

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Eighth Edition 2017.

DESIGN LOADING

Live Load (Bridge Deck) HL - 93 Modified

TRAFFIC DATA

Current (2020) AADT1,610
Future (2040) AADT1,770
DHV - % of AADT10%
Design Hour Volume177
Heavy Trucks (% of AADT)7%
Heavy Trucks (% of DHV)3%
Directional Distribution (% of DHV)66%
18 kip Equivalent P 2.037
18 kip Equivalent P 2.535
Design Speed (mph)45

MATERIALS

Concrete:
Curbs, Transition Barrier Class "LP"
All Other Class "A"

Reinforcing:
Stainless Steel ReinforcingASTM A 955, Grade 75

BASIC DESIGN STRESSES

Concrete:
Class "A"f 'c = 4,000 psi
Class "LP"f 'c = 5,000 psi

Reinforcing:
Stainless Steel Reinforcing f y = 75,000 psi

UTILITIES

Central Maine Power
Comcast
Consolidated Communications

MAINTENANCE OF TRAFFIC

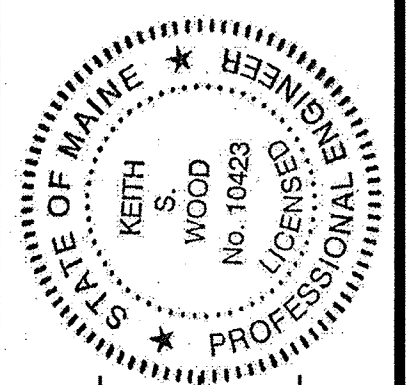
Bridge/road closure with off site detour.

BERWICK
YORK COUNTY
HUBBARD BRIDGE
OVER
LITTLE RIVER
HUBBARD ROAD
FEDERAL PROJECT NO. 2228200
PROJECT LENGTH 0.036 mi.
BRIDGE NO. 6221

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STATE OF MAINE DEPARTMENT OF TRANSPORTATION		DATE 9/18/19
APPROVED		COMMISSIONER: [Signature]
CHIEF ENGINEER: [Signature]		9-18-19



[Signature]
SIGNATURE
Keith S. Wood
P.E. NUMBER
16423
DATE
9/18/2019

PROJECT INFORMATION	
PROGRAM	BRIDGE
PROJECT MANAGER	M. KERSBERGEN
DESIGNER	T. TURCOTTE
CONSULTANT	KLEINFELDER
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

BERWICK HUBBARD BRIDGE	
TITLE SHEET	

SHEET NUMBER	
1	
OF 14	

PROJECT LOCATION:	Hubbard Road over Little River in Berwick, 0.02 Miles North of Hornes Mill Road. Latitude 43°19'1" N, Longitude 70°54'14" W
PROGRAM AREA:	Bridge Program
OUTLINE OF WORK:	Bridge Deck Replacement with 105' of Approach Work Plus Transitions

Date:9/8/2019

Username:

Division: BRIDGE

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WIN 22282.00

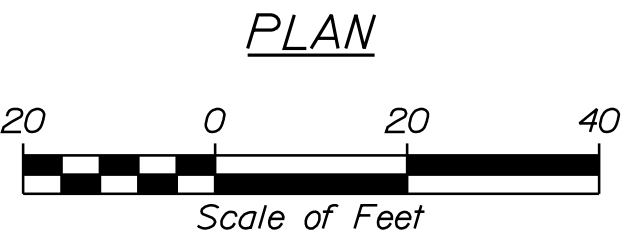
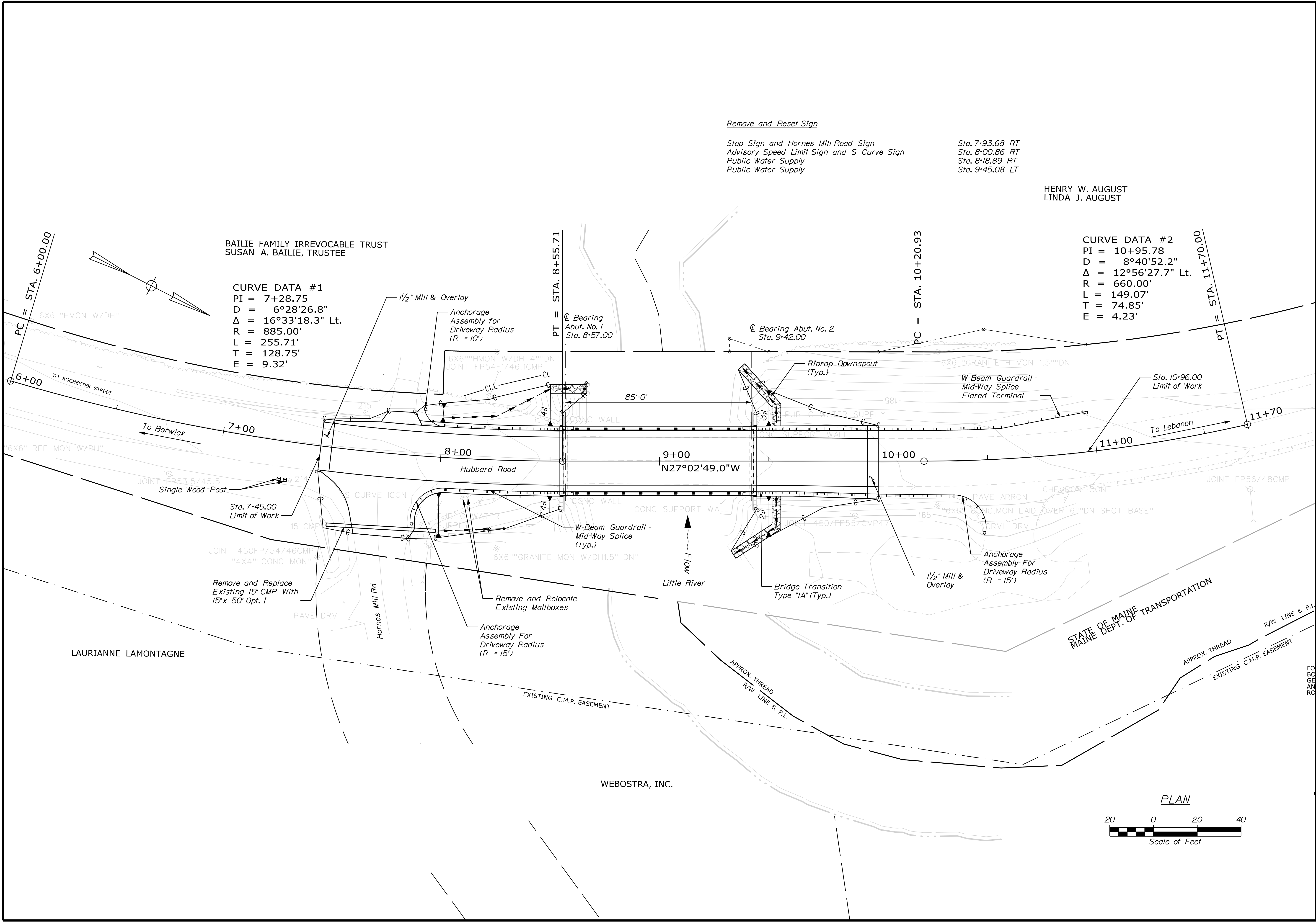
2228200

