INDEX OF DRAWINGS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STANDARD PLANS SUMMARY
3-8	GENERAL NOTES AND ABBREVIATIONS
9-14	WATER POLLUTION & EROSION CONTROL PLAN, NOTES AND DETAILS
15	ALIGNMENT PLAN
16	TYPICAL SECTION
17	ROADWAY PLAN
18	SPOT ELEVATION PLAN
19-20	PAVEMENT MARKINGS PLAN, NOTES AND LEGEND
21-24	TRAFFIC CONTROL NOTES, LEGEND AND DETAILS
25-29	TRAFFIC CONTROL PLANS
30-280	STRUCTURAL PLANS

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

HONOLULU, HAWAII

PLANS FOR

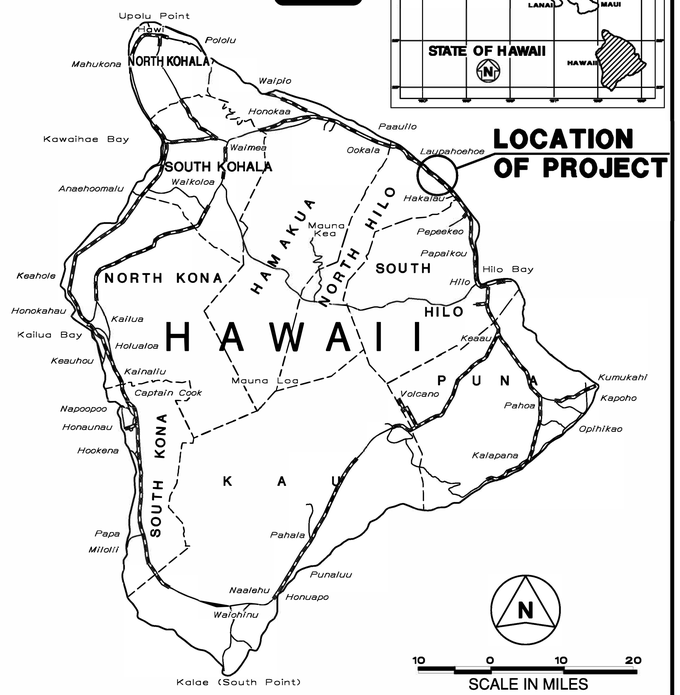
HAWAII BELT ROAD

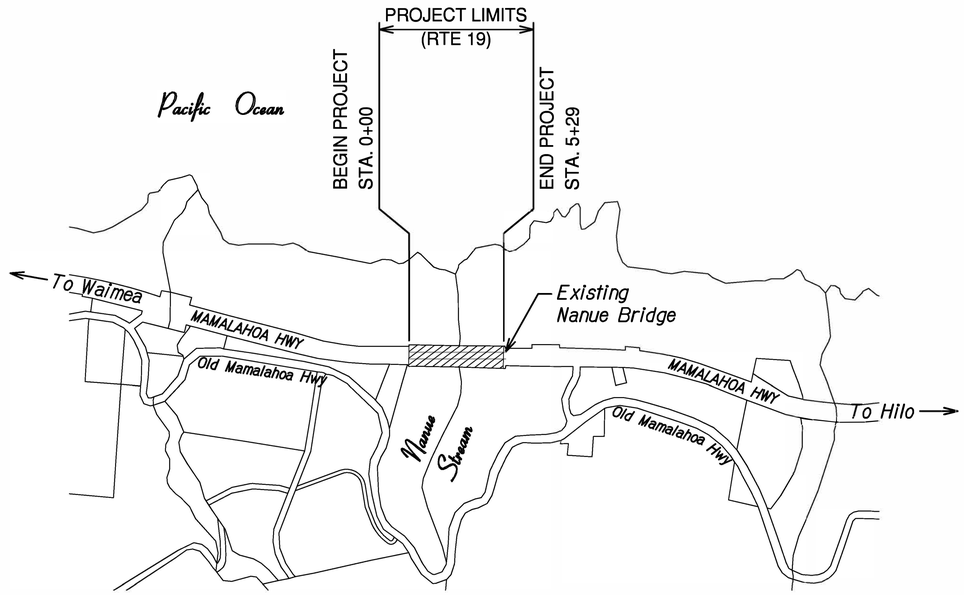
NANUE STREAM BRIDGE REHABILITATION

FEDERAL-AID PROJECT NO. BR-019-2(077)

DISTRICT OF NORTH HILO
ISLAND OF HAWAII

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





LAYOUT PLAN

NOT TO SCALE

GROSS LENGTH OF PROJECT 0.10 MILES
NET LENGTH OF PROJECT 0.10 MILES

FEDERAL AID INTERSTATE PROJECTS PREVIOUSLY CONSTRUCTED OR UNDER CONSTRUCTION

MILE POST 18.00 TO MILE POST 18.10

DESIGN DESIGNATION

ADT (2024). 10,700
ADT (2034). 12,100
ADT (2044). 13,500
DHV (2034). 1,030
DHV (2044). 1,150
Design K. 8.5
Design D. 55/45
Design T. 4.5
T24. . . . . .6.5

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED:

Oct 2, 2024

HIGHWAYS ADMINISTRATOR — DATE

WSP USA
DESIGNED BY

HWY-DD
MANAGED BY

(808)-692-8431
PHONE

AUG 2024
DATE

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

STANDARD PLANS SUMMARY

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

STANDARD PLAN NO.	TITLE	DATE
B-01	NOTES & MISCELLANEOUS DETAILS	05/31/07
B-03	BACKFILL DETAILS AT EARTH RETAINING STRUCTURES	05/31/07
B-12	PRESTRESSED CONCRETE PILES & COMPRESSION SPLICE	05/31/07
	CAN DETAILS	
B-12A	PRESTRESSED CONCRETE PILES, PILE & COMPRESSION	05/31/07
	SPLICE CAN DETAILS & NOTES	
B-12B	PILE INTERACTION DIAGRAM	05/31/07
B-13	PRESTRESSED CONCRETE PILE BUILD-UP DETAILS	05/31/07
D-01	CATTLE GATE	05/31/07
D-02	CHAIN LINK FENCE WITH TOPRAIL	05/31/07
D-03	CHAIN LINK FENCE WITHOUT TOPRAIL	05/31/07
D-04	WIRE FENCE WITH METAL POSTS	05/31/07
D-05	TYPICAL DETAILS OF CURBS AND/OR GUTTERS	05/31/07
D-06	TYPICAL DETAIL OF REINFORCED CONCRETE DROP DRIVEWAY	05/31/07
D-07	CENTERLINE AND REFERENCE SURVEY MONUMENTS	05/31/07
D-08	STREET SURVEY MONUMENT	05/31/07
D-15	CONCRETE SIDEWALK	05/31/07
D-16	P.C.C. BUS PAD	05/31/07
D-17	P.C.C. BUS PAD	05/31/07
D-18	P.C.C. PAVEMENT LAYOUT	05/31/07
D-19	P.C.C. PAVEMENT W/ PERMEABLE BASE JOINT DETAILS	05/31/07
D-20	P.C.C. PAVEMENT W/ PERMEABLE BASE JOINT DETAILS	05/31/07
D-21	P.C.C. LONGITUDINAL JOINT DETAILS	05/31/07
D-22	P.C.C. CONNECTION TO CURBS AND GUTTERS	05/31/07
D-23	JOINTS	05/31/07
L-01	TREE PLANTING	08/16/06
L-02	TREE PLANTING	08/16/06
L-03	TREE TRANSPLANTING	08/16/06
L-04	PALM PLANTING	08/16/06
L-05	SHRUB PLANTING	08/16/06
L-06	LANDSCAPE DETAILS	08/16/06
L-07	LANDSCAPE DETAILS	08/16/06
L-08	LANDSCAPE DETAILS	08/16/06
L-09	LANDSCAPE DETAILS	08/16/06
L-10	LANDSCAPE DETAILS	08/16/06
L-11	PLANTING NOTES	08/16/06
L-12	IRRIGATION DETAILS	08/16/06
L-13	IRRIGATION DETAILS	08/16/06
L-14	IRRIGATION DETAILS	08/16/06
L-15	IRRIGATION DETAILS	08/16/06
L-16	IRRIGATION DETAILS	08/16/06
L-17	IRRIGATION DETAILS	08/16/06
L-18	IRRIGATION DETAILS	08/16/06
L-19	IRRIGATION DETAILS	08/16/06
L-20	IRRIGATION DETAILS	08/16/06
L-21	IRRIGATION DETAILS	08/16/06
L-22	IRRIGATION DETAILS	08/16/06
L-23	IRRIGATION DETAILS	08/16/06
L-24	IRRIGATION NOTES	08/16/06

STANDARD PLAN NO.	TITLE	DATE
H-01A	TYPE A CATCH BASIN	05/31/07
H-01B	TYPE B CATCH BASIN	05/31/07
H-01C	TYPE C CATCH BASIN	05/31/07
H-01D	TYPE D CATCH BASIN	05/31/07
H-01E	CATCH BASIN SECTIONS	05/31/07
H-02A	TYPE A1 CATCH BASIN	05/31/07
H-02B	TYPE B2 CATCH BASIN	05/31/07
H-02C	TYPE C1 CATCH BASIN	05/31/07
H-02D	TYPE D1 CATCH BASIN	05/31/07
H-02E	CATCH BASIN SECTION	05/31/07
H-03	TYPE A,B, AND C STORM DRAIN MANHOLE	05/31/07
H-04	TYPE D STORM DRAIN MANHOLE	05/31/07
H-05	TYPICAL REINFORCING DETAILS FOR DRAINAGE STRUCTURES	05/31/07
H-06	TYPICAL REINFORCING DETAILS FOR DRAINAGE STRUCTURES	05/31/07
H-07	CATCH BASIN AND MANHOLE CASTINGS	05/31/07
H-08	TYPE 1A-9 AND 1A-9P GRATED DROP INLET	05/31/07
H-09	TYPE 2A-9 AND 2A-9P GRATED DROP INLET	05/31/07
H-10	TYPE A-9 OR A-9P STEEL FRAMES	05/31/07
H-11	TYPE A-9 AND A-9P STEEL GRATES	05/31/07
H-12	TYPE 61614P AND 1211214P GRATED DROP INLET	05/31/07
H-13	TYPE 61616P AND 1211216P GRATED DROP INLET	05/31/07
H-14	TYPE 61214P GRATED DROP INLET	05/31/07
H-15	TYPE 1211214, 1211214P, 1211216, 1211216P STEEL	05/31/07
	FRAME AND GRATES	
H-16	TYPE 61614, 61614P, 61616, 61616P STEEL FRAME	05/31/07
	AND GRATES	
H-17	TYPE 61214 STEEL FRAMES AND GRATES	05/31/07
H-18	TYPE 61214P STEEL GRATES	05/31/07
H-19	TYPE 61614B STEEL FRAME AND GRATES	05/31/07
H-20	CEMENT RUBBLE MASONRY STRUCTURES	05/31/07
H-21	CONCRETE AND CEMENT RUBBLE MASONRY STRUCTURES	05/31/07
H-22	INLET/OUTLET STRUCTURE	05/31/07
H-23	INLET/OUTLET STRUCTURE	05/31/07
H-24	FLARED END SECTION FOR CULVERTS	05/31/07
H-25	FLARED END SECTION FOR CULVERTS	05/31/07
H-26	CONCRETE SPILLWAY INLET	05/31/07
H-27	CAP COUPLING DETAILS STANDARD JOINT	05/31/07
H-28	REINFORCED CONCRETE COLLAR & JACKET	05/31/07
H-29	UNDERDRAIN CLEANOUT STEEL FRAME AND COVER	05/31/07
H-30	UNDERDRAIN CONNECTION TO DRAINAGE STRUCTURE	05/31/07
TE-01	SIGN HEIGHT AND LOCATION	07/11/08
TE-1A	SIGN INSTALLATION	07/11/08
TE-02A	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-02B	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-02C	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-03A	GALVANIZED SQUARE TUBE SIGN POST MOUNTING	05/31/07
TE-03B	GALVANIZED SQUARE TUBE SIGN POST MOUNTING	05/31/07
TE-04 ●	REGULATORY SIGNS	07/11/08
TE-05 ●	WARNING SIGNS	07/11/08
TE-06	MISCELLANEOUS SIGNS	07/11/08
TE-07 ●	CONSTRUCTION SIGNS	07/11/08
TE-08	MISCELLANEOUS INTERSECTION SIGNS	07/11/08

STANDARD PLAN NO.	TITLE	DATE
TE-09	BIKE ROUTE SIGN & SUPPLEMENTARY PLATES	07/11/08
TE-10	INTERSTATE ROUTE MARKER	07/11/08
TE-11	STATE ROUTE MARKER AND AUXILIARY MARKERS	07/11/08
TE-12	STATE ROUTE MARKER AND BORDER DETAIL FOR	07/11/08
	GUIDE SIGNS	
TE-12A	ROUTE SIGN ASSEMBLIES	07/11/08
TE-13	STREET NAME SIGN ON MAST ARM	07/11/08
TE-14	MISCELLANEOUS REFLECTOR MARKERS	07/11/08
TE-15	OBJECT MARKERS	07/11/08
TE-16	MILE POSTS	07/11/08
TE-17A	CANTILEVER OVERHEAD SIGN ELEVATION & DETAILS	05/31/07
TE-17B	CANTILEVER SIGN FRAME DETAIL AND SECTION	05/31/07
TE-17C	CANTILEVER SIGN FRAME DETAIL	05/31/07
TE-17D	CANTILEVER SIGN FRAME SECTION	05/31/07
TE-17E	CANTILEVER SIGN FRAME DETAILS	05/31/07
TE-18A	TWO POST OVERHEAD SIGN FRAME ELEVATIONS	05/31/07
TE-18B	TWO POST SIGN FRAMING PLAN SECTION	05/31/07
TE-18C	TWO POST SIGN FRAMING SECTIONS AND DETAILS	05/31/07
TE-18D	TWO POST SIGN FRAME DETAILS	05/31/07
TE-18E	TWO POST SIGN FRAME DETAILS	05/31/07
TE-19A	OVERHEAD SIGN FRAMING SCHEDULE	05/31/07
TE-19B	SIGN POST DRILLED SHAFT FOUNDATION	05/31/07
TE-19C	SPREAD FOOTING	05/31/07
TE-19D	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.1	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.2	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.3	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.4	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.5	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19E	ANCHORAGE DETAILS	05/31/07
TE-19F	ANCHORAGE DETAILS	05/31/07
TE-19G	MISCELLANEOUS SIGN FRAME DETAILS	05/31/07
TE-19H	LUMINAIRE WALKWAY SUPPORT	05/31/07
TE-19J	FIXED MESSAGE LUMINAIRE SUPPORT	05/31/07
TE-19K	MISCELLANEOUS SIGN DETAILS	05/31/07
TE-19L	MISCELLANEOUS SIGN DETAILS	05/31/07
TE-19M	MISCELLANEOUS SIGN FRAME DETAILS	05/31/07
TE-20	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20A	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20B	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20C	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-21A	SIGN BREAKAWAY MOUNTS	05/31/07
TE-21B	SIGN BREAKAWAY MOUNTS	05/31/07
TE-22	LAMINATED ALUMINUM SIGN PANELS (OVERHEAD)	05/31/07
TE-23	LAMINATED ALUMINUM SIGN PANELS (GROUND MOUNTED)	07/11/08
TE-24	SOLID ALUMINUM EXTRUDED SIGN PANEL AND	05/31/07
	ACCESSORY DETAILS	
TE-25	GUIDE SIGNS LUMINAIRE MOUNTINGS	05/31/07
TE-26 ●	RAISED PAVEMENT MARKERS AND STRIPING	07/11/08
TE-27	RAISED PAVEMENT MARKERS AND STRIPING	07/11/08
TE-28	ENTRANCE AND EXIT PAVEMENT MARKINGS	07/11/08
TE-28A	MISCELLANEOUS PAVEMENT MARKINGS	07/11/08
TE-29	PAVEMENT ARROWS AND SYMBOLS	07/11/08
TE-30	PAVEMENT ALPHABETS, NUMBERS & SYMBOLS	07/11/08
TE-31	PAVEMENT ALPHABETS, NUMBERS & SYMBOLS	07/11/08

STANDARD PLAN NO.	TITLE	DATE
TE-32	TYPE I & II TRAFFIC SIGNAL SYSTEM MISC. DETAILS	05/31/07
TE-33	TYPE II TRAFFIC SIGNAL SYSTEM	08/16/06
TE-33A.1	TYPE II TRAFFIC SIGNAL STANDARD	05/31/07
TE-33A.2	TYPE II TRAFFIC SIGNAL STANDARD	05/31/07
TE-34	LOOP DETECTOR DETAILS	07/11/08
TE-35	LOOP DETECTORS & DUCT DETAILS	07/11/08
TE-36	TRAFFIC SIGNAL DETAILS	07/11/08
TE-37	PULLBOX & COVER DETAILS	07/11/08
TE-37A	TYPE "A" TRAFFIC PULLBOX	05/31/07
TE-37B	TYPE "A" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37C	TYPE "B" TRAFFIC PULLBOX	05/31/07
TE-37D	TYPE "B" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37E	TYPE "B" TRAFFIC PULLBOX FOUNDATION	05/31/07
TE-37F	TYPE "C" TRAFFIC PULLBOX	05/31/07
TE-37G	TYPE "C" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37H	TYPE "C" TRAFFIC PULLBOX FOUNDATION	05/31/07
TE-37J	TRAFFIC PULLBOX COVER AND DETAILS	05/31/07
TE-38	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-38A.1	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-38A.2	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-39	METAL GUARDRAIL CONNECTION TO CONCRETE BARRIER	07/11/08
TE-40	CONCRETE BARRIER TRANSITION	05/31/07
TE-40A	CONCRETE BARRIER TRANSITION SECTIONS	05/31/07
TE-41	GUARDRAIL TYPE 4 (RIGID BARRIER)	05/31/07
TE-42	PORTABLE CONCRETE BARRIER	05/31/07
TE-43	PORTABLE CONCRETE BARRIER	05/31/07
TE-44	GUARDRAIL TYPE 4 MISCELLANEOUS DETAILS	07/11/08
TE-45	BARRICADES	07/11/08
TE-46	DELINEATION & PAVEMENT MARKINGS AT NARROW BRIDGES	07/11/08
TE-47	HIGHWAY LIGHT STANDARD	05/31/07

NOTE:

STANDARD PLANS APPLICABLE TO THIS PROJECT ARE INDICATED BY A " ● " NEXT TO THE STANDARD PLAN NO. (FOR EXAMPLE: D-07 ●)

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

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE — EXPIRATION DATE OF THE LICENSE: 04/30/26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLAN SUMMARY

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

Scale: None Date: Oct. 2024

SHEET No. N-1 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	3	280

GENERAL NOTES:

1. The scope of work for this project includes replacing steel truss members, bearings, gusset plates, etc., that have corrosion and section loss; fixing spalls and delamination in the concrete deck, abutments, bridge railings and column pedestals; cleaning and painting the steel members following the repairs; addressing scour deficiencies for the bridge foundations; removal and disposal of bridge sections and parts; cold planing and paving with asphalt and hybrid polymer concrete; management of contaminated materials; installation of pavement markings; installation of BMP measures for erosion control and hazardous materials; and traffic control.

2. Subsection 105.16(A) - Subcontract Requirements requires the Contractor to perform work amounting to not less than 30 percent of the total contract cost less deductible items.

3. The Contractor's attention is directed to the following Sections of the Standard Specifications and the Special Provisions 104.09 - Maintenance of Traffic; Subsection 105.09 - Coordination Between the Contractors; Subsection 107.06 - Contractor Duty Regarding Public Convenience; Subsection 107.12 - Protection of Persons and Property; and Section 645 - Work Zone Traffic Control.

4. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.

5. The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall tone for the exact locations and depths of all underground facilities, either shown on or omitted from the plans. Toning shall be considered incidental to the various contract items and will not be paid for separately. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.

6. The Contractor shall notify Hawaii Island Hele-On Bus two (2) weeks prior to lane closures, informing them of the location and dates of lane closures and name of affected roadway.

7. The Contractor shall notify the Engineer in writing, two (2) weeks prior to starting construction operations.

8. The Contractor shall indemnify and be solely responsible for the protection of adjacent properties, utilities, and existing structures from damages due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.

9. The existing drainage system shall be kept functional at all times during construction. Furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. This work shall be considered incidental to the various contract items.

10. No material or equipment shall be stockpiled or otherwise stored within highway right-of-way except at locations shown on the plans or designated in writing and approved by the Engineer.

11. The Contractor shall restore any damaged benchmarks or survey monuments. This work shall be considered incidental to the various contract items.

12. Benchmark for this topo is based on Triangulation Station "Honohina Reset". Azimuths and coordinates are referred to the Hawaii State Plane Coordinate System Zone 1, NAD83(1993). To convert to local Triangulation Station "Honohina Reset" azimuths, add (0° 07' 00.6") to the State Plane azimuths. Elevations are referenced to BM Box Cut found at the South end of Opea Bridge as noted on sheet 5468.4 of Hawaii Belt Road, Seismic Wave Damage Rehabilitation Project No. S.D.R. 3(13) Dated June 10, 1953. Elevation at Benchmark is 260.44 Mean Sea Level.

13. Smooth riding connections shall be constructed at all limits of project, including the beginning and end of project, connecting approaches, side streets, walkways and driveways as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to asphalt concrete and will not be paid for separately.

14. The Contractor shall clean and remove any accumulation of aggregates along the roadside within 10 feet of the edge of pavement. This work shall be considered incidental to bulk of work or the various contract items and will not be paid for separately.

15. The Contractor shall provide and maintain for access to and from all existing driveways, sidewalks and ADA access routes, and side streets and cross streets at all times. This work shall be considered incidental to the various contract items and will not be paid for separately.

16. Traffic control plans shown in the Contract Documents are minimum requirements and do not constitute a complete traffic control plan. The Contractor shall provide any traffic control plan (not shown in the plans) that is needed to accomplish the work based on Contractor's means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable Manual (on) Uniform Traffic Control Devices (MUTCD) requirements. All lane closures or traffic pattern changes (detours) not shown on the plan shall be submitted to the Engineer for approval in accordance with Specifications Section 645 - Work Zone Traffic Control. For restrictions on lane closures, detours, construction work during peak hours, and other requirements regarding maintaining vehicular and pedestrian traffic, see Section 645 - Work Zone Traffic Control. All traffic control related costs shall be included in the lump sum traffic control Pay Item 645.1000 - Traffic Control.

17. Submit requests for detours, and lane closures in accordance with Hawaii Standard Specification Subsection 645.03(F). Refer to minimum timeframes required for implementation. Approval may be denied if submittal timeframe is not set.

18. Contractor required to coordinate with other projects in the vicinity and obtain any approvals/permit needed to do the work.

19. All public notices and advertisements shall be incidental to lump sum traffic control Pay Item 645.1000 - Traffic Control, and shall not be paid for separately, unless otherwise directed by Engineer.

20. If the traffic control plan or any traffic control device is not installed per plan, specification, or is deemed unsafe, the Engineer reserves the right to shut down the work at no additional cost and time or withhold payment.

21. The Contractor shall verify the presence of existing utilities which may conflict with activities and shall coordinate with the utility company for temporary relocation, as necessary. All costs associated with the temporary relocation shall be borne by the Contractor and shall be incidental to the various pay items.

22. The Contractor shall comply with utility coordination requirements per Standard Specification Section 104.11. As part of coordination requirements, the Contractor shall provide a copy to the Engineer in all correspondences with utilities.

23. All materials shall be new and free of defects, such as rust, damage, or corrosion. The Engineer will determine acceptability. No payment will be made for material that is not accepted by the Engineer.

24. The Contractor shall allow access to all materials that will be used in the project for inspection and/or testing (this includes but is not limited to access to Contractor or subcontractor's base yards, manufacturer yard, production plant, separate storage areas). The Engineer reserves the right to reject any material for which access or inspection is not allowed.

25. Unauthorized occupancy of a lane, shoulder, or location encroached upon or occupied beyond the time periods authorized in the contract or by the Engineer may be subject to rental fees in accordance with Special Provisions 108.09.

26. All material generated by the project and taken off-site shall be considered solid waste. The Contractor shall dispose of all removed material at an approved Department of Health waste management facility. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer by the last day of the month. Provide documentation from any intermediary facility where solid waste is handled or processed, haul tags, or any documentation as requested by the Engineer. If the Contractor elects to reclassify material as inert fill, DOH HEER testing guidance shall be followed. No material generated from this project shall be classified as inert fill material for reuse without testing, obtaining required approvals/permits, providing disposal locations/quantities, and obtaining prior written approval from the Engineer. Failure to comply with these requirements may result in fines/liquidated damages in accordance with Special Provisions Section 209 and HDOT's Enforcement Response Plan.

27. All work specified in the Contract Documents but not itemized in the proposal including all that is needed to complete the work shall be considered incidental to the various contract items and shall not be paid for separately.

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

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

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

Scale: None Date: Oct. 2024

SHEET No. N-2 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	4	280

PUBLIC HEALTH, SAFETY, AND CONVENIENCE NOTES:

1. *The Contractor shall observe and comply with all Federal, State, and Local laws required for the protection of public health and safety and environmental quality.*

2. *The Contractor, at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the air pollution standards and regulations of the State Department of Health. The County may require supplementary measures as necessary.*

3. *The Contractor is to comply with the directions of the State of Hawaii Occupation Safety and Health Law (DOSH).*

HISTORICAL PRESERVATION NOTES:

1. *In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 933-7651, which will assess the significance of the find and recommend the appropriate mitigation measures, if necessary. In addition, if human remains are found, the Contractor shall immediately notify the County of Hawaii Police Department.*

HAWAII-ONE-CALL NOTES:

1. *The Contractor shall contact Hawaii One Call Center to have respective utility companies and agencies mark where their underground utilities are located. The Contractor shall comply with all requirements of Hawaii One Call Law. The Contractor shall be liable for any damages if Hawaii One Call requirements are not strictly adhered to. In accordance with Hawaii State Law Section 269E-7, the Hawaii One Call Center (HOCC) shall provide an inquiry identification number for each location request provided by the Contractor. The inquiry identification number and utility marks shall remain valid for not more than twenty-eight (28) calendar days from the date of issuance and after that date shall require the Contractor to submit a new request for HOCC revalidation. The Contractor shall provide all inquiry identification numbers for each location request to the Engineer.*

STAGING AREA NOTES:

1. *The Contractor shall be responsible for securing staging area(s) outside of the HDOT right-of-way. Securing a staging area includes obtaining property owner's consent and all necessary permits to utilize the site.*

2. *Note that property TMK (3) 3-2-001:008 has been cleared for Section 106 and HRS 6E-8.*

3. *Payment for securing staging area(s) is considered incidental to the various contract pay items.*

ORIGINAL PLAN
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QUANTITIES BY
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RANDALL M. URASAKI
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HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

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

Scale: None Date: Oct. 2024

SHEET No. N-3 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	5	280

GRADING NOTES:

1. All grading work shall be done in accordance with Chapter 14, Articles 13, 14, 15 and 16, as related to Grading, Soil Erosion and Sediment Control, of the Revised Ordinances of Honolulu, 1990, as Amended.

2. No Contractor shall perform any grading operation so as to cause falling rocks, soil or debris in any form to fall, slide or flow onto adjoining properties, streets or natural watercourses. Should such violations occur, the costs incurred for any remedial action shall be payable by the Contractor.

3. The Contractor, at his own expense, shall keep the project area and surrounding area free from dust nuisance. The work shall be in conformance with the Air Pollution Control Standards contained in The Hawaii Administrative Rules, Title 11, Chapter 60.1, "Air Pollution Control".

4. The underground pipes, cables or ductlines known to exist by the Engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.

5. Adequate provisions shall be made to prevent surface waters from damaging the cut face of an excavation or the sloped surfaces of a fill. Furthermore, adequate provisions shall be made to prevent sediment-laden runoff from leaving the site.

6. All slopes and exposed areas shall be sodded or planted as soon as final grades have been established. Planting shall not be delayed until all grading work has been completed. Grading to final grade shall be continuous, and any area within which work has been interrupted or delayed shall be planted.

7. Fills on slopes steeper than 5:1 shall be keyed.

8. The Engineer shall be informed of the location of the borrow/disposal site for the project when the application for a grading permit is made. The borrow/disposal site must also fulfill the requirements of the grading ordinance.

9. No grading work shall be done on Saturdays, Sundays and holidays at any time without prior notice to the District Engineer, provided such grading work is also in conformance with The Community Noise Control Standard Contained in The Hawaii Administrative Rules, Title 11 Chapter 46, "Community Noise Control".

10. The limits of the area to be graded shall be flagged before the commencement of the grading work.

11. All grading operations shall be performed in conformance with the applicable provisions of the water pollution control and water quality standards contained in Hawaii Administrative Rules, Title 11 Chapter 55, "Water Pollution Control" and Title 11 Chapter 54, "Water Quality Standards" and if applicable, the NPDES permit for the project.

12. Where applicable and feasible the measures to control erosion and other pollutants shall be in place before any earth moving phase of the grading is initiated.

13. Temporary erosion controls shall not be removed before permanent erosion controls are in-place and established.

14. Temporary erosion control procedures shall be submitted for approval prior to application for grading permit.

15. If the grading work involves contaminated soil, then all grading work shall be done in conformance with applicable State and Federal requirements.

16. Non-compliance to any of the above requirements shall mean immediate suspension of all work, and remedial work shall commence immediately. All remedial work shall be billed to the Contractor. All remedial work shall be at no cost to the State. Furthermore, violators shall be subjected to administrative, civil and/or criminal penalties.

17. Prior to placement of any fill, the existing ground shall be scarified to a depth of six inches and compacted to a minimum of 90 percent compaction as determined by AASHTO T-180.

18. After clearing and grubbing, additional roots and other vegetation found in the upper 6 to 8 inches shall be removed.

19. Construction observation and field density testing shall be performed by the State. Where test and/or observations indicate that the density of uniformity of any portion of the fill is inadequate, that portion shall be removed and reworked until the required density or uniformity has been satisfactorily obtained.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES
GRADING NOTES

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

Scale: None Date: Oct. 2024

SHEET No. N-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	6	280

NOTES FOR PROTECTION OF ENDANGERED SPECIES:

1. Inform project personnel and construction staff of the potential presence of threatened and endangered species on the project site. Provide materials to assist in species identification and appropriate actions if a species enters the work area.

2. HAWAIIAN SEABIRDS
No night time construction will be permitted during the seabird fledging period (September 15th through December 15th).

   All outdoor construction flood lights shall be fully shielded with automatic motion sensor switches and controls or turn off lights when human activity is not occuring in the lighted area.

3. HAWAIIAN HOARY BAT (Ope'ape'a)
No disturbing, clearing, grubbing, or trimming of woody plants greater than 15' tall shall be allowed during the Hawaiian Hoary Bat birthing and pup-rearing season (June 1st through September 15th).

   The Contractor shall not use barbed wire fencing.

4. HAWAIIAN GOOSE (Nene)
The Contractor's personnel shall be trained to identify Nene and instructed to not approach, disturb, or feed geese.

   If geese are observed loafing or foraging within the project area during the breeding season (September 1st through April 30th), a biologist familiar with the nesting behavior of geese shall survey for nests in and around the project area prior to the resumption of any work. Surveys shall be repeated after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).

   If a goose nest is discovered within a radius of 150 feet of the proposed work, cease all work immediately and contact the USFWS (808) 792-9400 for further guidance.

   In areas where geese are known to be present, post and implement reduced speed limits and inform project personnel and contractors about the presence of endangered species on-site.

5. The Hawaiian Short-Eared Owl (pueo)
Before any potential vegetative alteration, especially ground based disturbance, line transect surveys shall be conducted during crepuscular hours through the project area. If a pueo nest is discovered, a minimum buffer of 100 meters from the nest should be established until chicks are capable of flight.

6. The Hawaiian Hawk ('io)
Prior to vegetation cleaning, pre-construction surveys shall be conducted by a qualified biologist to ensure no Hawaiian Hawk nests are present. The survey shall be conducted at least 10 days prior to the start of construction. If an 'io nest is detected, a buffer zone of 100 meters shall be established around it where no construction shall occur until the chick or chicks have fledged, or the nest is abandoned.

7. WATERBIRDS (Ae'o or Hawaiian Stilt, 'Alae Ke'oke'o or Hawaiian coot)
In areas where waterbirds are known to be present, post and implement reduced speed limits and inform project personnel and contractors about the presence of endangered species on-site.

   In areas where vegetated streambanks would be disturbed, waterbird nest searches shall be conducted by a qualified biologist before any work is conducted, within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).

   If a nest or active brood is found:
   - Contact the USFWS (808) 792-9400 and Hawaiian Island Branch DOFAW office at (808) 974-4221 within 24 hours for further guidance.
   - Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.
   - A biological monitor that is familiar with the species' biology shall be present on the project site during all construction or earth moving activities until the chicks fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

8. SEA TURTLES (Honu)
To avoid and minimize project impacts to sea turtles and their nests the following measures shall be incorporated into the project:
   - Do not remove native dune vegetation.
   - Applicable best management practices regarding Work in Aquatic Environments will be required.
   - A biologist familiar with sea turtles shall conduct a visual survey of the project site to ensure no basking sea turtles are present.
   - If a basking sea turtle is found within the project area:
     - Cease all mechanical or construction activities within 100 feet until the animal voluntarily leaves the area.
     - Cease all activities between the basking turtle and the ocean.
   - Remove any project-related debris, trash, or equipment from the beach or dune if not actively being used.
   - Do not stockpile project-related materials in the intertidal zone, reef flats, sandy beach and adjacent vegetated areas, or stream channels.

9. Turbidity and siltation from project-related work should be minimized and contained within the project area by silt containment devices and curtailing work during flooding or adverse tidal and weather conditions. BMPs should be maintained for the life of the construction period until turbidity and siltation within the project area is stabilized. All project construction-related debris and sediment containment devices should be removed and disposed of at an approved site.

10. No project construction-related materials or equipment (dredges, vessels, backhoes, silt curtains, etc.) shall be placed in an aquatic environment. Project related activities should not result in any debris disposal, non-native species introductions, or attraction of non-native pests to the affected or adjacent aquatic or terrestrial habitats.

11. Project construction-related materials (fill, revetment rock, pipe, etc.) should not be stockpiled in, or in close proximity to, aquatic habitats and should be protected from erosion (e.g., with filter fabric, etc.), to prevent materials from being carried into waters by wind, rain, or high surf.

12. Fueling of project-related vehicles and equipment should take place away from the aquatic environment and a contingency plan to control petroleum products accidentally spilled during the project should be developed. The plan should be retained on site with the person responsible for compliance with the plan. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of accidental petroleum releases.

13. All deliberately exposed soil or under-layer materials used in the project near water should be protected from erosion and stabilized as soon as possible with geotextile, filter fabric or native or non-invasive vegetation matting, hydro-seeding, etc.

14. A litter-control plan shall be developed and implemented to prevent attraction and introduction of non-native species.

15. Invasive species controls shall be maintained to ensure that all materials transported from off-site are free of such species.

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GENERAL NOTES

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

Scale: None Date: Oct. 2024

SHEET No. N-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	7	280

NOTES FOR PROTECTION OF ENDANGERED SPECIES Cont.:

16. ESA-Listed Marine Species (Sea Turtles and Hawaiian Monk Seals)
    1. Constant vigilance shall be kept for the presence of ESA-listed marine species (sea turtles and Hawaiian monk seals) during construction.
    2. The Contractor shall designate a competent observer to search/monitor work sites and the areas adjacent to the authorized work area for ESA-listed marine species.
    3. Work shall be postponed or halted when ESA-listed marine species are within 50 yards.
    4. A pollution and erosion control plan for the project site and adjacent areas must be prepared and carried out. As a minimum, this plan shall include:
        a. Proper installation and maintenance of silt fences/curtains, sausages, equipment diapers, or drip pans.
        b. A contingency plan to control and clean spilled petroleum products and other toxic materials.
        c. Appropriate materials to contain and clean potential spills will be stored at the work site, and be readily available.
        d. All project-related materials and equipment placed in the water will be free of pollutants.
        e. Daily pre-work inspections of heavy equipment for cleanliness and leaks, with all heavy equipment operations postponed or halted until leaks are repaired and equipment is cleaned.
        f. Fueling of project-related vehicles and equipment will take place at least 50 feet away from the water and within a containment area, preferably over an impervious surface.
    5. BMPs shall be implemented in accordance with An Integrated Storm Water Management Approach and a Summary of Clear Water Diversion and Isolation Best Management Practices for Use in the State of Hawaii, by the Federal Highway Administration and Hawaii Department of Transportation Practitioners Guide (2016) or the Construction Best Management Practices Field Manual by the State of Hawaii Department of Transportation (2008).
        a. All objects will be lowered to the bottom in a controlled manner. This can include the use of buoyancy controls such as lift bags, or the use of cranes, winches, or other equipment that affect positive control over the rate of descent.
        b. Special attention shall be given to ensure that no ESA-listed marine species are within 50 yards of maintenance dredging, in-water excavation and movement of large armor stones, and benthic core sampling, and that those operations will immediately shut-down should any ESA-listed species enter within that range.
        c. Full-depth silt curtains shall be installed around all work sites with the potential to disturb and mobilize sediments. This will contain mobilized sediments in the marine environment and reduce the potential for elevated turbidity.

17. Alani, Nanu and Microlepia strigose var. mauiensis
    To avoid and minimize project impacts to flowering plants and ferns and allies, the table below shall be followed:

Action		Buffer Distance (feet - (meters)) - Keep Project Activity This Far Away from Listed Plant	
		Grasses/Herbs/Shrubs and Terrestrial Orchids	Trees and Arboreal Orchids
Walking, hiking, surveys		3 ft (1 m)	3 ft (1 m)
Cutting and Removing Vegetation By Hand or Hand Tools (e.g., weeding)		3 ft (1 m)	3 ft (1 m)
Mechanical Removal of Individual Plants or Woody Vegetation (e.g., chainsaw, weed eater)		3 ft up to height of removed vegetation (whichever greater)	3 ft up to height of removed vegetation (whichever greater)
Removal of Vegetation with Heavy Equipment (e.g., bulldozer, tractor, "bush hog")		2x width equipment + height of vegetation	820 ft (250 m)
Use of Approved Herbicides (following label)	Ground-based Spray Application; hand application (no wand applicator; spot treatment)	10 ft (3 m)	Crown diameter
	Ground-based Spray Application; manual pump with wand, backpack	50 ft (15 m)	Crown diameter
	Ground-based Spray Application; vehicle-mounted tank sprayer	50 ft (15 m)	Crown diameter
	Aerial Spray (ball applicator)	250 ft (76 m)	250 ft (76 m)
	Aerial Application - herbicide ballistic technology (individual plant treatment)	100 ft (30 m)	Crown diameter
	Aerial Spray (boom)	Further consultation required	Further consultation required
Use of Insecticides (pollinators, seed dispersers)		Further consultation required	Further consultation required
Ground/Soil Disturbance/Outplanting/Fencing (Hand Tools, e.g. shovel, ʻō ʻō; Small mechanized tools, e.g., auger)		20 ft (6 m)	2x crown diameter
Ground/Soil Disturbance (Heavy Equipment)		328 ft (100 m)	820 ft (250 m)
Surface Hardening/Soil compaction	Trails (e.g., human ungulates)	20 ft (6 m)	2x crown diameter
	Roads/Utility Corridors, Buildings/Structures	328 ft (100 m)	820 ft (250 m)
Prescribed Burns		Further consultation required	Further consultation required
Farming/Ranching/Silviculture		820 ft (250 m)	820 ft (250 m)

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GENERAL NOTES

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

Scale: None — Date: Oct. 2024

SHEET No. N-6 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	8	280

ABBREVIATIONS:

℄	BASELINE
BC	BOTTOM CURB
BMP	BEST MANAGEMENT PRACTICES
CLR	CLEARANCE
Ch	CHORD
CONC	CONCRETE
D	DRAIN LINE
DI	DRAIN INLET
DIA.	DIAMETER
E	ELECTRICAL
ES	EDGE OF SHOULDER
ep	EXISTING EDGE OF PAVEMENT
EP	EDGE OF PAVEMENT
ELEV	ELEVATION
EMB	EMBANKMENT
EXC	EXCAVATION
EXIST.	EXISTING
FH	FIRE HYDRANT
GRP	GROUTED RUBBLE PAVING
GW	GUY WIRE
HMA	HOT MIX ASPHALT
INV.	INVERT
Lc	LENGTH OF CURVE
LF	LINEAR FEET
LT.	LEFT
MB	METER BOX
MIN.	MINIMUM
M.L.	MATCHLINE
N	NORTH
NTS	NOT TO SCALE
O/H.	OVERHEAD ELECTRICAL
o/s	OFFSET
PC	POINT OF CURVATURE
PCCP	PORTLAND CEMENT CONCRETE PAVEMENT
PI	POINT OF INTERSECTION OF TANGENTS
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
PVMT	PAVEMENT
R	RADIUS
RD	ROAD
RT.	RIGHT
R/W	RIGHT-OF-WAY
S.E.	SUPERELEVATION
SF	SQUARE FEET
SHT	SHEET
ST	STREET
STA.	STATION
STD	STANDARD
T	TANGENT
TC	TOP CURB
TYP.	TYPICAL
U/G	UNDER GROUND
UP	UTILITY POLE
VAR	VARIES
W	WATER
WMH	WATER MANHOLE
WV	WATER VALVE

LEGEND:

EXISTING

	DI
D5	5" DRAIN LINE
ELEC.	ELEC. BOX
	ELEC MH
	ELEC. BOX
	ELEC TRANSFORMER
	E.O.
	FH
	G.P.
	GUARD RAIL
	G.W.
	MH
O/H	OVERHEAD LINE
	SMH
	SEWER VALVE
	SIGN
	S.L.
	STREET MONUMENT
	TEL BOX
	TEL. MH
TEL.	TELEPHONE LINE
	TREE
	TSL
	TSLB
	U.P/S.L.
	U.P./CONDUIT
	UTILITY BOX
W6	6" WATERLINE
	WM
	WMH
	WV

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LEGEND AND ABBREVIATIONS

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

Scale: None Date: Oct. 2024

SHEET No. N-7 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	9	280

WATER POLLUTION AND EROSION CONTROL NOTES:

A. GENERAL:

1. See Special Provisions Section 209 - Water Pollution and Erosion Control. Section 209 describes but is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment. In addition, Appendix A lists potential pollutant sources and corresponding BMPs used to mitigate the pollutants.

2. Follow the guidelines in the current HDOT Construction Best Management Practices Field Manual in developing, installing and maintaining the Best Management Practices (BMP) for the project. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, the Contractor shall notify the Engineer immediately for interpretation. For the purposes of clarification under Note A.2, "applicable bid documents" include the construction plans, standard specifications, Special Provisions, Permits, and the Storm Water Pollution Prevention Plan (SWPPP) when applicable.

3. Follow the guidelines in the Honolulu's City & County "Rules Relating to Soil Erosion Standards and Guidelines" along with applicable Soil Erosion Guidelines for projects on Maui, Molokai, Kauai, and Hawaii.

4. The Engineer may assess liquidated damages of up to $27,500 for non-compliance of each BMP requirement and each requirement stated in Section 209 and special provisions, for every day of non-compliance. There is no maximum limit on the amount assessed per day.

5. The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.

6. If necessary, install a rain gage prior to any field work including the installation of any site-specific best management practices. The rain gage shall have a tolerance of at least 0.05 inches of rainfall. Install the rain gage on the project site in an area that will not deter rainfall from entering the gage opening. Do not install in a location where rain water may splash into rain gage. The rain gage installation shall be stable and plumbed. Do not begin field work until the rain gage is installed and site-specific best management practices are in-place.

7. Submit Site-Specific BMP Plan to the Engineer along with a completed Site-Specific BMP Review Checklist within 21 calendar days of date of award. The Site-Specific BMP Review Checklist may be obtained from http://www.stormwaterhawaii.com.

B. WASTE DISPOSAL:

1. Waste Materials
Collect and store all waste materials in a securely lidded metal dumpster or roll off container with cover to keep rain out or loss of waste during windy conditions. The dumpster shall meet all local and State solid waste management regulations. Deposit all trash and construction debris from the site in the dumpster. Empty the dumpster weekly or when the container is two-thirds full, whichever is sooner. Do not bury construction waste materials onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Post notices stating these practices in the office trailer, on a weatherproof bulletin board, or other accessible location acceptable to the Engineer. The Contractor shall be responsible for seeing that these procedures are followed. Submit the Solid Waste Disclosure Form for Construction Sites to the Engineer within 21 calendar days of date of award. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly. This should also include documentation from any intermediary facility where solid waste is handled or processed.

2. Hazardous Waste
Dispose all hazardous waste materials in the manner specified by local or State regulations and by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

3. Sanitary Waste
Collect all sanitary waste from the portable units a minimum of once per week, or as required. Position sanitary facilities where they are secure and will not be tipped over or knocked down.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

1. For projects with an NPDES Permit for Construction Activities, inspect at the following intervals. For construction areas discharging to nutrient or sediment impaired waters, inspect all control measures at least once each week and within 24 hours of any rainfall event of 0.25 inches or greater within a 24 hour period. For construction areas discharging to waters not impaired for nutrient or sediments, inspect all control measures weekly. Inspections are only required during the project's normal working hours. The discharge point water classification may be found in the SWPPP.

2. For projects without an NPDES Permit for Construction Activities, inspect all control measures weekly.

3. Maintain all erosion and sediment control measures in good working order. If repair is necessary, initiate repair immediately and complete by the close of the next work day if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance. When installation of a new erosion or sediment control or a significant repair is needed, install the new or modified control or complete the repair no later than 7 calendar days from the time of discovery. "Immediately" means the Contractor shall take all reasonable measures to minimize or prevent discharge of pollutants until a permanent solution is installed and made operational. If a problem is identified at a time in the day in which it is too late to initiate repair, initiation of repair shall begin on the following work day.

4. Remove built-up sediment from silt fence when it has reached one-third the height of the fence. Remove sediment from other perimeter sediment control devices when it has reached one-half the height of the device.

5. Inspect silt screen or fence for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab and to verify that the fence posts are firmly in the ground. Inspect and verify the bottom of the silt screen is buried a minimum of 6 inches below the existing ground.

6. Inspect temporary and permanent seeding and planting for bare spots, washouts and healthy growth.

7. Complete and submit to the Engineer a maintenance inspection report within 24 hours after each inspection.

8. Provide a stabilized construction entrance at all points of exit onto paved roads to reduce vehicle tracking of sediments. Include stabilized construction entrance in the Water Pollution, Dust, and Erosion Control submittals. Minimum length should be 50 feet. Minimum width should be 30 feet. Minimum depth should be 12 inches or as recommended by the soils engineer and underlain with geo-textile fabric. If minimum dimensions cannot be met, provide other stabilization techniques that remove sediment prior to exit. Clean the paved street adjacent to the site entrance daily or as required to remove any excess mud, cold-planed materials, dirt or rock tracked from the site. Do not hose down the street without containing or vacuuming wash water. Cover dump trucks hauling material from the construction site with a tarpaulin. Remove sediment tracked onto the street, sidewalk, or other paved area by the end of the day in which the track-out occurs.

9. Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.

10. Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.

11. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION & EROSION CONTROL NOTES

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

Scale: None Date: Oct. 2024

SHEET No. EC-1 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	10	280

WATER POLLUTION AND EROSION CONTROL NOTES (Cont.):

12. Contain, remove, and dispose slurry generated from saw cutting of pavement in accordance with approved BMP practices. Do not allow discharge into the drainage system or State waters.

13. For projects with an NPDES Permit for Construction Activities, immediately initiate stabilizing exposed soil areas upon completion of earth-disturbing activities for areas where earth-disturbing activities have permanently or temporarily ceased. Earth-disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future. For construction areas discharging into waters not impaired for nutrients sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities. For construction areas discharging into nutrient or sediment impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities. Classification of water at the discharge point may be found in the SWPPP.

14. For projects without an NPDES Permit for Construction Activities, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. Materials Pollution Prevention Plan
   a. Applicable materials or substances listed below are expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Cleaning Solvents
Detergents	Wood
Paints (enamel and latex)	Masonry Block
Metal Studs	Herbicides and Pesticides
Tar	Curing Compounds
Fertilizers	Adhesives
Petroleum Based Products	

   b. Use Material Management Practices to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. Make an effort to store only enough product as is required to do the job.
   c. Store all materials stored onsite in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
   d. Keep products in their original containers with the original manufacturer's label.
   e. Do not mix substances with one another unless recommended by the manufacturer.
   f. Whenever possible, use a product up completely before disposing of the container.
   g. Follow manufacturer's recommendations for proper use and disposal.
   h. Conduct a daily inspection to ensure proper use and disposal of materials onsite.

2. Hazardous Material Pollution Prevention Plan
   a. Keep products in original containers unless they are not resealable.
   b. Retain original labels and Safety Data Sheets (SDS), formerly Material Safety Data Sheets (MSDS).
   c. Dispose of surplus products according to manufacturers' instructions and local and State regulations.

3. Onsite and Offsite Product Specific Plan
   The following product specific practices shall be followed onsite:
   a. Petroleum Based Products:
      Monitor all onsite vehicles for leaks and perform regular preventive maintenance to reduce the chance of leakage. Store petroleum products in tightly sealed containers which are clearly labeled. Apply asphalt substances used onsite according to the manufacturer's recommendation.

   b. Fertilizers:
      Apply fertilizers used only in the minimum amounts recommended by the manufacturer and federal, state, and local requirements. Avoid applying just before a heavy rain event. Apply at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth. Once applied, work fertilizer into the soil to limit exposure to storm water. Do not apply to storm conveyance channels with flowing water. Storage shall be in a covered shed or in an area where fertilizer will not come into contact with precipitation or stormwater. Transfer the contents of any partially used bags of fertilizer to a sealable plastic bin to avoid spills.

   c. Paints:
      Seal and store all containers when not required for use. Do not discharge excess paint to the drainage system, sanitary sewer system, or State waters. Dispose properly according to manufacturers' instructions and State and local regulations.

   d. Concrete Trucks:
      Washout or discharge concrete truck drum wash water only at a designated site as far as practicable from storm drain inlets or State waters. Do not discharge water in the drainage system or State waters. Disposal by percolation is prohibited. Clean disposal site as required or as requested by the Engineer.

4. Spill Control Plan
   a. Post a spill prevention plan to include measures to prevent and clean up each spill.
   b. The Contractor shall be the spill prevention and cleanup coordinator. Designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. Post the names of responsible spill personnel in the material storage area on a weatherproof bulletin board or other accessible location acceptable to the Engineer and in the office trailer onsite.
   c. Clearly post manufacturers' recommended methods for spill cleanup. Make site personnel aware of the procedures and the location of the information and cleanup supplies.
   d. Keep ample materials and equipment necessary for spill cleanup in the material storage area onsite.
   e. Clean up all spills immediately after discovery.
   f. Keep the spill area well ventilated. Personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
   g. Report spills of toxic hazardous material to the appropriate State or local government agency, regardless of the size. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, the Contractor shall notify the Engineer as soon as the Contractor has knowledge of the discharge. The Engineer will notify the National Response Center (NRC) at (800) 424-8802, the Clean Water Branch during regular business hours at 586-4309, and the Hawaii State Hospital Operator at 247-2191 and the Clean Water Branch (DOH-CWB) via email at cleanwaterbranch@doh.hawaii.gov during non-business hours immediately. The Contractor shall also provide to the Engineer, within 7 calendar days of knowledge of the release, a description of the release, the circumstances leading to the release, and the date of the release. The Engineer will provide this information to the DOH-CWB. The Engineer will provide information to the NRC if requested.

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

RANDALL M. URASAKI
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No. 7269-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION & EROSION CONTROL NOTES

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

Scale: None Date: Oct. 2024

SHEET No. EC-2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	11	280

WATER POLLUTION AND EROSION CONTROL NOTES (Cont.):

E. PERMIT REQUIREMENTS:

1. The calculated land disturbance area for this project based on the construction plans is 0.5 acres not including Contractor Staging and Storage areas. If the total of the disturbed area and the Contractor Staging and Storage area is one acre or greater, the Contractor shall obtain the NPDES Construction Activities Permit using HDOT's latest SWPPP template. See Hawaii Administrative Rules Chapter 11-55, Appendix C for the definition of land disturbance. The Contractor shall be responsible for obtaining the required NPDES Construction Activities Permit and complying with the requirements of HAR 11-55 including, but not limited to:

a. Deadlines for initiating and completing initial stabilization
b. Increased inspection frequency and installation of rain gage if applicable
c. Deadlines to initiate and complete repairs to BMPs
d. Reporting requirements and corrective action reports

2. Comply with all applicable State and Federal Permit conditions. Permits may include, but not limited to the following:

a. NPDES Permit for Construction Activities

b. Water Quality Certification

c. Section 404 Army Corps of Engineer Permit

F. SITE-SPECIFIC BMP REQUIREMENTS:
Each BMP below is referenced to the corresponding section of the current HDOT Construction Best Management Practices Field Manual and appropriate Supplemental Sheets. The Manual may be obtained from the HDOT Statewide Stormwater Management Program Website at http://www.stormwaterhawaii.com/resources/contractors-and-consultants/ under Construction Best Management Practices Field Manual. Supplemental BMP sheets are located at http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/ under Concrete Curing and Irrigation Water.

The requirements for Water Pollution, Dust, and Erosion Control submittals are included in Section 209 of the Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and applicable Special Provisions. A list of pollutant sources and corresponding BMP used to mitigate the pollutants are included in Section 209 of the Special Provisions under Appendix A.

Follow the requirements below:

1. Protect all Drainage Inlets receiving runoff from disturbed areas (SC-1).

2. Contain on-site runoff using Perimeter Sediment Controls
a. SC-7 Silt Fence or Filter Fabric Fence
b. SC-2 Vegetated Filter Strips and Buffers
c. SC-6 Compost Filter Berm/Sock
d. SC-8 Sandbag Barrier
e. SC-9 Brush or Rock Filter

3. Control offsite runoff from entering construction area
a. EC-3 Run-On Diversion
b. EC-6 Earth Dike, Swales, and Ditches

4. Incorporate applicable Site Management BMP
a. SM-1 Employee Training
b. SM-2 Material Storage and Handling
c. SM-3 Stockpile Management
d. SM-6 Solid Waste Management
e. SM-7 Sanitary Waste Management
f. SM-9 Hazardous Materials and Waste Management
g. SM-10 Spill Prevention and Control
h. SM-11 Vehicle and Equipment Cleaning
i. SM-12 Vehicle and Equipment Maintenance
j. SM-13 Vehicle and Equipment Refueling
k. SM-14 Scheduling
l. SM-15 Location of Potential Sources of Sediment
m. SM-16 Staging Area
n. SM-17 Preservation of Existing Vegetation
o. SM-19 Dust Control

5. Contain pollutants within the Construction Staging/Storage Area BMP with applicable Perimeter Sediment Controls and Site Management BMP. Include a Stabilized Construction Entrance/Exit (SC-11) for all areas which exit onto a paved street. Restrict vehicle access to these points.

6. Manage Concrete Waste including installing a Concrete Washout Area (SM-4) and properly disposing of Concrete Curing Water (California Stormwater BMP Handbook NS-12 Concrete Curing).

7. Remove saw cut slurry and hydrodemolition water from the site by vacuuming. Provide storm drain protection and/or perimeter sediment controls during saw cutting and hydrodemolition work.

ORIGINAL PLAN
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CHECKED BY .....

RANDALL M. URASAKI
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

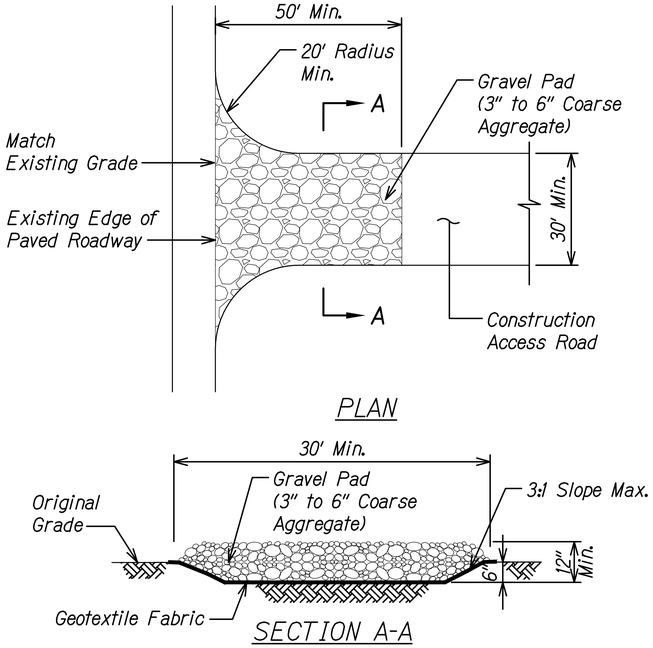
WATER POLLUTION & EROSION CONTROL NOTES

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

Scale: None Date: Oct. 2024

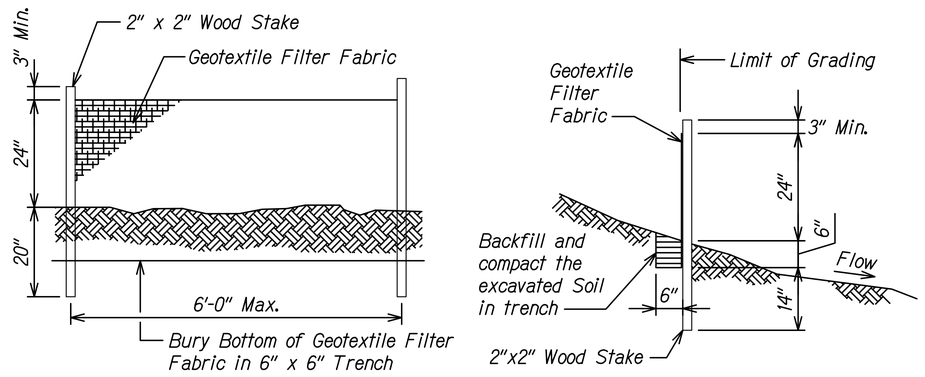
SHEET No. EC-3 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	12	280



TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

Not to Scale

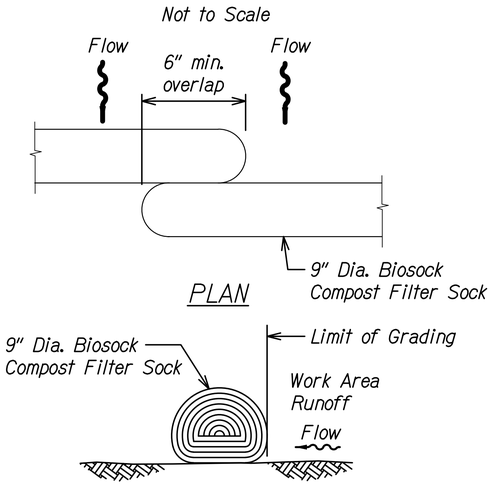


SILT FENCE NOTES:

1. The filter fabric shall be a minimum of 36 inches wide.
2. If silt fence is obtained from manufacturer as a package (i.e. fabric attached to post) the manufacturer's installation instructions shall be adhered to.

SILT FENCE DETAIL

Not to Scale



BIOSOCK COMPOST FILTER SOCK PERIMETER CONTROL DETAIL

Not to Scale

GENERAL NOTES FOR BMP PLAN:

1. Sediment and Erosion Control BMP details shown are the minimum required. The Contractor shall prepare site-specific BMP plans based on their means and methods, considering site conditions and construction sequence.

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

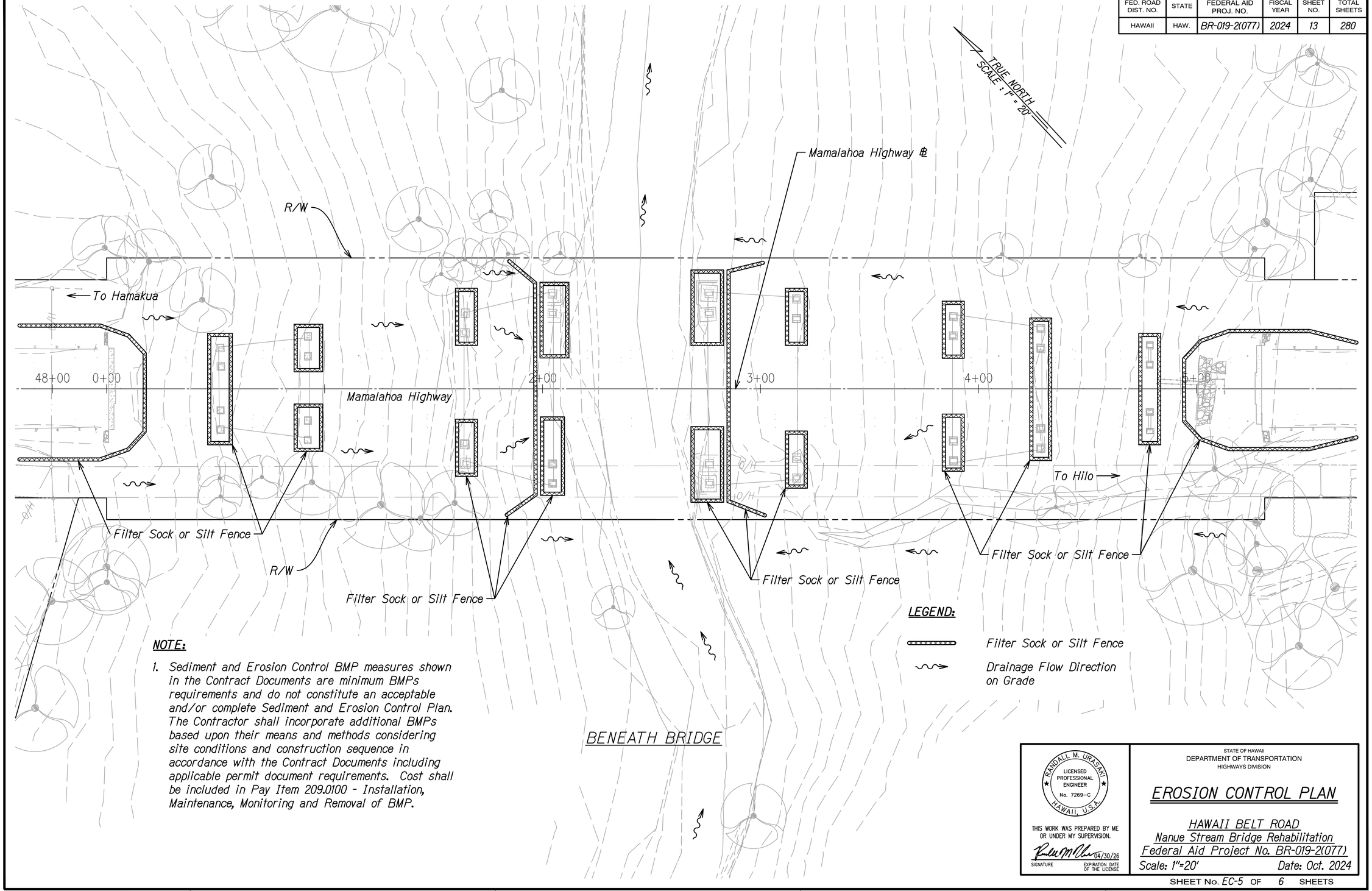
EROSION CONTROL DETAILS

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

Scale: As Shown Date: Oct. 2024

SHEET No. EC-4 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	13	280



NOTE:

1. Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100 - Installation, Maintenance, Monitoring and Removal of BMP.

LEGEND:

- Filter Sock or Silt Fence
- Drainage Flow Direction on Grade

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STATE OF HAWAII
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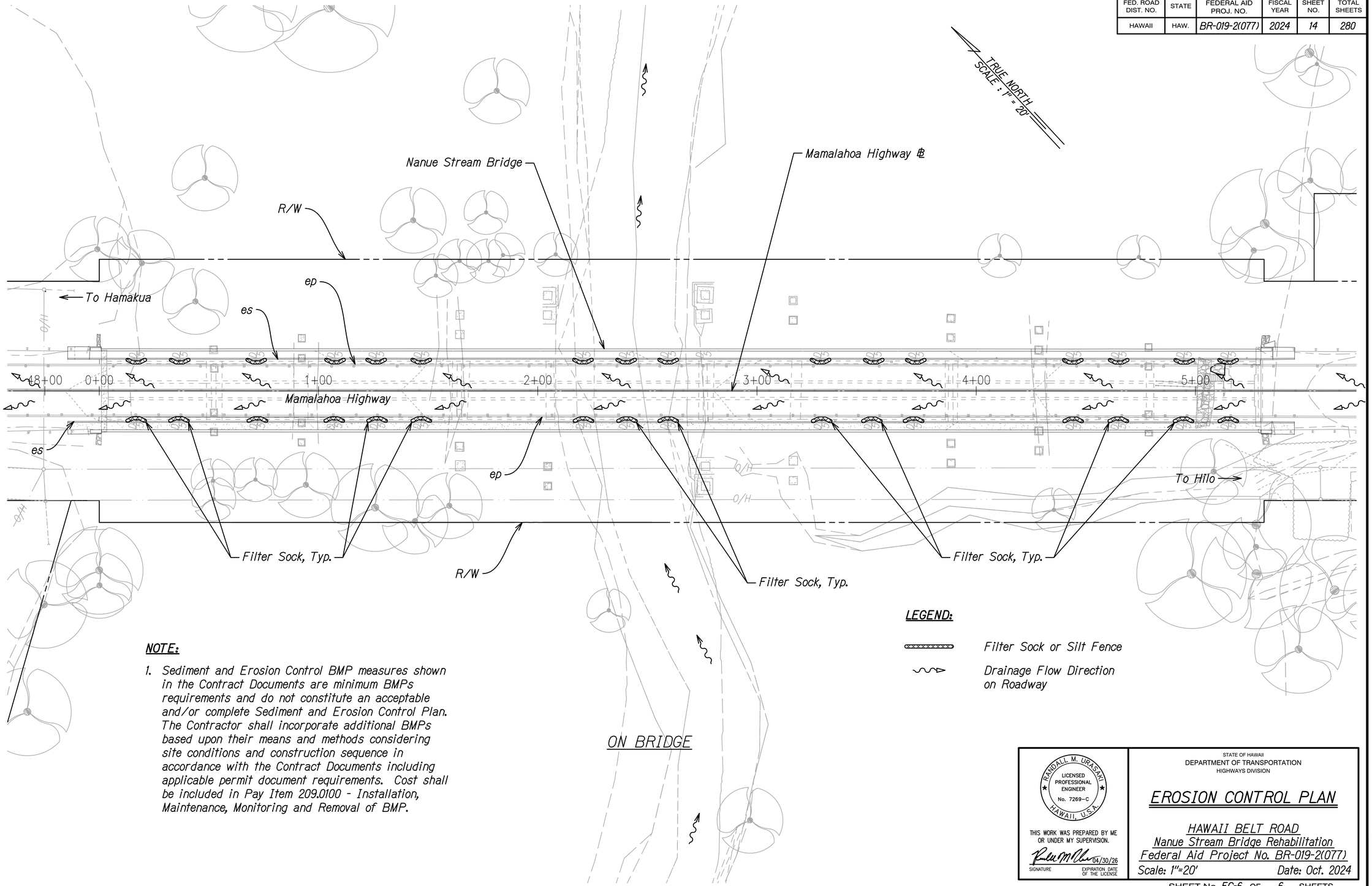
EROSION CONTROL PLAN

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

Scale: 1"=20' Date: Oct. 2024

SHEET No. EC-5 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	14	280



NOTE:

1. Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100 - Installation, Maintenance, Monitoring and Removal of BMP.

LEGEND:

Filter Sock or Silt Fence

Drainage Flow Direction on Roadway

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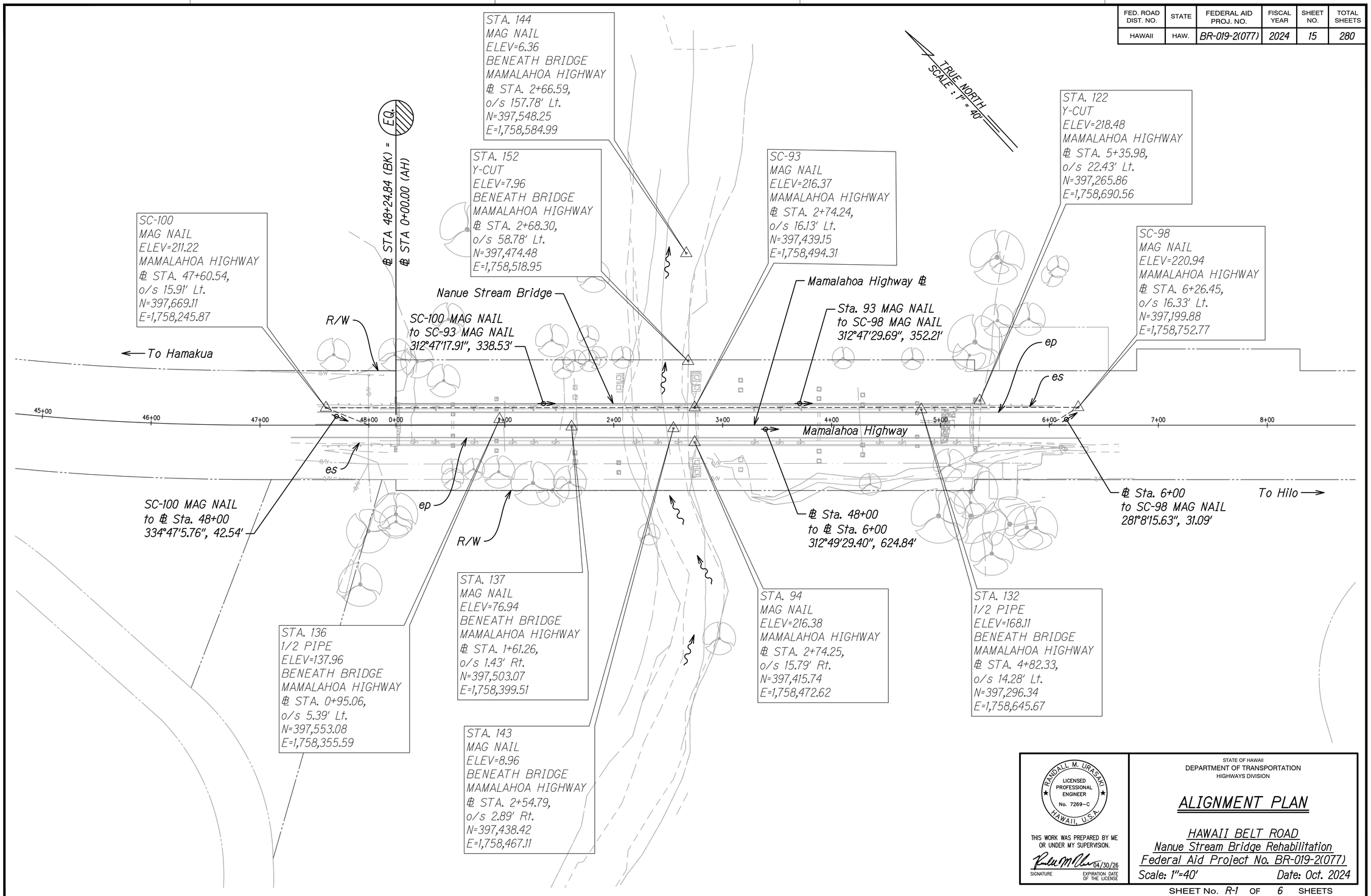
EROSION CONTROL PLAN

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

Scale: 1"=20' Date: Oct. 2024

SHEET No. EC-6 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	15	280



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STATE OF HAWAII
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HIGHWAYS DIVISION

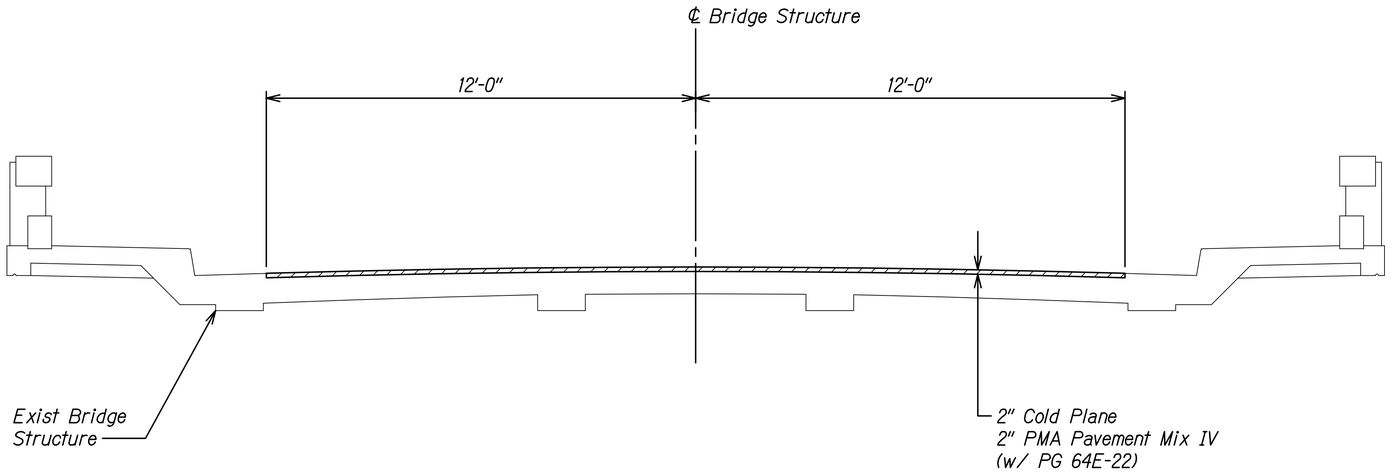
ALIGNMENT PLAN

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

Scale: 1"=40' Date: Oct. 2024

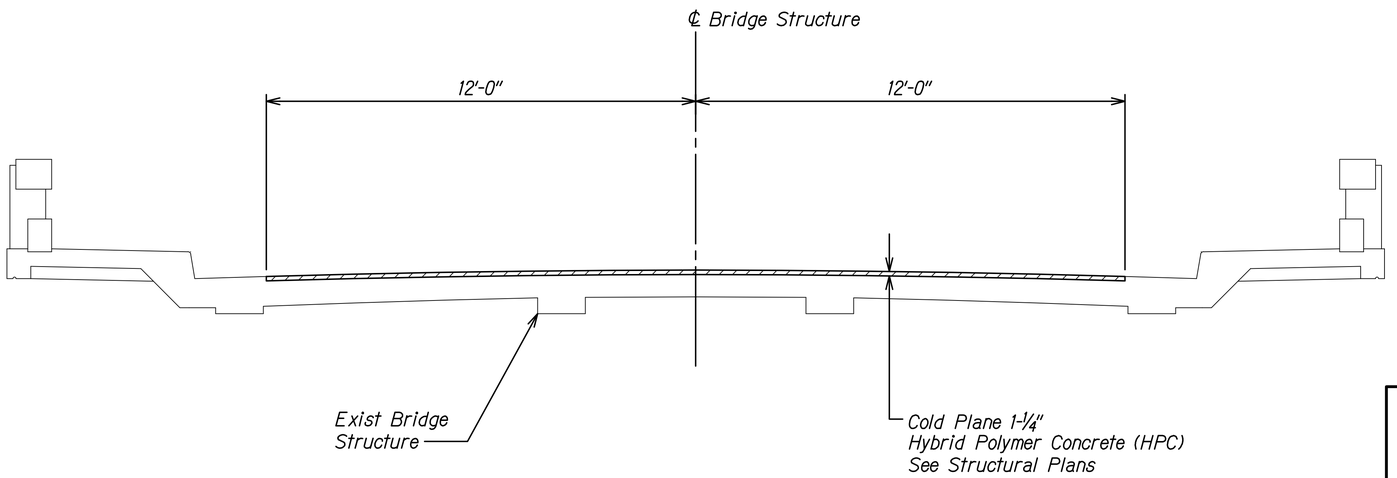
SHEET No. R-1 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	16	280



TYPICAL SECTION AT ABUTMENT (Off Bridge)

Scale: ½" = 1'-0"



TYPICAL SECTION (On Bridge)

Scale: ½" = 1'-0"

ORIGINAL PLAN
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STATE OF HAWAII
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HIGHWAYS DIVISION

TYPICAL SECTION

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

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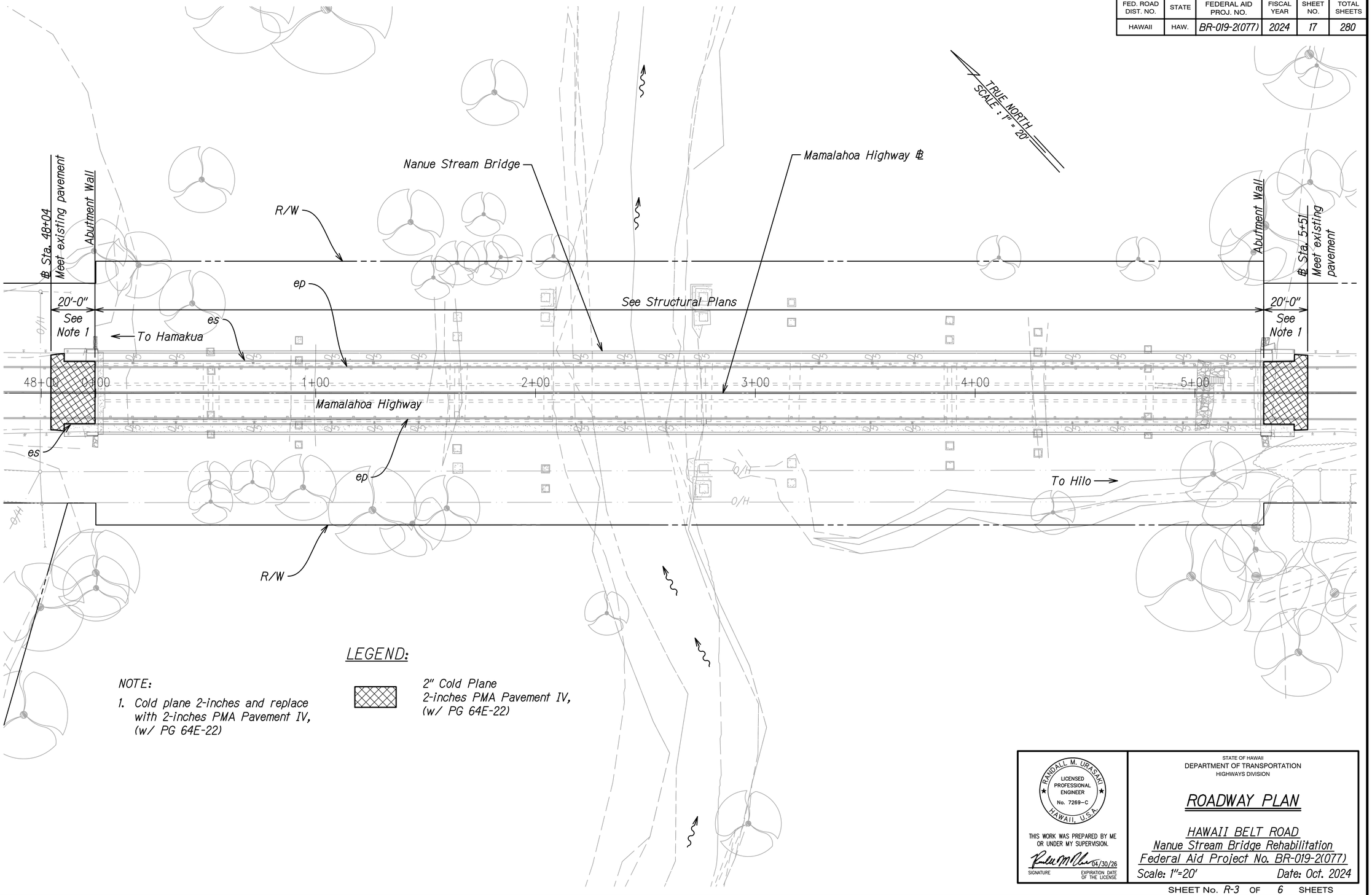
SHEET No. R-2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	17	280



LEGEND:

2" Cold Plane
2-inches PMA Pavement IV,
(w/ PG 64E-22)

NOTE:

1. Cold plane 2-inches and replace with 2-inches PMA Pavement IV, (w/ PG 64E-22)

ORIGINAL PLAN
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STATE OF HAWAII
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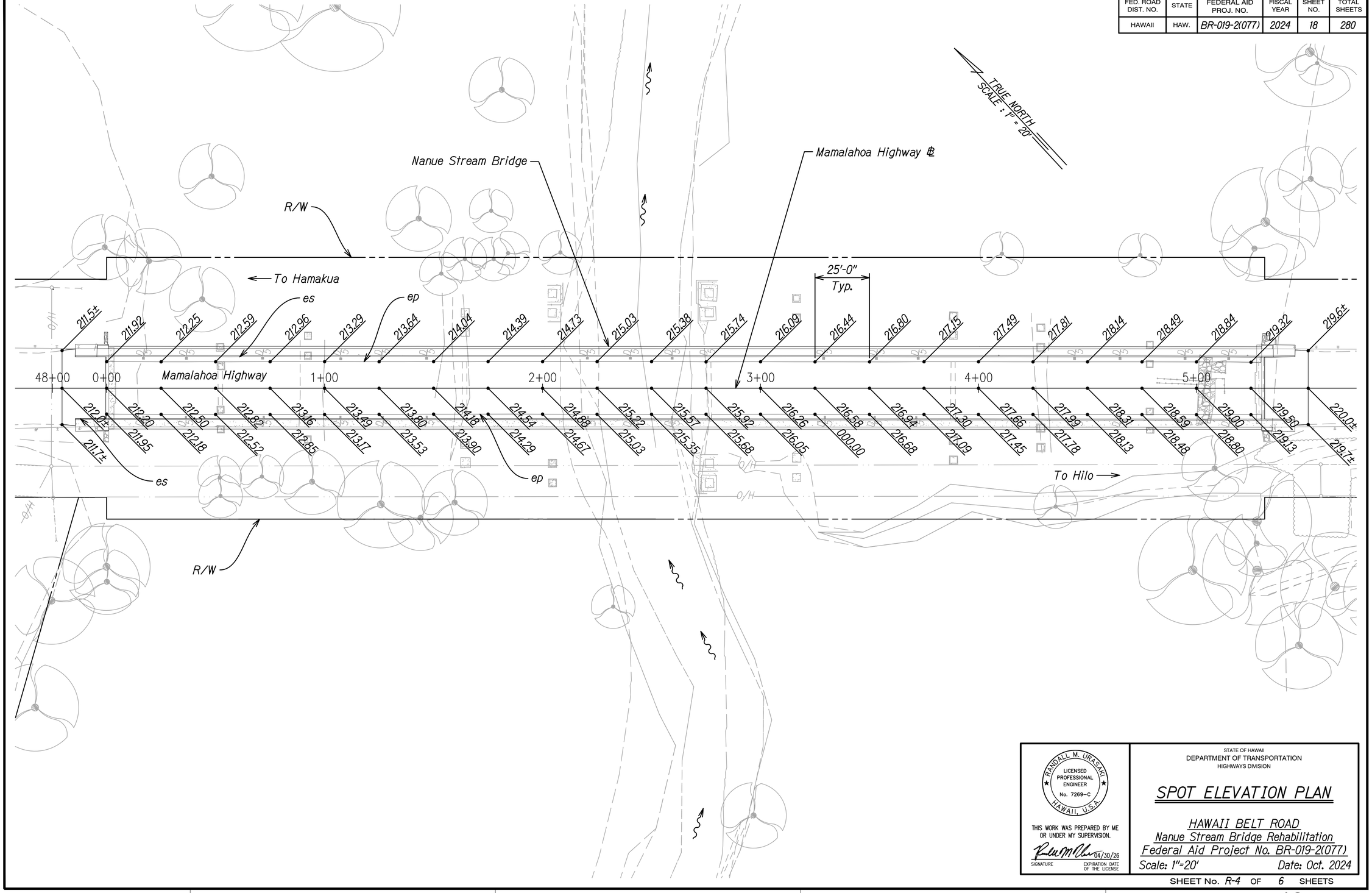
ROADWAY PLAN

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

Scale: 1"=20' Date: Oct. 2024

SHEET No. R-3 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	18	280



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STATE OF HAWAII
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HIGHWAYS DIVISION

SPOT ELEVATION PLAN

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

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SHEET No. R-4 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	19	280

PAVEMENT MARKING NOTES:

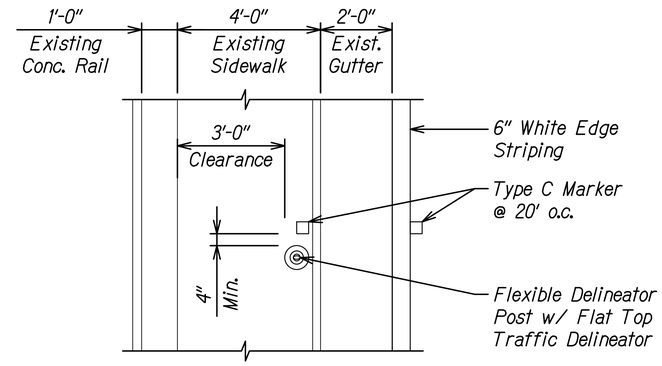
1. Location of pavement markers is shown schematically. For exact location of markers in relation to stripe, see Standard Plans.
2. All pavement striping, legends and symbols shall be retroreflective thermoplastic compound pavement markings.
3. Removal of existing pavement markings shall be considered incidental to the various contract items.
4. Layout of pavement markings and striping shall be done by the Contractor and approved by the Engineer prior to any installation work.
5. Existing pavement markings not incorporated in the final traffic pattern shall be removed as directed by the Engineer. The costs shall be incidental to the various pavement marking items.
6. All pavement striping shall be as noted on the legend or plans.
7. All preformed pavement marking tapes over existing pavement shall be applied with an approved primer as recommended by the tape's manufacturer and as approved by the Engineer. The primer shall be allowed to dry to the tacky stage prior to tape application.

LEGEND

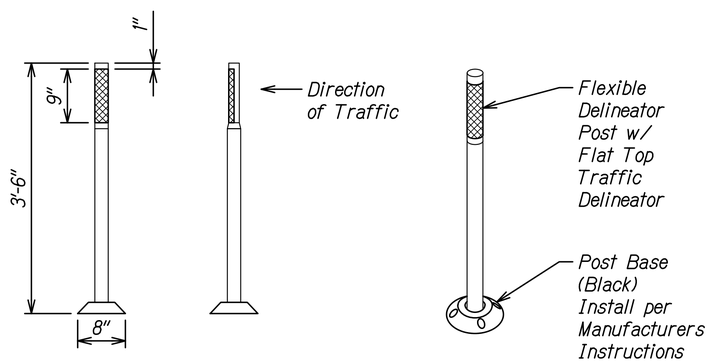
Existing Sign

(1) 6" White Edge Stripe with Type C Raised Pavement Markers @ 40'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)

(2) 4" Double Solid Yellow with Type D Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)



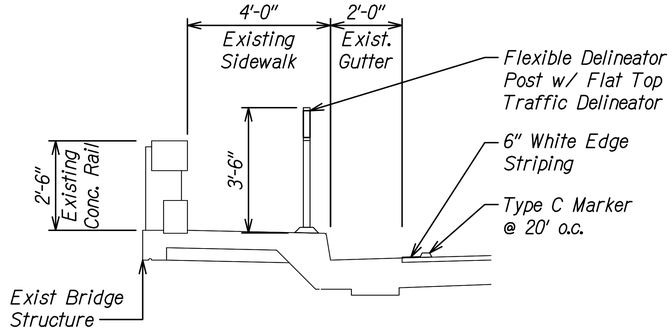
Plan



Elev Side

FLEXIBLE DELINEATOR (Surface Mount Post with Base)

Scale: 1" = 1'-0"



Section

FLEXIBLE DELINEATOR (On Bridge Sidewalk)

Scale: ½" = 1'-0"

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

LICENSED PROFESSIONAL ENGINEER
RANDALL M. URASAKI
No. 7269-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

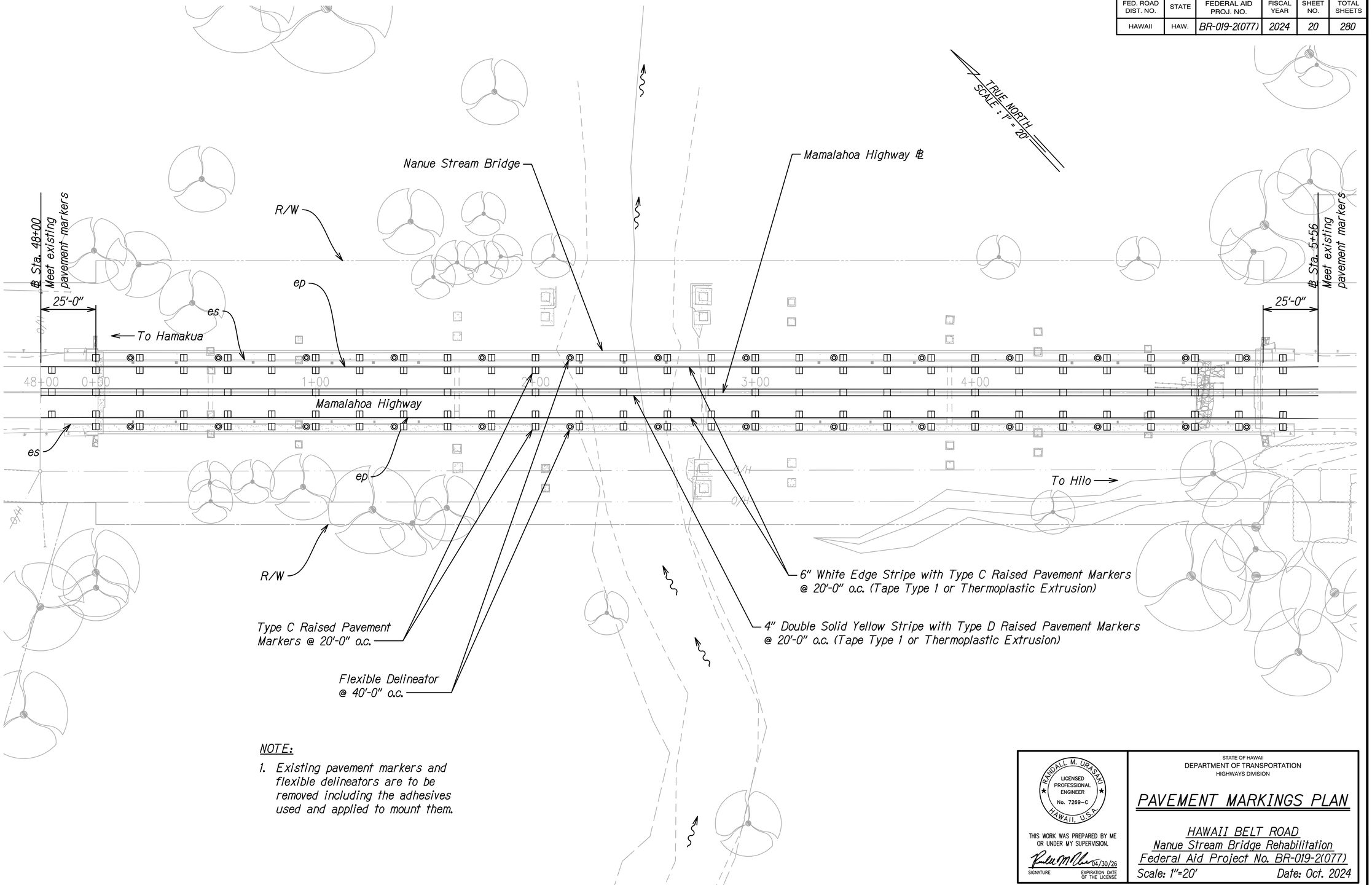
PAVEMENT MARKINGS NOTES, LEGEND & DETAILS

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

Scale: None Date: Oct. 2024

SHEET No. R-5 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	20	280



NOTE:

1. Existing pavement markers and flexible delineators are to be removed including the adhesives used and applied to mount them.

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

LICENSED PROFESSIONAL ENGINEER
RANDALL M. URASAKI
No. 7269-C
HAWAII, U.S.A.

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SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKINGS PLAN

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

Scale: 1"=20' Date: Oct. 2024

SHEET No. R-6 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	21	280

GENERAL NOTES FOR TRAFFIC CONTROL PLAN (STATE R/W):

1. Only Traffic Control Plans for major construction activities are shown. The Contractor shall develop his own Traffic Control Plans in accordance with Section 645 of the Special Provisions for activities to complete work not covered by the Traffic Control Plans. The Contractor shall submit the Traffic Control Plans to the Engineer for acceptance. Payment for development and implementation of the Traffic Control Plans shall be included in the various traffic control pay items.
2. All lane closures and traffic pattern changes (detours) not shown on the plan shall be submitted to the Engineer for acceptance in accordance with Specifications Section 645 - Work Zone Traffic Control. For restrictions on lane closures, detours, construction work during peak hours, and other requirements regarding maintaining vehicular and pedestrian traffic, see Subsection 107.03 - Working Hours; Night Work and Section 645-Work Zone Traffic Control.
3. The Contractor shall make minor adjustments at intersections, driveways, bridges, structures, etc. to fit field conditions.
4. Cones or delineators shall be extended to a point where they are visible to approaching traffic.
5. Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
6. Flaggers and/or police officers shall be in sight of each other or in direct communications at all times. Flaggers and/or police officers working at night shall be illuminated as required by the MUTCD.
7. Sign spacings (L), taper lengths (T), and spacings of cones or delineators shall be as shown in Table 1 of Section 645 in the Specifications, unless otherwise noted on HDOT's Traffic Control Plans.
8. All traffic lanes shall be minimum of 11 feet wide.
9. All signs shall be promptly removed or covered whenever the message is not applicable or not in use.
10. The backs of all signs for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces).
11. At the end of each day's work or as soon as the work is completed, the Contractor shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
12. Replace permanent pavement markings and traffic signs upon completion of each phase of work. Temporary pavement markings and traffic signs shall be used in the interim.
13. The locations of pavement markings, signs, and delineators used in the Traffic Control shall be as shown on the plans, Contractor's approved Traffic Control Plans, and/or as determined in the field by the Engineer.
14. Damage to signs, pavement markers, and delineators caused by the Contractor's negligence shall be repaired or replaced by the Contractor as directed by the Engineer at no cost to the State.
15. Signs for night work shall be retroreflective and shall be mounted with a Type B high intensity flasher. The sign and flasher will be paid under the various traffic control pay items.
16. The Contractor shall provide all sign supports, barrier mounting brackets, and/or posts for construction warning signs.
17. The Contractor shall furnish, install, maintain, and remove all traffic control devices shown on the traffic control plans.
18. The Traffic Control Plans Schedule on this sheet shall govern when each type of traffic control plan is utilized.

TRAFFIC CONTROL PLANS SCHEDULE

Type	Time	Traffic Control Plans
Long-term closure of one lane for extended period of time	Greater than 5 days	Shts. 5, 6 & 9
Short-term closure of one lane	Overnight and up-to 5 days	Shts. 7, 8 & 9
Short-term closure of one lane	Less than a day and not overnight	Shts. 7, 8 & 9

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

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

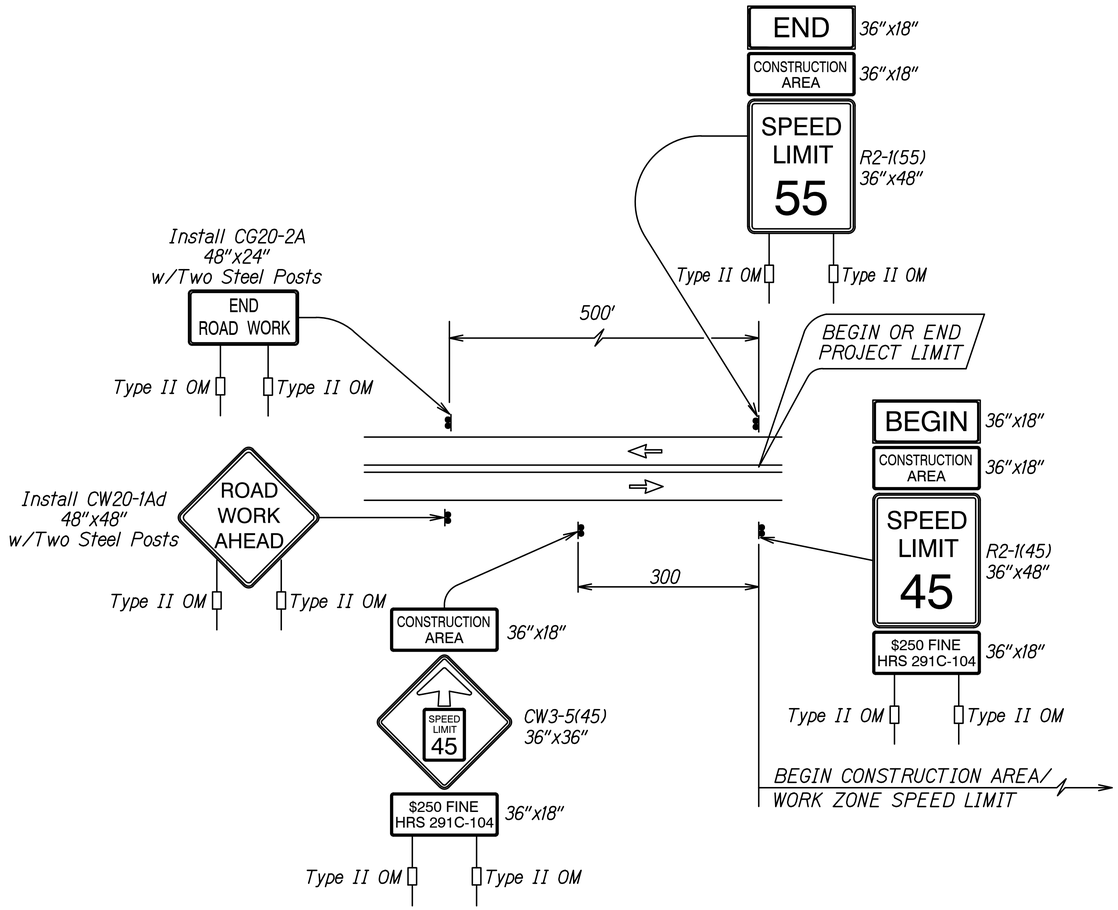
TRAFFIC CONTROL NOTES

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

Scale: None Date: Oct. 2024

SHEET No. T-1 OF 9 SHEETS

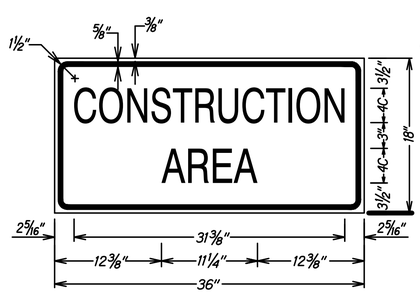
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	22	280



Work Zone Note:

1. *This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.*
2. *All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(XX)) with "CONSTRUCTION AREA" and "$250 FINE HRS 291C-104" Supplemental Signs).*
3. *Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.*
4. *Each construction warning sign and work zone speed limit assembly shall have a minimum of two (2) Type II OM. Installation of each Type II OM shall be considered incidental to Item No. 645.1000 - Traffic Control.*
5. *Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project imits shall be restored back to their original locations and configurations.*
6. *Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.*
7. *The removal and restoration of existing regulatory speed limit signs shall be considered incidental to Item No. 645.1000 - Traffic Control.*
8. *The installation, maintenance and removal of work zone speed limit signs shall be paid for under Item No. 645.1000 - Traffic Control.*
9. *The work zone speed limit signs shall be new and become the property of the Contractor.*
10. *The Contractor shall adjust the locations of work zone signs to correspond with the beginning and end of work zone limits for each phase. Relocation of work zone signs shall be considered incidental to Item No. 645.1000 - Traffic Control.*

TYPICAL DETAIL FOR CONSTRUCTION SIGNS ON TWO LANE OR MULTILANE UNDIVIDED HIGH SPEED HIGHWAY



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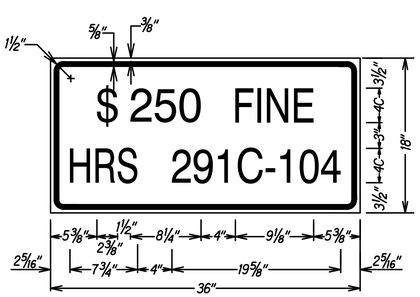

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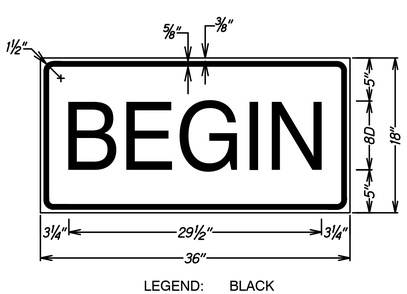

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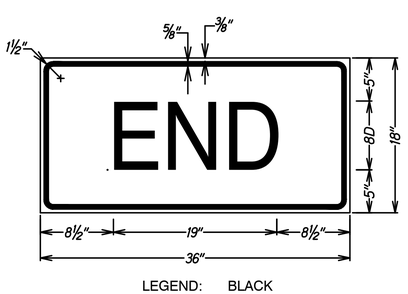

LEGEND: BLACK
BACKGROUND: ORANGE

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

LICENSED PROFESSIONAL ENGINEER
RANDALL M. URASAKI
No. 7269-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

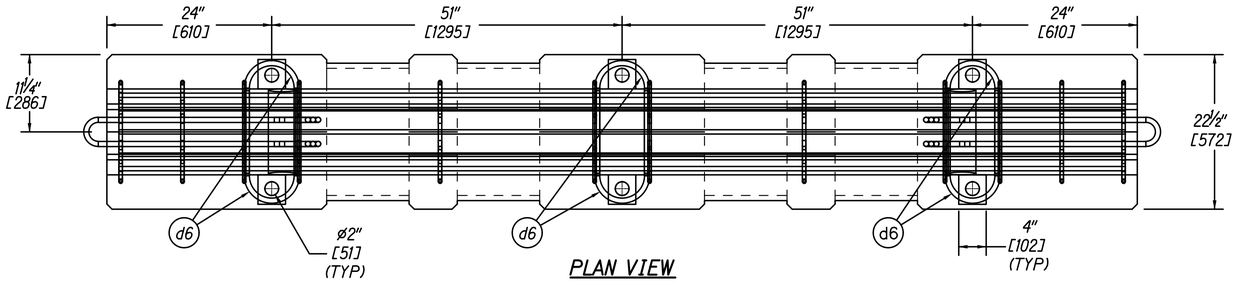
HIGH SPEED UNDIVIDED HIGHWAY
WORK ZONE SIGNING PLAN, NOTES & DETAILS

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

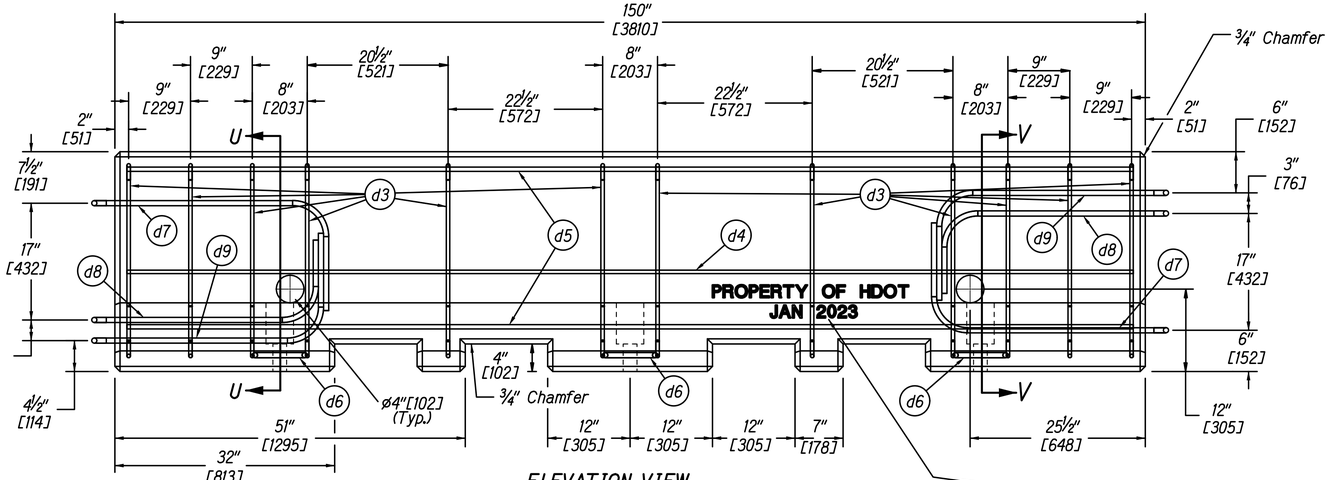
Scale: NTS — Date: Oct. 2024

SHEET No. T-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	23	280

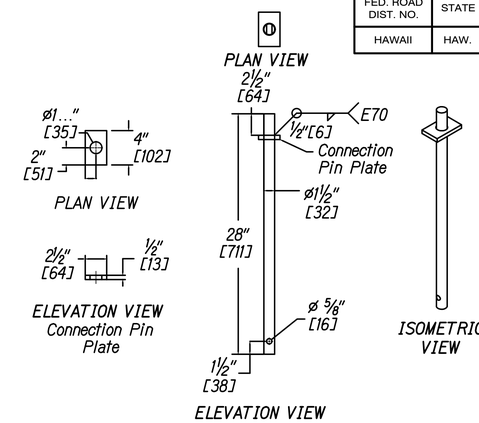


PLAN VIEW



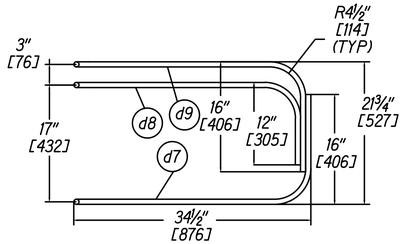
ELEVATION VIEW

Part d1

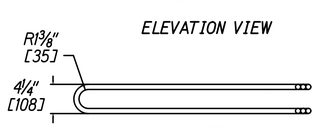


LONG CONNECTOR PIN

Part d2



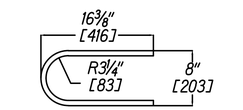
ELEVATION VIEW



PLAN VIEW

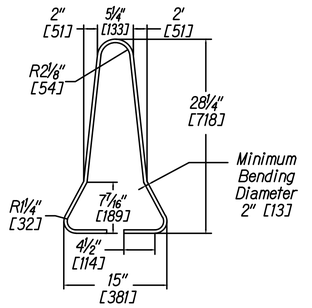
LONG CONNECTOR LOOP BAR ASSEMBLY

Part d7, d8, d9



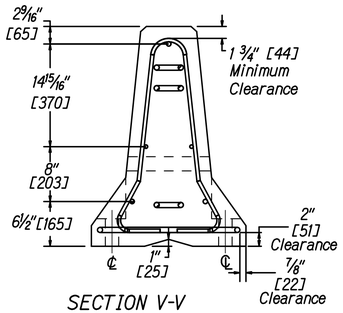
LONG ANCHOR LOOP BAR

Part d6

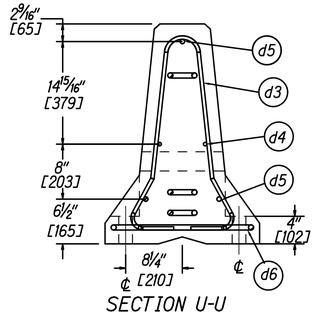


LONG FORM BAR

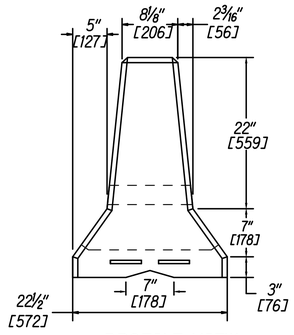
Part d3



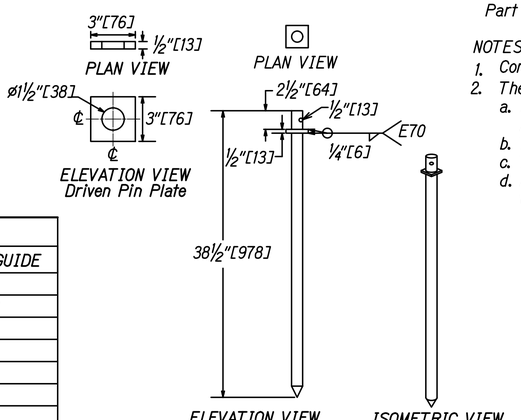
SECTION V-V



SECTION U-U



PROFILE VIEW



DRIVEN PINS FOR CONCRETE BARRIERS (FRS01)

NOTES:

1. Concrete has minimum 28-day compressive strength of 5000 psi (34.5 MPa)
2. The steel shall be zinc-coated (galvanized) as specified below:
   a. Zinc-coated (galvanized steel bars shall meet the requirements of ASTM A123, (coating grade 100, minimum coating - 2.30 oz. per square foot)
   b. The bars shall be fabricated prior to galvanizing.
   c. The procedures of ASTM A143 shall be observed as applicable.
   d. All zinc coating damage due to fabrication or handling shall be repaired with a zinc dust (zinc-rich) formulation in accordance with ASTM A780.

BILL OF MATERIALS

ITEM NO.	QTY.	DESCRIPTION	MATERIAL SPECIFICATION	HARDWARE GUIDE
d1	11*	Portable Concrete Barrier	min f'c=5000 psi [34.5 MPa]	SWC09
d2	10*	1 1/4" [32] Dia., 28" [711] Long Connector Pin	ASTM A36	FMW02
d3	132	1/2" [13] Dia., 72" [1829] Long Form Bar	ASTM A615 Grade 60	_
d4	22	1/2" [13] Dia., 146" [3708] Long Longitudinal Bar	ASTM A615 Grade 60	_
d5	33	5/8" [16] Dia., 146" [3708] Long Longitudinal Bar	ASTM A615 Grade 60	_
d6	66	3/4" [19] Dia., 36" [914] Long Anchor Loop Bar	ASTM A615 Grade 60, Galvanized	_
d7	22	3/4" [19] Dia., 102" [2591] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60, Galvanized	_
d8	22	3/4" [19] Dia., 91" [2311] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60, Galvanized	_
d9	22	3/4" [19] Dia., 101" [2565] Long Connection Loop Bar	ASTM A709 Grade 70 or A706 Grade 60, Galvanized	_

*Note: See Note 7 on Sheet 2 of 2

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

LICENSED PROFESSIONAL ENGINEER
RANDALL M. URASAKI
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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

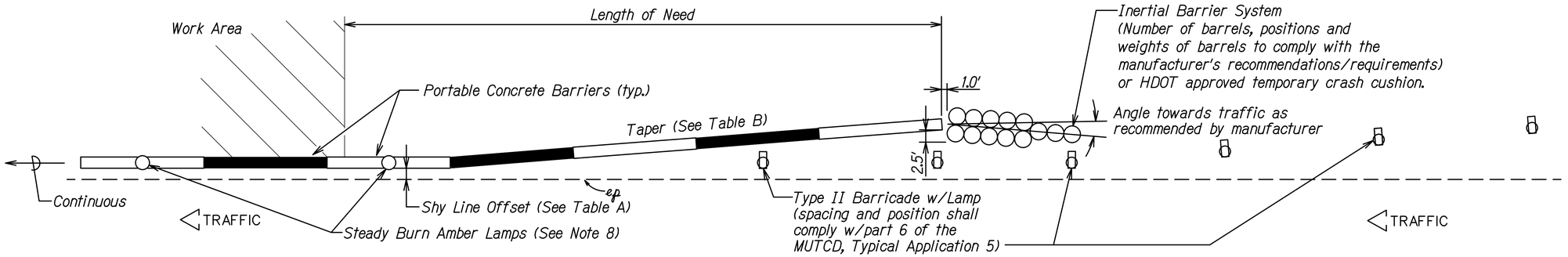
F-SHAPE PORTABLE CONCRETE BARRIER

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

Scale: — Date: Oct. 2024

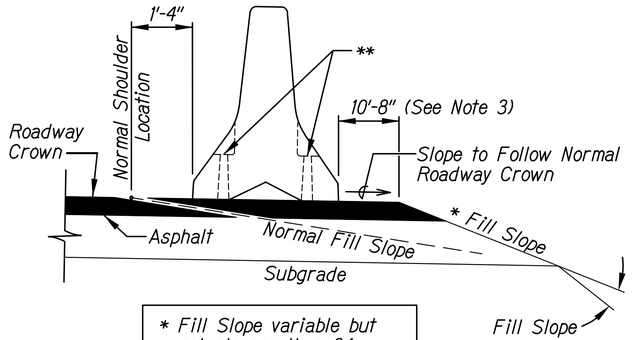
SHEET No. T-3 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	24	280



TYPICAL DETAIL - PORTABLE CONCRETE BARRIER END TREATMENT

Scale: 1" = 10'-0"



* Fill Slope variable but not steeper than 2:1
** No Stabilization Pins (See Note Nos. 3 & 4)

STANDARD INSTALLATION

(See Note No. 1)

TABLE A

SHY LINE OFFSETS *

DESIGN SPEED (mph)	SHY LINE OFFSETS
70	10.0'
65	9.0'
60	8.5'
55	7.0'
50	6.5'
45	6.0'
40	5.0'
35	4.5'
30	3.5'
≤ 25	2.0'

TABLE B

MAXIMUM TAPERS FOR CONCRETE BARRIER

DESIGN SPEED (mph)	TAPER	
	INSIDE SHY LINE	BEYOND SHY LINE
70	30:1	20:1
65	28:1	19:1
60	26:1	18:1
55	24:1	16:1
50	21:1	14:1
45	18:1	12:1
40	17:1	11:1
35	15:1	9:1
≤ 30	13:1	8:1

* Note: Minimum shy line offset for tangent sections shall be 2'-0".

NOTES:

1. For end treatment, layout, crash cushions and where needed see Project Plans or Special Provisions.
2. Barriers must be pinned together and cannot exceed the Table of Maximum Tapers.
3. The concrete barrier "Standard Installation" design allows for 10'-8" of outward lateral movement if the barrier is struck. Barrier installations that require less than the 10'-8" of outward lateral movement should have stabilization pins.
4. ASTM A-36 steel shall be used for the connection pin and stabilization pins.
5. Concrete shall be 5,000 psi and reinforcing shall be as indicated in the Bill of Materials (See Sheet No. 1 of 2).
6. Identification and date of design will be as follows:

   PROPERTY OF HDOT
   JAN 2023

   Text letters and numbers shall be shown as on Sht. No. 1 "PROPERTY OF HDOT" may be changed depending upon ownership. All Portable Concrete Barriers made for HDOT will be subject to rejection, if "PROPERTY OF HDOT" is not imprinted. The Contractor shall bear the cost of the rejected Portable Concrete Barriers.
7. Minimum tangent length for portable Concrete Barrier System shall be 11 units. This minimum does not include the required system length of the Inertial Barrier System, nor does it consider Length of Need (LON). LON shall comply with the latest edition of the AASHTO Roadside Design Guide.
8. Install steady burn amber lamps on portable concrete barriers @ approximately 25' o.c. Installing, maintaining and removing each steady burn amber lamp including maintenance shall be considered incidental to applicable portable concrete barrier items.
9. A 4" white PVC sleeve may be used to form the lifting hole and if used, the sleeve is to be left in place.

ORIGINAL PLAN
NOTE BOOK
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DESIGNED BY
QUANTITIES BY
CHECKED BY
No.

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

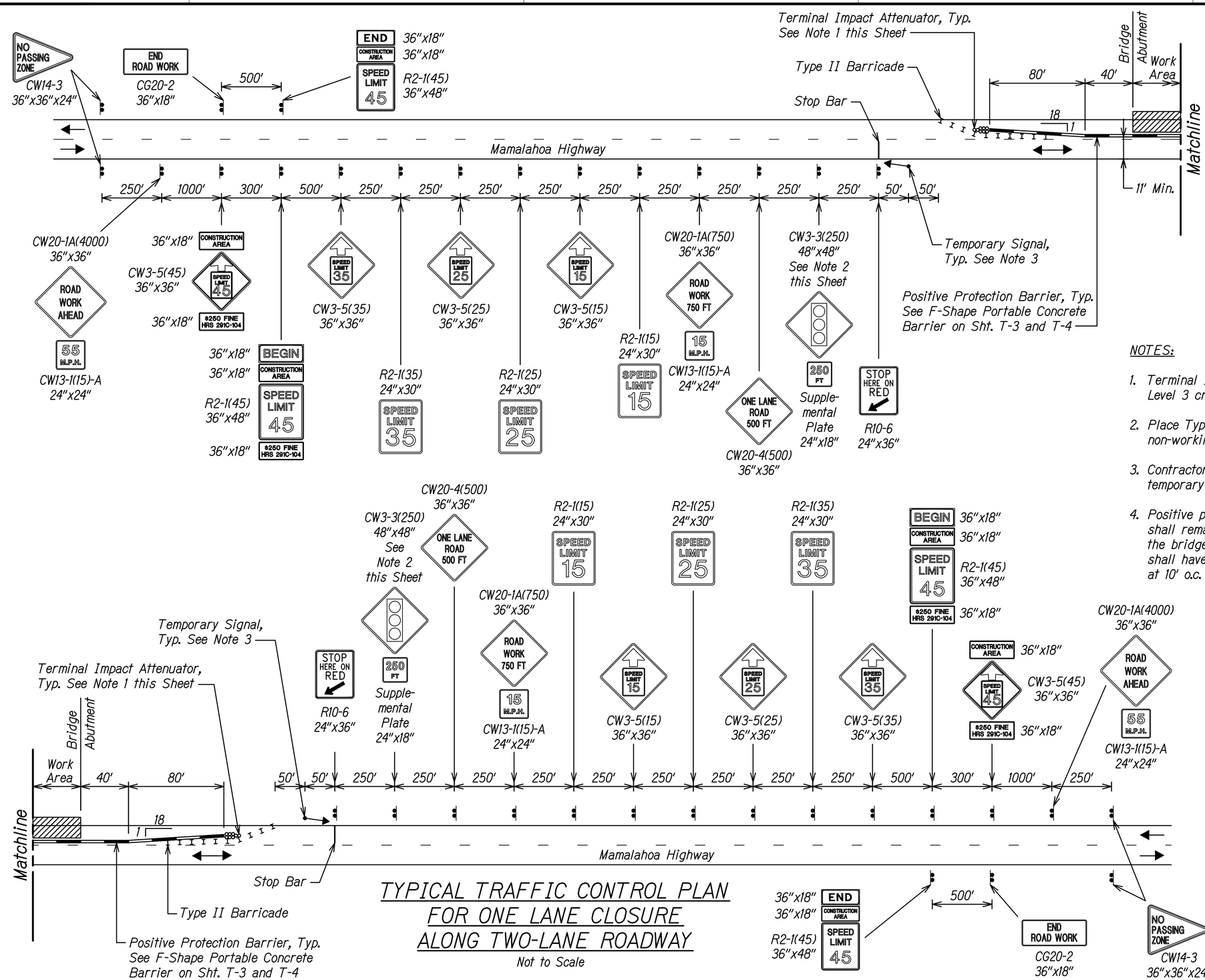
F-SHAPE PORTABLE CONCRETE BARRIER

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

Scale: Date: Oct. 2024

SHEET No. T-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	25	280



LEGEND

- Flagman
- Work Area
- Sign
- Stop Line
- Direction of Traffic
- Terminal Impact Attenuator
- Positive Protection Barrier
- Type II Barricade with Steady Burn Amber Lamp
- Temporary Signal

NOTES:

1. Terminal Impact Attenuator shall meet MASH Test Level 3 criteria.
2. Place Type B Flashing Warning Light on sign during non-working hours.
3. Contractor shall determine signal timing for the temporary signal, with concurrence by the Engineer.
4. Positive protection barriers and Type II barricades shall remain in place 24 hours a day until work on the bridge is complete. Barriers and barricades shall have Type B steady burn amber warning lights at 10' o.c.

TYPICAL TRAFFIC CONTROL PLAN FOR ONE LANE CLOSURE ALONG TWO-LANE ROADWAY

Not to Scale

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

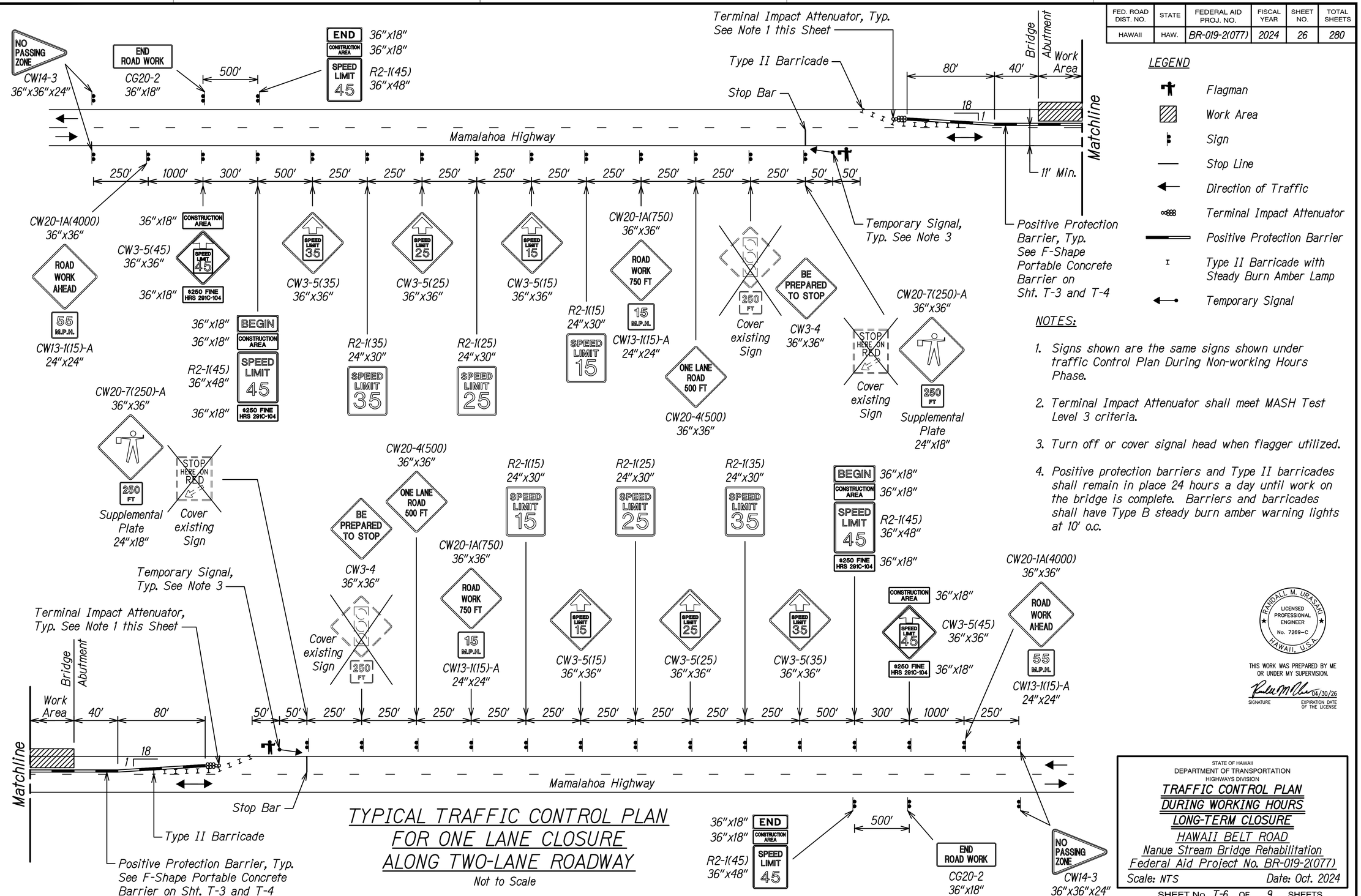
TRAFFIC CONTROL PLAN DURING NON-WORKING HOURS LONG-TERM CLOSURE

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

Scale: NTS Date: Oct. 2024

SHEET No. T-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	26	280



LEGEND

- Flagman
- Work Area
- Sign
- Stop Line
- Direction of Traffic
- Terminal Impact Attenuator
- Positive Protection Barrier
- Type II Barricade with Steady Burn Amber Lamp
- Temporary Signal

NOTES:

1. Signs shown are the same signs shown under traffic Control Plan During Non-working Hours Phase.
2. Terminal Impact Attenuator shall meet MASH Test Level 3 criteria.
3. Turn off or cover signal head when flagger utilized.
4. Positive protection barriers and Type II barricades shall remain in place 24 hours a day until work on the bridge is complete. Barriers and barricades shall have Type B steady burn amber warning lights at 10' o.c.

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

RANDALL M. URASAKI LICENSED PROFESSIONAL ENGINEER No. 7269-C HAWAII, U.S.A.

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SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

TYPICAL TRAFFIC CONTROL PLAN FOR ONE LANE CLOSURE ALONG TWO-LANE ROADWAY

Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

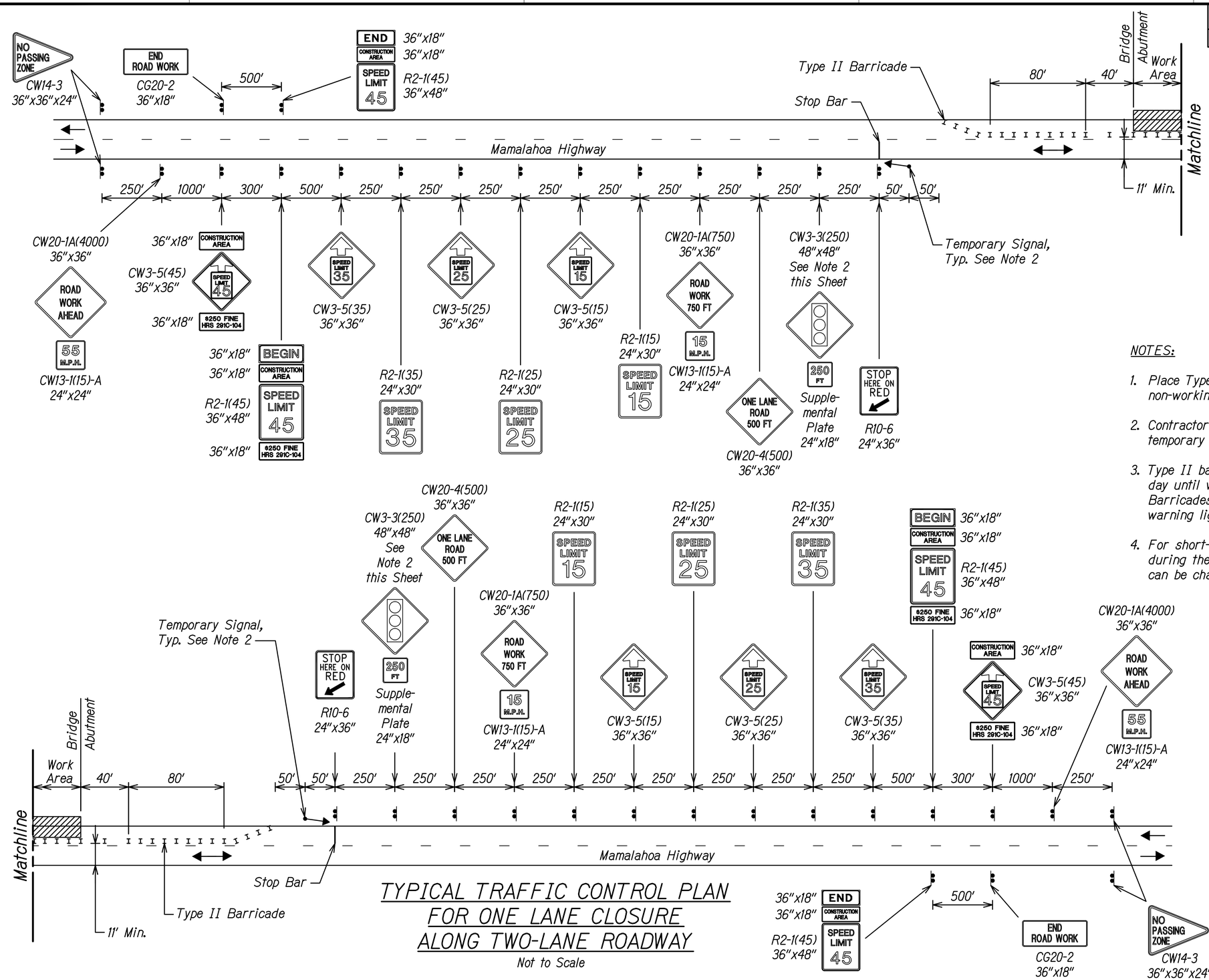
TRAFFIC CONTROL PLAN DURING WORKING HOURS LONG-TERM CLOSURE

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

Scale: NTS Date: Oct. 2024

SHEET No. T-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	27	280



LEGEND

- Work Area
- Sign
- Stop Line
- Direction of Traffic
- Type II Barricade with Steady Burn Amber Lamp
- Temporary Signal

NOTES:

1. Place Type B Flashing Warning Light on sign during non-working hours.
2. Contractor shall determine signal timing for the temporary signal, with concurrence by the Engineer.
3. Type II barricades shall remain in place 24 hours a day until work on the bridge is complete. Barricades shall have Type B steady burn amber warning lights at 10' o.c.
4. For short-term closures less than a day and not during the night-time hours, the Type II Barricades can be changed to traffic cones.

TYPICAL TRAFFIC CONTROL PLAN FOR ONE LANE CLOSURE ALONG TWO-LANE ROADWAY

Not to Scale

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

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

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SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

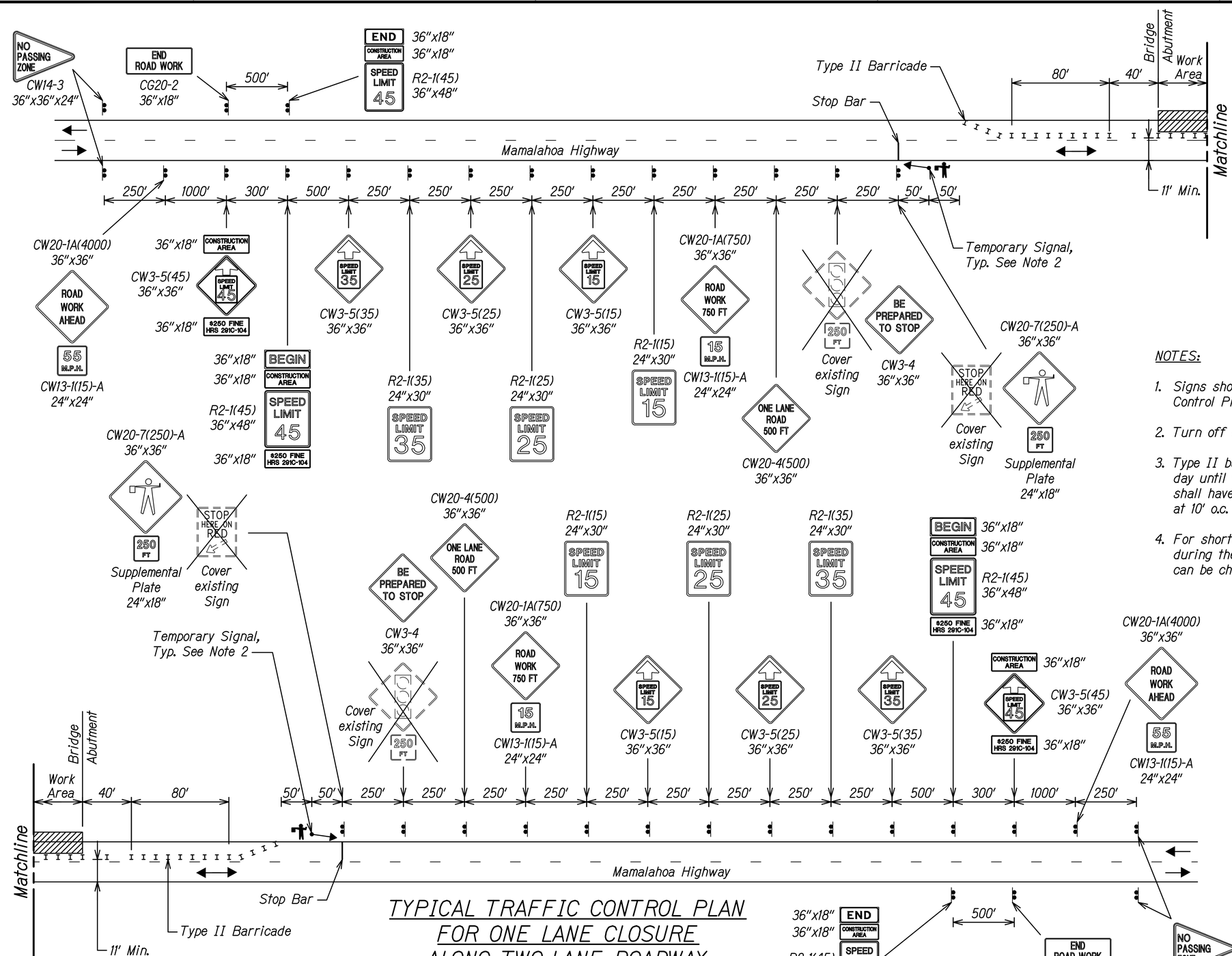
TRAFFIC CONTROL PLAN DURING NON-WORKING HOURS SHORT-TERM CLOSURE

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

Scale: NTS Date: Oct. 2024

SHEET No. T-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	28	280



LEGEND

- Flagman
- Work Area
- Sign
- Stop Line
- Direction of Traffic
- Type II Barricade with Steady Burn Amber Lamp
- Temporary Signal

NOTES:

1. Signs shown are the same signs shown under traffic Control Plan During Non-working Hours Phase.
2. Turn off or cover signal head when flagger utilized.
3. Type II barricades shall remain in place 24 hours a day until work on the bridge is complete. Barricades shall have Type B steady burn amber warning lights at 10' o.c.
4. For short-term closures less than a day and not during the night-time hours, the Type II Barricades can be changed to traffic cones.

TYPICAL TRAFFIC CONTROL PLAN FOR ONE LANE CLOSURE ALONG TWO-LANE ROADWAY

Not to Scale

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

LICENSED PROFESSIONAL ENGINEER
RANDALL M. URASAKI
No. 7269-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

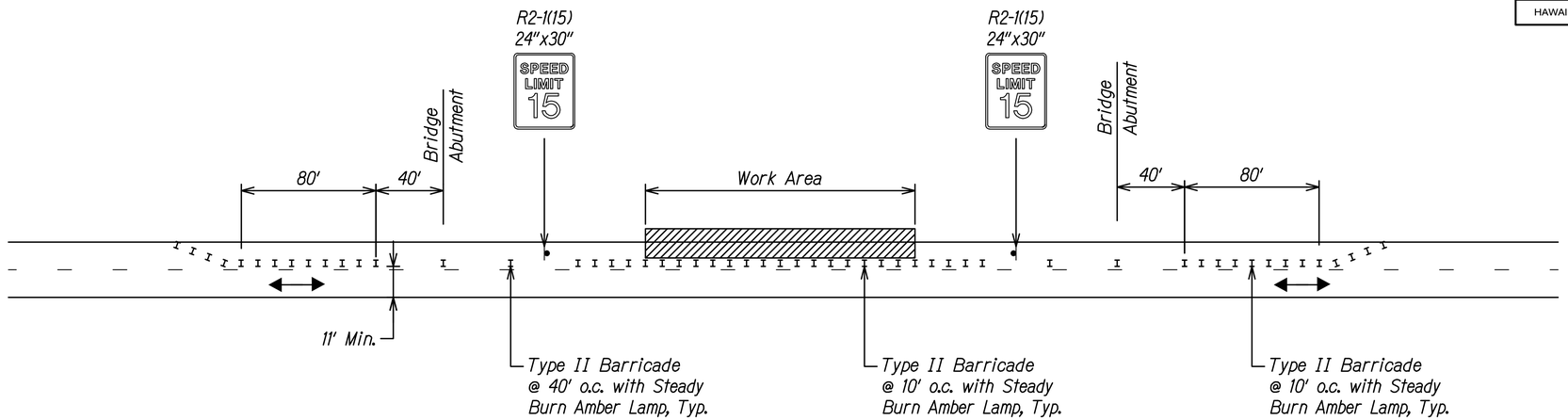
TRAFFIC CONTROL PLAN DURING WORKING HOURS SHORT-TERM CLOSURE

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

Scale: NTS Date: Oct. 2024

SHEET No. T-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	29	280



TYPICAL BARRICADE SPACING AT WORK ZONE

Not to Scale

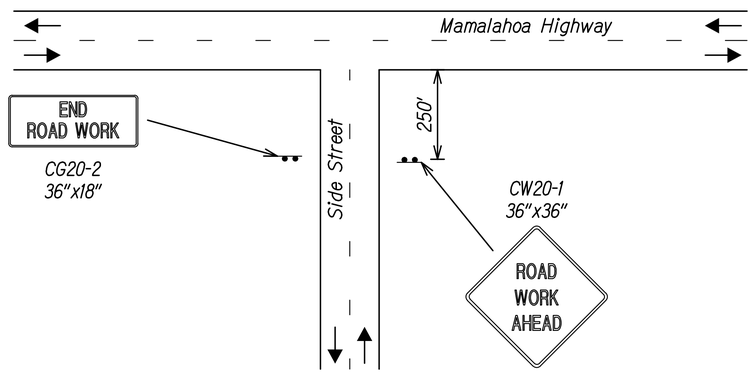
LEGEND

Sign

Direction of Traffic

NOTES:

1. See sheet TC-2 for construction area reduced speed limit signs.
2. For delineator spacing, see Sht. TC-1.
3. Cover existing signage that conflict with traffic control signs.



TYPICAL SIDE STREET SIGNING

Not to Scale

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NOTE BOOK No.
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL PLAN MISCELLANEOUS DETAILS

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

Scale: NTS Date: Oct. 2024

SHEET No. T-9 OF 9 SHEETS

INDEX TO STRUCTURAL DRAWINGS

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

SHEET NO.	DESCRIPTION
S0.1	INDEX TO STRUCTURAL DRAWINGS
S0.2	INDEX TO STRUCTURAL DRAWINGS
S0.3	INDEX TO STRUCTURAL DRAWINGS
S0.4	STRUCTURAL GENERAL NOTES
S0.5	STRUCTURAL GENERAL NOTES
S0.6	STRUCTURAL GENERAL NOTES
S0.7	STRUCTURAL GENERAL NOTES
S0.8	STRUCTURAL GENERAL NOTES
S0.9	SYMBOLS AND ABBREVIATIONS
SA1.1	LAYOUT PLAN
SA1.2	FOUNDATION PLAN
SA2.1	DOWNSTREAM ELEVATION
SA2.2	TYPICAL TRANSVERSE SECTION
SA2.3	TRANSVERSE SECTION AT FIXED BEARING BENTS
SA2.4	TRANSVERSE SECTION AT EXPANSION BEARING BENTS
SA2.5	SURVEY POINTS
SA3.1	ABUTMENT NOS. 1 AND 2 PLAN
SA3.2	ABUTMENT NOS. 1 AND 2 ELEVATIONS
SA3.3	ABUTMENT NO. 1 DEMO PLAN AND SECTIONS
SA3.4	ABUTMENT NO. 2 DEMO PLAN AND SECTIONS
SA3.5	ABUTMENT NO. 1 ABUTMENT SECTIONS
SA3.6	ABUTMENT NO. 2 ABUTMENT SECTIONS
SA3.7	BEARING REPLACEMENT CONSTRUCTION SEQUENCE
SA4.1	MEMBER ID LOCATION KEY, LEGEND, WP DETAILS & SCHEDULE AT BENTS
SA4.2	MEMBER ID LOCATION KEY AND LEGEND AT TRESTLES
SA4.3	BENT NO. 1 / TRESTLE NO. 1 MEMBER ELEVATIONS
SA4.4	BENT NO. 2 / TRESTLE NO. 2 MEMBER ELEVATIONS
SA4.5	BENT NO. 3 / TRESTLE NO. 2 MEMBER ELEVATIONS
SA4.6	BENT NO. 4 / TRESTLE NO. 3 MEMBER ELEVATIONS
SA4.7	BENT NO. 5 / TRESTLE NO. 3 MEMBER ELEVATIONS
SA4.8	BENT NO. 6 / TRESTLE NO. 4 MEMBER ELEVATIONS
SA4.9	BENT NO. 7 / TRESTLE NO. 4 MEMBER ELEVATIONS

SHEET NO.	DESCRIPTION
SA4.10	BENT NOS. 8 AND 9 / TRESTLE NO. 5 MEMBER ELEVATIONS
SA4.11	CONNECTION ID LOCATION KEY AND LEGEND AT BENTS
SA4.12	CONNECTION ID LOCATION KEY AND LEGEND AT TRESTLES
SA4.13	BENT NO. 1 / TRESTLE NO. 1 CONNECTION ELEVATIONS
SA4.14	BENT NO. 2 / TRESTLE NO. 2 CONNECTION ELEVATIONS
SA4.15	BENT NO. 3 / TRESTLE NO. 2 CONNECTION ELEVATIONS
SA4.16	BENT NO. 4 / TRESTLE NO. 3 CONNECTION ELEVATIONS
SA4.17	BENT NO. 5 / TRESTLE NO. 3 CONNECTION ELEVATIONS
SA4.18	BENT NO. 6 / TRESTLE NO. 4 CONNECTION ELEVATIONS
SA4.19	BENT NO. 7 / TRESTLE NO. 4 CONNECTION ELEVATIONS
SA4.20	BENT NOS. 8 AND 9 / TRESTLE NO. 5 CONNECTION ELEVATIONS
SA5.1	UPPER COLUMN ELEVATIONS
SA5.2	UPPER COLUMN ELEVATIONS
SA5.3	INTERMEDIATE COLUMN ELEVATIONS
SA5.4	INTERMEDIATE COLUMN ELEVATIONS
SA5.5	LOWER COLUMN ELEVATIONS
SA5.6	LOWER COLUMN ELEVATIONS
SA5.7	BENT NO. 1 COLUMN ELEVATIONS
SA5.8	BENT NO. 1 COLUMN ELEVATIONS
SA5.9	BENT NO. 9 COLUMN ELEVATIONS
SA5.10	BENT NO. 9 COLUMN ELEVATIONS
SA5.11	COLUMN SECTIONS AND DETAILS
SA5.12	DIAGONAL BRACE PLAN, ELEVATION AND SECTION
SA5.13	DIAGONAL BRACE SCHEDULE
SA5.14	DIAGONAL BRACE SCHEDULE
SA5.15	DIAGONAL BRACE PLAN, ELEVATION AND SECTION
SA5.16	DIAGONAL BRACE SCHEDULE
SA5.17	DIAGONAL BRACE PLAN, ELEVATION AND SECTION
SA5.18	DIAGONAL BRACE SCHEDULE
SA5.19	HORIZONTAL BRACE PLAN, ELEVATION AND SECTION
SA5.20	HORIZONTAL BRACE SCHEDULE
SA5.21	HORIZONTAL BRACE PLAN, ELEVATION AND SECTION
SA5.22	HORIZONTAL BRACE SCHEDULE
SA5.23	DIAGONAL BRACE PLAN, ELEVATION AND SECTION
SA5.24	DIAGONAL BRACE SCHEDULE

SHEET NO.	DESCRIPTION
SA5.25	DIAGONAL BRACE SCHEDULE
SA5.26	DIAGONAL BRACE PLAN, ELEVATION AND SECTION
SA5.27	DIAGONAL BRACE SCHEDULE
SA5.28	HORIZONTAL BRACE PLAN, ELEVATION AND SECTION
SA5.29	HORIZONTAL BRACE PLAN, ELEVATION AND SECTION
SA5.30	HORIZONTAL BRACE SCHEDULE
SA5.31	VERTICAL BRACE PLAN, ELEVATION AND SECTION
SA5.32	VERTICAL BRACE SCHEDULE
SA5.33	VERTICAL BRACE PLAN, ELEVATION AND SECTION
SA5.34	VERTICAL BRACE SCHEDULE
SA6.1	COLUMN SPLICE CONNECTION DETAILS
SA6.2	COLUMN TO BRACE CONNECTION DETAILS
SA6.3	COLUMN TO BRACE CONNECTION DETAILS
SA6.4	COLUMN TO BRACE CONNECTION DETAILS
SA6.5	COLUMN TO BRACE CONNECTION DETAILS
SA6.6	COLUMN TO BRACE CONNECTION DETAILS
SA6.7	COLUMN TO BRACE CONNECTION DETAILS
SA6.8	COLUMN TO BRACE CONNECTION DETAILS
SA6.9	COLUMN TO BRACE CONNECTION DETAILS
SA6.10	BASE COLUMN TO BRACE CONNECTION DETAILS
SA6.11	BASE COLUMN TO BRACE CONNECTION DETAILS
SA6.12	BASE COLUMN TO BRACE CONNECTION DETAILS
SA6.13	BASE COLUMN TO BRACE CONNECTION DETAILS
SA6.14	TOP COLUMN TO BRACE CONNECTION DETAILS
SA6.15	BRACE TO BRACE CONNECTION DETAILS
SA6.16	BRACE TO BRACE CONNECTION DETAILS
SA6.17	BRACE TO BRACE CONNECTION DETAILS
SA6.18	CONNECTION REFERENCE SCHEDULE

ORIGINAL PLAN
NOTE BOOK
No.
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QUANTITIES BY
CHECKED BY
DATE

STEPHEN T. PETERS
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INDEX TO STRUCTURAL DRAWINGS

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

Scale: None Date: Oct. 2024

SHEET No. S0.1 OF 9 SHEETS

DRAWING NAME: Z:\OD ONGOING\23-022-2-NANUE STR BR FED-BOTH\01 CAD\10-28-24 BID SET\HSR-S0001 INDEX.DWG PLOT TIME: 10-28-24, 6:44 PM)

INDEX TO STRUCTURAL DRAWINGS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	31	280

SHEET NO.	DESCRIPTION
SA6.19	CONNECTION REFERENCE SCHEDULE
SA6.20	CONNECTION REFERENCE SCHEDULE
SA6.21	CONNECTION REFERENCE SCHEDULE
SA6.22	CONNECTION REFERENCE SCHEDULE
SA7.1	FOUNDATION DEMOLITION ELEVATIONS AND SECTIONS
SA7.2	FOUNDATION DEMOLITION ELEVATIONS AND SECTIONS
SA7.3	FOUNDATION DEMOLITION ELEVATIONS AND SECTIONS
SA7.4	FOUNDATION DEMOLITION ELEVATIONS AND SECTIONS
SA7.5	EXCAVATION/BACKFILL PAY LIMITS
SA7.6	TYPICAL FOUNDATION REINFORCING SECTIONS
SA7.7	BENT NO. 4 UPSTREAM FOUNDATION REINFORCING SECTIONS
SA7.8	BENT NO. 6 UPSTREAM FOUNDATION REINFORCING SECTIONS
SA7.9	PEDESTAL/GRADE BEAM REINFORCING SECTIONS
SA7.10	COLUMN BASE PLATE AND ANCHOR BOLT DETAILS
SA7.11	COLUMN BASE PLATE AND ANCHOR BOLT DETAILS
SA7.12	COLUMN BASE PLATE AND ANCHOR BOLT DETAILS
SA7.13	COLUMN BASE PLATE AND ANCHOR BOLT SECTIONS
SA7.14	BENT NO. 5 FOOTING PLAN, ELEVATION AND SECTION
SA7.15	BENT NO. 5 FOOTING PLAN, ELEVATION AND SECTION
SA7.16	BENT NO. 6 FOOTING PLAN, ELEVATION AND SECTION
SA7.17	BENT NO. 6 FOOTING PLAN, ELEVATION AND SECTION
SA7.18	SHOTCRETE COVER PLAN AND SECTIONS
SA8.1	BENT NO. 1 TOP OF COLUMN DEMOLITION ELEVATIONS
SA8.2	FIXED BEARING TOP OF COLUMN DEMOLITION ELEVATIONS
SA8.3	EXPANSION BEARING TOP OF COLUMN DEMOLITION ELEVATIONS
SA8.4	BENT NO. 1 TOP OF COLUMN ELEVATIONS
SA8.5	FIXED BEARING TOP OF COLUMN ELEVATIONS
SA8.6	EXPANSION BEARING TOP OF COLUMN ELEVATIONS
SA8.7	COLUMN SEAT SECTIONS
SA8.8	COLUMN SEAT SECTIONS
SA8.9	COLUMN SEAT SECTIONS
SA8.10	FIXED BEARING DETAILS
SA8.11	FIXED BEARING SCHEDULE
SA8.12	EXPANSION BEARING DETAILS

SHEET NO.	DESCRIPTION
SA8.13	EXPANSION BEARING SCHEDULE
SA9.1	GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 1 AND 2
SA9.2	GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 3 AND 4
SA9.3	GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 5 AND 6
SA9.4	GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 7 AND 8
SA9.5	GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 9 AND 10
SA9.6	GIRDER FRAMING PLAN - SPAN NOS. 1 AND 2
SA9.7	GIRDER FRAMING PLAN - SPAN NOS. 3 AND 4
SA9.8	GIRDER FRAMING PLAN - SPAN NOS. 5 AND 6
SA9.9	GIRDER FRAMING PLAN - SPAN NOS. 7 AND 8
SA9.10	GIRDER FRAMING PLAN - SPAN NOS. 9 AND 10
SA9.11	GIRDER LINE G-1 DOWNSTREAM ELEVATION
SA9.12	GIRDER LINE G-1 DOWNSTREAM ELEVATION
SA9.13	GIRDER LINE G-1 DOWNSTREAM ELEVATION
SA9.14	GIRDER LINE G-2 DOWNSTREAM ELEVATION
SA9.15	GIRDER LINE G-2 DOWNSTREAM ELEVATION
SA9.16	GIRDER LINE G-2 DOWNSTREAM ELEVATION
SA9.17	GIRDER LINE G-3 DOWNSTREAM ELEVATION
SA9.18	GIRDER LINE G-3 DOWNSTREAM ELEVATION
SA9.19	GIRDER LINE G-3 DOWNSTREAM ELEVATION
SA9.20	GIRDER LINE G-4 DOWNSTREAM ELEVATION
SA9.21	GIRDER LINE G-4 DOWNSTREAM ELEVATION
SA9.22	GIRDER LINE G-4 DOWNSTREAM ELEVATION
SA9.23	BRACING REMOVAL AND INSTALLATION SEQUENCE
SA10.1	EXTERIOR BAY STRUT DEMOLITION SECTIONS
SA10.2	EXTERIOR BAY STRUT DEMOLITION SECTIONS
SA10.3	EXTERIOR BAY STRUT DEMOLITION SECTIONS
SA10.4	INTERIOR BAY STRUT DEMOLITION SECTIONS
SA10.5	INTERIOR BAY STRUT DEMOLITION SECTIONS
SA10.6	IN-SPAN CROSS FRAME DEMOLITION SECTIONS
SA10.7	IN-SPAN CROSS FRAME DEMOLITION SECTIONS
SA10.8	EXPANSION BEARING CROSS FRAME DEMOLITION SECTIONS
SA10.9	FIXED BEARING CROSS FRAME DEMOLITION SECTIONS
SA10.10	TIE PLATE DEMOLITION ELEVATIONS AT BEARINGS

SHEET NO.	DESCRIPTION
SA10.11	MISCELLANEOUS DEMOLITION DETAILS
SA10.12	EXTERIOR BAY STRUT SECTIONS
SA10.13	INTERIOR BAY STRUT SECTIONS AND DETAILS
SA10.14	IN-SPAN, EXPANSION, AND FIXED BEARING CROSS FRAME SECTIONS
SA10.15	ABUTMENT CROSS FRAME SECTION
SA10.16	CROSS FRAME DETAILS
SA10.17	CROSS FRAME DETAILS
SA10.18	CROSS FRAME DETAILS
SA10.19	CROSS FRAME DETAILS
SA10.20	MISCELLANEOUS DETAILS
SA10.21	LATERAL DIAGONAL BRACING DETAILS
SA10.22	LATERAL DIAGONAL BRACING DETAILS
SA10.23	LATERAL DIAGONAL BRACING DETAILS
SA10.24	LATERAL DIAGONAL BRACING DETAILS
SA10.25	TIE PLATE ELEVATIONS AND DETAILS AT BEARINGS
SA10.26	CRANE RAIL, DRAIN PIPE, AND UTILITY BRACKET DETAILS
SA10.27	LIFELINE DETAILS
SA10.28	RIVET REPLACEMENT DETAILS
SA10.29	BRIDGE PLAQUE DETAILS
SA10.30	PAINT/CAULKING DETAILS
SA11.1	OVERHEAD AND VERTICAL DEFECTIVE CONCRETE REPAIR DETAILS
SA11.2	HORIZONTAL DEFECTIVE CONCRETE REPAIR DETAILS
SA11.3	REINFORCING STEEL REPAIR DETAIL, SECTION, AND SCHEDULE
SA11.4	CONCRETE DECK SOFFIT CRACK REPAIR DETAILS

ORIGINAL PLAN
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DRAWING NAME: Z:\OD ONGOING\23-022-2-NANUE_STR_BR_RE2-BOTH.OT OAD\10-28-24 BID SET\WSR-SD001 INDEX.DWG PLOT TIME: 10-28-24, 8:45 PM)

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INDEX TO STRUCTURAL DRAWINGS

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

INDEX TO STRUCTURAL DRAWINGS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	32	280

SHEET NO.	DESCRIPTION
SA12.1	BRIDGE DECK OVERLAY AND JOINTING PLAN
SA12.2	TRANSVERSE SECTION WITH HPC OVERLAY
SA12.3	TRANSVERSE SECTION AT EXPANSION JOINTS
SA12.4	EXPANSION JOINT SECTIONS
SA12.5	EXPANSION JOINT DETAILS
SA12.6	HPC OVERLAY AND PENETRATING SEALER DETAILS
SA13.1	INSPECTION WALKWAY FRAMING PLAN
SA13.2	INSPECTION WALKWAY SECTIONS
SA13.3	INSPECTION WALKWAY CONNECTION DETAILS
SA13.4	INSPECTION WALKWAY FASTENER LAYOUT PLANS AND SECTION
SA14.1	OVERALL CONSTRUCTION SEQUENCE
SA14.2	OVERALL CONSTRUCTION SEQUENCE
SA14.3	OVERALL CONSTRUCTION SEQUENCE

SHEET NO.	DESCRIPTION
SB1.1	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.2	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.3	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.4	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.5	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.6	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.7	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.8	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.9	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.10	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.11	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.12	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.13	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.14	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.15	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.16	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.17	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.18	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.19	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.20	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.21	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.22	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.23	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.24	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.25	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.26	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.27	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.28	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB1.29	SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE
SB2.1	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.2	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.3	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.4	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.5	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.6	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL

SHEET NO.	DESCRIPTION
SB2.7	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.8	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.9	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.10	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.11	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.12	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB2.13	SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL
SB3.1	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS
SB3.2	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS
SB3.3	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS
SB3.4	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS
SB3.5	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS
SB3.6	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS
SB3.7	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS
SB3.8	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS
SB3.9	SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS

ORIGINAL PLAN
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STEPHEN T. PETERS
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INDEX TO STRUCTURAL DRAWINGS

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

Scale: None Date: Oct. 2024

SHEET No. S0.3 OF 9 SHEETS

STRUCTURAL GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	33	280

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. SA2.5.

   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)

   PGA = 0.471 g; F_{PGA} = 1.00; As = 0.471 g
   Ss = 0.913 g; Fa = 1.035; S_{DS} = 0.945 g
   S_1 = 0.353 g; Fv = 1.447; S_{D1} = 0.511 g
   Site Class = C; Seismic Zone = 4

   D. Wind Loads:

   V = 130 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	fy = 36 ksi	Yes
(2)	Angles for Trestle Braces	ASTM A709 / AASHTO M270	fy = 36 ksi	Yes
(3)	Cross Frames, Struts, Lateral Diag. Bracing, Lacing, Batten Plates, Tie Plates, Girder Gusset Plates, Girder Stiffeners, Spacer Plates, Anchor Plates, Fixed & Expansion Bearing Plates, All Other Plates	ASTM A709 / AASHTO M270	fy = 36 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	fy = 50 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	fy = 50 ksi	Yes
(6)	Pipe Extensions	ASTM A53	fy = 36 ksi	No
(7)	Utility Brackets	ASTM A240 Type 2205	fy = 65 ksi	No

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STATE OF HAWAII
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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

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

DRAWING NAME: Z:\OD ONDONA\23-022\9-NANUE STR BR PE2-3DTHA\01 CAD\10-28-24 ED SER\NSR-SG001 GENNOTES.DWG PLOT TIME: 10-28-24, 6:46 PM

STRUCTURAL GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	34	280

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 Advanced (ABR) 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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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. S0.5 OF 9 SHEETS

STRUCTURAL GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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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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. S0.6 OF 9 SHEETS

STRUCTURAL GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	36	280

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.

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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STRUCTURAL GENERAL NOTES

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SHEET No. S0.7 OF 9 SHEETS

STRUCTURAL GENERAL NOTES

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HAWAII	HAW.	BR-019-2(077)	2024	37	280

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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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. S0.8 OF 9 SHEETS

SYMBOLS AND ABBREVIATIONS

∉	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
Det.	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
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

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

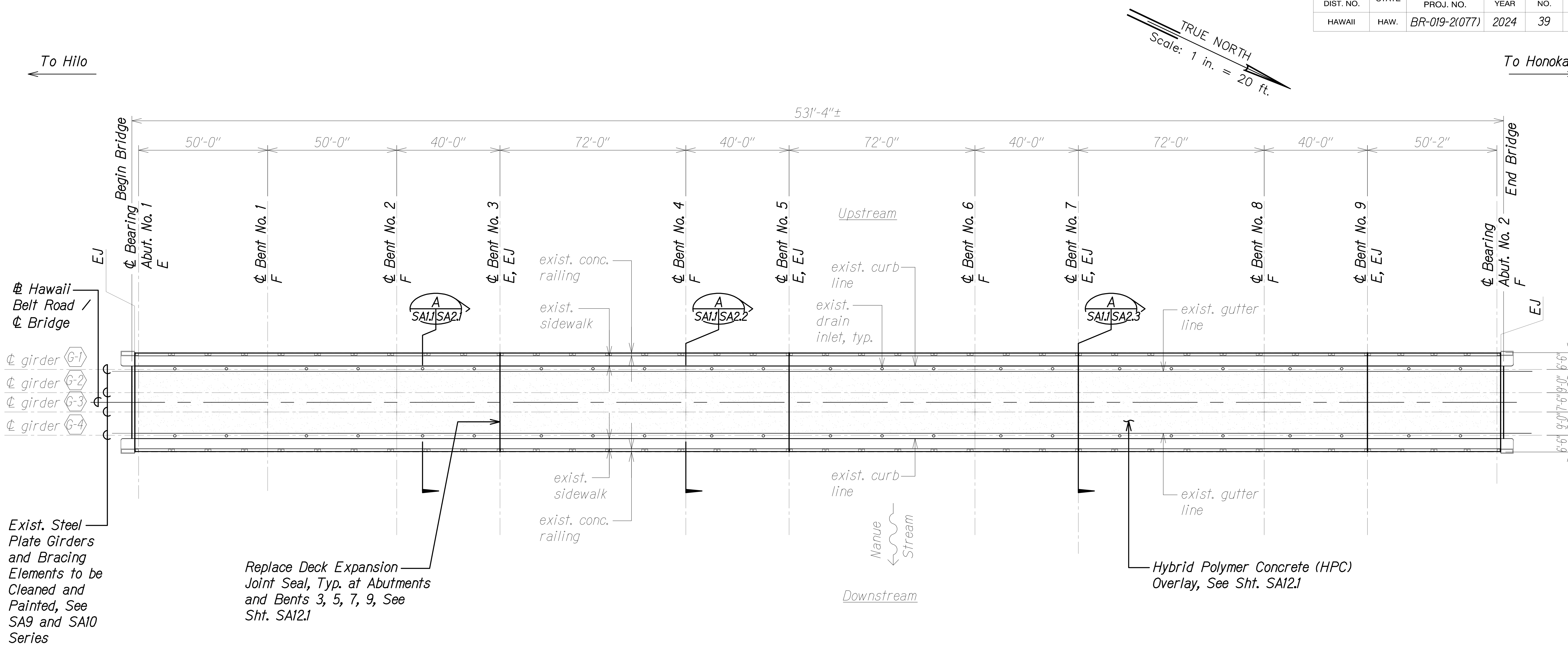
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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. S0.9 OF 9 SHEETS



LAYOUT PLAN

Scale: 1" = 20'-0"

LEGEND:

G-#	Existing Girder Line
E	Expansion Bearing
F	Fixed Bearing
EJ	Expansion Joint in Deck

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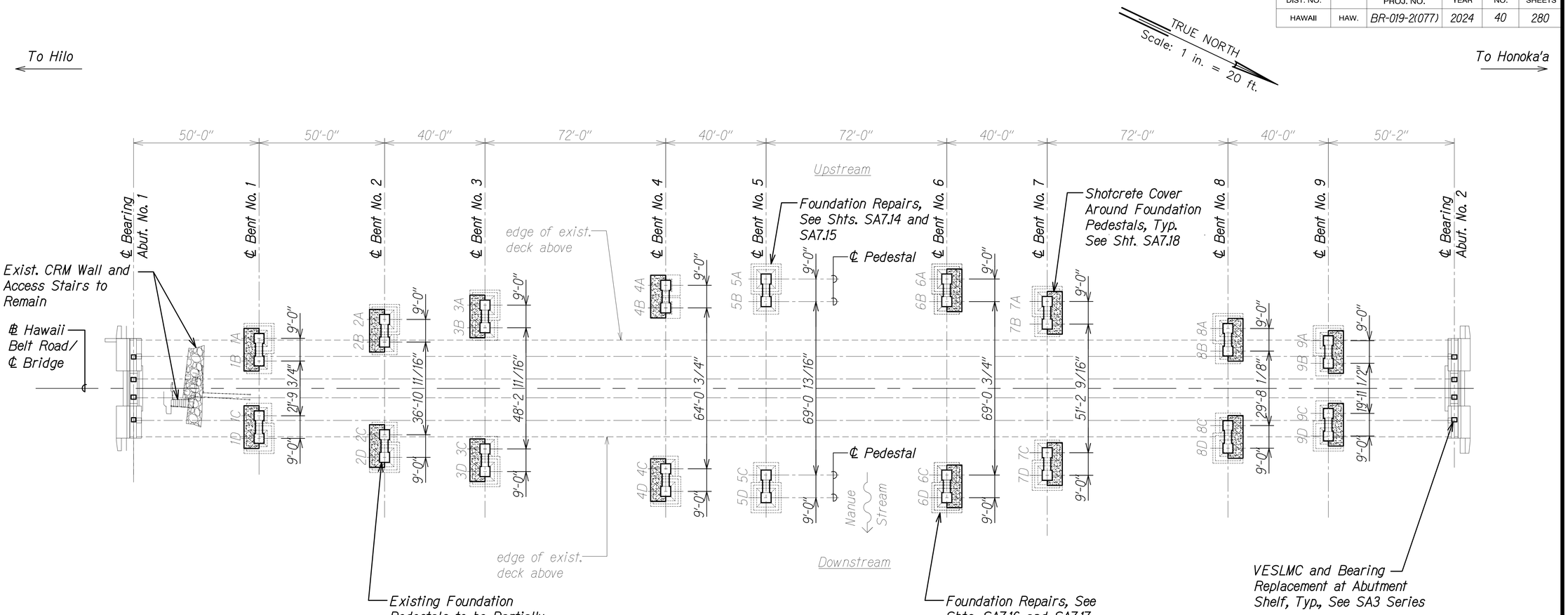
LAYOUT PLAN

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA1.1 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	40	280



FOUNDATION PLAN

Scale: 1" = 20'-0"

NOTES:

1. Dimensions are from ℄ Pedestal to ℄ 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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FOUNDATION PLAN

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

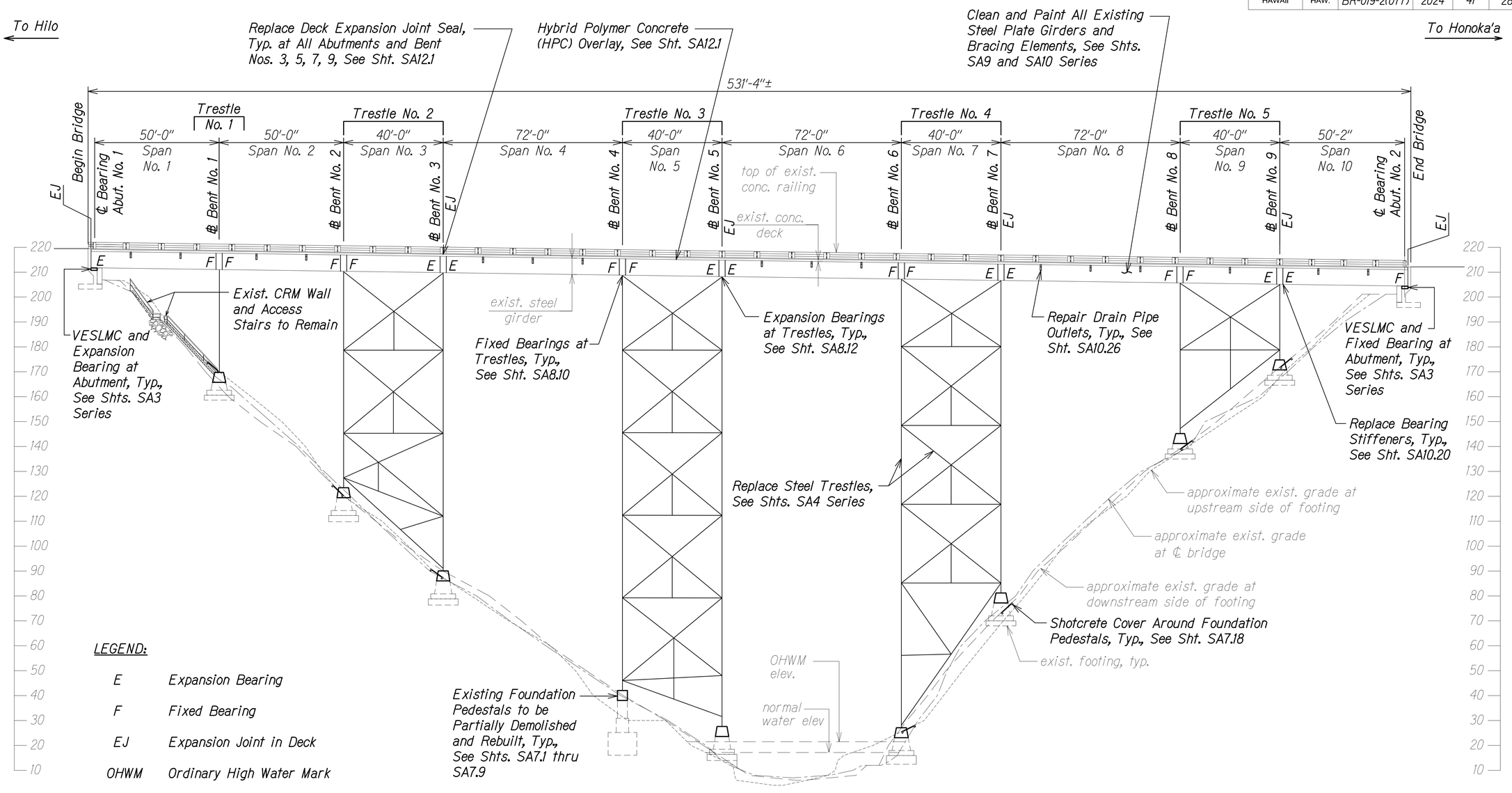
Scale: As Noted — Date: Oct. 2024

SHEET No. SA1.2 OF 2 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR REP-BOTH\01 CAD\10-28-24 BID SET\NSR-SA0102 FIN PLAN.DWG PLOT TIME: 10-28-24, 11:27 AM

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



LEGEND:

E	Expansion Bearing
F	Fixed Bearing
EJ	Expansion Joint in Deck
OHWM	Ordinary High Water Mark

DOWNSTREAM ELEVATION

Scale: 1" = 20'-0"

DRAWING NAME: ZA\00 ONGOING\23-0229-NANUE STR BR PE2-DOTA\01 CAD\10-28-24 BID SET\VGR-SA0001 ELEV.DWG PLOT TIME: 10-28-24, 8:14 AM

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

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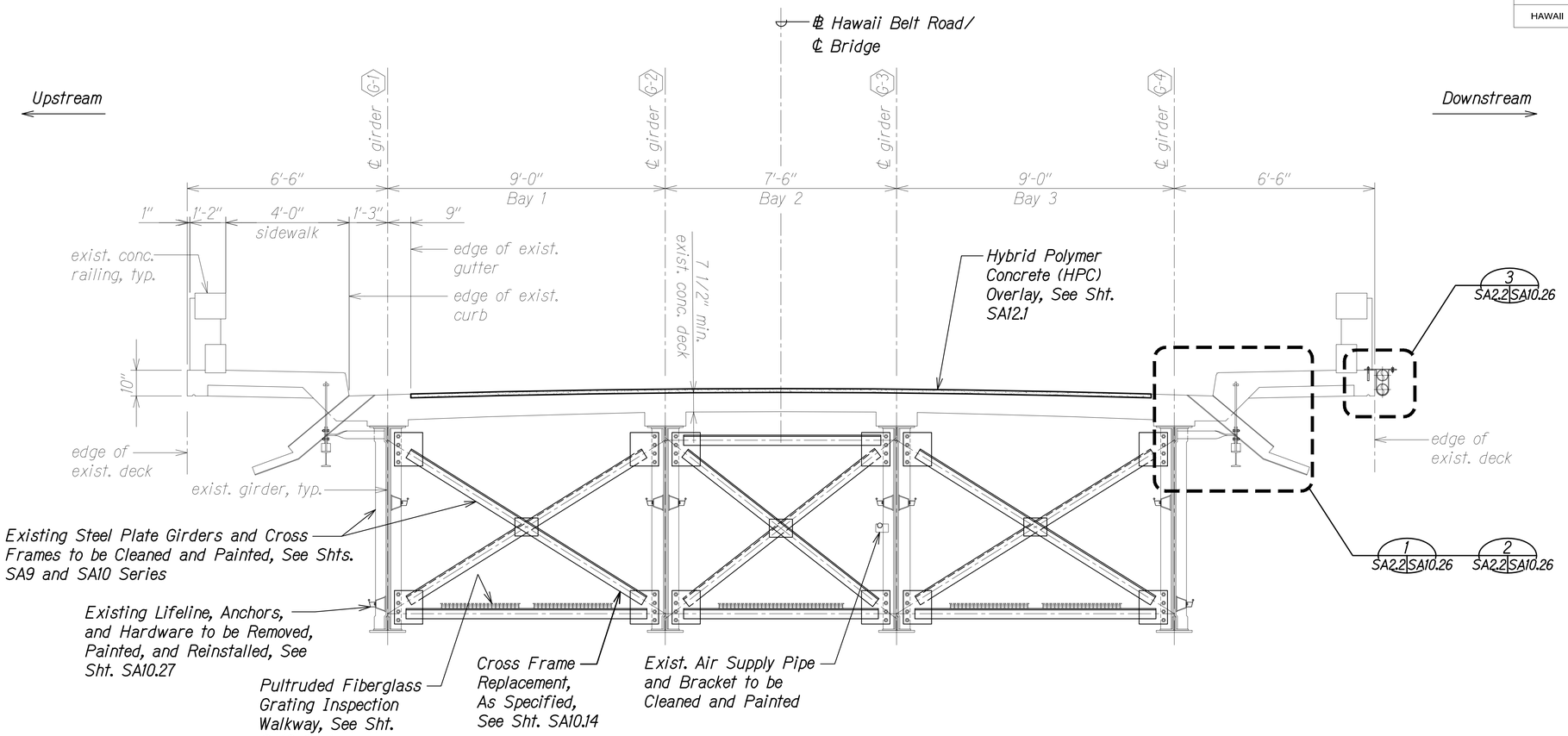
DOWNSTREAM ELEVATION

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA2.1 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	42	280



TYPICAL TRANSVERSE SECTION

A SA1.1 SA2.2

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

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-BOTH\01 CAD\10-28-24 BID SET\NSR-SA0202 TRANS.DWG PLOT TIME: 10-28-24, 8:18 AM

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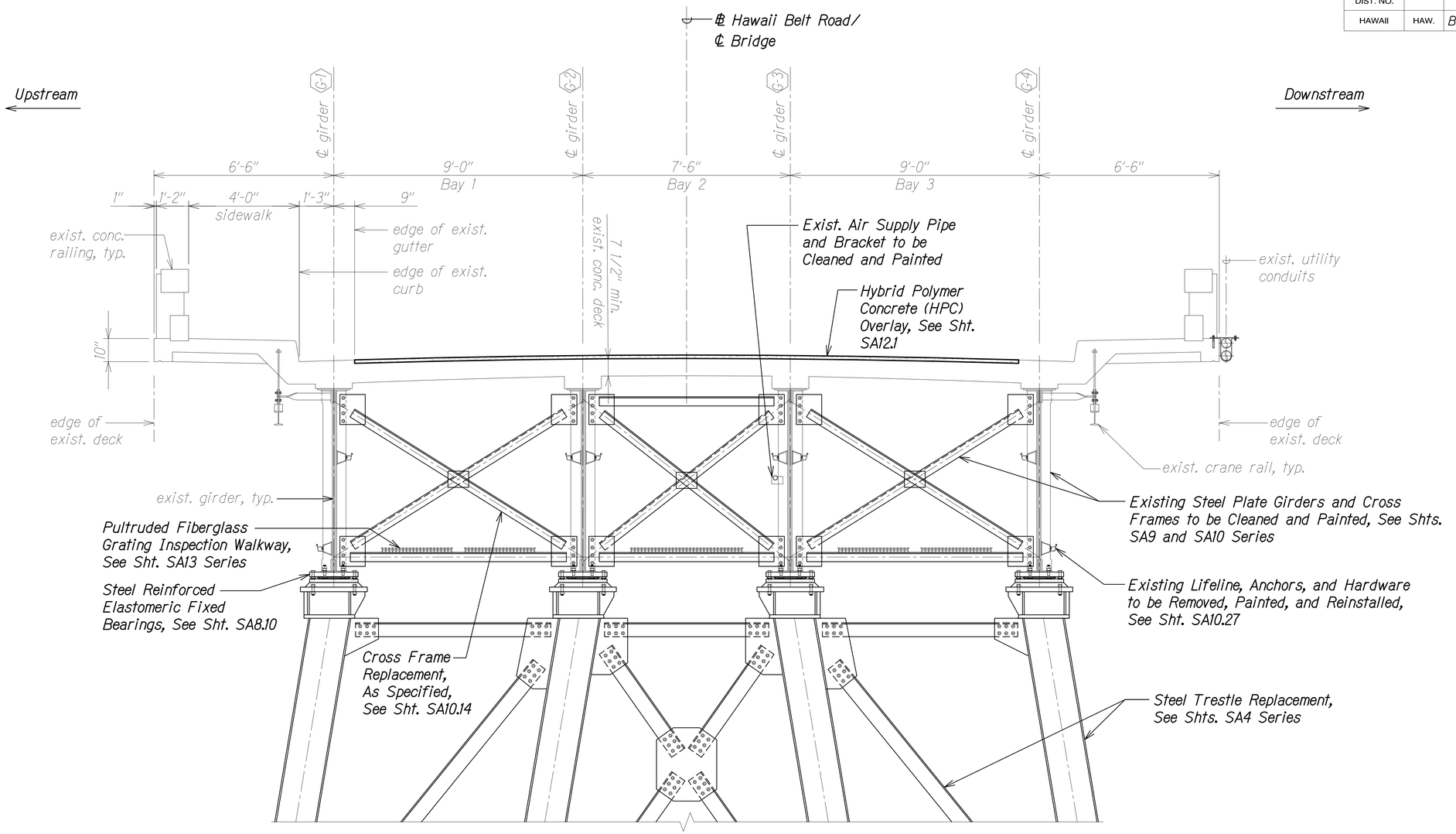
TYPICAL TRANSVERSE SECTION

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

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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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HIGHWAYS DIVISION

TRANSVERSE SECTION AT FIXED BEARING BENTS

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

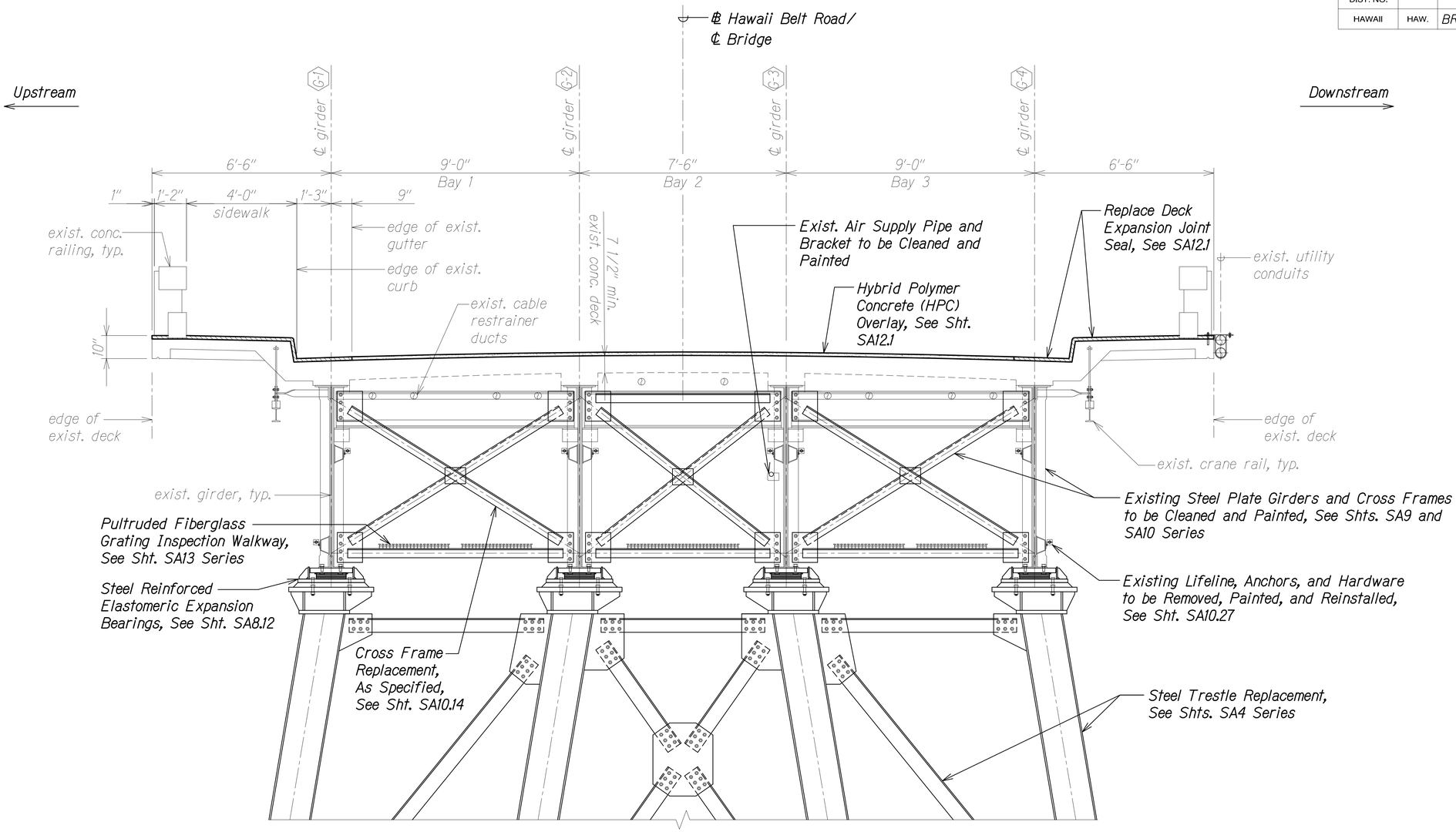
Scale: As Noted Date: Oct. 2024

SHEET No. SA2.3 OF 5 SHEETS

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

DRAWING NAME: A:\00 ONGOING\23-022-3-NANUE STR BR PE2-BOTH.01 PLOT DATE: 10-28-24, 8:18 AM
PLOT TIME: 10-28-24, 8:18 AM
BID SET\NSP-SA0202 TRANSVERSE SECTION AT FIXED BEARING BENTS.DWG

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)

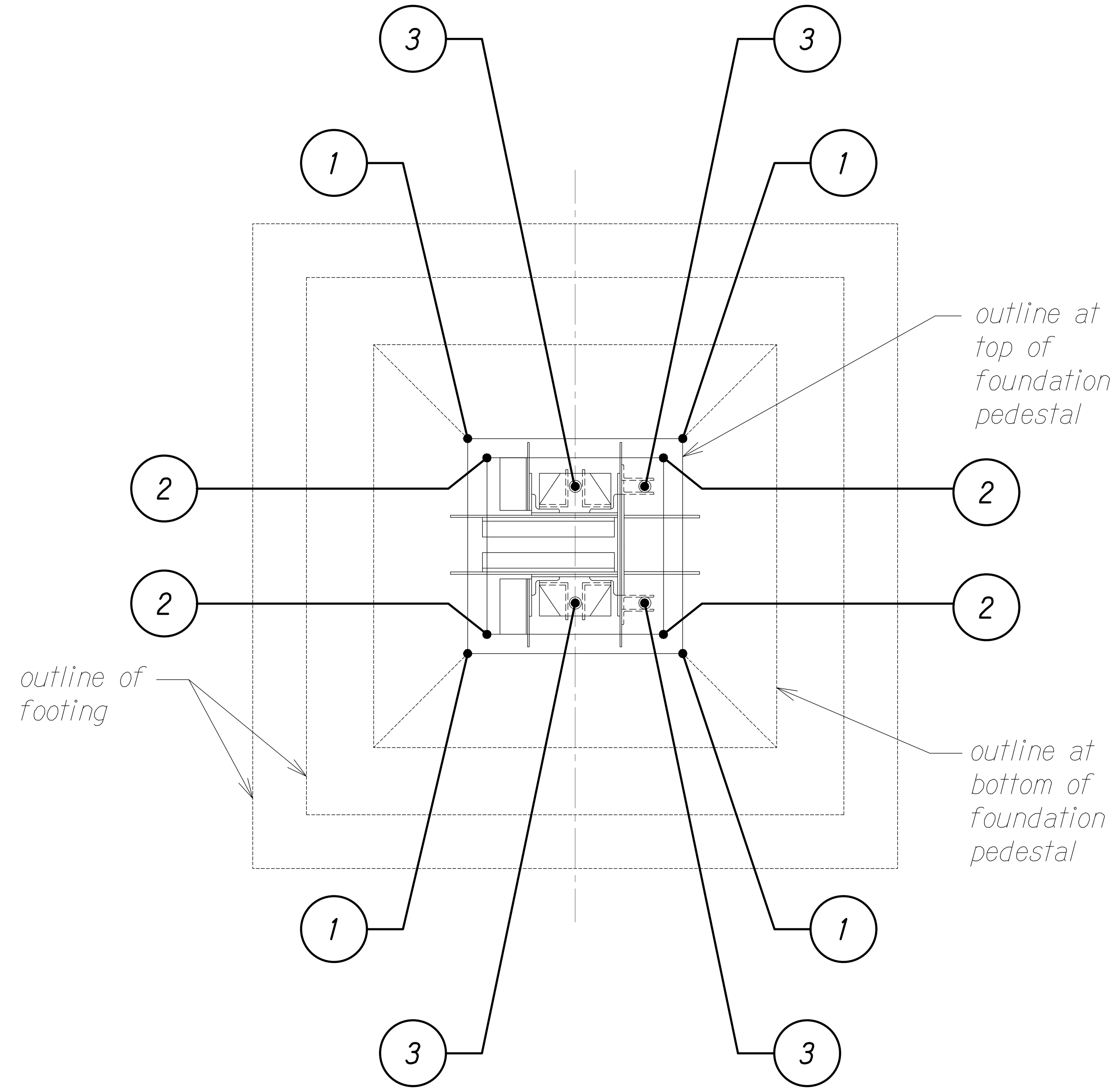
Scale: As Noted — Date: Oct. 2024

SHEET No. SA2.4 OF 5 SHEETS

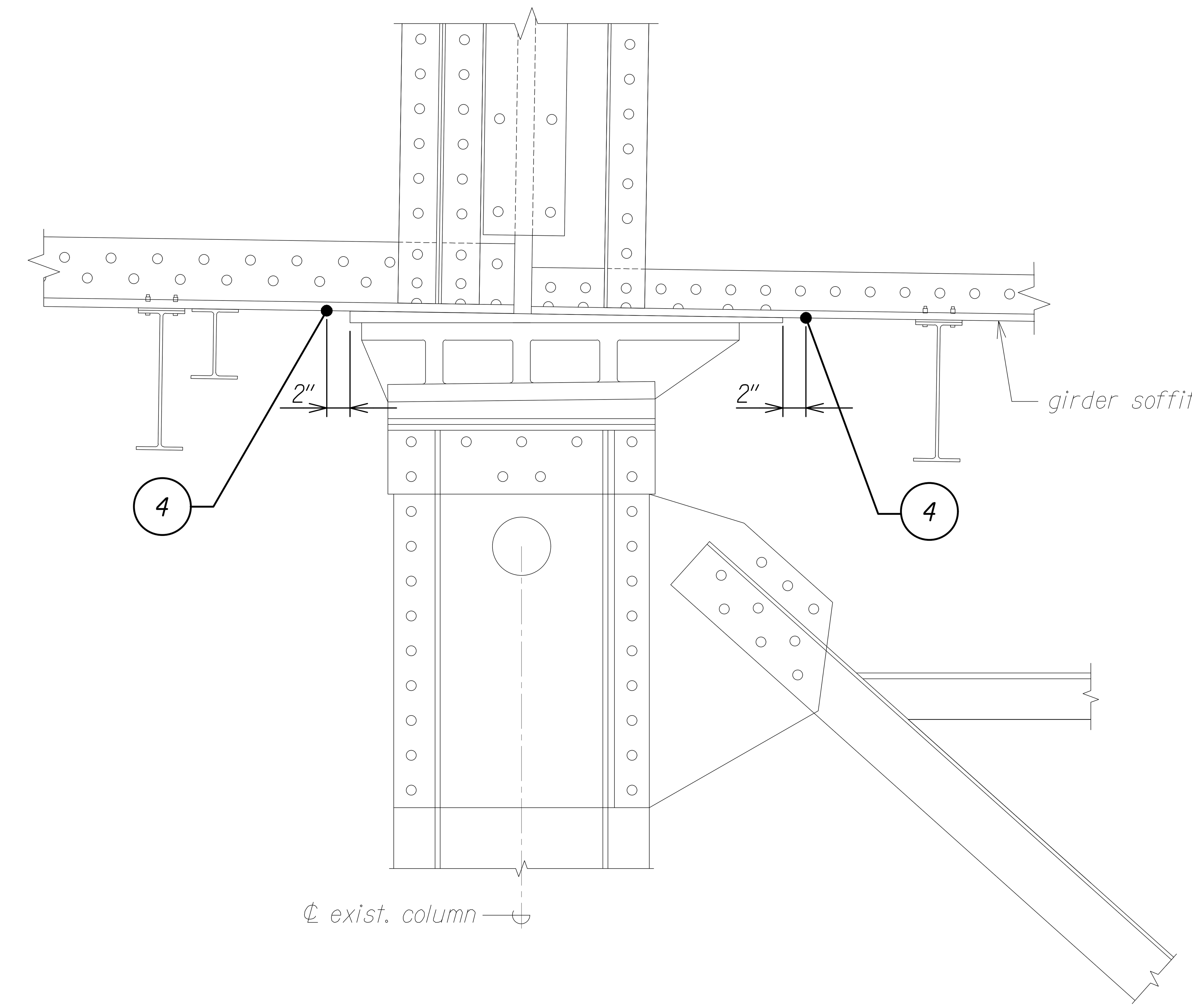
ORIGINAL PLAN | NOTE BOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\AD\ONONO\23-0229-NANUE STR BR PEZ-EOTH\01 CAD\10-28-24 BID SET\NSR-SA0202 TRANS.DWG PLOT TIME: 10-28-24, 8:19 AM

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 (1 / SA2.5 | SA2.5)
Scale: 1/2" = 1'-0"



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

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 ℄ (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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DEPARTMENT OF TRANSPORTATION
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SURVEY POINTS

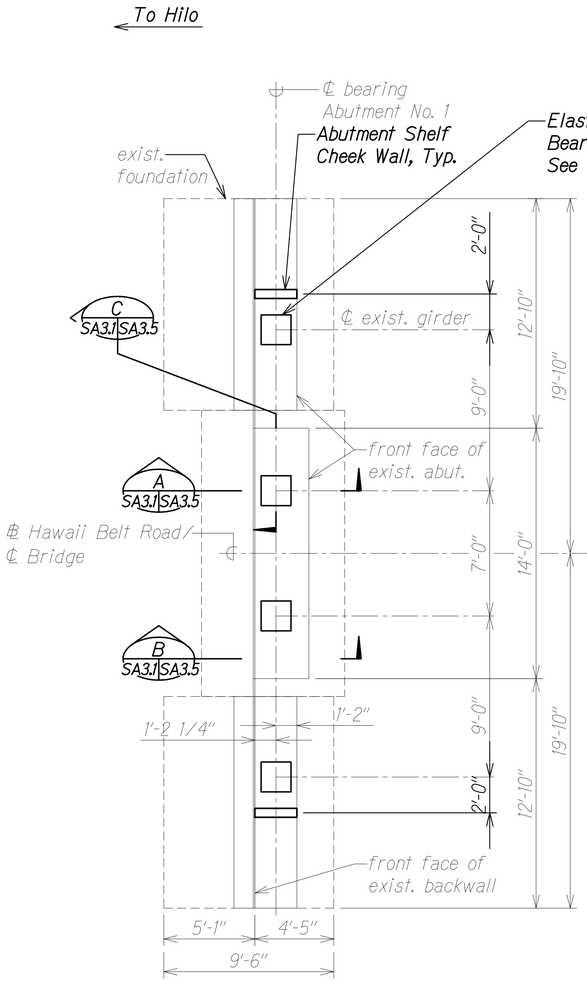
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted   Date: Oct. 2024

SHEET No. SA2.5 OF 5 SHEETS

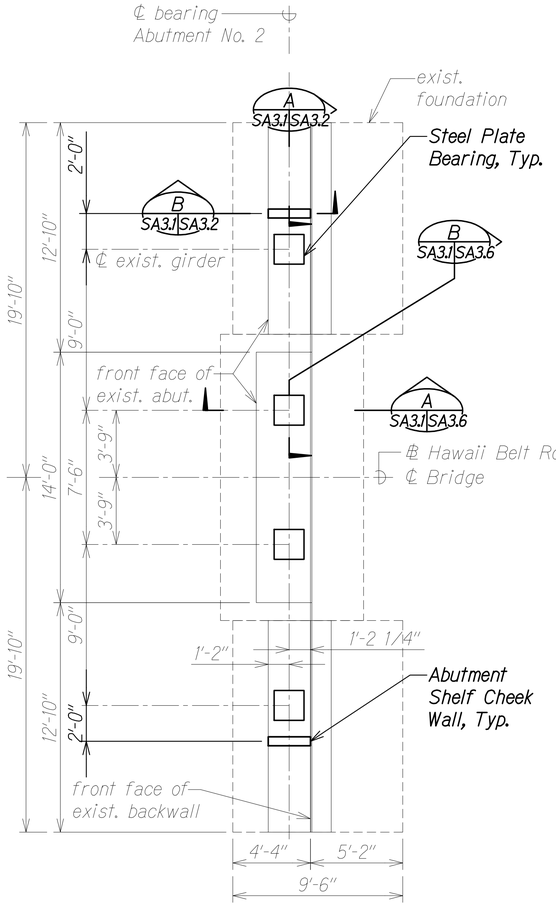
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	46	280



ABUTMENT NO. 1 PLAN

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



ABUTMENT NO. 2 PLAN

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

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

DRAWING NAME: ZA:\OD ONGOING\23-0229-NANUE STR BR PE2-SOTA\01 CAD\10-28-24 BID SET\NSR-SA0301-SA0307 ABUT.DWG PLOT TIME: 10-28-24, 9:02 PM

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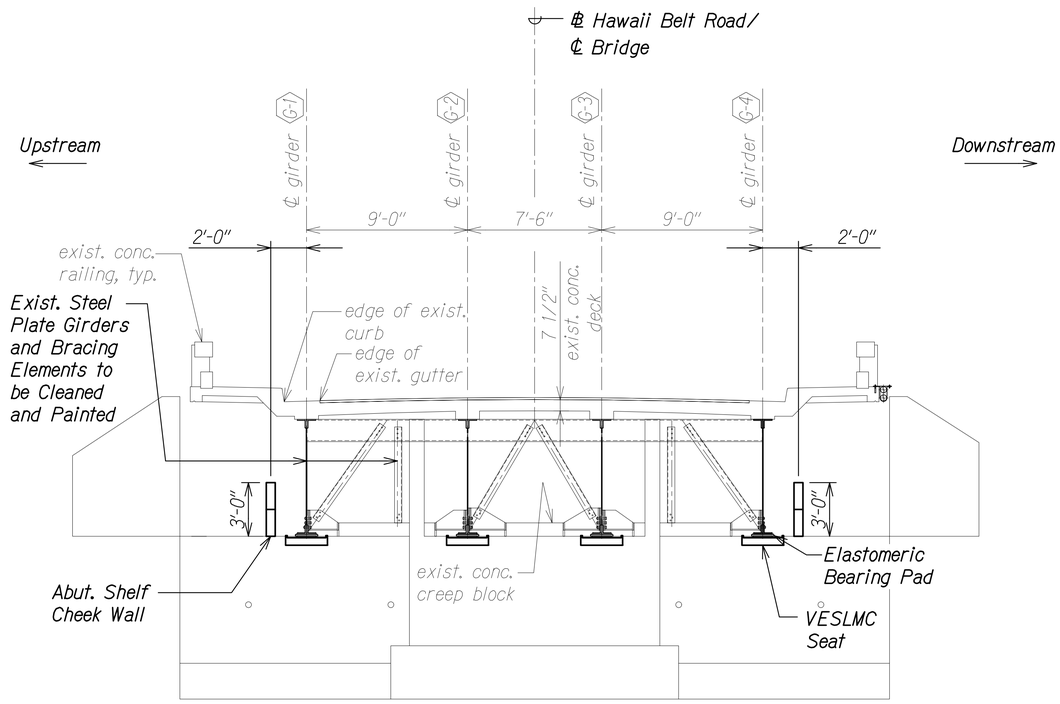
ABUTMENT NOS. 1 AND 2 PLAN

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

Scale: As Noted Date: Oct. 2024

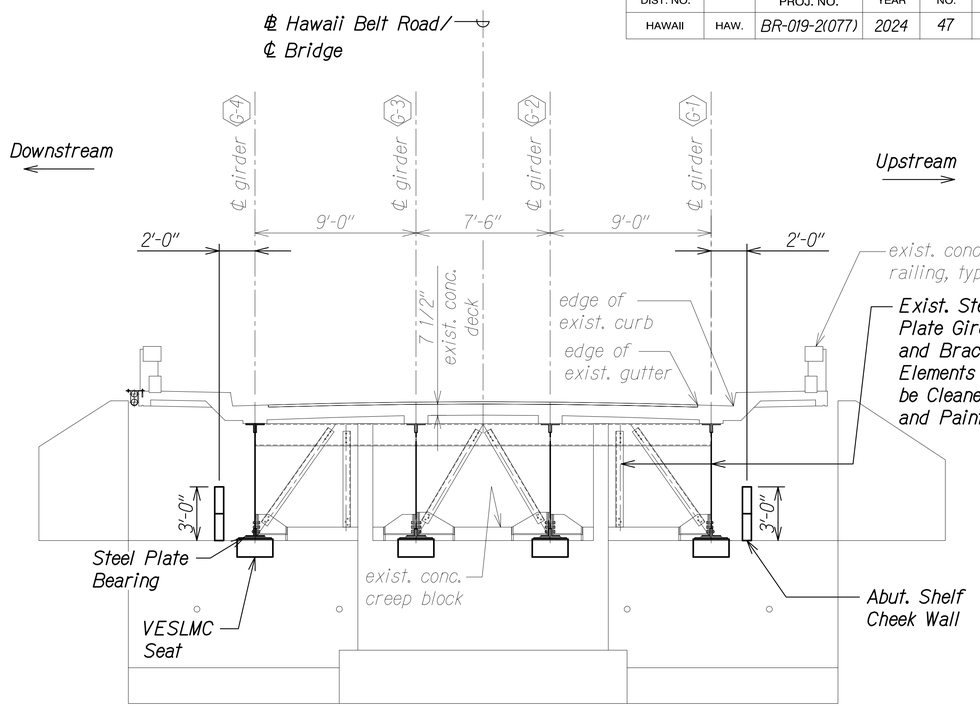
SHEET No. SA3.1 OF 7 SHEETS

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



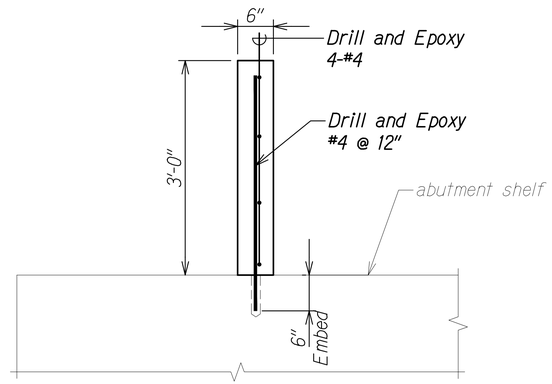
ABUTMENT NO. 1 - ELEVATION

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



ABUTMENT NO. 2 - ELEVATION

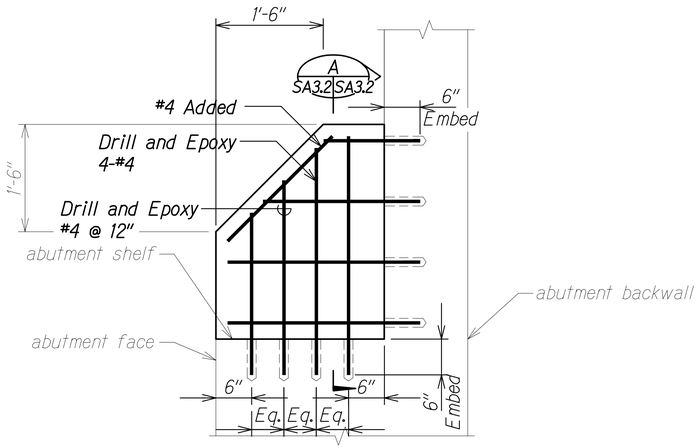
Scale: 1/4" = 1'-0"



ABUTMENT CHEEK WALL SECTION A

Scale: 1" = 1'-0"

SA3.1 | SA3.2



ABUTMENT CHEEK WALL SECTION B

Scale: 1" = 1'-0"

SA3.1 | SA3.2

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LICENSED PROFESSIONAL ENGINEER
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

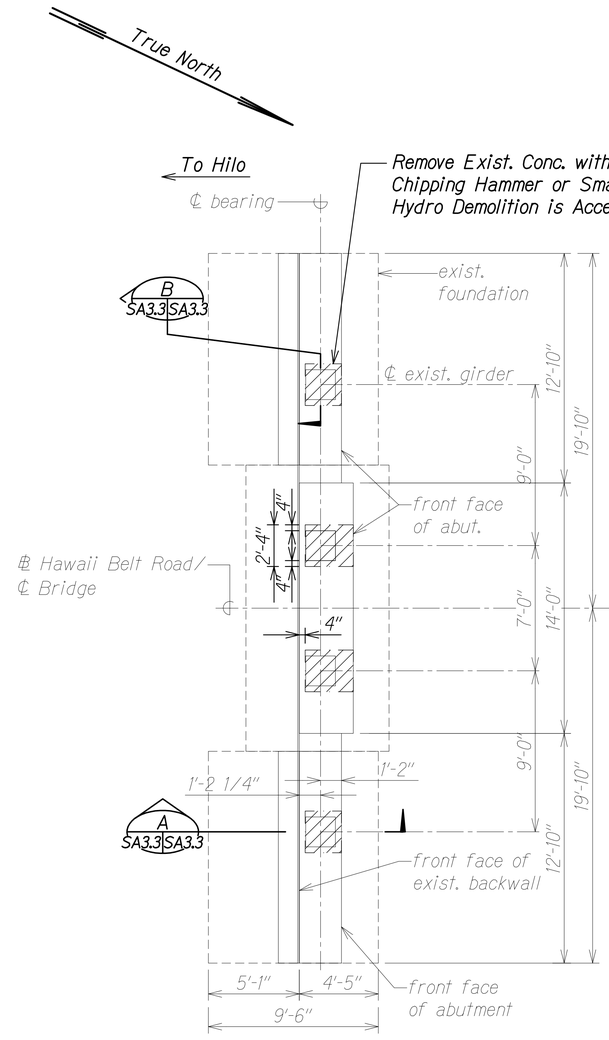
SHEET No. SA3.2 OF 7 SHEETS

47

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

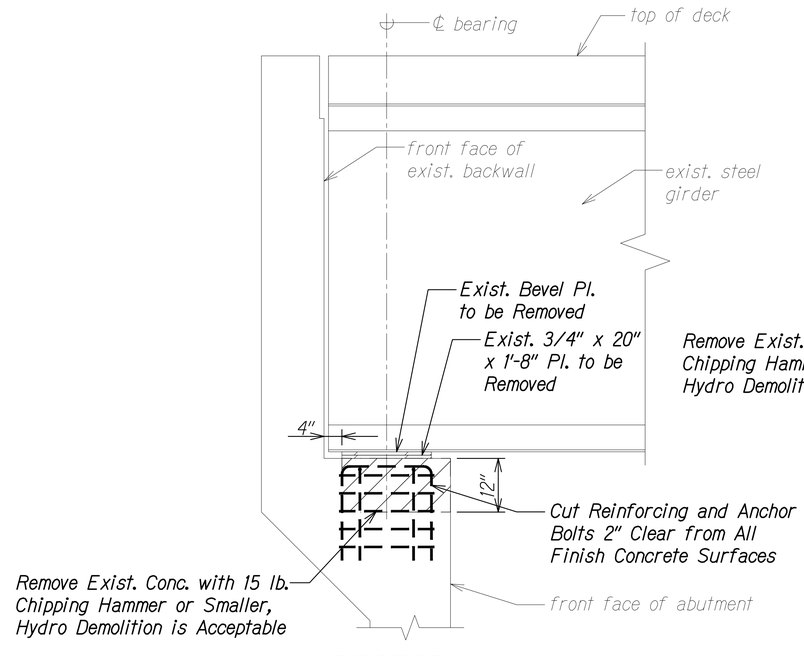
DRAWING NAME: Z:\OD ONGOING\23-022\2-NANUE STR BR RE2-DOTH\01 CAD\10-28-24 BID SET\HSR-SA0301-SA0307 ABUT.DWG PLOT TIME: 10-28-24 9:13 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	48	280



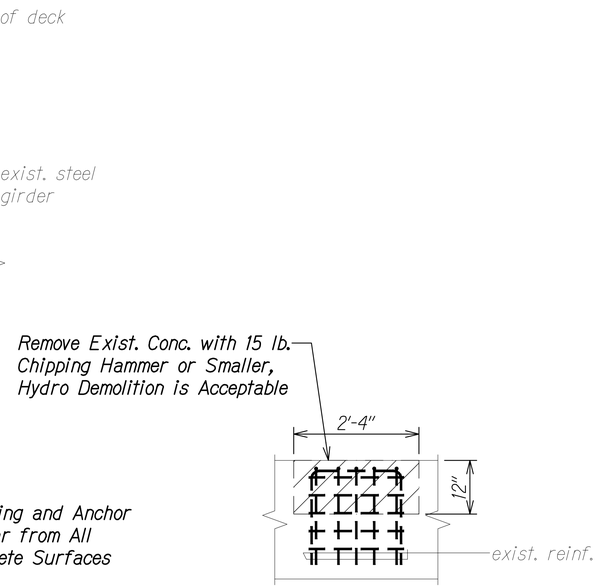
ABUTMENT NO. 1 DEMO PLAN

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



SECTION A

Scale: 3/4" = 1'-0" SA3.3 | SA3.3



SECTION B

Scale: 3/4" = 1'-0" SA3.3 | SA3.3

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

DRAWING NAME: ZA\00 ENGINEERING\23-022\9-NANUE STR BR PE2-00THA\01 CADD\10-28-24 BID SET\ER-SA0301-SA0307 ABUTDWG PLOT TIME: 10-26-24, 3:55 PM

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

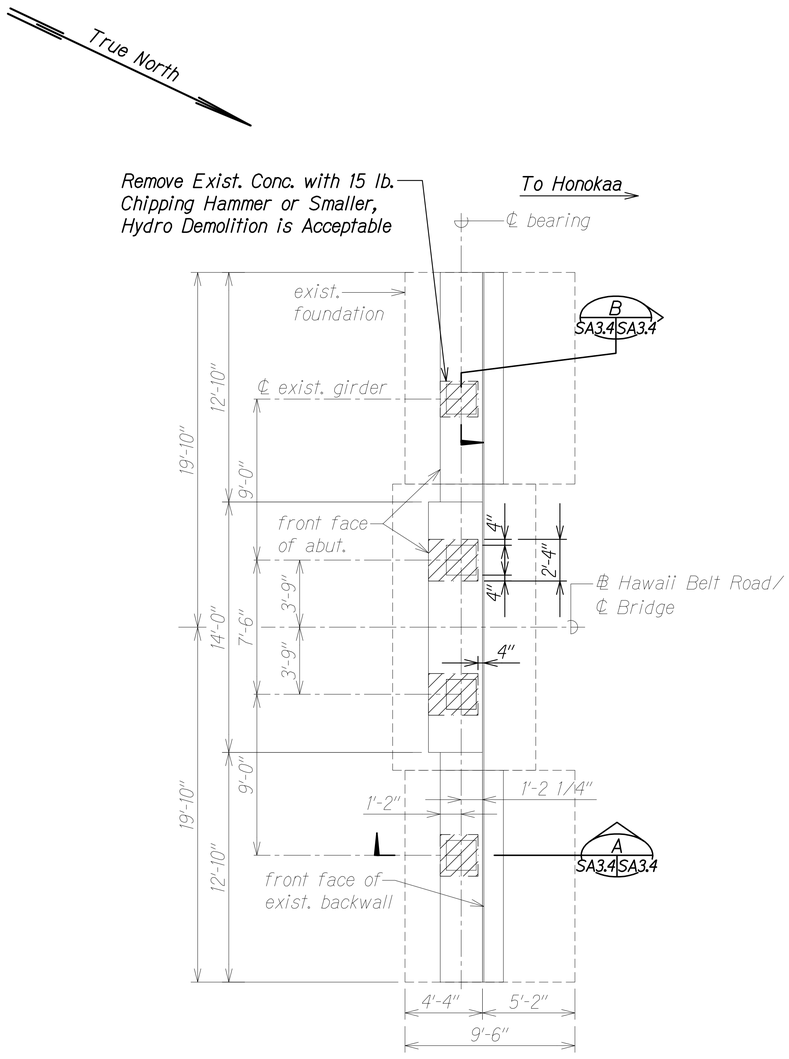
ABUTMENT NO. 1 DEMO PLAN AND SECTIONS

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

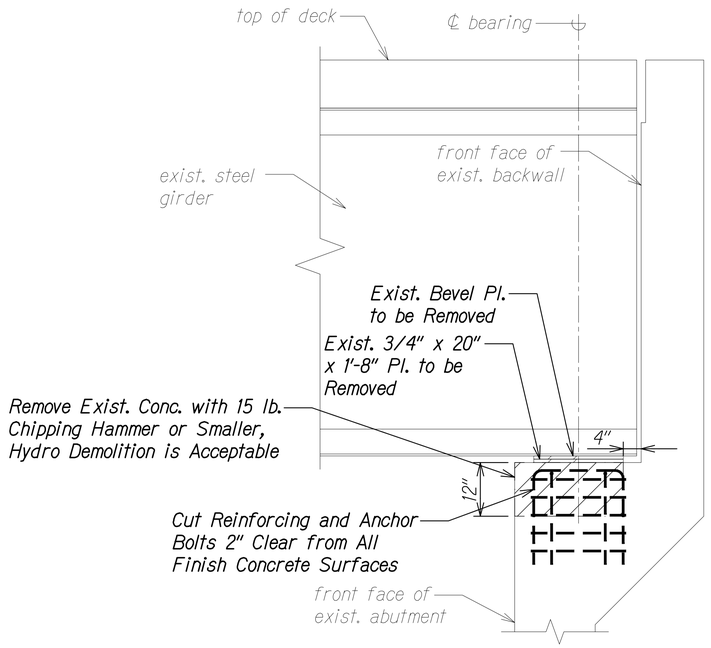
Scale: As Noted Date: Oct. 2024

SHEET No. SA3.3 OF 7 SHEETS

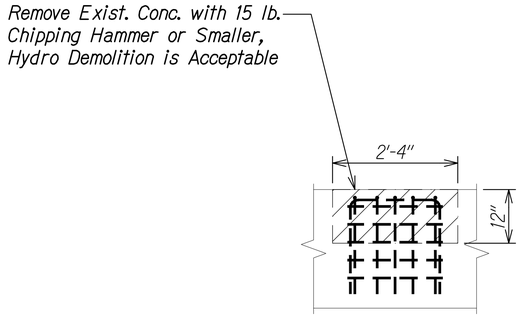
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	49	280



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



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



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

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ABUTMENT NO. 2 DEMO PLAN AND SECTIONS

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

Scale: As Noted Date: Oct. 2024

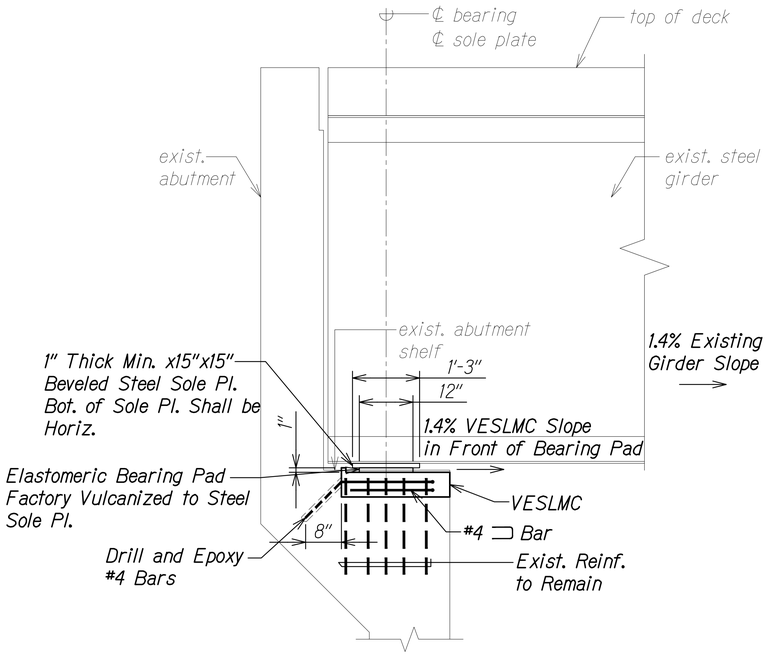
SHEET No. SA3.4 OF 7 SHEETS

ORIGINAL PLAN
NOTE BOOK
No.

