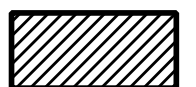
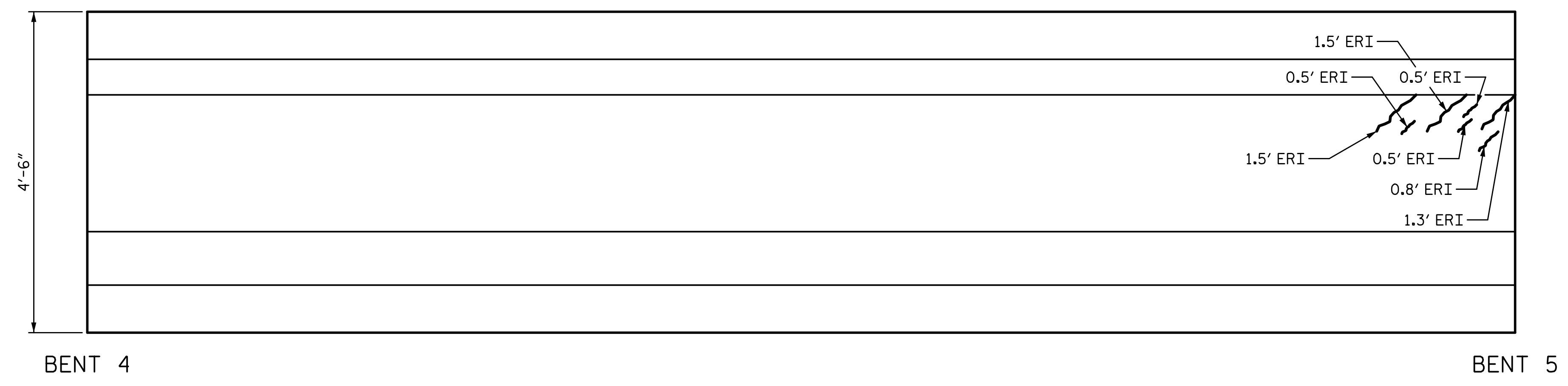
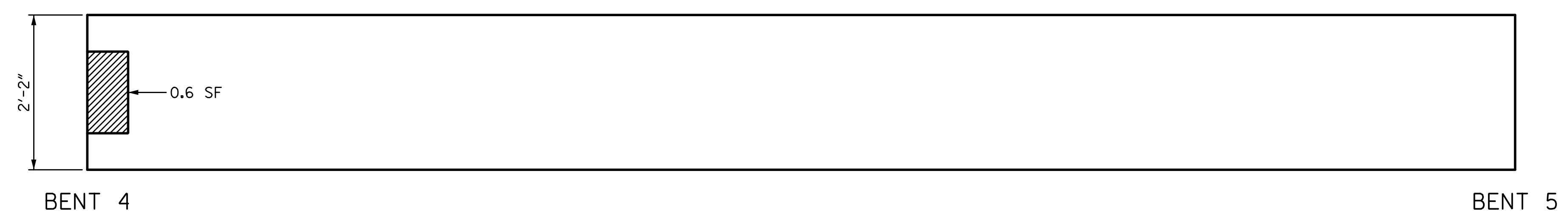


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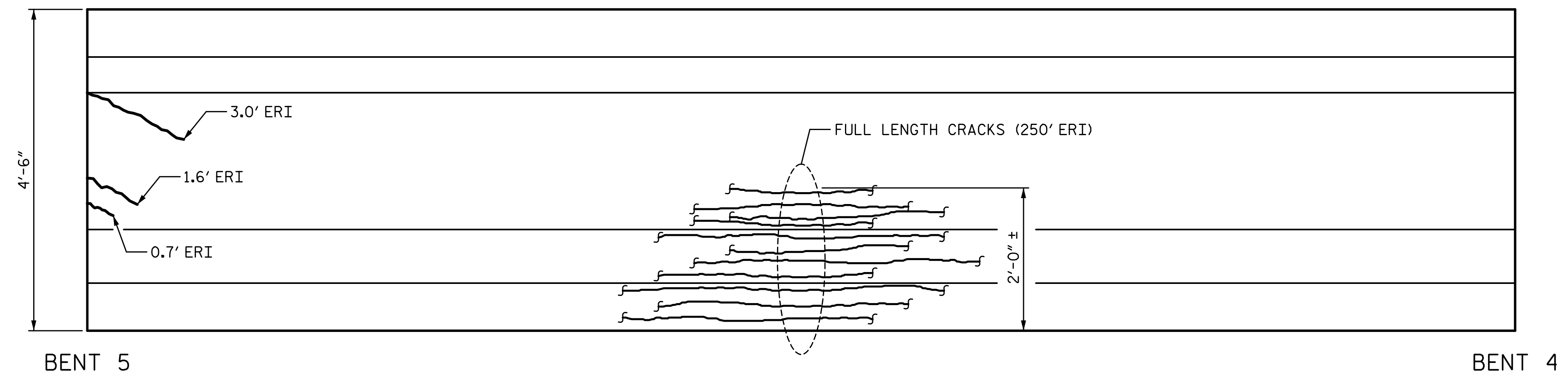
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 5 GRD. 1	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.6	2.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		250.0			

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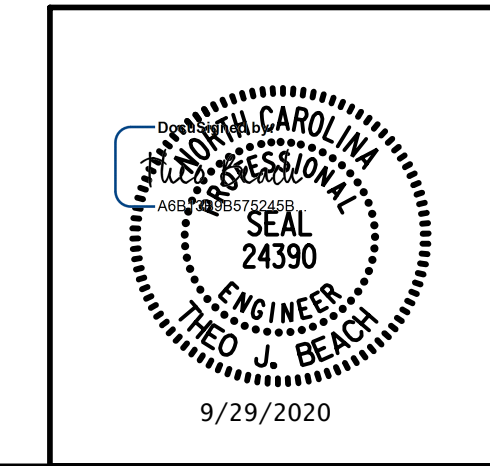
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 5
 GIRDER 1

PLANS PREPARED BY:

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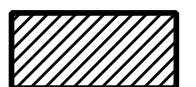


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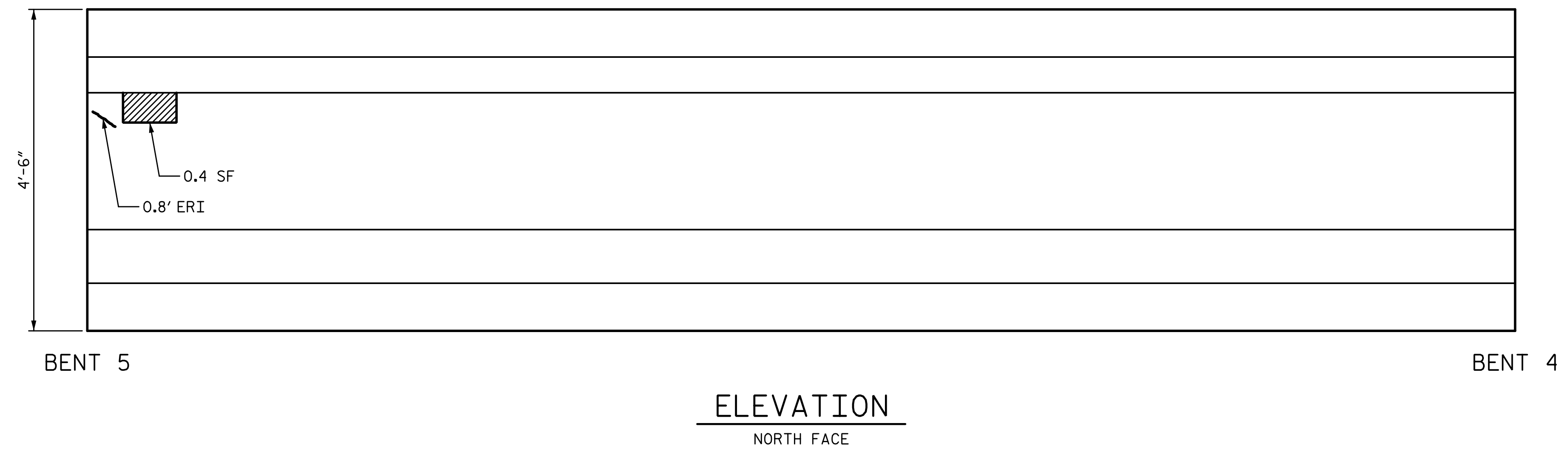
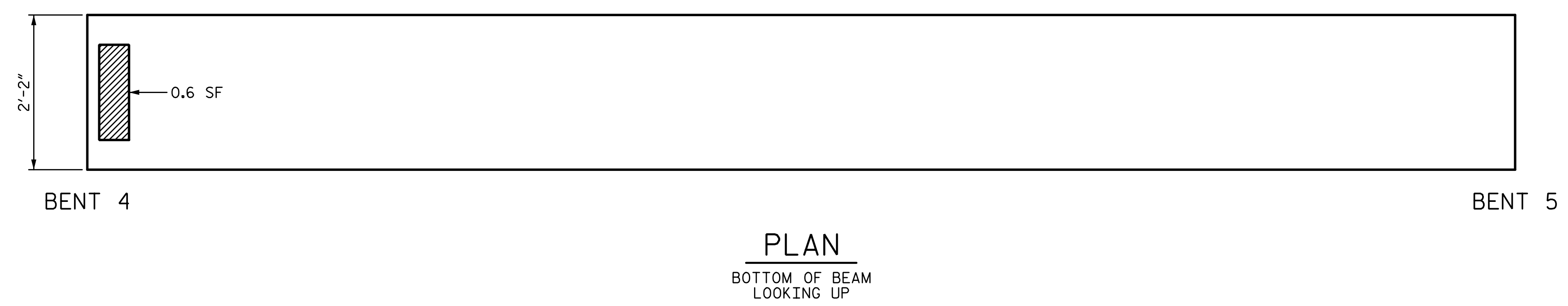
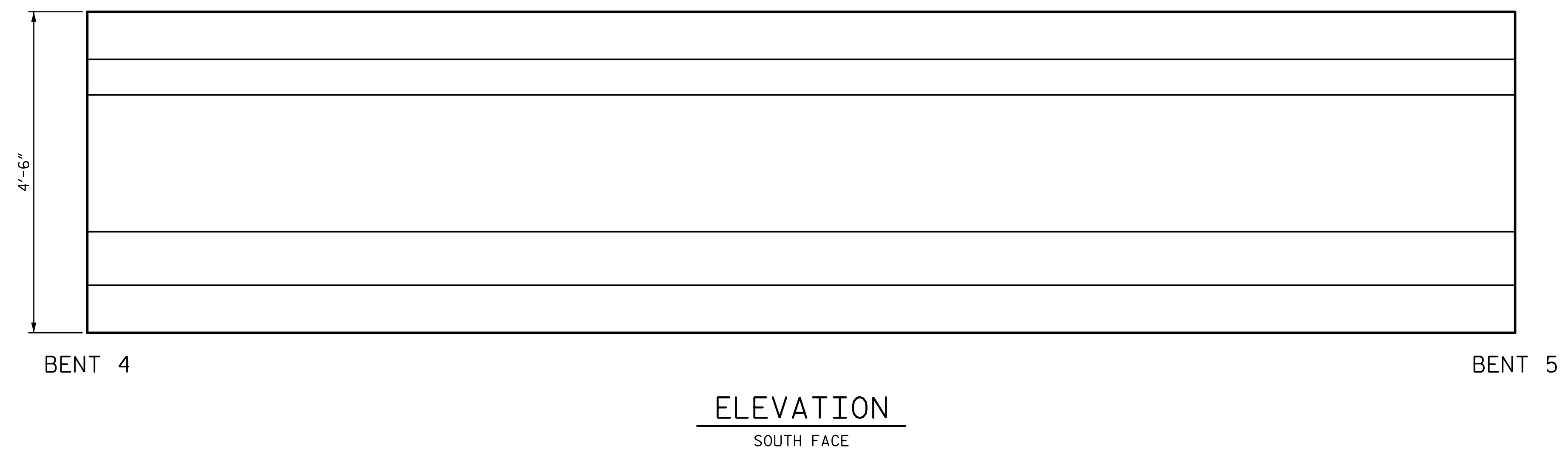
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-53
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 5 GRD. 2	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.0	0.2			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.8			



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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

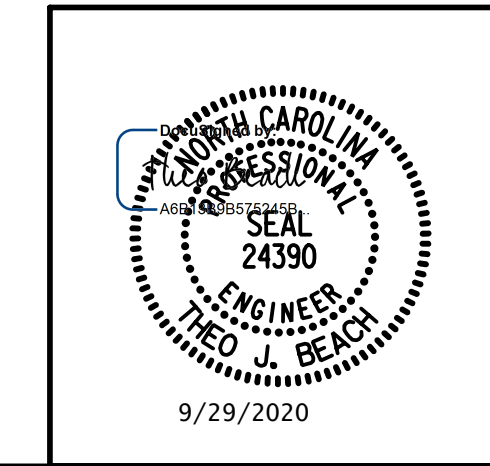
SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 5
 GIRDER 2**

PLANS PREPARED BY:

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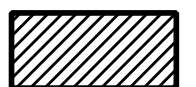


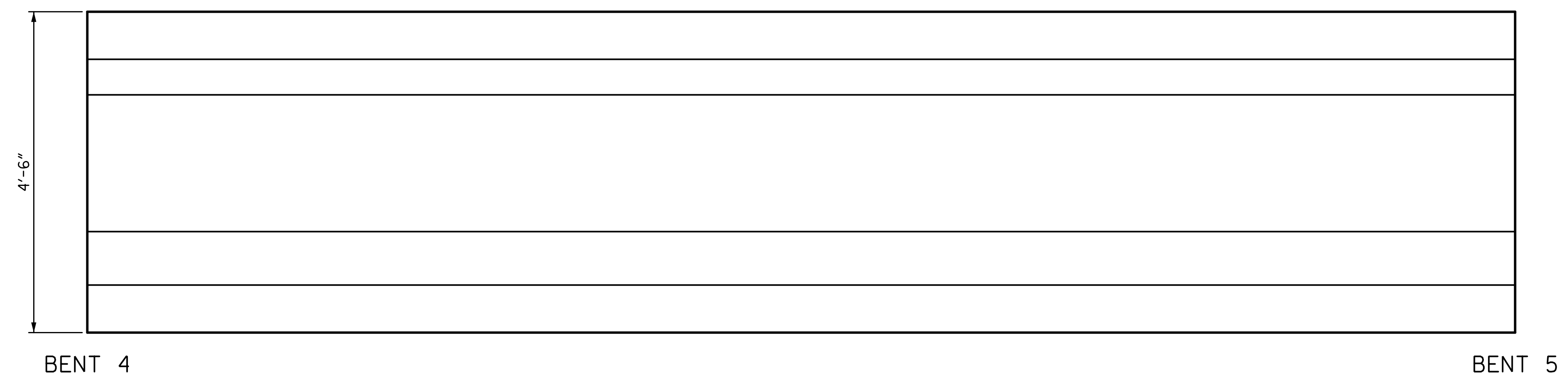
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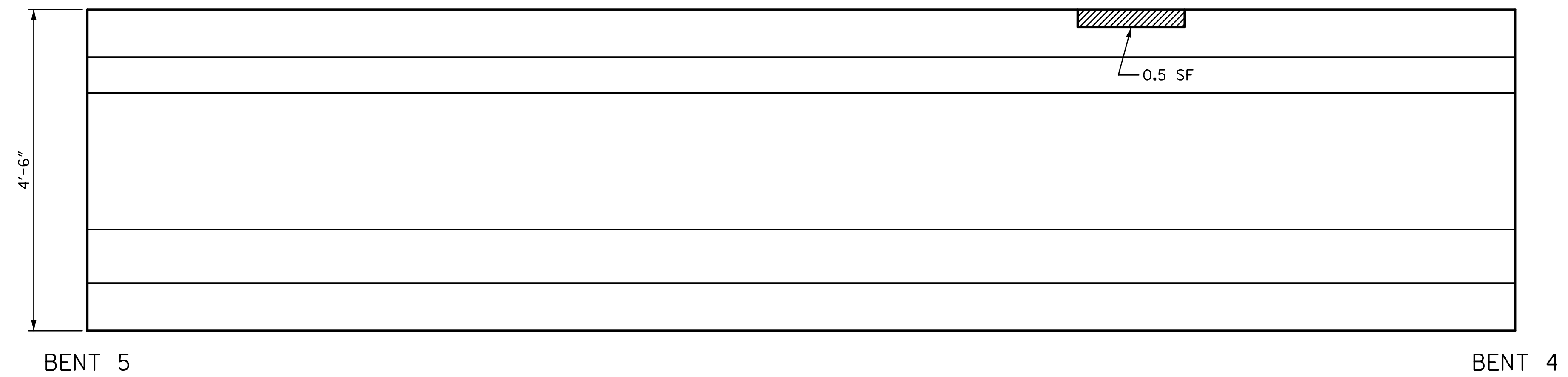
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 5 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.5	0.1			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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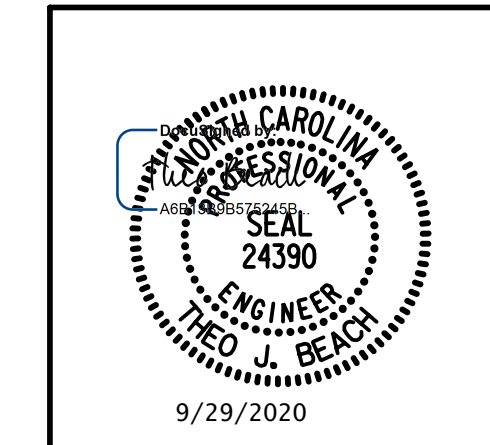
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 5
 GIRDER 3

PLANS PREPARED BY:

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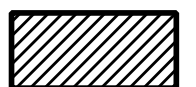


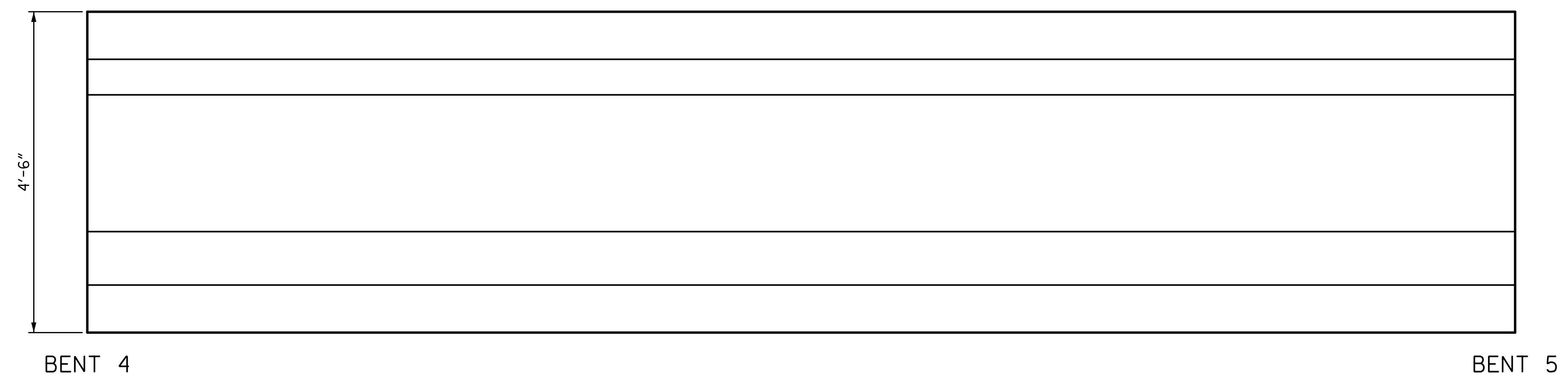
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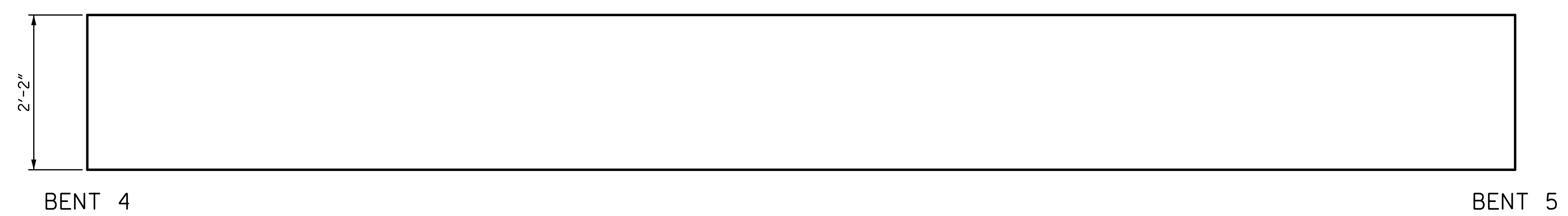
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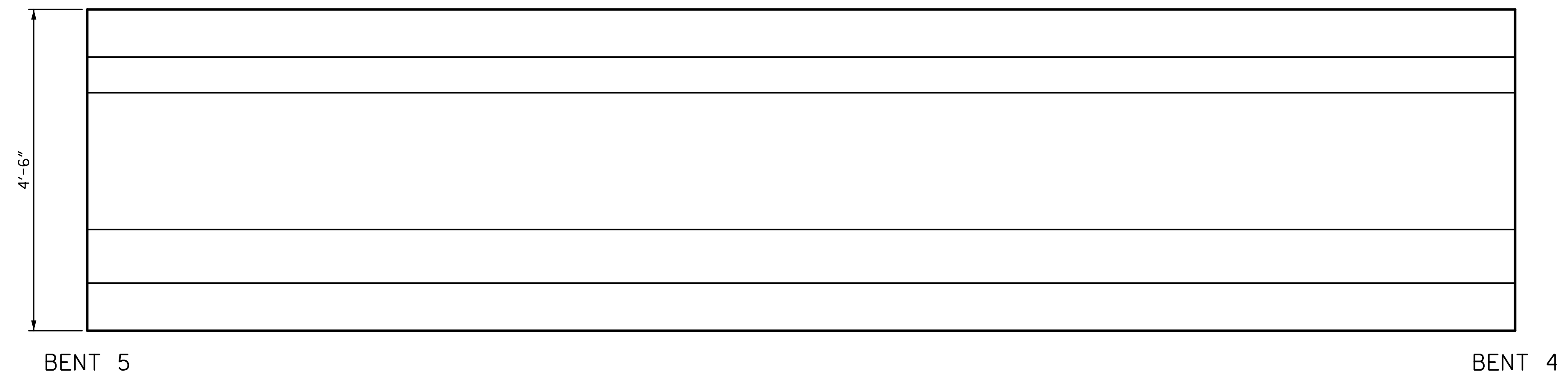
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 5 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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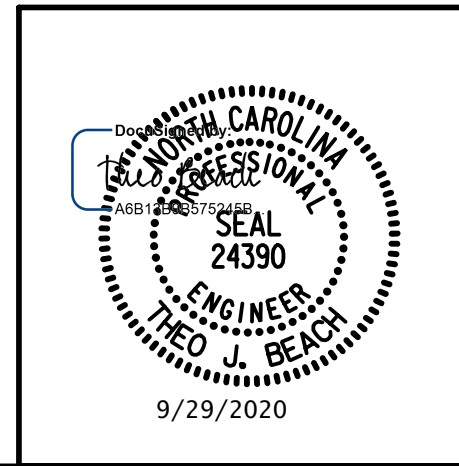
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 5
 GIRDER 4

PLANS PREPARED BY:

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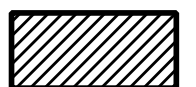


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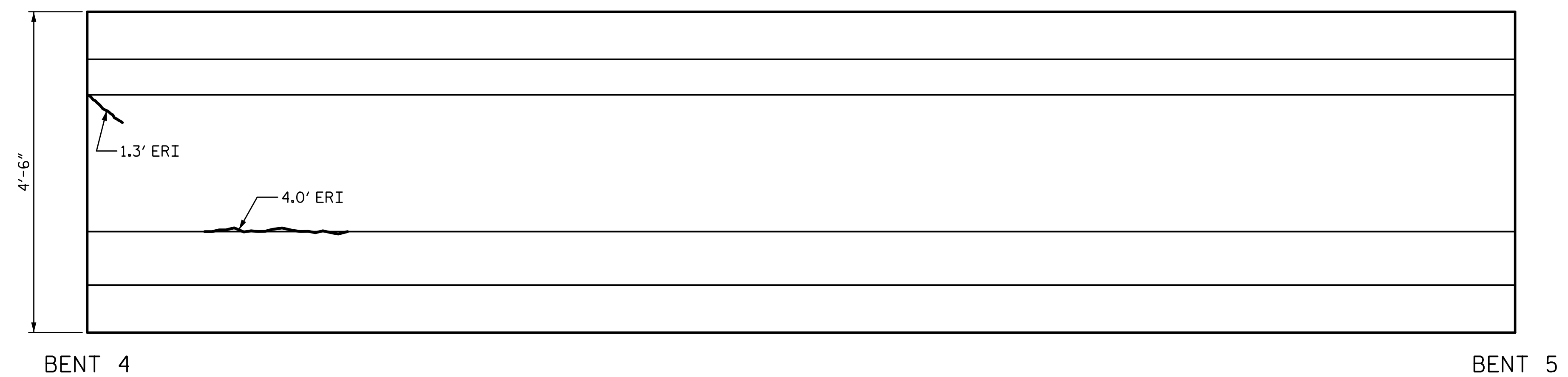
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

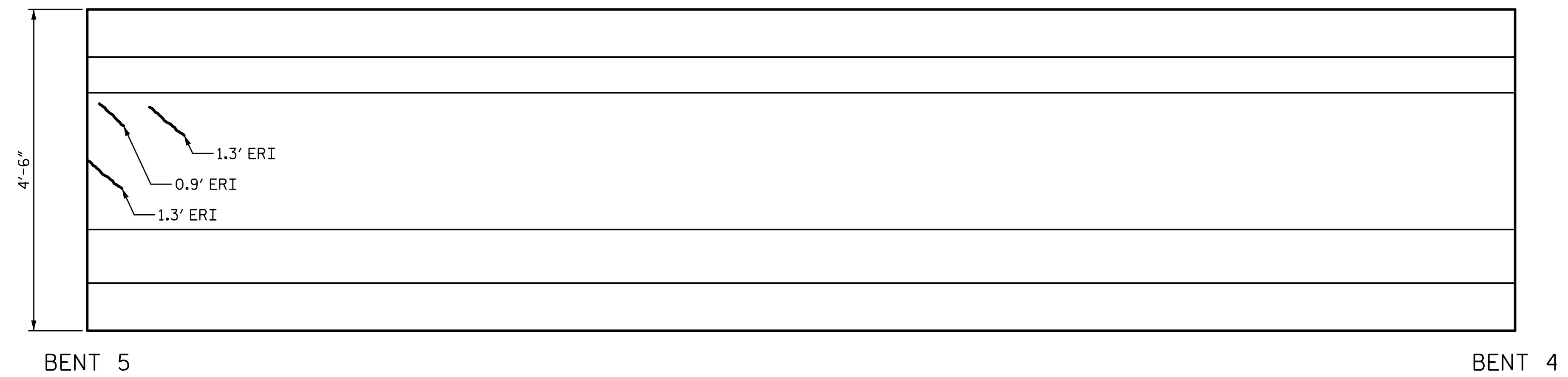
REPAIR QUANTITY TABLE					
REPAIRS SPAN 5 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.9	0.2			
EPOXY RESIN INJECTION			LF		LF
GIRDER		8.8			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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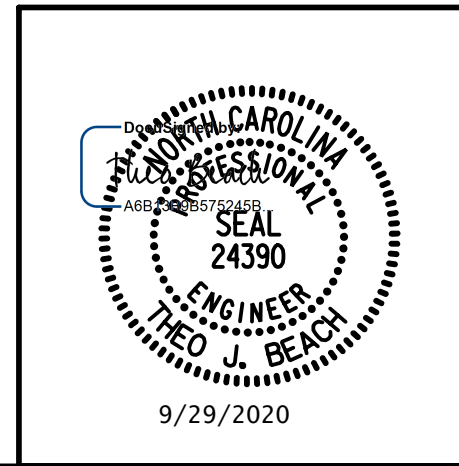
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
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SHEET 5 OF 5

STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION
 SPAN 5
 GIRDER 5

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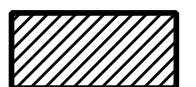


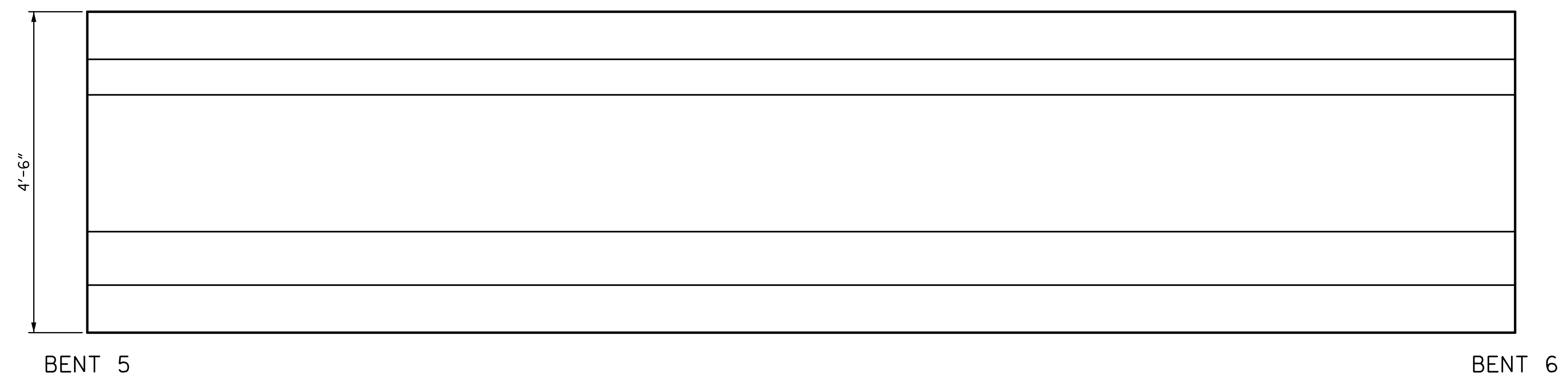
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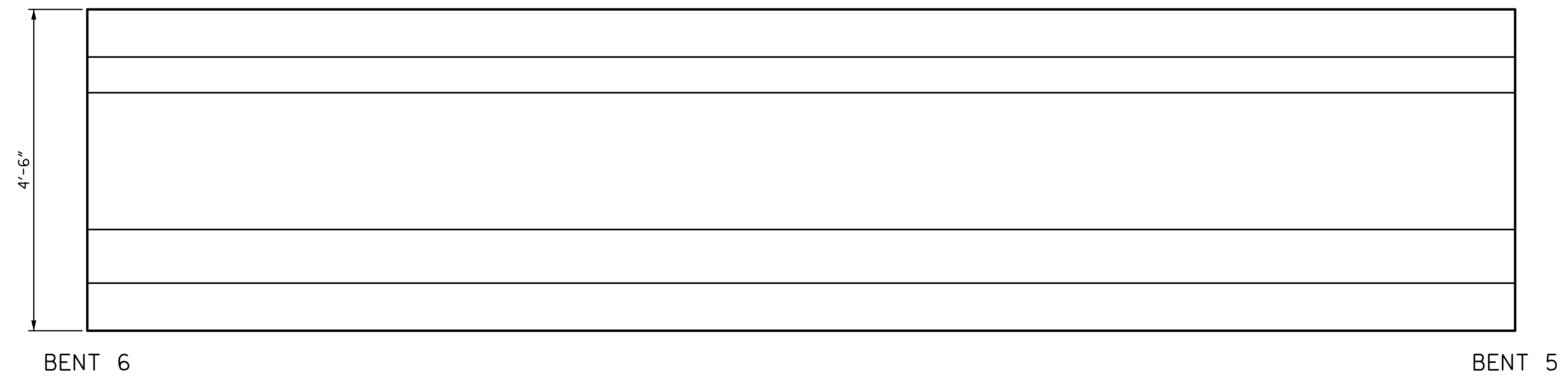
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 6 GRD. 1	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

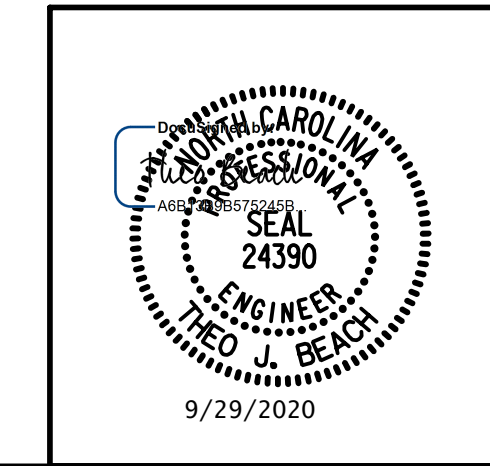
SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 6
 GIRDER 1**

PLANS PREPARED BY:

 SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
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 Cary, NC 27518
 (919) 852-0468
 (919) 852-0538 (Fax)
 www.simpsonengr.com
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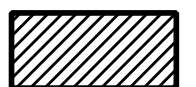


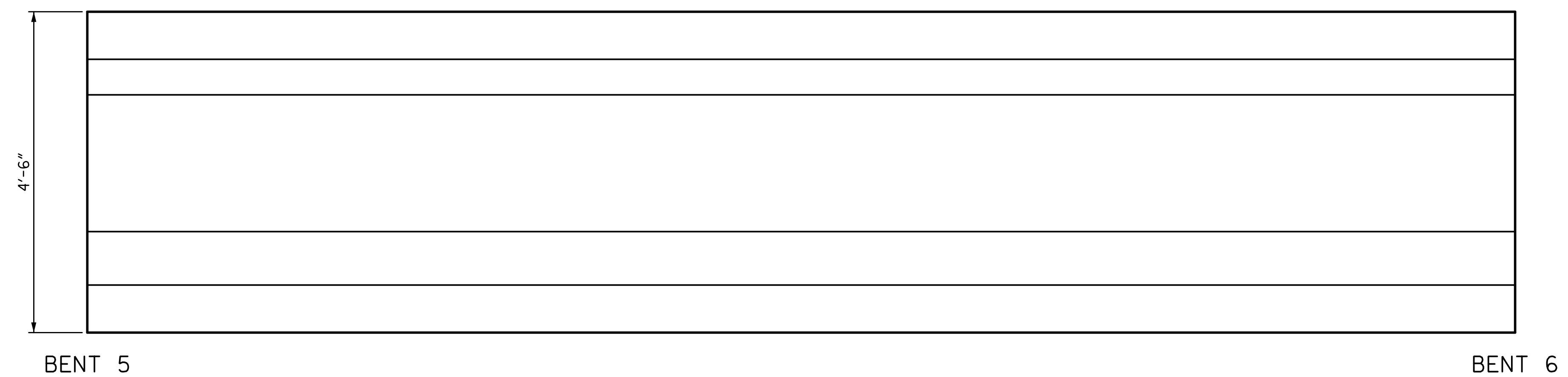
DRAWN BY: <u>T. BANKOVICH</u>	DATE: <u>9-20</u>
CHECKED BY: <u>T.J. BEACH</u>	DATE: <u>9-20</u>
DESIGN ENGINEER OF RECORD: <u>T.J. BEACH</u>	DATE: <u>9-20</u>

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2			4			163

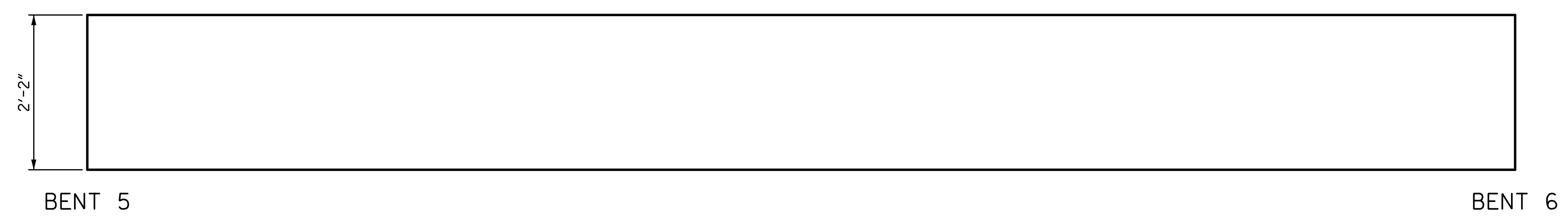
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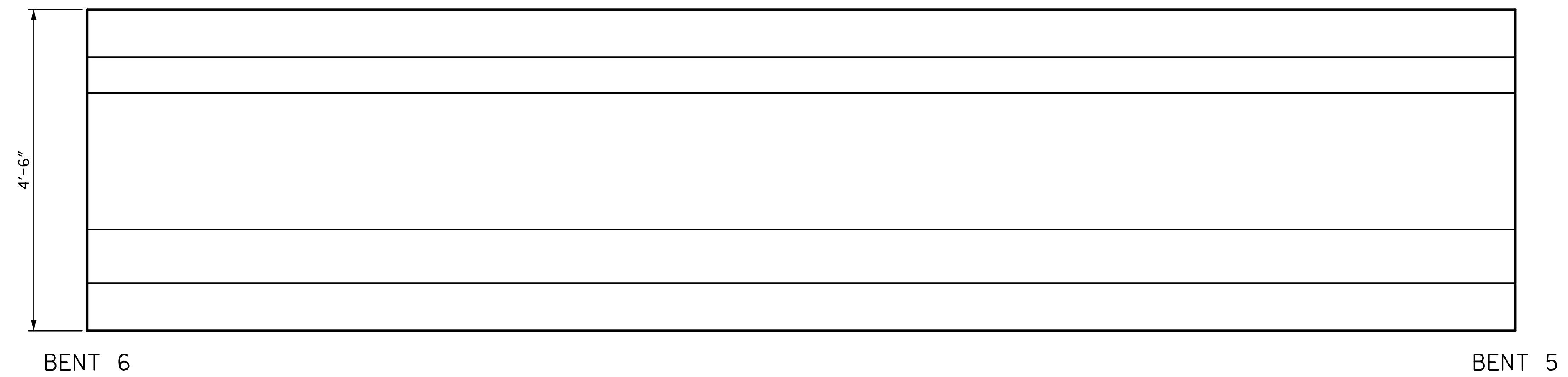
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 6 GRD. 2	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.
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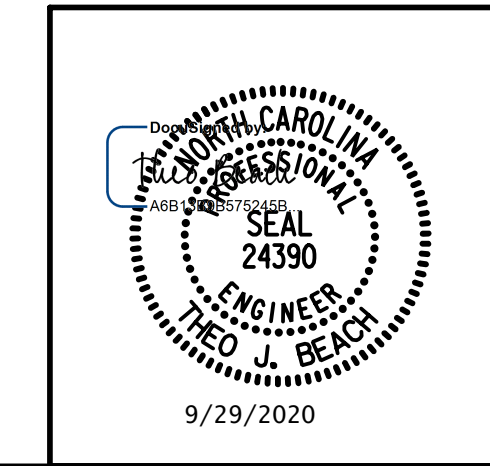
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 6
 GIRDER 2

PLANS PREPARED BY:

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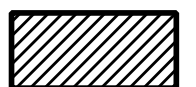


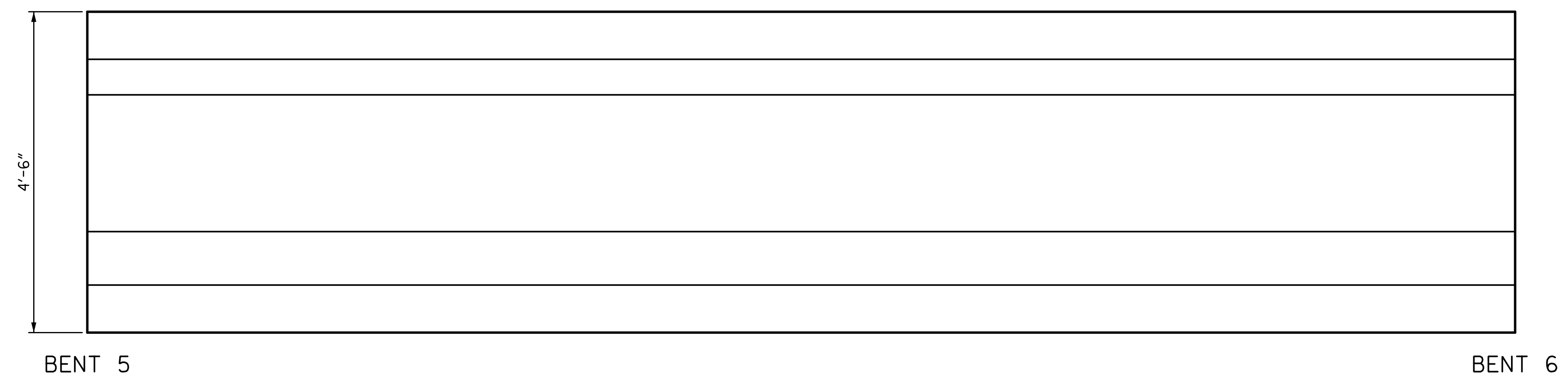
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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			163

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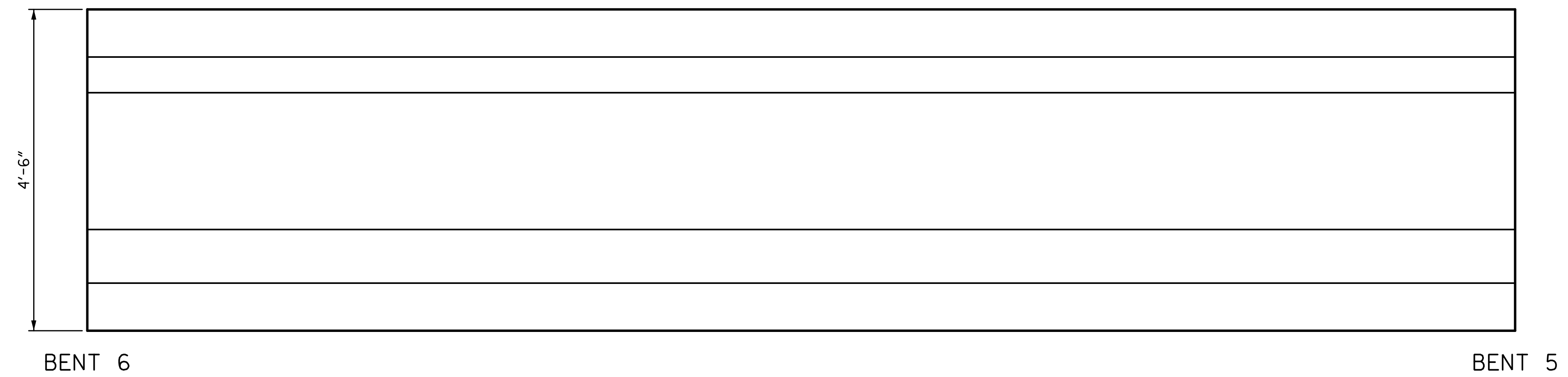
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 6 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.3	0.1			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

NOTES:
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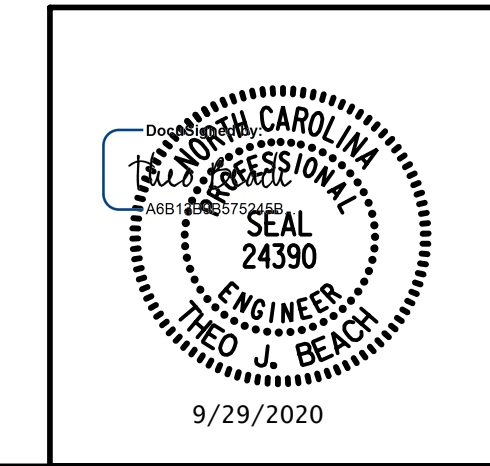
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 6
 GIRDER 3

PLANS PREPARED BY:

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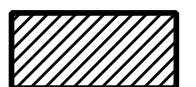


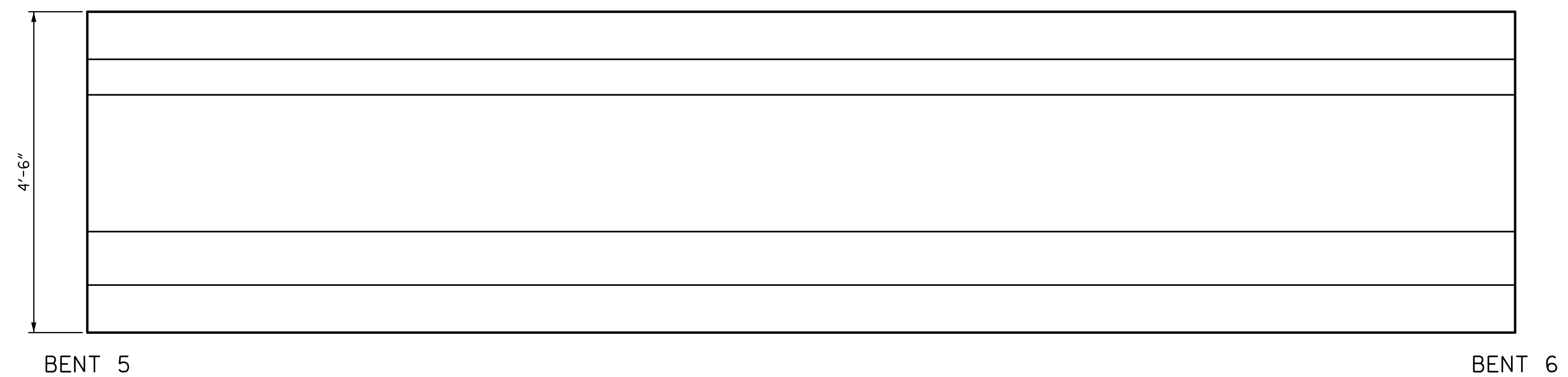
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-60
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2			4			163

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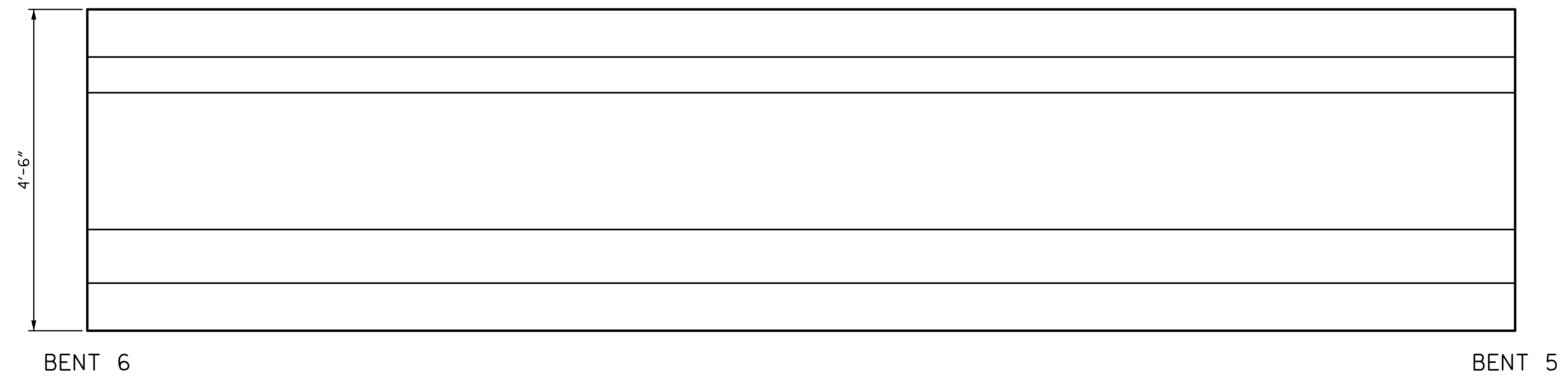
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 6 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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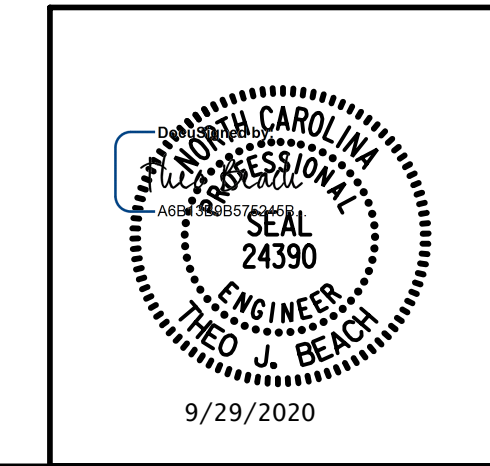
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 6
 GIRDER 4

PLANS PREPARED BY:

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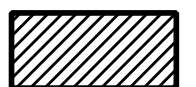


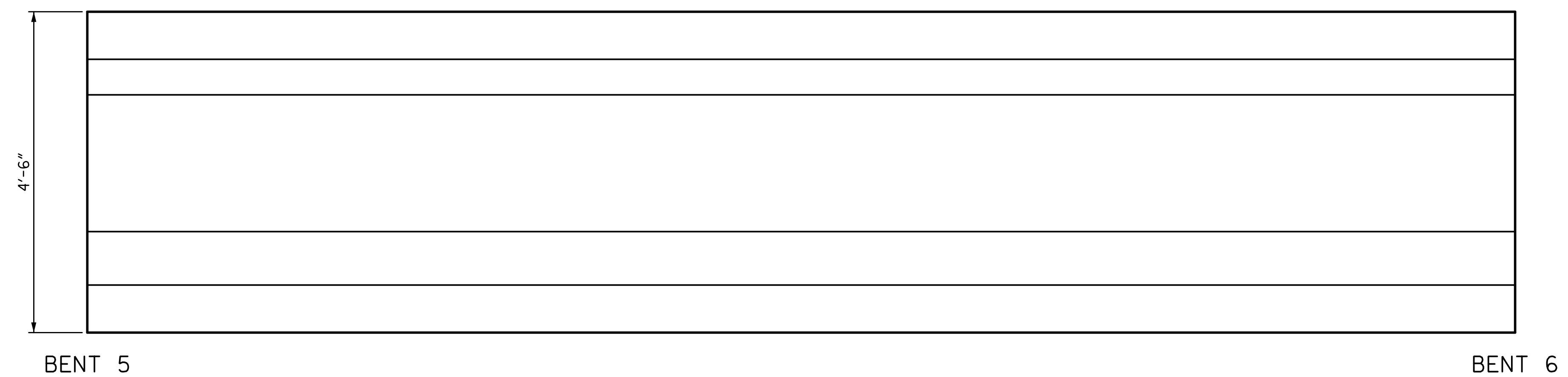
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REVISIONS						SHEET NO.
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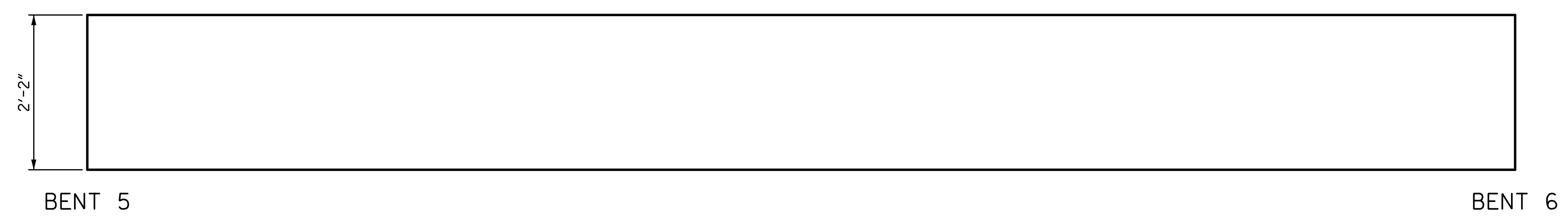
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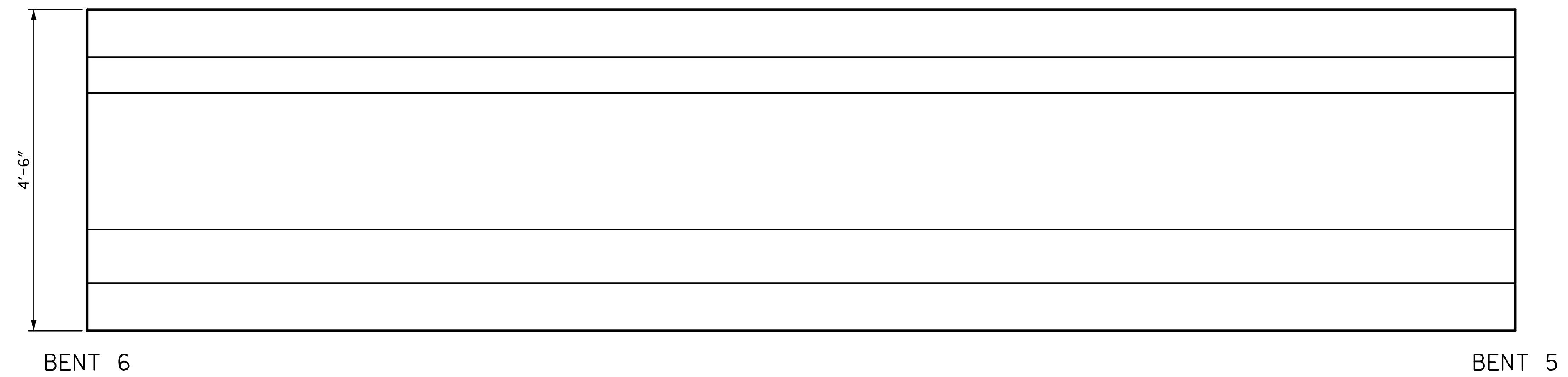
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 6 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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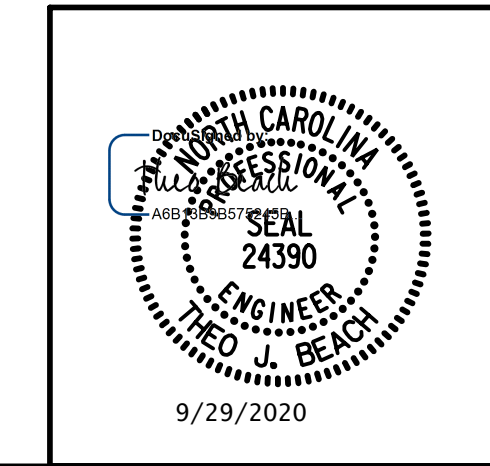
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 6
 GIRDER 5

PLANS PREPARED BY:

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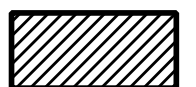


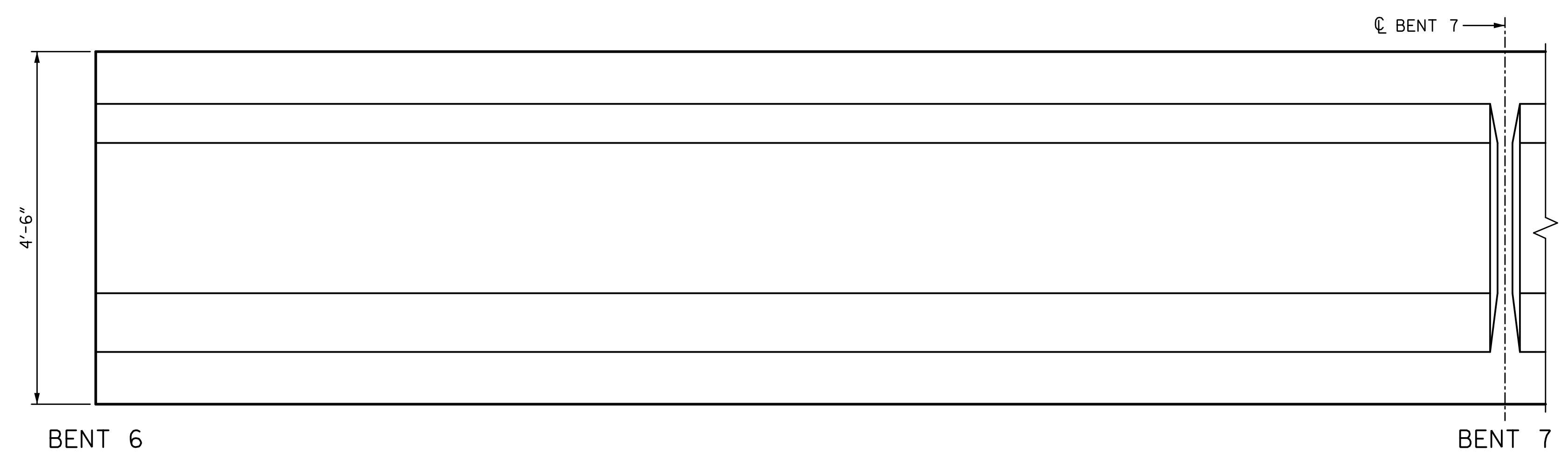
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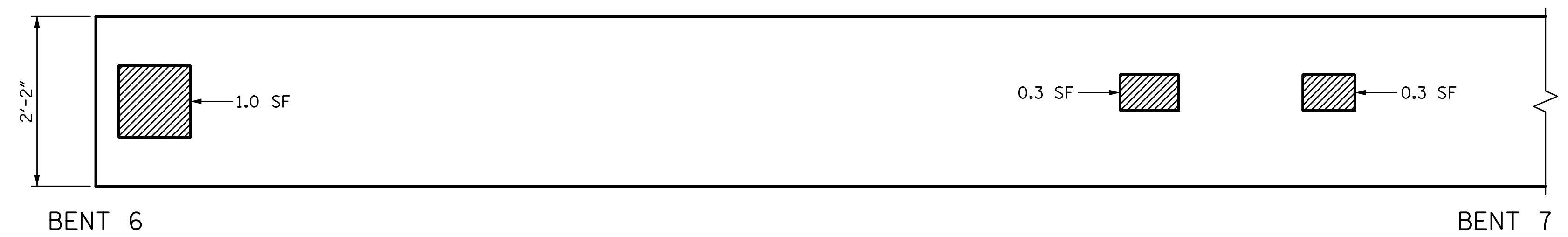
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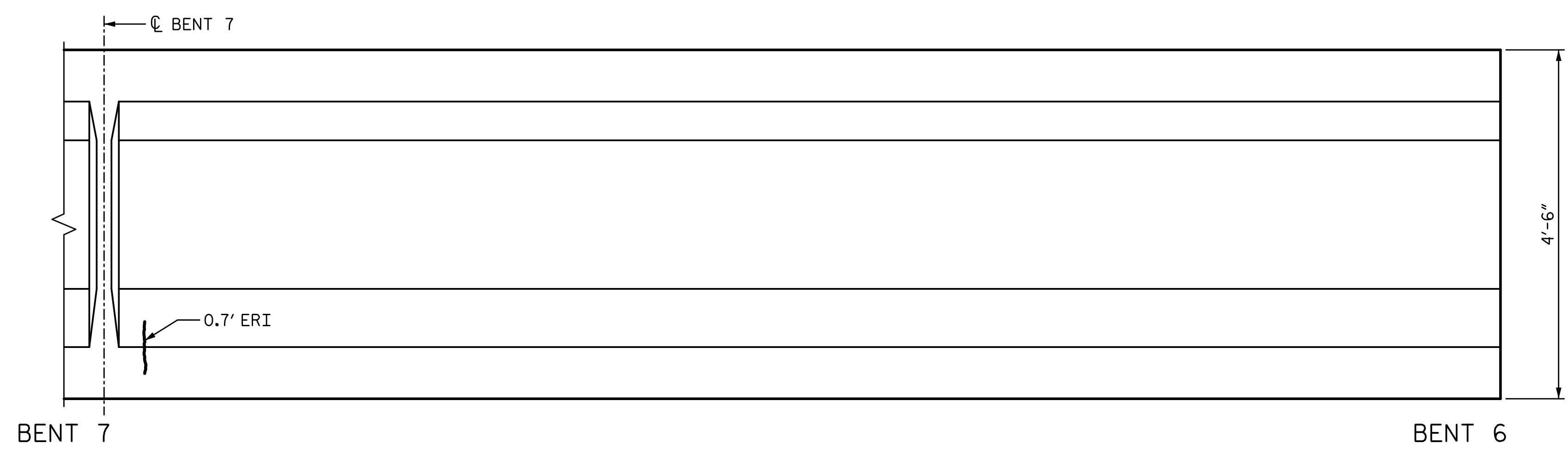
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7 GRD. 1	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.6	0.5			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.7			