Date:9/8/2019

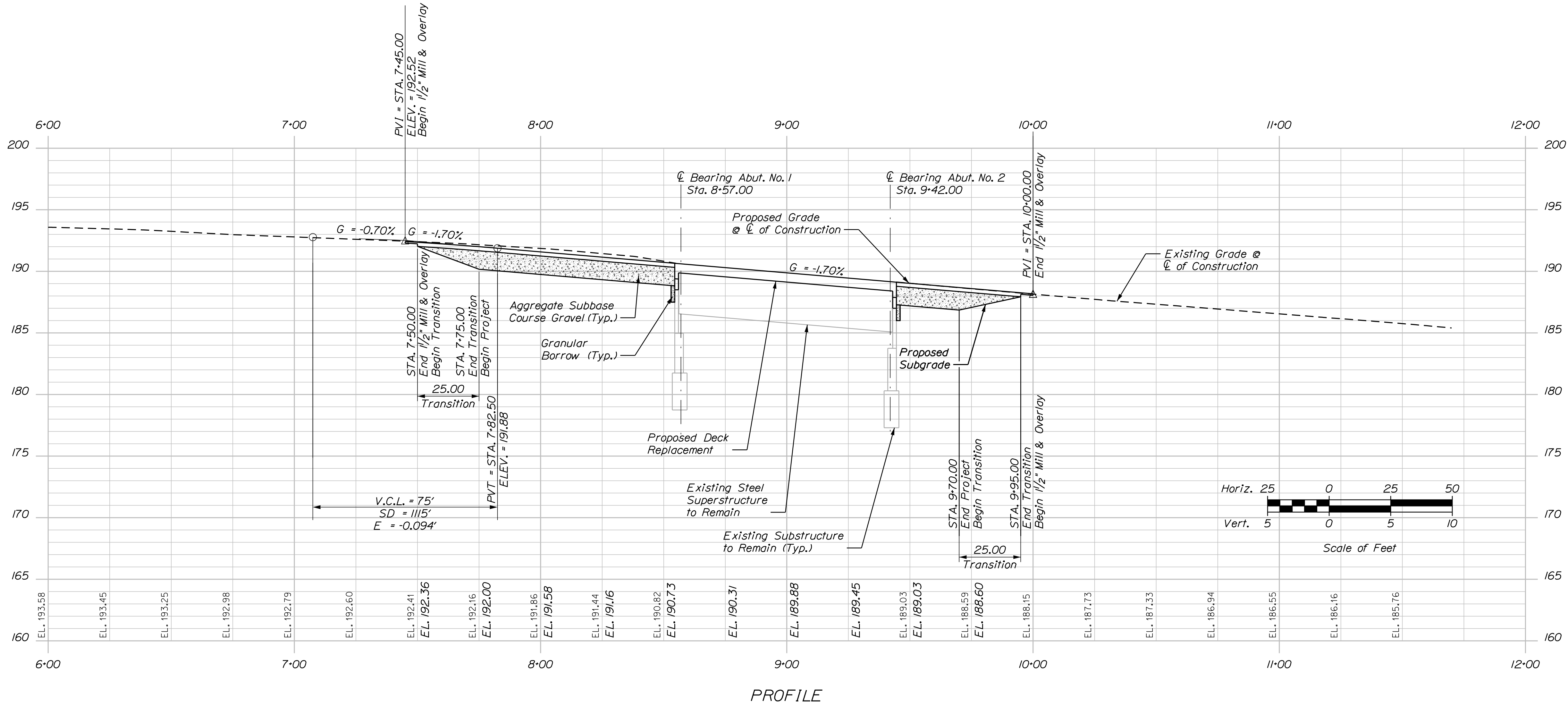
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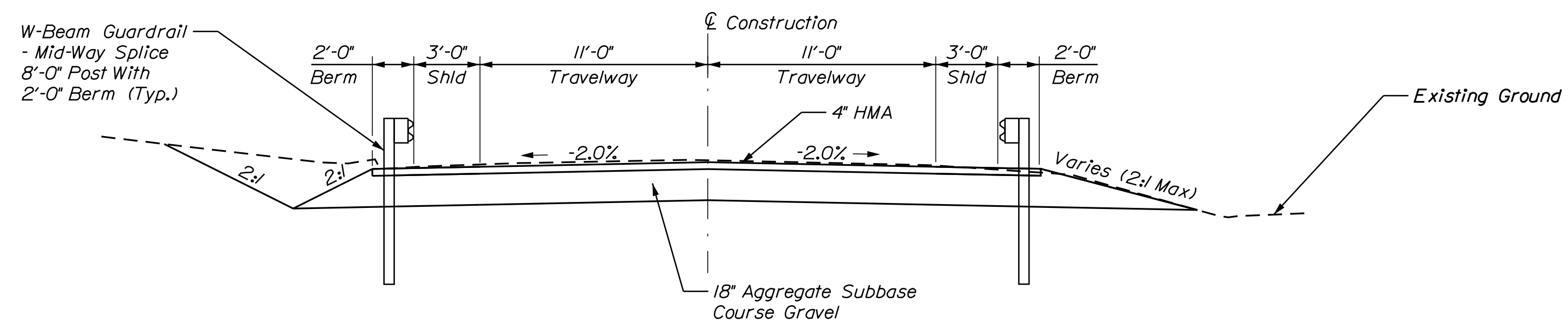
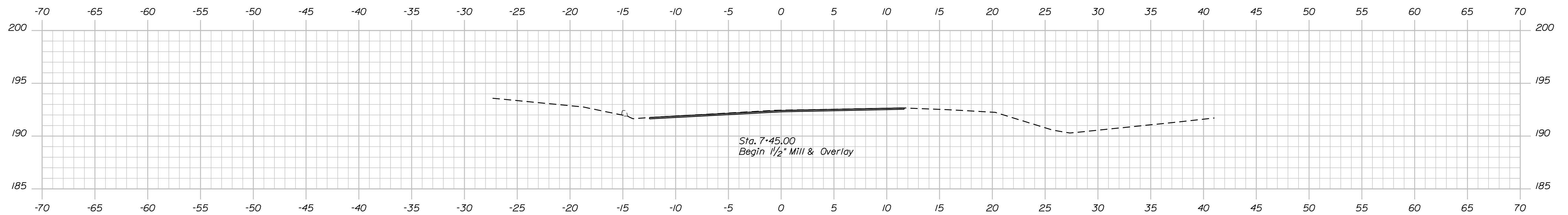
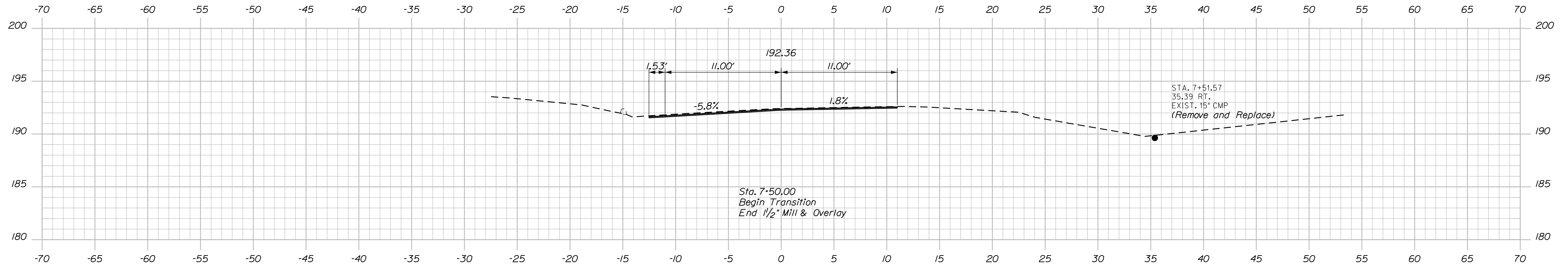
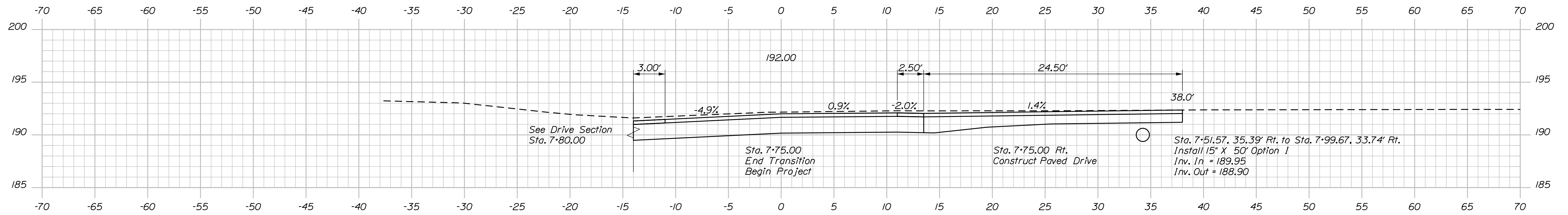


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SIGNATURE		P.E. NUMBER		DATE			
BY		DATE		PROJ. MANAGER		M. KERSBERGEN	
T. WOLFEL		8/2019		DESIGN-DETAILED		T. WOLFEL	
T. WOLFEL		8/2019		CHECKED-REVIEWED		K. WOOD	
				DESIGN-DETAILED			
				REVISIONS 1			
				REVISIONS 2			
				REVISIONS 3			
				REVISIONS 4			
				FIELD CHANGES			
HUBBARD BRIDGE LITTLE RIVER YORK COUNTY		GENERAL PLAN					
BERWICK		SHEET NUMBER 3 OF 14					



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE	
	P.E. NUMBER	
	DATE	
2228200		
BRIDGE NO. 0221		
WIN		
22282.00		
BRIDGE PLANS		

HUBBARD BRIDGE LITTLE RIVER YORK COUNTY		PROJ. MANAGER M. KERSBERGEN	BY T. WOLFEL	DATE 8/2019
BERWICK YORK COUNTY PROFILE		CHECKED-REVIEWED K. WOOD	T. WOLFEL	8/2019
		DESIGN-DETAILED	T. WOLFEL	8/2019
		DESIGN-DETAILED	T. WOLFEL	8/2019
		REVISIONS 1		
		REVISIONS 2		
SHEET NUMBER		REVISIONS 3		
4		REVISIONS 4		
OF 14		FIELD CHANGES		