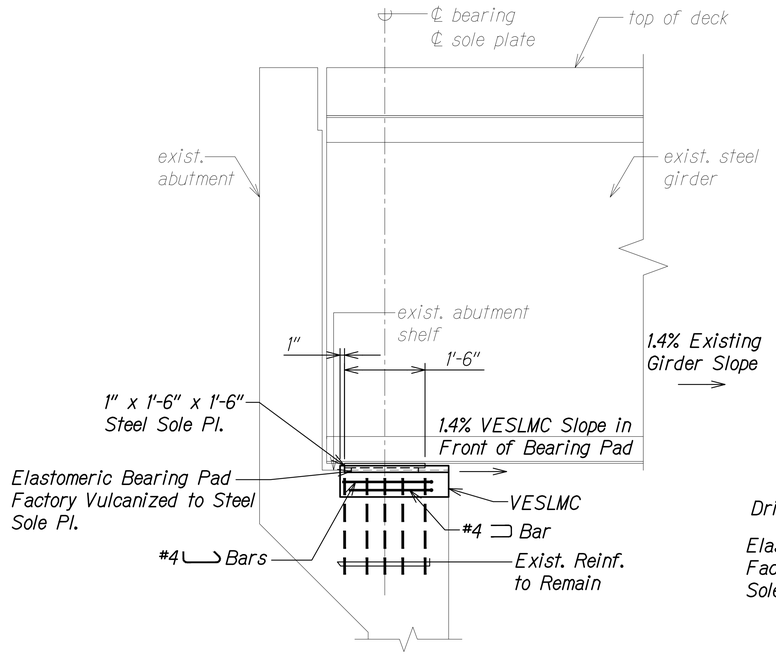
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\DOT ONGOING\23-029.9-NANUE STR BR PE2-DOT\HAT CAD\10-28-24 BID SET\VSR-SA0301-SA0307 ABUT.DWG PLOT TIME: 10-26-24 3:55 PM

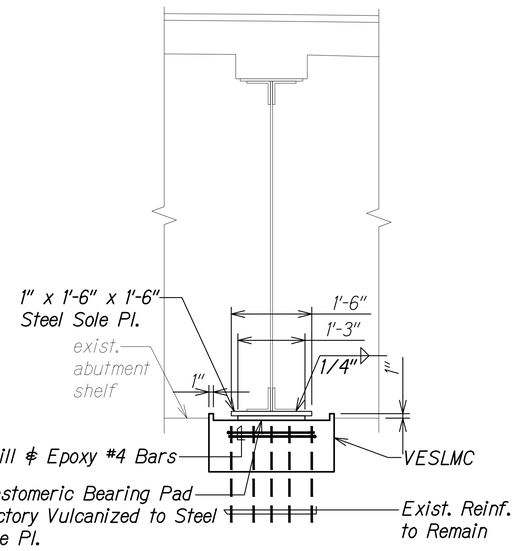
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	50	280



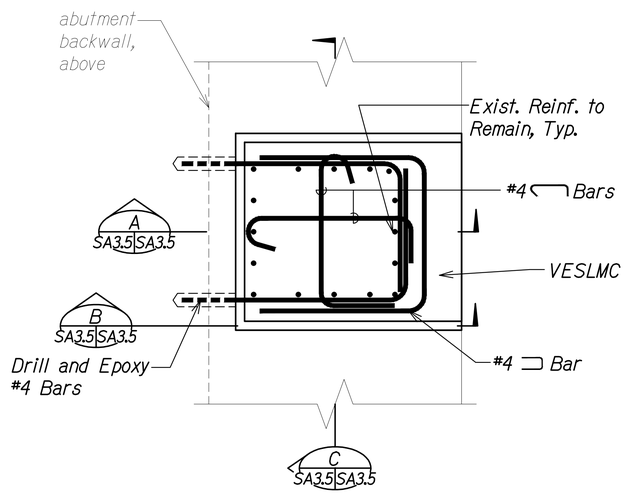
SECTION A
Scale: 3/4" = 1'-0" SA3.1 | SA3.5



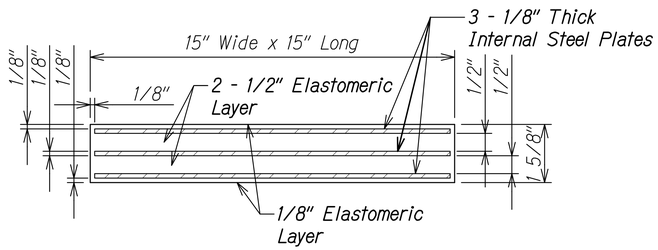
SECTION B
Scale: 3/4" = 1'-0" SA3.1 | SA3.5



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:

1. VESLMC below bearing pad shall be horizontal and level.
2. Verify all dimensions and slopes in field before fabricating any members.

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

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SIGNATURE 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)

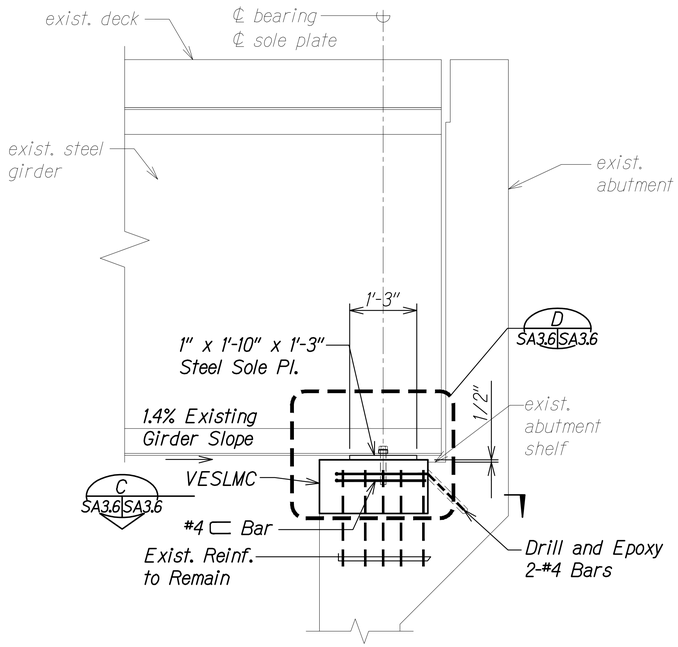
Scale: As Noted Date: Oct. 2024

SHEET No. SA3.5 OF 7 SHEETS

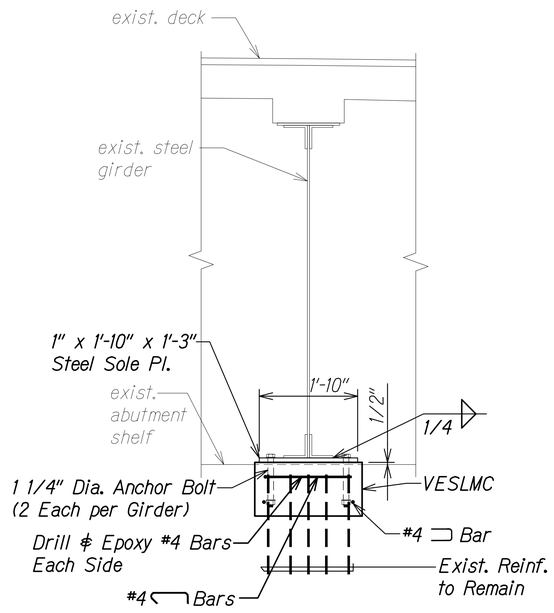
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

DRAWING NAME: ZA:\DOT\ENGINEERING\23-022\9-NANUE STR BR\PE2-ABUTMENTS\ABUTMENT SHEETS\SA3.5 ABUTMENTS.DWG PLOT TIME: 10-28-24, 9:14 PM

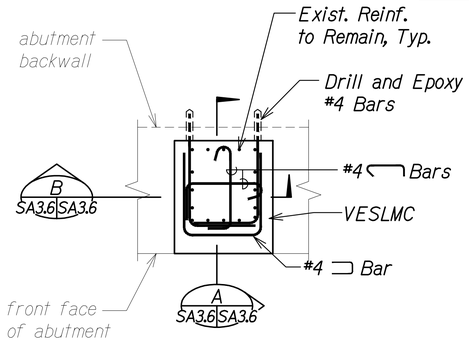
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	51	280



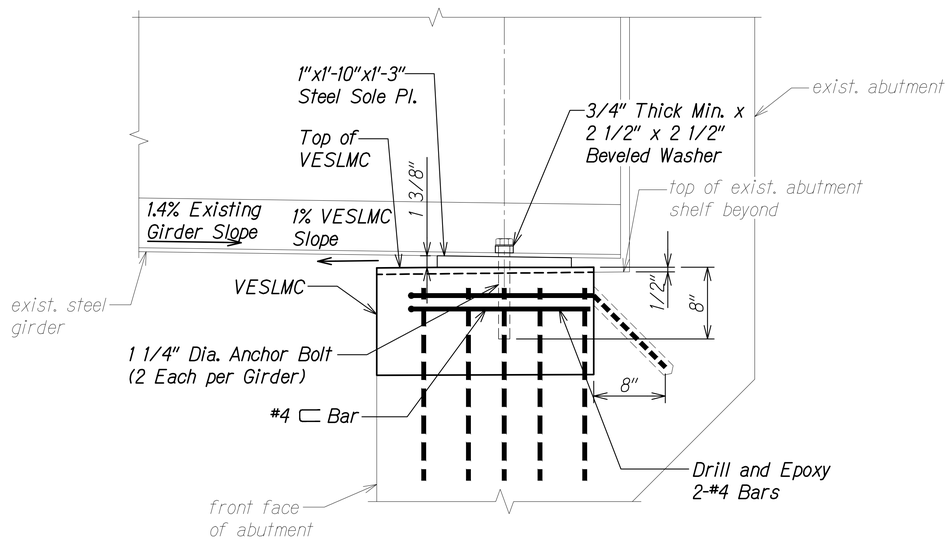
SECTION A
Scale: 3/4" = 1'-0" SA3.1 | SA3.6



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



PLAN
Scale: 3/4" = 1'-0" C SA3.6 | SA3.6



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

NOTE:

Verify all dimensions and slopes in field before fabricating any members.

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

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

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

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR REPZ-DOTH\01 CAD\10-28-24 BID SET\ABT-SA3.DGN PLOT TIME: 10-26-24, 3:56 PM

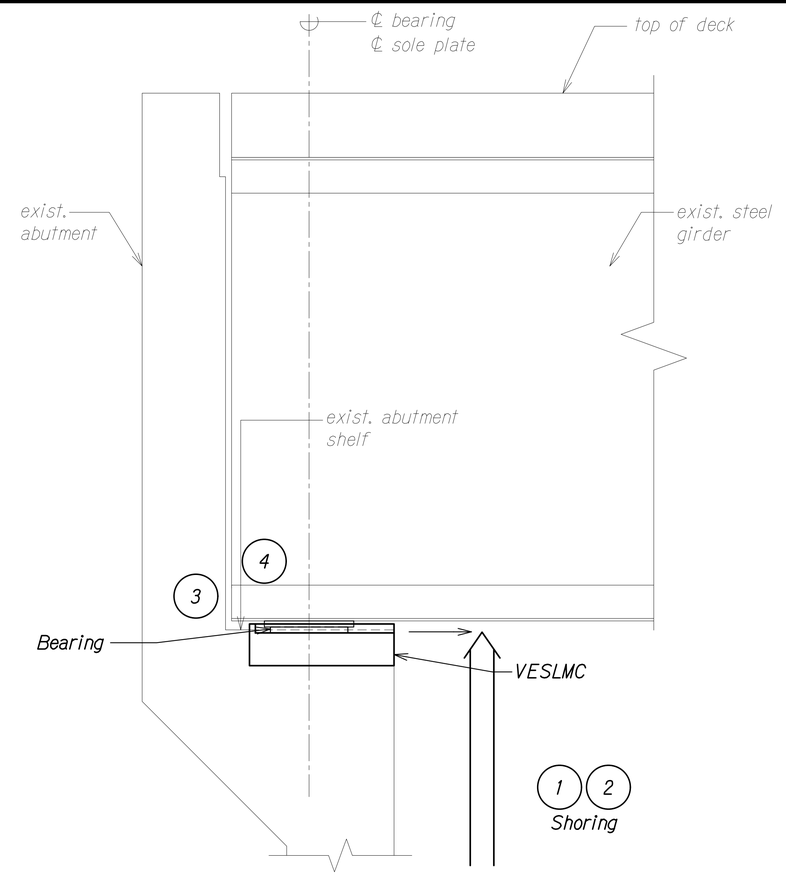
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	52	280

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-HANUE STR BR PE2-DOT\HAOT CAD\10-28-24 BID SET\VSR-SA0301-SA0307 ABUT.DWG PLOT TIME: 10-28-24 8:14 PM

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BEARING REPLACEMENT CONSTRUCTION SEQUENCE

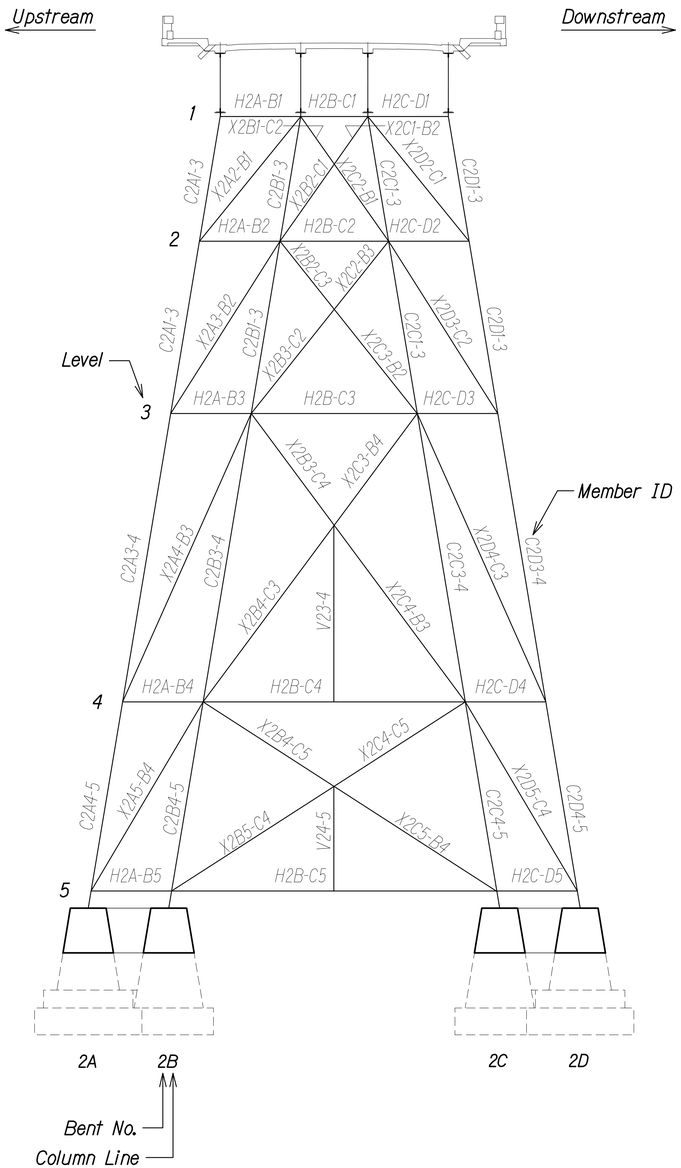
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA3.7 OF 7 SHEETS

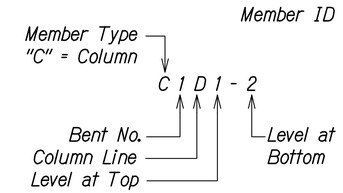
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	53	280

MEMBER IDENTIFICATION (ID) LOCATION KEY AT BENTS



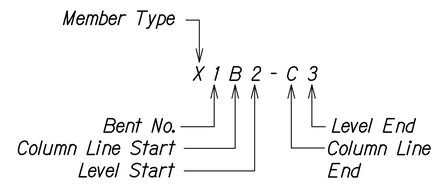
MEMBER ID LEGEND

COLUMN ID - SEE SA5.1 - SA5.11

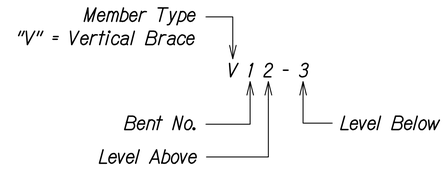


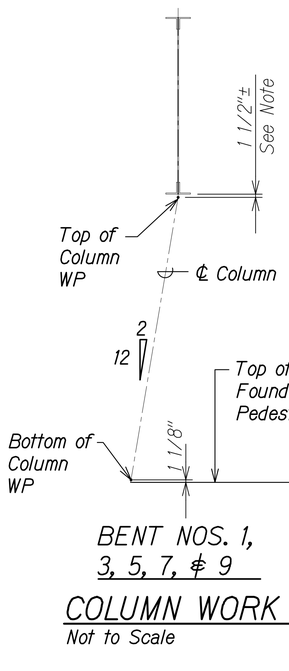
HORIZONTAL BRACE ID - SEE SA5.19 - SA5.22

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

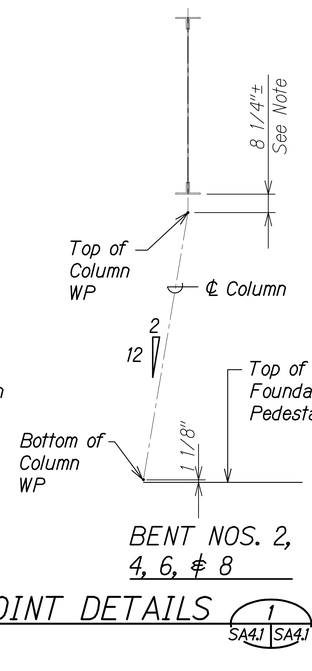


VERTICAL BRACE ID - SEE SA5.31 - SA5.32





BENT NOS. 1, 3, 5, 7, & 9



BENT NOS. 2, 4, 6, & 8

COLUMN WORK POINT DETAILS

1
SA4.1 | SA4.1

Not to Scale

NOTE:

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

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

ORIGINAL PLAN
NOTE BOOK
No.

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

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE
4-30-26
EXPIRATION DATE OF THE LICENSE

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)

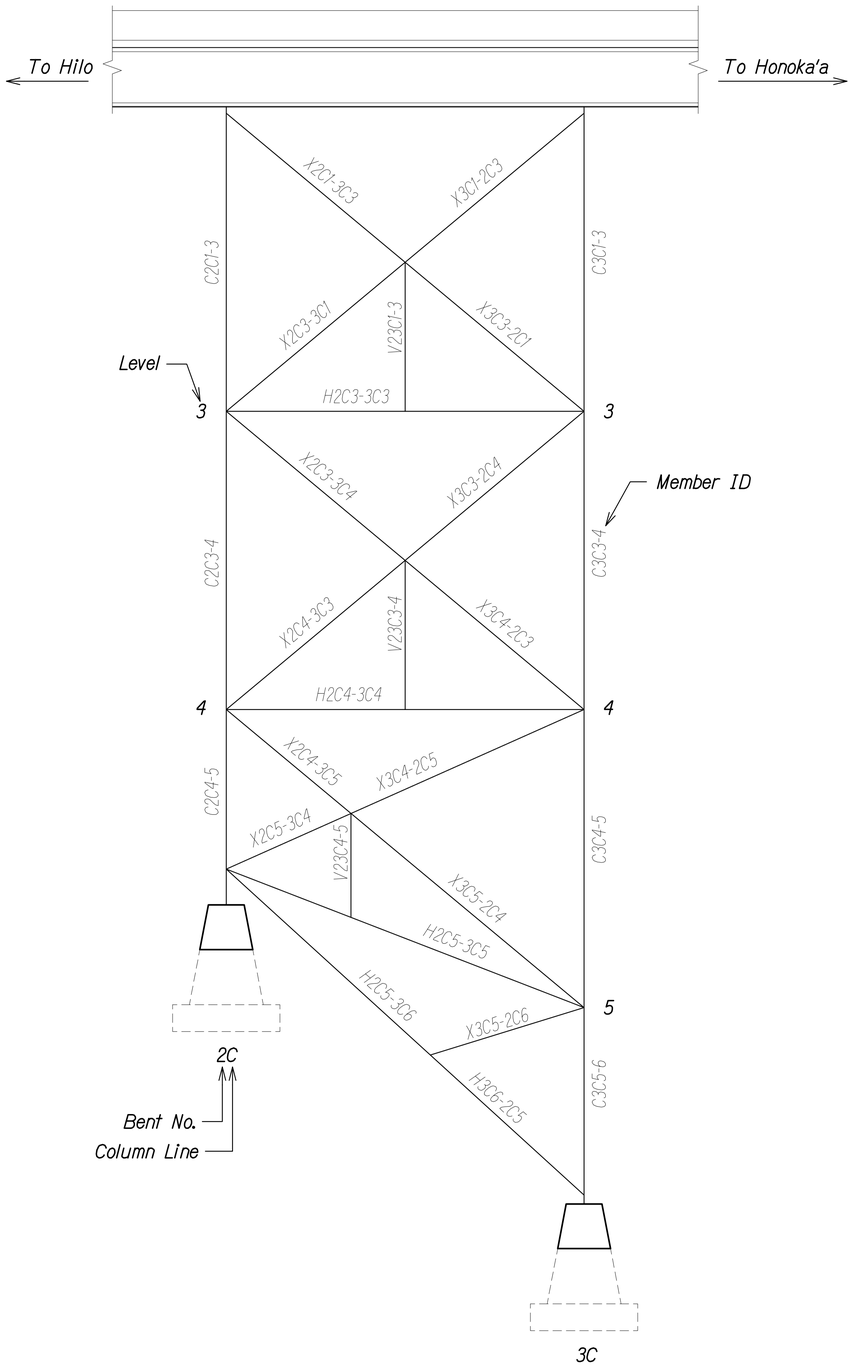
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.1 OF 20 SHEETS

DRAWING NAME: Z:\OD ONO\NO 23-022\3-NANUE STR BR PE2-SOTH\01 CAD\ 10-28-24 BID SET\NSR-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24, 3:58 PM

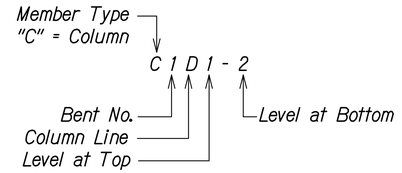
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	54	280

MEMBER IDENTIFICATION (ID) LOCATION KEY AT TRESTLES

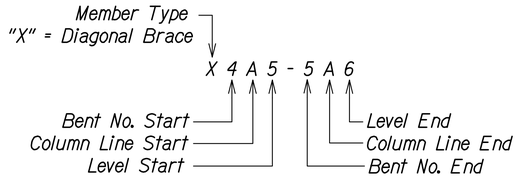


MEMBER ID LEGEND

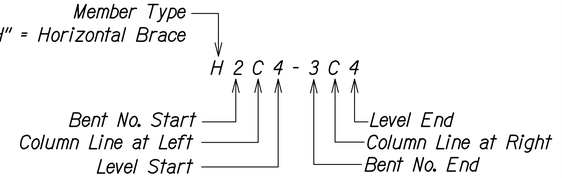
COLUMN ID - SEE SA5.1 - SA5.11



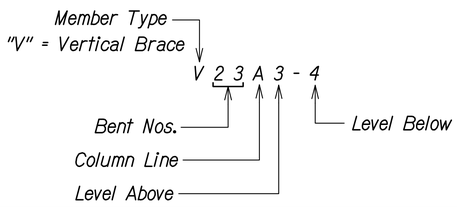
DIAGONAL BRACE ID - SEE SA5.23 - SA5.27



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



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



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MEMBER ID LOCATION KEY AND LEGEND AT TRESTLES

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

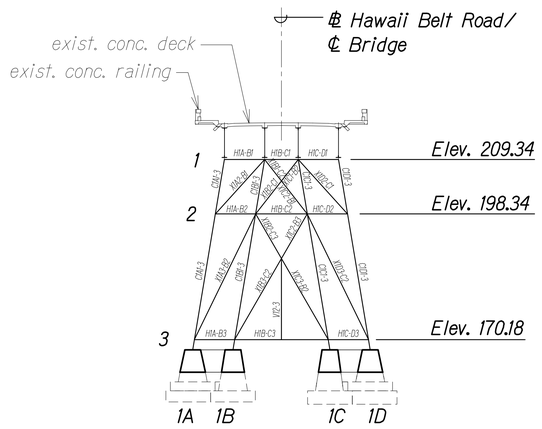
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.2 OF 20 SHEETS

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

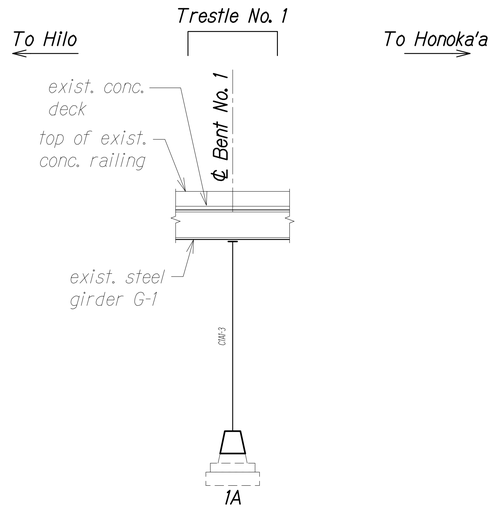
DRAWING NAME: ZA00 ONONEA 23-0229-NANUE STR BR PE2-20TA01 CAD\10-28-24 BD SERVER-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-28-24, 3:58 PM

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



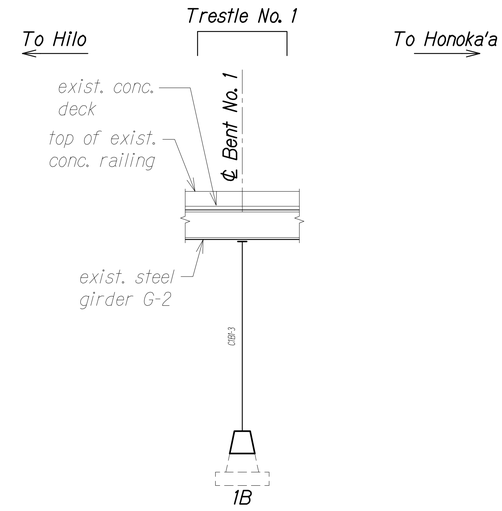
BENT NO. 1 ELEVATION (A)

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



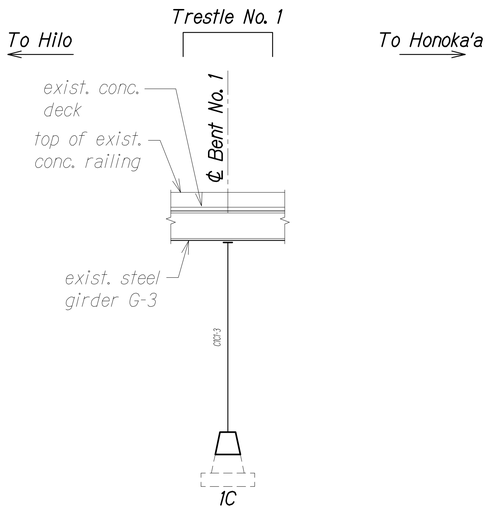
TRESTLE NO. 1 ELEVATION - COLUMN LINE "A" (B)

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



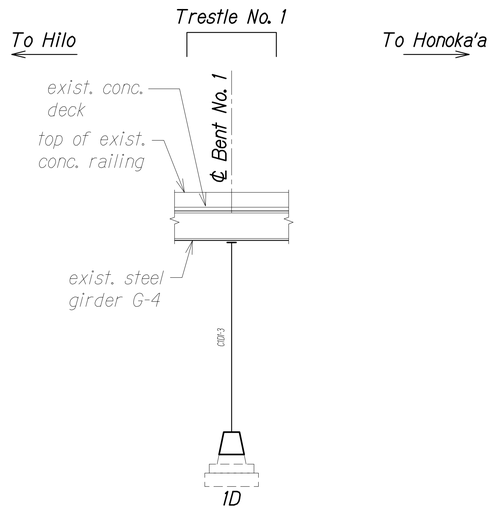
TRESTLE NO. 1 ELEVATION - COLUMN LINE "B" (C)

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



TRESTLE NO. 1 ELEVATION - COLUMN LINE "C" (D)

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



TRESTLE NO. 1 ELEVATION - COLUMN LINE "D" (E)

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

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

DRAWING NAME: ZA100 ONONEA 23-0229-NANUE STR BR PE2-2DETA01.CADD\10-28-24 BD SER\SR-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24, 3:58 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

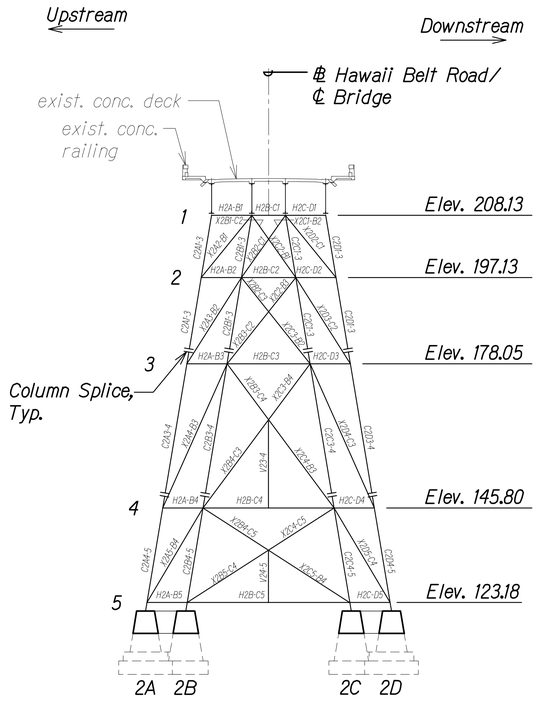
BENT NO. 1/TRESTLE NO. 1 MEMBER ELEVATIONS

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

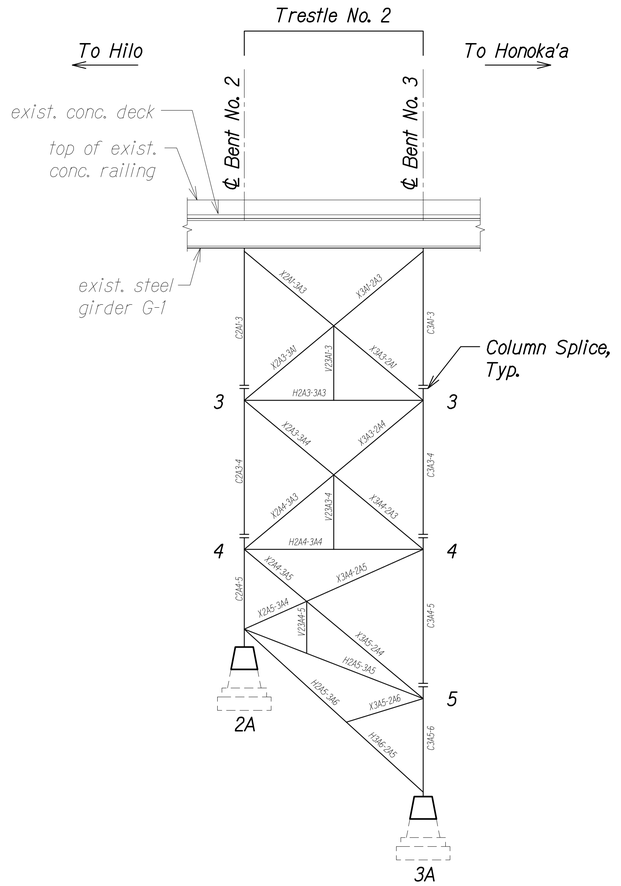
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	56	280



BENT NO. 2 ELEVATION

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

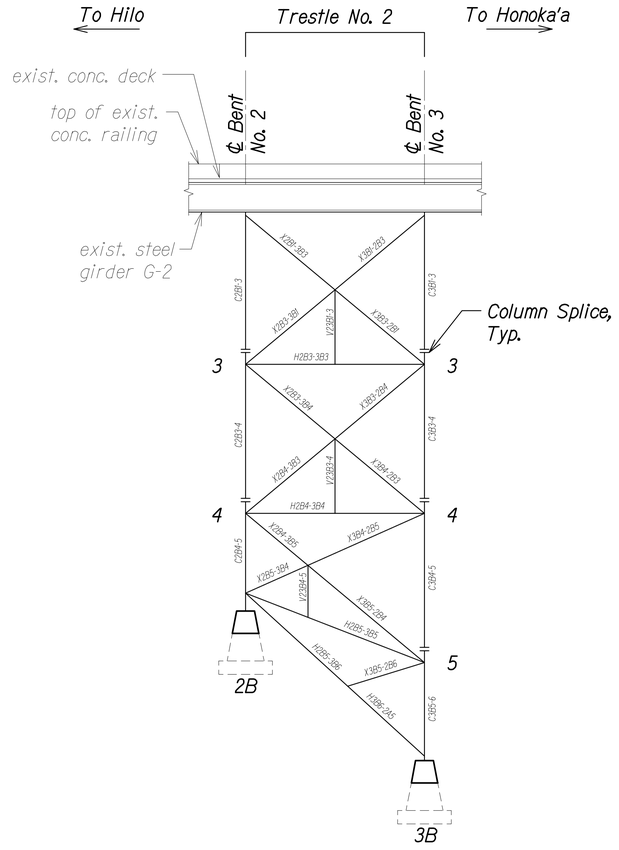
A SA4.4 | SA4.4



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

NOTE BOOK

No.

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

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT NO. 2/TRESTLE NO. 2 MEMBER ELEVATIONS

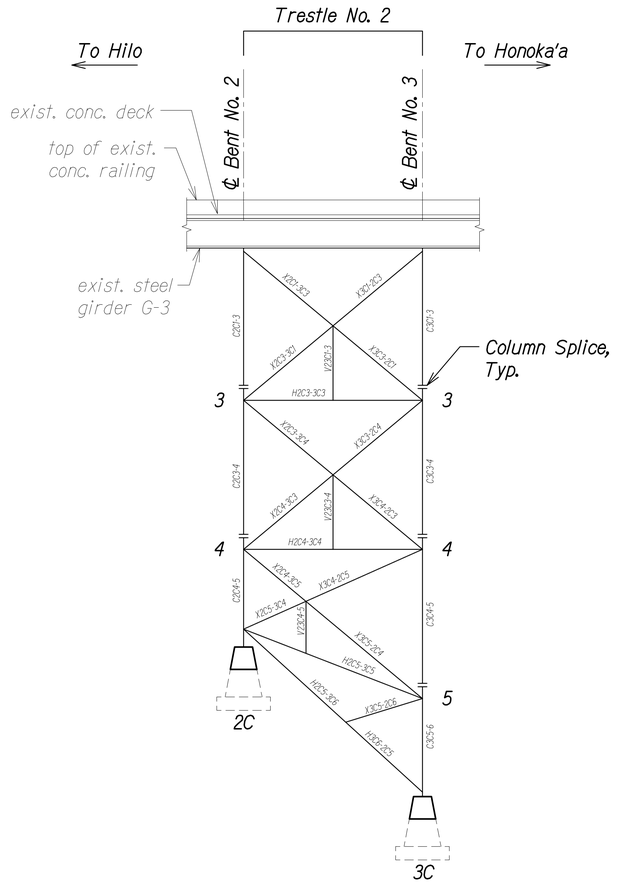
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA4.4 OF 20 SHEETS

DRAWING NAME: Z:\OD\ ONGOING\23-0223-NANUE STR BR PEZ-BOTH\01 CAD\10-28-24 BID SET\SSR-SA401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24, 3:59 PM)

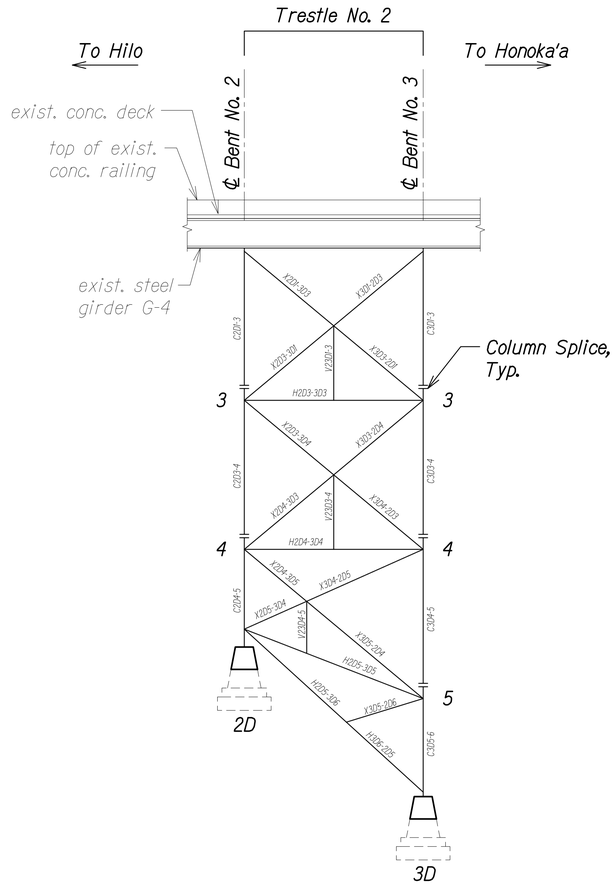
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	57	280



TRESTLE NO. 2 ELEVATION - COLUMN LINE "C"

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

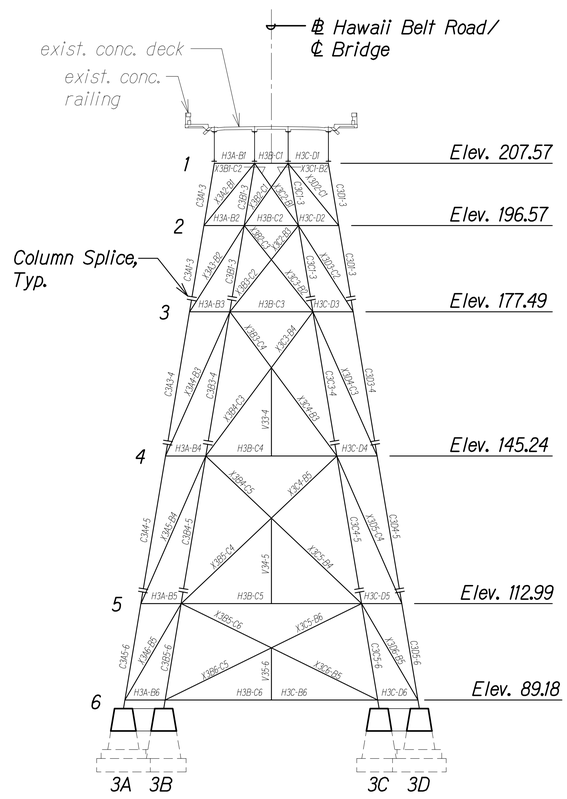
A SA4.5 | SA4.5



TRESTLE NO. 2 ELEVATION - COLUMN LINE "D"

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

B SA4.5 | SA4.5



BENT NO. 3 ELEVATION

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

C SA4.5 | SA4.5

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

BENT NO. 3/TRESTLE NO. 2 MEMBER ELEVATIONS

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

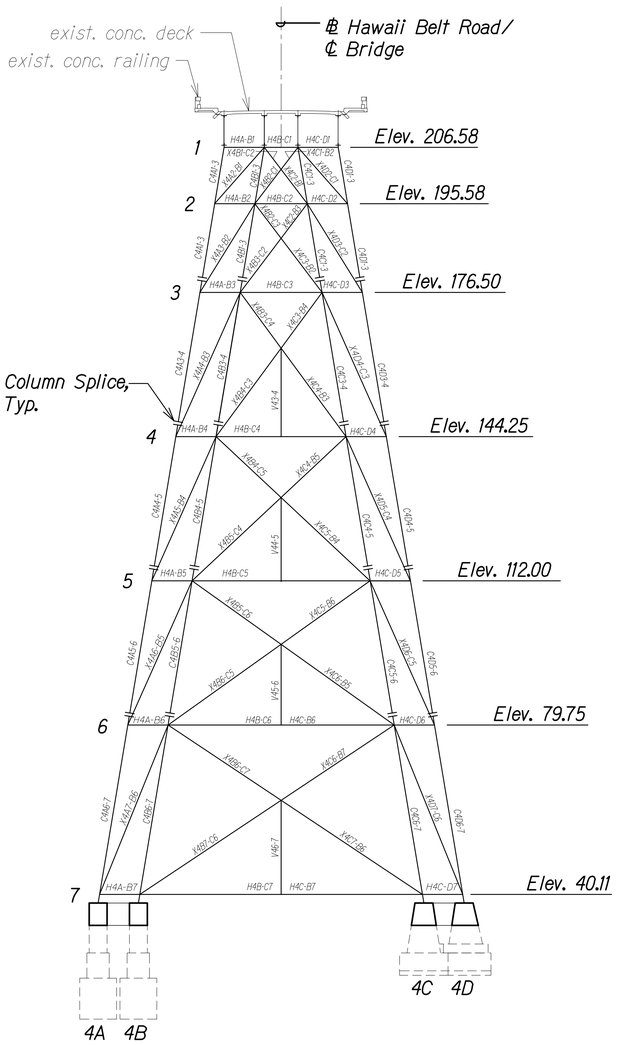
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.5 OF 20 SHEETS

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

DRAWING NAME: Z:\OD ONDONG\23-022\9-NANUE STR BR PE2-20TH\01 CAD\10-28-24 BID SET\SGR-SA0401-SA410 BENT_TRESTLES.DWG PLOT TIME: 10-28-24, 3:59 PM

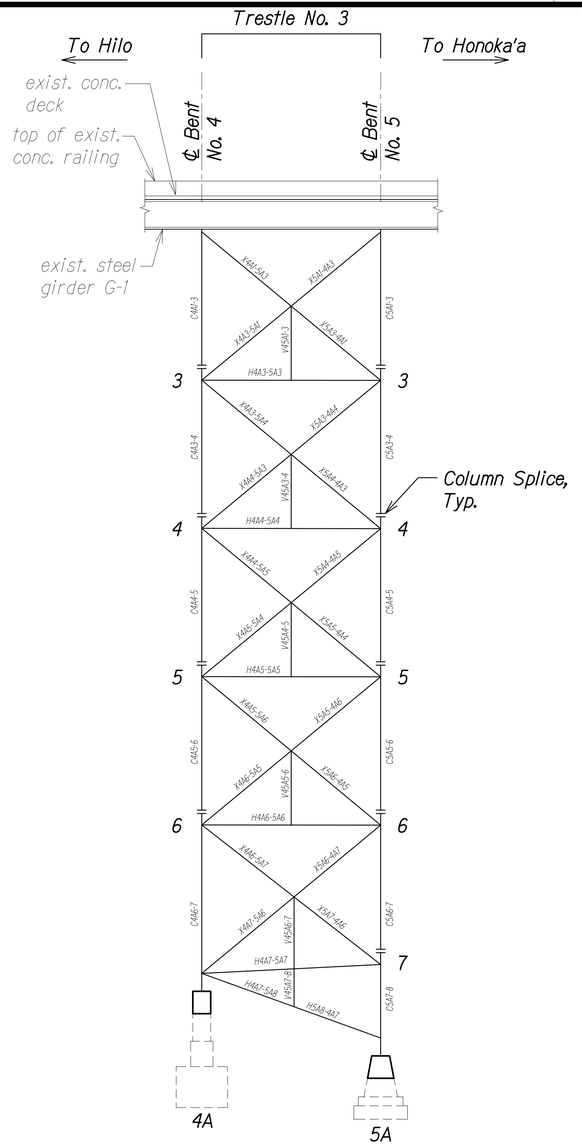
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	58	280



BENT NO. 4 ELEVATION

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

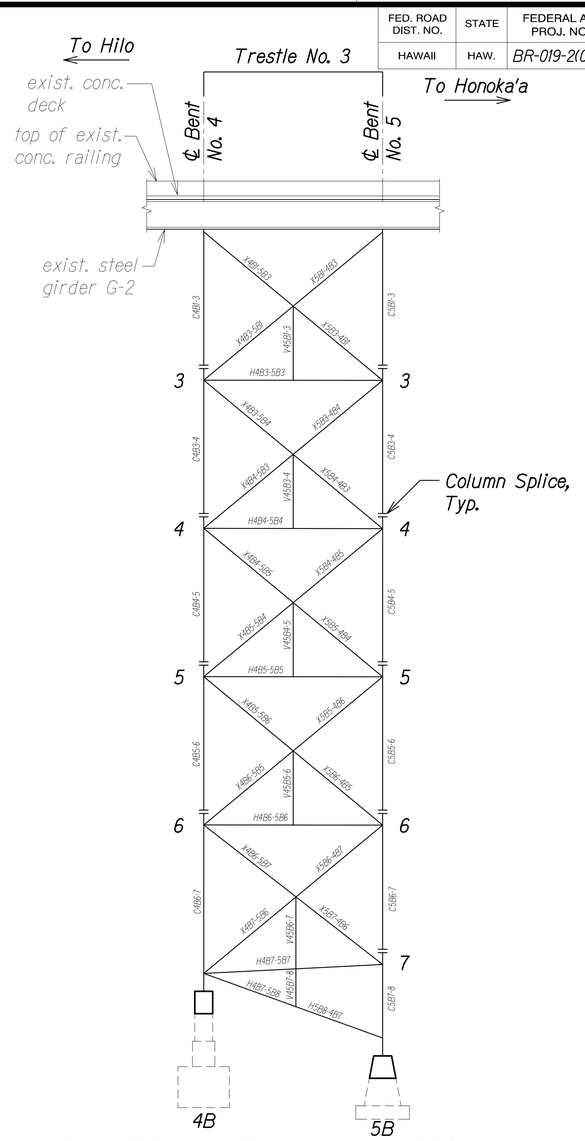
A | SA4.6 | SA4.6



TRESTLE NO. 3 ELEVATION - COLUMN LINE "A"

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

B | SA4.6 | SA4.6



TRESTLE NO. 3 ELEVATION - COLUMN LINE "B"

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

C | SA4.6 | SA4.6

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

DRAWING NAME: Z:\OD ONGINGV23-0229-NANUE STR BR PEZ-DOTH\01 CAD\10-28-24 BID SET\VSR-SA0401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-28-24, 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: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

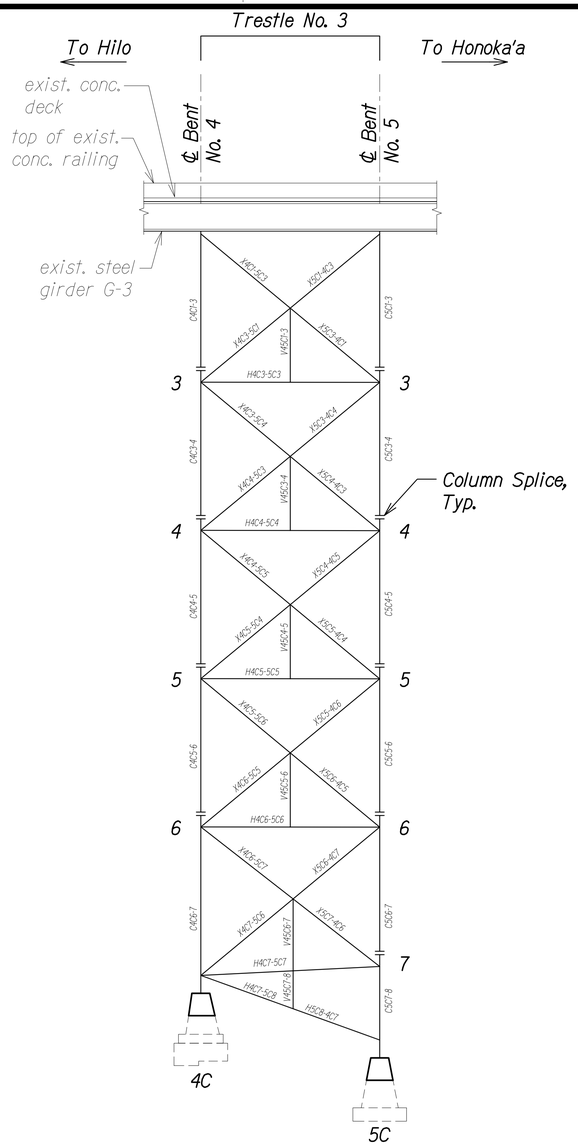
BENT NO. 4/TRESTLE NO. 3 MEMBER ELEVATIONS

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

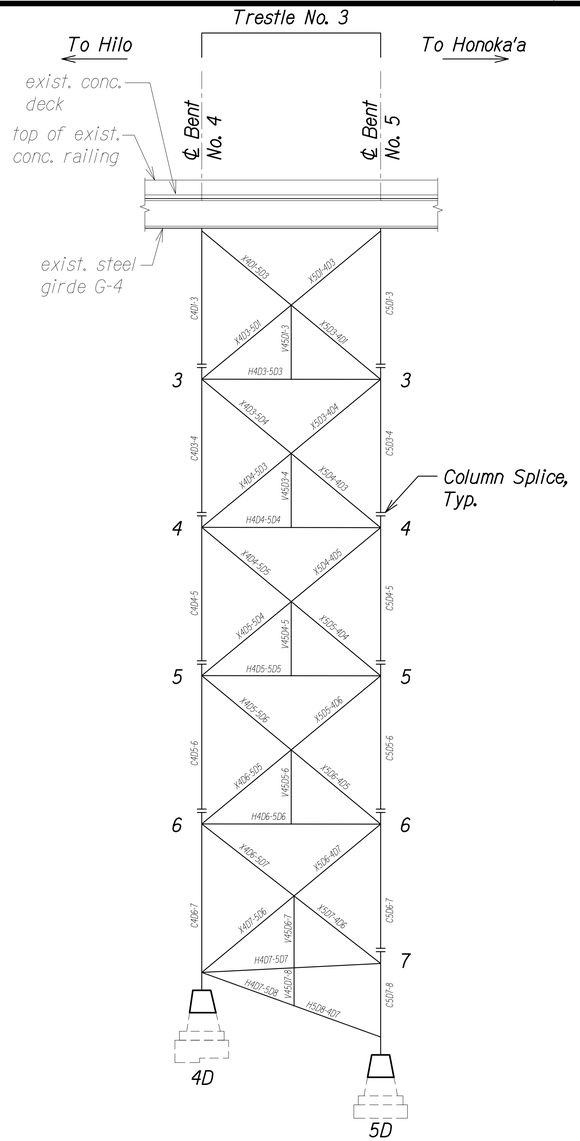
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	59	280



TRESTLE NO. 3 ELEVATION - COLUMN LINE "C"

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

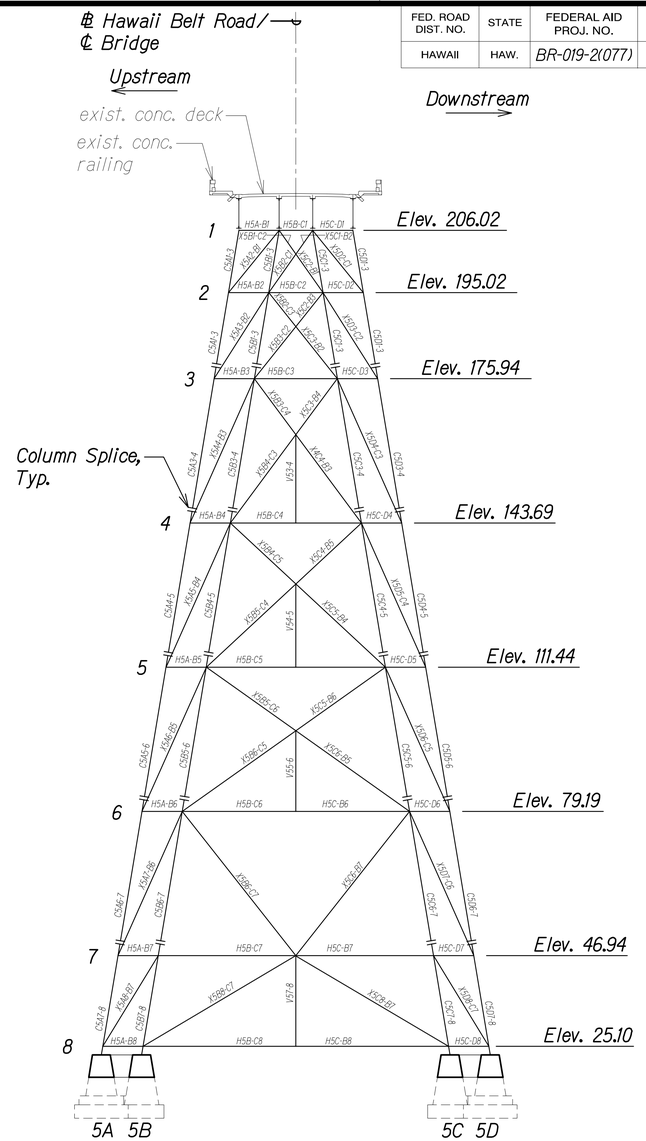
A SA4.7 | SA4.7



TRESTLE NO. 3 ELEVATION - COLUMN LINE "D"

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

B SA4.7 | SA4.7



BENT NO. 5 ELEVATION

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

C SA4.7 | SA4.7

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

BENT NO. 5/TRESTLE NO. 3 MEMBER ELEVATIONS

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

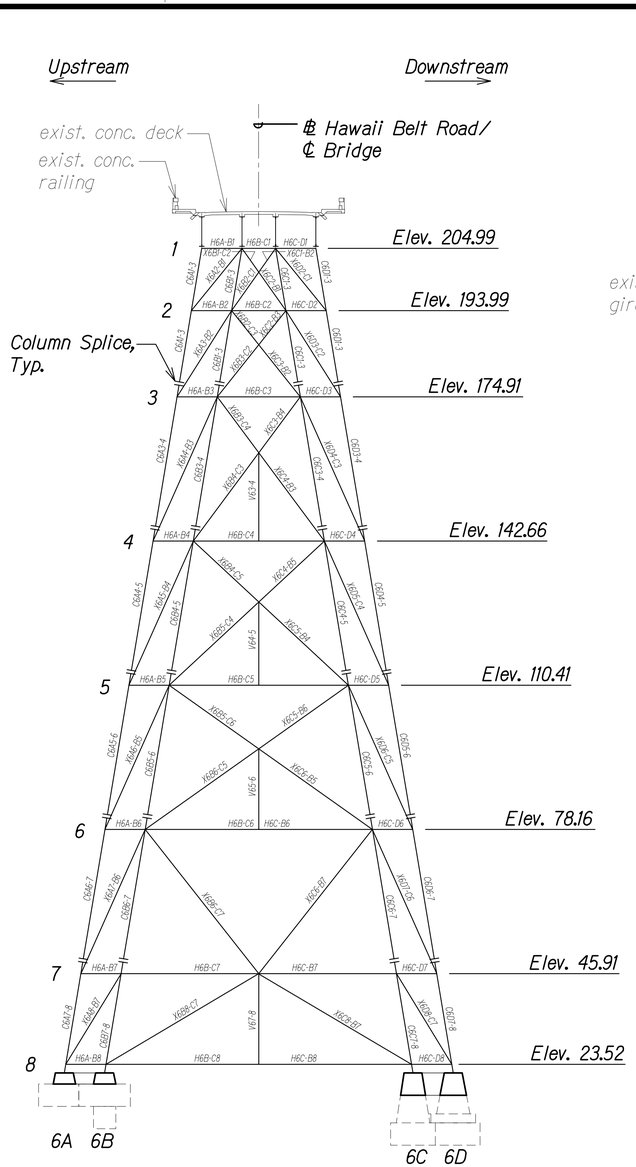
Scale: As Noted — Date: Oct. 2024

SHEET No. SA4.7 OF 20 SHEETS

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

DRAWING NAME: Z:\OD ONDONO\23-022\9-NANUE STR BR PE2-DOT\A01 CAD\10-28-24 BID SET\NSR-SA0401-SA410 BENT_TRESTLES.DWG PLOT TIME: 10-28-24, 4:00 PM

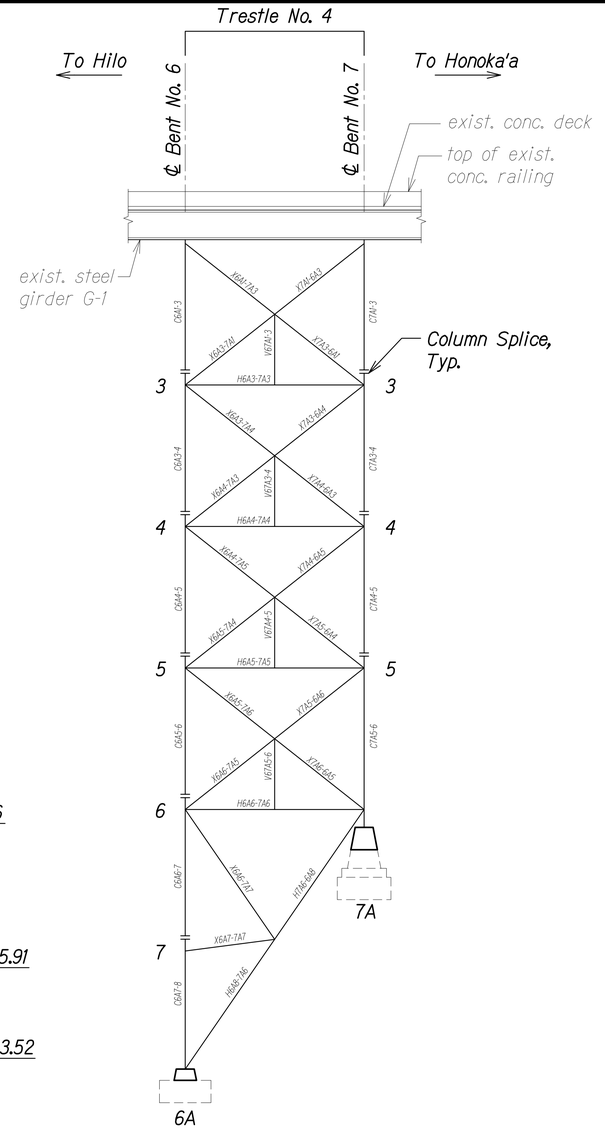
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	60	280



BENT NO. 6 ELEVATION

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

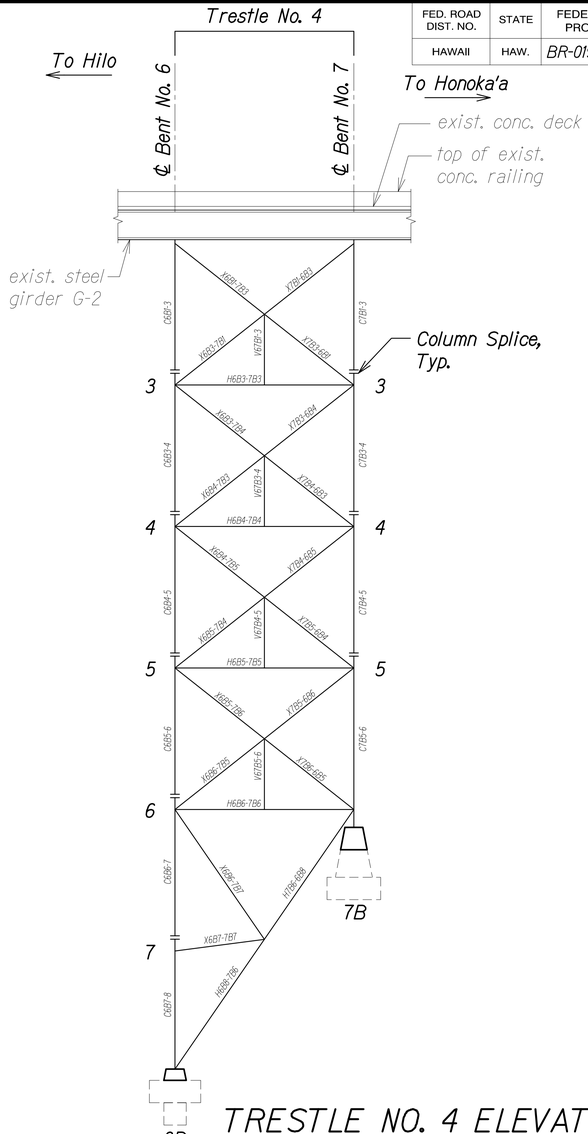
A SA4.8 | SA4.8



TRESTLE NO. 4 ELEVATION - COLUMN LINE "A"

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

B SA4.8 | SA4.8



TRESTLE NO. 4 ELEVATION - COLUMN LINE "B"

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

C SA4.8 | SA4.8

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

DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR PE2-BOTH\01 CAD\10-28-24 BID SET\NSR-SA401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-28-24 4:00 PM

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

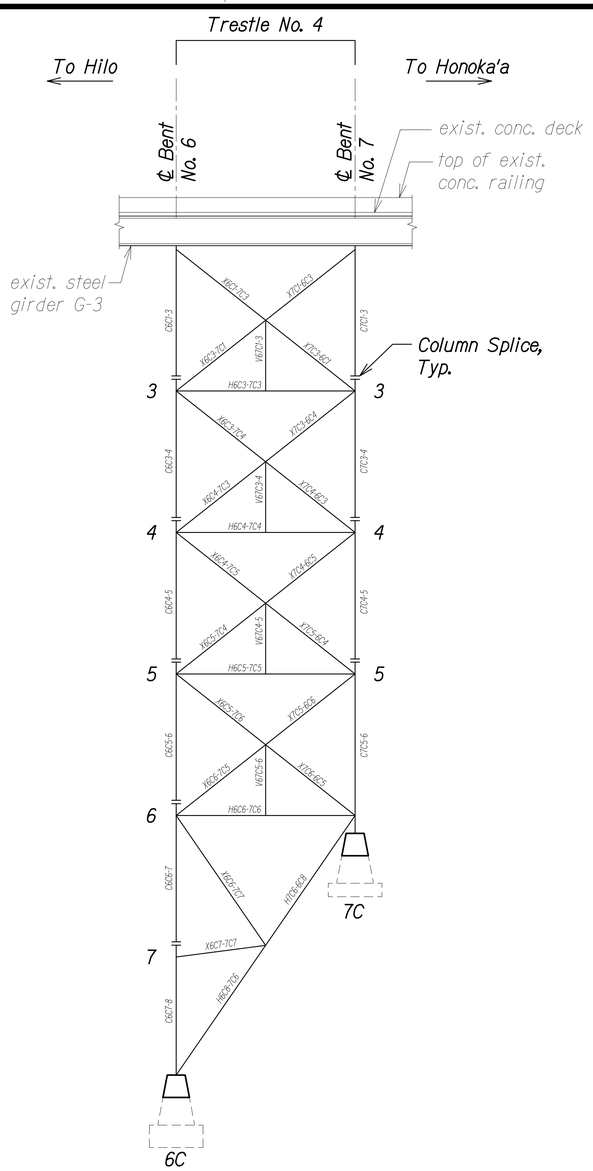
BENT NO. 6/TRESTLE NO. 4 MEMBER ELEVATIONS

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

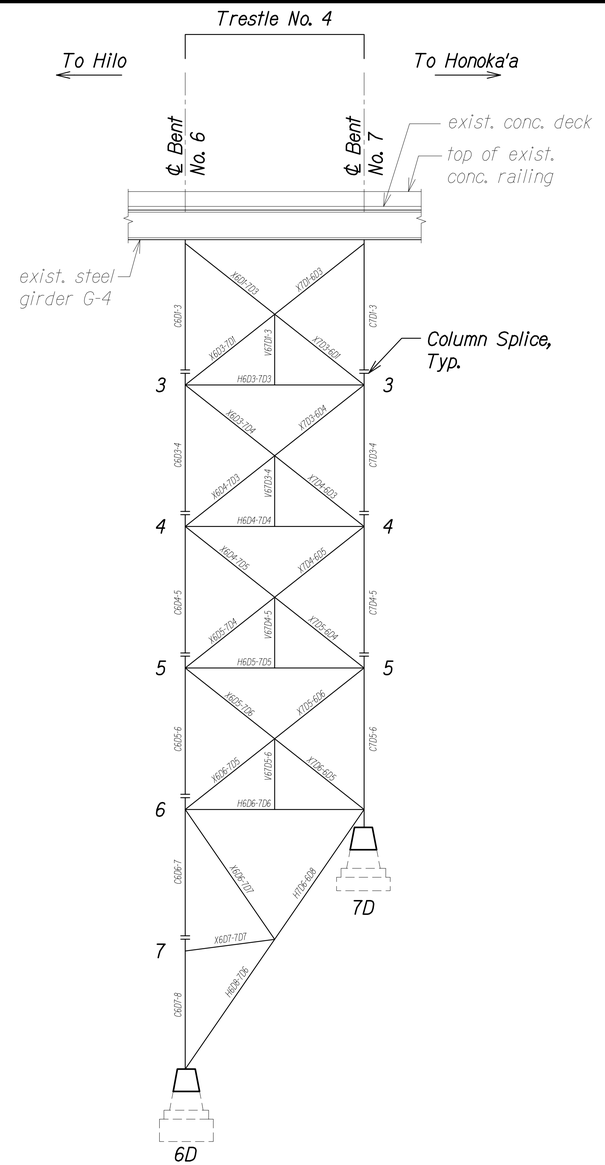
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	61	280



TRESTLE NO. 4 ELEVATION - COLUMN LINE "C"

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

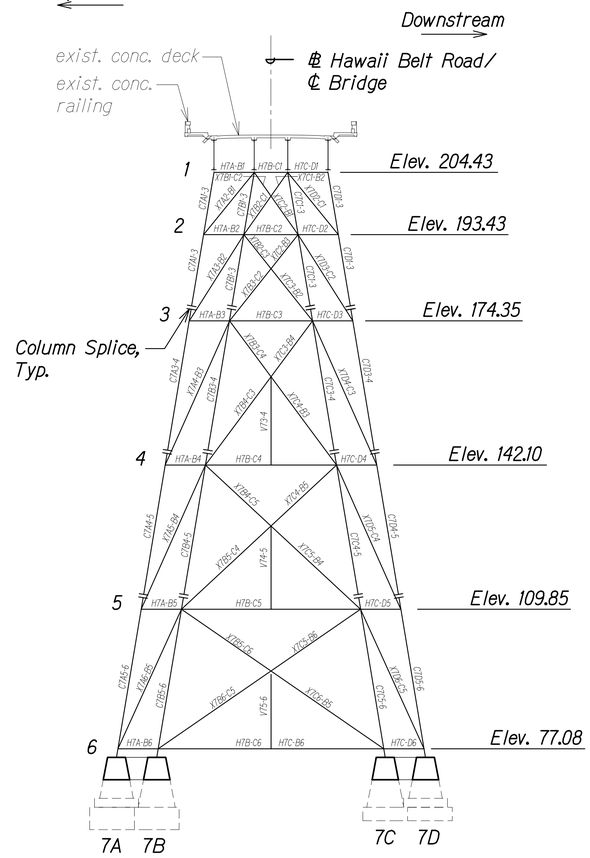
A SA4.9 | SA4.9



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

NOTE BOOK No.

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

DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR PEZ-EOTA\01 CAD\10-28-24 BID SET\NSR-SA5401-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

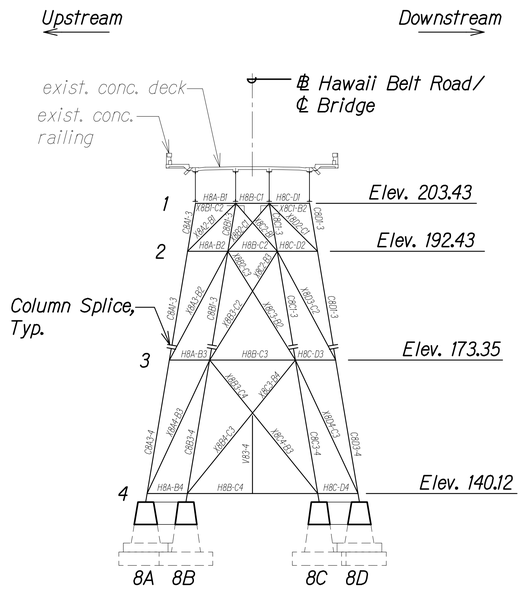
STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

SHEET No. SA4.9 OF 20 SHEETS

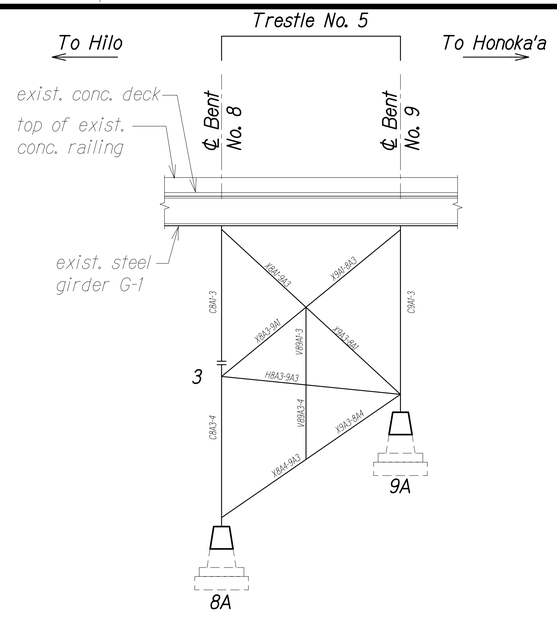
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	62	280



BENT NO. 8 ELEVATION (A)

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

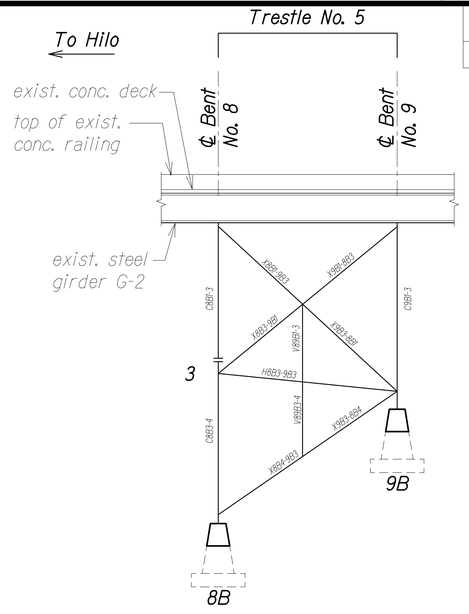
SA4.10 | SA4.10



TRESTLE NO. 5 ELEVATION - COLUMN LINE "A" (B)

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

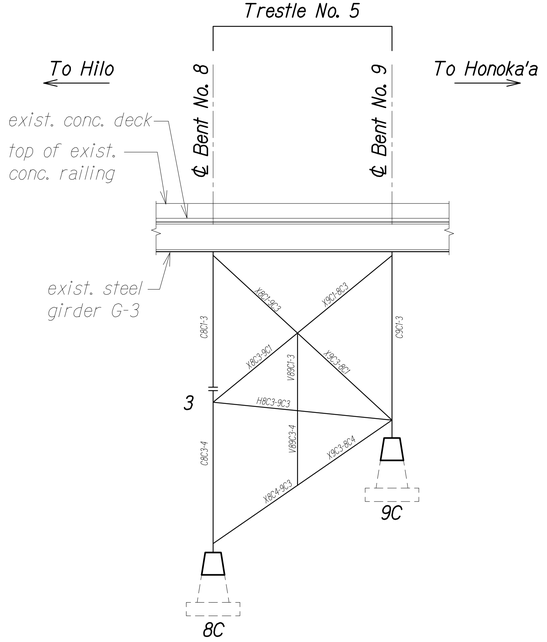
SA4.10 | SA4.10



TRESTLE NO. 5 ELEVATION - COLUMN LINE "B" (C)

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

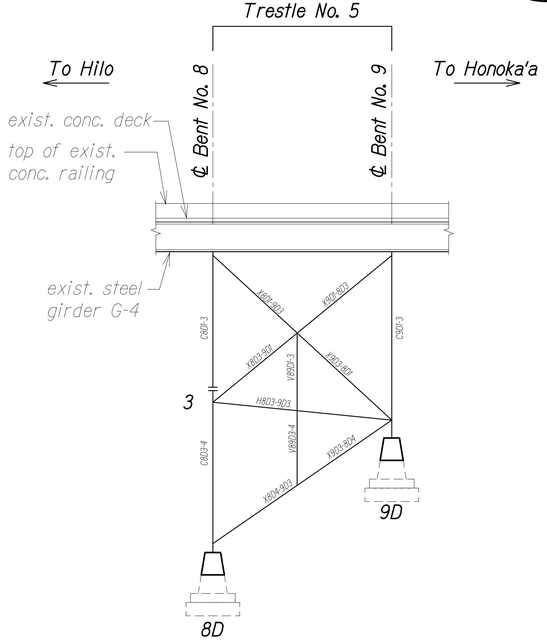
SA4.10 | SA4.10



TRESTLE NO. 5 ELEVATION - COLUMN LINE "C" (D)

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

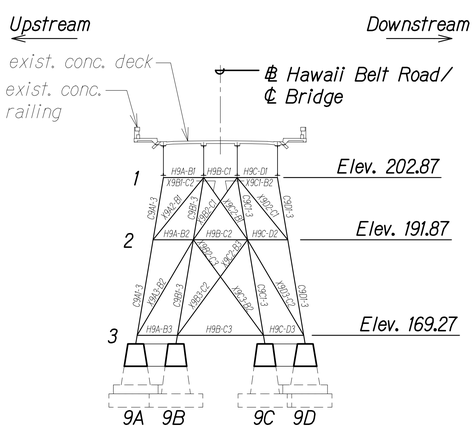
SA4.10 | SA4.10



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

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

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

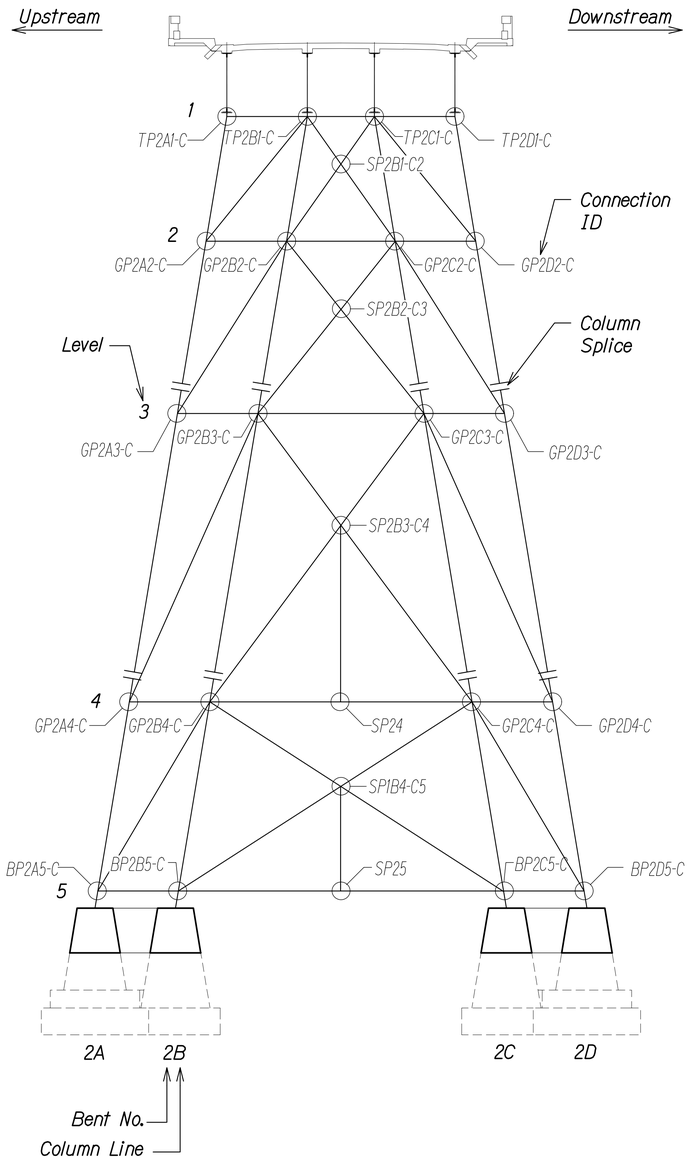
SHEET No. SA4.10 OF 20 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022-2-NANUE STR BR RPZ-BOTH.01 CAD\10-26-24 BID SET\HSR-SAD401-SA410 BENT-TRESTLES.DWG PLOT TIME: 10-26-24, 8:20 AM

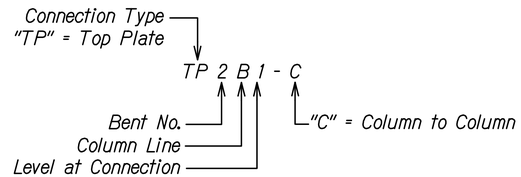
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	63	280

CONNECTION IDENTIFICATION (ID) LOCATION KEY AT BENTS

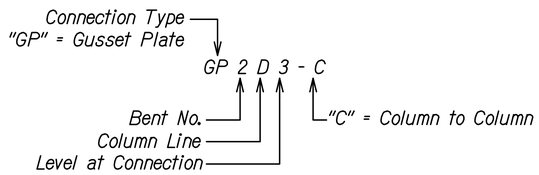


CONNECTION ID LEGEND

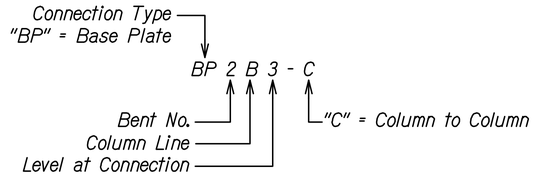
TOP PLATE CONNECTION ID - SEE SCHEDULE SA6.18 - SA6.19



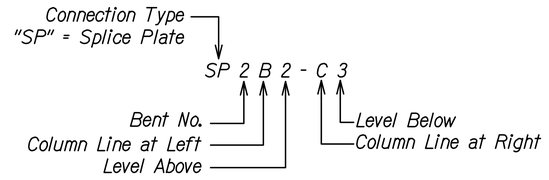
GUSSET PLATE CONNECTION ID - SEE SCHEDULE SA6.18 - SA6.19



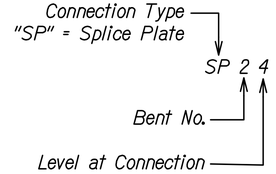
BASE PLATE CONNECTION ID - SEE SCHEDULE SA6.18 - SA6.19



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	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PE2-OOTH\01 CAD\10-28-24 BID SER\VGR-SA0411-SA0420 BENT CONN.DWG PLOT TIME: 10-28-24, 4:52 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

CONNECTION ID LOCATION KEY AND LEGEND AT BENTS

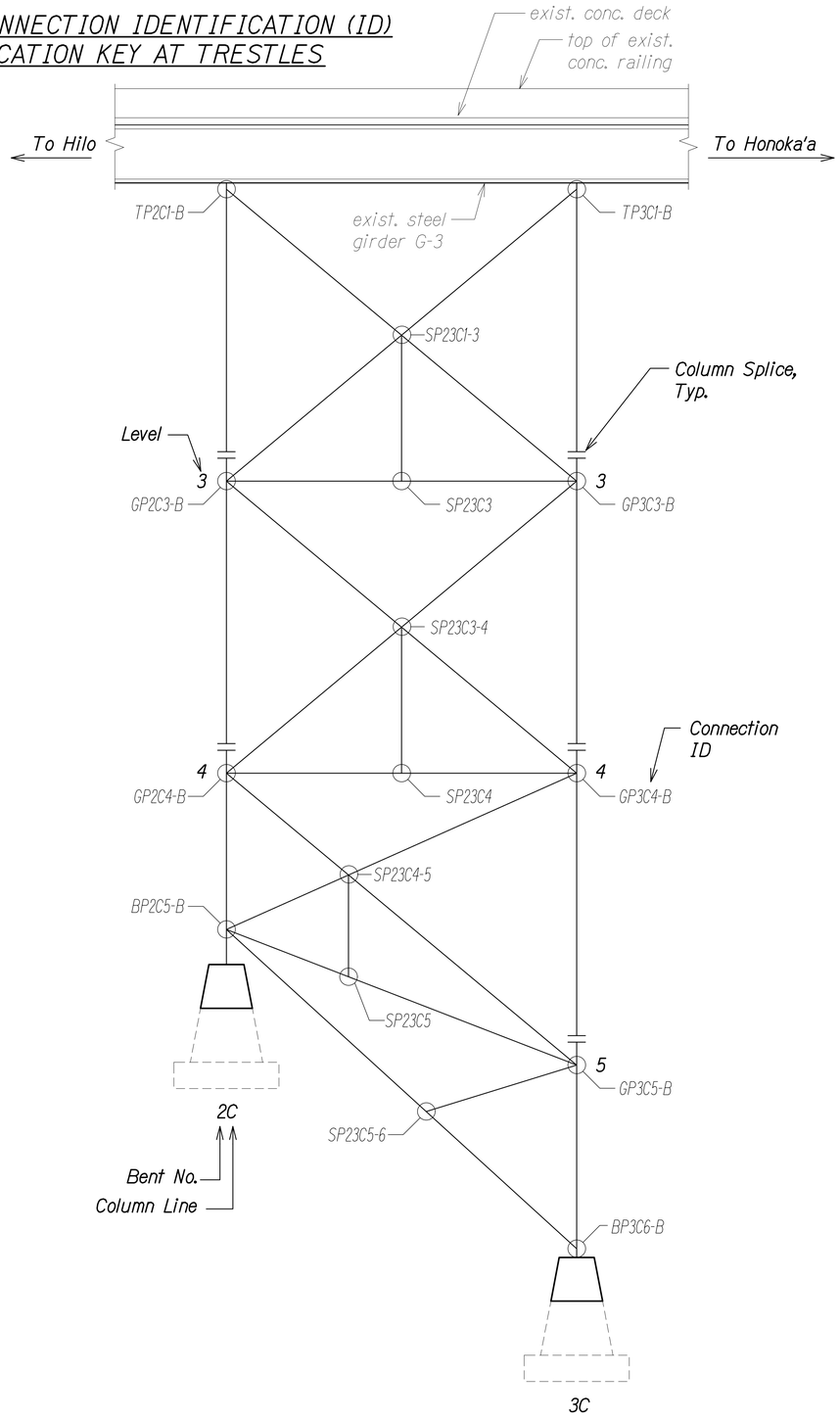
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted — Date: Oct. 2024

SHEET No. SA4.11 OF 20 SHEETS

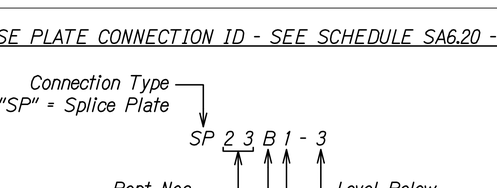
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	64	280

CONNECTION IDENTIFICATION (ID) LOCATION KEY AT TRESTLES

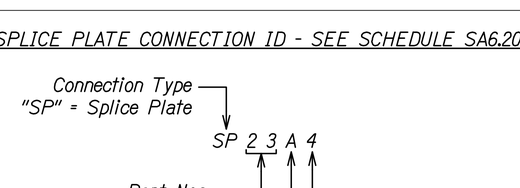


CONNECTION ID LEGEND

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONNECTION ID LOCATION KEY AND LEGEND AT TRESTLES

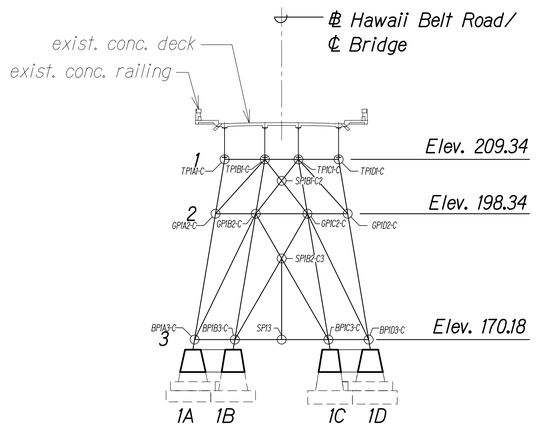
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA4.12 OF 20 SHEETS

DRAWING NAME: Z:\OD ONGOING\23-029.3-NANUE STR BR REP-BOTH\OT CAD\10-28-24 BID SET\VSR-SA0411-SA0420 BENT CONN.DWG PLOT TIME: 10-28-24, 4:53 PM)

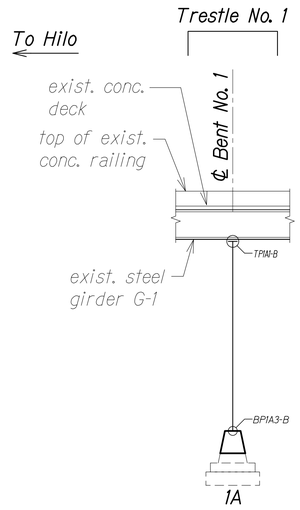
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	65	280



BENT NO. 1 ELEVATION (A)

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

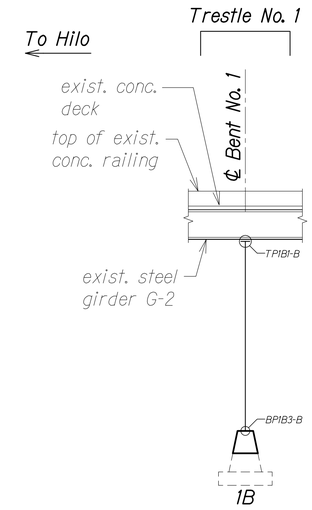
SA4.13 | SA4.13



TRESTLE NO. 1 ELEVATION - COLUMN LINE "A" (B)

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

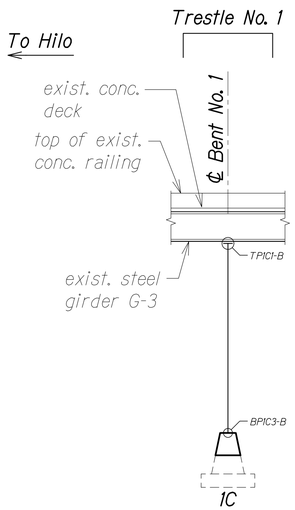
SA4.13 | SA4.13



TRESTLE NO. 1 ELEVATION - COLUMN LINE "B" (C)

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

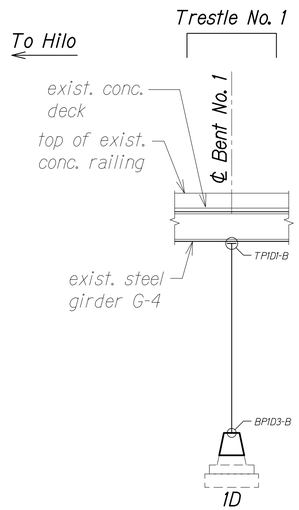
SA4.13 | SA4.13



TRESTLE NO. 1 ELEVATION - COLUMN LINE "C" (D)

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

SA4.13 | SA4.13



TRESTLE NO. 1 ELEVATION - COLUMN LINE "D" (E)

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

SA4.13 | SA4.13

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

DRAWING NAME: Z:\OD ONDOWO\23-022\9-NANUE STR BR PEZ-DOTH\01 CAD\10-28-24 BID SER\NSR-SA0411-SA0419 BENT CONN.DWG PLOT TIME: 10-28-24, 4:02 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 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

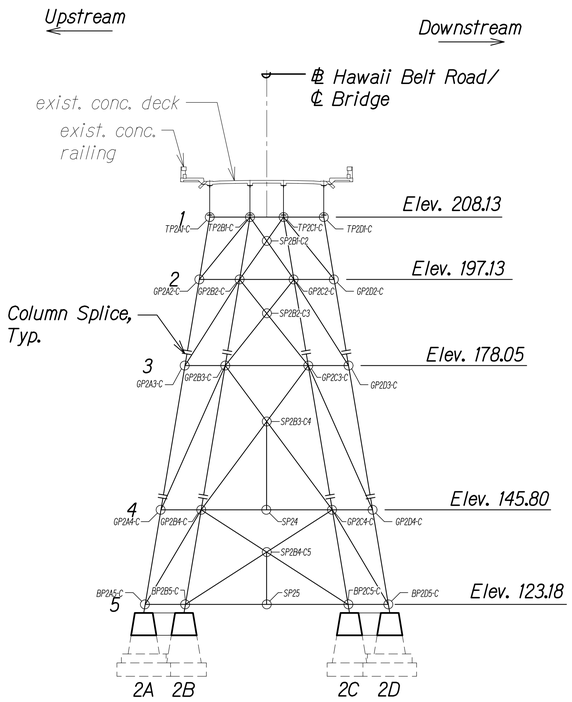
BENT NO. 1/TRESTLE NO. 1 CONNECTION ELEVATIONS

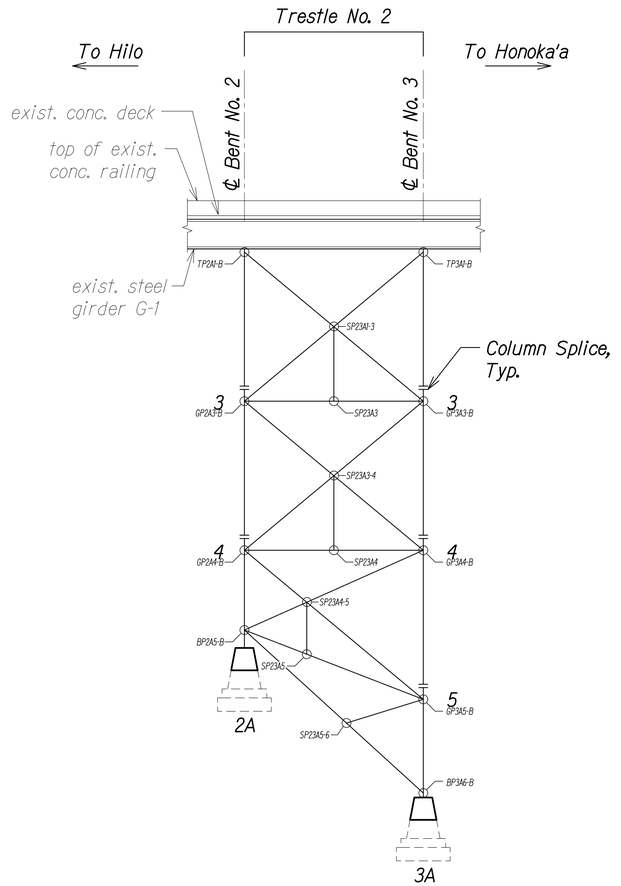
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

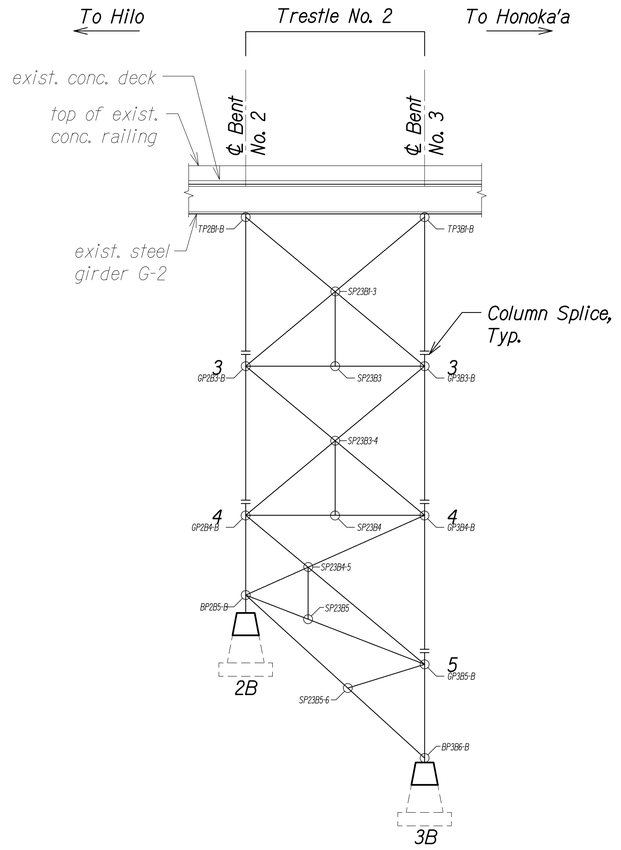
Scale: As Noted Date: Oct. 2024

SHEET No. SA4.13 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	66	280







BENT NO. 2 ELEVATION

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

A | SA4.14 | SA4.14

TRESTLE NO. 2 ELEVATION - COLUMN LINE "A"

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

B | SA4.14 | SA4.14

TRESTLE NO. 2 ELEVATION - COLUMN LINE "B"

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

C | SA4.14 | SA4.14

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

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT NO. 2/TRESTLE NO. 2 CONNECTION ELEVATIONS

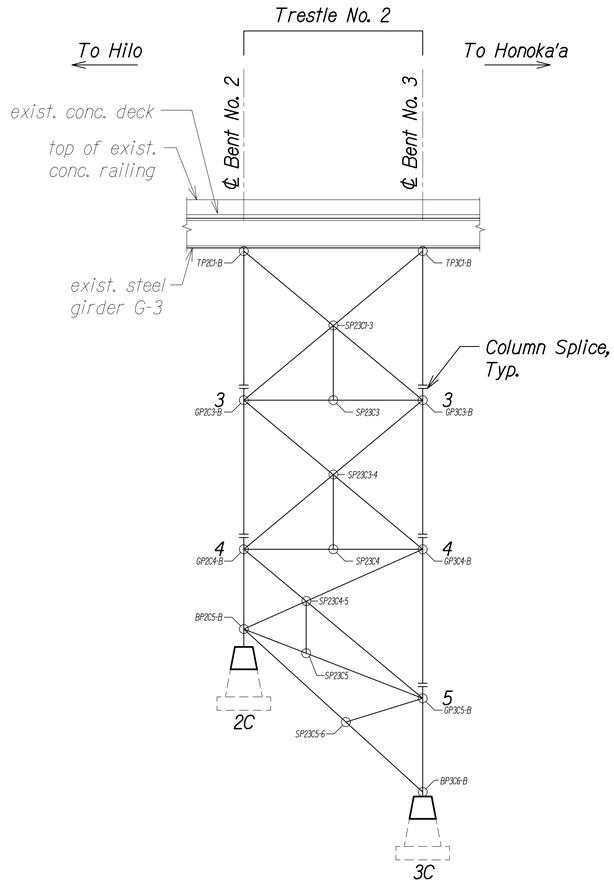
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

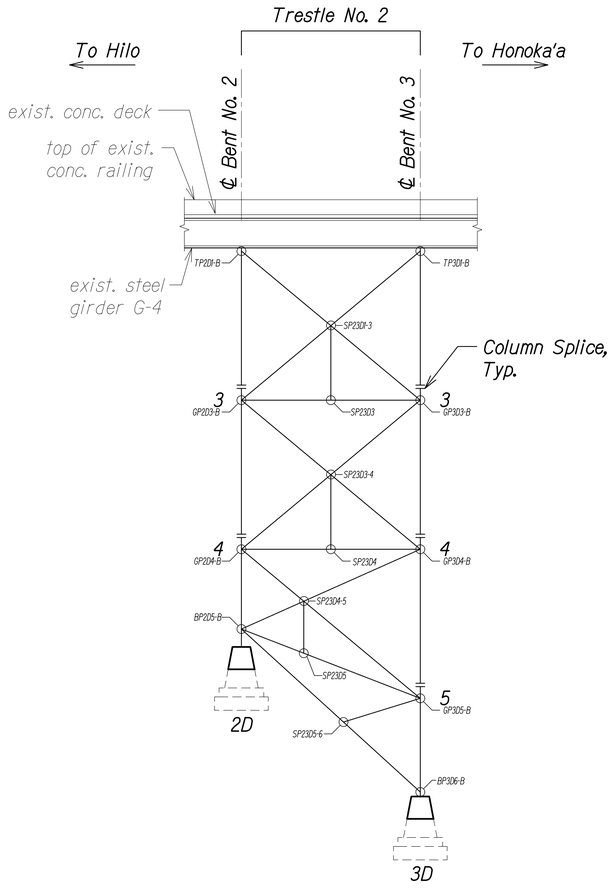
Scale: As Noted Date: Oct. 2024

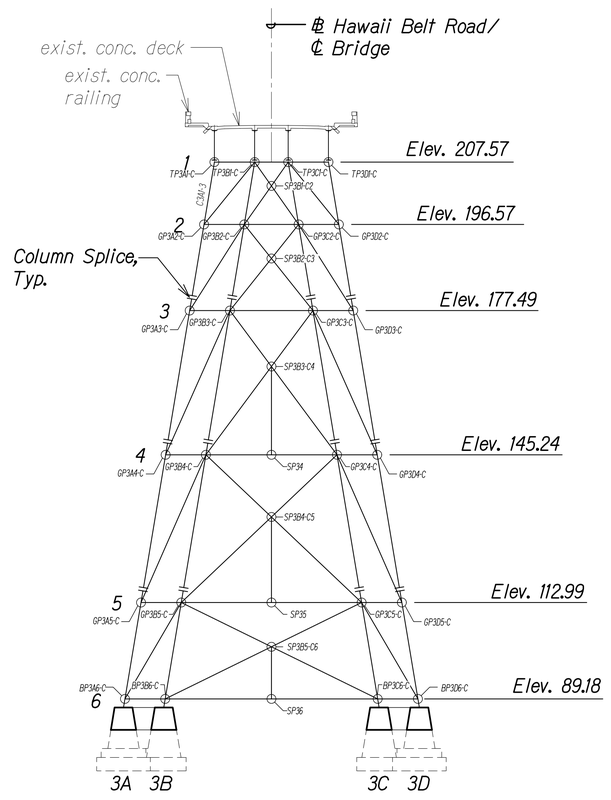
SHEET No. SA4.14 OF 20 SHEETS

BRAWING NAME: Z:\OD ONGOING\23-0223-NANUE STR BR PEZ-EOTA\01 CAD\10-28-24 BID SET\NSB-SA0411-SA0419 BENT CONN.DWG PLOT TIME: 10-26-24, 4:08 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"

A SA4.15 | SA4.15

TRESTLE NO. 2 ELEVATION - COLUMN LINE "D"

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

B SA4.15 | SA4.15

BENT NO. 3 ELEVATION

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

C SA4.15 | SA4.15

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

DRAWING NAME: ZA:\00 ENGINEERING\23-022\3-NANUE STR BR PE2-00THA\01 CADD\10-28-24 BID SET\NSR-SA04115A0419 BENT CONN.DWG PLOT TIME: 10-26-24, 4:03 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 6-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

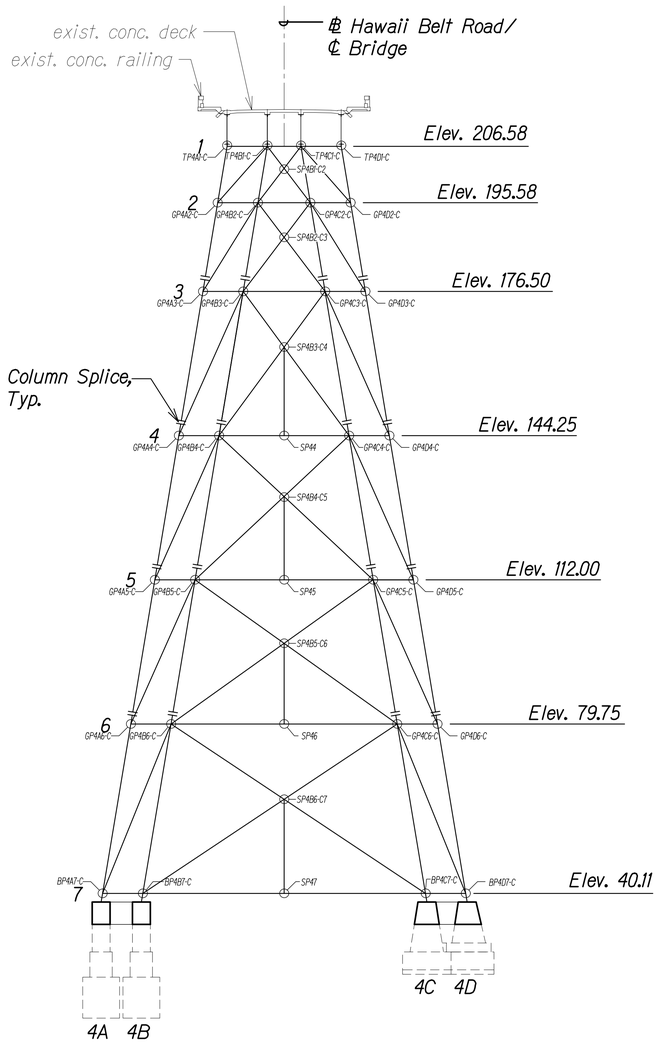
BENT NO. 3/TRESTLE NO. 2 CONNECTION ELEVATIONS

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

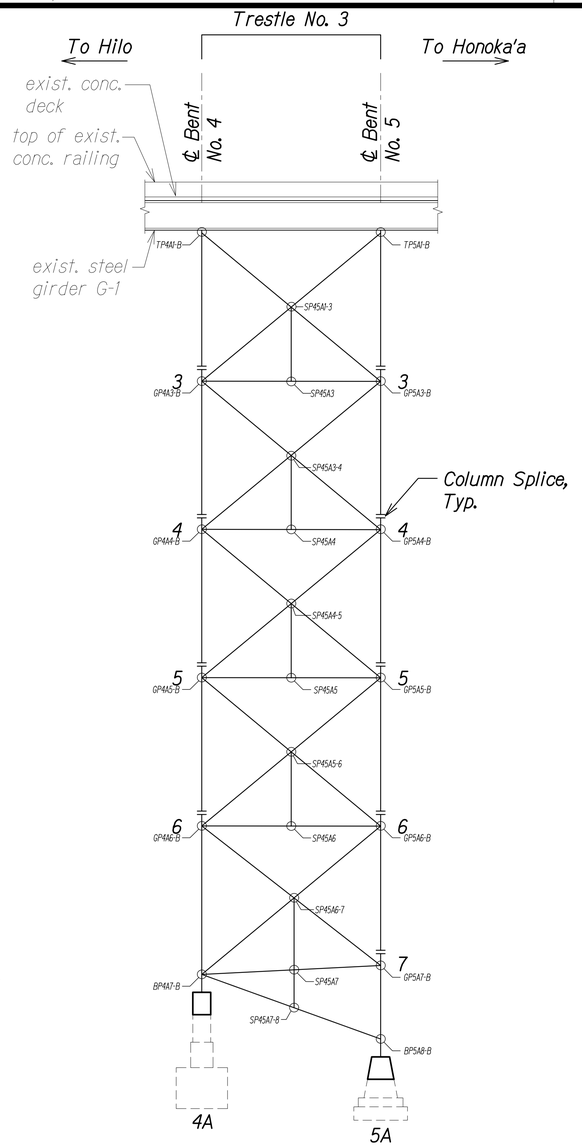
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	68	280



BENT NO. 4 ELEVATION

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

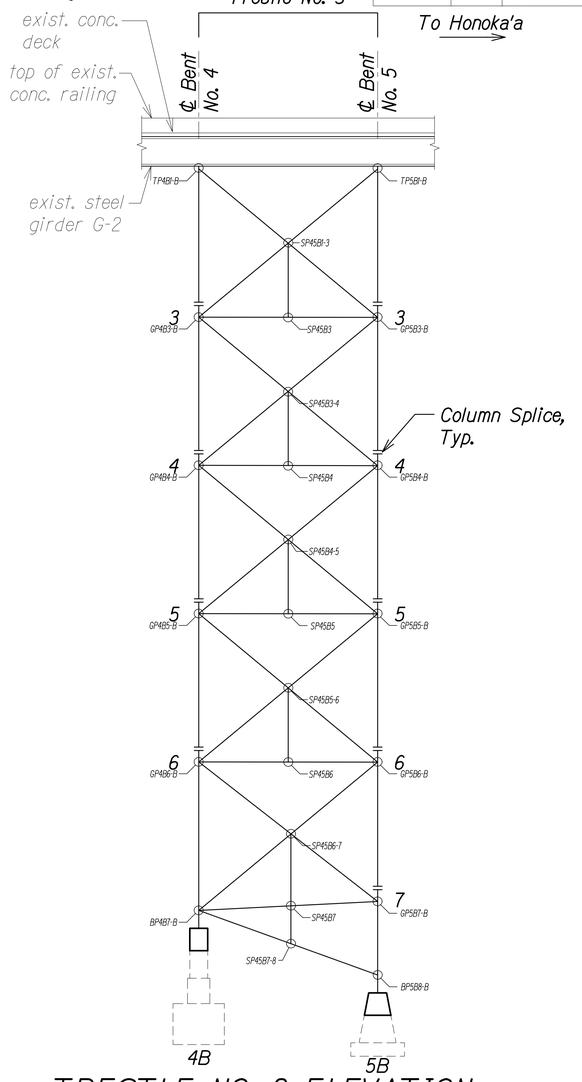
A | SA4.16 | SA4.16



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

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

BENT NO. 4/TRESTLE NO. 3 CONNECTION ELEVATIONS

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

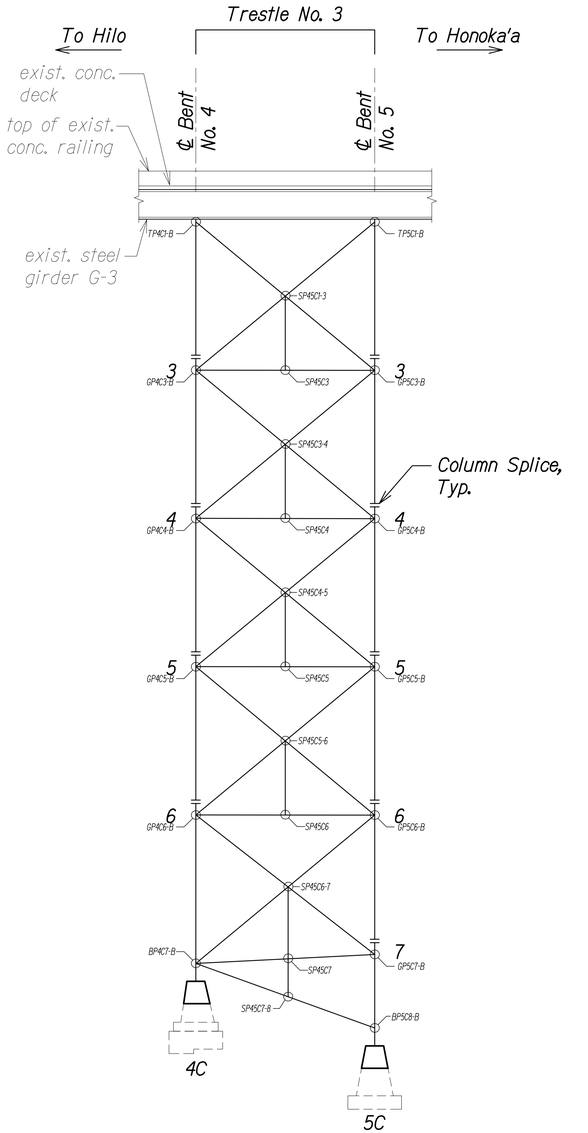
Scale: As Noted — Date: Oct. 2024

SHEET No. SA4.16 OF 20 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR REP-BOTH\OT CAD\10-28-24 BID SET\VSR-SA0411-SA0420 BENT CONN.DWG PLOT TIME: 10-28-24, 4:56 PM)

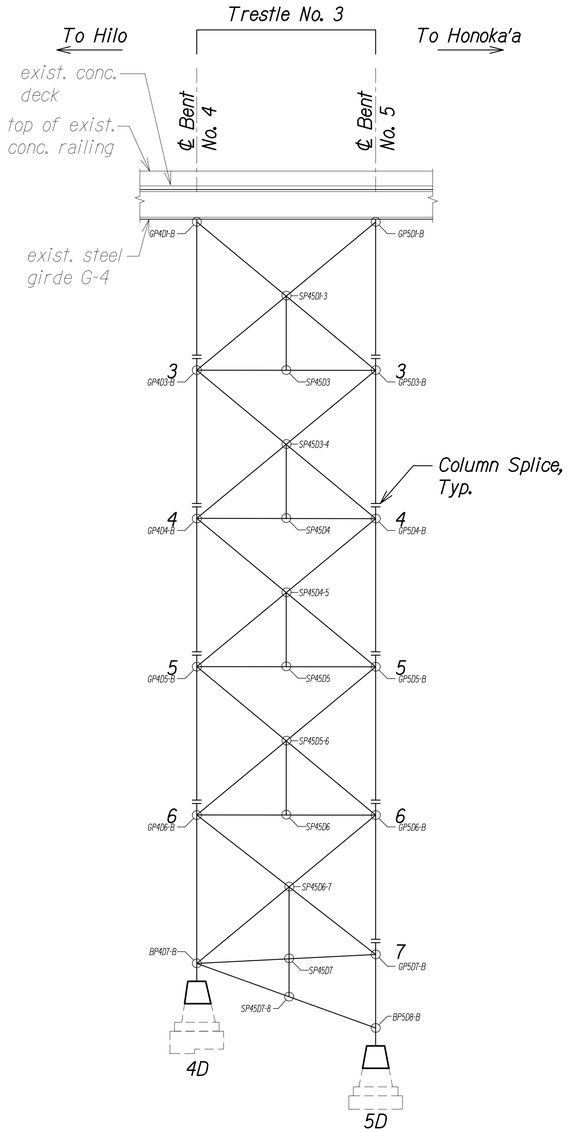
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	69	280



TRESTLE NO. 3 ELEVATION - COLUMN LINE "C"

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

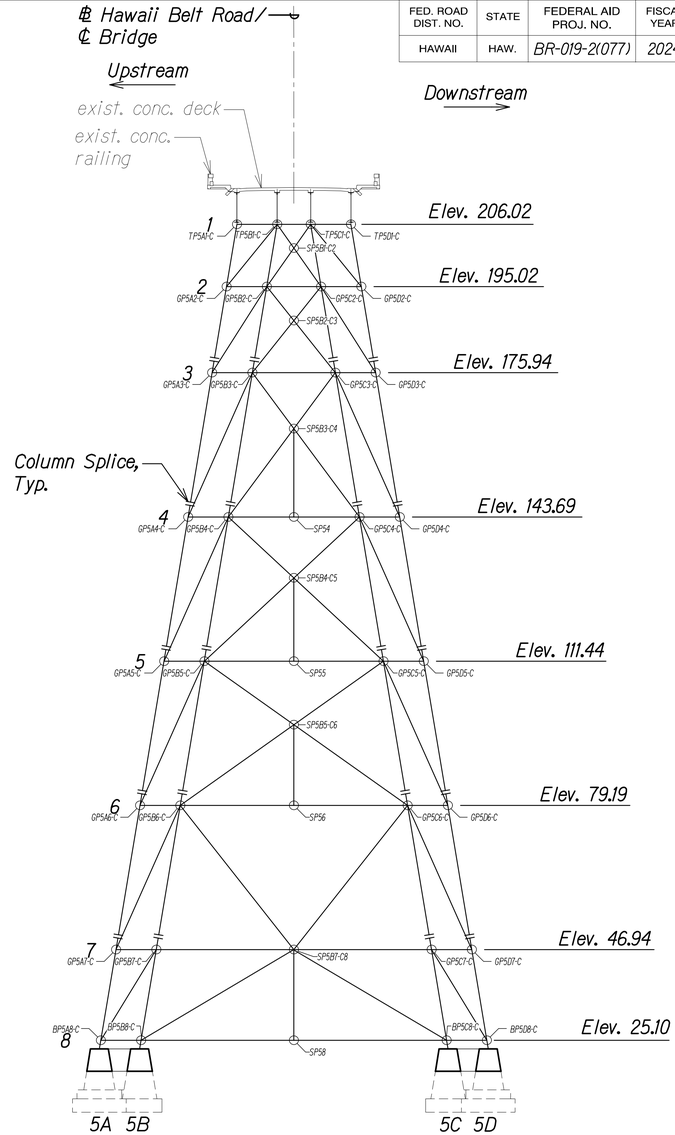
A SA4.17 | SA4.17



TRESTLE NO. 3 ELEVATION - COLUMN LINE "D"

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

B SA4.17 | SA4.17



BENT NO. 5 ELEVATION

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

C SA4.17 | SA4.17

ORIGINAL PLAN
NOTE BOOK
No.

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

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT NO. 5/TRESTLE NO. 3 CONNECTION ELEVATIONS

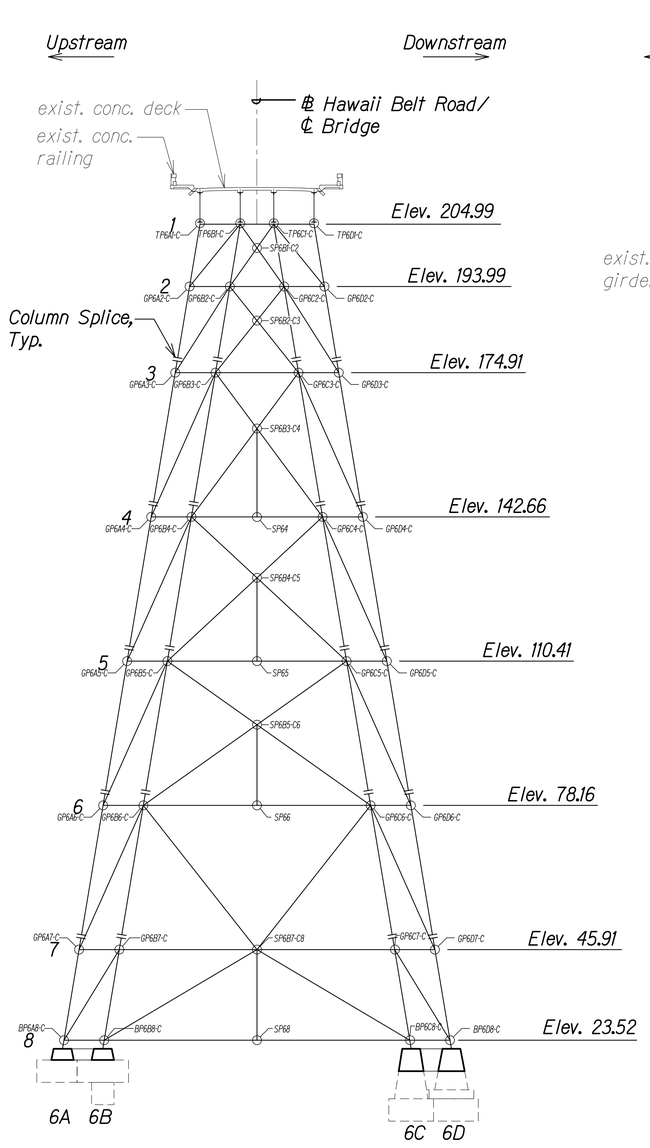
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA4.17 OF 20 SHEETS

DRAWING NAME: Z:\AOI ONGOING\23-022.9-HANUE STR BR PE2-DOT\AOT CAD\10-28-24 BID SET\SR-SA0411-SA0420 BENT CONN.DWG PLOT TIME: 10-28-24, 4:55 PM)

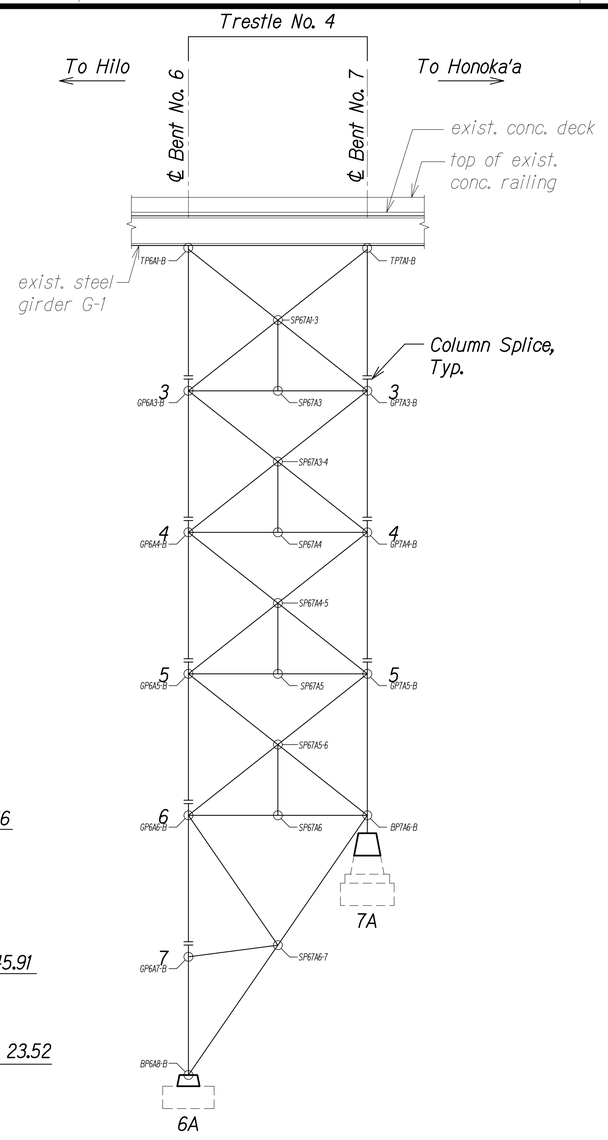
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	70	280



BENT NO. 6 ELEVATION

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

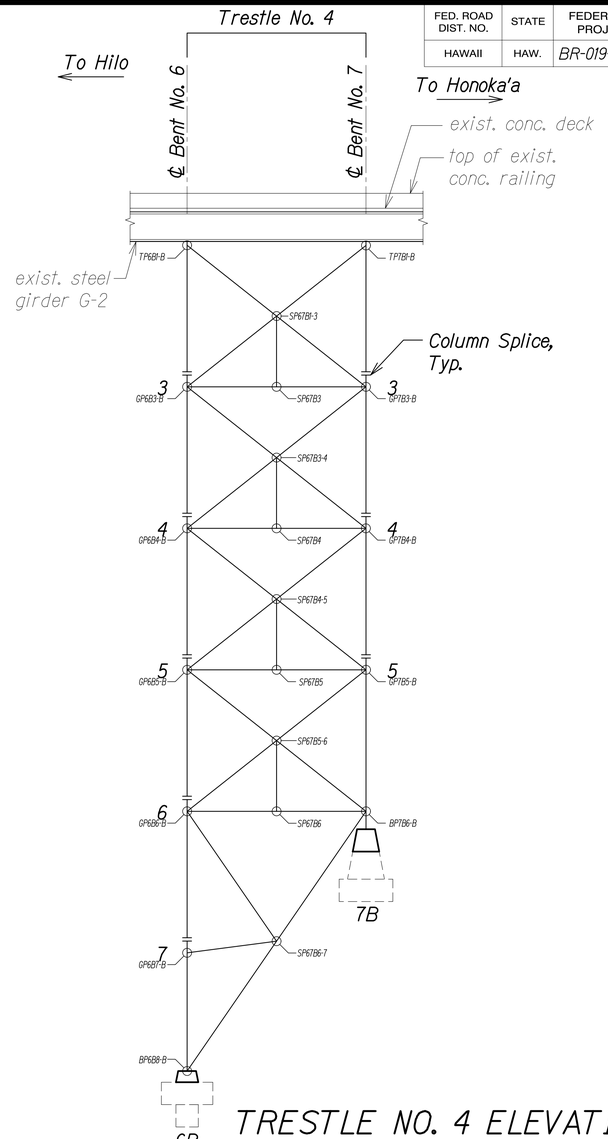
A SA4.18 | SA4.18



TRESTLE NO. 4 ELEVATION - COLUMN LINE "A"

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

B SA4.18 | SA4.18



TRESTLE NO. 4 ELEVATION - COLUMN LINE "B"

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

C SA4.18 | SA4.18

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

DRAWING NAME: Z:\OD ONDNV\23-022\9-NANUE STR BR PE2-ADTH\01 CAD\10-28-24 BID SET\NSR_SA0411_SA0419 BENT CONN.DWG PLOT TIME: 10-28-24, 4:04 PM

LICENSED PROFESSIONAL ENGINEER
STEPHEN T. PETERS
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

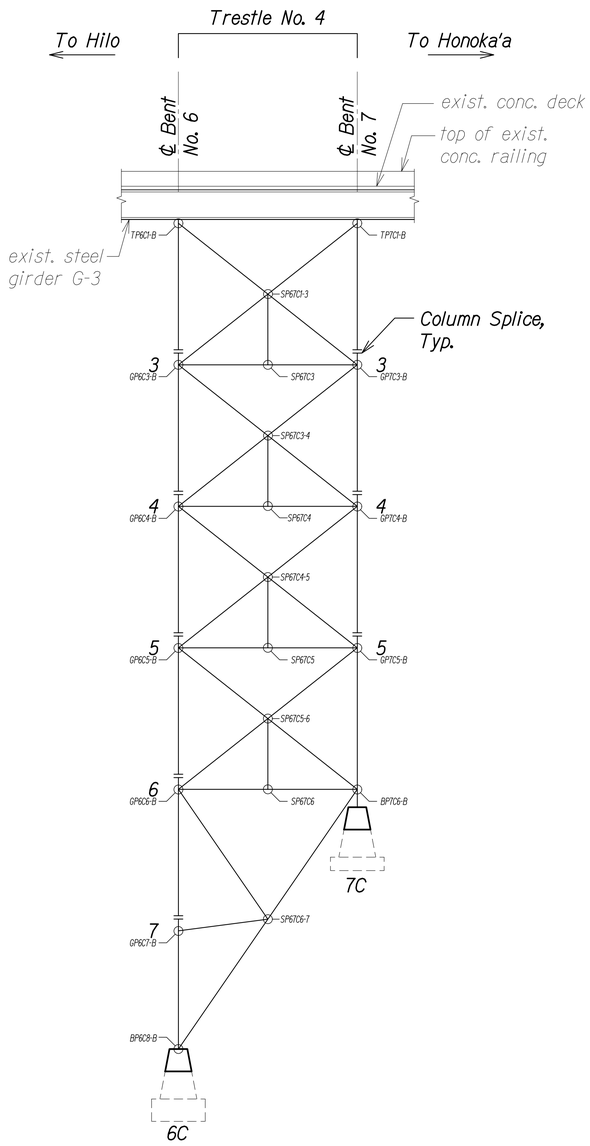
BENT NO. 6/TRESTLE NO. 4 CONNECTION ELEVATIONS

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

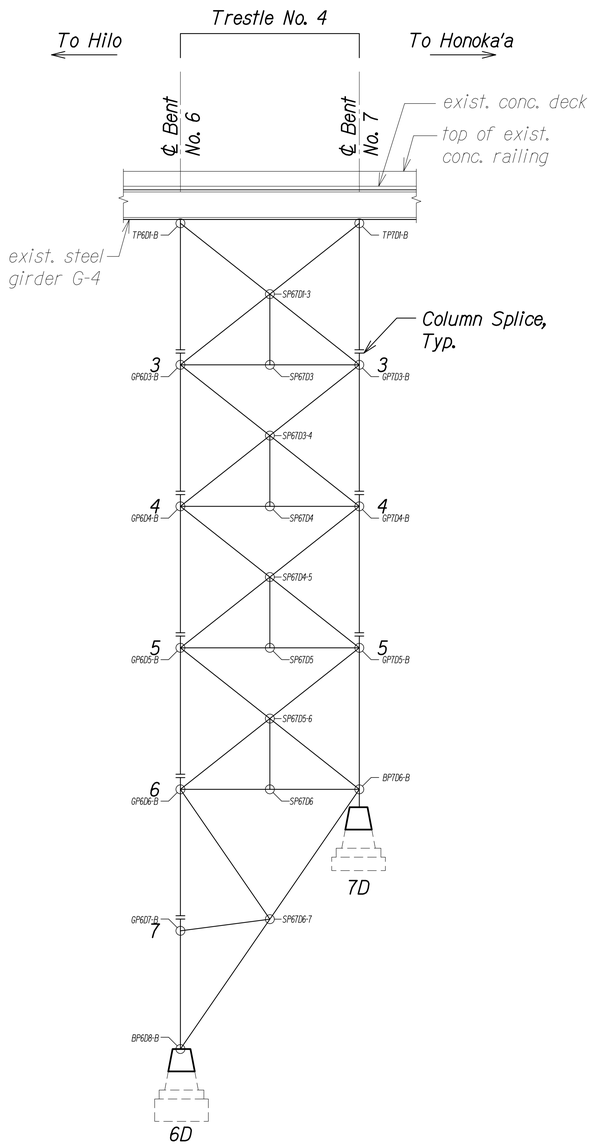
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	71	280



TRESTLE NO. 4 ELEVATION - COLUMN LINE "C"

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

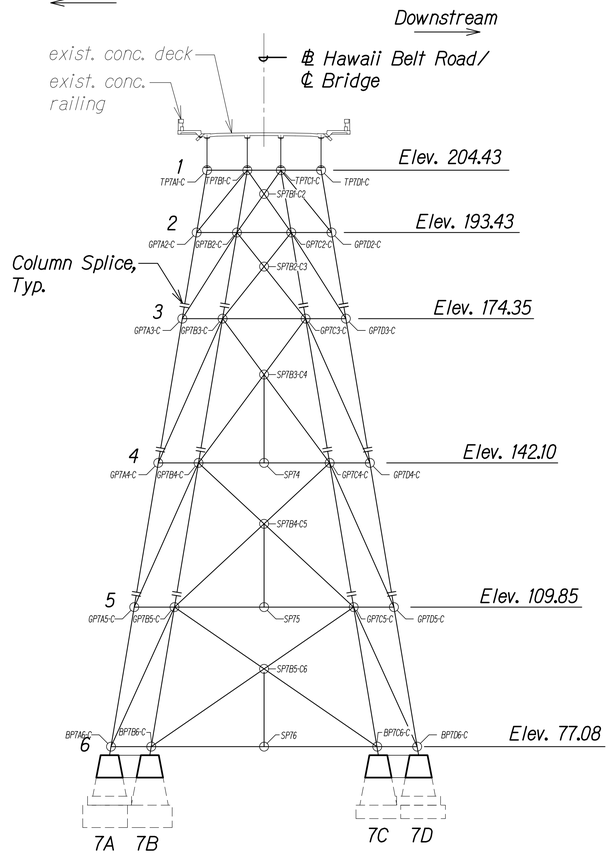
A SA4.19 | SA4.19



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
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONO\NOV\23-022\9-NANUE STR BR PE2-DOT\A01 CADV\10-28-24 BID SER\NSR-SA0411-SA0419 BENT CONN.DWG PLOT TIME: 10-26-24, 4:05 PM

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

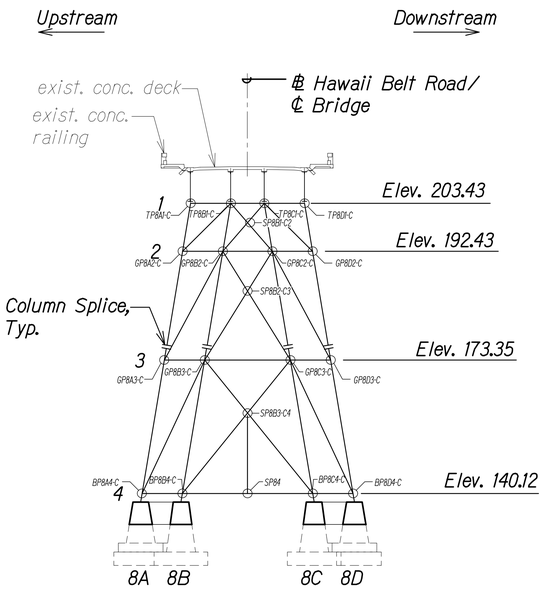
BENT NO. 7/TRESTLE NO. 4 CONNECTION ELEVATIONS

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

Scale: As Noted — Date: Oct. 2024

SHEET No. SA4.19 OF 20 SHEETS

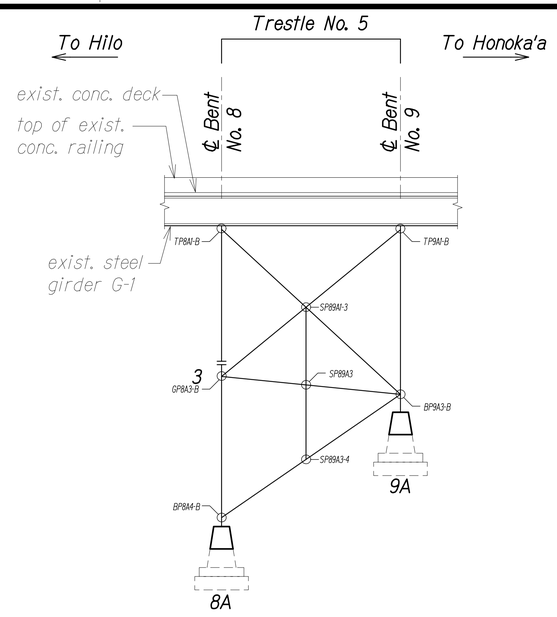
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	72	280



BENT NO. 8 ELEVATION (A)

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

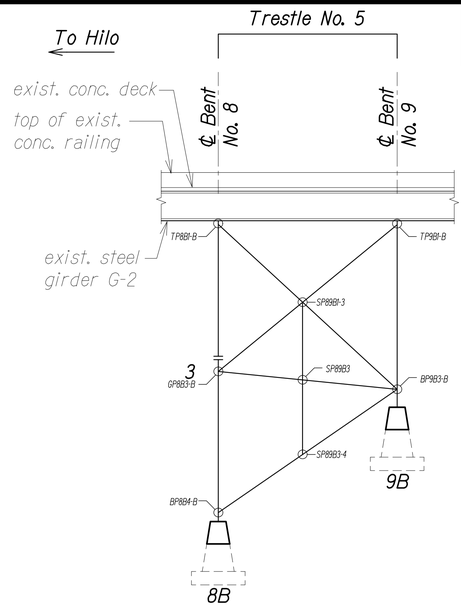
SA4.20 | SA4.20



TRESTLE NO. 5 ELEVATION - COLUMN LINE "A" (B)

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

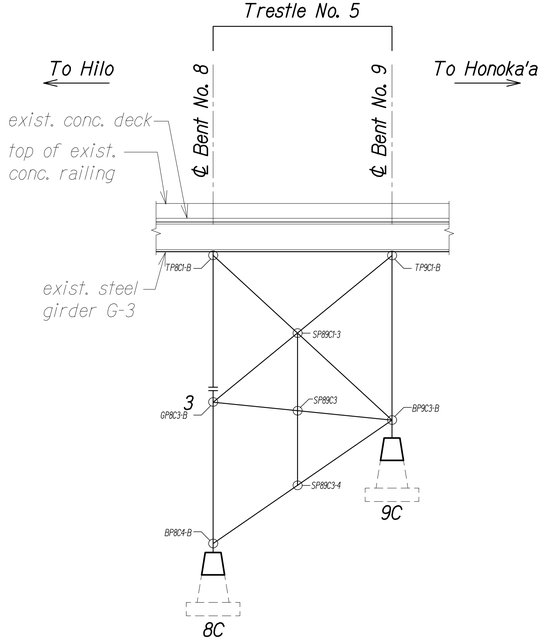
SA4.20 | SA4.20



TRESTLE NO. 5 ELEVATION - COLUMN LINE "B" (C)

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

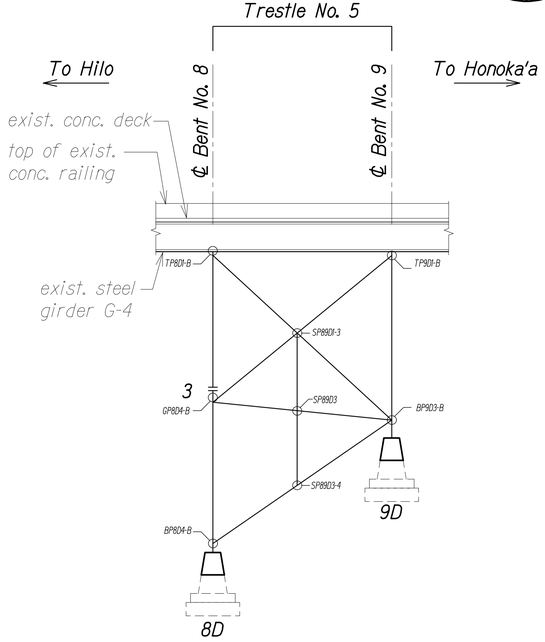
SA4.20 | SA4.20



TRESTLE NO. 5 ELEVATION - COLUMN LINE "C" (D)

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

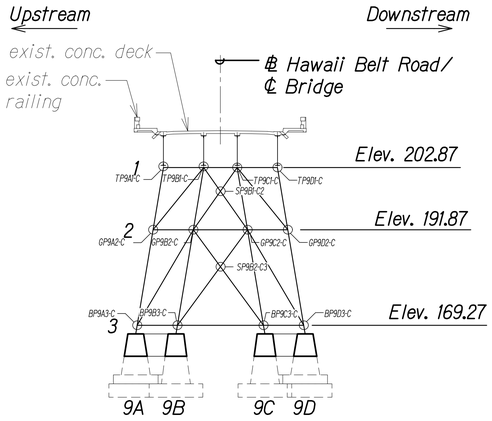
SA4.20 | SA4.20



TRESTLE NO. 5 ELEVATION - COLUMN LINE "D" (E)

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

SA4.20 | SA4.20



BENT NO. 9 ELEVATION (F)

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

SA4.20 | SA4.20

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

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

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

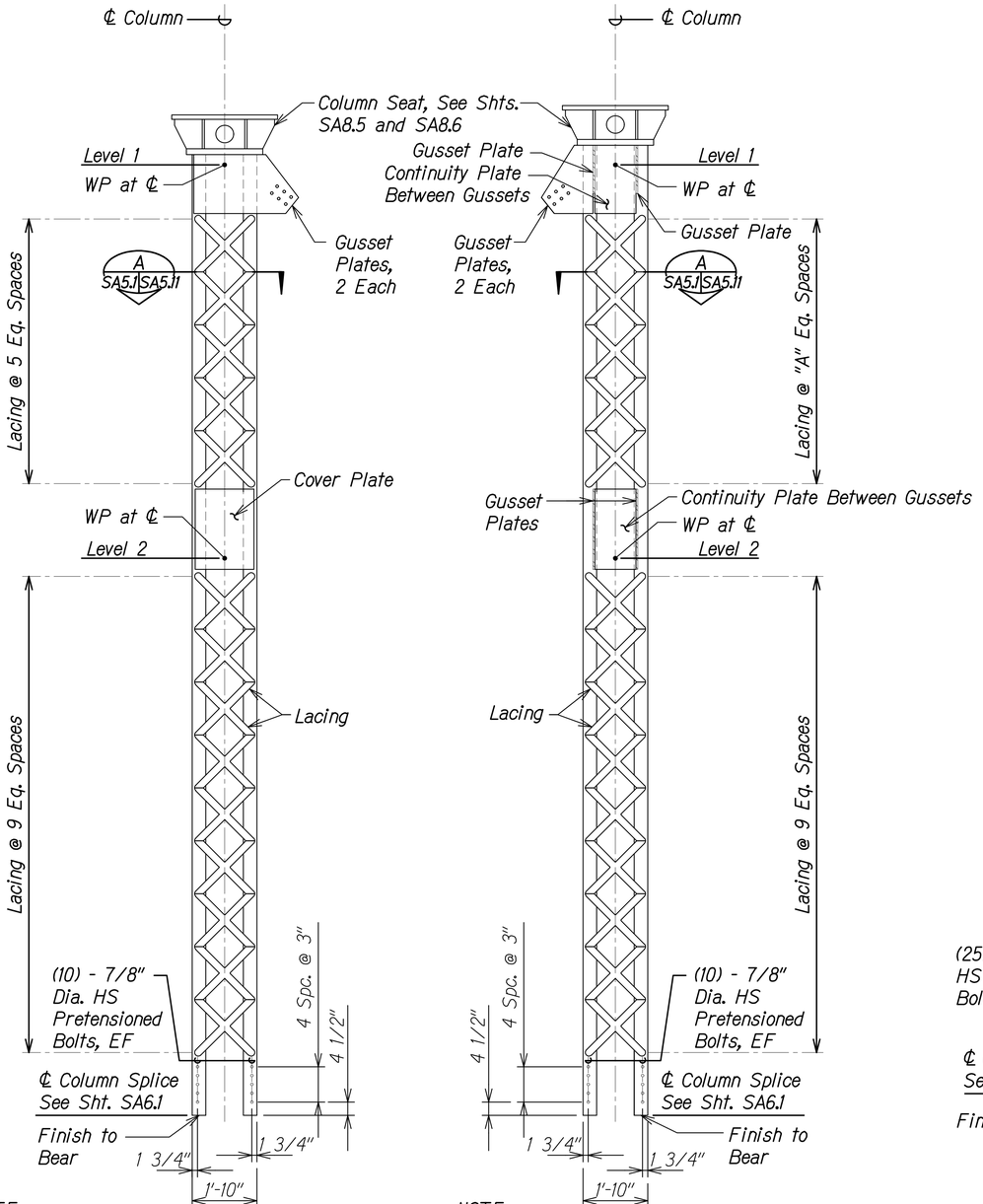
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted — Date: Oct. 2024

SHEET NO SA4.20 OF 20 SHEETS

DRAWING NAME: Z:\OD ONGOING\23-022-2-NANUE STR BR REP-BOTH\01 CAD\10-28-24 BID SET\HSR-SA0411-SA0420 BENT CONN.DWG 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

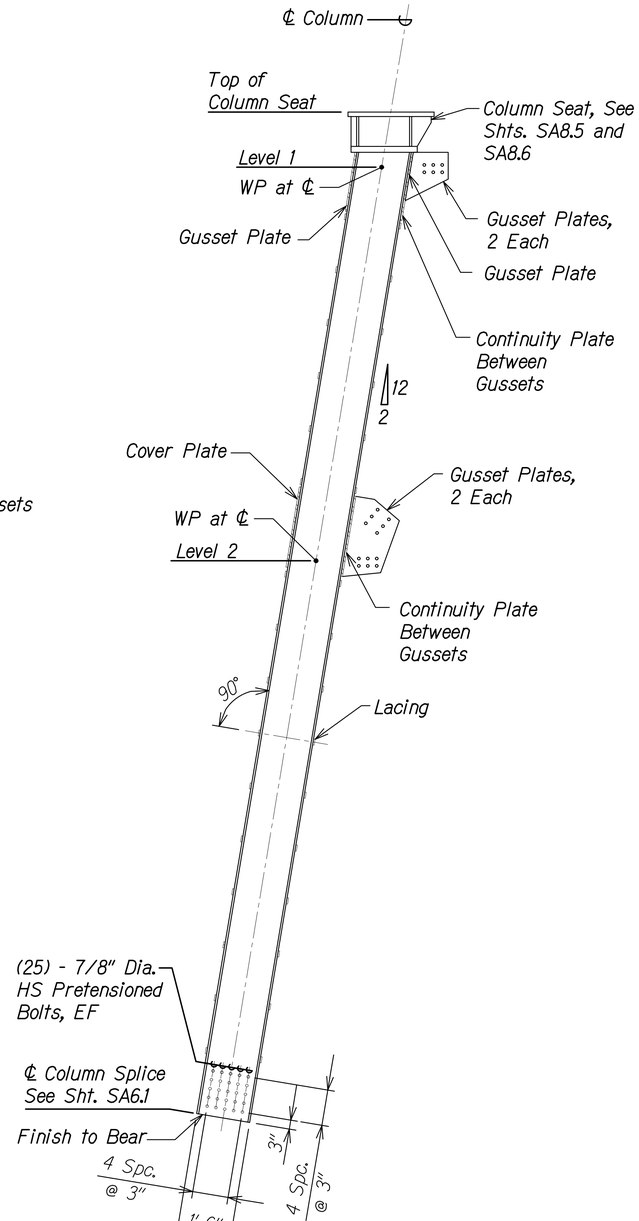


NOTE:
Typical at upstream face of Col. Line A (Bent Nos. 3, 5, & 7) and downstream face of Col. Line D (Bent Nos. 2, 4, 6 & 8). Gusset plates, opp. hand for upstream face of Col. Line A (Bent Nos. 2, 4, 6 & 8) and downstream face of Col. Line D (Bent Nos. 3, 5 & 7).

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

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

NOTES:

1. Elevations are typical for upper column at Bent Nos. 2, 3, 4, 5, 6, 7, and 8.
2. Install lacing on downstream face in line with lacing on upstream face when measured perpendicular to the ℄ of column.
3. 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

STEPHEN T. PETERS
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UPPER COLUMN ELEVATIONS

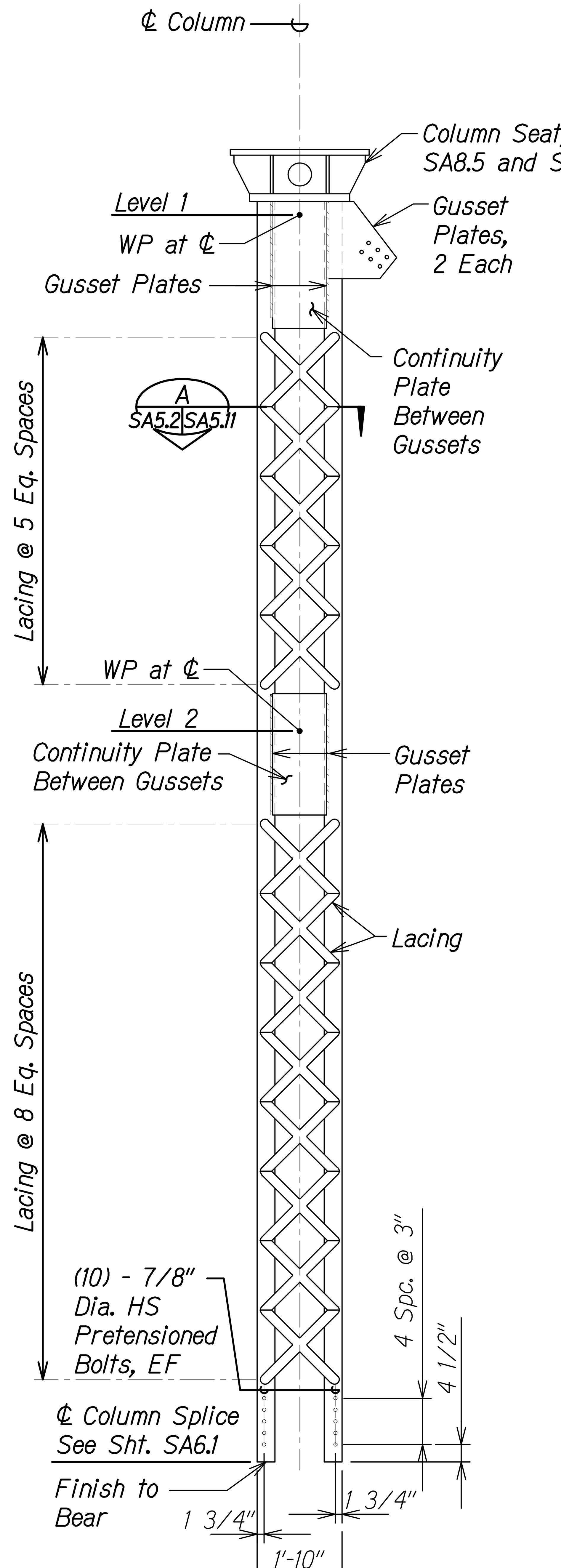
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA5.1 OF 34 SHEETS

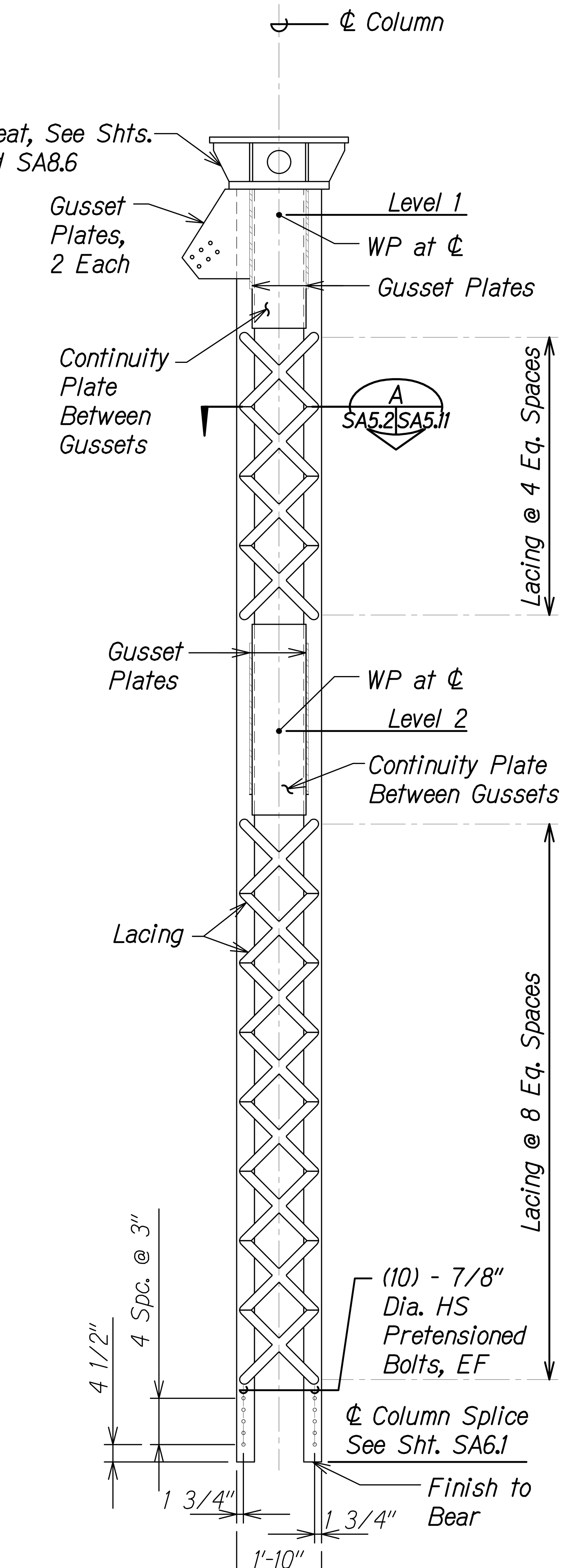
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

DRAWING NAME: C:\OD ONDRIVE\23-072-2-NANUE STR BR PEP-BOTH\07 CAD\10-28-24 BID SET\HSR-SA0501-SA0510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:23 AM



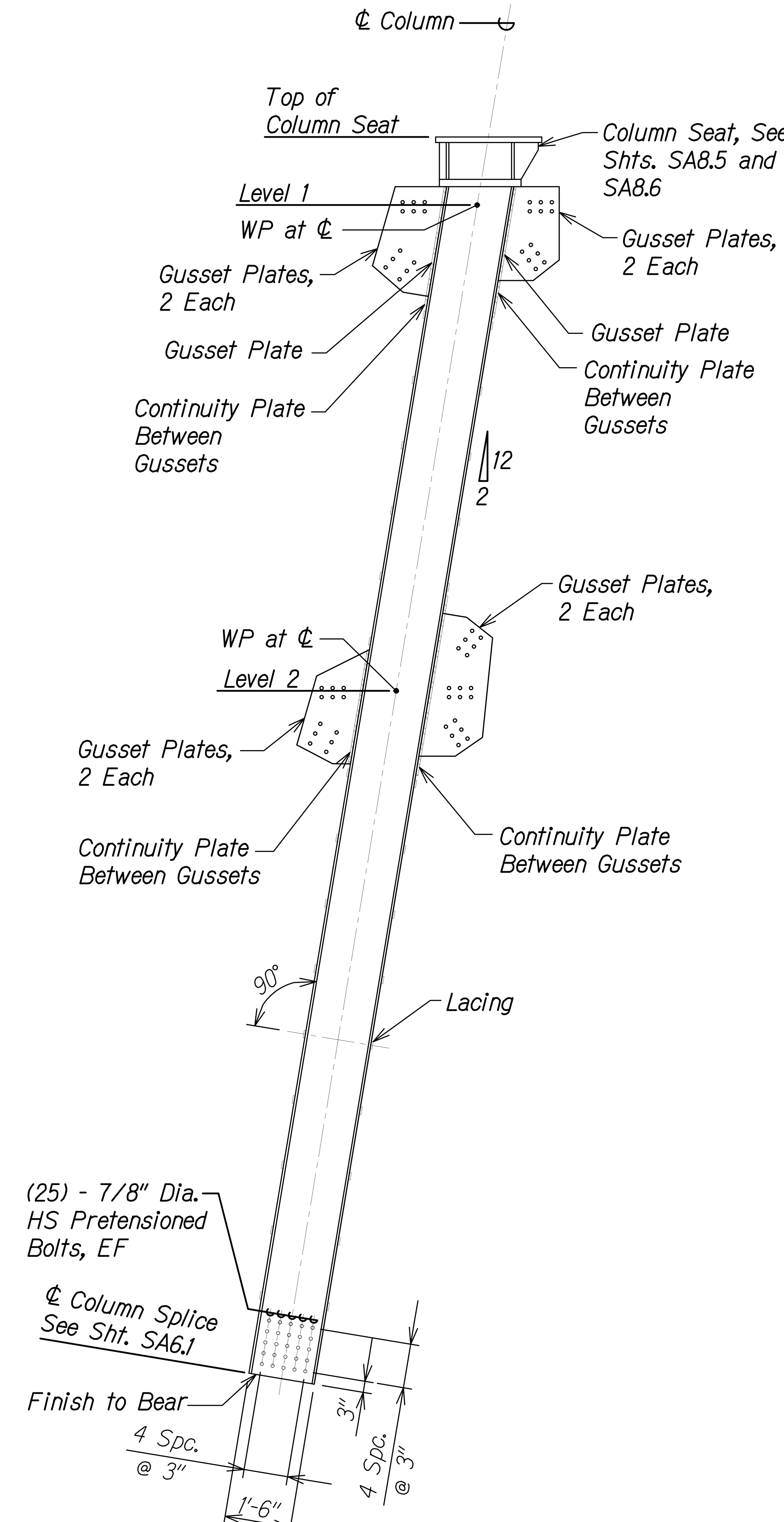
NOTE:
Typical at upstream face of Col. Line B (Bent Nos. 3, 5, & 7) and downstream face of Col. Line C (Bent Nos. 2, 4, 6 & 8). Gusset plates, Opp. Hand for upstream face of Col. Line B (Bent Nos. 2, 4, 6 & 8) and downstream face of Col. Line C (Bent Nos. 3, 5 & 7).

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



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

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



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

NOTES:

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

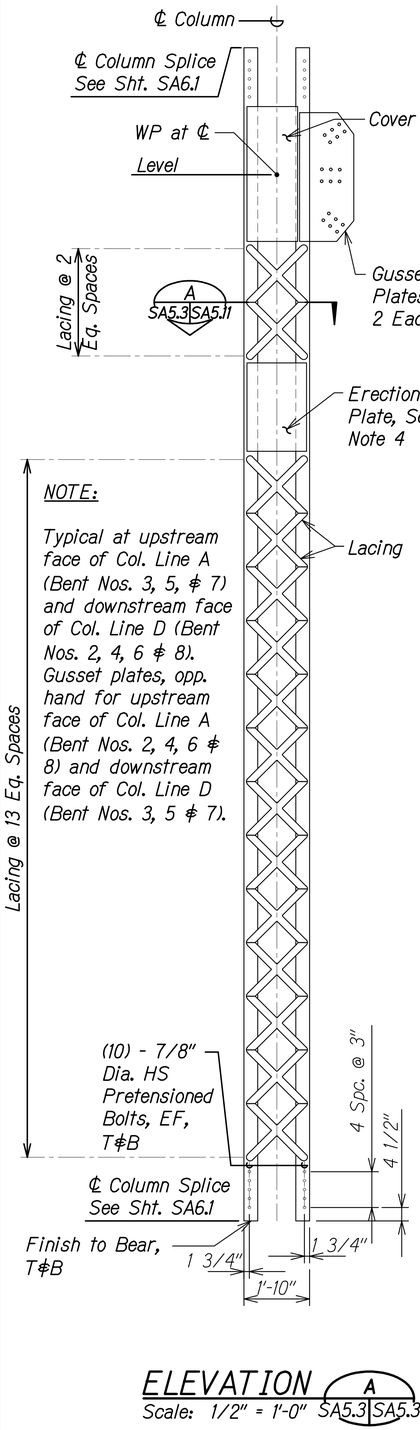
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UPPER COLUMN ELEVATIONS

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

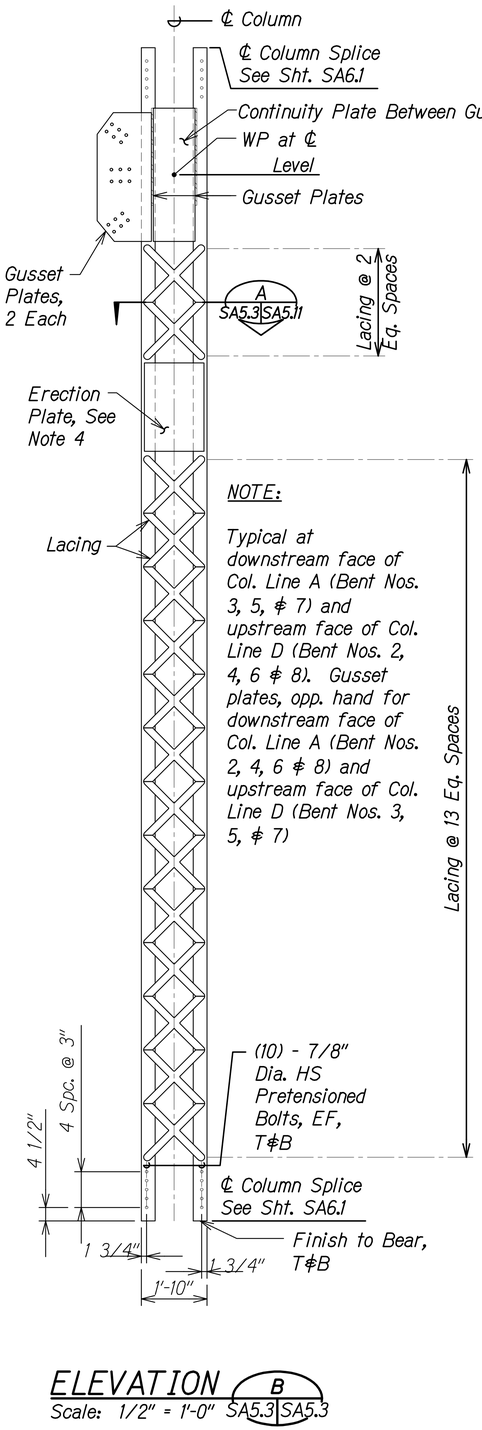
Scale: As Noted   Date: Oct. 2024

SHEET No. SA5.2 OF 34 SHEETS



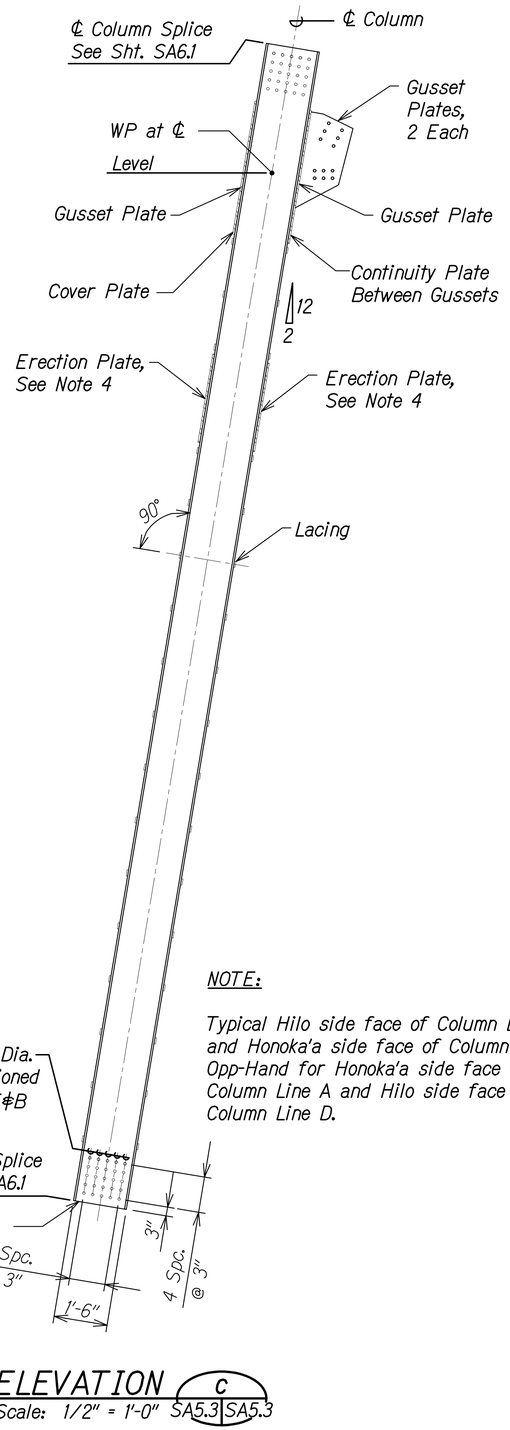
ELEVATION A

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

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:

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

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NO. 17097-S
HAWAII, U.S.A.

