

# STATE OF MAINE DEPARTMENT OF TRANSPORTATION



## LEVANT PENOBSCOT COUNTY PERKINS BRIDGE OVER BLACK STREAM LAKE ROAD FEDERAL PROJECT NUMBER 2709810 PROJECT LENGTH 0.000 mi. BRIDGE NO. 6133

### SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Ninth Edition 2020.

### DESIGN LOADING

Live Load ..... HL - 93 Modified for Strength I

### MATERIALS

Structural Steel:  
All Material (except as noted) ..... ASTM A 709, Grade 50  
High Strength Bolts ..... ASTM F 3125, Grade A 325, Type 1

### BASIC DESIGN STRESSES

Structural Steel:  
ASTM A709, Grade 50 .....  $F_y = 50,000$  psi  
ASTM F3125, Grade A325 .....  $F_u = 120,000$  psi

### LIST OF DRAWINGS

Title Sheet .....	1
Preliminary Profile and Superstructure Section .....	2
Framing Plan, Estimated Quantities and Notes .....	3
Girder Details .....	4
Girder Support Details .....	5

<u>PROJECT LOCATION</u>	Perkins Bridge (#6133) over Black Stream. Located 0.10 of a mile west of Pecal Lane. Lat./Long. 44°51'28.5" N -68°57'16.5" W (Perkins Bridge)
<u>PROGRAM AREA</u>	Highway-Bridges
<u>OUTLINE OF WORK</u>	Steel Girder Fabrication.



Signature: *Benjamin J. Bartlett*  
SIGNATURE  
16323  
P.E. NUMBER  
DATE: 09/27/2023

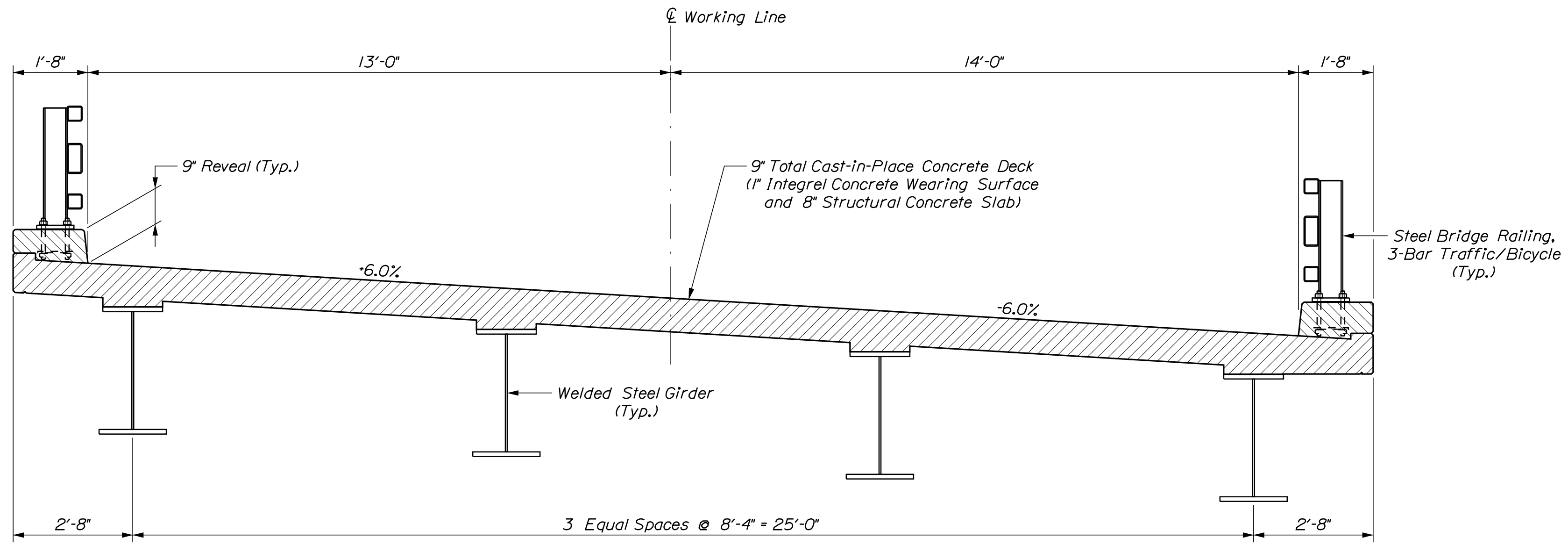
STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
APPROVED: *[Signature]*  
DATE: 10-3-23  
COMMISSIONER:  
CHIEF ENGINEER: *[Signature]*

