

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



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

TRAFFIC DATA

Current (2023) AADT 2940
Future (2043) AADT 3230
DHV - % of AADT 10
Design Hour Volume 323
Heavy Trucks (% of AADT) 13
Heavy Trucks (% of DHV) 13
Directional Distribution (% of DHV) 62
18 kip Equivalent P 2.0 498
18 kip Equivalent P 2.5 474
Design Speed (mph) 55

MATERIALS

Concrete:
Curbs & Transition Barriers Class "LP"
All Other Class "A"
Reinforcing:
Plain Reinforcing Steel ASTM A615, Grade 60
Glass Fiber Reinforcing Polymer (GFRP) ASTM D7957
Low-Carbon Chromium Steel: ASTM A1035, Type CS, Grade 100

BASIC DESIGN STRESSES

Concrete:
Class "A" f 'c = 4,000 psi
Class "LP" f 'c = 5,000 psi
Reinforcing:
Plain Reinforcing Steel f y = 60,000 psi
Glass Fiber Reinforced Polymer
#6 Bar f fu = 116,000 psi
Minimum Elastic Modulus E f = 8,700,000 psi
Minimum Nominal Design Tensile Strain e fu = 1.3%
Low-Carbon Chromium Steel: f y = 100,000 psi

SKOWHEGAN
SOMERSET COUNTY
SMITH POND BRIDGE
OVER

WEST BRANCH WESSERUNSETT STREAM
ROUTE 150
FEDERAL AID PROJECT NO. 2611500
PROJECT LENGTH 0.099 mi.
BRIDGE NO. 6152

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UTILITIES

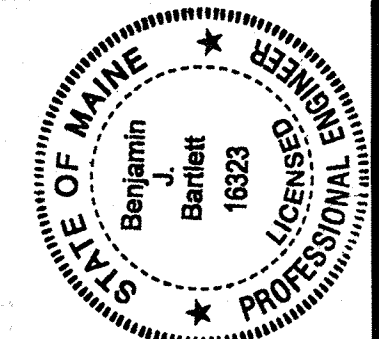
Central Maine Power
Consolidated Communications
Bee Line TV
Mainecom Services

MAINTENANCE OF TRAFFIC

Maintain one lane of alternating one - way traffic using traffic signals.

PROJECT LOCATION	Smith Pond Bridge (#6152) over West Branch Wesserunsett Stream. Located 0.36 of a mile north of Molunkus Road. Lat./Long. 44°48'20.2" N 69°42'16.8" W
PROGRAM AREA	Highway-Bridges
OUTLINE OF WORK	Bridge deck replacement with abutment rehabilitation.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER: <i>[Signature]</i>		11-9-23
CHIEF ENGINEER: <i>[Signature]</i>		11-9-2023



<i>[Signature]</i>	SIGNATURE	P.E. NUMBER	DATE
Benjamin J. Bartlett	16323	11/8/2023	

PROJECT INFORMATION	BRIDGE
PROGRAM	M. PARLIN
PROJECT MANAGER	B. BARTLETT
DESIGNER	
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

SKOWHEGAN SMITH POND BRIDGE	TITLE SHEET
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SHEET NUMBER
1
OF 21

[illegible]

GENERAL CONSTRUCTION NOTES

1. For easements, construction limits, and right of way lines, refer to the Right of Way Map.

2. The clearing limits as shown on the plans are approximate. The exact limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract items.

3. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.

4. Existing signs within the Project limits shall be removed and reset as directed by the Resident. Payment for removal and reinstallation of existing signs will be considered incidental to the Contract. No separate payment will be made.

5. All aluminum bridge rail, rail posts, and associated hardware which are to be removed shall be salvaged in accordance with Special Provision Section 202, Removing Structures and Obstructions (Removing Existing Railings-Retained by Department).

6. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.

7. In areas where the Resident directs the Contractor not to excavate to the subgrade line shown on the plans, payment for removing existing pavement, grubbing, shaping, ditching, and compacting the existing subbase and layers of new subbase 6 inches or less thick will be made under appropriate equipment rental items.

8. Place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.

9. *Erosion Control Mix* may be substituted in those areas normally receiving loam and seed as directed by the Resident. Placement shall be in accordance with *Standard Specifications* Section 619, Mulch. Payment will be made under Pay Item 619.14, *Erosion Control Mix*.

10. Place a 24 inch wide strip of Erosion Control Blanket on the sideslopes along the top of the riprap and behind the wingwalls.

11. A MASH compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.

12. Where it is apparent that runoff will cause continual erosion, Erosion Control Blanket, seeded gutters, riprap downspouts, and other gutters lined with Stone Ditch Protection shall be constructed after paving and shoulder work is completed. Payment will be made under the appropriate Contract items.

13. *Protective Coating for Concrete Surfaces shall be applied to the following areas:*

*All exposed surfaces of concrete curbs,
Fascias down to the drip notch,
All exposed surfaces of Concrete Transition Barriers,
Concrete wearing surfaces,
Top of abutment backwalls and to one foot below the grade on backside,
All exposed surfaces of concrete abutments and wingwalls.*

14. Project information referred to below may be accessed at the following
MaineDOT web address: <http://www.maine.gov/mdot/contractors/>

15. The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.

16. 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.

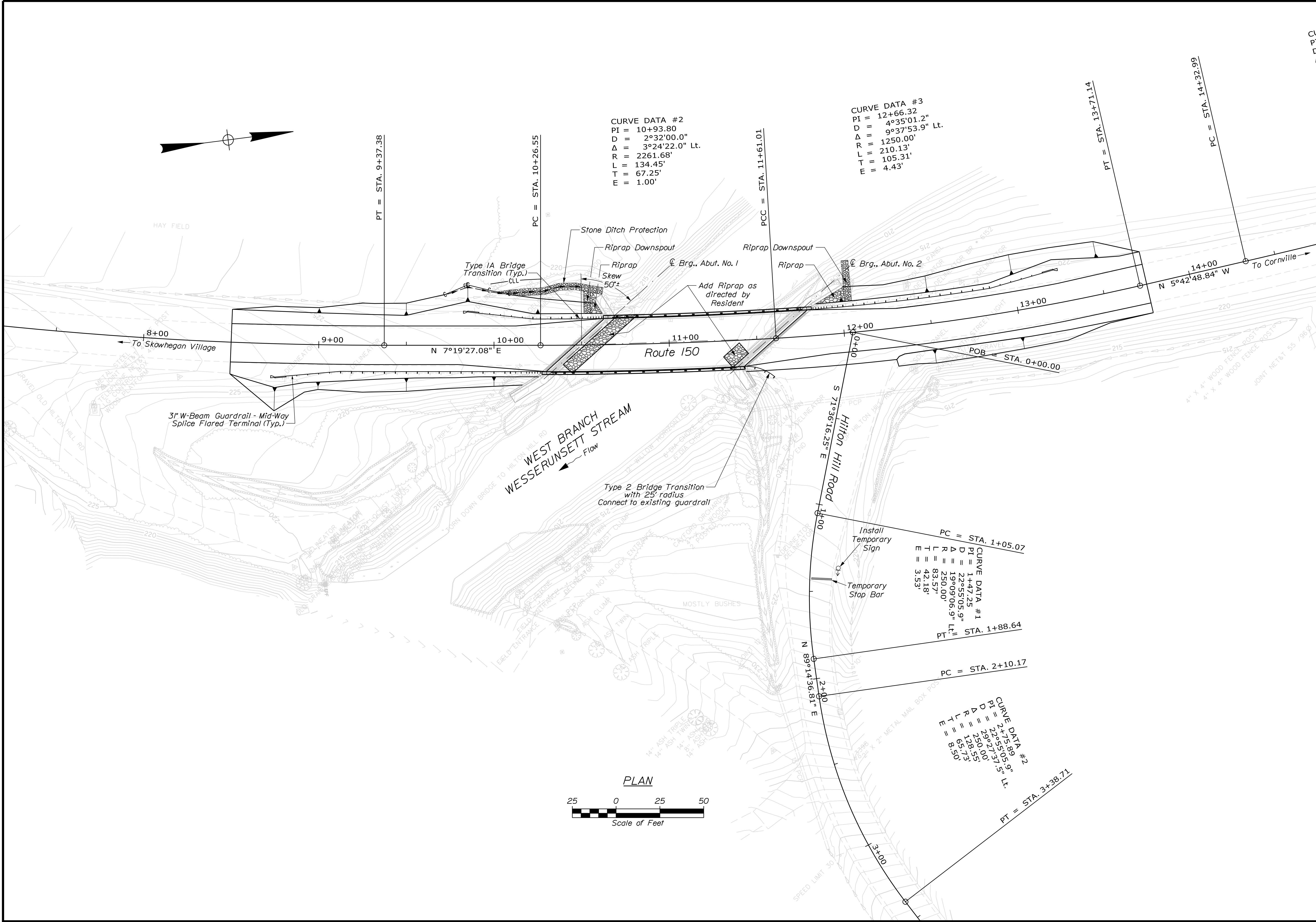
b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

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.

17. The steel portions of the existing bridge may be coated with a lead-based paint system. The Contractor is responsible for the containment, proper management and disposal of all lead-contaminated hazardous waste generated by the removal of steel members. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards related to this process. The Contractor is solely responsible for the care, custody of any hazardous waste generated as a result of the storage, recycling, or disposal of bridge components, including lead-coated steel. Payment for this work will not be made separately, but will be considered incidental to related Contract Items.

