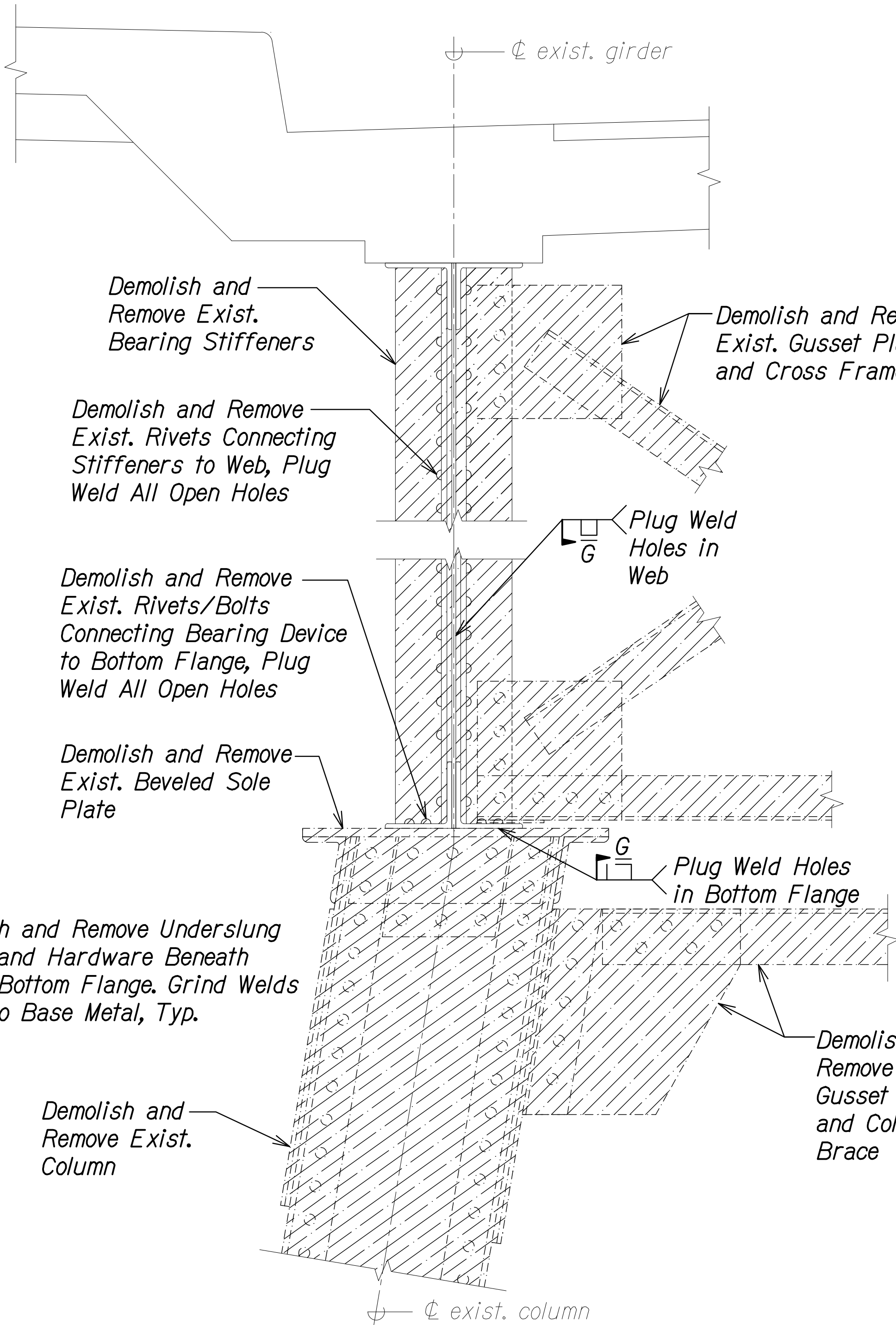
| | | |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| No. | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |



**EXPANSION BEARING
TOP OF COLUMN DEMO ELEVATION**

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

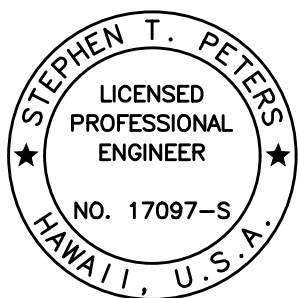
A
SA8.3 SA8.3



**EXPANSION BEARING
TOP OF COLUMN DEMO ELEVATION**

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

B
SA8.3 SA8.3



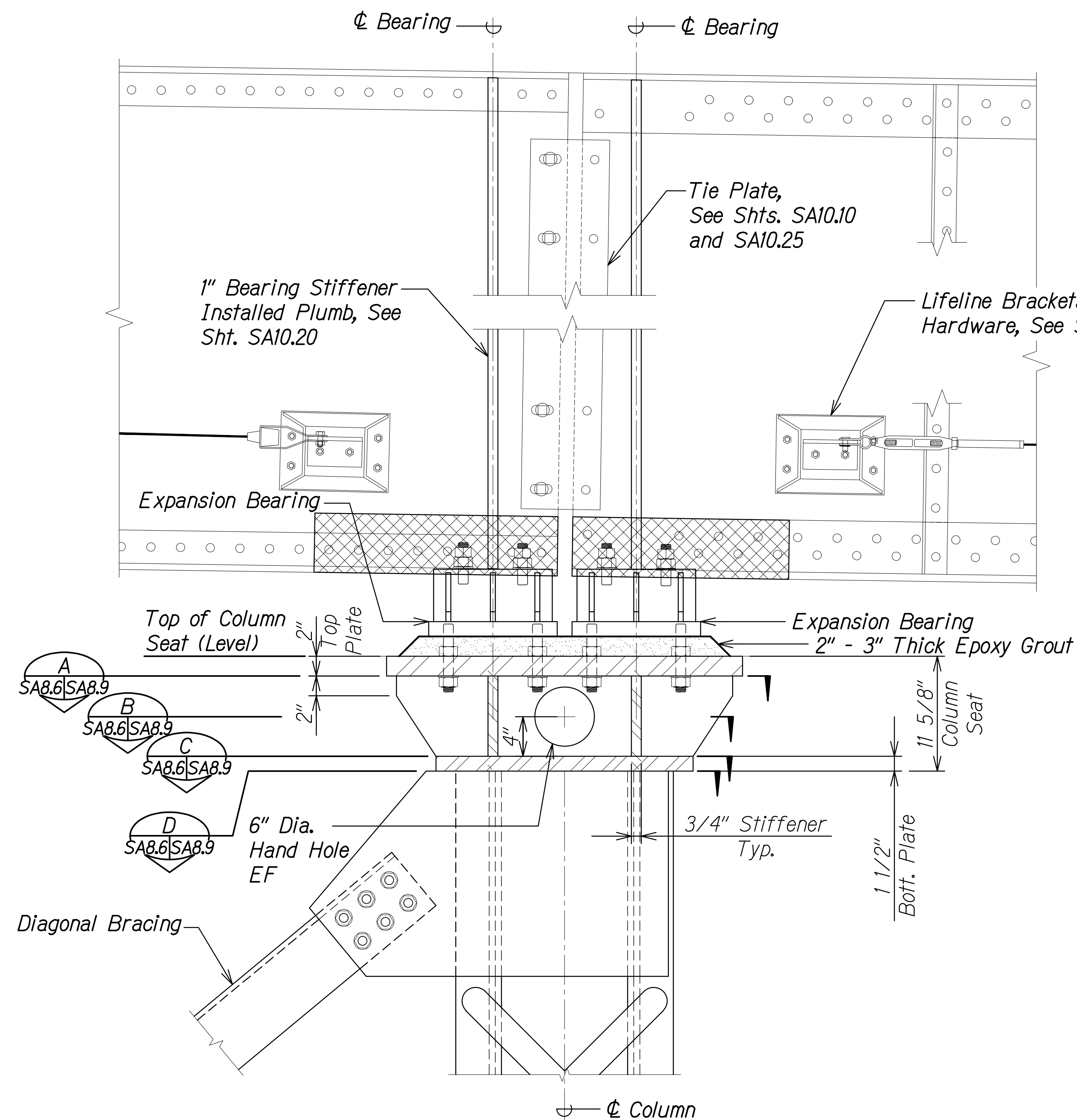
THIS WORK WAS PREPARED BY
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Stephen T. Peters
SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**EXPANSION BEARING TOP OF COLUMN
DEMOLITION ELEVATIONS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No.SA8.3 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 152 | 280 |



**EXPANSION BEARING
TOP OF COLUMN ELEVATION**

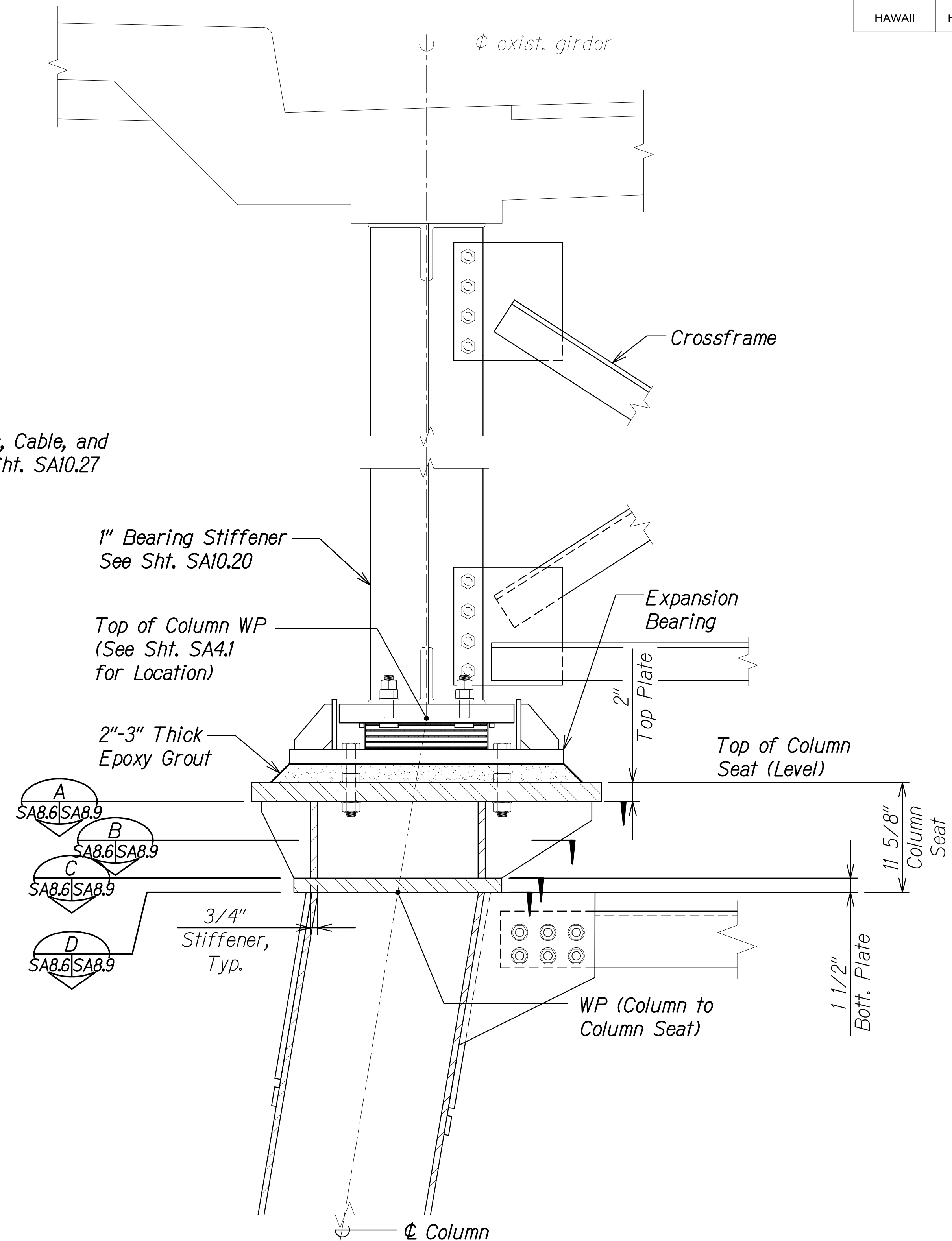
Scale: 1 1/2" = 1'-0"

A
SA8.6 SA8.6

LEGEND:



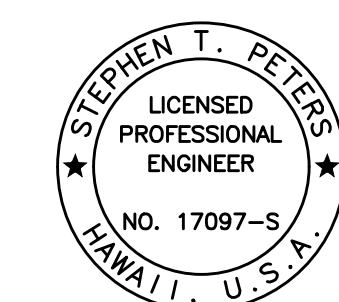
Prior to bearing installation, clean and prepare steel girder surfaces (including soffit) in accordance with SSPC SP11 and coat with specified paint system. This work shall be incidental to Pay Item 666.1000.



**EXPANSION BEARING
TOP OF COLUMN ELEVATION**

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

B
SA8.6 SA8.6



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SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

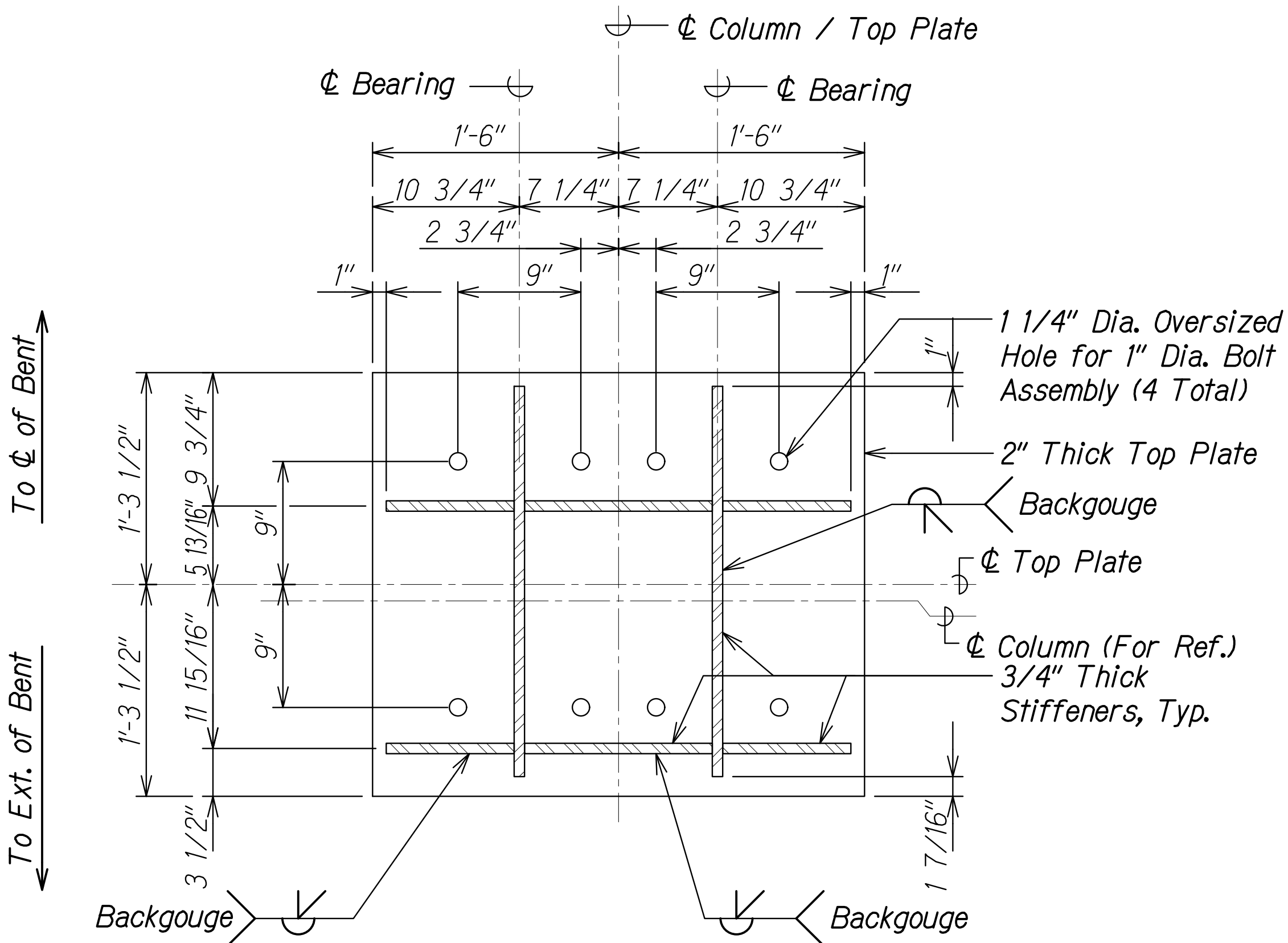
**EXPANSION BEARING TOP OF
COLUMN ELEVATIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

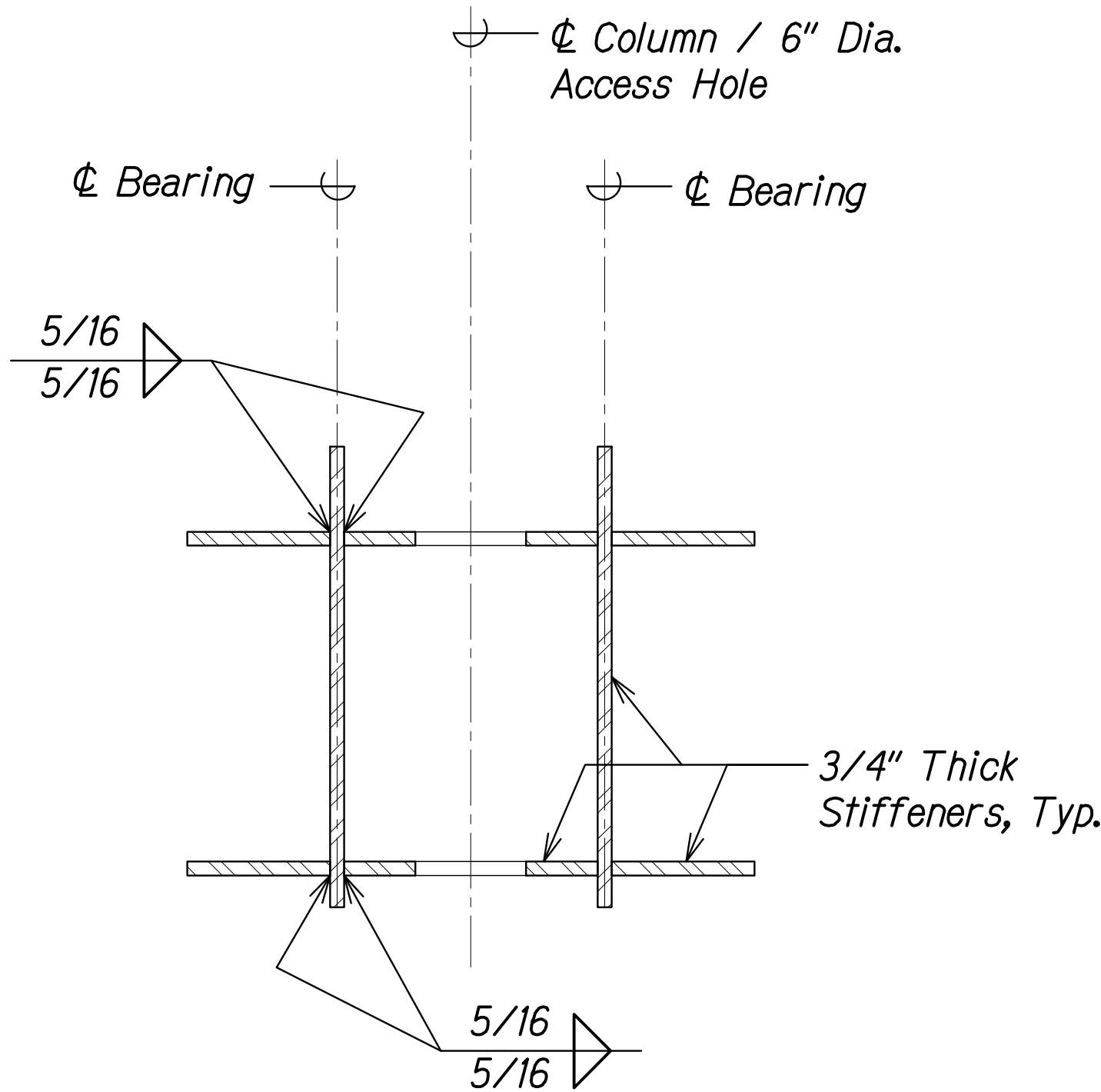
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.6 OF 13 SHEETS

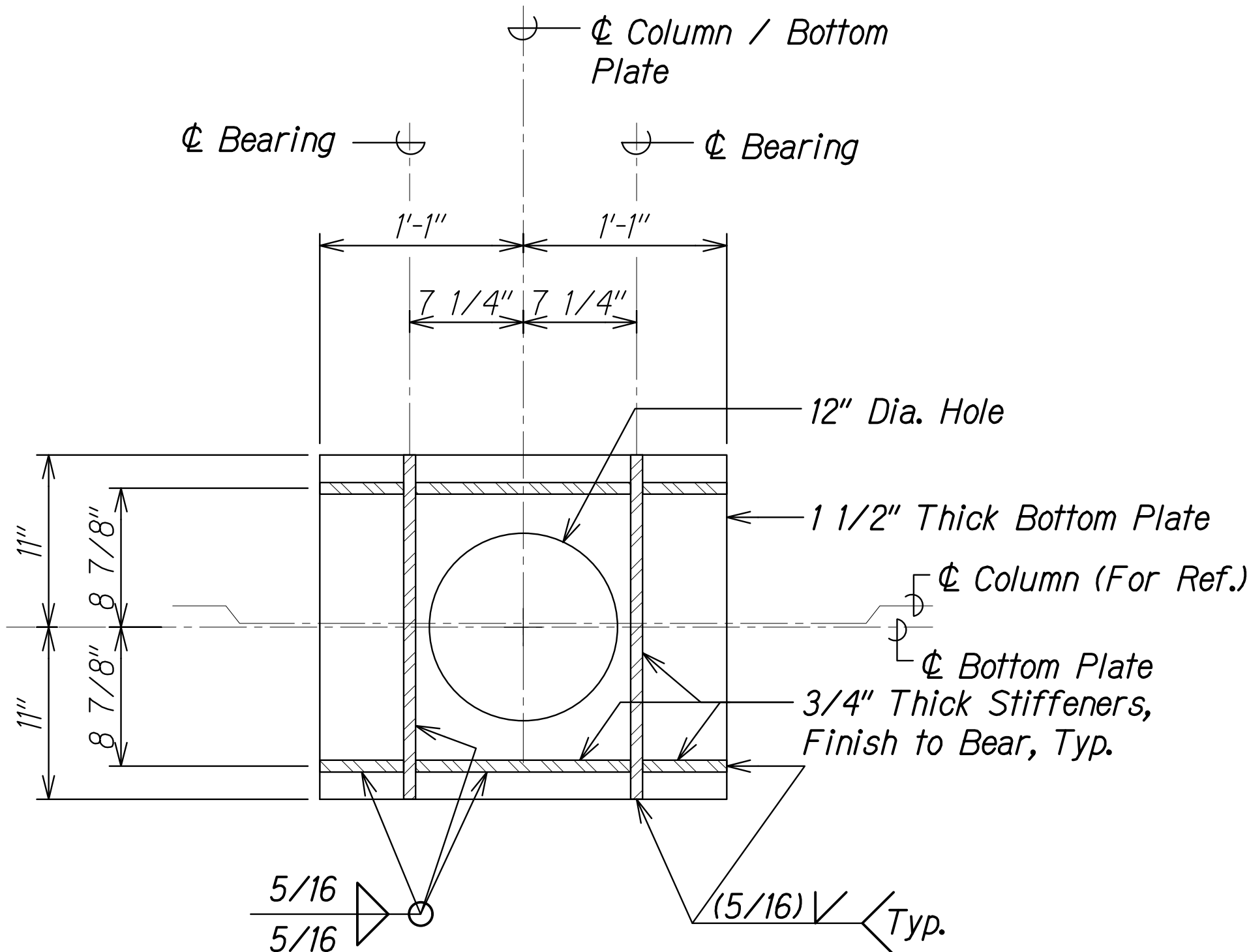
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 153 | 280 |



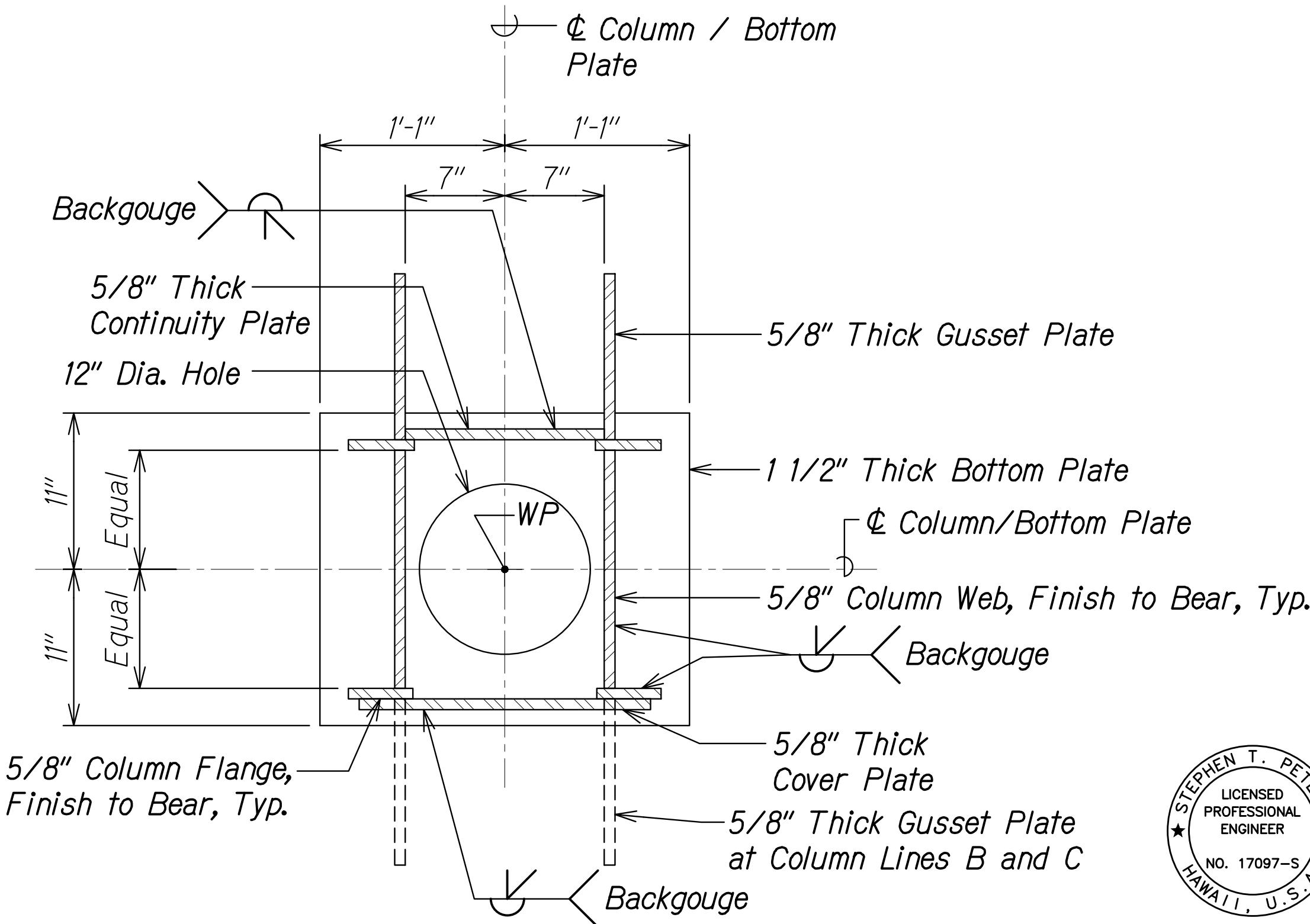
SECTION - COLUMN SEAT **A**
Scale: 1 1/2" = 1'-0"
SA8.4 | SA8.7



SECTION - COLUMN SEAT **B**
Scale: 1 1/2" = 1'-0"
SA8.4 | SA8.7



SECTION - COLUMN SEAT **C**
Scale: 1 1/2" = 1'-0"
SA8.4 | SA8.7



SECTION - COLUMN SEAT **D**
Scale: 1 1/2" = 1'-0"
SA8.4 | SA8.7

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 HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

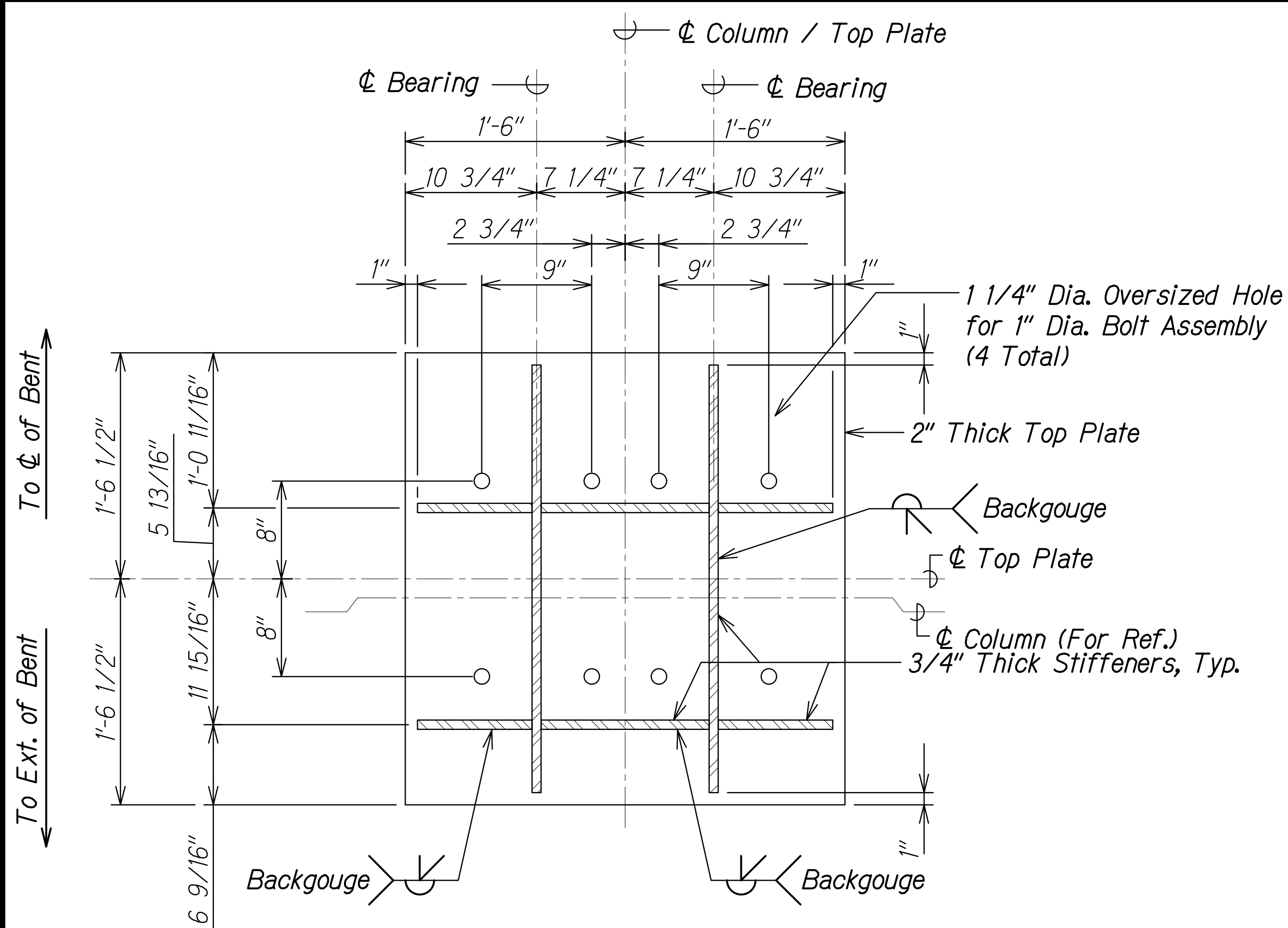
COLUMN SEAT SECTIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

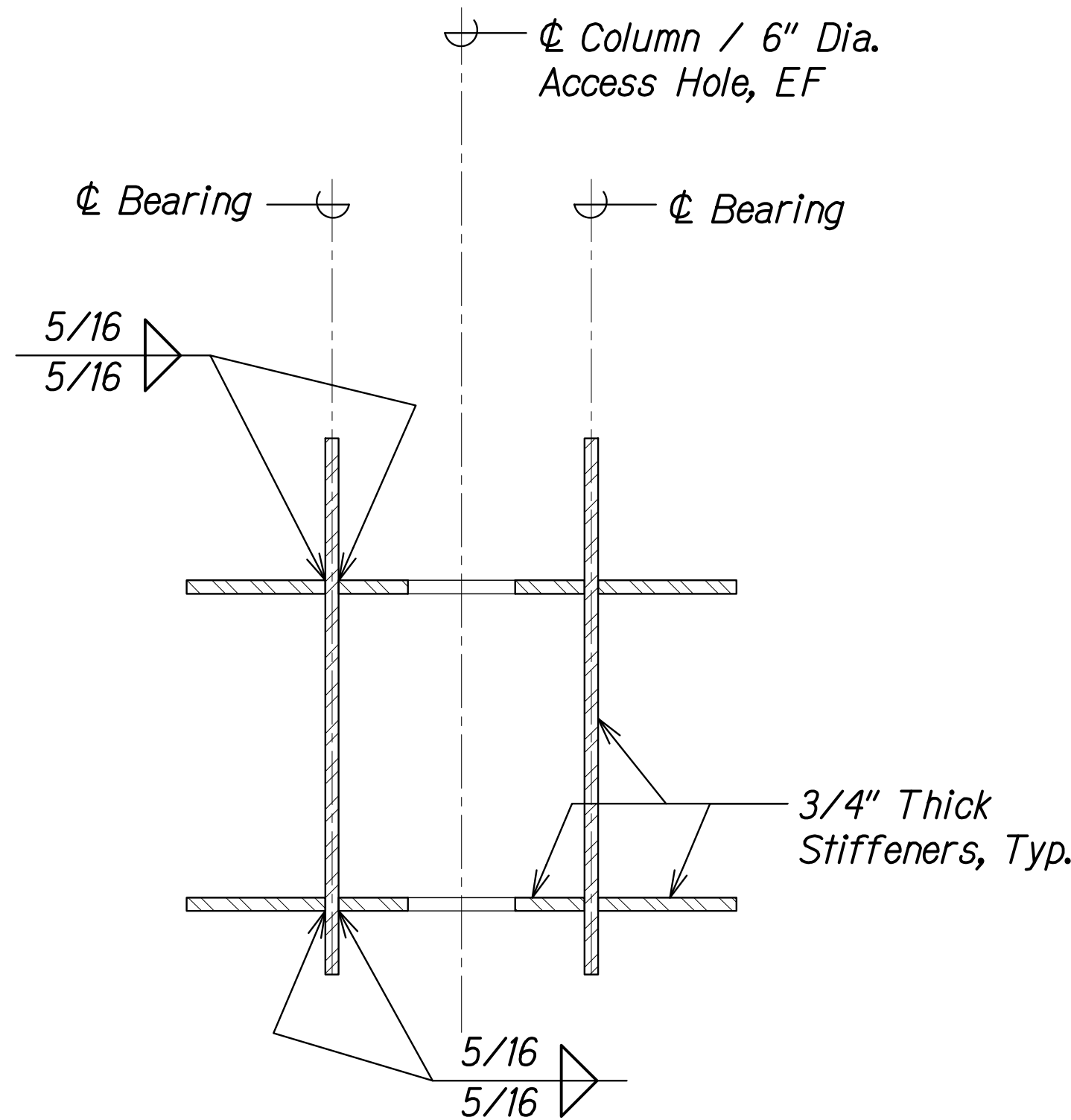
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.7 OF 13 SHEETS

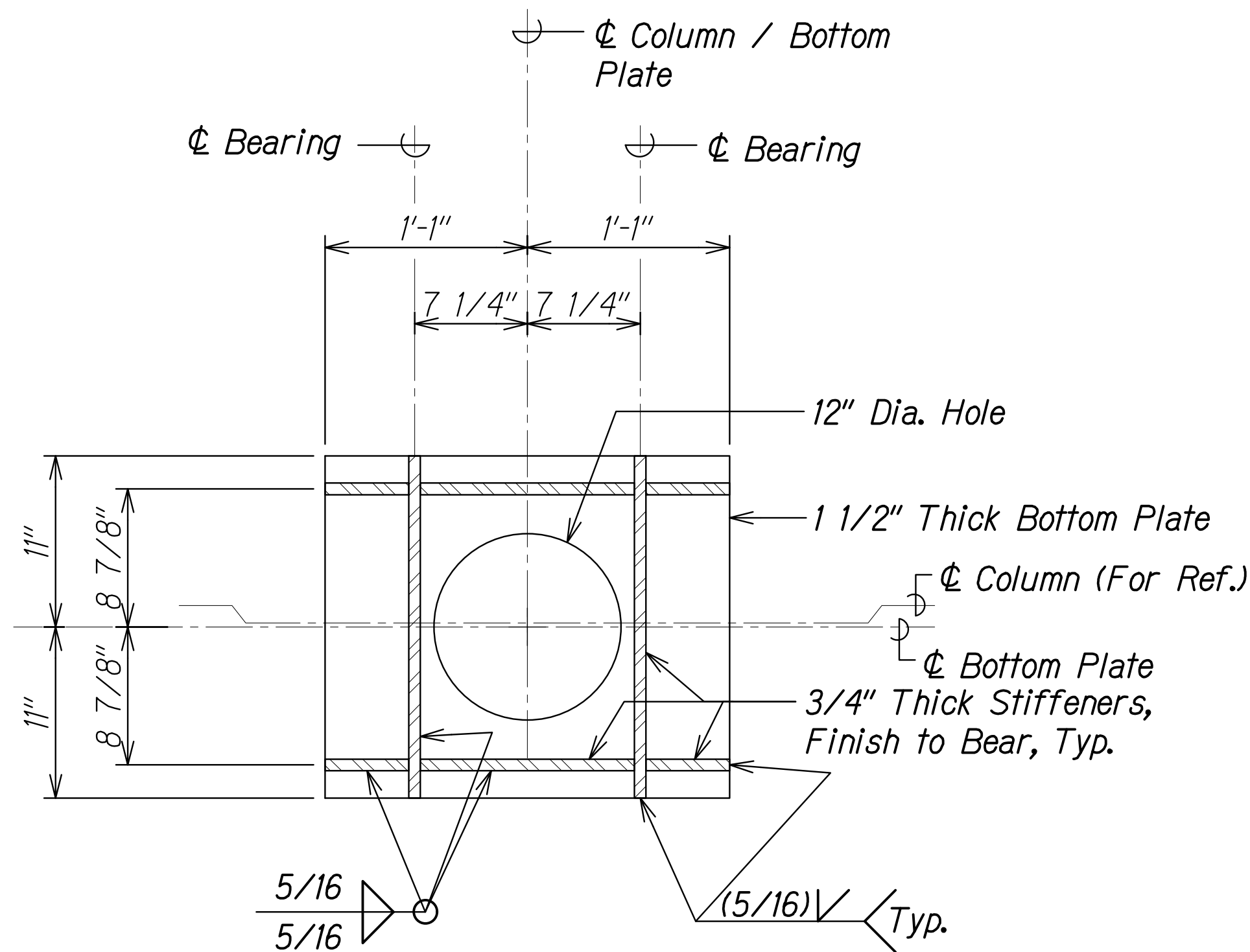
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 155 | 280 |



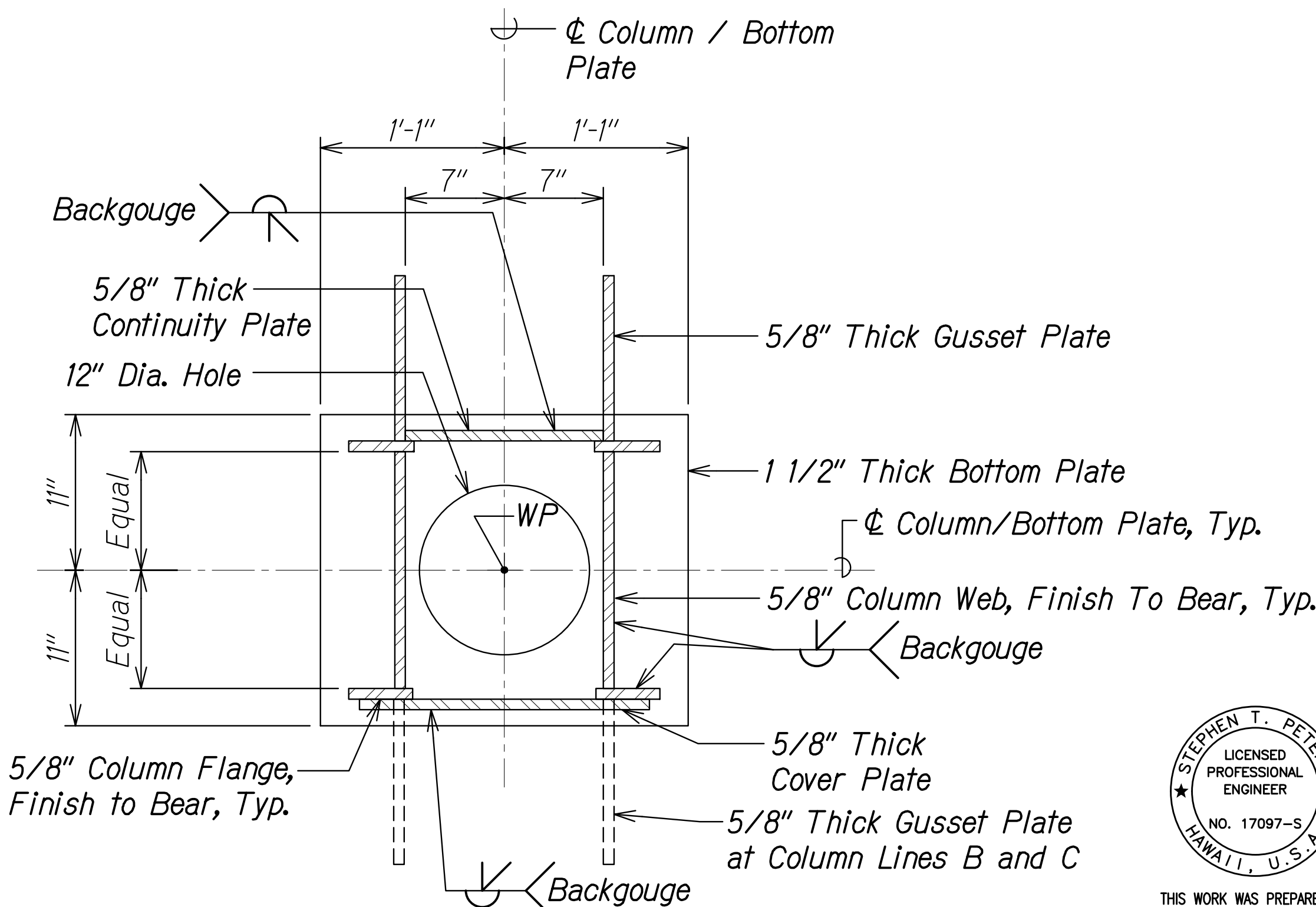
SECTION - COLUMN SEAT **A**
Scale: 1 1/2" = 1'-0"
SA8.6 | SA8.9



SECTION - COLUMN SEAT **B**
Scale: 1 1/2" = 1'-0"
SA8.6 | SA8.9



SECTION - COLUMN SEAT **C**
Scale: 1 1/2" = 1'-0"
SA8.6 | SA8.9



SECTION - COLUMN SEAT **D**
Scale: 1 1/2" = 1'-0"
SA8.6 | SA8.9

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.
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SIGNATURE
EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COLUMN SEAT SECTIONS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

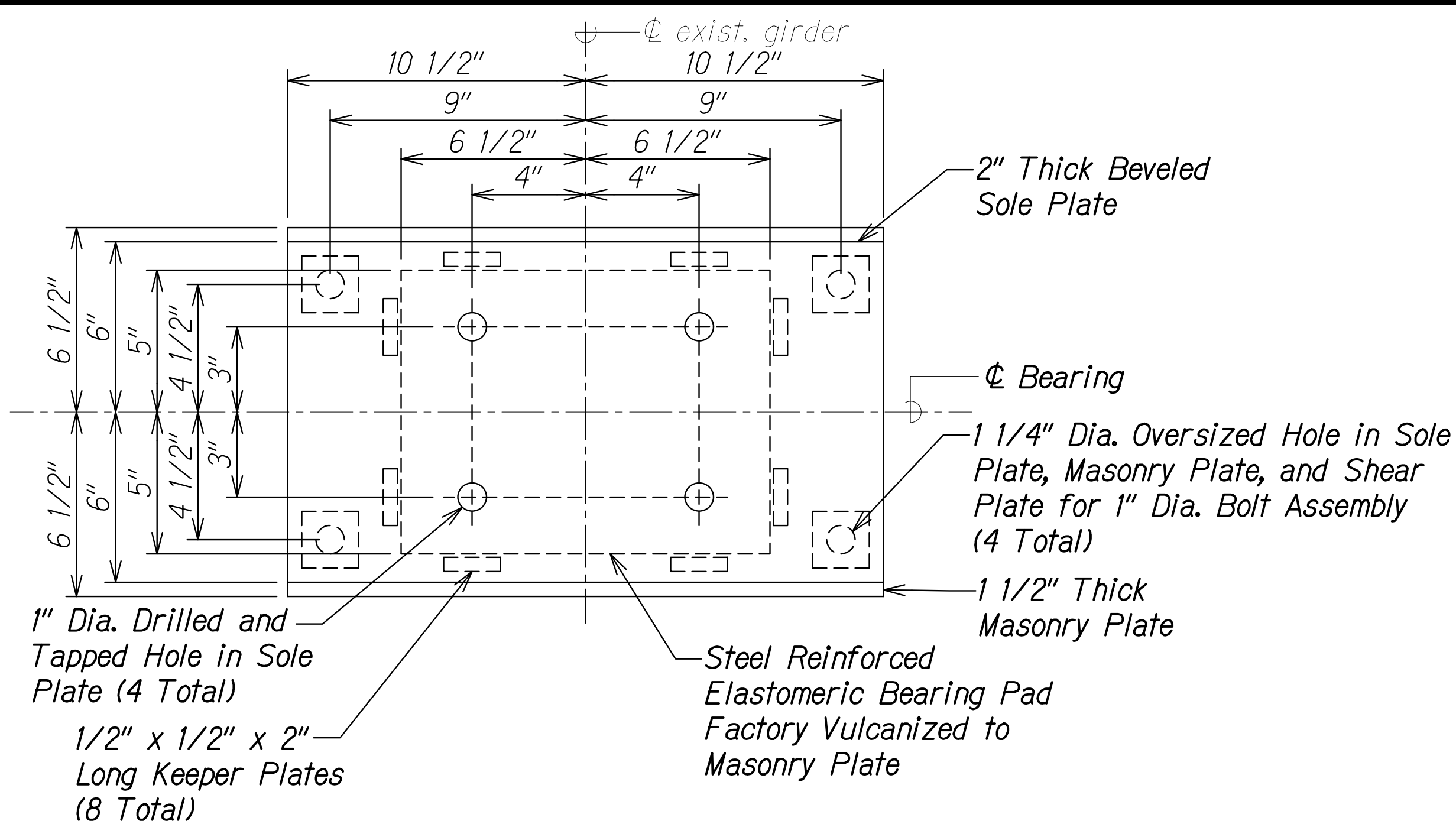
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.9 OF 13 SHEETS

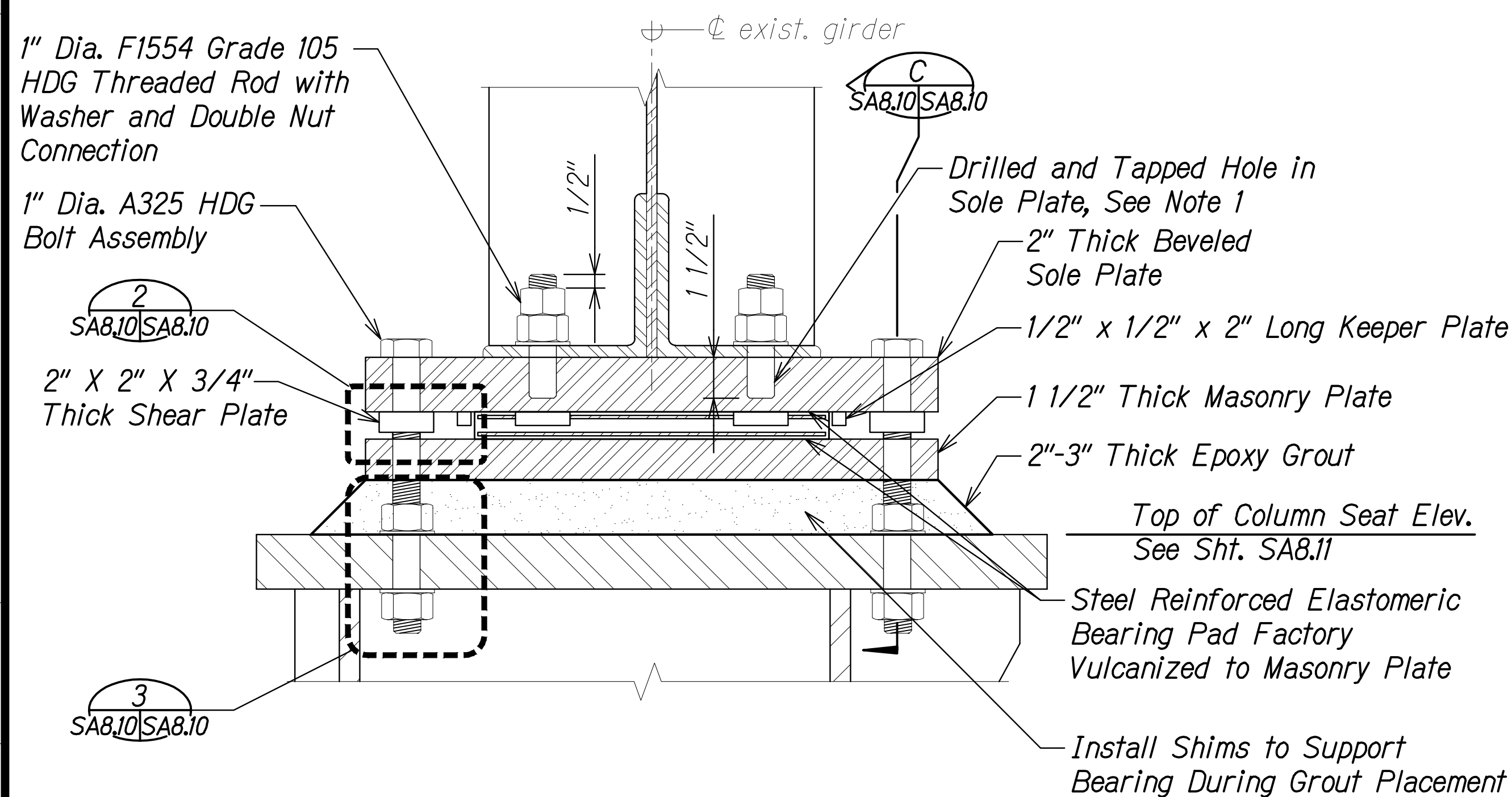
| | | |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SA0804-SA0809 TOP BEAR DET.DWG PLOT TIME: 10-28-24, 2:54 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 156 | 280 |



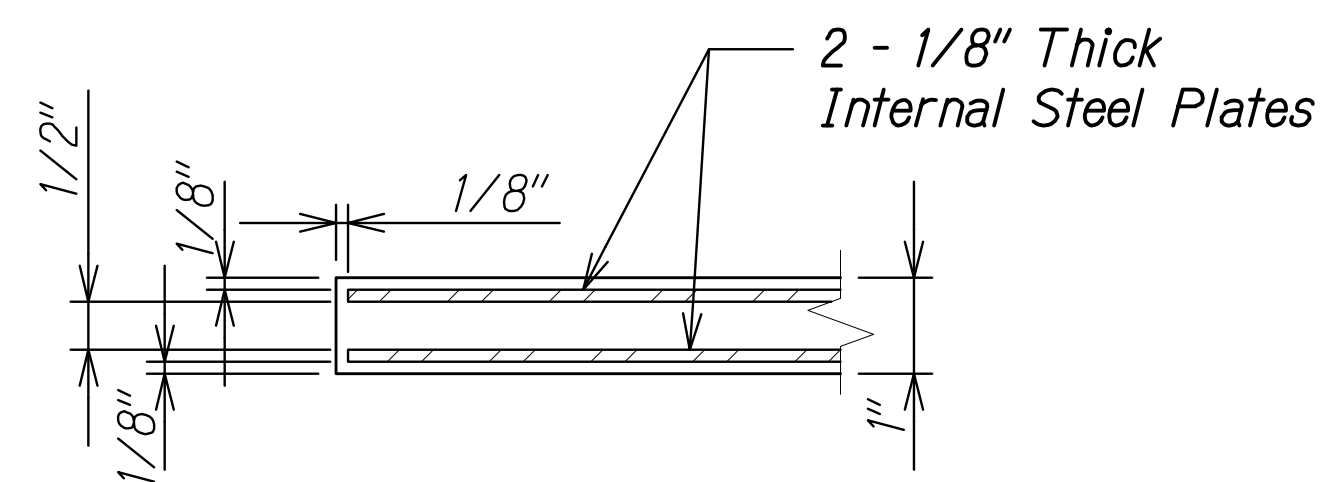
PLAN - FIXED BEARING
Scale: 3" = 1'-0"



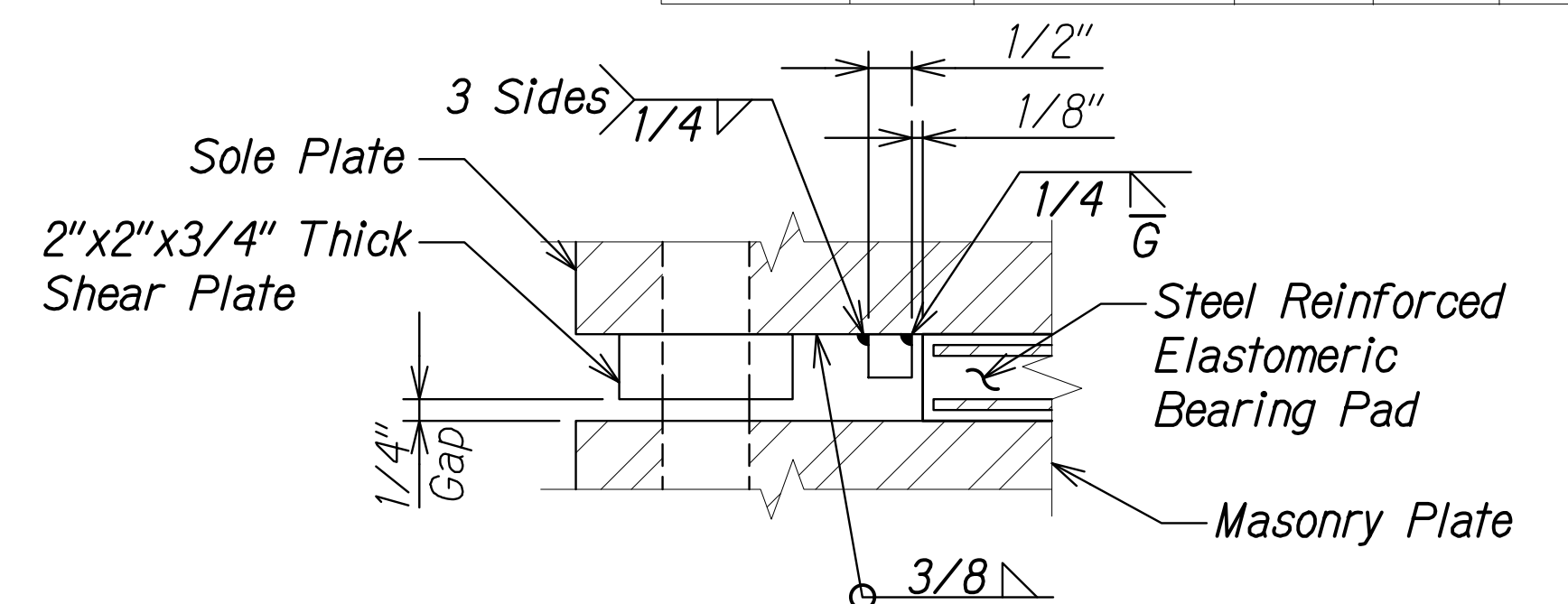
ELEVATION - FIXED BEARING
Scale: 3" = 1'-0"

NOTES:

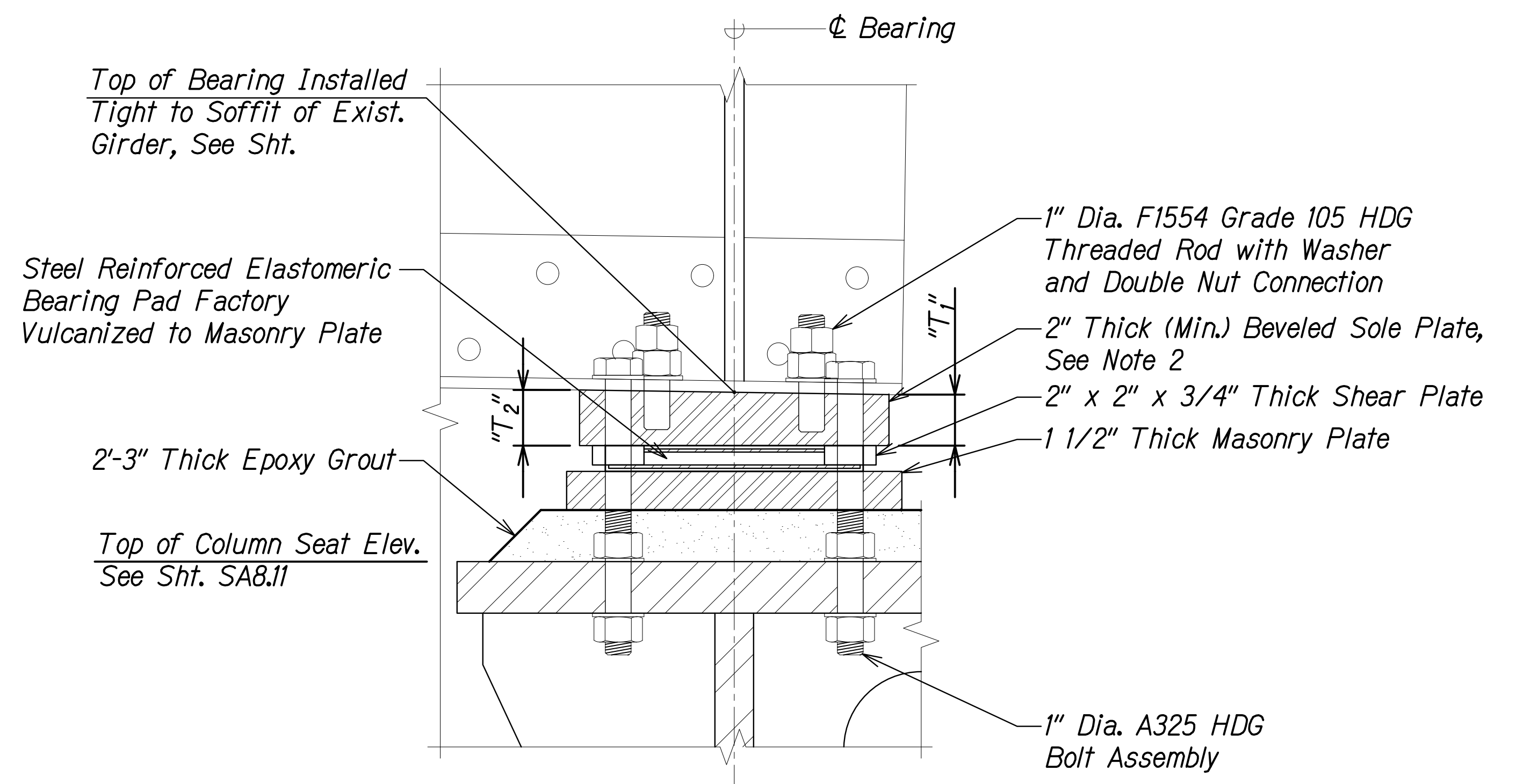
- Threaded holes in bearing assembly shall be tapped oversized in accordance with the tolerances specified under ASTM A563.
- See Sht. SA8.11 for beveled sole plate thickness.
- Sole plate, masonry plate, and shear plate shall all have 1 1/4" dia. oversized holes.
- The cost for painting bearing assemblies shall be included in the price for Pay Item 506.1000.



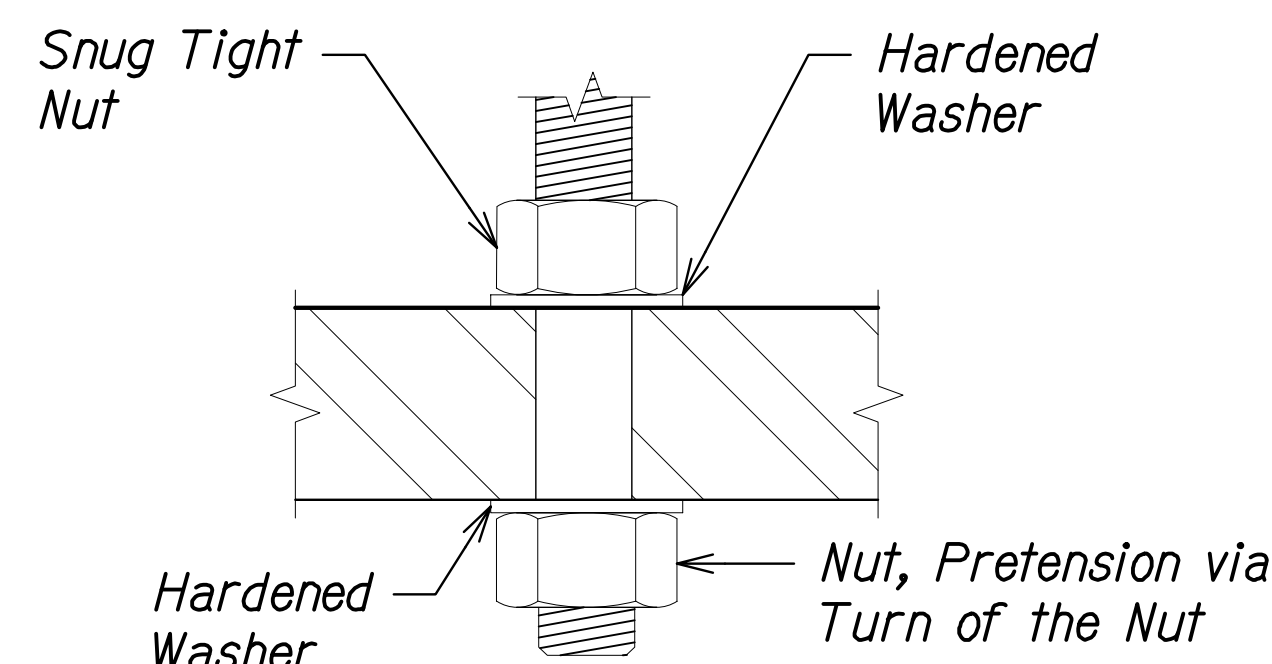
ELASTOMERIC DETAIL
Scale: 6" = 1'-0"



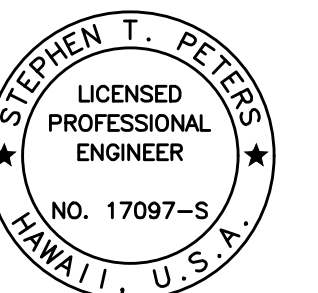
DETAIL
Scale: 6" = 1'-0"



SECTION - FIXED BEARING
Scale: 3" = 1'-0"



DETAIL
Scale: 6" = 1'-0"



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FIXED BEARING DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

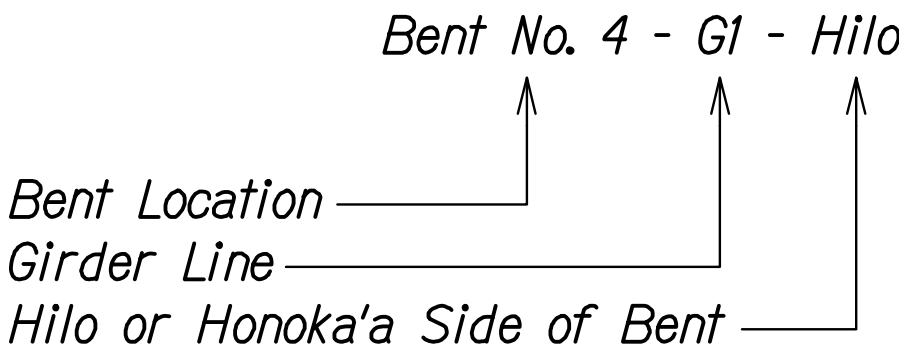
SHEET No. SA8.10 OF 13 SHEETS

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 157 | 280 |

| FIXED STEEL REINFORCED ELASTOMERIC BEARING SCHEDULE | | | |
|---|--------------------|-------------------|--------------------------|
| LOCATION | BEVELED SOLE PLATE | | TOP OF COLUMN SEAT ELEV. |
| | "T ₁ " | "T ₂ " | |
| Bent No. 1 - G1 - Hilo | 2.203" | 2.371" | 210.32 |
| Bent No. 1 - G2 - Hilo | | | |
| Bent No. 1 - G3 - Hilo | | | |
| Bent No. 1 - G4 - Hilo | | | |
| Bent No. 1 - G1 - Honoka'a | 2" | 2.168" | 210.32 |
| Bent No. 1 - G2 - Honoka'a | | | |
| Bent No. 1 - G3 - Honoka'a | | | |
| Bent No. 1 - G4 - Honoka'a | | | |
| Bent No. 2 - G1 - Hilo | 2.203" | 2.371" | 209.67 |
| Bent No. 2 - G2 - Hilo | | | |
| Bent No. 2 - G3 - Hilo | | | |
| Bent No. 2 - G4 - Hilo | | | |
| Bent No. 2 - G1 - Honoka'a | 2" | 2.168" | 209.67 |
| Bent No. 2 - G2 - Honoka'a | | | |
| Bent No. 2 - G3 - Honoka'a | | | |
| Bent No. 2 - G4 - Honoka'a | | | |
| Bent No. 4 - G1 - Hilo | 2.203" | 2.371" | 208.12 |
| Bent No. 4 - G2 - Hilo | | | |
| Bent No. 4 - G3 - Hilo | | | |
| Bent No. 4 - G4 - Hilo | | | |
| Bent No. 4 - G1 - Honoka'a | 2" | 2.168" | 208.12 |
| Bent No. 4 - G2 - Honoka'a | | | |
| Bent No. 4 - G3 - Honoka'a | | | |
| Bent No. 4 - G4 - Honoka'a | | | |

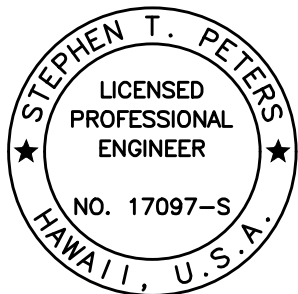
| FIXED STEEL REINFORCED ELASTOMERIC BEARING SCHEDULE | | | |
|---|--------------------|-------------------|--------------------------|
| LOCATION | BEVELED SOLE PLATE | | TOP OF COLUMN SEAT ELEV. |
| | "T ₁ " | "T ₂ " | |
| Bent No. 6 - G1 - Hilo | 2.203" | 2.371" | 206.53 |
| Bent No. 6 - G2 - Hilo | | | |
| Bent No. 6 - G3 - Hilo | | | |
| Bent No. 6 - G4 - Hilo | | | |
| Bent No. 6 - G1 - Honoka'a | 2" | 2.168" | 206.53 |
| Bent No. 6 - G2 - Honoka'a | | | |
| Bent No. 6 - G3 - Honoka'a | | | |
| Bent No. 6 - G4 - Honoka'a | | | |
| Bent No. 8 - G1 - Hilo | 2.203" | 2.371" | 204.97 |
| Bent No. 8 - G2 - Hilo | | | |
| Bent No. 8 - G3 - Hilo | | | |
| Bent No. 8 - G4 - Hilo | | | |
| Bent No. 8 - G1 - Honoka'a | 2" | 2.168" | 204.97 |
| Bent No. 8 - G2 - Honoka'a | | | |
| Bent No. 8 - G3 - Honoka'a | | | |
| Bent No. 8 - G4 - Honoka'a | | | |

BEARING LOCATION KEY:



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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\01 CAD\10-28-24 BID SET\NSR-SA0810-SA0813 BEARG DET-SCHED.DWG PLOT TIME: 10-28-24, 2:57 PM)



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STATE OF HAWAII
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HIGHWAYS DIVISION

FIXED BEARING SCHEDULE

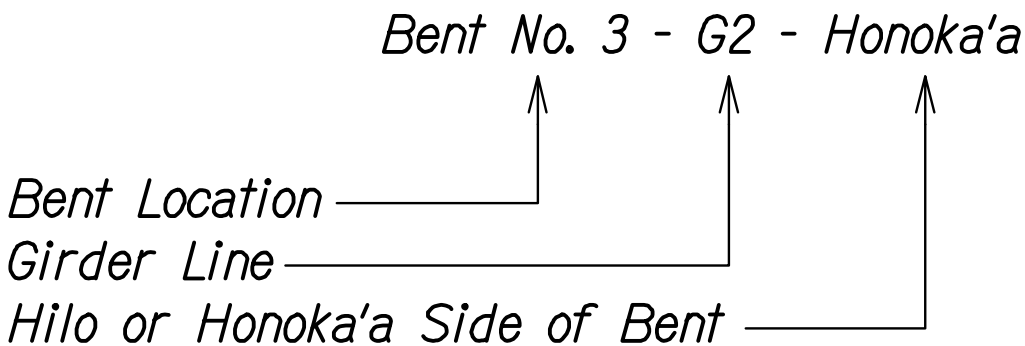
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No.SA8.11 OF 13 SHEETS

| | | | | | |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 159 | 280 |

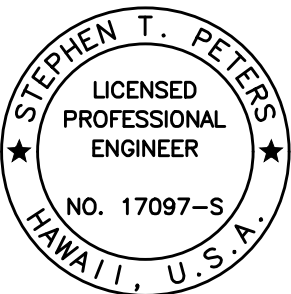
| EXPANSION STEEL REINFORCED ELASTOMERIC BEARING SCHEDULE | | | |
|---|--------------------|-------------------|-----------------------------|
| LOCATION | BEVELED SOLE PLATE | | TOP OF COLUMN SEAT ELEV. |
| | "T ₁ " | "T ₂ " | |
| Bent No. 3 - G1 - Hilo | 2.203" | 2.371" | 208.96 |
| Bent No. 3 - G2 - Hilo | | | |
| Bent No. 3 - G3 - Hilo | | | |
| Bent No. 3 - G4 - Hilo | | | |
| Bent No. 3 - G1 - Honoka'a | 2" | 2.168" | 208.96 |
| Bent No. 3 - G2 - Honoka'a | | | |
| Bent No. 3 - G3 - Honoka'a | | | |
| Bent No. 3 - G4 - Honoka'a | | | |
| Bent No. 5 - G1 - Hilo | 2.203" | 2.371" | 207.41 |
| Bent No. 5 - G2 - Hilo | | | |
| Bent No. 5 - G3 - Hilo | | | |
| Bent No. 5 - G4 - Hilo | | | |
| Bent No. 5 - G1 - Honoka'a | 2" | 2.168" | 207.41 |
| Bent No. 5 - G2 - Honoka'a | | | |
| Bent No. 5 - G3 - Honoka'a | | | |
| Bent No. 5 - G4 - Honoka'a | | | |
| Bent No. 7 - G1 - Hilo | 2.203" | 2.371" | 205.82 |
| Bent No. 7 - G2 - Hilo | | | |
| Bent No. 7 - G3 - Hilo | | | |
| Bent No. 7 - G4 - Hilo | | | |
| Bent No. 7 - G1 - Honoka'a | 2" | 2.168" | 205.82 |
| Bent No. 7 - G2 - Honoka'a | | | |
| Bent No. 7 - G3 - Honoka'a | | | |
| Bent No. 7 - G4 - Honoka'a | | | |
| Bent No. 9 - G1 - Hilo | 2.203" | 2.371" | 204.26 |
| Bent No. 9 - G2 - Hilo | | | |
| Bent No. 9 - G3 - Hilo | | | |
| Bent No. 9 - G4 - Hilo | | | |
| Bent No. 9 - G1 - Honoka'a | 2" | 2.168" | 204.26 |
| Bent No. 9 - G2 - Honoka'a | | | |
| Bent No. 9 - G3 - Honoka'a | | | |
| Bent No. 9 - G4 - Honoka'a | | | |

BEARING LOCATION KEY:



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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SA0810-SA0813 BEARG DET-SCHED.DWG PLOT TIME: 10-28-24, 2:58 PM)



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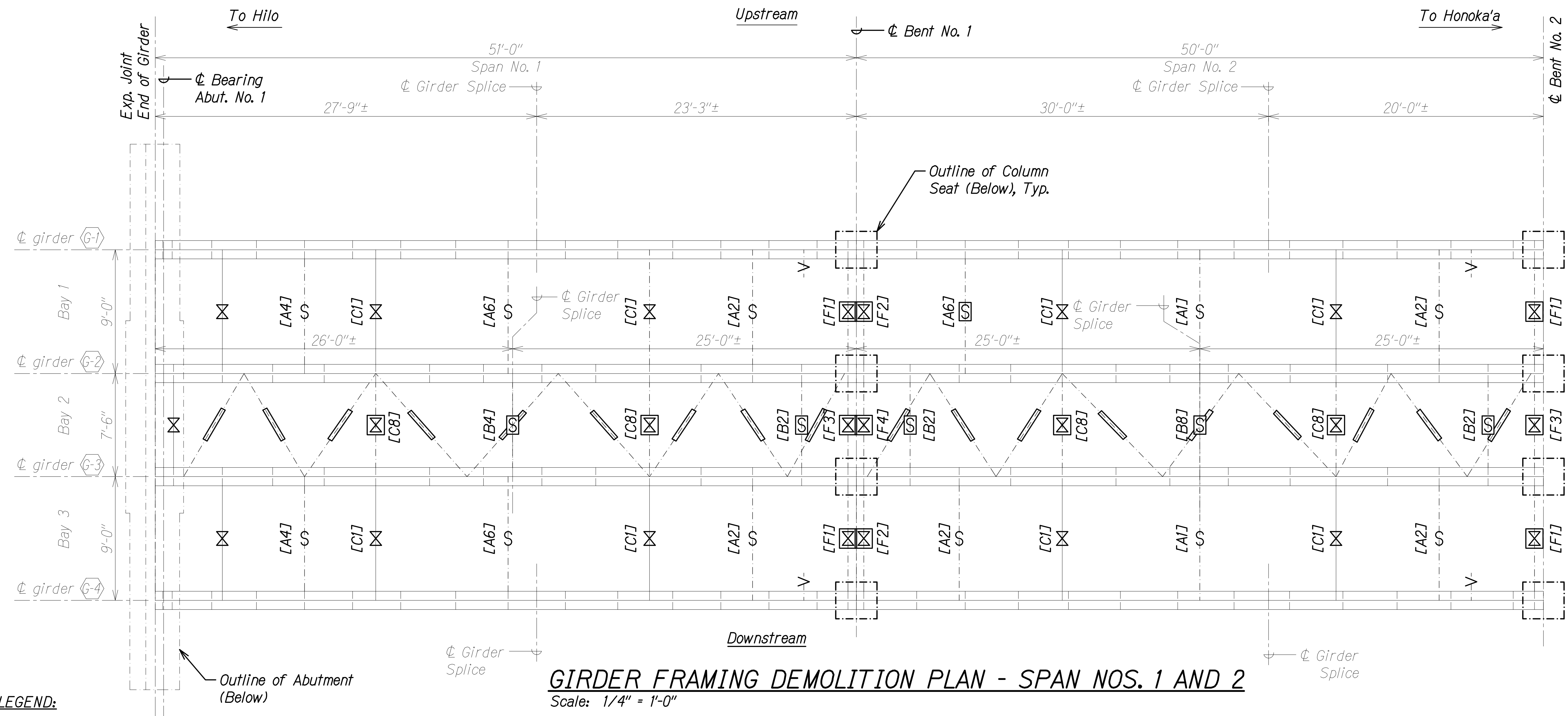
SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXPANSION BEARING
SCHEDULE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024



LEGEND:

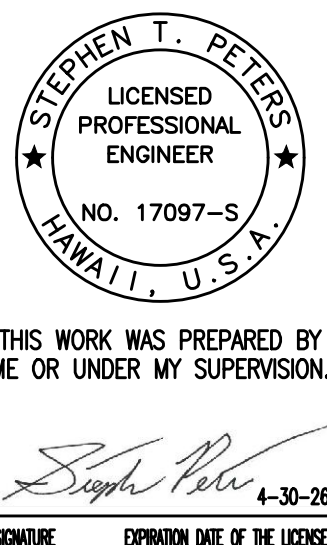
- ⊗ Exist. Cross Frame to Remain
- ⊗ Exist. Cross Frame to be Removed and Replaced
- ⊗ Exist. Strut to be Removed and Replaced
- ⊗ Exist. Strut to be Removed
- ⊗ Exist. Lateral Diagonal Bracing at Bottom Flange to be Removed, See Section E/SA10.4
- ⊗ Exist. Angle Iron to be Removed, See Detail 1/SA10.11
- [] Cross Frame or Strut Mark, See Table

GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 1 AND 2
Scale: 1/4" = 1'-0"

| DEMOLITION OF MEMBERS AND CONNECTIONS | | | |
|---------------------------------------|--------------------|------|--------------------|
| MARK | REFERENCE | MARK | REFERENCE |
| A1 | Section A / SA10.1 | C1 | Section A / SA10.6 |
| A2 | Section B / SA10.1 | C8 | Section C / SA10.7 |
| A4 | Section D / SA10.1 | F1 | Section A / SA10.9 |
| A6 | Section B / SA10.2 | F2 | Section B / SA10.9 |
| B2 | Section B / SA10.4 | F3 | Section C / SA10.9 |
| B4 | Section D / SA10.4 | F4 | Section D / SA10.9 |
| B8 | Section D / SA10.5 | - | - |

NOTES:

- Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor
- Provided dimensions are based on As-Built plans.



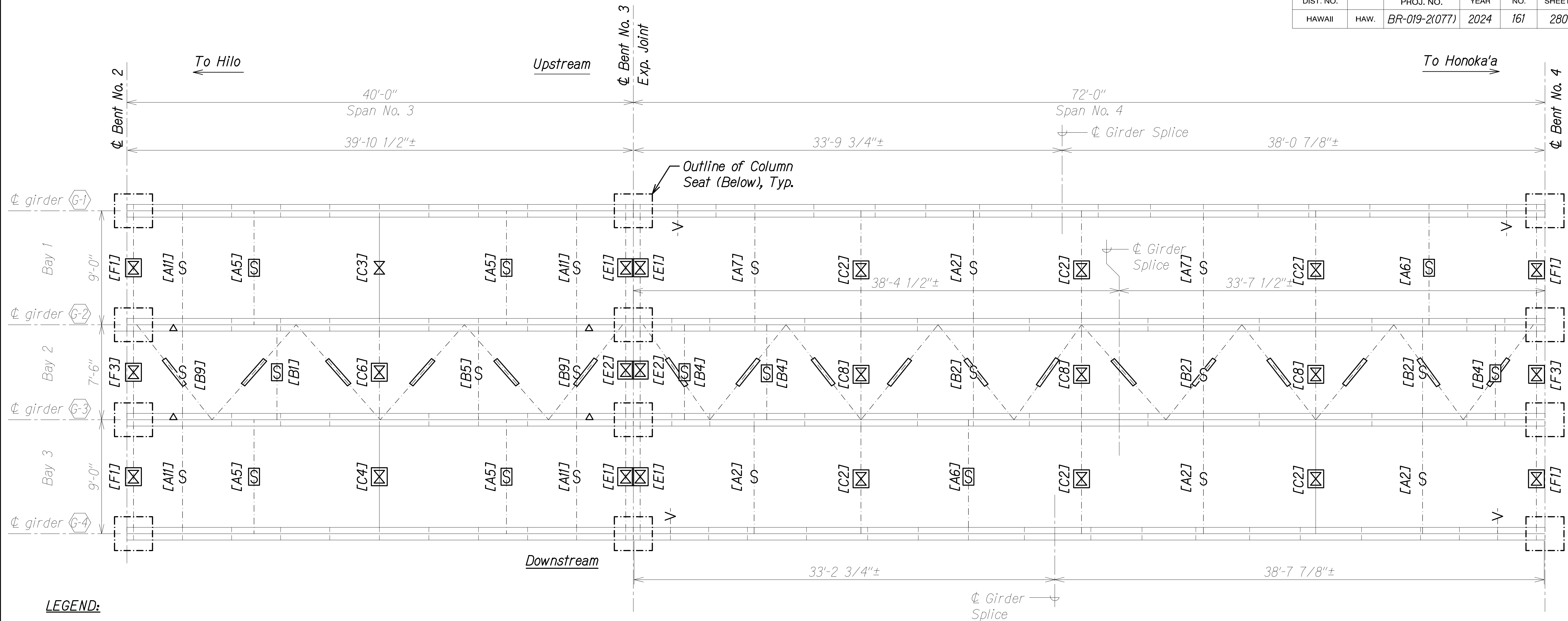
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER FRAMING DEMOLITION
PLAN - SPAN NOS. 1 AND 2**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA9/ OF 23 SHEETS



LEGEND:

- ⊗ Exist. Cross Frame to Remain
- ⊗ Exist. Cross Frame to be Removed and Replaced
- ⊗ Exist. Strut to be Removed and Replaced
- ⊗ Exist. Strut to be Removed
- ⊗ Exist. Lateral Diagonal Bracing at Bottom Flange to be Removed, See Section E/SA10.4
- ⊗ Exist. Angle Iron to be Removed, See Detail 1/SA10.11
- △ Exist. Steel Component to be Removed, See Detail 3/SA10.11

[] Cross Frame or Strut Mark, See Table

NOTES:

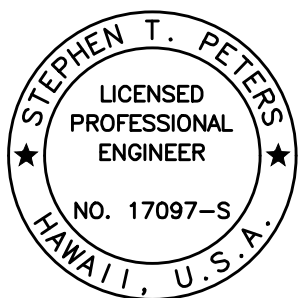
- Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor.
- Provided dimensions are based on As-Built plans.

GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 3 AND 4

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

DEMOLITION OF MEMBERS AND CONNECTIONS

| MARK | REFERENCE | MARK | REFERENCE |
|------|--------------------|------|--------------------|
| A2 | Section B / SA10.1 | C2 | Section B / SA10.6 |
| A5 | Section A / SA10.2 | C3 | Section C / SA10.6 |
| A6 | Section B / SA10.2 | C4 | Section D / SA10.6 |
| A7 | Section C / SA10.2 | C6 | Section A / SA10.7 |
| A11 | Section C / SA10.3 | C8 | Section C / SA10.7 |
| B1 | Section A / SA10.4 | E1 | Section A / SA10.8 |
| B2 | Section B / SA10.4 | E2 | Section B / SA10.8 |
| B4 | Section D / SA10.4 | F1 | Section A / SA10.9 |
| B5 | Section A / SA10.5 | F3 | Section C / SA10.9 |
| B9 | Section E / SA10.5 | - | - |

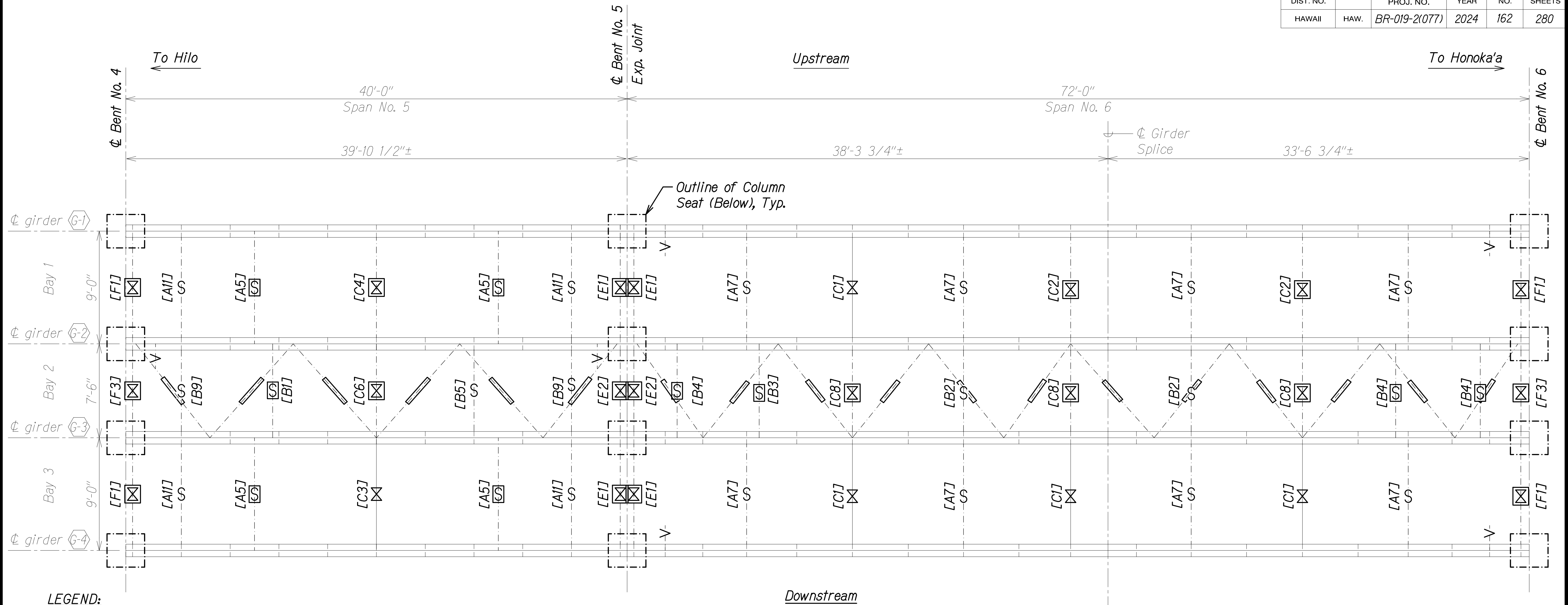


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SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**GIRDER FRAMING DEMOLITION
PLAN - SPAN NOS. 3 AND 4**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 162 | 280 |



LEGEND:

- Exist. Cross Frame to Remain
- Exist. Cross Frame to be Removed and Replaced
- Exist. Strut to be Removed and Replaced
- Exist. Strut to be Removed
- Exist. Lateral Diagonal Bracing at Bottom Flange to be Removed, See Section E/SA10.4
- Exist. Angle Iron to be Removed, See Detail 1/SA10.11
- [] Cross Frame or Strut Mark, See Table

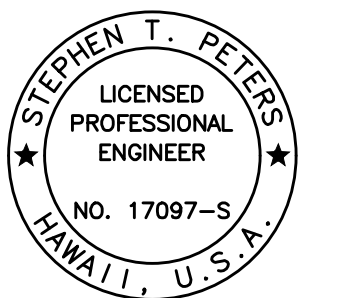
NOTES:

- Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor.
- Provided dimensions are based on As-Built plans.

GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 5 AND 6
Scale: 1/4" = 1'-0"

DEMOLITION OF MEMBERS AND CONNECTIONS

| MARK | REFERENCE | MARK | REFERENCE |
|------|--------------------|------|--------------------|
| A5 | Section A / SA10.2 | C2 | Section B / SA10.6 |
| A7 | Section C / SA10.2 | C3 | Section C / SA10.6 |
| A11 | Section C / SA10.3 | C4 | Section D / SA10.6 |
| B1 | Section A / SA10.4 | C6 | Section A / SA10.7 |
| B2 | Section B / SA10.4 | C8 | Section C / SA10.7 |
| B3 | Section C / SA10.4 | E1 | Section A / SA10.8 |
| B4 | Section D / SA10.4 | E2 | Section B / SA10.8 |
| B5 | Section A / SA10.5 | F1 | Section A / SA10.9 |
| B9 | Section E / SA10.5 | F3 | Section C / SA10.9 |
| C1 | Section A / SA10.6 | - | - |



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SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER FRAMING DEMOLITION
PLAN - SPAN NOS. 5 AND 6**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

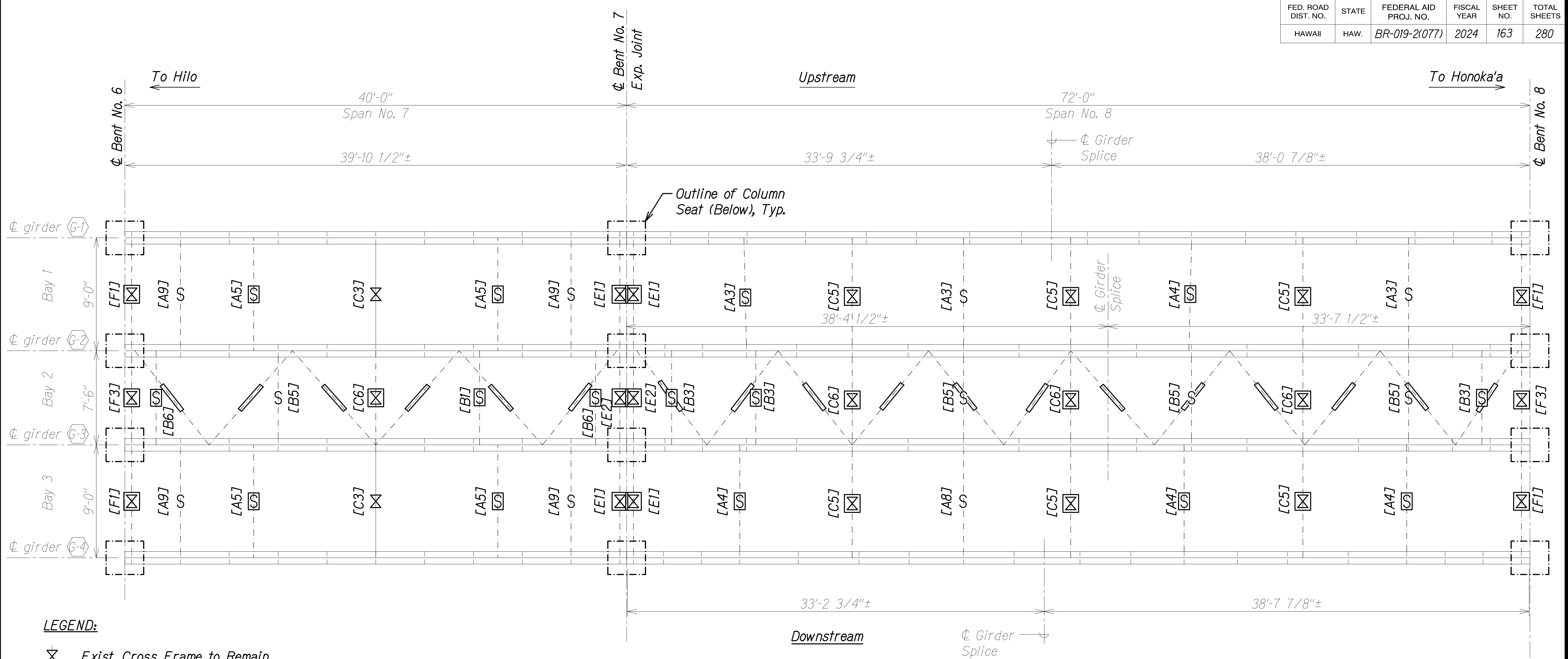
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.3 OF 23 SHEETS

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT10.1 CAD\10-28-24 BID SET\NSR-SA0903 GIRDER SPAN 5 & 6 DEMO PLNDWG PLOT TIME: 10-28-24 3:01 PM

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 163 | 280 |



LEGEND:

- Exist. Cross Frame to Remain
- Exist. Cross Frame to be Removed and Replaced
- Exist. Strut to be Removed and Replaced
- Exist. Strut to be Removed
- Exist. Lateral Diagonal Bracing at Bottom Flange to be Removed, See Section E/SAI0.4
- [] Cross Frame or Strut Mark, See Table

NOTES:

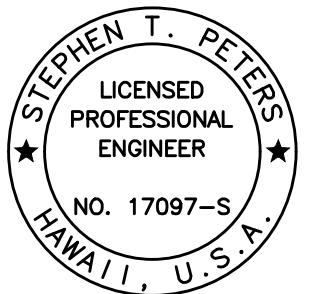
- Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor.
- Provided dimensions are based on As-Built plans.

GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 7 AND 8

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

DEMOLITION OF MEMBERS AND CONNECTIONS

| MARK | REFERENCE | MARK | REFERENCE |
|------|--------------------|------|--------------------|
| A3 | Section C / SAI0.1 | C3 | Section C / SAI0.6 |
| A4 | Section D / SAI0.1 | C5 | Section E / SAI0.6 |
| A5 | Section A / SAI0.2 | C6 | Section A / SAI0.7 |
| A8 | Section D / SAI0.2 | E1 | Section A / SAI0.8 |
| A9 | Section A / SAI0.3 | E2 | Section B / SAI0.8 |
| B1 | Section A / SAI0.4 | F1 | Section A / SAI0.9 |
| B3 | Section C / SAI0.4 | F3 | Section C / SAI0.9 |
| B5 | Section A / SAI0.5 | - | - |
| B6 | Section B / SAI0.5 | - | - |



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SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

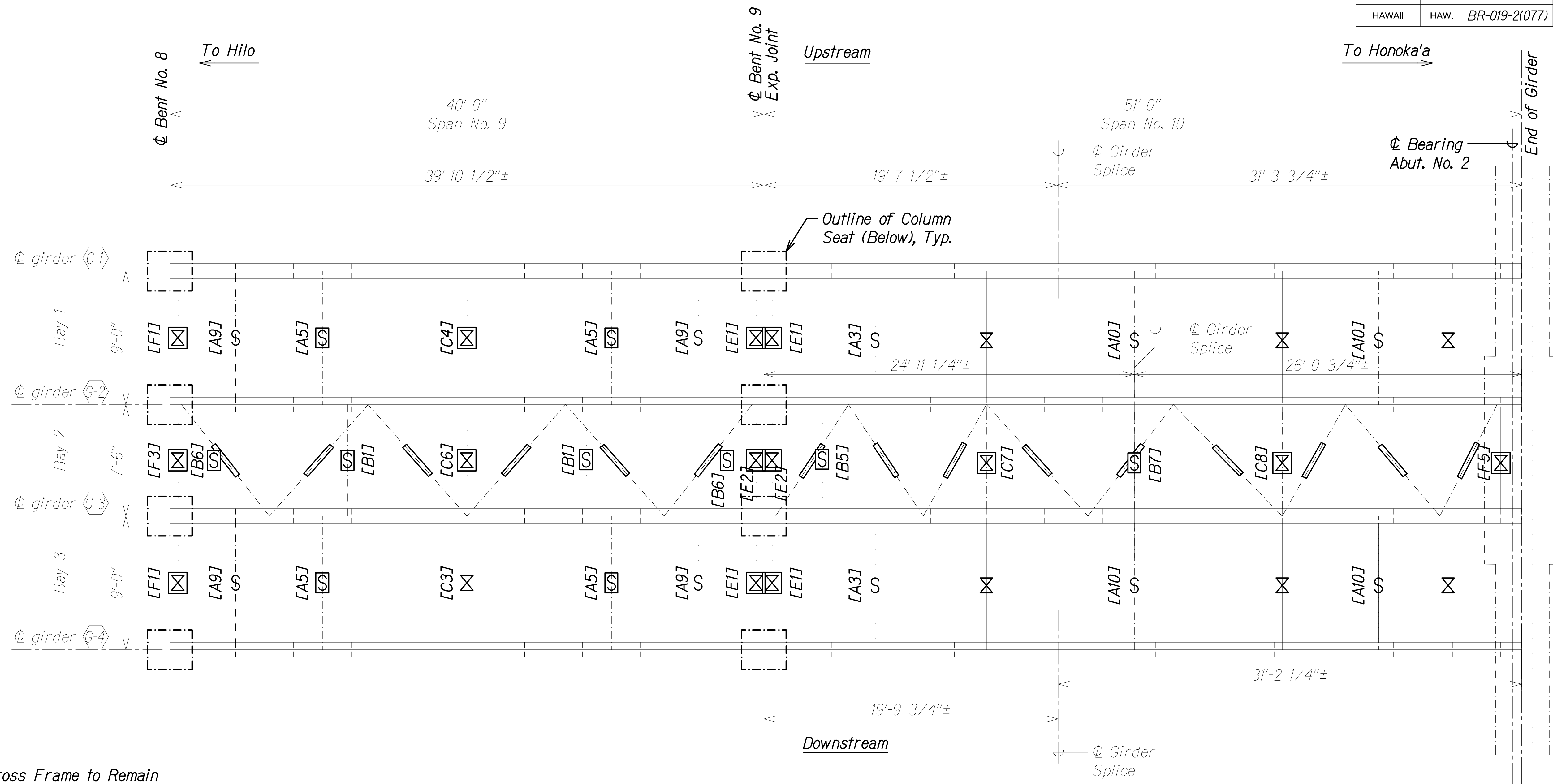
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER FRAMING DEMOLITION
PLAN - SPAN NOS. 7 AND 8**






HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 164 | 280 |



LEGEND:

-  Exist. Cross Frame to Remain
-  Exist. Cross Frame to be Removed and Replaced
-  Exist. Strut to be Removed and Replaced
-  Exist. Strut to be Removed
-  Exist. Lateral Diagonal Bracing at Bottom Flange to be Removed, See Section E/SAI0.4
- [] Cross Frame or Strut Mark, See Table

NOTES:

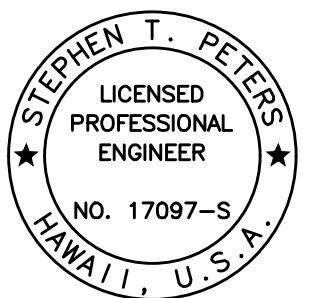
1. Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor.
2. Provided dimensions are based on As-Built plans.

GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 9 AND 10

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

DEMOLITION OF MEMBERS AND CONNECTIONS

| MARK | REFERENCE | MARK | REFERENCE |
|------|--------------------|------|--------------------|
| A3 | Section C / SAI0.1 | C4 | Section D / SAI0.6 |
| A5 | Section A / SAI0.2 | C6 | Section A / SAI0.7 |
| A9 | Section A / SAI0.3 | C7 | Section B / SAI0.7 |
| A10 | Section B / SAI0.3 | C8 | Section C / SAI0.7 |
| B1 | Section A / SAI0.4 | E1 | Section A / SAI0.8 |
| B5 | Section A / SAI0.5 | E2 | Section B / SAI0.8 |
| B6 | Section B / SAI0.5 | F1 | Section A / SAI0.9 |
| B7 | Section C / SAI0.5 | F3 | Section C / SAI0.9 |
| C3 | Section C / SAI0.6 | F5 | Section E / SAI0.9 |

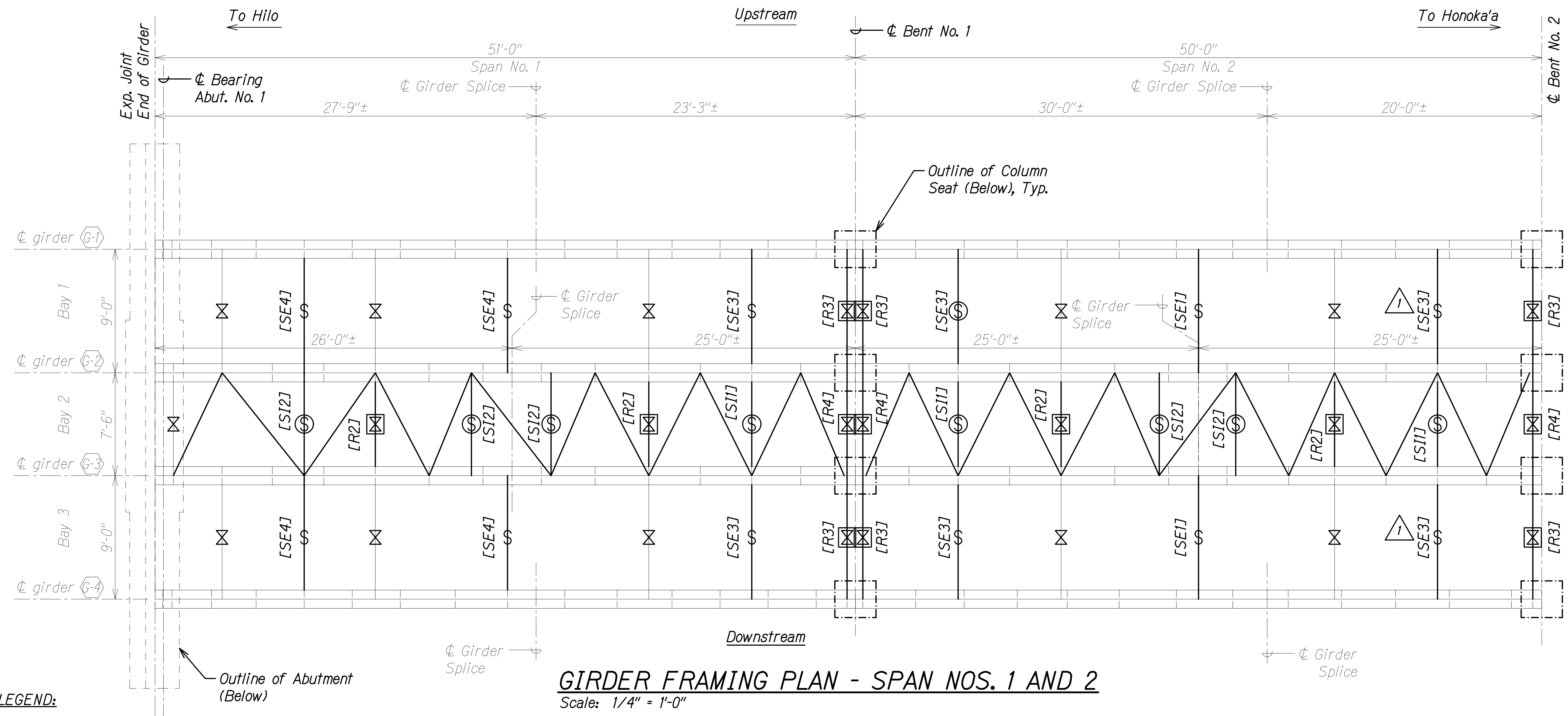


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SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**GIRDER FRAMING DEMOLITION
PLAN - SPAN NOS. 9 AND 10**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.5 OF 23 SHEETS



LEGEND:

- ⊗ Exist. Cross Frame to Remain
- ⊗ Exist. Cross Frame to be Removed and Replaced
- ⊗ Exist. Strut to be Removed and Replaced
- ⊗ New Strut
- △ New Lateral Diagonal Bracing at Bottom Flange, See Sheet SA10.21 through SA10.24

[] Cross Frame or Strut Mark, See Table

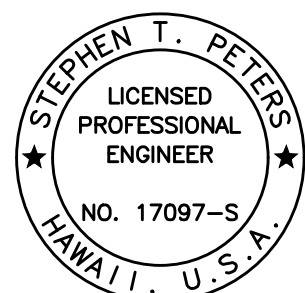
NOTES:

- Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor.
- Provided dimensions are based on As-Built plans.

GIRDER FRAMING PLAN - SPAN NOS. 1 AND 2
Scale: 1/4" = 1'-0"

INSTALLATION OF MEMBERS AND CONNECTIONS

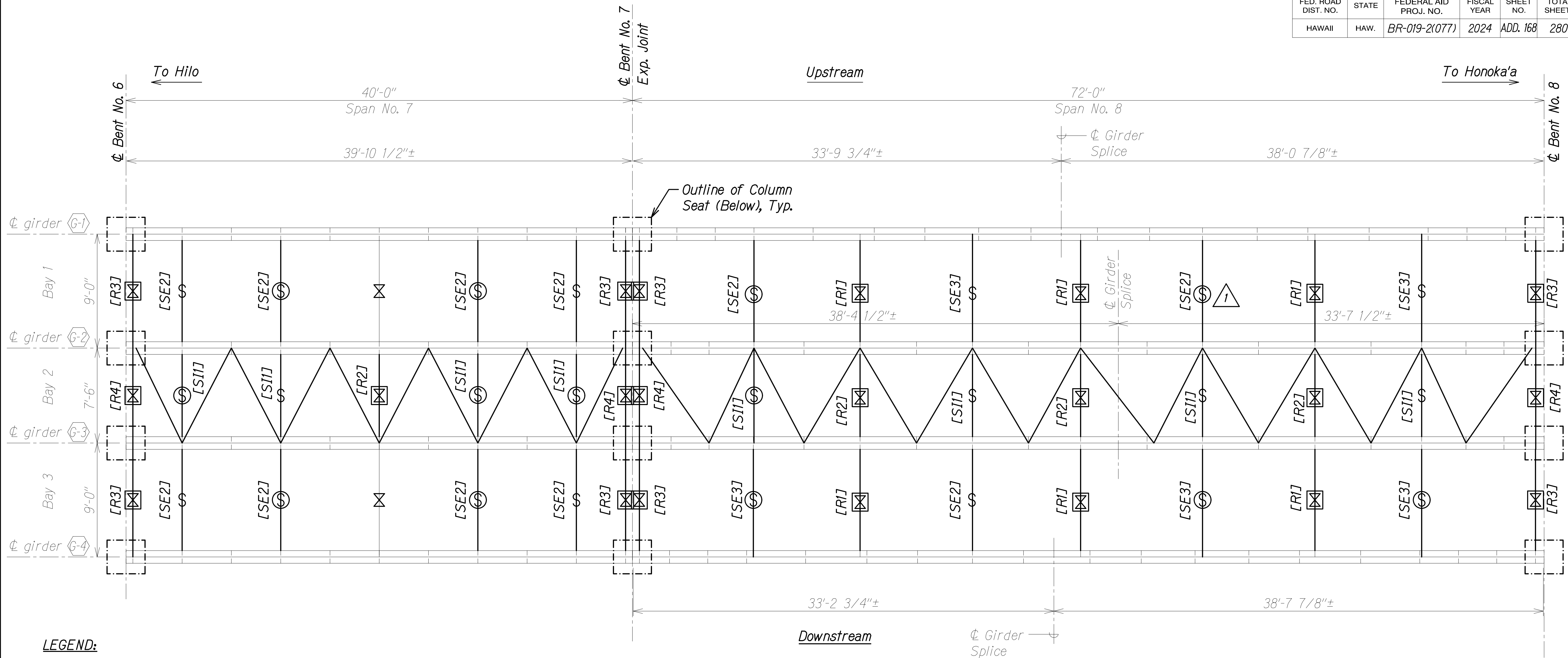
| MARK | REFERENCE | MARK | REFERENCE |
|------|---------------------|------|---------------------|
| SE1 | Section A / SA10.12 | R3 | Section C / SA10.14 |
| SE3 | Section C / SA10.12 | R4 | Section D / SA10.14 |
| SE4 | Section D / SA10.12 | - | - |
| SI1 | Section A / SA10.13 | - | - |
| SI2 | Section B / SA10.13 | - | - |
| R2 | Section B / SA10.14 | - | - |



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SIGNATURE: *Stephen T. Peters*
EXPIRATION DATE OF THE LICENSE: 4-30-26

| | |
|--|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION GIRDER FRAMING PLAN - SPAN NOS. 1 AND 2 HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 168 | 280 |



LEGEND:

- ⊗ Exist. Cross Frame to Remain
⊗ Exist. Cross Frame to be Removed and Replaced
\$ Exist. Strut to be Removed and Replaced
⊙ New Strut
△ New Lateral Diagonal Bracing at Bottom Flange, See Sheet SA10.21 through SA10.24
[] Cross Frame or Strut Mark, See Table

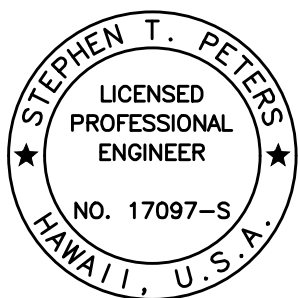
NOTES:

- Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor.
- Provided dimensions are based on As-Built plans.

GIRDER FRAMING PLAN - SPAN NOS. 7 AND 8

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

| INSTALLATION OF MEMBERS AND CONNECTIONS | | | |
|---|---------------------|------|---------------------|
| MARK | REFERENCE | MARK | REFERENCE |
| SE2 | Section B / SA10.12 | R1 | Section A / SA10.14 |
| SE3 | Section C / SA10.12 | R2 | Section B / SA10.14 |
| SI1 | Section A / SA10.13 | R3 | Section C / SA10.14 |
| - | - | R4 | Section D / SA10.14 |



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SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

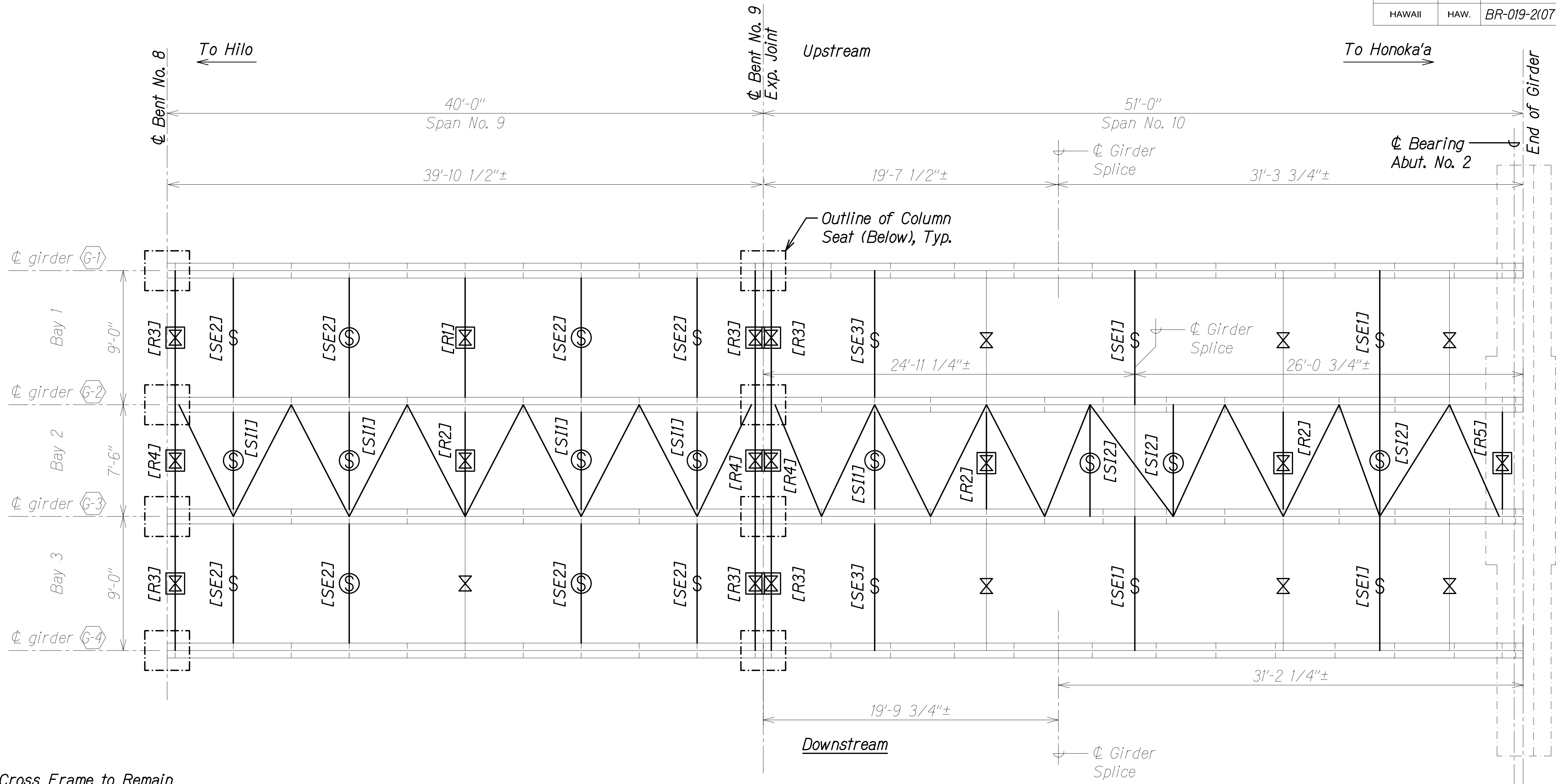
**GIRDER FRAMING PLAN -
SPAN NOS. 7 AND 8**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.9 OF 23 SHEETS

| | | |
|---------|----------|------------------|
| 12/6/24 | 1 | Revised Callouts |
| DATE | REVISION | |



LEGEND:

- ⊗ Exist. Cross Frame to Remain
- ⊗ Exist. Cross Frame to be Removed and Replaced
- ⊗ Exist. Strut to be Removed and Replaced
- ⊗ New Strut
- △ New Lateral Diagonal Bracing at Bottom Flange, See Sheet SA10.21 through SA10.24
- [] Cross Frame or Strut Mark, See Table

NOTES:

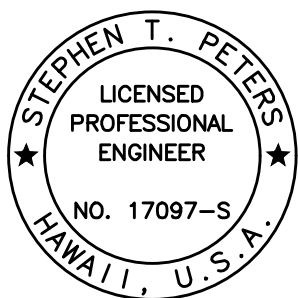
- Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor.
- Provided dimensions are based on As-Built plans.

GIRDER FRAMING PLAN - SPAN NOS. 9 AND 10

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

INSTALLATION OF MEMBERS AND CONNECTIONS

| MARK | REFERENCE | MARK | REFERENCE |
|------|---------------------|------|---------------------|
| SE1 | Section A / SA10.12 | R1 | Section A / SA10.14 |
| SE2 | Section B / SA10.12 | R2 | Section B / SA10.14 |
| SE3 | Section C / SA10.12 | R3 | Section C / SA10.14 |
| SI1 | Section A / SA10.13 | R4 | Section D / SA10.14 |
| SI2 | Section B / SA10.13 | R5 | Section A / SA10.15 |



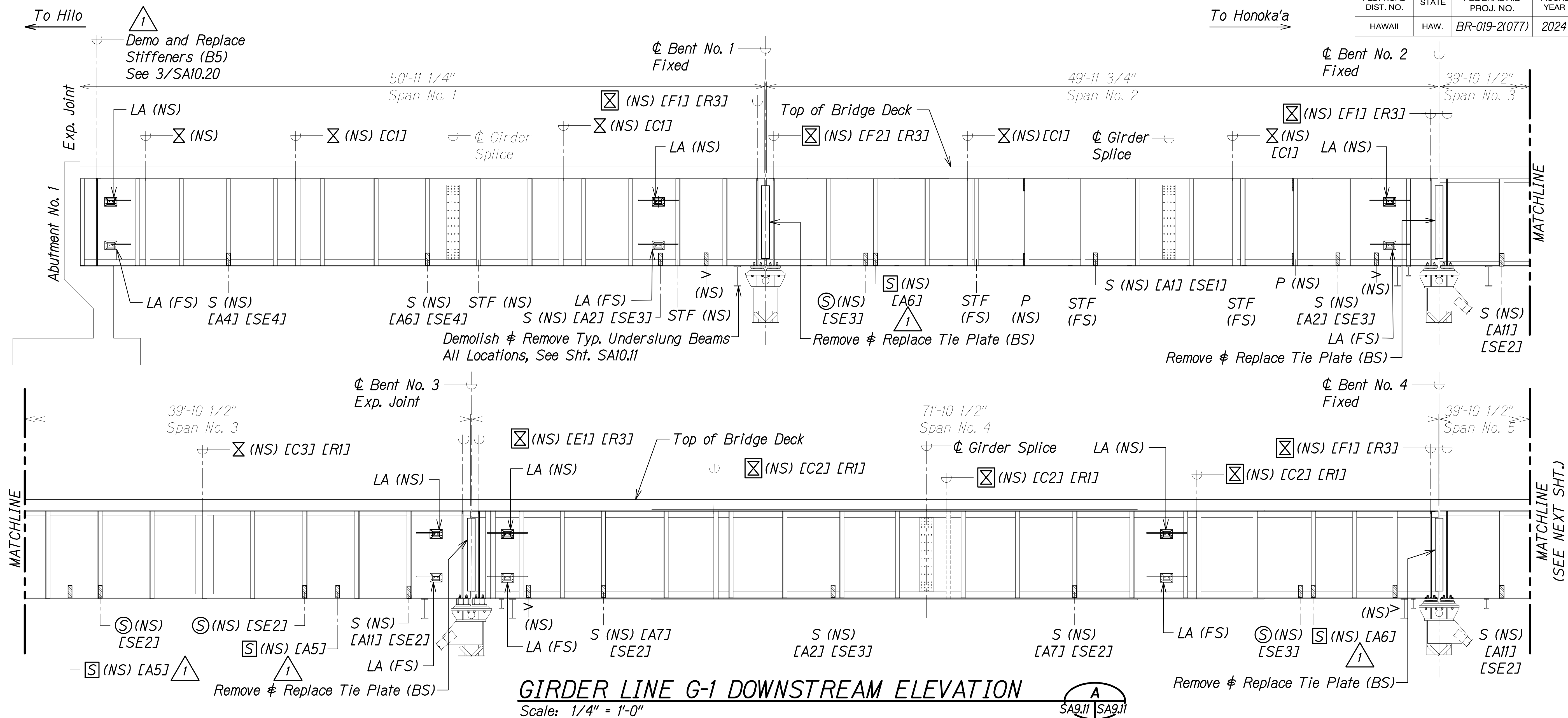
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**GIRDER FRAMING PLAN -
SPAN NOS. 9 AND 10**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.10 OF 18 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 170 | 280 |



LEGEND:

LA Lifeline Anchor,
See Sheet SA10.27

⊗ Cross Frame

BS Both Sides

FS Far Side

NS Near Side

⊙ New Strut

S Exist. Strut to be Removed
and Replaced

⊠ Exist. Strut to be Removed

⊗ Cross Frame to be Removed
and Replaced

STF Deformed Stiffener to be
Repaired, See Structural
General Note 5.AB.

P Plates to be Removed from
Stiffener Location. Plug Weld
Resulting Holes

⌋ Exist. Angle Iron to be
Removed, See Detail 1/SA10.11

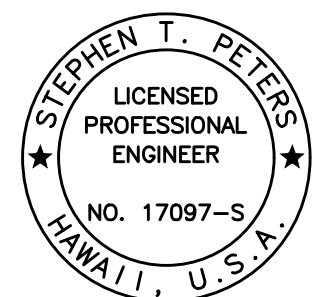
△ Exist. Ancillary Flange Tab to
be Removed, See Detail
3/SA10.11

| DEMOLITION OF MEMBERS ⊗ CONNECTIONS | |
|--|--------------------|
| MARK | REFERENCE |
| A1 | Section A / SA10.1 |
| A2 | Section B / SA10.1 |
| A4 | Section D / SA10.1 |
| A5 | Section A / SA10.2 |
| A6 | Section B / SA10.2 |
| A7 | Section C / SA10.2 |
| A11 | Section C / SA10.3 |
| C1 | Section A / SA10.6 |
| C2 | Section B / SA10.6 |
| C3 | Section C / SA10.6 |
| E1 | Section A / SA10.8 |
| F1 | Section A / SA10.9 |
| F2 | Section B / SA10.9 |

| INSTALLATION OF MEMBERS ⊗ CONN. | |
|------------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| SE4 | Section D / SA10.12 |
| R1 | Section A / SA10.14 |
| R3 | Section C / SA10.14 |

NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings. See Sheets SA10.10 and SA10.25 for tie plate details.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters*
EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER LINE G-1
DOWNSTREAM ELEVATION**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

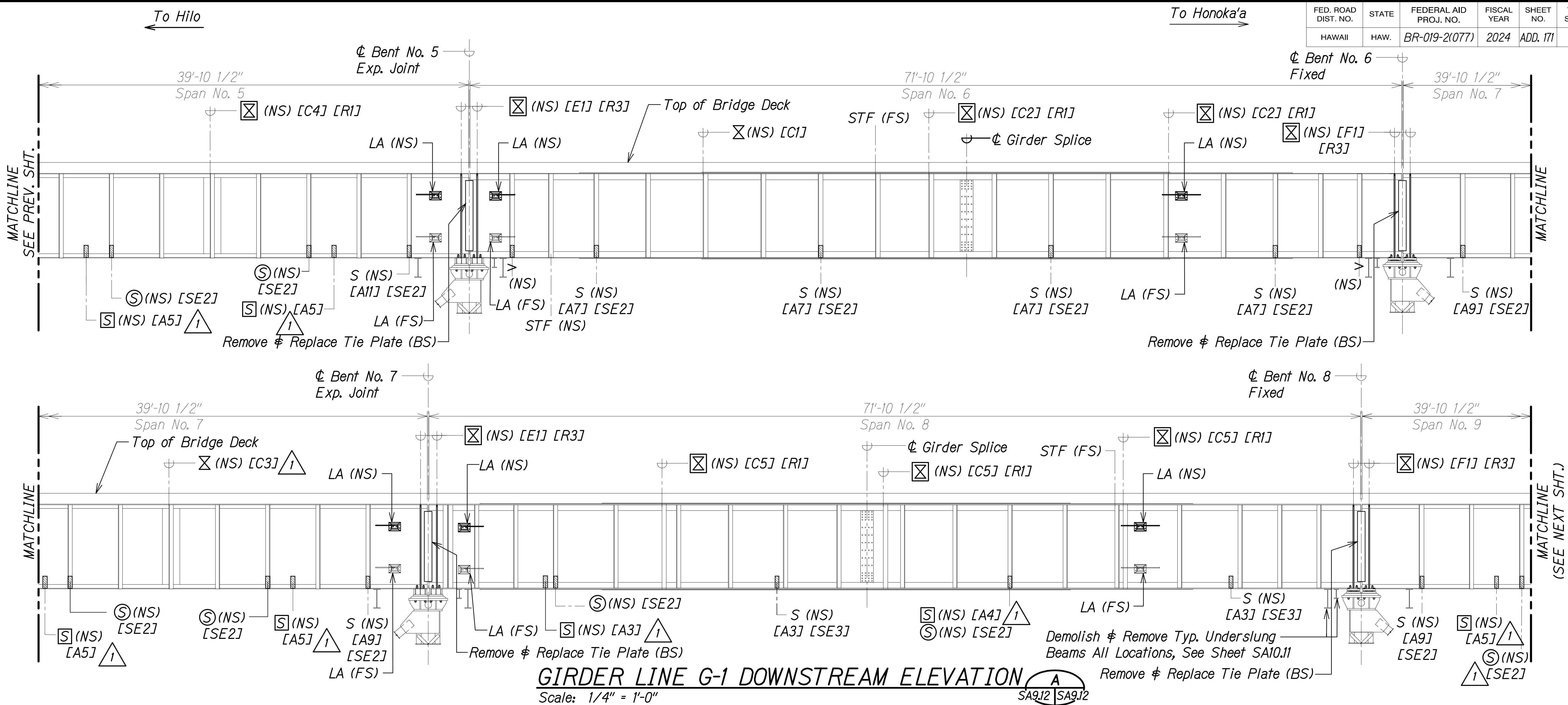
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.11 OF 23 SHEETS

| | |
|---------|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\12-06-24 ADD\NSR-SA0911-SA0922 GIRDER ELEV ADD2.DWG PLOT TIME: 12-04-24 3:25 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 171 | 280 |



GIRDER LINE G-1 DOWNSTREAM ELEVATION A
Scale: 1/4" = 1'-0" SA9.12 SA9.12

LEGEND:

- LA Lifeline Anchor, See Sheet SA10.27
- X Cross Frame
- BS Both Sides
- FS Far Side
- NS Near Side
- (S) New Strut
- S Exist. Strut to be Removed and Replaced
- [S] Exist. Strut to be Removed
- [X] Cross Frame to be Removed and Replaced

- STF Deformed Stiffener to be Repaired, See Structural General Note 5.AB.
- P Plates to be Removed from Stiffener Location. Plug Weld Resulting Holes
- ⌋ Exist. Angle Iron to be Removed, See Detail 1/SA10.11
- Δ Exist. Ancillary Flange Tab to be Removed, See Detail 3/SA10.11

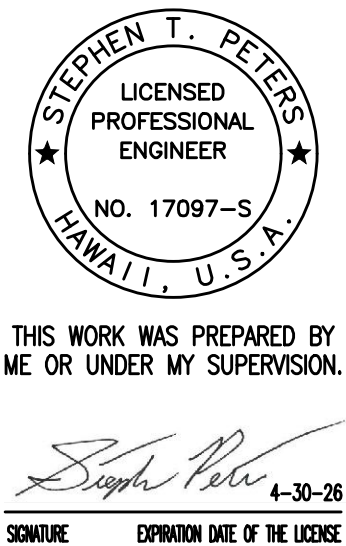
| DEMOLITION OF MEMBERS & CONNECTIONS | |
|-------------------------------------|--------------------|
| MARK | REFERENCE |
| A3 | Section C / SA10.1 |
| A4 | Section D / SA10.1 |
| A5 | Section A / SA10.2 |
| A7 | Section C / SA10.2 |
| A9 | Section A / SA10.3 |
| A11 | Section C / SA10.3 |
| C1 | Section A / SA10.6 |
| C2 | Section B / SA10.6 |
| C3 | Section C / SA10.6 |
| C4 | Section D / SA10.6 |
| C5 | Section E / SA10.6 |
| E1 | Section A / SA10.8 |
| F1 | Section A / SA10.9 |

| INSTALLATION OF MEMBERS & CONN. | |
|---------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| SE4 | Section D / SA10.12 |
| R1 | Section A / SA10.14 |
| R2 | Section B / SA10.14 |
| R3 | Section C / SA10.14 |

NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings. See Sheets SA10.10 and SA10.25 for tie plate details.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

| | |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DRAWN BY | |
| DESIGNED BY | |
| QUANTITIES BY | |
| CHECKED BY | |



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER LINE G-1
DOWNSTREAM ELEVATION**

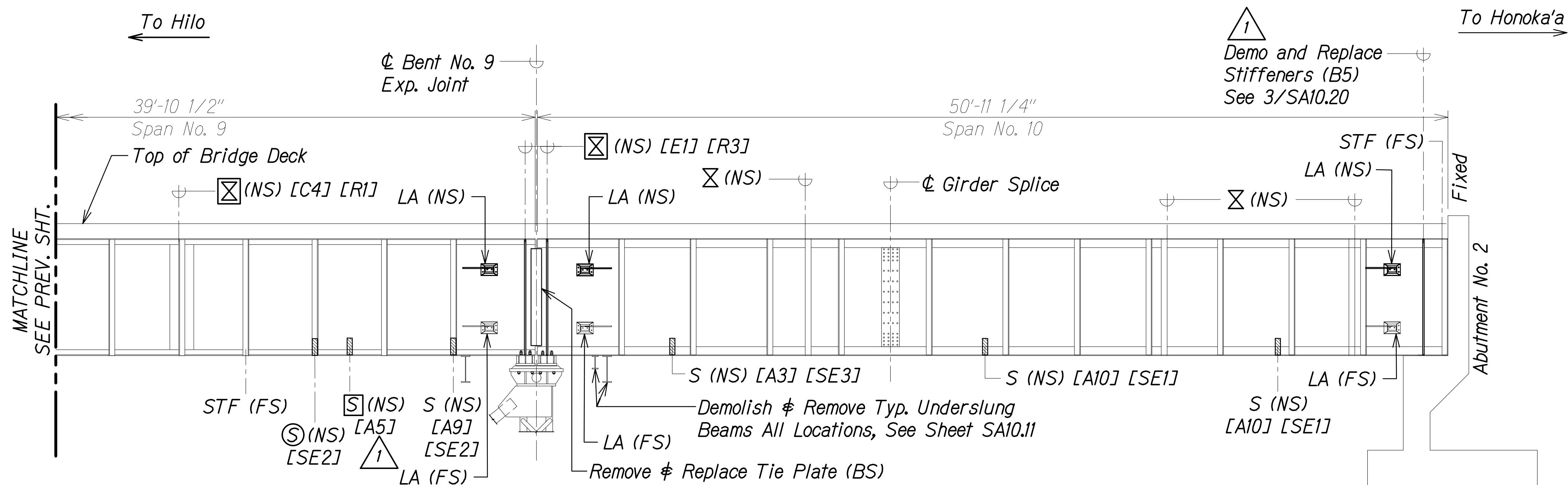
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.12 OF 23 SHEETS

| | |
|---------|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 172 | 280 |



GIRDER LINE G-1
DOWNSTREAM ELEVATION
Scale: 1/4" = 1'-0"
A
SA9.13 | SA9.13

LEGEND:

LA Lifeline Anchor,
See Sheet SA10.27

⊗ Cross Frame

BS Both Sides

FS Far Side

NS Near Side

⊙ New Strut

S Exist. Strut to be Removed
and Replaced

⊠ Exist. Strut to be Removed

⊗ Cross Frame to be Removed
and Replaced

STF Deformed Stiffener to be
Repaired, See Structural
General Note 5.AB.

P Plates to be Removed from
Stiffener Location. Plug Weld
Resulting Holes

⌋ Exist. Angle Iron to be
Removed, See Detail 1/SA10.11

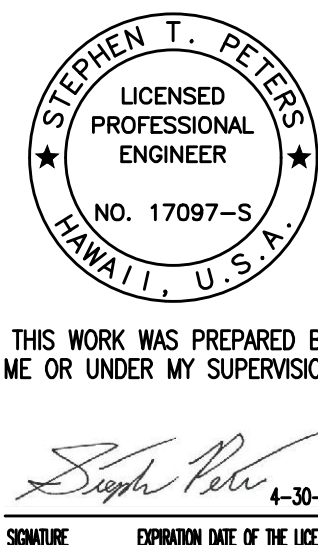
△ Exist. Ancillary Flange Tab to
be Removed, See Detail
3/SA10.11

| DEMOLITION OF MEMBERS & CONNECTIONS | |
|--|--------------------|
| MARK | REFERENCE |
| A3 | Section C / SA10.1 |
| A5 | Section A / SA10.2 |
| A9 | Section A / SA10.3 |
| A10 | Section B / SA10.3 |
| C4 | Section D / SA10.6 |
| E1 | Section A / SA10.8 |

| INSTALLATION OF MEMBERS & CONN. | |
|------------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| R1 | Section A / SA10.14 |
| R3 | Section C / SA10.14 |
| R4 | Section D / SA10.14 |

NOTES:

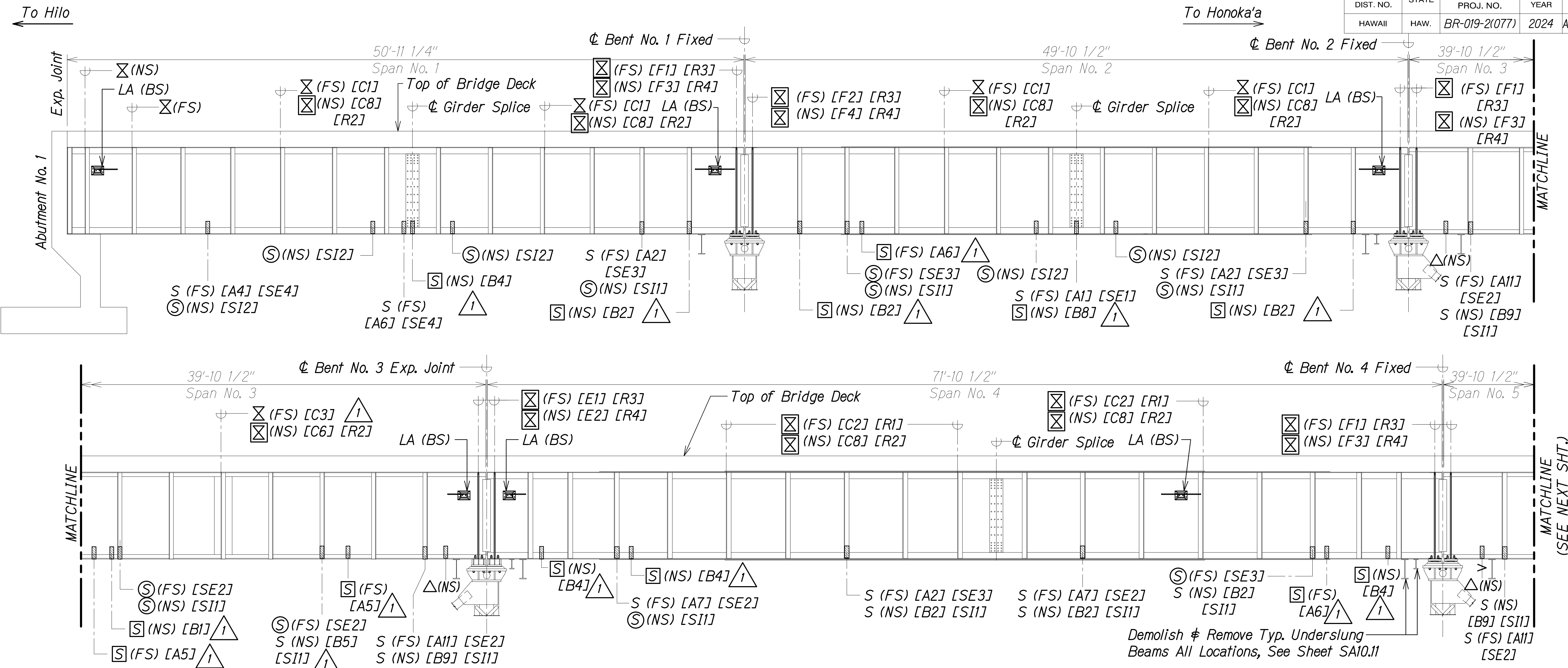
- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings. See Sheets SA10.10 and SA10.25 for tie plate details.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.



| | |
|---|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION GIRDER LINE G-1 DOWNSTREAM ELEVATION HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET No. SA9.13 OF 23 SHEETS | |

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A01 CAD\12-06-24 ADD\NSR-SA0911-SA0922 GIRDER ELEV ADD2.DWG PLOT TIME: 12-04-24 3:26 PM

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 173 | 280 |



LEGEND:

- LA Lifeline Anchor, See Sheet SA10.27
X Cross Frame
BS Both Sides
S Exist. Strut to be Removed and Replaced
[S] Exist. Strut to be Removed
[X] Cross Frame to be Removed and Replaced
STF Deformed Stiffener to be Repaired, See Structural General Note 5.AB.
P Plates to be Removed from Stiffener Location. Plug Weld Resulting Holes
Exist. Angle Iron to be Removed, See Detail 1/SA10.11
Exist. Ancillary Flange Tab to be Removed, See Detail 3/SA10.11
- FS Far Side
NS Near Side
New Strut

GIRDER LINE G-2 DOWNSTREAM ELEVATION

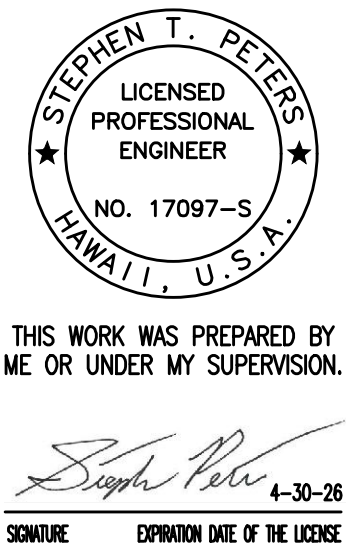
Scale: 1/4" = 1'-0"

| DEMOLITION OF MEMBERS & CONNECTIONS | | | |
|-------------------------------------|--------------------|------|--------------------|
| MARK | REFERENCE | MARK | REFERENCE |
| A1 | Section A / SA10.1 | B9 | Section E / SA10.5 |
| A2 | Section B / SA10.1 | C1 | Section A / SA10.6 |
| A4 | Section D / SA10.1 | C2 | Section B / SA10.6 |
| A5 | Section A / SA10.2 | C3 | Section C / SA10.6 |
| A6 | Section B / SA10.2 | C6 | Section A / SA10.7 |
| A7 | Section C / SA10.2 | C8 | Section C / SA10.7 |
| A11 | Section C / SA10.3 | E1 | Section A / SA10.8 |
| B1 | Section A / SA10.4 | E2 | Section B / SA10.8 |
| B2 | Section B / SA10.4 | F1 | Section A / SA10.9 |
| B4 | Section D / SA10.4 | F2 | Section B / SA10.9 |
| B5 | Section A / SA10.5 | F3 | Section C / SA10.9 |
| B8 | Section D / SA10.5 | F4 | Section D / SA10.9 |

| INSTALLATION OF MEMBERS & CONN. | |
|---------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| SE4 | Section D / SA10.12 |
| SI1 | Section A / SA10.13 |
| SI2 | Section B / SA10.13 |
| R1 | Section A / SA10.14 |
| R2 | Section B / SA10.14 |
| R3 | Section C / SA10.14 |
| R4 | Section D / SA10.14 |

NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER LINE G-2
DOWNSTREAM ELEVATION**

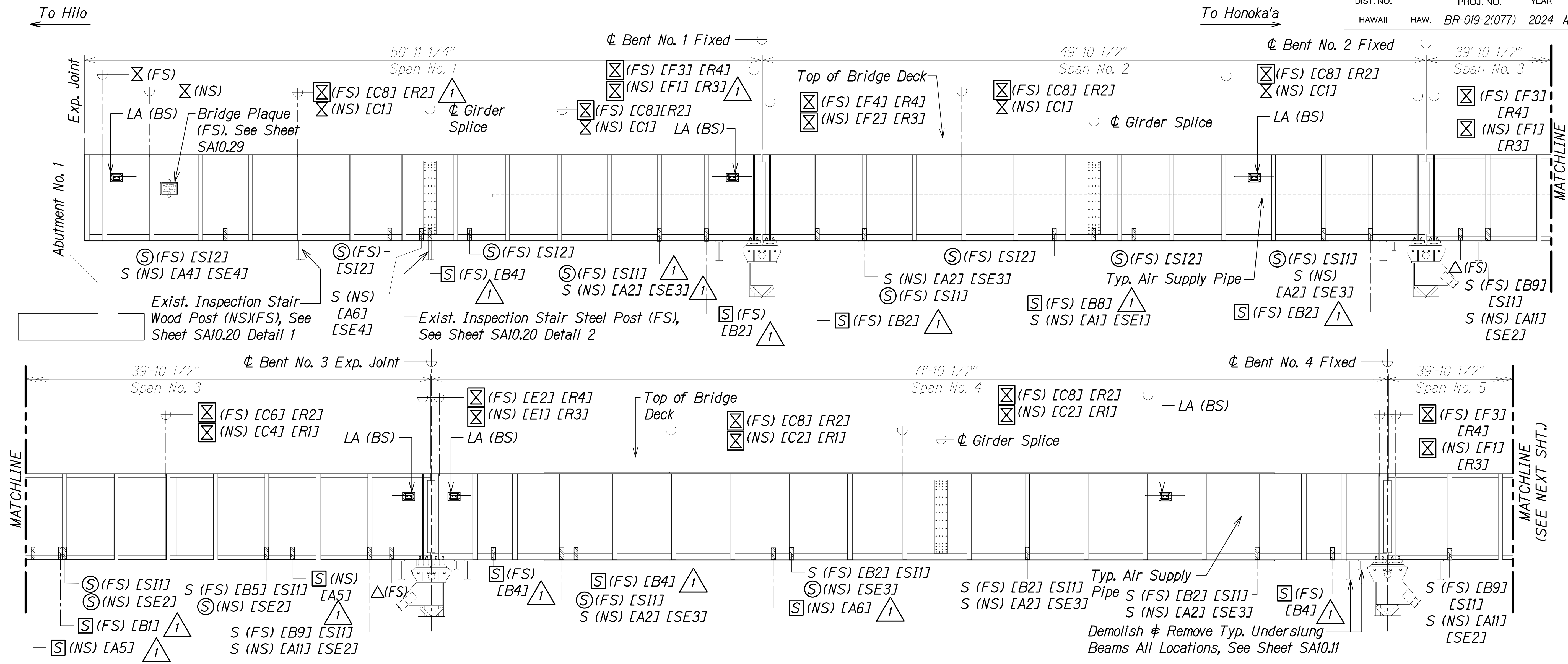
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.14 OF 23 SHEETS

| | |
|---------|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 176 | 280 |



LEGEND:

- | | | | |
|-----|---|-----|-----------|
| LA | Lifeline Anchor, See Sheet SA10.27 | FS | Far Side |
| X | Cross Frame | NS | Near Side |
| BS | Both Sides | (S) | New Strut |
| S | Exist. Strut to be Removed and Replaced | | |
| [S] | Exist. Strut to be Removed | | |
| [X] | Cross Frame to be Removed and Replaced | | |
| STF | Deformed Stiffener to be Repaired, See Structural General Note 5.AB. | | |
| P | Plates to be Removed from Stiffener Location. Plug Weld Resulting Holes | | |
| ↗ | Exist. Angle Iron to be Removed, See Detail 1/SA10.11 | | |
| △ | Exist. Ancillary Flange Tab to be Removed, See Detail 3/SA10.11 | | |

GIRDER LINE G-3 DOWNSTREAM ELEVATION

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

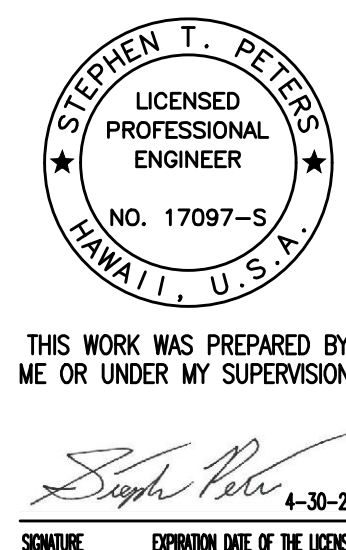
A
SA9.17 SA9.17

| DEMOLITION OF MEMBERS & CONNECTIONS | | | |
|-------------------------------------|--------------------|------|--------------------|
| MARK | REFERENCE | MARK | REFERENCE |
| A1 | Section A / SA10.1 | C1 | Section A / SA10.6 |
| A2 | Section B / SA10.1 | C2 | Section B / SA10.6 |
| A4 | Section D / SA10.1 | C4 | Section D / SA10.6 |
| A5 | Section A / SA10.2 | C6 | Section A / SA10.7 |
| A6 | Section B / SA10.2 | C8 | Section C / SA10.7 |
| A11 | Section C / SA10.3 | E1 | Section A / SA10.8 |
| B1 | Section A / SA10.4 | E2 | Section B / SA10.8 |
| B2 | Section B / SA10.4 | F1 | Section A / SA10.9 |
| B4 | Section D / SA10.4 | F2 | Section B / SA10.9 |
| B5 | Section A / SA10.5 | F3 | Section C / SA10.9 |
| B8 | Section D / SA10.5 | F4 | Section D / SA10.9 |
| B9 | Section E / SA10.5 | - | - |

| INSTALLATION OF MEMBERS & CONN. | |
|---------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| SE4 | Section D / SA10.12 |
| SI1 | Section A / SA10.13 |
| SI2 | Section B / SA10.13 |
| R1 | Section A / SA10.14 |
| R2 | Section B / SA10.14 |
| R3 | Section C / SA10.14 |
| R4 | Section D / SA10.14 |

NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

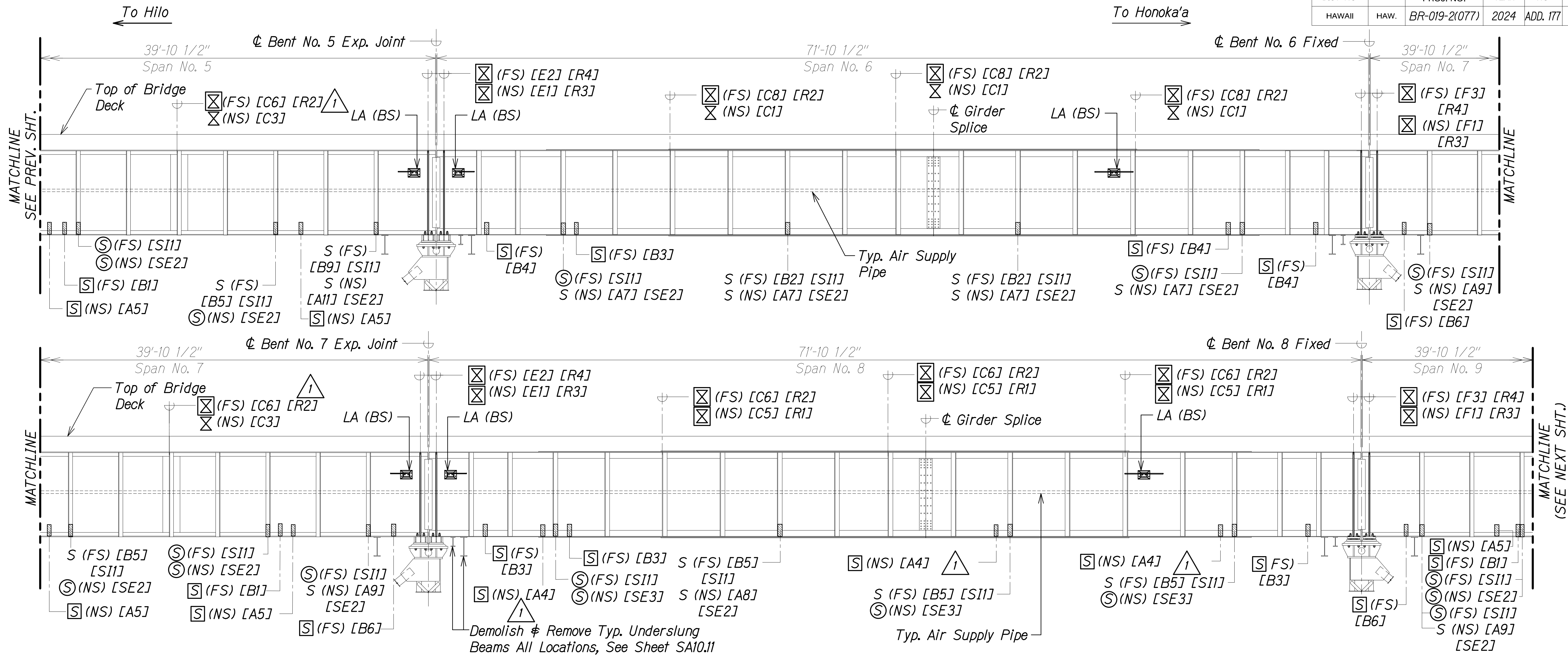
**GIRDER LINE G-3
DOWNSTREAM ELEVATION**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.17 OF 23 SHEETS

| | |
|---------|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |



LEGEND:

- LA Lifeline Anchor, See Sheet SA10.27
X Cross Frame
BS Both Sides
S Exist. Strut to be Removed and Replaced
[S] Exist. Strut to be Removed
[X] Cross Frame to be Removed and Replaced
STF Deformed Stiffener to be Repaired, See Structural General Note 5.AB.
P Plates to be Removed from Stiffener Location. Plug Weld Resulting Holes
△ Exist. Angle Iron to be Removed, See Detail 1/SA10.11
△ Exist. Ancillary Flange Tab to be Removed, See Detail 3/SA10.11
- FS Far Side
NS Near Side
Ⓢ New Strut

GIRDER LINE G-3 DOWNSTREAM ELEVATION

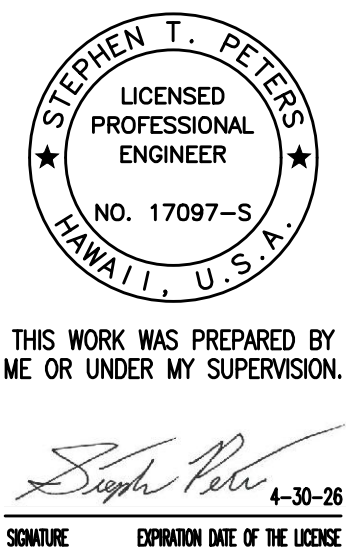
Scale: 1/4" = 1'-0"

| DEMOLITION OF MEMBERS & CONNECTIONS | | | |
|-------------------------------------|--------------------|------|--------------------|
| MARK | REFERENCE | MARK | REFERENCE |
| A4 | Section D / SA10.1 | B9 | Section E / SA10.5 |
| A5 | Section A / SA10.2 | C1 | Section A / SA10.6 |
| A7 | Section C / SA10.2 | C3 | Section C / SA10.6 |
| A8 | Section D / SA10.2 | C5 | Section E / SA10.6 |
| A9 | Section A / SA10.3 | C6 | Section A / SA10.7 |
| A11 | Section C / SA10.3 | C8 | Section C / SA10.7 |
| B1 | Section A / SA10.4 | E1 | Section A / SA10.8 |
| B2 | Section B / SA10.4 | E2 | Section B / SA10.8 |
| B3 | Section C / SA10.4 | F1 | Section A / SA10.9 |
| B4 | Section D / SA10.4 | F3 | Section C / SA10.9 |
| B5 | Section A / SA10.5 | - | - |
| B6 | Section B / SA10.5 | - | - |

| INSTALLATION OF MEMBERS & CONN. | |
|---------------------------------|---------------------|
| MARK | REFERENCE |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| SE4 | Section D / SA10.12 |
| SI1 | Section A / SA10.13 |
| SI2 | Section B / SA10.13 |
| R1 | Section A / SA10.14 |
| R2 | Section B / SA10.14 |
| R3 | Section C / SA10.14 |
| R4 | Section D / SA10.14 |

NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER LINE G-3
DOWNSTREAM ELEVATION**

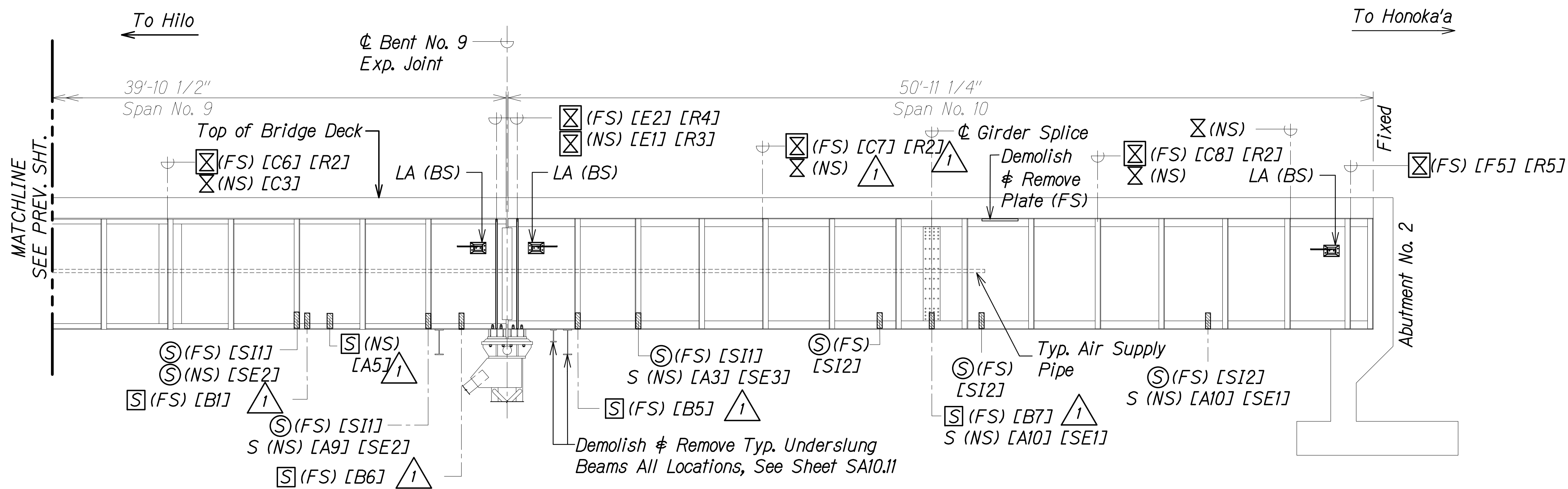
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.18 OF 23 SHEETS

| | |
|---------|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |

| | | | | | |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 178 | 280 |



GIRDER LINE G-3
DOWNSTREAM ELEVATION
Scale: 1/4" = 1'-0" SA9.19 SA9.19

LEGEND:

- LA Lifeline Anchor, See Sheet SA10.27
X Cross Frame
BS Both Sides
S Exist. Strut to be Removed and Replaced
S Exist. Strut to be Removed
X Cross Frame to be Removed and Replaced
STF Deformed Stiffener to be Repaired, See Structural General Note 5.AB.
P Plates to be Removed from Stiffener Location. Plug Weld Resulting Holes
X Exist. Angle Iron to be Removed, See Detail 1/SA10.11
X Exist. Ancillary Flange Tab to be Removed, See Detail 3/SA10.11
- FS Far Side
NS Near Side
S New Strut

| DEMOLITION OF MEMBERS & CONNECTIONS | | | |
|-------------------------------------|--------------------|------|--------------------|
| MARK | REFERENCE | MARK | REFERENCE |
| A3 | Section C / SA10.1 | C7 | Section C / SA10.7 |
| A5 | Section A / SA10.2 | C8 | Section C / SA10.7 |
| A9 | Section A / SA10.3 | E1 | Section A / SA10.8 |
| A10 | Section B / SA10.3 | E2 | Section B / SA10.8 |
| B1 | Section A / SA10.4 | F5 | Section E / SA10.9 |
| B5 | Section A / SA10.5 | - | - |
| B6 | Section B / SA10.5 | - | - |
| B7 | Section C / SA10.5 | - | - |
| C3 | Section C / SA10.6 | - | - |
| C6 | Section A / SA10.7 | - | - |

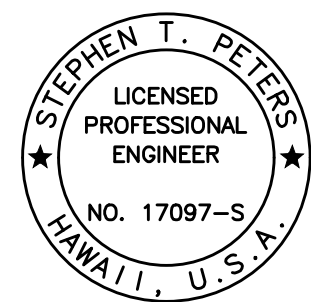
NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

| INSTALLATION OF MEMBERS & CONN. | |
|---------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| SI1 | Section A / SA10.13 |
| SI2 | Section B / SA10.13 |
| R1 | Section A / SA10.14 |
| R2 | Section B / SA10.14 |
| R3 | Section C / SA10.14 |
| R4 | Section D / SA10.14 |
| R5 | Section A / SA10.15 |

12/6/24 1 Revised Callouts

DATE REVISION



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

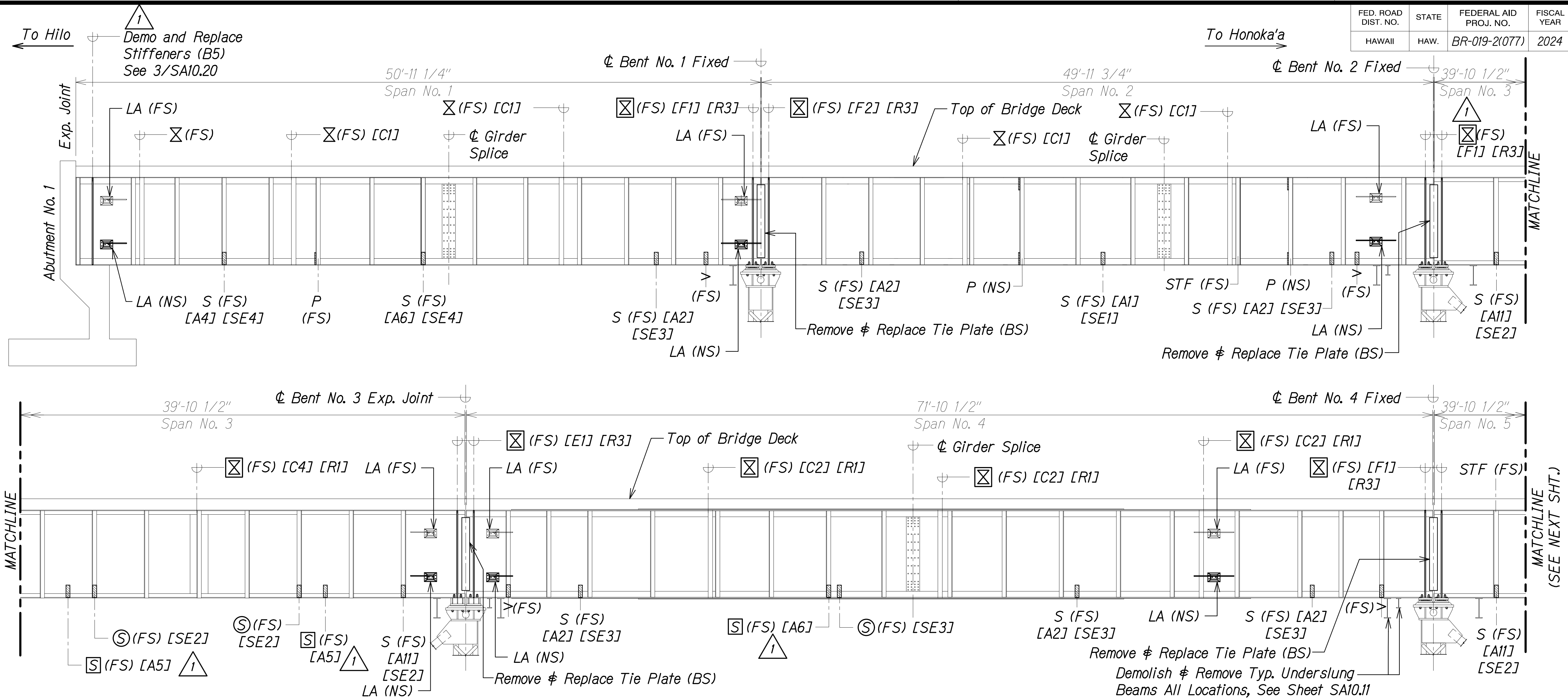
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**GIRDER LINE G-3
DOWNSTREAM ELEVATION**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.19 OF 23 SHEETS

ADD. 178

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 179 | 280 |



LEGEND:

- LA Lifeline Anchor, See Sheet SA10.27
X Cross Frame
BS Both Sides
S Exist. Strut to be Removed and Replaced
[S] Exist. Strut to be Removed
[X] Cross Frame to be Removed and Replaced
STF Deformed Stiffener to be Repaired, See Structural General Note 5.AB.
P Plates to be Removed from Stiffener Location. Plug Weld Resulting Holes
/ Exist. Angle Iron to be Removed, See Detail 1/SA10.11
Δ Exist. Ancillary Flange Tab to be Removed, See Detail 3/SA10.11
- FS Far Side
NS Near Side
Ⓢ New Strut

GIRDER LINE G-4 DOWNSTREAM ELEVATION

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

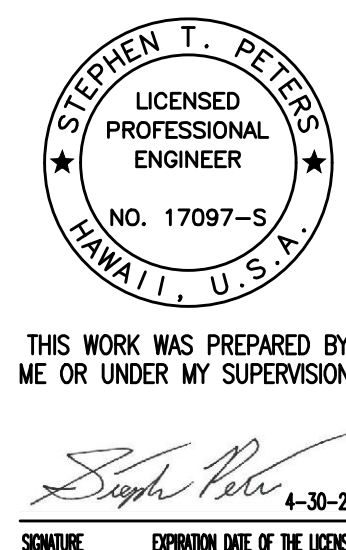
A
SA9.20 | SA9.20

| DEMOLITION OF MEMBERS & CONNECTIONS | |
|-------------------------------------|--------------------|
| MARK | REFERENCE |
| A1 | Section A / SA10.1 |
| A2 | Section B / SA10.1 |
| A4 | Section D / SA10.1 |
| A5 | Section A / SA10.2 |
| A6 | Section B / SA10.2 |
| A11 | Section C / SA10.3 |
| C1 | Section A / SA10.6 |
| C2 | Section B / SA10.6 |
| C4 | Section D / SA10.6 |
| E1 | Section A / SA10.8 |
| F1 | Section A / SA10.9 |
| F2 | Section B / SA10.9 |

| INSTALLATION OF MEMBERS & CONN. | |
|---------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| SE4 | Section D / SA10.12 |
| R1 | Section A / SA10.14 |
| R3 | Section C / SA10.14 |

NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings. See Sheets SA10.10 and SA10.25 for tie plate details.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER LINE G-4
DOWNSTREAM ELEVATION**

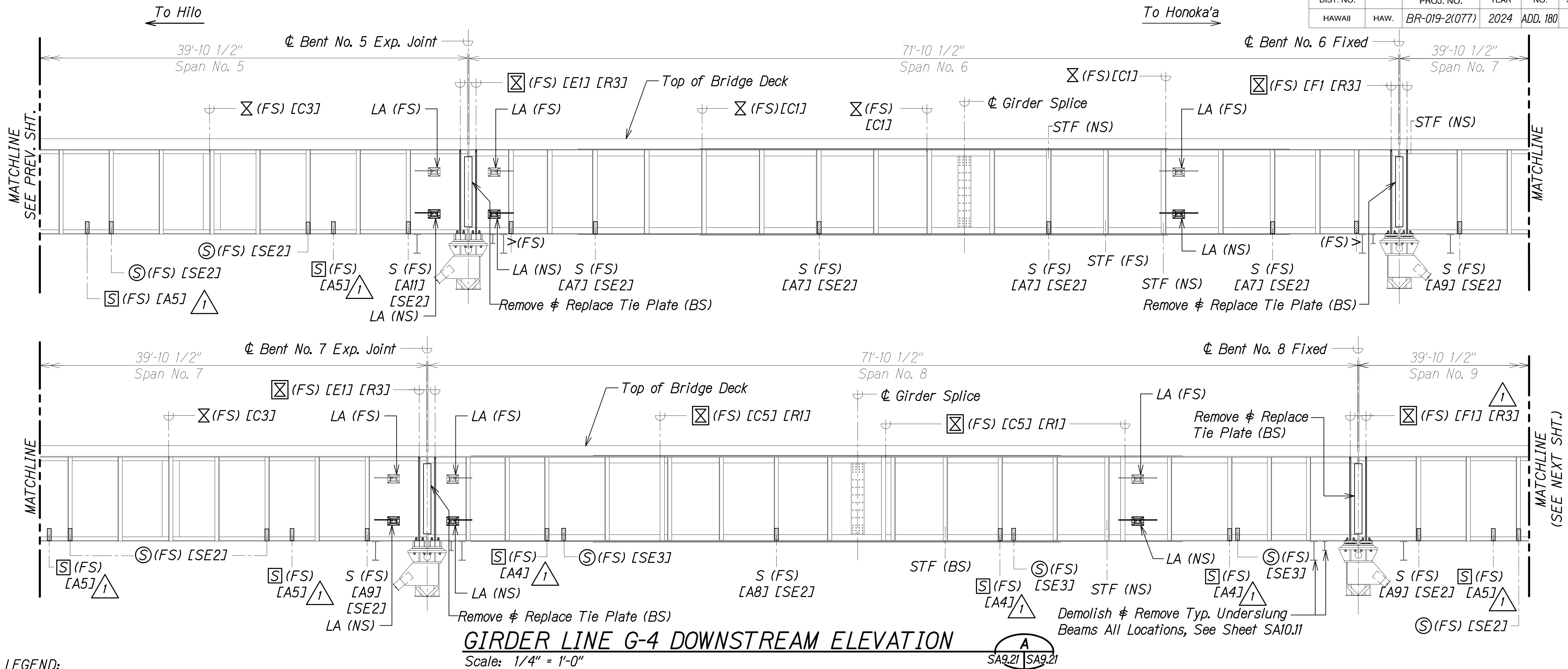
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.20 OF 23 SHEETS

| | |
|---------|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 180 | 280 |



LEGEND:

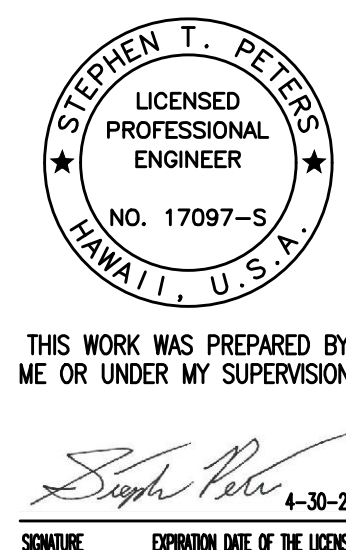
- LA Lifeline Anchor, See Sheet SA10.27
CF Cross Frame
BS Both Sides
S Exist. Strut to be Removed and Replaced
[S] Exist. Strut to be Removed
[X] Cross Frame to be Removed and Replaced
STF Deformed Stiffener to be Repaired, See Structural General Note 5.AB.
P Plates to be Removed from Stiffener Location. Plug Weld Resulting Holes
Exist. Angle Iron to be Removed, See Detail 1/SA10.11
Exist. Ancillary Flange Tab to be Removed, See Detail 3/SA10.11
- FS Far Side
NS Near Side
[S] New Strut

| DEMOLITION OF MEMBERS & CONNECTIONS | |
|-------------------------------------|--------------------|
| MARK | REFERENCE |
| A4 | Section D / SA10.1 |
| A5 | Section A / SA10.2 |
| A7 | Section C / SA10.2 |
| A8 | Section D / SA10.2 |
| A9 | Section A / SA10.3 |
| A11 | Section C / SA10.3 |
| C1 | Section A / SA10.6 |
| C3 | Section C / SA10.6 |
| C5 | Section E / SA10.6 |
| E1 | Section A / SA10.8 |
| F1 | Section A / SA10.9 |

| INSTALLATION OF MEMBERS & CONN. | |
|---------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| SE4 | Section D / SA10.12 |
| R1 | Section A / SA10.14 |
| R3 | Section C / SA10.14 |

NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings. See Sheets SA10.10 and SA10.25 for tie plate details.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GIRDER LINE G-4
DOWNSTREAM ELEVATION**

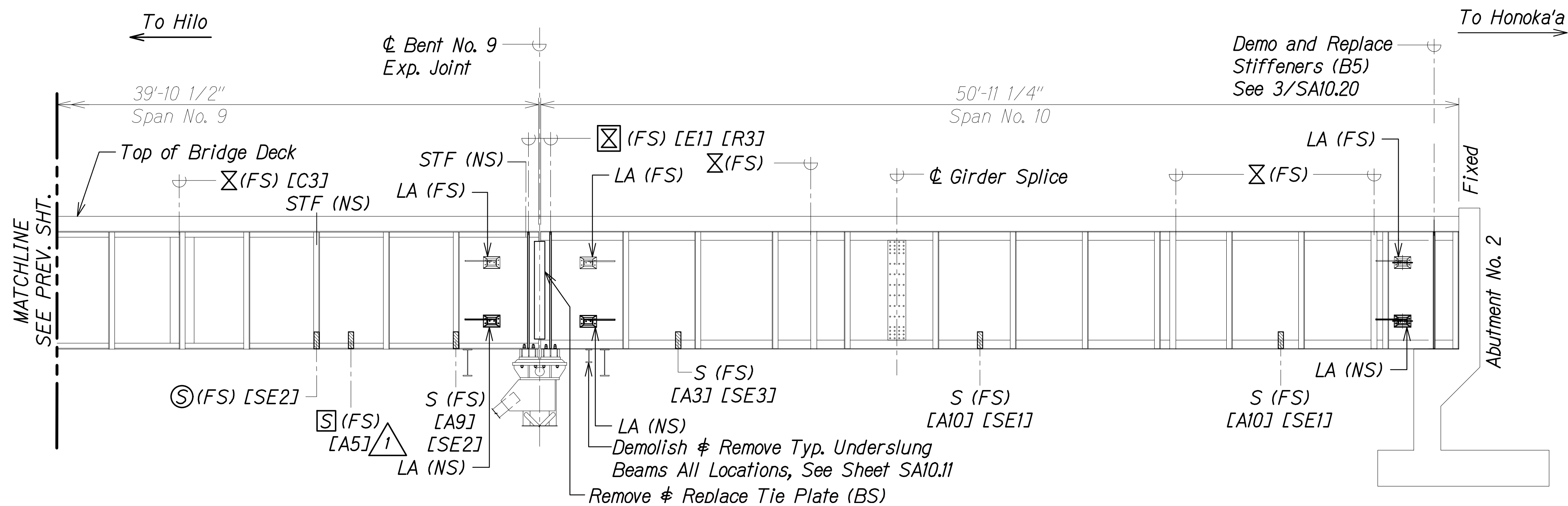
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.21 OF 23 SHEETS

| | |
|---------|--------------------|
| 12/6/24 | 1 Revised Callouts |
| DATE | REVISION |

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 181 | 280 |



GIRDER LINE G-4
DOWNSTREAM ELEVATION
Scale: 1/4" = 1'-0"
SA9.22 A SA9.22

LEGEND:

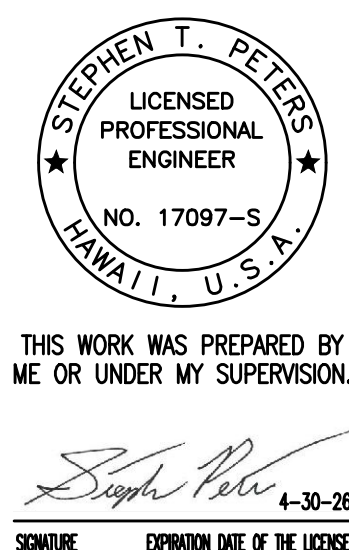
- LA Lifeline Anchor, See Sheet SA10.27
X Cross Frame
BS Both Sides
S Exist. Strut to be Removed and Replaced
S Exist. Strut to be Removed
X Cross Frame to be Removed and Replaced
STF Deformed Stiffener to be Repaired, See Structural General Note 5.AB.
P Plates to be Removed from Stiffener Location. Plug Weld Resulting Holes
A Exist. Angle Iron to be Removed, See Detail 1/SA10.11
Δ Exist. Ancillary Flange Tab to be Removed, See Detail 3/SA10.11
- FS Far Side
NS Near Side
S New Strut

| DEMOLITION OF MEMBERS & CONNECTIONS | |
|-------------------------------------|--------------------|
| MARK | REFERENCE |
| A3 | Section C / SA10.1 |
| A5 | Section A / SA10.2 |
| A9 | Section A / SA10.3 |
| A10 | Section B / SA10.3 |
| C3 | Section C / SA10.6 |
| E1 | Section A / SA10.8 |

| INSTALLATION OF MEMBERS & CONN. | |
|---------------------------------|---------------------|
| MARK | REFERENCE |
| SE1 | Section A / SA10.12 |
| SE2 | Section B / SA10.12 |
| SE3 | Section C / SA10.12 |
| R3 | Section C / SA10.14 |

NOTES:

- The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings. See Sheets SA10.10 and SA10.25 for tie plate details.
- Struts are shown hatched for clarity.
- Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.



| | | |
|---------|----------|------------------------|
| 12/6/24 | 1 | <i>Revised Callout</i> |
| DATE | REVISION | |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GIRDER LINE G-4
DOWNSTREAM ELEVATION

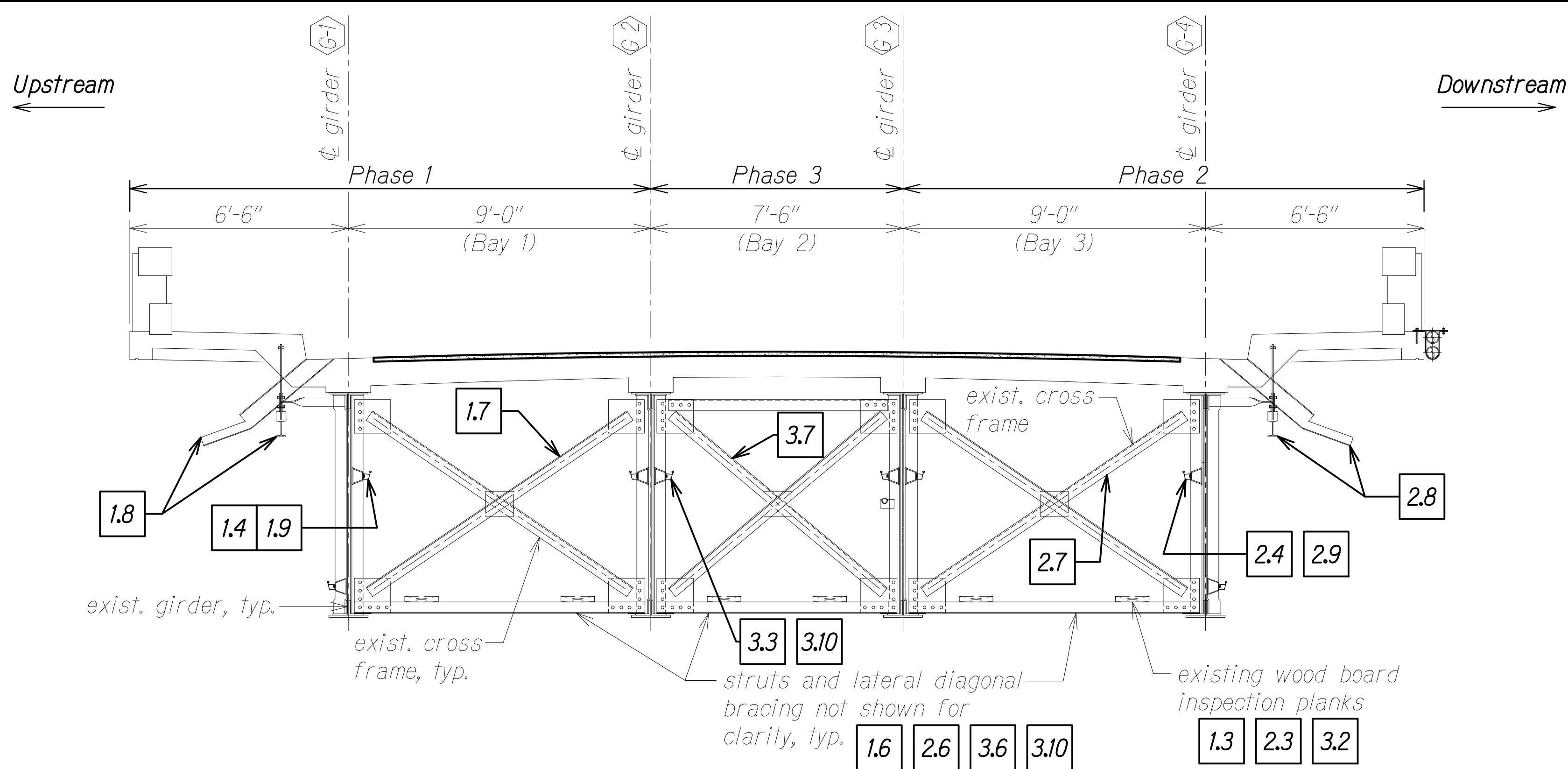
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted *Date: Oct. 2024*

SHEET No. SA9.22 OF 23 SHEETS

ADD. 181

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 182 | 280 |

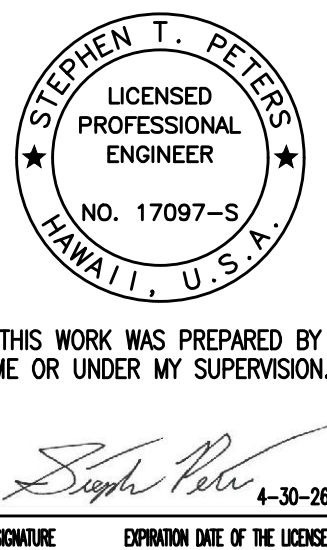


TYPICAL SUPERSTRUCTURE SECTION
Scale: NTS

- NOTES:**
1. The order of the construction sequence shall not be changed unless approved by the Engineer.
 2. Each sequence stage shall be completely finished before proceeding to the next stage unless otherwise noted. The Engineer will be the sole judge of whether the sequence stage is complete, and may direct the Contractor to stop work so as to complete work on the preceding sequence stage.
 3. Only one cross frame may be removed per span during each phase. Removed cross frame must be replaced before the next cross frame is removed.
 4. Make necessary steel repairs, grind and radius edges of steel plates, replace corroded rivets with bolts. Abrasive blast, paint, and caulk steel members. For cleaning and painting of existing and new cross frames, struts, lateral bottom bracing, connections and bearing replacements, see specifications.
 5. See Sheet SA10.24 for additional lateral diagonal bracing notes.
 6. See Sheets SA10.12 and SA10.13 for additional strut notes.
 7. See Sheets SA10.14 and SA10.15 for additional cross frame notes.
 8. For the overall construction sequence, see SA14 Series.