Sta. 7+75.00 to Sta. 9+70.00

BRIDGE NO. 6221	WIN	22282.00
		2228200
BRIDGE PLANS		

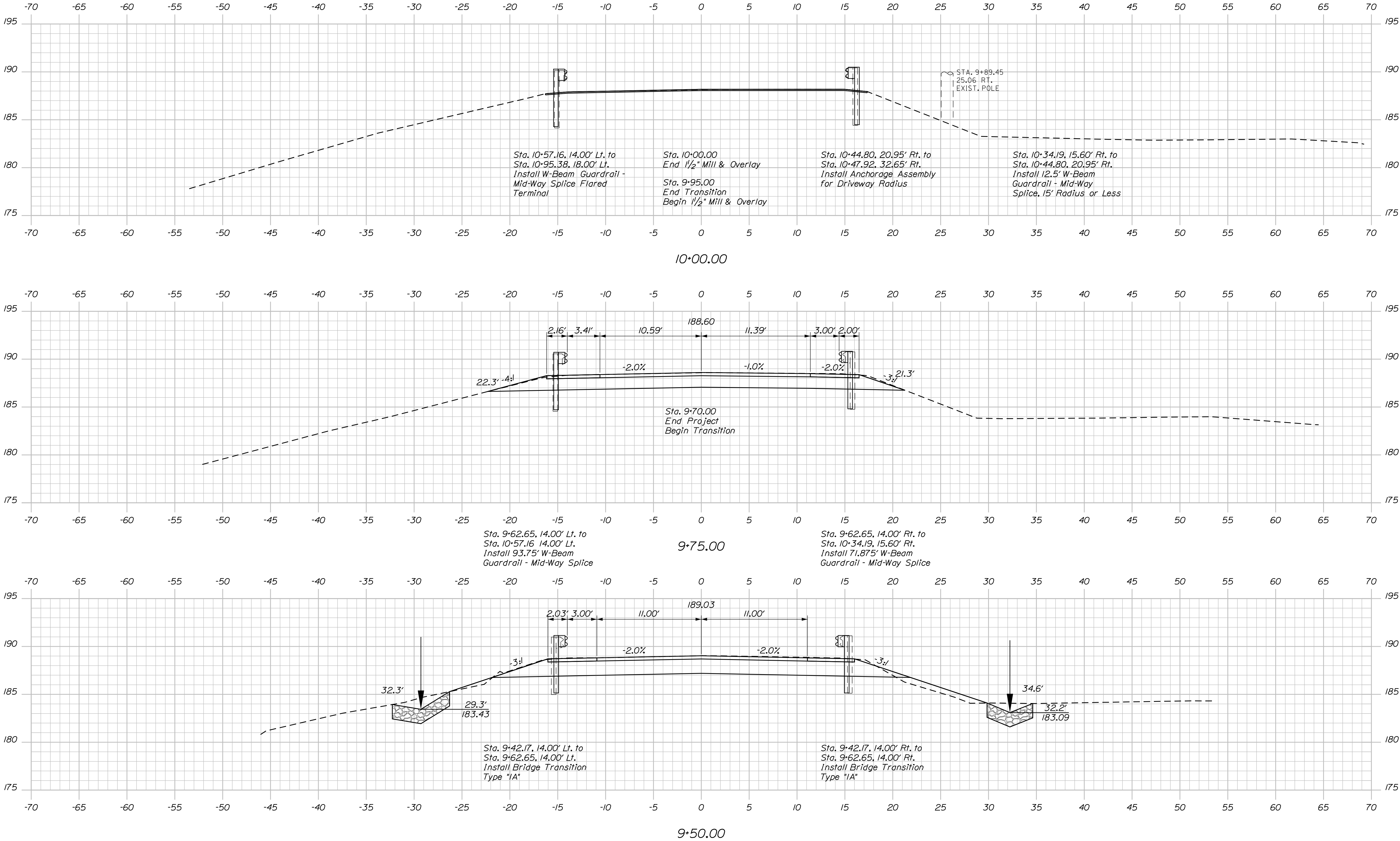
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DESIGN3-DETAILED3			
DESIGN4-DETAILED4			
REVISIONS 1			P.E. NUMBER
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			DATE

Date:9/8/2019

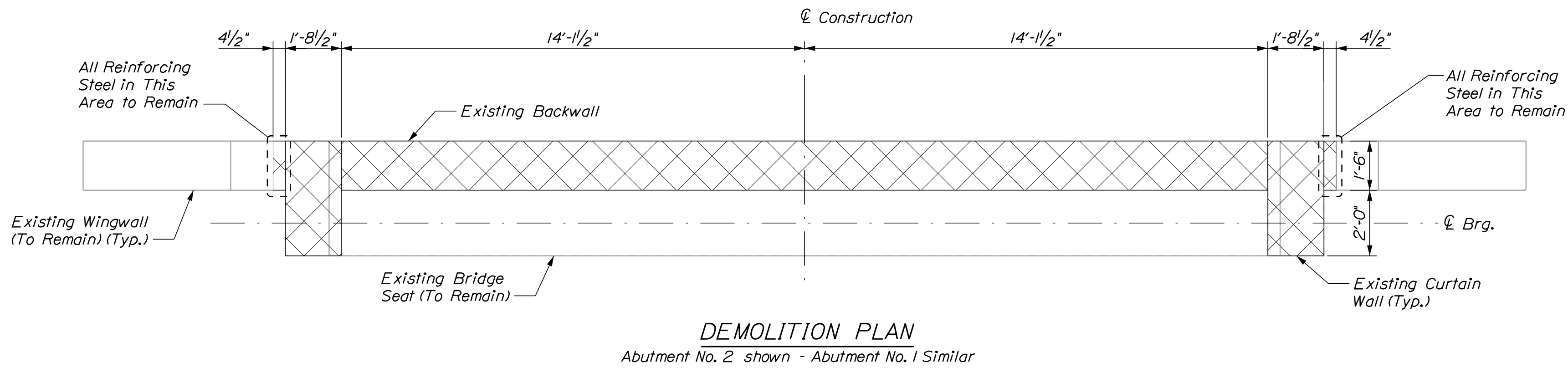
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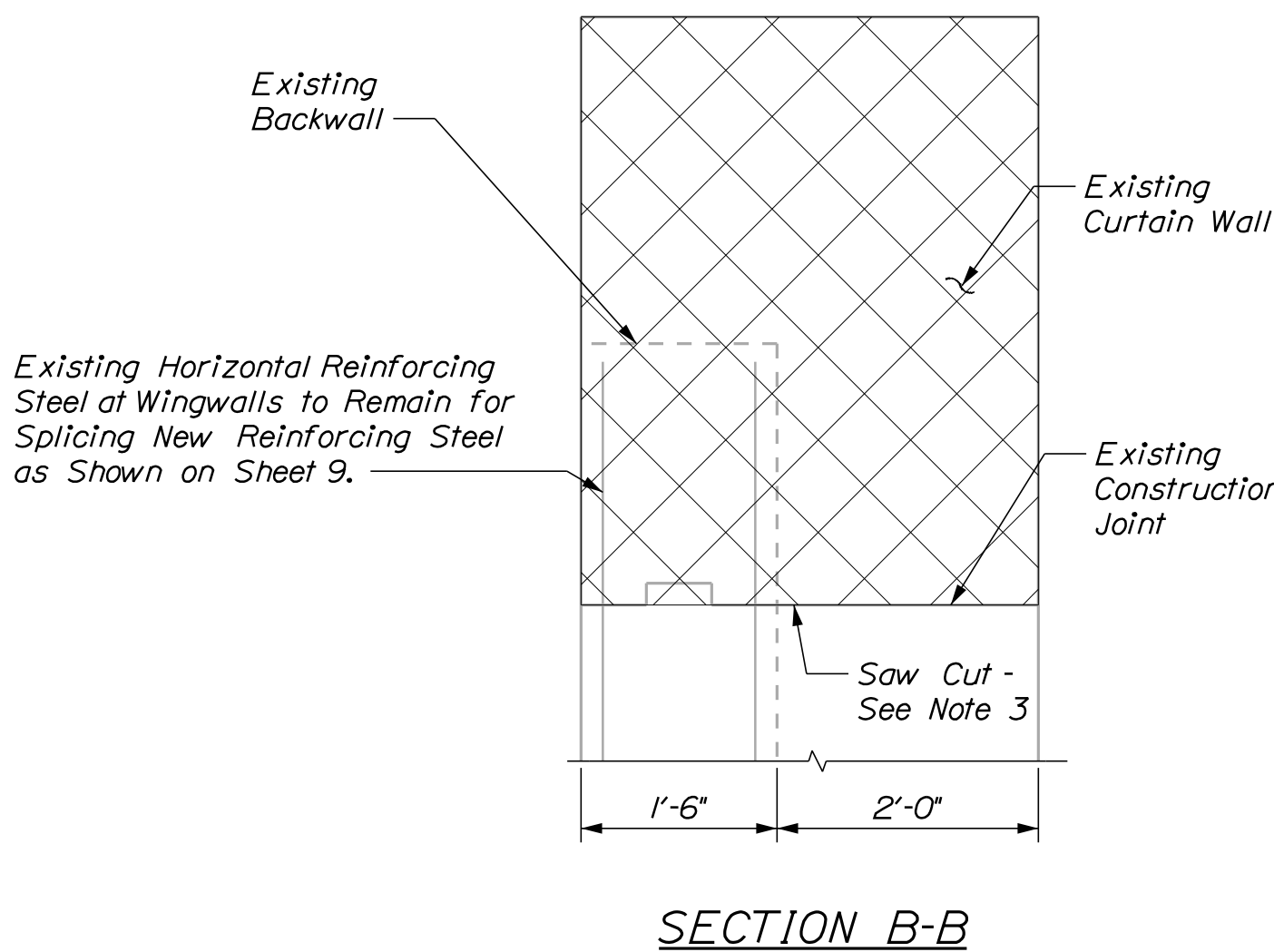
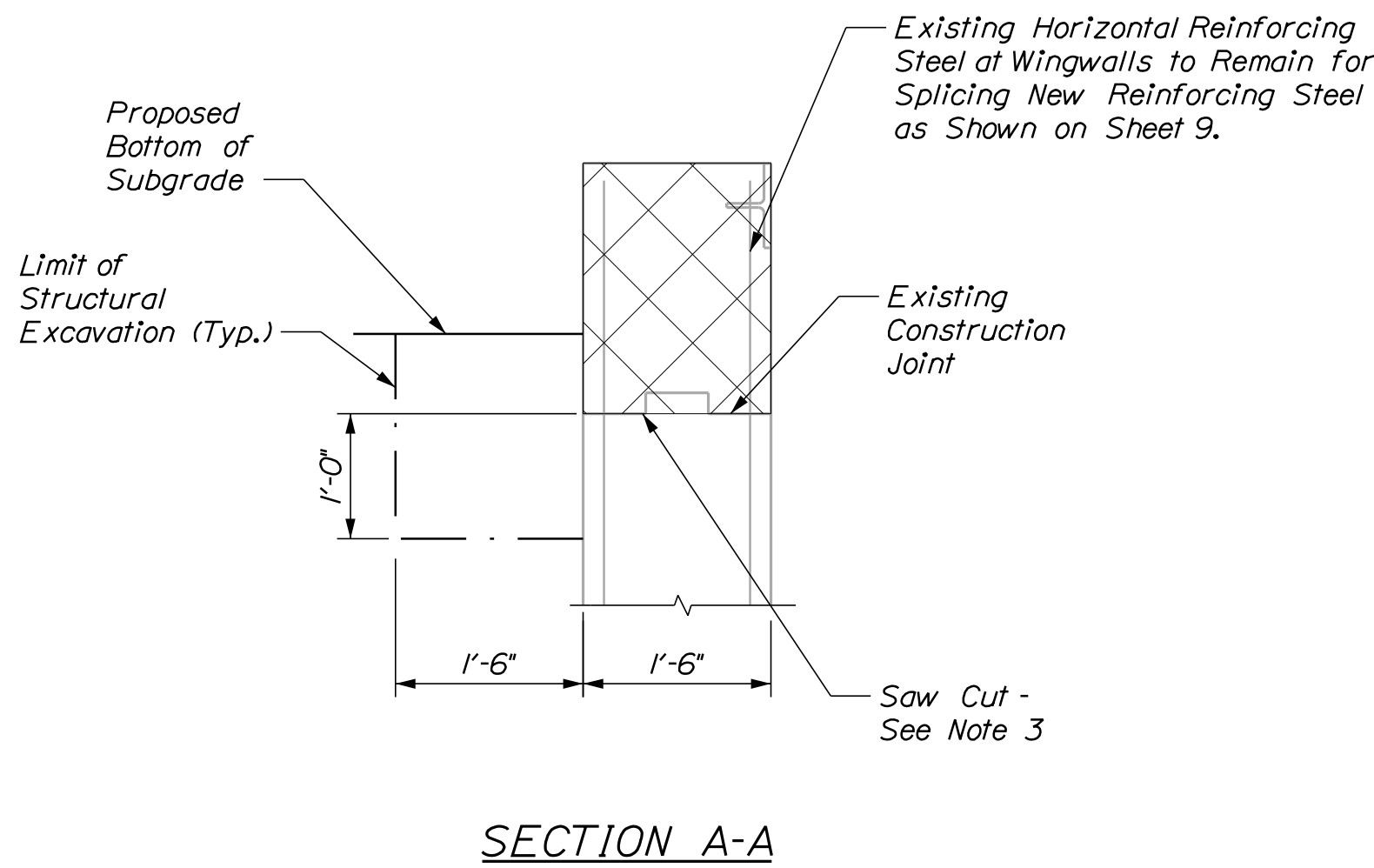
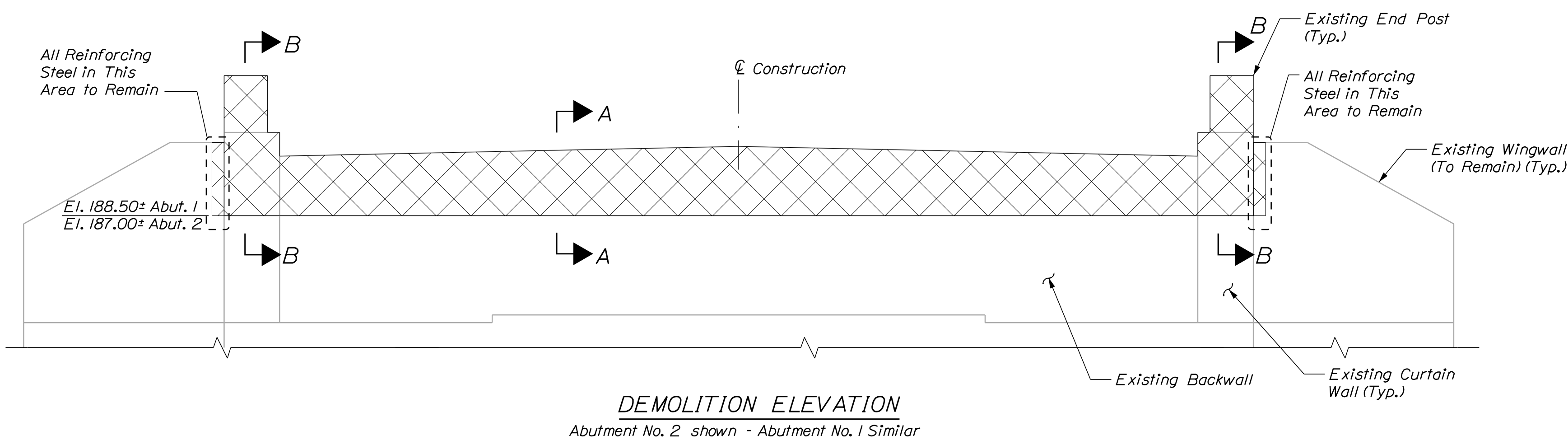