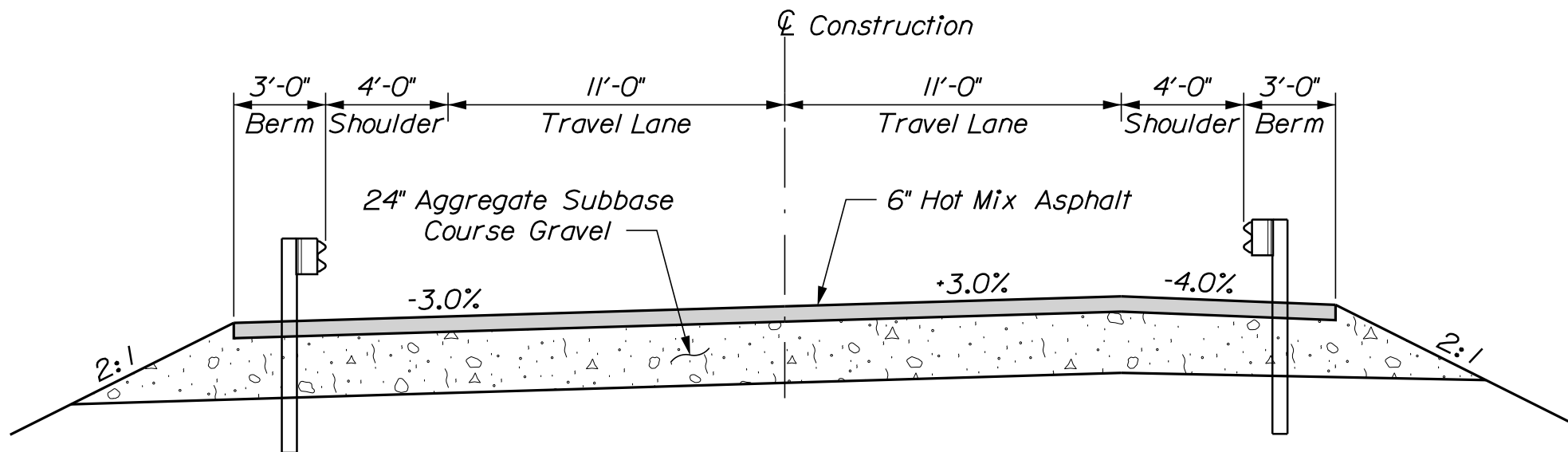
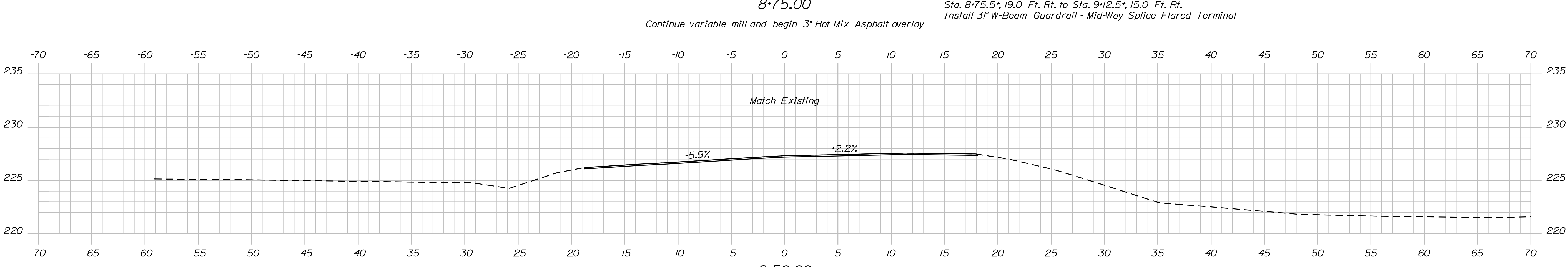
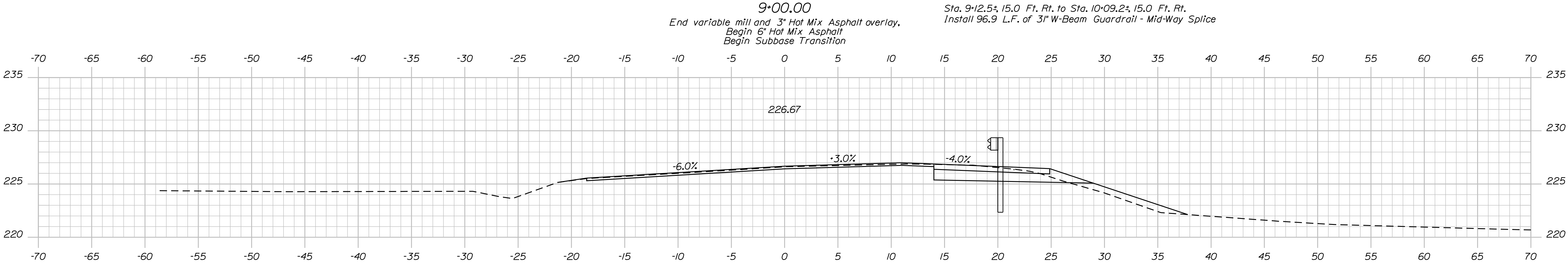
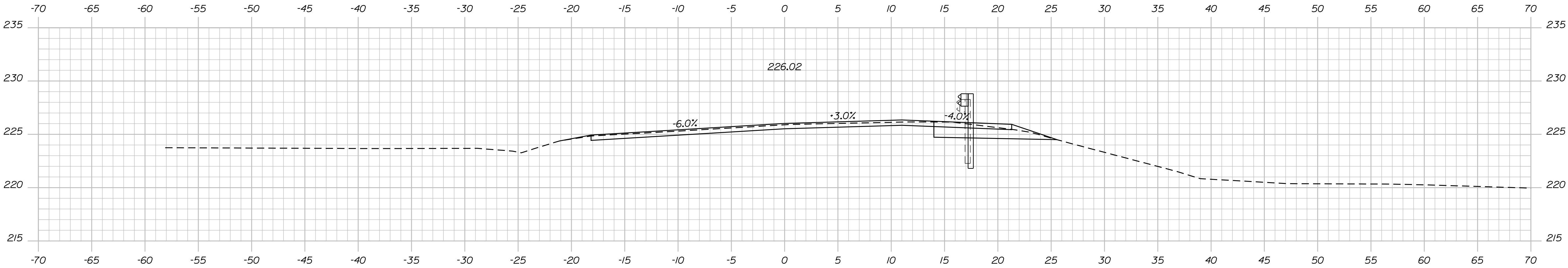
18. Payment for connecting the Bridge Transition Type 2 to the existing guardrail to remain on the Hilton Hill Road shall be considered incidental to related Contract Items.

2 OF 21	SHEET NUMBER	SMITH POND BRIDGE				PROJ. MANAGER	M. PARLIN	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION
		WEST BRANCH WESSERUNSETT STREAM				DESIGN-DETAILED	B. BARTLETT	D. SHAW	OCT. 2023	
		SKOWHEGAN SOMERSET COUNTY				CHECKED-REVIEWED	W. CASEY	T. AQUILAR	OCT. 2023	
						DESIGN2-DETAILED2				
						DESIGN3-DETAILED3				
		ESTIMATED QUANTITIES AND GENERAL CONSTRUCTION NOTES				DESIGN3-DETAILED3				2611500
						REVISIONS 1			P.E. NUMBER	
						REVISIONS 2				
						REVISIONS 3				WIN 026115.00
						REVISIONS 4			DATE	
						FIELD CHANGES				
						BRIDGE NO. 6152				BRIDGE PLANS

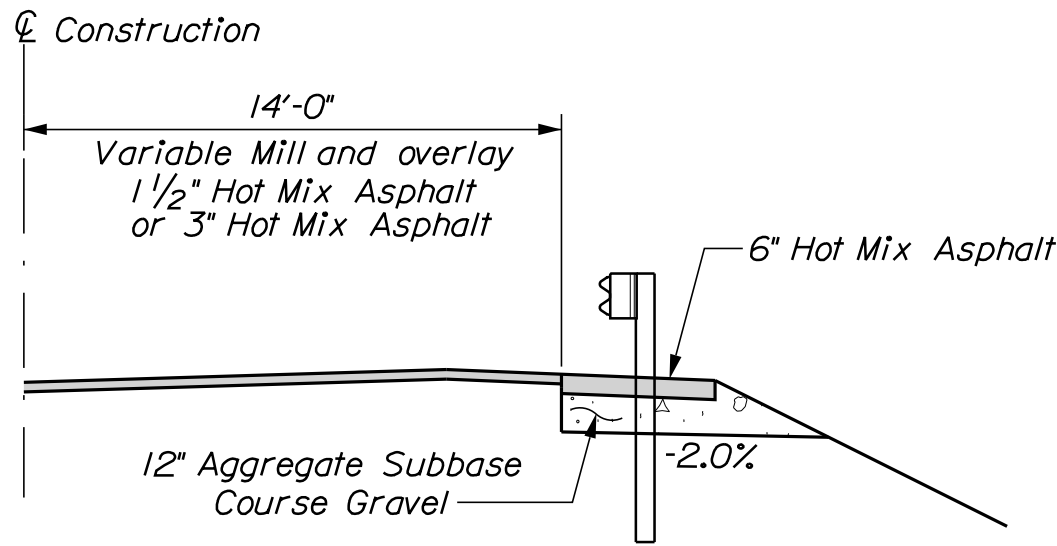


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2611500		BRIDGE NO. 6152	WIN	026115.00	BRIDGE PLANS
	SHEET NUMBER					
	3					
SMITH POND BRIDGE WEST BRANCH WESSERUNSETT STREAM SKOWHEGAN		SOMERSET COUNTY		GENERAL PLAN		
PROJ. MANAGER	DESIGN-DETAILED	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
M. PARLIN	B. BARTLETT	D. SHAW	OCT 2023			
CHECKED-REVIEWED	W. CASEY	T. AGUILAR	OCT 2023			
DESIGNS-DETAILED						
DESIGNS-DETAILED						
REVISIONS 1						
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REVISIONS 4						
FIELD CHANGES						