BRACING REMOVAL AND INSTALLATION SEQUENCE

| Phase 1 | Phase 2 | Phase 3 |
|--|--|---|
| 1.1 Install underdeck work platform and containment system. | 2.1 Install underdeck work platform and containment system. | 3.1 Install underdeck work platform and containment system. |
| 1.2 Install Traffic Control. See T Sheets. (Traffic on Downstream side of bridge) | 2.2 Adjust Traffic Control. See T Sheets. (Traffic on Upstream side of bridge). | 3.2 Remove all existing wood board inspection planks in Bay 2 and deliver to HDOT maintenance yard. |
| 1.3 Remove all existing wood board inspection planks in Bay 1 and deliver to HDOT maintenance yard. | 2.3 Remove all existing wood board inspection planks in Bay 3 and deliver to HDOT maintenance yard. | 3.3 Remove all existing underslung beams and ancillary steel. See Sheet SA10.11. Remove Lifelines. See Sheet SA10.27. |
| 1.4 Remove all existing underslung beams and ancillary steel. See Sheet SA10.11. Remove lifelines. See Sheet SA10.27. | 2.4 Remove all existing underslung beams and ancillary steel. See Sheet SA10.11. Remove lifelines. See Sheet SA10.27. | 3.4 Field fit struts and cross frames. See Notes 6 and 7. |
| 1.5 Field fit struts and cross frames. See Notes 5, 6, and 7. | 2.5 Field fit struts and cross frames. See Notes 5, 6, and 7. | 3.5 Remove all existing struts and lateral diagonal bracing. |
| 1.6 Remove and replace all existing struts in Bay 1. See Notes 4 and 6. | 2.6 Remove and replace all existing struts in Bay 3. See Notes 4 and 6. | 3.6 Install new struts in Bay 2. See Notes 4 and 6. |
| 1.7 Remove and replace existing cross frames in Bay 1 as indicated on Sheets SA9.1 through SA9.22. See Notes 3, 4 and 7. | 2.7 Remove and replace existing cross frames in Bay 3 as indicated on Sheets SA9.1 through SA9.22. See Notes 3, 4, and 7. | 3.7 Remove and replace existing cross frames and connections in Bay 2 as indicated on Sheets SA9.1 through SA9.22. See Notes 4 and 7. |
| 1.8 Repair deck drains and crane rails. See Sheet SA10.26. Remove tie plates. See Sheet SA10.10. Clean and paint Bay 1 and Upstream face of girders. | 2.8 Repair deck drains and crane rails. See Sheet SA10.26. Remove tie plates. See Sheet SA10.10. Clean and paint Bay 3 and Downstream face of girders. | 3.8 Field fit lateral diagonal bracing. See Note 5. |
| 1.9 Install lifelines and tie plates. See Sheet SA10.25. | 2.9 Install lifelines and tie plates. See Sheet SA10.25. | 3.9 Clean and Paint Bay 2. |
| | | 3.10 Install lifelines and lateral diagonal bracing. |



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**BRACING REMOVAL AND
INSTALLATION SEQUENCE**


HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET NoSA9.23 OF 23 SHEETS

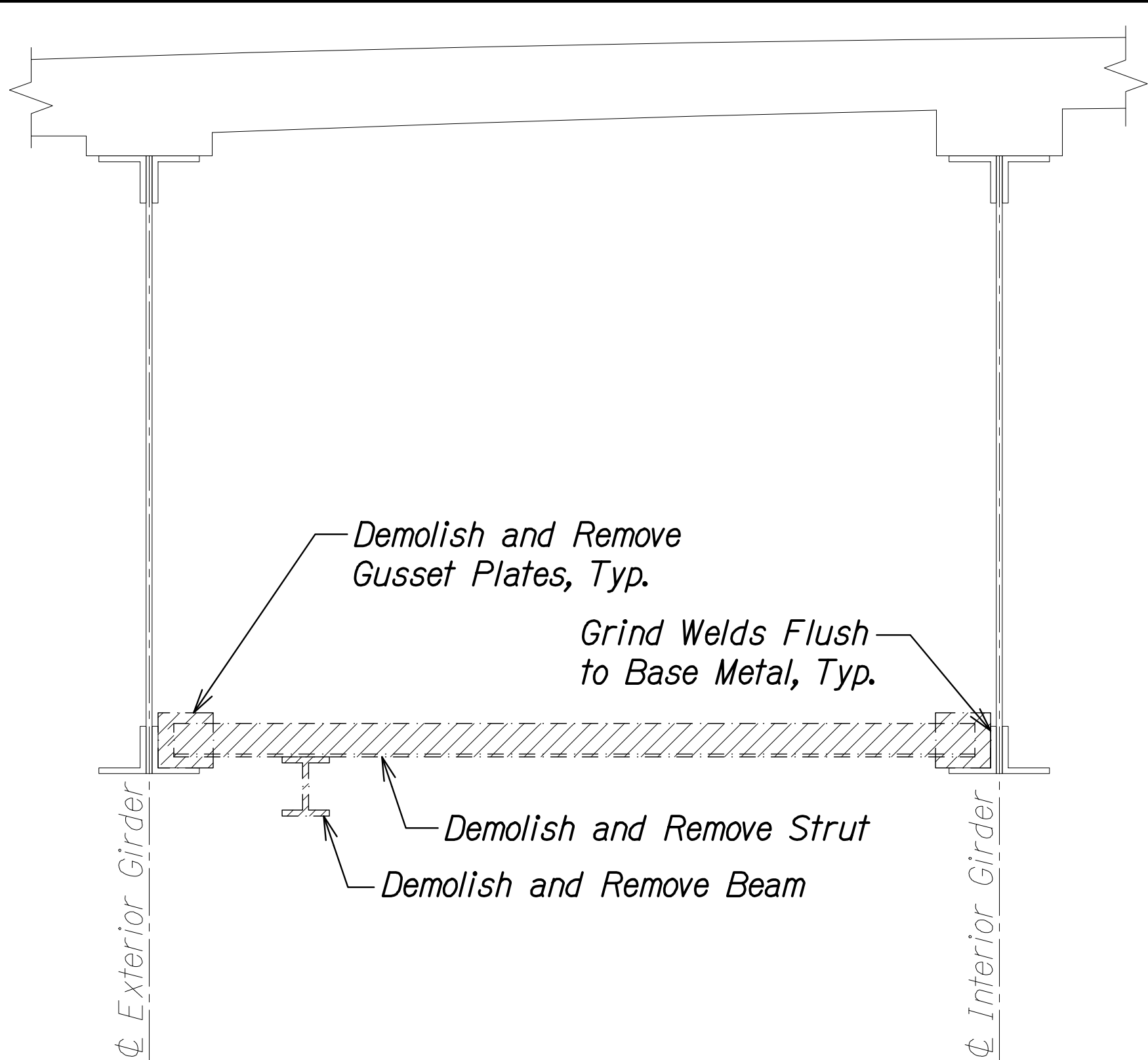
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 183 | 280 |

LEGEND:

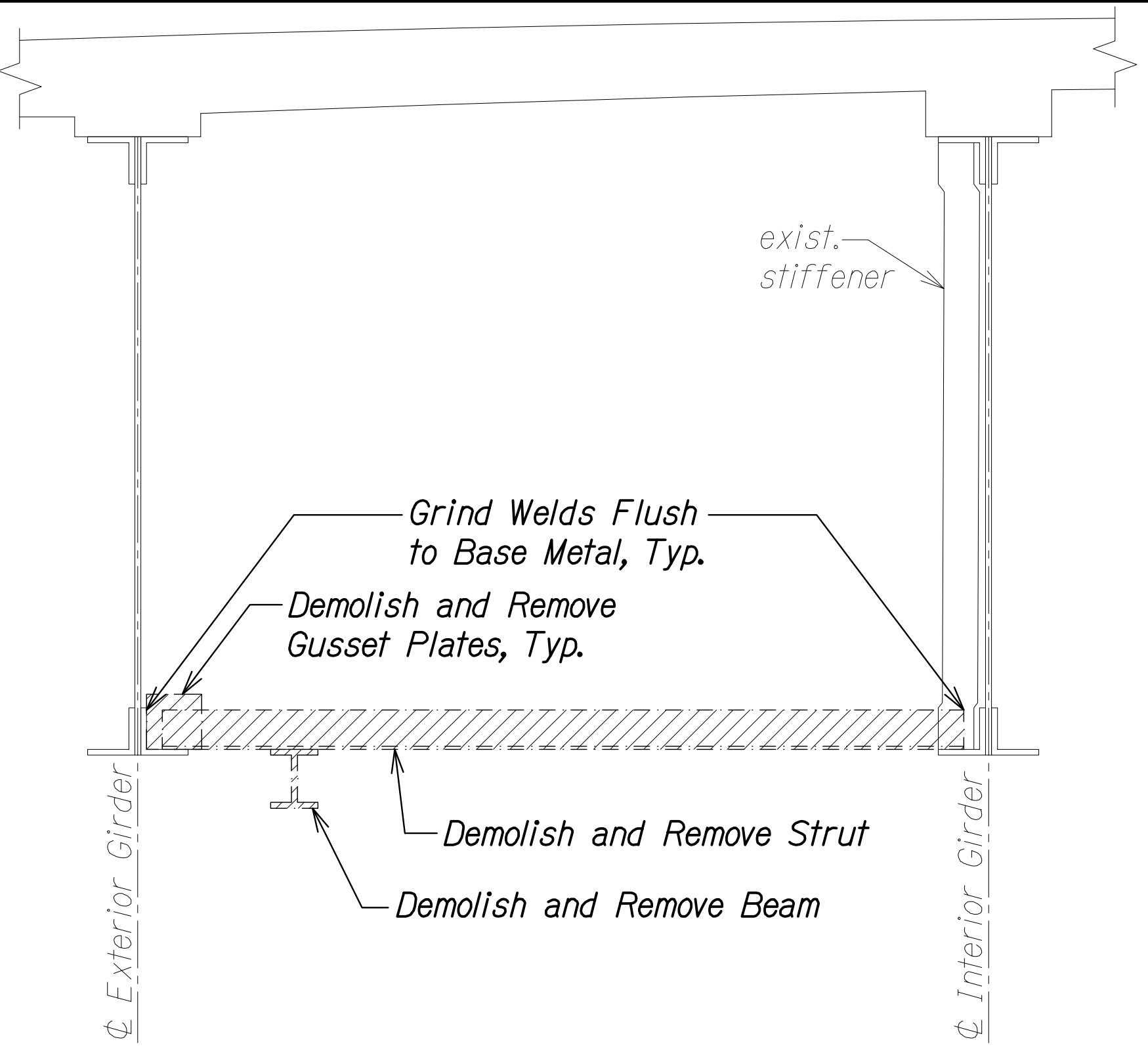
-  Demolish and Remove
- [XX] Strut Mark, See SA9.1 through SA9.5 for locations

NOTES:

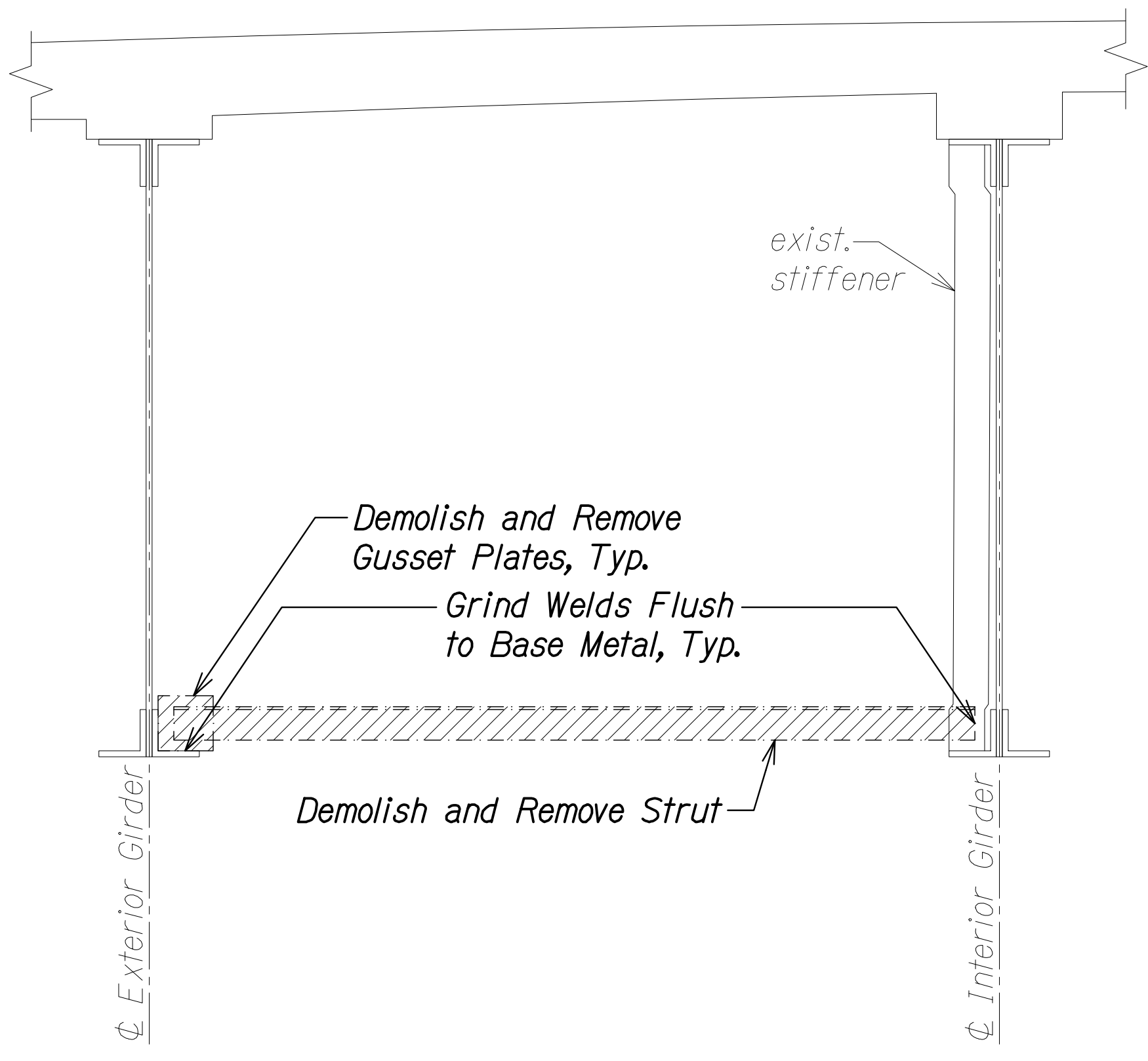
- The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
- Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
- Details beyond shown bay are not provided.
- See Sheet SA10.11 for miscellaneous demolition details



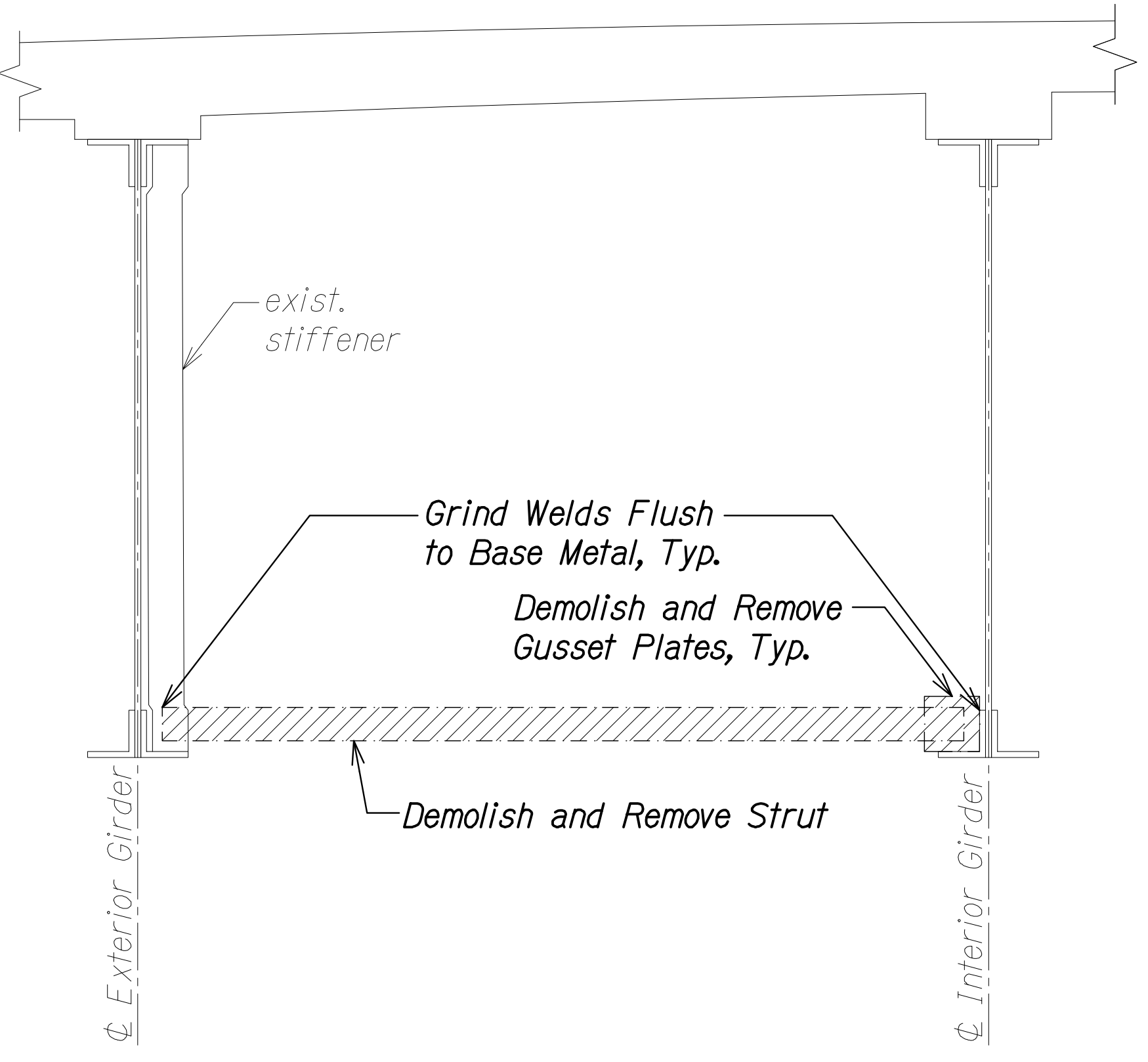
[A1] EXTERIOR BAY
STRUT DEMO SECTION **A**
Scale: 3/4" = 1'-0" SA10.1 SA10.1



[A2] EXTERIOR BAY
STRUT DEMO SECTION **B**
Scale: 3/4" = 1'-0" SA10.1 SA10.1



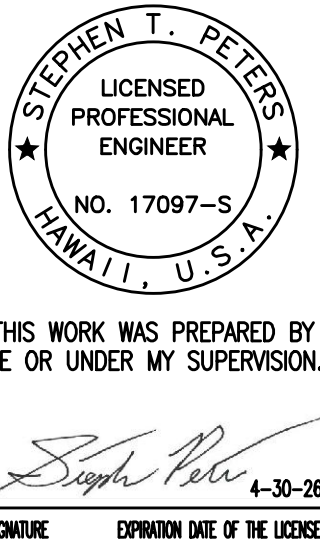
[A3] EXTERIOR BAY
STRUT DEMO SECTION **C**
Scale: 3/4" = 1'-0" SA10.1 SA10.1



[A4] EXTERIOR BAY
STRUT DEMO SECTION **D**
Scale: 3/4" = 1'-0" SA10.1 SA10.1

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOTHA 01 CAD\10-28-24 BID SET\NSR-SA1001-SA1009 STRUT DEMO SECTION PLOT TIME: 10-28-24 6:17 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**EXTERIOR BAY STRUT
DEMOLITION SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA10.1 OF 30 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 184 | 280 |

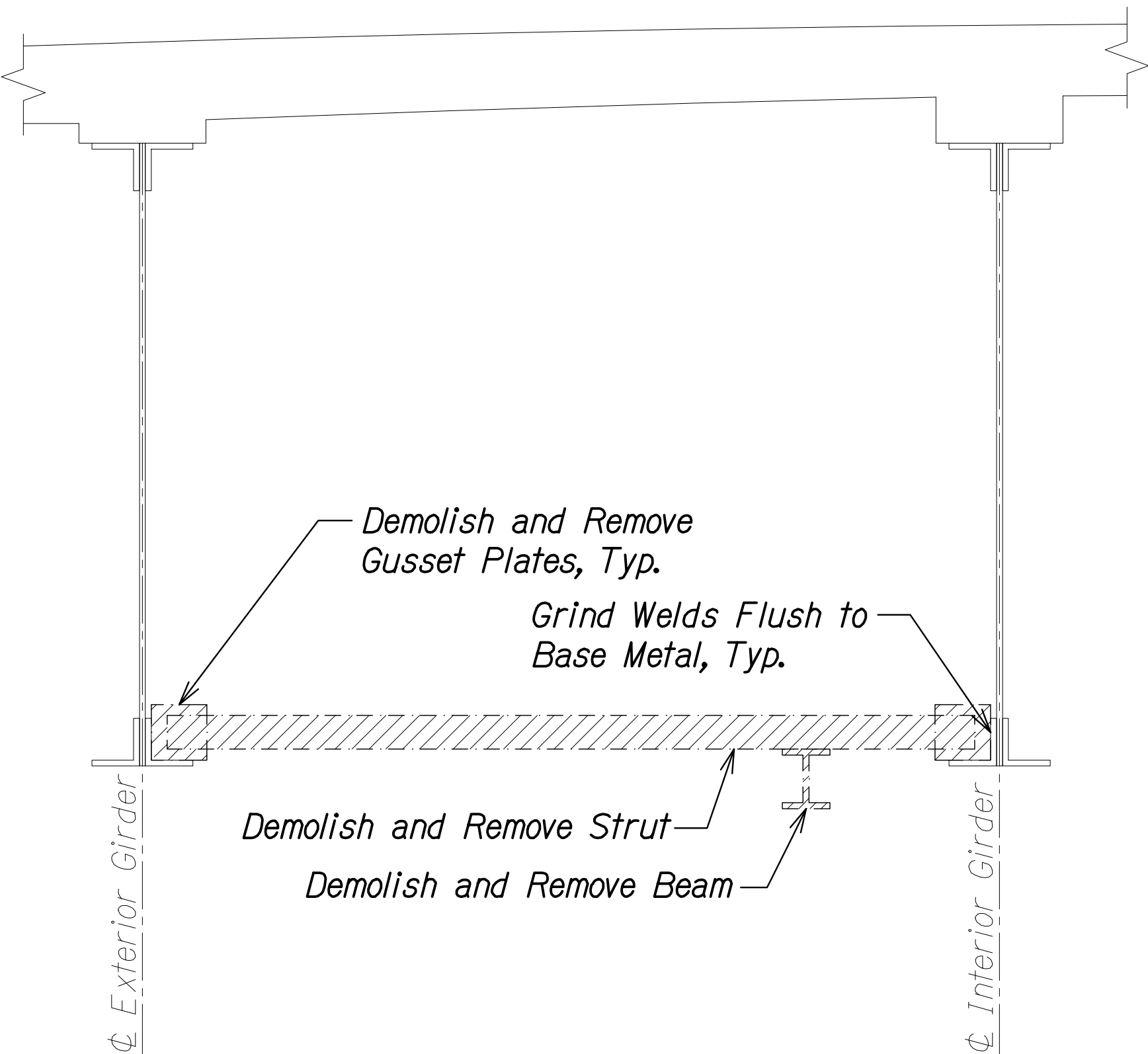
LEGEND:

 Demolish and Remove

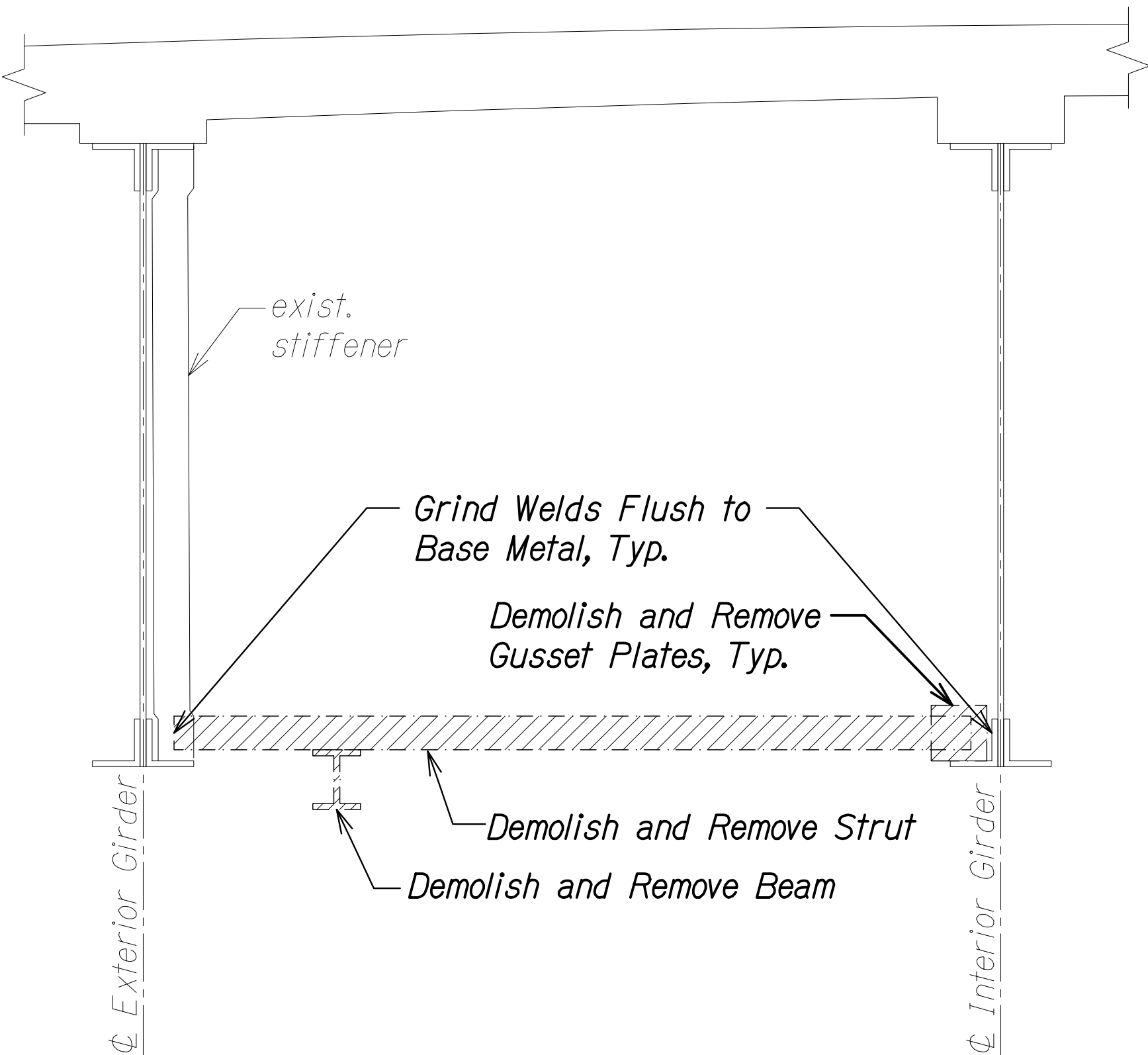
[XX] Strut Mark, See SA9.1 through SA9.5 for locations

NOTES:

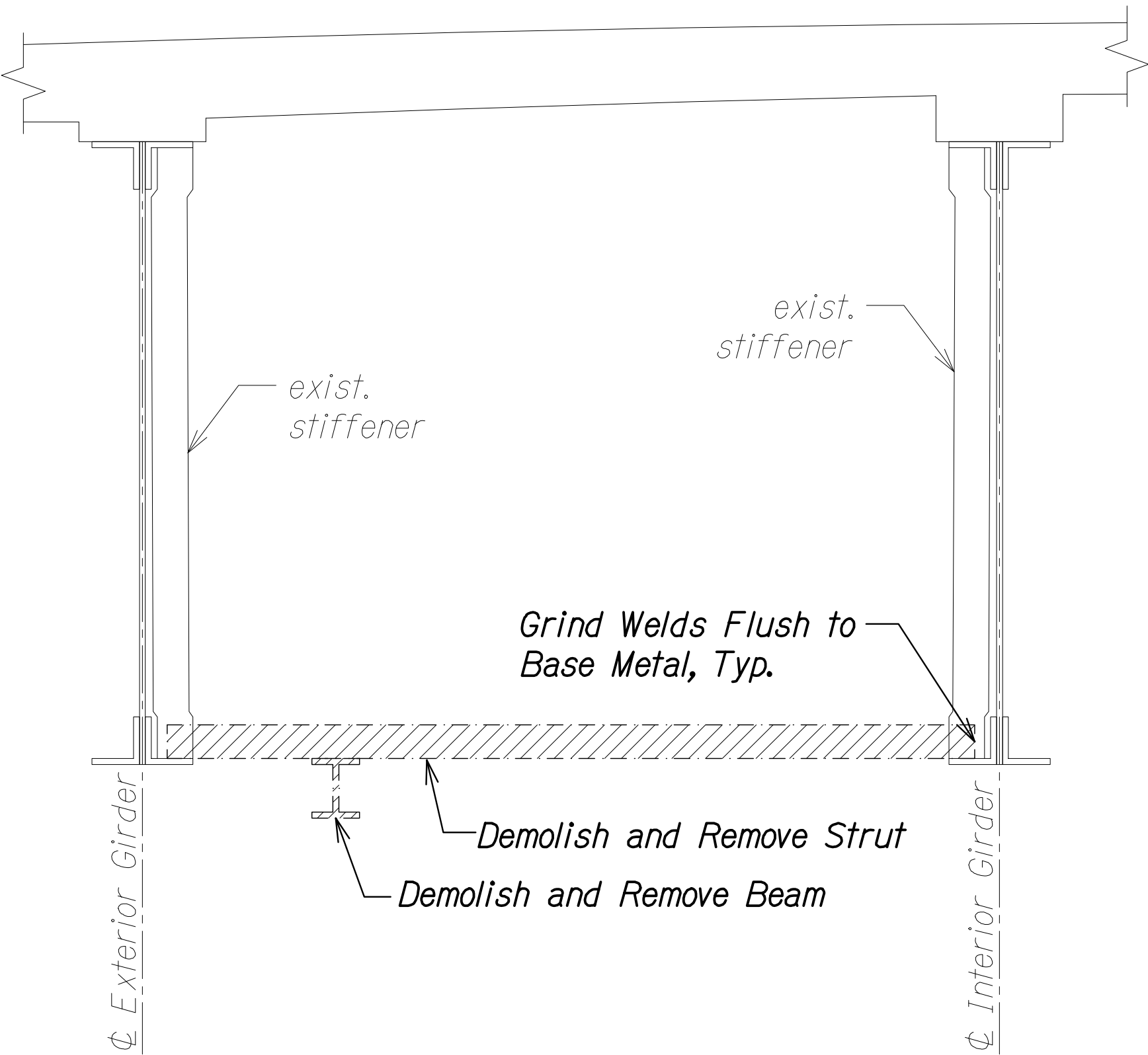
1. The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
2. Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
3. Details beyond shown bay are not provided.
4. See Sheet SA10.11 for miscellaneous demolition details



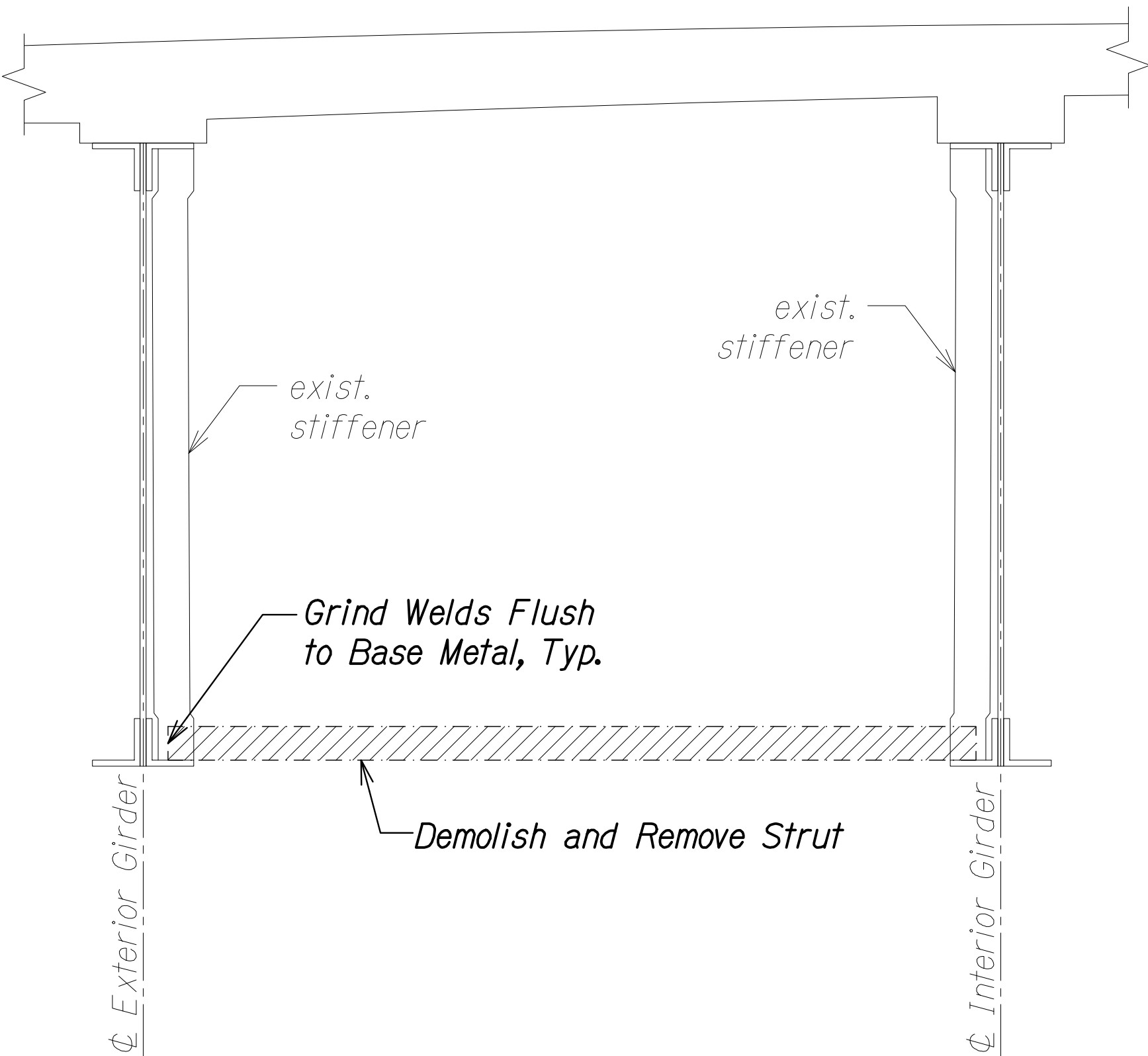
**[A5] EXTERIOR BAY
STRUT DEMO SECTION**
Scale: 3/4" = 1'-0"
A
SA10.2 SA10.2



**[A6] EXTERIOR BAY
STRUT DEMO SECTION**
Scale: 3/4" = 1'-0"
B
SA10.2 SA10.2



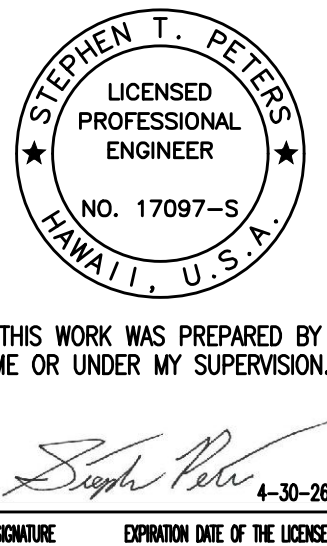
**[A7] EXTERIOR BAY
STRUT DEMO SECTION**
Scale: 3/4" = 1'-0"
C
SA10.2 SA10.2



**[A8] EXTERIOR BAY
STRUT DEMO SECTION**
Scale: 3/4" = 1'-0"
D
SA10.2 SA10.2

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT10.1 CAD\10-28-24 BID SET\NSR-SA1001-SA1009 STRUT DEMO SECTION PLOT TIME: 10-28-24 11:41 AM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**EXTERIOR BAY STRUT
DEMOLITION SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET NoSA10.2 OF 30 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 185 | 280 |

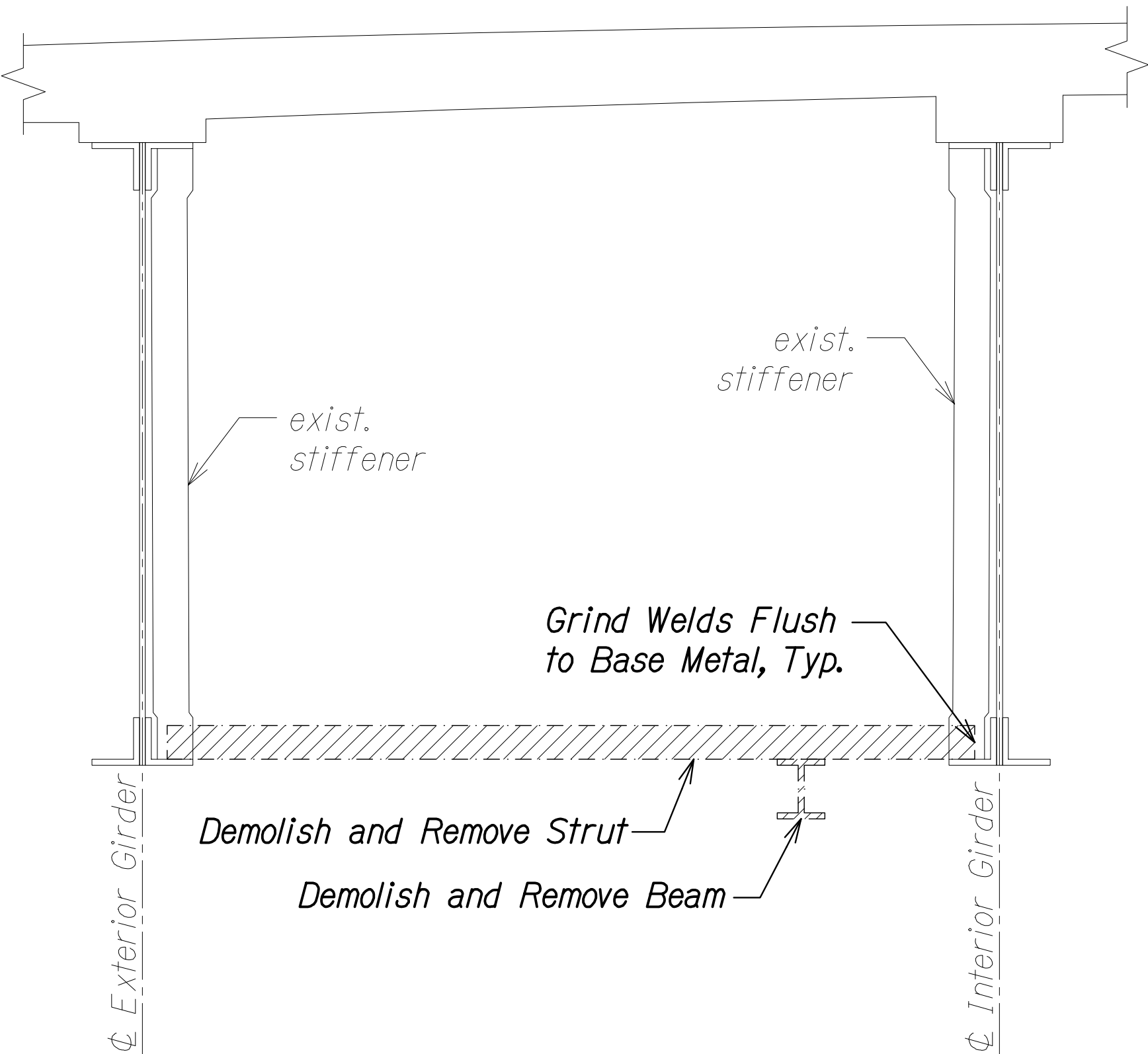
LEGEND:

 Demolish and Remove

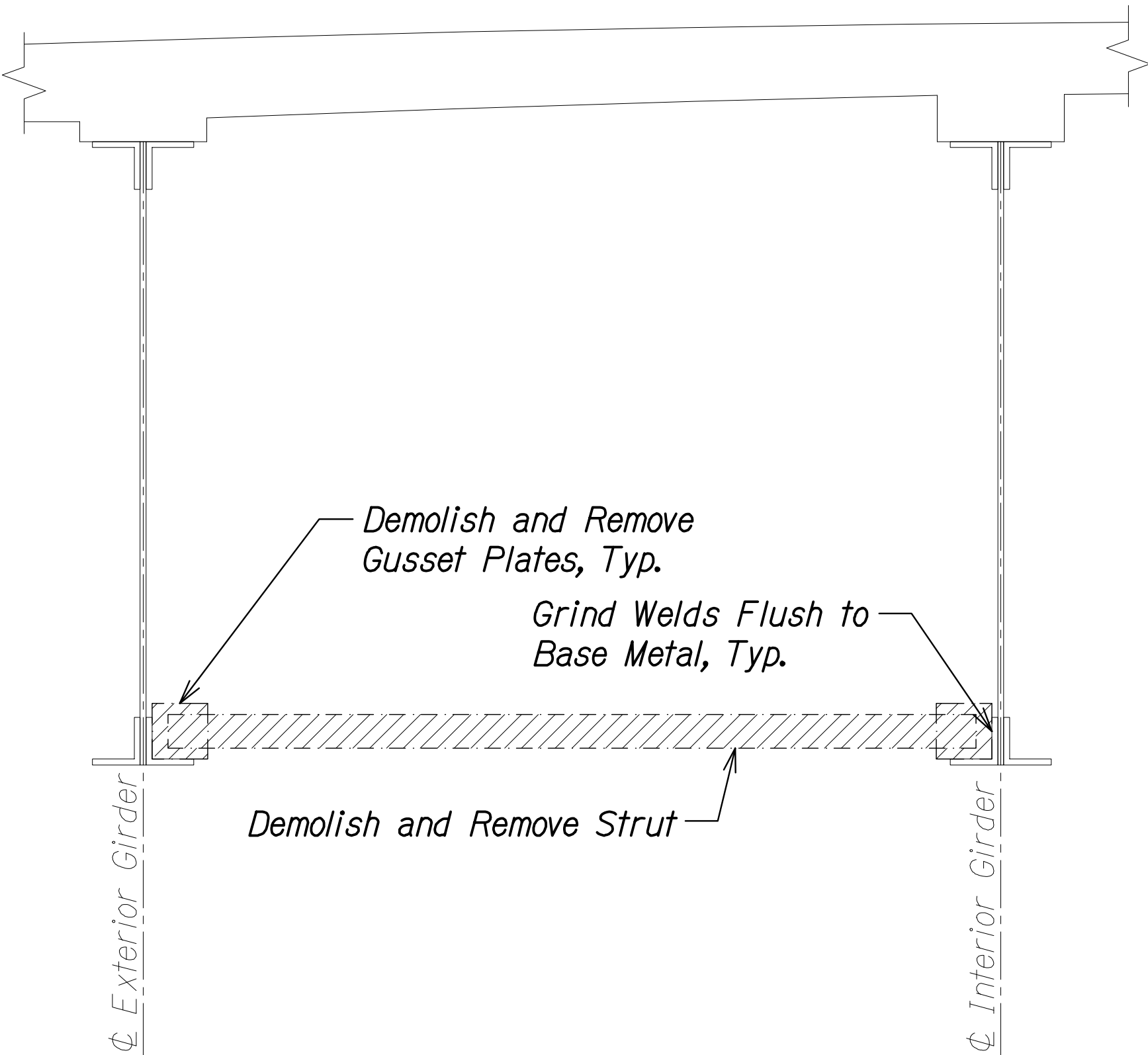
[XX] Strut Mark, See SA9.I through SA9.5 for locations

NOTES:

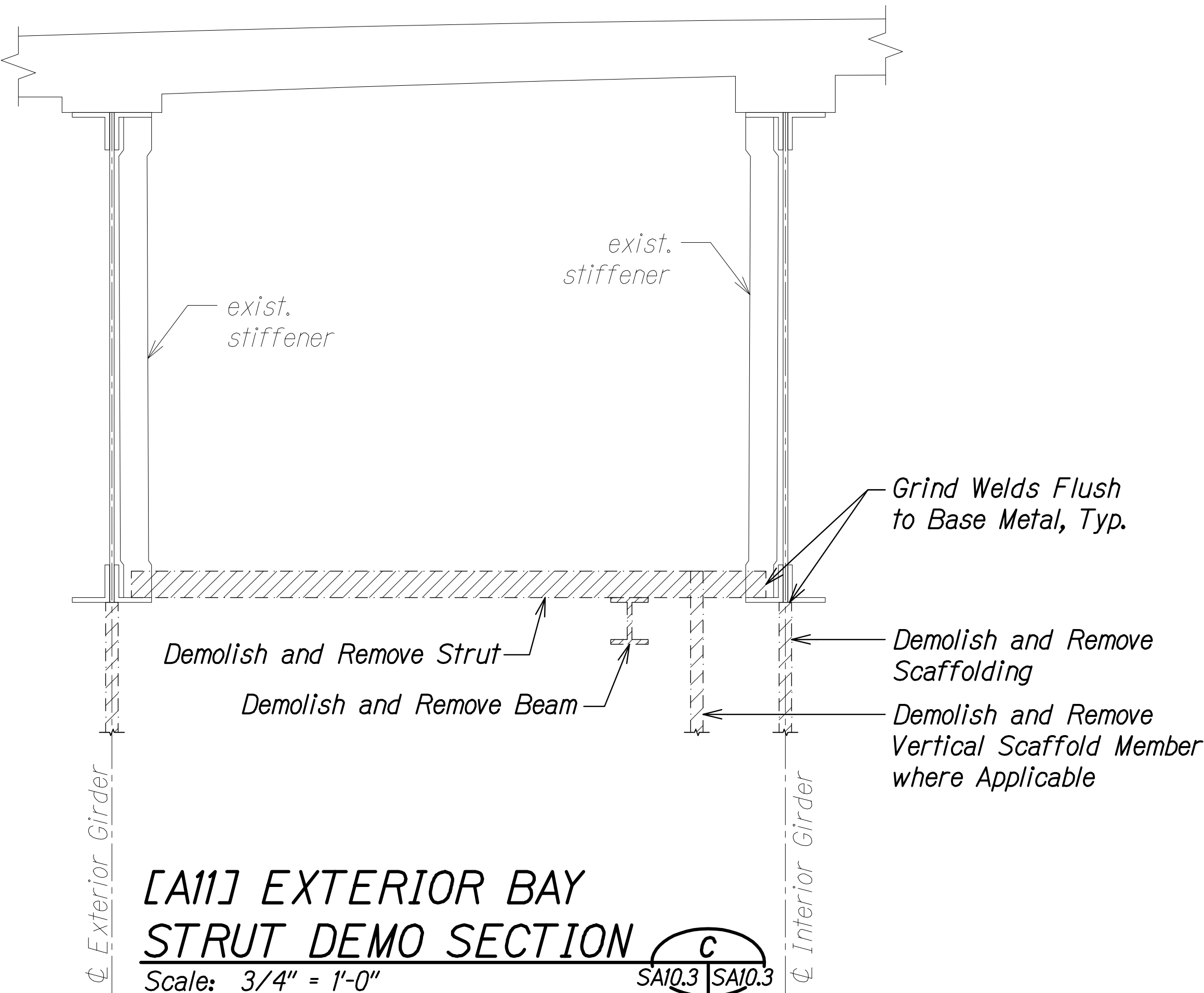
1. The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
2. Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
3. Details beyond shown bay are not provided.
4. See Sheet SA10.II for miscellaneous demolition details



**[A9] EXTERIOR BAY
STRUT DEMO SECTION A**
Scale: 3/4" = 1'-0" SA10.3 SA10.3



**[A10] EXTERIOR BAY
STRUT DEMO SECTION B**
Scale: 3/4" = 1'-0" SA10.3 SA10.3

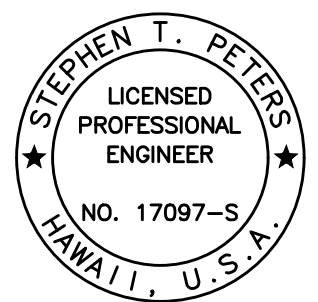


**[A11] EXTERIOR BAY
STRUT DEMO SECTION C**
Scale: 3/4" = 1'-0" SA10.3 SA10.3

Grind Welds Flush
to Base Metal, Typ.

Demolish and Remove
Scaffolding

Demolish and Remove
Vertical Scaffold Member
where Applicable



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Stephen T. Peters
SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**EXTERIOR BAY STRUT
DEMOLITION SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 186 | 280 |

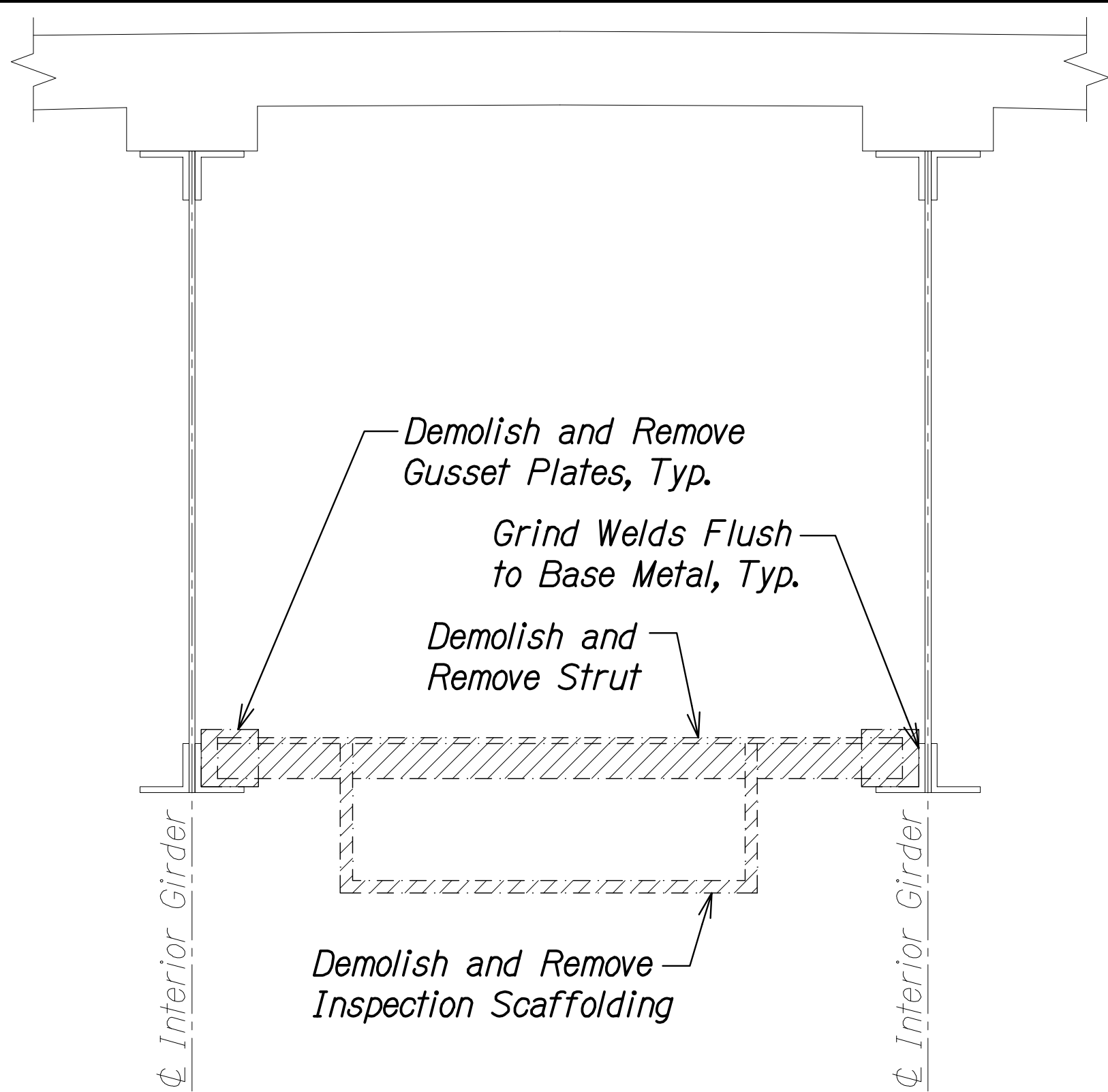
LEGEND:

 Demolish and Remove

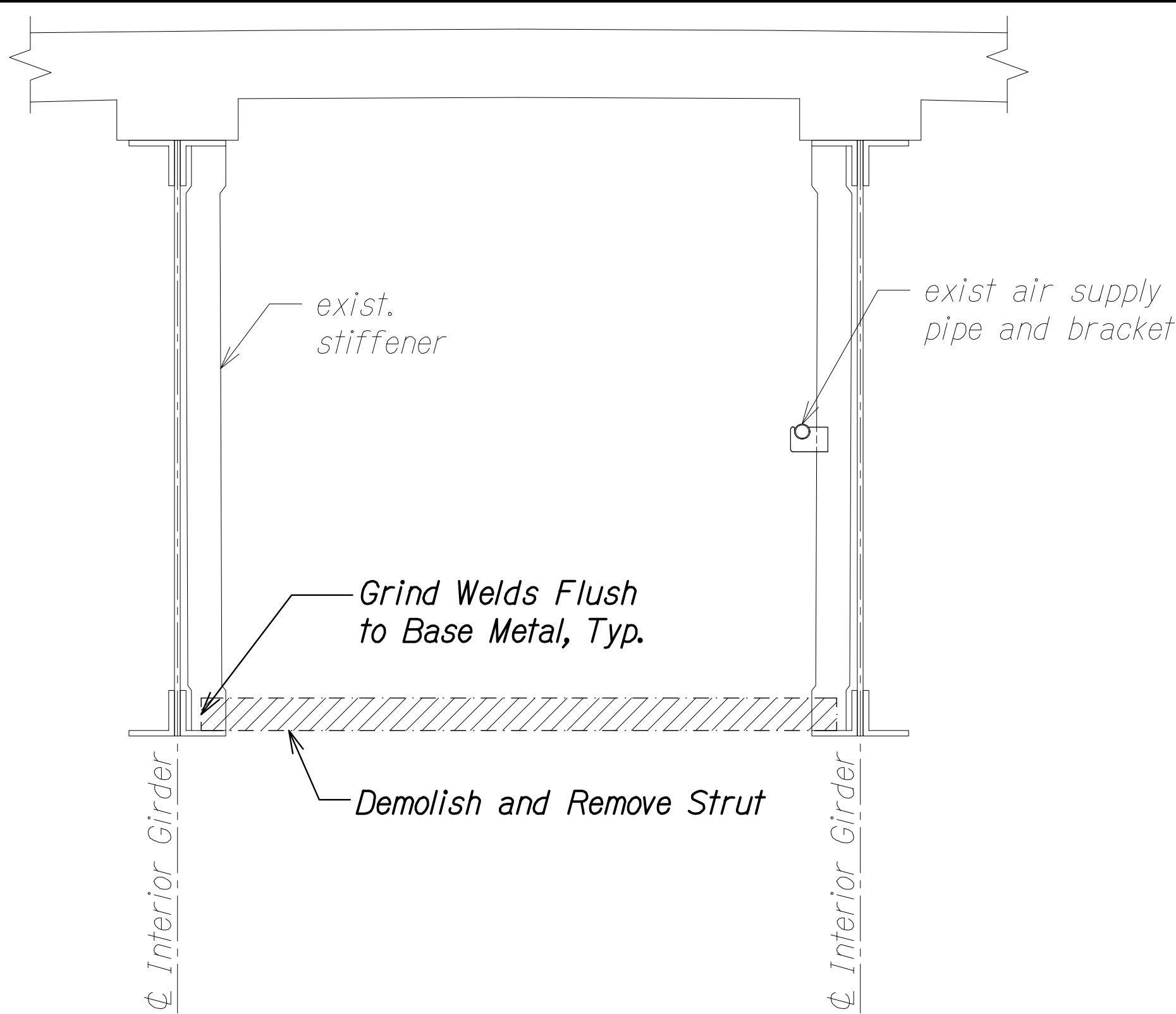
[XX] Strut Mark, See SA9.1 through SA9.5 for locations

NOTES:

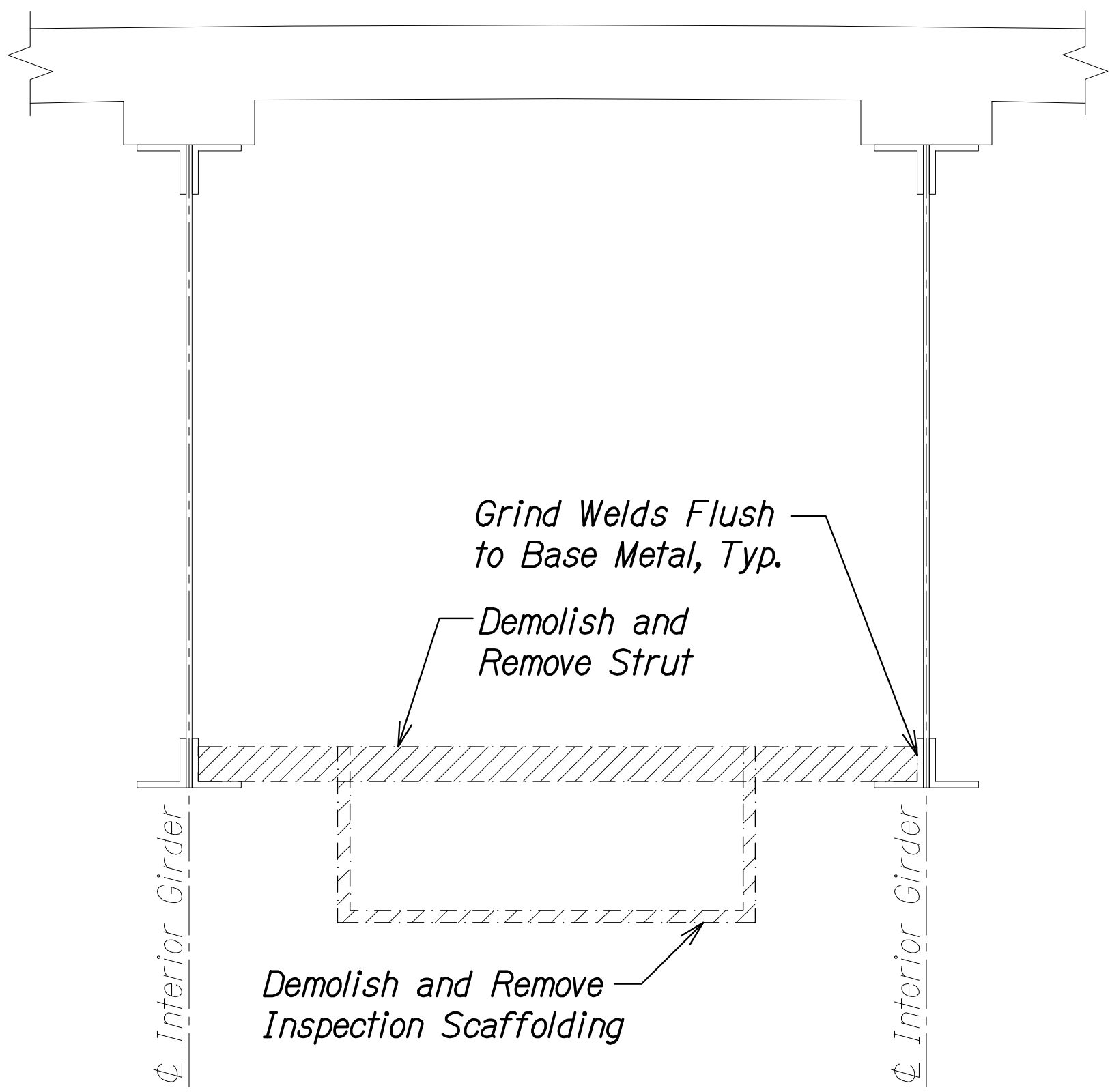
1. The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
2. Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
3. Details beyond shown bay are not provided.
4. See Sheet SA10.11 for miscellaneous demolition details.



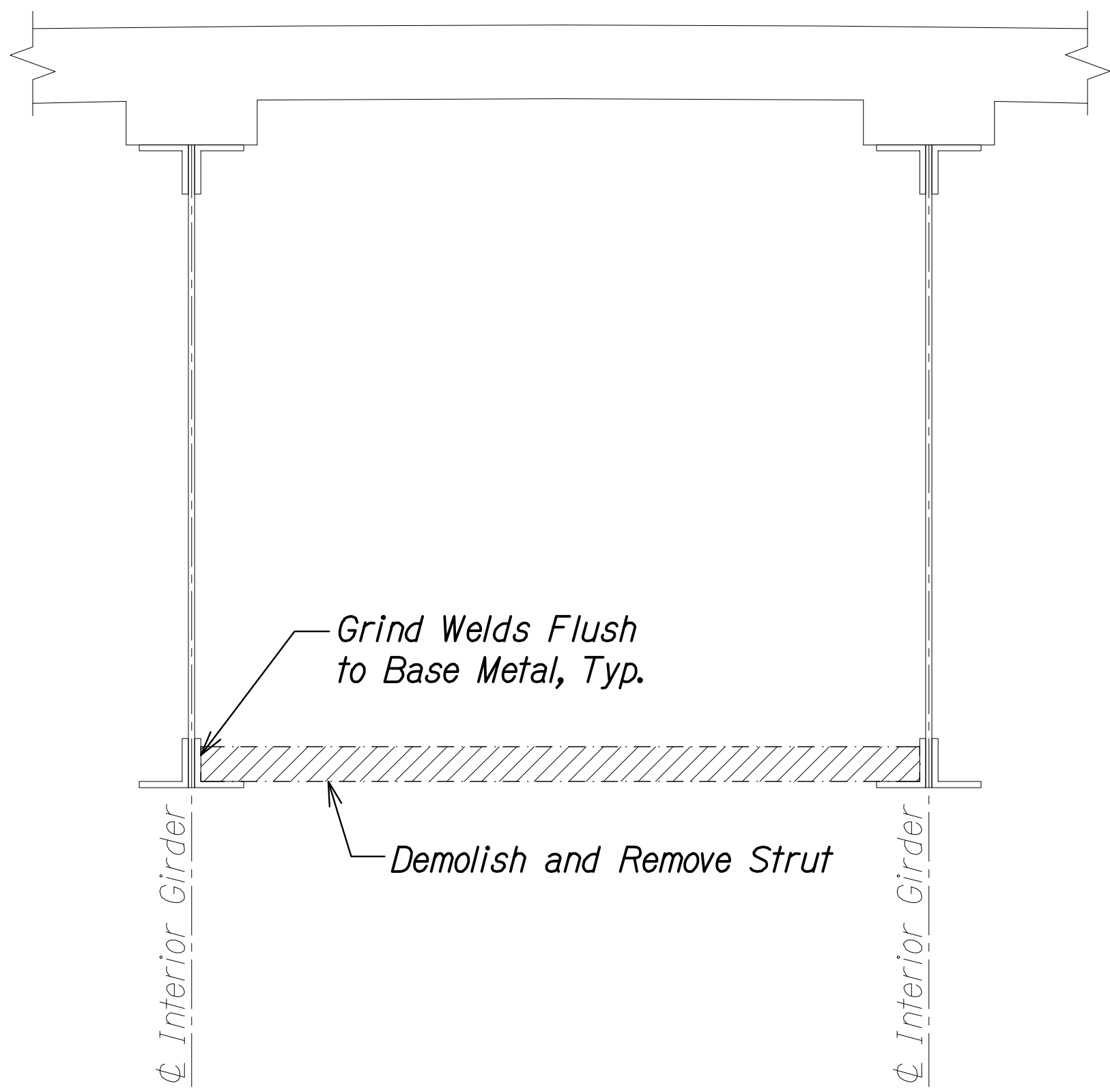
**[B1] INTERIOR BAY
STRUT DEMO SECTION** **A**
Scale: 3/4" = 1'-0" SA10.4 SA10.4



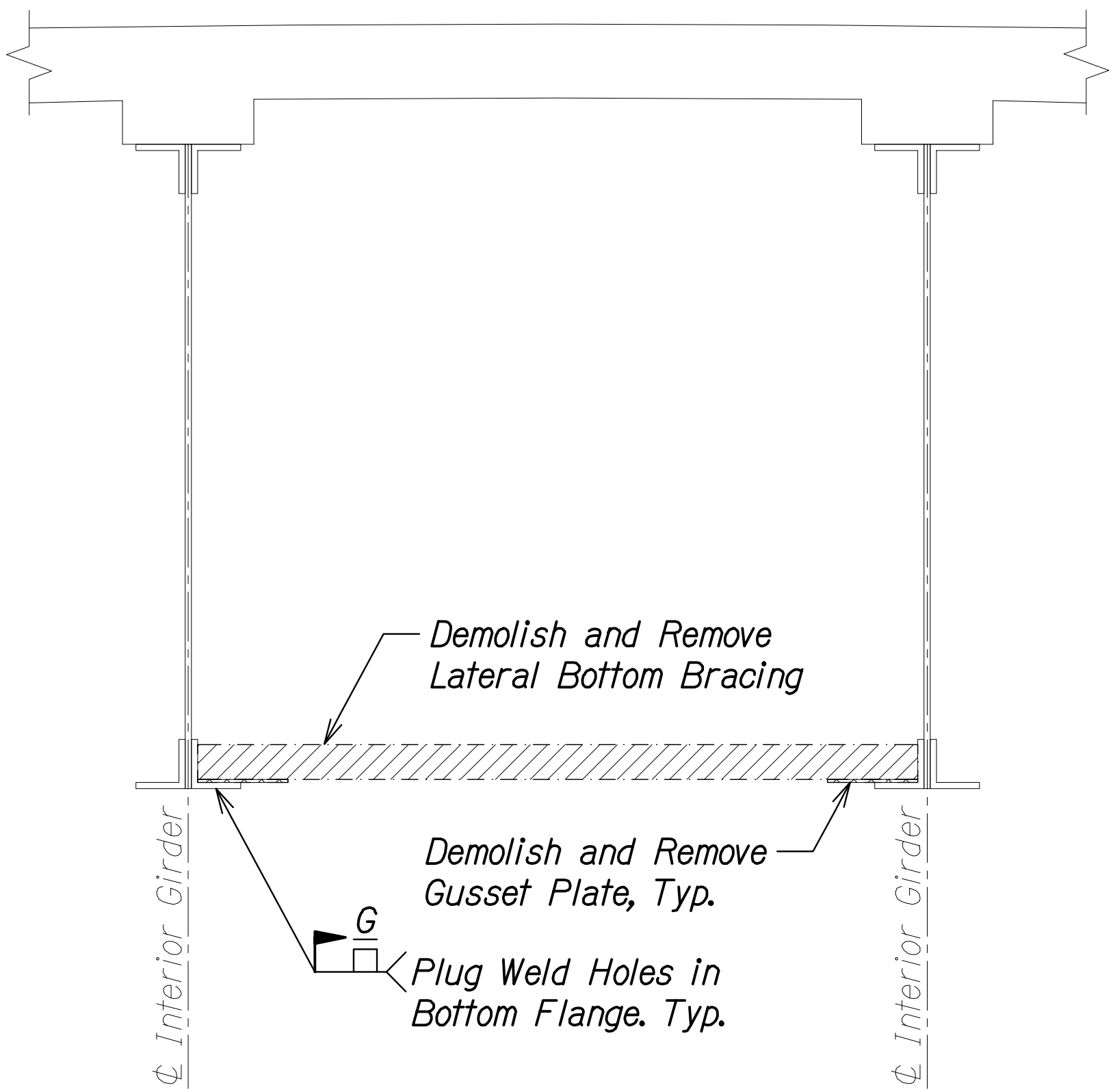
**[B2] INTERIOR BAY
STRUT DEMO SECTION** **B**
Scale: 3/4" = 1'-0" SA10.4 SA10.4



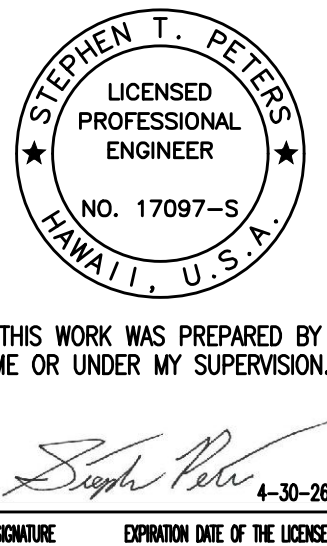
**[B3] INTERIOR BAY
STRUT DEMO SECTION** **C**
Scale: 3/4" = 1'-0" SA10.4 SA10.4



**[B4] INTERIOR BAY
STRUT DEMO SECTION** **D**
Scale: 3/4" = 1'-0" SA10.4 SA10.4



**INTERIOR BAY LATERAL
BOTTOM BRACING DEMO SECTION** **E**
Scale: 3/4" = 1'-0" SA10.4 SA10.4



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**INTERIOR BAY STRUT
DEMOLITION SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024


SHEET No SA10.4 OF 30 SHEETS

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT10.1 CAD\10-28-24 BID SET\NSR-SA1001-SA1009 STRUT DEMO SECTION PLOT TIME: 10-28-24 11:42 AM

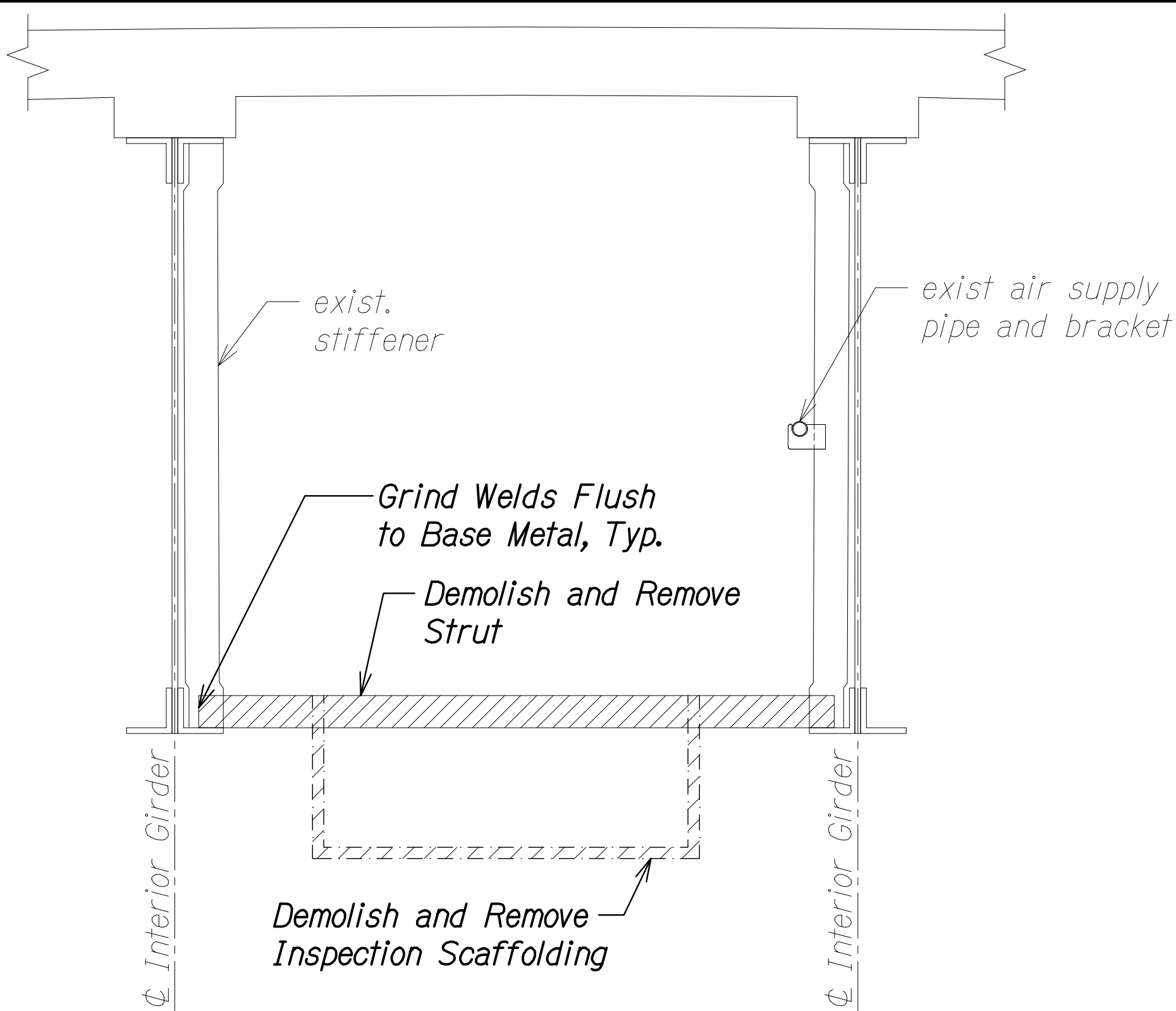
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 187 | 280 |

LEGEND:

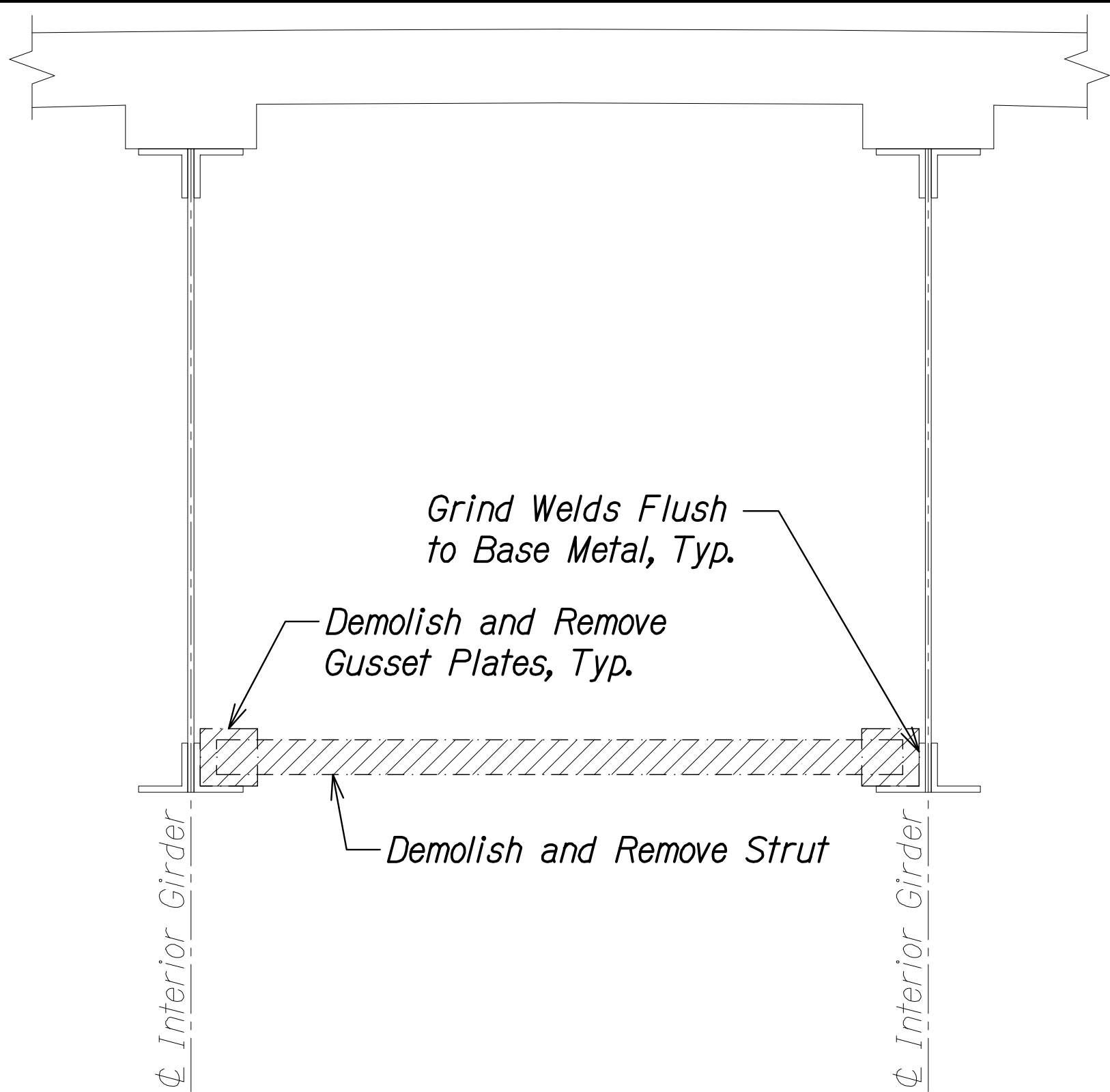
-  Demolish and Remove
- [XX] Strut Mark, See SA9.1 through SA9.5 for locations

NOTES:

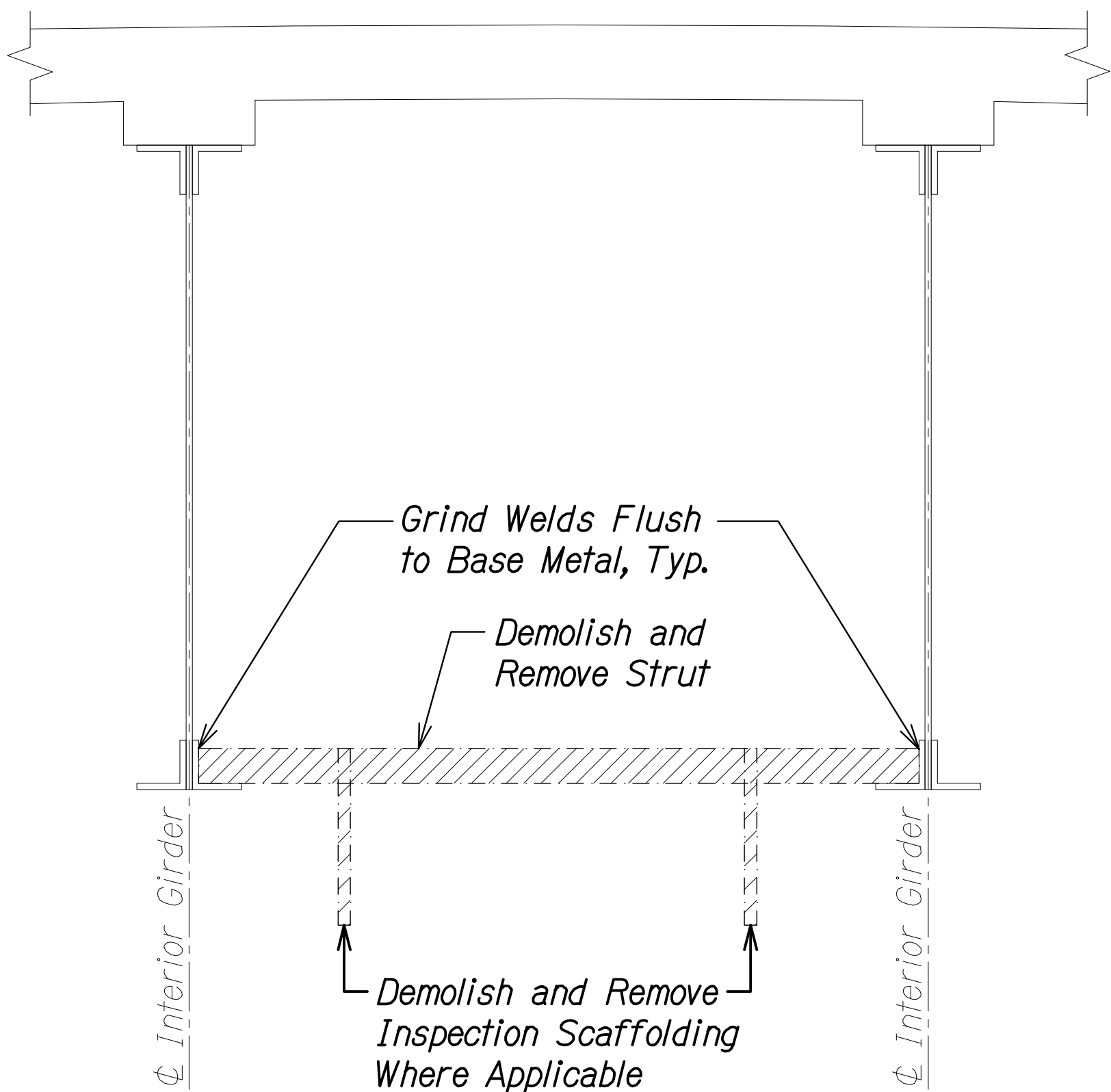
- The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
- Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
- Details beyond shown bay are not provided.
- See Sheet SA10.11 for miscellaneous demolition details



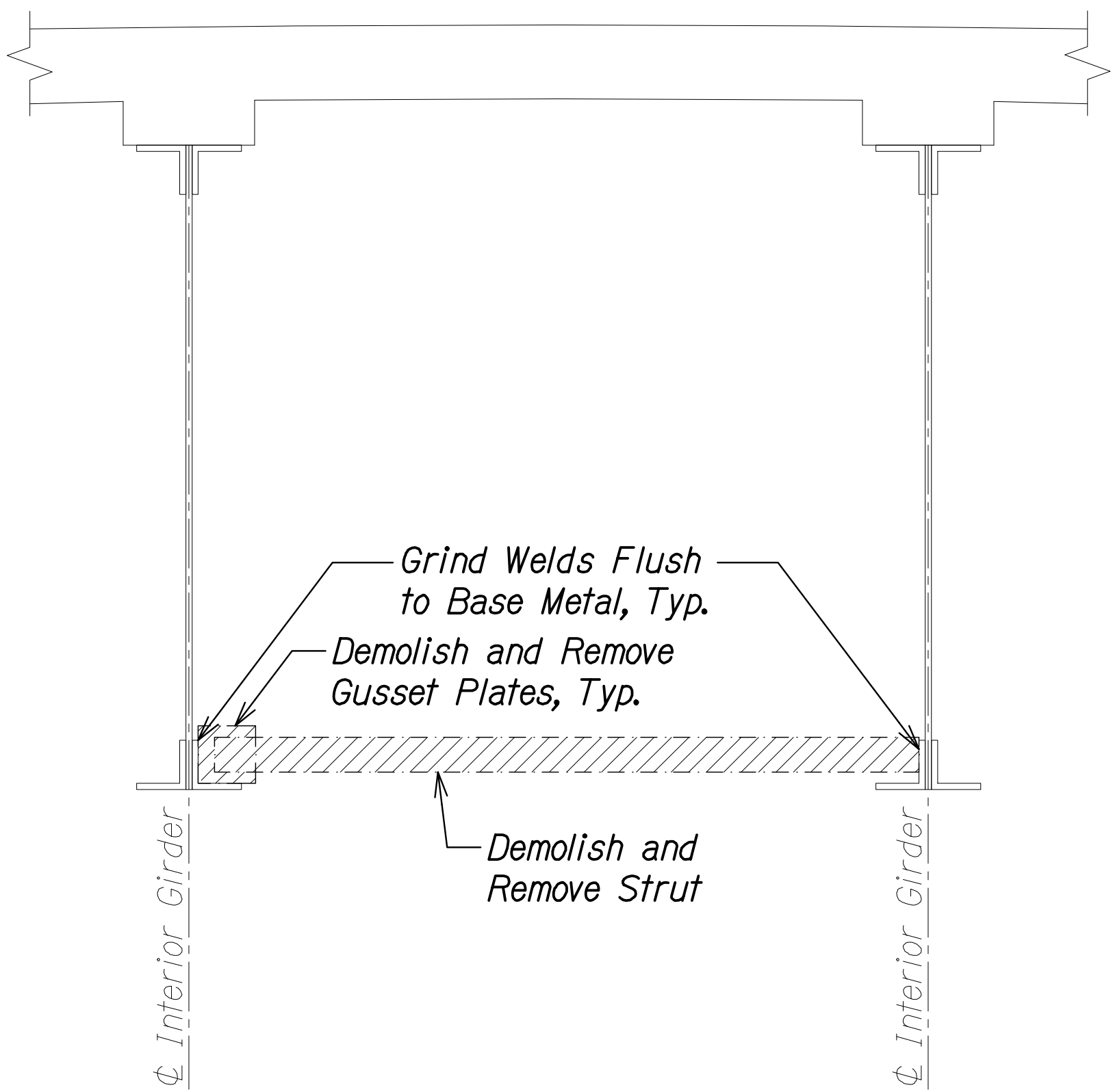
[B5] INTERIOR BAY
STRUT DEMO SECTION **A**
Scale: 3/4" = 1'-0" SA10.5 SA10.5



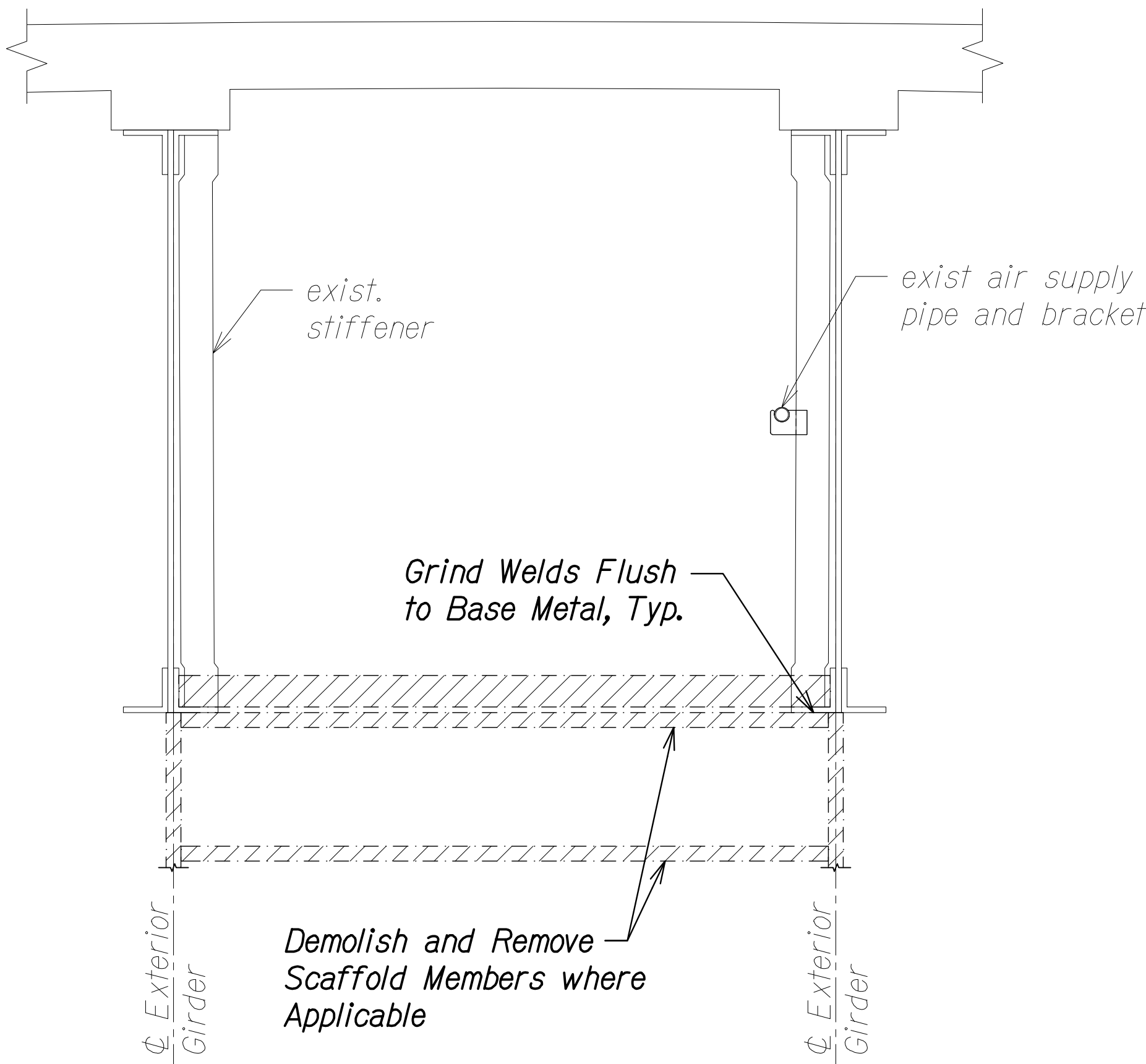
[B6] INTERIOR BAY
STRUT DEMO SECTION **B**
Scale: 3/4" = 1'-0" SA10.5 SA10.5



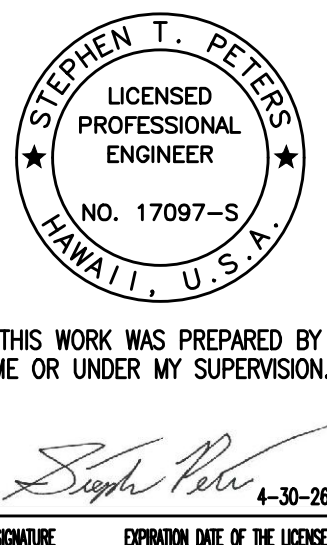
[B7] INTERIOR BAY
STRUT DEMO SECTION **C**
Scale: 3/4" = 1'-0" SA10.5 SA10.5



[B8] INTERIOR BAY
STRUT DEMO SECTION **D**
Scale: 3/4" = 1'-0" SA10.5 SA10.5



[B9] INTERIOR BAY
STRUT DEMO SECTION **E**
Scale: 3/4" = 1'-0" SA10.5 SA10.5



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**INTERIOR BAY STRUT
DEMOLITION SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

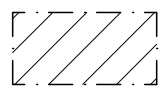
SHEET NoSA10.5 OF 30 SHEETS

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOTHA.01 CAD\10-28-24 BID SET\NSR-SA1001-SA1009 STRUT DEMO SECTION.DWG PLOT TIME: 10-28-24 6:18 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 189 | 280 |

LEGEND:



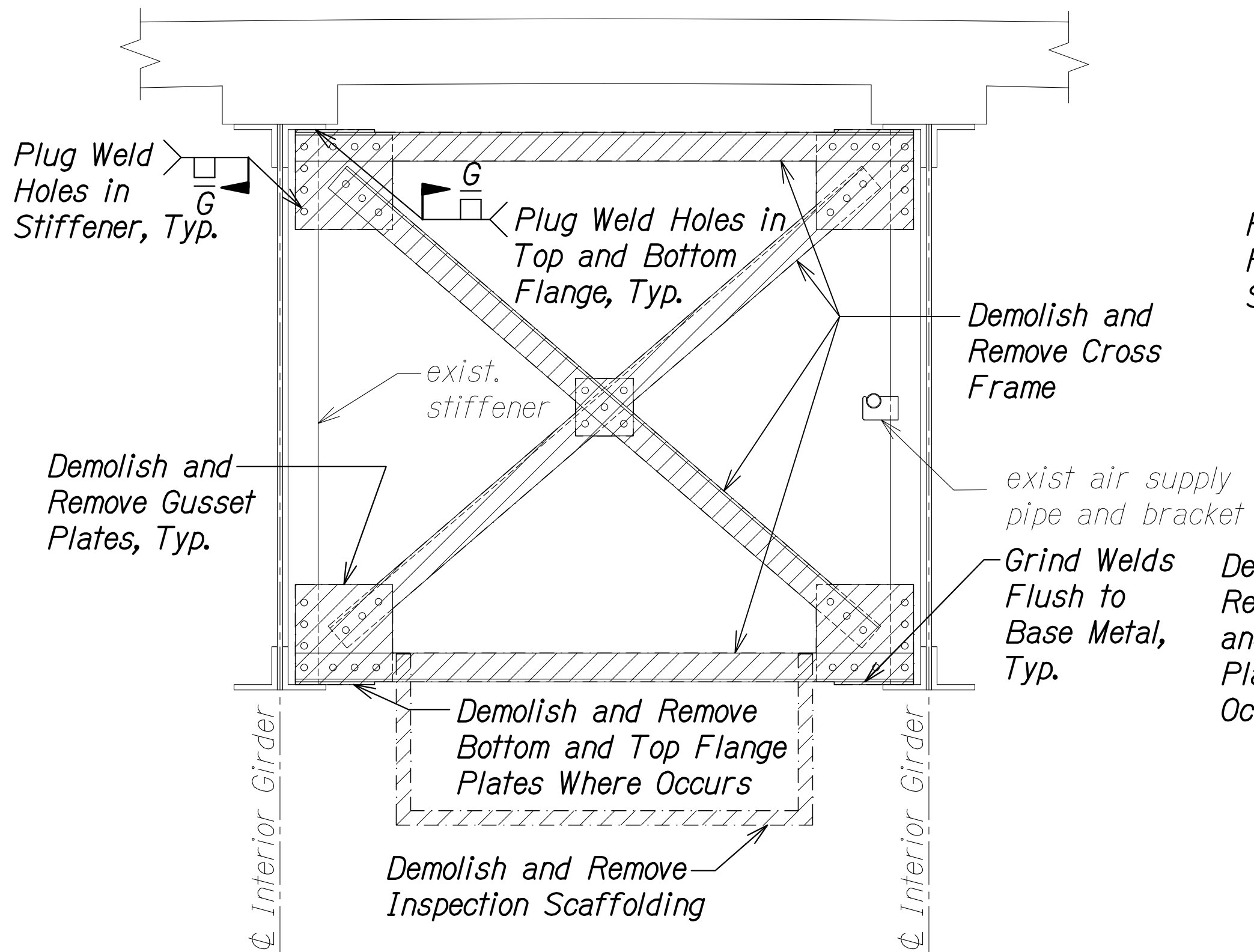
Demolish and Remove



[XX] Cross Frame Mark, See SA9.1 through SA9.5 for locations

NOTES:

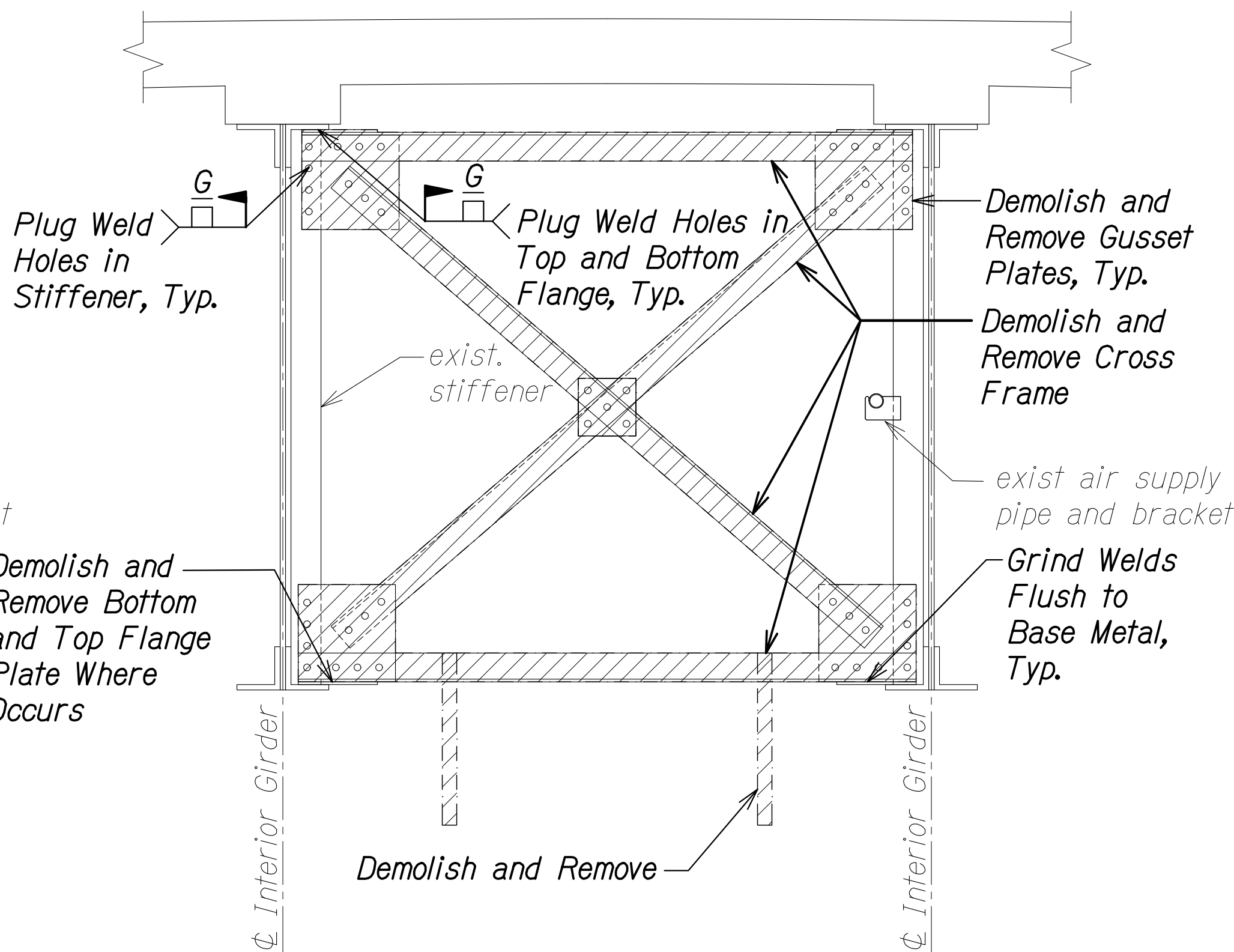
- The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
- Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
- Details beyond shown bay are not provided.
- See Sheet SA10.11 for miscellaneous demolition details



**[C6] INTERIOR BAY DEMO
SECTION AT IN-SPAN CROSS FRAME**

Scale: 3/4" = 1'-0"

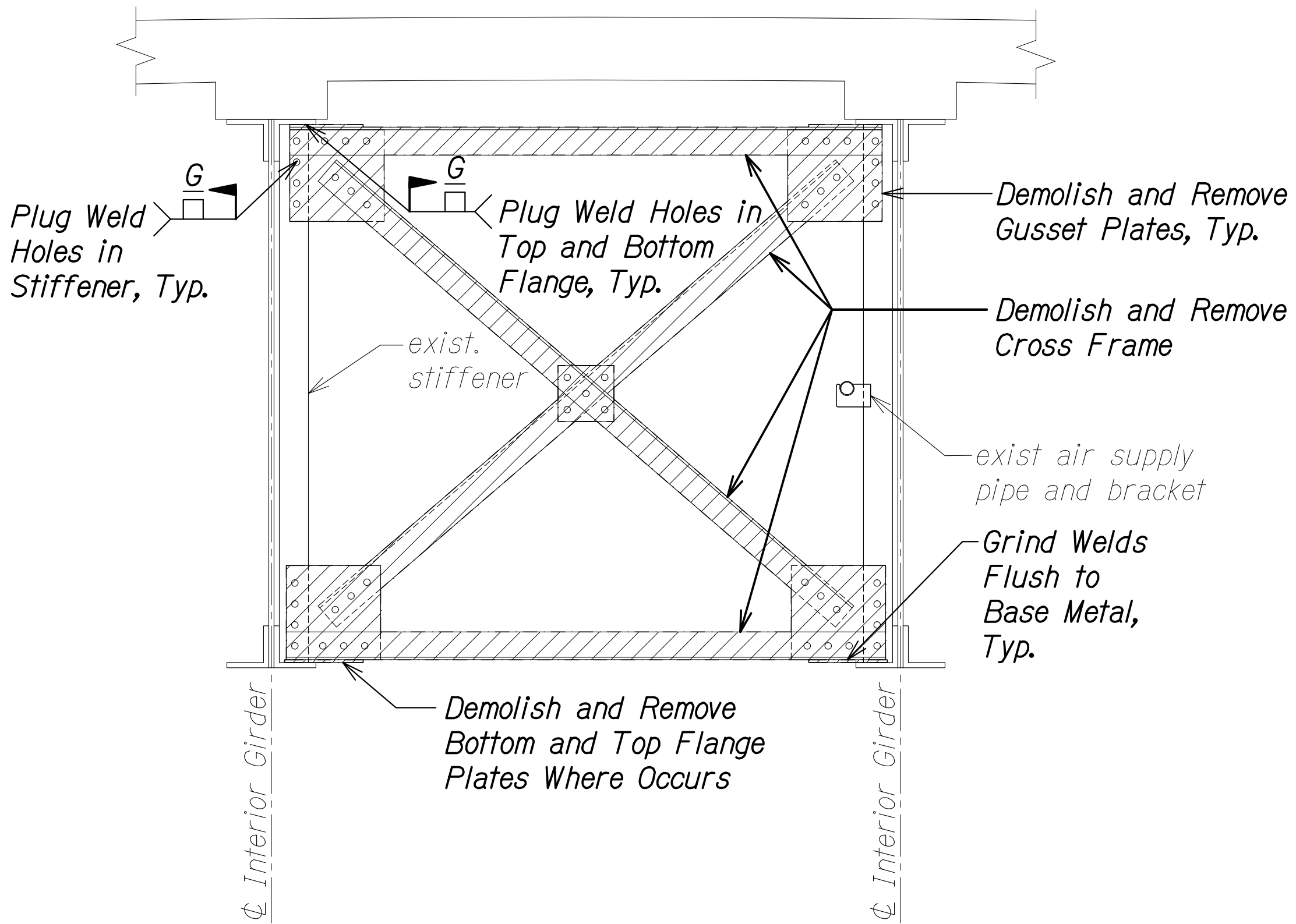
SA10.7 A SA10.7



**[C7] INTERIOR BAY DEMO
SECTION AT IN-SPAN CROSS FRAME**

Scale: 3/4" = 1'-0"

SA10.7 B SA10.7

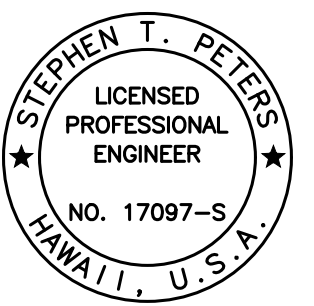


**[C8] INTERIOR BAY DEMO
SECTION AT IN-SPAN CROSS FRAME**

Scale: 3/4" = 1'-0"

SA10.7 C SA10.7

| | | |
|---------|---|--------------|
| 12/6/24 | 1 | Revised Note |
| DATE | | REVISION |



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Stephen T. Peters
SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**IN-SPAN CROSS FRAME
DEMOLITION SECTIONS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A.01 CAD\12-06-24 ADD\NSR-SA1001-STRUT DEMO SECT ADD2.DWG PLOT TIME: 12-03-24 11:34 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 190 | 280 |

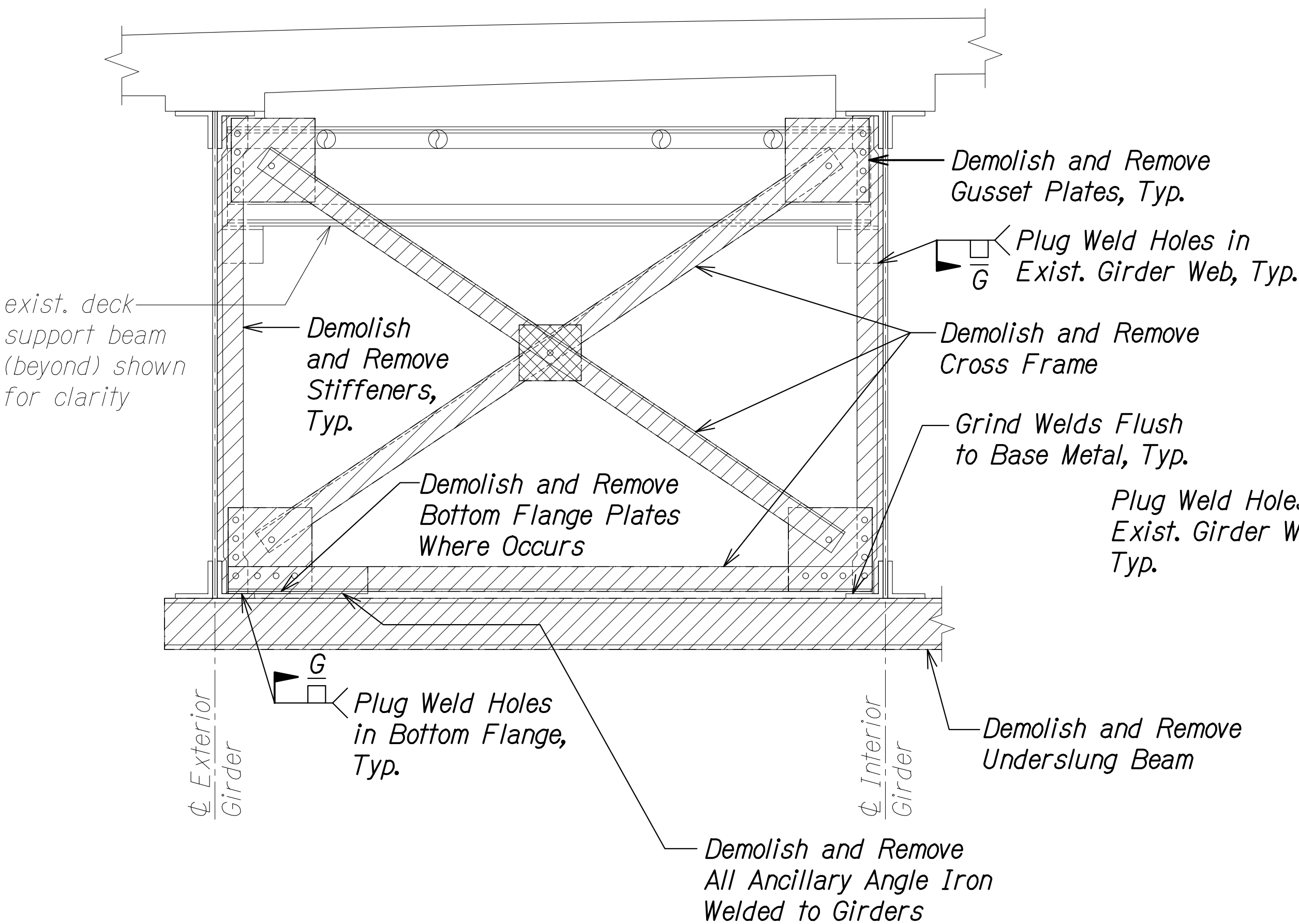
LEGEND:

 Demolish and Remove

 [XXX] Cross Frame Mark, See SA9.1 through SA9.5 for locations

NOTES:

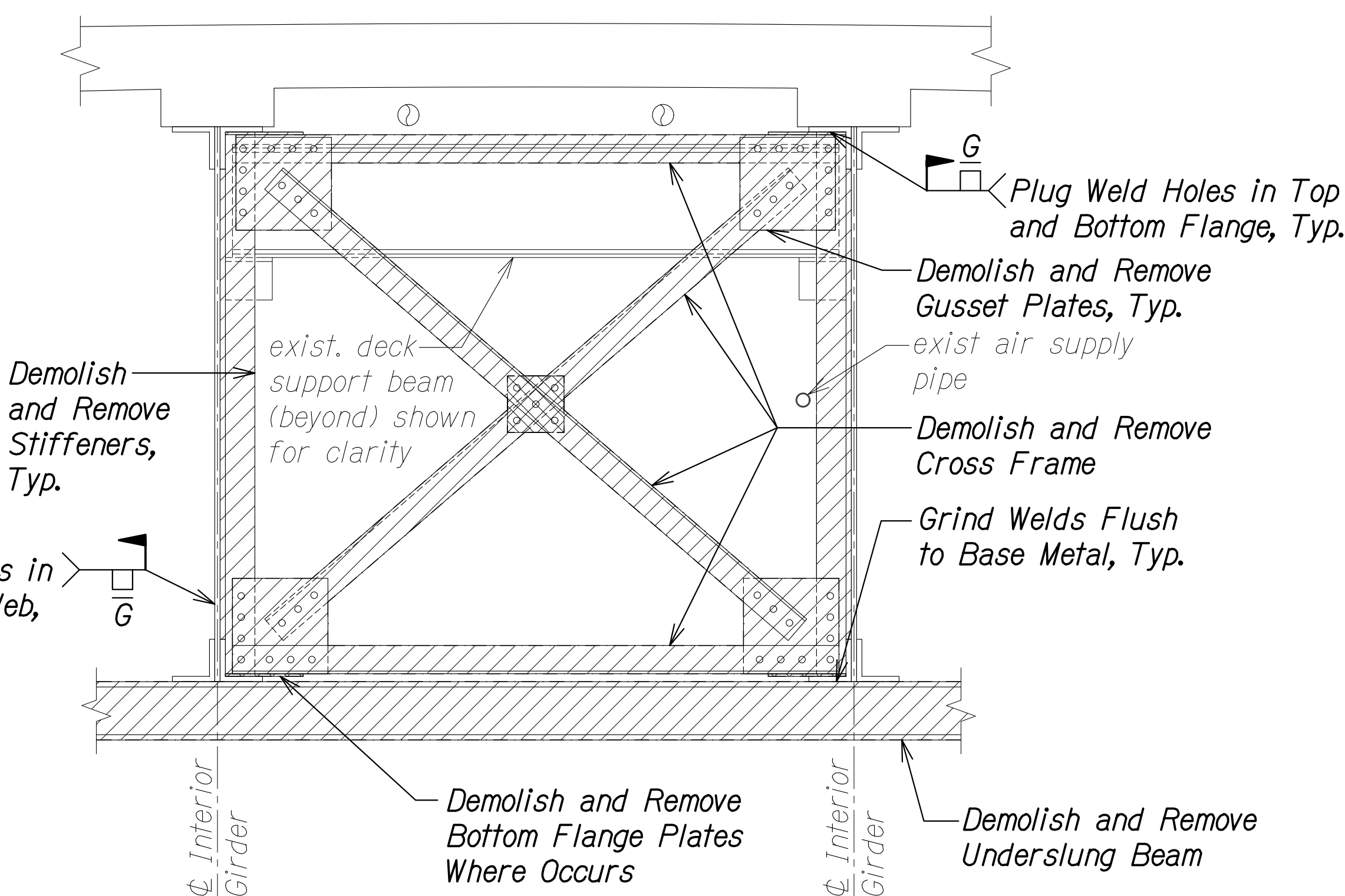
1. The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
2. Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
3. Details beyond shown bay are not provided.
4. See Sheet SA10.11 for miscellaneous demolition details



**[E1] EXTERIOR BAY DEMO SECTION
AT EXPANSION BEARING**

Scale: 3/4" = 1'-0"


A
SA10.8 SA10.8




**[E2] TYPICAL INTERIOR BAY
DEMO SECTION AT EXPANSION BEARING**

Scale: 3/4" = 1'-0"

B
SA10.8 SA10.8

| | |
|--|--|
| 12/6/24 |  Revised Note |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION EXPANSION BEARING CROSS FRAME DEMOLITION SECTIONS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |

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 4-30-26

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT1A.01 CAD\12-06-24 ADD\NSR-SA1001-SA1009 STRUT DEMO SECT ADD2.DWG PLOT TIME: 12-03-24 10:33 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 191 | 280 |

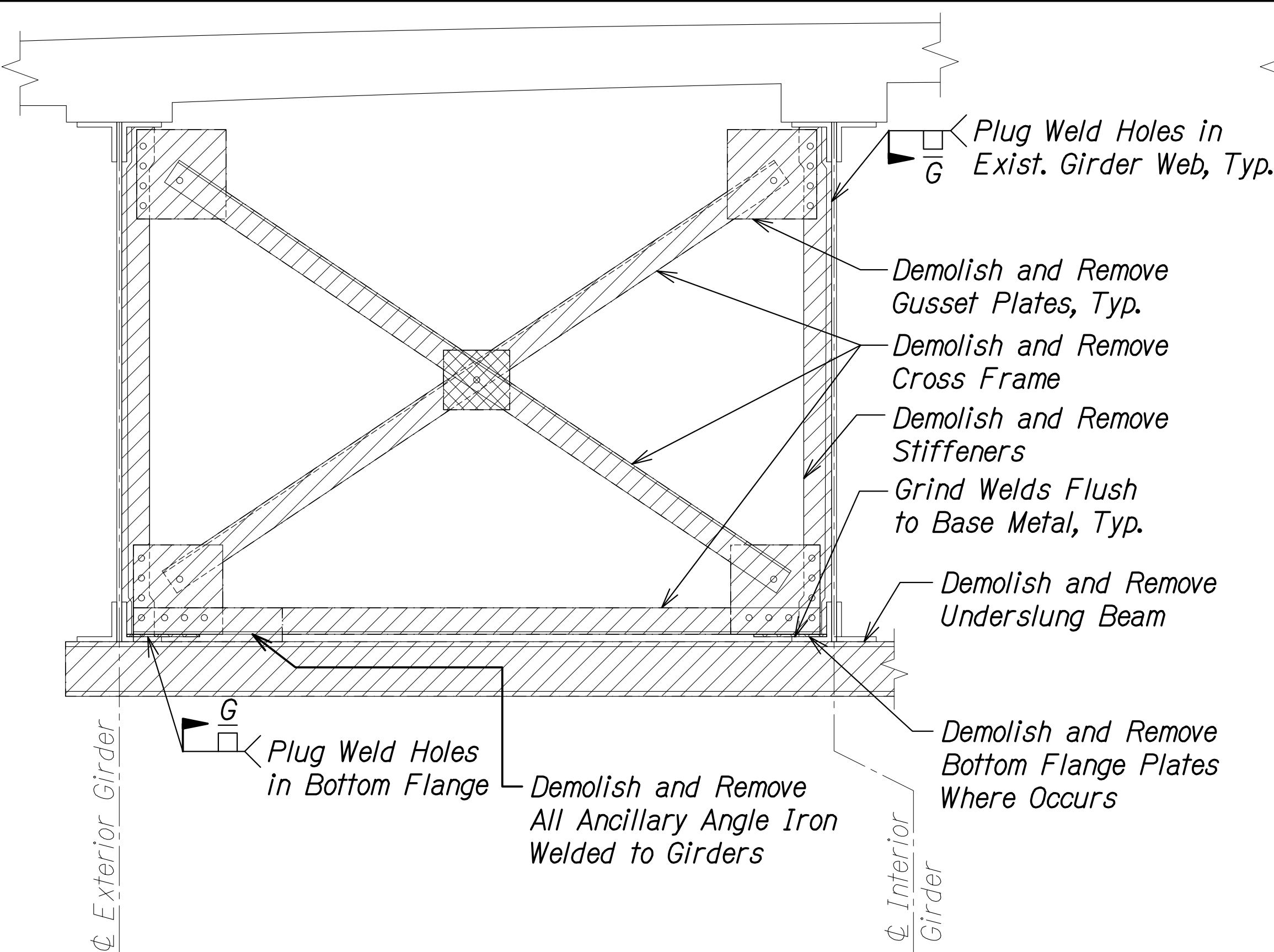
LEGEND:

 Demolish and Remove

 [XX] Cross Frame Mark, See SA9.1 through SA9.5 for locations

NOTES:

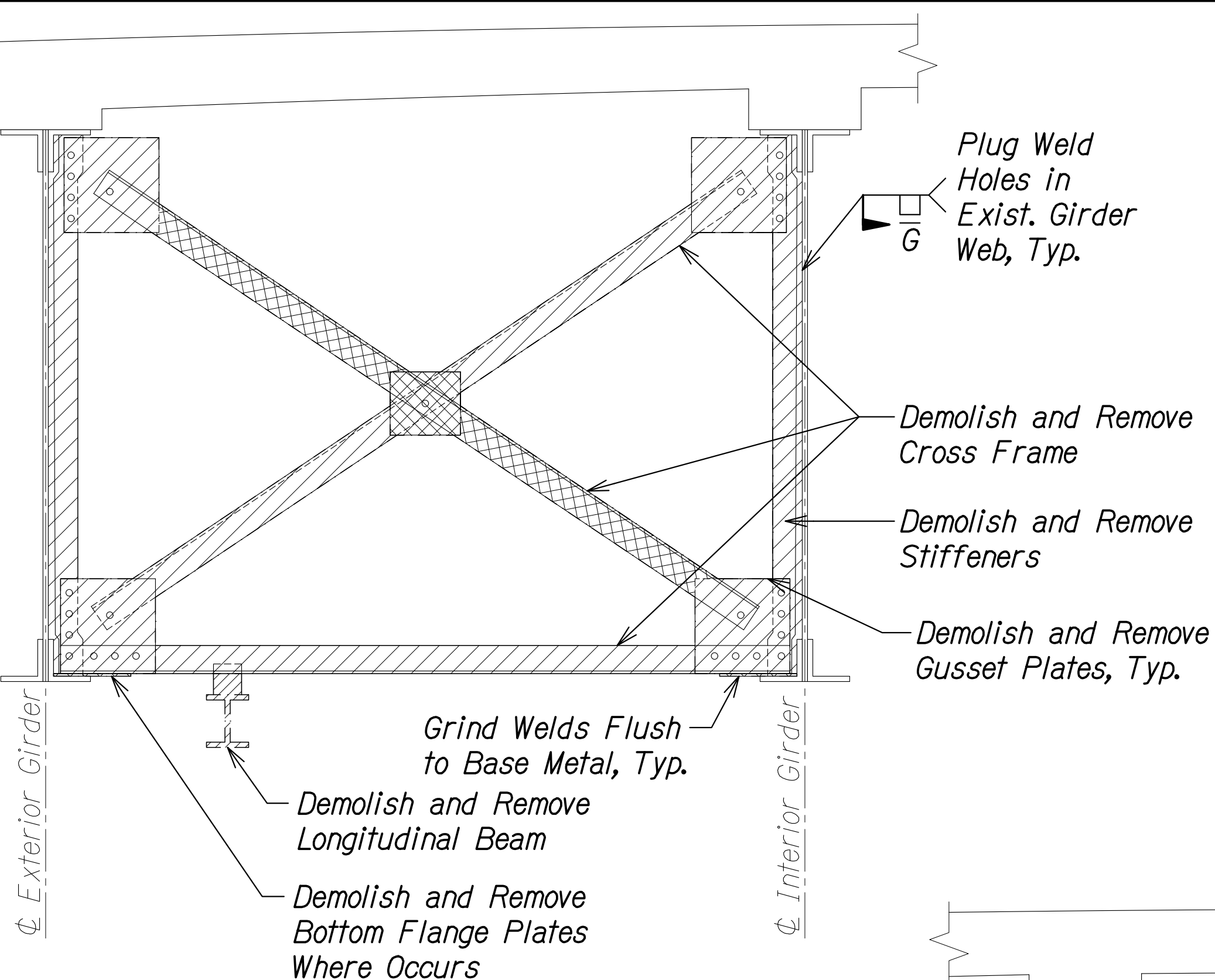
1. The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
2. Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
3. Details beyond shown bay are not provided.
4. See Sheet SA10.11 for miscellaneous demolition details.



**[F1] EXTERIOR BAY DEMO SECTION
AT FIXED BEARING**

Scale: 3/4" = 1'-0"

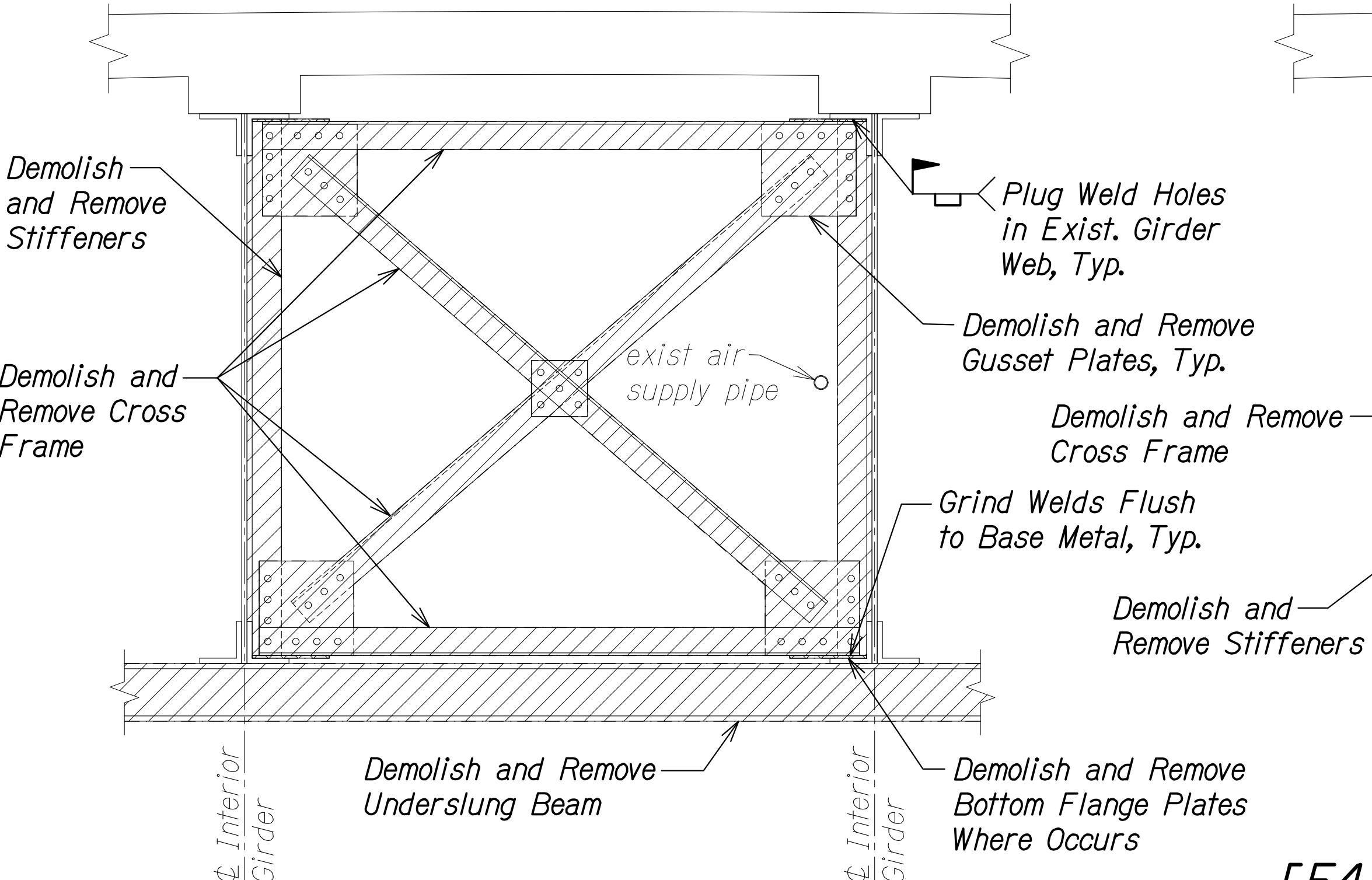
A
SA10.9 SA10.9



**[F2] EXTERIOR BAY DEMO SECTION
AT FIXED BEARING**

Scale: 3/4" = 1'-0"

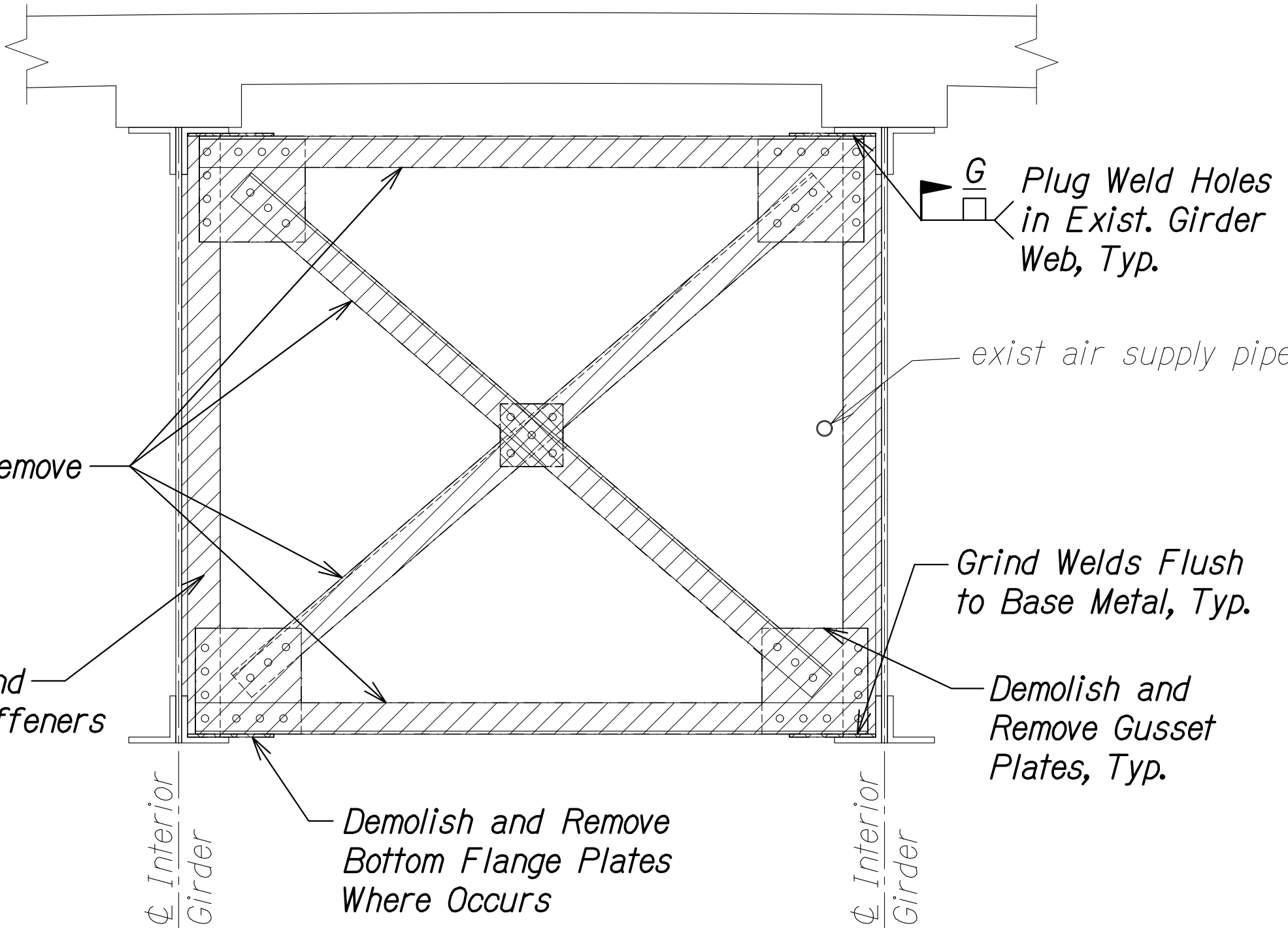
B
SA10.9 SA10.9



**[F3] INTERIOR BAY DEMO SECTION
AT FIXED BEARING**

Scale: 3/4" = 1'-0"

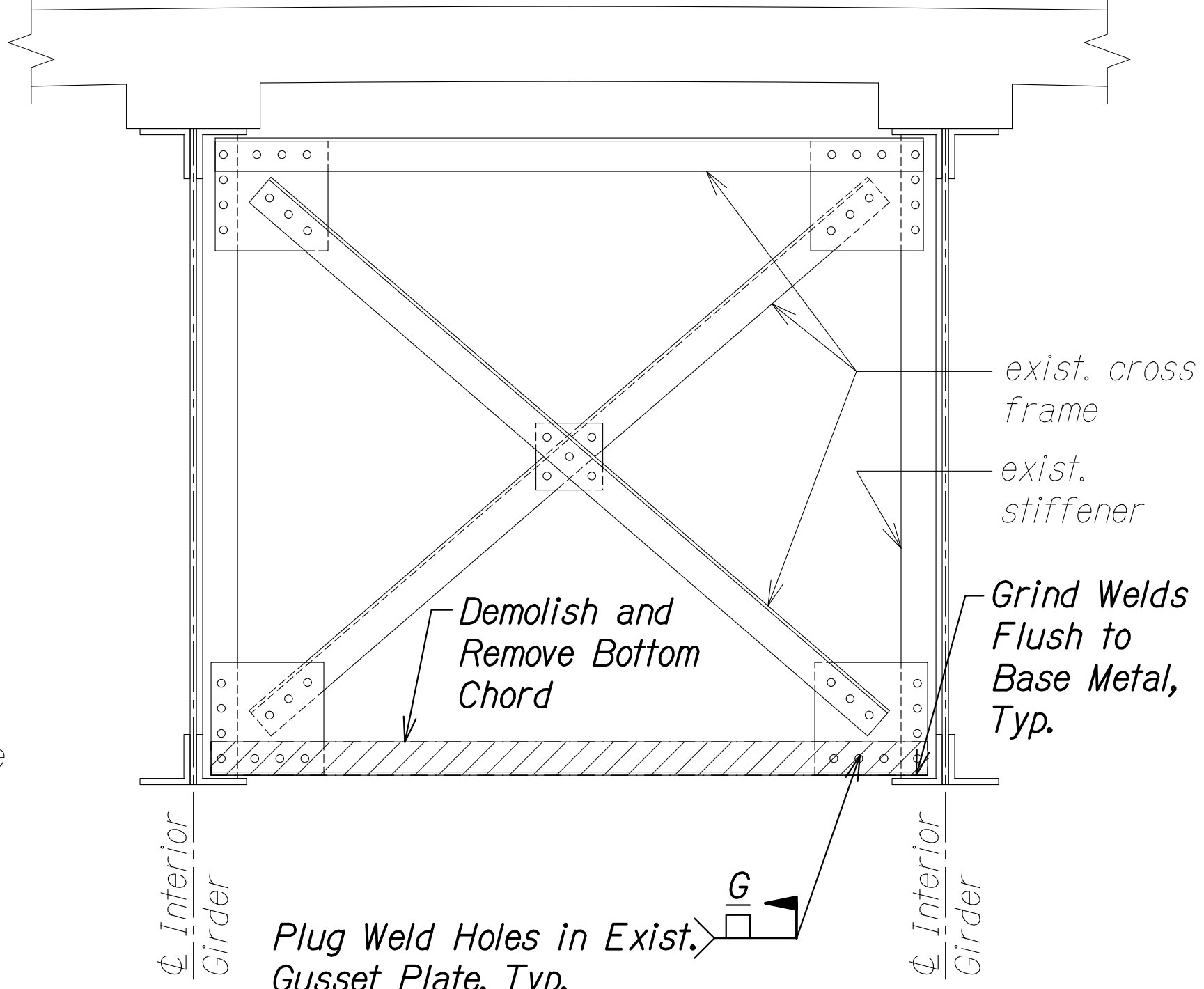
C
SA10.9 SA10.9



**[F4] INTERIOR BAY DEMO SECTION
AT FIXED BEARING**

Scale: 3/4" = 1'-0"

D
SA10.9 SA10.9



**[F5] INTERIOR BAY DEMO SECTION
AT FIXED ABUTMENT**

Scale: 3/4" = 1'-0"

E
SA10.9 SA10.9

| | |
|-------------------|-------|
| DATE | _____ |
| SURVEY PLOTTED BY | _____ |
| DESIGNED BY | _____ |
| TRACED BY | _____ |
| NOTE BOOK | _____ |
| QUANTITIES BY | _____ |
| CHECKED BY | _____ |

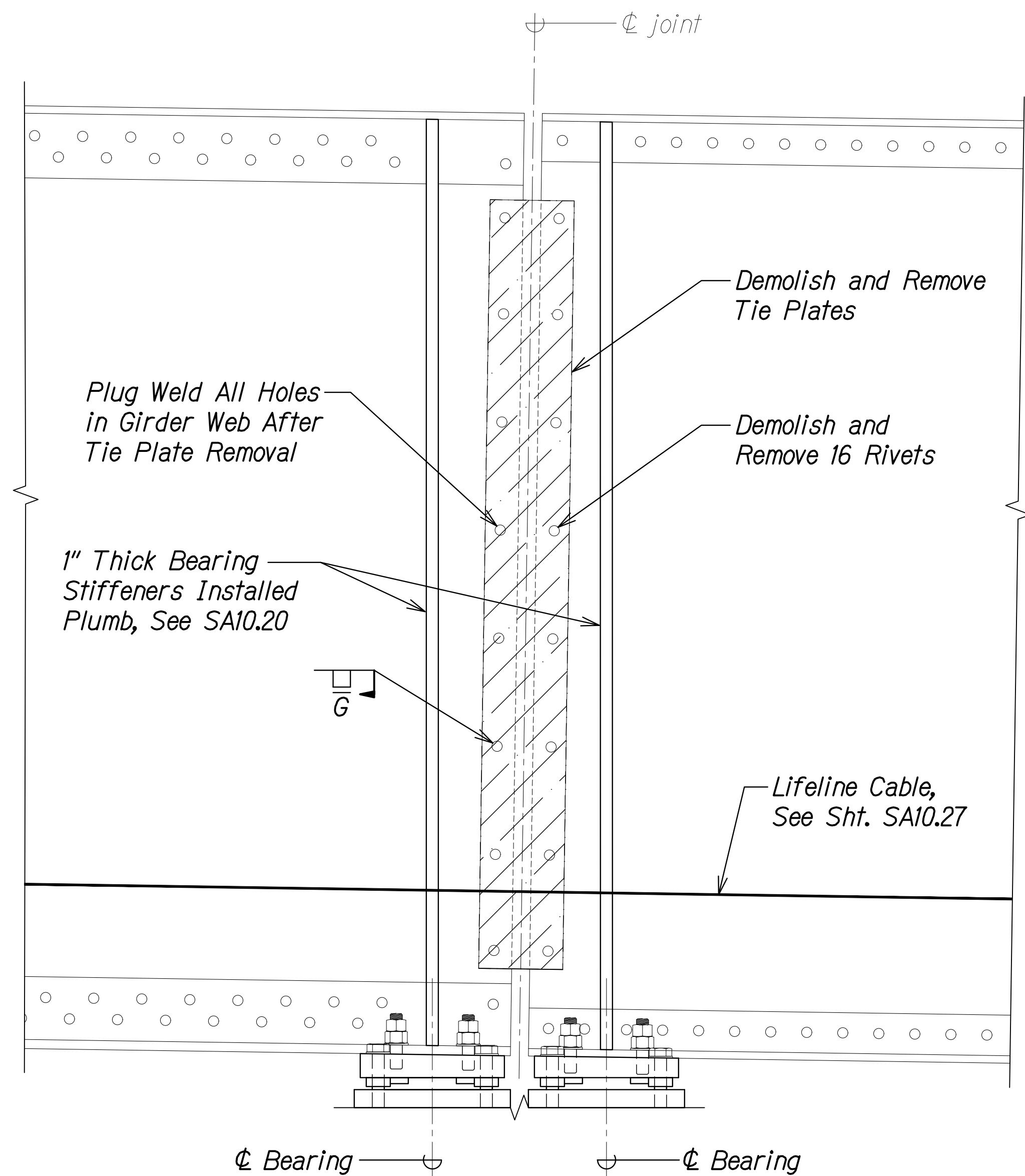
DRAWING NAME: 21.00.000000.23-022.9-NANUE STR BR PF2-DOT10.1 CAD 12-06-24 ADD2 NSR-SA1001-SA1009 STRUT DEMO SECT ADD2.DWG PLOT TIME: 12-03-24 10:34 PM

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE: *Stephen Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**FIXED BEARING CROSS FRAME
DEMOLITION SECTIONS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024
SHEET No SA10.9 OF 30 SHEETS

| | | |
|---------|---|--------------|
| 12/6/24 | 1 | Revised Note |
| DATE | | REVISION |

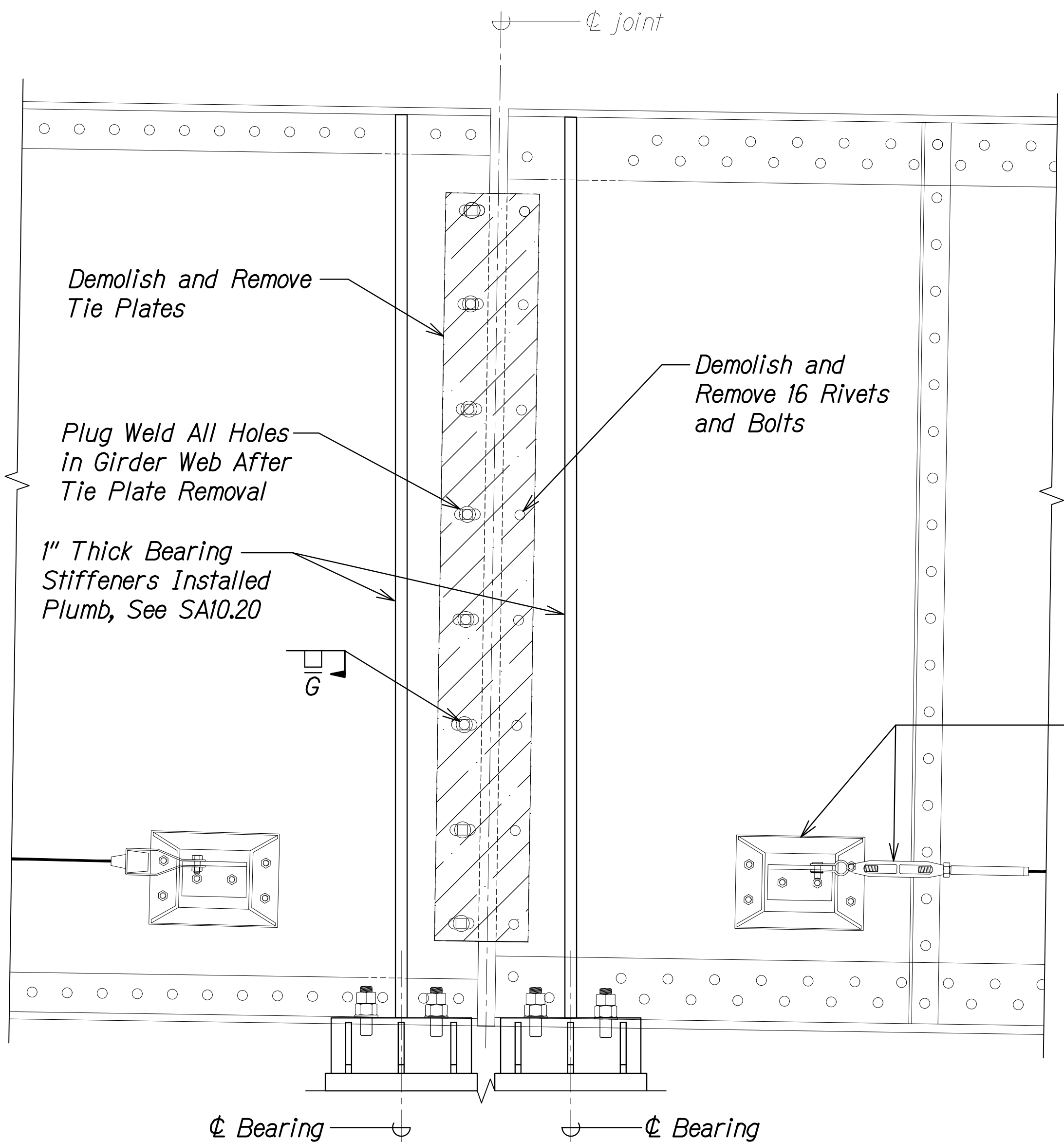
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 192 | 280 |



TIE PLATE DEMO ELEVATION - FIXED BEARING

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

SA10.10 A SA10.10

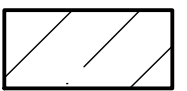


TIE PLATE DEMO ELEVATION - EXPANSION BEARING

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

SA10.10 B SA10.10

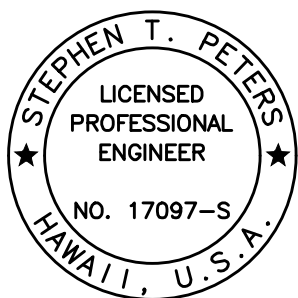
LEGEND:



Remove and Replace

NOTES:

1. See girder elevations for location of the tie plate replacement.
2. See Sht. SA10.25 for replacement details.
3. Remove tie plates prior to abrasive blasting. See Sequencing on Sheet SA9.23.