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2228200		WIN 22282.00		BRIDGE NO. 6221		BRIDGE PLANS	
HUBBARD BRIDGE LITTLE RIVER BERWICK		YORK COUNTY		CROSS SECTIONS		SHEET NUMBER 7 OF 14			
PROJ. MANAGER	M. KERSBERGEN	BY	T. WOLFEL	DATE	8/2019	SIGNATURE	P.E. NUMBER	DATE	
CHECKED	T. WOLFEL	DESIGNED	T. WOLFEL						
REVIEWED	K. WOOD	DESIGNED	K. WOOD						
DESIGNED		DESIGNED							
REVISIONS	1	REVISIONS	1						
REVISIONS	2	REVISIONS	2						
REVISIONS	3	REVISIONS	3						
REVISIONS	4	REVISIONS	4						
FIELD CHANGES									



DEMOLITION NOTES

1. The Contractor shall use care not to damage the existing reinforcing steel which is to remain. Any damaged reinforcing steel shall be replaced as directed by the Resident at no expense to the Department.
2. All dimensions based on or related to the existing bridge shall be verified in the field by the Contractor.
3. At all proposed construction joint locations other than existing construction joints, the Contractor shall saw cut to a minimum depth of 1' prior to removal of the concrete.
4. Limits of removal of existing bridge deck, associated bridge rail, and shear studs shall be from center of compression seal to center of compression seal. Payment shall be made under pay item 202.10 - Removing Existing Superstructure (Property of Contractor). Demolition of existing abutments to the limits shown on the plans including the existing backwalls, curtain walls and associated end posts shall be paid for under pay item 202.12 - Removing Existing Structural Concrete.



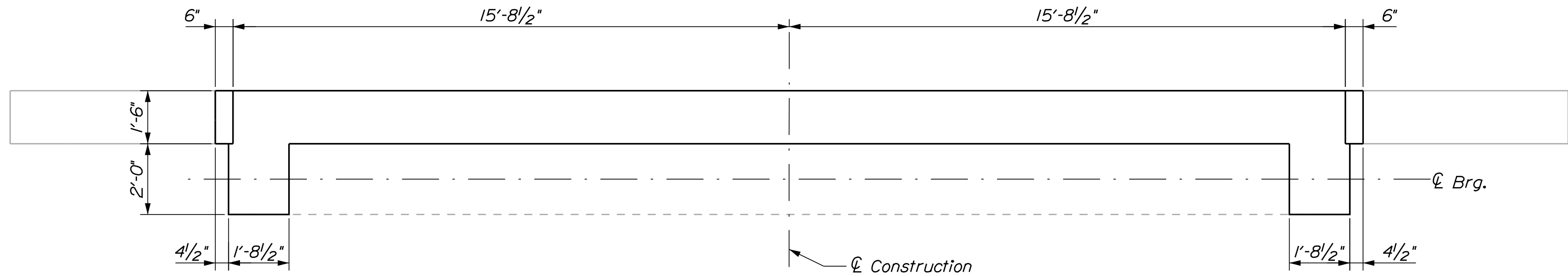
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HUBBARD BRIDGE		LITTLE RIVER		YORK COUNTY		BERWICK		ABUTMENT DEMOLITION		SHEET NUMBER		8	
PROJ. MANAGER		M. KERSBERGEN		BY		DATE		SIGNATURE		P.E. NUMBER		DATE	
DESIGN-DETAILED		T. TURCOTTE		ID		8/2019							
CHECKED-REVIEWED		K. WOOD		T. MARSHALL		8/2019							
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FIELD CHANGES													

Date:9/8/2019

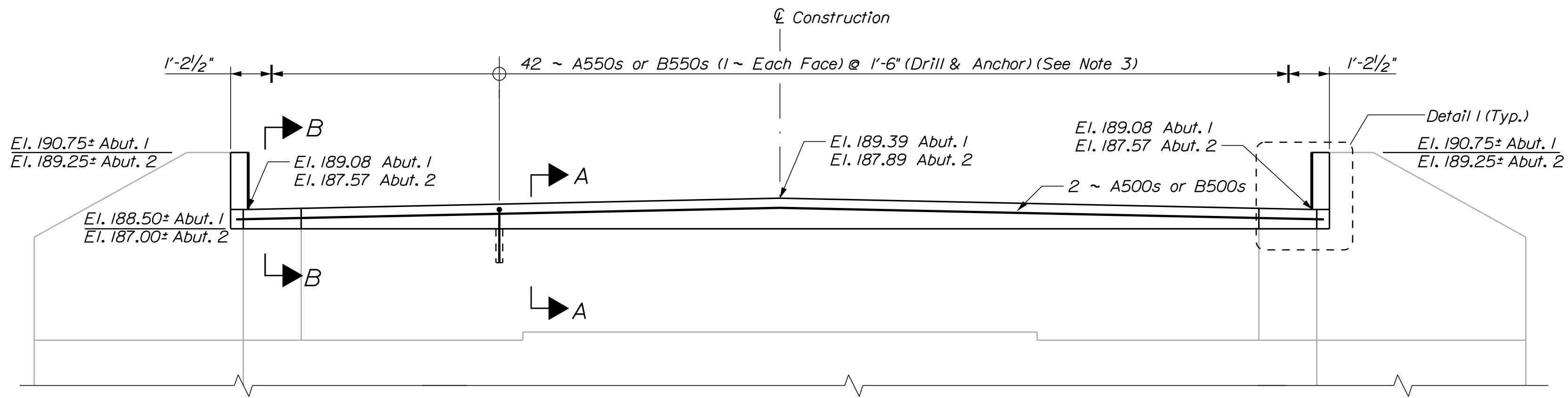
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Division: BRIDGE