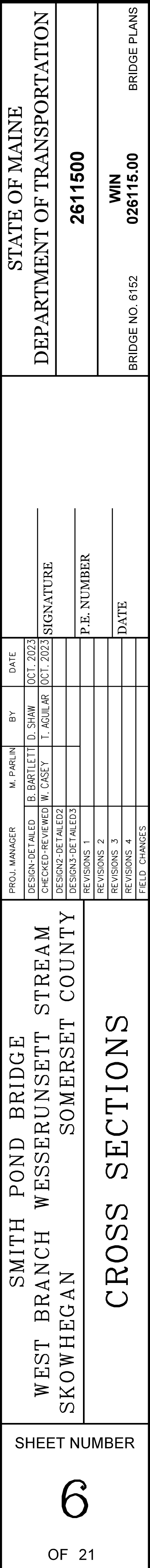
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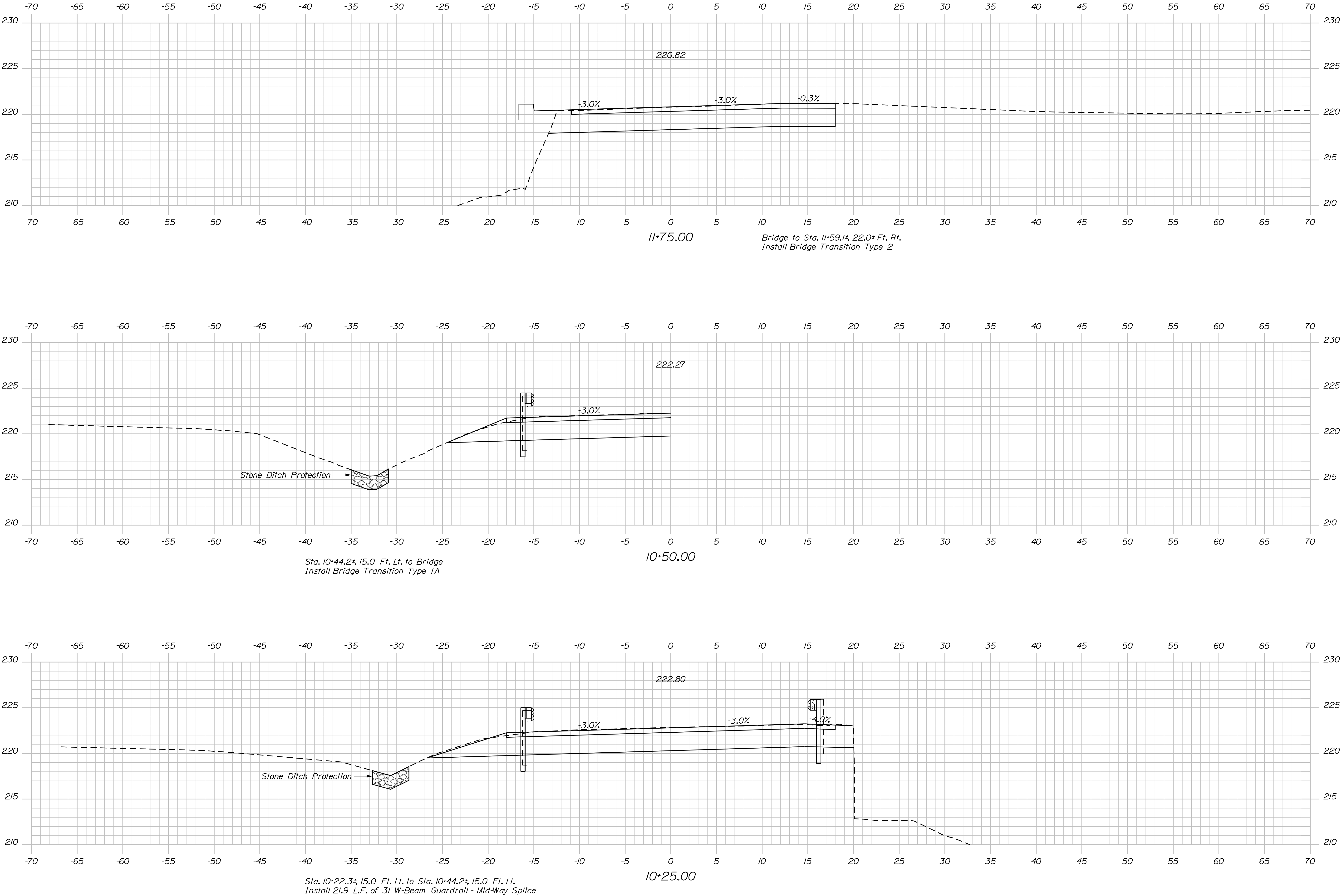


TYPICAL REBUILT SHOULDER SECTION

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2611500		WIN		026115.00		BRIDGE NO. 6152		BRIDGE PLANS		
	SIGNATURE		P.E. NUMBER		DATE						
SMITH POND BRIDGE		WEST BRANCH WESSERUNSETT STREAM		SOMERSET COUNTY		SKOWHEGAN		CROSS SECTIONS		SHEET NUMBER	
										5	
										OF 21	

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2611500

WIN
026115.00

BRIDGE NO. 6152

BRIDGE PLANS

SMITH POND BRIDGE
WEST BRANCH WESSERUNSETT STREAM
SKOWHEGAN
SOMERSET COUNTY

CROSS SECTIONS

SHEET NUMBER

27

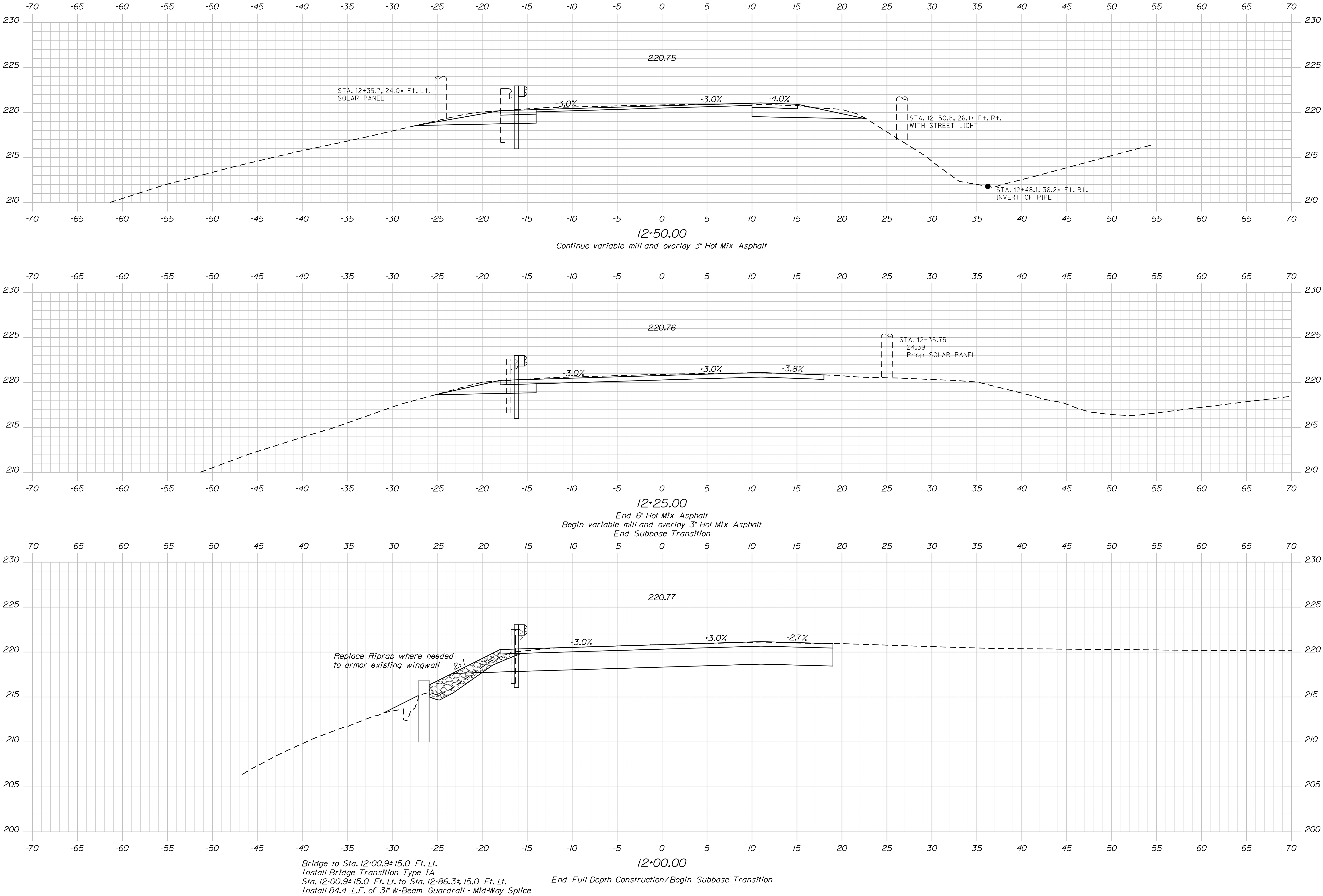
OF 21

PROJ. MANAGER	BY	DATE
M. PARLIN	D. SHAW	OCT 2023
CHECKED-REVIEWED	T. AGUILAR	OCT 2023
DESIGNED-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

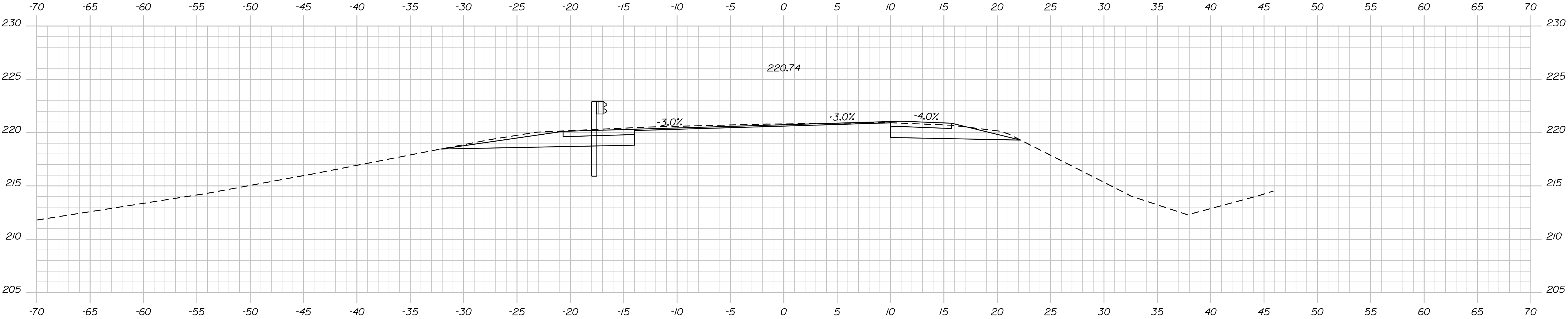
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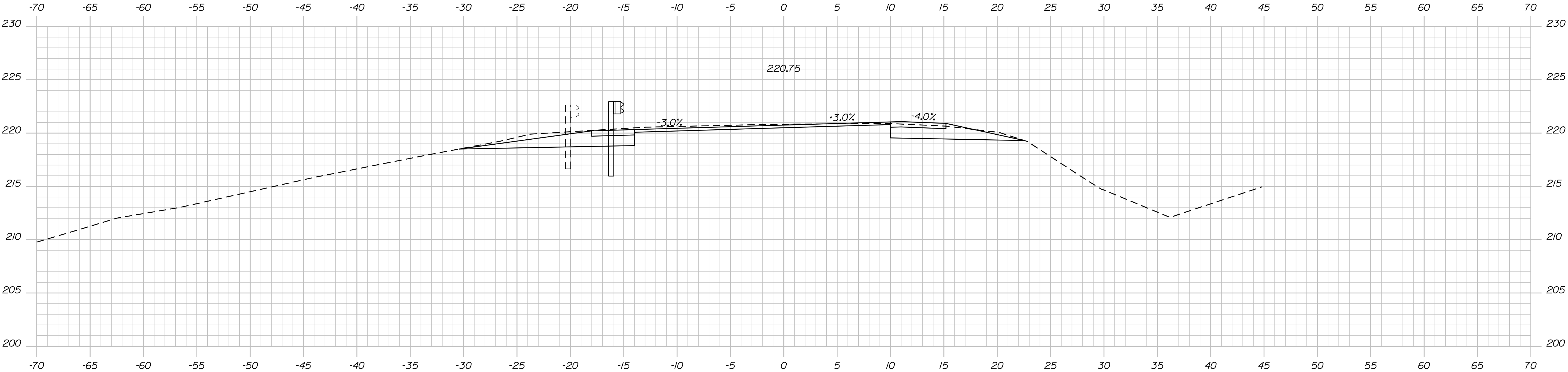