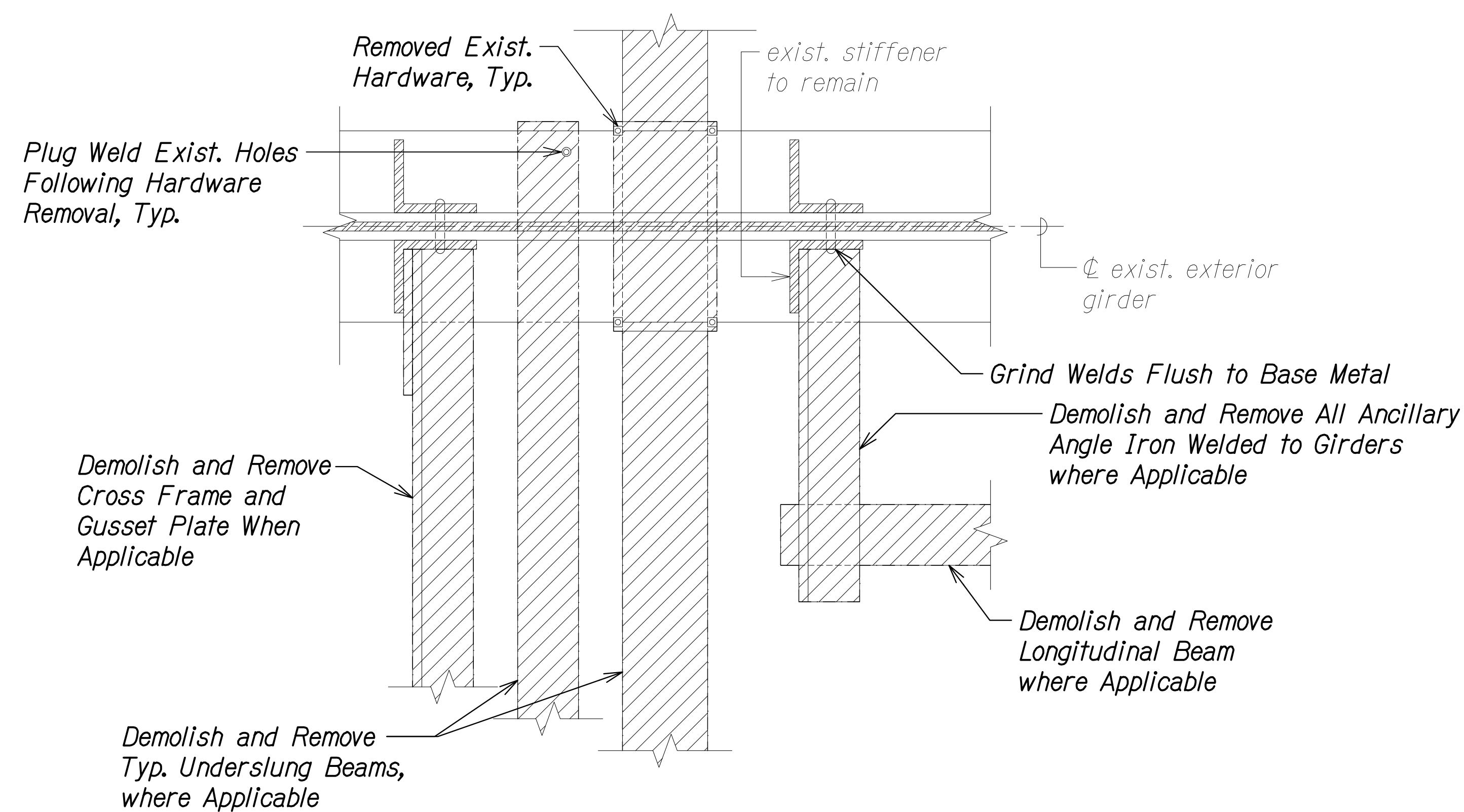
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TIE PLATE DEMOLITION ELEVATIONS
AT BEARINGS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSA10.10 OF 30 SHEETS

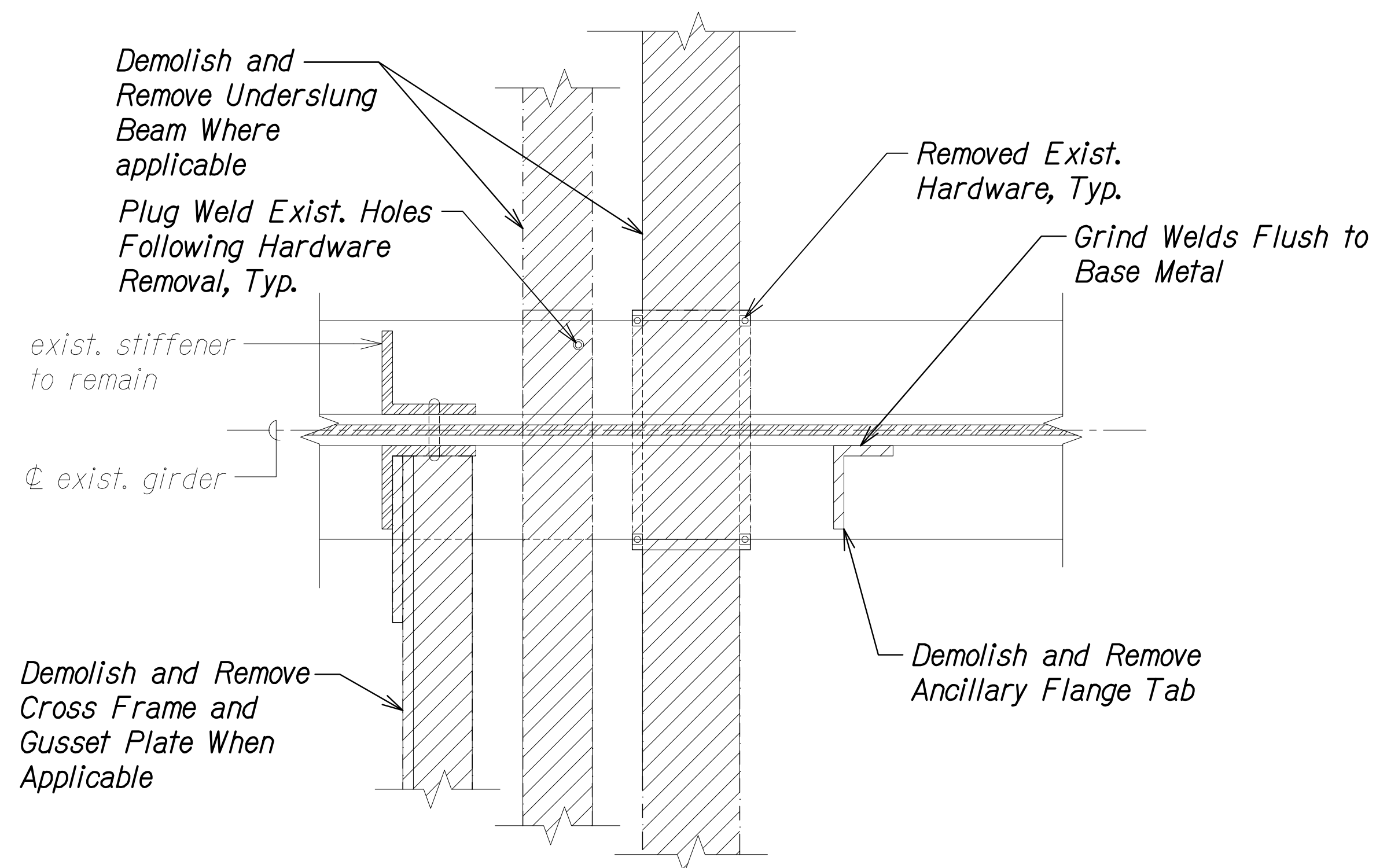
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 193 | 280 |



**TYPICAL EXTERIOR BAY
DEMO DETAIL AT BEARING**

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

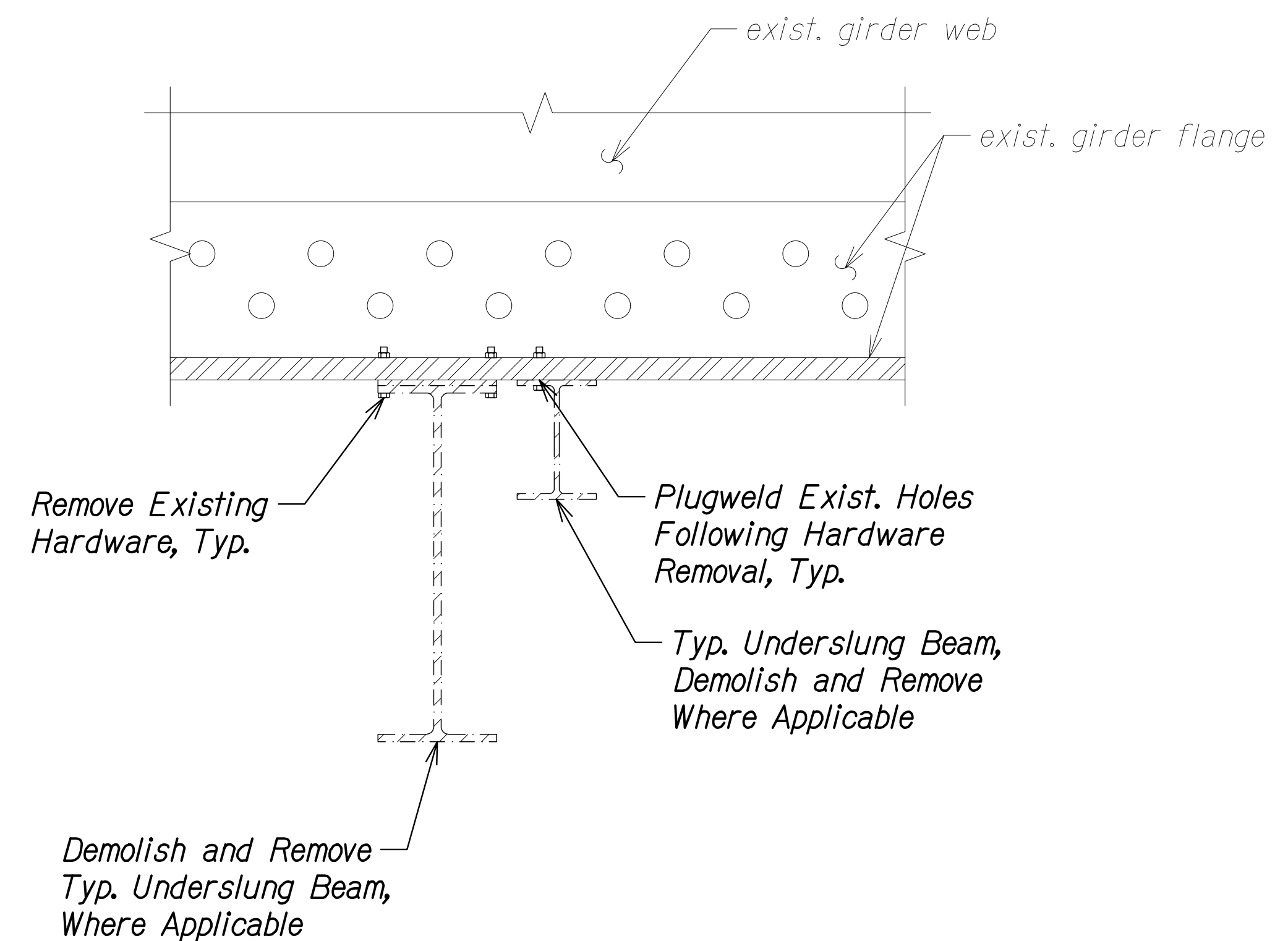
1
SA10.11 SA10.11



**TYPICAL INTERIOR BAY
DEMO DETAIL AT BEARING**

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

3
SA10.11 SA10.11



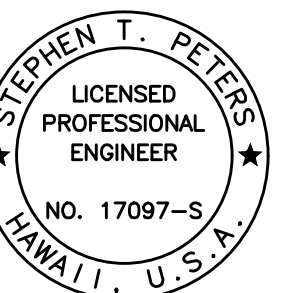
TYPICAL UNDERSLUNG BEAM DEMO DETAIL

Scale: 1" = 1'-0"

2
SA10.11 SA10.11

LEGEND:

 Demolish and Remove



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ME OR UNDER MY SUPERVISION.

SIGNATURE:  4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**MISCELLANEOUS DEMOLITION
DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSA10.11 OF 30 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 194 | 280 |

LEGEND:

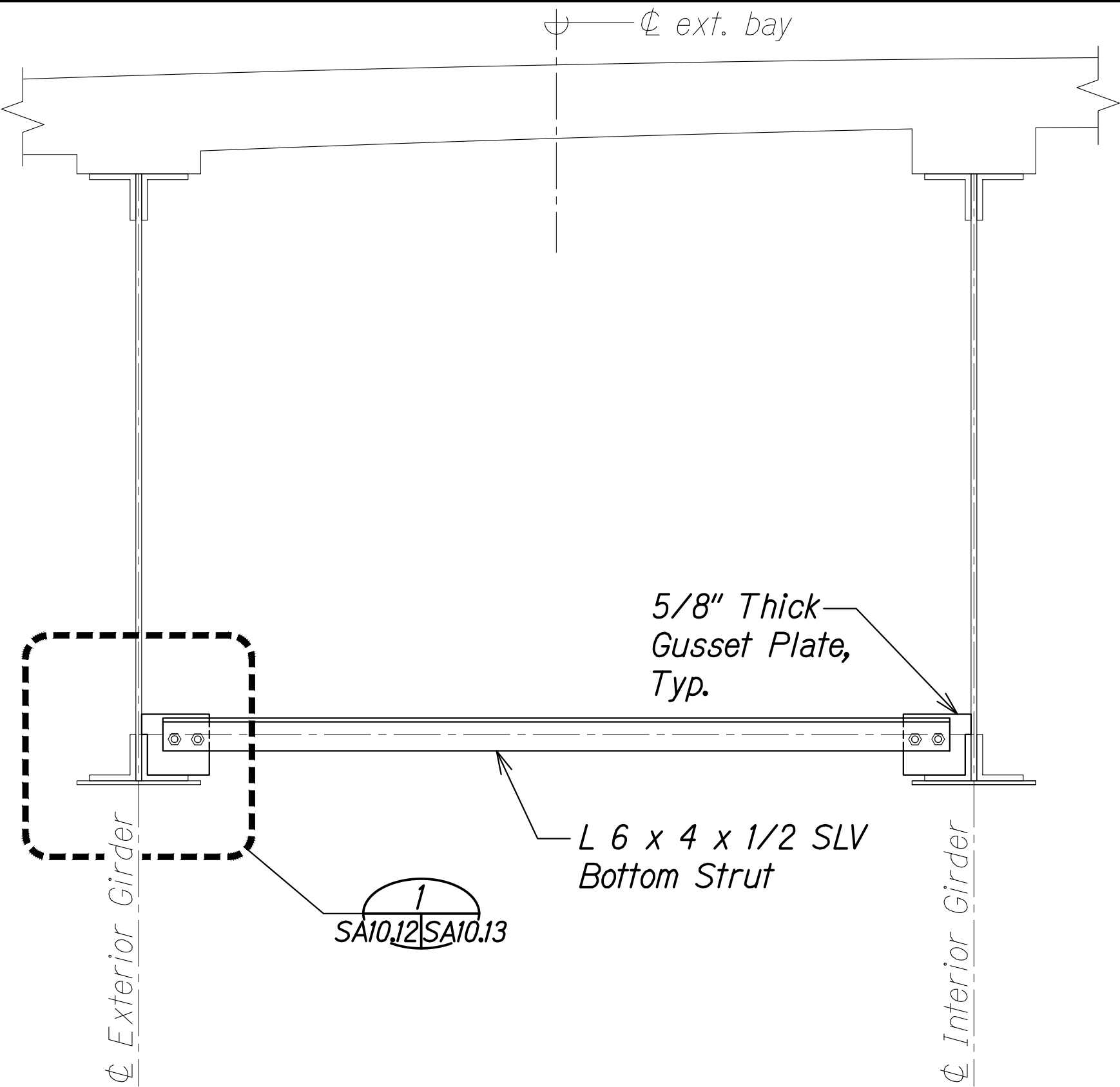
[XXX] Strut Mark, See SA9.6 through SA9.10 for locations

NOTES:

- The Contractor shall field fit strut members and gussets prior to welding and galvanizing assemblies.
- New gussets welded directly to exist. plate girders shall be provided ungalvanized. Field drill standard size holes in exist. girder stiffeners and new welded gusset plates to match bolt pattern in new strut assembly.
- Strut assemblies shall be delivered to the site fully assembled, hot-dip zinc galvanized per ASTM A123 and shop painted with primer, seal, stripe coat, and intermediate in accordance with Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL of the Special Provisions.

1
- Just prior to installation of strut assemblies, the immediate surrounding faying surfaces of existing girder web, flange, and stiffeners as well as new welded gusset plates shall be cleaned in accordance with SSPC-SP 10 or SSPC-SP 11 and painted, by brush, with two coats of the specified primer.
- Perform final abrasive blast cleaning to all girders, stiffeners, etc. Strut assemblies shall be sufficiently shielded from damage during blasting operation and masked from overspray during primer application.

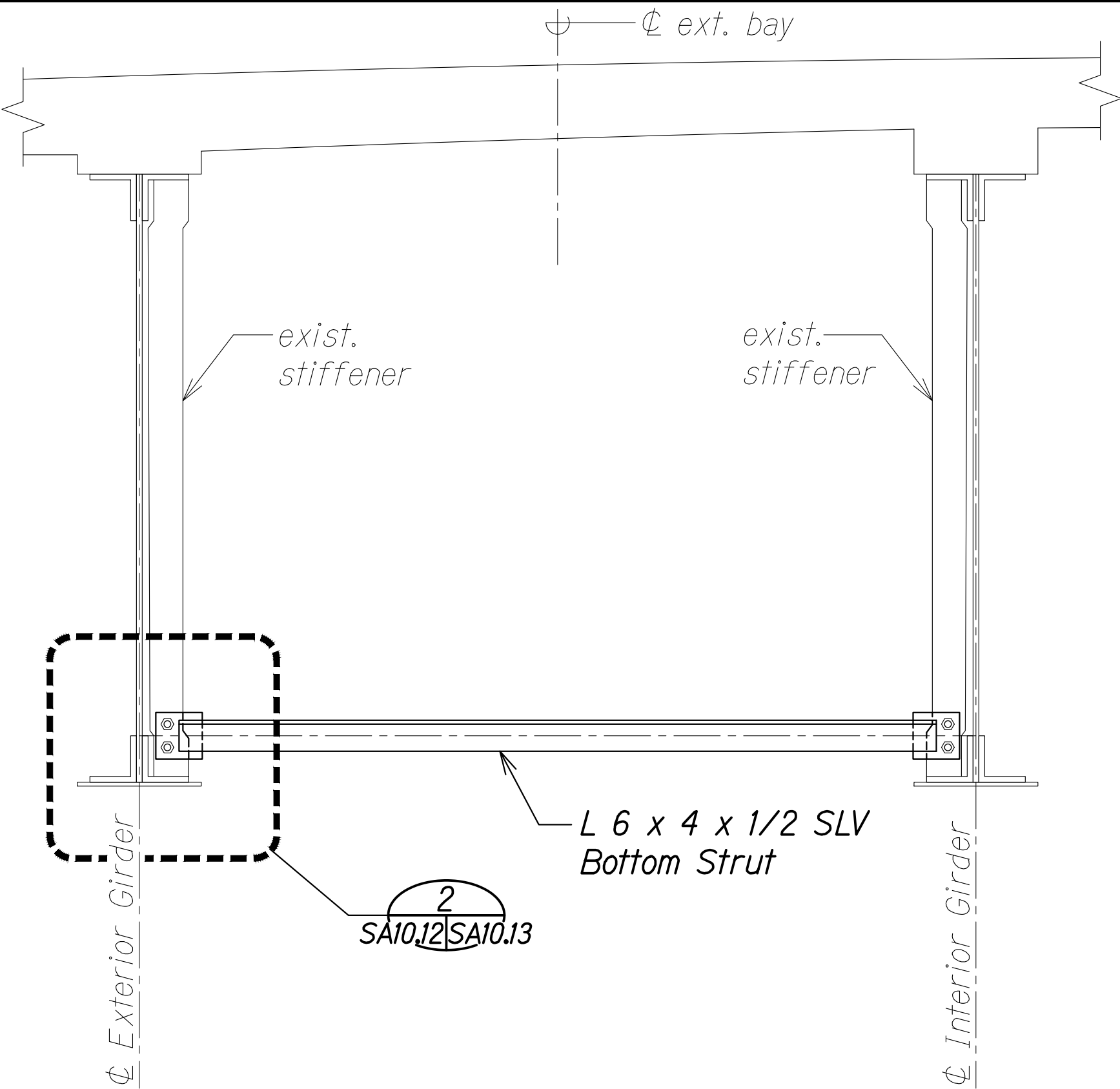
1
- Strut assemblies shall receive field applied top coat in accordance with Section 666 - BLAST, CLEAN, AND PAINT EXISTING BRIDGE STEEL of the Special Provisions.
- Details from adjacent bays not shown for clarity.
- See Sheet SA9.23 for required sequence regarding strut replacement and corresponding traffic control requirements.



[SE1] EXTERIOR BAY
STRUT SECTION

Scale: 3/4" = 1'-0"

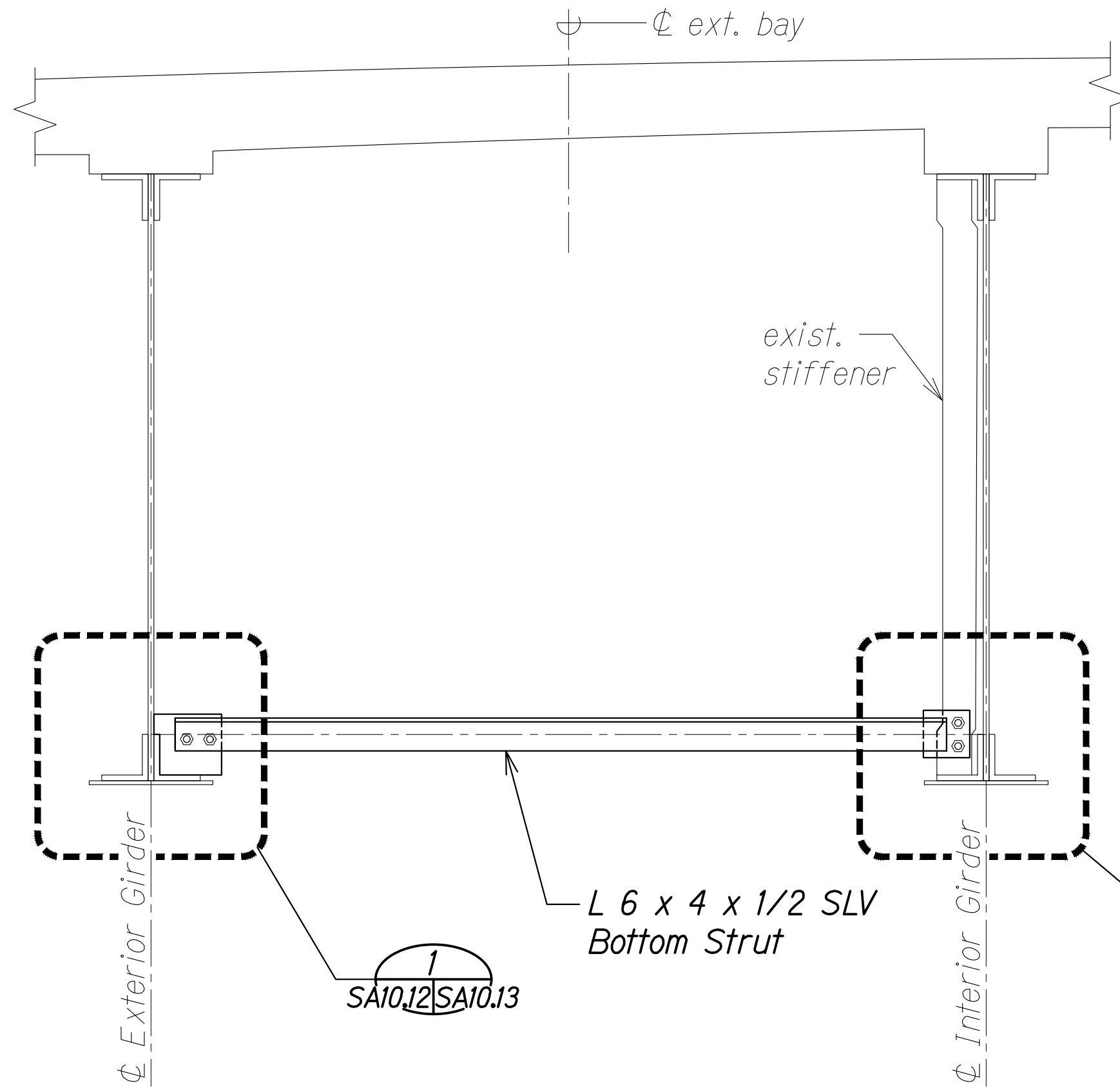
SA10.12 SA10.13
A



[SE2] EXTERIOR BAY
STRUT SECTION

Scale: 3/4" = 1'-0"

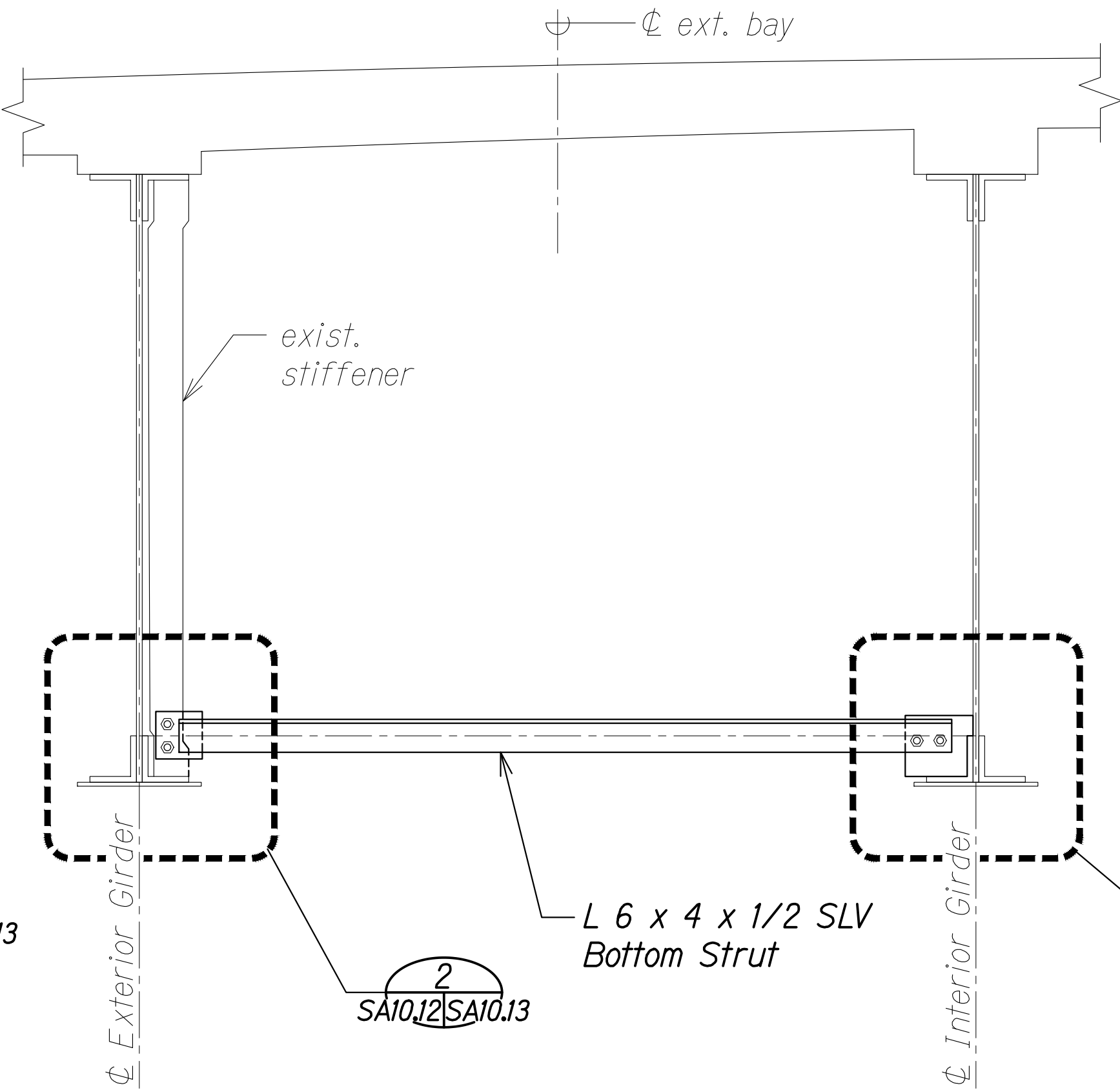
SA10.12 SA10.13
B



[SE3] EXTERIOR BAY
STRUT SECTION

Scale: 3/4" = 1'-0"

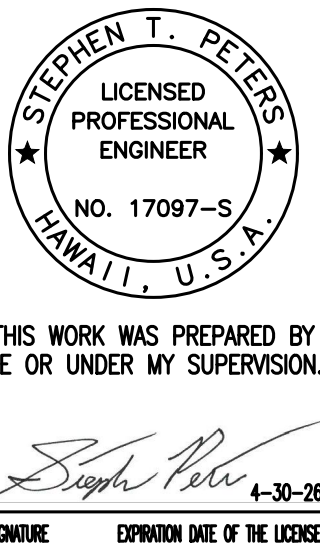
SA10.12 SA10.13
C



[SE4] EXTERIOR BAY
STRUT SECTION

Scale: 3/4" = 1'-0"

SA10.12 SA10.13
D



| | |
|--|-----------------|
| 12/6/24 | 1 Revised Notes |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION EXTERIOR BAY STRUT SECTIONS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET No SA10.12 OF 30 SHEETS | |

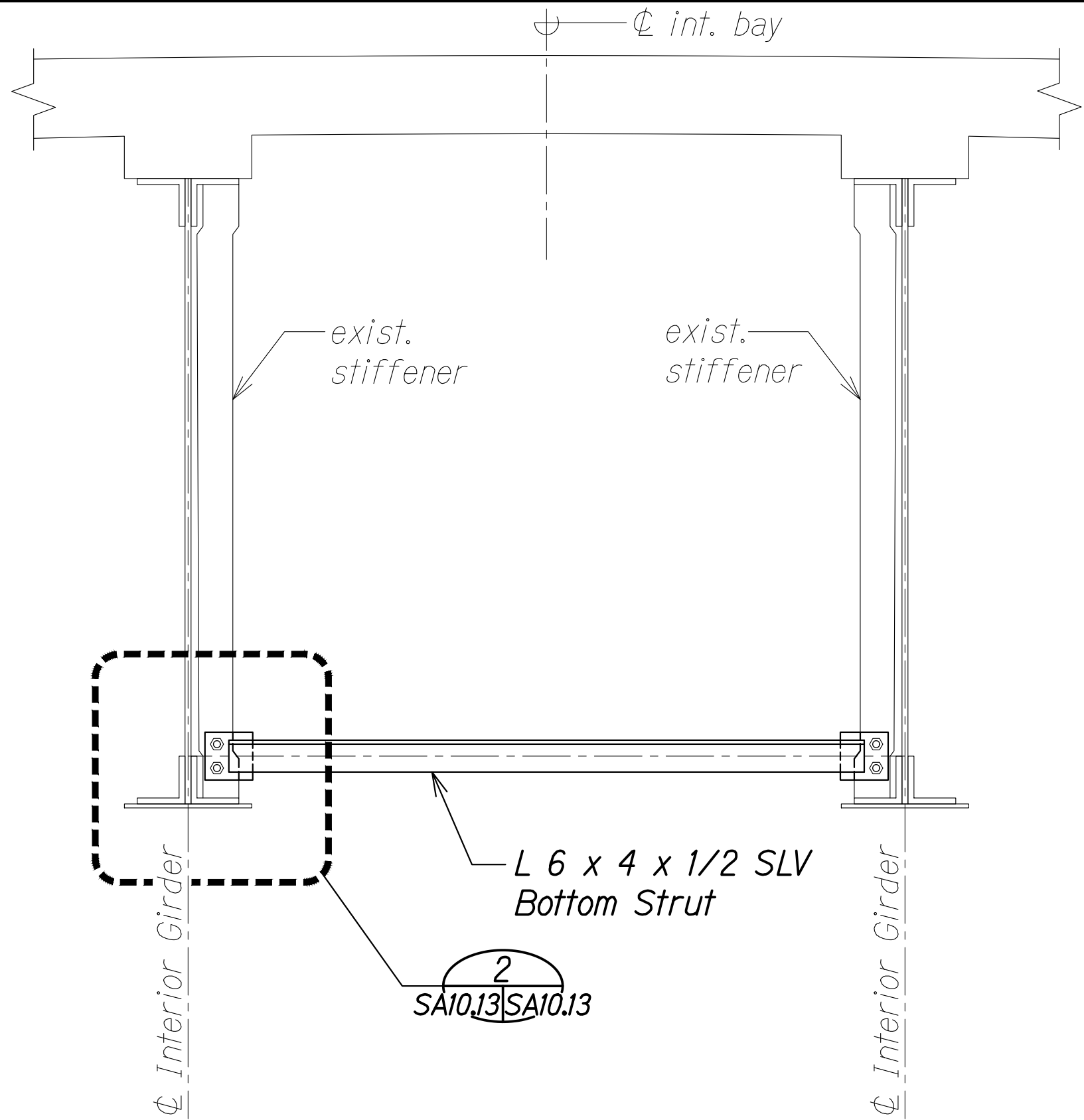
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 195 | 280 |

LEGEND:

[XXX] Strut Mark, See SA9.6 through SA9.10 for locations

NOTES:

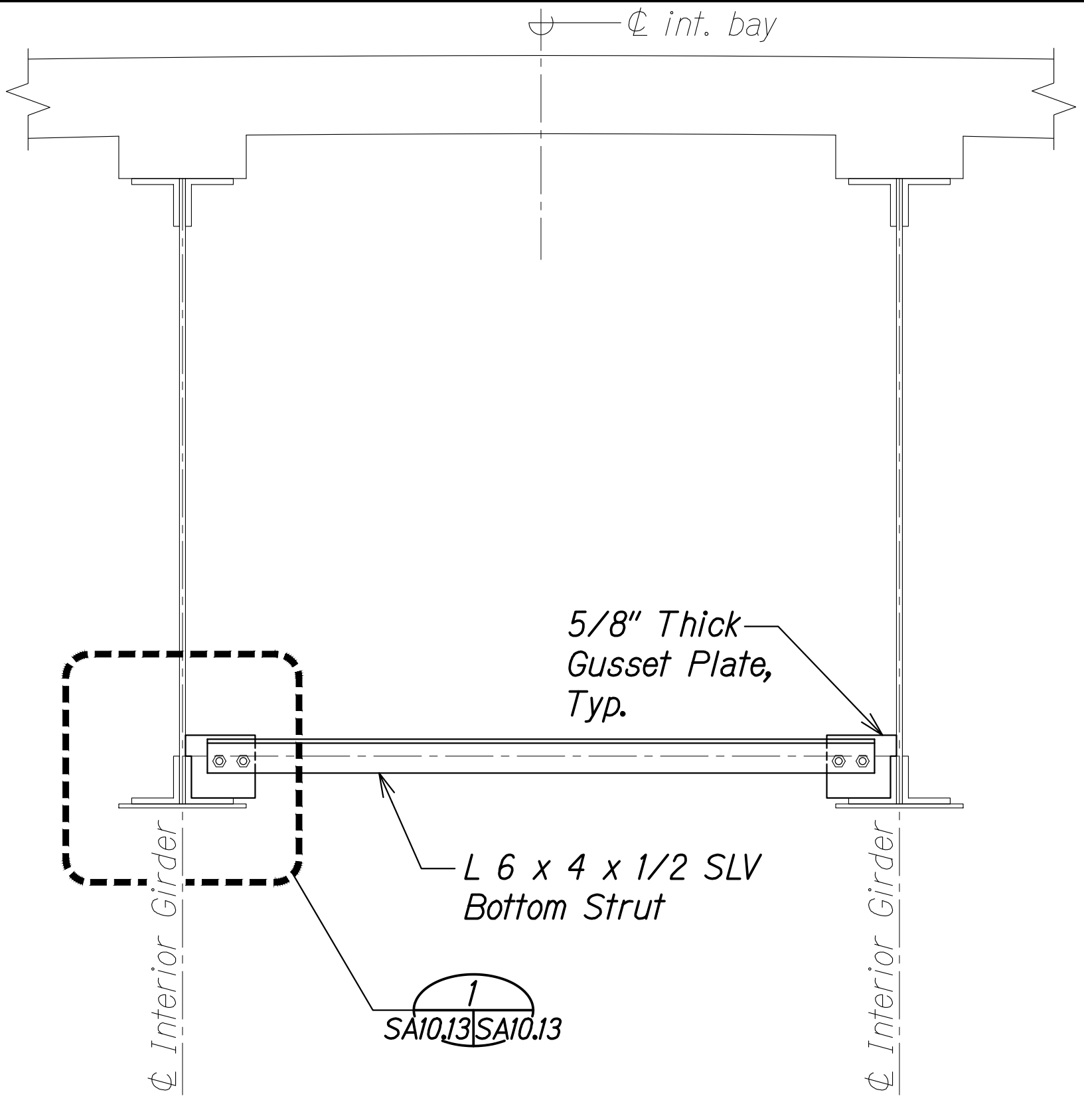
- The Contractor shall field fit strut members and gussets prior to welding and galvanizing assemblies.
- New gussets welded directly to exist. plate girders shall be provided ungalvanized. Field drill standard size holes in exist. girder stiffeners and new welded gusset plates to match bolt pattern in new strut assembly.
- Strut assemblies shall be delivered to the site fully assembled, hot-dip zinc galvanized per ASTM A123 and shop painted with primer, seal coat, stripe coat, and intermediate in accordance with Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL of the Special Provisions.
- Just prior to installation of strut assemblies, the immediate surrounding faying surfaces of existing girder web, flange, and stiffeners as well as new welded gusset plates shall be cleaned in accordance with SSPC-SP 10 or SSPC-SP 11 and painted, by brush, with two coats of the specified primer.
- Perform final abrasive blast cleaning to all girders, stiffeners, etc. Strut assemblies shall be sufficiently shielded from damage during blasting operation and masked from overspray during primer application.
- Strut assemblies shall receive field applied top coat in accordance with Section 666 - BLAST, CLEAN, AND PAINT EXISTING BRIDGE STEEL of the Special Provisions.
- Details from adjacent bays not shown for clarity.
- See Sheet SA9.23 for required sequence regarding strut replacement and corresponding traffic control requirements.



[SI1] INTERIOR BAY
STRUT SECTION

Scale: 3/4" = 1'-0"

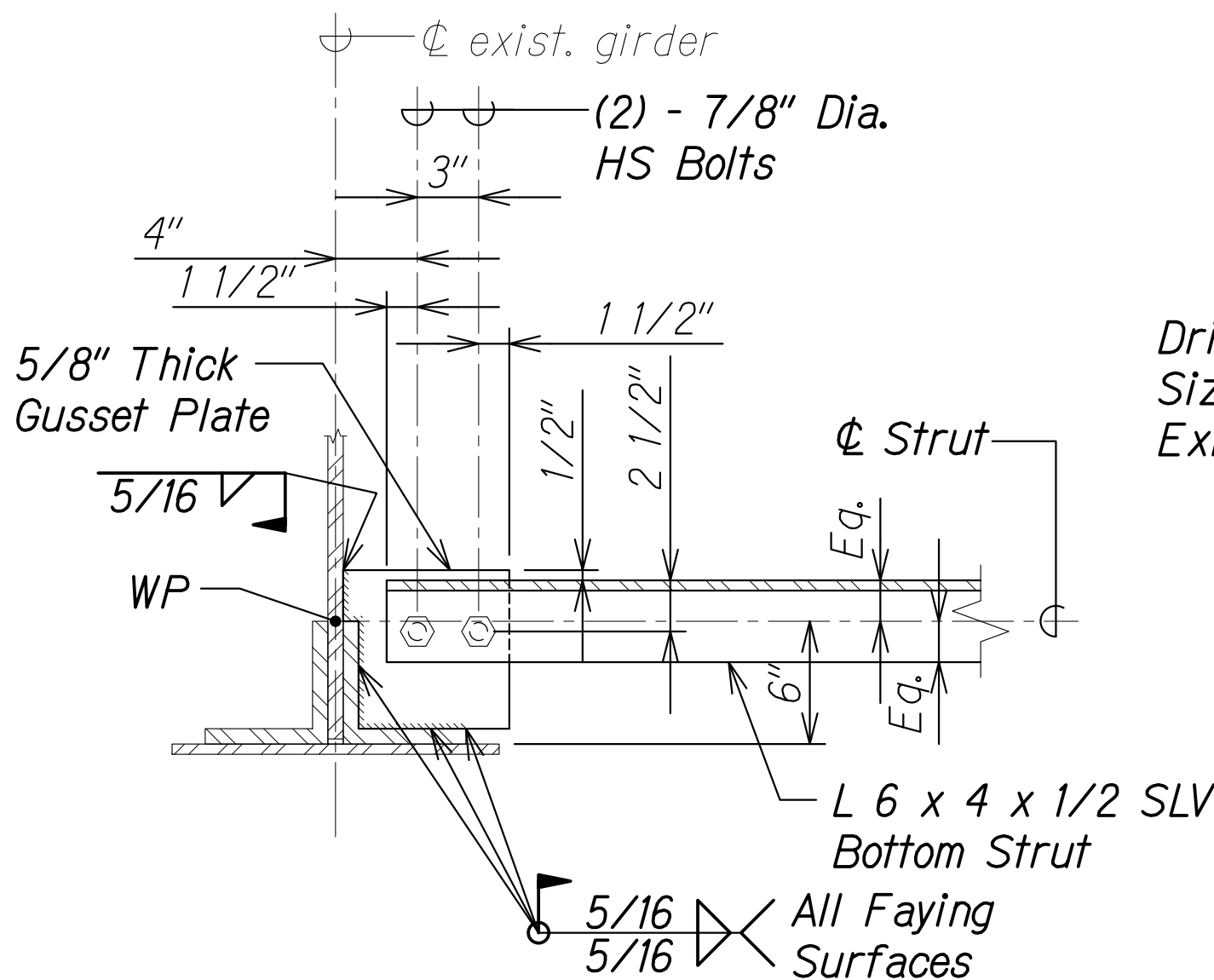
SA10.13 A SA10.13



[SI2] INTERIOR BAY
STRUT SECTION

Scale: 3/4" = 1'-0"

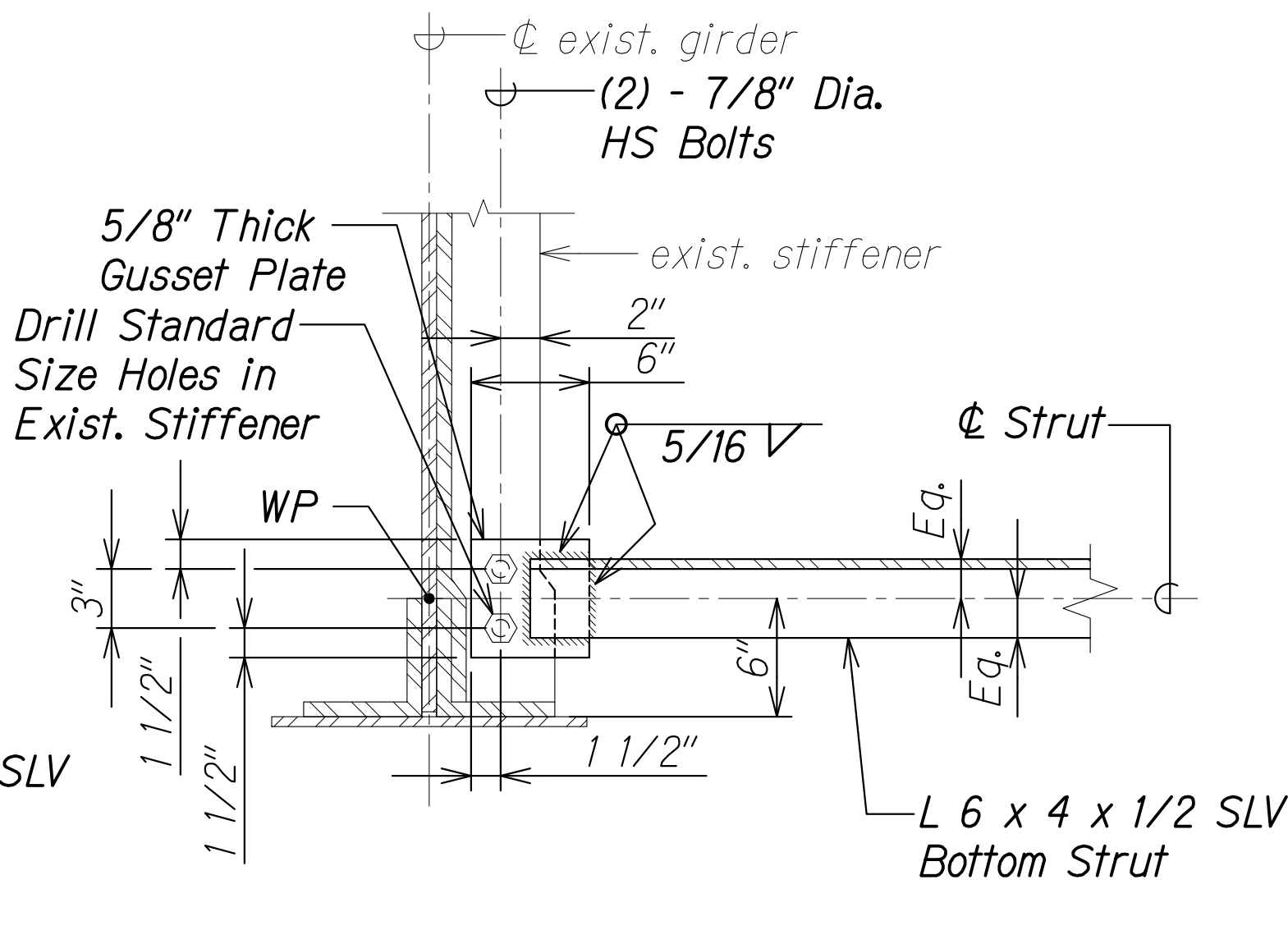
SA10.13 B SA10.13



DETAIL 1

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

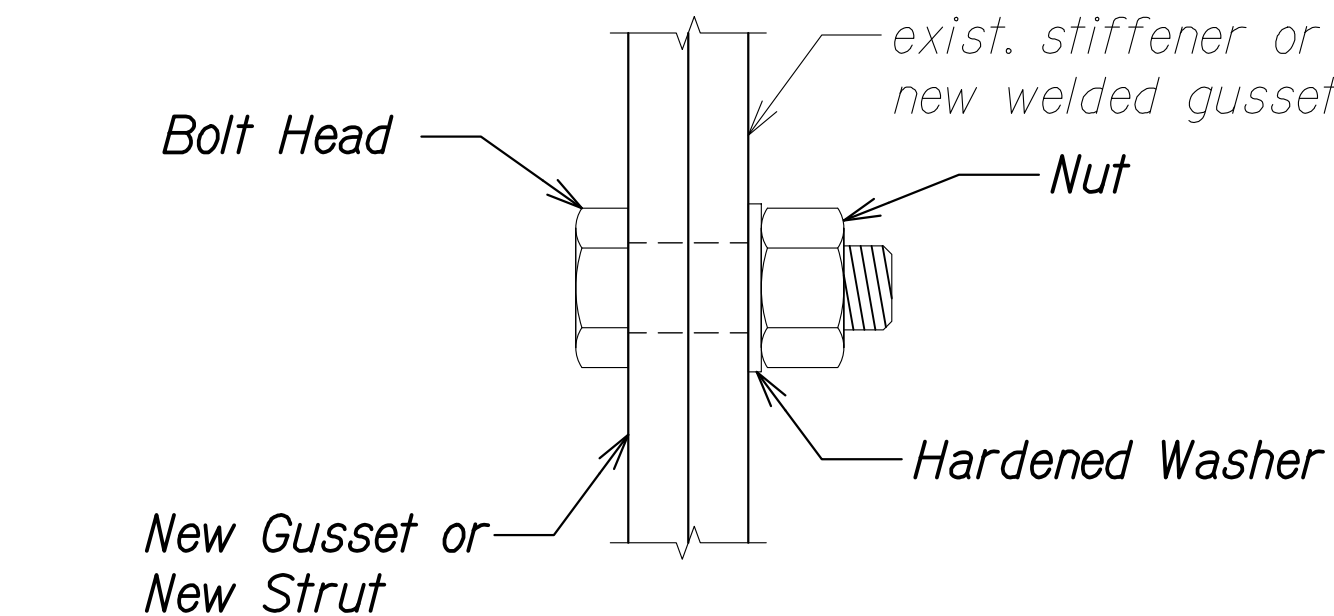
SA10.12 1 SA10.13
SA10.13



DETAIL 2

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

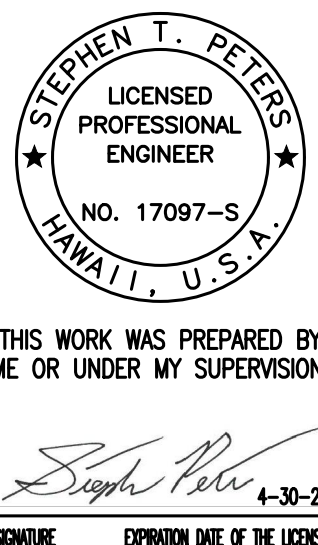
SA10.12 2 SA10.13
SA10.13



BOLT CONNECTION DETAIL 3

Scale: 6" = 1'-0"

SA10.13 3 SA10.13



| | |
|--|-----------------|
| 12/6/24 | 1 Revised Notes |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION INTERIOR BAY STRUT SECTIONS AND DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET NoSA10.13 OF 30 SHEETS | |

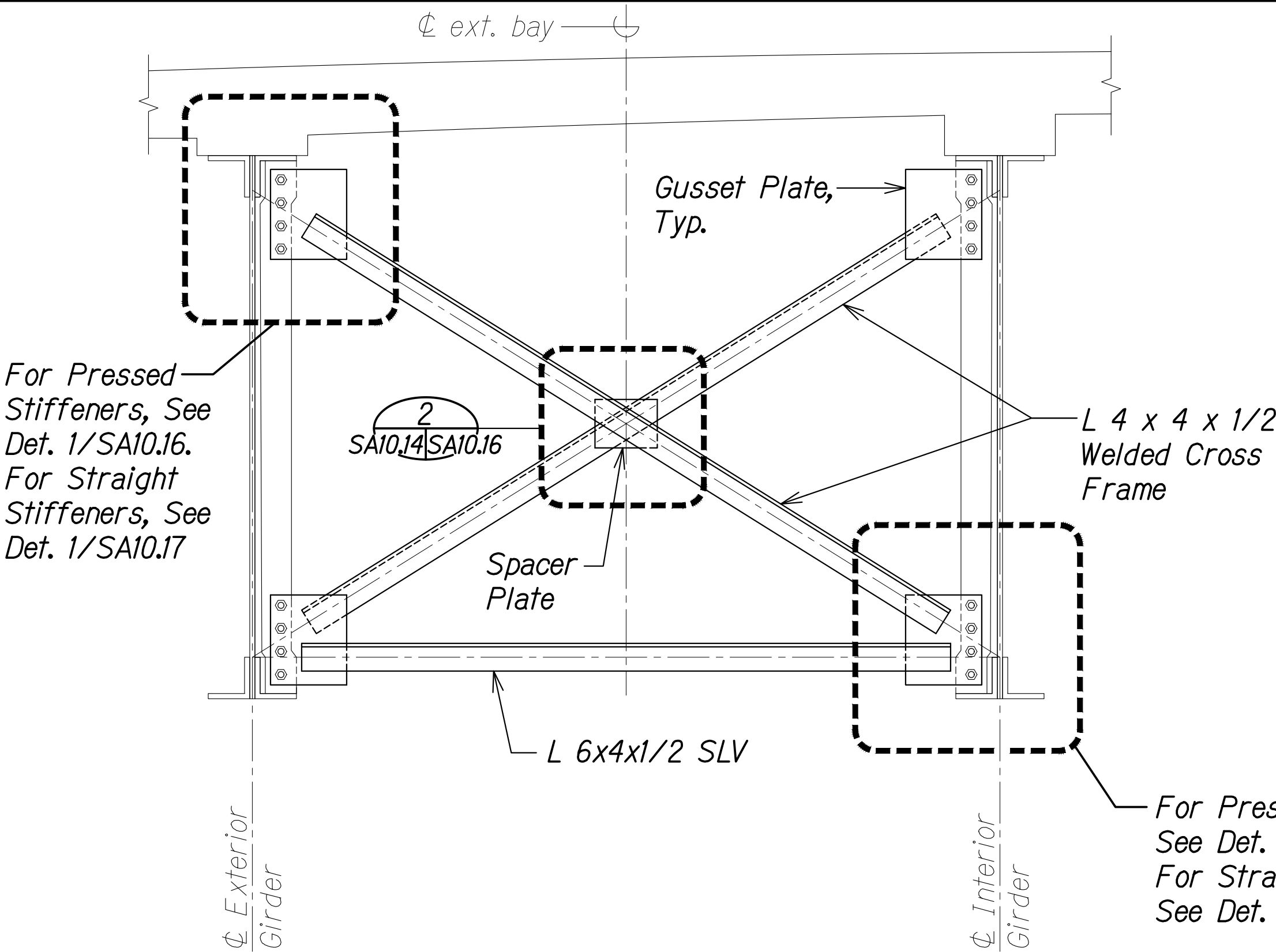
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 196 | 280 |

LEGEND:

[XXX] Cross Frame Mark, See SA9.6 through SA9.10 for locations

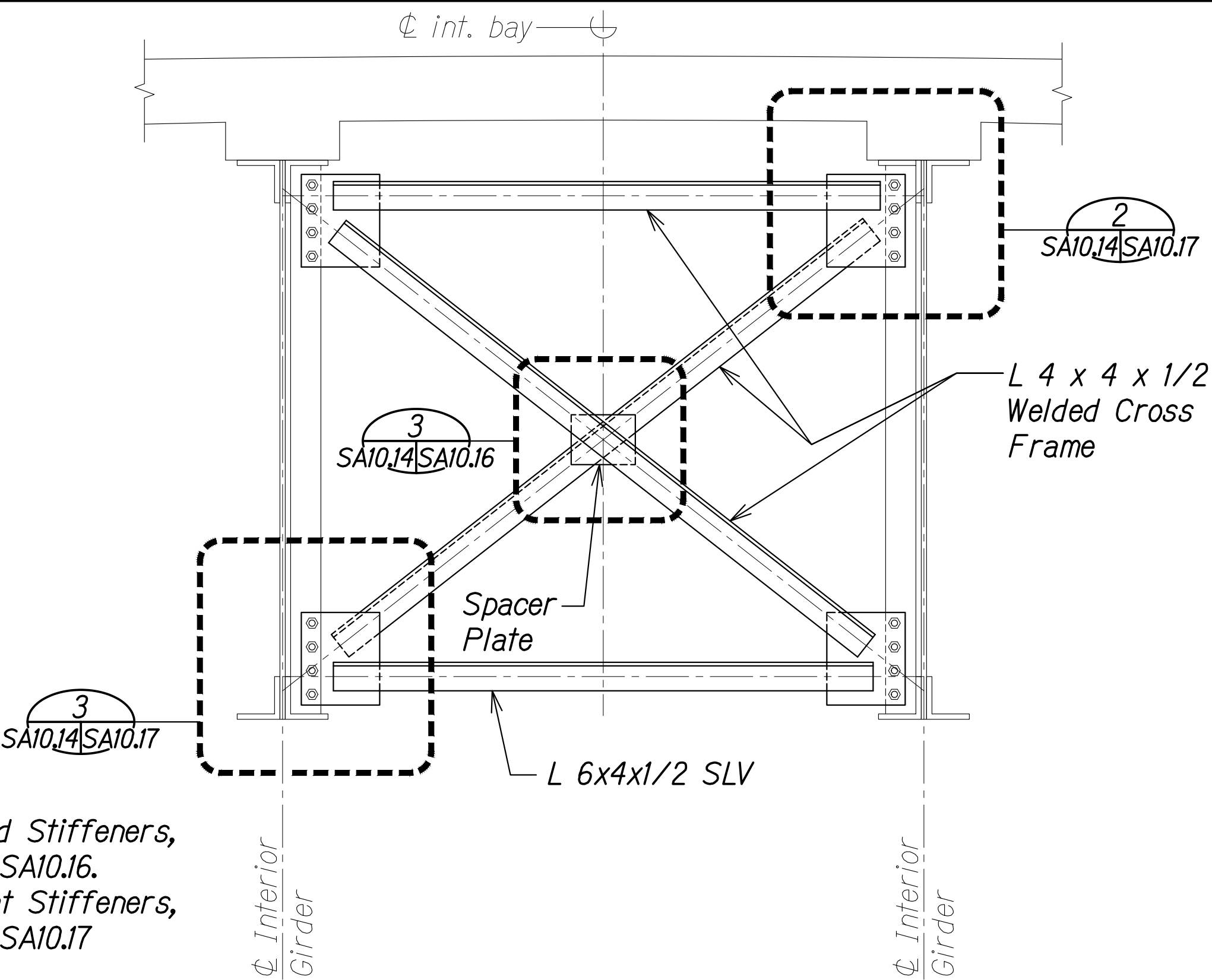
NOTES:

- The Contractor shall field fit frame members and gussets prior to welding and galvanizing assemblies.
- New girder stiffeners shall be provided ungalvanized and field welded to existing plate girders. Field drill standard size holes in existing/new girder stiffeners to match bolt pattern in new cross frame assembly.
- Existing stiffeners at in-span cross frames shall remain. Existing bearing stiffeners at fixed and expansion bearing cross frames shall be replaced. See Sheet SA10.20 for stiffener replacement details.
- Cross frame assemblies shall be delivered to the site fully assembled, hot-dip zinc galvanized per ASTM A123, and shop painted with primer, seal coat, stripe coat, and intermediate in accordance with Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL of the Special Provisions.
- Just prior to installation of cross frame assemblies, the immediate surrounding faying surfaces of existing/new girder stiffeners shall be cleaned in accordance with SSPC-SP 10 or SSPC-SP 11 and painted, by brush, with two coats of the specified primer.
- Perform final abrasive blast cleaning to all girders, stiffeners, etc. Cross frame assemblies shall be sufficiently shielded from damage during blasting operation and masked from overspray during primer application.
- Cross frame assemblies shall receive field applied top coat in accordance with Section 666 - BLAST, CLEAN, AND PAINT EXISTING BRIDGE STEEL of the Special Provisions.
- Details from adjacent bays not shown for clarity.
- See Sheet SA9.23 for required sequence regarding cross frame replacement and corresponding traffic control requirements.



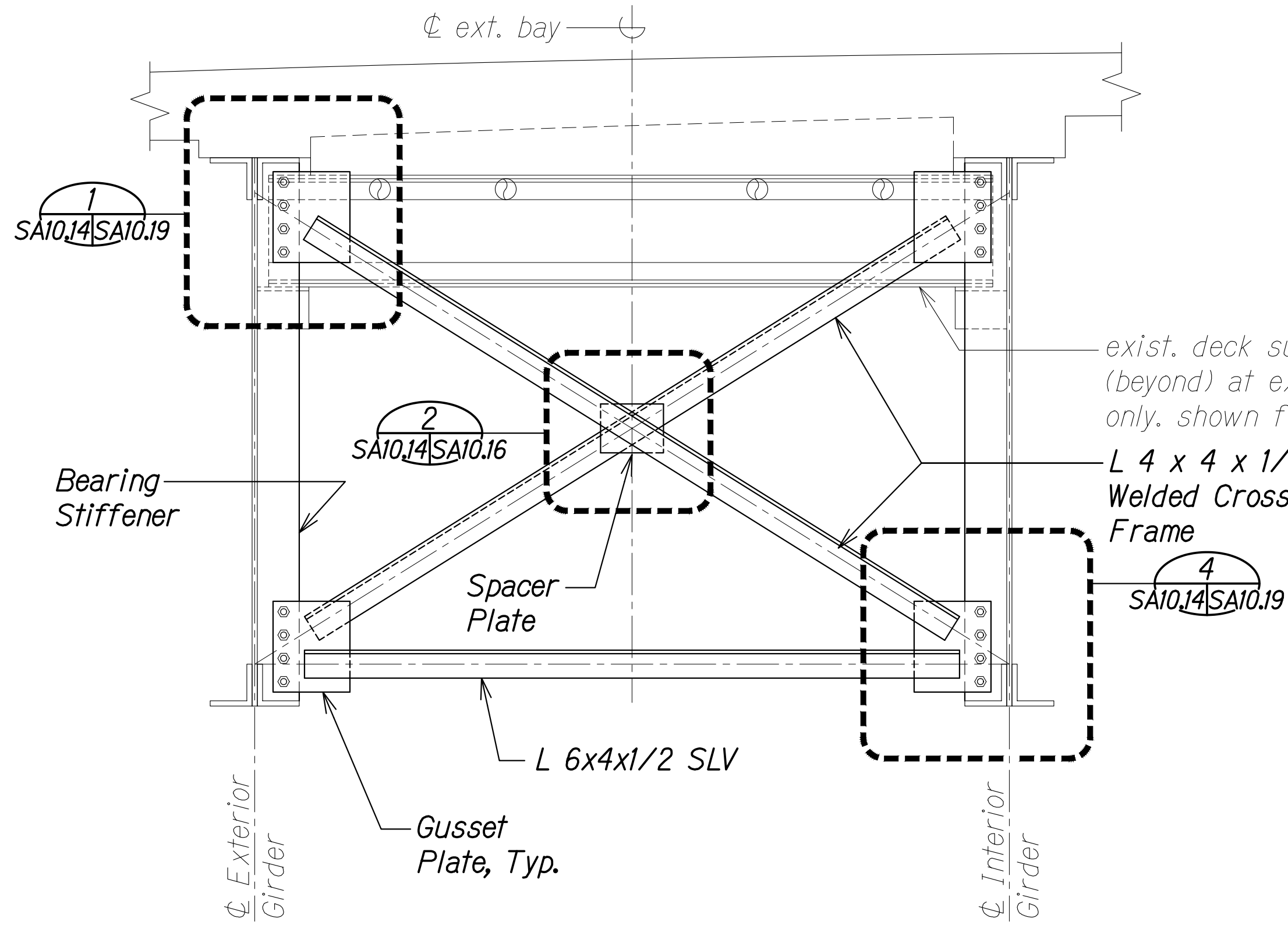
[R1] EXTERIOR BAY SECTION
AT IN-SPAN CROSS FRAME A

Scale: 3/4" = 1'-0" SA10.14 SA10.14



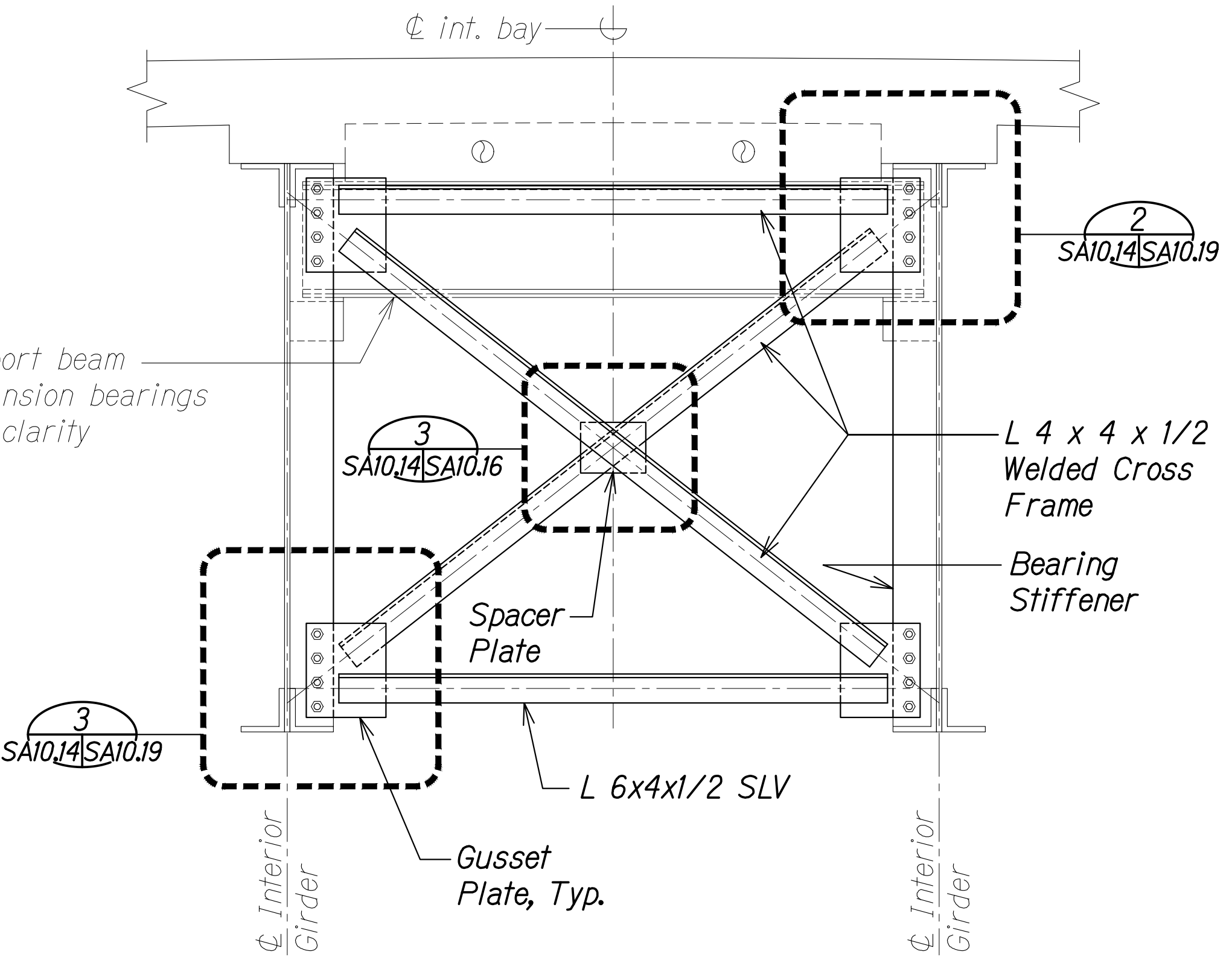
[R2] INTERIOR BAY SECTION
AT IN-SPAN CROSS FRAME B

Scale: 3/4" = 1'-0" SA10.14 SA10.14



[R3] EXTERIOR BAY SECTION AT FIXED &
EXPANSION BEARING CROSS FRAMES C

Scale: 3/4" = 1'-0" SA10.14 SA10.14



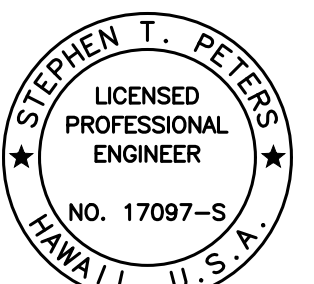
[R4] INTERIOR BAY SECTION AT FIXED &
EXPANSION BEARING CROSS FRAMES D

Scale: 3/4" = 1'-0" SA10.14 SA10.14

12/6/24 1 Revised Notes

DATE REVISION

| | |
|---|-----------------|
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | |
| IN-SPAN, ELEVATION, AND FIXED BEARING CROSS FRAME SECTIONS | |
| HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) | |
| Scale: As Noted | Date: Oct. 2024 |
| SHEET No SA10.14 OF 30 SHEETS | |



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SIGNATURE EXPIRATION DATE OF THE LICENSE

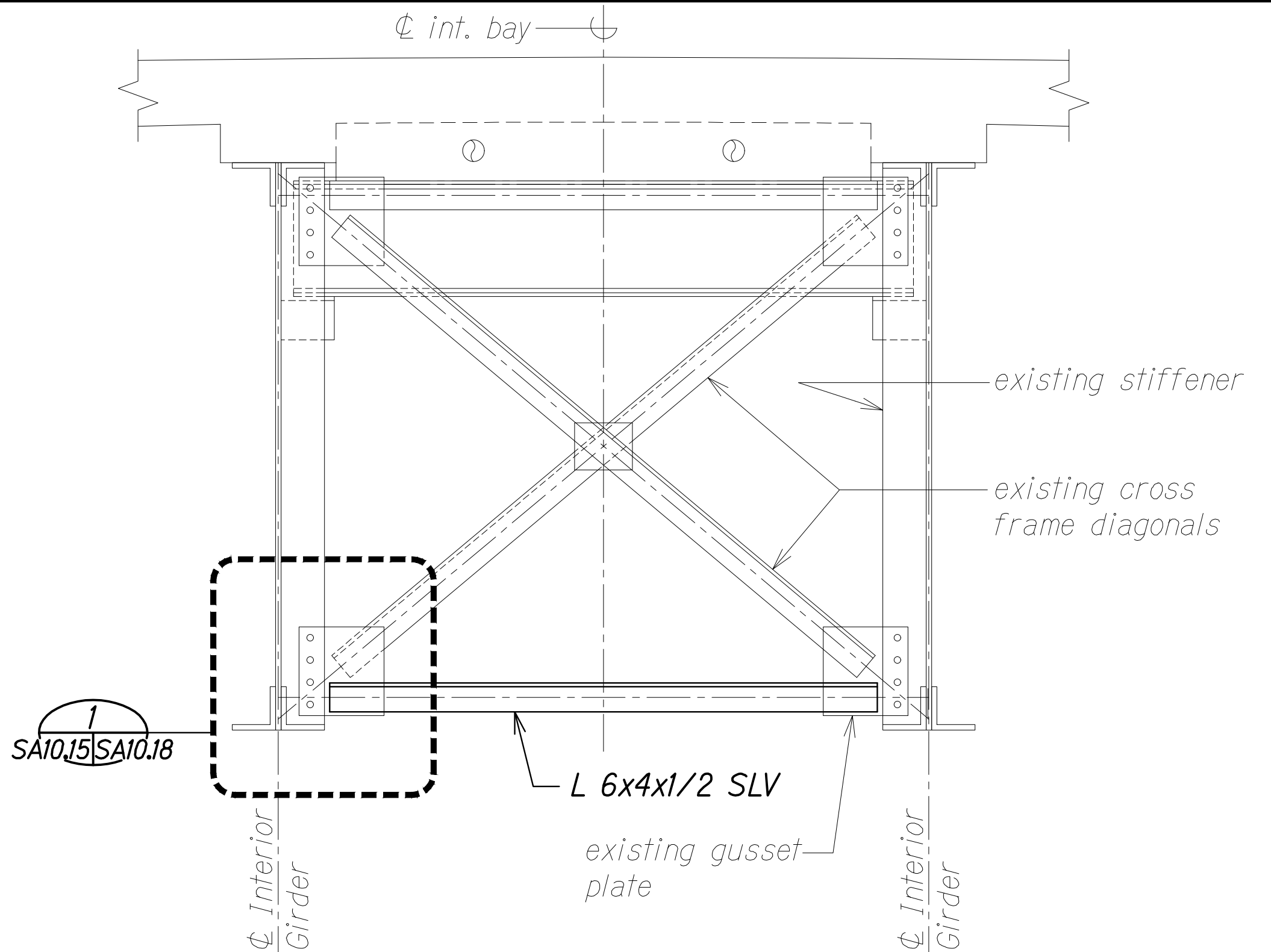
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 197 | 280 |

LEGEND:

[XX] Cross Frame Mark, See SA9.6
through SA9.10 for locations

NOTES:

1. New bottom chord shall be provided ungalvanized and field welded to existing gusset plates.
2. Just prior to installation of bottom chord, the immediate surrounding faying surfaces of existing gusset plates shall be cleaned in accordance with SSPC-SP 10 or SSPC-SP 11.
3. Perform final abrasive blast cleaning to all girders, stiffeners, and new bottom chord.
4. Bottom chord shall receive field applied primer coats, stripe coat, intermediate coat, and top coat in accordance with Section 666 - BLAST, CLEAN, AND PAINT EXISTING BRIDGE STEEL of the Special Provisions.
5. Details from adjacent bays not shown for clarity.
6. See Sheet SA9.23 for required sequence regarding member replacement.



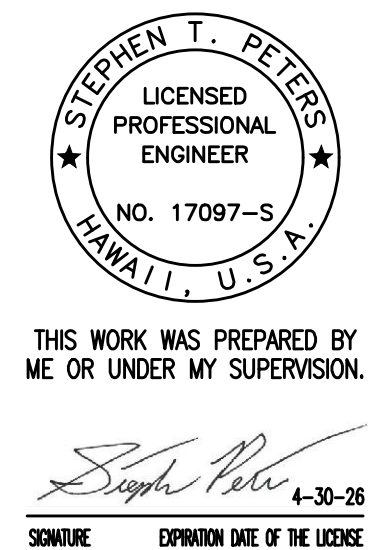
**[R5] INTERIOR BAY SECTION AT FIXED
ABUTMENT CROSS FRAME**

Scale: 3/4" = 1'-0"

A
SA10.15 SA10.15

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\10-28-24 BID SET\NSR-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24 3:19 PM



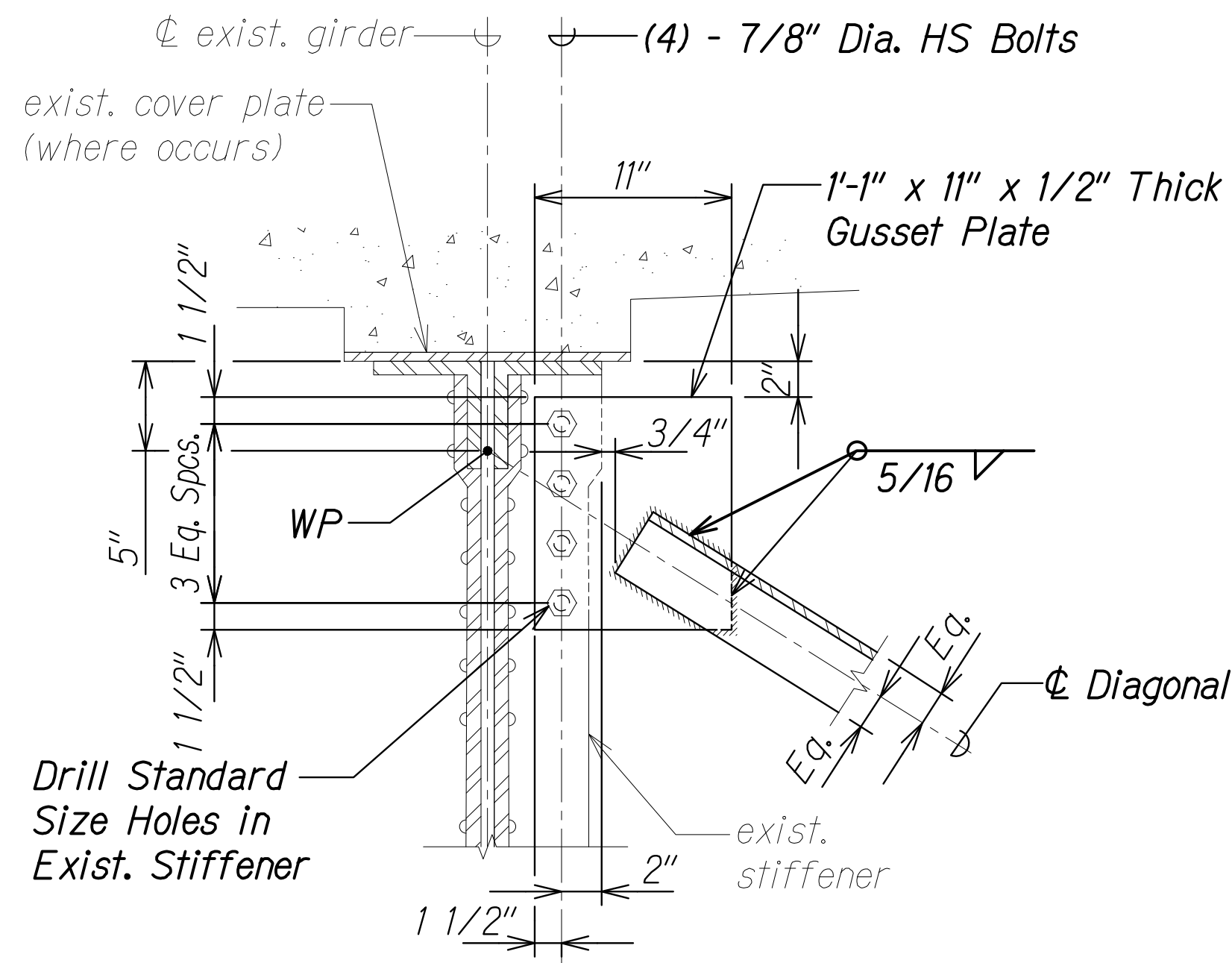
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**ABUTMENT CROSS FRAME
SECTION**

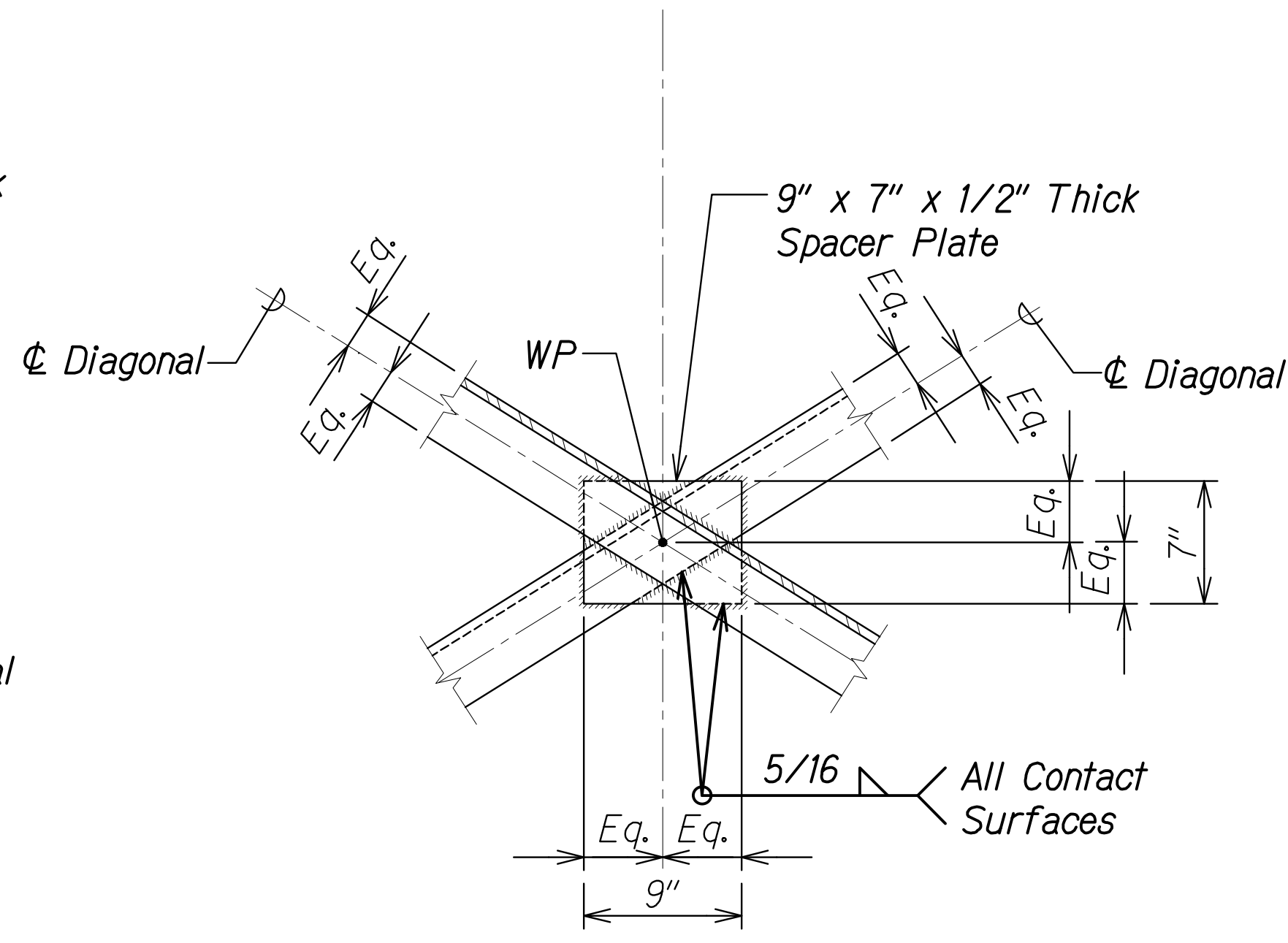
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

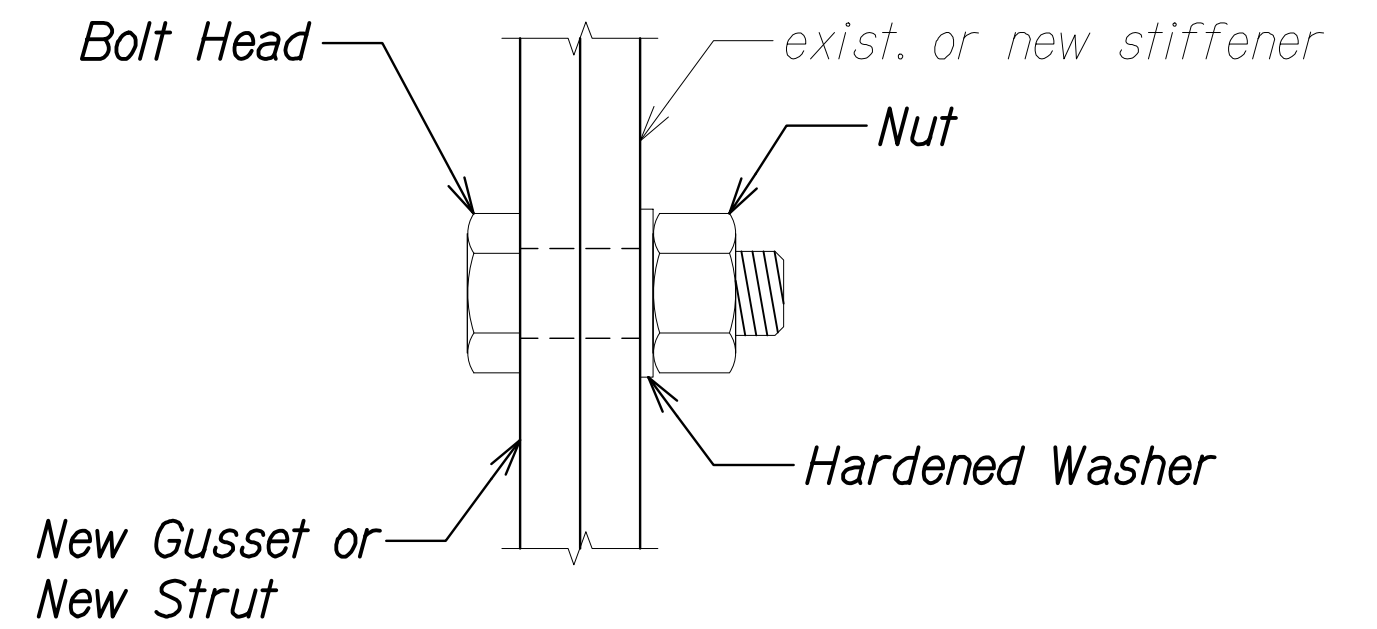
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 198 | 280 |



DETAIL 1
Scale: 1 1/2" = 1'-0" SAIQ.14 SAIQ.16



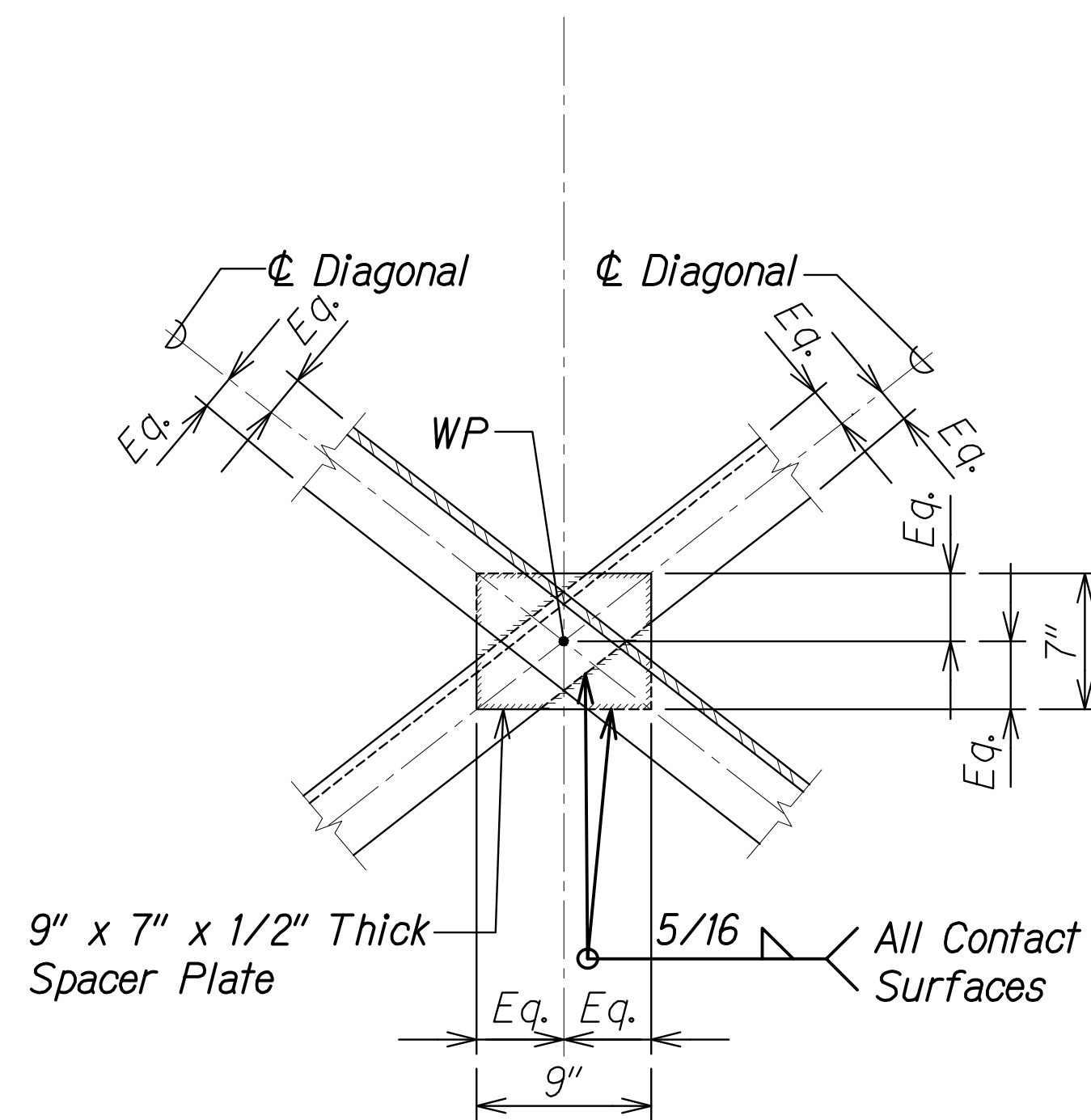
DETAIL 2
Scale: 1 1/2" = 1'-0" SAIQ.14 SAIQ.16



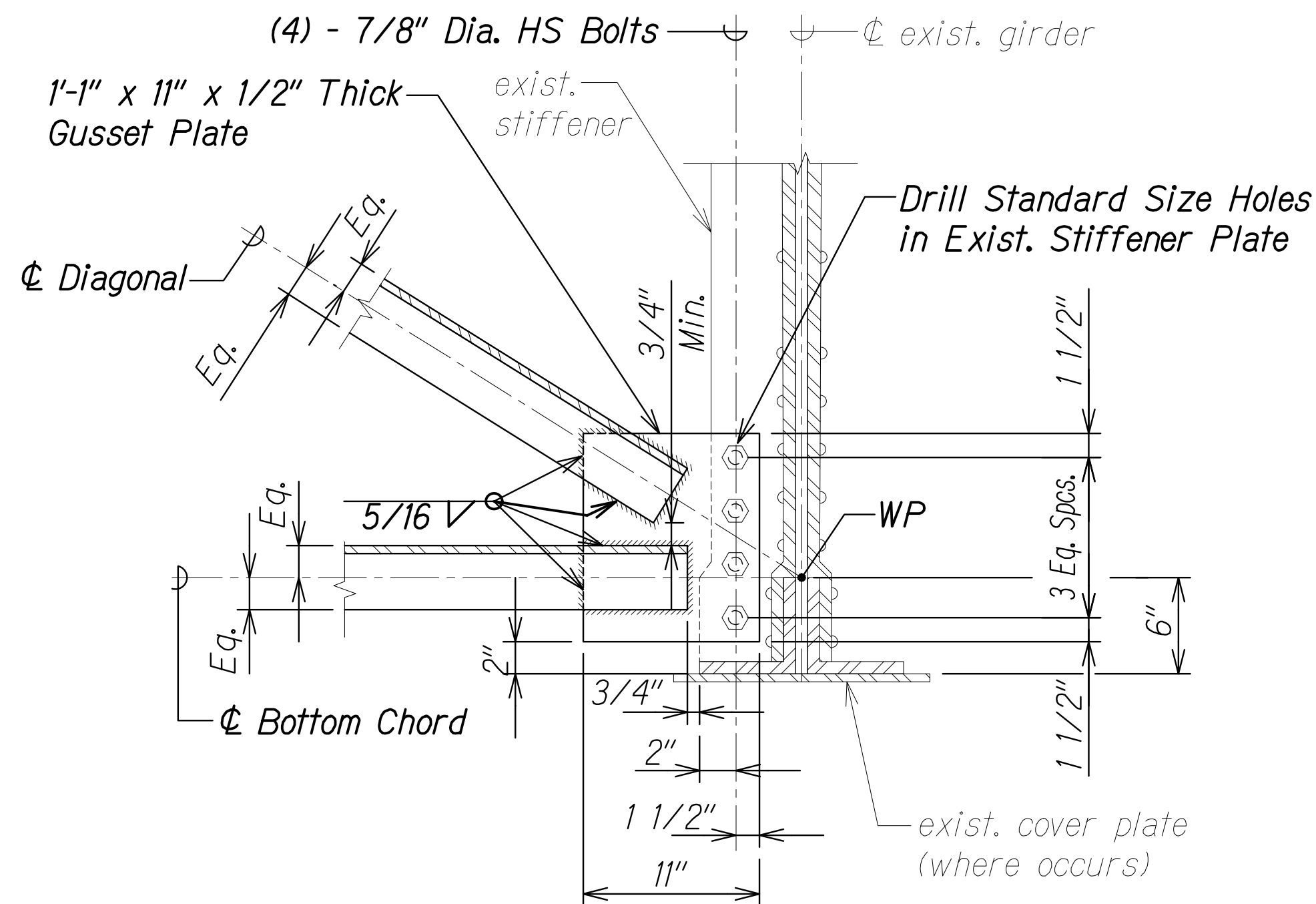
BOLT CONNECTION DETAIL 5
Scale: 6" = 1'-0" SAIQ.16 SAIQ.16

NOTE:

Face all bolts in the same direction for consistency.



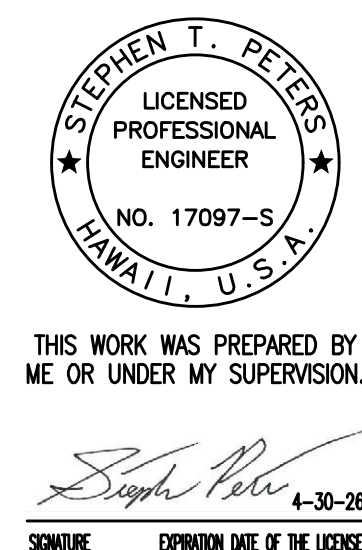
DETAIL 3
Scale: 1 1/2" = 1'-0" SAIQ.14 SAIQ.16



DETAIL 4
Scale: 1 1/2" = 1'-0" SAIQ.14 SAIQ.16

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24, 5:01 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

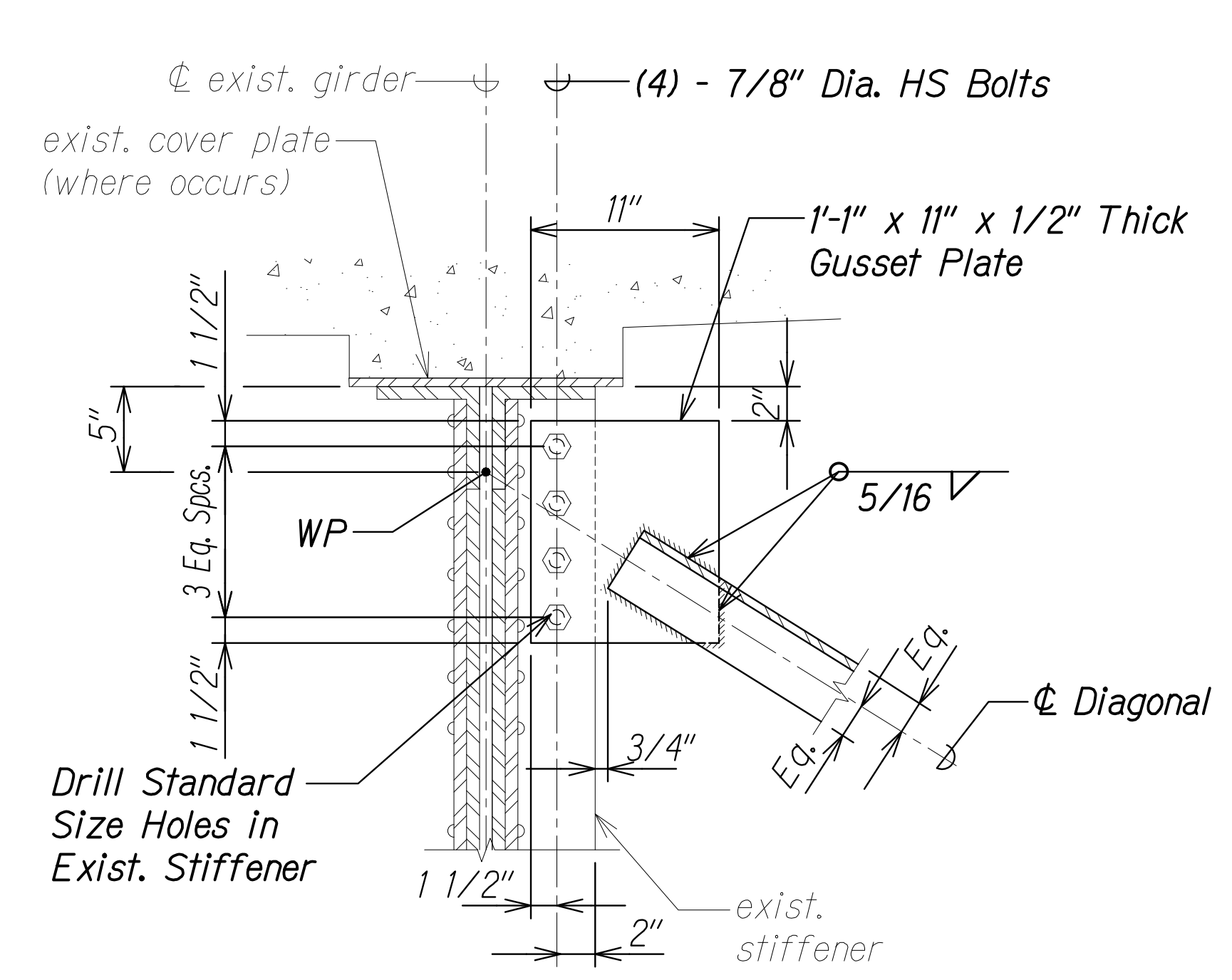
CROSS FRAME DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

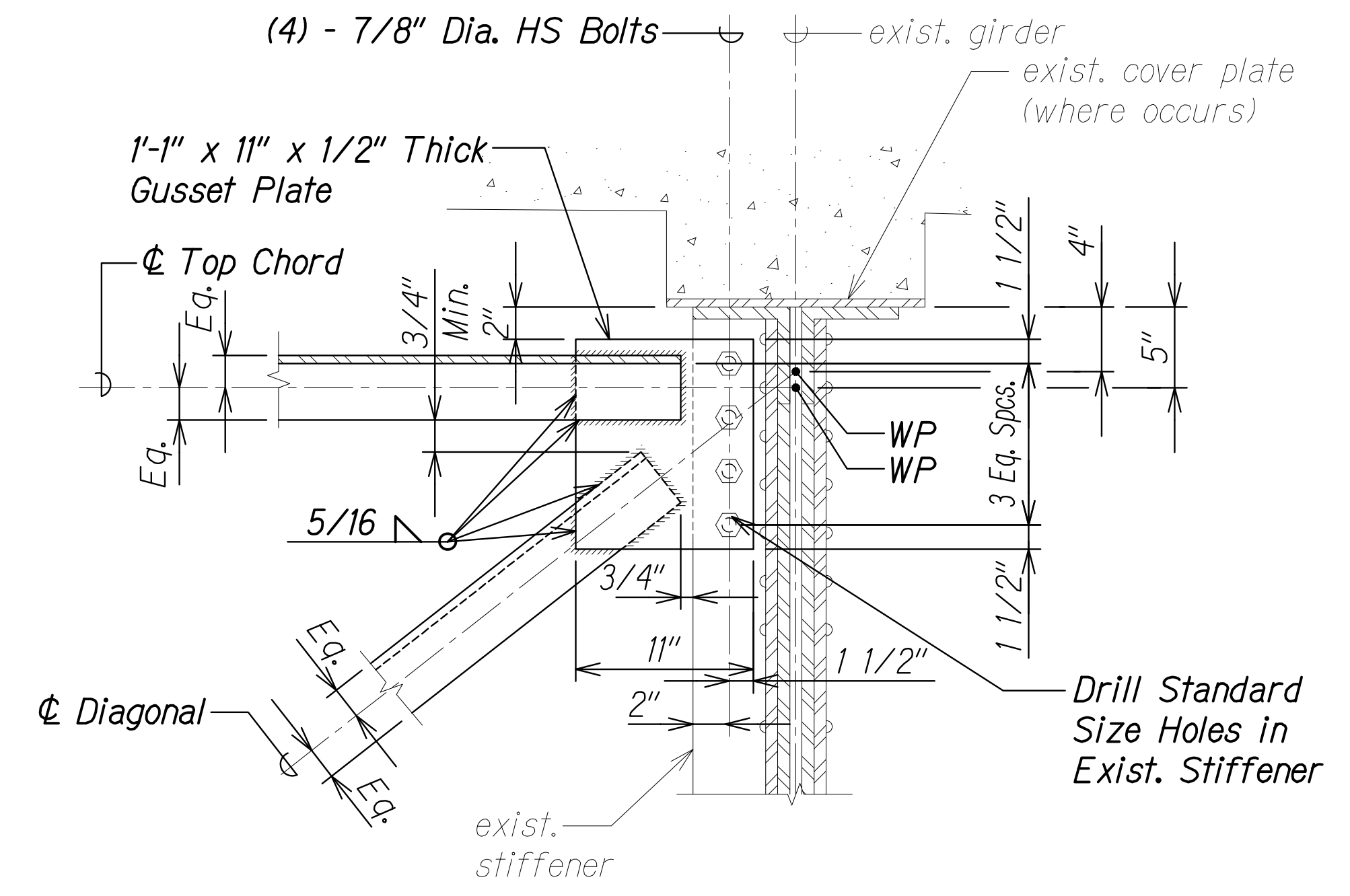
Scale: As Noted Date: Oct. 2024

SHEET NoSA10.16 OF 30 SHEETS

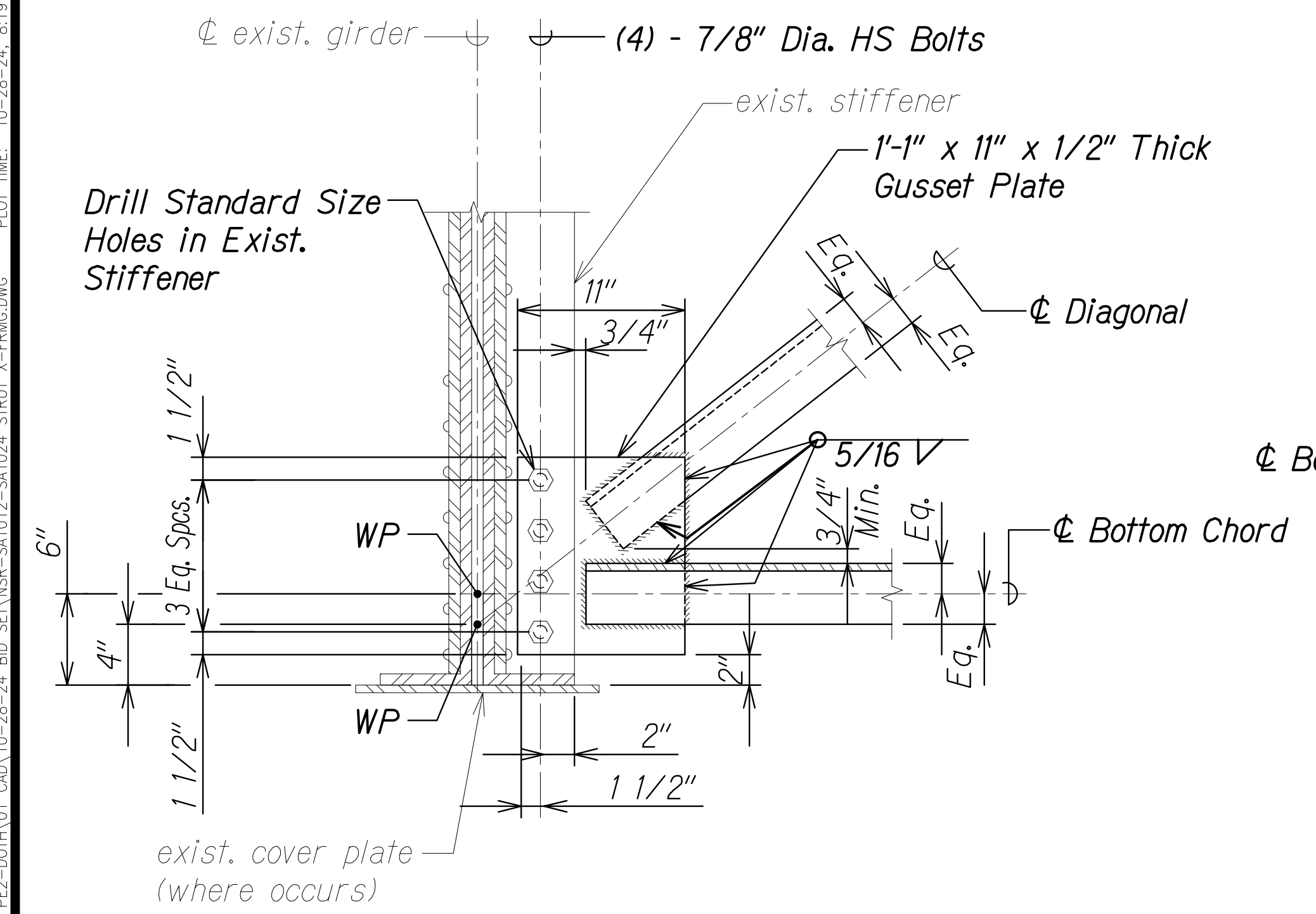
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 199 | 280 |



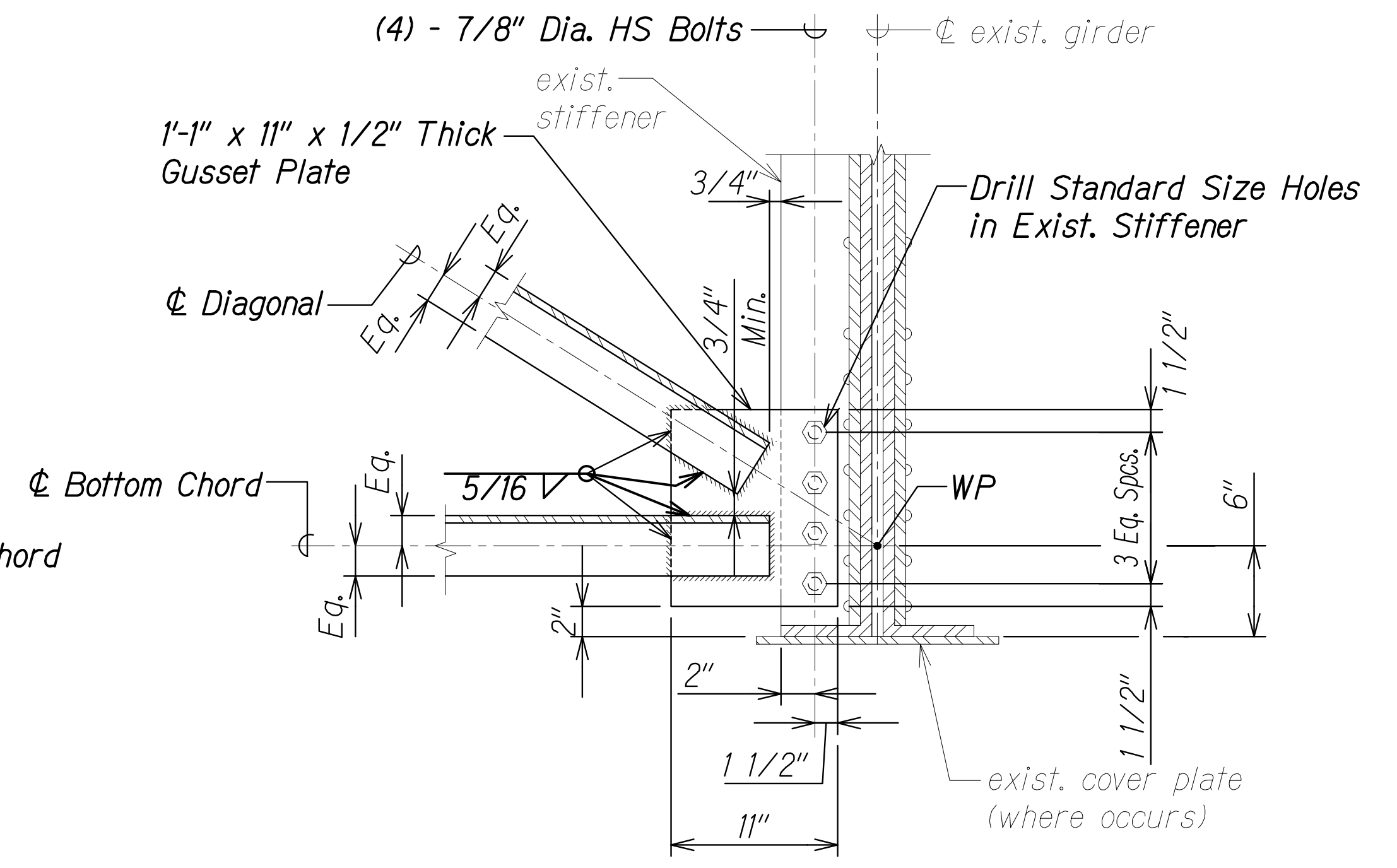
DETAIL 1
Scale: 1 1/2" = 1'-0" SAI0.14 SAI0.17



DETAIL 2
Scale: 1 1/2" = 1'-0" SAI0.14 SAI0.17



DETAIL 3
Scale: 1 1/2" = 1'-0" SAI0.14 SAI0.17



DETAIL 4
Scale: 1 1/2" = 1'-0" SAI0.14 SAI0.17

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24, 8:19 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: *Stephen Peters* 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSS FRAME DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

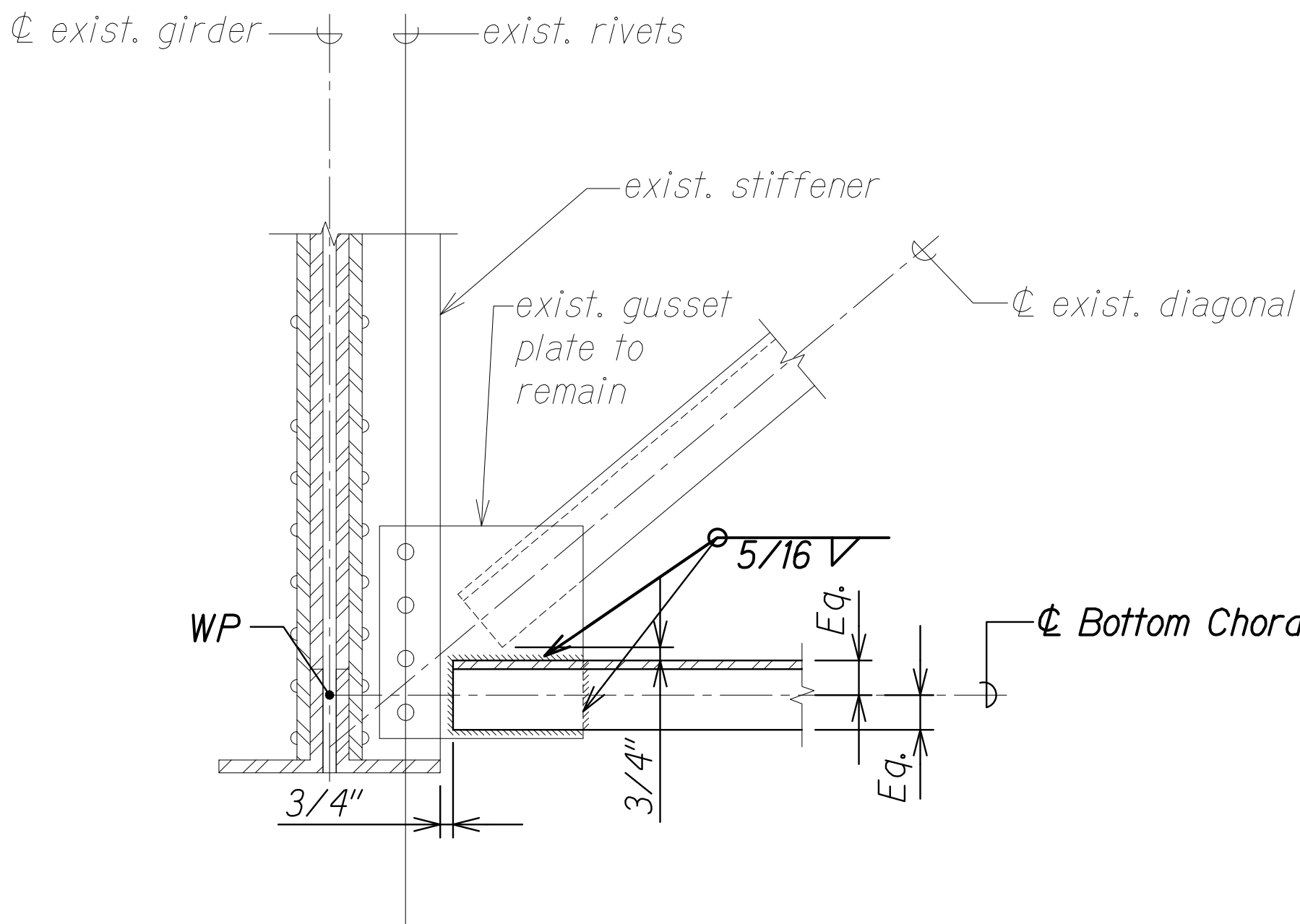
Scale: As Noted Date: Oct. 2024

SHEET NoSA10.17 OF 30 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 200 | 280 |

NOTE:

Install bottom chord with sufficient clearance to make necessary welds.



DETAIL

Scale: 1 1/2" = 1'-0" SA10.15 SA10.18

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\01 CAD\10-28-24 BID SET\NSR-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24, 3:57 PM)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSS FRAME DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET NoSA10.18 OF 30 SHEETS

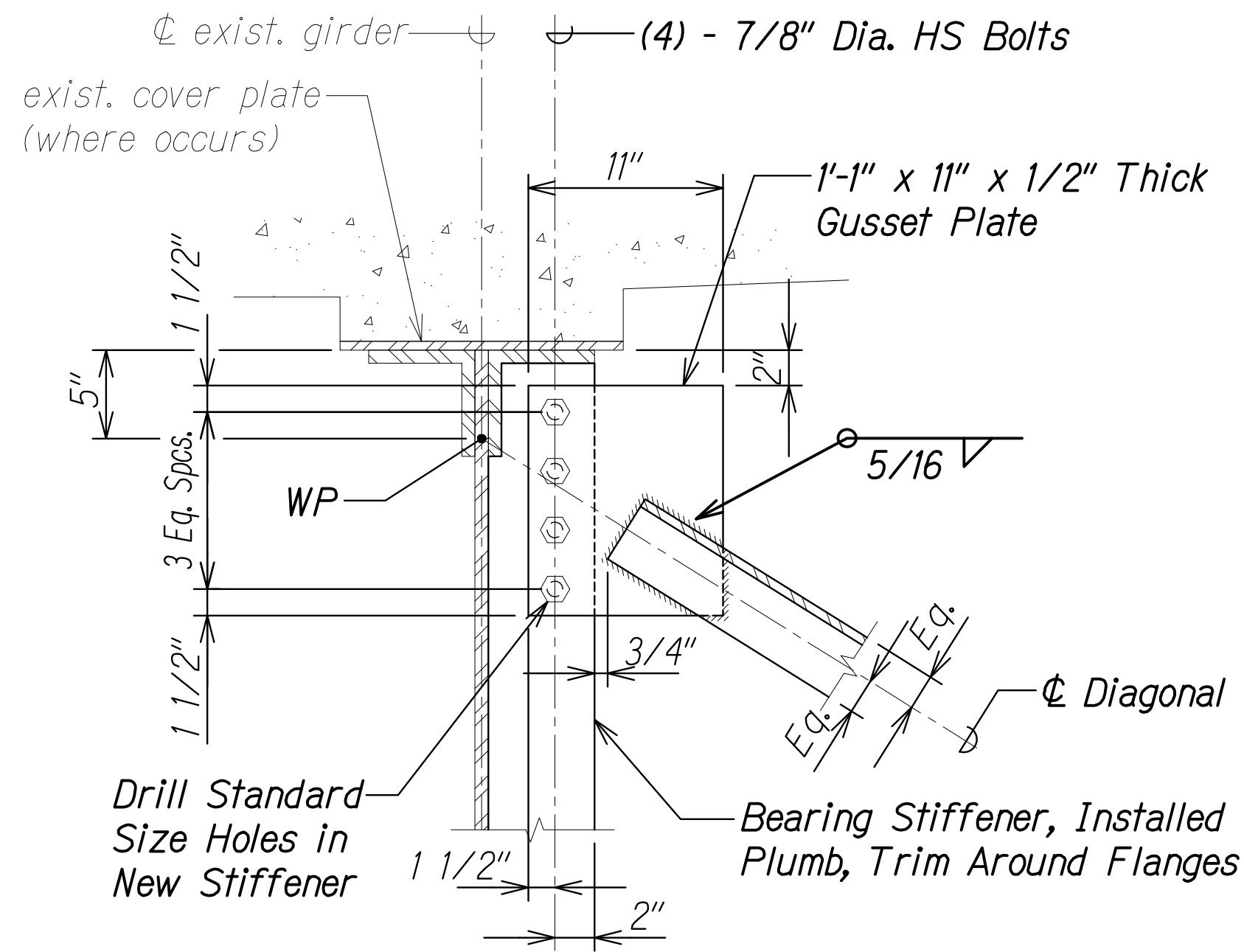
200

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

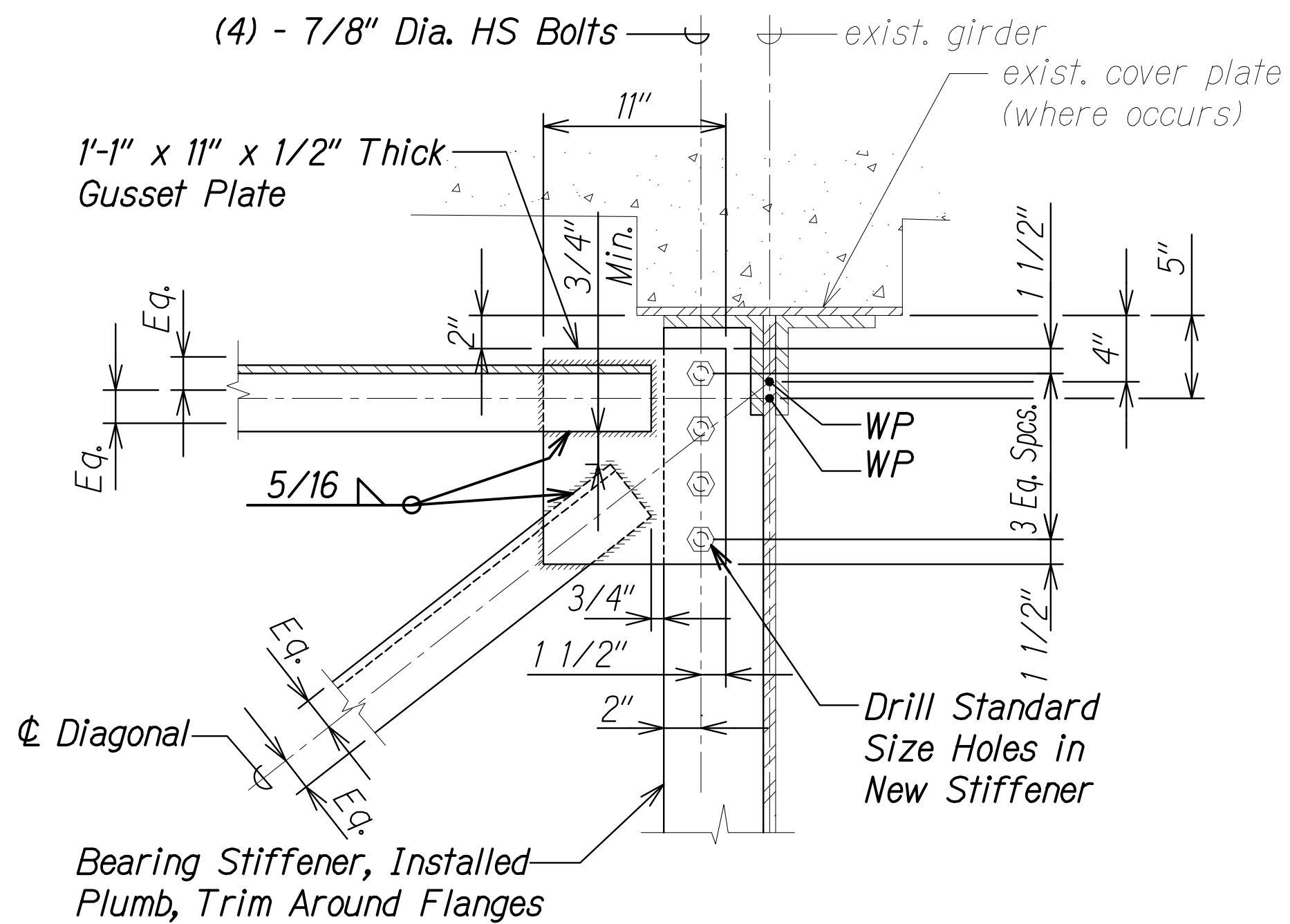
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: Stephen Peters
4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

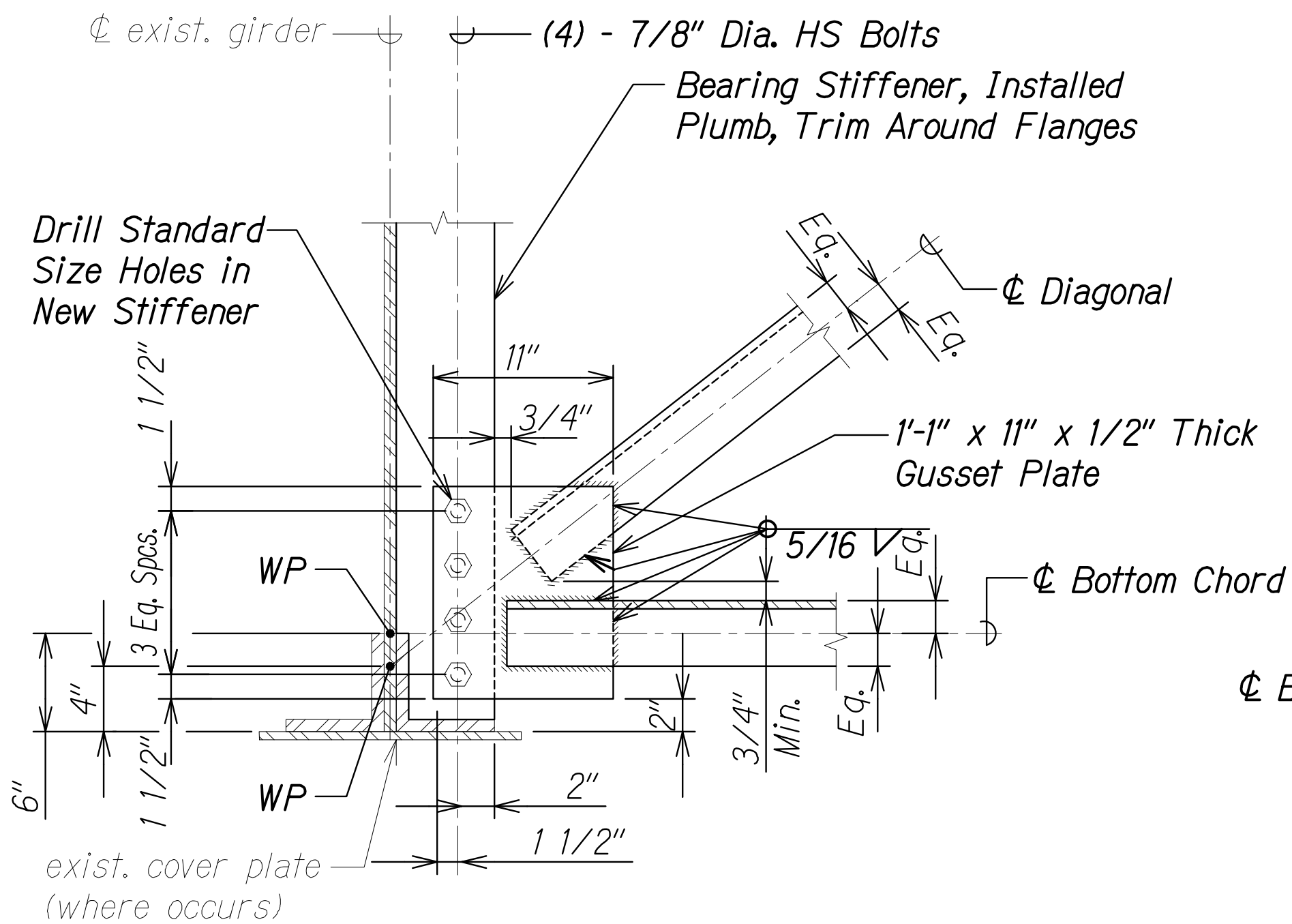
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 201 | 280 |



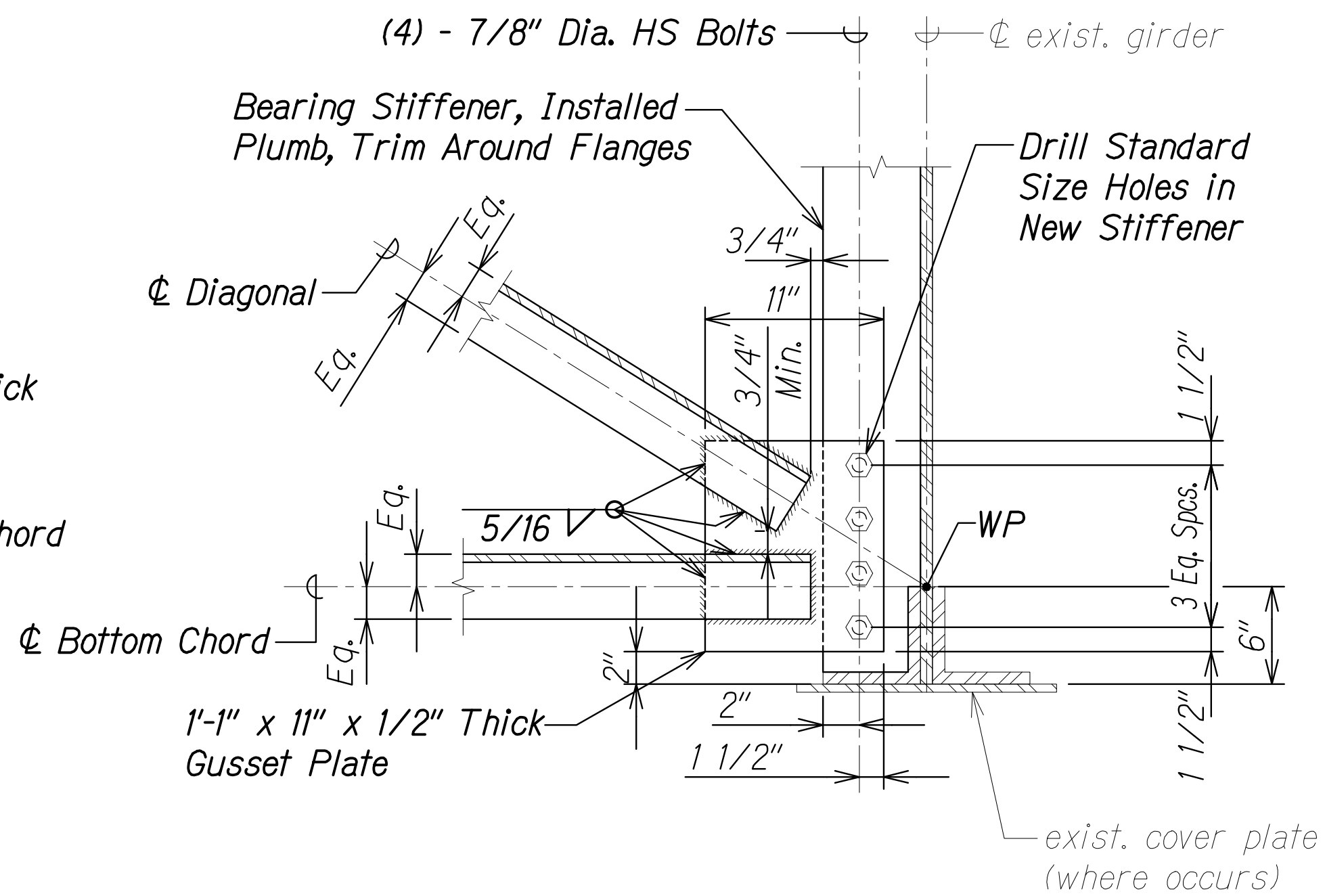
DETAIL 1
Scale: 1 1/2" = 1'-0" SA10.14 SA10.19



DETAIL 2
Scale: 1 1/2" = 1'-0" SA10.14 SA10.19



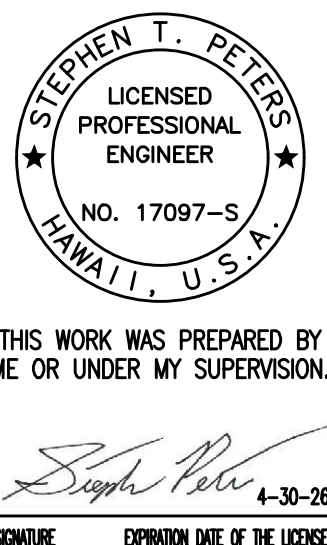
DETAIL 3
Scale: 1 1/2" = 1'-0" SA10.14 SA10.19



DETAIL 4
Scale: 1 1/2" = 1'-0" SA10.14 SA10.19

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A01 CAD\10-28-24 BID SET\NSR-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24 5:03 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

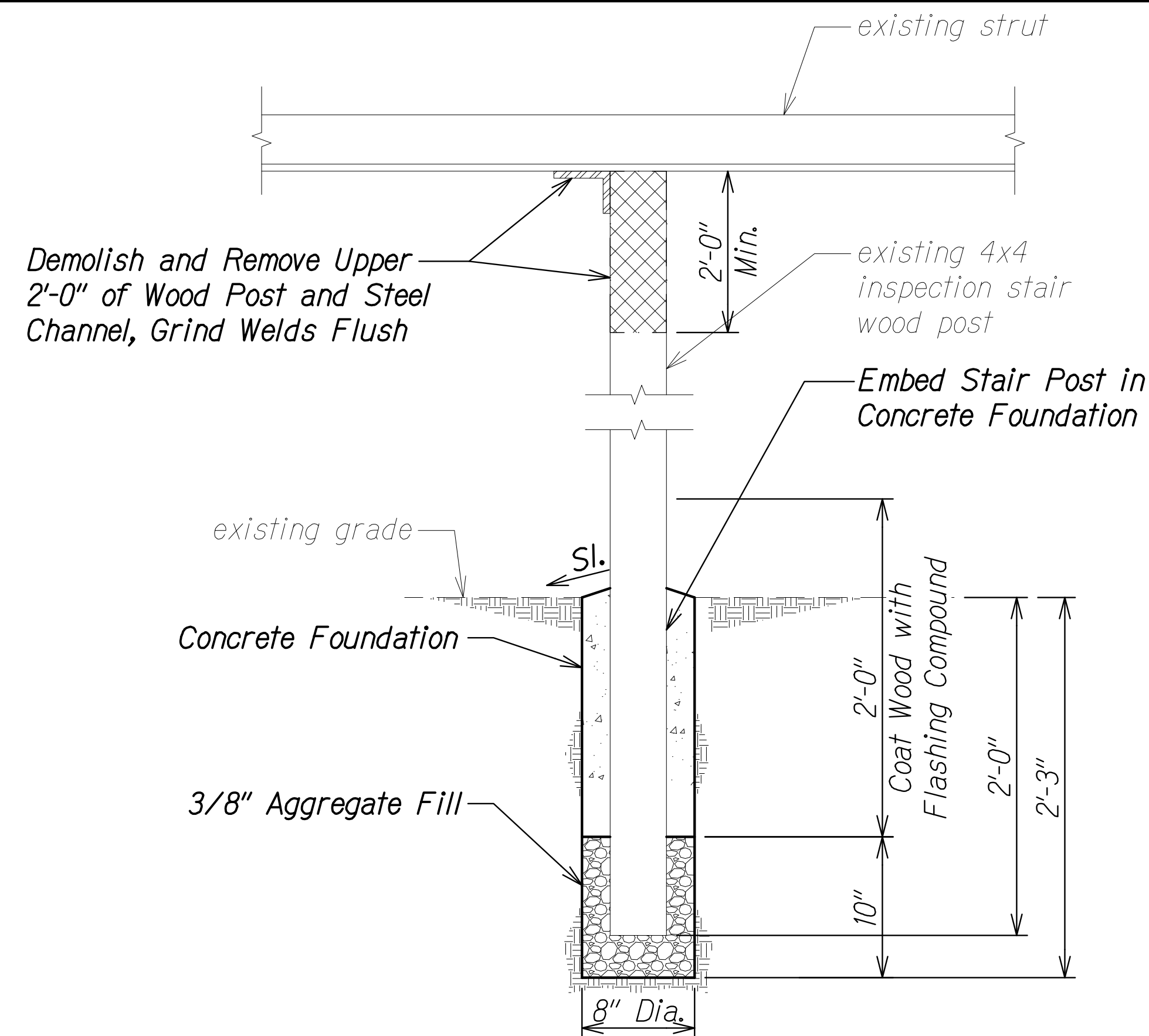
CROSS FRAME DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

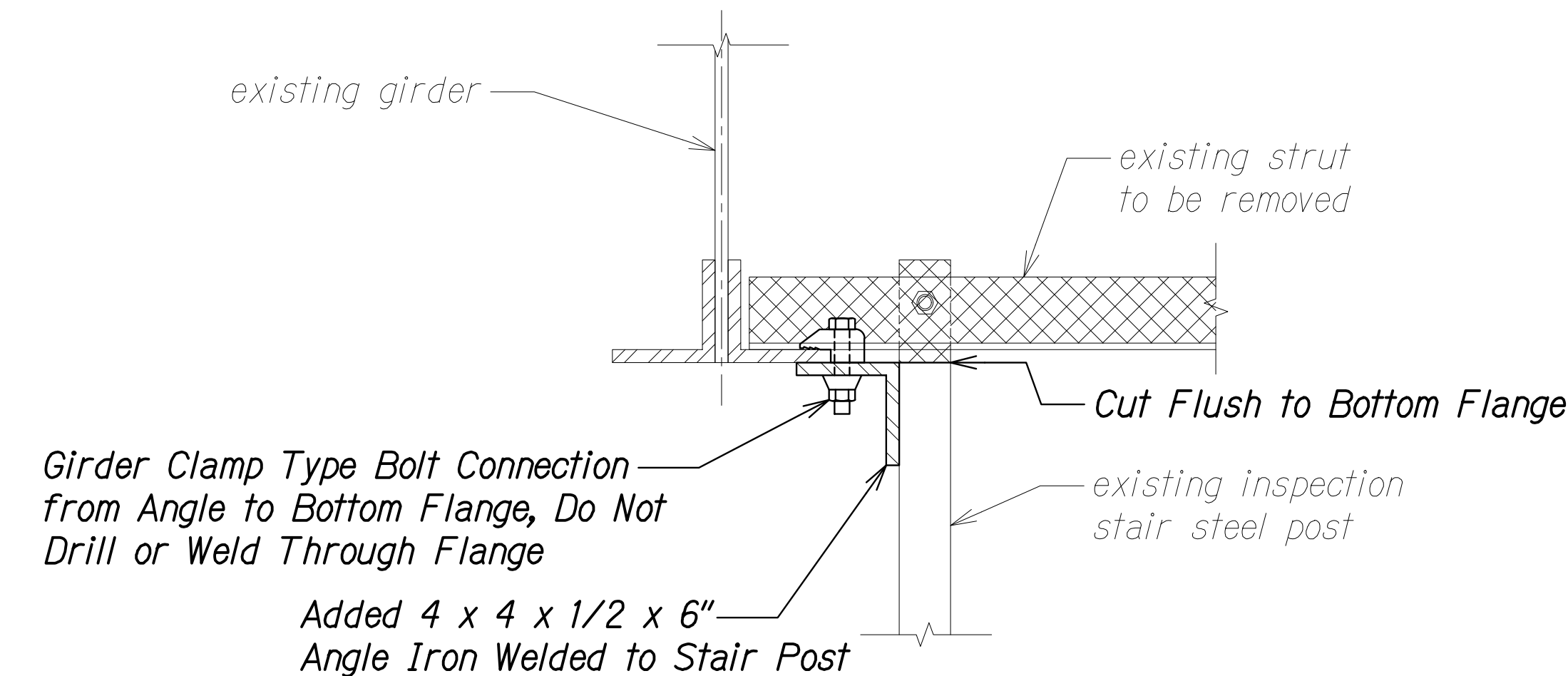
Scale: As Noted Date: Oct. 2024

SHEET No SA10.19 OF 30 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 202 | 280 |



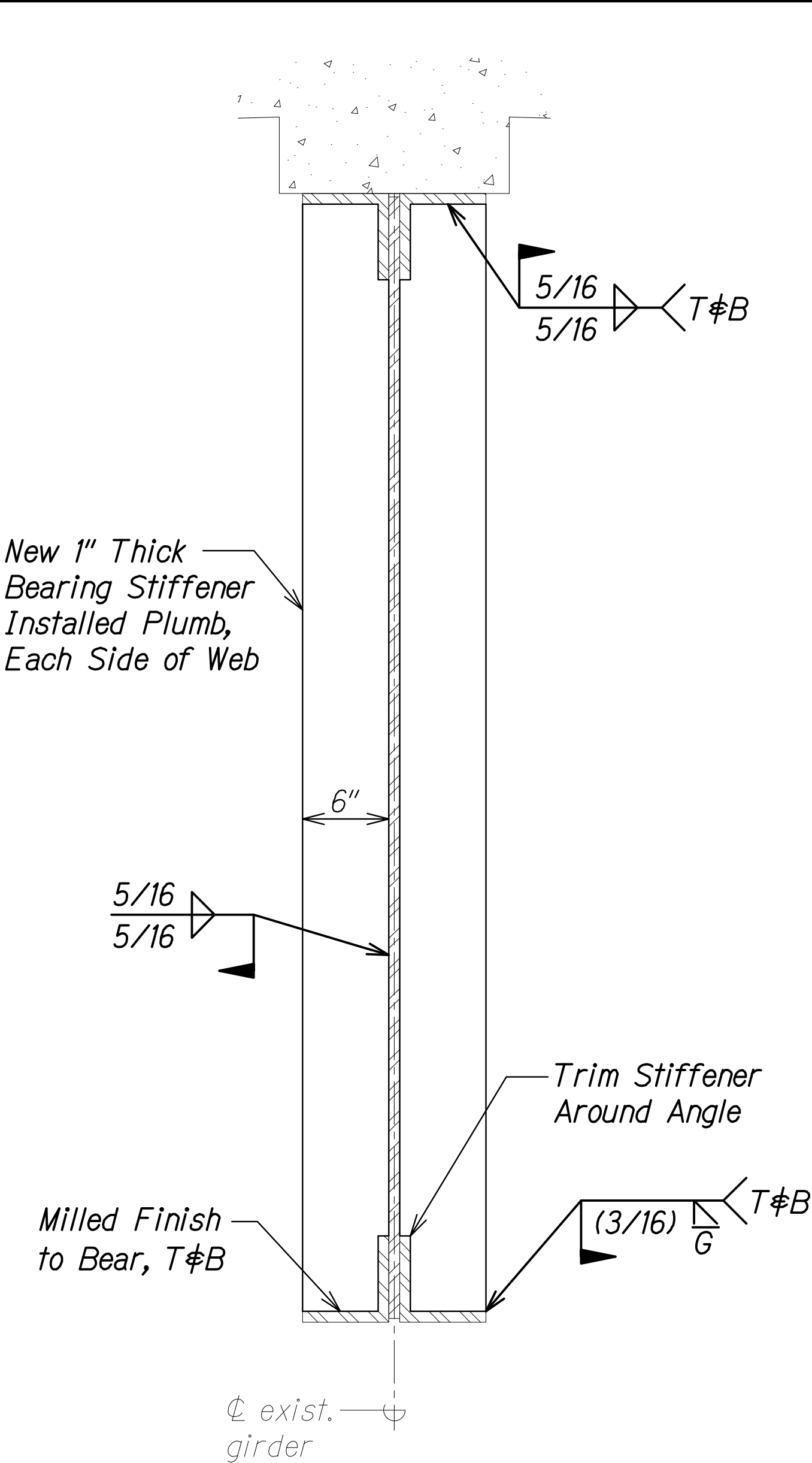
EXISTING INSPECTION STAIR POST TO STRUT DETAIL (2 LOCATIONS)
 Scale: 1 1/2" = 1'-0"
 SA10.20 SA10.20



EXISTING INSPECTION STAIR POST TO STRUT DETAIL
 Scale: 1 1/2" = 1'-0"
 SA10.20 SA10.20

NOTES:

- Cost of work involving inspection stair posts shall be incidental to the various pay items.
- Contractor has the option to replace existing stair post with new CA-C treated post. Provide temporary support for stair stringer.



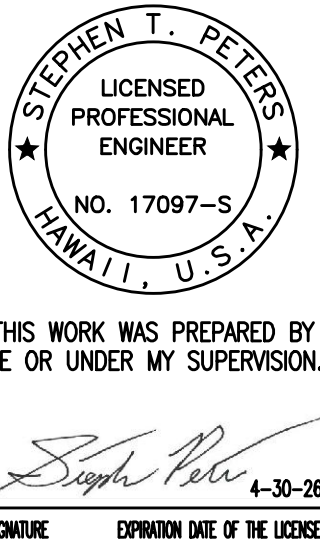
BEARING STIFFENER REPLACEMENT DETAIL
 Scale: 1 1/2" = 1'-0"
 SA10.20 SA10.20

NOTE:

Cross frame connections not shown for clarity.

| DATE | DESIGNED BY | CHECKED BY |
|---------------|-------------|------------|
| | | |
| ORIGINAL PLAN | NOTE BOOK | NO. |
| | | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24 11:58 AM

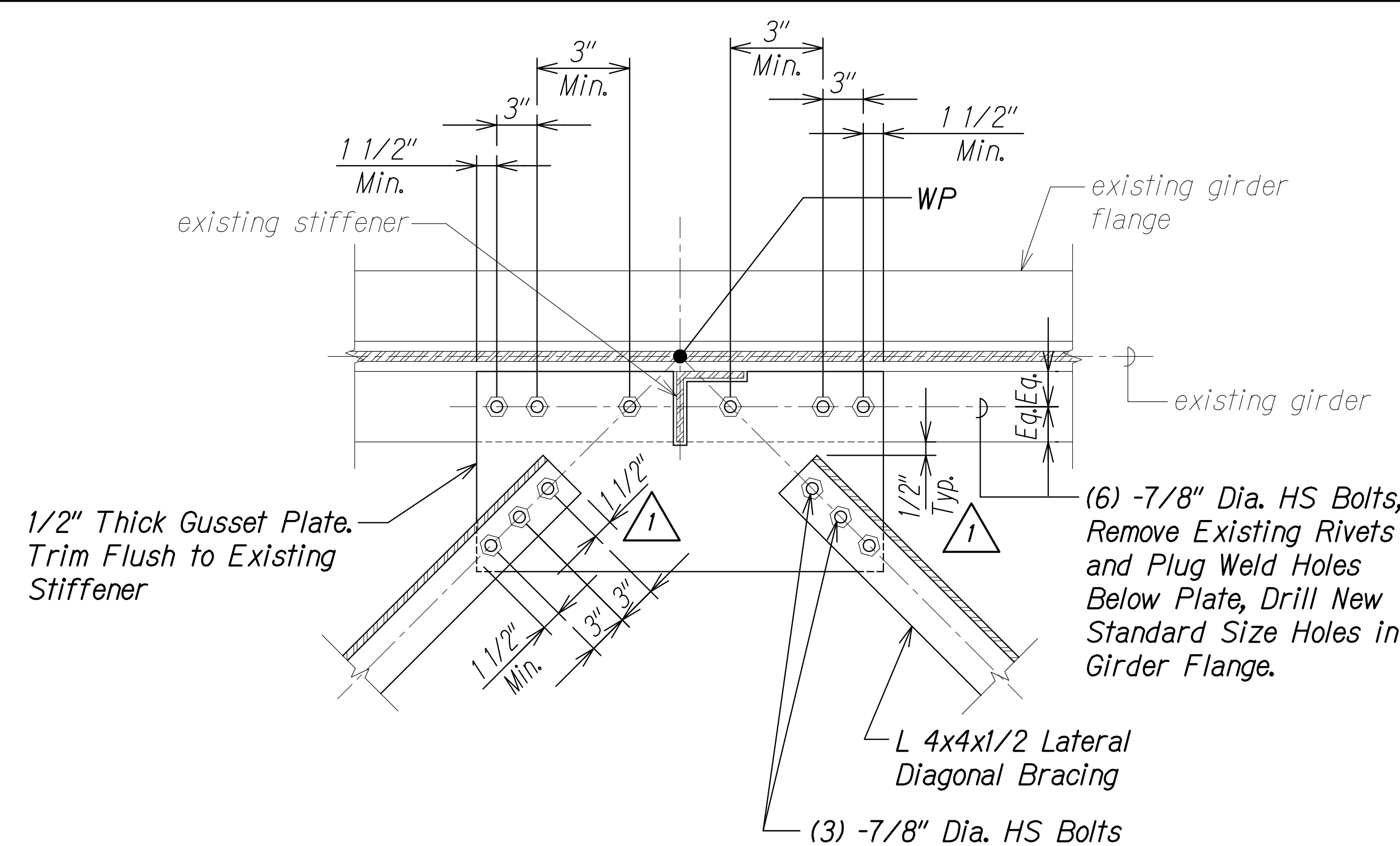


STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

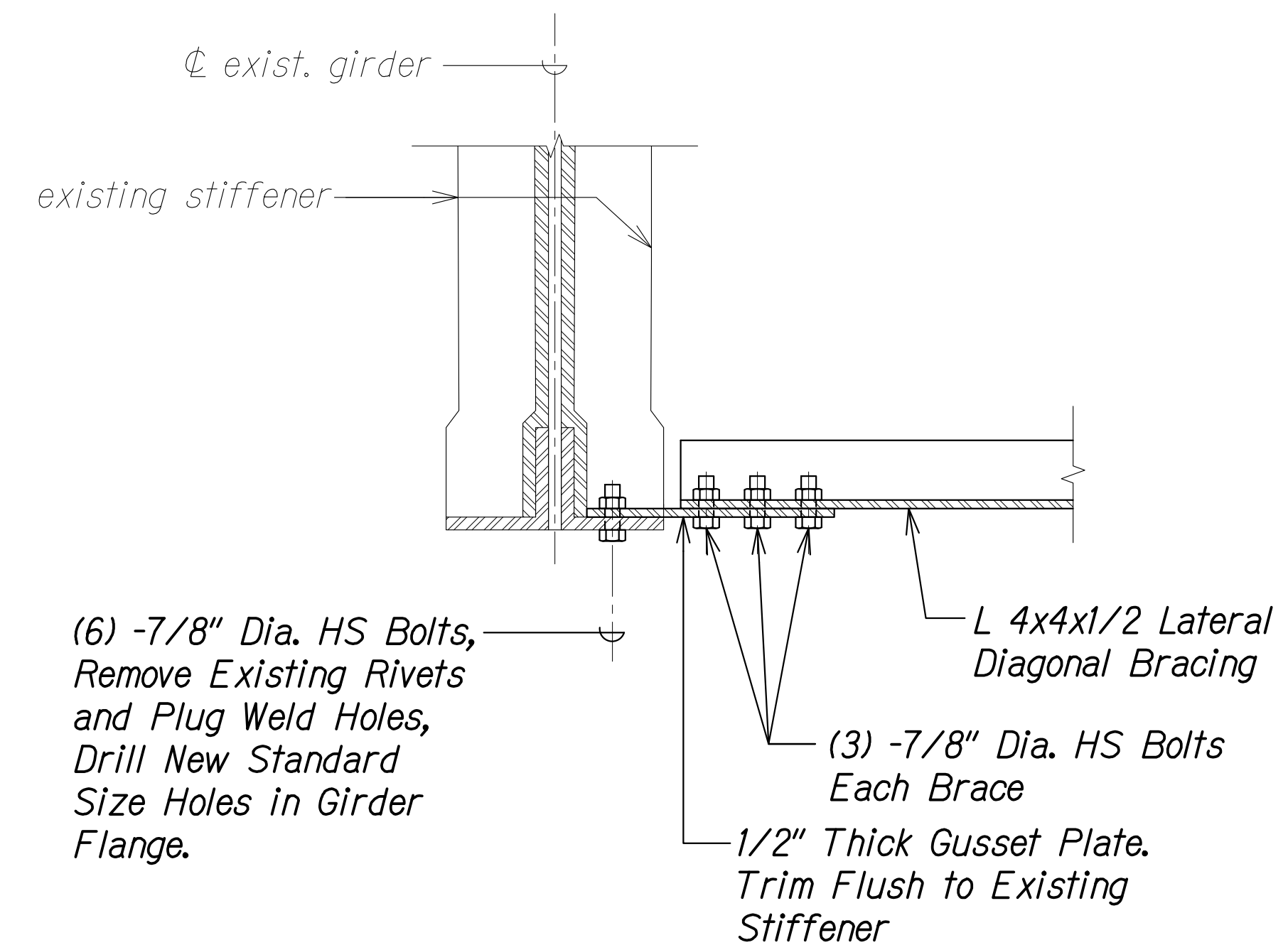
MISCELLANEOUS DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
 Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 203 | 280 |



PLAN AT EXISTING WEB STIFFENER
Scale: 1 1/2" = 1'-0"
SA10.21 SA10.21



SECTION AT EXISTING WEB STIFFENER
Scale: 1 1/2" = 1'-0"
SA10.21 SA10.21

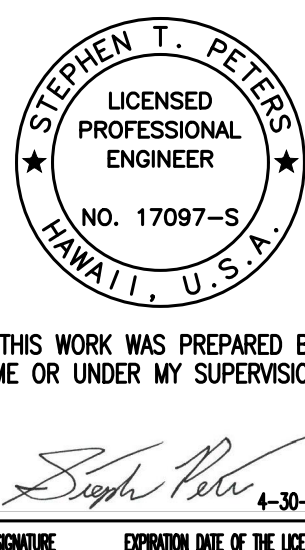
INTERIOR BAY LATERAL DIAGONAL BRACING DETAILS

NOTES:

- The Contractor shall field fit lateral diagonal bracing and gussets prior to galvanizing. Predrill holes in the field, including those through the bottom flange of the girder.
- Lateral diagonal bracing and gussets shall be delivered to the site hot-dip zinc galvanized per ASTM A123, and shop painted with the complete coating system in accordance with Special Provisions Section 667-PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL.
- Install lateral diagonal bracing and gussets following completion of painting in Bay 2. Touch up paint ends of bolts, nuts and washers. Payment for work under Pay Item 667.3000 does not apply.