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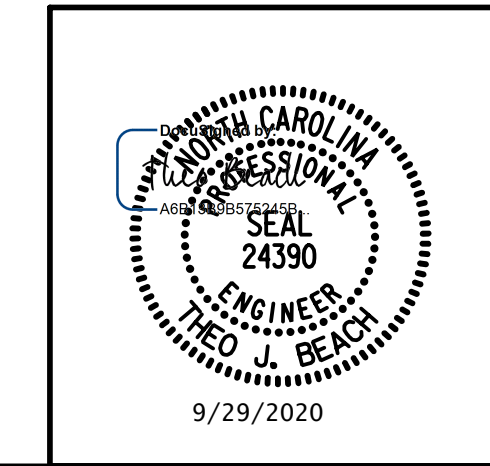
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
**SPAN 7
 GIRDER 1**

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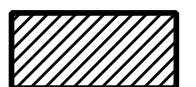


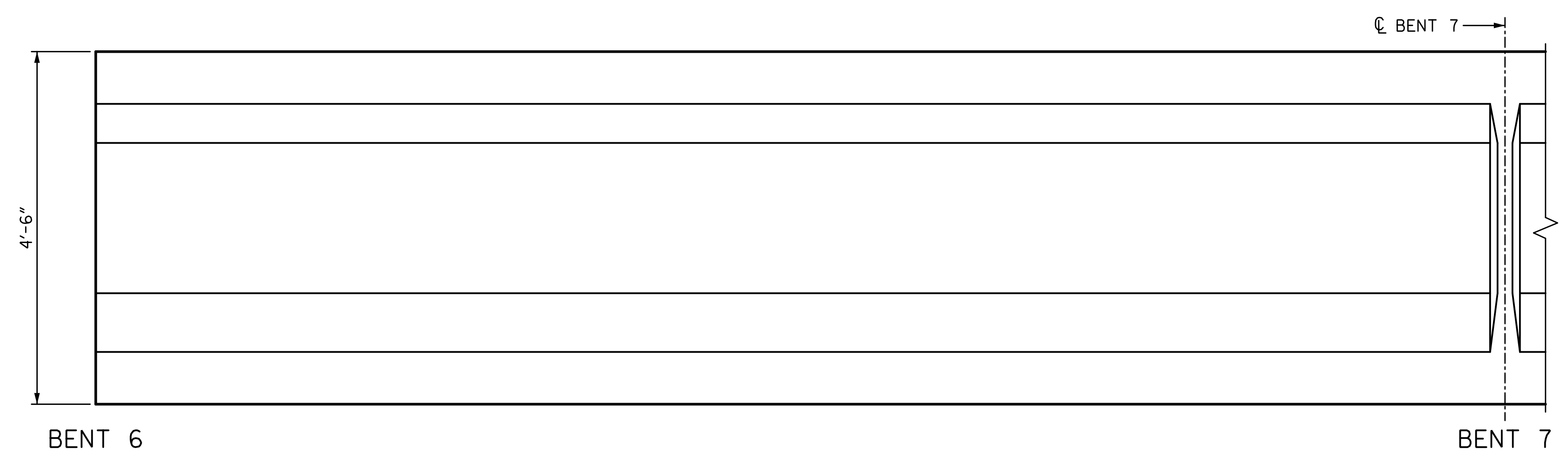
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1			3			TOTAL SHEETS
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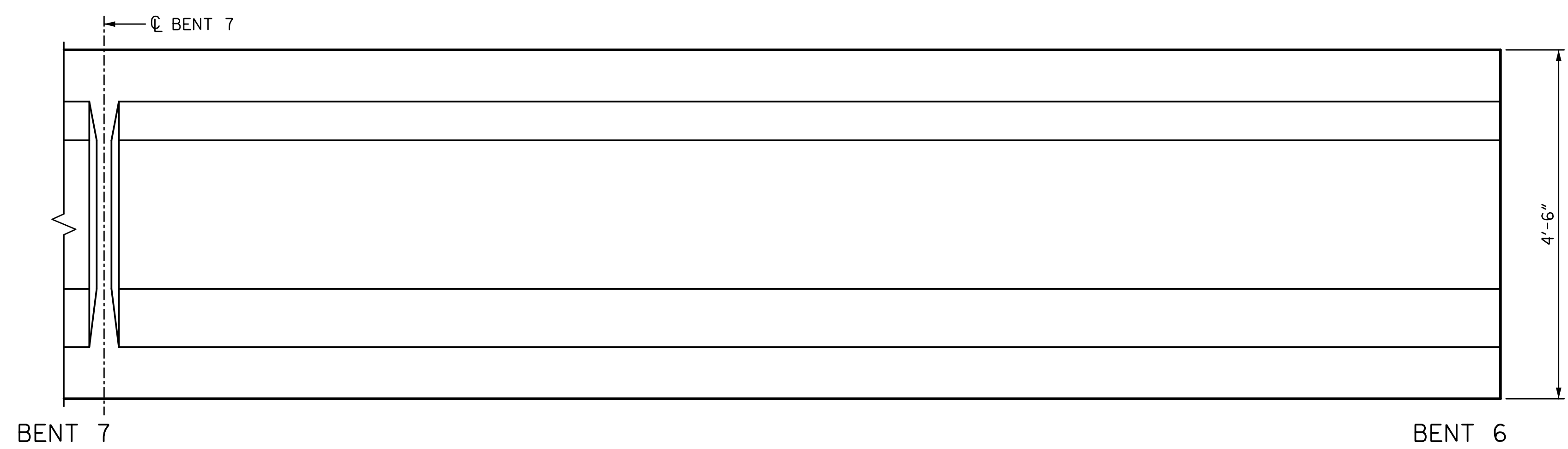
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 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7 GRD. 2	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.8	0.2			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

NOTES:
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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

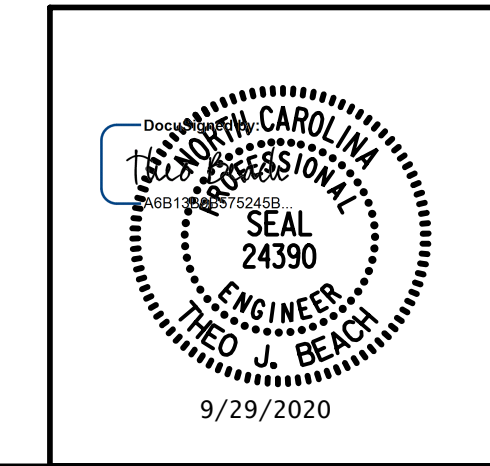
SHEET 2 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 7
 GIRDER 2**

PLANS PREPARED BY:

 SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
 Suite 200
 Cary, NC 27518
 (919) 852-0468
 (919) 852-0538 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521

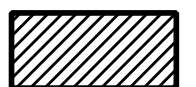


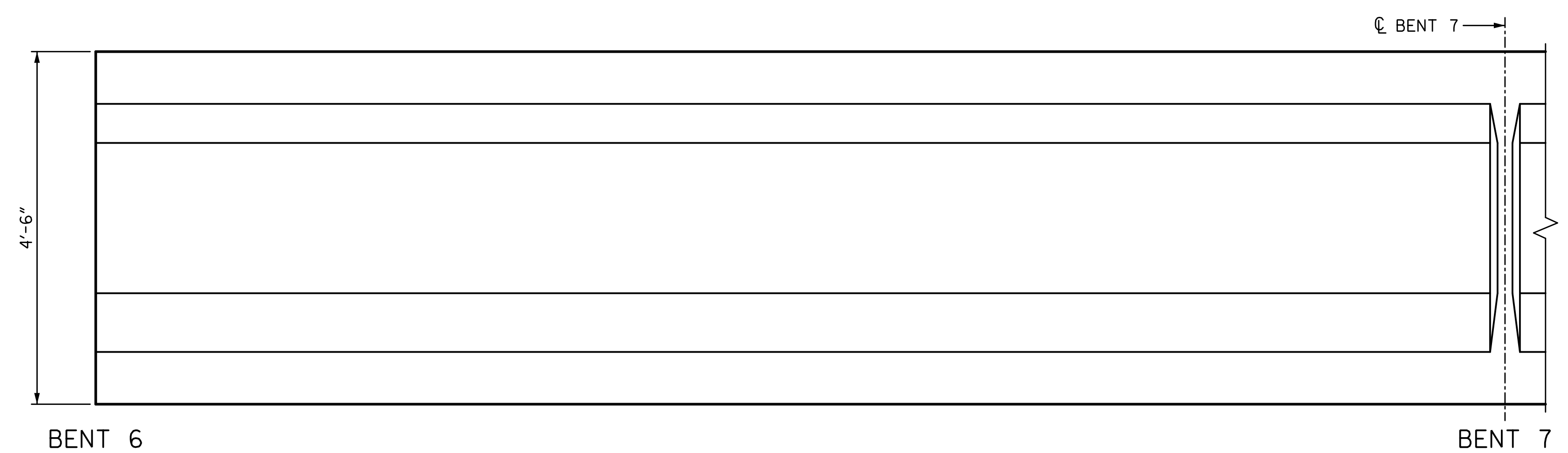
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CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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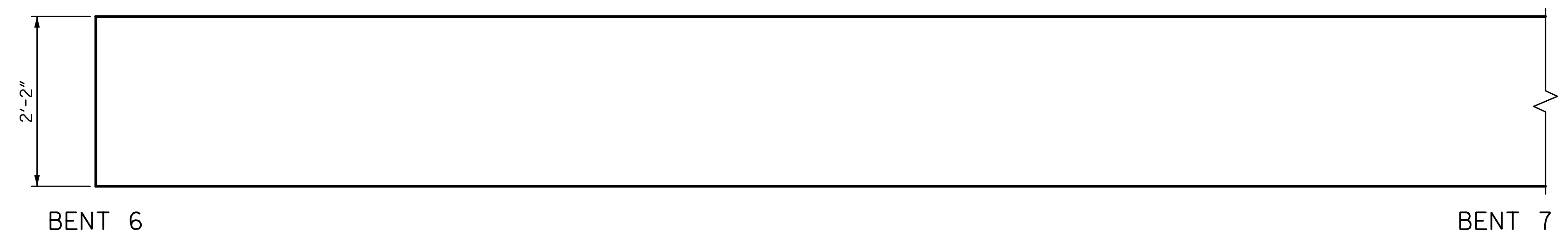
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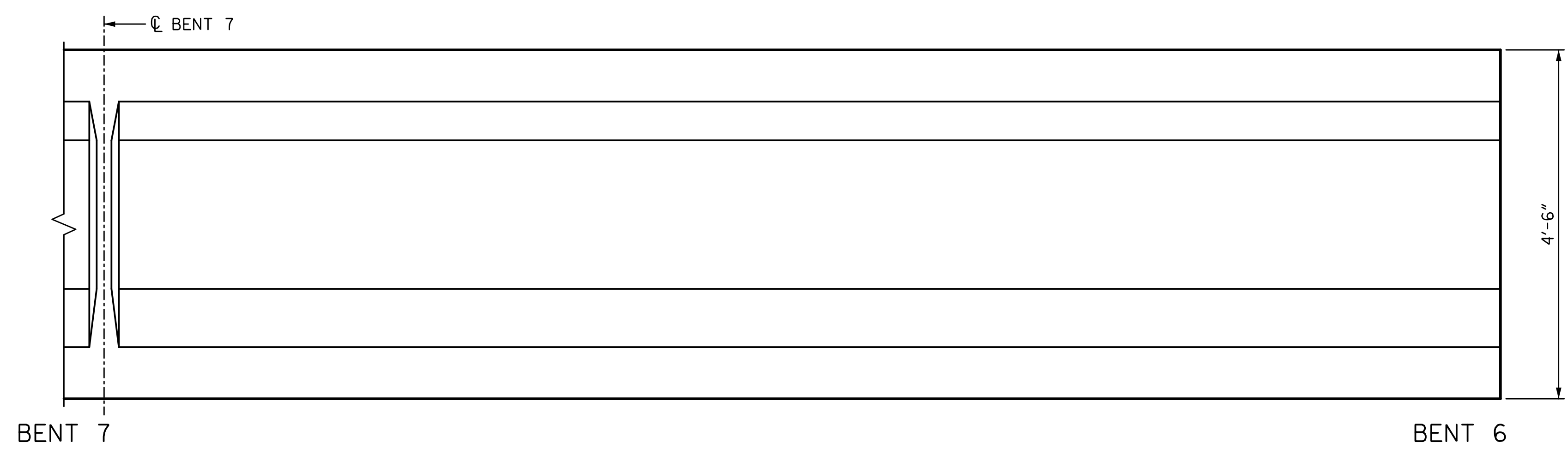
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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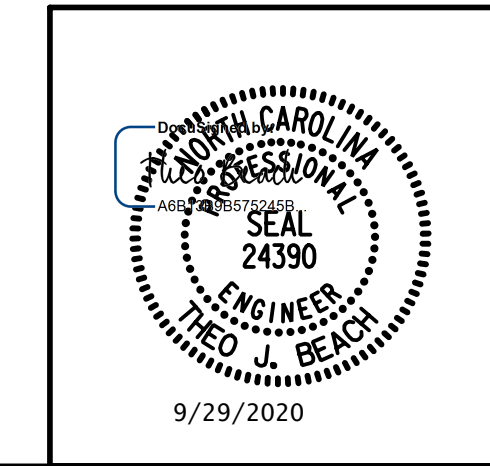
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 7
 GIRDER 3

PLANS PREPARED BY:

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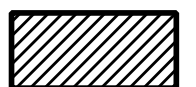


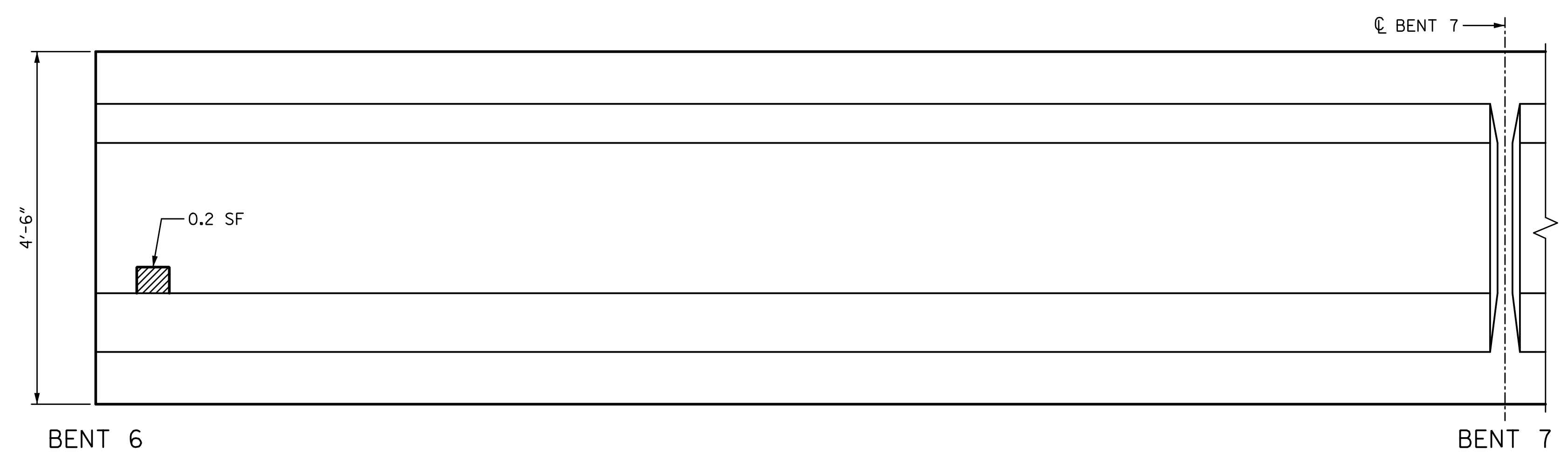
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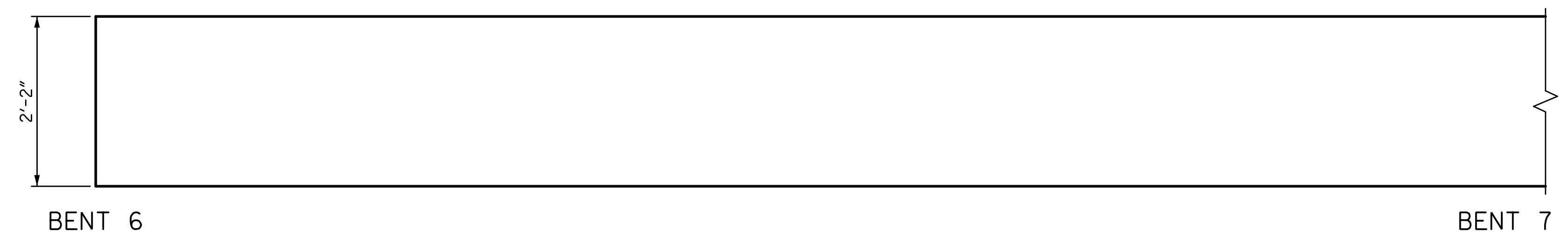
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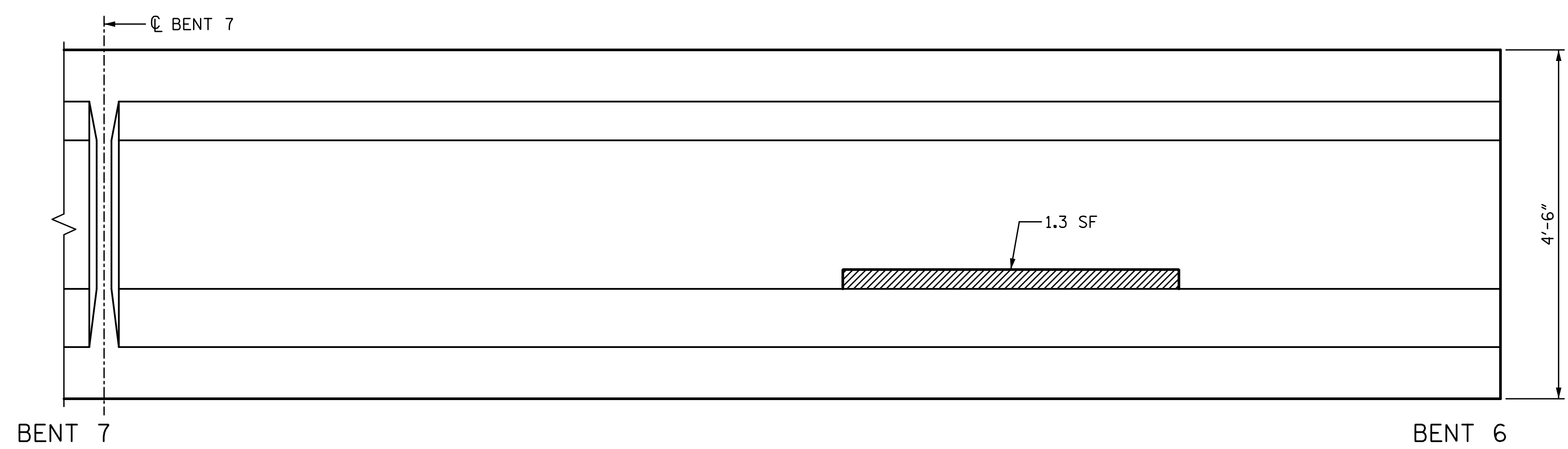
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.5	0.3			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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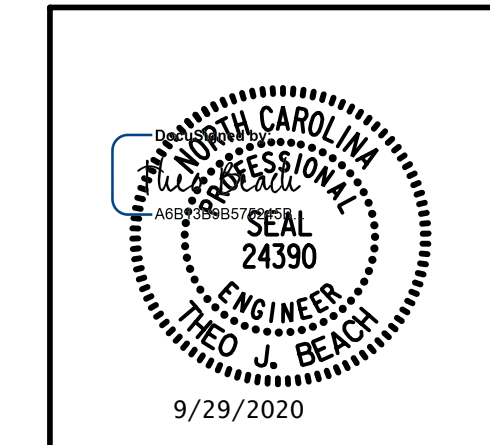
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 7
 GIRDER 4

PLANS PREPARED BY:

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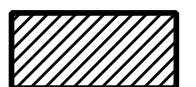


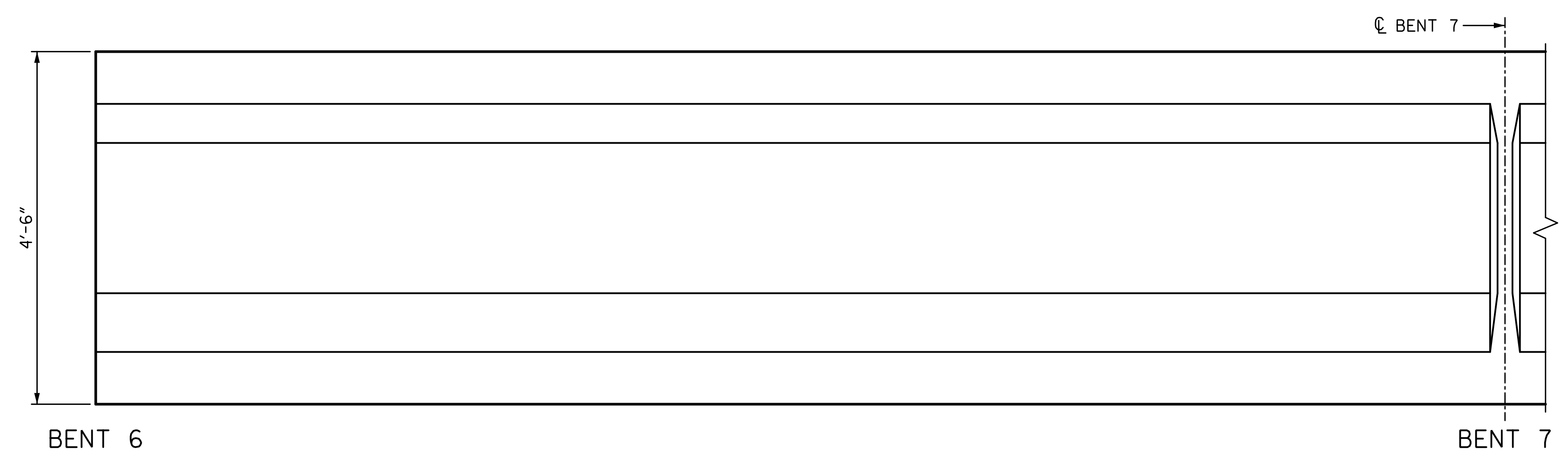
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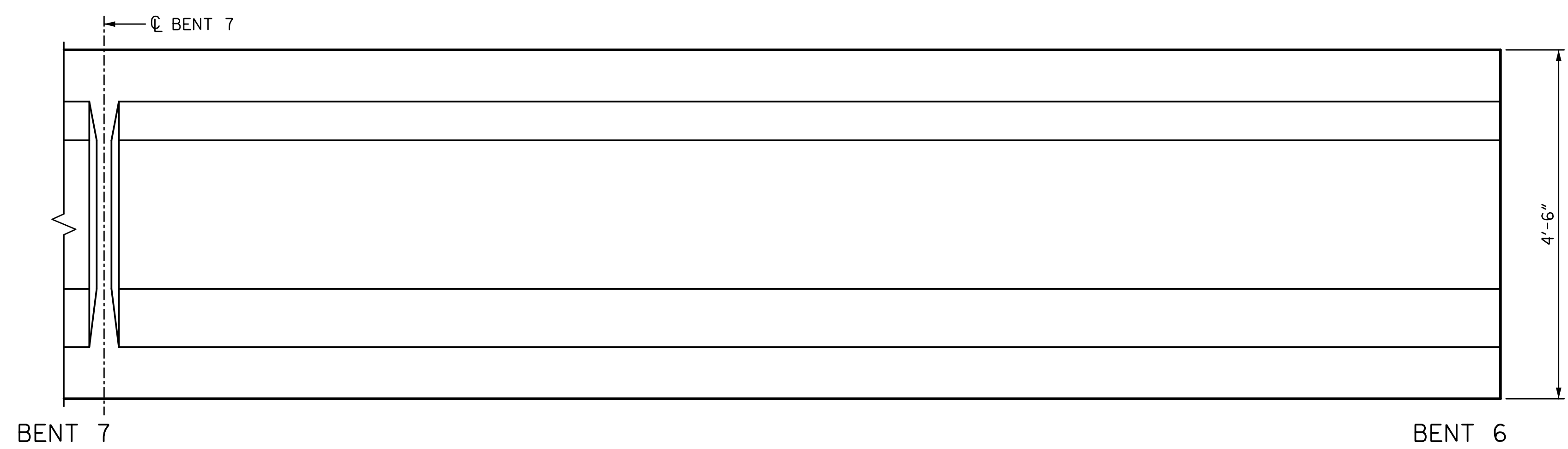
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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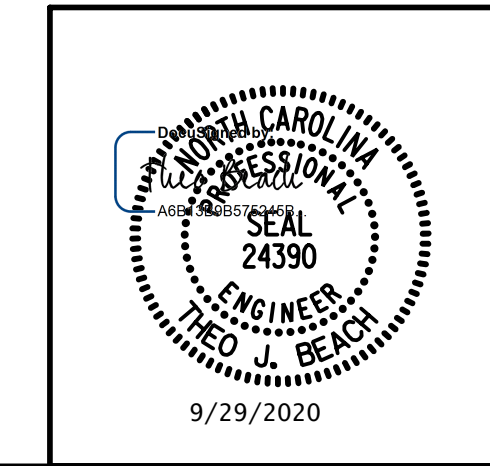
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 7
 GIRDER 5

PLANS PREPARED BY:

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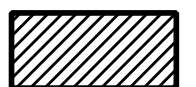


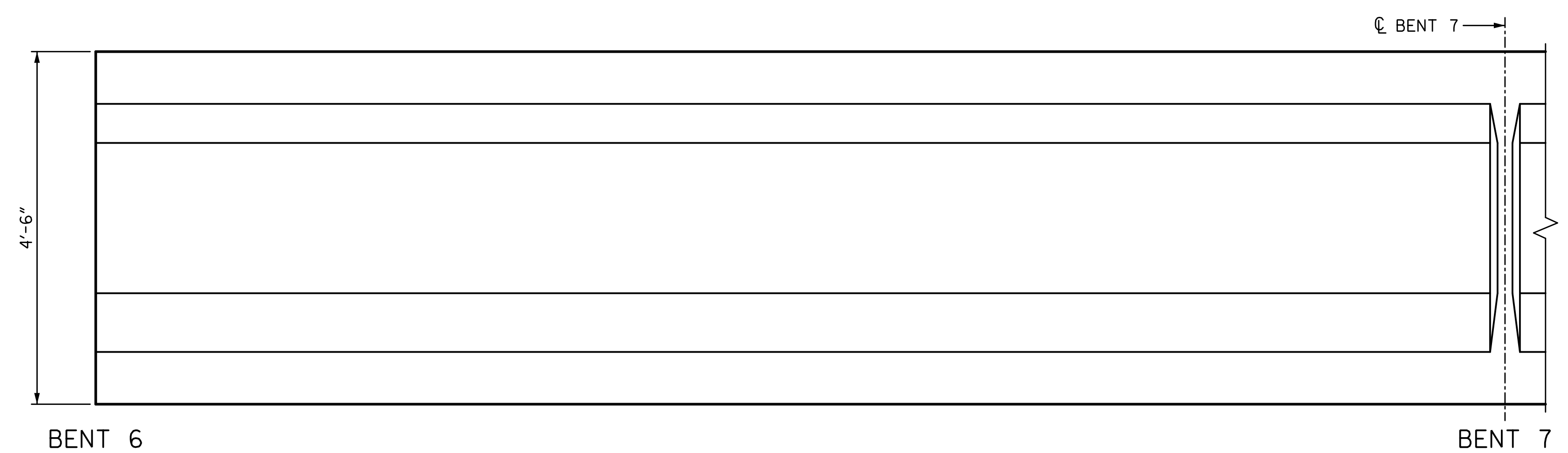
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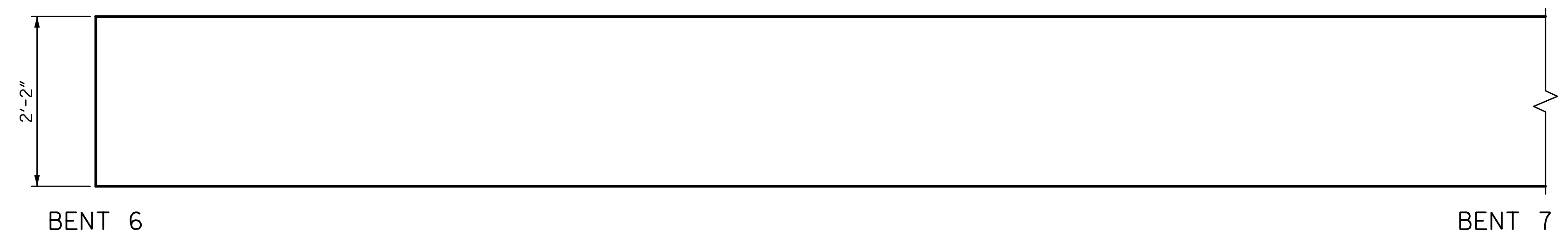
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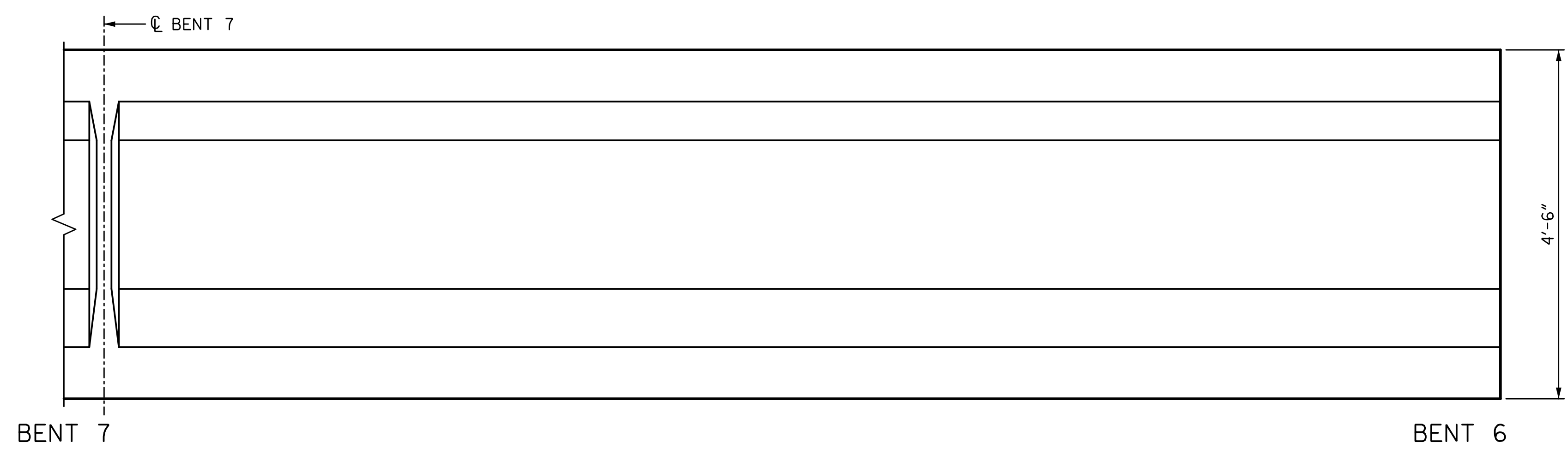
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7 GRD. 6	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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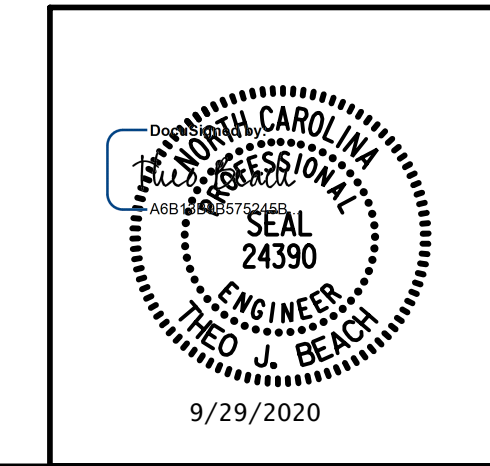
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 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 6 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 7
 GIRDER 6

PLANS PREPARED BY:

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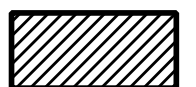


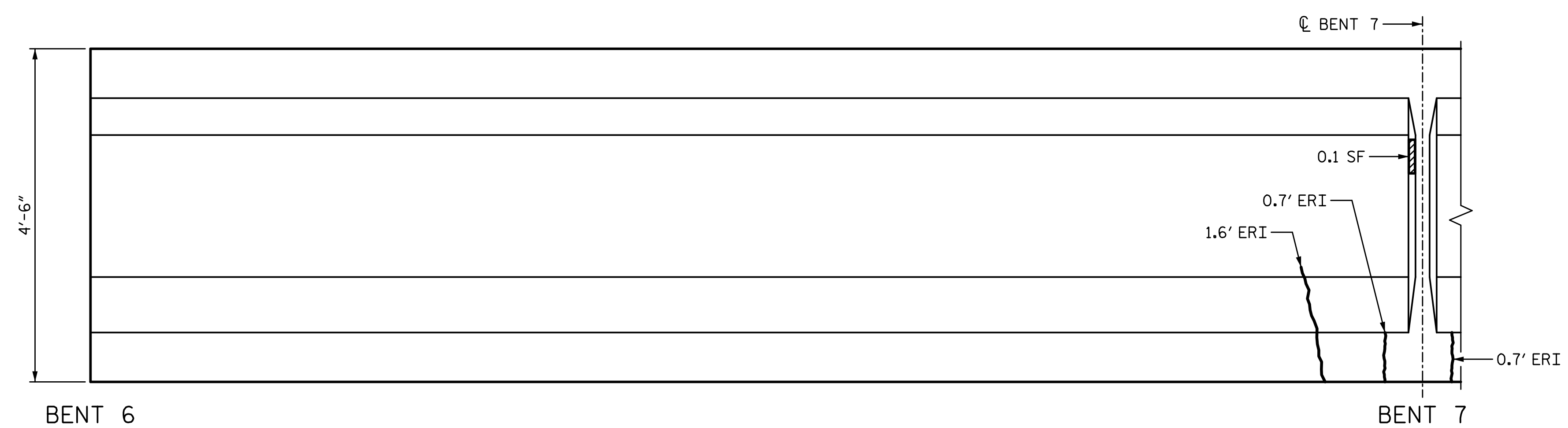
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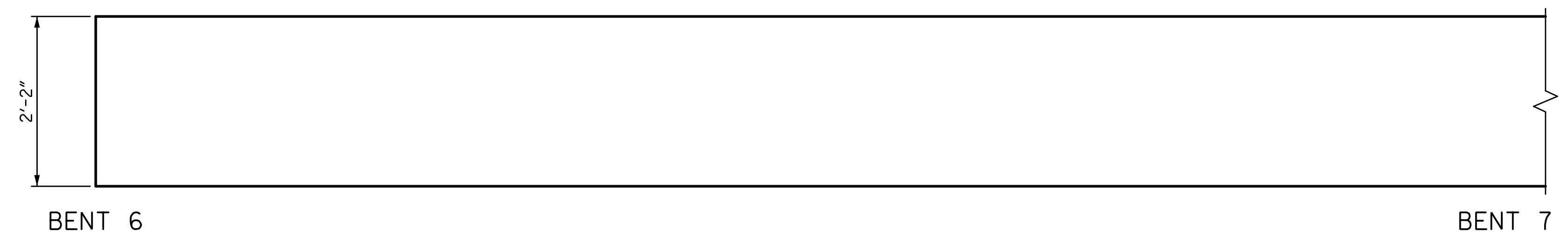
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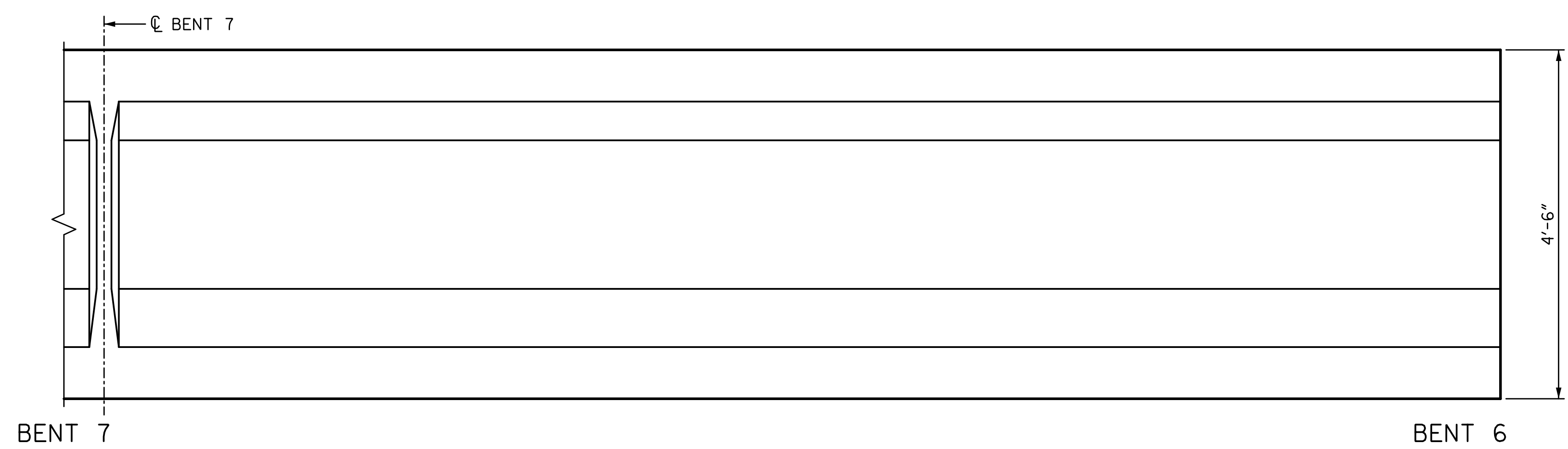
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 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7 GRD. 7	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.1	0.1			
EPOXY RESIN INJECTION		LF			LF
GIRDER		3.0			

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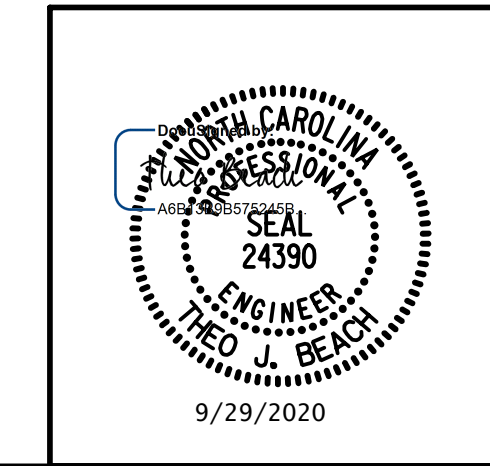
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SHEET 7 OF 7

STATE OF NORTH CAROLINA
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 SPAN 7
 GIRDER 7

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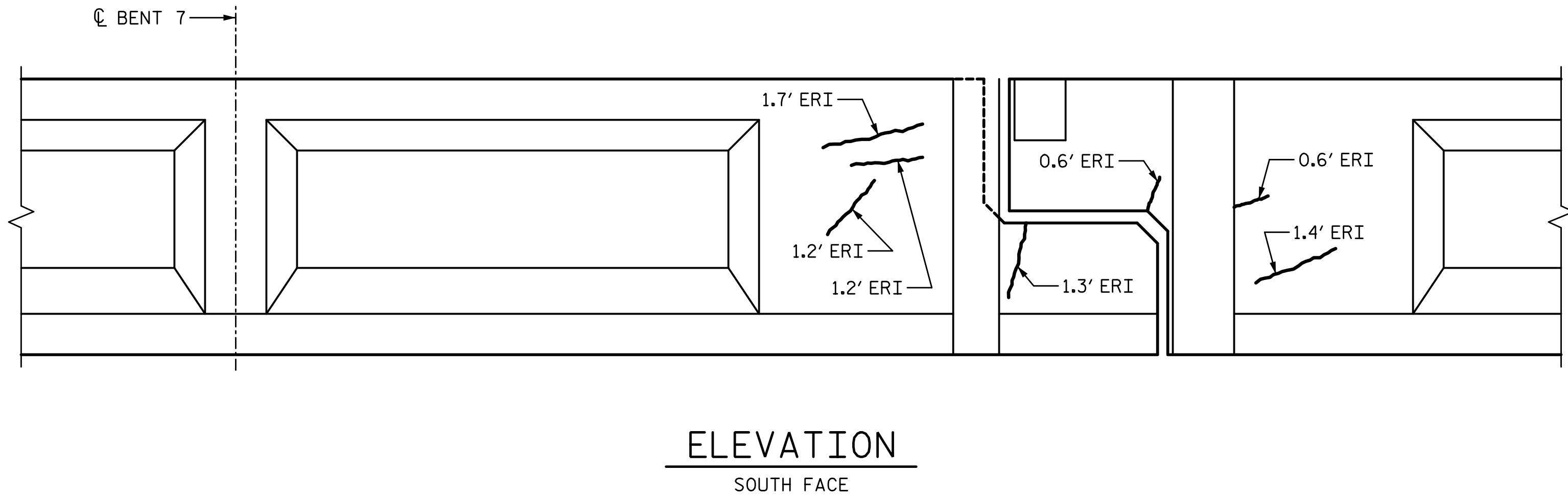
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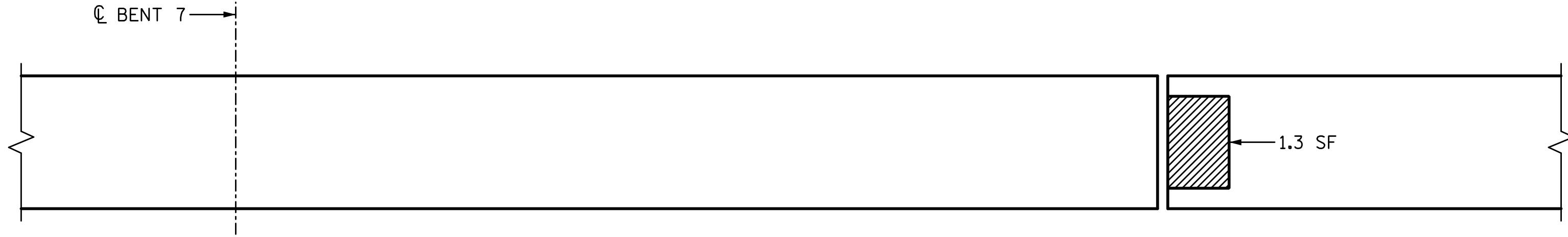
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 CHECKED BY: T.J. BEACH DATE: 9-20
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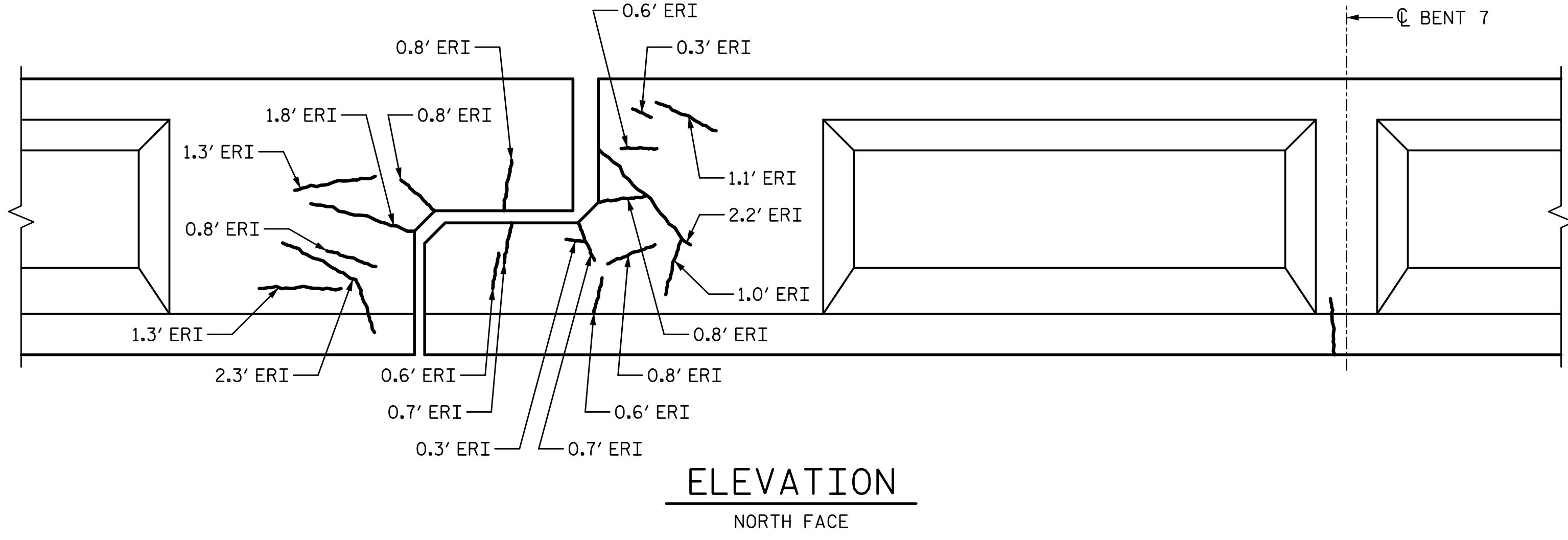
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



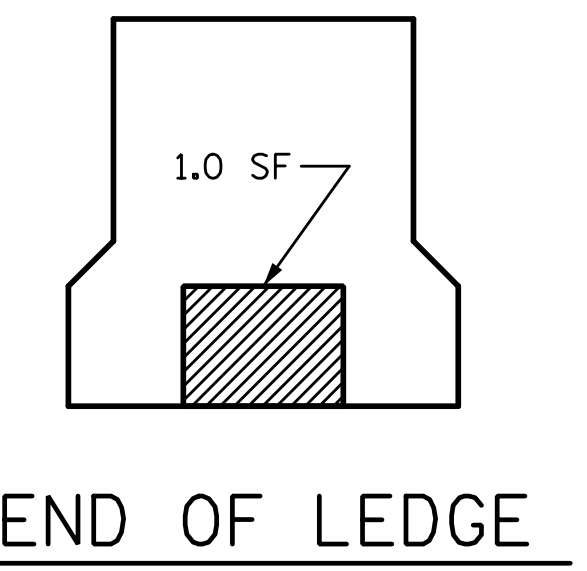
PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS WEST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	2.3	0.7			
EPOXY RESIN INJECTION		LF			LF
GIRDER		26.8			

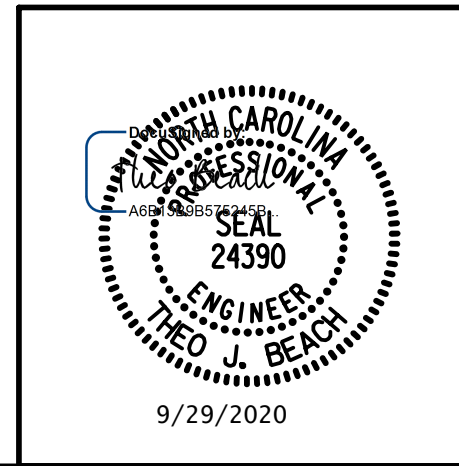
NOTES:
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END OF LEDGE

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 7



PLANS PREPARED BY:
SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
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 Cary, NC 27518
 (919) 852-0468
 (919) 852-0598 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521

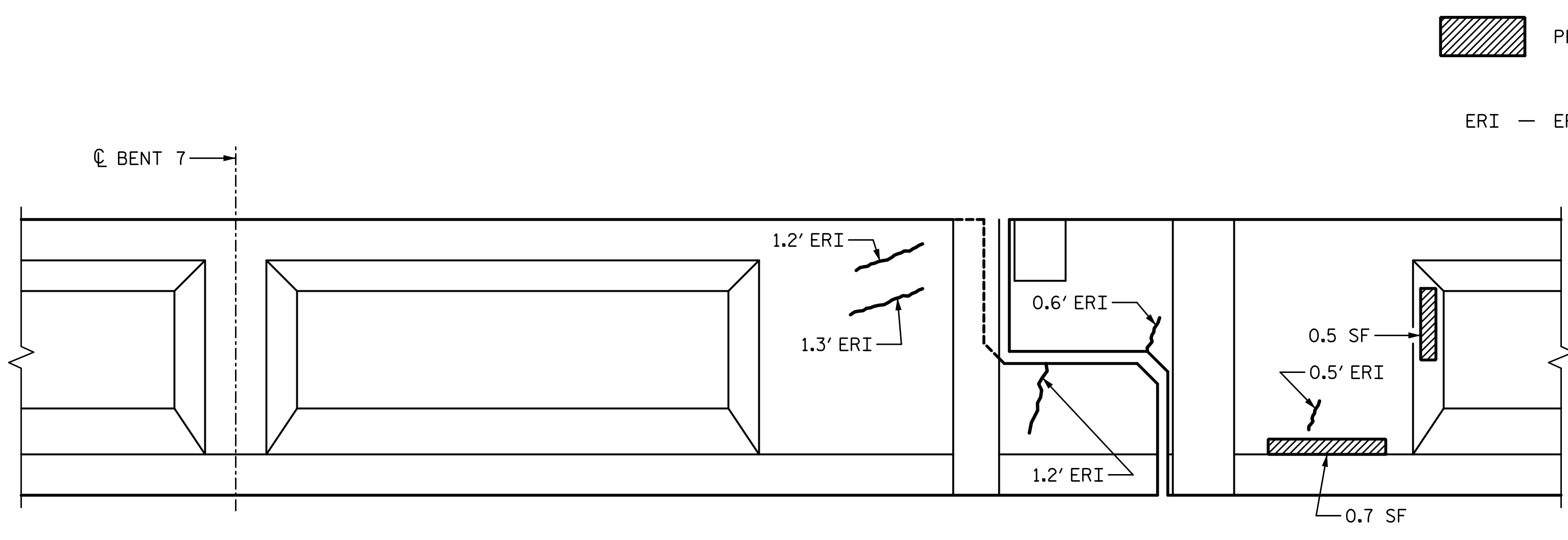
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
**WEST HINGE DETAILS
 FOR GIRDER 1**

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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

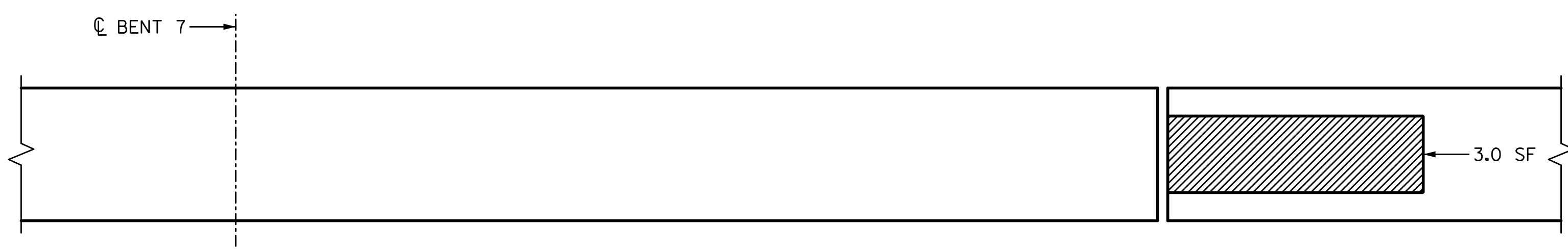
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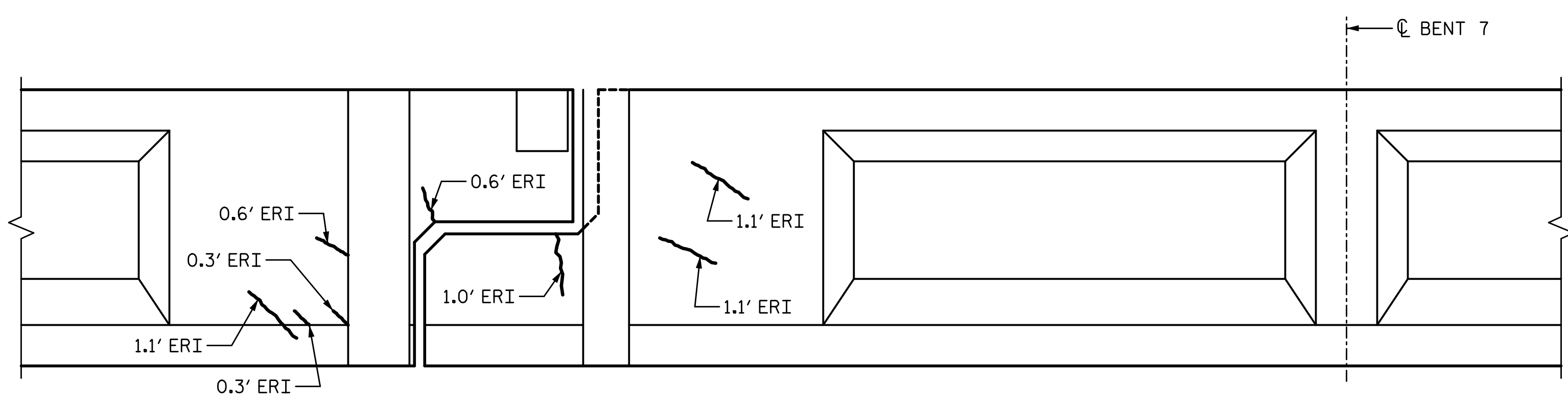
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ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

PRESTRESSED CONCRETE GIRDER REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE

REPAIRS WEST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	5.6	1.5			
EPOXY RESIN INJECTION		LF			LF
GIRDER		10.9			

NOTES:

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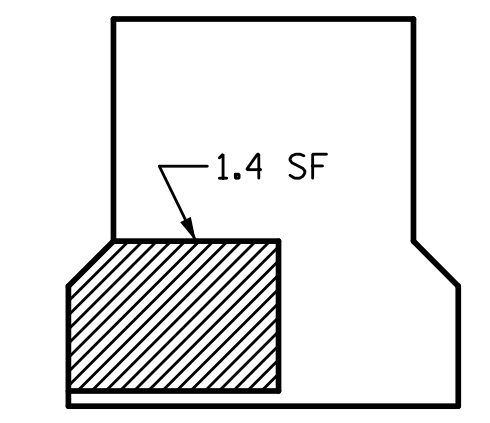
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END OF LEDGE

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

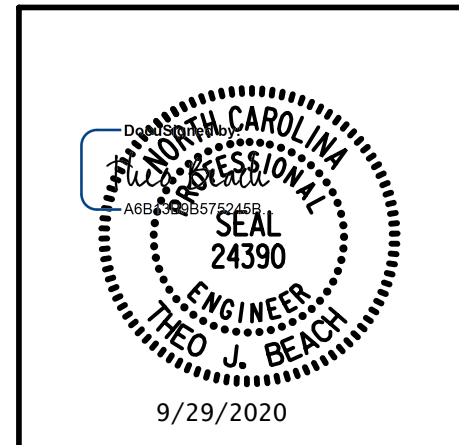
SHEET 2 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

WEST HINGE DETAILS
FOR GIRDER 2

PLANS PREPARED BY:

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LICENSURE NO. C-2521



REVISIONS

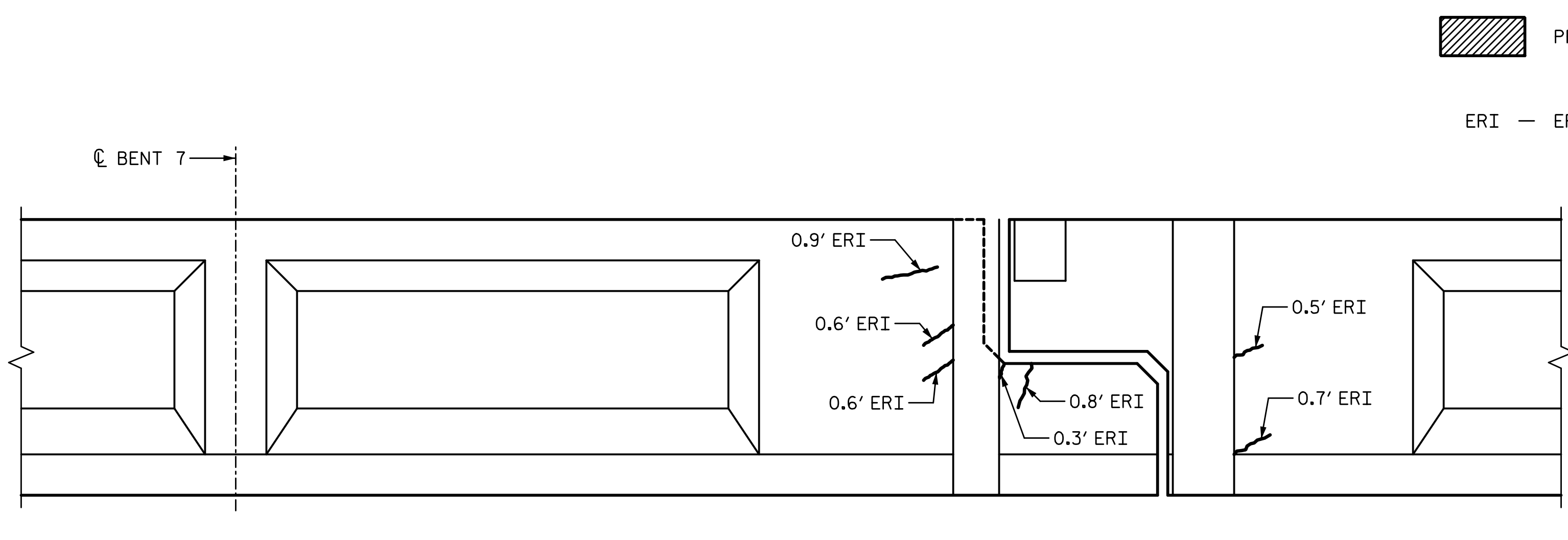
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SHEET NO.
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TOTAL SHEETS
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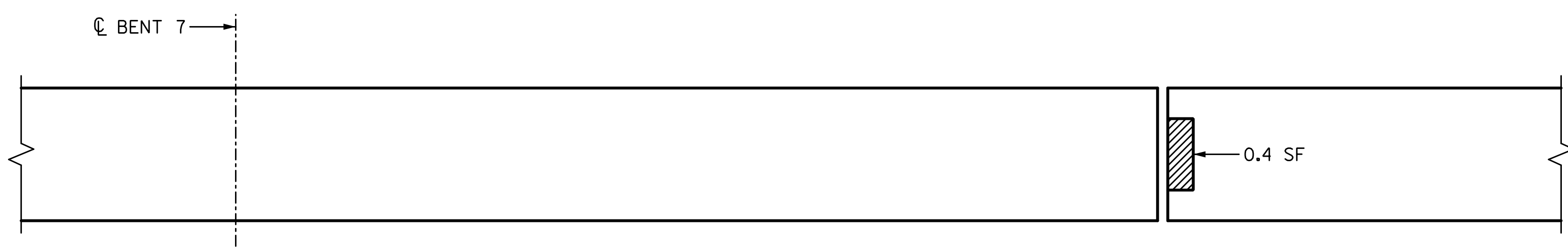
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CHECKED BY: T.J. BEACH DATE: 9-20
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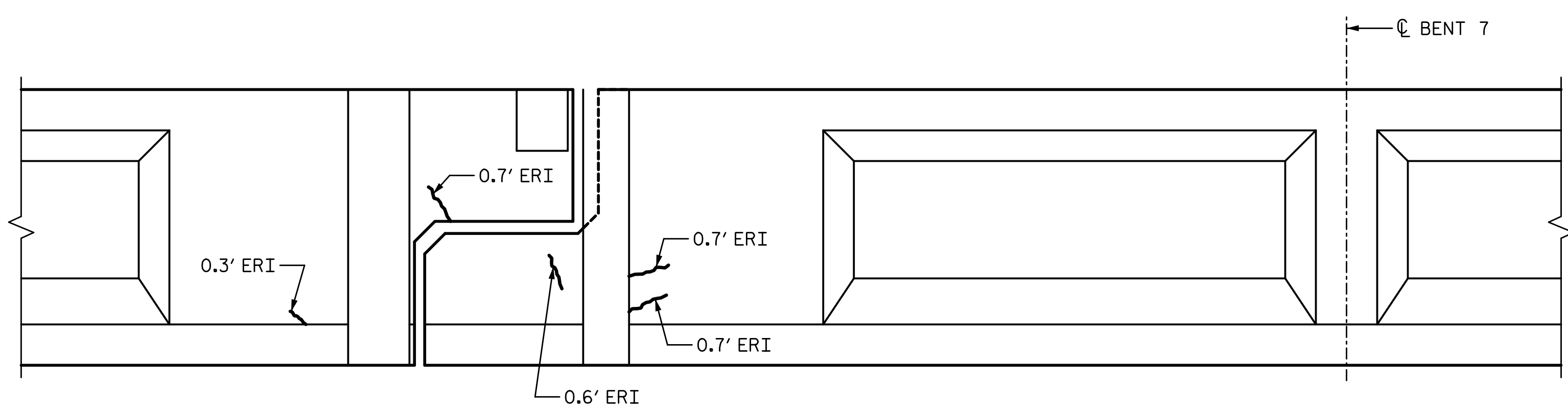
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ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