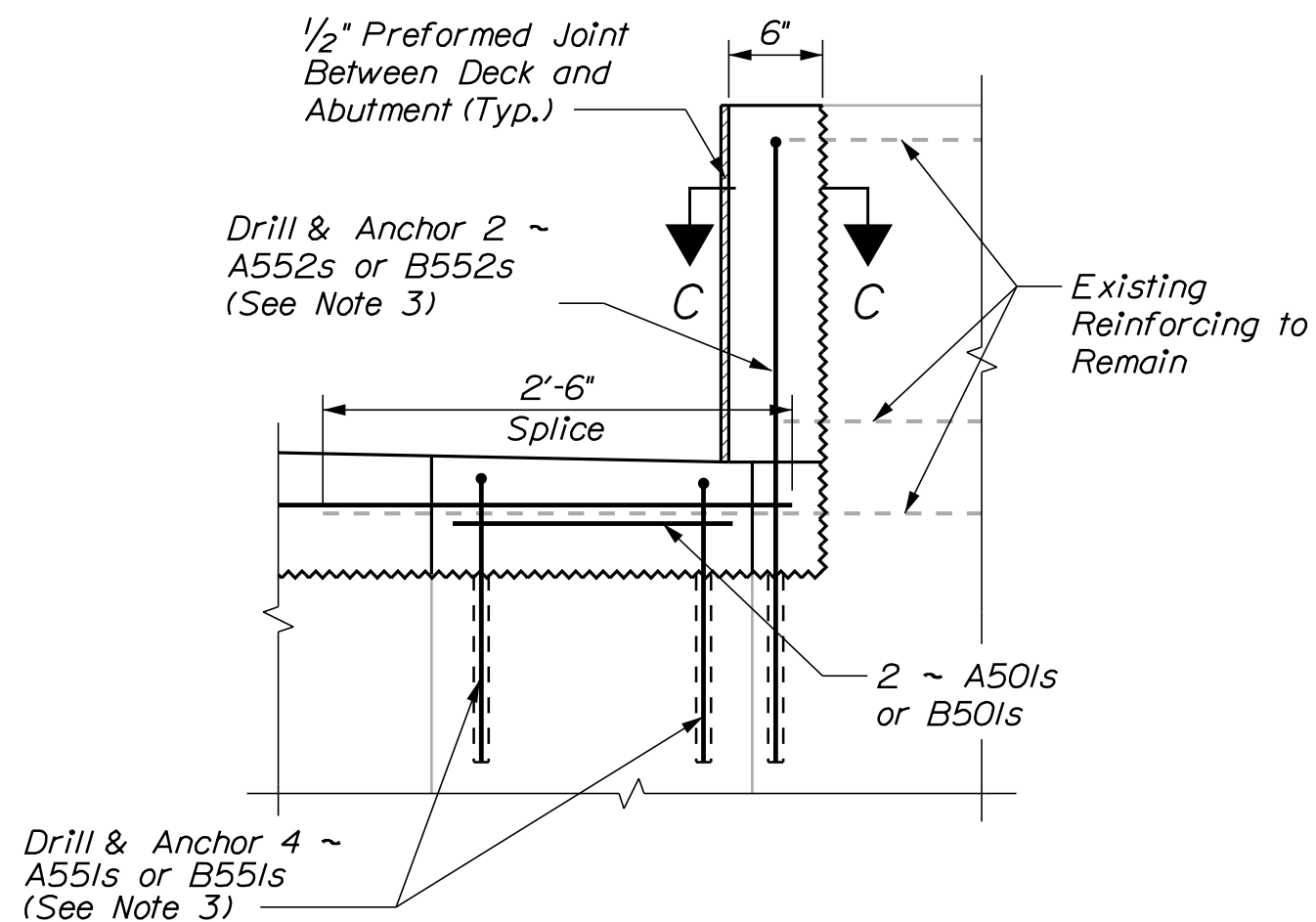
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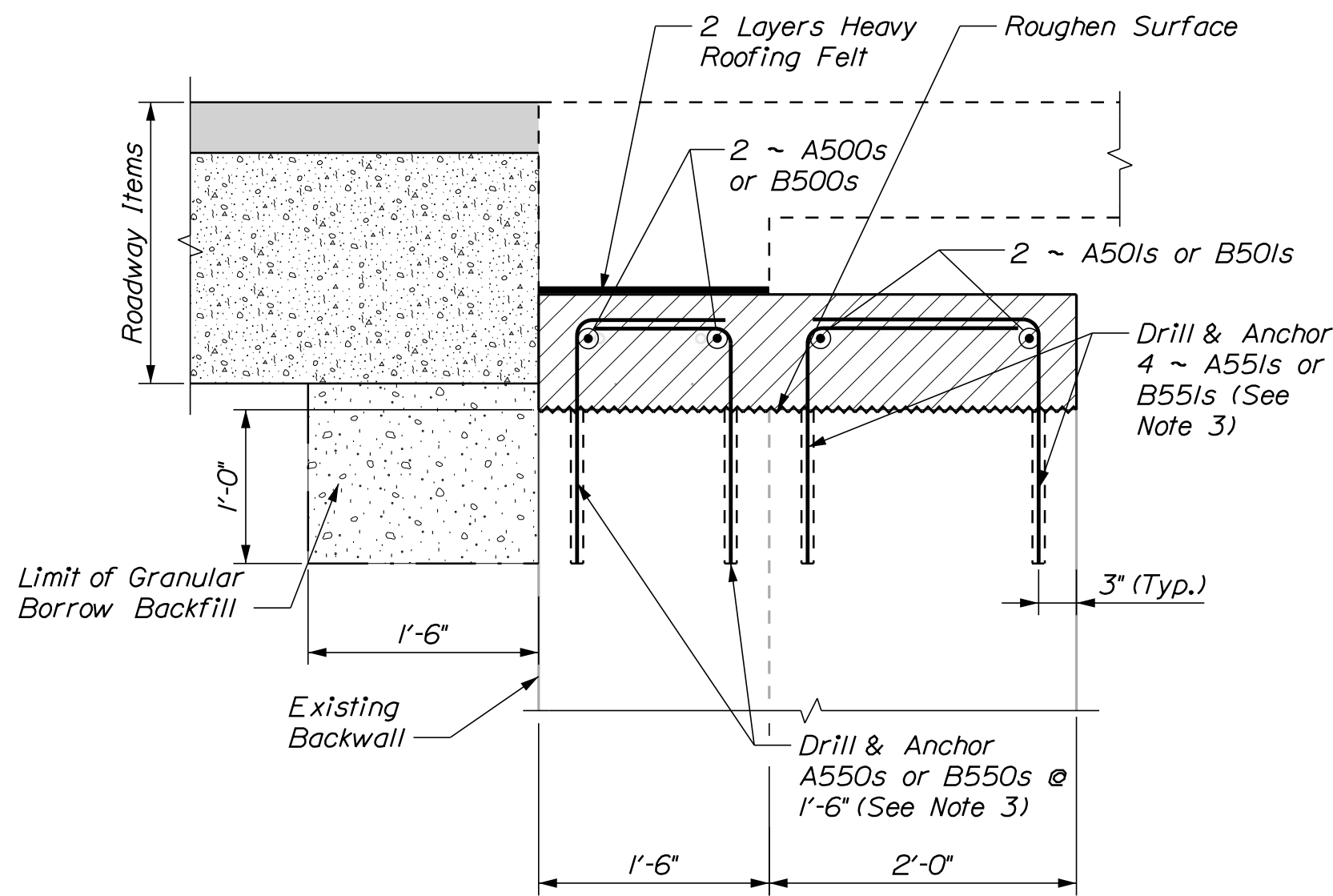
ABUTMENT PLAN
ABUTMENT 2 SHOWN - ABUTMENT 1 SIMILAR