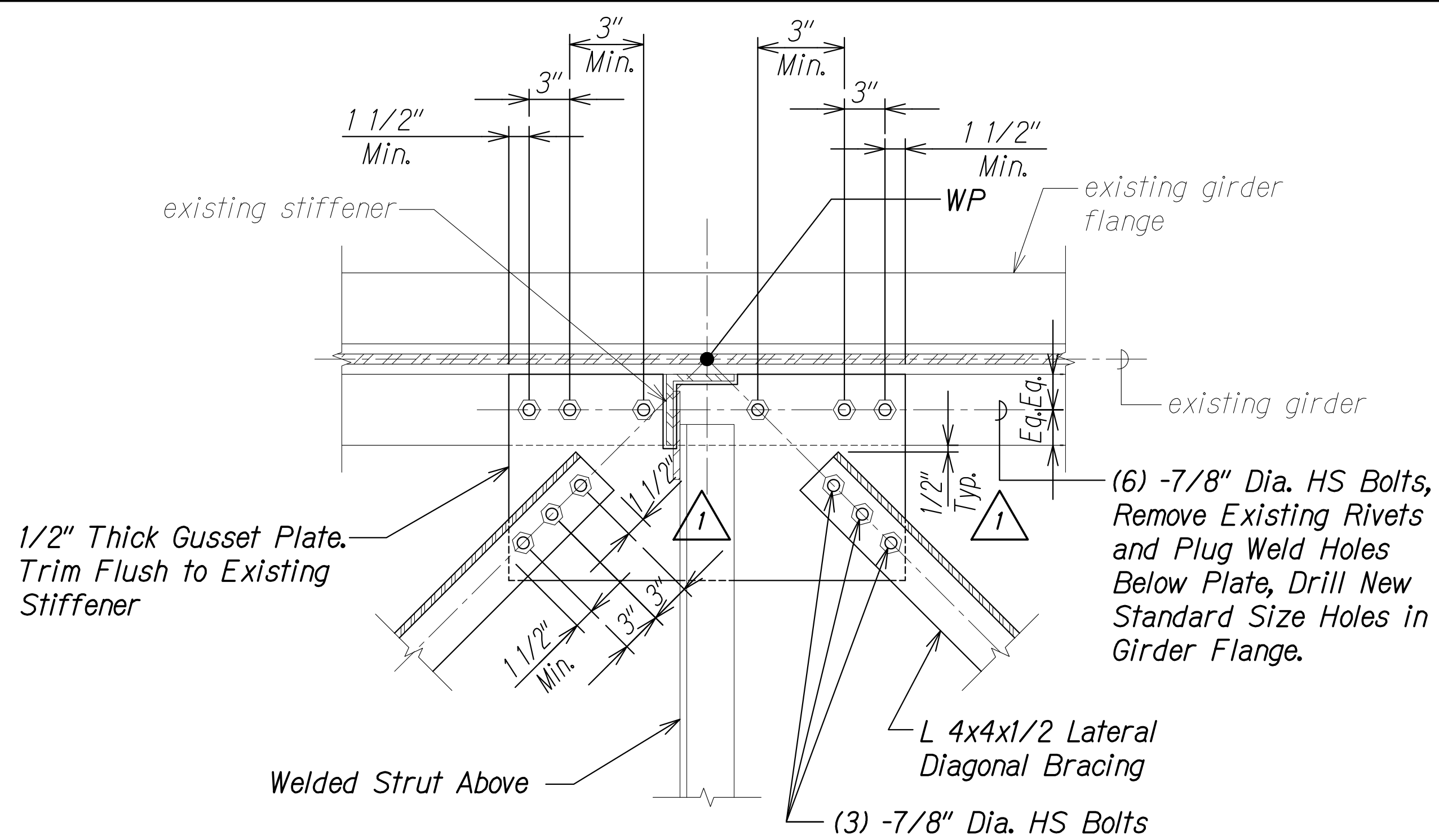
| | | |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| No. | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\01 CAD\12-06-24 ADD\NSR-SA1012-SA1024 STRUT X-FRMG ADD2.DWG PLOT TIME: 12-03-24, 8:55 PM

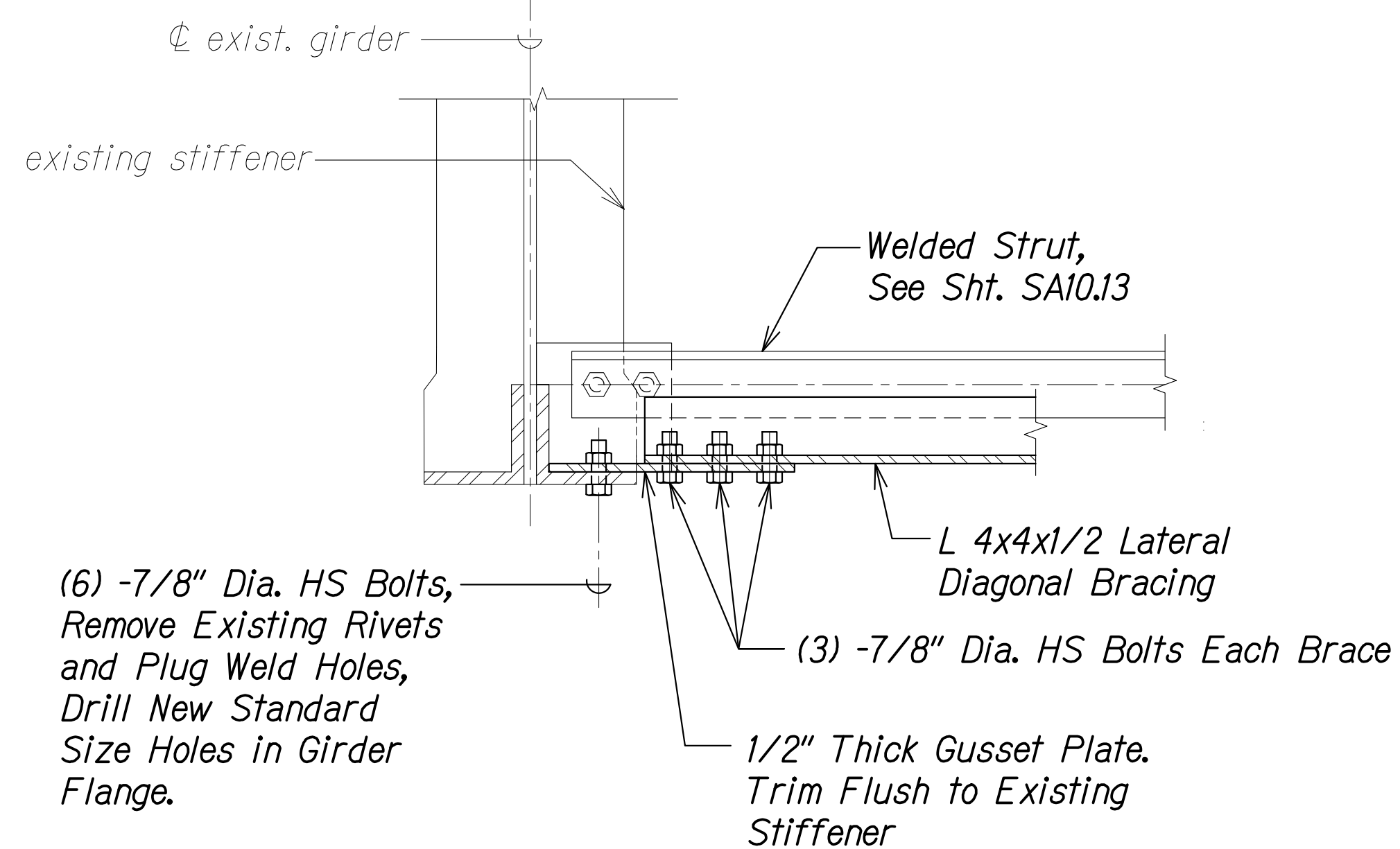


| | |
|---|---|
| 12/6/24 | Removed Details "C" & "D" Revised Notes and Added/ Revised Dimensions |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LATERAL DIAGONAL BRACING DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |
| SHEET No SA10.21 OF 30 SHEETS | |

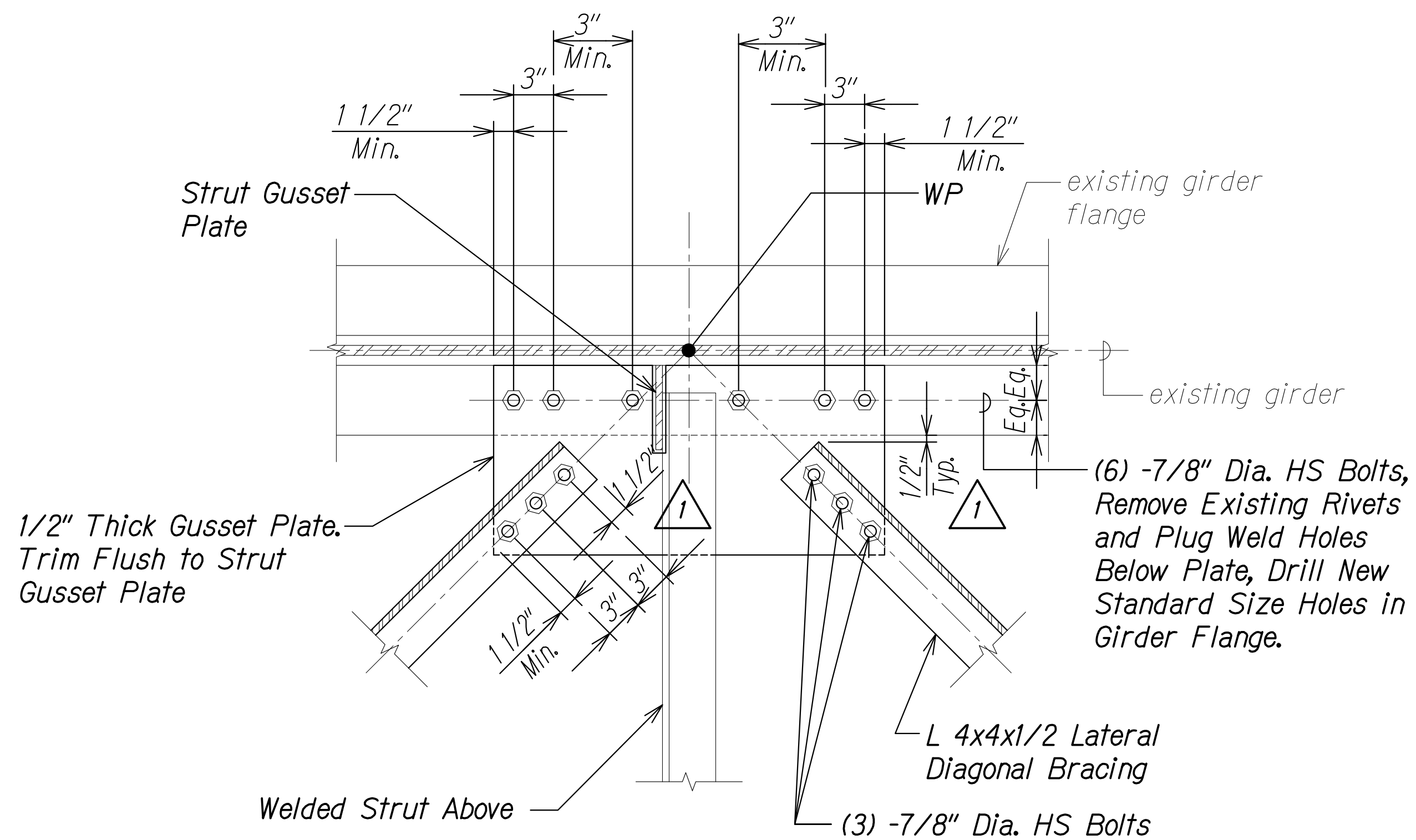
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 205 | 280 |



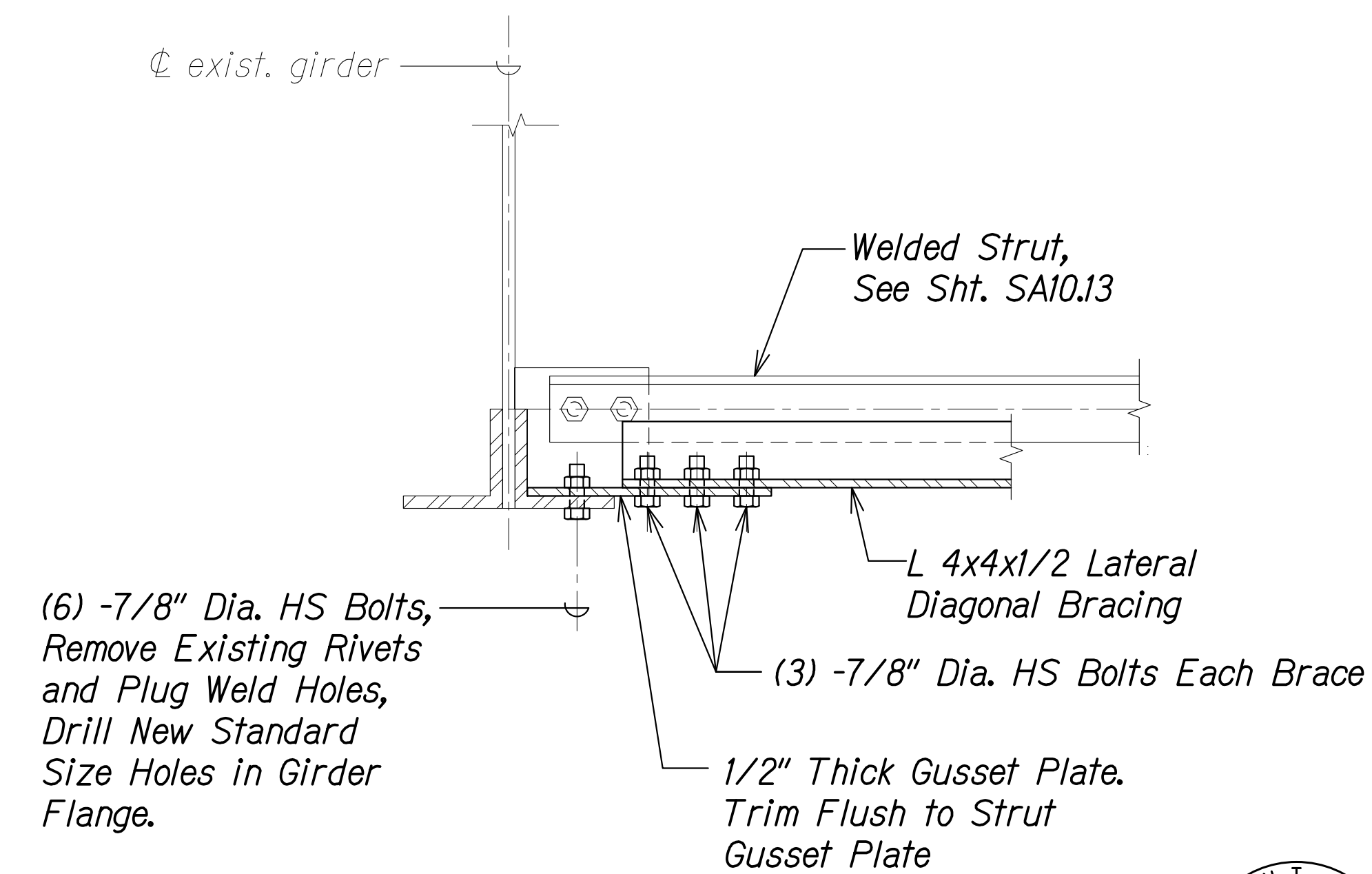
PLAN AT STRUT A
Scale: 1 1/2" = 1'-0" SA10.23 SA10.23



SECTION AT STRUT B
Scale: 1 1/2" = 1'-0" SA10.23 SA10.23



PLAN AT STRUT C
Scale: 1 1/2" = 1'-0" SA10.23 SA10.23

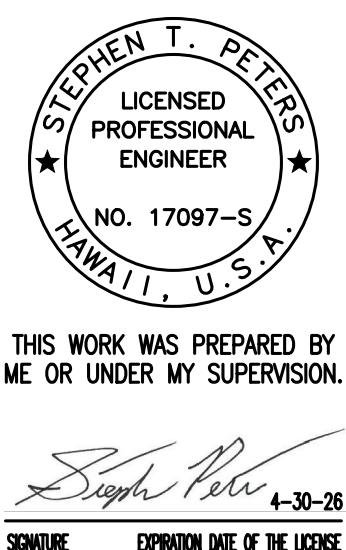


SECTION AT STRUT D
Scale: 1 1/2" = 1'-0" SA10.23 SA10.23

NOTES:

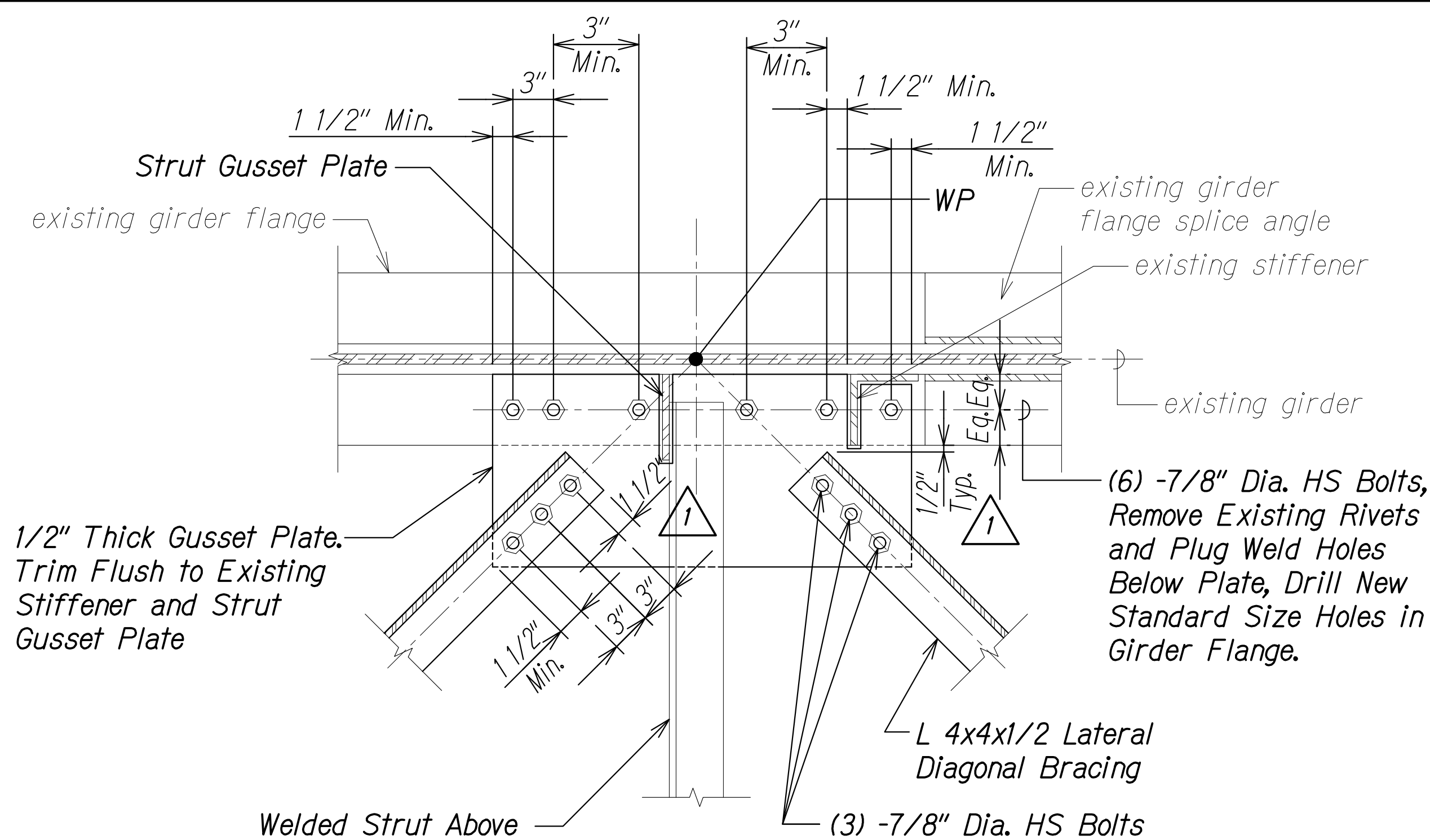
- The Contractor shall field fit lateral diagonal bracing and gussets prior to galvanizing. Predrill holes in the field, including those through the bottom flange of the girder.
- Lateral diagonal bracing and gussets shall be delivered to the site hot-dip zinc galvanized per ASTM A123, and shop painted with the complete coating system in accordance with Special Provisions Section 667-PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL.
- Install lateral diagonal bracing and gussets following completion of painting in Bay 2. Touch up paint ends of bolts, nuts and washers. Payment for work under Pay Item 667.3000 does not apply.

| DATE | REVISION |
|---|---|
| 12/6/24 | 1 Revised Notes and Added/ Revised Dimensions |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LATERAL DIAGONAL BRACING DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |

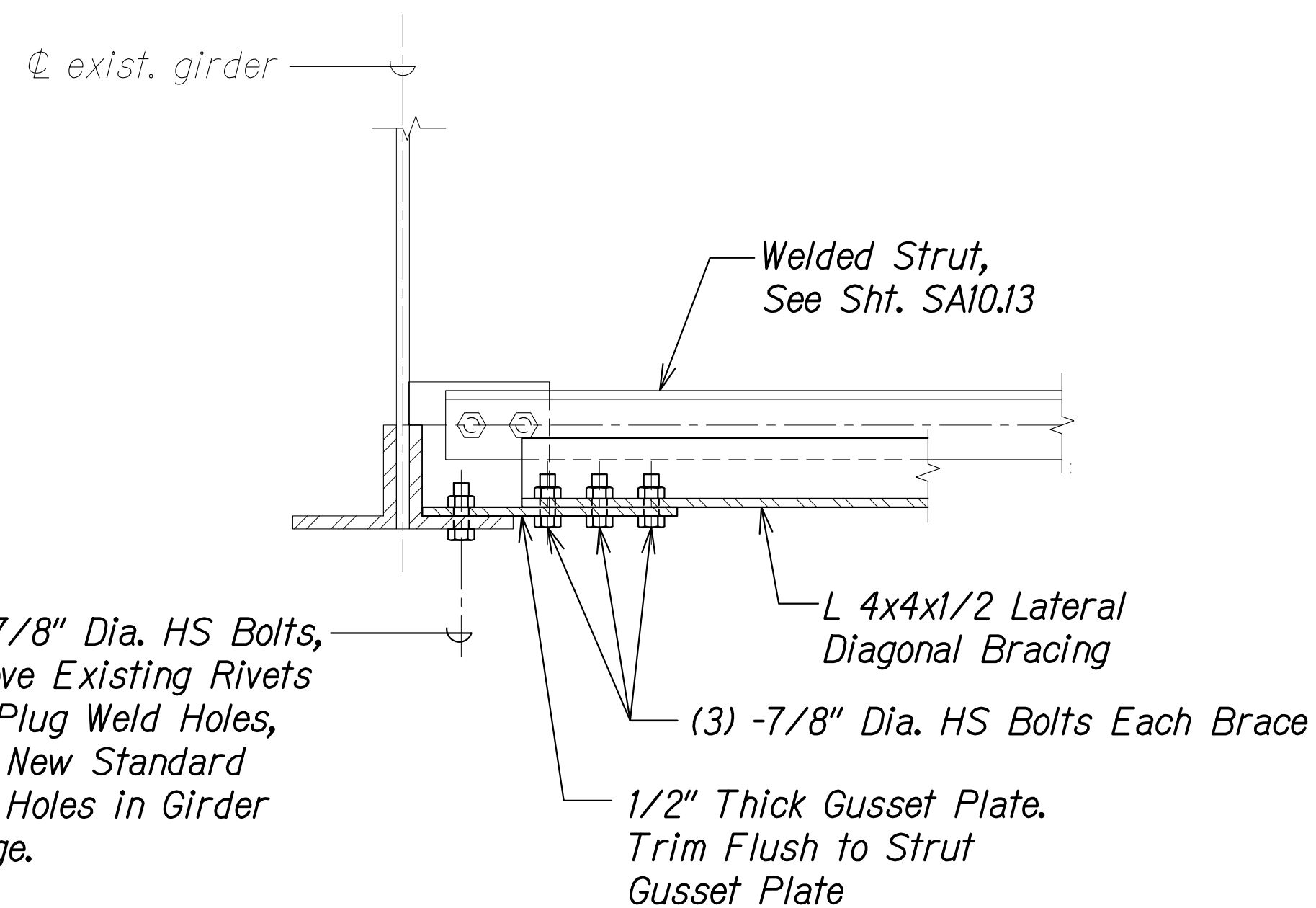


INTERIOR BAY LATERAL DIAGONAL BRACING DETAILS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 206 | 280 |



PLAN NEAR GIRDER SPLICE A
Scale: 1 1/2" = 1'-0" SA10.24 SA10.24



SECTION NEAR GIRDER SPLICE B
Scale: 1 1/2" = 1'-0" SA10.24 SA10.24

INTERIOR BAY LATERAL DIAGONAL BRACING DETAILS

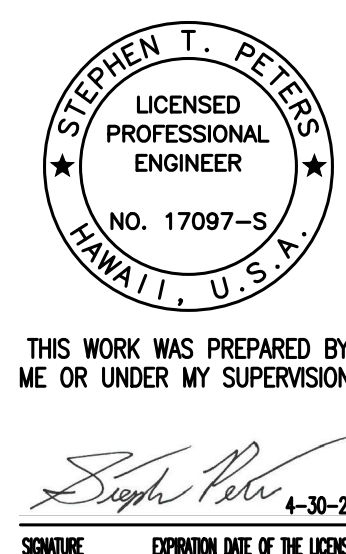
NOTES:

- The Contractor shall field fit lateral diagonal bracing and gussets prior to galvanizing. Predrill holes in the field, including those through the bottom flange of the girder.
- Lateral diagonal bracing and gussets shall be delivered to the site hot-dip zinc galvanized per ASTM A123, and shop painted with the complete coating system in accordance with Special Provisions Section 667-PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL.
- Install lateral diagonal bracing and gussets following completion of painting in Bay 2. Touch up paint ends of bolts, nuts and washers. Payment for work under Pay Item 667.3000 does not apply.



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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\12-06-24 ADD\NSR-SA1012-SA1024 STRUT X-FRMG ADD2.DWG PLOT TIME: 12-03-24, 9:01 PM



| | |
|---|---|
| 12/6/24 | 1 Revised Notes and Added/ Revised Dimensions |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LATERAL DIAGONAL BRACING DETAILS HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) Scale: As Noted Date: Oct. 2024 | |

SHEET NoSA10.24 OF 30 SHEETS

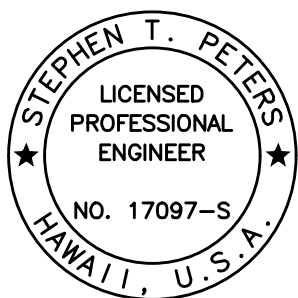
ADD. 206

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 207 | 280 |

NOTES:

1. Bolt assembly at tie plate connection must not be pretensioned.
2. See girder line elevations for location of tie plate replacement.
3. Redrill standard size holes at the ends of girder web to match bolt pattern in tie plate prior to painting.
4. Clean and paint girders prior to installation of tie plates.
5. Tie plates shall be delivered to the site hot-dip zinc galvanized per ASTM A123 and shop painted with the complete coating system in accordance with Special Provisions Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL.
6. Touch-up paint ends of all hardware (bolt, nut, washers) after installation. Payment for work under Pay Item 667.3000 does not apply.

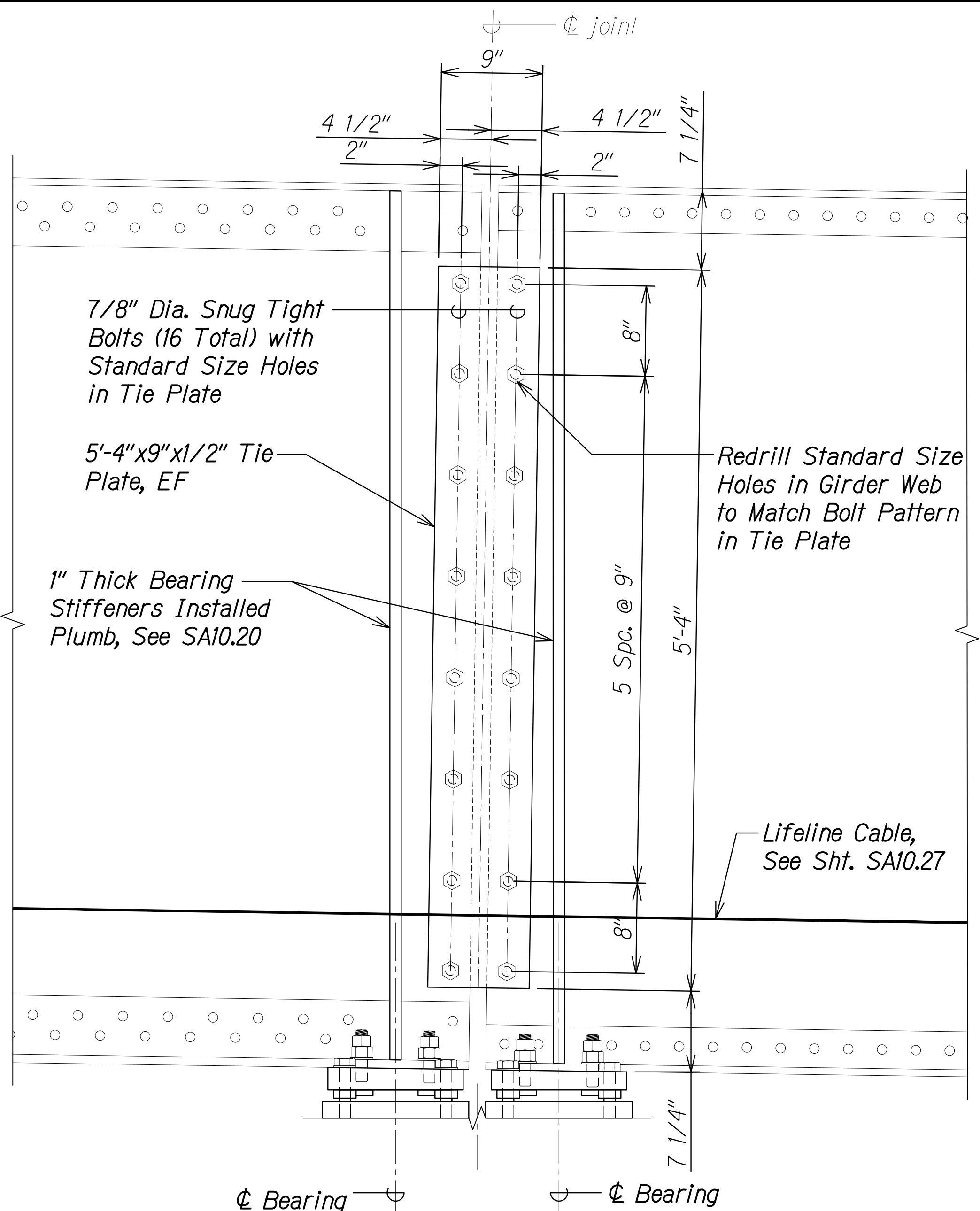
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|---------|-----------------|
| 12/6/24 | 1 Revised Notes |
| DATE | REVISION |



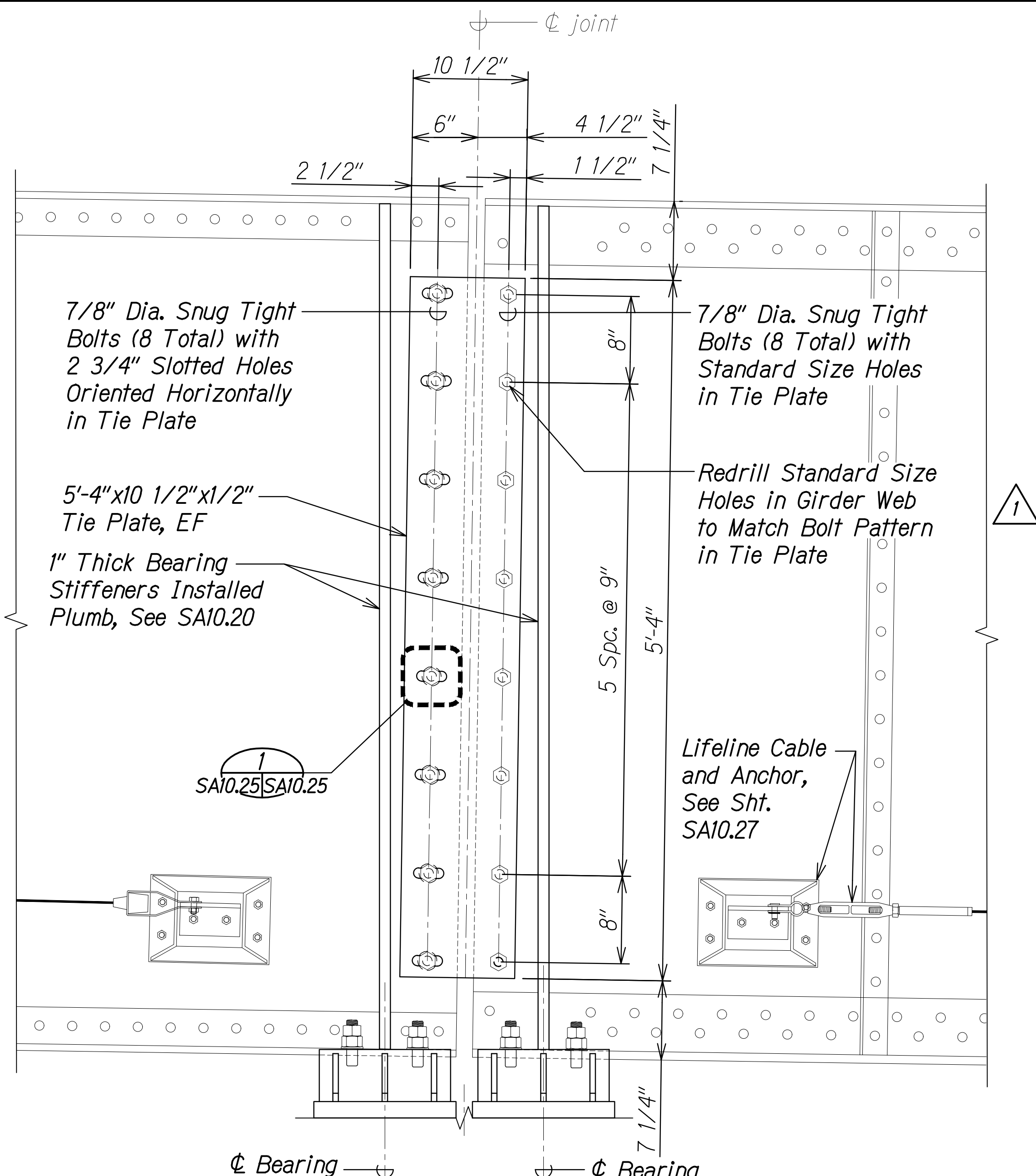
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: Stephen Peters
EXPIRATION DATE OF THE LICENSE: 4-30-26

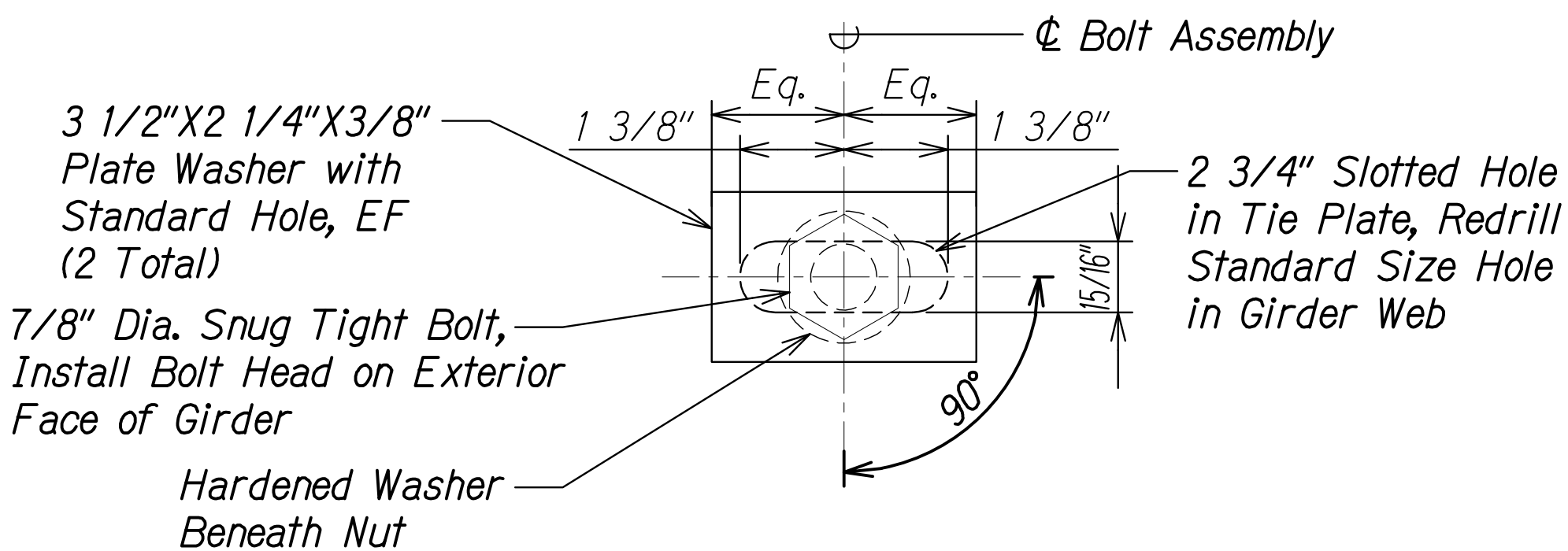
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|---|
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION |
| TIE PLATE ELEVATIONS AND DETAILS AT BEARINGS |
| HAWAII BELT ROAD Nanue Stream Bridge Rehabilitation Federal Aid Project No. BR-019-2(077) |
| Scale: As Noted Date: Oct. 2024 |
| SHEET NoSA10.25 OF 30 SHEETS |



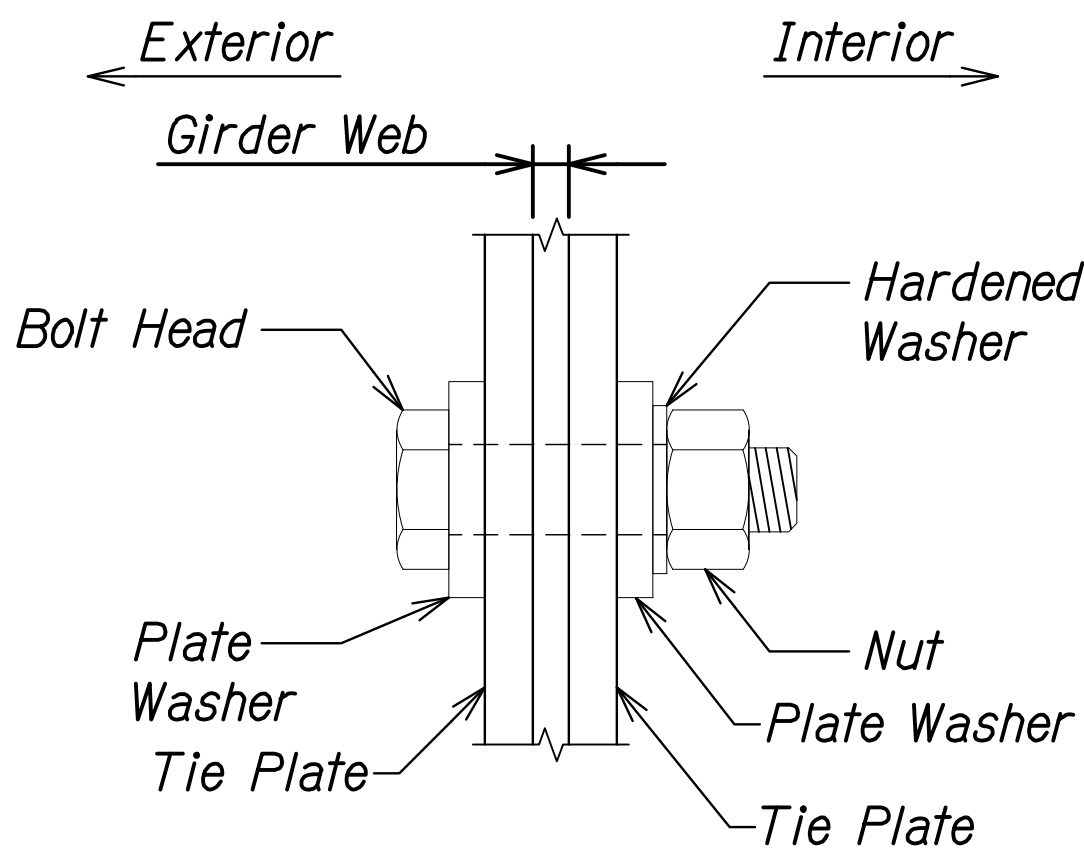
TIE PLATE ELEVATION - FIXED BEARING A
Scale: 1 1/2" = 1'-0" SA10.25 SA10.25



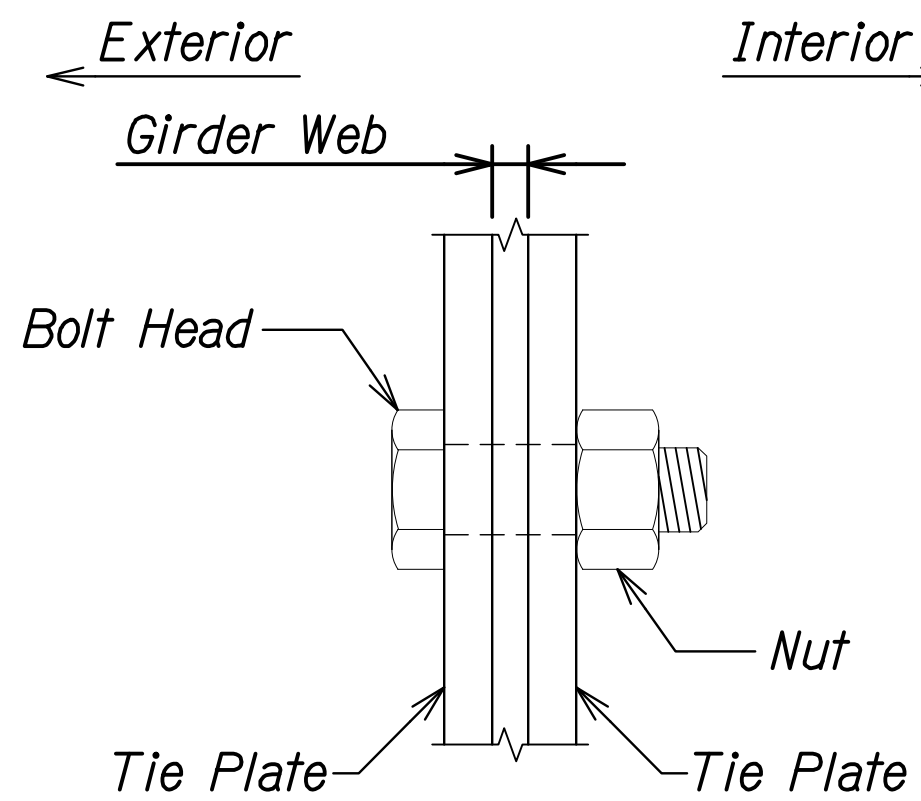
TIE PLATE ELEVATION - EXPANSION BEARING B
Scale: 1 1/2" = 1'-0" SA10.25 SA10.25



**BOLT CONNECTION DETAIL
AT SLOTTED HOLE** 1
Scale: 6" = 1'-0" SA10.25 SA10.25

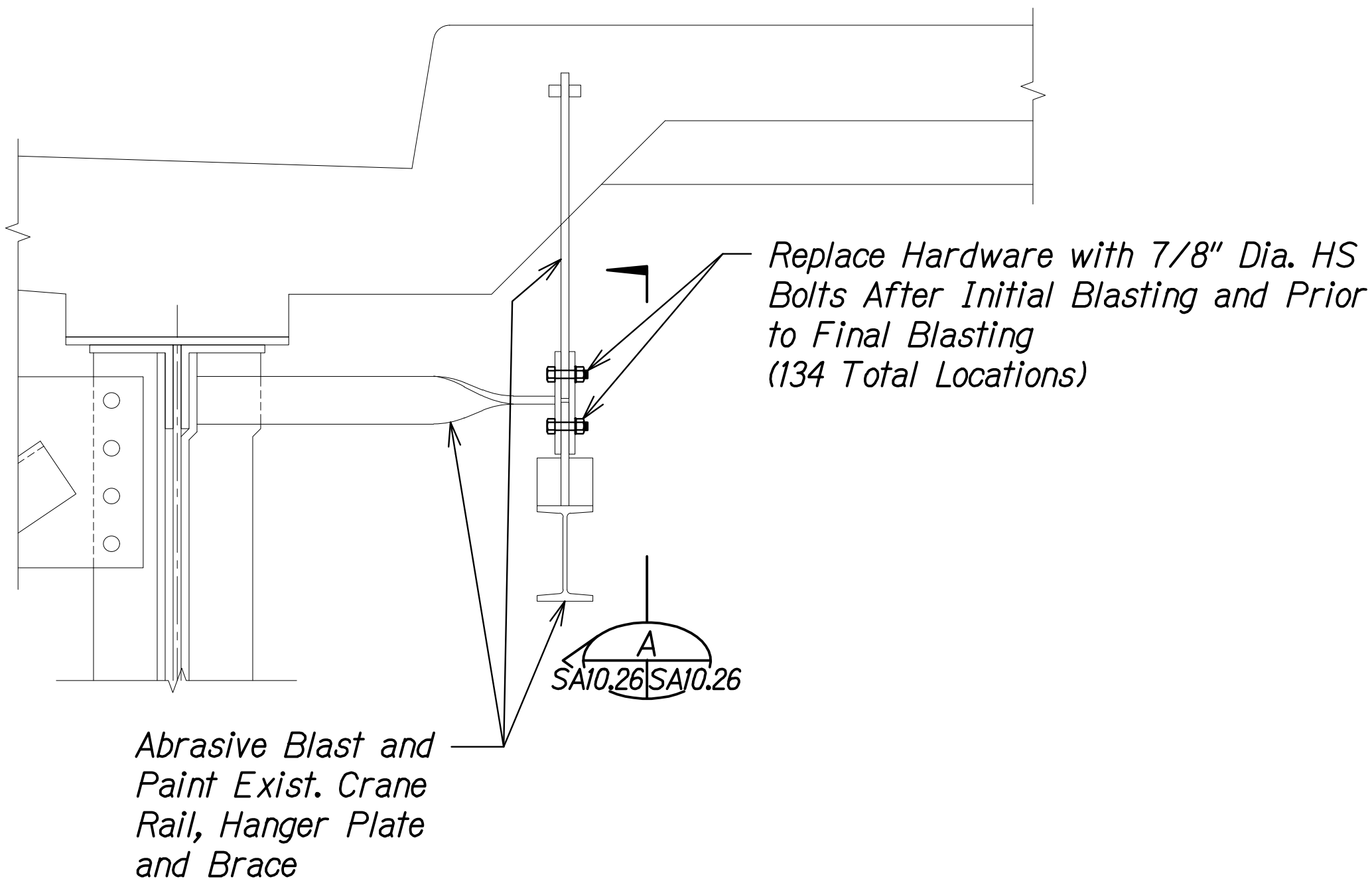


**BOLT CONNECTION DETAIL
AT SLOTTED HOLE** 2
Scale: 6" = 1'-0" SA10.25 SA10.25

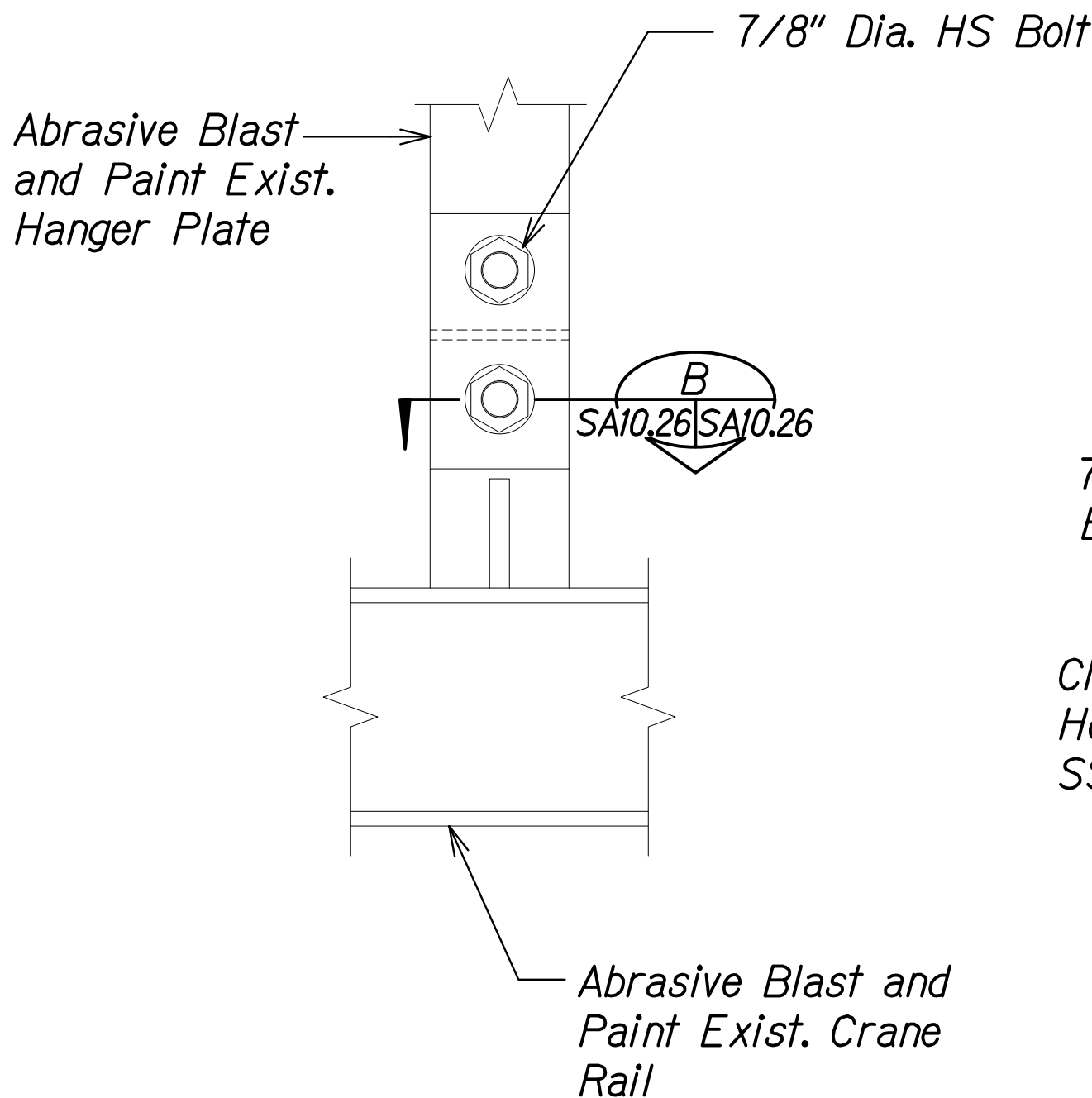


**TYP. BOLT CONNECTION
DETAIL** 3
Scale: 6" = 1'-0" SA10.25 SA10.25

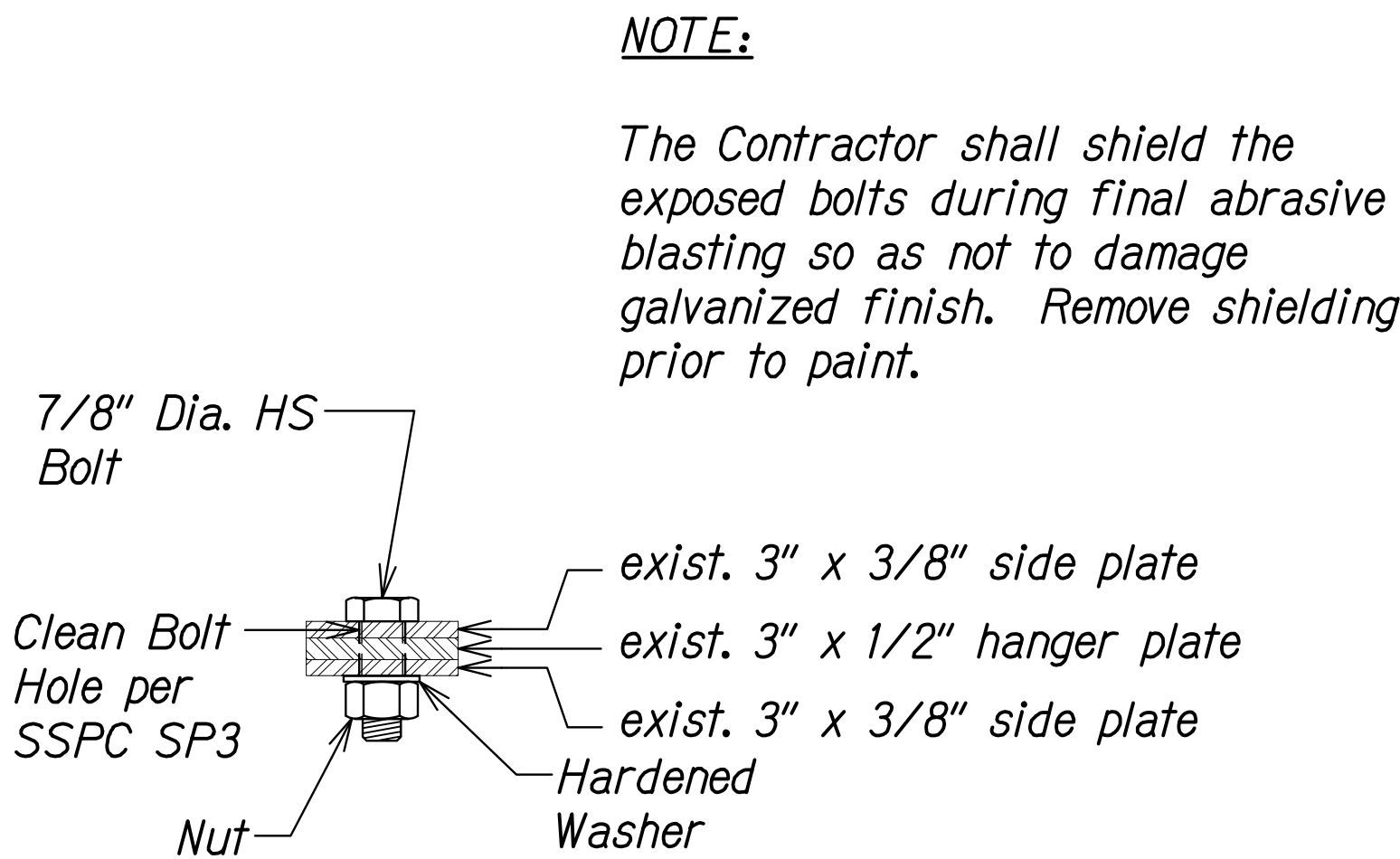
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 208 | 280 |



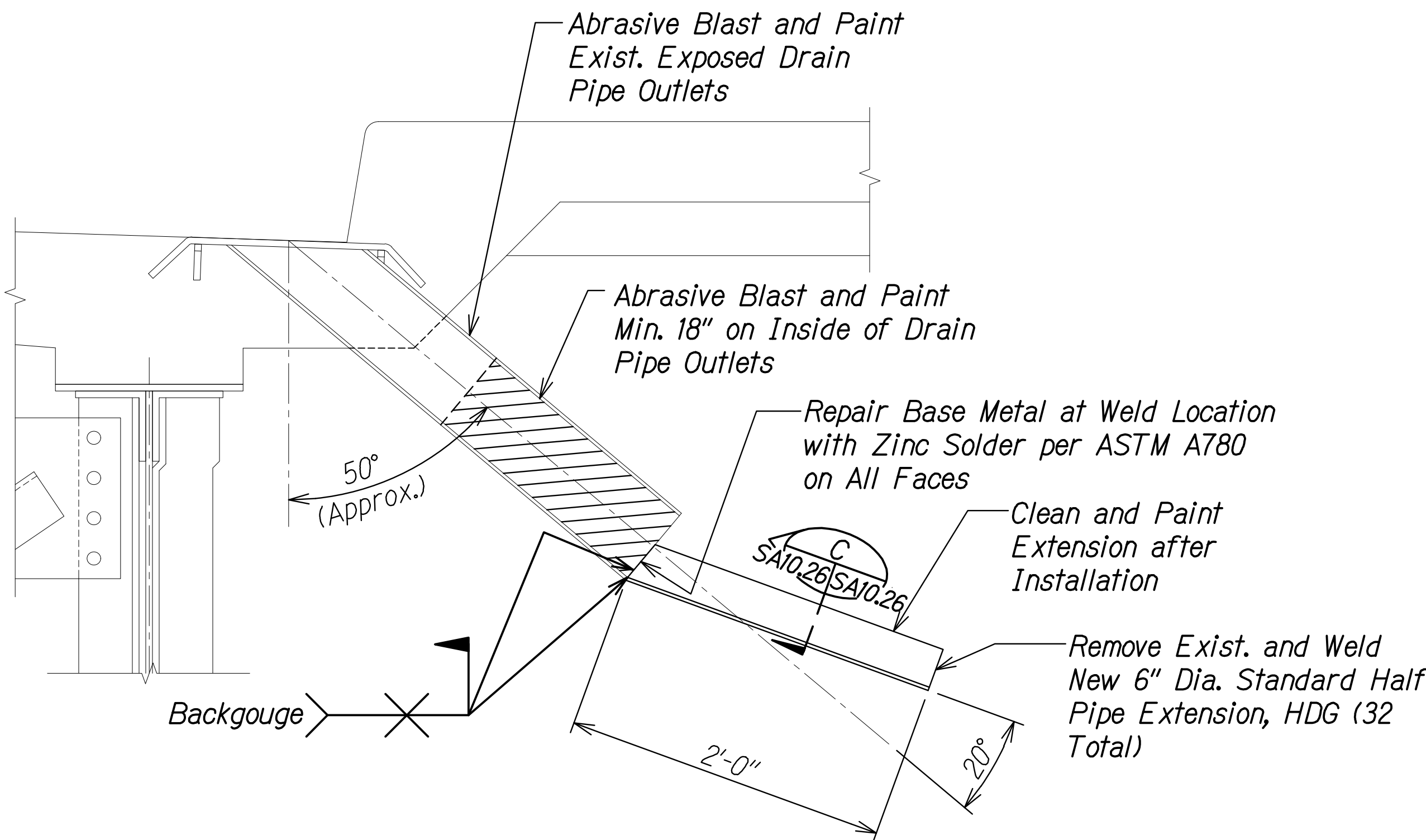
DETAIL 1
Scale: 1 1/2" = 1'-0"
SA2.2 SA10.26



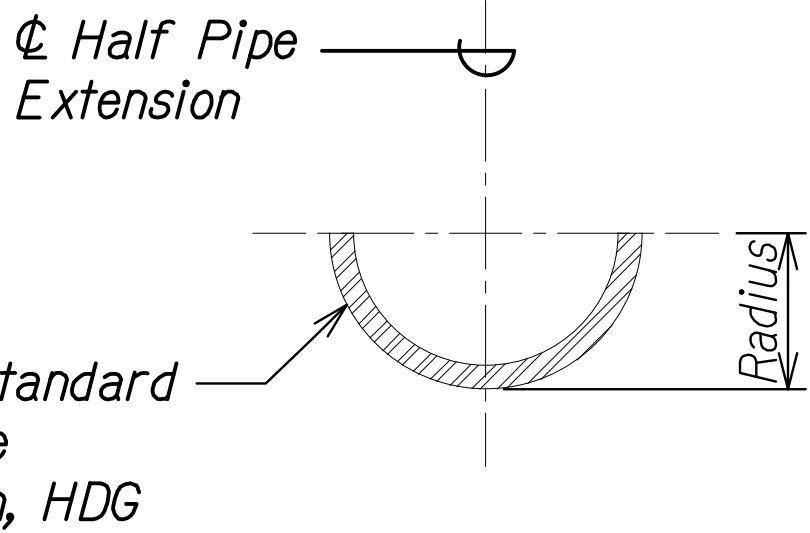
SECTION A
Scale: 3" = 1'-0"
SA10.26 SA10.26



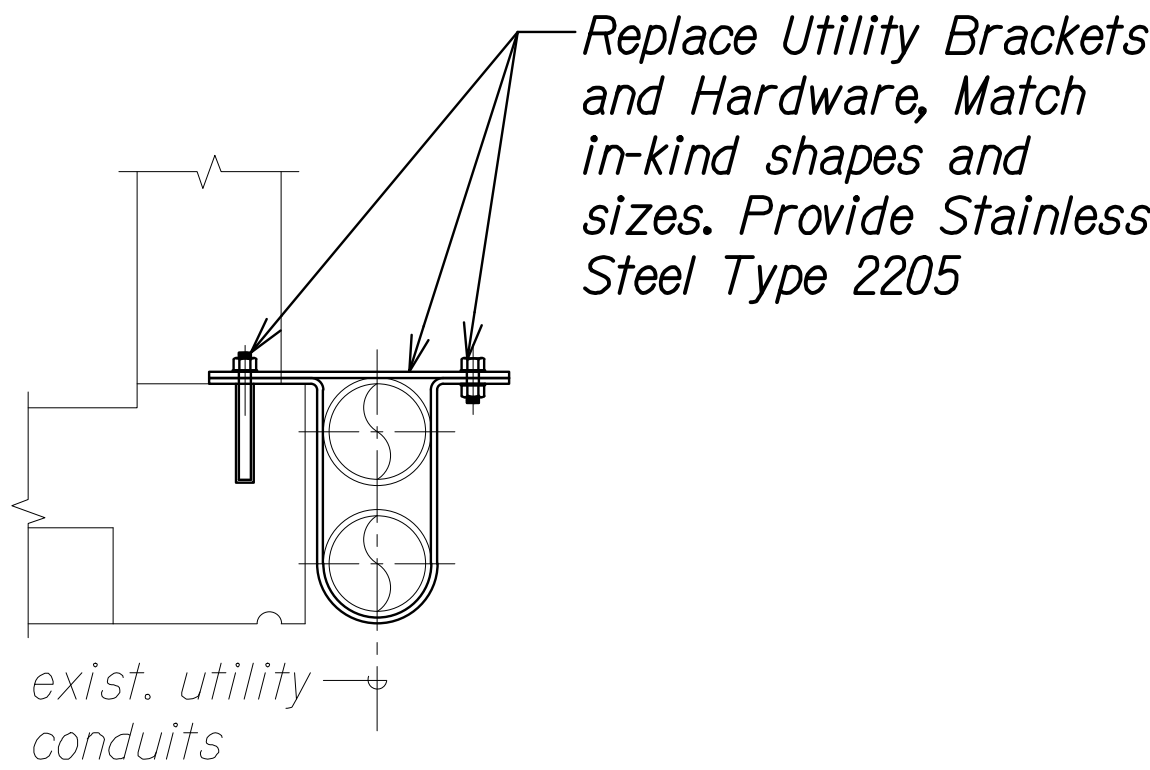
SECTION B
Scale: 3" = 1'-0"
SA10.26 SA10.26



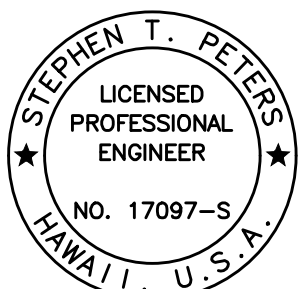
DETAIL 2
Scale: 1 1/2" = 1'-0"
SA2.2 SA10.26



SECTION C
Not to Scale
SA10.26 SA10.26



DETAIL 3
Scale: 1 1/2" = 1'-0"
SA2.2 SA10.26



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

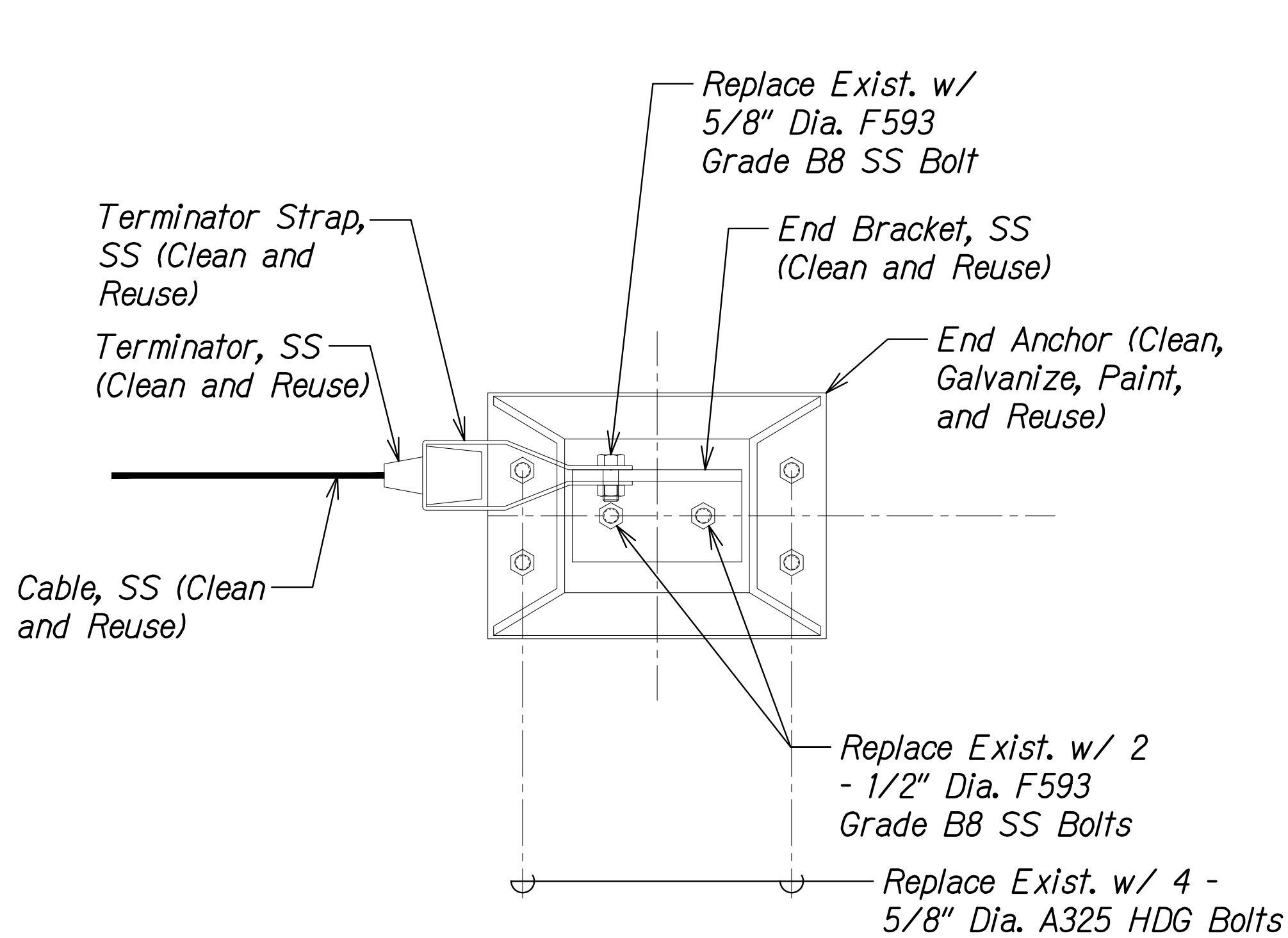
SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

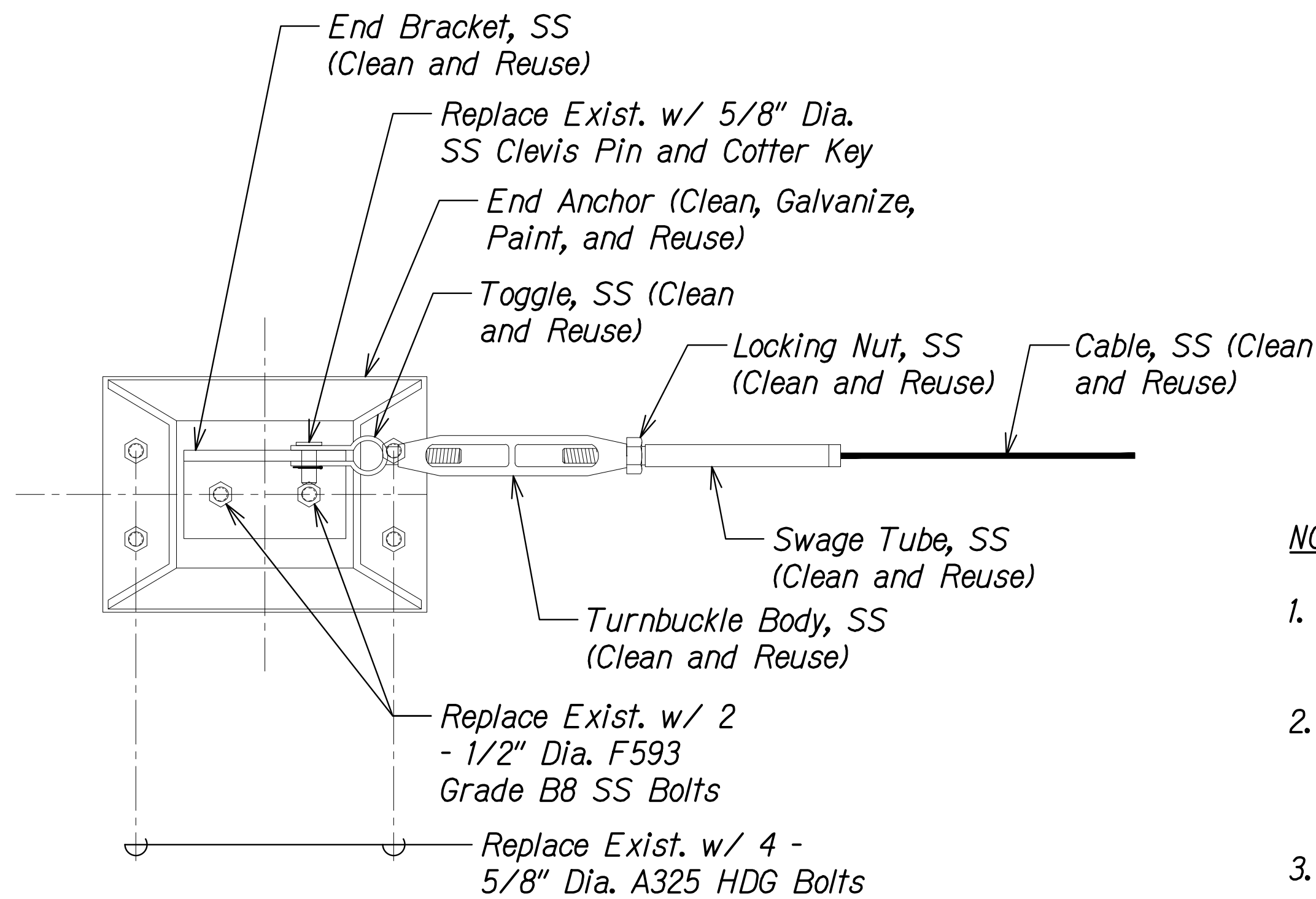
**CRANE RAIL, DRAIN PIPE,
AND UTILITY BRACKET DETAILS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 209 | 280 |



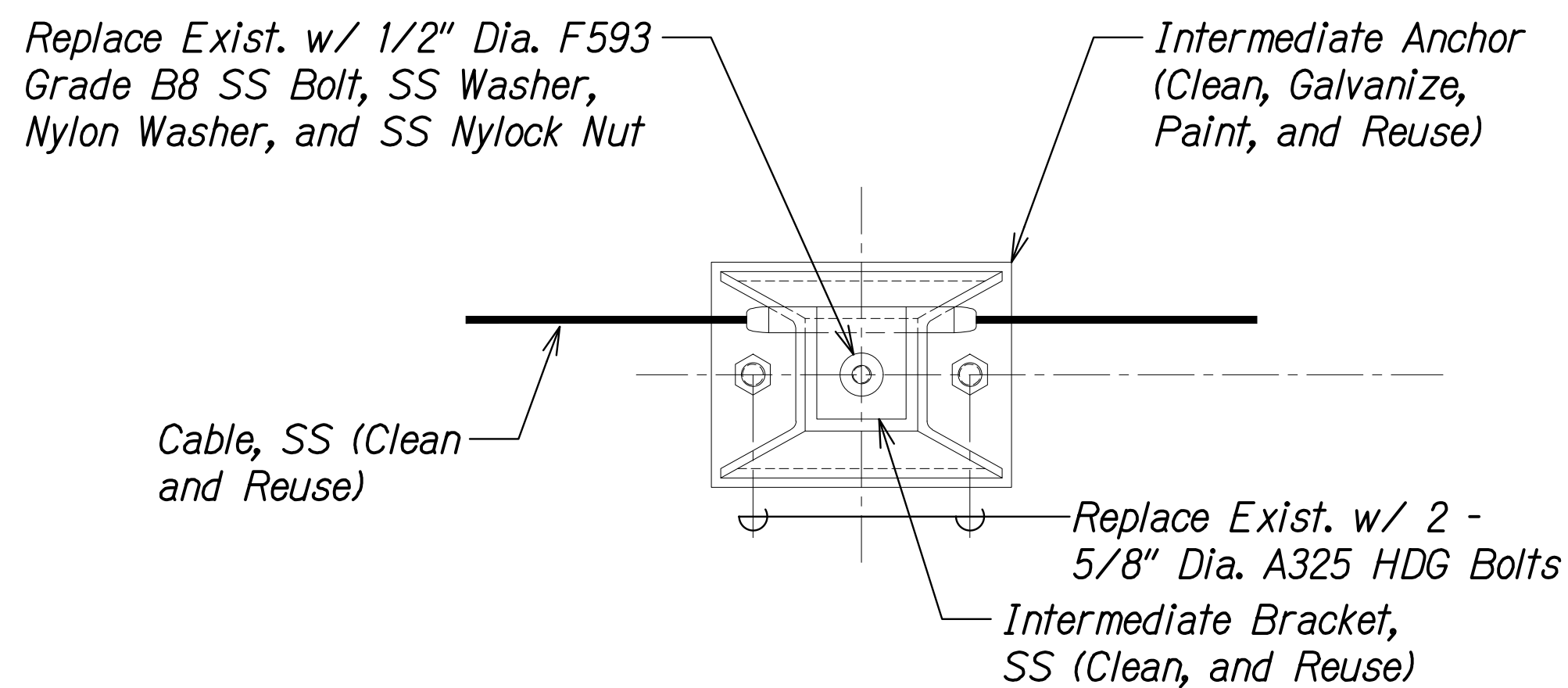
LIFELINE END ANCHOR DETAIL 1
Scale: 3" = 1'-0" SAI0.27 SAI0.27



LIFELINE END ANCHOR DETAIL 2
Scale: 3" = 1'-0" SAI0.27 SAI0.27

NOTES:

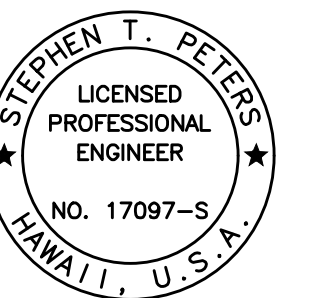
1. Lifeline anchors, cable, and hardware shall be removed prior to abrasive blasting of girders.
2. Lifeline anchors shall be reused and abrasive blast cleaned in accordance with SSPC-SPI0 prior to hot-dip galvanizing in accordance with ASTM A123.
3. Lifeline anchors shall be shop painted in accordance with Special Provisions Section 667 - CLEAN AND PAINT NEW BRIDGE STEEL prior to reinstallation on the bridge.
4. Stainless steel components such as end bracket, intermediate bracket, terminator, terminator strap, toggle, turnbuckle body, locking nut, swage tube, and cable shall be reused and abrasive blast cleaned in accordance with SSPC-SPI6 before reinstallation on the bridge.
5. All bolts shall be replaced with assemblies in accordance with ASTM F3125, Grade A325, HDG.
6. All stainless steel bolts shall be replaced with assemblies in accordance with ASTM F593 Grade B8 SS.
7. Stainless steel clevis pin and cotter key shall be replaced with a headed pin assembly machined from Type 316 stainless steel.



LIFELINE INTERMEDIATE ANCHOR DETAIL 3
Scale: 3" = 1'-0" SAI0.27 SAI0.27

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SAI027 LIFELINE ANCHOR DET.DWG PLOT TIME: 10-28-24, 3:24 PM



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

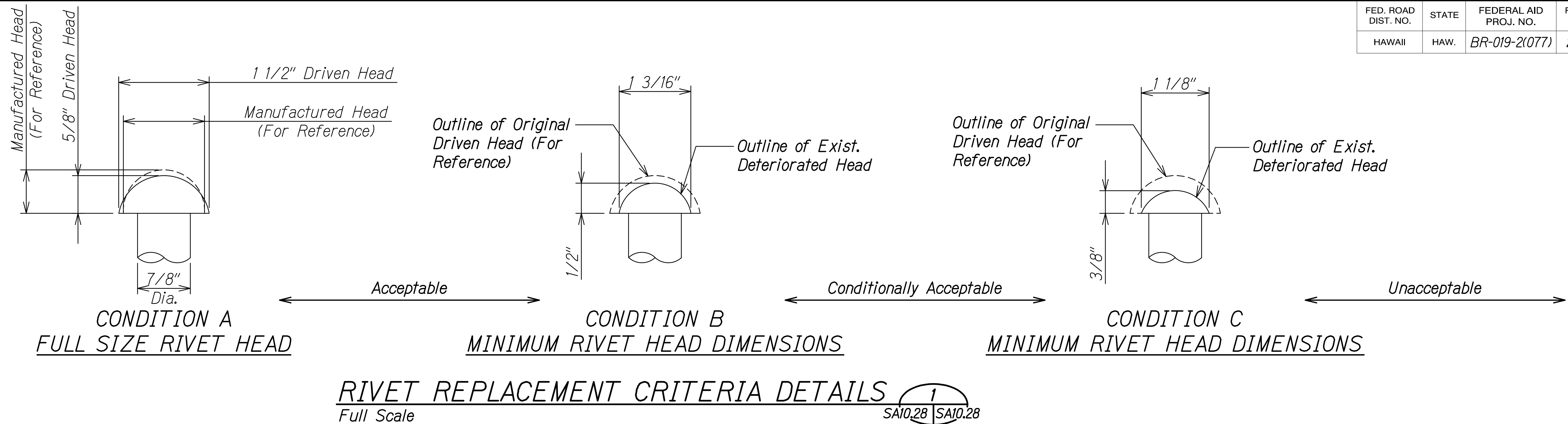
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIFELINE DETAILS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SAI0.27 OF 30 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 210 | 280 |

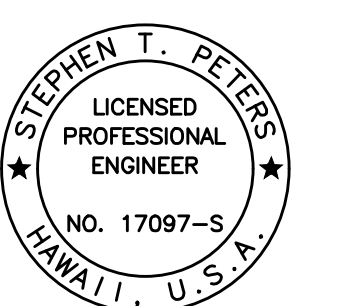


RIVET REPLACEMENT NOTES:

- Removal of rivets for the purpose of making various structural steel repairs/replacing members as indicated on the plans or as ordered by the Engineer are not included in the criteria and are not covered for payment under Pay Item 501.9000 and shall be considered incidental to the various pay items related to the steel repairs/replacement.
- Inspection and evaluation of rivet acceptability shall be conducted following the initial abrasive blasting work of the bridge superstructure.
- Deteriorated rivets not covered under Note 1 above shall be inspected by the Contractor and determined whether rivet replacement is required per the criteria. The Contractor shall mark and indicate all rivets planned for replacement. The Contractor shall request an inspection by the Engineer to determine if rivet replacements are acceptable. Rivets shall be replaced with 7/8" Dia. ASTM F3125, Grade A325, HDG, pretensioned high strength bolts, unless otherwise noted and in accordance with the following guidelines.
- The Contractor shall submit a working plan, for approval, detailing the proposed methods for rivet removal. Acceptance will require demonstration by the Contractor to ensure no damage will occur to the existing member to remain. No flame cutting methods will be permitted.
- Rivets (Acceptable) with head dimensions for both diameter and height meeting or surpassing each of the minimum requirements shown for Condition B may be left in place subject to conditions described in Notes 8 and 9.
- Rivets (Conditionally Acceptable) with head dimensions for diameter or height not meeting the requirements of Condition B, but having head dimensions for both diameter and height meeting or surpassing each of the minimum requirements shown for Condition C may be left in place subject to the following conditions:
 - The rivet is not present in a joint that subjects the rivet to tension stresses and tends to separate the connected parts.
 - Rivet heads do not have additional losses described in Note 8.
 - No crevice corrosion is present as described in Note 9.
 - Rivets may be left in place to the extent that their number does not exceed 20% of connection or 50% of stitch rivets in any one portion of a member.
 - Where the above percentages are exceeded the number of rivets over the prescribed percentage shall be replaced.
- Rivets (Unacceptable) with head dimensions for diameter or height not meeting the requirements of Condition C shall be replaced.
- Replacement will also be requested for any rivet exhibiting additional loss in the form of pits or gouges at the edges of either head projecting beyond the shank where such loss reduces the section below the limits shown for Condition B.
- Where crevice or interface corrosion between connected parts is present, the rivets adjacent to that area shall be replaced after cleaning between the parts regardless of the condition of the rivets.
- Dimensions shown on these sketches for Conditions B and C are minimum requirements for driven heads. The minimum height of head is measured to the center of the rivet. The minimum diameter applies to that direction in which it is the smallest.
- After removal of the rivet, the rivet hole shall be cleaned per SSPC SP3 prior to installation of the replacement bolt assembly.
- If reaming is required to dress up the rivet holes, and if after reaming the hole diameter exceeds 1 1/16", the Contractor shall install a 1" Dia. HS bolt. In no case shall the hole size be enlarged greater than 1 1/4" Dia. No change in unit price or time shall apply.
- All high-strength bolt connections shall be assembled with a DTI washer and hardened washer under the nut. Install bolt head on exterior face of girder, as applicable.
- The remaining areas shall be cleaned and any depressions, pits, or holes on surface of head shall be filled with surfacing epoxy following application of prime coat.
- Cost for removal of existing rivets and replacement with high-strength bolts (other than those shown on the Contract Plans) shall be covered under Pay Item 501.9000.

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

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOHA\01 CAD\10-28-24 BID SET\NSR-SA1028 RIVETS.DWG PLOT TIME: 10-28-24 11:47 AM



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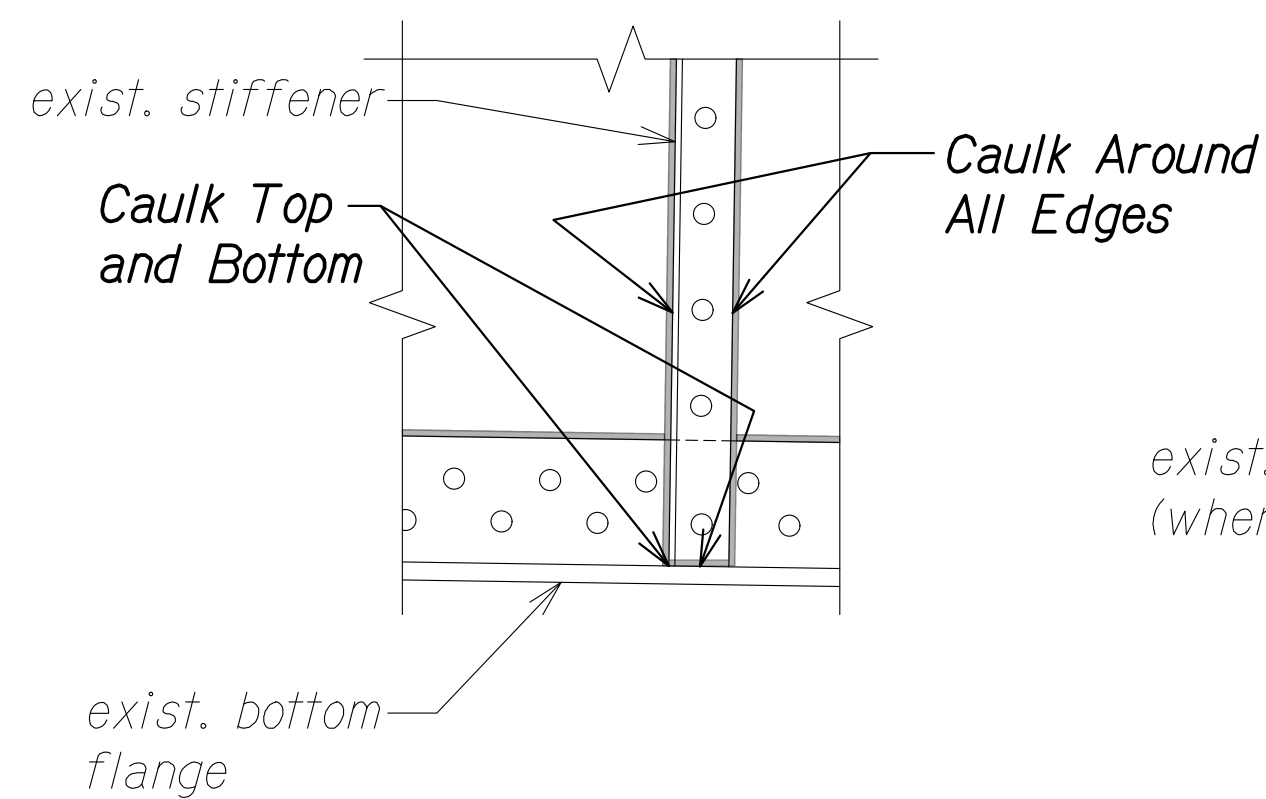
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RIVET REPLACEMENT DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

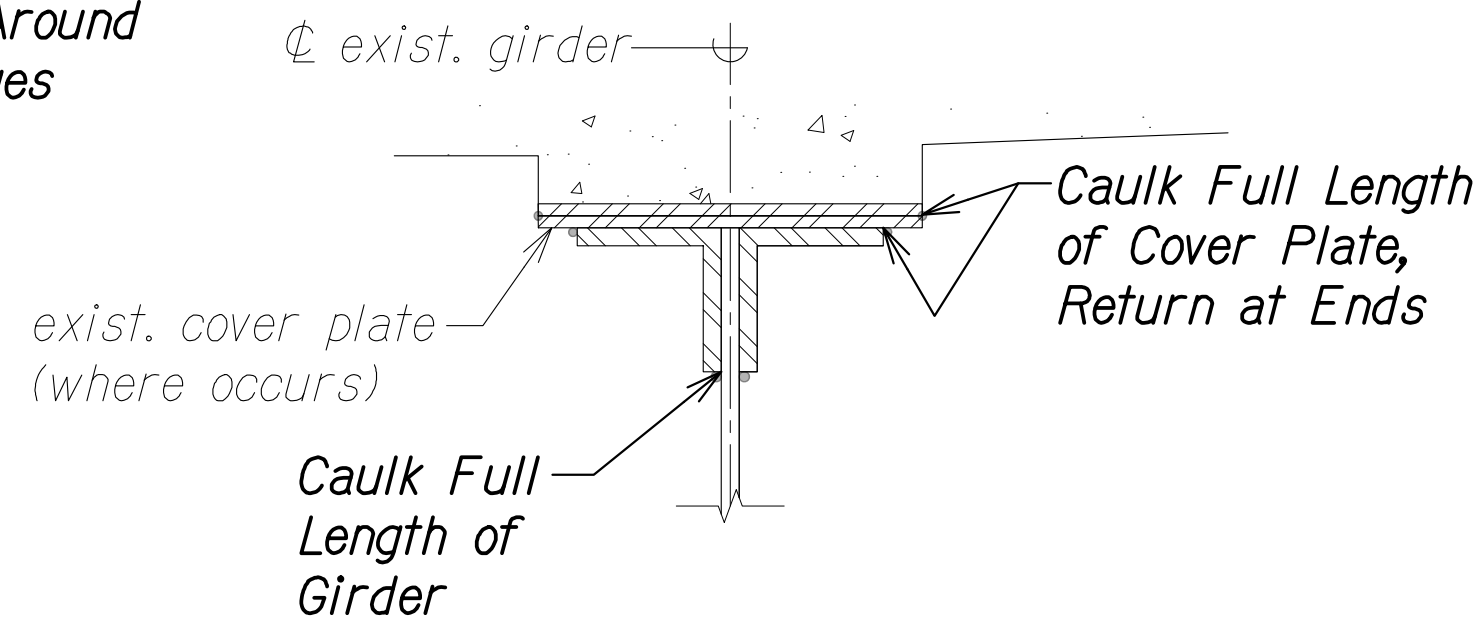
SHEET NoSA10.28 OF 30 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | ADD. 212 | 280 |



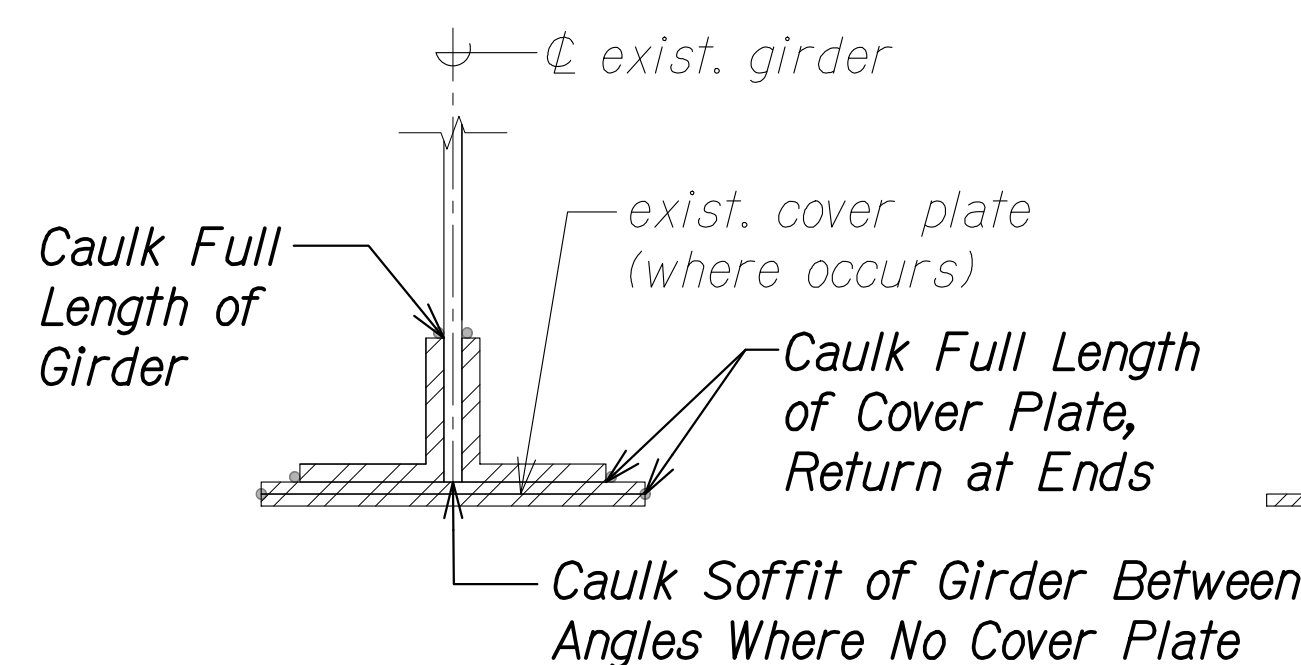
STIFFENER CONNECTION

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



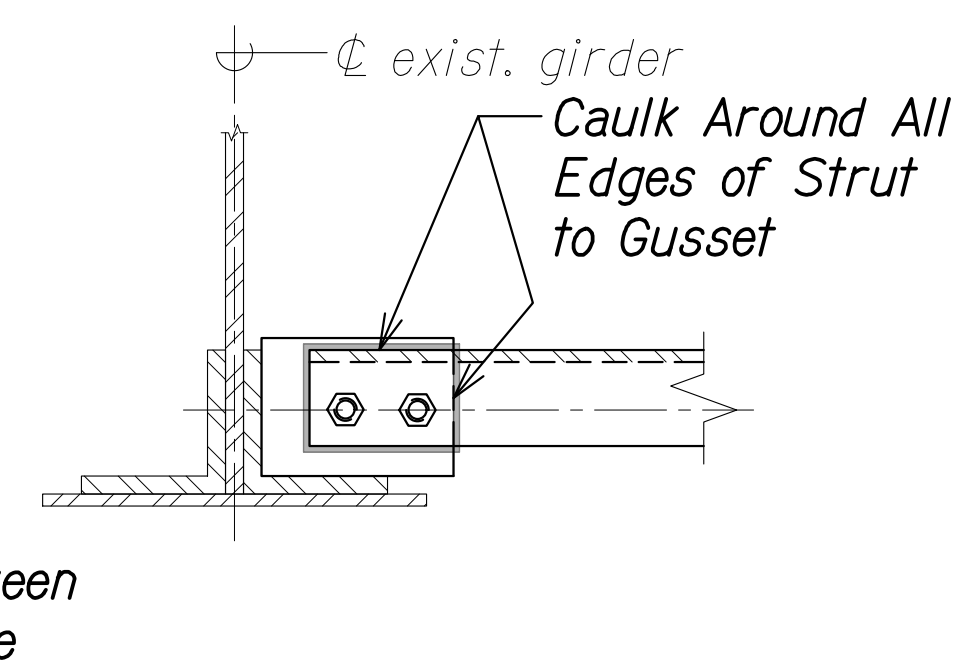
TOP FLANGE CONNECTION

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



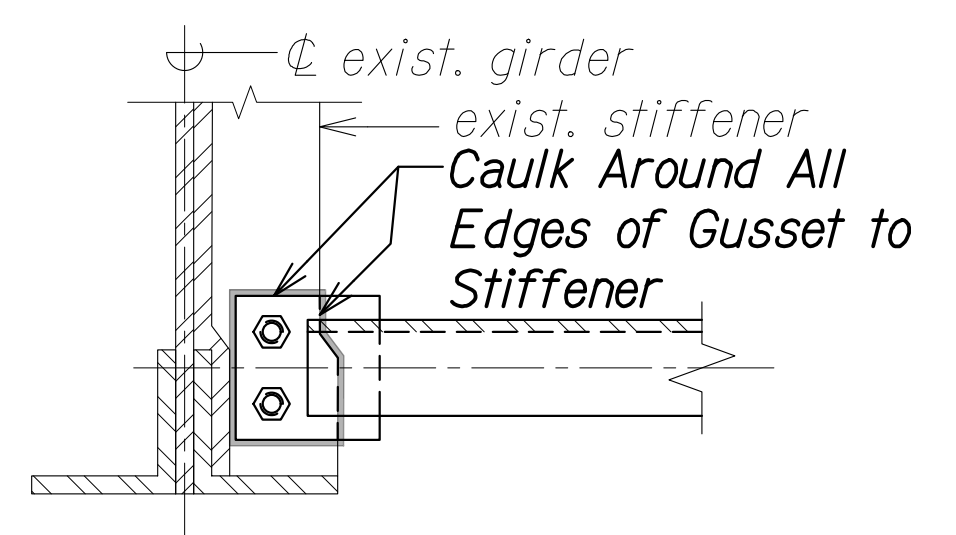
BOTTOM FLANGE CONNECTION

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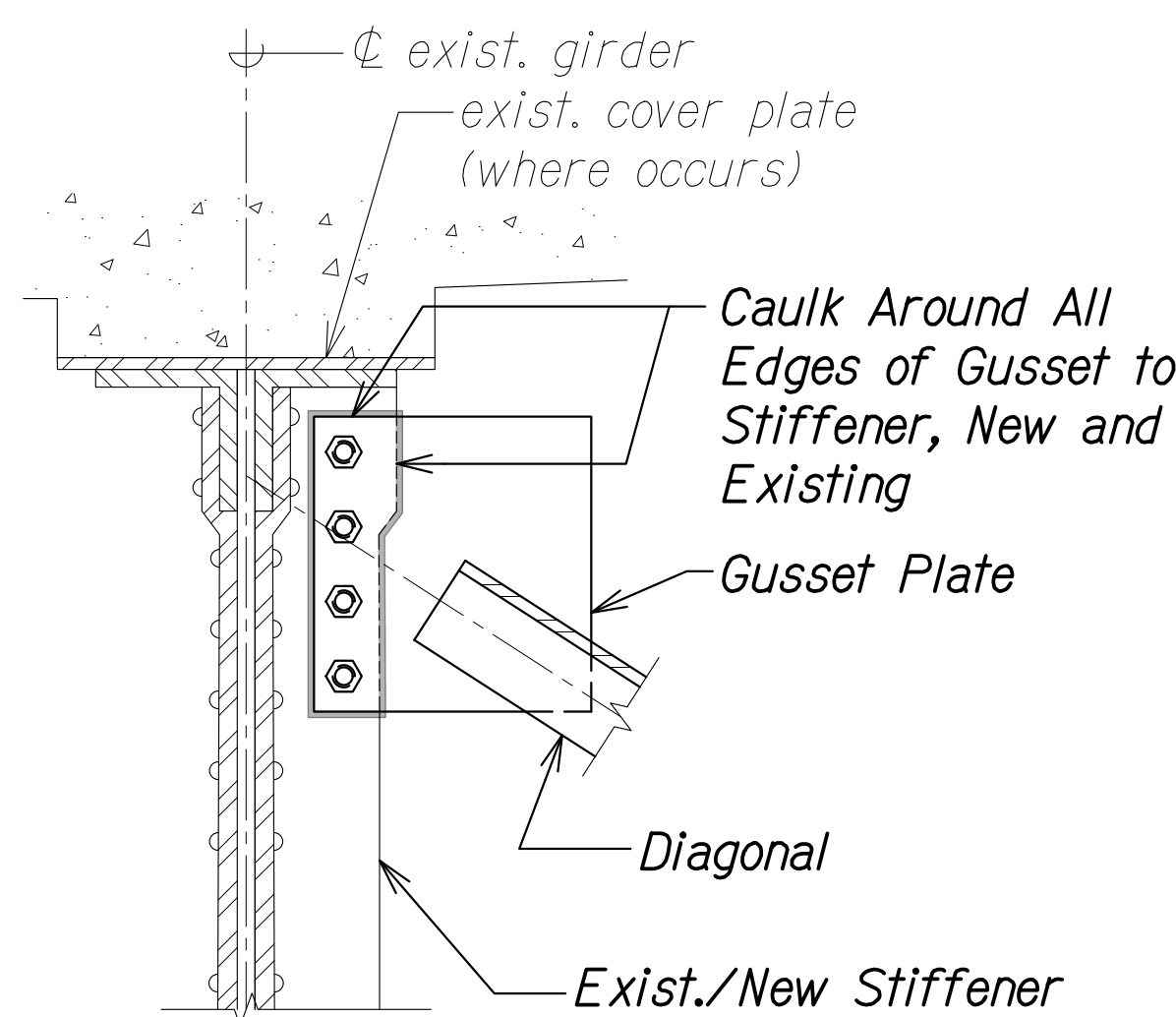
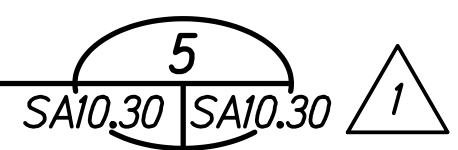
STRUT CONNECTION

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



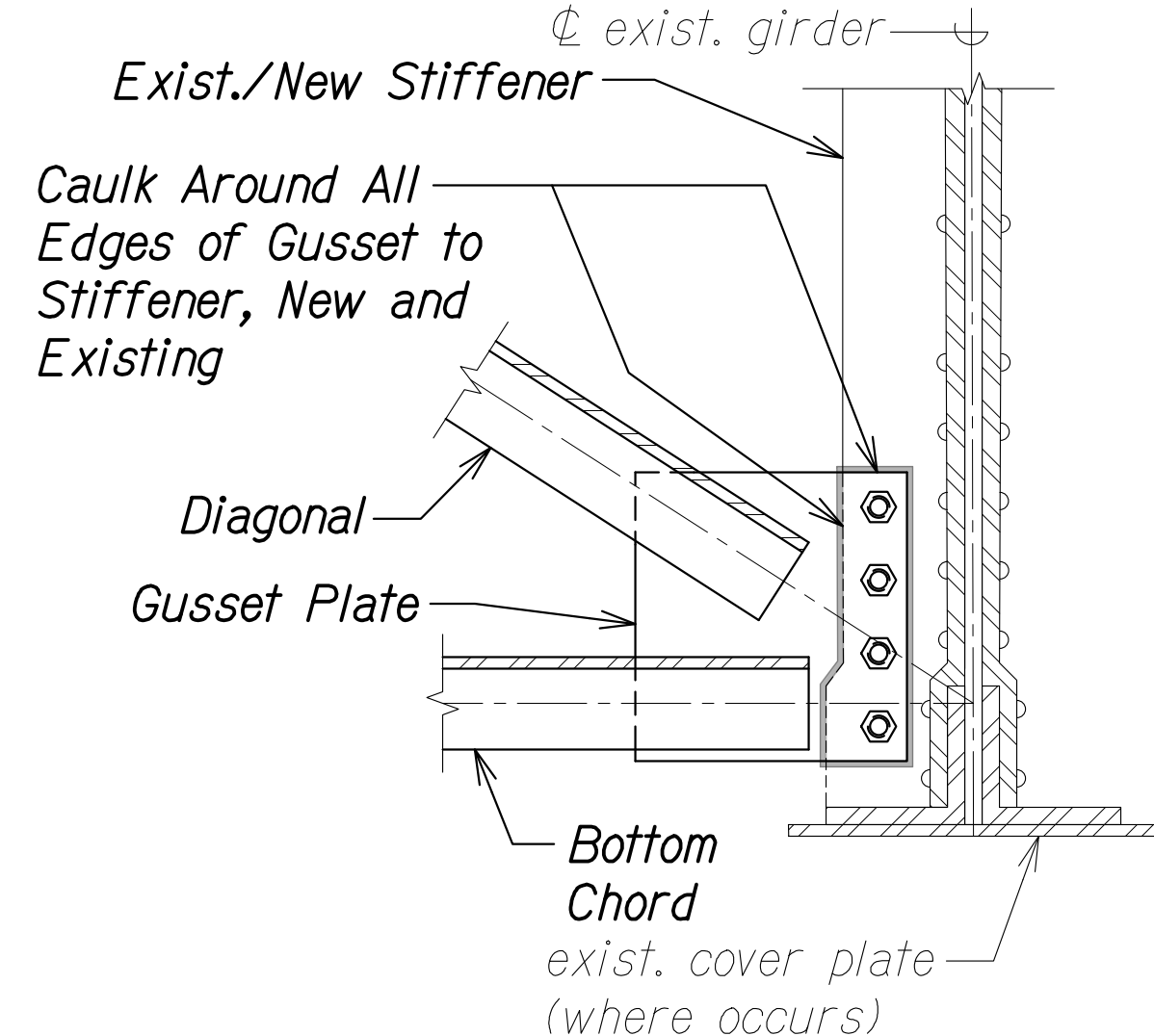
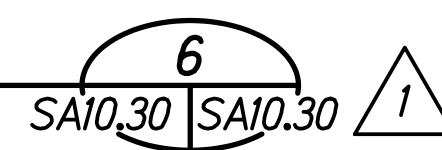
STRUT CONNECTION

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



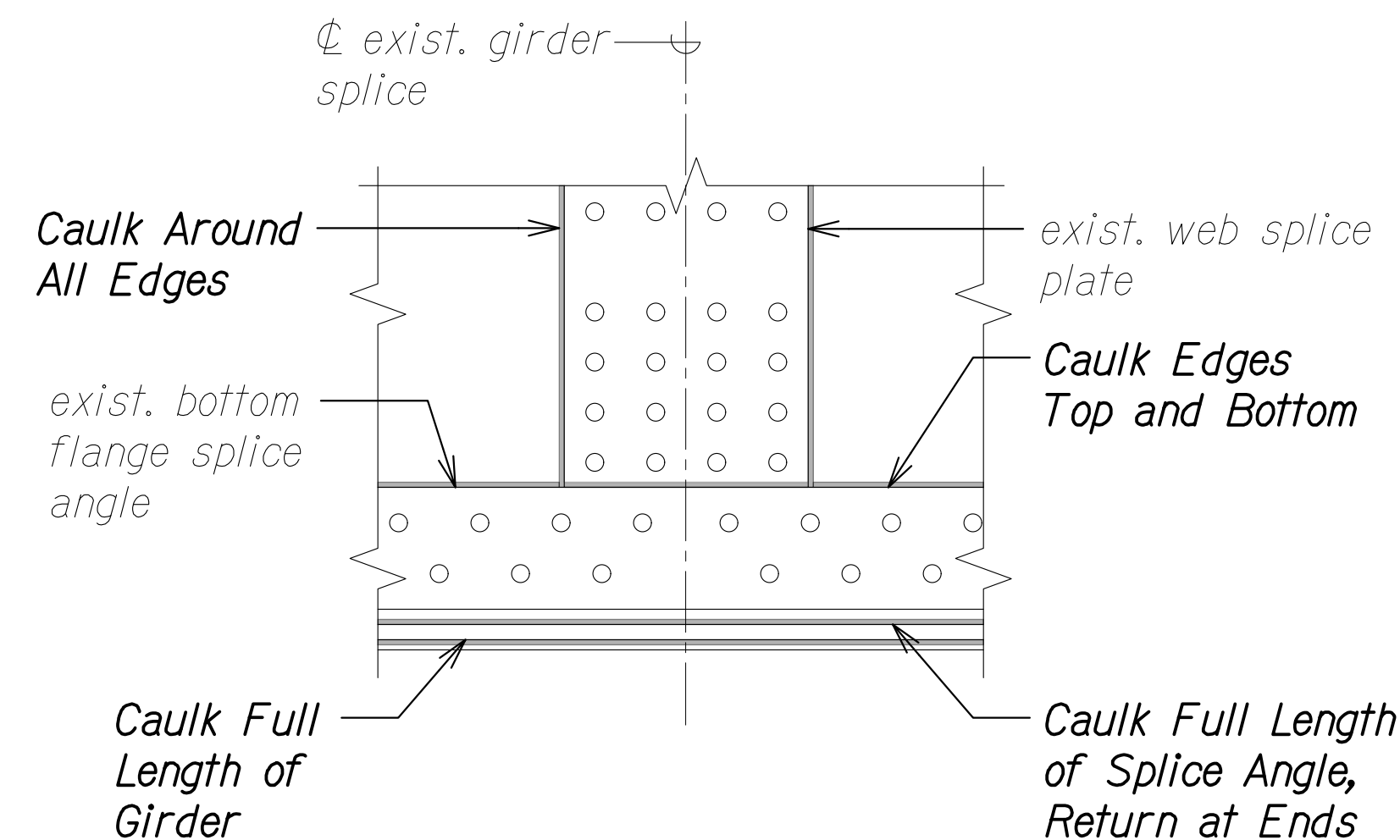
CROSS-FRAME CONNECTION

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



CROSS-FRAME CONNECTION

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



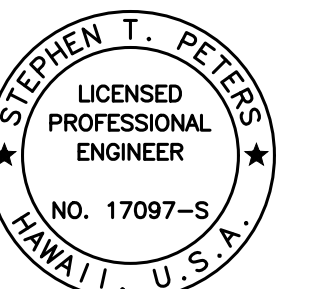
GIRDER SPLICE CONNECTION

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



NOTES:

- All details are shown as typical and shall be applied at all locations throughout the bridge.
- Caulk shall be applied after applicable dry-to-recoat time of the epoxy mist coat, as described in its product data sheet.
- The cost for caulking shall be covered under Pay Item 666.3000.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAINT/CAULKING DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| | | |
|---------|----------|--|
| 12/6/24 | 1 | Added Detail and Revised Details & Notes |
| DATE | REVISION | |

SHEET NoSA10.30 OF 30 SHEETS

ADD. 212

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\12-06-24 ADD\NSR-SA1030 PAINT ADD2.DWG PLOT TIME: 12-05-24 3:37 PM

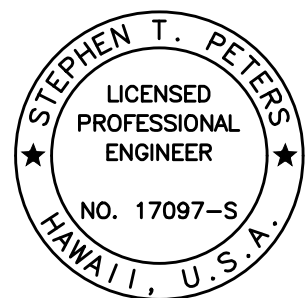
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 213 | 280 |

OVERHEAD AND VERTICAL CONCRETE REPAIR NOTES:

- The Contractor shall use a non-sag polymer modified repair mortar to repair defective concrete on the deck soffit, and other vertical and overhead repairs. The Contractor shall be aware of the extensive repair requirements in Section 680 - DEFECTIVE CONCRETE REPAIRS of the Special Provisions.
- Spalls, delaminations, and honeycombing as noted on the drawings shall all be referred to as defective concrete.
- Any existing defective concrete and cracked concrete that the Contractor discovers throughout the construction process that was not shown on the contract documents shall be brought to the attention of the Engineer.
- All contaminated concrete containing any oil, dirt, etc. shall be removed. The Contractor shall take necessary precautions to avoid damaging the underlying sound concrete and reinforcing.
- The defective concrete repair area shall be squared by sawcutting and chipping the concrete at the perimeter beyond the defect area a minimum of 1-inch. Exercise great care to avoid vibrating, cutting or damaging any existing embedded steel reinforcing. Angles between adjacent saw-cuts around the perimeter shall be 90 degrees.
- Existing concrete surfaces within the repair area shall be roughened to ensure proper adhesion. Follow Special Provisions and Manufacturer's recommendations for further surface preparation.
- If any reinforcing steel is observed to have section loss during the removal of existing concrete patches, removing unsound concrete, or during surface preparation, the Contractor shall follow SA11.3 and the requirements in the Special Provisions.
- The Contractor shall not saw-cut beyond the repair limits.
- Any defective concrete that the Contractor discovers throughout the project that is not covered in the estimated quantities shall be brought to the attention of the Engineer.

DEFECTIVE CONCRETE REPAIR QUANTITIES

| LOCATION | POSITION | AREA (SF) |
|----------------------------|----------|--------------|
| Abutment No. 1 | V | 3 |
| Abutment No. 2 | V | 4 |
| Concrete Deck Soffit | OH | 7 |
| Bottom of Concrete Railing | OH | 4 |
| | | Total SF: 18 |



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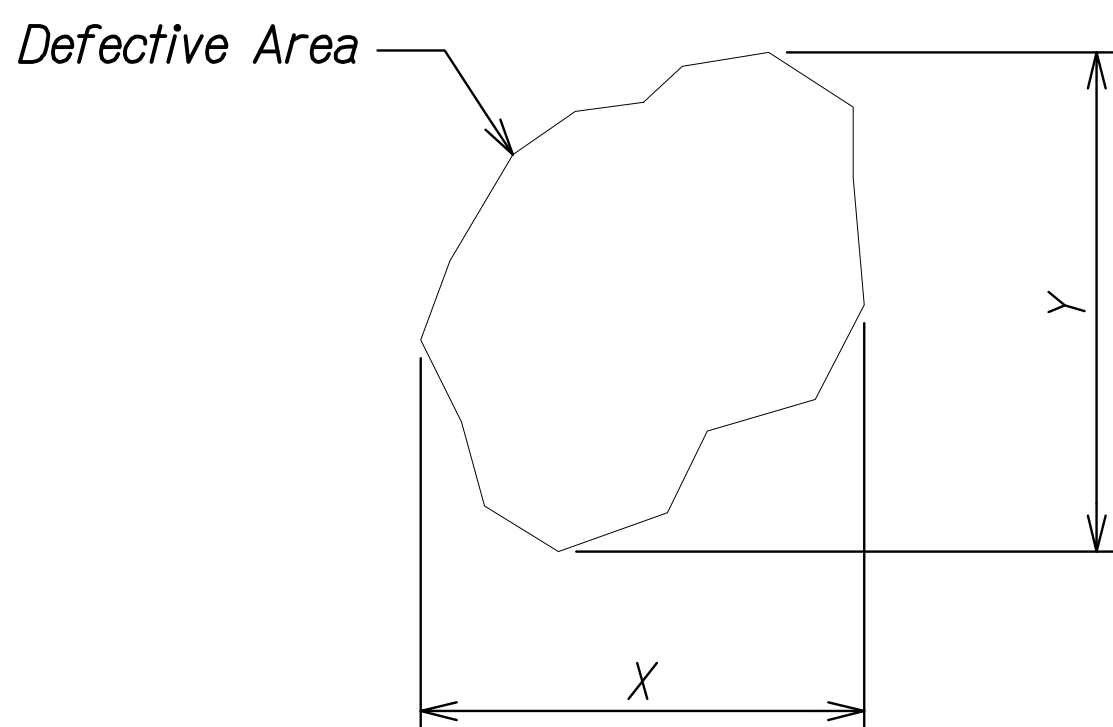
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERHEAD AND VERTICAL DEFECTIVE
CONCRETE REPAIR DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

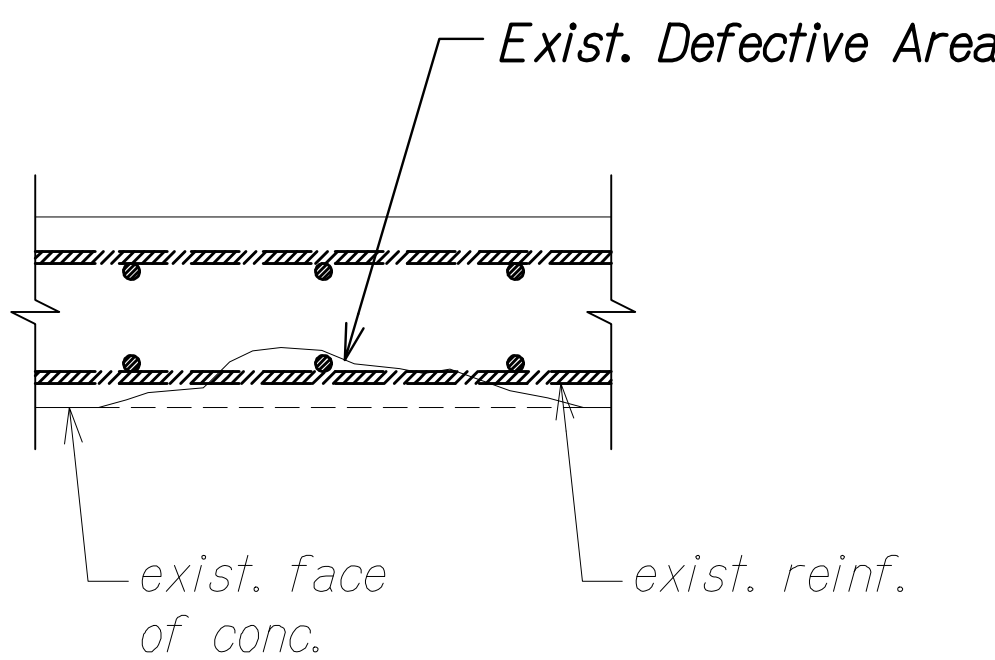
Scale: As Noted Date: Oct. 2024

SHEET No. SA11.1 OF 4 SHEETS

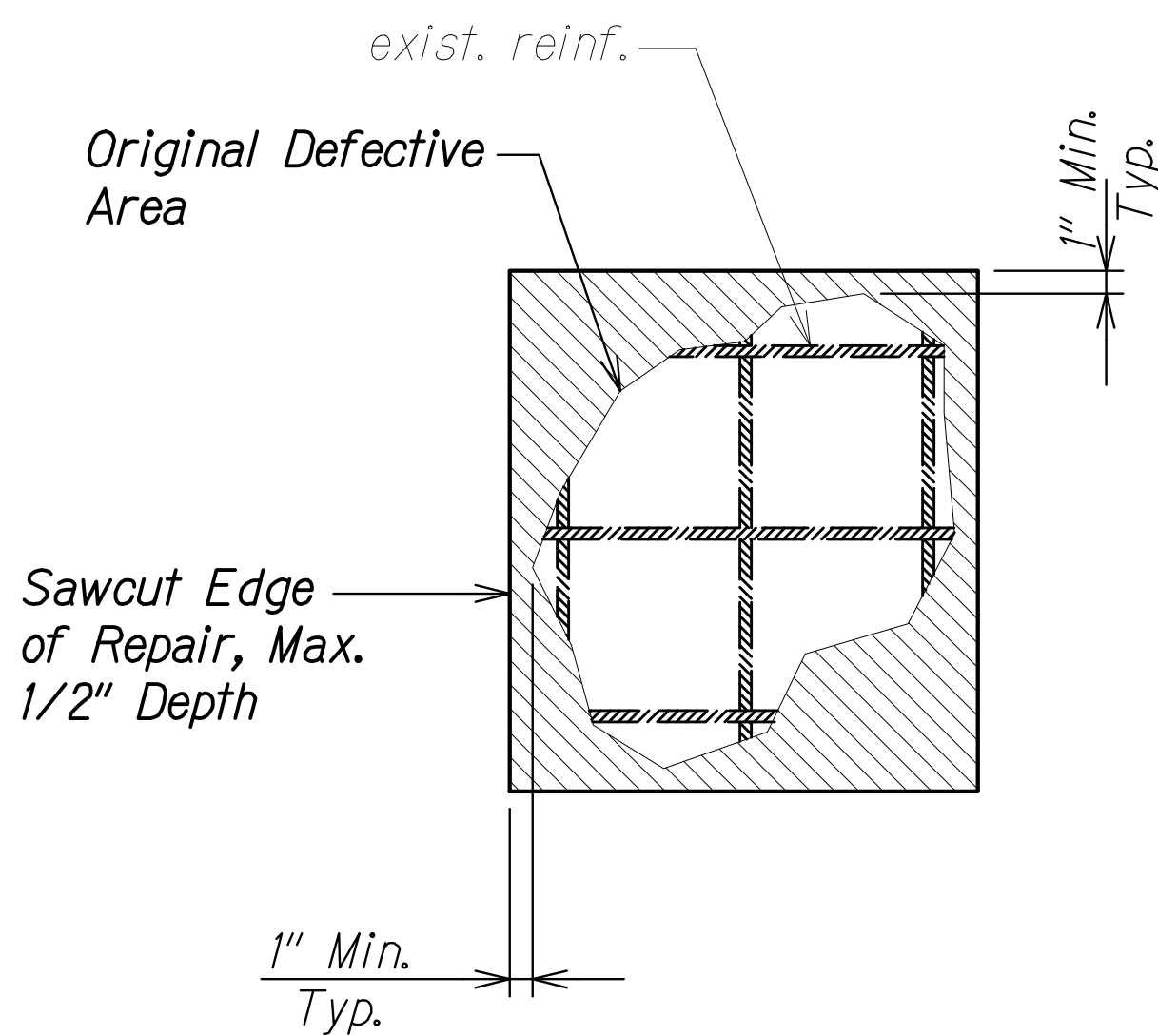


Exist. Defective Area = $X \times Y$

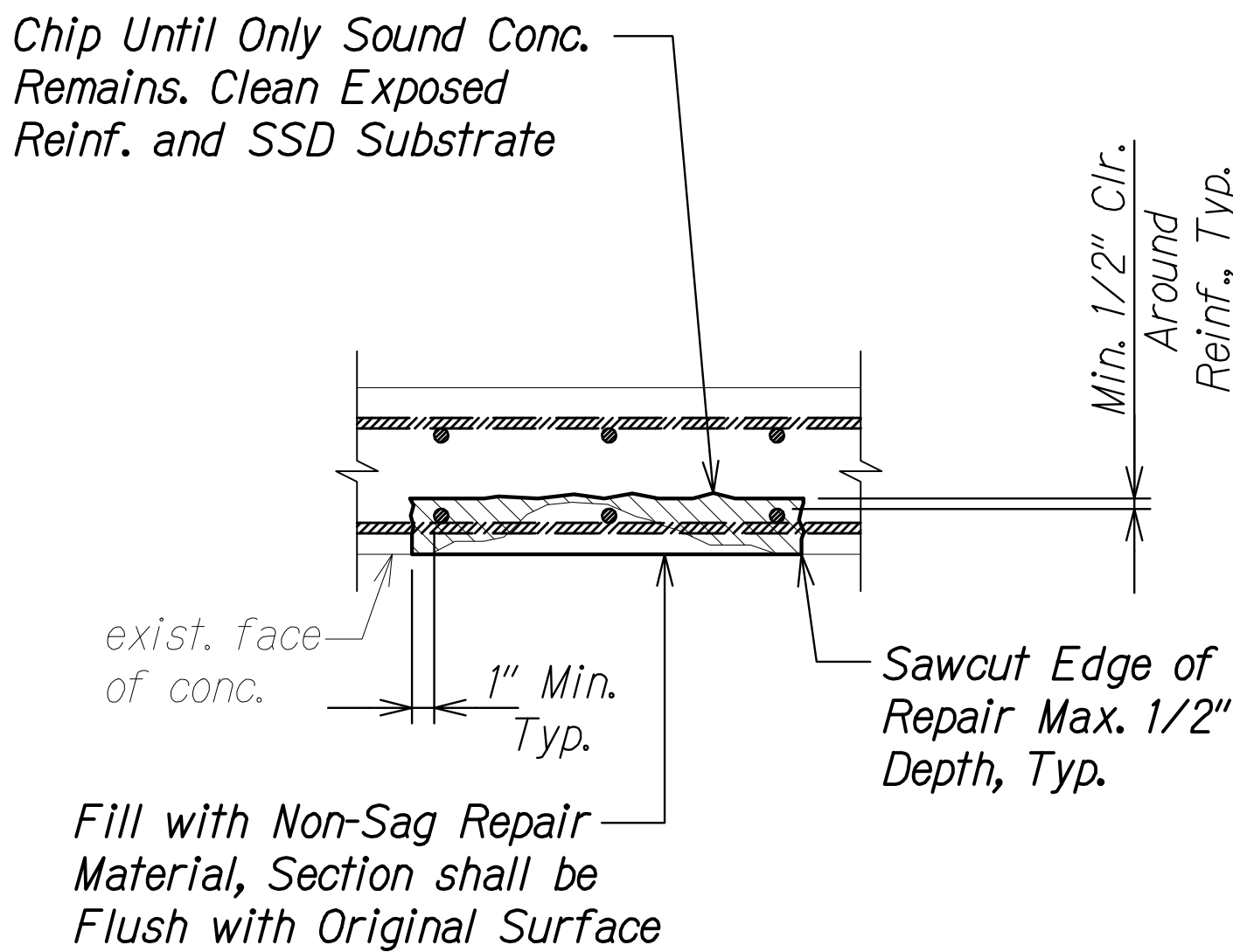
DEFECT PLAN/ELEVATION



DEFECT SECTION



REPAIR PLAN/ELEVATION



REPAIR SECTION

OVERHEAD AND VERTICAL DEFECTIVE CONCRETE REPAIRS

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

LEGEND:

- Defective Concrete to be Removed
- OH Overhead
- V Vertical

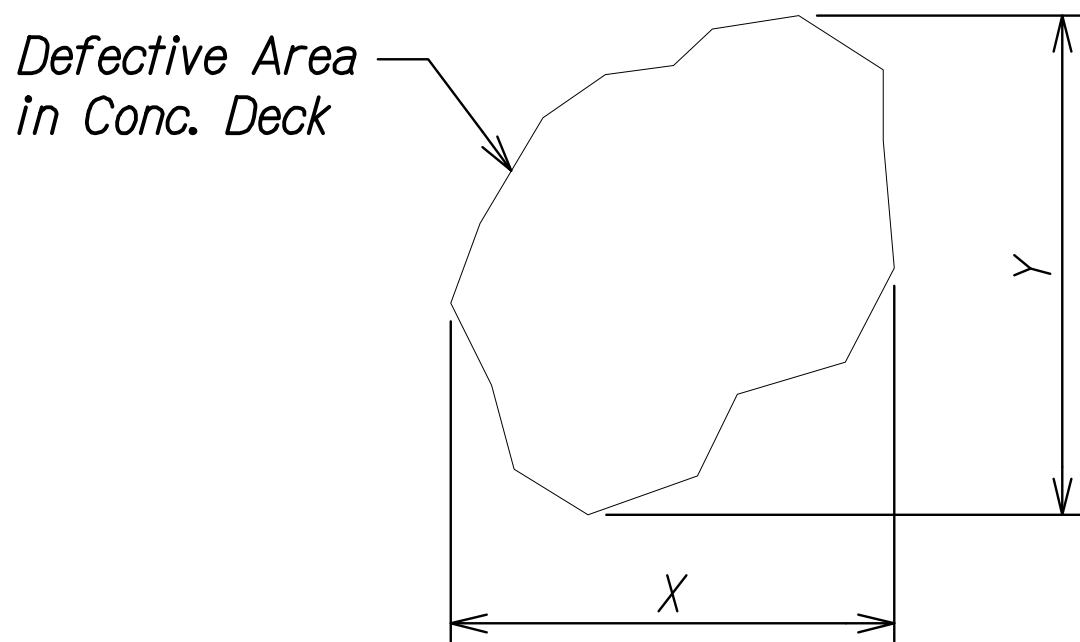
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOTHA.01 CAD\10-28-24 BID SET\NSR-SA1101-SA1104 REPAIR DTLS.DWG PLOT TIME: 10-28-24 1:10 PM

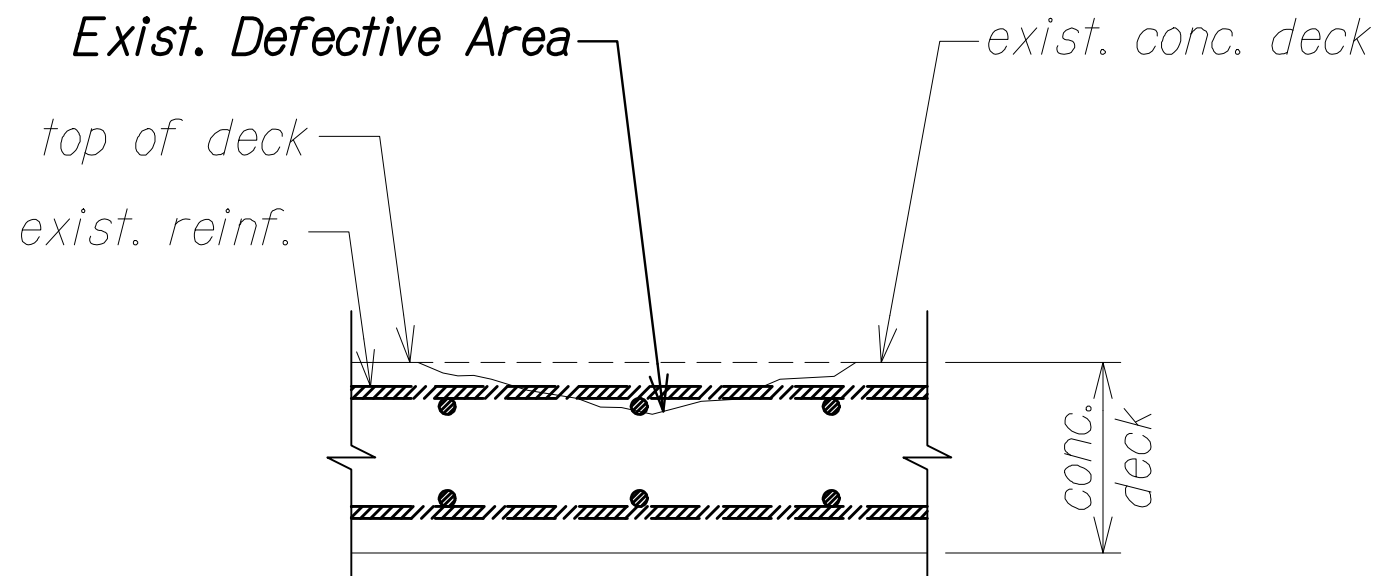
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 214 | 280 |

CONCRETE DECK REPAIR NOTES:

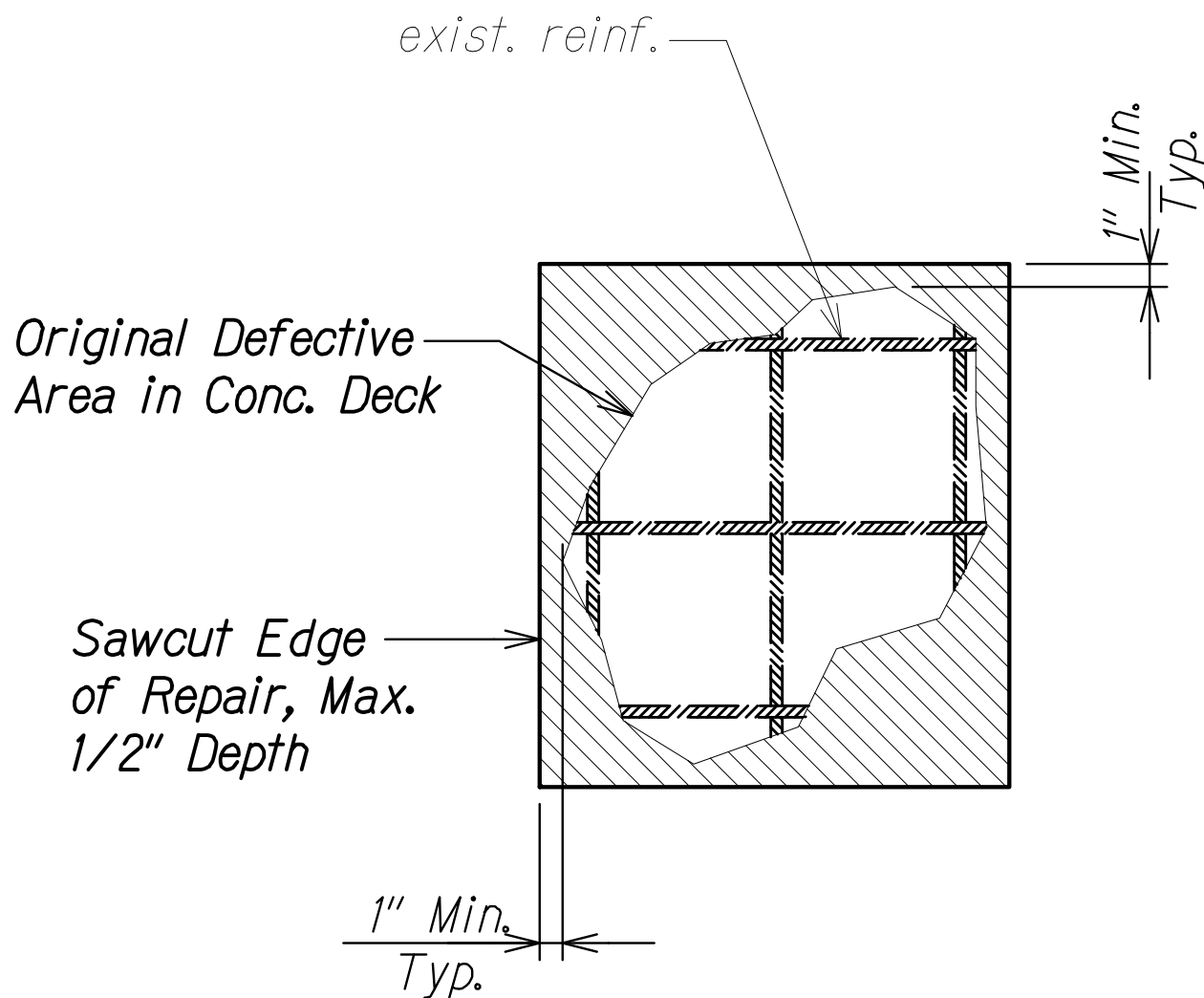
- The Contractor shall use a Very Early Strength Latex Modified Concrete (VESLMC) to repair defective concrete on the bridge deck. The VESLMC shall conform to Section 679 - Very Early Strength Latex Modified Concrete (VESLMC) of the Special Provisions. The Contractor shall follow the requirements in Section 680 - DEFECTIVE CONCRETE REPAIRS of the Special Provisions, Sheet SAI1.2, and manufacturer's recommendations.
- Spalls, delaminations, and honeycombing as noted on the drawings shall all be referred to as defective concrete.
- Any existing defective concrete and cracked concrete that the Contractor discovers throughout the construction process that was not shown on the contract documents shall be brought to the attention of the Engineer.
- All contaminated concrete containing any oil, dirt, etc. shall be removed. The Contractor shall take necessary precautions to avoid damaging the underlying sound concrete and reinforcing.
- The defective concrete repair area shall be squared by sawcutting and chipping the concrete at the perimeter beyond the defect area a minimum of 1-inch. Exercise great care to avoid vibrating, cutting or damaging any existing embedded steel reinforcing. Angles between adjacent saw-cuts around the perimeter shall be 90 degrees.
- Existing concrete surfaces within the repair area shall be roughened to ensure proper adhesion. Follow Special Provisions and Manufacturer's recommendations for further surface preparation.
- If any reinforcing steel is observed to have section loss during the removal of existing concrete patches, removing unsound concrete, or during surface preparation, the Contractor shall follow SAI1.3 and the requirements in the Special Provisions.
- The Contractor shall not saw-cut beyond the repair limits.
- Finish all concrete surfaces to match existing conditions.



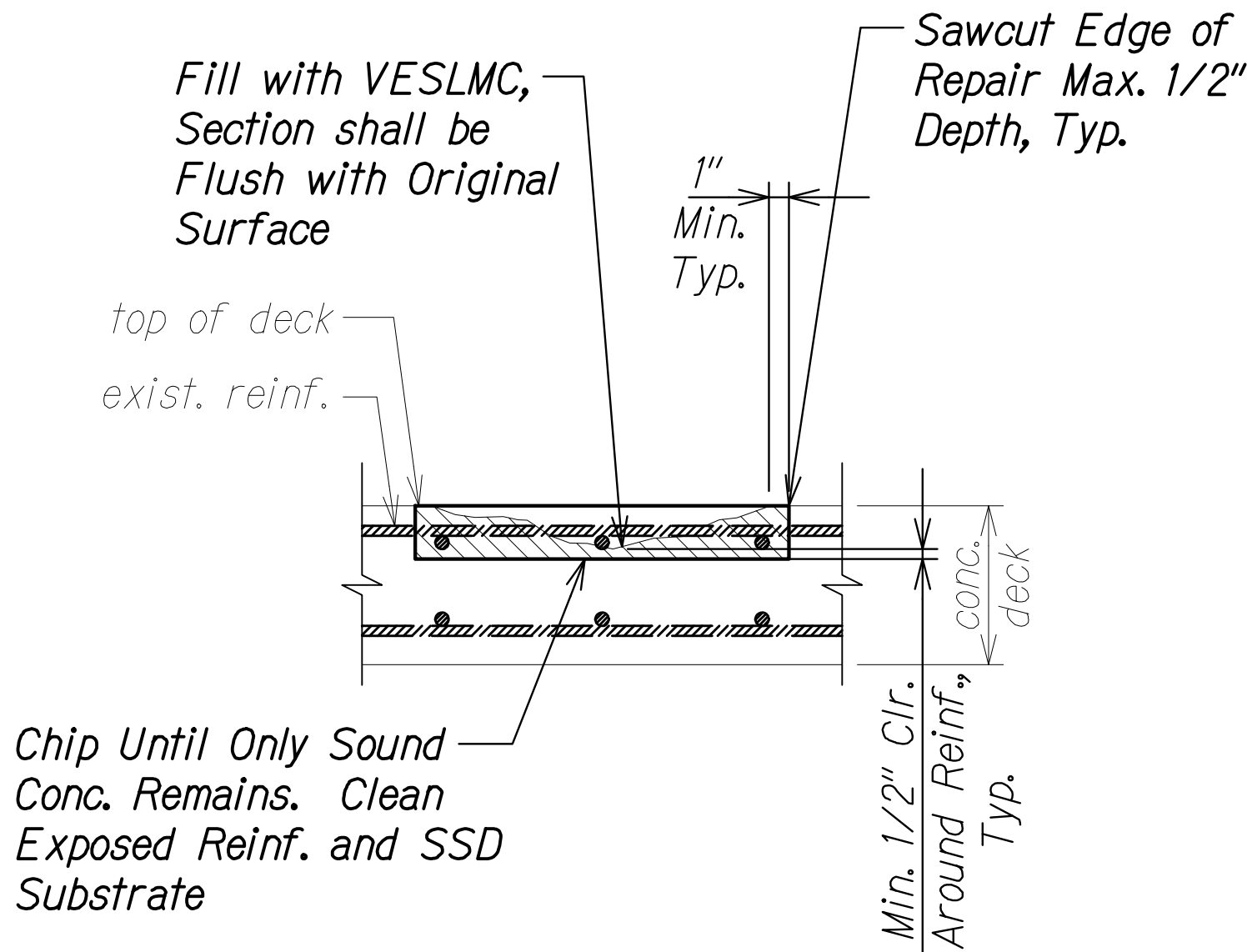
Existing Defective Area = $X \times Y$
TOP DECK DEFECT PLAN



TOP DECK DEFECT SECTION



TOP DECK REPAIR PLAN



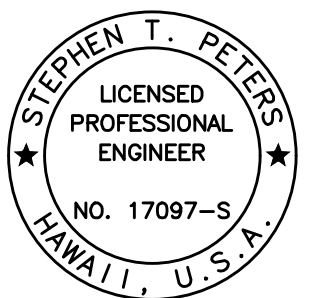
TOP DECK REPAIR SECTION

HORIZONTAL DEFECTIVE CONCRETE DECK REPAIRS A
Scale: 1 1/2" = 1'-0" SAI1.2 SAI1.2

LEGEND:
 Concrete to be Removed

| | | |
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DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SAI101-SAI104 REPAIR DTLS.DWG PLOT TIME: 10-28-24 1:26 PM



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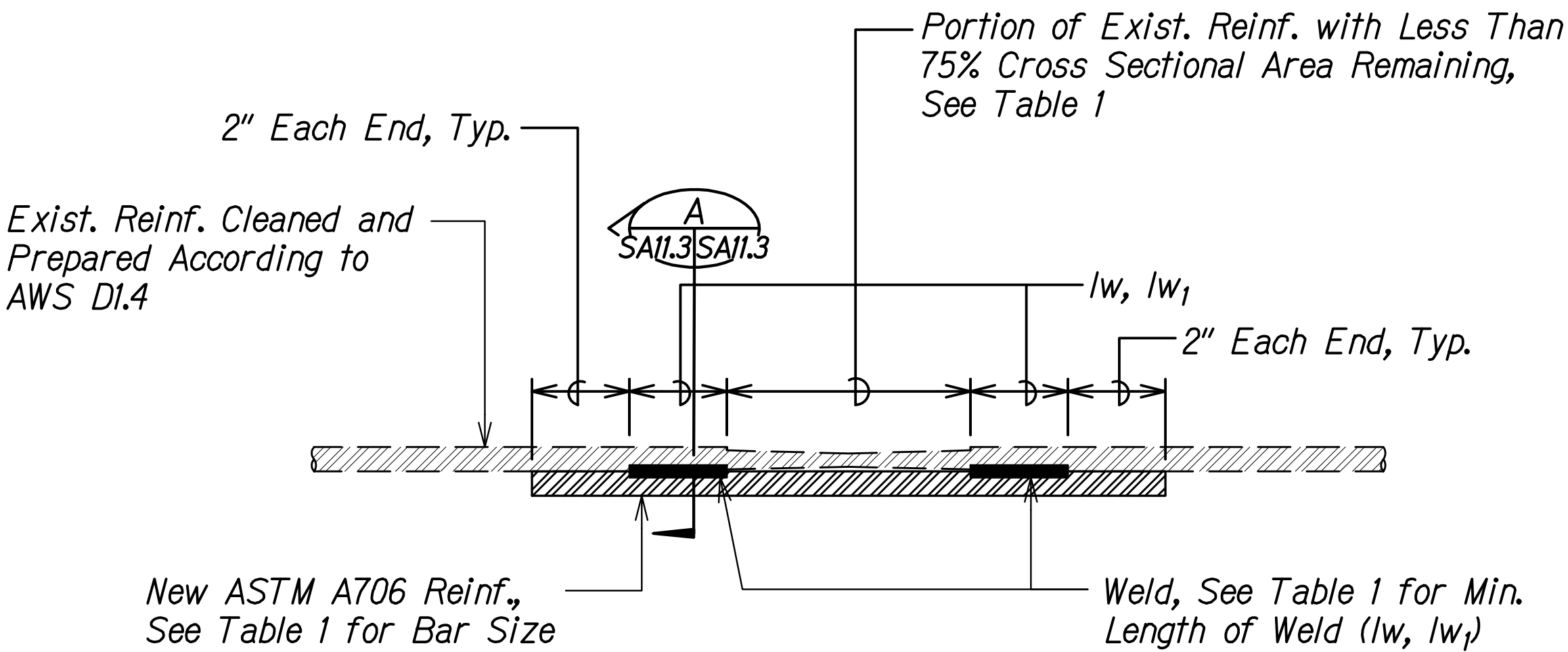
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HORIZONTAL DEFECTIVE CONCRETE REPAIR DETAILS

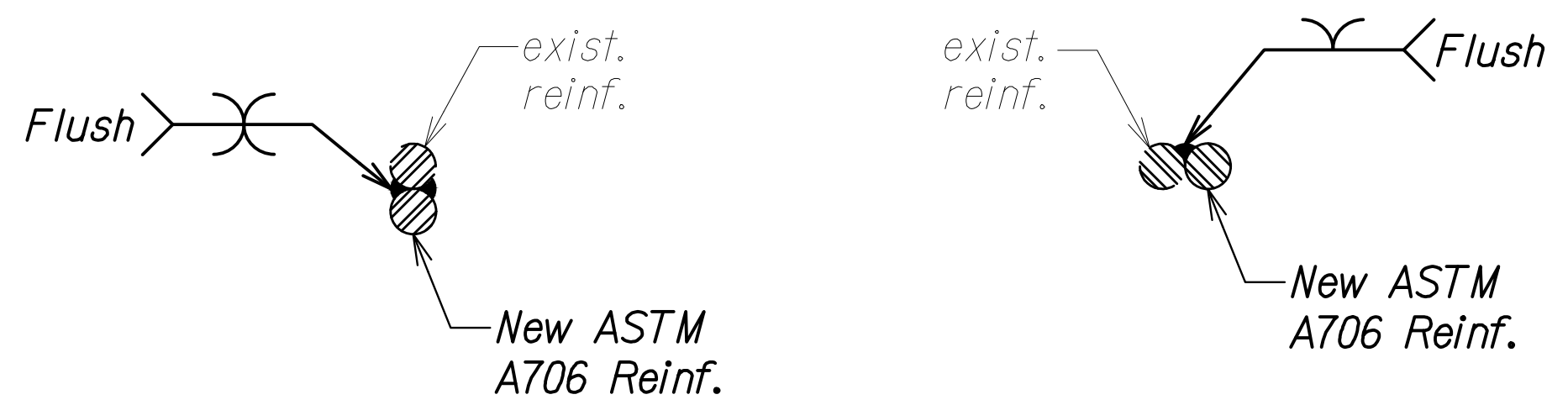
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SAI1.2 OF 4 SHEETS



REINF. REPAIR PLAN
Scale: 1" = 1'-0"
SA11.3 SA11.3



OPTION NO. 1 (lw) **OPTION NO. 2 (lw1)**

lw = Length of Weld Each Side
lw1 = Length of Weld One Side
See Table 1

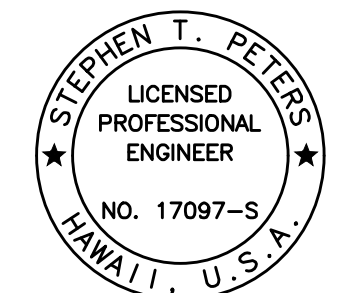
REINF. SECTIONS
Scale: 1" = 1'-0"
SA11.3 SA11.3

| TABLE 1 | | | | |
|------------------------------|-------|-------------------------------------|---------------------------------------|---------------------------------------|
| REPLACEMENT SCHEDULE | | | | |
| SIZE OF EXISTING REINFORCING | | SIZE OF NEW REPLACEMENT REINFORCING | MINIMUM LENGTH OF WELD EACH SIDE (lw) | MINIMUM LENGTH OF WELD ONE SIDE (lw1) |
| SQUARE | ROUND | | | |
| 3/8" | #3 | #4 | 2" | 4" |
| | #4 | #4 | 2" | 4" |
| 1/2" | #5 | #5 | 2 1/2" | 5" |
| 5/8" | #6 | #6 | 3 1/2" | 5" |
| 3/4" | #7 | #7 | 4" | - |
| 7/8" OR 1" | #8 | #8 | 5" | - |

- NOTES:**
- Replacement reinforcing shall be spliced to existing reinforcing so as not to reduce the existing clear cover.
 - For welding of #3, #4, #5, & #6 replacement reinforcing, welding may be performed on one side only, if lw is increased to lw1 as shown in Table 1.
 - All welding procedures shall conform to AWS D1.4 and shall be performed by a qualified welder. Electrode classifications shall be in accordance with matching filler metal requirements.
 - All Welding Procedure Specifications (WPS's) shall either be prequalified or shall have an accompanying Procedure Qualification Record (PQR) and shall be submitted and approved by the Engineer prior to starting any work.
 - The Contractor shall be responsible for retaining the services of a certified third-party welding inspector to be present full-time during all welding operations. In addition to visual inspection, all welds shall be tested via Liquid Penetrant testing and Magnetic Particle testing for all reinforcing larger than a #5.
 - Do not weld in inclement or wet weather unless protection accepted by the Engineer is provided.
 - For bidding purposes, assume 1.0 lb of spliced reinforcing bar for each 1 sf of defective concrete repair.

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| | CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA1101-SA1104 REPAIR DTLS.DWG PLOT TIME: 10-28-24 1:11 PM



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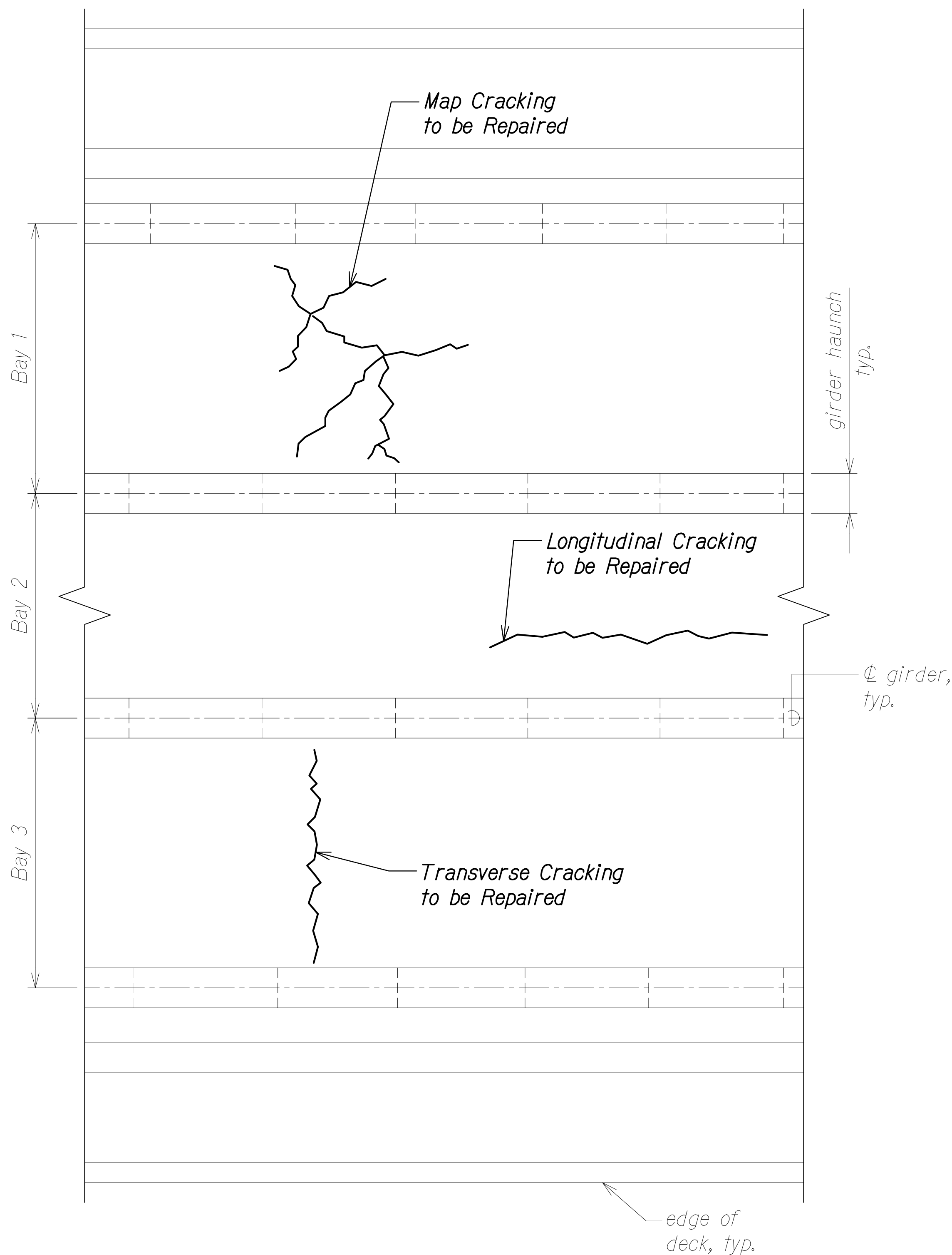
**REINFORCING STEEL REPAIR DETAIL,
SECTION, AND SCHEDULE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA11.3 OF 4 SHEETS

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| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 216 | 280 |



NOTES:

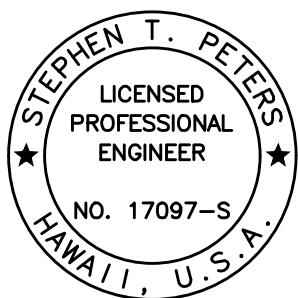
1. All cracks greater than or equal to 0.010" wide shall be repaired by epoxy injection. The Contractor shall verify crack widths prior to epoxy injection. The Contractor shall also sound the surrounding concrete for any delaminations. Notify the Engineer if any delamination or spalls are discovered.
2. Crack repairs shall be performed in accordance with ACI 503.7.
3. The Contractor shall follow the Manufacturer's recommendations for crack repairs.
4. Any cracked concrete that the Contractor discovers throughout the project that is not covered in the contract quantities shall be brought to the attention of the Engineer.
5. For injectable epoxy resin, refer to Note 8F on the Structural General Notes.

| CRACK REPAIR QUANTITIES | |
|-------------------------|------------------|
| SPAN NO. | LINEAR FOOT (LF) |
| 1 | 480 |
| 2 | 470 |
| 3 | 376 |
| 4 | 677 |
| 5 | 376 |
| 6 | 677 |
| 7 | 376 |
| 8 | 677 |
| 9 | 376 |
| 10 | 480 |
| Total LF: 4965 | |

TYPICAL DECK REFLECTIVE SOFFIT PLAN
Scale: 3/8" = 1'-0"

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SA1101-SA1104 REPAIR DTLS.DWG PLOT TIME: 10-26-24, 5:59 PM

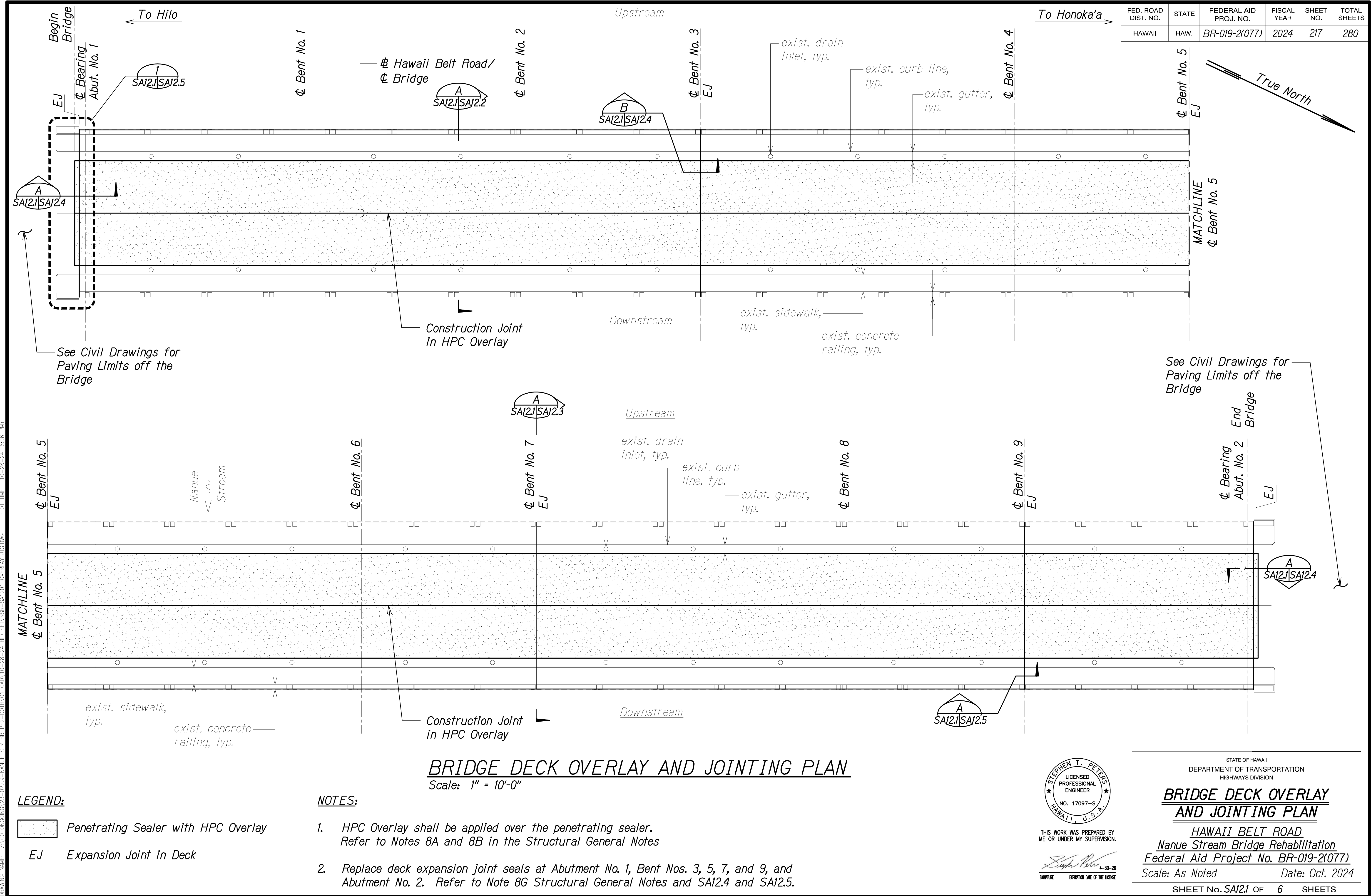


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ME OR UNDER MY SUPERVISION.

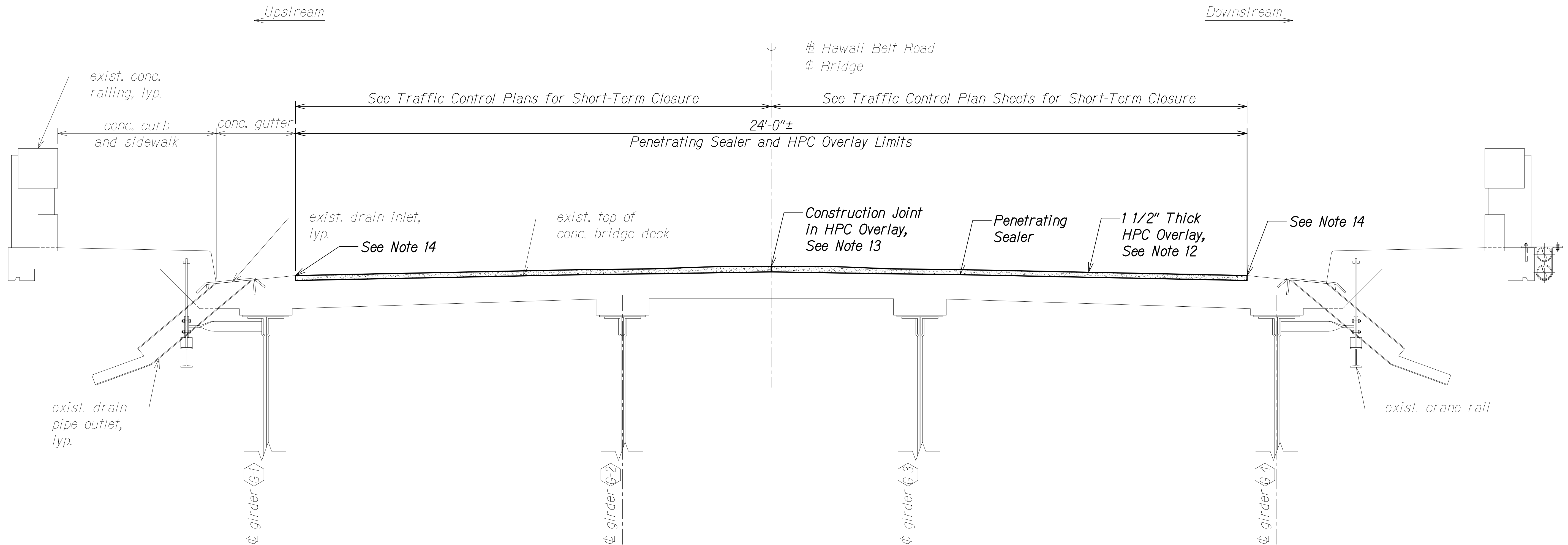
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**CONCRETE DECK SOFFIT
CRACK REPAIR DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 217 | 280 |



| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 218 | 280 |



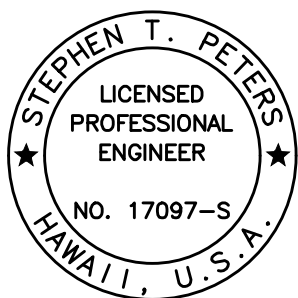
TRANSVERSE SECTION WITH HPC OVERLAY
Scale: 3/4" = 1'-0"

LEGEND:

Penetrating Sealer with HPC Overlay

NOTES:

- Penetrating sealer and HPC overlay shall conform to Special Provisions Sections 677 PENETRATING SEALER and 678 HYBRID POLYMER CONCRETE.
- The existing AC wearing surface shall be removed, followed by shotblasting of the existing concrete deck surface.
- The concrete deck surface shall be cleaned with a vacuum sweeper and blown with oil free/moisture free compressed air after shotblasting is completed.
- The Contractor shall not remove the existing concrete deck when removing the existing AC wearing surface.
- Existing concrete surface to receive penetrating sealer and HPC overlay shall not have a moisture content that exceeds the Manufacturer's recommendations at the time of material placement.
- Vehicular traffic shall not be allowed onto the prepared concrete deck surface prior to application of the penetrating sealer and HPC overlay.
- Penetrating sealer shall be lightly shotblasted and blown with oil free/moisture free compressed air if the HPC overlay is not placed within 48 hours of penetrating sealer placement or if the surface becomes contaminated.
- HPC overlay shall not be placed directly against the AC. All HPC construction joints must be formed.
- Notify the Engineer immediately if spalls or delaminations are discovered in the concrete deck after removing the existing AC wearing surface.
- Application of penetrating sealer and HPC overlay shall not occur until after the deck soffit cracks have been epoxy injected.
- The Contractor shall submit penetrating sealer and HPC overlay jointing plans for approval.
- The overlay shall have a nominal thickness of 1 1/2". The HPC overlay thickness may vary based on the grades shown in the Civil Plans.
- Refer to sheet SA12.6 for construction joint details.
- The HPC must be finished to match the concrete gutter elevation.