PROJECT INFORMATION	
PROGRAM	BRIDGE
PROJECT MANAGER	J. STETSON
DESIGNER	B. BARTLETT
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

2709810 WIN 27098.10

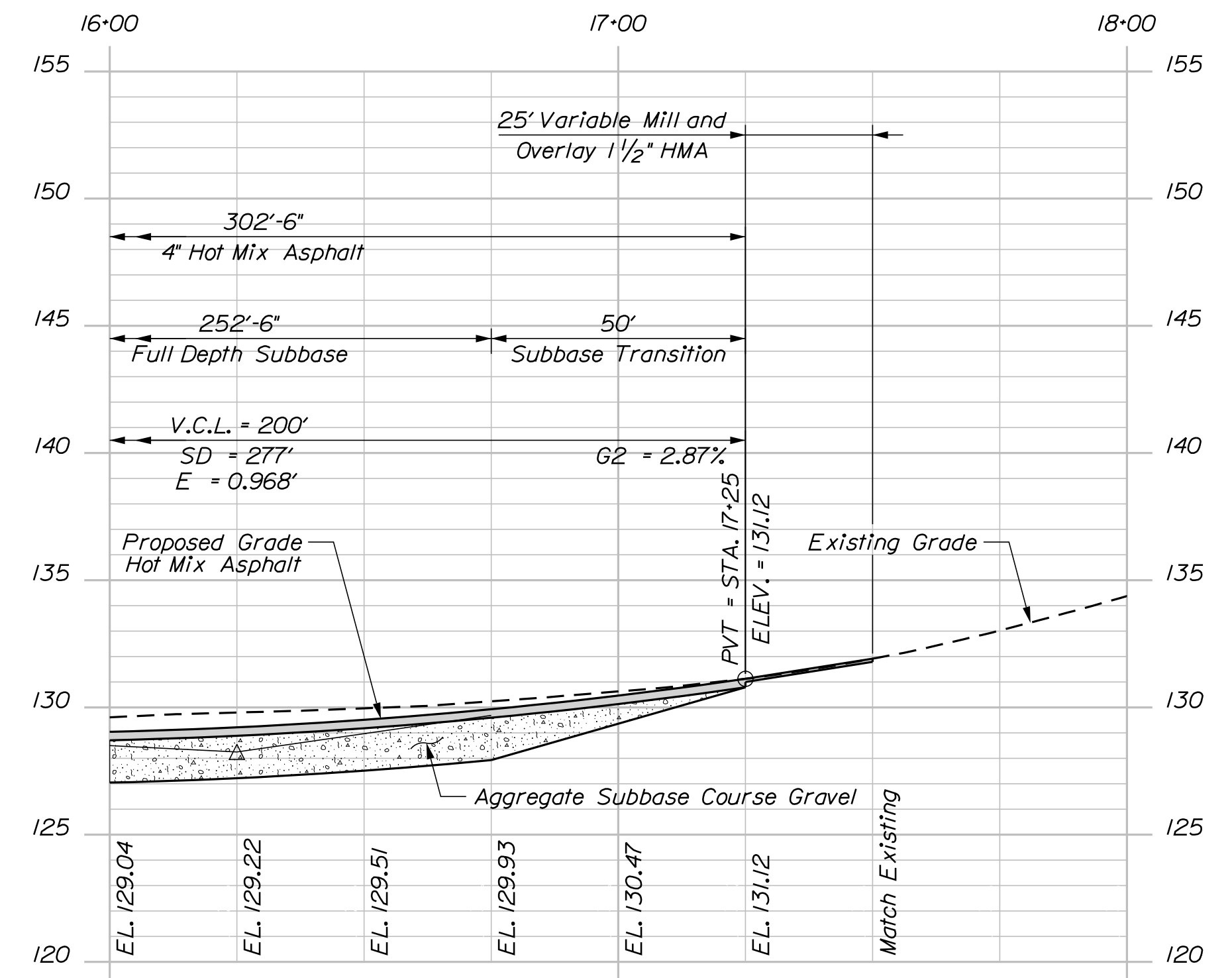
LEVANT  
PERKINS BRIDGE  
TITLE SHEET

SHEET NUMBER  
**1**  
OF 5

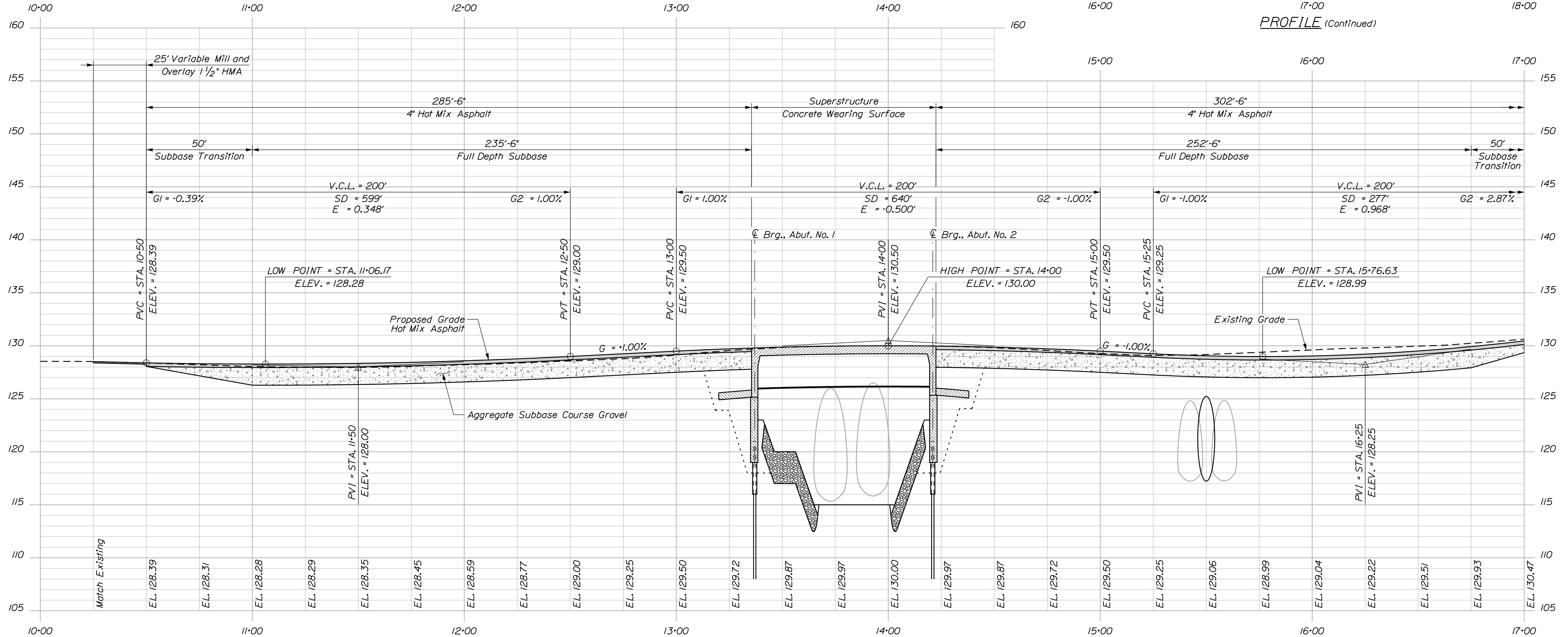


TYPICAL BRIDGE SECTION

FOR REFERENCE ONLY



PROFILE (Continued)



PROFILE

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

2709810

WIN  
27098.10  
BRIDGE NO. 6133  
BRIDGE PLANS

SIGNATURE

P.E. NUMBER

DATE

PROJ. MANAGER	BY	DATE
J. STETSON	J. STETSON	AUG 2023
DESIGN DETAILED	B. BARTLETT	AUG 2023
CHECKED/REVIEWED	D. SHAW	AUG 2023
DESIGN DETAILED	T. AGUIAR	AUG 2023
DESIGN DETAILED	J. STETSON	AUG 2023