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INTERMEDIATE COLUMN ELEVATIONS

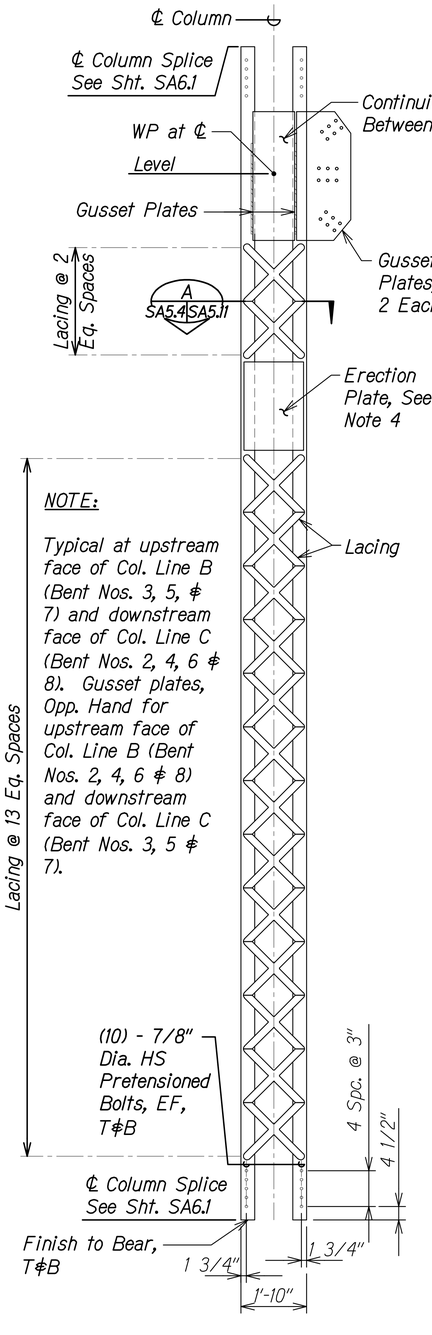
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

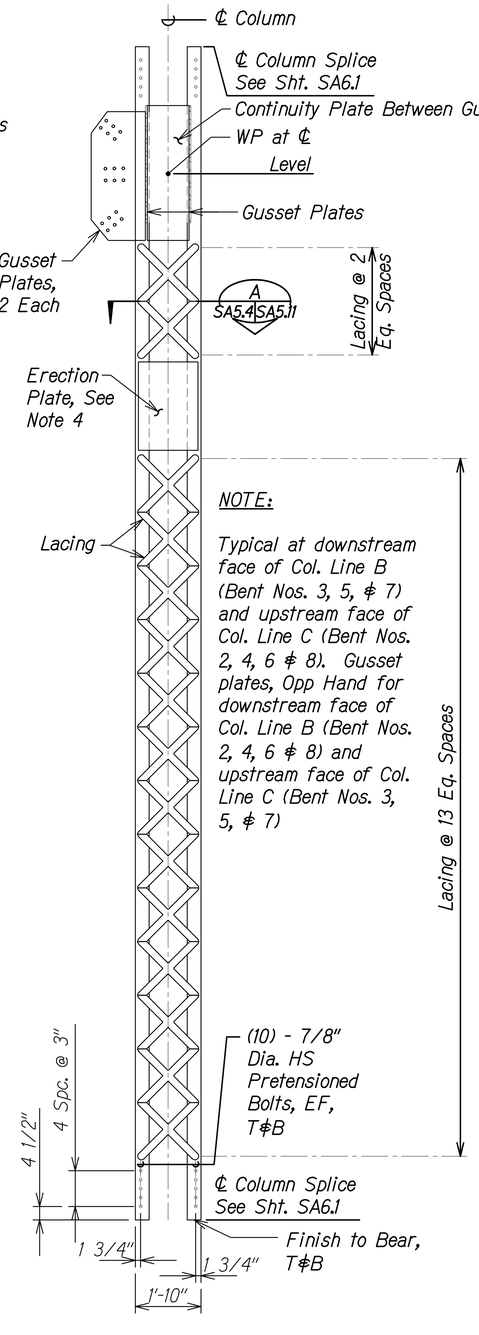
SHEET No. SA5.3 OF 34 SHEETS

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

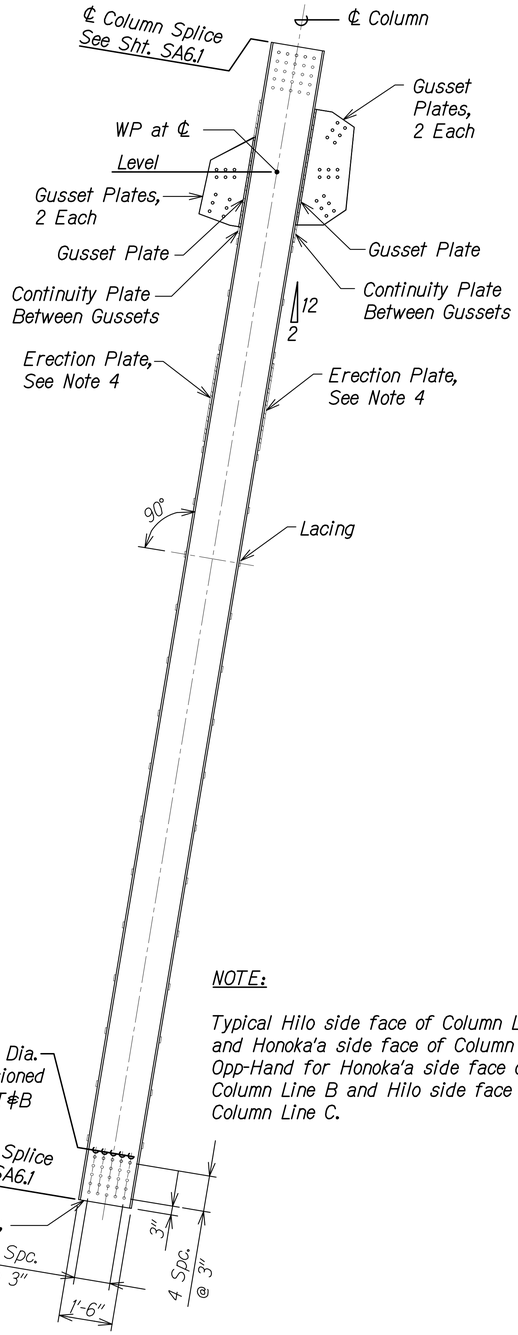
DRAWING NAME: Z:\OD ONDONCA\23-0229-NANUE STR BR PE2-SDTA\01 CAD\10-28-24 BID SET\VER-SA05\01-SA0510 COL ELEVDWG PLOT TIME: 10-28-24 (10:28:24, 8:24 AM)



ELEVATION A
Scale: 1/2" = 1'-0" SA5.4 SA5.4



ELEVATION B
Scale: 1/2" = 1'-0" SA5.4 SA5.4



ELEVATION C
Scale: 1/2" = 1'-0" SA5.4 SA5.4

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	76	280

NOTES:

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INTERMEDIATE COLUMN ELEVATIONS

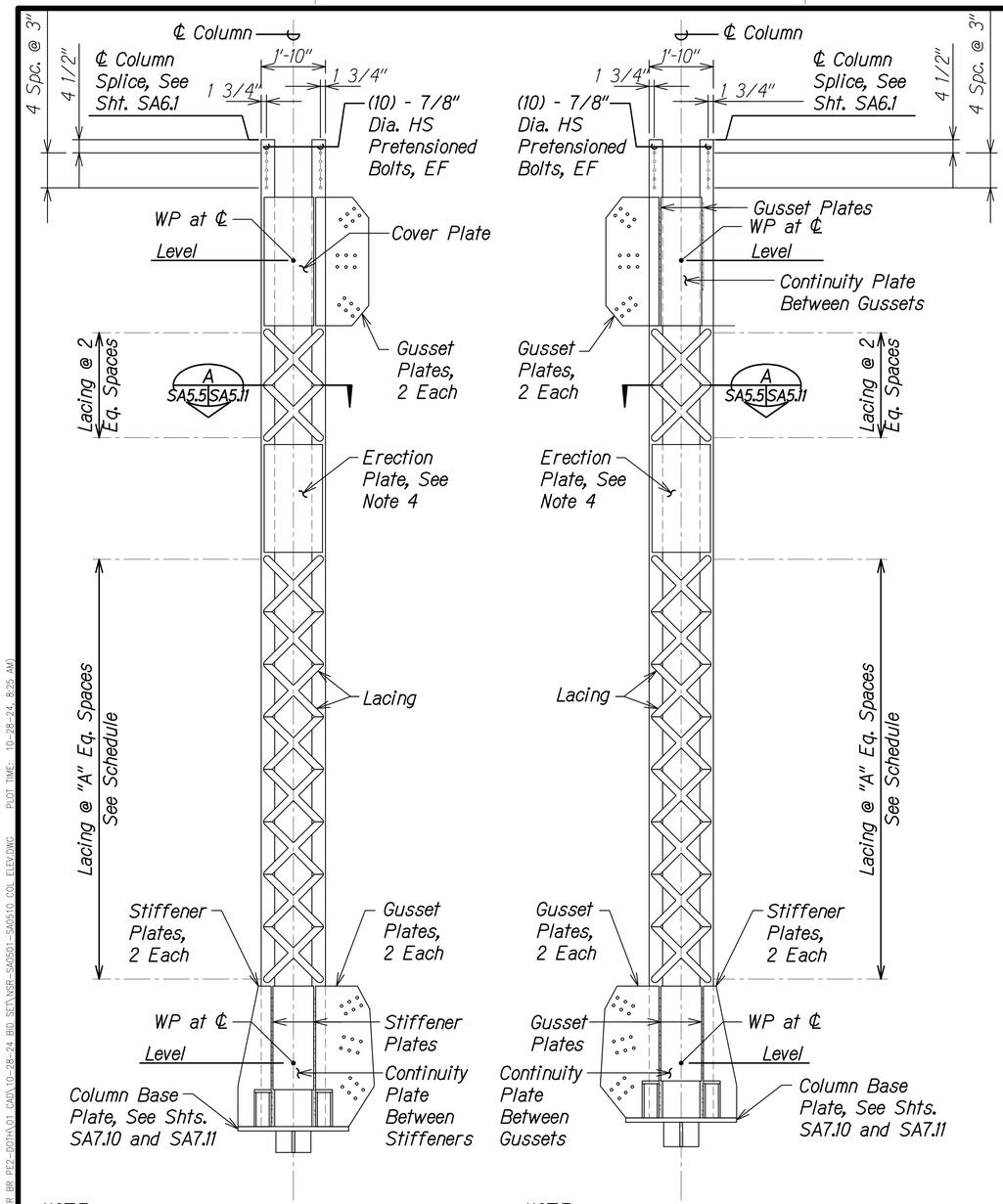
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA5.4 OF 34 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-072-2-HANUE STR BR REP-BOTH\OT CAD\10-28-24 BID SET\HSR-SA0501-SA0510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:25 AM



NOTE:

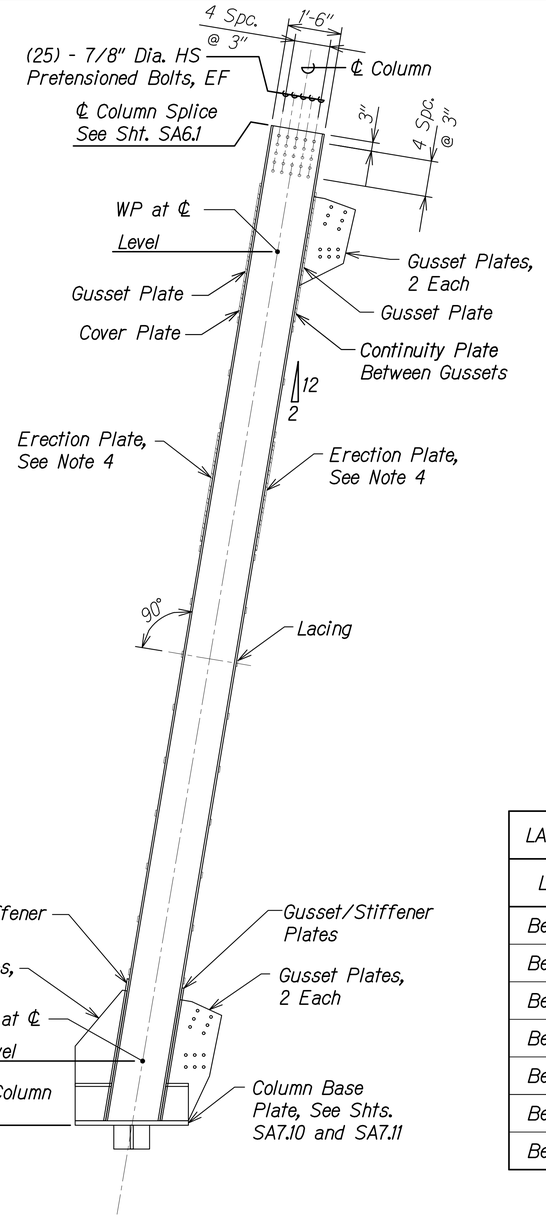
Typical at upstream face of Col. Line A (Bent Nos. 3, 5, ∉ 7) and downstream face of Col. Line D (Bent Nos. 2, 4, 6 ∉ 8). Gusset plates, opp. hand for upstream face of Col. Line A (Bent Nos. 2, 4, 6 ∉ 8) and downstream face of Col. Line D (Bent Nos. 3, 5 ∉ 7).

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

NOTE:

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

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:

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

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

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SIGNATURE 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)

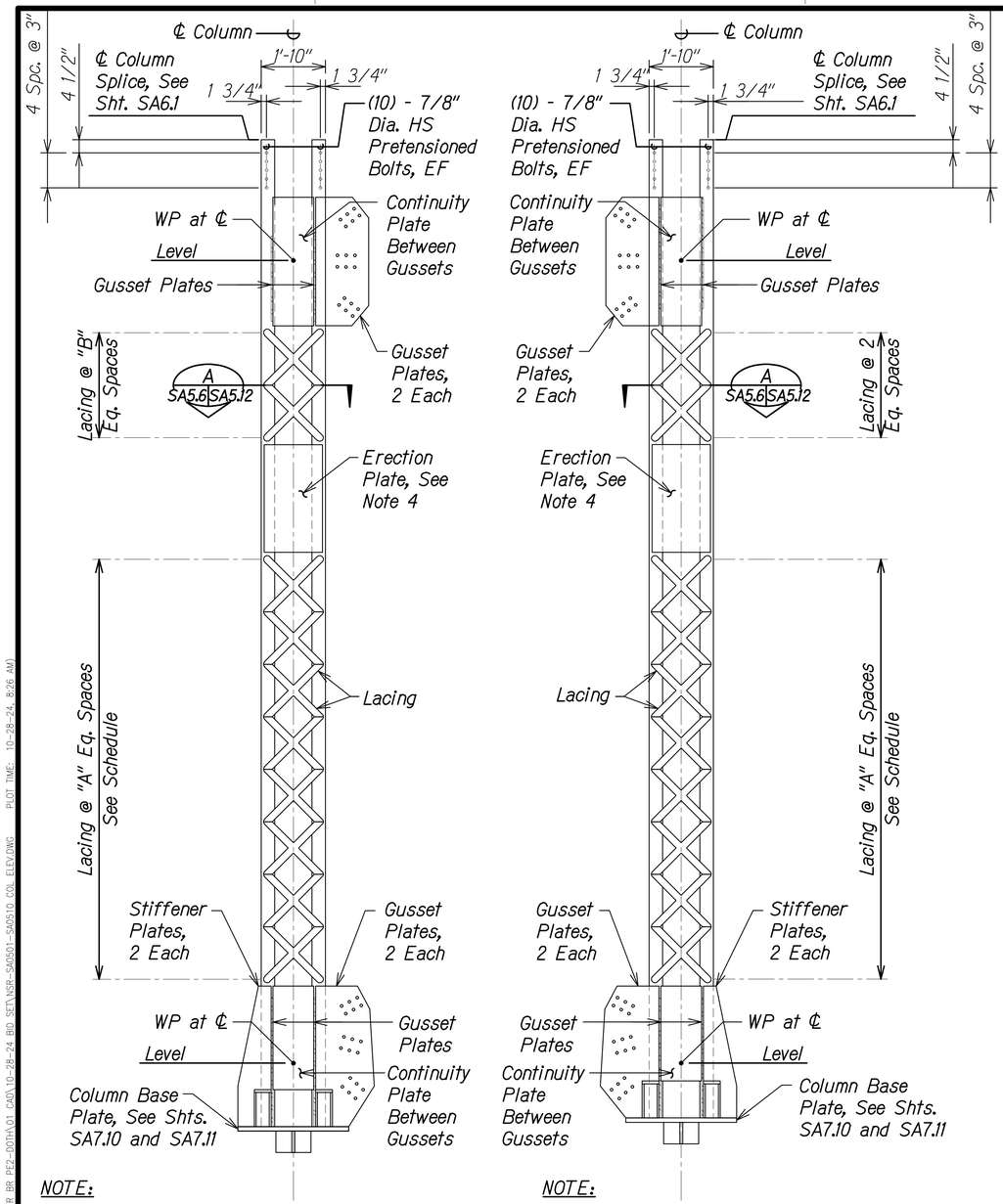
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.5 OF 34 SHEETS

77

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

DRAWING NAME: Z:\00 ONGOING\23-022-3-HANUE STR BR PE2-BOTH\01 DGN\10-28-24 BID SET\HSR-SA0501-SA0510 COL ELV.DWG PLOT TIME: 10-28-24 8:26 AM



NOTE:

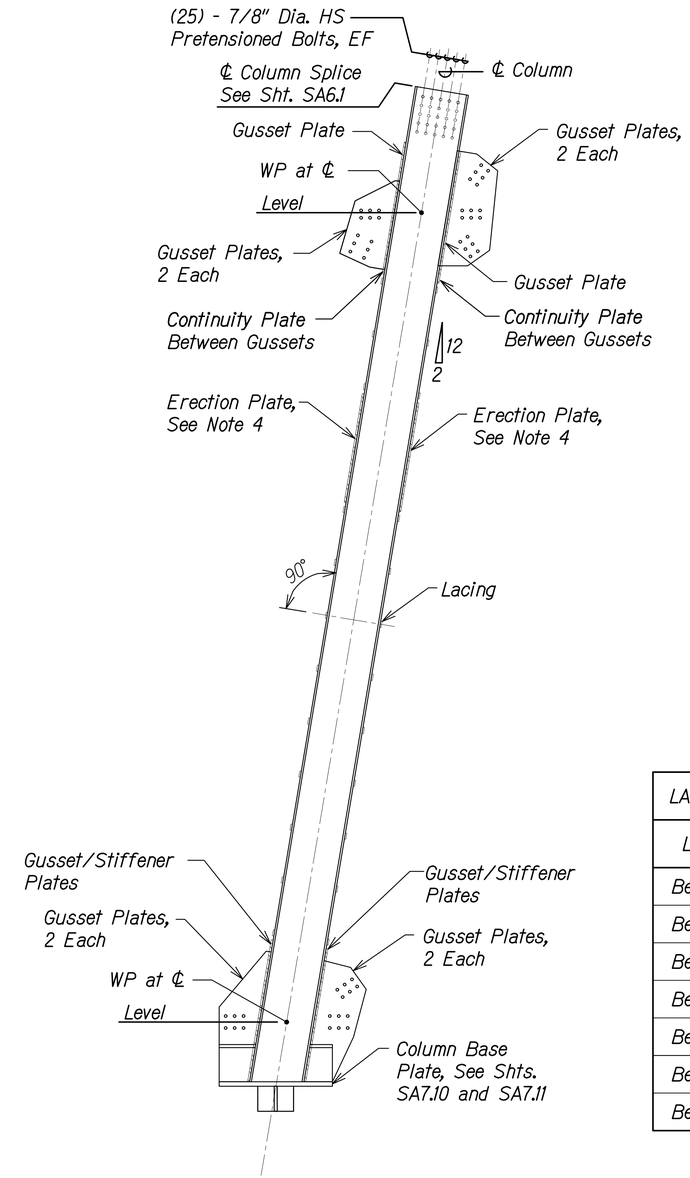
Typical at upstream face of Col. Line B (Bent Nos. 3, 5, & 7) and downstream face of Col. Line C (Bent Nos. 2, 4, 6 & 8). Gusset plates, Opp. Hand for upstream face of Col. Line B (Bent Nos. 2, 4, 6 & 8) and downstream face of Col. Line C (Bent Nos. 3, 5 & 7).

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

NOTE:

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

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:

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOWER COLUMN ELEVATIONS

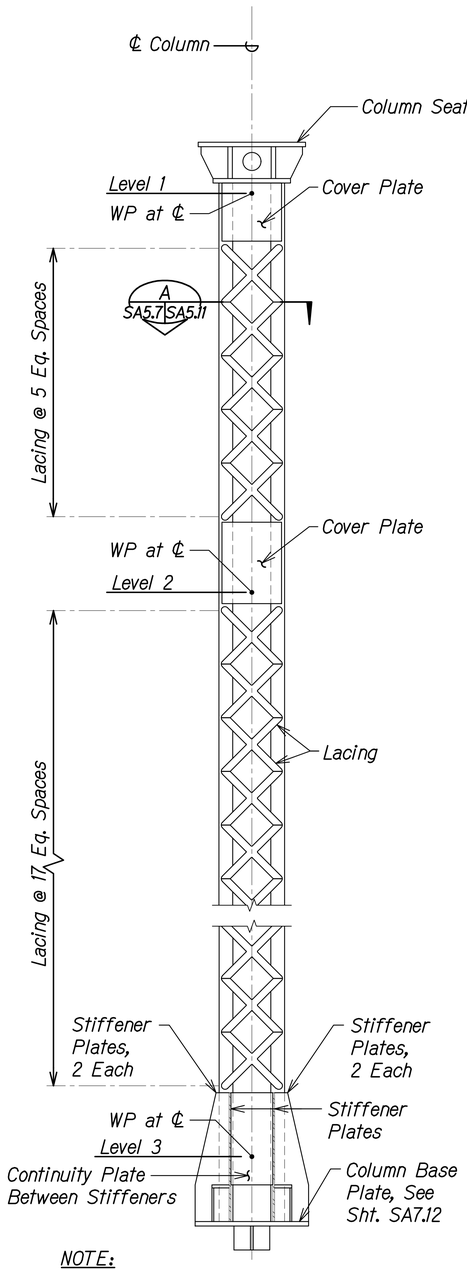
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA5.6 OF 34 SHEETS

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

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

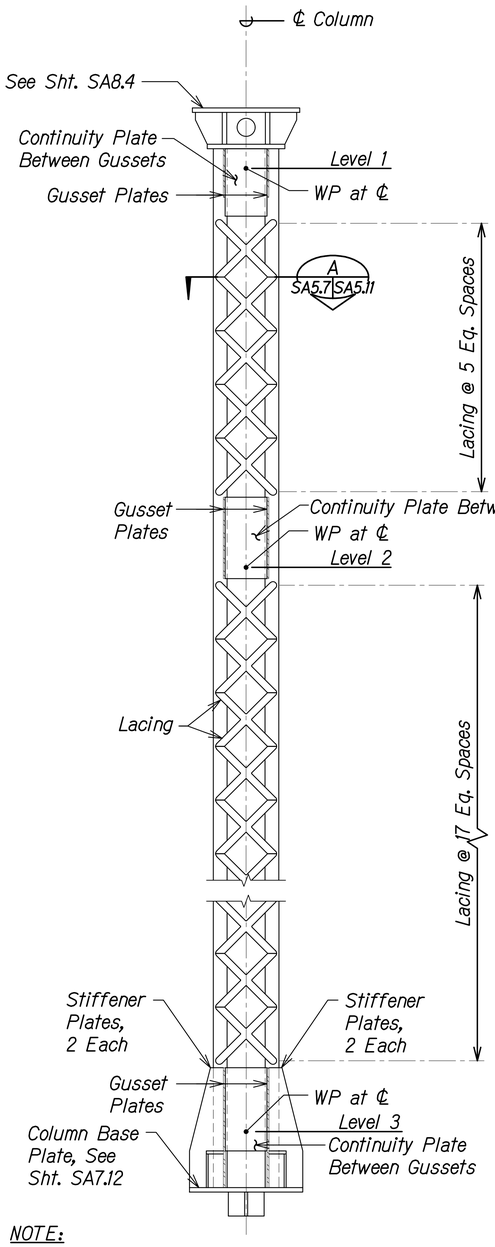


NOTE:

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

ELEVATION A SA5.7 SA5.7

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

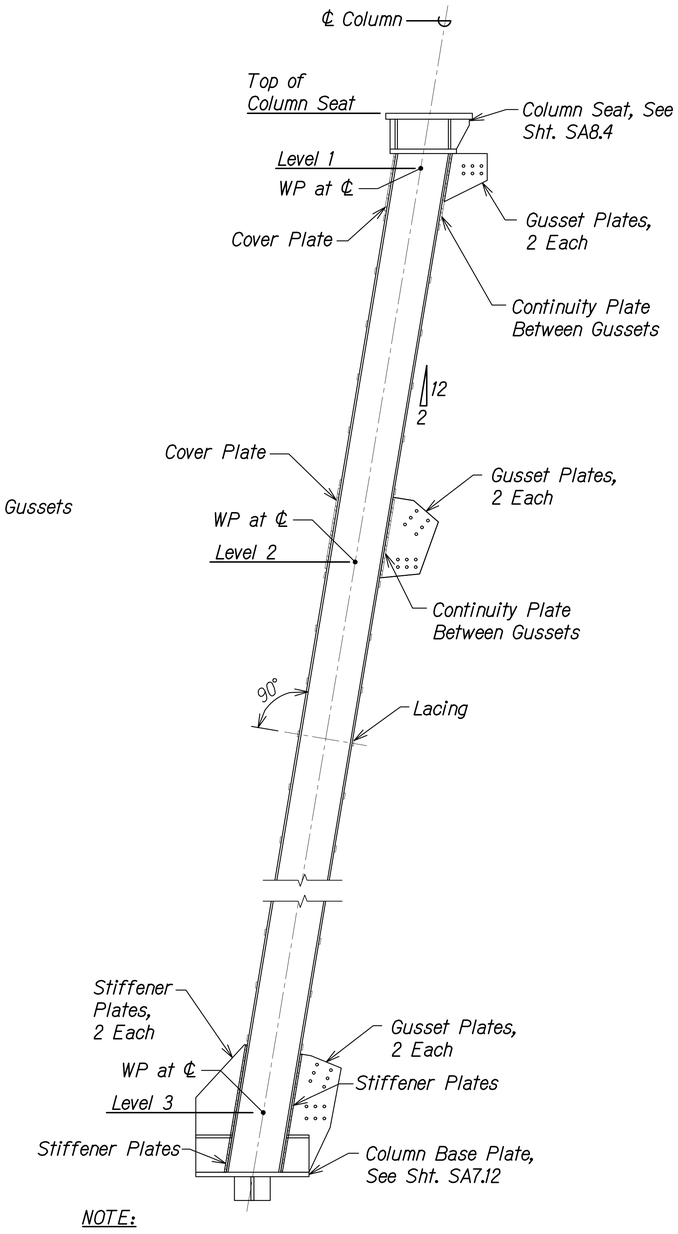


NOTE:

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

ELEVATION B SA5.7 SA5.7

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



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 SA5.7 SA5.7

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

NOTES:

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

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: Z:\OD\ ONGONO\23-0223-HANUE STR BR PEP-BOTH\01 CAD\10-28-24 BID SET\HSR-SA0501-SA0510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:29 AM

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

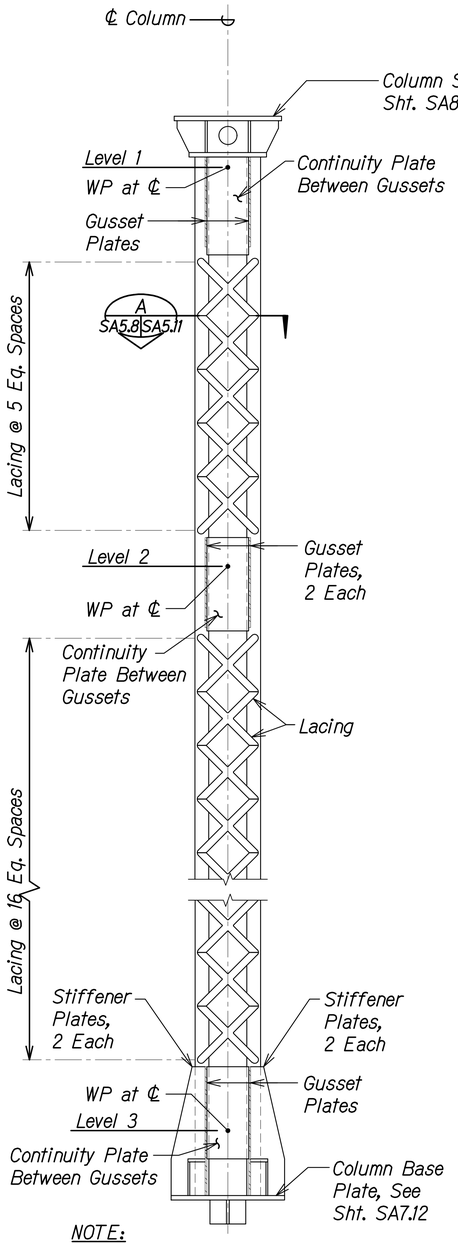
BENT NO. 1 COLUMN ELEVATIONS

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

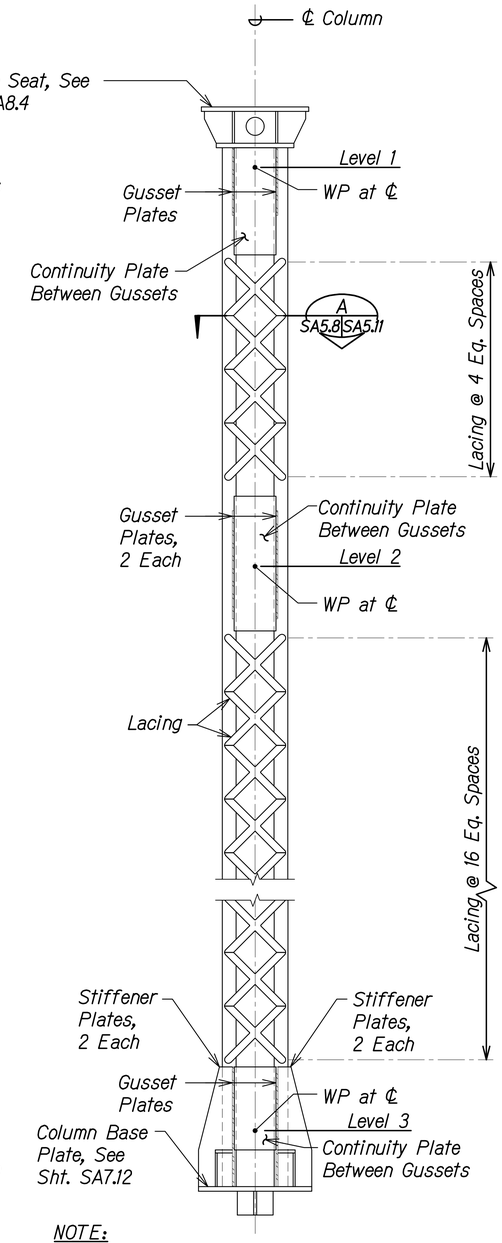
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	80	280



NOTE:

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

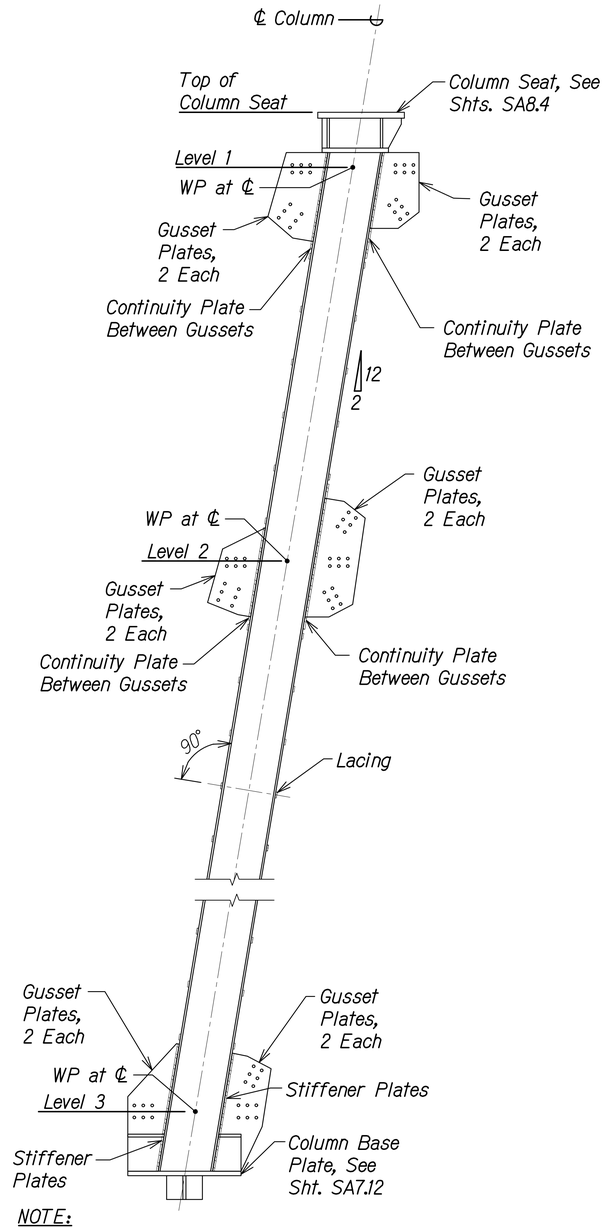
ELEVATION A
Scale: 1/2" = 1'-0" SA5.8 | SA5.8



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

NOTES:

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

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

BENT NO. 1
COLUMN ELEVATIONS

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

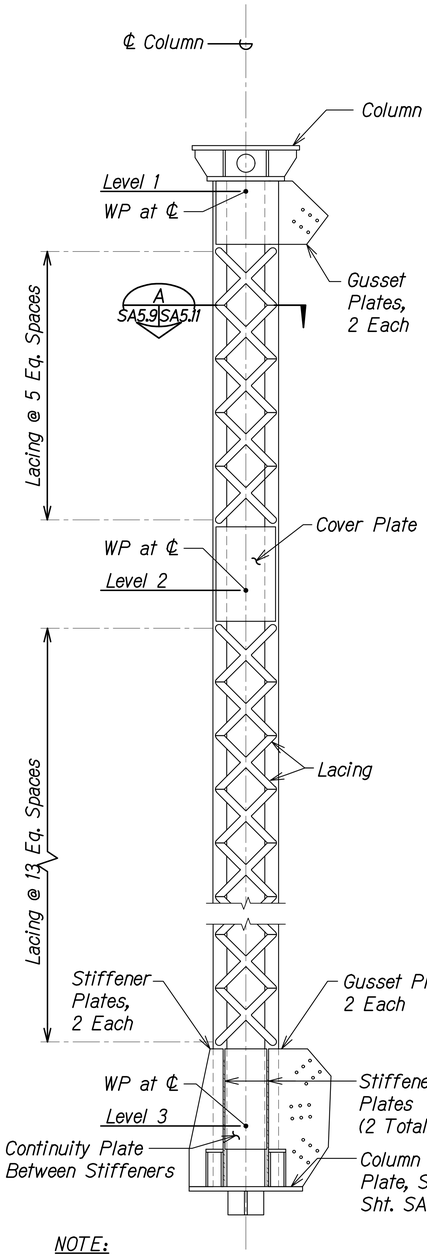
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.8 OF 34 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-072-2-NANUE STR BR PEP-DOTH\OT OAD\10-28-24 BID SET\NSR-SA0501-SA0510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:32 AM

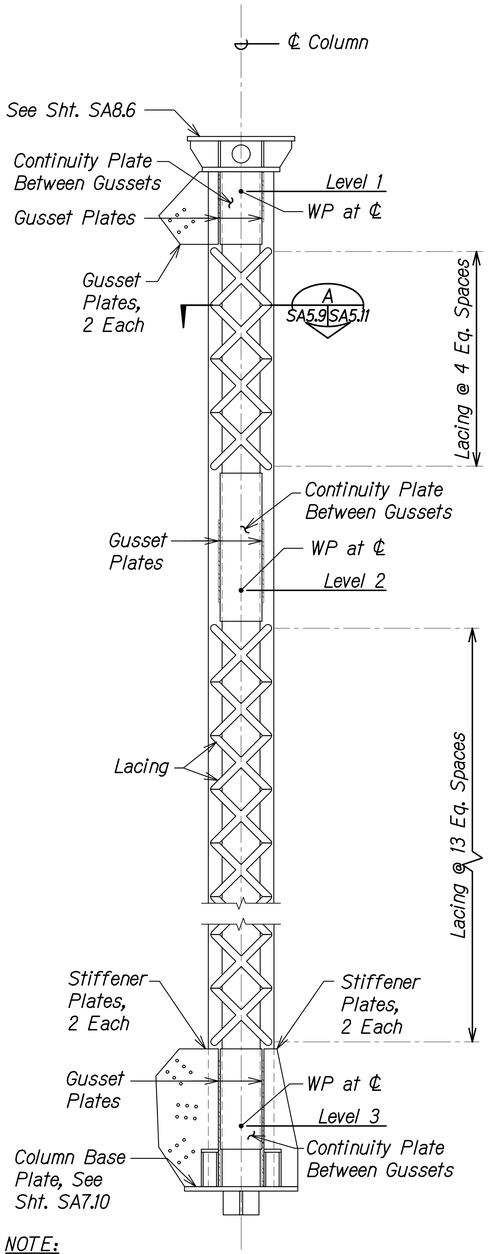
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	81	280



NOTE:

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

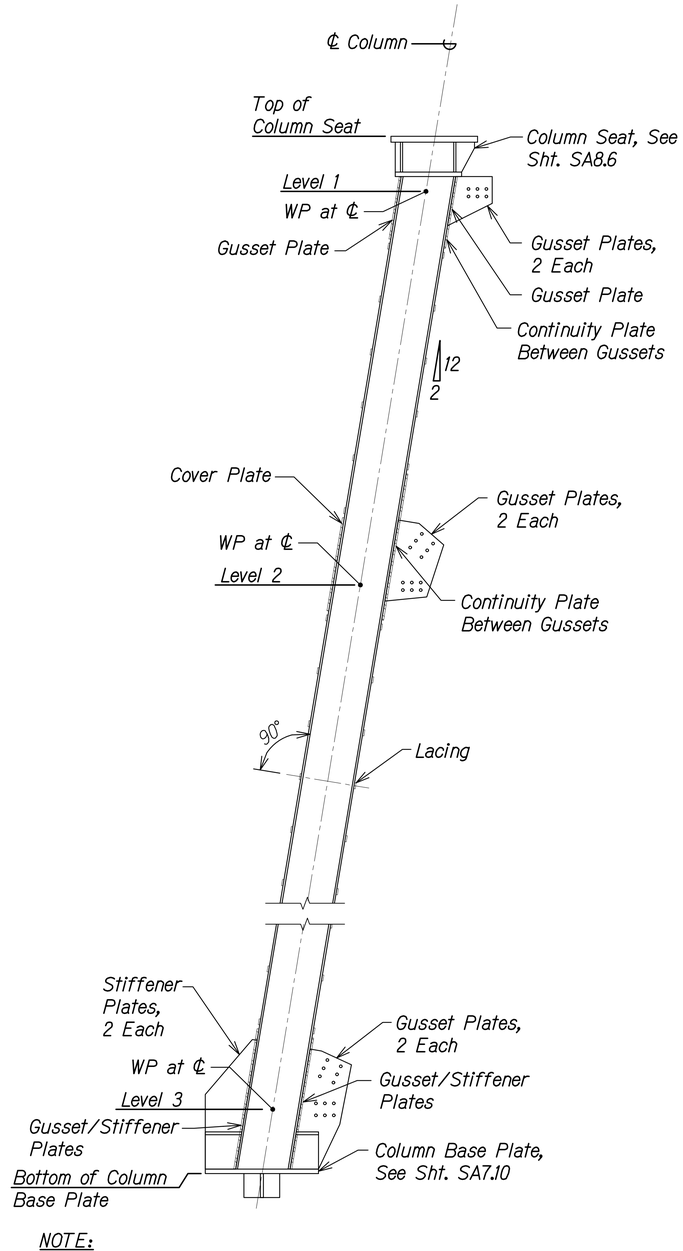
ELEVATION A
Scale: 1/2" = 1'-0" SA5.9 SA5.9



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

NOTES:

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

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

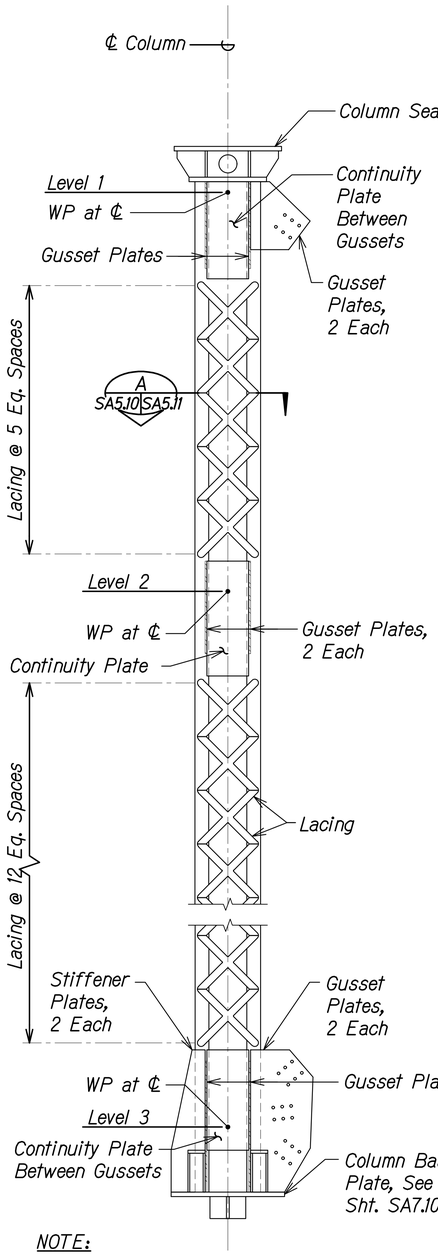
SHEET No. SA5.9 OF 34 SHEETS

81

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

DRAWING NAME: Z:\OD ENGINEERING\03-022\9-NANUE STR BR PEZ-DOT\A01 CAD\10-28-24 BID SET\VER-SA\SA01-SA05\10-SA5.9 COL ELEV.DWG PLOT TIME: 10-28-24, 8:15 PM

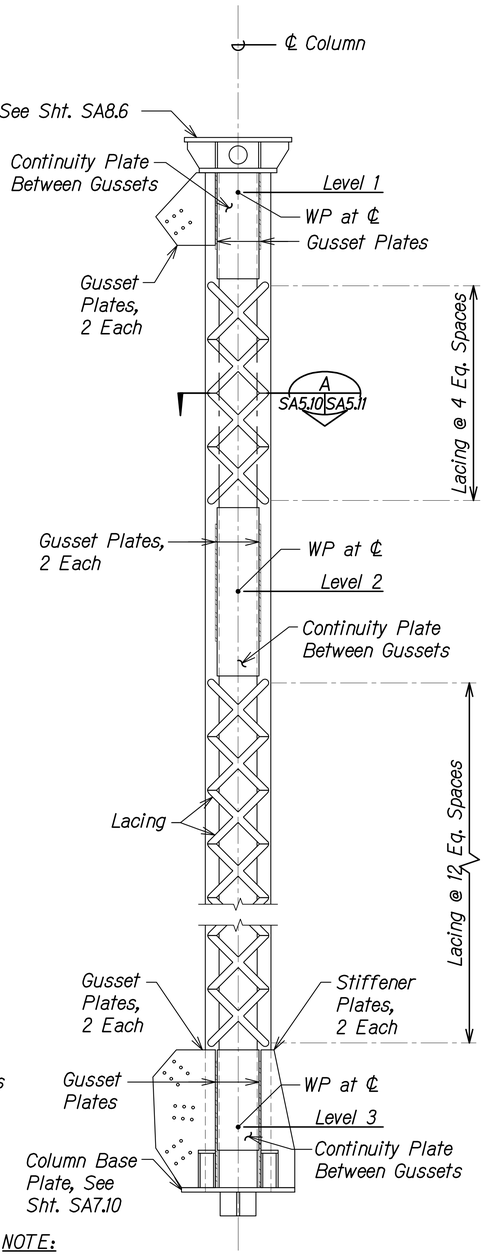
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	82	280



NOTE:

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

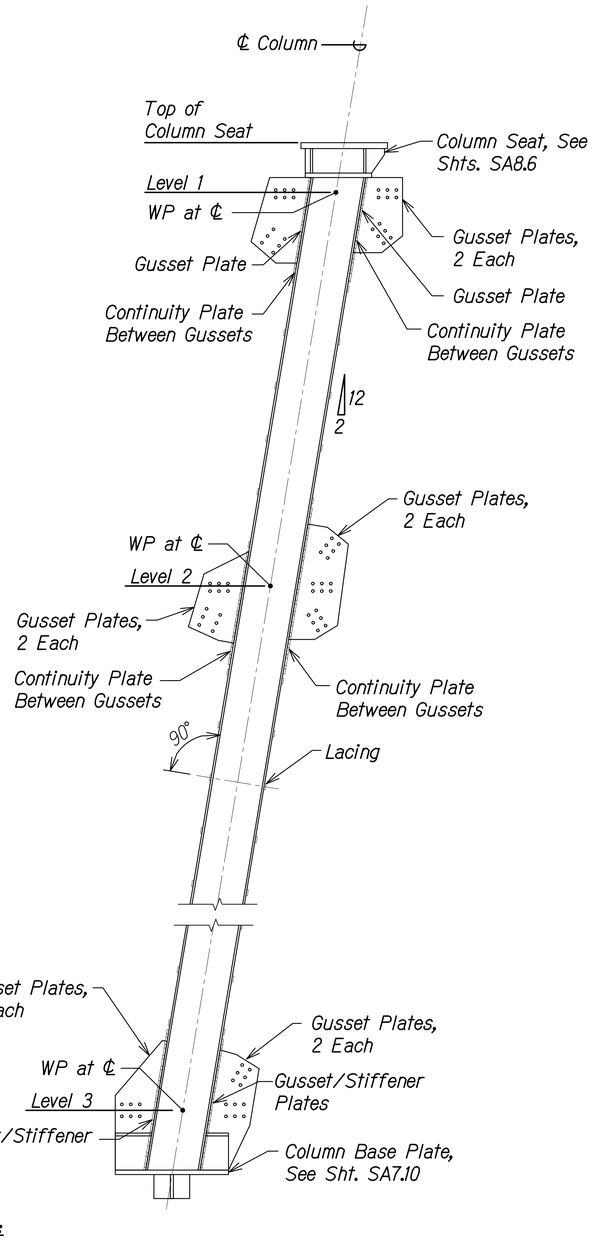
ELEVATION A SA5.10 SA5.10
Scale: 1/2" = 1'-0"



NOTE:

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

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



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 SA5.10 SA5.10
Scale: 1/2" = 1'-0"

NOTES:

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

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)

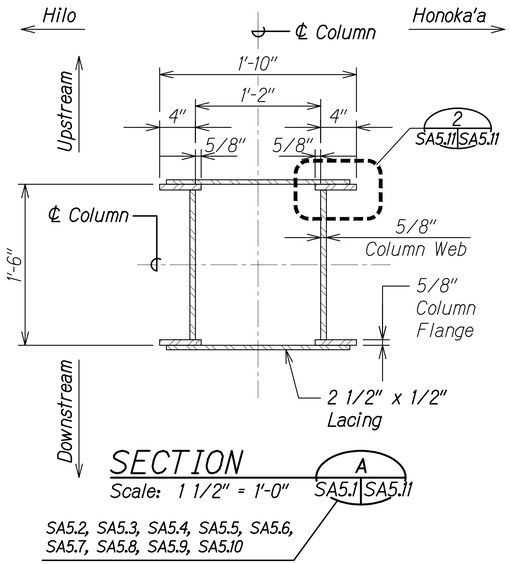
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.10 OF 34 SHEETS

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

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PEZ-DOT\A01 CAD\10-28-24 BID SET\VER-SA5501-SA5510 COL ELEV.DWG PLOT TIME: 10-28-24, 8:34 AM

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



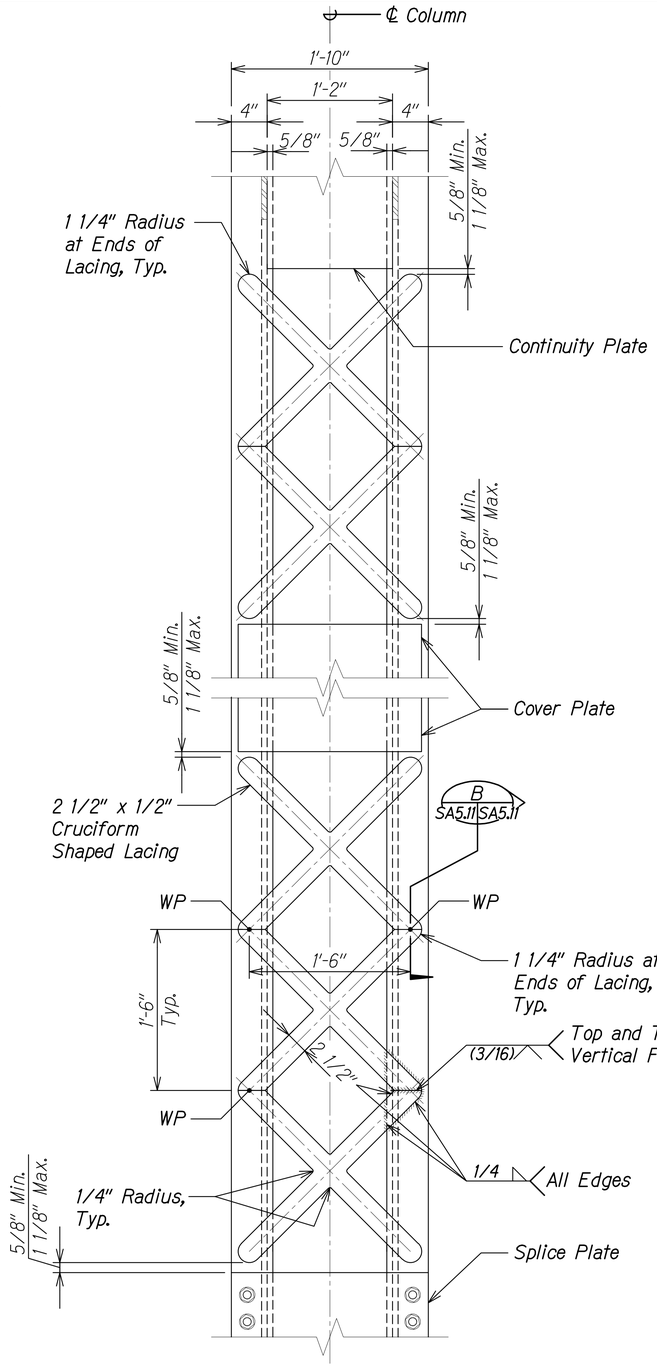
SECTION A
Scale: 1 1/2" = 1'-0" SA5.1 SA5.11

SA5.2, SA5.3, SA5.4, SA5.5, SA5.6, SA5.7, SA5.8, SA5.9, SA5.10

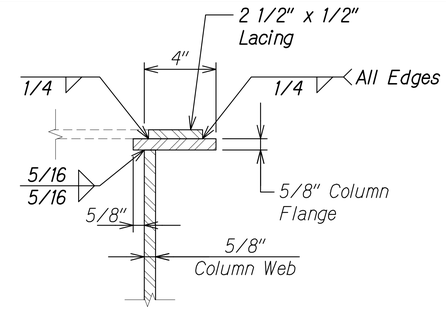
NOTES:

1. Lacing shall be cut in cruciform shapes. At Contractor's option, multiple interconnecting cruciforms may be fabricated to eliminate PJP butt weld at WP.

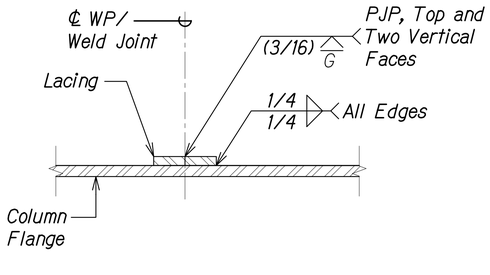
2. All welded connections shall receive full seal welding along all edges of faying surfaces to prevent moisture intrusion.



LACING BAR ELEVATION DETAIL 1
Scale: 1 1/2" = 1'-0" SA5.11 SA5.11



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



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

STEPHEN T. PETERS
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SIGNATURE — EXPIRATION DATE OF THE LICENSE 4-30-26

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)

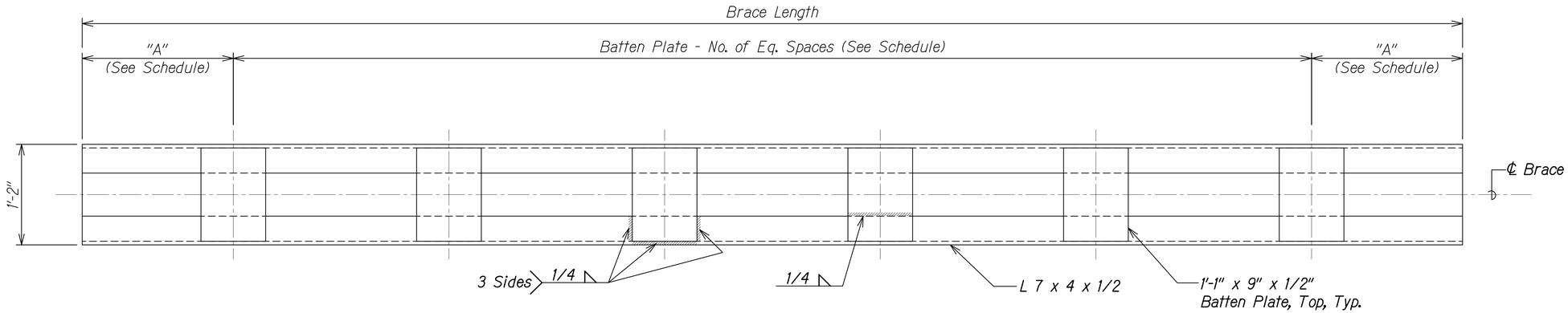
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.11 OF 34 SHEETS

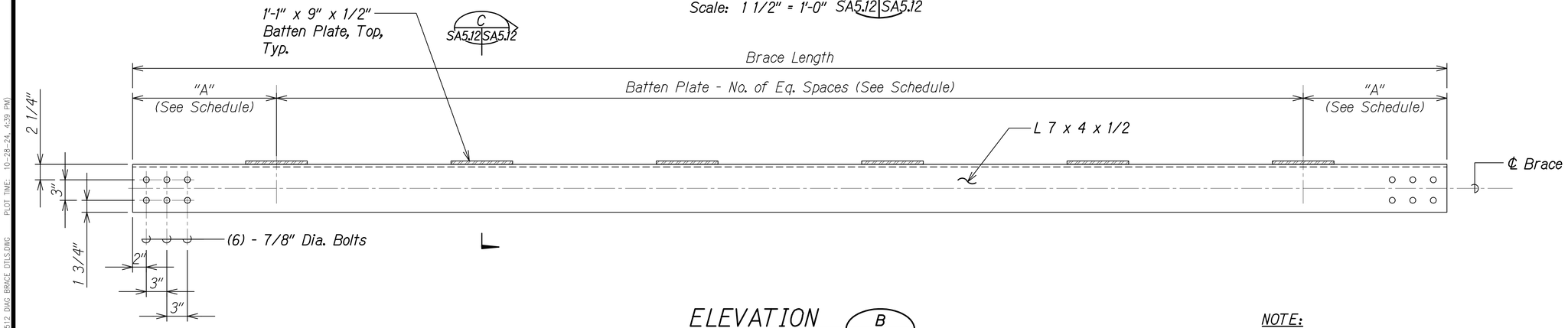
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: ZA:\02 ONOONO\23-022\3-NANUE STR BR PE2-DOTA\01 CADD\10-28-24 BID SET\VER-SA05\11 COL DET.DWG PLOT TIME: 10-28-24, 8:39 AM

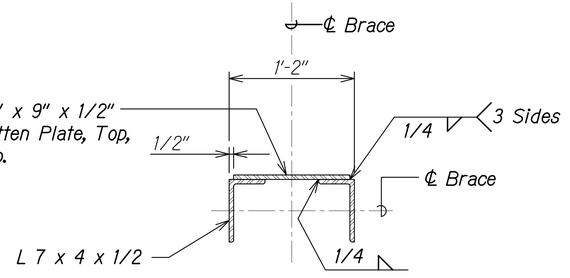
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	84	280



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



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



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

NOTE:

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

BENT UPPER INTERIOR 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 No. SA5.12 OF 34 SHEETS

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

DRAWING NAME: Z:\OD ONDOWA\23-022-9-NANUE STR BR PE2-3DTHA\01 CAD\10-28-24 BID SET\NSR-SA5512 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:39 PM)

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

BENT UPPER INTERIOR DIAGONAL BRACE SCHEDULE

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 1	X1B1-C2	1'-6"	2 Eq. Spaces
	X1C1-B2	1'-6"	2 Eq. Spaces
	X1B2-C1	1'-6"	3 Eq. Spaces
	X1C2-B1	1'-6"	3 Eq. Spaces
	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"	2 Eq. Spaces
	X2C1-B2	1'-6"	2 Eq. Spaces
	X2B2-C1	1'-6"	3 Eq. Spaces
	X2C2-B1	1'-6"	3 Eq. Spaces
	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-C5	1'-6"	7 Eq. Spaces
	X2B5-C4	1'-6"	10 Eq. Spaces
	X2C5-B4	1'-6"	10 Eq. Spaces
BENT NO. 3	X3B1-C2	1'-6"	2 Eq. Spaces
	X3C1-B2	1'-6"	2 Eq. Spaces
	X3B2-C1	1'-6"	3 Eq. Spaces
	X3C2-B1	1'-6"	3 Eq. Spaces
	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

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 4	X4B1-C2	1'-6"	2 Eq. Spaces
	X4C1-B2	1'-6"	2 Eq. Spaces
	X4B2-C1	1'-6"	3 Eq. Spaces
	X4C2-B1	1'-6"	3 Eq. Spaces
	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
	X4C5-B4	1'-6"	12 Eq. Spaces
	X4B5-C6	1'-6"	11 Eq. Spaces
	X4C5-B6	1'-6"	11 Eq. Spaces
	X4B6-C5	1'-6"	14 Eq. Spaces
	X4C6-B5	1'-6"	14 Eq. Spaces
BENT NO. 5	X5B1-C2	1'-6"	2 Eq. Spaces
	X5C1-B2	1'-6"	2 Eq. Spaces
	X5B2-C1	1'-6"	3 Eq. Spaces
	X5C2-B1	1'-6"	3 Eq. Spaces
	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
NOTE BOOK
No.

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-3D\HALOT CAD\10-28-24 BID SET\VSR-540512 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:40 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 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 No. SA5.13 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	86	280

BENT UPPER INTERIOR DIAGONAL BRACE SCHEDULE

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 6	X6B1-C2	1'-6"	2 Eq. Spaces
	X6C1-B2	1'-6"	2 Eq. Spaces
	X6B2-C1	1'-6"	3 Eq. Spaces
	X6C2-B1	1'-6"	3 Eq. Spaces
	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"	2 Eq. Spaces
	X7C1-B2	1'-6"	2 Eq. Spaces
	X7B2-C1	1'-6"	3 Eq. Spaces
	X7C2-B1	1'-6"	3 Eq. Spaces
	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

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 8	X8B1-C2	1'-6"	2 Eq. Spaces
	X8C1-B2	1'-6"	2 Eq. Spaces
	X8B2-C1	1'-6"	3 Eq. Spaces
	X8C2-B1	1'-6"	3 Eq. Spaces
	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"	2 Eq. Spaces
	X9C1-B2	1'-6"	2 Eq. Spaces
	X9B2-C1	1'-6"	3 Eq. Spaces
	X9C2-B1	1'-6"	3 Eq. Spaces
	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
NOTE BOOK No.
SURVEY PLOTTED BY
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DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PE2-OOTH\01 CAD\10-28-24 BID SERVER-SA5512 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:40 PM

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

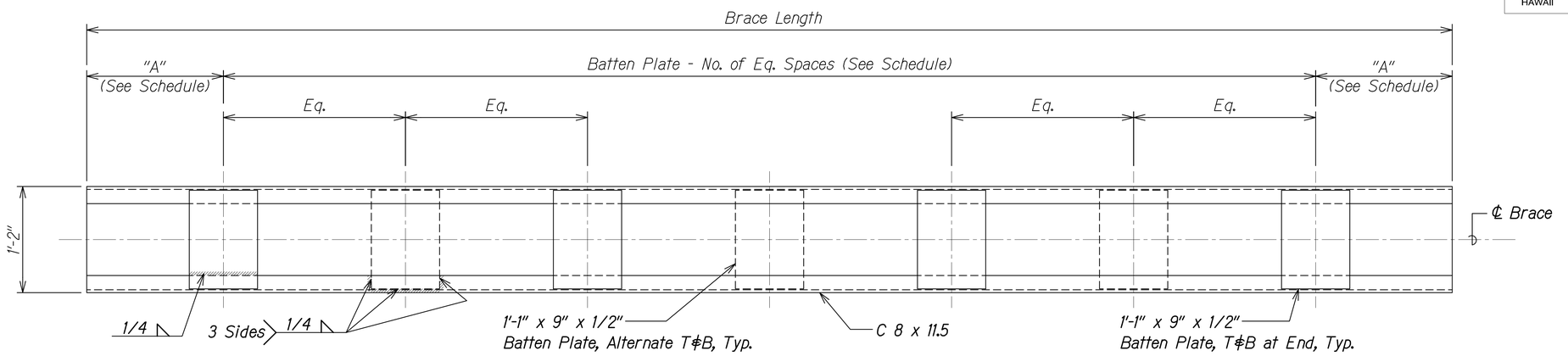
DIAGONAL BRACE SCHEDULE

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

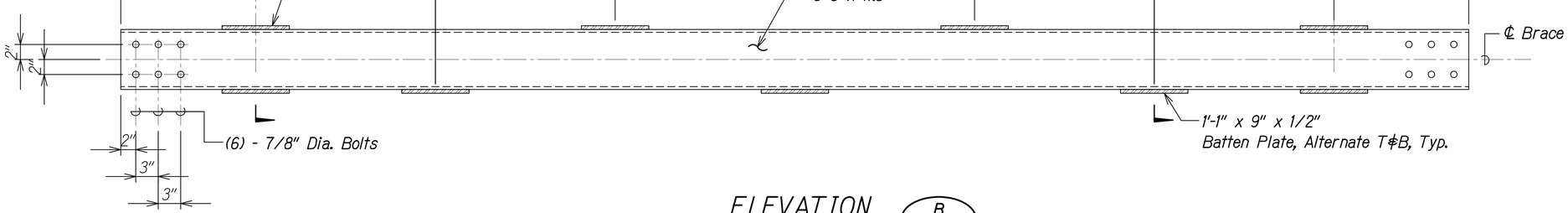
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	87	280



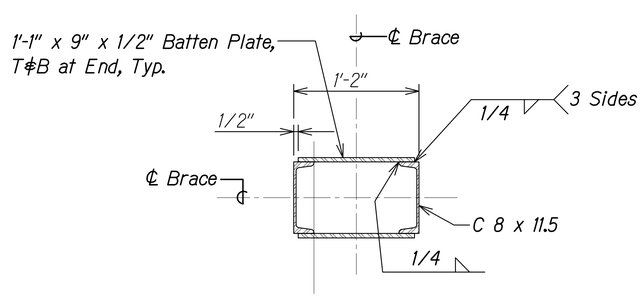
PLAN A
Scale: 1 1/2" = 1'-0" SA5.15 SA5.15

C SA5.15 SA5.15

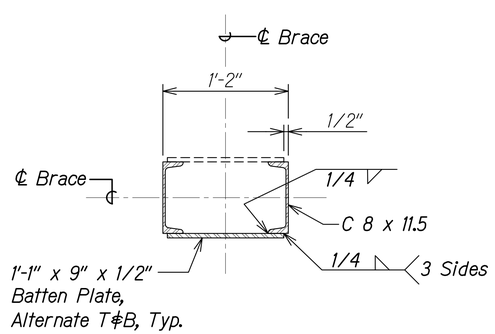
D SA5.15 SA5.15



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



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



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

NOTE:

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

BENT LOWER INTERIOR DIAGONAL BRACE

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-20THAOT CADD\10-28-24 BID SET\VSR-540512 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:40 PM)

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

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	88	280

BENT LOWER INTERIOR DIAGONAL BRACE SCHEDULE

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 4	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"	19 Eq. Spaces
	X5C6-B7	1'-6"	19 Eq. Spaces
	X5B8-C7	1'-6"	18 Eq. Spaces
	X5C8-B7	1'-6"	18 Eq. Spaces
BENT NO. 6	X6B6-C7	1'-6"	19 Eq. Spaces
	X6C6-B7	1'-6"	19 Eq. Spaces
	X6B8-C7	1'-6"	18 Eq. Spaces
	X6C8-B7	1'-6"	18 Eq. Spaces

DRAWING NAME: Z:\DOT\ONGOING\23-022.9-HANUE STR BR PE2-3DTM\01 CAD\10-28-24 BID SET\SR-SA0512 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:41 PM)

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
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DATE

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

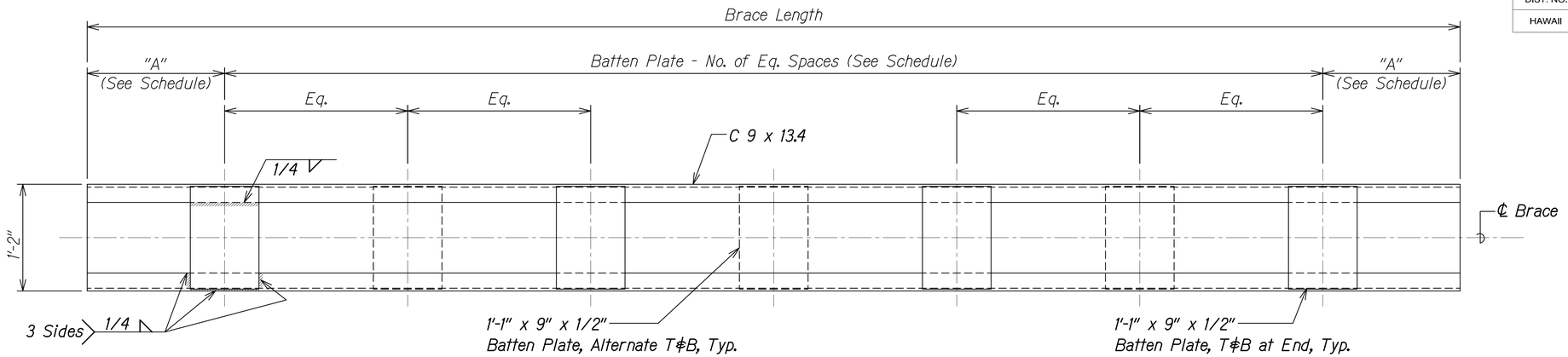
DIAGONAL BRACE SCHEDULE

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

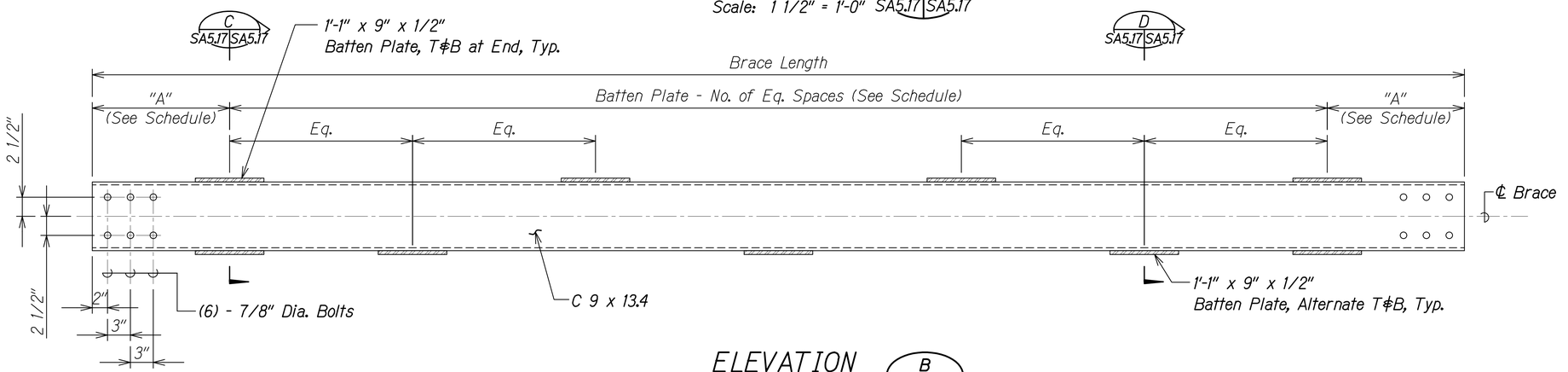
Scale: As Noted Date: Oct. 2024

SHEET No. SA5.16 OF 34 SHEETS

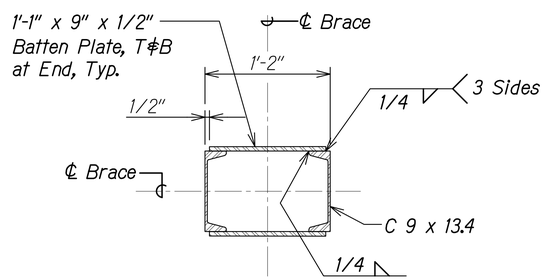
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	89	280



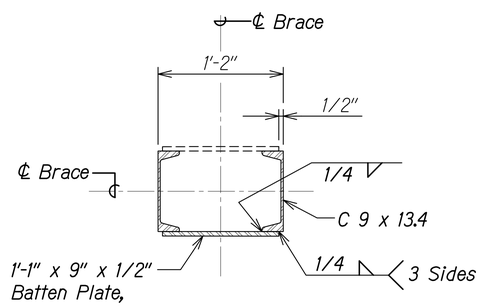
PLAN (A) SA5.17 | SA5.17
Scale: 1 1/2" = 1'-0"



ELEVATION (B) SA5.17 | SA5.17
Scale: 1 1/2" = 1'-0"



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



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

NOTE:

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

BENT EXTERIOR DIAGONAL BRACE

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGINOA 23-022\3-NANUE STR BR PE2-20TH\01 CAD\ 10-28-24 BID SET\VER-SA5\12 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:41 PM

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

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

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	90	280

BENT EXTERIOR DIAGONAL BRACE SCHEDULE

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 1	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
	X3D6-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

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 5	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
	X5A8-B7	1'-6"	12 Eq. Spcs
	X5D8-C7	1'-6"	12 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
	X6A8-B7	1'-6"	12 Eq. Spcs
	X6D8-C7	1'-6"	12 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
	X7A6-B5	1'-6"	18 Eq. Spcs
	X7D6-C5	1'-6"	18 Eq. Spcs

BENT EXTERIOR DIAGONAL BRACE SCHEDULE

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 8	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
	X8D4-C3	1'-6"	18 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

ORIGINAL PLAN
NOTE BOOK No.

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DATE

DRAWING NAME: ZA:\OD ONGINCA\23-0229-NANUE STR BR PE2-DOTA\01 CAD\10-28-24 BID SET\VER-SA5\12 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24, 1:42 PM)

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

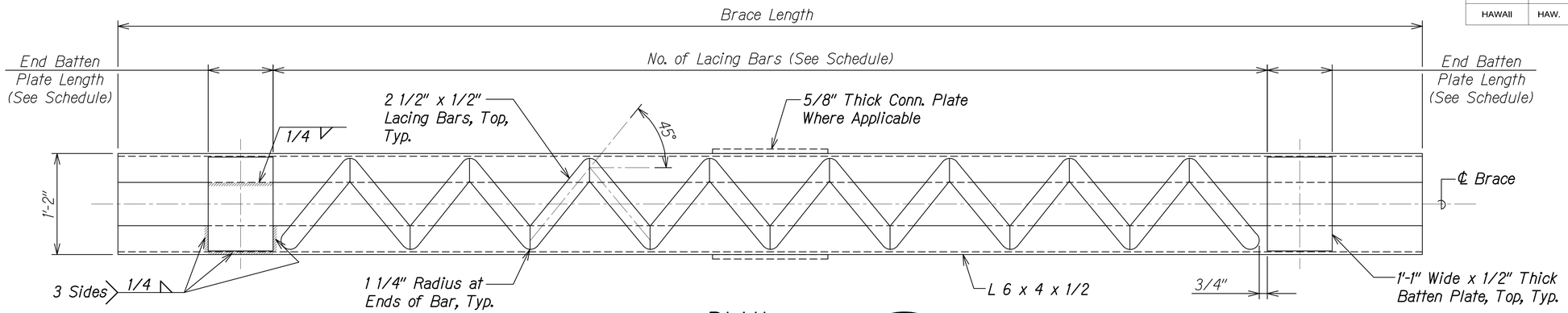
DIAGONAL BRACE SCHEDULE

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	91	280

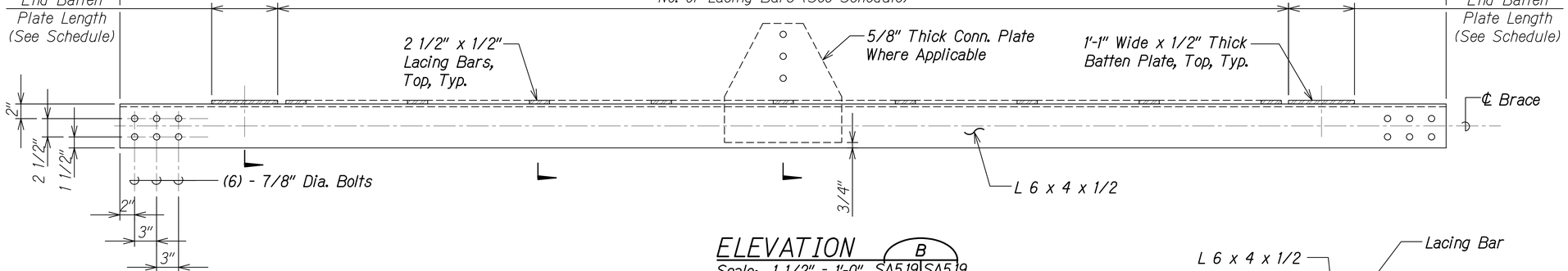


PLAN (A) SA5.19 | SA5.19
Scale: 1 1/2" = 1'-0"

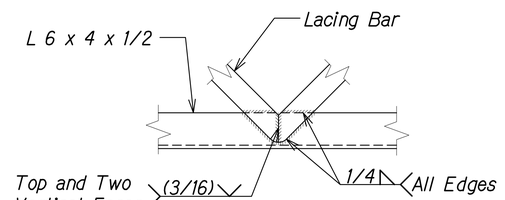
NOTE:

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

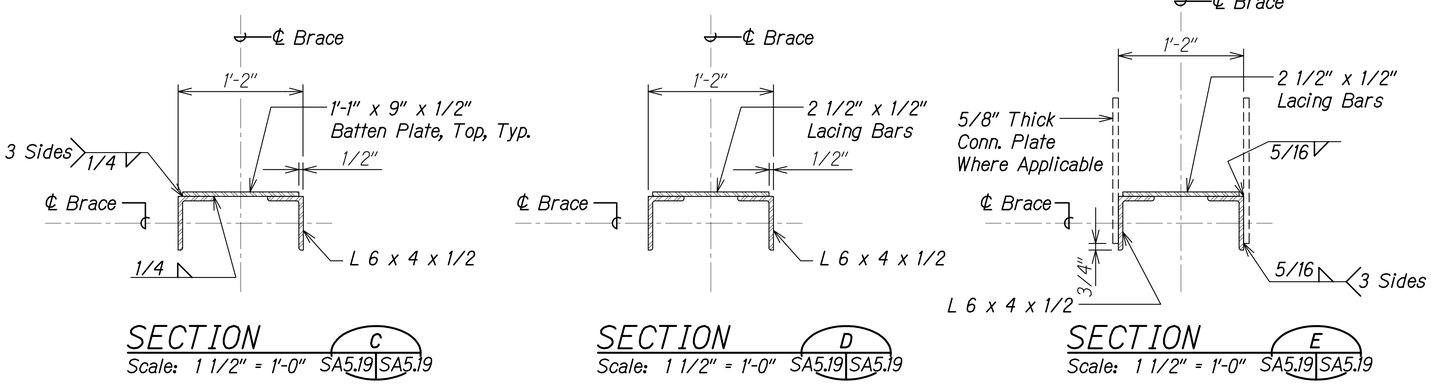
C SA5.19 | SA5.19 D SA5.19 | SA5.19 E SA5.19 | SA5.19



ELEVATION (B) SA5.19 | SA5.19
Scale: 1 1/2" = 1'-0"



DETAIL (1) SA5.19 | SA5.19
Scale: 1 1/2" = 1'-0"



SECTION (C) SA5.19 | SA5.19
Scale: 1 1/2" = 1'-0"

SECTION (D) SA5.19 | SA5.19
Scale: 1 1/2" = 1'-0"

SECTION (E) SA5.19 | SA5.19
Scale: 1 1/2" = 1'-0"

BENT UPPER HORIZONTAL BRACE

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

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

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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

BENT UPPER HORIZONTAL BRACE SCHEDULE

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

	MEMBER ID	End Batten Plate Length	No. of Lacing Bars
BENT NO. 1	H1A-B1	0'-10"	4
	H1B-C1	0'-9"	4
	H1C-D1	0'-10"	4
	H1A-B2	0'-10"	4
	H1B-C2	0'-10"	8
	H1C-D2	0'-10"	4
BENT NO. 2	H2A-B1	0'-10"	4
	H2B-C1	0'-9"	4
	H2C-D1	0'-10"	4
	H2A-B2	0'-10"	4
	H2B-C2	0'-10"	8
	H2C-D2	0'-10"	4
	H2A-B3	0'-10"	4
	H2B-C3	1'-2"	16
	H2C-D3	0'-10"	4
	H2A-B4	0'-10"	4
	H2B-C4	0'-10"	32
	H2C-D4	0'-10"	4
BENT NO. 3	H3A-B1	0'-10"	4
	H3B-C1	0'-9"	4
	H3C-D1	0'-10"	4
	H3A-B2	0'-10"	4
	H3B-C2	0'-10"	8
	H3C-D2	0'-10"	4
	H3A-B3	0'-10"	4
	H3B-C3	1'-2"	16
	H3C-D3	0'-10"	4
	H3A-B4	0'-10"	4
	H3B-C4	1'-0"	32
	H3C-D4	0'-10"	4
	H3A-B5	0'-10"	4
	H3B-C5	0'-9"	48
	H3C-D5	0'-10"	4
BENT NO. 4	H4A-B1	0'-10"	4
	H4B-C1	0'-9"	4
	H4C-D1	0'-10"	4
	H4A-B2	0'-10"	4
	H4B-C2	0'-10"	8
	H4C-D2	0'-10"	4
	H4A-B3	0'-10"	4
	H4B-C3	1'-2"	16
	H4C-D3	0'-10"	4

	MEMBER ID	End Batten Plate Length	No. of Lacing Bars
BENT NO. 4	H4A-B4	0'-10"	4
	H4B-C4	1'-0"	32
	H4C-D4	0'-10"	4
	H4A-B5	0'-10"	4
	H4B-C5	0'-9"	48
	H4C-D5	0'-10"	4
BENT NO. 5	H5A-B1	0'-10"	4
	H5B-C1	0'-9"	4
	H5C-D1	0'-10"	4
	H5A-B2	0'-10"	4
	H5B-C2	0'-10"	8
	H5C-D2	0'-10"	4
	H5B-C3	0'-10"	4
	H5C-D3	1'-2"	16
	H5A-B4	0'-10"	4
	H5A-B1	0'-10"	4
	H5B-C4	1'-0"	32
	H5C-D4	0'-10"	4
	H5A-B5	0'-10"	4
	H5B-C5	0'-9"	48
	H5C-D5	0'-10"	4
BENT NO. 6	H6A-B1	0'-10"	4
	H6B-C1	0'-9"	4
	H6C-D1	0'-10"	4
	H6A-B2	0'-10"	4
	H6B-C2	0'-10"	8
	H6C-D2	0'-10"	4
	H6A-B3	0'-10"	4
	H6B-C3	1'-2"	16
	H6C-D3	0'-10"	4
	H6A-B4	0'-10"	4
	H6B-C4	1'-0"	32
	H6C-D4	0'-10"	4
	H6A-B5	0'-10"	4
	H6B-C5	0'-9"	48
	H6C-D5	0'-10"	4
BENT NO. 7	H7A-B1	0'-10"	4
	H7B-C1	0'-9"	4
	H7C-D1	0'-10"	4
	H7A-B2	0'-10"	4
	H7B-C2	0'-10"	8
	H7C-D2	0'-10"	4
	H7A-B3	0'-10"	4

	MEMBER ID	End Batten Plate Length	No. of Lacing Bars
BENT NO. 7	H7B-C3	1'-2"	16
	H7C-D3	0'-10"	4
	H7A-B4	0'-10"	4
	H7B-C4	1'-0"	32
	H7C-D4	0'-10"	4
	H7A-B5	0'-10"	4
	H7B-C5	0'-9"	48
	H7C-D5	0'-10"	4
BENT NO. 8	H8A-B1	0'-10"	4
	H8B-C1	0'-9"	4
	H8C-D1	0'-10"	4
	H8A-B2	0'-10"	4
	H8B-C2	0'-10"	8
	H8C-D2	0'-10"	4
	H8A-B3	0'-10"	4
	H8B-C3	1'-2"	16
	H8C-D3	0'-10"	4
BENT NO. 9	H9A-B1	0'-10"	4
	H9B-C1	0'-9"	4
	H9C-D1	0'-10"	4
	H9A-B2	0'-10"	4
	H9B-C2	0'-10"	8
	H9C-D2	0'-10"	4

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-3DTM.01 CADD\10-28-24 BID SET\VSR-540512 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:42 PM)

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

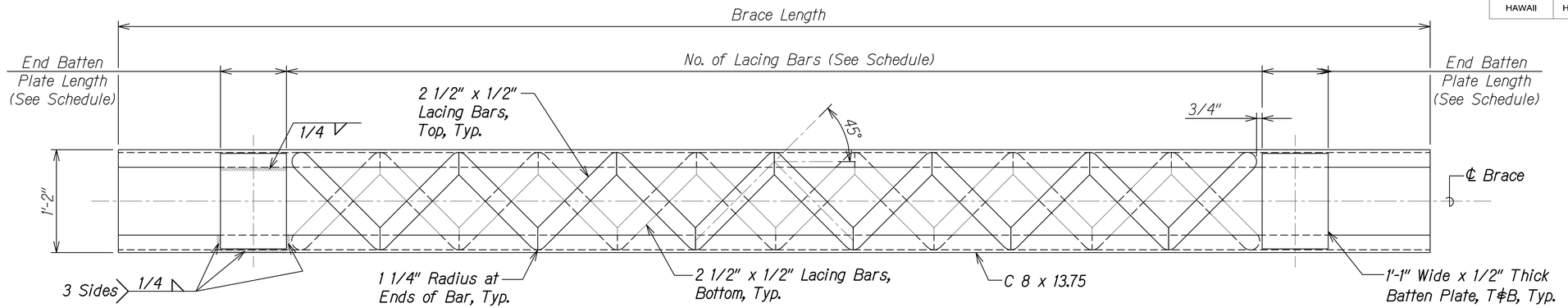
HORIZONTAL BRACE SCHEDULE

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

Scale: As Noted Date: Oct. 2024

SHEET NO SA5.20 OF 34 SHEETS

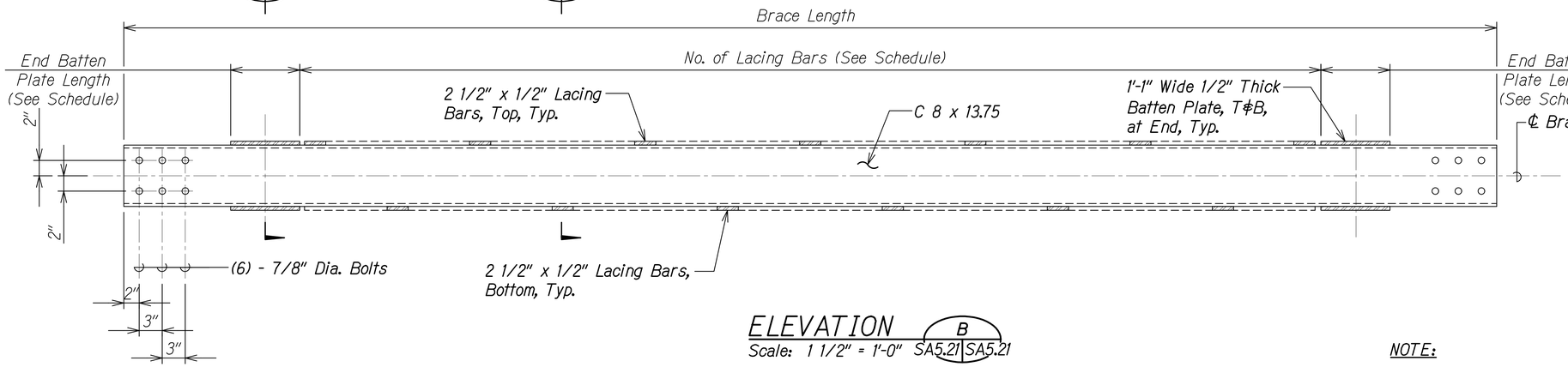
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	93	280



PLAN (A) SA5.21 | SA5.21
Scale: 1 1/2" = 1'-0"

C SA5.21 | SA5.21

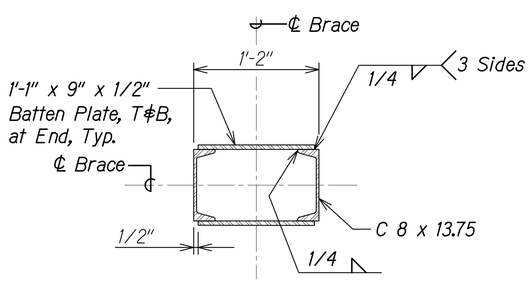
D SA5.21 | SA5.21



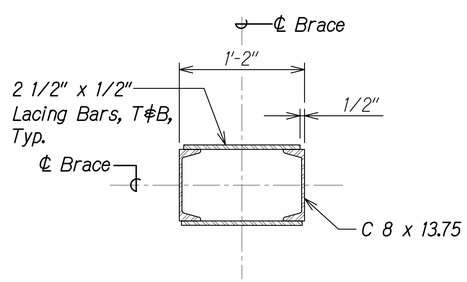
ELEVATION (B) SA5.21 | SA5.21
Scale: 1 1/2" = 1'-0"

NOTE:

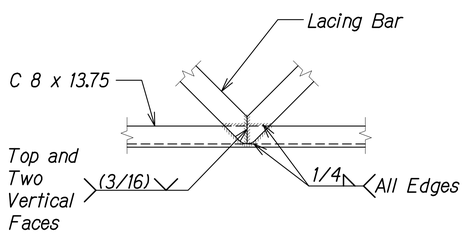
Steel detailer to determine all lengths not shown on brace plans and schedule.



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



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



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

BENT LOWER HORIZONTAL BRACE

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

DRAWING NAME: Z:\OD ONGOING\24-022\3-NANUE STR BR REPL-ROUTE 11\CAD\10-28-24 BID SET\NSR-240519.DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:43 PM)

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

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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 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	94	280

BENT LOWER HORIZONTAL BRACE SCHEDULE

	MEMBER ID	End Batten Plate Length	No. of Lacing Bars
BENT NO. 1	H1A-B3	0′-8″	4
	H1B-C3	1′-2″	16
	H1C-D3	0′-8″	4
BENT NO. 2	H2A-B5	0′-8″	4
	H2B-C5	0′-8″	34
	H2C-D5	0′-8″	4
BENT NO. 3	H3A-B6	0′-8″	4
	H3B-C6	1′-2″	20
	H3C-B6	1′-2″	20
	H3C-D6	0′-8″	4
BENT NO. 4	H4A-B6	0′-8″	4
	H4B-C6	0′-10″	22
	H4C-B6	0′-10″	22
	H4C-D6	0′-8″	4
	H4A-B7	0′-8″	4
	H4B-C7	0′-8″	30
	H4C-B7	0′-8″	30
	H4C-D7	0′-8″	4
BENT NO. 5	H5A-B6	0′-8″	4
	H5B-C6	0′-10″	22
	H5C-B6	0′-10″	22
	H5C-D6	0′-8″	4
	H5A-B7	0′-8″	4
	H5B-C7	0′-11″	28
	H5C-B7	0′-11″	28
	H5C-D7	0′-8″	4
	H5A-B8	0′-8″	4
	H5B-C8	0′-11″	32
	H5C-B8	0′-11″	32
	H5C-D8	0′-8″	4
BENT NO. 6	H6A-B6	0′-8″	4
	H6B-C6	0′-10″	22
	H6C-B6	0′-10″	22
	H6C-D6	0′-8″	4
	H6A-B7	0′-8″	4
	H6B-C7	0′-11″	28
	H6C-B7	0′-11″	28
	H6C-D7	0′-8″	4
	H6A-B8	0′-8″	4
	H6B-C8	0′-11″	32
	H6C-B8	0′-11″	32
	H6C-D8	0′-8″	4
BENT NO. 7	H7A-B6	0′-8″	4
	H7B-C6	1′-0″	22
	H7C-B6	1′-0″	22
	H7C-D6	0′-8″	4
BENT NO. 8	H8A-B4	0′-8″	4
	H8B-C4	0′-8″	26
	H8C-D4	0′-8″	4
BENT NO. 9	H9A-B3	0′-8″	4
	H9B-C3	1′-1″	14
	H9C-D3	0′-8″	4

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-20TH\LOT CAD\10-28-24 BID SET\HSR-SA0512 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:43 PM

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

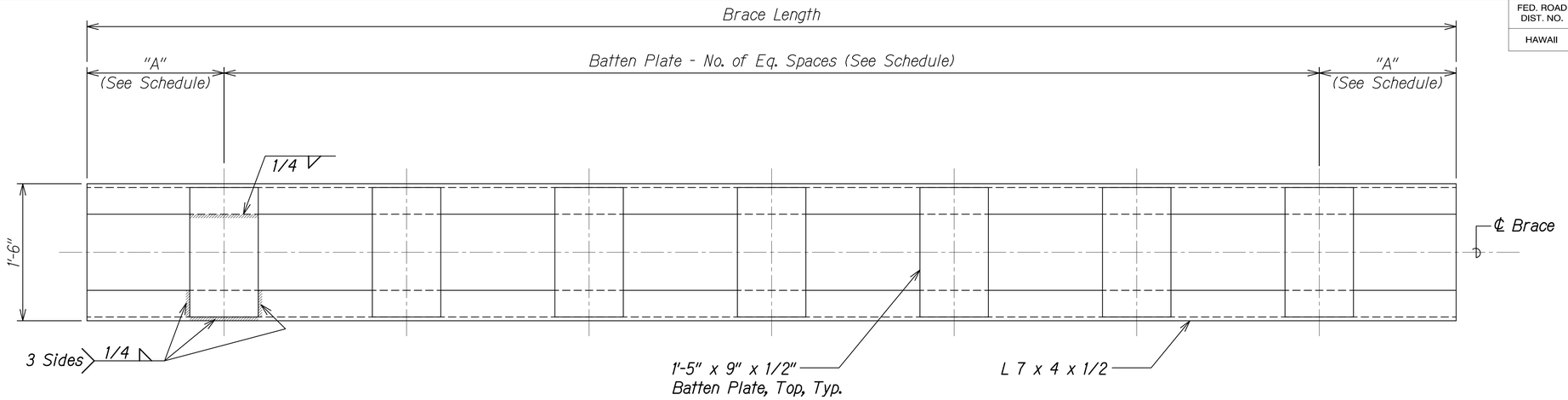
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HORIZONTAL BRACE SCHEDULE

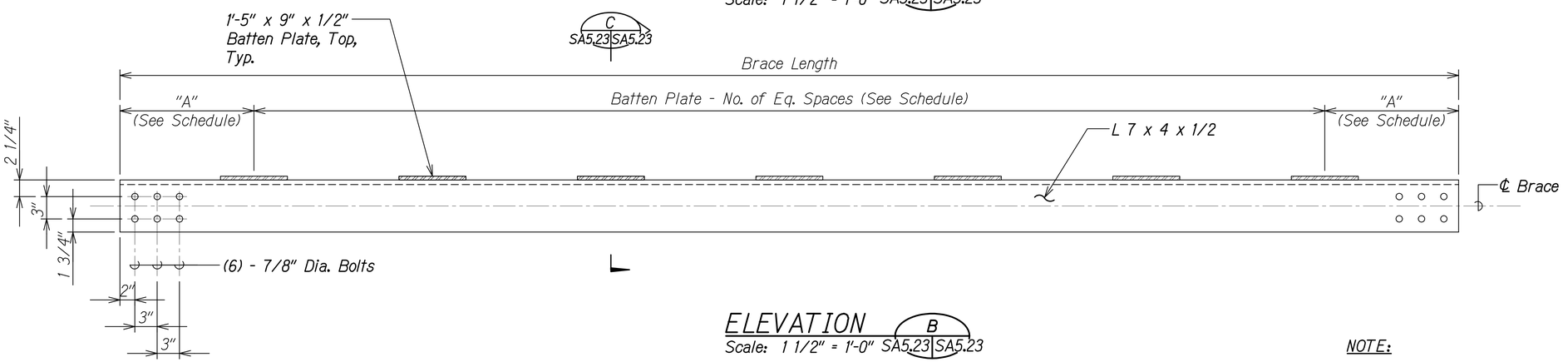
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

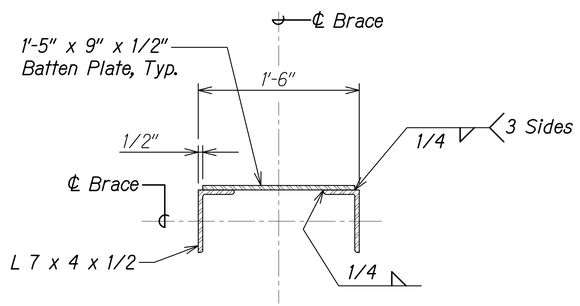
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	95	280



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



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



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

BENT-TO-BENT DIAGONAL BRACE

NOTE:

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

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

STEPHEN T. PETERS
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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 SA5.23 OF 34 SHEETS

DRAWING NAME: Z:\OD\ONGOING\23-022\3-NANUE STR BR REP-ROTA\01 CAD\10-28-24 BID SET\NSR-240519 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24 4:43 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	96	280

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

MEMBER ID	"A"	BATTEN PLATE SPACES
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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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 SA5.24 OF 34 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR REP-BOTH\01 CAD\10-28-24 BID SET\NSR-240519 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:45 PM)

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

TRESTLE NO. 4

MEMBER ID	"A"	BATTEN PLATE SPACES
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

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

DRAWING NAME: ZA:\OD ONOONO\23-022\3-NANUE STR BR PE2-DOTA\01 CAD\10-28-24 BID SET\VGR-SA5\12 DWG BRACE DTLS.DWG PLOT TIME 10-28-24, 4:44 PM)

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

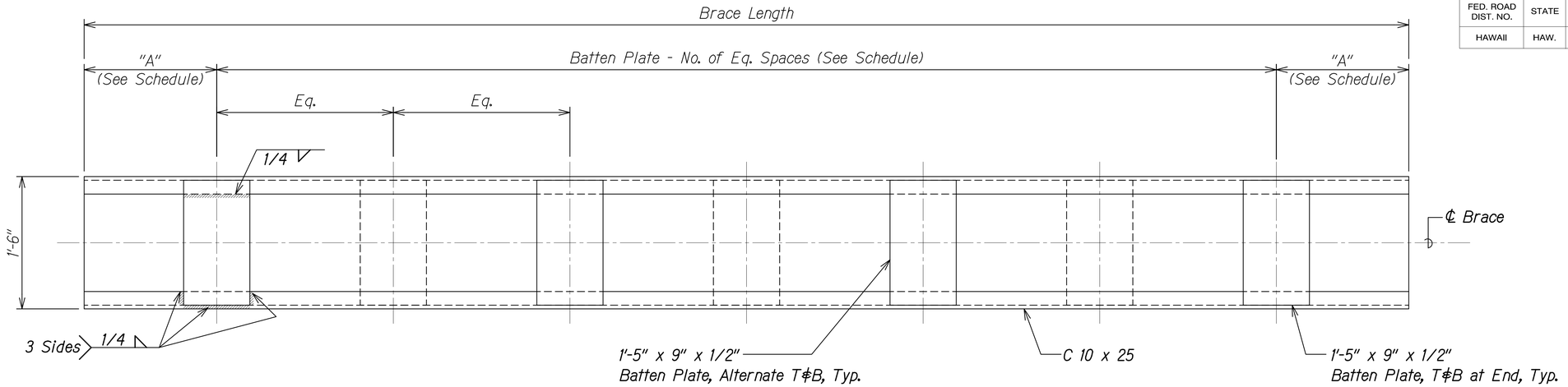
DIAGONAL BRACE SCHEDULE

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

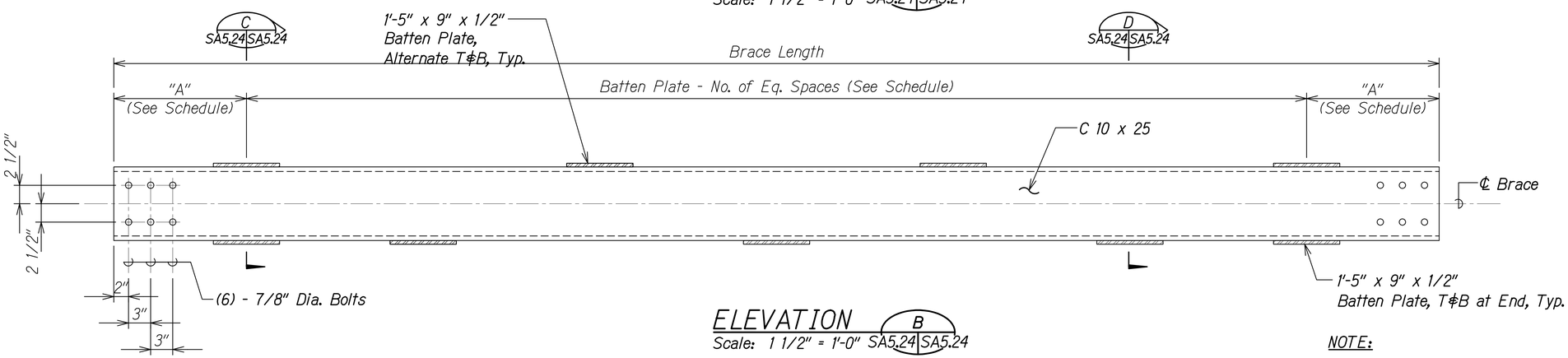
Scale: As Noted Date: Oct. 2024

SHEET NO SA5.25 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



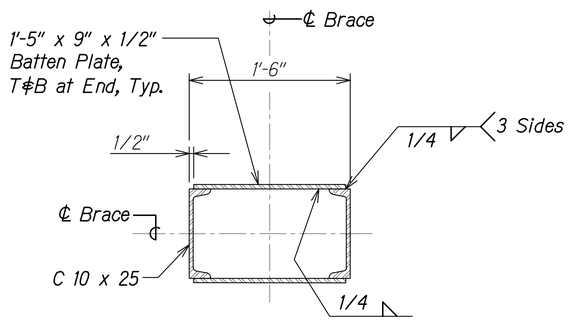
PLAN (A) SA5.24 | SA5.24
Scale: 1 1/2" = 1'-0"



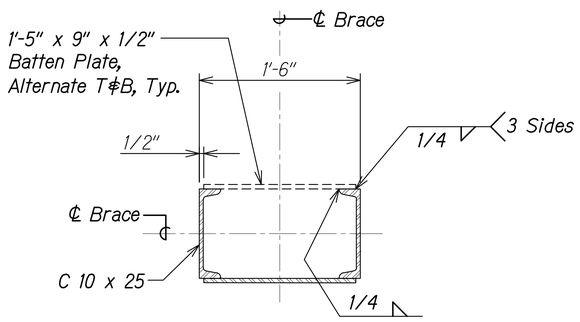
ELEVATION (B) SA5.24 | SA5.24
Scale: 1 1/2" = 1'-0"

NOTE:

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



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



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

TRESTLE NO. 5 DIAGONAL BRACE

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

DRAWING NAME: ZA:\00 ONGOING\23-022\3-NANUE STR BR PE2-SOTA\01 CAD\10-28-24 BID SET\VER-SA5\12 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:44 PM)

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

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 SA5.26 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	99	280

TRESTLE NO. 5 DIAGONAL BRACE SCHEDULE

TRESTLE NO. 5

MEMBER ID	"A"	BATTEN PLATE SPACES
X8A1-9A3	1'-6"	11 Eq. Spaces
X8B1-9B3	1'-6"	11 Eq. Spaces
X8C1-9C3	1'-6"	11 Eq. Spaces
X8D1-9D3	1'-6"	11 Eq. Spaces
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"	11 Eq. Spaces
X8B4-9B3	1'-6"	11 Eq. Spaces
X8C4-9C3	1'-6"	11 Eq. Spaces
X8D4-9D3	1'-6"	11 Eq. Spaces
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

DRAWING NAME: Z:\OD ONCONO\23-0229-NANUE STR BR REP-ROTA\01 CAD\10-28-24 BID SET\NSR-240519 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:46 PM)

ORIGINAL PLAN
NOTE BOOK
No.

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

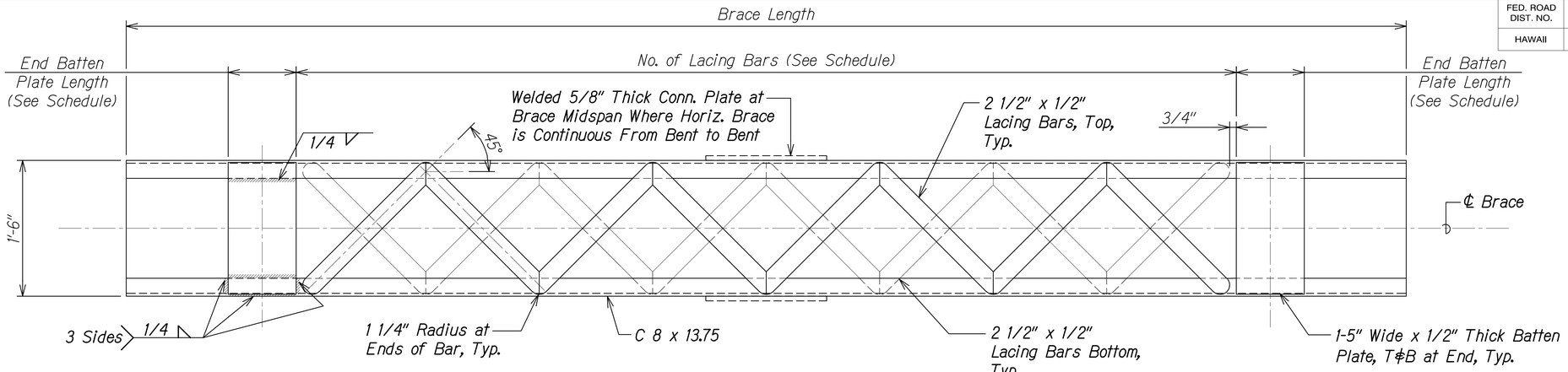
DIAGONAL BRACE SCHEDULE

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

Scale: As Noted Date: Oct. 2024

SHEET NO SA5.27 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	100	280

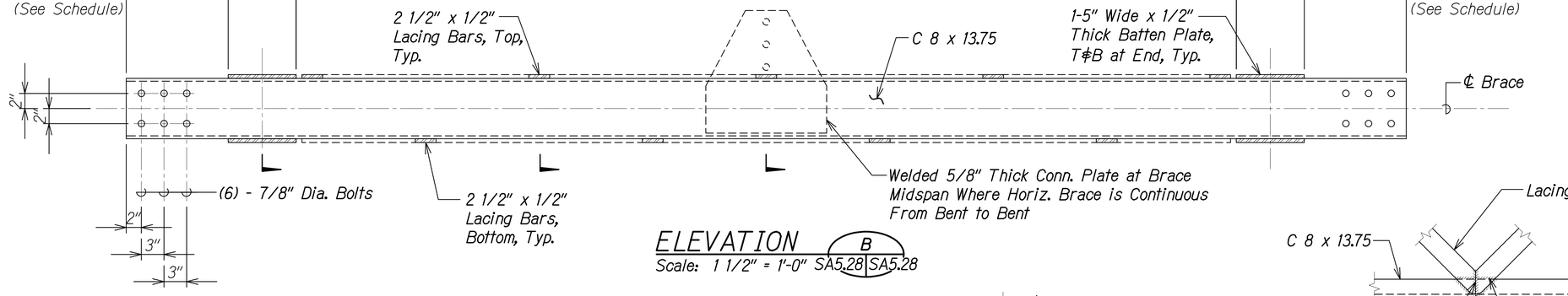


PLAN (A) SA5.28 | SA5.28
Scale: 1 1/2" = 1'-0"

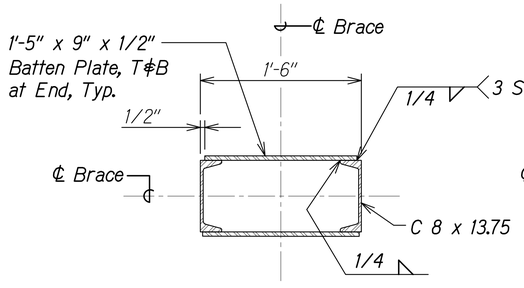
C SA5.28 | SA5.28 D SA5.28 | SA5.28 E SA5.28 | SA5.28

NOTE:

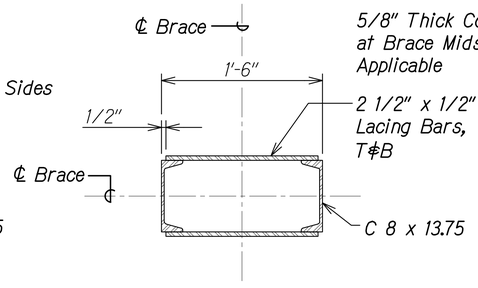
Steel detailer to determine all lengths not shown on brace plans and schedule.



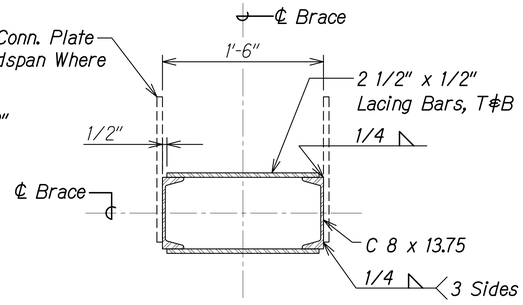
ELEVATION (B) SA5.28 | SA5.28
Scale: 1 1/2" = 1'-0"



SECTION (C) SA5.28 | SA5.28
Scale: 1 1/2" = 1'-0"



SECTION (D) SA5.28 | SA5.28
Scale: 1 1/2" = 1'-0"



SECTION (E) SA5.28 | SA5.28
Scale: 1 1/2" = 1'-0"

DETAIL (1) SA5.28 | SA5.28
Scale: 1 1/2" = 1'-0"

BENT-TO-BENT HORIZONTAL BRACE

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

DRAWING NAME: ZA:\OD ONGINO\93-0229-NANUE STR BR PEZ-DOTA\01 CAD\10-28-24 BID SET\NSR-SA5\12 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:47 PM

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

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

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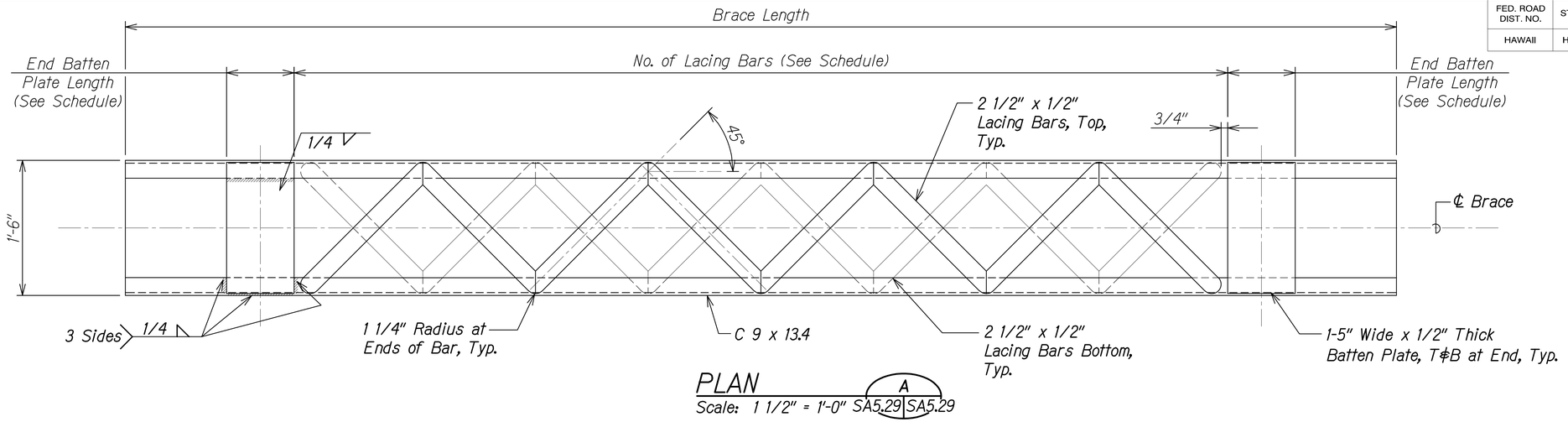
SHEET NO SA5.28 OF 34 SHEETS

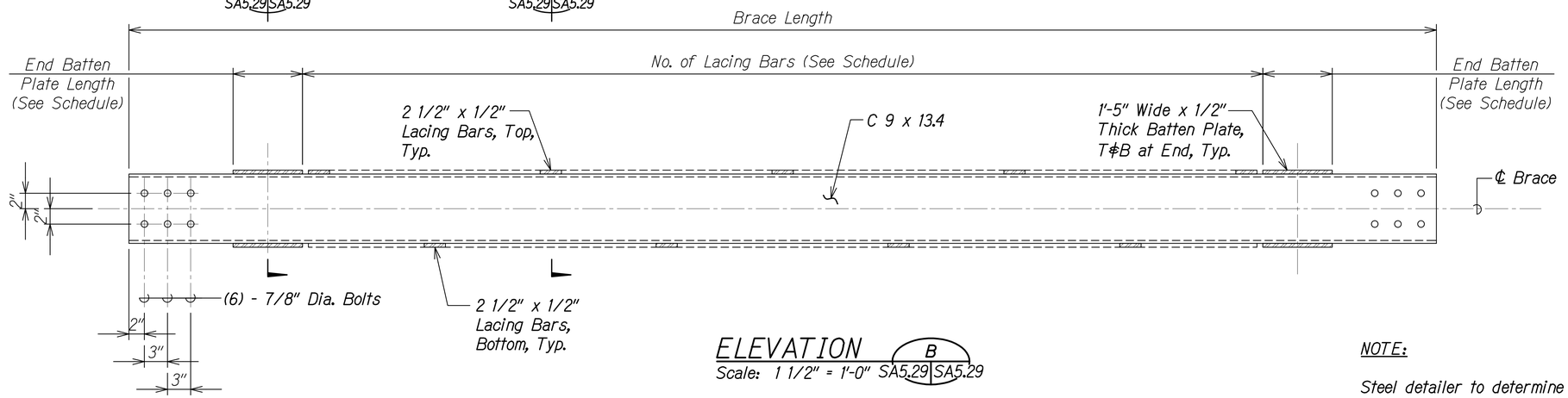
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	101	280



PLAN A
Scale: 1 1/2" = 1'-0" SA5.29 | SA5.29

C SA5.29 | SA5.29

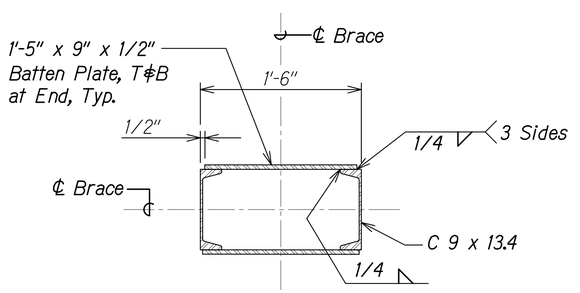
D SA5.29 | SA5.29



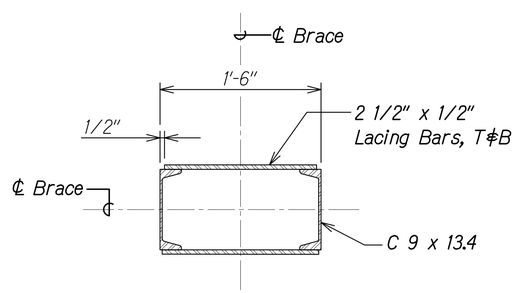
ELEVATION B
Scale: 1 1/2" = 1'-0" SA5.29 | SA5.29

NOTE:

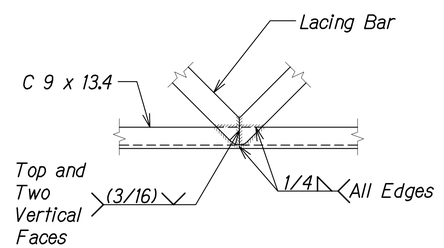
Steel detailer to determine all lengths not shown on brace plans and schedule.



SECTION C
Scale: 1 1/2" = 1'-0" SA5.29 | SA5.29



SECTION D
Scale: 1 1/2" = 1'-0" SA5.29 | SA5.29



DETAIL 1
Scale: 1 1/2" = 1'-0" SA5.29 | SA5.29

TRESTLE NO. 4 BOTTOM HORIZONTAL BRACE

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

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

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4-30-26
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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 SA5.29 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	102	280

BENT-TO-BENT HORIZONTAL BRACE SCHEDULE

TRESTLE NO. 2

MEMBER ID	End Batten Plate Length	No. of Lacing Bars
H2A3-3A3	1'-2"	26
H2B3-3B3	1'-2"	26
H2C3-3C3	1'-2"	26
H2D3-3D3	1'-2"	26
H2A4-3A4	1'-2"	26
H2B4-3B4	1'-2"	26
H2C4-3C4	1'-2"	26
H2D4-3D4	1'-2"	26
H2A5-3A5	0'-8"	28
H2B5-3B5	0'-8"	28
H2C5-3C5	0'-8"	28
H2D5-3D5	0'-8"	28
H2A5-3A6	1'-3"	16
H2B5-3B6	1'-3"	16
H2C5-3C6	1'-3"	16
H2D5-3D6	1'-3"	16
H3A6-2A5	1'-3"	16
H3B6-2B5	1'-3"	16
H3C6-2C5	1'-3"	16
H3D6-2D5	1'-3"	16

TRESTLE NO. 3

MEMBER ID	End Batten Plate Length	No. of Lacing Bars
H4A3-5A3	1'-2"	26
H4B3-5B3	1'-2"	26
H4C3-5C3	1'-2"	26
H4D3-5D3	1'-2"	26
H4A4-5A4	1'-2"	26
H4B4-5B4	1'-2"	26
H4C4-5C4	1'-2"	26
H4D4-5D4	1'-2"	26
H4A5-5A5	1'-2"	26
H4B5-5B5	1'-2"	26
H4C5-5C5	1'-2"	26
H4D5-5D5	1'-2"	26
H4A6-5A6	1'-2"	26
H4B6-5B6	1'-2"	26
H4C6-5C6	1'-2"	26
H4D6-5D6	1'-2"	26
H4A7-5A7	1'-4"	26
H4B7-5B7	1'-4"	26
H4C7-5C7	1'-4"	26
H4D7-5D7	1'-4"	26
H4A7-5A8	1'-0"	14
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

TRESTLE NO. 4

MEMBER ID	End Batten Plate Length	No. of Lacing Bars
H6A3-7A3	1'-2"	26
H6B3-7B3	1'-2"	26
H6C3-7C3	1'-2"	26
H6D3-7D3	1'-2"	26
H6A4-7A4	1'-2"	26
H6B4-7B4	1'-2"	26
H6C4-7C4	1'-2"	26
H6D4-7D4	1'-2"	26
H6A5-7A5	1'-2"	26
H6B5-7B5	1'-2"	26
H6C5-7C5	1'-2"	26
H6D5-7D5	1'-2"	26
H6A6-7A6	1'-2"	26
H6B6-7B6	1'-2"	26
H6C6-7C6	1'-2"	26
H6D6-7D6	1'-2"	26

TRESTLE NO. 5

MEMBER ID	End Batten Plate Length	No. of Lacing Bars
H8A3-9A3	1'-2"	26
H8B3-9B3	1'-2"	26
H8C3-9C3	1'-2"	26
H8D3-9D3	1'-2"	26

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

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR REP-ROTAVO\CAD\10-28-24 BID SET\NSR-240519.DWG BRACE DTLS.DWG PLOT TIME: 10-28-24 4:47 PM)

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

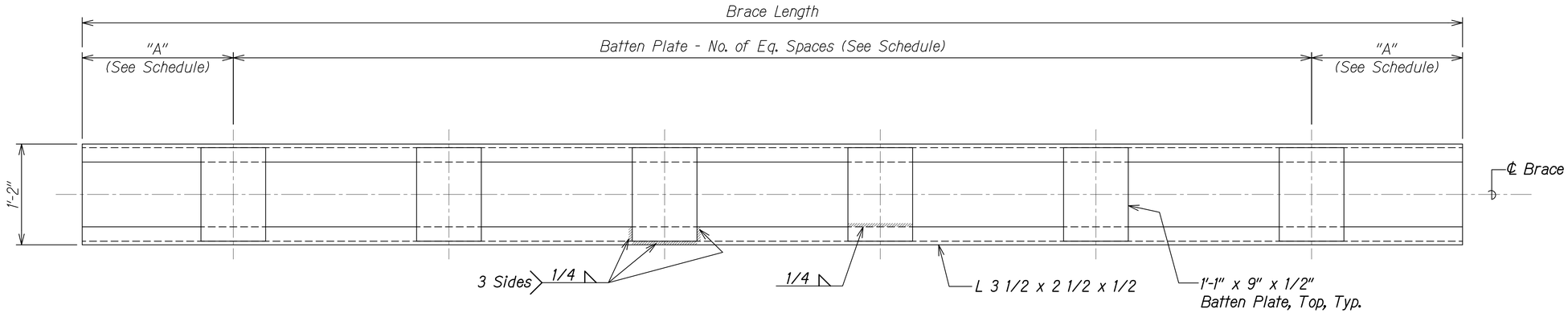
HORIZONTAL BRACE SCHEDULE

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

Scale: As Noted Date: Oct. 2024

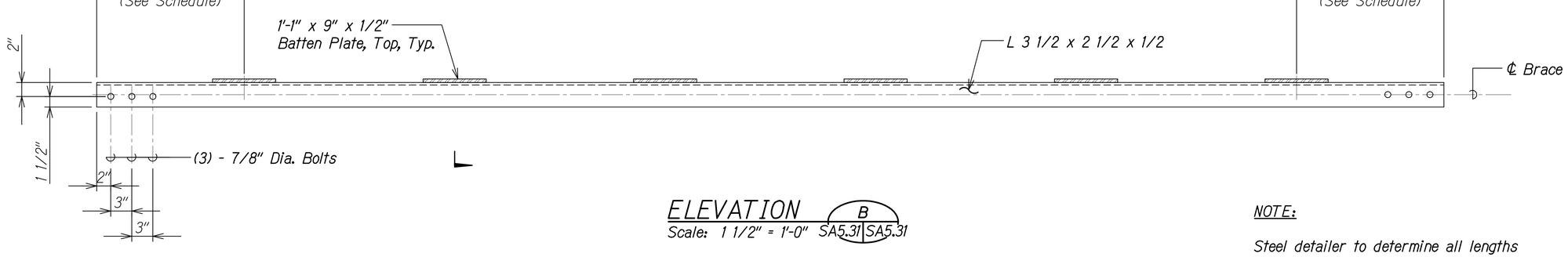
SHEET NO SA5.30 OF 34 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	103	280

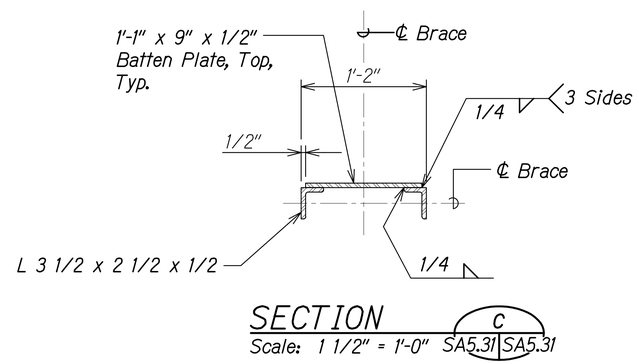


PLAN A SA5.31 | SA5.31
Scale: 1 1/2" = 1'-0"

C SA5.31 | SA5.31



ELEVATION B SA5.31 | SA5.31
Scale: 1 1/2" = 1'-0"



SECTION C SA5.31 | SA5.31
Scale: 1 1/2" = 1'-0"

BENT VERTICAL BRACE

NOTE:

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

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

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VERTICAL 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. SA5.31 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

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 1	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

	MEMBER ID	"A"	BATTEN PLATE SPACES
BENT NO. 6	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

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: Z:\OI ONGOING\23-022.9-NANUE STR BR PE2-DOTH\OT CAD\10-28-24 BID SET\VSR-540512 DIAG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:48 PM

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

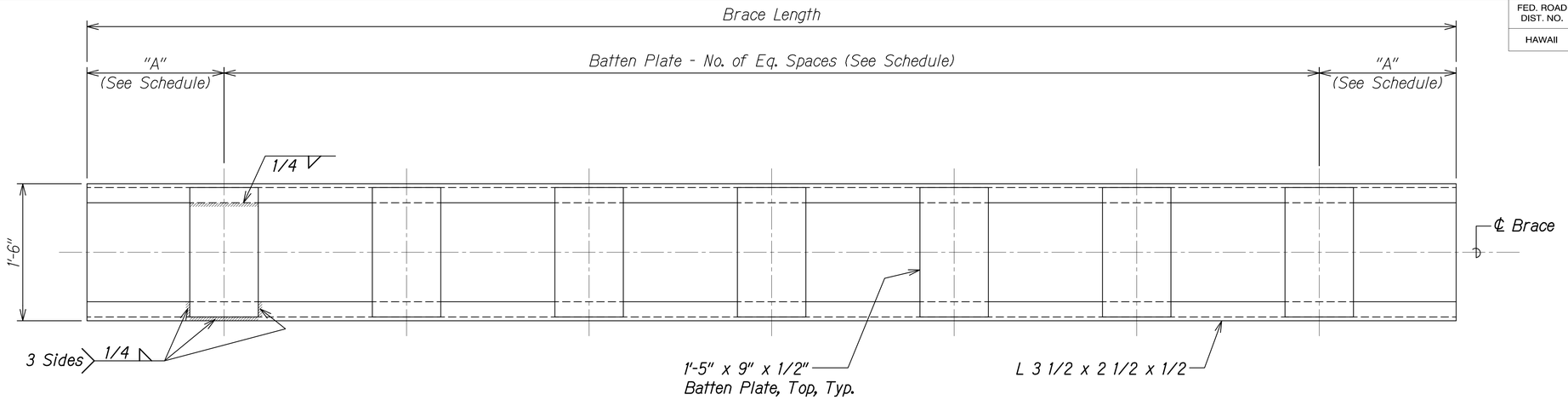
VERTICAL BRACE SCHEDULE

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

Scale: As Noted Date: Oct. 2024

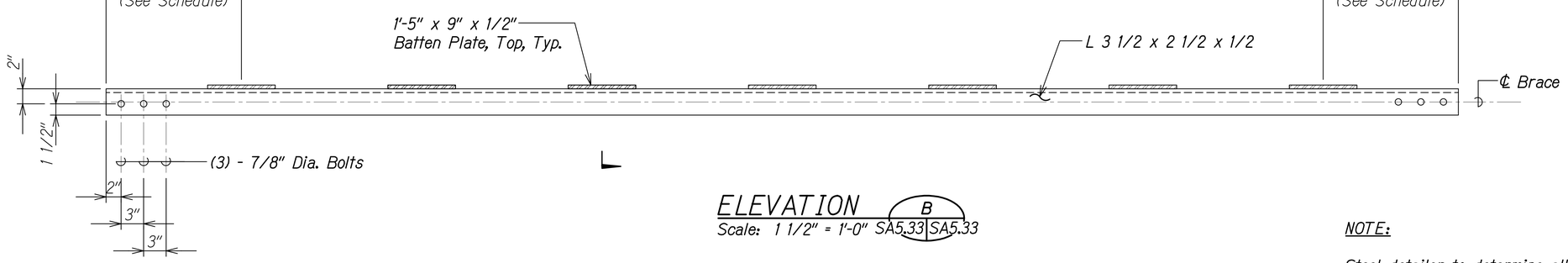
SHEET NO SA5.32 OF 34 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	105	280

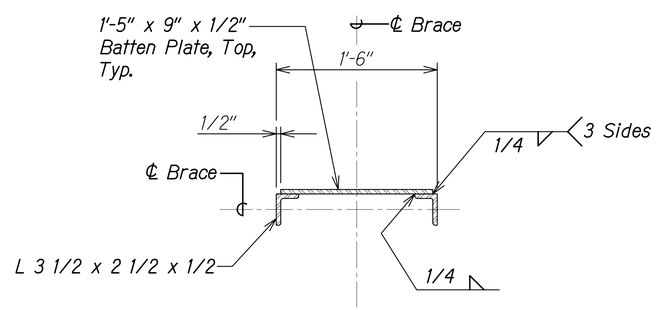


PLAN (A)
Scale: 1 1/2" = 1'-0" SA5.33 SA5.33

C
SA5.33 SA5.33



ELEVATION (B)
Scale: 1 1/2" = 1'-0" SA5.33 SA5.33



SECTION (C)
Scale: 1 1/2" = 1'-0" SA5.33 SA5.33

BENT-TO-BENT VERTICAL BRACE

NOTE:

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

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR REP-BOTH\01 CAD\10-28-24 BID SET\NSR-240519 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24 4:48 PM

STEPHEN T. PETERS
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VERTICAL 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 SA5.33 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	106	280

BENT VERTICAL BRACE SCHEDULE

	MEMBER ID	"A"	BATTEN PLATE SPACES
TRESTLE NO. 2	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

	MEMBER ID	"A"	BATTEN PLATE SPACES
TRESTLE NO. 4	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
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PE2-3D\TH\01 CAD\10-28-24 BID SERVER-SAS512 DWG BRACE DTLS.DWG PLOT TIME: 10-28-24, 4:49 PM

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

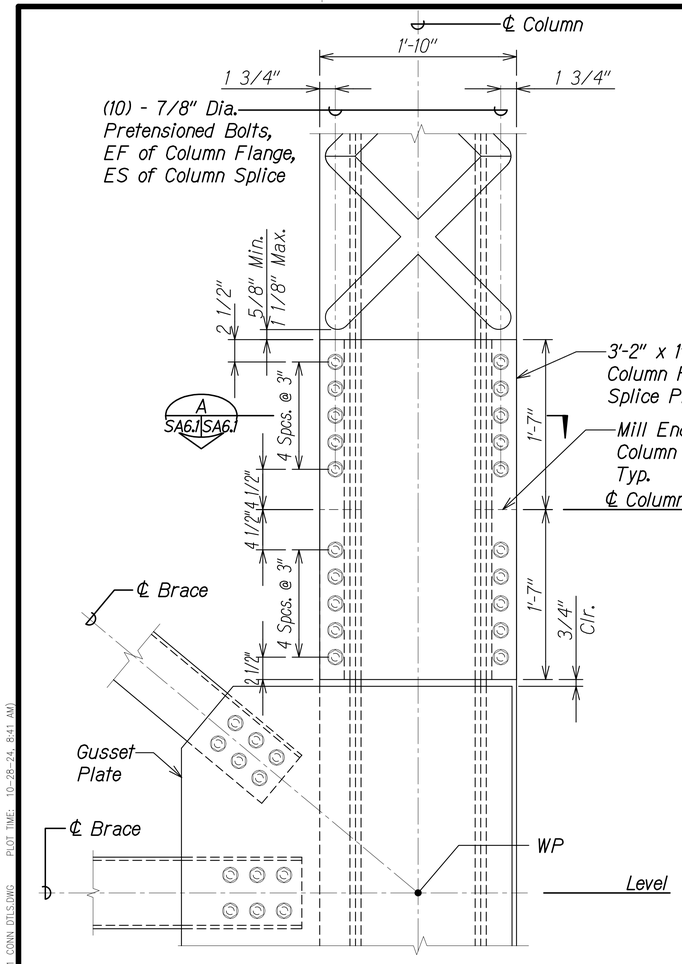
VERTICAL BRACE SCHEDULE

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

Scale: As Noted Date: Oct. 2024

SHEET NO SA5.34 OF 34 SHEETS

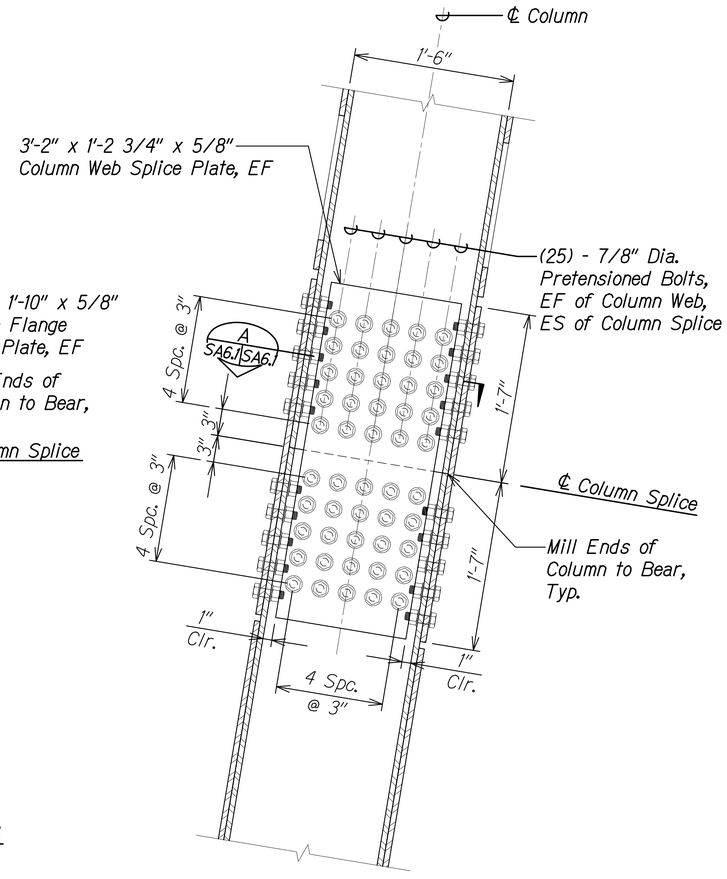
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	107	280



COLUMN FLANGE SPLICE - CONNECTION DETAIL

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

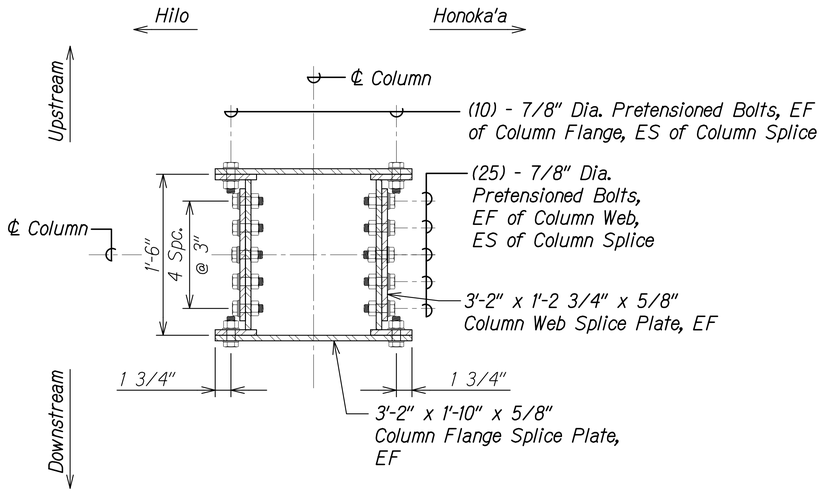
1 SA6.1 SA6.1



COLUMN WEB SPLICE - CONNECTION DETAIL

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

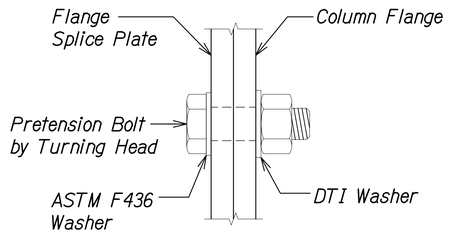
2 SA6.1 SA6.1



SECTION A

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

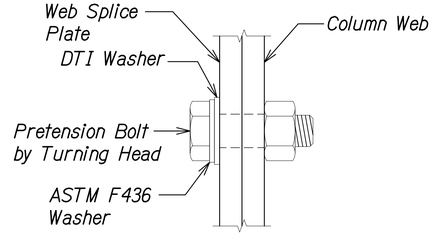
A SA6.1 SA6.1



COLUMN FLANGE SPLICE BOLT CONNECTION DETAIL

Scale: 6" = 1'-0"

3 SA6.1 SA6.1



COLUMN WEB SPLICE BOLT CONNECTION DETAIL

Scale: 6" = 1'-0"

4 SA6.1 SA6.1

NOTE:

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

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
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HAWAII, U.S.A.

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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

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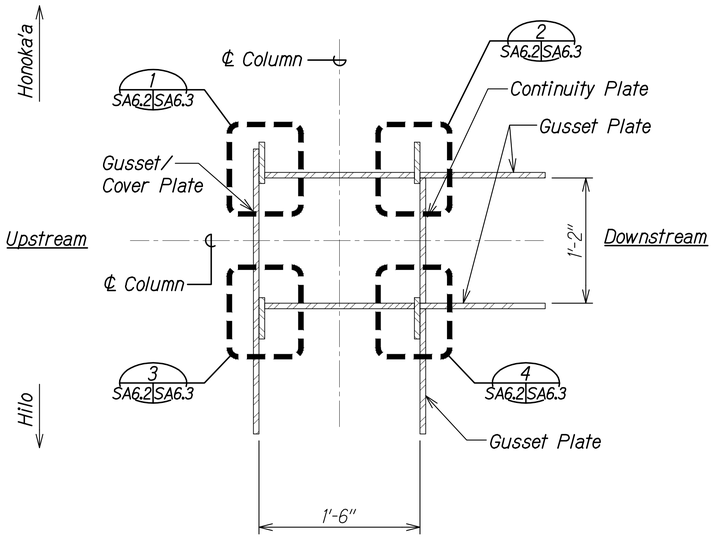
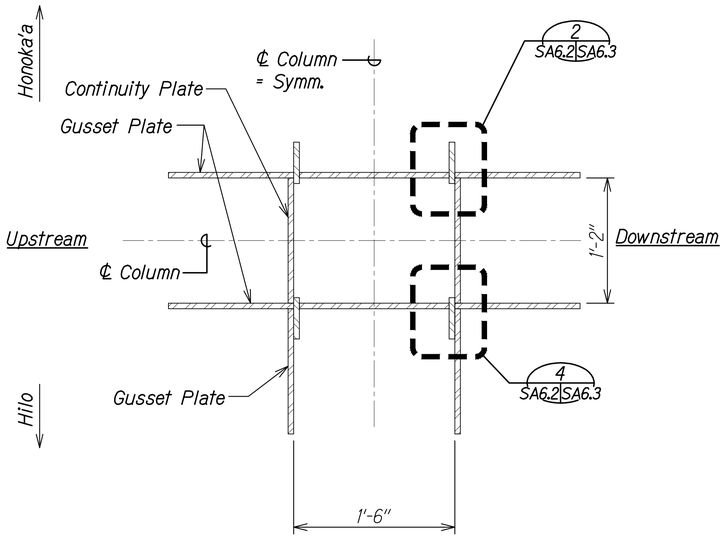
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: ZA:\02 ONGOING\23-0229-NANUE STR BR PE2-DOTA\01 CAD\10-28-24 BID SET\VER-SA06\01 CONN DTLS.DWG PLOT TIME: 10-28-24 8:41 AM)

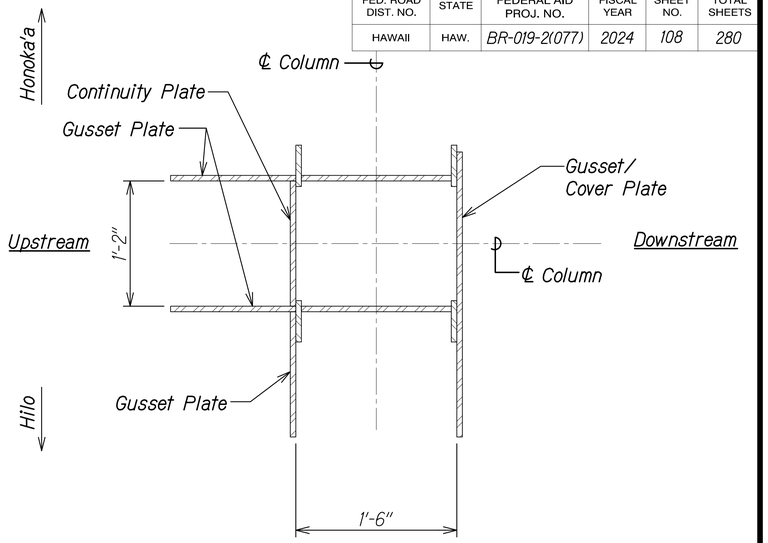
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	108	280



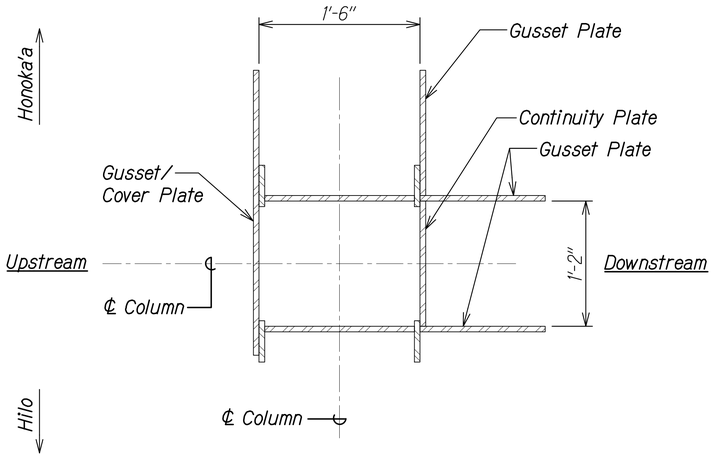
PLAN DETAIL A
Scale: 1 1/2" = 1'-0" SA6.2|SA6.2



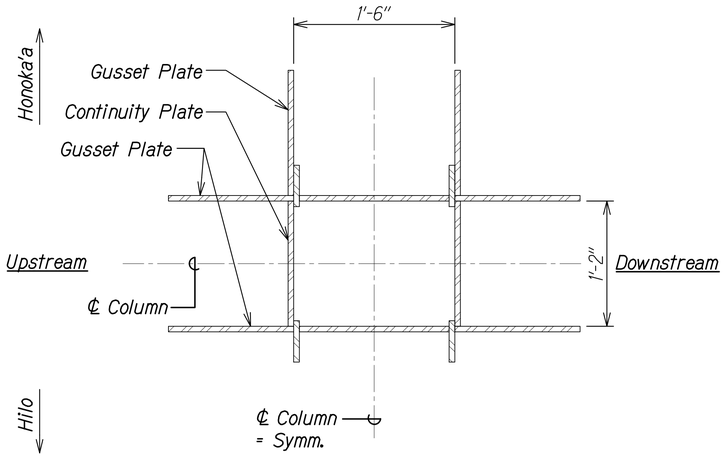
PLAN DETAIL B
Scale: 1 1/2" = 1'-0" SA6.2|SA6.2



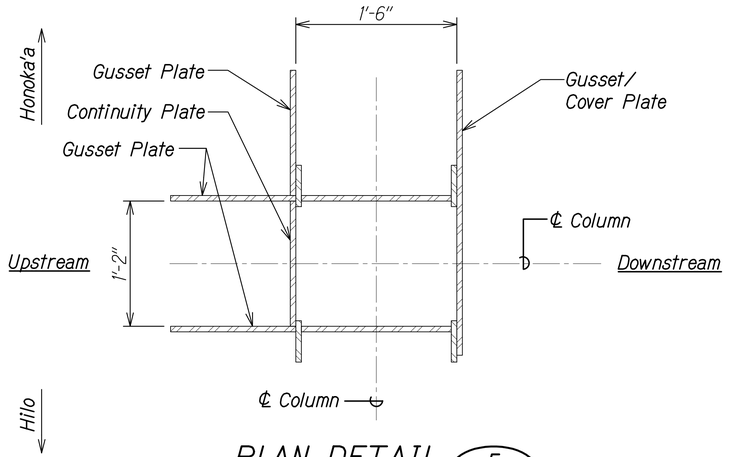
PLAN DETAIL C
Scale: 1 1/2" = 1'-0" SA6.2|SA6.2



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.

STEPHEN T. PETERS
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HAWAII, U.S.A.

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SIGNATURE 4-30-26 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

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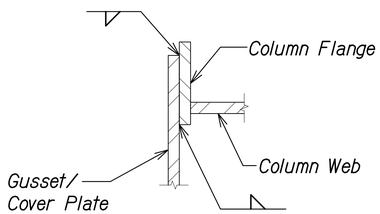
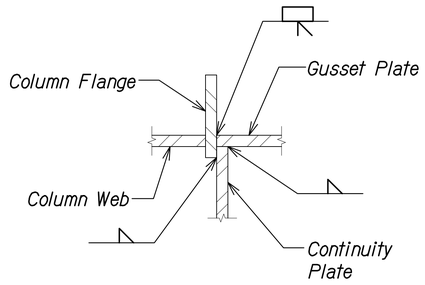
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-DOT\A1OT CAD\10-28-24 BID SET\VSR-SA0602-SA0617 CONN DTLS.DWG PLOT TIME: 10-28-24, 6:01 PM

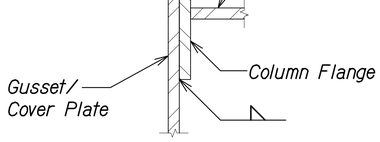
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	109	280



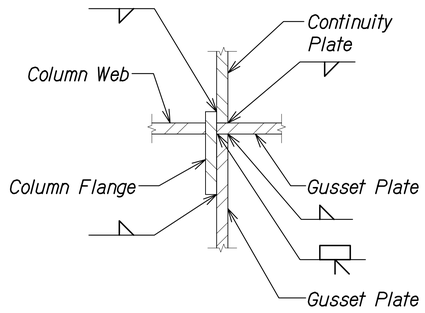
DETAIL 1
Scale: 3" = 1'-0" SA6.2 | SA6.3



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



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



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

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

DRAWING NAME: Z:\OD ONO\ONO\23-022\9-NANUE STR BR PE2-3OTH\01 CAD\10-28-24 BID SET\VSR-SA6602-SA6617 CONN DTLS.DWG PLOT TIME: 10-28-24, 6:01 PM

STEPHEN T. PETERS
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

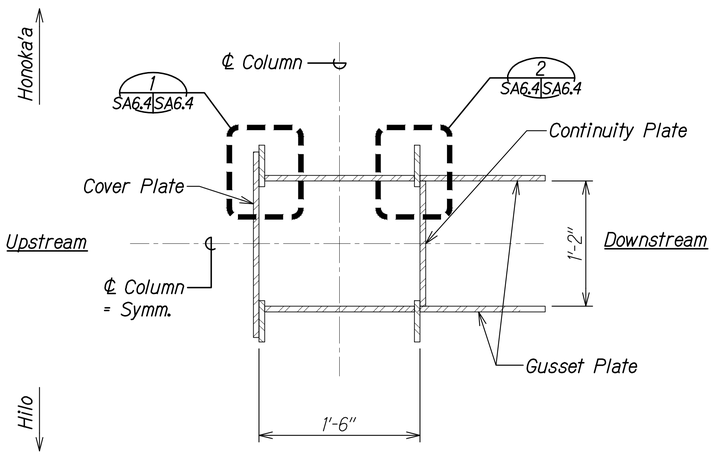
COLUMN TO BRACE CONNECTION DETAILS

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

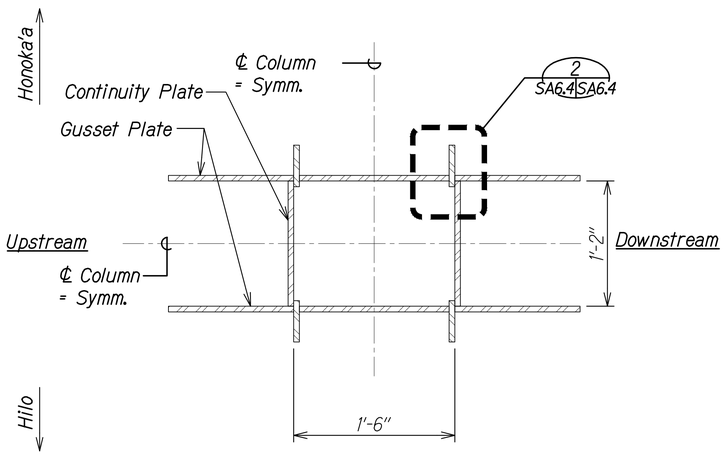
Scale: As Noted Date: Oct. 2024

SHEET No. SA6.3 OF 22 SHEETS

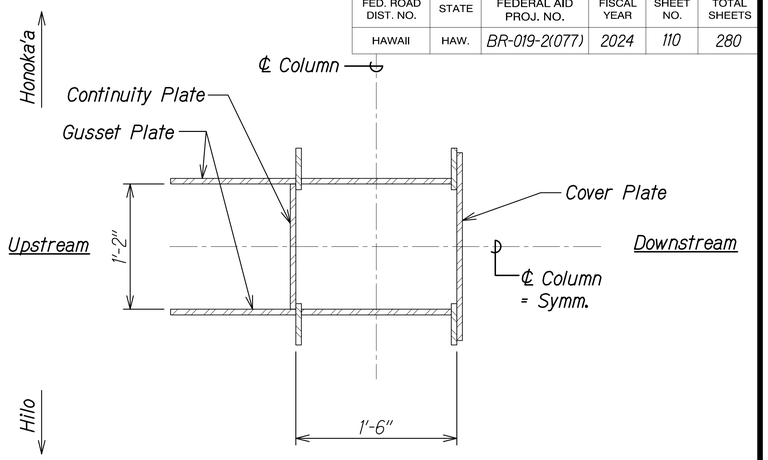
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	110	280



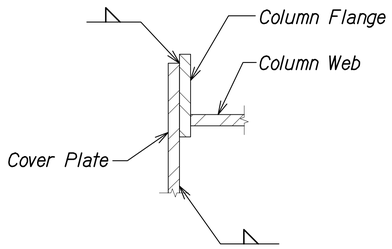
PLAN DETAIL A
Scale: 1 1/2" = 1'-0" SA6.4 SA6.4



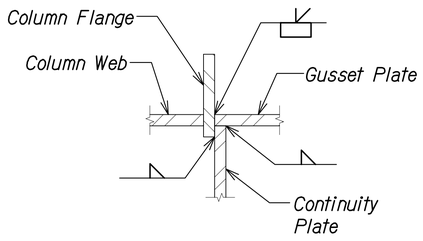
PLAN DETAIL B
Scale: 1 1/2" = 1'-0" SA6.4 SA6.4



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

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-DOT\HAT CAD\10-28-24 BID SET\SR-SA0602-SA0617 CONN DTLS.DWG PLOT TIME: 10-28-24, 6:02 PM

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

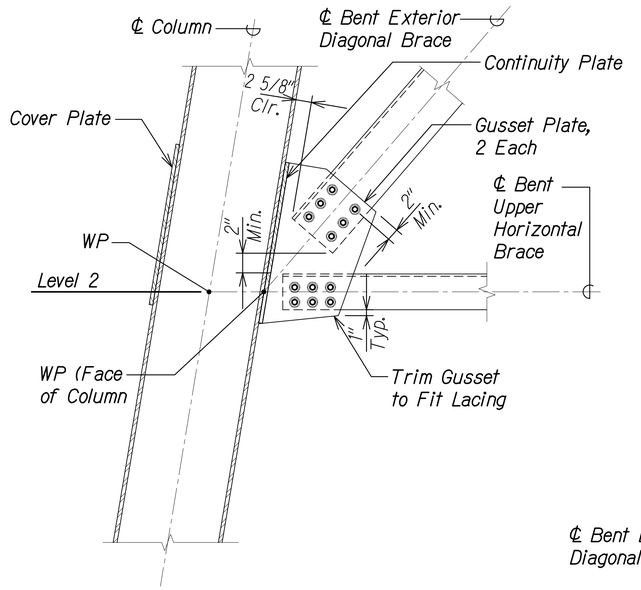
COLUMN TO BRACE CONNECTION DETAILS

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA6.4 OF 22 SHEETS

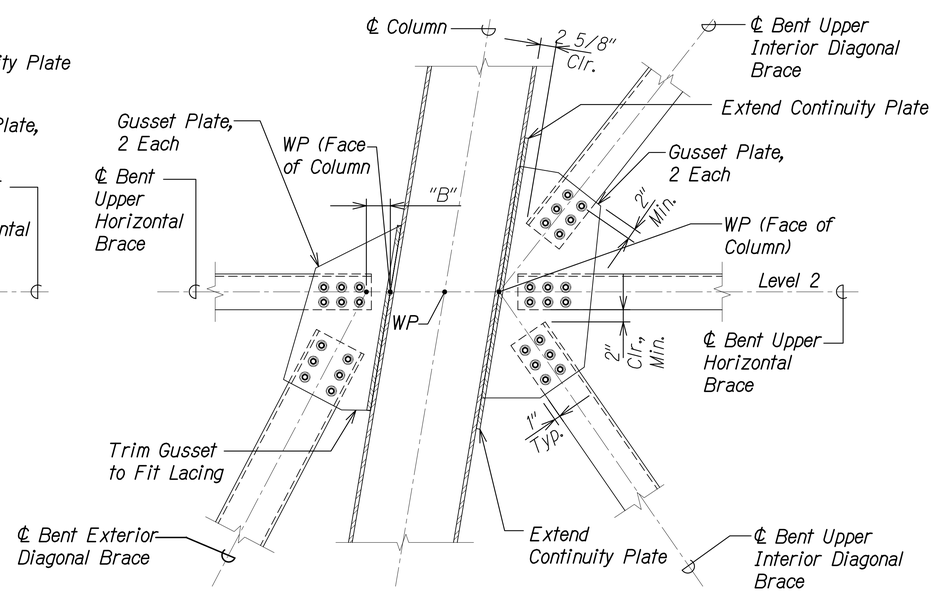
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	111	280



UPPER EXTERIOR COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

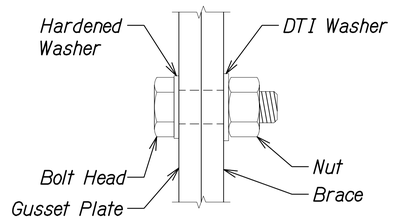
1 SA6.5 | SA6.5



UPPER INTERIOR COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

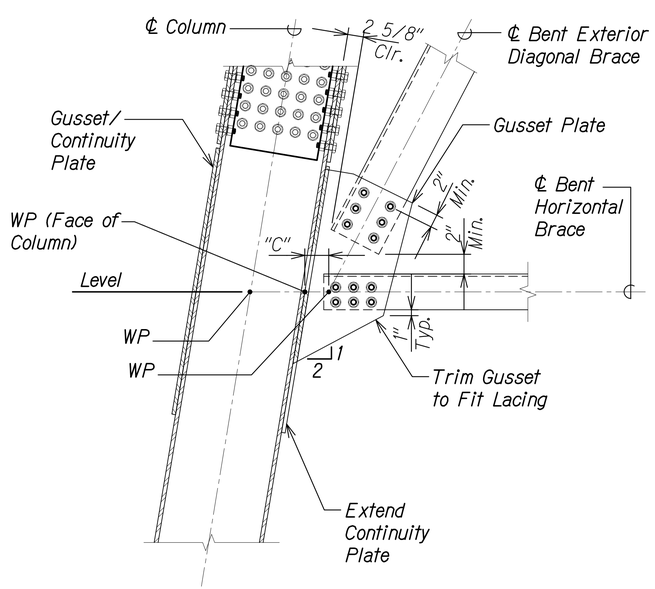
2 SA6.5 | SA6.5



BOLT CONNECTION DETAIL

Scale: 6" = 1'-0"

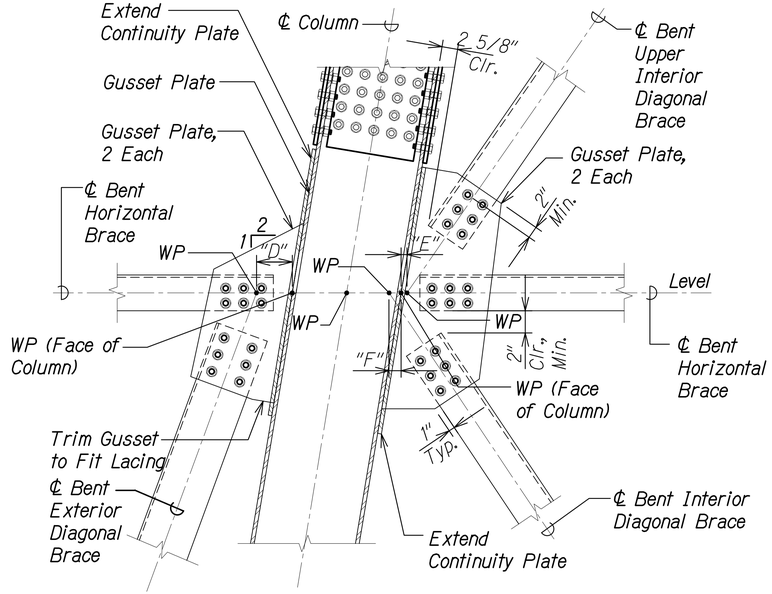
5 SA6.5 | SA6.5



TYPICAL EXTERIOR COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

3 SA6.5 | SA6.5



TYPICAL INTERIOR COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

4 SA6.5 | SA6.5

NOTE:

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.

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

DRAWING NAME: Z:\07 ONGOING\23-022.9-NANUE STR BR PE2-ADTHA\07 CAD\10-28-24 BID SET\VSR-540602-540617_CONN DTLS.DWG PLOT TIME: 10-28-24, 6:02 PM

STEPHEN T. PETERS
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STATE OF HAWAII
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HIGHWAYS DIVISION

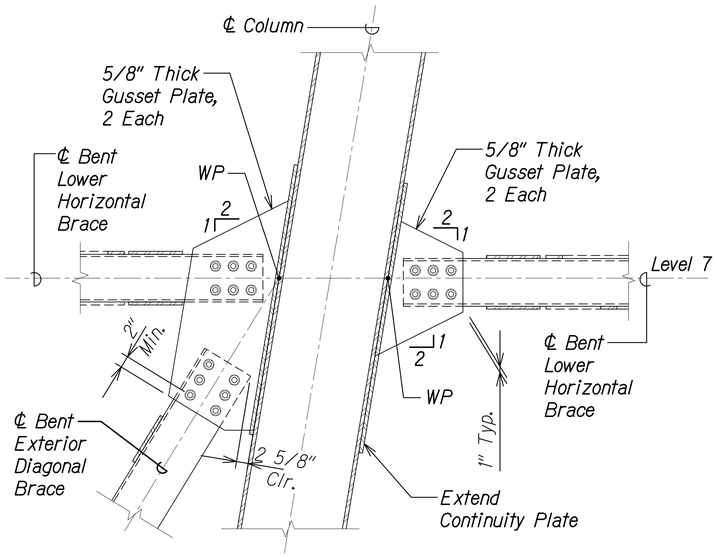
COLUMN TO BRACE CONNECTION DETAILS

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA6.5 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	112	280



LOWER INTERIOR COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

1 SA6.6 | SA6.6

WP OFFSET SCHEDULE

LOCATION		"B"	"C"	"D"	"E"
Level 2	Bent Nos. 1 ∉ 9	6"			
	Bent Nos. 2, 3, 4, 5, 6, 7, ∉ 8	4"			
Level 3	Bent Nos. 2, 3, 4, 5, 6, 7, ∉ 8		4"	4"	
	Bent Nos. 2, 3, 4, 5, 6, 7, 8, ∉ 9				1"
Level 4	Bent Nos. 2, 3, 4, 5, 6, ∉ 7		6"	6"	
	Bent Nos. 2, 3, 4, 5, 6, 7, ∉ 8				3"
Level 5	Bent Nos. 3, 4, 5, 6, ∉ 7		6"	6"	0"
Level 6	Bent Nos. 4, 5, ∉ 6		6"	6"	0"
Level 7	Bent Nos. 5, ∉ 6		6"		

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

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Stephen Peters 4-30-26

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STATE OF HAWAII
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HIGHWAYS DIVISION

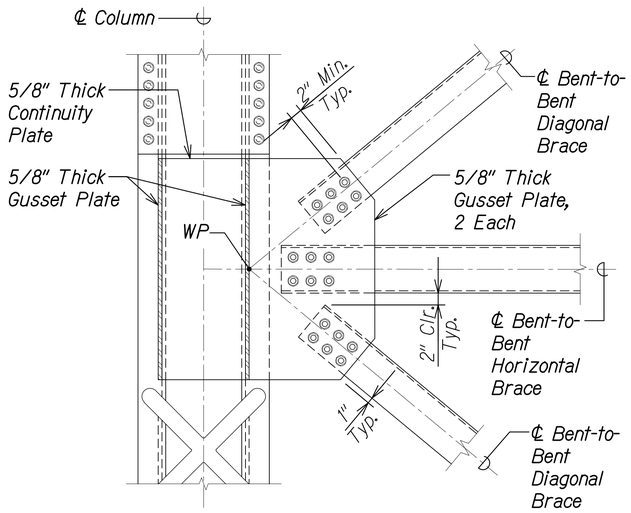
COLUMN TO BRACE CONNECTION DETAILS

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

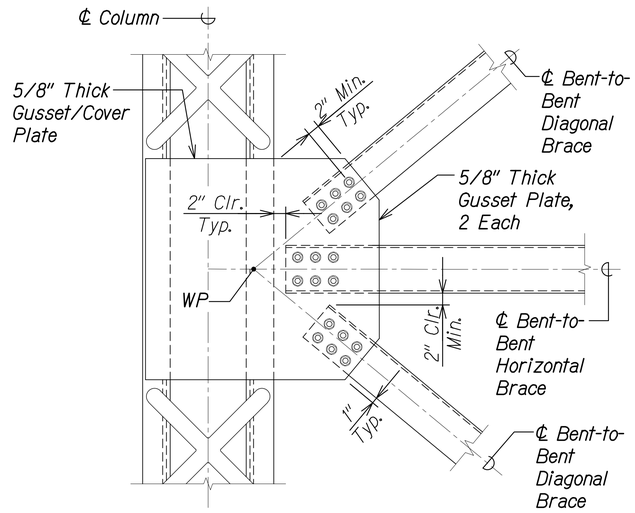
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	113	280



COLUMN TO BRACE CONNECTION DETAIL 1

Scale: 1" = 1'-0"

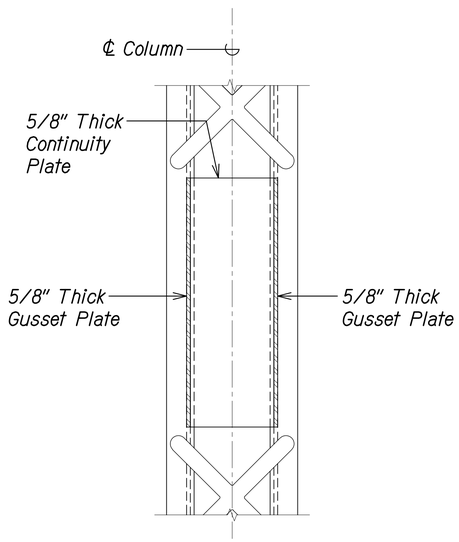
SA6.7 | SA6.7



COLUMN TO BRACE CONNECTION DETAIL 2

Scale: 1" = 1'-0"

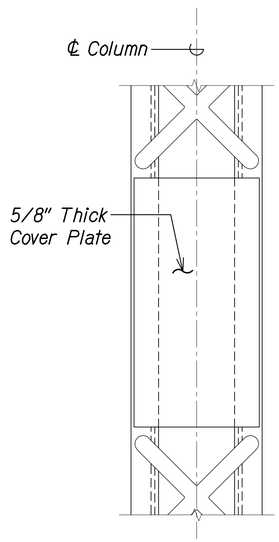
SA6.7 | SA6.7



COLUMN TO BRACE CONNECTION DETAIL 3

Scale: 1" = 1'-0"

SA6.7 | SA6.7



COLUMN TO BRACE CONNECTION DETAIL 4

Scale: 1" = 1'-0"

SA6.7 | SA6.7

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-DOTH\01 CAD\10-28-24 BID SET\VSR-540602-540617 CONN DTLS.DWG PLOT TIME: 10-28-24, 6:03 PM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

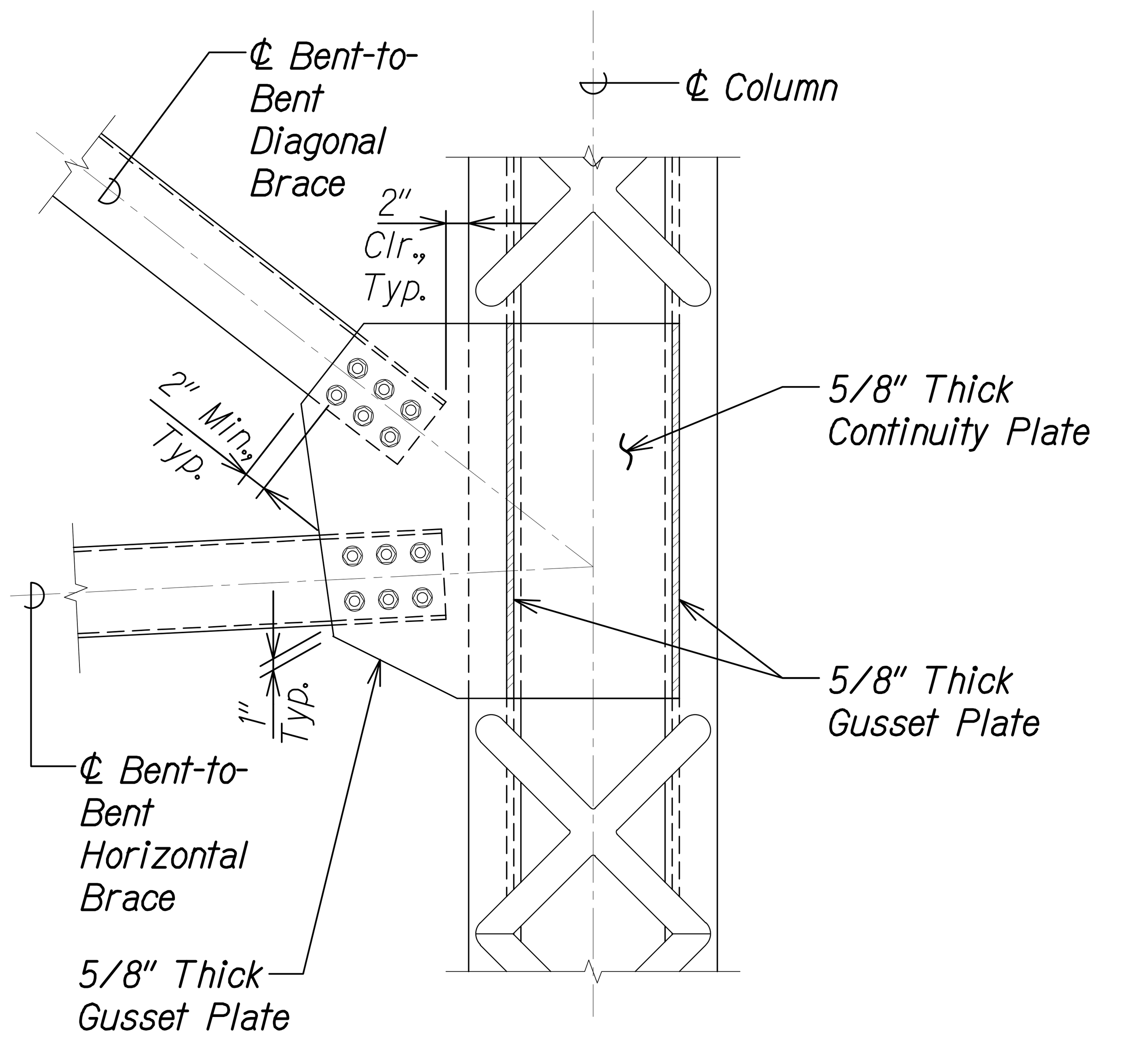
COLUMN TO BRACE CONNECTION DETAILS

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

Scale: As Noted Date: Oct. 2024

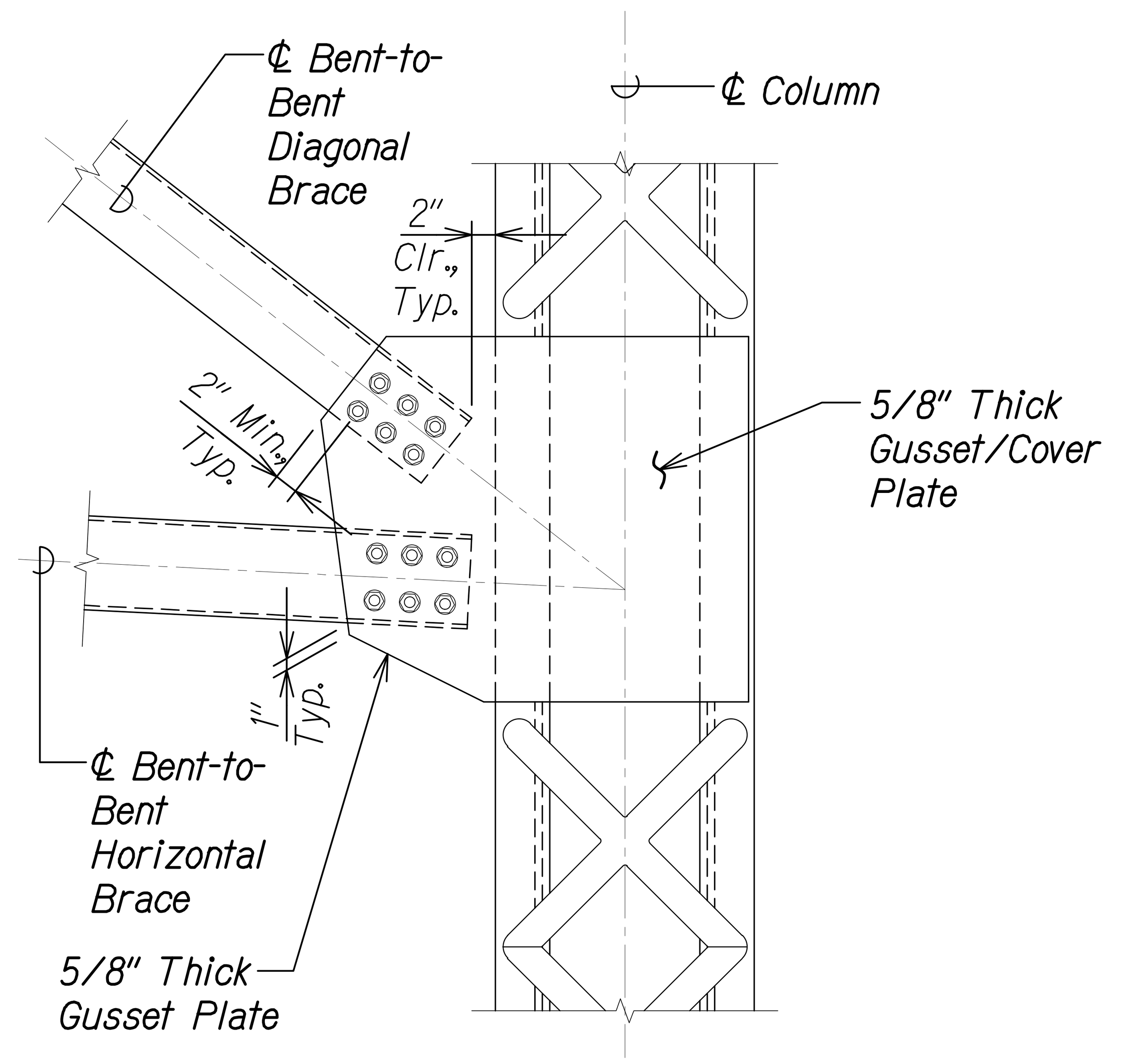
SHEET No. SA6.7 OF 22 SHEETS

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



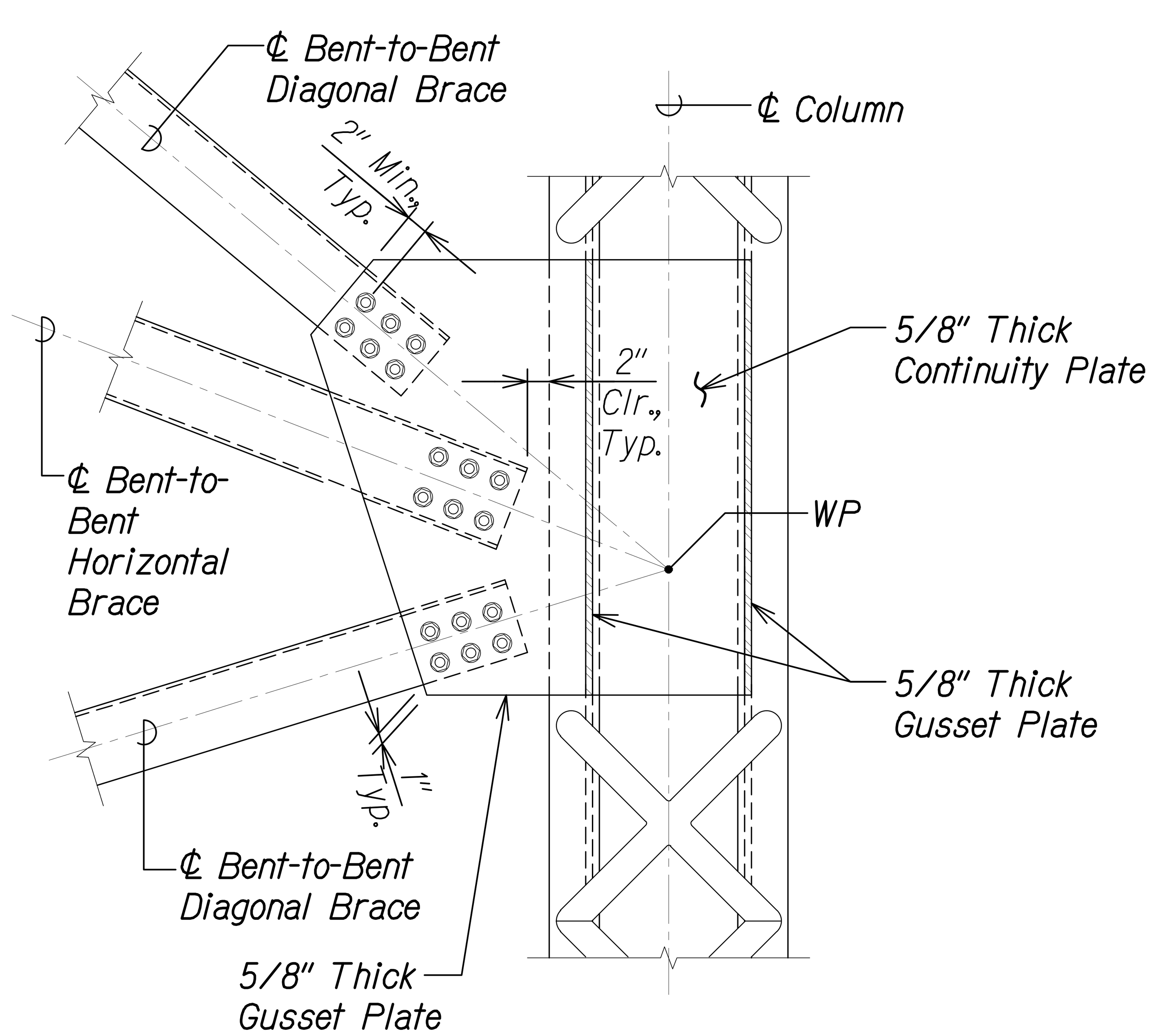
COLUMN TO BRACE CONNECTION DETAIL 1 SA6.8 | SA6.8

Scale: 1" = 1'-0"



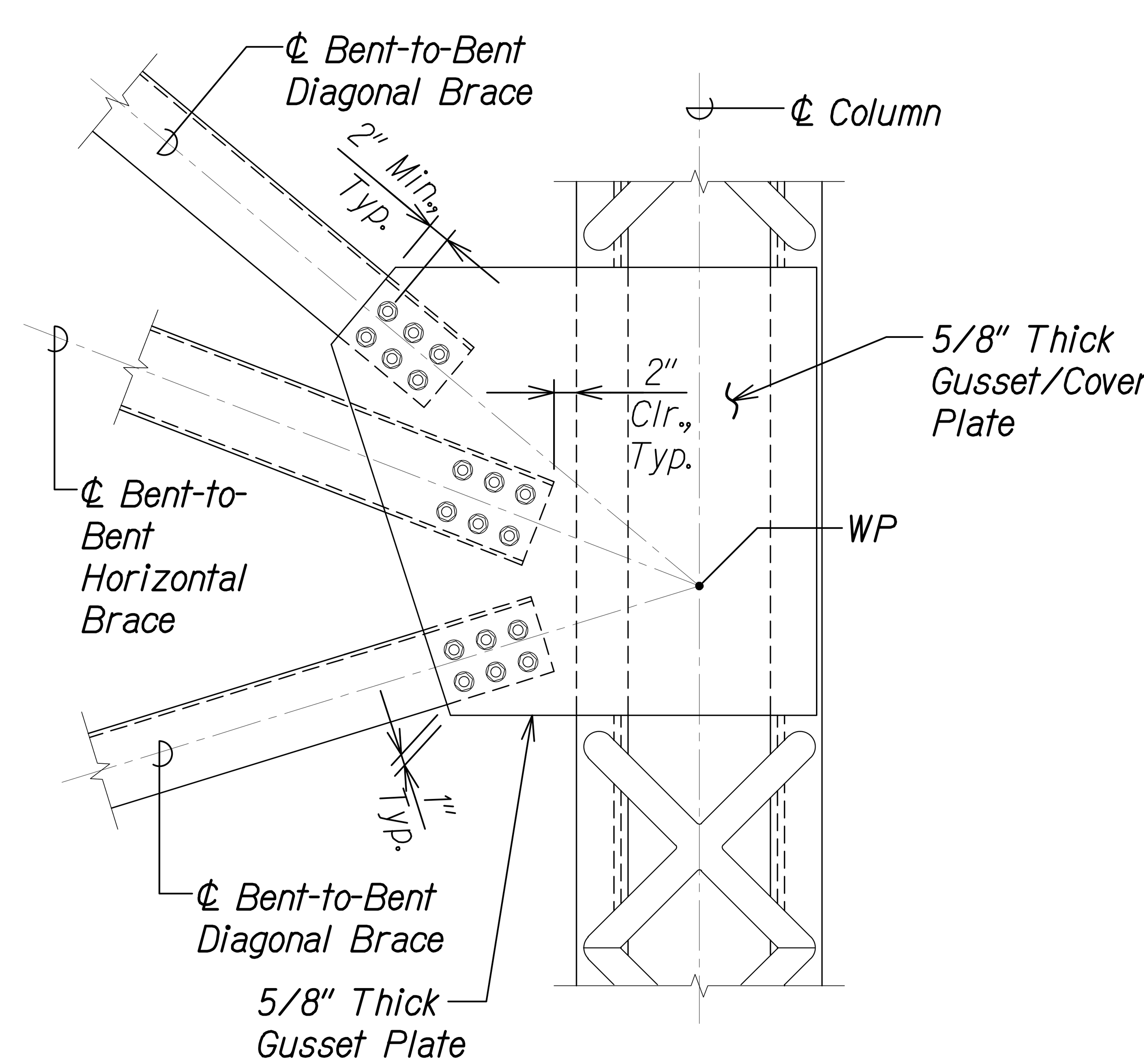
COLUMN TO BRACE CONNECTION DETAIL 2 SA6.8 | SA6.8

Scale: 1" = 1'-0"



COLUMN TO BRACE CONNECTION DETAIL 3 SA6.8 | SA6.8

Scale: 1" = 1'-0"



COLUMN TO BRACE CONNECTION DETAIL 4 SA6.8 | SA6.8

Scale: 1" = 1'-0"

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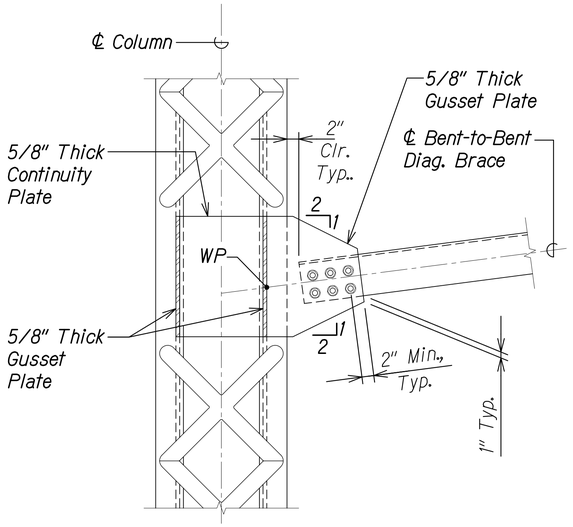
COLUMN TO BRACE CONNECTION DETAILS

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA6.8 OF 22 SHEETS

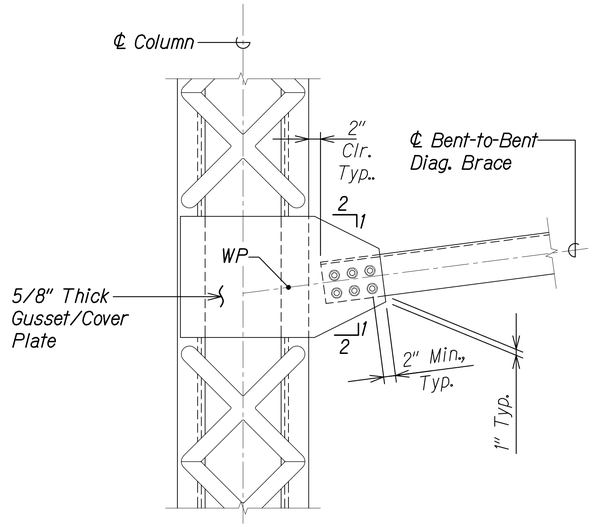
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	115	280



COLUMN TO BRACE CONNECTION DETAIL 1

SA6.9 | SA6.9

Scale: 1" = 1'-0"



COLUMN TO BRACE CONNECTION DETAIL 2

SA6.9 | SA6.9

Scale: 1" = 1'-0"

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
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DATE

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

4-30-26
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

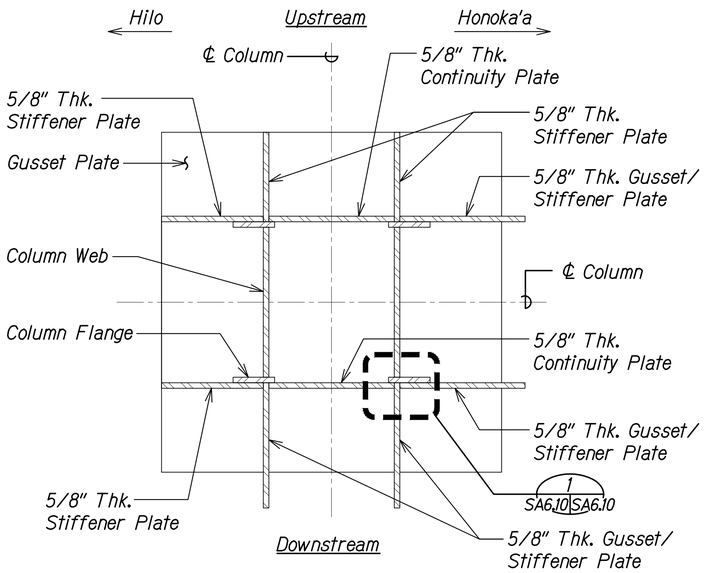
COLUMN TO BRACE CONNECTION DETAILS

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

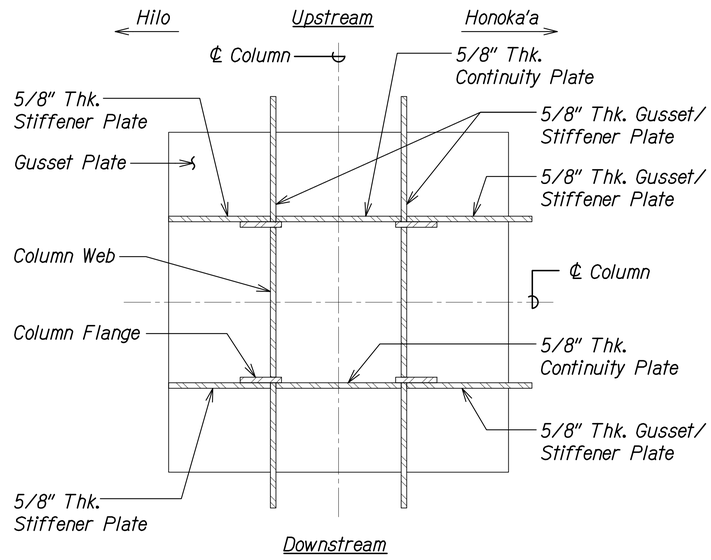
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	116	280



BASE OF COLUMN TO BRACE PLAN AT BENT EXTERIOR

A
SA6.10 SA6.10

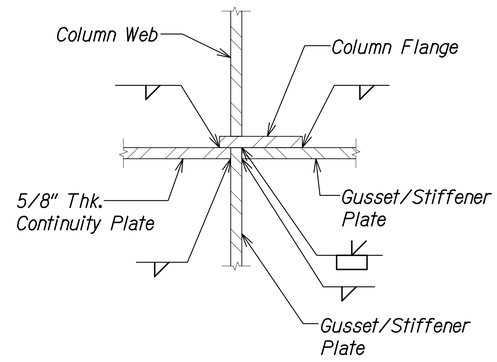
Scale: 1 1/2" = 1'-0"



BASE OF COLUMN TO BRACE PLAN AT BENT INTERIOR

B
SA6.10 SA6.10

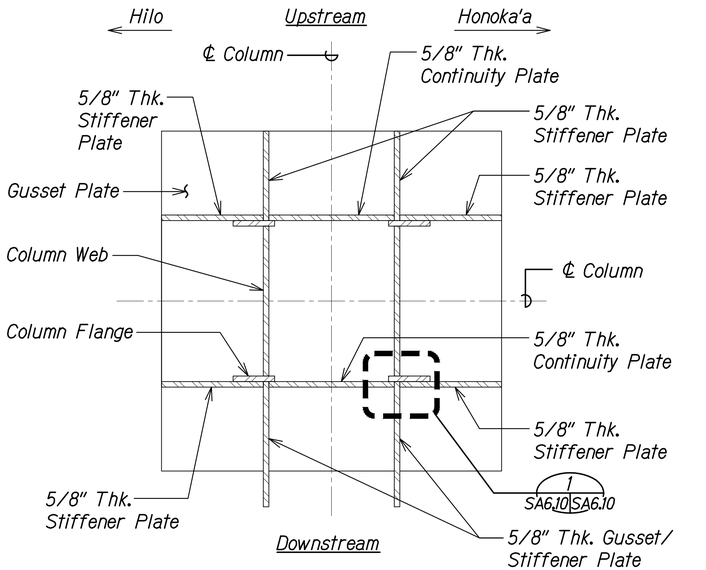
Scale: 1 1/2" = 1'-0"



DETAIL

1
SA6.10 SA6.10

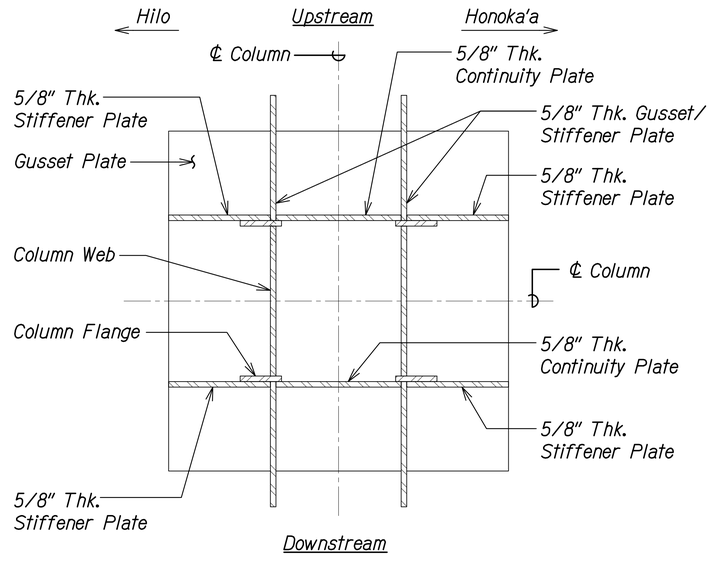
Scale: 3" = 1'-0"



BASE OF COLUMN TO BRACE PLAN AT BENT EXTERIOR

C
SA6.10 SA6.10

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



BASE OF COLUMN TO BRACE PLAN AT BENT INTERIOR

D
SA6.10 SA6.10

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

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

DRAWING NAME: Z:\OT ONGOING\23-202.9-HANUE STR BR PE2-DOTH\OT CAD\10-28-24 BID SET\VSR-540602-540617_CONN DTLS.DWG PLOT TIME: 10-28-24, 6:04 PM

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HAWAII, U.S.A.