PRESTRESSED CONCRETE GIRDER REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS WEST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.4	0.1			
EPOXY RESIN INJECTION			LF		LF
GIRDER		7.4			

NOTES:
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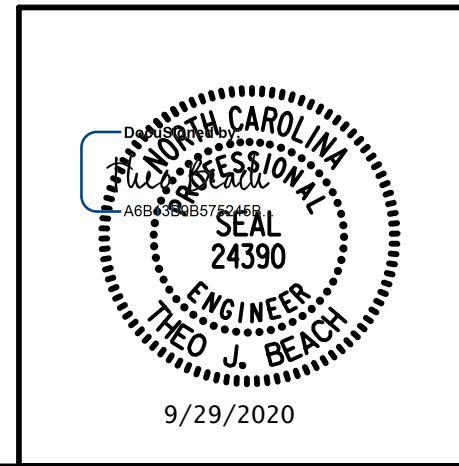
PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 3 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

**WEST HINGE DETAILS
FOR GIRDER 3**

PLANS PREPARED BY:
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LICENSURE NO. C-2521

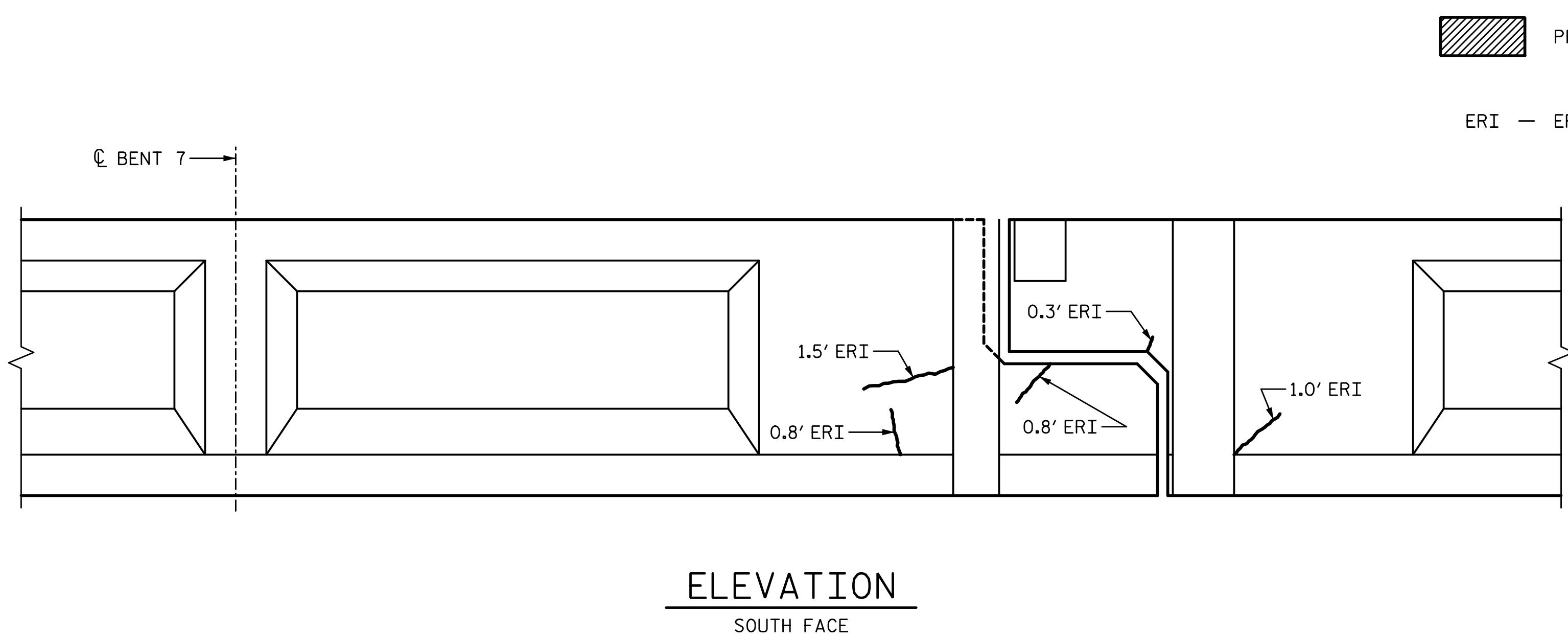


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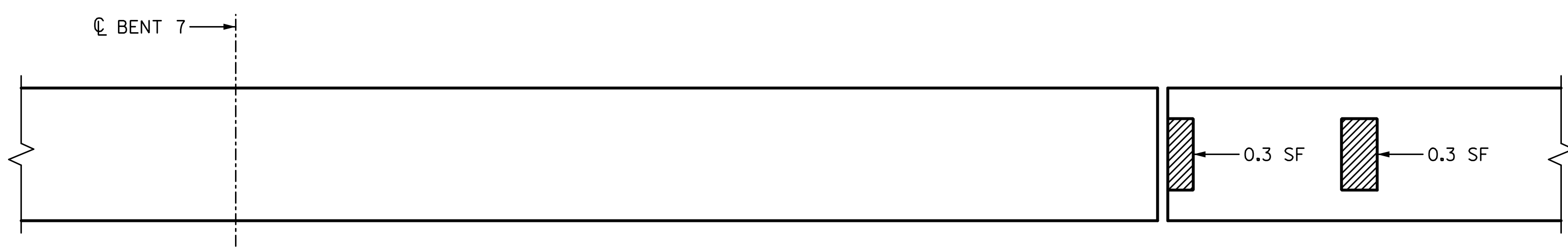
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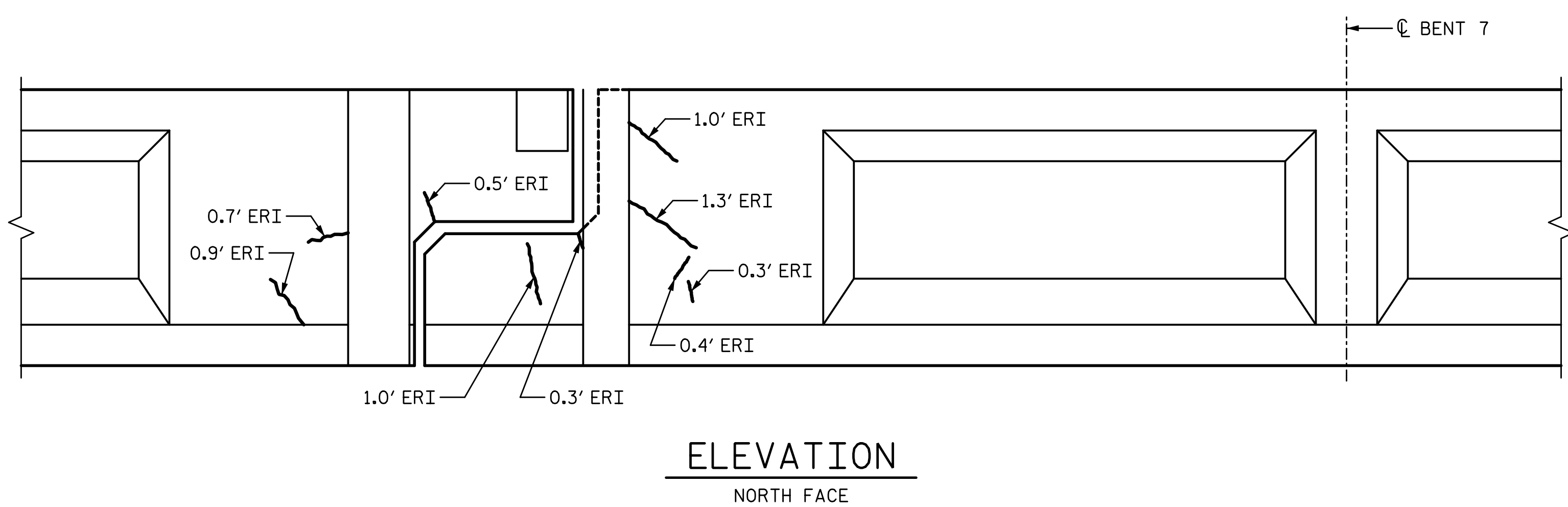
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ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS WEST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.6	0.2			
EPOXY RESIN INJECTION		LF			LF
GIRDER		10.8			

NOTES:

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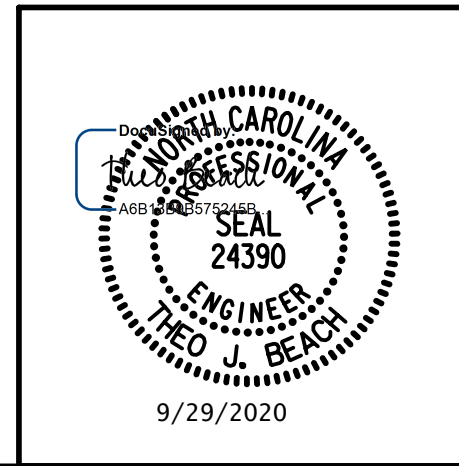
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**WEST HINGE DETAILS
 FOR GIRDER 4**

PLANS PREPARED BY:
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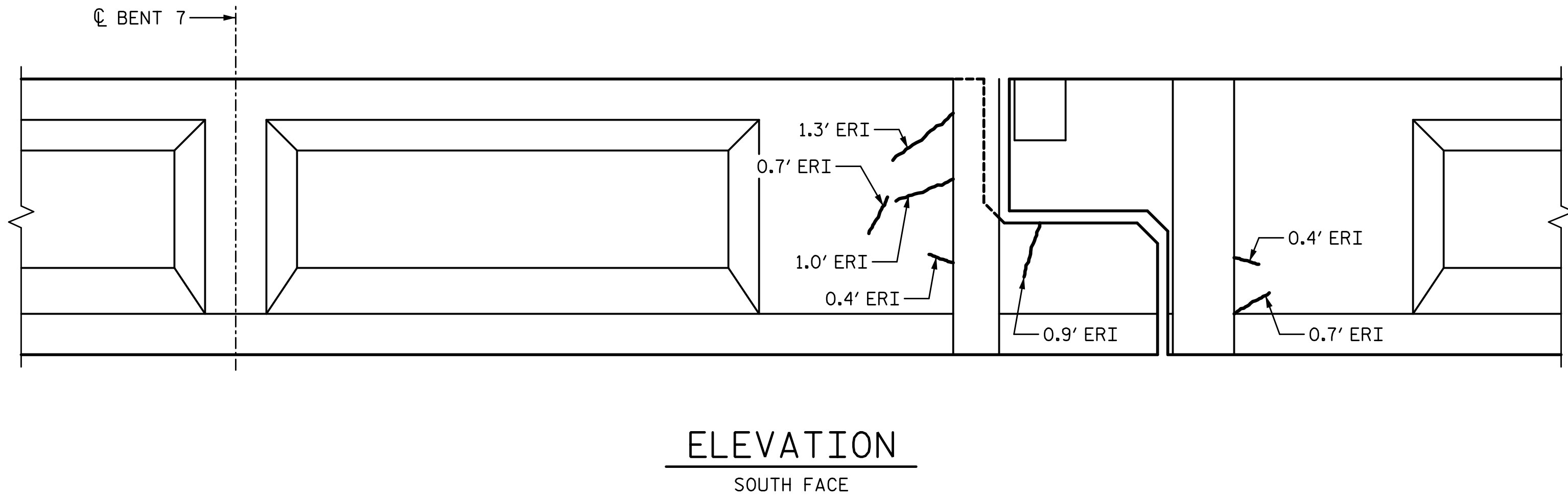
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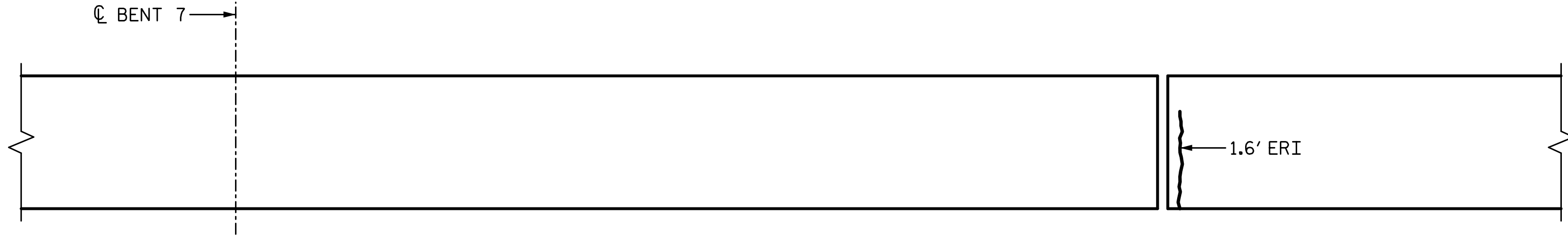
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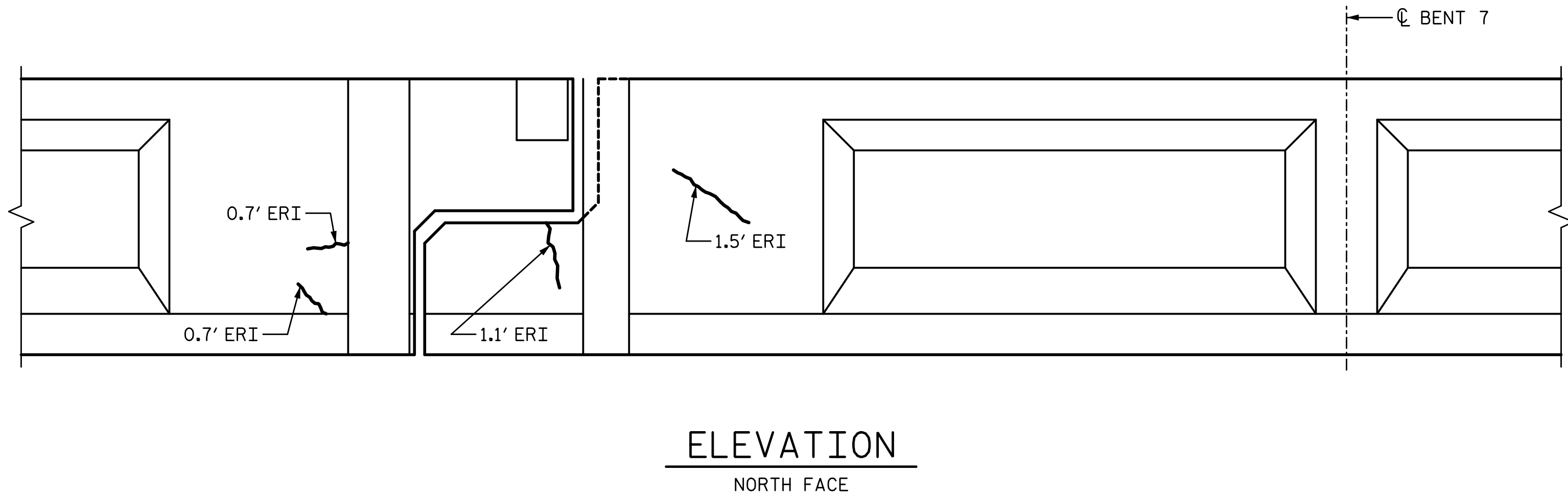
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE

REPAIRS WEST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.2	0.4			
EPOXY RESIN INJECTION		LF			LF
GIRDER		11.0			

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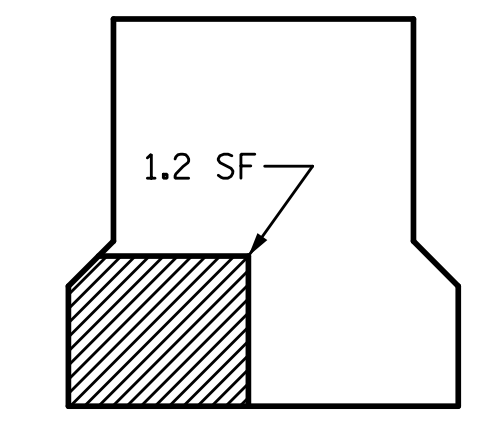
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END OF LEDGE

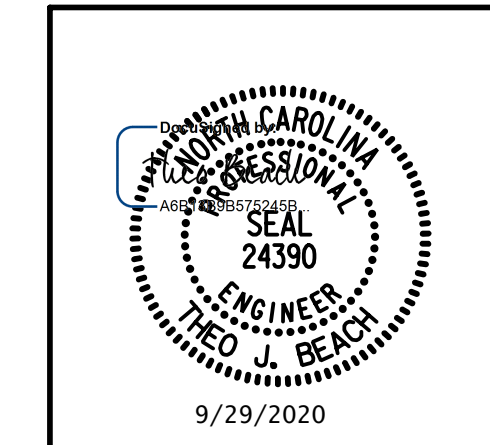
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
**WEST HINGE DETAILS
 FOR GIRDER 5**

PLANS PREPARED BY:

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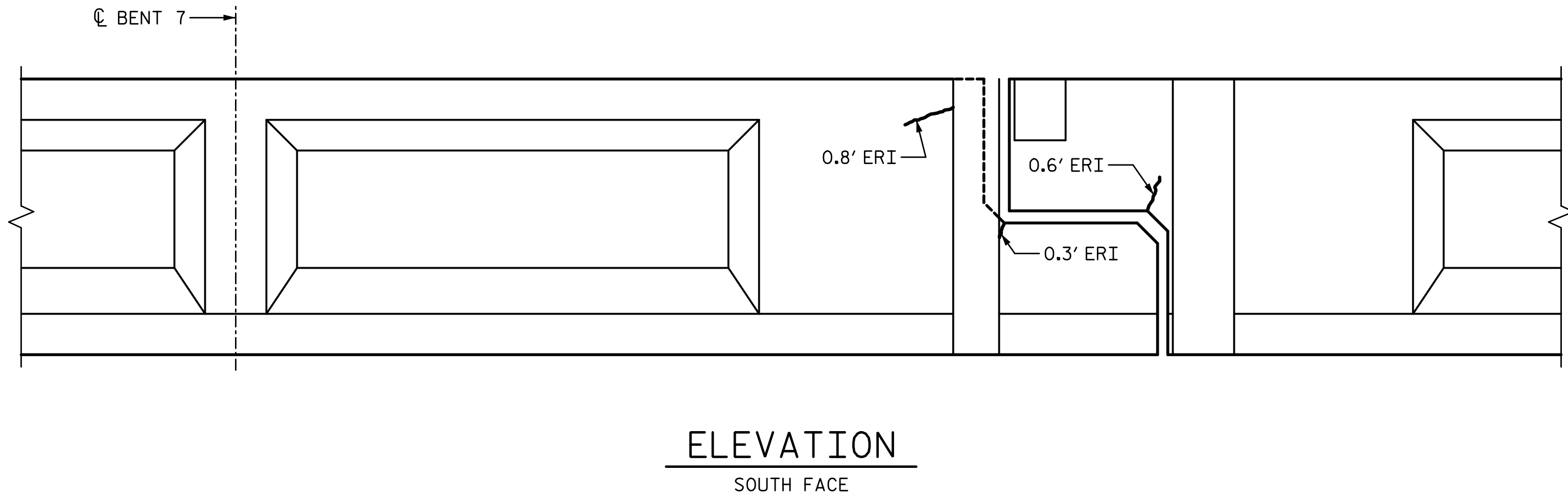
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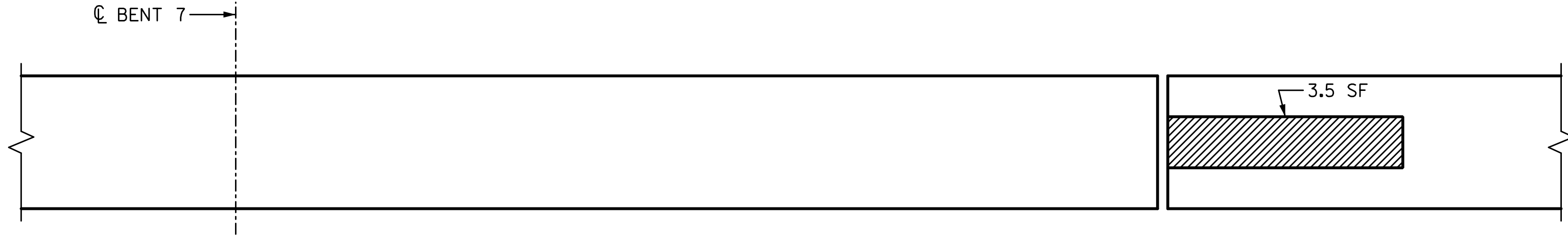
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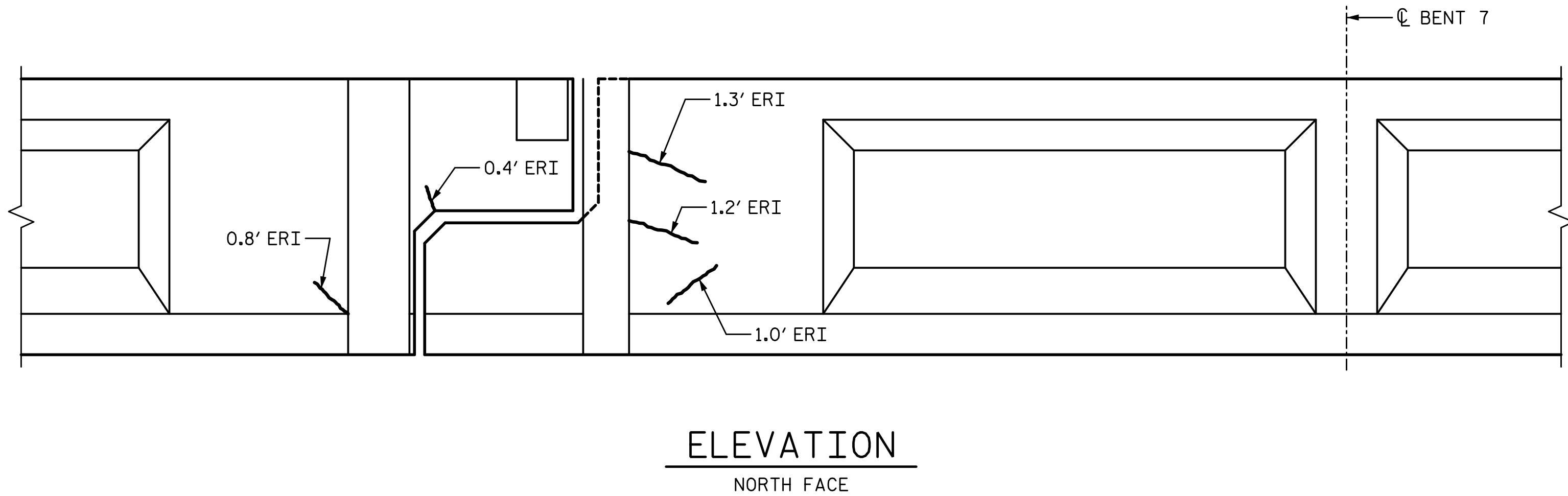
 PRESTRESSED CONCRETE GIRDER REPAIR
ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE

REPAIRS WEST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	3.6	1.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		6.4			

NOTES:

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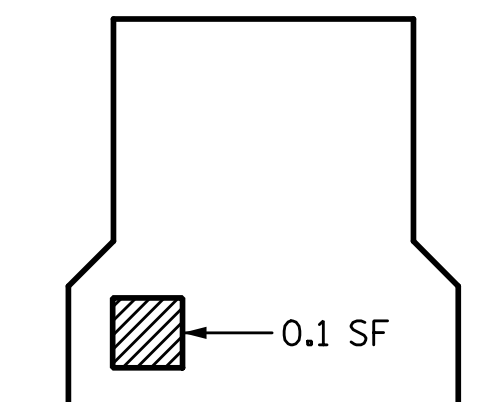
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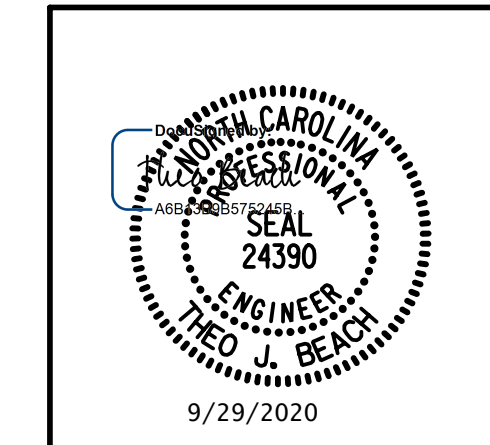
END OF LEDGE

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 6 OF 7

PLANS PREPARED BY:

SE & A
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(919) 852-0598 (Fax)
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LICENSURE NO. C-2521



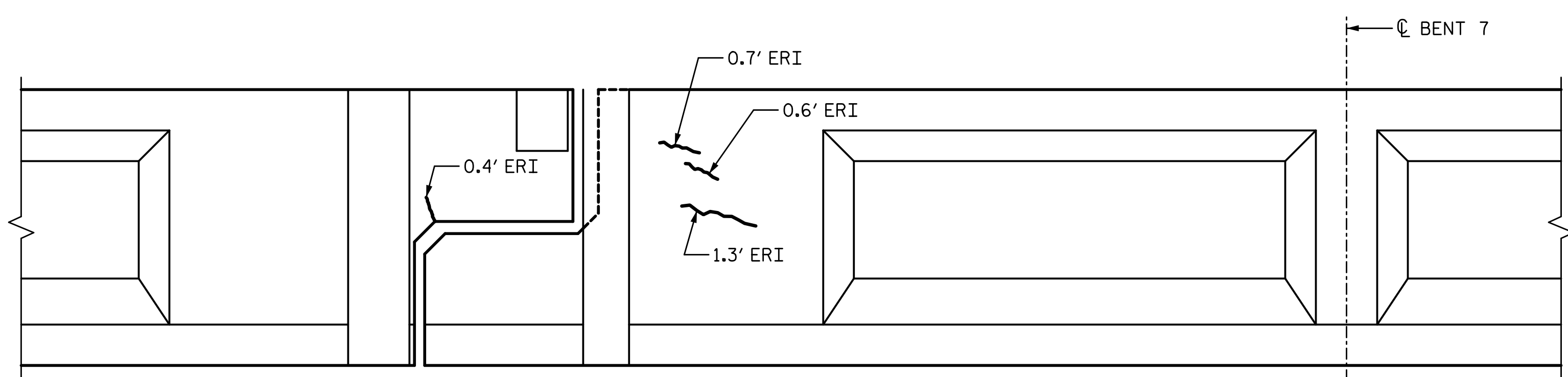
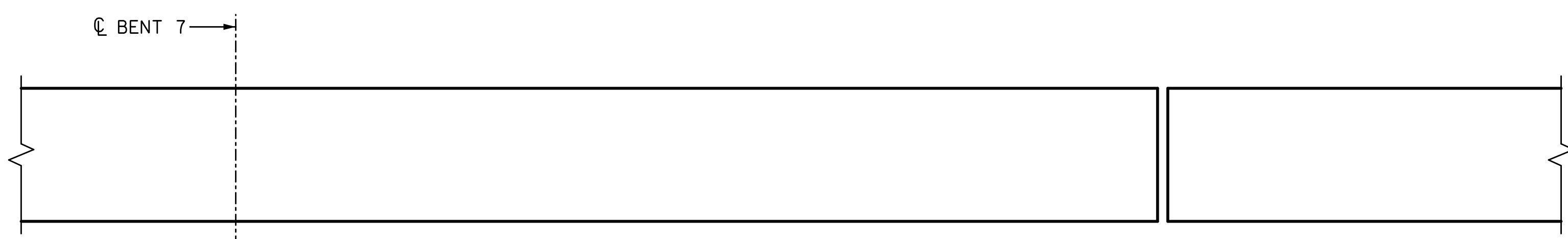
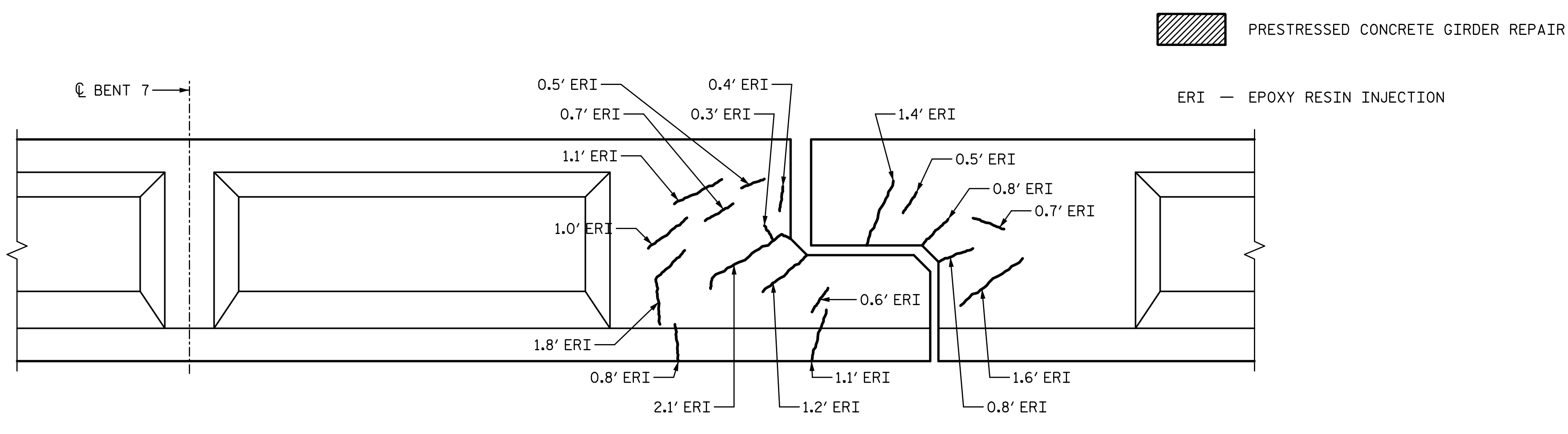
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION
**WEST HINGE DETAILS
FOR GIRDER 6**

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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REPAIR QUANTITY TABLE				
REPAIRS WEST HINGE	QUANTITIES			
	ESTIMATE		ACTUAL	
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
GIRDER	0.0	0.0		
EPOXY RESIN INJECTION		LF		LF
GIRDER		19.3		

NOTES:

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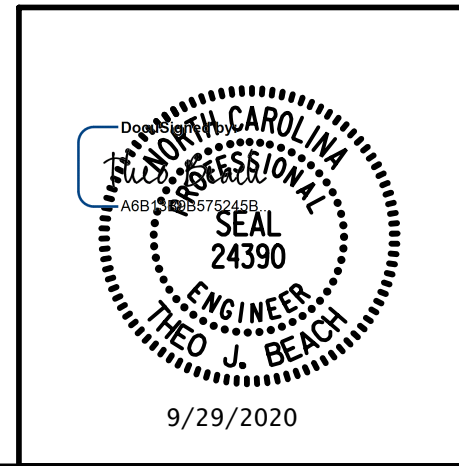
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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049
 SHEET 7 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**WEST HINGE DETAILS
 FOR GIRDER 7**

PLANS PREPARED BY:
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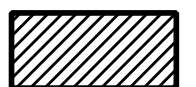


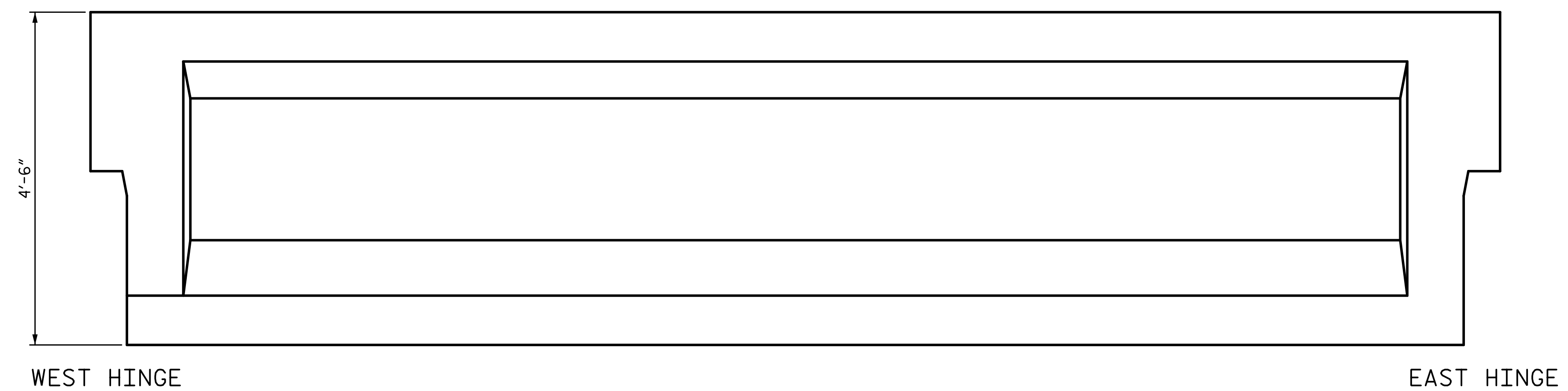
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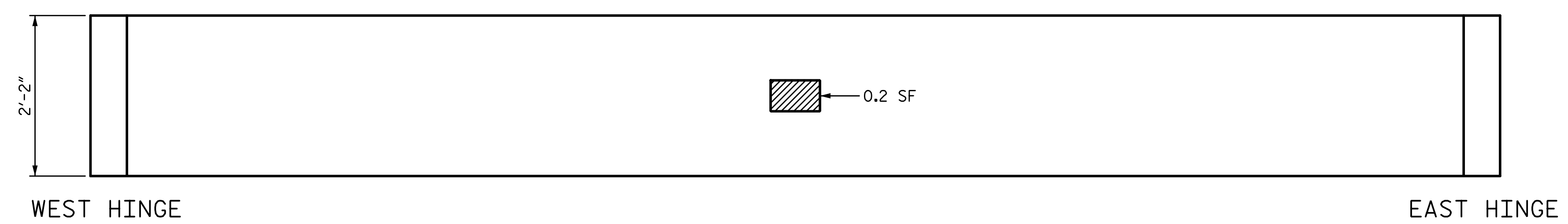
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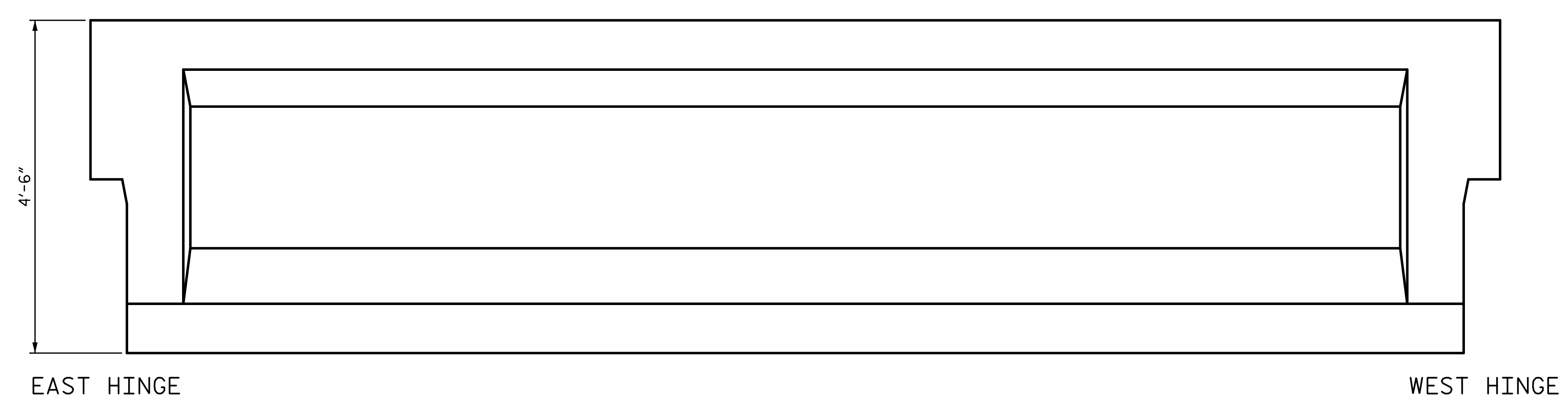
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 8 GRD. 1	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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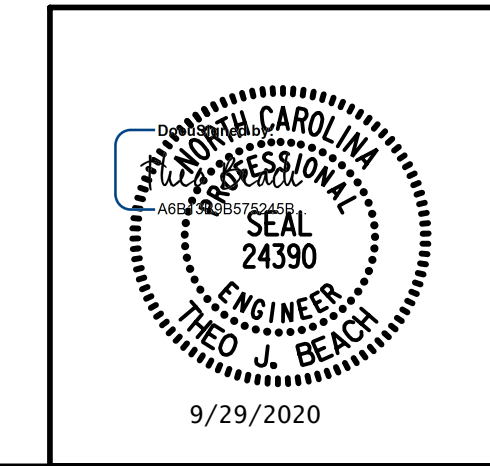
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 8
 GIRDER 1

PLANS PREPARED BY:

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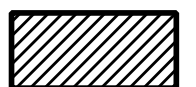


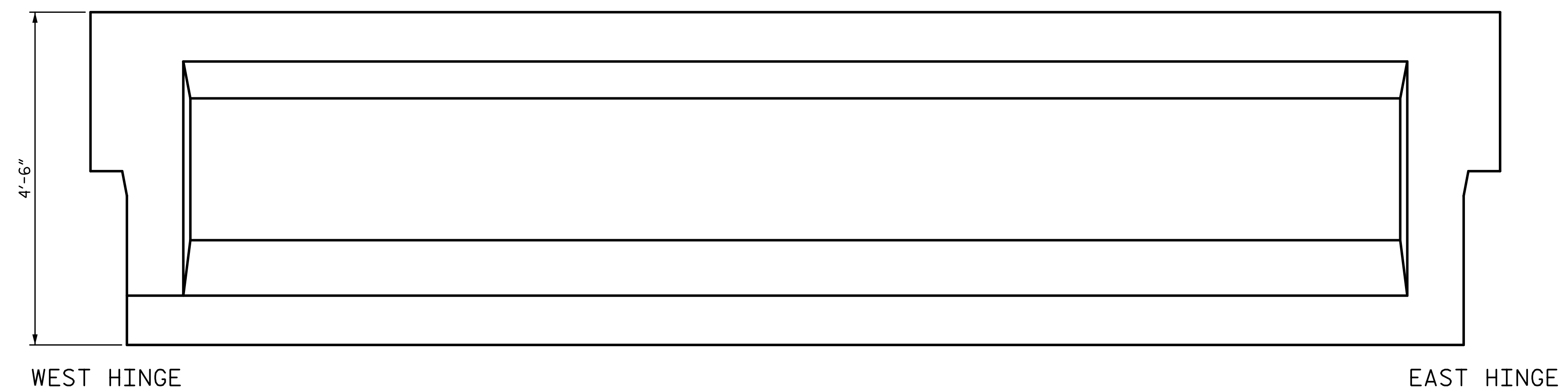
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-77
1			3			TOTAL SHEETS
2			4			163

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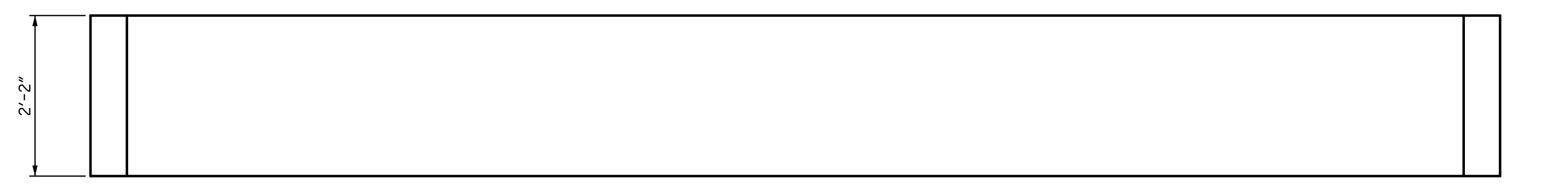
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



WEST HINGE

EAST HINGE

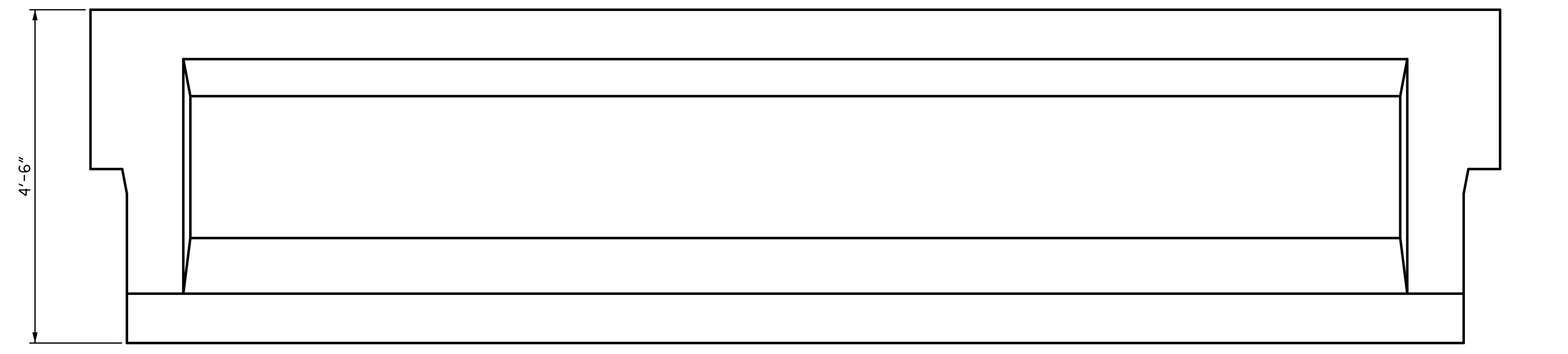
ELEVATION
SOUTH FACE



WEST HINGE

EAST HINGE

PLAN
BOTTOM OF BEAM
LOOKING UP



EAST HINGE

WEST HINGE

ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 8 GRD. 2	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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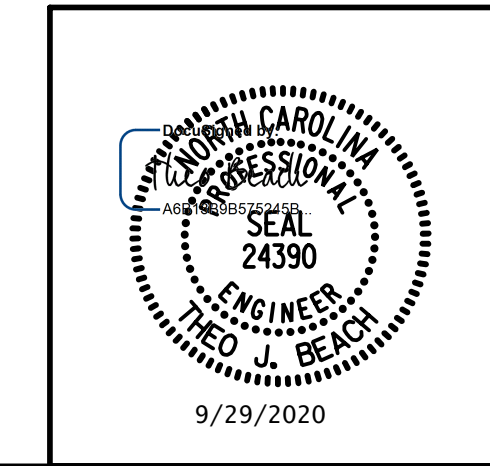
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 8
 GIRDER 2

PLANS PREPARED BY:

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 Cary, NC 27518
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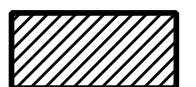


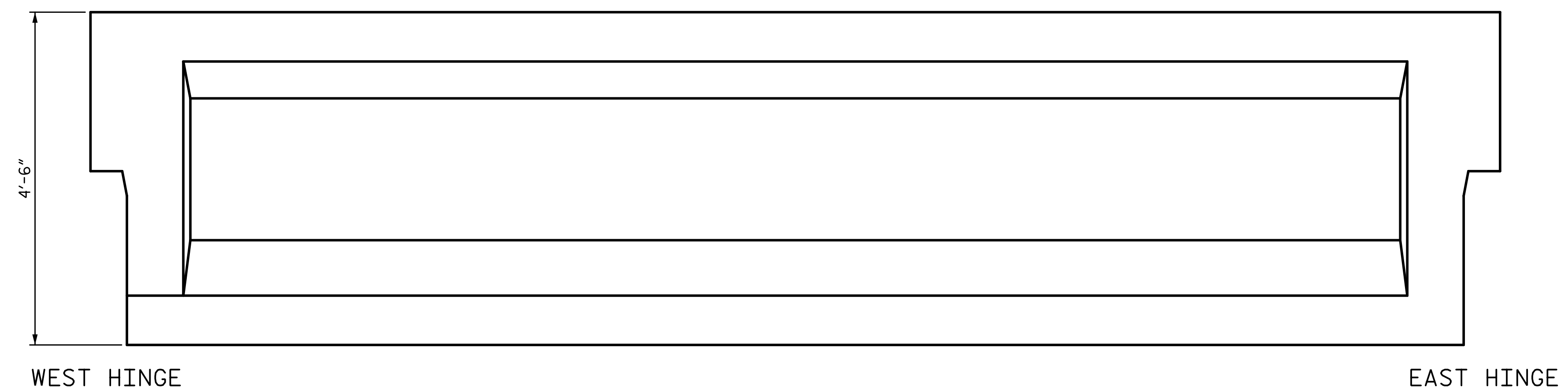
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CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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1			3			TOTAL SHEETS
2			4			163

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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



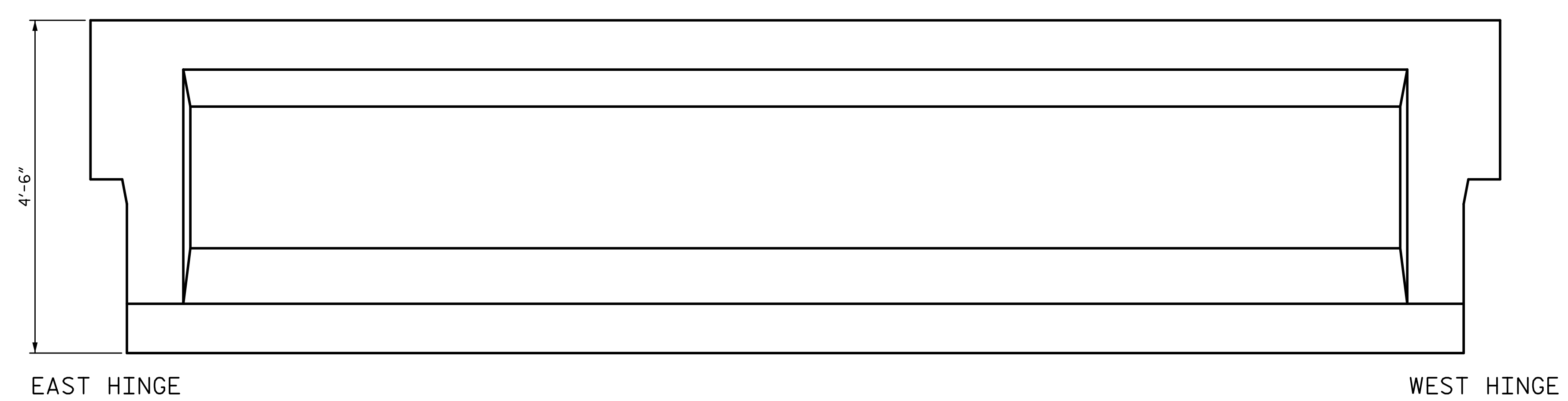
WEST HINGE EAST HINGE

ELEVATION
SOUTH FACE



WEST HINGE EAST HINGE

PLAN
BOTTOM OF BEAM
LOOKING UP



EAST HINGE WEST HINGE

ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 8 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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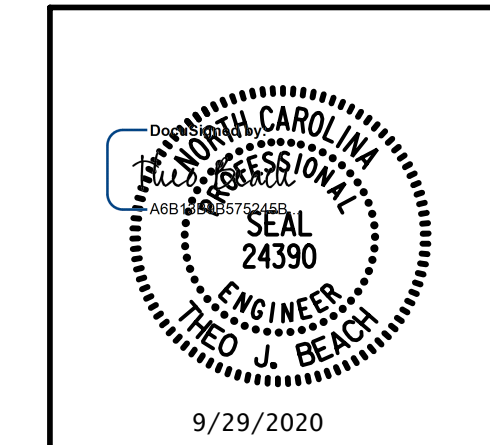
SHEET 3 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

SPAN 8
GIRDER 3

PLANS PREPARED BY:

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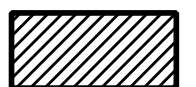


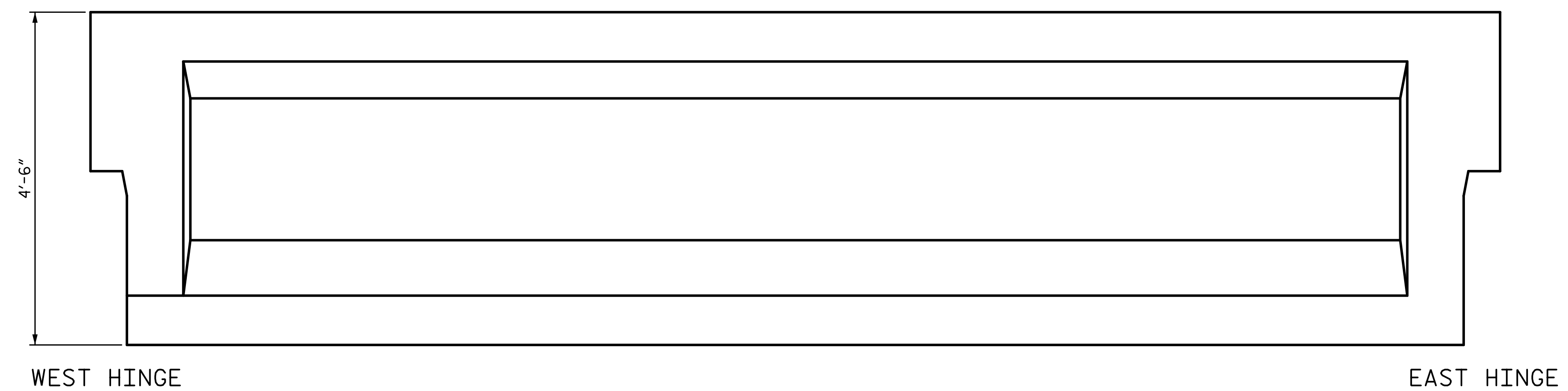
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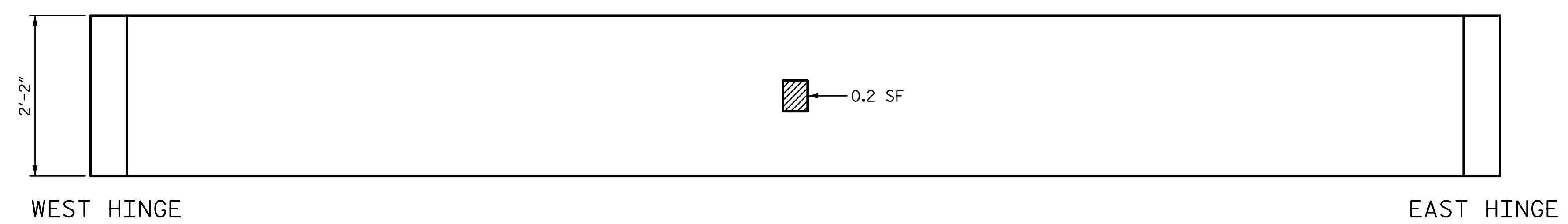
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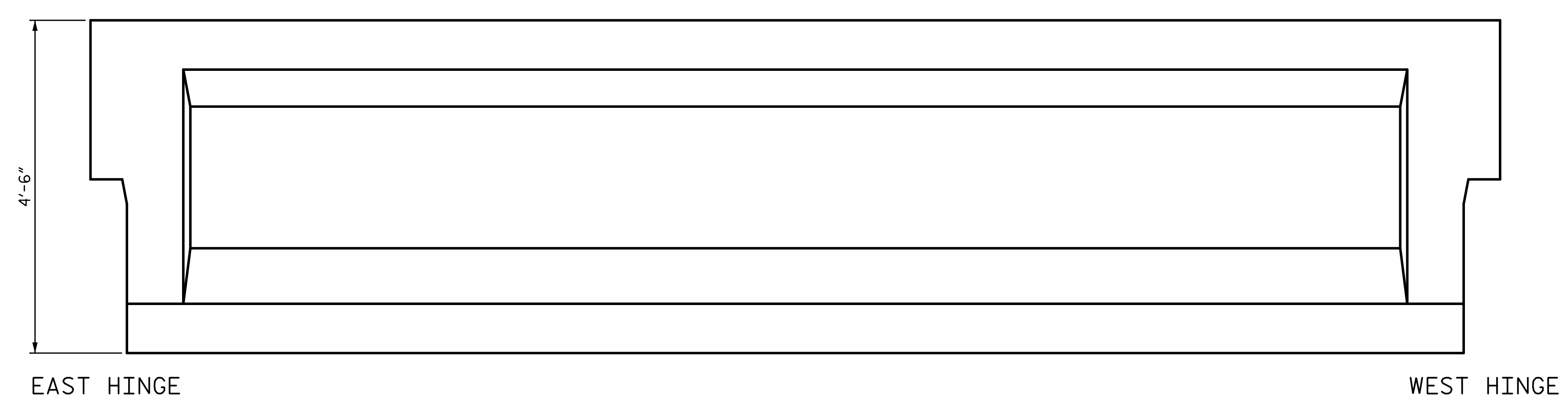
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 8 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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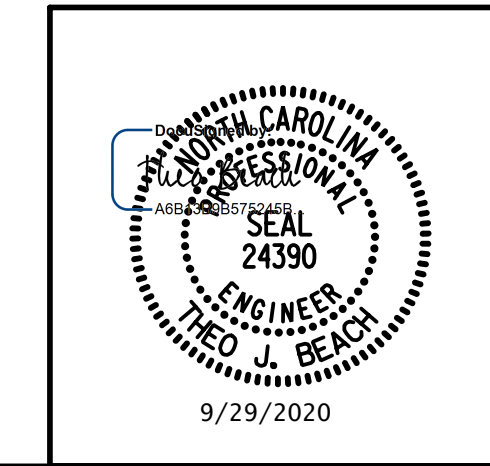
PROJECT NO. 15BPR.26
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 BRIDGE NO.: 640049

SHEET 4 OF 7

STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION
 SPAN 8
 GIRDER 4

PLANS PREPARED BY:

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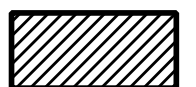


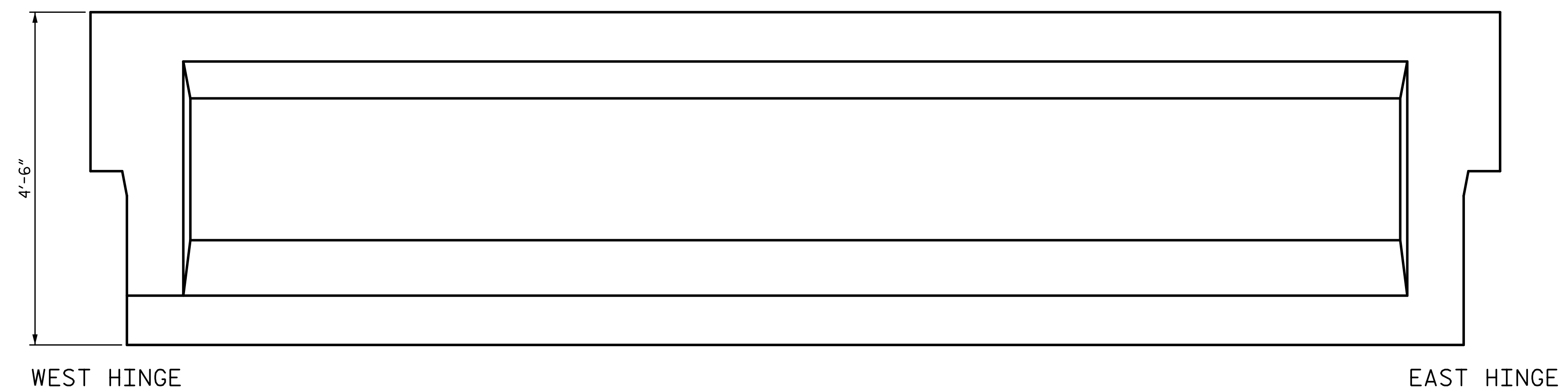
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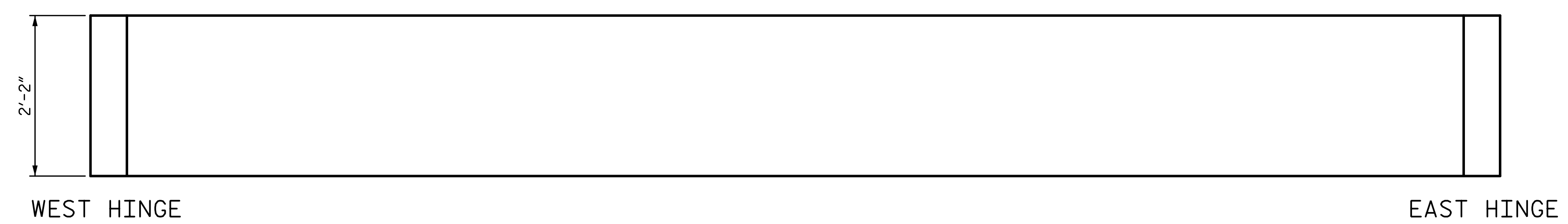
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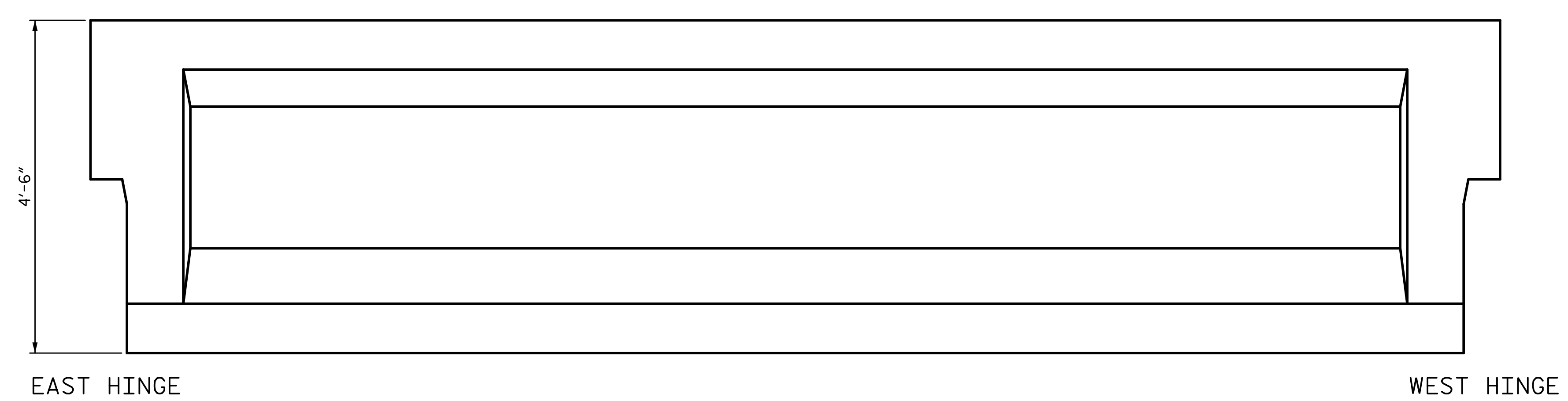
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 8 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