REVISIONS	DATE	DESCRIPTION
1		
2		
3		
4		

PERKINS BRIDGE  
BLACK STREAM  
PENOBSCOT COUNTY

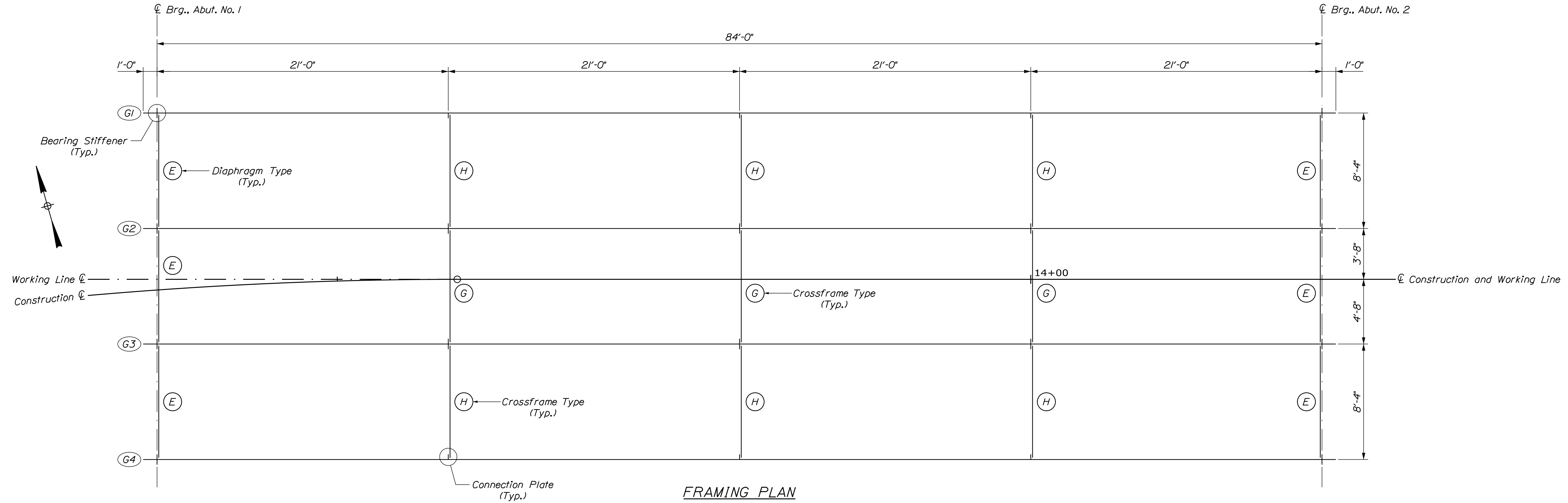
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PRELIMINARY PROFILE AND  
SUPERSTRUCTURE SECTION

SHEET NUMBER

2

OF 5



FRAMING PLAN

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
504.702	STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED (73,000 LBS)	1	LS
506.9104	THERMAL SPRAY COATING - SHOP APPLIED	1	LS

**GENERAL CONSTRUCTION NOTES**

1. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:

a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation and Time.

**STRUCTURAL STEEL NOTES**

1. Camber ordinates, as shown, are computed to compensate for all dead load deflections and for the curvature of the finished grade profile.

2. No transverse butt weld splices will be allowed in the flange plates or web plates within 10 feet or 10 percent of the span length (whichever is greater) from the points of maximum negative moment or maximum positive moment. Butt weld splices in flanges shall be not less than one foot from transverse butt welds in the web plates and no transverse web or flange butt welds shall be located within one foot of other transverse welds (e.g. connection plates to web welds) on either flange or web. No transverse butt weld splices will be allowed in areas of stress reversal.

3. Sections of flange plates or web plates between transverse shop splices or between a transverse shop splice and a field splice shall be not less than 20 feet in length unless otherwise shown on the plans.

4. Bearing stiffeners shall be plumb after erection and dead loading of the structure. Intermediate web stiffeners may be either plumb or normal to the top flange.