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HIGHWAYS DIVISION

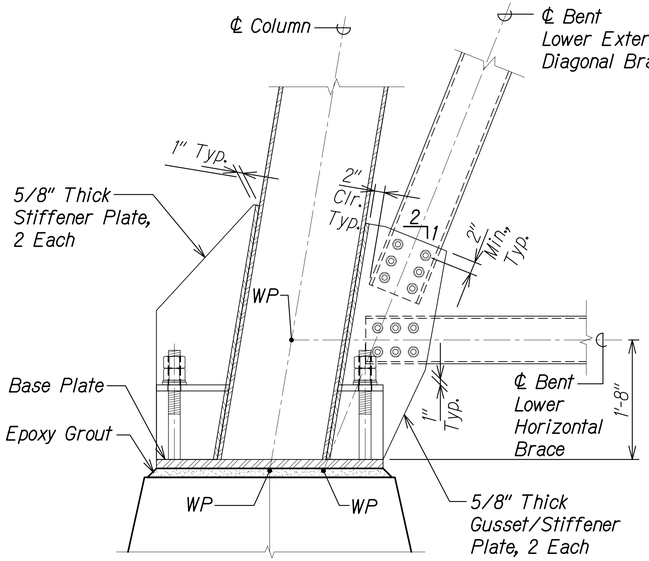
BASE COLUMN TO BRACE CONNECTION DETAILS

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

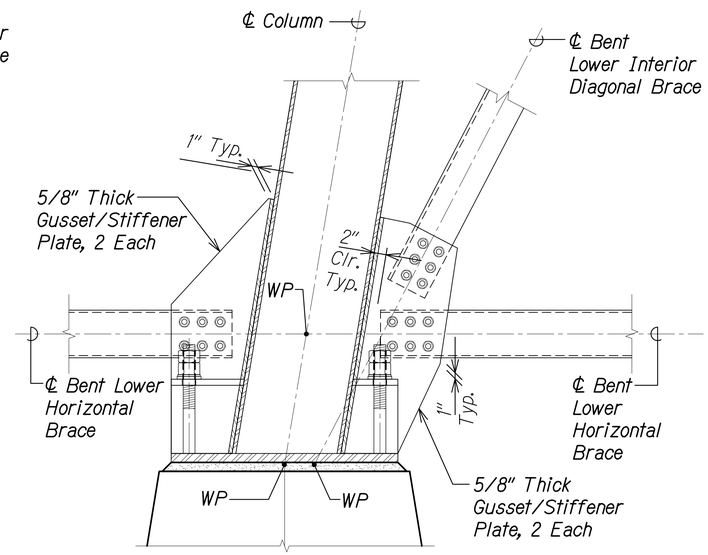
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	117	280



BASE OF COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

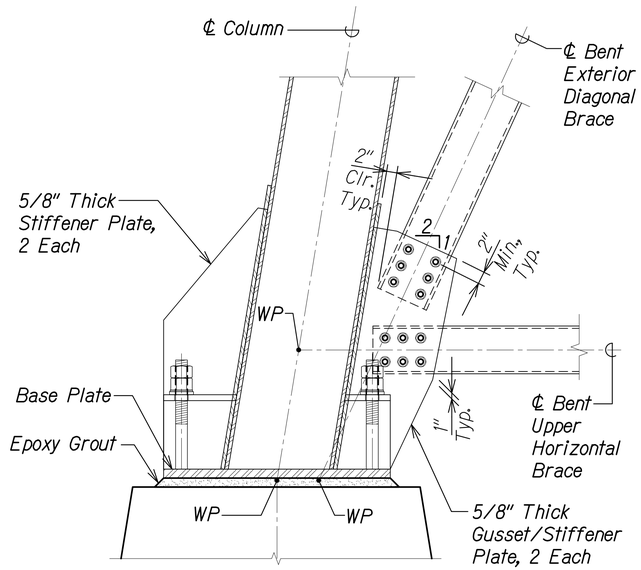
1 SA6.11 | SA6.11



BASE OF COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

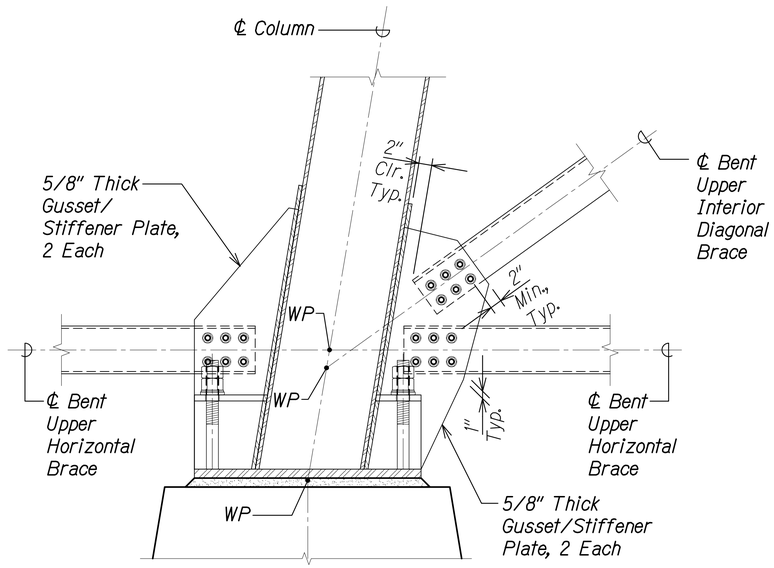
2 SA6.11 | SA6.11



BASE OF COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

3 SA6.11 | SA6.11



BASE OF COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

4 SA6.11 | SA6.11

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

DRAWING NAME: Z:\OT ONGOING\23-022.9-NANUE STR BR PE2-DOT\A1OT CAD\10-28-24 BID SET\VSR-540602-540617_CONN DTLS.DWG PLOT TIME: 10-28-24, 6:04 PM

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

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4-30-26

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STATE OF HAWAII
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HIGHWAYS DIVISION

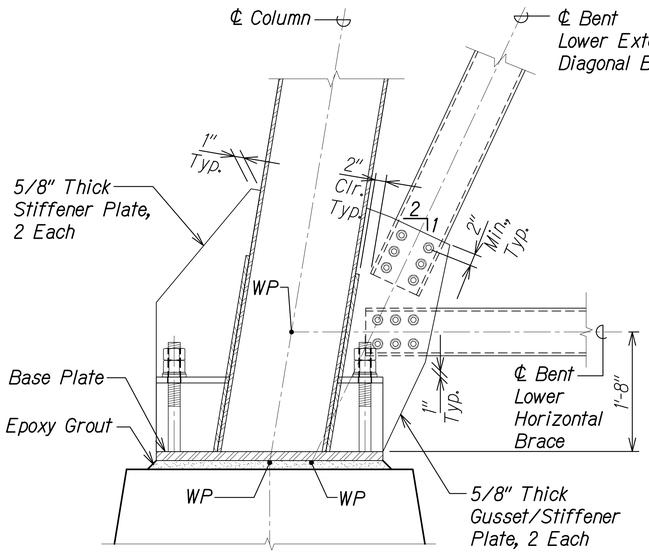
BASE COLUMN TO BRACE CONNECTION DETAILS

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA6.11 OF 22 SHEETS

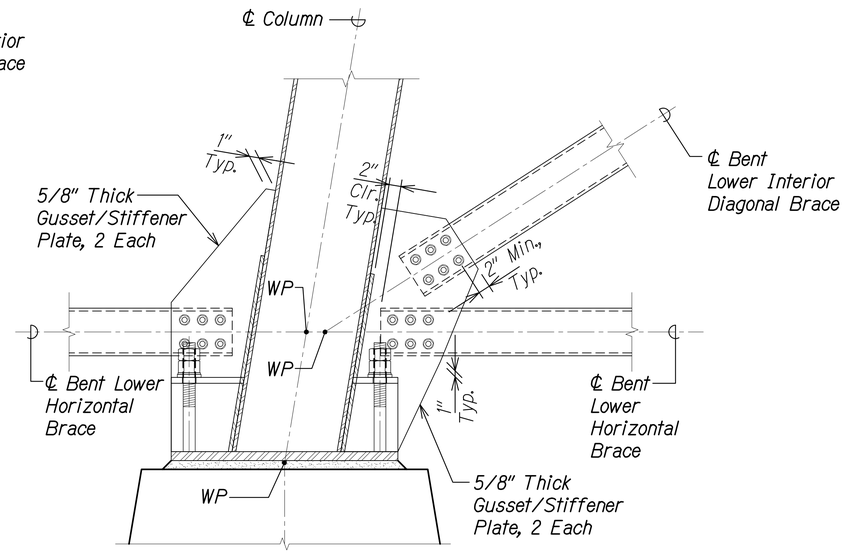
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	118	280



BASE OF COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

1 SA6.12 | SA6.12



BASE OF COLUMN TO BRACE CONNECTION DETAIL

Scale: 1" = 1'-0"

2 SA6.12 | SA6.12

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-DOTHAI\OD\10-28-24 BID SET\VSR-SA0602-SA0617 CONN DTLS.DWG PLOT TIME: 10-28-24, 6:05 PM

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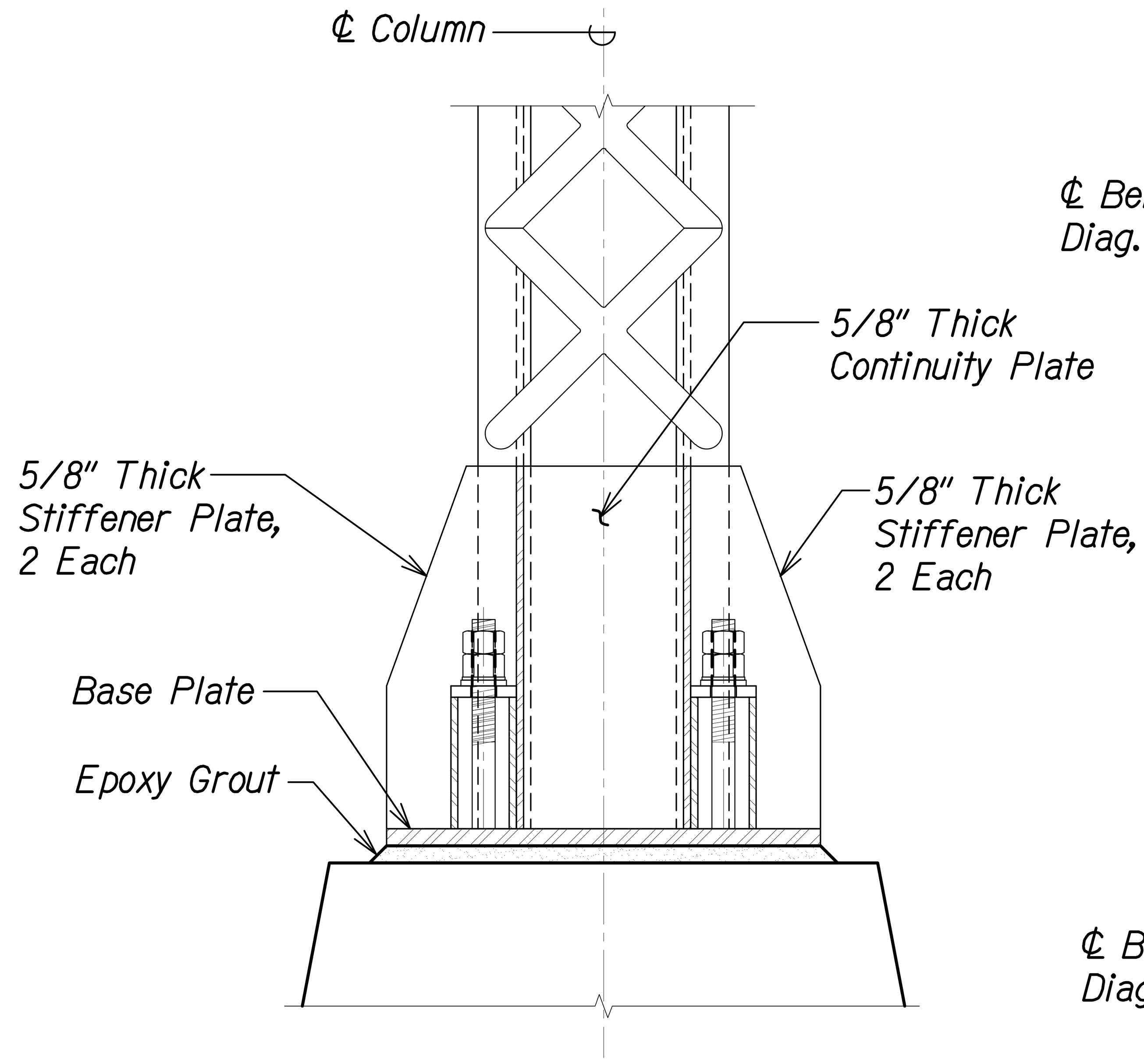
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

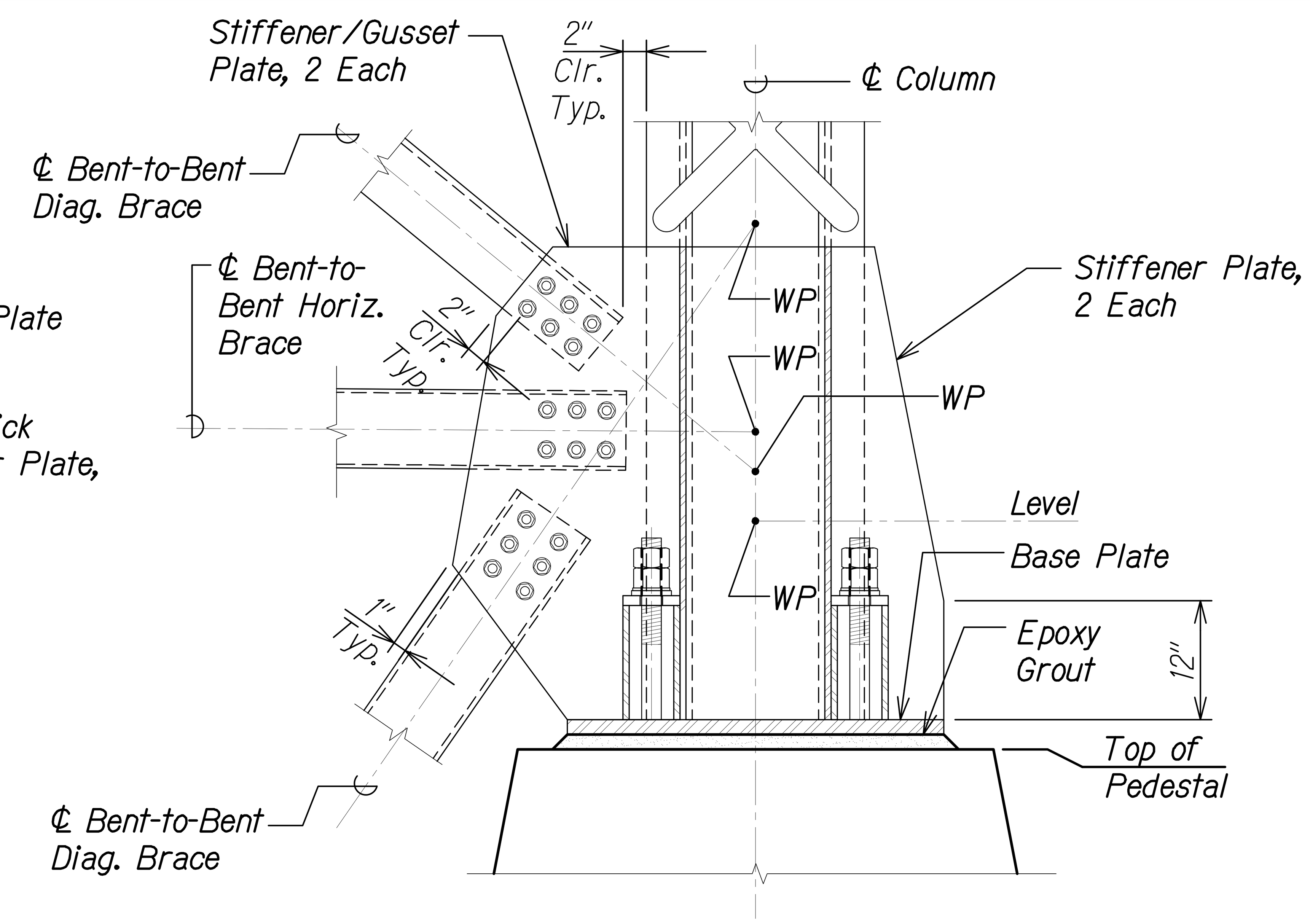
SHEET No. SA6.12 OF 22 SHEETS

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



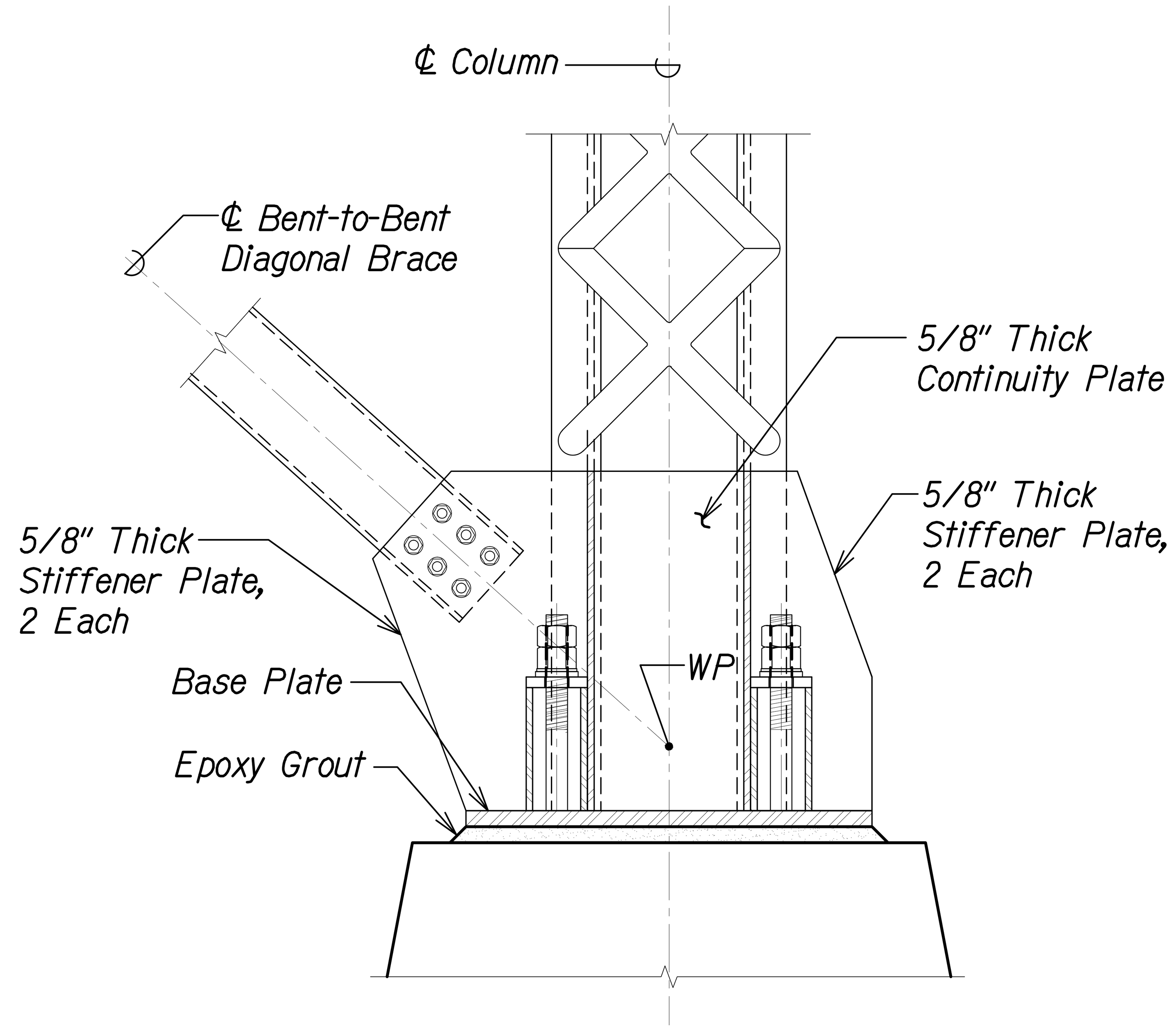
BASE COLUMN TO BRACE CONNECTION DETAIL 1 SA6.13 SA6.13

Scale: 1" = 1'-0"



BASE COLUMN TO BRACE CONNECTION DETAIL 2 SA6.13 SA6.13

Scale: 1" = 1'-0"



BASE COLUMN TO BRACE CONNECTION DETAIL 3 SA6.13 SA6.13

Scale: 1" = 1'-0"

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

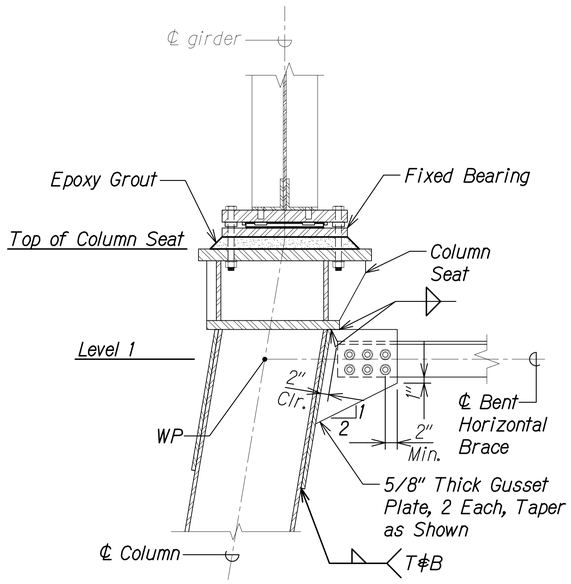
BASE COLUMN TO BRACE CONNECTION DETAILS

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

Scale: As Noted Date: Oct. 2024

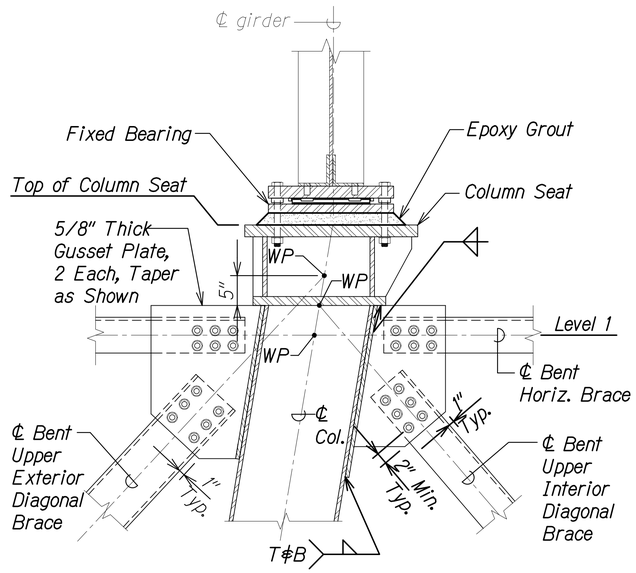
SHEET No. SA6.13 OF 22 SHEETS

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



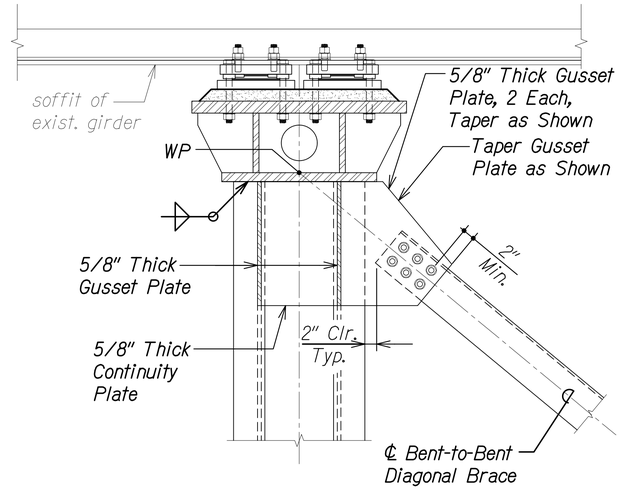
TOP COLUMN TO BRACE CONNECTION DETAIL 1 SA6.14 | SA6.14

Scale: 1" = 1'-0"



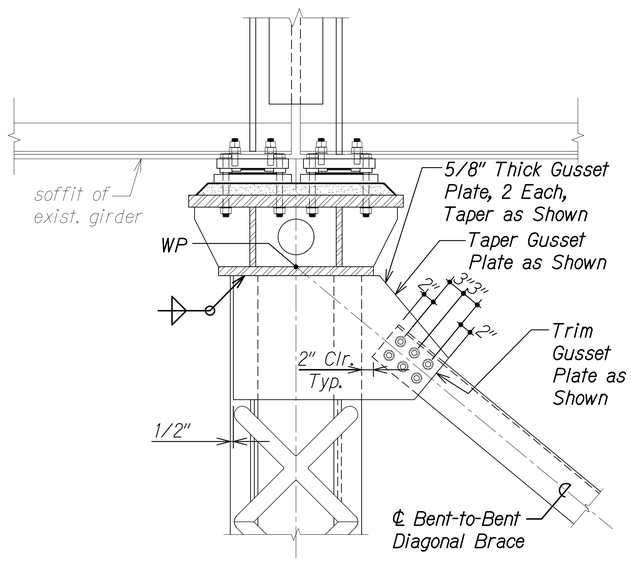
TOP COLUMN TO BRACE CONNECTION DETAIL 2 SA6.14 | SA6.14

Scale: 1" = 1'-0"



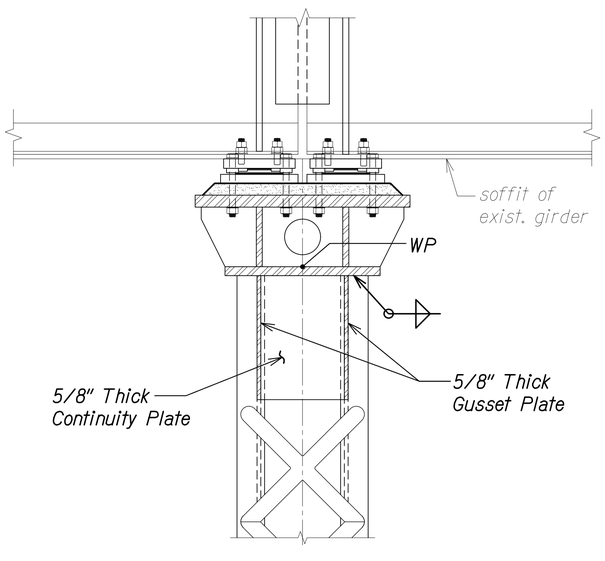
TOP COLUMN TO BRACE CONNECTION DETAIL 3 SA6.14 | SA6.14

Scale: 1" = 1'-0"



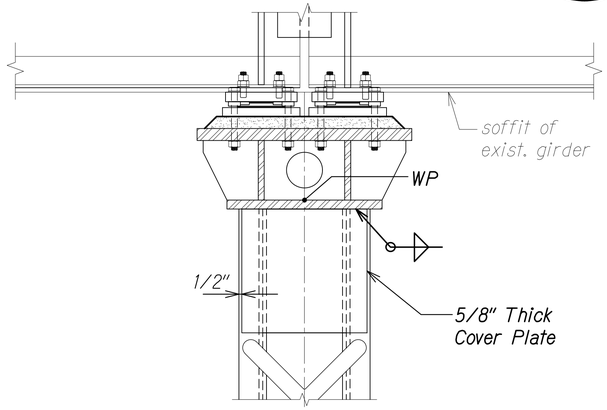
TOP COLUMN TO BRACE CONNECTION DETAIL 4 SA6.14 | SA6.14

Scale: 1" = 1'-0"



TOP COLUMN TO BRACE CONNECTION DETAIL 5 SA6.14 | SA6.14

Scale: 1" = 1'-0"



TOP COLUMN TO BRACE CONNECTION DETAIL 6 SA6.14 | SA6.14

Scale: 1" = 1'-0"

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-3DTH\01 CAD\10-28-24 BID SET\PSR-SA0602-SA0617 CONN DTLS.DWG PLOT TIME: 10-28-24, 6:05 PM

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

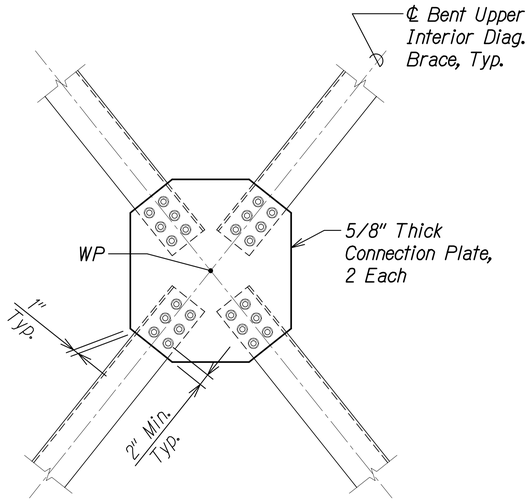
TOP COLUMN TO BRACE CONNECTION DETAILS

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

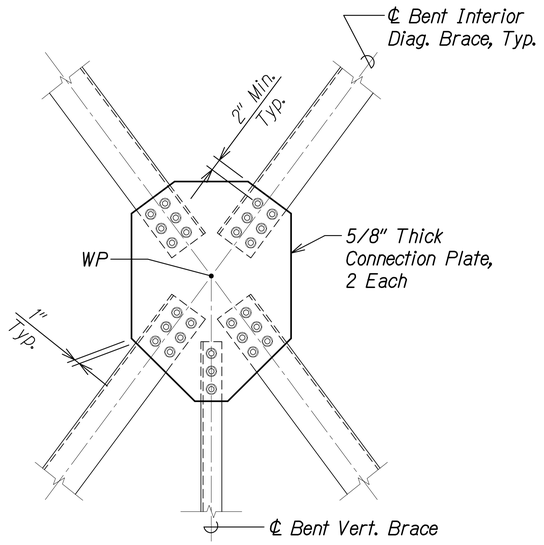
Scale: As Noted Date: Oct. 2024

SHEET No. SA6.14 OF 22 SHEETS

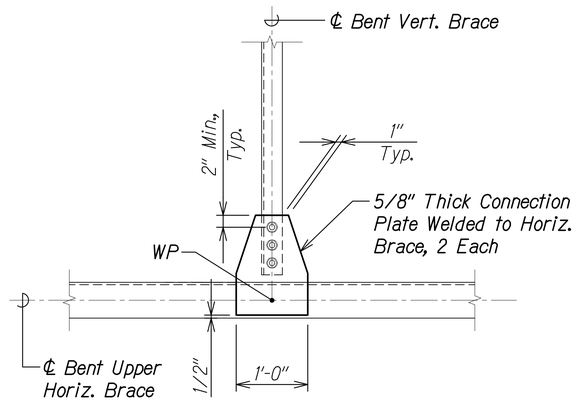
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	121	280



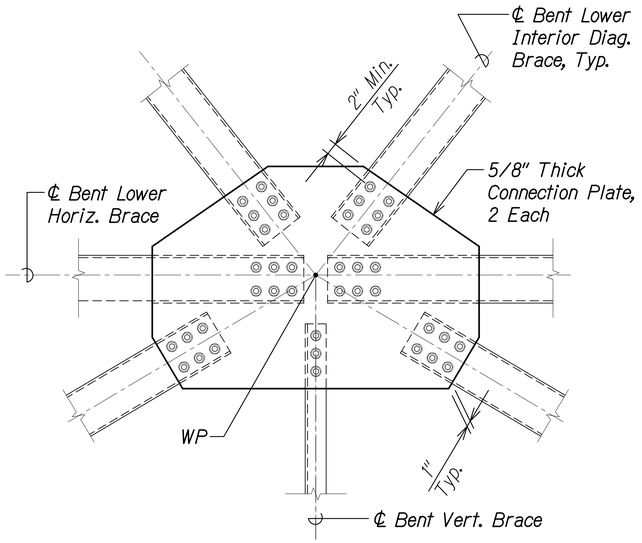
BRACE TO BRACE CONNECTION DETAIL 1
Scale: 1" = 1'-0"
SA6.15 | SA6.15



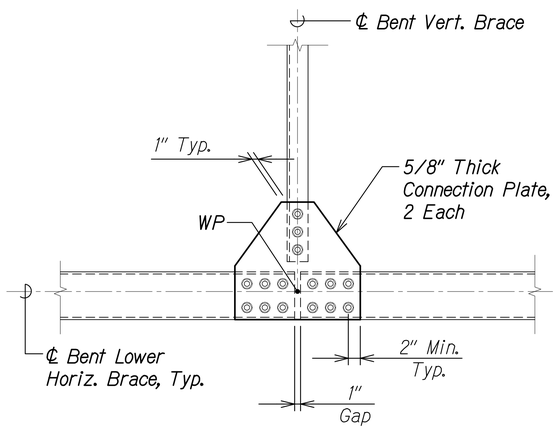
BRACE TO BRACE CONNECTION DETAIL 2
Scale: 1" = 1'-0"
SA6.15 | SA6.15



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



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

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

DRAWING NAME: Z:\OD\ ONGOING\23-022.9-NANUE STR BR PE2-ADTHA\OD\ CAD\ 10-28-24 BID SET\VSR-SA0602-SA0617 CONN DTLS.DWG PLOT TIME: 10-28-24, 12:46 PM

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

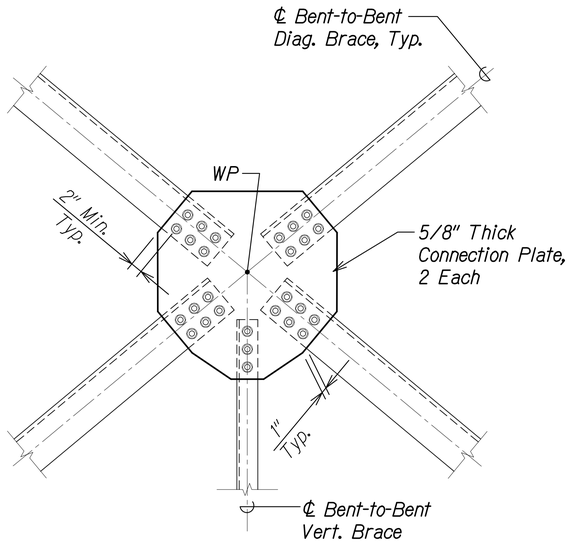
BRACE TO BRACE CONNECTION DETAILS

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

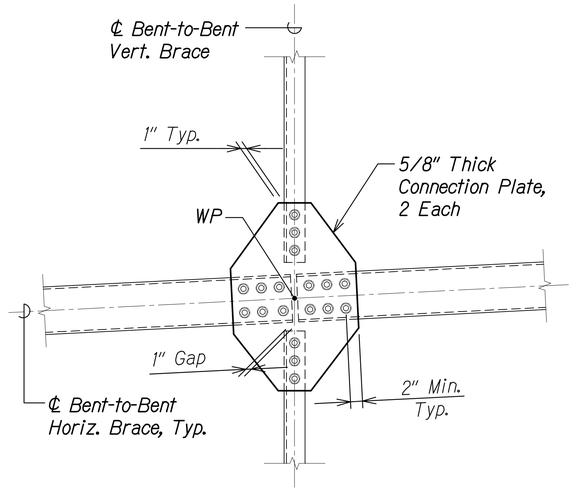
Scale: As Noted Date: Oct. 2024

SHEET No. SA6.15 OF 22 SHEETS

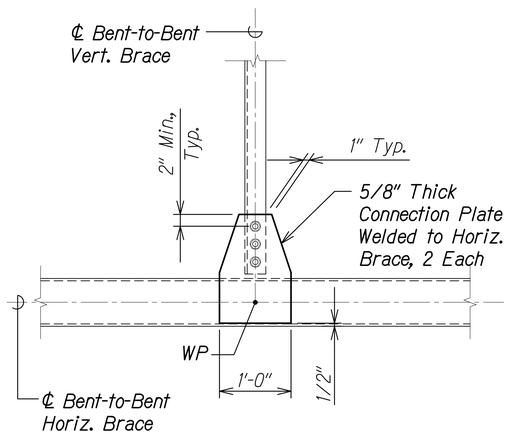
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	122	280



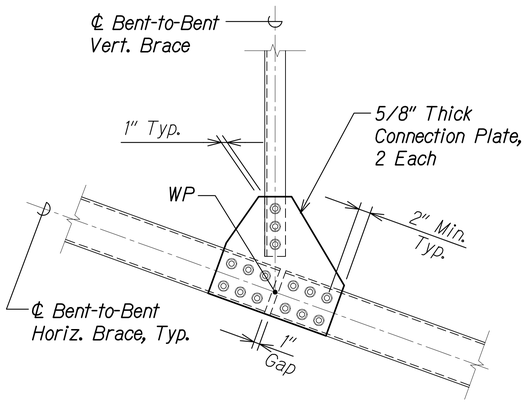
BRACE TO BRACE CONNECTION DETAIL 1
Scale: 1" = 1'-0"
SA6.16 | SA6.16



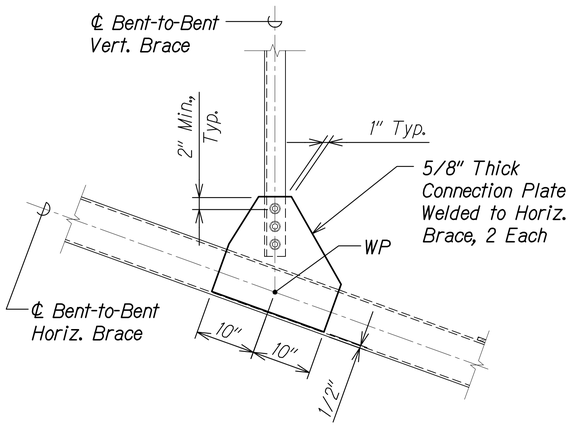
BRACE TO BRACE CONNECTION DETAIL 2
Scale: 1" = 1'-0"
SA6.16 | SA6.16



BRACE TO BRACE CONNECTION DETAIL 3
Scale: 1" = 1'-0"
SA6.16 | SA6.16



BRACE TO BRACE CONNECTION DETAIL 4
Scale: 1" = 1'-0"
SA6.16 | SA6.16



BRACE TO BRACE CONNECTION DETAIL 5
Scale: 1" = 1'-0"
SA6.16 | SA6.16

STEPHEN T. PETERS
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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. SA6.16 OF 22 SHEETS

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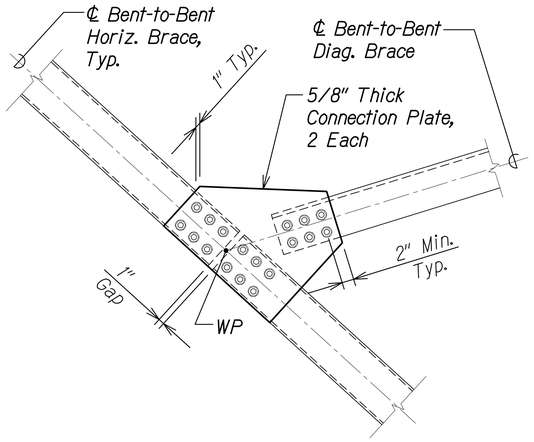
DESIGNED BY
QUANTITIES BY
CHECKED BY

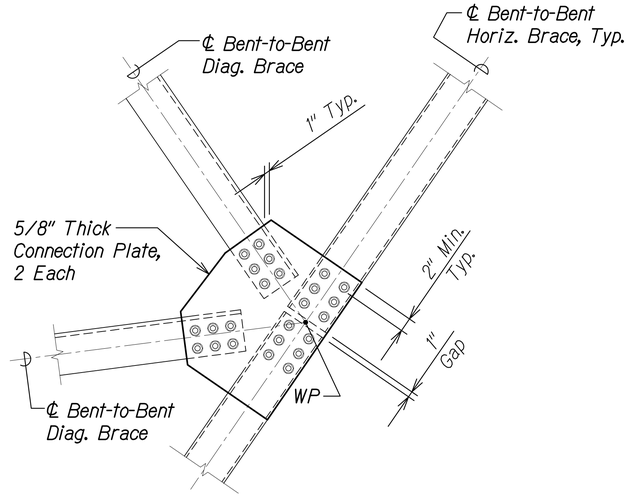
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	123	280



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

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: Z:\AOI ONGOING\23-029.9-HANUE STR BR PE2-DOTHA01 CAD\10-28-24 BID SET\SR_SA0622_SA0617_CONN DTLS.DWG PLOT TIME: 10-28-24, 12:47 PM

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

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	124	280

CONNECTION REFERENCE SCHEDULE

BENT NO. 1

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP1A1-C	A/SA6.4	1/SA6.14
TP1B1-C	B/SA6.4	2/SA6.14
TP1C1-C	B/SA6.4	2/SA6.14 (OH)
TP1D1-C	C/SA6.4	1/SA6.14 (OH)
SP1B1-C2	-	1/SA6.15
GP1A2-C	A/SA6.4	1/SA6.5
GP1B2-C	B/SA6.4	2/SA6.5
GP1C2-C	B/SA6.4	2/SA6.5 (OH)
GP1D2-C	C/SA6.4	1/SA6.5 (OH)
SP1B2-C3	-	2/SA6.15
BP1A3-C	C/SA6.10	1/SA6.11
BP1B3-C	D/SA6.10	2/SA6.11
SP13	-	3/SA6.15
BP1C3-C	D/SA6.10	2/SA6.11 (OH)
BP1D3-C	C/SA6.10 (OH)	1/SA6.11 (OH)

BENT NO. 2

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP2A1-C	D/SA6.2	1/SA6.14
TP2B1-C	E/SA6.2	2/SA6.14
TP2C1-C	E/SA6.2	2/SA6.14 (OH)
TP2D1-C	F/SA6.2	1/SA6.14 (OH)
SP2B1-C2	-	1/SA6.15
GP2A2-C	A/SA6.4	1/SA6.5
GP2B2-C	B/SA6.4	2/SA6.5
GP2C2-C	B/SA6.4	2/SA6.5 (OH)
GP2D2-C	C/SA6.4	1/SA6.5 (OH)
SP2B2-C3	-	1/SA6.15
GP2A3-C	D/SA6.2	1/SA6.5
GP2B3-C	E/SA6.2	2/SA6.5
GP2C3-C	E/SA6.2	2/SA6.5 (OH)
GP2D3-C	F/SA6.2	1/SA6.5 (OH)
SP2B3-C4	-	1/SA6.15
GP2A4-C	D/SA6.2	1/SA6.5
GP2B4-C	E/SA6.2	2/SA6.5
SP24	-	3/SA6.15
GP2C4-C	E/SA6.2	2/SA6.5 (OH)
GP2D4-C	F/SA6.2	1/SA6.5 (OH)
SP2B4-C5	-	2/SA6.15

BENT NO. 2

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
BP2A5-C	A/SA6.10	3/SA6.11
BP2B5-C	B/SA6.10	4/SA6.11
SP25	-	3/SA6.15
BP2C5-C	B/SA6.10	4/SA6.11 (OH)
BP2D5-C	A/SA6.10 (OH)	3/SA6.11 (OH)

BENT NO. 3

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP3A1-C	A/SA6.2	1/SA6.14
TP3B1-C	B/SA6.2	2/SA6.14
TP3C1-C	B/SA6.2	2/SA6.14 (OH)
TP3D1-C	C/SA6.2	1/SA6.14 (OH)
SP3B1-C2	-	1/SA6.15
GP3A2-C	A/SA6.4	1/SA6.5
GP3B2-C	B/SA6.4	2/SA6.5
GP3C2-C	B/SA6.4	2/SA6.5 (OH)
GP3D2-C	C/SA6.4	1/SA6.5 (OH)
SP3B2-C3	-	1/SA6.15
GP3A3-C	A/SA6.4	1/SA6.5
GP3B3-C	B/SA6.4	2/SA6.5
GP3C3-C	B/SA6.4	2/SA6.5 (OH)
GP3D3-C	C/SA6.4	1/SA6.5 (OH)
SP3B3-C4	-	1/SA6.15
GP3A4-C	A/SA6.2	1/SA6.5
GP3B4-C	B/SA6.2	2/SA6.5
SP34	-	3/SA6.15
GP3C4-C	B/SA6.2	2/SA6.5 (OH)
GP3D4-C	C/SA6.2	1/SA6.5 (OH)
SP3B4-C5	-	2/SA6.15
GP3A5-C	A/SA6.2	1/SA6.5
GP3B5-C	B/SA6.2	2/SA6.5
SP35	-	3/SA6.15
GP3C5-C	B/SA6.2	2/SA6.5 (OH)
GP3D5-C	C/SA6.2	1/SA6.5 (OH)
SP3B5-C6	-	2/SA6.15
BP3A6-C	A/SA6.10 (OH)	1/SA6.12
BP3B6-C	B/SA6.10 (OH)	2/SA6.12
SP36	-	5/SA6.15
BP3C6-C	B/SA6.10 (OH)	2/SA6.12 (OH)
BP3D6-C	A/SA6.10 (OH)(OH)	1/SA6.12 (OH)

BENT NO. 4

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP4A1-C	D/SA6.2	1/SA6.14
TP4B1-C	E/SA6.2	2/SA6.14
TP4C1-C	E/SA6.2	2/SA6.14 (OH)
TP4D1-C	F/SA6.2	1/SA6.14 (OH)
SP4B1-C2	-	1/SA6.15
GP4A2-C	A/SA6.4	1/SA6.5
GP4B2-C	B/SA6.4	2/SA6.5
GP4C2-C	B/SA6.4	2/SA6.5 (OH)
GP4D2-C	C/SA6.4	1/SA6.5 (OH)
SP4B2-C3	-	1/SA6.15
GP4A3-C	D/SA6.2	1/SA6.5
GP4B3-C	E/SA6.2	2/SA6.5
GP4C3-C	E/SA6.2	2/SA6.5 (OH)
GP4D3-C	F/SA6.2	1/SA6.5 (OH)
SP4B3-C4	-	2/SA6.15
GP4A4-C	D/SA6.2	1/SA6.5
GP4B4-C	E/SA6.2	2/SA6.5
SP44	-	3/SA6.15
GP4C4-C	E/SA6.2	2/SA6.5 (OH)
GP4D4-C	F/SA6.2	1/SA6.5 (OH)
SP4B4-C5	-	2/SA6.15
GP4A5-C	D/SA6.2	1/SA6.5
GP4B5-C	E/SA6.2	2/SA6.5
SP45	-	3/SA6.15
GP4C5-C	E/SA6.2	2/SA6.5 (OH)
GP4D5-C	F/SA6.2	1/SA6.5 (OH)
SP4B5-C6	-	2/SA6.15
GP4A6-C	D/SA6.2	3/SA6.5
GP4B6-C	E/SA6.2	4/SA6.5
SP46	-	5/SA6.15
GP4C6-C	E/SA6.2	4/SA6.5 (OH)
GP4D6-C	F/SA6.2	3/SA6.5 (OH)
SP4B6-C7	-	2/SA6.15
BP4A7-C	A/SA6.10	3/SA6.11
BP4B7-C	B/SA6.10	4/SA6.11
SP47	-	5/SA6.15
BP4C7-C	B/SA6.10	4/SA6.11 (OH)
BP4D7-C	A/SA6.10 (OH)	3/SA6.11 (OH)

BENT NO. 5

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP5A1-C	A/SA6.2	1/SA6.14
TP5B1-C	B/SA6.2	2/SA6.14
TP5C1-C	B/SA6.2	2/SA6.14 (OH)
TP5D1-C	C/SA6.2	1/SA6.14 (OH)
SP5B1-C2	-	1/SA6.15
GP5A2-C	A/SA6.4	1/SA6.5
GP5B2-C	B/SA6.4	2/SA6.5
GP5C2-C	B/SA6.4	2/SA6.5 (OH)
GP5D2-C	C/SA6.4	1/SA6.5 (OH)
SP5B2-C3	-	1/SA6.15
GP5A3-C	A/SA6.2	1/SA6.5
GP5B3-C	B/SA6.2	2/SA6.5
GP5C3-C	B/SA6.2	2/SA6.5 (OH)
GP5D3-C	C/SA6.2	1/SA6.5 (OH)
SP5B3-C4	-	2/SA6.15
GP5A4-C	A/SA6.2	1/SA6.5
GP5B4-C	B/SA6.2	2/SA6.5
SP54	-	3/SA6.15
GP5C4-C	B/SA6.2	2/SA6.5 (OH)
GP5D4-C	C/SA6.2	1/SA6.5 (OH)
SP5B4-C5	-	2/SA6.15
GP5A5-C	A/SA6.2	1/SA6.5
GP5B5-C	B/SA6.2	2/SA6.5
SP55	-	3/SA6.15
GP5C5-C	B/SA6.2	2/SA6.5 (OH)
GP5D5-C	C/SA6.2	1/SA6.5 (OH)
SP5B5-C6	-	2/SA6.15

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

ORIGINAL PLAN
NOTE BOOK
No.

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

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

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	125	280

CONNECTION REFERENCE SCHEDULE

BENT NO. 5

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
GP5A6-C	A/SA6.2	3/SA6.5
GP5B6-C	B/SA6.2	4/SA6.5
SP56	-	5/SA6.15
GP5C6-C	B/SA6.2	4/SA6.5 (OH)
GP5D6-C	C/SA6.2	3/SA6.5 (OH)
GP5A7-C	A/SA6.2	3/SA6.5
GP5B7-C	B/SA6.2	1/SA6.6
SP5B7-C8	-	4/SA6.15
GP5C7-C	B/SA6.2	1/SA6.6 (OH)
GP5D7-C	C/SA6.2	3/SA6.5 (OH)
BP5A8-C	A/SA6.10 (OH)	1/SA6.12
BP5B8-C	B/SA6.10 (OH)	2/SA6.12
SP58	-	5/SA6.15
BP5C8-C	B/SA6.10 (OH)	2/SA6.12 (OH)
BP5D8-C	A/SA6.10 (OH)(OH)	1/SA6.12 (OH)

BENT NO. 6

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP6A1-C	D/SA6.2	1/SA6.14
TP6B1-C	E/SA6.2	2/SA6.14
TP6C1-C	E/SA6.2	2/SA6.14 (OH)
TP6D1-C	F/SA6.2	1/SA6.14 (OH)
SP6B1-C2	-	1/SA6.15
GP6A2-C	A/SA6.4	1/SA6.5
GP6B2-C	B/SA6.4	2/SA6.5
GP6C2-C	B/SA6.4	2/SA6.5 (OH)
GP6D2-C	C/SA6.4	1/SA6.5 (OH)
SP6B2-C3	-	1/SA6.15
GP6A3-C	D/SA6.2	1/SA6.5
GP6B3-C	E/SA6.2	2/SA6.5
GP6C3-C	E/SA6.2	2/SA6.5 (OH)
GP6D3-C	F/SA6.2	1/SA6.5 (OH)
SP6B3-C4	-	2/SA6.15
GP6A4-C	D/SA6.2	1/SA6.5
GP6B4-C	E/SA6.2	2/SA6.5
SP64	-	3/SA6.15
GP6C4-C	E/SA6.2	2/SA6.5 (OH)
GP6D4-C	F/SA6.2	1/SA6.5 (OH)
SP6B4-C5	-	2/SA6.15

BENT NO. 6

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
GP6A5-C	D/SA6.2	1/SA6.5
GP6B5-C	E/SA6.2	2/SA6.5
SP65	-	3/SA6.15
GP6C5-C	E/SA6.2	2/SA6.5 (OH)
GP6D5-C	F/SA6.2	1/SA6.5 (OH)
SP6B5-C6	-	2/SA6.15
GP6A6-C	D/SA6.2	3/SA6.5
GP6B6-C	E/SA6.2	4/SA6.5
SP66	-	5/SA6.15
GP6C6-C	E/SA6.2	4/SA6.5 (OH)
GP6D6-C	F/SA6.2	3/SA6.5 (OH)
GP6A7-C	D/SA6.2	3/SA6.5
GP6B7-C	E/SA6.2	1/SA6.6
SP6B7-C8	-	4/SA6.15
GP6C7-C	E/SA6.2	1/SA6.6 (OH)
GP6D7-C	F/SA6.2	3/SA6.5 (OH)
BP6A8-C	A/SA6.10	1/SA6.12
BP6B8-C	B/SA6.10	2/SA6.12
SP68	-	5/SA6.15
BP6C8-C	B/SA6.10	2/SA6.12 (OH)
BP6D8-C	A/SA6.10 (OH)	1/SA6.12 (OH)

BENT NO. 7

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP7A1-C	A/SA6.2	1/SA6.14
TP7B1-C	B/SA6.2	2/SA6.14
TP7C1-C	B/SA6.2	2/SA6.14 (OH)
TP7D1-C	C/SA6.2	1/SA6.14 (OH)
SP7B1-C2	-	1/SA6.15
GP7A2-C	A/SA6.4	1/SA6.5
GP7B2-C	B/SA6.4	2/SA6.5
GP7C2-C	B/SA6.4	2/SA6.5 (OH)
GP7D2-C	C/SA6.4	1/SA6.5 (OH)
SP7B2-C3	-	1/SA6.15
GP7A3-C	A/SA6.2	1/SA6.5
GP7B3-C	B/SA6.2	2/SA6.5
GP7C3-C	B/SA6.2	2/SA6.5 (OH)
GP7D3-C	C/SA6.2	1/SA6.5 (OH)
SP7B3-C4	-	2/SA6.15

BENT NO. 7

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
GP7A4-C	A/SA6.2	1/SA6.5
GP7B4-C	B/SA6.2	2/SA6.5
SP74	-	3/SA6.15
GP7C4-C	B/SA6.2	2/SA6.5 (OH)
GP7D4-C	C/SA6.2	1/SA6.5 (OH)
SP7B4-C5	-	2/SA6.15
GP7A5-C	A/SA6.2	1/SA6.5
GP7B5-C	B/SA6.2	2/SA6.5
SP75	-	3/SA6.15
GP7C5-C	B/SA6.2	2/SA6.5 (OH)
GP7D5-C	C/SA6.2	1/SA6.5 (OH)
SP7B5-C6	-	2/SA6.15
BP7A6-C	A/SA6.10 (OH)	3/SA6.11
BP7B6-C	B/SA6.10 (OH)	4/SA6.11
SP76	-	5/SA6.15
BP7C6-C	B/SA6.10 (OH)	4/SA6.11 (OH)
BP7D6-C	A/SA6.10 (OH)(OH)	3/SA6.11 (OH)

BENT NO. 8

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP8A1-C	D/SA6.2	1/SA6.14
TP8B1-C	E/SA6.2	2/SA6.14
TP8C1-C	E/SA6.2	2/SA6.14 (OH)
TP8D1-C	F/SA6.2	1/SA6.14 (OH)
SP8B1-C2	-	1/SA6.15
GP8A2-C	A/SA6.4	1/SA6.5
GP8B2-C	B/SA6.4	2/SA6.5
GP8C2-C	B/SA6.4	2/SA6.5 (OH)
GP8D2-C	C/SA6.4	1/SA6.5 (OH)
SP8B2-C3	-	1/SA6.15
GP8A3-C	D/SA6.2	1/SA6.5
GP8B3-C	E/SA6.2	2/SA6.5
GP8C3-C	E/SA6.2	2/SA6.5 (OH)
GP8D3-C	F/SA6.2	1/SA6.5 (OH)
SP8B3-C4	-	2/SA6.15
BP8A4-C	A/SA6.10	1/SA6.12
BP8B4-C	B/SA6.10	2/SA6.12
SP84	-	3/SA6.15
BP8C4-C	B/SA6.10	2/SA6.12 (OH)
BP8D4-C	A/SA6.10 (OH)	1/SA6.12 (OH)

BENT NO. 9

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP9A1-C	A/SA6.2	1/SA6.14
TP9B1-C	B/SA6.2	2/SA6.14
TP9C1-C	B/SA6.2	2/SA6.14 (OH)
TP9D1-C	C/SA6.2	1/SA6.14 (OH)
SP9B1-C2	-	1/SA6.15
GP9A2-C	A/SA6.4	1/SA6.5
GP9B2-C	B/SA6.4	2/SA6.5
GP9C2-C	B/SA6.4	2/SA6.5 (OH)
GP9D2-C	C/SA6.4	1/SA6.5 (OH)
SP9B2-C3	-	1/SA6.15
BP9A3-C	A/SA6.10 (OH)	3/SA6.11
BP9B3-C	B/SA6.10 (OH)	4/SA6.11
BP9C3-C	B/SA6.10 (OH)	4/SA6.11 (OH)
BP9D3-C	A/SA6.10 (OH)(OH)	3/SA6.11 (OH)

ORIGINAL PLAN

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
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QUANTITIES BY
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NOTE BOOK
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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

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	126	280

CONNECTION REFERENCE SCHEDULE

TRESTLE NO. 1 - COL. LINE "A", "B", "C" AND "D"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS UPSTREAM	ELEV. DETAILS DOWNSTREAM
TP1A1-B	A/SA6.4	6/SA6.14	5/SA6.14
BP1A3-B	C/SA6.10	1/SA6.13	1/SA6.13
TP1B1-B	B/SA6.4	5/SA6.14	5/SA6.14
BP1B3-B	D/SA6.10	1/SA6.13	1/SA6.13
TP1C1-B	B/SA6.4	5/SA6.14	5/SA6.14
BP1C3-B	D/SA6.10	1/SA6.13	1/SA6.13
TP1D1-B	C/SA6.4	5/SA6.14	6/SA6.14
BP1D3-B	C/SA6.10 (OH)	1/SA6.13	1/SA6.13

TRESTLE NO. 2 - COLUMN LINE "A"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS UPSTREAM	ELEV. DETAILS DOWNSTREAM
TP2A1-B	D/SA6.2	4/SA6.14	3/SA6.14
TP3A1-B	A/SA6.2	4/SA6.14 (OH)	3/SA6.14 (OH)
SP23A1-3	-	1/SA6.16	1/SA6.16
GP2A3-B	D/SA6.2	2/SA6.7	1/SA6.7
SP23A3	-	3/SA6.16	3/SA6.16
GP3A3-B	A/SA6.2	2/SA6.7 (OH)	1/SA6.7 (OH)
SP23A3-4	-	1/SA6.16	1/SA6.16
GP2A4-B	D/SA6.2	2/SA6.7	1/SA6.7
SP23A4	-	3/SA6.16	3/SA6.16
GP3A4-B	A/SA6.2	2/SA6.7 (OH)	1/SA6.7 (OH)
SP23A4-5	-	1/SA6.16	1/SA6.16
BP2A5-B	A/SA6.10	2/SA6.13 (OH)	2/SA6.13 (OH)
SP23A5	-	5/SA6.16	5/SA6.16
GP3A5-B	A/SA6.2	4/SA6.8	3/SA6.8
SP23A5-6	-	1/SA6.17	1/SA6.17
BP3A6-B	A/SA6.10 (OH)	3/SA6.13	3/SA6.13

TRESTLE NO. 2 - COL LINE "B"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS UPSTREAM	ELEV. DETAILS DOWNSTREAM
TP2B1-B	E/SA6.2	3/SA6.14	
TP3B1-B	B/SA6.2	3/SA6.14 (OH)	
SP23B1-3	-	1/SA6.16	
GP2B3-B	E/SA6.2	1/SA6.7	
SP23B3	-	3/SA6.16	
GP3B3-B	B/SA6.2	1/SA6.7 (OH)	
SP23B3-4	-	1/SA6.16	

TRESTLE NO. 2 - COLUMN LINE "B"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
GP2B4-B	E/SA6.2	1/SA6.7
SP23B4	-	3/SA6.16
GP3B4-B	B/SA6.2	1/SA6.7 (OH)
SP23B4-5	-	1/SA6.16
BP2B5-B	B/SA6.10	2/SA6.13 (OH)
SP23B5	-	5/SA6.16
GP3B5-B	B/SA6.2	3/SA6.8
SP23B5-6	-	1/SA6.17
BP3B6-B	B/SA6.10 (OH)	3/SA6.13

TRESTLE NO. 2 - COLUMN LINE "C"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP2C1-B	E/SA6.2	3/SA6.14
TP3C1-B	B/SA6.2	3/SA6.14 (OH)
SP23C1-3	-	1/SA6.16
GP2C3-B	E/SA6.2	1/SA6.7
SP23C3	-	3/SA6.16
GP3C3-B	B/SA6.2	1/SA6.7 (OH)
SP23C3-4	-	1/SA6.16
GP2C4-B	E/SA6.2	1/SA6.7
SP23C4	-	3/SA6.16
GP3C4-B	B/SA6.2	1/SA6.7 (OH)
SP23C4-5	-	1/SA6.16
BP2C5-B	B/SA6.10	2/SA6.13 (OH)
SP23C5	-	5/SA6.16
GP3C5-B	B/SA6.2	3/SA6.8
SP23C5-6	-	1/SA6.17
BP3C6-B	B/SA6.10 (OH)	3/SA6.13

TRESTLE NO. 2 - COL LINE "D"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS UPSTREAM	ELEV. DETAILS DOWNSTREAM
TP2D1-B	F/SA6.2	3/SA6.14	4/SA6.14
TP3D1-B	C/SA6.2	3/SA6.14 (OH)	4/SA6.14 (OH)
SP23D1-3	-	1/SA6.16	1/SA6.16
GP2D3-B	F/SA6.2	1/SA6.7	2/SA6.7
SP23D3	-	3/SA6.16	3/SA6.16
GP3D3-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP23D3-4	-	1/SA6.16	1/SA6.16

TRESTLE NO. 2 - COLUMN LINE "D"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS UPSTREAM	ELEV. DETAILS DOWNSTREAM
GP2D4-B	F/SA6.2	1/SA6.7	2/SA6.7
SP23D4	-	3/SA6.16	3/SA6.16
GP3D4-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP23D4-5	-	1/SA6.16	1/SA6.16
BP2D5-B	A/SA6.10 (OH)	2/SA6.13 (OH)	2/SA6.13 (OH)
SP23D5	-	5/SA6.16	5/SA6.16
GP3D5-B	C/SA6.2	3/SA6.8	4/SA6.8
SP23D5-6	-	1/SA6.17	1/SA6.17
BP3D6-B	A/SA6.10 (OH)(OH)	3/SA6.13	3/SA6.13

TRESTLE NO. 3 - COLUMN LINE "A"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS UPSTREAM	ELEV. DETAILS DOWNSTREAM
TP4A1-B	D/SA6.2	4/SA6.14	3/SA6.14
TP5A1-B	A/SA6.2	4/SA6.14 (OH)	3/SA6.14 (OH)
SP45A1-3	-	1/SA6.16	1/SA6.16
GP4A3-B	D/SA6.2	2/SA6.7	1/SA6.7
SP45A3	-	3/SA6.16	3/SA6.16
GP5A3-B	A/SA6.2	2/SA6.7 (OH)	1/SA6.7 (OH)
SP45A3-4	-	1/SA6.16	1/SA6.16
GP4A4-B	D/SA6.2	2/SA6.7	1/SA6.7
SP45A4	-	3/SA6.16	3/SA6.16
GP5A4-B	A/SA6.2	2/SA6.7 (OH)	1/SA6.7 (OH)
SP45A4-5	-	1/SA6.16	1/SA6.16
GP4A5-B	D/SA6.2	2/SA6.7	1/SA6.7
SP45A5	-	3/SA6.16	3/SA6.16
GP5A5-B	A/SA6.2	2/SA6.7 (OH)	1/SA6.7 (OH)
SP45A5-6	-	1/SA6.16	1/SA6.16
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)
SP45A6-7	-	1/SA6.16	1/SA6.16
BP4A7-B	A/SA6.10	2/SA6.13 (OH)	2/SA6.13 (OH)
SP45A7	-	2/SA6.16	2/SA6.16
GP5A7-B	A/SA6.2	2/SA6.8	1/SA6.8
SP45A7-8	-	4/SA6.16	4/SA6.16
BP5A8-B	A/SA6.10 (OH)	3/SA6.13	3/SA6.13

TRESTLE NO. 3 - COLUMN LINE "B"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP4B1-B	E/SA6.2	3/SA6.14
TP5B1-B	B/SA6.2	3/SA6.14 (OH)
SP45B1-3	-	1/SA6.16
GP4B3-B	E/SA6.2	1/SA6.7
SP45B3	-	3/SA6.16
GP5B3-B	B/SA6.2	1/SA6.7 (OH)
SP45B3-4	-	1/SA6.16
GP4B4-B	E/SA6.2	1/SA6.7
SP45B4	-	3/SA6.16
GP5B4-B	B/SA6.2	1/SA6.7 (OH)
SP45B4-5	-	1/SA6.16
GP4B5-B	E/SA6.2	1/SA6.7
SP45B5	-	3/SA6.16
GP5B5-B	B/SA6.2	1/SA6.7 (OH)
SP45B5-6	-	1/SA6.16
GP4B6-B	E/SA6.2	1/SA6.7
SP45B6	-	3/SA6.16
GP5B6-B	B/SA6.2	1/SA6.7 (OH)
SP45B6-7	-	1/SA6.16
BP4B7-B	B/SA6.10	2/SA6.13 (OH)
SP45B7	-	4/SA6.16
GP5B7-B	B/SA6.2	1/SA6.8
SP45B7-8	-	4/SA6.16
BP5B8-B	B/SA6.10 (OH)	3/SA6.13

TRESTLE NO. 3 - COLUMN LINE "C"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP4C1-B	E/SA6.2	3/SA6.14
TP5C1-B	B/SA6.2	3/SA6.14 (OH)
SP45C1-3	-	1/SA6.16
GP4C3-B	E/SA6.2	1/SA6.7
SP45C3	-	3/SA6.16
GP5C3-B	B/SA6.2	1/SA6.7 (OH)
SP45C3-4	-	1/SA6.16
GP4C4-B	E/SA6.2	1/SA6.7
SP45C4	-	3/SA6.16
GP5C4-B	B/SA6.2	1/SA6.7 (OH)
SP45C4-5	-	1/SA6.16
GP4C5-B	E/SA6.2	1/SA6.7
SP45C5	-	3/SA6.16
GP5C5-B	B/SA6.2	1/SA6.7 (OH)
SP45C5-6	-	1/SA6.16
GP4C6-B	E/SA6.2	1/SA6.7
SP45C6	-	3/SA6.16
GP5C6-B	B/SA6.2	1/SA6.7 (OH)
SP45C6-7	-	1/SA6.16
BP4C7-B	B/SA6.10	2/SA6.13 (OH)
SP45C7	-	4/SA6.16
GP5C7-B	B/SA6.2	1/SA6.8
SP45C7-8	-	4/SA6.16
BP5C8-B	B/SA6.10 (OH)	3/SA6.13

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

DRAWING NAME: Z:\OD ONDONA\23-022.9-NANUE STR BR PE2-3DTM.DGN 10-28-24 BD SERVER: SA6618-SA0622 PDN DTLS SCHD.DWG PLOT TIME: 10-28-24, 12:50 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 EXPIRATION DATE OF THE LICENSE

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 SA6.20 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	127	280

CONNECTION REFERENCE SCHEDULE

TRESTLE NO. 3 - COLUMN LINE "C"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP4C1-B	E/SA6.2	3/SA6.14
TP5C1-B	B/SA6.2	3/SA6.14 (OH)
SP45C1-3	-	1/SA6.16
GP4C3-B	E/SA6.2	1/SA6.7
SP45C3	-	3/SA6.16
GP5C3-B	B/SA6.2	1/SA6.7 (OH)
SP45C3-4	-	1/SA6.16
GP4C4-B	E/SA6.2	1/SA6.7
SP45C4	-	3/SA6.16
GP5C4-B	B/SA6.2	1/SA6.7 (OH)
SP45C4-5	-	1/SA6.16
GP4C5-B	E/SA6.2	1/SA6.7
SP45C5	-	3/SA6.16
GP5C5-B	B/SA6.2	1/SA6.7 (OH)
SP45C5-6	-	1/SA6.16
GP4C6-B	E/SA6.2	1/SA6.7
SP45C6	-	3/SA6.16
GP5C6-B	B/SA6.2	1/SA6.7 (OH)
SP45C6-7	-	1/SA6.16
BP4C7-B	B/SA6.10	2/SA6.13 (OH)
SP45C7	-	2/SA6.16
GP5C7-B	B/SA6.2	1/SA6.8
SP45C7-8	-	4/SA6.16
BP5C8-B	B/SA6.10 (OH)	3/SA6.13

TRESTLE NO. 3 - COLUMN LINE "D"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS	
		UPSTREAM	DOWNSTREAM
TP4D1-B	F/SA6.2	3/SA6.14	4/SA6.14
TP5D1-B	C/SA6.2	3/SA6.14 (OH)	4/SA6.14 (OH)
SP45D1-3	-	1/SA6.16	1/SA6.16
GP4D3-B	F/SA6.2	1/SA6.7	2/SA6.7
SP45D3	-	3/SA6.16	3/SA6.16
GP5D3-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP45D3-4	-	1/SA6.16	1/SA6.16
GP4D4-B	F/SA6.2	1/SA6.7	2/SA6.7
SP45D4	-	3/SA6.16	3/SA6.16
GP5D4-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP45D4-5	-	1/SA6.16	1/SA6.16
GP4D5-B	F/SA6.2	1/SA6.7	2/SA6.7
SP45D5	-	3/SA6.16	3/SA6.16
GP5D5-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP45D5-6	-	1/SA6.16	1/SA6.16
GP4D6-B	F/SA6.2	1/SA6.7	2/SA6.7
SP45D6	-	3/SA6.16	3/SA6.16
GP5D6-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP45D6-7	-	1/SA6.16	1/SA6.16
BP4D7-B	A/SA6.10 (OH)	2/SA6.13 (OH)	2/SA6.13 (OH)
SP45D7	-	2/SA6.16	2/SA6.16
GP5D7-B	C/SA6.2	1/SA6.8	2/SA6.8
SP45D7-8	-	4/SA6.16	4/SA6.16
BP5D8-B	A/SA6.10 (OH)(OH)	3/SA6.13	3/SA6.13

TRESTLE NO. 4 - COLUMN LINE "A"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS	
		UPSTREAM	DOWNSTREAM
TP6A1-B	D/SA6.2	4/SA6.14	3/SA6.14
TP7A1-B	A/SA6.2	4/SA6.14 (OH)	3/SA6.14 (OH)
SP67A1-3	-	1/SA6.16	1/SA6.16
GP6A3-B	D/SA6.2	2/SA6.7	1/SA6.7
SP67A3	-	3/SA6.16	3/SA6.16
GP7A3-B	A/SA6.2	2/SA6.7 (OH)	1/SA6.7 (OH)
SP67A3-4	-	1/SA6.16	1/SA6.16
GP6A4-B	D/SA6.2	2/SA6.7	1/SA6.7
SP67A4	-	3/SA6.16	3/SA6.16
GP7A4-B	A/SA6.2	2/SA6.7 (OH)	1/SA6.7 (OH)
SP67A4-5	-	1/SA6.16	1/SA6.16
GP6A5-B	D/SA6.2	2/SA6.7	1/SA6.7
SP67A5	-	3/SA6.16	3/SA6.16
GP7A5-B	A/SA6.2	2/SA6.7 (OH)	1/SA6.7 (OH)
SP67A5-6	-	1/SA6.16	1/SA6.16
GP6A6-B	D/SA6.2	2/SA6.7	1/SA6.7
SP67A6	-	3/SA6.16	3/SA6.16
BP7A6-B	A/SA6.10 (OH)	2/SA6.13	2/SA6.13
GP6A7-B	D/SA6.2	2/SA6.9	1/SA6.9
SP67A6-7	-	2/SA6.17	2/SA6.17
BP6A8-B	A/SA6.10	3/SA6.13 (OH)	3/SA6.13 (OH)

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
BP6B8-B	B/SA6.10	3/SA6.13 (OH)

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

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

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. SA6.21 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	128	280

CONNECTION REFERENCE SCHEDULE

TRESTLE NO. 4 - COLUMN LINE "C"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP6C1-B	E/SA6.2	3/SA6.14
TP7C1-B	B/SA6.2	3/SA6.14 (OH)
SP67C1-3	-	1/SA6.16
GP6C3-B	E/SA6.2	1/SA6.7
SP67C3	-	3/SA6.16
GP7C3-B	B/SA6.2	1/SA6.7 (OH)
SP67C3-4	-	1/SA6.16
GP6C4-B	E/SA6.2	1/SA6.7
SP67C4	-	3/SA6.16
GP7C4-B	B/SA6.2	1/SA6.7 (OH)
SP67C4-5	-	1/SA6.16
GP6C5-B	E/SA6.2	1/SA6.7
SP67C5	-	3/SA6.16
GP7C5-B	B/SA6.2	1/SA6.7 (OH)
SP67C5-6	-	1/SA6.16
GP6C6-B	E/SA6.2	1/SA6.7
SP67C6	-	3/SA6.16
BP7C6-B	B/SA6.10 (OH)	2/SA6.13
GP6C7-B	E/SA6.2	1/SA6.9
SP67C6-7	-	2/SA6.17
BP6C8-B	B/SA6.10	3/SA6.13 (OH)

TRESTLE NO. 4 - COLUMN LINE "D"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS	
		UPSTREAM	DOWNSTREAM
TP6D1-B	F/SA6.2	3/SA6.14	4/SA6.14
TP7D1-B	C/SA6.2	3/SA6.14 (OH)	4/SA6.14 (OH)
SP67D1-3	-	1/SA6.16	1/SA6.16
GP6D3-B	F/SA6.2	1/SA6.7	2/SA6.7
SP67D3	-	3/SA6.16	3/SA6.16
GP7D3-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP67D3-4	-	1/SA6.16	1/SA6.16
GP6D4-B	F/SA6.2	1/SA6.7	2/SA6.7
SP67D4	-	3/SA6.16	3/SA6.16
GP7D4-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP67D4-5	-	1/SA6.16	1/SA6.16
GP6D5-B	F/SA6.2	1/SA6.7	2/SA6.7
SP67D5	-	3/SA6.16	3/SA6.16
GP7D5-B	C/SA6.2	1/SA6.7 (OH)	2/SA6.7 (OH)
SP67D5-6	-	1/SA6.16	1/SA6.16
GP6D6-B	F/SA6.2	1/SA6.7	2/SA6.7
SP67D6	-	3/SA6.16	3/SA6.16
BP7D6-B	A/SA6.10 (OHXOH)	2/SA6.13	2/SA6.13
GP6D7-B	F/SA6.2	1/SA6.9	2/SA6.9
SP67D6-7	-	2/SA6.17	2/SA6.17
BP6D8-B	A/SA6.10 (OH)	3/SA6.13 (OH)	3/SA6.13 (OH)

TRESTLE NO. 5 - COLUMN LINE "A"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS	
		UPSTREAM	DOWNSTREAM
TP8A1-B	D/SA6.2	4/SA6.14	3/SA6.14
TP9A1-B	A/SA6.2	4/SA6.14 (OH)	3/SA6.14 (OH)
SP89A1-3	-	1/SA6.16	1/SA6.16
GP8A3-B	D/SA6.2	2/SA6.8 (OH)	1/SA6.8 (OH)
SP89A3	-	2/SA6.16	2/SA6.16
BP9A3-B	A/SA6.10 (OH)	2/SA6.13	2/SA6.13
SP89A3-4	-	4/SA6.16 (OH)	4/SA6.16 (OH)
BP8A4-B	A/SA6.10	3/SA6.13 (OH)	3/SA6.13 (OH)

TRESTLE NO. 5 - COLUMN LINE "B"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP8B1-B	E/SA6.2	3/SA6.14
TP9B1-B	B/SA6.2	3/SA6.14 (OH)
SP89B1-3	-	1/SA6.16
GP8B3-B	E/SA6.2	1/SA6.8 (OH)
SP89B3	-	2/SA6.16
BP9B3-B	B/SA6.10 (OH)	2/SA6.13
SP89B3-4	-	4/SA6.16 (OH)
BP8B4-B	B/SA6.10	3/SA6.13 (OH)

TRESTLE NO. 5 - COLUMN LINE "C"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS
TP8C1-B	E/SA6.2	3/SA6.14
TP9C1-B	B/SA6.2	3/SA6.14 (OH)
SP89C1-3	-	1/SA6.16
GP8C3-B	E/SA6.2	1/SA6.8 (OH)
SP89C3	-	2/SA6.16
BP9C3-B	B/SA6.10 (OH)	2/SA6.13
SP89C3-4	-	4/SA6.16 (OH)
BP8C4-B	B/SA6.10	3/SA6.13 (OH)

TRESTLE NO. 5 - COLUMN LINE "D"

CONNECTION ID	PLAN DETAILS	ELEV. DETAILS	
		UPSTREAM	DOWNSTREAM
TP8D1-B	F/SA6.2	3/SA6.14	4/SA6.14
TP9D1-B	C/SA6.2	3/SA6.14 (OH)	4/SA6.14 (OH)
SP89D1-3	-	1/SA6.16	1/SA6.16
GP8D3-B	F/SA6.2	1/SA6.8 (OH)	2/SA6.8 (OH)
SP89D3	-	2/SA6.16	2/SA6.16
BP9D3-B	A/SA6.10 (OHXOH)	2/SA6.13	2/SA6.13
SP89D3-4	-	4/SA6.16 (OH)	4/SA6.16 (OH)
BP8D4-B	A/SA6.10 (OH)	3/SA6.13 (OH)	3/SA6.13 (OH)

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-DOT\A01 CAD\10-28-24 BID SET\NSR-SA6618-SA6622 CON DTLS SCHD.DWG PLOT TIME: 10-28-24, 12:52 PM

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

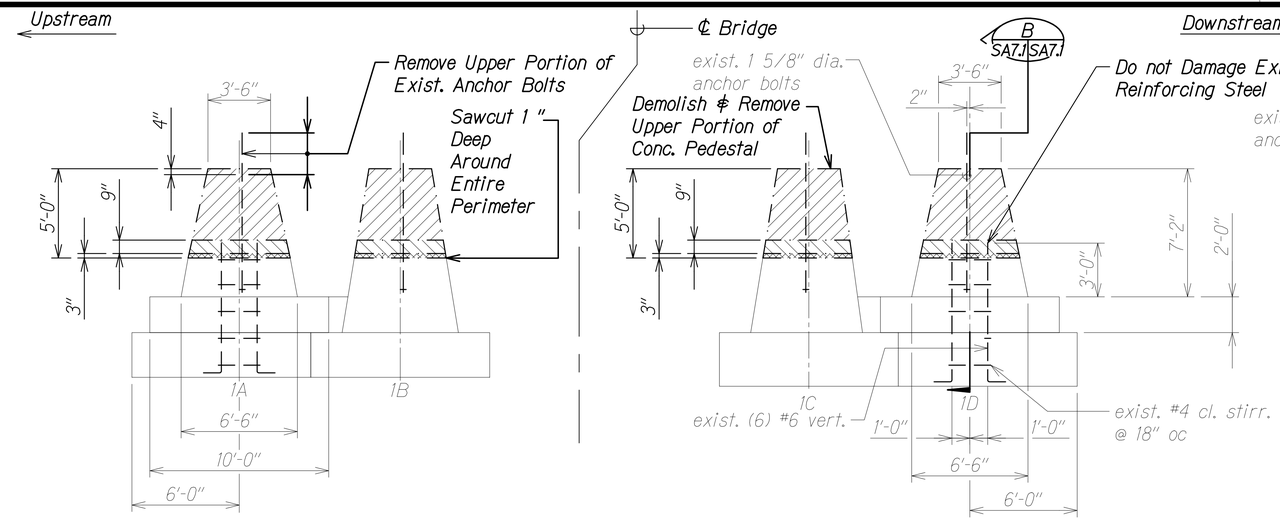
CONNECTION REFERENCE SCHEDULE

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

Scale: As Noted Date: Oct. 2024

SHEET No SA6.22 OF 22 SHEETS

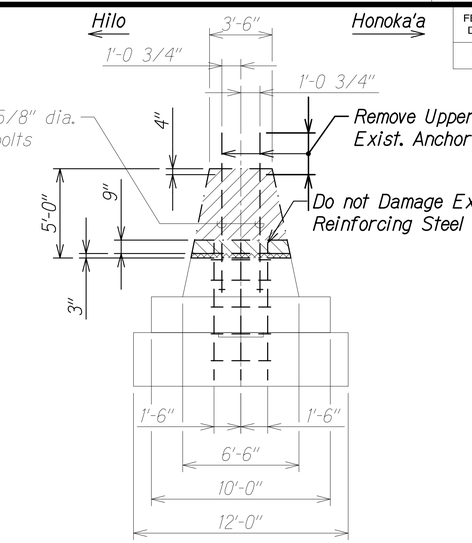
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	129	280



BENT NO. 1 FOUNDATION - DEMOLITION ELEVATION

A SA7.1 SA7.1

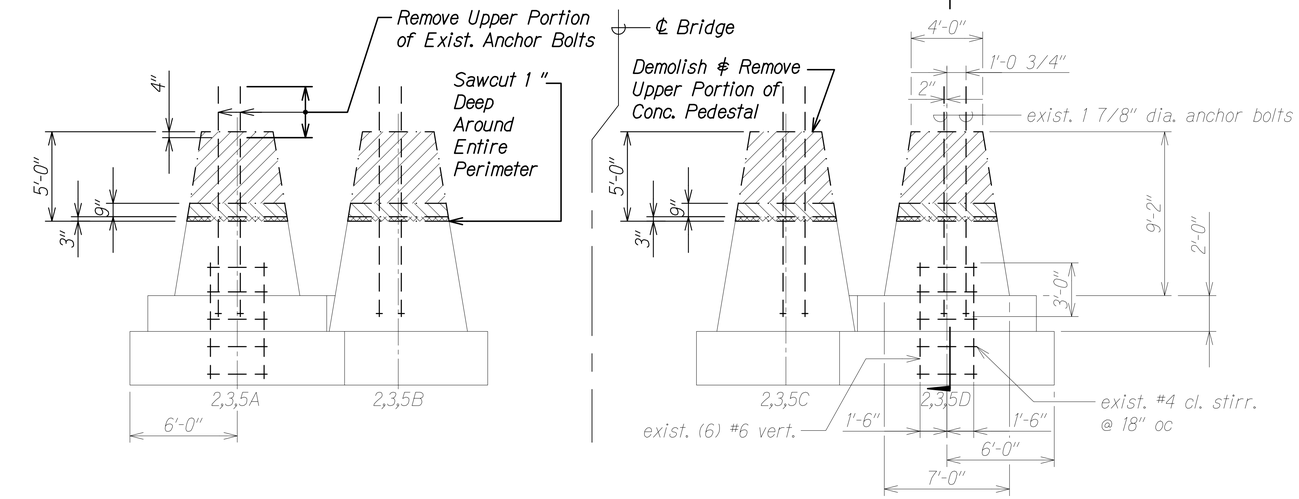
Scale: 1/4" = 1'-0"



DEMOLITION SECTION

B SA7.1 SA7.1

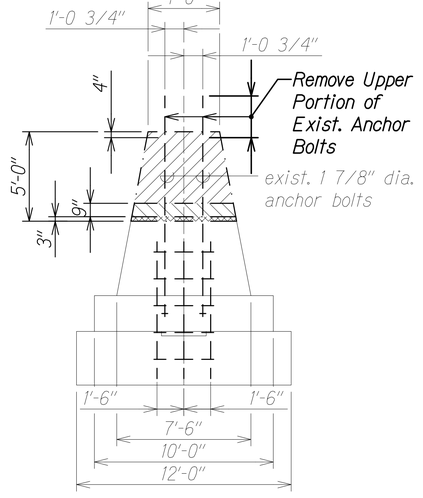
Scale: 1/4" = 1'-0"



BENT NOS. 2, 3, & 5 FOUNDATION - DEMOLITION ELEVATION

C SA7.1 SA7.1

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



DEMOLITION SECTION

D SA7.1 SA7.1

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:

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

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

FOUNDATION DEMOLITION ELEVATIONS AND SECTIONS

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

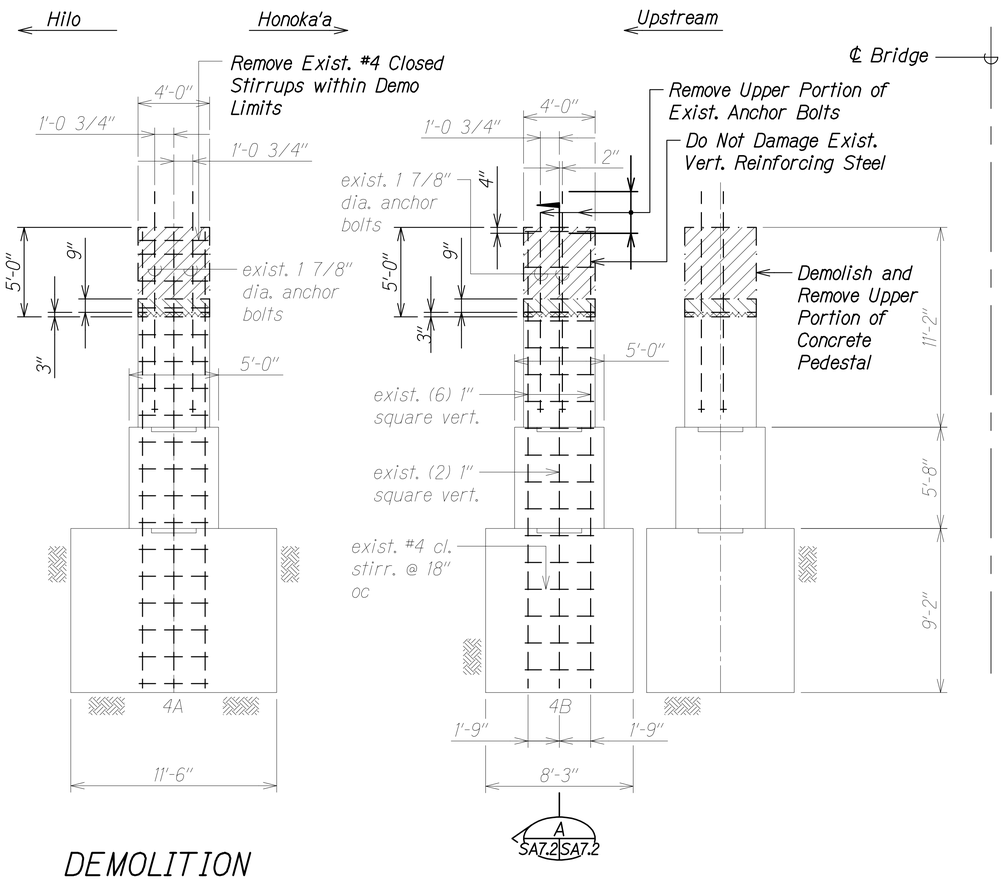
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.1 OF 18 SHEETS

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

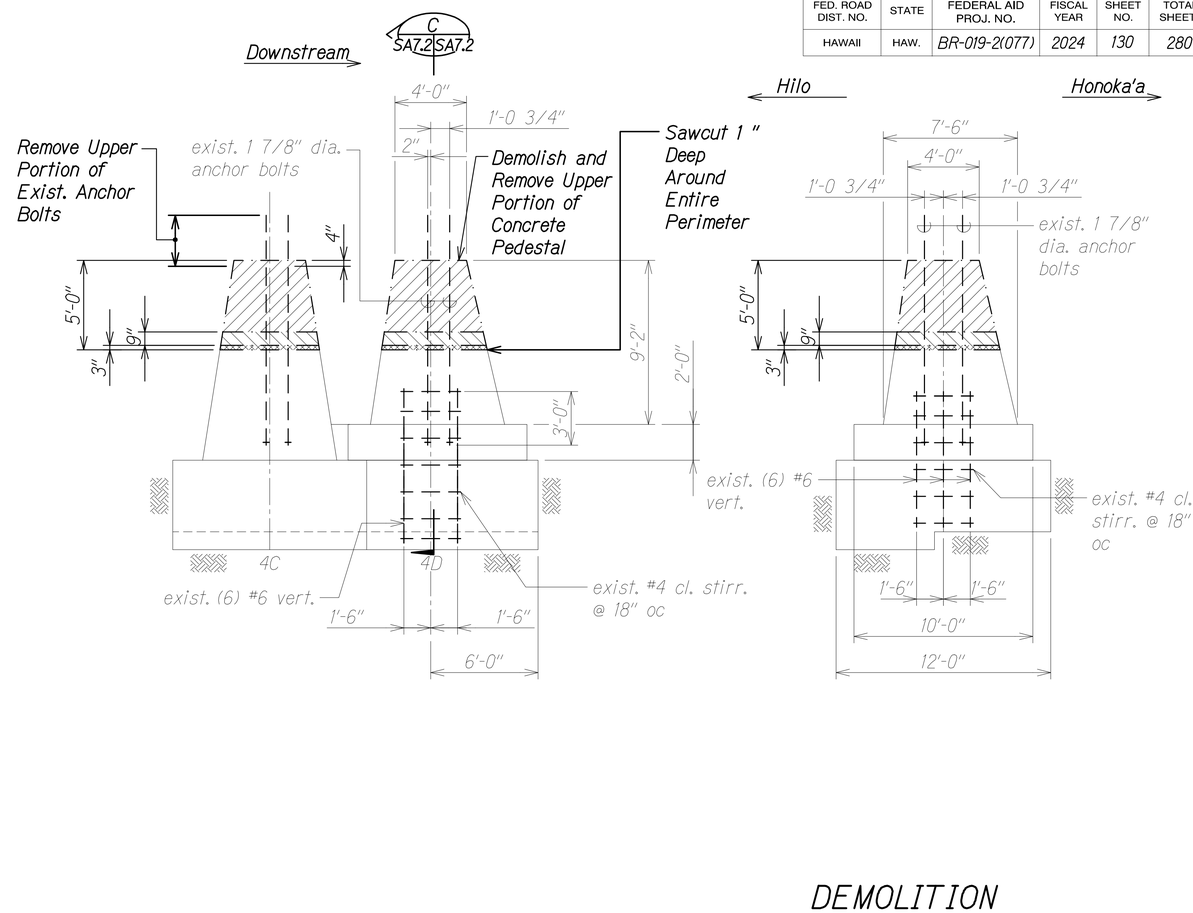
DRAWING NAME: Z:\OD\ONGINGA\23-0229-NANUE STR BR PEP-EOT\A\01 CAD\10-28-24 BID SET\NSR-SA0701-SA0705 DEMO FIN.DWG PLOT TIME: 10-28-24, 8:44 AM

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"



DEMOLITION SECTION C

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

BENT NO. 4 FOUNDATION - DEMOLITION ELEVATION B

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:

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

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

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)

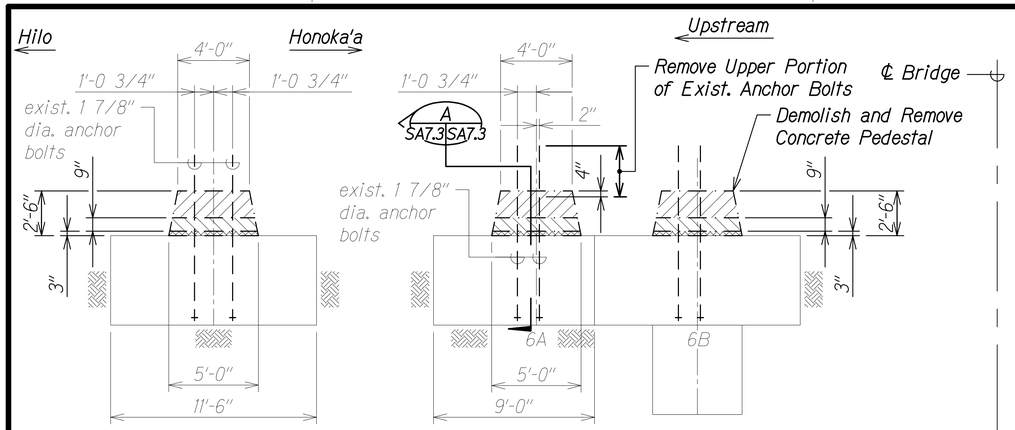
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.2 OF 18 SHEETS

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

DRAWING NAME: Z:\OD\ONGINGA\23-0229-NANUE STR BR PE2-EOTA\01 CAD\10-28-24 BID SET\HSR-SA0705 DEMO FIN.DWG PLOT TIME: 10-28-24, 8:44 AM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	131	280

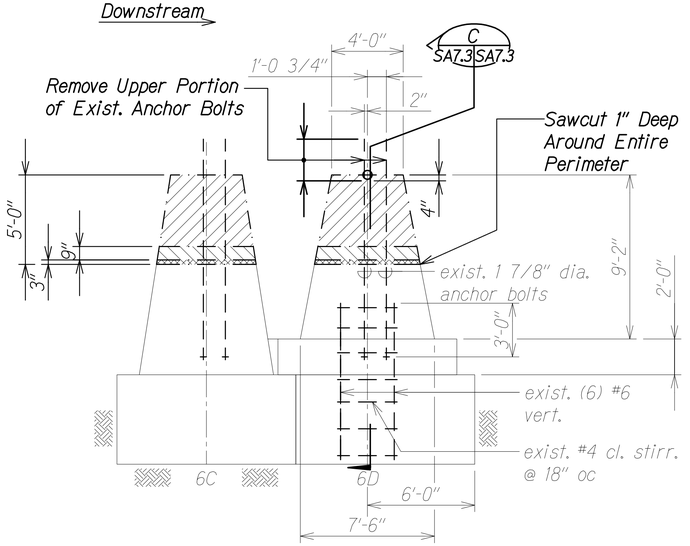


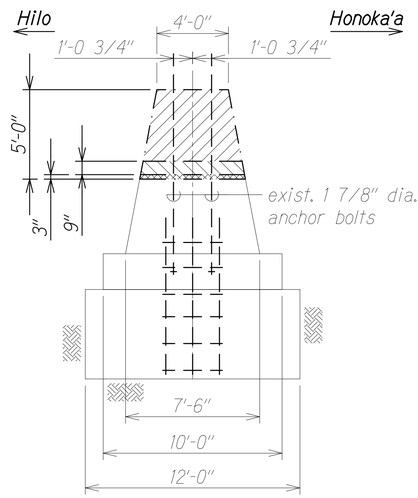
DEMOLITION SECTION (A)

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

BENT NO. 6 FOUNDATION - DEMOLITION ELEVATION (B)

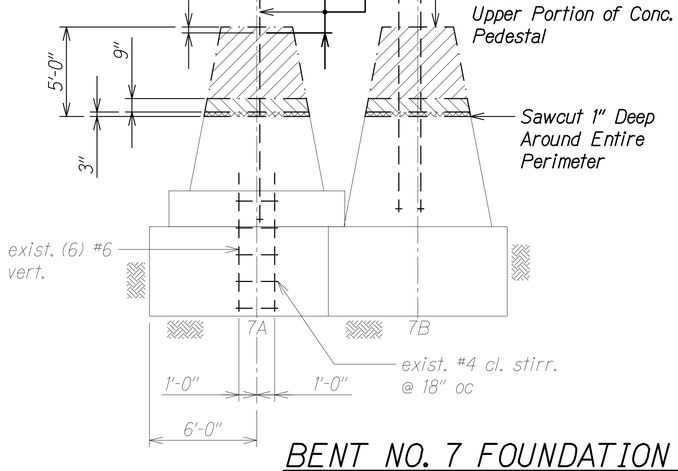
Scale: 1/4" = 1'-0"





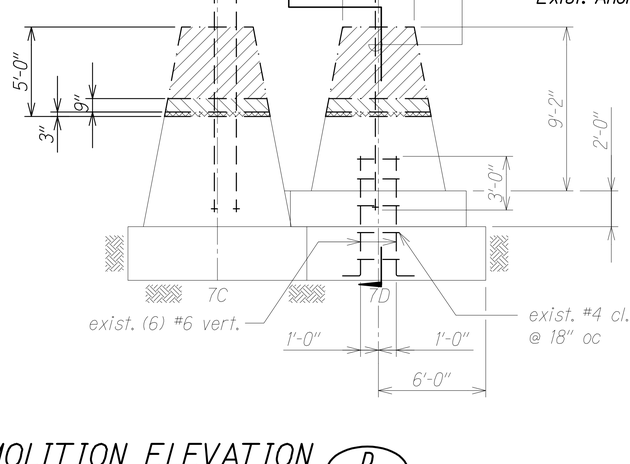
DEMOLITION SECTION (C)

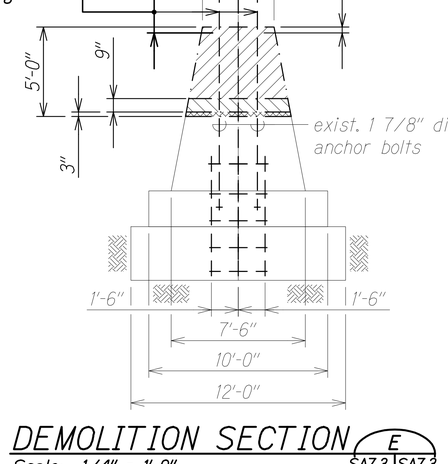
Scale: 1/4" = 1'-0"



BENT NO. 7 FOUNDATION - DEMOLITION ELEVATION (D)

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





DEMOLITION SECTION (E)

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:

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

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

ORIGINAL PLAN
NOTE BOOK
No.

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

FOUNDATION DEMOLITION ELEVATIONS AND SECTIONS

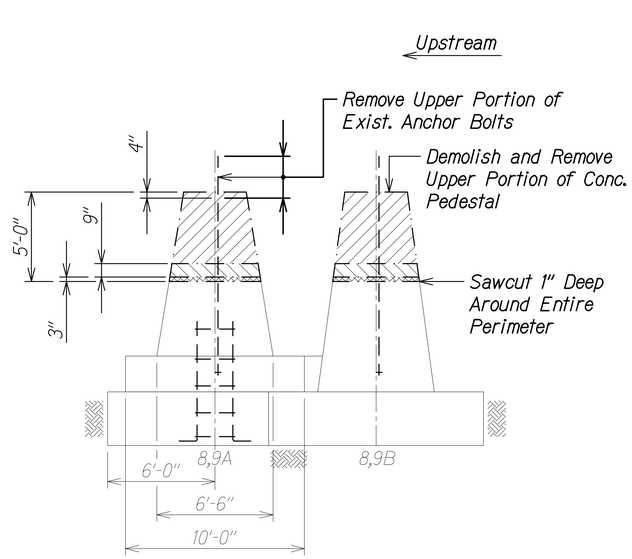
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

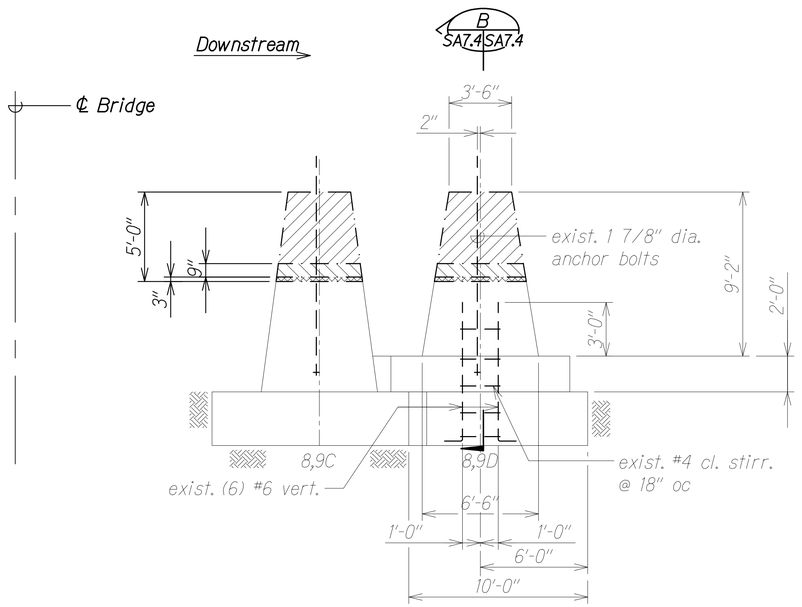
Scale: As Noted Date: Oct. 2024

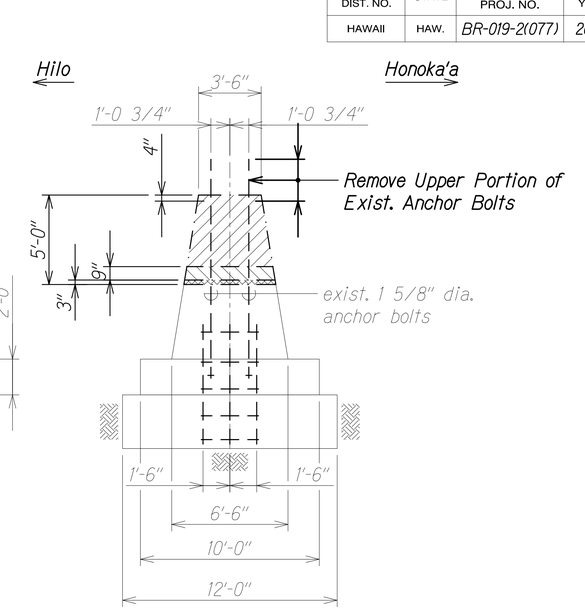
SHEET No. SA7.3 OF 18 SHEETS

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR REP-ROTA\01 CAD\10-28-24 BID SET\NSB-SA0701-SA0705 DEMO FIN.DWG PLOT TIME: 10-28-24, 8:45 AM

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:

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FOUNDATION DEMOLITION ELEVATIONS AND SECTIONS

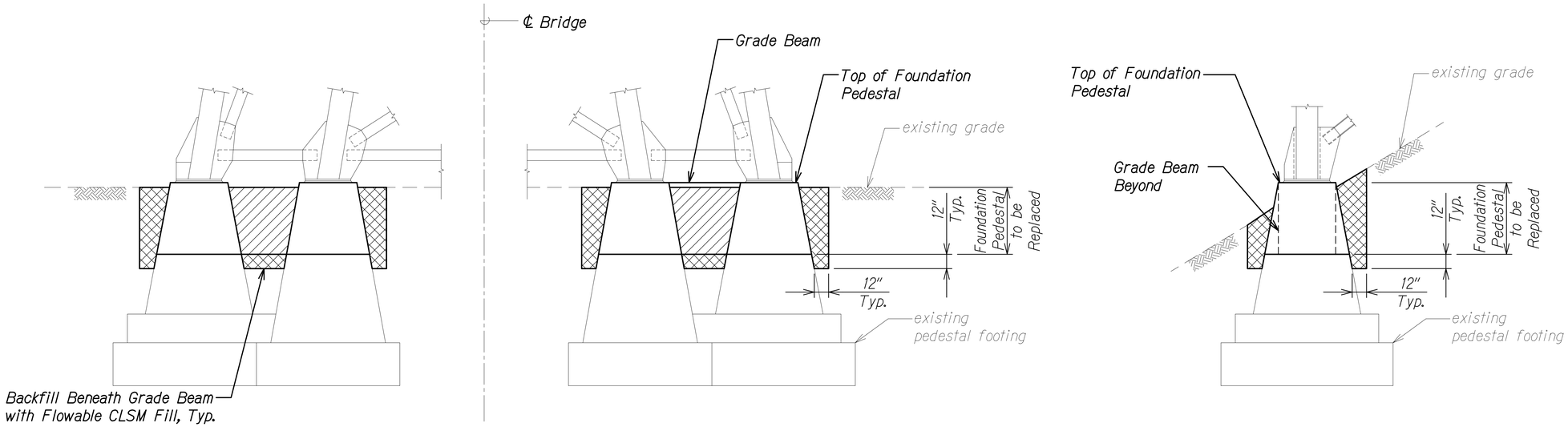
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA7.4 OF 18 SHEETS

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

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 (A)

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

SA7.5 | SA7.5

EXCAVATION/BACKFILL PAY LIMITS AT TYPICAL FOUNDATION PEDESTAL (B)

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

SA7.5 | SA7.5

LEGEND:

Structure Excavation

Structure Backfill

NOTES:

1. 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.
2. Actual structure excavation/backfill outside of the pay limits is permitted but will not be covered for measurement and payment.
3. Pay limits are shown for typical conditions. Due to variations in the existing grade elevations, some foundation locations will require no excavation/backfill.
4. It is acceptable to use structure excavation soil material as structure backfill so long as the material is compacted in accordance with the specifications.

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR REP-ROUTE 01 CAD\10-28-24 BID SET\NSR-SA0701-SA0705 BRND FIN.DWG PLOT TIME: 10-28-24, 11:34 AM

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

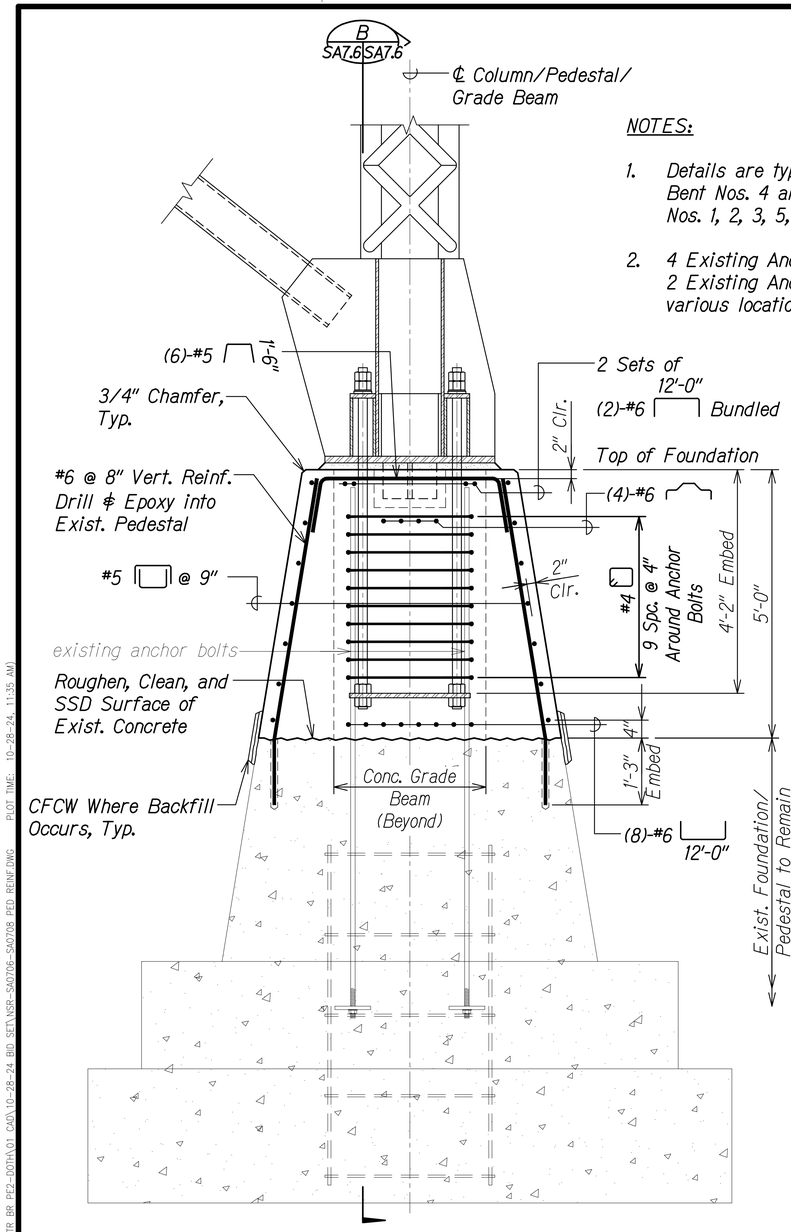
EXCAVATION/BACKFILL PAY LIMITS

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



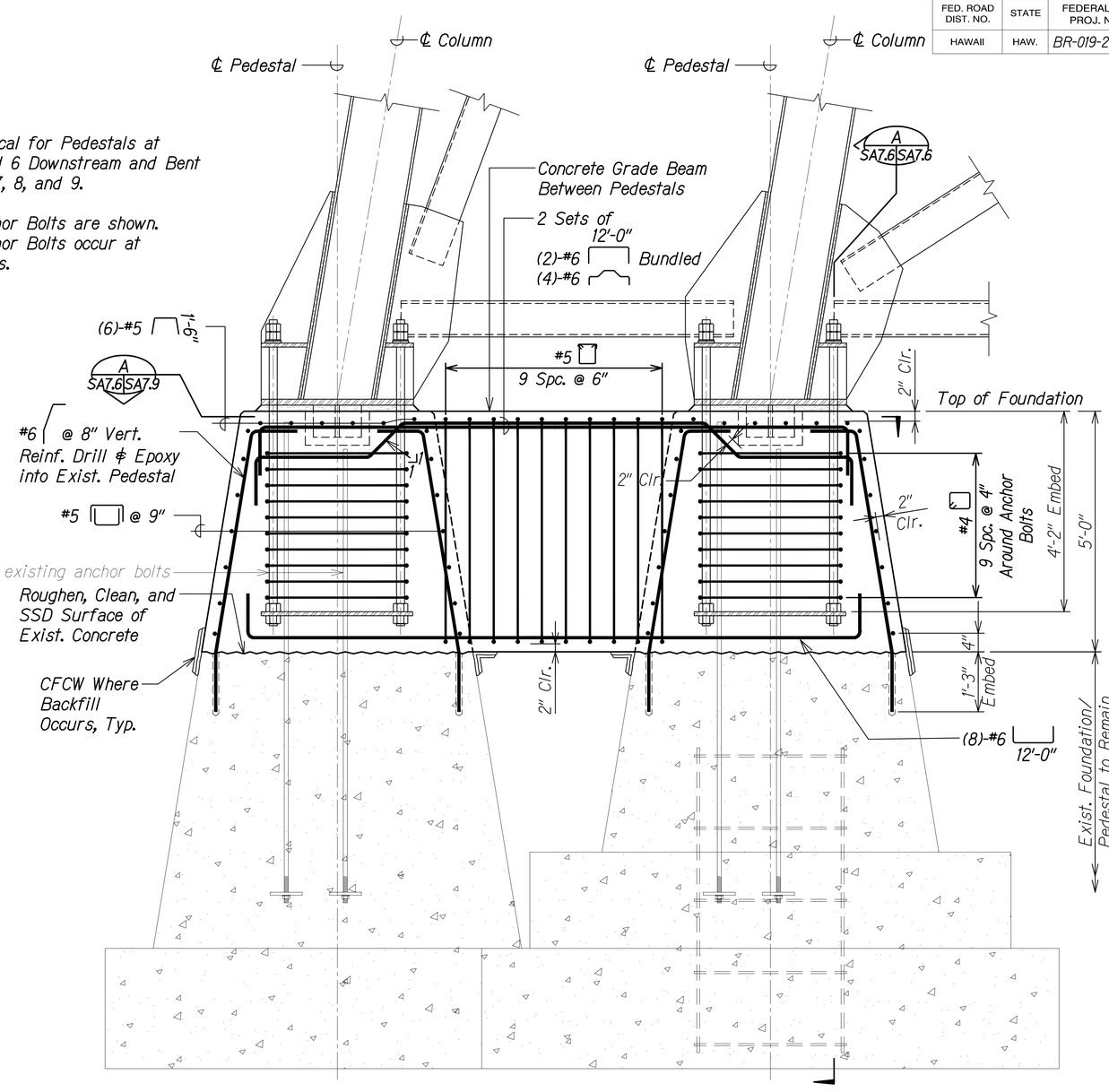
NOTES:

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

TYPICAL FOUNDATION PEDESTAL REINFORCING SECTION A

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

SA7.6 | SA7.6



TYPICAL FOUNDATION PEDESTAL REINFORCING SECTION B

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

SA7.6 | SA7.6

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

DRAWING NAME: Z:\OD ONDONG\23-022.9-NANUE STR BR PE2-3DTM.01 CADD\10-28-24 BID SET\SGR-SA0706-SA0708 PED REINF.DWG PLOT TIME: 10-28-24, 11:35 AM

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

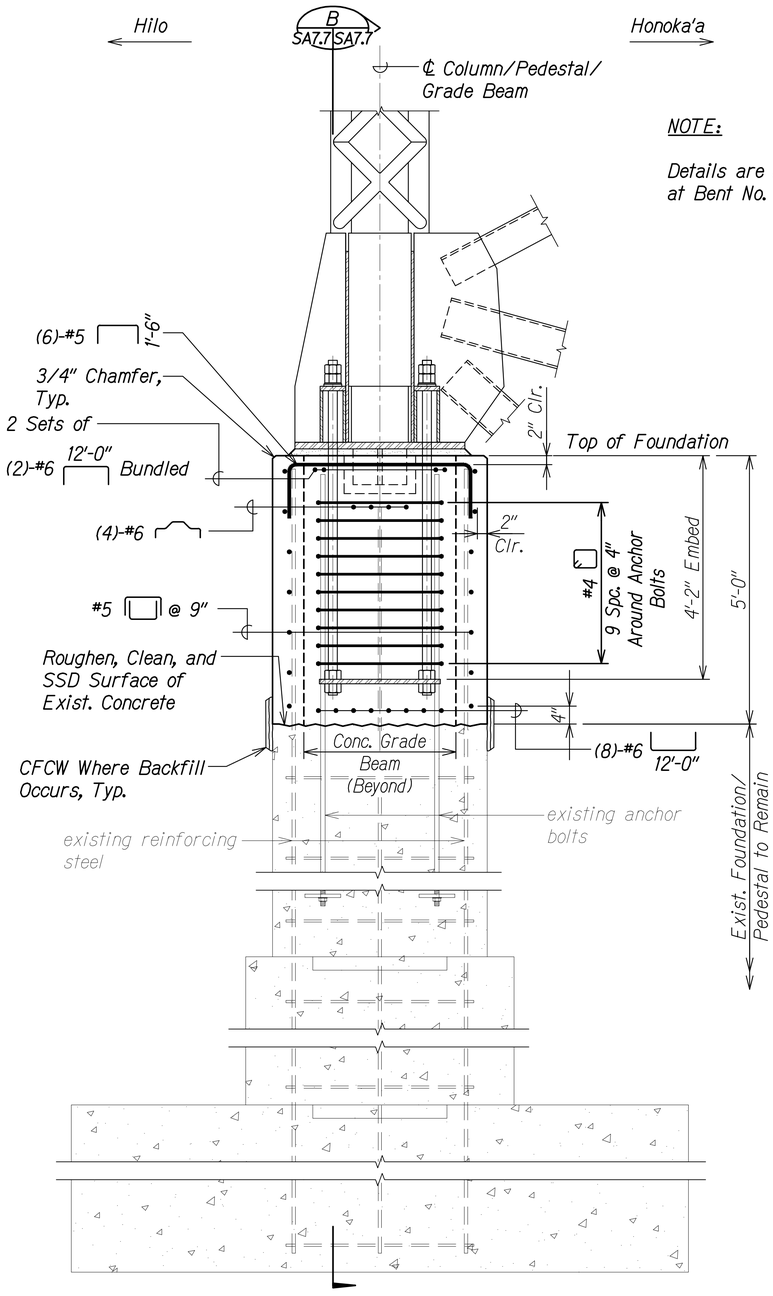
TYPICAL FOUNDATION REINFORCING SECTIONS

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

Scale: As Noted Date: Oct. 2024

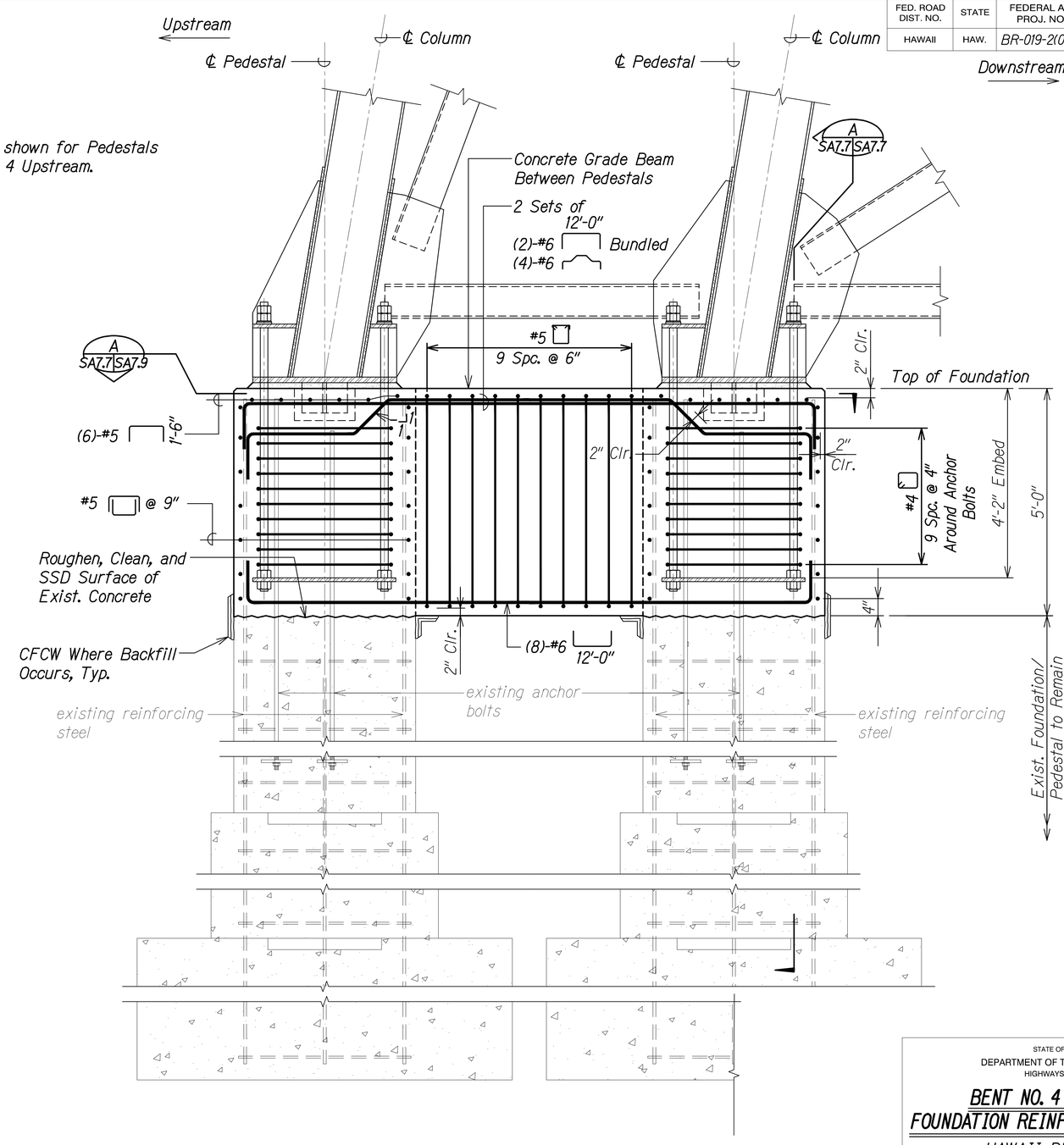
SHEET No. SA7.6 OF 18 SHEETS

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"

A SA7.7 SA7.7

FOUNDATION PEDESTAL REINFORCING SECTION

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

B SA7.7 SA7.7

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

DRAWING NAME: Z:\OD ONDONG\23-022.9-NANUE STR BR PE2-3DTM.01 CADD\10-28-24 BID SET\SGR-SA0706-SA0708 PED REINF.DWG PLOT TIME: 10-28-24, 8:16 PM

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

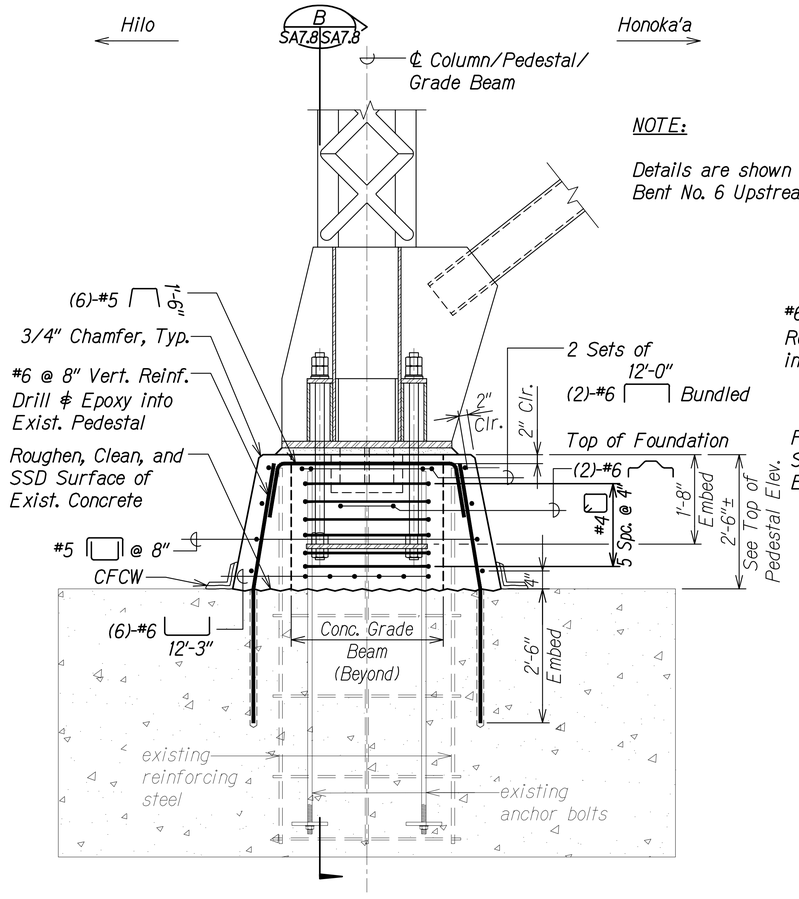
BENT NO. 4 UPSTREAM FOUNDATION REINFORCING SECTIONS

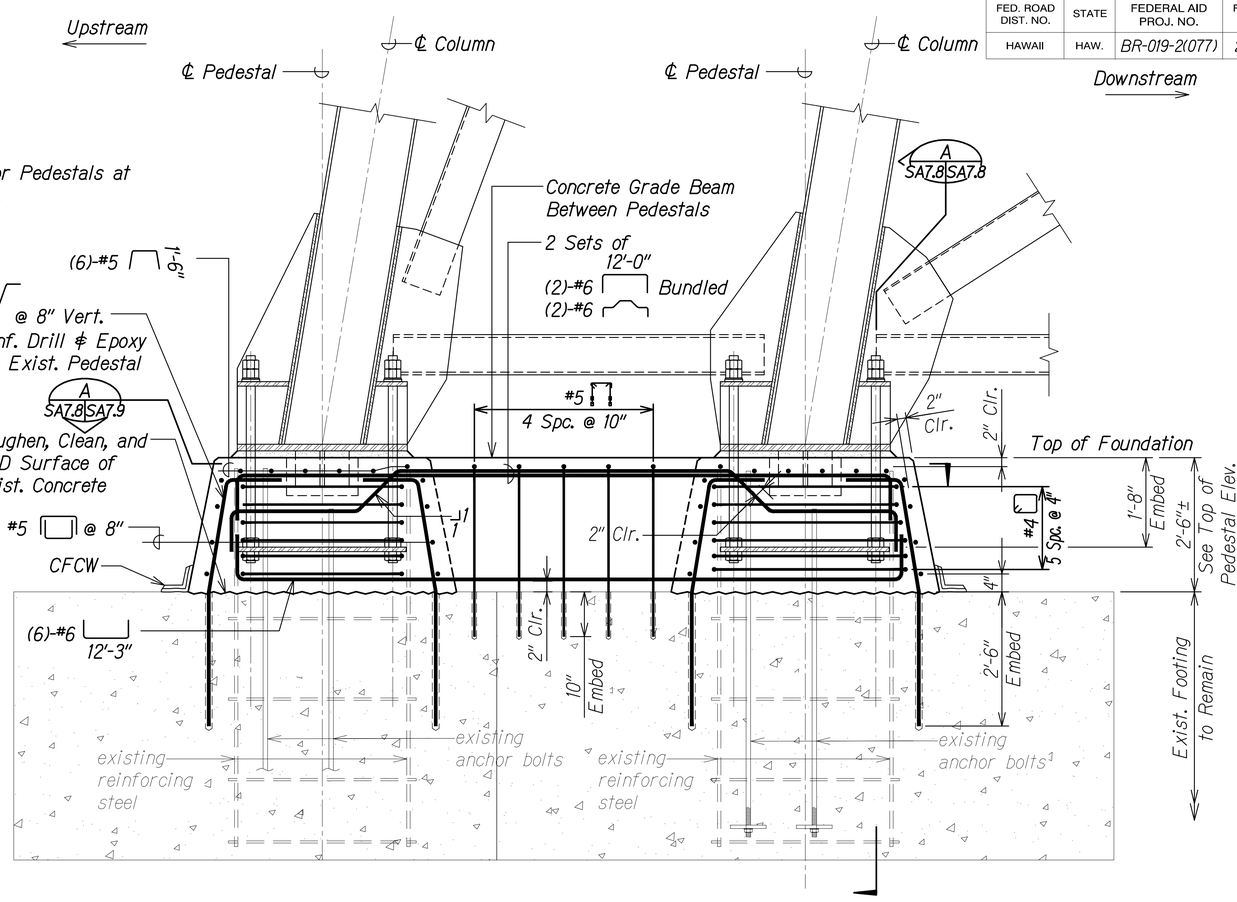
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted — Date: Oct. 2024

SHEET No. SA7.7 OF 18 SHEETS

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

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

BRAWING NAME: ZAXD ONONOA 23-0229-NANUE STR BR PE2-DOTH 01 CADD\10-28-24 BID SET\NSR-SA0706-SA0708 PED REINF.DWG PLOT TIME: 10-28-24, 11:36 AM)

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

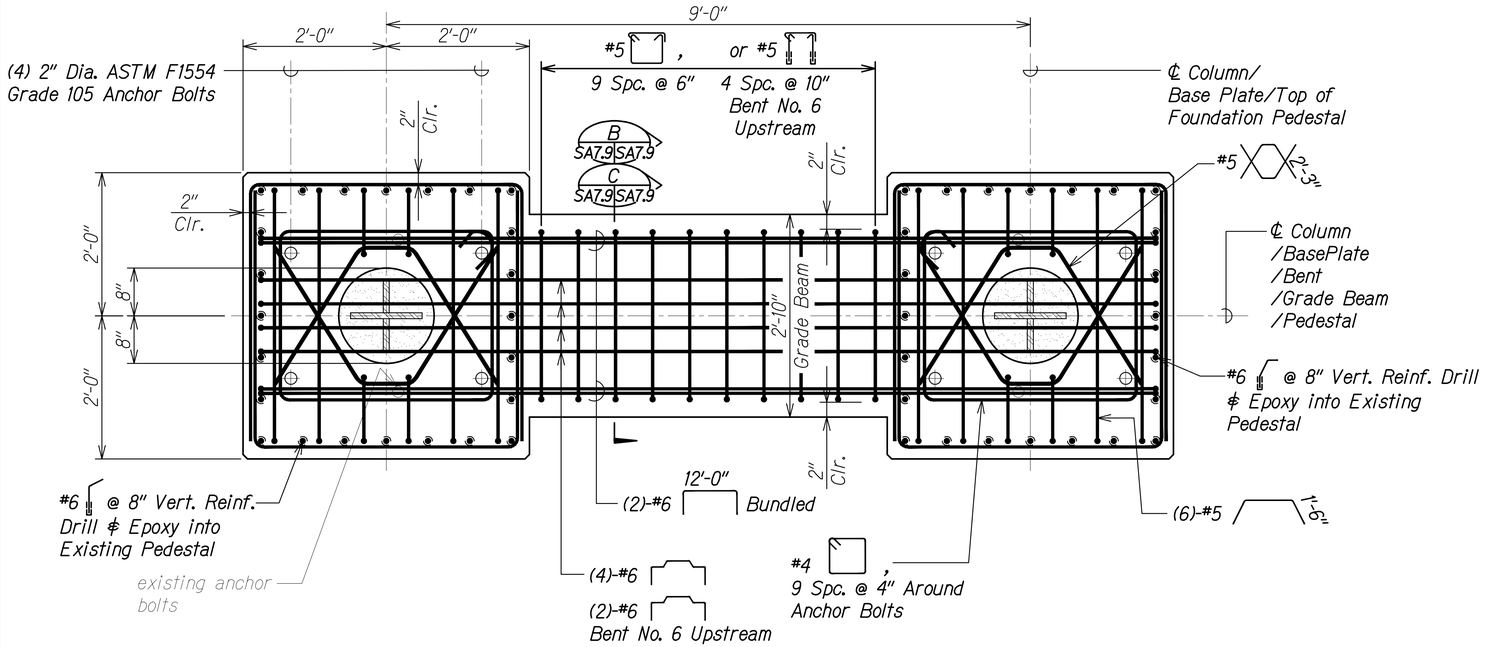
BENT NO. 6 UPSTREAM
FOUNDATION REINFORCING SECTIONS

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

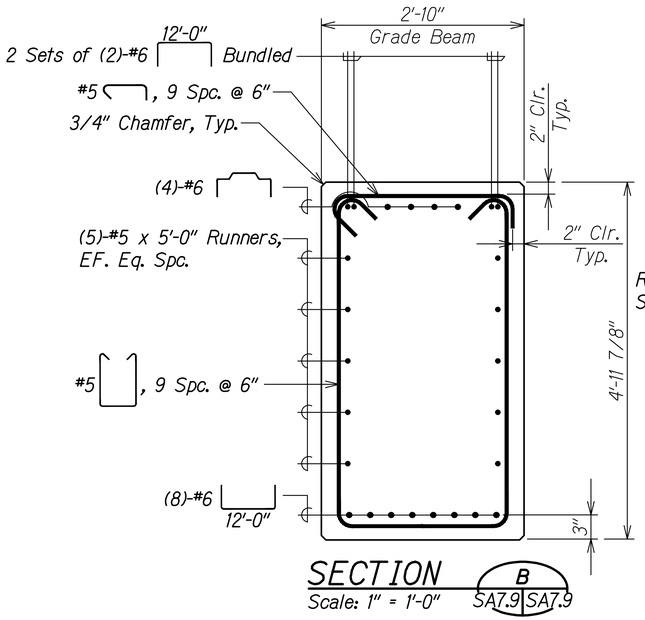
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.8 OF 18 SHEETS

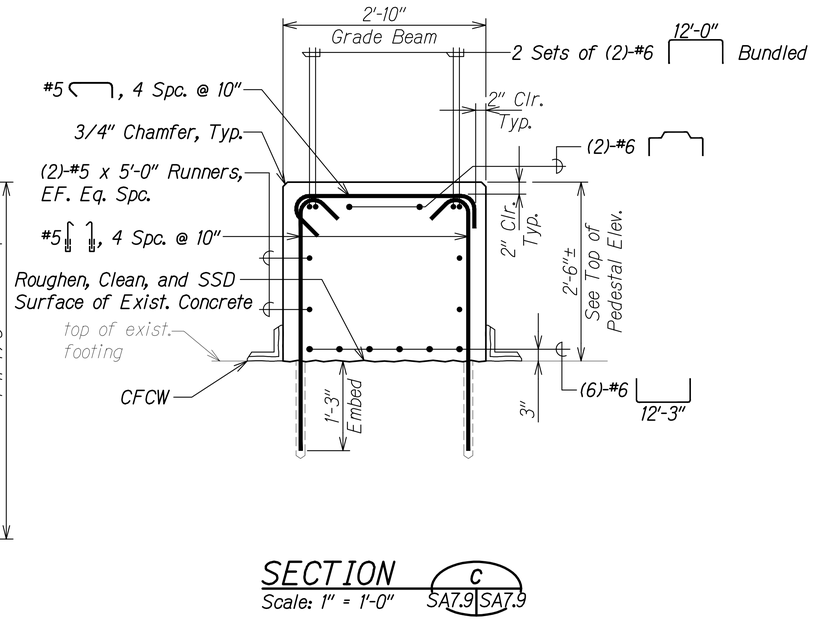
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	137	280



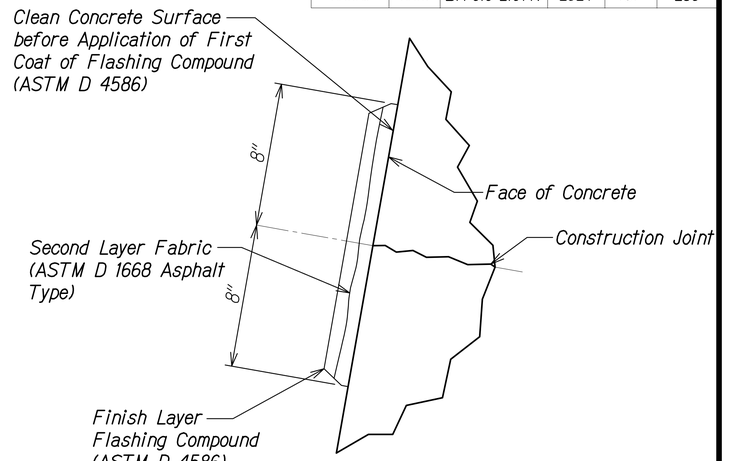
SECTION A
Scale: 1" = 1'-0" SA7.6 SA7.9



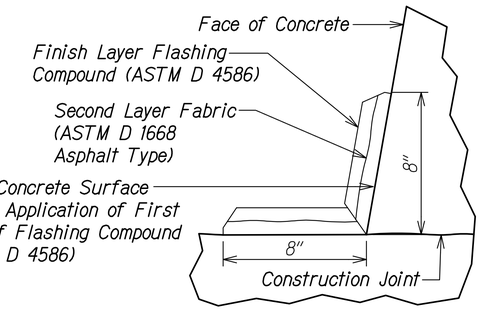
SECTION B
Scale: 1" = 1'-0" SA7.9 SA7.9



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



CFCW DETAIL 1
Scale: 3" = 1'-0" SA7.9 SA7.9



CFCW DETAIL 2
Scale: 3" = 1'-0" SA7.9 SA7.9

NOTE:

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

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)

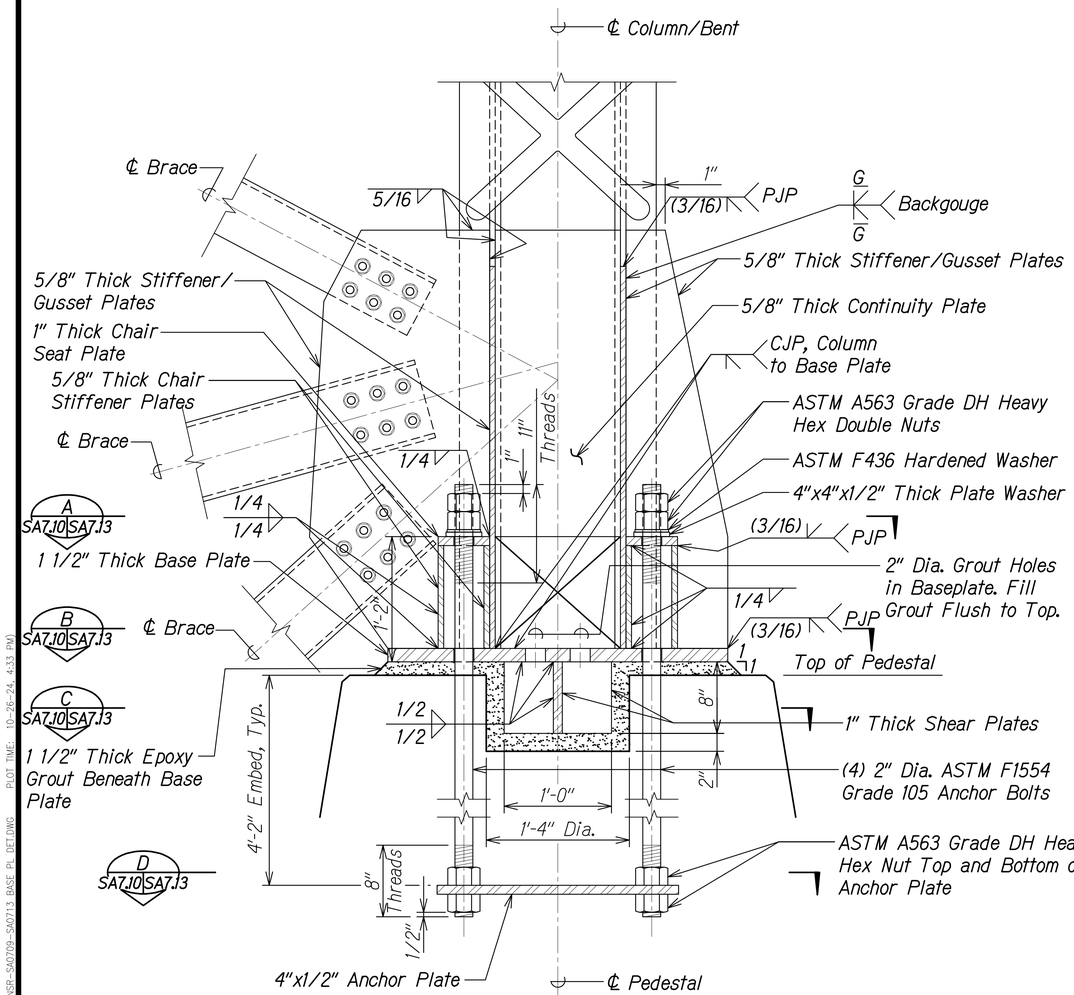
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.9 OF 18 SHEETS

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

DRAWING NAME: Z:\OD ONDONA\23-022.9-NANUE STR BR PE2-3DTM.01 CADD\10-28-24 BID SET\SR-SA0719-SA0713 BASE PL DET.DWG PLOT TIME: 10-28-24, 11:51 AM

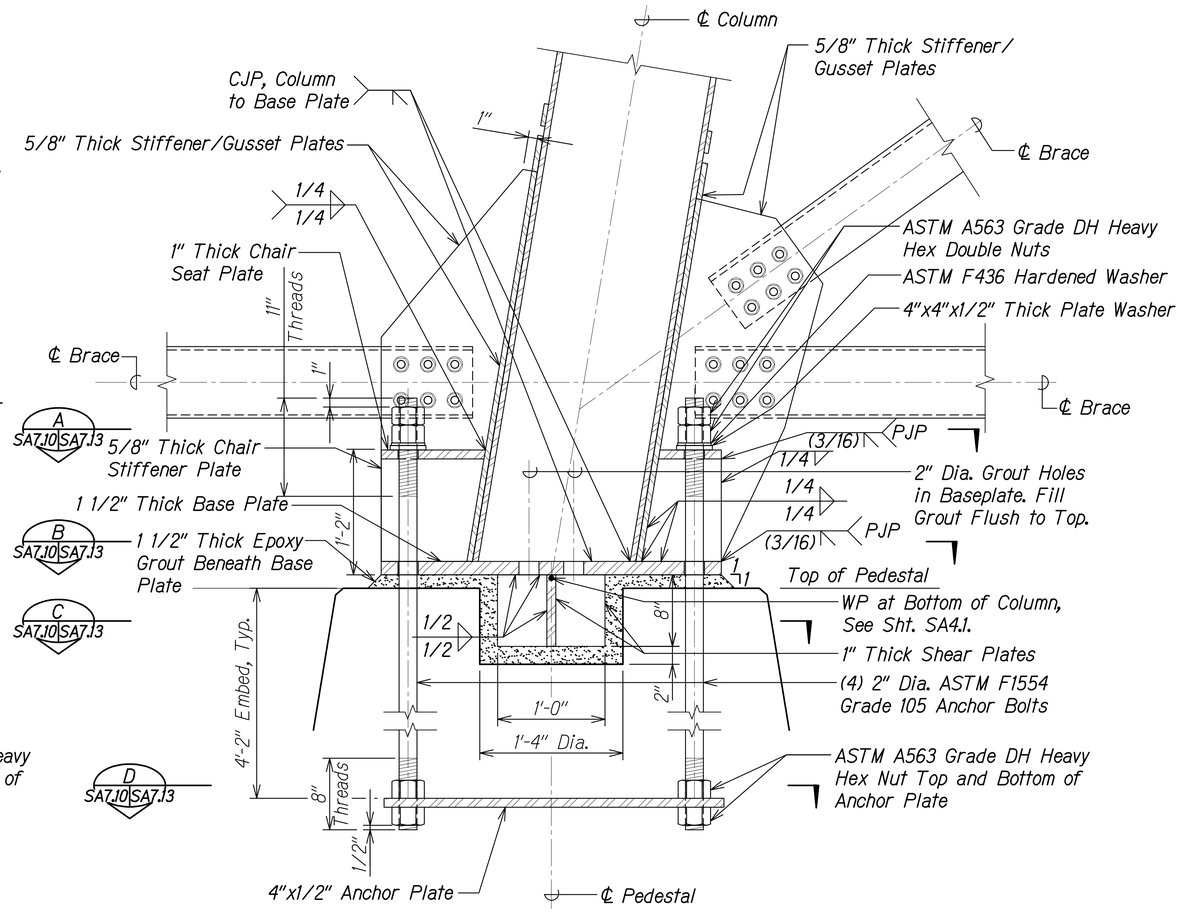
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	138	280



COLUMN BASE PLATE AND ANCHOR BOLT DETAIL 1

SA7.10 SA7.10

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



COLUMN BASE PLATE AND ANCHOR BOLT DETAIL 2

SA7.10 SA7.10

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

NOTES:

1. Details are typical for Bent Nos. 2, 4, 7, and 9.
2. All welded connections shall receive full seal welding along all edges of faying surfaces to prevent moisture intrusion.
3. The upper 2'-6" of anchor bolts shall be shop painted.
4. Anchor bolts shall be shipped fastened to the bottom anchor plate and a temporary steel top template to ensure proper layout during installation.
5. 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.
6. Touch-up paint nuts, washers, and ends of anchor bolts after installation.
7. 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.

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

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)

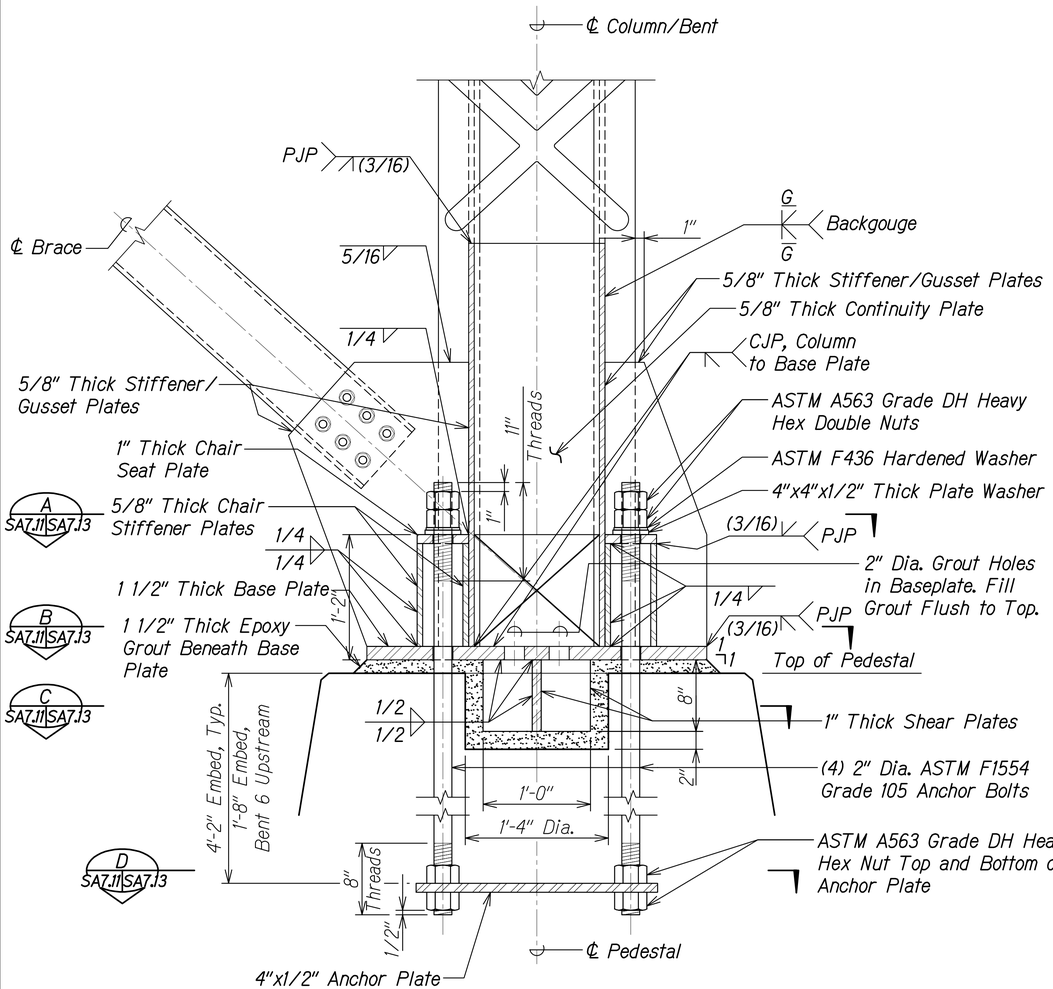
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.10 OF 18 SHEETS

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

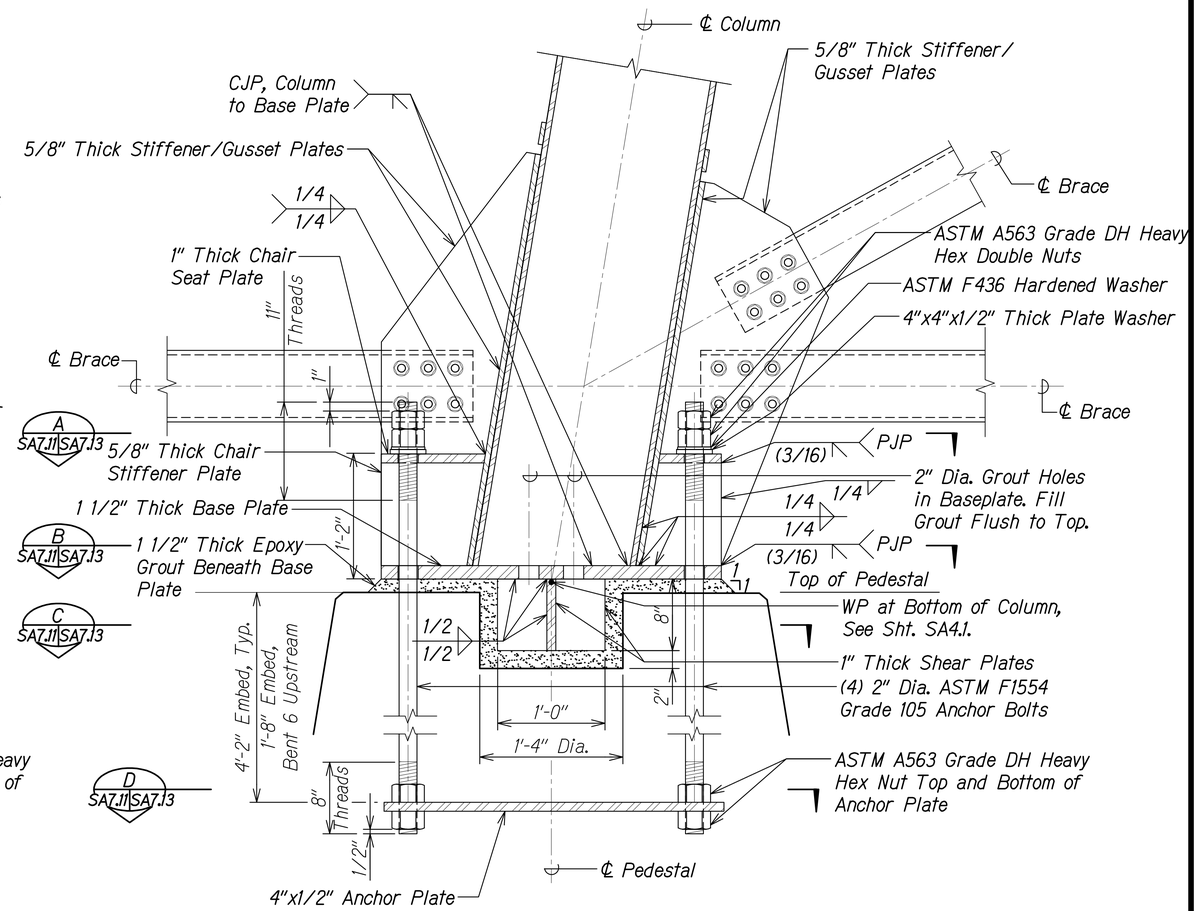
DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PEP-FOTH\01 CAD\10-28-24 BID SET\NSR-SA0709-SA0713 BASE PL DET.DWG PLOT TIME: 10-28-24, 4:33 PM

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 1 SA7.11 SA7.11

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



COLUMN BASE PLATE AND ANCHOR BOLT DETAIL 2 SA7.11 SA7.11

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

NOTES:

1. Details are typical for Bent Nos. 3, 5, 6, and 8.
2. All welded connections shall receive full seal welding along all edges of faying surfaces to prevent moisture intrusion.
3. The upper 2'-6" of anchor bolts shall be shop painted.
4. Anchor bolts shall be shipped fastened to the bottom anchor plate and a temporary steel top template to ensure proper layout during installation.
5. 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.
6. Touch-up paint nuts, washers, and ends of anchor bolts after installation.
7. 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.

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

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)

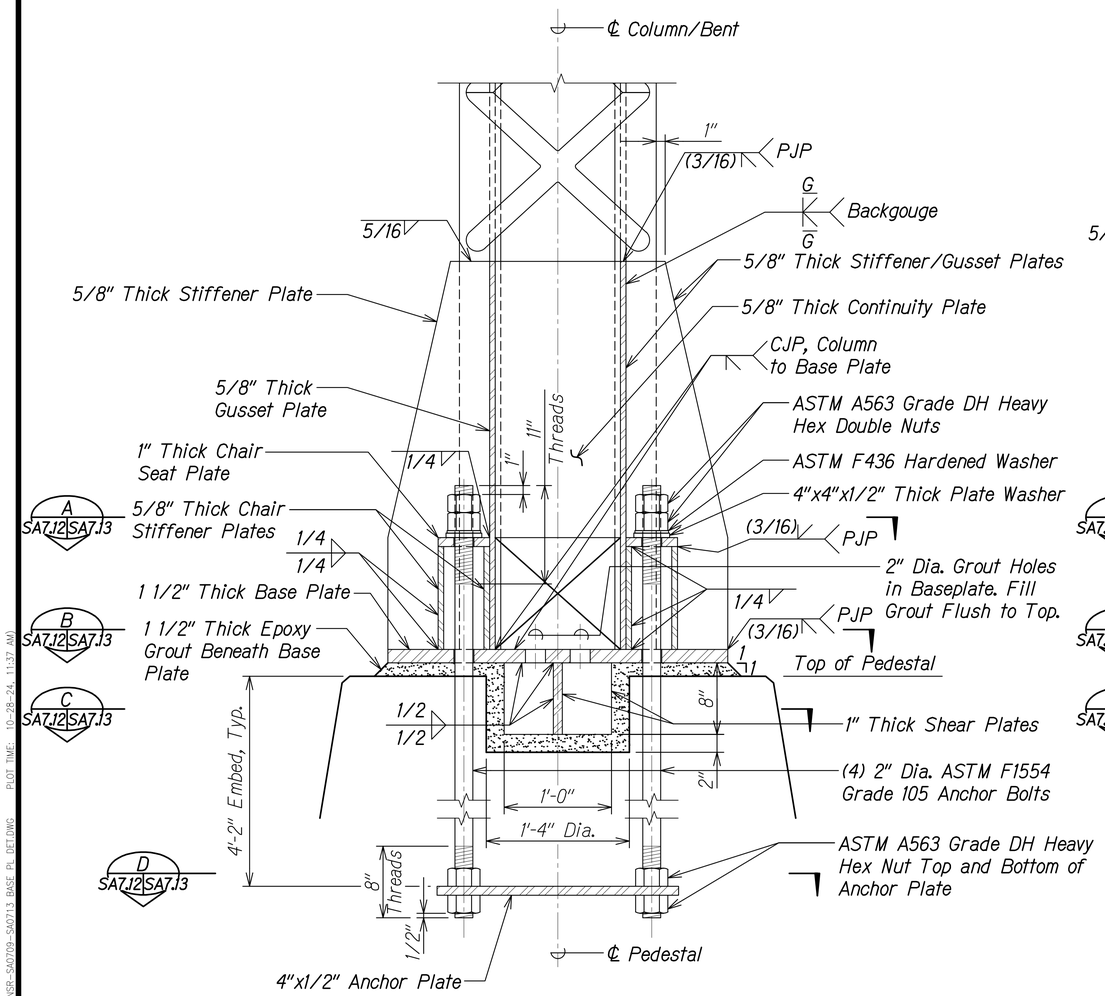
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.11 OF 18 SHEETS

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

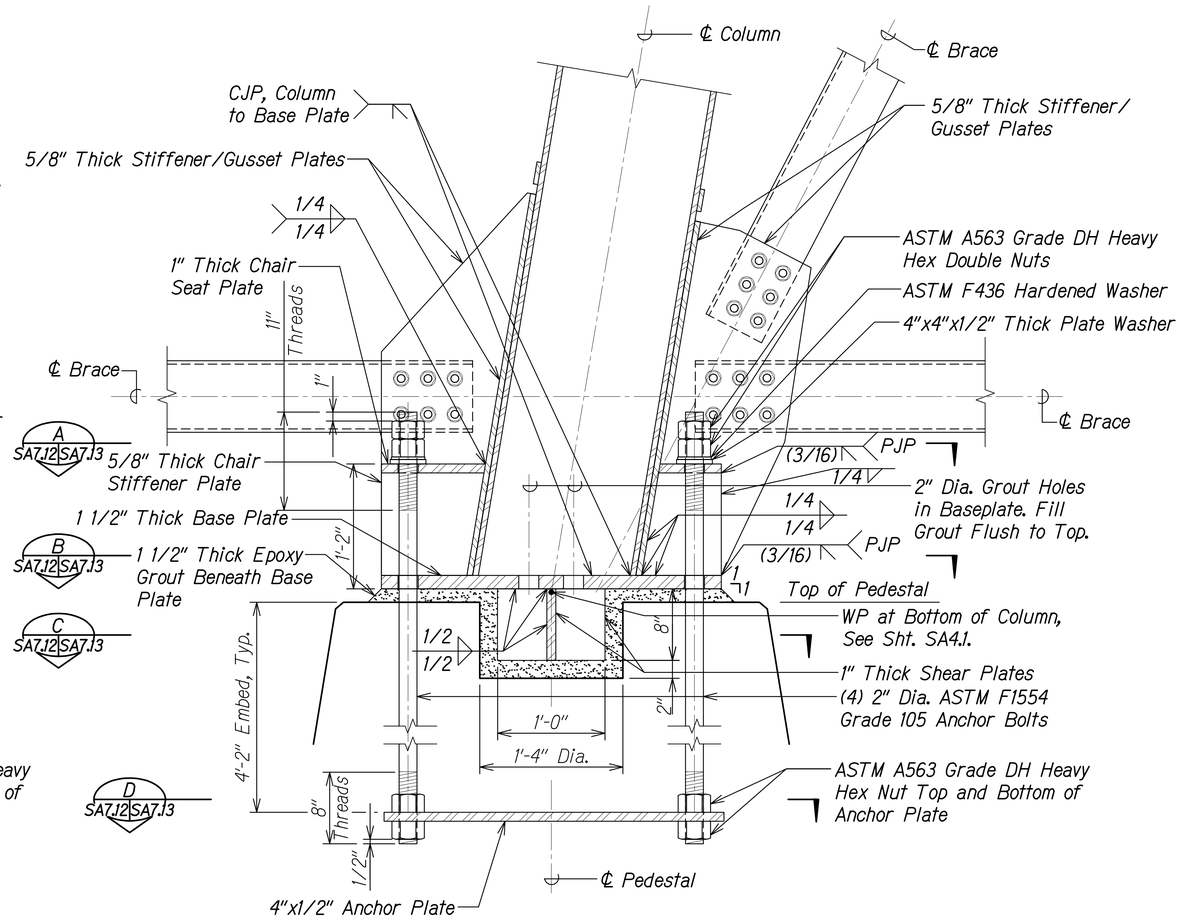
DRAWING NAME: ZA:\OD ENGINEERING\23-022\3-NANUE STR BR PE2-20\TA\01 CAD\10-28-24 BID SET\VER-SA07\9-SA0713 BASE PL DETAILS.DWG PLOT TIME: 10-28-24, 8:16 PM

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 SA7.12

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



COLUMN BASE PLATE AND ANCHOR BOLT DETAIL 2 SA7.12

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

NOTES:

1. Details are typical for Bent No. 1.
2. All welded connections shall receive full seal welding along all edges of faying surfaces to prevent moisture intrusion.
3. The upper 2'-6" of anchor bolts shall be shop painted.
4. Anchor bolts shall be shipped fastened to the bottom anchor plate and a temporary steel top template to ensure proper layout during installation.
5. 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.
6. Touch-up paint nuts, washers, and ends of anchor bolts after installation.
7. 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.

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

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)

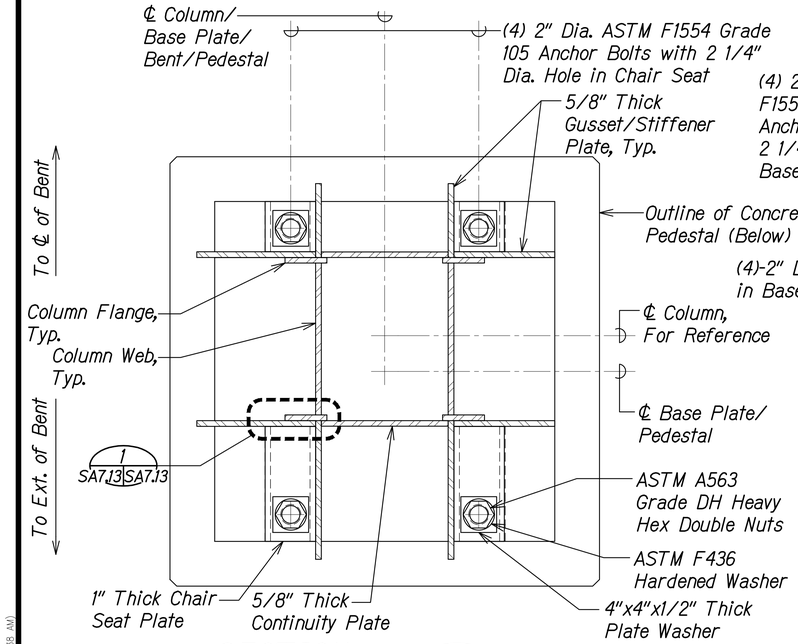
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.12 OF 18 SHEETS

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

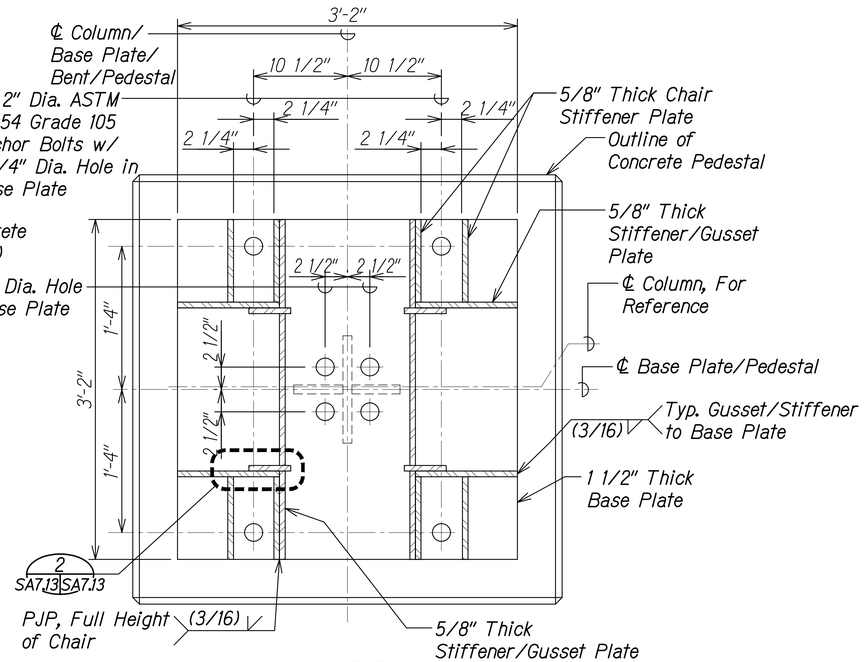
DRAWING NAME: ZA:\OD ONO\NGA\23-022.9-NANUE STR BR PE\2-DGN\01 CAD\10-28-24 BID SER\NSR-SA0719-SA0713 BASE PL DET.DWG PLOT TIME: 10-28-24, 11:37 AM

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



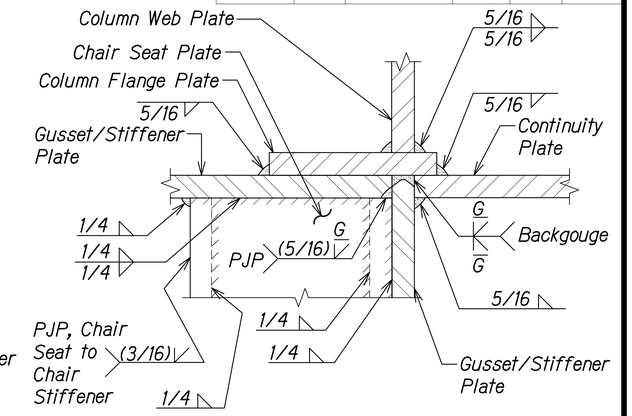
SECTION A

Scale: 1 1/2" = 1'-0" SA7.10 SA7.13 SA7.11, SA7.12



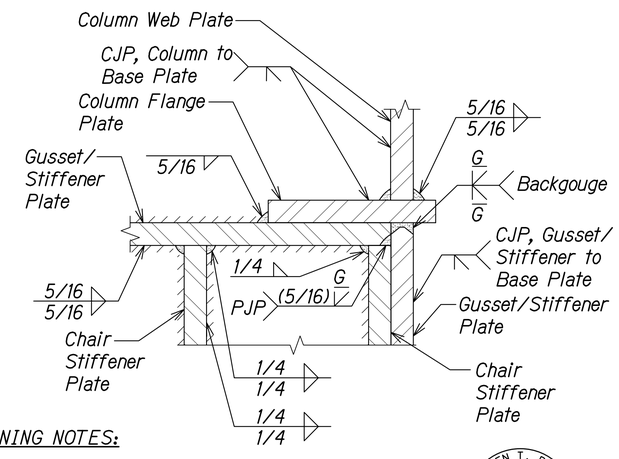
SECTION B

Scale: 1 1/2" = 1'-0" SA7.10 SA7.13 SA7.11, SA7.12



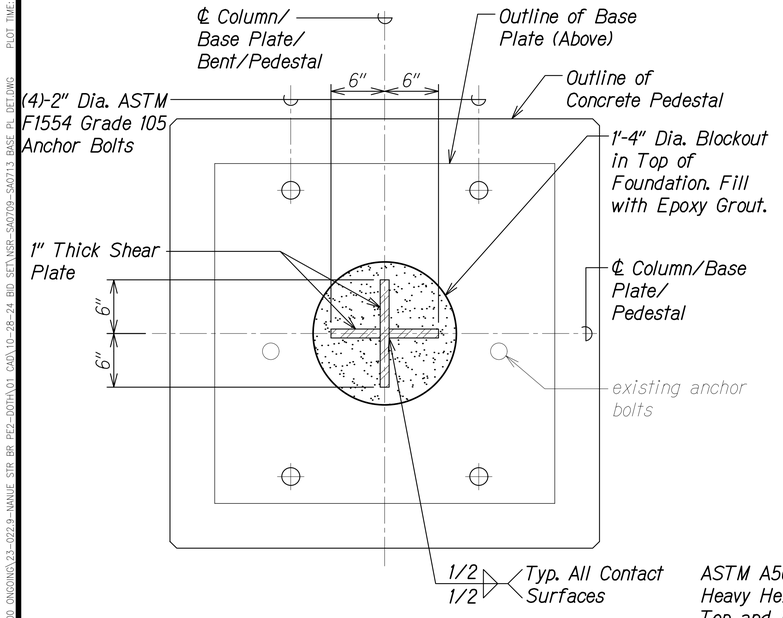
DETAIL 1

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



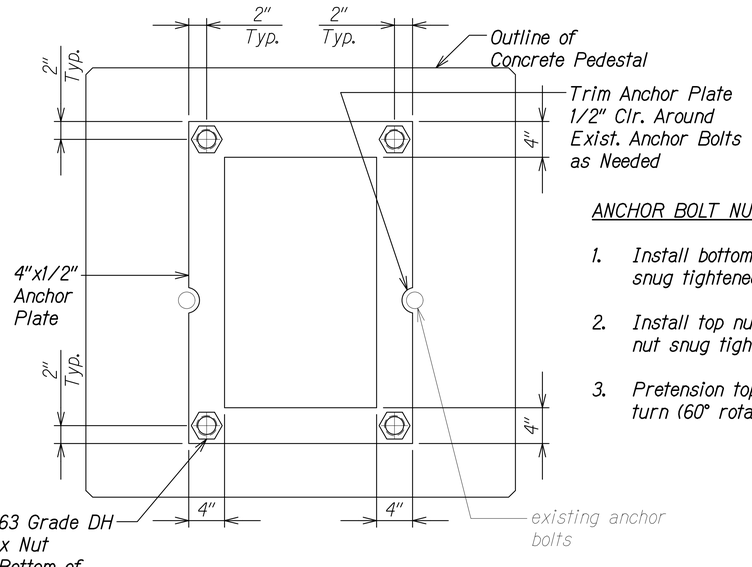
DETAIL 2

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



SECTION C

Scale: 1 1/2" = 1'-0" SA7.10 SA7.13 SA7.11, SA7.12



SECTION D

Scale: 1 1/2" = 1'-0" SA7.10 SA7.13 SA7.11, SA7.12

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).

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)

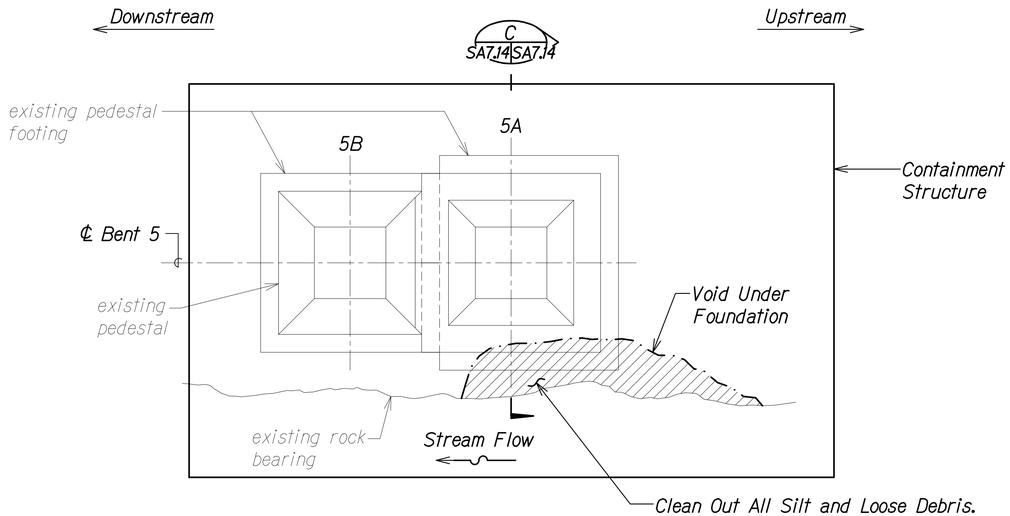
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.13 OF 18 SHEETS

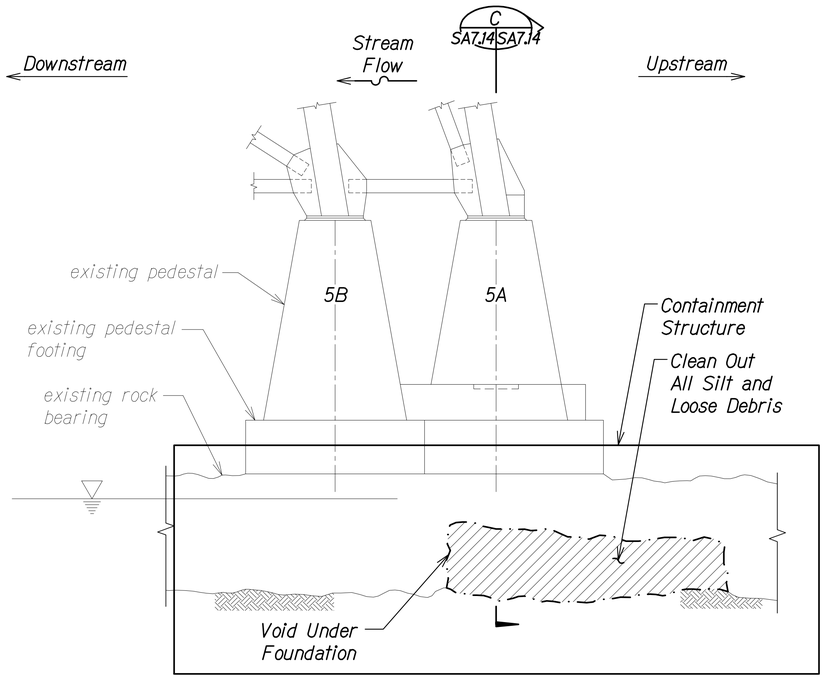
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONDONO\23-022\3-NANUE STR BR PEZ-DOTH\01 CAD\10-28-24 BID SET\NSR-SA0709-SA0713 BASE PL DET.DWG PLOT TIME: 10-28-24, 11:38 AM

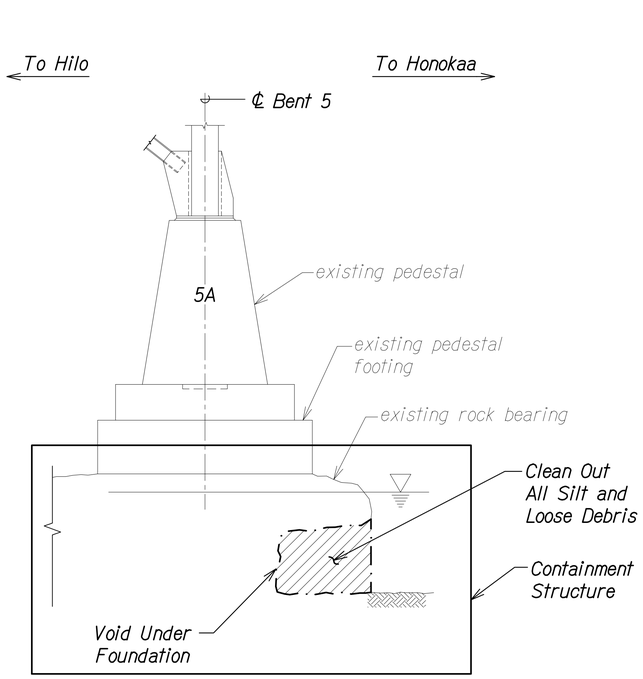
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	142	280



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



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



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

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.

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

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BENT NO. 5 FOOTING PLAN, ELEVATION, AND SECTION

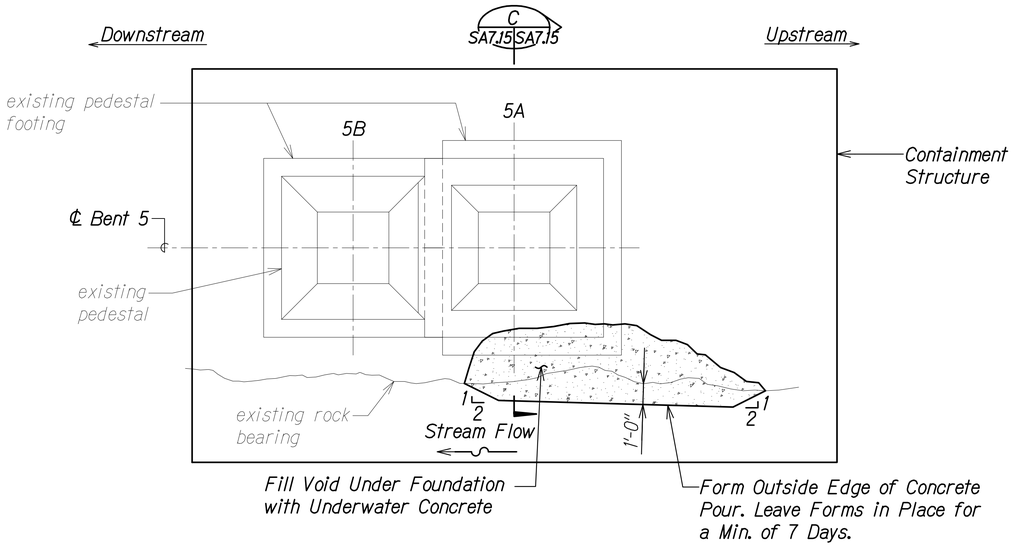
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA7.14 OF 18 SHEETS

142

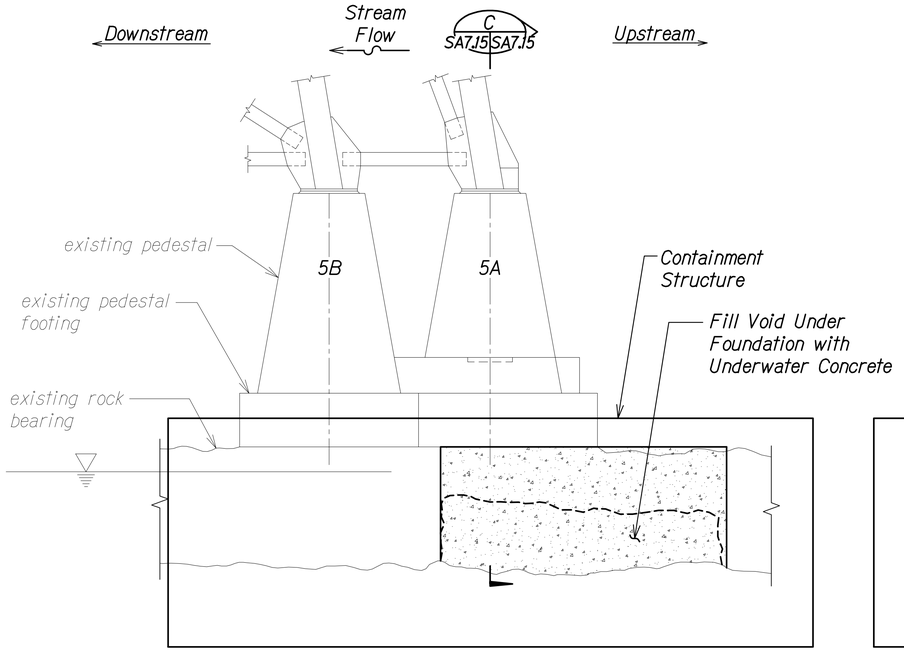
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	143	280



PLAN VIEW

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

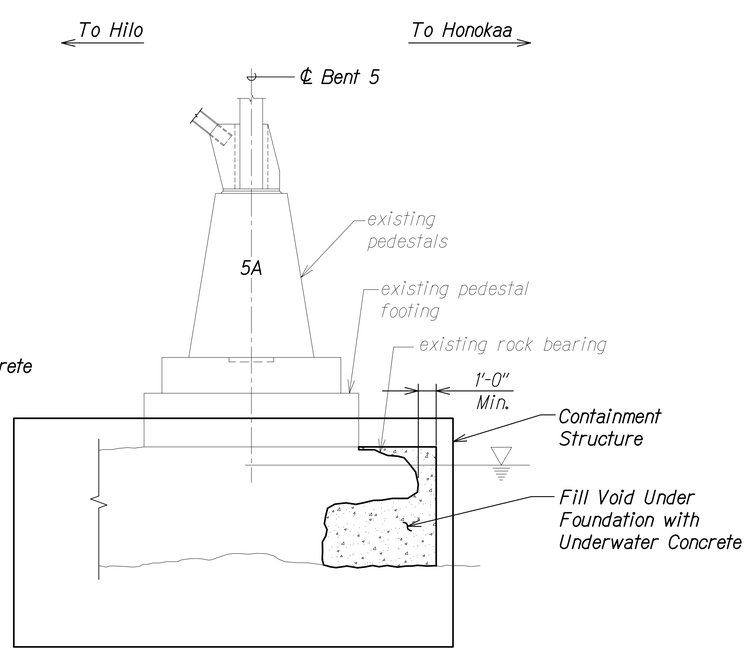
A SA7.15 SA7.15



ELEVATION VIEW

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

B SA7.15 SA7.15



SECTION VIEW

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

C SA7.15 SA7.15

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.

ORIGINAL PLAN | NOTE BOOK | No.

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

DRAWING NAME: Z:\OD ONGINO\23-022\3-NANUE STR BR PE2-BOTH\01 CAD\10-28-24 BID SET\NSB-S40714-S40717 FDN DET.DWG PLOT TIME: 10-28-24, 11:39 AM

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

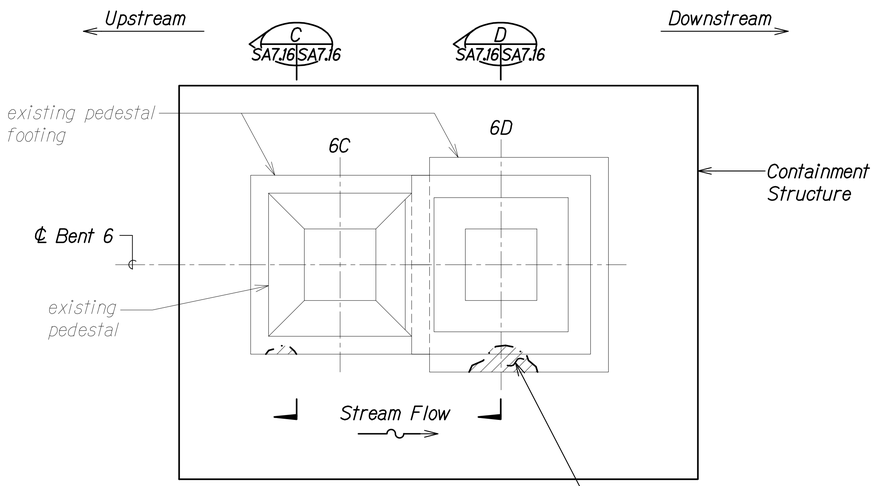
BENT NO. 5 FOOTING PLAN, ELEVATION, AND SECTION

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

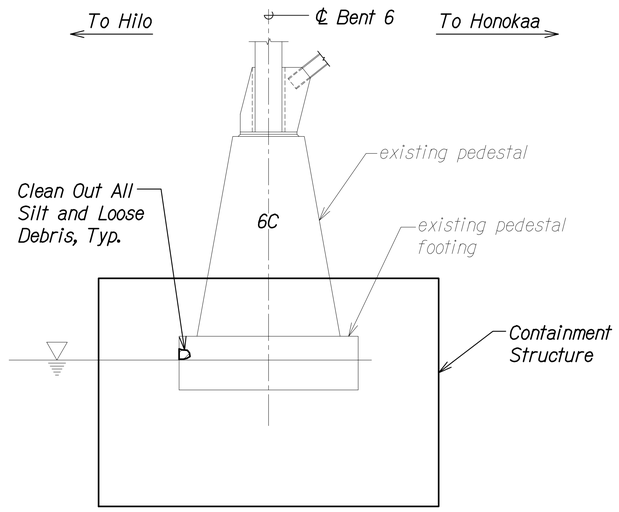
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.15 OF 18 SHEETS

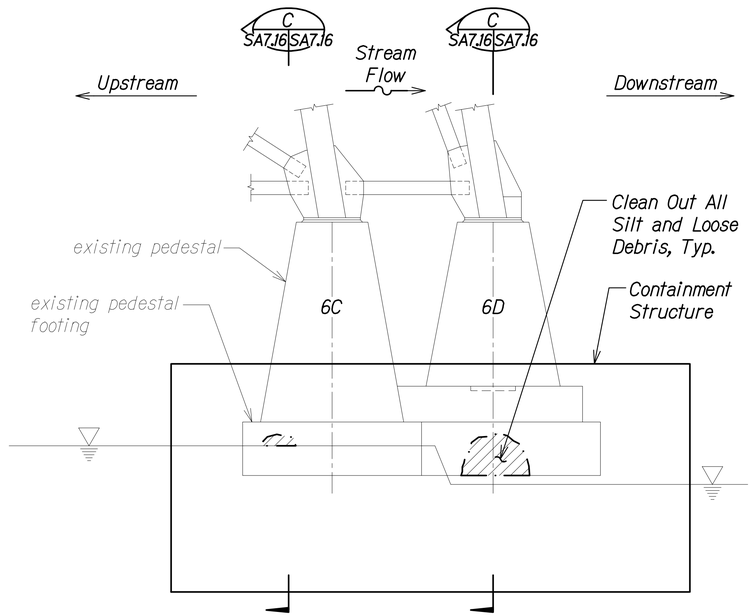
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	144	280



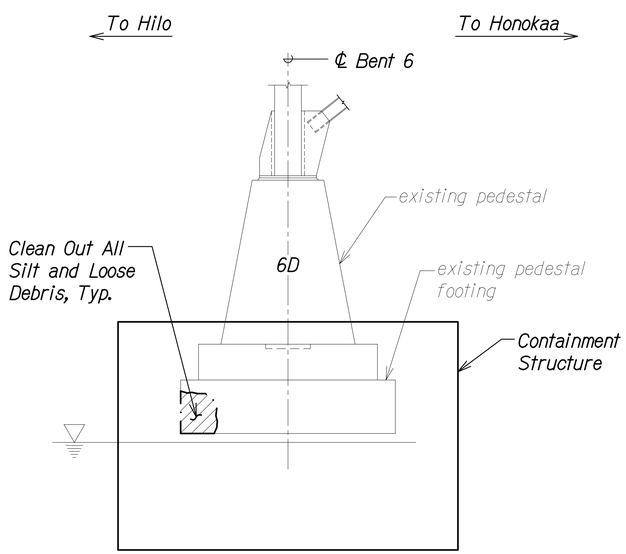
PLAN
Scale: 1/4" = 1'-0" A SA7.16 SA7.16



SECTION
Scale: 1/4" = 1'-0" C SA7.16 SA7.16



ELEVATION
Scale: 1/4" = 1'-0" B SA7.16 SA7.16



SECTION
Scale: 1/4" = 1'-0" D SA7.16 SA7.16

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.

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

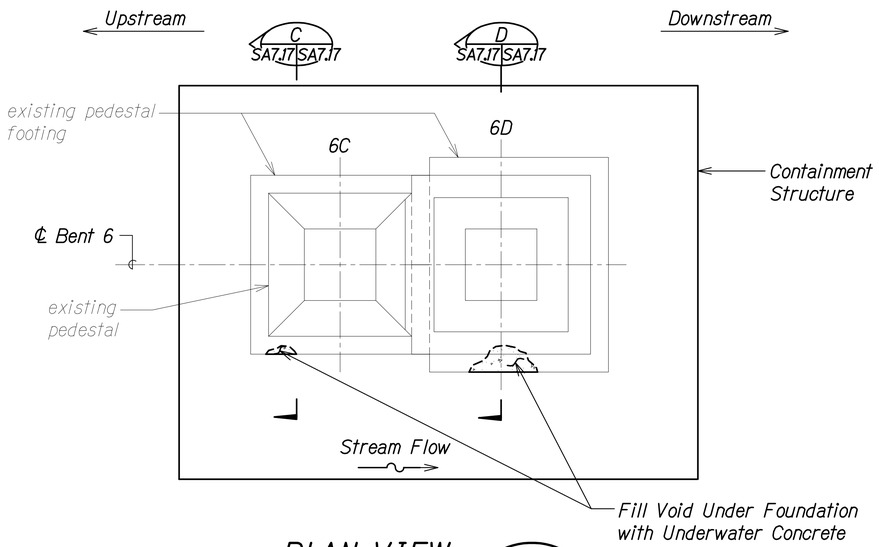
BENT NO. 6 FOOTING PLAN, ELEVATION, AND SECTION

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

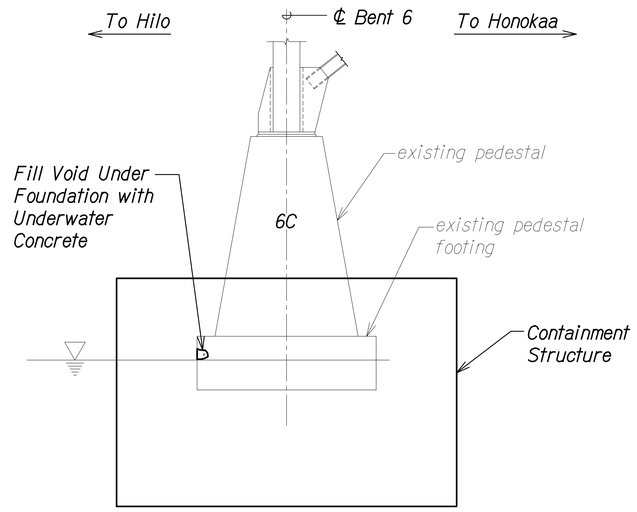
Scale: As Noted Date: Oct. 2024

SHEET No. SA7.16 OF 18 SHEETS

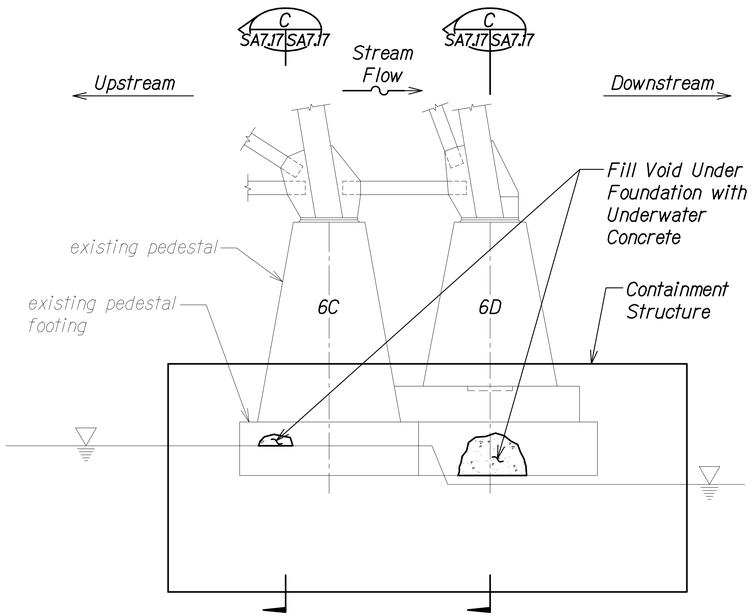
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	145	280



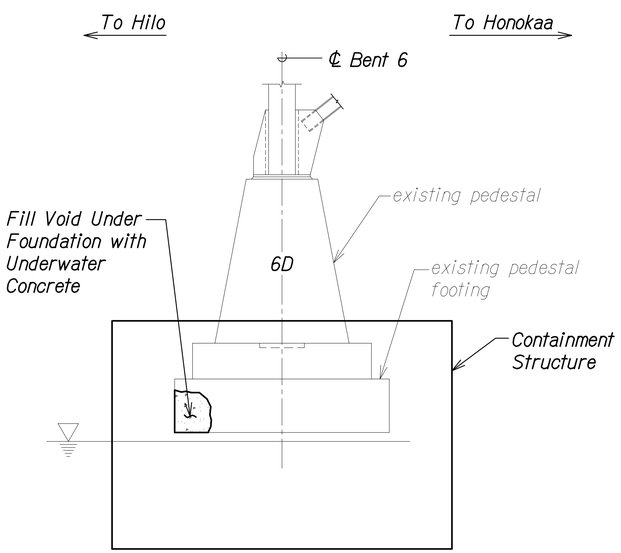
PLAN VIEW A SA7.17 SA7.17
Scale: 1/4" = 1'-0"



SECTION VIEW C SA7.17 SA7.17
Scale: 1/4" = 1'-0"



ELEVATION VIEW B SA7.17 SA7.17
Scale: 1/4" = 1'-0"



SECTION VIEW D SA7.17 SA7.17
Scale: 1/4" = 1'-0"

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.