NOTES:
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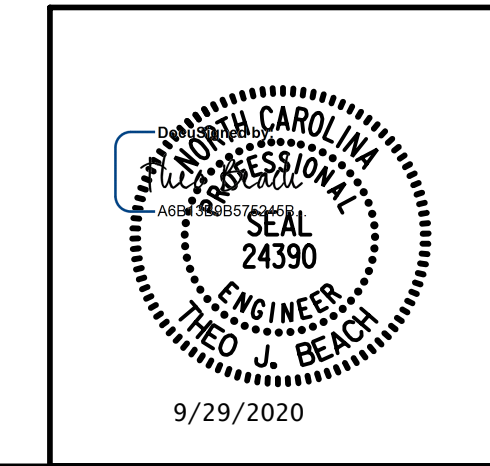
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 8
 GIRDER 5

PLANS PREPARED BY:

 SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
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 (919) 852-0538 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521

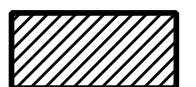


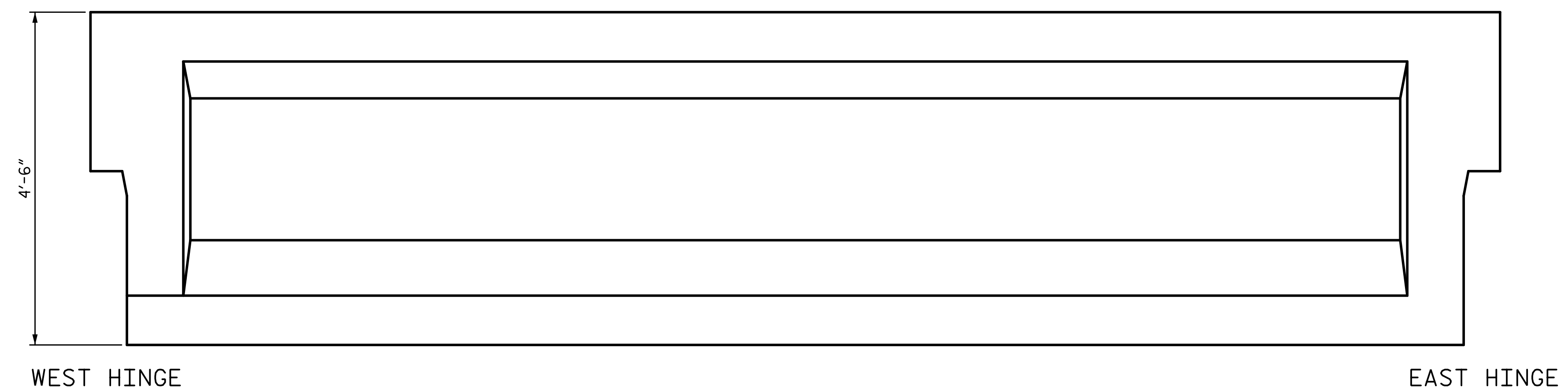
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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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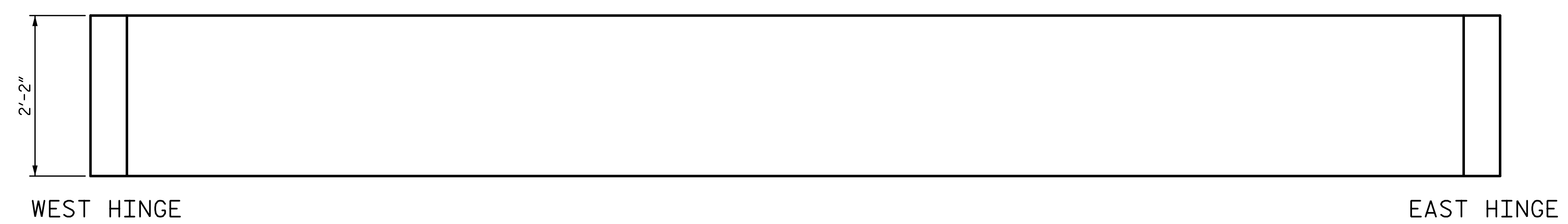
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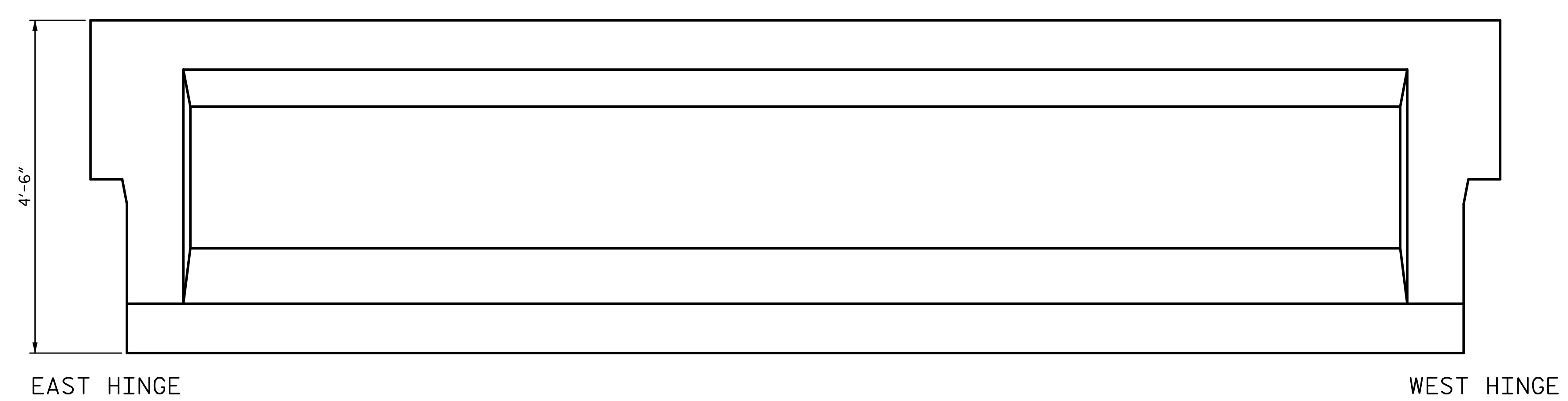
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 8 GRD. 6	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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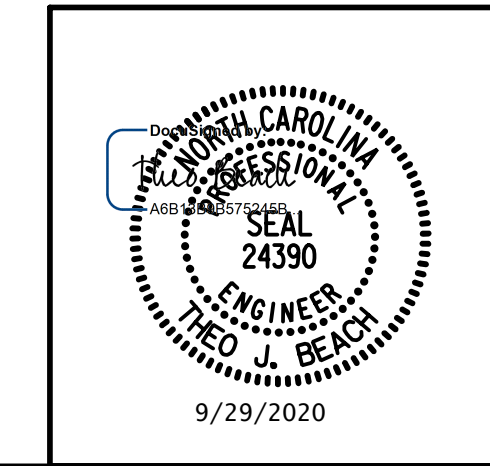
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 6 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 8
 GIRDER 6

PLANS PREPARED BY:

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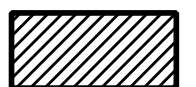


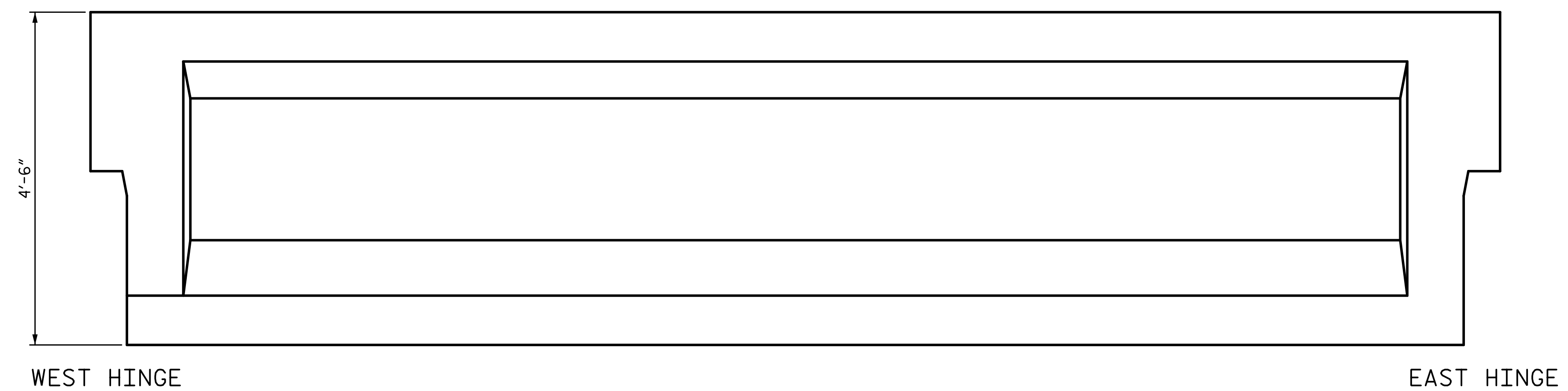
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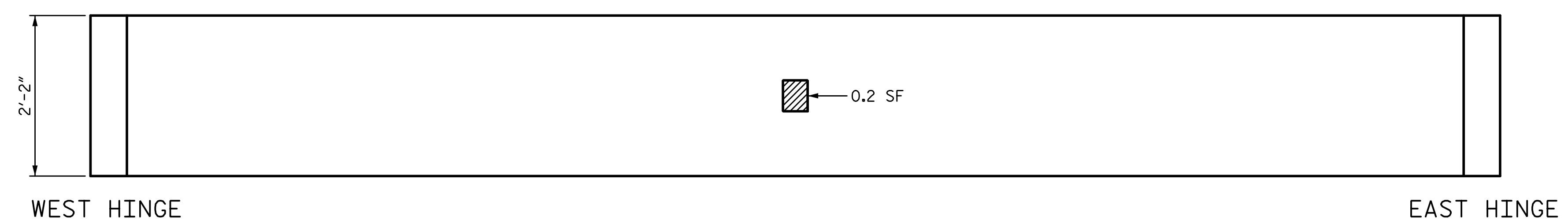
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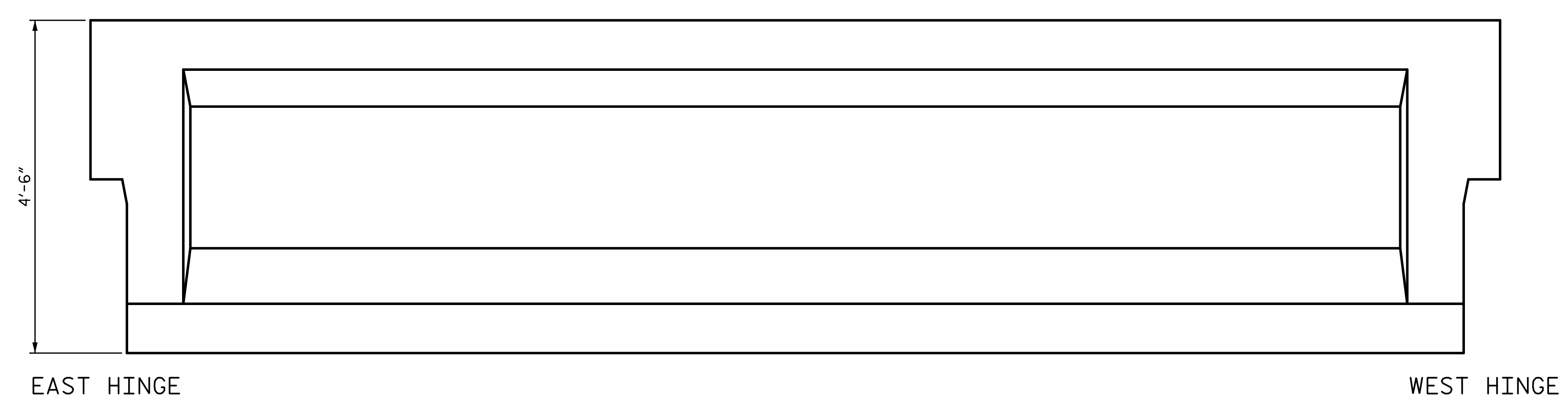
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 8 GRD. 7	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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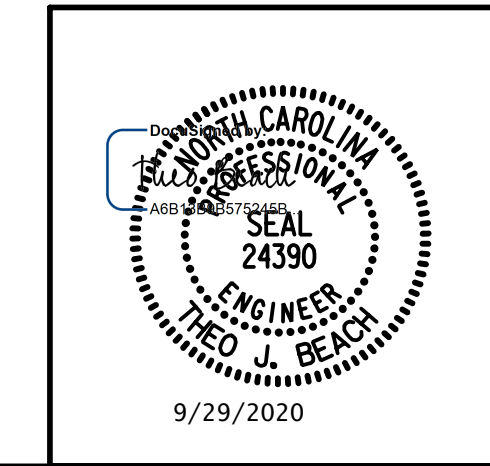
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 7 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 8
 GIRDER 7

PLANS PREPARED BY:

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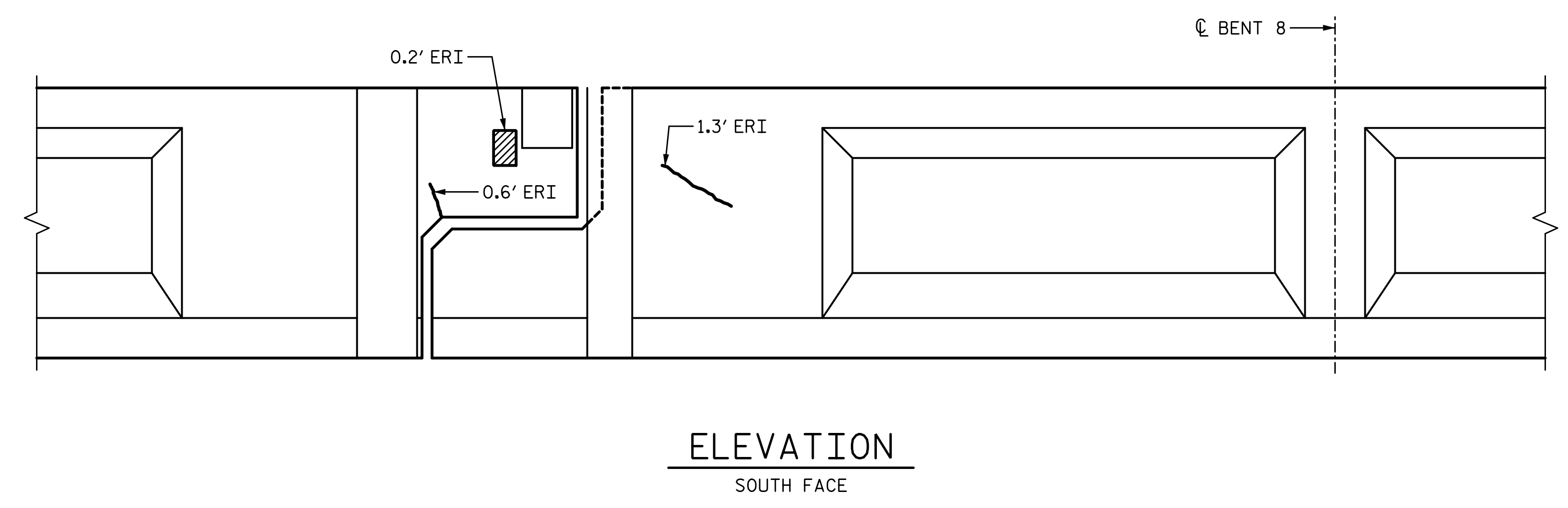


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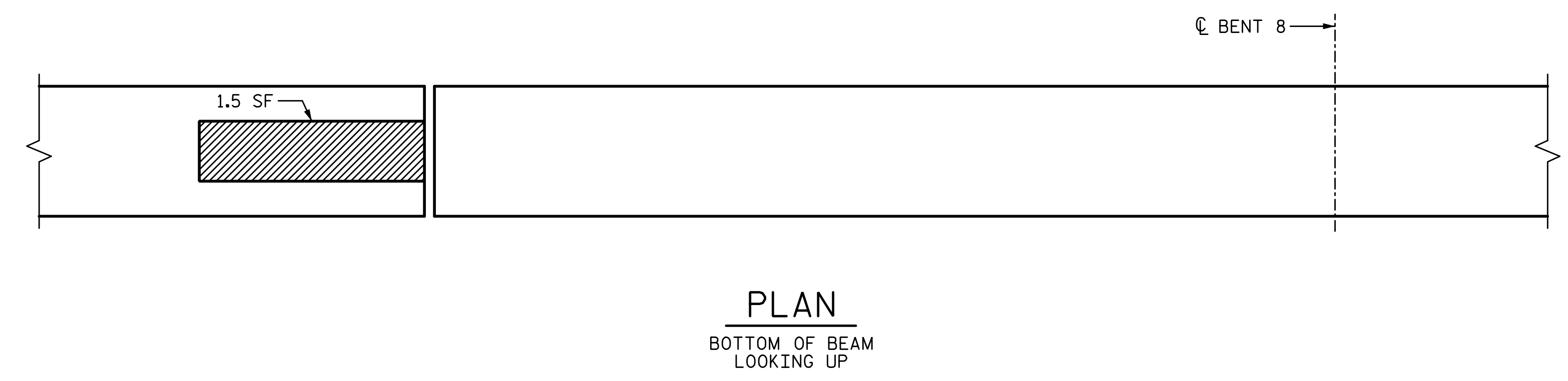
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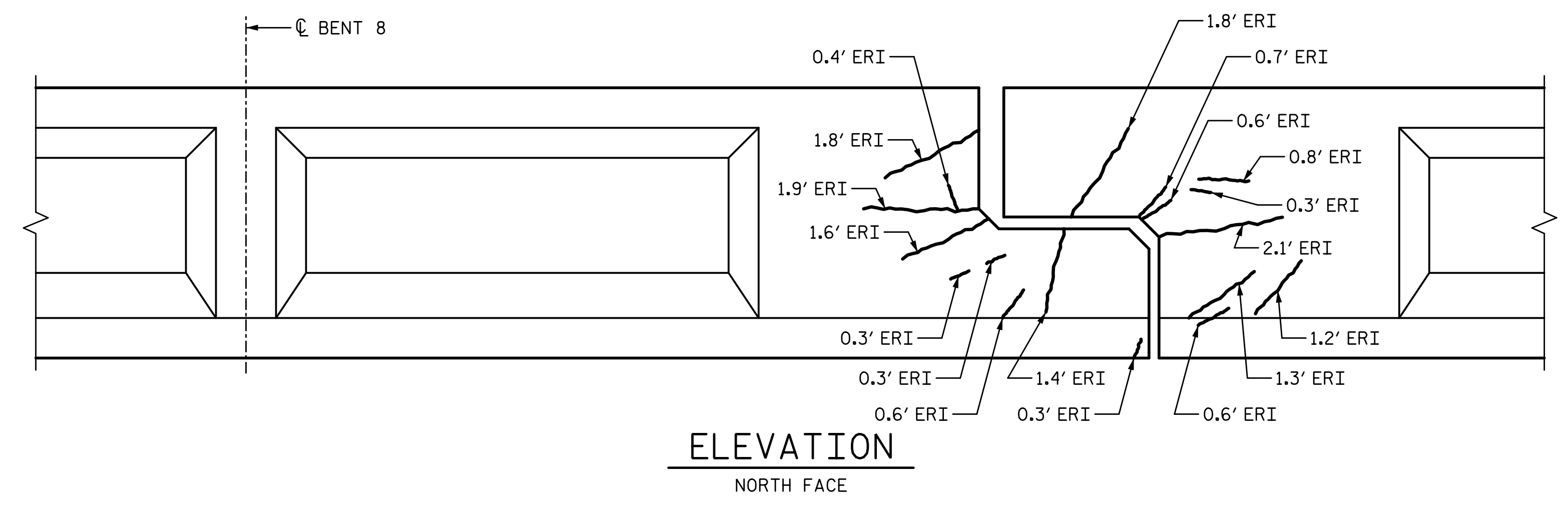
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ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS EAST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.7	0.5			
EPOXY RESIN INJECTION		LF			LF
GIRDER		19.9			

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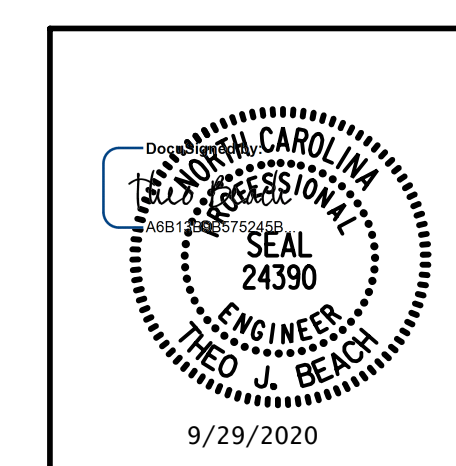
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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049
 SHEET 1 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**EAST HINGE DETAILS
 FOR GIRDER 1**

PLANS PREPARED BY:
SE & A
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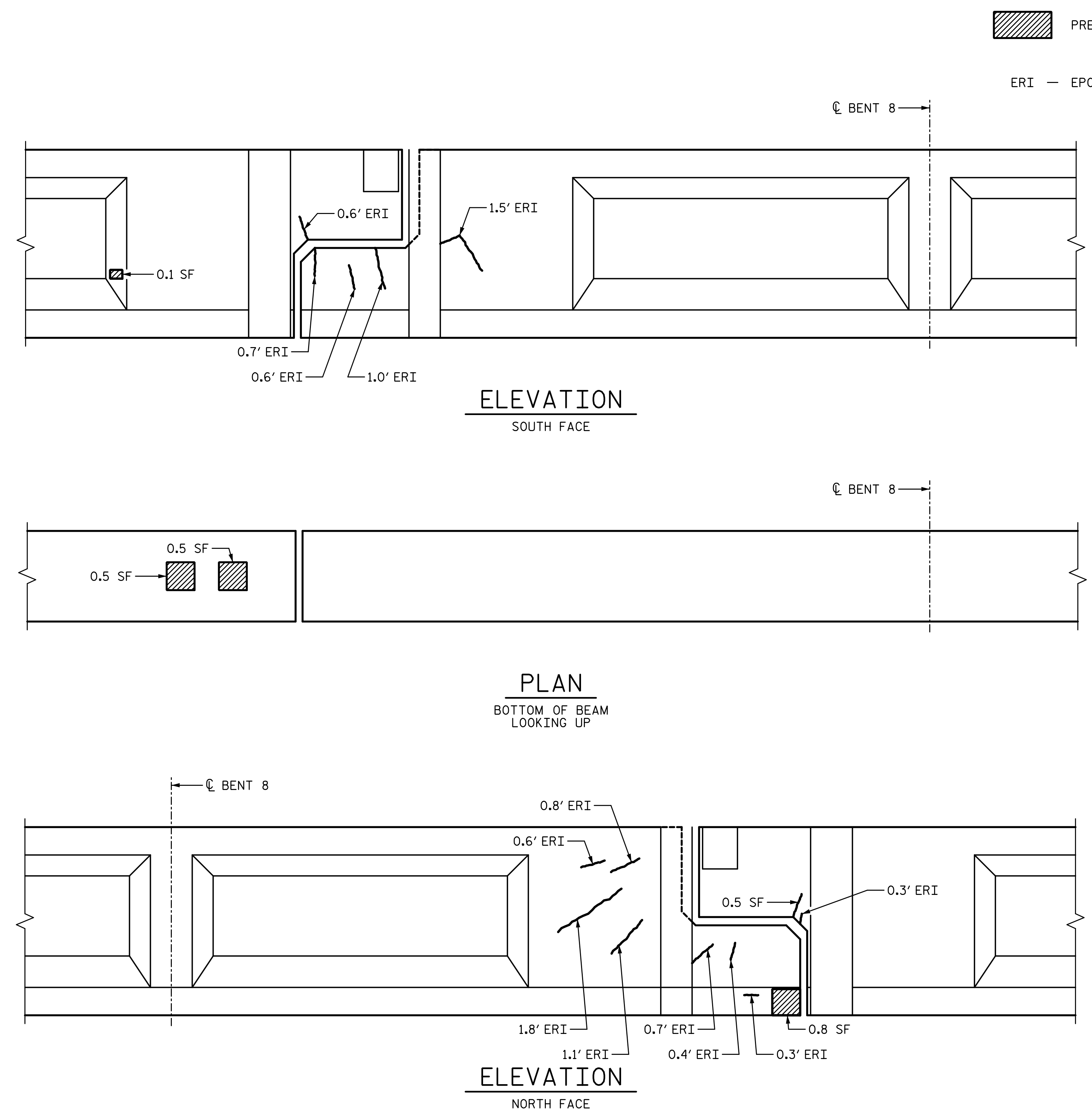


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PRESTRESSED CONCRETE GIRDER REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE

REPAIRS EAST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.9	0.7			
EPOXY RESIN INJECTION		LF			LF
GIRDER		10.9			

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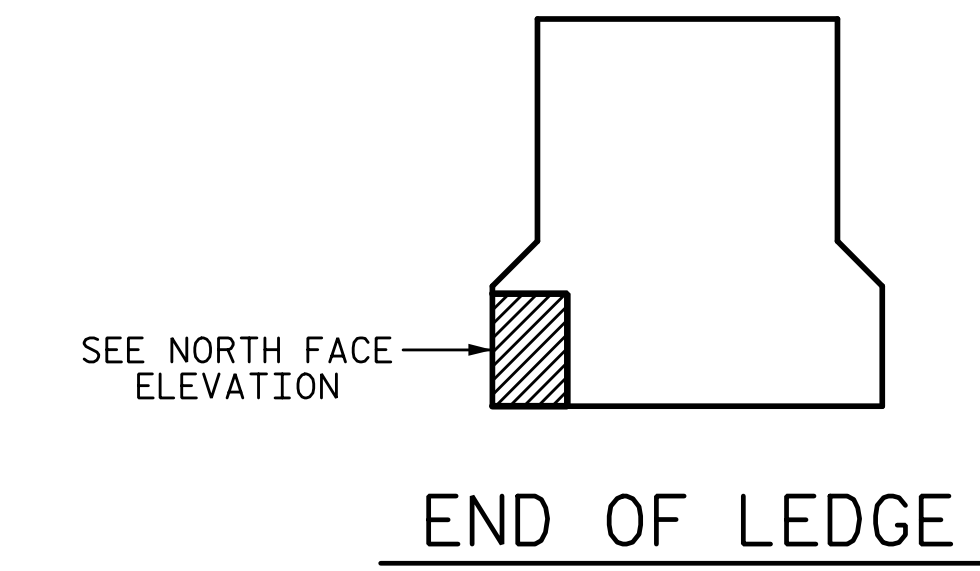
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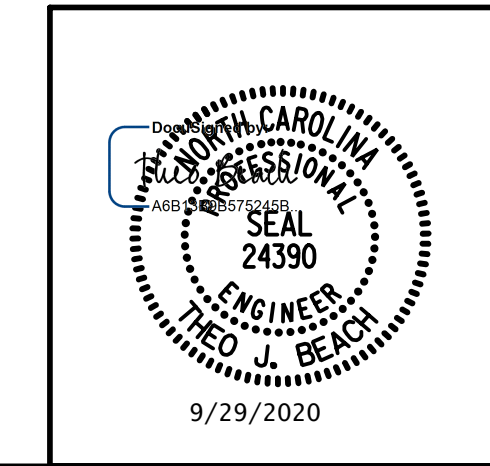
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**EAST HINGE DETAILS
 FOR GIRDER 2**

PLANS PREPARED BY:
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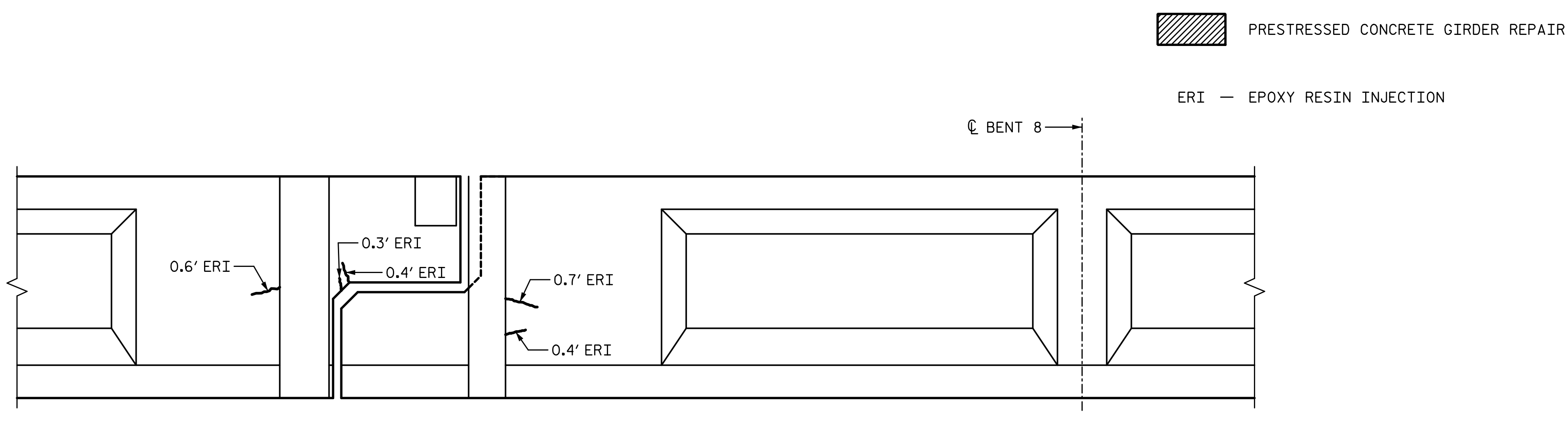


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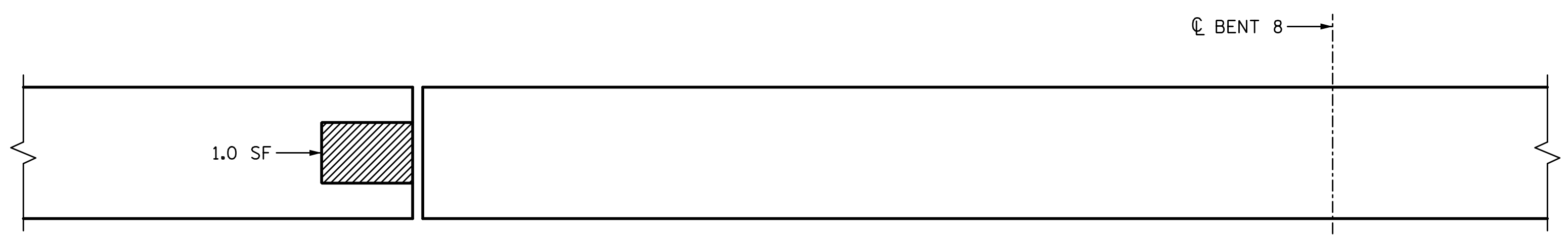
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-85
1			3			TOTAL SHEETS
2			4			163

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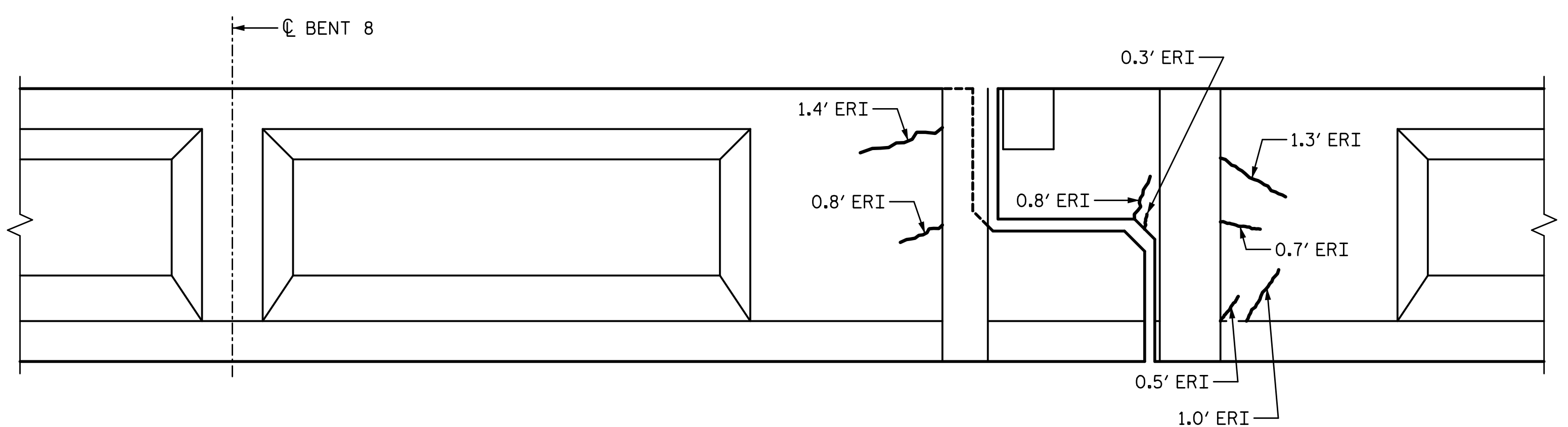
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ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

PRESTRESSED CONCRETE GIRDER REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE

REPAIRS EAST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.3	0.4			
EPOXY RESIN INJECTION		LF			LF
GIRDER		9.2			

NOTES:

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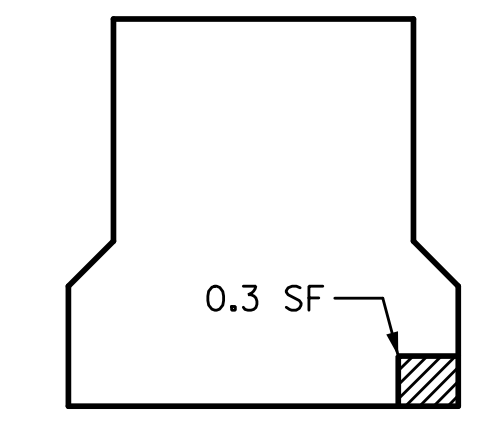
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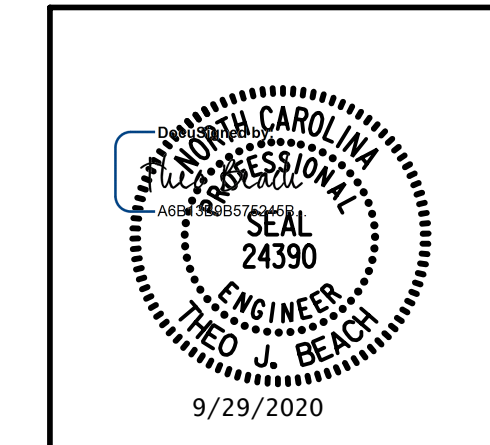
END OF LEDGE

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NEW HANOVER/PENDER COUNTY
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SHEET 3 OF 7

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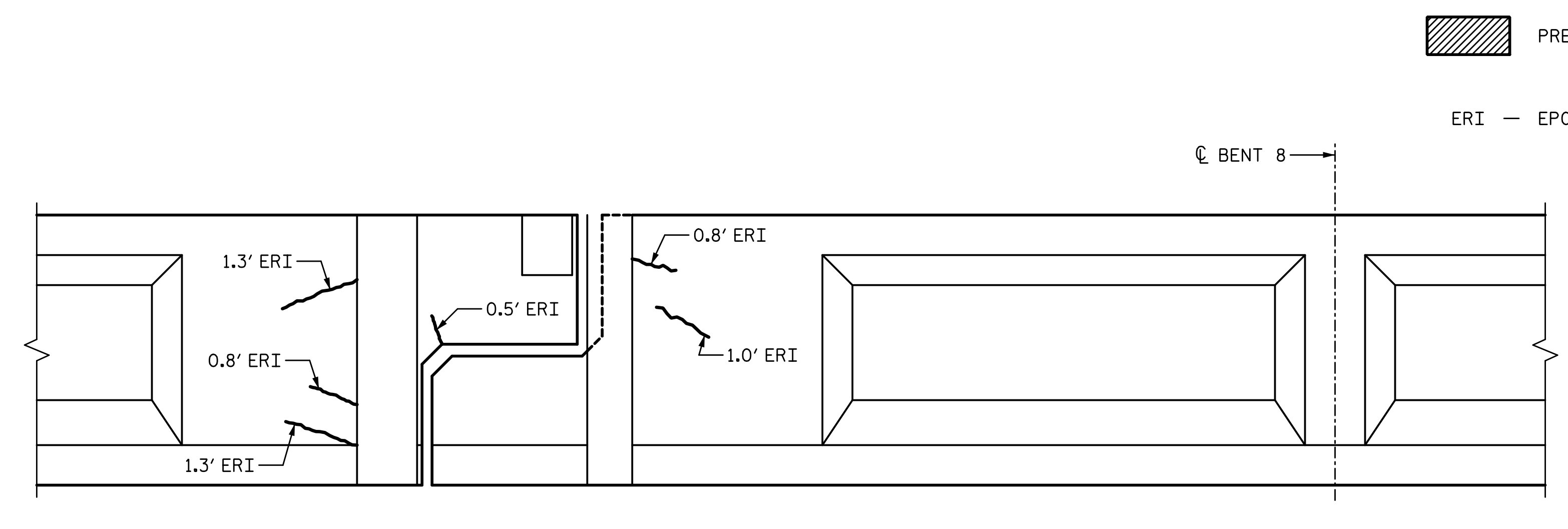
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION
**EAST HINGE DETAILS
FOR GIRDER 3**

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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-86
1			3			TOTAL SHEETS
2			4			163

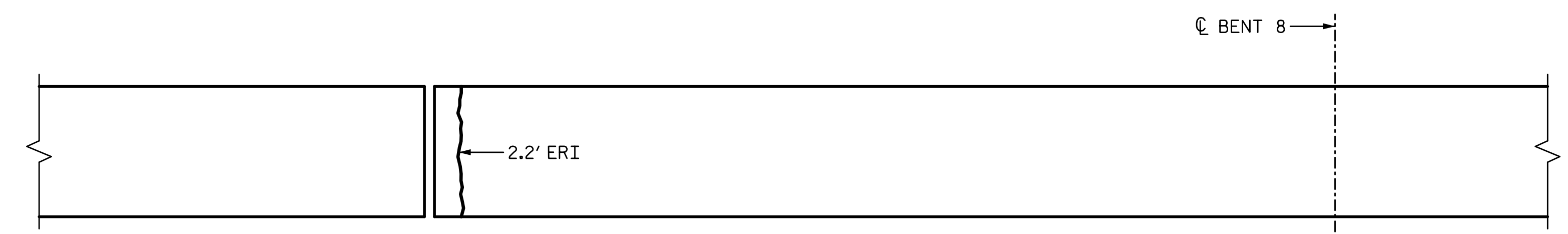
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CHECKED BY: T.J. BEACH DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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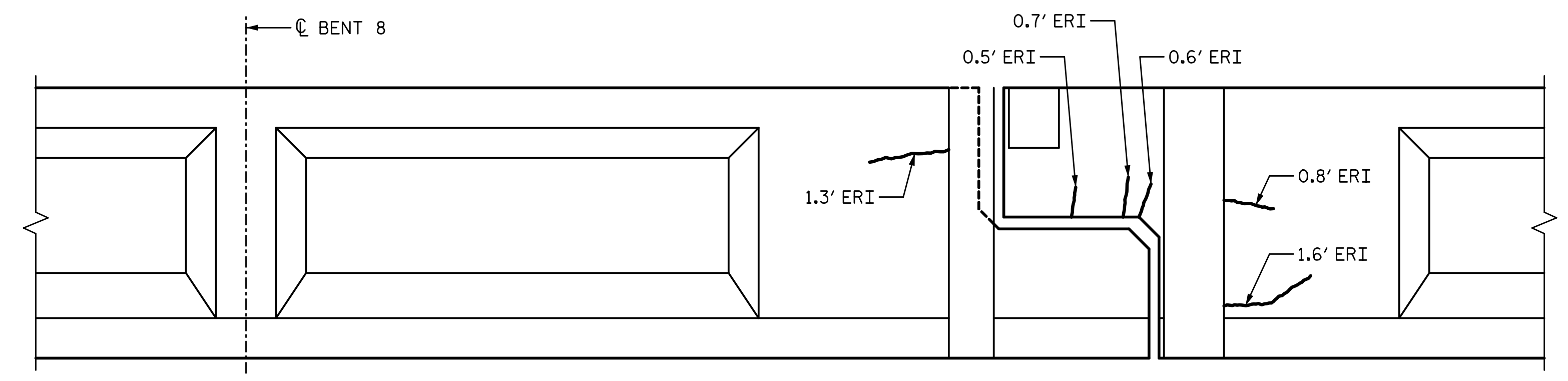
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ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

PRESTRESSED CONCRETE GIRDER REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS EAST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		13.4			

NOTES:
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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
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FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.
FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS DETAILS, SEE "PRESTRESSED CONCRETE GIRDER REPAIR DETAILS" SHEET.
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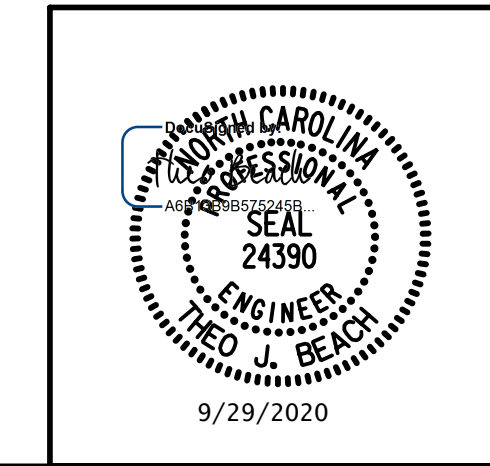
PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 4 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

**EAST HINGE DETAILS
FOR GIRDER 4**

PLANS PREPARED BY:
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LICENSURE NO. C-2521

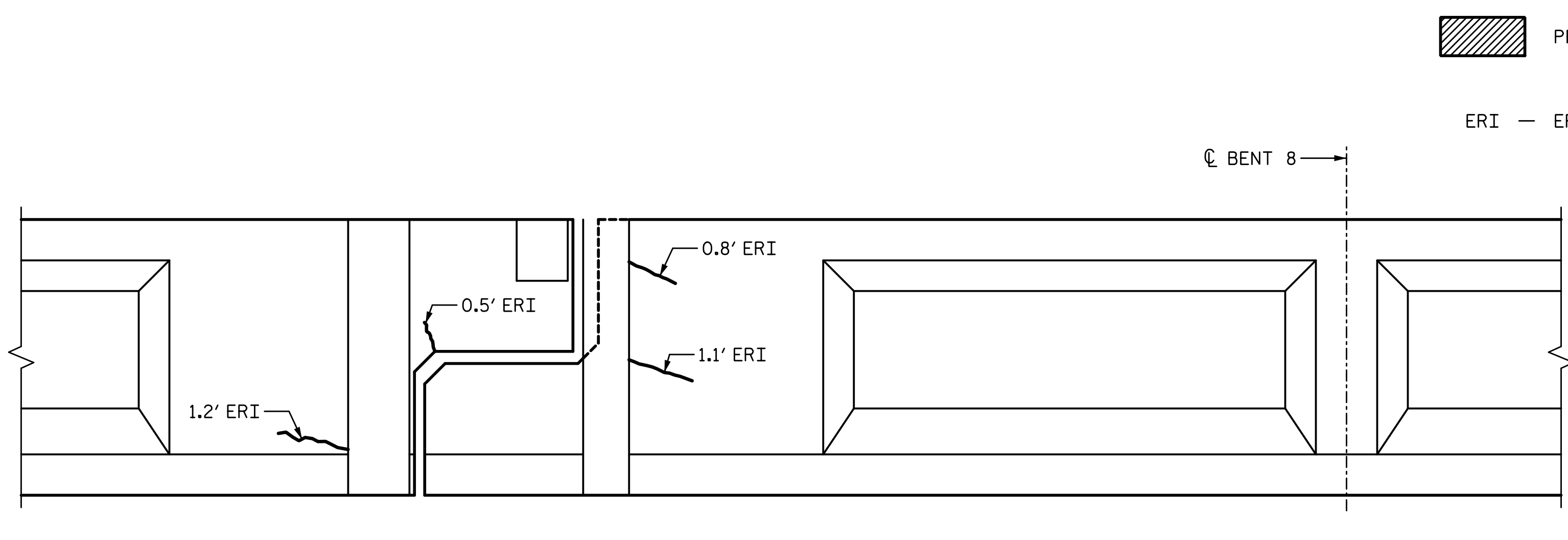


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CHECKED BY: T.J. BEACH DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

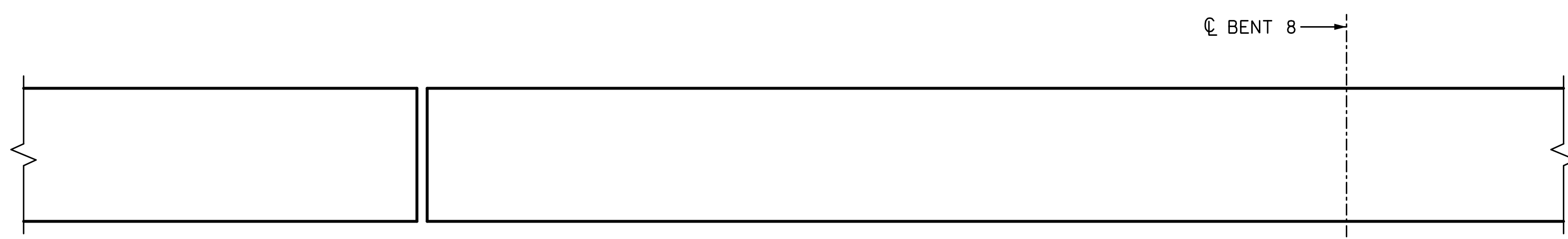
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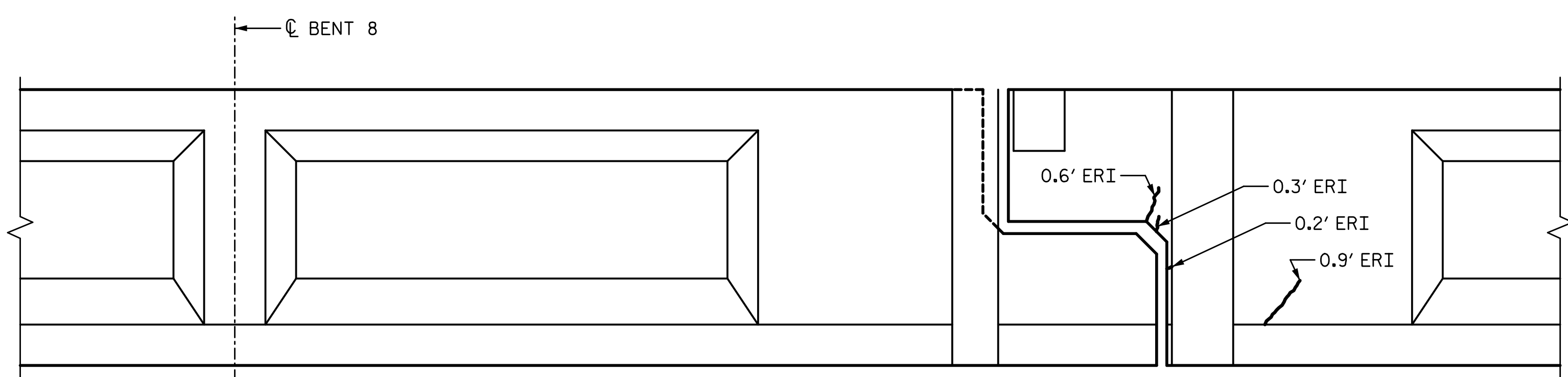
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ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

PRESTRESSED CONCRETE GIRDER REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS EAST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		5.6			

NOTES:
REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.
FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.
FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS DETAILS, SEE "PRESTRESSED CONCRETE GIRDER REPAIR DETAILS" SHEET.
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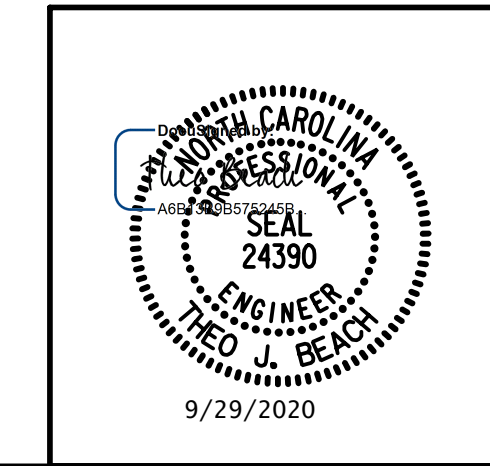
PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 5 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

**EAST HINGE DETAILS
FOR GIRDER 5**

PLANS PREPARED BY:
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LICENSURE NO. C-2521

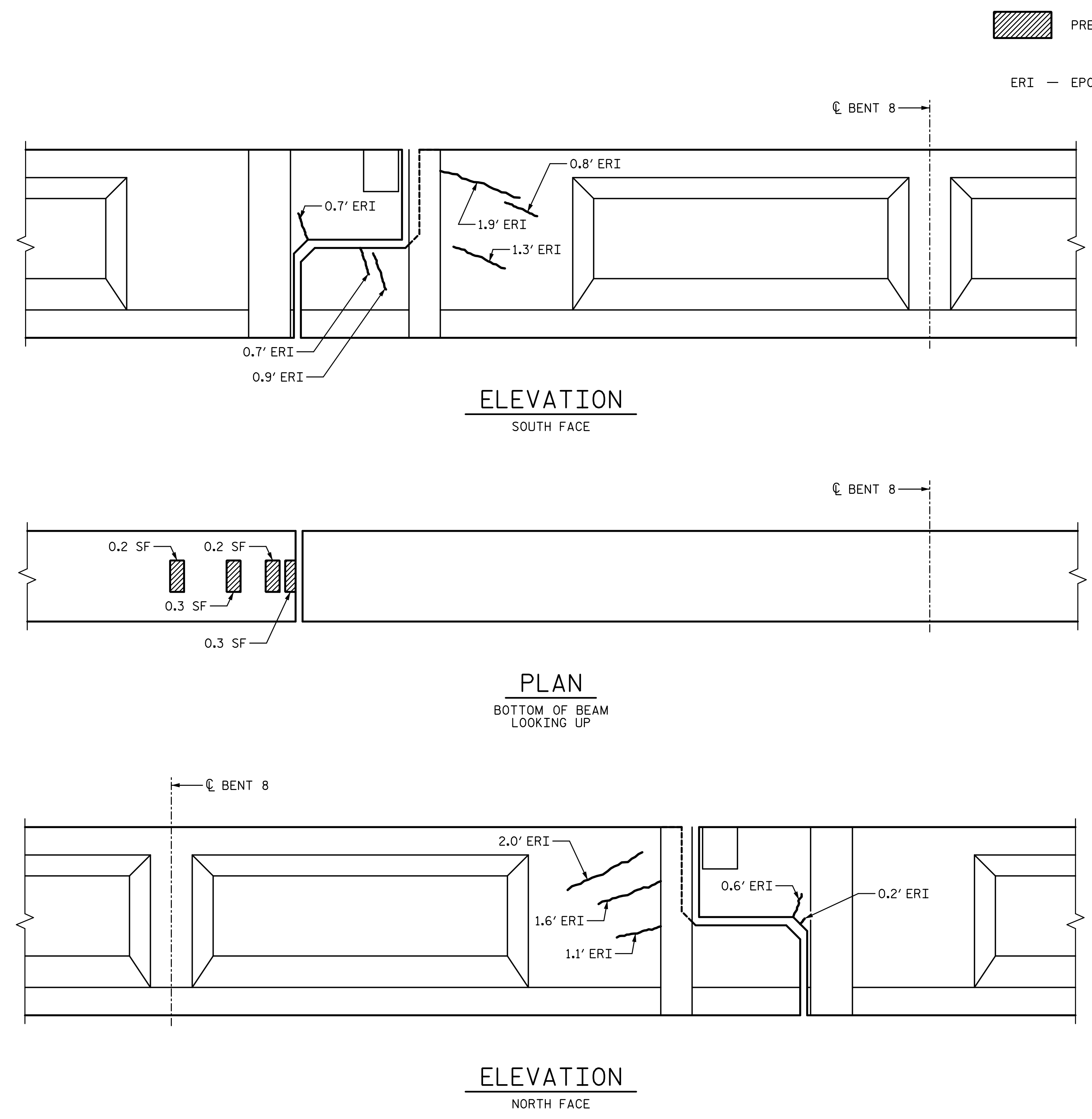


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-88
1			3			TOTAL SHEETS
2			4			163

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DRAWN BY: T. BANKOVICH DATE: 9-20
CHECKED BY: T.J. BEACH DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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REPAIR QUANTITY TABLE					
REPAIRS EAST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.0	0.3			
EPOXY RESIN INJECTION		LF			LF
GIRDER		11.8			

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

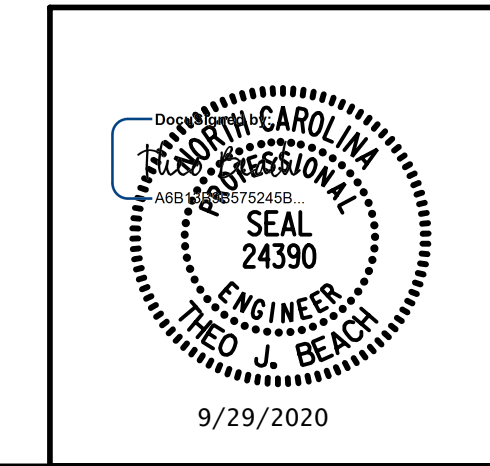
FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS DETAILS, SEE "PRESTRESSED CONCRETE GIRDER REPAIR DETAILS" SHEET.