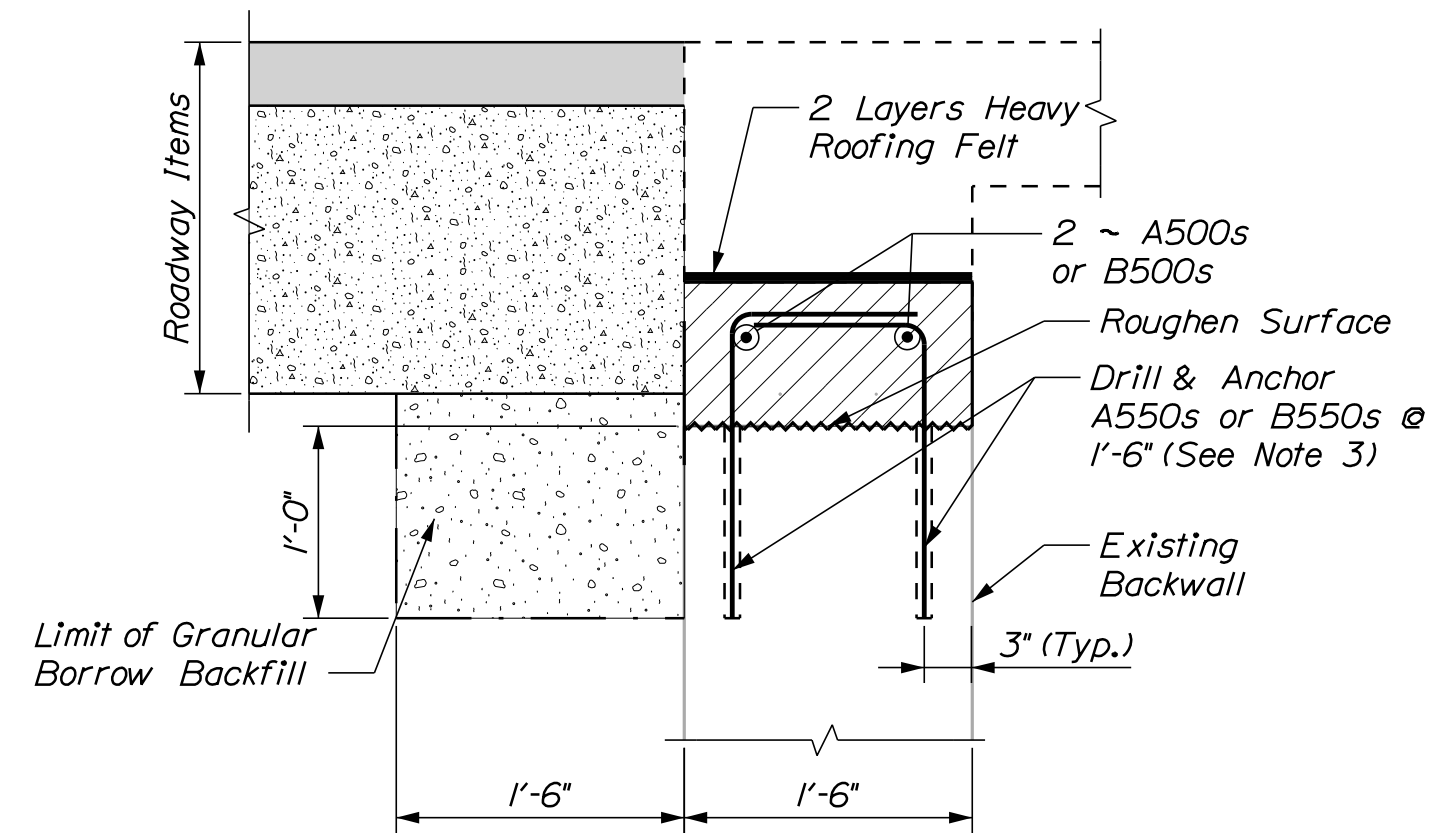
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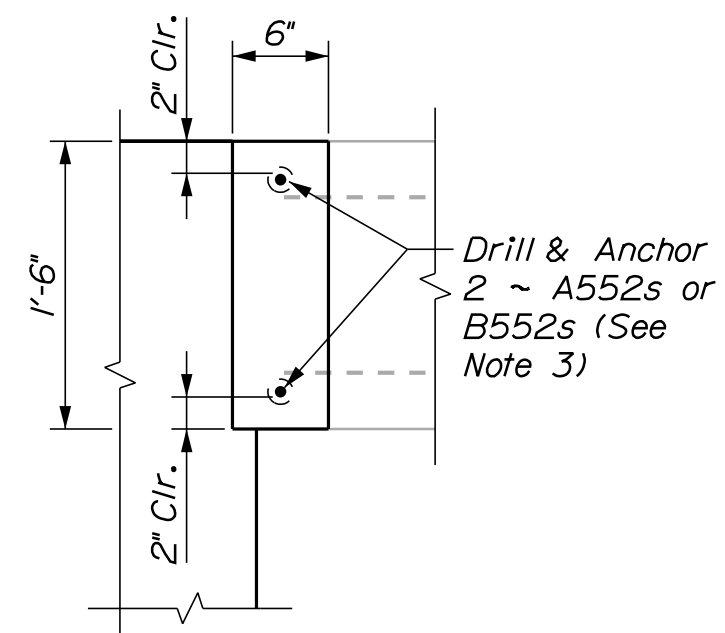
DETAIL I



SECTION B-B



SECTION A-A

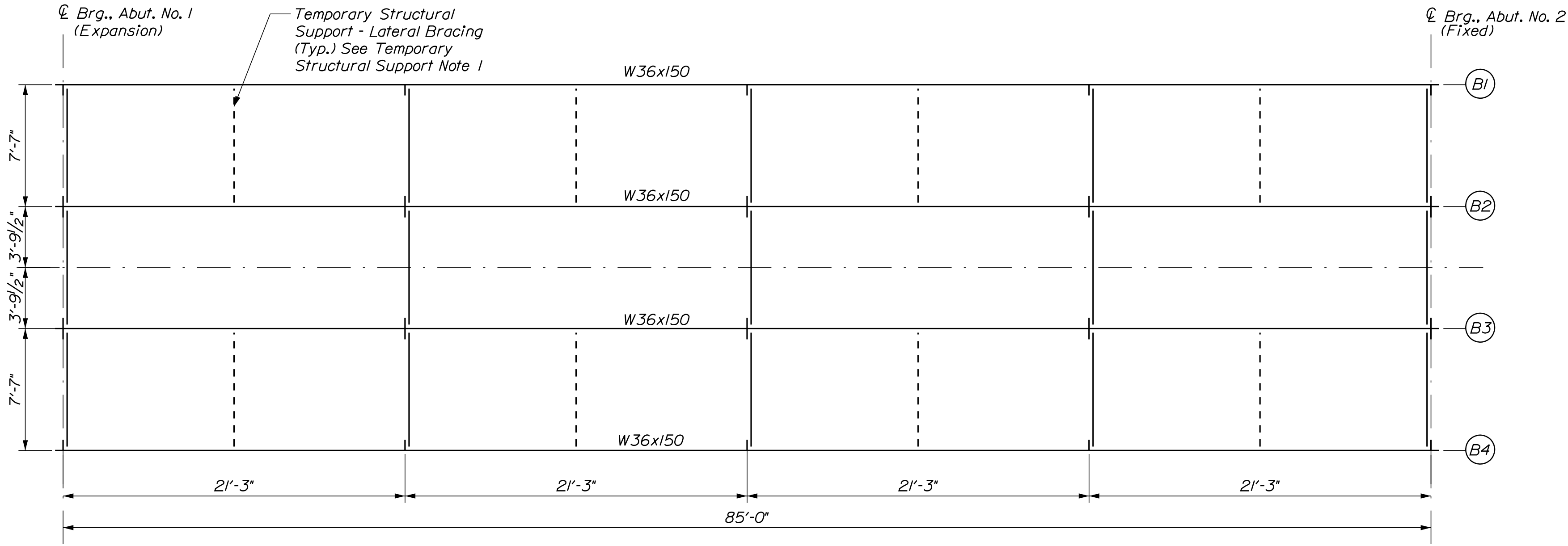
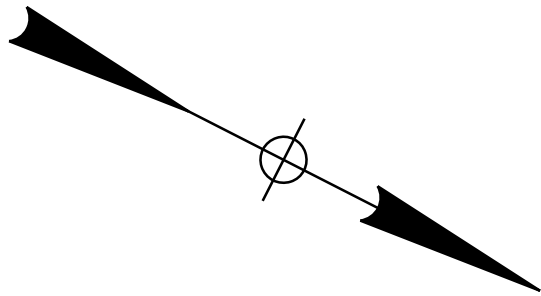


SECTION C-C

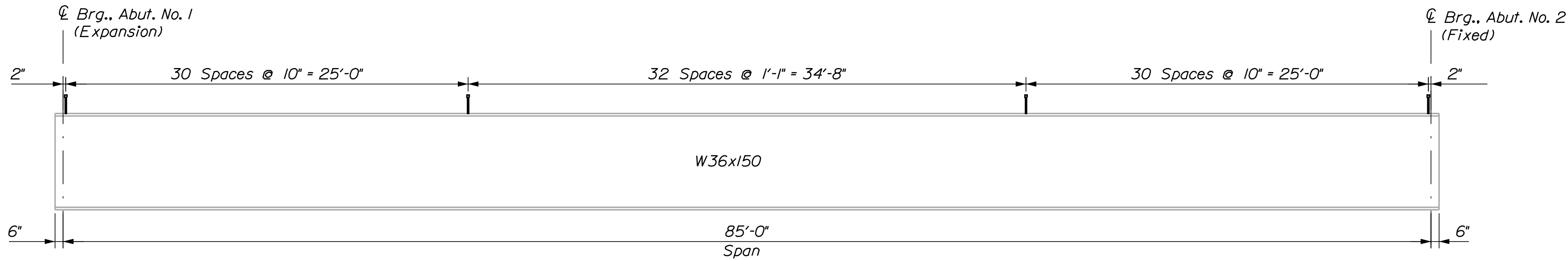
ABUTMENT NOTES

1. Reinforcing steel shall have 2 inches of cover unless otherwise noted.
2. All exposed edges of concrete shall have a 3/4" chamfer unless otherwise noted.
3. Where drilling and anchoring reinforcement is specified, the Contractor Shall use a material listed on the Maine Department of Transportation Qualified Products List of Concrete Adhesive Anchor Systems. The depth of embedment shall be sufficient to develop 125% of the yield strength of the bar per the manufacturer's recommendations or 12 inches, whichever is greater. Proposed anchoring material and embedment depth shall be submitted for approval. No separate payment will be made for drilling and anchoring of reinforcing steel, but shall be incidental to the related contract pay item.
4. Payment for Preformed Expansion Joint Filler shall be incidental to related contract items.