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-20THA\01 CAD\10-28-24 BID SET\SGR-SA07.17 FDN DET.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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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

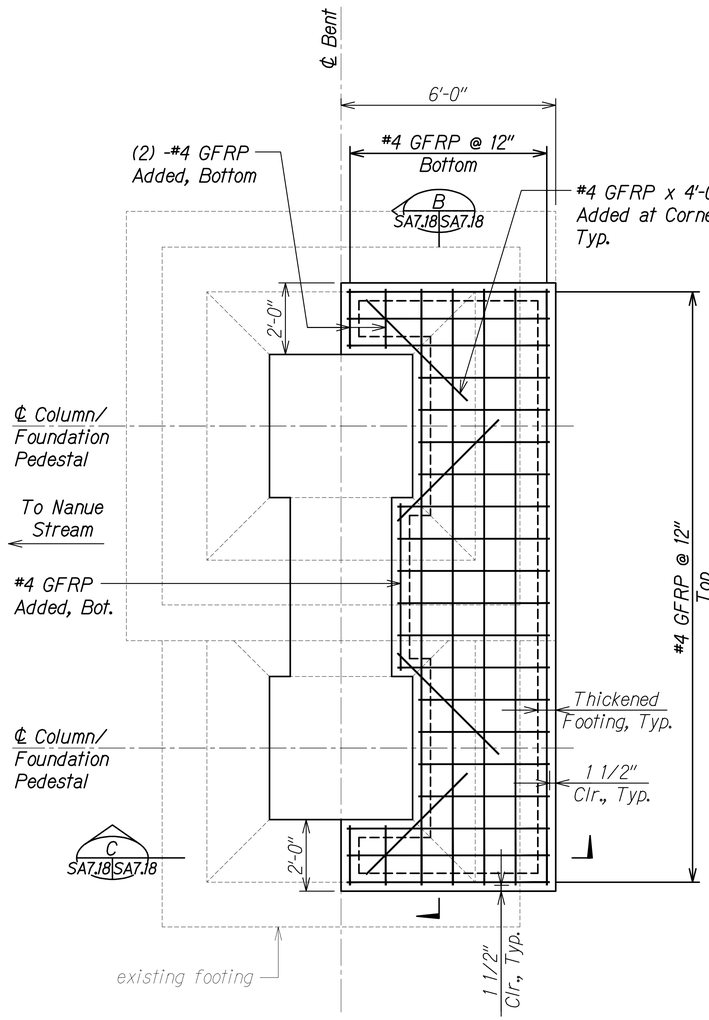
BENT NO. 6 FOOTING PLAN, ELEVATION, AND SECTION

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

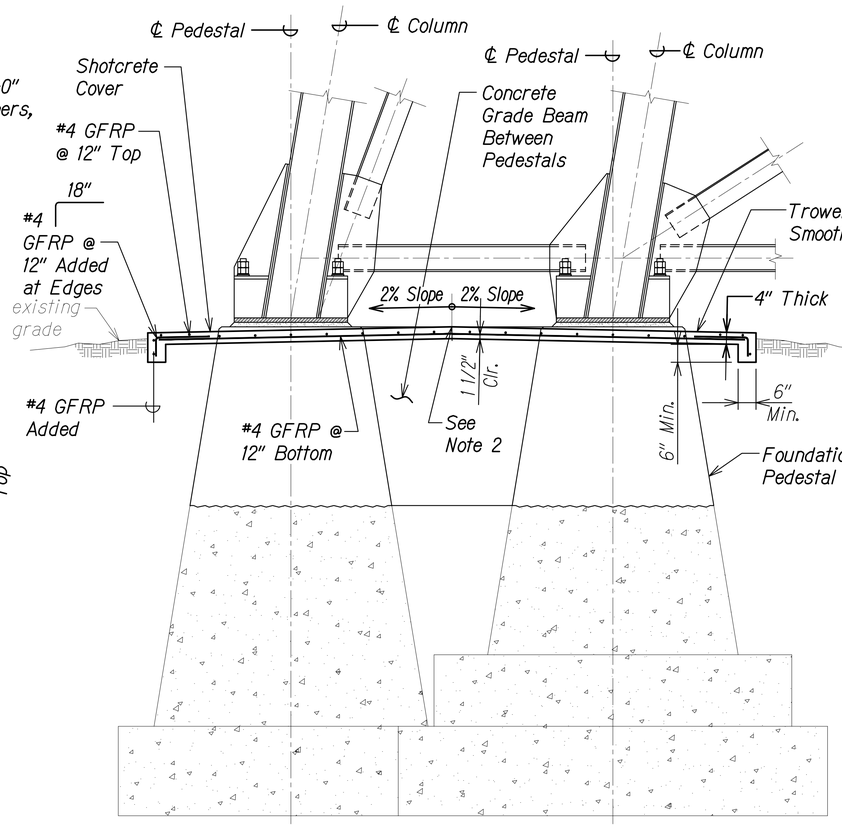
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	146	280



SHOTCRETE COVER REINFORCING PLAN

A SA7.18 SA7.18

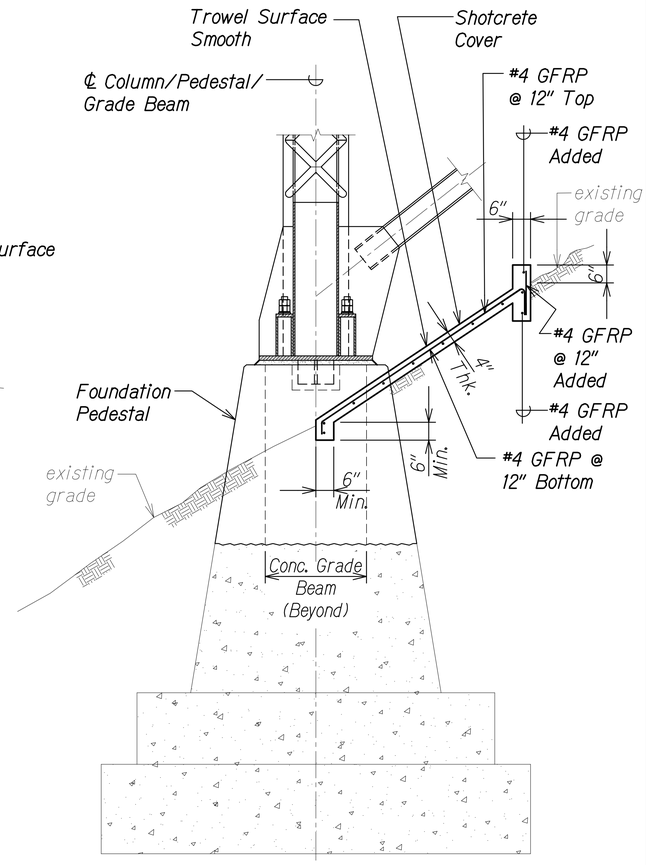
Scale: 1/2" = 1'-0"



TYPICAL FOUNDATION PEDESTAL ELEVATION AT SHOTCRETE COVER

B SA7.18 SA7.18

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



TYPICAL FOUNDATION PEDESTAL SECTION AT SHOTCRETE COVER

C SA7.18 SA7.18

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

NOTES:

1. Foundation pedestal elevations are shown typical. Elevation of shotcrete cover may vary by Bent.
2. 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.
3. Isolate concrete foundation pedestals from shotcrete using 1-layer No. 15 asphalt roofing felt.
4. Steel columns, base plates, and braces shall be shielded from rebound during shotcrete application.

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

DRAWING NAME: Z:\OD ONGOING\23-029-3-NANUE STR BR REP-GOTHO\01 CAD\10-26-24 BID SET\VSR-SA0718 SHOTCRETE.DWG PLOT TIME: 10-26-24, 4:38 PM

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

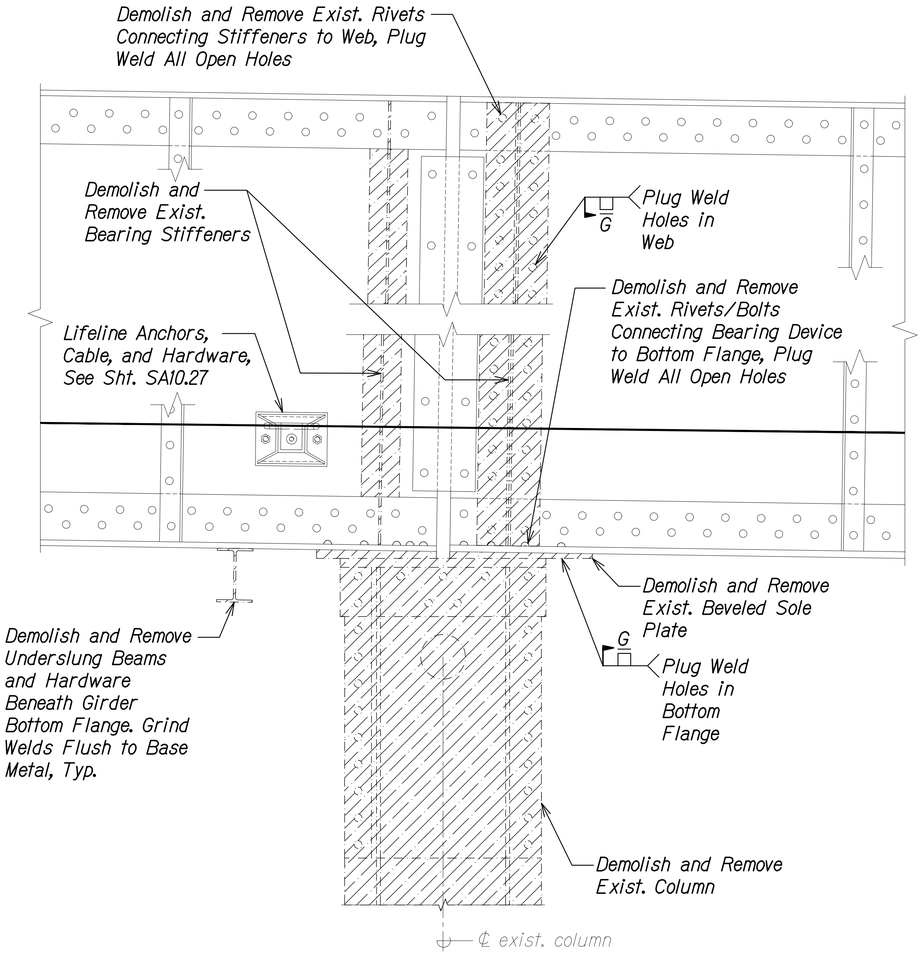
SHOTCRETE COVER PLAN AND SECTIONS

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA7.18 OF 18 SHEETS

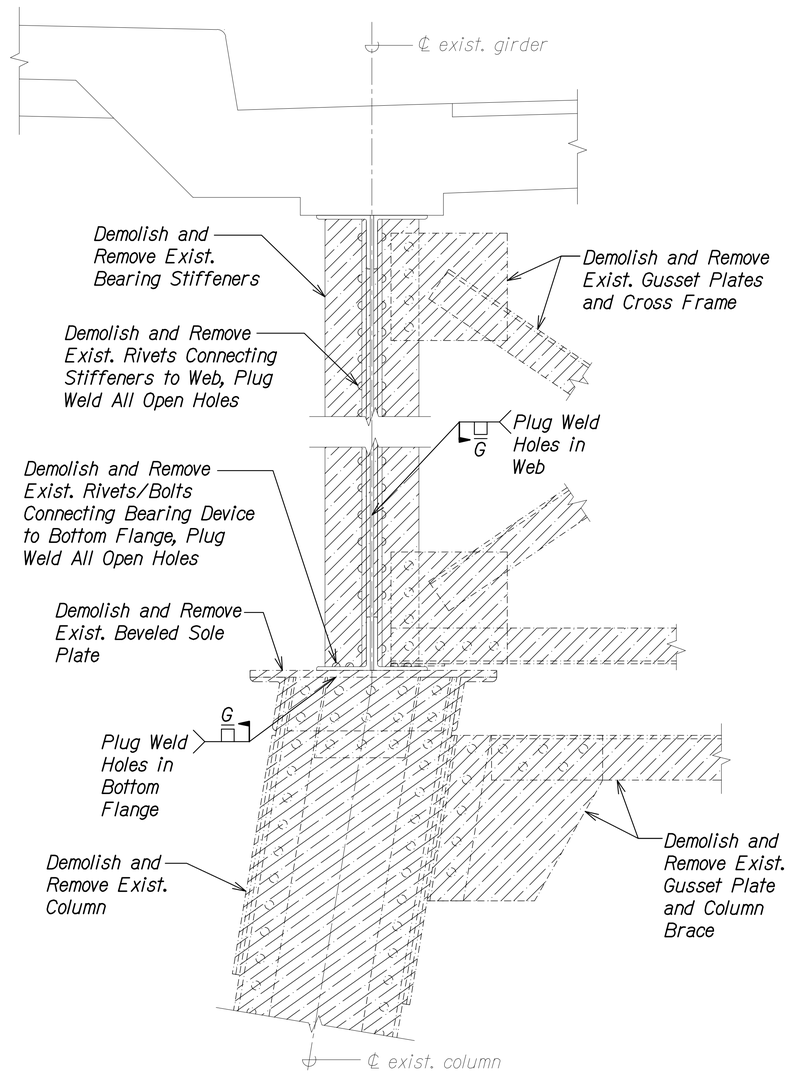
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	147	280



BENT NO. 1
TOP OF COLUMN DEMO ELEVATION (A)

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

SA8.1 | SA8.1



BENT NO. 1
TOP OF COLUMN DEMO ELEVATION (B)

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

SA8.1 | SA8.1

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.

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

BENT NO. 1 TOP OF COLUMN DEMOLITION ELEVATIONS

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

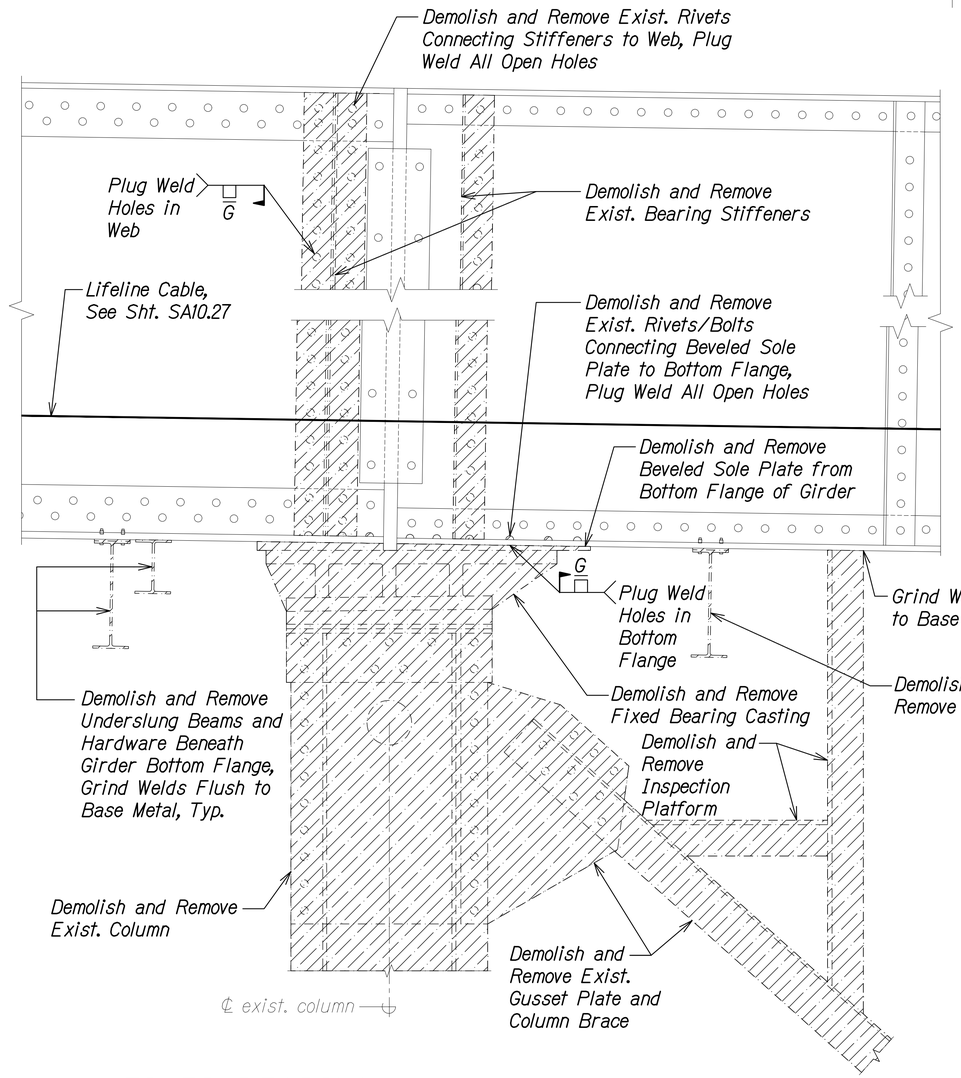
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.1 OF 13 SHEETS

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

DRAWING NAME: Z:\OD ONDONCA\23-0229-NANUE STR BR PEZ-EOTH\01 CAD\10-28-24 BID SET\NSR-SA0801-SA0803 DEMO DET.DWG PLOT TIME: 10-28-24, 8:46 PM)

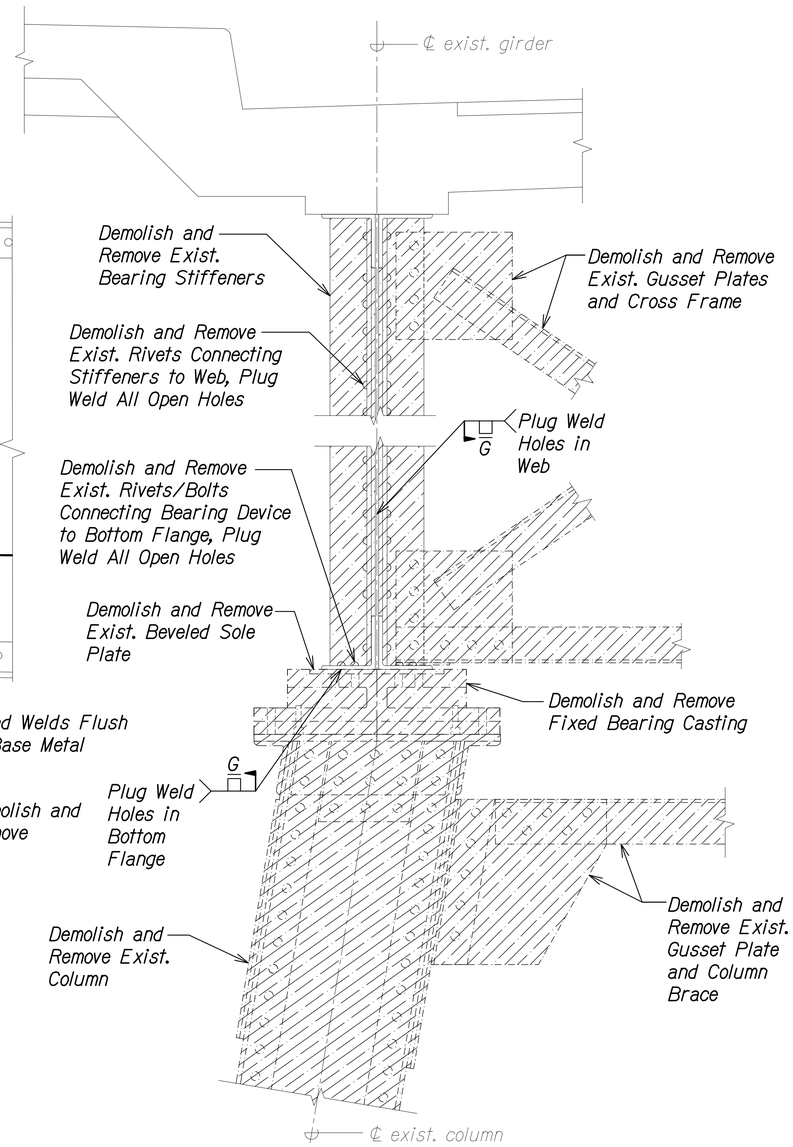
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	148	280



FIXED BEARING
TOP OF COLUMN DEMO ELEVATION (A)

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

SA8.2 | SA8.2



FIXED BEARING
TOP OF COLUMN DEMO ELEVATION (B)

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

SA8.2 | SA8.2

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. 2, 4, 6, and 8.

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

FIXED BEARING TOP OF COLUMN DEMOLITION ELEVATIONS

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

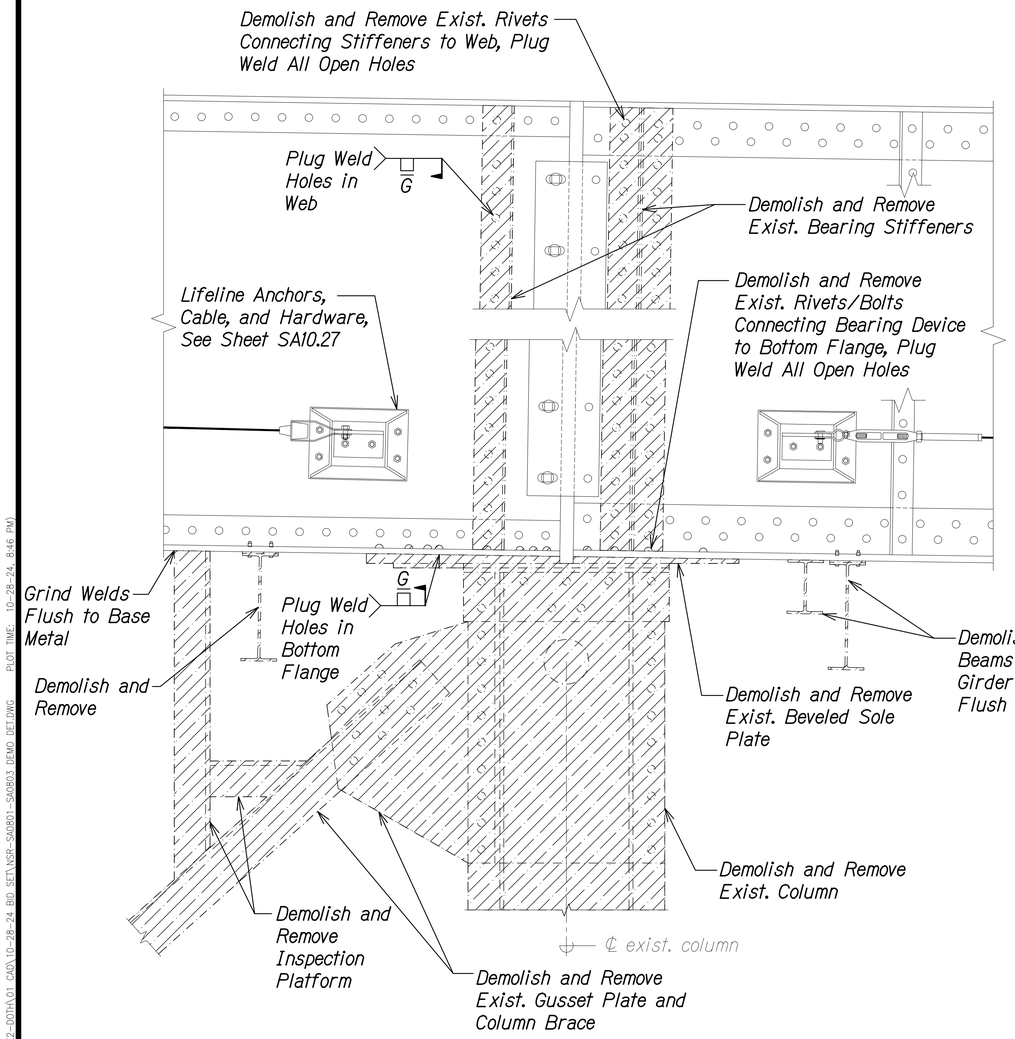
Scale: As Noted — Date: Oct. 2024

SHEET No. SA8.2 OF 13 SHEETS

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

DRAWING NAME: Z:\OD ONGINO\23-022\3-NANUE STR BR PE2-SOTA\01 CAD\10-28-24 BID SET\VER-SA\BR1-SA2803 DEMO DET.DWG PLOT TIME: 10-28-24, 8:46 PM

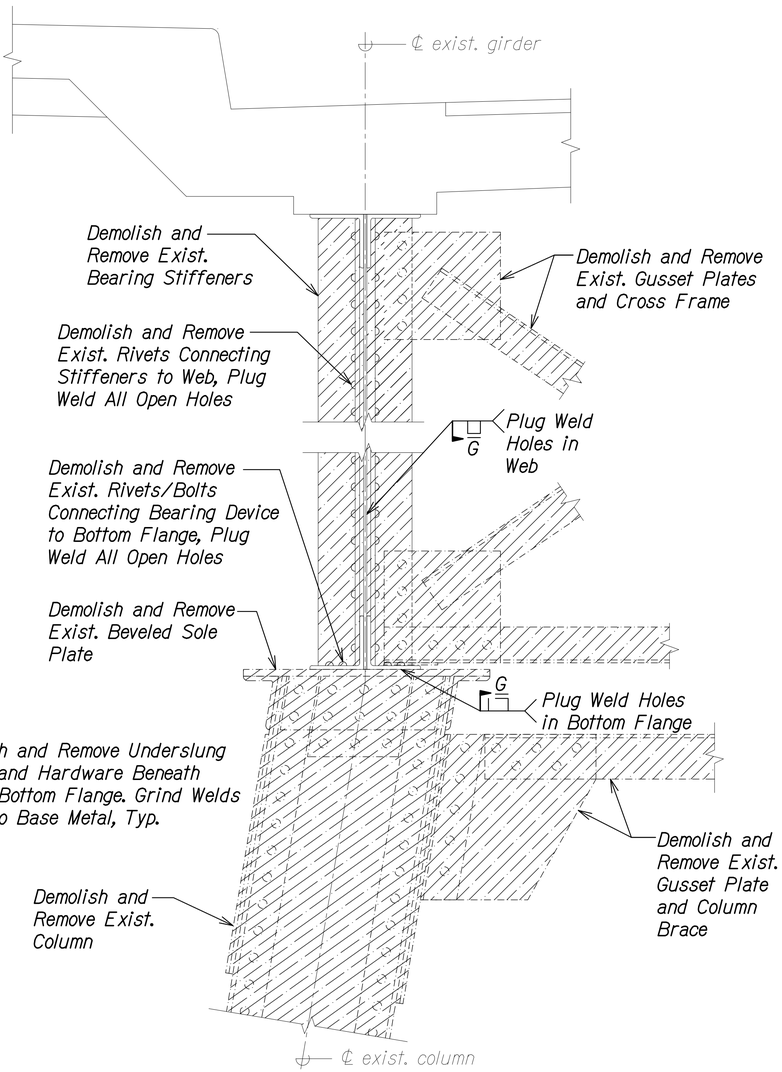
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	149	280



EXPANSION BEARING
TOP OF COLUMN DEMO ELEVATION A

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

SA8.3 | SA8.3



EXPANSION BEARING
TOP OF COLUMN DEMO ELEVATION B

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

SA8.3 | SA8.3

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.

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

EXPANSION BEARING TOP OF COLUMN DEMOLITION ELEVATIONS

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

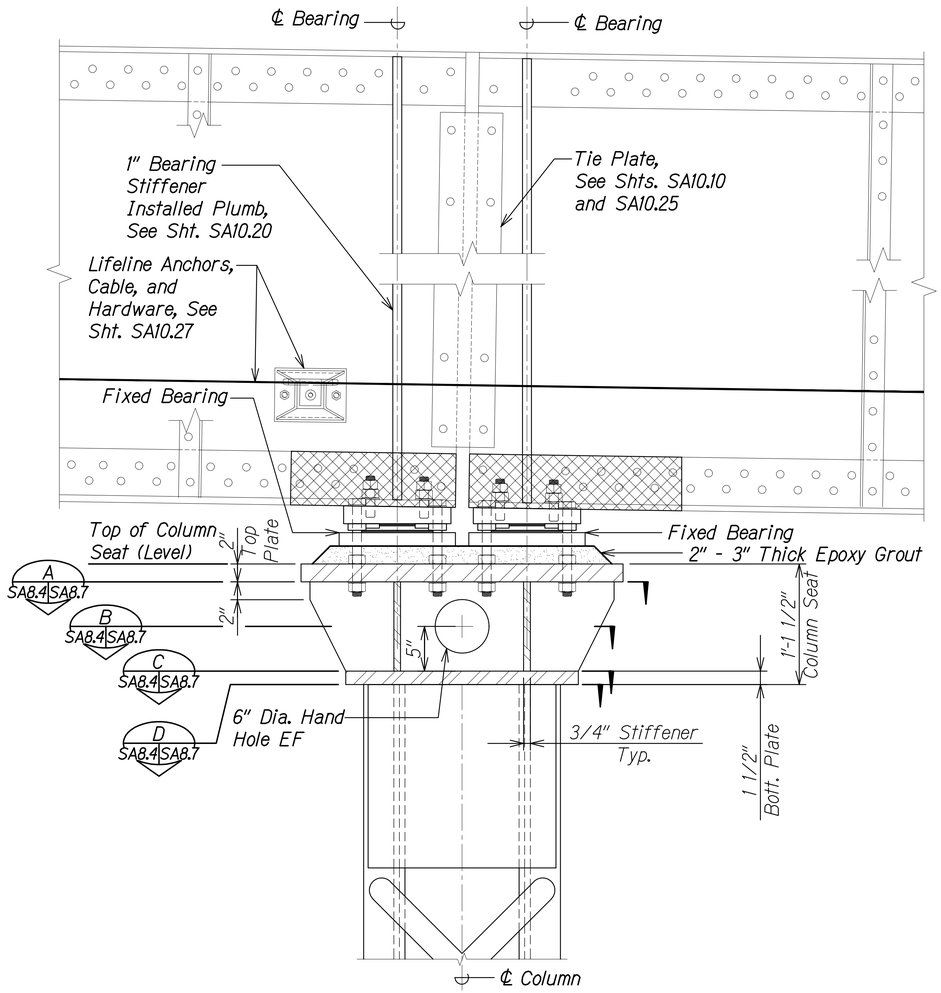
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.3 OF 13 SHEETS

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

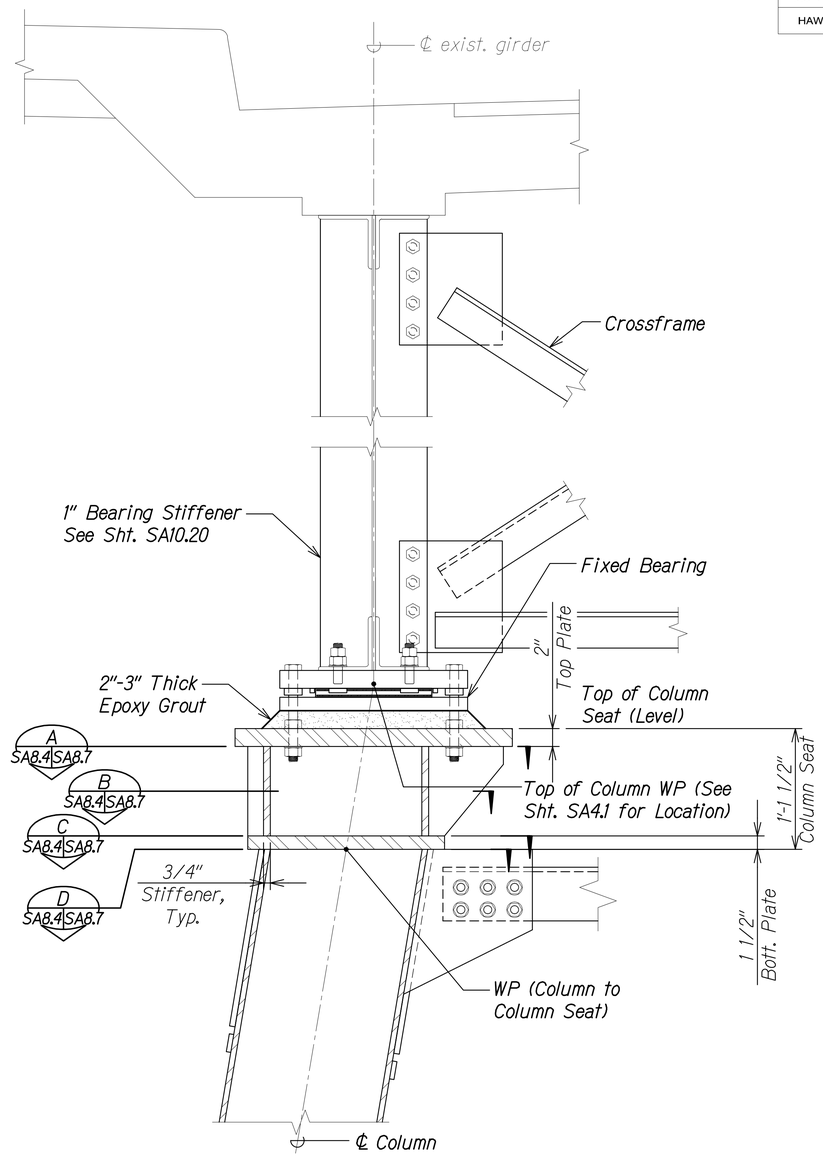
DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PEZ-DOT\A101 CAD\10-28-24 BID SERVER-SA0801-SA0803 DEMO DETAILS.DWG PLOT TIME: 10-28-24 8:46 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	150	280



BENT NO. 1
TOP OF COLUMN ELEVATION (A SA8.4 | SA8.4)

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



BENT NO. 1
TOP OF COLUMN ELEVATION (B SA8.4 | SA8.4)

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

LEGEND:

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

ORIGINAL PLAN | NOTE BOOK | No.

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

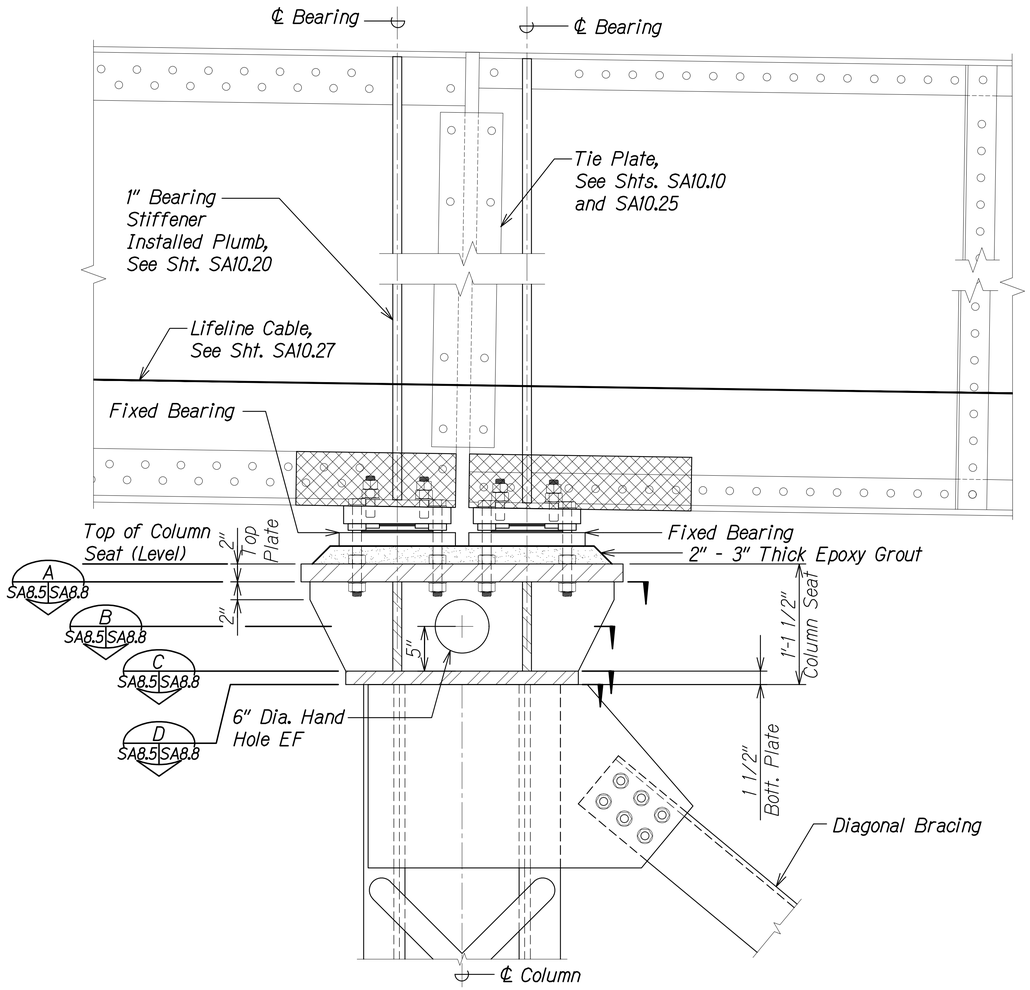
BENT NO. 1 TOP OF COLUMN ELEVATIONS

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

Scale: As Noted Date: Oct. 2024

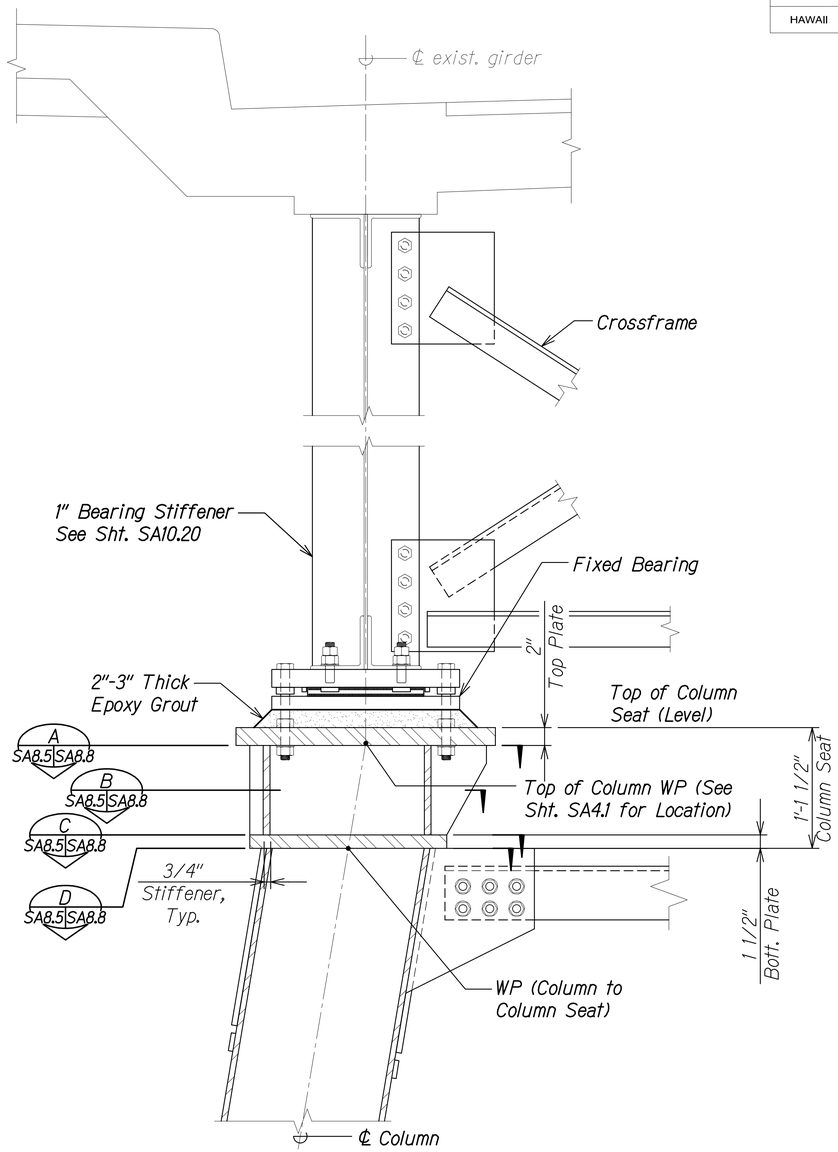
SHEET No. SA8.4 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	151	280



FIXED BEARING TOP OF COLUMN ELEVATION A SA8.5 SA8.5

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



FIXED BEARING TOP OF COLUMN ELEVATION B SA8.5 SA8.5

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

LEGEND:

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

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FIXED BEARING TOP OF COLUMN ELEVATIONS

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

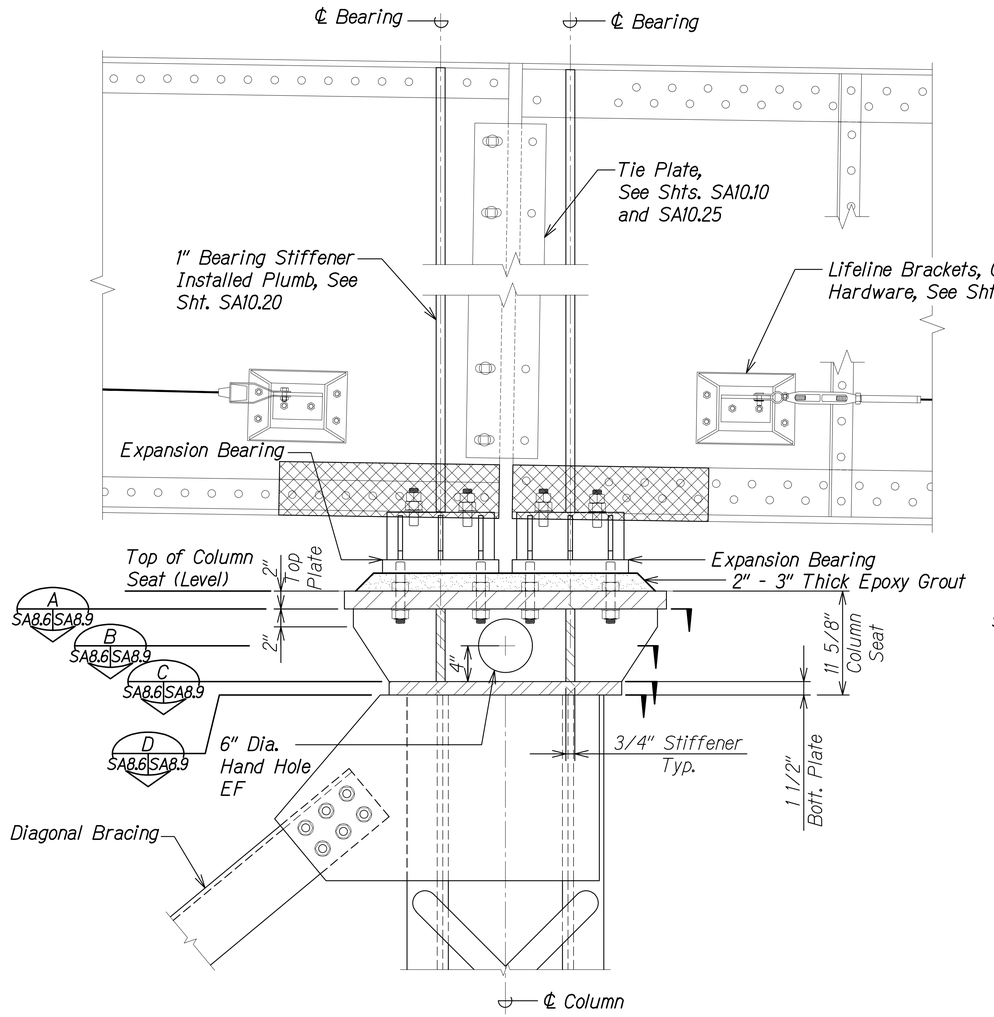
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.5 OF 13 SHEETS

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

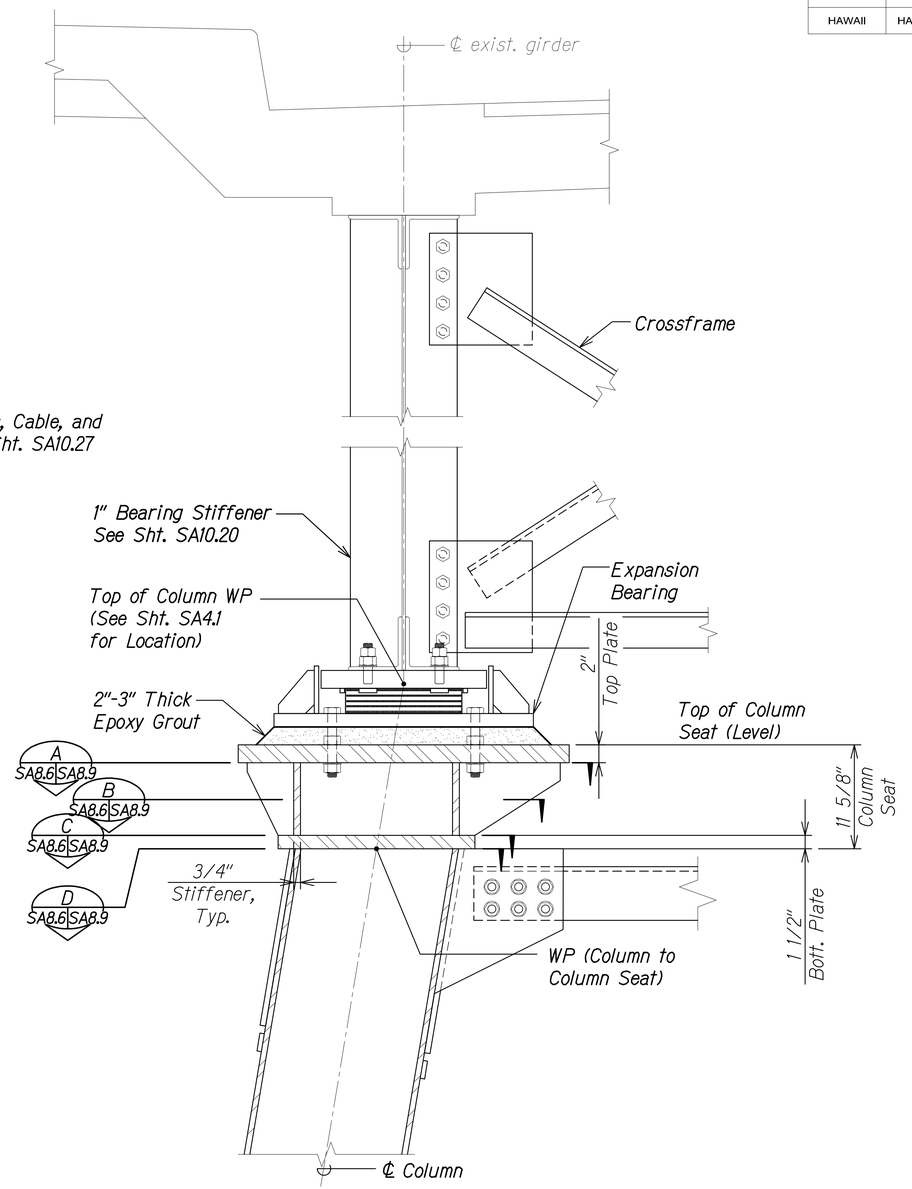
DRAWING NAME: Z:\OD ONGOING\23-0223-NANUE STR BR PEP-BOTH\01 CAD\10-28-24 BID SET\HSR-SA08B1-SA0809 TOP BEARG DET.DWG PLOT TIME: 10-28-24 8:48 PM

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 A

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



EXPANSION BEARING TOP OF COLUMN ELEVATION B

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

LEGEND:

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

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

EXPANSION BEARING TOP OF COLUMN ELEVATIONS

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

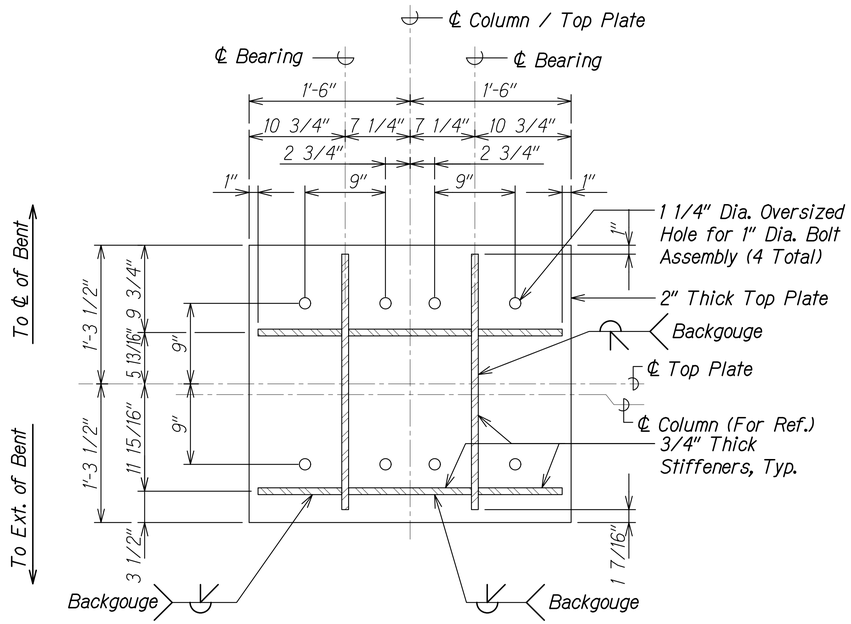
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.6 OF 13 SHEETS

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

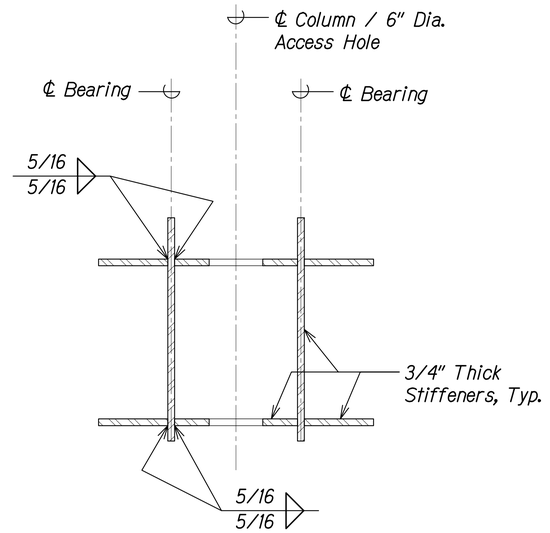
DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-20THAOT CAD\10-28-24 BID SET\SR-SA0804-SA0809 TOP BEARG DETAILS.DWG PLOT TIME: 10-28-24 8:48 PM

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



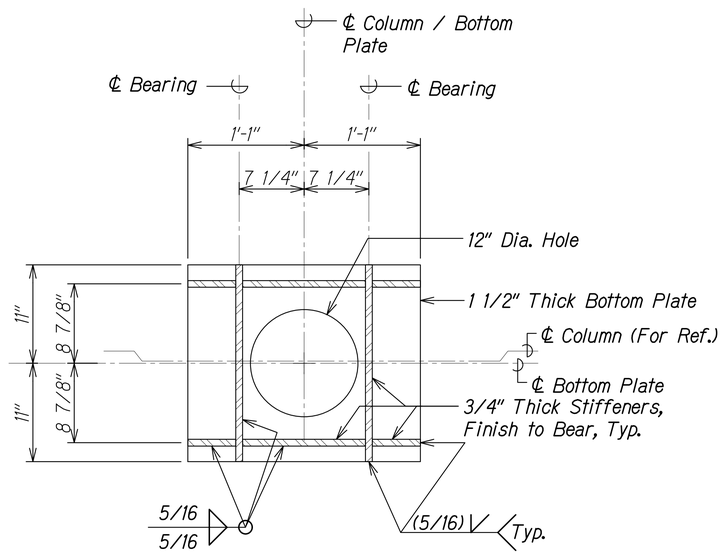
SECTION - COLUMN SEAT (A) SA8.4 | SA8.7

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



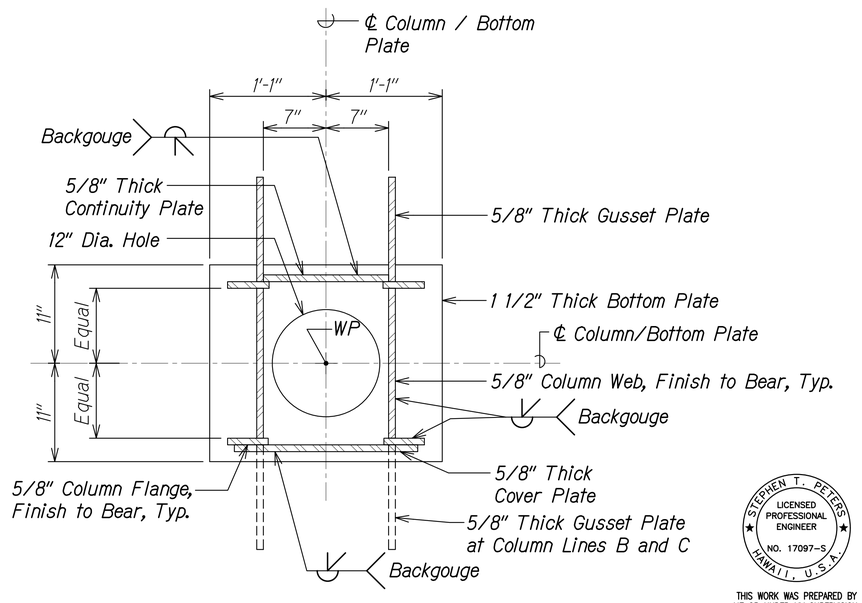
SECTION - COLUMN SEAT (B) SA8.4 | SA8.7

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



SECTION - COLUMN SEAT (C) SA8.4 | SA8.7

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



SECTION - COLUMN SEAT (D) SA8.4 | SA8.7

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

STEPHEN T. PETERS
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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)

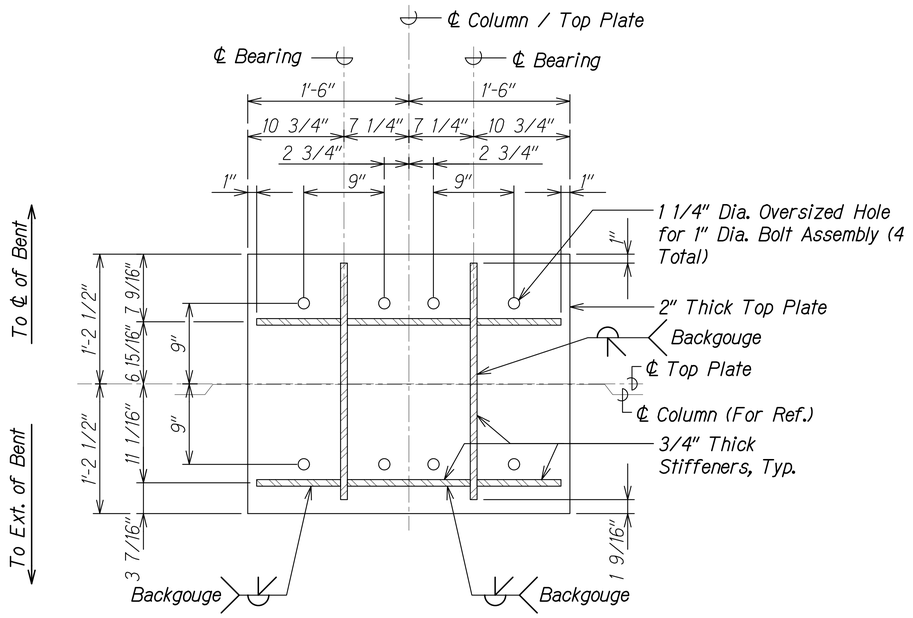
Scale: As Noted — Date: Oct. 2024

SHEET No. SA8.7 OF 13 SHEETS

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

DRAWING NAME: ZA:\OD ONGONGA 23-0229-NANUE STR BR PE2-DOTA\01 CAD\10-28-24 BD SET\VSR-SA0804-SA0809 TOP BEARG DET.DWG PLOT TIME: 10-28-24, 2:53 PM)

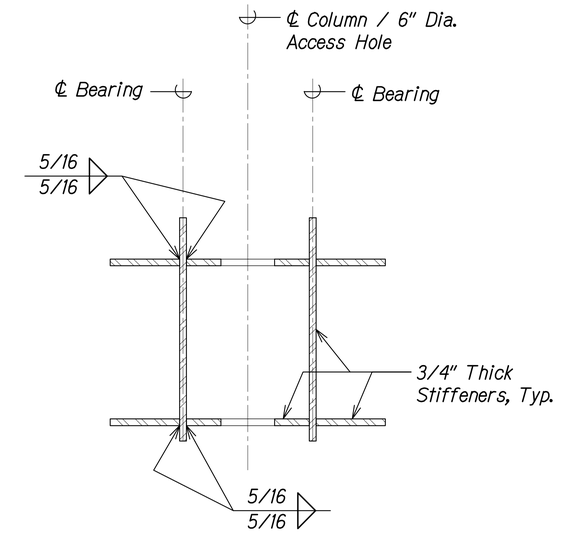
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	154	280



SECTION - COLUMN SEAT A

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

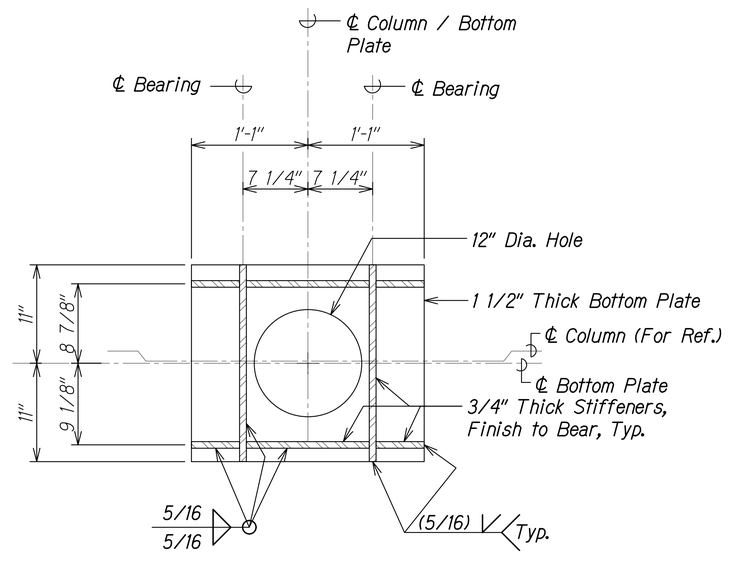
SA8.5 | SA8.8



SECTION - COLUMN SEAT B

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

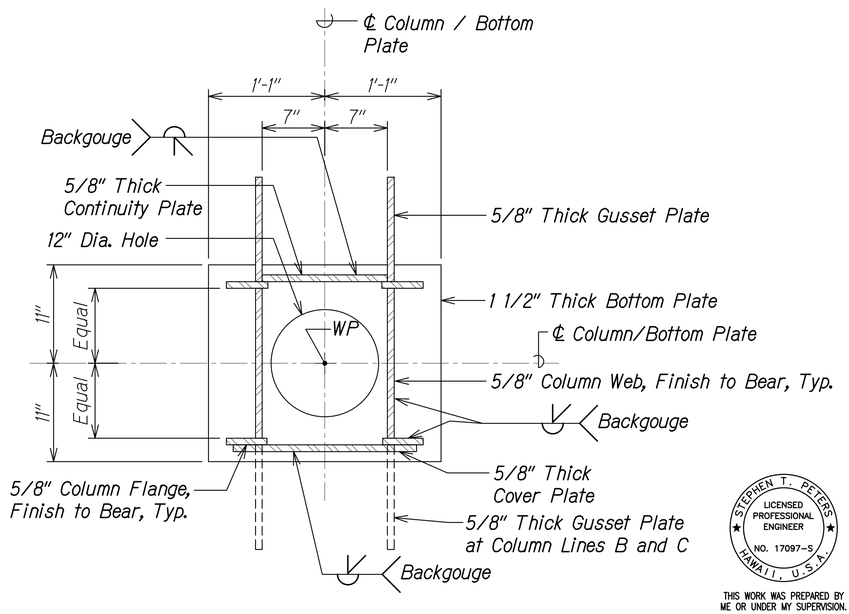
SA8.5 | SA8.8



SECTION - COLUMN SEAT C

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

SA8.5 | SA8.8



SECTION - COLUMN SEAT D

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

SA8.5 | SA8.8

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

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

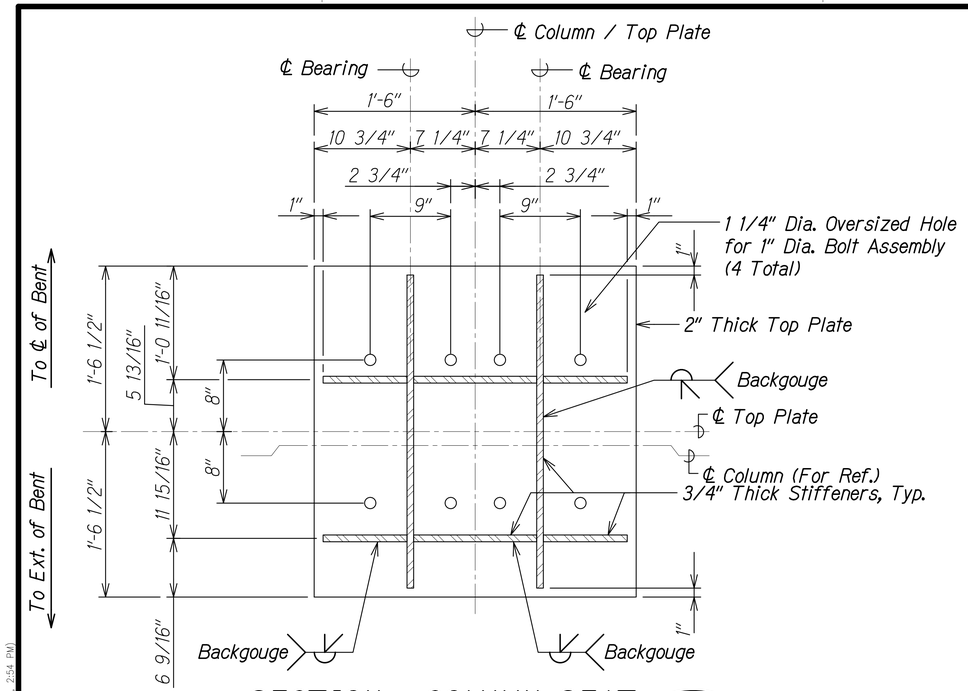
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted — Date: Oct. 2024

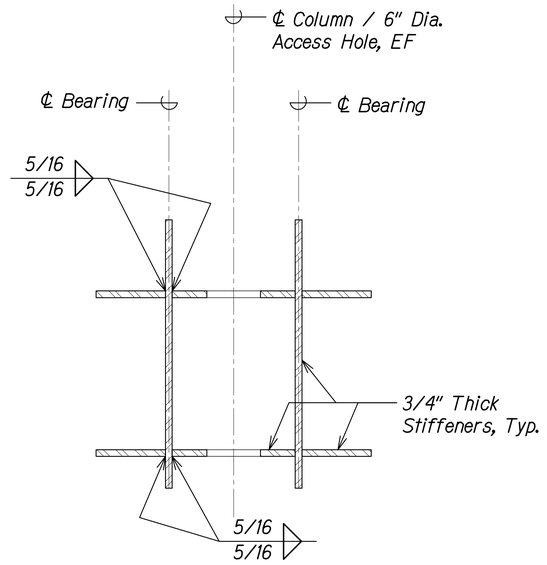
SHEET No. SA8.8 OF 13 SHEETS

DRAWING NAME: ZA:\OD ONGINDA\23-0229-NANUE STR BR PE2-DOTA\01 CAD\10-28-24 BD SET\VSR-SA0804-SA0809 TOP BEARG DET.DWG PLOT TIME: 10-28-24, 2:53 PM

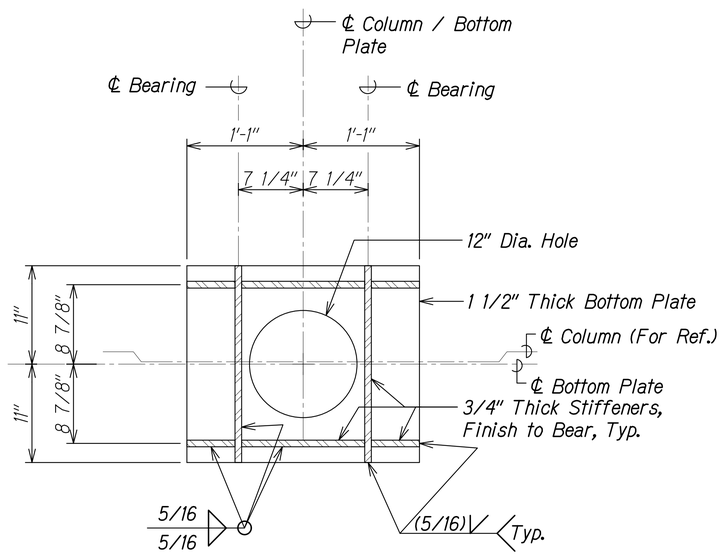
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	155	280



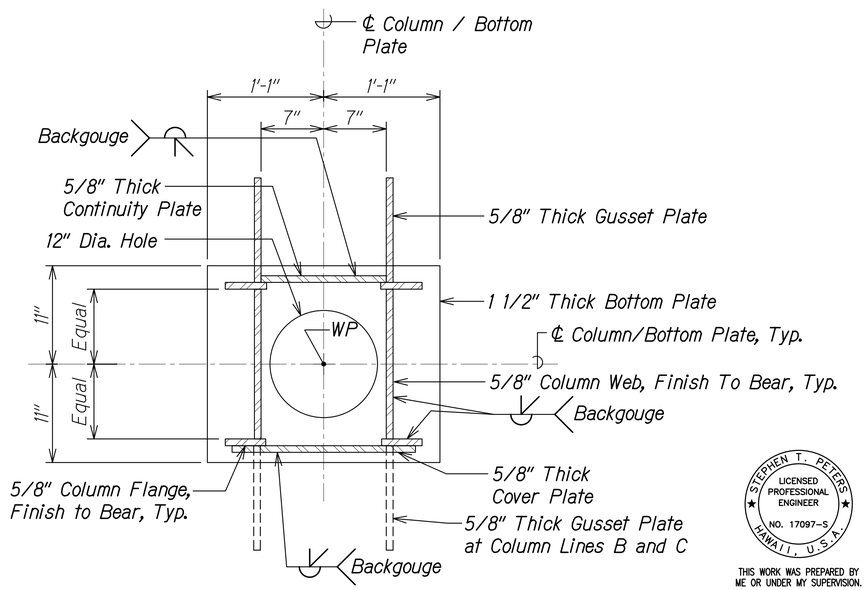
SECTION - COLUMN SEAT (A)
Scale: 1 1/2" = 1'-0"
SA8.6 | SA8.9



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
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HAWAII, U.S.A.

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4-30-26
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)

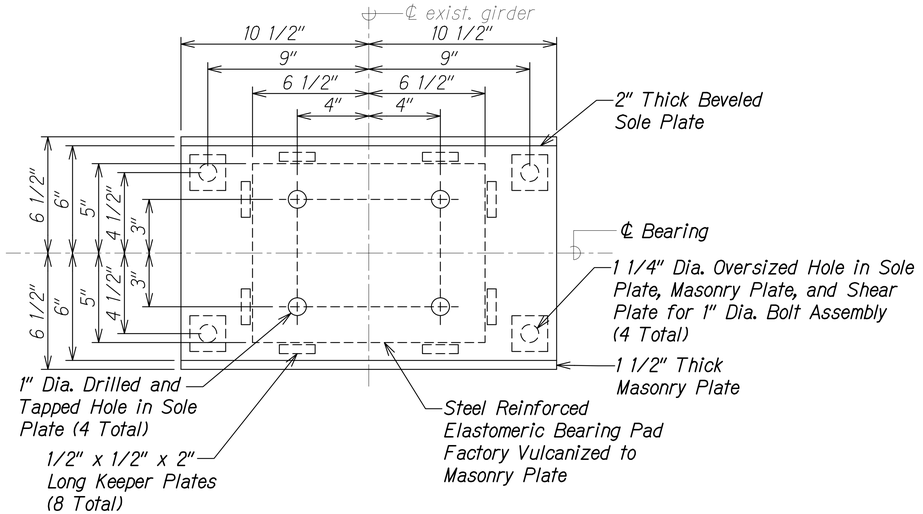
Scale: As Noted Date: Oct. 2024

SHEET No. SA8.9 OF 13 SHEETS

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

DRAWING NAME: Z:\OD ONGINOA\23-0229-NANUE STR BR PE2-BOTH\01 CAD\10-28-24 BID SET\NSR-SA08A1-SA08A9 TOP BEARG DET.DWG PLOT TIME: 10-28-24, 2:54 PM

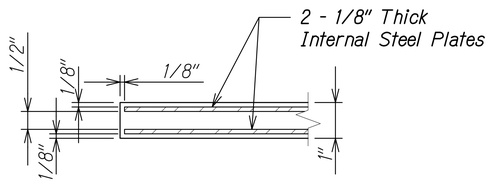
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	156	280



PLAN - FIXED BEARING

Scale: 3" = 1'-0"

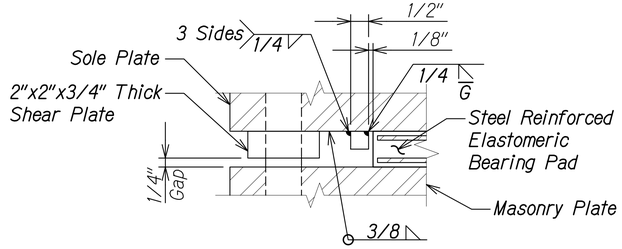
A SA8.10 | SA8.10



ELASTOMERIC DETAIL

Scale: 6" = 1'-0"

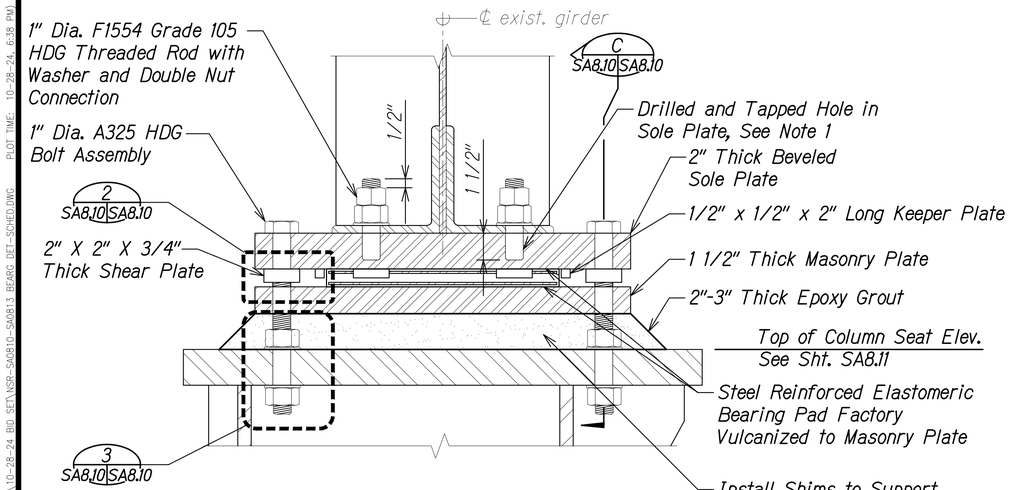
1 SA8.10 | SA8.10



DETAIL

Scale: 6" = 1'-0"

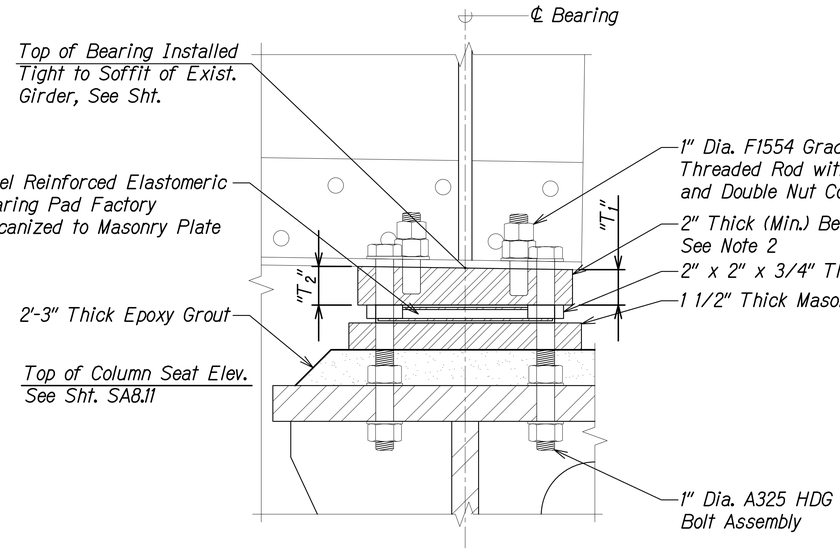
2 SA8.10 | SA8.10



ELEVATION - FIXED BEARING

Scale: 3" = 1'-0"

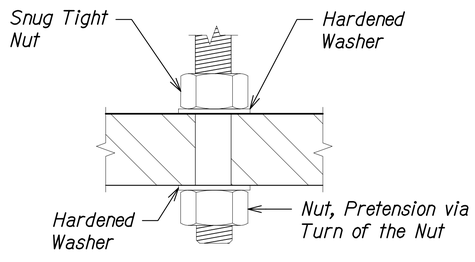
B SA8.10 | SA8.10



SECTION - FIXED BEARING

Scale: 3" = 1'-0"

C SA8.10 | SA8.10



DETAIL

Scale: 6" = 1'-0"

3 SA8.10 | SA8.10

NOTES:

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

STEPHEN T. PETERS
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SIGNATURE — EXPIRATION DATE OF THE LICENSE: 4-30-26

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

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

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

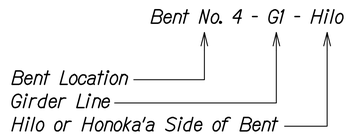
FIXED STEEL REINFORCED ELASTOMERIC BEARING SCHEDULE

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"	
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"	
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"	
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"	
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"	
Bent No. 8 - G2 - Honoka'a			
Bent No. 8 - G3 - Honoka'a			
Bent No. 8 - G4 - Honoka'a			

BEARING LOCATION KEY:



DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-OOTH\01 CAD\ 10-28-24 BID SET\VGR-SA0810-SA0813 BEARG DET-SCHED.DWG PLOT TIME: 10-28-24 2:57 PM

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

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

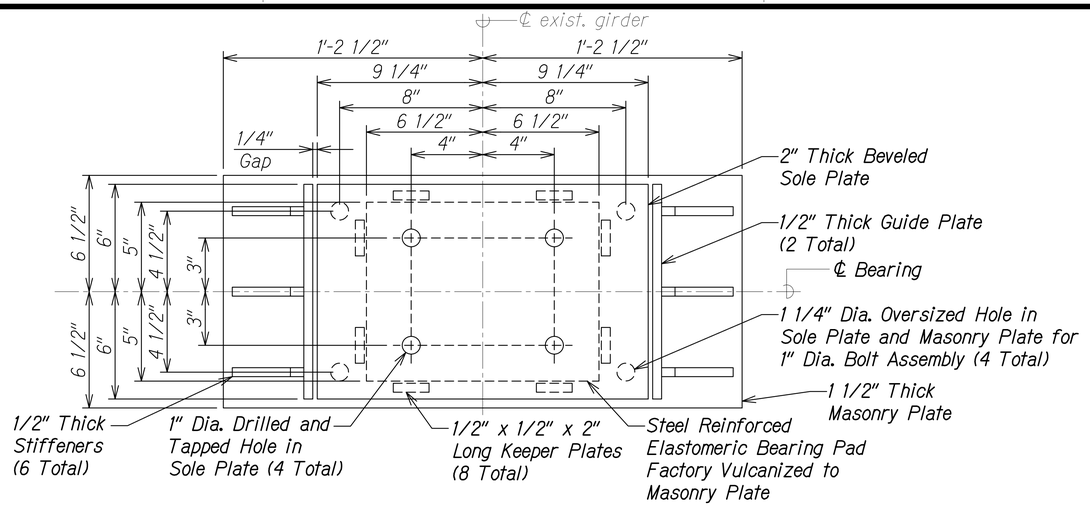
FIXED BEARING SCHEDULE

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

Scale: As Noted Date: Oct. 2024

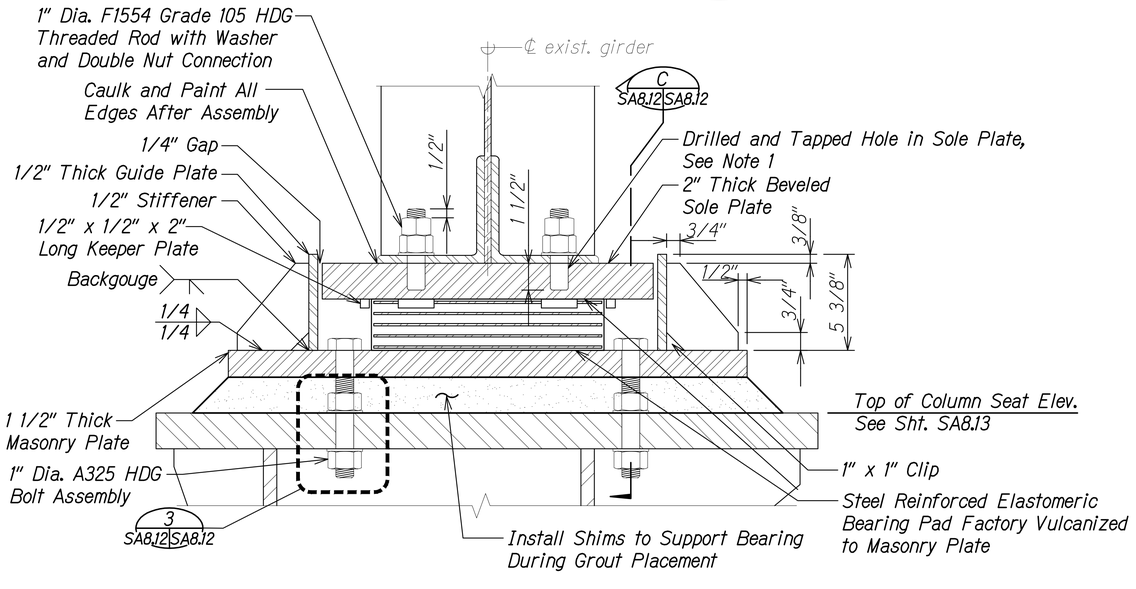
SHEET No. SA8.11 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	158	280



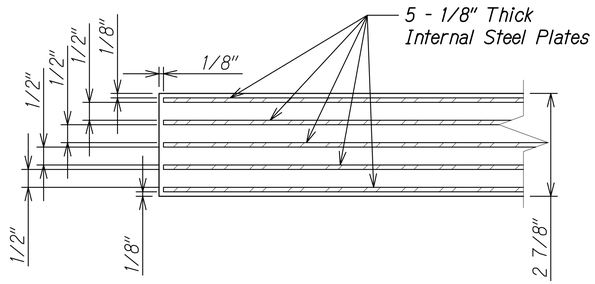
PLAN - EXPANSION BEARING (A SA8.12 | SA8.12)

Scale: 3" = 1'-0"



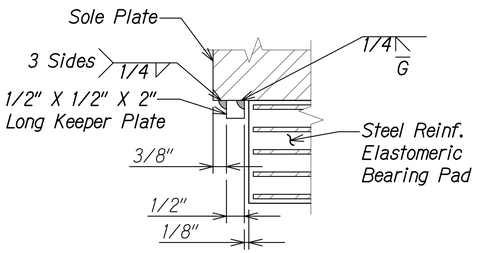
ELEVATION - EXPANSION BEARING (B SA8.12 | SA8.12)

Scale: 3" = 1'-0"



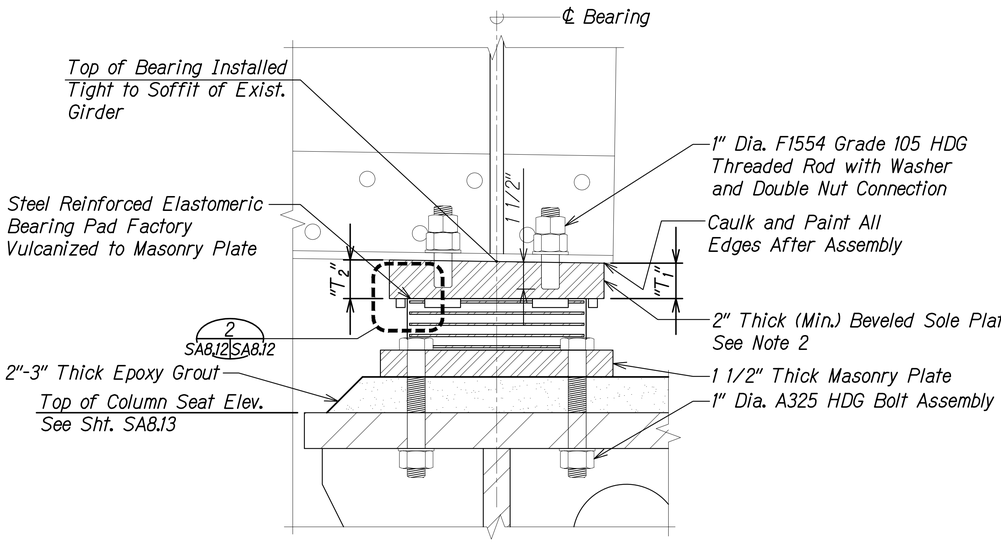
ELASTOMERIC DETAIL (1 SA8.12 | SA8.12)

Scale: 6" = 1'-0"



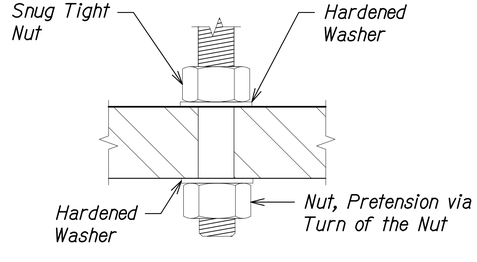
DETAIL (2 SA8.12 | SA8.12)

Scale: 6" = 1'-0"



SECTION - EXPANSION BEARING (C SA8.12 | SA8.12)

Scale: 3" = 1'-0"



DETAIL (3 SA8.12 | SA8.12)

Scale: 6" = 1'-0"

NOTES:

1. Threaded holes in bearing assembly shall be tapped oversized in accordance with the tolerances specified under ASTM A563.
2. See Sht. SA8.12 for beveled sole plate thickness.
3. Sole plate, and masonry plate shall all have 1 1/4" dia. oversized holes.
4. The cost for painting bearing assemblies shall be included in the price for Pay Item 506.2000.

STEPHEN T. PETERS
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXPANSION 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. SA8.12 OF 13 SHEETS

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

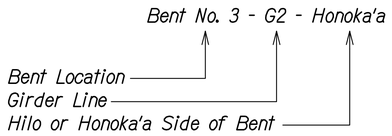
DRAWING NAME: Z:\VOL ONGOING\23-0229-NANUE STR BR PE-EOT\01 CAD\10-28-24 BID SETS\SR-540\10-540813 BEARG DET-SCHED.DWG PLOT TIME: 10-28-24, 8:18 PM

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"	
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"	
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"	
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"	
Bent No. 9 - G2 - Honoka'a			
Bent No. 9 - G3 - Honoka'a			
Bent No. 9 - G4 - Honoka'a			

BEARING LOCATION KEY:



DRAWING NAME: ZA\OB ONONOV\23-0229-NANUE STR BR PE2-OOTHA\01 CAD\ 10-28-24 BID SERVER-SA0810-SA0813 BEARG DET-SCHED.DWG PLOT TIME: 10-28-24 2:58 PM

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

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SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

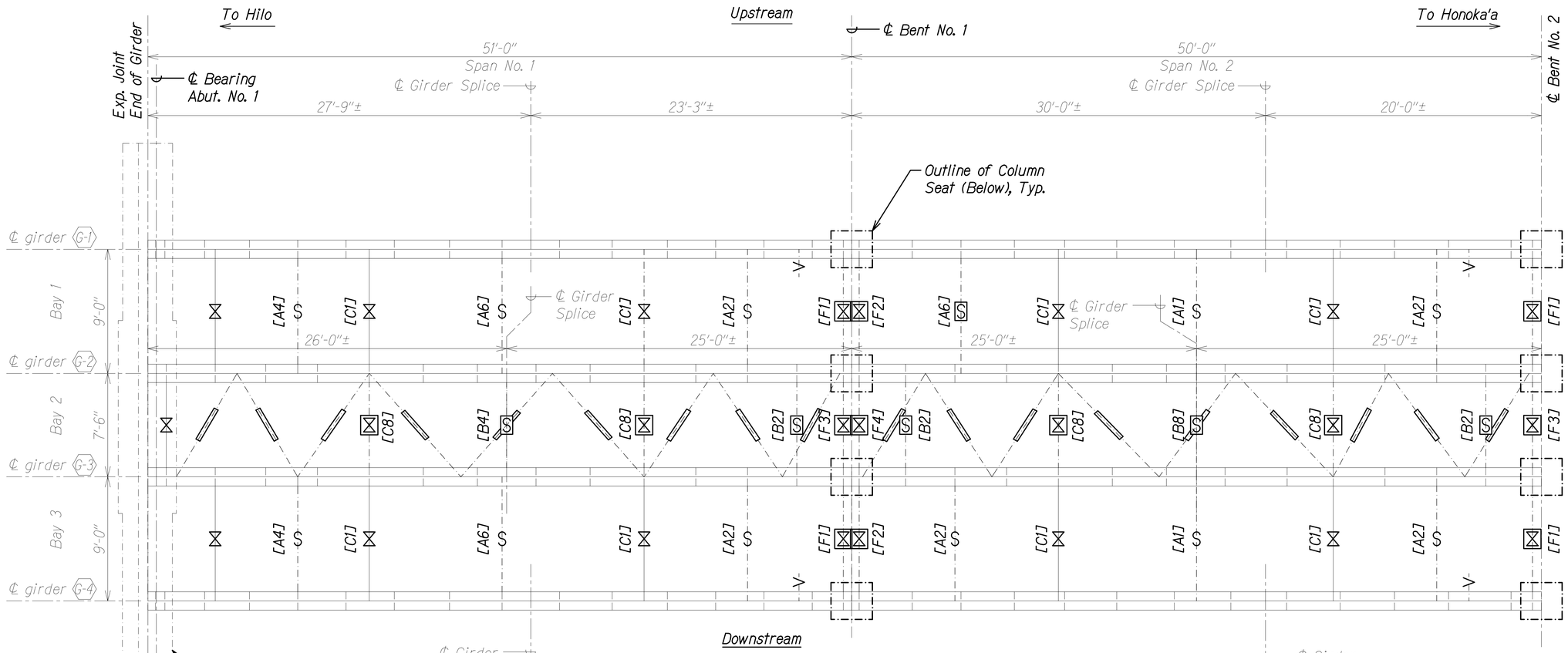
EXPANSION BEARING SCHEDULE

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA8.13 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	160	280



GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 1 AND 2

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

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

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:

1. Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor
2. Provided dimensions are based on As-Built plans.

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
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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)

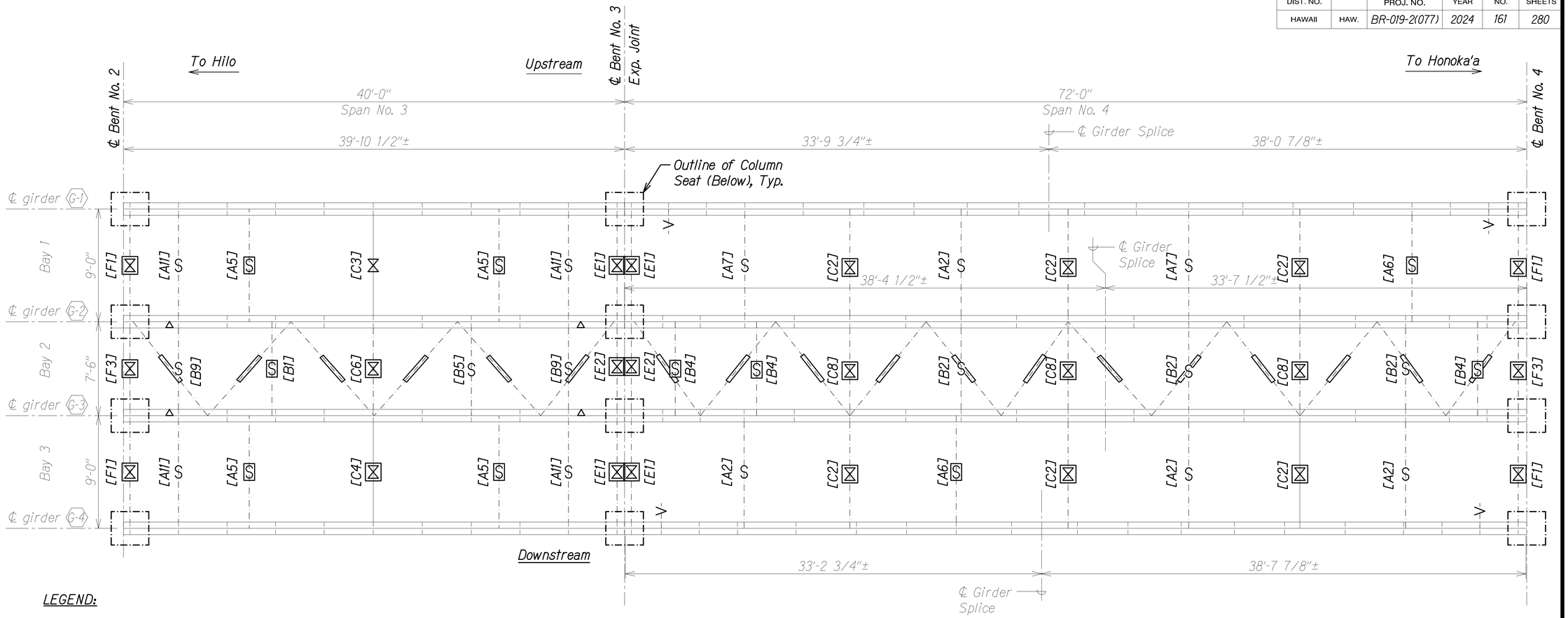
Scale: As Noted — Date: Oct. 2024

SHEET No. SA9.1 OF 23 SHEETS

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

DRAWING NAME: Z:\OD_ONGOING\23-072-3-HANUE STR BR REP-DOTH\01 CAD\10-28-24 BID SET\HSR-SA0901 GIRDER SPAN 1 & 2 DEMO PLN.DWG PLOT TIME: 10-28-24, 5:56 PM)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	161	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
- △ Exist. Steel Component to be Removed, See Detail 3/SA10.11
- [ ] 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. 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	-	-

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

DRAWING NAME: ZA:\00 ONGOING\23-0229-NANUE STR BR PE2-DOTA\01 CAD\10-28-24 BID SET\VER-SA0902 GIRDER SPAN 3 & 4 DEMO PLN.DWG PLOT TIME: 10-28-24, 4:49 PM)

STEPHEN T. PETERS
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

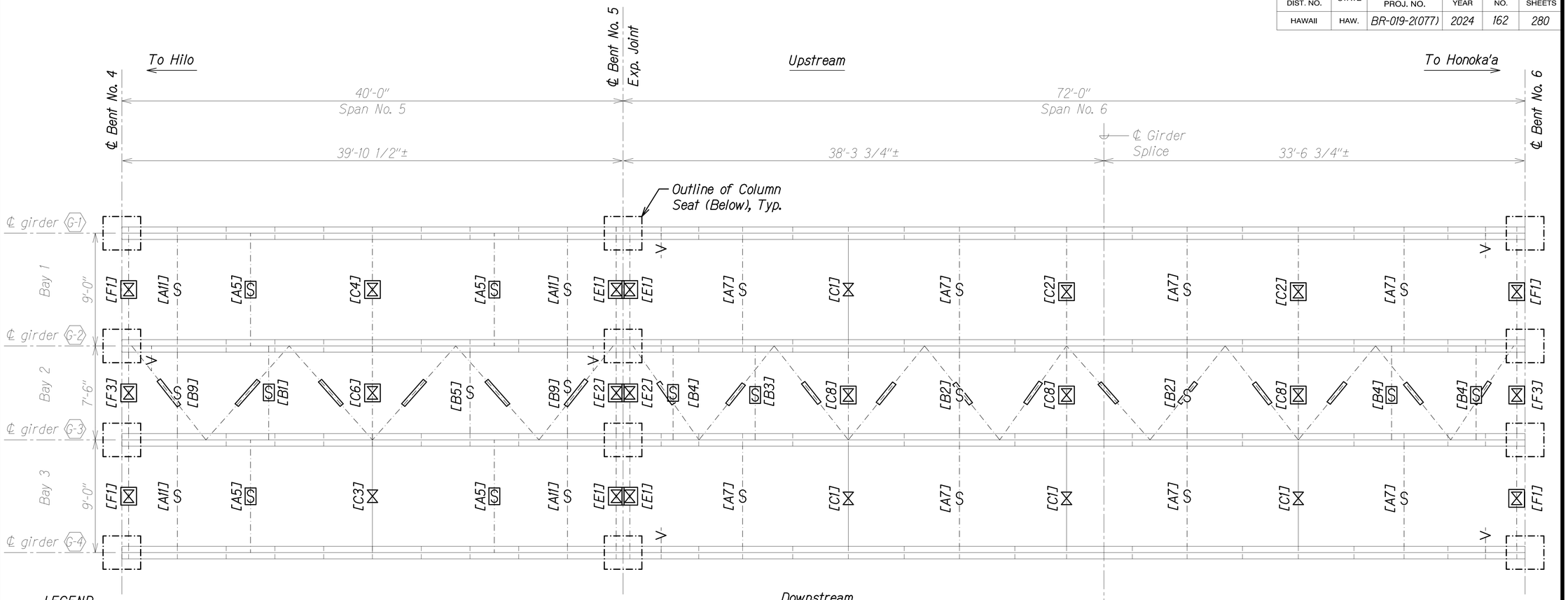
GIRDER FRAMING DEMOLITION PLAN - SPAN NOS. 3 AND 4

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.2 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	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:

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. 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	-	-

STEPHEN T. PETERS
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SIGNATURE — 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)

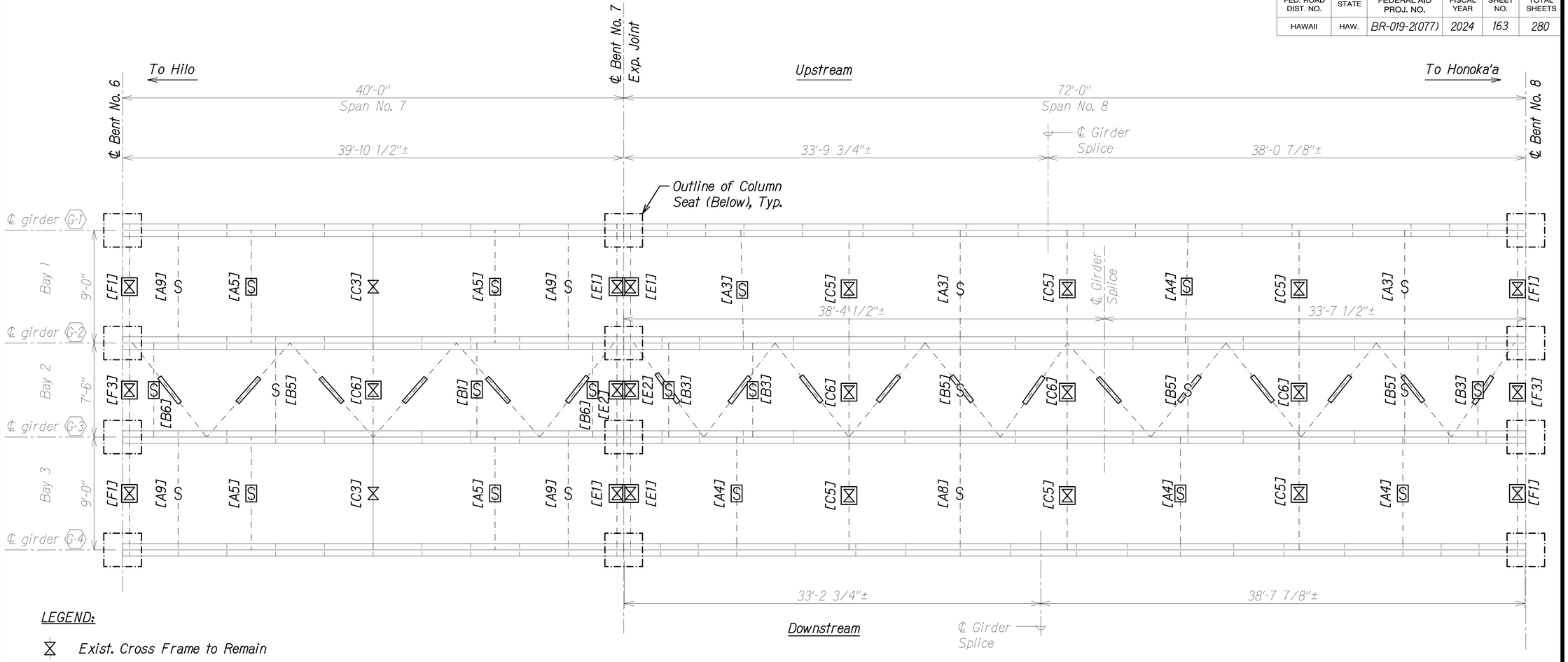
Scale: As Noted — Date: Oct. 2024

SHEET No. SA9.3 OF 23 SHEETS

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

PLOT TIME: 10-28-24, 3:01 PM)
DRAWING NAME: Z:\OD ONONUI\23-022\3-NANUE STR BR PE2-DOT\A10\CADV\10-28-24 BID SET\NSR-SA0903 GIRDER SPAN 5 & 6 DEMO PLN.DWG

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/SA10.4
- [ ] 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. 7 AND 8

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

DEMOLITION OF MEMBERS AND CONNECTIONS

MARK	REFERENCE	MARK	REFERENCE
A3	Section C / SA10.1	C3	Section C / SA10.6
A4	Section D / SA10.1	C5	Section E / SA10.6
A5	Section A / SA10.2	C6	Section A / SA10.7
A8	Section D / SA10.2	E1	Section A / SA10.8
A9	Section A / SA10.3	E2	Section B / SA10.8
B1	Section A / SA10.4	F1	Section A / SA10.9
B3	Section C / SA10.4	F3	Section C / SA10.9
B5	Section A / SA10.5	-	-
B6	Section B / SA10.5	-	-

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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)

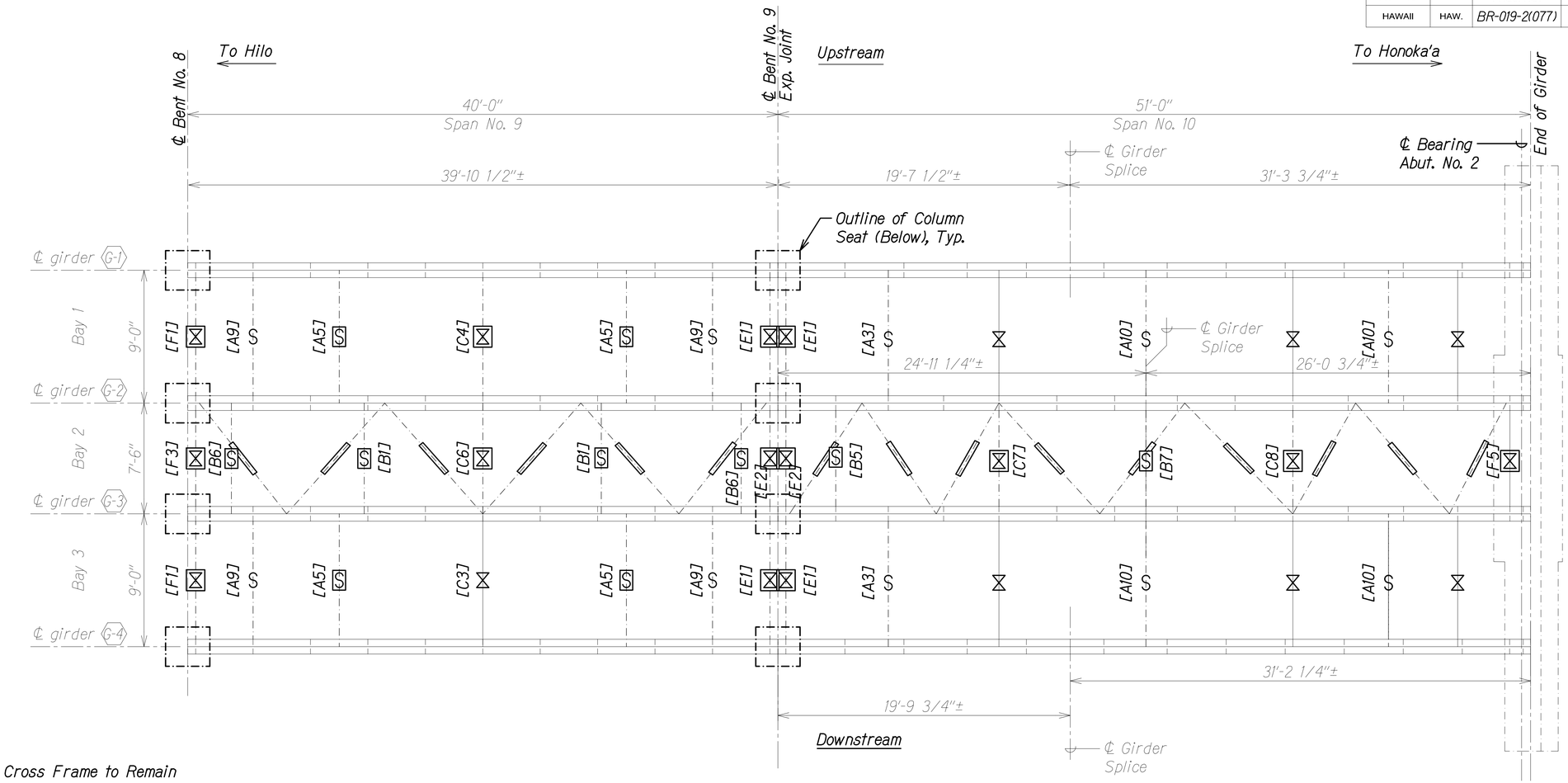
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.4 OF 23 SHEETS

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

BRAWING NAME: Z:\OD ONGOING\23-022-3-NANUE STR BR PE2-BOTH.01 DATE: 10-28-24, 3:02 PM) PLOT TIME: 10-28-24 BID SET\NSB-240004 GIRDER SPAN 7 & 8 DEMO P.N.DWG

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/SA10.4*
- *[ ] 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 / SA10.1	C4	Section D / SA10.6
A5	Section A / SA10.2	C6	Section A / SA10.7
A9	Section A / SA10.3	C7	Section B / SA10.7
A10	Section B / SA10.3	C8	Section C / SA10.7
B1	Section A / SA10.4	E1	Section A / SA10.8
B5	Section A / SA10.5	E2	Section B / SA10.8
B6	Section B / SA10.5	F1	Section A / SA10.9
B7	Section C / SA10.5	F3	Section C / SA10.9
C3	Section C / SA10.6	F5	Section E / SA10.9

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

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SIGNATURE — 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)

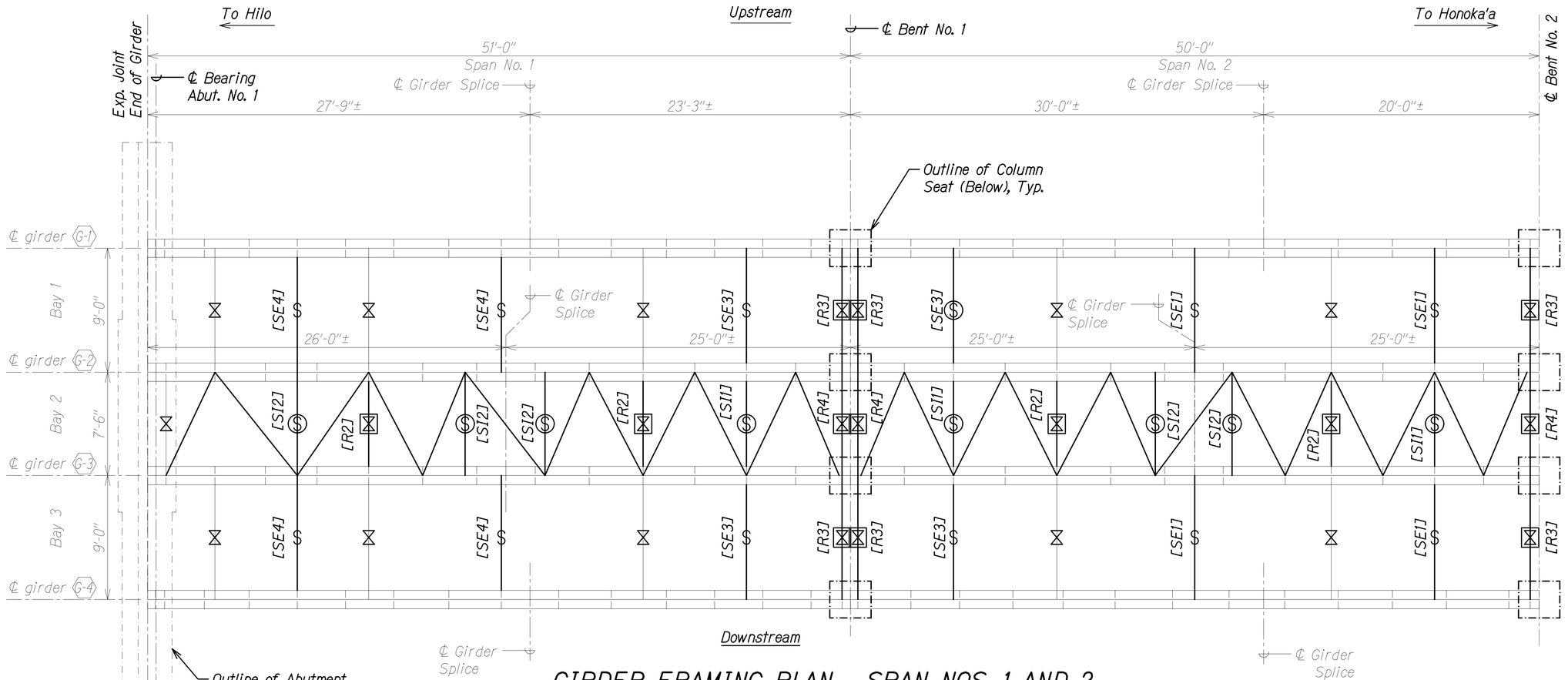
Scale: As Noted *Date: Oct. 2024*

SHEET No. *SA9.5* OF *23* SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-BOTH.VOL 1\DGN\10-28-24 BID SET\NSB-SA0905 GIRDER SPAN 9 & 10 DEMO PLN.DWG PLOT TIME: 10-28-24, 8:49 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	165	280



GIRDER FRAMING PLAN - SPAN NOS. 1 AND 2

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

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:

1. Cross Frames, Struts, Stiffeners and Lateral Bracing locations to be verified by Contractor.
2. Provided dimensions are based on As-Built plans.

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	-	-

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

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

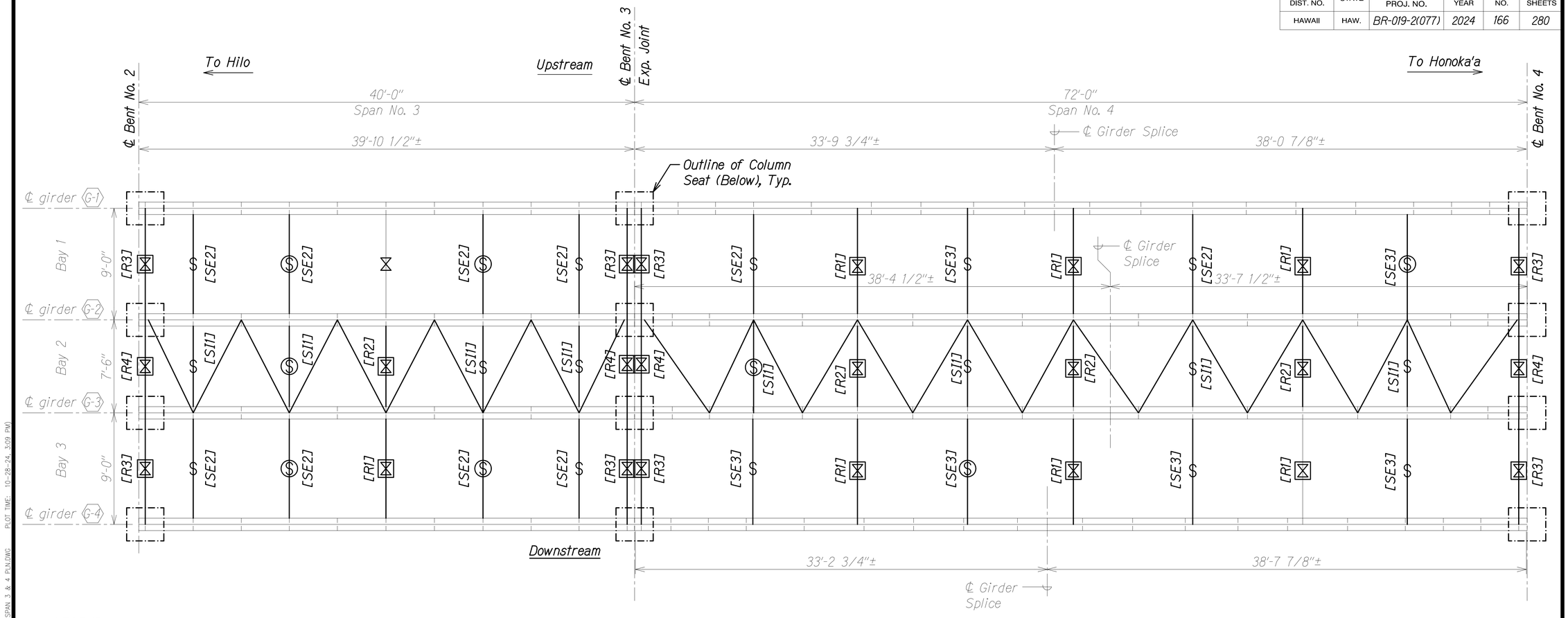
GIRDER FRAMING PLAN - SPAN NOS. 1 AND 2

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.6 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	166	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:

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 PLAN - SPAN NOS. 3 AND 4

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

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

GIRDER FRAMING PLAN - SPAN NOS. 3 AND 4

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

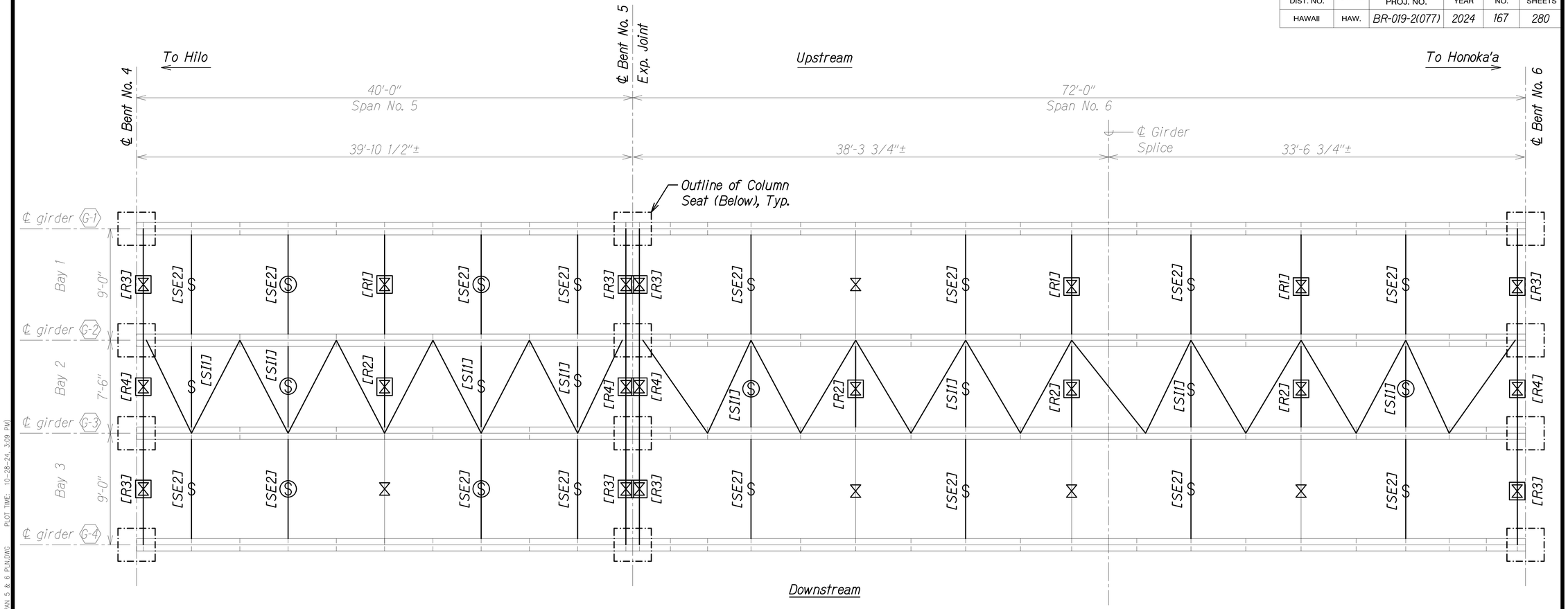
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.7 OF 23 SHEETS

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

PLOT TIME: 10-28-24; 3:09 PM)
DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR PE2-EOTA\01 CAD\10-28-24 BID SET\NSR-SA0907 GIRDER SPAN 3 & 4 P.N.DWG

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	167	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:

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 PLAN - SPAN NOS. 5 AND 6

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
SI1	Section A / SA10.13	R3	Section C / SA10.14
-	-	R4	Section D / SA10.14

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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

GIRDER FRAMING PLAN - SPAN NOS. 5 AND 6

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

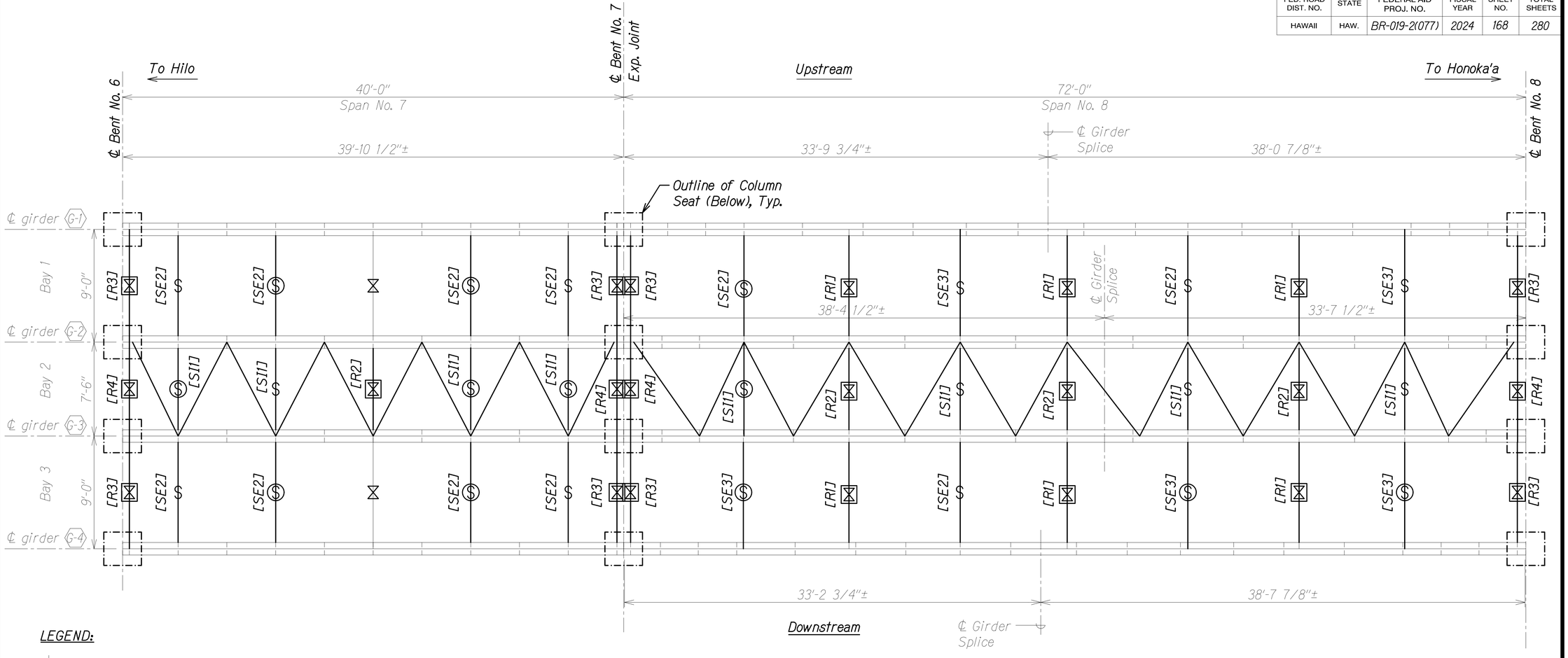
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.8 OF 23 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022-3-NANUE STR BR PEA-BOTH.OT CADD\10-28-24 BID SET\NSB-SA09B GIRDER SPAN 5 & 6 PLN.DWG PLOT TIME: 10-28-24, 3:09 PM

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

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

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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)

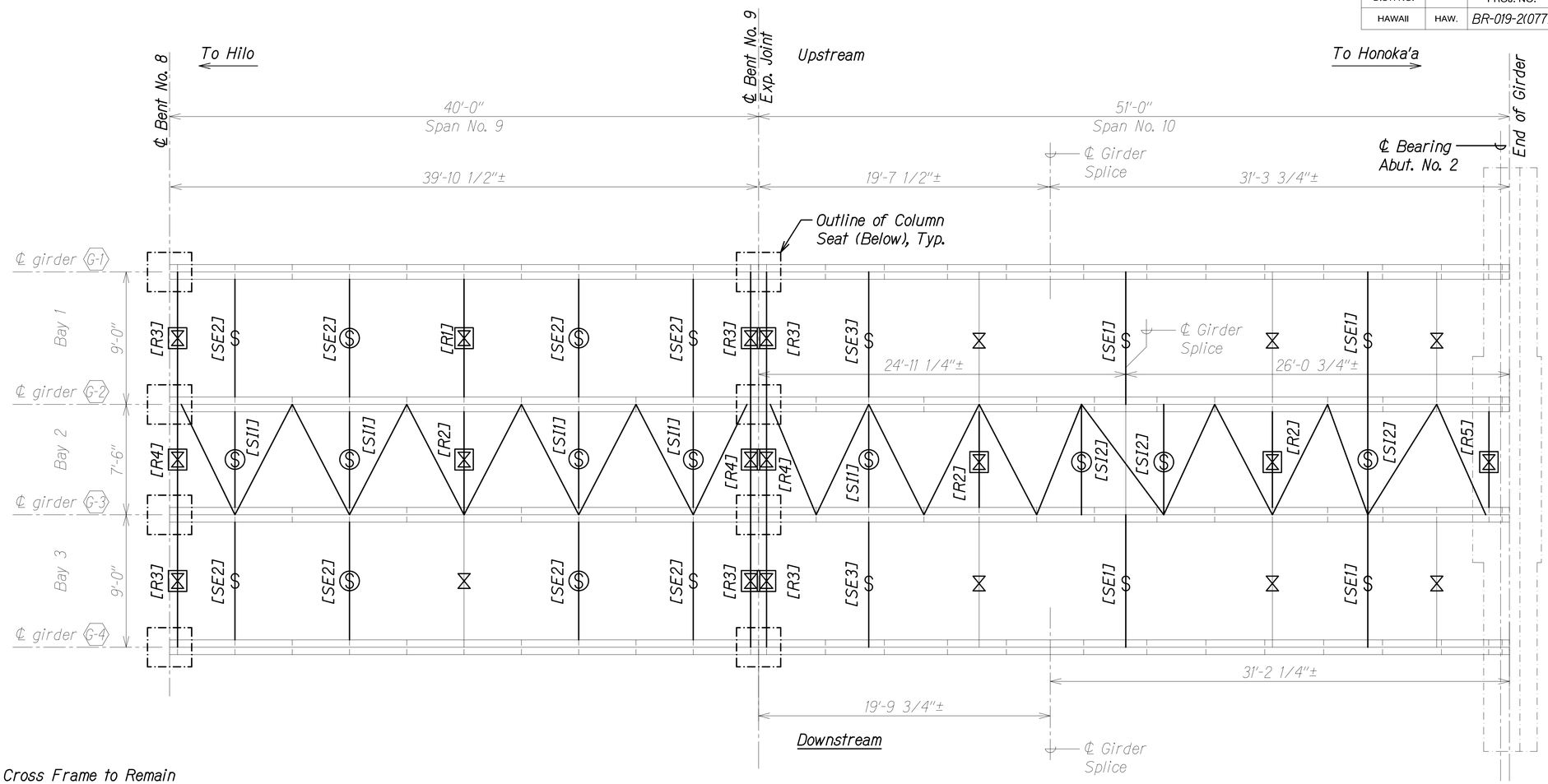
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.9 OF 23 SHEETS

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

DRAWING NAME: Z:\OD ONGINGS\23-0229-NANUE STR BR REPL-EOTA\01 CAD\10-28-24 BID SET\SR-SA0909 GIRDER SPAN 7 & 8.DWG PLOT TIME: 10-28-24, 3:10 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	169	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:

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 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

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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)

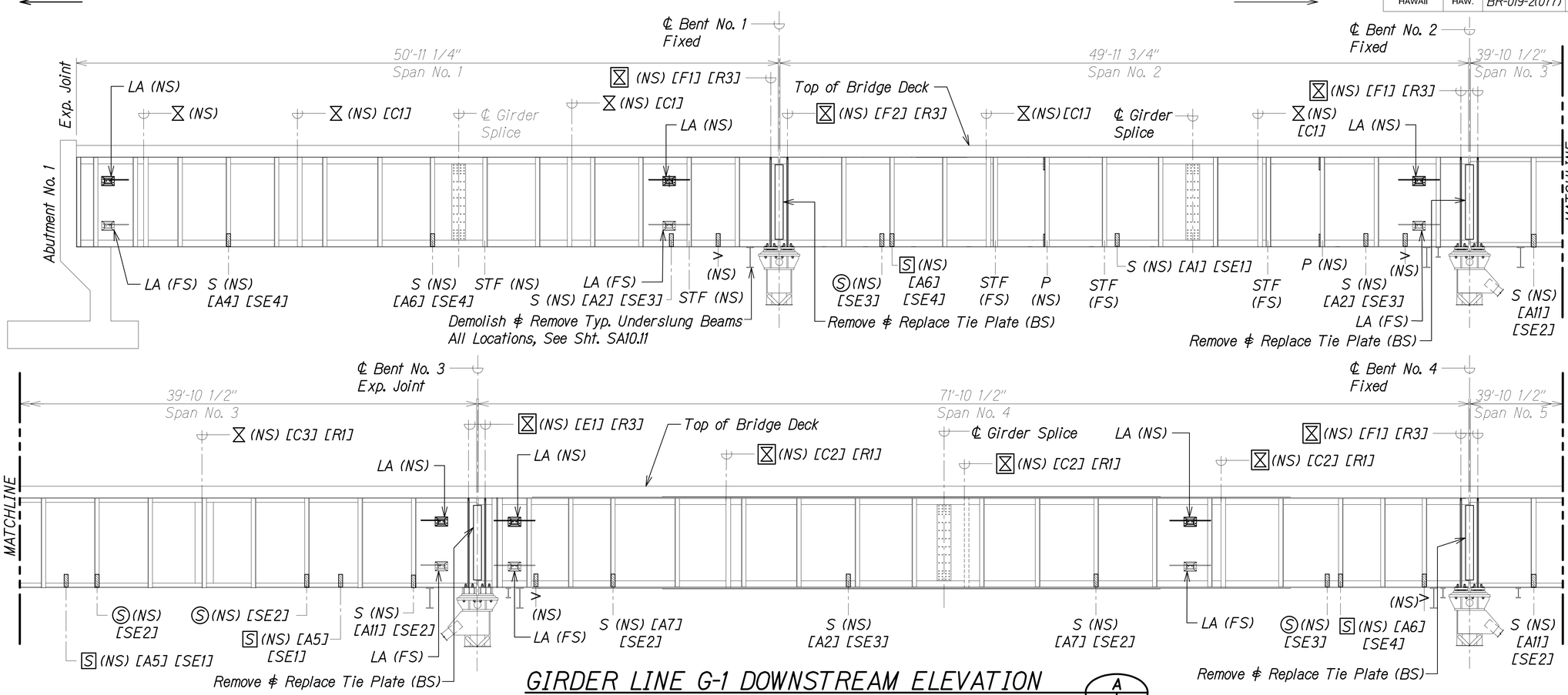
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.10 OF 18 SHEETS

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

DRAWING NAME: ZA/00 ONGINA/23-0229-NANUE STR BR PE2-SOTA/01 CAD\10-28-24 BID SET\NBR-SA0910 GIRDER SPAN 9 & 10 PLN.DWG PLOT TIME: 10-28-24, 3:10 PM)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	170	280



GIRDER LINE G-1 DOWNSTREAM ELEVATION

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

A SA9.11 | SA9.11

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
S	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:

1. 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.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

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)

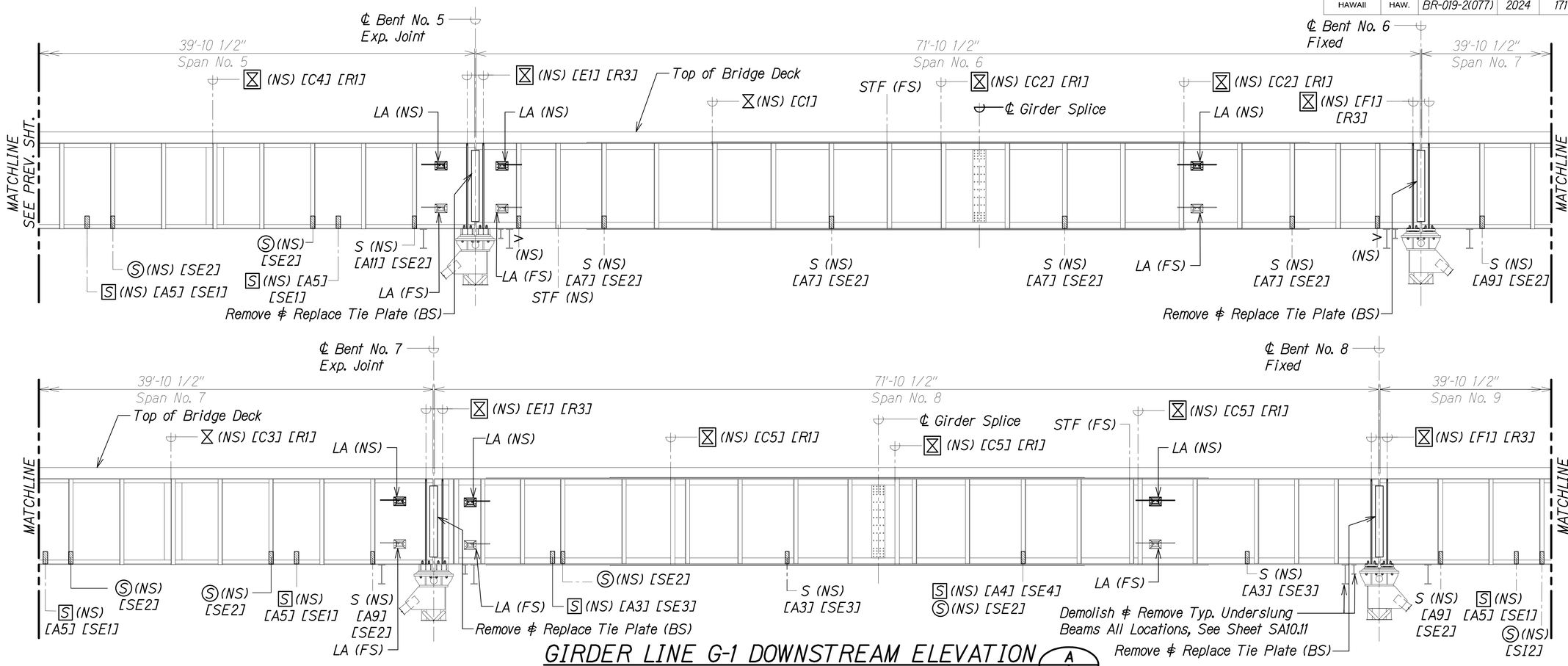
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.11 OF 23 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-072-3-NANUE STR BR PE2-BOTH OT EXH\10-28-24 BID SET\NSB_SA0911_SA0922 GIRDER ELEVDWG PLOT TIME: 10-28-24, 3:12 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	171	280



GIRDER LINE G-1 DOWNSTREAM ELEVATION

A SA9.12 | SA9.12

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

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27
⧖	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
[⧖]	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
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:

1. 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.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

GIRDER LINE G-1 DOWNSTREAM ELEVATION

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

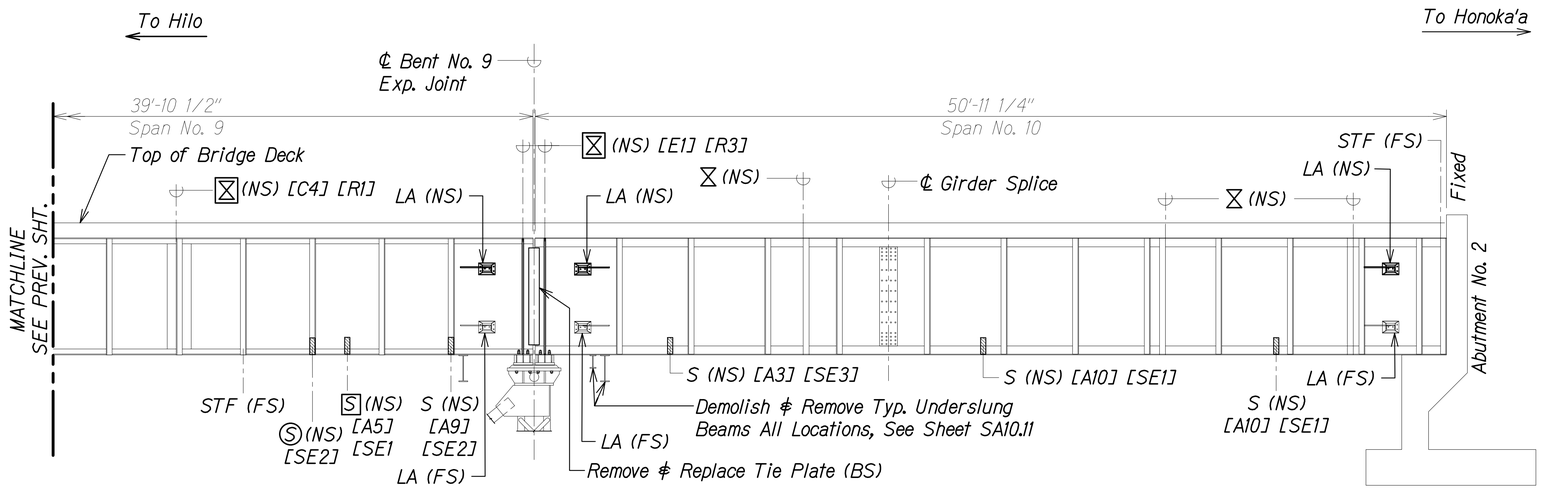
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.12 OF 23 SHEETS

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

DRAWING NAME: Z:\OD\ ONGOING\23-022\3-NANUE STR BR REP-REPAIR\01 CAD\10-28-24 BID SET\NSR-SA0911-SA0922 GIRDER ELEV.DWG PLOT TIME: 10-28-24, 3:12 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	172	280



GIRDER LINE G-1
DOWNSTREAM ELEVATION (A)

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

SA9.13 | SA9.13

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27
⧖	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
[⧖]	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:

1. 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.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-20THAO1 CAD\10-28-24 BID SET\SR-SA9011-SA0922 GIRDER ELEV.DWG PLOT TIME: 10-28-24 3:12 PM

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

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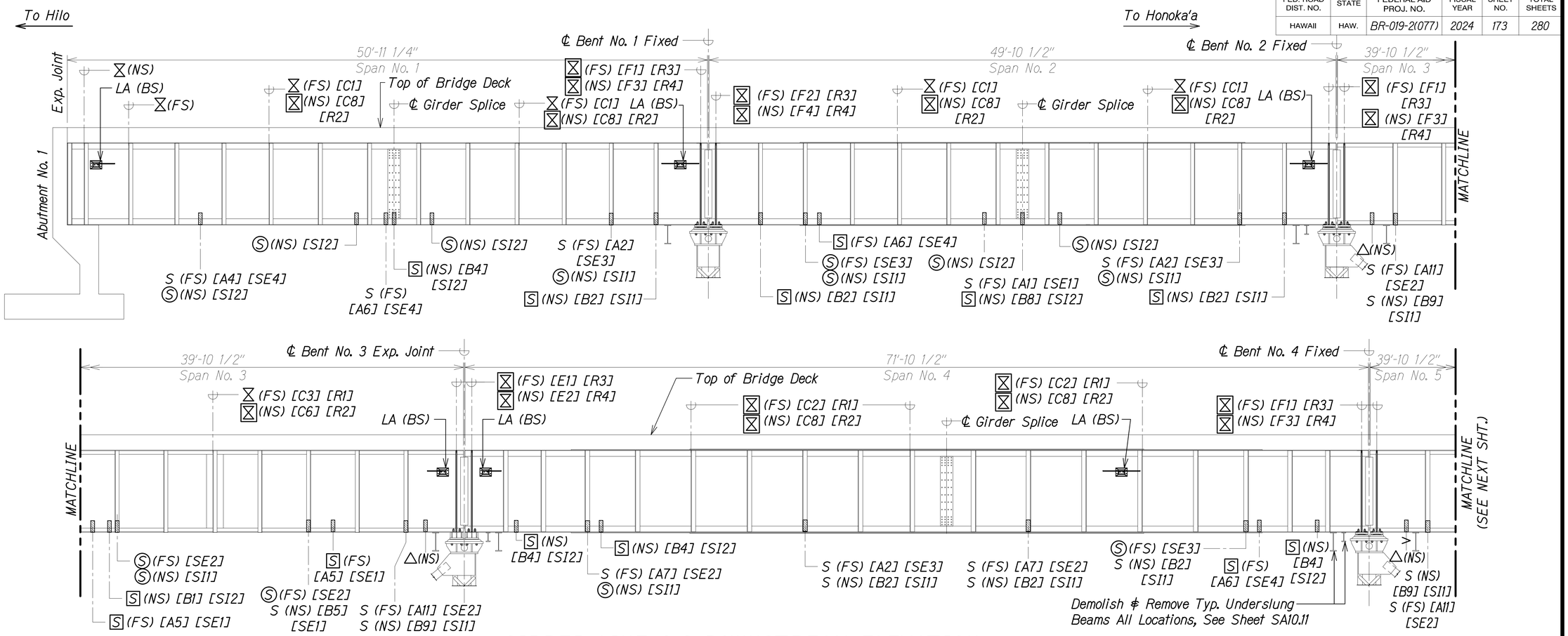
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	173	280



GIRDER LINE G-2 DOWNSTREAM ELEVATION

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

A SA9.14 | SA9.14

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27	FS	Far Side
⧖	Cross Frame	NS	Near Side
BS	Both Sides	Ⓢ	New Strut
S	Exist. Strut to be Removed and Replaced		
[S]	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	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:

1. The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

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)

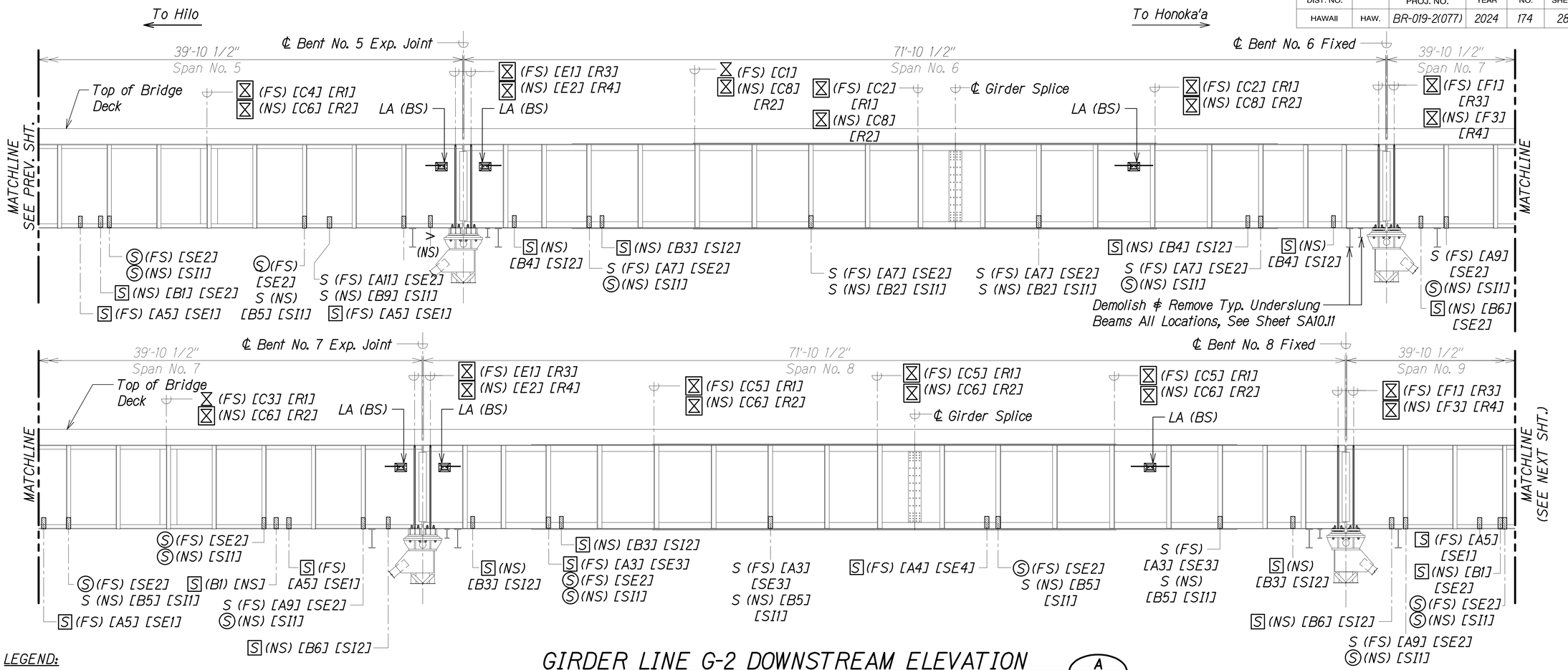
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.14 OF 23 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PED-BOTH\01-CAD\10-28-24 BID SET\NSB-SA0911-SA0922 GIRDER ELEVDWG PLOT TIME: 10-28-24, 3:13 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	174	280



GIRDER LINE G-2 DOWNSTREAM ELEVATION

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

A SA9.15 | SA9.15

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27	FS	Far Side
☒	Cross Frame	NS	Near Side
BS	Both Sides	Ⓢ	New Strut
S	Exist. Strut to be Removed and Replaced		
[S]	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	MARK	REFERENCE
A3	Section C / SA10.1	B9	Section E / SA10.5
A4	Section D / SA10.1	C1	Section A / SA10.6
A5	Section A / SA10.2	C2	Section B / SA10.6
A7	Section C / SA10.2	C3	Section C / SA10.6
A9	Section A / SA10.3	C4	Section D / SA10.6
A11	Section C / SA10.3	C5	Section E / 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
B6	Section B / SA10.5	F3	Section C / 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:

1. The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

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)

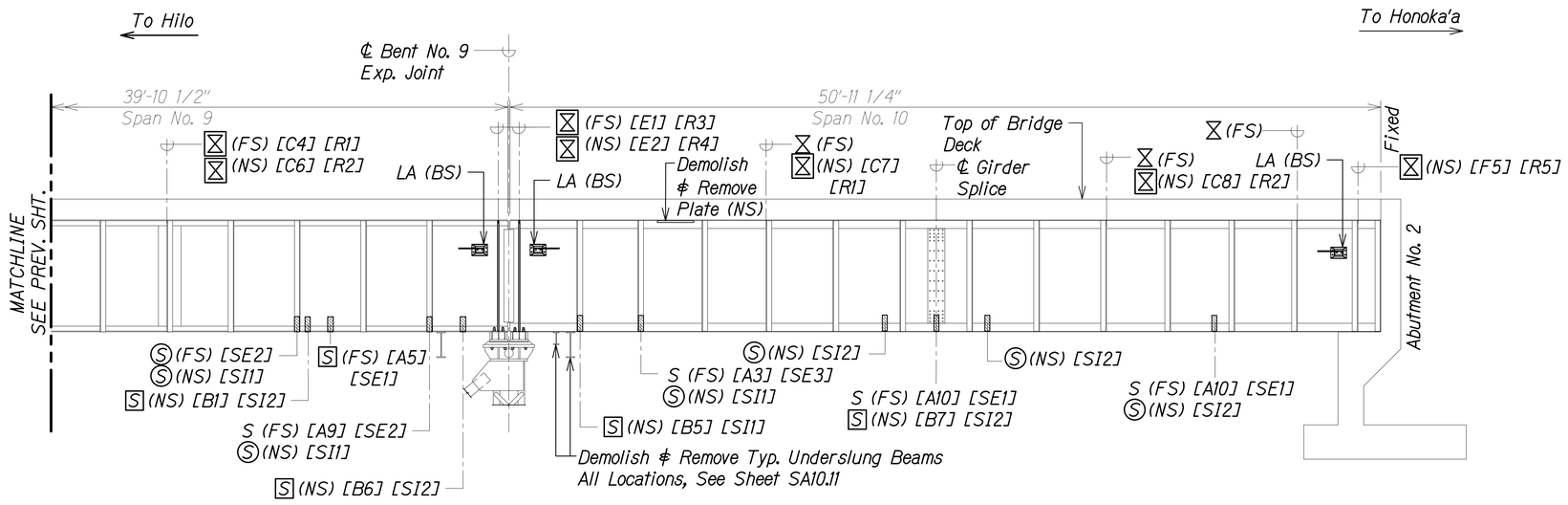
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.15 OF 23 SHEETS

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

DRAWING NAME: Z:\DOT\ONGOING\23-0229-NANUE STR BR PEP_EDITH\01 CAD\10-28-24 BID SET\NSR-SA9111-SA9122 GIRDER ELEV.DWG PLOT TIME: 10-28-24, 3:13 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	175	280



GIRDER LINE G-2
DOWNSTREAM ELEVATION (A)

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

SA9.16 | SA9.16

LEGEND:

- LA — Lifeline Anchor, See Sheet SA10.27
- FS — Far Side
- NS — Near Side
- ⊗ — Cross Frame
- (S) — New Strut
- BS — Both Sides
- S — Exist. Strut to be Removed and Replaced
- [S] — 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
B1	Section A / SA10.4
B5	Section A / SA10.5
B6	Section B / SA10.5
B7	Section C / SA10.5
C4	Section D / SA10.6
C6	Section A / SA10.7

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

NOTES:

1. The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

DRAWING NAME: Z:\OI ONGOING\23-022.9-NANUE STR BR PE2-20\HAOT CAD\10-28-24 BID SET\VSR-540911-SA0922 GIRDER ELEV.DWG PLOT TIME: 10-28-24 3:13 PM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

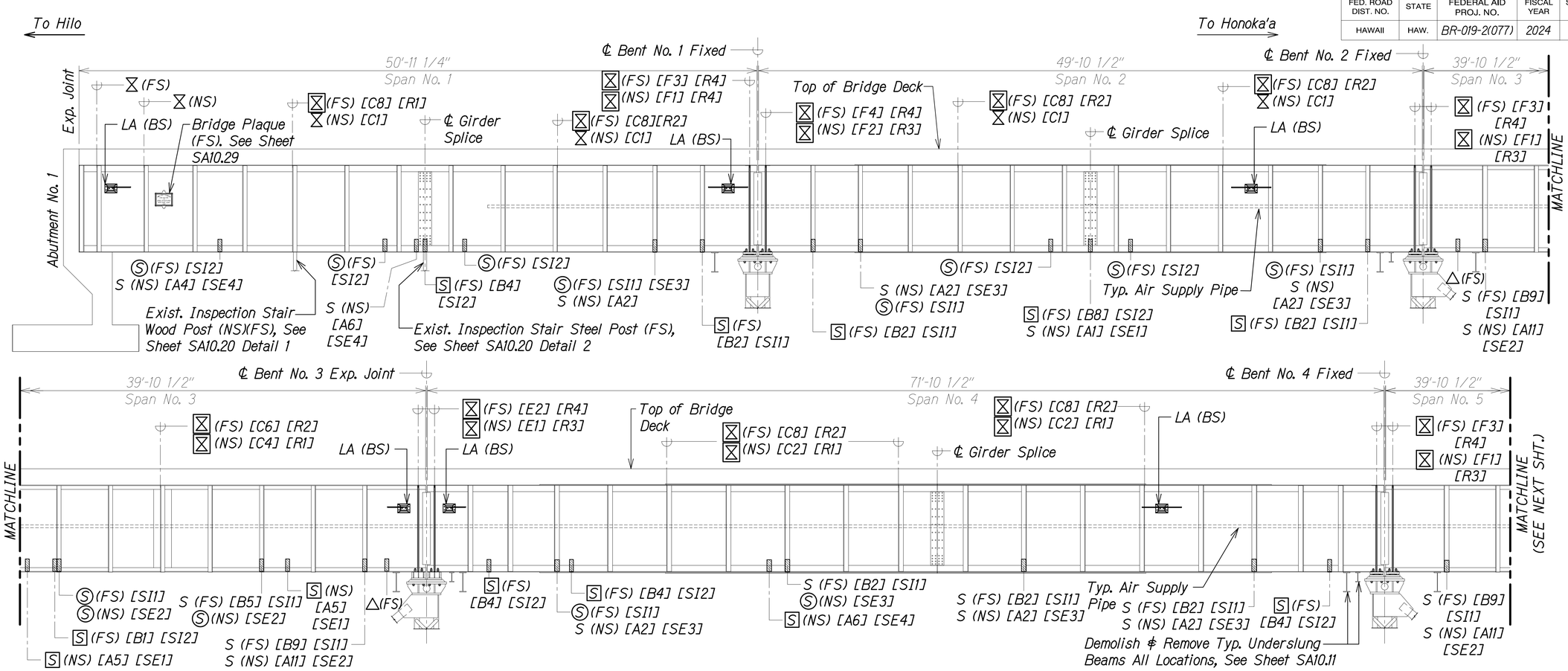
GIRDER LINE G-2
DOWNSTREAM ELEVATION

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA9.16 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	176	280



GIRDER LINE G-3 DOWNSTREAM ELEVATION

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

A SA9.17 | SA9.17

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27	FS	Far Side
⧖	Cross Frame	NS	Near Side
BS	Both Sides	Ⓢ	New Strut
S	Exist. Strut to be Removed and Replaced		
[S]	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	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:

1. The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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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)

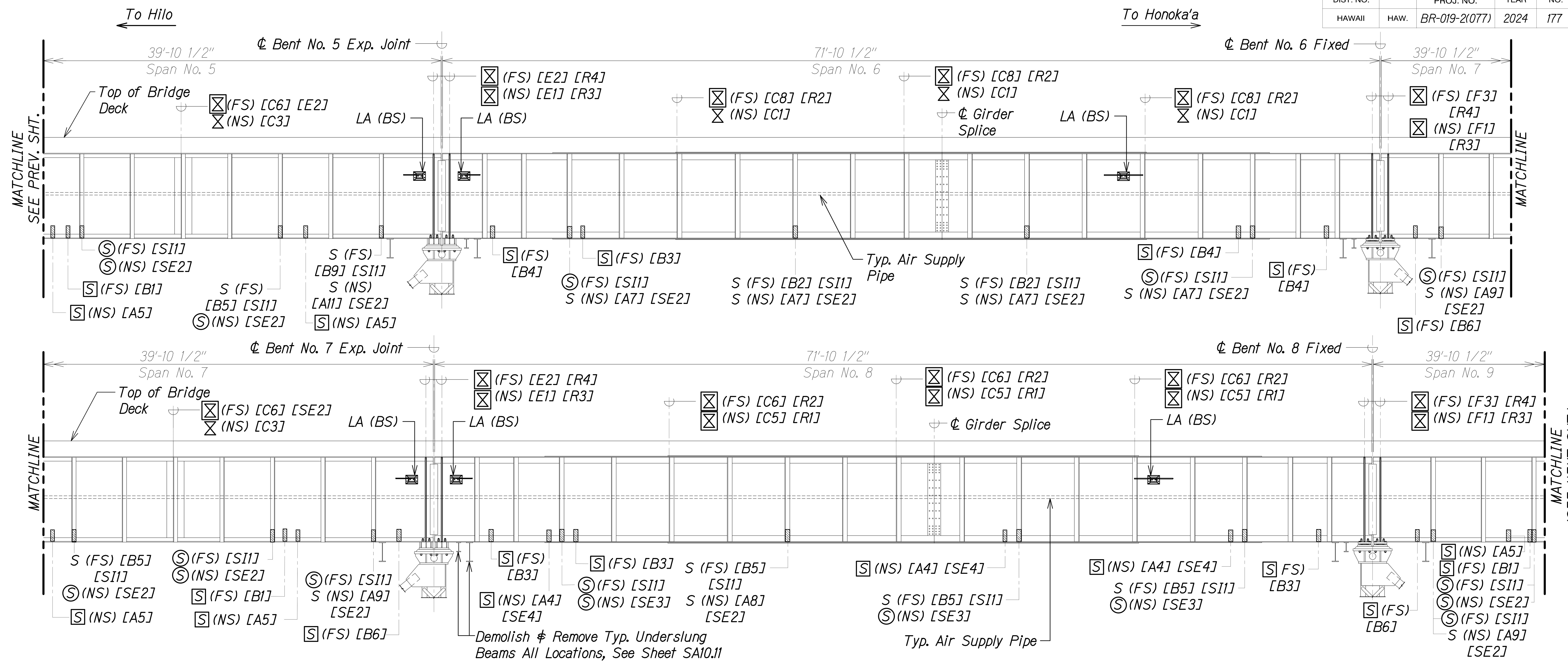
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.17 OF 23 SHEETS

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

DRAWING NAME: Z:\OD ENGINEERING\23-022\3-NANUE STR BR PEZ-BOTH\01 CAD\10-28-24 BID SET\VER-SA\011-SA0920 GIRDER ELEV.DWG PLOT TIME: 10-28-24, 3:14 PM)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	177	280



LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27
⌛	Cross Frame
BS	Both Sides
S	Exist. Strut to be Removed and Replaced
[S]	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
FS	Far Side
NS	Near Side
(S)	New Strut

GIRDER LINE G-3 DOWNSTREAM ELEVATION

A SA9.18 | SA9.18

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:

1. The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

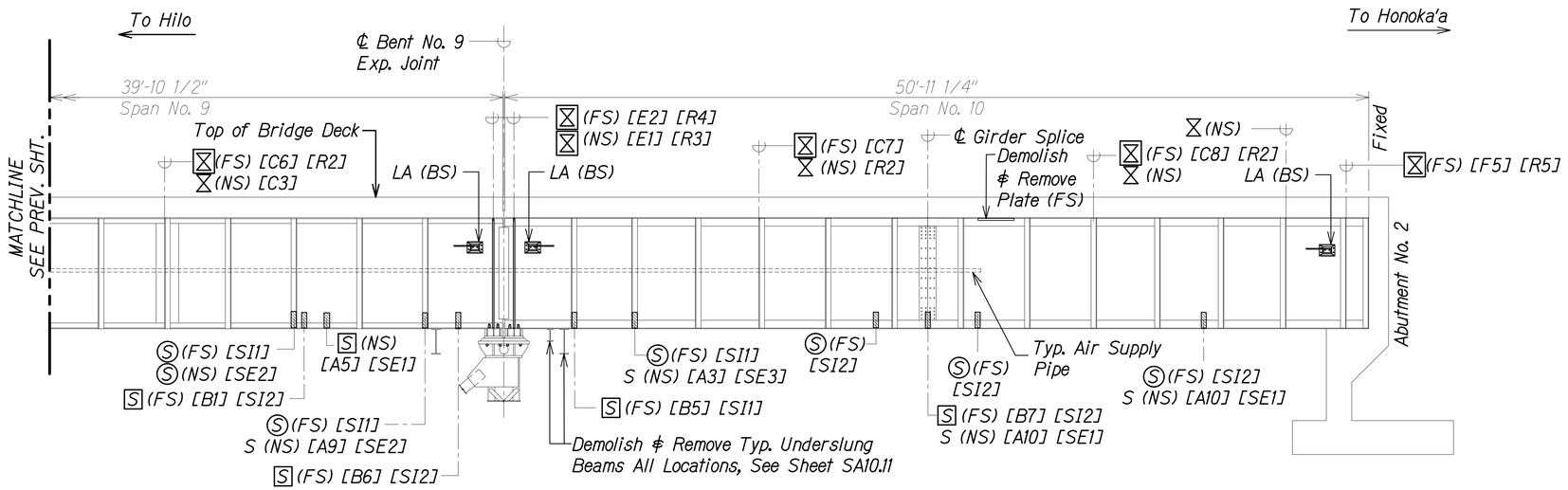
GIRDER LINE G-3
DOWNSTREAM ELEVATION

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

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	178	280



GIRDER LINE G-3
DOWNSTREAM ELEVATION (A)

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

SA9.19 | SA9.19

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27	FS	Far Side
⧖	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		
⧖	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	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	-	-

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

NOTES:

1. The gap between the ends of the girders at the bents is 1 1/2" according to As-Built drawings.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

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

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4-30-26

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)

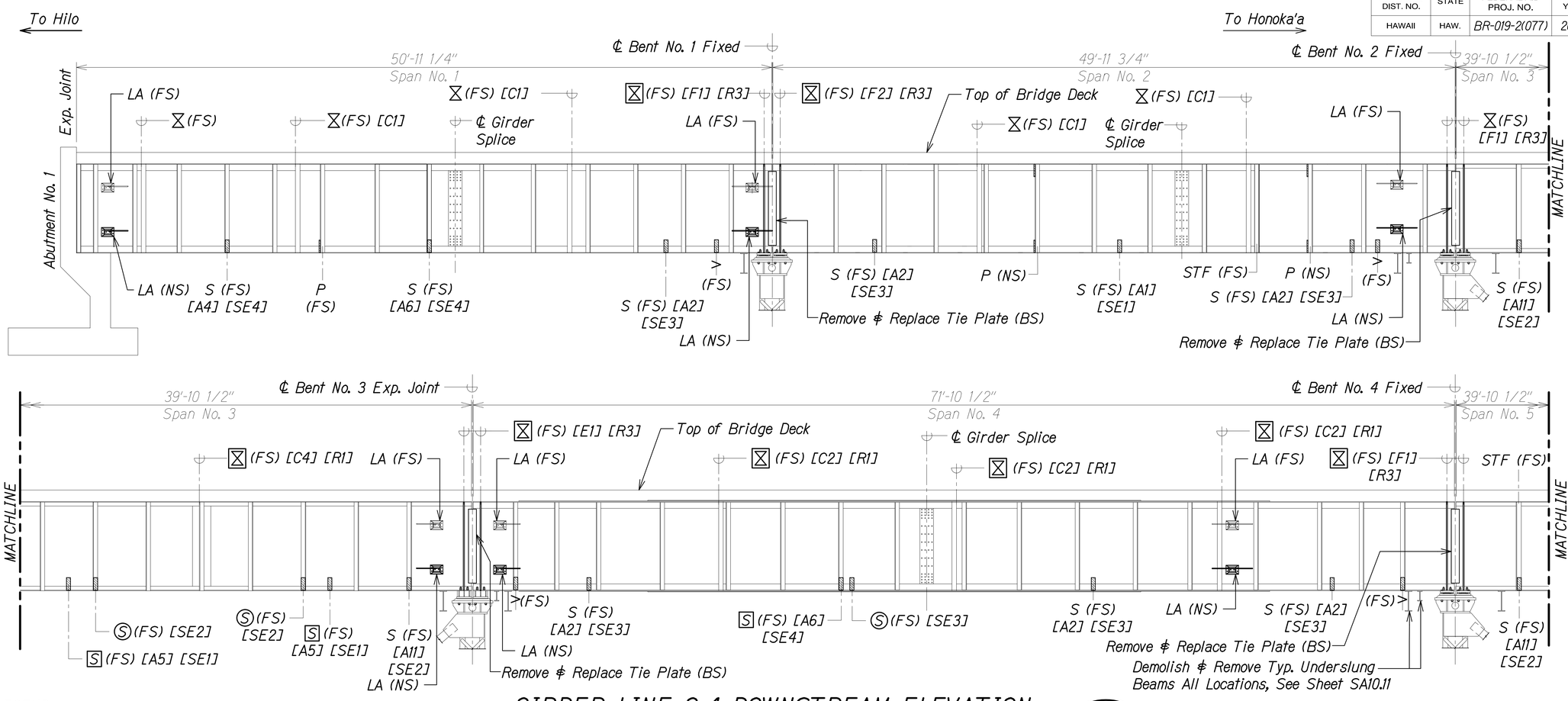
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.19 OF 23 SHEETS

178

DRAWING NAME: Z:\OD ONGOING\23-022.9-HANUE STR BR PE2-DOTH.DT CAD\10-28-24 BID SET\VSR-SA9011-SA9022 GIRDER ELEV.DWG PLOT TIME: 10-28-24, 3:15 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	179	280



GIRDER LINE G-4 DOWNSTREAM ELEVATION

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

A SA9.20 | SA9.20

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27	FS	Far Side
⧖	Cross Frame	NS	Near Side
BS	Both Sides	Ⓢ	New Strut
S	Exist. Strut to be Removed and Replaced		
[S]	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
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:

1. 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.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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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)

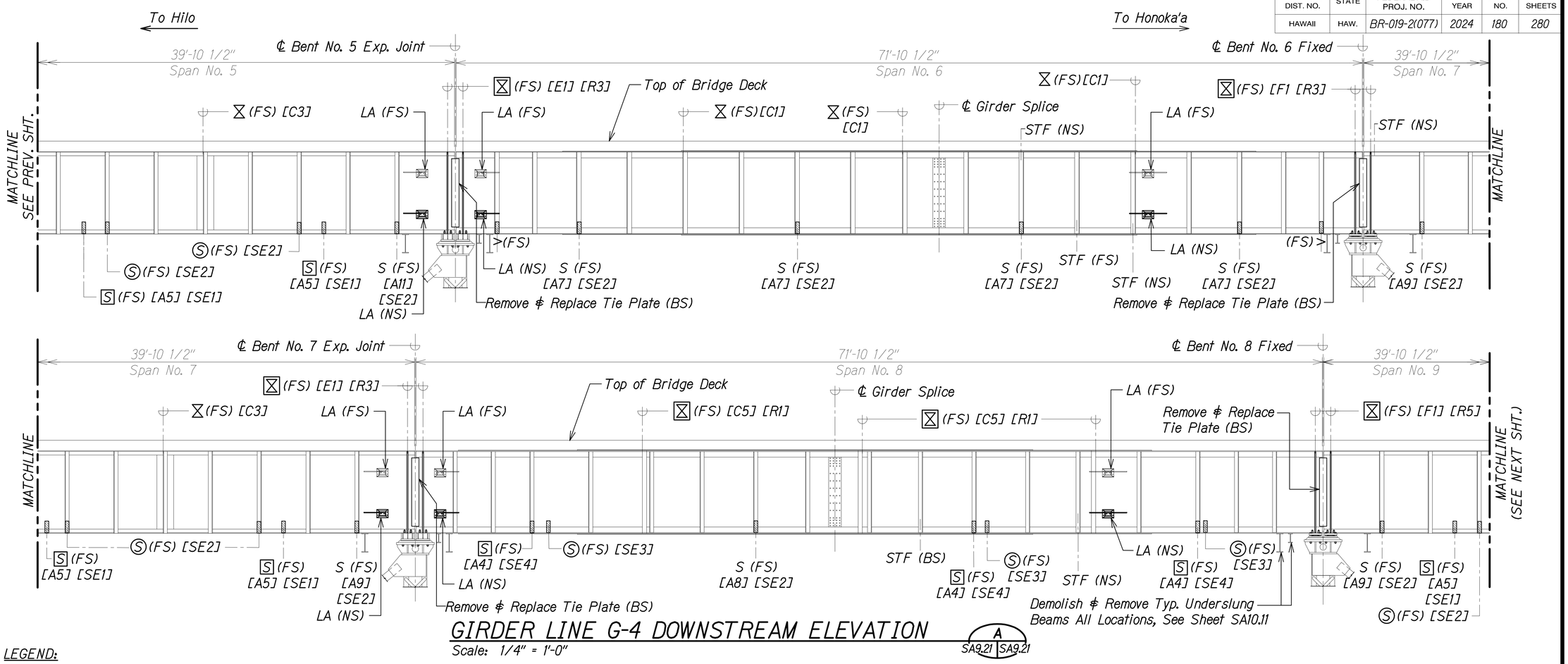
Scale: As Noted Date: Oct. 2024

SHEET No. SA9.20 OF 23 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR PEZ-DOTA\01 CAD\10-28-24 BID SET\VER-SA09\11-SA0929 GIRDER ELEV.DWG PLOT TIME: 10-28-24, 3:15 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	180	280



GIRDER LINE G-4 DOWNSTREAM ELEVATION

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

A SA9.21 | SA9.21

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27	FS	Far Side
☒	Cross Frame	NS	Near Side
BS	Both Sides	Ⓢ	New Strut
S	Exist. Strut to be Removed and Replaced		
[S]	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
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:

1. 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.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

DRAWING NAME: Z:\OD\ ONGOING\ 23-0229-NANUE STR BR PEP-EOT\01 CAD\ 10-28-24 BID SET\ VSR-540911-540922 GIRDER ELEV.DWG PLOT TIME: 10-28-24, 3:15 PM

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

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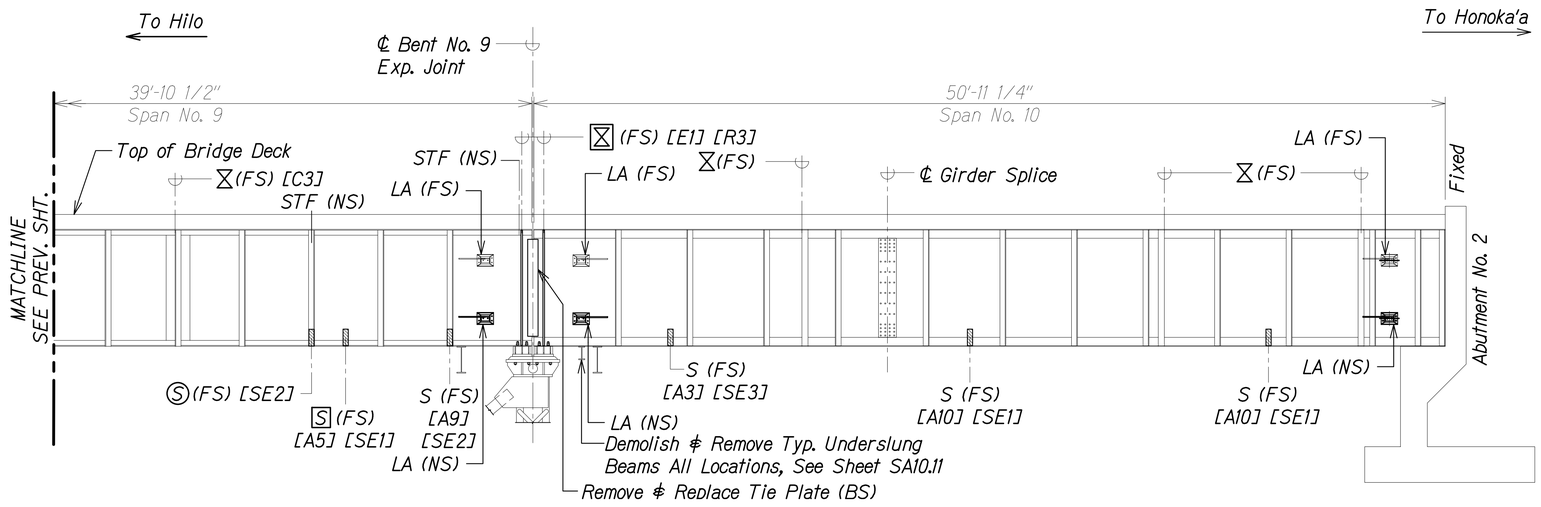
SHEET No. SA9.21 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	181	280



GIRDER LINE G-4
DOWNSTREAM ELEVATION (A)

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

SA9.22 | SA9.22

LEGEND:

LA	Lifeline Anchor, See Sheet SA10.27	FS	Far Side
⧖	Cross Frame	NS	Near Side
BS	Both Sides	Ⓢ	New Strut
S	Exist. Strut to be Removed and Replaced		
[S]	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
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:

1. 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.
2. Struts are shown hatched for clarity.
3. Replace bearing stiffeners at all locations EF of girder. See Sheet SA10.20.

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-20THAOT CAD\10-28-24 BID SET\VSR-540911-SA0922 GIRDER ELEV.DWG PLOT TIME: 10-28-24 3:16 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 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

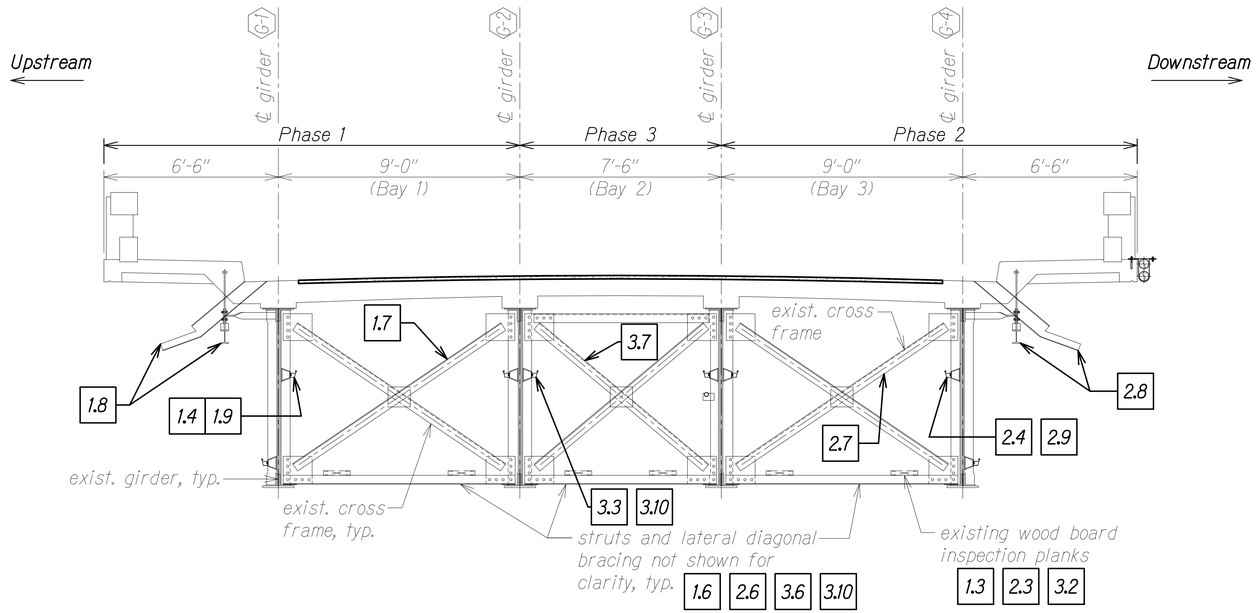
GIRDER LINE G-4
DOWNSTREAM ELEVATION

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

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

BRACING REMOVAL AND INSTALLATION SEQUENCE

Phase 1

1.1 Install underdeck work platform and containment system.

1.2 Install Traffic Control. See T Sheets. (Traffic on Downstream side of bridge)

1.3 Remove all existing wood board inspection planks in Bay 1 and deliver to HDOT maintenance yard.

1.4 Remove all existing underslung beams and ancillary steel. See Sheet SA10.11. Remove lifelines. See Sheet SA10.27.

1.5 Field fit struts and cross frames. See Notes 5, 6, and 7.

1.6 Remove and replace all existing struts in Bay 1. 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.

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.

1.9 Install lifelines and tie plates. See Sheet SA10.25.

Phase 2

2.1 Install underdeck work platform and containment system.

2.2 Adjust Traffic Control. See T Sheets. (Traffic on Upstream side of bridge).

2.3 Remove all existing wood board inspection planks in Bay 3 and deliver to HDOT maintenance yard.

2.4 Remove all existing underslung beams and ancillary steel. See Sheet SA10.11. Remove lifelines. See Sheet SA10.27.

2.5 Field fit struts and cross frames. See Notes 5, 6, and 7.

2.6 Remove and replace all existing struts in Bay 3. See Notes 4 and 6.

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.

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.

2.9 Install lifelines and tie plates. See Sheet SA10.25.

Phase 3

3.1 Install underdeck work platform and containment system.

3.2 Remove all existing wood board inspection planks in Bay 2 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.

3.4 Field fit struts and cross frames. See Notes 6 and 7.

3.5 Remove all existing struts and lateral diagonal bracing.

3.6 Install new struts in Bay 2. See Notes 4 and 6.

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.

3.8 Field fit lateral diagonal bracing. See Note 5.

3.9 Clean and Paint Bay 2.

3.10 Install lifelines and lateral diagonal bracing.

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.

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

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

BRACING REMOVAL AND INSTALLATION SEQUENCE

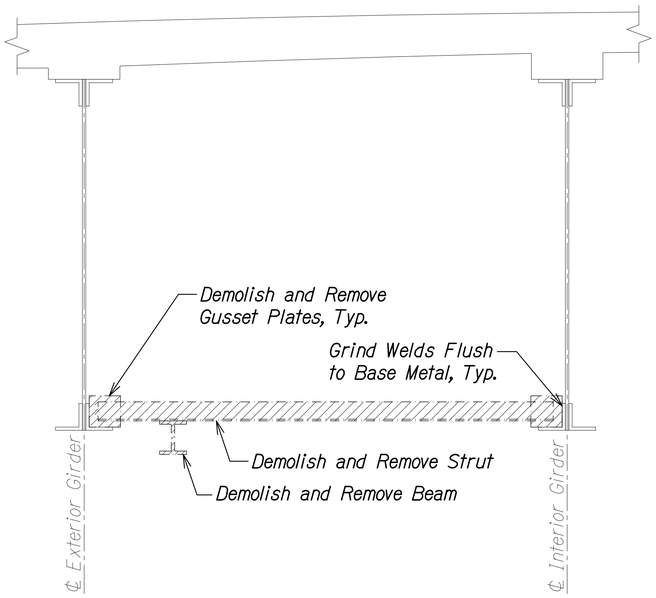
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET NO SA9.23 OF 23 SHEETS

DRAWING NAME: Z:\01 ONGOING\23-022.9-NANUE STR BR PE2-DOT\A01 CAD\10-28-24 BID SET\VSR-540923 BRACE SEQ.DWG PLOT TIME: 10-28-24, 3:16 PM

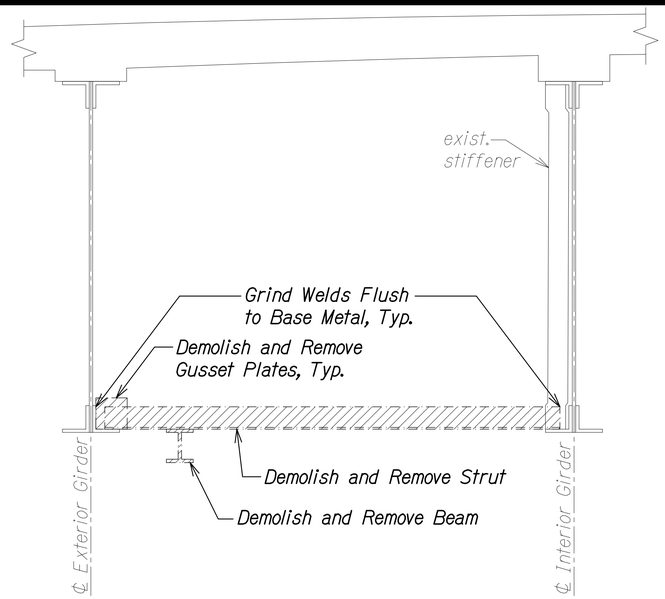
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	183	280



[A1] EXTERIOR BAY STRUT DEMO SECTION

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

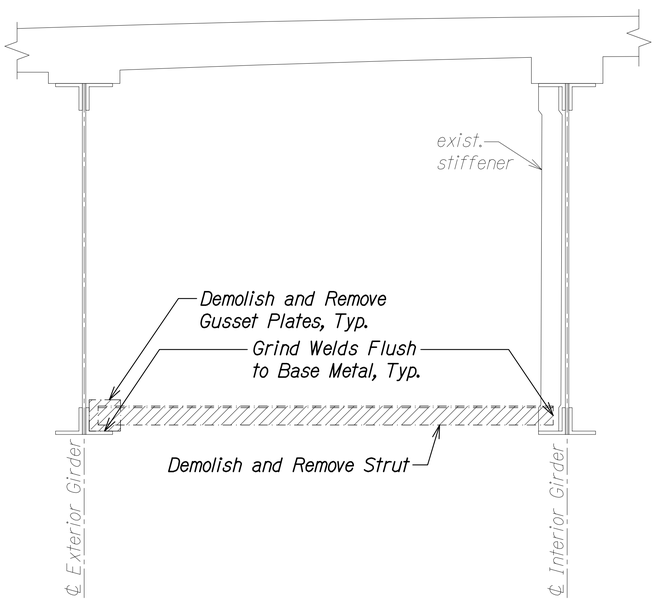
A SA10.1 | SA10.1



[A2] EXTERIOR BAY STRUT DEMO SECTION

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

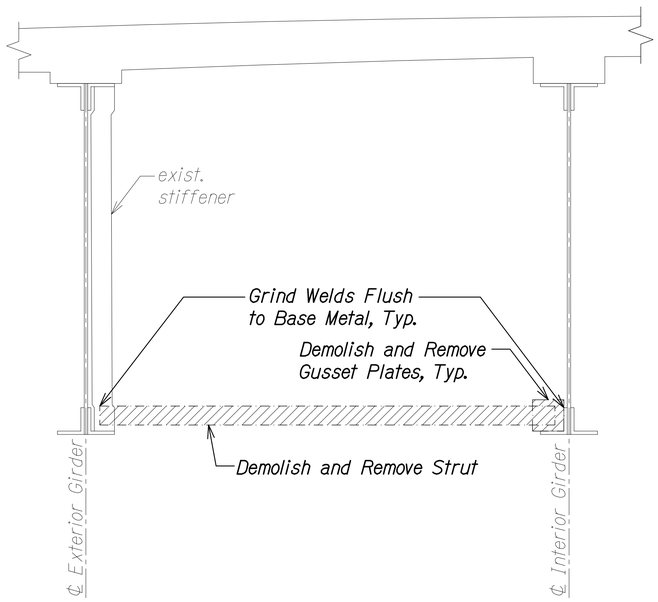
B SA10.1 | SA10.1



[A3] EXTERIOR BAY STRUT DEMO SECTION

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

C SA10.1 | SA10.1



[A4] EXTERIOR BAY STRUT DEMO SECTION

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

D SA10.1 | SA10.1

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

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

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

EXTERIOR BAY STRUT DEMOLITION SECTIONS

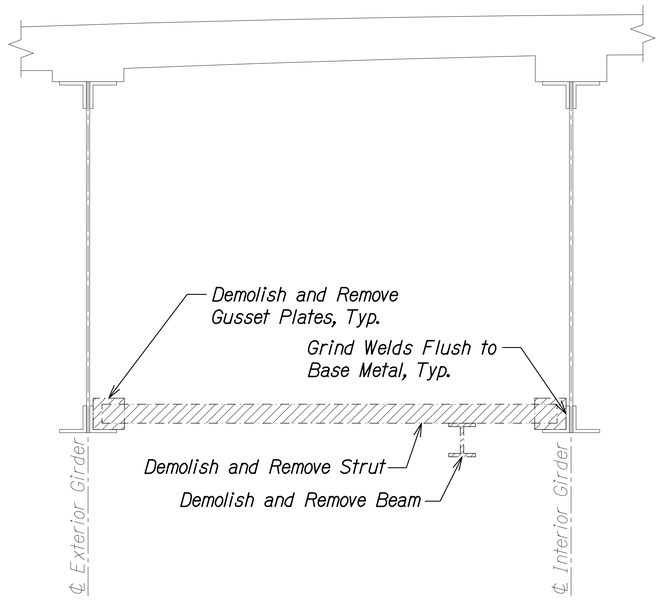
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SA10.1 OF 30 SHEETS

DRAWING NAME: Z:\OD ONDONG\23-022.9-NANUE STR BR PE2-20TH.01 CAD\10-28-24 BID SET\VSR-SA1001-SA1009 STRUT DEMO SECT.DWG PLOT TIME: 10-28-

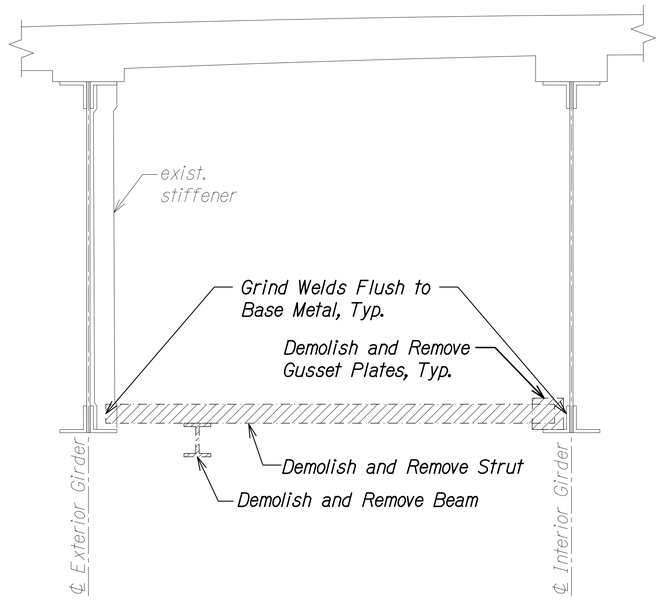
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	184	280



[A5] EXTERIOR BAY STRUT DEMO SECTION

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

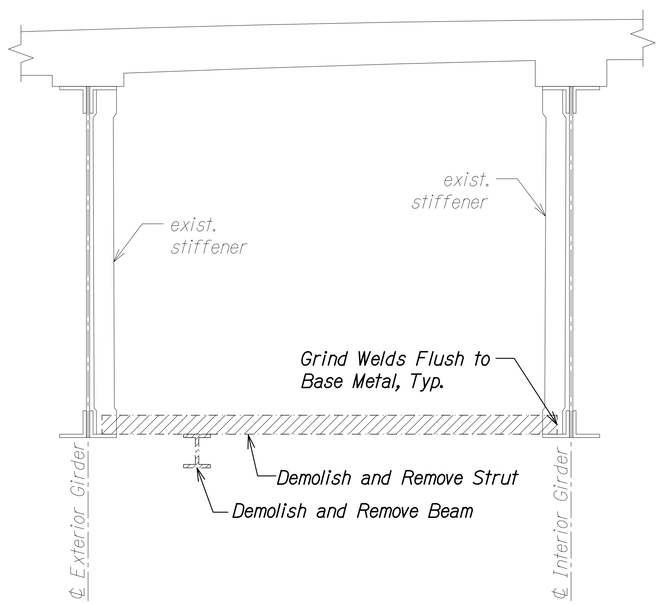
A SA10.2 | SA10.2



[A6] EXTERIOR BAY STRUT DEMO SECTION

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

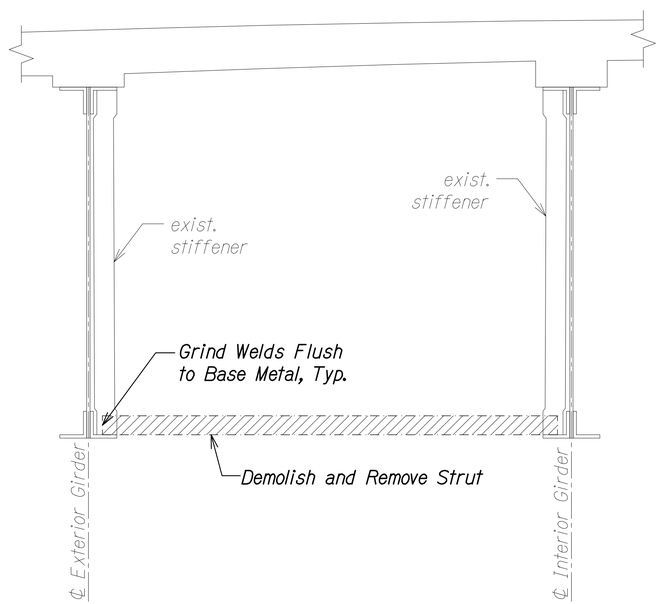
B SA10.2 | SA10.2



[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

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

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

DRAWING NAME: Z:\OD ONDONG\23-022.9-HANUE STR BR PE2-20THA\01 CAD\10-28-24 BID SET\VSR-SA1001-SA1009 STRUT DEMO SECT.DWG PLOT TIME: 10-28-

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

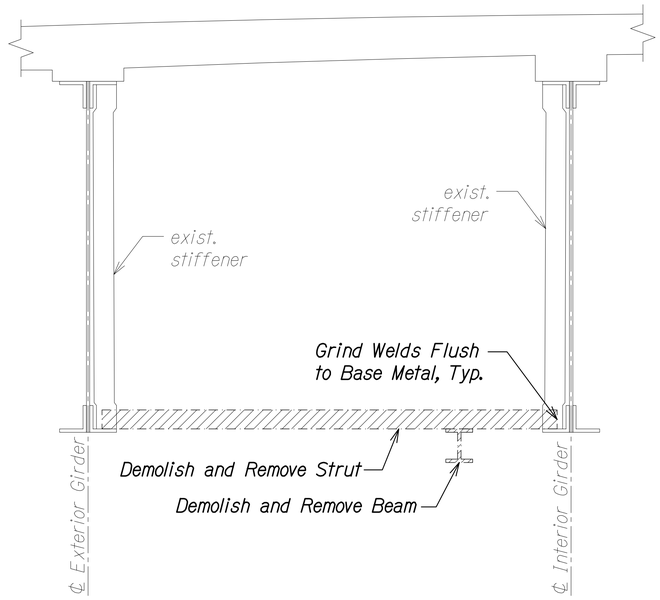
EXTERIOR BAY STRUT DEMOLITION SECTIONS

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

Scale: As Noted Date: Oct. 2024

SHEET No SA10.2 OF 30 SHEETS

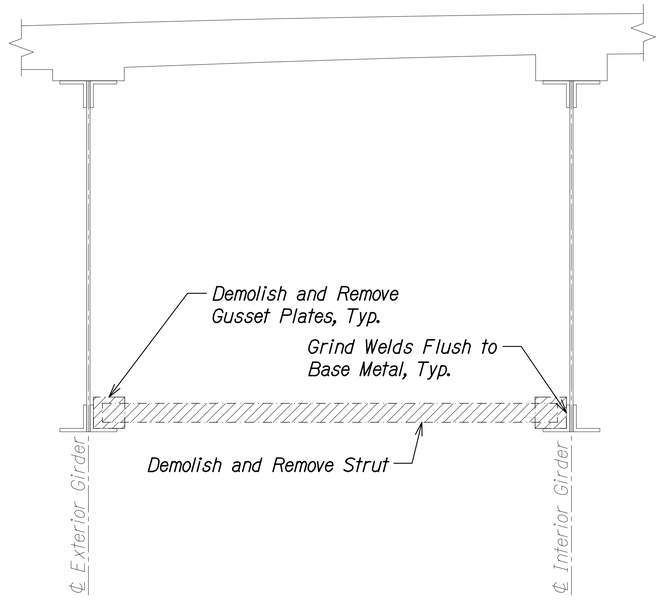
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	185	280



[A9] EXTERIOR BAY STRUT DEMO SECTION

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

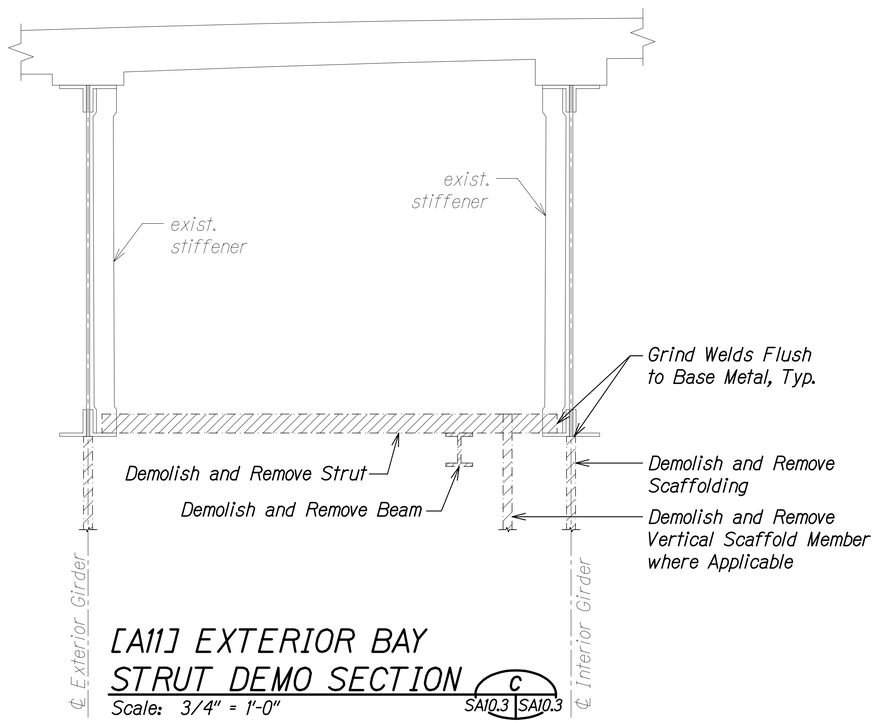
A SA10.3 | SA10.3



[A10] EXTERIOR BAY STRUT DEMO SECTION

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

B SA10.3 | SA10.3



[A11] EXTERIOR BAY STRUT DEMO SECTION

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

C SA10.3 | SA10.3

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

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

DRAWING NAME: Z:\00 ONGOING\23-022.9-NANUE STR BR PE2-20\TH\01 CAD\10-28-24 BID SET\WSR-SA1001-SA1009 STRUT DEMO SECT.DWG PLOT TIME: 10-28-24 11:42 AM

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

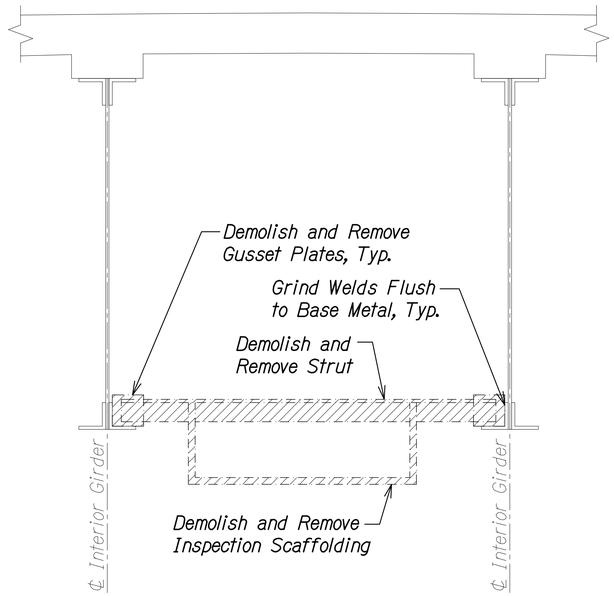
EXTERIOR BAY STRUT DEMOLITION SECTIONS

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

Scale: As Noted Date: Oct. 2024

SHEET NO SA10.3 OF 30 SHEETS

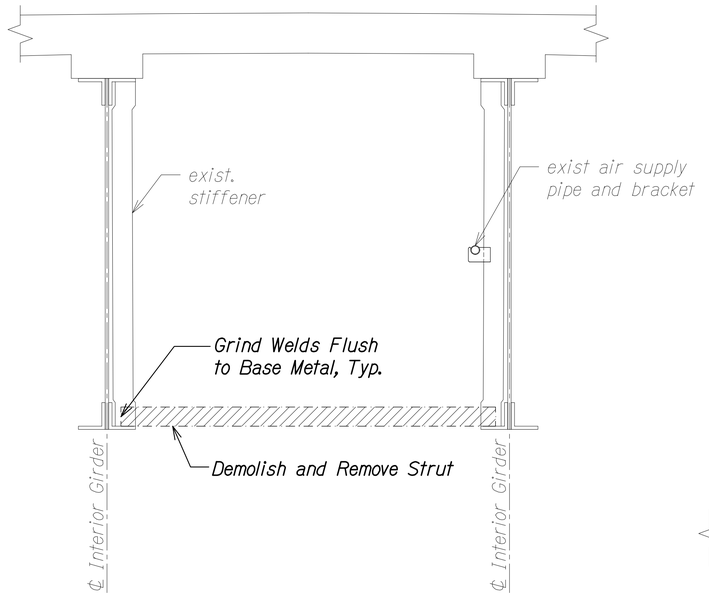
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	186	280



[B1] INTERIOR BAY STRUT DEMO SECTION

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

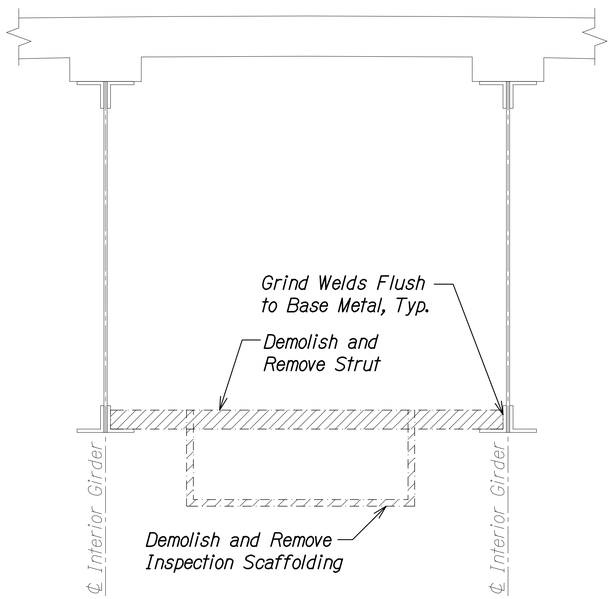
A SA10.4 | SA10.4



[B2] INTERIOR BAY STRUT DEMO SECTION

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

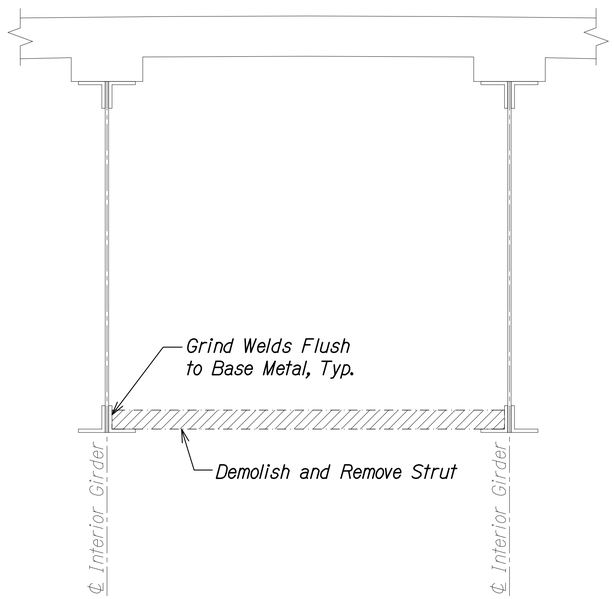
B SA10.4 | SA10.4



[B3] INTERIOR BAY STRUT DEMO SECTION

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

C SA10.4 | SA10.4



[B4] INTERIOR BAY STRUT DEMO SECTION

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

D SA10.4 | SA10.4

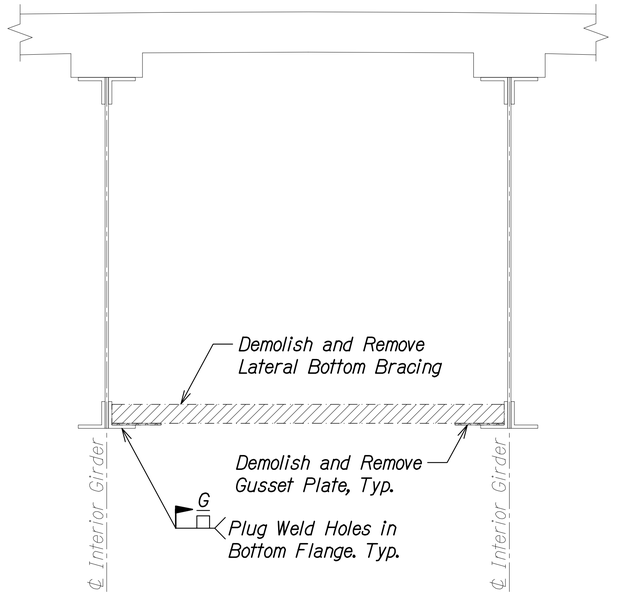
LEGEND:

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.