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049
 SHEET 6 OF 7

DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

PLANS PREPARED BY:
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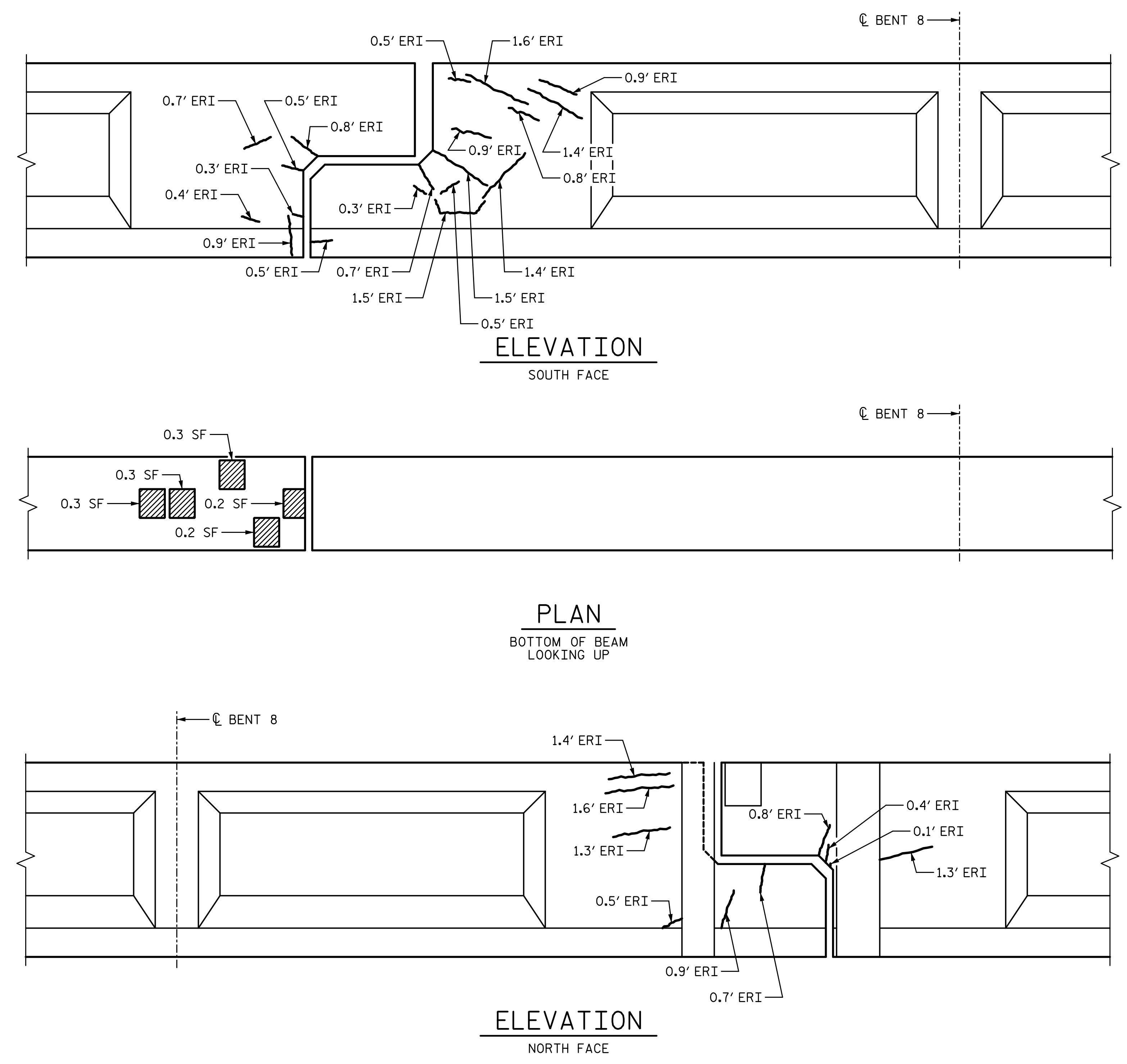
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

EAST HINGE DETAILS FOR GIRDER 6

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-89
1			3			TOTAL SHEETS
2			4			163

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REPAIR QUANTITY TABLE

REPAIRS EAST HINGE	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.3	0.3			
EPOXY RESIN INJECTION		LF			LF
GIRDER		25.1			

NOTES:

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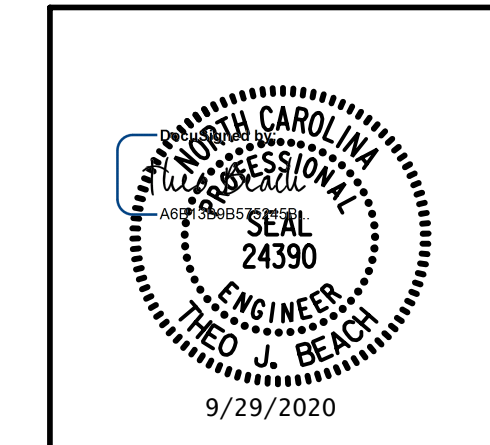
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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 7 OF 7

PLANS PREPARED BY:

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 www.simpsonengr.com
 LICENSURE NO. C-2521



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

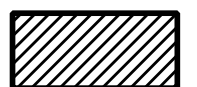
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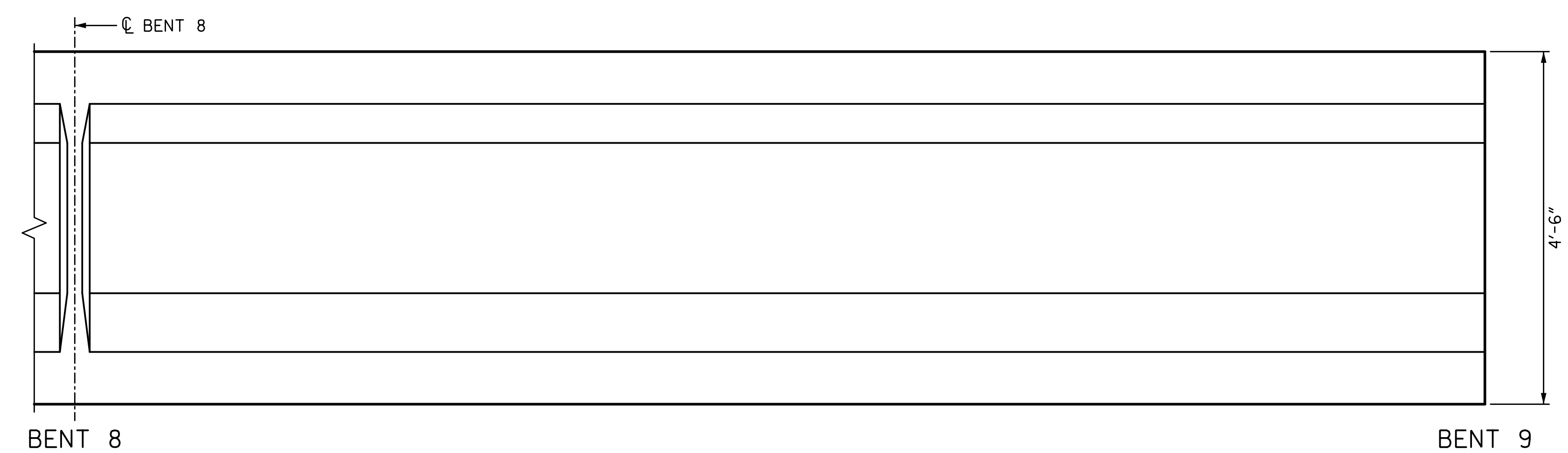
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-90
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2			4			163

DRAWN BY: <u>T. BANKOVICH</u>	DATE: <u>9-20</u>
CHECKED BY: <u>T.J. BEACH</u>	DATE: <u>9-20</u>
DESIGN ENGINEER OF RECORD: <u>T.J. BEACH</u>	DATE: <u>9-20</u>

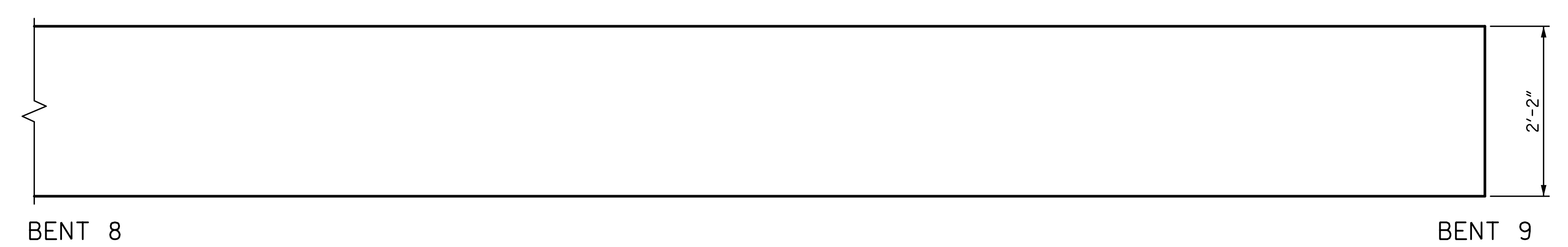
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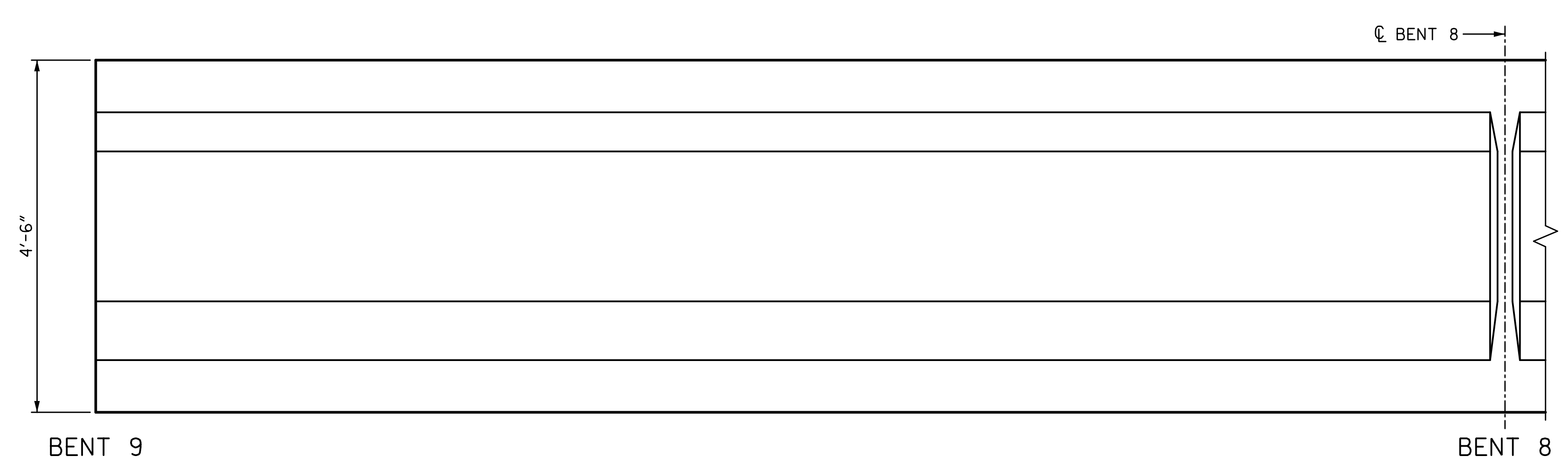
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9 GRD. 1	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

NOTES:
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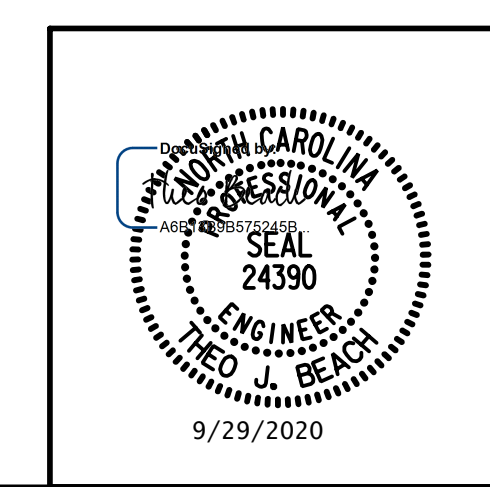
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 9
 GIRDER 1

PLANS PREPARED BY:

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 (919) 852-0468
 (919) 852-0538 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521

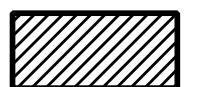


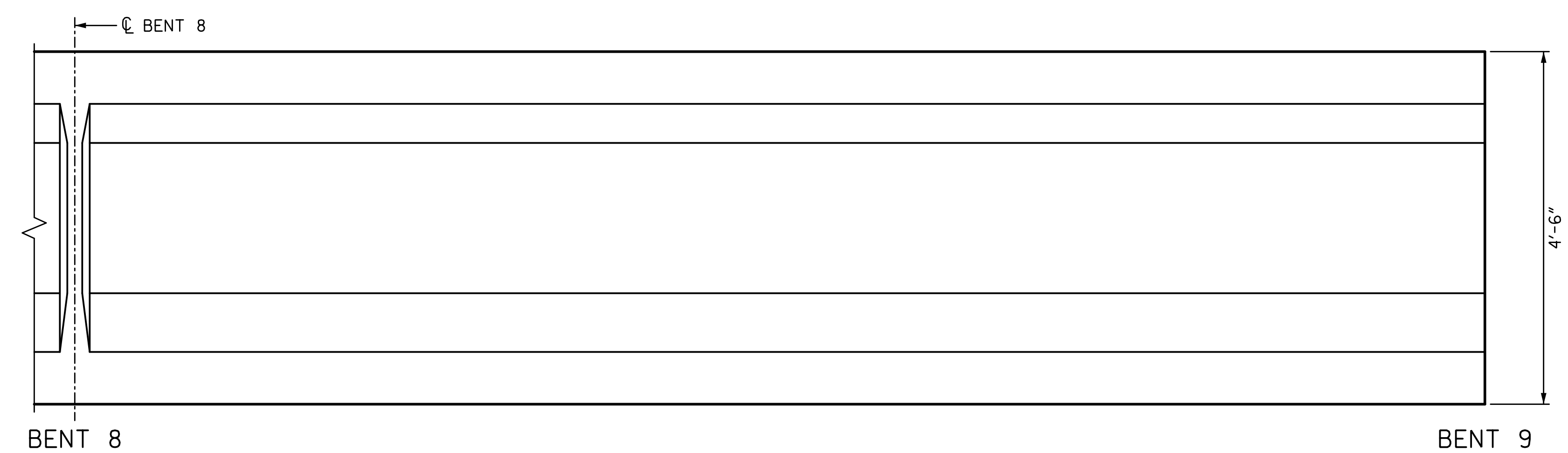
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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-91
1			3			TOTAL SHEETS
2			4			163

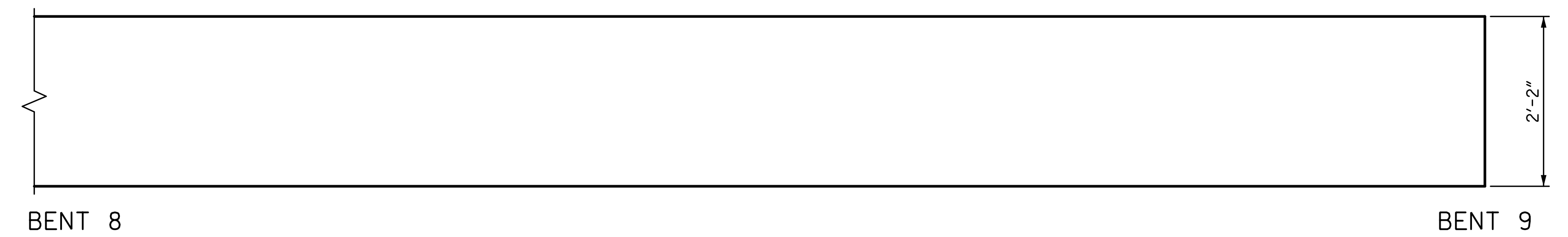
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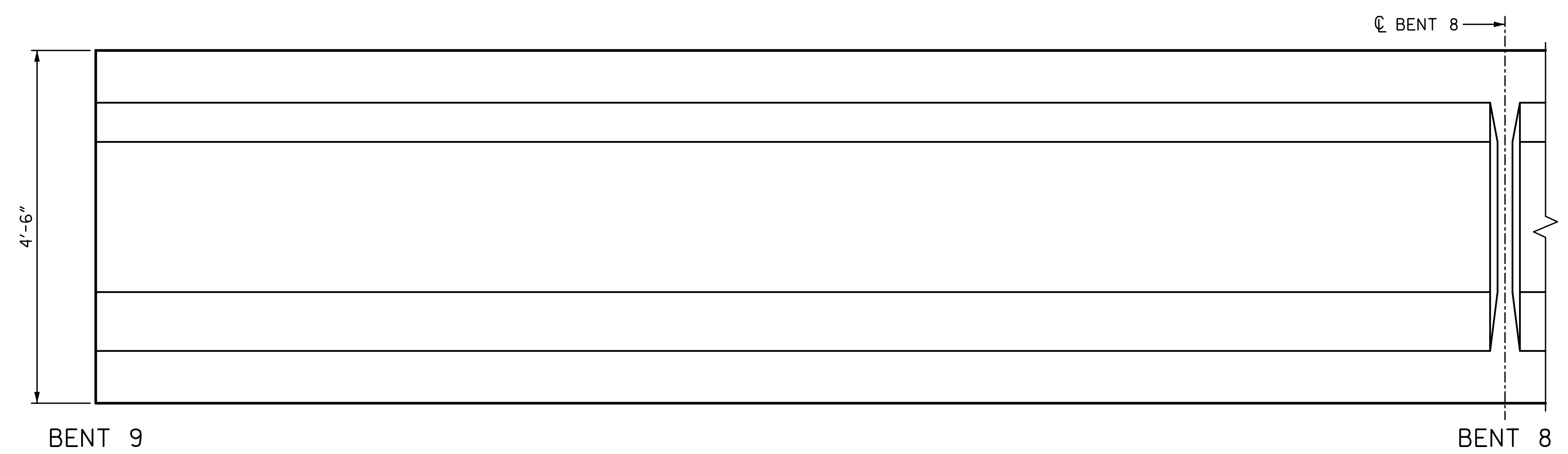
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9 GRD. 2	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

NOTES:
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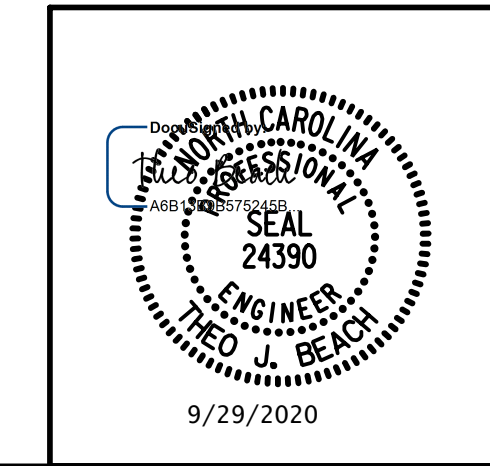
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 9
 GIRDER 2

PLANS PREPARED BY:

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 LICENSURE NO. C-2521

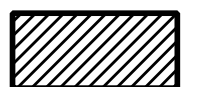


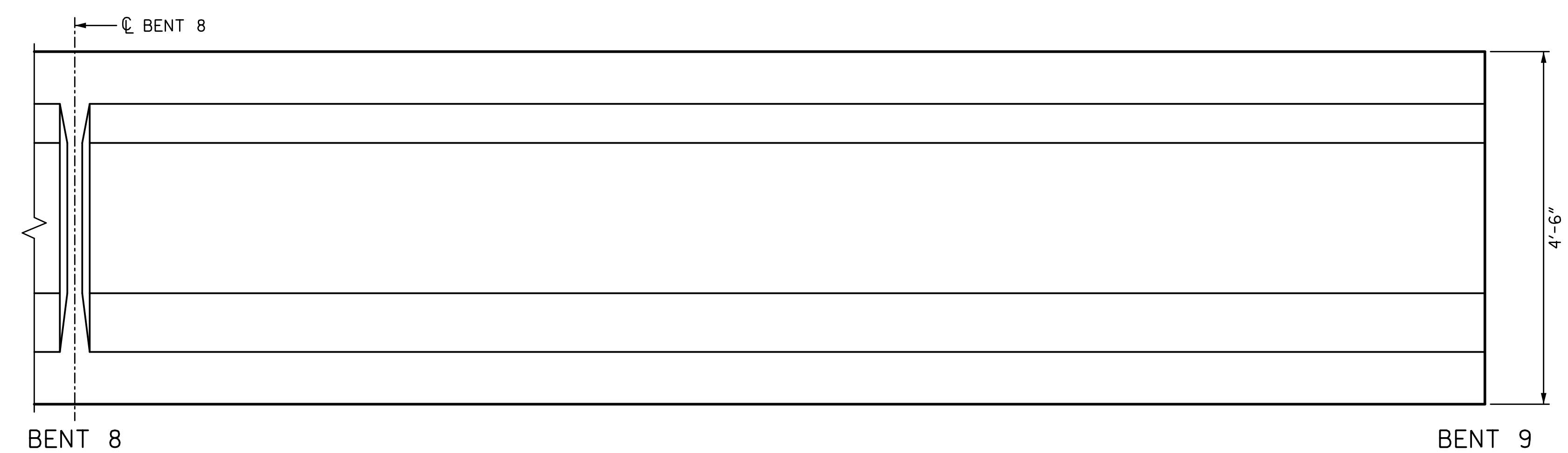
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 CHECKED BY: T.J. BEACH DATE: 9-20
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-92
1			3			TOTAL SHEETS
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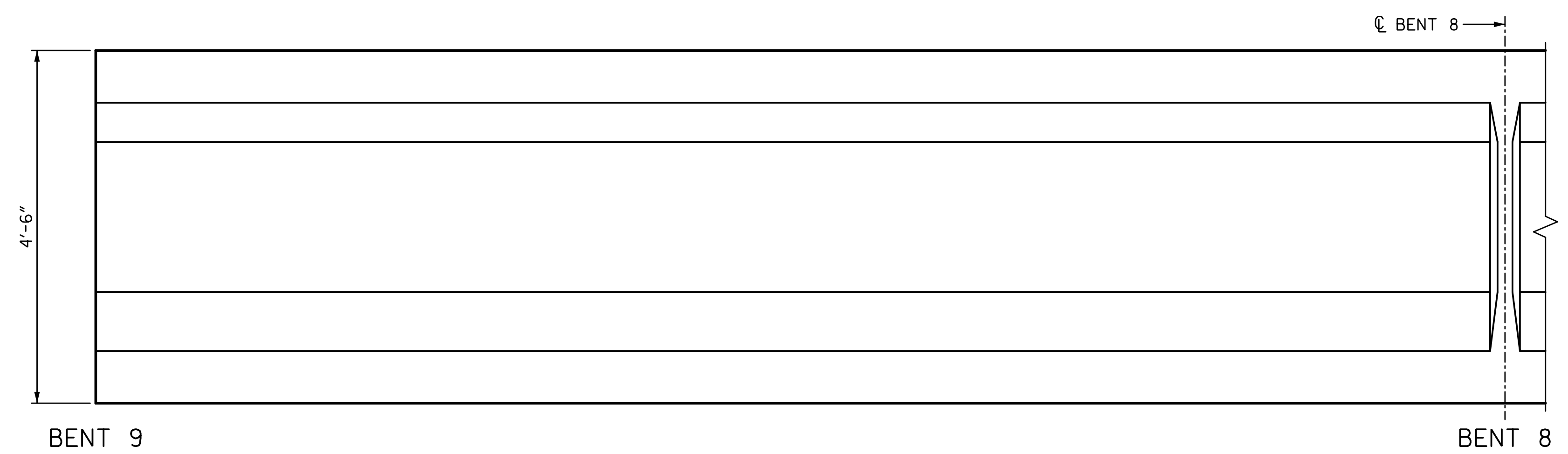
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

NOTES:
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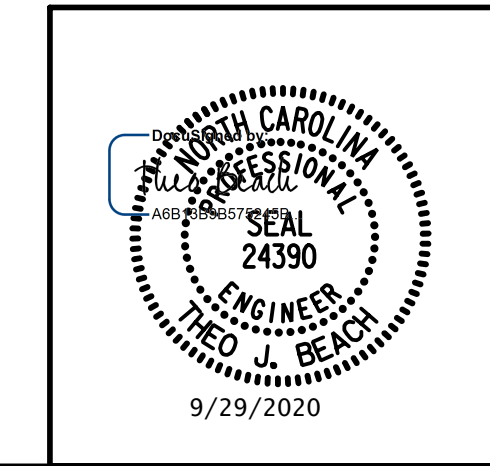
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 9
 GIRDER 3

PLANS PREPARED BY:

 SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
 Suite 200
 Cary, NC 27518
 (919) 852-0468
 (919) 852-0538 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521

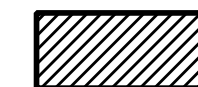


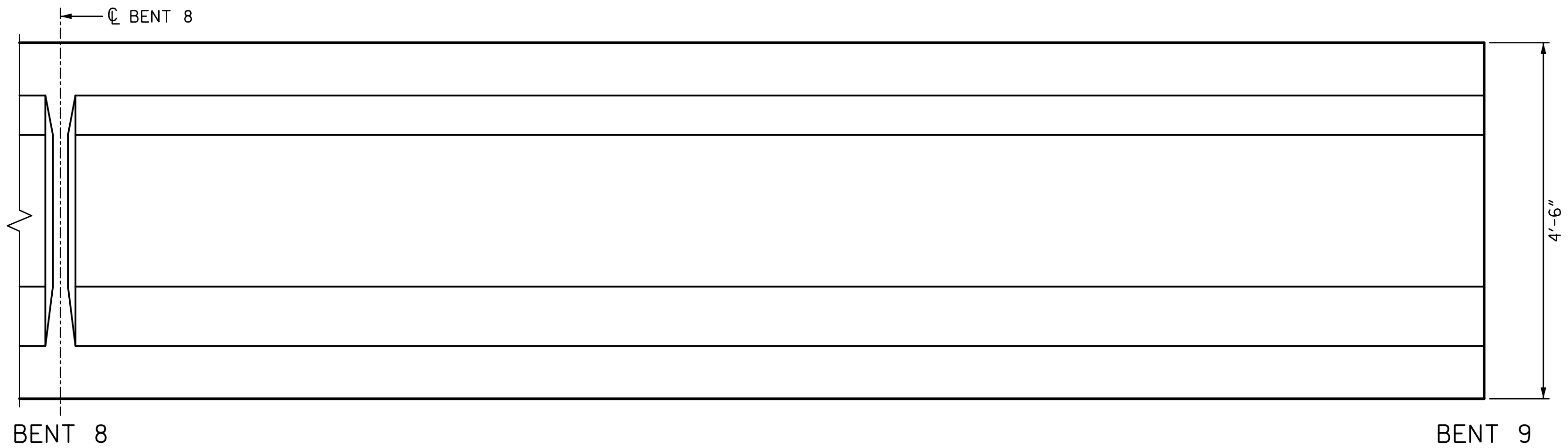
DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-93
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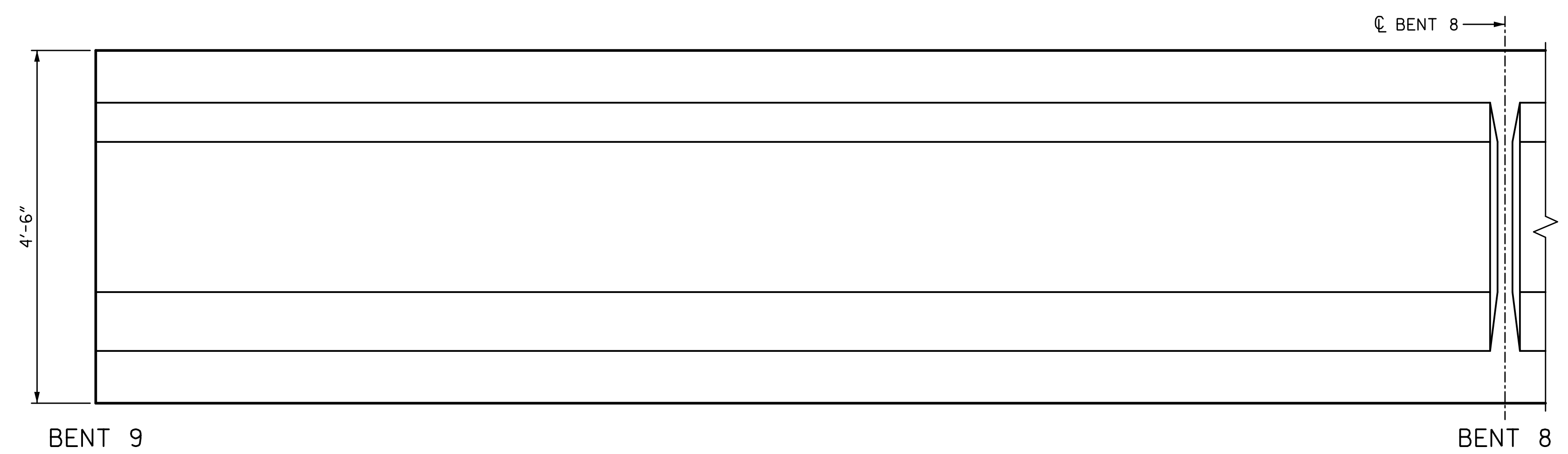
 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

NOTES:
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 SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.
 FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR SUPERSTRUCTURE REPAIR DETAIL, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.

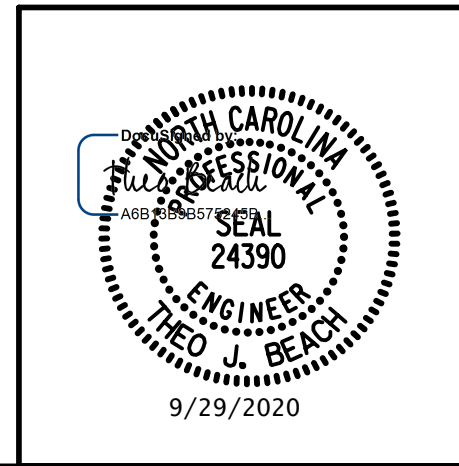
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 9
 GIRDER 4

PLANS PREPARED BY:

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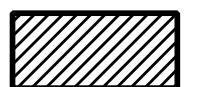


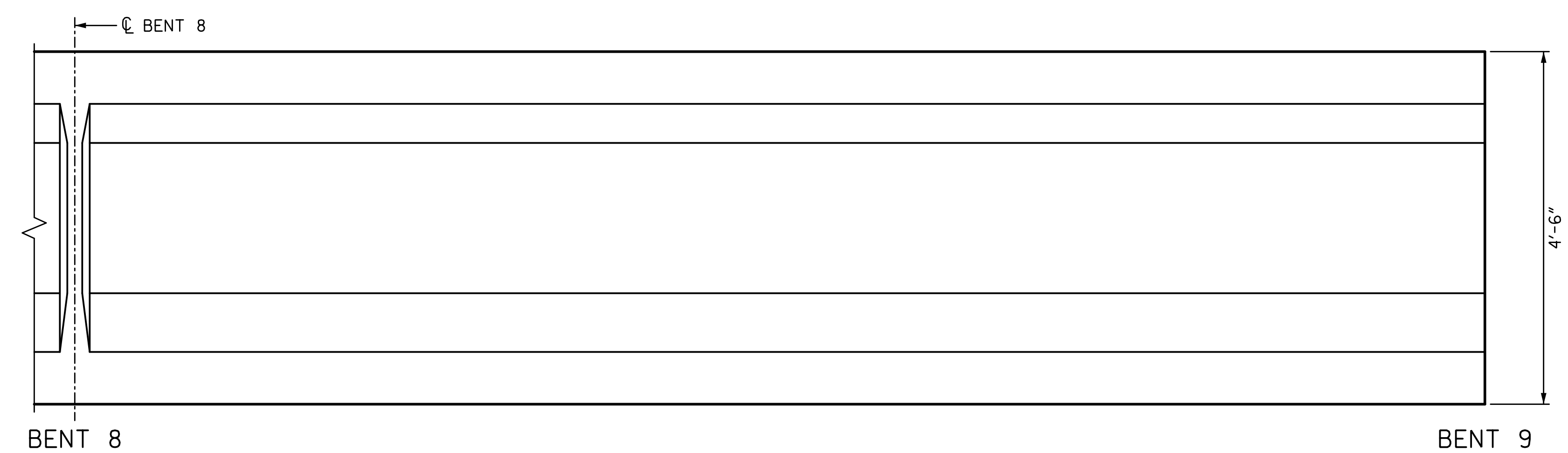
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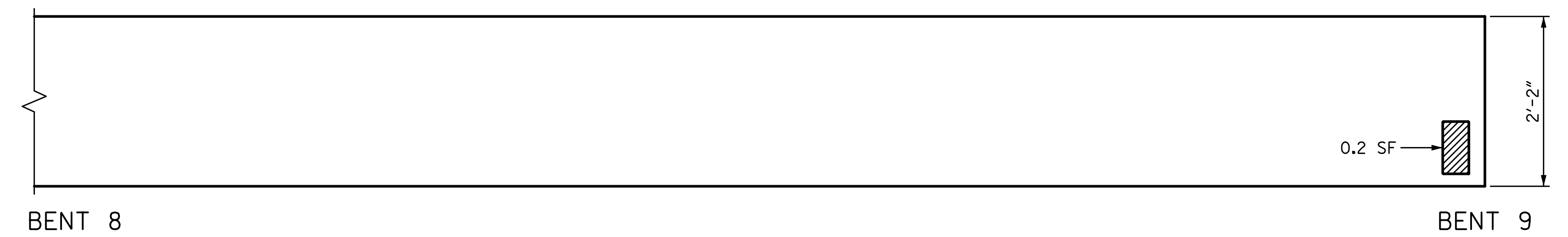
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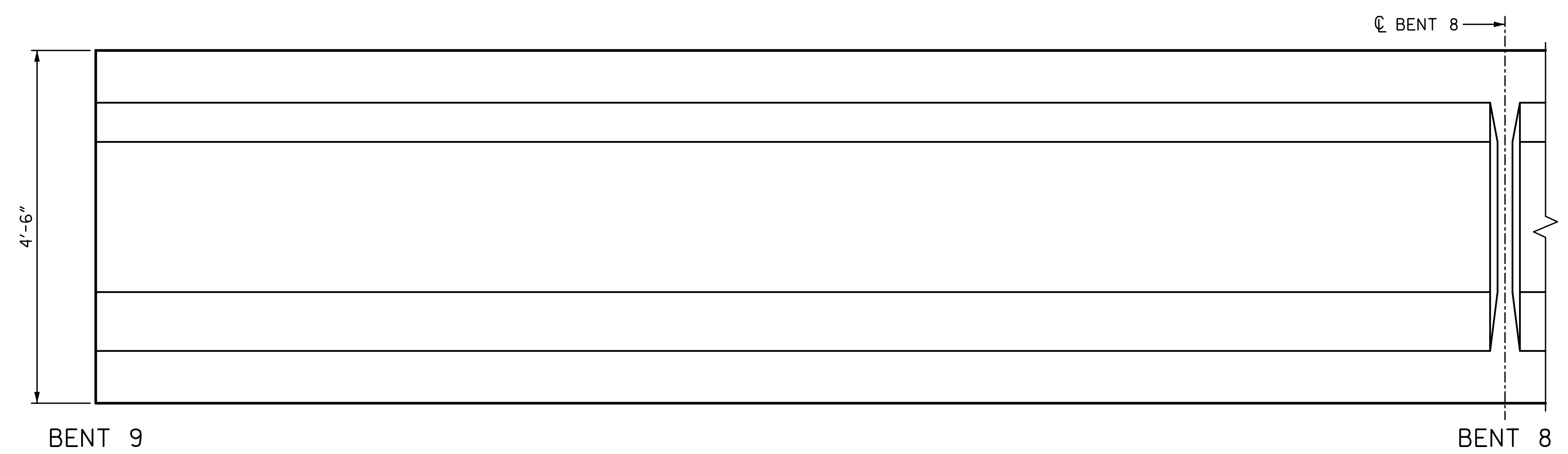
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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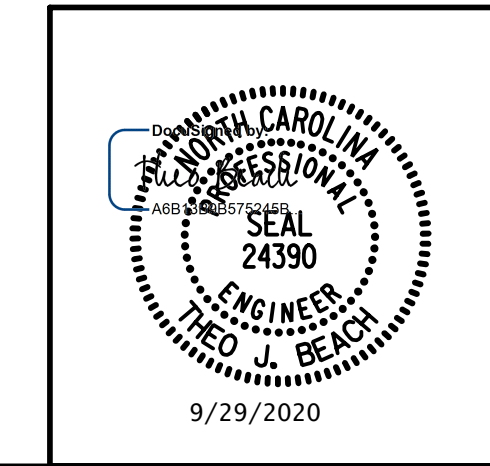
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 9
 GIRDER 5

PLANS PREPARED BY:

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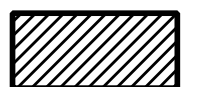


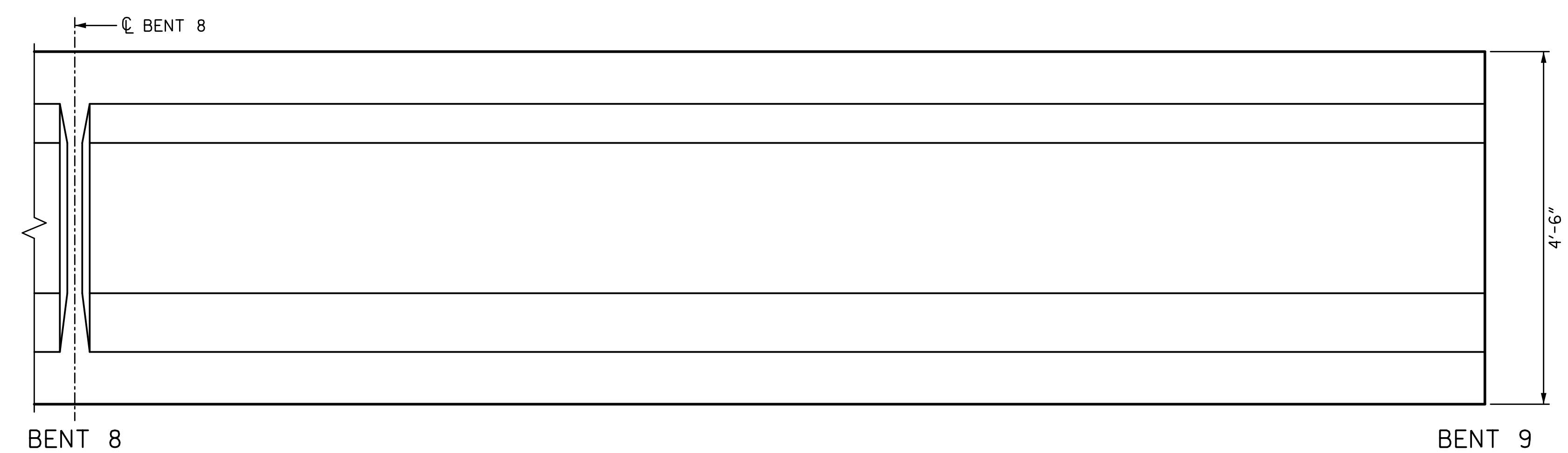
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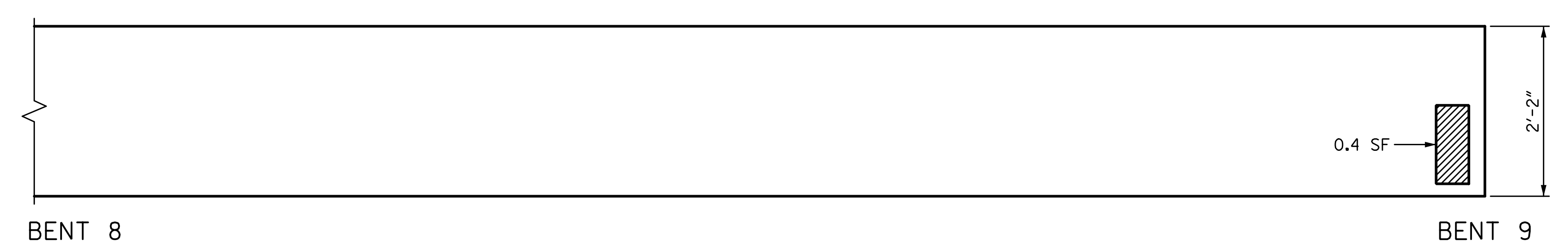
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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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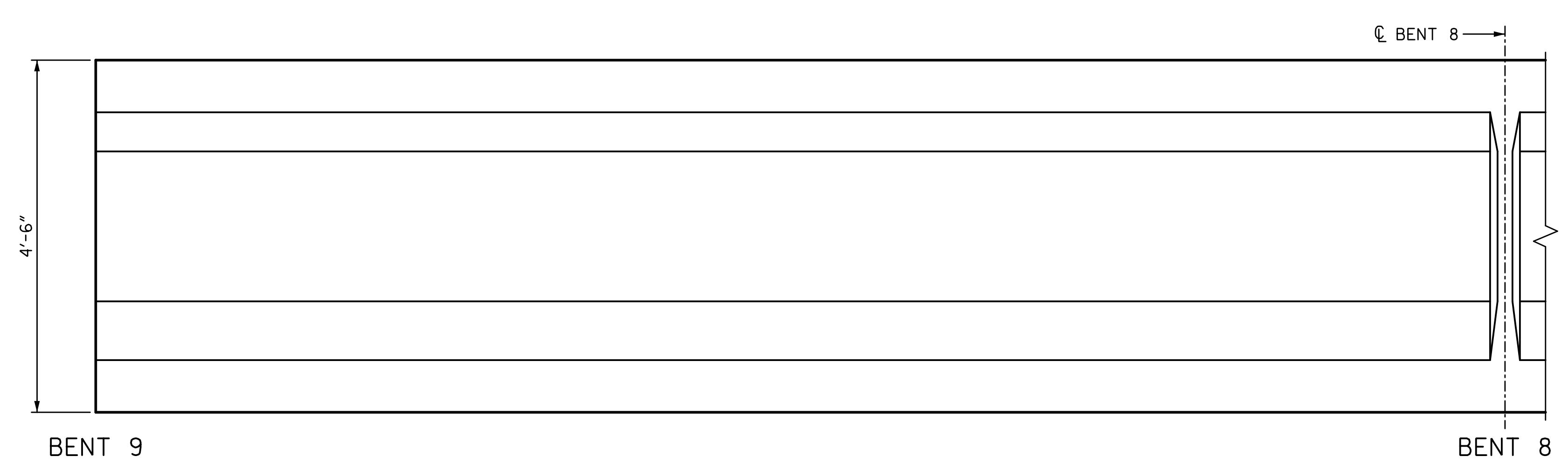
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9 GRD. 6	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.4	0.1			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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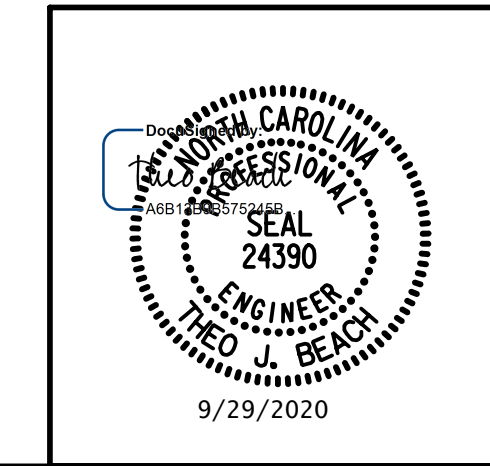
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 6 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 9
 GIRDER 6

PLANS PREPARED BY:

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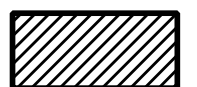


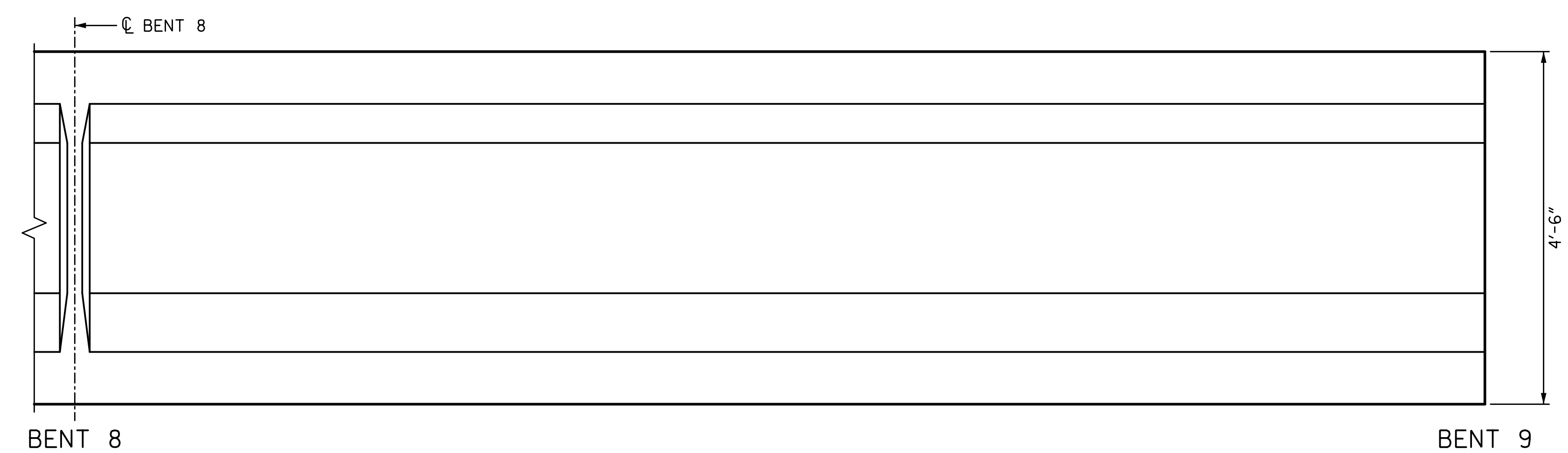
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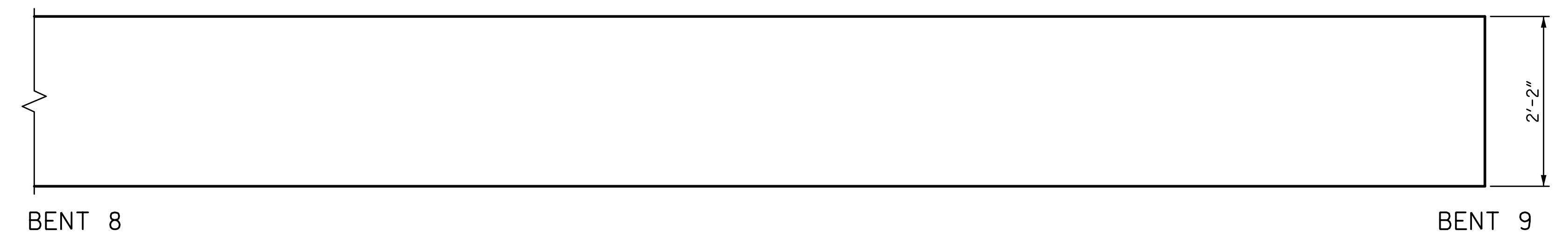
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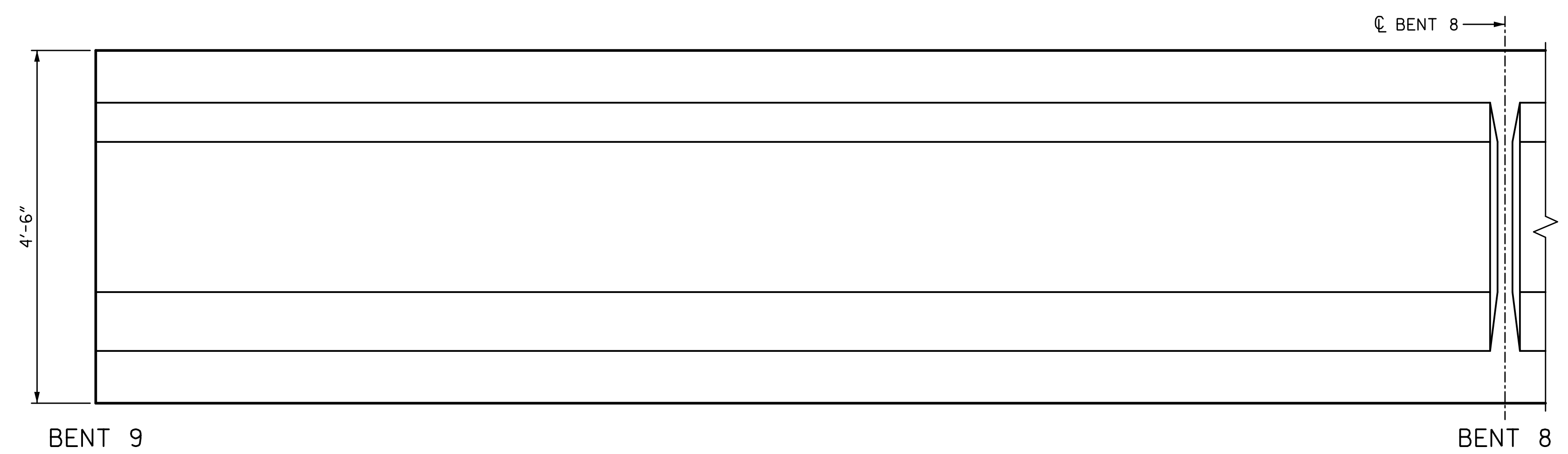
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9 GRD. 7	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

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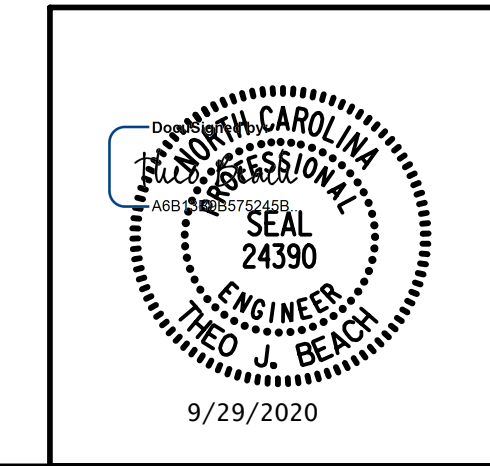
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 7 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 9
 GIRDER 7

PLANS PREPARED BY:

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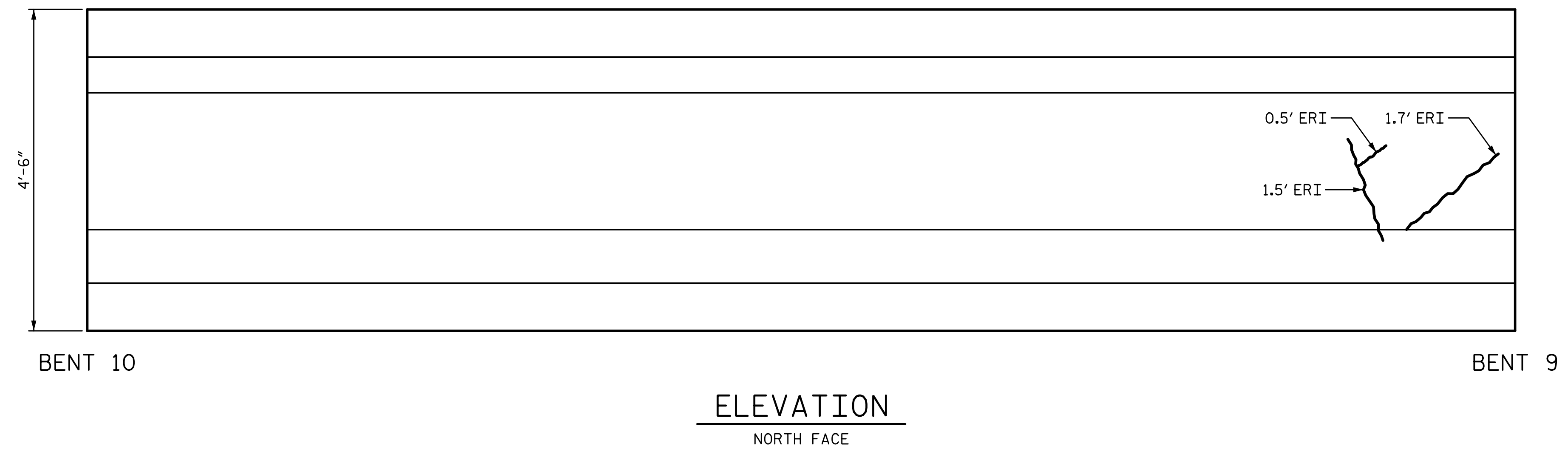
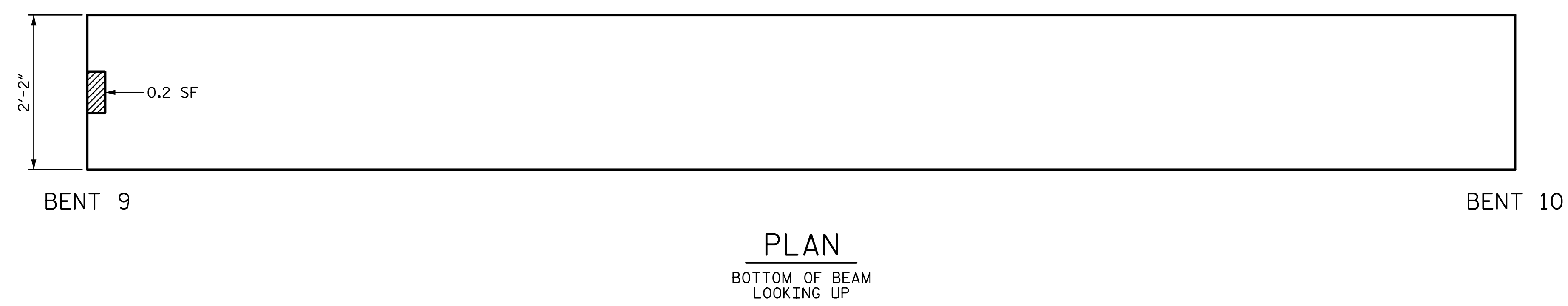
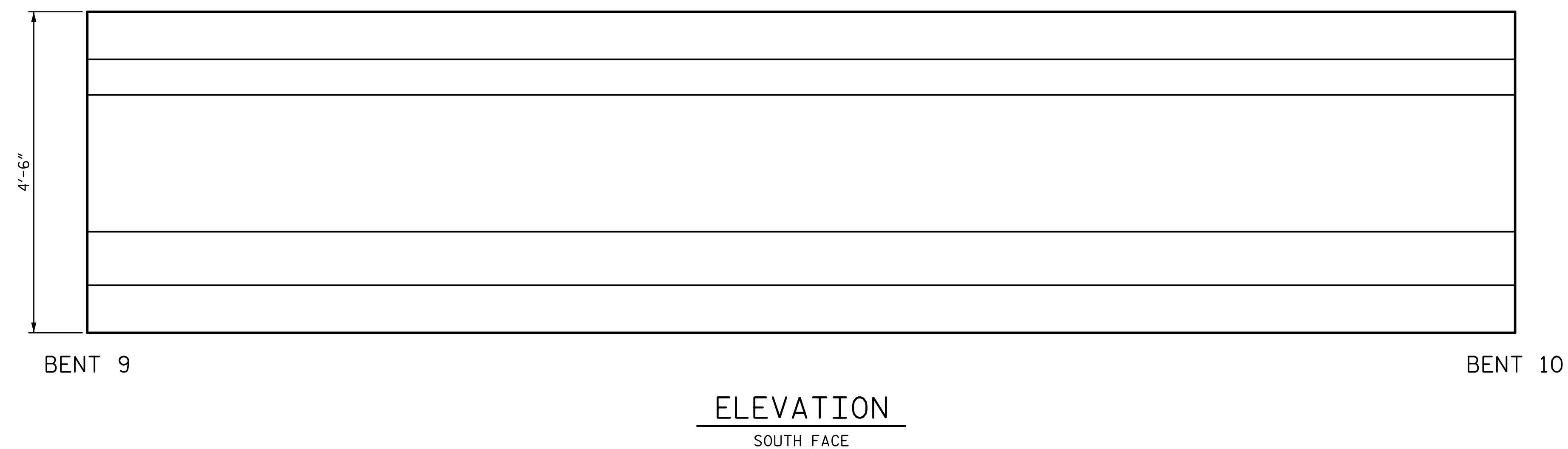
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 10 GRD. 1	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.2	0.1			
EPOXY RESIN INJECTION			LF		LF
GIRDER		3.7			



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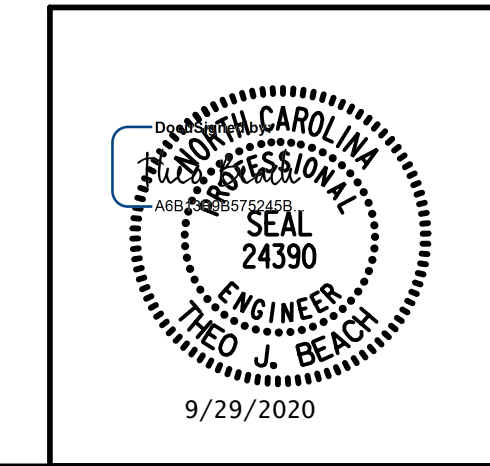
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SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 10
 GIRDER 1

PLANS PREPARED BY:

 5640 Dillard Drive
 Suite 200
 Cary, NC 27518
 (919) 852-0468
 (919) 852-0538 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521




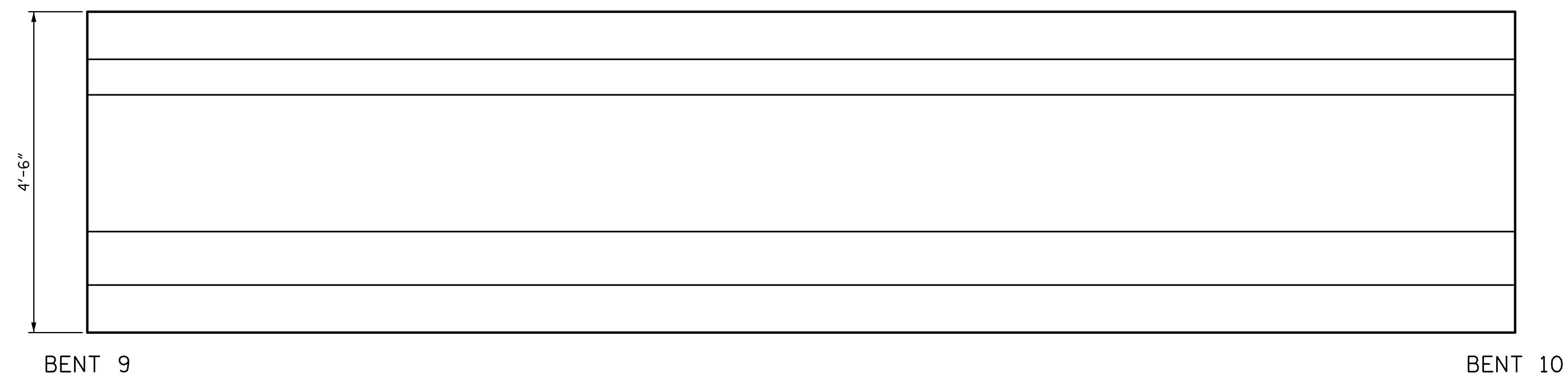
DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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1			3			TOTAL SHEETS
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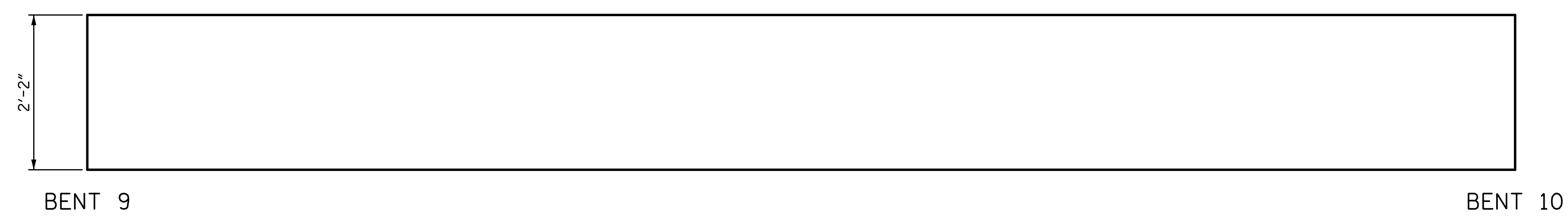
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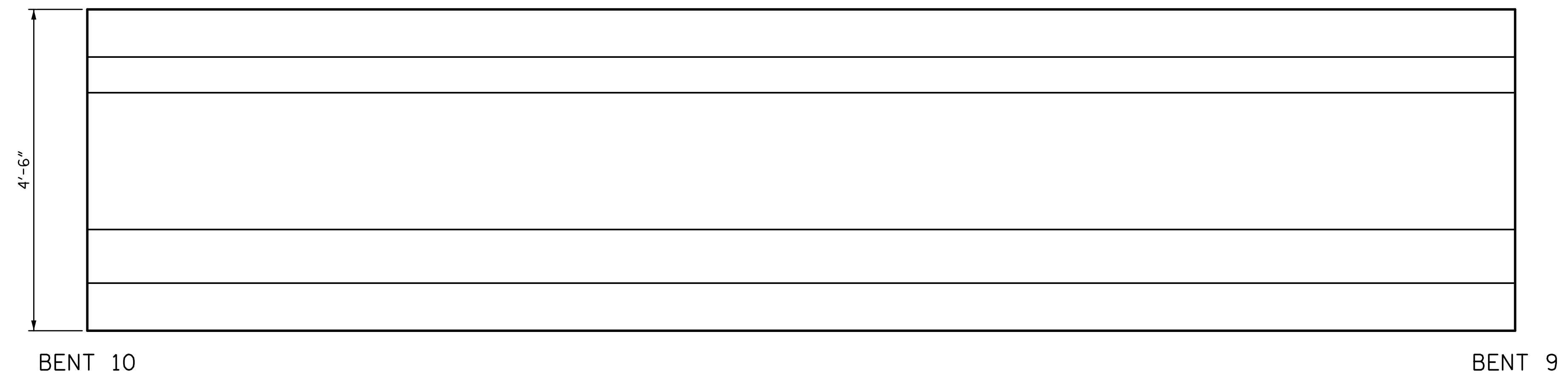
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 10 GRD. 2	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

NOTES:
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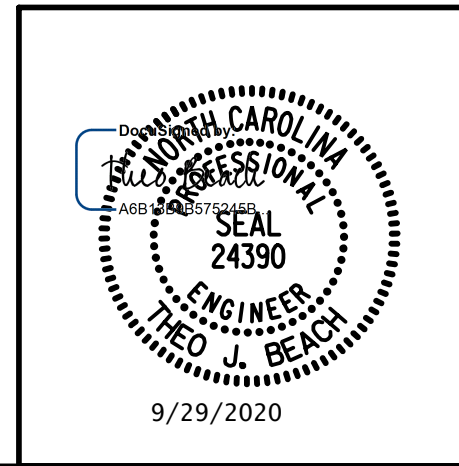
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 10
 GIRDER 2

PLANS PREPARED BY:

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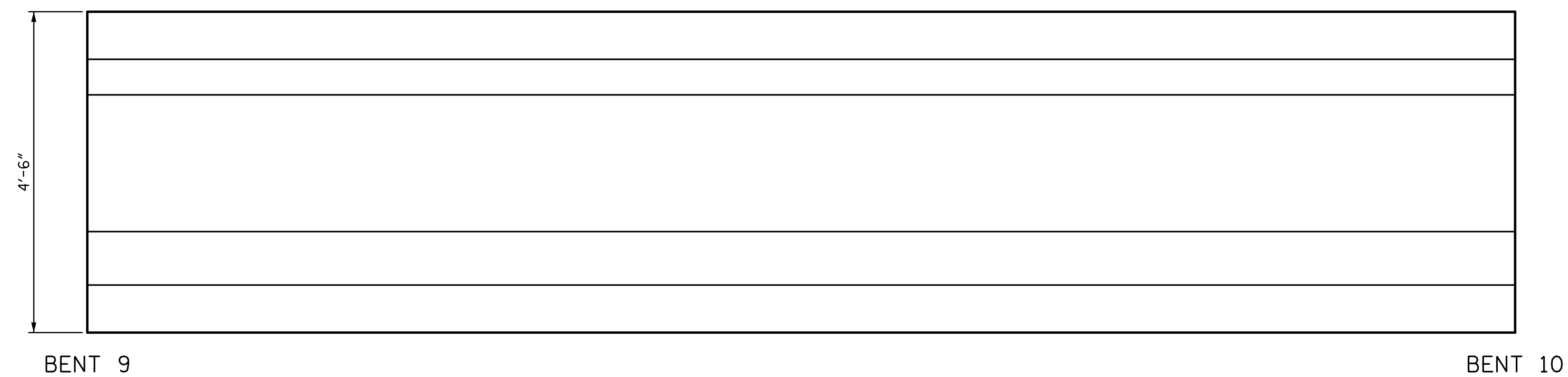
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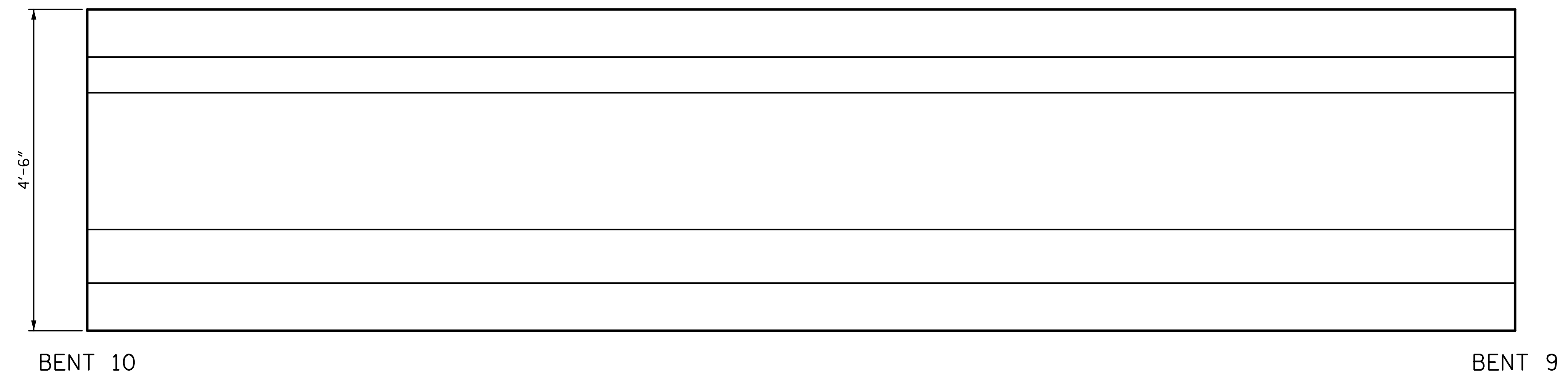
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 10 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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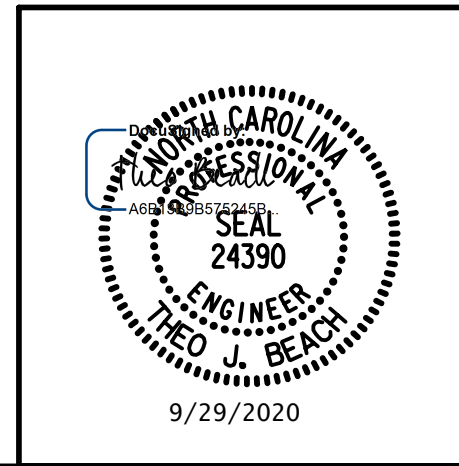
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 10
 GIRDER 3

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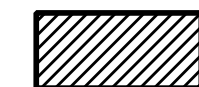


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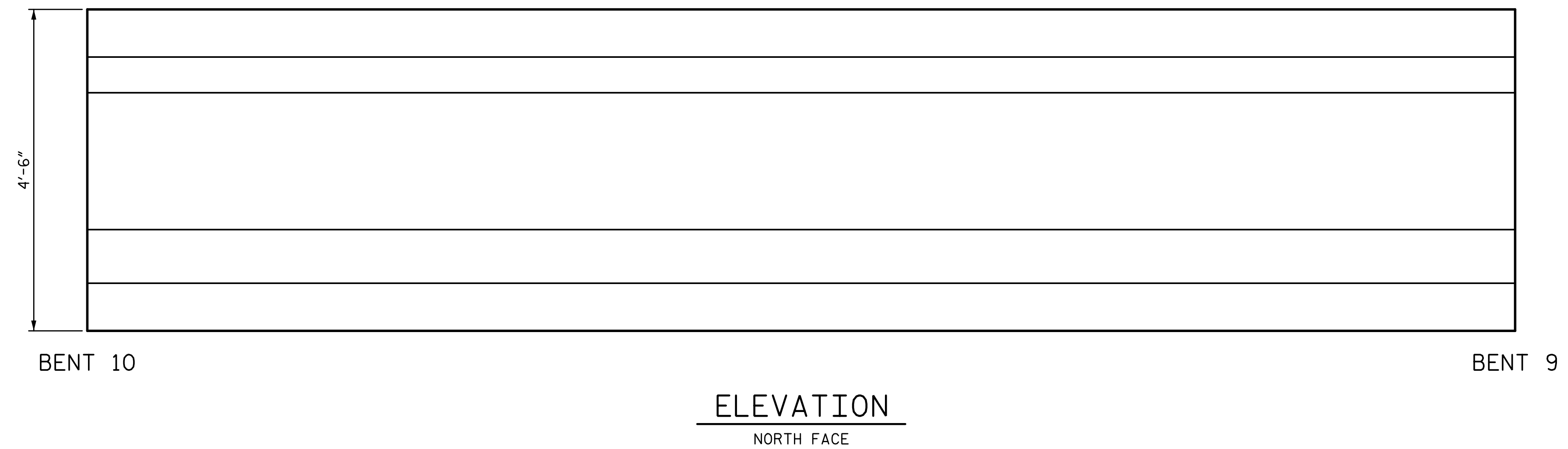
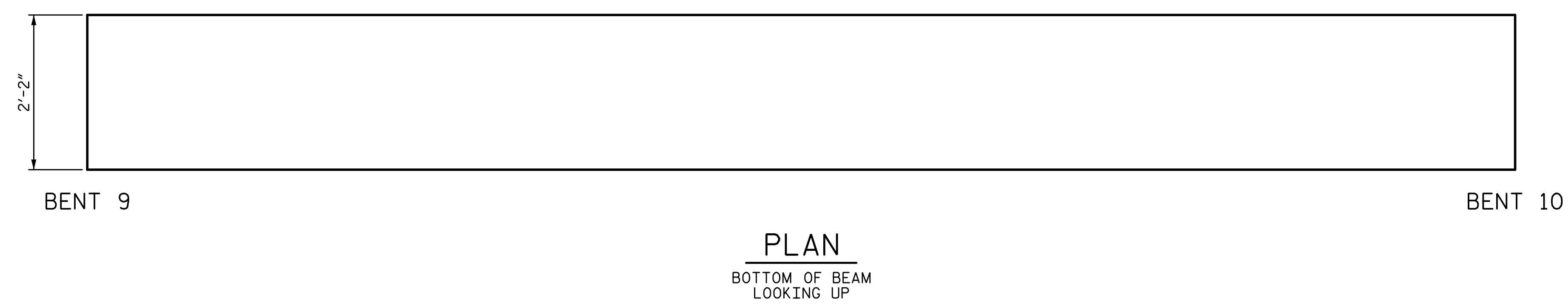
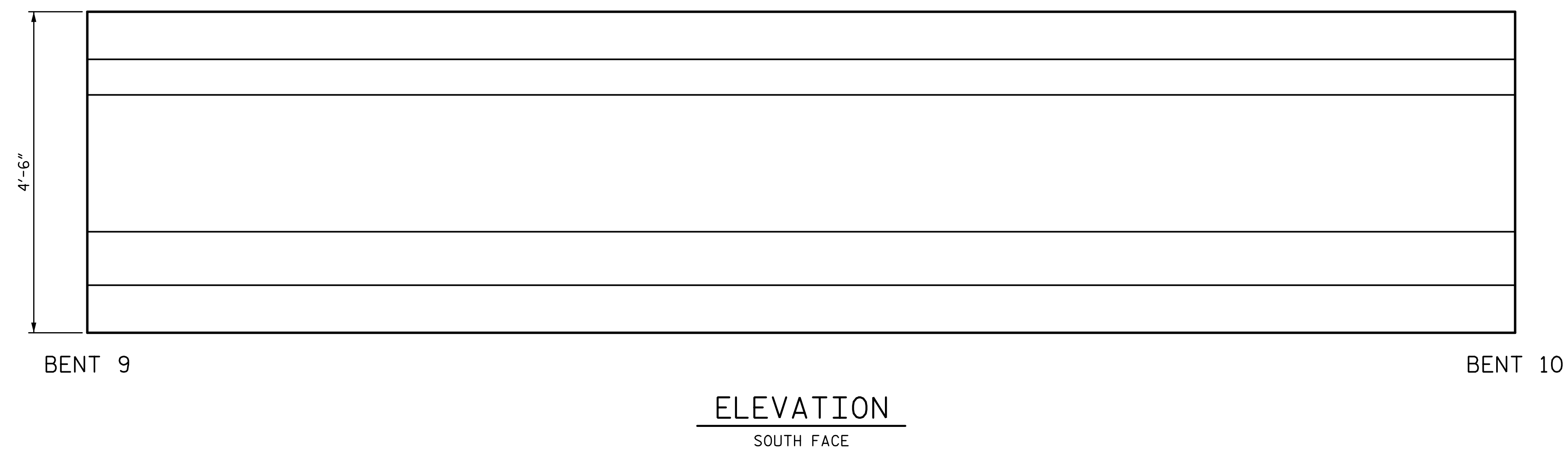
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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 10 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

NOTES:
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 SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.
 FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR SUPERSTRUCTURE REPAIR DETAIL, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.



PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

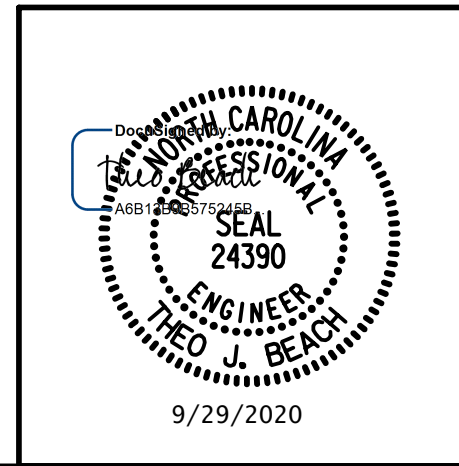
SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 10
 GIRDER 4**

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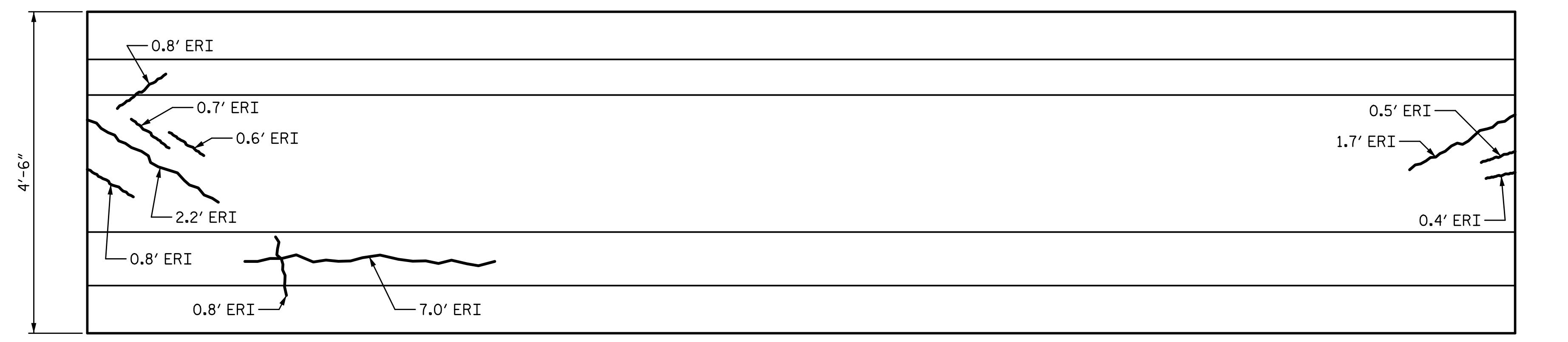
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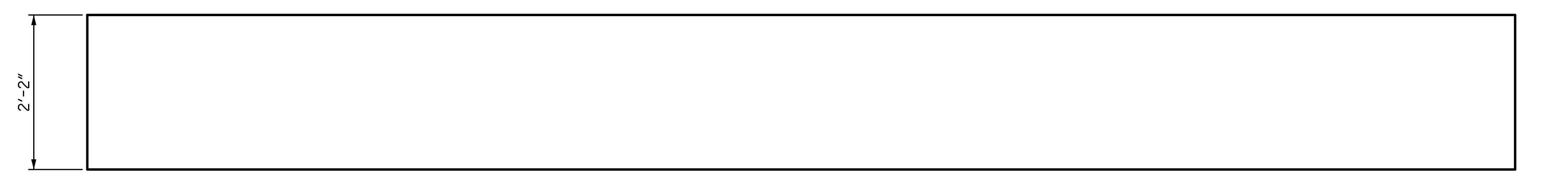
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 10 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		20.6			



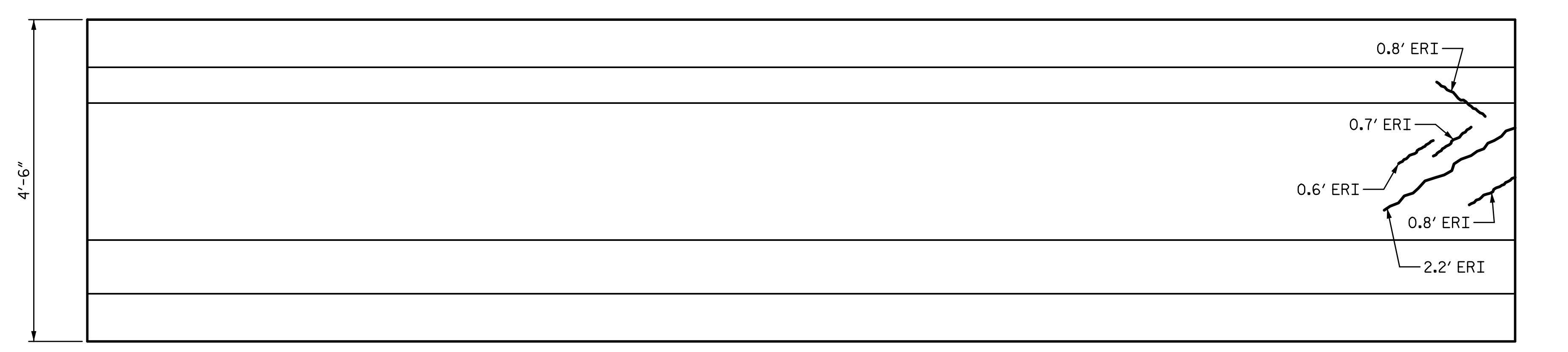
BENT 9 BENT 10

ELEVATION
SOUTH FACE



BENT 9 BENT 10

PLAN
BOTTOM OF BEAM
LOOKING UP



BENT 10 BENT 9

ELEVATION
NORTH FACE

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

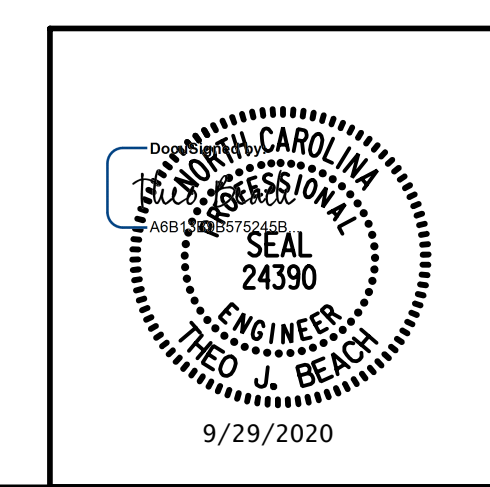
SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 10
 GIRDER 5**

PLANS PREPARED BY:

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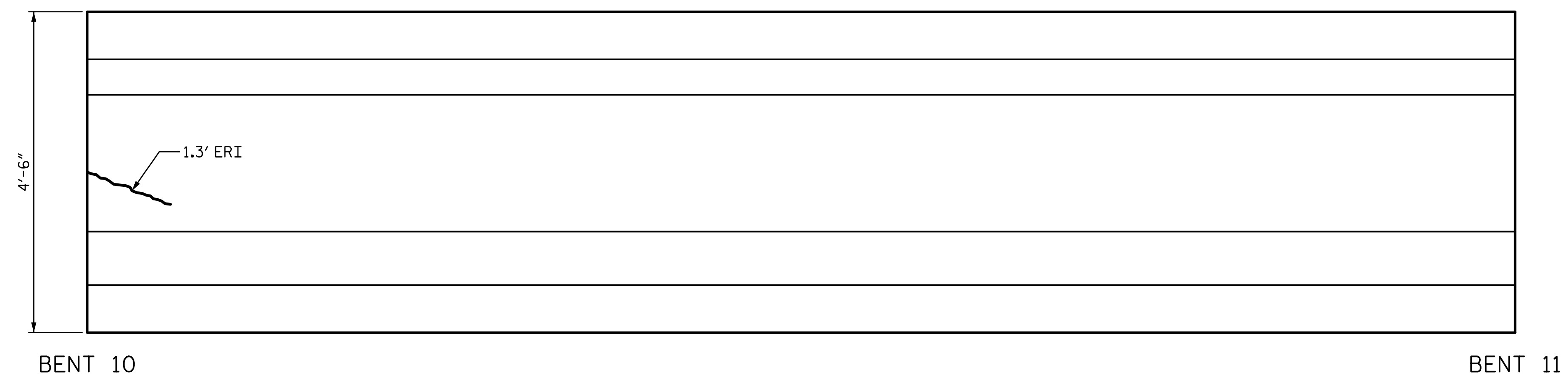
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1			3			TOTAL SHEETS
2			4			163

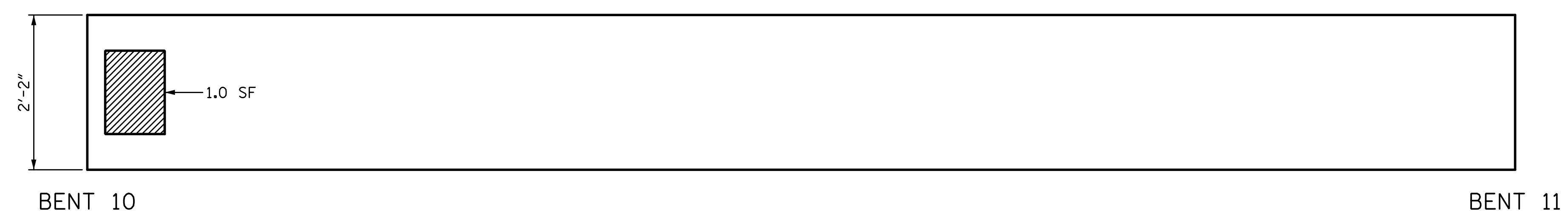
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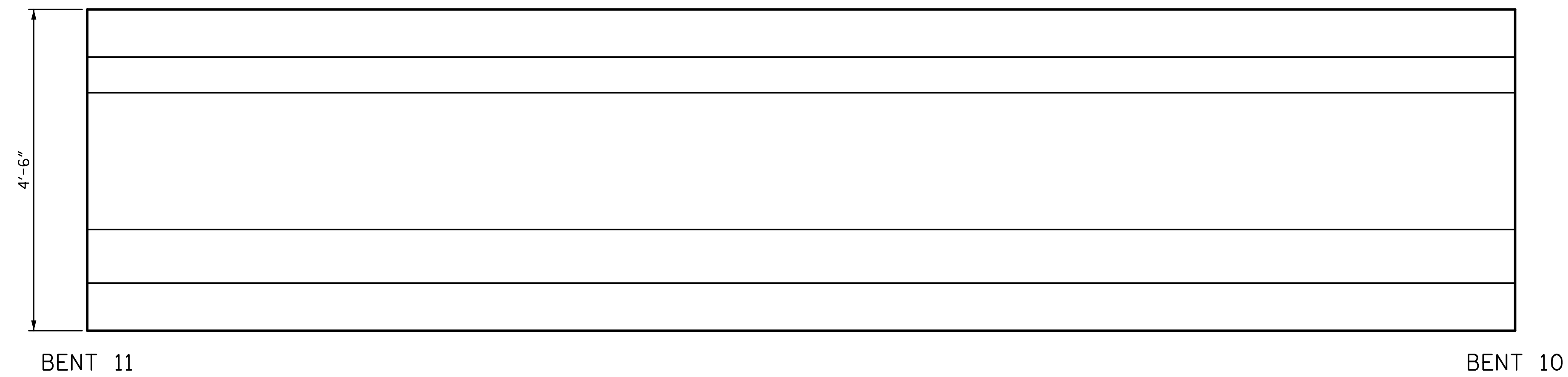
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 11 GRD. 1	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.0	0.2			
EPOXY RESIN INJECTION			LF		LF
GIRDER		1.3			

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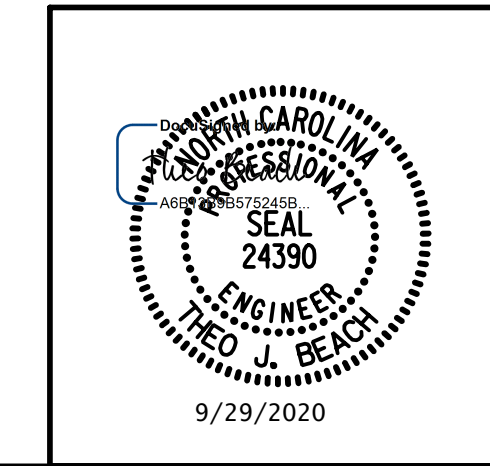
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 BRIDGE NO.: 640049

SHEET 1 OF 5

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 PRESERVATION
 SPAN 11
 GIRDER 1

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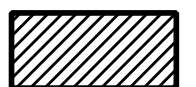


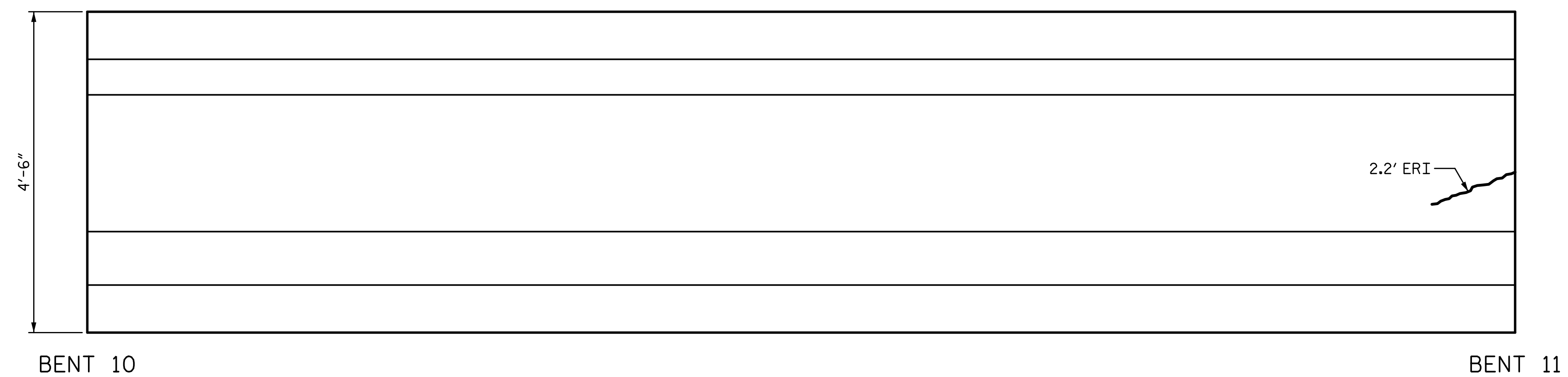
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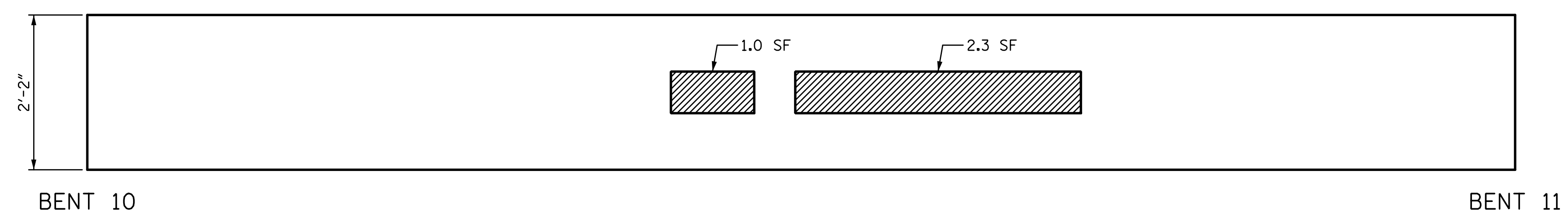
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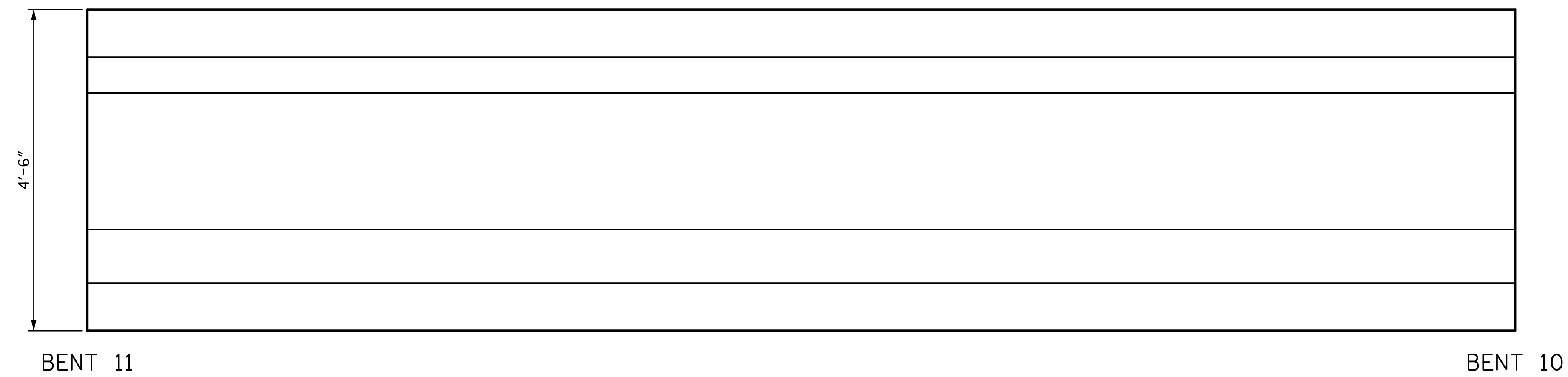
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 11 GRD. 2	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	3.3	0.6			
EPOXY RESIN INJECTION		LF			LF
GIRDER		2.2			

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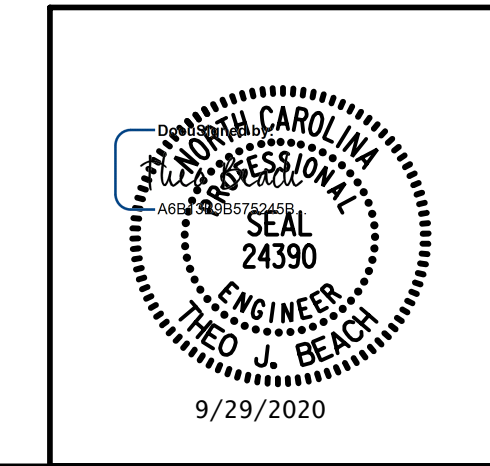
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SHEET 2 OF 5

STATE OF NORTH CAROLINA
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 SPAN 11
 GIRDER 2

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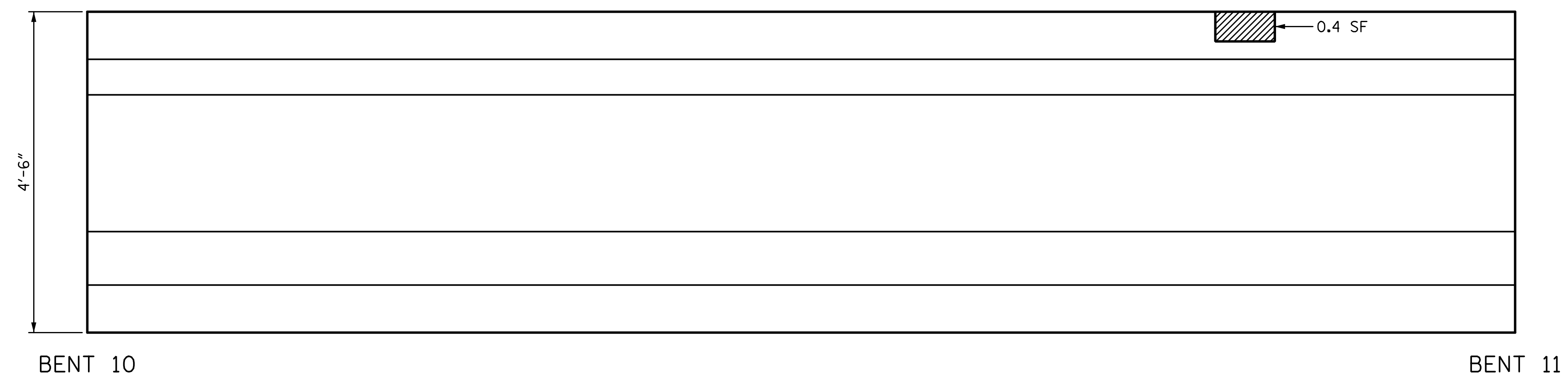
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CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
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2			4			163

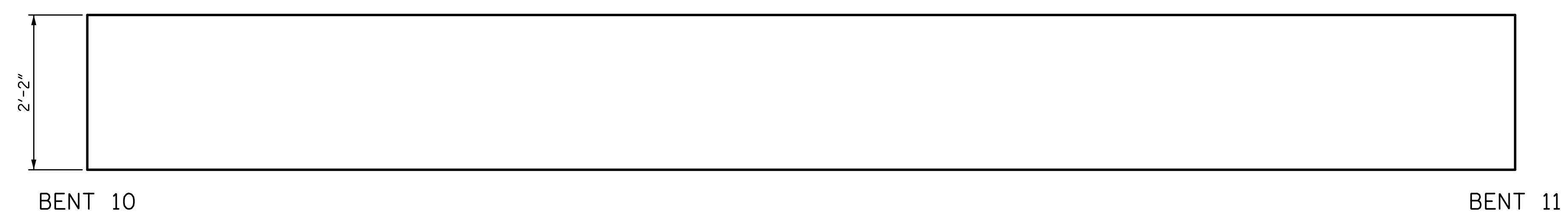
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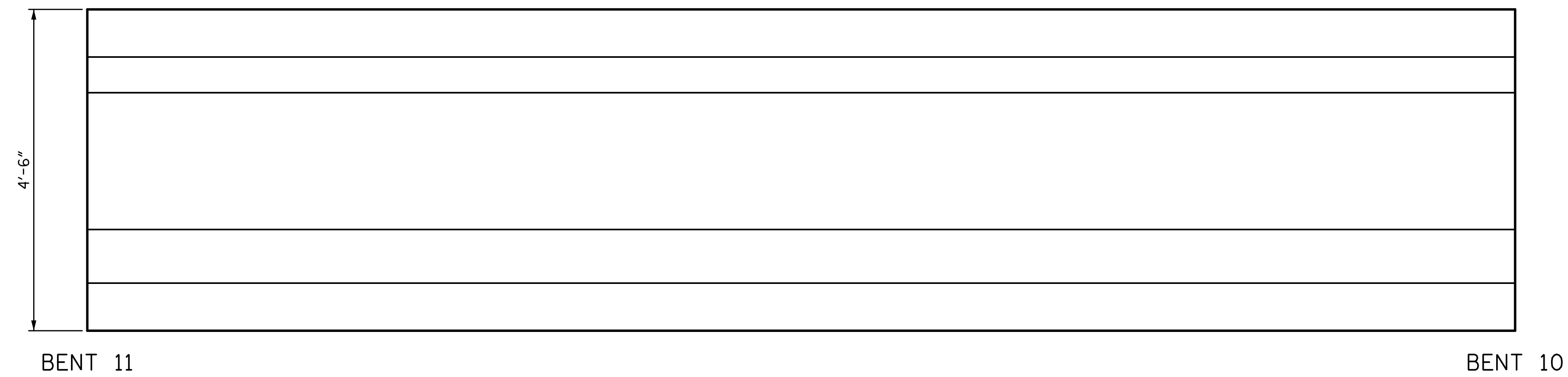
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 11 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.4	0.1			
EPOXY RESIN INJECTION		LF			LF
GIRDER		0.0			

NOTES:
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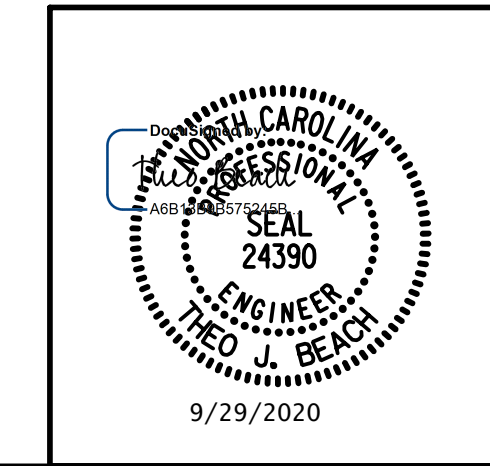
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 11
 GIRDER 3

PLANS PREPARED BY:

 SIMPSON ENGINEERS & ASSOCIATES
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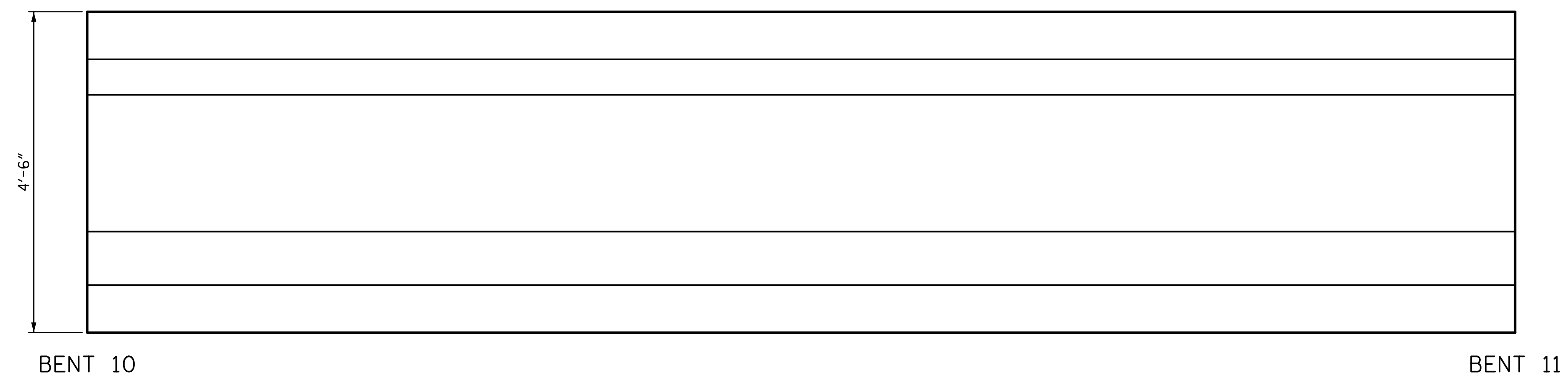
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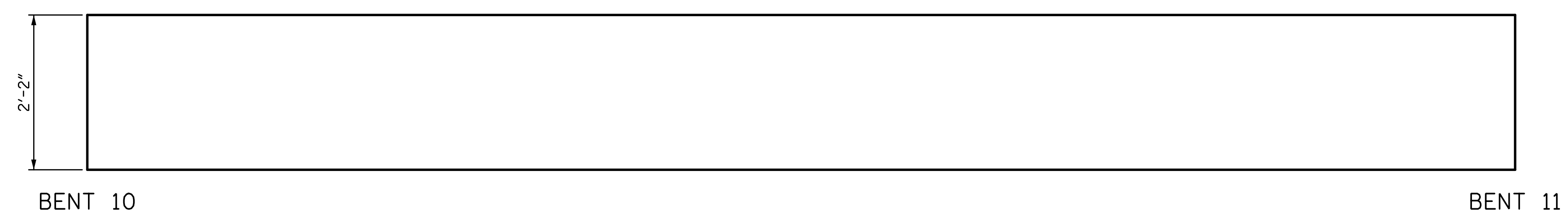
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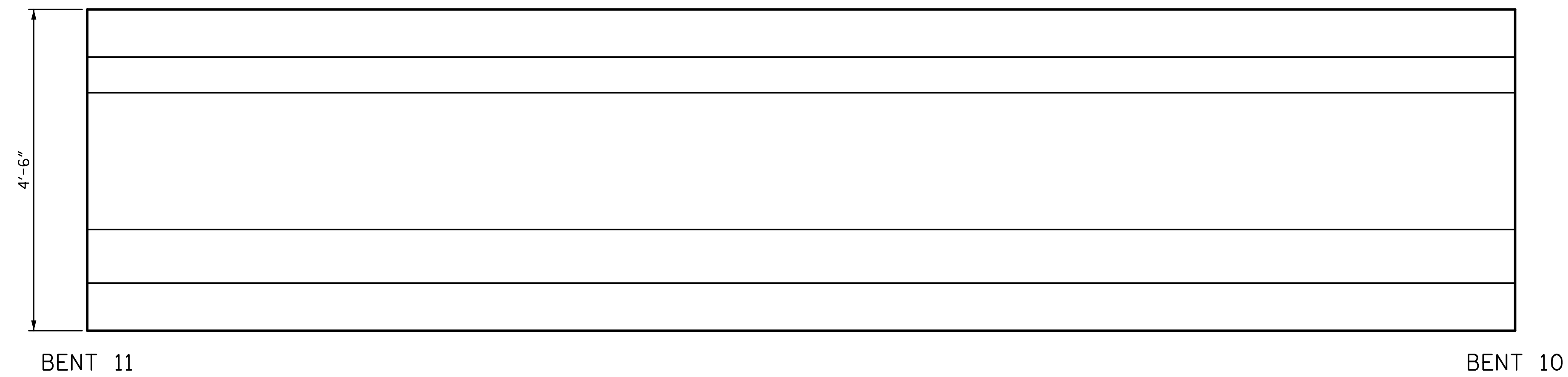
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 11 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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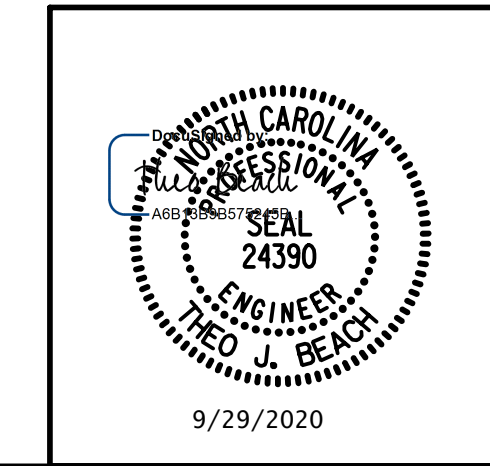
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 11
 GIRDER 4

PLANS PREPARED BY:

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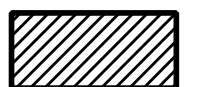


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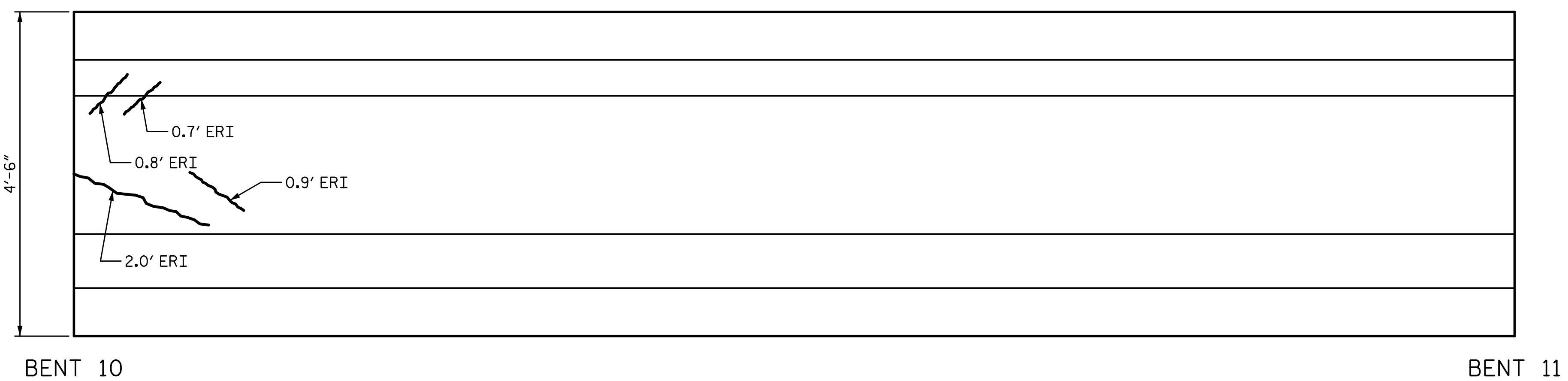
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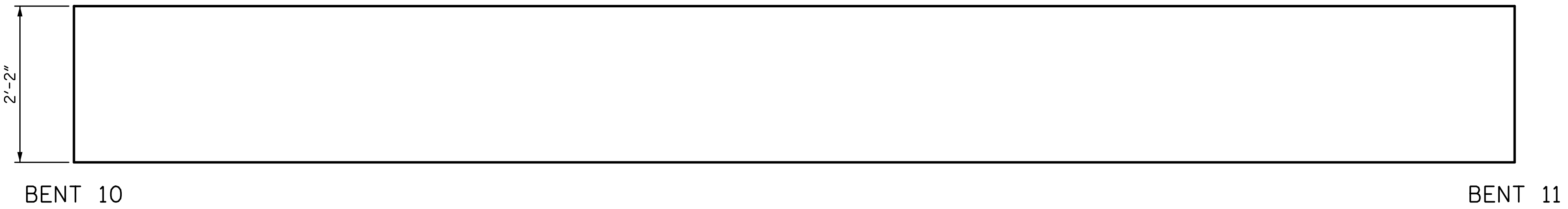
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

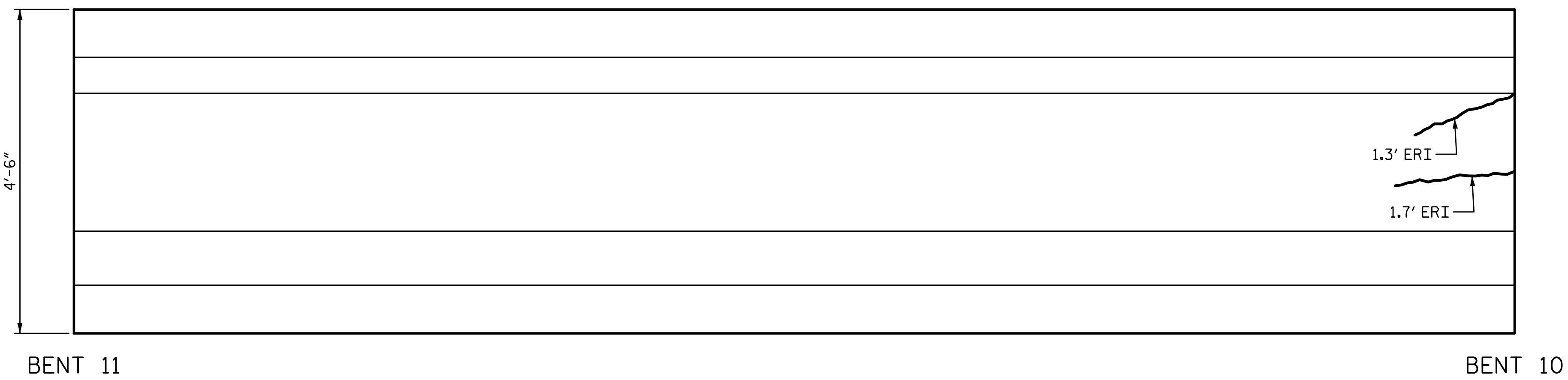
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REPAIRS SPAN 11 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		7.4			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



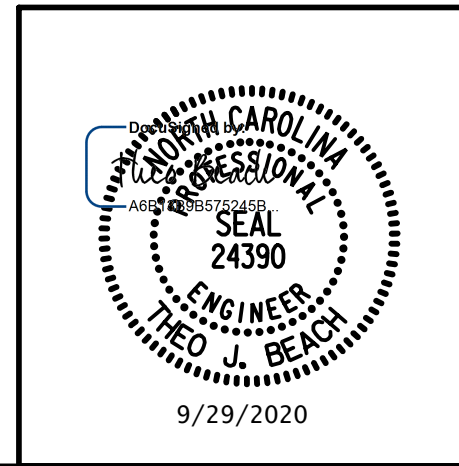
ELEVATION
NORTH FACE

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 11
 GIRDER 5




PLANS PREPARED BY:
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DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
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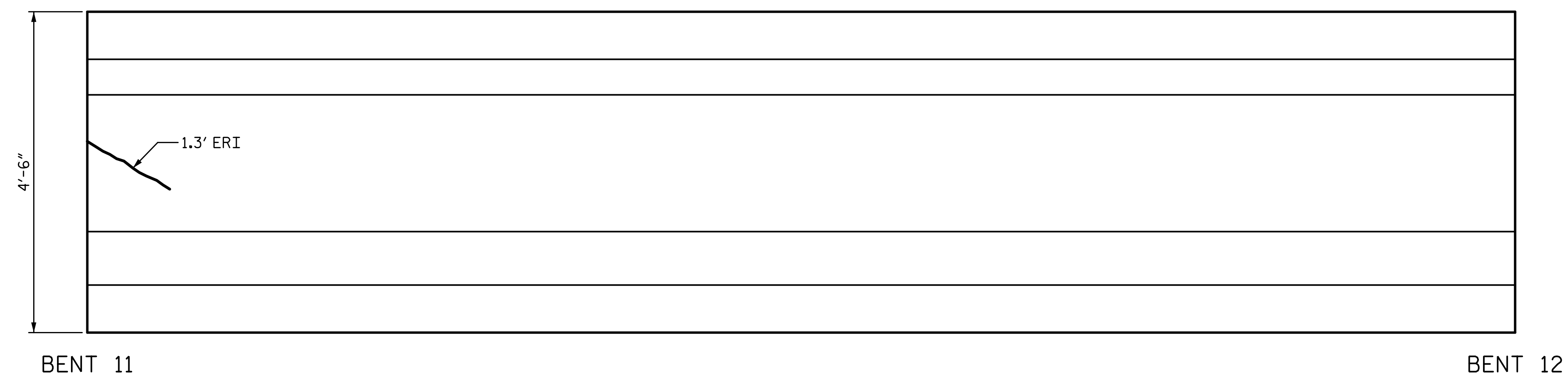
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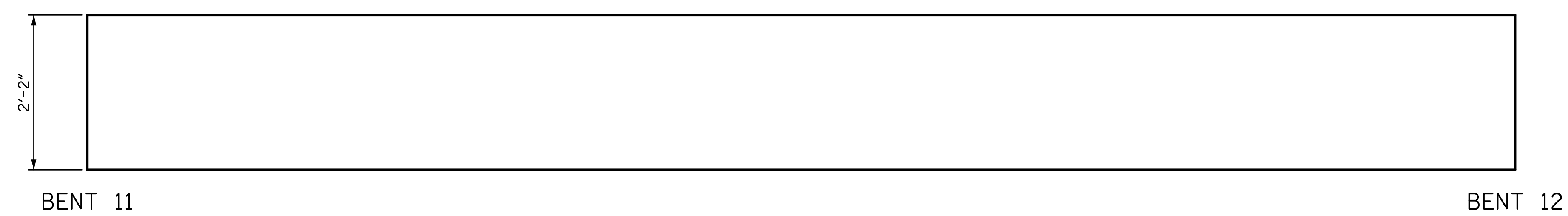
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

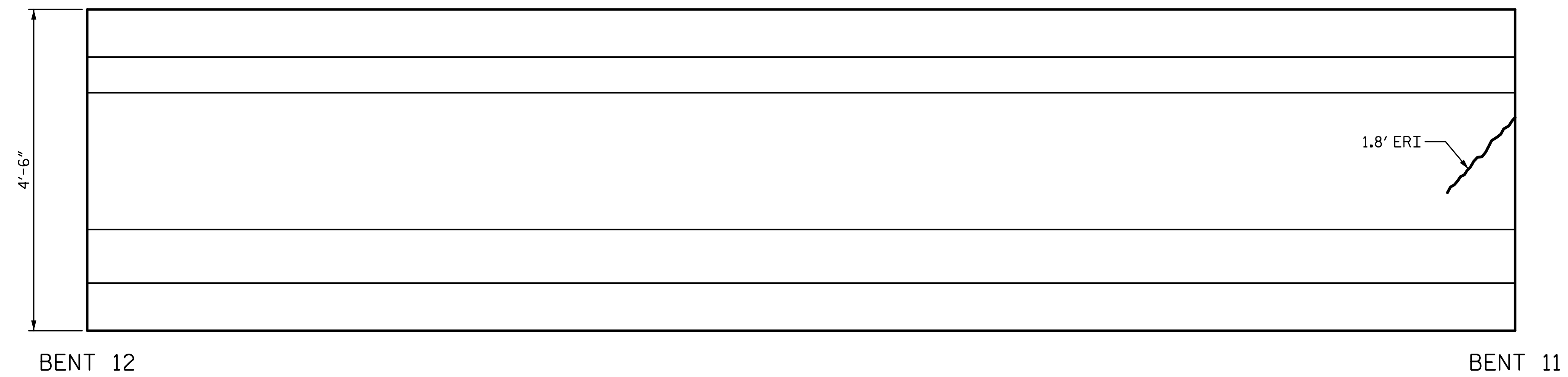
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	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		3.1			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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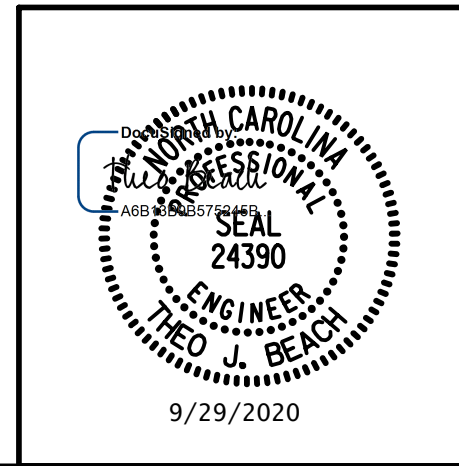
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 12
 GIRDER 1

PLANS PREPARED BY:

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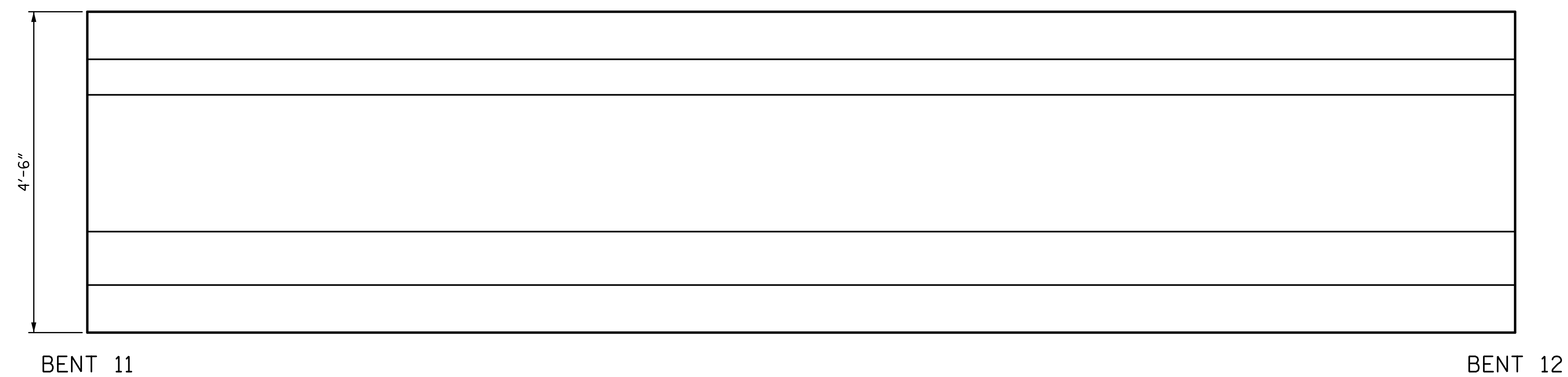
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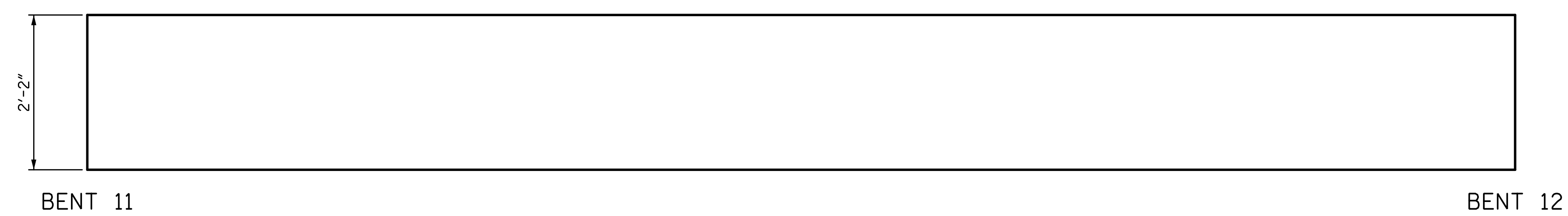
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

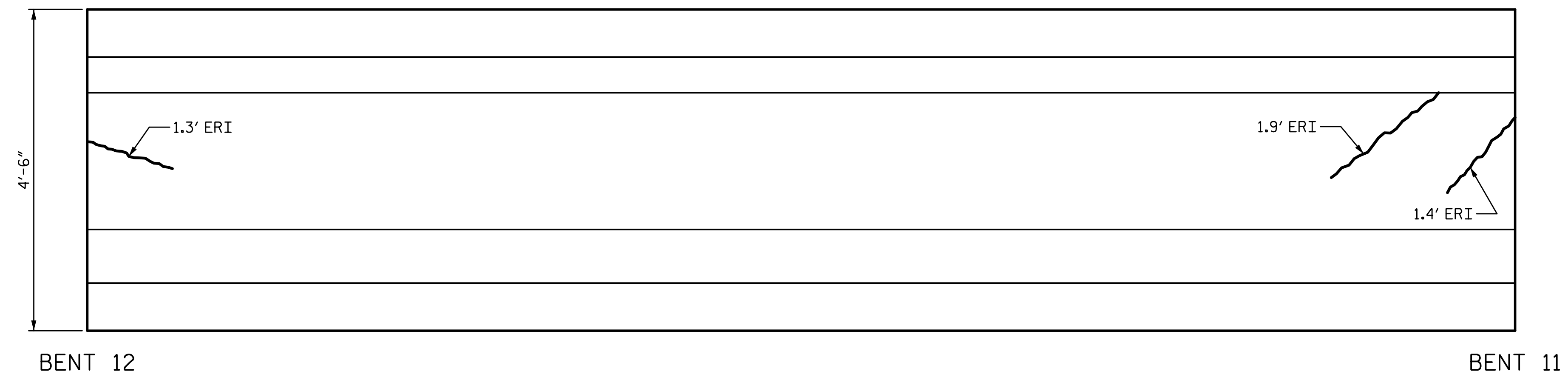
REPAIR QUANTITY TABLE					
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	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		4.6			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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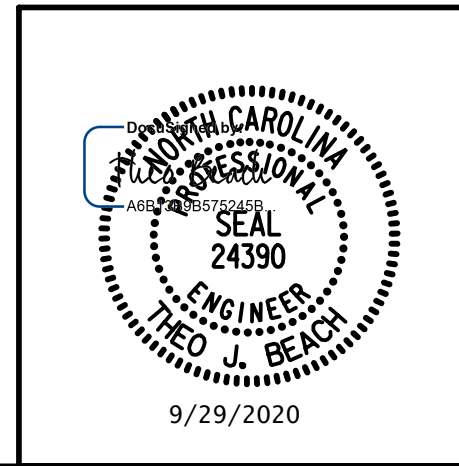
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 12
 GIRDER 2

PLANS PREPARED BY:

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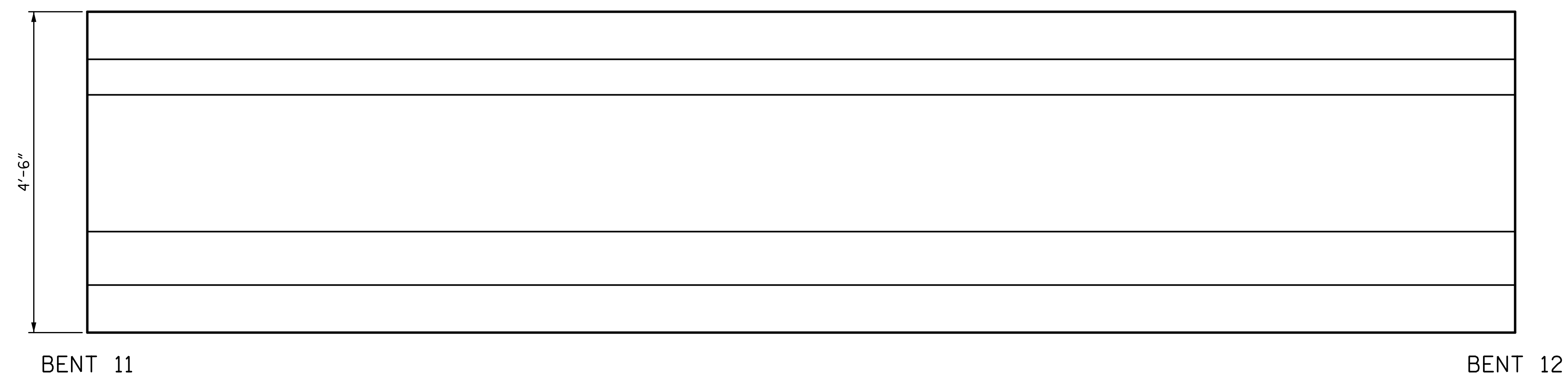
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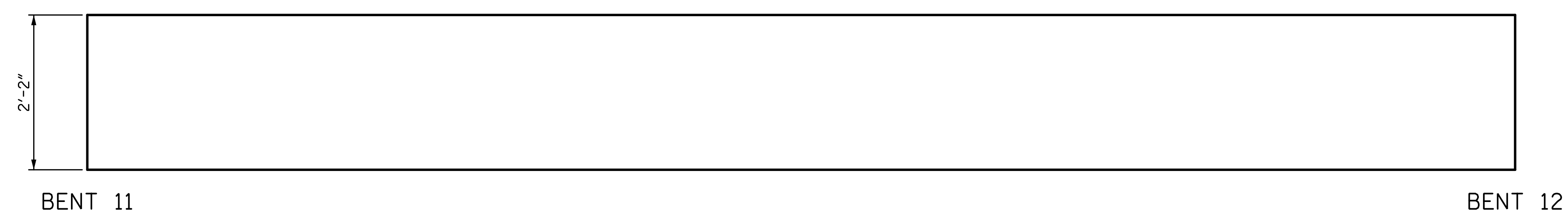
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 ERI — EPOXY RESIN INJECTION