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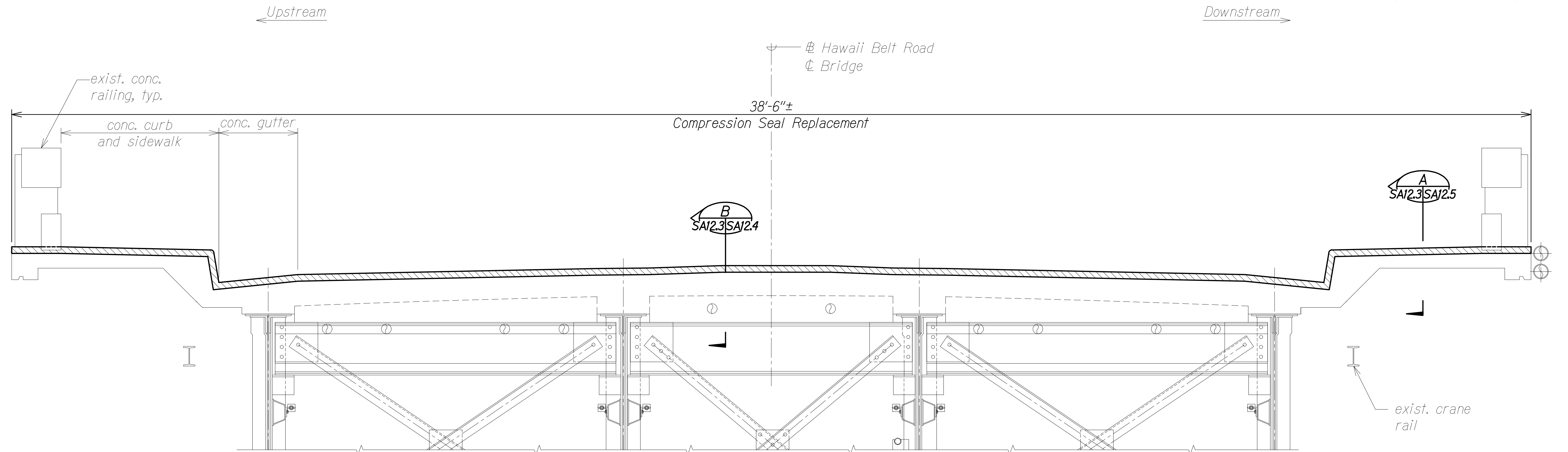
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**TRANSVERSE SECTION
WITH HPC OVERLAY**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 219 | 280 |



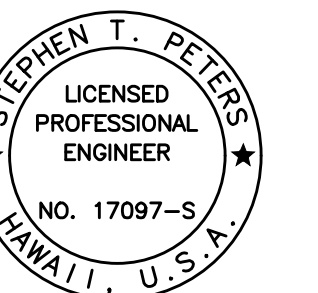
TRANSVERSE SECTION AT EXPANSION JOINTS
Scale: 3/4" = 1'-0"

LEGEND:

 New Expansion Joint Compression Seal

NOTES:

- The new compression seal shall be monolithic, unless otherwise approved by the Engineer.
- New compression seals shall conform to Special Provisions Section 515 DECK EXPANSION JOINTS.
- The Contractor shall field verify expansion joint widths prior to ordering compression seal materials. The Contractor shall be aware of the date and time the field measurements are recorded due to the effects of temperature.
- The concrete at the expansion joint shall be sound before replacement of existing compression seals. If defective concrete is discovered after the removal of the existing expansion joint seal, notify the Engineer immediately.



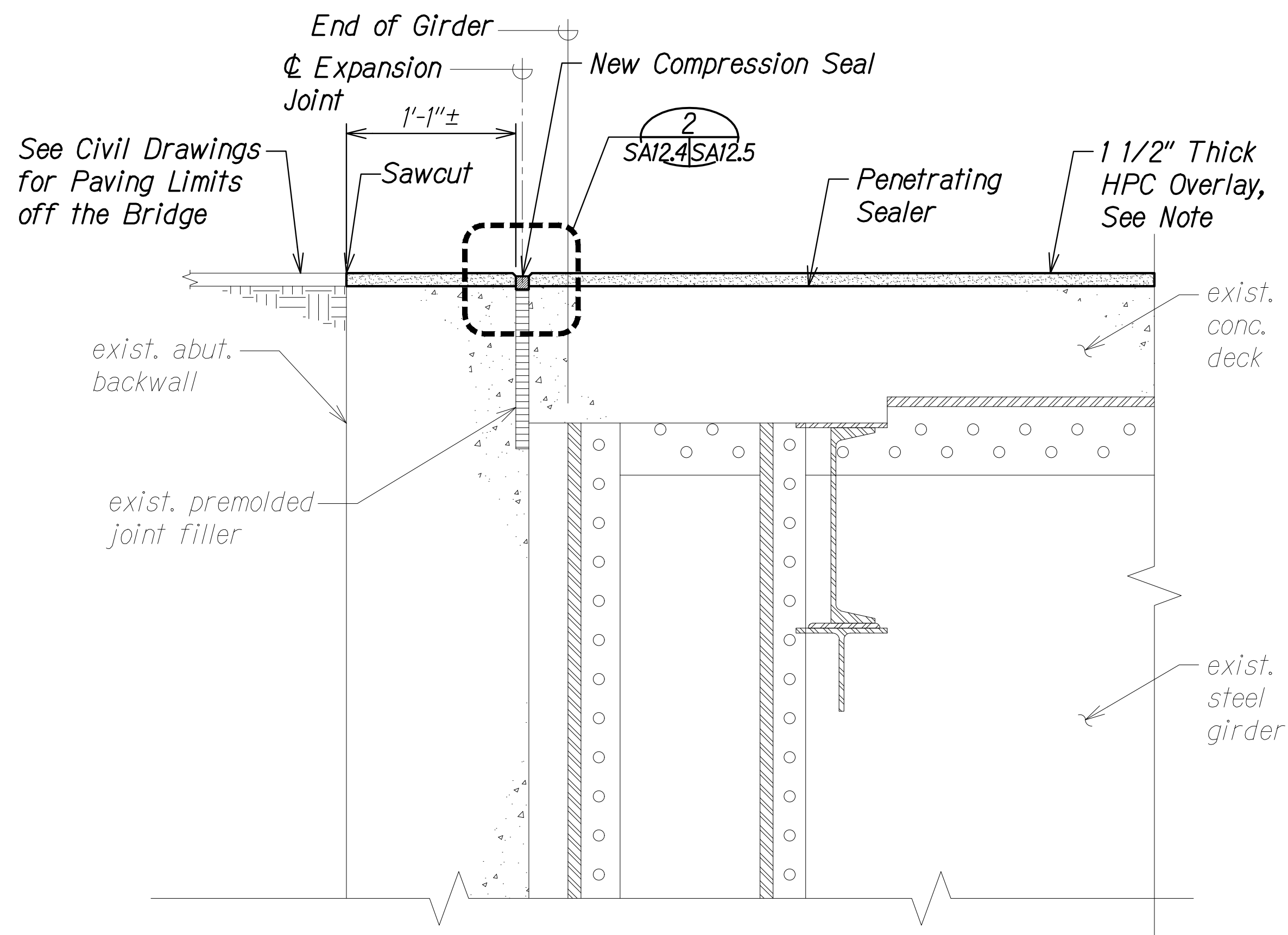
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STATE OF HAWAII
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HIGHWAYS DIVISION
**TRANSVERSE SECTION
AT EXPANSION JOINTS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SAI2.3 OF 6 SHEETS

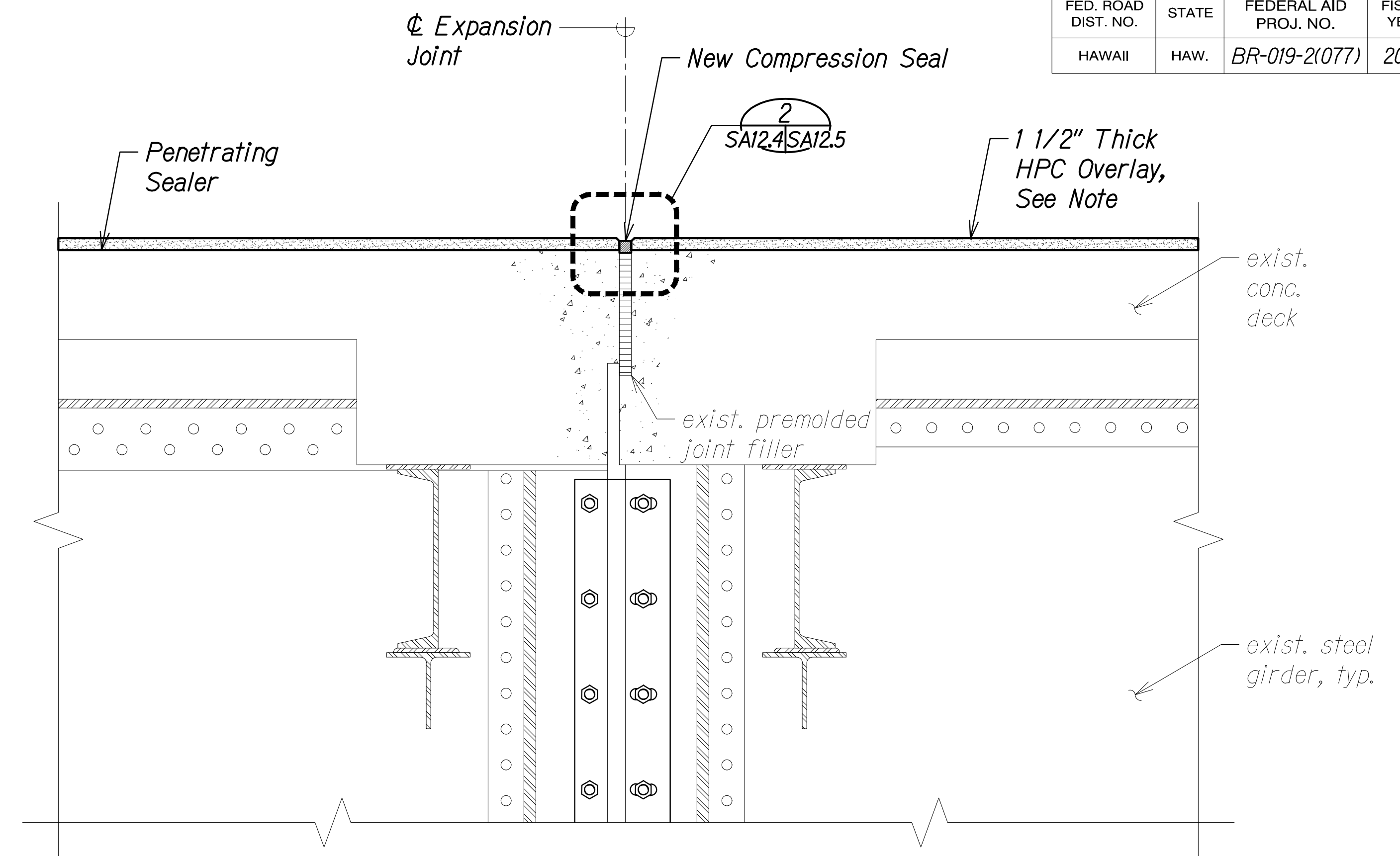
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|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 220 | 280 |



**TYPICAL DECK EXPANSION
JOINT SECTION AT ABUTMENTS**
Scale: 1 1/2" = 1'-0"
SAI2.1 SAI2.4

NOTE:

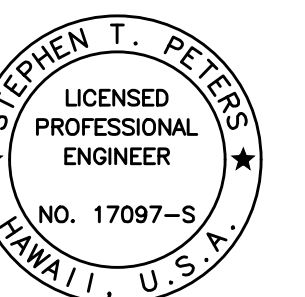
Refer to Note 12 on sheet SAI2.2.



**TYPICAL DECK EXPANSION
JOINT SECTION AT BENTS**
Scale: 1 1/2" = 1'-0"
SAI2.1 SAI2.4
SAI2.3

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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
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DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SAI202-SAI205 HPC DET.DWG PLOT TIME: 10-26-24 6:07 PM



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HIGHWAYS DIVISION

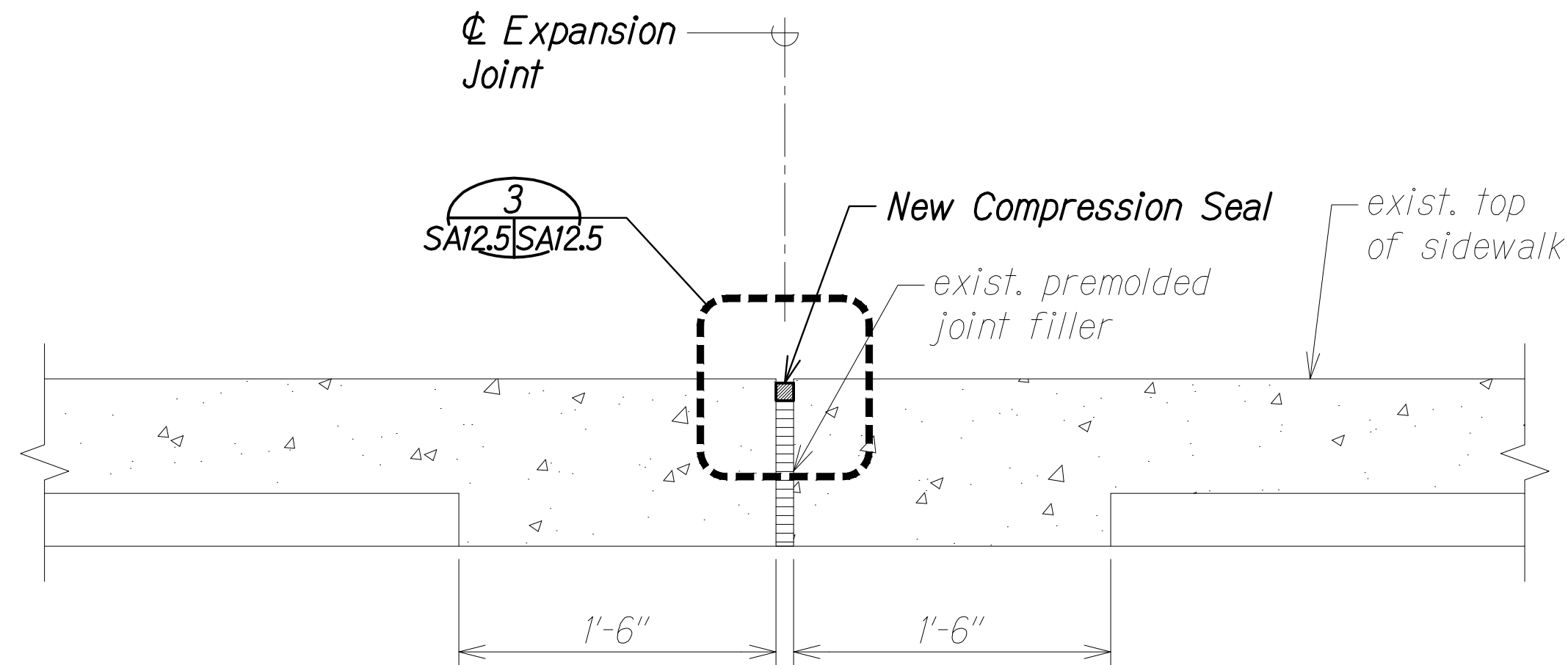
**EXPANSION JOINT
SECTIONS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SAI2.4 OF 6 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 221 | 280 |



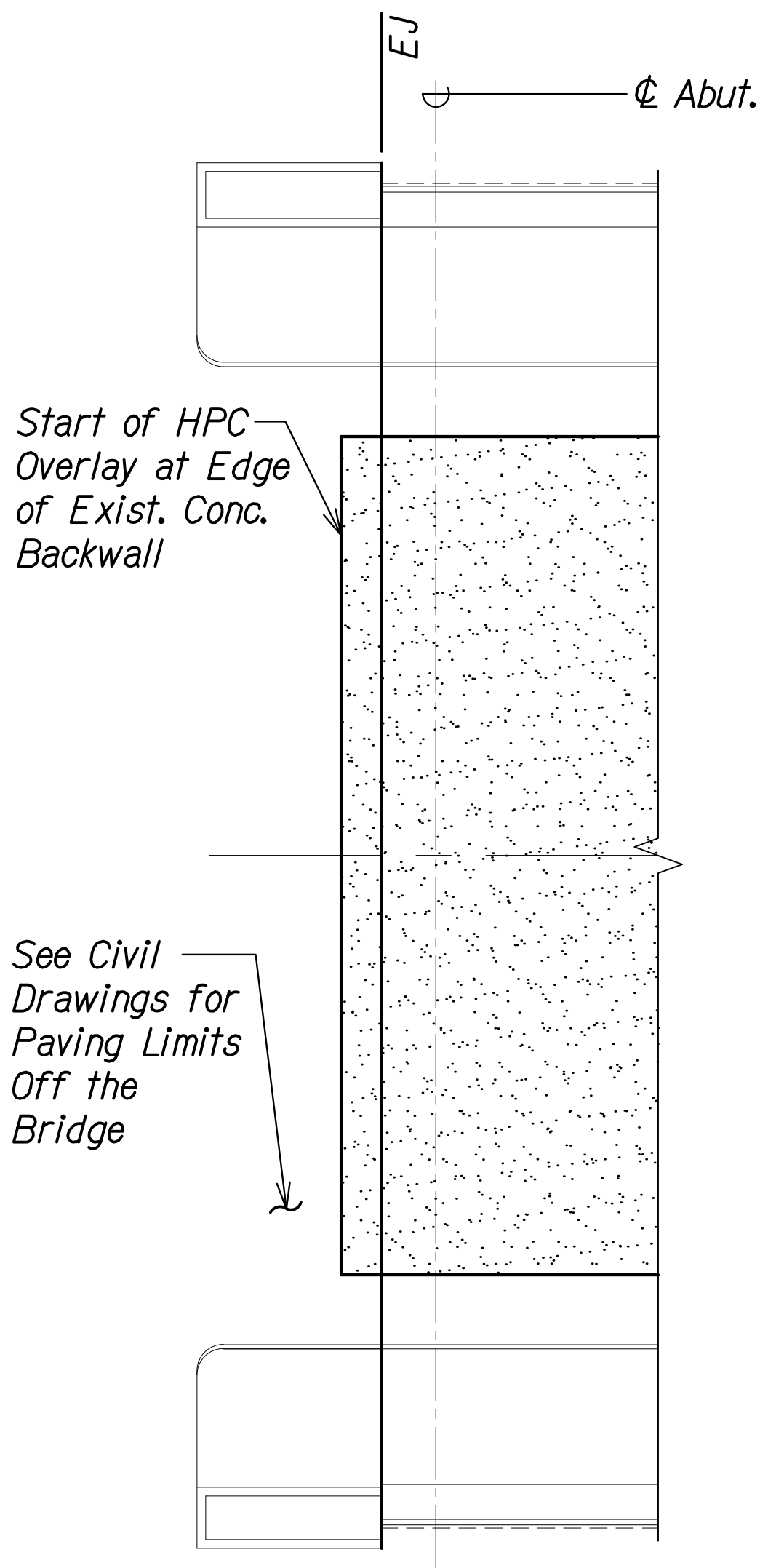
**TYPICAL SECTION
AT SIDEWALK EXPANSION JOINTS**

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

SAI2.1 SAI2.5
SAI2.3

NOTE:

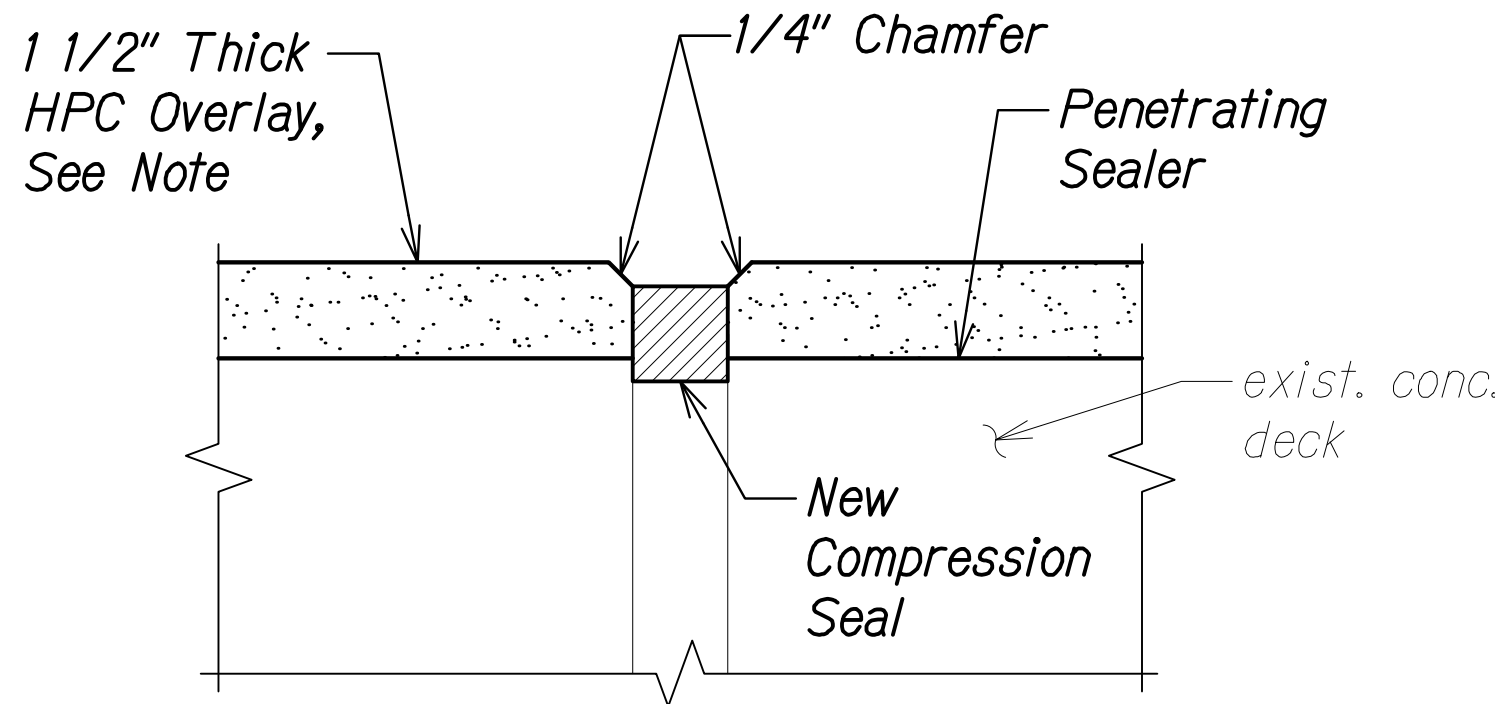
Refer to Note 12 on sheet SAI2.2.



DETAIL

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

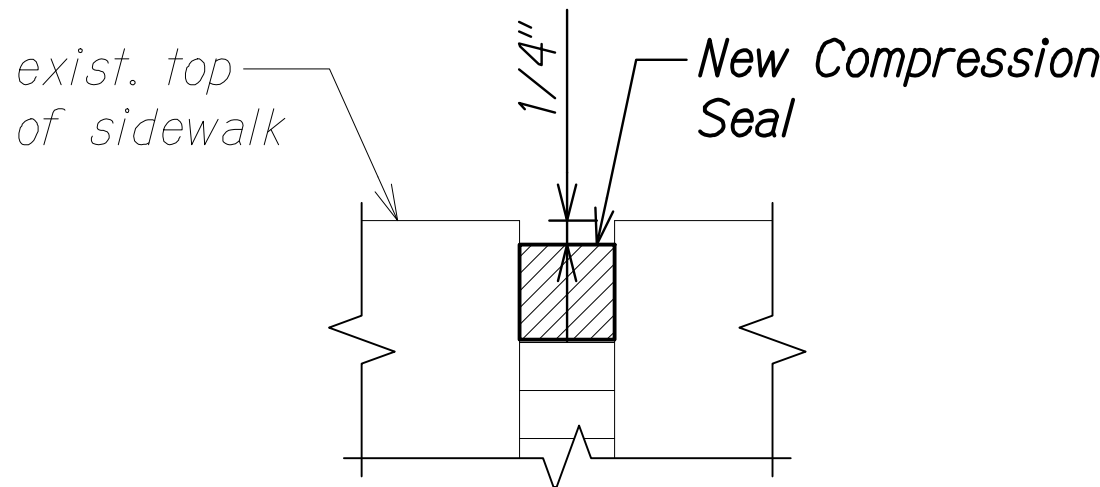
SAI2.1 SAI2.5



COMPRESSION SEAL DETAIL

Scale: 6" = 1'-0"

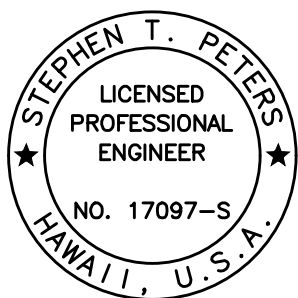
SAI2.4 SAI2.5



COMPRESSION SEAL DETAIL

Scale: 6" = 1'-0"

SAI2.5 SAI2.5



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXPANSION JOINT DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

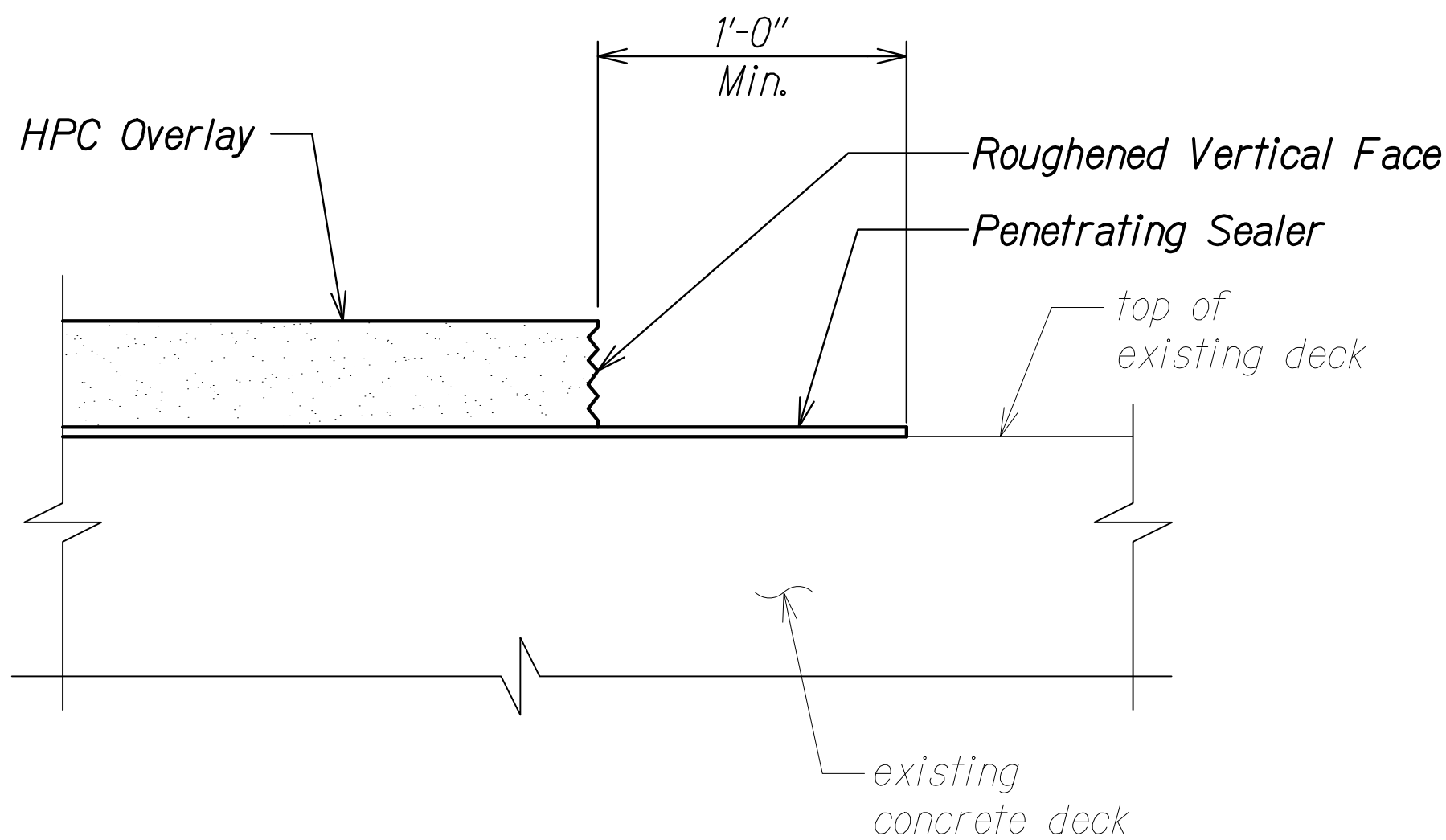
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SHEET No. SAI2.5 OF 6 SHEETS

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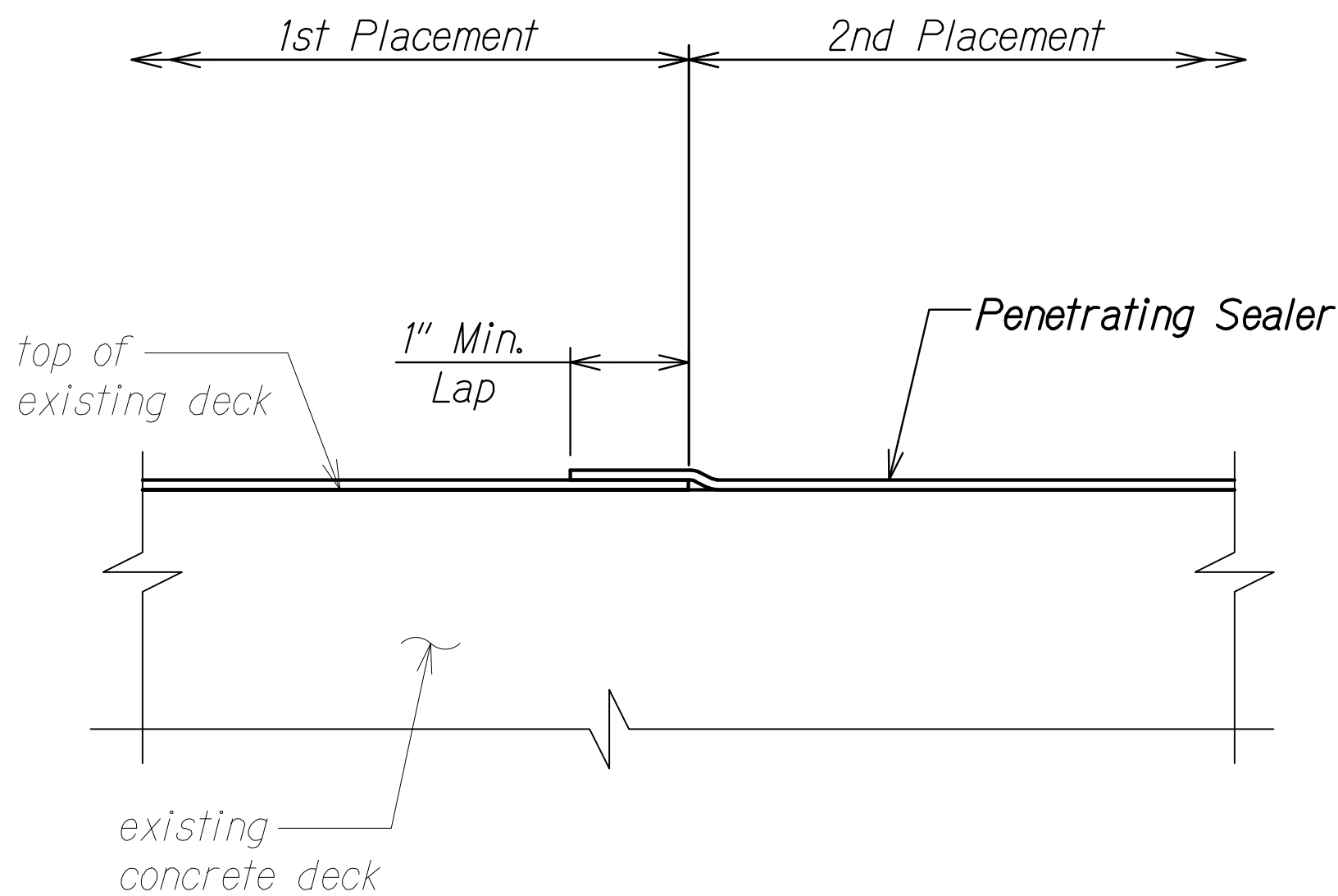
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|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 222 | 280 |



**PENETRATING SEALER AND
HPC OVERLAY AT CONSTRUCTION JOINT**

Scale: 6" = 1'-0"

1
SAI2.6 SAI2.6



PENETRATING SEALER LAP

Scale: 6" = 1'-0"

2
SAI2.6 SAI2.6

NOTES:

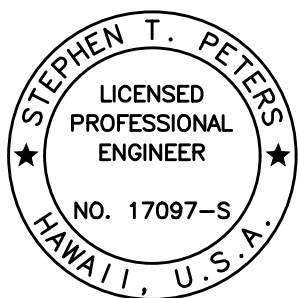
- HPC overlay shall not be placed directly against the AC. HPC construction joints must be formed.
- Forms for the longitudinal construction joint must produce a 1/4" amplitude or a Concrete Surface Profile (CSP) of 7.
- Penetrating sealer construction joints shall be straight, neat, and smooth.
- High and low spots in penetrating sealer shall be corrected before placement of the HPC overlay.
- Smooth spots in penetrating sealer shall be corrected to ensure proper bonding of the HPC overlay. Smooth spots are due to an insufficient quantity of topping aggregate and do not provide skid resistance.
- Construction joints between penetrating sealer and HPC Overlay shall be staggered.

LEGEND:

 HPC Overlay

| | | |
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
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DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\01 CAD\10-28-24 BID SET\NSR-SAI206 HPC DET.DWG PLOT TIME: 10-26-24 6:08 PM



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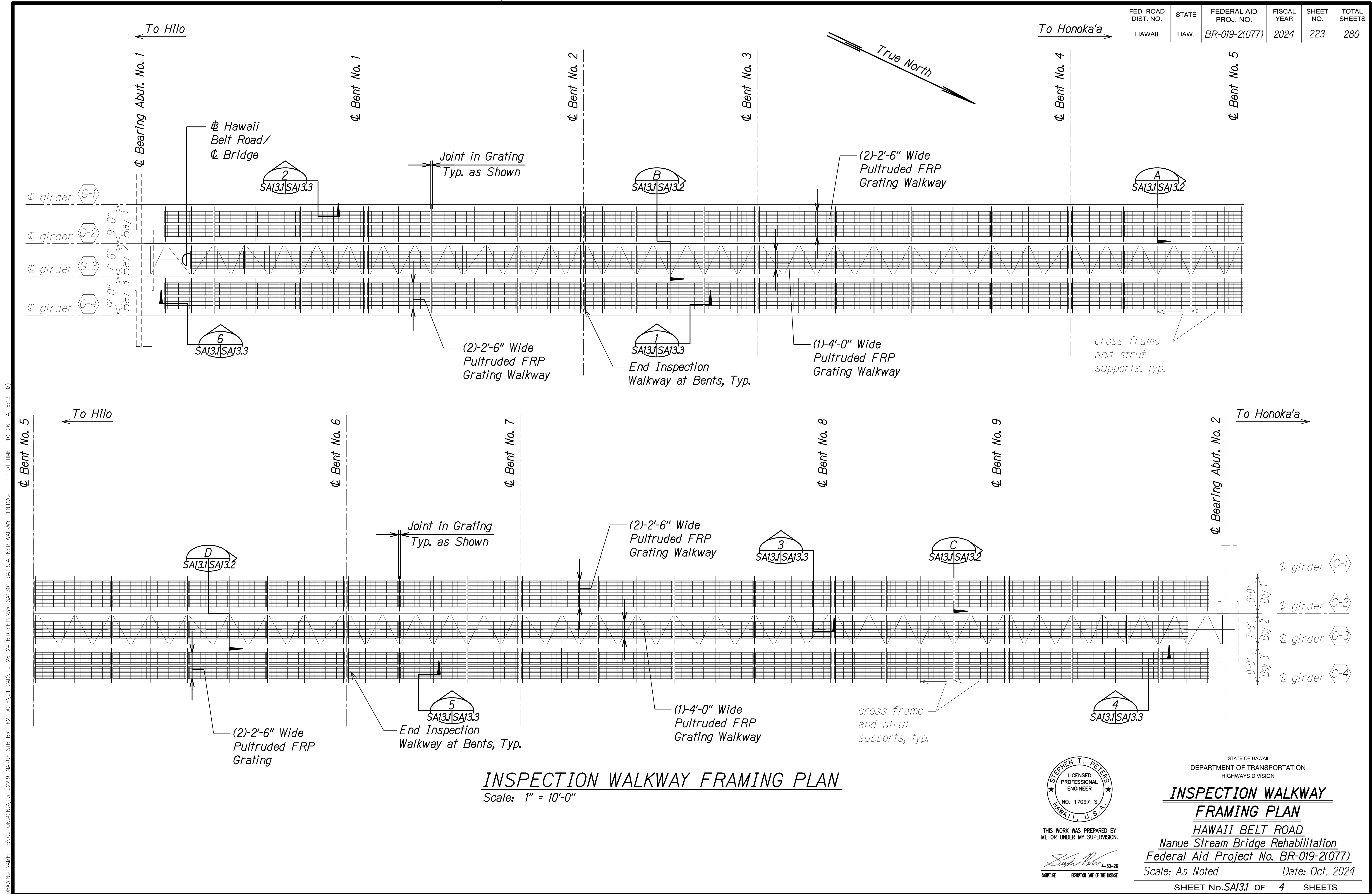
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**HPC OVERLAY AND
PENETRATING SEALER DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SAI2.6 OF 6 SHEETS

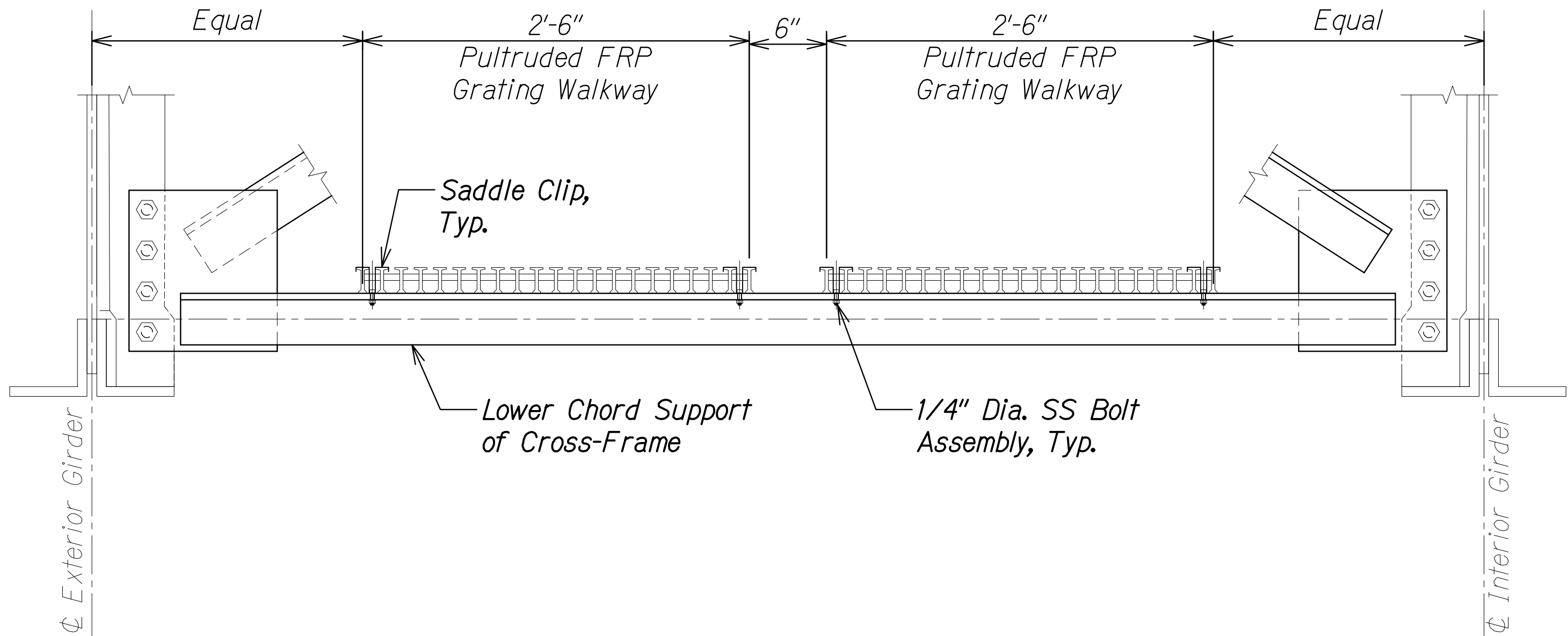
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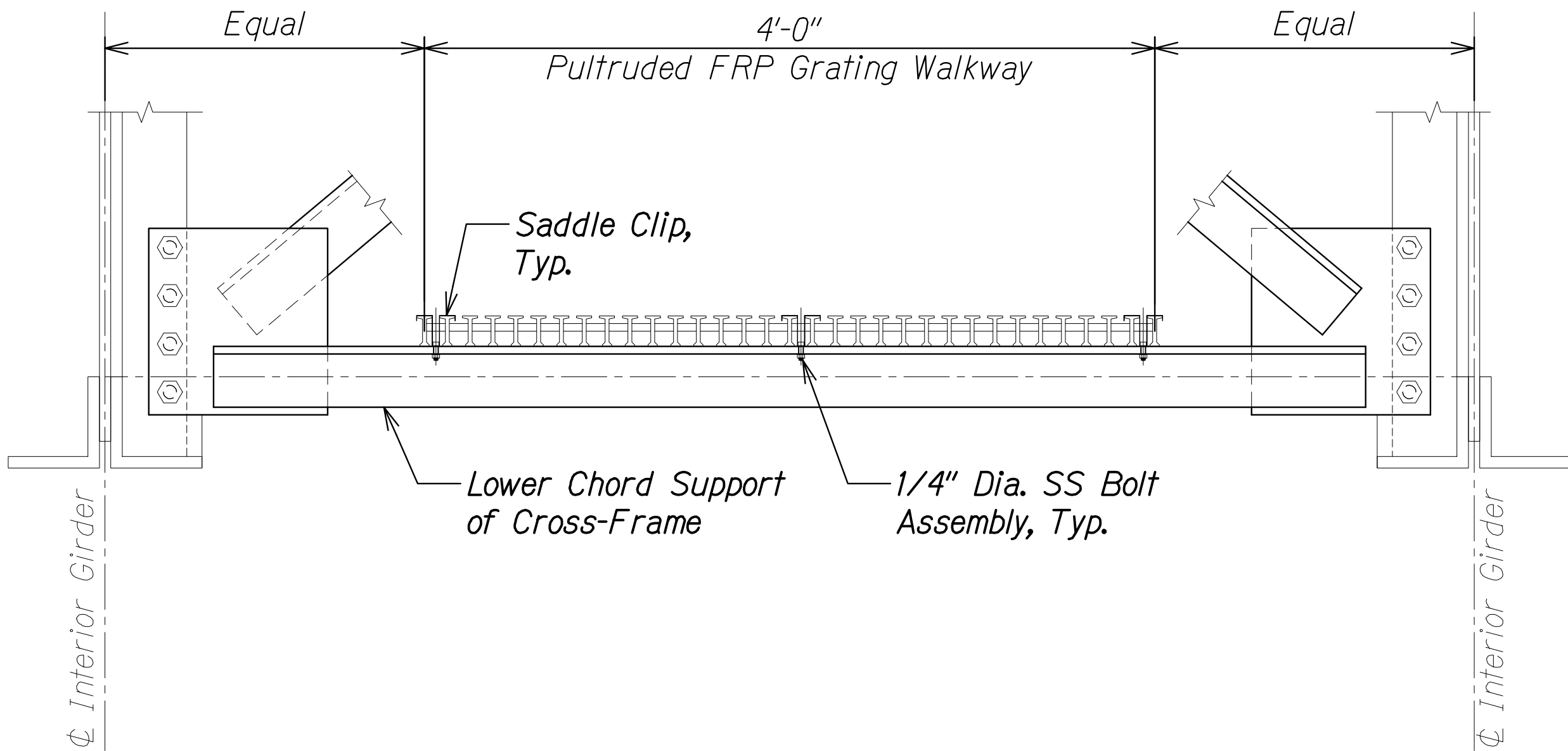
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|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 224 | 280 |



INSPECTION WALKWAY SECTION
AT EXTERIOR BAY CROSS-FRAME SUPPORT

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

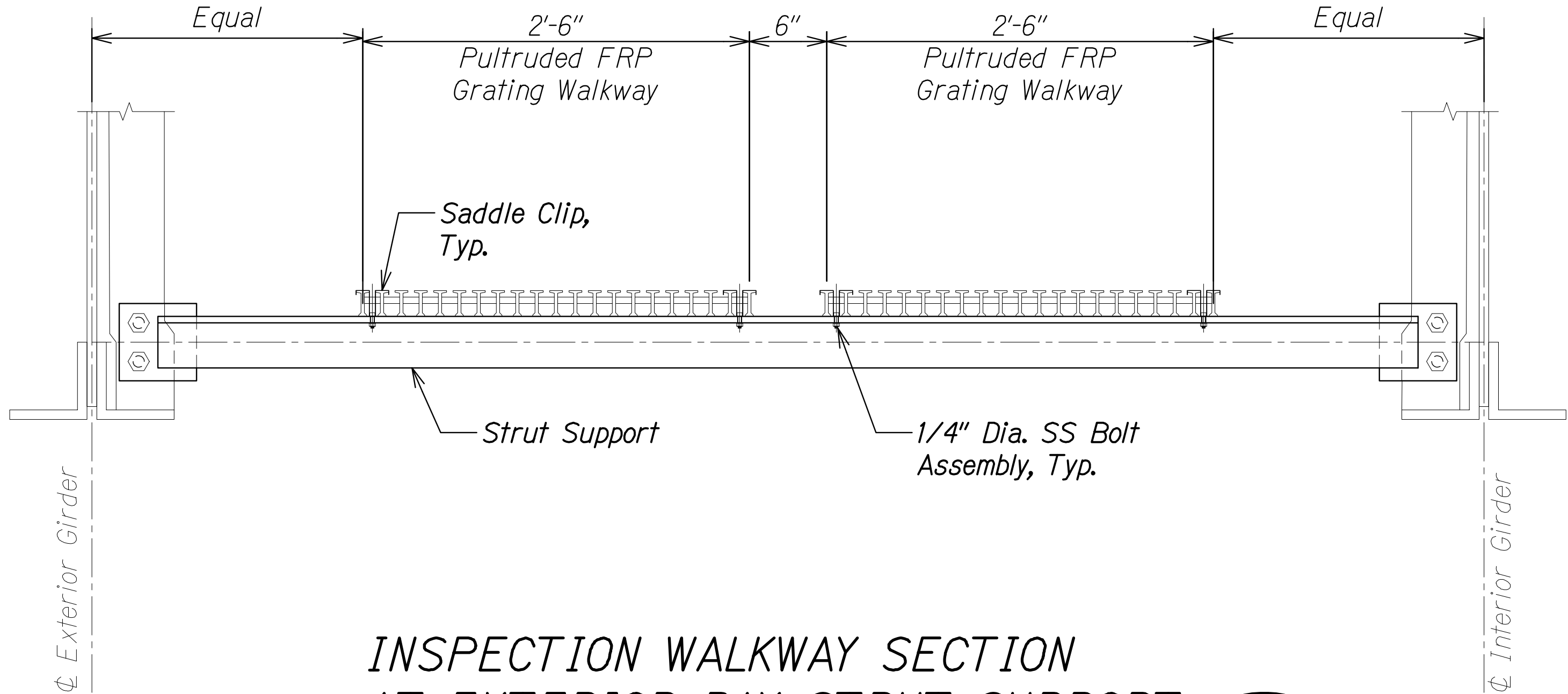
A
SA13.1|SA13.2



INSPECTION WALKWAY SECTION
AT INTERIOR BAY CROSS-FRAME SUPPORT

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

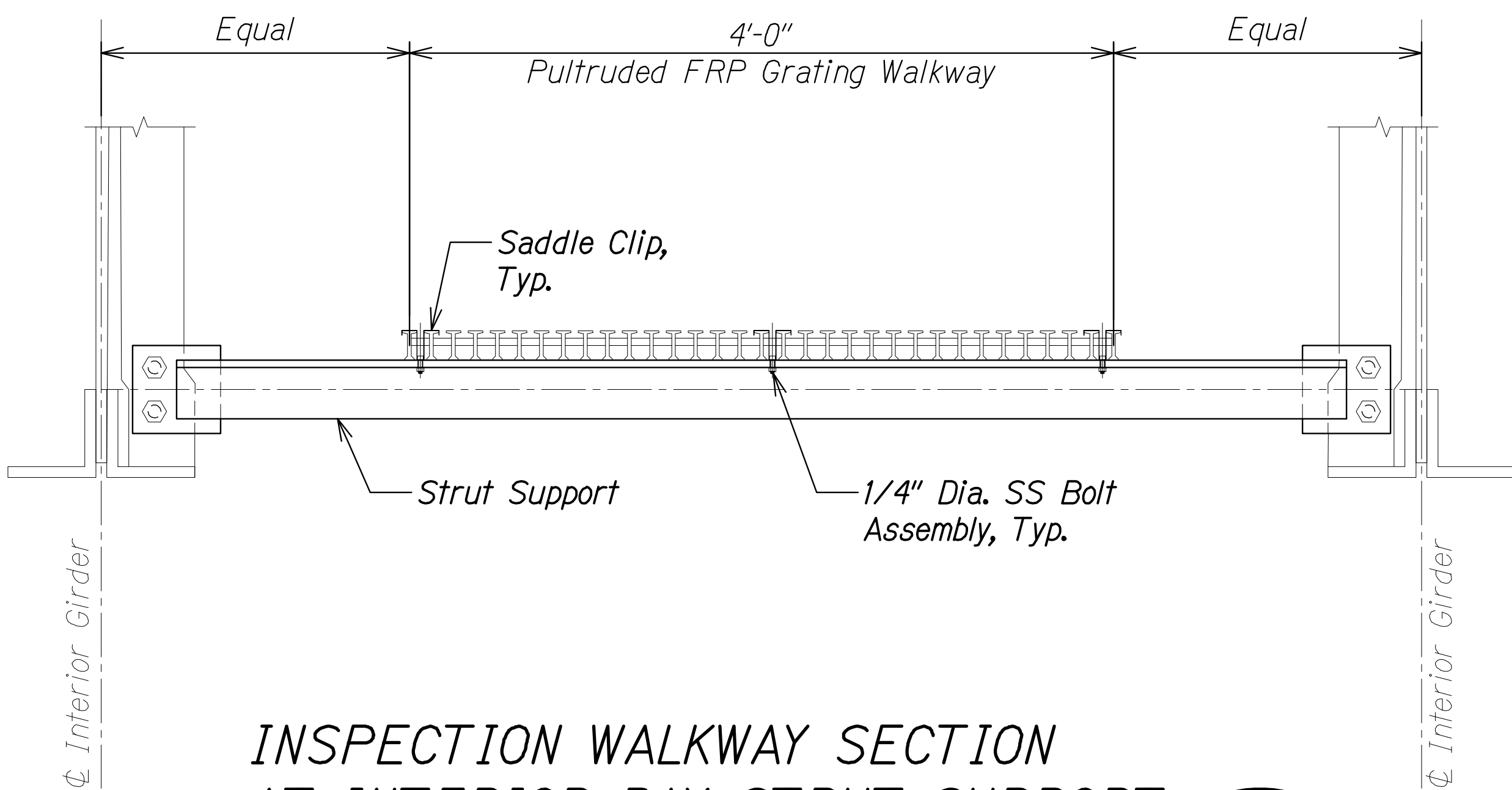
B
SA13.1|SA13.2



INSPECTION WALKWAY SECTION
AT EXTERIOR BAY STRUT SUPPORT

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

C
SA13.1|SA13.2



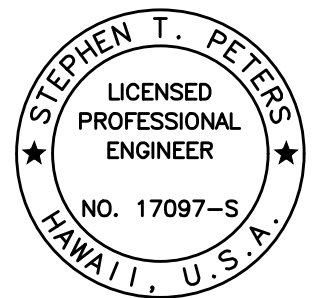
INSPECTION WALKWAY SECTION
AT INTERIOR BAY STRUT SUPPORT

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

D
SA13.1|SA13.2

| | | |
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
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DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SA1301-SA1304 INSP WALKWAY PLINDWG PLOT TIME: 10-28-24, 3:27 PM



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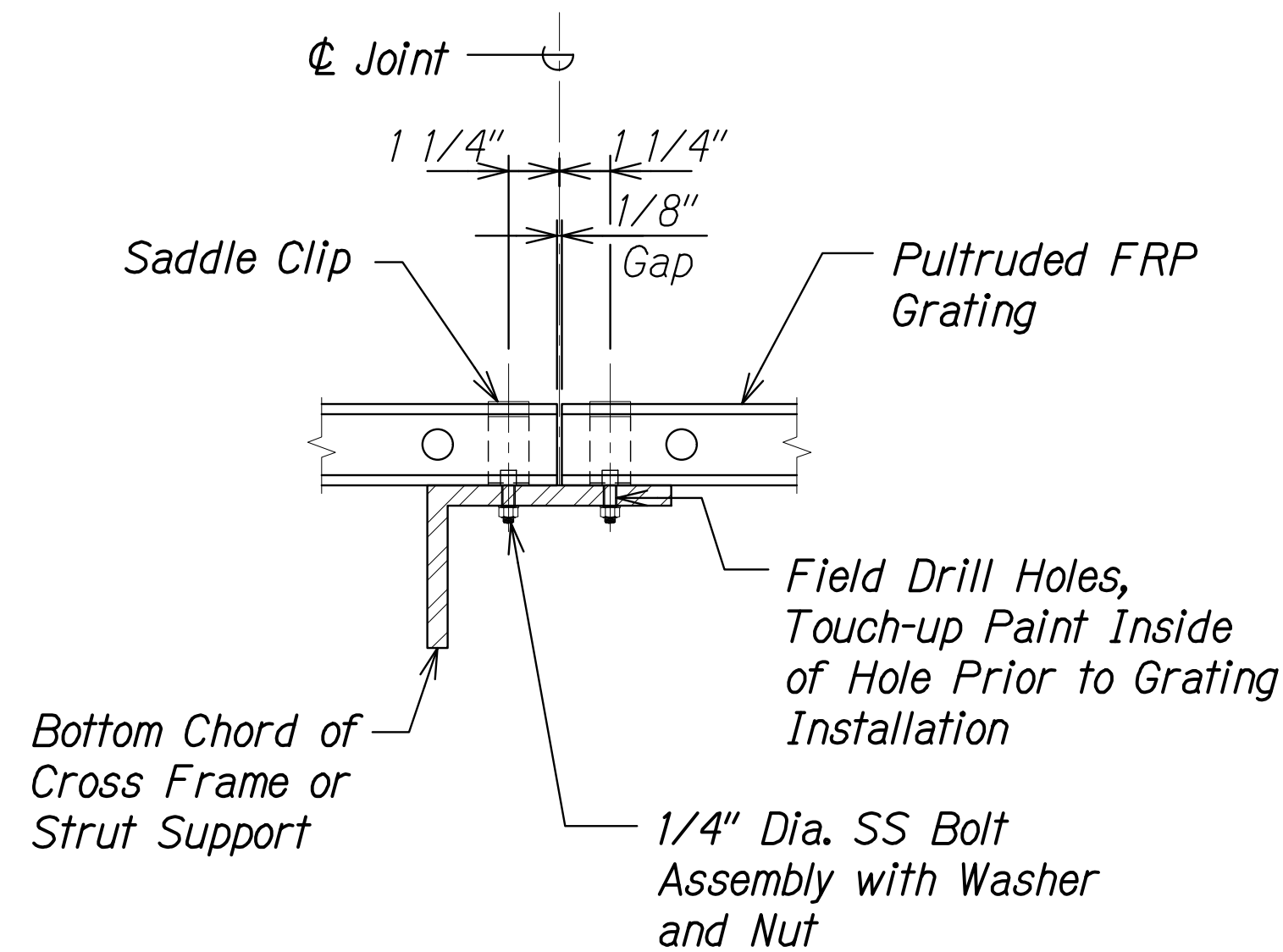
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INSPECTION WALKWAY
SECTIONS

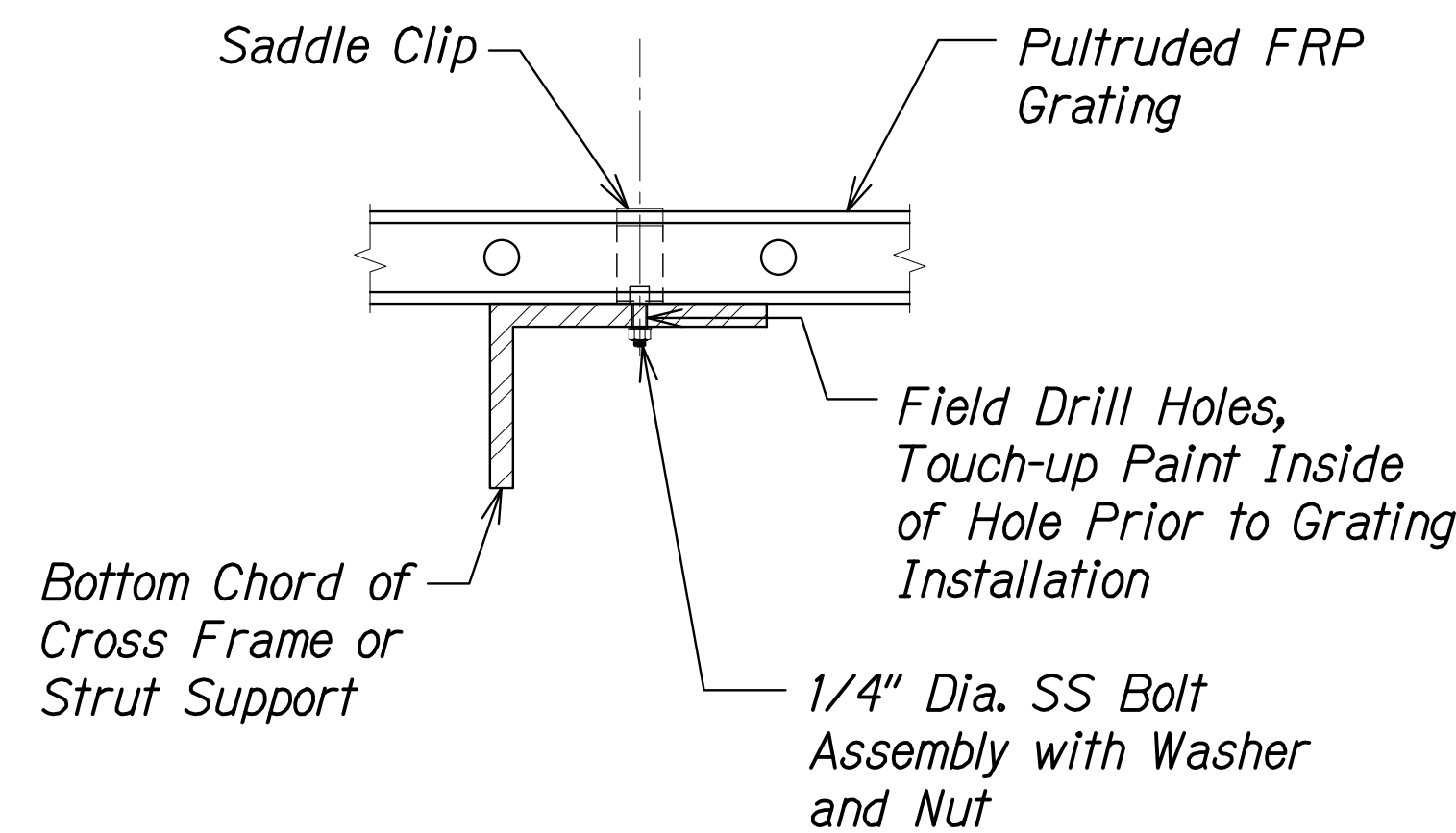
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted
Date: Oct. 2024

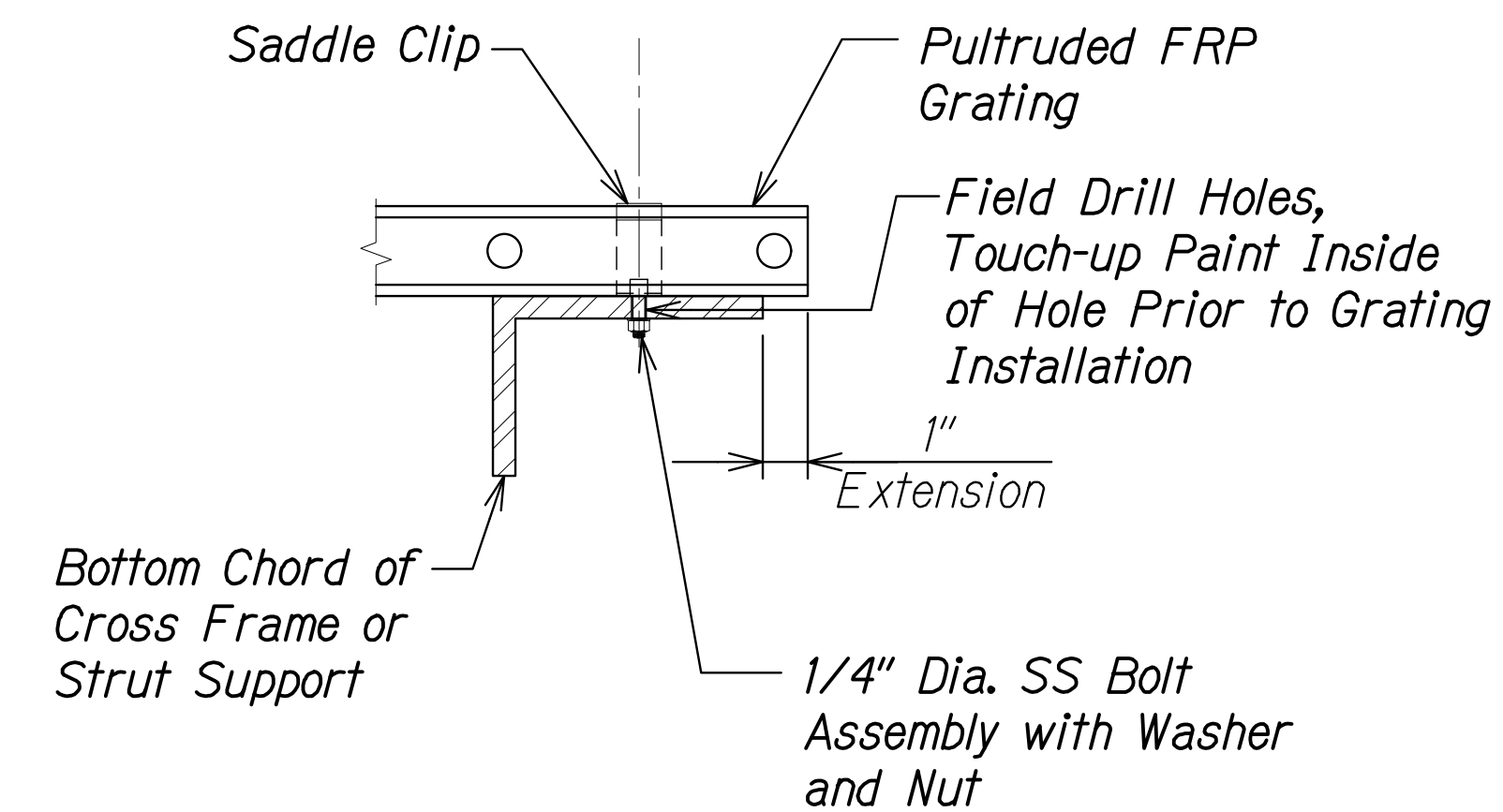
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 225 | 280 |



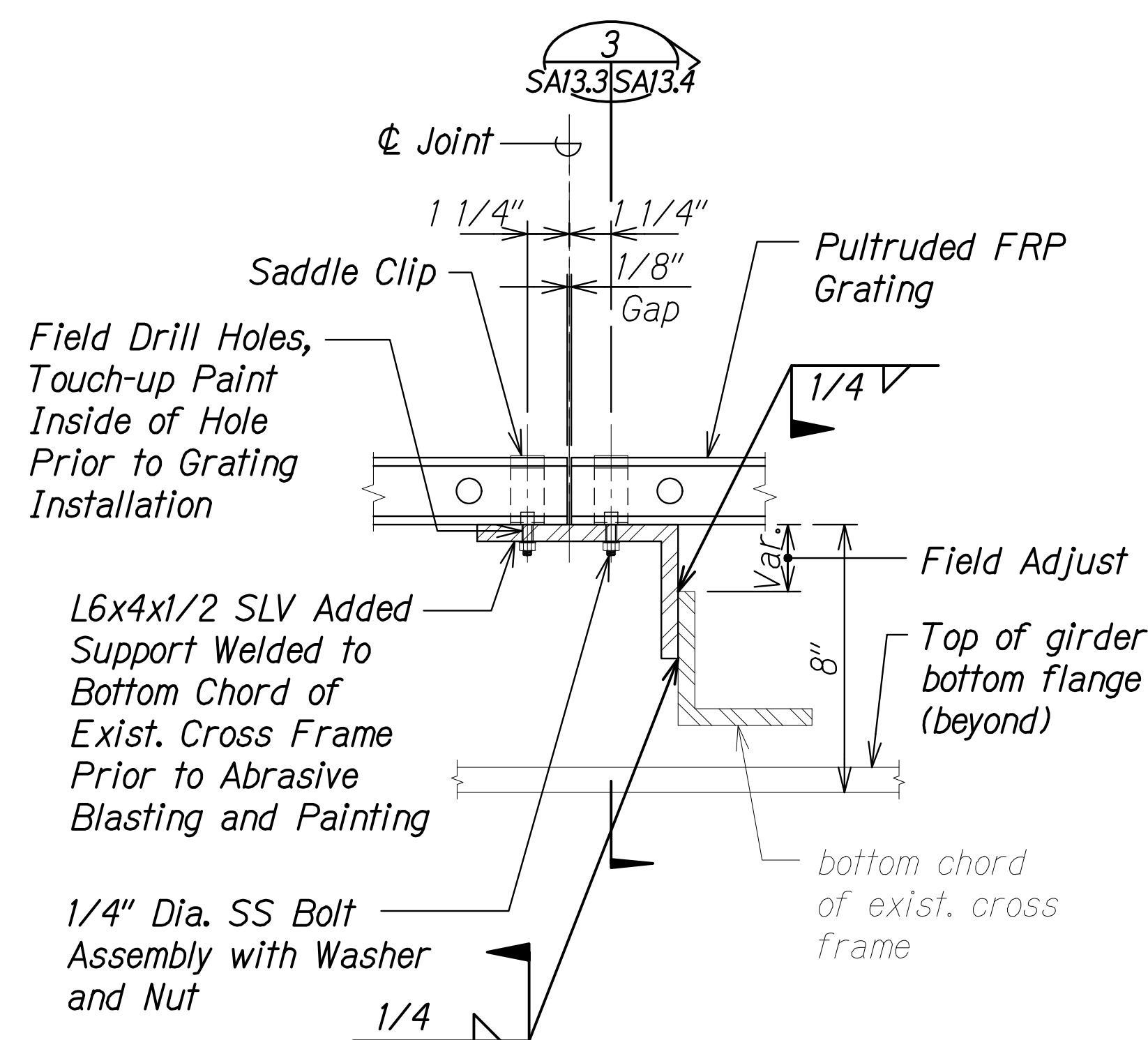
CONNECTION DETAIL
AT JOINT SUPPORT 1
Scale: 3" = 1'-0" SAI3.1 SAI3.3



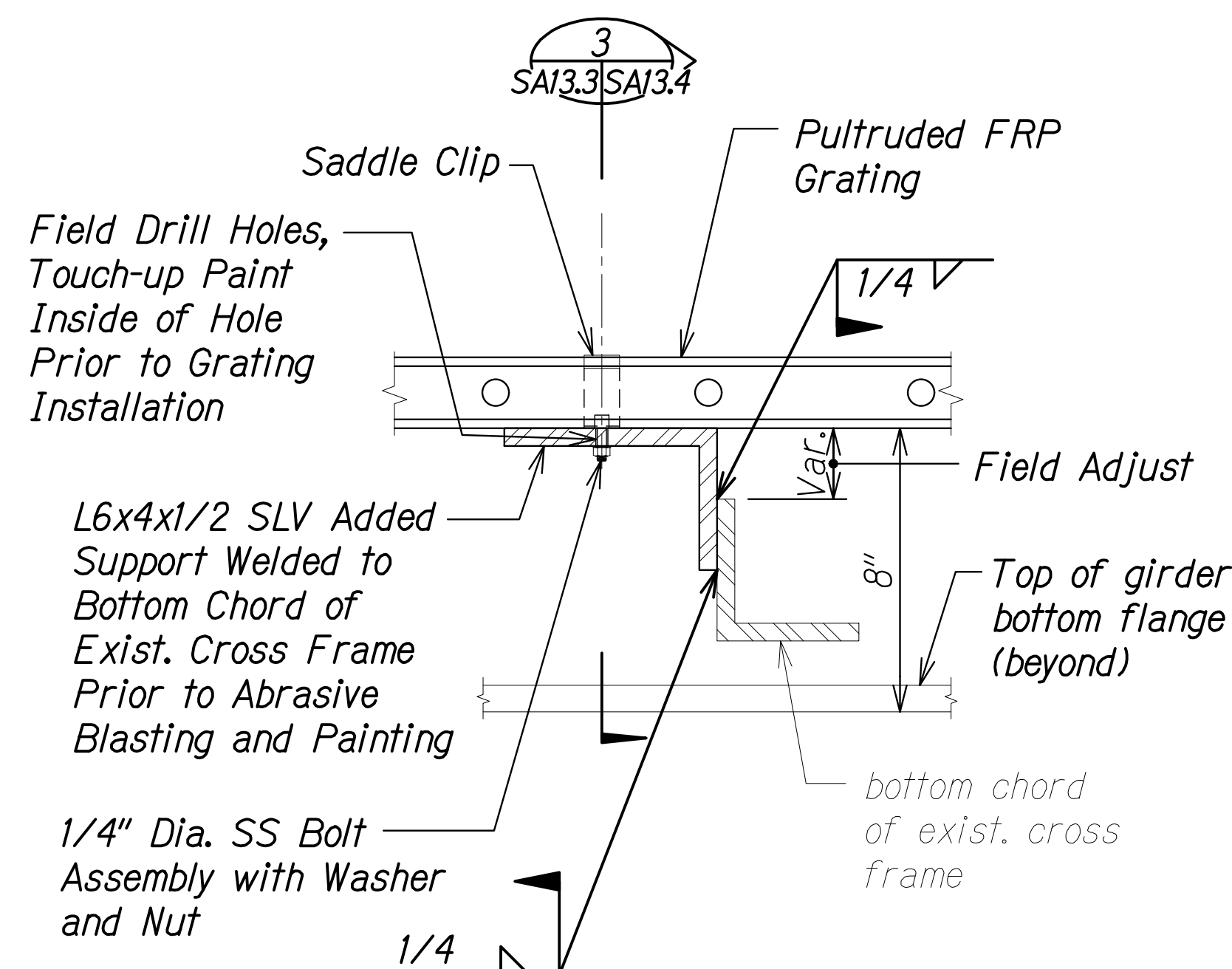
CONNECTION DETAIL AT
INTERMEDIATE SUPPORT 2
Scale: 3" = 1'-0" SAI3.1 SAI3.3



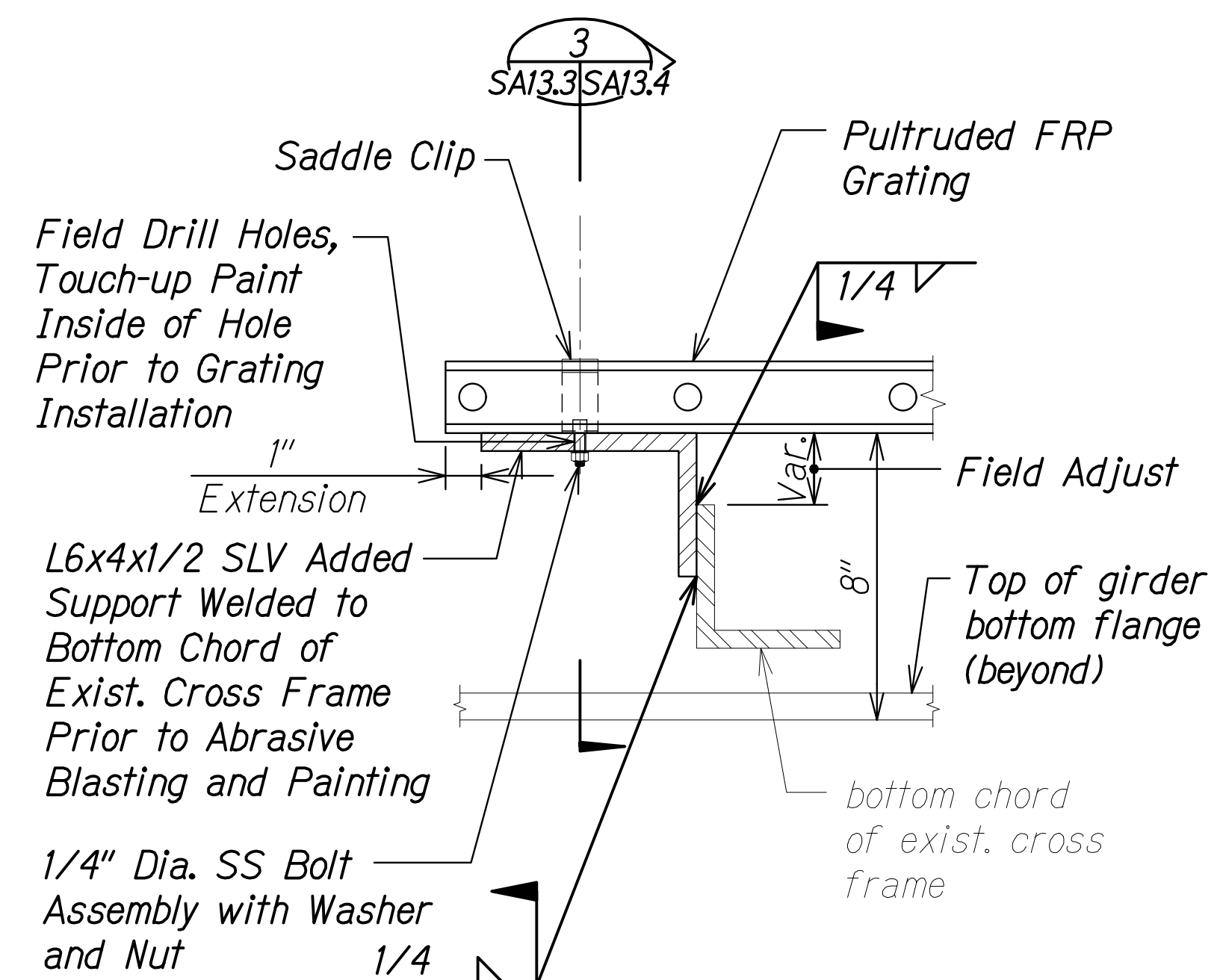
CONNECTION DETAIL
AT END SUPPORT 3
Scale: 3" = 1'-0" SAI3.1 SAI3.3



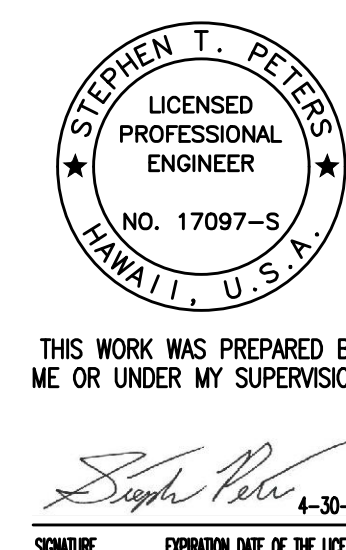
CONNECTION DETAIL
AT EXIST. JOINT SUPPORT 4
Scale: 3" = 1'-0" SAI3.1 SAI3.3



CONNECTION DETAIL AT
EXIST. INTERMEDIATE SUPPORT 5
Scale: 3" = 1'-0" SAI3.1 SAI3.3



CONNECTION DETAIL
AT EXIST. END SUPPORT 6
Scale: 3" = 1'-0" SAI3.1 SAI3.3



STATE OF HAWAII
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HIGHWAYS DIVISION

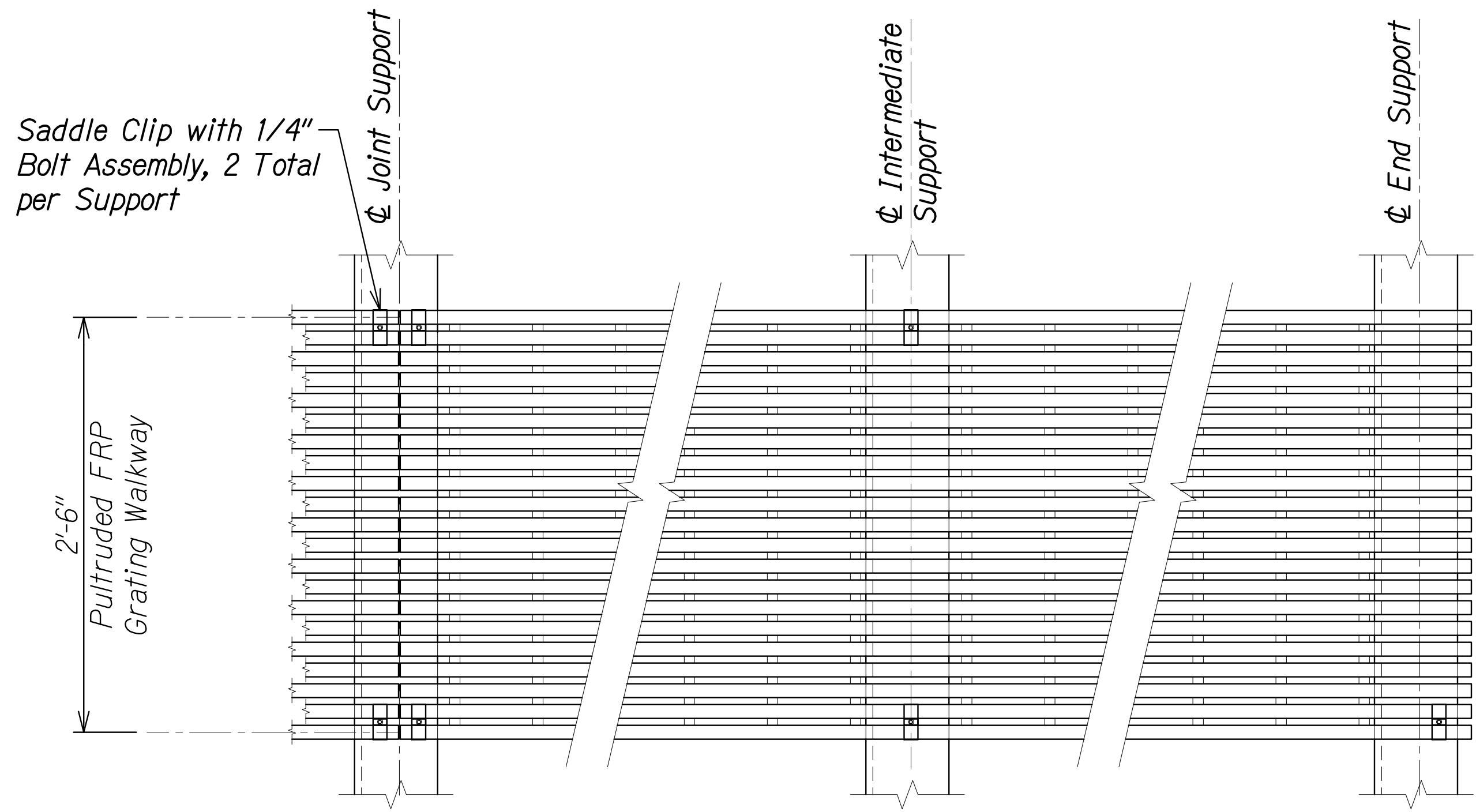
**INSPECTION WALKWAY
CONNECTION DETAILS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

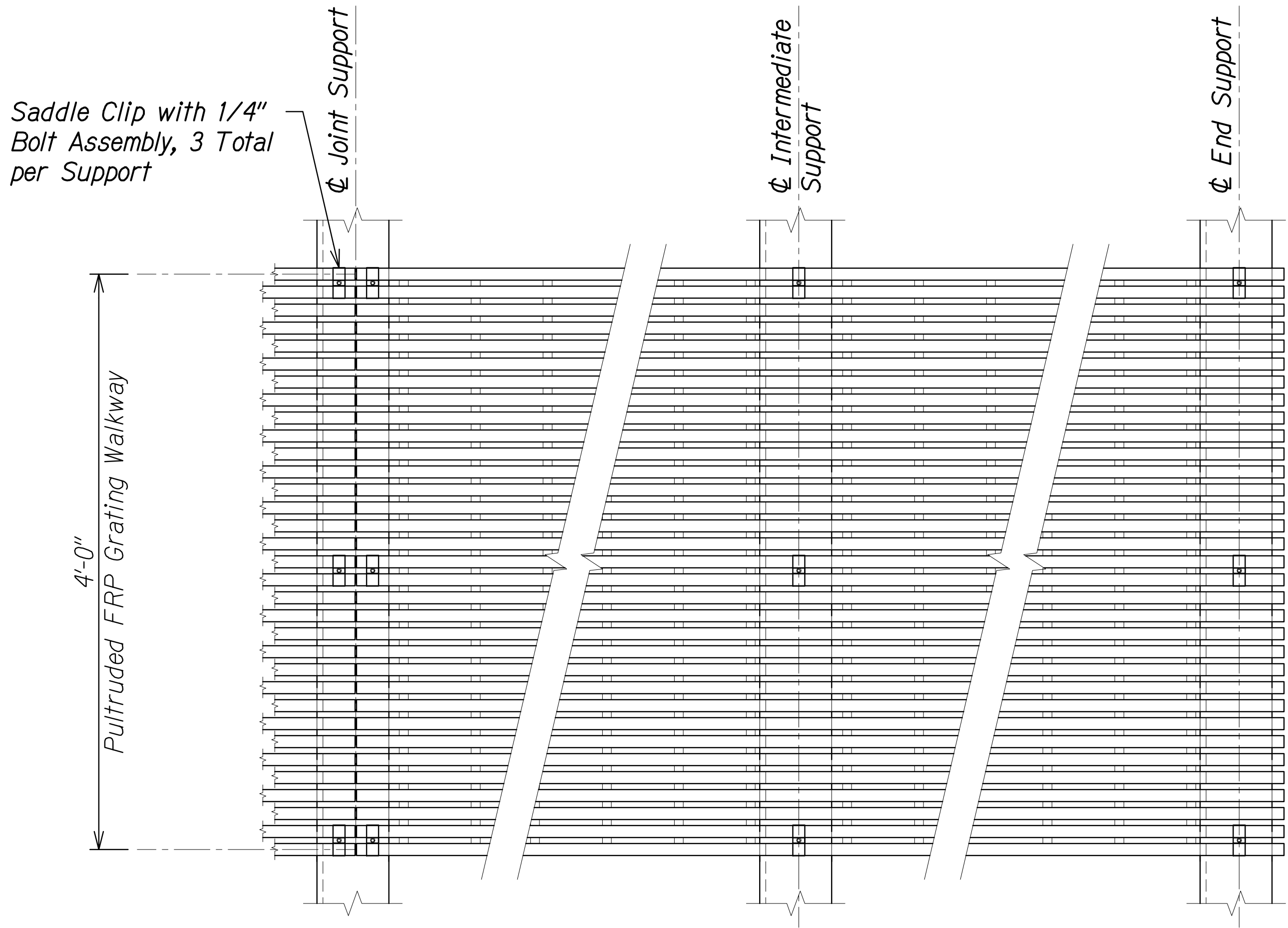
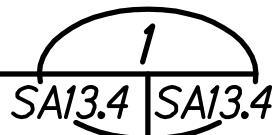
SHEET No.SAI3.3 OF 4 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 226 | 280 |



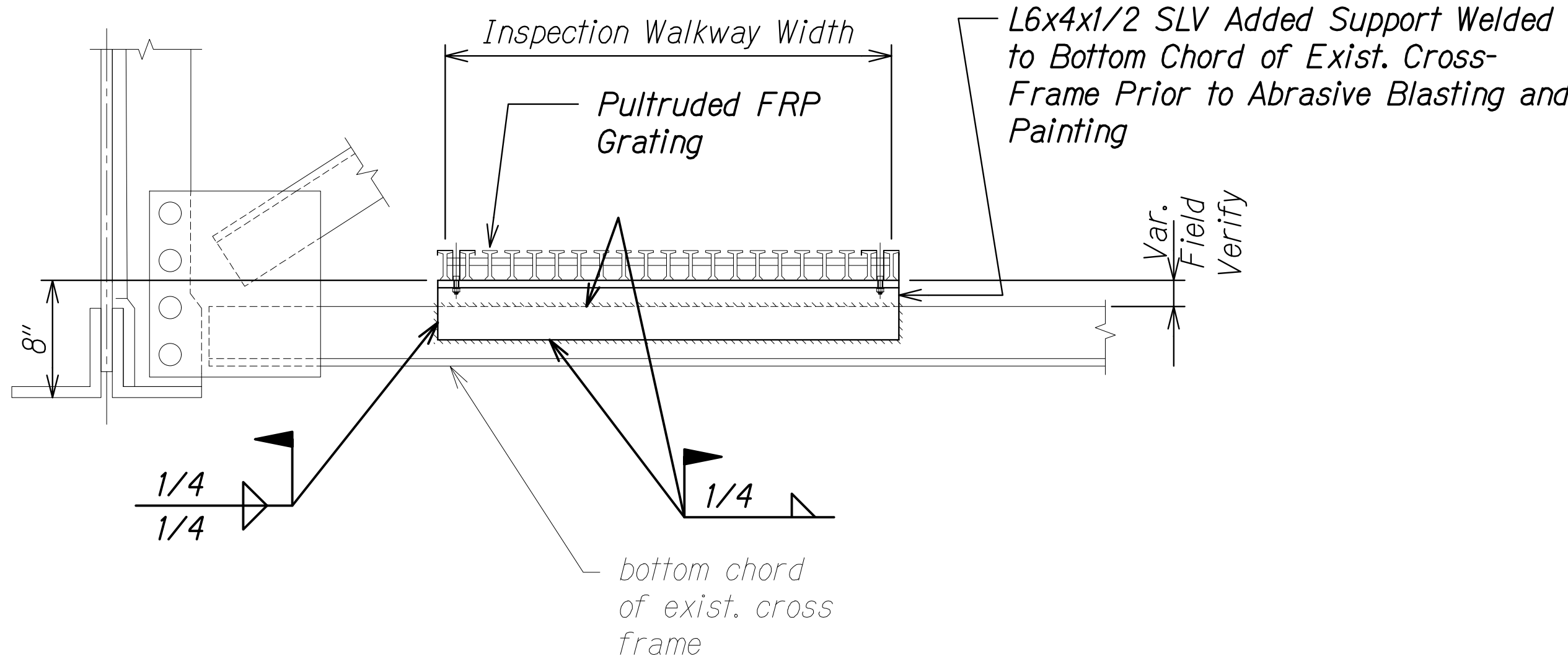
FASTENER LAYOUT PLAN - 2'-6" GRATING

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



FASTENER LAYOUT PLAN - 4'-0" GRATING

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



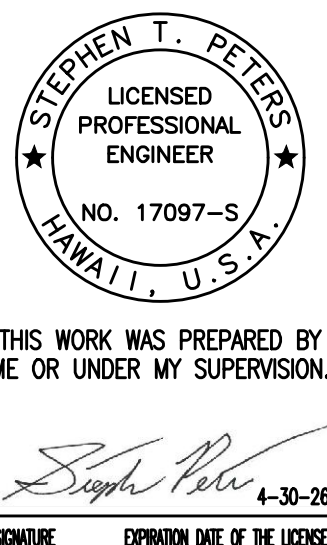
SECTION

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



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DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA1301-SA1304 INSP WALKWAY PLNDWG PLOT TIME: 10-28-24 3:29 PM



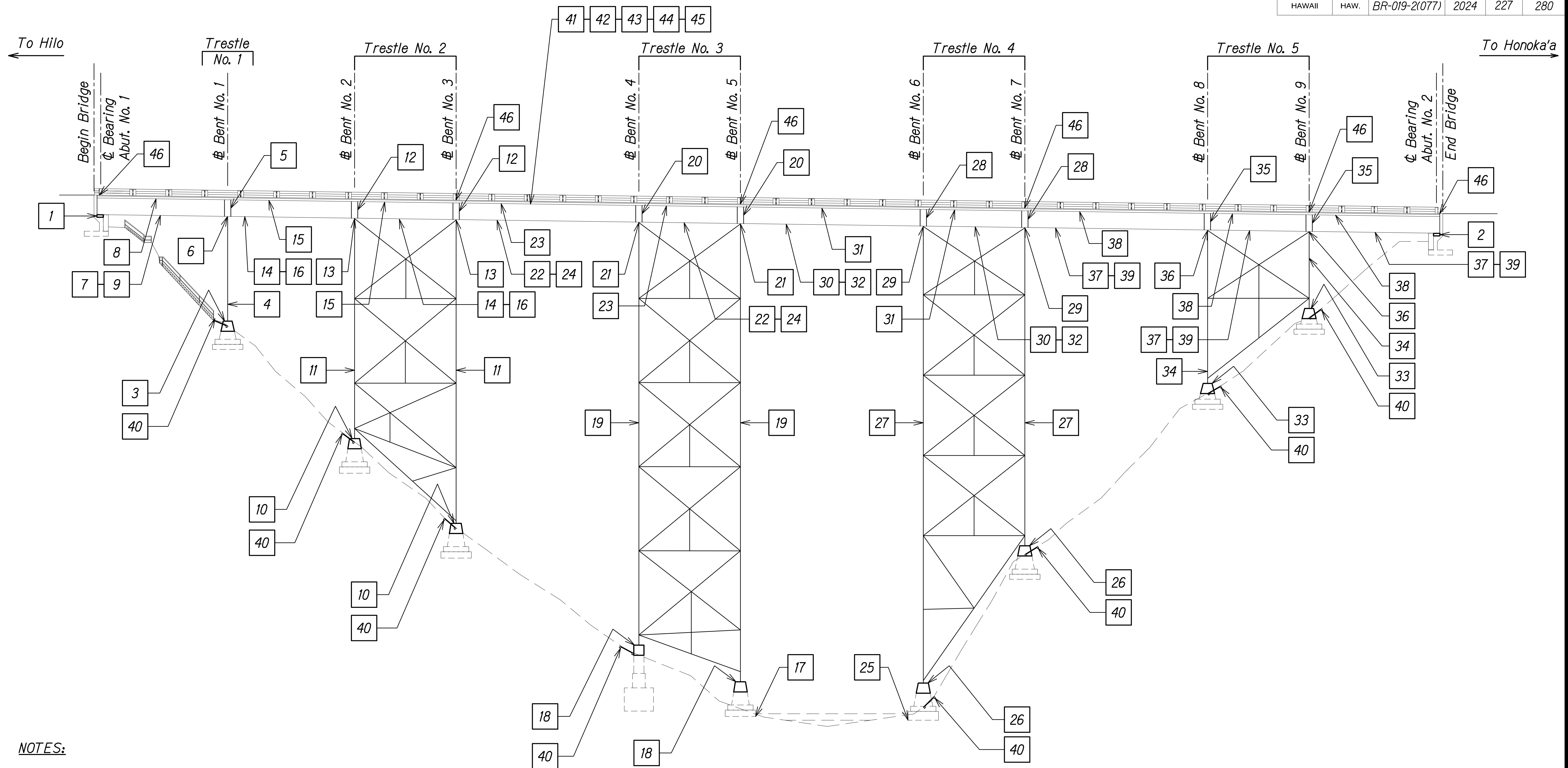
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INSPECTION WALKWAY
FASTENER LAYOUT PLANS AND SECTION

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

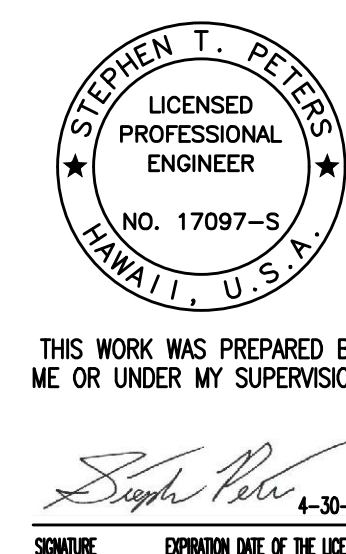
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 227 | 280 |



NOTES:

1. The order of the construction sequence shall not be changed unless approved by the Engineer.
2. Each sequence stage shall be completely finished before proceeding to the next stage unless otherwise noted. The Engineer will be the sole judge of whether the sequence stage is complete, and may direct the Contractor to stop work so as to complete work on the preceding sequence stage.
3. See Sheets SA14.2 and SA14.3 for description of construction stages.

OVERALL CONSTRUCTION SEQUENCE
Not to Scale



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**OVERALL
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA14.1 OF 3 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 228 | 280 |

ABUTMENTS

- 1

Install temporary bearing stiffeners on girder web at shoring locations. Jack and shore bridge girders at Abutment No. 1, demolish concrete seats, remove existing bearings and bearing stiffeners, install new bearing stiffeners, clean and paint steel at bearing location, pour new VESLMC seats, install new bearings. Do not release bridge girders onto new seats until concrete has cured for a minimum of 1 day and has attained a minimum of 4,000 psi compressive strength. See SA3 Series.
- 2

Install temporary bearing stiffeners on girder web at shoring locations. Jack and shore bridge girders at Abutment No. 2, demolish concrete seats, remove existing bearings and bearing stiffeners, install new bearing stiffeners, clean and paint steel at bearing location, pour new VESLMC seats, install new bearings. Do not release bridge girders onto new seats until concrete has cured for a minimum of 1 day and has attained a minimum of 4,000 psi compressive strength. See SA3 Series.

TRESTLE NO. 1

- 3

Excavate around existing foundation pedestal. Install temporary bypass column and ensure it is properly braced for stability (See SB series). Partially demolish existing foundation pedestals. Install reinforcing steel and anchor bolts; pour concrete pedestals and grade beams.
- 4

Erect steel trestle after concrete for foundation pedestals has cured for a minimum of 15 days and has attained a minimum 4,000 psi compressive strength. Pour epoxy grout beneath base plate.
- 5

Install temporary bearing stiffeners on girder web at shoring locations. Remove existing bearing stiffeners, remove any existing underslung beams that conflict with construction, install permanent bearing stiffeners, clean and paint steel at bearing locations.
- 6

Install elastomeric fixed bearings and pour epoxy grout.

SPAN NO. 1

- 7

Install underside work deck with containment. Remove existing wood access planks. Remove and replace existing stiffeners, struts, cross frames, and tie plates. Make necessary steel repairs, grind and radius edges of steel plates, replace corroded rivets with bolts. Abrasive blast, paint, and caulk steel members. See Sheet SA9.23 for detailed superstructure construction sequence.
- 8

Pressure inject cracks in soffit of concrete deck with epoxy resin and perform necessary defective concrete repairs.
- 9

Install FRP grating inspection platforms.

TRESTLE NO. 2

- 10

Excavate around existing foundation pedestal. Install temporary bypass column (See SB series). Partially demolish existing foundation pedestals. Install reinforcing steel and anchor bolts; pour concrete pedestals and grade beams.
- 11

Erect steel trestle after concrete for foundation pedestals has cured for a minimum of 15 days and has attained a minimum 4,000 psi compressive strength. Pour epoxy grout beneath base plate.
- 12

Install temporary bearing stiffeners on girder web at shoring locations. Remove existing bearing stiffeners, remove any existing underslung beams that conflict with construction, install permanent bearing stiffeners, clean and paint steel at bearing locations.
- 13

Install elastomeric fixed and expansion bearings and pour epoxy grout.

SPAN NOS. 2 AND 3

- 14

Install underside work deck with containment. Remove existing wood access planks. Remove and replace existing stiffeners, struts, cross frames, and tie plates. Make necessary steel repairs, grind and radius edges of steel plates, replace corroded rivets with bolts. Abrasive blast, paint, and caulk steel members. See Sheet SA9.23 for detailed superstructure construction sequence.
- 15

Pressure inject cracks in soffit of concrete deck with epoxy resin and perform necessary defective concrete repairs.
- 16

Install FRP grating inspection platforms.

TRESTLE NO. 3

- 17

Make underwater concrete repairs to foundation footings at Bent No. 5.
- 18

Excavate around existing foundation pedestal (if necessary). Install temporary bypass column (See SB series). Partially demolish existing foundation pedestals. Install reinforcing steel and anchor bolts; pour concrete pedestals and grade beams.
- 19

Erect steel trestle after concrete for foundation pedestals has cured for a minimum of 15 days and has attained a minimum 4,000 psi compressive strength. Pour epoxy grout beneath base plate.
- 20

Install temporary bearing stiffeners on girder web at shoring locations. Remove existing bearing stiffeners, remove any existing underslung beams that conflict with construction, install permanent bearing stiffeners, clean and paint steel at bearing locations.
- 21

Install elastomeric fixed and expansion bearings and pour epoxy grout.

SPAN NOS. 4 AND 5

- 22

Install underside work deck with containment. Remove existing wood access planks. Remove and replace existing stiffeners, struts, cross frames, and tie plates. Make necessary steel repairs, grind and radius edges of steel plates, replace corroded rivets with bolts. Abrasive blast, paint, and caulk steel members. See Sheet SA9.23 for detailed superstructure construction sequence.
- 23

Pressure inject cracks in soffit of concrete deck with epoxy resin and perform necessary defective concrete repairs.
- 24

Install FRP grating inspection platforms.

TRESTLE NO. 4

- 25

Make underwater concrete repairs to foundation footings at Bent No. 6.
- 26

Excavate around existing foundation pedestal (if necessary). Install temporary bypass column (See SB series). Partially demolish existing foundation pedestals. Install reinforcing steel and anchor bolts; pour concrete pedestals and grade beams.
- 27

Erect steel trestle after concrete for foundation pedestals has cured for a minimum of 15 days and has attained a minimum 4,000 psi compressive strength. Pour epoxy grout beneath base plate.
- 28

Install temporary bearing stiffeners on girder web at shoring locations. Remove existing bearing stiffeners, remove any existing underslung beams that conflict with construction, install permanent bearing stiffeners, clean and paint steel at bearing locations.
- 29

Install elastomeric fixed and expansion bearings and pour epoxy grout.

SPAN NOS. 6 AND 7

- 30

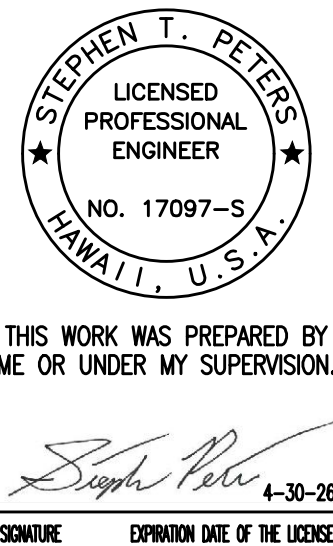
Install underside work deck with containment. Remove existing wood access planks. Remove and replace existing stiffeners, struts, cross frames, and tie plates. Make necessary steel repairs, grind and radius edges of steel plates, replace corroded rivets with bolts. Abrasive blast, paint, and caulk steel members. See Sheet SA9.23 for detailed superstructure construction sequence.
- 31

Pressure inject cracks in soffit of concrete deck with epoxy resin and perform necessary defective concrete repairs.
- 32

Install FRP grating inspection platforms.

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA1401-SA1403 CONSEQ.DWG PLOT TIME: 10-28-24, 4:35 PM



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERALL
CONSTRUCTION SEQUENCE
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 229 | 280 |

TRESTLE NO. 5

- 33

Excavate around existing foundation pedestal. Install temporary bypass column (See SB series). Partially demolish existing foundation pedestals. Install reinforcing steel and anchor bolts; pour concrete pedestals and grade beams.
- 34

Erect steel trestle after concrete for foundation pedestals has cured for a minimum of 15 days and has attained a minimum 4,000 psi compressive strength. Pour epoxy grout beneath base plate.
- 35

Install temporary bearing stiffeners on girder web at shoring locations. Remove existing bearing stiffeners, remove any existing underslung beams that conflict with construction, install permanent bearing stiffeners, clean and paint steel at bearing locations.
- 36

Install elastomeric fixed and expansion bearings and pour epoxy grout.

SPAN NOS. 8, 9 AND 10

- 37

Install underside work deck with containment. Remove existing wood access planks. Remove and replace existing stiffeners, struts, cross frames, and tie plates. Make necessary steel repairs, grind and radius edges of steel plates, replace corroded rivets with bolts. Abrasive blast, paint, and caulk steel members. See Sheet SA9.23 for detailed superstructure construction sequence.
- 38

Pressure inject cracks in soffit of concrete deck with epoxy resin and perform necessary defective concrete repairs.
- 39

Install FRP grating and inspection platforms.
- 40

Install shotcrete cover at specific foundation pedestals.

TOP OF DECK

- 41

Remove AC pavement on Upstream side of Bridge Deck (See Civil Drawings for Traffic Control Plan).
- 42

Remove AC pavement on Downstream side of Bridge Deck (See Civil Drawings for Traffic Control Plan).
- 43

Perform Necessary top of deck defective concrete repairs.
- 44

Place HPC overlay on Upstream side of Bridge Deck (See Civil Drawings for Traffic Control Plan).
- 45

Place HPC overlay on Downstream side of Bridge Deck (See Civil Drawings for Traffic Control Plan).
- 46

Install Compression Seal at all Expansion Joints.

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SA1401-SA1403_CONSEC.DWG PLOT TIME: 10-28-24, 4:36 PM)

STEPHEN T. PETERS

LICENSED
PROFESSIONAL
ENGINEER

NO. 17097-S

HAWAII, U.S.A.

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Signature

4-30-26

SIGNATURE

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

OVERALL

CONSTRUCTION SEQUENCE

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

Scale: As Noted

Date: Oct. 2024

SHEET No.SA14.3 OF 3 SHEETS

229

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 230 | 280 |

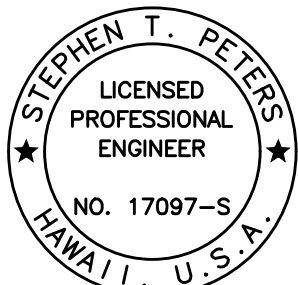
NOTES:

- The "SB" sheets are shown for schematic purposes only.
- The Contractor's Engineer is responsible for providing a detailed plan for the replacement of the steel trestles. Steel trestle falsework cost shall be incidental to Structural Steel. See General Note 3.D.
- The following schematic bent rehabilitation construction sequence shown for Bents No. 4 and 5/Trestle No. 3 shall be utilized at all Bent/Trestle locations.
- Bent No. 1 Bypass Column Assemblies shall be laterally braced to Bent No. 2 prior to and during Bent No. 1 rehabilitation.
- Contractor shall be aware of the existing bolstered column repair at Bent 4 Column Line D between Levels 3-4 and take this into consideration during bidding.

CONSTRUCTION SEQUENCE:

STAGE 1:

- 1 Install Bottom of Bent Column Bypass Assemblies. See Sht. SB2.7.
- 2 Install Temporary Horizontal Compression Bracings. See Sht. SB2.7.
- 3 Install Temporary Diagonal Cable Bracing within Column Bypass Level. See Sht. SB2.7.
- 4 Install Temporary Diagonal Bracing to Level Above. Temporary Bracing shall Connect to Existing Column Gusset Plate of Above Level. See Sht. SB2.7.



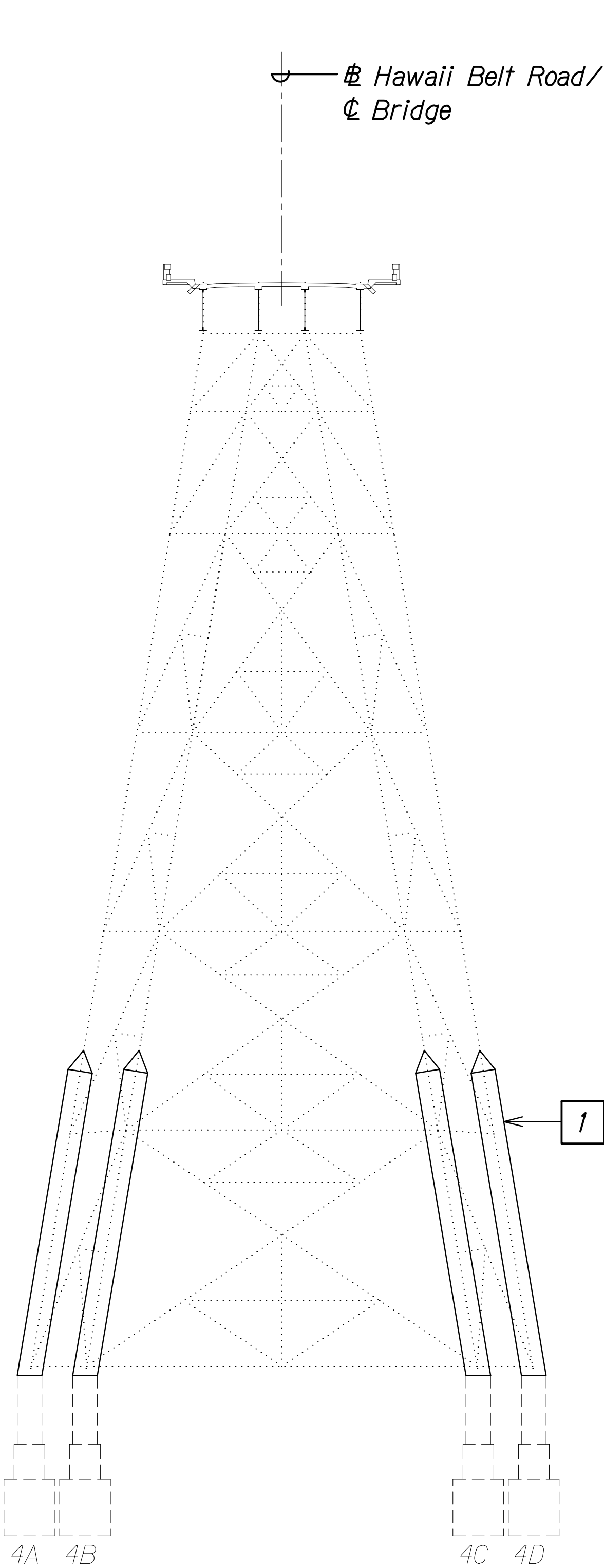
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

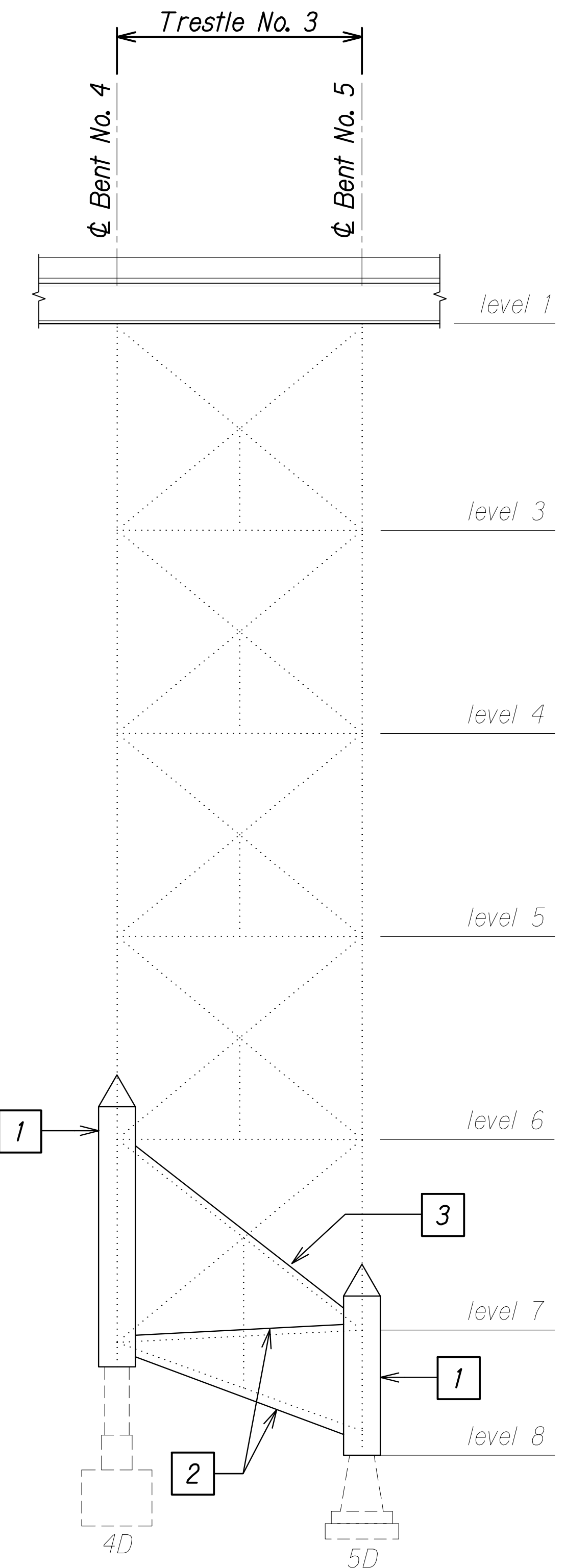
SHEET No. *SBIJ* OF 29 SHEETS



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

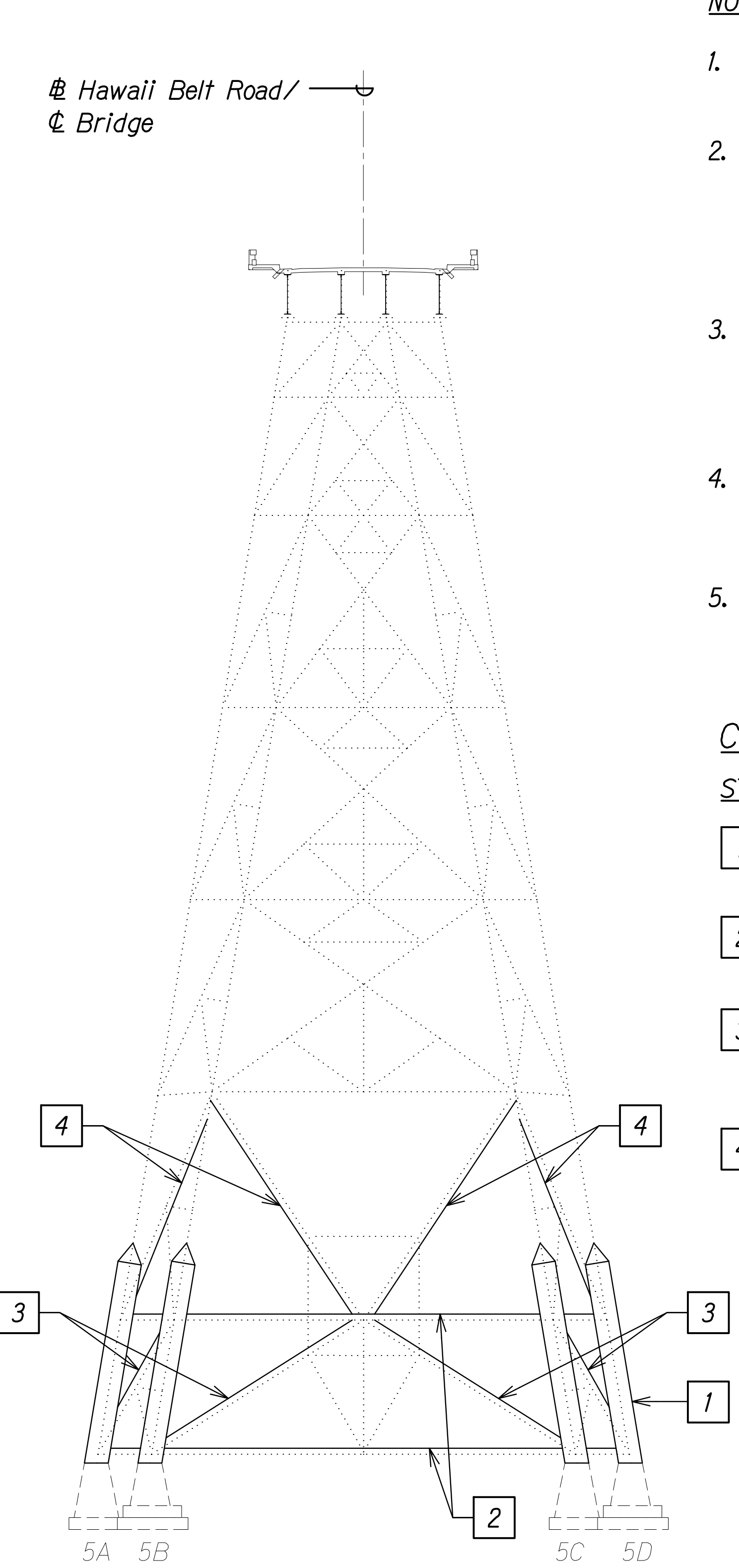
SBIJ *SBIJ*



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

SBIJ *SBIJ*



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

SBIJ *SBIJ*

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|---------------|---------------|
| DATE | DATE |
| ORIGINAL PLAN | ORIGINAL PLAN |
| DESIGNED BY | DESIGNED BY |
| QUANTITIES BY | QUANTITIES BY |
| NO. | NO. |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-28-24, 1:50 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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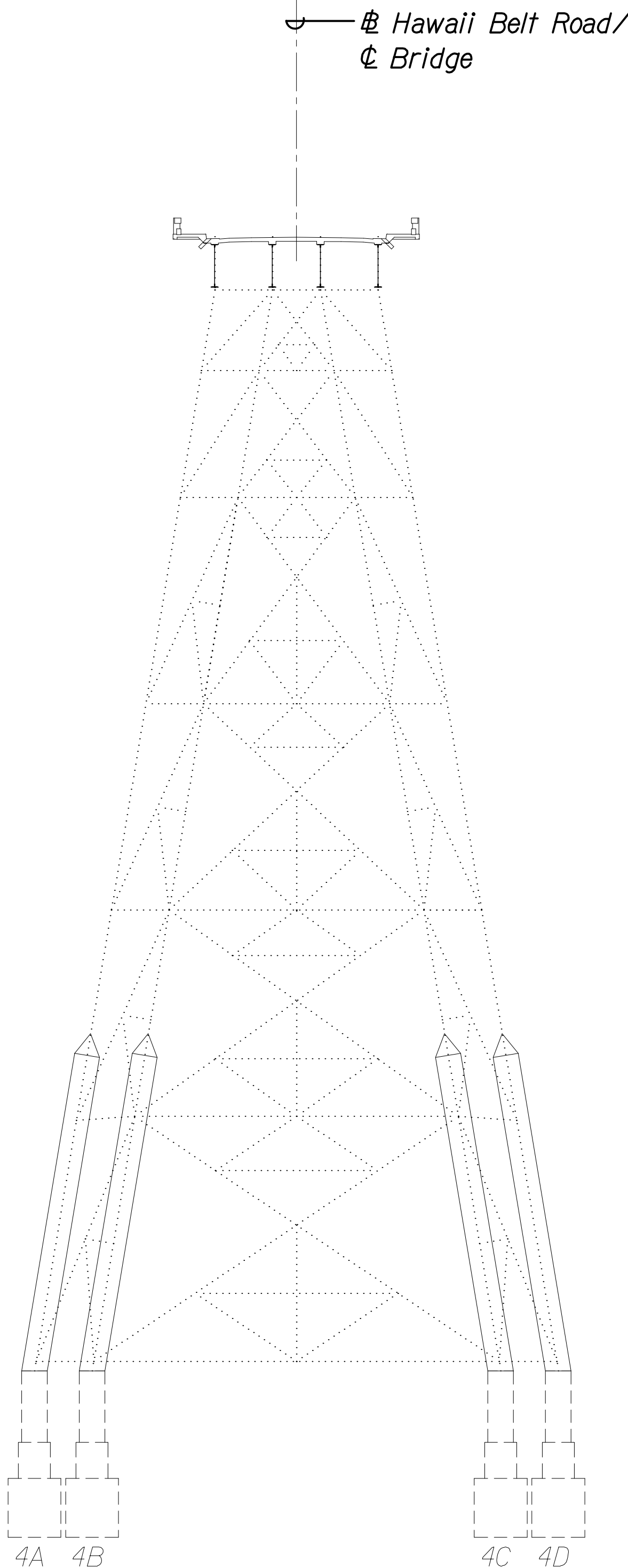
CONSTRUCTION SEQUENCE:

STAGE 1:

- 10 Install new column between splice locations within column bypass. See sht. SB2.10.
- 11 Install new bracings within level of column bypass. See sht. SB2.10.

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-28-24, 6:44 PM

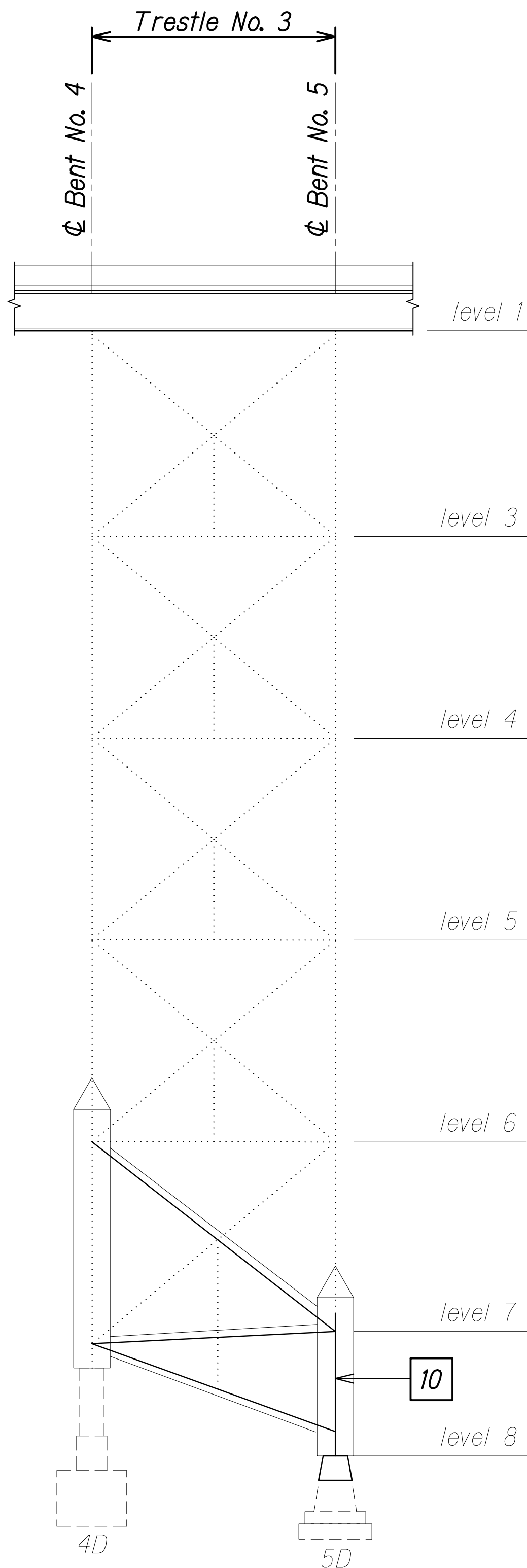
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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
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| | CHECKED BY | |



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

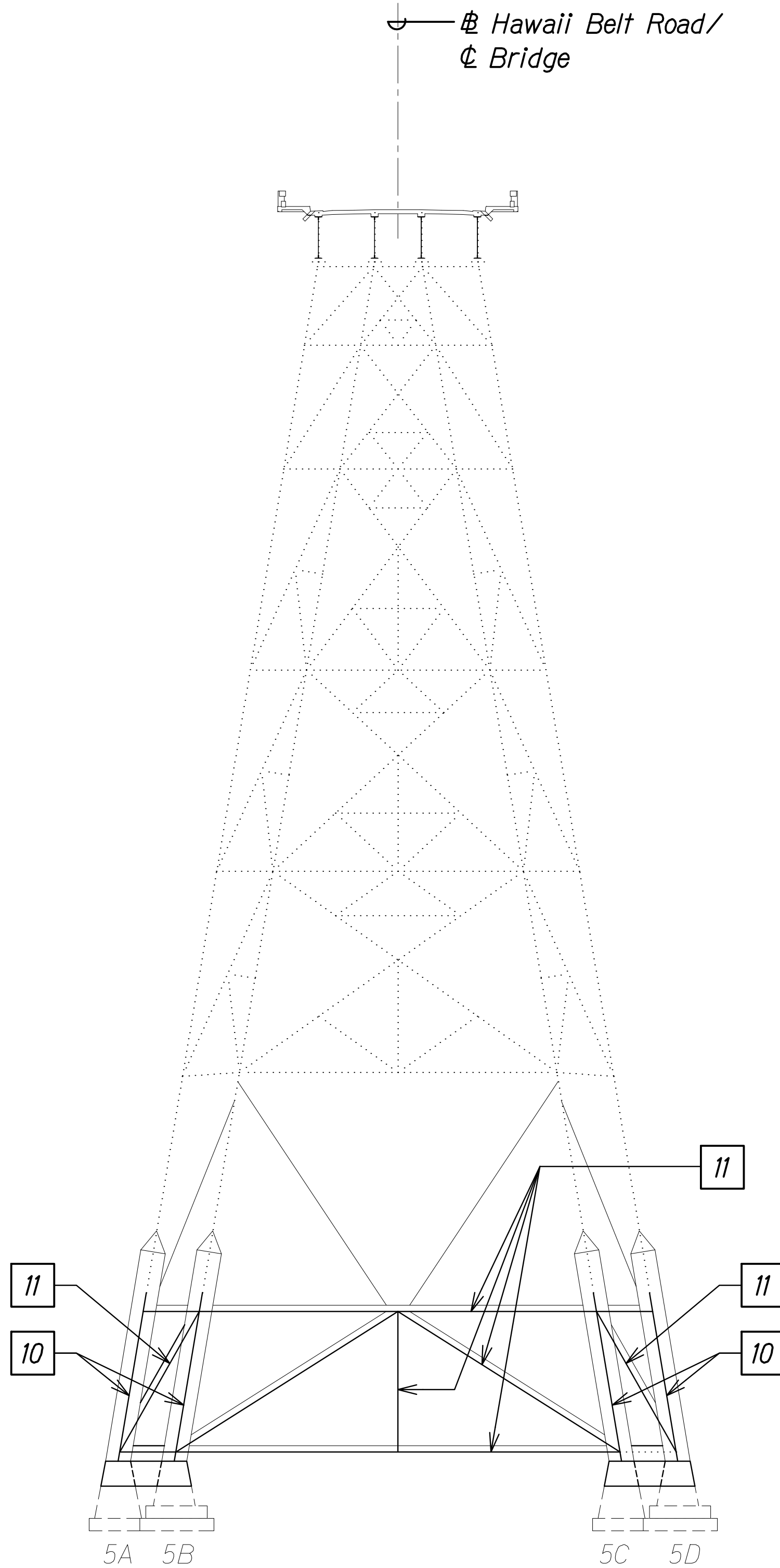
A
SBL.3 SBL.3



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

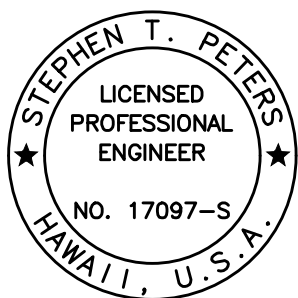
B
SBL.3 SBL.3



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL.3 SBL.3



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CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SBL.3 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 233 | 280 |

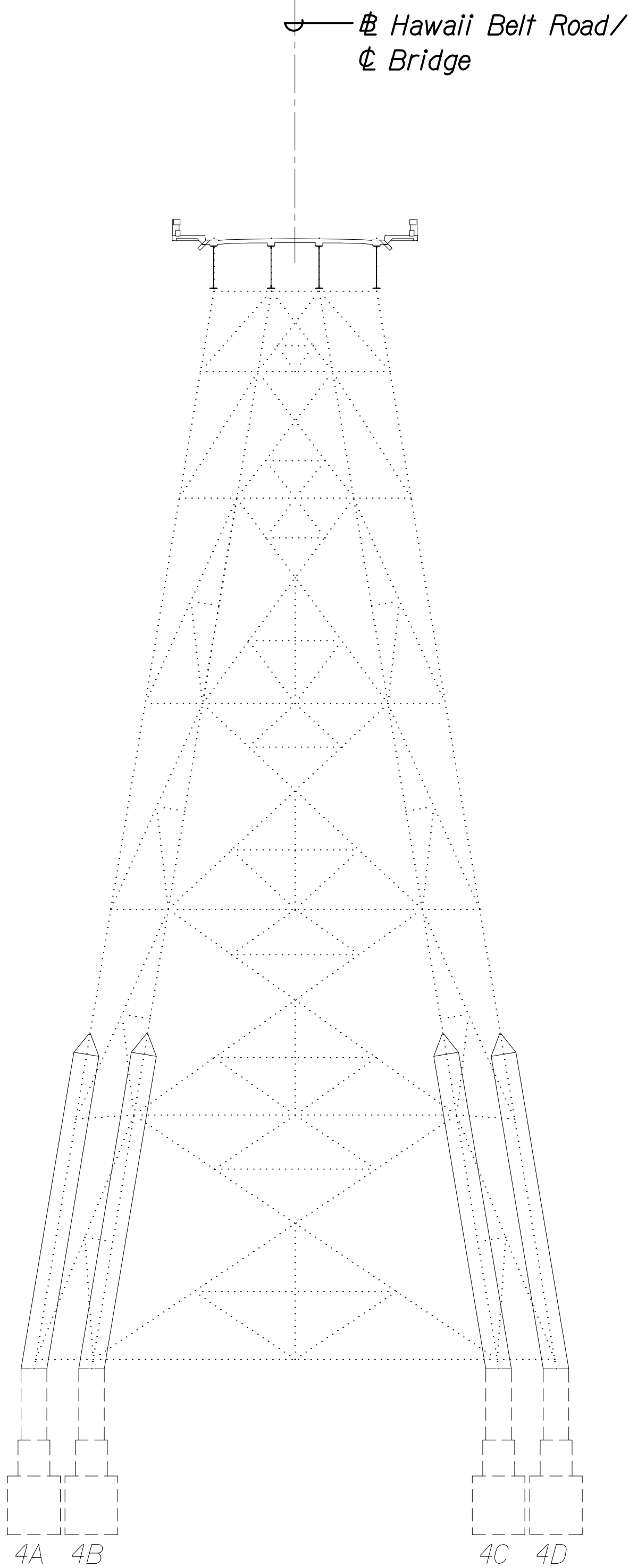
CONSTRUCTION SEQUENCE:

STAGE 1:

- 12

Install in-plane temporary bracing between new column at column bypass level and existing column gusset plate at level above. See sht. SB2.10.
- 13

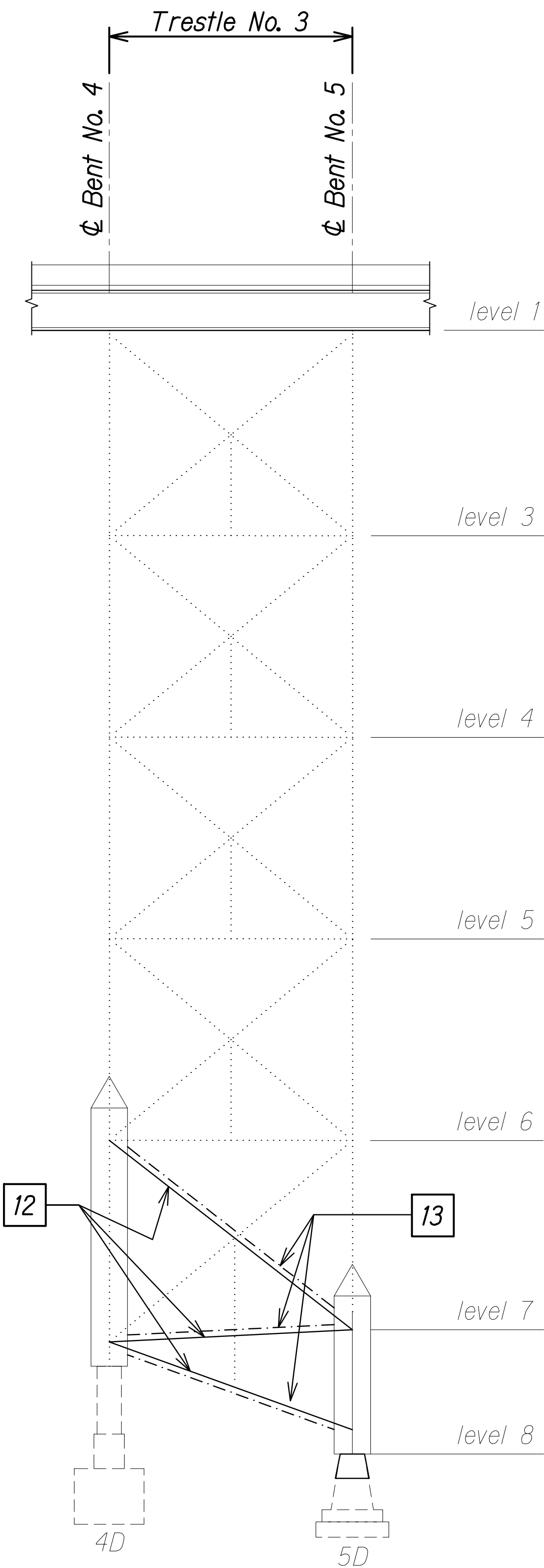
Remove temporary bracings.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

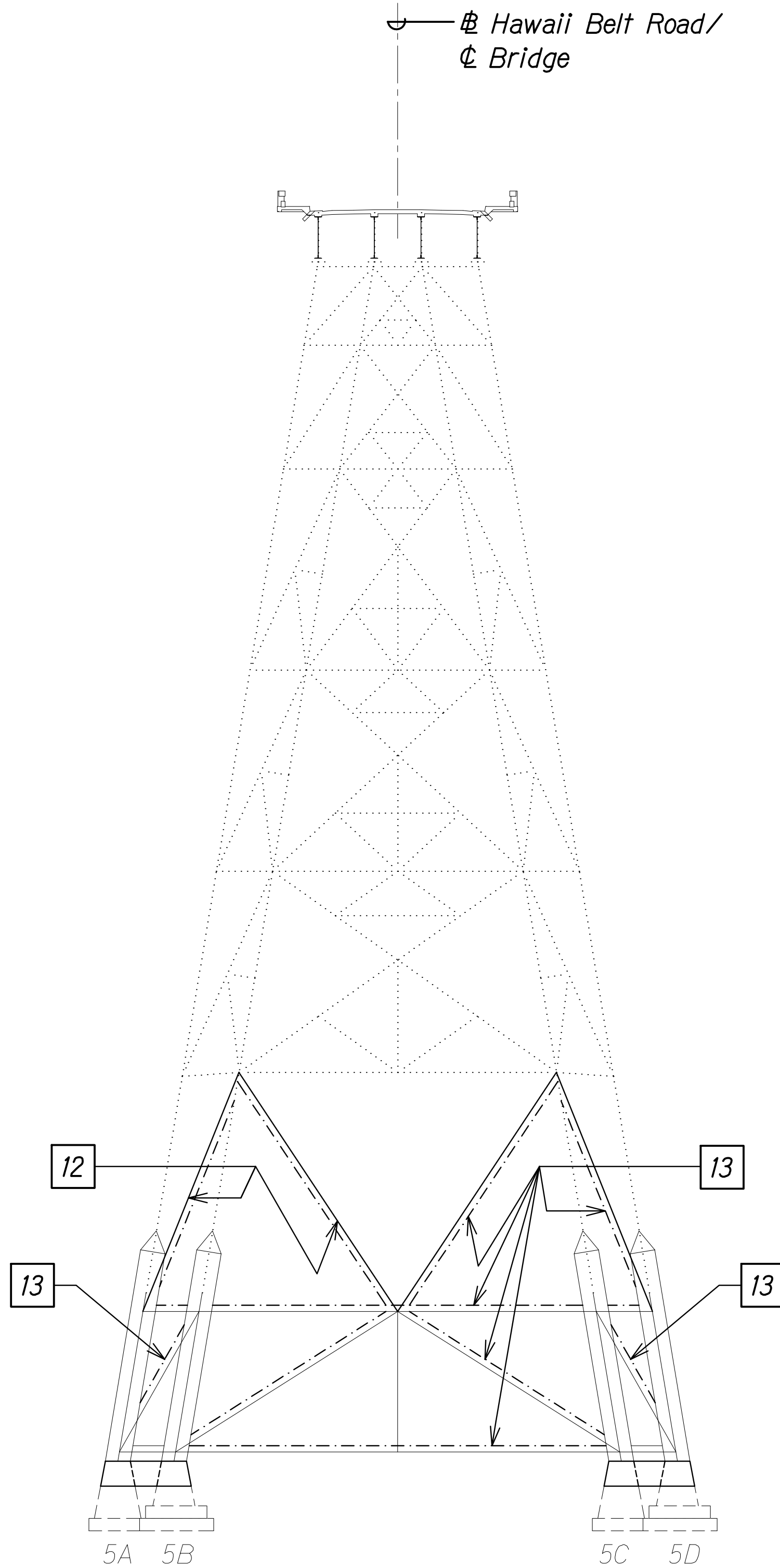
A
SBL4 | SBL4



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

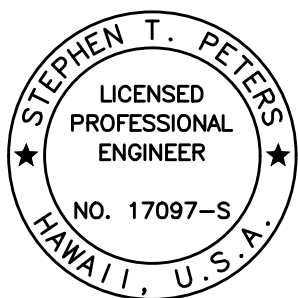
B
SBL4 | SBL4



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL4 | SBL4



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CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

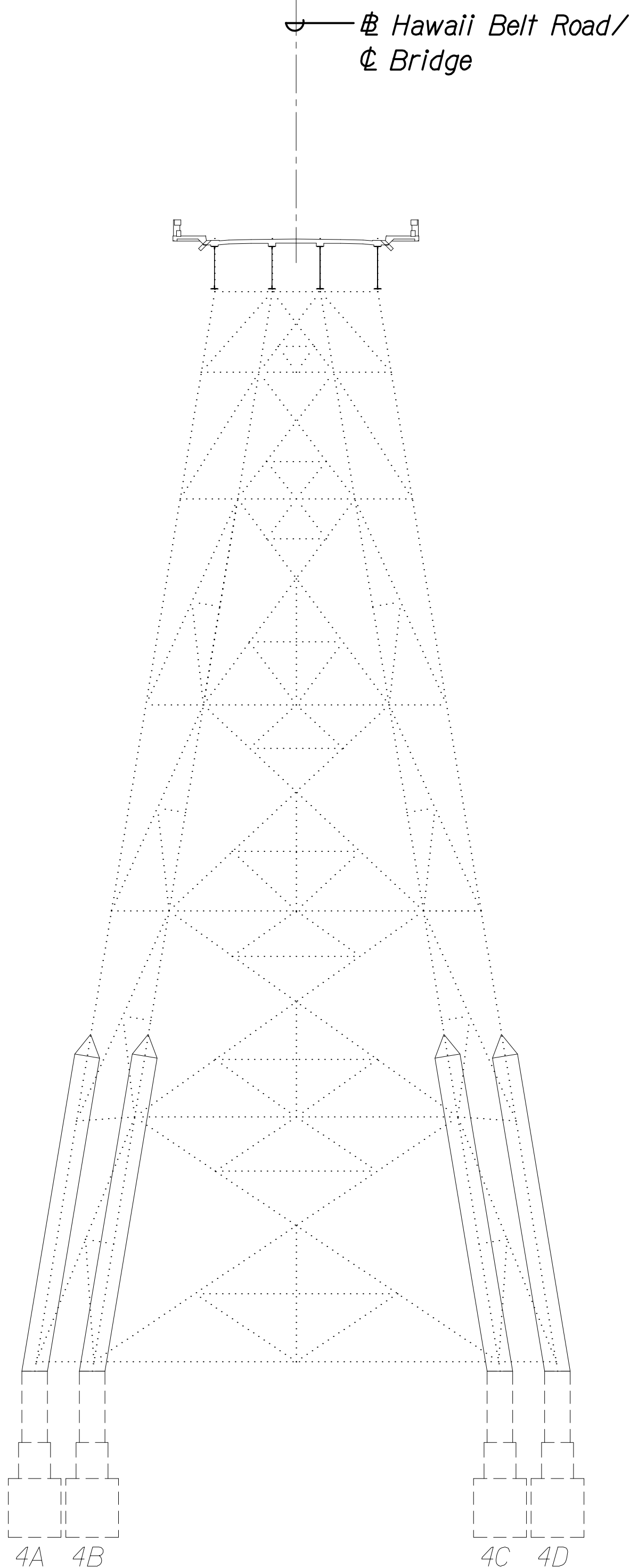
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| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 234 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 1:

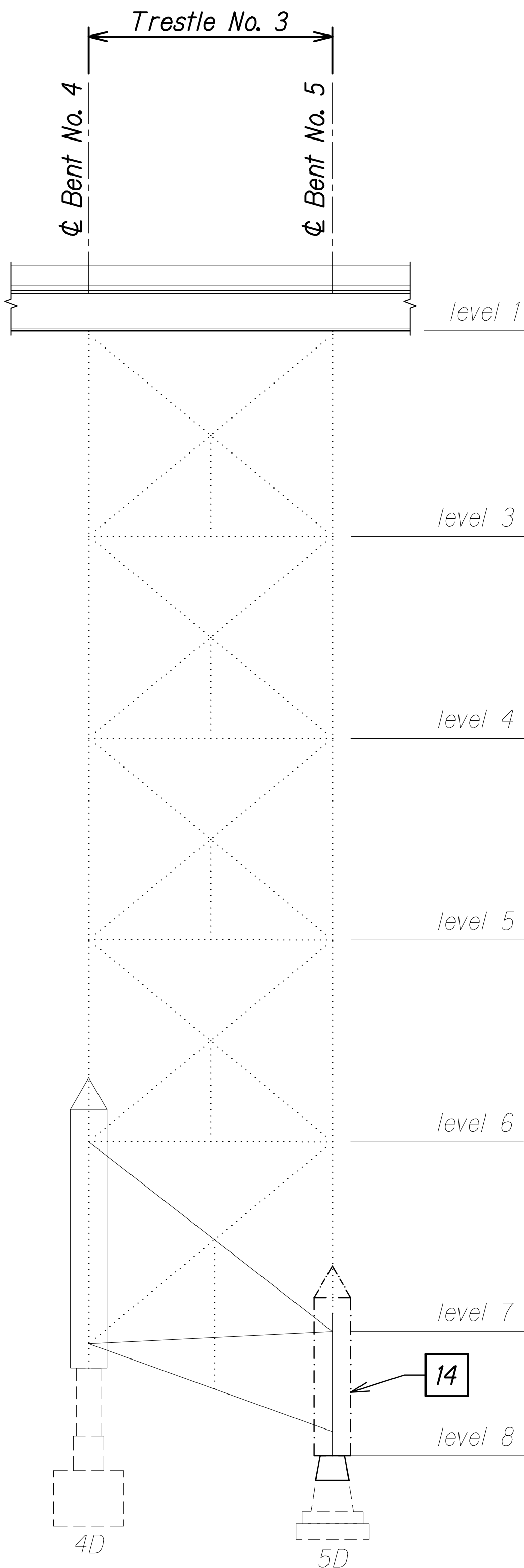
- 14 Remove bottom of bent column bypass assemblies. See sht. SB2.10. Proceed to next stage.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

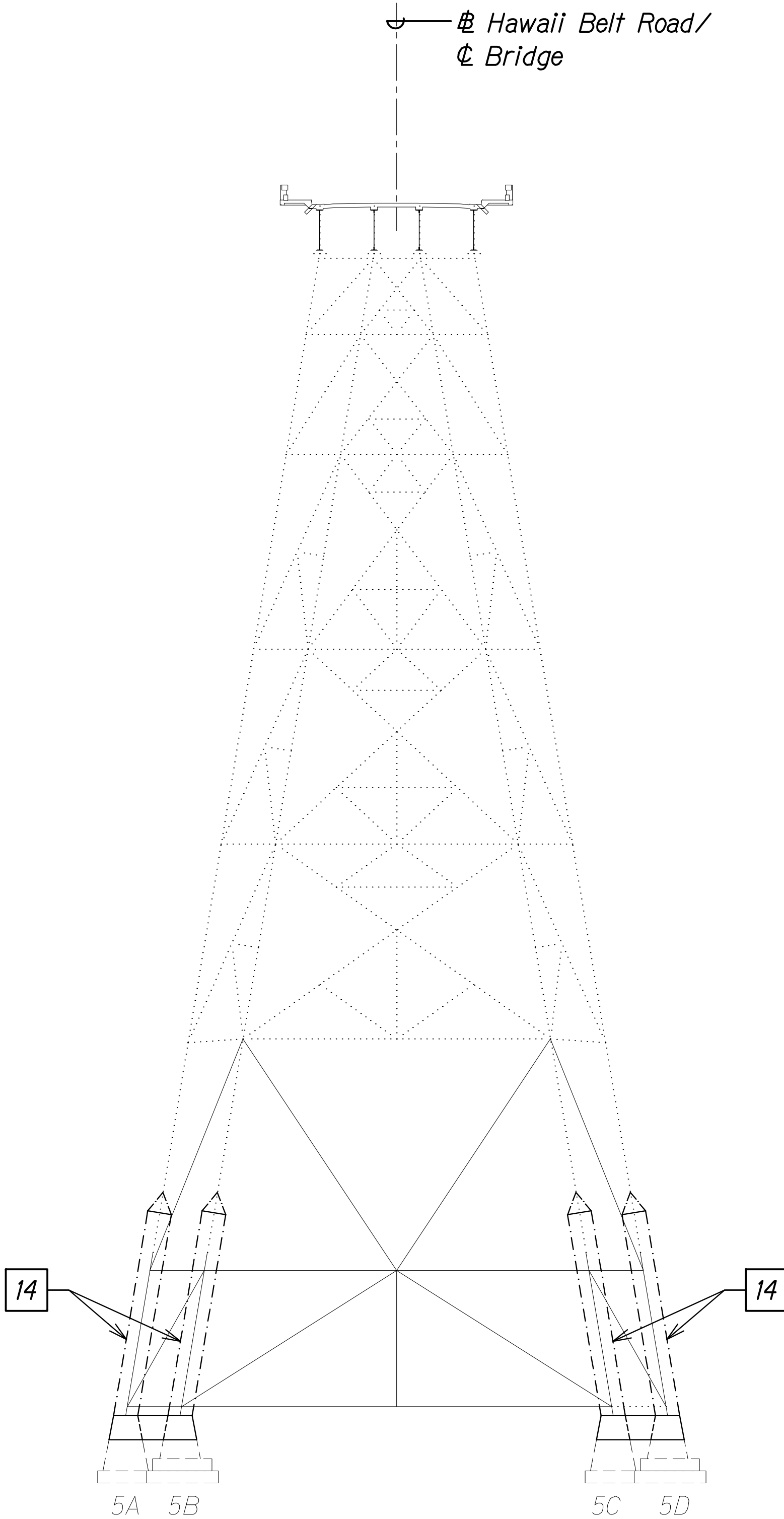
A
SBL5 SBL5



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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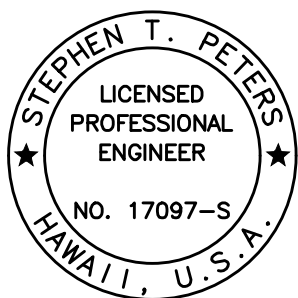
B
SBL5 SBL5



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL5 SBL5



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CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SBL5 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 235 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 2:

- 1

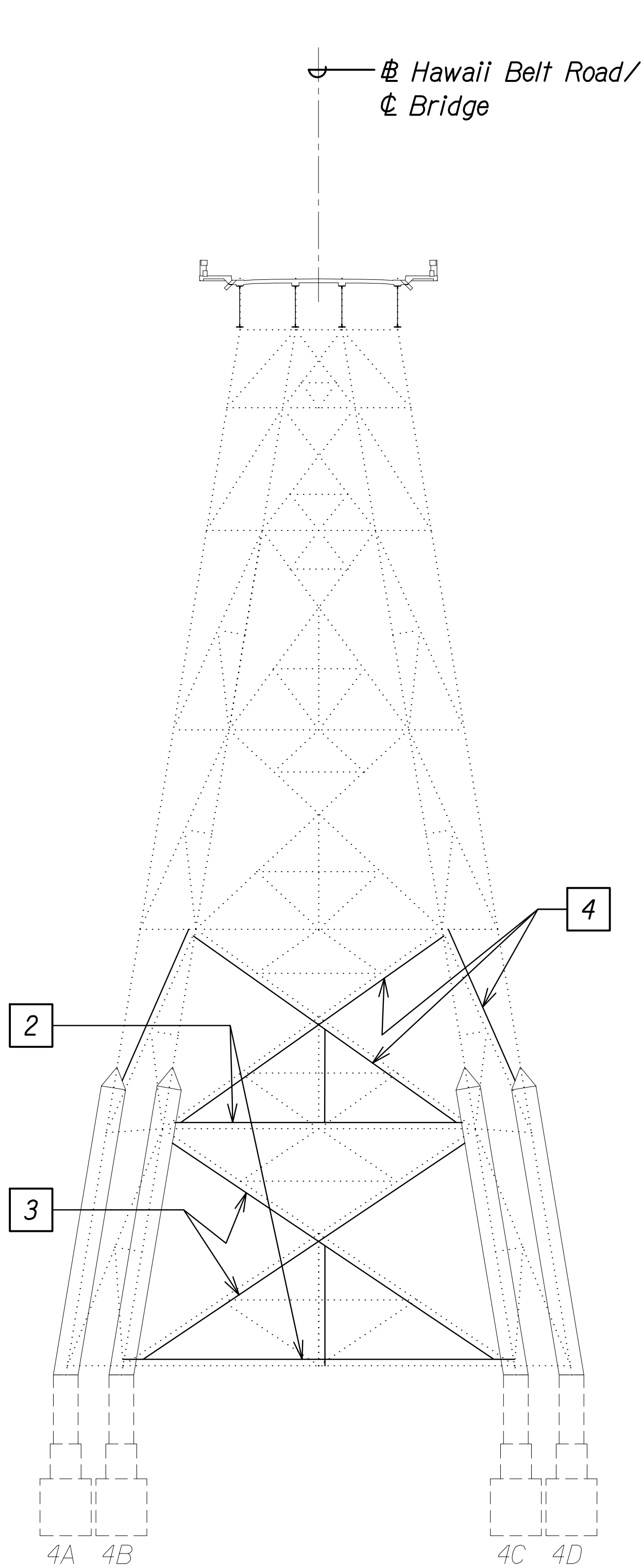
At Bent 5, install column bypass beyond existing column splice points. See sht. SB2.1.
At Bent 4, bottom of bent column bypass assembly remains installed from previous stage. See sht. SB2.7.
- 2

Install temporary horizontal compression bracings. See sht. SB2.2
- 3

Install temporary diagonal cable bracing within column bypass level. See sht. SB2.2
- 4

Install temporary diagonal cable bracing to level above. Temporary bracing shall connect to existing column gusset plate of above level. See sht. SB2.2
- 4b

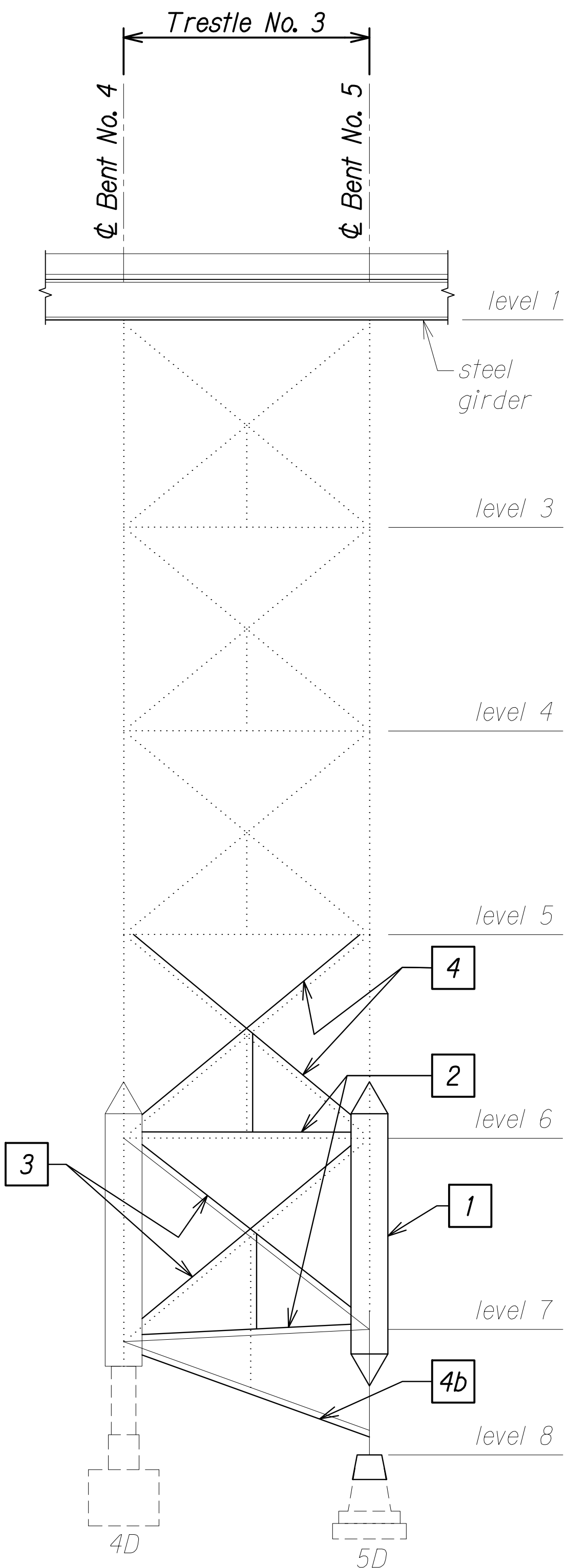
Install temporary diagonal cable bracing to level below. Temporary bracing shall connect to new gusset plate at below level.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

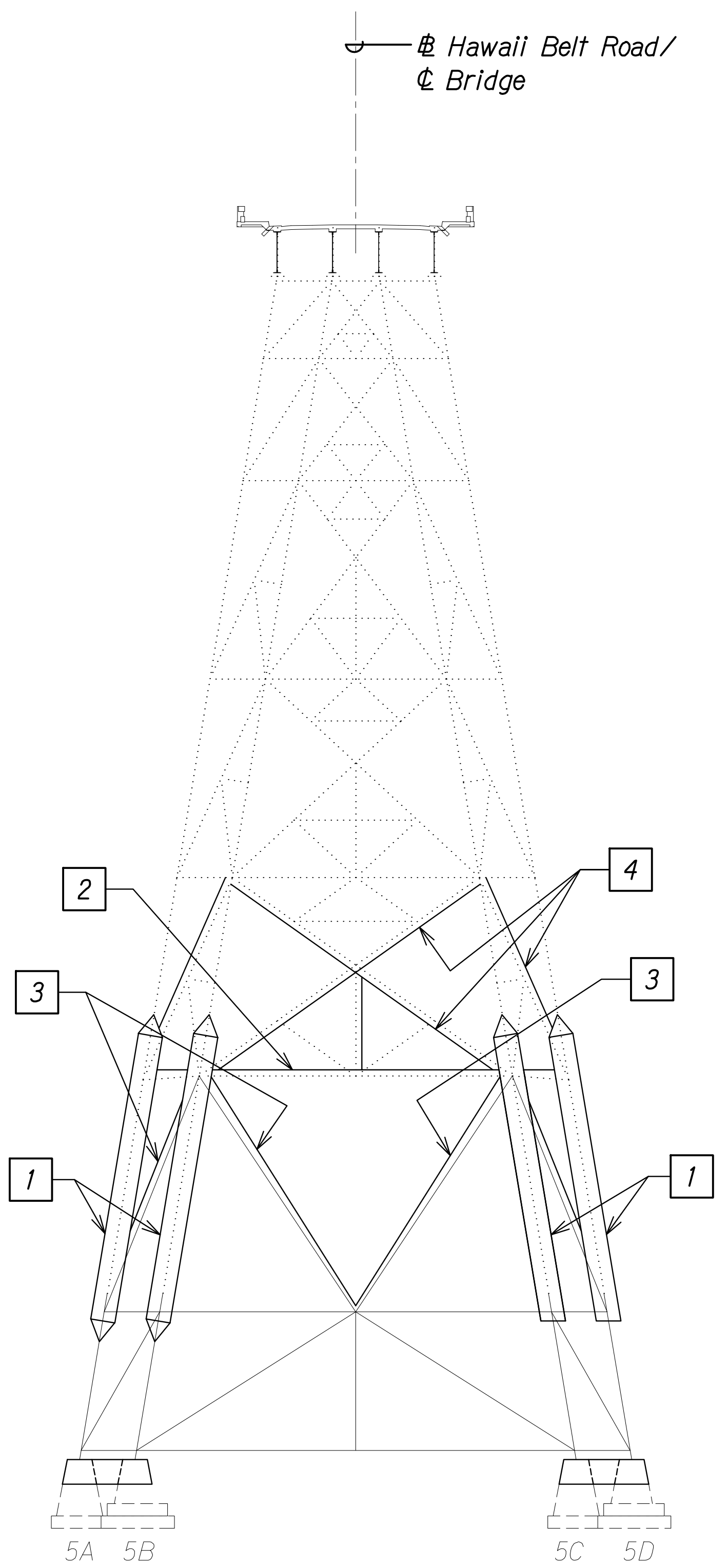
A
SBL6 SBL6



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

B
SBL6 SBL6



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL6 SBL6

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted
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STEPHEN T. PETERSON
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

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|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 236 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 2:

- 5

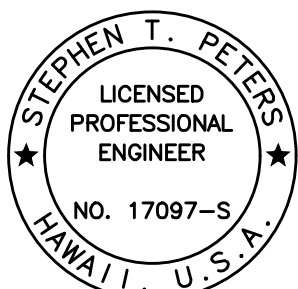
Remove existing bracings along temporary bracings.
See sht. SB2.3
- 6

Remove existing column between existing column splice points, within column bypass. See sht. SB2.3
Traffic control plan with Mauka lane closures shall be in effect prior to removal and replacement of columns along Bent lines A and B. Traffic control plan with Makai lane closures shall be in effect prior to removal and replacement of columns along Bent lines C and D. See Traffic Control Plans on Sheets T-5 and T-6.
- 6a

Demolish top of pedestal and upper portion of existing anchor bolts
- 6b

Install footing anchor bolts and reinforcing.
- 6c

Pour top of pedestal back to original top of foundation height and added grade beam.