INTERIOR BAY LATERAL BOTTOM BRACING DEMO SECTION

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

E SA10.4 | SA10.4

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

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4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

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)

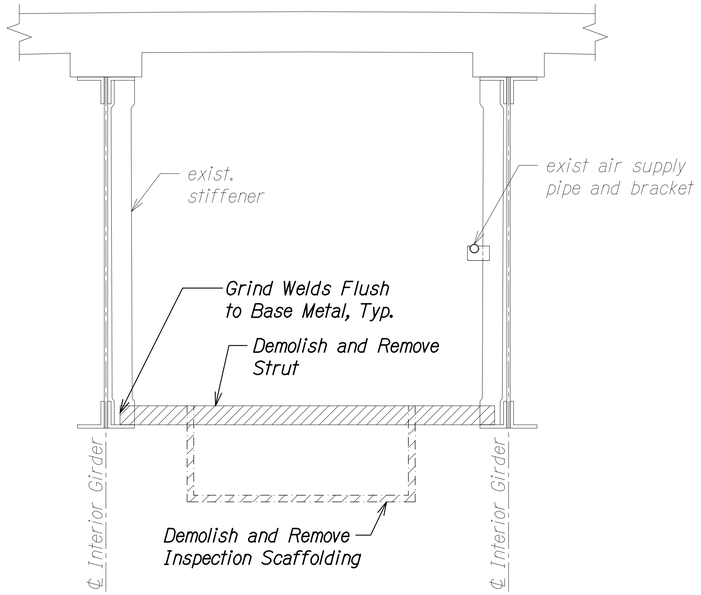
Scale: As Noted Date: Oct. 2024

SHEET No SA10.4 OF 30 SHEETS

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

DRAWING NAME: Z:\OD ONDONCA.23-0229-NANUE STR BR PE2-EOTH.01 CAD\10-28-24 BID SET\NSR-SA1001-SA1009 STRUT DEMO SECT.DWG PLOT TIME: 10-28-24, 11:42 AM

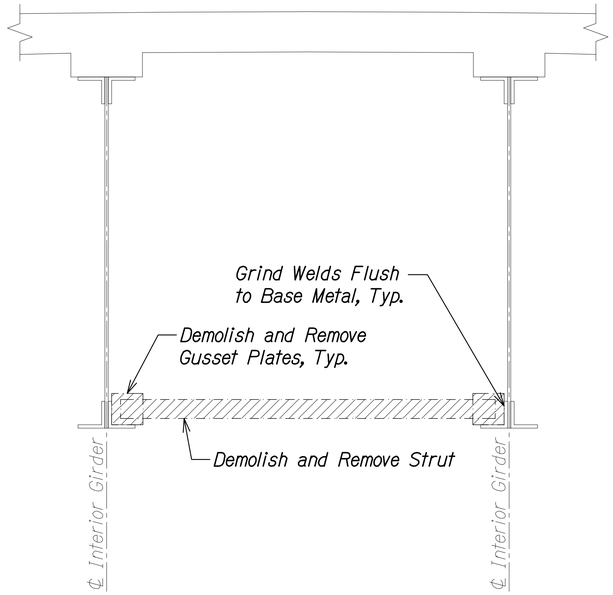
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	187	280



[B5] INTERIOR BAY STRUT DEMO SECTION (A)

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

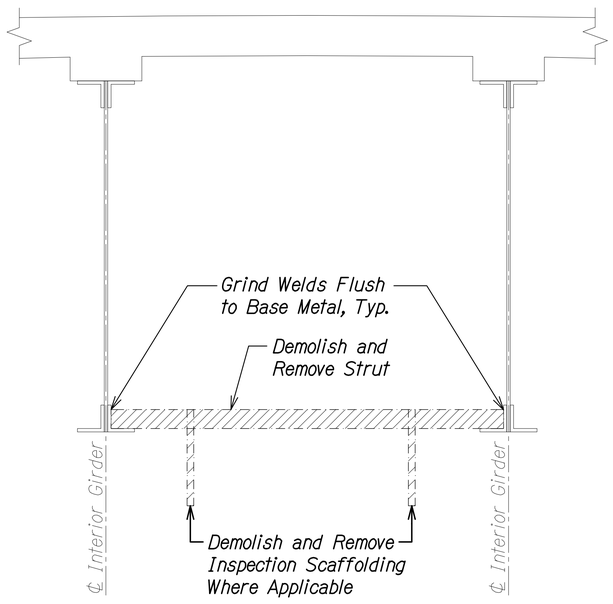
SA10.5 | SA10.5



[B6] INTERIOR BAY STRUT DEMO SECTION (B)

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

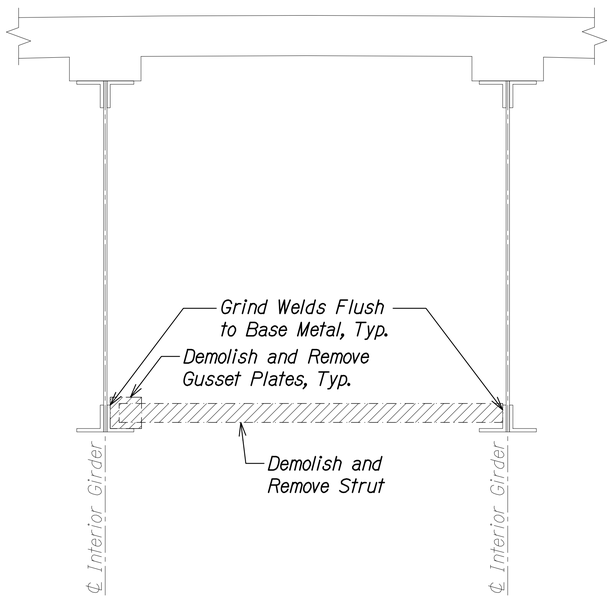
SA10.5 | SA10.5



[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

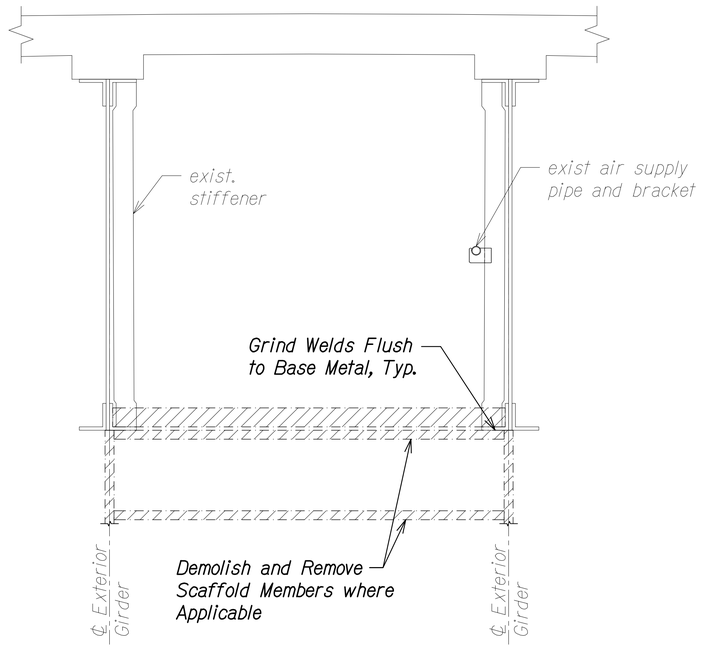
LEGEND:

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



[B9] INTERIOR BAY STRUT DEMO SECTION (E)

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

SA10.5 | SA10.5

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

INTERIOR BAY STRUT DEMOLITION SECTIONS

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

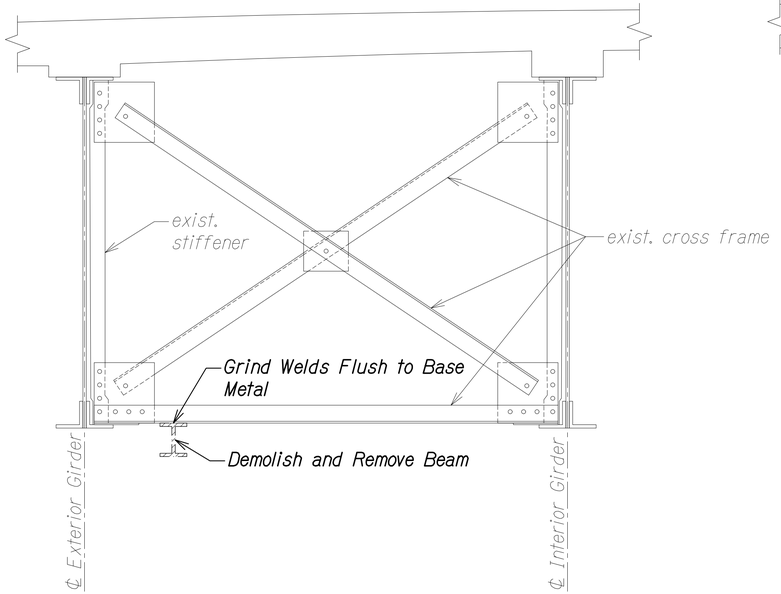
Scale: As Noted Date: Oct. 2024

SHEET No SA10.5 OF 30 SHEETS

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

DRAWING NAME: Z:\DOT\ENGINEERING\23-022.9-NANUE STR BR PE2-3DTM\01 CAD\10-28-24 BID SET\SGR-SA1001-SA1009 STRUT DEMO SECT.DWG PLOT TIME: 10-28-24 6:18 PM)

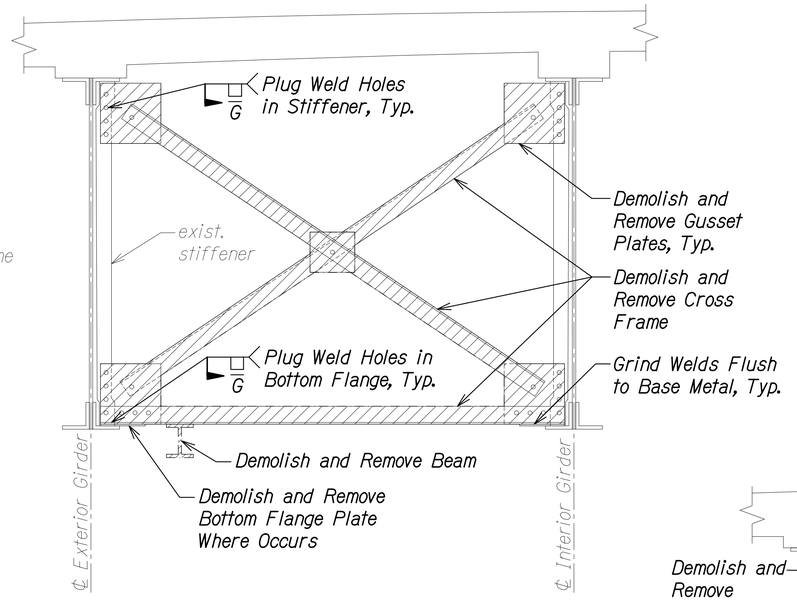
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	188	280



[C1] EXTERIOR BAY DEMO SECTION AT IN-SPAN CROSS FRAME (A)

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

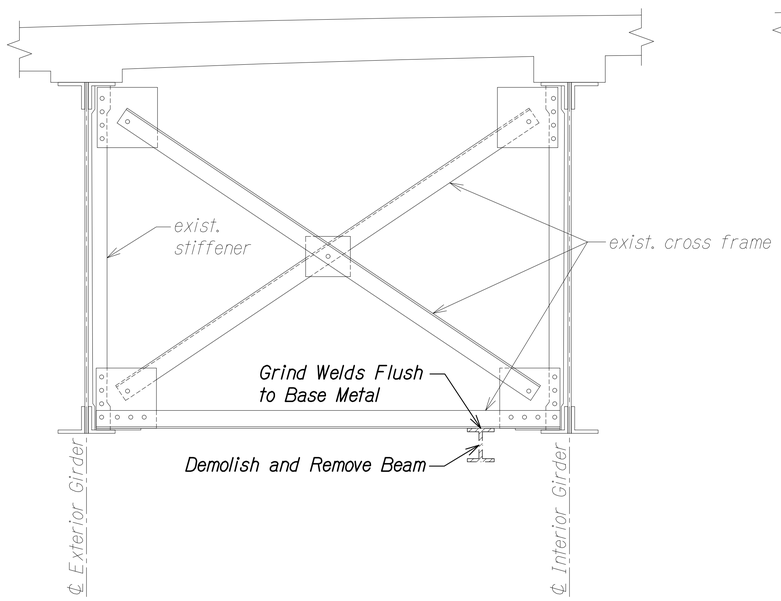
SA10.6 | SA10.6



[C2] EXTERIOR BAY DEMO SECTION AT IN-SPAN CROSS FRAME (B)

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

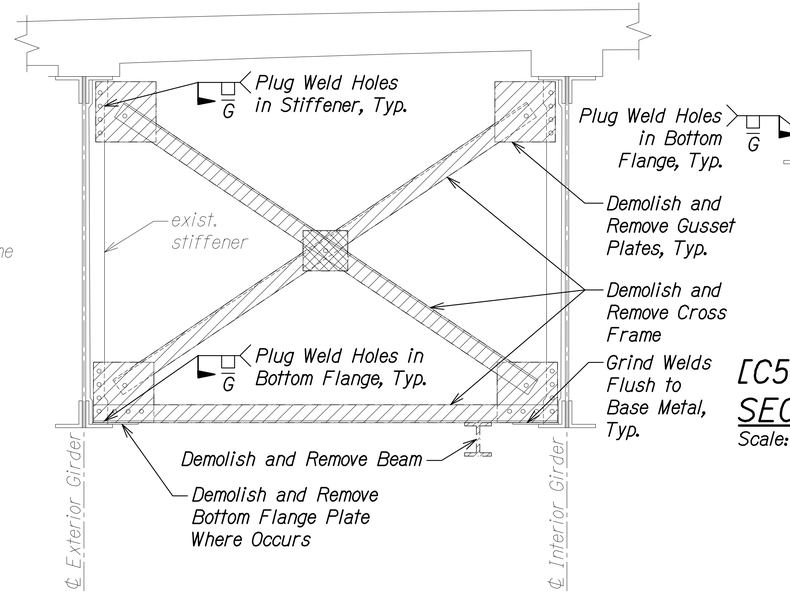
SA10.6 | SA10.6



[C3] EXTERIOR BAY DEMO SECTION AT IN-SPAN CROSS FRAME (C)

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

SA10.6 | SA10.6



[C4] EXTERIOR BAY DEMO SECTION AT IN-SPAN CROSS FRAME (D)

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

SA10.6 | SA10.6

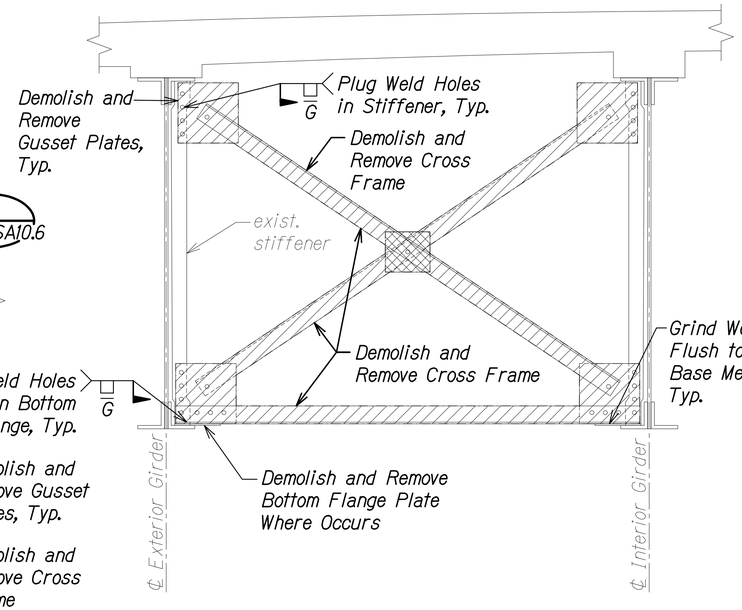
LEGEND:

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



[C5] EXTERIOR BAY DEMO SECTION AT IN-SPAN CROSS FRAME (E)

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

SA10.6 | SA10.6

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

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

IN-SPAN CROSS FRAME DEMOLITION SECTIONS

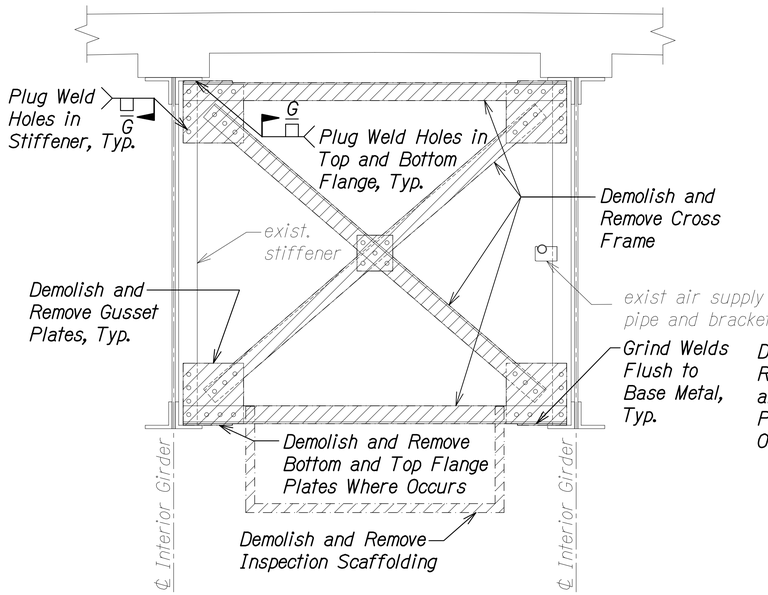
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No SA10.6 OF 30 SHEETS

DRAWING NAME: ZA:\OD ONO\NOV\23-022.9-NANUE STR BR PEZ-2D\TH\01 CAD\10-28-24 BID SER\SGR-SA1001-SA1009 STRUT DEMO SECT.DWG PLOT TIME: 10-28-24, 11:43 AM

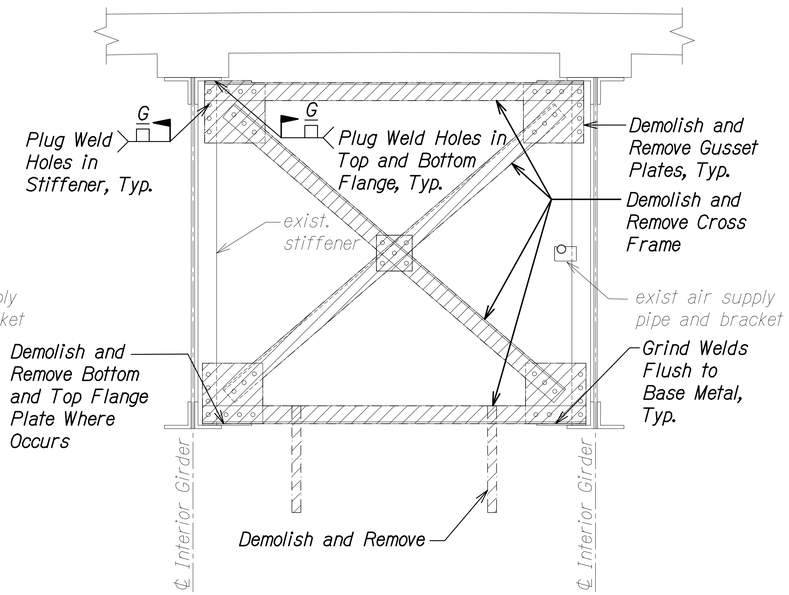
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	189	280



[C6] INTERIOR BAY DEMO
SECTION AT IN-SPAN CROSS FRAME (A)

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

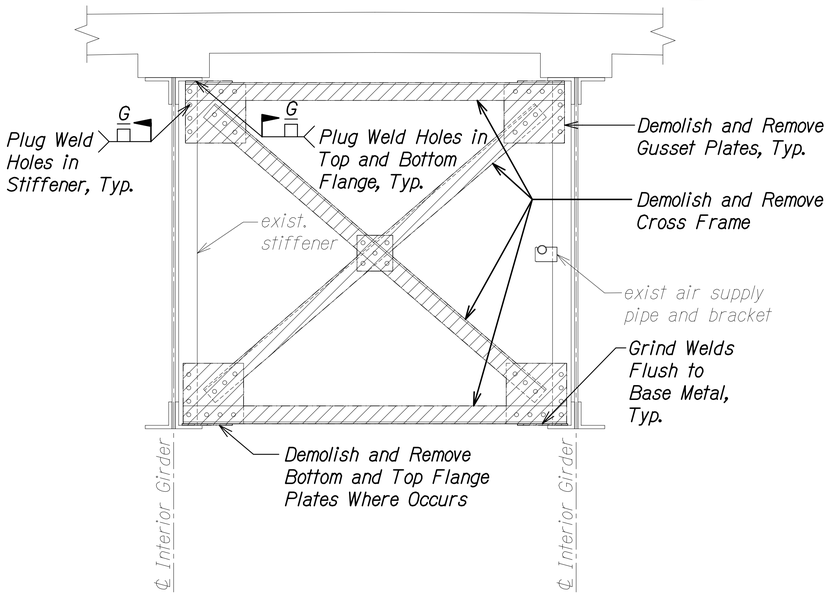
SA10.7 | SA10.7



[C7] INTERIOR BAY DEMO
SECTION AT IN-SPAN CROSS FRAME (B)

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

SA10.7 | SA10.7



[C8] INTERIOR BAY DEMO
SECTION AT IN-SPAN CROSS FRAME (C)

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

SA10.7 | SA10.7

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

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

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

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

SHEET No SA10.7 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	190	280

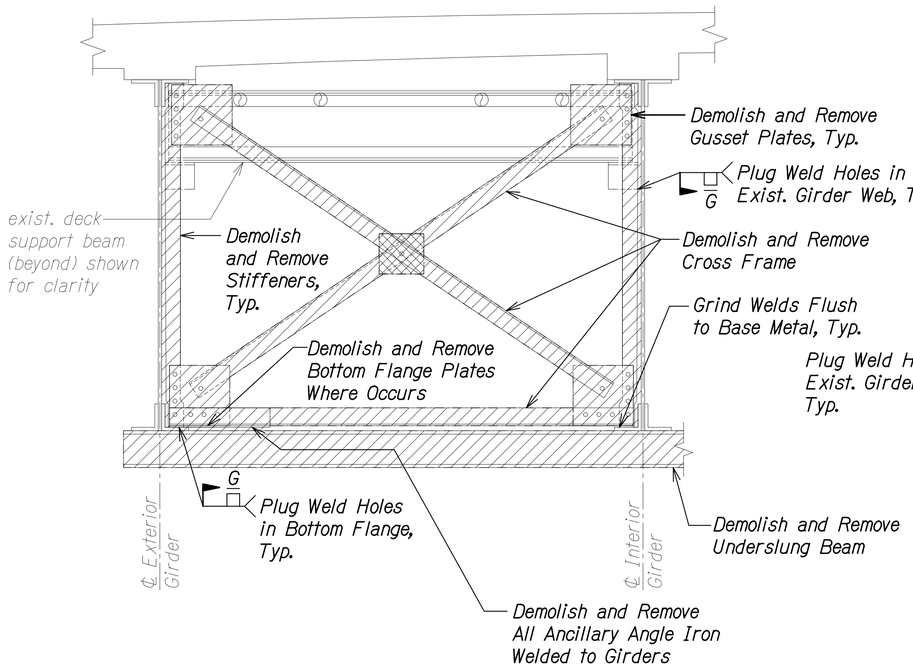
LEGEND:

Demolish and Remove

[XX] Strut Mark, See SA9.1 through SA9.5 for locations

NOTES:

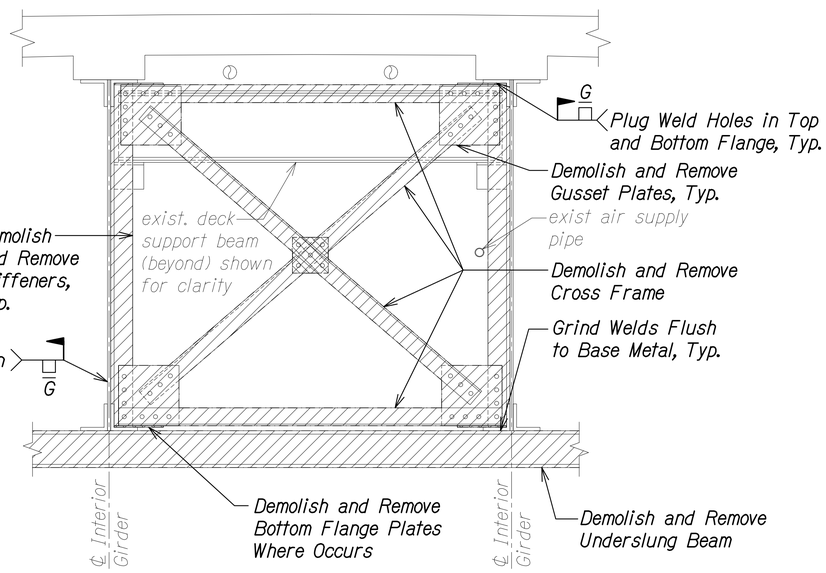
1. The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
2. Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
3. Details beyond shown bay are not provided.
4. See Sheet SA10.11 for miscellaneous demolition details



[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

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: Z:\OD\ ONGOING\23-022\3-NANUE STR BR PE2-BOTH\01 CAD\10-28-24 BID SET\NSB-SA1001-SA1009 STRUT DEMO SECT.DWG PLOT TIME: 10-28-24, 11:32 AM

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

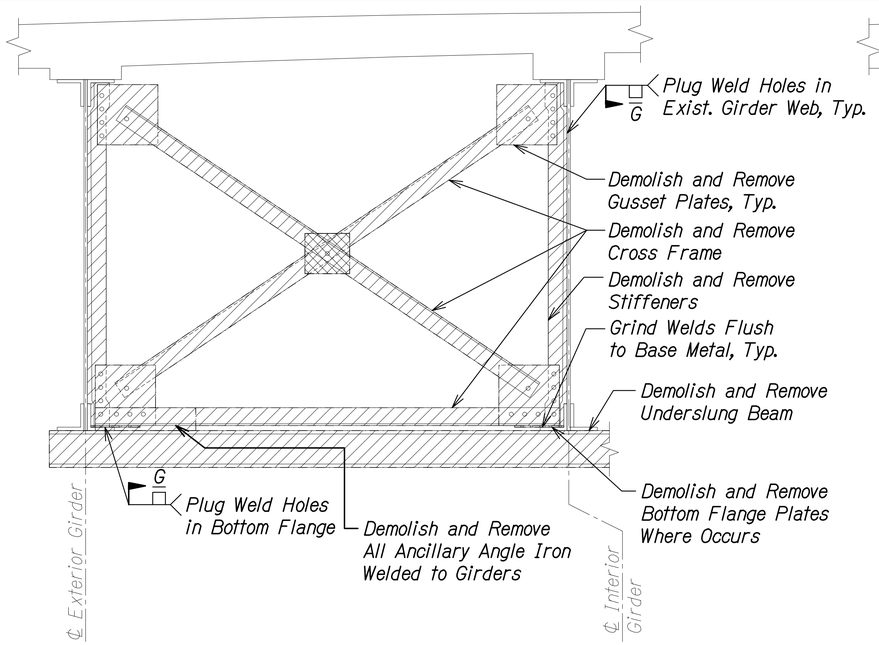
EXPANSION BEARING CROSS FRAME DEMOLITION SECTIONS

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

Scale: As Noted Date: Oct. 2024

SHEET NO SA10.8 OF 30 SHEETS

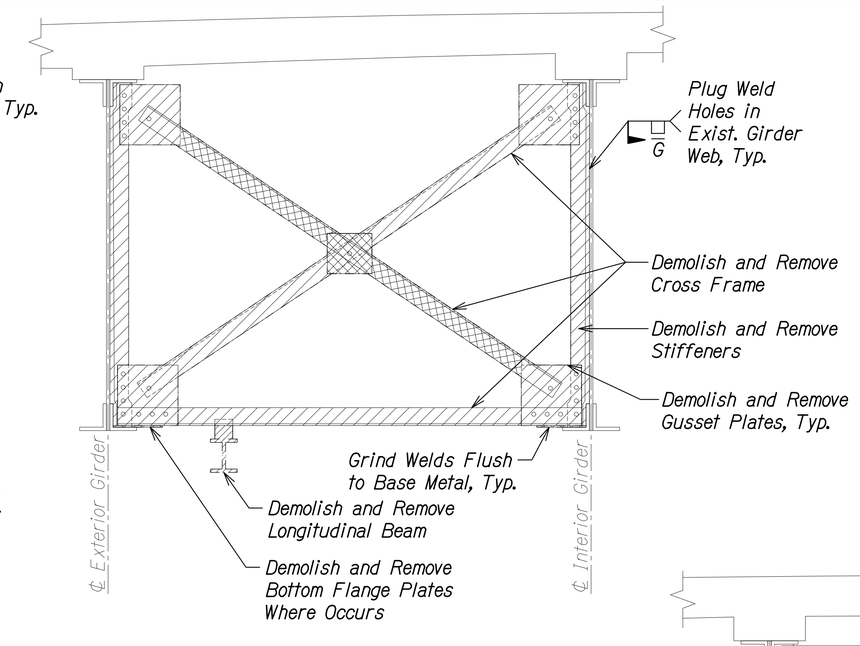
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	191	280



[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

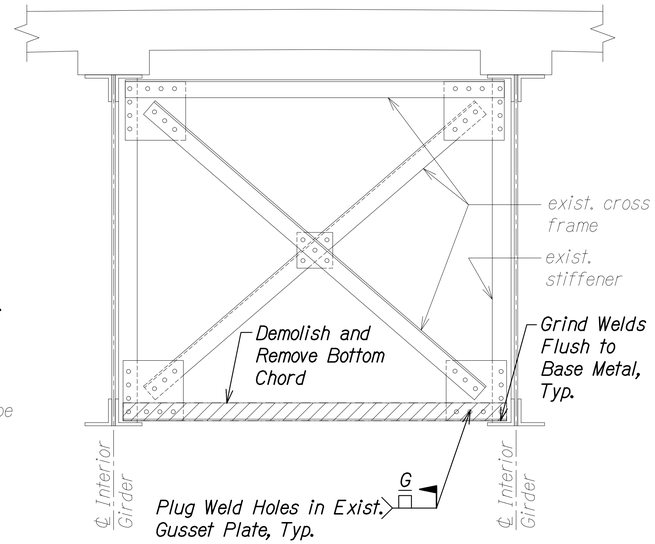
LEGEND:

Demolish and Remove

[XX] Strut Mark, See SA9.1 through SA9.5 for locations

NOTES:

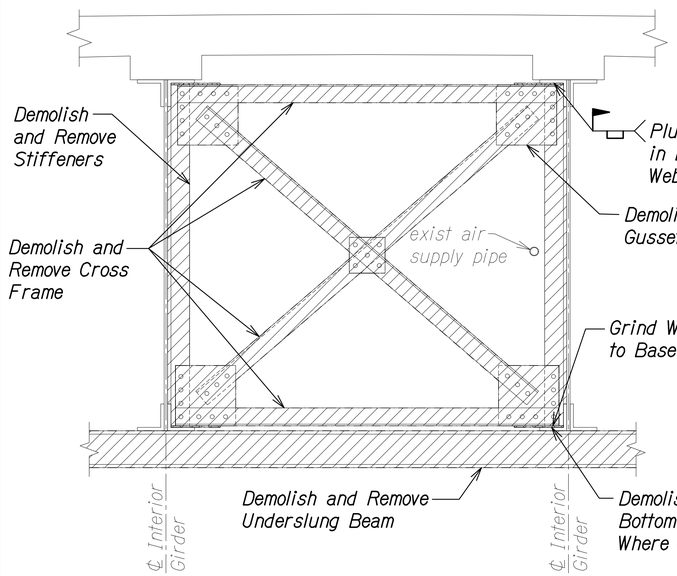
1. The Contractor shall take care when removing existing steel members so as not to damage the existing steel members to remain.
2. Remove all exist. wood board inspection planks (not shown) and deliver to HDOT maintenance yard.
3. Details beyond shown bay are not provided.
4. See Sheet SA10.11 for miscellaneous demolition details.



[F5] INTERIOR BAY DEMO SECTION AT FIXED ABUTMENT

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

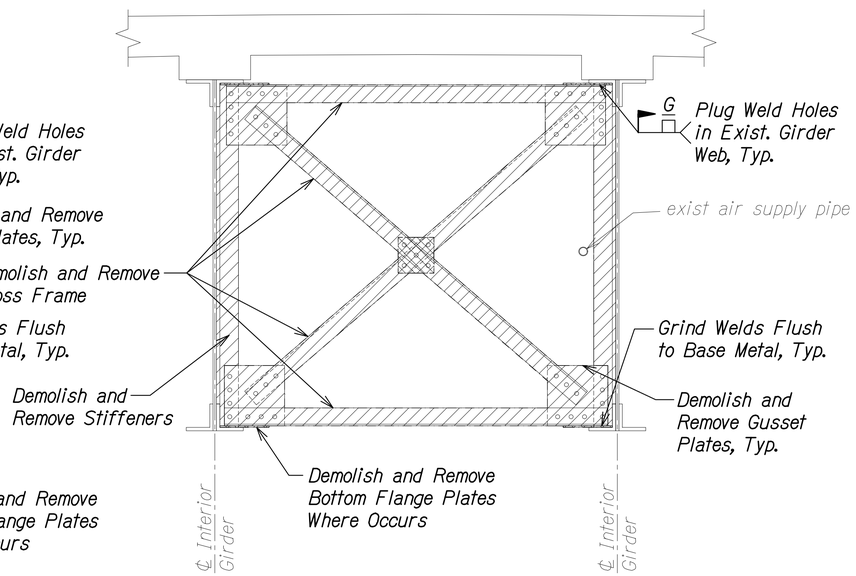
E SA10.9 | SA10.9



[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

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

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

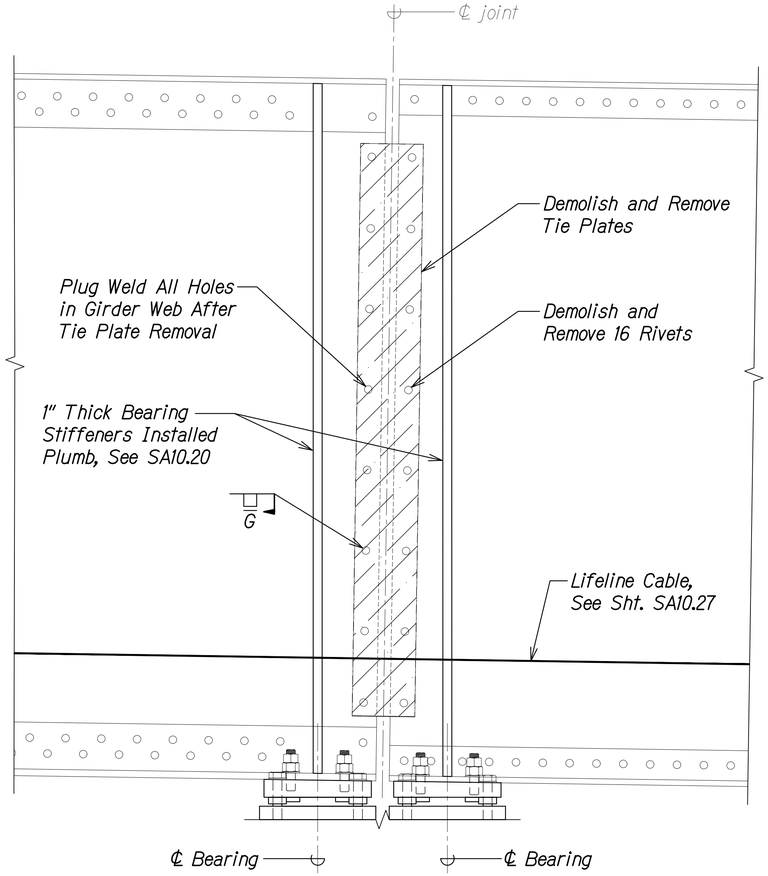
FIXED BEARING CROSS FRAME DEMOLITION SECTIONS

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

Scale: As Noted Date: Oct. 2024

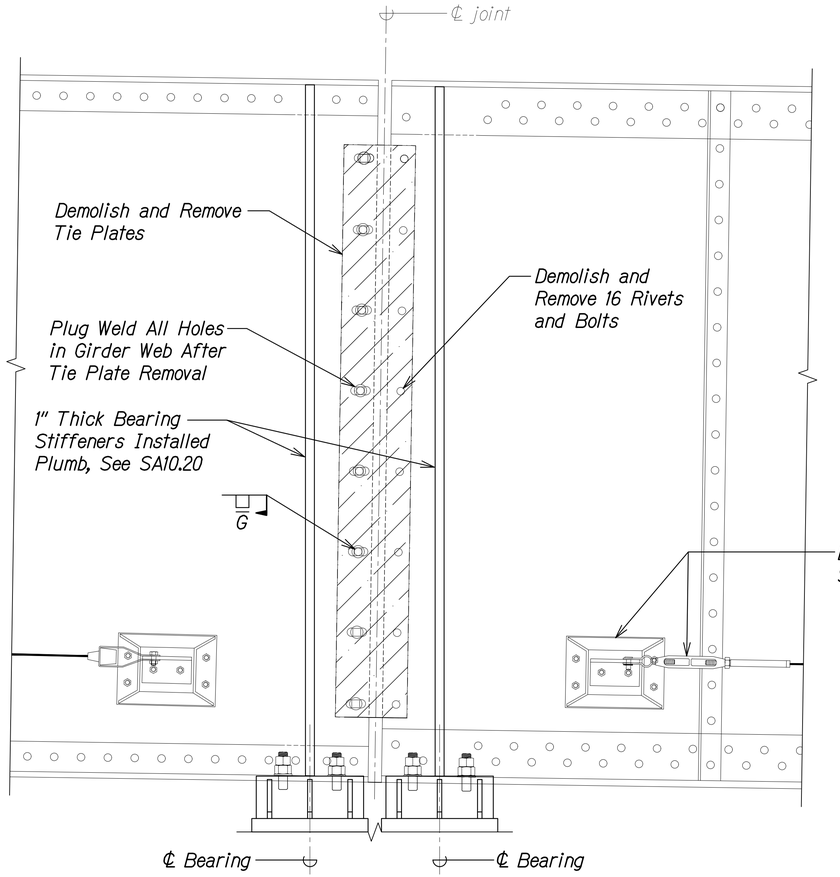
SHEET No SA10.9 OF 30 SHEETS

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 (A) SA10.10 | SA10.10

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



TIE PLATE DEMO ELEVATION - EXPANSION BEARING (B) SA10.10 | SA10.10

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

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.

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

TIE PLATE DEMOLITION ELEVATIONS AT BEARINGS

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

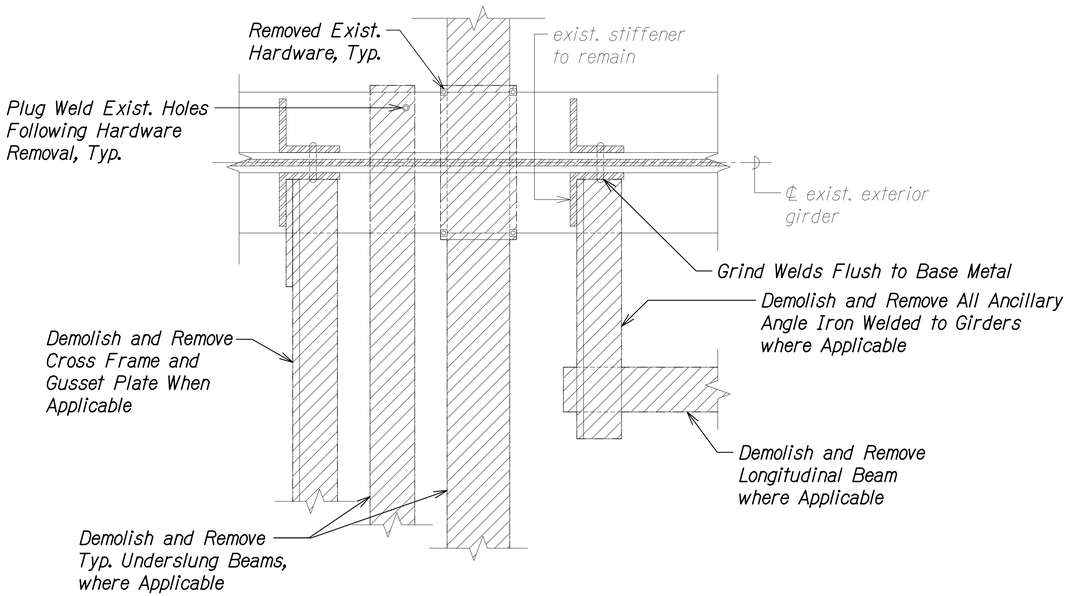
Scale: As Noted Date: Oct. 2024

SHEET NO SA10.10 OF 30 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022\2-NANUE STR BR REZ-DOTH\OT CAD\10-28-24 BID SET\HSR-SA1010 TIE PLATE.DWG PLOT TIME: 10-28-24, 11:45 AM

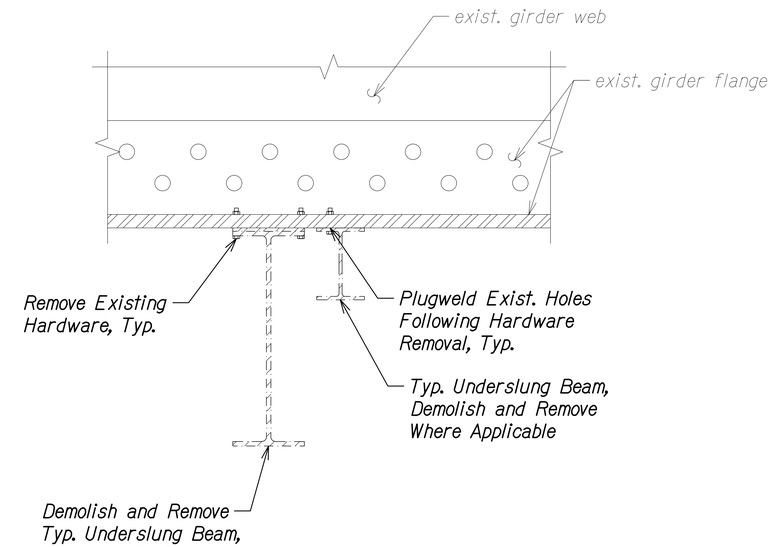
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	193	280



TYPICAL EXTERIOR BAY DEMO DETAIL AT BEARING

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

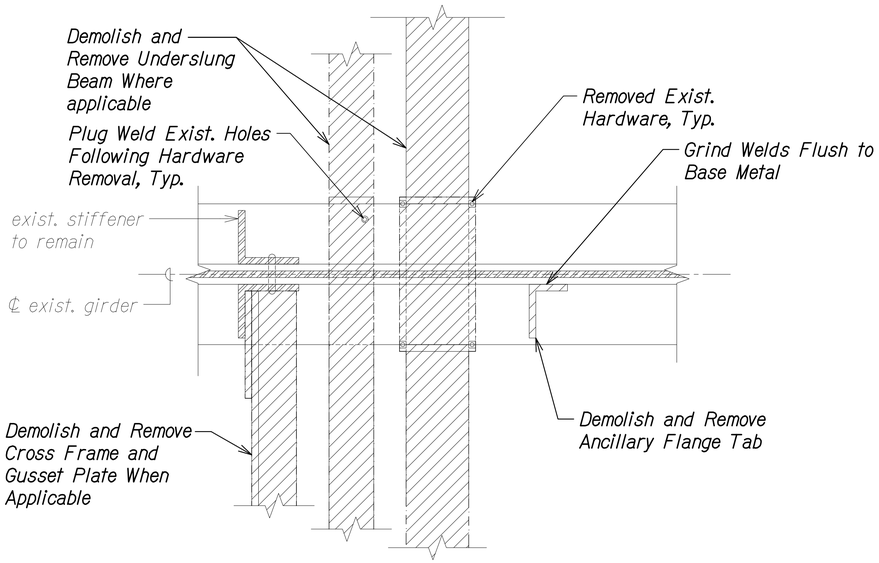
1 SA10.11 | SA10.11



TYPICAL UNDERSLUNG BEAM DEMO DETAIL

Scale: 1" = 1'-0"

2 SA10.11 | SA10.11



TYPICAL INTERIOR BAY DEMO DETAIL AT BEARING

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

3 SA10.11 | SA10.11

LEGEND:

Demolish and Remove

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

MISCELLANEOUS DEMOLITION DETAILS

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

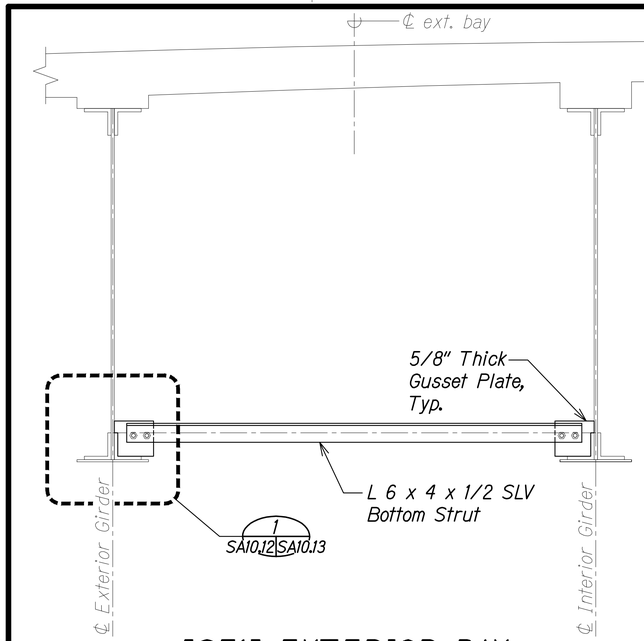
Scale: As Noted Date: Oct. 2024

SHEET NO SA10.11 OF 30 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-DOT\HAOT CAD\10-28-24 BID SET\VSR-SA1011 MISC DEMO.DWG PLOT TIME: 10-28-24, 3:22 PM

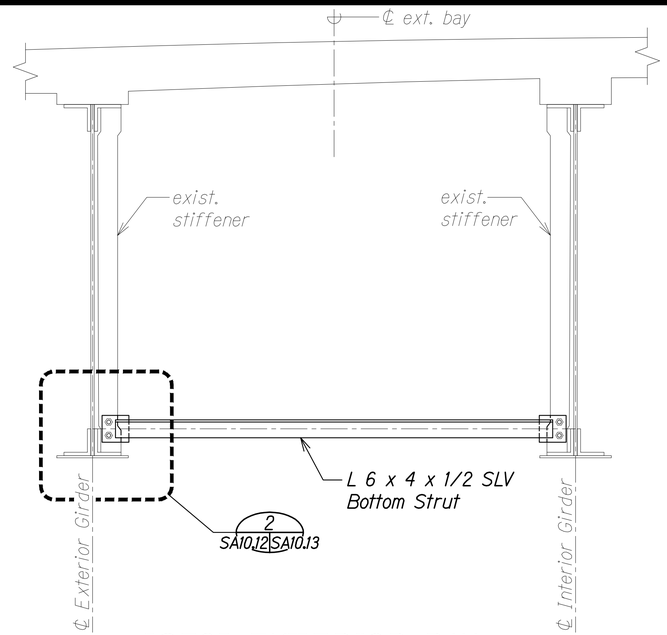
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	194	280



[SE1] EXTERIOR BAY STRUT SECTION

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

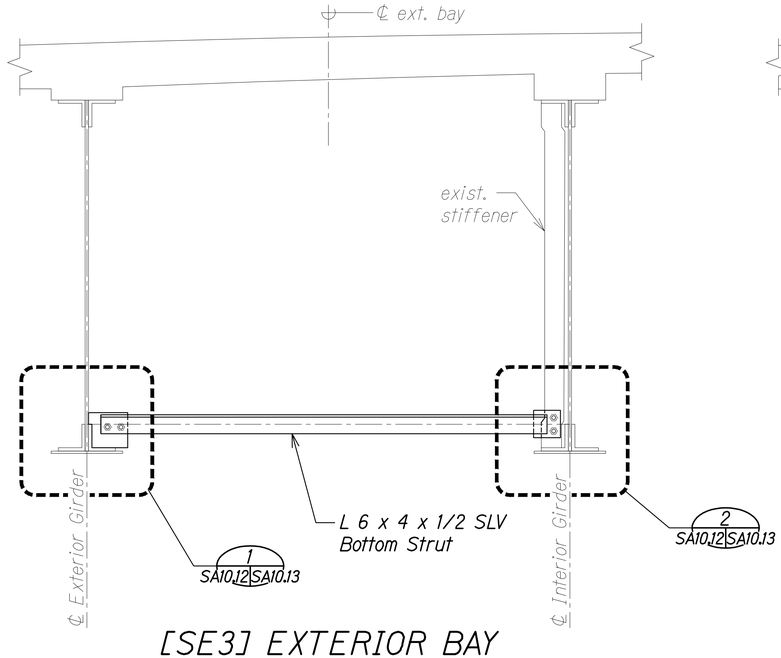
A
SA10.12 SA10.12



[SE2] EXTERIOR BAY STRUT SECTION

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

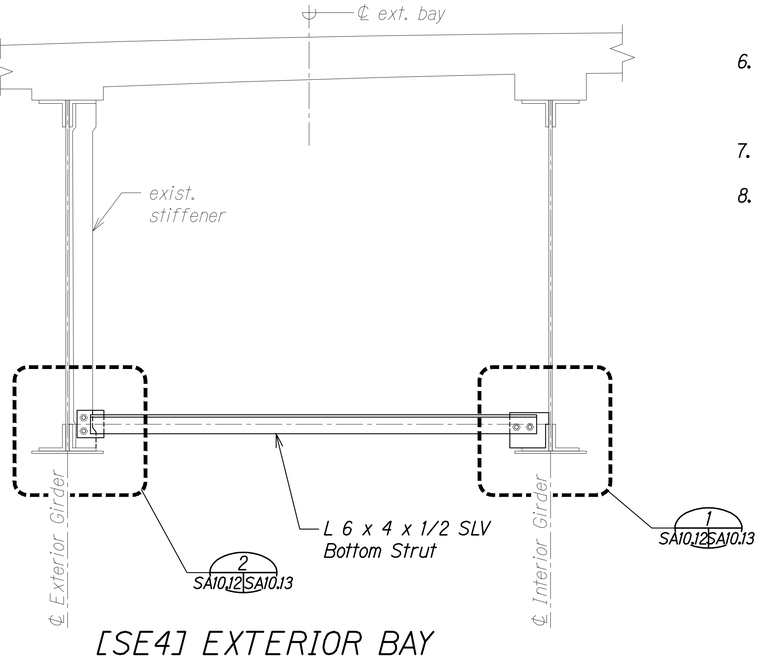
B
SA10.12 SA10.12



[SE3] EXTERIOR BAY STRUT SECTION

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

C
SA10.12 SA10.12



[SE4] EXTERIOR BAY STRUT SECTION

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

D
SA10.12 SA10.12

LEGEND:

[XXX] Strut Mark, See SA9.6 through SA9.10 for locations

NOTES:

1. The Contractor shall field fit strut members and gussets prior to welding and galvanizing assemblies.
2. 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.
3. Strut assemblies shall be delivered to the site fully assembled, hot-dip zinc galvanized per ASTM A123 and shop painted with primer in accordance with Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL of the Special Provisions.
4. 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.
5. 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.
6. Strut assemblies shall receive field applied stripe coat, intermediate coat, and top coat in accordance with Section 666 - BLAST, CLEAN, AND PAINT EXISTING BRIDGE STEEL of the Special Provisions.
7. Details from adjacent bays not shown for clarity.
8. See Sheet SA9.23 for required sequence regarding strut replacement and corresponding traffic control requirements.

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

DRAWING NAME: ZA100 ONGOING\23-0229-NANUE STR BR PE2-20\TA\01 CAD\10-28-24 BID SET\VSR-SA1012-SA1024 STRUT X-FINAL.DWG PLOT TIME: 10-28-24, 11:57 AM

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

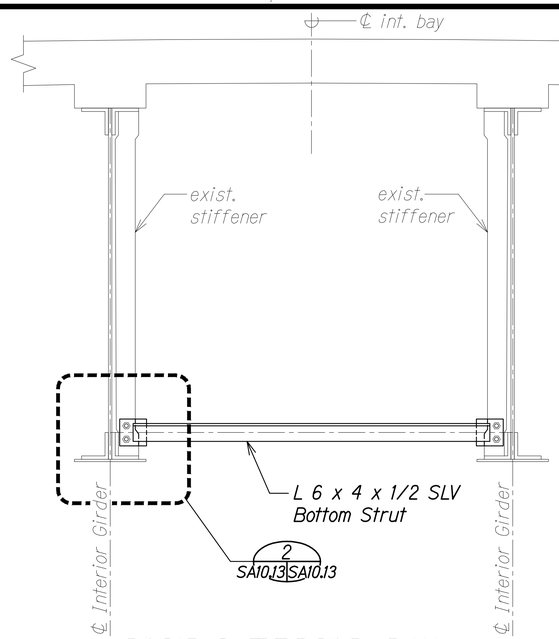
EXTERIOR BAY STRUT SECTIONS

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

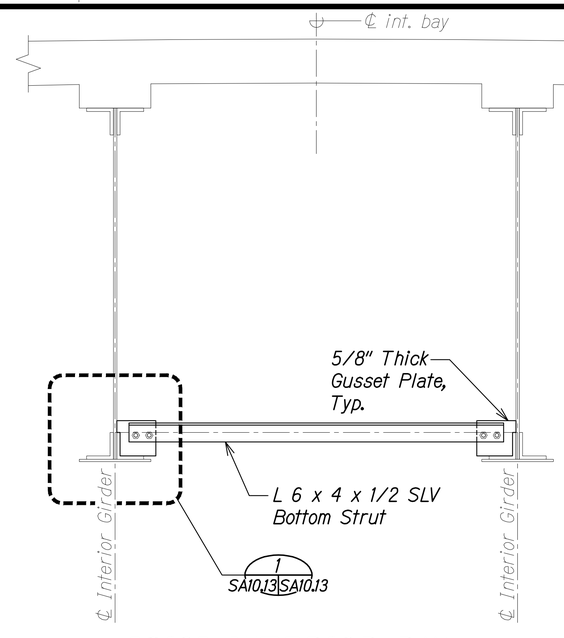
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	195	280



[SI1] INTERIOR BAY STRUT SECTION

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

A SA10.13 | SA10.13



[SI2] INTERIOR BAY STRUT SECTION

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

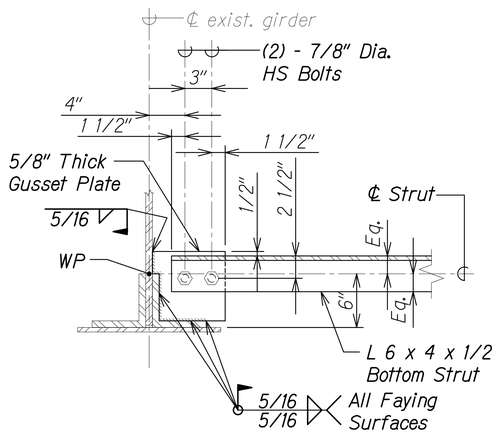
B SA10.13 | SA10.13

LEGEND:

[XXX] Strut Mark, See SA9.6 through SA9.10 for locations

NOTES:

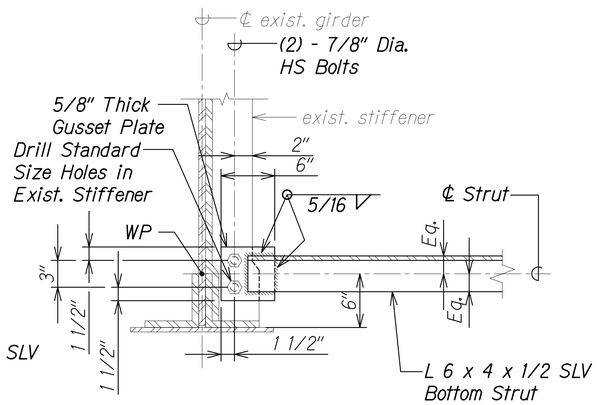
1. *The Contractor shall field fit strut members and gussets prior to welding and galvanizing assemblies.*
2. *New gussets welded directly to exist. plate girders shall be provided ungalvanized. Field drill standard size holes in exist. girder stiffeners and new welded gusset plates to match bolt pattern in new strut assembly.*
3. *Strut assemblies shall be delivered to the site fully assembled, hot-dip zinc galvanized per ASTM A123 and shop painted with primer in accordance with Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL of the Special Provisions.*
4. *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.*
5. *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.*
6. *Strut assemblies shall receive field applied stripe coat, intermediate coat, and top coat in accordance with Section 666 - BLAST, CLEAN, AND PAINT EXISTING BRIDGE STEEL of the Special Provisions.*
7. *Details from adjacent bays not shown for clarity.*
8. *See Sheet SA9.23 for required sequence regarding strut replacement and corresponding traffic control requirements.*



DETAIL

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

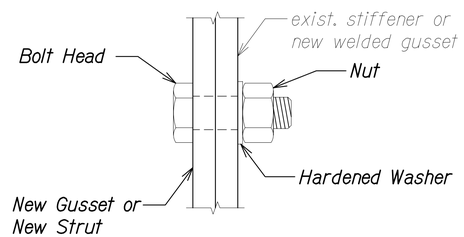
1 SA10.12 | SA10.13 SA10.13



DETAIL

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

2 SA10.12 | SA10.13 SA10.13



BOLT CONNECTION DETAIL

Scale: 6" = 1'-0"

3 SA10.13 | SA10.13

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

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

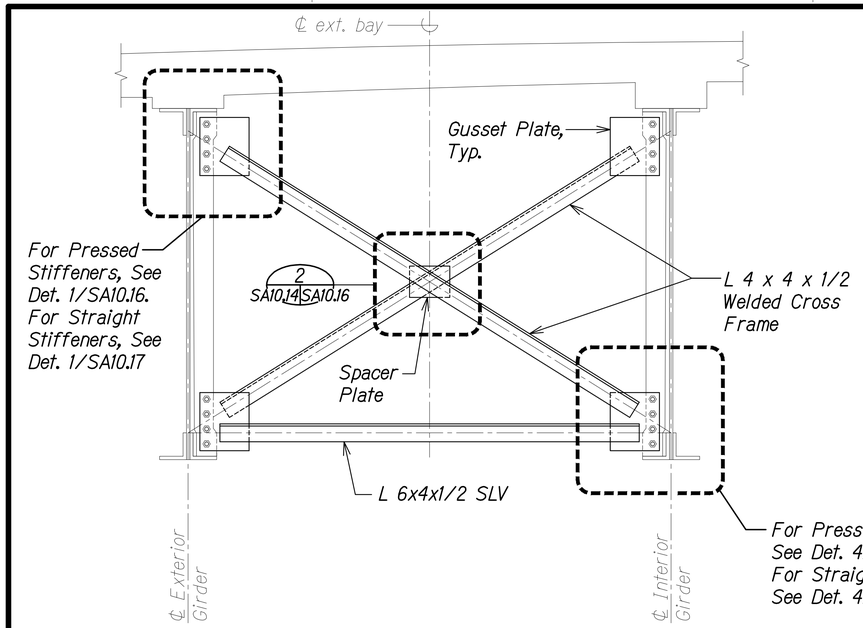
SHEET No SA10.13 OF 30 SHEETS

ORIGINAL PLAN | NOTE BOOK | No.

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

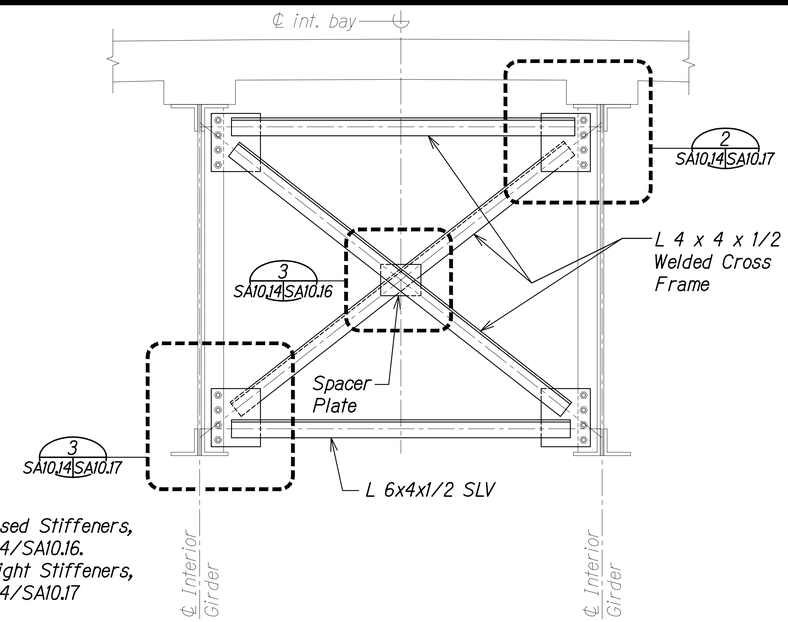
DRAWING NAME: Z:\OD ONGOING\23-0223-NANUE STR BR PE2-EOTA\01 CAD\10-28-24 BID SET\PSR-SA1012-SA1024 STRUT X-FING.DWG PLOT TIME: 10-28-24 11:57 AM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	196	280



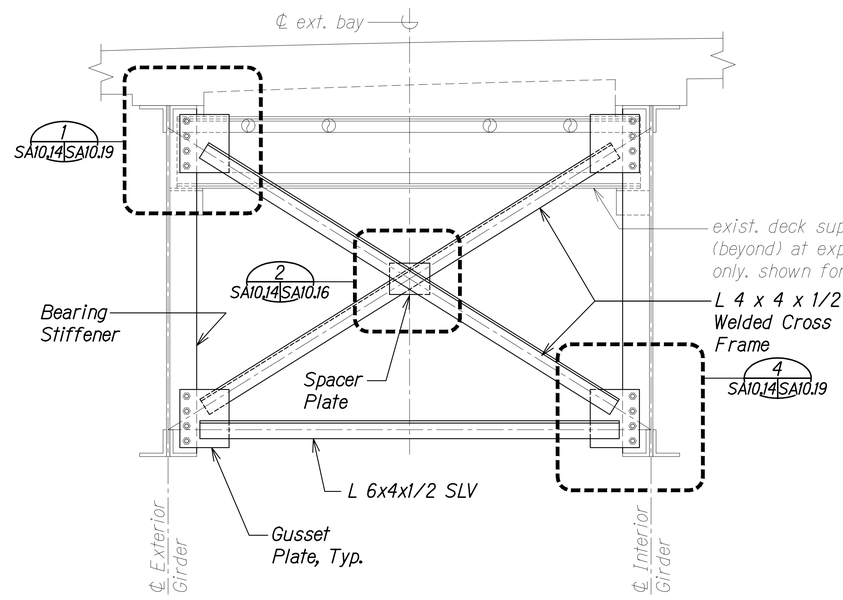
[R1] EXTERIOR BAY SECTION AT IN-SPAN CROSS FRAME (A SA10.14 SA10.14)

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



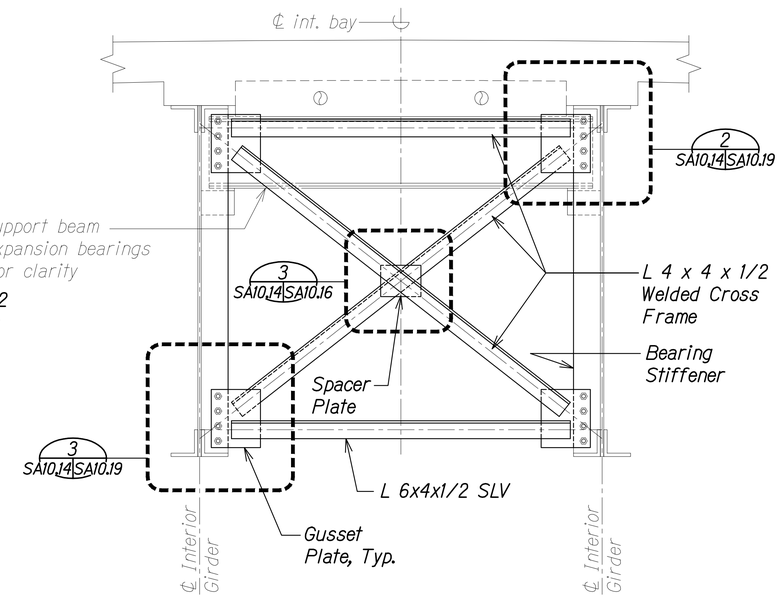
[R2] INTERIOR BAY SECTION AT IN-SPAN CROSS FRAME (B SA10.14 SA10.14)

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



[R3] EXTERIOR BAY SECTION AT FIXED & EXPANSION BEARING CROSS FRAMES (C SA10.14 SA10.14)

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



[R4] INTERIOR BAY SECTION AT FIXED & EXPANSION BEARING CROSS FRAMES (D SA10.14 SA10.14)

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

LEGEND:

[XXX] Strut Mark, See SA9.6 through SA9.10 for locations

NOTES:

1. The Contractor shall field fit frame members and gussets prior to welding and galvanizing assemblies.
2. 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.
3. 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.
4. Cross frame assemblies shall be delivered to the site fully assembled, hot-dip zinc galvanized per ASTM A123, and shop painted with primer in accordance with Section 667 - PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL of the Special Provisions.
5. 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.
6. 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.
7. Cross frame assemblies shall receive field applied stripe coat, intermediate coat, and top coat in accordance with Section 666 - BLAST, CLEAN, AND PAINT EXISTING BRIDGE STEEL of the Special Provisions.
8. Details from adjacent bays not shown for clarity.
9. See Sheet SA9.23 for required sequence regarding cross frame replacement and corresponding traffic control requirements.

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

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

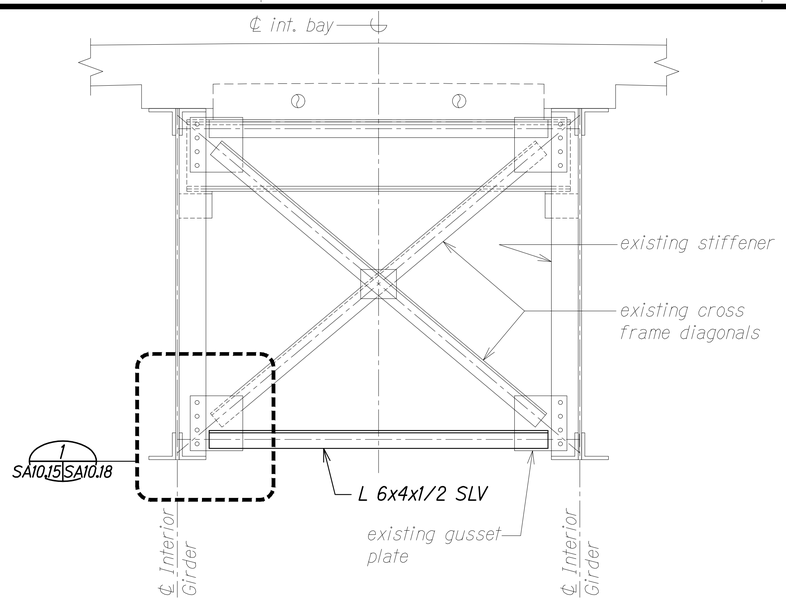
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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



[R5] INTERIOR BAY SECTION AT FIXED ABUTMENT CROSS FRAME

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

A
SA10.15|SA10.15

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.

ORIGINAL PLAN | NOTE BOOK | No.

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

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ABUTMENT CROSS FRAME SECTION

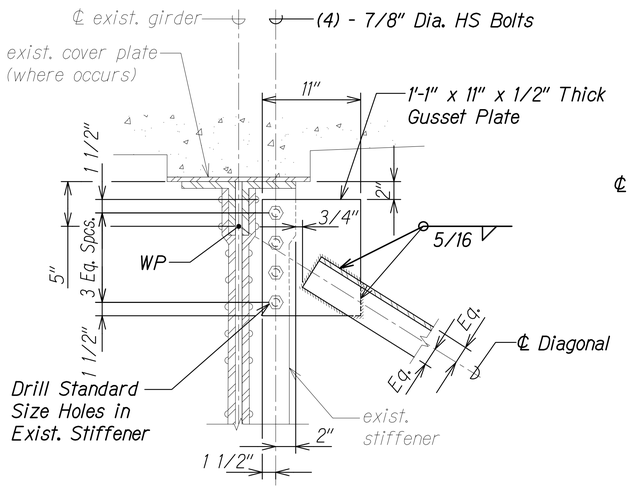
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

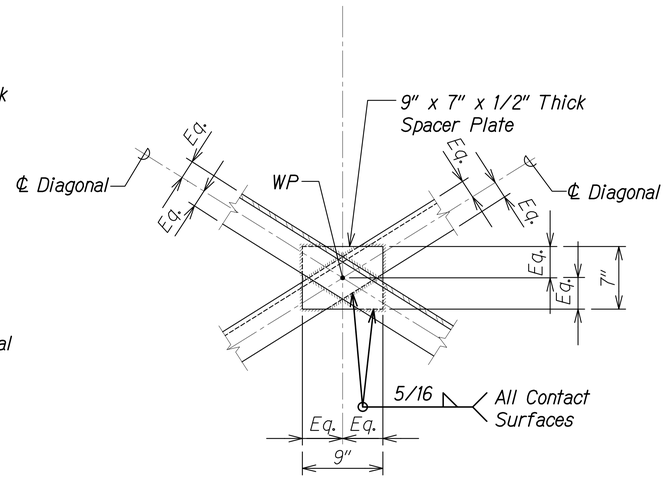
SHEET NO SA10.15 OF 30 SHEETS

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-DOTHA\OT CAD\10-28-24 BID SET\SR-SA1012-SA1024 STRUT X-FRMS.DWG PLOT TIME: 10-28-24, 3:19 PM)

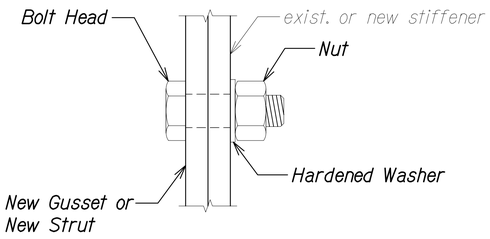
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	198	280



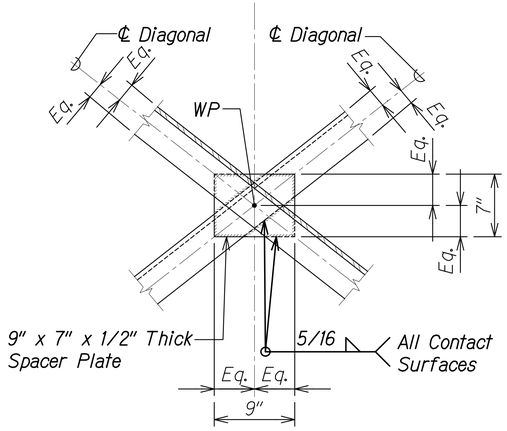
DETAIL 1
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.16



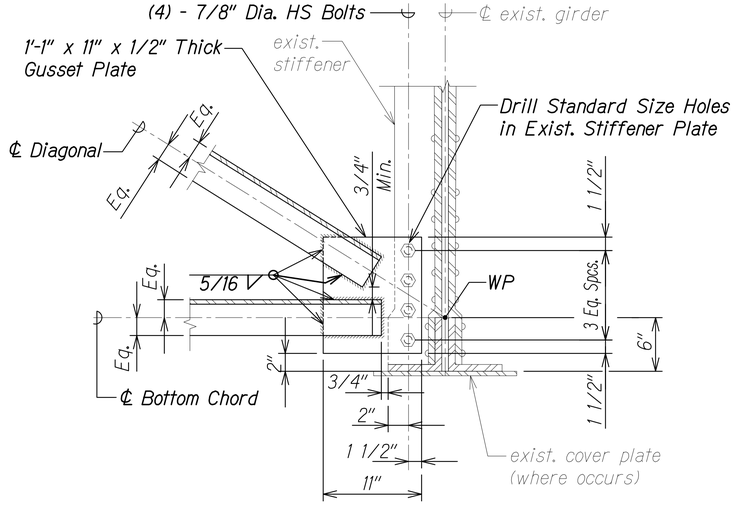
DETAIL 2
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.16



BOLT CONNECTION DETAIL 5
Scale: 6" = 1'-0" SA10.16 | SA10.16



DETAIL 3
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.16



DETAIL 4
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.16

NOTE:

Face all bolts in the same direction for consistency.

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

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

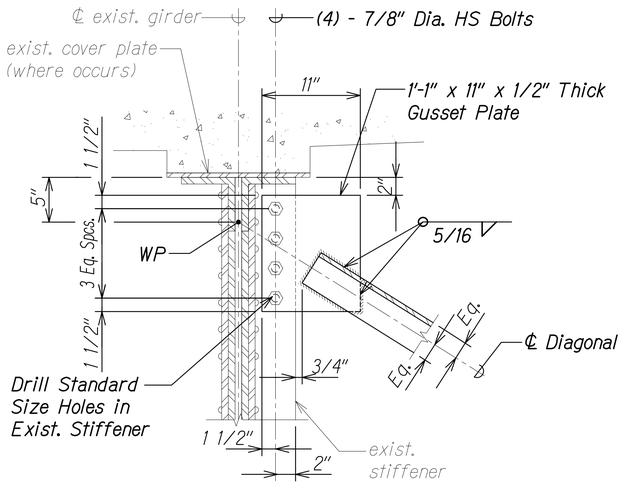
CROSS FRAME DETAILS

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

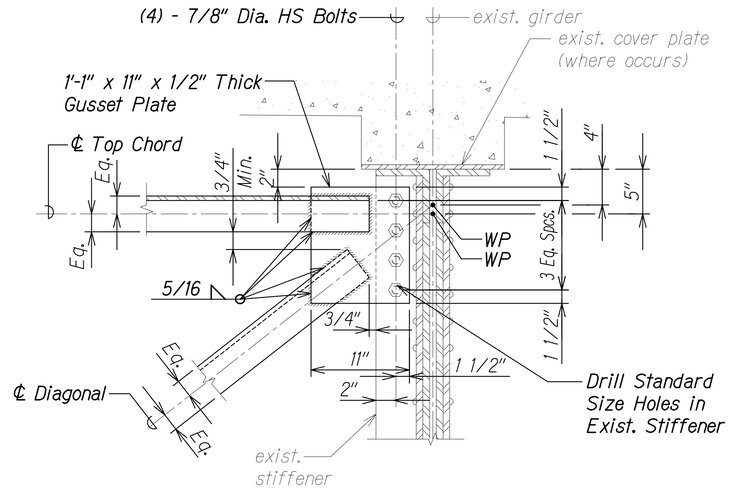
Scale: As Noted Date: Oct. 2024

SHEET No SA10.16 OF 30 SHEETS

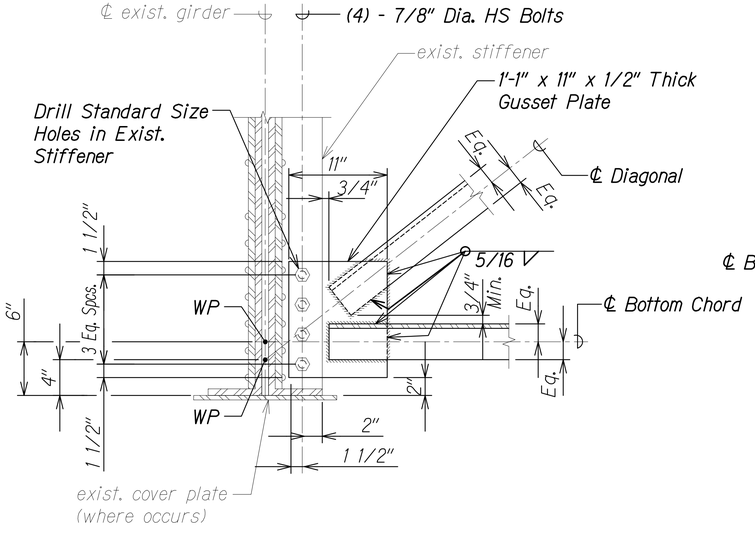
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	199	280



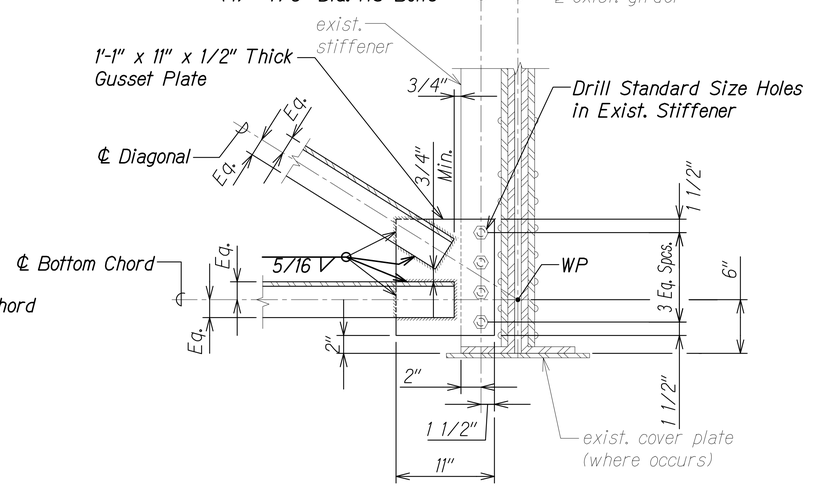
DETAIL 1
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.17



DETAIL 2
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.17



DETAIL 3
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.17



DETAIL 4
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.17

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: ZA:\OD ONGINDA 23-0229-NANUE STR BR PE2-2DETAIL01.DGN\10-28-24 BD SERVER-SA1012-SA1024 STRUT X-FRM.DWG PLOT TIME: 10-28-24, 8:19 PM

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

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

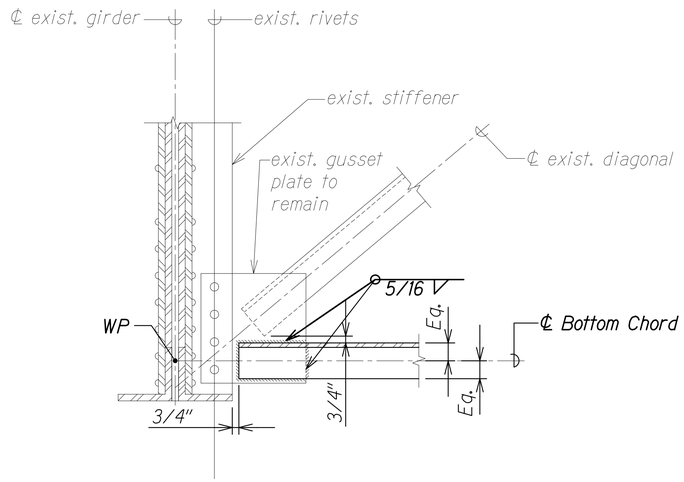
CROSS FRAME DETAILS

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

Scale: As Noted Date: Oct. 2024

SHEET NO SA10.17 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



DETAIL 1
Scale: 1 1/2" = 1'-0" SA10.15 SA10.18

NOTE:

Install bottom chord with sufficient clearance to make necessary welds.

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR RE2-BOTH\01 CAD\10-28-24 BID SET\NSR-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24 3:57 PM

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

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

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4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

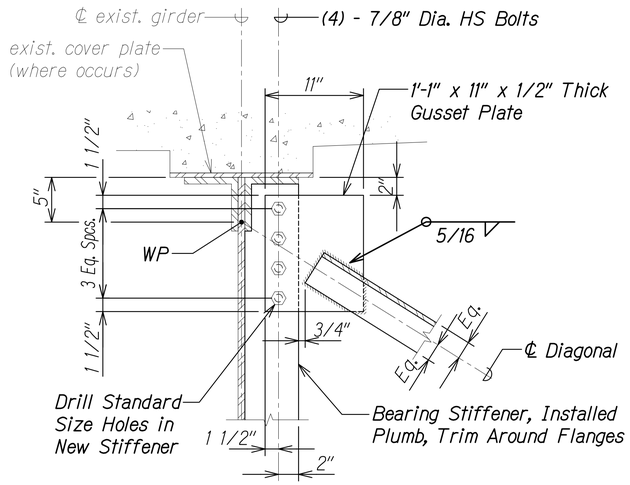
CROSS FRAME DETAILS

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

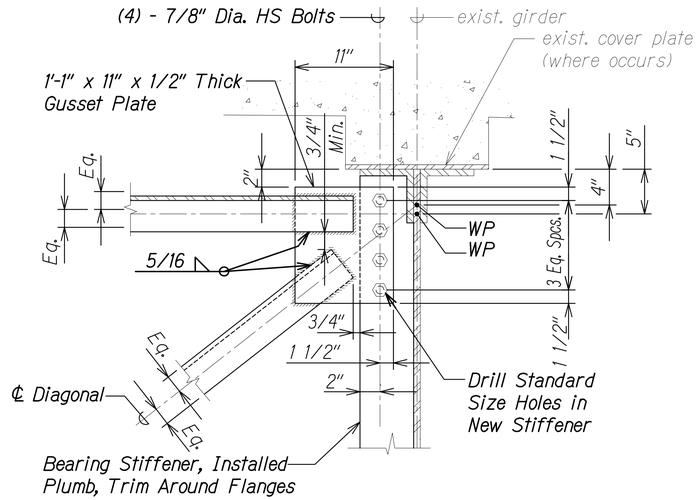
Scale: As Noted Date: Oct. 2024

SHEET NO SA10.18 OF 30 SHEETS

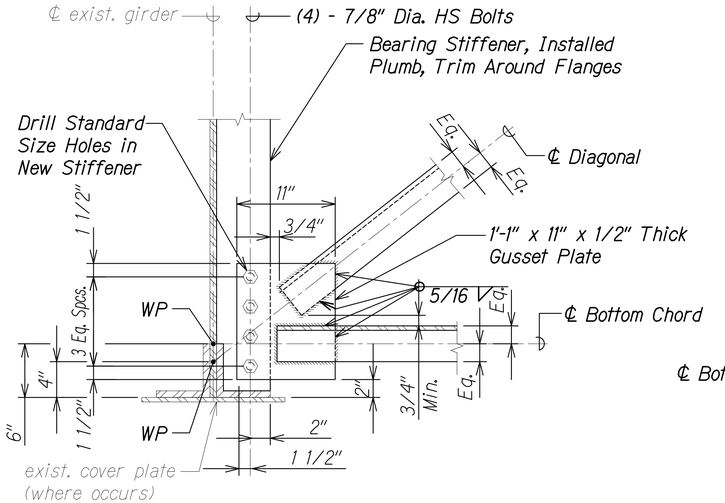
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	201	280



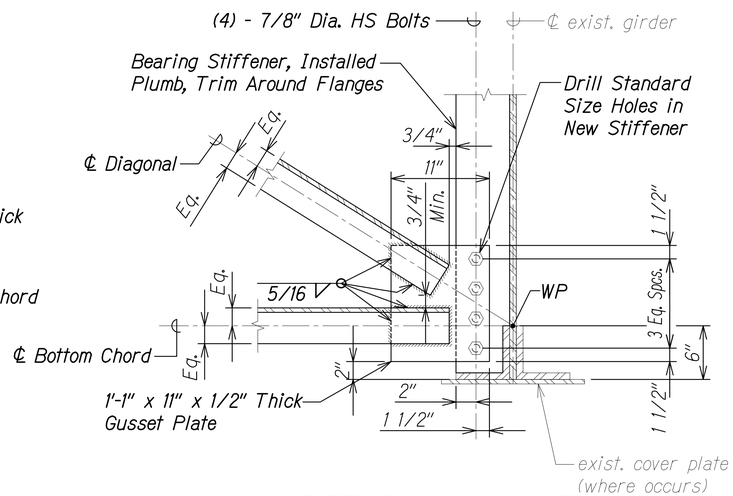
DETAIL 1
Scale: 1 1/2" = 1'-0" SA10.14 | SA10.19



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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PEZ-ROTA\01 CAD\10-28-24 BID SET\NSB-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

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

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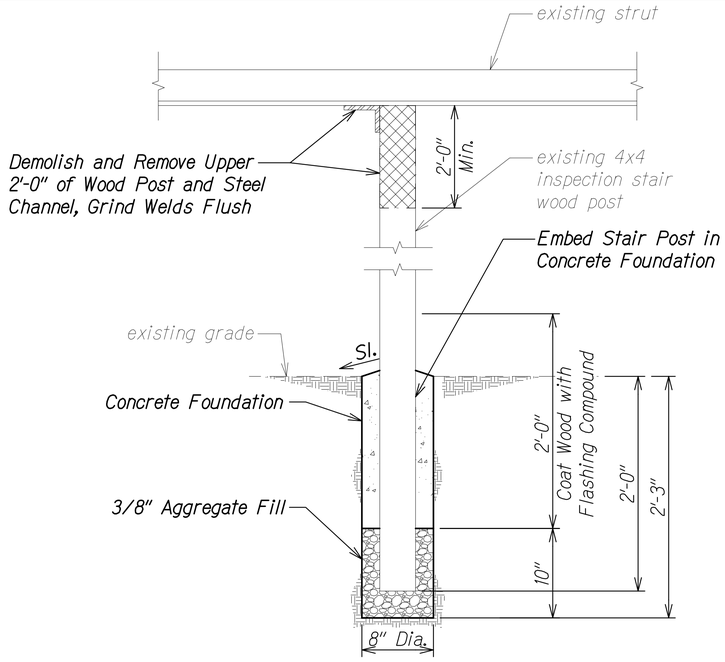
SHEET NO SA10.19 OF 30 SHEETS

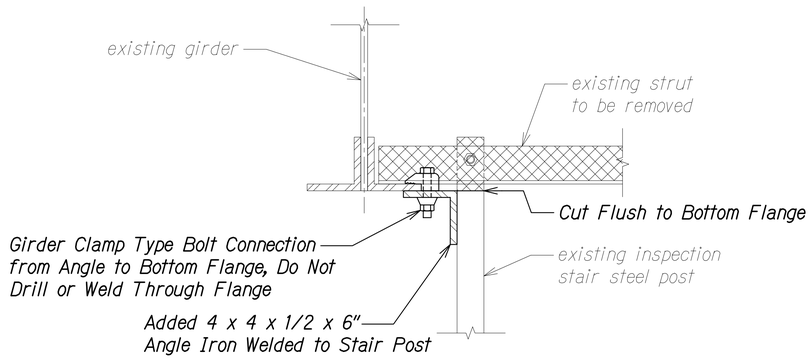
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	202	280



EXISTING INSPECTION STAIR POST TO STRUT DETAIL (2 LOCATIONS)

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

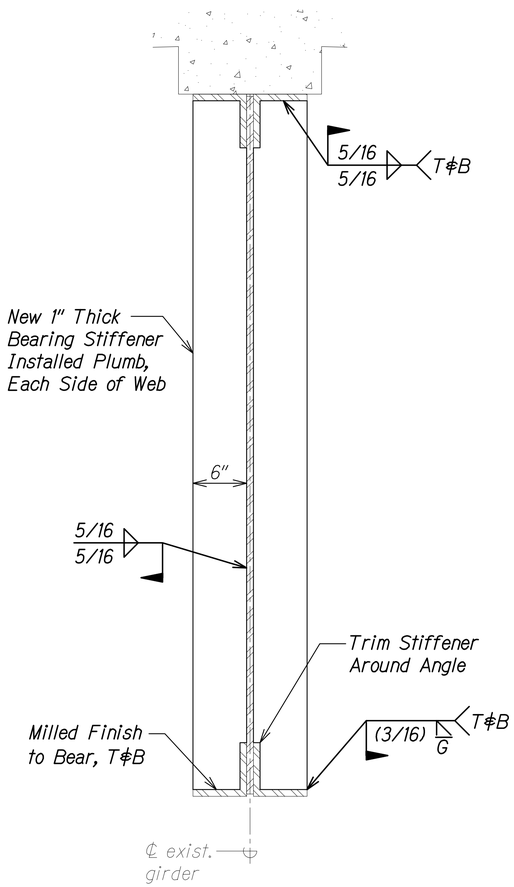
1 SA10.20 | SA10.20



EXISTING INSPECTION STAIR POST TO STRUT DETAIL

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

2 SA10.20 | SA10.20



BEARING STIFFENER REPLACEMENT DETAIL

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

3 SA10.20 | SA10.20

NOTE:

Cross frame connections not shown for clarity.

NOTES:

1. Cost of work involving inspection stair posts shall be incidental to the various pay items.
2. Contractor has the option to replace existing stair post with new CA-C treated post. Provide temporary support for stair stringer.

ORIGINAL PLAN | NOTE BOOK | No.

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

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

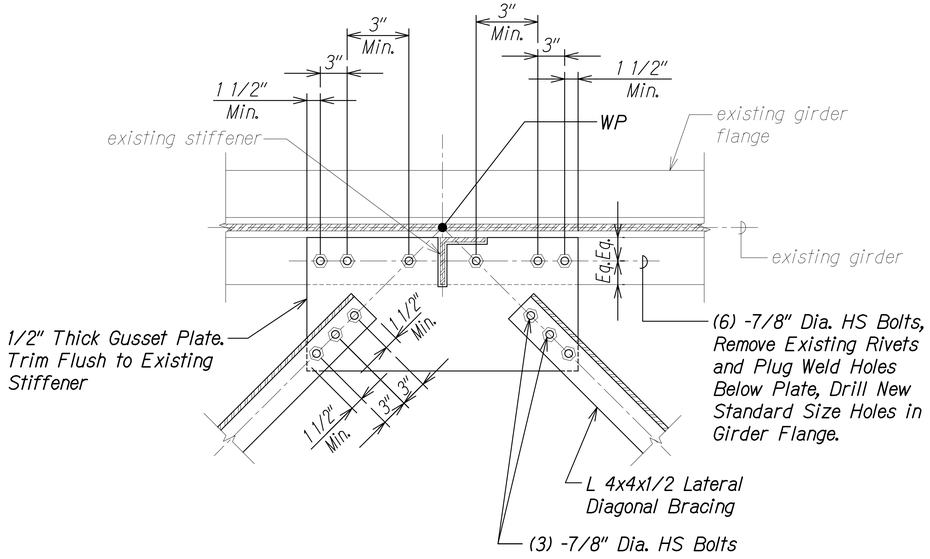
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No SA10.20 OF 30 SHEETS

202

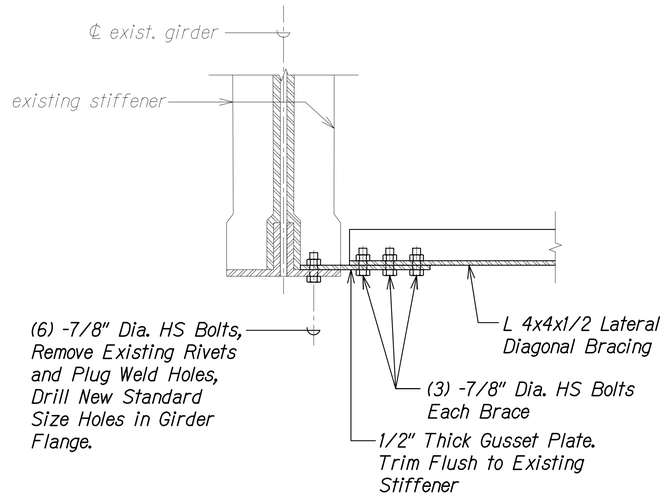
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	203	280



PLAN AT EXISTING WEB STIFFENER (A)

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

SA10.21 | SA10.21



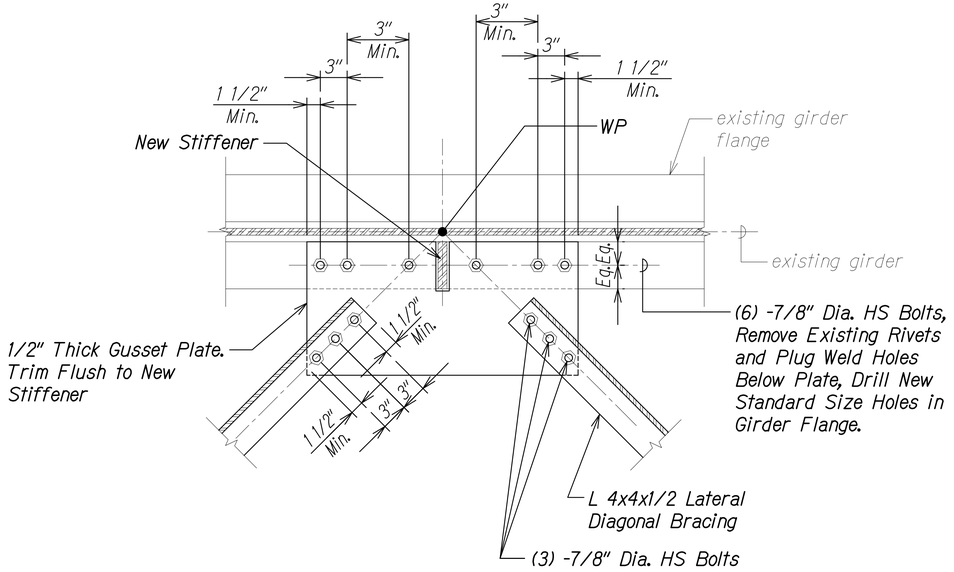
SECTION AT EXISTING WEB STIFFENER (B)

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

SA10.21 | SA10.21

NOTE:

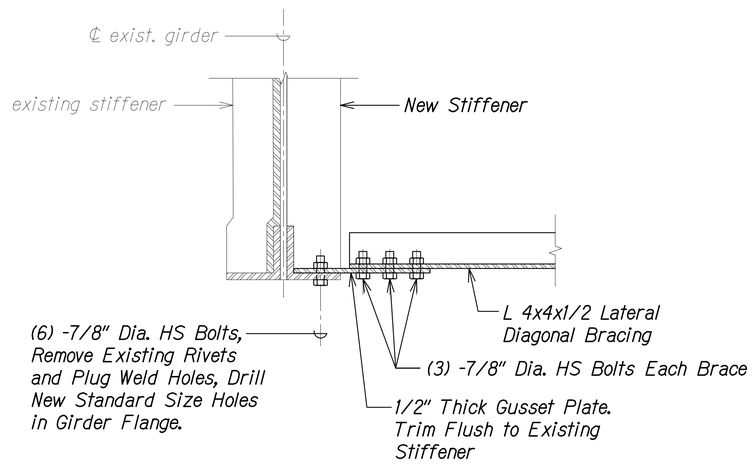
1. The Contractor shall field fit lateral diagonal bracing and gussets prior to galvanizing. Predrill holes in the field, including those through the bottom flange of the girder.
2. Lateral diagonal bracing and gussets shall be delivered to the site hot-dip zinc galvanized per ASTM A123, and shop painted with the complete coating system in accordance with Special Provisions Section 667-PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL.
3. Install lateral diagonal bracing and gussets following completion of painting in Bay 2. Touch up paint ends of bolts and edges that receive caulk.



PLAN AT NEW WEB STIFFENER (C)

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

SA10.21 | SA10.21



SECTION AT NEW WEB STIFFENER (D)

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

SA10.21 | SA10.21

INTERIOR BAY LATERAL DIAGONAL BRACING DETAILS

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

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

LATERAL DIAGONAL BRACING DETAILS

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

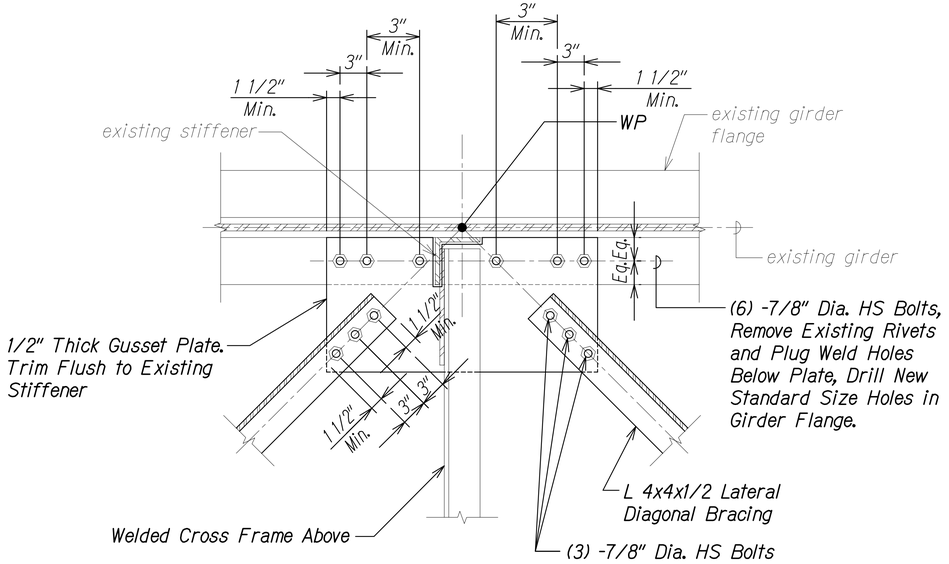
Scale: As Noted Date: Oct. 2024

SHEET No SA10.21 OF 30 SHEETS

203

DRAWING NAME: Z:\OD ONGOING\23-022-3-NANUE STR BR REP-BOTH\01 DGN\10-28-24 BID SET\NSR-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24 4:50 PM

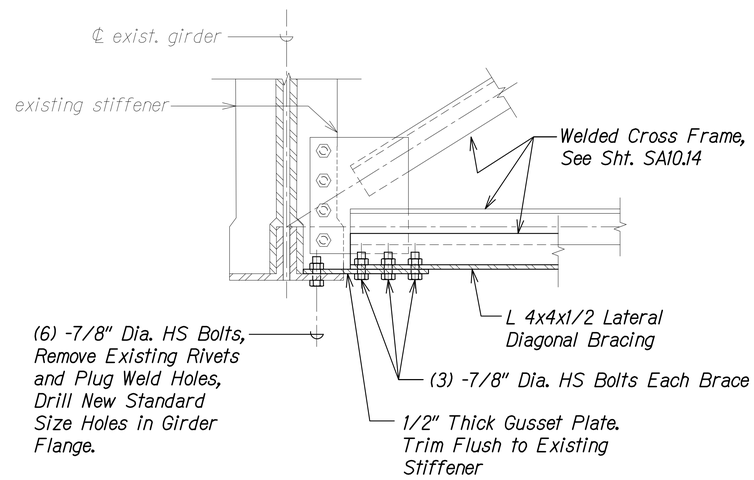
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	204	280



PLAN AT CROSS FRAME (A)

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

SAI0.22 | SAI0.22



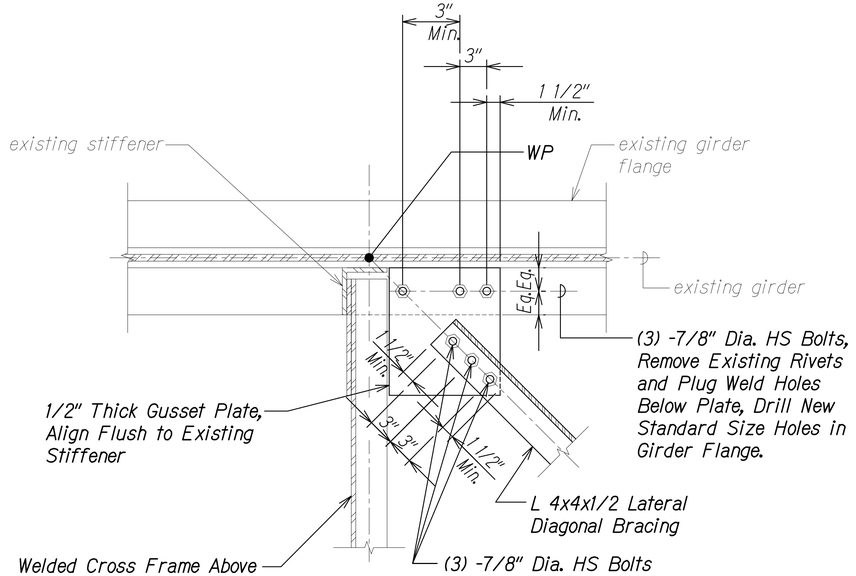
SECTION AT CROSS FRAME (B)

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

SAI0.22 | SAI0.22

NOTE:

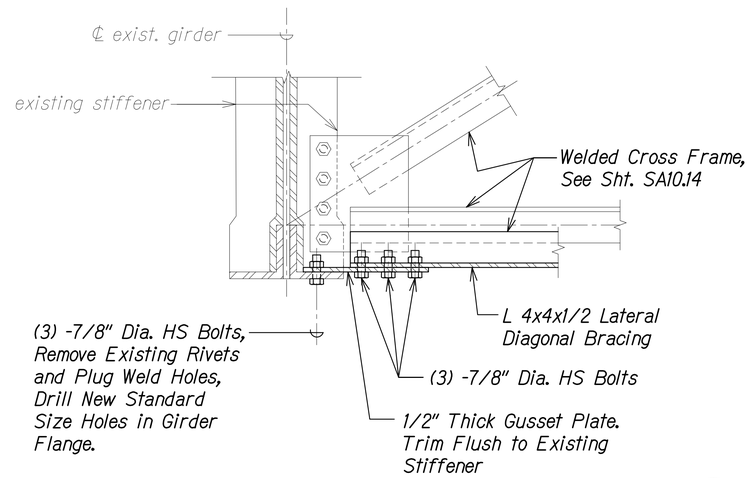
1. The Contractor shall field fit lateral diagonal bracing and gussets prior to galvanizing. Predrill holes in the field, including those through the bottom flange of the girder.
2. Lateral diagonal bracing and gussets shall be delivered to the site hot-dip zinc galvanized per ASTM A123, and shop painted with the complete coating system in accordance with Special Provisions Section 667-PREPARATION AND COATING OF GALVANIZED BRIDGE STEEL.
3. Install lateral diagonal bracing and gussets following completion of painting in Bay 2. Touch up paint ends of bolts and edges that receive caulk.



PLAN AT BEARING CROSS FRAME (C)

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

SAI0.22 | SAI0.22



SECTION AT BEARING CROSS FRAME (D)

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

SAI0.22 | SAI0.22

INTERIOR BAY LATERAL DIAGONAL BRACING DETAILS

ORIGINAL PLAN | NOTE BOOK No.

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

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

4-30-26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

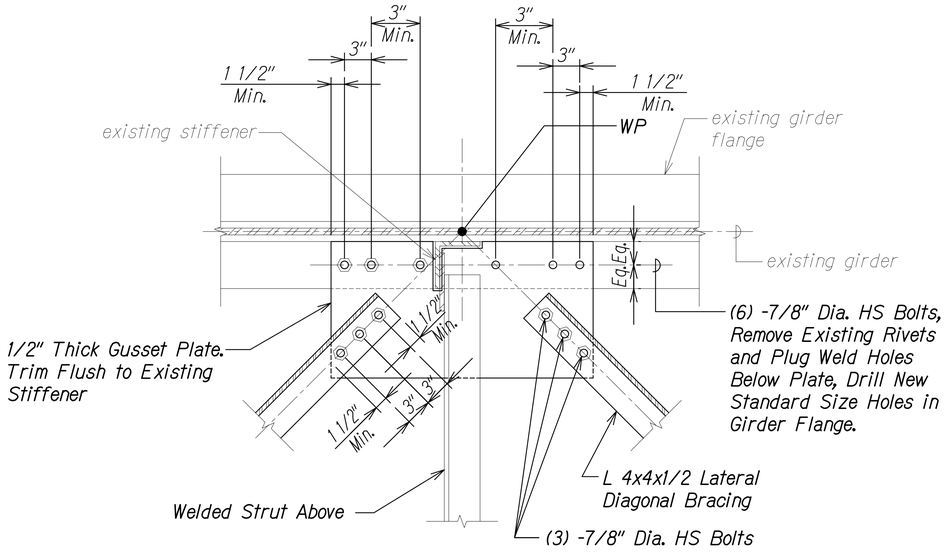
LATERAL DIAGONAL BRACING DETAILS

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

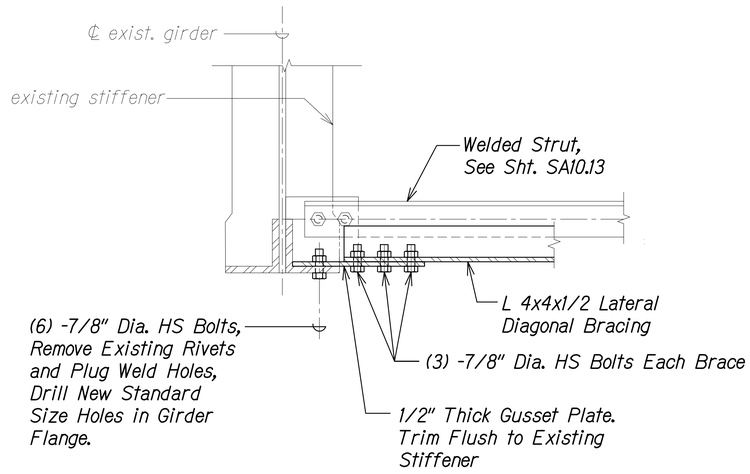
Scale: As Noted Date: Oct. 2024

SHEET No SAI0.22 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	205	280



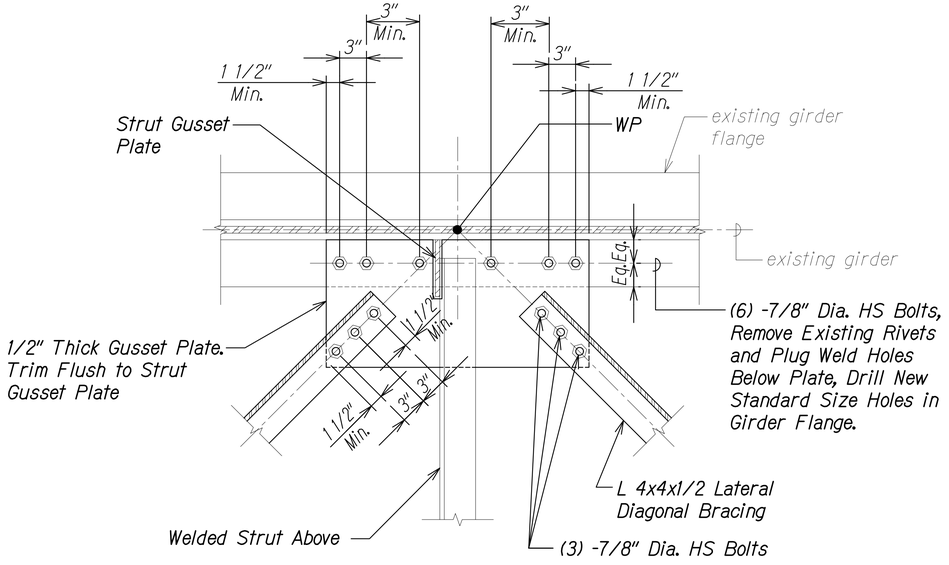
PLAN AT STRUT (A) SA10.23 | SA10.23
Scale: 1 1/2" = 1'-0"



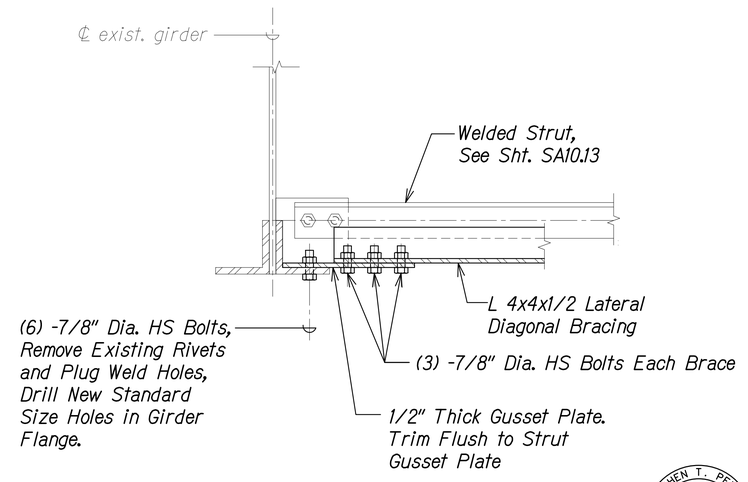
SECTION AT STRUT (B) SA10.23 | SA10.23
Scale: 1 1/2" = 1'-0"

NOTE:

1. 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.
2. 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.
3. Install lateral diagonal bracing and gussets following completion of painting in Bay 2. Touch up paint ends of bolts and edges that receive caulk.



PLAN AT STRUT (C) SA10.23 | SA10.23
Scale: 1 1/2" = 1'-0"



SECTION AT STRUT (D) SA10.23 | SA10.23
Scale: 1 1/2" = 1'-0"

INTERIOR BAY LATERAL DIAGONAL BRACING DETAILS

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

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

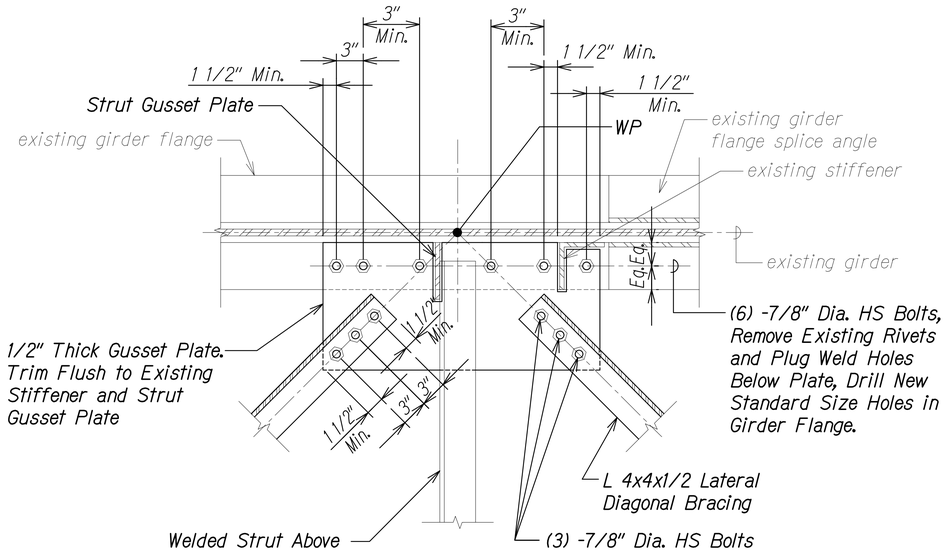
SHEET No. SA10.23 OF 30 SHEETS

205

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

DRAWING NAME: Z:\OD ONGOING\23-022-3-NANUE STR BR REP-BOTH\01 CAD\10-28-24 BID SET\HSP-SA1012-SA1024 STRUT X-FRMG.DWG PLOT TIME: 10-28-24 4:51 PM

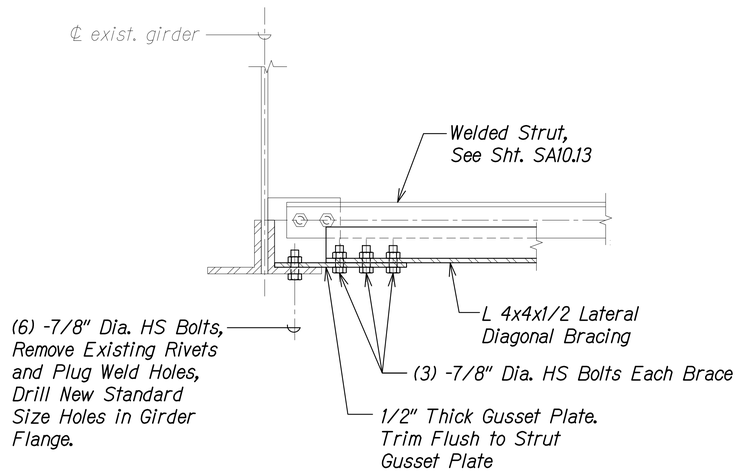
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	206	280



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

NOTE:

1. 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.

2. 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.

3. Install lateral diagonal bracing and gussets following completion of painting in Bay 2. Touch up paint ends of bolts and edges that receive caulk.

INTERIOR BAY LATERAL DIAGONAL BRACING DETAILS

ORIGINAL PLAN | NOTE BOOK | No.

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

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

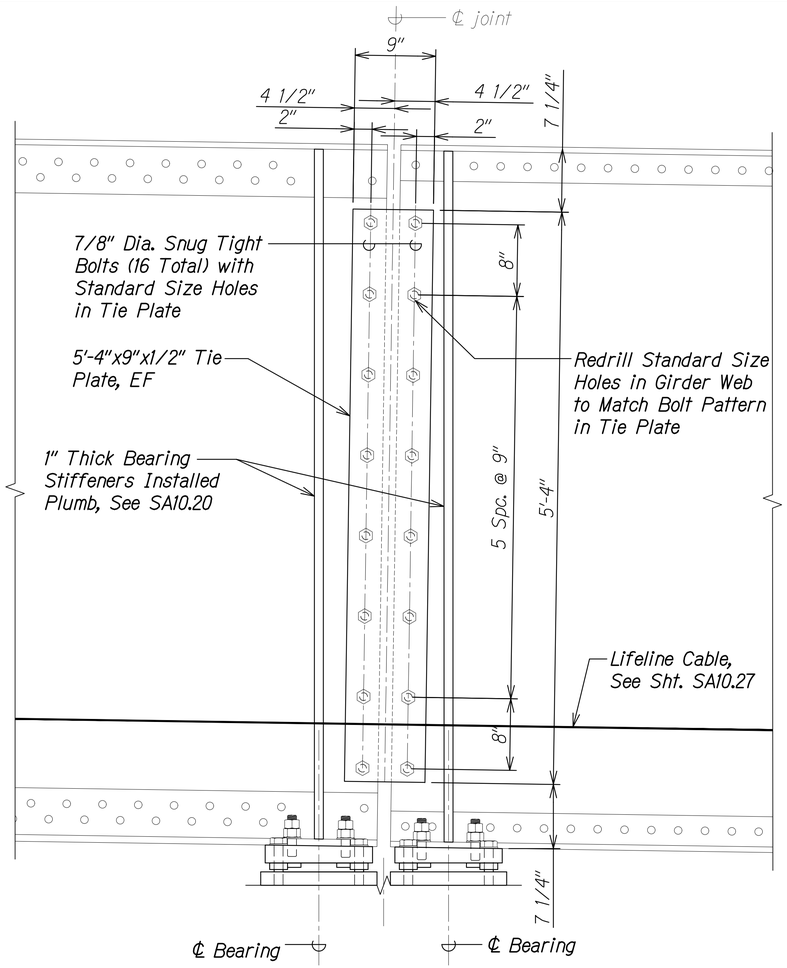
LATERAL DIAGONAL BRACING DETAILS

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

Scale: As Noted Date: Oct. 2024

SHEET NO SA10.24 OF 30 SHEETS

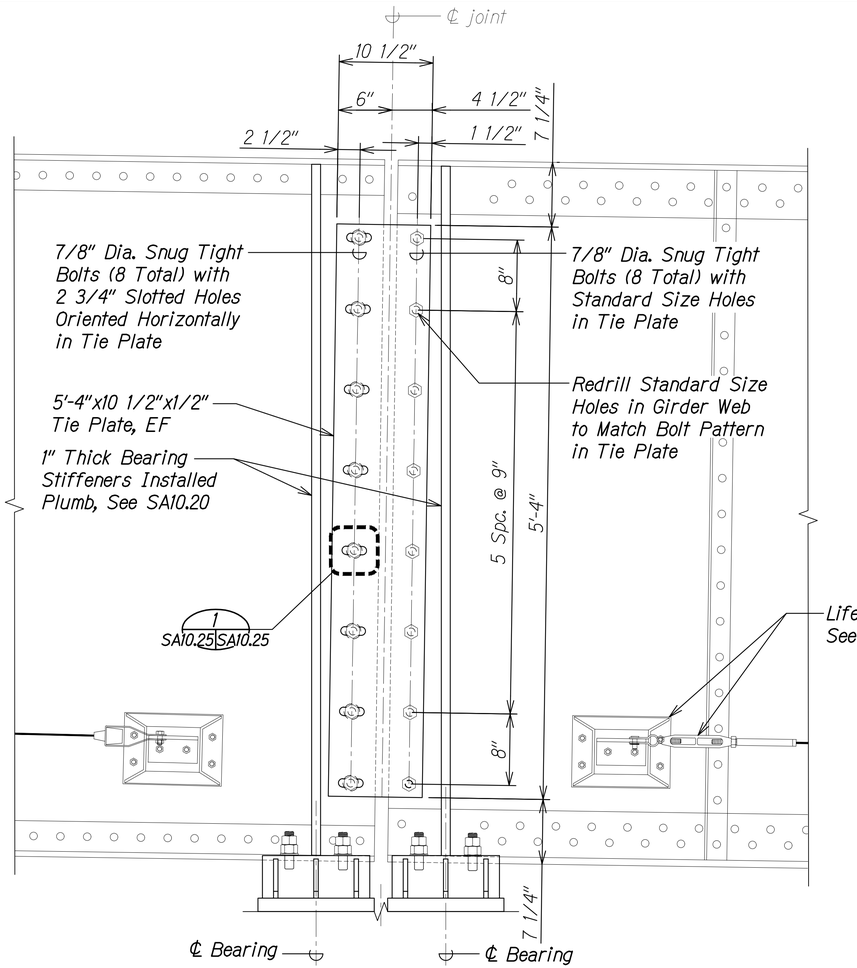
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	207	280



TIE PLATE ELEVATION - FIXED BEARING (A)

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

SA10.25 | SA10.25



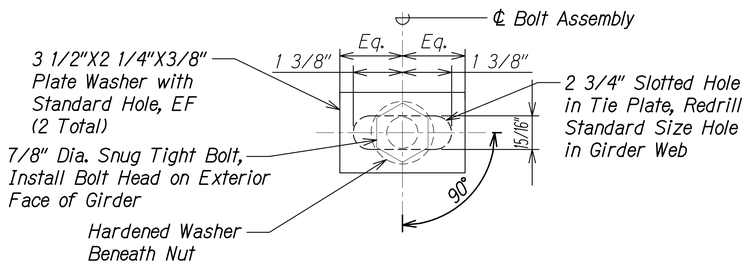
TIE PLATE ELEVATION - EXPANSION BEARING (B)

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

SA10.25 | SA10.25

NOTES:

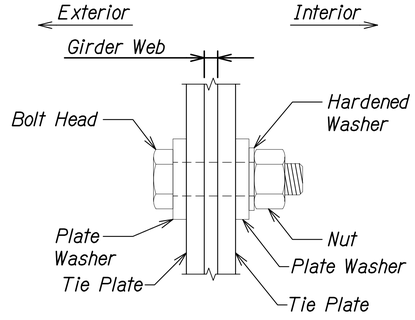
1. Bolt assembly at tie plate connection must not be pretensioned.
2. See girder line elevations for location of tie plate replacement.
3. Redrill standard size holes at the ends of girder web to match bolt pattern in tie plate prior to painting.
4. Clean and paint girders prior to installation of tie plates.
5. Touch-up paint ends of all hardware (bolt, nut, washers) after installation.



BOLT CONNECTION DETAIL AT SLOTTED HOLE (1)

Scale: 6" = 1'-0"

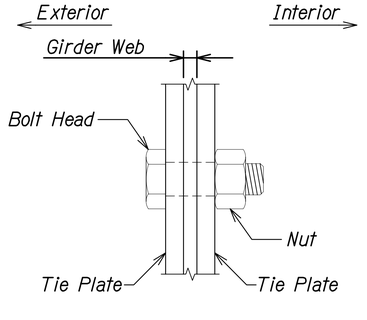
SA10.25 | SA10.25



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

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

TIE PLATE
ELEVATIONS AND DETAILS AT BEARINGS

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

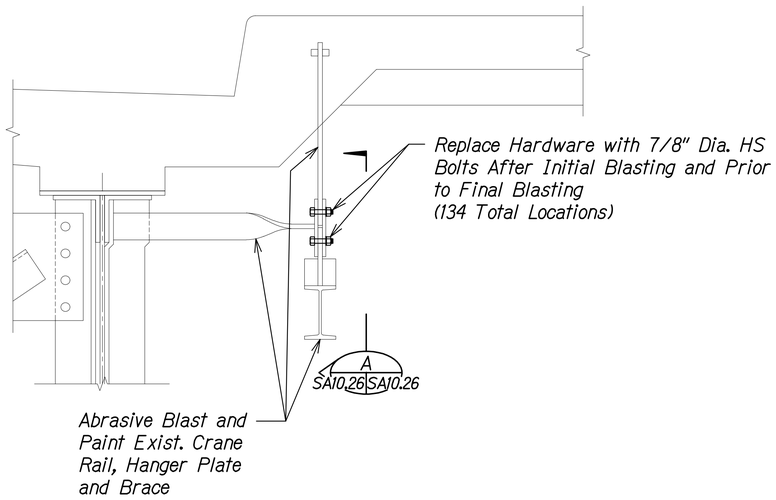
Scale: As Noted — Date: Oct. 2024

SHEET NO. SA10.25 OF 30 SHEETS

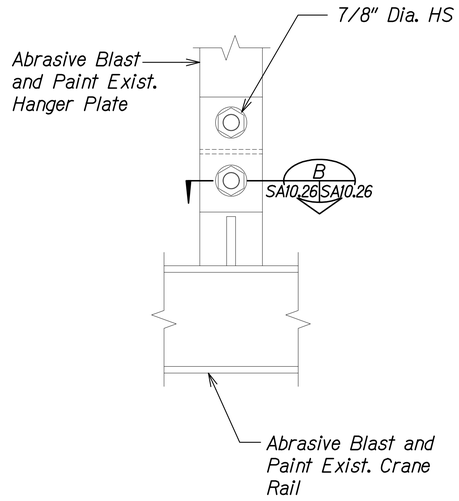
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-30TH\07 CAD\10-28-24 BID SET\SR-SA1025 TIE PLATE.DWG PLOT TIME: 10-28-24, 11:46 AM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	208	280



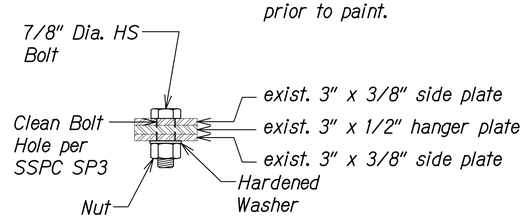
DETAIL 1
Scale: 1 1/2" = 1'-0"
SA2.2 | SA10.26



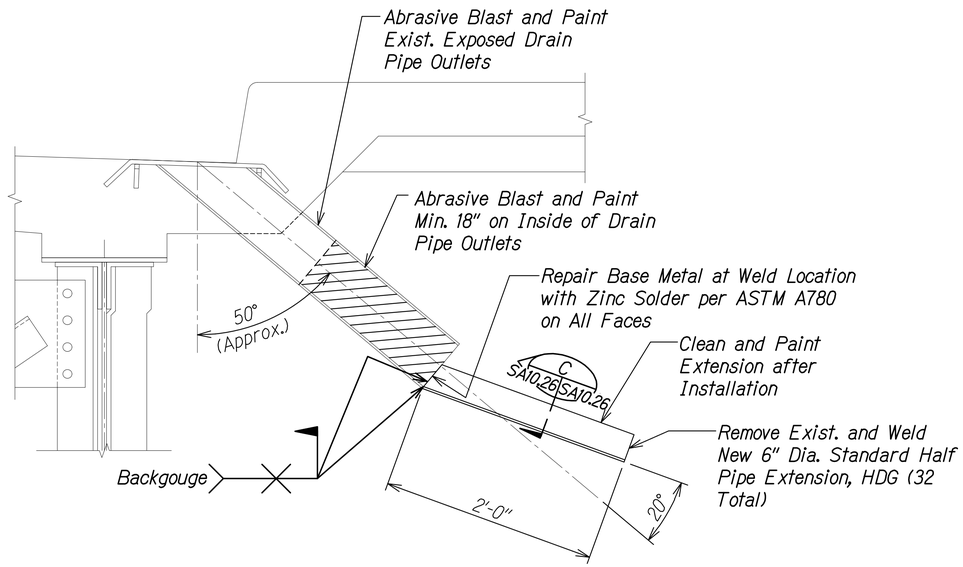
SECTION A
Scale: 3" = 1'-0"
SA10.26 | SA10.26

NOTE:

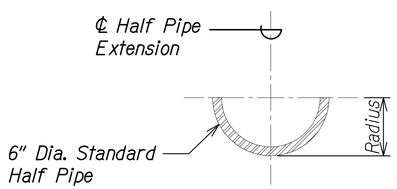
The Contractor shall shield the exposed bolts during final abrasive blasting so as not to damage galvanized finish. Remove shielding prior to paint.



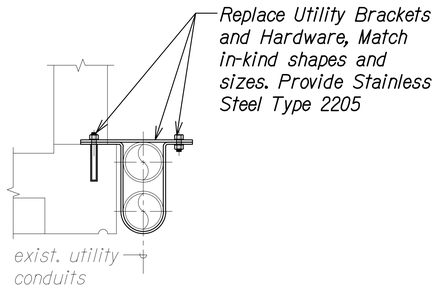
SECTION B
Scale: 3" = 1'-0"
SA10.26 | SA10.26



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

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

CRANE RAIL, DRAIN PIPE, AND UTILITY BRACKET DETAILS

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

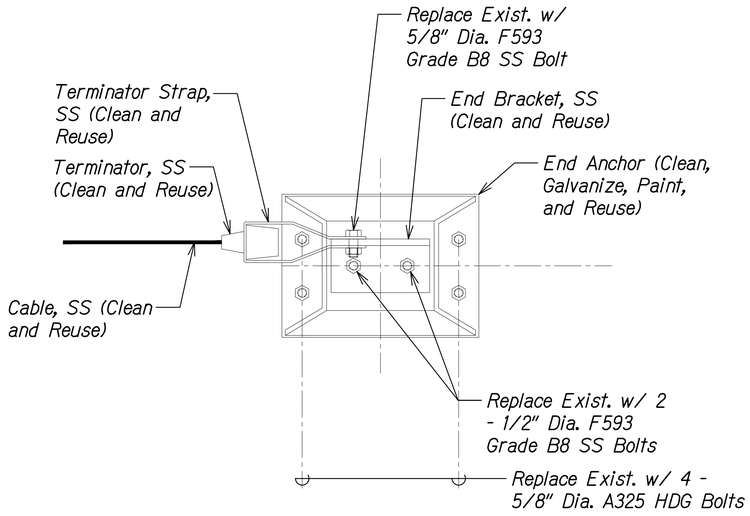
Scale: As Noted Date: Oct. 2024

SHEET NO SA10.26 OF 30 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-027.3-NANUE STR BR REP-BOTH\OT CAD\10-28-24 BID SET\SR-SA1026 CRANE RAIL & DRAIN.DWG PLOT TIME: 10-28-24 3:23 PM)

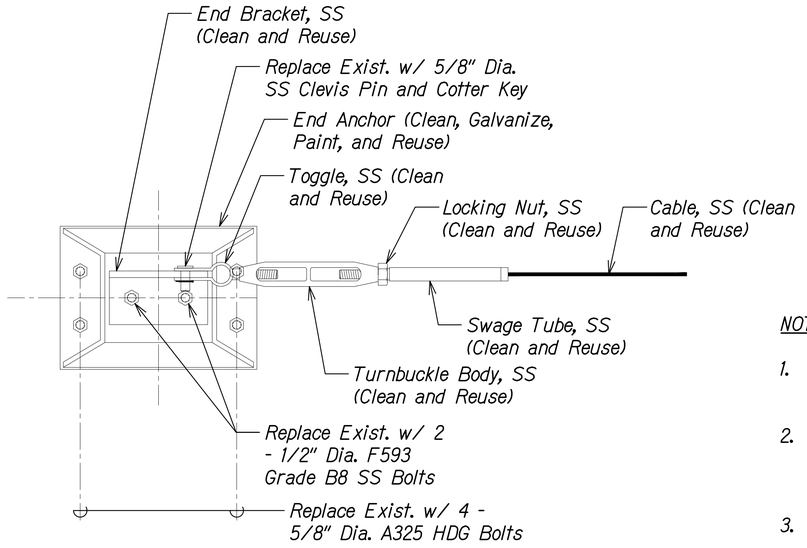
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	209	280



LIFELINE END ANCHOR DETAIL 1

Scale: 3" = 1'-0"

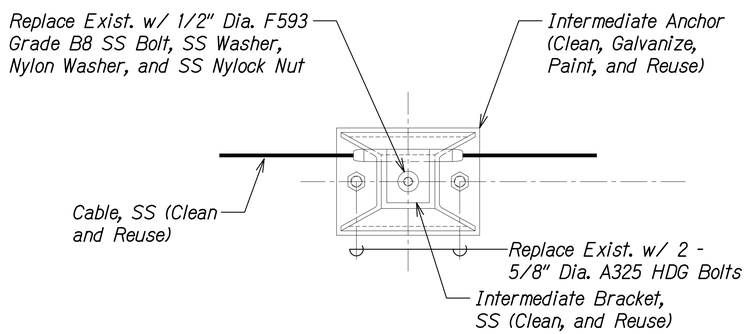
SA10.27 | SA10.27



LIFELINE END ANCHOR DETAIL 2

Scale: 3" = 1'-0"

SA10.27 | SA10.27



LIFELINE INTERMEDIATE ANCHOR DETAIL 3

Scale: 3" = 1'-0"

SA10.27 | SA10.27

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-SP10 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-SP16 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.

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

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SIGNATURE 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)

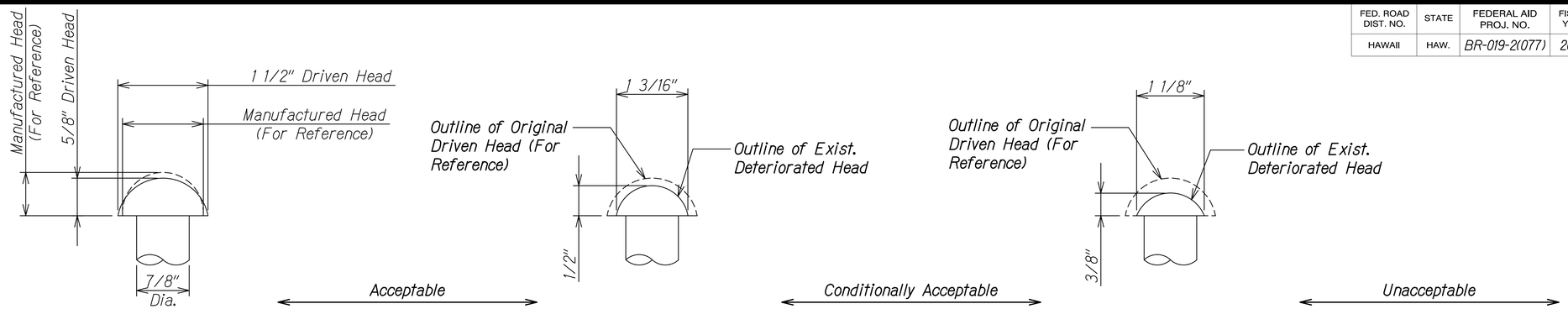
Scale: As Noted Date: Oct. 2024

SHEET No. SA10.27 OF 30 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-20THA\01 CAD\10-28-24 BID SET\SGR-SA1027 LIFELINE ANCHOR DET.DWG PLOT TIME: 10-28-24 3:24 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	210	280



CONDITION A
FULL SIZE RIVET HEAD

CONDITION B
MINIMUM RIVET HEAD DIMENSIONS

CONDITION C
MINIMUM RIVET HEAD DIMENSIONS

RIVET REPLACEMENT CRITERIA DETAILS

Full Scale

1
SA10.28 | SA10.28

RIVET REPLACEMENT NOTES:

1. 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.

2. Inspection and evaluation of rivet acceptability shall be conducted following the initial abrasive blasting work of the bridge superstructure.

3. 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.

4. 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.

5. 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.

6. 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:

   A) The rivet is not present in a joint that subjects the rivet to tension stresses and tends to separate the connected parts.

   B) Rivet heads do not have additional losses described in Note 8.

   C) No crevice corrosion is present as described in Note 9.

   D) 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.

   E) Where the above percentages are exceeded the number of rivets over the prescribed percentage shall be replaced.

7. Rivets (Unacceptable) with head dimensions for diameter or height not meeting the requirements of Condition C shall be replaced.

8. 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.

9. 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.

10. 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.

11. After removal of the rivet, the rivet hole shall be cleaned per SSPC SP3 prior to installation of the replacement bolt assembly.

12. 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.

13. 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.

14. 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.

15. 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.

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
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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 NO SA10.28 OF 30 SHEETS

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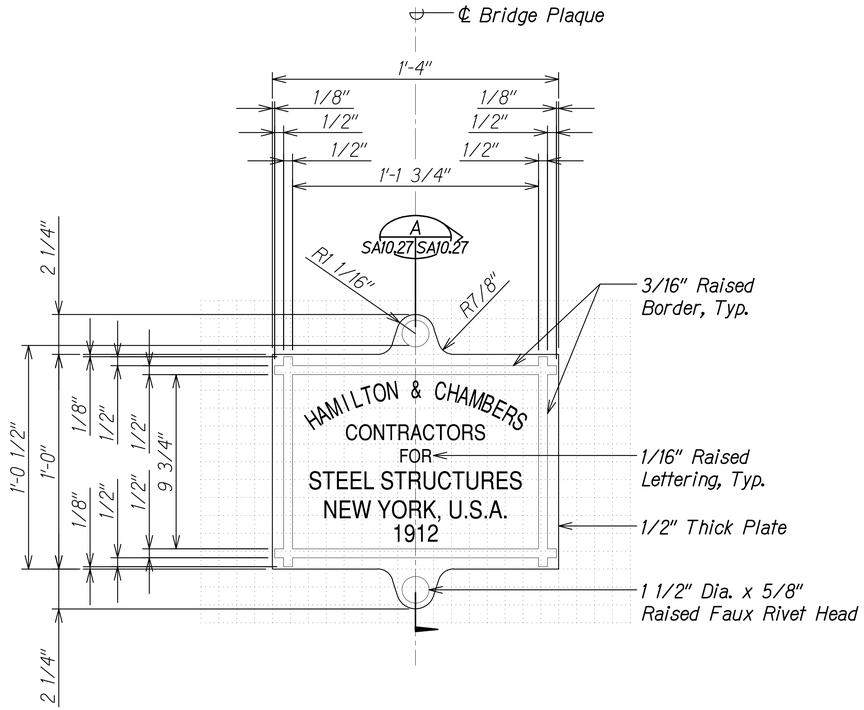
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

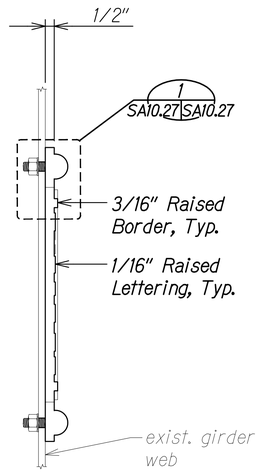
DRAWING NAME: Z:\OD ONDONGA\23-022\9-NANUE STR BR PS2-20THA\01 CAD\10-28-24 BID SET\WSR-SA10P28 RIVETS.DWG PLOT TIME: 10-28-24, 11:47 AM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	211	280



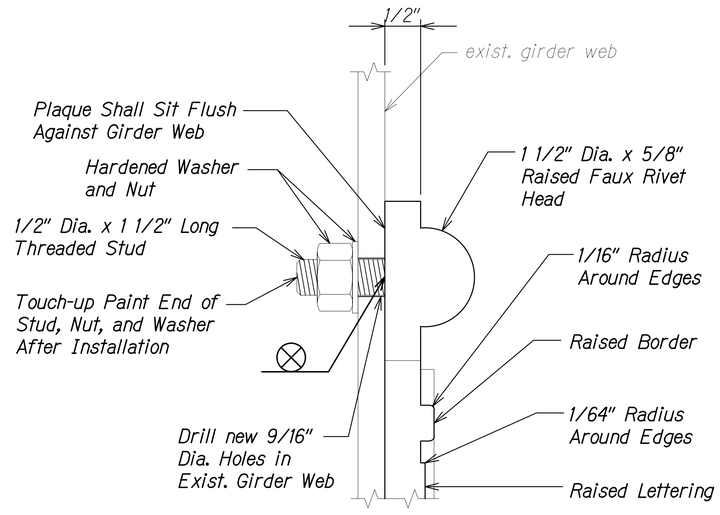
BRIDGE PLAQUE - LAYOUT

Scale: 3" = 1'-0"



SECTION A SA10.29 SA10.29

Scale: 3" = 1'-0"



DETAIL 1 SA10.29 SA10.29

Scale: 1" = 1"

BRIDGE PLAQUE EXAMPLE FROM HAKALAU STREAM BRIDGE

Scale: 3" = 1'-0"

NOTES:

1. The Contractor shall fabricate one new plaque. The cost of the work shall be incidental to the various pay items.
2. The Contractor shall select an appropriate font type that best matches the example plaque.
3. The bridge plaque shall be hot-dip zinc galvanized after fabrication in accordance with ASTM A123.
4. The bridge plaque shall be shop painted with the specified coat system.
5. Existing mounting holes in the girder web shall be plug welded and new mounting holes drilled prior to final abrasive blasting work.
6. Install bridge plaque following girder painting completion.

STEPHEN T. PETERS
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STATE OF HAWAII
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HIGHWAYS DIVISION

BRIDGE PLAQUE DETAILS

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

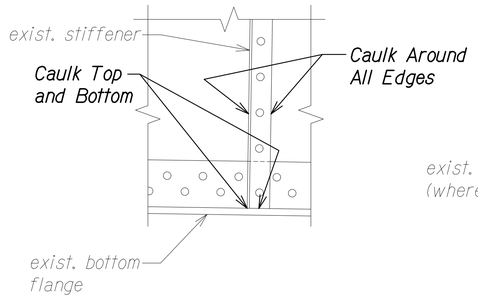
Scale: As Noted Date: Oct. 2024

SHEET No. SA10.29 OF 30 SHEETS

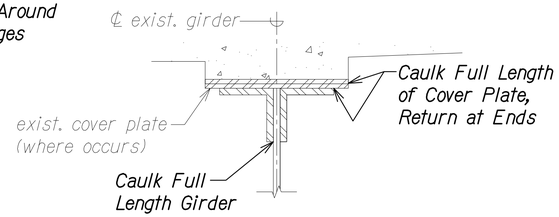
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

DRAWING NAME: Z:\OD ONGOING\23-022.9-HANUE STR BR PE2-20\HA\01 CAD\10-28-24 BID SET\SR-SA1029 PLAQUE.DWG PLOT TIME: 10-26-24, 2:59 PM

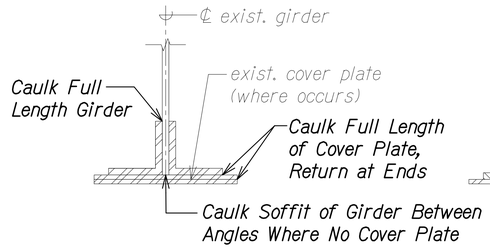
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	212	280



STIFFENER CONNECTION (1)
Scale: 1 1/2" = 1'-0" SA10.30 | SA10.30



TOP FLANGE CONNECTION (2)
Scale: 1 1/2" = 1'-0" SA10.30 | SA10.30



BOTTOM FLANGE CONNECTION (3)
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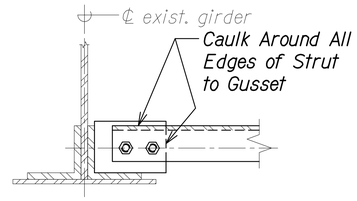
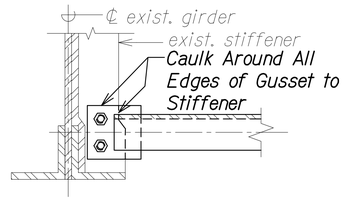
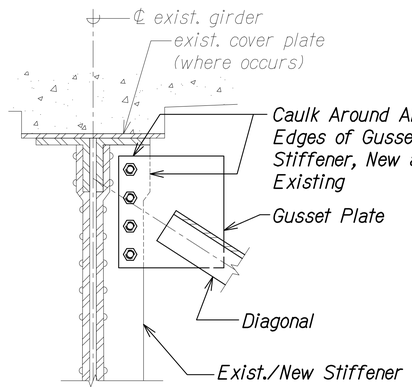


STRUT CONNECTION (4)
Scale: 1 1/2" = 1'-0" SA10.30 | SA10.30



STRUT CONNECTION (5)
Scale: 1 1/2" = 1'-0" SA10.30 | SA10.30



CROSS-FRAME CONNECTION (6)
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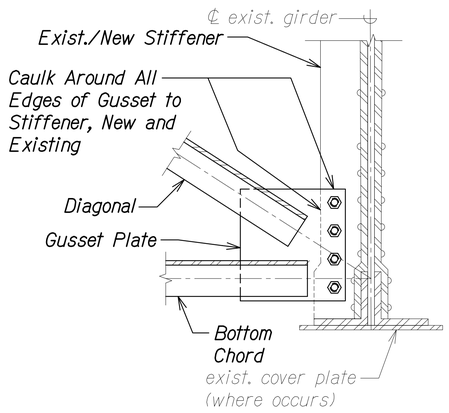

CROSS-FRAME CONNECTION (7)
Scale: 1 1/2" = 1'-0" SA10.30 | SA10.30

NOTES:

1. All details are shown as typical and shall be applied at all locations throughout the bridge.
2. Caulk shall be applied after applicable dry-to recoat time of the primer, as described in its product data sheet.
3. The cost for caulking shall be covered under Pay Item 666.3000.

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

DRAWING NAME: Z:\OD ONDONG\23-022.9-NANUE STR BR PE2-DOT\A01 CAD\10-28-24 BID SER\NSR-SA1030 PAINT.DWG PLOT TIME: 10-28-24, 3:26 PM

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HIGHWAYS DIVISION

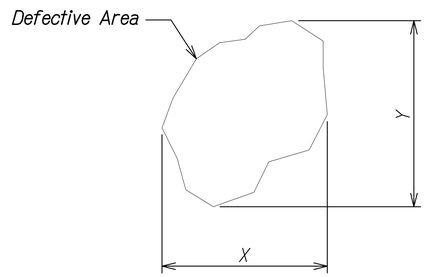
PAINT/CAULKING DETAILS

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

Scale: As Noted Date: Oct. 2024

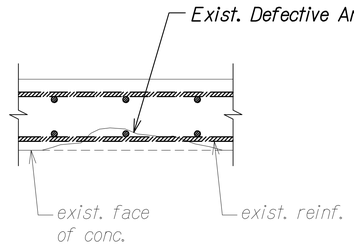
SHEET NO SA10.30 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	213	280

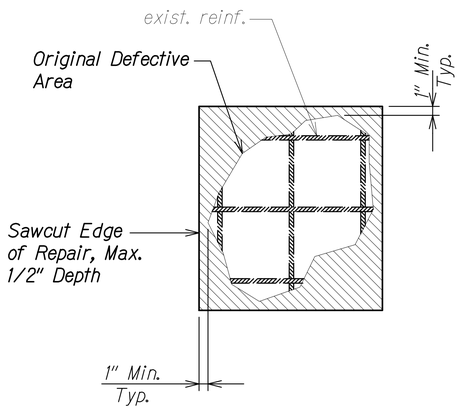


Exist. Defective Area = X x Y

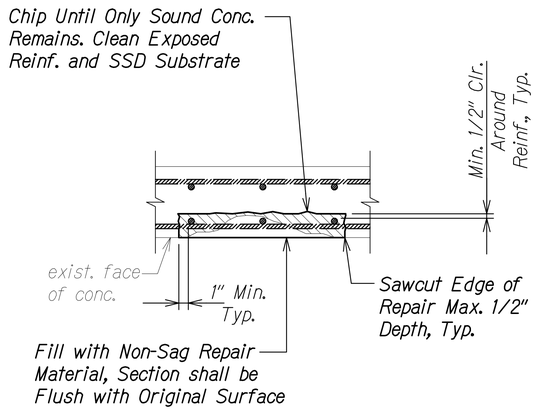
DEFECT PLAN/ELEVATION



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

OVERHEAD AND VERTICAL CONCRETE REPAIR NOTES:

1. 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.
2. Spalls, delaminations, and honeycombing as noted on the drawings shall all be referred to as defective concrete.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. The Contractor shall not saw-cut beyond the repair limits.
9. 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

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

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

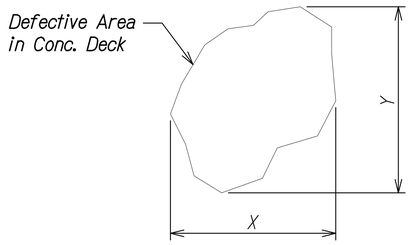
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | NOTE BOOK | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | No. | DATE

DRAWING NAME: Z:\OD ONDONA\23-022.9-NANUE STR BR PE2-3D\HA01 CAD\10-28-24 BID SER\SR-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

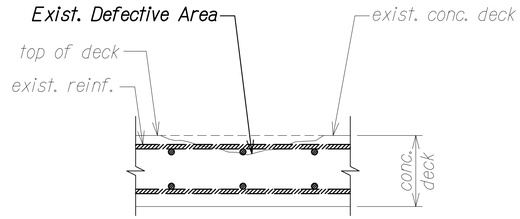
CONCRETE DECK REPAIR NOTES:

1. 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 SA11.2, and manufacturer's recommendations.
2. Spalls, delaminations, and honeycombing as noted on the drawings shall all be referred to as defective concrete.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. The Contractor shall not saw-cut beyond the repair limits.
9. Finish all concrete surfaces to match existing conditions.

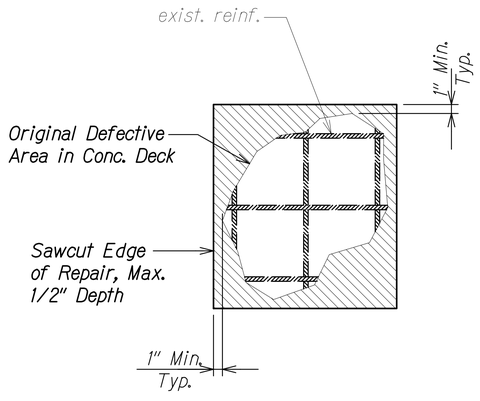


Existing Defective Area = X x Y

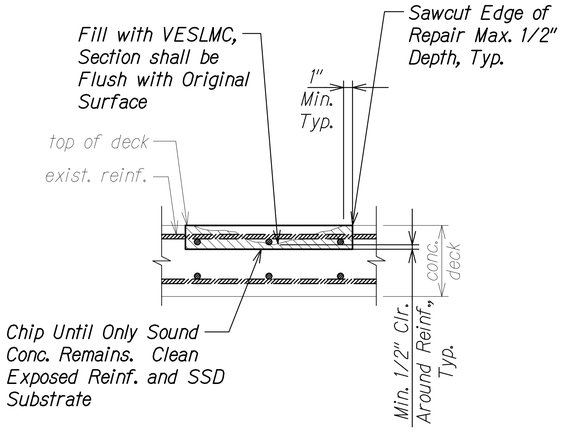
TOP DECK DEFECT PLAN



TOP DECK DEFECT SECTION



TOP DECK REPAIR PLAN



TOP DECK REPAIR SECTION

HORIZONTAL DEFECTIVE CONCRETE DECK REPAIRS

A SA11.2 | SA11.2

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

LEGEND:

Concrete to be Removed

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

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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. SA11.2 OF 4 SHEETS

ORIGINAL PLAN
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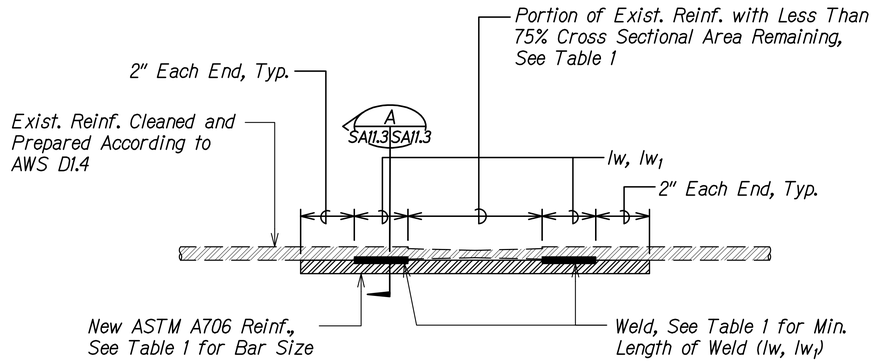
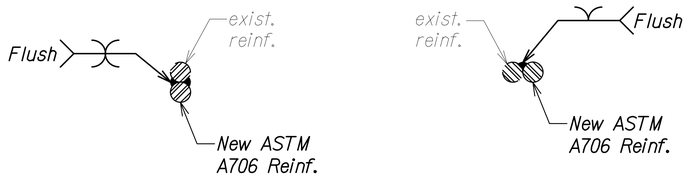
DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR REP-BOTH\01 CAD\10-28-24 BID SET\HSR-SA1101-SA1104 REPAIR DTLS.DWG PLOT TIME: 10-28-24, 1:26 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	215	280



REINF. REPAIR PLAN 1 SA11.3 SA11.3

Scale: 1" = 1'-0"



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 A SA11.3 SA11.3

Scale: 1" = 1'-0"

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:

1. Replacement reinforcing shall be spliced to existing reinforcing so as not to reduce the existing clear cover.
2. 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.
3. 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.
4. 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.
5. 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.
6. Do not weld in inclement or wet weather unless protection accepted by the Engineer is provided.
7. For bidding purposes, assume 1.0 lb of spliced reinforcing bar for each 1 sf of defective concrete repair.

STEPHEN T. PETERS
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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

ORIGINAL PLAN
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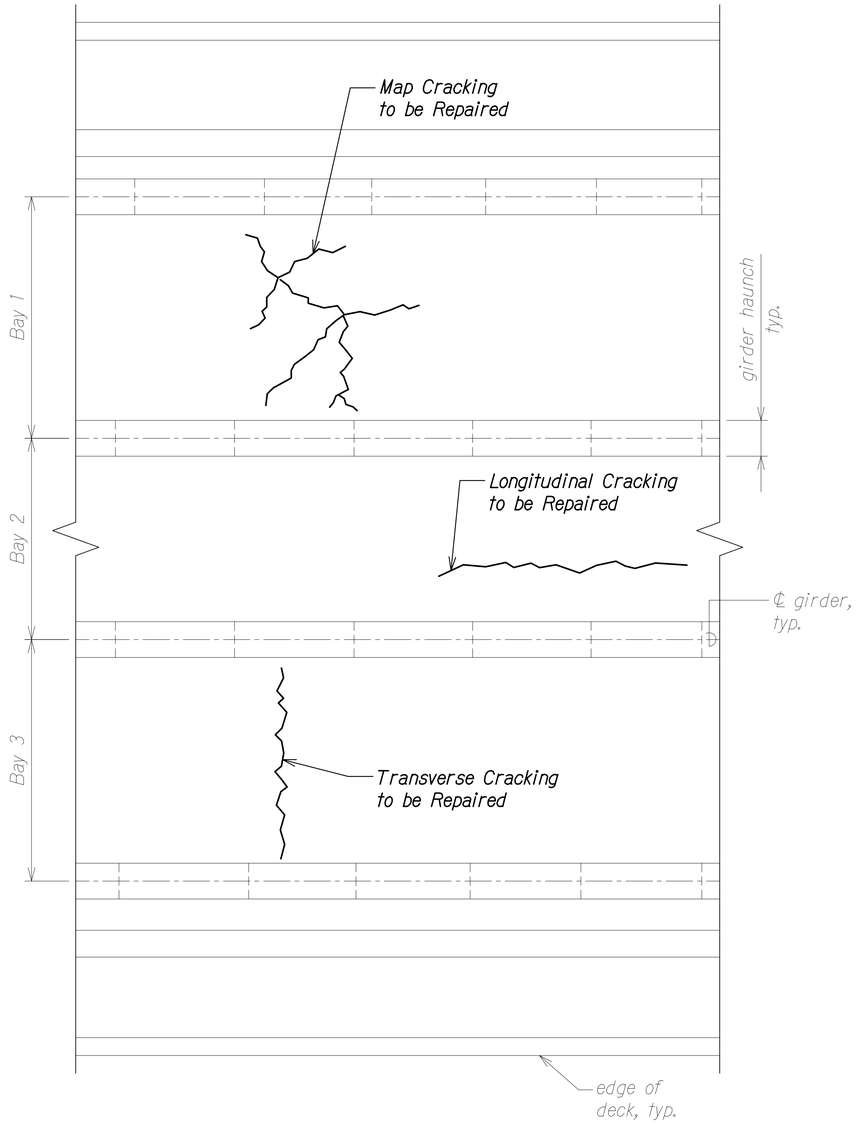
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR PE2-60TH\01 CAD\10-28-24 BID SET\NSR-SA101-SA104 REPAIR DTLS.DWG PLOT TIME: 10-28-24, 1:11 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	216	280



TYPICAL DECK REFLECTIVE SOFFIT PLAN

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

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

STEPHEN T. PETERS
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NO. 17097-S
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HIGHWAYS DIVISION

CONCRETE DECK SOFFIT CRACK REPAIR DETAILS

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

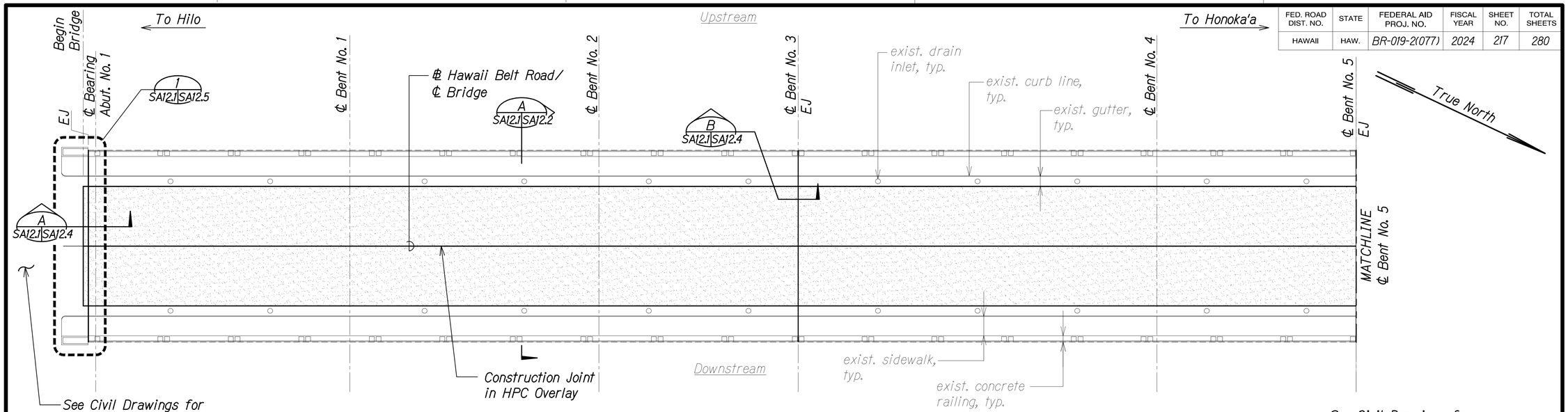
Scale: As Noted Date: Oct. 2024

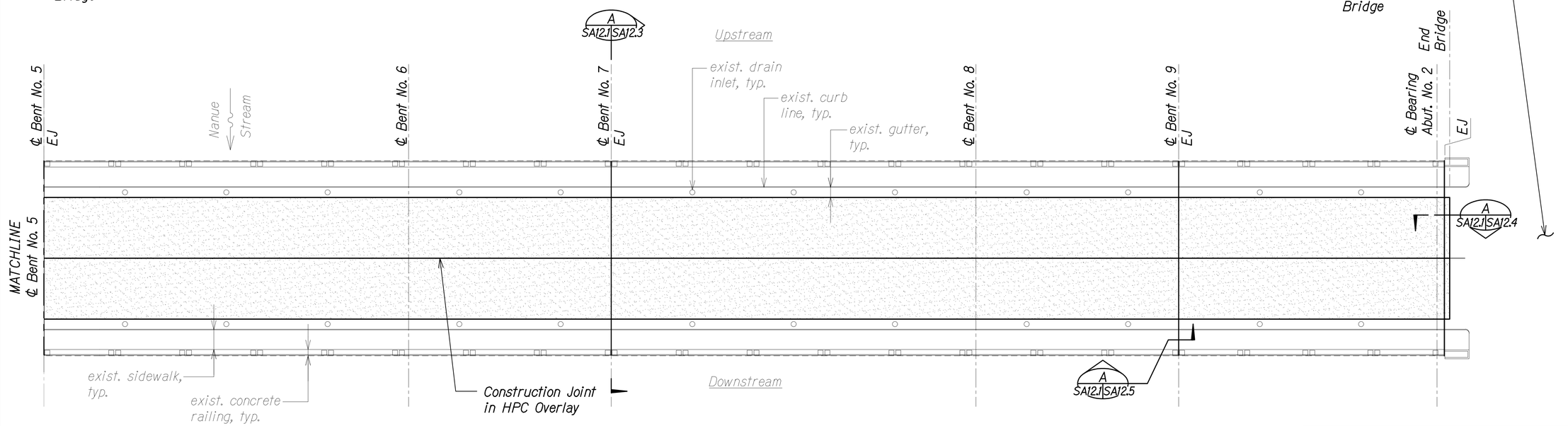
SHEET No. SA11.4 OF 4 SHEETS

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

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PE2-OOTH\01 CAD\10-28-24 BID SERVICE-SA1101-SA1104 REPAIR DTLS.DWG PLOT TIME: 10-26-24 5:59 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	217	280





BRIDGE DECK OVERLAY AND JOINTING PLAN

Scale: 1" = 10'-0"

LEGEND:

Penetrating Sealer with HPC Overlay

EJ Expansion Joint in Deck

NOTES:

1. HPC Overlay shall be applied over the penetrating sealer. Refer to Notes 8A and 8B in the Structural General Notes
2. Replace deck expansion joint seals at Abutment No. 1, Bent Nos. 3, 5, 7, and 9, and Abutment No. 2. Refer to Note 8G Structural General Notes and SA12.4 and SA12.5.

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STATE OF HAWAII
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BRIDGE DECK OVERLAY AND JOINTING PLAN

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

Scale: As Noted Date: Oct. 2024

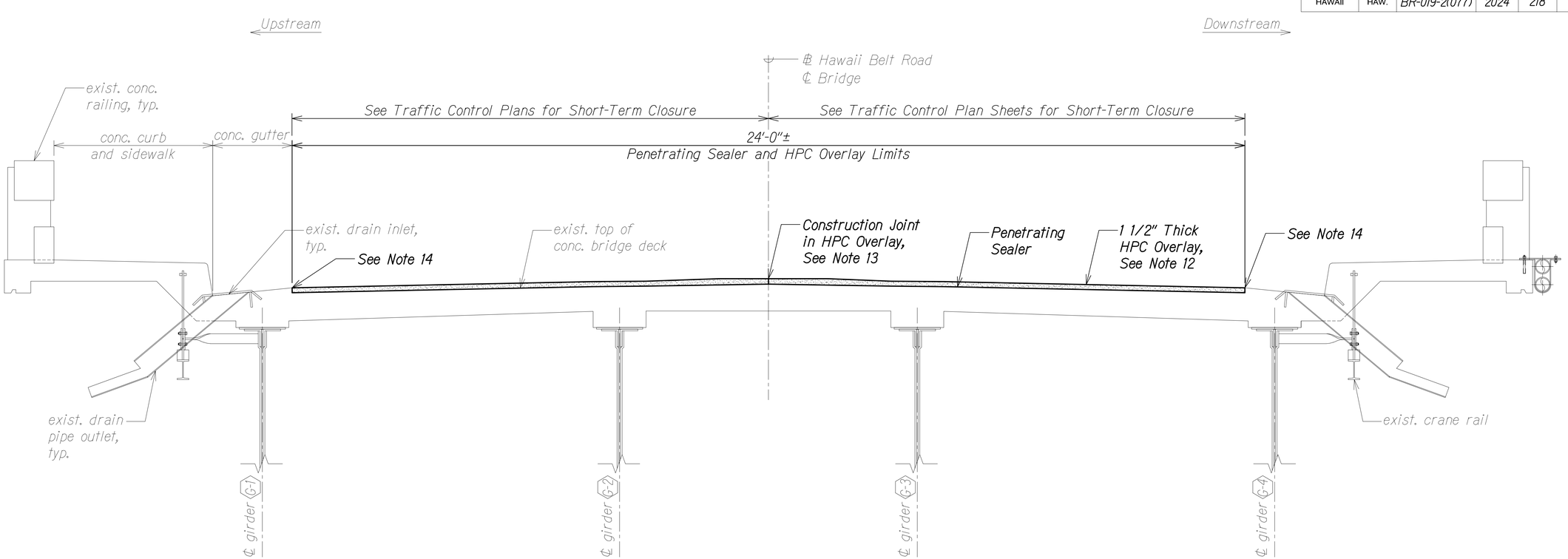
SHEET No. SA12.1 OF 6 SHEETS

ORIGINAL PLAN | NOTE BOOK No.

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

DRAWING NAME: Z:\OD\ ONGOING\ 23-022\ 3-NANUE STR BR PE2-80\TA\01 CAD\ 10-28-24 BID SET\ NSR-SA1201 OVERLAY JTG.DWG PLOT TIME: 10-26-24, 6:06 PM

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"

A SA12.1 | SA12.2

LEGEND:

Penetrating Sealer with HPC Overlay

NOTES:

1. Penetrating sealer and HPC overlay shall conform to Special Provisions Sections 677 PENETRATING SEALER and 678 HYBRID POLYMER CONCRETE.
2. The existing AC wearing surface shall be removed, followed by shotblasting of the existing concrete deck surface.
3. The concrete deck surface shall be cleaned with a vacuum sweeper and blown with oil free/moisture free compressed air after shotblasting is completed
4. The Contractor shall not remove the existing concrete deck when removing the existing AC wearing surface.
5. 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.
6. Vehicular traffic shall not be allowed onto the prepared concrete deck surface prior to application of the penetrating sealer and HPC overlay.
7. 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.
8. HPC overlay shall not be placed directly against the AC. All HPC construction joints must be formed.
9. Notify the Engineer immediately if spalls or delaminations are discovered in the concrete deck after removing the existing AC wearing surface.
10. Application of penetrating sealer and HPC overlay shall not occur until after the deck soffit cracks have been epoxy injected.
11. The Contractor shall submit penetrating sealer and HPC overlay jointing plans for approval.
12. 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.
13. Refer to sheet SA12.6 for construction joint details.
14. The HPC must be finished to match the concrete gutter elevation.

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TRANSVERSE SECTION WITH HPC OVERLAY

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

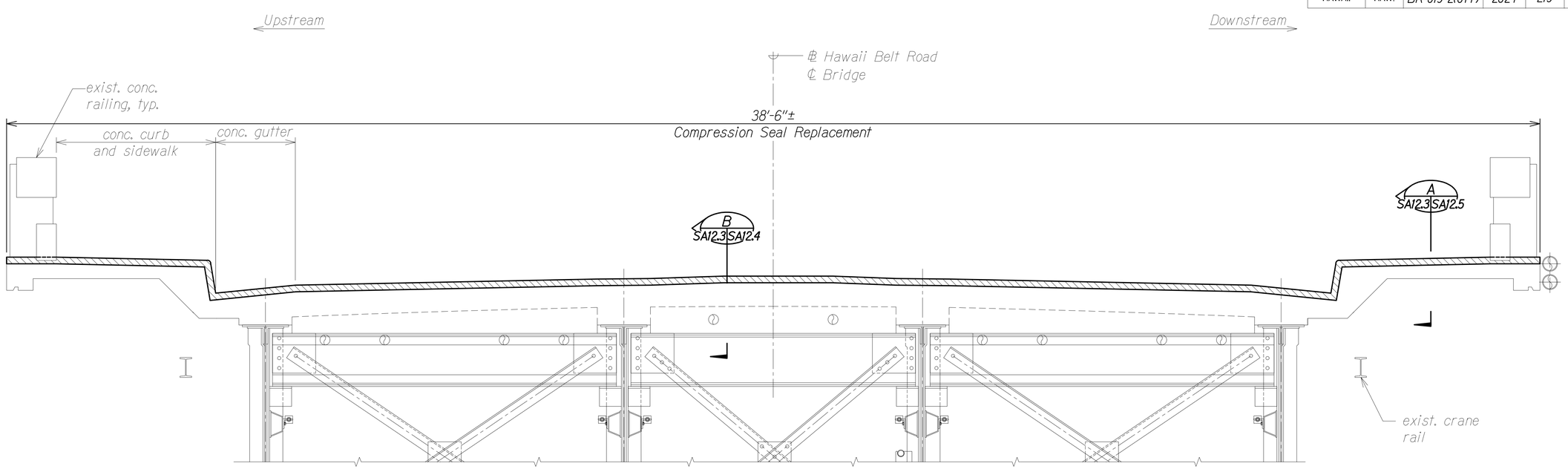
Scale: As Noted Date: Oct. 2024

SHEET No. SA12.2 OF 6 SHEETS

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

DRAWING NAME: Z:\OD\ ONGOING\23-022.9-HANUE STR BR PE2-3D\HAOT CAD\10-28-24 BID SET\VSR-SA1202-SA1205 HPC DET.DWG PLOT TIME: 10-28-24, 1:14 PM

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 (A SA12.1 | SA12.3)

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

LEGEND:

New Expansion Joint Compression Seal

NOTES:

1. The new compression seal shall be monolithic, unless otherwise approved by the Engineer.
2. New compression seals shall conform to Special Provisions Section 515 DECK EXPANSION JOINTS.
3. 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.
4. 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.

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

DRAWING NAME: Z:\OT ONGOING\23-202.9-NANUE STR BR PE2-20TH\OT CAD\10-28-24 BID SET\VSR-SA1202-SA1205 HPC DET.DWG PLOT TIME: 10-26-24, 6:07 PM

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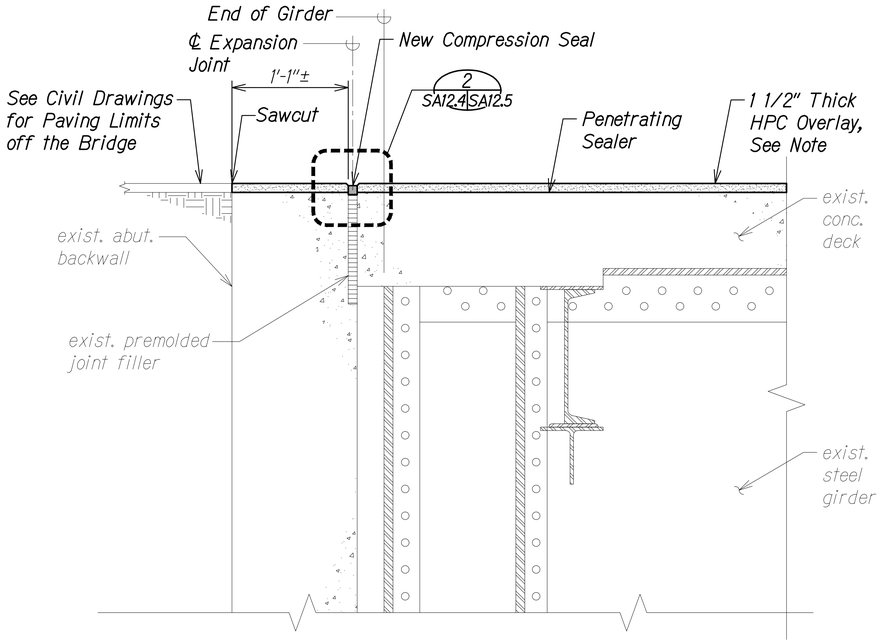
TRANSVERSE SECTION AT EXPANSION JOINTS

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA12.3 OF 6 SHEETS

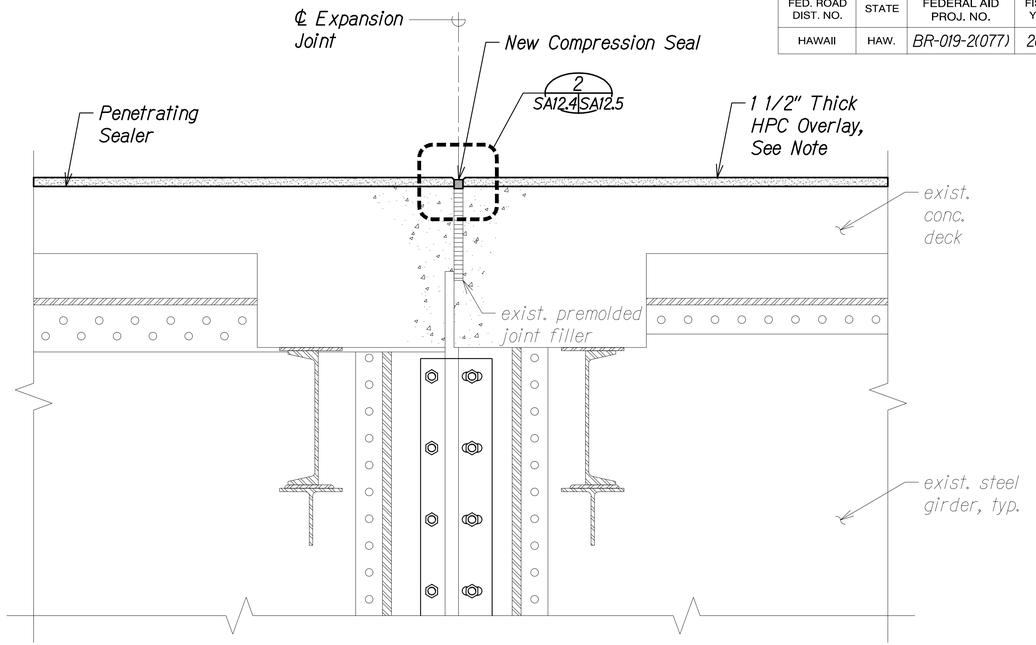
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	220	280



TYPICAL DECK EXPANSION JOINT SECTION AT ABUTMENTS (A)

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

A: SA12.1 | SA12.4



TYPICAL DECK EXPANSION JOINT SECTION AT BENTS (B)

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

B: SA12.1 | SA12.4; SA12.3

NOTE:

Refer to Note 12 on sheet SA12.2.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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. SA12.4 OF 6 SHEETS

220

ORIGINAL PLAN
NOTE BOOK
No.

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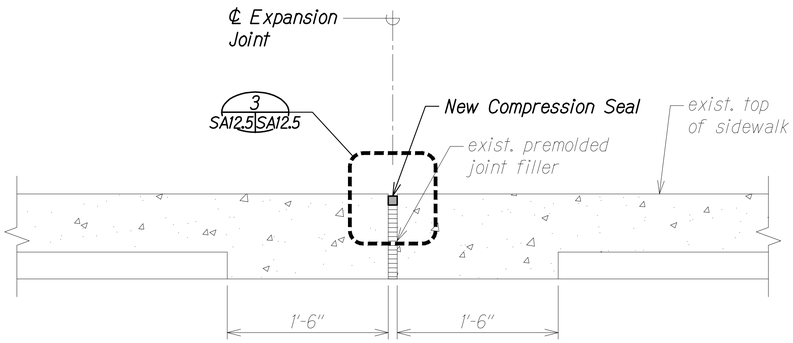
DRAWING NAME: Z:\OD ONGOING\23-022\9-NANUE STR BR PE2-DOTH\01 CAD\10-28-24 BID SER\SR-SA12\02-SA12\05 HPC DET.DWG PLOT TIME: 10-28-24, 6:07 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	221	280



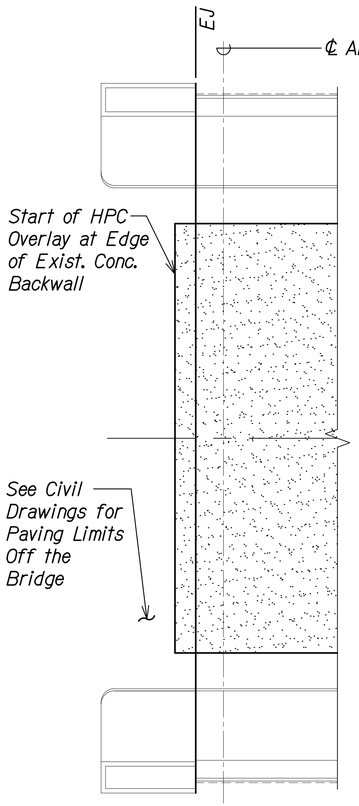
TYPICAL SECTION AT SIDEWALK EXPANSION JOINTS

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

A
SA12.1 SA12.5
SA12.3

NOTE:

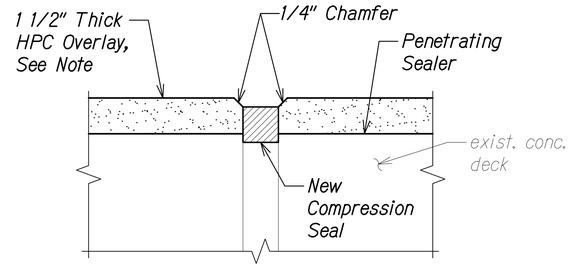
Refer to Note 12 on sheet SA12.2.



DETAIL

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

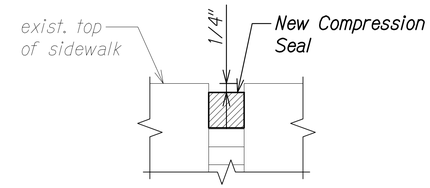
1
SA12.1 SA12.5



COMPRESSION SEAL DETAIL

Scale: 6" = 1'-0"

2
SA12.4 SA12.5



COMPRESSION SEAL DETAIL

Scale: 6" = 1'-0"

3
SA12.5 SA12.5

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NO. 17097-S
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STATE OF HAWAII
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EXPANSION JOINT DETAILS

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA12.5 OF 6 SHEETS

ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY
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QUANTITIES BY
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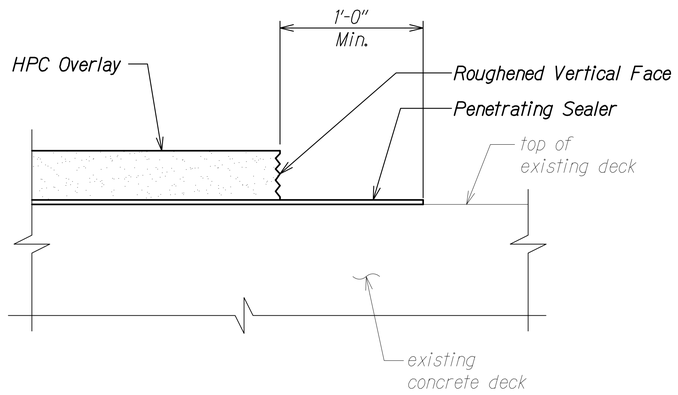
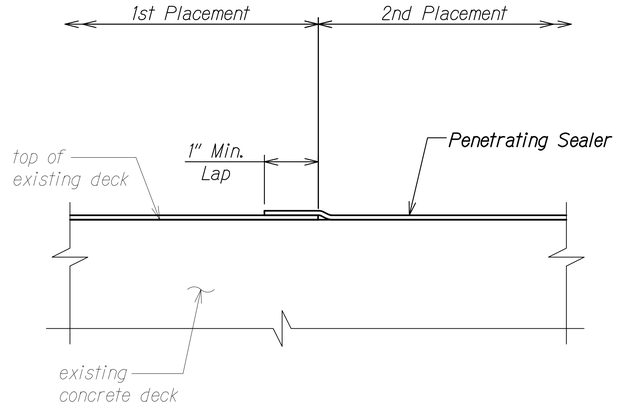
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	222	280



PENETRATING SEALER AND HPC OVERLAY AT CONSTRUCTION JOINT

1 SA12.6 | SA12.6

Scale: 6" = 1'-0"



PENETRATING SEALER LAP

2 SA12.6 | SA12.6

Scale: 6" = 1'-0"

NOTES:

1. HPC overlay shall not be placed directly against the AC. HPC construction joints must be formed.
2. Forms for the longitudinal construction joint must produce a 1/4" amplitude or a Concrete Surface Profile (CSP) of 7.
3. Penetrating sealer construction joints shall be straight, neat, and smooth.
4. High and low spots in penetrating sealer shall be corrected before placement of the HPC overlay.
5. 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.
6. Construction joints between penetrating sealer and HPC Overlay shall be staggered.