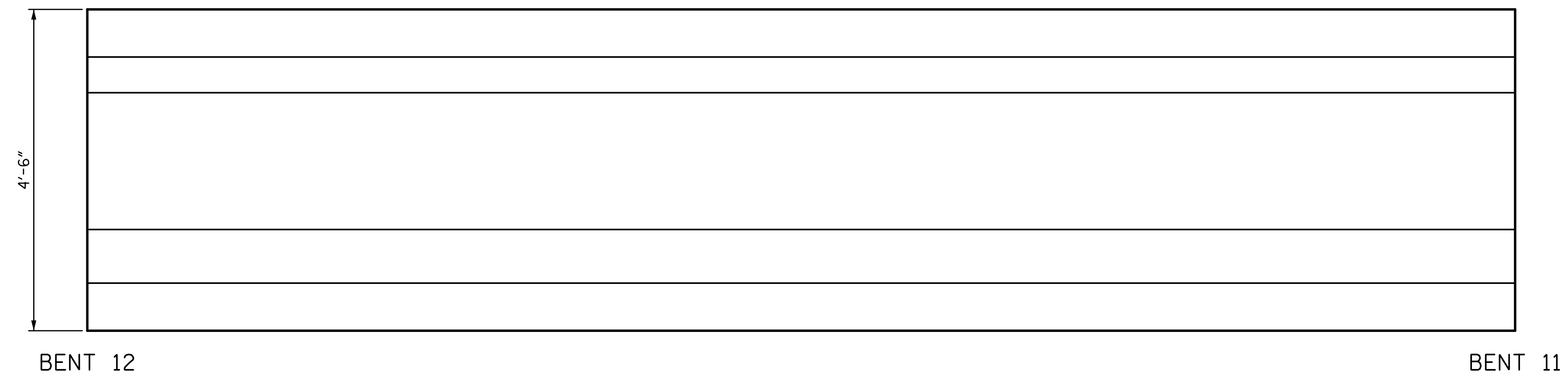
REPAIR QUANTITY TABLE					
REPAIRS SPAN 12 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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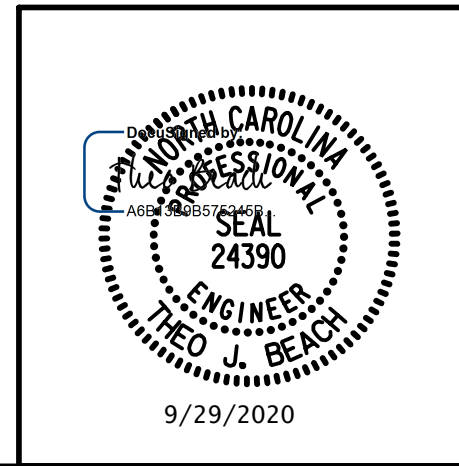
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 12
 GIRDER 3

PLANS PREPARED BY:

 SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
 Suite 200
 Cary, NC 27518
 (919) 852-0468
 (919) 852-0538 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521




DRAWN BY: T. BANKOVICH	DATE: 9-20
CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

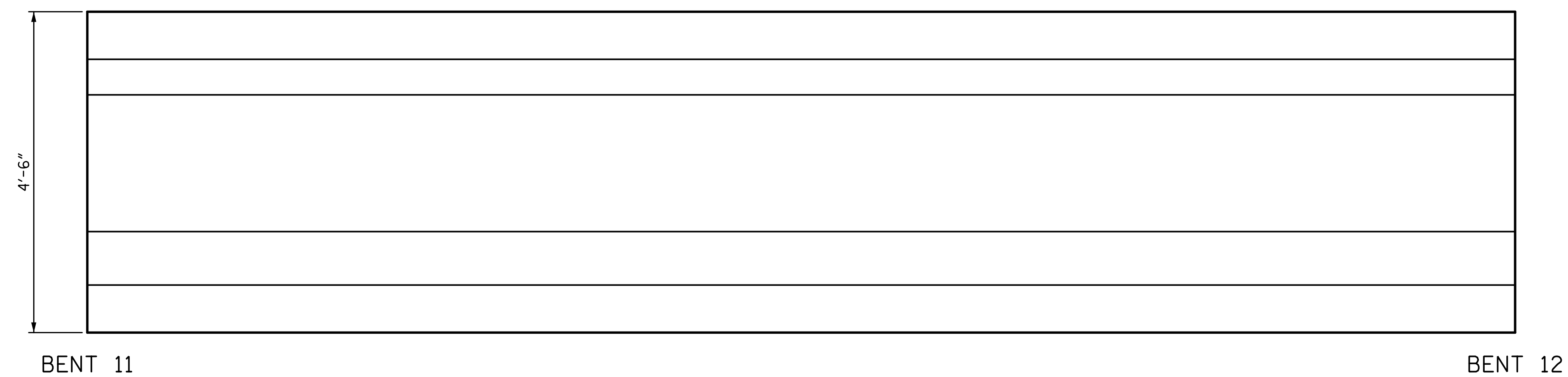
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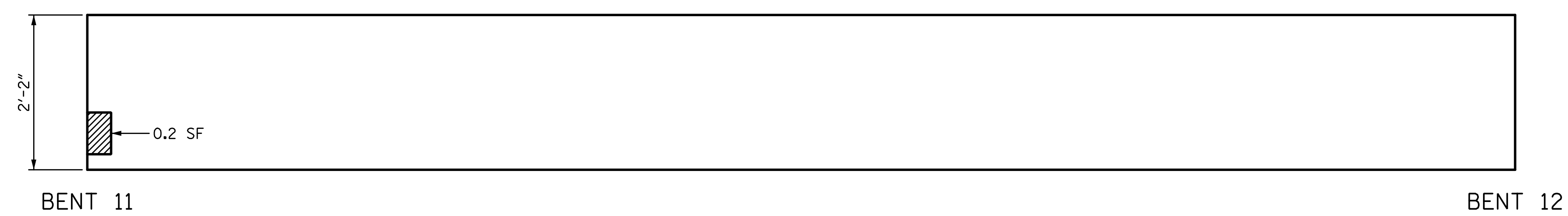
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

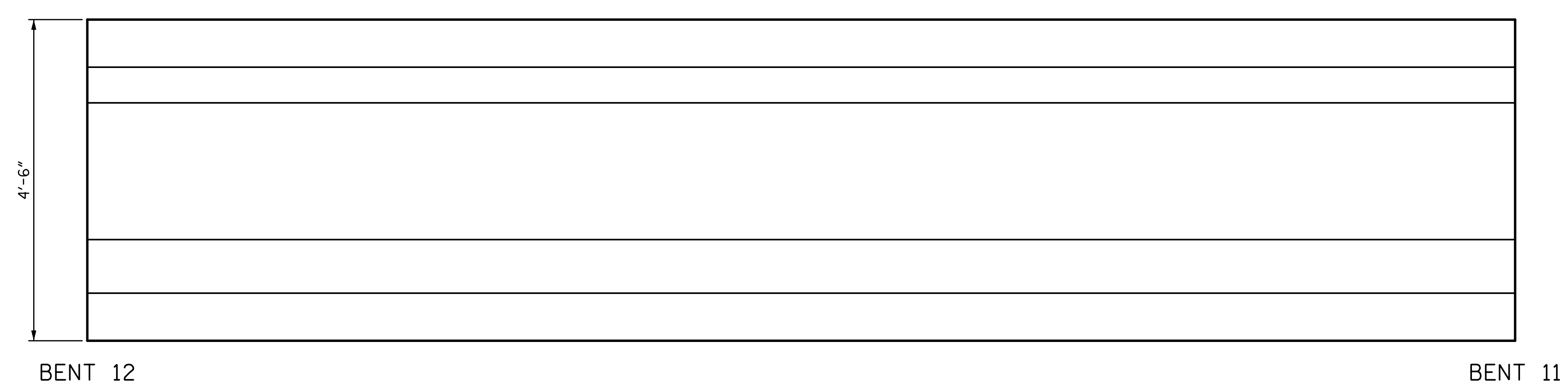
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	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.2	0.1			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

NOTES:
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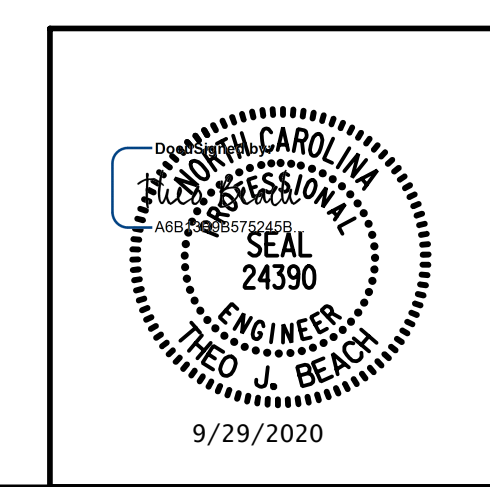
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 12
 GIRDER 4

PLANS PREPARED BY:

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DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

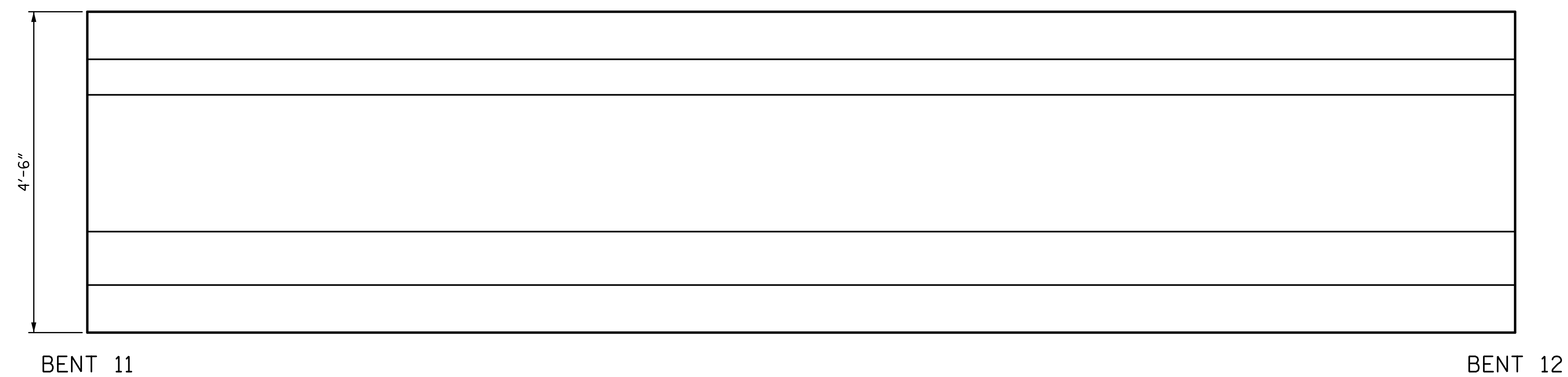
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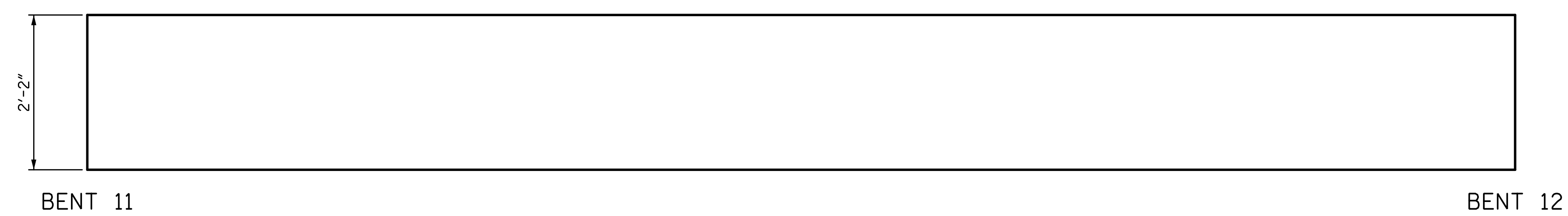
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

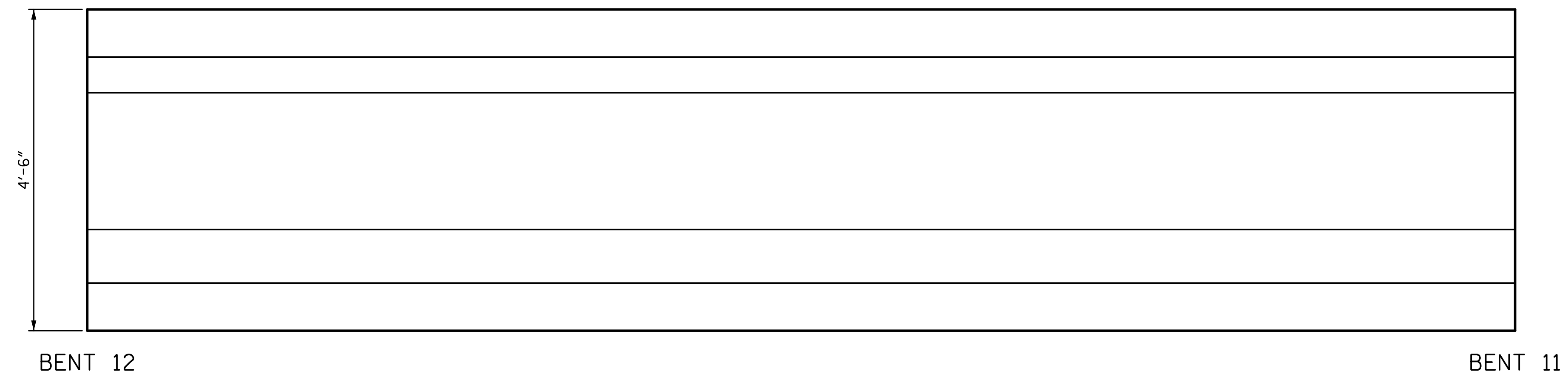
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	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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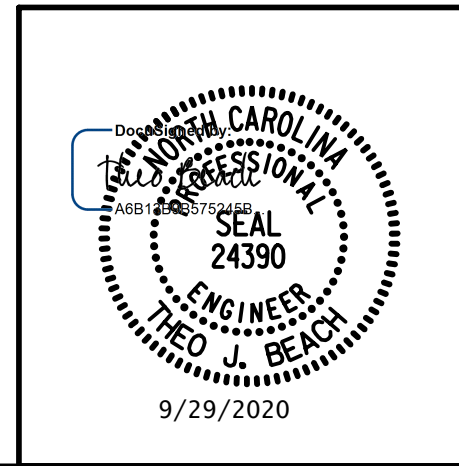
PROJECT NO. 15BPR.26
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 BRIDGE NO.: 640049

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 12
 GIRDER 5

PLANS PREPARED BY:

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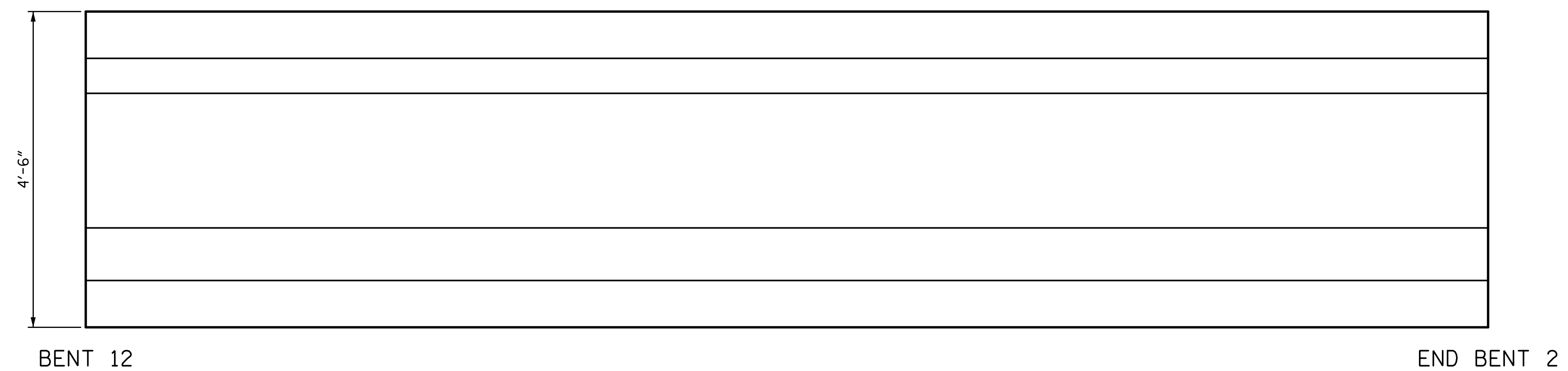
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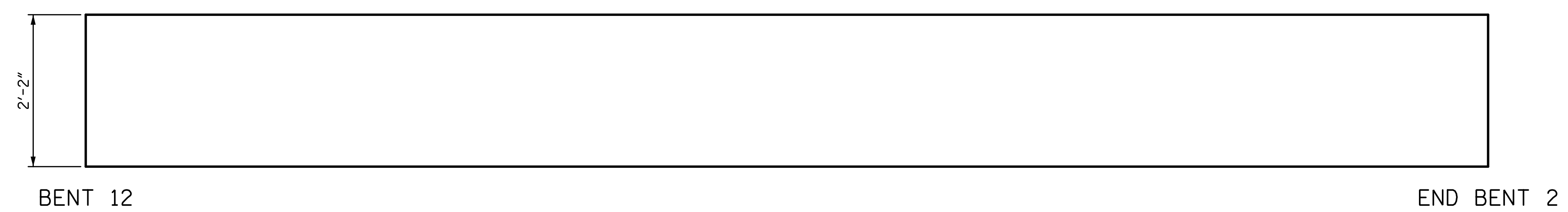
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 ERI — EPOXY RESIN INJECTION

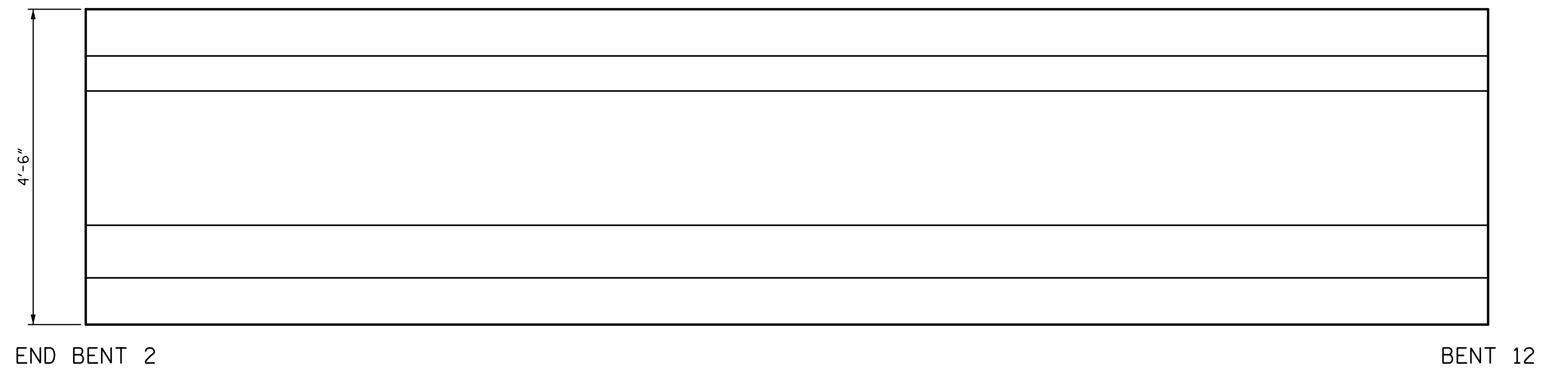
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REPAIRS SPAN 13 GRD. 1	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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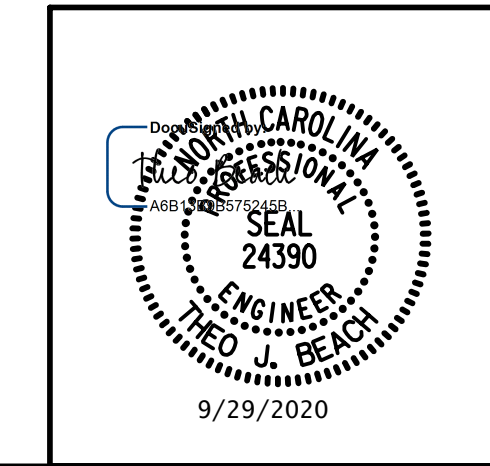
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 13
 GIRDER 1

PLANS PREPARED BY:

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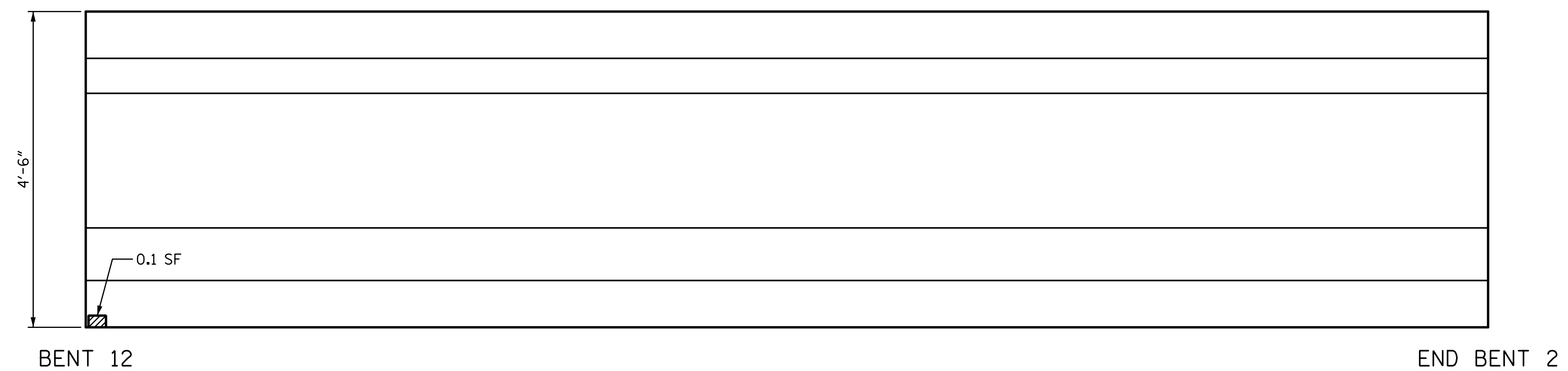
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

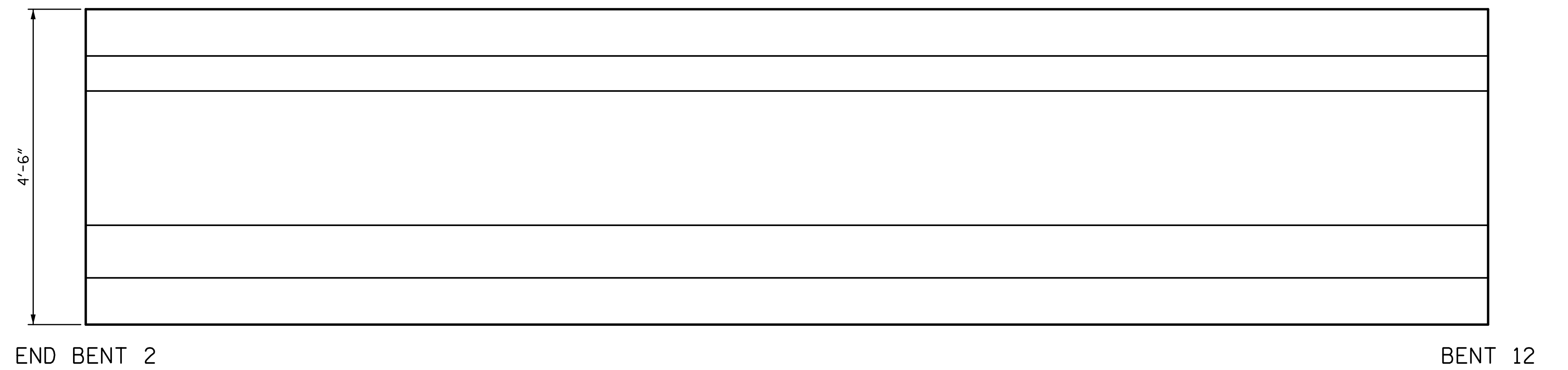
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	ESTIMATE		ACTUAL		
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GIRDER	0.1	0.1			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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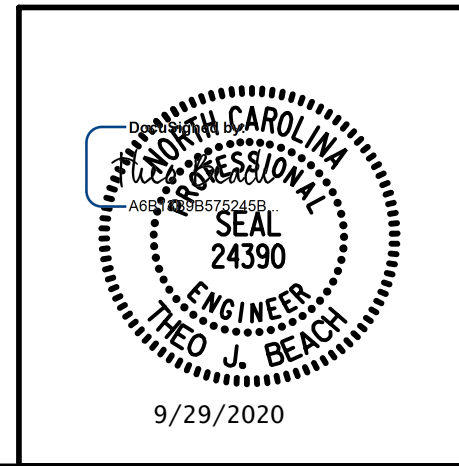
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 13
 GIRDER 2

PLANS PREPARED BY:

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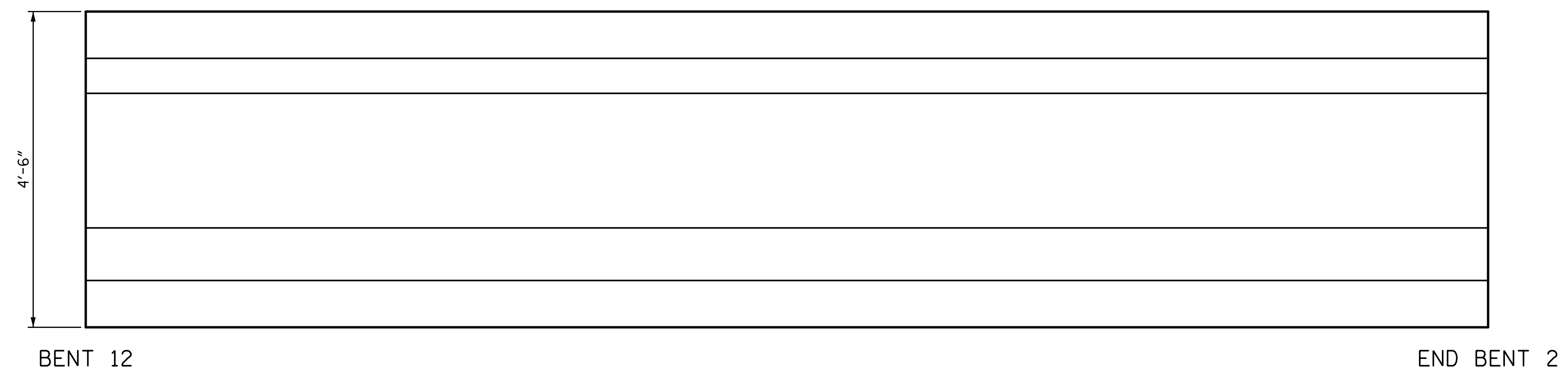
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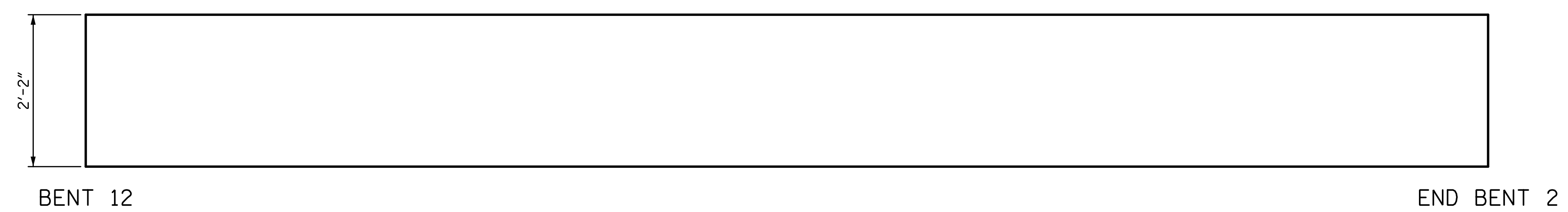
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 ERI — EPOXY RESIN INJECTION

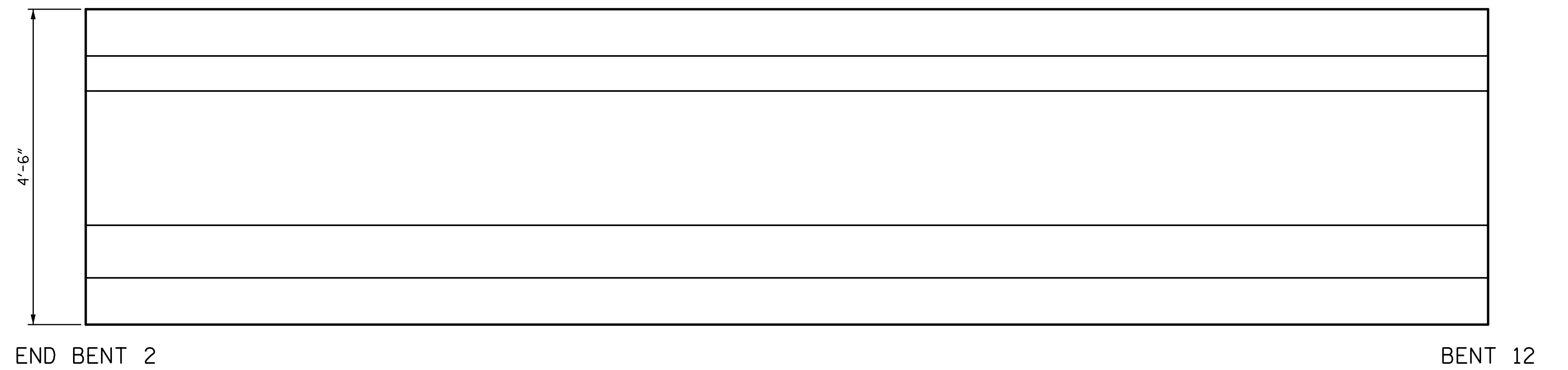
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REPAIRS SPAN 13 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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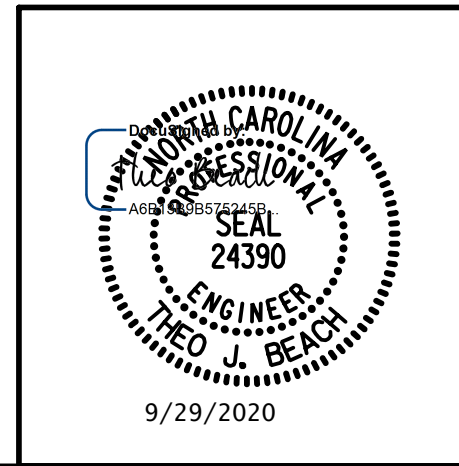
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 BRIDGE NO.: 640049

SHEET 3 OF 5

STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION
 SPAN 13
 GIRDER 3

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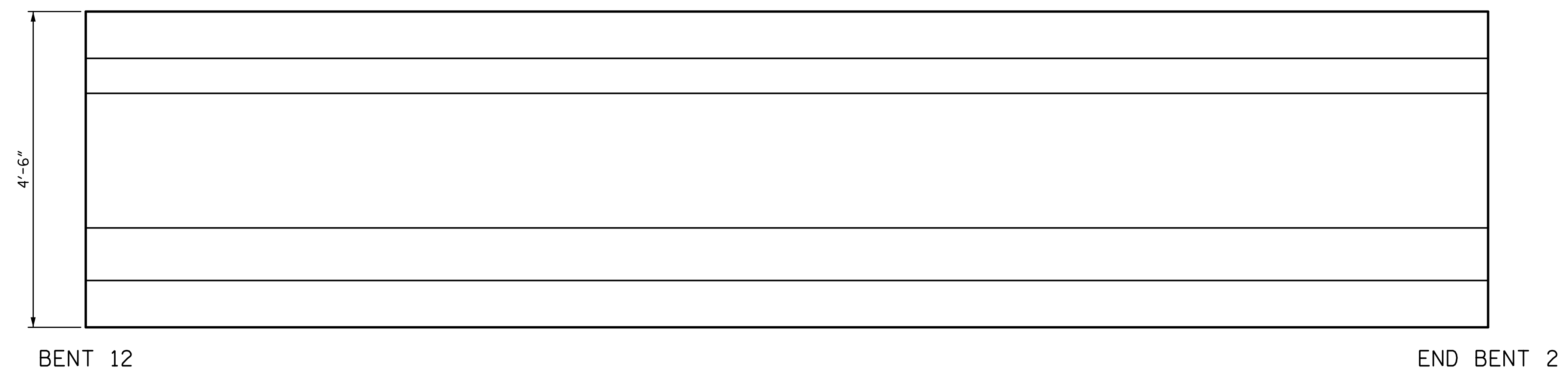
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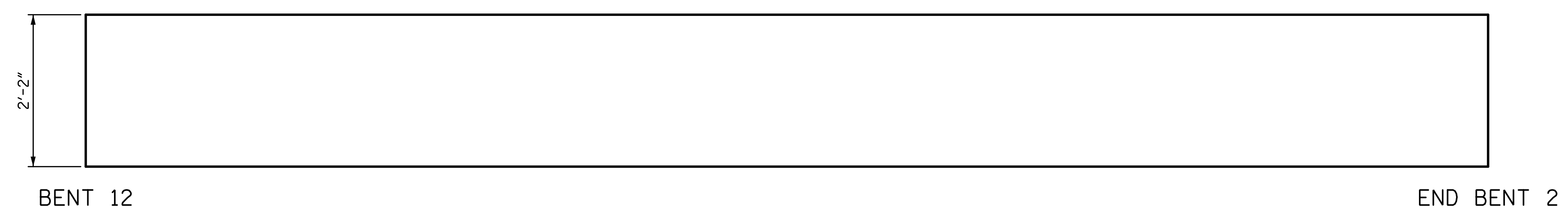
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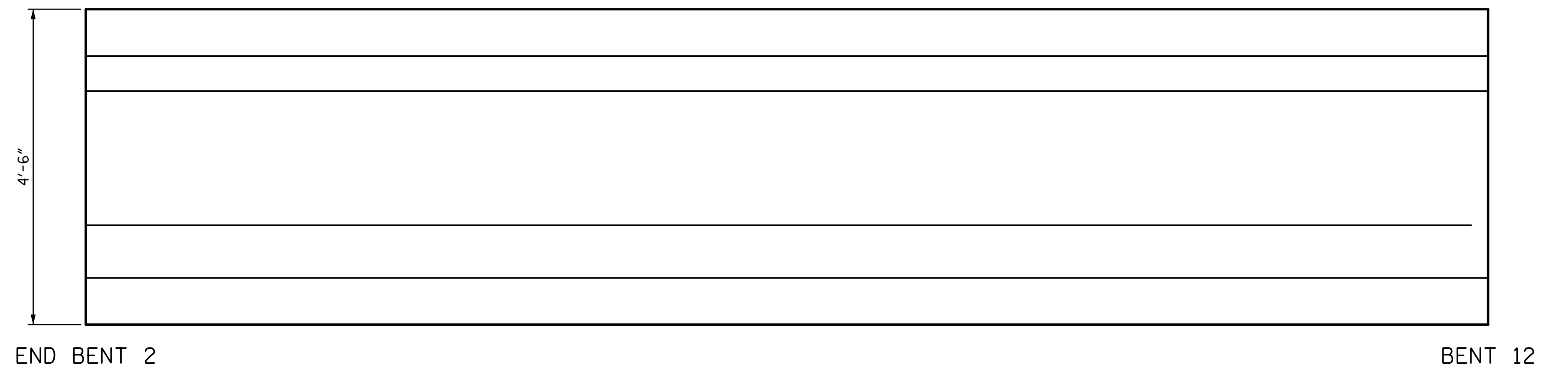
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 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 13 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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 AT THE TIME OF PREPARATION OF PLANS, IT WAS NOT ANTICIPATED SPLICING OF PRESTRESSING STRAND, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS PER ARTICLE 104-7 OF THE STANDARD SPECIFICATIONS. WORK ITEMS HAVE BEEN PROVIDED IN THE CONTRACT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES AND COST WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

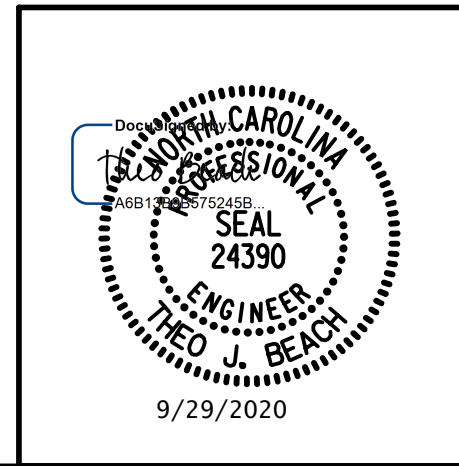
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 13
 GIRDER 4

PLANS PREPARED BY:

 5640 Dillard Drive
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 (919) 852-0538 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521




DRAWN BY: T. BANKOVICH	DATE: 9-20
CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

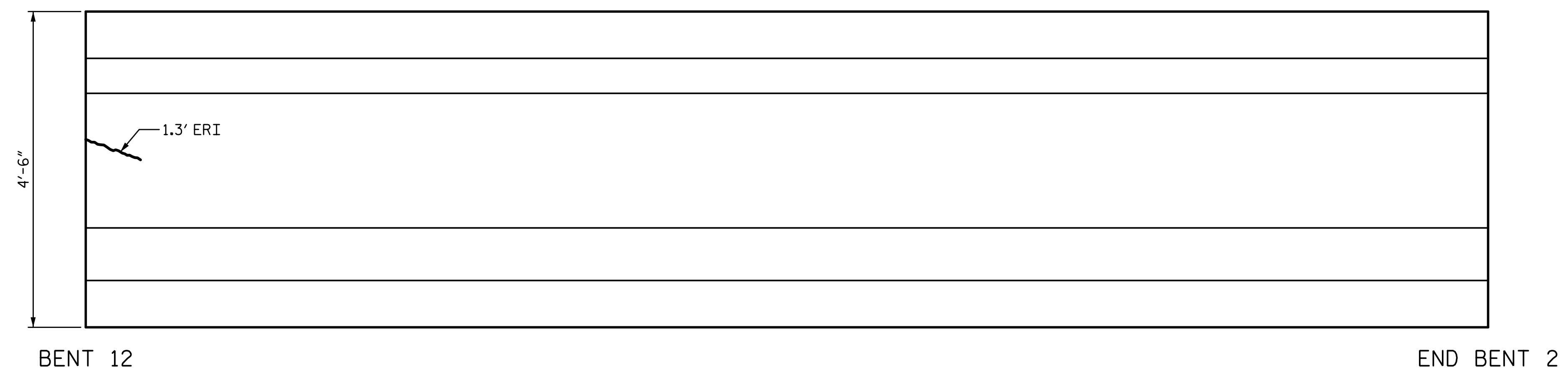
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

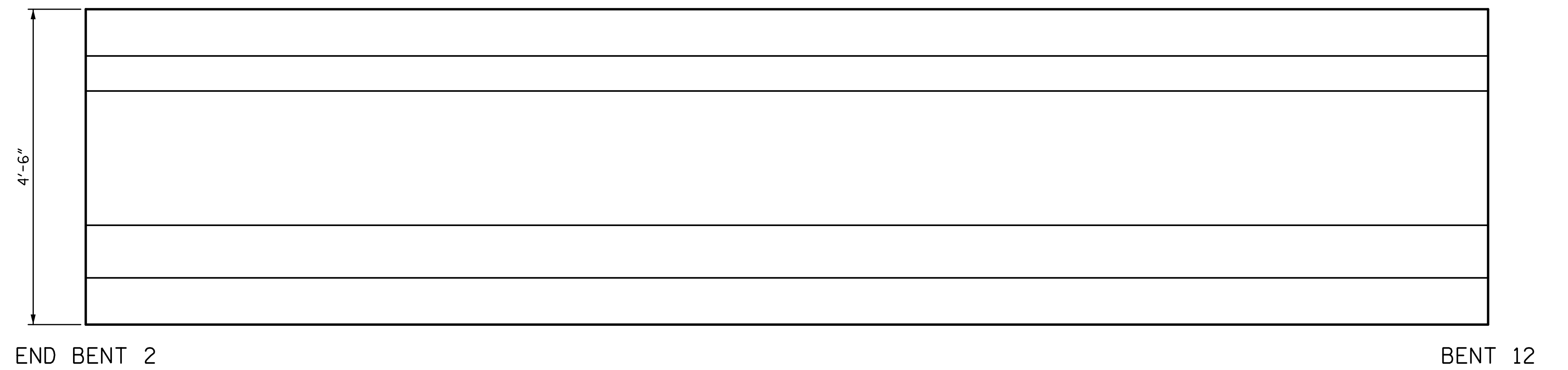
REPAIR QUANTITY TABLE					
REPAIRS SPAN 13 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		1.3			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.
 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
 VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.
 FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.
 FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS DETAILS, SEE "PRESTRESSED CONCRETE GIRDER REPAIR DETAILS" SHEET.
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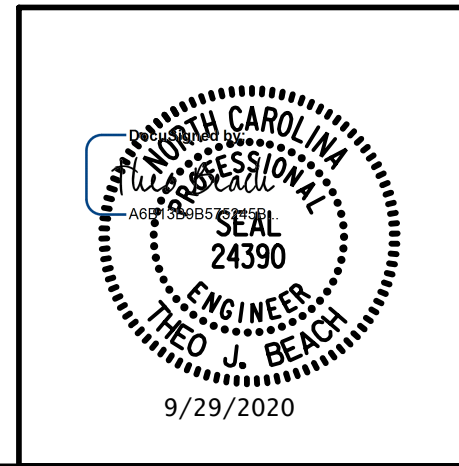
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 13
 GIRDER 5

PLANS PREPARED BY:

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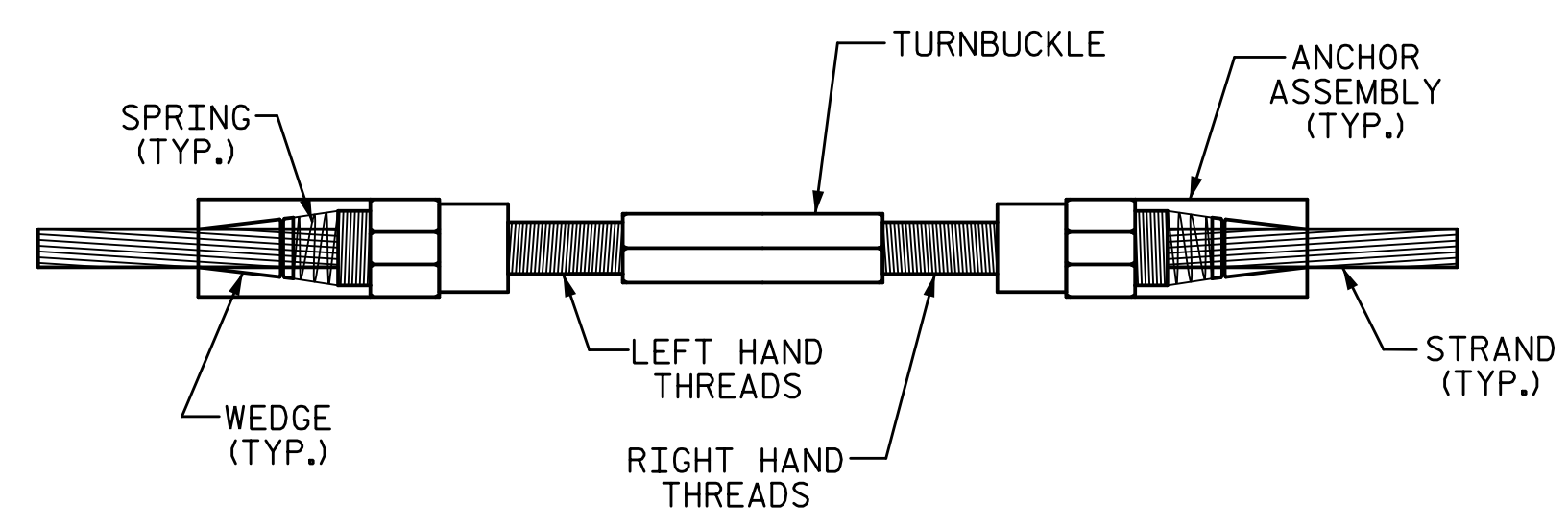
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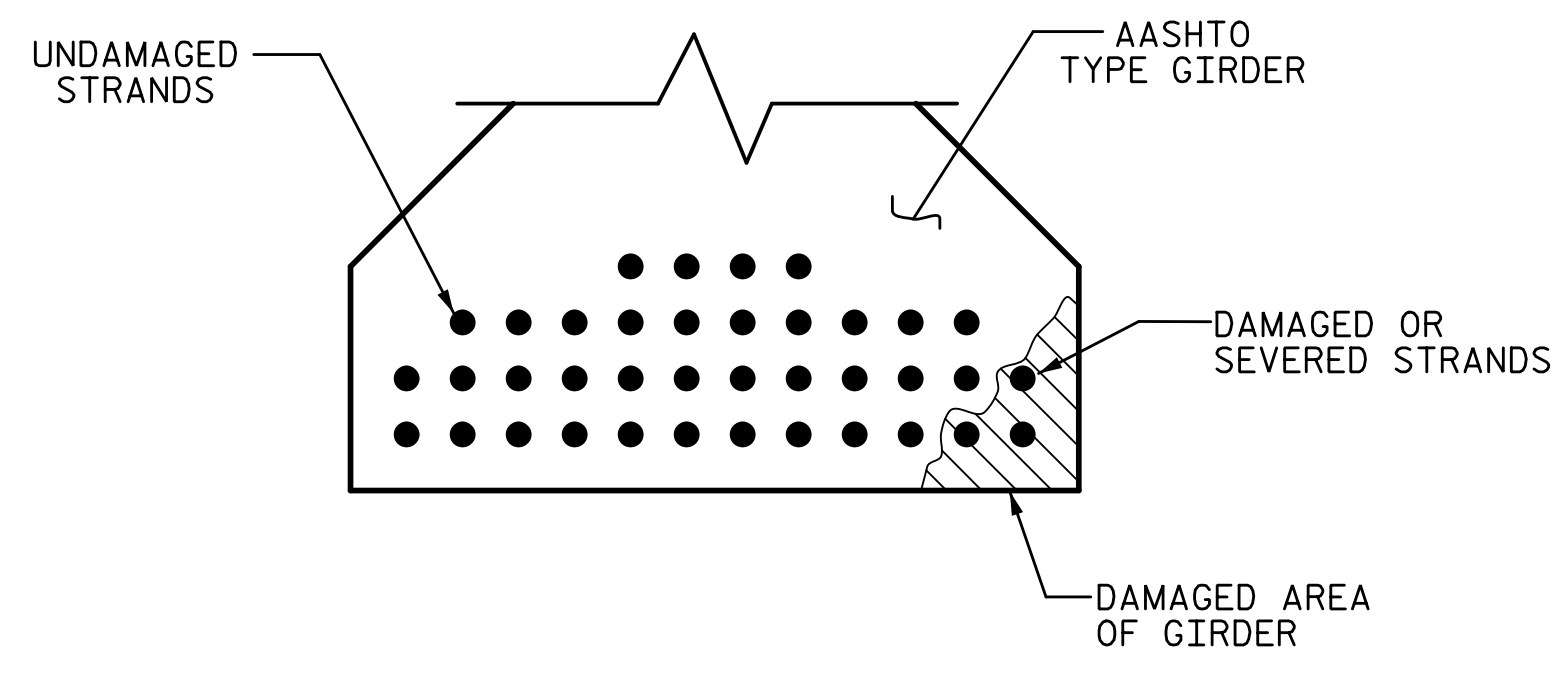
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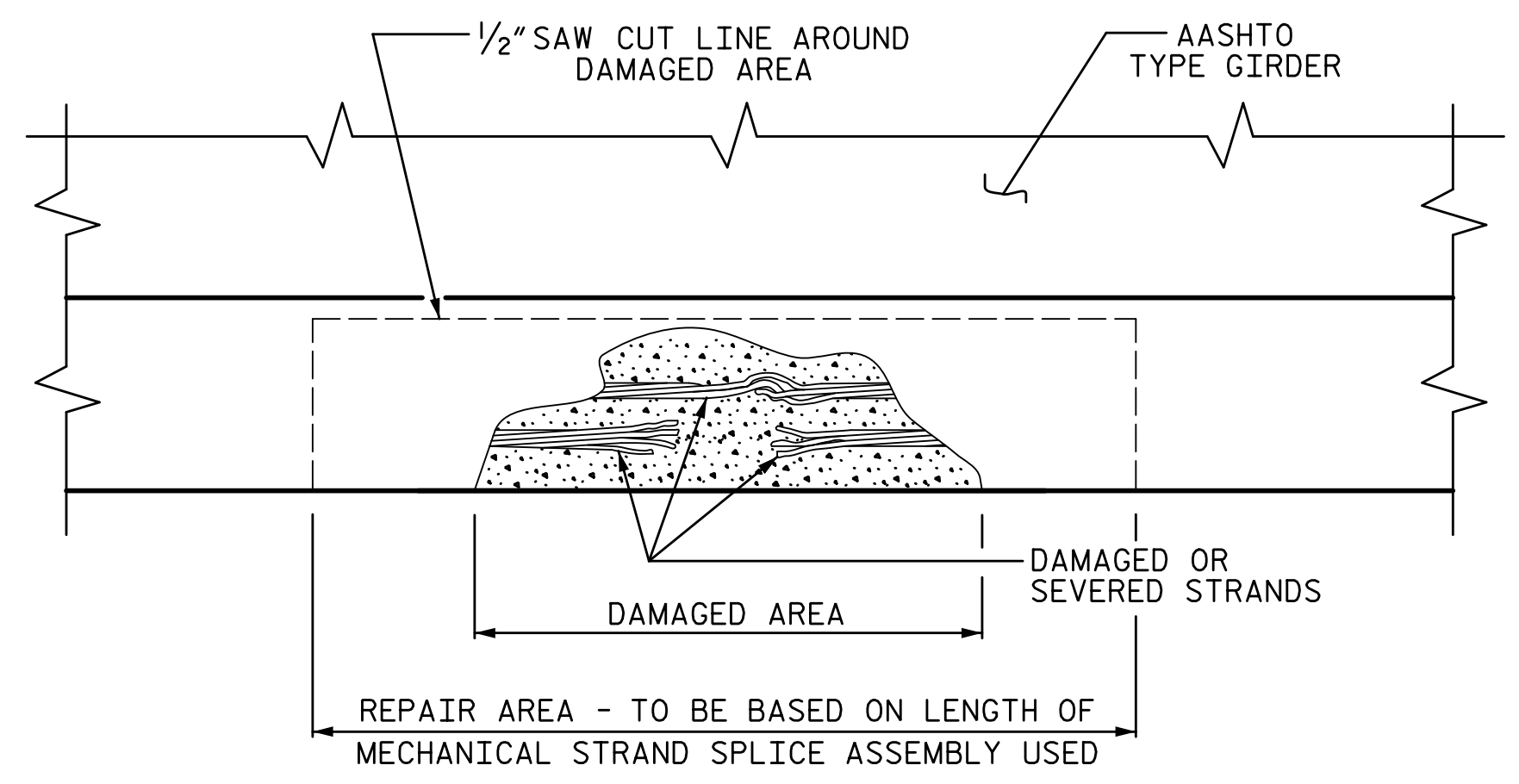
MECHANICAL STRAND SPLICE ASSEMBLY
(ASSEMBLIES MAY VARY DEPENDING ON MANUFACTURER)



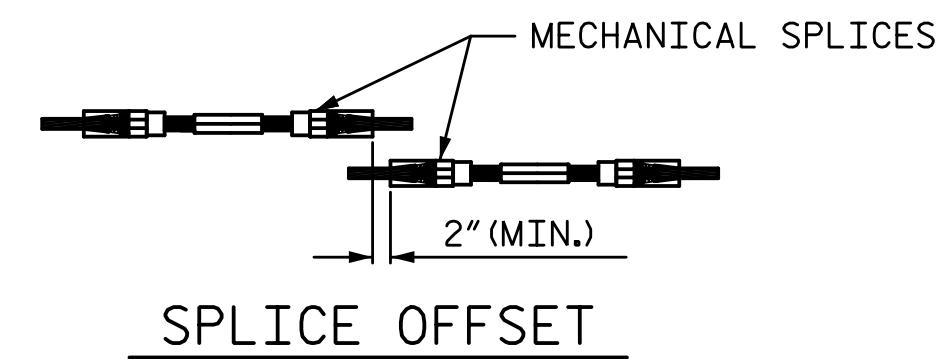
STRAND SPLICE DETAIL



SECTION VIEW OF DAMAGED GIRDER

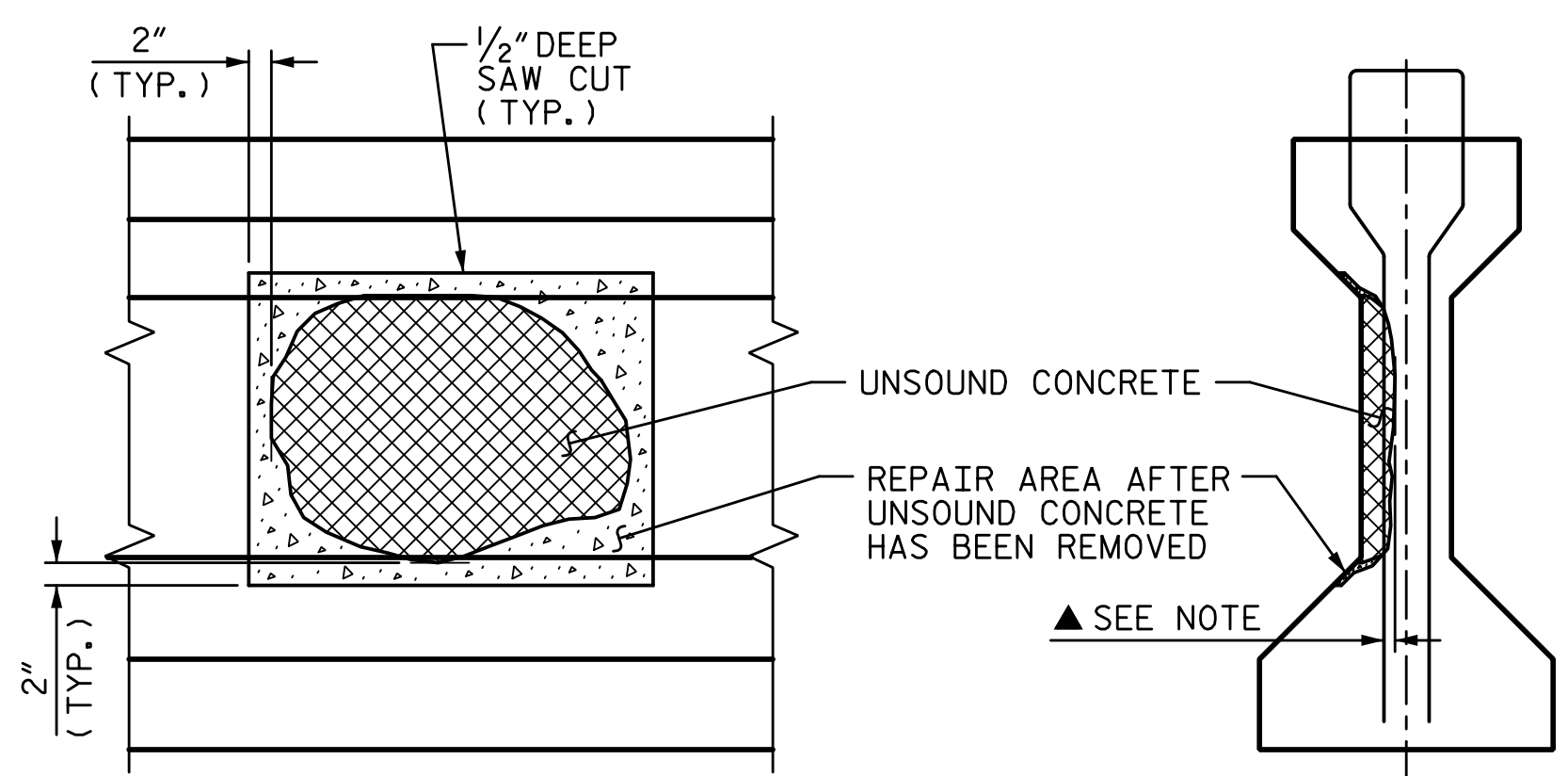


ELEVATION VIEW OF DAMAGED GIRDER



SPLICE OFFSET

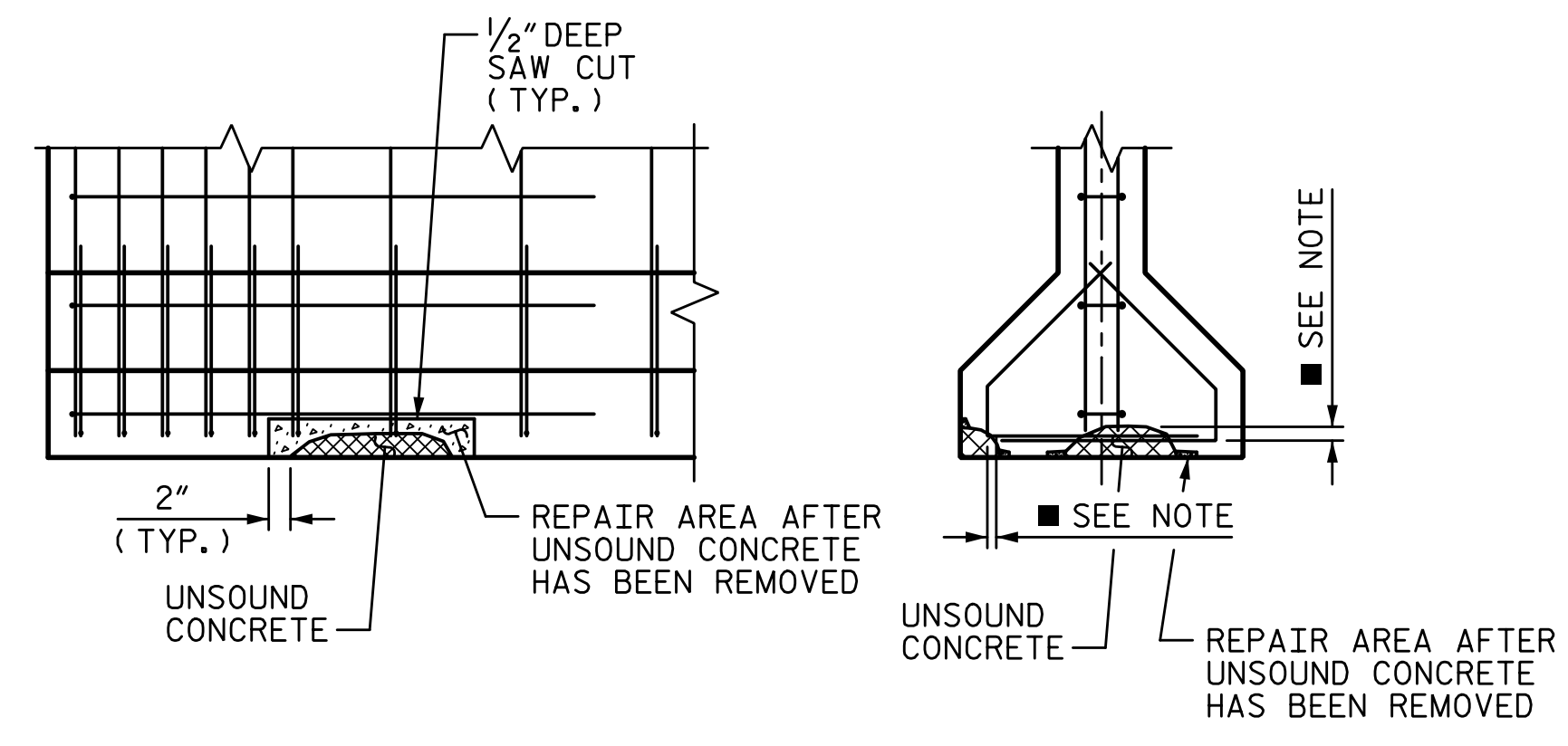
STRAND REPAIR DETAILS



ELEVATION

SECTION

GIRDER WEB REPAIR



ELEVATION

SECTION

GIRDER FLANGE REPAIR

PRESTRESSED GIRDER REPAIR

NOTES:

- PREPACKAGED MATERIAL IS REQUIRED.
- CONSULT WITH THE ENGINEER TO DETERMINE PRELOADING REQUIREMENTS WHEN REPAIR IS WITHIN THE CENTER REGION OF THE BEAM (0.25L TO 0.75L).
- FOR REPAIRS OVER TRAFFIC AND SHALLOW REPAIRS THAT DO NOT ENGAGE REINFORCEMENT, ANCHOR PATCH MATERIAL USING 1/4" GALVANIZED BOLTS, EPOXY ANCHORED WITH 2" EMBEDMENT. PLACE BOLTS IN A 6" GRID. USE A LATEX OR EPOXY PATCH MATERIAL FOR IMPROVED BOND. USE EXTREME CARE TO NOT DAMAGE STRANDS.
- FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

PRESTRESSED GIRDER STRAND REPAIR SEQUENCE:

1. REMOVE LIVE LOAD FORM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.
2. MEASURE OUT THE AREA NEEDED TO HAVE ADEQUATE ROOM TO SPLICE THE BROKEN OR DAMAGED STRAND. IF MULTIPLE STRANDS ARE BROKEN ADJACENT TO ONE ANOTHER THEN THE SPLICES SHALL BE STAGGERED, SEE "SPLICE OFFSET" ABOVE. AFTER YOU HAVE DETERMINED THE REPAIR AREA NEEDED, SAW CUT A MINIMUM OF 1/2" AT RIGHT ANGLES AROUND THE DAMAGED AREA. CHIP OUT REST OF CONCRETE TO A SUFFICIENT REPAIR DEPTH.
3. SPLICE STRANDS USING THE MECHANICAL SPLICE STRAND ASSEMBLY AND TENSION TO REQUIRED FORCE PER THE MANUFACTURER'S GUIDELINES.
4. PATCH REPAIR AREA USING NON SHRINK GROUT. PROFILE OF GIRDER MAY NEED TO BE INCREASED AROUND REPAIR AREA TO PROVIDE PROPER COVER.
5. AFTER GROUT HAS CURED PLACE TRAFFIC BACK ON BRIDGE OR REPAIRED AREA OF BRIDGE.