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2611500		WIN 026115.00		BRIDGE NO. 6152	BRIDGE PLANS
	SMITH POND BRIDGE WEST BRANCH WESSERUNSETT STREAM SKOWHEGAN SOMERSET COUNTY					
	CROSS SECTIONS					
SHEET NUMBER						
8						
OF 21						

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED	M. PARLIN	OCT 2023			
CHECKED-REVIEWED	B. BARTLETT	OCT 2023			
DESIGN-DETAILED	D. SHAW	OCT 2023			
REVISIONS 1	T. AGUIAR	OCT 2023			
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

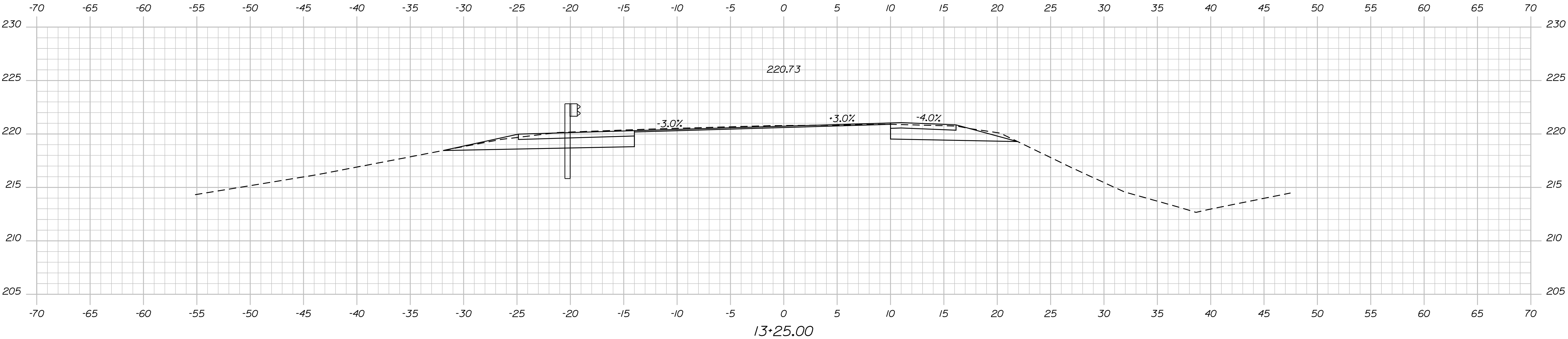
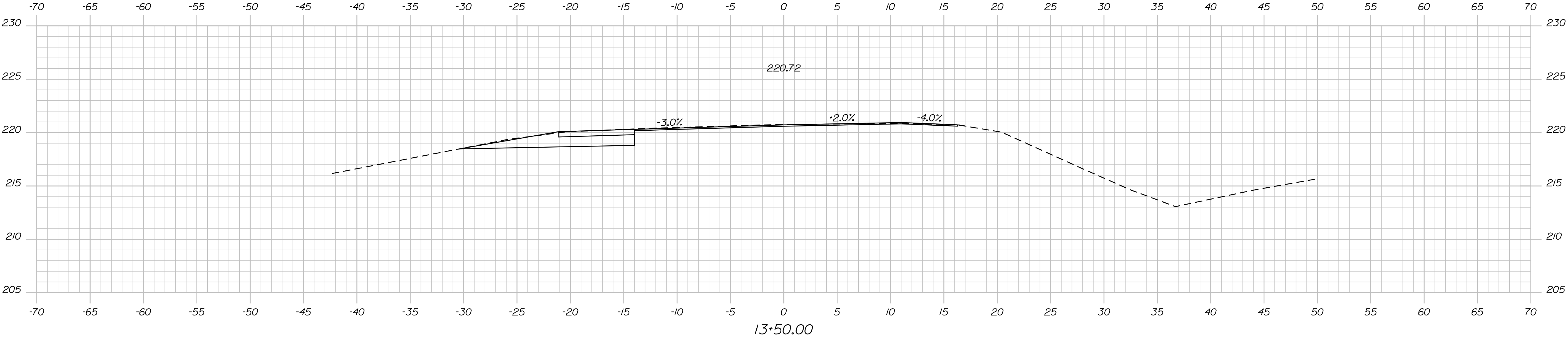
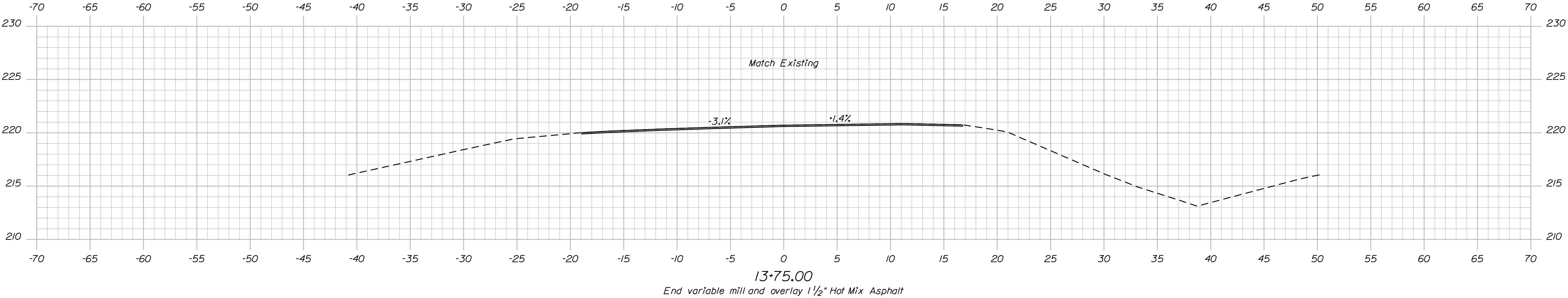


Sta. 12+86.3 to 15.0 Ft. Lt. to Sta. 13+24.1 to 19.0 Ft. Lt.
Install 3' W-Beam Guardrail - Mid-Way Splice Flared Terminal
Continue variable mill and overlay 1 1/2" Hot Mix Asphalt



Continue variable mill and overlay 3" Hot Mix Asphalt

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SMITH POND BRIDGE		DESIGN-DETAILED		BY		DATE					
WEST BRANCH WESSERUNSETT STREAM		CHECKED-REVIEWED		D. SHAW		OCT 2023					
SKOWHEGAN		DESIGN-DETAILED		T. AGUILAR		OCT 2023					
CROSS SECTIONS		DESIGN-DETAILED									
		REVISIONS 1									
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		OF 21									



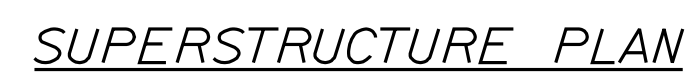
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
	2611500	
	WIN	026115.00
BRIDGE NO. 6152		
BRIDGE PLANS		

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	D. SHAW	OCT 2023
CHECKED-REVIEWED	T. AGUILAR	OCT 2023
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