5. Crossframe or diaphragm connection plates may be either plumb or normal to the top flange.

6. All connection plate and stiffener welds shall be 5/16" fillet welds.

7. Girder webs shall be vertical under full dead load.

8. Drip Bars shall be used adjacent to Abutment 1 and 2, as shown in the Standard Details.

9. All structural steel including the girders, stiffeners, connection plates, and cross frames shall be coated with Thermal Spray Coating in accordance with Standard Specifications Section 506, Shop Applied Protective Coating.

10. At the Contractor's option, the diaphragms and cross frames may be hot-dipped galvanized in accordance with Standard Specifications Section 506, Shop Applied Protective Coating, as approved by the Fabrication Engineer. Payment will be considered incidental to Item 506.9104, Thermal Spray Coating (Shop Applied), no separate payment will be made.

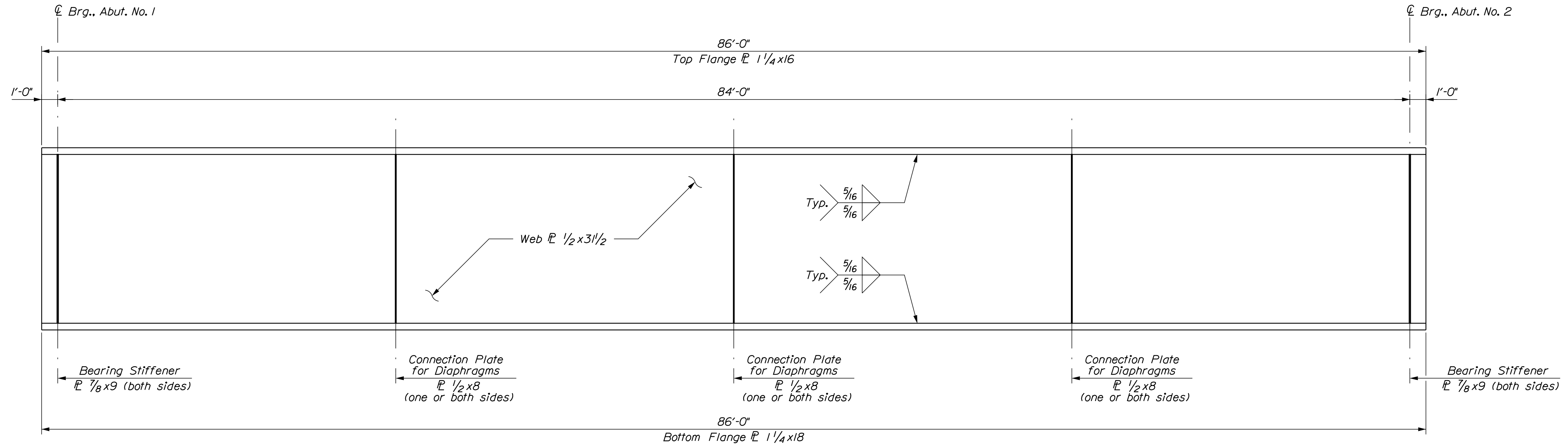
11. All bolts, nuts, and washers shall be hot-dip galvanized in accordance with ASTM A153.

12. Repairs to the Thermal Spray Coating that modify the surface roughness in the area of the faying surfaces shall not be performed without the approval of the Fabrication Engineer.

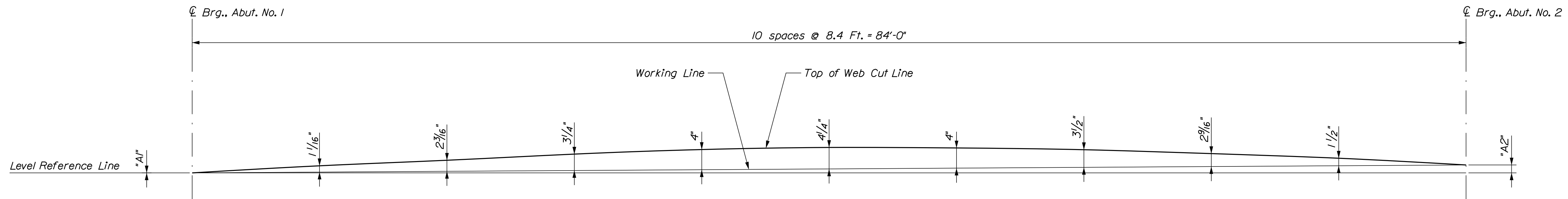
13. Bolted diaphragms or cross frame connections shall be made using 7/8" diameter, ASTM F3125, Grade A325, Type 1 H.S. bolts. Hole size shall be 15/16" diameter. The minimum edge distance shall be 1 1/2" unless otherwise shown. Oversized or short-slotted holes are not permitted. Bolt threads shall be excluded from the shear plane of cross frame or diaphragm connections.