HUBBARD BRIDGE LITTLE RIVER BERWICK YORK COUNTY				PROJ. MANAGER M. KERSBERGEN BY T. TURCOTTE 8/2019		STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
ABUTMENT DETAILS				DESIGN-DETAILED T. TURCOTTE CHECKED-REVIEWED K. WOOD T. MARSHALL 8/2019		SIGNATURE	
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				DESIGN3-DETAILED3			
				REVISIONS 1		P.E. NUMBER	
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				REVISIONS 3			
				REVISIONS 4		DATE	
FIELD CHANGES						BRIDGE NO. 6221	
						WIN	
						22282.00	
						BRIDGE PLANS	



FRAMING PLAN



SHEAR CONNECTOR LAYOUT ~ INTERIOR & EXTERIOR BEAMS
Double Studs ~ 186 Studs per Beam Line (4) = 744 Studs

BOTTOM OF SLAB ELEVATIONS (IN FEET)											
		Span No. 1 = 85 FT									
Beam	℄ Brg., Abut. No. 1	8.5'	17.0'	25.5'	34.0'	42.5'	51.0'	59.5'	68.0'	76.5'	℄ Brg., Abut. No. 2
1	189.64	189.59	189.53	189.45	189.35	189.22	189.06	188.88	188.67	188.44	188.19
2	189.79	189.73	189.67	189.58	189.48	189.35	189.19	189.01	188.80	188.58	188.34
3	189.79	189.73	189.67	189.58	189.48	189.35	189.19	189.01	188.80	188.58	188.34
4	189.64	189.59	189.53	189.45	189.35	189.22	189.06	188.88	188.67	188.44	188.19

SHEAR CONNECTOR NOTES

1. Prior to installing the proposed shear studs, 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 studs shall be incidental to related contract items.

2. Existing shear connectors shall be removed such that they project one-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 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.

3. The minimum shear stud length shall be 7 inches. See Standard Detail 505(01) for more information.

TEMPORARY STRUCTURAL SUPPORT NOTES

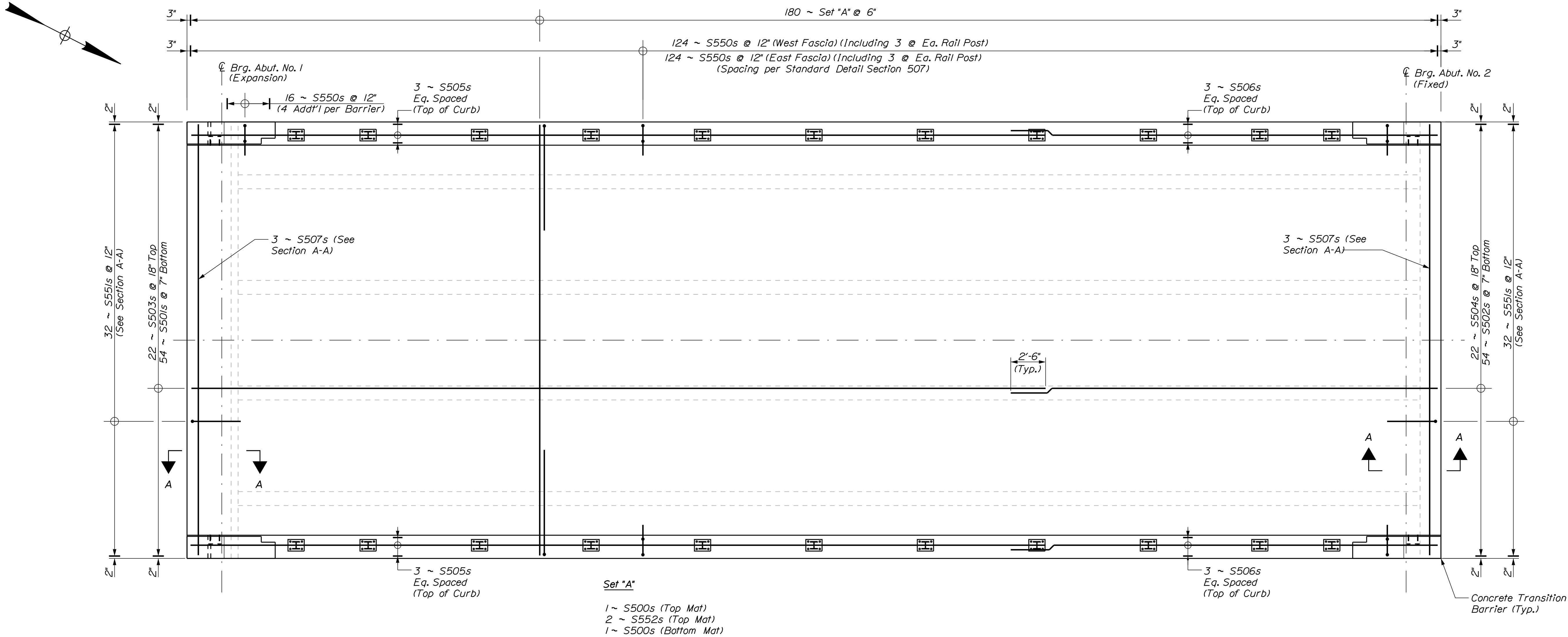
1. If required, Temporary Structural Support - Lateral Bracing for the exterior girders is to be designed by the Contractor. The layout shown on the framing plan is conceptual. The actual layout and design of the lateral bracing shall be per Special Provision 524.301 - Temporary Structural Support - Lateral Bracing.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2228200		BRIDGE NO. 6221		BRIDGE PLANS	
	WIN		22282.00			
HUBBARD BRIDGE LITTLE RIVER YORK COUNTY BERWICK		SIGNATURE		DATE	FRAMING PLAN	
		P.E. NUMBER		DATE		
PROJ. MANAGER M. KERSBERGEN		BY	DATE	SHEET NUMBER		
DESIGN-DETAILED J. TURCOTTE		D. BLONDEAU	8/2019	10		
CHECKED-REVIEWED K. WOOD		T. MARSHALL	8/2019			
DESIGNS-DETAILED						
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FIELD CHANGES						



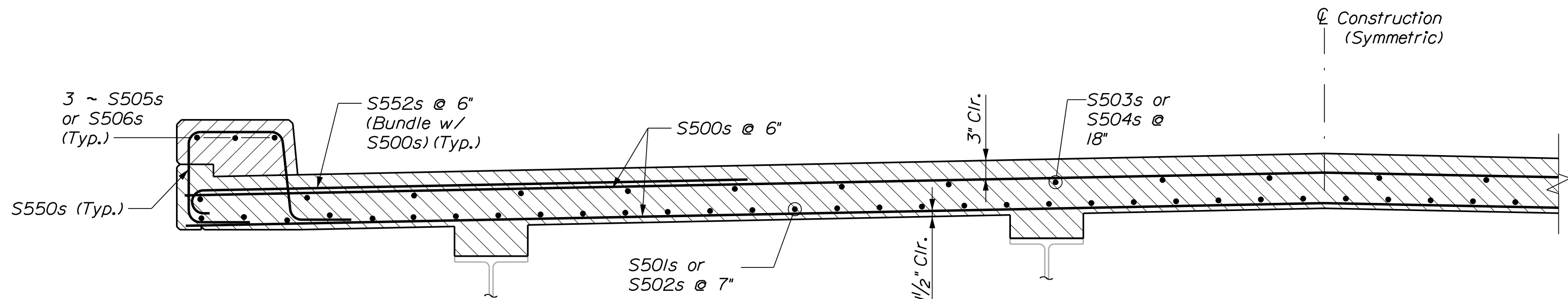
1. The theoretical blocking used for design of the structure is 5 inches at the centerline of bearing of the abutments for the exterior beams and 4 inches for the interior beams. Refer to Standard Detail 502(03) for blocking details.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Form a one inch V-groove on the fascia's at the horizontal joint between the curb and slab.
4. The superstructure slab concrete shall be placed continuously and shall be kept plastic until the entire placement has been made.
5. Precast Deck Panels will not be permitted as a substitute to the cast-in-place concrete.
6. Provide 4 additional stirrups in the curbs at each Transition Barrier location. The Contractor shall install Transition Barrier vertical closed stirrups, as shown in Standard Details Section 526, prior to the placement of the curb concrete. All reinforcing steel in the Transition Barrier shall be stainless steel. Bars TB651s and TB652s detailed in Standard Detail 526(37) shall be reduced in height by 3-inches to account for the difference in curb height between a bare deck and one with an HMA overlay. The corrected dimensions are provided on the Reinforcing Steel Schedule sheet.
7. The Contractor shall stagger splice locations of longitudinal bars.
8. Heavy roofing felt on top of the backwall shall not be paid for directly. Payment shall be considered incidental to related contract items.
9. Anchor rods for the steel bridge rail posts shall be shortened by 1" to provide additional clearance between the top of deck and bottom of anchor rod. Payment shall be considered incidental to related contract items.