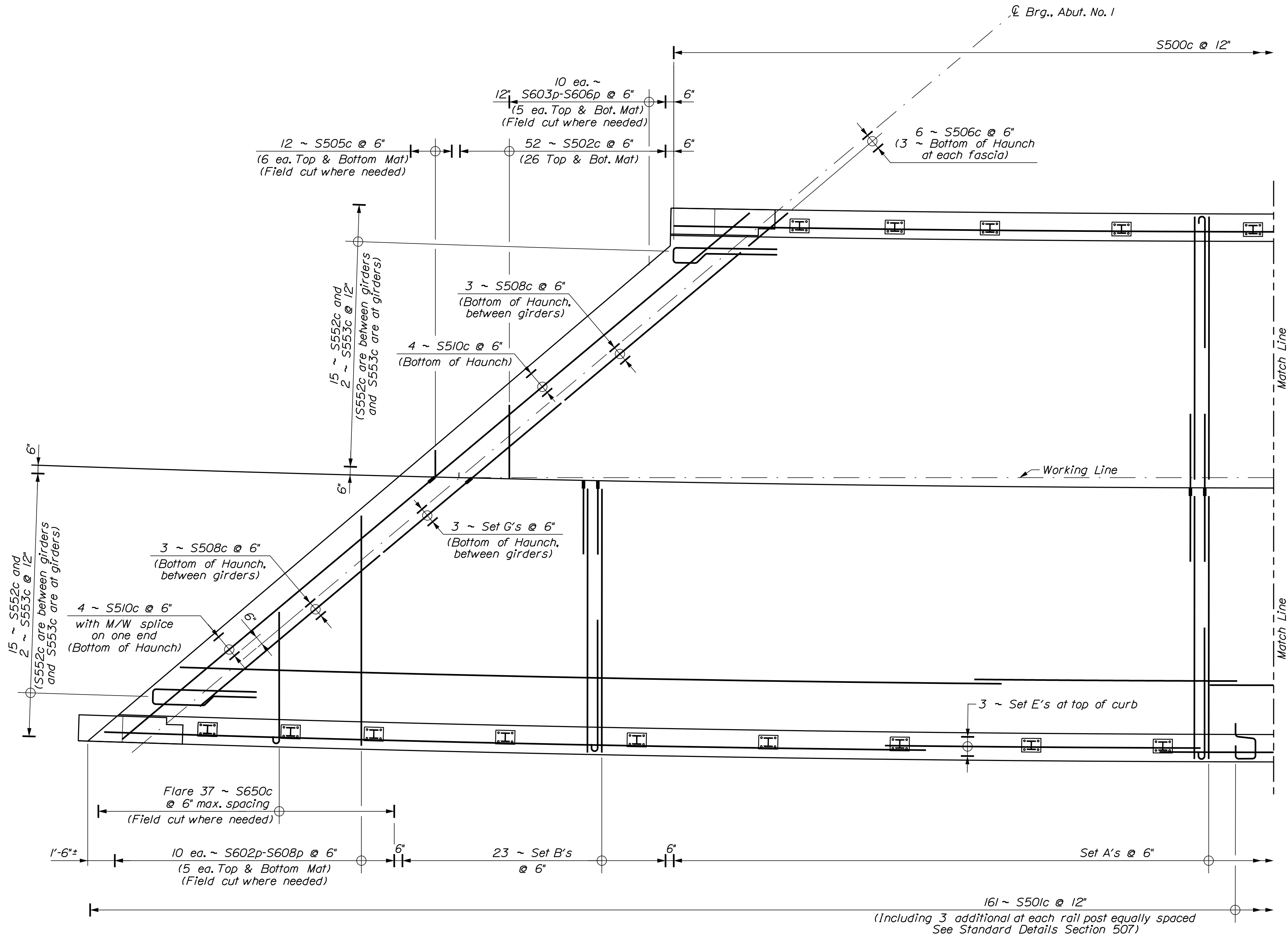
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SMITH POND BRIDGE WEST BRANCH WESSERUNSETT STREAM SKOWHEGAN SOMERSET COUNTY	CROSS SECTIONS
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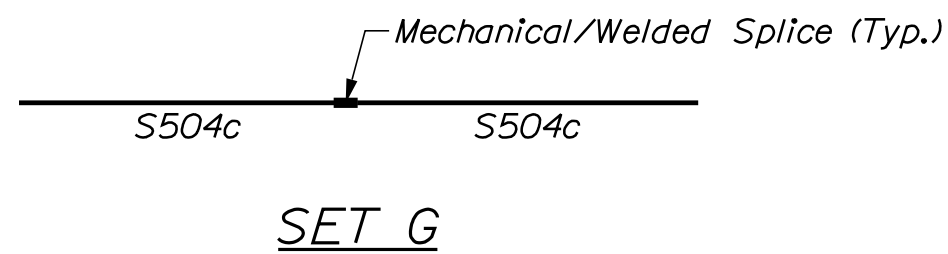
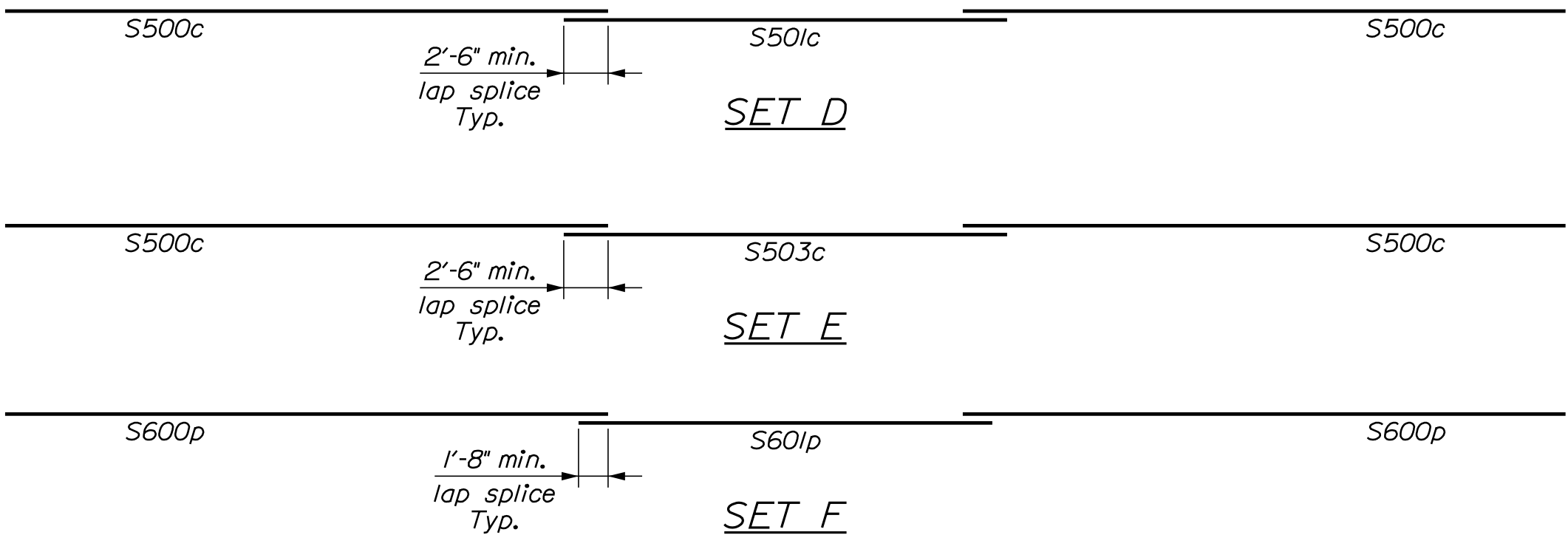
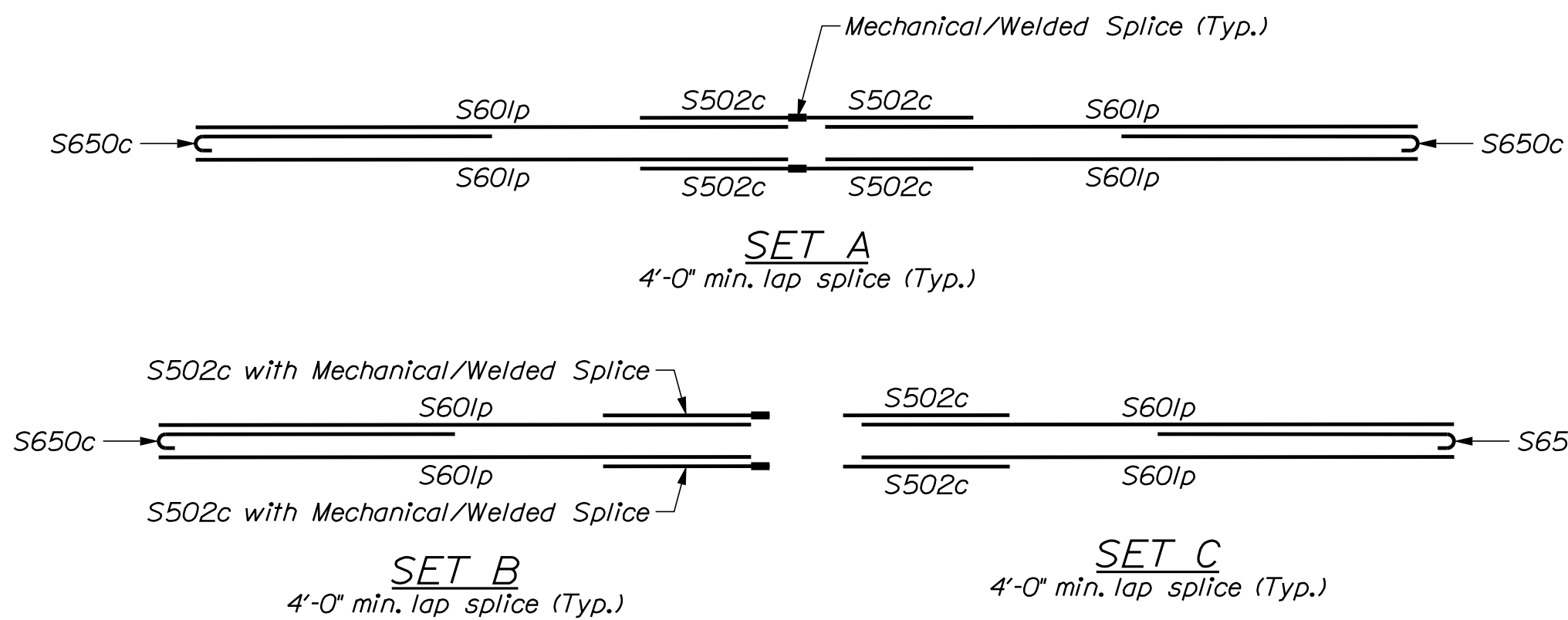
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OF 21