LEGEND:

HPC Overlay

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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. SA12.6 OF 6 SHEETS

222

ORIGINAL PLAN
NOTE BOOK
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SURVEY PLOTTED BY
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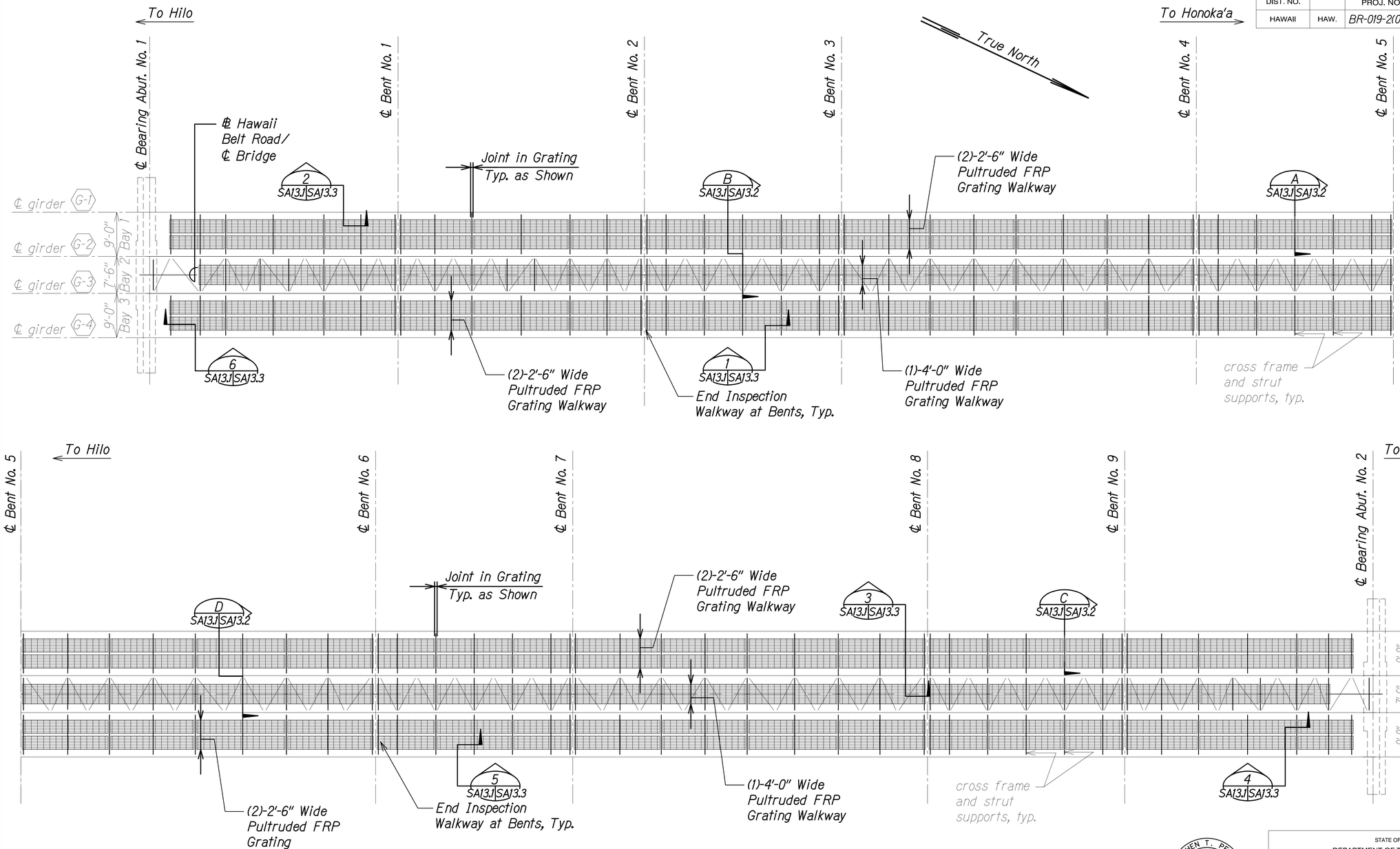
DATE

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR REZ-BOTH\01 CAD\10-28-24 BID SET\NSR-SA12R6 HPC DET.DWG PLOT TIME: 10-28-24, 6:08 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	223	280



INSPECTION WALKWAY FRAMING PLAN

Scale: 1" = 10'-0"

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

DRAWING NAME: ZA\00 ONGOING\23-0229-NANUE STR BR PE2-60\HA\01 CAD\10-28-24 BID SETS\SR-SA1301-SA1304 INSP WALKWY PLN.DWG PLOT TIME: 10-26-24, 6:13 PM

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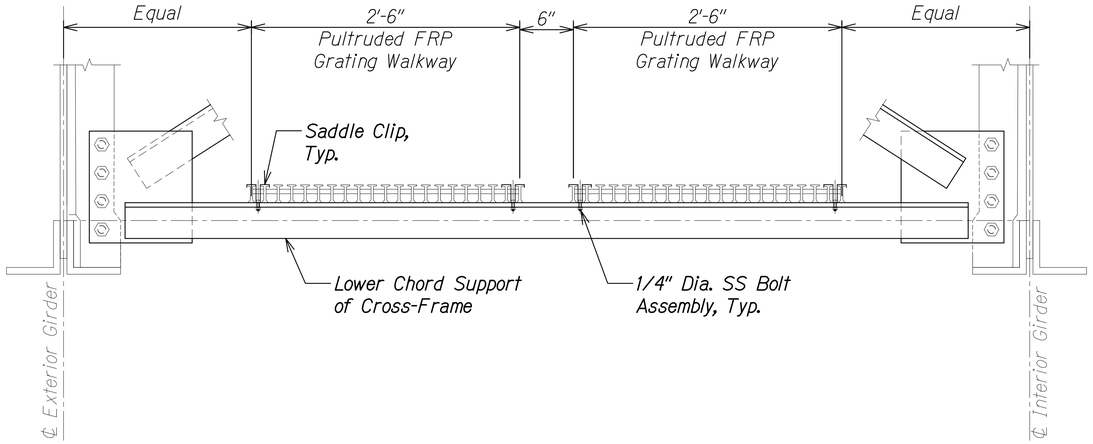
INSPECTION WALKWAY FRAMING PLAN

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

Scale: As Noted Date: Oct. 2024

SHEET No. SA13.1 OF 4 SHEETS

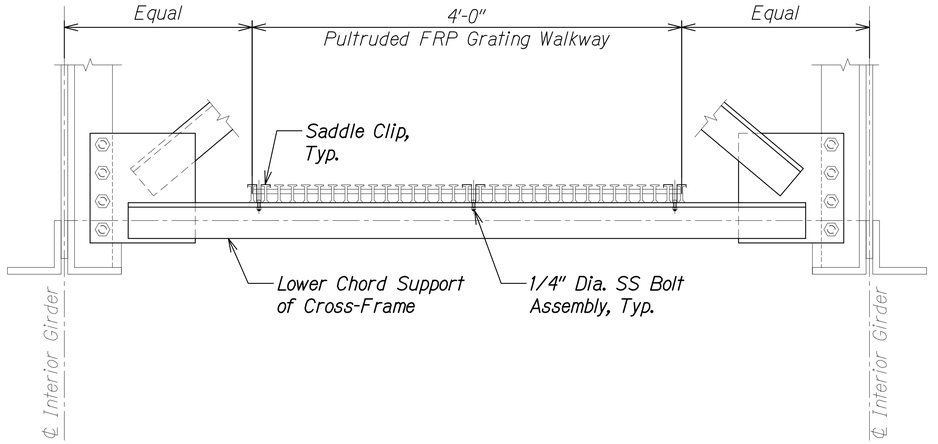
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	224	280



INSPECTION WALKWAY SECTION AT EXTERIOR BAY CROSS-FRAME SUPPORT

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

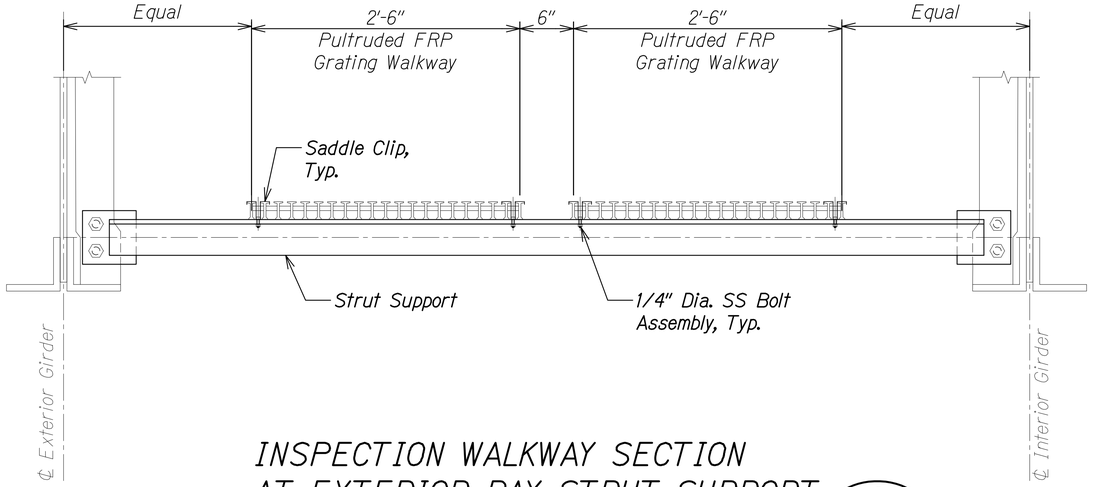
A SA13.1 | SA13.2



INSPECTION WALKWAY SECTION AT INTERIOR BAY CROSS-FRAME SUPPORT

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

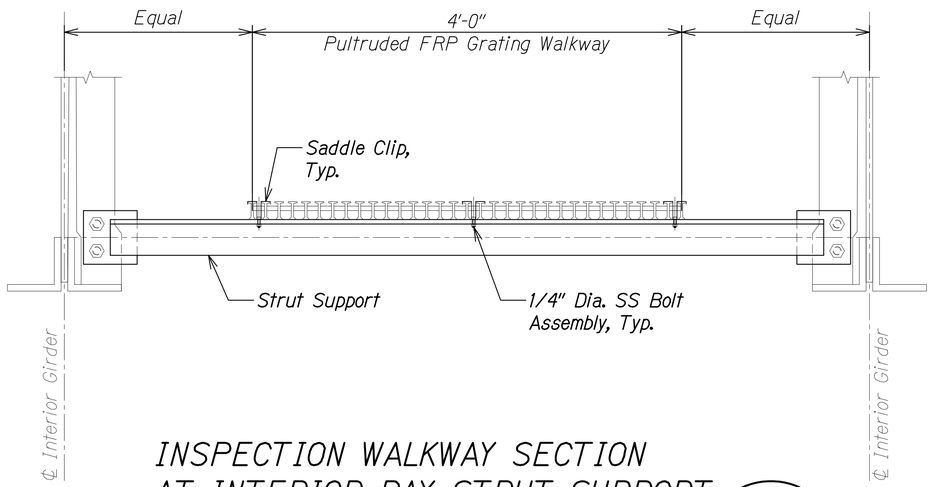
B SA13.1 | SA13.2



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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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	CHECKED BY	

DRAWING NAME: Z:\OD\ ONGOING\23-022\3-NANUE STR BR PEP-ROTA\01 CAD\10-28-24 BID SET\NSR-SA1301-SA1304 INSP WALKWY PLN.DWG PLOT TIME: 10-28-24, 3:27 PM)

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

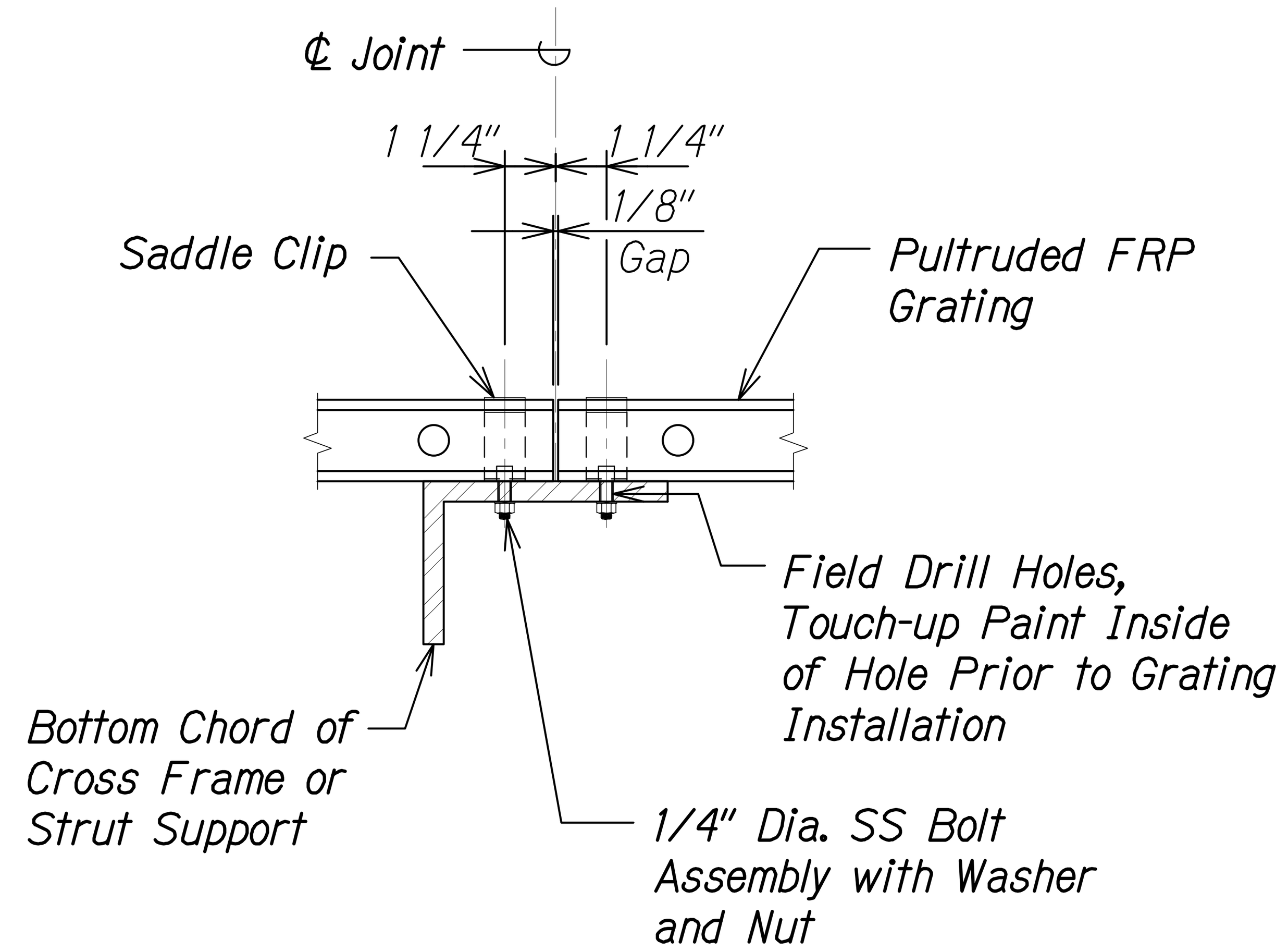
INSPECTION WALKWAY SECTIONS

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

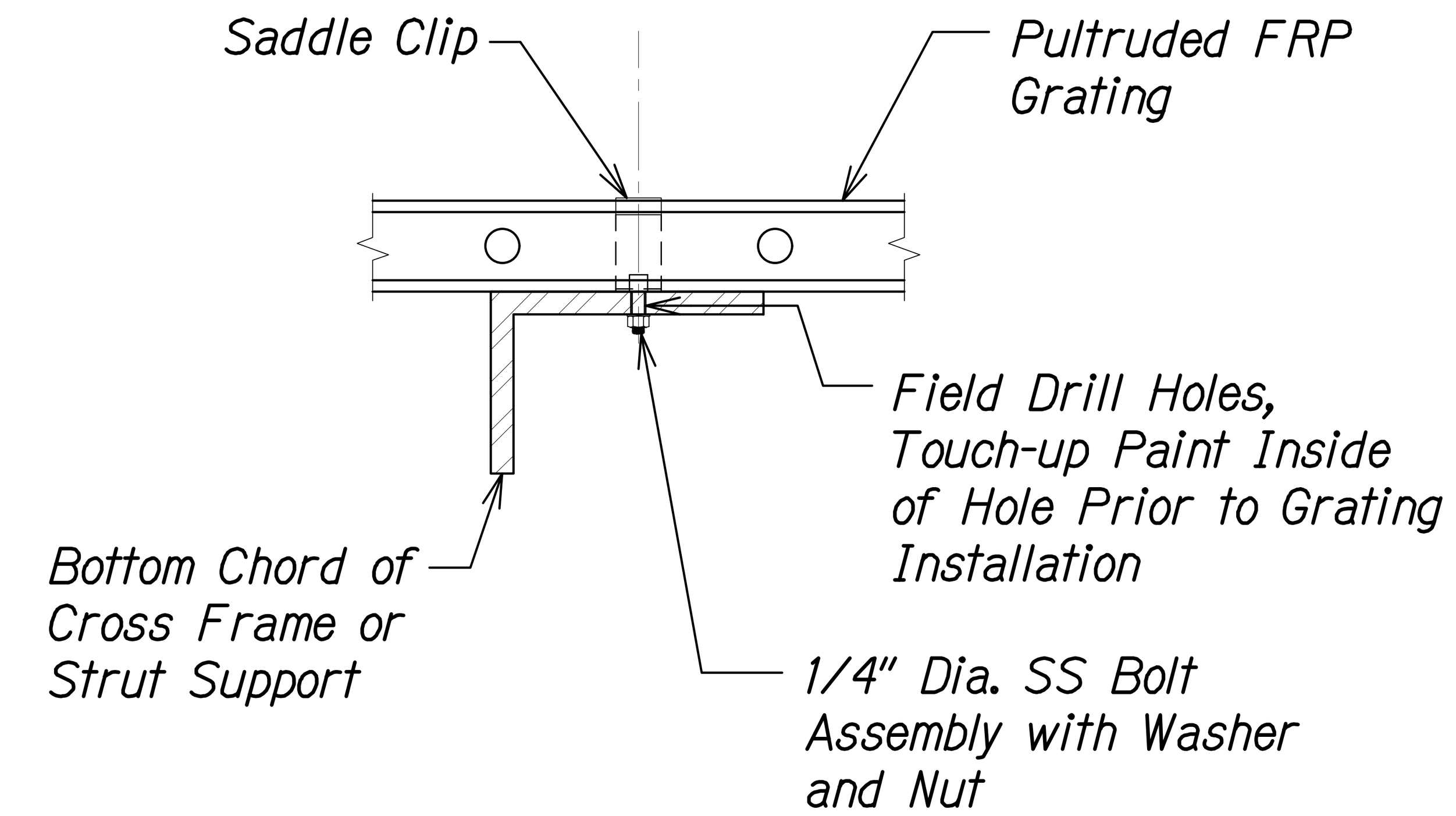
Scale: As Noted Date: Oct. 2024

SHEET No. SA13.2 OF 4 SHEETS

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 SA13.1 | SA13.3
Scale: 3" = 1'-0"



CONNECTION DETAIL AT INTERMEDIATE SUPPORT 2 SA13.1 | SA13.3
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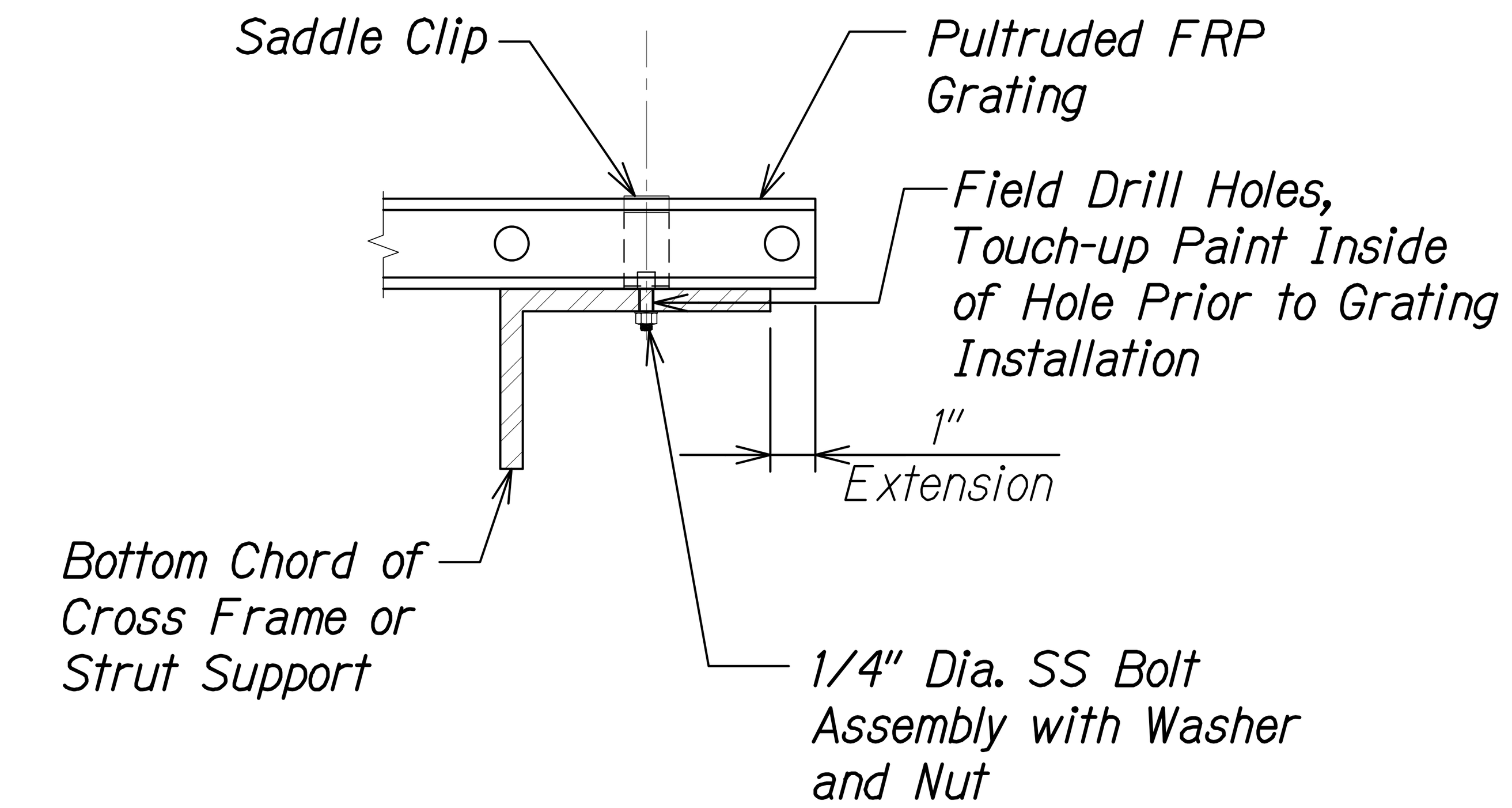
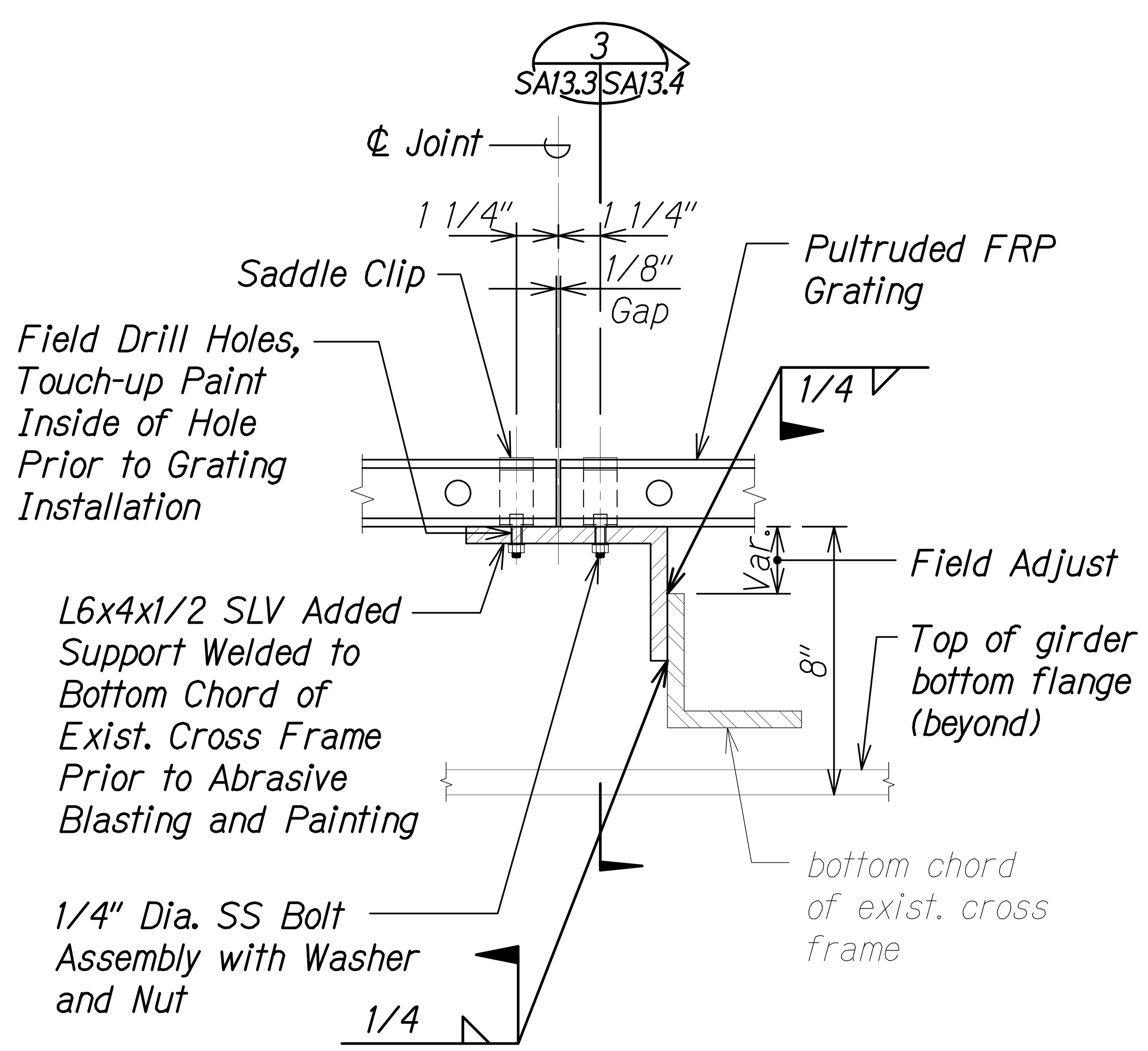
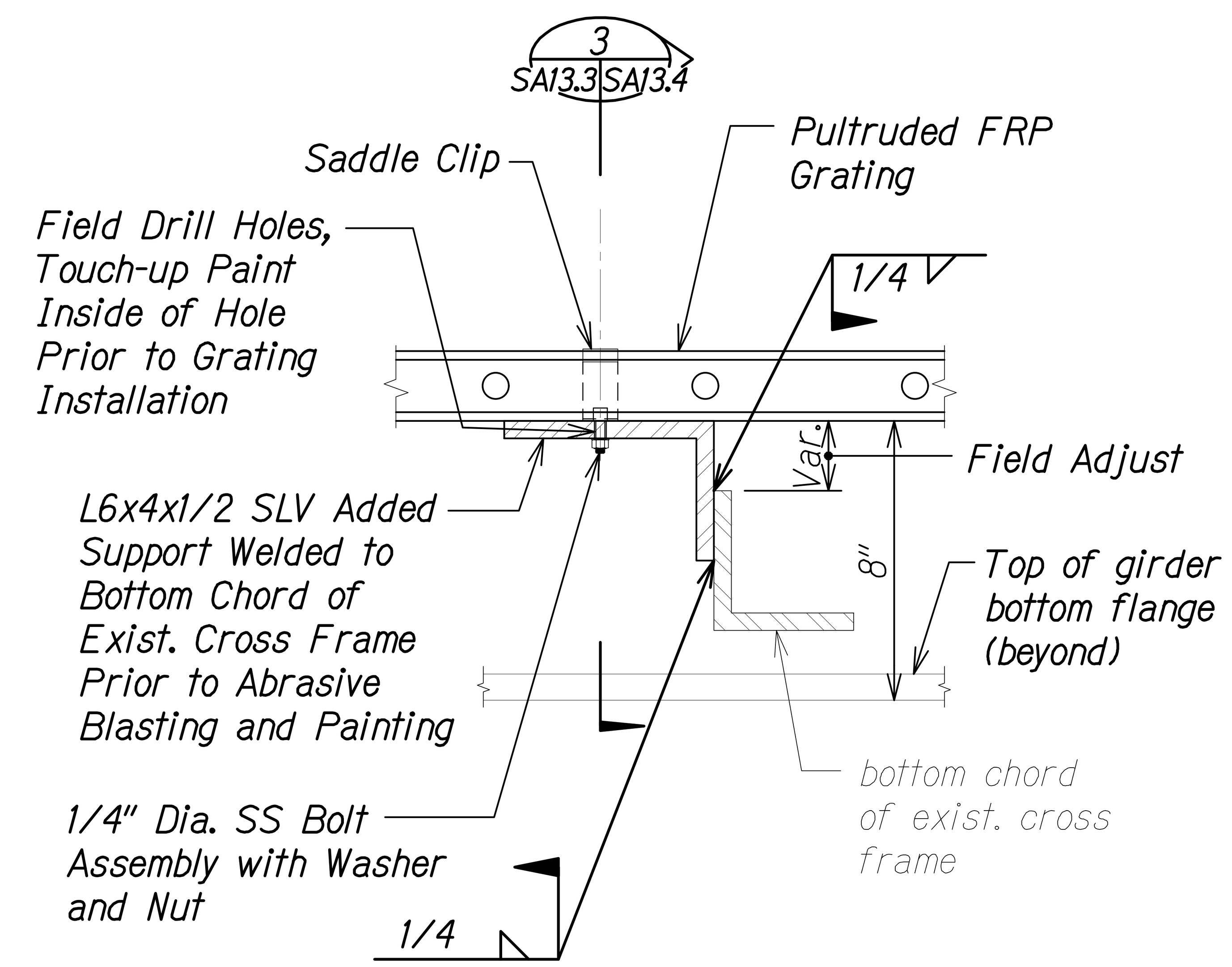


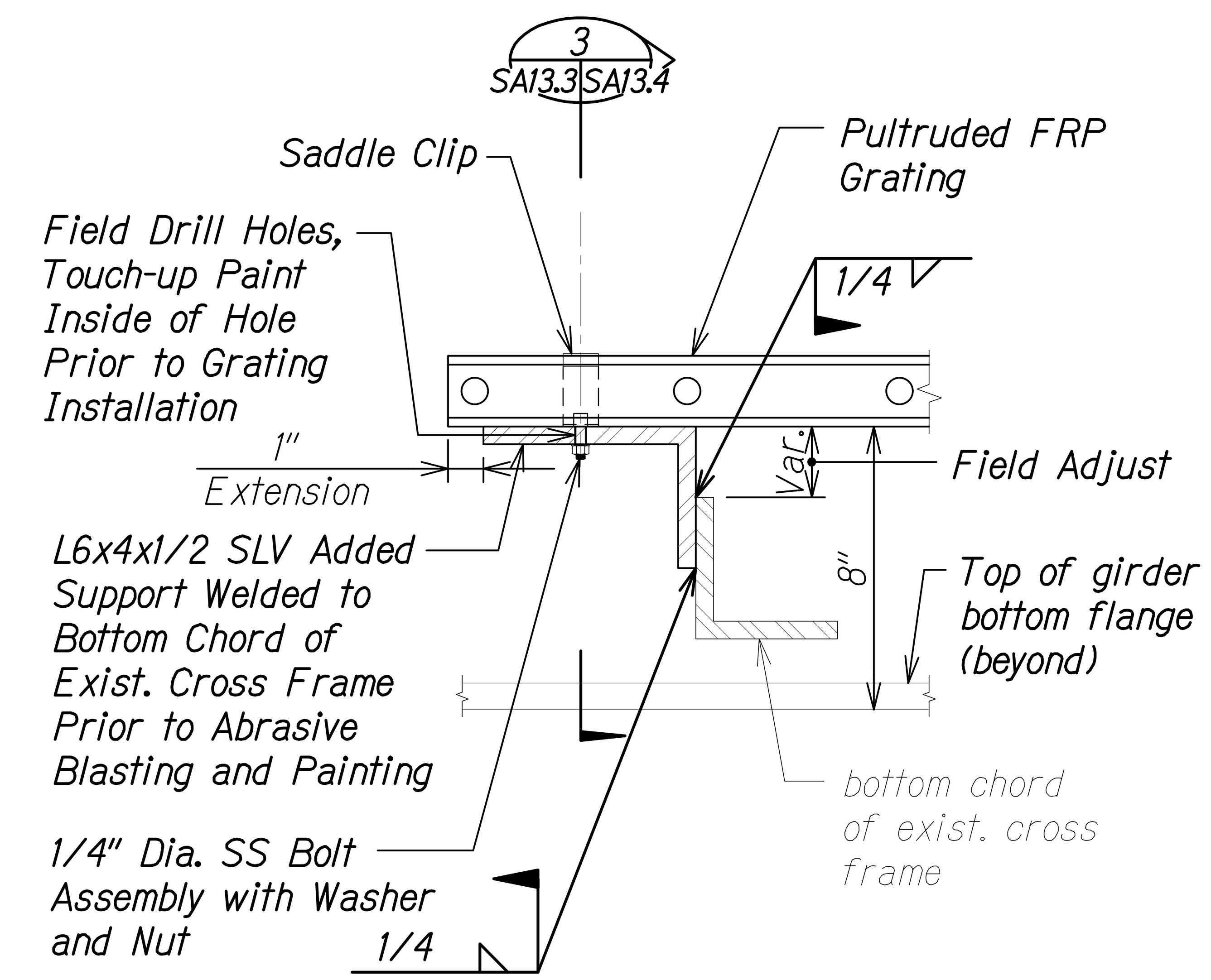
CONNECTION DETAIL AT END SUPPORT 3 SA13.1 | SA13.3
Scale: 3" = 1'-0"



CONNECTION DETAIL AT EXIST. JOINT SUPPORT 4 SA13.1 | SA13.3
Scale: 3" = 1'-0"



CONNECTION DETAIL AT EXIST. INTERMEDIATE SUPPORT 5 SA13.1 | SA13.3
Scale: 3" = 1'-0"



CONNECTION DETAIL AT EXIST. END SUPPORT 6 SA13.1 | SA13.3
Scale: 3" = 1'-0"

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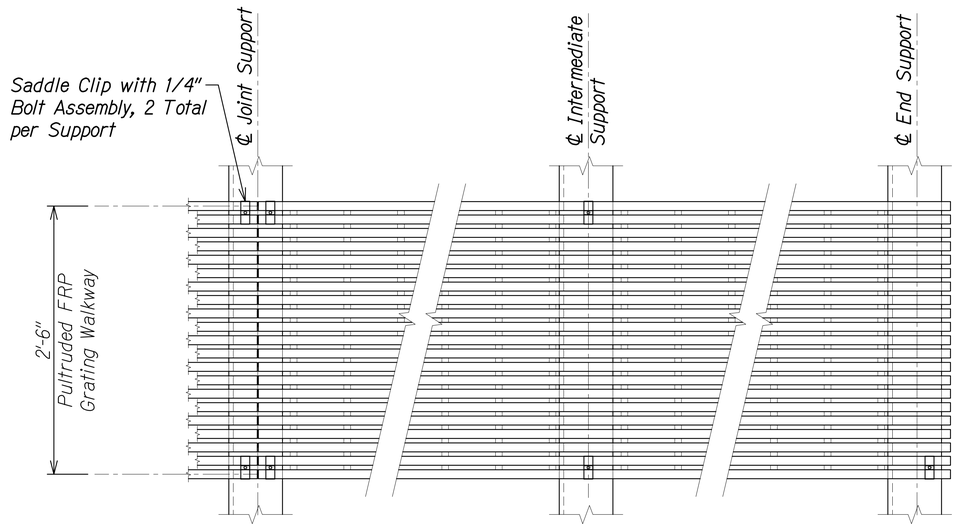
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INSPECTION WALKWAY CONNECTION DETAILS

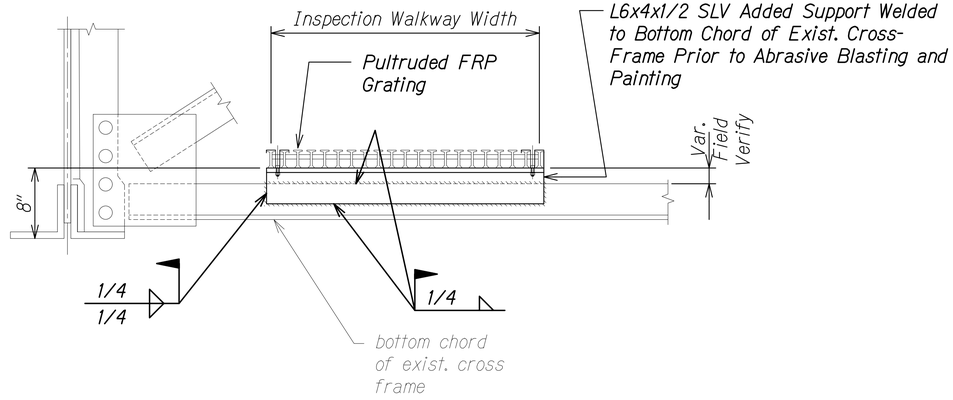
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024
SHEET No. SA13.3 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	226	280



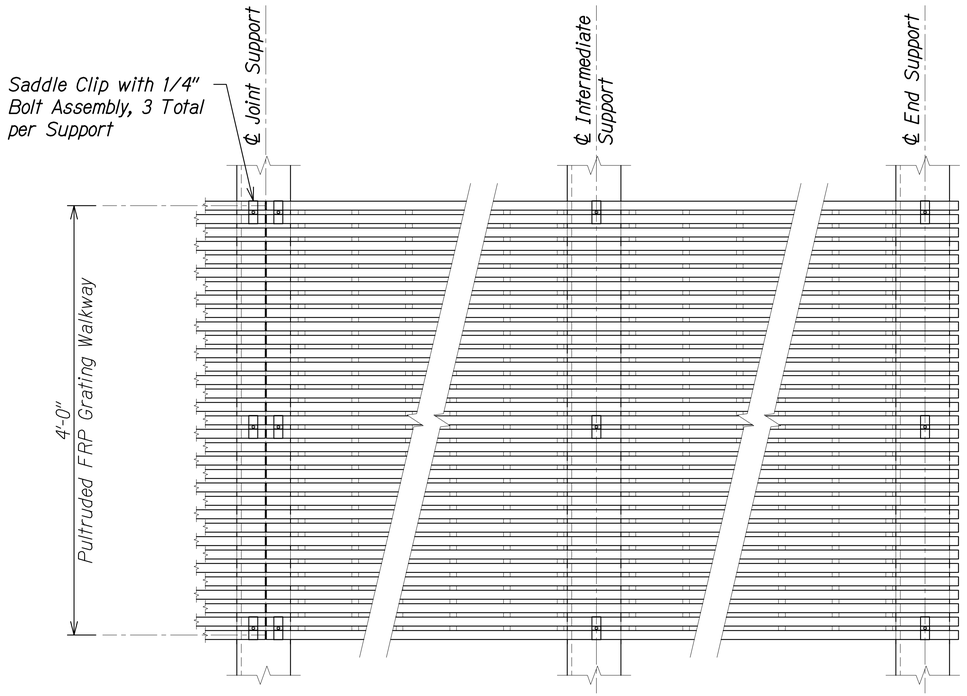
FASTENER LAYOUT PLAN - 2'-6" GRATING (1) SAI3.4 | SAI3.4

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



SECTION (3) SAI3.3 | SAI3.4

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



FASTENER LAYOUT PLAN - 4'-0" GRATING (2) SAI3.4 | SAI3.4

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

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

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-DOT\AOT CAD\10-28-24 BID SET\VSR-SA1301-SA1304 NSP WALKWY PLN.DWG PLOT TIME: 10-28-24, 3:29 PM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

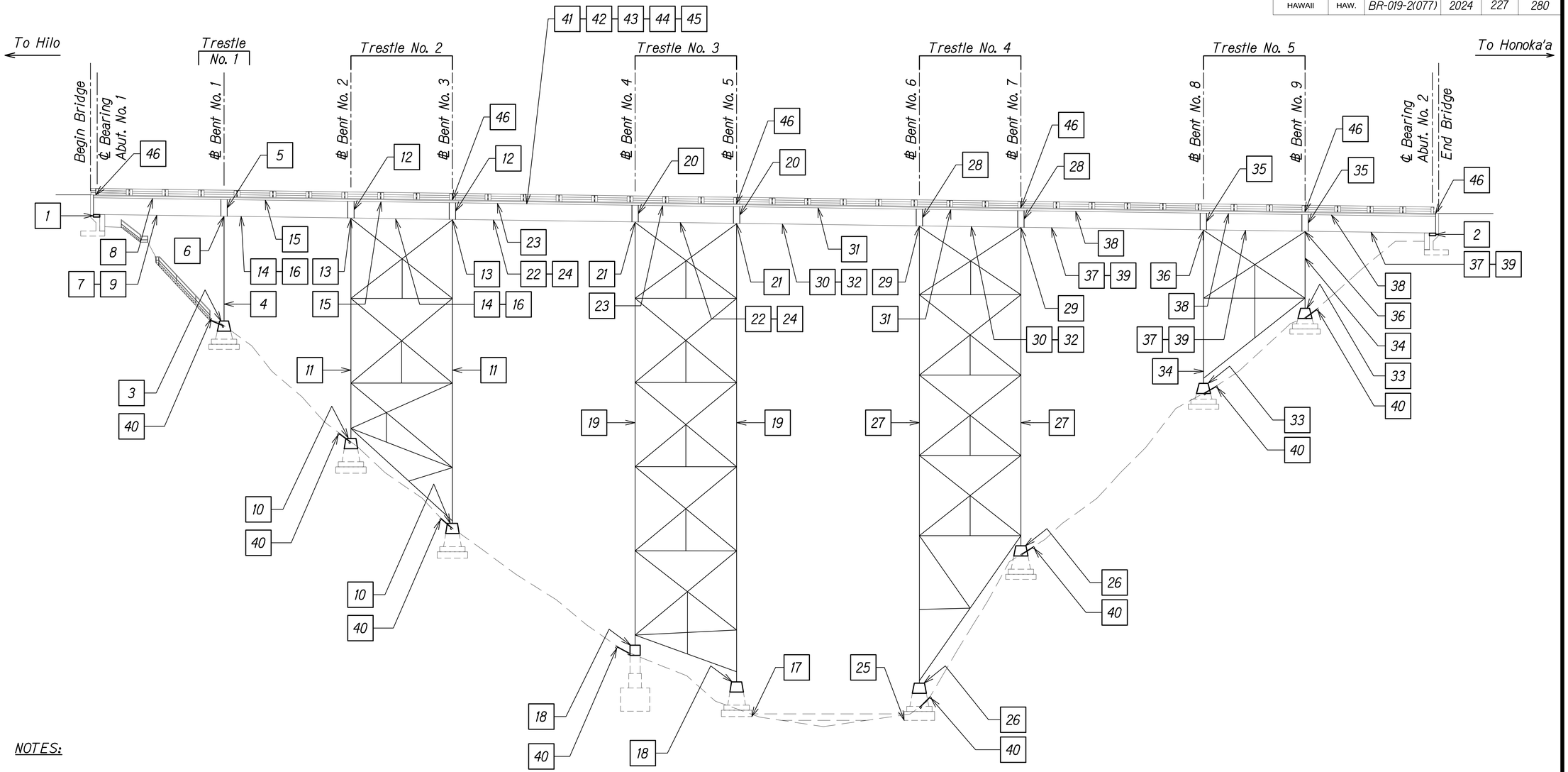
INSPECTION WALKWAY
FASTENER LAYOUT PLANS AND SECTION

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

Scale: As Noted Date: Oct. 2024

SHEET No. SAI3.4 OF 4 SHEETS

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

SURVEY PLOTTED BY
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QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLAN
NOTE BOOK
No.

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NO. 17097-S
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STATE OF HAWAII
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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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PEP-BOTH.01 CAD\10-28-24 BID SET\NSR-SA1401-SA1403 CONSEQ.DWG PLOT TIME: 10-28-24, 4:35 PM

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.*

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

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

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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. SA14.2 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	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.*

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

DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR PE2-EOTH\01 CAD\10-28-24 BID SET\HSR-SA1401-SA1403 CONSEQ.DWG PLOT TIME: 10-28-24, 4:36 PM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

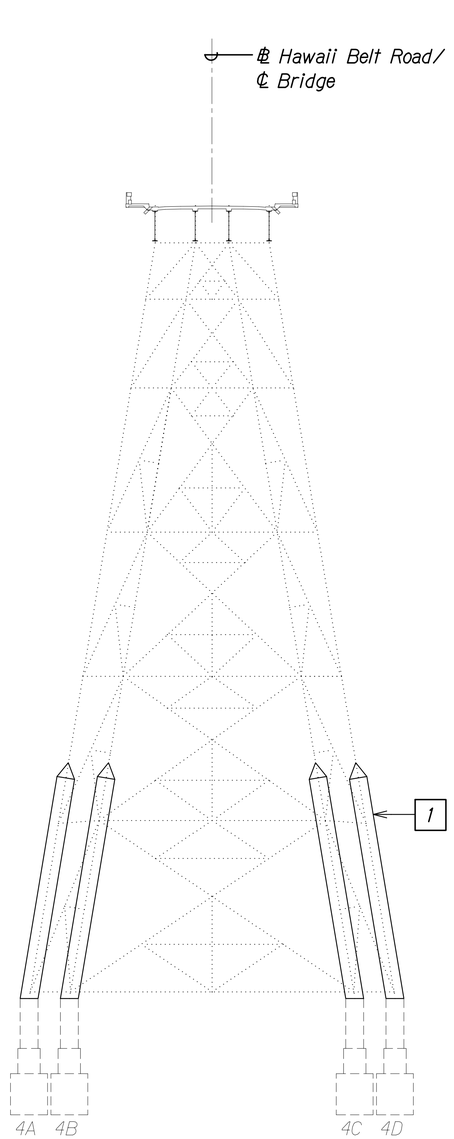
OVERALL CONSTRUCTION SEQUENCE

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

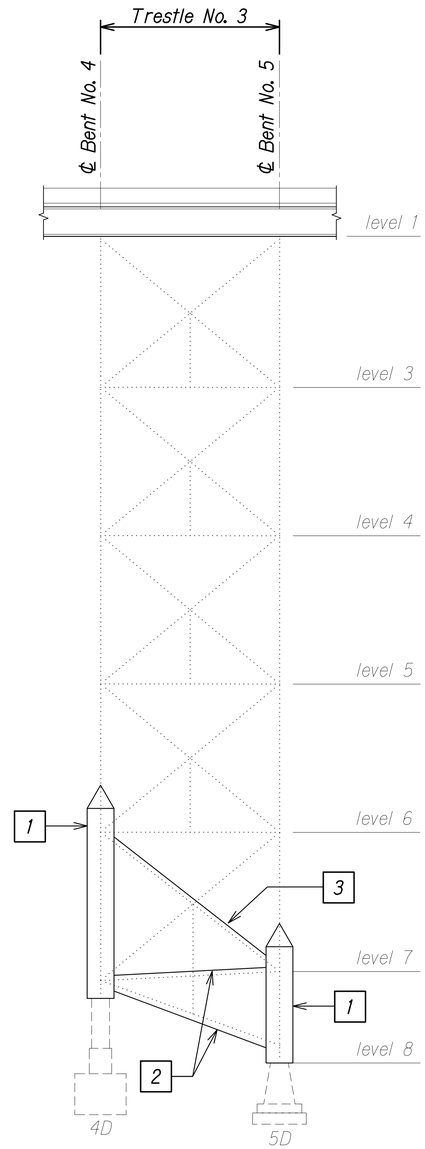
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	230	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE (A)

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

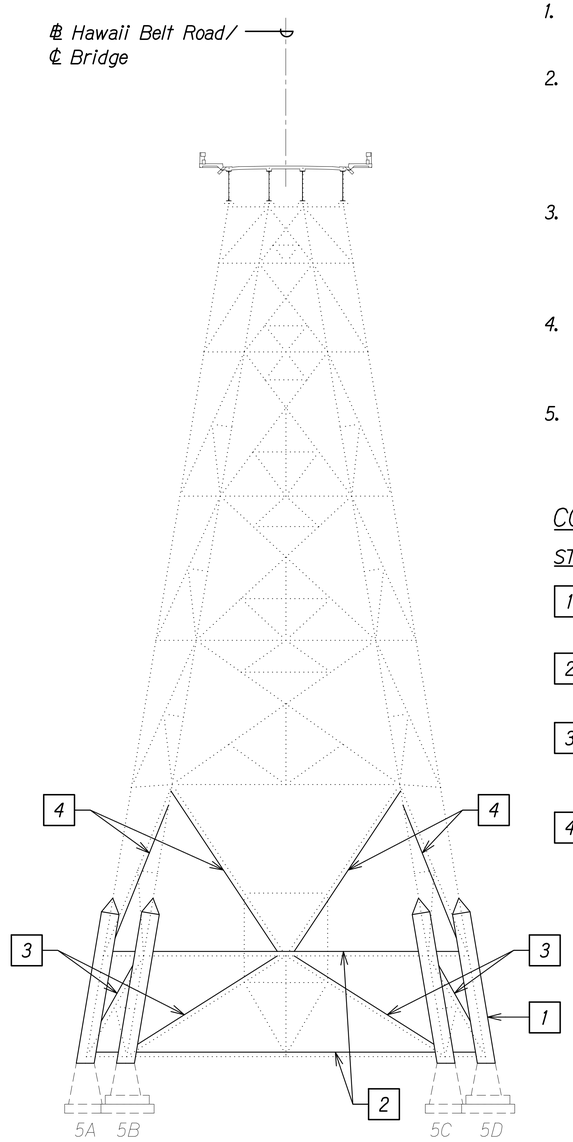
SB1.1 | SB1.1



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE (B)

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

SB1.1 | SB1.1



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE (C)

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

SB1.1 | SB1.1

NOTES:

1. The "SB" sheets are shown for schematic purposes only.
2. 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.
3. 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.
4. Bent No. 1 Bypass Column Assemblies shall be laterally braced to Bent No. 2 prior to and during Bent No. 1 rehabilitation.
5. 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.

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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. SB1.1 OF 29 SHEETS

ORIGINAL PLAN | NOTE BOOK | No.

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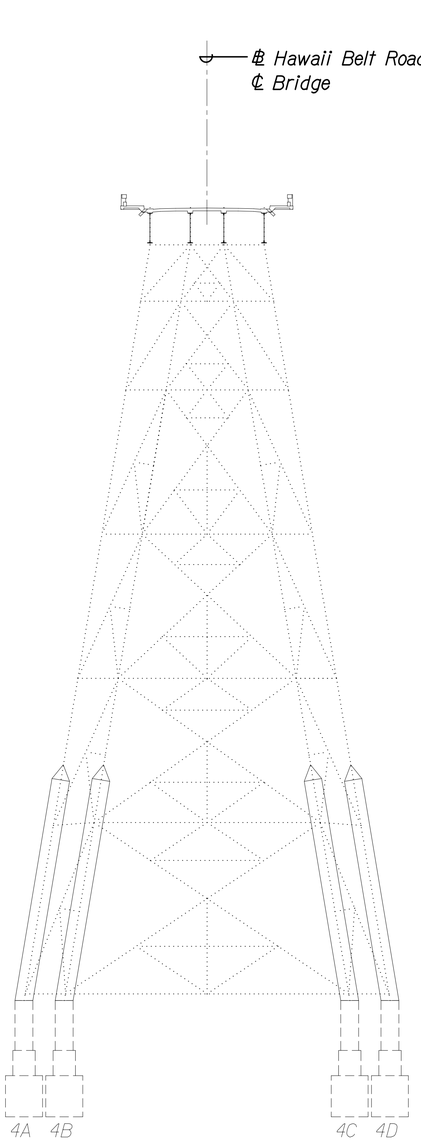
DATE

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-BOT\A01 CAD\10-28-24 BID SET\NSB-SB1101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-28-24, 1:50 PM)

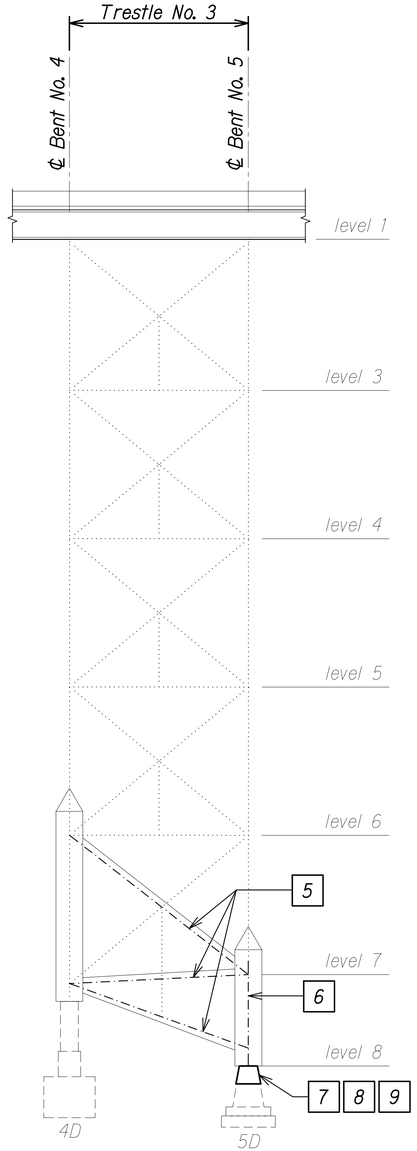
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	231	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

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

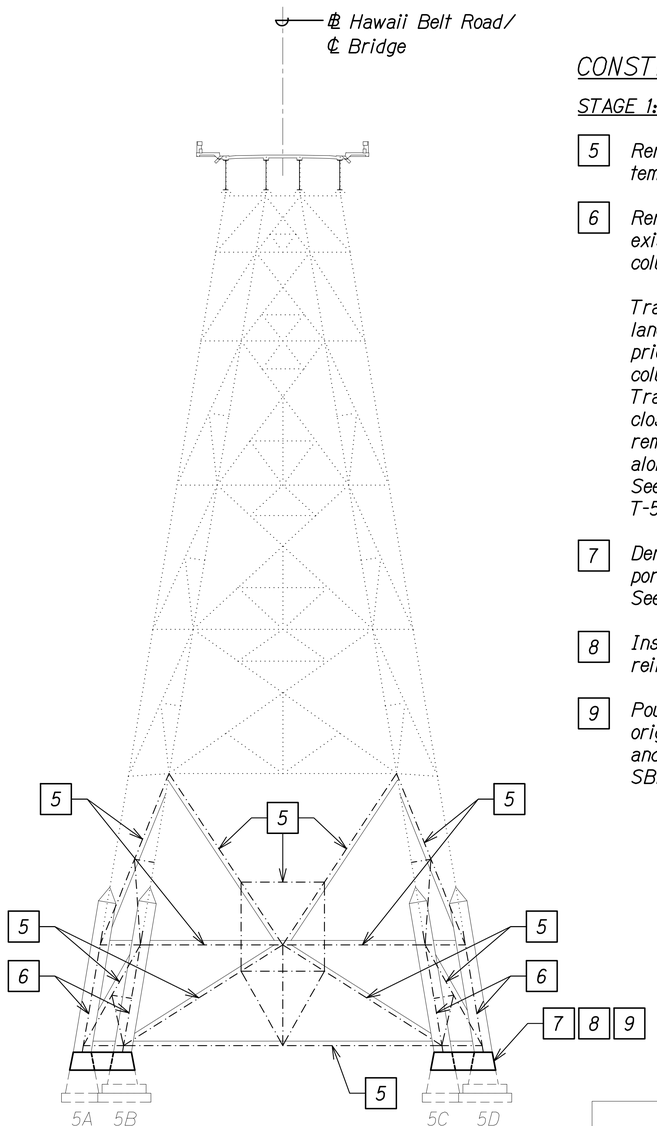
A SBI.2 | SBI.2



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

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

B SBI.2 | SBI.2



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

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

C SBI.2 | SBI.2

CONSTRUCTION SEQUENCE:

STAGE 1:

5 Remove existing bracings along temporary bracings. See sht. SB2.8.

6 Remove existing column between existing column splice points within column bypass. See sht. SB2.8.

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.

7 Demolish top of pedestal and upper portion of existing anchor bolts. See sht. SB2.8.

8 Install pedestal anchor bolts and reinforcing. See sht. SB2.9.

9 Pour top of pedestal back to original top of foundation height and added grade beam. See sht. SB2.9.

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STATE OF HAWAII
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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)

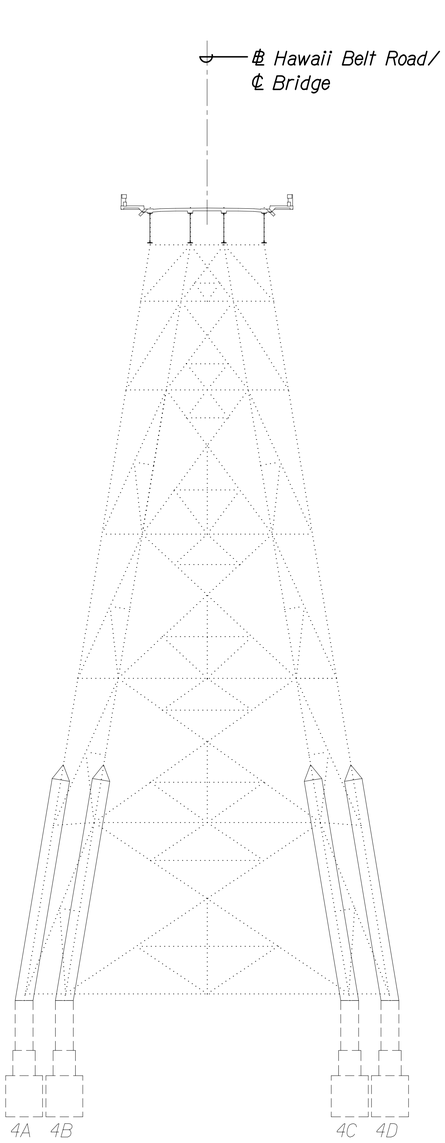
Scale: As Noted Date: Oct. 2024

SHEET No. SBI.2 OF 29 SHEETS

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

DRAWING NAME: Z:\VOL ONGOING\23-029.9-NANUE STR BR PE2-3D\HAUT CAD\10-28-24 BID SET\VSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-28-24 6:43 PM

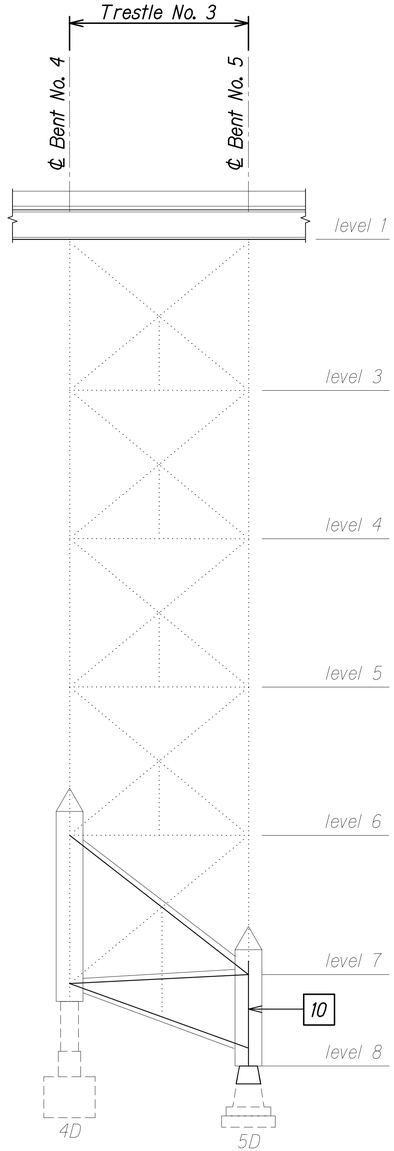
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	232	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE (A)

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

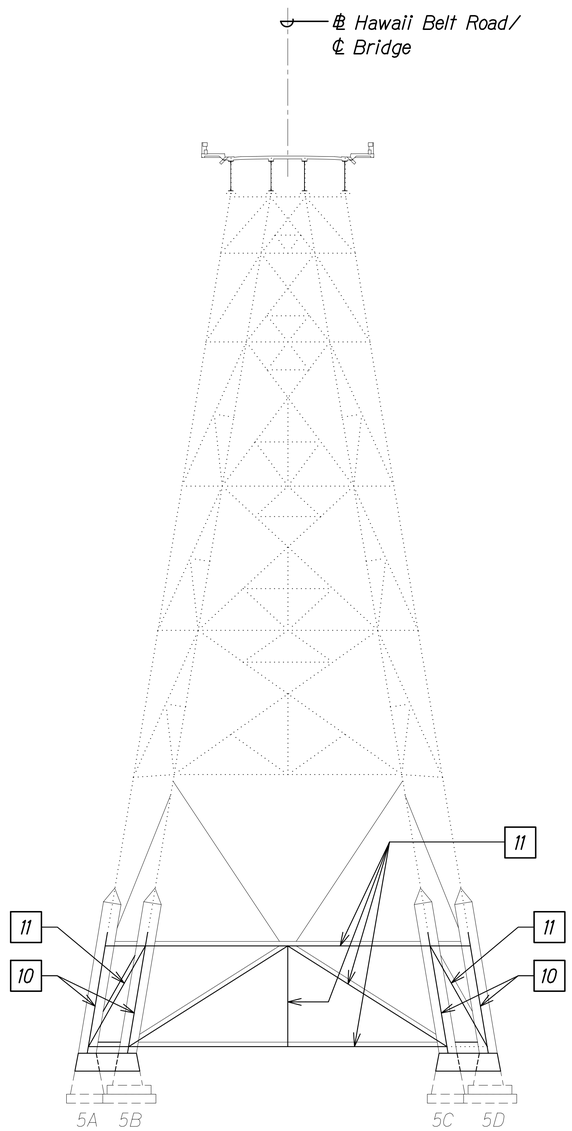
SB1.3 | SB1.3



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE (B)

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

SB1.3 | SB1.3



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE (C)

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

SB1.3 | SB1.3

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.

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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. SB1.3 OF 29 SHEETS

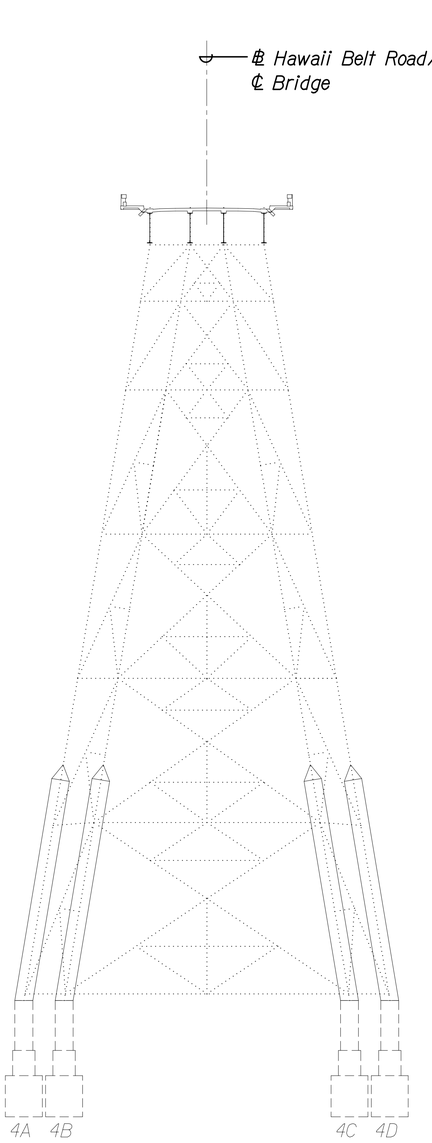
232

ORIGINAL PLAN | NOTE BOOK No.

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

DRAWING NAME: Z:\OD ONGINOA\23-022\3-NANUE STR BR PE2-EOTH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:44 PM

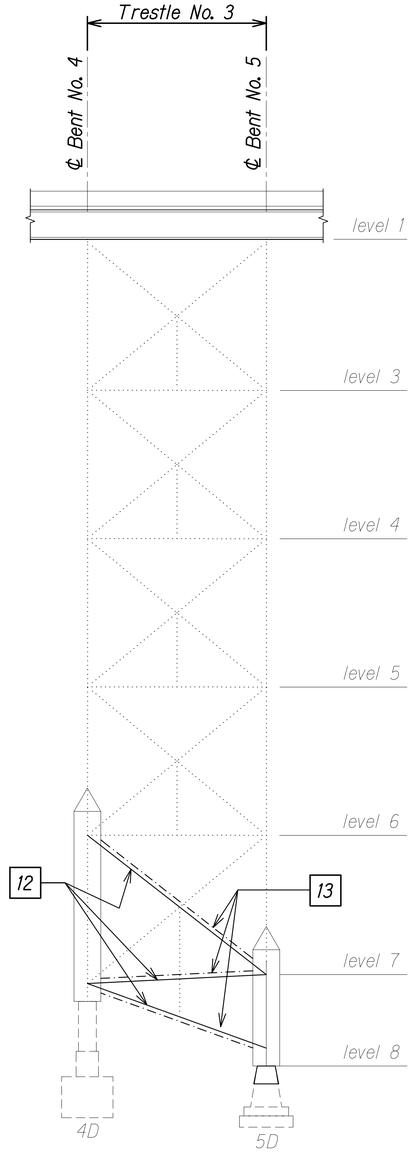
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	233	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE (A)

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

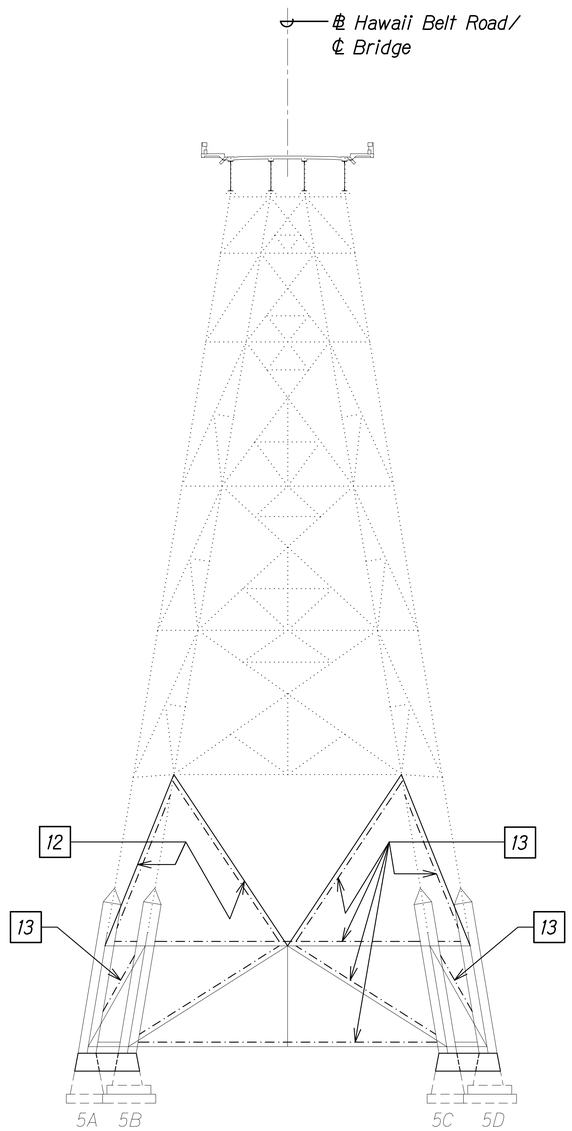
SB1.4 | SB1.4



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE (B)

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

SB1.4 | SB1.4



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE (C)

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

SB1.4 | SB1.4

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.

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

SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE

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

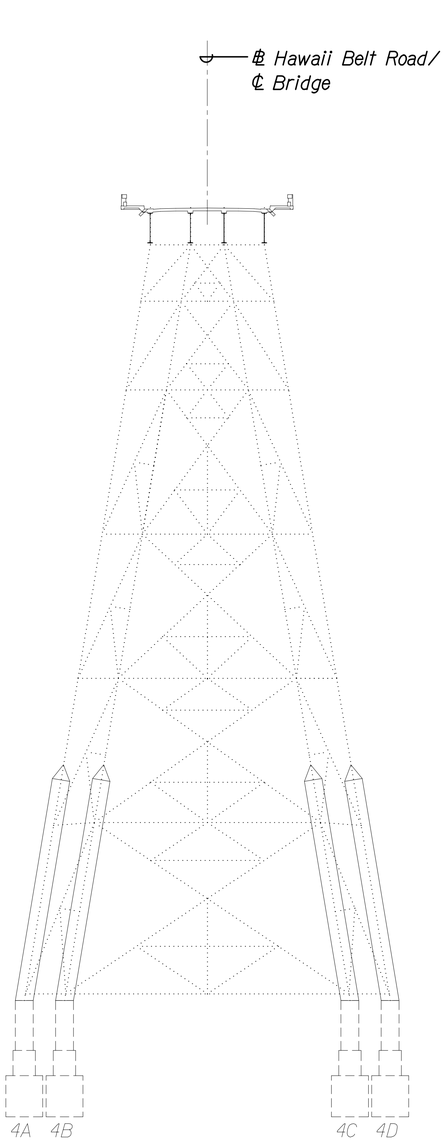
Scale: As Noted Date: Oct. 2024

SHEET No. SB1.4 OF 29 SHEETS

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

DRAWING NAME: Z:\OD\ONGINOA\23-022\3-NANUE STR BR PEZ-DOTH\01 CAD\10-28-24 BID SET\NSR-SB01\01 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:44 PM

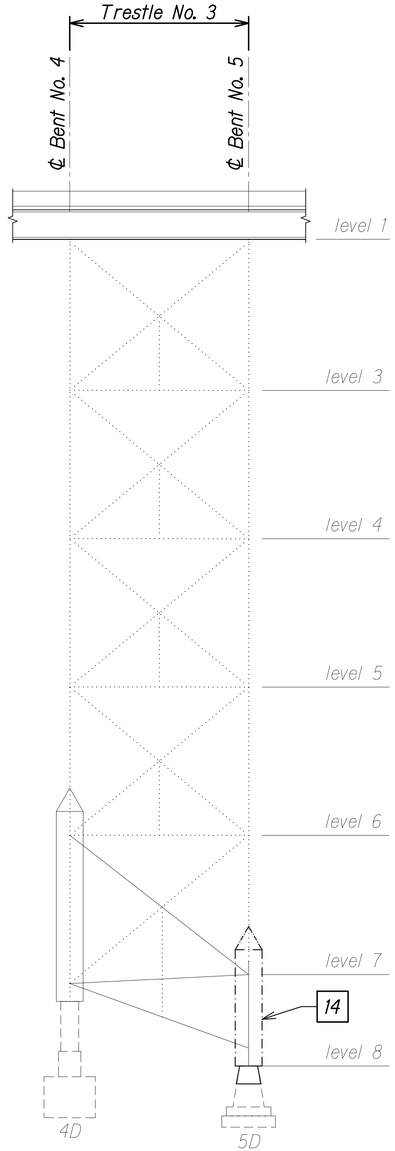
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	234	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE (A)

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

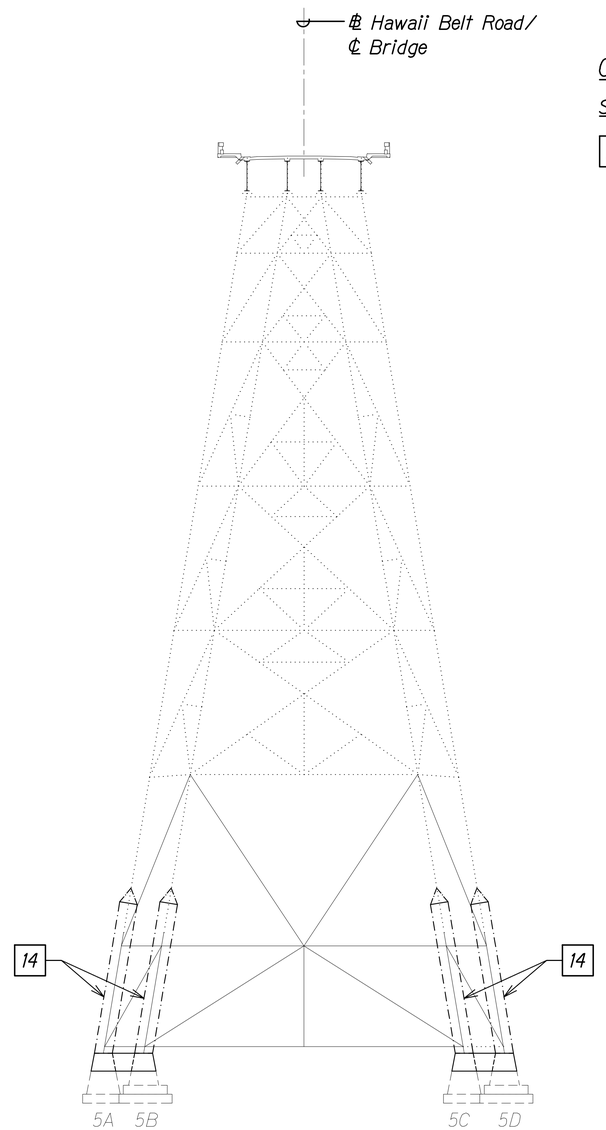
SBI.5 SBI.5



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE (B)

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

SBI.5 SBI.5



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE (C)

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

SBI.5 SBI.5

CONSTRUCTION SEQUENCE:

STAGE 1:

14 Remove bottom of bent column bypass assemblies. See sht. SB2.10. Proceed to next stage.

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

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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

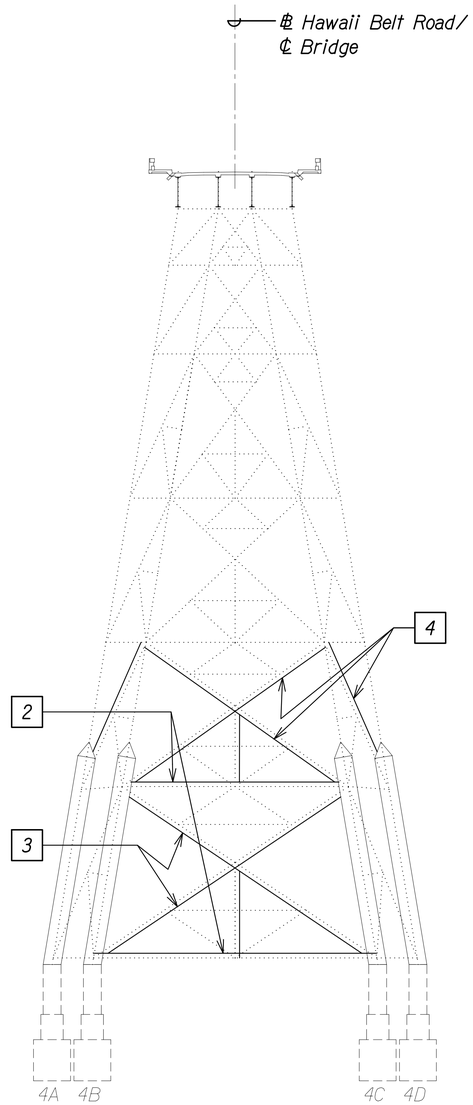
SHEET No. SBI.5 OF 29 SHEETS

234

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

DRAWING NAME: Z:\OD ONGINOA\23-022\3-NANUE STR BR PEZ-EDITA\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:44 PM

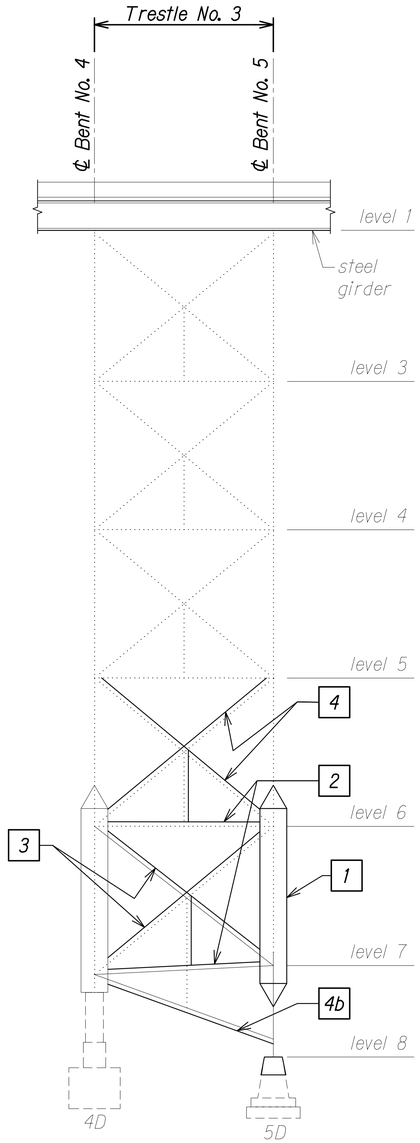
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	235	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

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

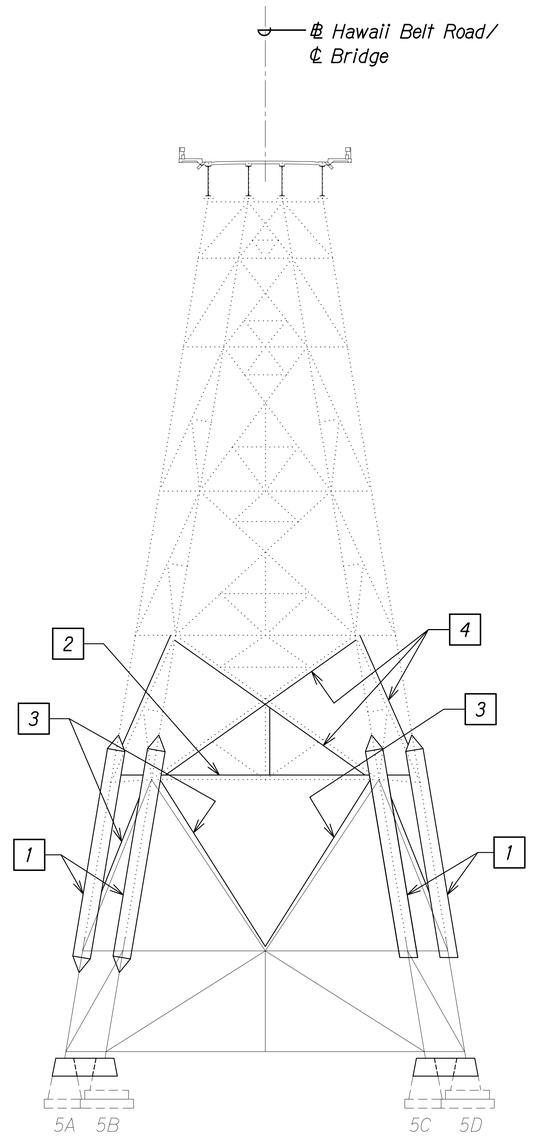
A SB1.6 SB1.6



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

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

B SB1.6 SB1.6



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

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

C SB1.6 SB1.6

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.

STEPHEN T. PETERS
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NO. 17097-S
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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

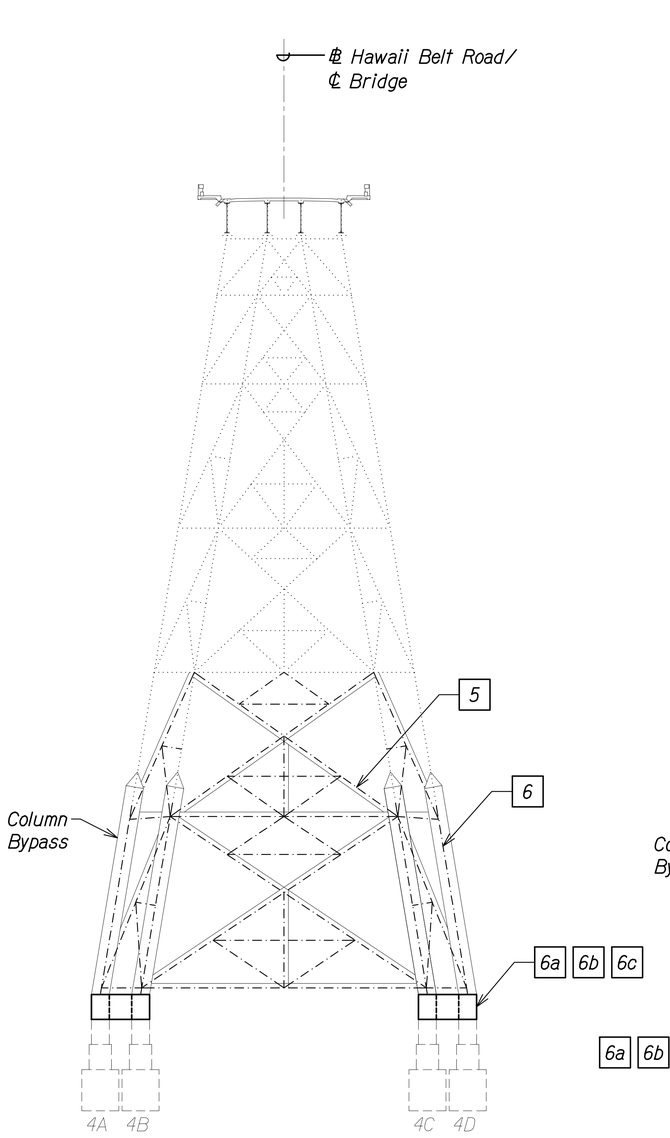
SHEET No. SB1.6 OF 29 SHEETS

ORIGINAL PLAN | NOTE BOOK | No.

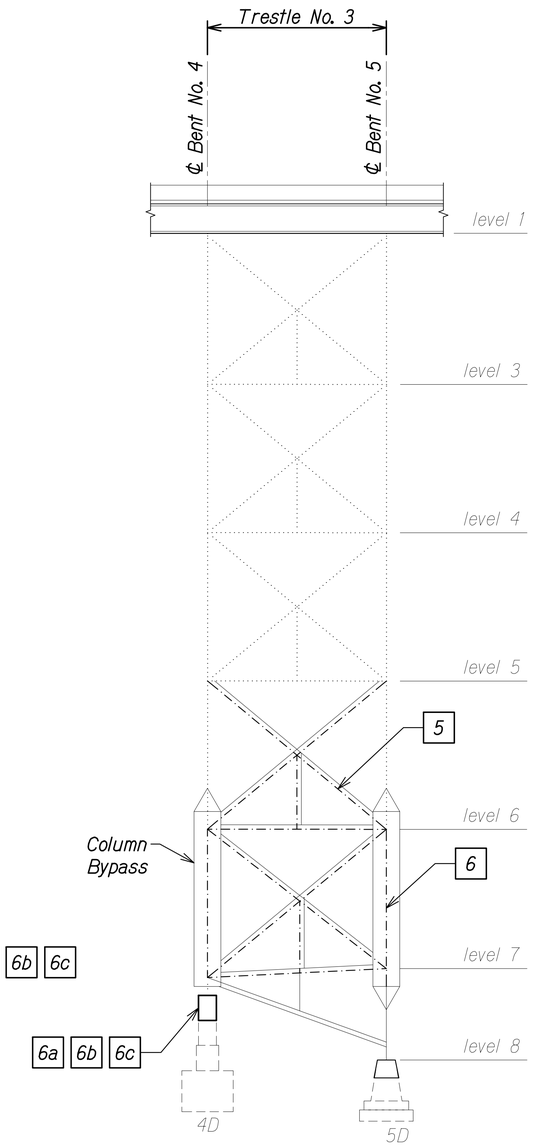
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGOING\23-0223-NANUE STR BR PE2-EOTV\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:45 PM

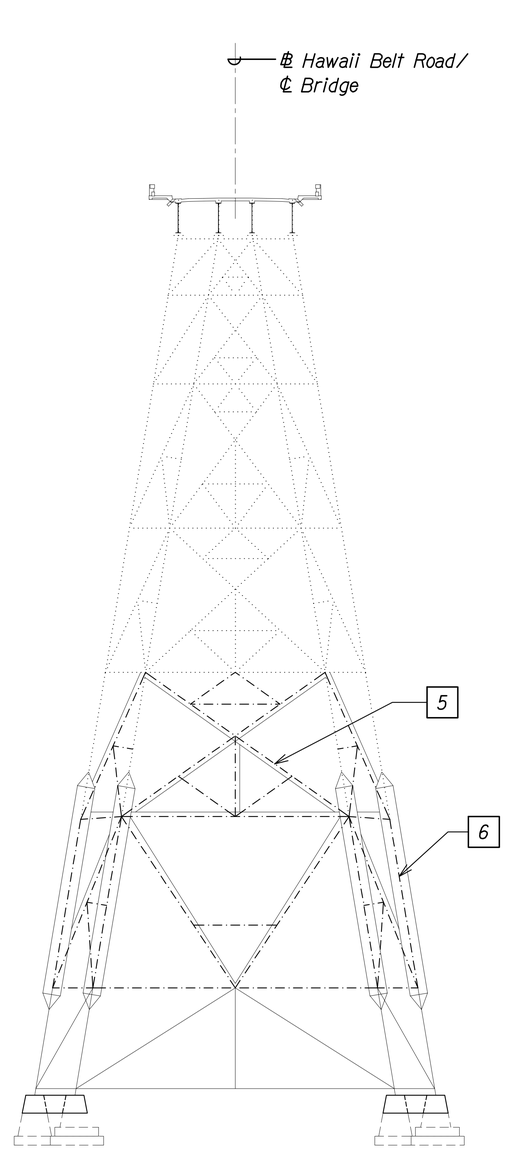
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	236	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE (A SBI.7 SBI.7)
Scale: 1/16" = 1'-0"



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE (B SBI.7 SBI.7)
Scale: 1/16" = 1'-0"



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE (C SBI.7 SBI.7)
Scale: 1/16" = 1'-0"

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)

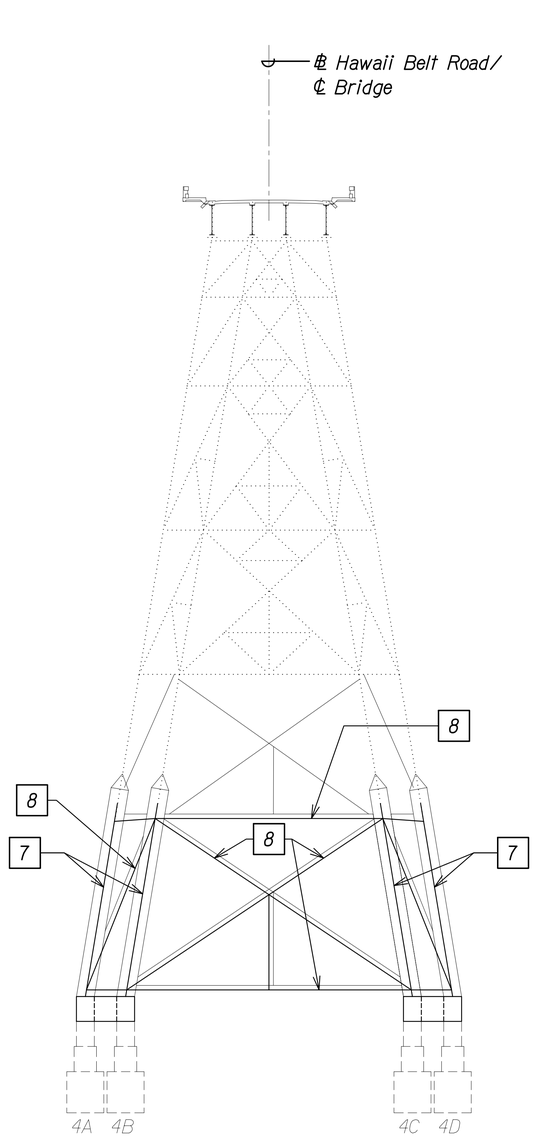
Scale: As Noted Date: Oct. 2024

SHEET No. SBI.7 OF 29 SHEETS

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

DRAWING NAME: Z:\OD ENGINEERING\23-022\3-NANUE STR BR PE2-SDTA\01 CAD\10-28-24 BID SET\STR_SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:45 PM

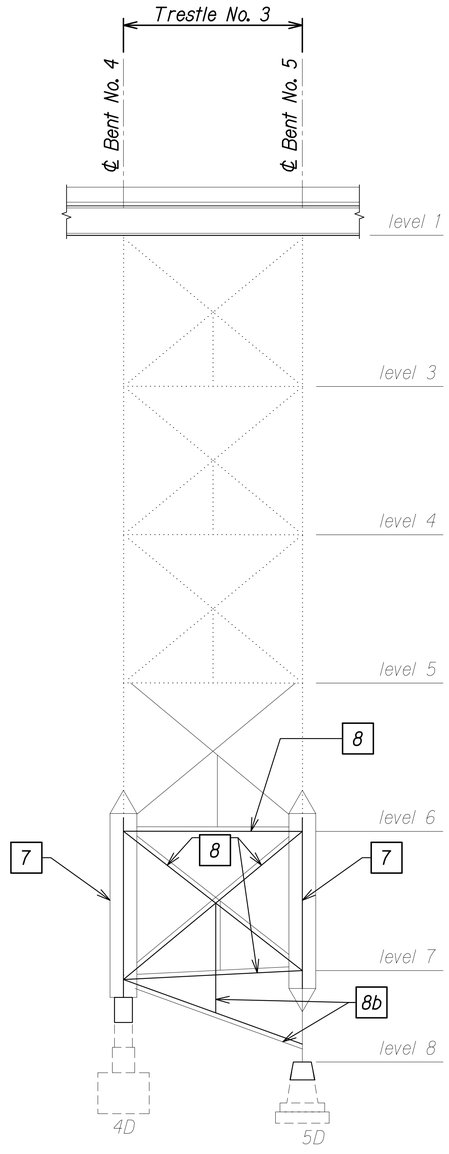
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	237	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

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

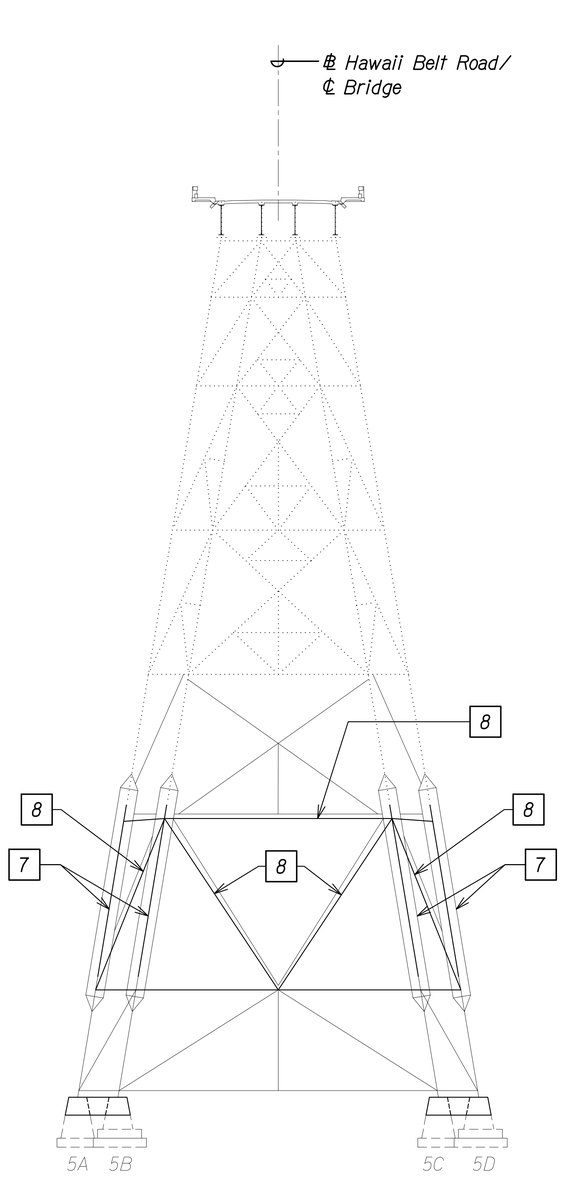
A SB1.8 SB1.8



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

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

B SB1.8 SB1.8



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

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

C SB1.8 SB1.8

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.

STEPHEN T. PETERS
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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. SB1.8 OF 29 SHEETS

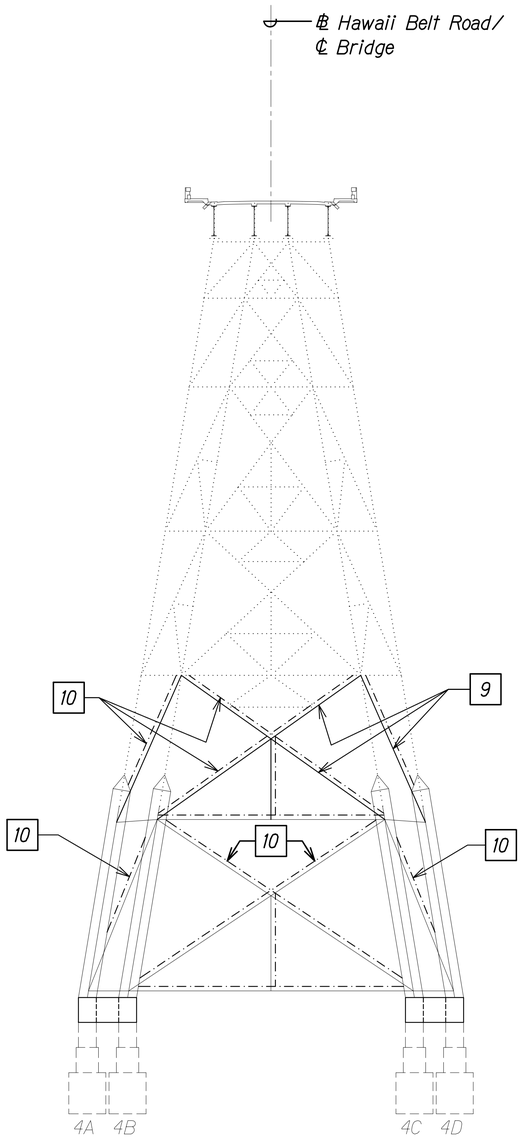
237

ORIGINAL PLAN
NOTE BOOK No.

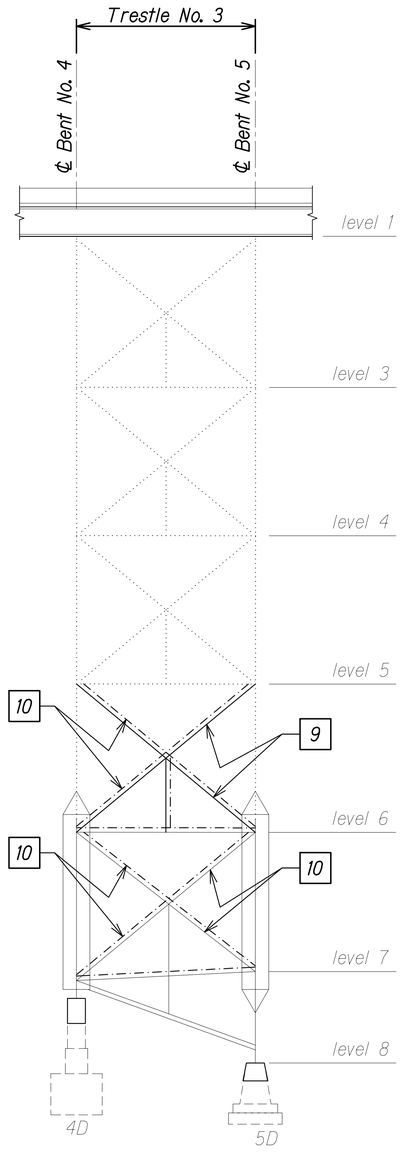
SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

DRAWING NAME: Z:\OD ONGINO\23-022\3-NANUE STR BR PEZ-EOTH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:46 PM

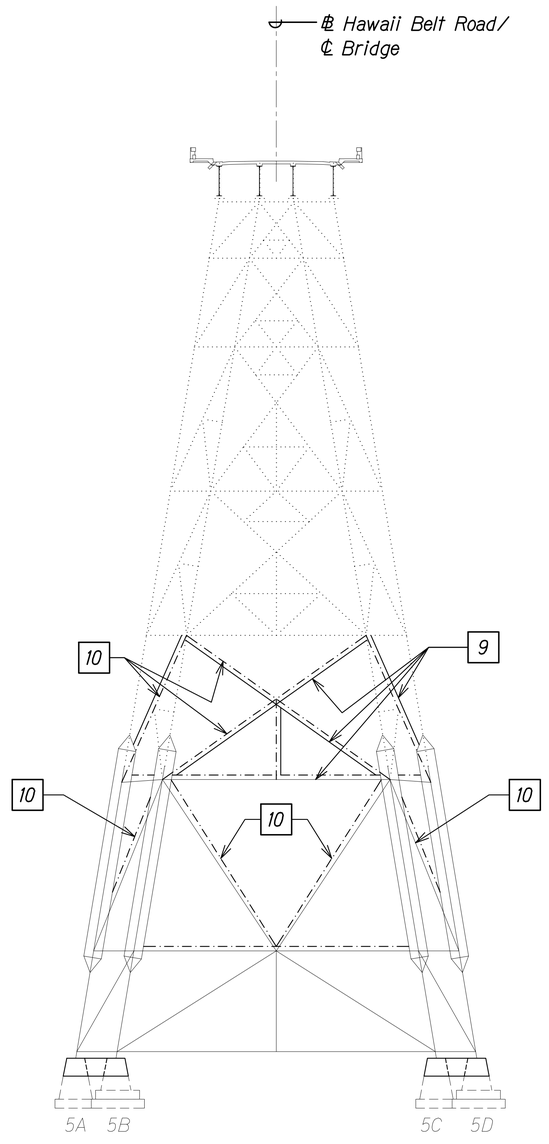
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	238	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE (A)
Scale: 1/16" = 1'-0"
SB1.9 | SB1.9



TRESTLE NO. 3 SECTION
CONSTRUCTION SEQUENCE (B)
Scale: 1/16" = 1'-0"
SB1.9 | SB1.9



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE (C)
Scale: 1/16" = 1'-0"
SB1.9 | SB1.9

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.

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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)

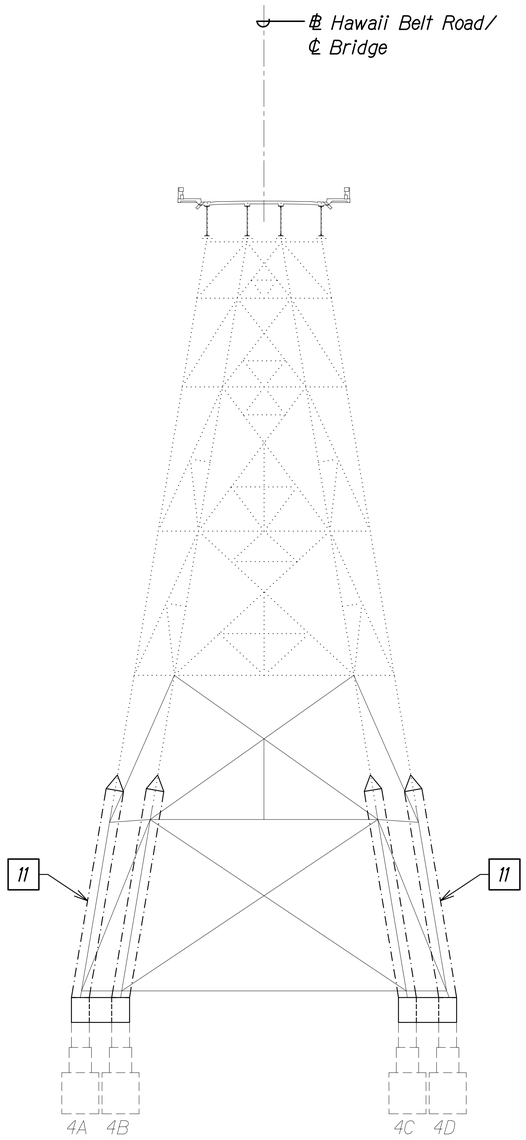
Scale: As Noted Date: Oct. 2024

SHEET No. SB1.9 OF 29 SHEETS

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

DRAWING NAME: Z:\OD\ ONGINOA\23-022\3-NANUE STR BR PEZ-EOTH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:46 PM

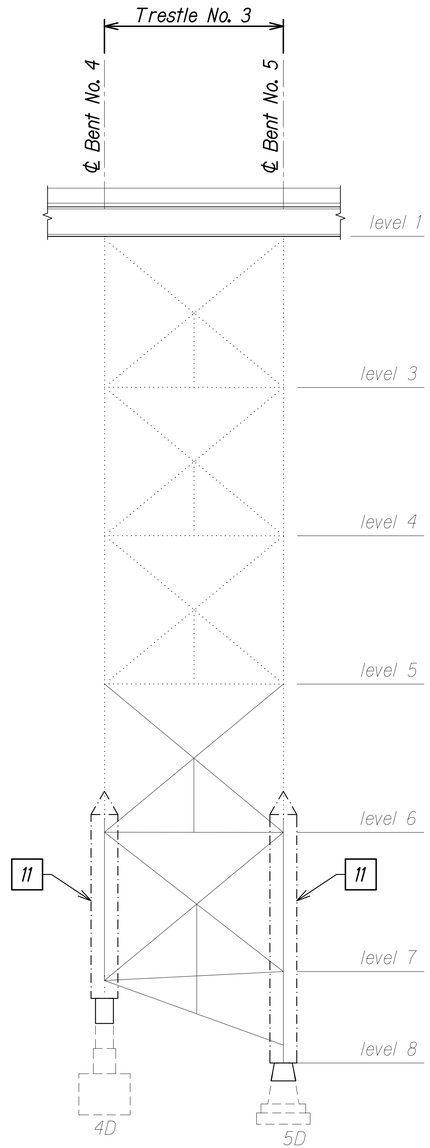
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	239	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

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

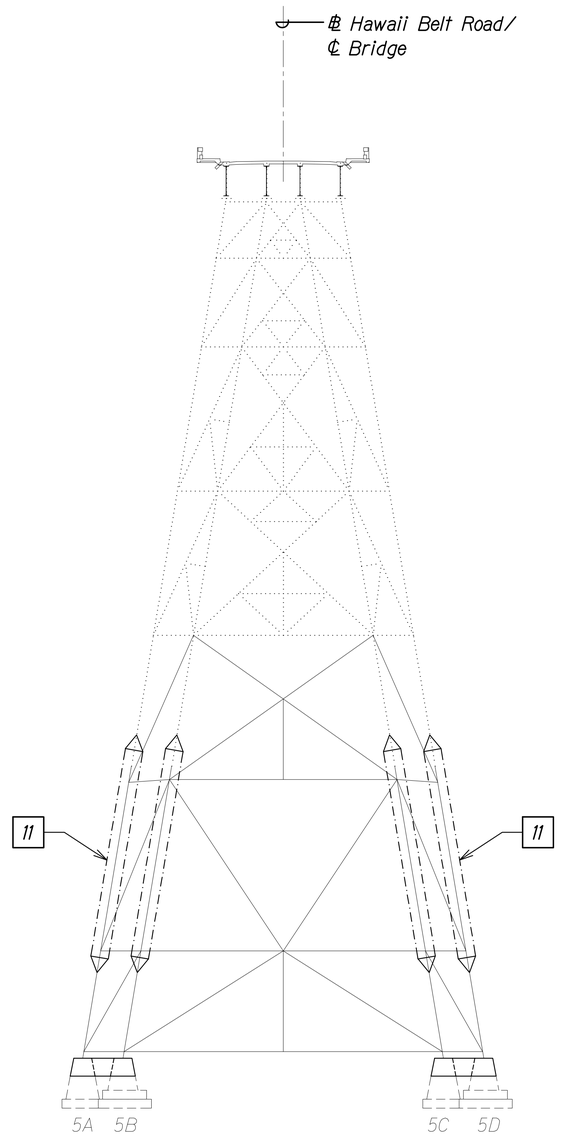
A SBI.10 SBI.10



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

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

B SBI.10 SBI.10



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

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

C SBI.10 SBI.10

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.

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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

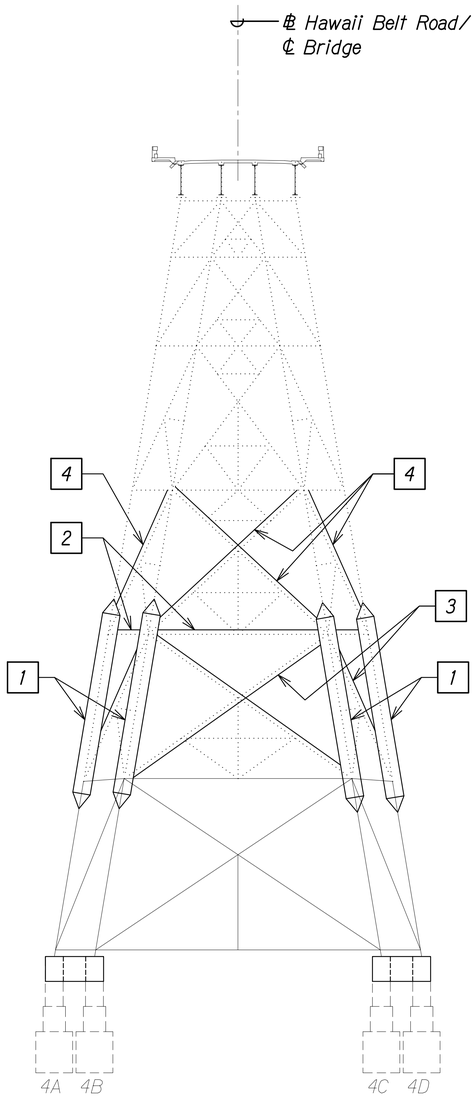
SHEET No SBI.10 OF 29 SHEETS

ORIGINAL PLAN
NOTE BOOK No.

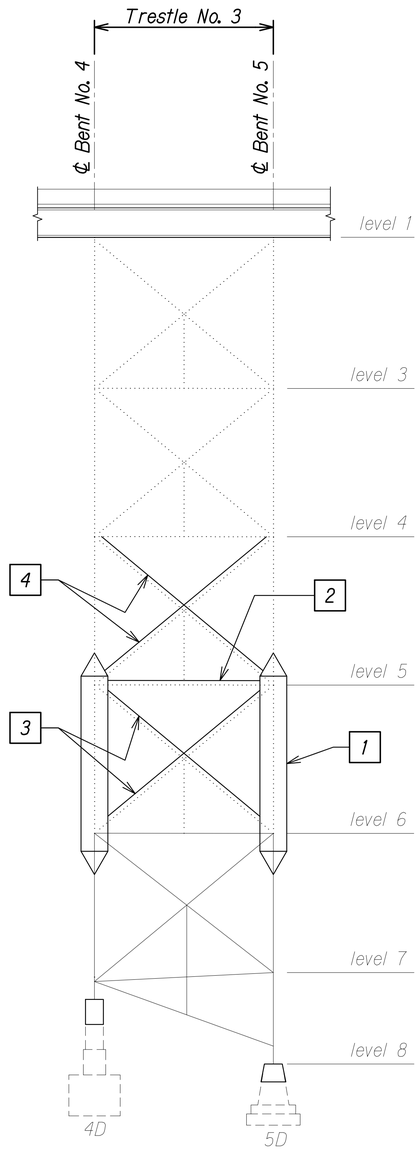
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGINOK\23-022\3-NANUE STR BR PEZ-EOTH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:46 PM

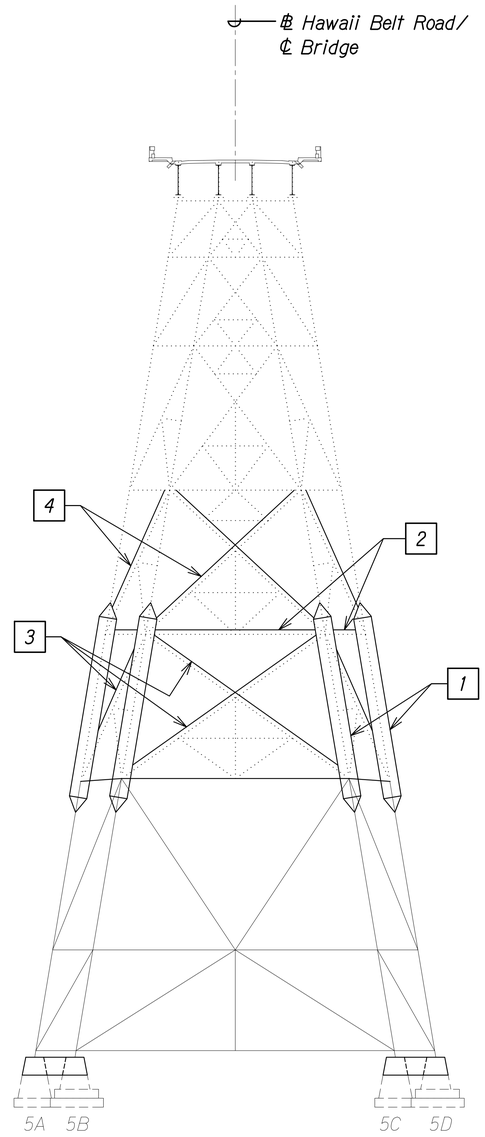
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	240	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE (A)
Scale: 1/16" = 1'-0"
SB1.11 SB1.11



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE (B)
Scale: 1/16" = 1'-0"
SB1.11 SB1.11



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE (C)
Scale: 1/16" = 1'-0"
SB1.11 SB1.11

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

STEPHEN T. PETERS
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SIGNATURE — 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

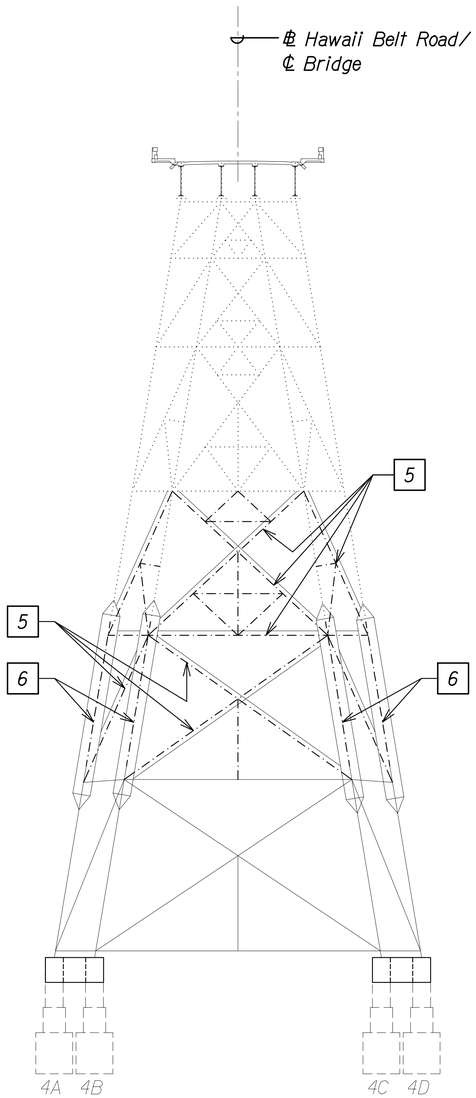
SHEET No. SB1.11 OF 29 SHEETS

240

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

DRAWING NAME: Z:\OD\ ONGOING\23-0223-NANUE STR BR PE2-60TH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:47 PM

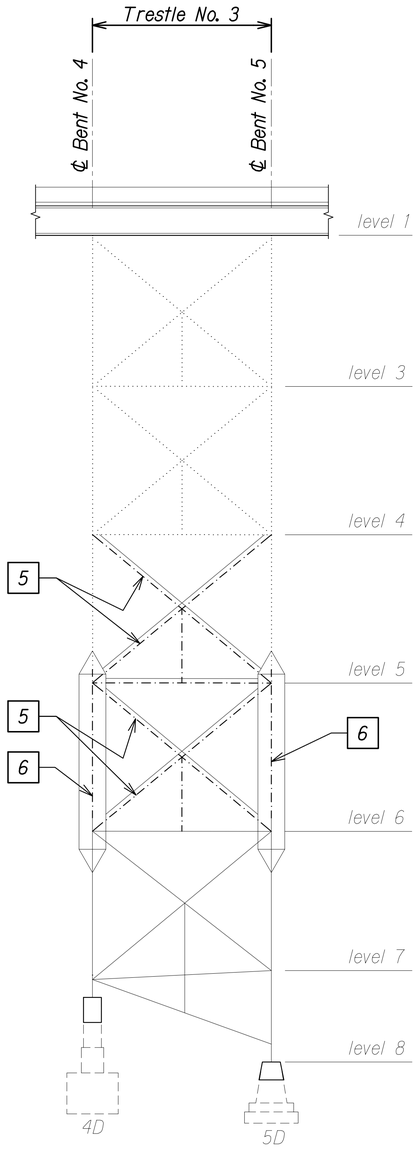
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	241	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

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

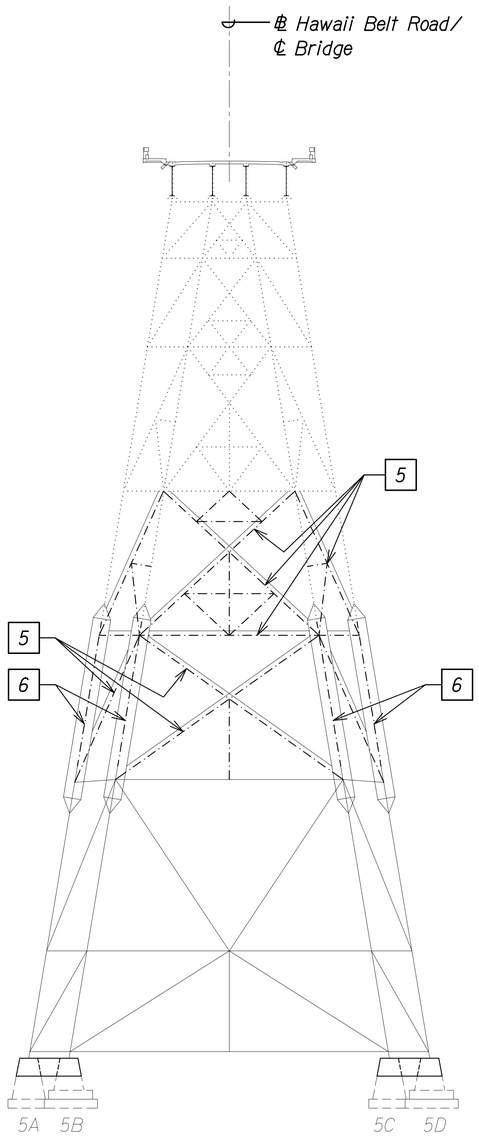
A SB1.12 SB1.12



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

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

B SB1.12 SB1.12



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

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

C SB1.12 SB1.12

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.

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

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4-30-26
SIGNATURE 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)

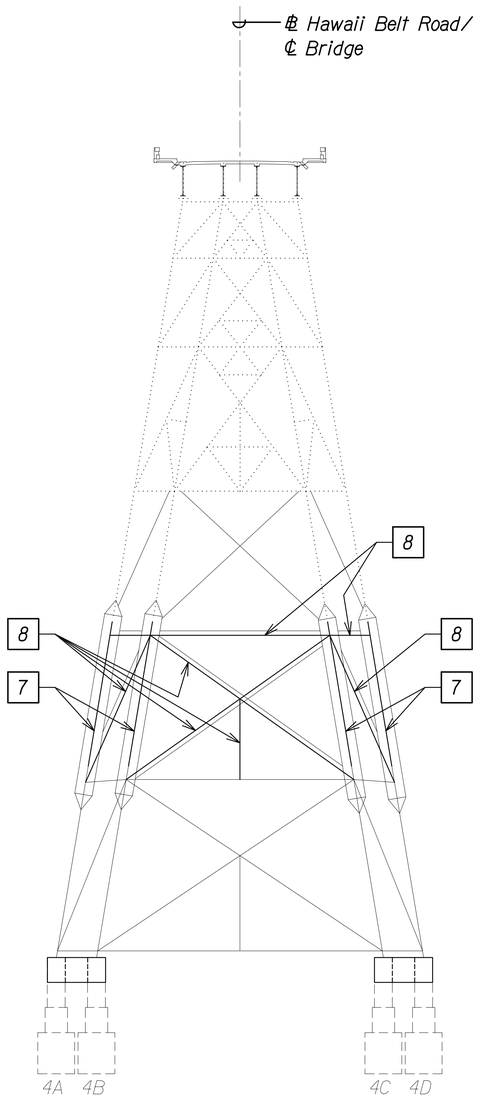
Scale: As Noted Date: Oct. 2024

SHEET No. SB1.12 OF 29 SHEETS

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

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR REP-BOTH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSED.DWG PLOT TIME: 10-26-24, 6:47 PM)

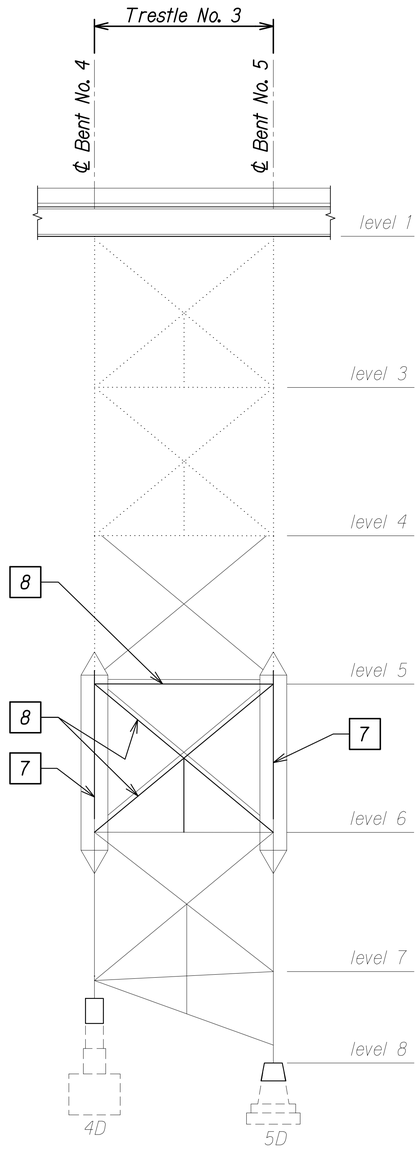
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	242	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

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

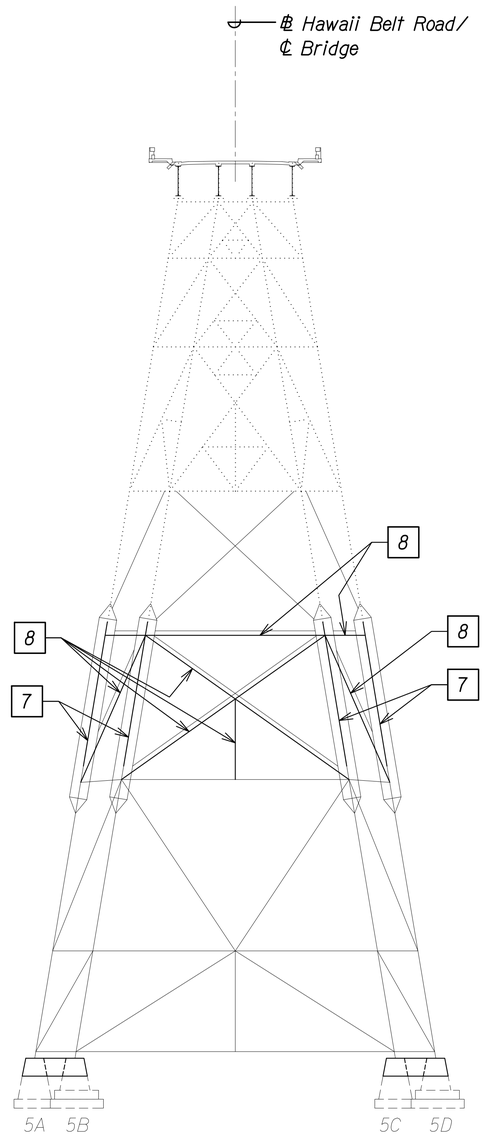
A SBI.13 SBI.13



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

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.

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
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HAWAII, U.S.A.

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SIGNATURE 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

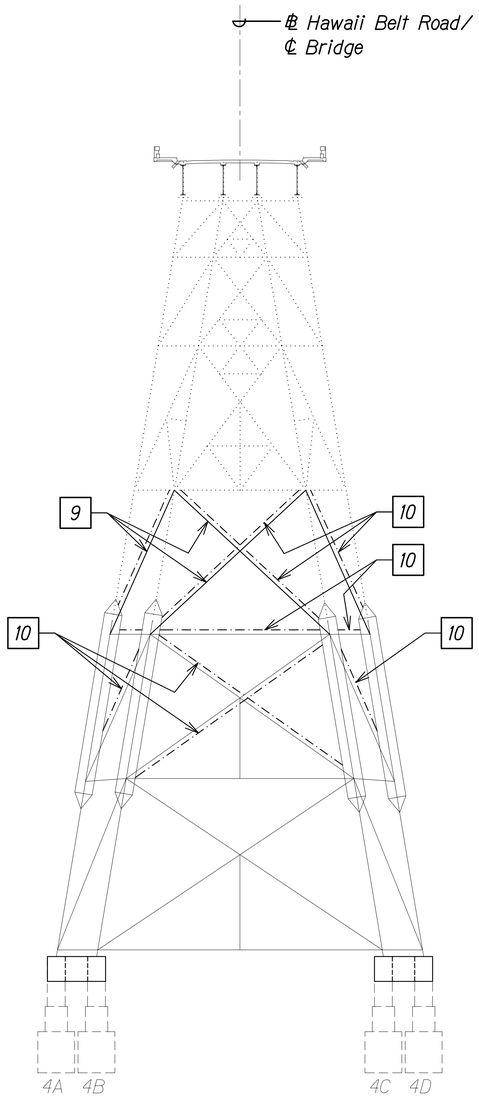
SHEET No. SBI.13 OF 29 SHEETS

242

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

DRAWING NAME: Z:\OD ONGOING\23-022\2-NANUE STR BR REP-BOTH\01 CAD\10-26-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:48 PM

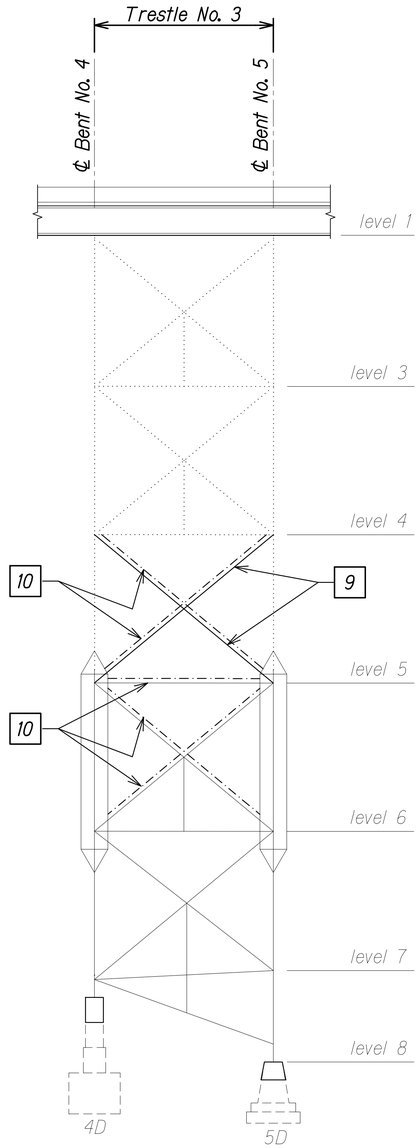
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	243	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

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

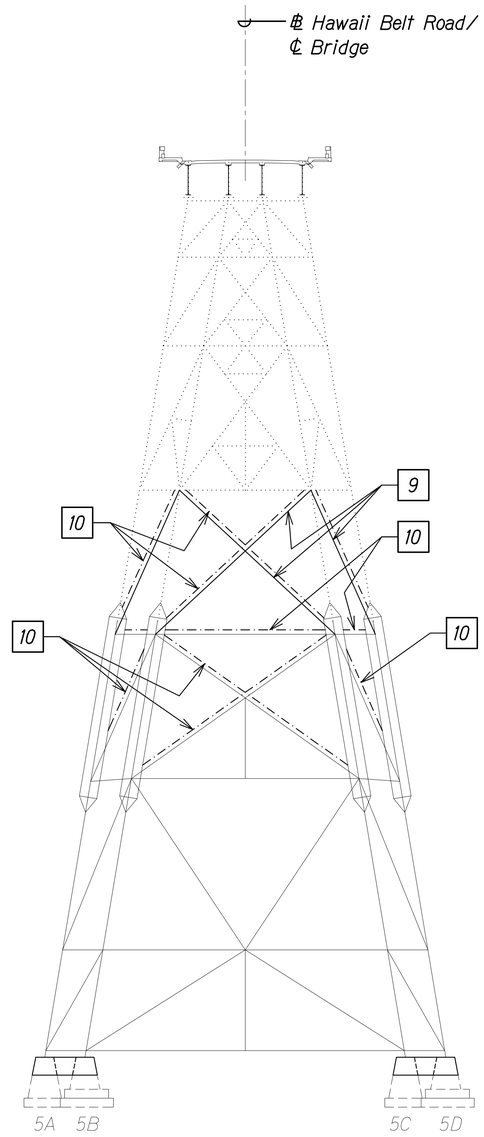
A SB1.14 SB1.14



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

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

B SB1.14 SB1.14



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

C SB1.14 SB1.14

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.

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

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SIGNATURE 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)

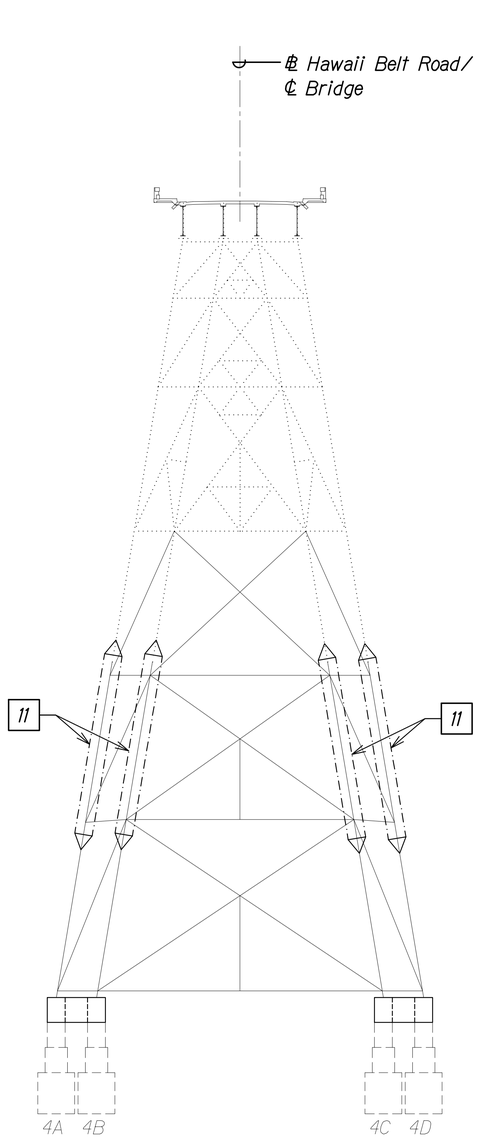
Scale: As Noted Date: Oct. 2024

SHEET No. SB1.14 OF 29 SHEETS

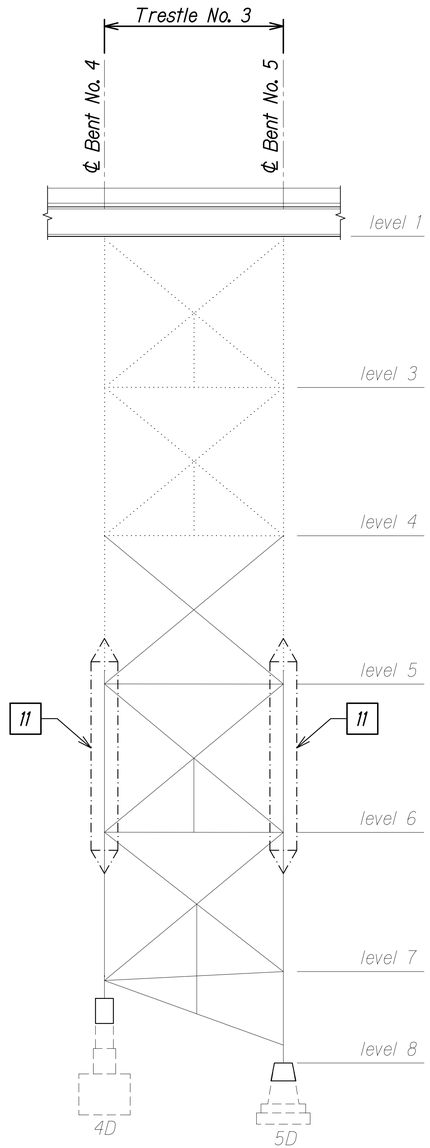
ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD\ ONGOING\23-0223-NANUE STR BR PE2-BOTH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:48 PM

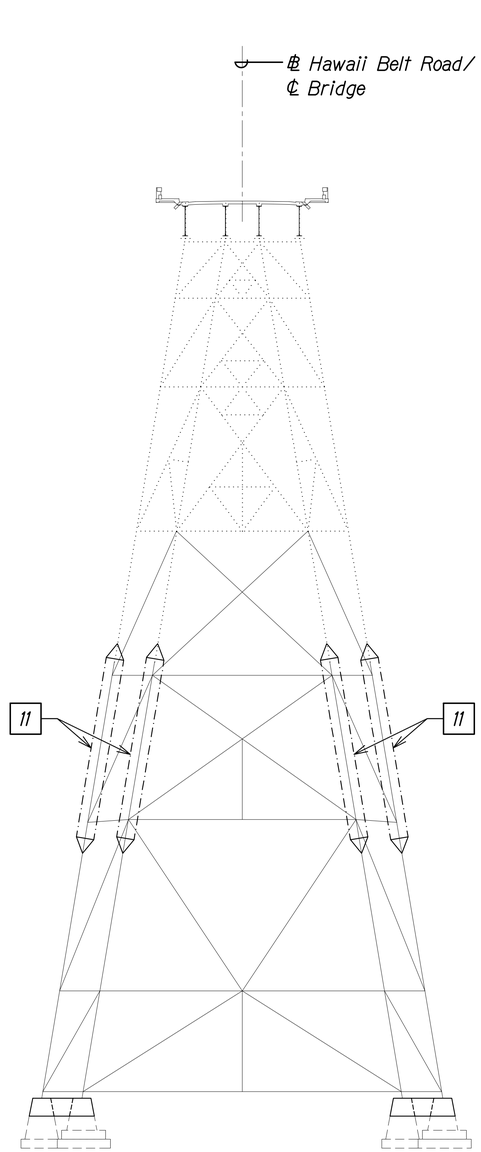
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	244	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE (A)
Scale: 1/16" = 1'-0"
SBI.15 SBI.15



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE (B)
Scale: 1/16" = 1'-0"
SBI.15 SBI.15



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE (C)
Scale: 1/16" = 1'-0"
SBI.15 SBI.15

CONSTRUCTION SEQUENCE:

STAGE 3:

11 Remove column bypass.
Proceed to next stage.
See sht. SB2.6

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

SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

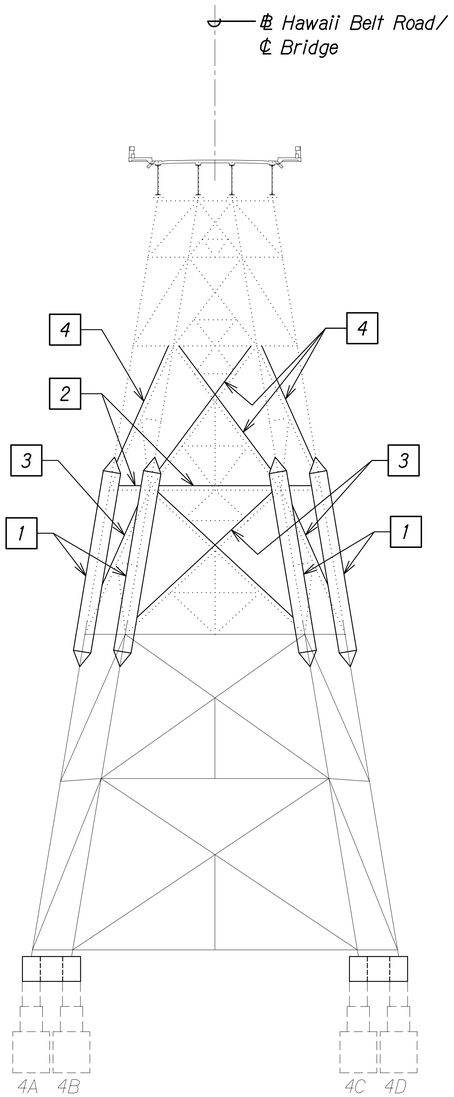
Scale: As Noted Date: Oct. 2024

SHEET No. SBI.15 OF 29 SHEETS

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

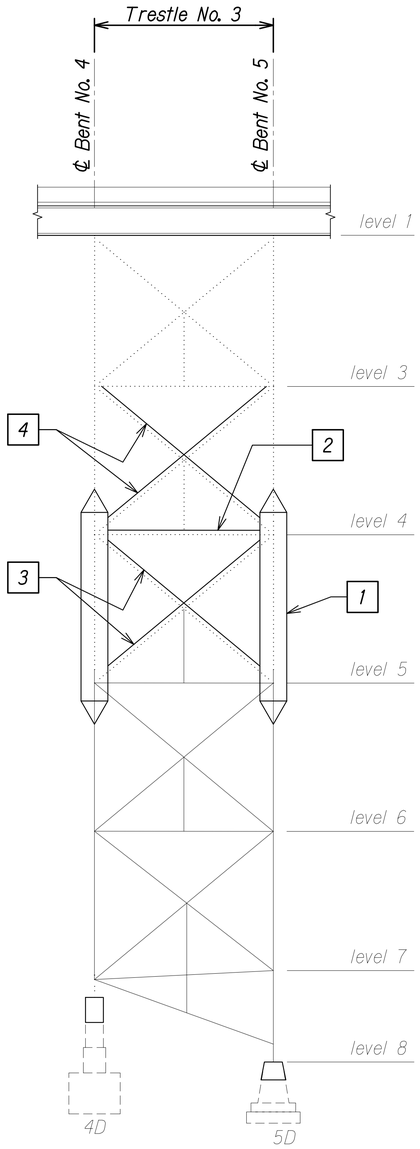
DRAWING NAME: J:\OD_ONGOING\23-022\3-NANUE STR BR REP-BOTH\01_PLN\10-28-24_BID_SET\NSP_SB01-01 BENT REHAB CONSEQUNS PLOT TIME: 10-26-24, 6:48 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	245	280



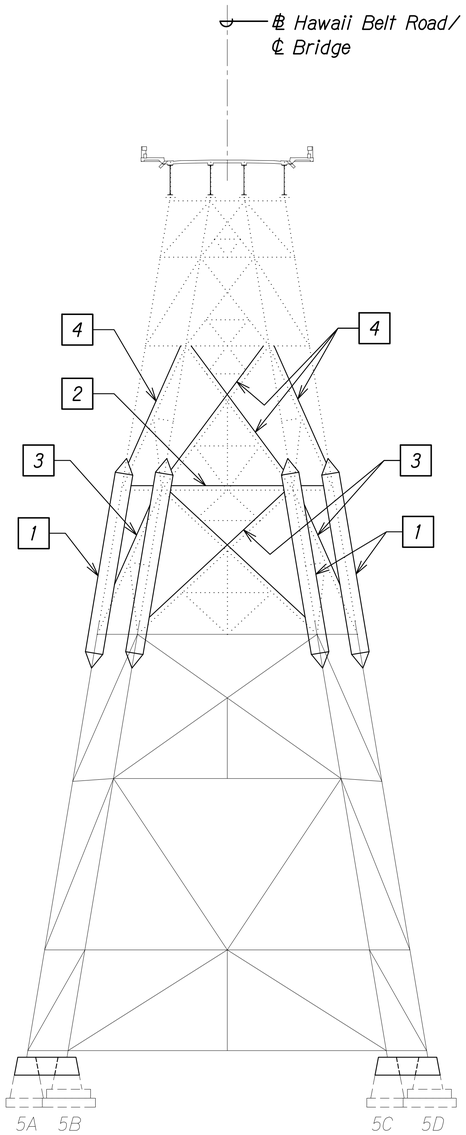
BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

A SB1.16 | SB1.16



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

B SB1.16 | SB1.16



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

C SB1.16 | SB1.16

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

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
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HAWAI'I, U.S.A.

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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)

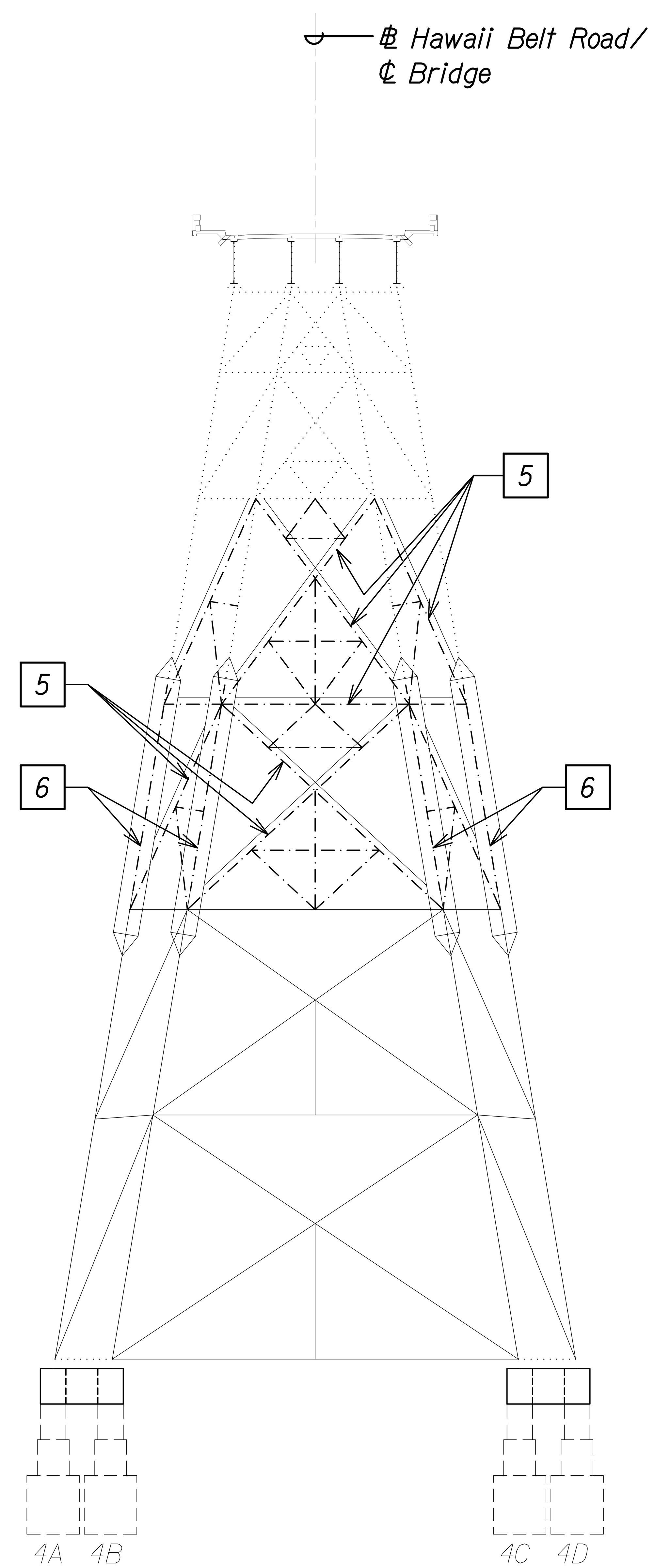
Scale: As Noted Date: Oct. 2024

SHEET No. SB1.16 OF 29 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

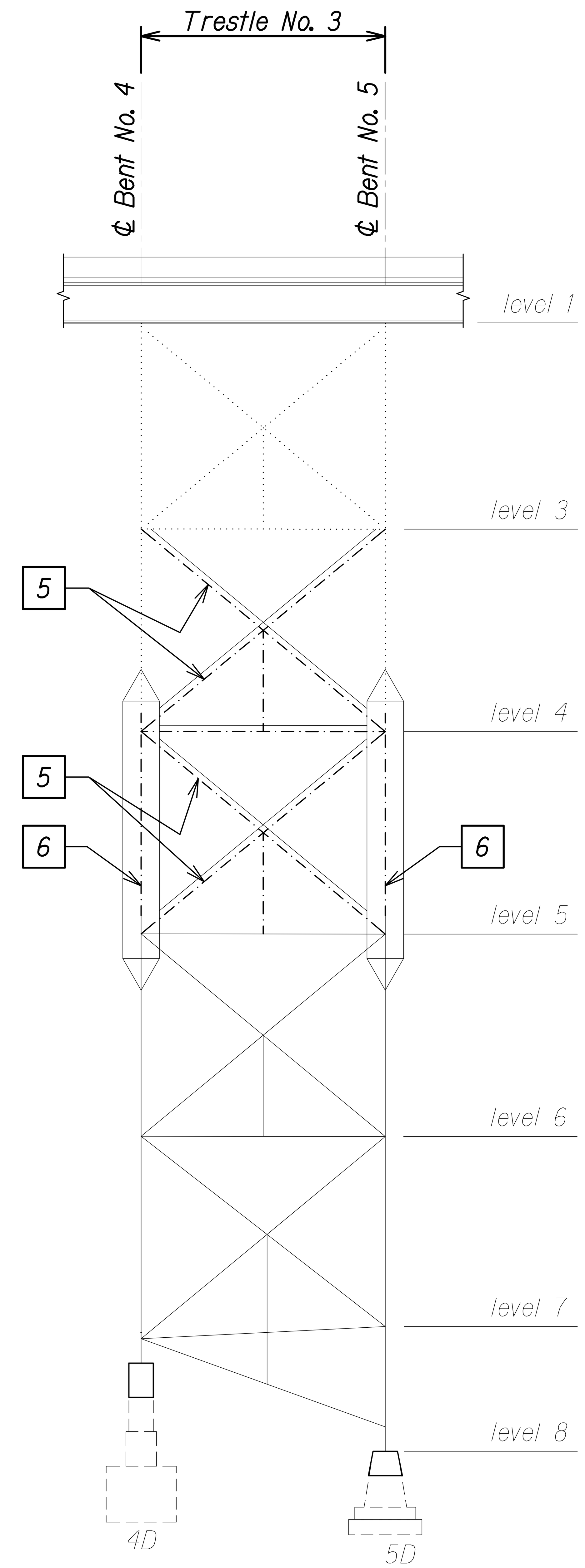
DRAWING NAME: Z:\OD ONDONO\23-022\9-NANUE STR BR PE2-2DTHA01 CAD\10-28-24 BID SER\NSR-SB1(6) BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:48 PM)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	246	280



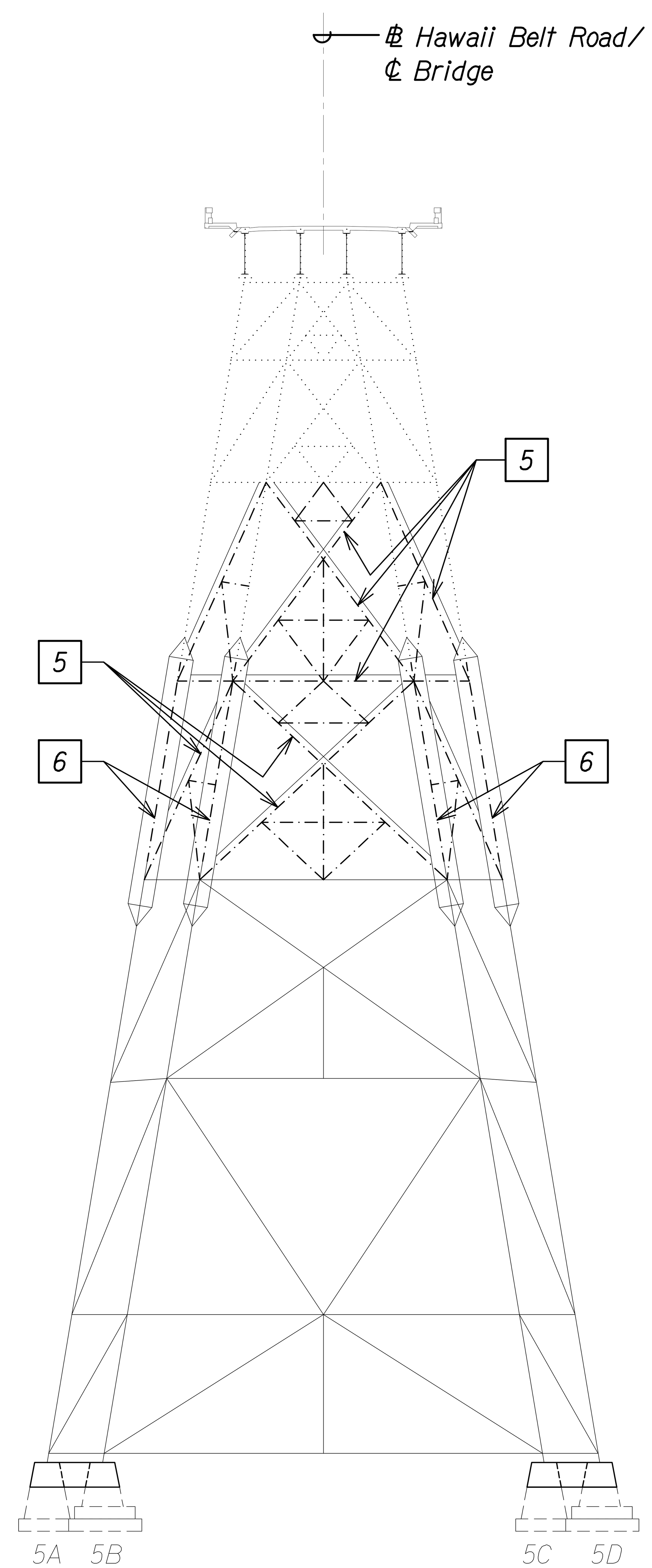
BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE (A, SB1.17 | SB1.17)

Scale: 1/16" = 1'-0"



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE (B, SB1.17 | SB1.17)

Scale: 1/16" = 1'-0"



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE (C, SB1.17 | SB1.17)

Scale: 1/16" = 1'-0"

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.

STEPHEN T. PETERS LICENSED PROFESSIONAL ENGINEER NO. 17097-S HAWAII, U.S.A.

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4-30-26

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE

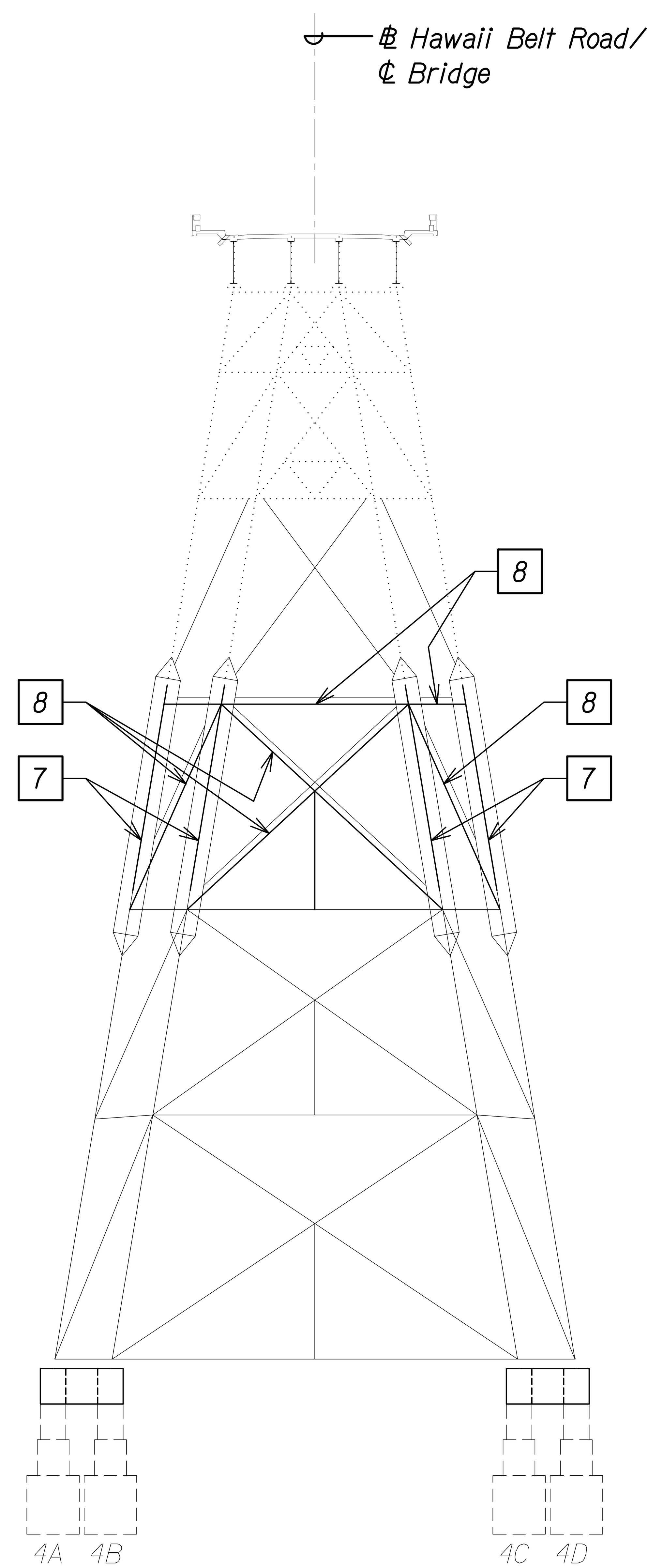
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

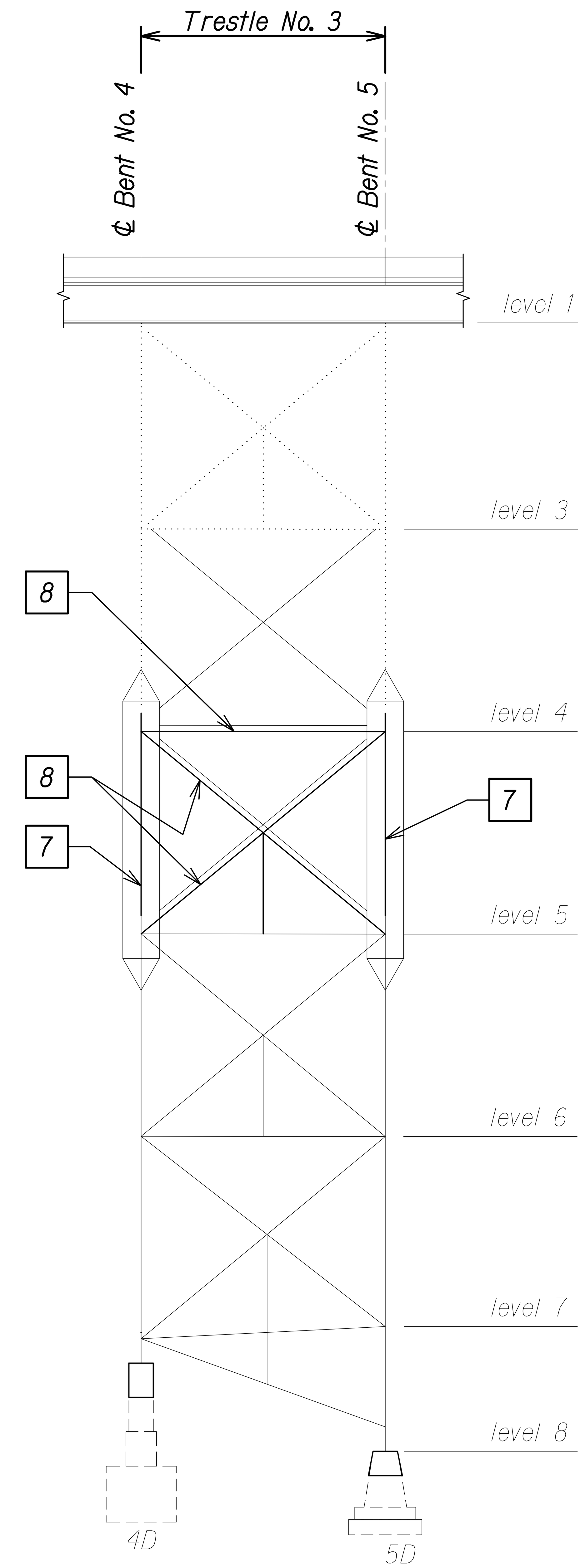
SHEET No SB1.17 OF 29 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

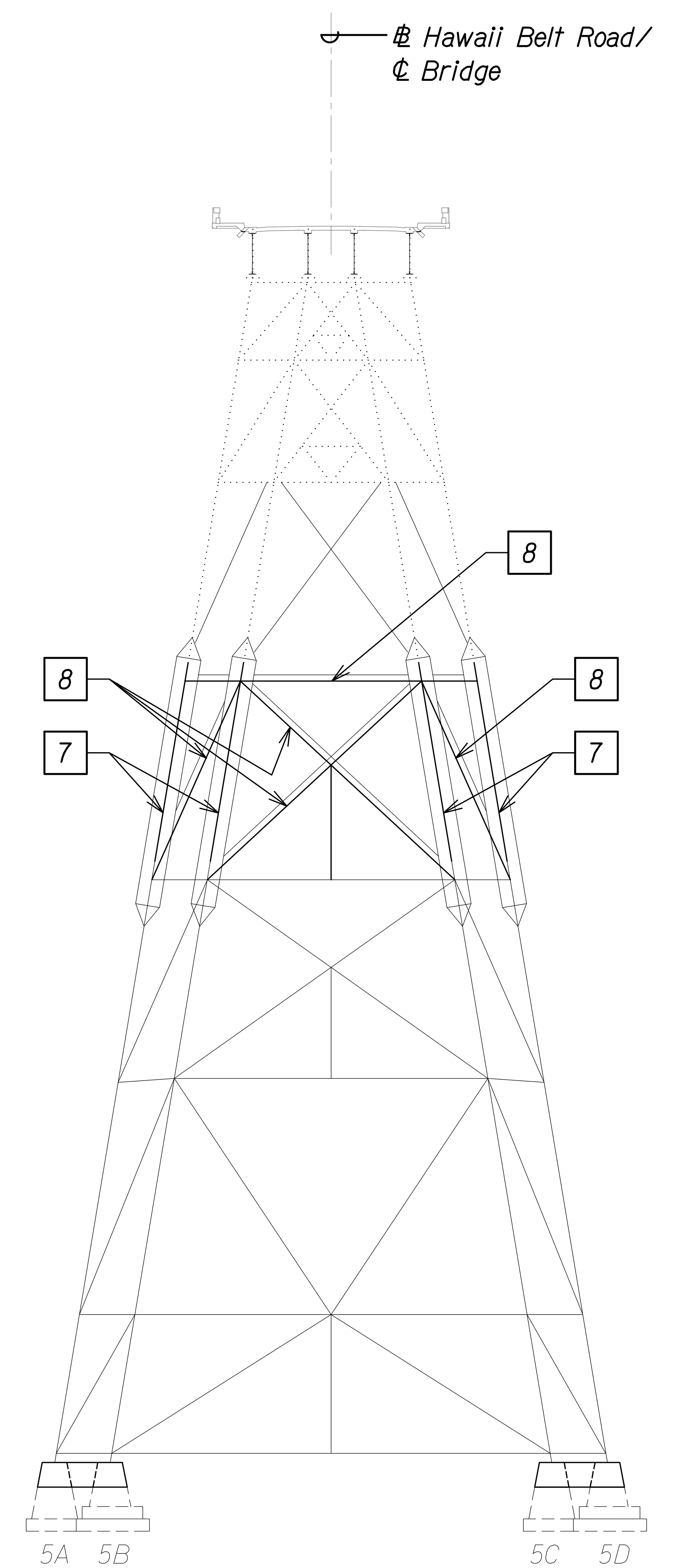
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	247	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"
A SB1.18 SB1.18



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"
B SB1.18 SB1.18



CONSTRUCTION SEQUENCE
LOOKING TOWARD HONOKA'A
Scale: 1/16" = 1'-0"
C SB1.18 SB1.18

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.

STEPHEN T. PETERS LICENSED PROFESSIONAL ENGINEER NO. 17097-S HAWAII, U.S.A.

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SIGNATURE 4-30-26 EXPIRATION DATE OF THE LICENSE

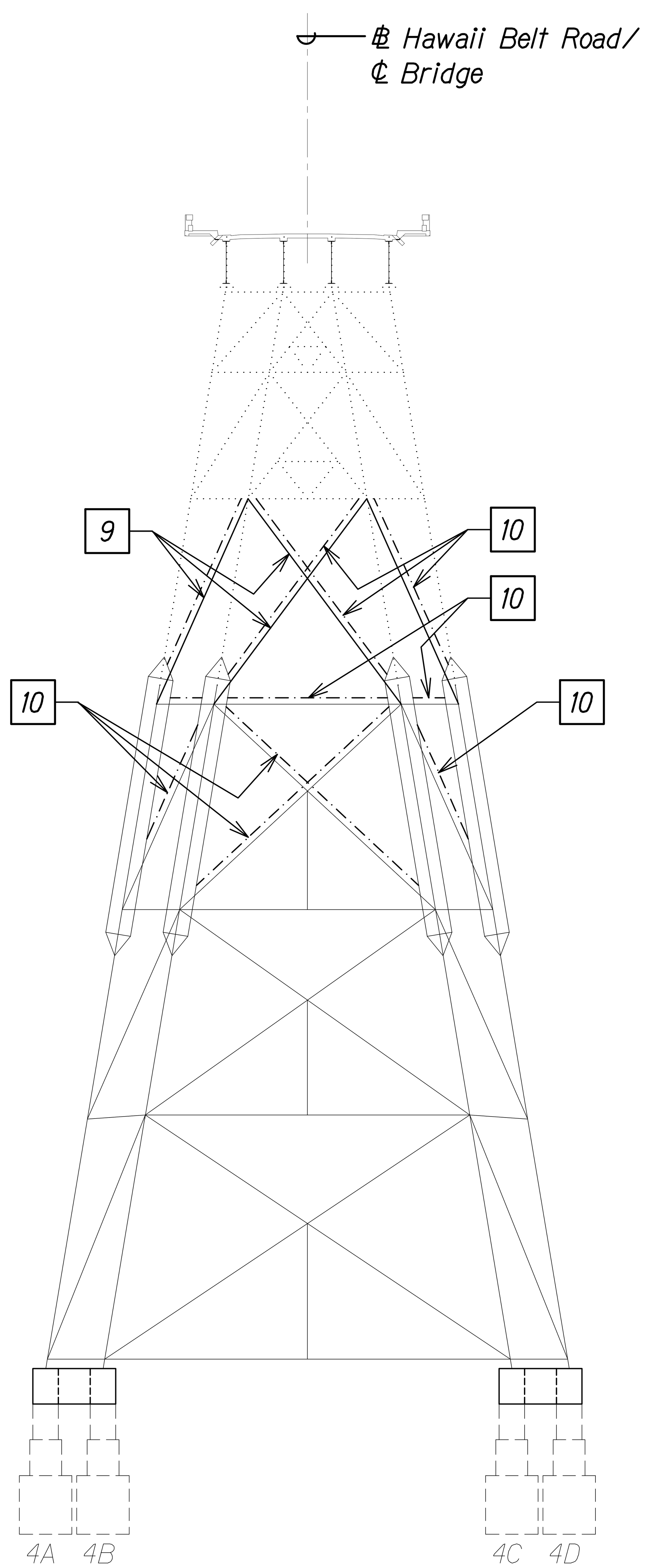
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE

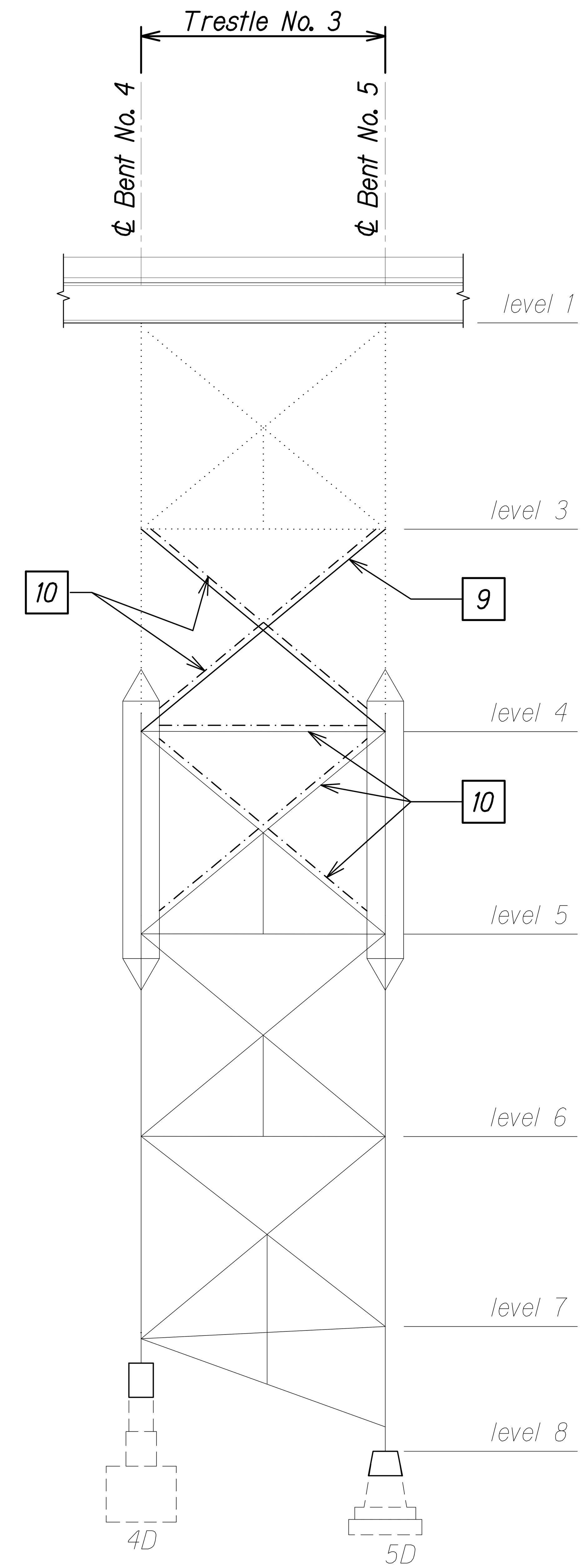
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No SB1.18 OF 29 SHEETS

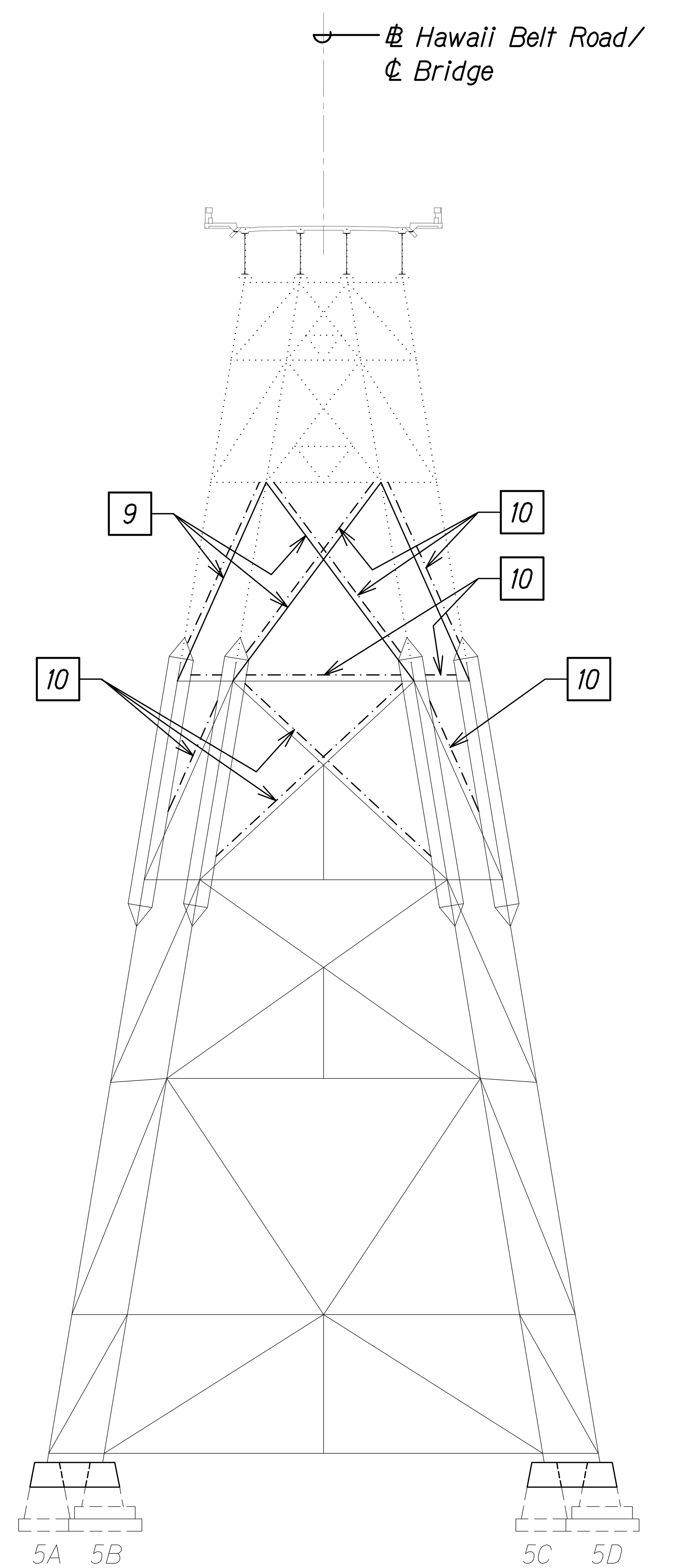
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	248	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE
A SB1.19 SB1.19
Scale: 1/16" = 1'-0"



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE
B SB1.19 SB1.19
Scale: 1/16" = 1'-0"



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE
C SB1.19 SB1.19
Scale: 1/16" = 1'-0"

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.

STEPHEN T. PETERS
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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE

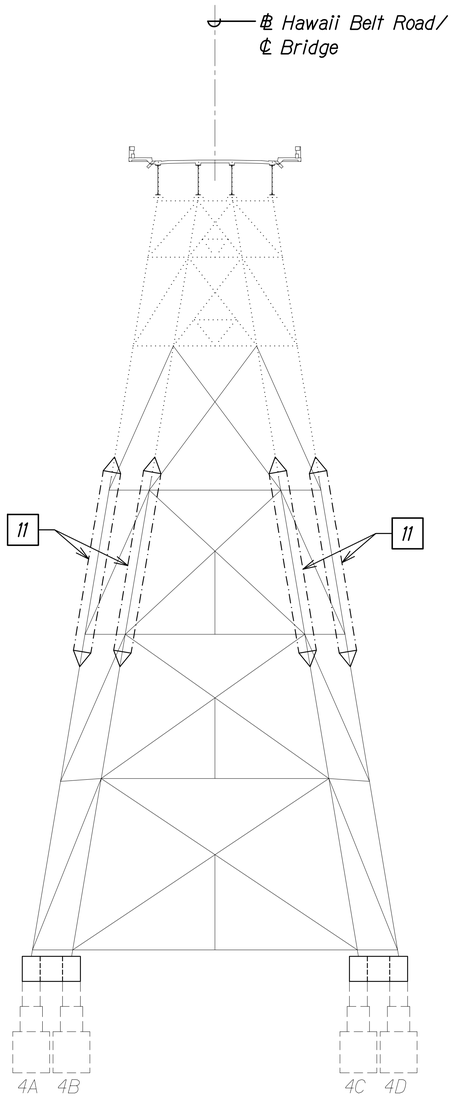
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)
Scale: As Noted Date: Oct. 2024

SHEET No SB1.19 OF 29 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | NOTE BOOK | No. | DATE

DRAWING NAME: Z:\00_ONGOING\23-022.9-NANUE_STR_BR_PE2-DOTH\01_CAD\10-28-24_BID_SET\NSR-SB0101_BENT_REHAB_CONSEQ.DWG PLOT TIME: 10-26-24 6:50 PM

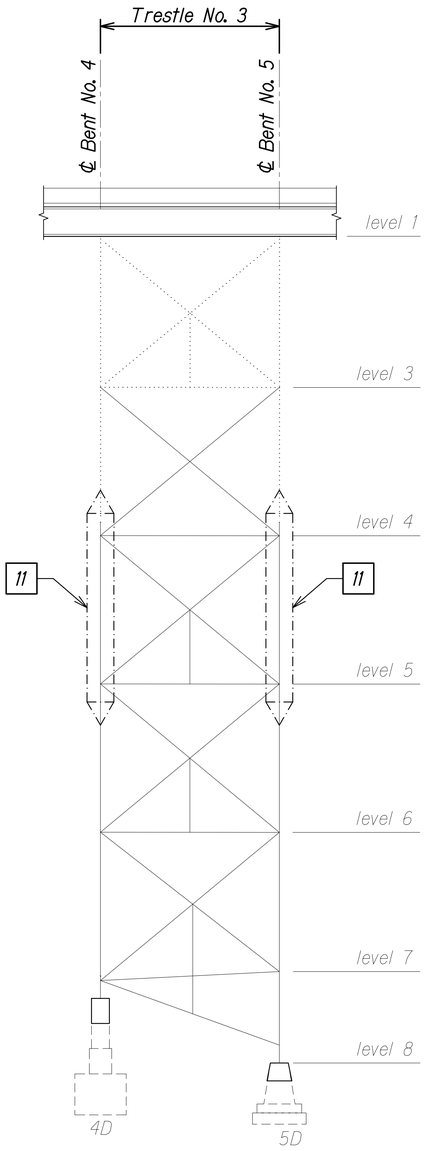
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	249	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

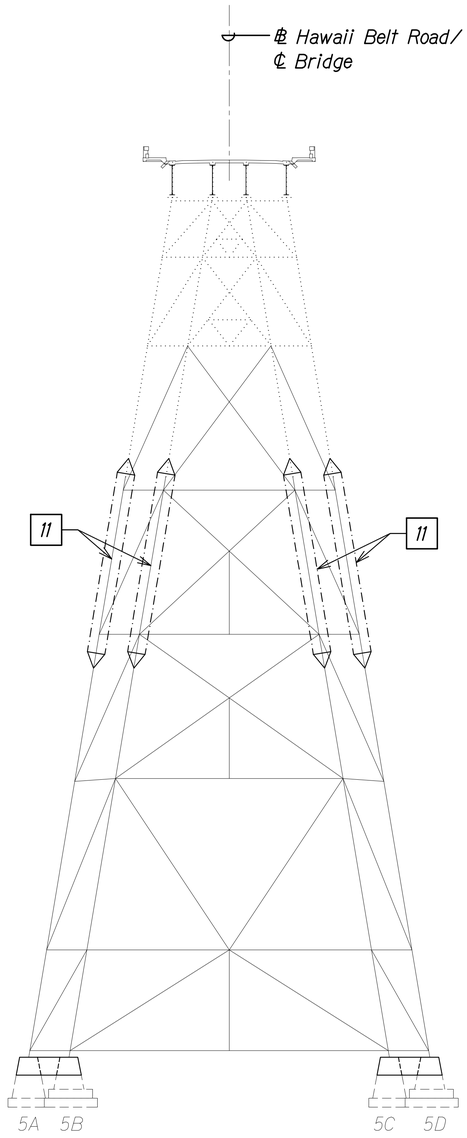
A SB1.20 | SB1.20



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

B SB1.20 | SB1.20



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

C SB1.20 | SB1.20

CONSTRUCTION SEQUENCE:

STAGE 4:

11 Remove column bypass.
Proceed to next stage.
See sht. SB2.6

STEPHEN T. PETERS
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HAWAII, U.S.A.

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SIGNATURE 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)

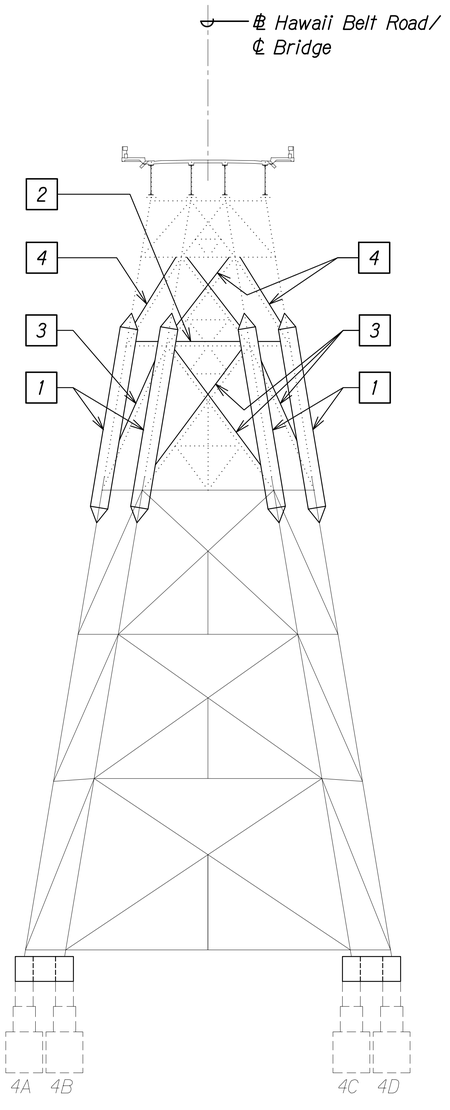
Scale: As Noted Date: Oct. 2024

SHEET No SB1.20 OF 29 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\DOT\ENGINEERING\23-022\9-NANUE STR BR PE2-DOT\A101 CAD\10-28-24 BID SET\VGR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:51 PM

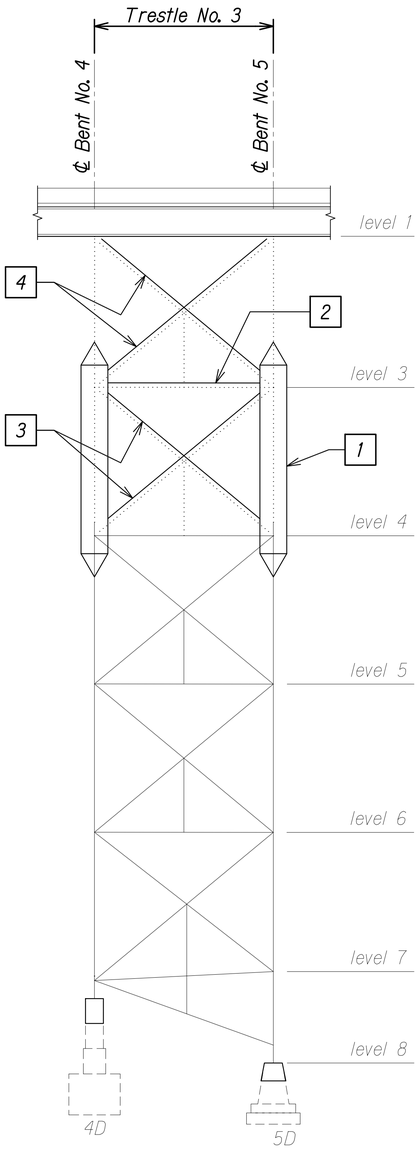
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	250	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

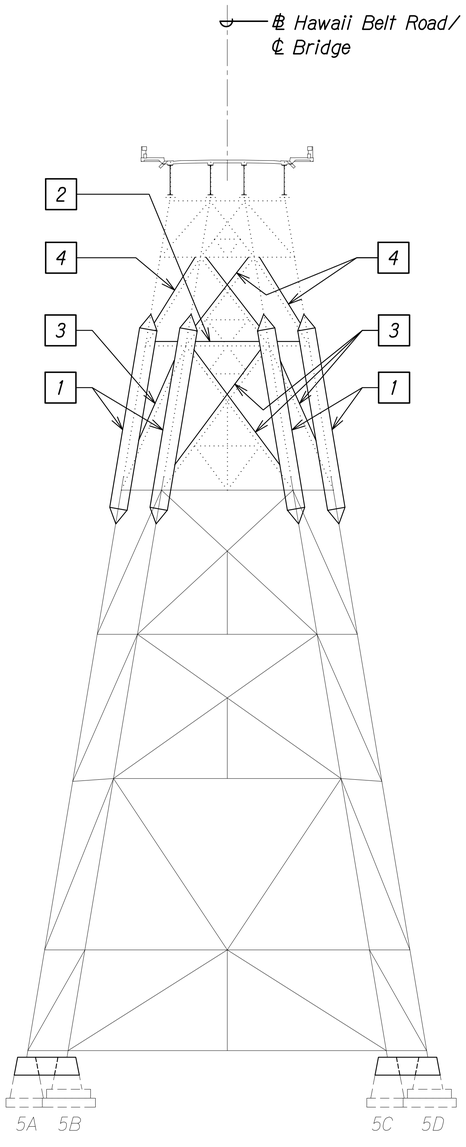
A SB1.21 | SB1.21



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

B SB1.21 | SB1.21



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

C SB1.21 | SB1.21

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

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

SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE

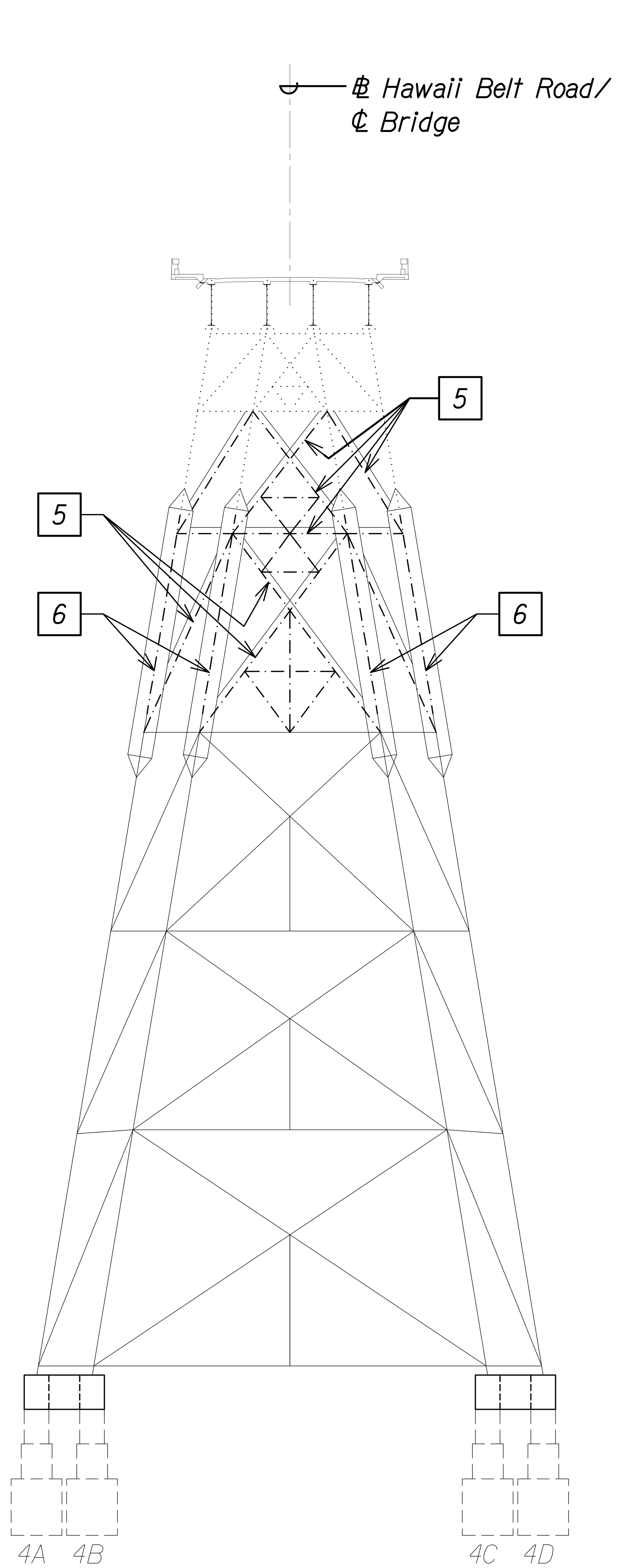
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

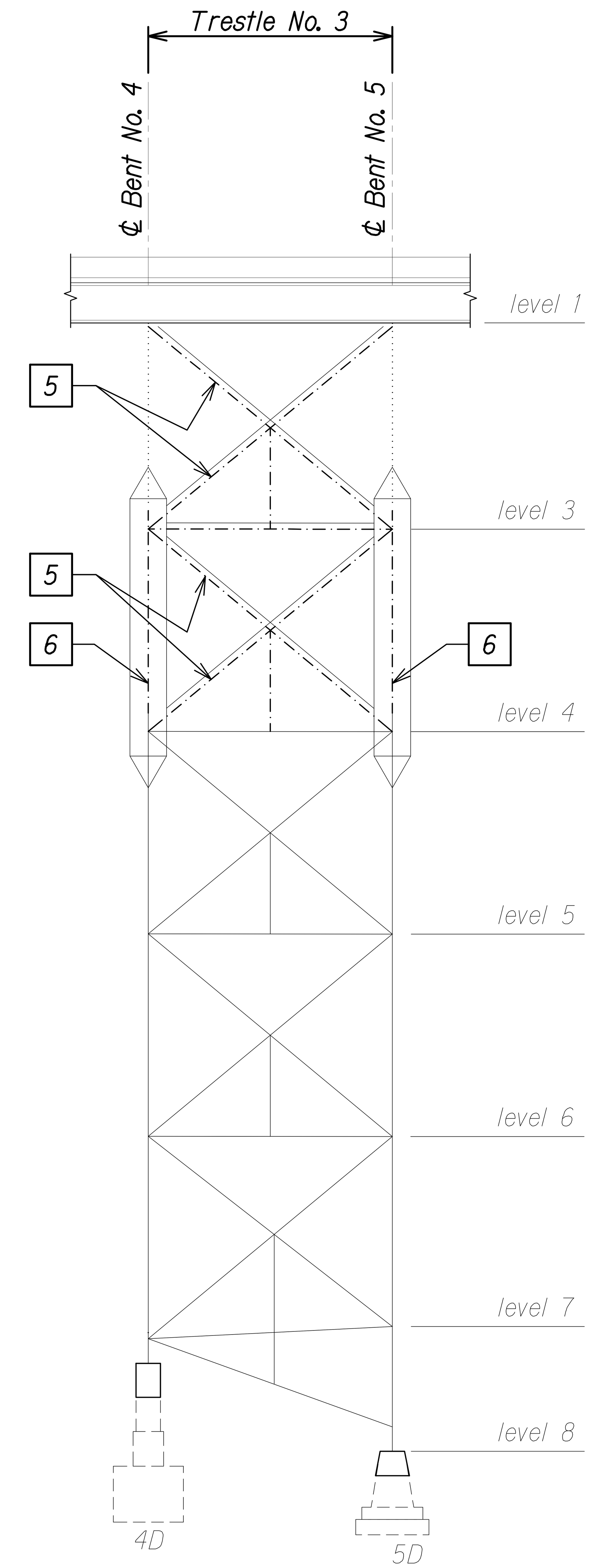
SHEET No. SB1.21 OF 29 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

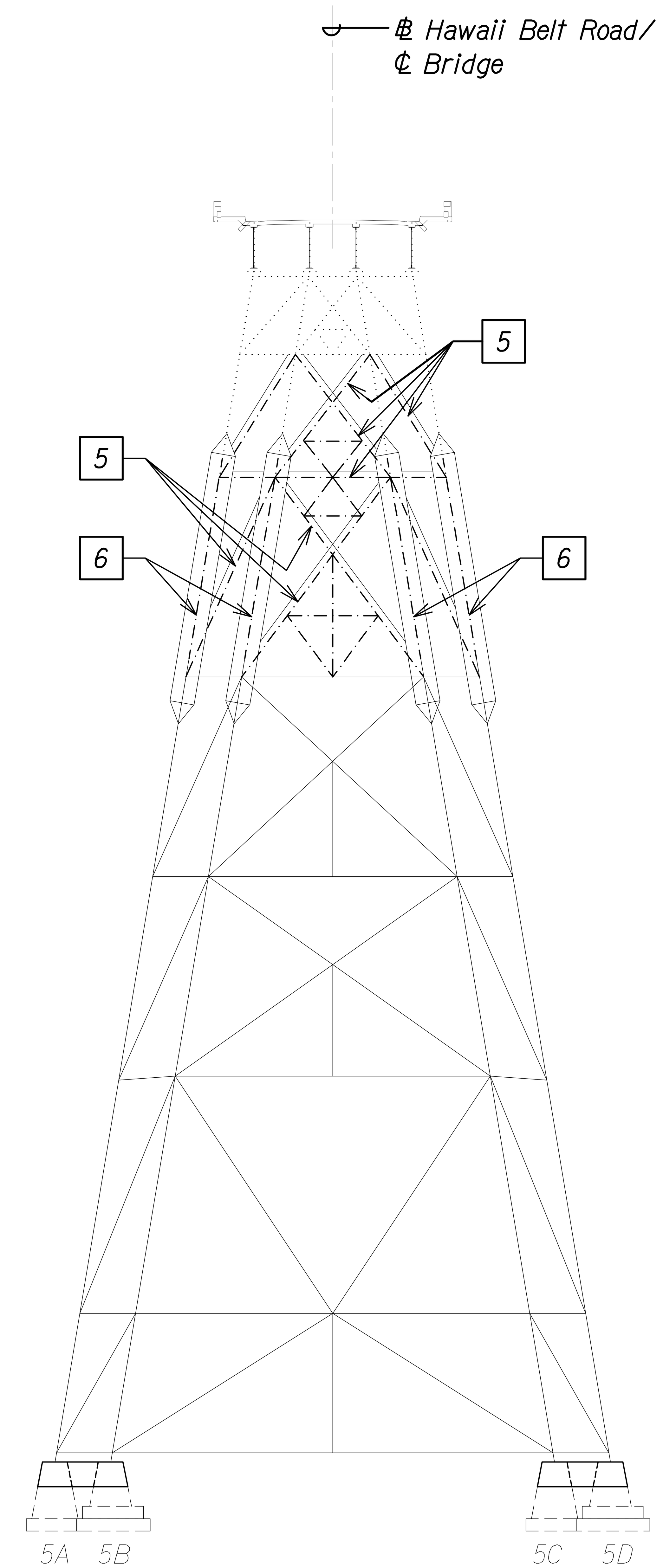
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	251	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"
A SB1.22 SB1.22



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"
B SB1.22 SB1.22



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"
C SB1.22 SB1.22

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.

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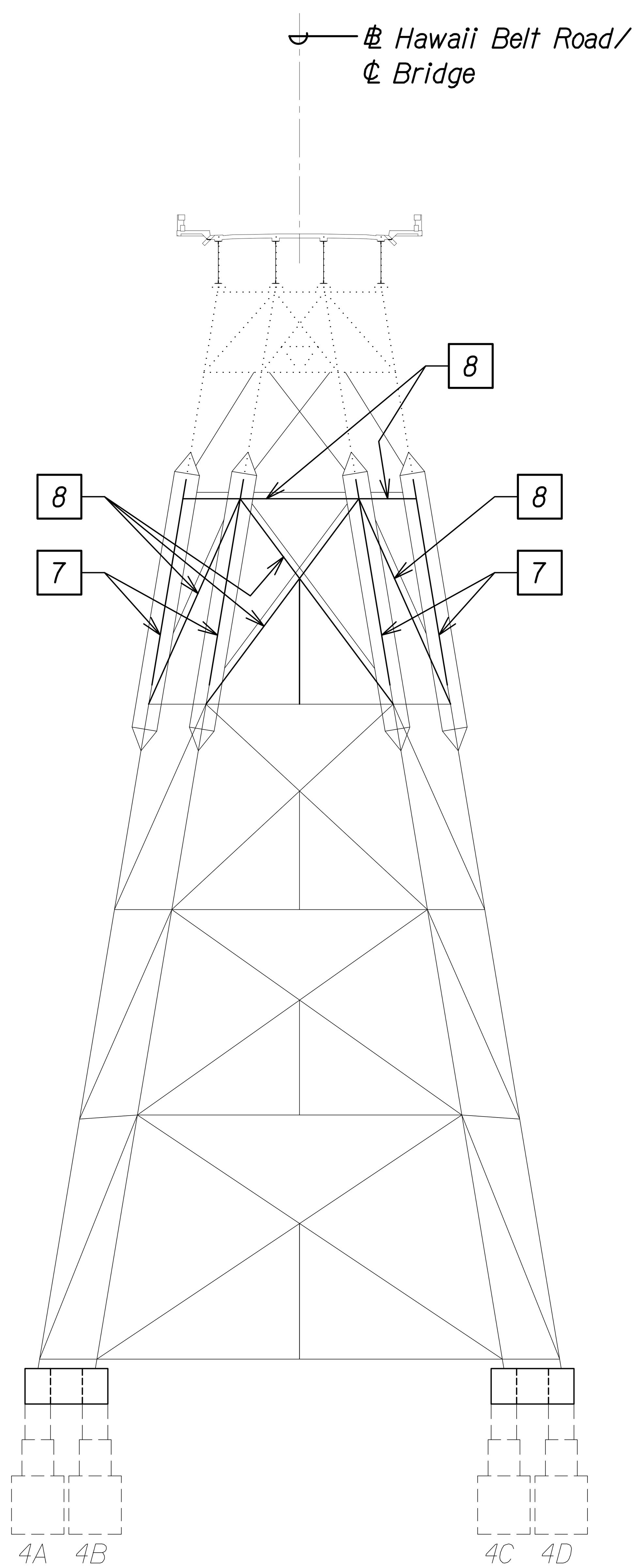
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

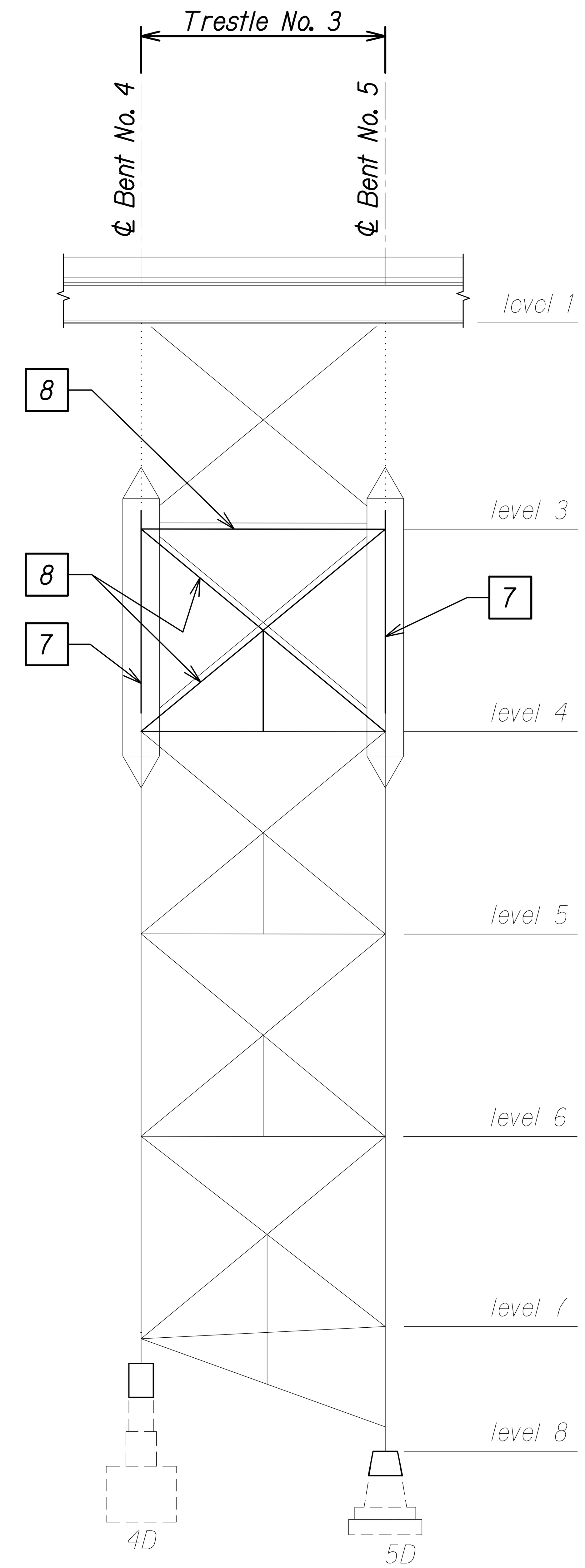
SHEET No SB1.22 OF 29 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	252	280



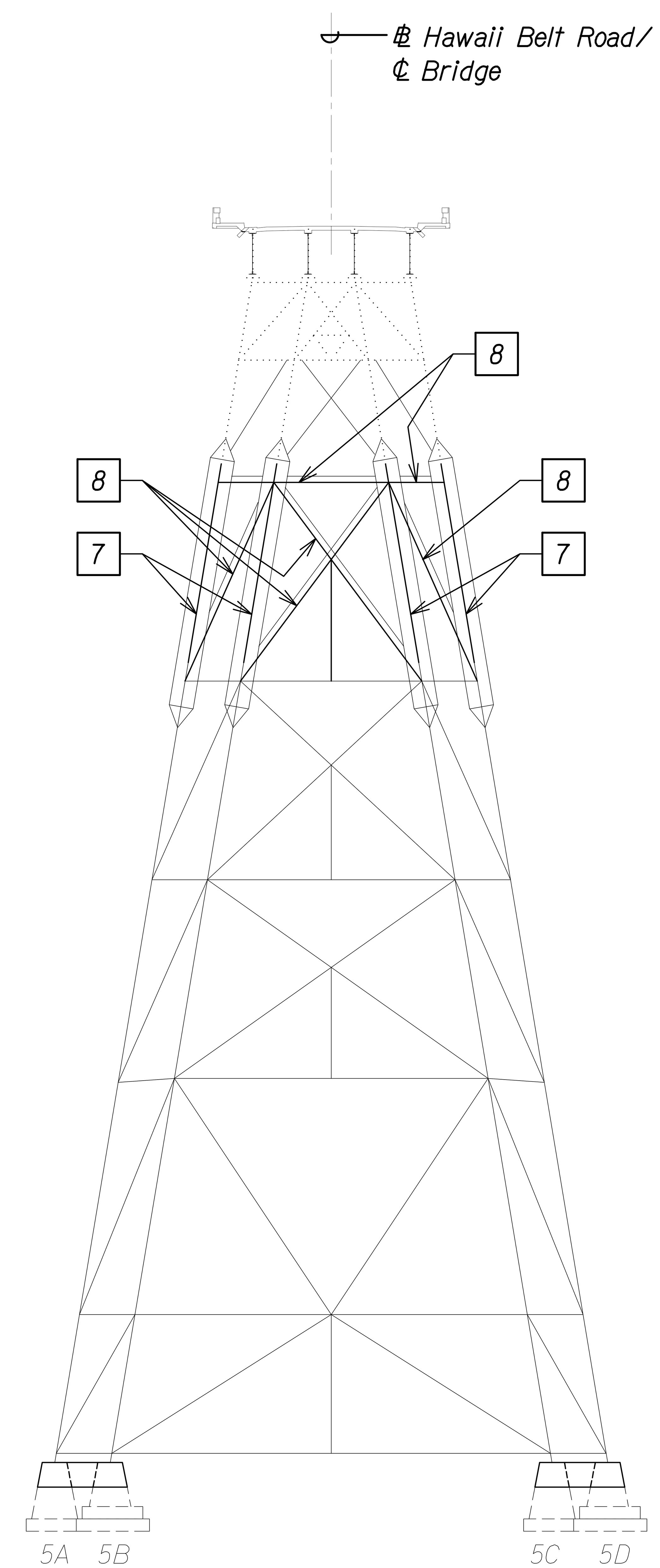
BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

A SB1.23 SB1.23



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

B SB1.23 SB1.23



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

C SB1.23 SB1.23

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.