14. Structural steel was designed with a vertical construction load of 50 lb/sf and lateral wind velocity of 80 mph.

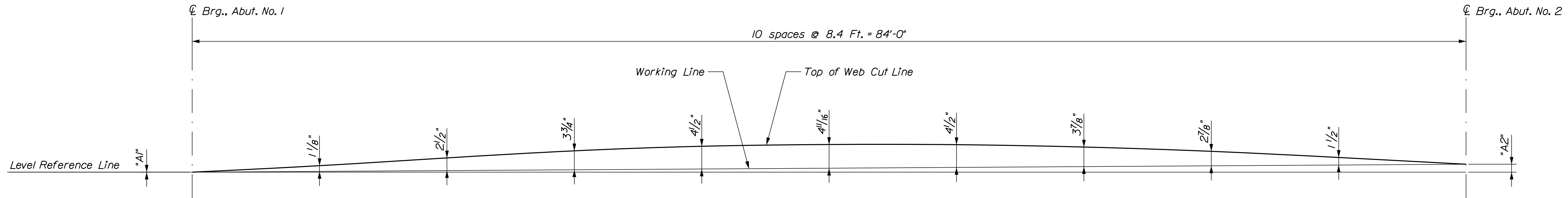
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2709810	
PERKINS BRIDGE		BLACK STREAM		LEVANT	
PENOBSCOT COUNTY		FRAMING PLAN, ESTIMATED QUANTITIES AND NOTES		SHEET NUMBER	
PROJ. MANAGER	J. STEYSON	CHECKED-DETAILED	B. BARTLETT	DESIGNS-DETAILED	
BY	D. SHAW	DATE	AUG 2023	SIGNATURE	
REVISIONS 1		REVISIONS 2		P.E. NUMBER	
REVISIONS 3		REVISIONS 4		DATE	
FIELD CHANGES					
BRIDGE NO. 6133				BRIDGE PLANS	
WIN				27098.10	
3		OF 5			



**GIRDER ELEVATION**  
See Framing Plan for Connection Plate Layout



**CAMBER DIAGRAM**  
Girders 1 and 4



**CAMBER DIAGRAM**  
Girders 2 and 3

Girder	"A1"	"A2"
A1	0.00	0.13

Girder	℄ A1	8.4 Ft.	16.8 Ft.	25.2 Ft.	33.6 Ft.	42 Ft.	50.4 Ft.	58.8 Ft.	67.2 Ft.	75.6 Ft.	℄ A2	Girder
G1 & G4	0	1 1/16	2 3/16	3 1/4	4	4 1/4	4	3 1/2	2 9/16	1 1/2	0	G1 & G4
G2 & G3	0	1 1/8	2 1/2	3 3/4	4 1/2	4 1/16	4 1/2	3 7/8	2 7/8	1 1/2	0	G2 & G3

Load	℄ Abut 1	8.4 Ft.	16.8 Ft.	25.2 Ft.	33.6 Ft.	42 Ft.	50.4 Ft.	58.8 Ft.	67.2 Ft.	75.6 Ft.	℄ Abut 2
	G1 & G4	0.00	0.20	0.38	0.52	0.61	0.64	0.61	0.52	0.38	0.20
Fluid Dead Load	0.00	0.81	1.52	2.09	2.45	2.56	2.45	2.09	1.52	0.81	0.00
Superimposed Dead Load	0.00	0.06	0.12	0.16	0.19	0.20	0.19	0.16	0.12	0.06	0.00
G2 & G3	0.00	0.21	0.40	0.55	0.64	0.67	0.64	0.55	0.40	0.21	0.00
Fluid Dead Load	0.00	0.81	1.77	2.43	2.85	2.98	2.85	2.43	1.77	0.81	0.00
Superimposed Dead Load	0.00	0.06	0.12	0.16	0.19	0.20	0.19	0.16	0.12	0.06	0.00