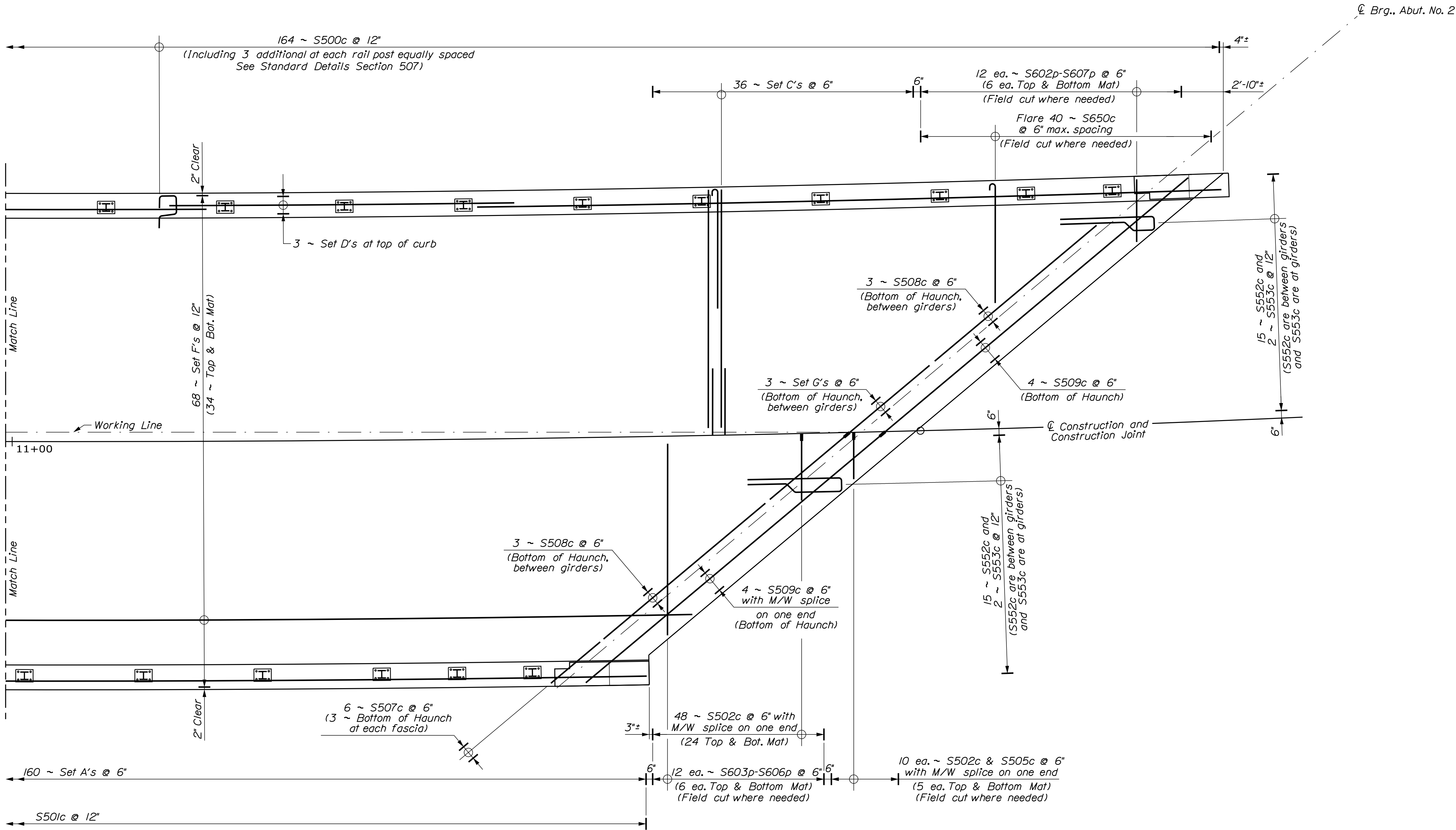
OVERHANG TO C GIRDER											
	C Brg. A1	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6L	0.7L	0.8L	0.9L	C Brg. A2
Dist. Along Girder	0.0'	10.7'	21.4'	32.1'	42.8'	53.5'	64.2'	74.9'	85.6'	96.3'	107.0'
Offset West Side	2'-4"	2'-2 $\frac{1}{4}$ "	2'-1"	2'-0 $\frac{1}{2}$ "	2'-0 $\frac{1}{2}$ "	2'-1 $\frac{1}{8}$ "	2'-2 $\frac{7}{16}$ "	2'-4 $\frac{1}{4}$ "	2'-6 $\frac{3}{4}$ "	2'-9 $\frac{7}{8}$ "	3'-0 $\frac{1}{16}$ "
Offset East Side	2'-2 $\frac{5}{8}$ "	2'-6 $\frac{1}{4}$ "	2'-9 $\frac{9}{16}$ "	2'-1 $\frac{3}{4}$ "	3'-1 $\frac{5}{8}$ "	3'-2 $\frac{7}{8}$ "	3'-3 $\frac{1}{2}$ "	3'-3 $\frac{1}{2}$ "	3'-3"	3'-1 $\frac{13}{16}$ "	3'-0"



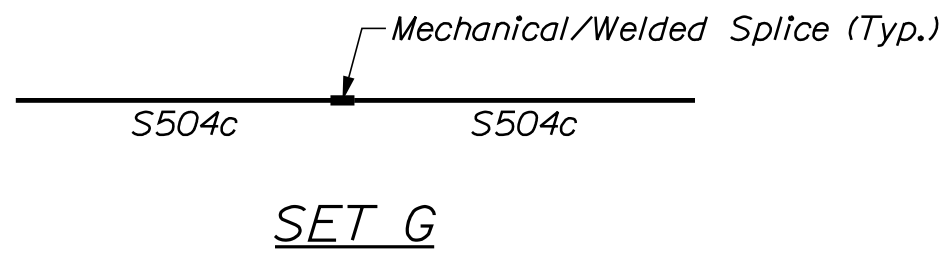
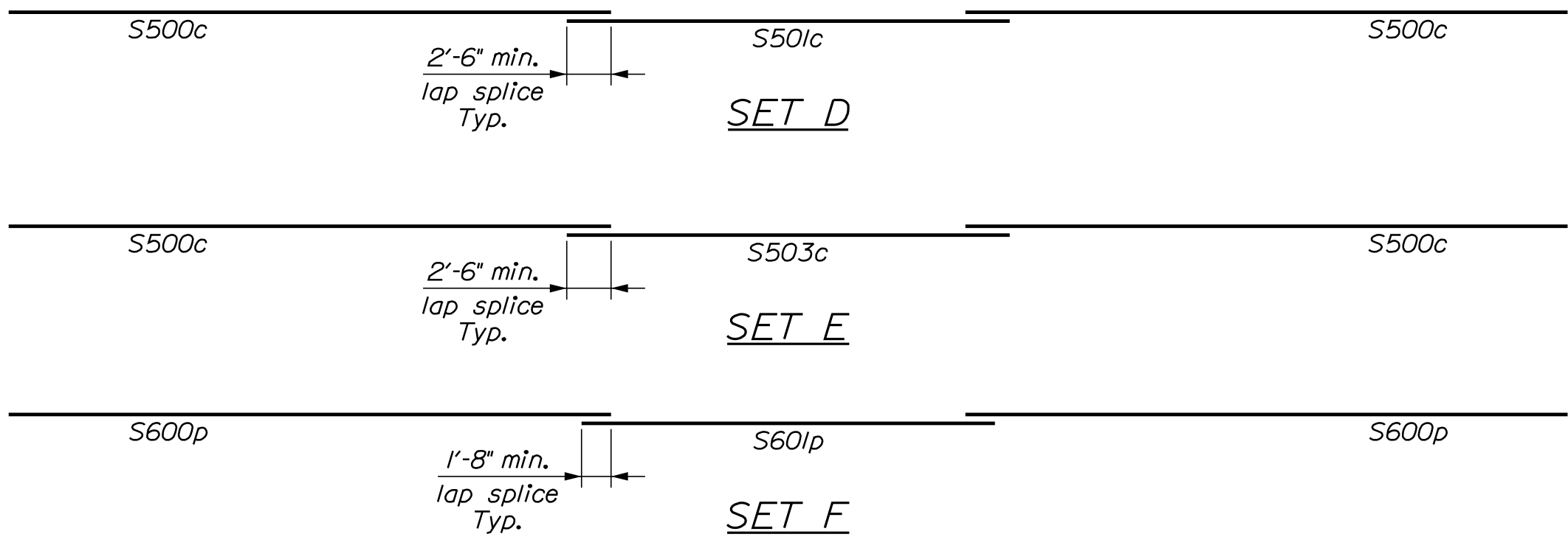
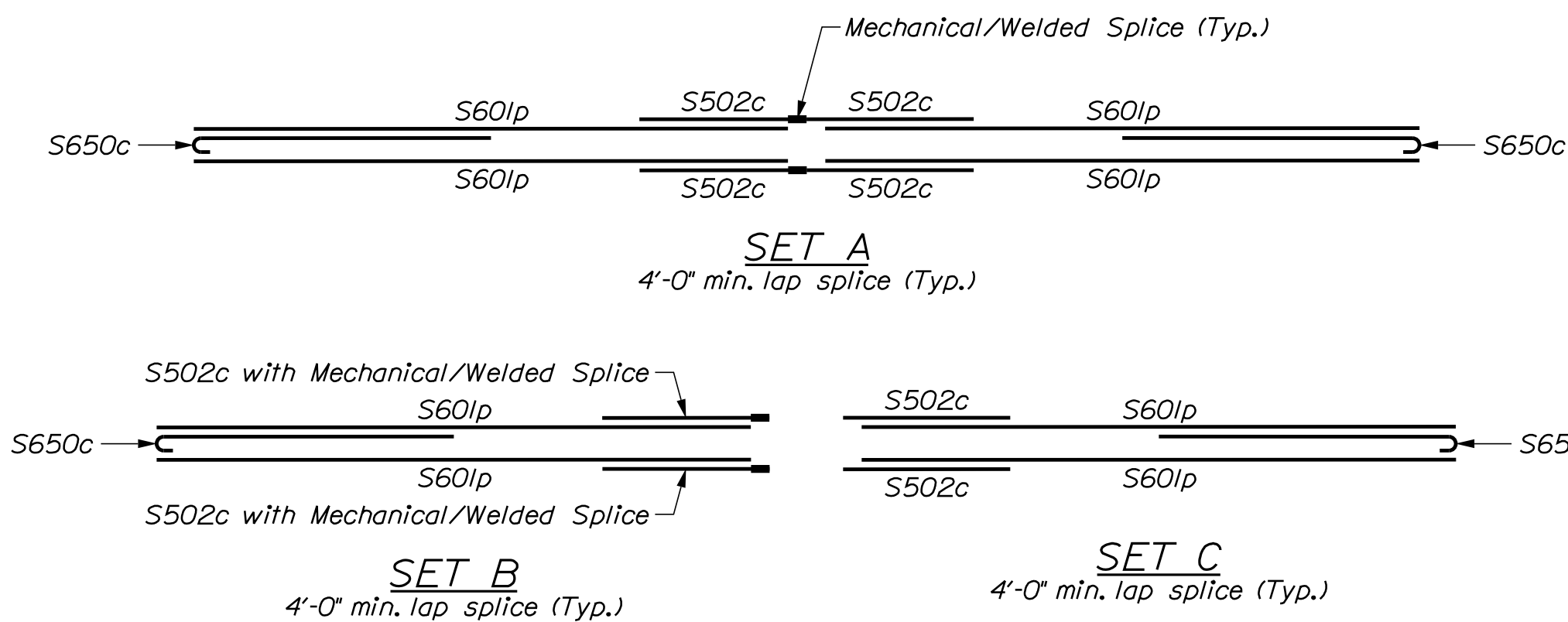
SUPERSTRUCTURE PLAN