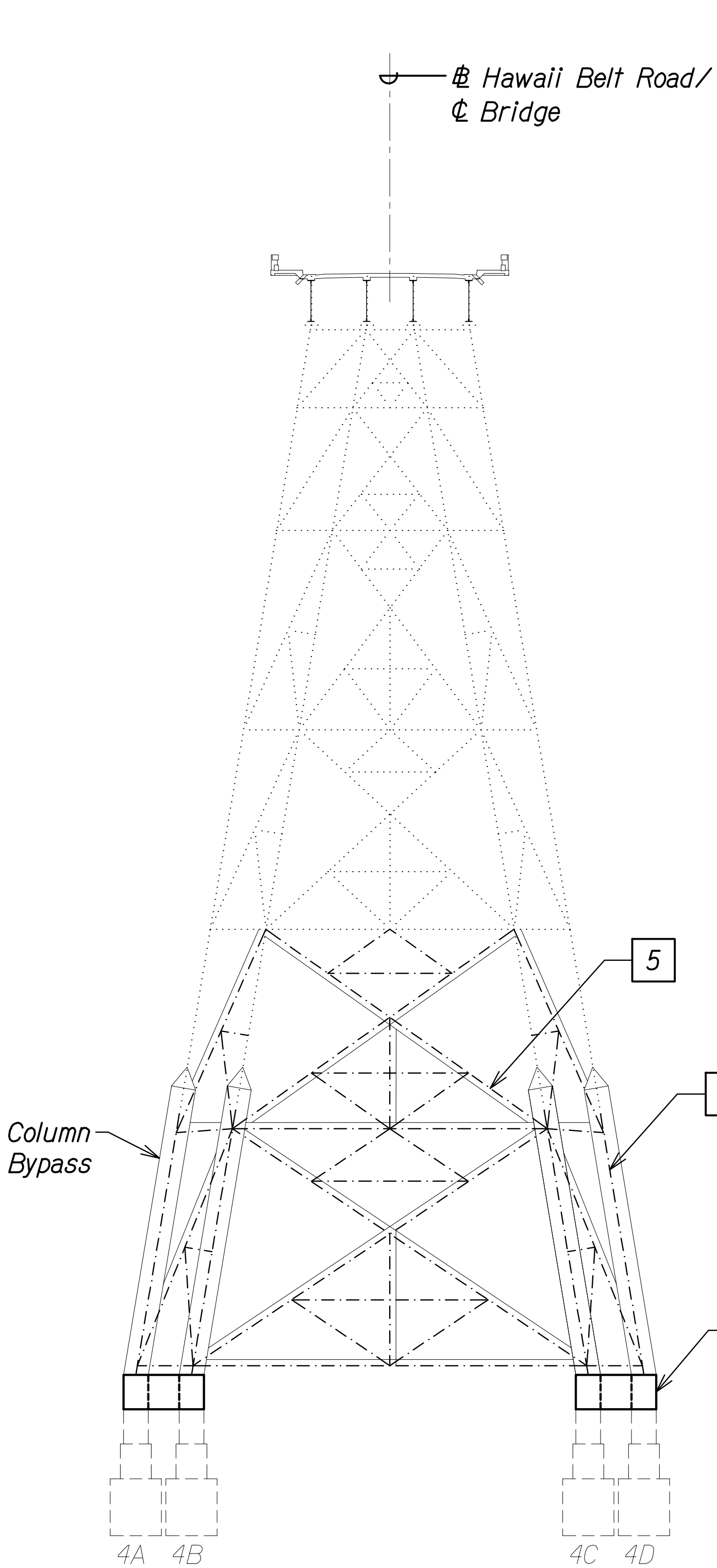
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE

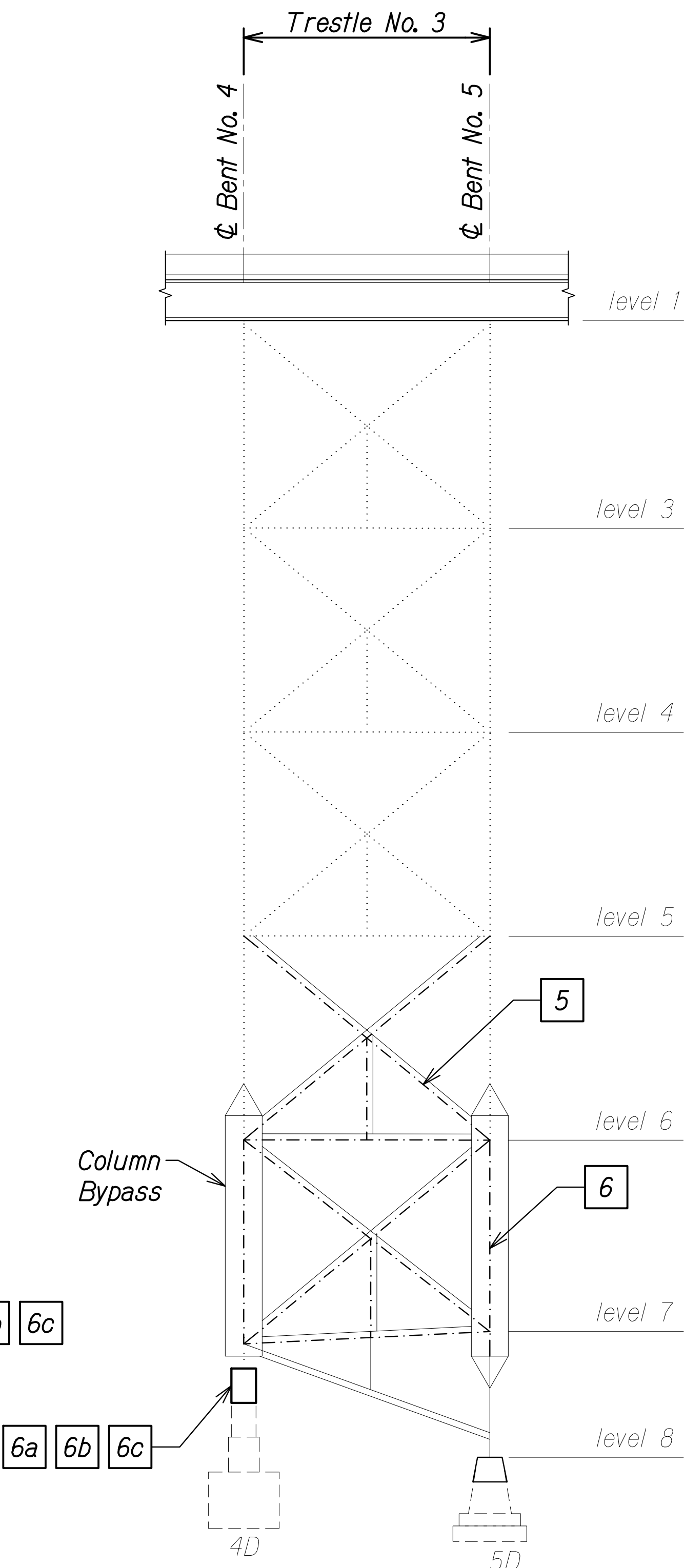
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. **SB1.7** OF 29 SHEETS



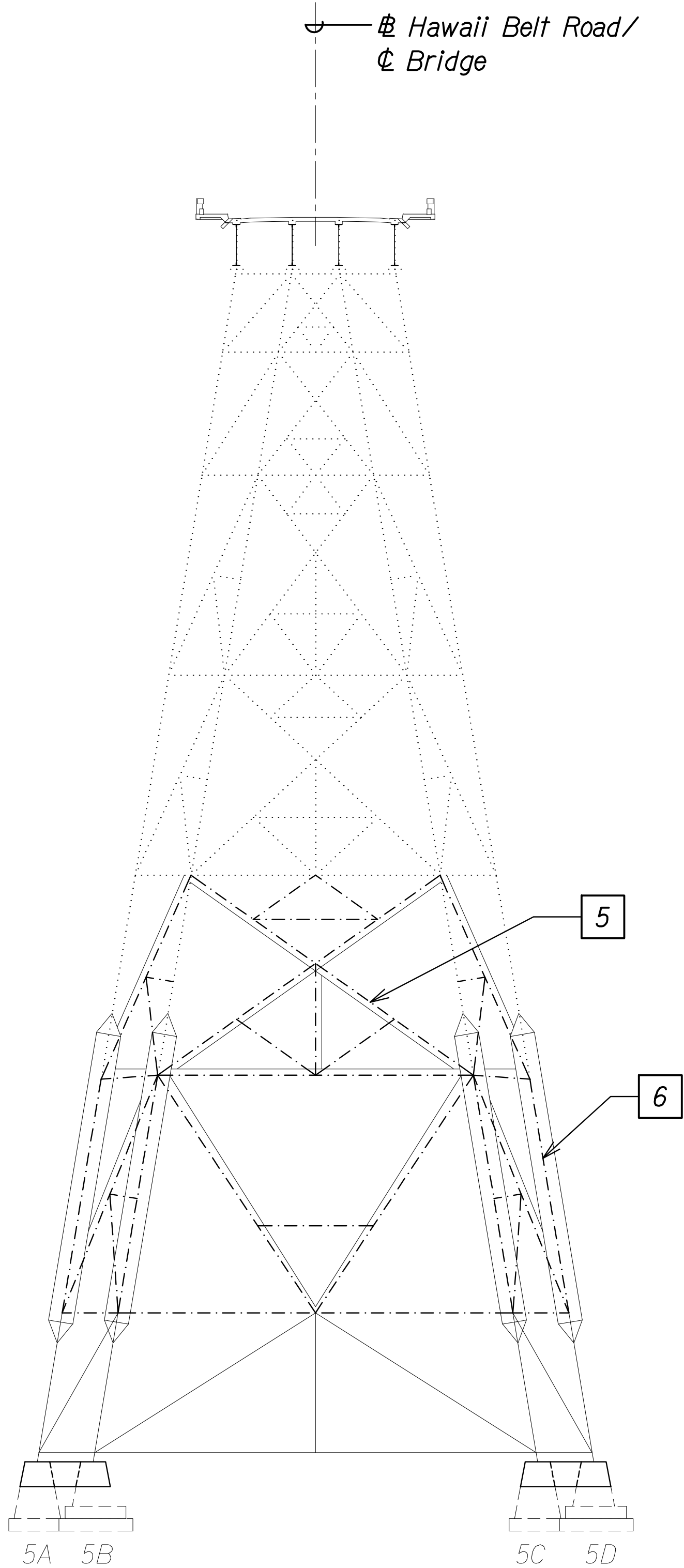
BENT NO. 4 ELEVATION
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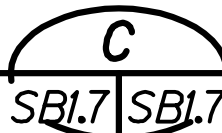
TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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



| | |
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| DATE | _____ |
| SURVEY PLOTTED BY | _____ |
| ORIGINAL PLAN | _____ |
| DRAWN BY | _____ |
| TRACED BY | _____ |
| DESIGNED BY | _____ |
| NOTED BY | _____ |
| QUANTITIES BY | _____ |
| CHECKED BY | _____ |
| No. | _____ |

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-28-24 6:45 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | BR-019-2(077) | 2024 | 237 | 280 |

CONSTRUCTION SEQUENCE:

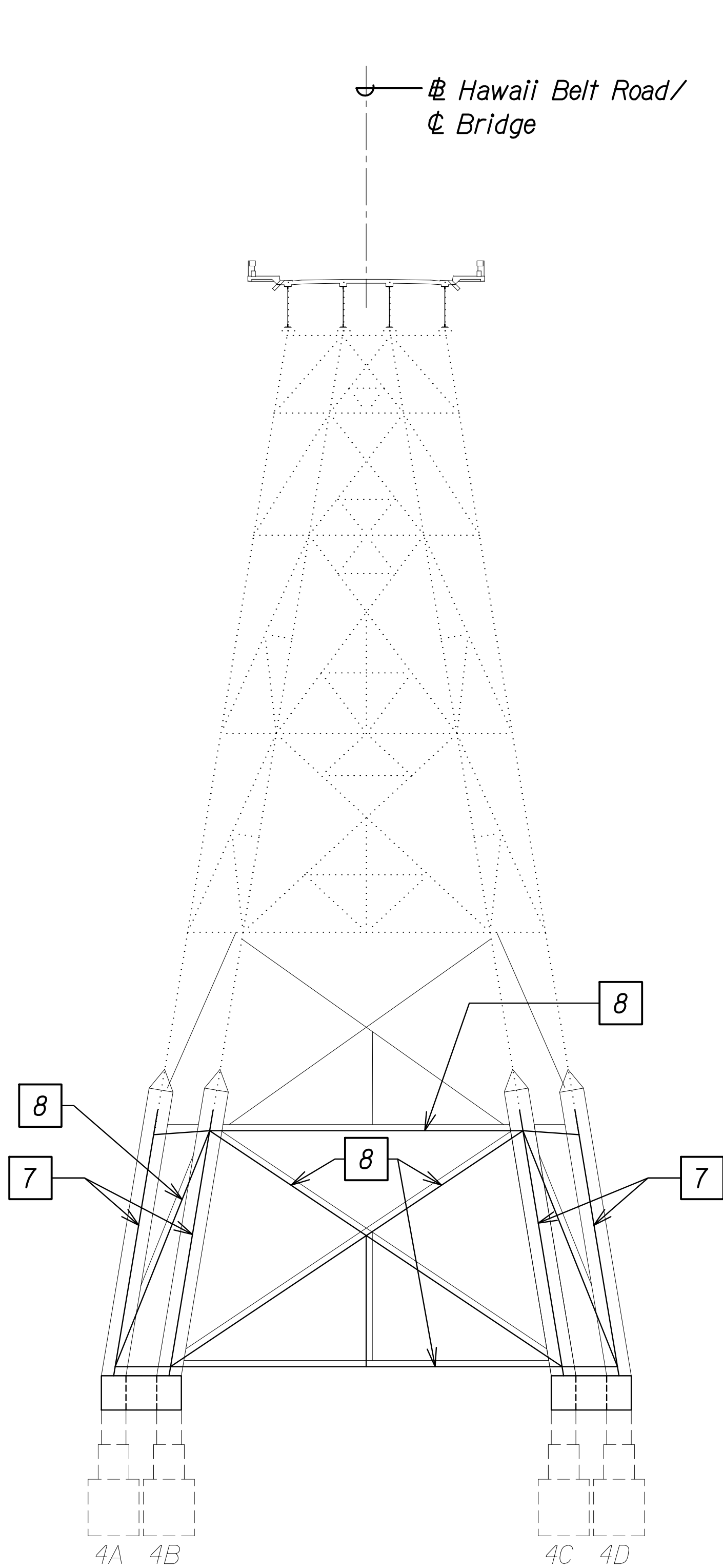
STAGE 2:

- 7

Install new column between column splice locations within column bypass. See sht. SB2.4.
- 8

Install new bracing within level of column bypass. See sht. SB2.4.
- 8b

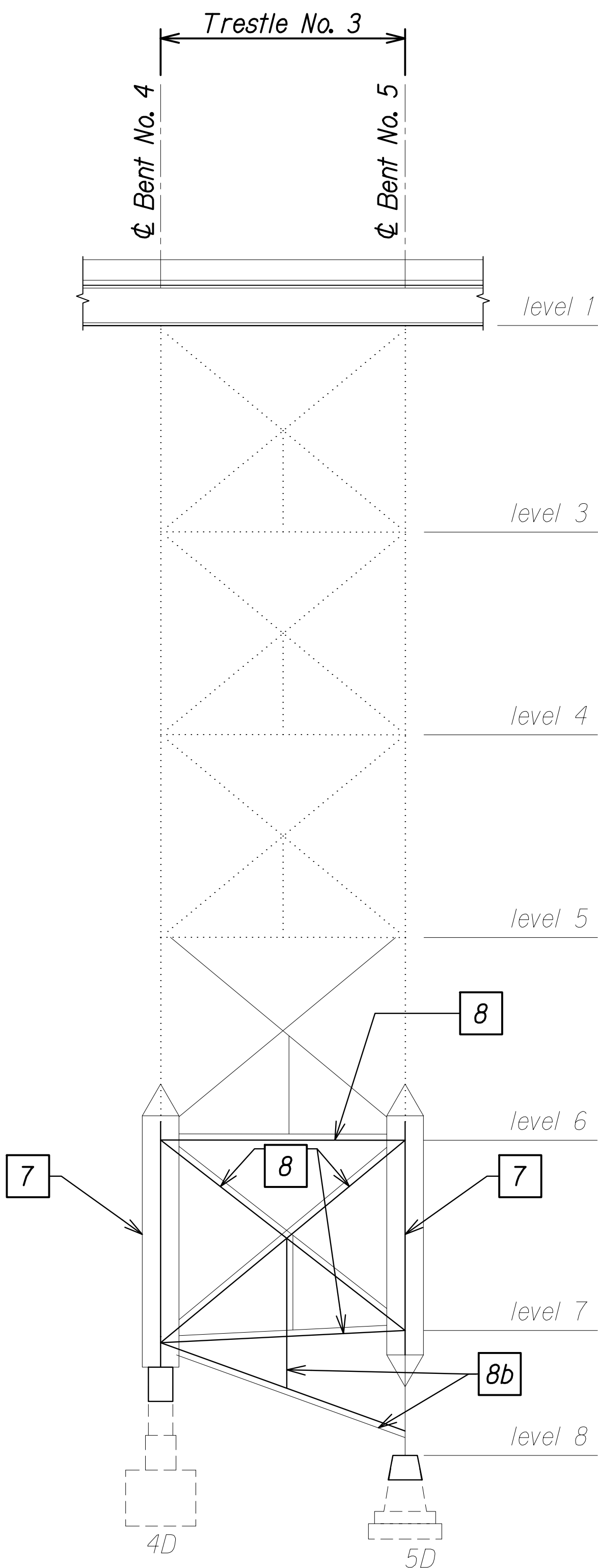
Install new bracing to level below.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

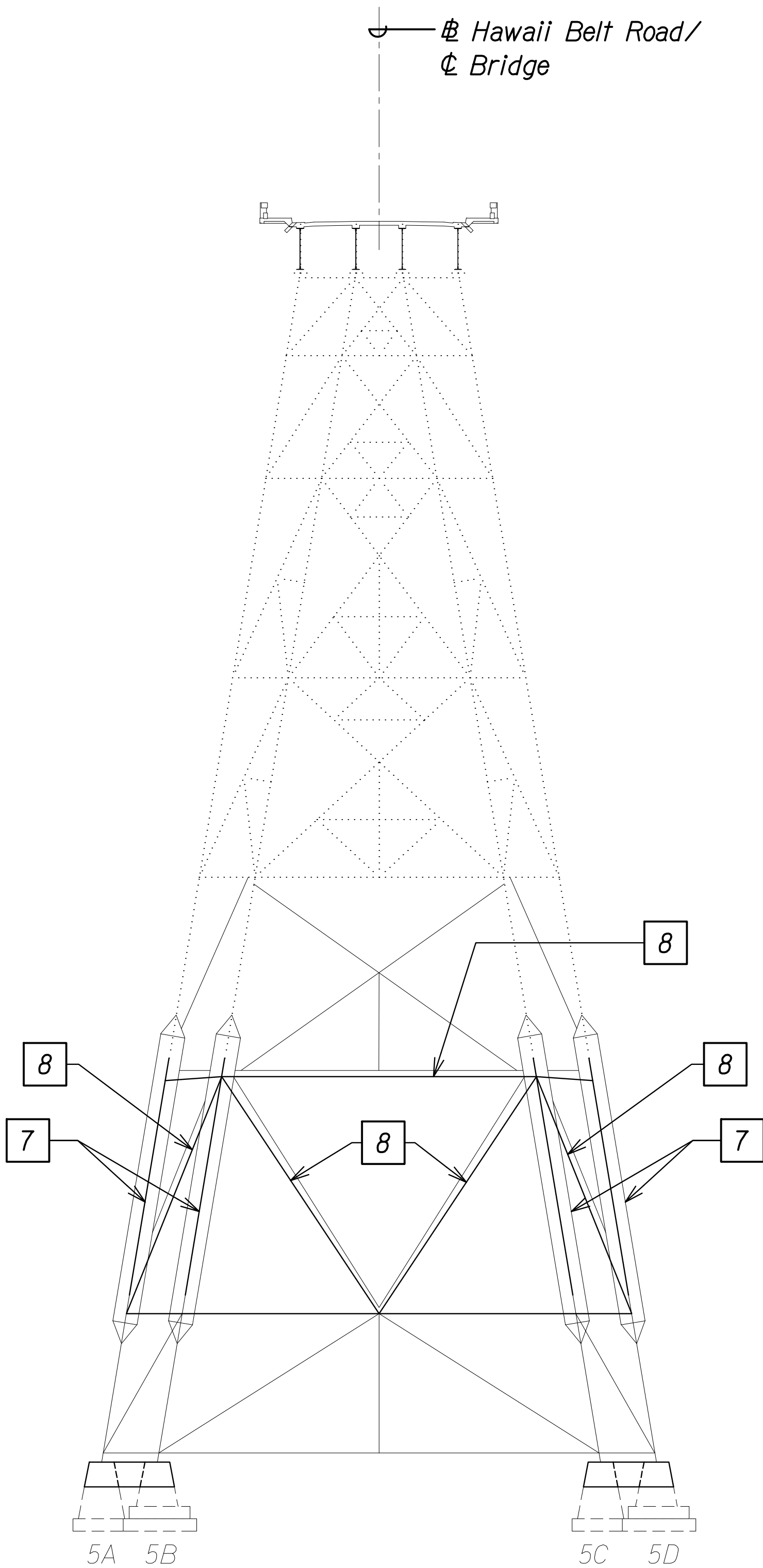
A
SBL8 | SBL8



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

B
SBL8 | SBL8



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

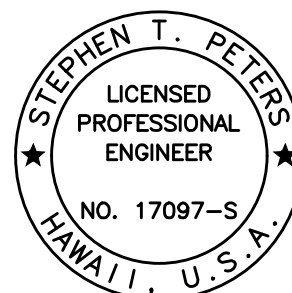
Scale: 1/16" = 1'-0"

C
SBL8 | SBL8

SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
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SHEET No. SBL8 OF 29 SHEETS



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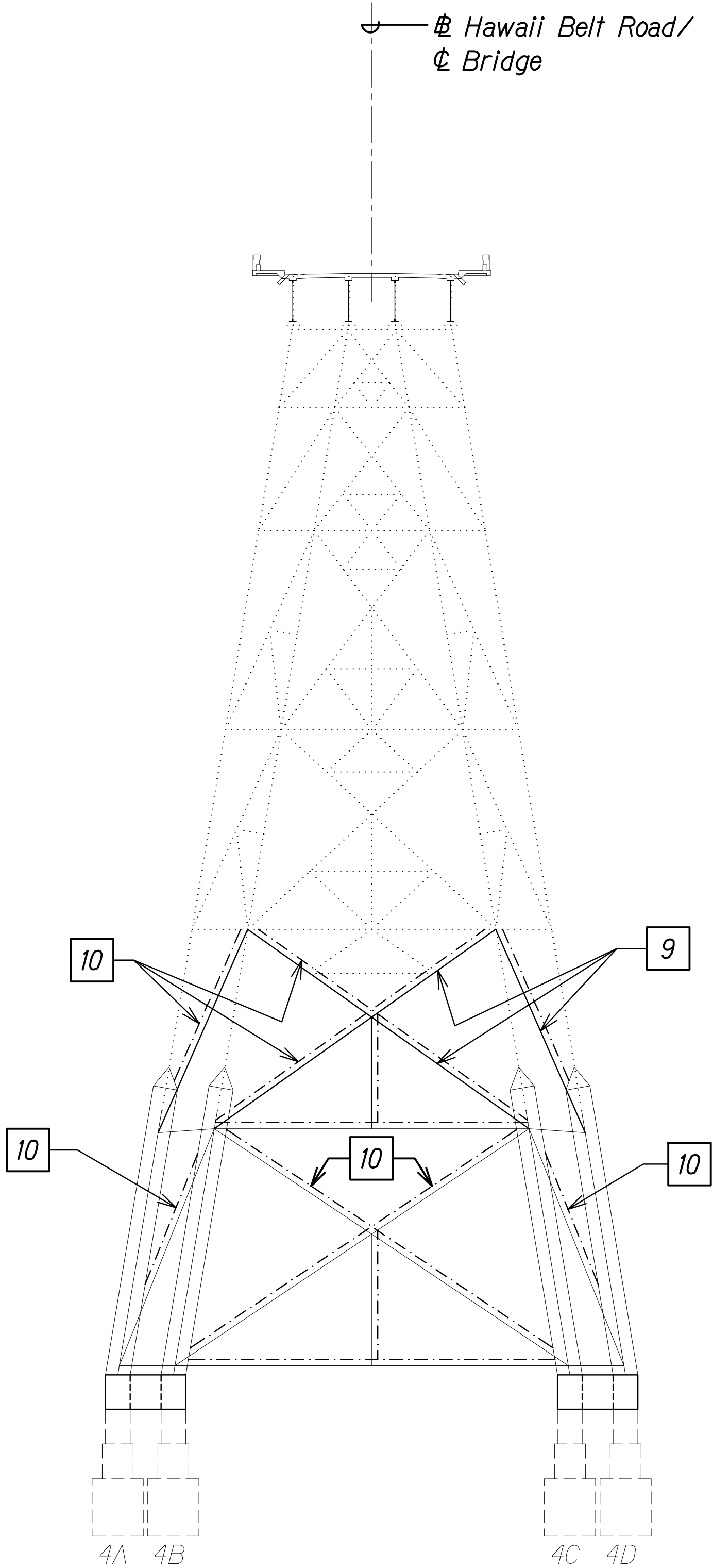
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 238 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 2:

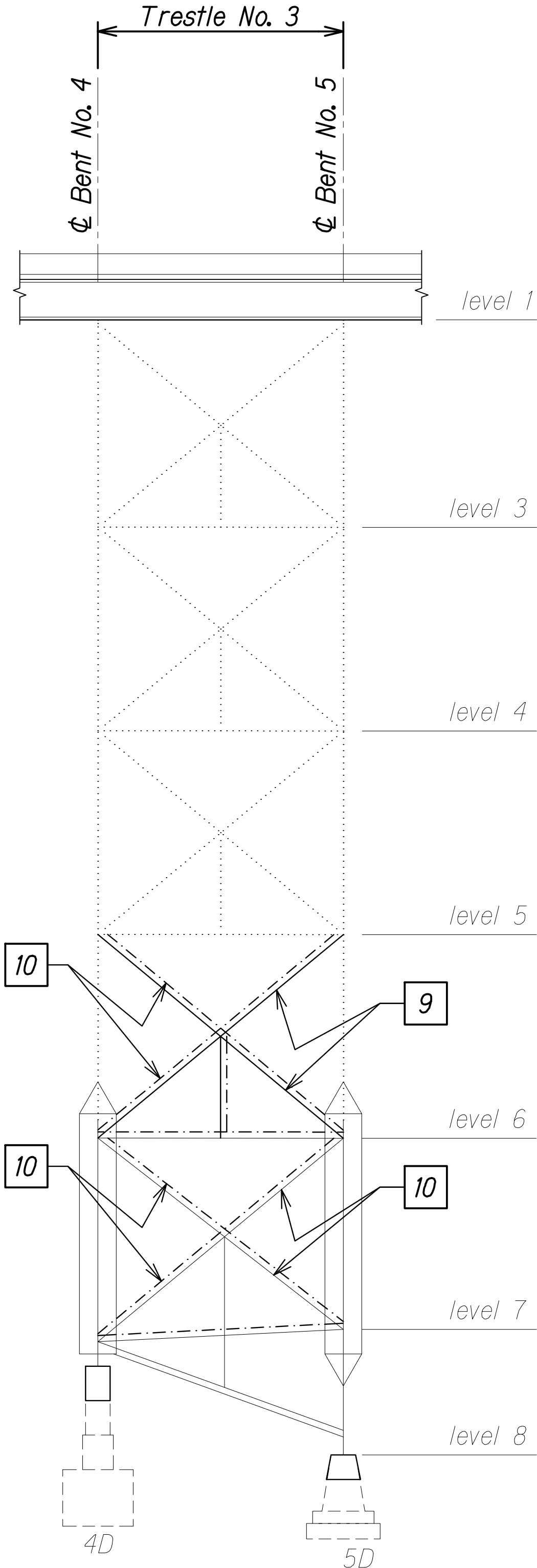
- 9
- Install in-plane temporary cable bracing between new column at column bypass level and existing column gusset plate at level above. See sht. SB2.5.
- 10
- Remove temporary bracing. See sht. SB2.5.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

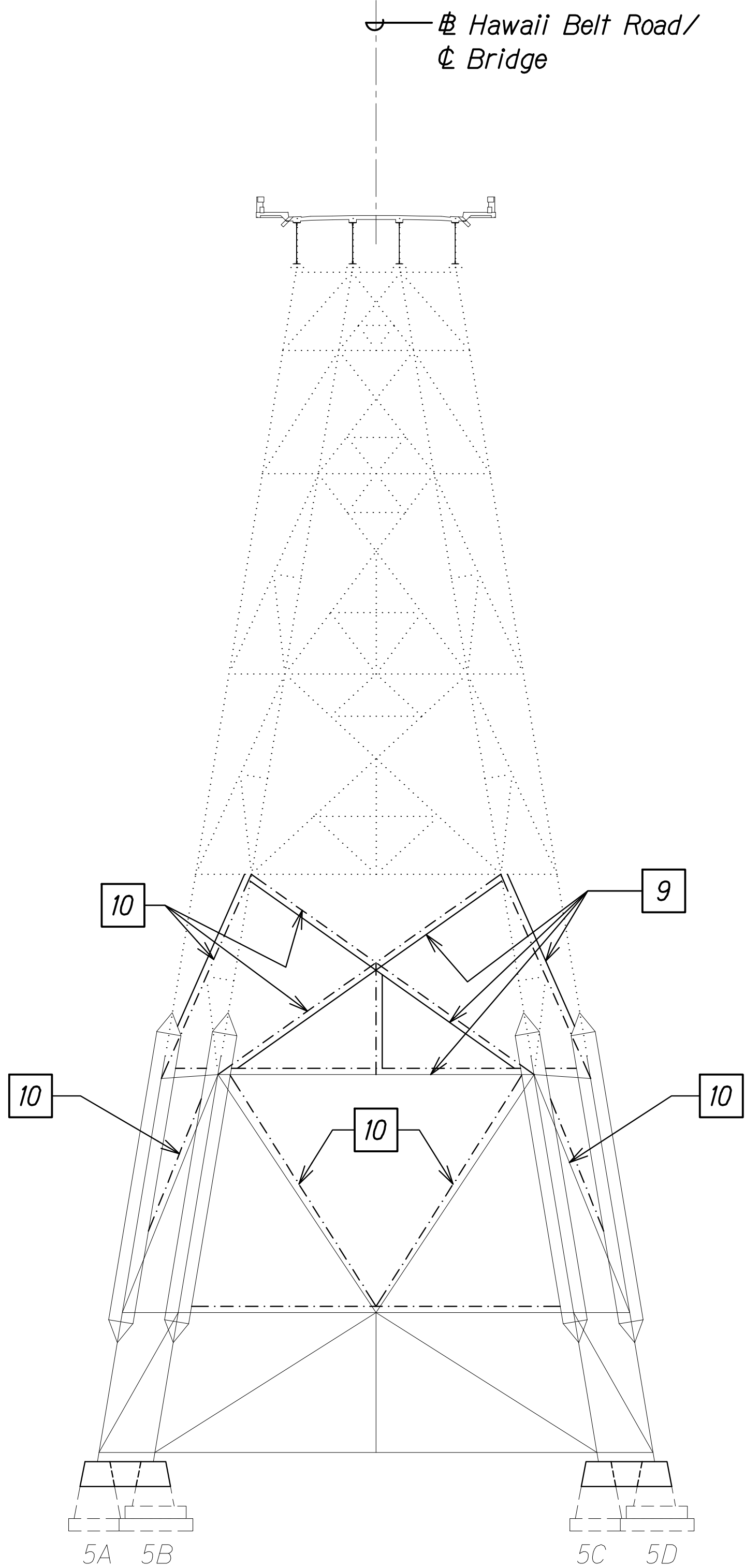
A
SBL9/SBL9



TRESTLE NO. 3 SECTION
CONSTRUCTION SEQUENCE

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

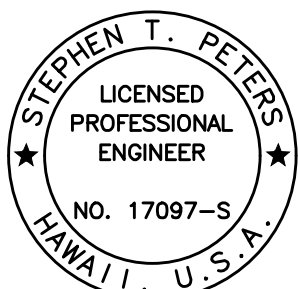
B
SBL9/SBL9



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL9/SBL9



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SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

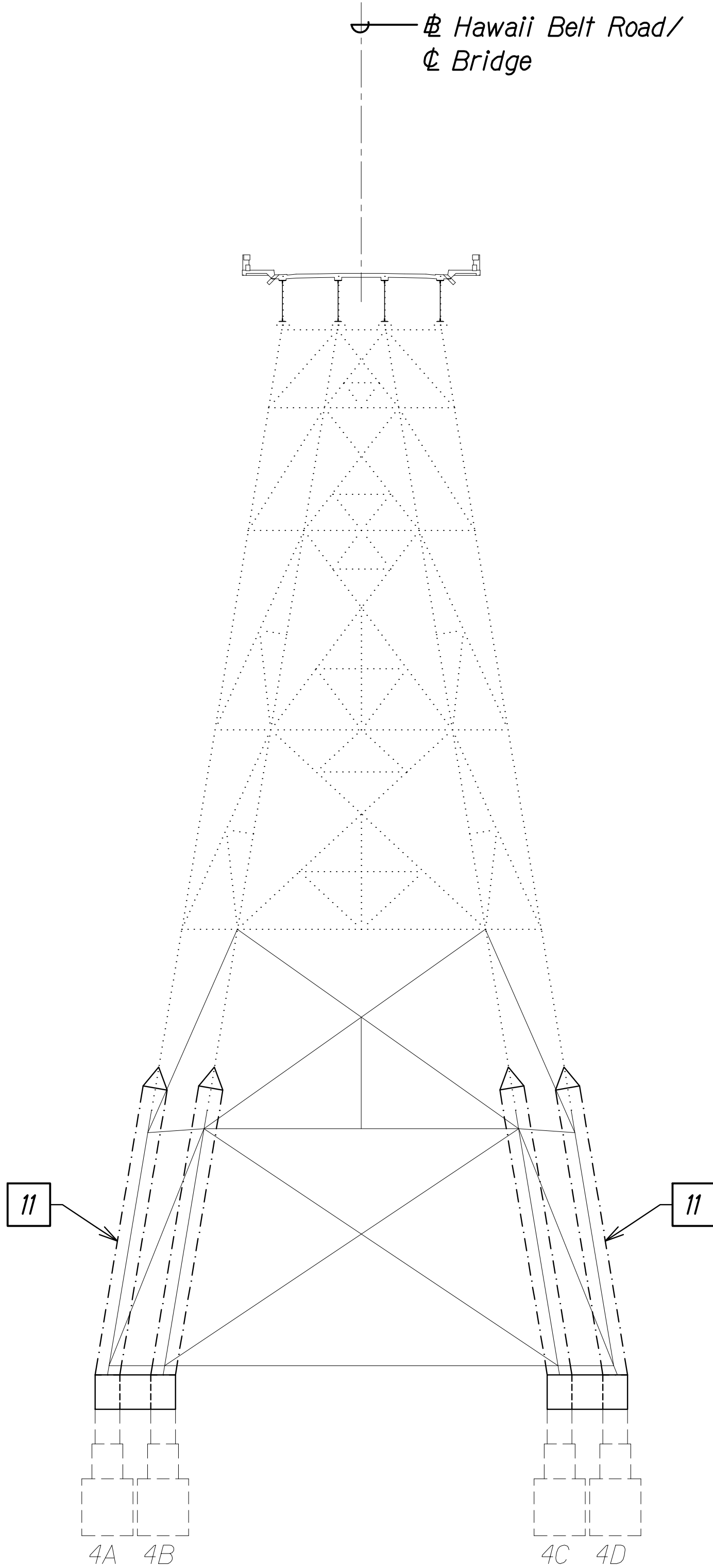
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 239 | 280 |

CONSTRUCTION SEQUENCE:

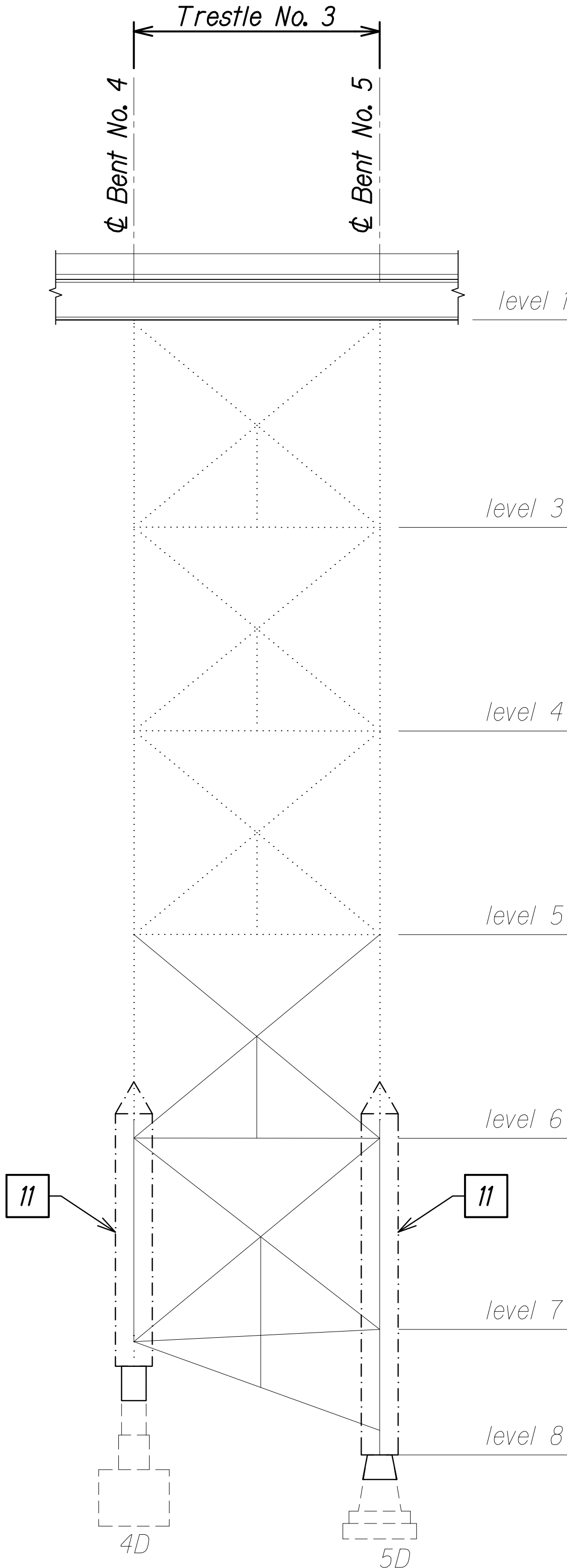
STAGE 2:

- 11
- Remove column bypass.
Proceed to next stage.
See sht. SB2.6
Remove bottom of bent column
bypass assembly.
See sheet SB2.10.



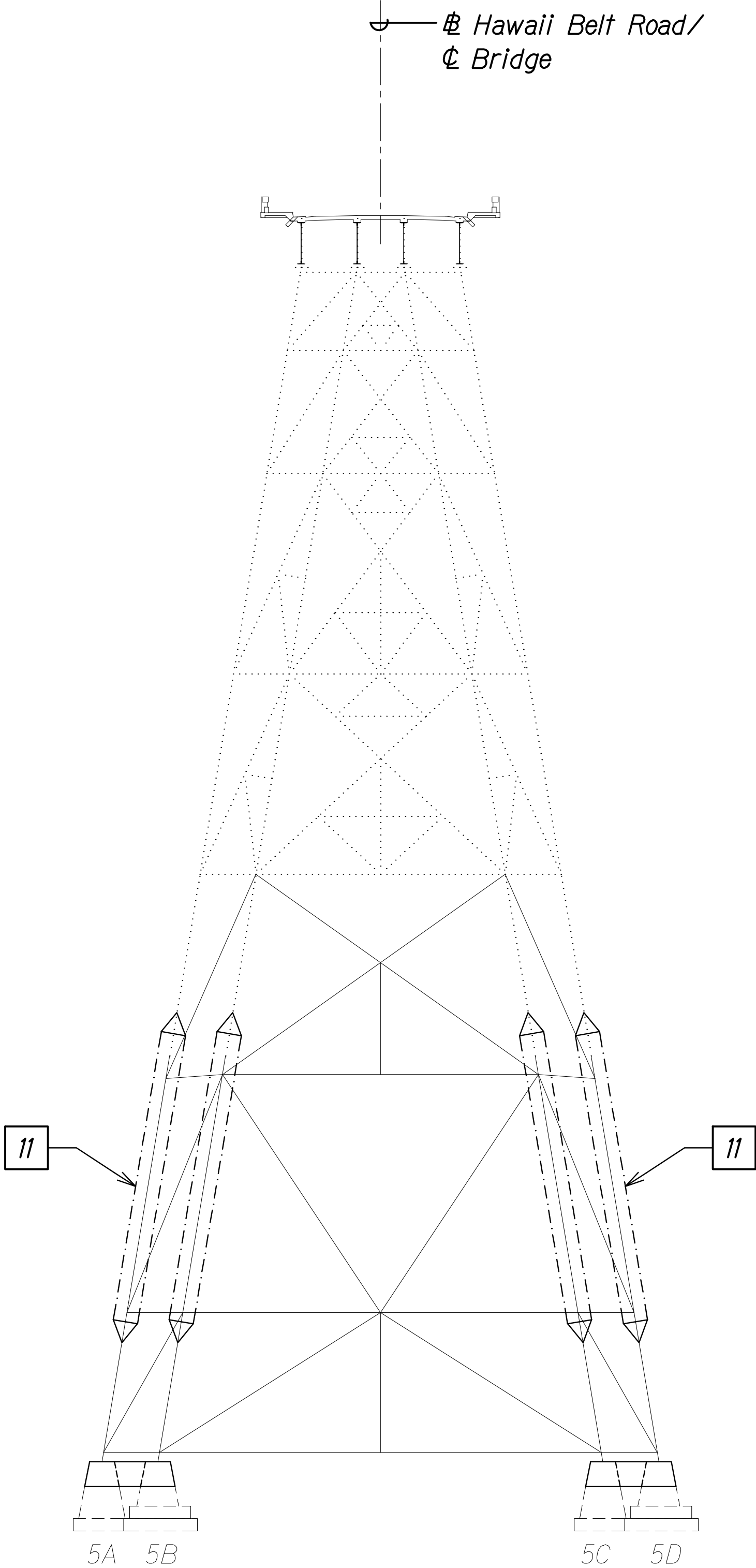
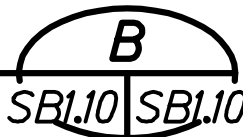
BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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



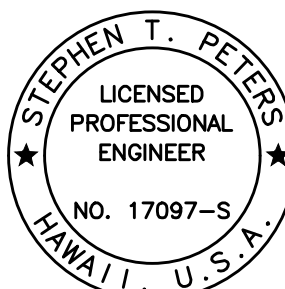
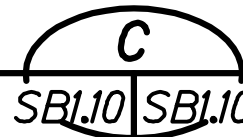
TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 240 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 3:

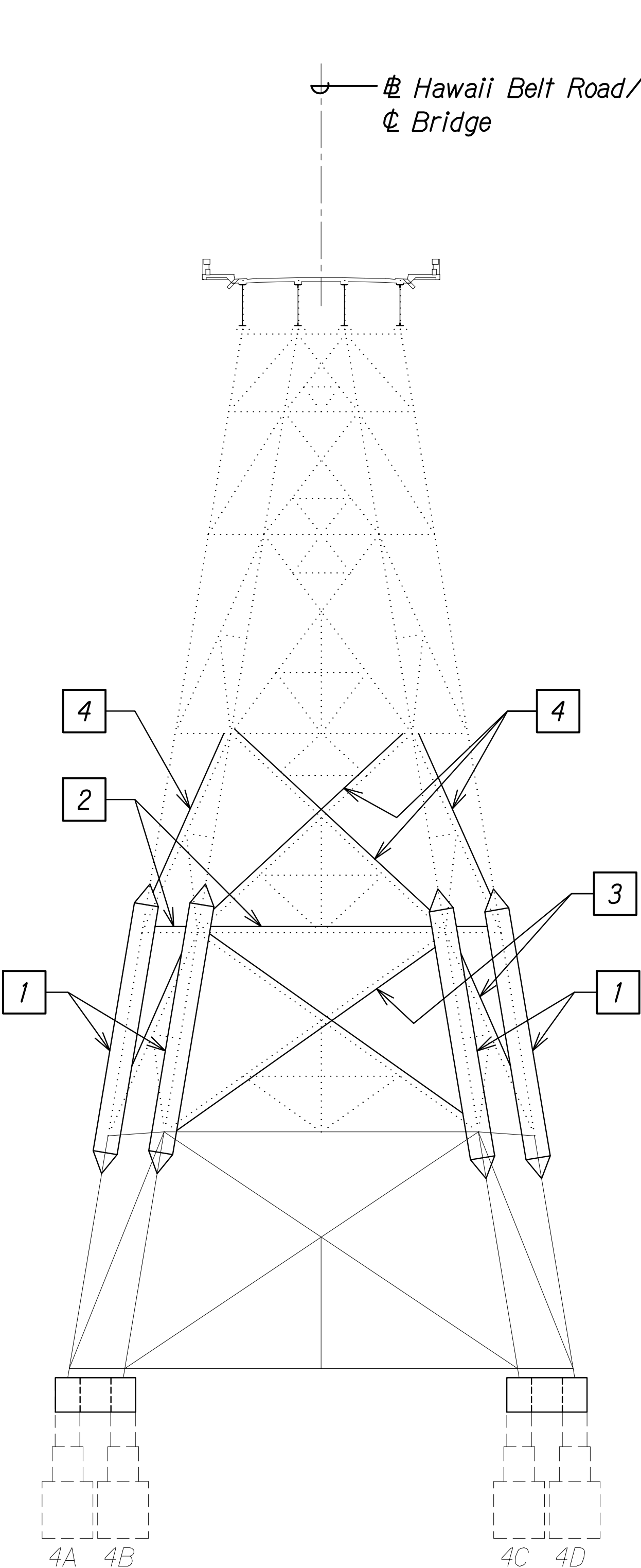
- 1

Install column bypass beyond existing column splice points. See sht. SB2.1.
- 2

Install temporary horizontal compression bracings. See sht. SB2.2
- 3

Install temporary diagonal cable bracing within column bypass level. See sht. SB2.2
- 4

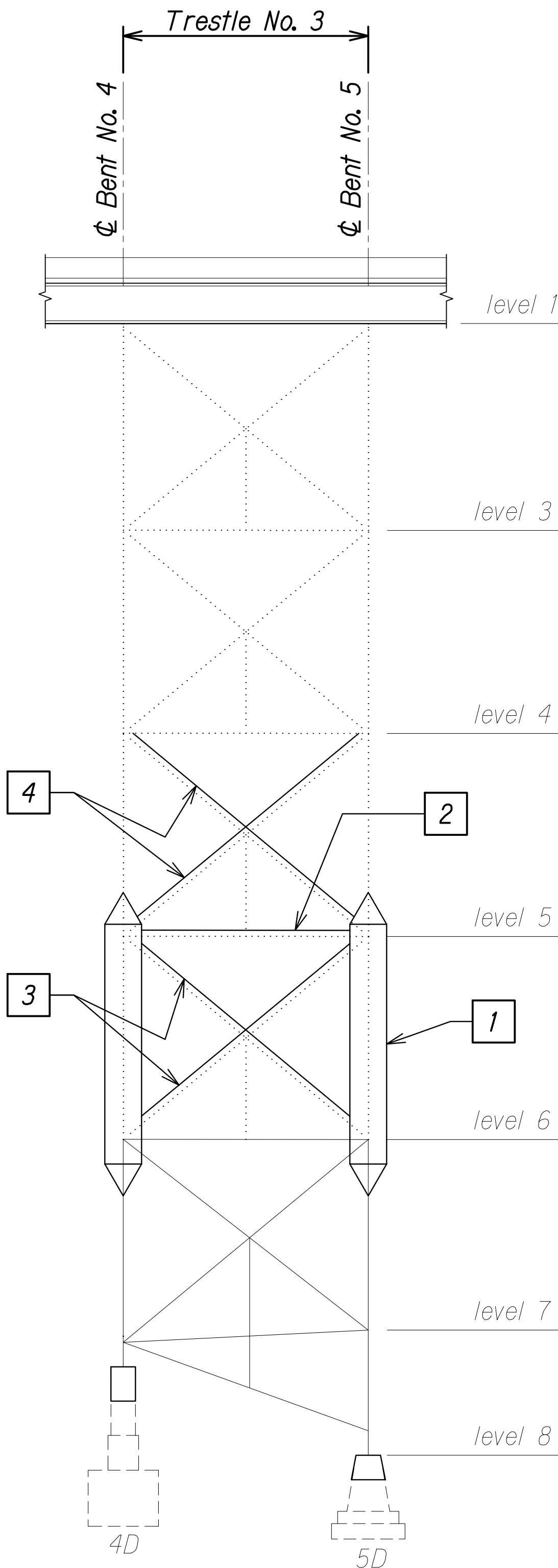
Install temporary diagonal cable bracing to level above. Temporary bracing shall connect to existing column gusset plate of above level. See sht. SB2.2



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

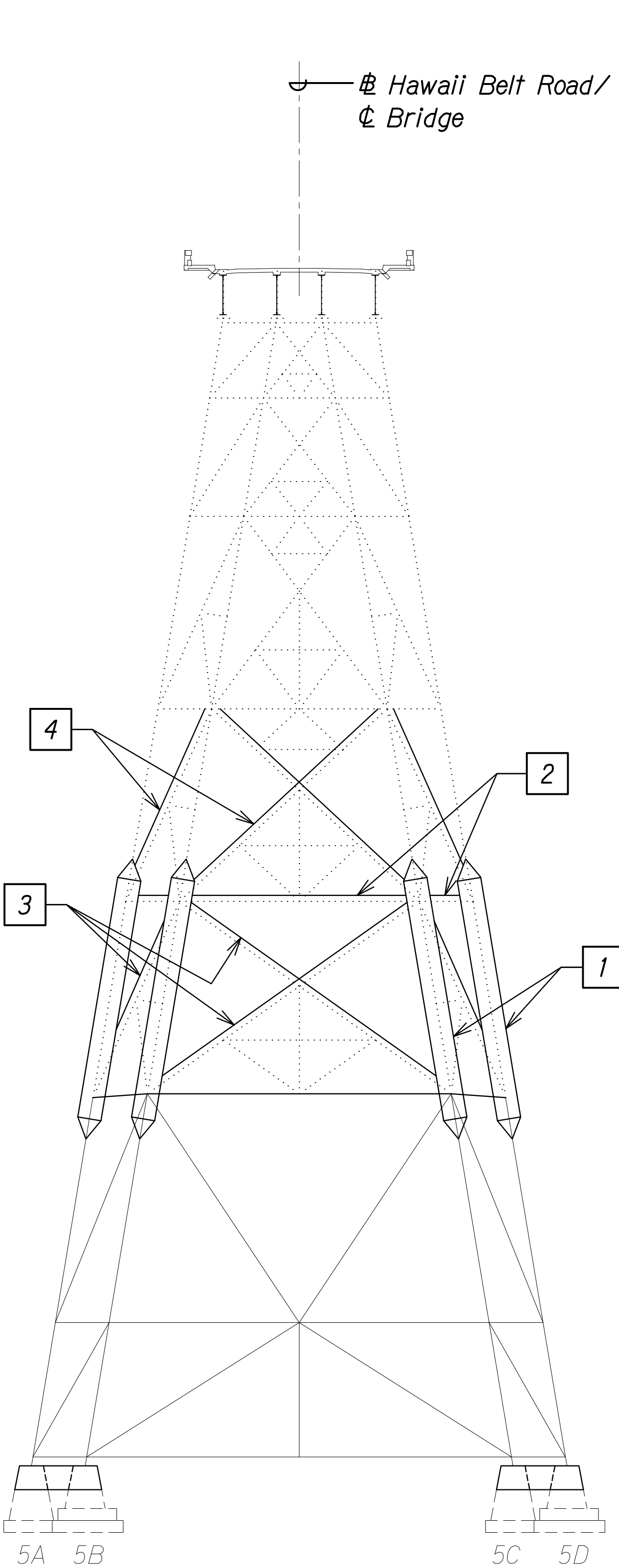
A
SBL11 SBL11



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

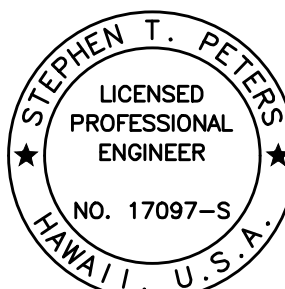
B
SBL11 SBL11



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL11 SBL11



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SBL11 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 241 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 3:

- 5

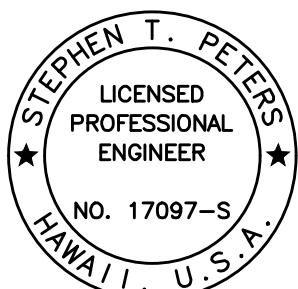
Remove existing bracings along temporary bracings.
See sht. SB2.3
- 6

Remove existing column between existing column splice points.
within column bypass.
See sht. SB2.3

Traffic control plan with Mauka lane closures shall be in effect prior to removal and replacement of columns along Bent lines A and B.

Traffic control plan with Makai lane closures shall be in effect prior to removal and replacement of columns along Bent lines C and D.

See Traffic Control Plans on Sheets T-5 and T-6.



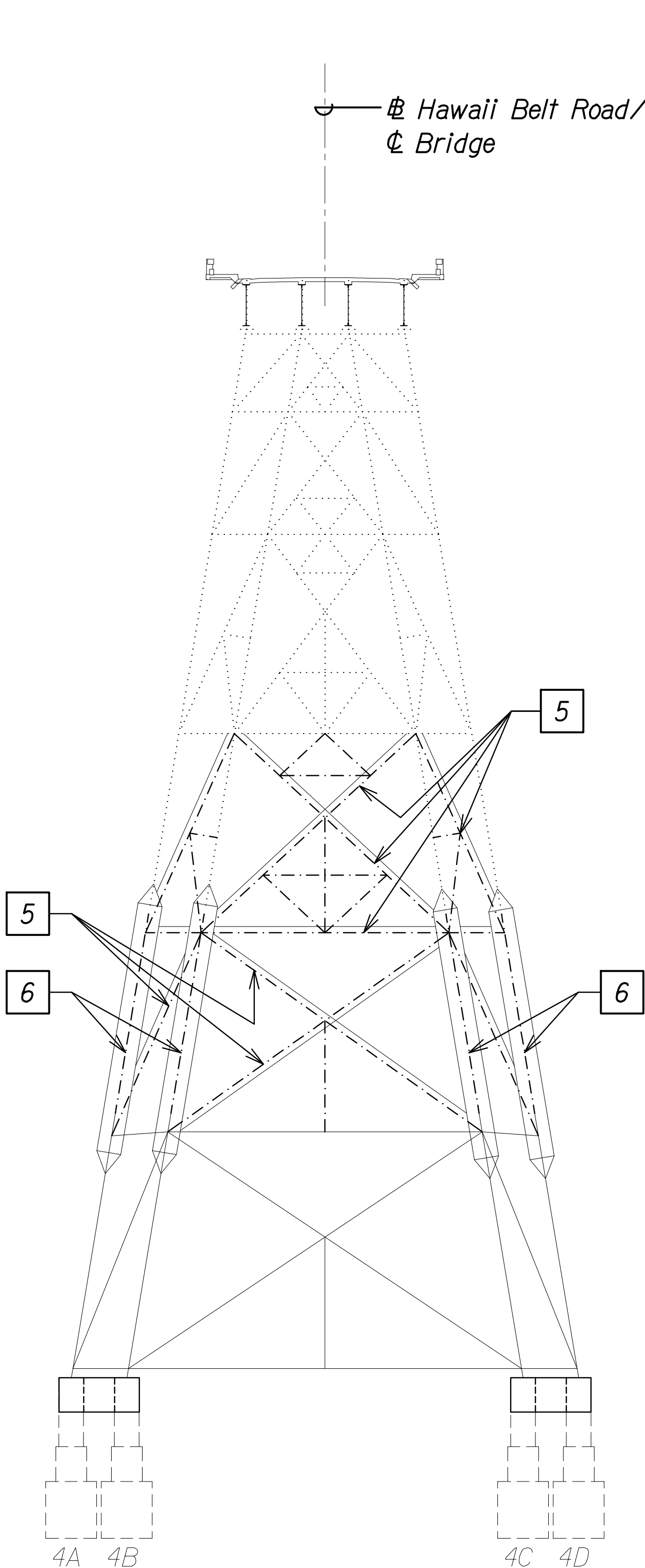
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SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

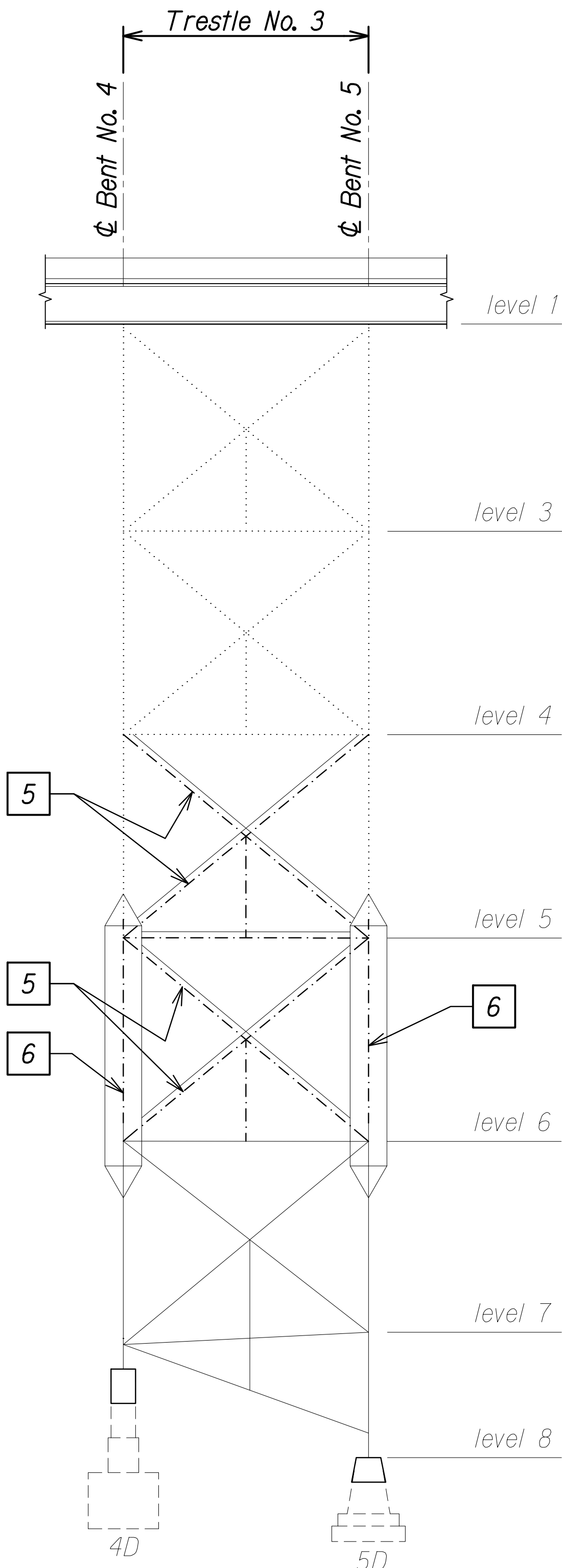
SHEET No SBI.12 OF 29 SHEETS



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

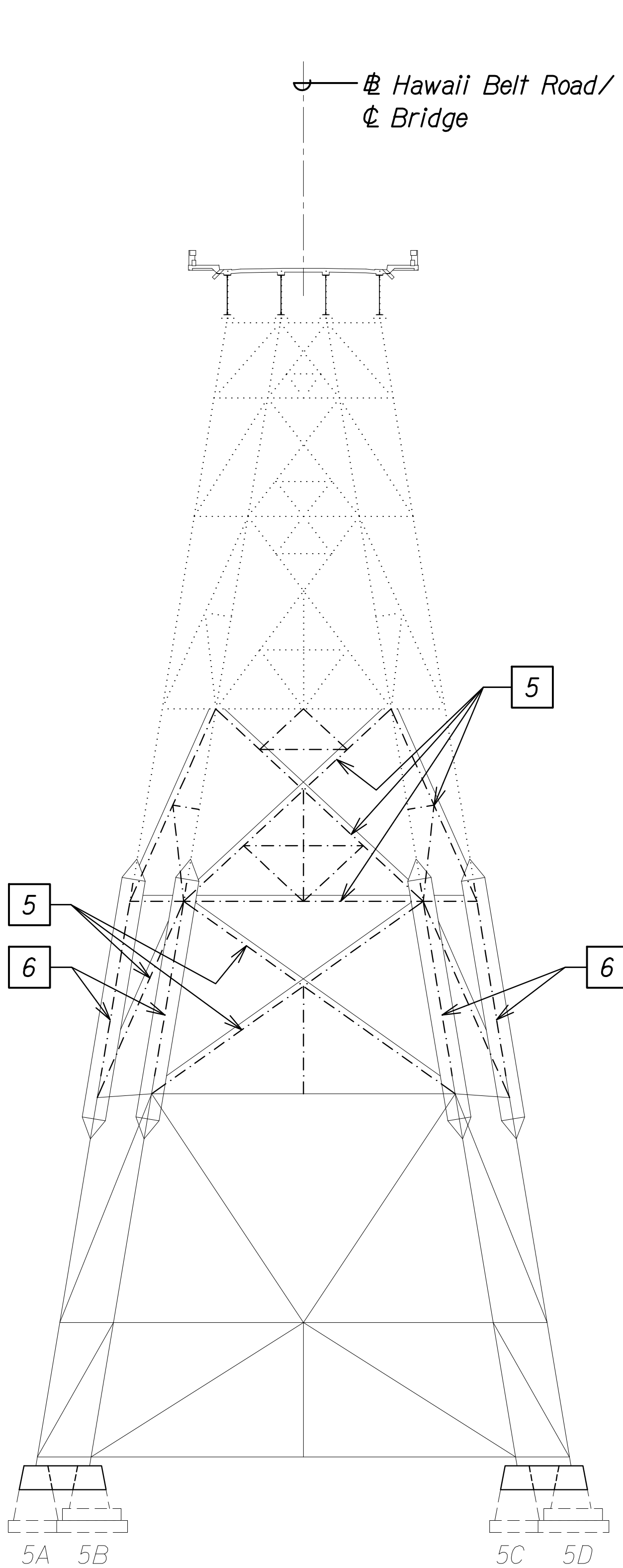
A
SBI.12 | SBI.12



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

B
SBI.12 | SBI.12



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBI.12 | SBI.12

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-28-24 6:47 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 242 | 280 |

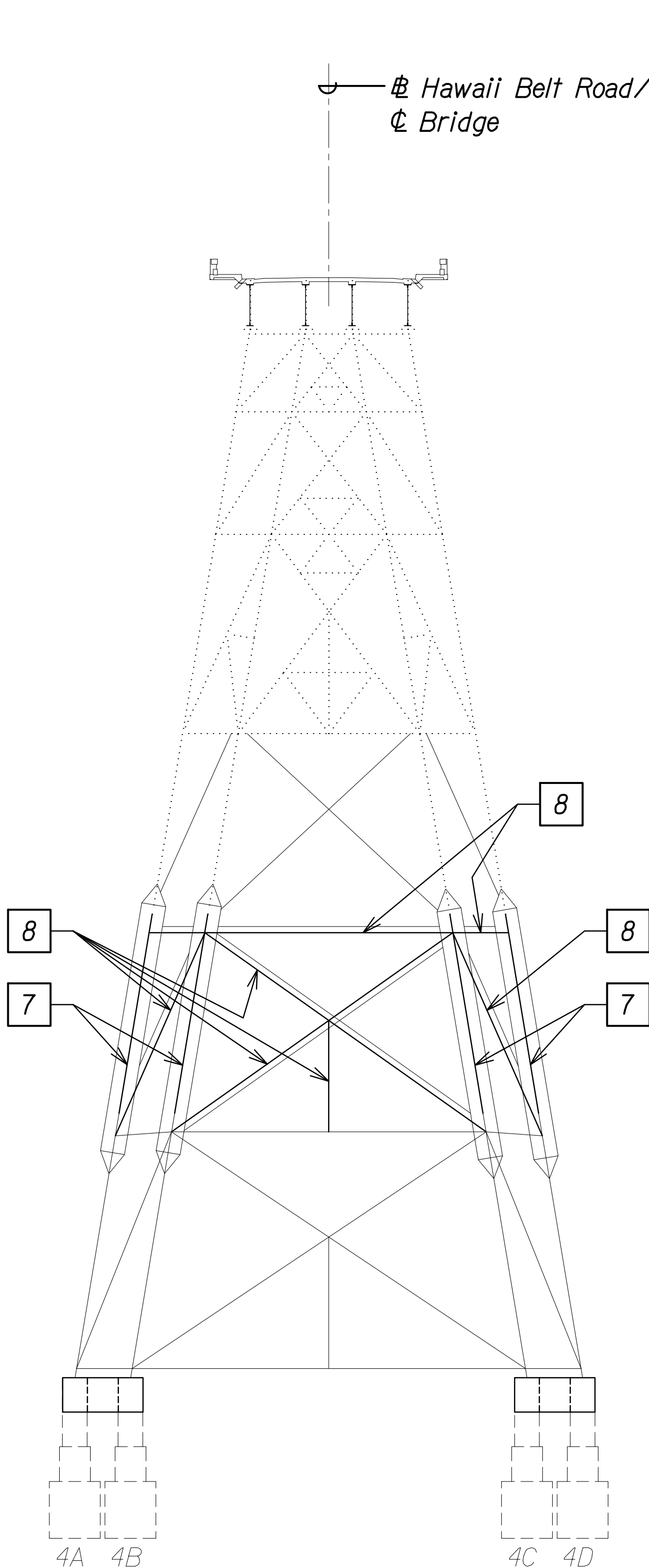
CONSTRUCTION SEQUENCE:

STAGE 3:

- 7

Install new column between column splice locations within column bypass. See sht. SB2.4.
- 8

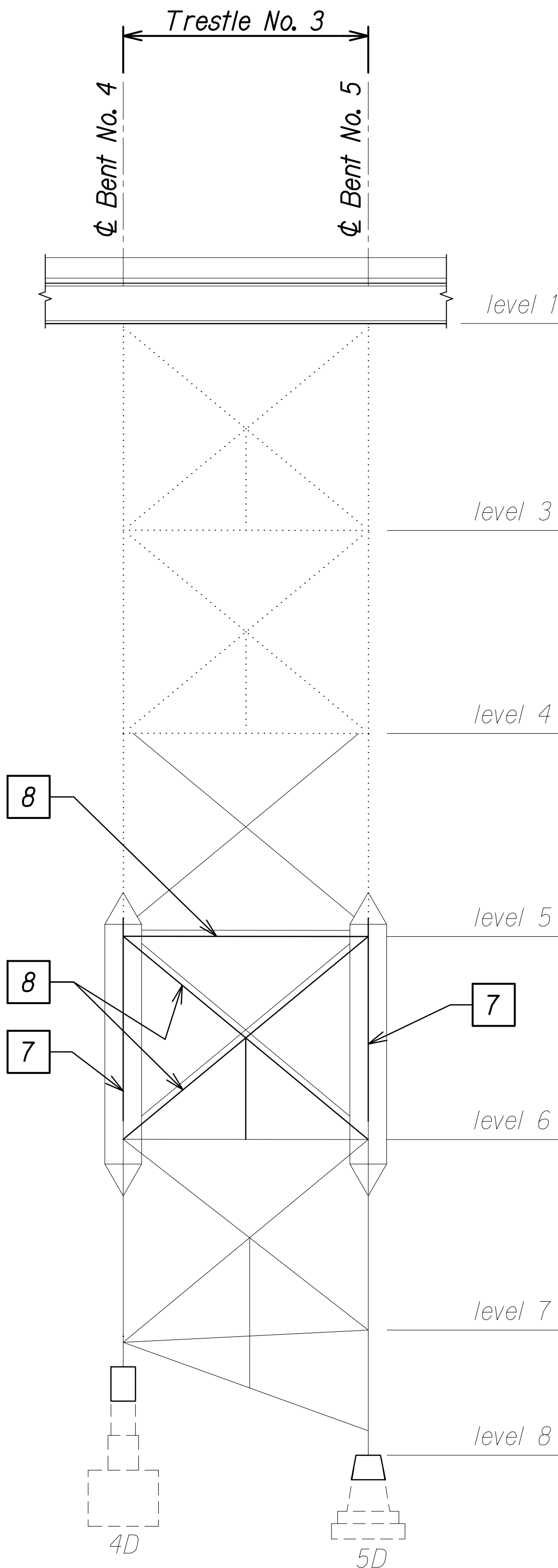
Install new bracing within level of column bypass. See sht. SB2.4.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

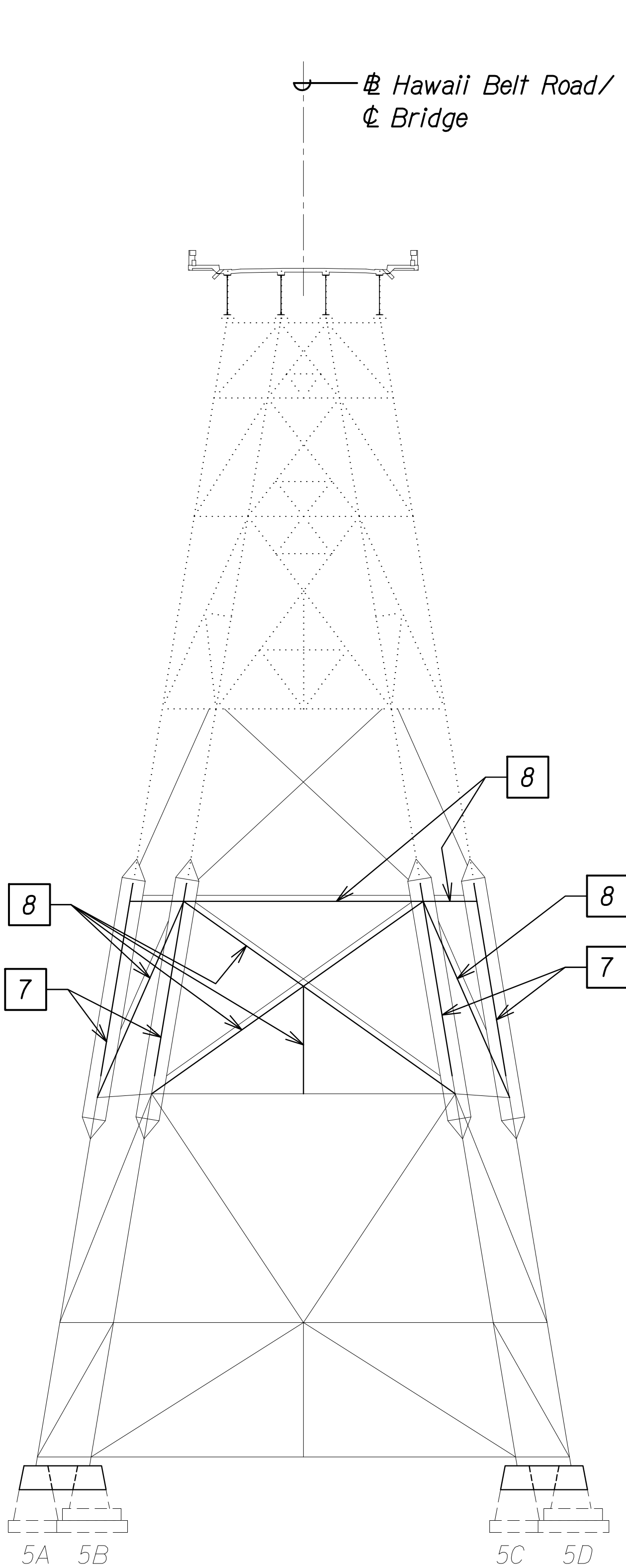
A
SBI.13 | SBI.13



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

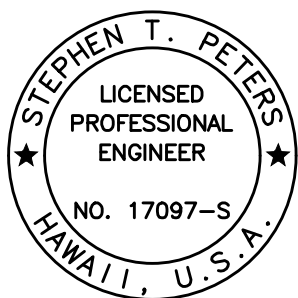
B
SBI.13 | SBI.13



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBI.13 | SBI.13



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EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No SBI.13 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 243 | 280 |

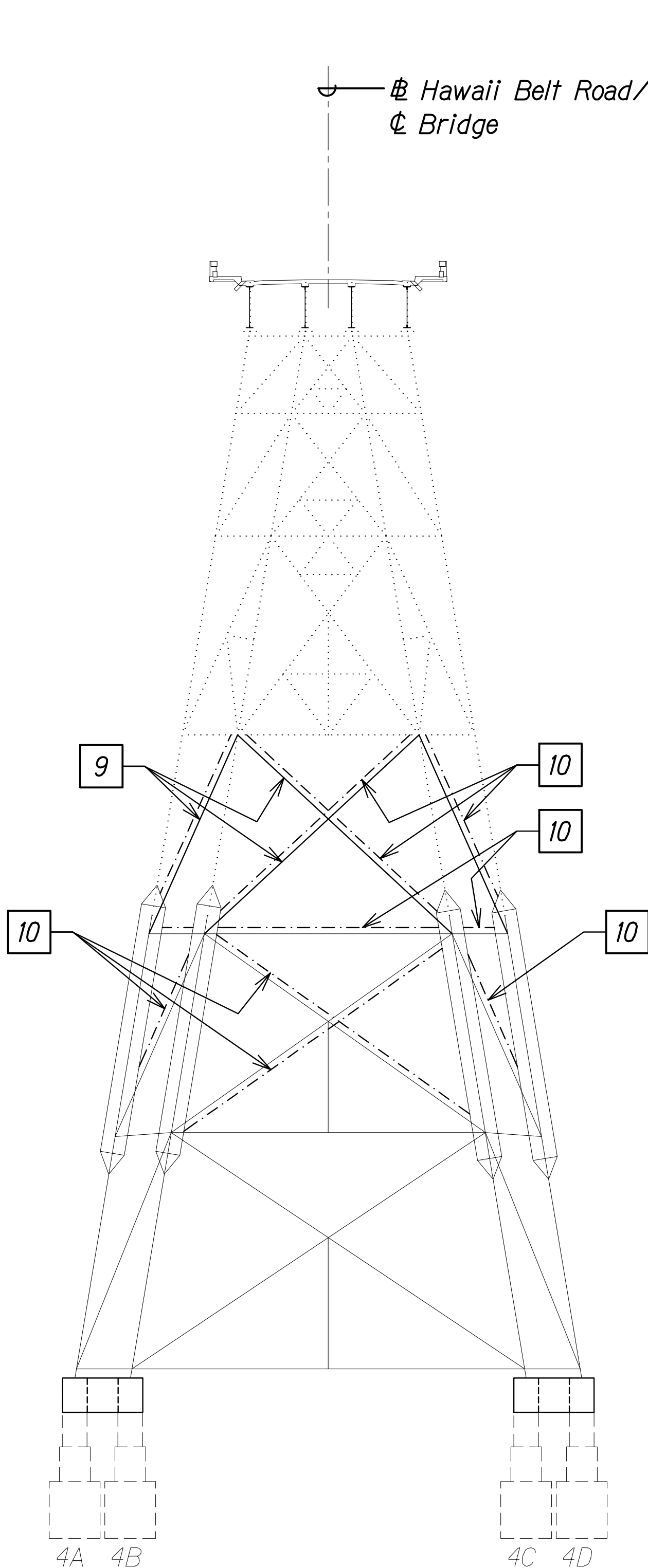
CONSTRUCTION SEQUENCE:

STAGE 3:

- 9

Install in-plane temporary cable bracing between new column at column bypass level and existing column gusset plate at level above. See sht. SB2.5.
- 10

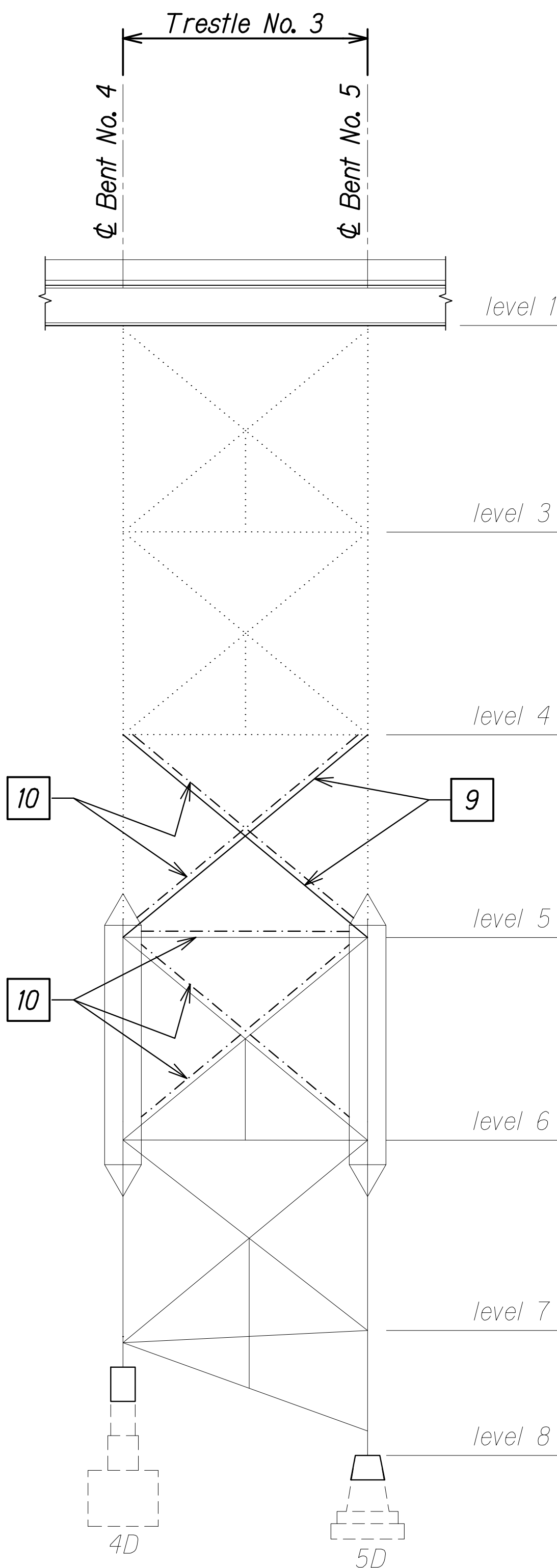
Remove temporary bracing. See sht. SB2.5.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

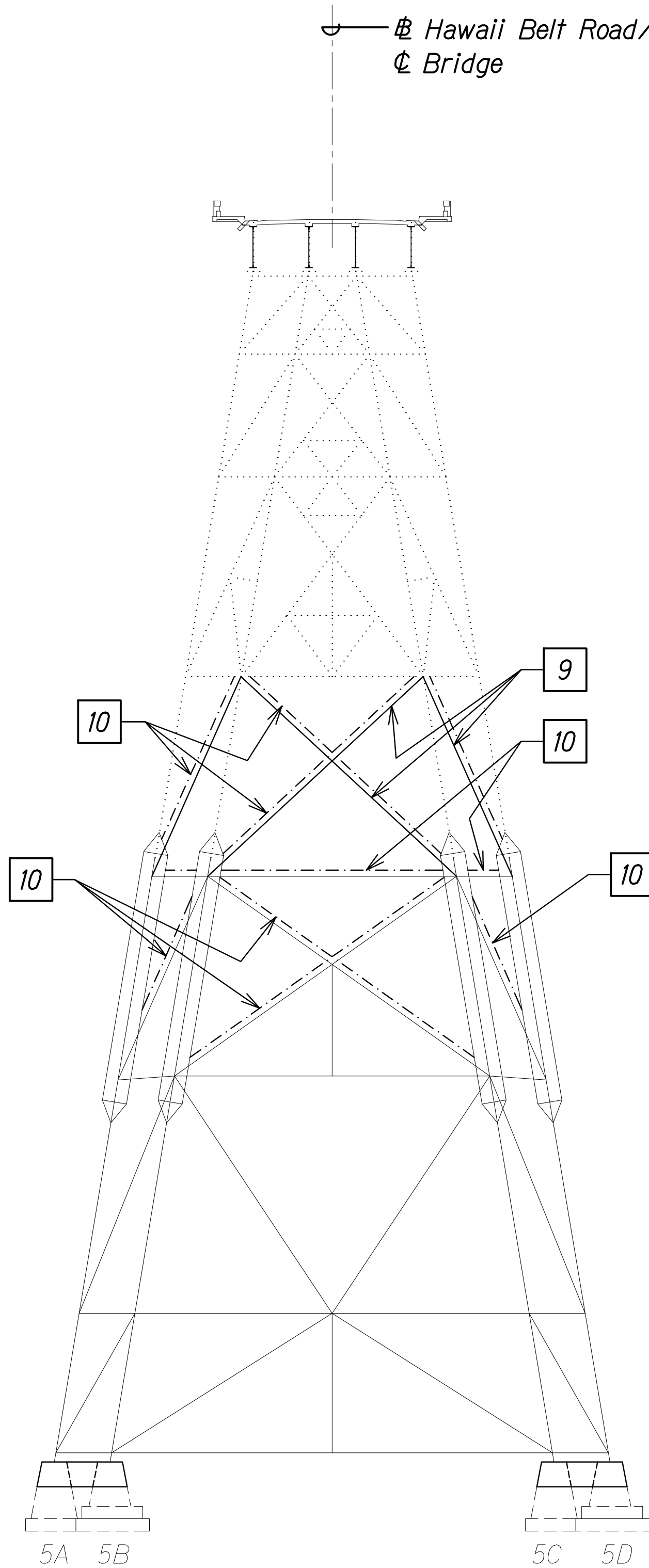
A
SBI.14 | SBI.14



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

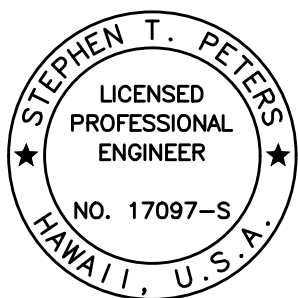
B
SBI.14 | SBI.14



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBI.14 | SBI.14



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STATE OF HAWAII
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HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

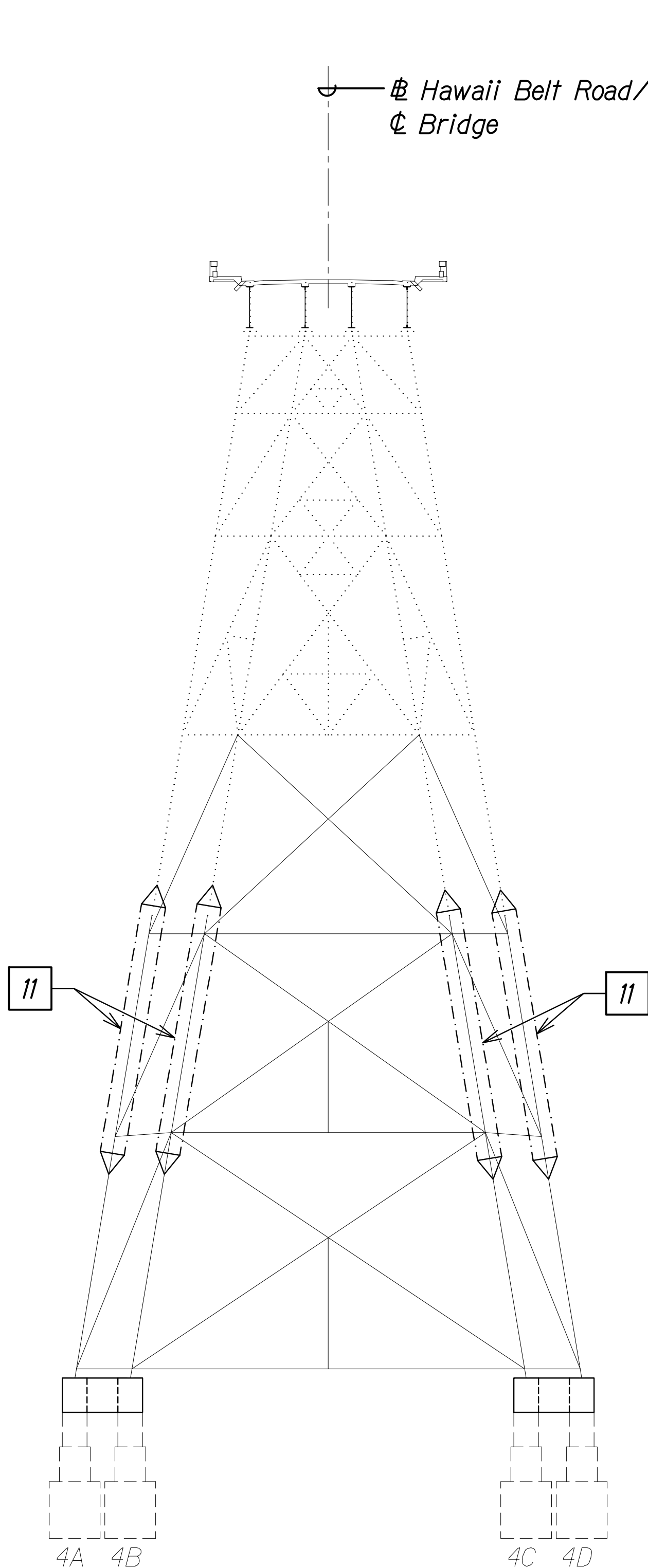
SHEET No SBI.14 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 244 | 280 |

CONSTRUCTION SEQUENCE:

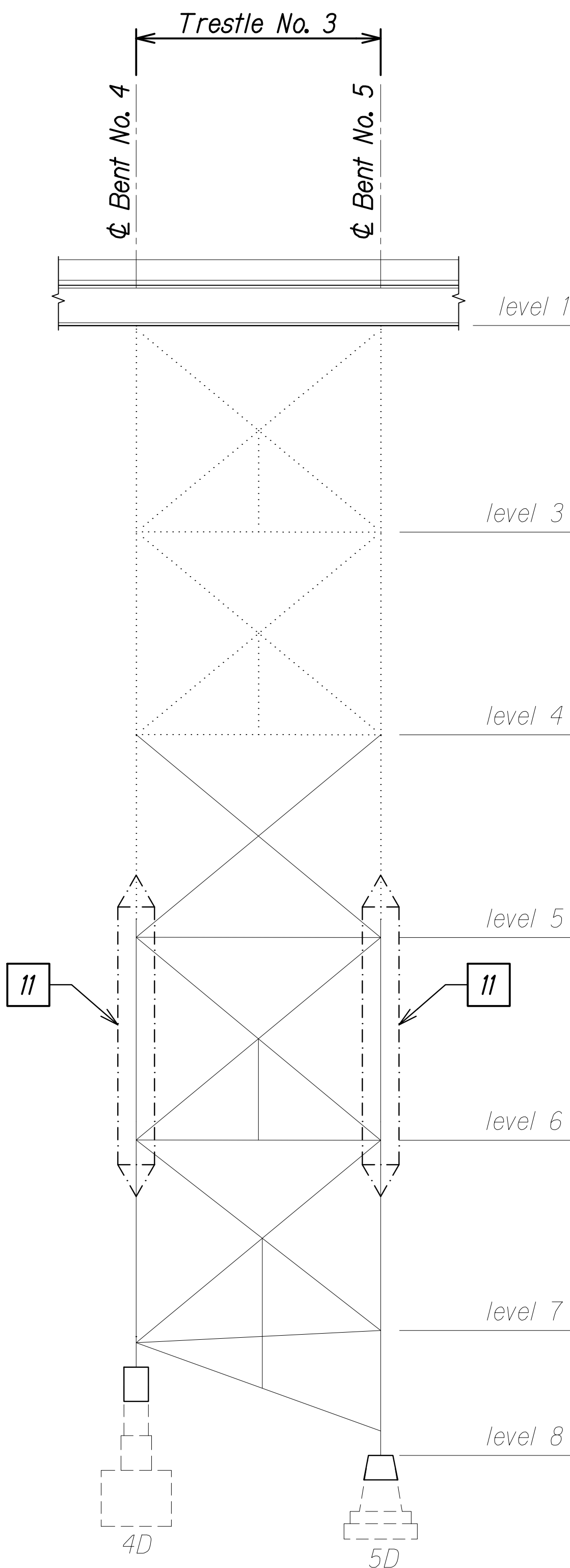
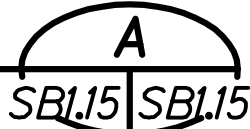
STAGE 3:

- 11
- Remove column bypass.
Proceed to next stage.
See sht. SB2.6



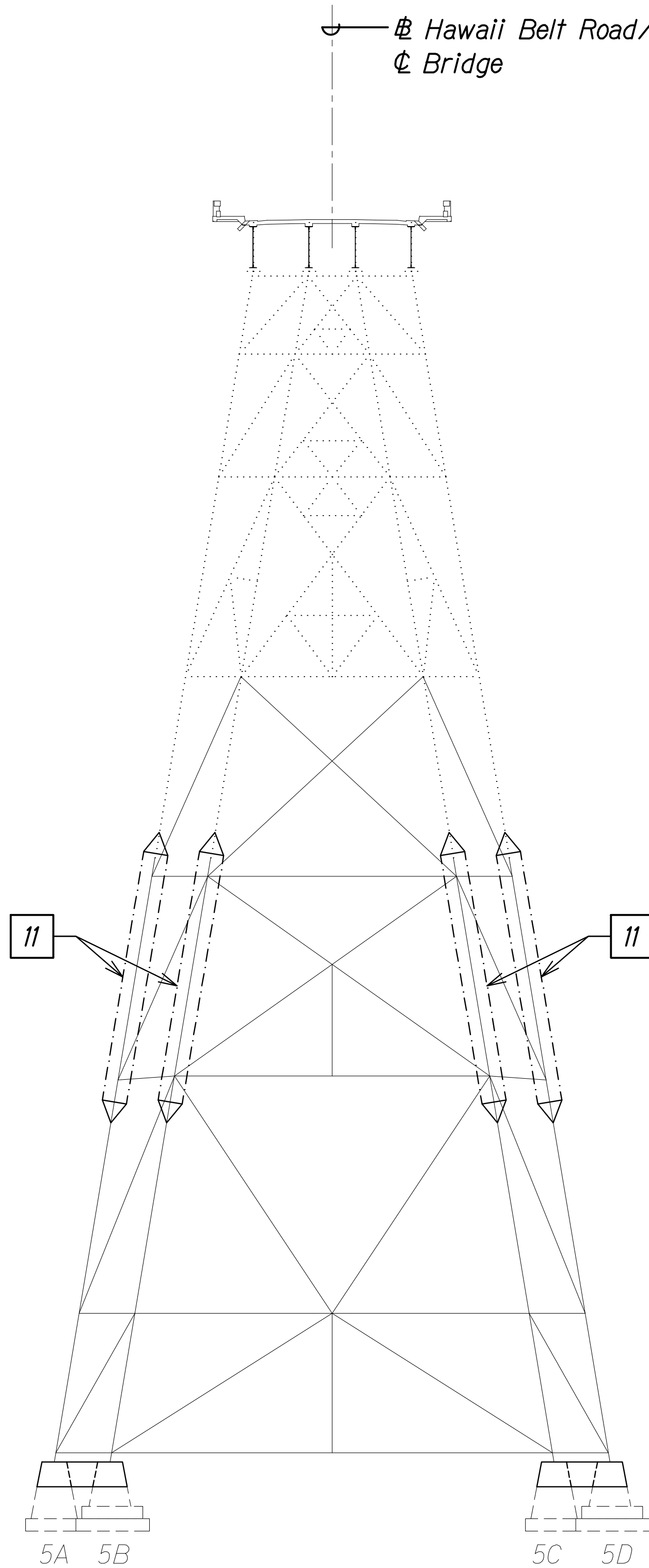
BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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



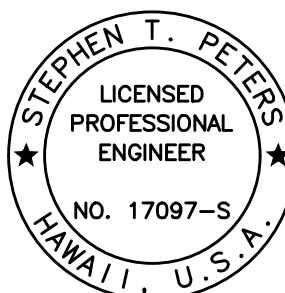
TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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



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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSBI.15 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 245 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 4:

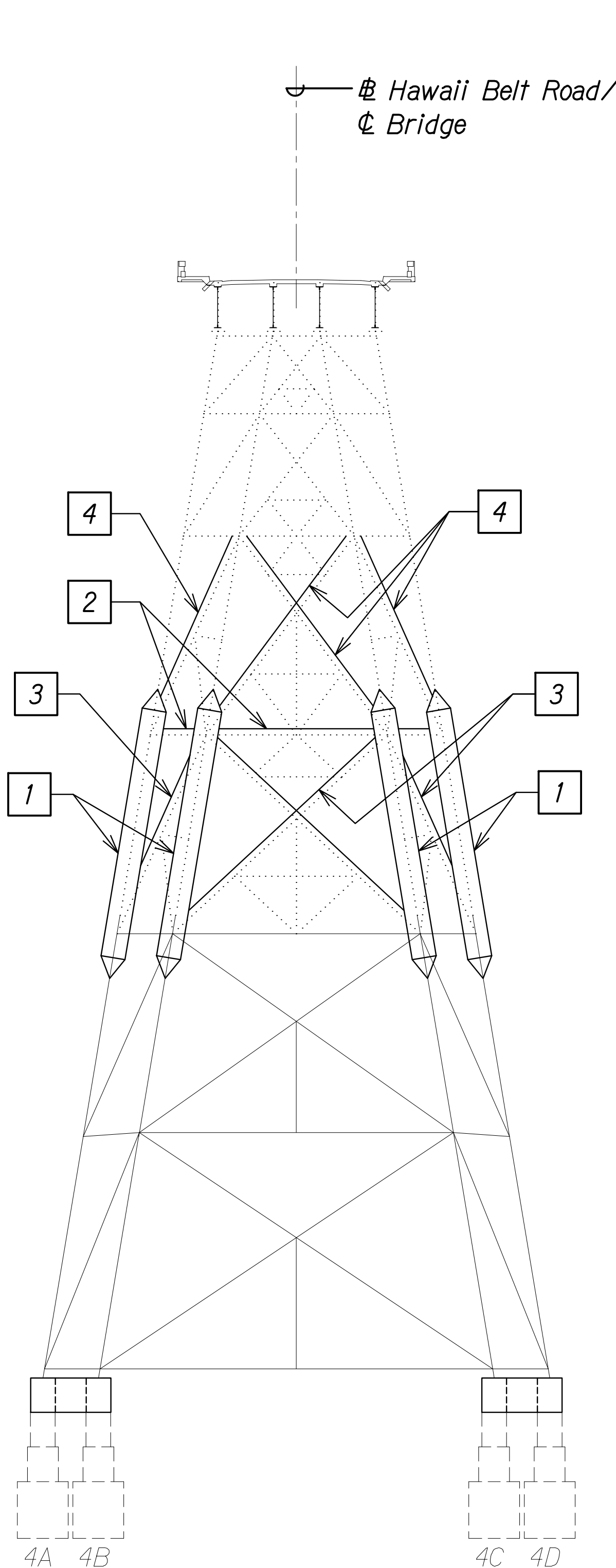
- 1

Install column bypass beyond existing column splice points. See sht. SB2.1.
- 2

Install temporary horizontal compression bracings. See sht. SB2.2
- 3

Install temporary diagonal cable bracing within column bypass level. See sht. SB2.2
- 4

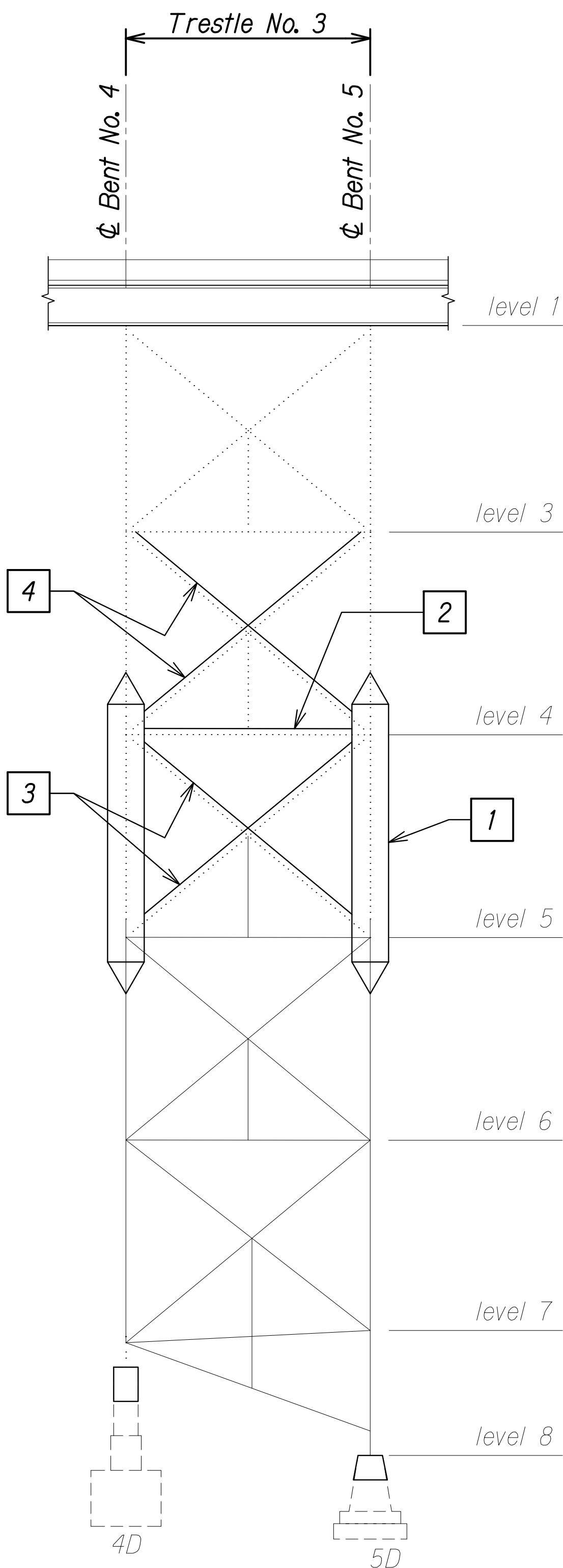
Install temporary diagonal cable bracing to level above. Temporary bracing shall connect to existing column gusset plate of above level. See sht. SB2.2



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

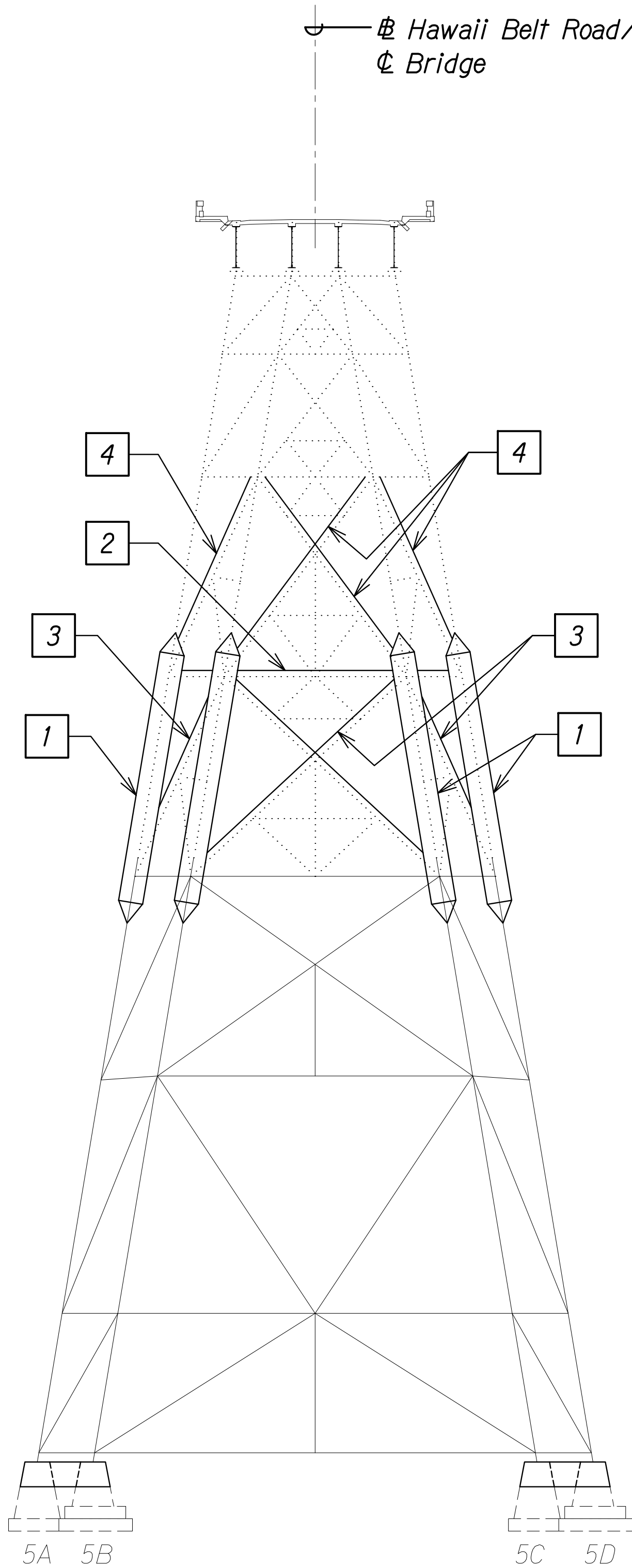
A
SBL16 SBL16



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

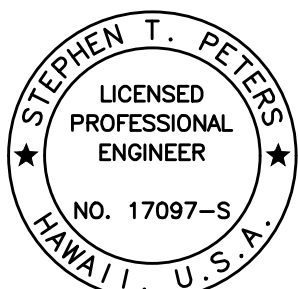
B
SBL16 SBL16



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL16 SBL16



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HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 246 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 4:

- 5

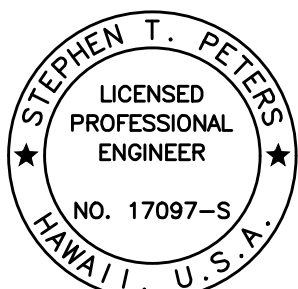
Remove existing bracings along temporary bracings.
See sht. SB2.3
- 6

Remove existing column between existing column splice points.
within column bypass.
See sht. SB2.3

Traffic control plan with Mauka lane closures shall be in effect prior to removal and replacement of columns along Bent lines A and B.

Traffic control plan with Makai lane closures shall be in effect prior to removal and replacement of columns along Bent lines C and D.

See Traffic Control Plans on Sheets T-5 and T-6.



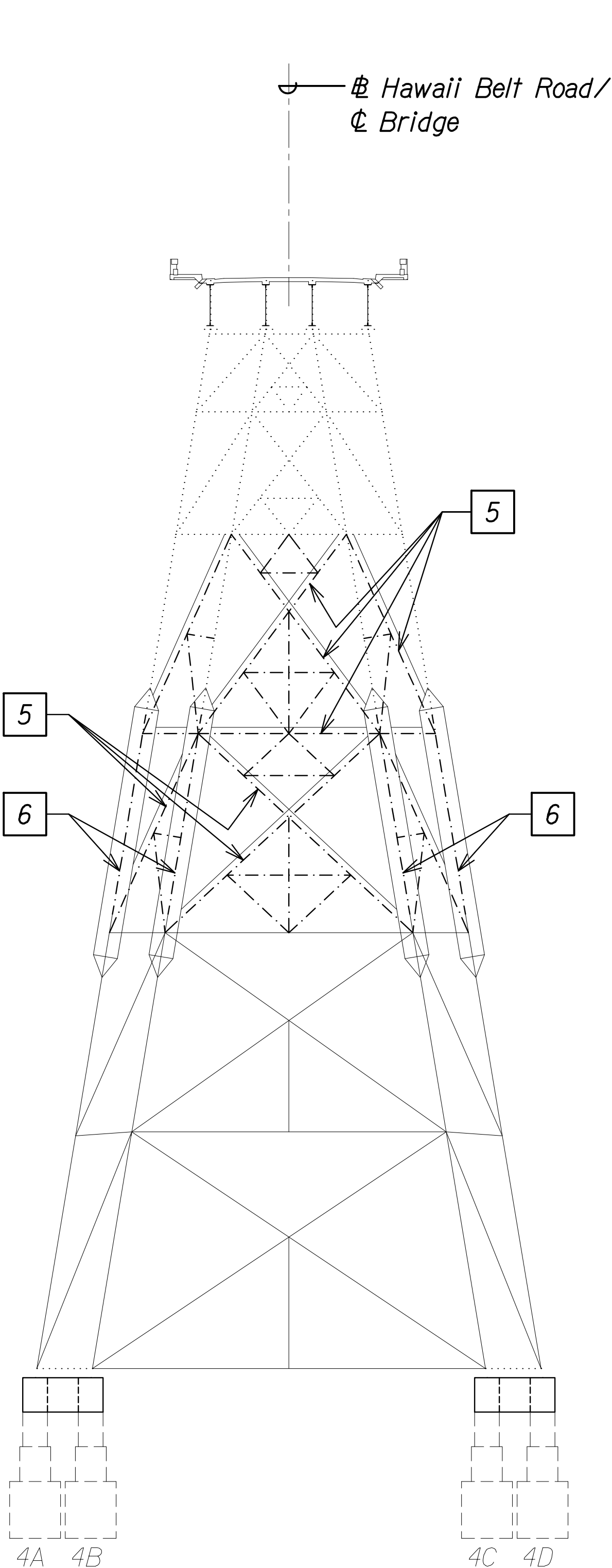
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

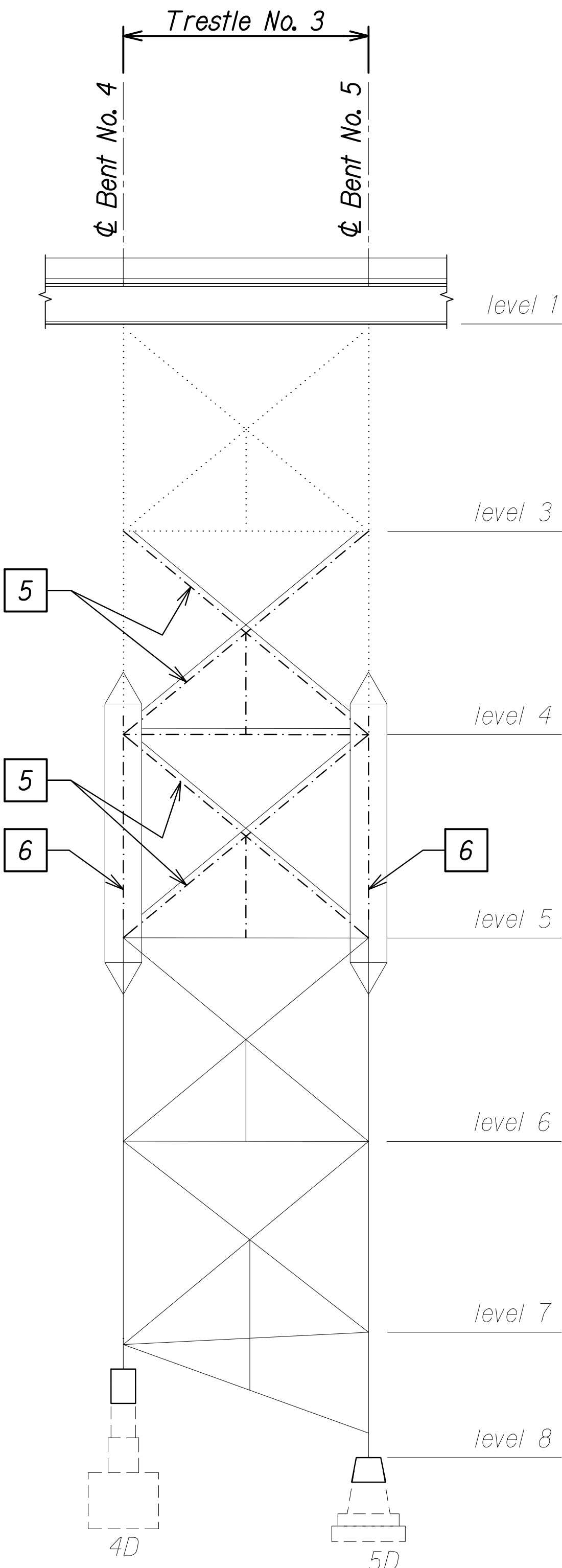
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSBI.17 OF 29 SHEETS



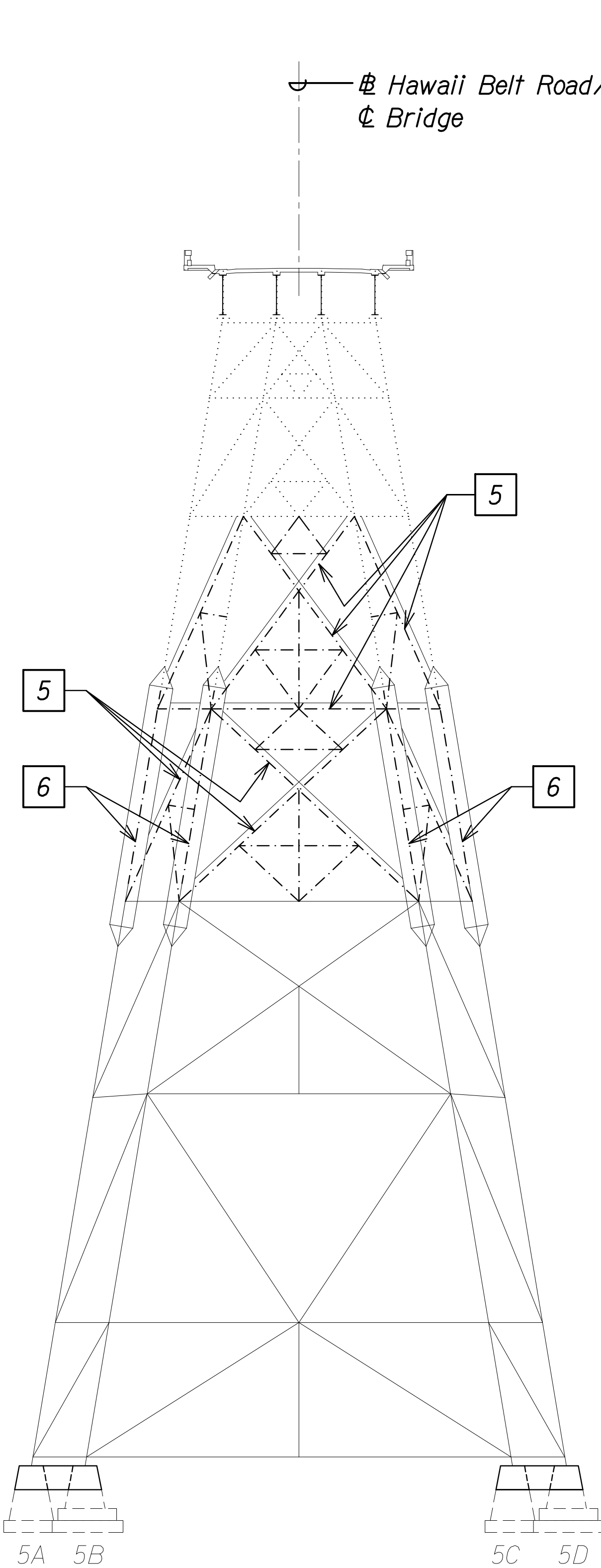
BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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



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

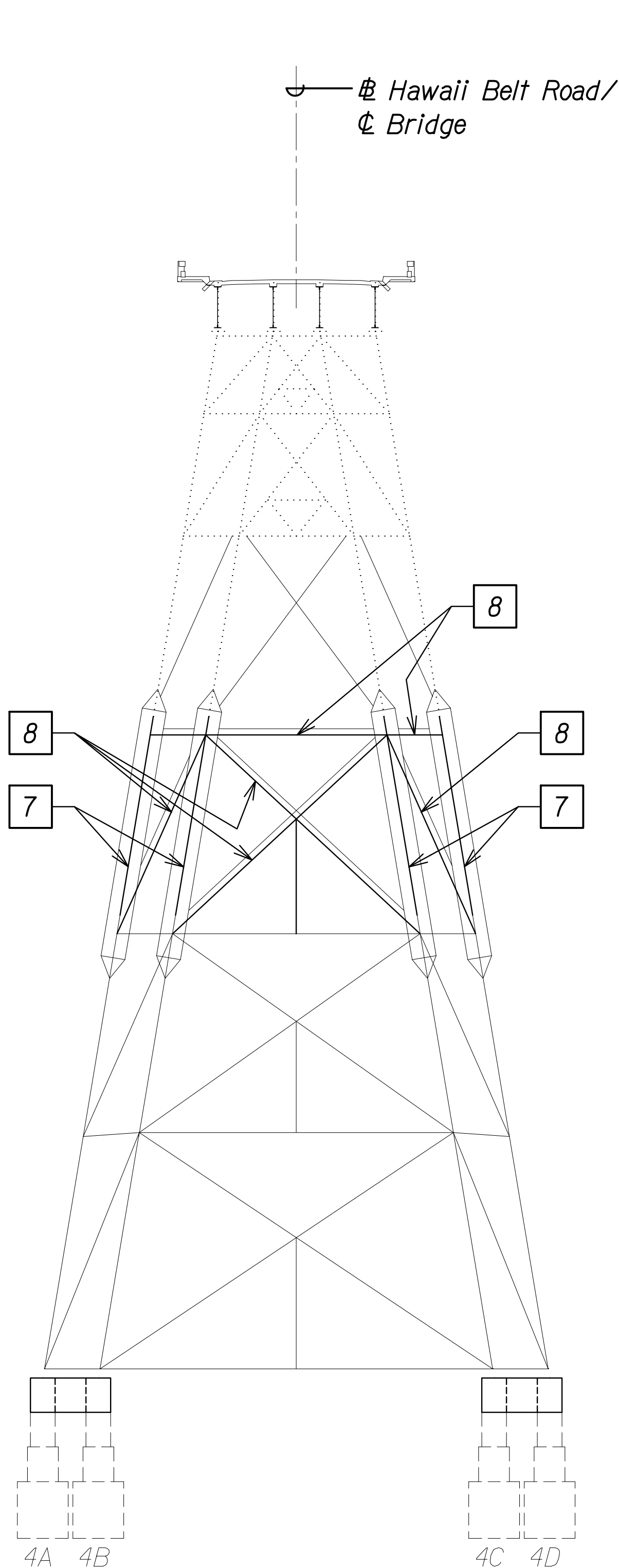
DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-28-24 6:49 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 247 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 4:

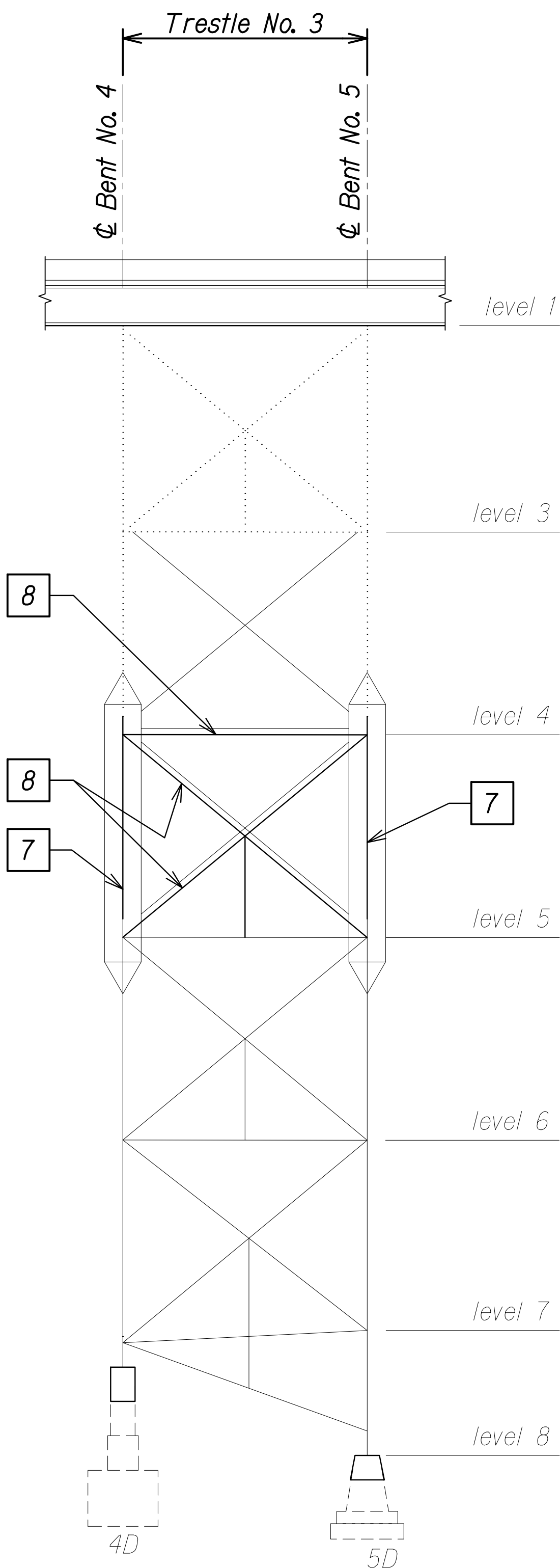
- 7 Install new column between column splice locations within column bypass. See sht. SB2.4.
- 8 Install new bracing within level of column bypass. See sht. SB2.4.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

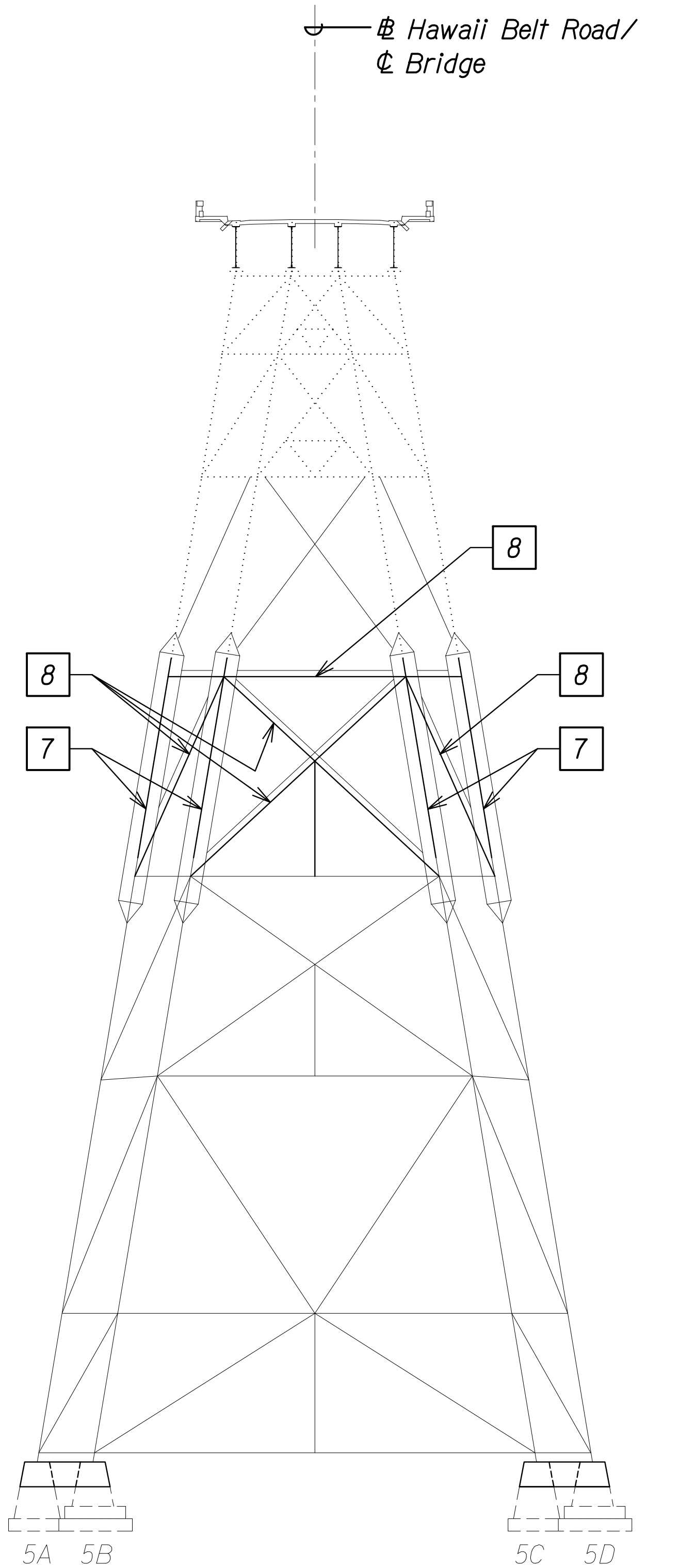
A
SBI.18 | SBI.18



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

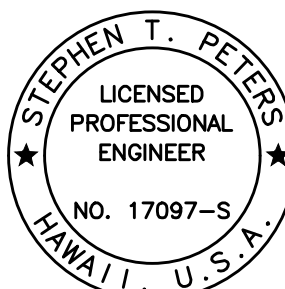
B
SBI.18 | SBI.18



CONSTRUCTION SEQUENCE
LOOKING TOWARD HONOKA'A

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

C
SBI.18 | SBI.18



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No SBI.18 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 248 | 280 |

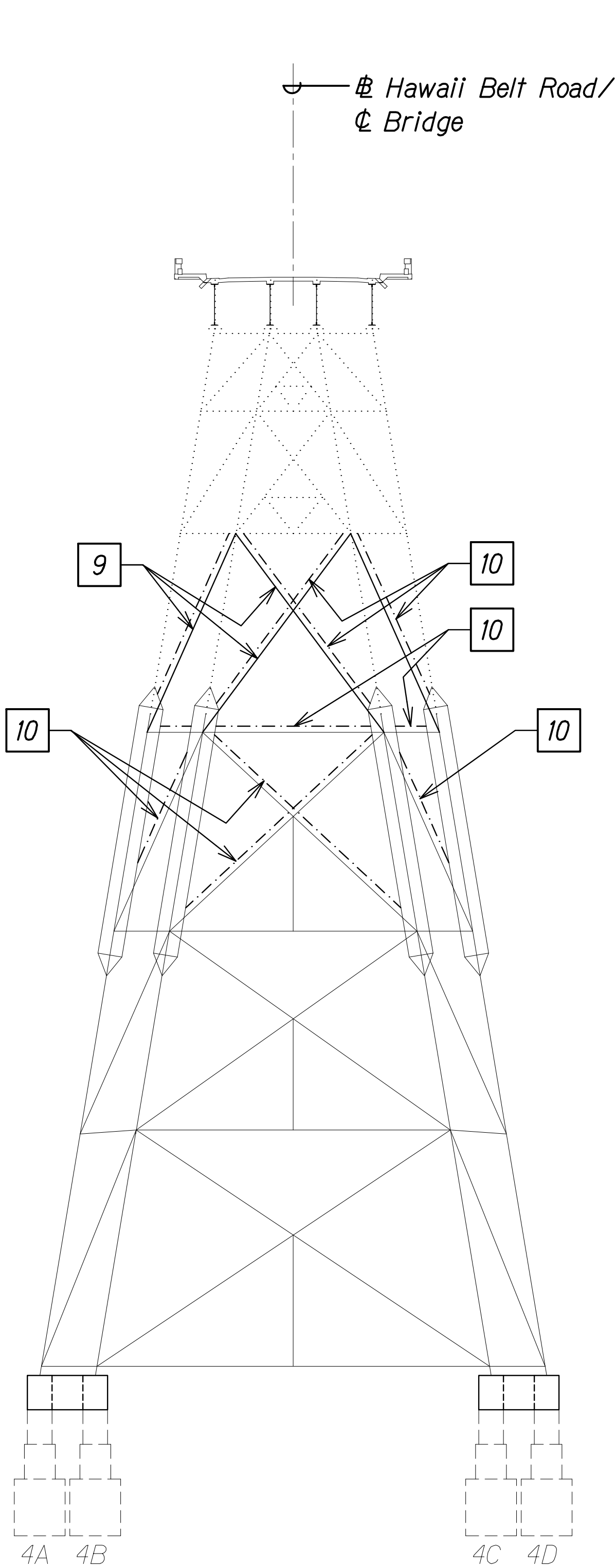
CONSTRUCTION SEQUENCE:

STAGE 4:

- 9

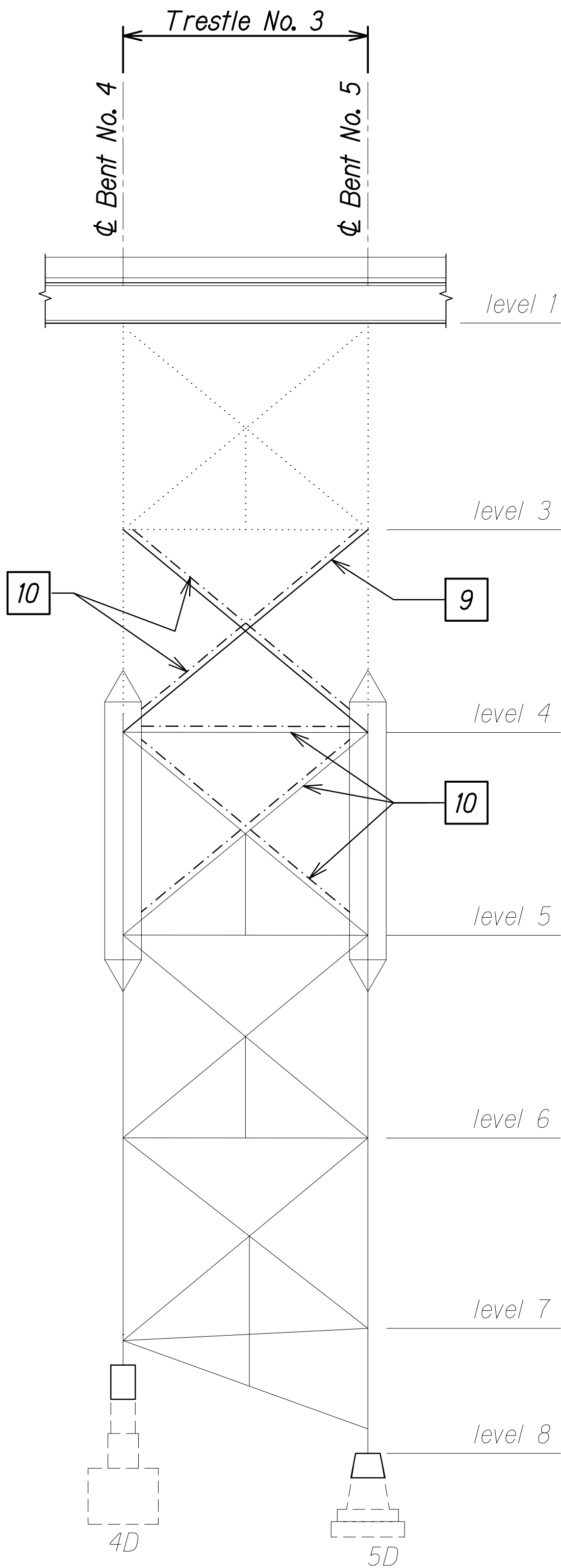
Install in-plane temporary cable bracing between new column at column bypass level and existing column gusset plate at level above. See sht. SB2.5.
- 10

Remove temporary bracing. See sht. SB2.5.



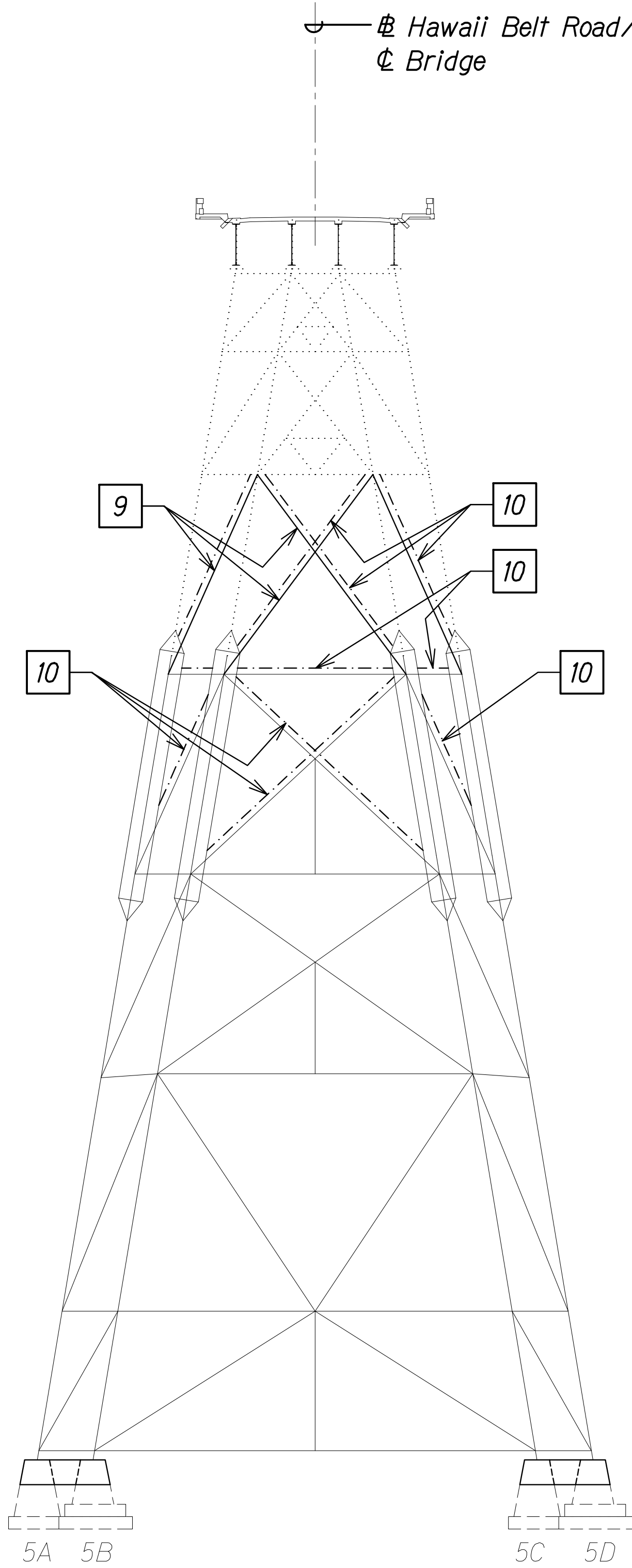
BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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



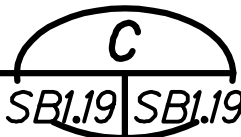
TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

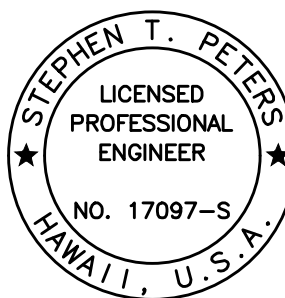
Scale: 1/16" = 1'-0"



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No SBL19 OF 29 SHEETS



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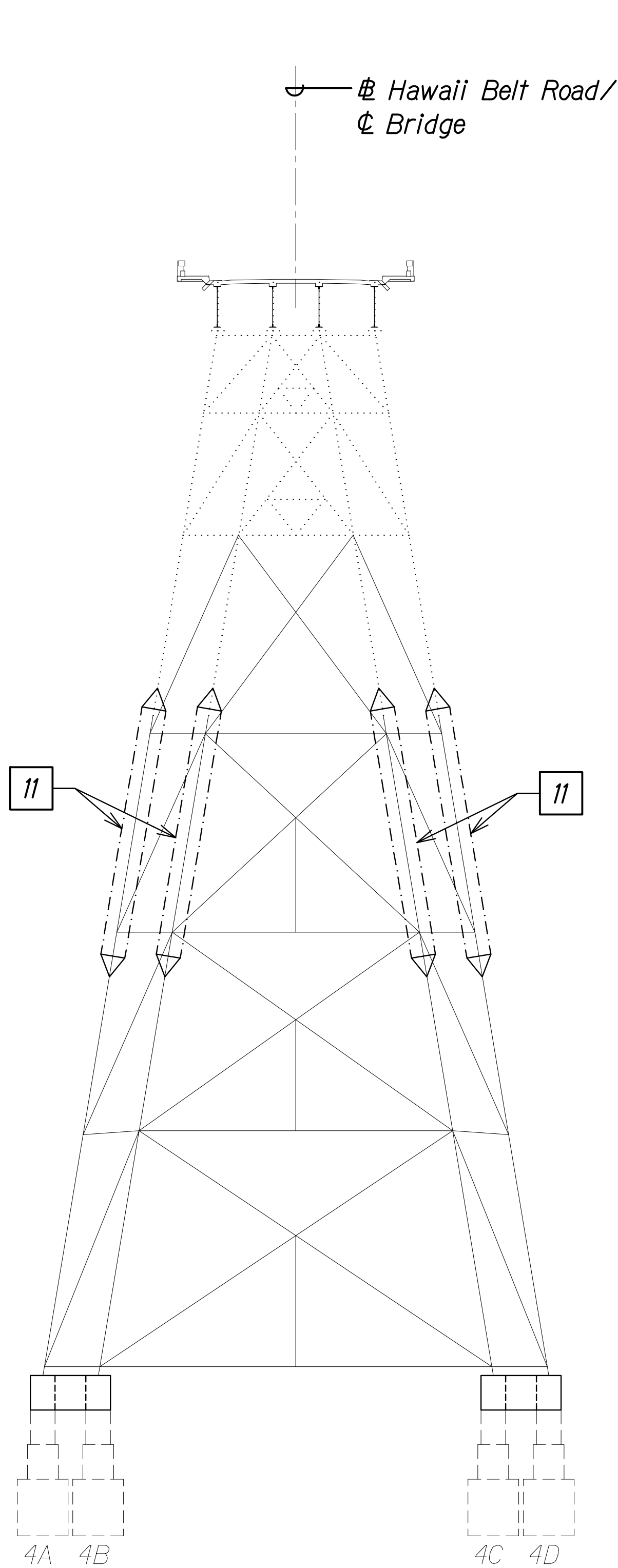
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 249 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 4:

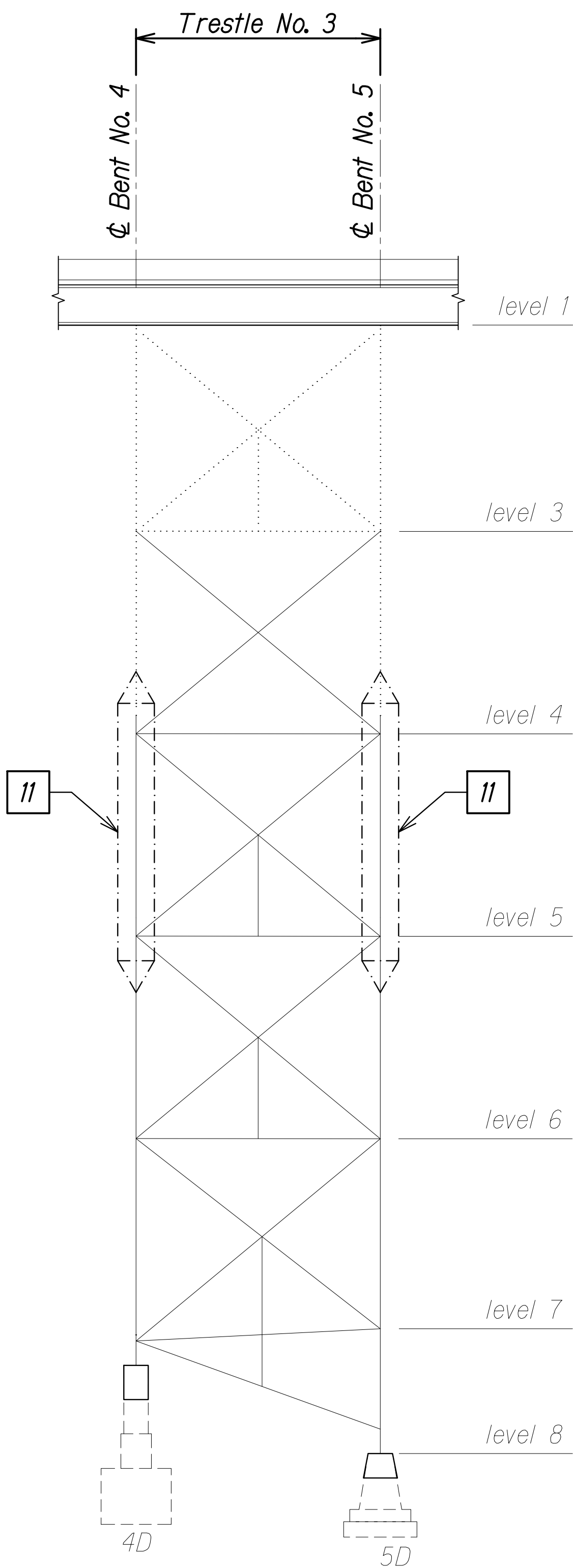
- 11 Remove column bypass.
Proceed to next stage.
See sht. SB2.6



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

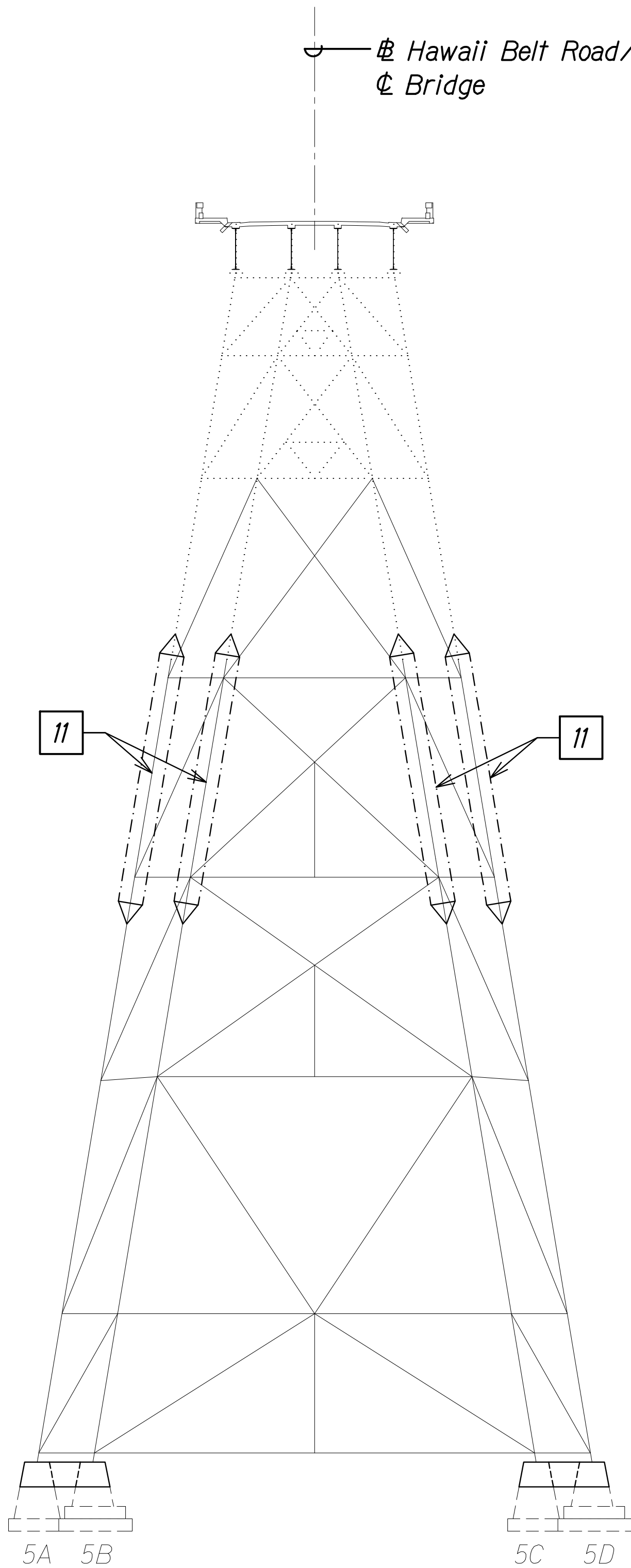
A
SBL20/SBL20



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

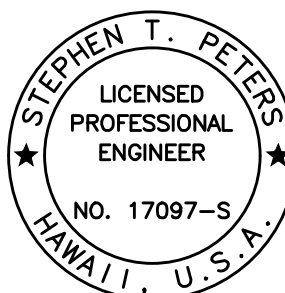
B
SBL20/SBL20



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL20/SBL20



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSBL20 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 250 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 5:

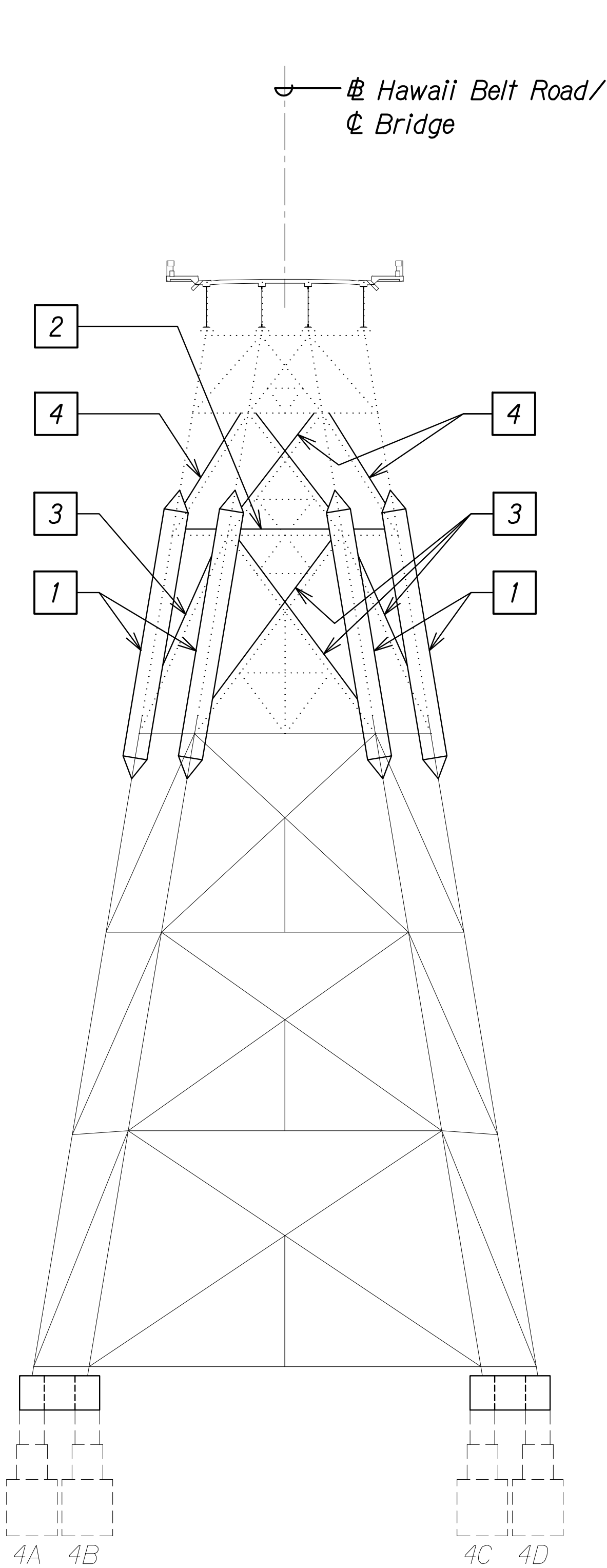
- 1

Install column bypass beyond existing column splice points. See sht. SB2.1.
- 2

Install temporary horizontal compression bracings. See sht. SB2.2
- 3

Install temporary diagonal cable bracing within column bypass level. See sht. SB2.2
- 4

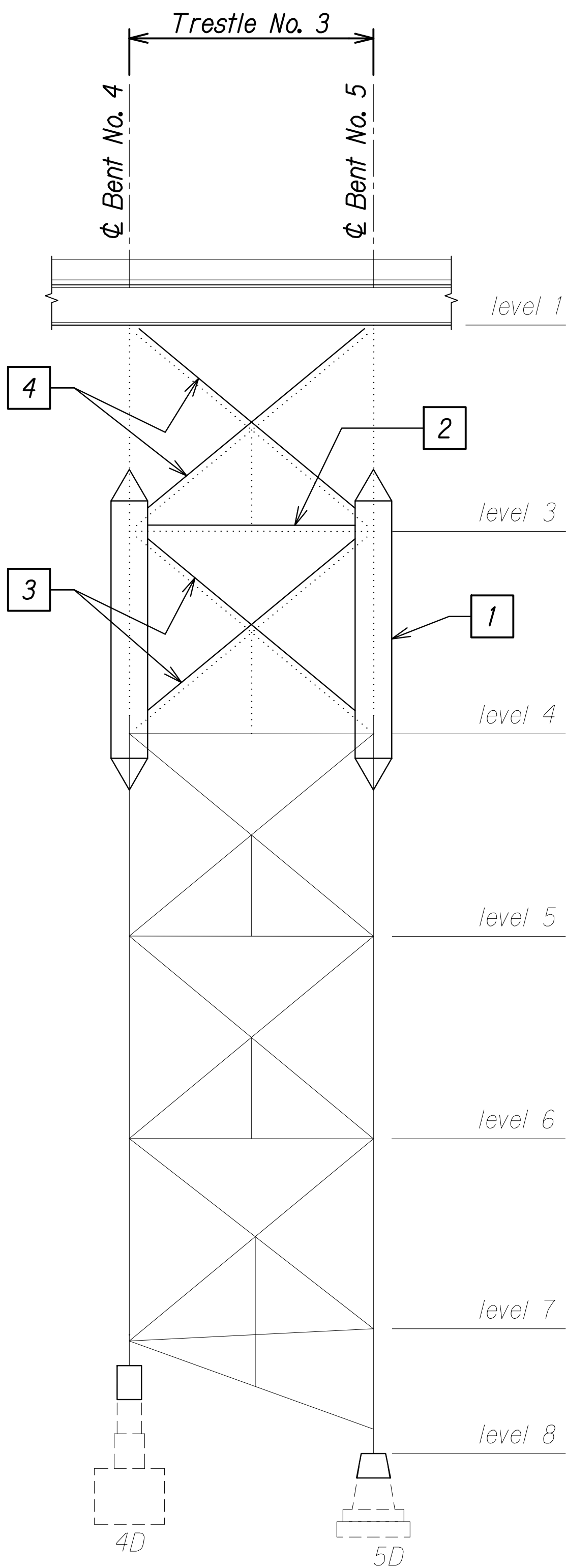
Install temporary diagonal cable bracing to level above. Temporary bracing shall connect to existing column gusset plate of above level. See sht. SB2.2



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

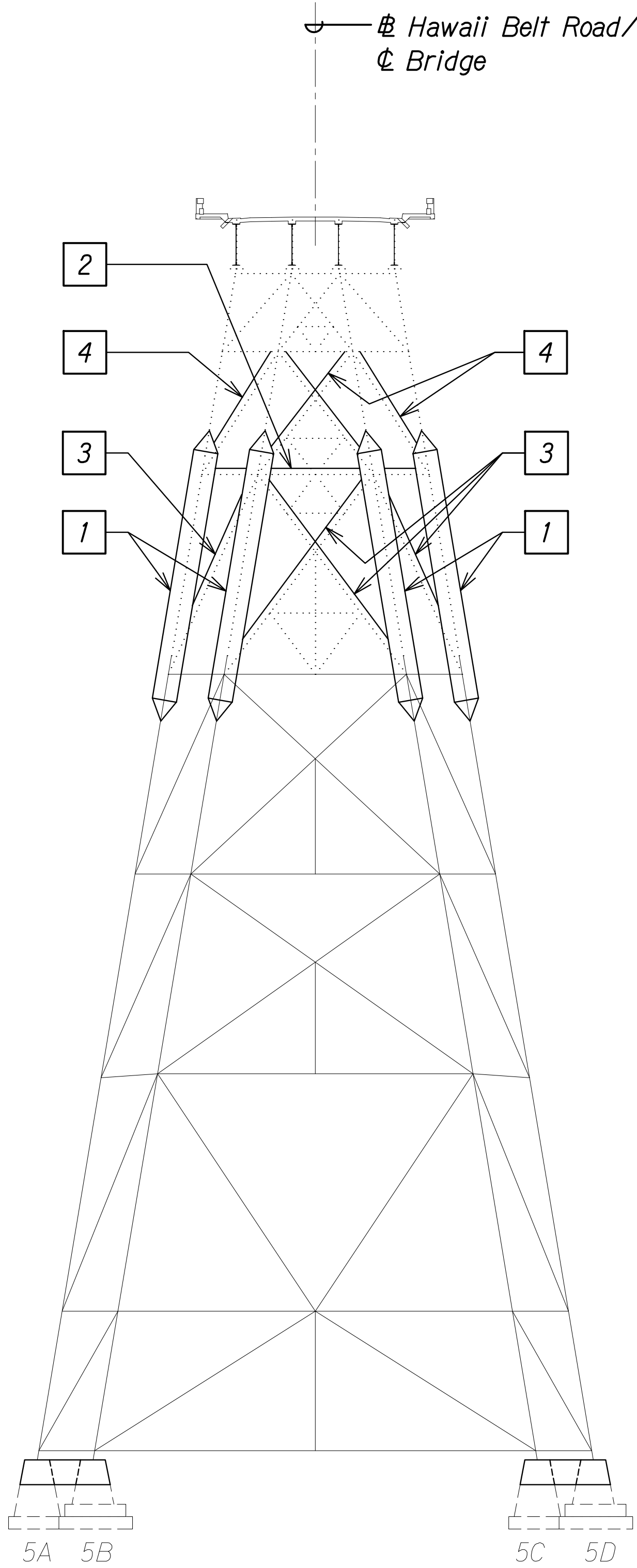
A
SBL21 SBL21



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

B
SBL21 SBL21



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL21 SBL21

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted
Date: Oct. 2024

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

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SIGNATURE
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| | | | | | |
|------------------------|-------|--------------------------|----------------|--------------|-----------------|
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | BR-019-2(077) | 2024 | 251 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 5:

- 5

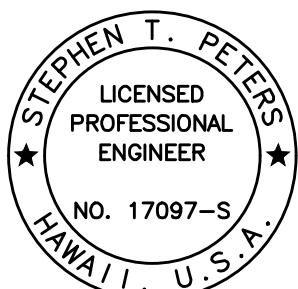
Remove existing bracings along temporary bracings.
See sht. SB2.3
- 6

Remove existing column between existing column splice points.
within column bypass.
See sht. SB2.3

Traffic control plan with Mauka lane closures shall be in effect prior to removal and replacement of columns along Bent lines A and B.

Traffic control plan with Makai lane closures shall be in effect prior to removal and replacement of columns along Bent lines C and D.

See Traffic Control Plans on Sheets T-5 and T-6.