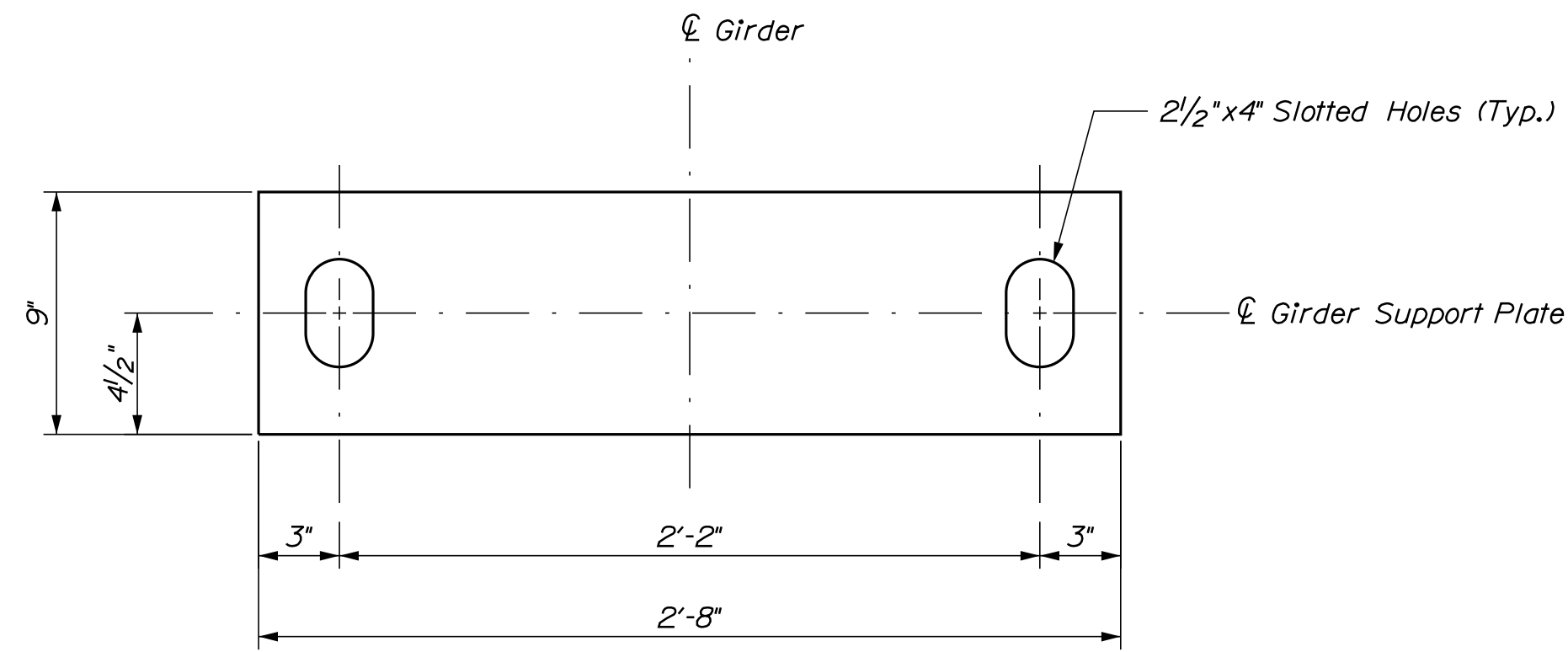
SIGNATURE	P.E. NUMBER	DATE

PROJ. MANAGER	BY	DATE
J. STETSON	D. SHAW	AUG 2023

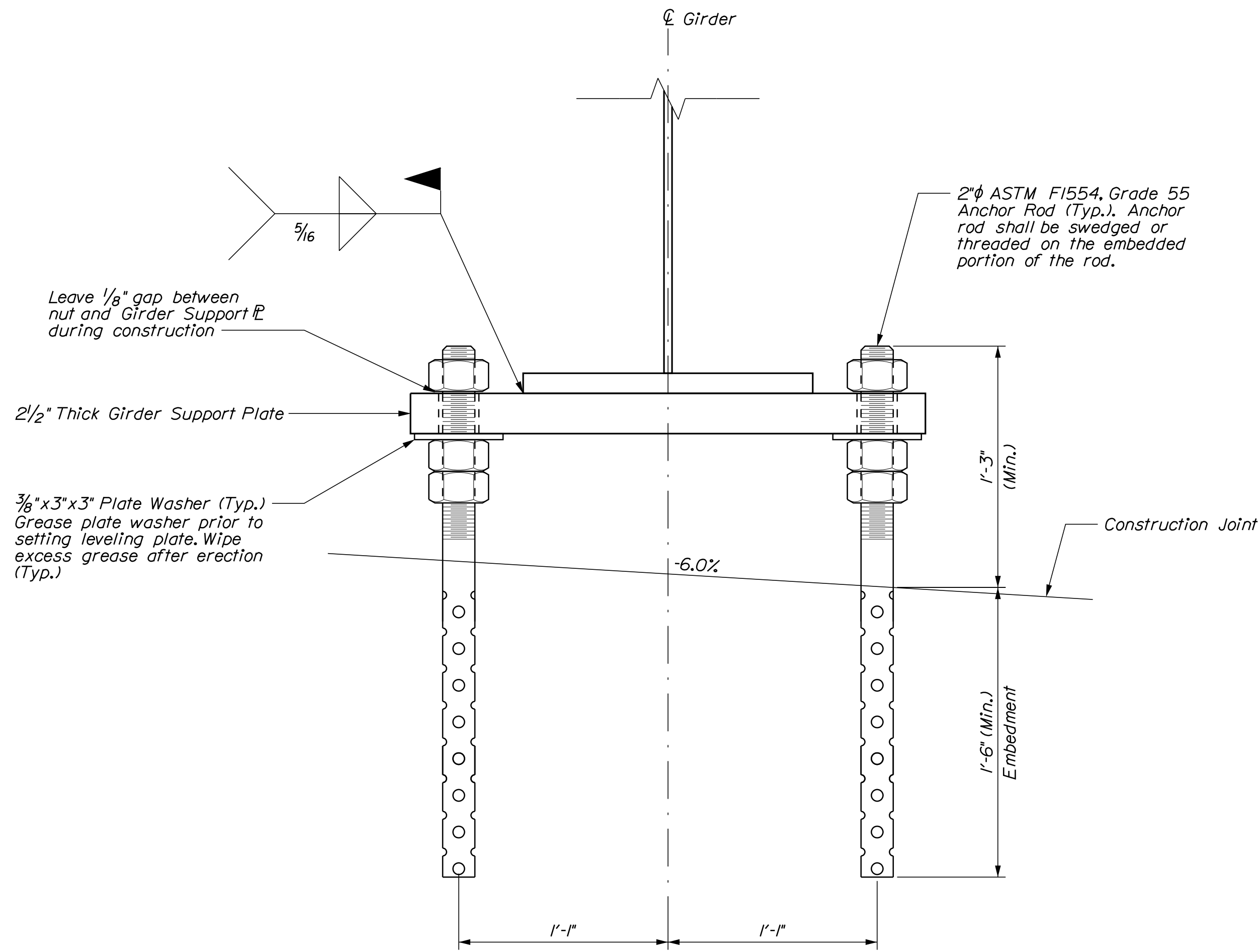
DESIGN DETAILED	CHECKED/REVIEWED	DESIGN DETAILED	DESIGN DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES

GIRDER SUPPORT NOTES

1. Payment for fabrication and installation of the girder support assemblies at the abutments will be considered incidental to related Contract items.



GIRDER SUPPORT PLATE



GIRDER SUPPORT DETAIL

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
2709810  
WIN  
27098.10  
BRIDGE NO. 6133  
BRIDGE PLANS

SIGNATURE  
P.E. NUMBER  
DATE

PROJ. MANAGER	J. STETSON	BY	DATE
CHECKED-REVIEWED	B. BARTLETT	D. SHAW	AUG 2023
DESIGNS DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

PERKINS BRIDGE  
BLACK STREAM  
PENOBSCOT COUNTY  
LEVANT  
GIRDER SUPPORT DETAILS

SHEET NUMBER

5

OF 5