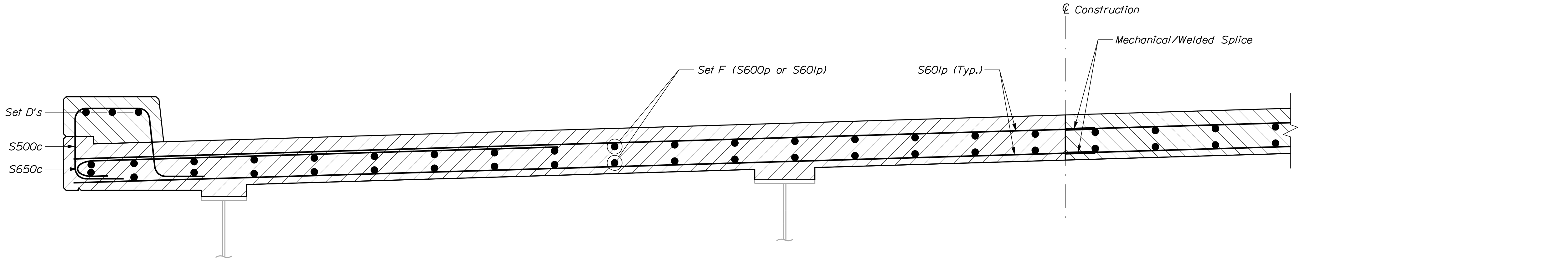
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2611500		WIN		026115.00		BRIDGE NO. 6152		BRIDGE PLANS	
SMITH POND BRIDGE		WEST BRANCH WESSERUNSETT STREAM		SOMERSET COUNTY		SKOWHEGAN		SUPERSTRUCTURE PLAN		SHEET NUMBER		13	
PROJ. MANAGER		DESIGN-DETAILED		BY		DATE		SIGNATURE		P.E. NUMBER		DATE	
CHECKED-REVIEWED		B. BARTLETT		D. SHAW		OCT 2023							
DESIGN-DETAILED		W. CASEY		T. AGUIAR		OCT 2023							
REVISIONS 1													
REVISIONS 2													
REVISIONS 3													
REVISIONS 4													
FIELD CHANGES													



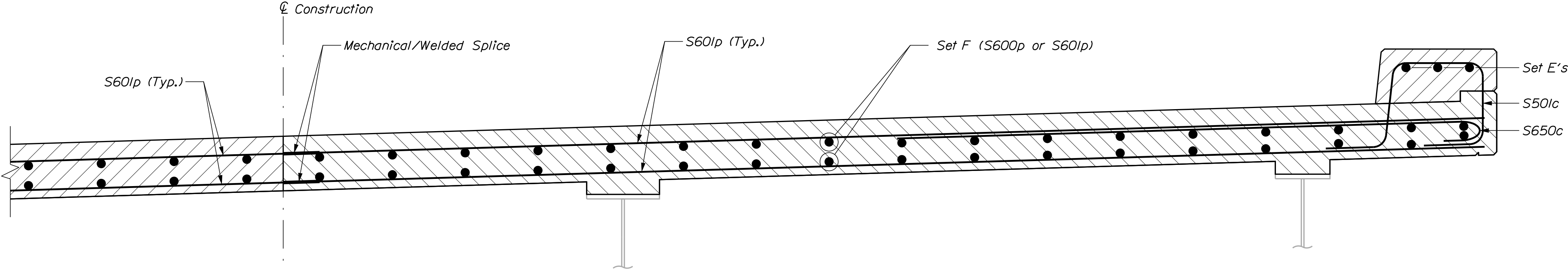
SUPERSTRUCTURE PLAN



STATE OF MAINE										DEPARTMENT OF TRANSPORTATION										2611500										WIN										026115.00										BRIDGE NO. 6152										BRIDGE PLANS																													
SMITH POND BRIDGE										WEST BRANCH WESSERUNSETT STREAM										SOMERSET COUNTY										SKOWHEGAN										SUPERSTRUCTURE PLAN										SHEET NUMBER																																							
DESIGNED-Detailed										CHECKED-REVIEWED										DESIGN2-DETAILED2										DESIGN3-DETAILED3										REVISIONS 1										REVISIONS 2										REVISIONS 3										REVISIONS 4										FIELD CHANGES									
BY										DATE										SIGNATURE										P.E. NUMBER										DATE																																																	
M. PARLIN										D. SHAW										T. AGUIAR																																																																					
B. BARTLETT										OCT. 2023																																																																															
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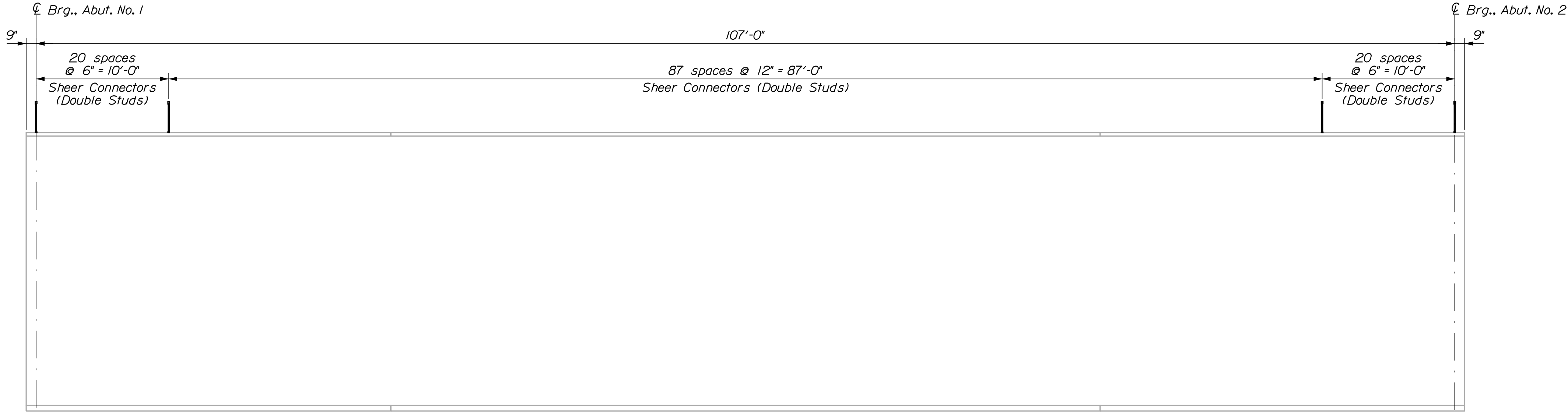


SUPERSTRUCTURE WEST SECTION



SUPERSTRUCTURE EAST SECTION

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE			
	P.E. NUMBER			
	DATE			
SMITH POND BRIDGE WEST BRANCH WESSERUNSETT STREAM SKOWHEGAN SOMERSET COUNTY SUPERSTRUCTURE SECTION	PROJ. MANAGER	M. PARLIN	BY	DATE
	CHECKED-DESIGNED	B. BARTLETT	D. SHAW	OCT 2023
	CHECKED-REVIEWED	W. CASEY	T. AGUIAR	OCT 2023
	DESIGNED-DETAILED			
	DESIGNED-DETAILED			
	DESIGNED-DETAILED			
SHEET NUMBER 15 OF 21	REVISIONS 1			
	REVISIONS 2			
	REVISIONS 3			
	REVISIONS 4			
2611500 WIN 026115.00	FIELD CHANGES			
	BRIDGE NO. 6152			
	BRIDGE PLANS			



INTERIOR GIRDER
Exterior Girder Similar
256 Studs per Girder = 1024 studs Total

BOTTOM OF SLAB ELEVATION IN FEET											
Girder	Abut. No. 1	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	Abut. No. 2
1	220.78	220.68	220.59	220.46	220.37	220.25	220.14	220.02	219.92	219.79	219.66
2	221.27	221.17	221.06	220.92	220.80	220.68	220.55	220.40	220.30	220.14	219.98
3	221.76	221.65	221.54	221.37	221.24	221.10	220.95	220.79	220.67	220.49	220.33
4	222.28	222.14	222.00	221.82	221.67	221.52	221.36	221.18	221.04	220.85	220.68

Shear Stud Notes:

1. Prior to installing the proposed shear connectors, the Contractor shall clean the top flange so that it is free of debris, rust, scale oil, and other contaminants that would adversely affect the welding operation. Payment for cleaning the top flange for installation of the proposed shear connectors shall be incidental to Item 505.08 Shear Connectors. If lead paint is encountered while cleaning top flanges, the Contractor is responsible for the containment, proper management and disposal of all lead-contaminated hazardous waste. See General Notes for more information.

2. Existing spiral/stud shear connectors shall be removed such that they project 1 inch maximum above the top of the existing top flange unless they conflict with the installation of the new shear connectors or any other work. If the existing spiral shear connectors interfere with installation of the new shear connectors or any other work, they shall be removed completely and ground flush with the top flange. All costs associated with this work shall be incidental to related contract items.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2611500