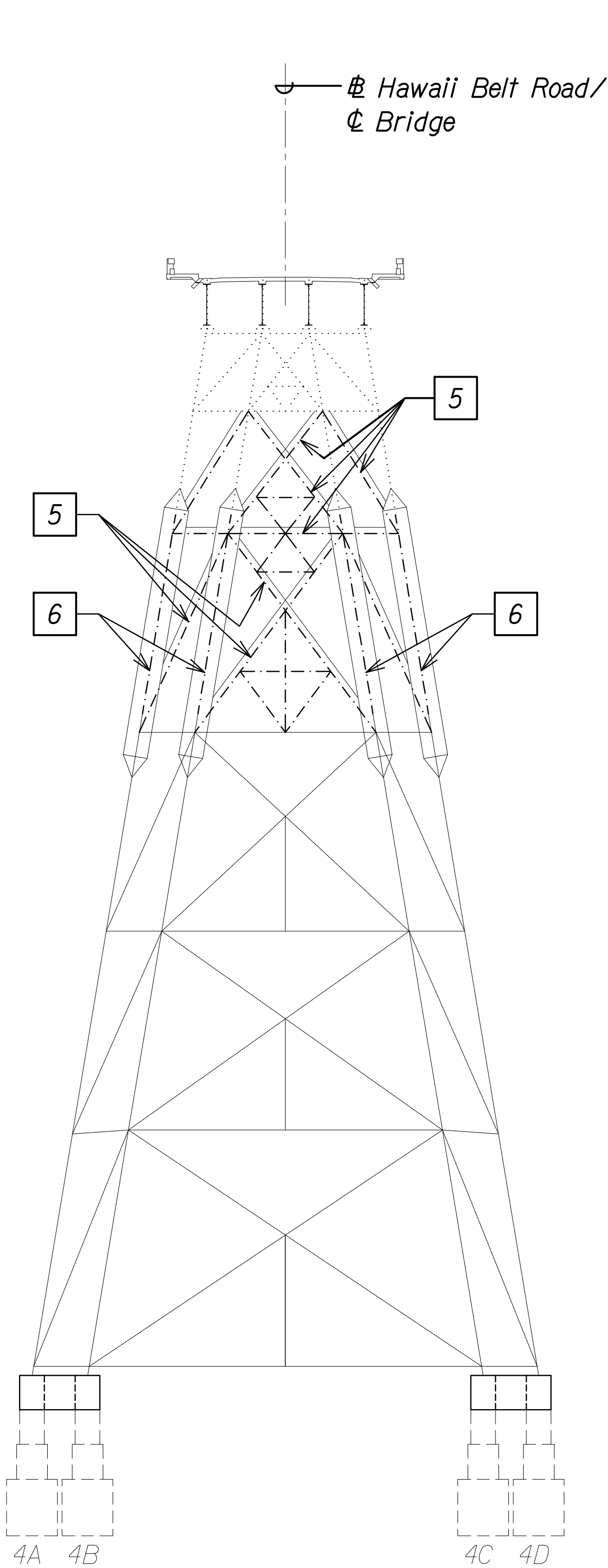
THIS WORK WAS PREPARED BY
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SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

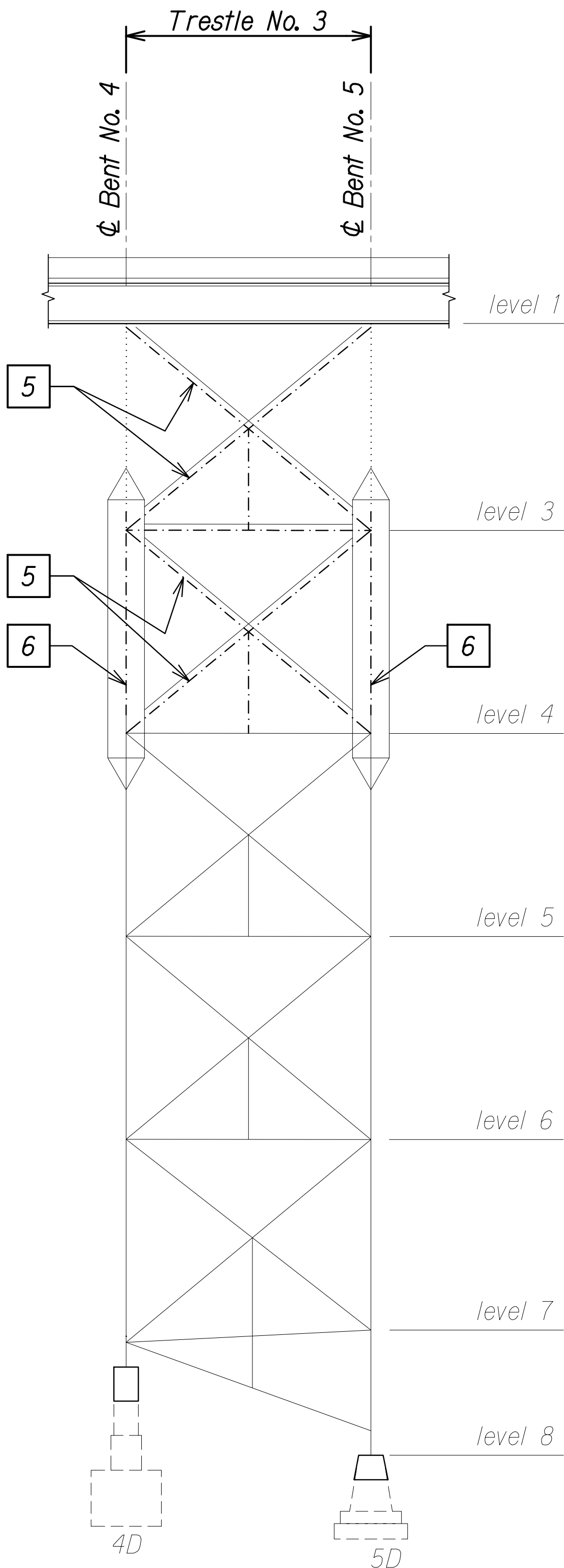
SHEET NoSBL22 OF 29 SHEETS



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

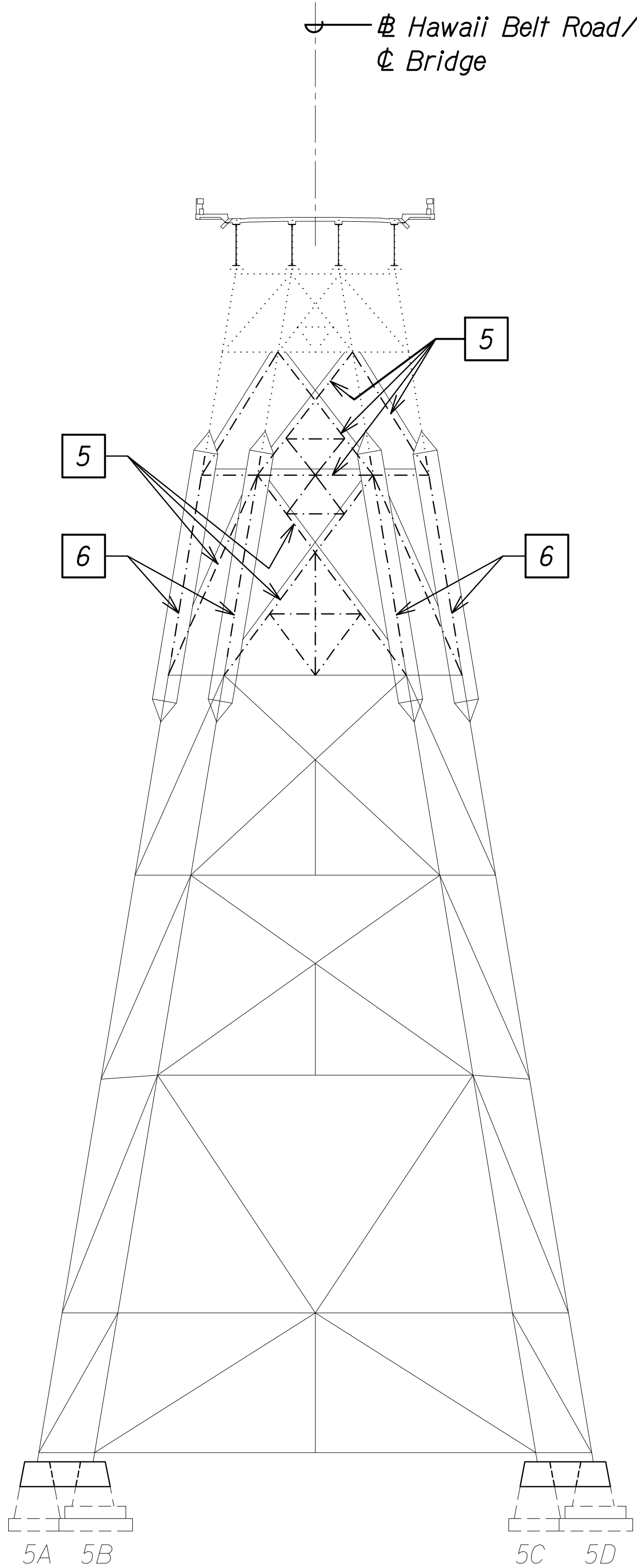
A
SBL22 | SBL22



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

B
SBL22 | SBL22



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL22 | SBL22

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A\1 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-28-24 6:51 PM

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 252 | 280 |

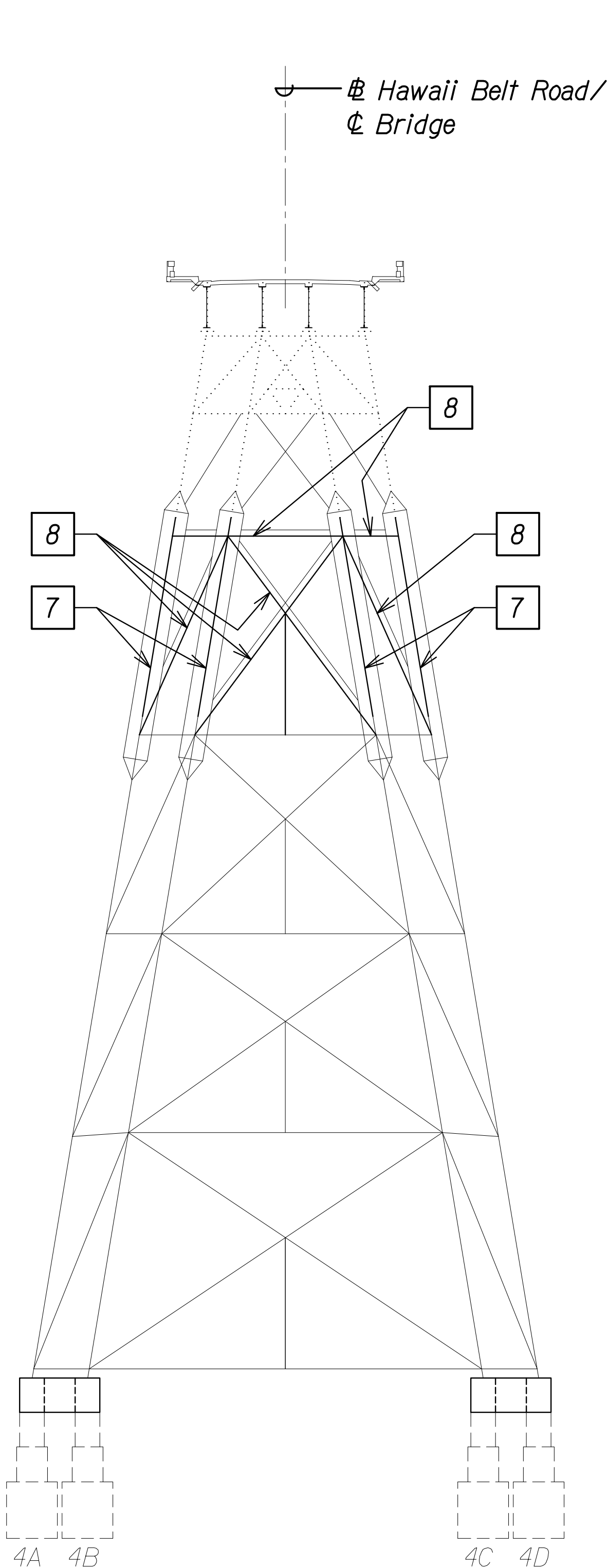
CONSTRUCTION SEQUENCE:

STAGE 5:

- 7

Install new column between column splice locations within column bypass. See sht. SB2.4.
- 8

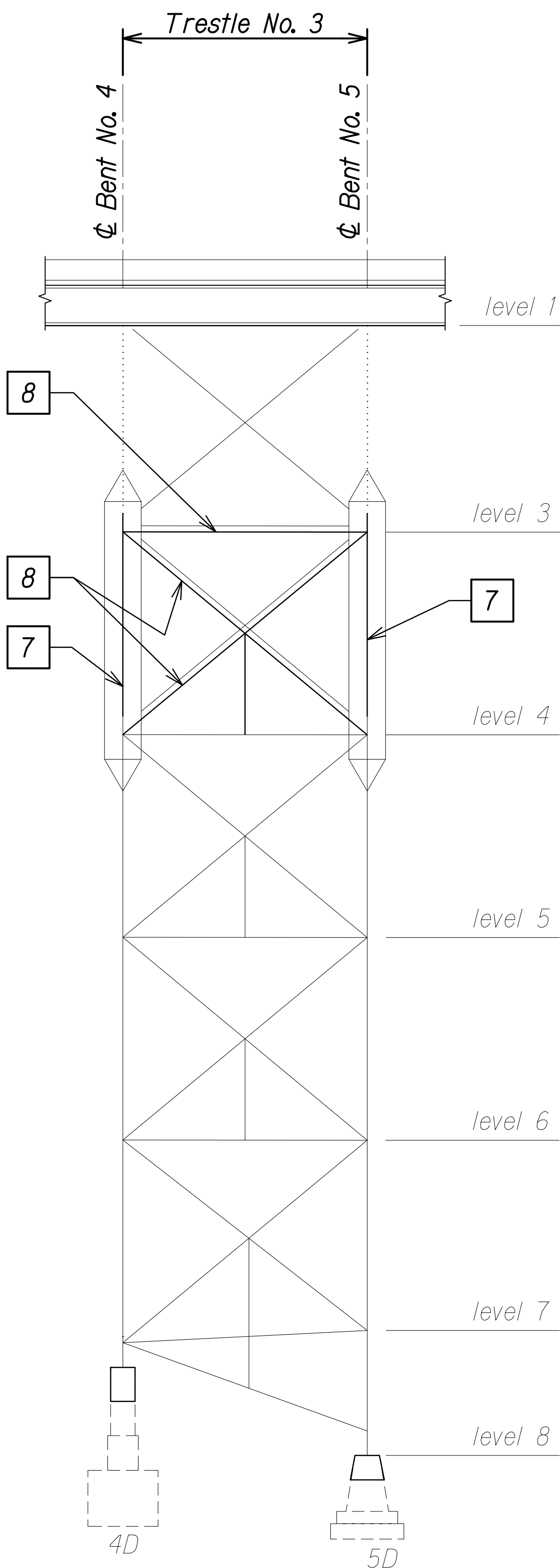
Install new bracing within level of column bypass. See sht. SB2.4.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

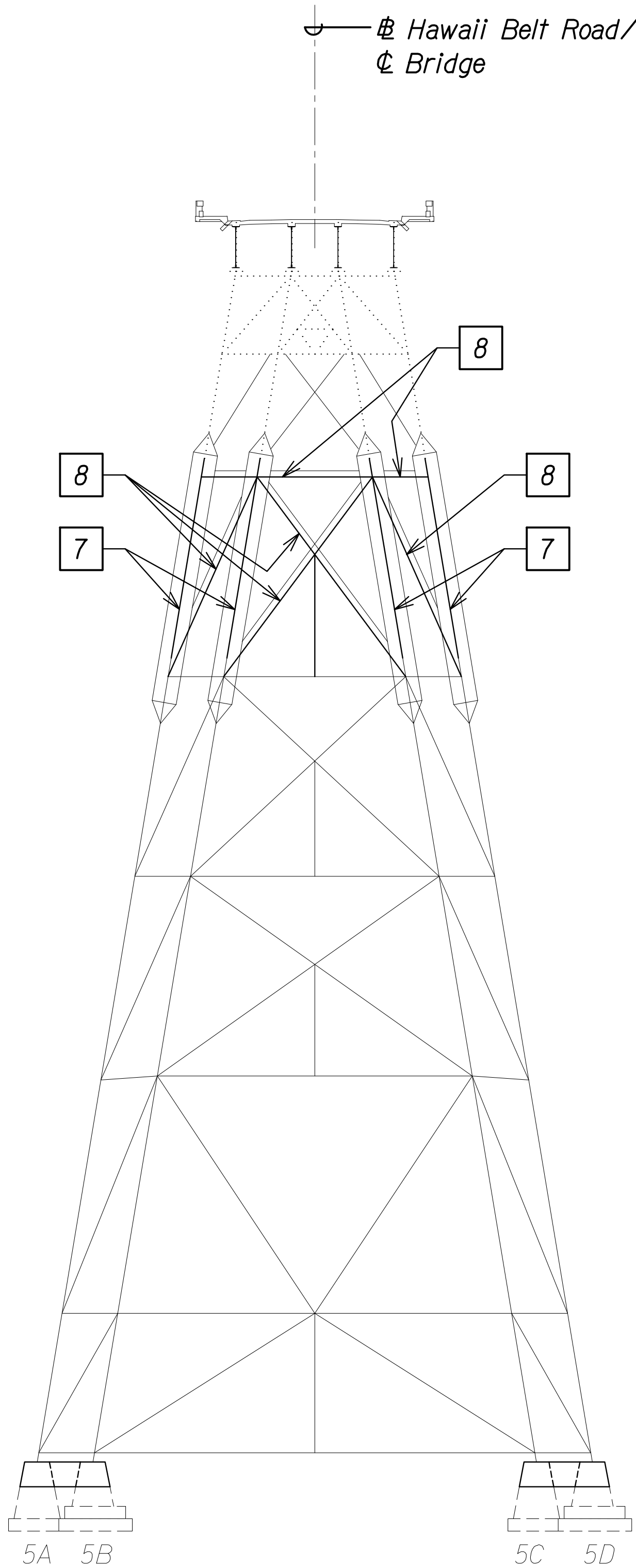
A
SBL23 | SBL23



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

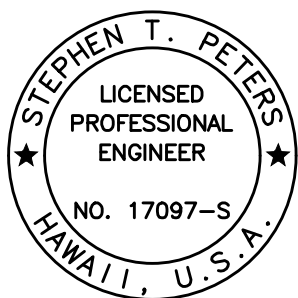
B
SBL23 | SBL23



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL23 | SBL23



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

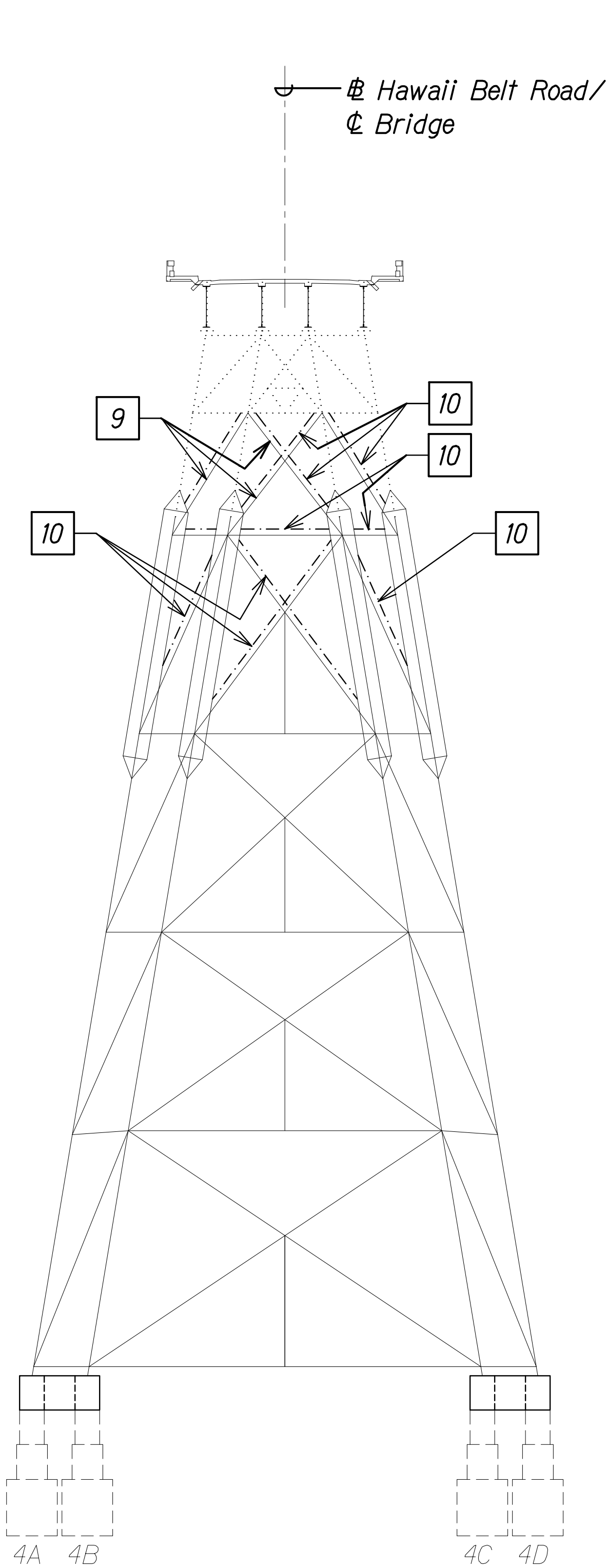
SHEET NoSBL23 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 253 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 5:

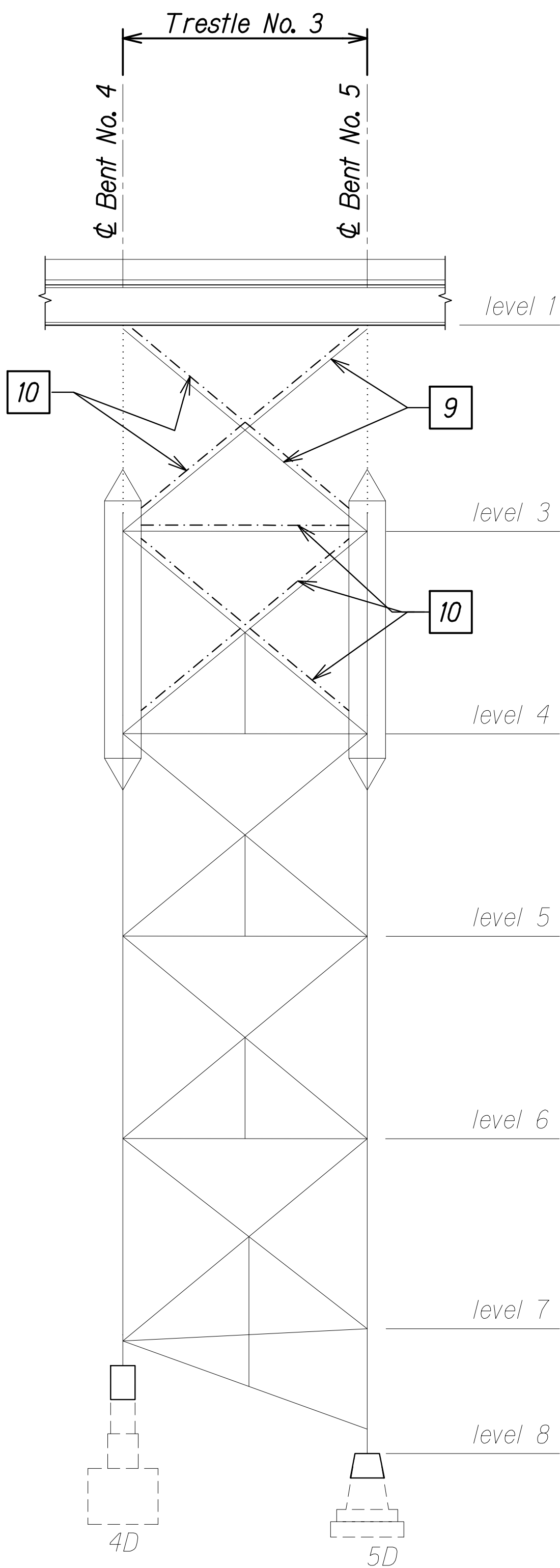
- 9
- Install in-plane temporary cable bracing between new column at column bypass level and existing column gusset plate at level above. See sht. SB2.5.
- 10
- Remove temporary bracing. See sht. SB2.5.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

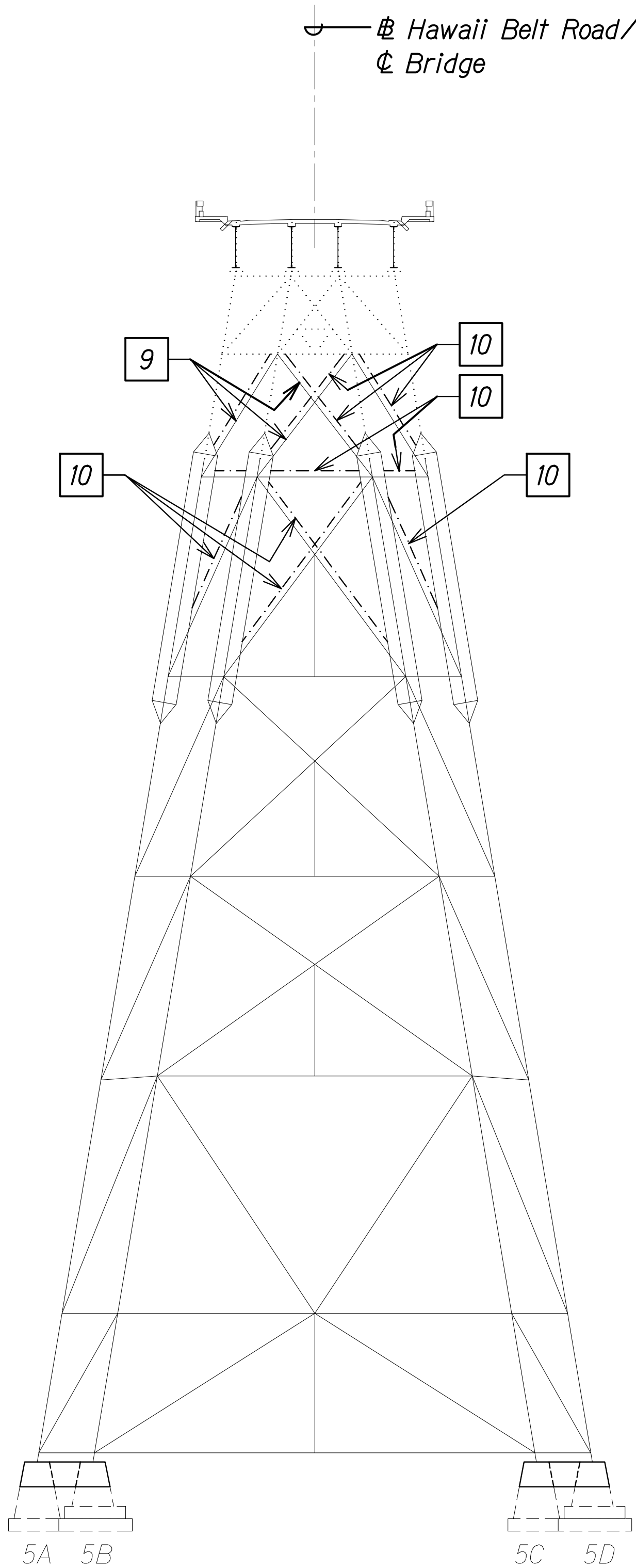
A
SBL24 | SBL24



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

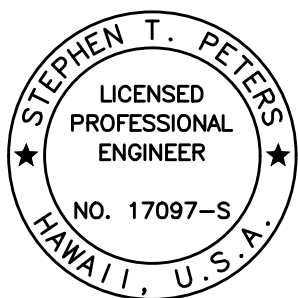
B
SBL24 | SBL24



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL24 | SBL24



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STATE OF HAWAII
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HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

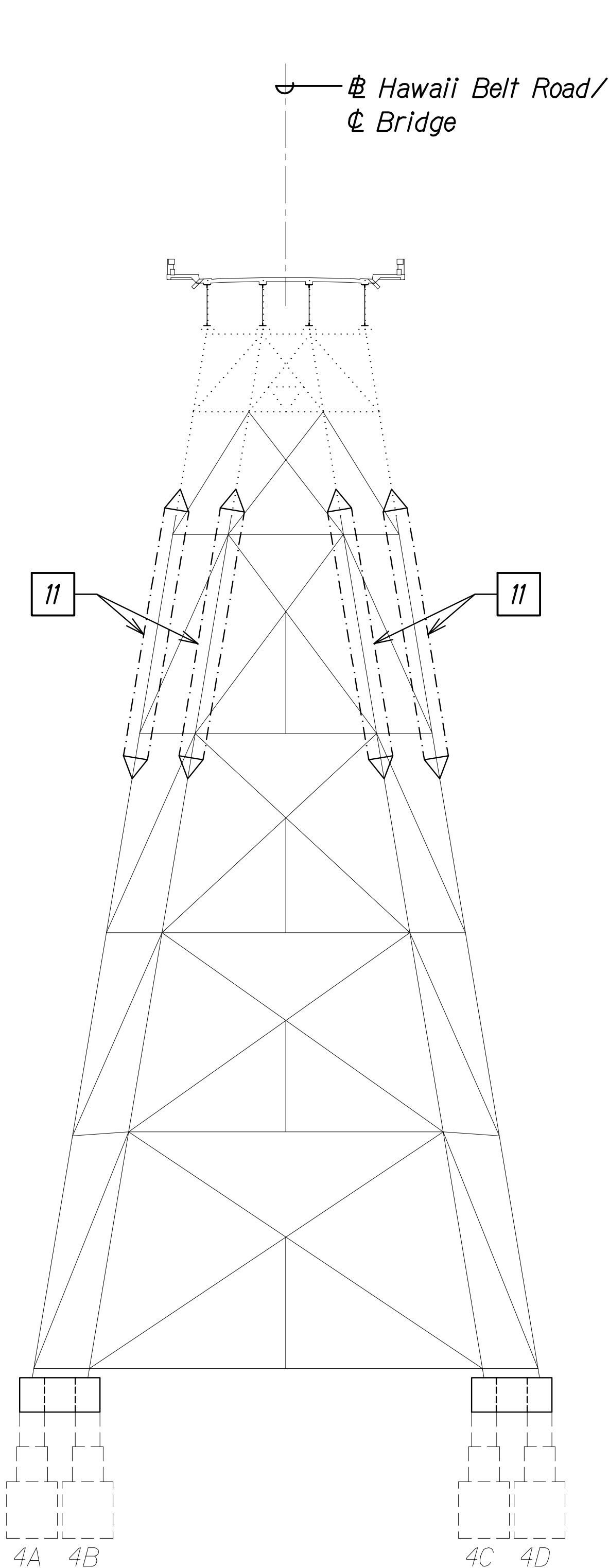
SHEET NoSBL24 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 254 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 5:

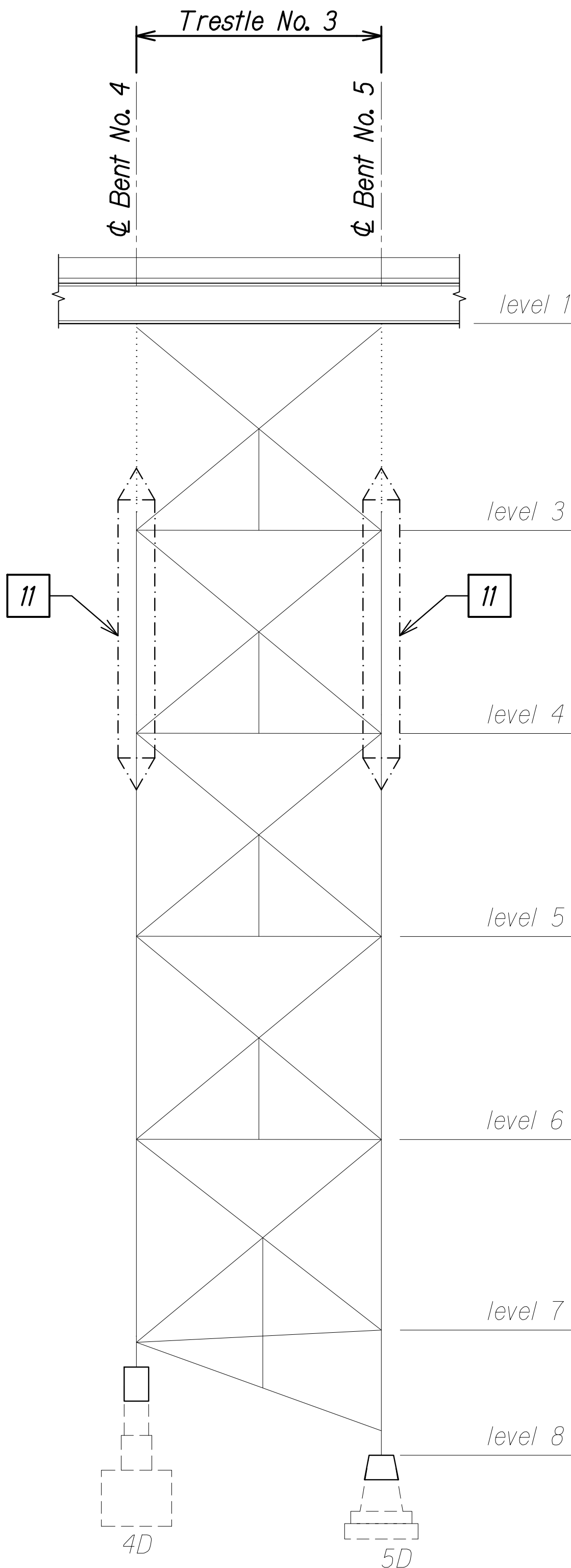
- 11
- Remove column bypass.
Proceed to next stage.
See sht. SB2.6



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

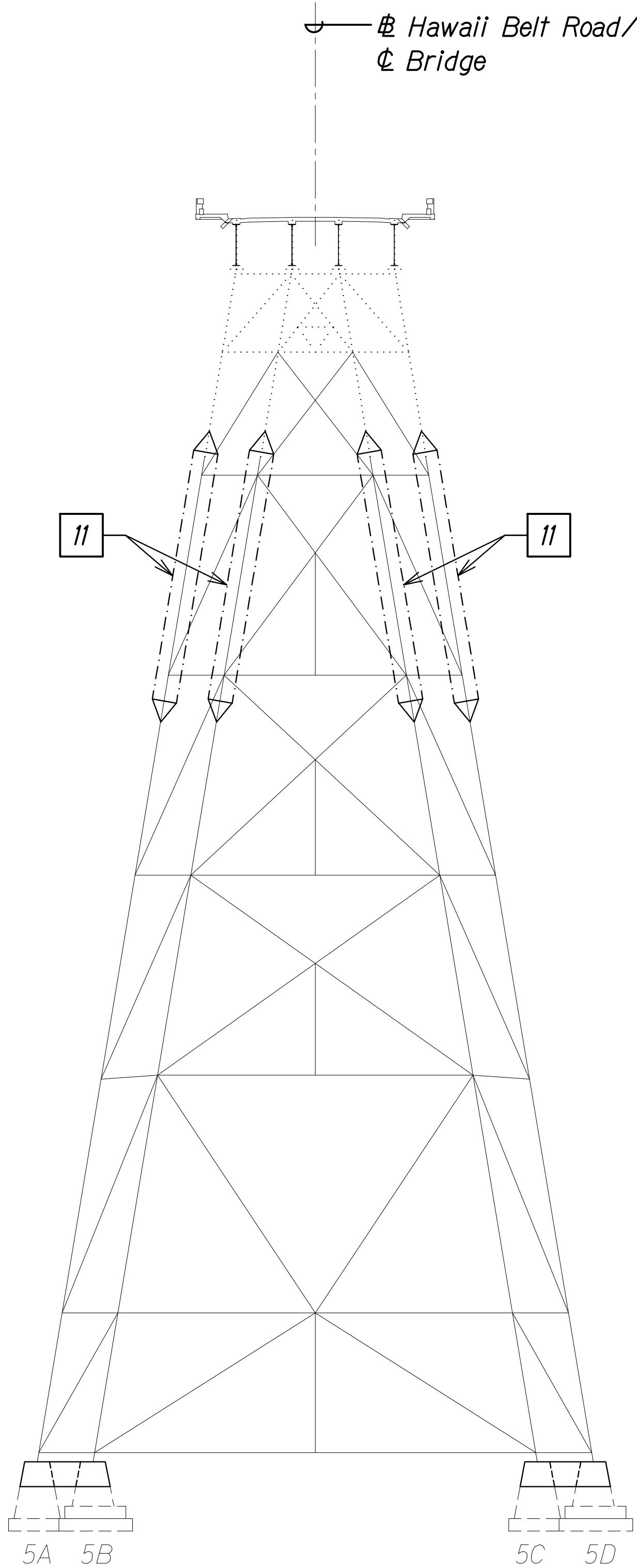
A
SBL25 | SBL25



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

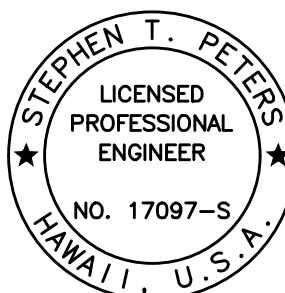
B
SBL25 | SBL25



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL25 | SBL25



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4-30-26
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STATE OF HAWAII
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HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET NoSBL25 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 255 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 6:

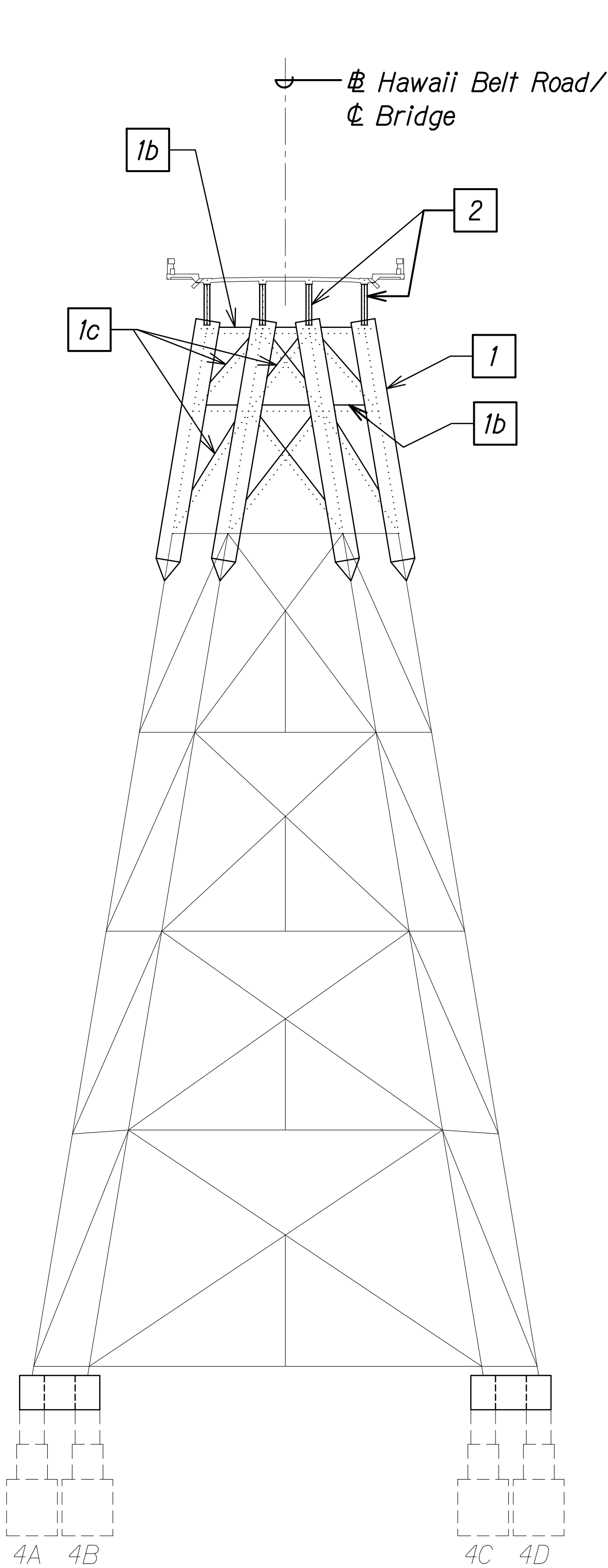
- 1

Install top of bent column bypass assembly. See sht. SB2.1f.
- 1b

Install temporary horizontal compression bracings. See sht. SB2.2.
- 1c

Install temporary diagonal bracing. See sht. SB2.2.
- 2

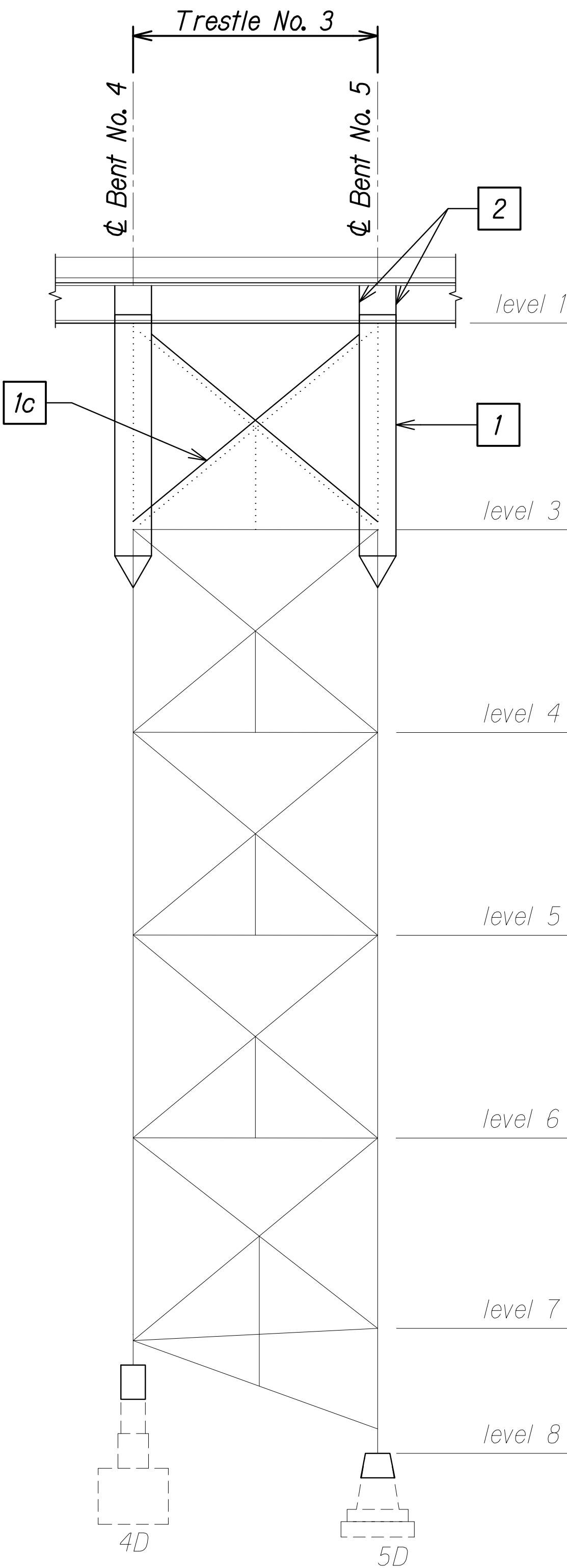
Add bearing stiffeners to existing girders at column bypass bearing locations. See sht. SB2.1f.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

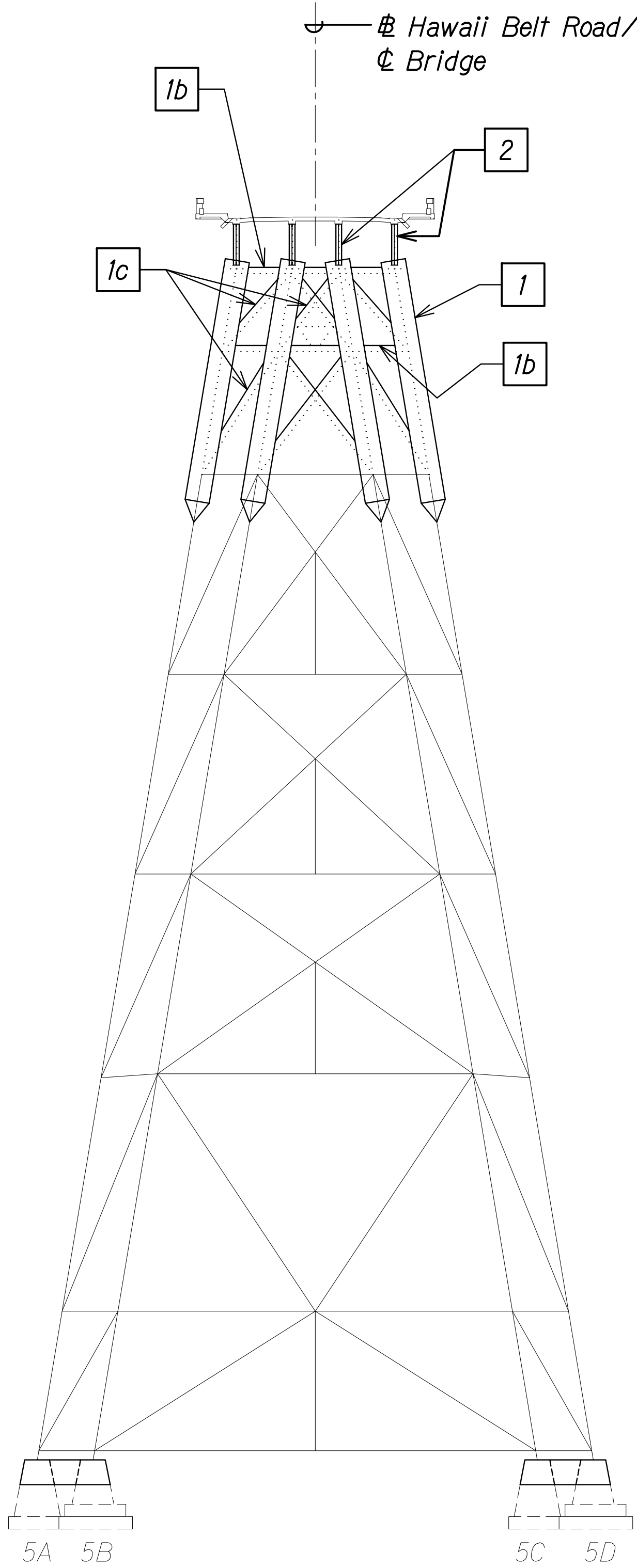
A
SBL26 SBL26



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

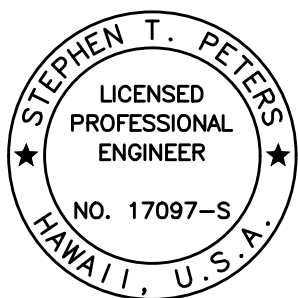
B
SBL26 SBL26



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL26 SBL26



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STATE OF HAWAII
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HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 256 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 6:

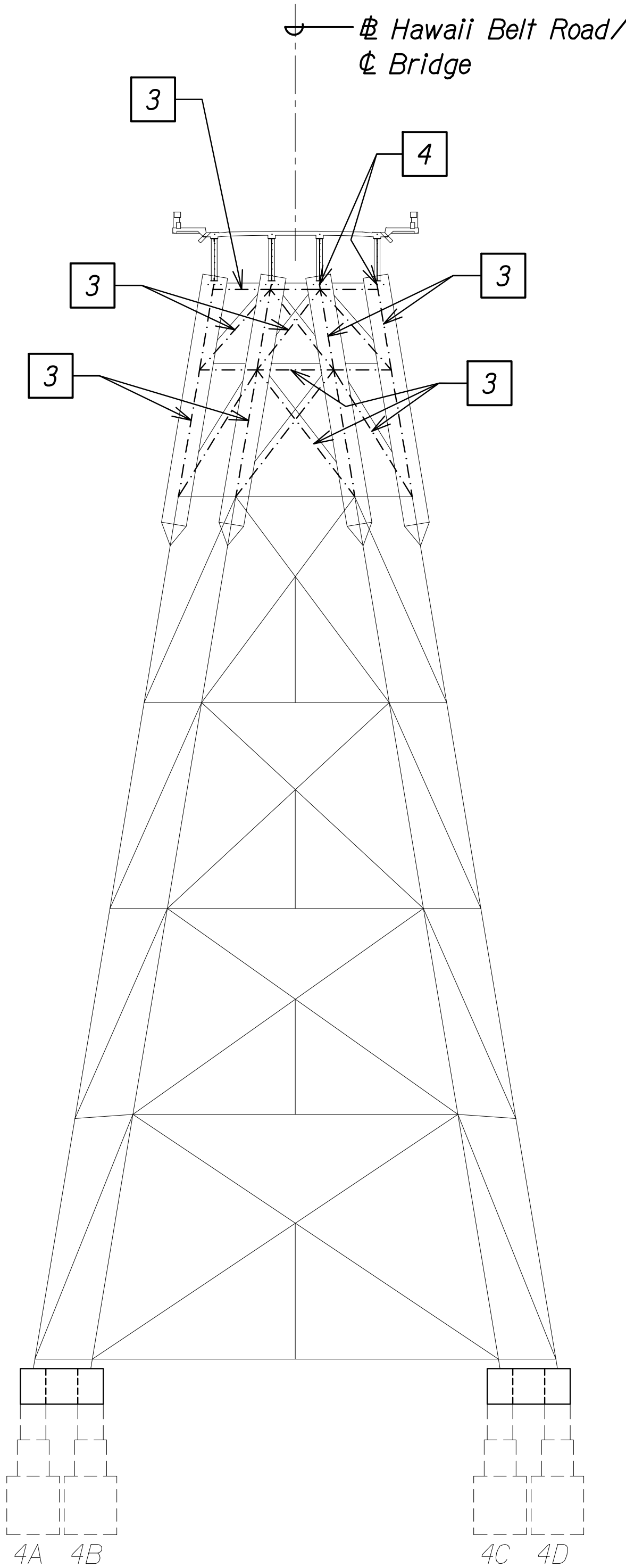
- 3 Remove existing columns and bracings. See sht. SB2.11.

Traffic control plan with Mauka lane closures shall be in effect prior to removal and replacement of columns along Bent lines A and B.

Traffic control plan with Makai lane closures shall be in effect prior to removal and replacement of columns along Bent lines C and D.

See Traffic Control Plans on Sheets T-5 and T-6.

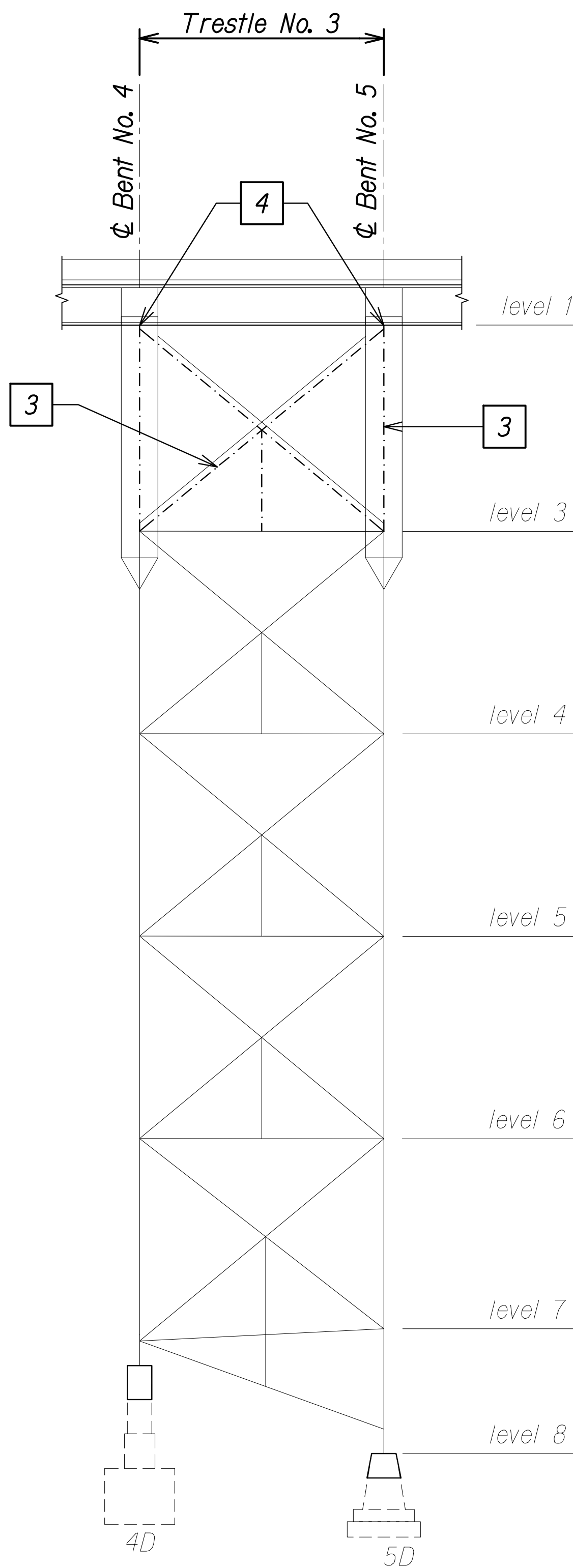
- 4 Clean & paint bottom of girders at bent bearing locations. See sht. SB2.11.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

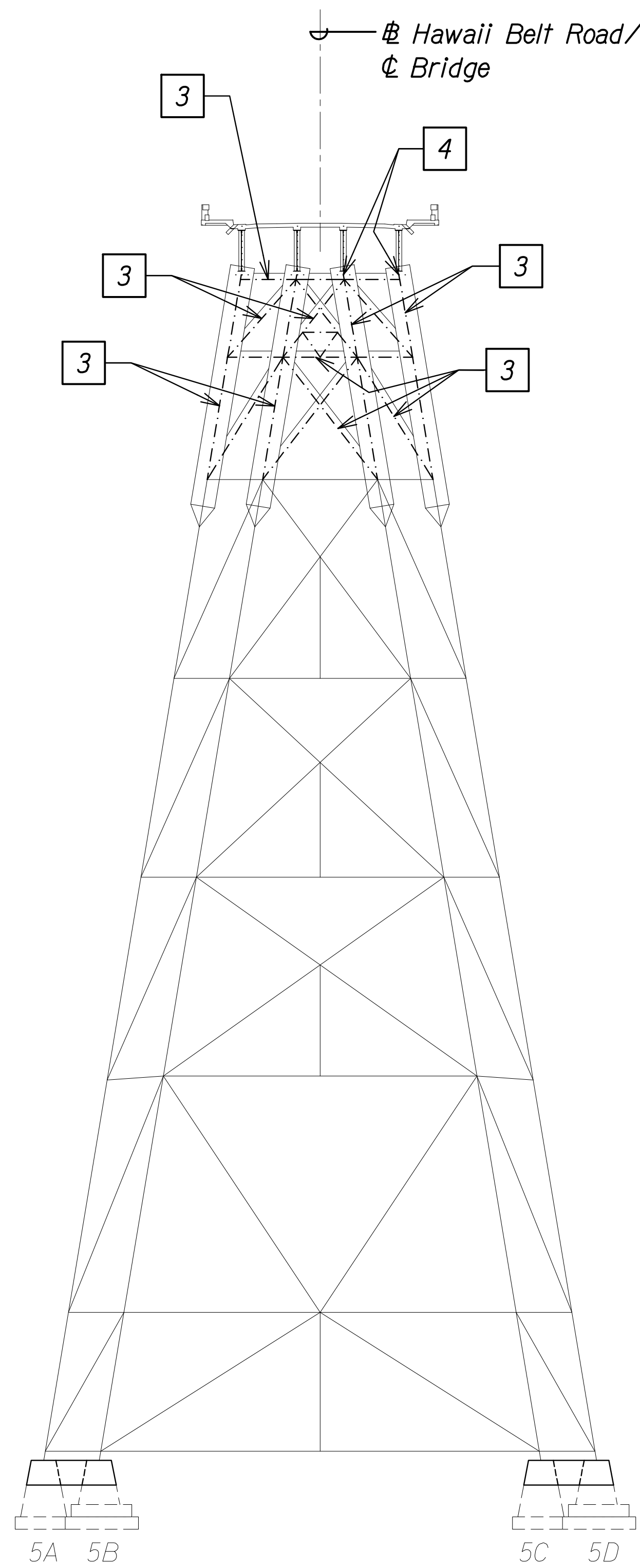
A
SBL27 SBL27



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

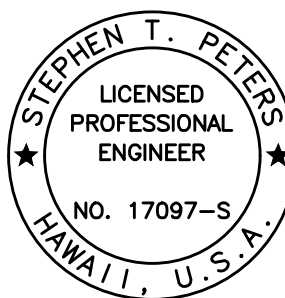
B
SBL27 SBL27



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL27 SBL27



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HIGHWAYS DIVISION
**SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

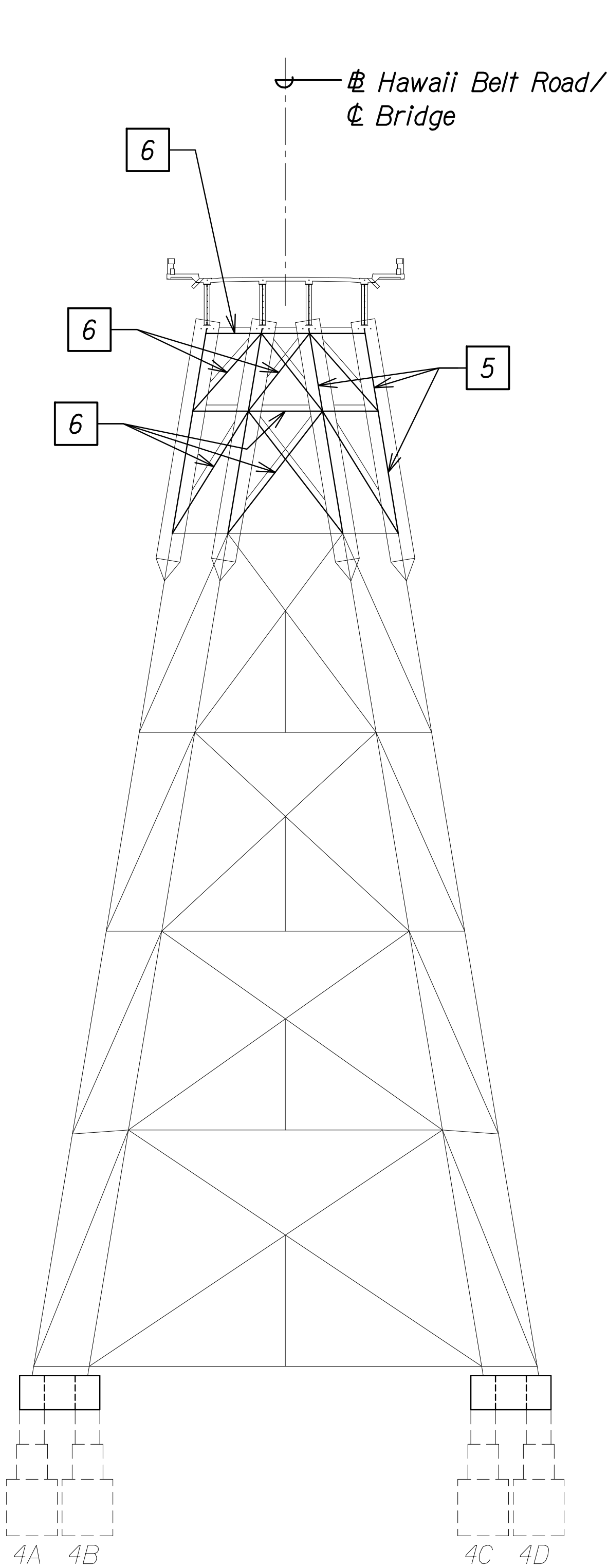
SHEET NoSBL27 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 257 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 6:

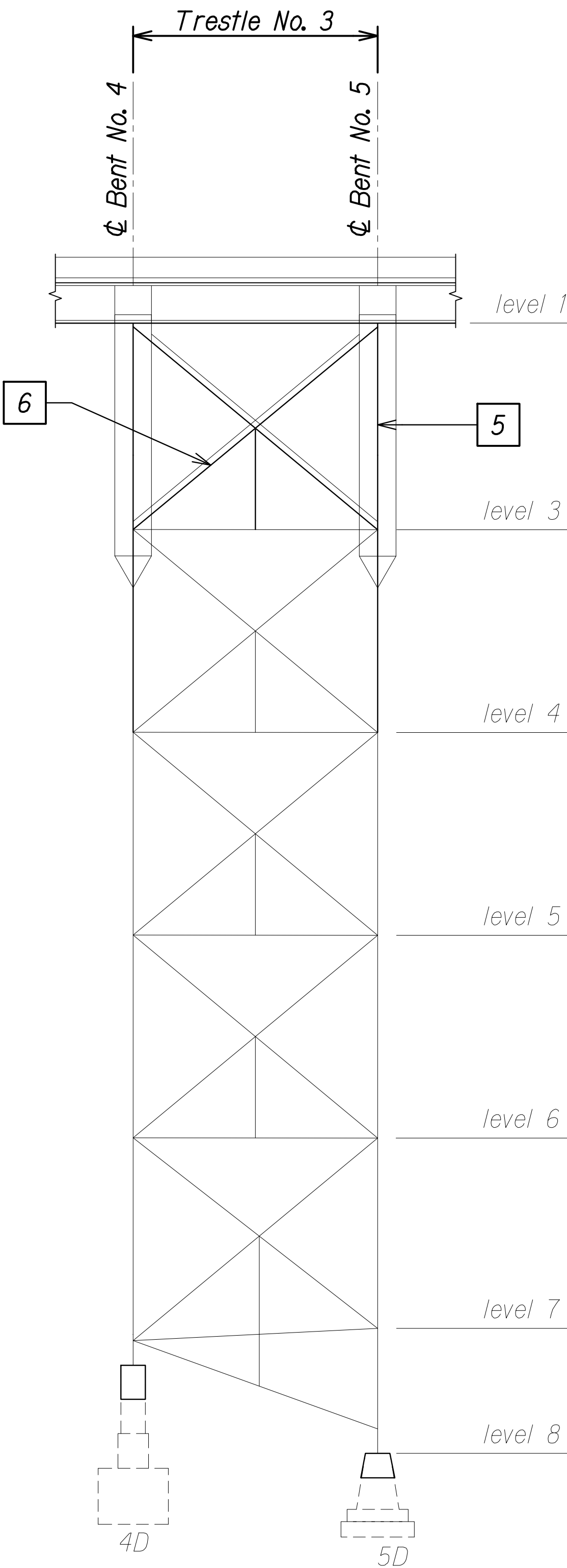
- 5
- Install new column.
See sht. SB2.12.
- 6
- Install new bracings.
See sht. SB2.12.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

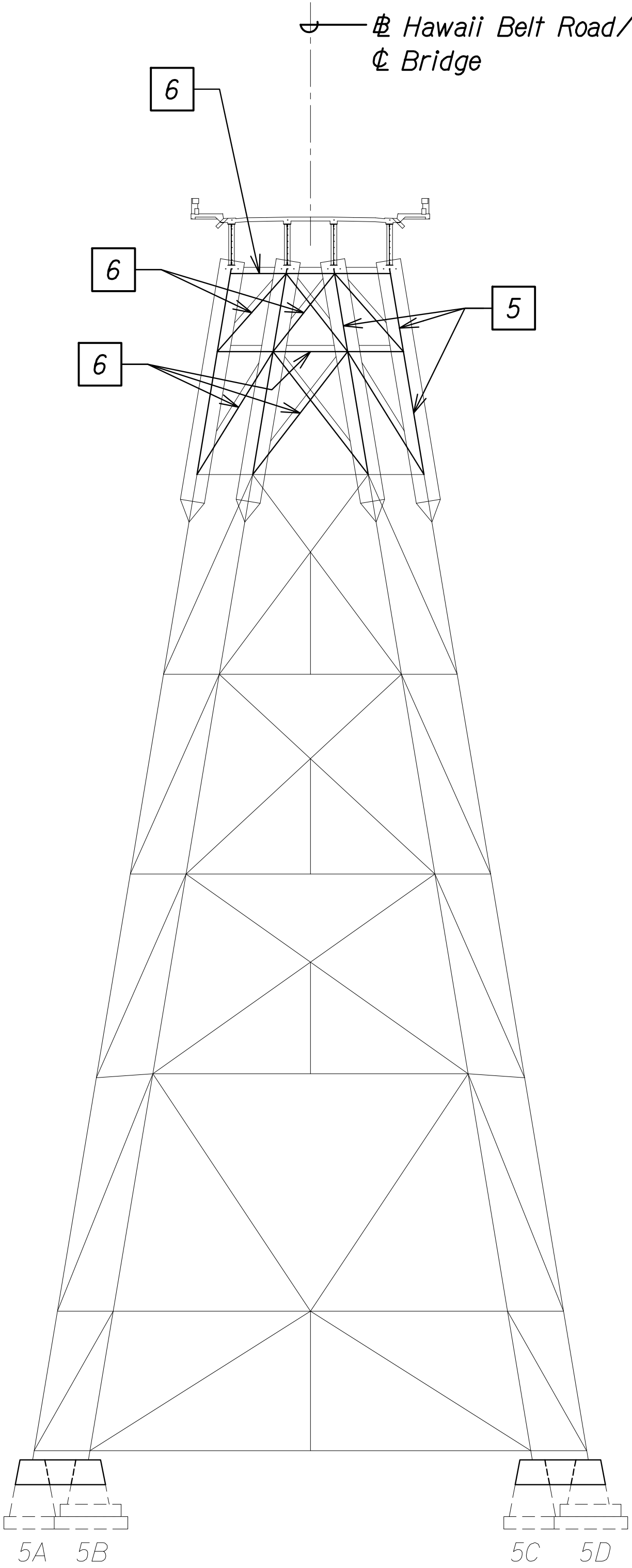
A
SBL28 | SBL28



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

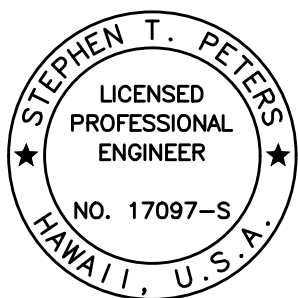
B
SBL28 | SBL28



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL28 | SBL28



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EXPIRATION DATE OF THE LICENSE

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

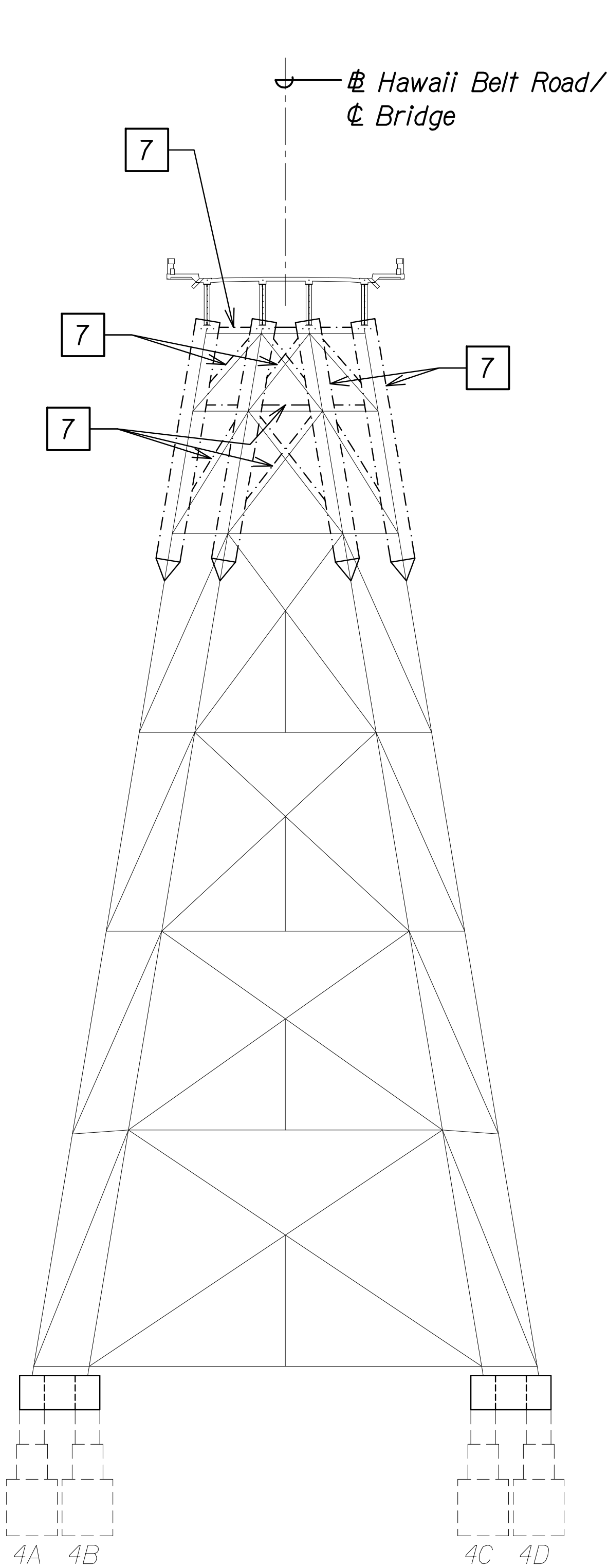
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 258 | 280 |

CONSTRUCTION SEQUENCE:

STAGE 6:

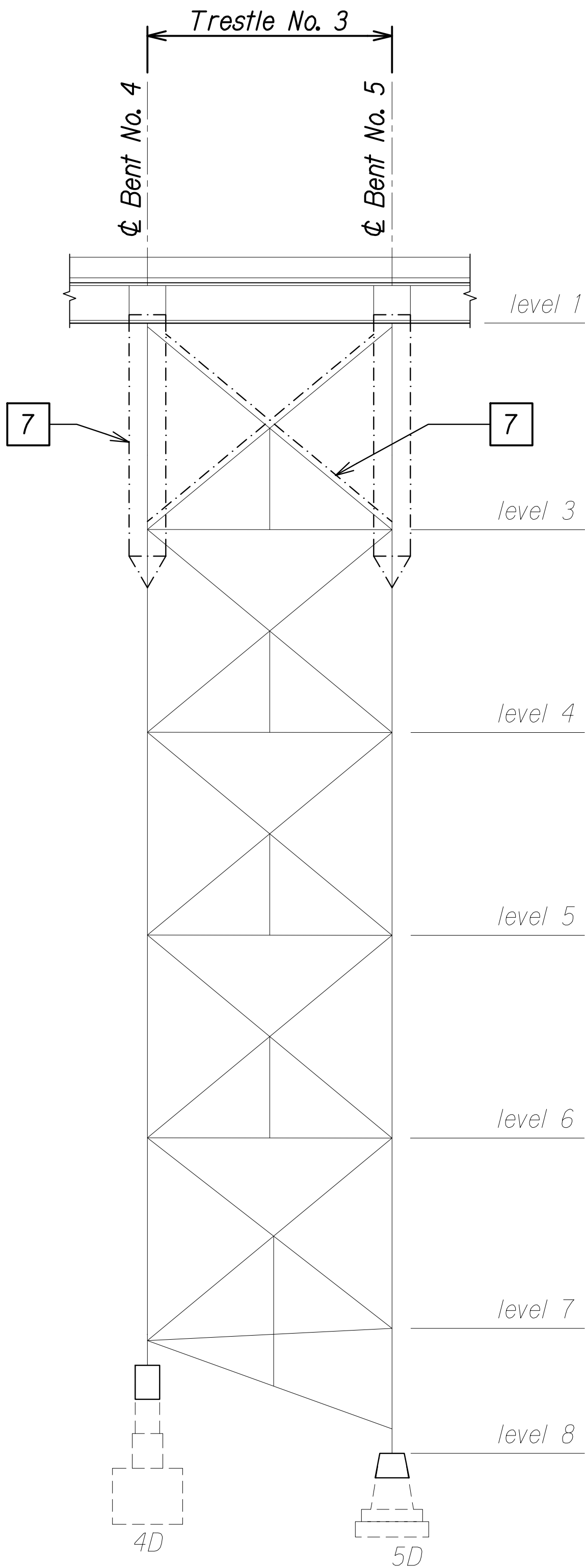
- 7 Remove top of bent column bypass assembly and temporary bracings. See sht. SB2.13.



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

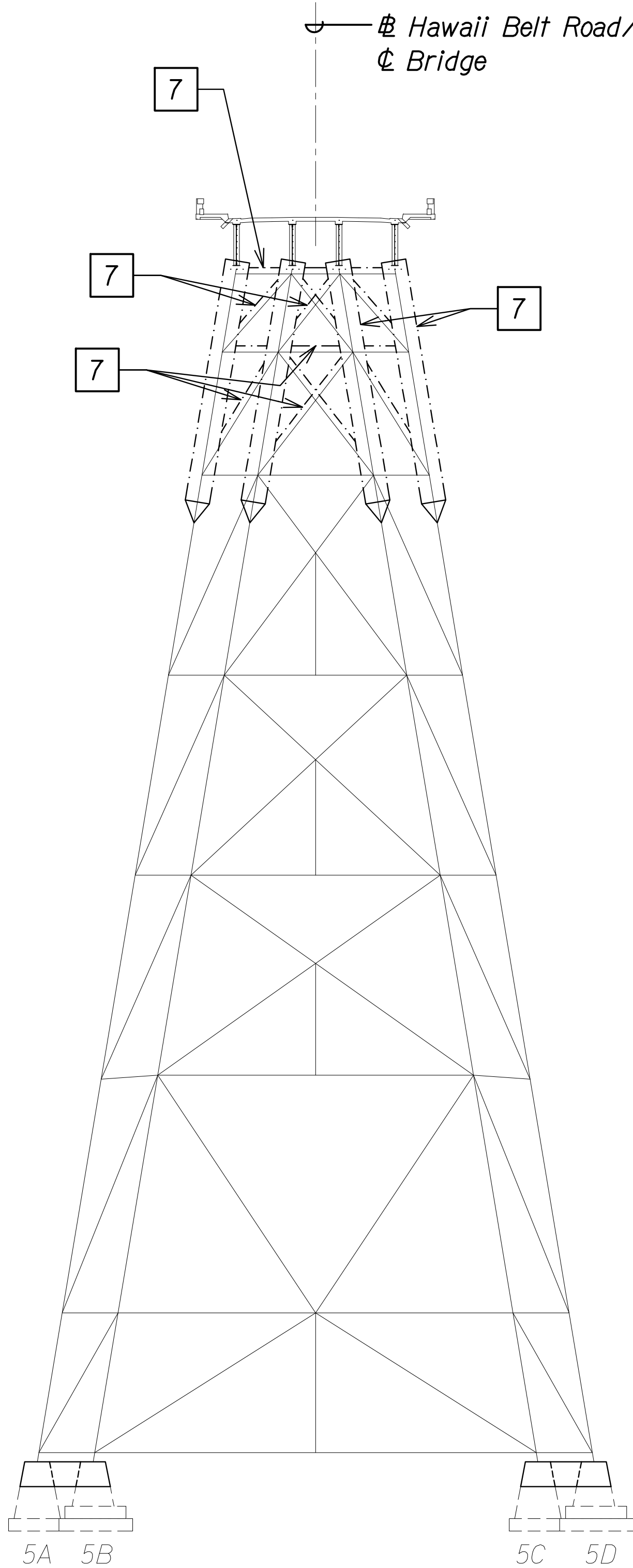
A
SBL29 | SBL29



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

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

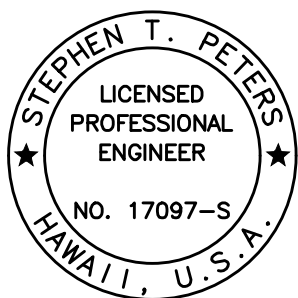
B
SBL29 | SBL29



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

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

C
SBL29 | SBL29



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EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

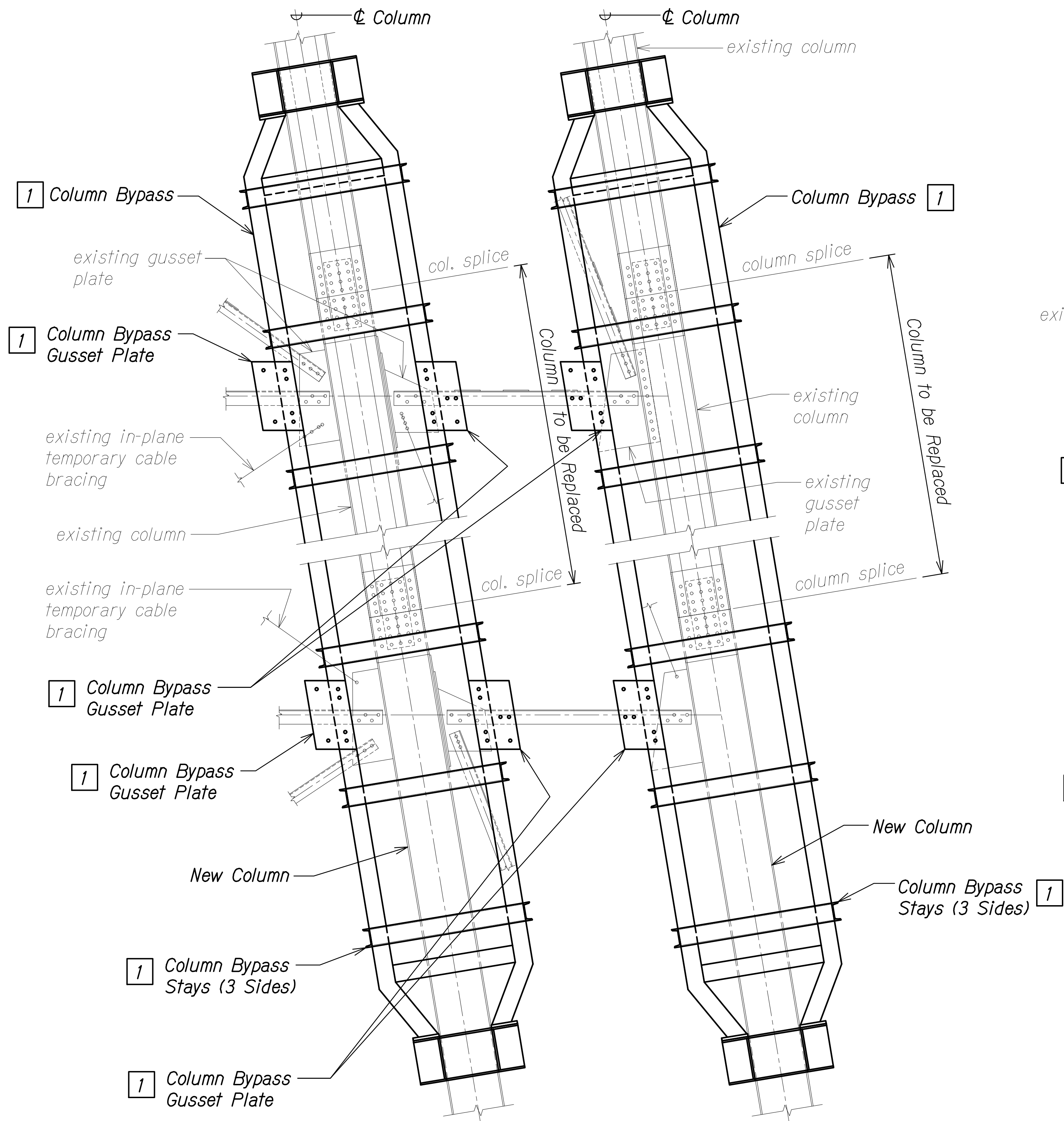
SHEET NoSBL29 OF 29 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 259 | 280 |

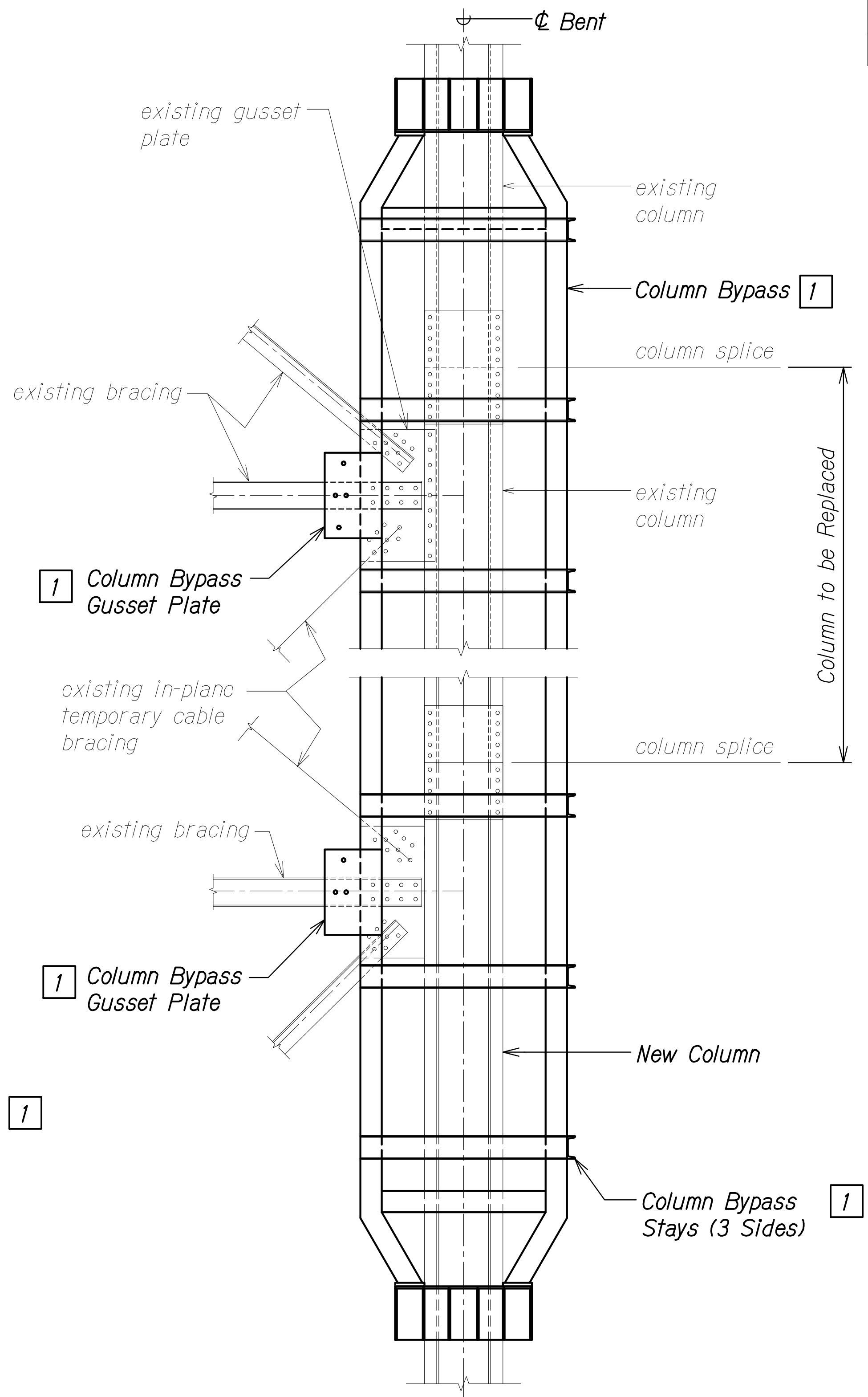
CONSTRUCTION SEQUENCE:

PHASE:

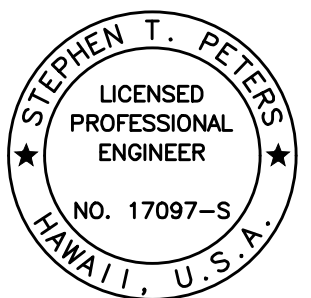
- 1 Install Column bypass beyond existing column splice points.



TYPICAL COLUMN BYPASS DETAIL A
Scale: 1/2" = 1'-0"



TYPICAL COLUMN BYPASS DETAIL B
Scale: 1/2" = 1'-0"



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EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.1 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 260 | 280 |

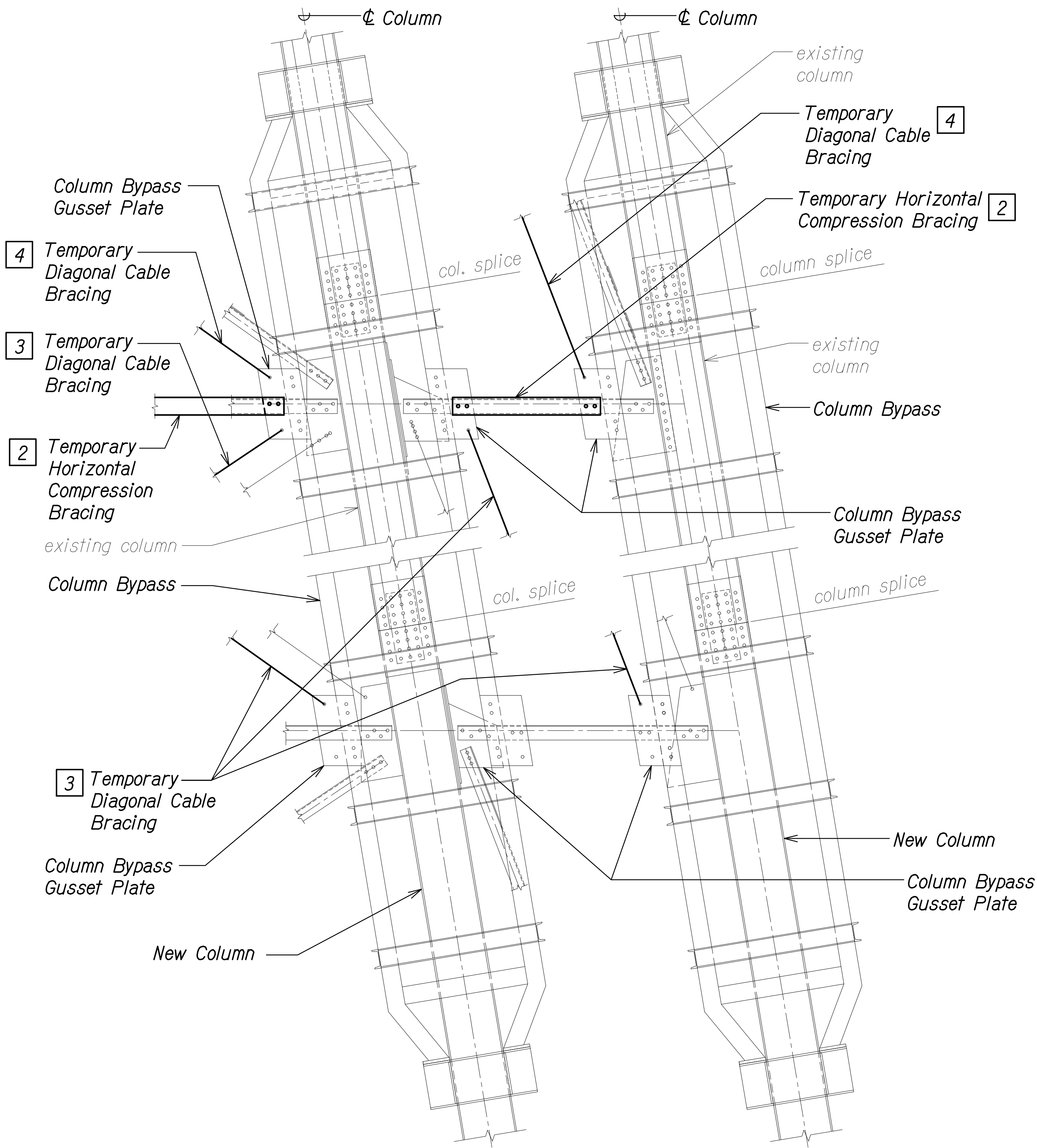
CONSTRUCTION SEQUENCE:

PHASE:

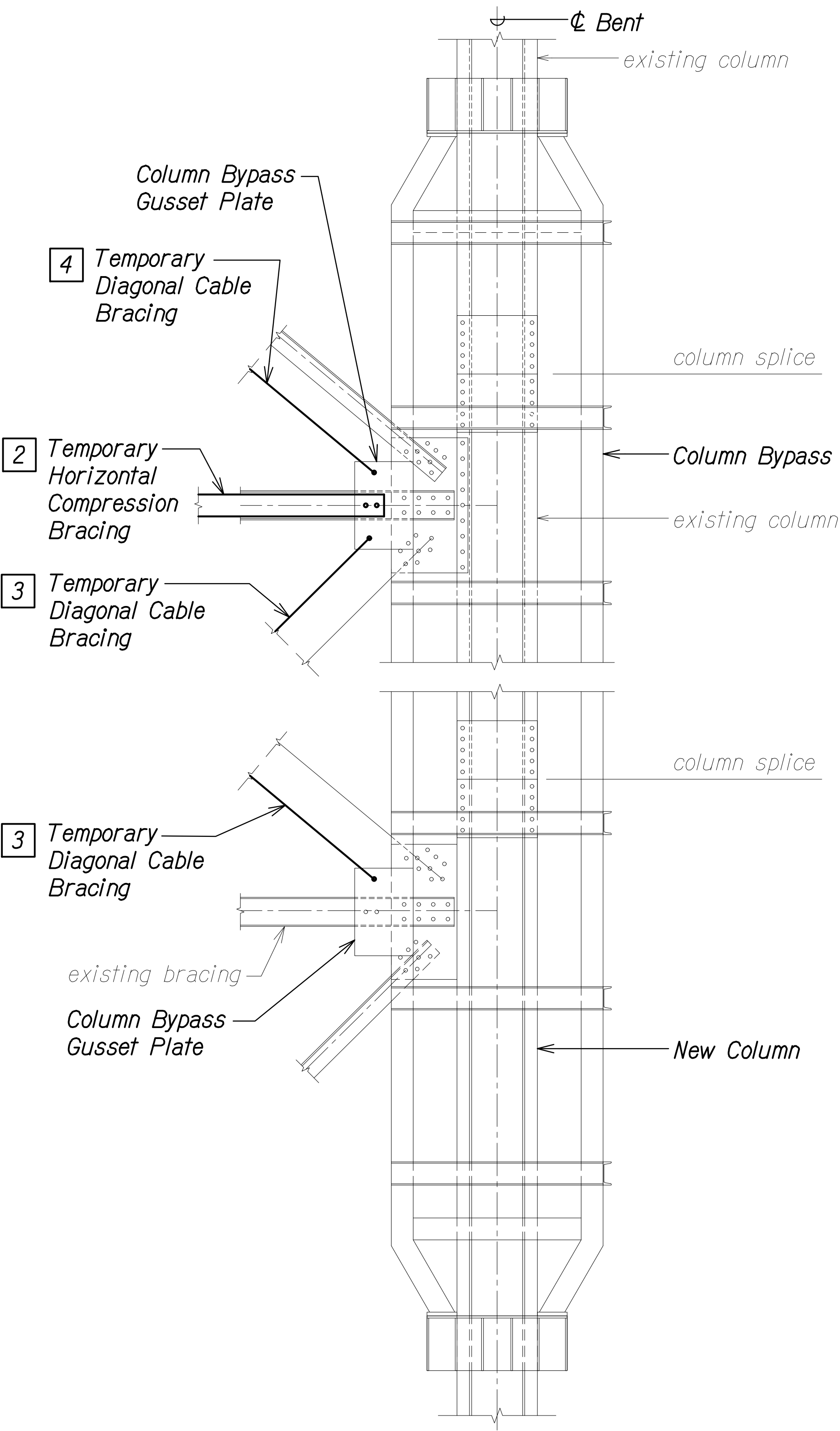
- 2 Install temporary horizontal compression bracings.
- 3 Install temporary diagonal cable bracing within column bypass level.
- 4 Install temporary diagonal cable bracing to level above. Temporary bracing shall connect to existing column gusset plate of above level.

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 6:57 PM

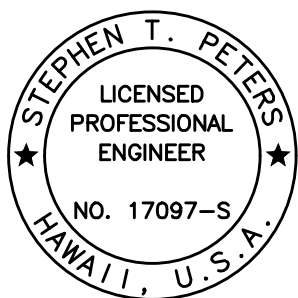
| | | |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK | DRAWN BY | |
| No. | DESIGNED BY | |
| | QUANTITIES BY | |
| | CHECKED BY | |



TYPICAL COLUMN BYPASS DETAIL A
Scale: 1/2" = 1'-0" SB2.2 BS2.2



TYPICAL COLUMN BYPASS DETAIL B
Scale: 1/2" = 1'-0" SB2.2 BS2.2



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 261 | 280 |

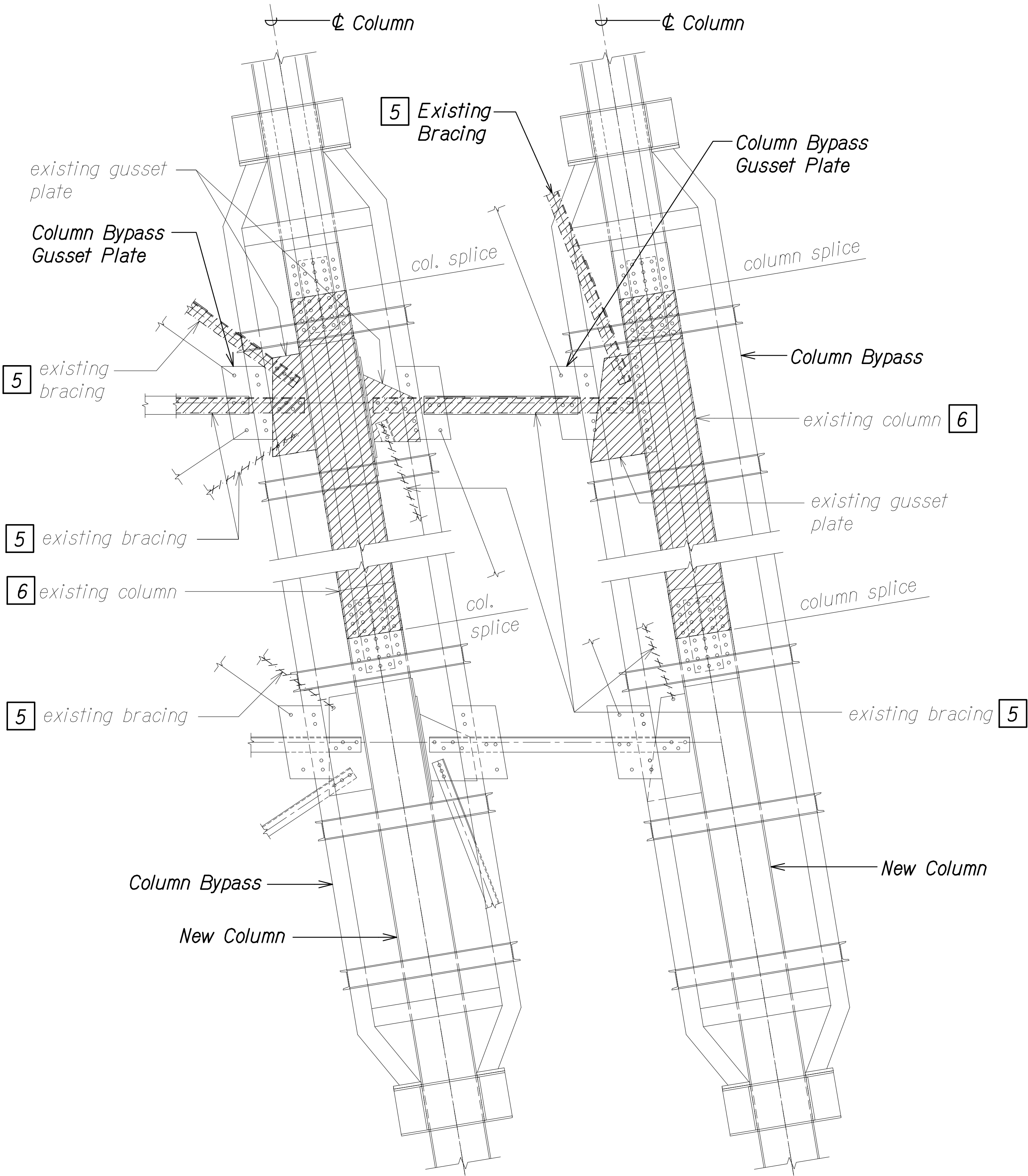
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PHASE:

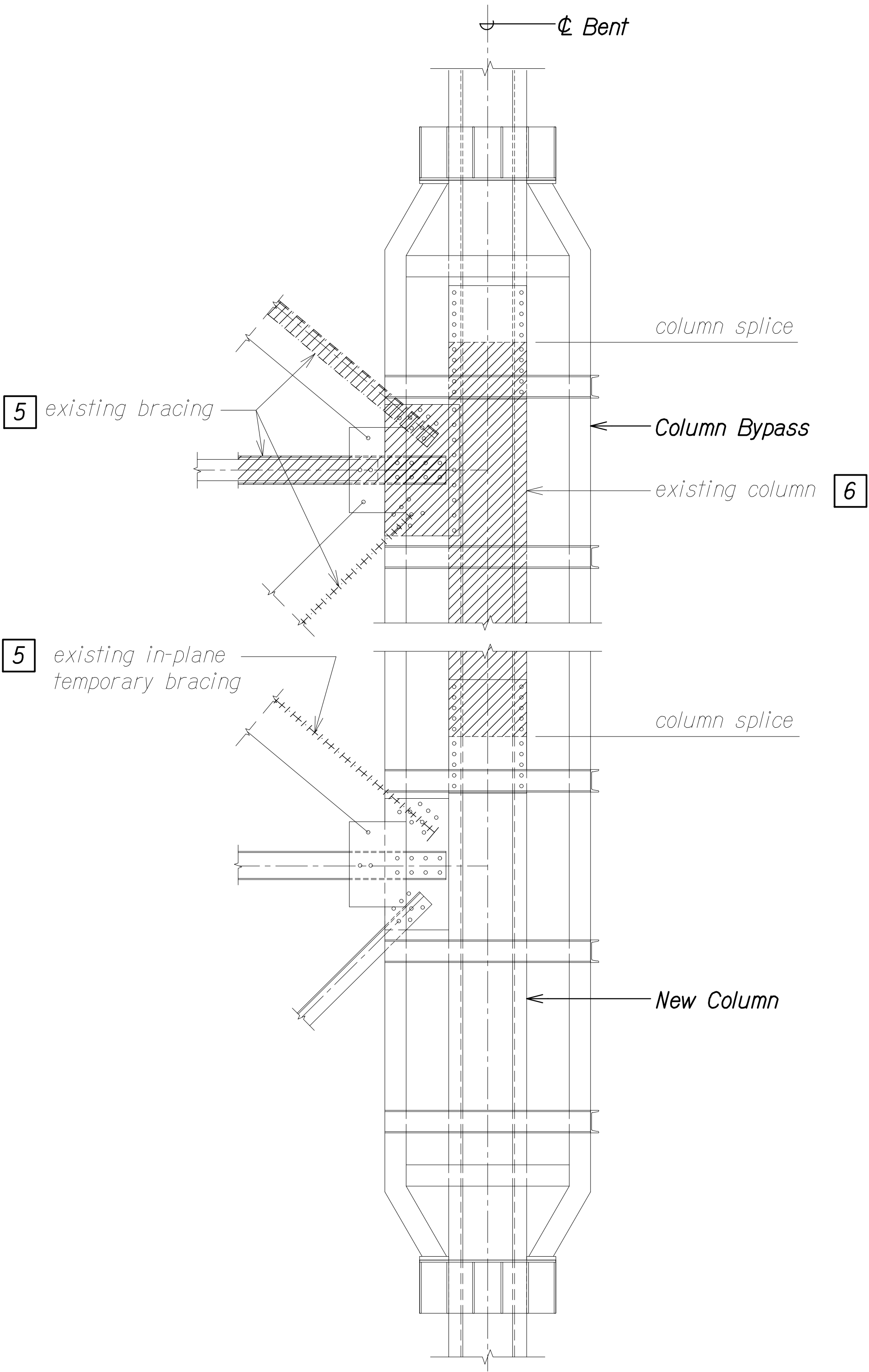
- 5

Remove existing bracing along temporary bracings.
- 6

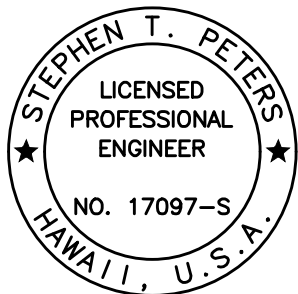
Remove existing column between existing column splice points within column bypass.



TYPICAL COLUMN BYPASS DETAIL A
Scale: 1/2" = 1'-0" SB2.3 SB2.3



TYPICAL COLUMN BYPASS DETAIL B
Scale: 1/2" = 1'-0" SB2.3 SB2.3



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Signature: *Stephen T. Peters*
DATE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SCHEMATIC COLUMN BYPASS

CONSTRUCTION PHASE DETAIL

HAWAII BELT ROAD

Nanue Stream Bridge Rehabilitation

Federal Aid Project No. BR-019-2(077)

Scale: As Noted

Date: Oct. 2024

SHEET No.SB2.3 OF 13 SHEETS

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

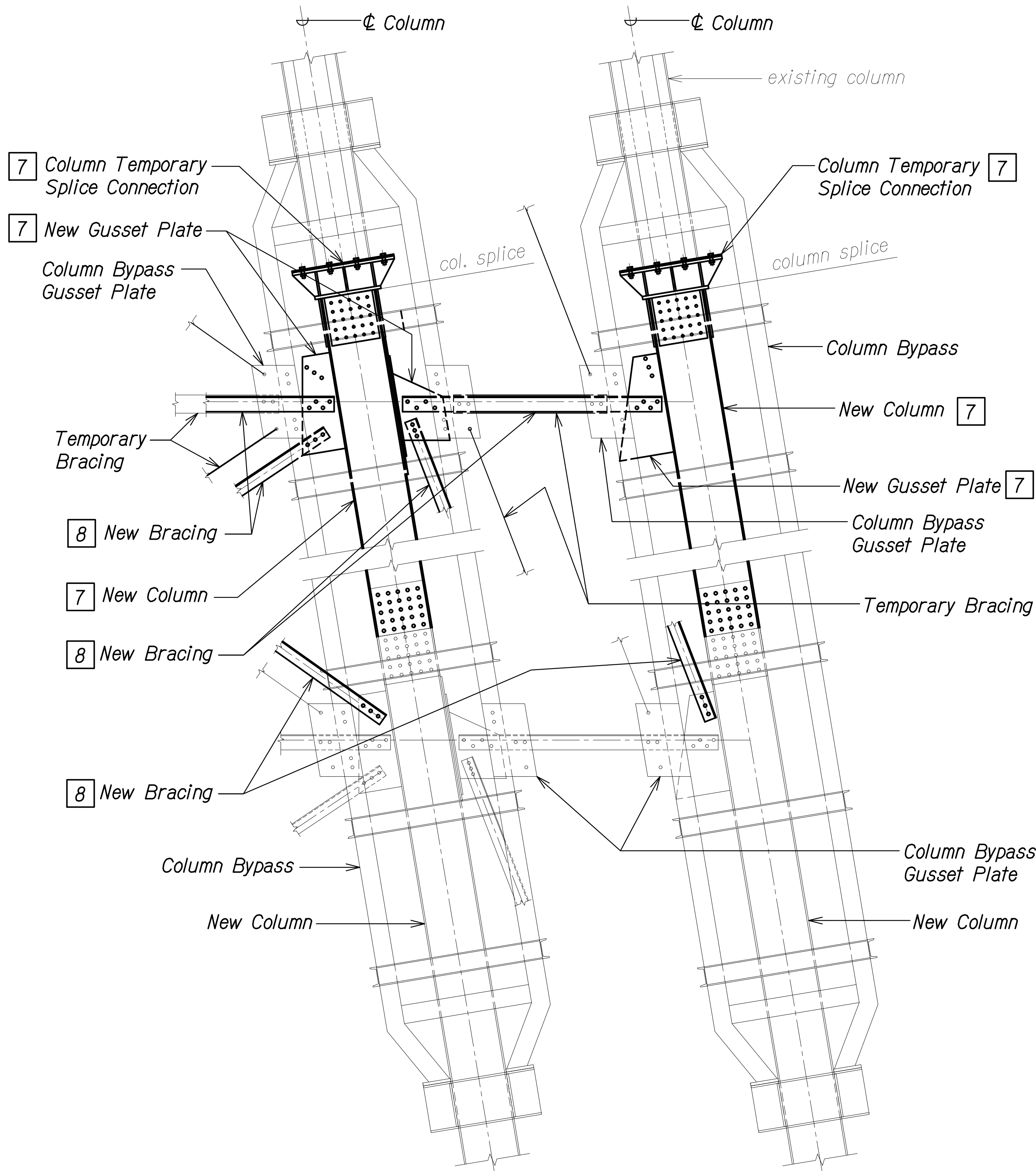
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| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 262 | 280 |

CONSTRUCTION SEQUENCE:

PHASE:

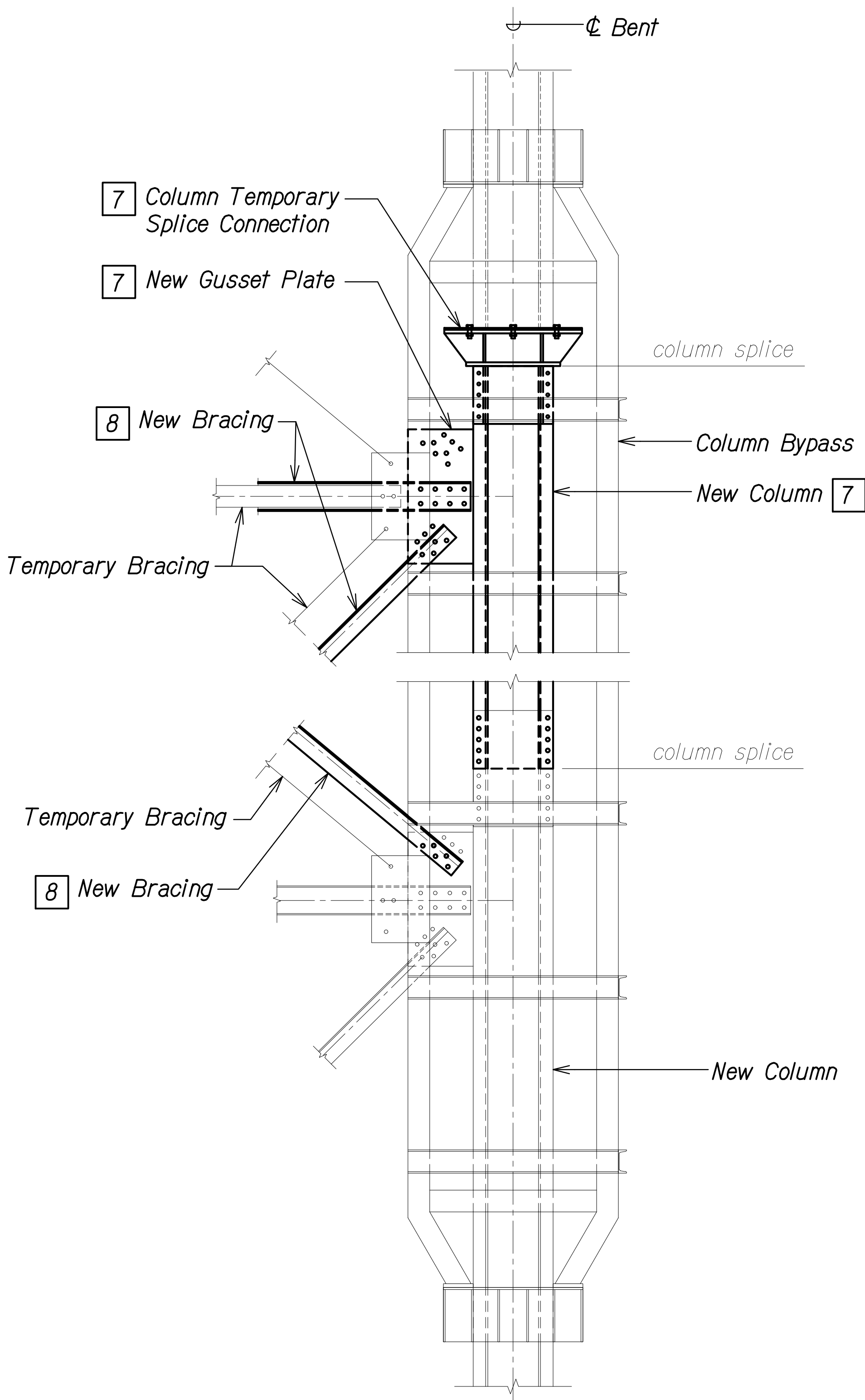
- 7 Install new column between column splice locations within column bypass. Install column temporary splice connection at top of new column; See sht. SB3.6.
- 8 Install new bracing within column bypass level.



TYPICAL COLUMN BYPASS DETAIL

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

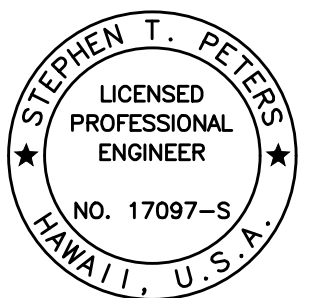
A
SB2.4 SB2.4



TYPICAL COLUMN BYPASS DETAIL

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

B
SB2.4 SB2.4



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

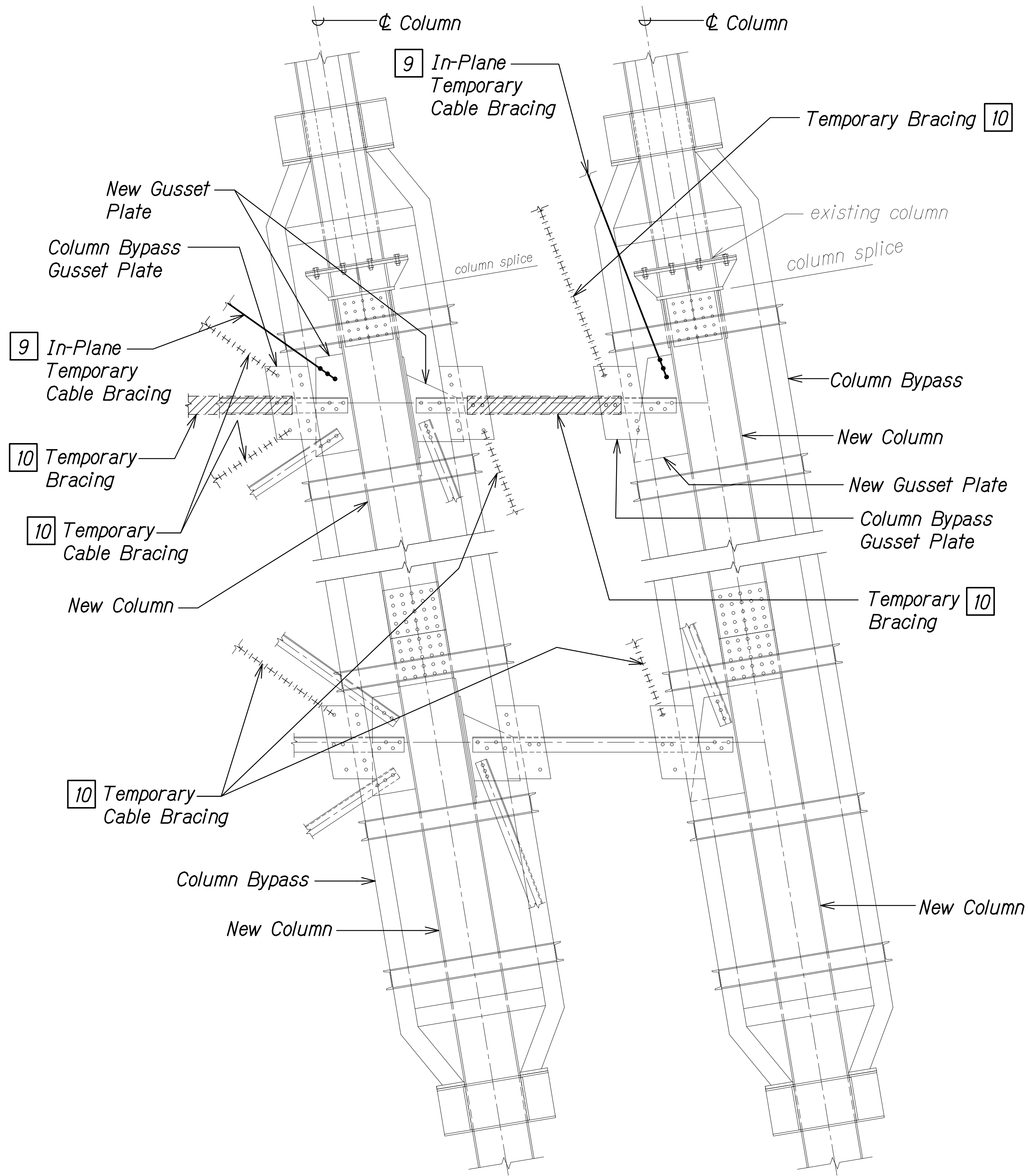
SHEET No. SB2.4 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 263 | 280 |

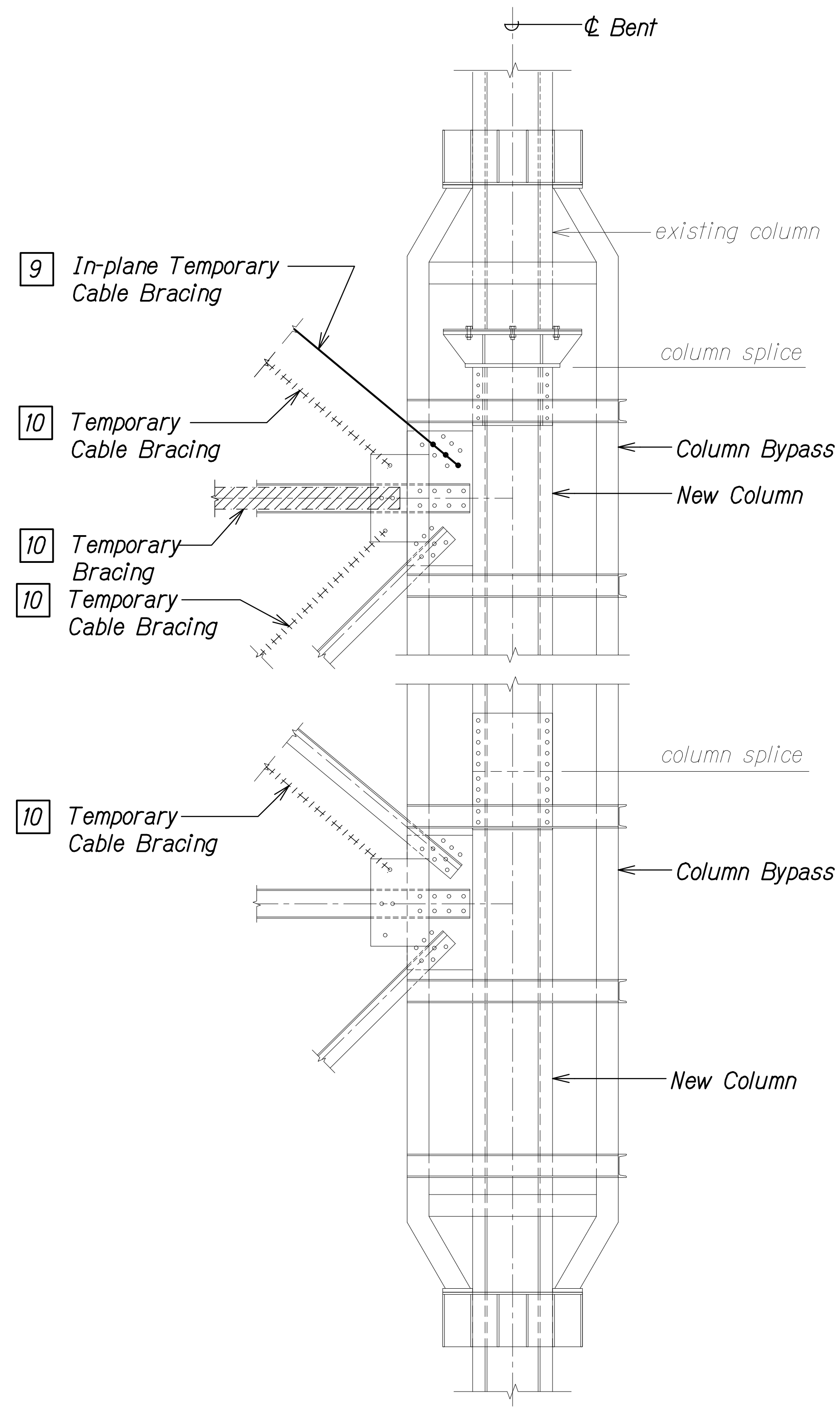
CONSTRUCTION SEQUENCE:

PHASE:

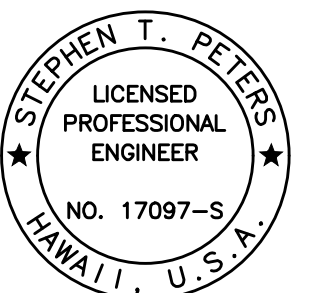
- 9 Install in-plane temporary cable bracing between new column gusset plate at column bypass level and existing column gusset plate at level above.
- 10 Remove temporary bracing.



TYPICAL COLUMN BYPASS DETAIL A
Scale: 1/2" = 1'-0"
SB2.5 SB2.5



TYPICAL COLUMN BYPASS DETAIL B
Scale: 1/2" = 1'-0"
SB2.5 SB2.5



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL**

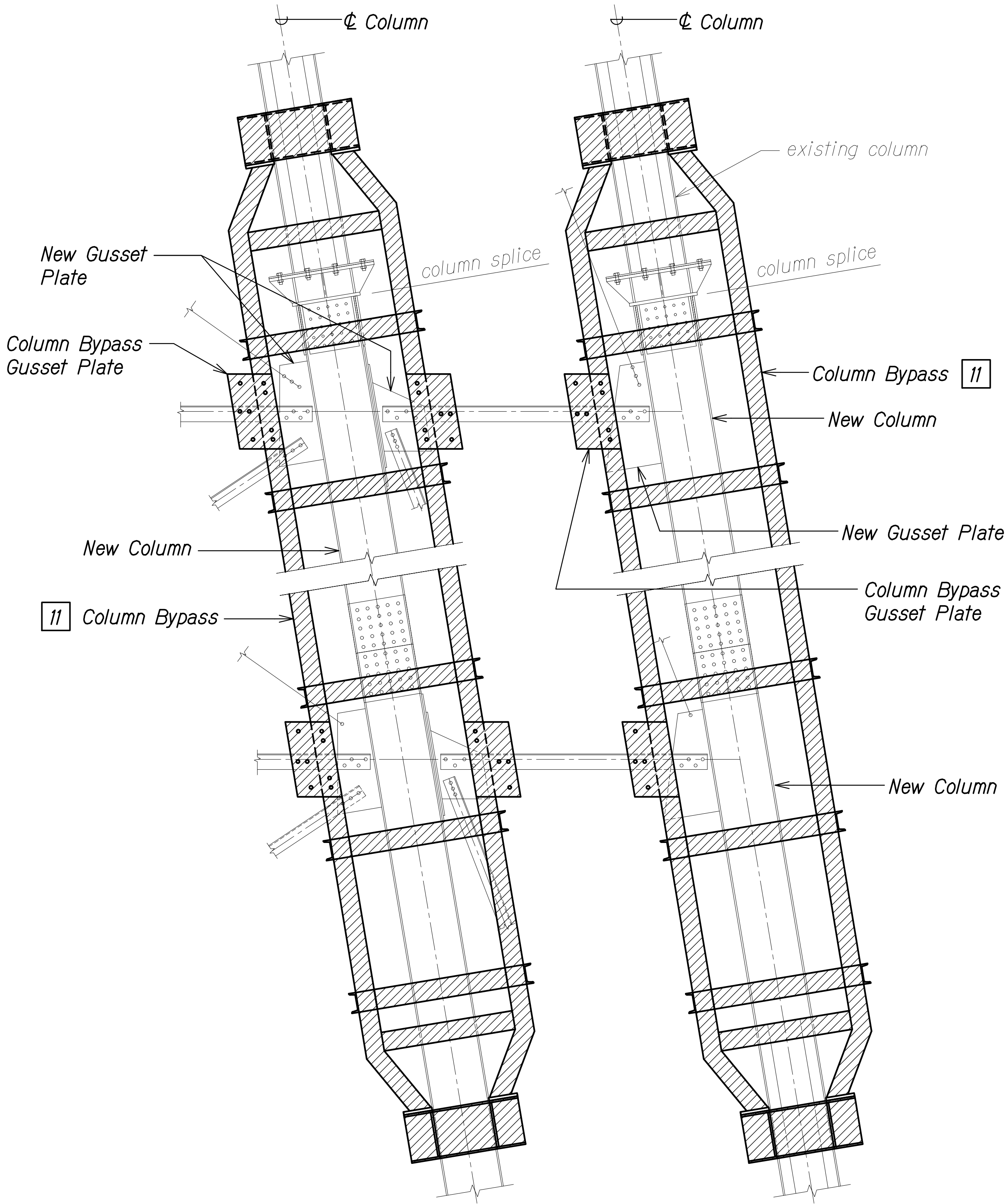
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 264 | 280 |

CONSTRUCTION SEQUENCE:

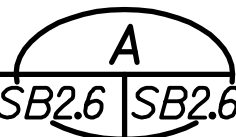
PHASE:

11 Remove column bypass.



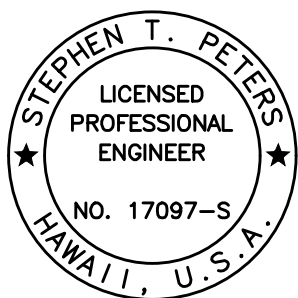
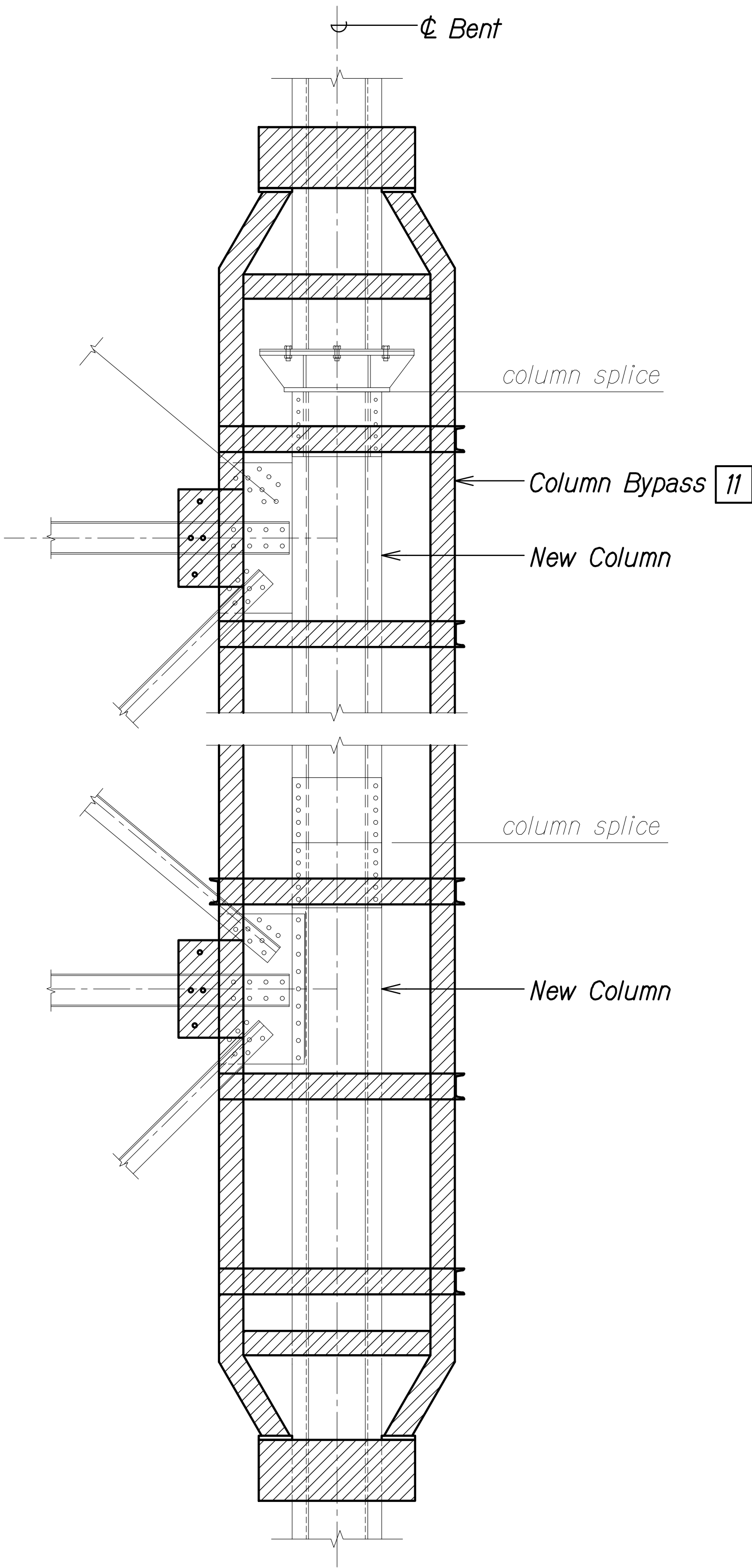
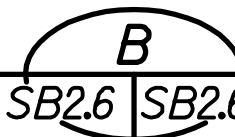
TYPICAL COLUMN BYPASS DETAIL

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



TYPICAL COLUMN BYPASS DETAIL

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



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

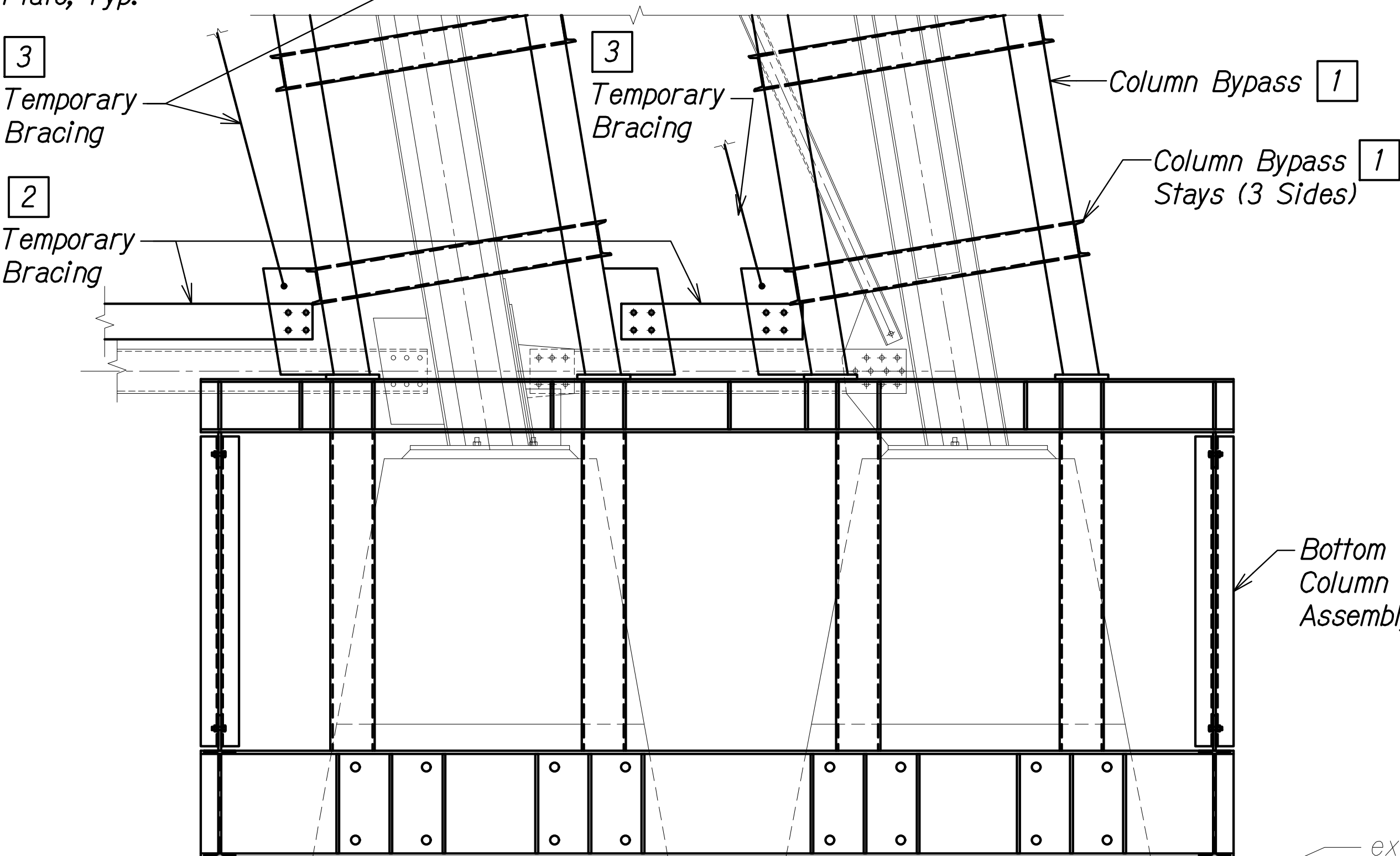
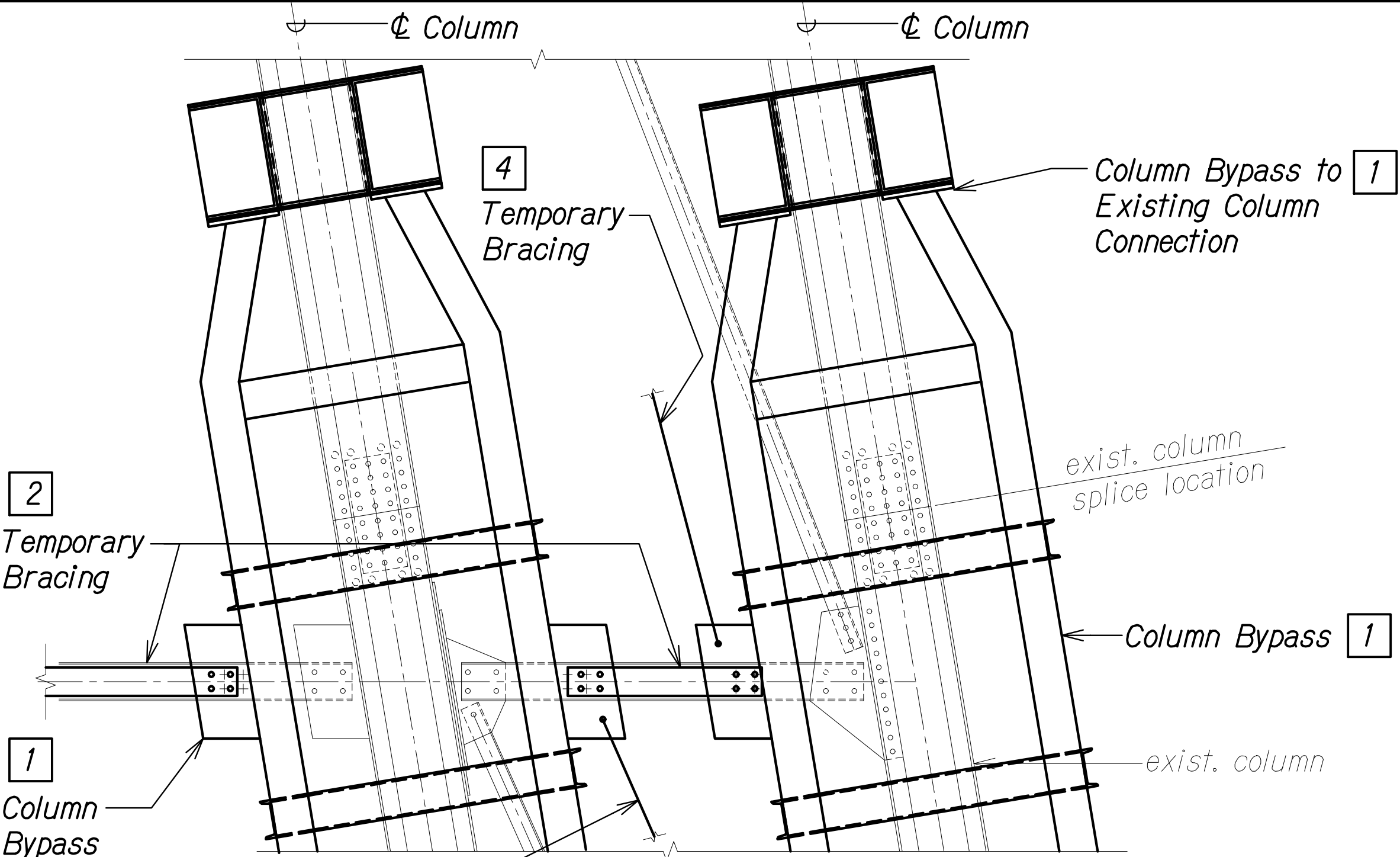
SHEET No. SB2.6 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 265 | 280 |

CONSTRUCTION SEQUENCE:

PHASES:

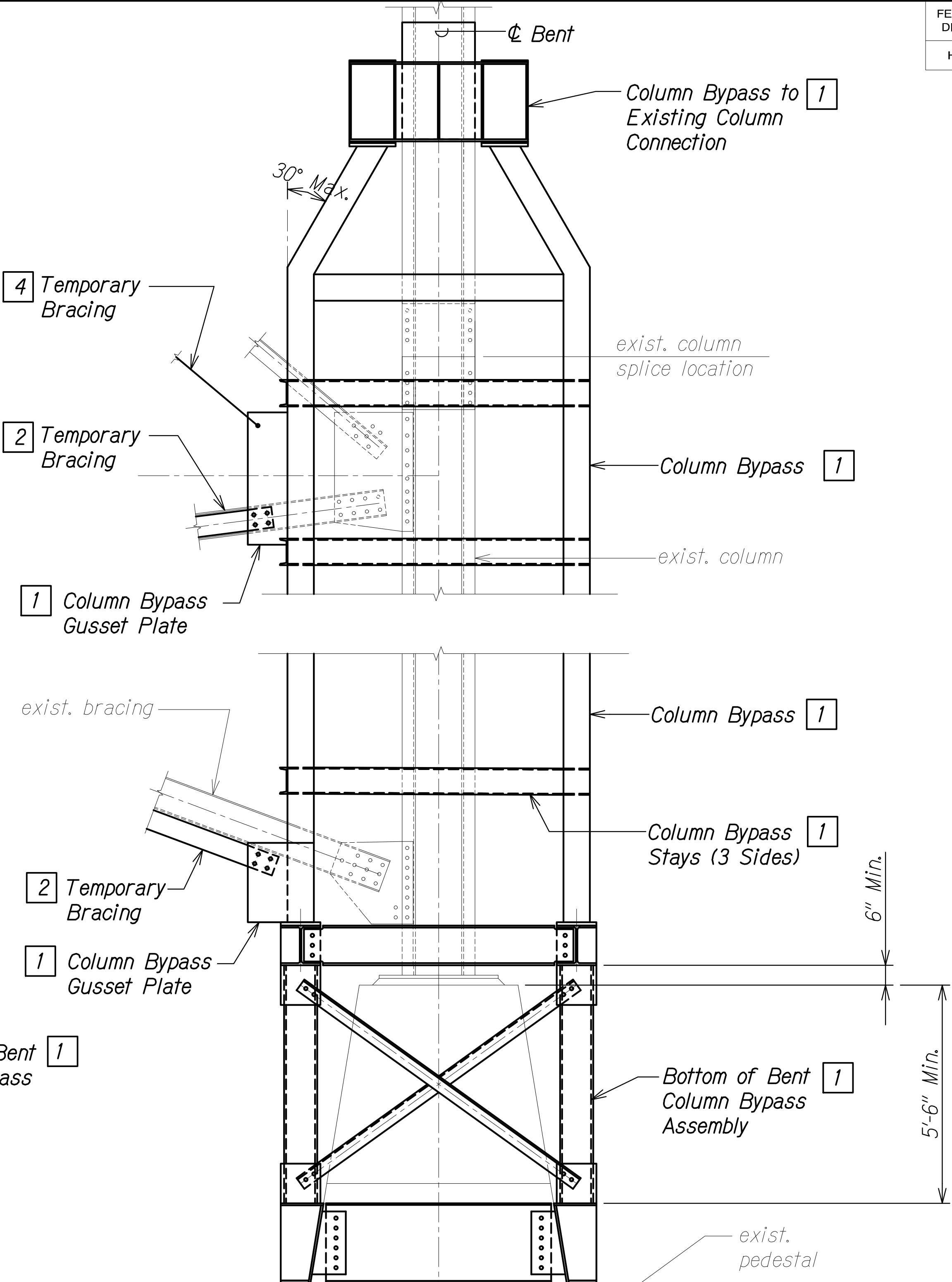
- 1 Install bottom of bent column bypass assembly. See sht. SB3.7.
- 2 Install temporary horizontal compression bracings.
- 3 Install temporary diagonal cable bracing within column bypass level.
- 4 Install temporary diagonal bracing to level above temporary bracing shall connect to existing columns gusset plate of above level.



COLUMN BYPASS
TO BENT PEDESTAL DETAIL

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

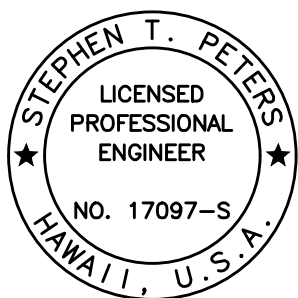
A
SB2.7 SB2.7



COLUMN BYPASS
TO BENT PEDESTAL DETAIL

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

B
SB2.7 SB2.7



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

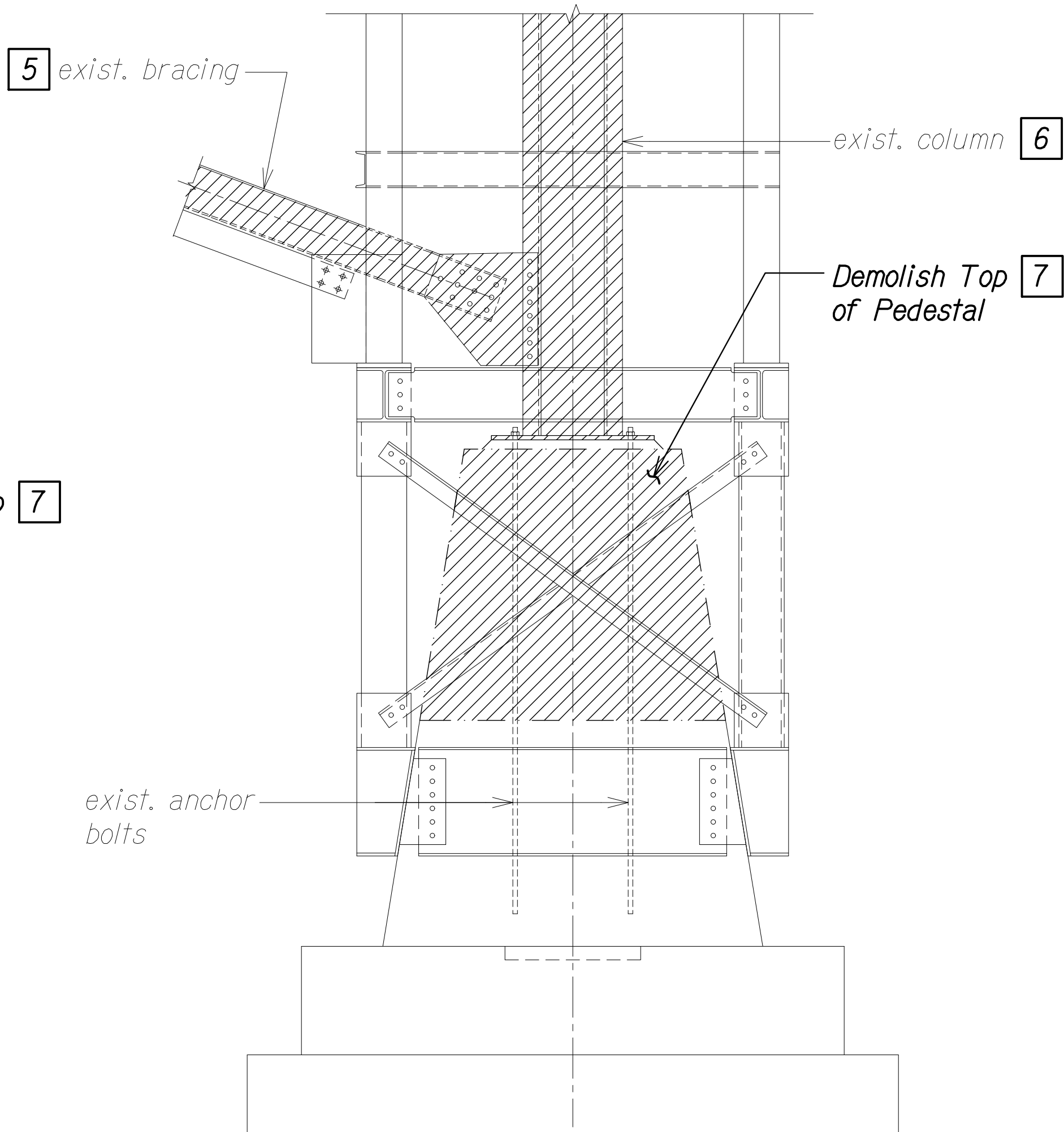
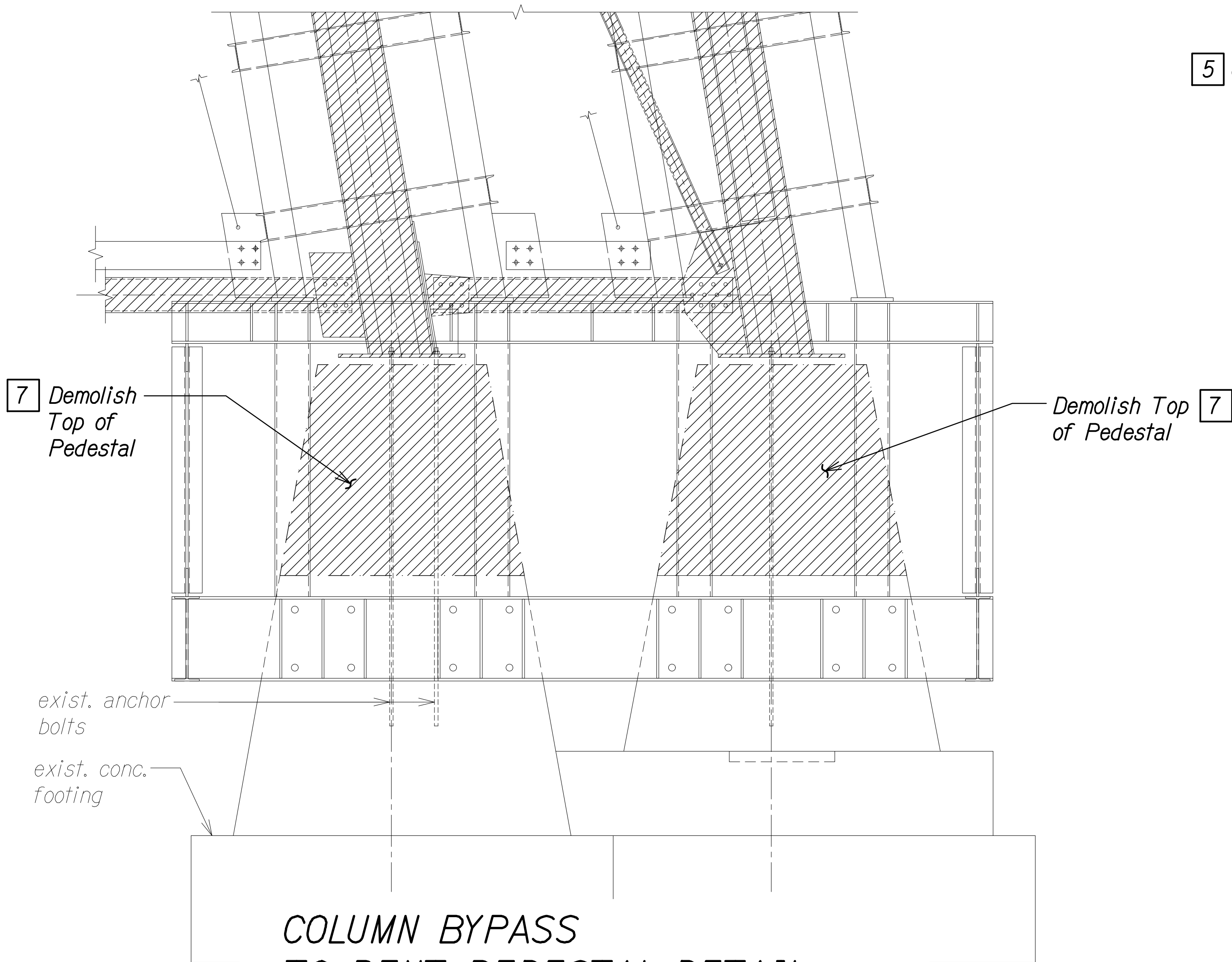
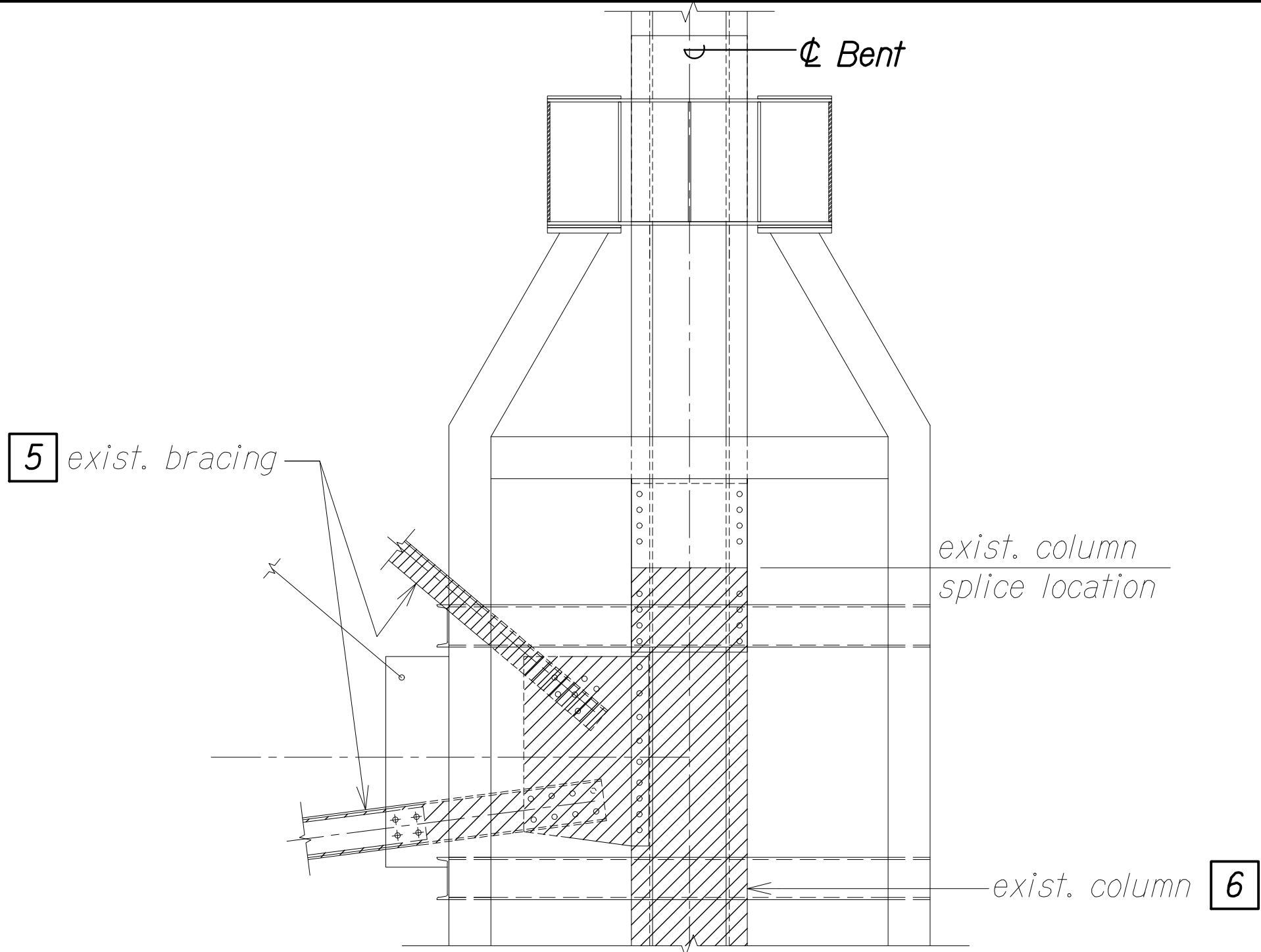
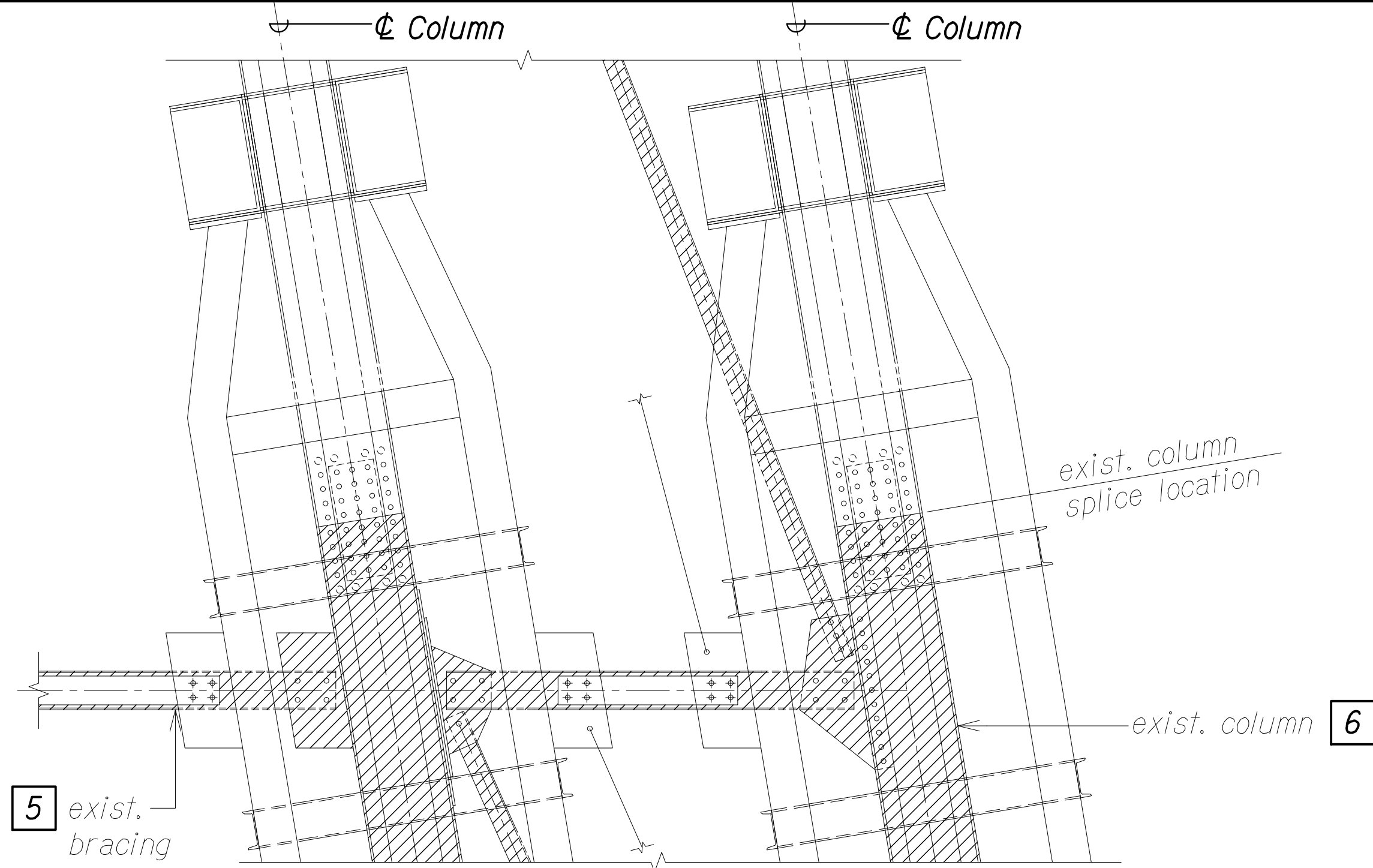
SHEET No. SB2.7 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 266 | 280 |

CONSTRUCTION SEQUENCE:

PHASES:

- 5 Remove existing bracings.
- 6 Remove existing Column.
- 7 Demolish and remove top of pedestal and upper portion of existing anchor bolts. See shts. SA7.1 to SA7.4.