SHEET NUMBER 11 OF 14 HUBBARD BRIDGE LITTLE RIVER BERWICK YORK COUNTY	PROJ. MANAGER M. KERSBERGEN	BY D. BLODFAU	DATE 8/2019	STATE OF MAINE DEPARTMENT OF TRANSPORTATION 2228200 BRIDGE NO. 6221 WIN 22282.00 BRIDGE PLANS
	DESIGN-DETAILED T. TURCOTTE	DESIGN-DETAILED T. TURCOTTE	DATE 8/2019	
	CHECKED-REVIEWER K. WOOD	CHECKED-REVIEWER K. WOOD	SIGNATURE	
	DESIGN-2-DETAILED2	DESIGN-2-DETAILED2	P.E. NUMBER	
	DESIGN-3-DETAILED3	DESIGN-3-DETAILED3	DATE	
REVISIONS 1	REVISIONS 1	REVISIONS 1	REVISIONS 1	REVISIONS 1
REVISIONS 2	REVISIONS 2	REVISIONS 2	REVISIONS 2	REVISIONS 2
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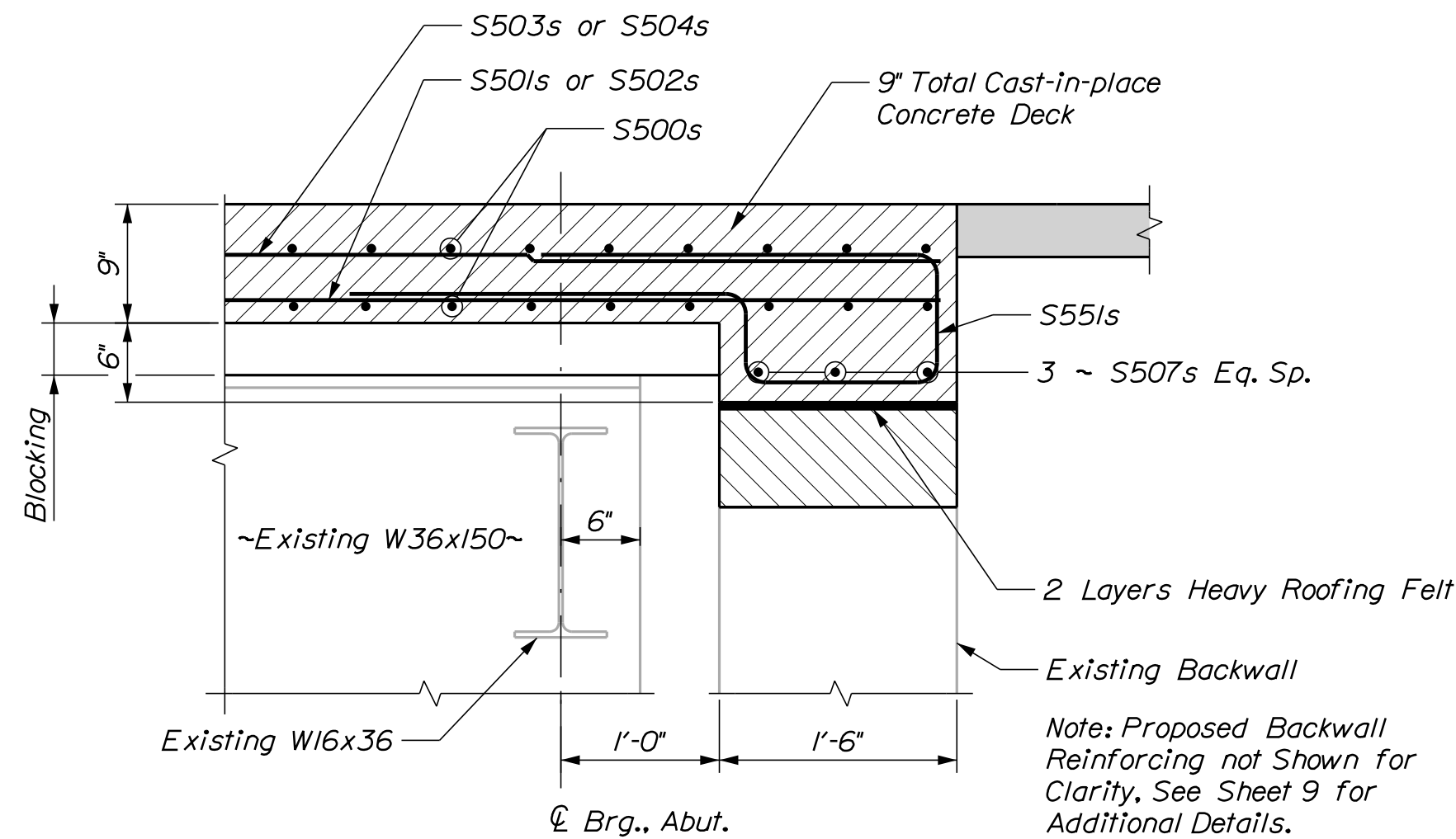


Set "A"
1 ~ S500s (Top Mat)
2 ~ S552s (Top Mat)
1 ~ S500s (Bottom Mat)

SUPERSTRUCTURE REINFORCING PLAN



PART TRANSVERSE REINFORCING SECTION



SECTION A-A

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2228200		BRIDGE NO. 6221		BRIDGE PLANS	
	WIN		22282.00			
HUBBARD BRIDGE LITTLE RIVER YORK COUNTY BERWICK	PROJ. MANAGER	M. KERSBEGEN	BY	T. TURCOTTE	DATE	8/2019
	CHECKED-REVIEWED	K. WOOD	T. MARSHALL	SIGNATURE		
	DESIGN-DETAILED			P.E. NUMBER		
	DESIGN-DETAILED			DATE		
	REVISIONS 1					
SUPERSTRUCTURE REINFORCING		SHEET NUMBER		12		
				OF 14		



ROAD
CLOSED
2 MILE

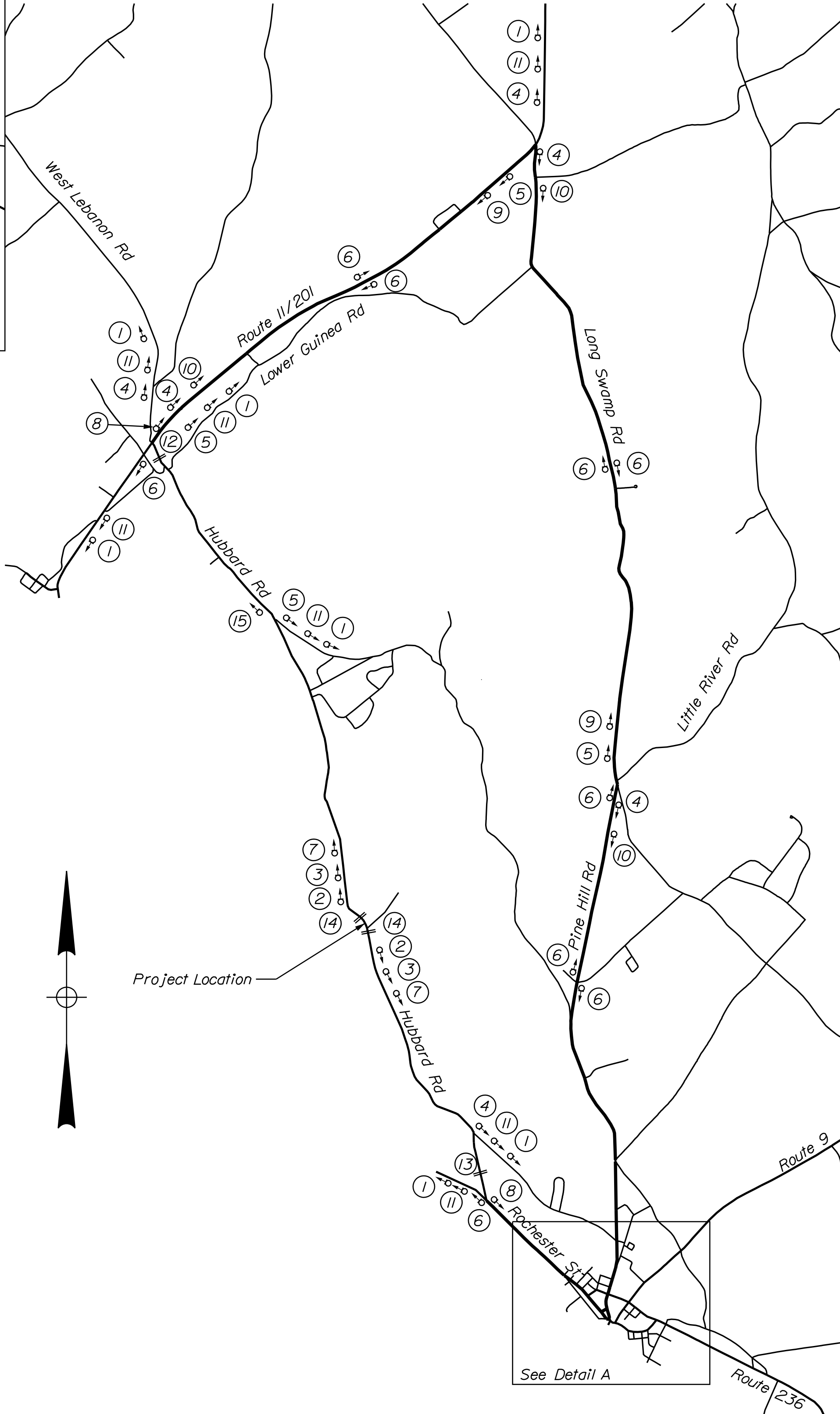
W20-3



Project Location —

See Detail A

5. Concrete barrier shall have retro-reflectivity immediately in front of or attached to barrier.

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