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SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE

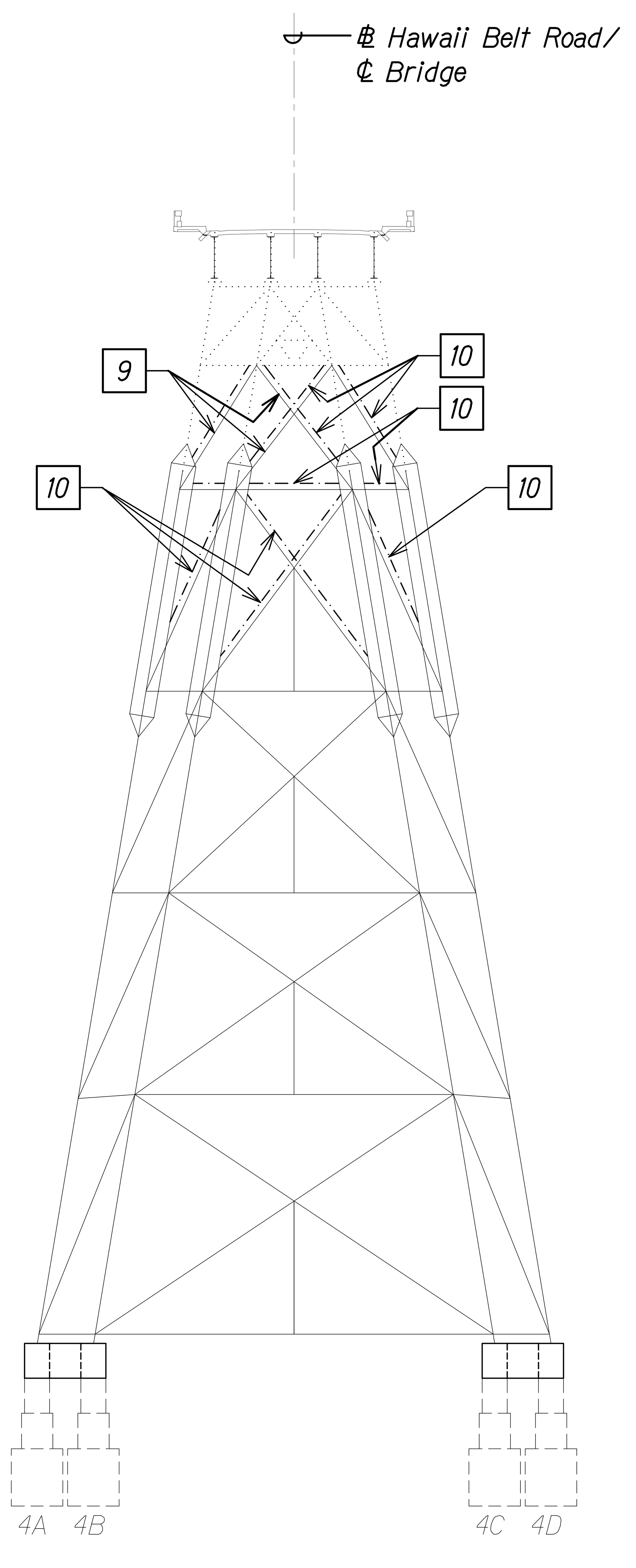
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No SB1.23 OF 29 SHEETS

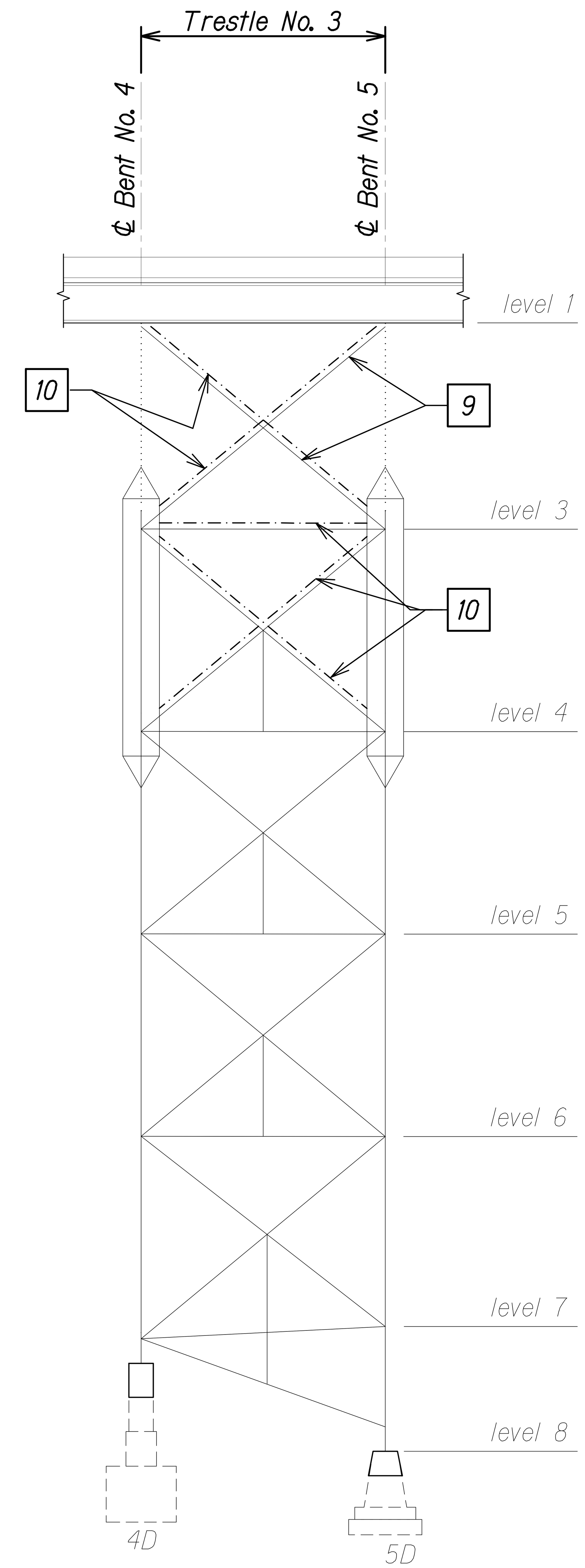
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	253	280



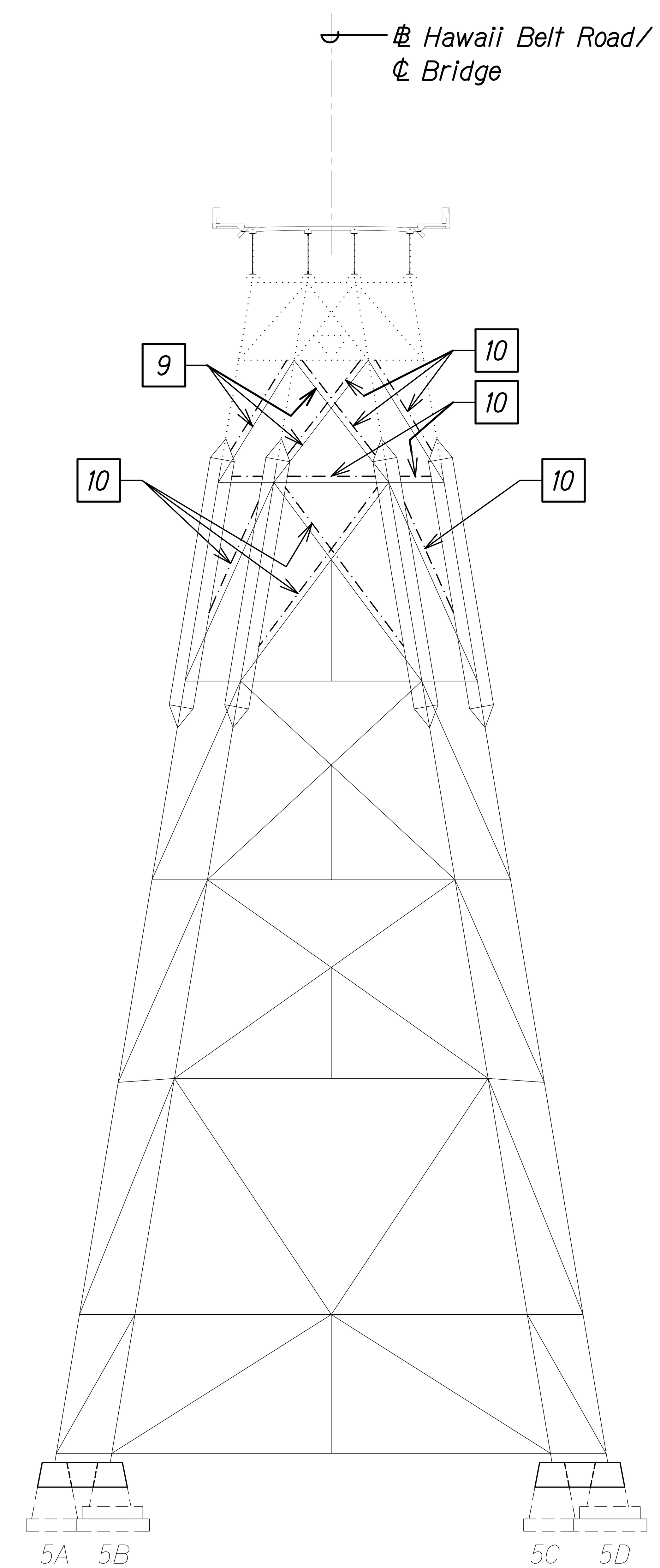
BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

A
SB1.24 | SB1.24



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

B
SB1.24 | SB1.24



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"

C
SB1.24 | SB1.24

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.

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HIGHWAYS DIVISION

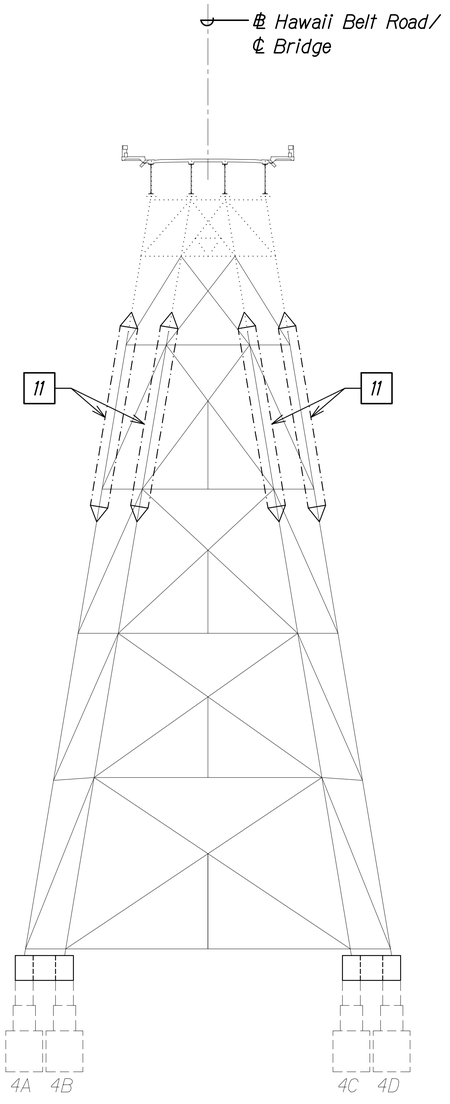
SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted — Date: Oct. 2024

SHEET No SB1.24 OF 29 SHEETS

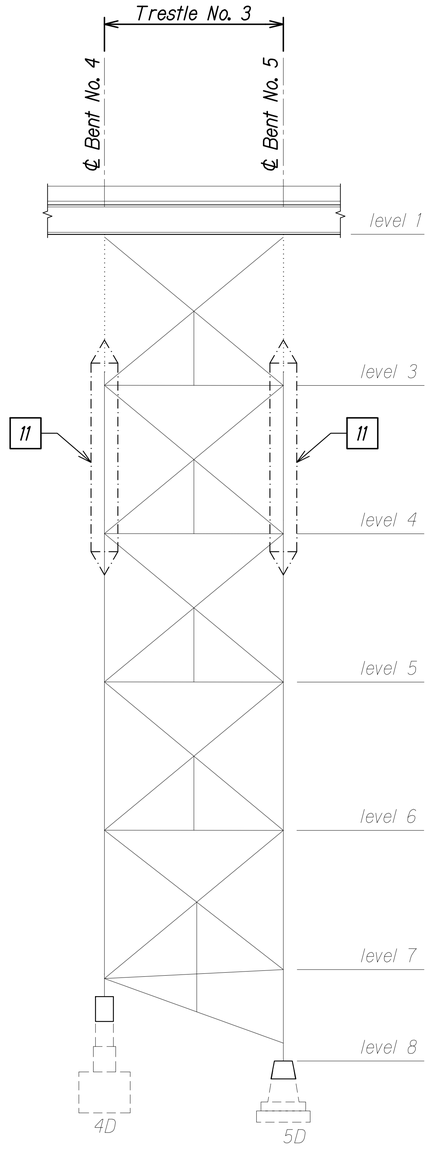
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	254	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

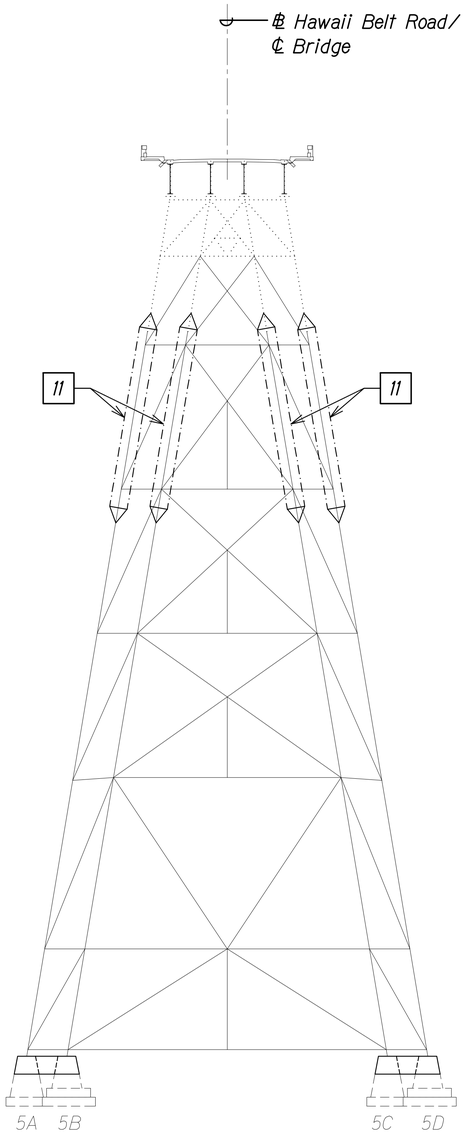
A SBI.25 | SBI.25



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

B SBI.25 | SBI.25



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

C SBI.25 | SBI.25

CONSTRUCTION SEQUENCE:

STAGE 5:

11 Remove column bypass.
Proceed to next stage.
See sht. SB2.6

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STATE OF HAWAII
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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)

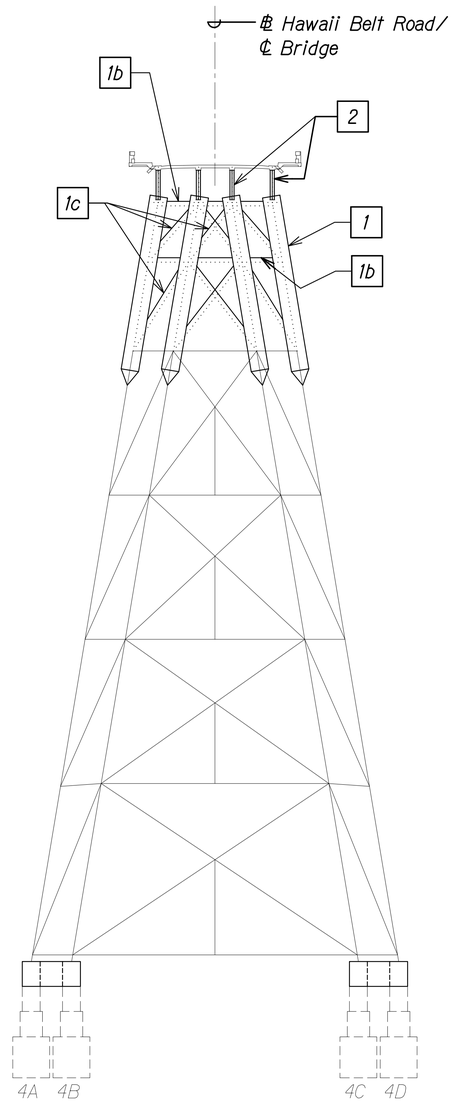
Scale: As Noted Date: Oct. 2024

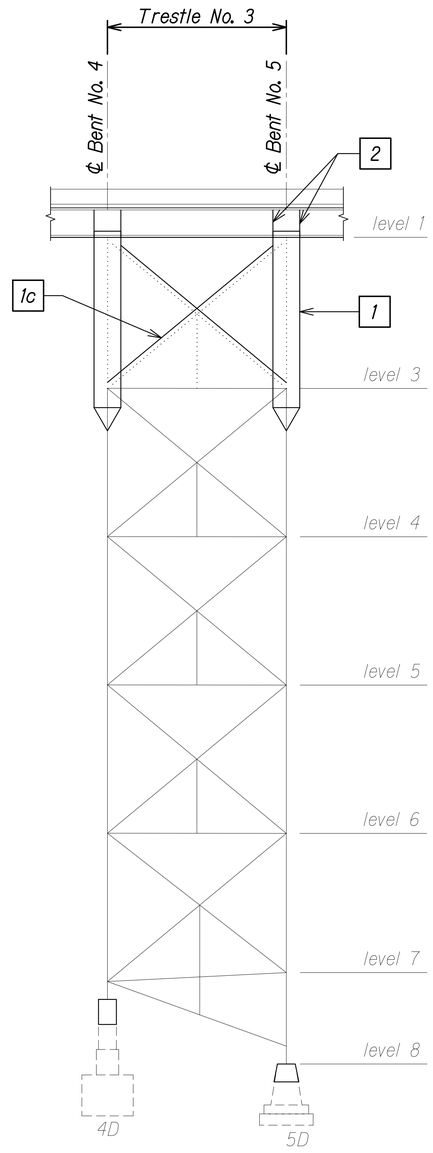
SHEET No SBI.25 OF 29 SHEETS

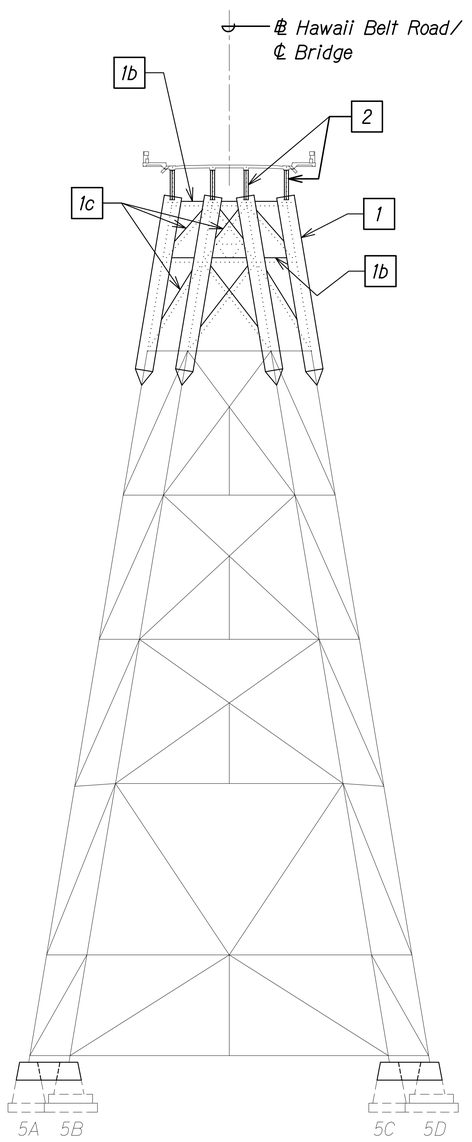
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\DO ONGOING\23-027.3-NANUE STR BR REP-GOTHAM\T CAD\10-26-24 BID SET\VSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24 6:53 PM)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	255	280







BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

A SBI.26 SBI.26

TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

B SBI.26 SBI.26

BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

C SBI.26 SBI.26

CONSTRUCTION SEQUENCE:

STAGE 6:

1 — Install top of bent column bypass assembly. See sht. SB2.11.

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. SB2.11.

STEPHEN T. PETERS
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NO. 17097-S
HAWAII, U.S.A.

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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)

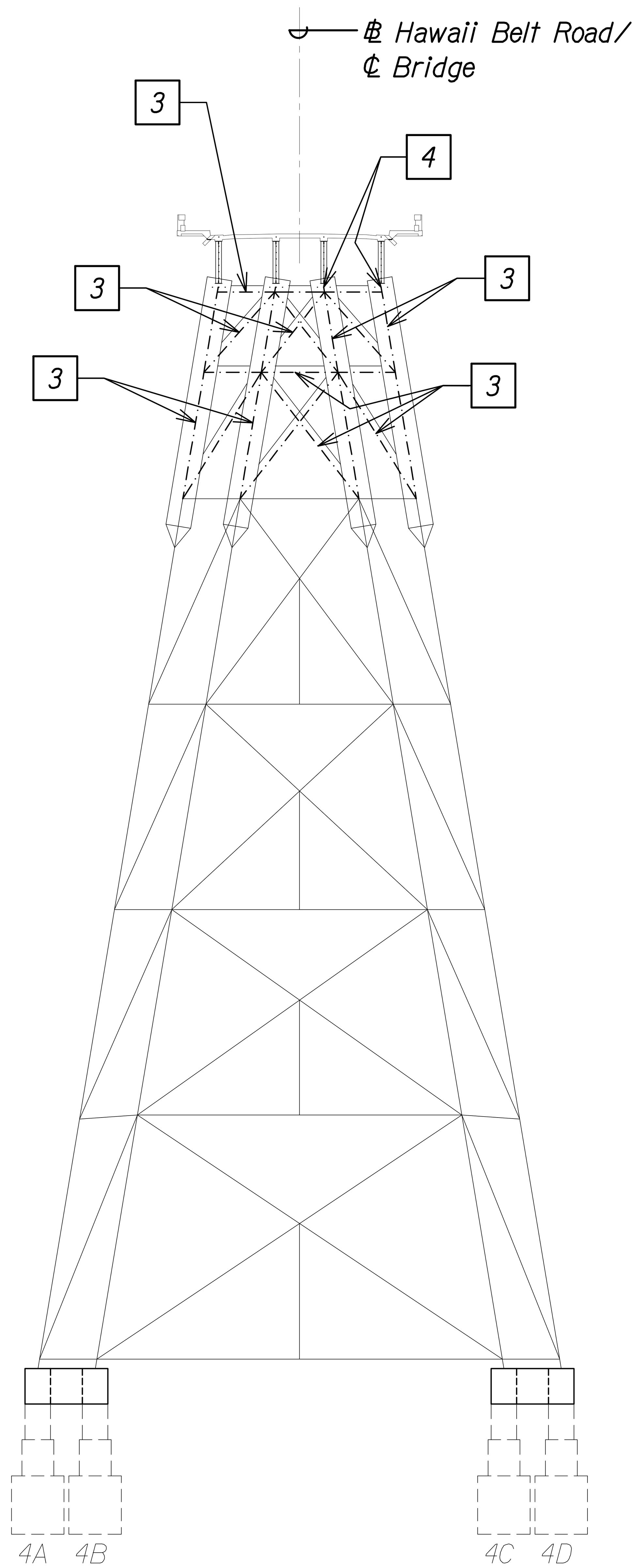
Scale: As Noted Date: Oct. 2024

SHEET No SBI.26 OF 29 SHEETS

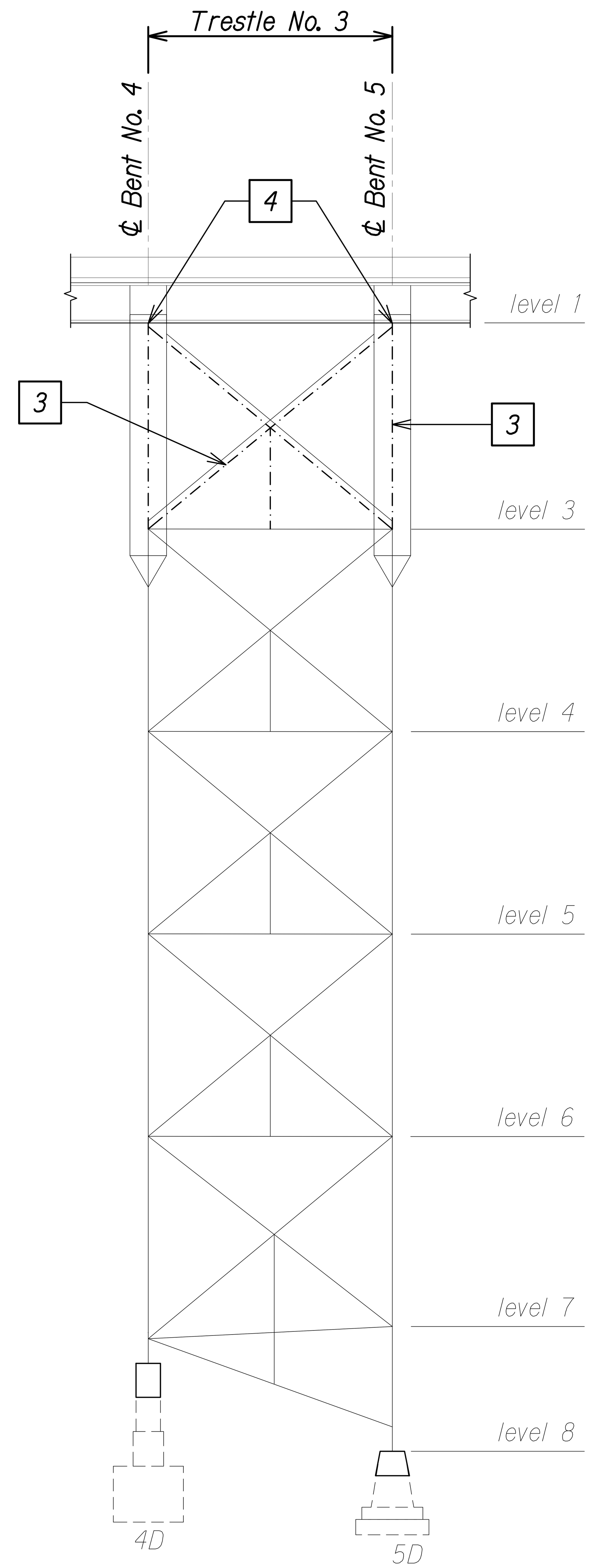
ORIGINAL PLAN | NOTE BOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD\ONGRONA\23-022\3-NANUE STR BR PE2-BOTH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:53 PM

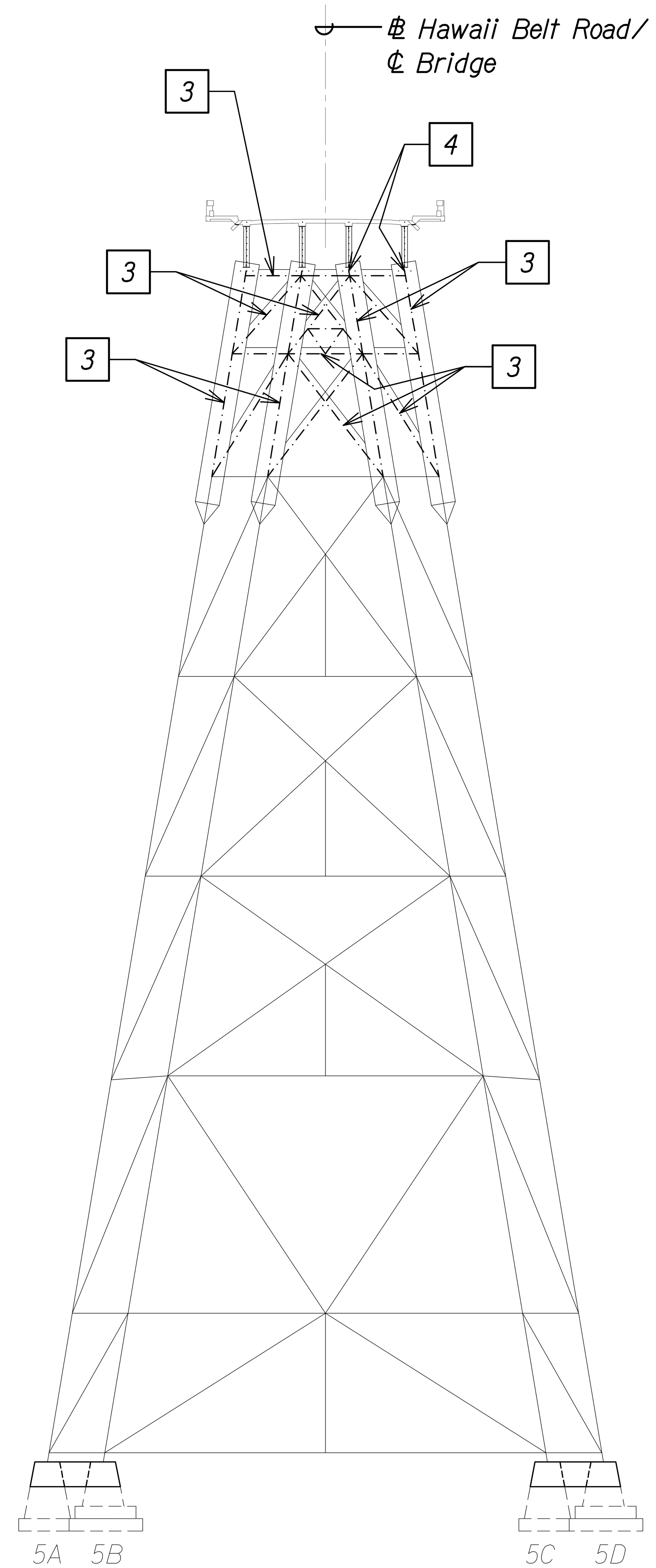
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	256	280



BENT NO. 4 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"
A SB1.27 SB1.27



TRESTLE NO. 3 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"
B SB1.27 SB1.27



BENT NO. 5 ELEVATION
CONSTRUCTION SEQUENCE
Scale: 1/16" = 1'-0"
C SB1.27 SB1.27

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.

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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SCHEMATIC BENT REHABILITATION
CONSTRUCTION SEQUENCE

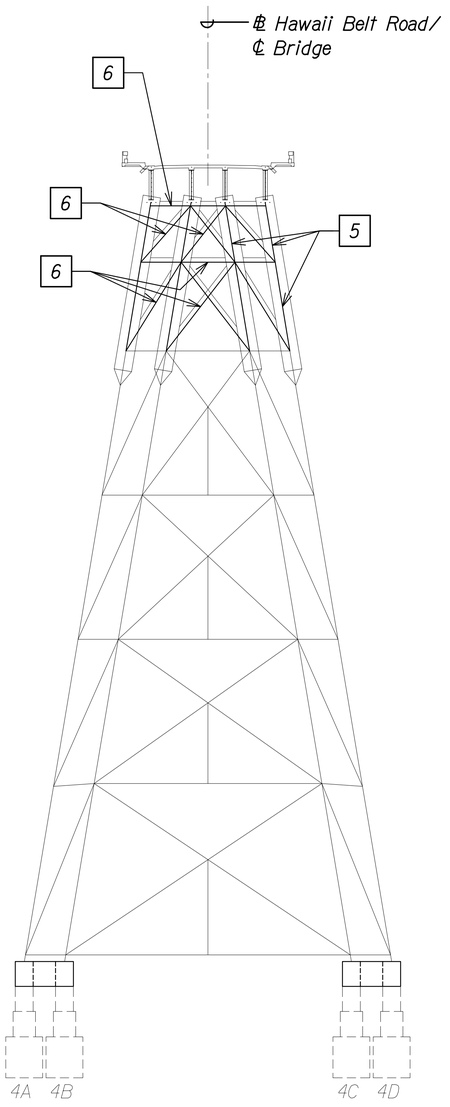
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No SB1.27 OF 29 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

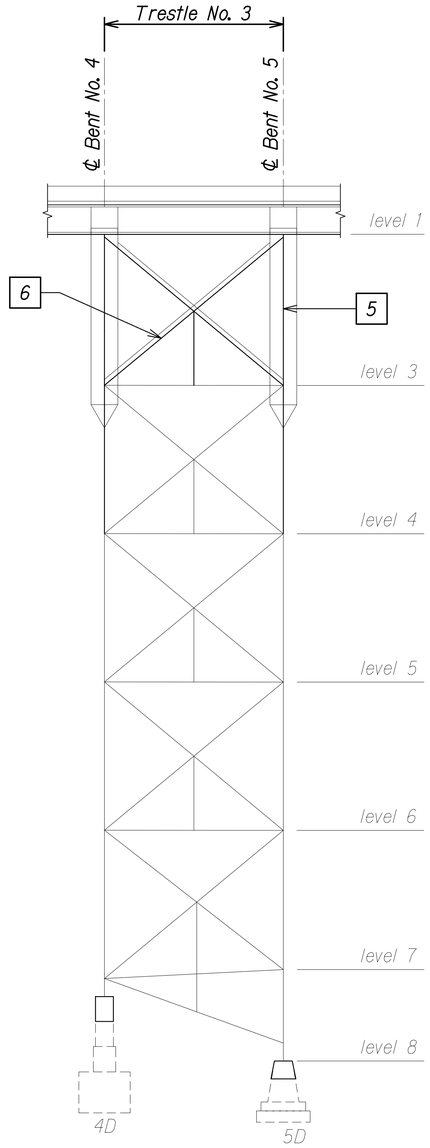
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	257	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

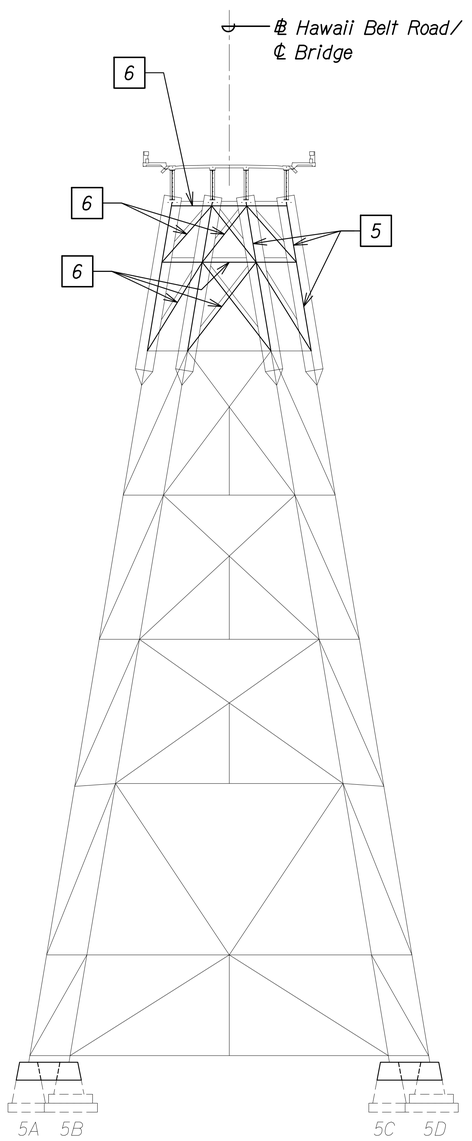
A SBI.28 SBI.28



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

B SBI.28 SBI.28



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

C SBI.28 SBI.28

CONSTRUCTION SEQUENCE:

STAGE 6:

5 Install new column. See sht. SB2.12.

6 Install new bracings. See sht. SB2.12.

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STATE OF HAWAII
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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)

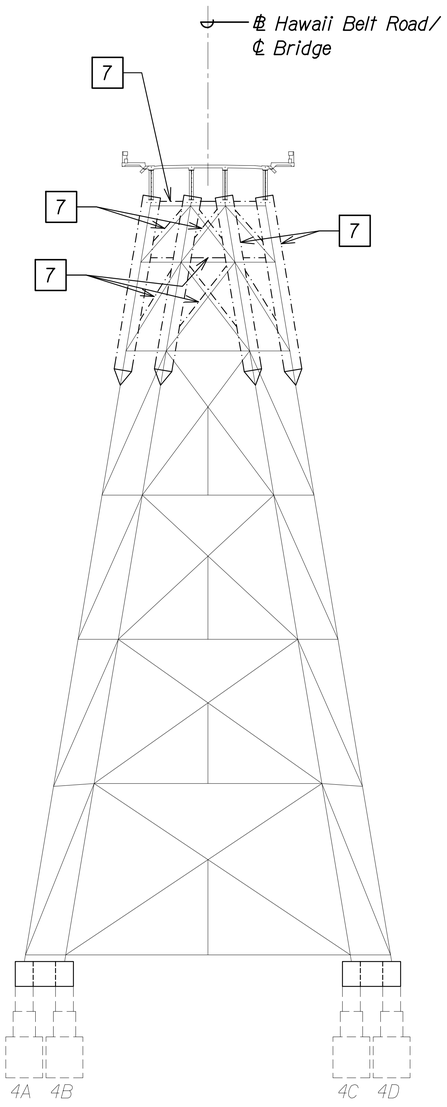
Scale: As Noted Date: Oct. 2024

SHEET No SBI.28 OF 29 SHEETS

ORIGINAL PLAN | NOTE BOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD\ONGOING\23-022\3-NANUE STR BR REP-EXTN\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:54 PM

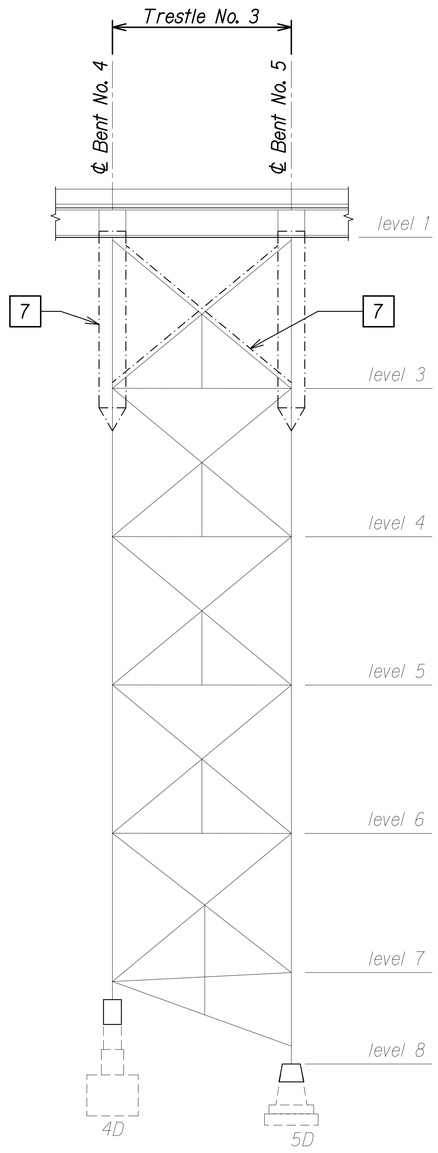
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	258	280



BENT NO. 4 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

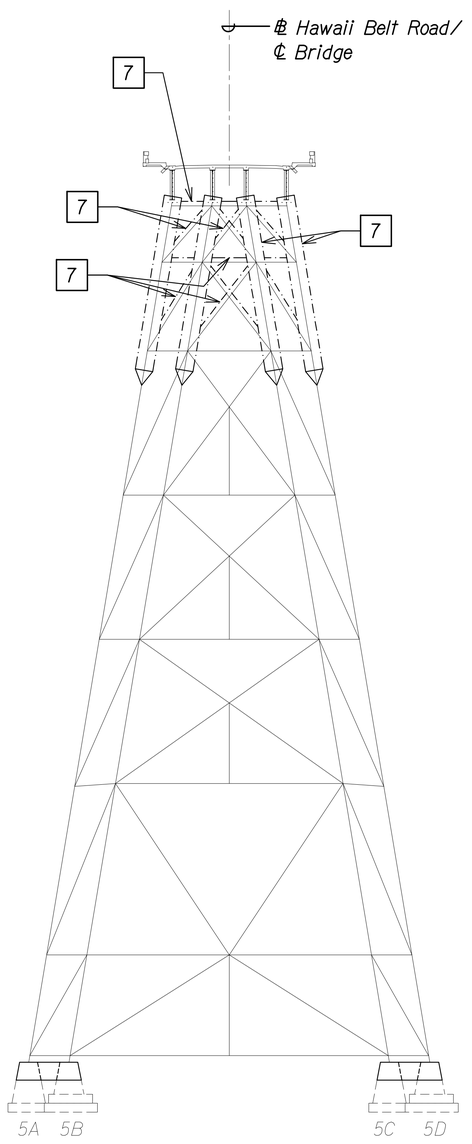
A SBI.29 | SBI.29



TRESTLE NO. 3 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

B SBI.29 | SBI.29



BENT NO. 5 ELEVATION CONSTRUCTION SEQUENCE

Scale: 1/16" = 1'-0"

C SBI.29 | SBI.29

CONSTRUCTION SEQUENCE:

STAGE 6:

7 Remove top of bent column bypass assembly and temporary bracings. See sht. SB2.13.

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SCHEMATIC BENT REHABILITATION CONSTRUCTION SEQUENCE

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

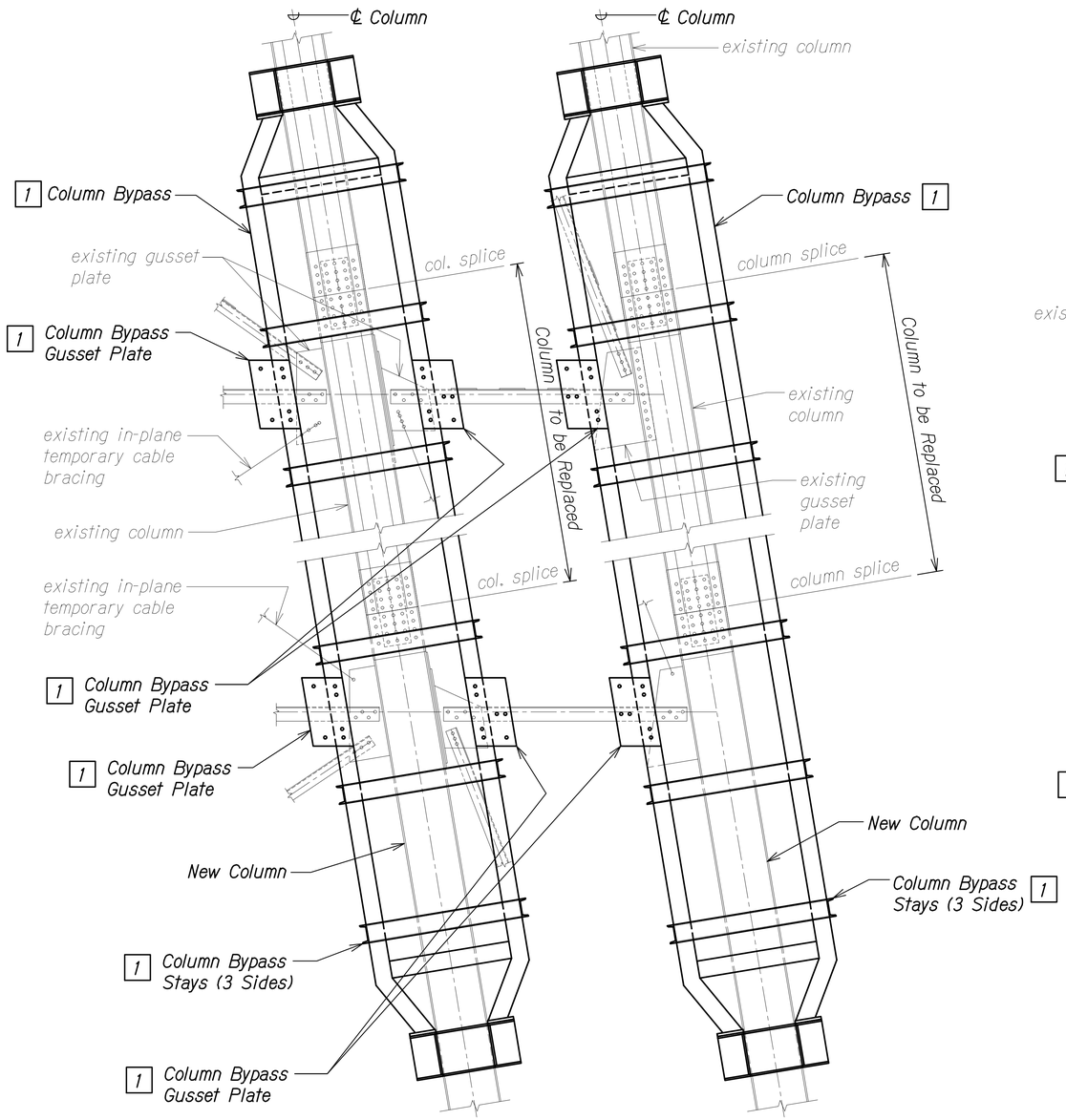
Scale: As Noted Date: Oct. 2024

SHEET No SBI.29 OF 29 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

DRAWING NAME: Z:\OD\ONGOING\23-022\3-NANUE STR BR PED-BOTH\01 CAD\10-28-24 BID SET\NSR-SB0101 BENT REHAB CONSEQ.DWG PLOT TIME: 10-26-24, 6:54 PM

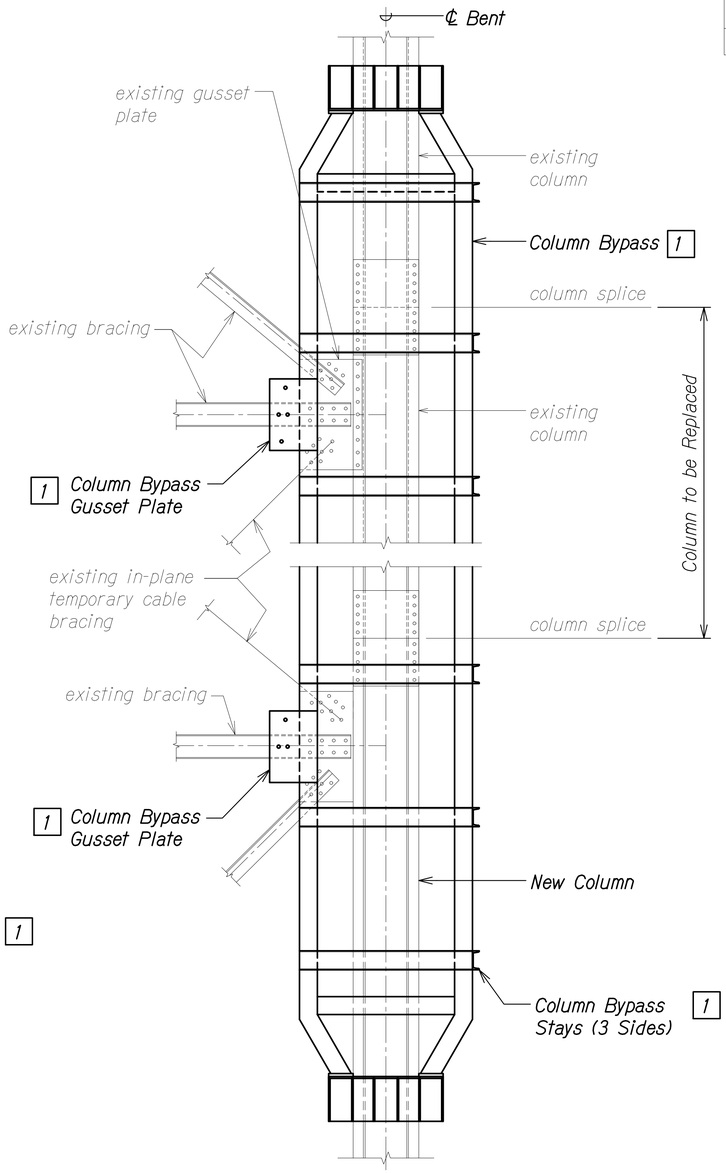
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	259	280



TYPICAL COLUMN BYPASS DETAIL

Scale: 1/2" = 1'-0"

A SB2.1 | BS2.1



TYPICAL COLUMN BYPASS DETAIL

Scale: 1/2" = 1'-0"

B SB2.1 | SB2.1

CONSTRUCTION SEQUENCE:

PHASE:

1 Install Column bypass beyond existing column splice points.

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LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

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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

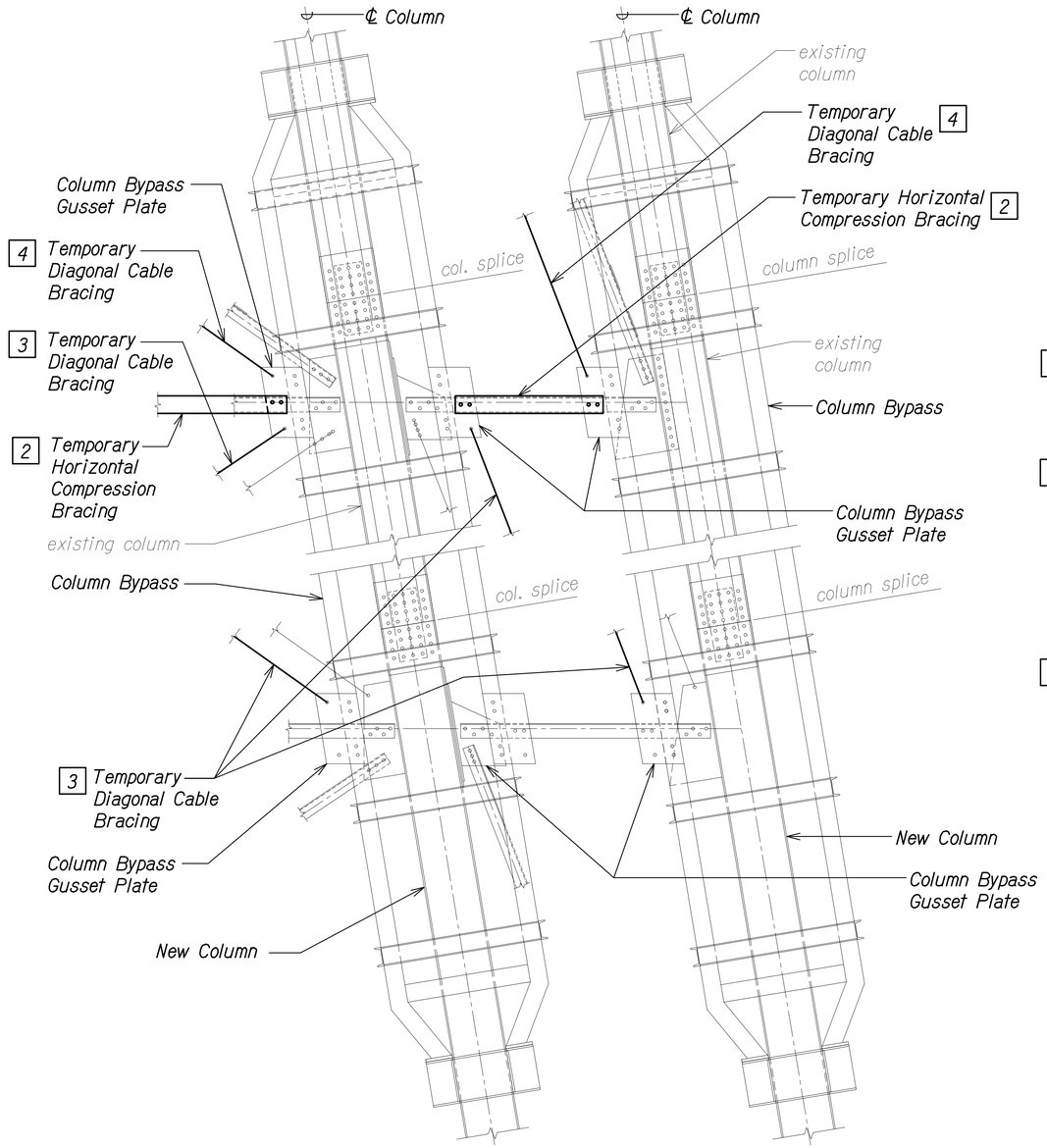
SHEET No. SB2.1 OF 13 SHEETS

259

ORIGINAL PLAN | NOTE BOOK | No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONDONO\23-022\3-NANUE STR BR PE2-20\TA\01 CAD\10-28-24 BID SET\NSR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 6:56 PM

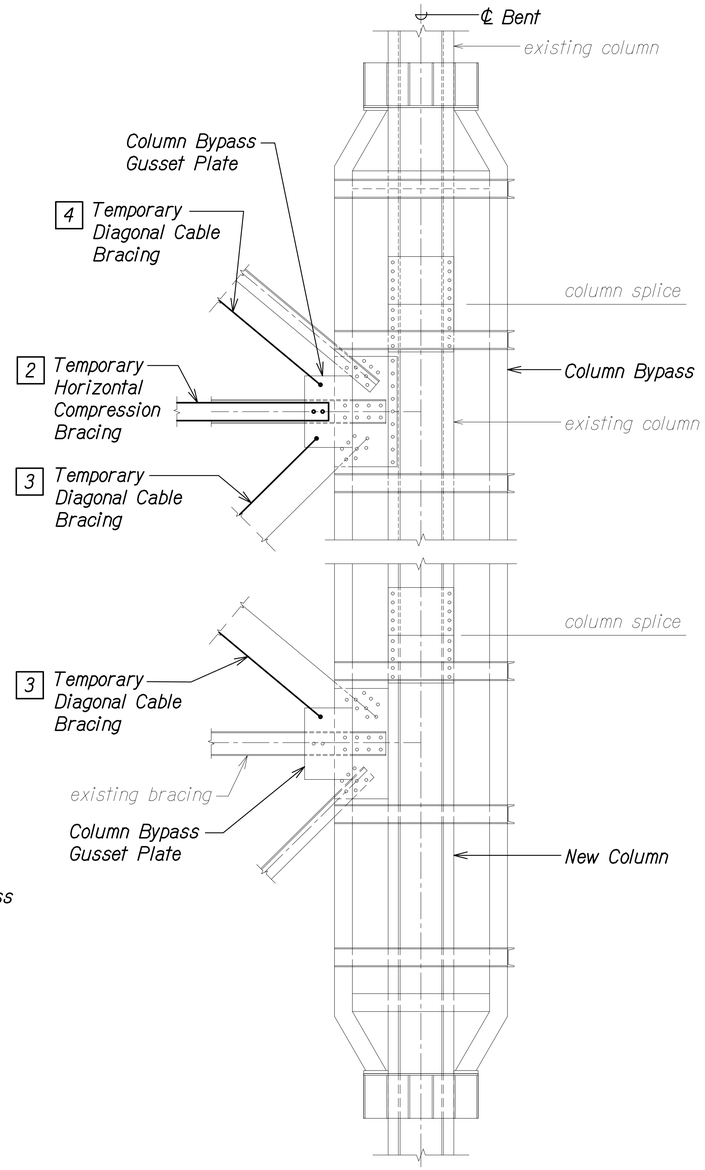
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	260	280



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 | SB2.2

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.

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HAWAII, U.S.A.

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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)

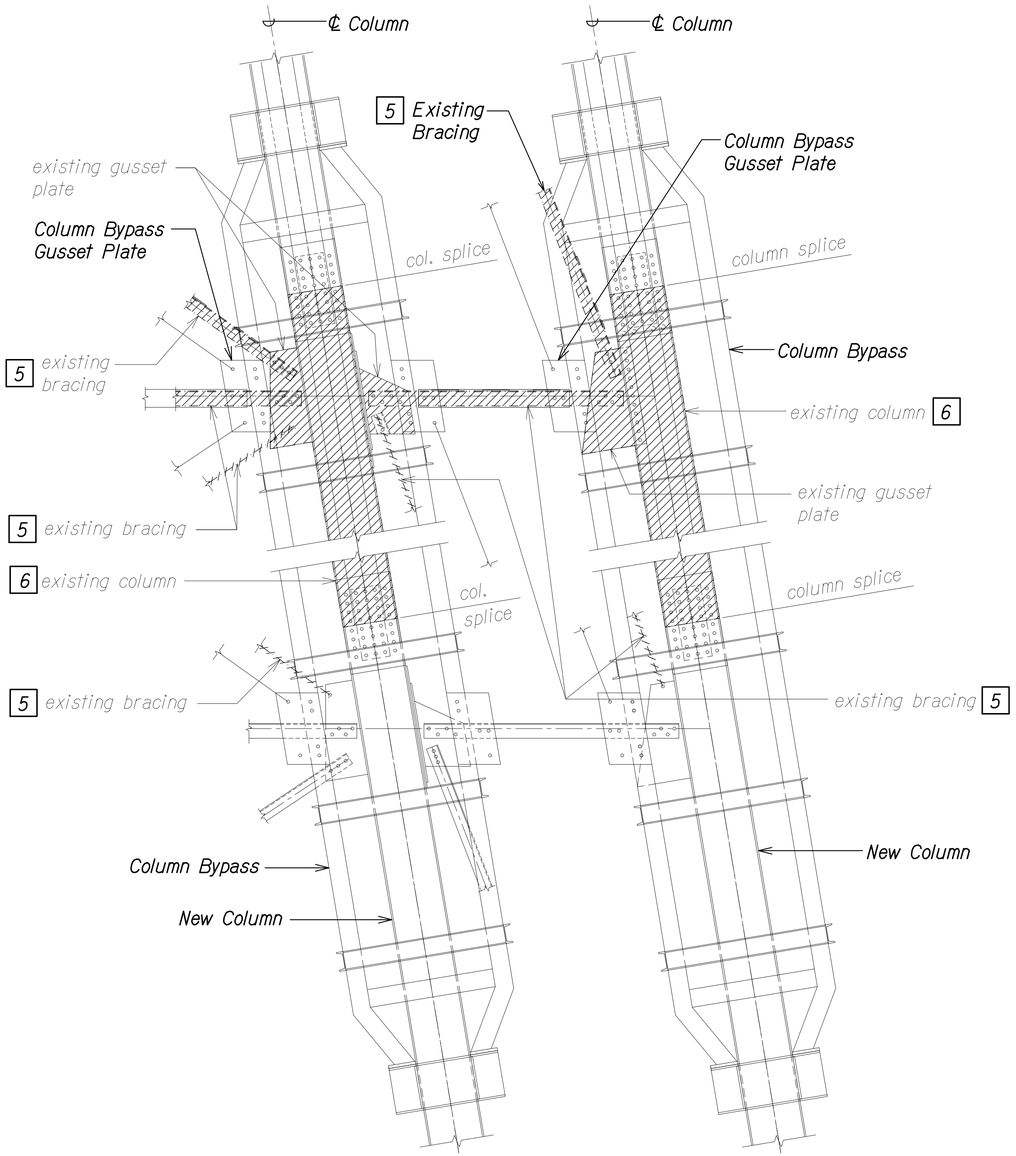
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.2 OF 13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

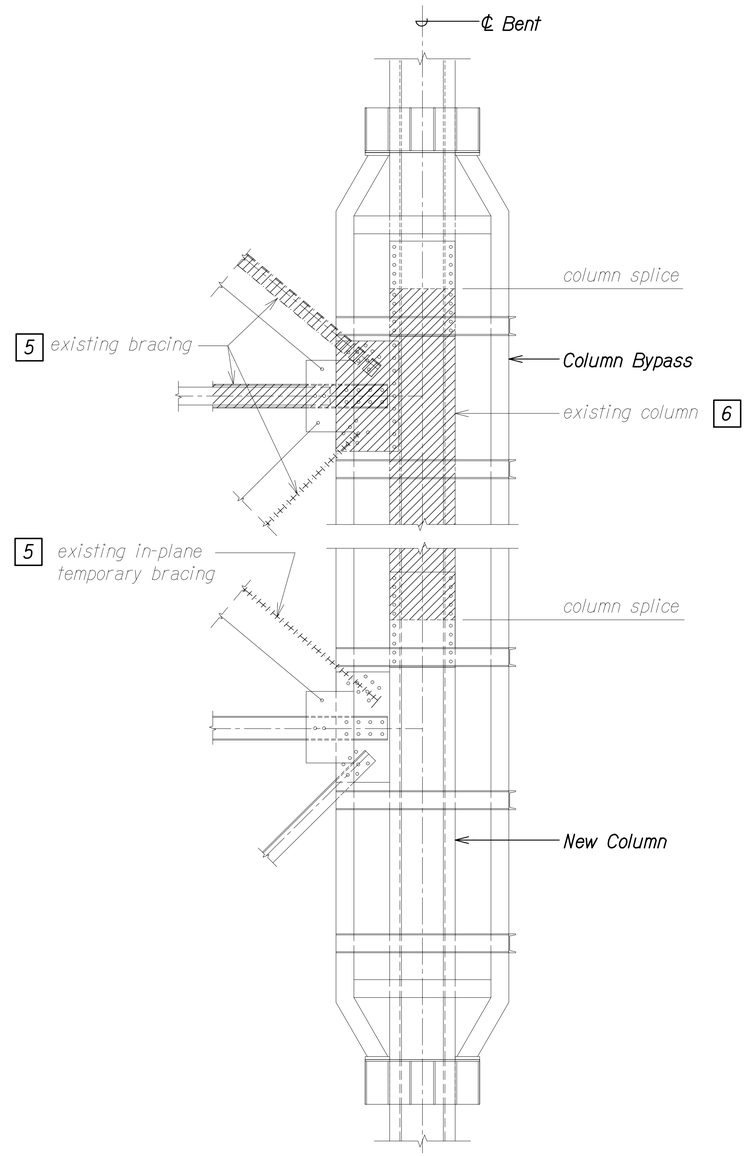
DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PEZ-DOT\A01 CAD\10-28-24 BID SERVER SB\SB2\01 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 6:57 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	261	280



TYPICAL COLUMN BYPASS DETAIL (A) SB2.3 | SB2.3

Scale: 1/2" = 1'-0"



TYPICAL COLUMN BYPASS DETAIL (B) SB2.3 | SB2.3

Scale: 1/2" = 1'-0"

CONSTRUCTION SEQUENCE:

PHASE:

5 Remove existing bracing along temporary bracings.

6 Remove existing column between existing column splice points within column bypass.

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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)

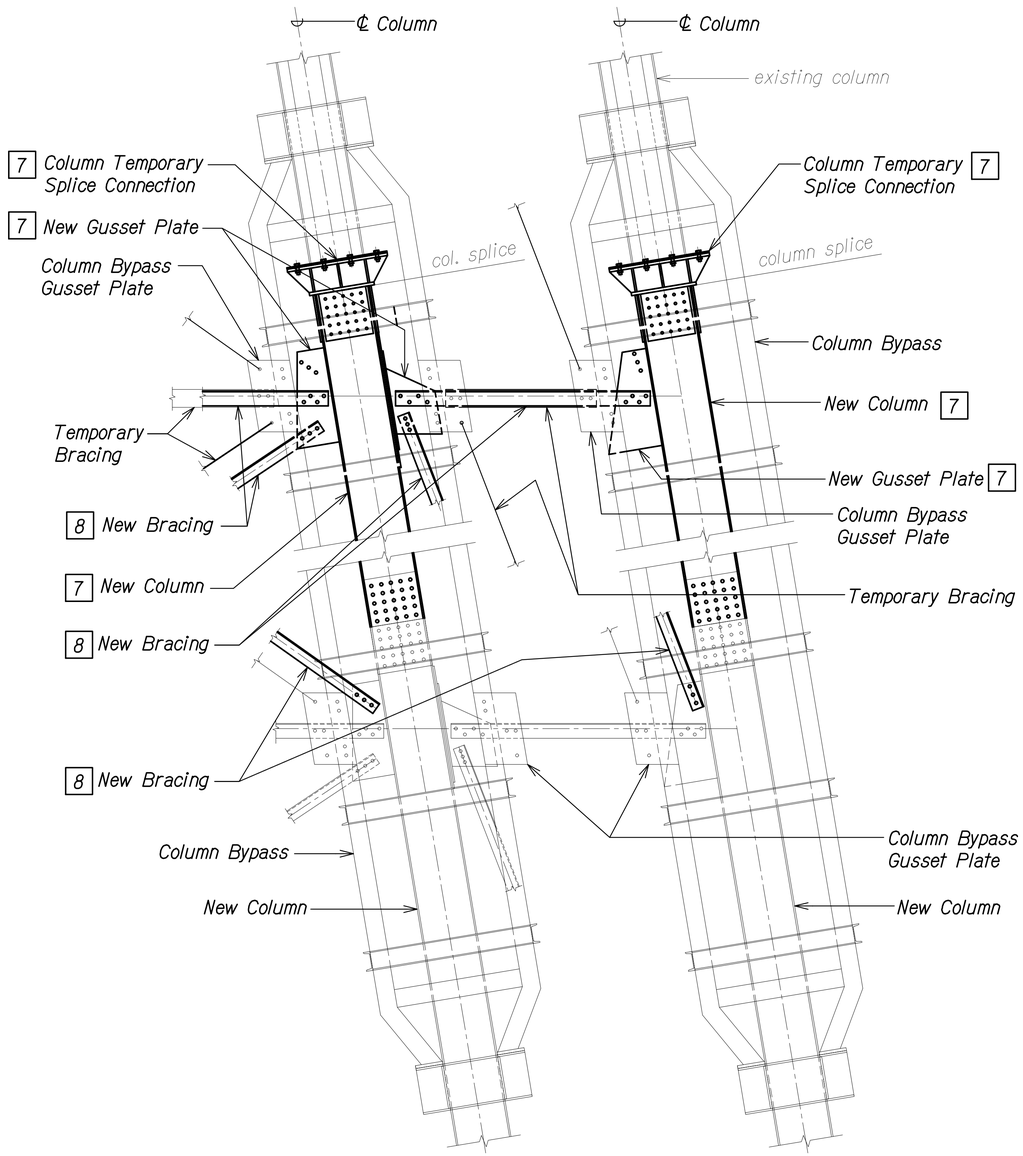
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.3 OF 13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGONGA\23-0223-NANUE STR BR PE2-20TA\01 CAD\10-28-24 BD SET\NSR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-26-24, 6:57 PM

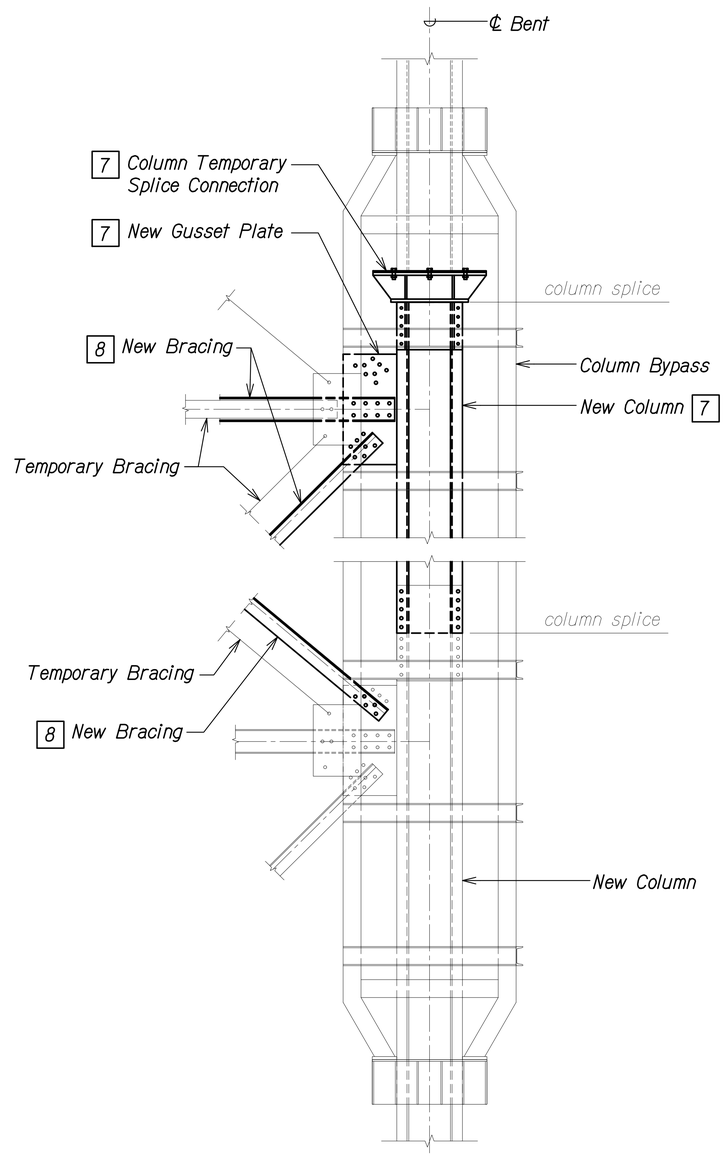
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	262	280



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

CONSTRUCTION SEQUENCE:

PHASE:

7 Install new column between column spice 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.

STEPHEN T. PETERS
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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)

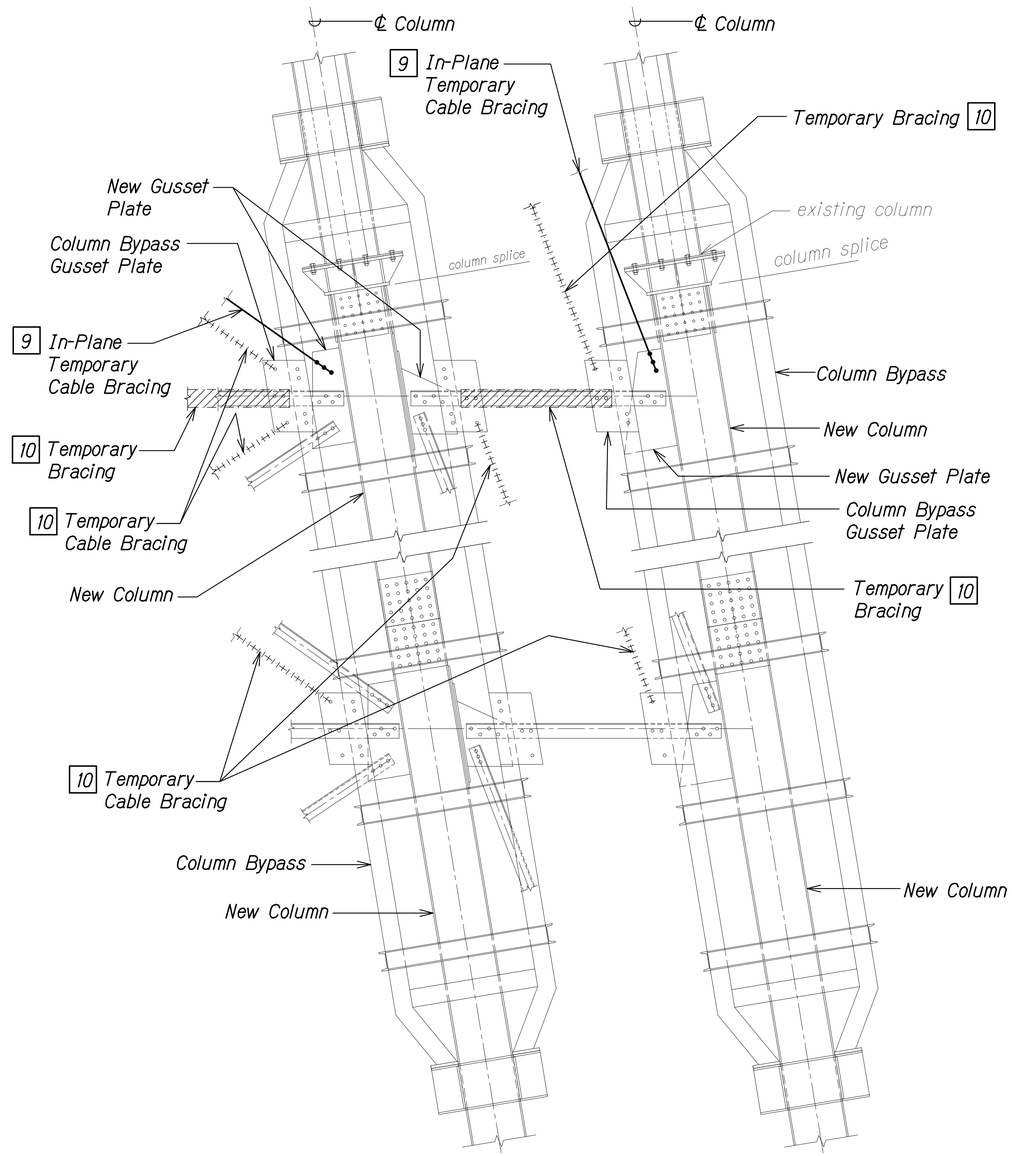
Scale: As Noted — Date: Oct. 2024

SHEET No. SB2.4 OF 13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PEZ-3OTHA\01 CAD\10-28-24 BID SET\SB\SB2\01 COL BYPASS PH.DWG PLOT TIME: 10-26-24, 6:57 PM

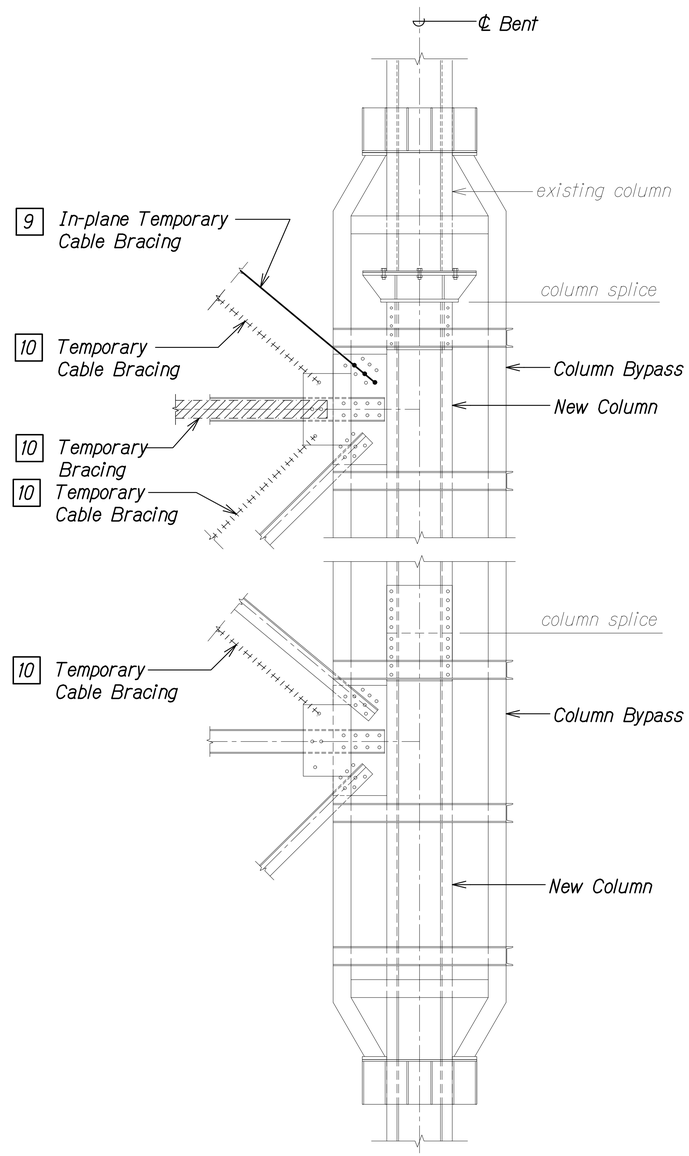
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	263	280



TYPICAL COLUMN BYPASS DETAIL

Scale: 1/2" = 1'-0"

A SB2.5 | SB2.5



TYPICAL COLUMN BYPASS DETAIL

Scale: 1/2" = 1'-0"

B SB2.5 | SB2.5

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.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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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)

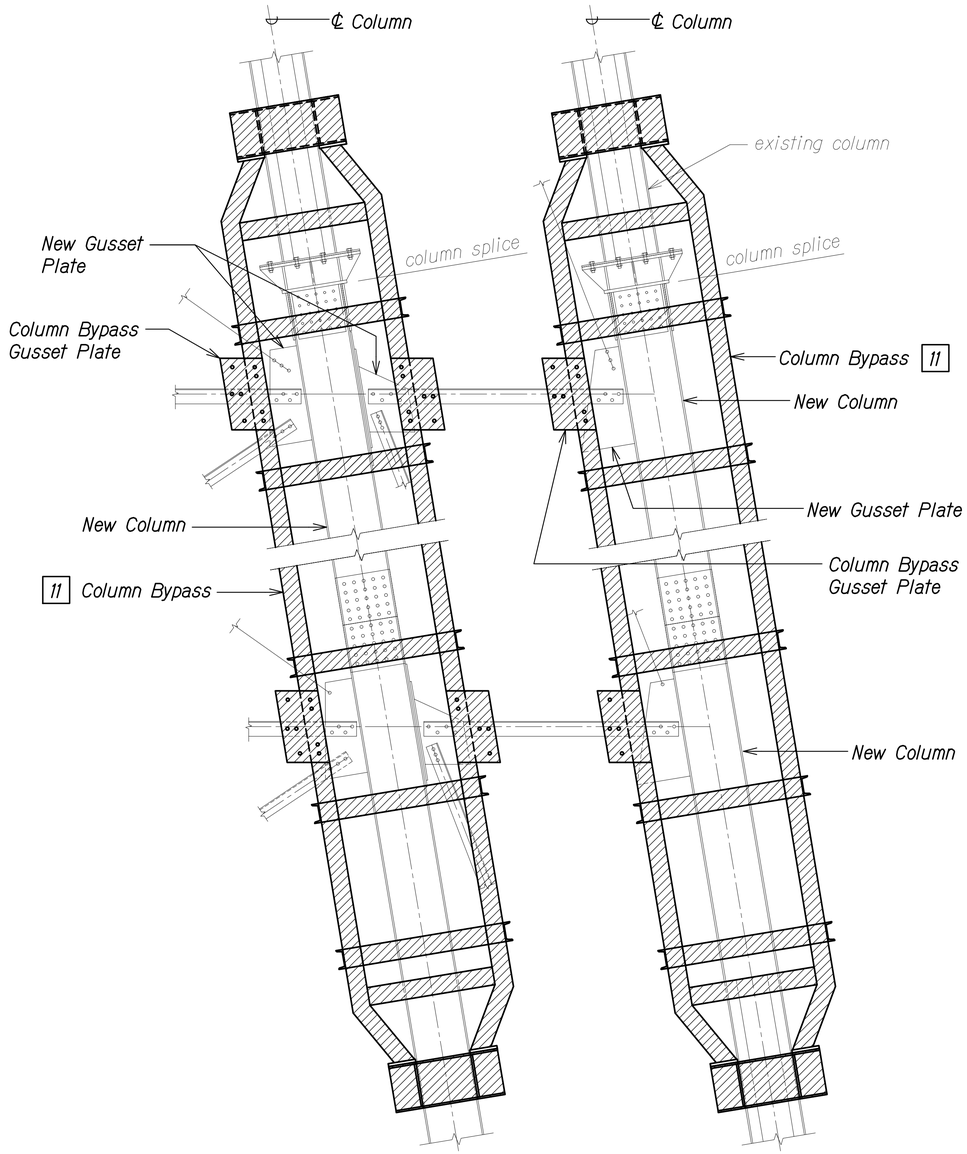
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.5 OF 13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PEZ-3\OTHA\01 CAD\10-28-24 BID SET\VGR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 6:58 PM

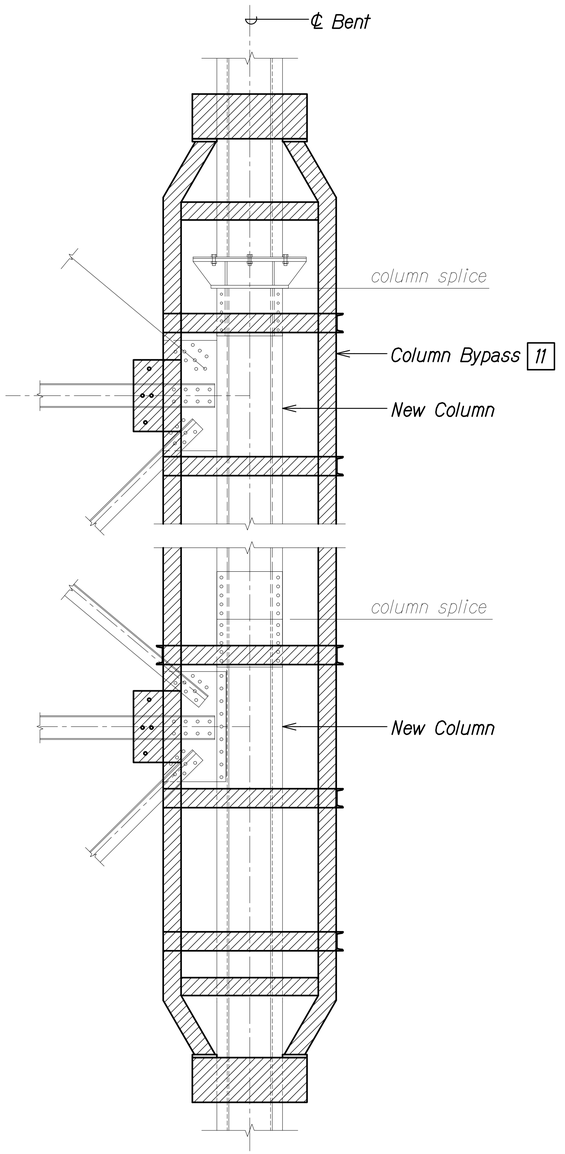
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	264	280



TYPICAL COLUMN BYPASS DETAIL (A)

Scale: 1/2" = 1'-0"

SB2.6 | SB2.6



TYPICAL COLUMN BYPASS DETAIL (B)

Scale: 1/2" = 1'-0"

SB2.6 | SB2.6

CONSTRUCTION SEQUENCE:

PHASE:

11 Remove column bypass.

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STATE OF HAWAII
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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

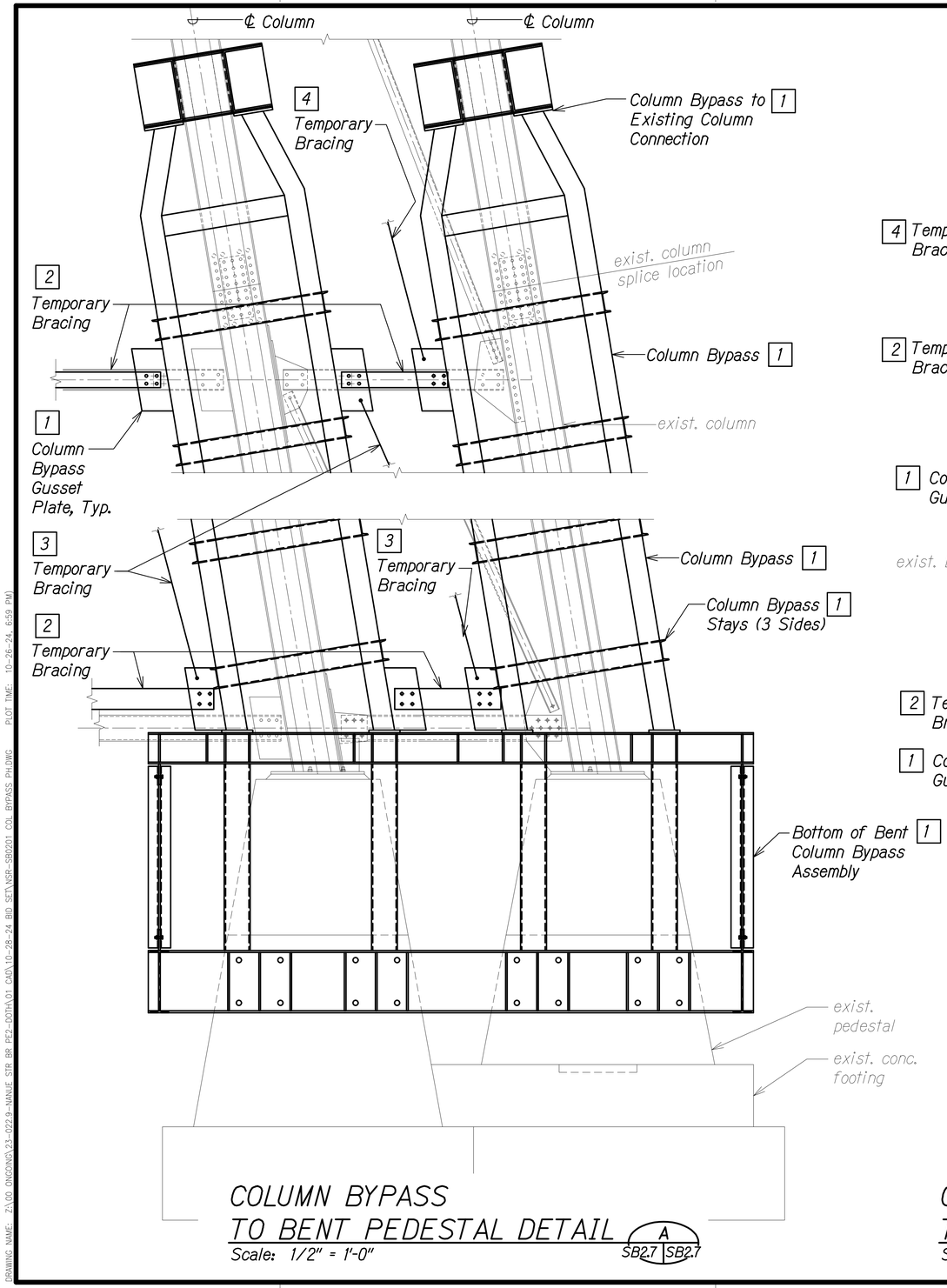
SHEET No. SB2.6 OF 13 SHEETS

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-BOTH.OT CAD\10-28-24 BID SET\NSR-SBO201 COL BYPASS PH.DWG PLOT TIME: 10-26-24, 6:58 PM

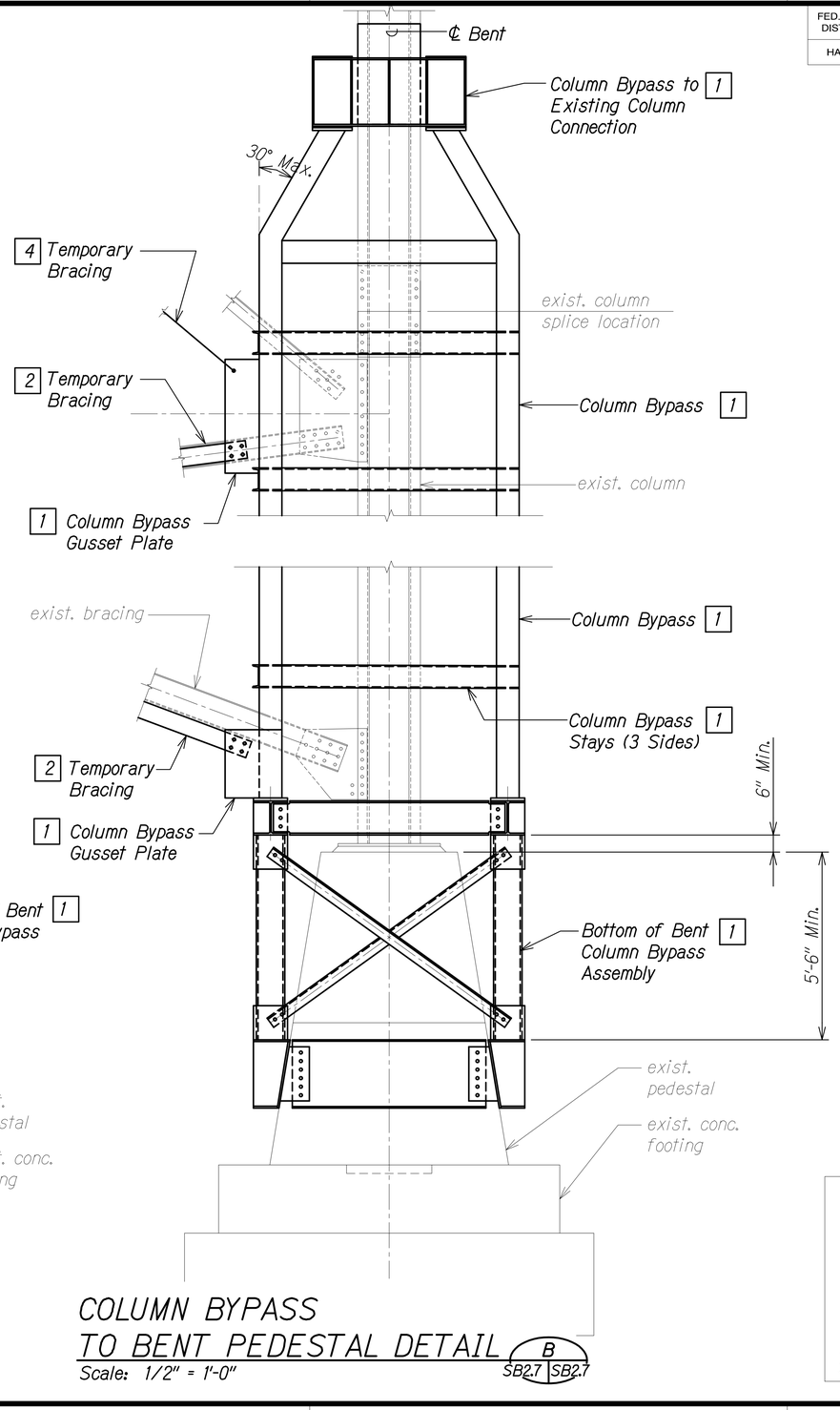
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	265	280



COLUMN BYPASS TO BENT PEDESTAL DETAIL A

Scale: 1/2" = 1'-0"

SB2.7 | SB2.7



COLUMN BYPASS TO BENT PEDESTAL DETAIL B

Scale: 1/2" = 1'-0"

SB2.7 | SB2.7

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.

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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)

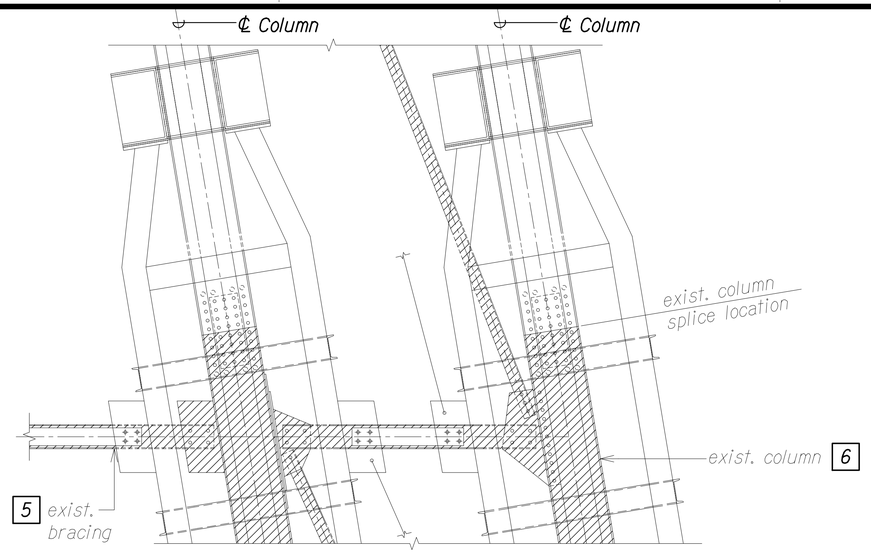
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.7 OF 13 SHEETS

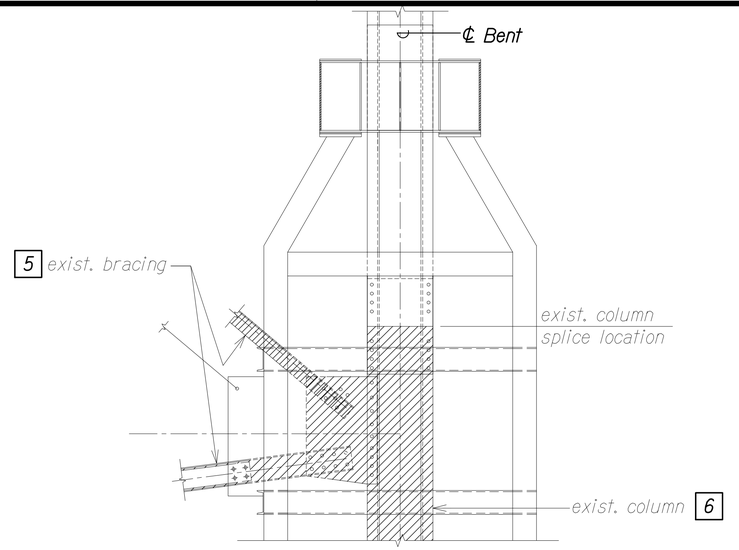
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-3D\HAOT CAD\10-28-24 BID SET\VSR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-26-24, 6:59 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	266	280



COLUMN BYPASS
TO BENT PEDESTAL DETAIL A
Scale: 1/2" = 1'-0"
SB2.8 | SB2.8



COLUMN BYPASS
TO BENT PEDESTAL DETAIL B
Scale: 1/2" = 1'-0"
SB2.8 | SB2.8

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.

STEPHEN T. PETERS
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NO. 17097-S
HAWAII, U.S.A.

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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

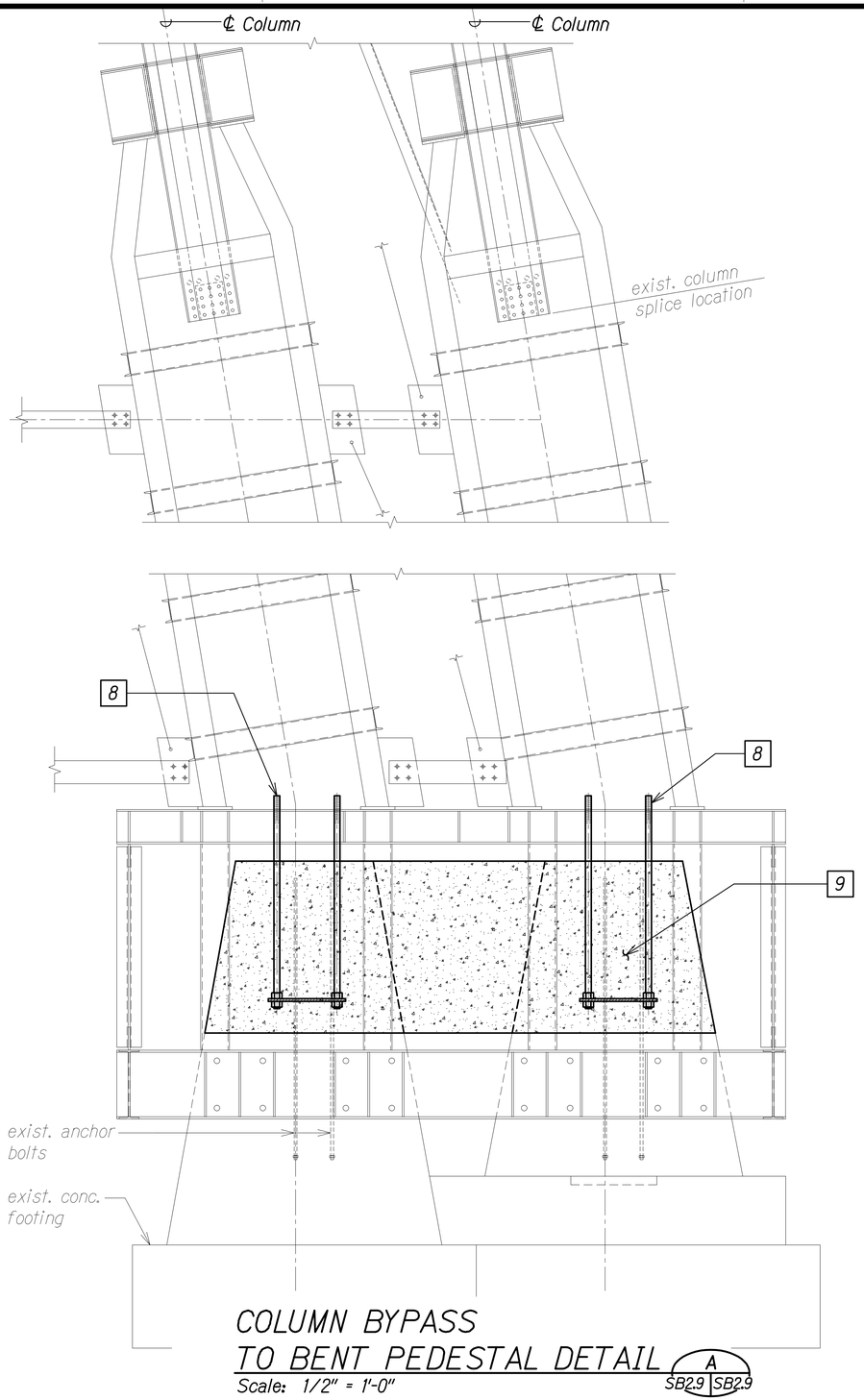
SHEET No. SB2.8 OF 13 SHEETS

266

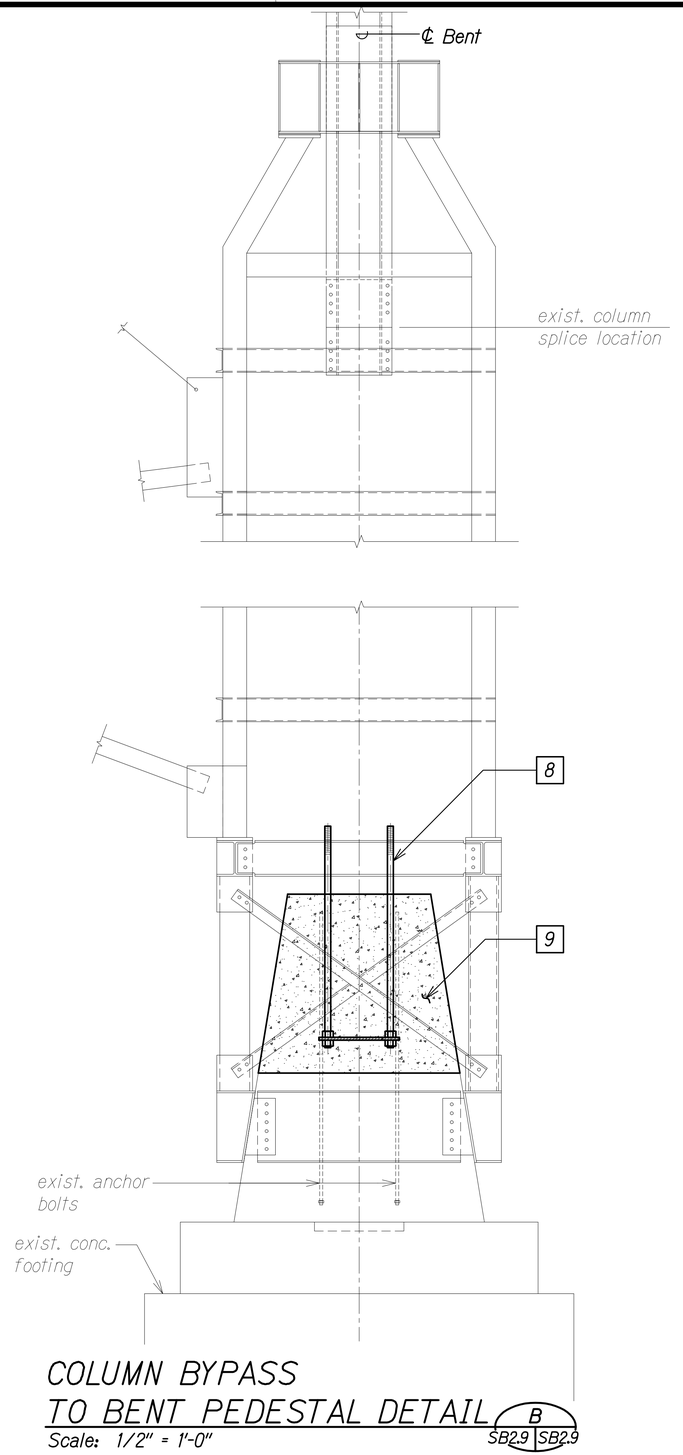
ORIGINAL PLAN | NOTE BOOK | No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-3D\TA\01 CAD\10-28-24 BID SET\VSR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 1:51 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	267	280



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

CONSTRUCTION SEQUENCE:

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.

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STATE OF HAWAII
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HIGHWAYS DIVISION

SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL

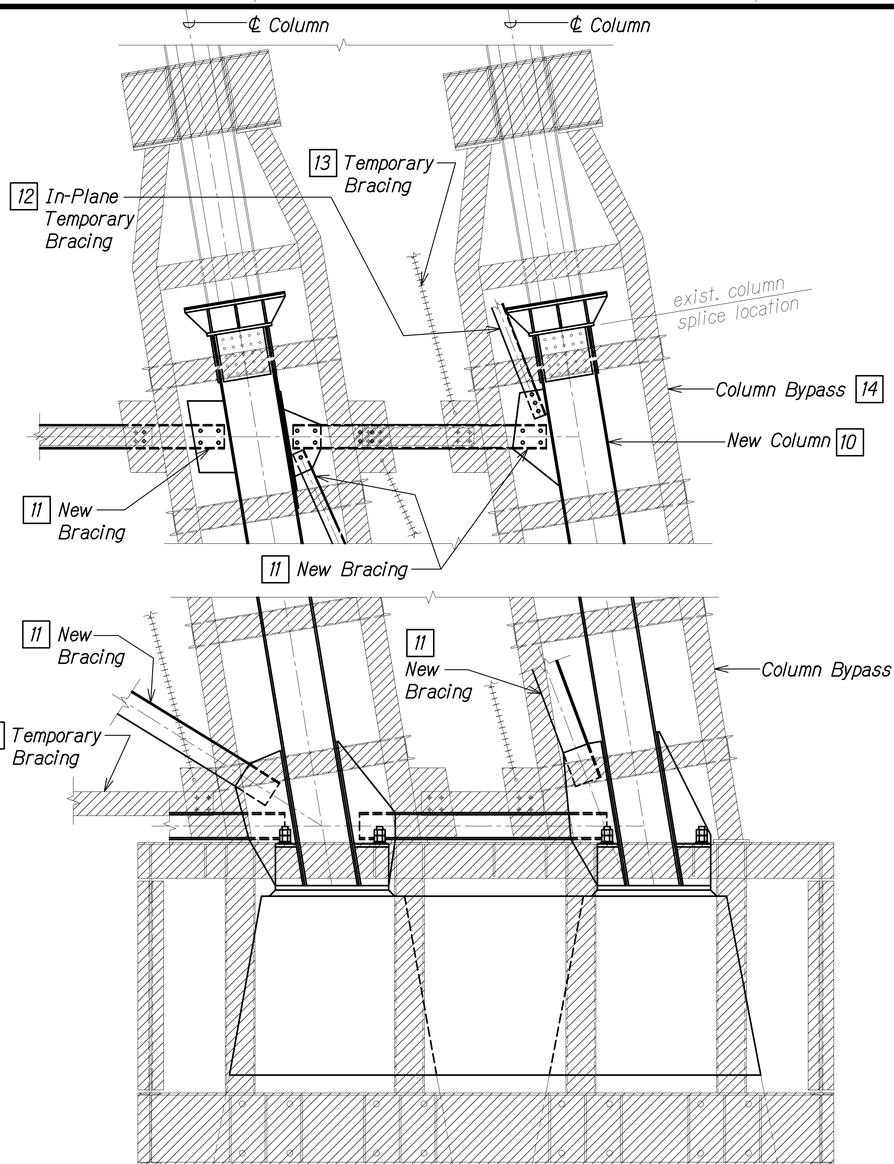
HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SB2.9 OF 13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

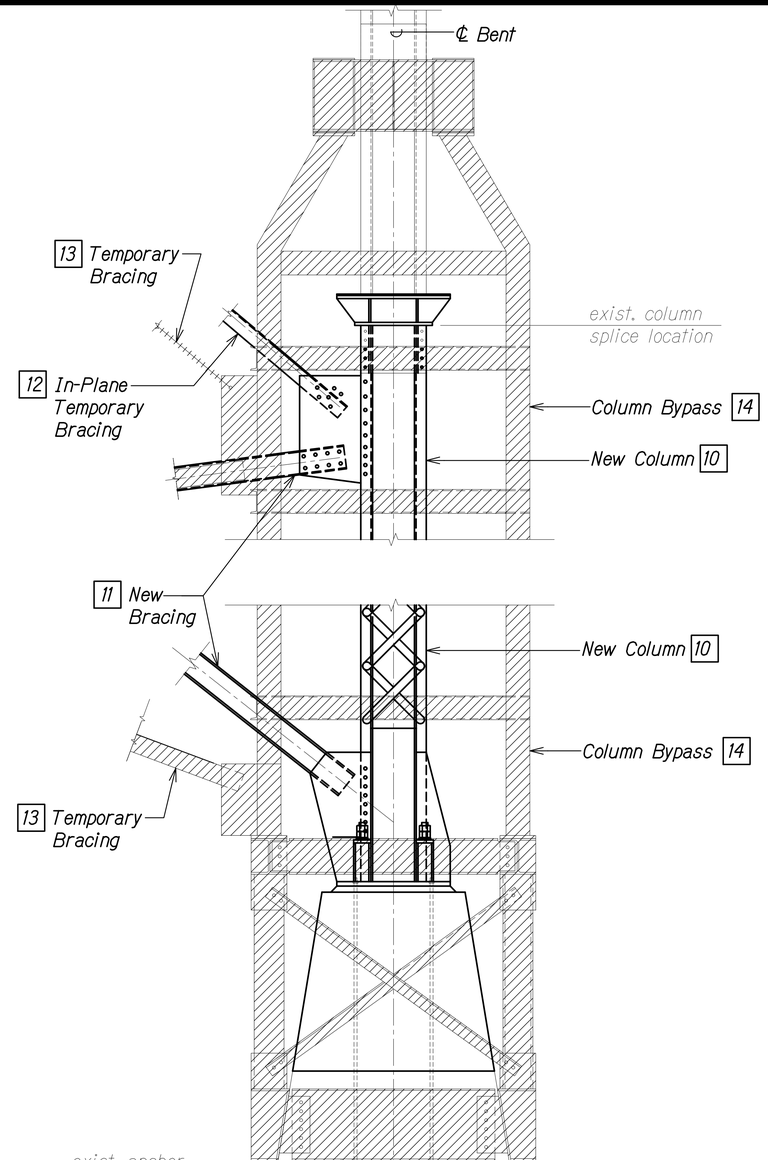
DRAWING NAME: Z:\OD ONDINKO\23-022\3-NANUE STR BR PE2-DOT\A101 CAD\ 10-28-24 BID SET\NSR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 1:52 PM



COLUMN BYPASS TO BENT PEDESTAL DETAIL A

Scale: 1/2" = 1'-0"

SB2.10 | SB2.10



COLUMN BYPASS TO BENT PEDESTAL DETAIL B

Scale: 1/2" = 1'-0"

SB2.10 | SB2.10

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.

STEPHEN T. PETERS
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SIGNATURE 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)

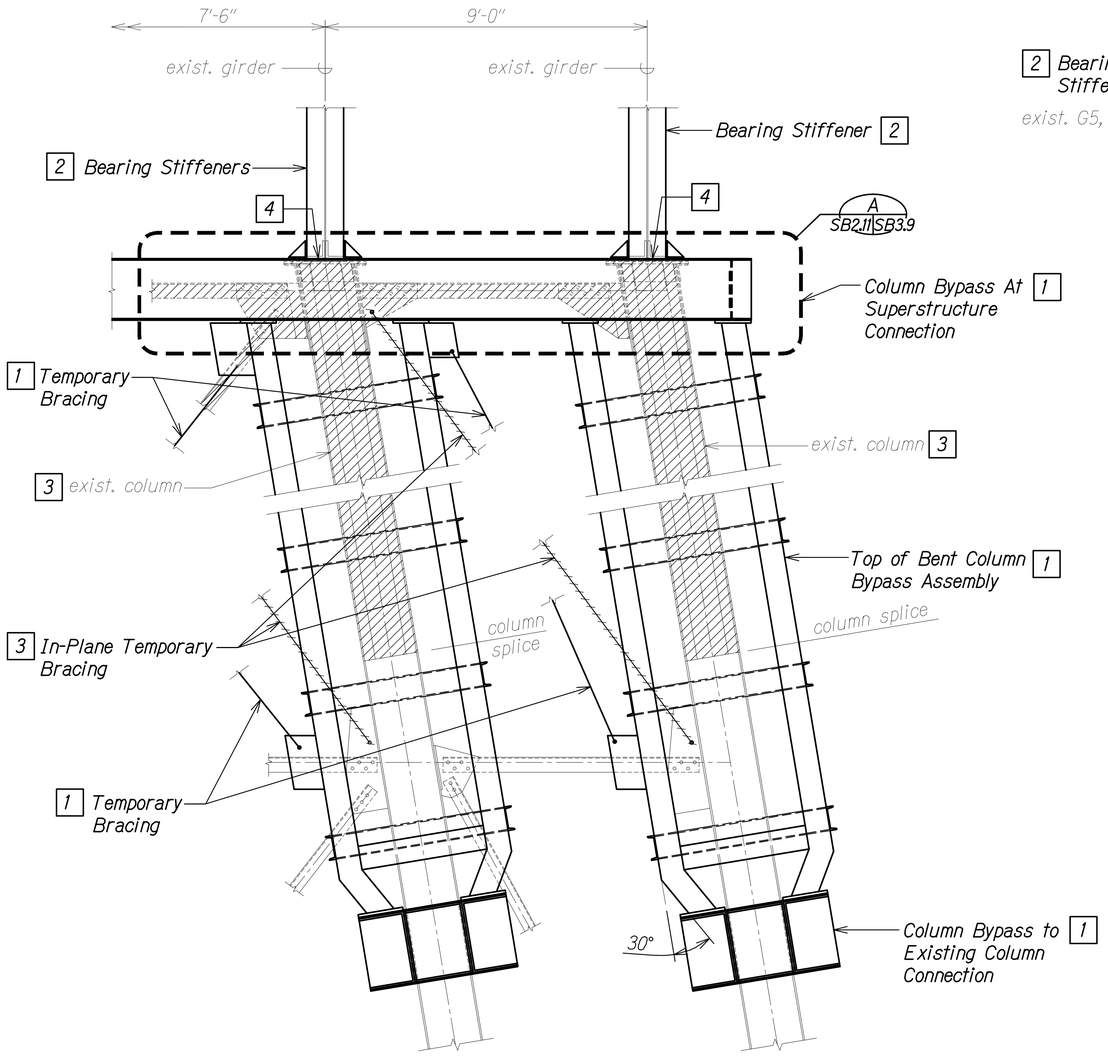
Scale: As Noted Date: Oct. 2024

SHEET NO SB2.10 OF 13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

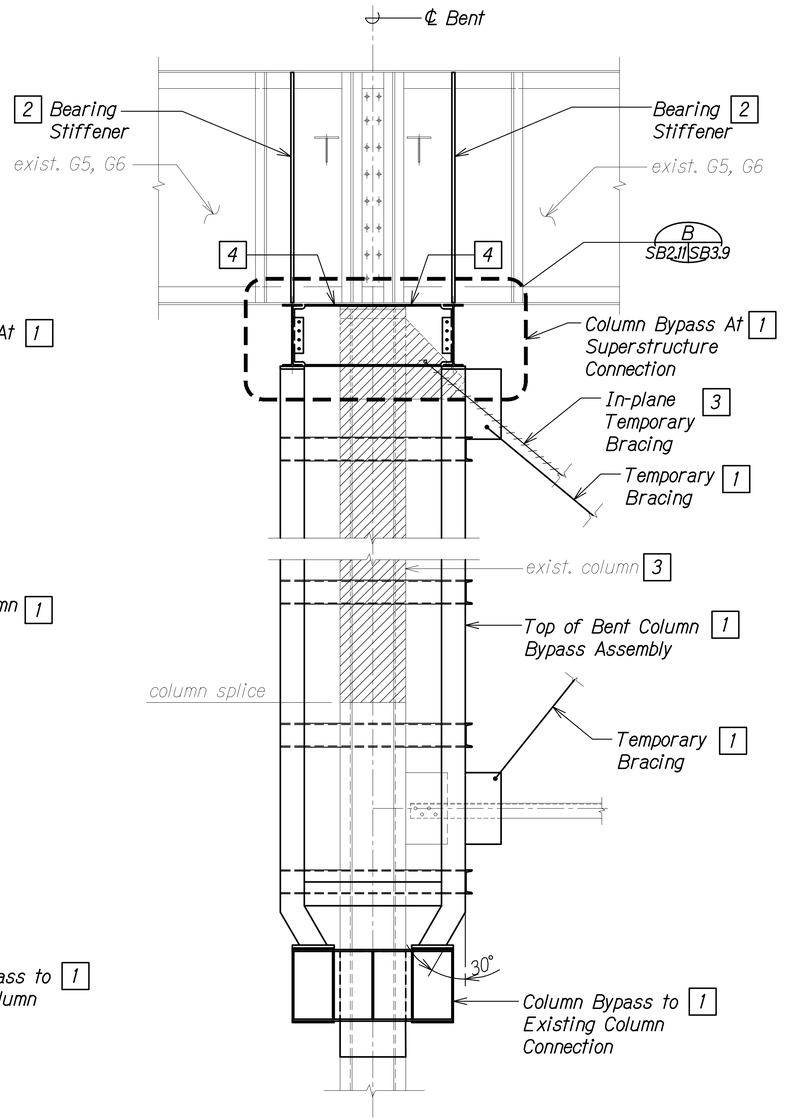
DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-BOTH.OT CAD\10-28-24 BID SET\NSB_SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 1:52 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	269	280



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL A SB2.11 SB2.11

Scale: 1/2" = 1'-0"



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL B SB2.11 SB2.11

Scale: 1/2" = 1'-0"

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.

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
NO. 17097-S
HAWAII, U.S.A.

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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)

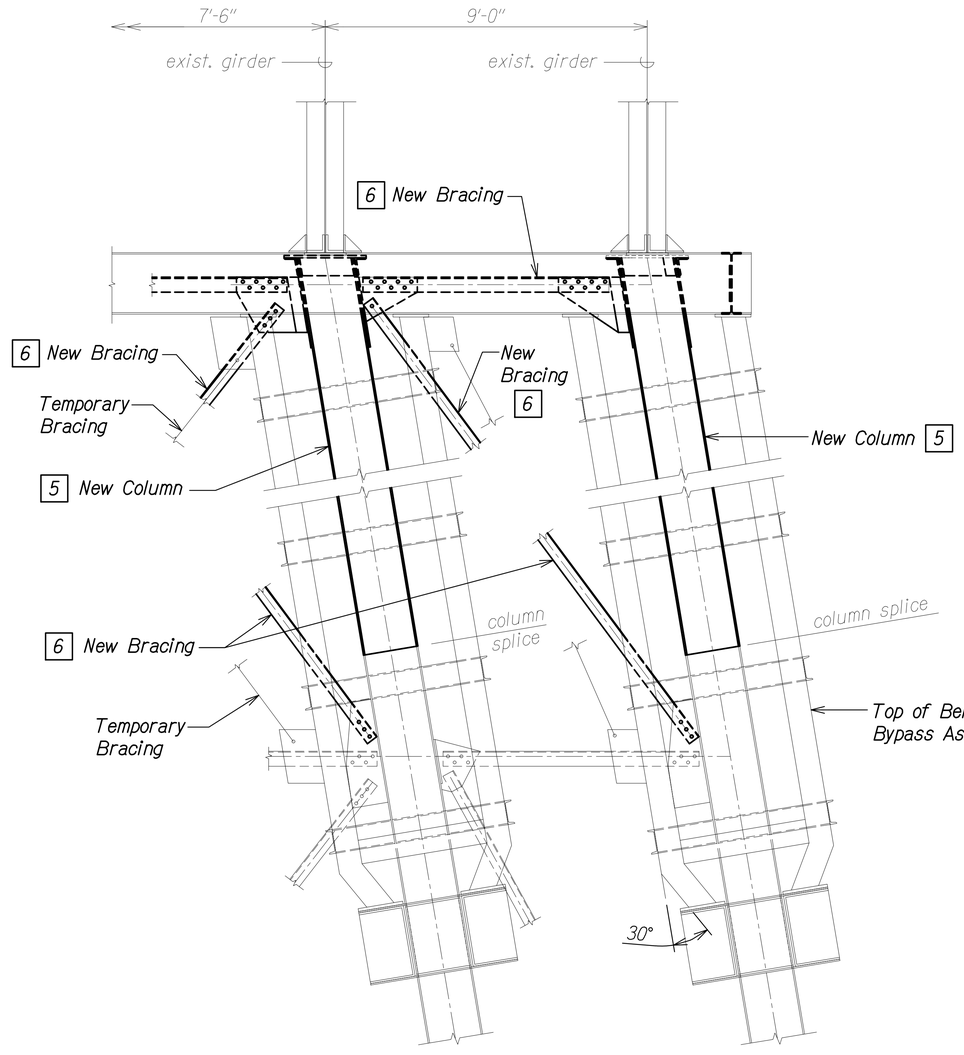
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.11 OF 13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\23-022.9-NANUE STR BR PE2-3DTHA1\OD\10-28-24 BID SET\VSR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 1:53 PM

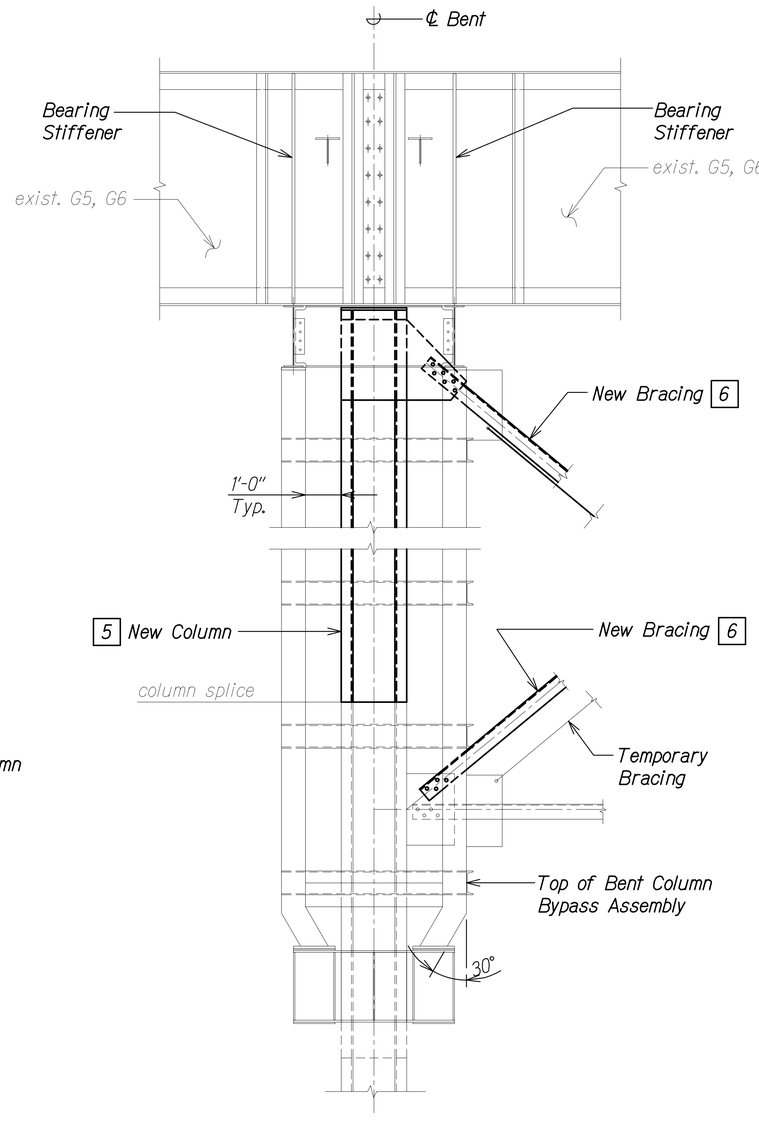
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	270	280



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL A

Scale: 1/2" = 1'-0"

SB2.12 | SB2.12



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL B

Scale: 1/2" = 1'-0"

SB2.12 | SB2.12

CONSTRUCTION SEQUENCE:

PHASES:

5 Install new column

6 Install new bracing

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ENGINEERING\23-022\9-NANUE STR BR PE\2-DOT\A101 CADD\10-28-24 BID SET\VGR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24, 1:54 PM

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4-30-26

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

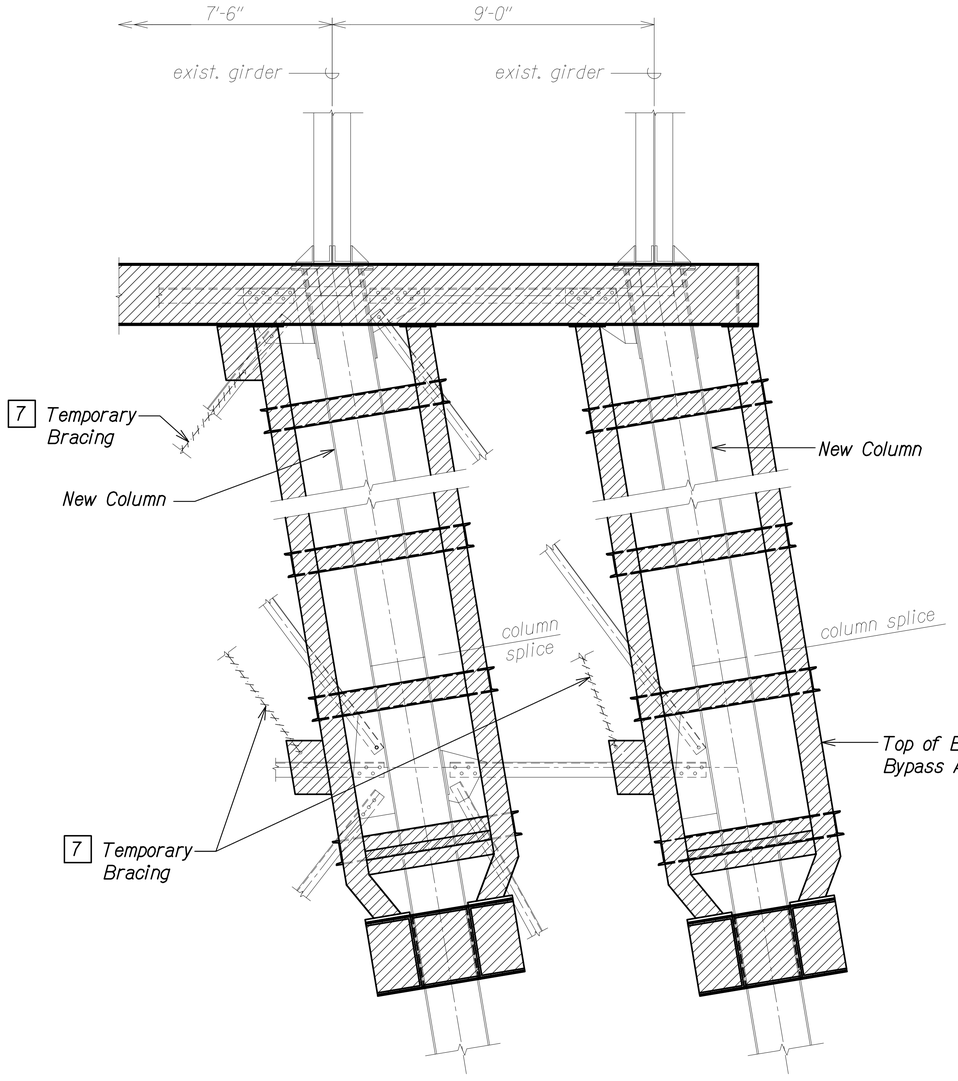
SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

Scale: As Noted Date: Oct. 2024

SHEET No. SB2.12 OF 13 SHEETS

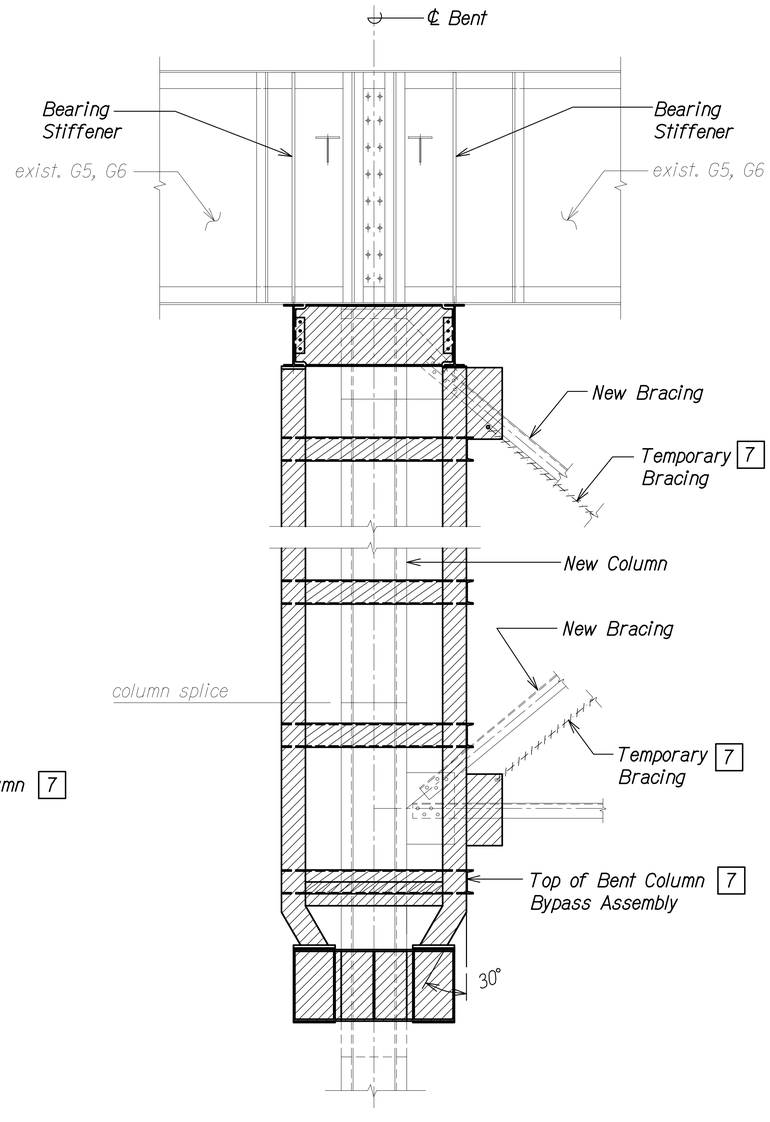
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	271	280



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL A

Scale: 1/2" = 1'-0"

SB2.13 | SB2.13



COLUMN BYPASS TO SUPERSTRUCTURE DETAIL B

Scale: 1/2" = 1'-0"

SB2.13 | SB2.13

CONSTRUCTION SEQUENCE:

PHASES:

7 Remove top of bent column bypass assembly and temporary bracing.

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ORIGINAL PLAN | NOTE BOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PEZ-DOT\H\01 CAD\10-28-24 BID SET\NSR-SB0201 COL BYPASS PH.DWG PLOT TIME: 10-28-24 7:01 PM

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

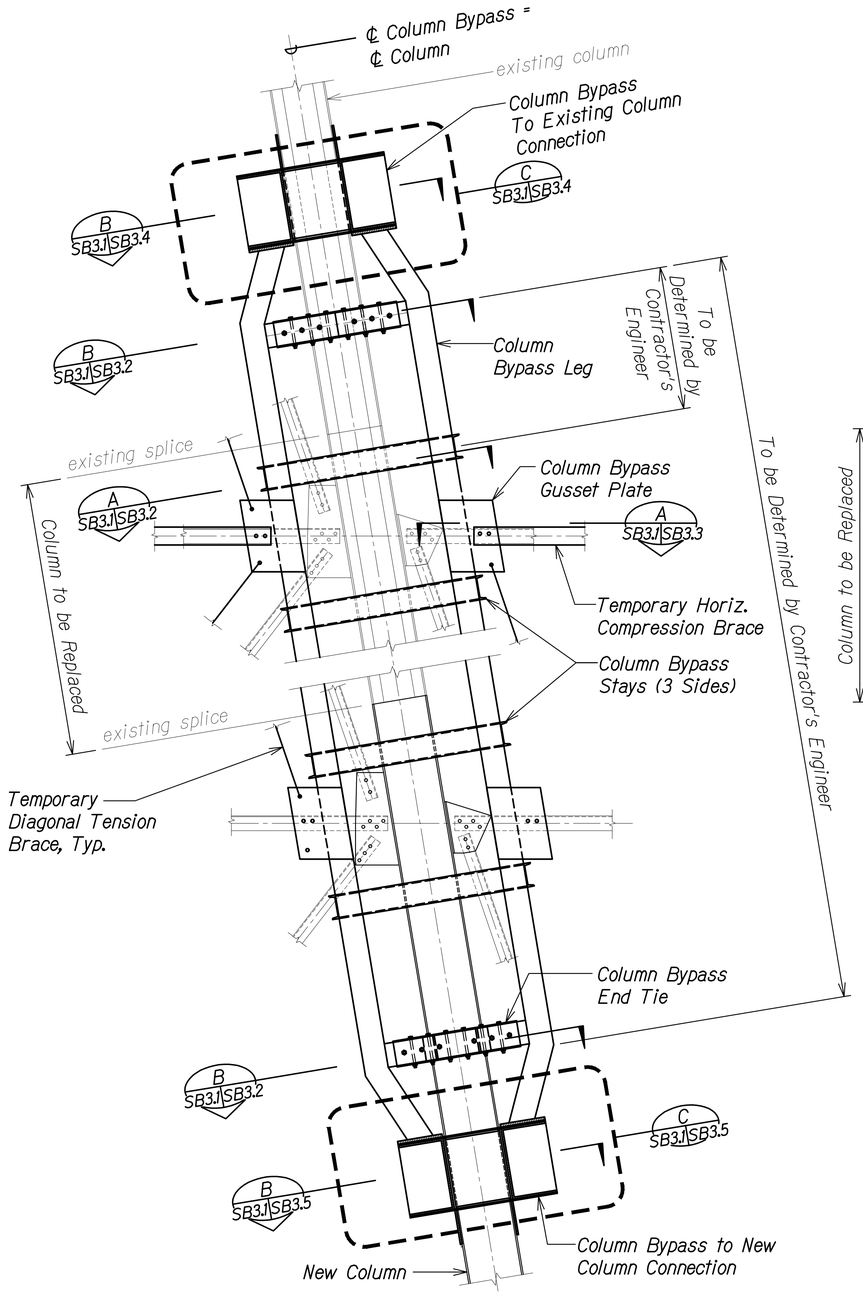
SCHEMATIC COLUMN BYPASS CONSTRUCTION PHASE DETAIL

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

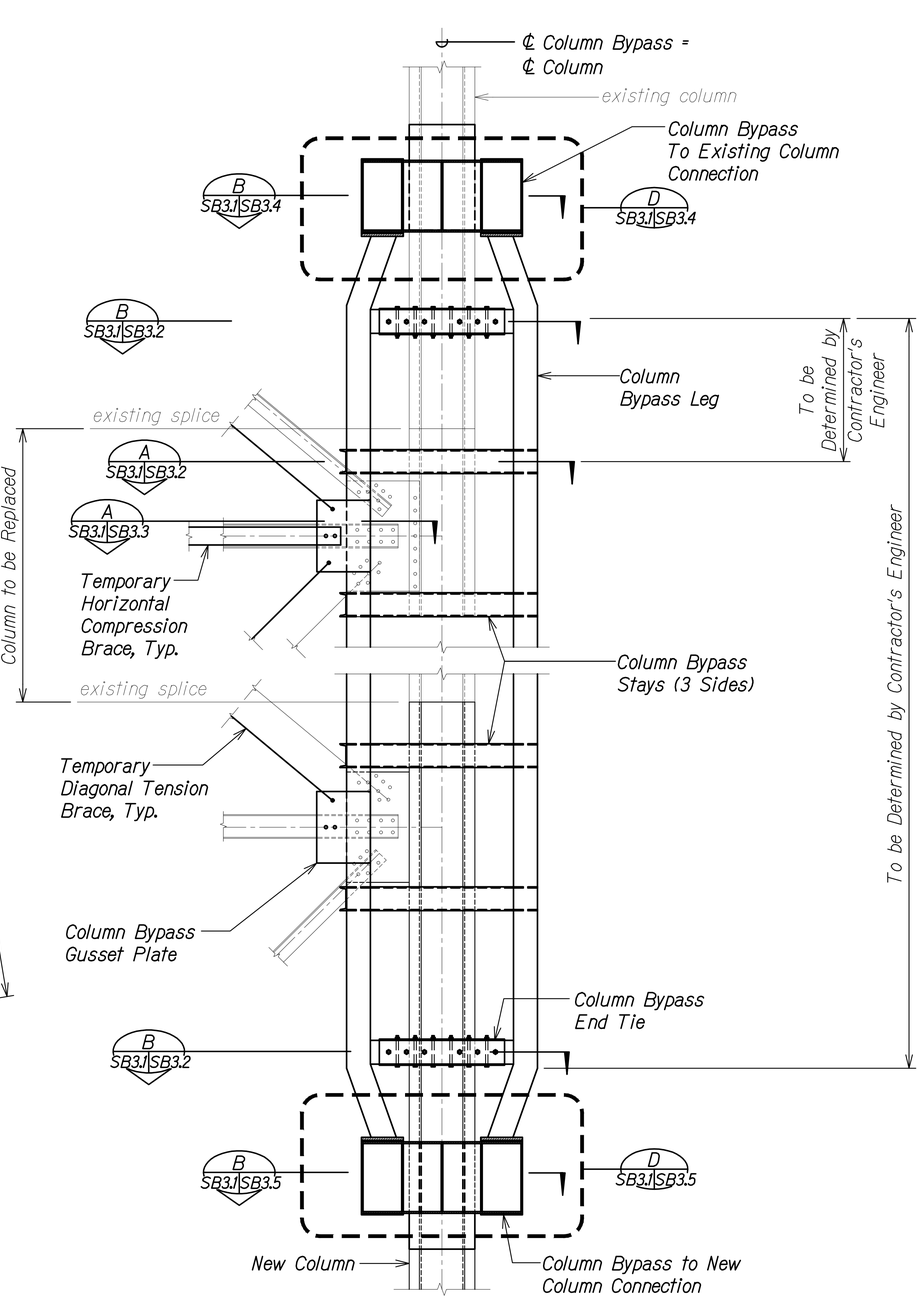
Scale: As Noted Date: Oct. 2024

SHEET No. SB2.13 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	272	280



HILO - HONOKA'A ELEVATION



UPSTREAM - DOWNSTREAM ELEVATION

TYPICAL COLUMN BYPASS CONNECTION DETAILS

Scale: 1/2" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\23-072-2-HNUE STR BR PE2-BOTH\OT CAD\10-28-24 BID SET\HSR-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 1:55 PM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

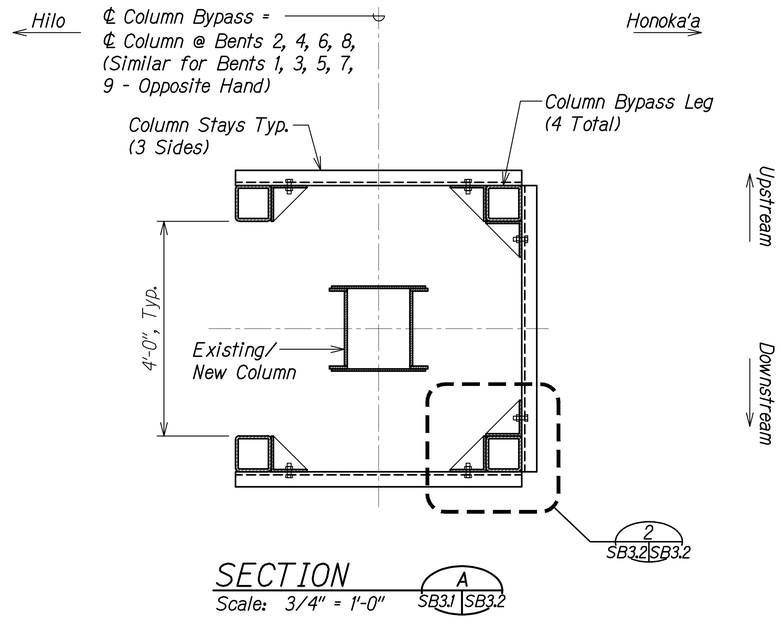
SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

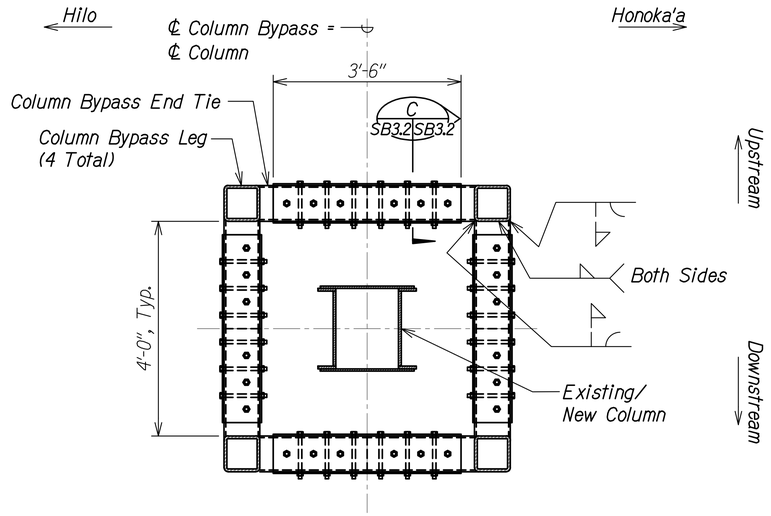
Scale: As Noted Date: Oct. 2024

SHEET No. SB3.1 OF 9 SHEETS

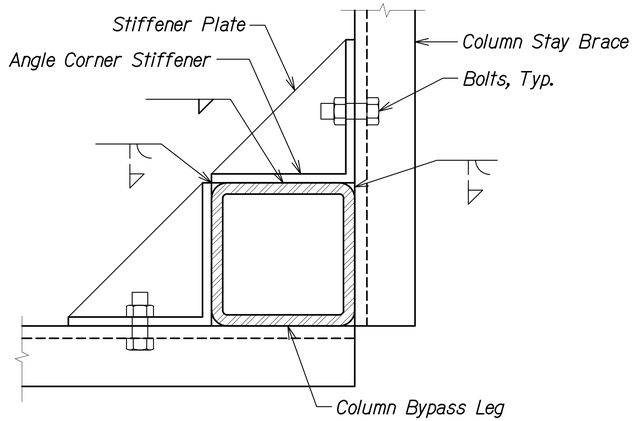
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	273	280



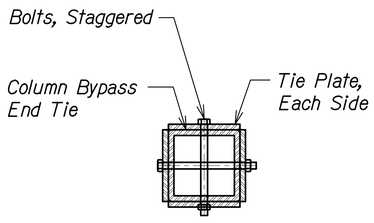
SECTION A
Scale: 3/4" = 1'-0" SB3.1 SB3.2



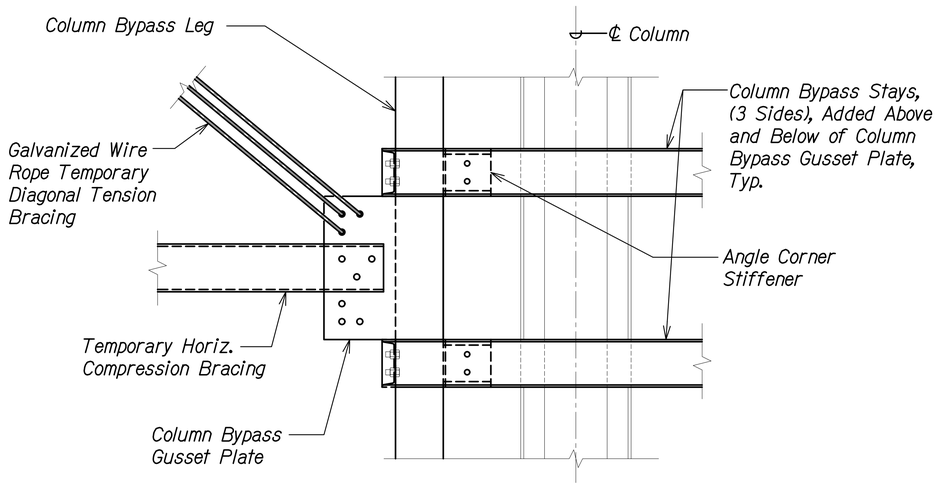
SECTION B
Scale: 3/4" = 1'-0" SB3.1 SB3.2



DETAIL 2
Scale: 3" = 1'-0" SB3.2 SB3.2



SECTION C
Scale: 1 1/2" = 1'-0" SB3.2 SB3.2



COLUMN BYPASS CONNECTION DETAILS 1
Scale: 1" = 1'-0" SB3.2 SB3.2

STEPHEN T. PETERS
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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

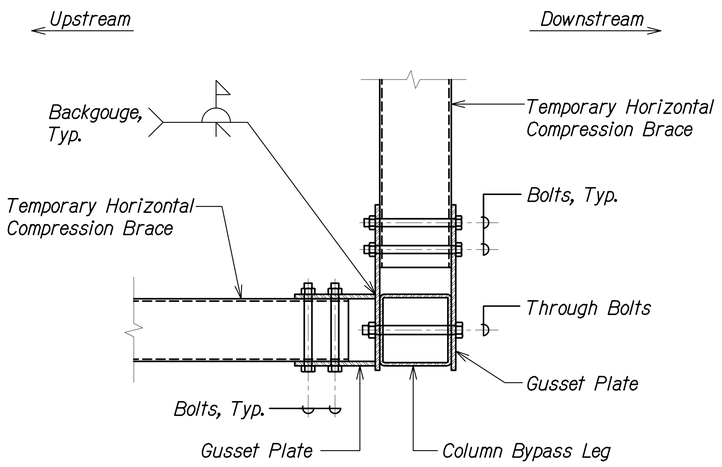
SHEET No. SB3.2 OF 9 SHEETS

273

ORIGINAL PLAN | NOTE BOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-BOTH\01 CAD\10-28-24 BID SET\NSB-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 1:56 PM

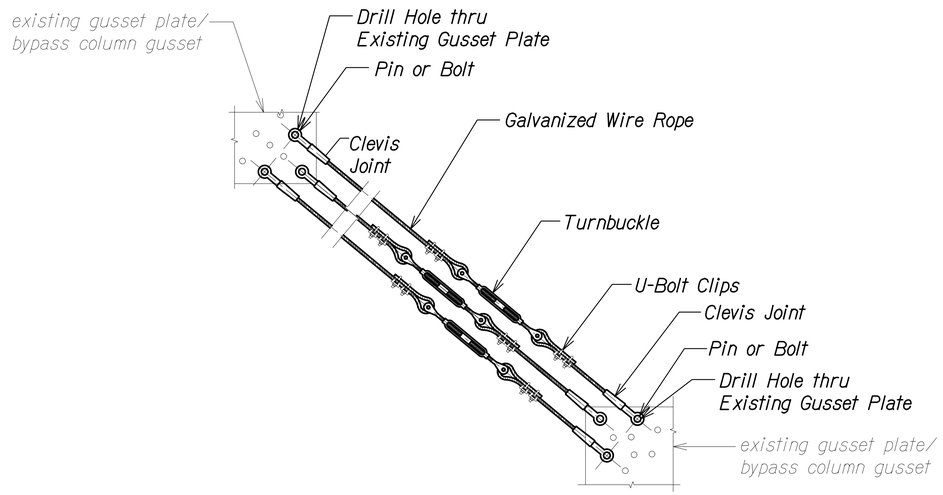
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	274	280



COLUMN BYPASS GUSSET PLATE SECTION DETAIL

A | SB3.1 | SB3.3

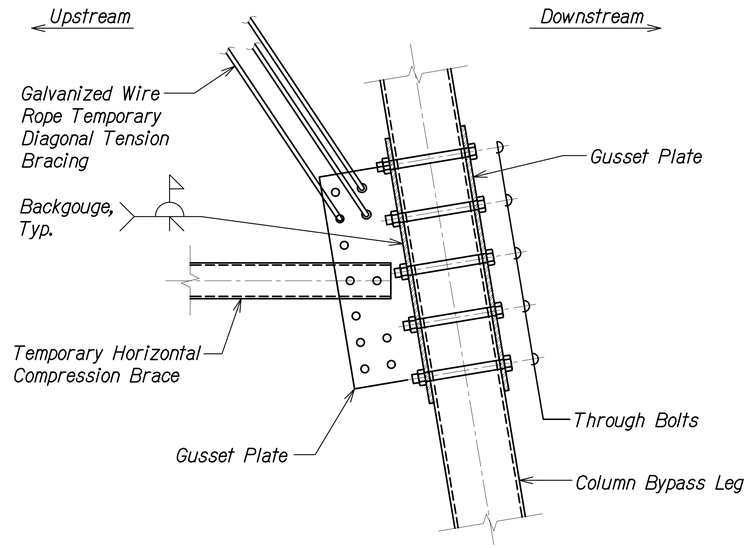
Scale: 1 1/2" = 1'-0"



COLUMN BYPASS TEMPORARY DIAGONAL TENSION BRACING DETAIL

1 | SB3.3 | SB3.3

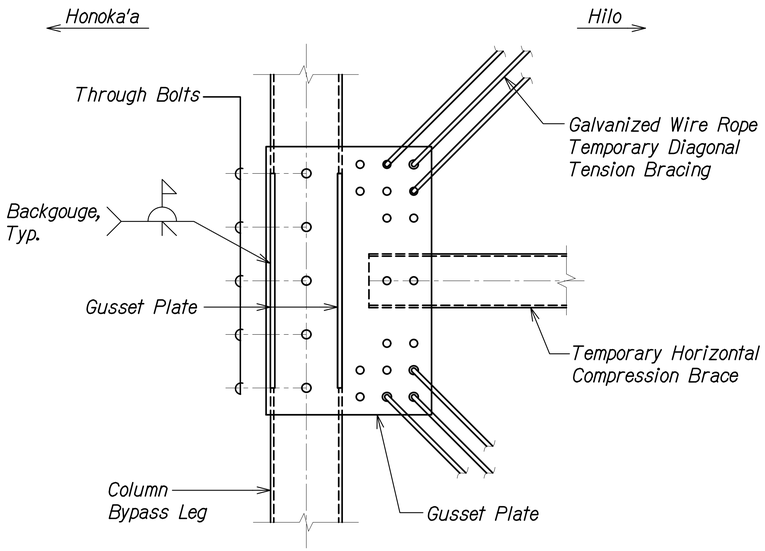
Scale: 1" = 1'-0"



COLUMN BYPASS GUSSET PLATE HILO TO HONOKA'A ELEVATION DETAIL

B | SB3.3 | SB3.3

Scale: 1 1/2" = 1'-0"



COLUMN BYPASS GUSSET PLATE UPSTREAM DOWNSTREAM ELEVATION DETAIL

C | SB3.3 | SB3.3

Scale: 1 1/2" = 1'-0"

ORIGINAL PLAN | NOTE BOOK | No.

SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD ONGOING\23-072-3-HNUE STR BR PEP-DOTH\OT CAD\10-28-24 BID SET\HSR-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 1:56 PM

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NO. 17097-S
HAWAII, U.S.A.

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STATE OF HAWAII
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HIGHWAYS DIVISION

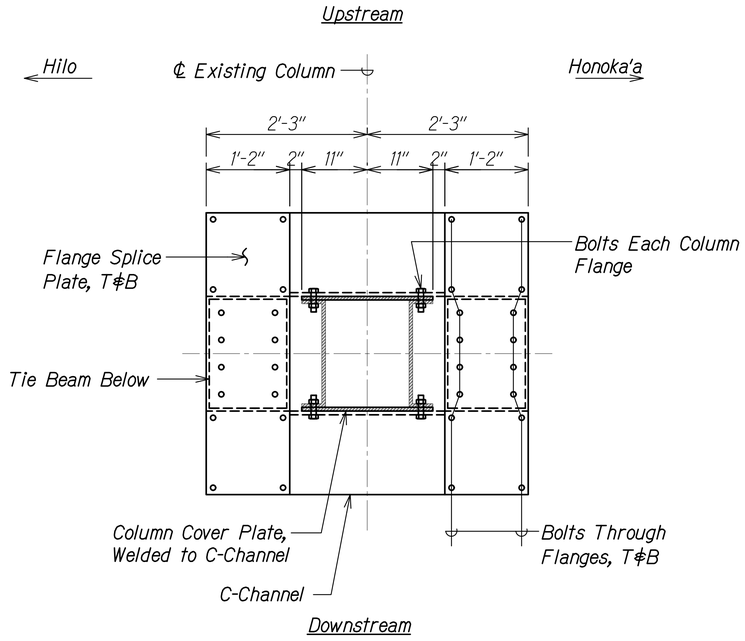
SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS

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

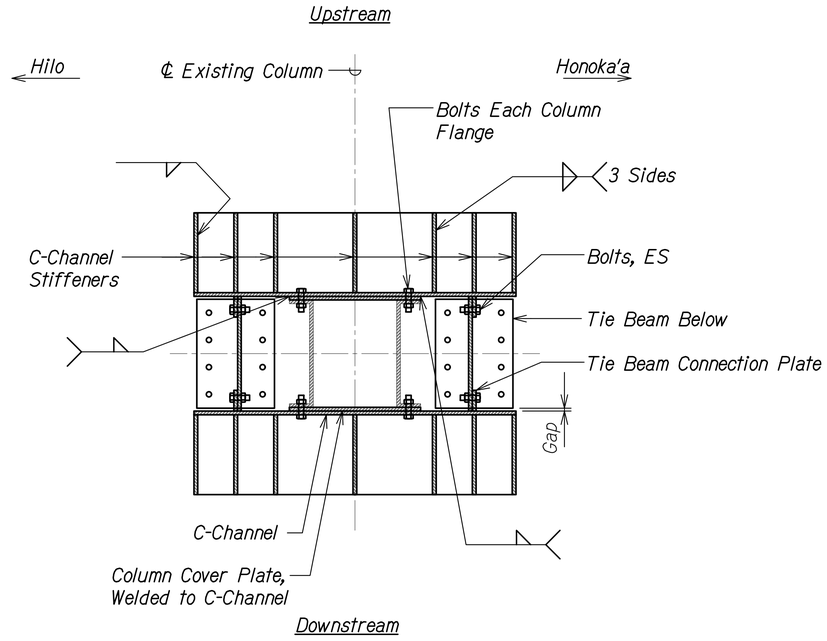
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	275	280



TOP CONNECTION ASSEMBLY PLAN

Scale: 1" = 1'-0"

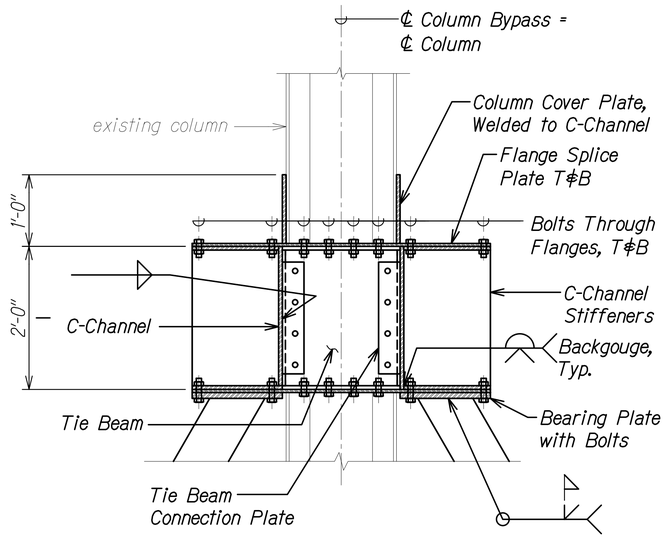
A SB3.4 | SB3.4



TOP CONNECTION ASSEMBLY SECTION

Scale: 1" = 1'-0"

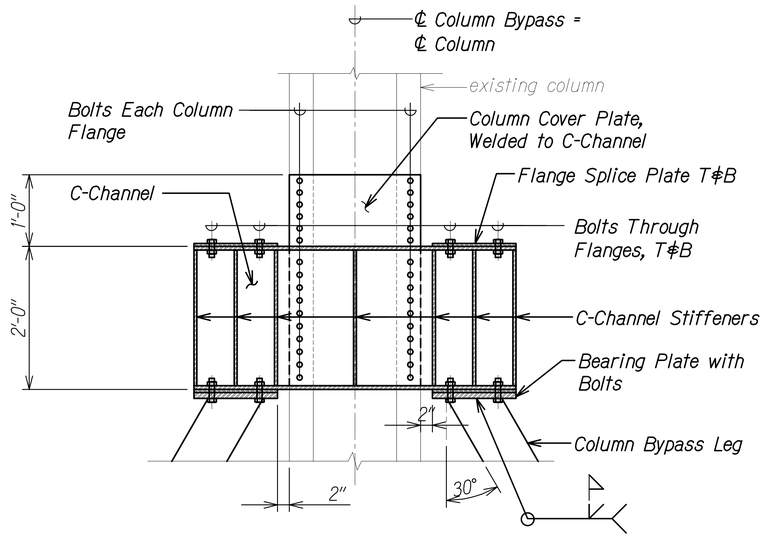
B SB3.1 | SB3.4



TOP CONNECTION ASSEMBLY HILO - HONOKA'A ELEVATION

Scale: 1" = 1'-0"

C SB3.1 | SB3.4



TOP CONNECTION ASSEMBLY UPSTREAM - DOWNSTREAM ELEVATION

Scale: 1" = 1'-0"

D SB3.1 | SB3.4

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HAWAII, U.S.A.

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STATE OF HAWAII
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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

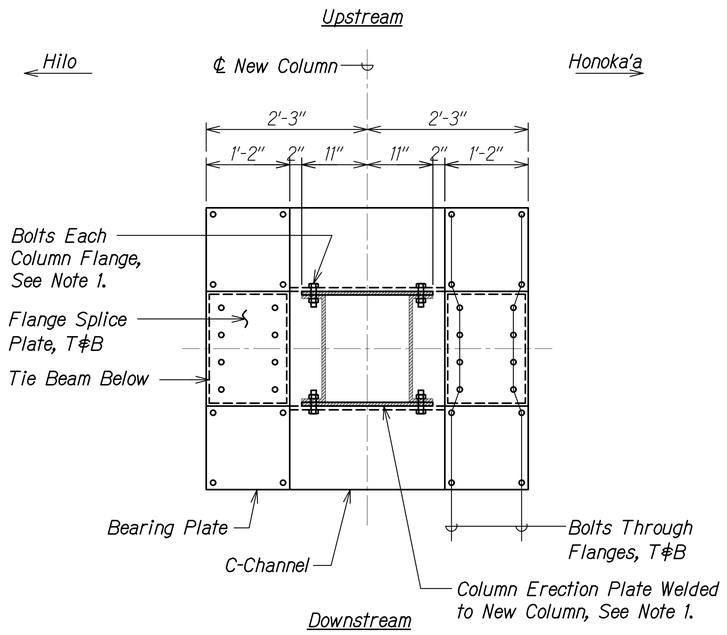
SHEET No. SB3.4 OF 9 SHEETS

ORIGINAL PLAN | NOTE BOOK | No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR PE2-EOT\01 CAD\10-28-24 BID SET\NSR-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 1:57 PM

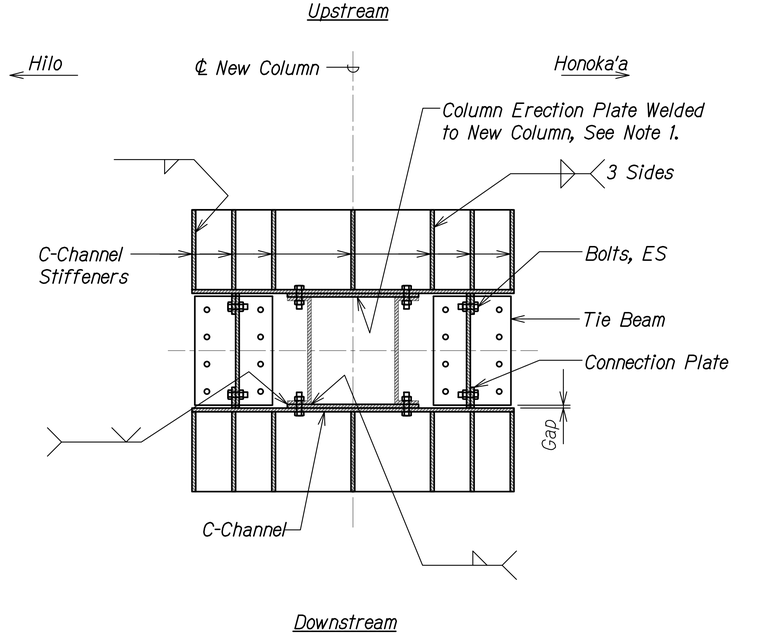
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	276	280



BOTTOM CONNECTION ASSEMBLY PLAN (A)

Scale: 1" = 1'-0"

SB3.5 | SB3.5



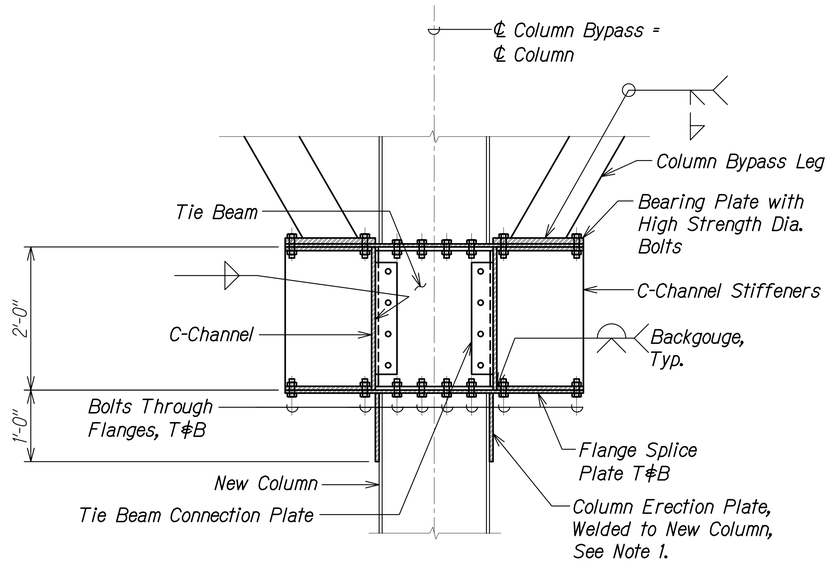
BOTTOM CONNECTION ASSEMBLY SECTION (B)

Scale: 1" = 1'-0"

SB3.1 | SB3.5

NOTE:

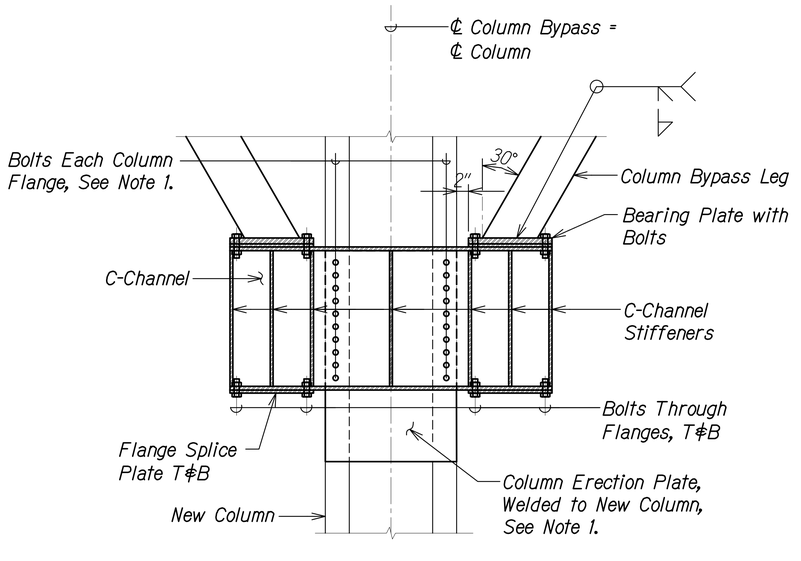
1. Erection plates are provided to aid the Contractor in the Construction of the trestle. The Contractor's Engineer shall determine the size of the plates and any needed pre-drilled holes prior to submittal of the shop drawings. Erection plates shall not be less than 5/8" thick and fully welded on all contact edges.



BOTTOM CONNECTION ASSEMBLY 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

STEPHEN T. PETERS
LICENSED PROFESSIONAL ENGINEER
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HAWAII, U.S.A.

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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

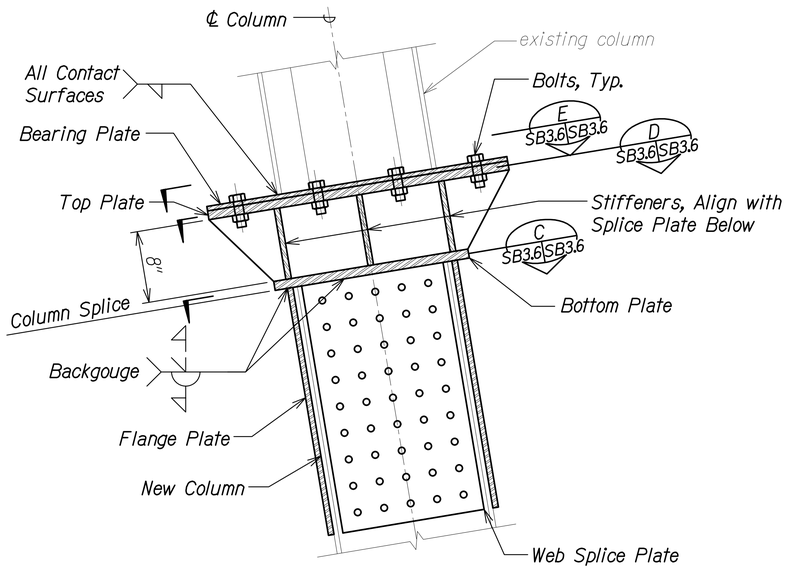
SHEET No. SB3.5 OF 9 SHEETS

276

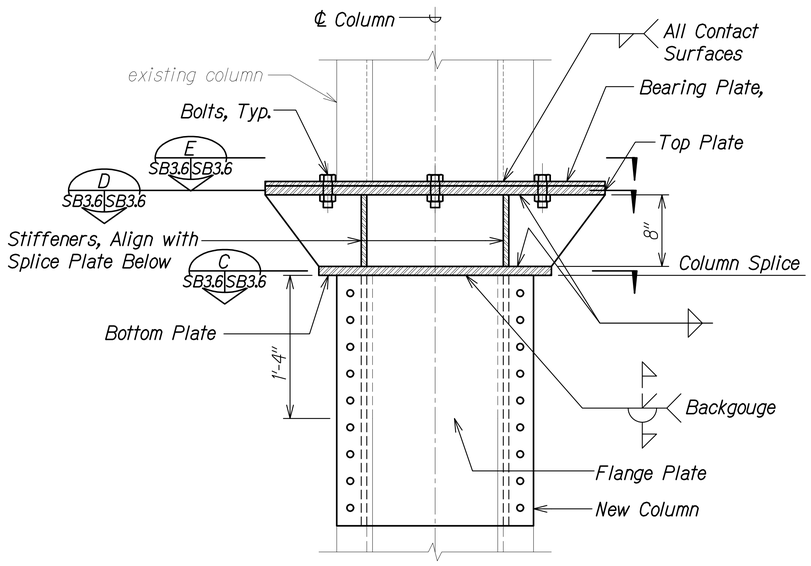
ORIGINAL PLAN | NOTE BOOK | No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD ONGOING\23-0229-NANUE STR BR PE2-EOTA\01 CAD\10-28-24 BID SET\SB-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 4:24 PM

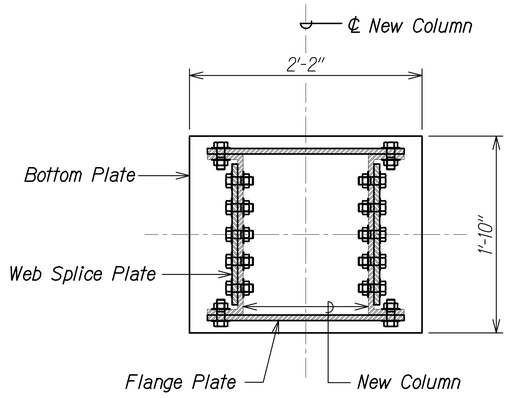
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	277	280



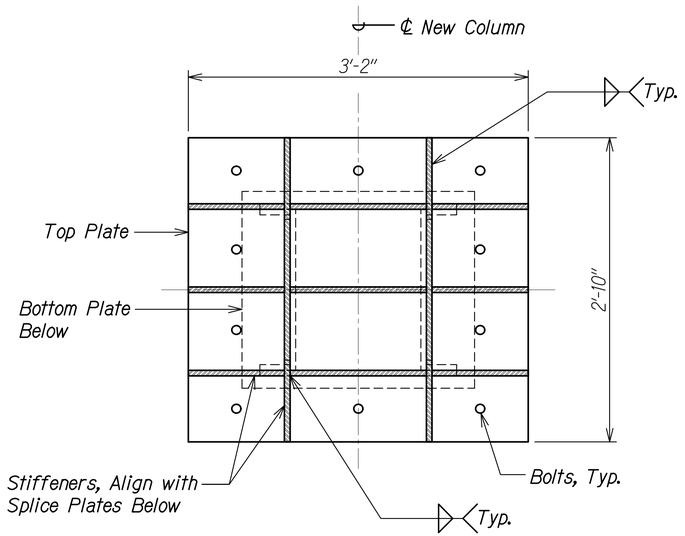
ELEVATION A — Scale: 1 1/2" = 1'-0" — SB2.4 | SB3.6



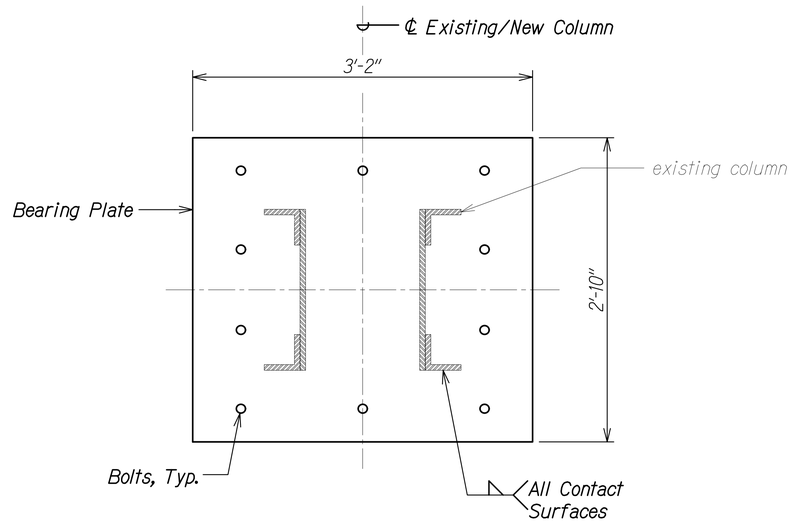
ELEVATION B — Scale: 1 1/2" = 1'-0" — SB3.6 | SB3.6



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.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\23-072\3-NANUE STR BR RTE-20THN\OT CAD\10-28-24 BID SET\HSR-SB03D1 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 1:57 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 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)

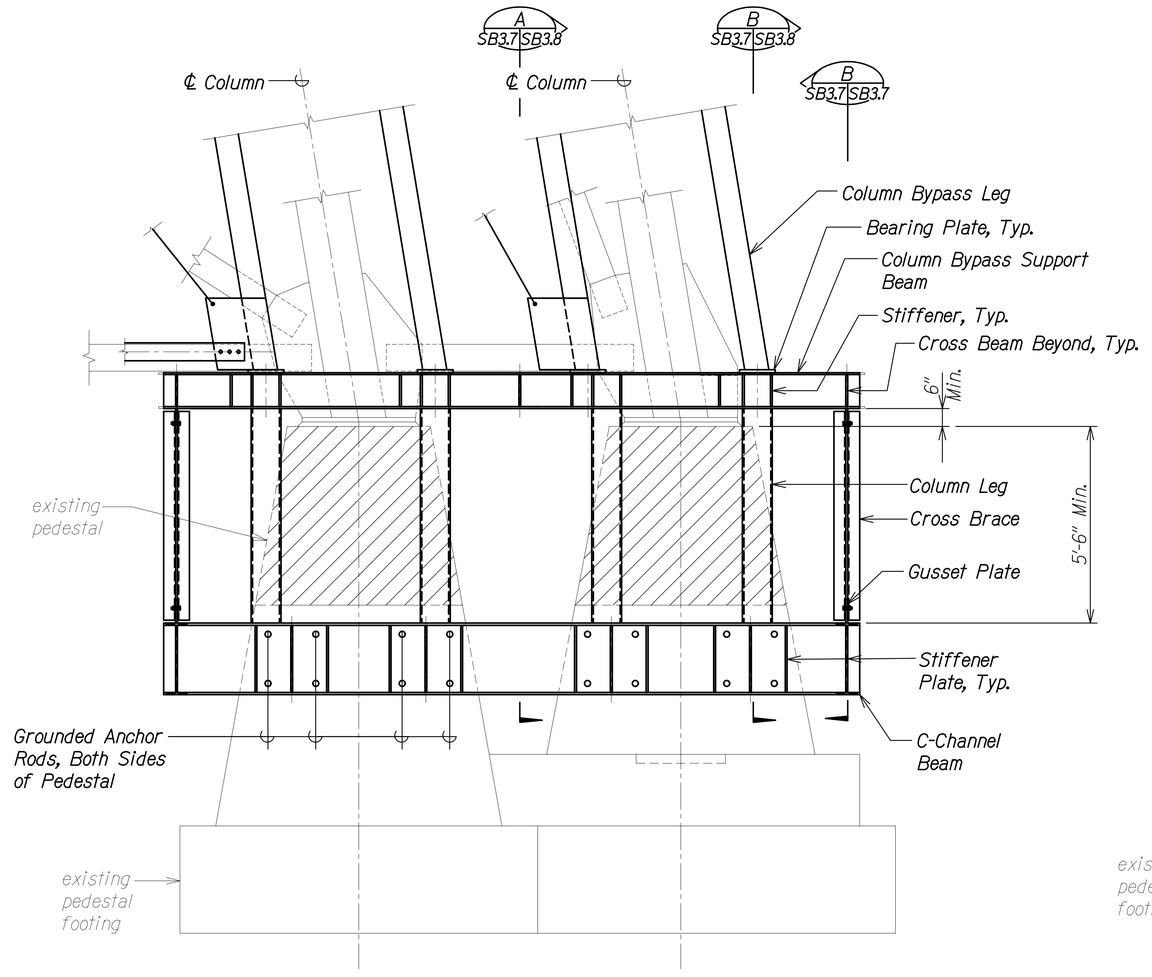
Scale: As Noted — Date: Oct. 2024

SHEET No. SB3.6 OF 9 SHEETS

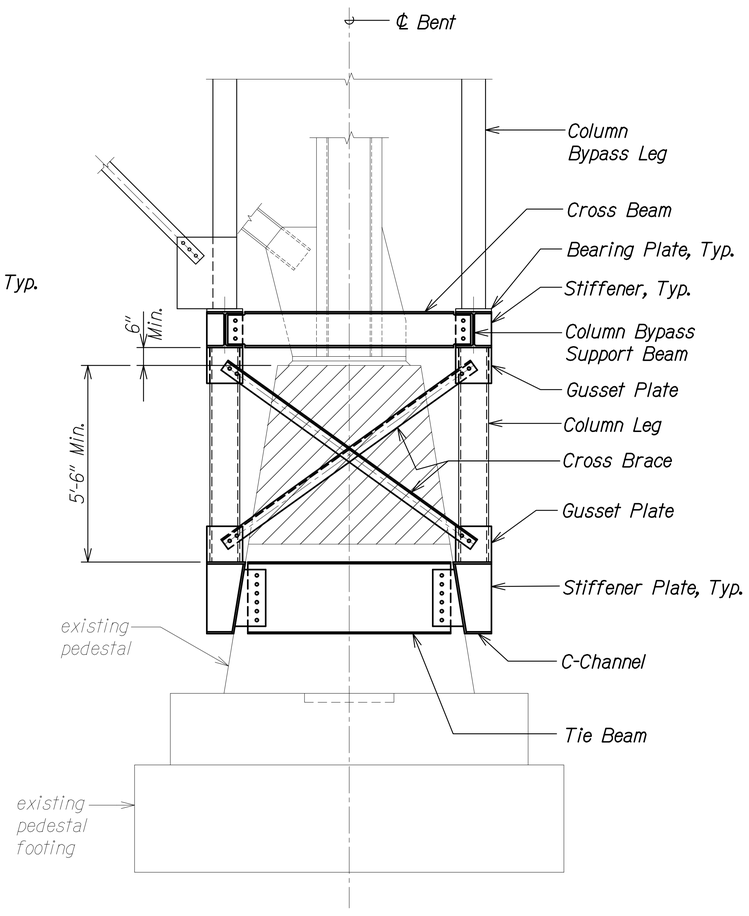
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	278	280

LEGEND:

Portion of footing to be repaired.



HILO-HONOKAA ELEVATION (A SB3.7 | SB3.7)
Scale: 1/2" = 1'-0"



SECTION (B SB3.7 | SB3.7)
Scale: 1/2" = 1'-0"

BOTTOM OF BENT COLUMN BYPASS ASSEMBLY TO BENT FOOTING CONNECTION DETAILS

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

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

278

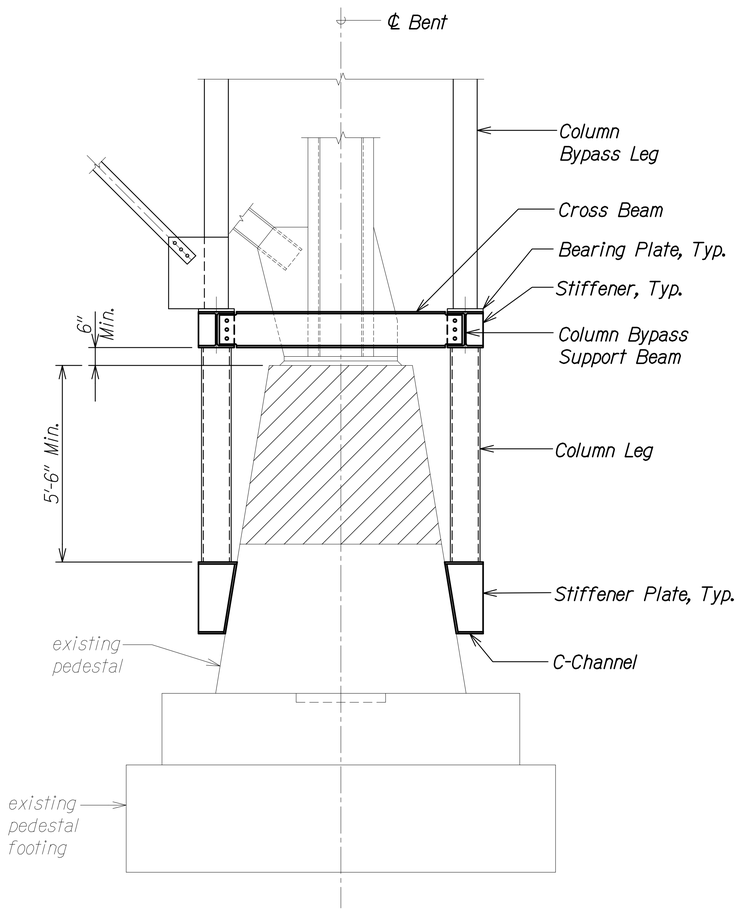
ORIGINAL PLAN | NOTE BOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\AD ONGOING\23-0229-NANUE STR BR PE2-DOT\H01 CAD\10-28-24 BID SET\NSR-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 1:58 PM

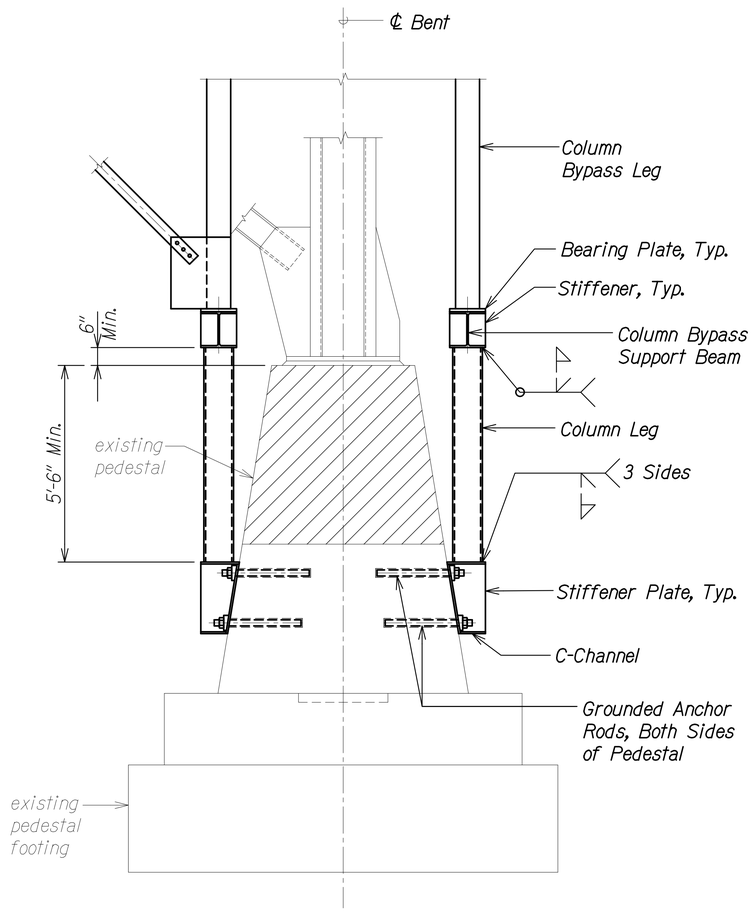
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(077)	2024	279	280

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

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

SCHEMATIC COLUMN BYPASS CONSTRUCTION DETAILS

HAWAII BELT ROAD
Nanue Stream Bridge Rehabilitation
Federal Aid Project No. BR-019-2(077)

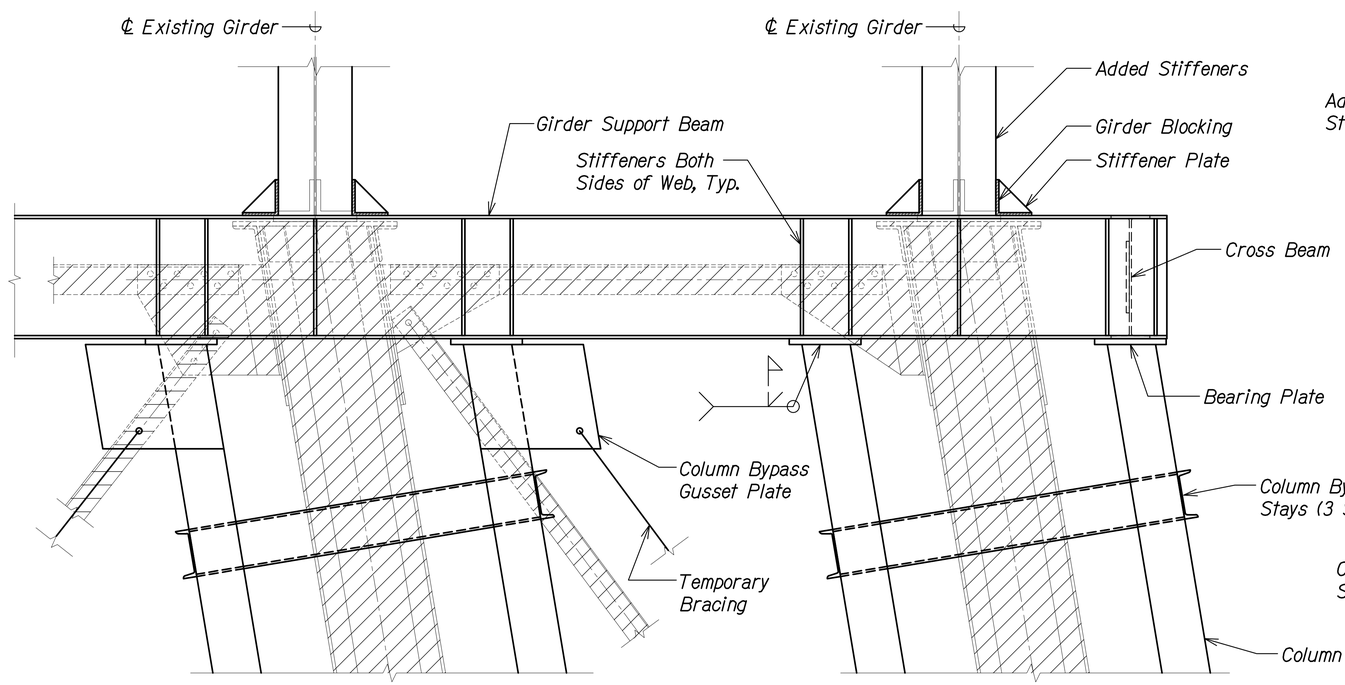
Scale: As Noted — Date: Oct. 2024

SHEET No. SB3.8 OF 9 SHEETS

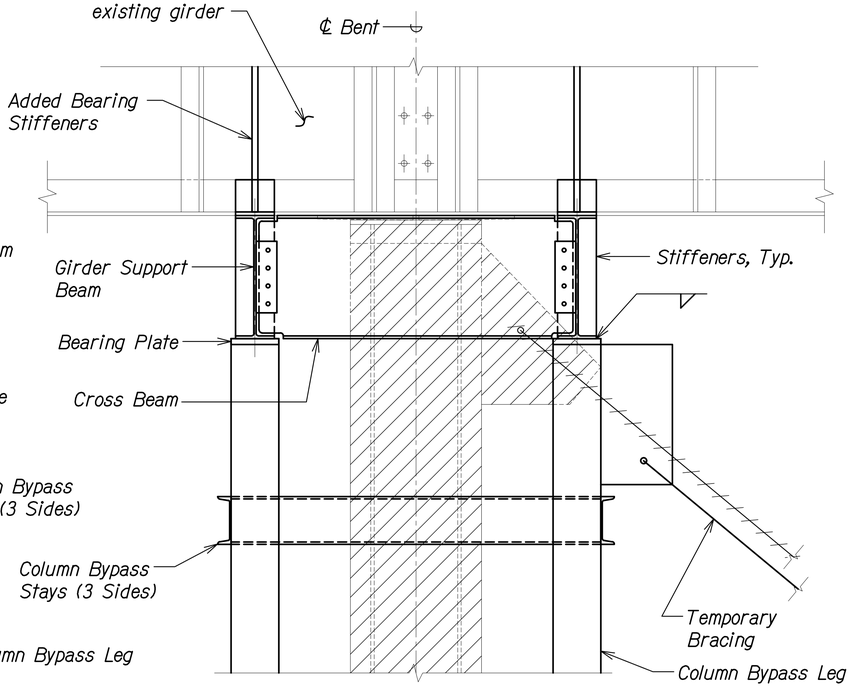
ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGOING\23-022\3-NANUE STR BR PE2-DOT\H\01 CAD\10-28-24 BID SET\NSR-SB0301 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 1:58 PM

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

ORIGINAL PLAN | NOTE BOOK | No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD ONGOING\23-027.2-HANUE STR BR PE2-DOT\HAOT CAD\10-28-24 BID SET\VSR-SB0351 COL BYPASS DTLS.DWG PLOT TIME: 10-28-24, 1:59 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 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. SB3.9 OF 9 SHEETS