COLUMN BYPASS
TO BENT PEDESTAL DETAIL

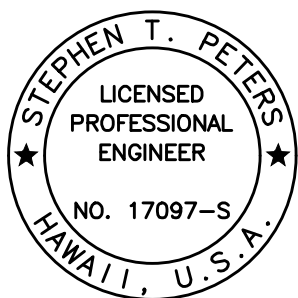
Scale: 1/2" = 1'-0"

A
SB2.8 | SB2.8

COLUMN BYPASS
TO BENT PEDESTAL DETAIL

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

B
SB2.8 | SB2.8



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.8 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 267 | 280 |

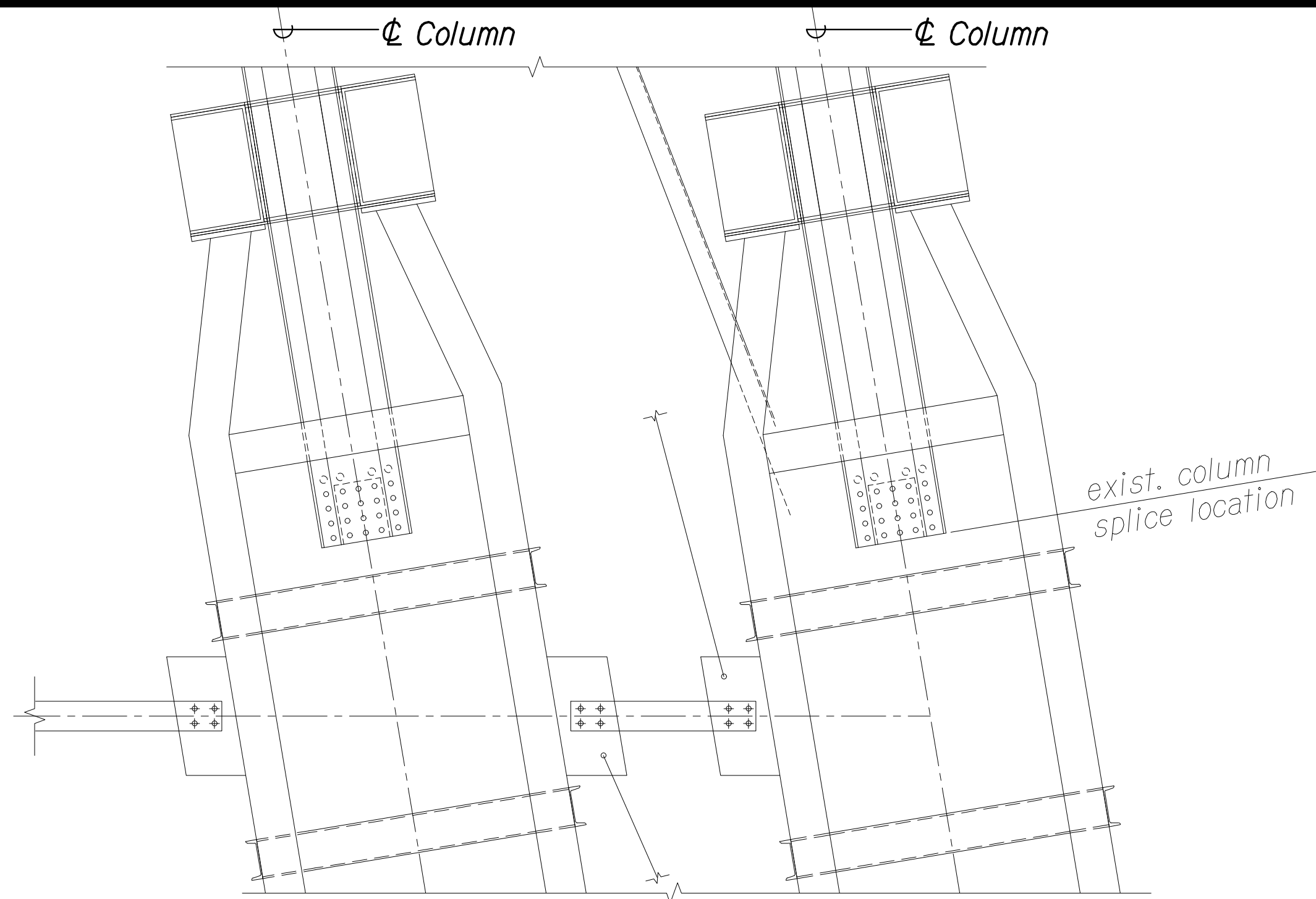
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PHASES:

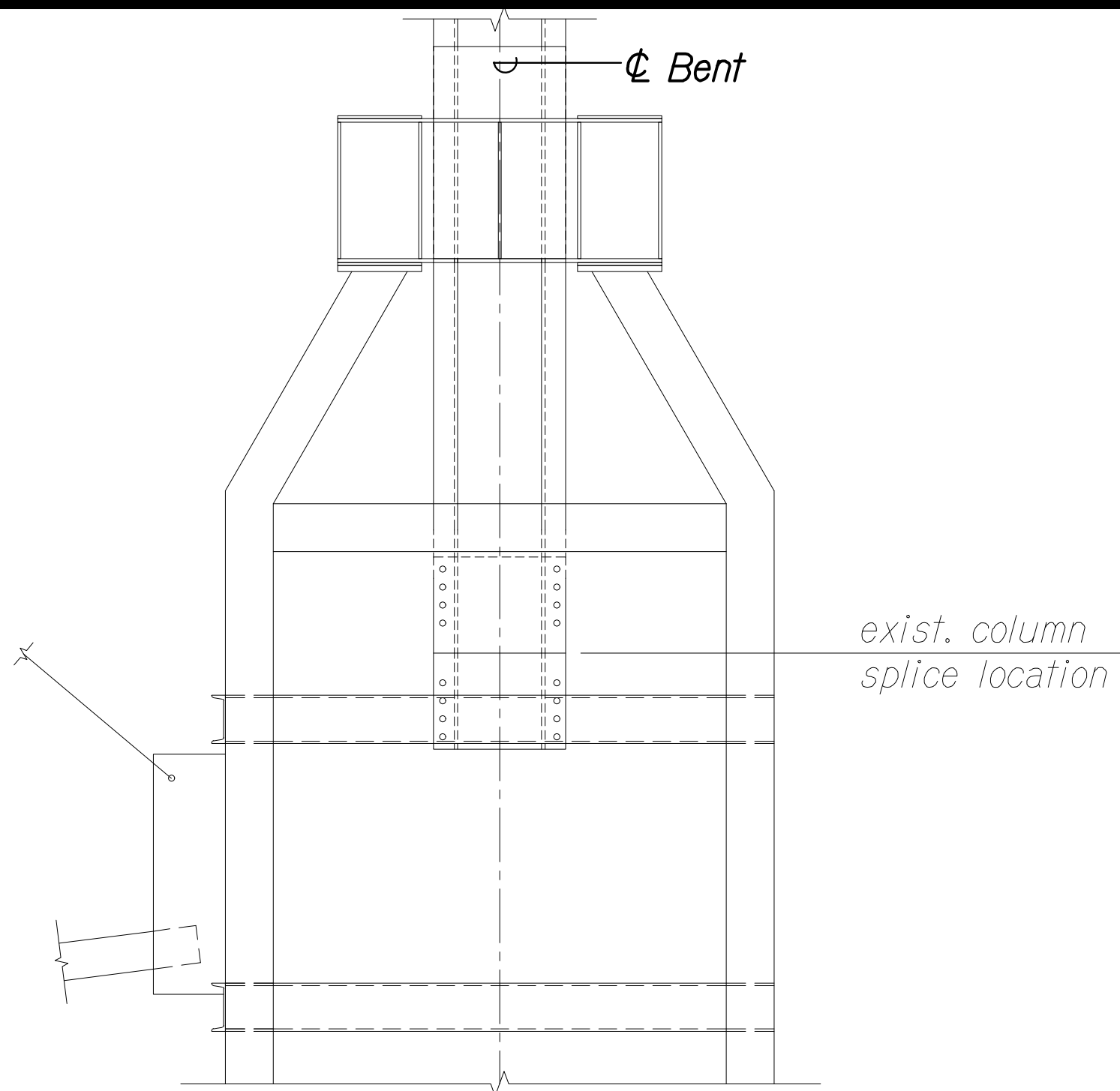
- 8

Install pedestal anchor bolts and reinforcing. See shts. SA7.6 to SA7.9.
- 9

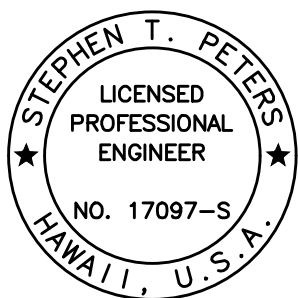
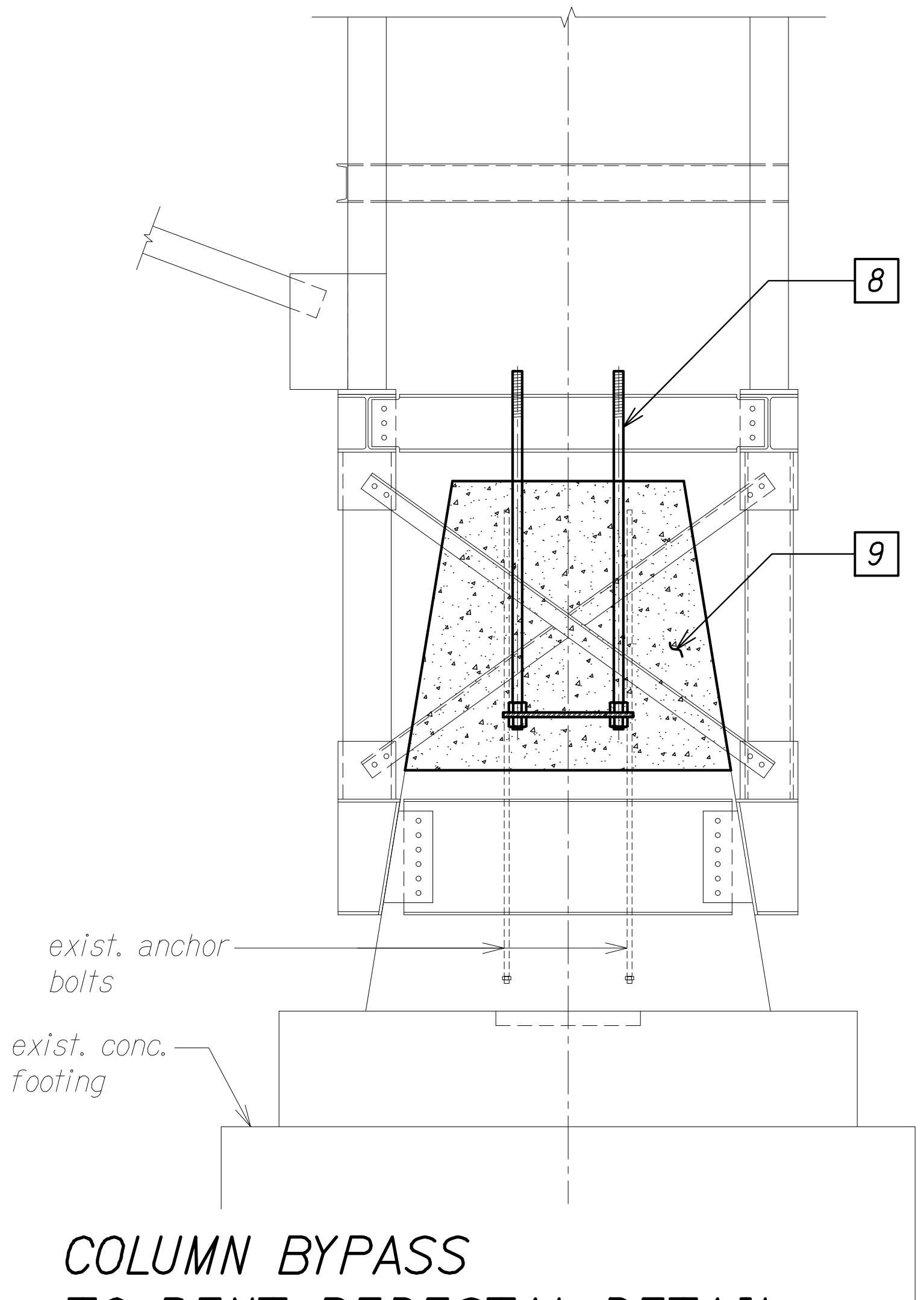
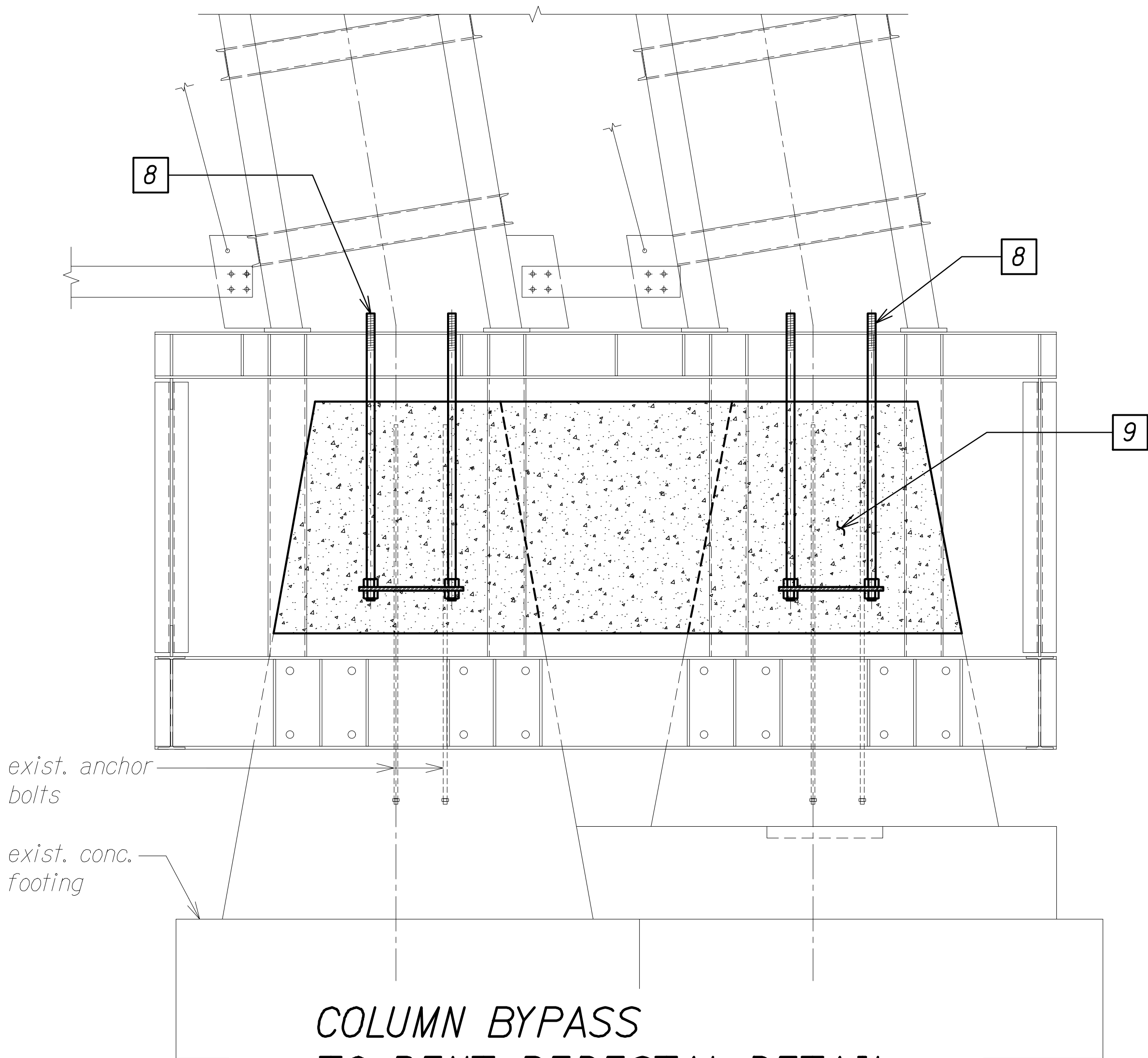
Pour top of pedestal back to original top of foundation height and added grade beam. See shts. SA7.6 to SA7.9.



COLUMN BYPASS
TO BENT PEDESTAL DETAIL A
Scale: 1/2" = 1'-0" SB2.9 SB2.9



COLUMN BYPASS
TO BENT PEDESTAL DETAIL B
Scale: 1/2" = 1'-0" SB2.9 SB2.9



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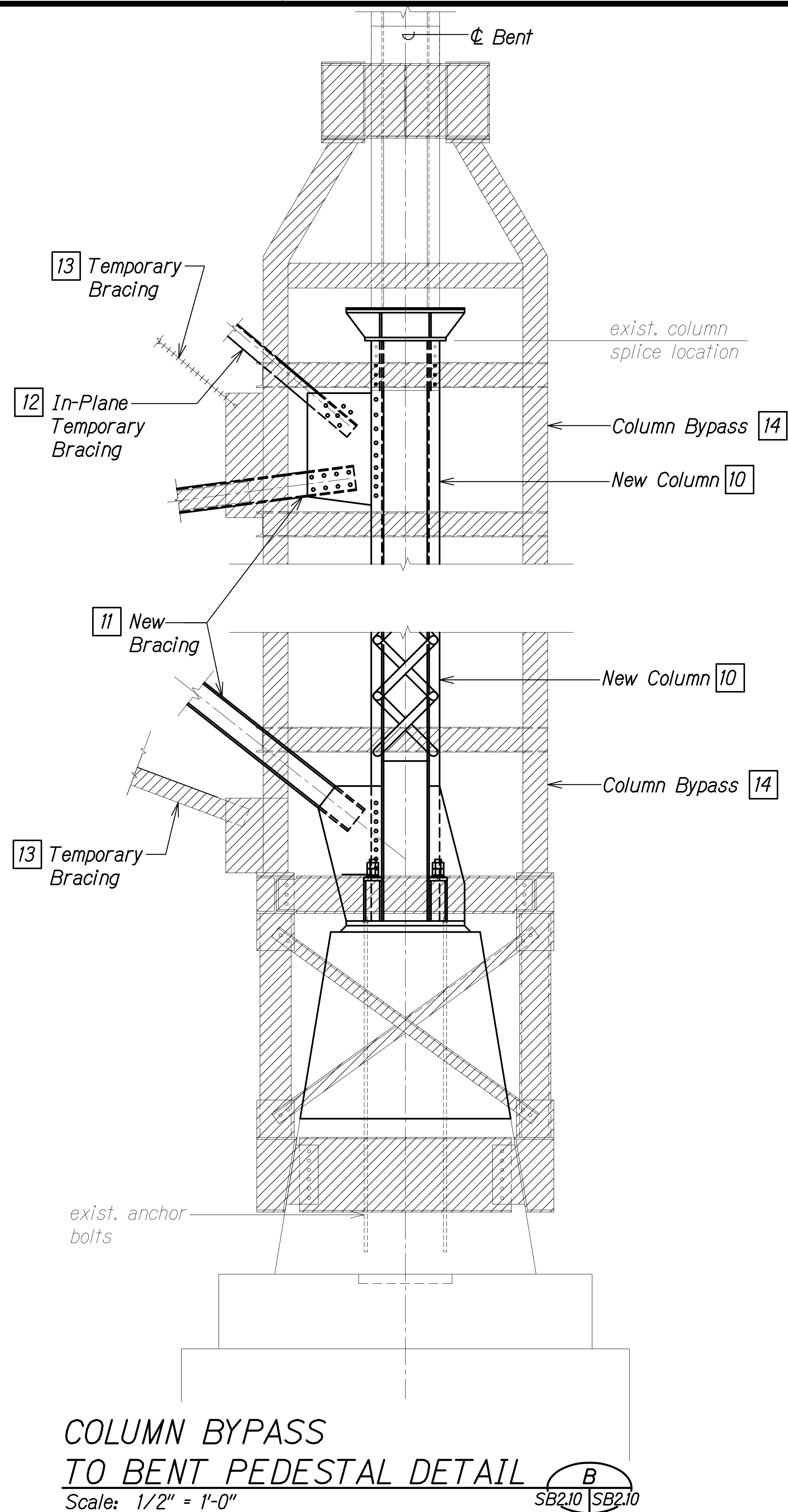
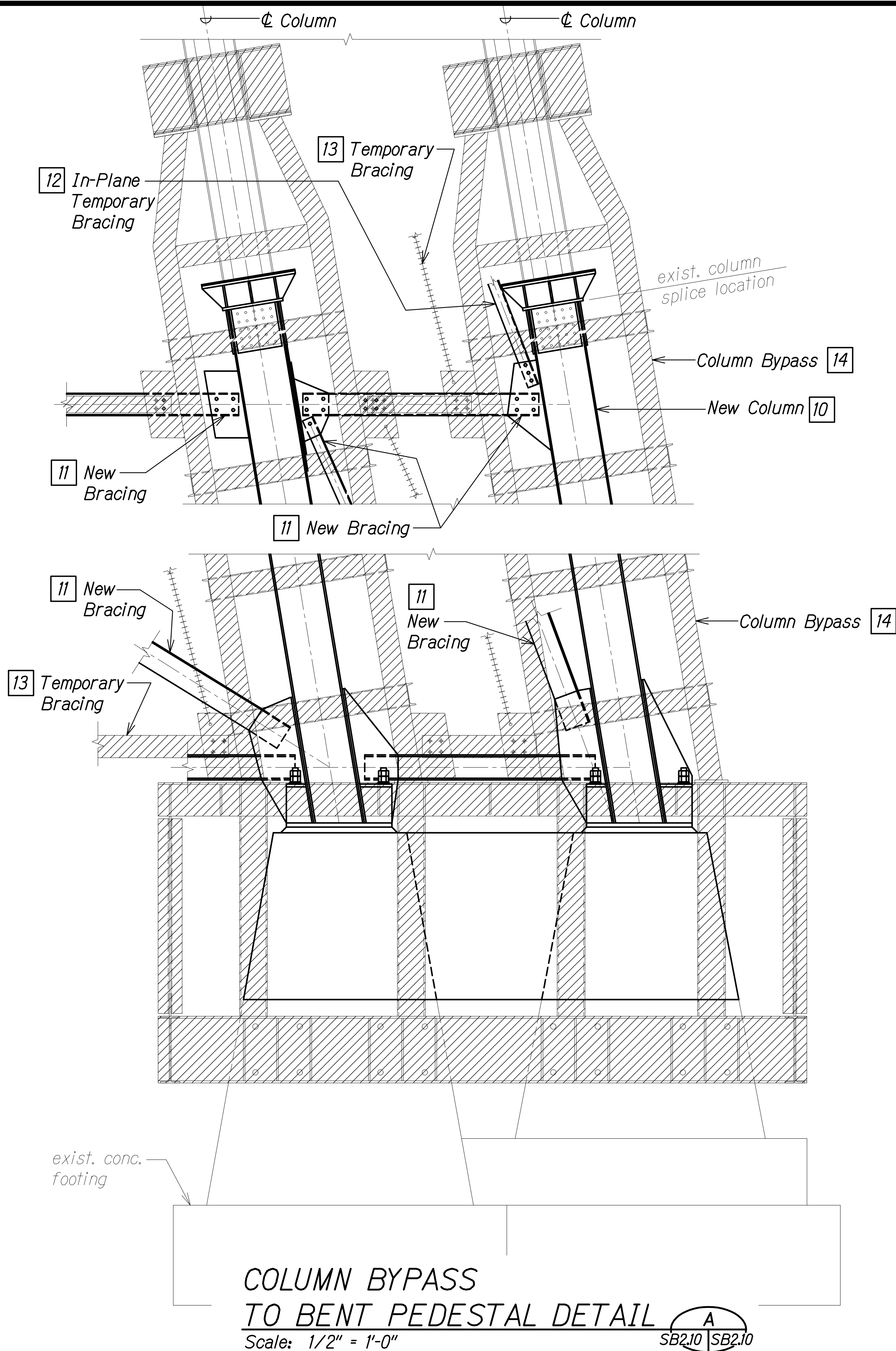
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.9 OF 13 SHEETS

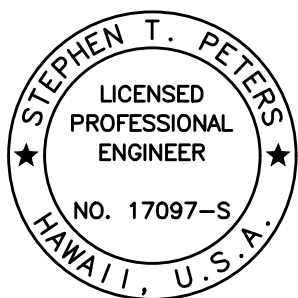
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 268 | 280 |



CONSTRUCTION SEQUENCE:

PHASES:

- 10 Install new column.
- 11 Install new bracing.
- 12 Install in-place temporary bracing between new column at column bypass level and existing column gusset plate at level above.
- 13 Remove temporary bracings.
- 14 Remove Bottom of Bent Column Bypass assembly.



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SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

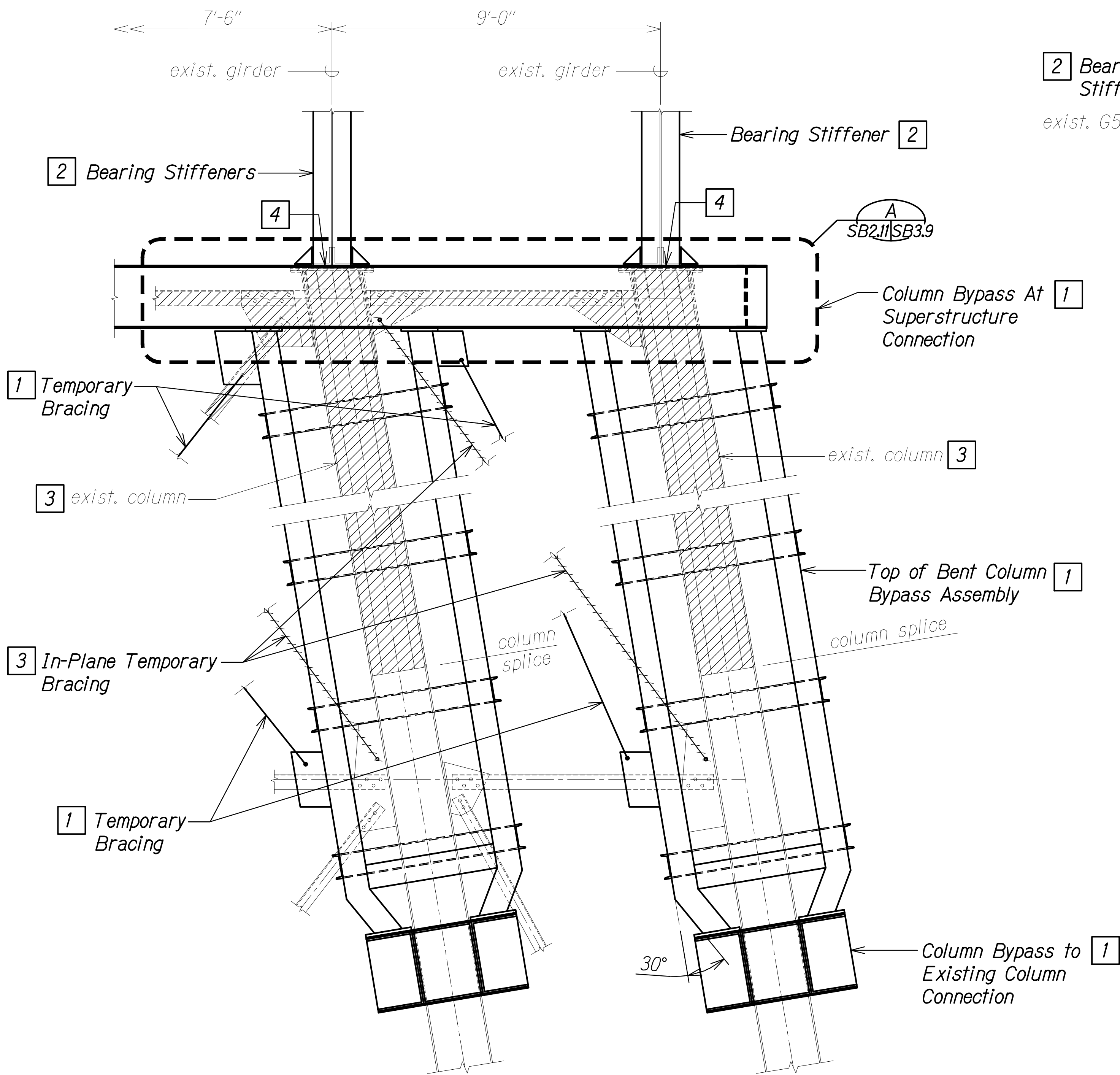
SHEET No.SB2.10 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 269 | 280 |

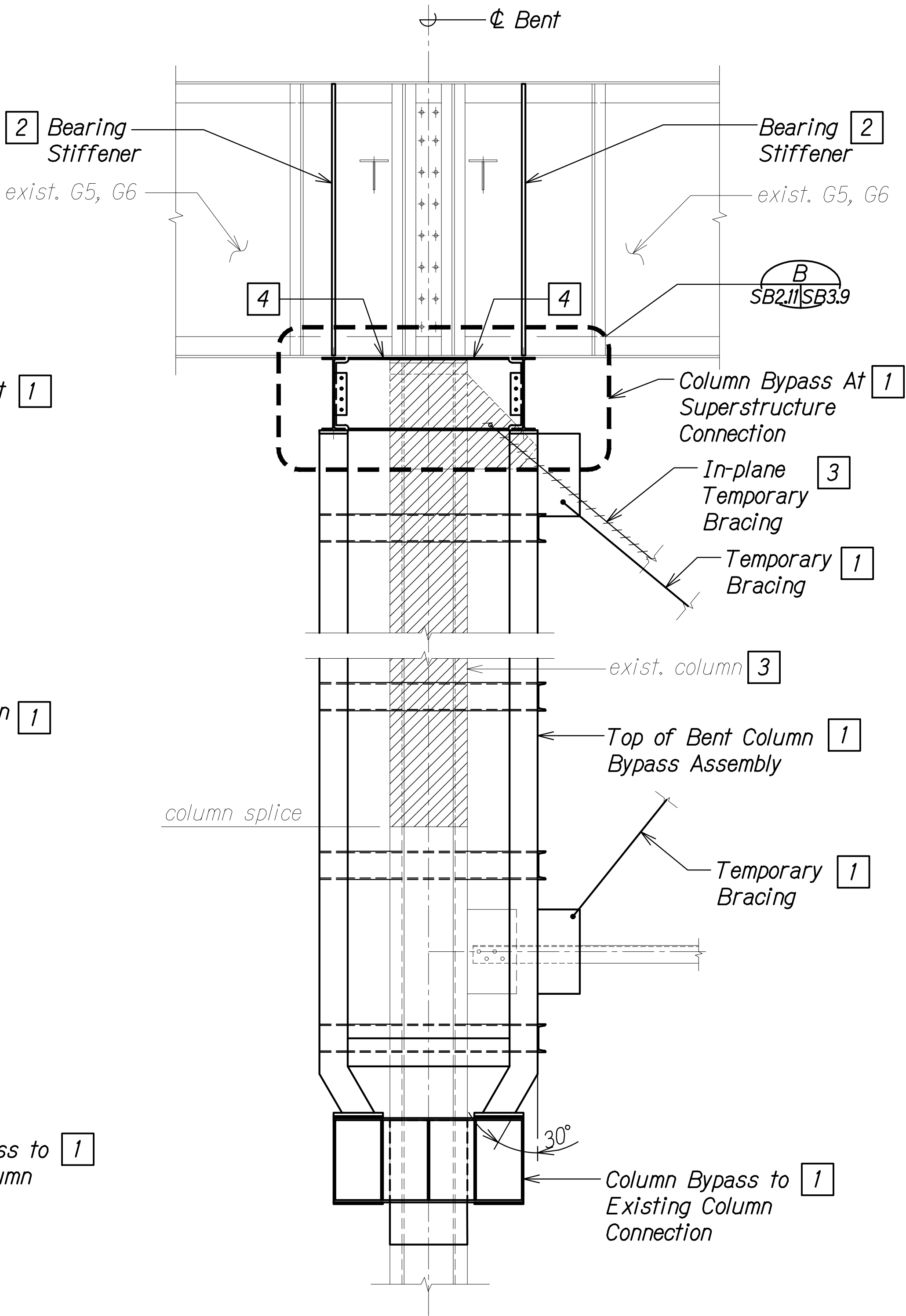
CONSTRUCTION SEQUENCE:

PHASES:

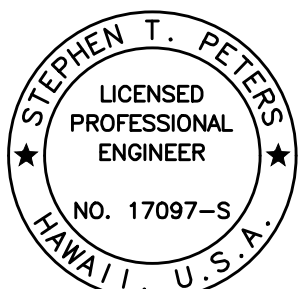
- 1 Install top of bent column bypass assembly and temporary bracing. See sheet SB3.9.
- 2 Add bearing stiffeners to existing girders at column bypass bearing locations.
- 3 Remove existing column and bracing.
- 4 Clean & paint bottom of girder at bearing locations. See shts. SA8.4 to SA8.6.



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL A
Scale: 1/2" = 1'-0" SB2.11 SB2.11



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL B
Scale: 1/2" = 1'-0" SB2.11 SB2.11



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SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

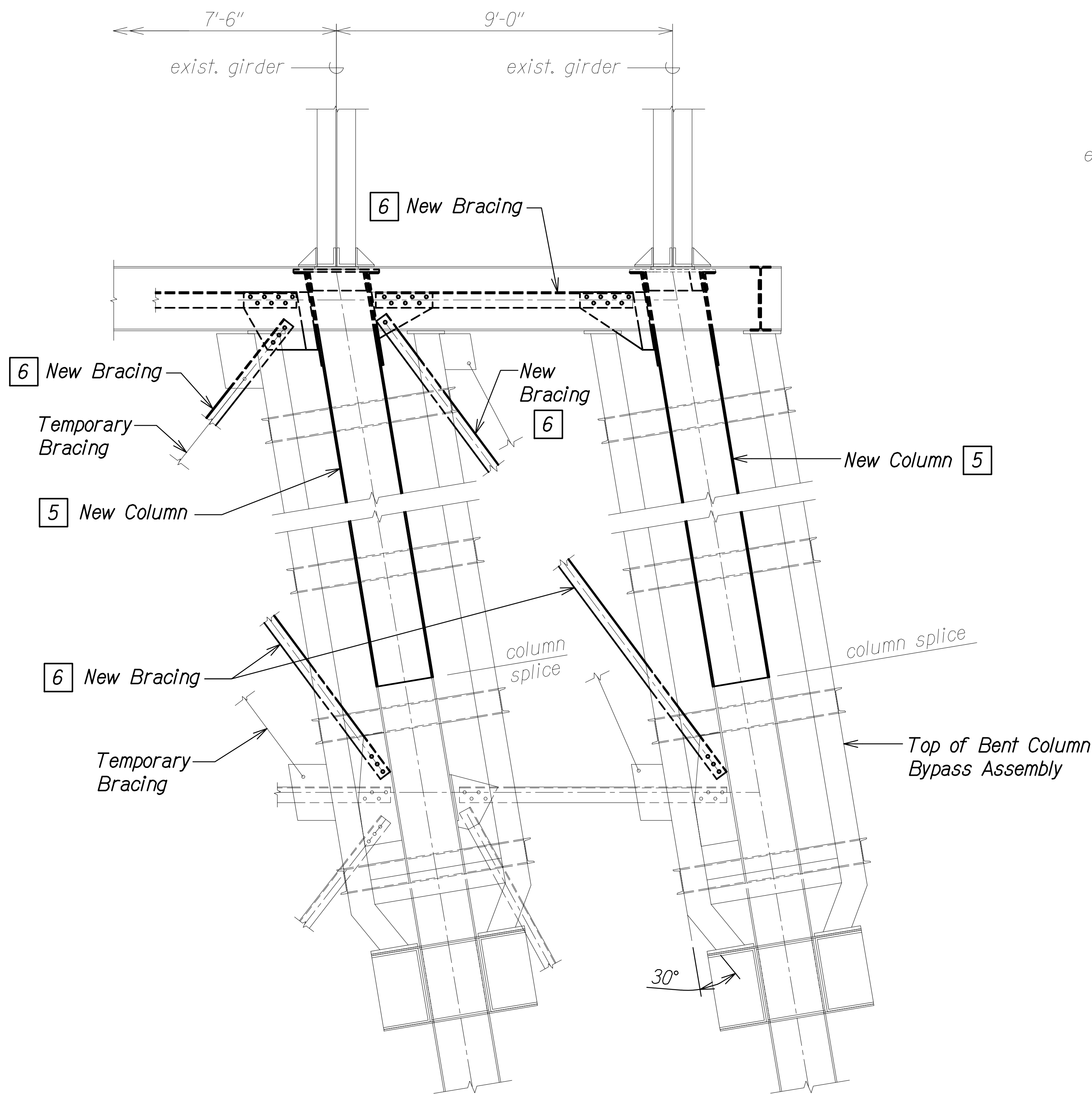
SHEET No. SB2.11 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 270 | 280 |

CONSTRUCTION SEQUENCE:

PHASES:

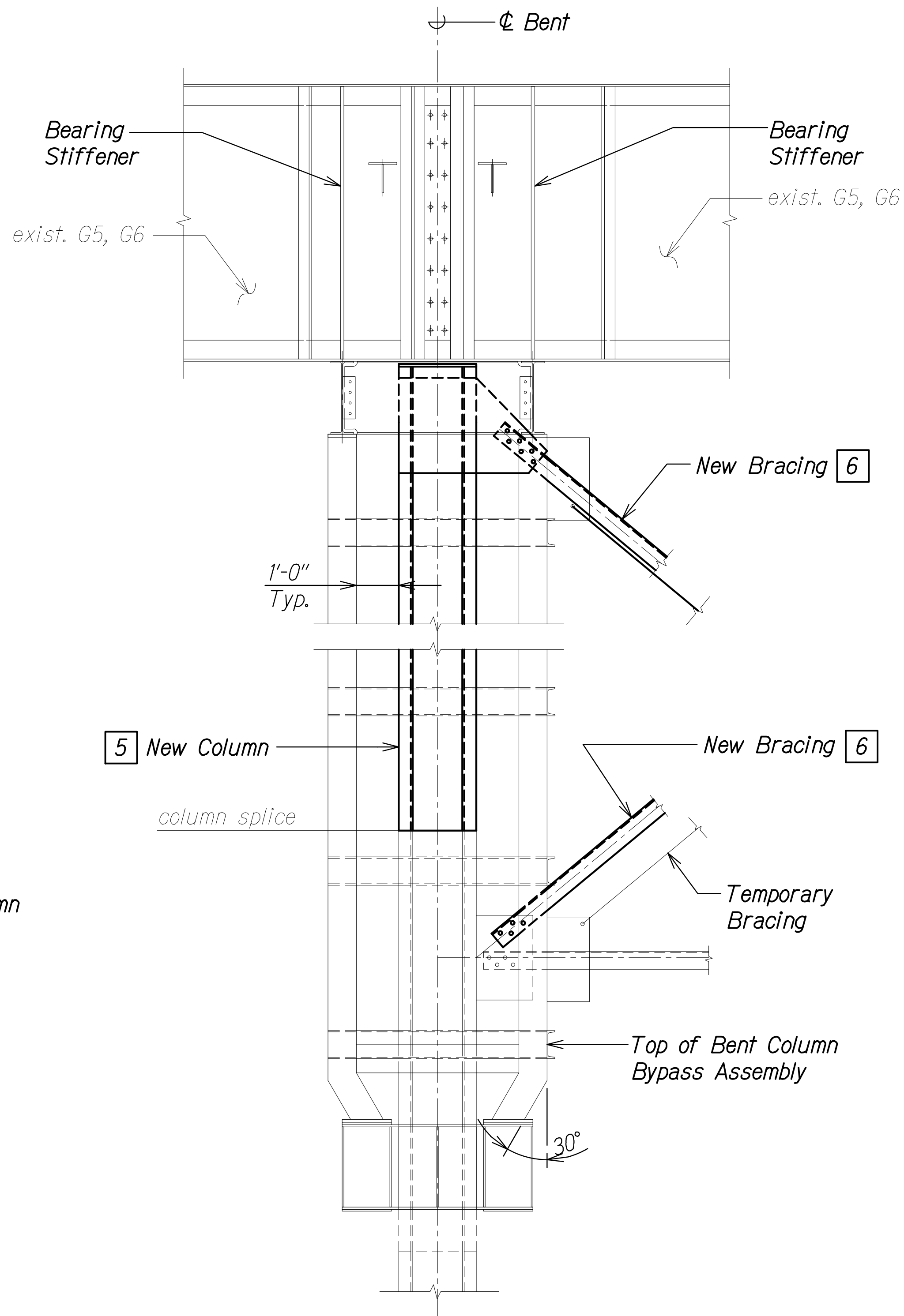
- 5 Install new column
6 Install new bracing



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL

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

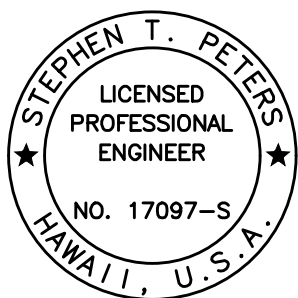
A
SB2.12 SB2.12



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL

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

B
SB2.12 SB2.12



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ME OR UNDER MY SUPERVISION.

Signature: Stephen T. Peters
4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

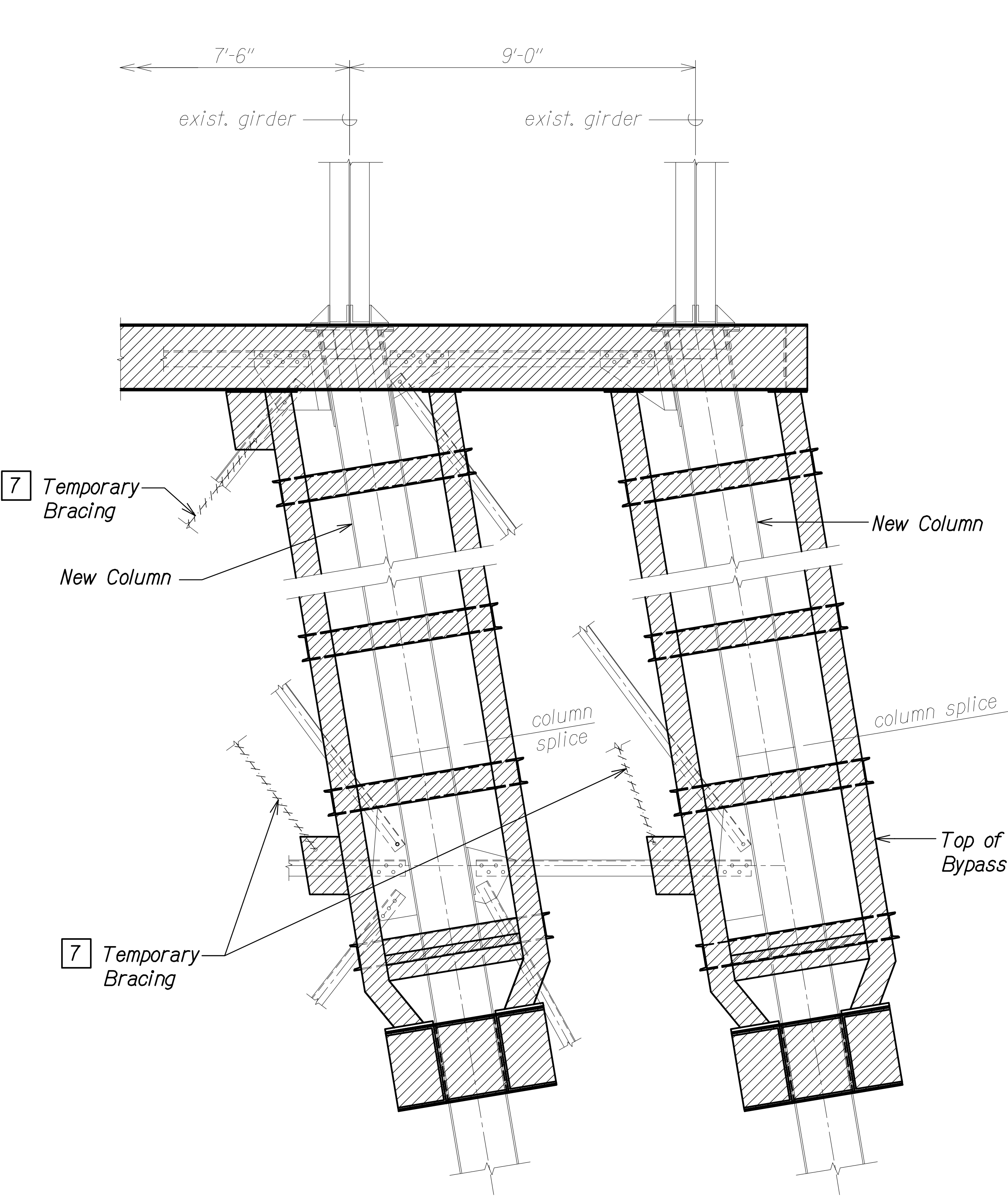
SHEET No.SB2.12 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 271 | 280 |

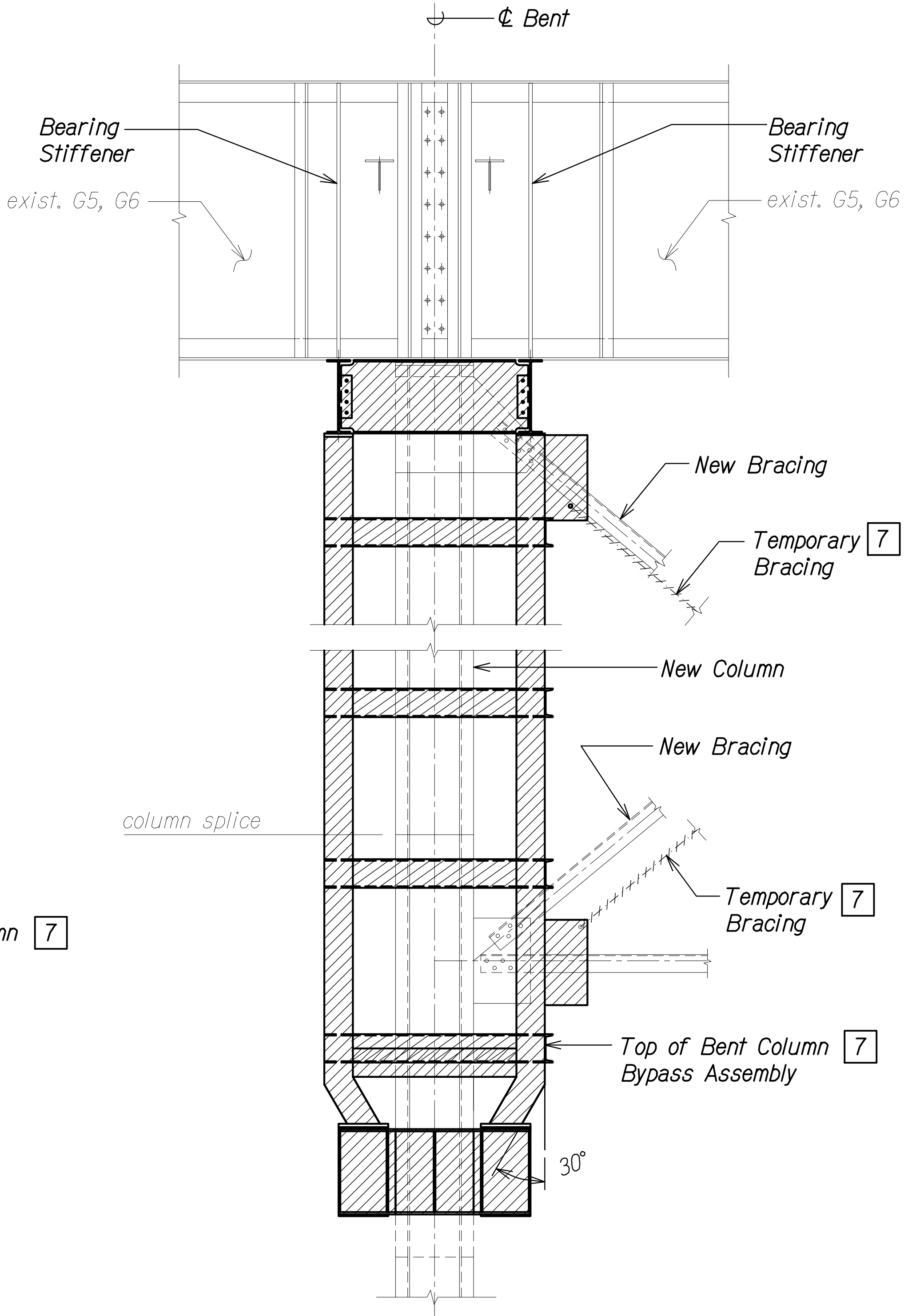
CONSTRUCTION SEQUENCE:

PHASES:

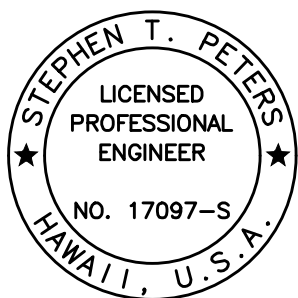
- 7
- Remove top of bent column bypass assembly and temporary bracing.



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL A
Scale: 1/2" = 1'-0"



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL B
Scale: 1/2" = 1'-0"



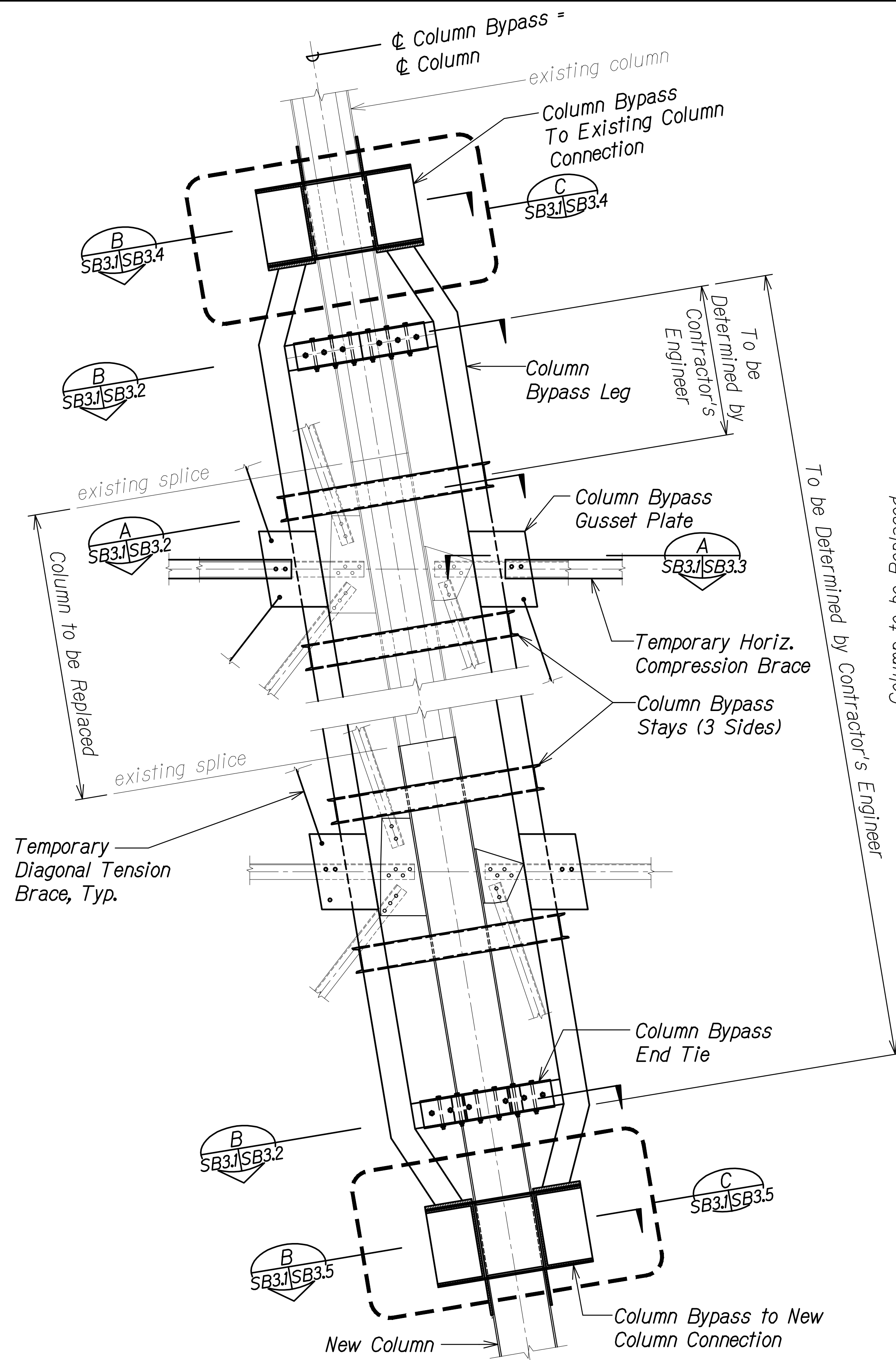
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: Stephen T. Peters
4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

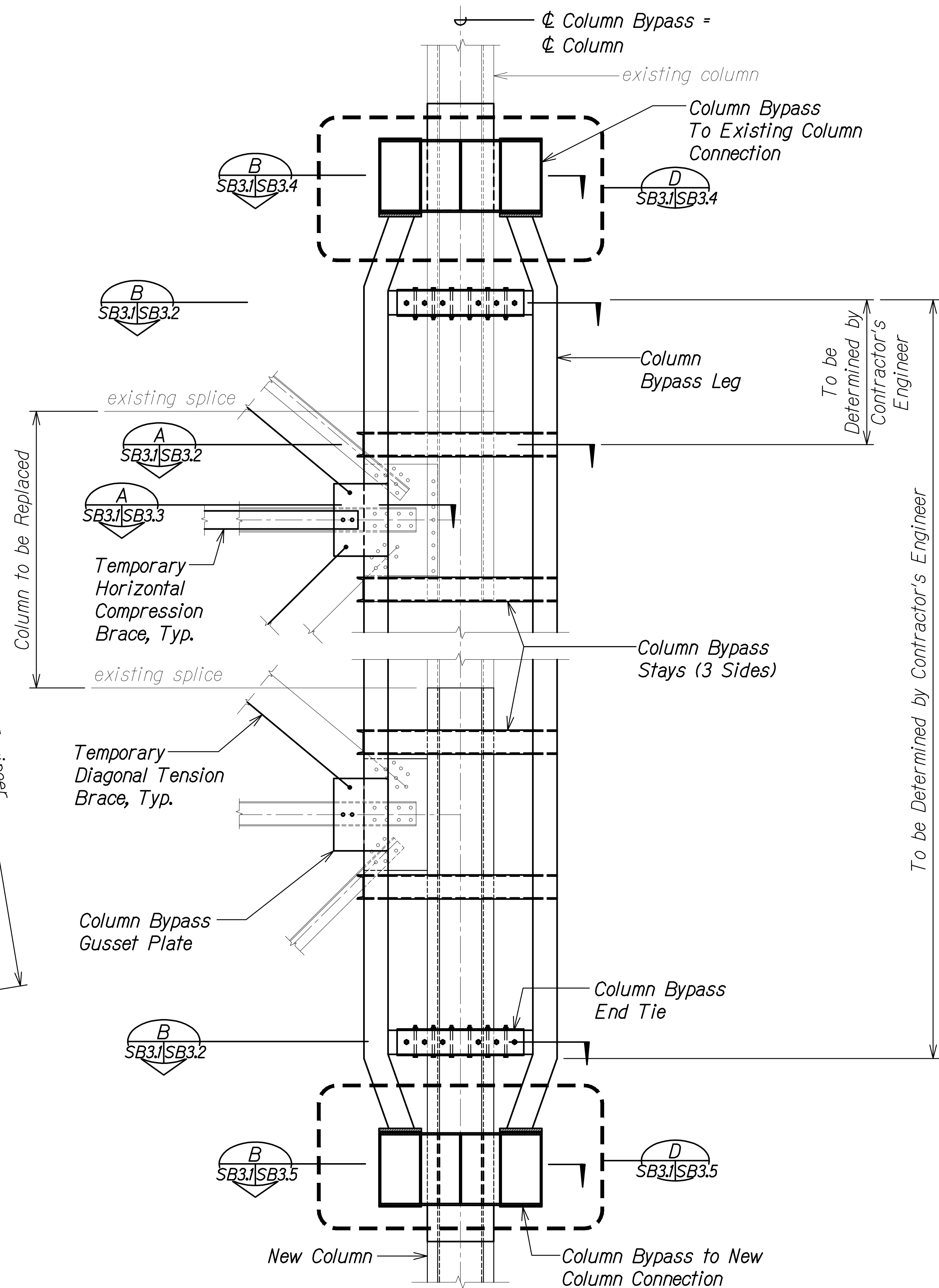
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION PHASE DETAIL**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 272 | 280 |



HILO - HONOKA'A ELEVATION



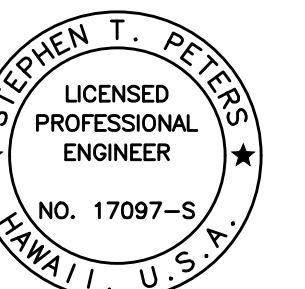
UPSTREAM - DOWNSTREAM ELEVATION

TYPICAL COLUMN BYPASS CONNECTION DETAILS

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

| | |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DESIGNED BY | |
| TRACED BY | |
| NOTED BY | |
| QUANTITIES BY | |
| CHECKED BY | |

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT\A1 CAD\10-28-24 BID SET\NSR-SB0301 COL BYPASS.DTL.DWG PLOT TIME: 10-28-24 1:55 PM



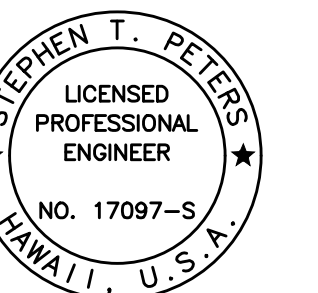
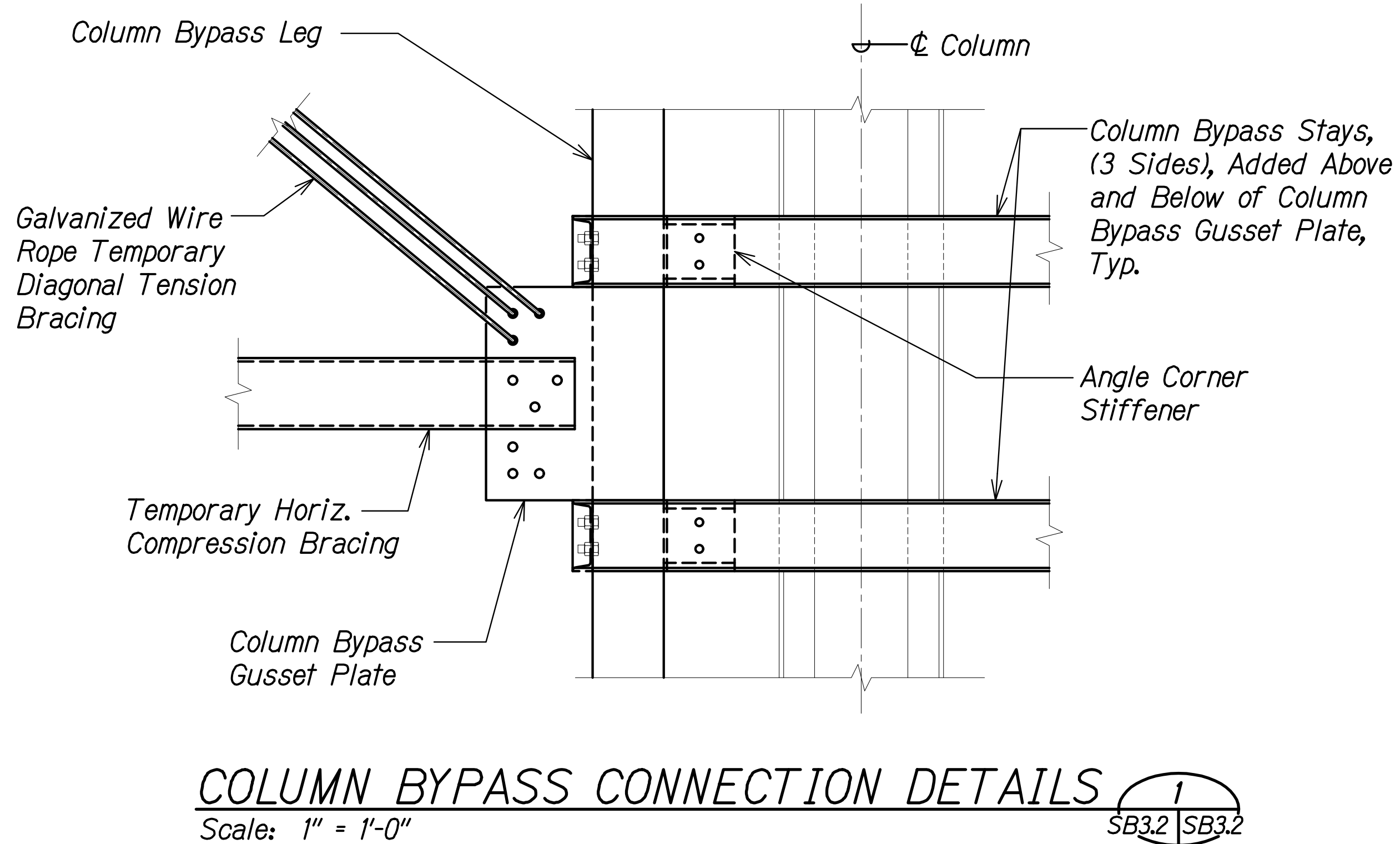
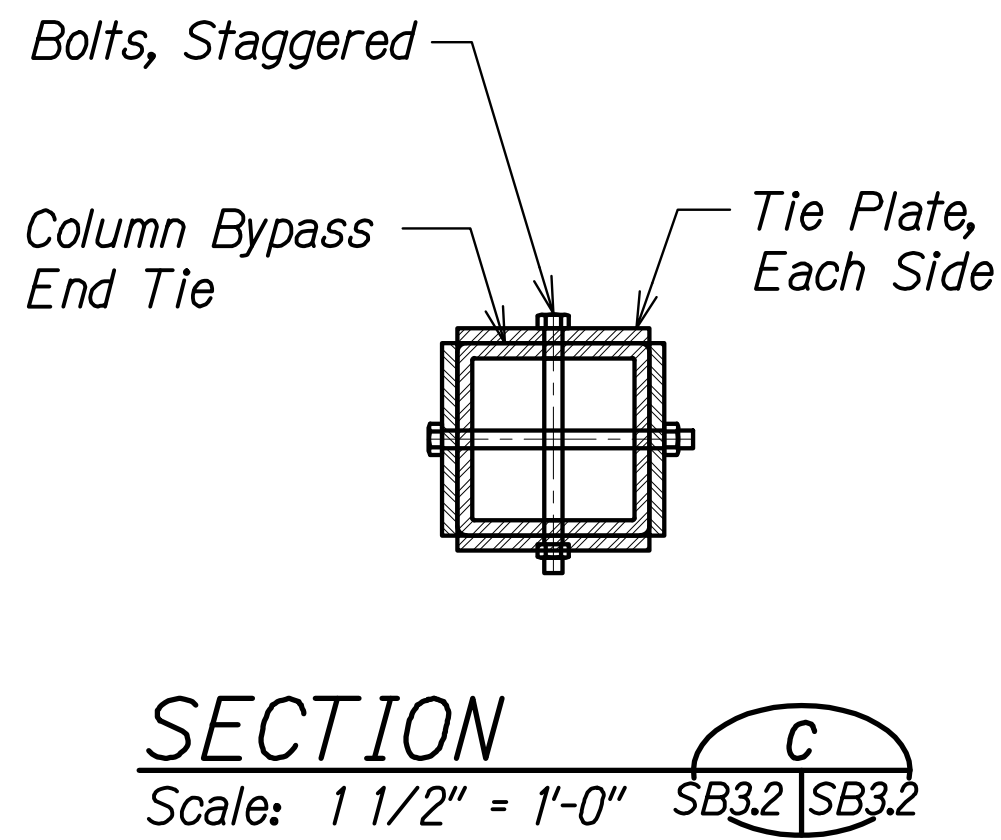
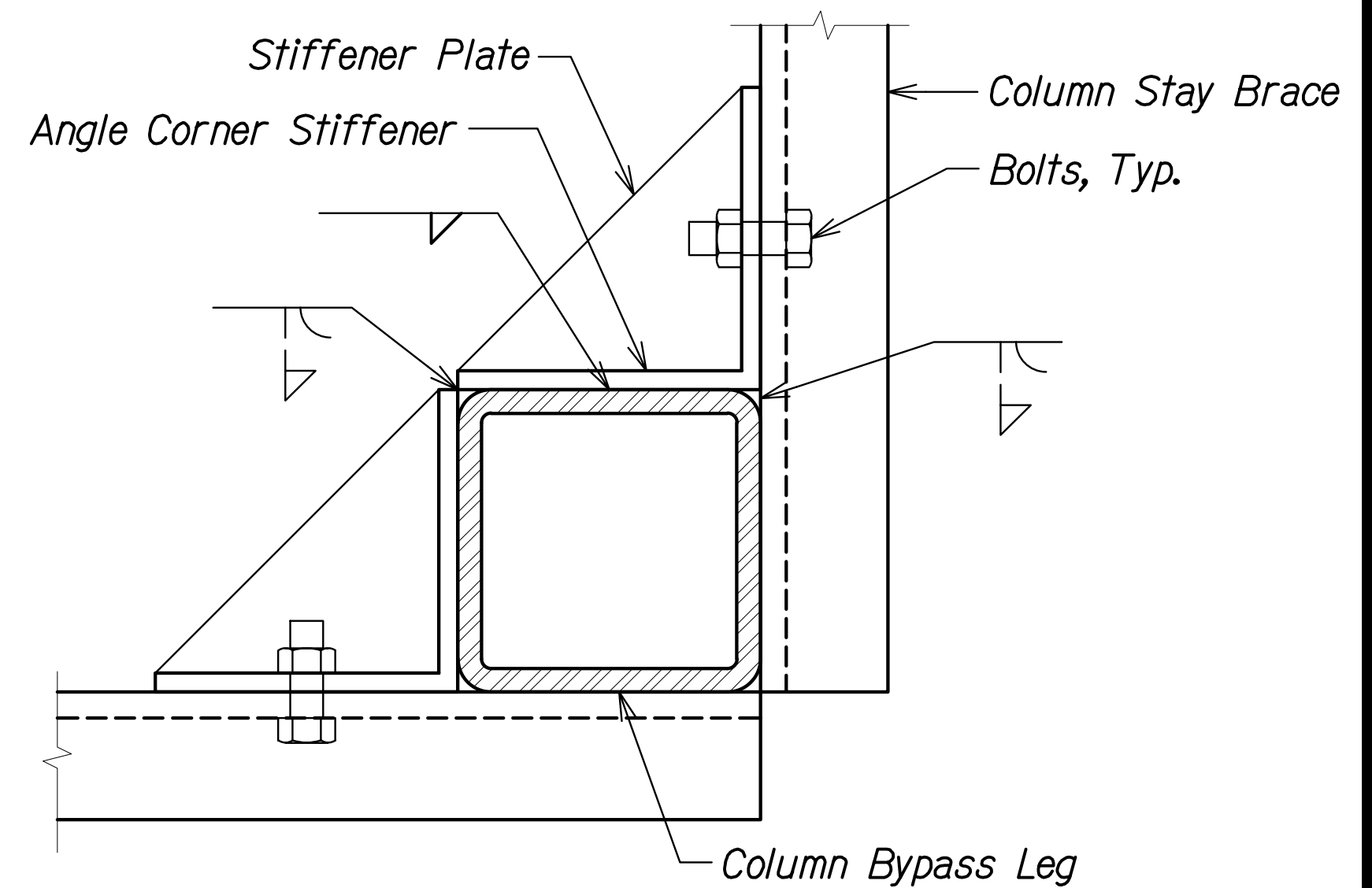
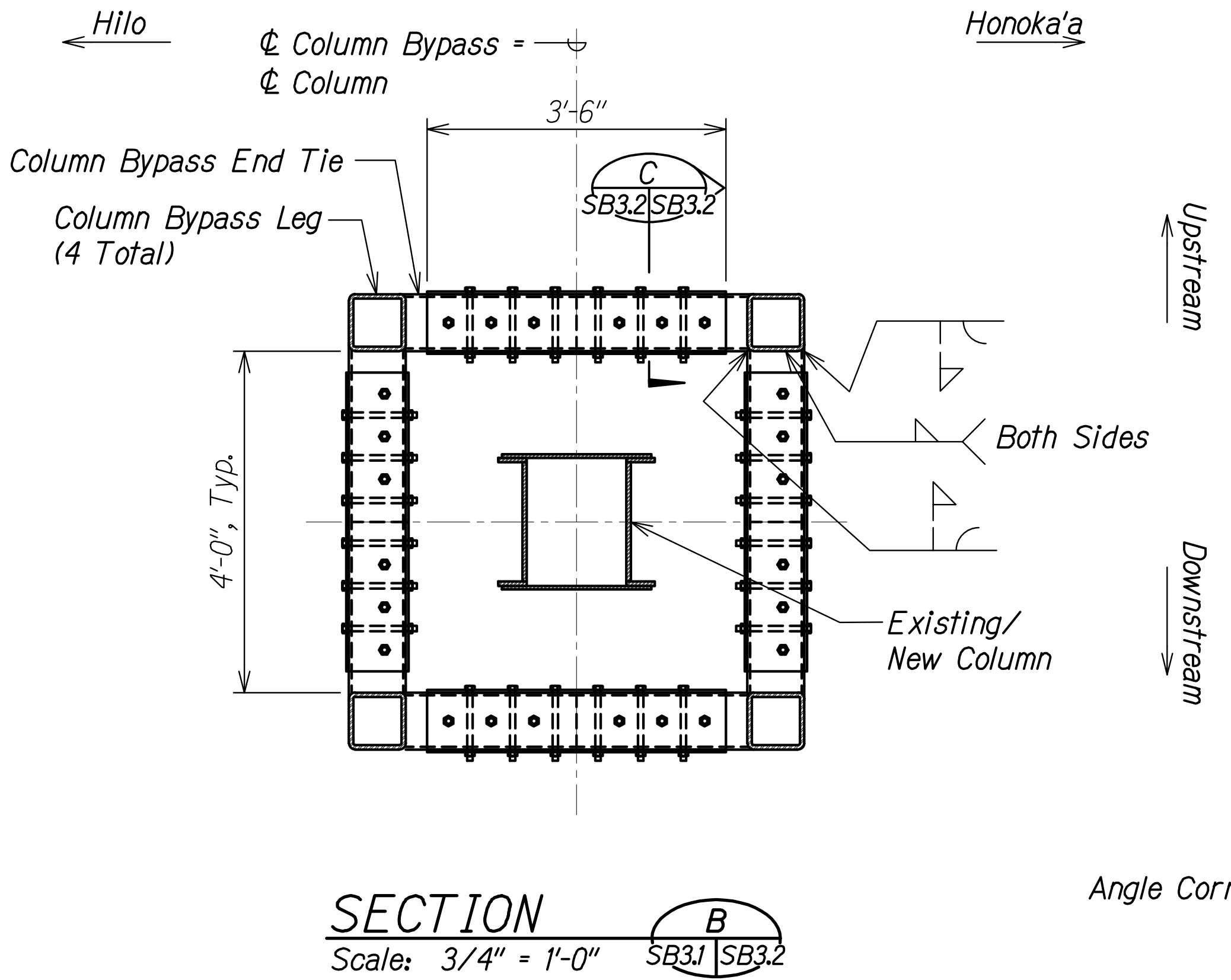
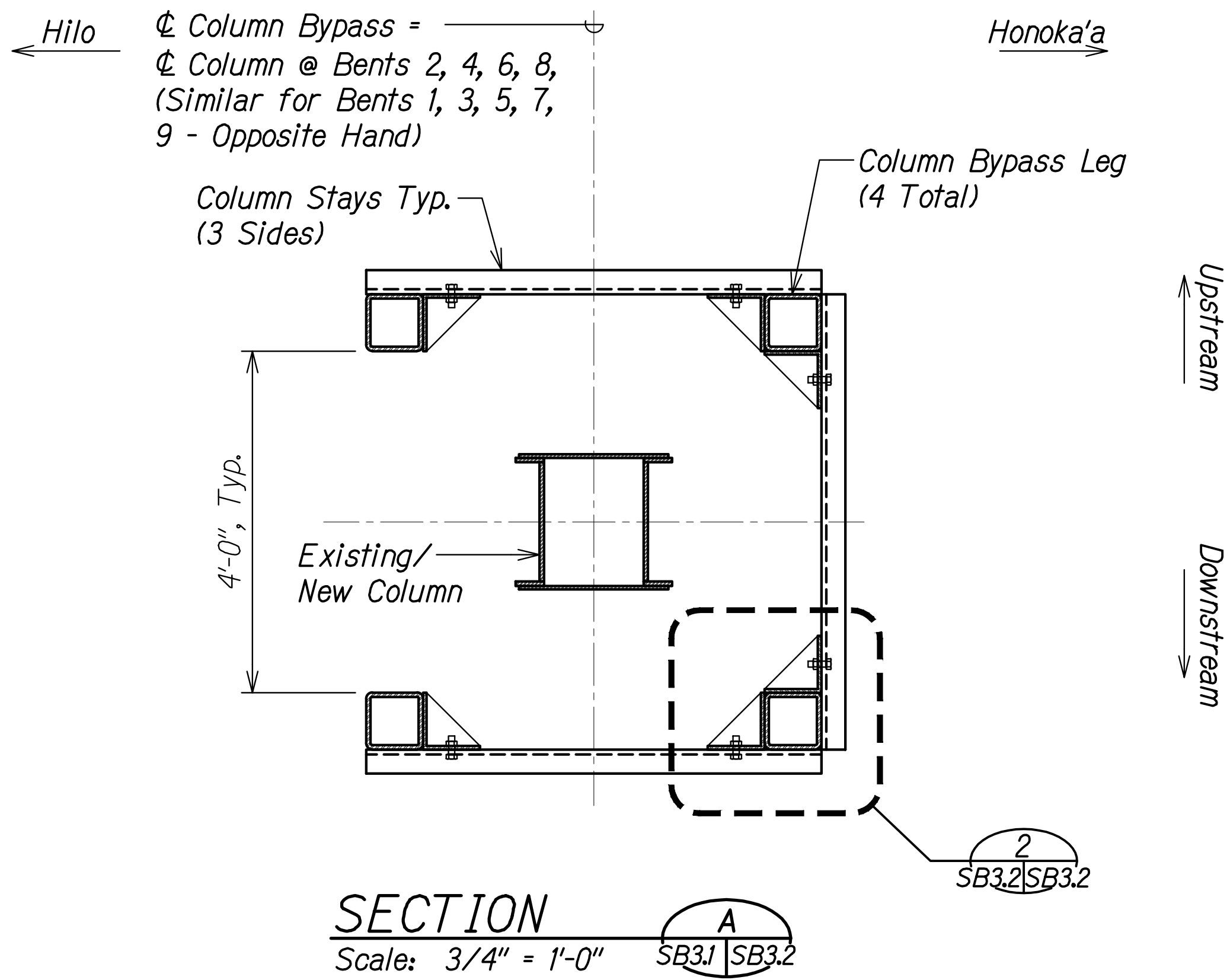
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: [Signature] EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SB3.1 OF 9 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 273 | 280 |



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SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

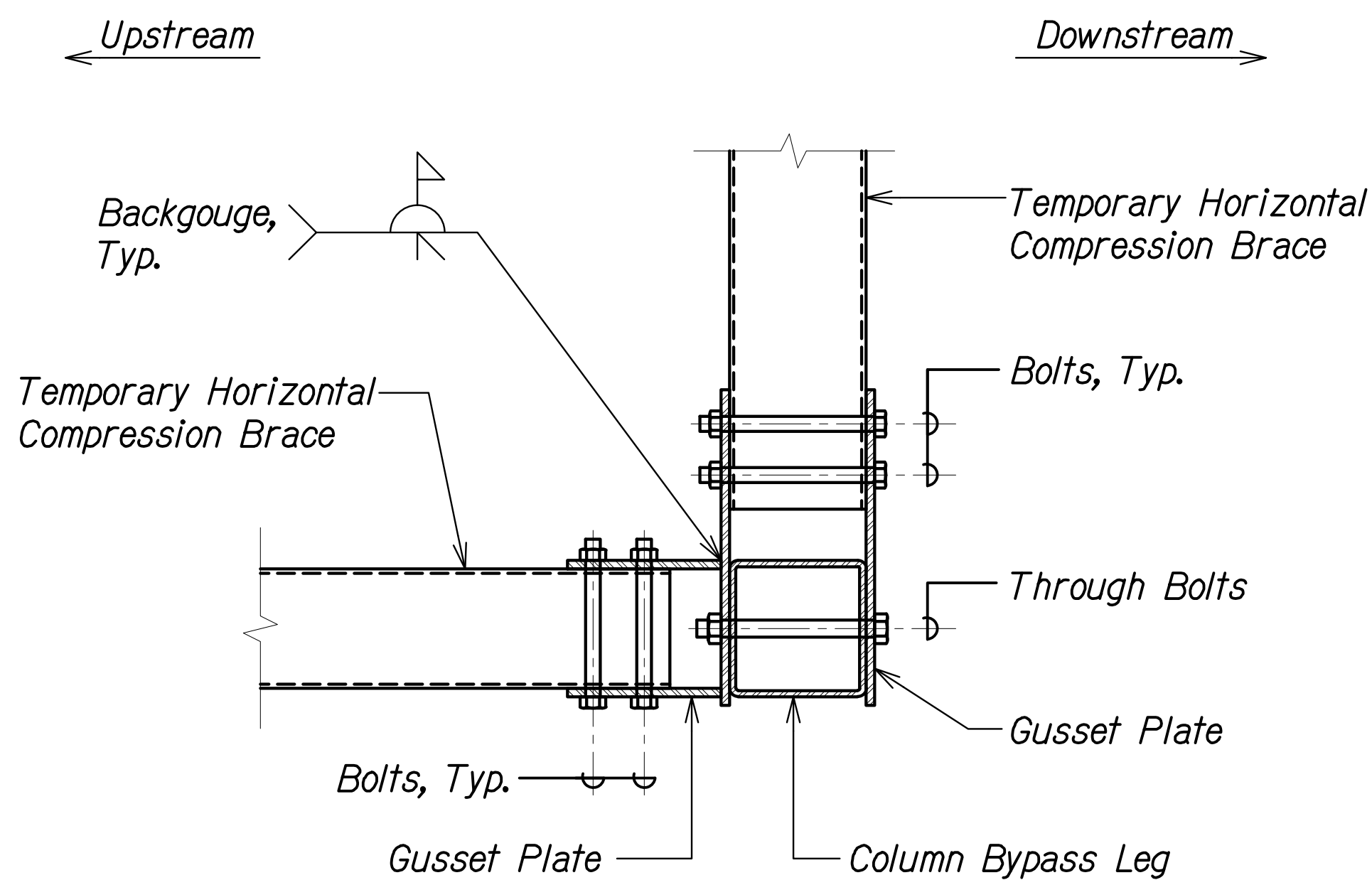
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS**

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SB3.2 OF 9 SHEETS

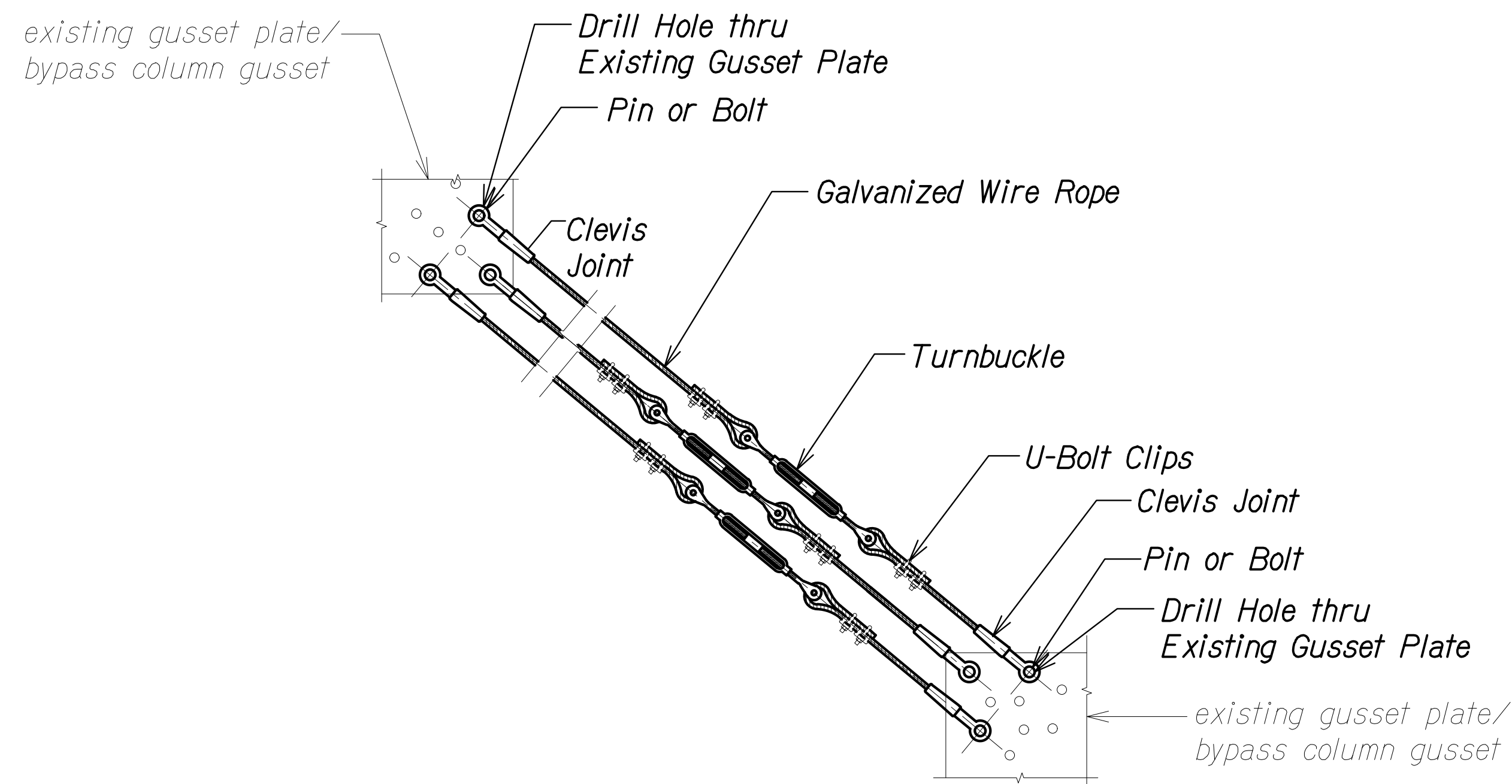
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 274 | 280 |



**COLUMN BYPASS GUSSET PLATE
SECTION DETAIL**

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

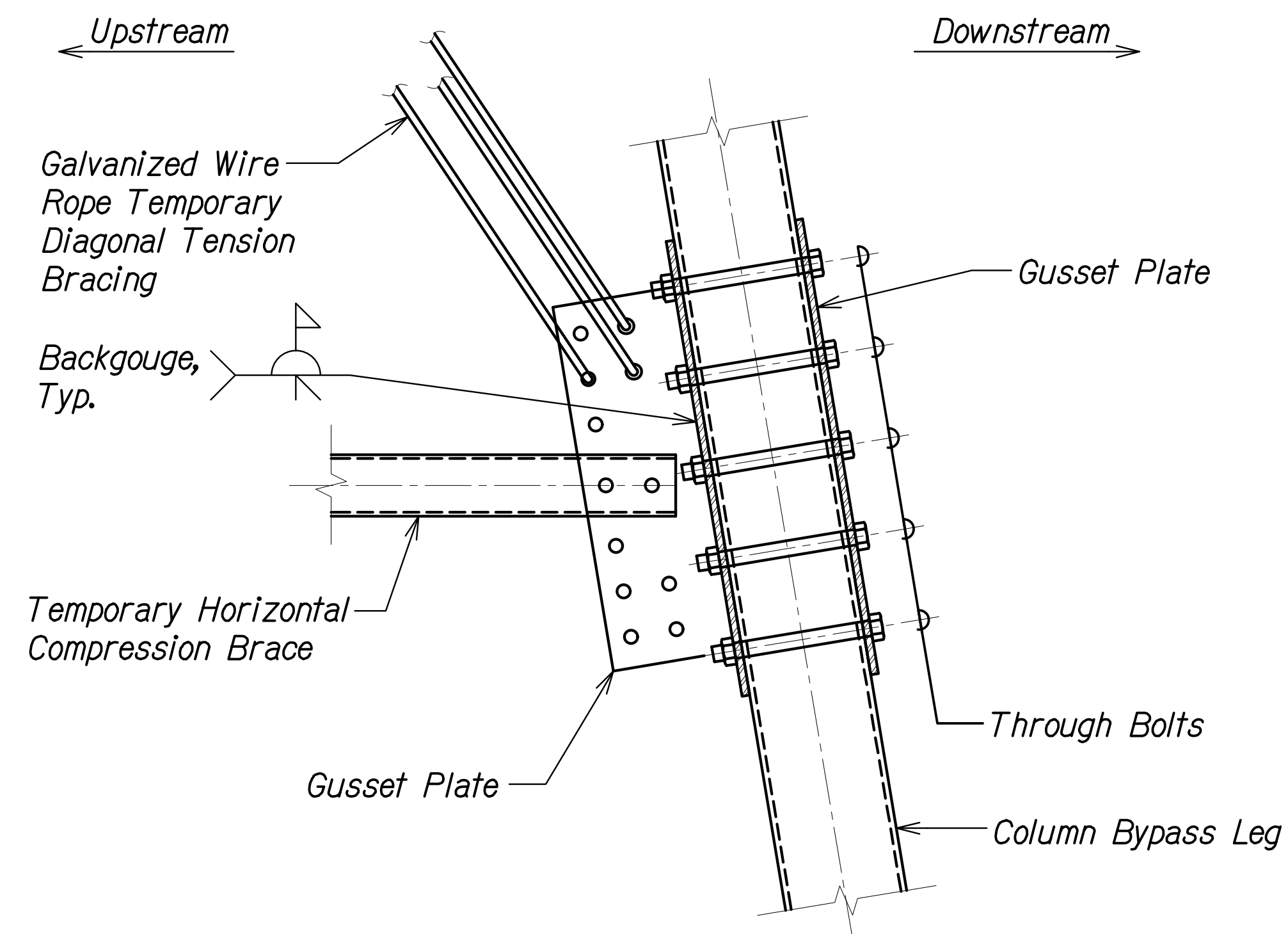
A
SB3.3 | SB3.3



**COLUMN BYPASS TEMPORARY
DIAGONAL TENSION BRACING DETAIL**

Scale: 1" = 1'-0"

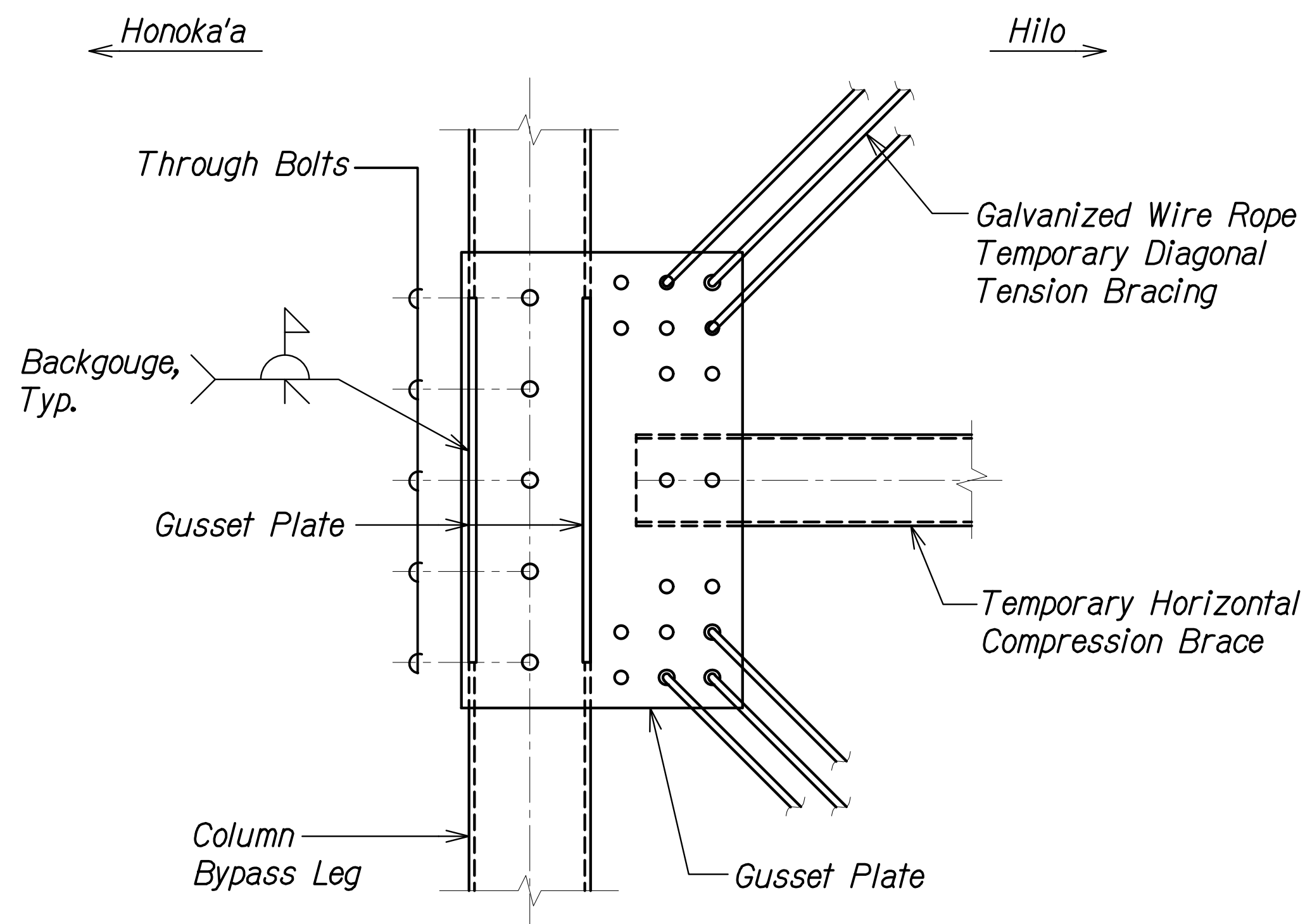
1
SB3.3 | SB3.3



**COLUMN BYPASS GUSSET PLATE
HILO TO HONOKA'A ELEVATION DETAIL**

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

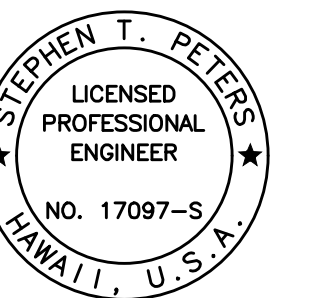
B
SB3.3 | SB3.3



**COLUMN BYPASS GUSSET PLATE
UPSTREAM DOWNSTREAM ELEVATION DETAIL**

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

C
SB3.3 | SB3.3

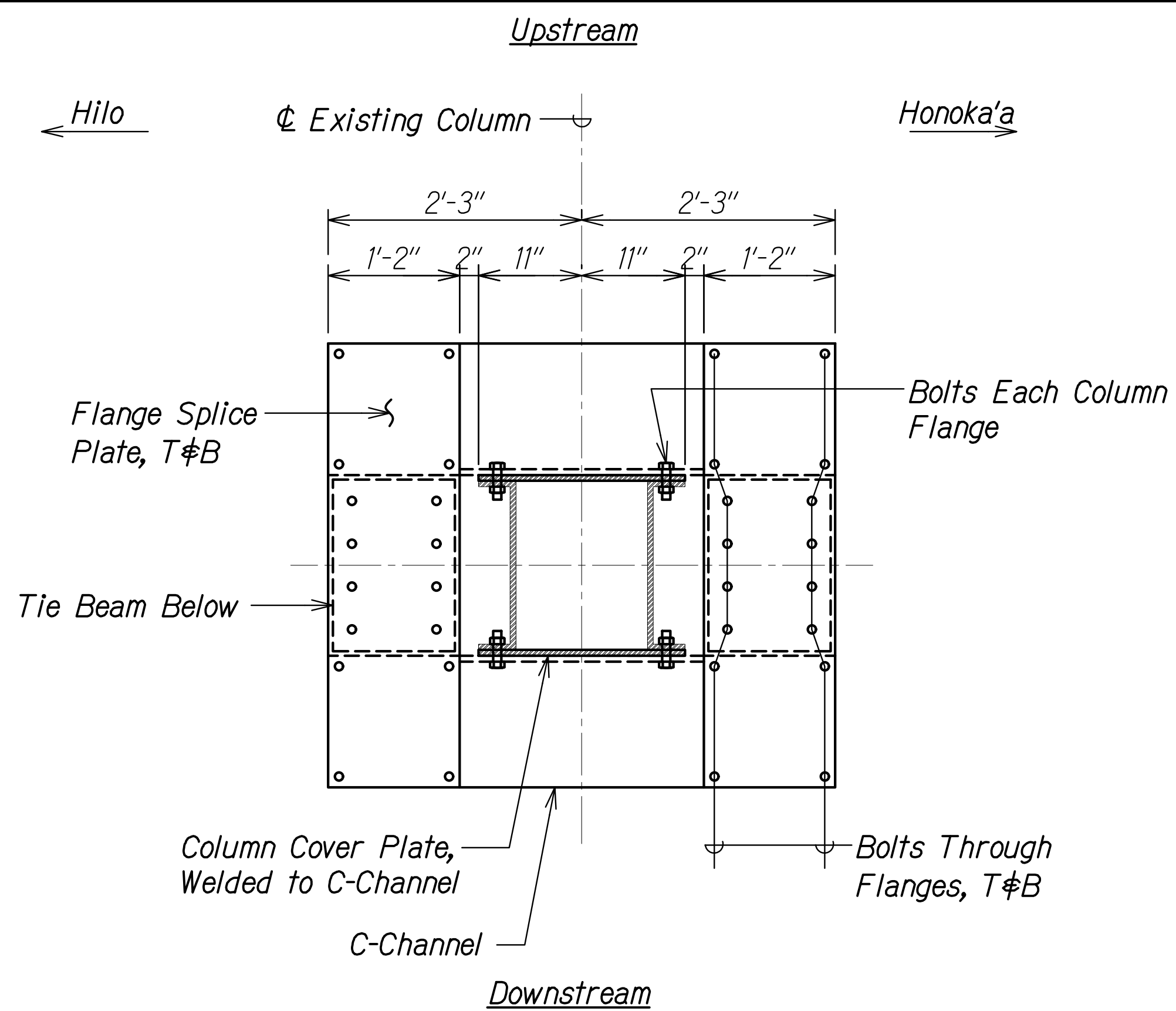


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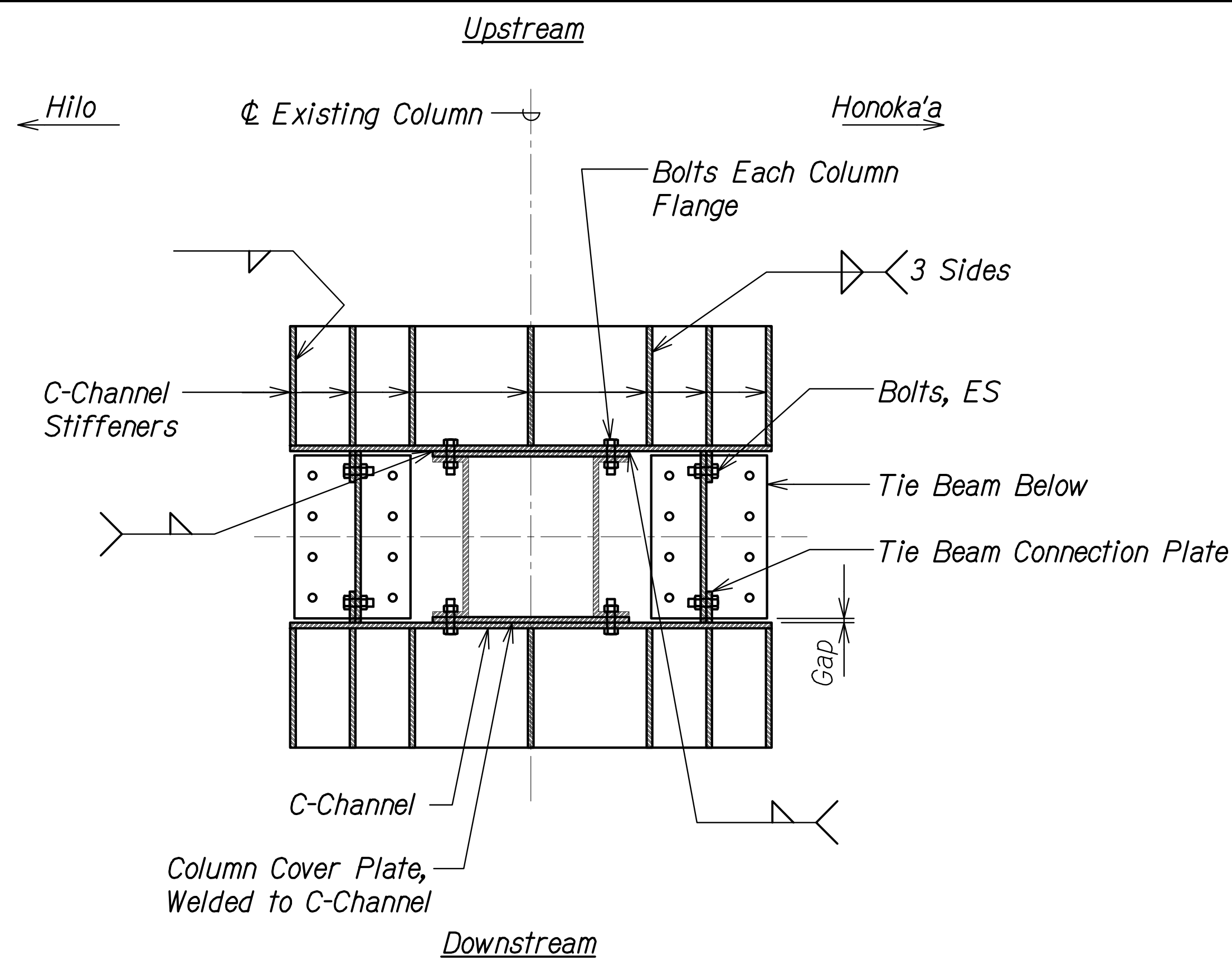
SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024
SHEET No. SB3.3 OF 9 SHEETS

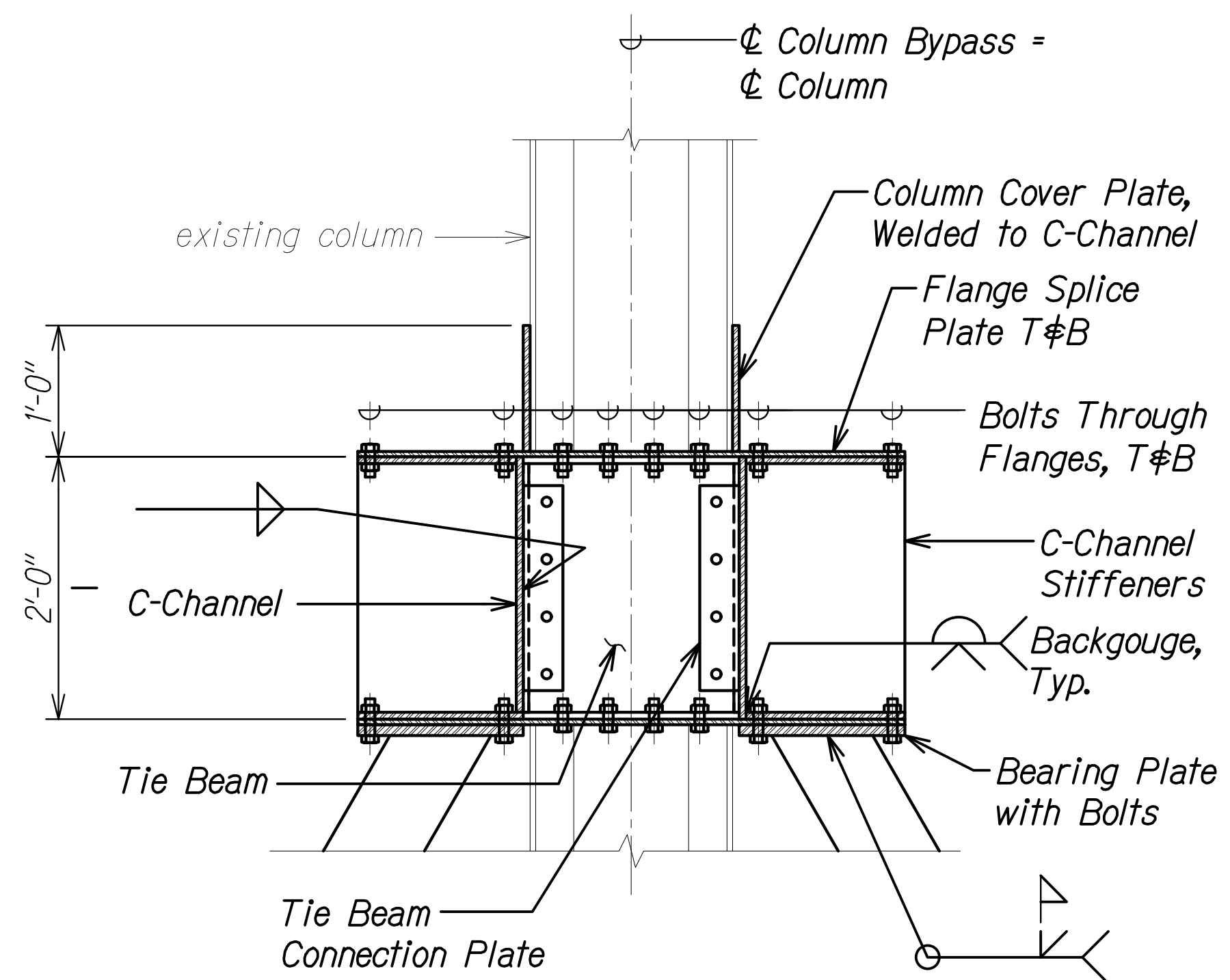
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 275 | 280 |



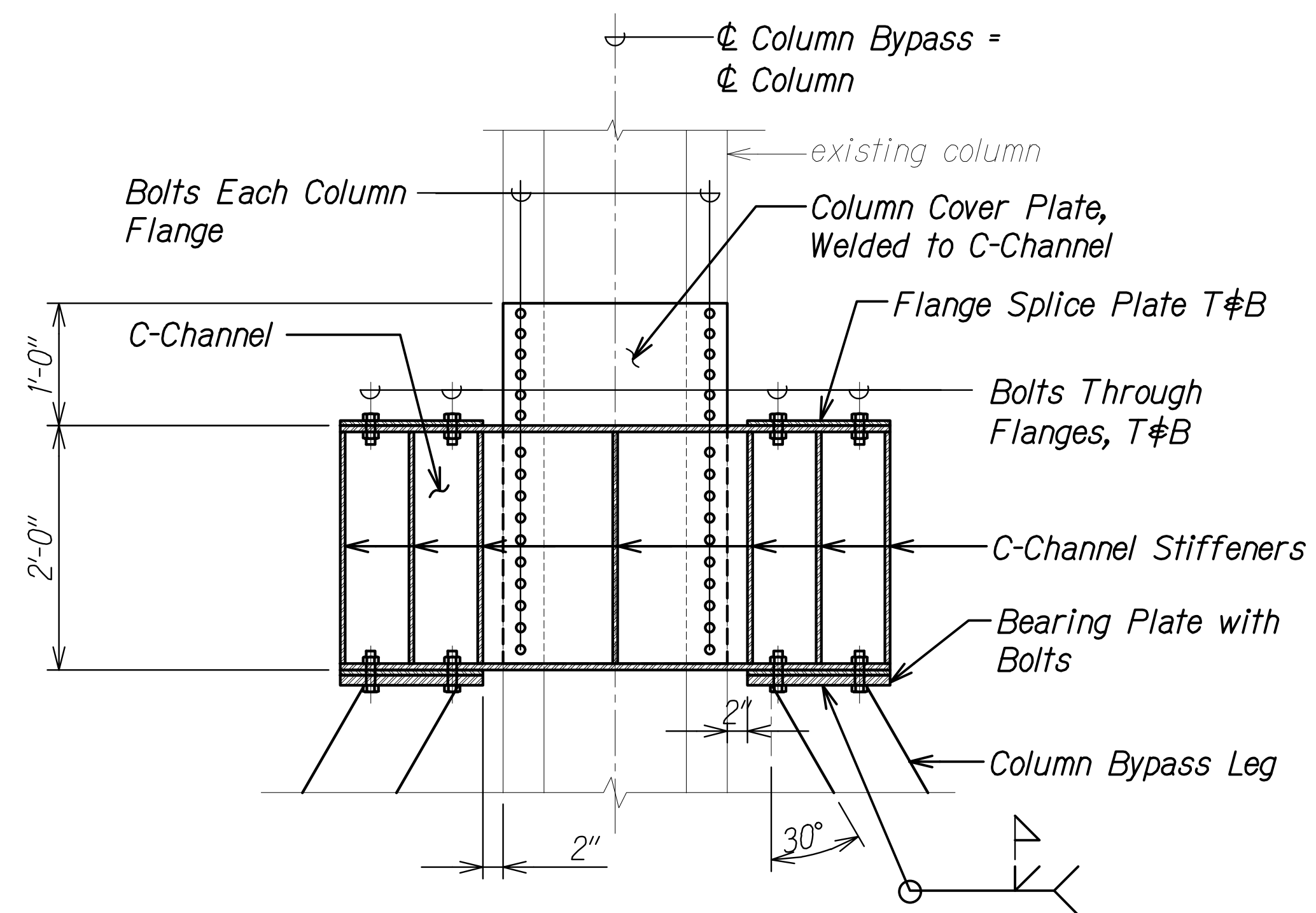
TOP CONNECTION ASSEMBLY PLAN A
Scale: 1" = 1'-0" SB3.1 SB3.4



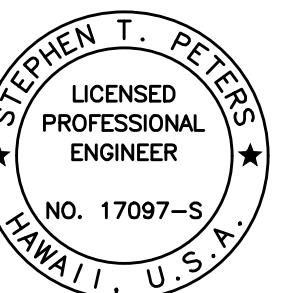
TOP CONNECTION ASSEMBLY SECTION B
Scale: 1" = 1'-0" SB3.1 SB3.4



**TOP CONNECTION ASSEMBLY
HILO - HONOKA'A ELEVATION** C
Scale: 1" = 1'-0" SB3.1 SB3.4



**TOP CONNECTION ASSEMBLY
UPSTREAM - DOWNSTREAM ELEVATION** D
Scale: 1" = 1'-0" SB3.1 SB3.4



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ME OR UNDER MY SUPERVISION.
Stephen T. Peters
SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

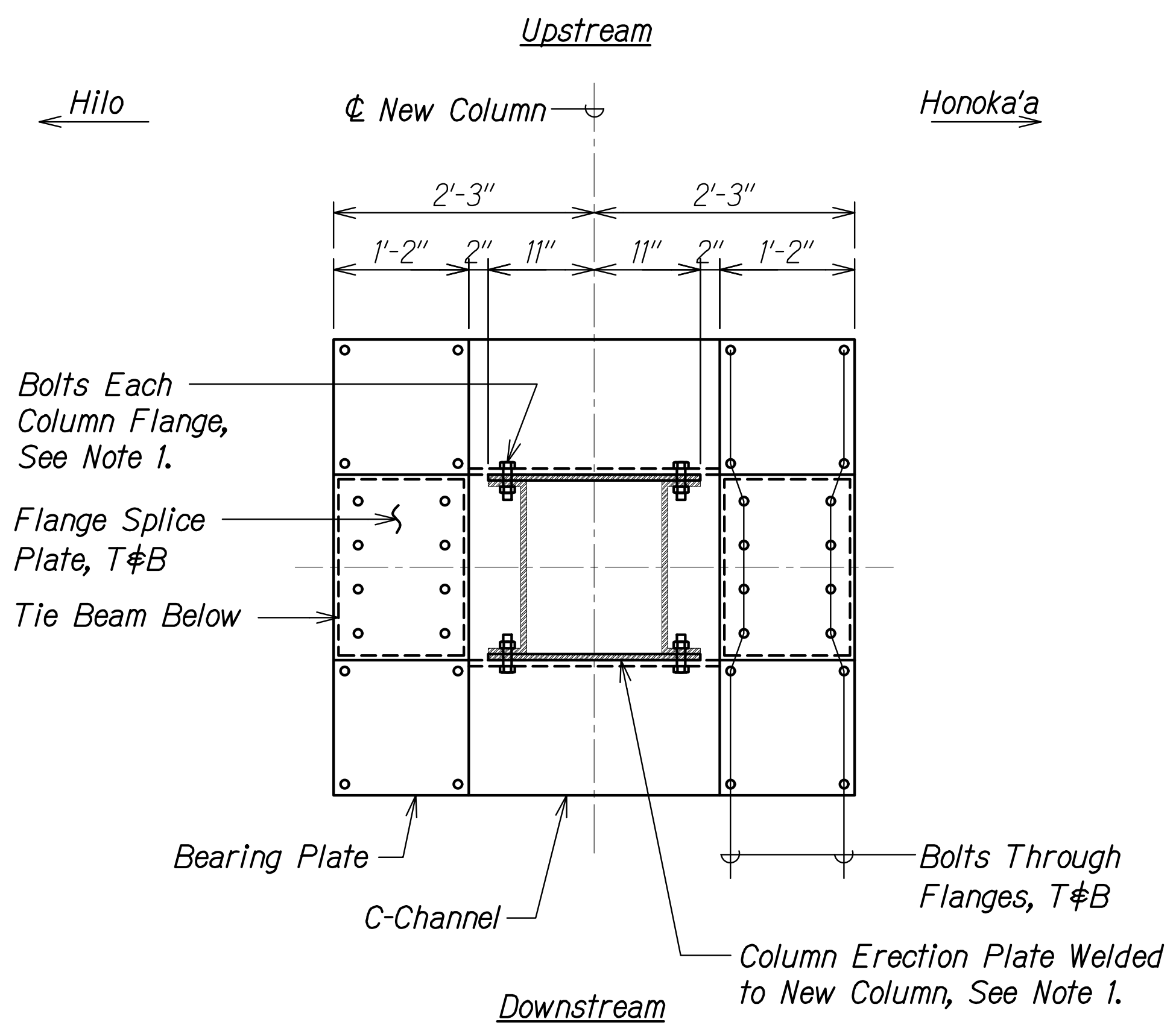
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SB3.4 OF 9 SHEETS

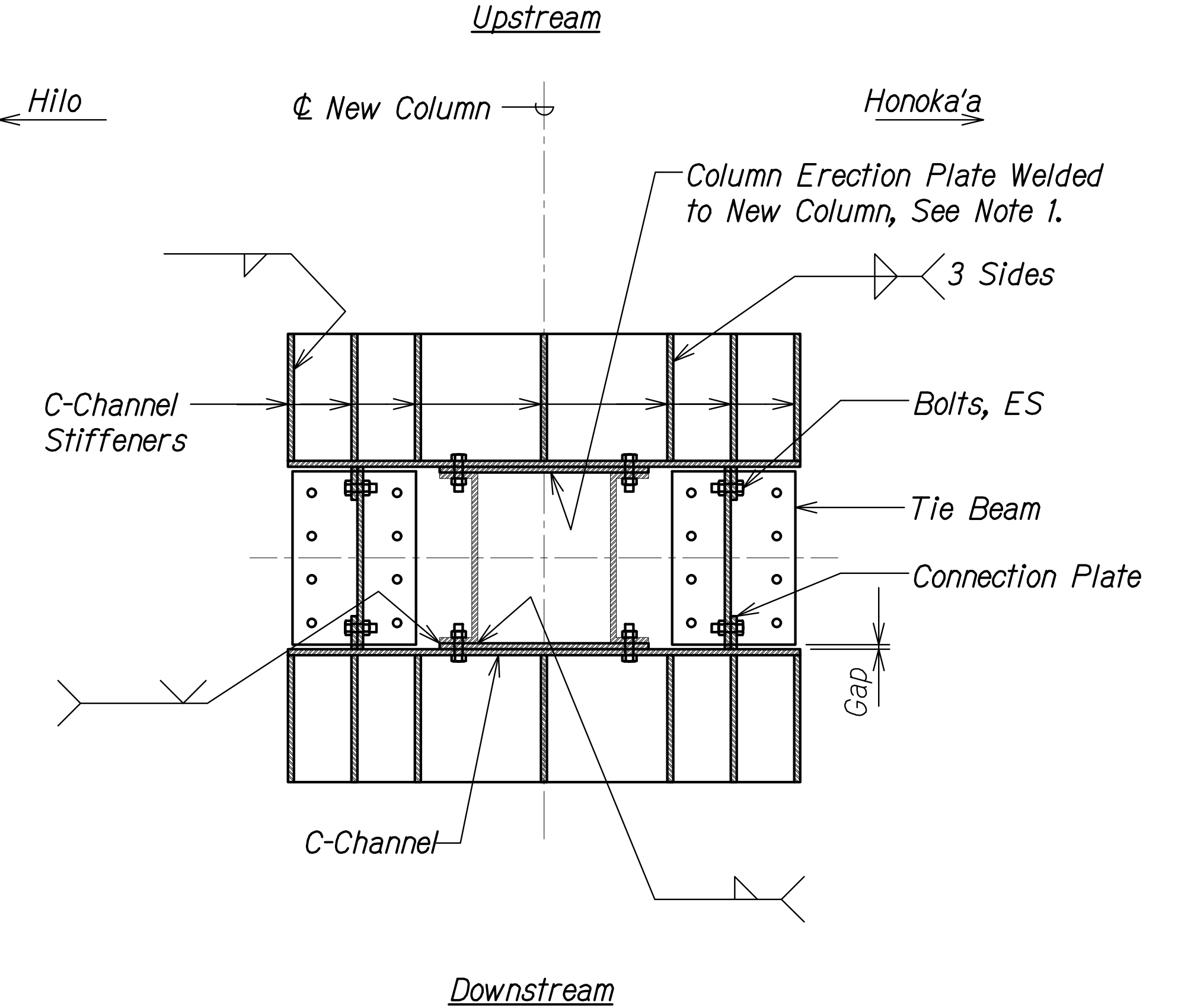
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 276 | 280 |

NOTE:

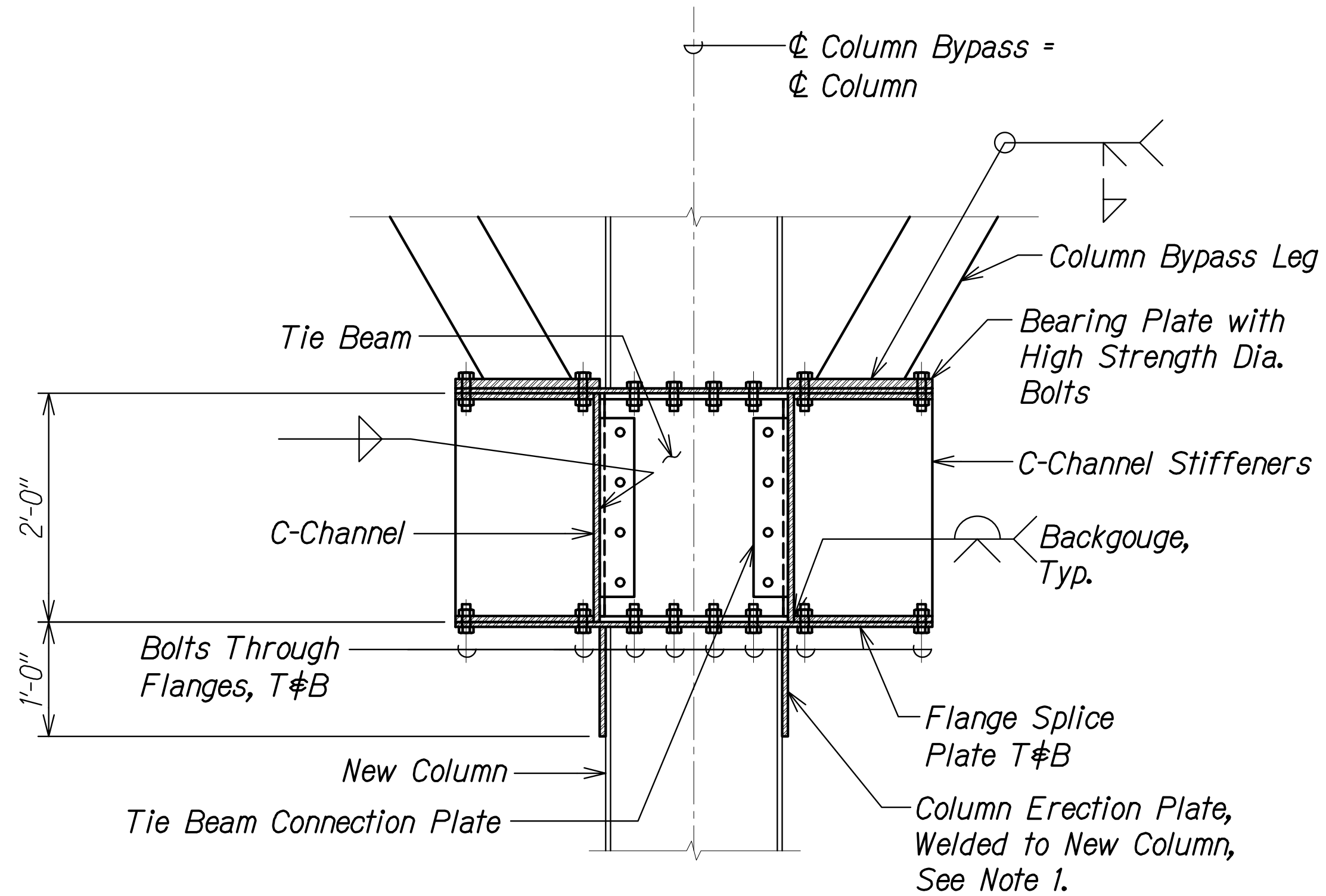
- Erection plates are provided to aid the Contractor in the Construction of the trestle. The Contractor's Engineer shall determine the size of the plates and any needed pre-drilled holes prior to submittal of the shop drawings. Erection plates shall not be less than 5/8" thick and fully welded on all contact edges.



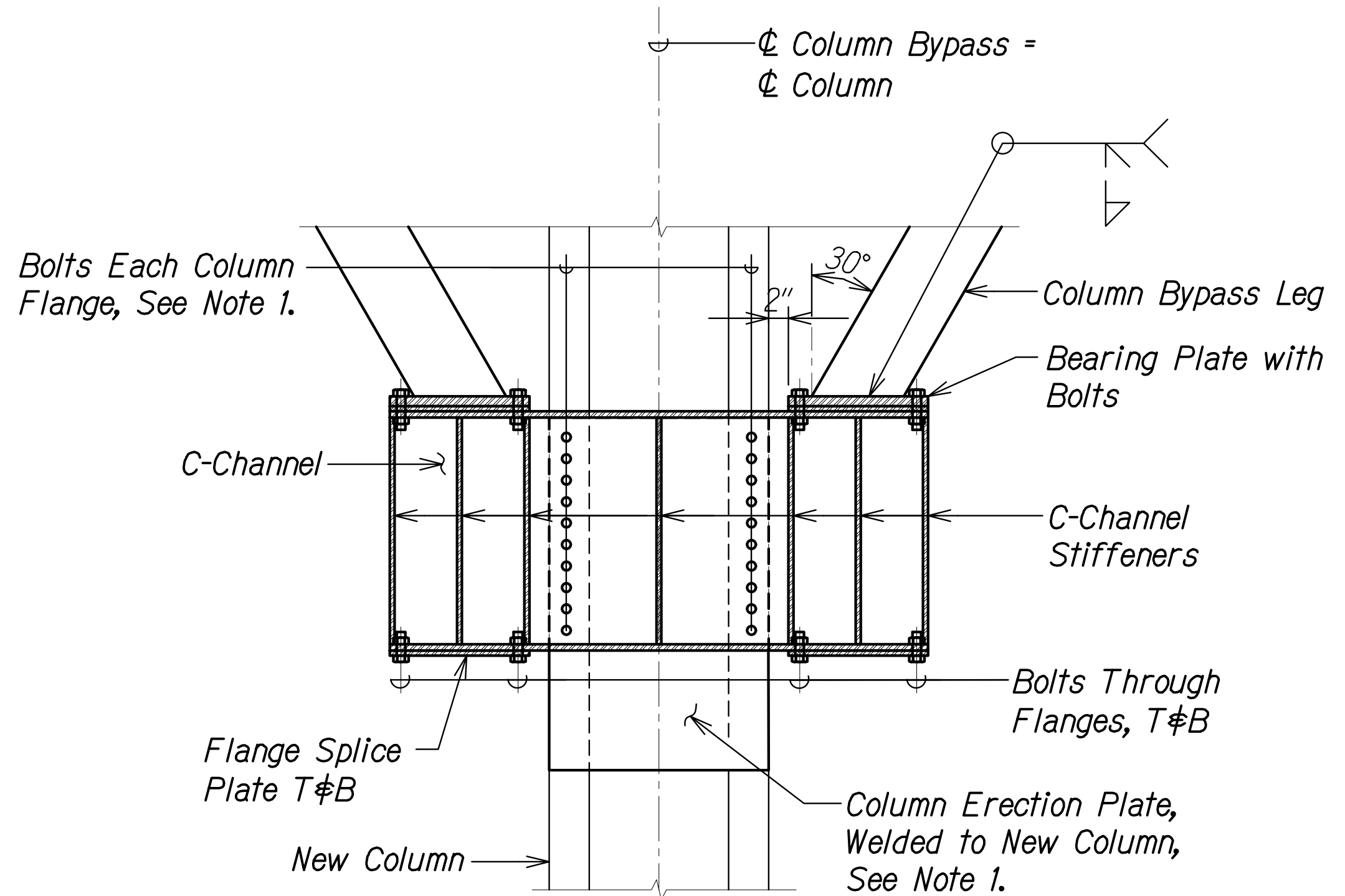
BOTTOM CONNECTION ASSEMBLY PLAN **A**
Scale: 1" = 1'-0"
SB3.5 | SB3.5



BOTTOM CONNECTION ASSEMBLY SECTION **B**
Scale: 1" = 1'-0"
SB3.1 | SB3.5



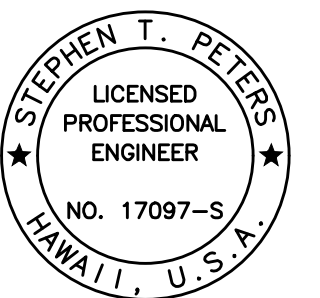
BOTTOM CONNECTION ASSEMBLY
HILO - HONOKA'A ELEVATION **C**
Scale: 1" = 1'-0"
SB3.1 | SB3.5



BOTTOM CONNECTION ASSEMBLY
UPSTREAM - DOWNSTREAM ELEVATION **D**
Scale: 1" = 1'-0"
SB3.1 | SB3.5

| | |
|-------------------|----------|
| DATE | 10-28-24 |
| SURVEY PLOTTED BY | 10-28-24 |
| ORIGINAL PLAN | 10-28-24 |
| DESIGNED BY | 10-28-24 |
| TRACED BY | 10-28-24 |
| NOTE BOOK | 10-28-24 |
| QUANTITIES BY | 10-28-24 |
| CHECKED BY | 10-28-24 |

DRAWING NAME: Z:\00 ONGOING\23-022-9-NANUE STR BR PF2-DOT1A.01 CAD\10-28-24 BID SET\NSR-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24 4:24 PM



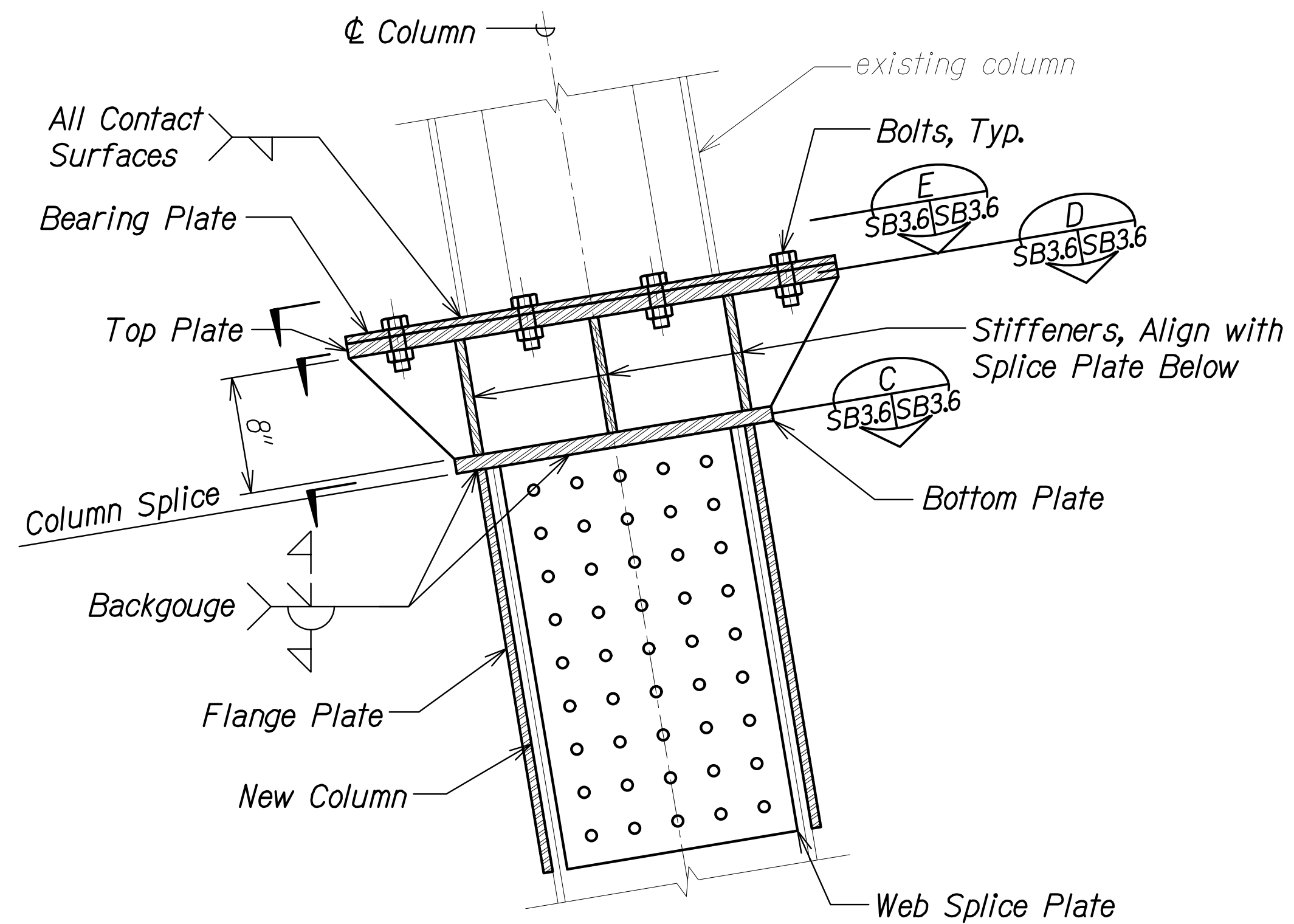
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

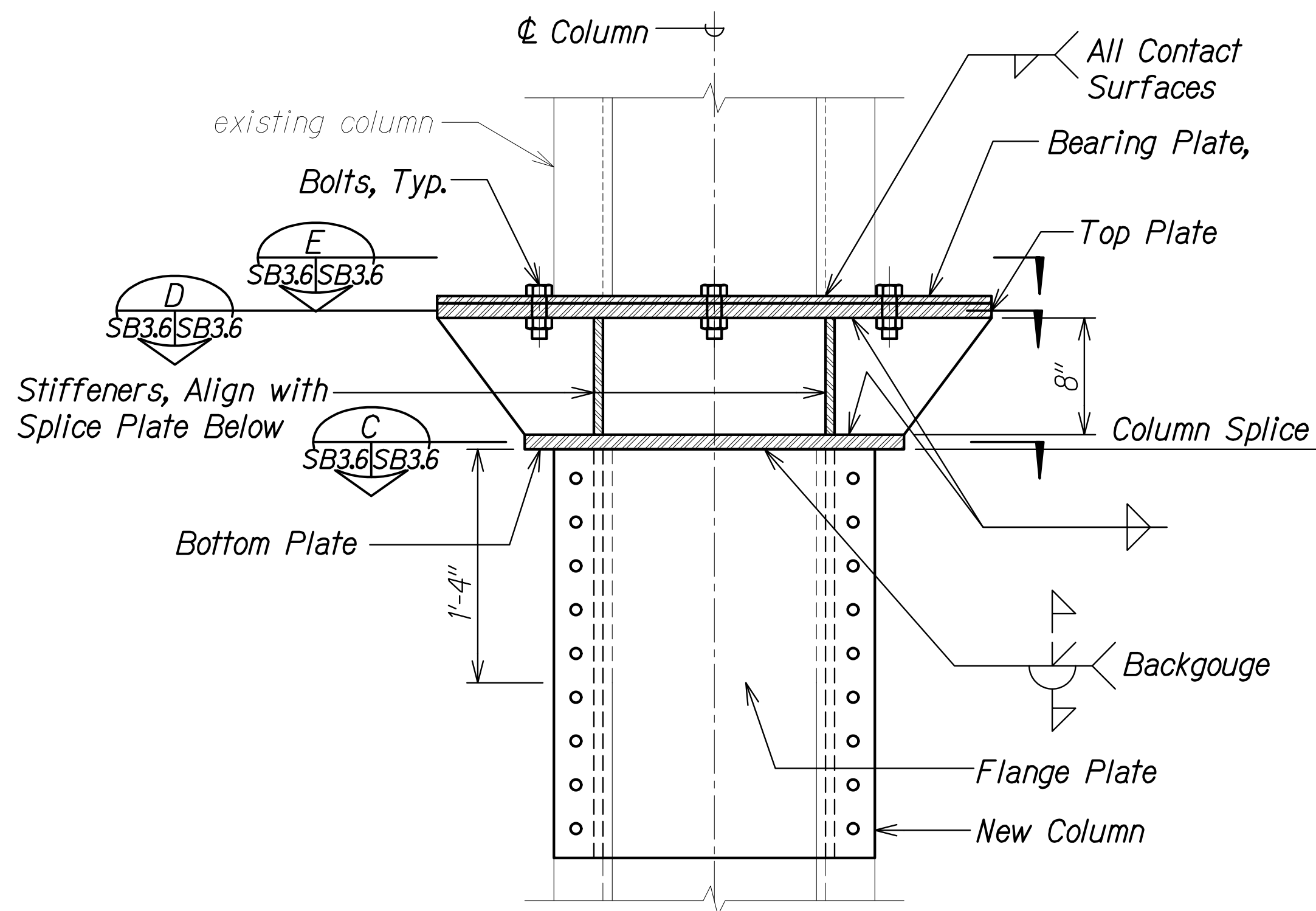
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SB3.5 OF 9 SHEETS

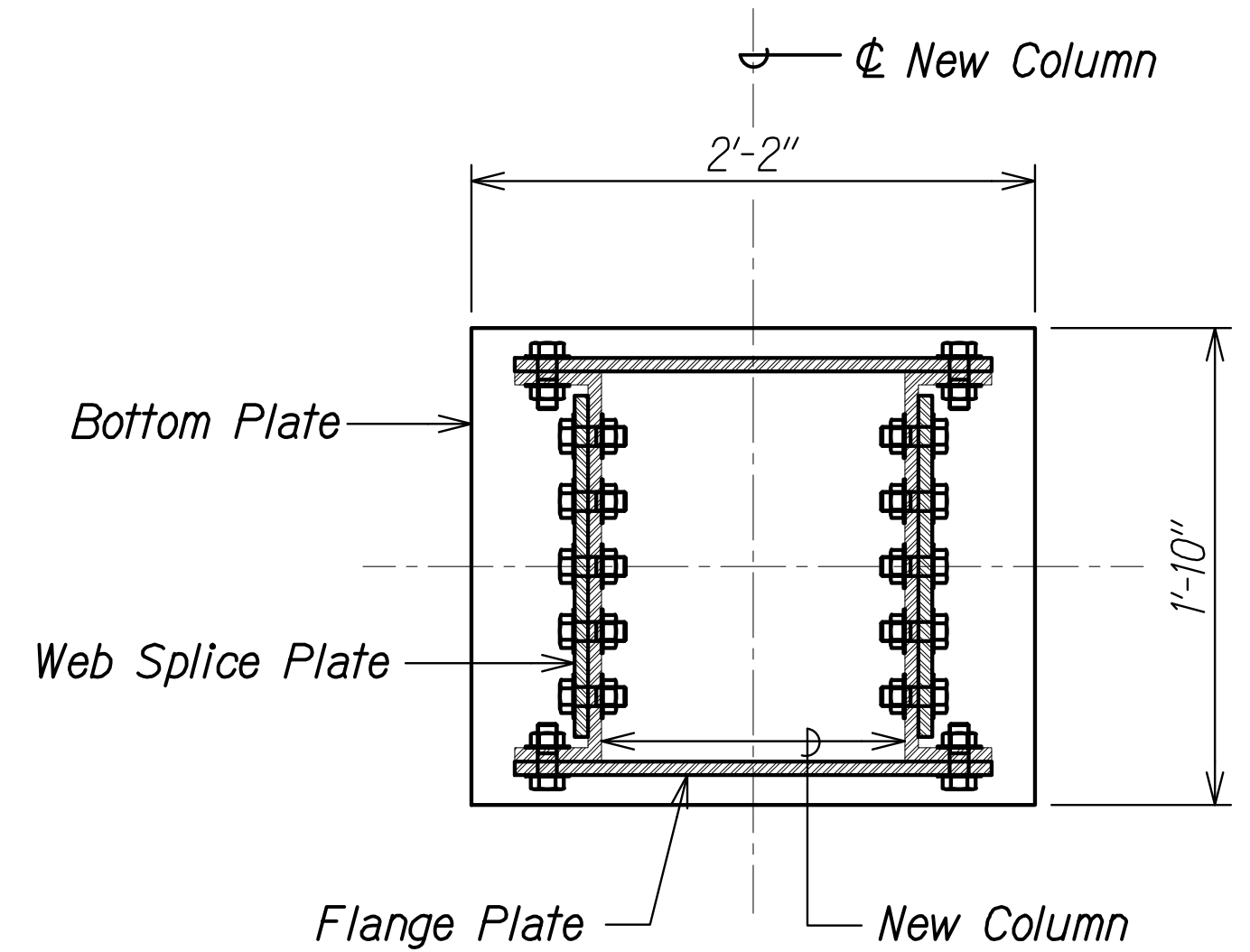
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 277 | 280 |



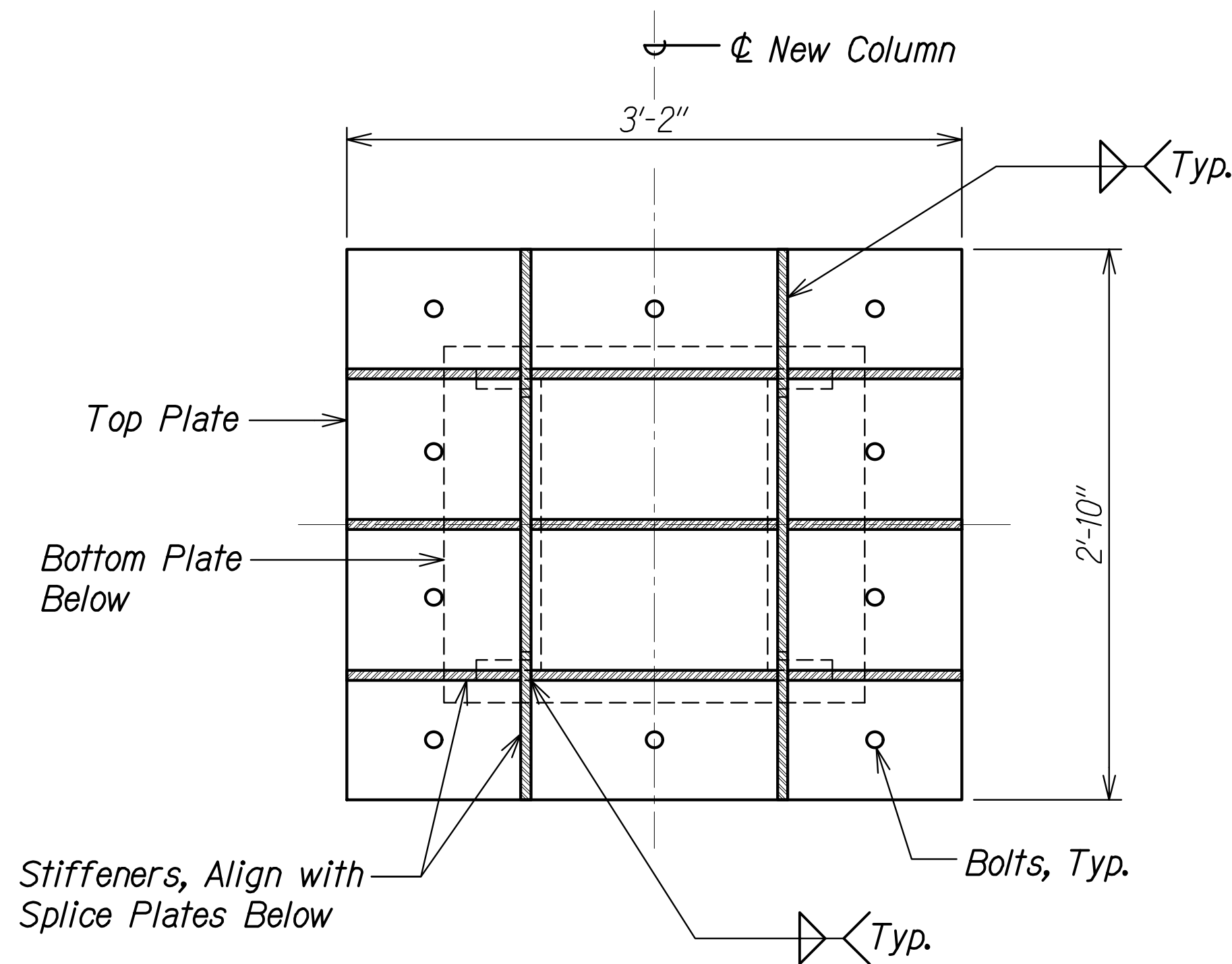
ELEVATION A
Scale: 1 1/2" = 1'-0" SB2.4 SB3.6



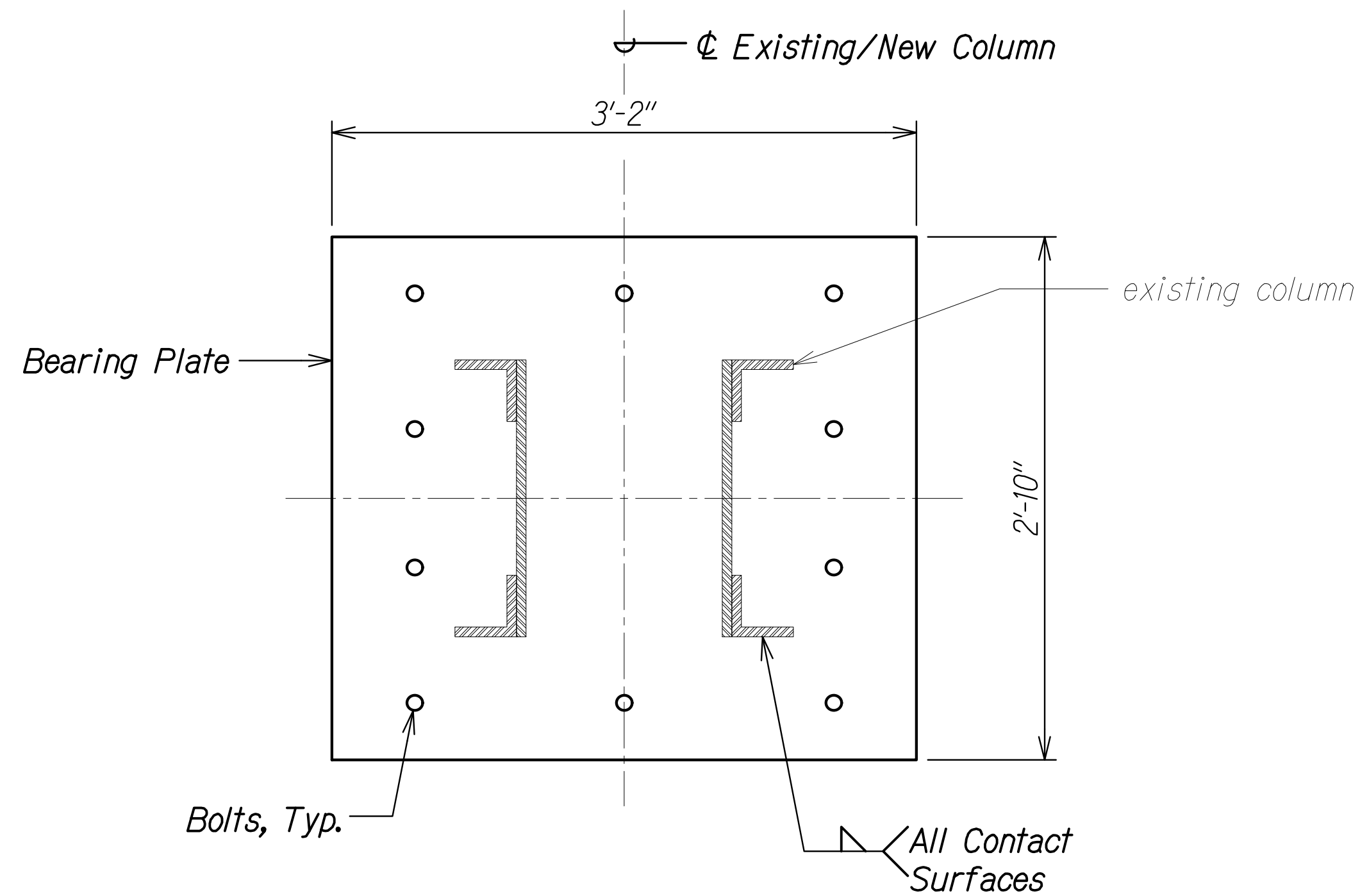
ELEVATION B
Scale: 1 1/2" = 1'-0" SB3.6 SB3.6



SECTION C
Scale: 1 1/2" = 1'-0" SB3.6 SB3.6



SECTION D
Scale: 1 1/2" = 1'-0" SB3.6 SB3.6

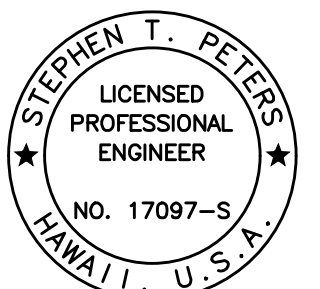


SECTION E
Scale: 1 1/2" = 1'-0" SB3.6 SB3.6

COLUMN TEMPORARY SPLICE CONNECTION DETAIL

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT1\01 CAD\10-28-24 BID SET\NSR-SB0301 COL BYPASS.DTL.SDWG PLOT TIME: 10-28-24, 1:57 PM



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SIGNATURE: *Stephen T. Peters* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS**

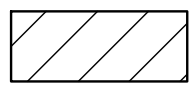
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

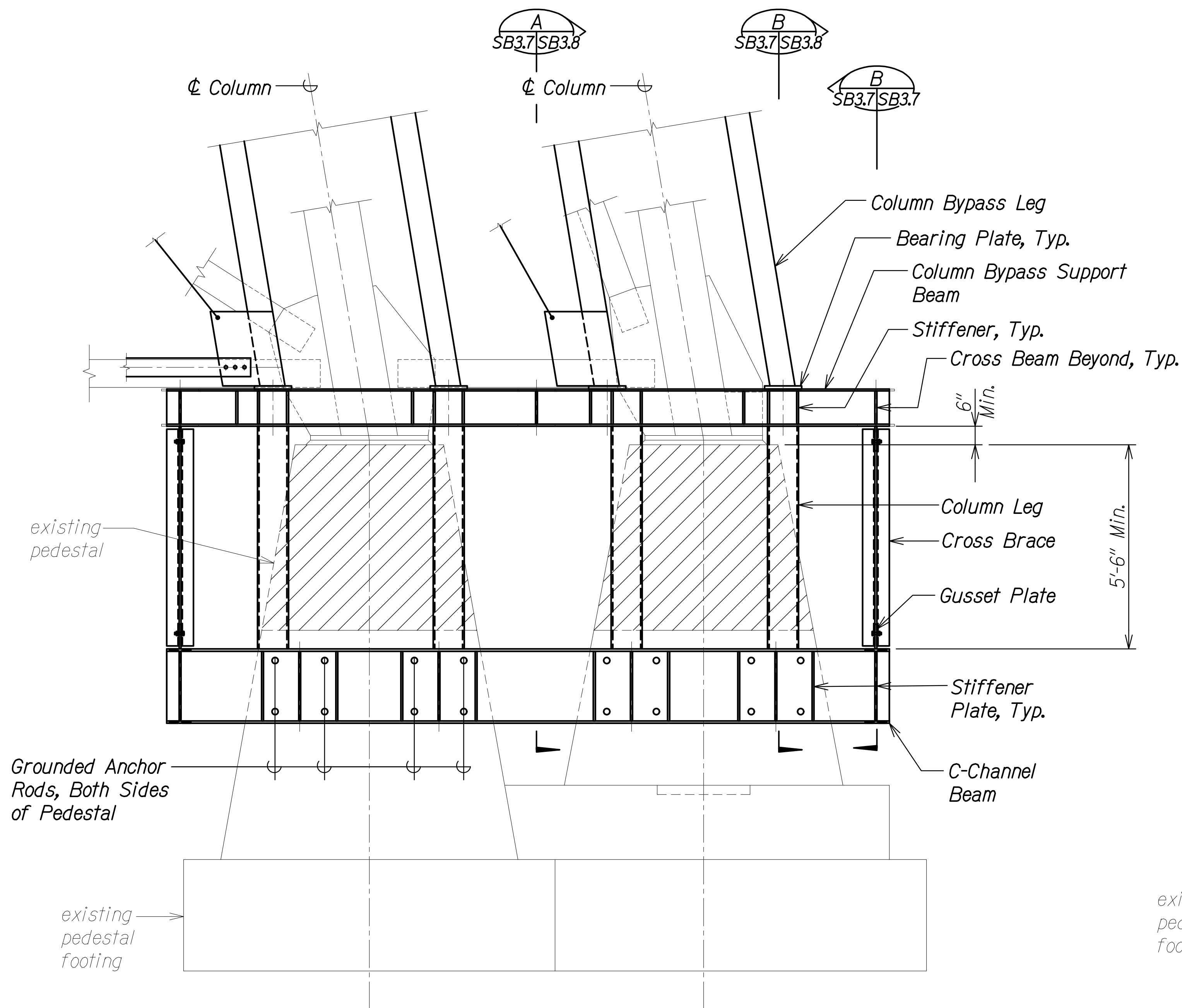
Scale: As Noted Date: Oct. 2024

SHEET No. SB3.6 OF 9 SHEETS

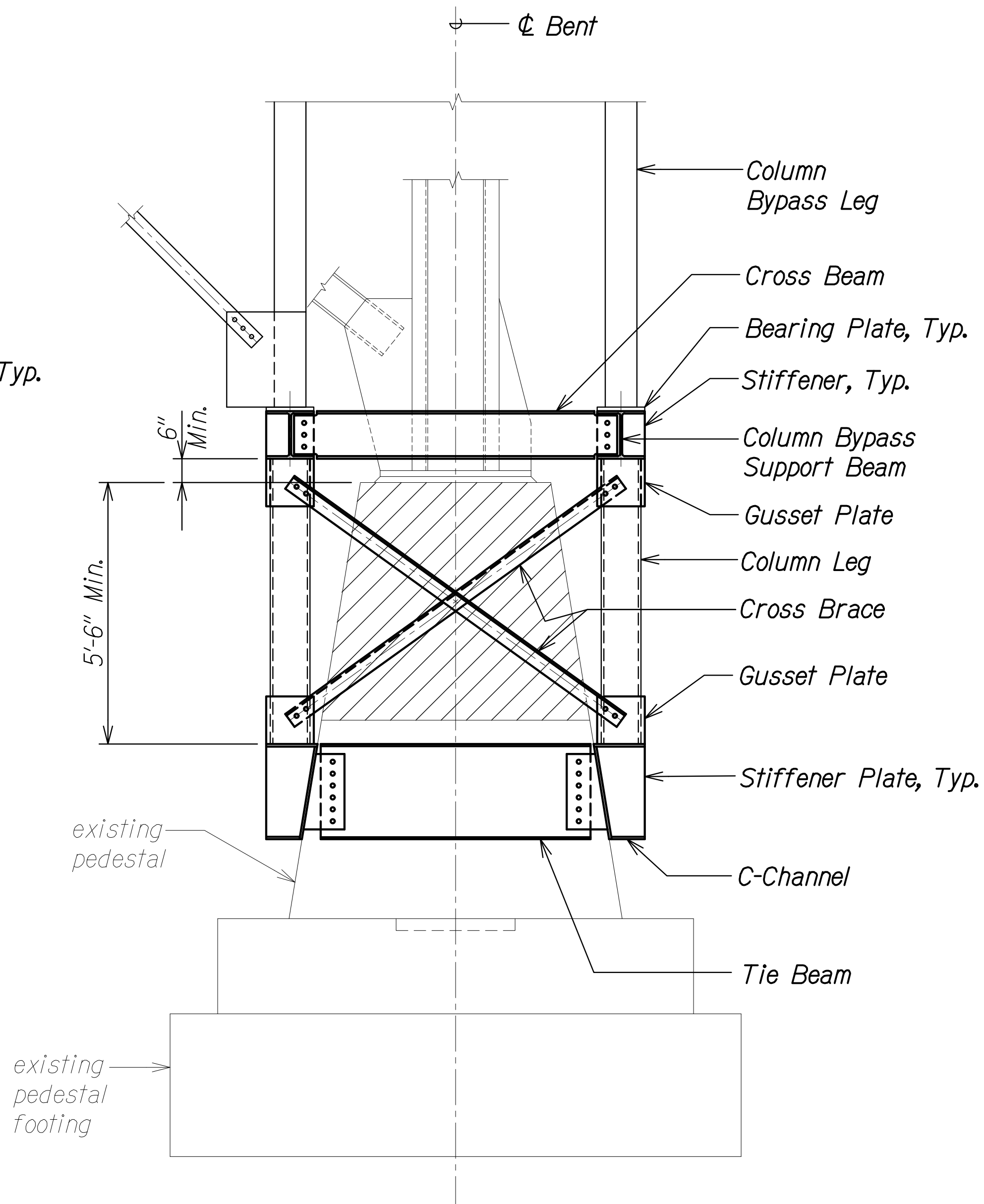
| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 278 | 280 |

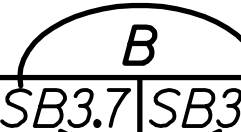
LEGEND:

 Portion of footing to be repaired.

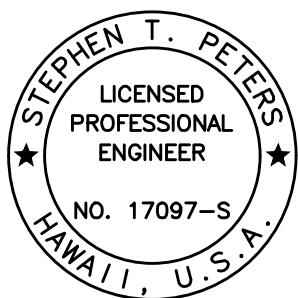


HILO-HONOKAA ELEVATION 
Scale: 1/2" = 1'-0" SB3.7|SB3.7



SECTION 
Scale: 1/2" = 1'-0" SB3.7|SB3.7

BOTTOM OF BENT COLUMN BYPASS ASSEMBLY TO BENT FOOTING CONNECTION DETAILS



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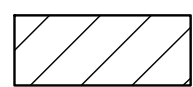

SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

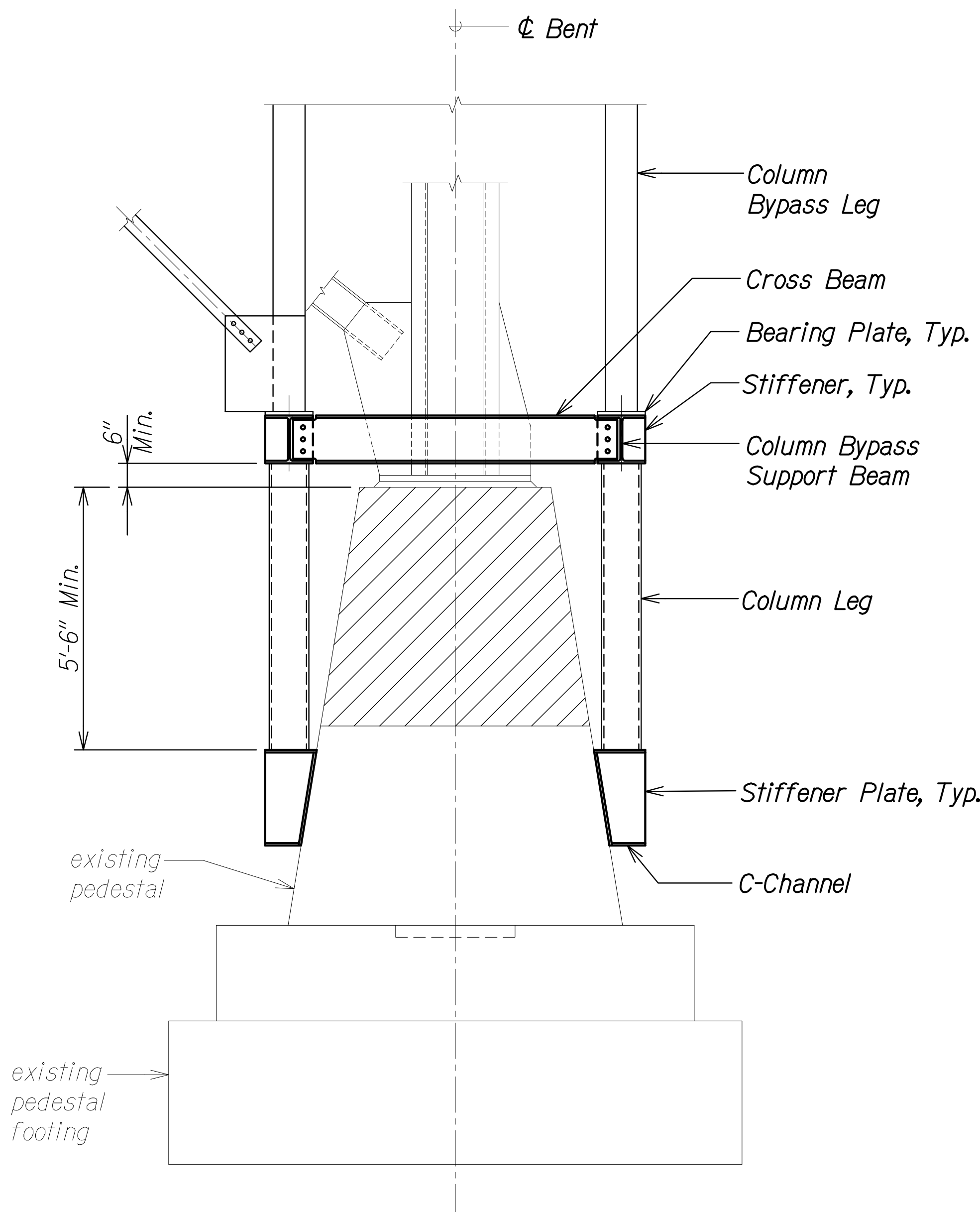
SHEET No. SB3.7 OF 9 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 279 | 280 |

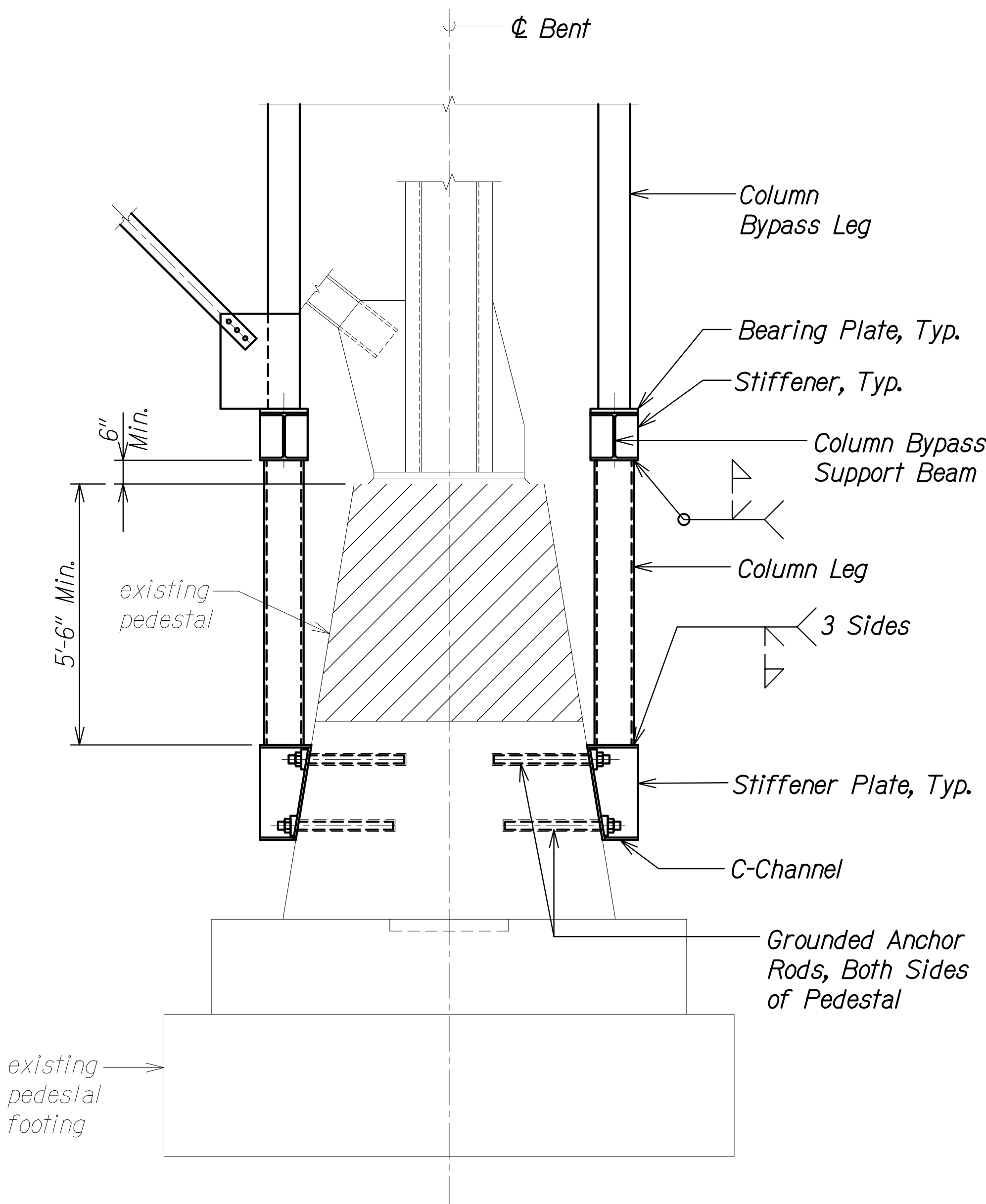
LEGEND:



Portion of footing to be repaired.



SECTION A
Scale: 1/2" = 1'-0" SB3.7|SB3.8

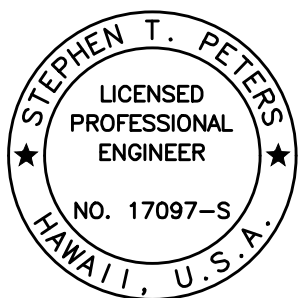


SECTION B
Scale: 1/2" = 1'-0" SB3.7|SB3.8

BOTTOM OF BENT COLUMN BYPASS ASSEMBLY TO BENT FOOTING CONNECTION DETAILS

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PF2-DOT\A.01 CAD\10-28-24 BID SET\NSR-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24 1:58 PM



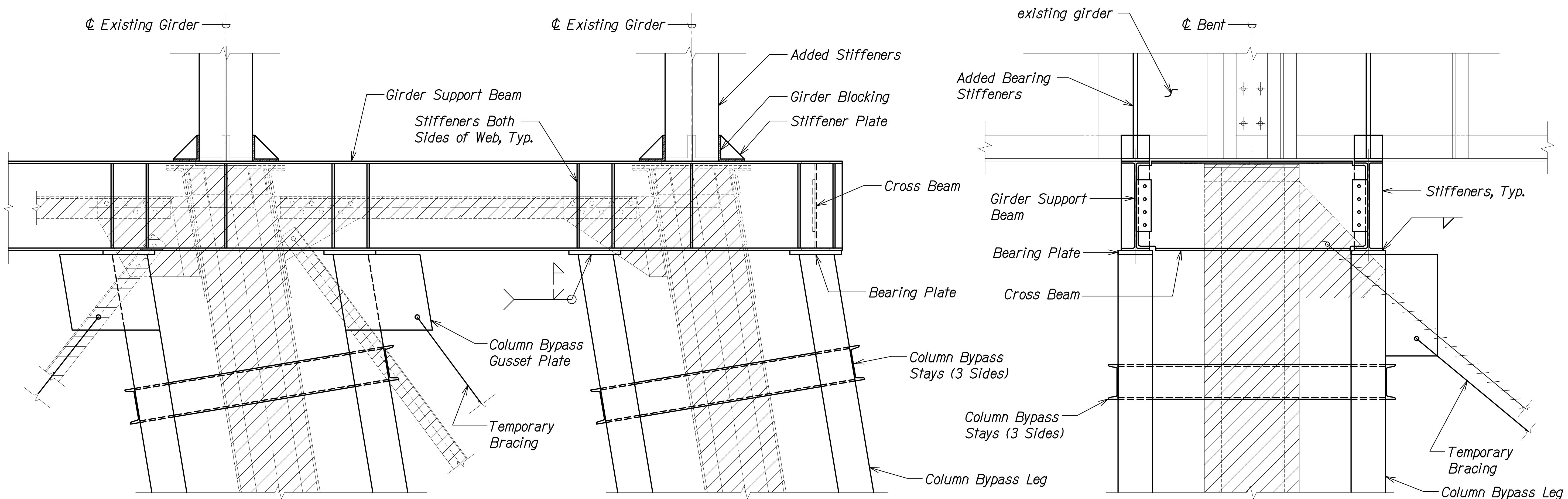
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Stephen T. Peters* 4-30-26
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS**
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No. SB3.8 OF 9 SHEETS

| FED. ROAD DIST. NO. | STATE | FEDERAL AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------------------|-------------|-----------|--------------|
| HAWAII | HAW. | BR-019-2(077) | 2024 | 280 | 280 |



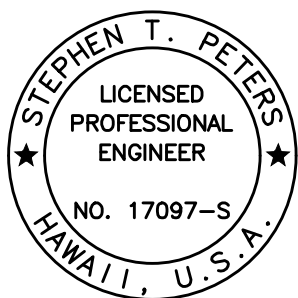
HILO - HONOKA'A ELEVATION A
SB2.11 SB3.9

UPSTREAM - DOWNSTREAM ELEVATION B
SB2.11 SB3.9

TOP OF BENT COLUMN BYPASS ASSEMBLY TO SUPERSTRUCTURE CONNECTION DETAILS
Scale: 1" = 1'-0"

LEGEND:

Existing Column to be Repaired



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Stephen T. Peters
SIGNATURE EXPIRATION DATE OF THE LICENSE 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SCHEMATIC COLUMN BYPASS
CONSTRUCTION DETAILS
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

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