BRIDGE NO. 6152WIN026115.00BRIDGE PLANS

SMITH POND BRIDGE
WEST BRANCH WESSERUNSETT STREAM
SKOWHEGAN
SOMERSET COUNTY

GIRDER DETAILS

SHEET NUMBER
16
OF 21

PROJ. MANAGER
DESIGN-DETAILED
CHECKED-REVIEWED
DESIGN-DETAILED
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

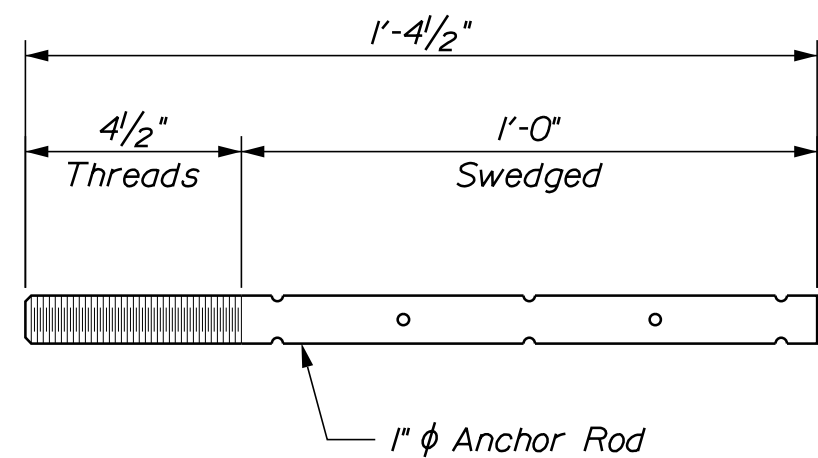
BY
D. SHAW
T. AGUILAR

DATE
OCT 2023
OCT 2023

SIGNATURE

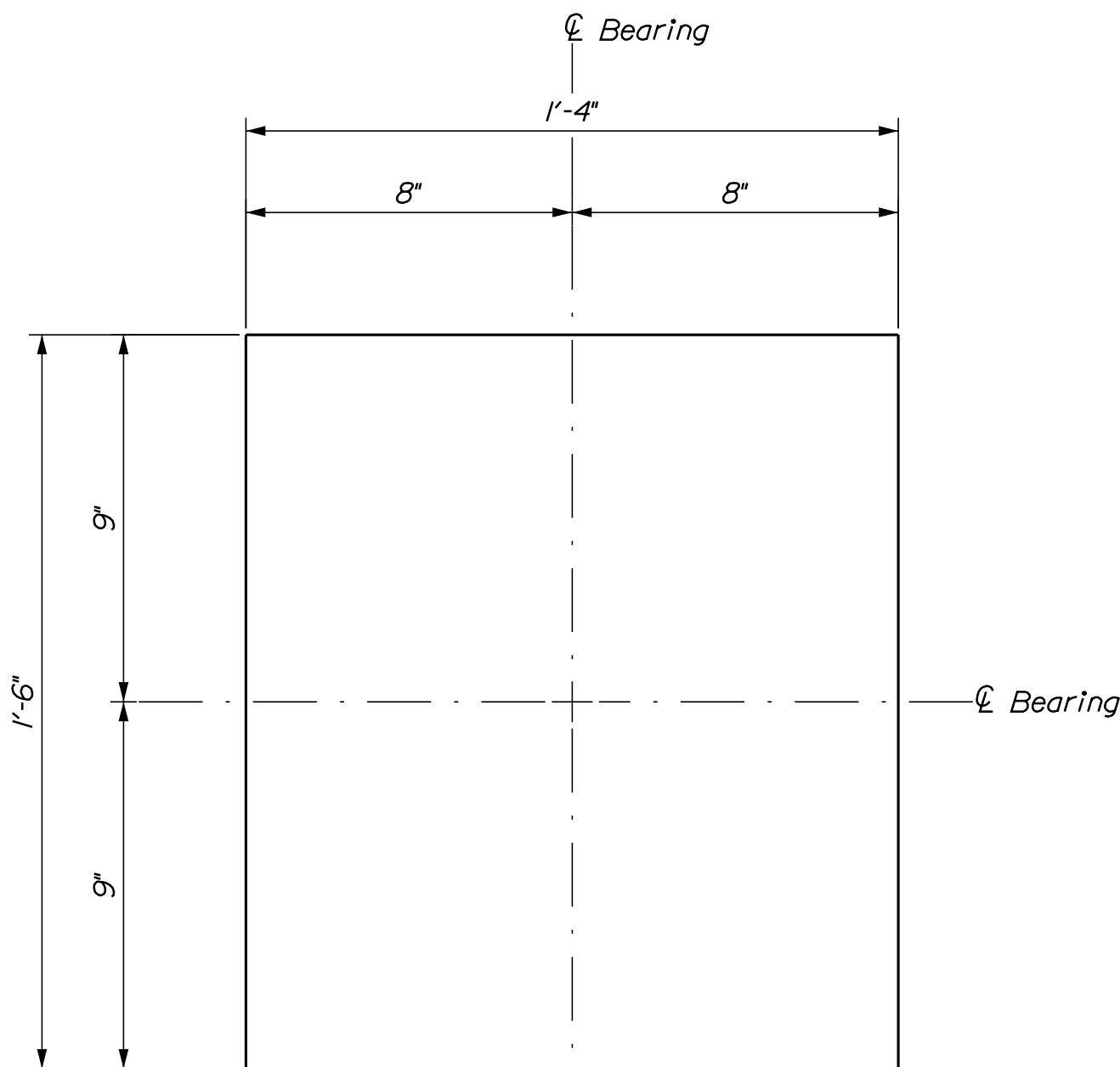
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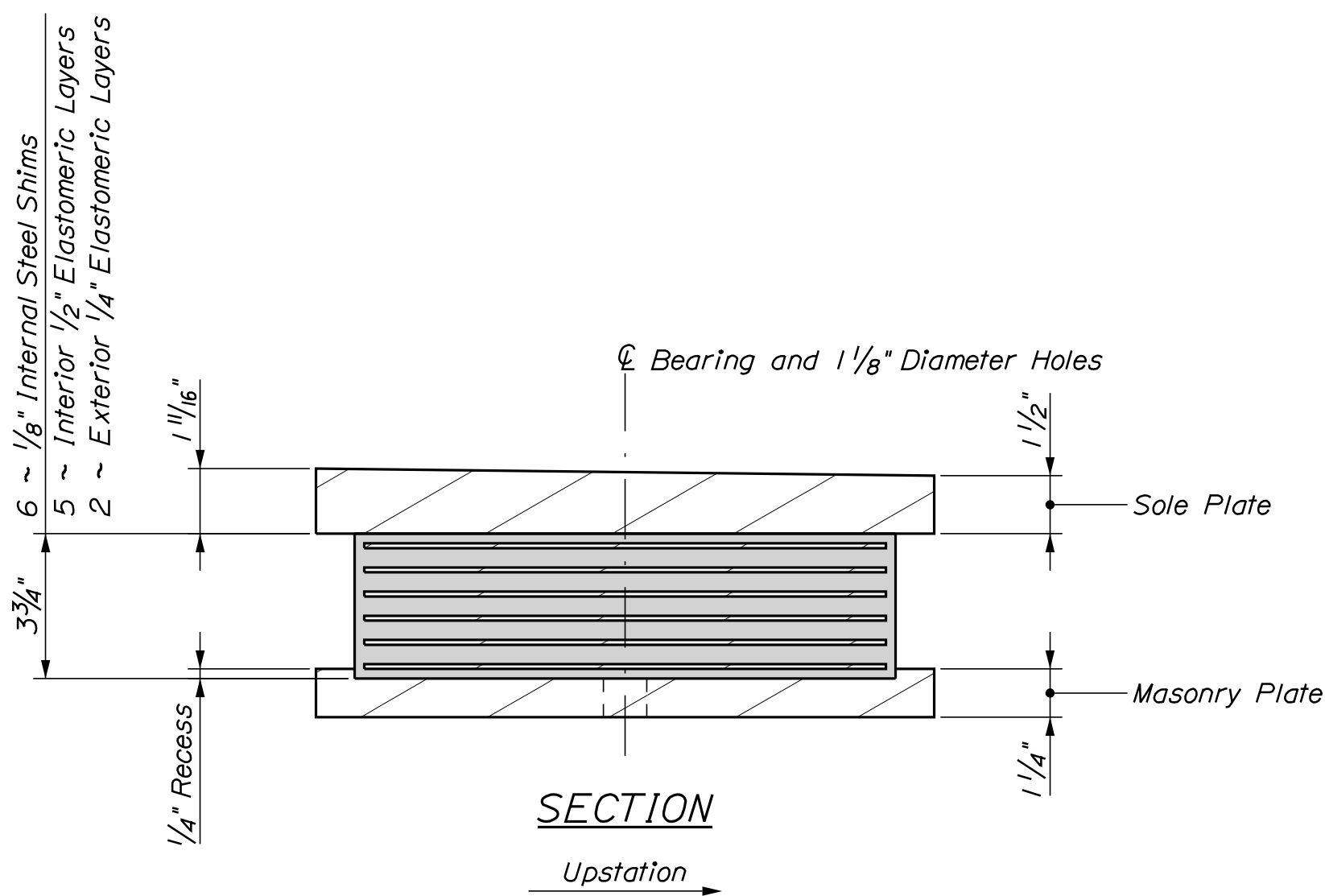


ELASTOMERIC BEARING NOTES

1. The shear modulus of the elastomer shall be 175 psi.
2. Vulcanization of the elastomer to the steel plates shall be done during the primary mold process. Sole plate shall be vulcanized to the elastomer.
3. Masonry plates, sole plates and shear blocks shall meet the requirements of ASTM A709, Grade 50 or 50W. Anchor rods shall meet the requirements of ASTM F1554, Grade 105 and shall be swaged on the embedded portion of the rod.
4. Masonry plates and sole plates shall be galvanized in accordance with Section 506. Anchor rods, washers, nuts and shear blocks shall be galvanized to ASTM A153 or ASTM B695, Class 50, Type I.
5. All bearings shall be marked prior to shipping. The marks shall include the bearing location on the bridge and a direction arrow that points upstation. All marks shall be permanent and shall be visible after the bearing is installed.
6. Bearings shall be covered during shipping and at any time prior to installation that the bearings may be exposed to sunlight.
7. The superstructure may be erected when the ambient air temperature is within the range of 65°F and 90°F. If the ambient air temperature is outside this range, the bearings shall be reset as directed by the Resident.
8. All necessary precautions shall be taken to protect bearing components from field weld flash and spatter. Heat from welding operations shall be controlled such that steel adjacent to the elastomer does not exceed 200°F. The temperature shall be verified by the use of temperature indicating crayons or other suitable means.
9. Upset the threads on the anchor rods after assembly of the bearing.
10. The Contractor shall not weld the girders to the sole plate until after all adjustments have been made in accordance with Standard Specification Section 523.094.
11. The "Bearing Design Load" for each bearing as noted in Standard Specifications, subsection 523.23.4, is 188 kips. This is the total load for the Service I load combination, without impact.



SOLE PLATE



STAGE I

STAGE II

STAGE III

STAGE IV

STAGE V
Completed Bridge

STAGE CONSTRUCTION NOTES

1. Temporary structural supports shall be installed on the interior beam supporting traffic during all stages of construction. Temporary structural supports shall be designed following Special Provisions Section 524, Temporary Structural Support-Deck Overhang & Lateral Bracing.

2. Temporary concrete barrier used on the new deck during stages III and IV shall be braced. Anchored barrier shall not be used on the new deck.

DESIGN-DETAILED	B. BARTLETT	D. SHAW	OCT. 2023
CHECKED-REVIEWED	W. CASEY	T. AQUILAR	OCT. 2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE			
P.E. NUMBER			
DATE			

SMITH FOND BRIDGE	
WEST BRANCH WESSERUNSETT STREAM	
SKOWHEGAN	SOMERSET COUNTY
STAGED CONSTRUCTION	

SHEET NUMBER

18

OF 21

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