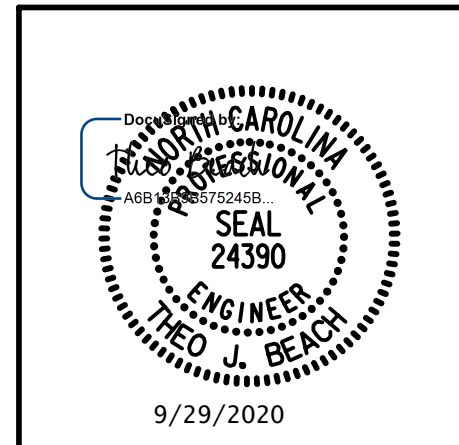
PRESTRESSED GIRDER REPAIR SEQUENCE:

1. SOUND CONCRETE TO DETERMINE EXTENTS OF REPAIR LOCATION.
2. REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL. SAW CUT AROUND REPAIR AREA TO A NOMINAL DEPTH OF 1/2".
3. REMOVE CONCRETE WITHIN SAW CUT AREA TO MINIMUM 1/2" DEPTH. IF CONCRETE IS DAMAGED BEYOND THE ORIGINAL SAW CUT, A NEW SAW CUT IS REQUIRED. (PICTURE REQUIRED)
4. ▲ IF MORE THAN HALF THE CIRCUMFERENCE OF A REINFORCING BAR IS EXPOSED DURING THIS PROCESS, REMOVE ADDITIONAL CONCRETE TO 1" BEHIND THE BAR. THIS DOES NOT APPLY TO PRESTRESSED STRANDS.
5. ■ ALL UNSOUND CONCRETE MUST BE REMOVED, HOWEVER, PRESTRESSED STRANDS SHOULD NOT BE DISTURBED UNLESS ABSOLUTELY NECESSARY. USE EXTREME CARE TO NOT DAMAGE STRANDS.
6. USE A WIRE BRUSH TO CLEAN ALL EXPOSED REINFORCING BARS AND PRESTRESSED STRANDS. FOR BARS WITH MORE THAN 10% SECTION LOSS, SPLICE AND SECURELY TIE SUPPLEMENTAL REINFORCING BARS AS NEEDED. NOTE AND PROVIDE DETAILED DOCUMENTATION, INCLUDING LOCATION AND SEVERITY OF ALL DAMAGE TO PRESTRESSED STRANDS THAT EXCEEDS 10% SECTION LOSS. IF FIVE OR MORE STRANDS ARE DAMAGED, NOTIFY THE ENGINEER PRIOR TO PLACEMENT OF REPAIR MATERIAL.
7. REMOVE ALL LOOSE OR WEAKENED MATERIAL THEN CLEAN THE REPAIR AREA OF DIRT, GREASE, OIL, AND FOREIGN MATTER.
8. PREPARE SURFACE AND PLACE APPROVED REPAIR MATERIAL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. MAXIMUM AGGREGATE SIZE FOR REPAIR MATERIAL SHALL NOT EXCEED 2/3 THE MINIMUM REPAIR DEPTH.

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

DRAWN BY: T. BANKOVICH DATE: 9-20
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 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

PLANS PREPARED BY:
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 LICENSURE NO. C-2521

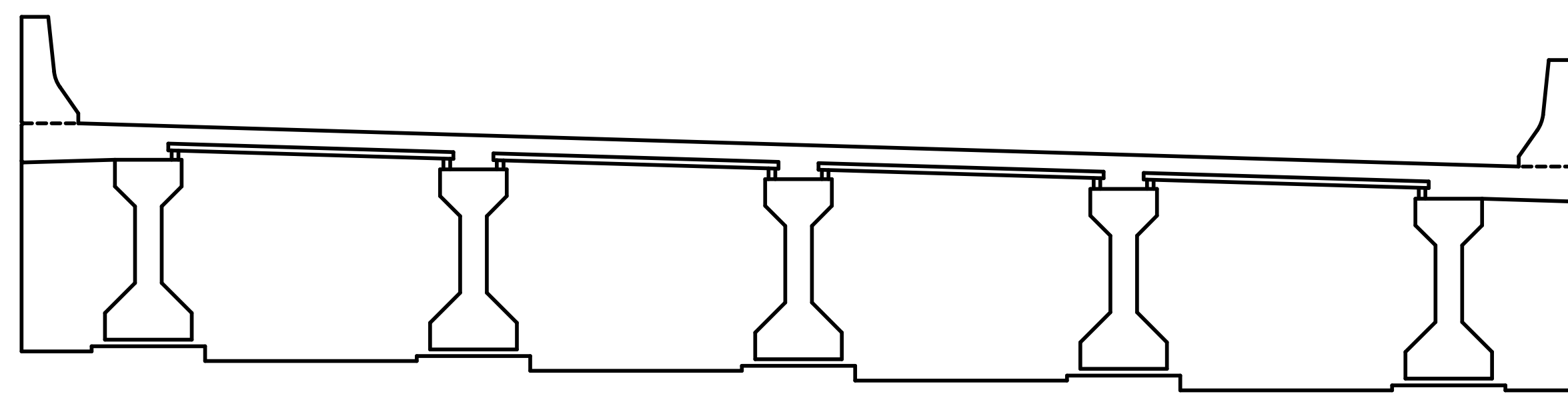


STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION
PRESTRESSED CONCRETE GIRDER REPAIR DETAILS

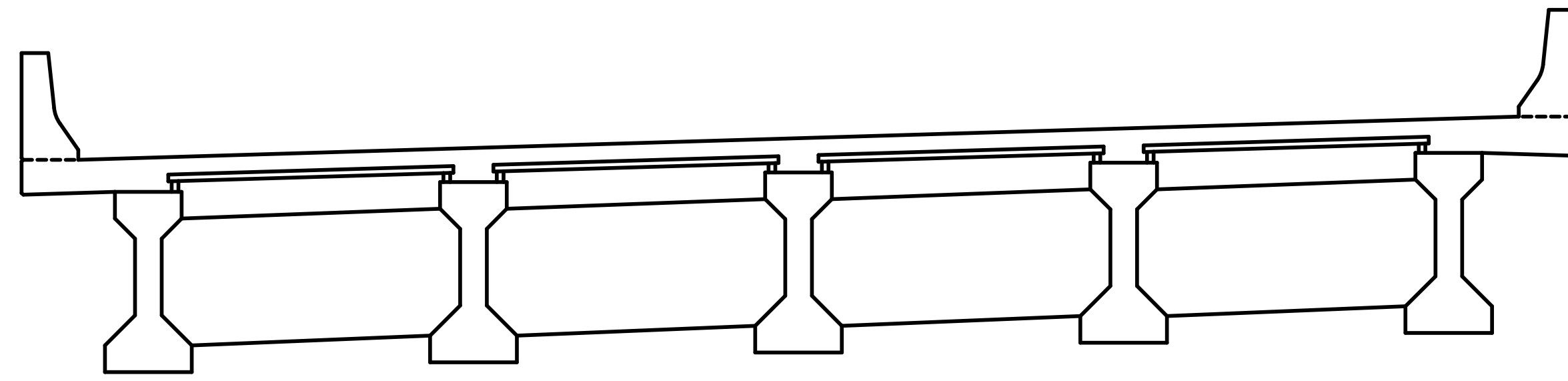
REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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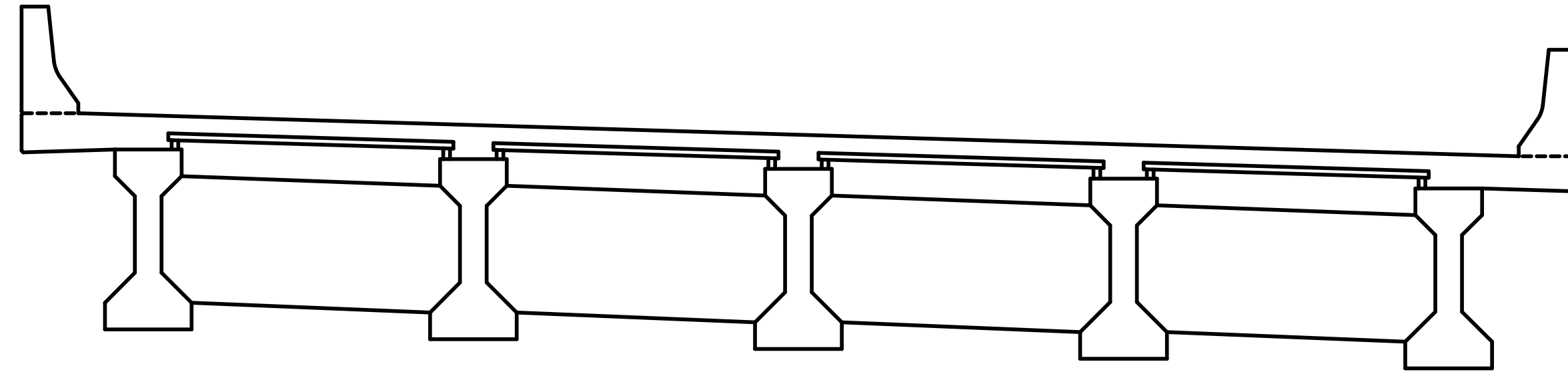
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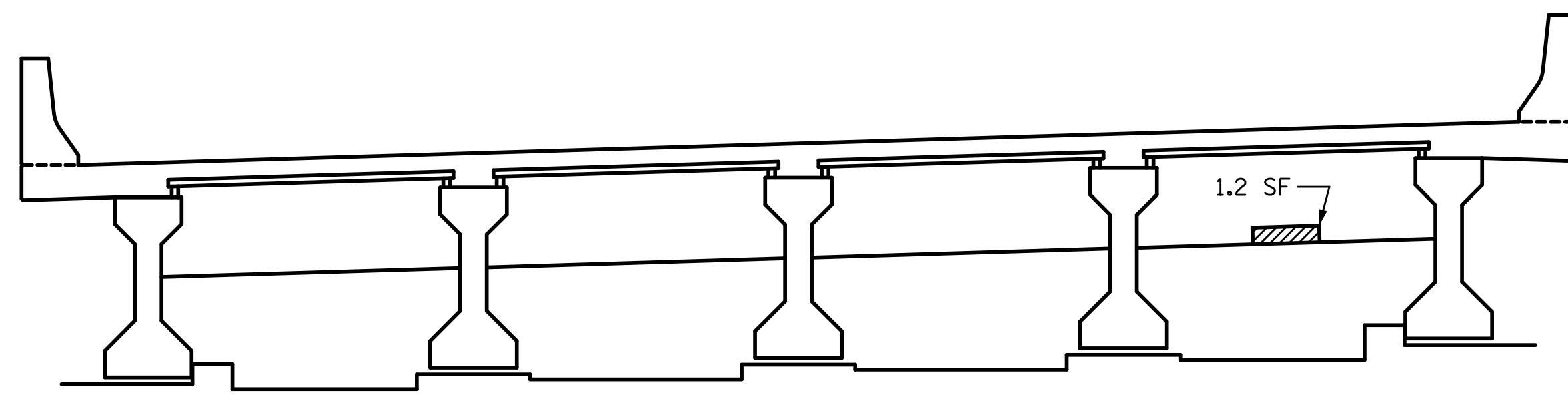
END BENT 1 CURTAIN WALL
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 1 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 1 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CURTAIN WALL	1.2	0.3			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 1 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CURTAIN WALL		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 1 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 19

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

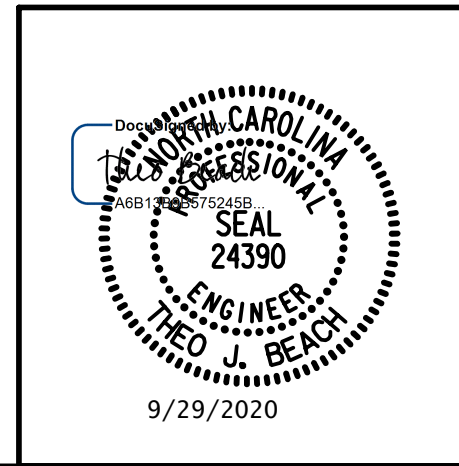
DIAPHRAGM REPAIRS

 SPAN 1

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			163

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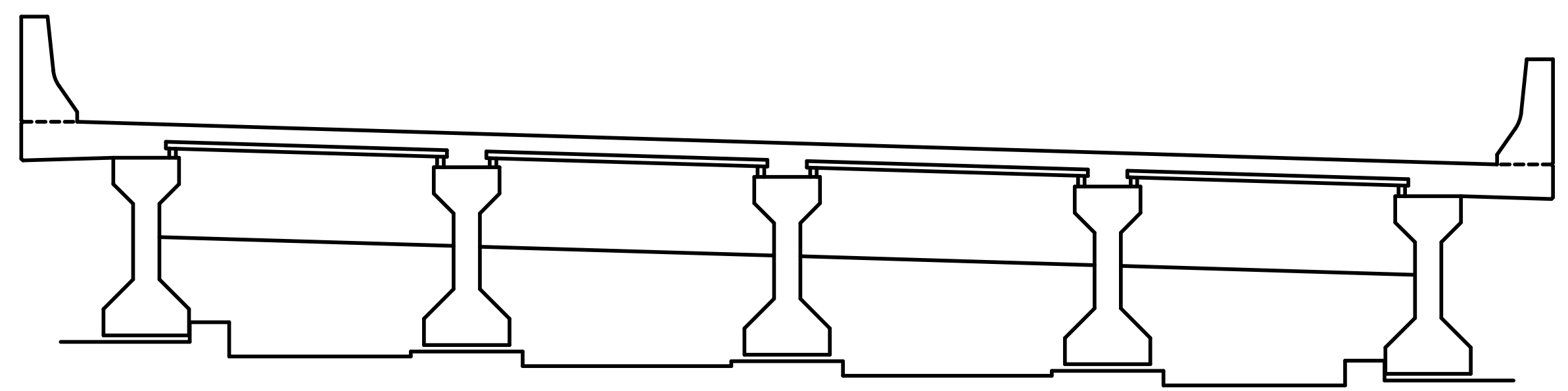
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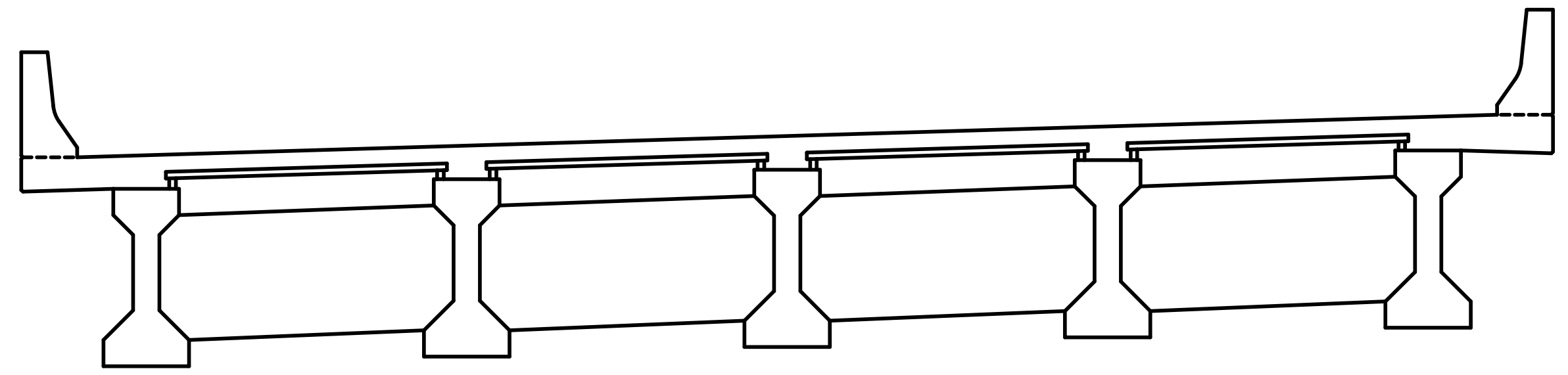
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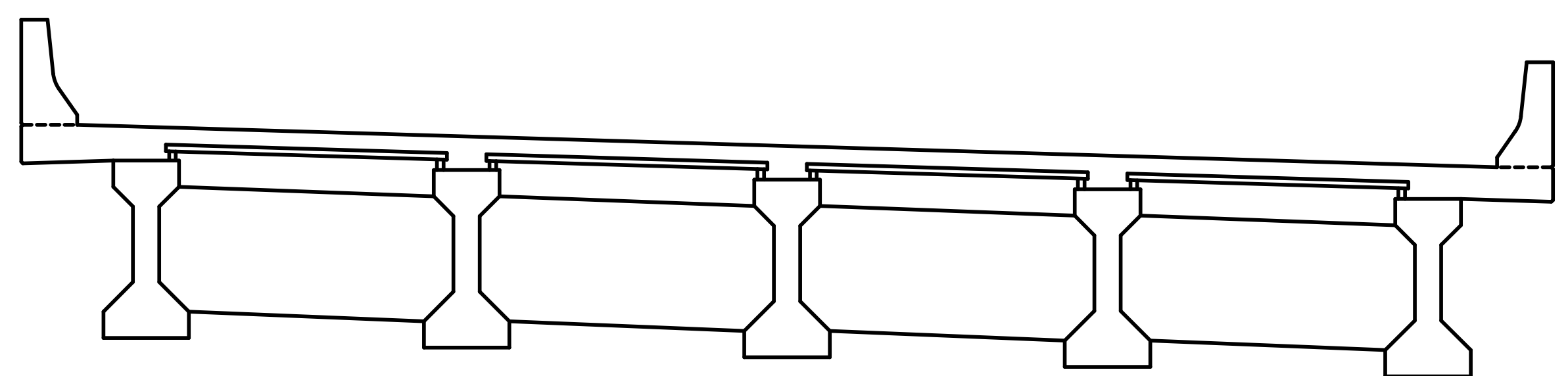
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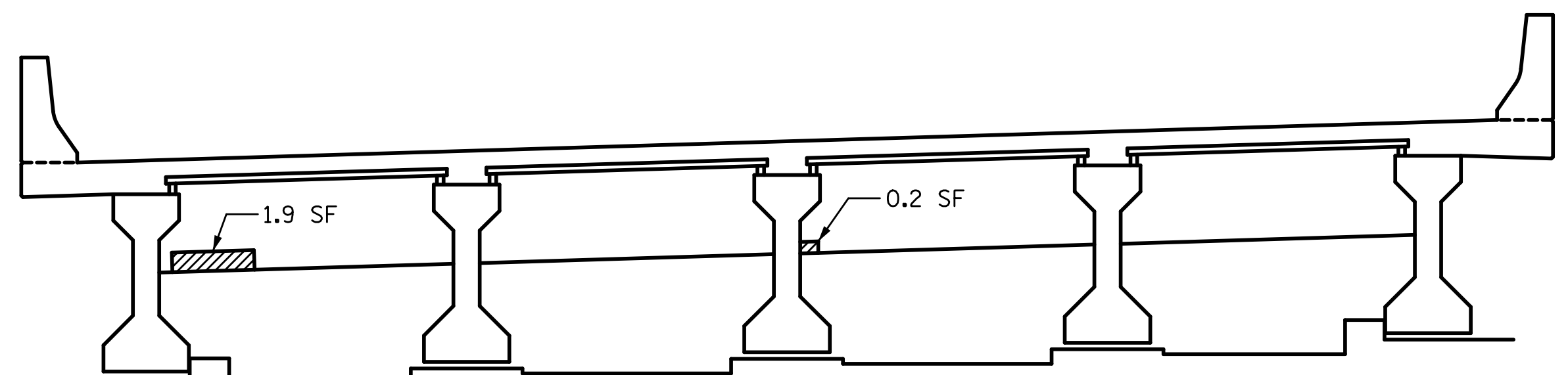
BENT 1 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 2 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 2 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 1 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 2 DIAPHRAGM	2.1	0.7			
EPOXY RESIN INJECTION		LF			LF
BENT 1 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 2 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 19

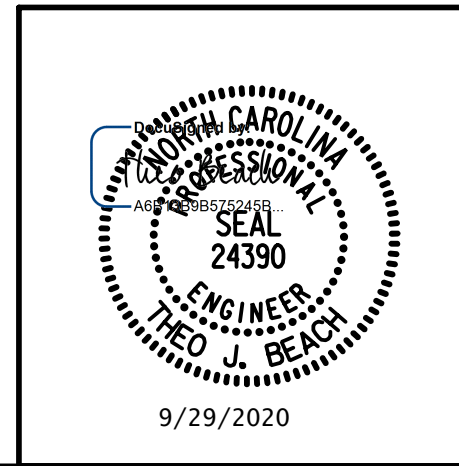
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 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

DIAPHRAGM REPAIRS

SPAN 2

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			163

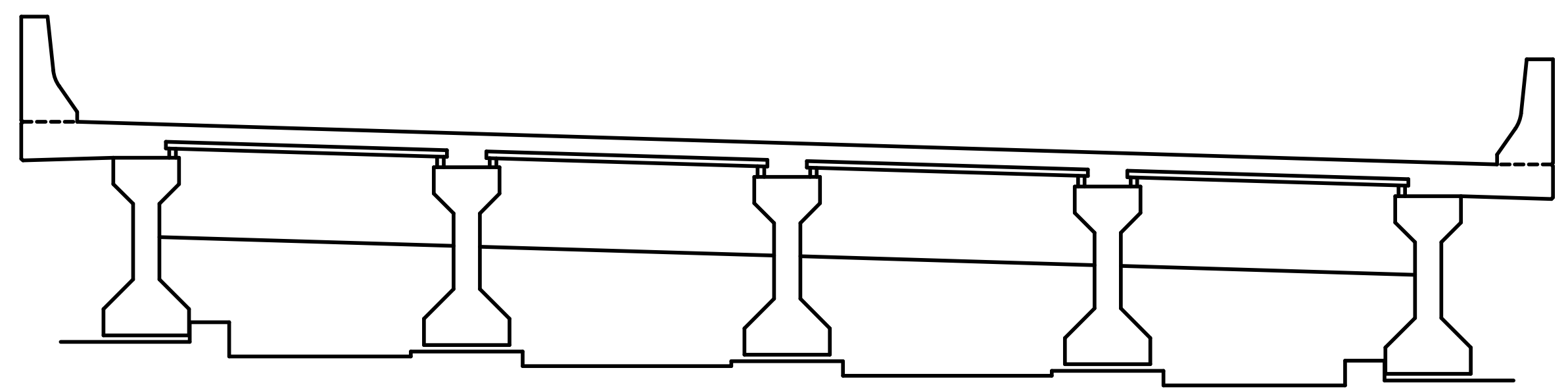
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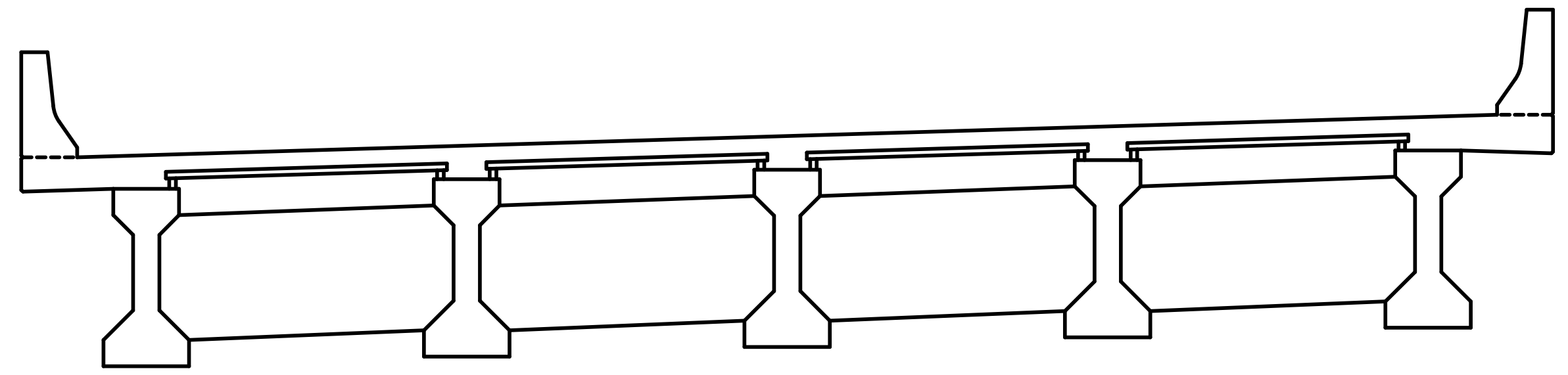
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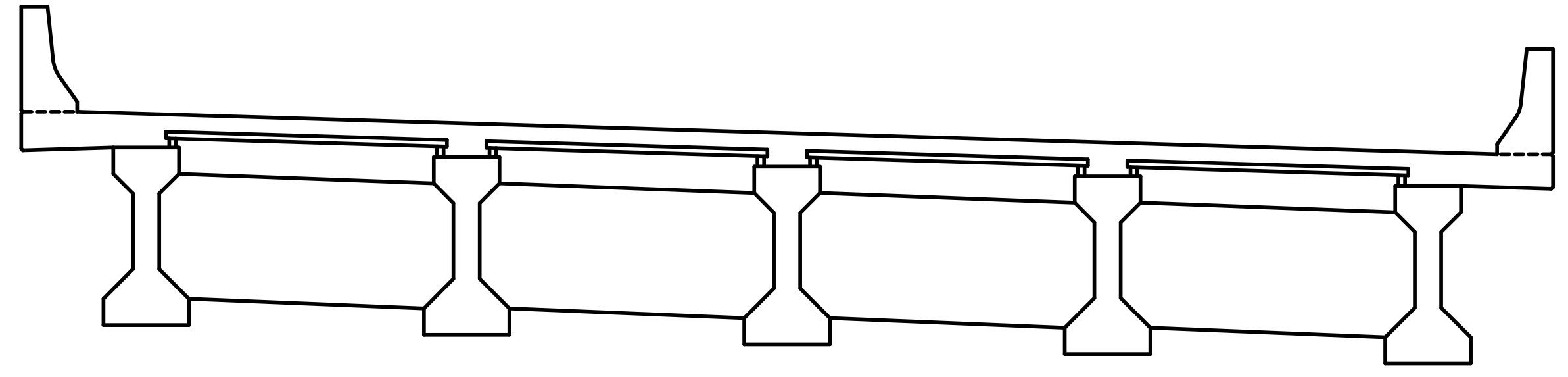
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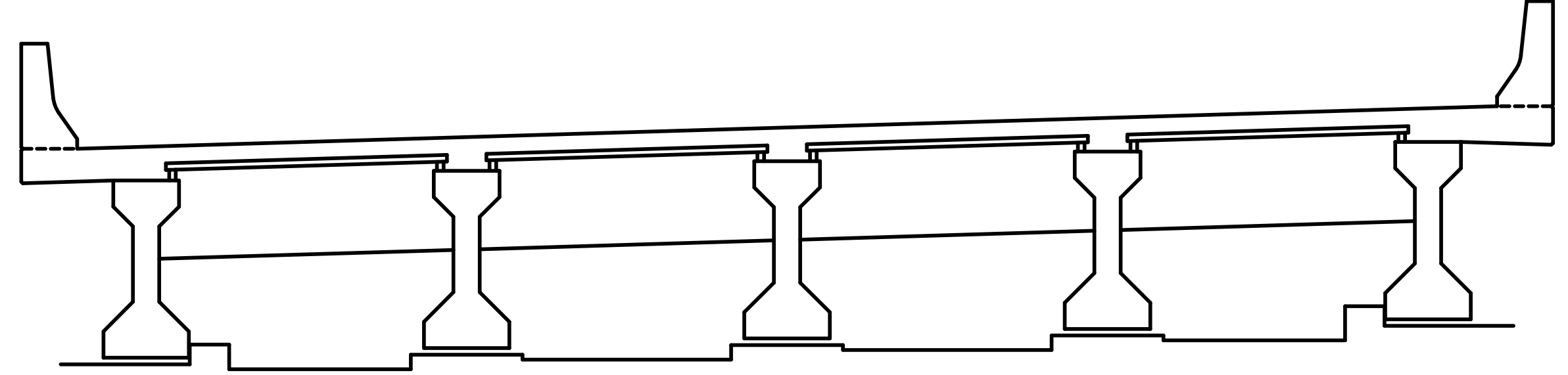
BENT 2 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 3 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIRS SPAN 3 DIAPH.					
SHOTCRETE REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 2 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 3 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 2 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 3 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 19

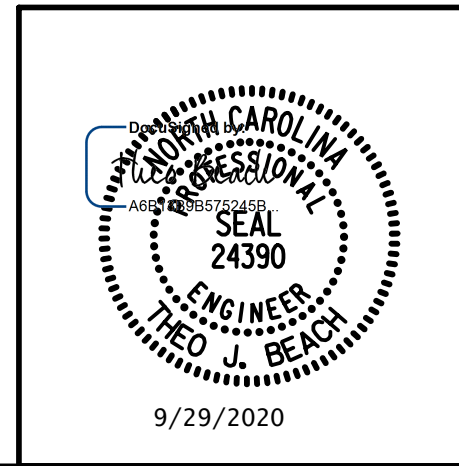
STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION

 DIAPHRAGM REPAIRS

 SPAN 3

PLANS PREPARED BY:

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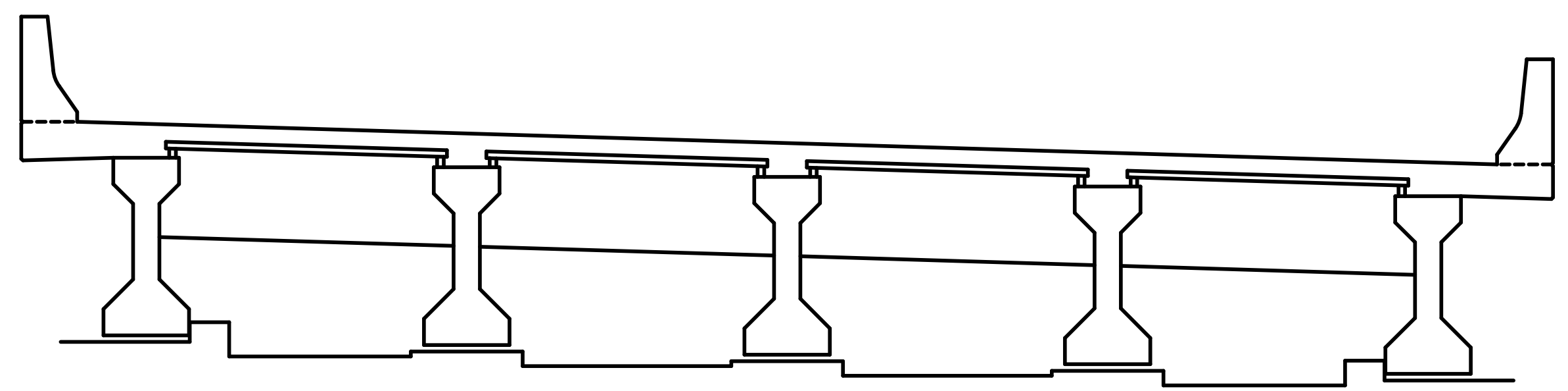


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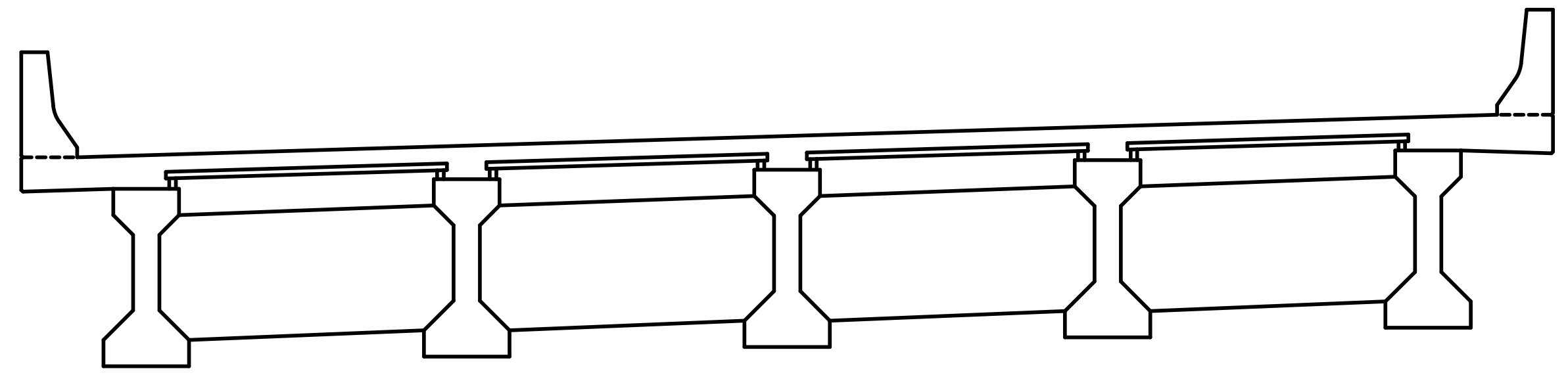
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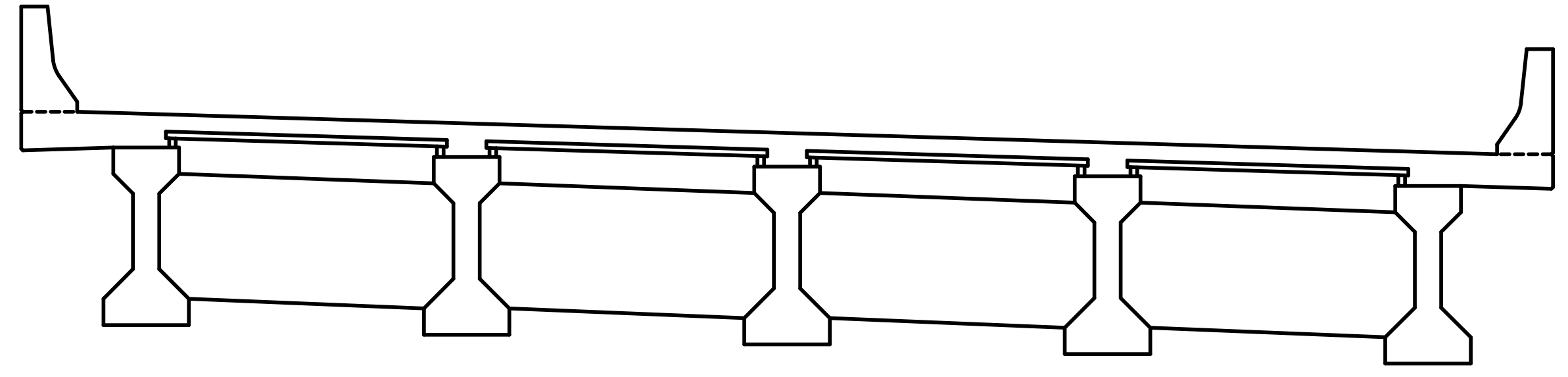
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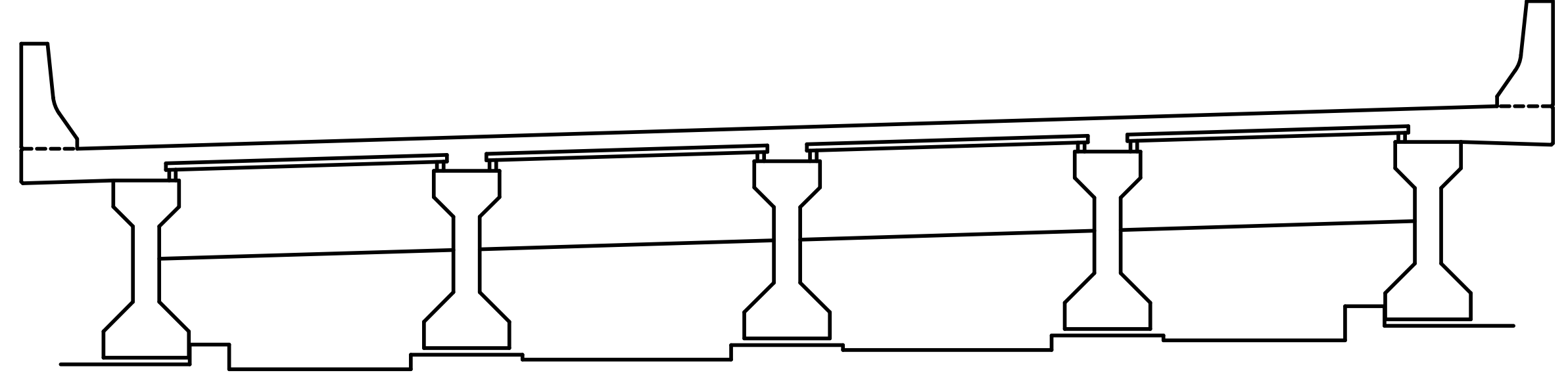
BENT 3 DIAPHRAGM
EAST FACE



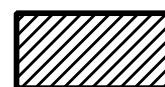
INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 4 DIAPHRAGM
WEST FACE

 SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIRS SPAN 4 DIAPH.					
REPAIRS SPAN 4 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 3 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 4 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 3 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 4 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 19

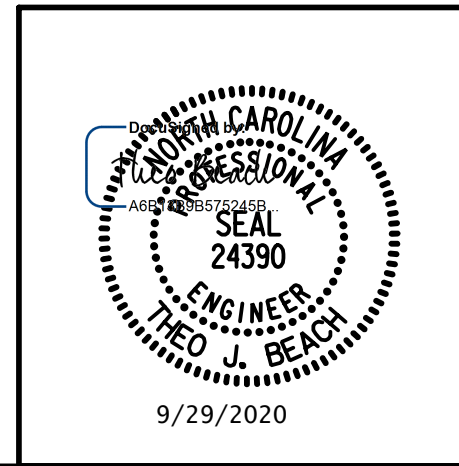
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DIAPHRAGM REPAIRS

 SPAN 4

PLANS PREPARED BY:

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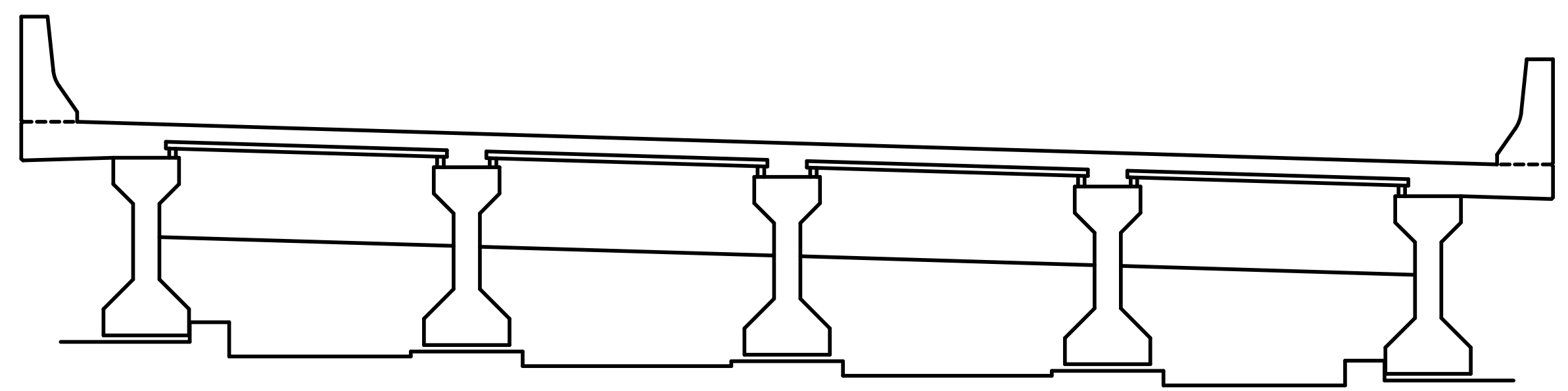


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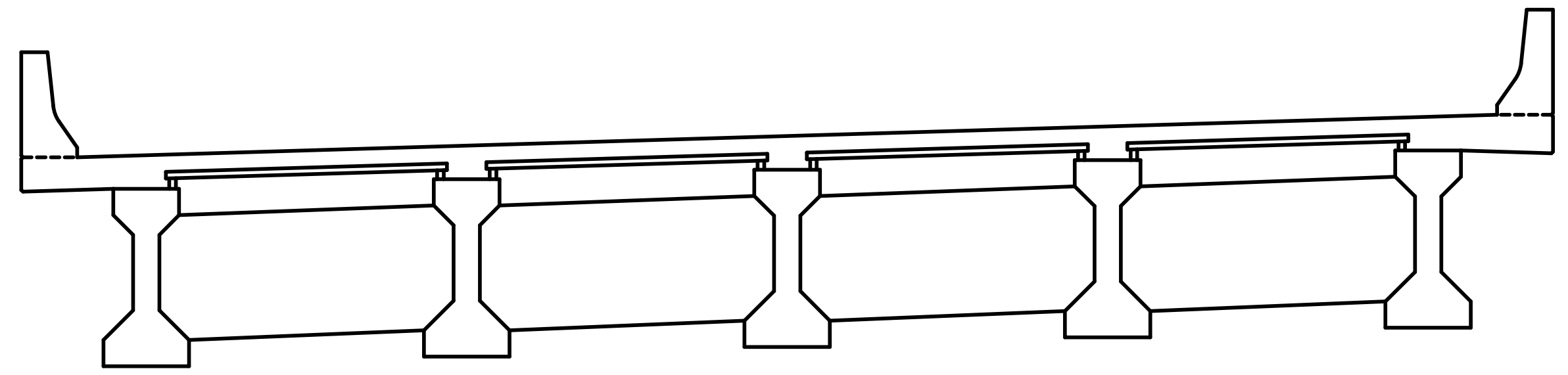
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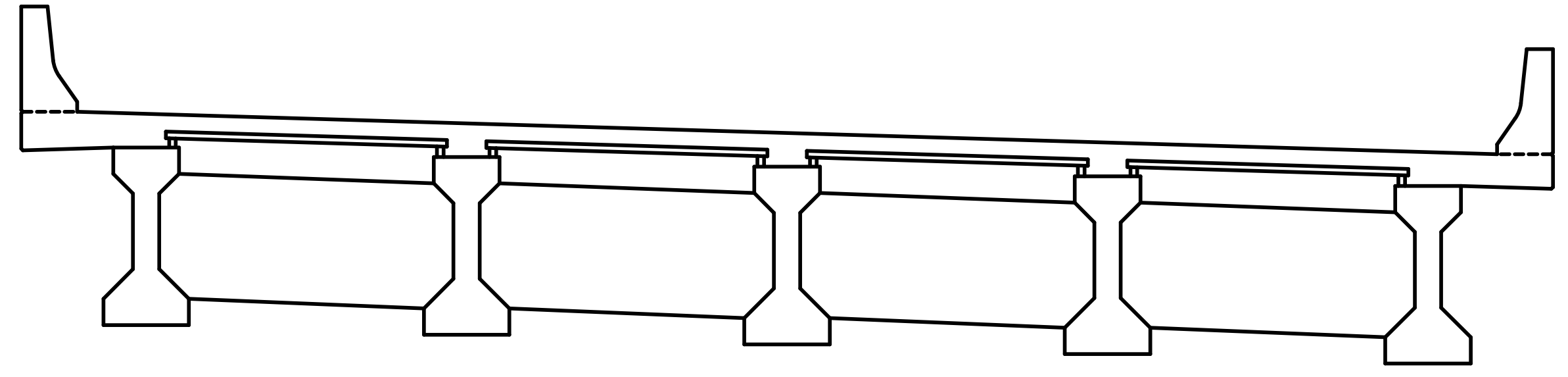
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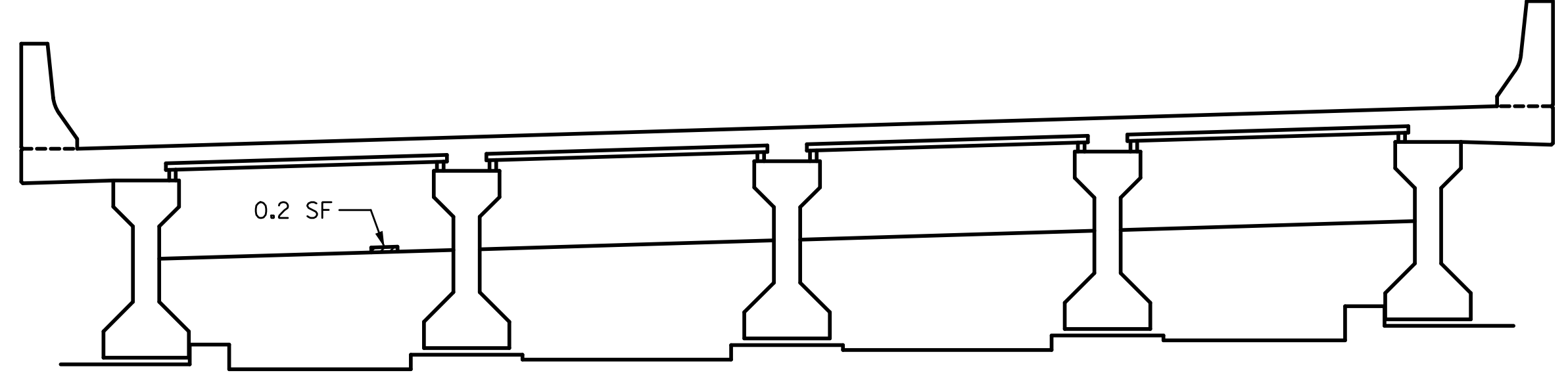
BENT 4 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 5 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 5 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 4 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 5 DIAPHRAGM	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
BENT 4 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 5 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

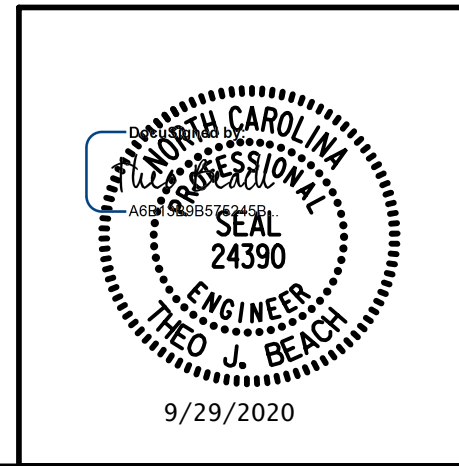
SHEET 5 OF 19

STATE OF NORTH CAROLINA
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DIAPHRAGM REPAIRS

 SPAN 5

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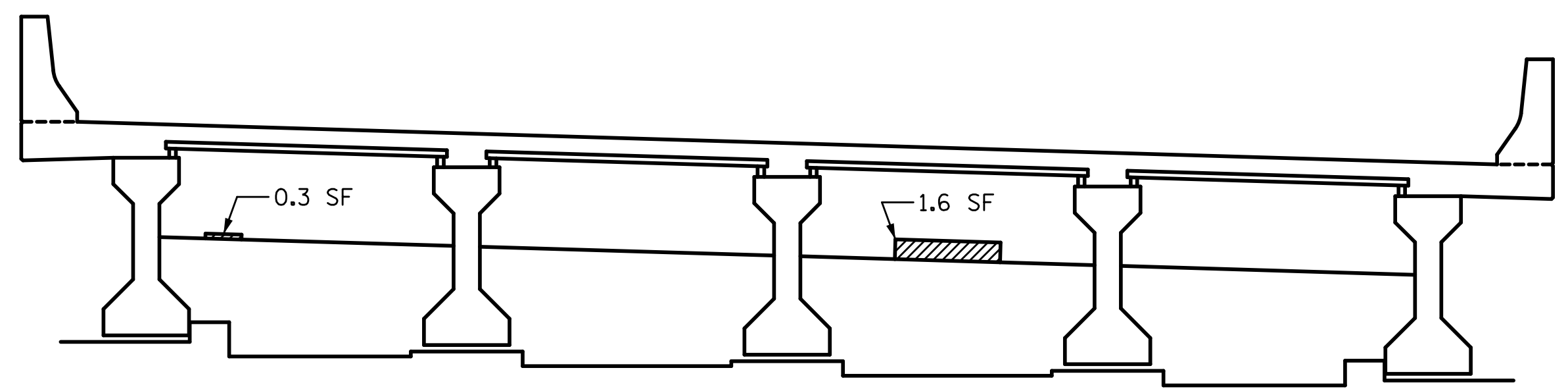


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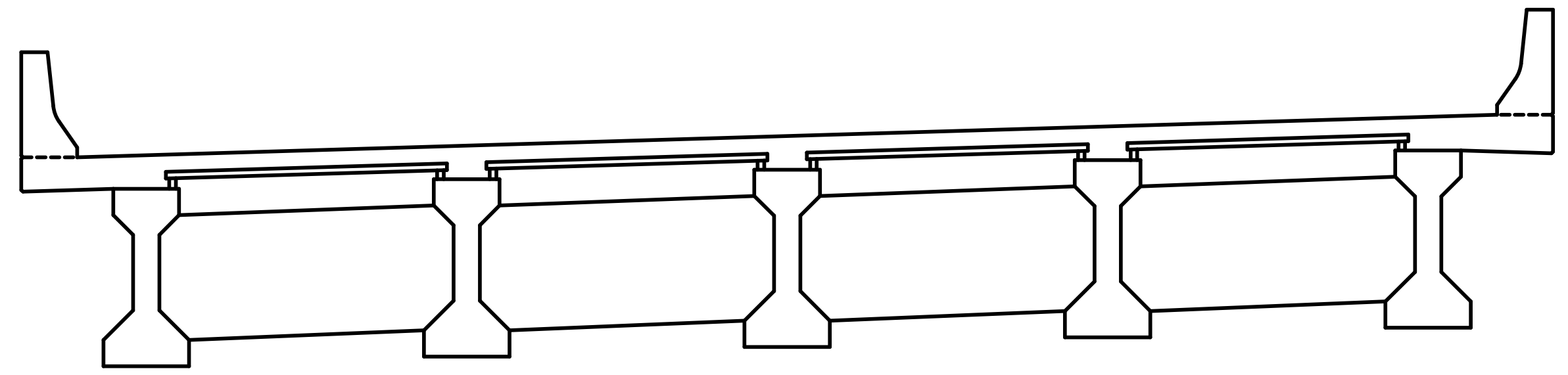
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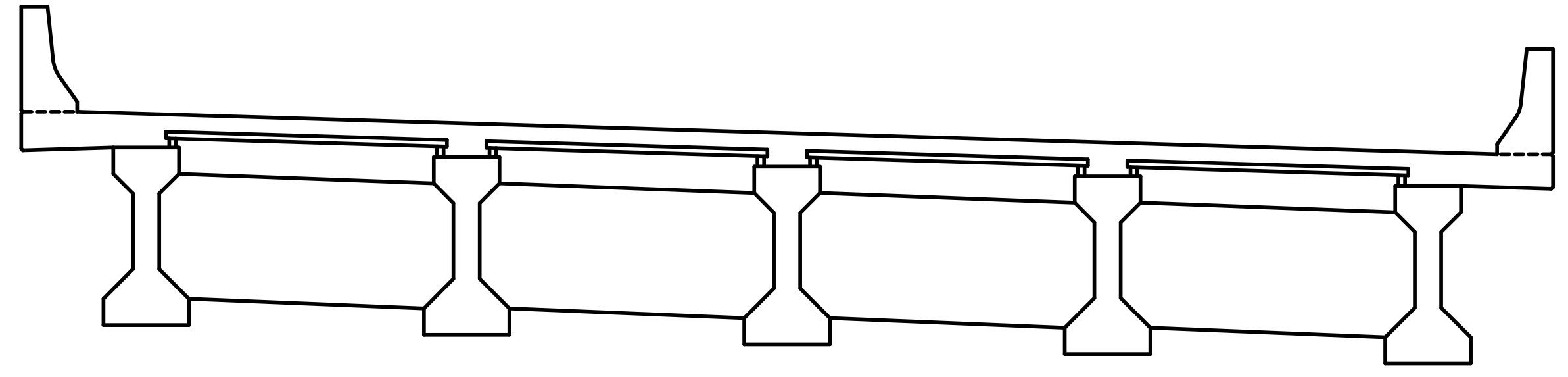
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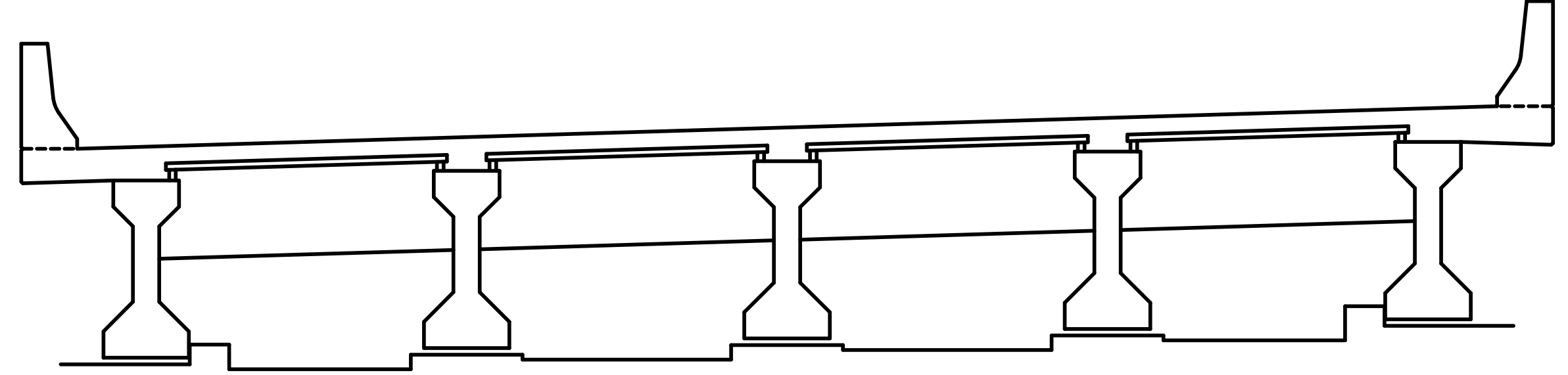
BENT 5 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 6 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIRS SPAN 6 DIAPH.					
SHOTCRETE REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 5 DIAPHRAGM	1.9	0.5			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 6 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 5 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 6 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 6 OF 19

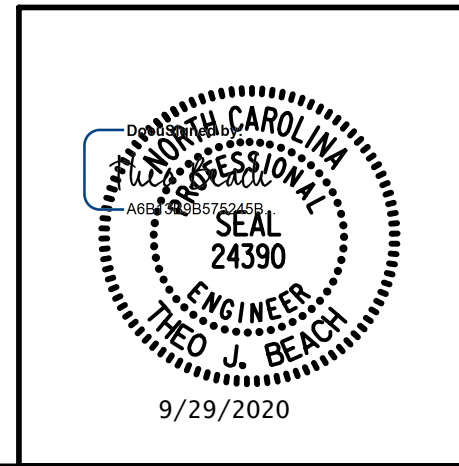
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DIAPHRAGM REPAIRS

 SPAN 6

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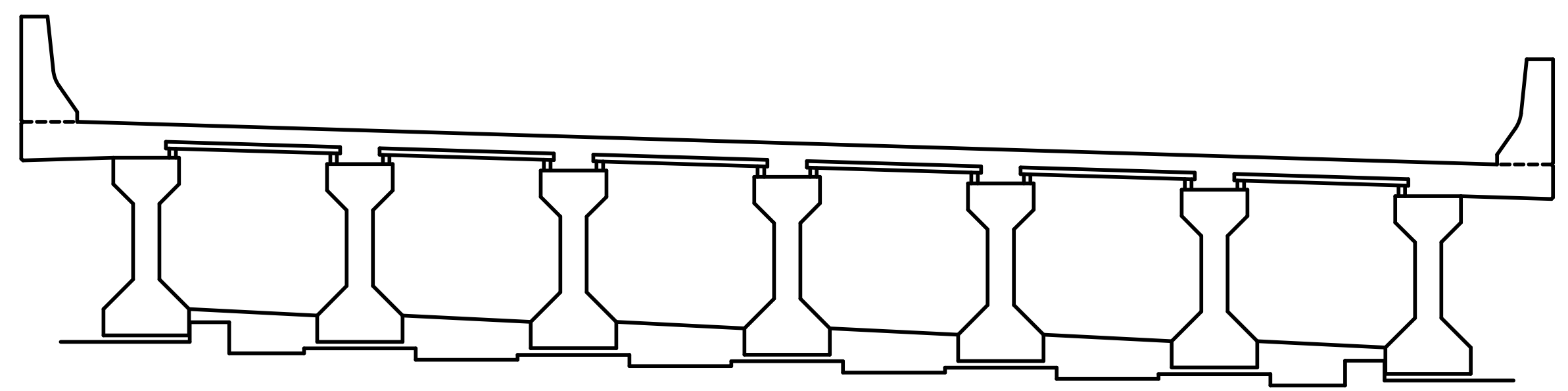


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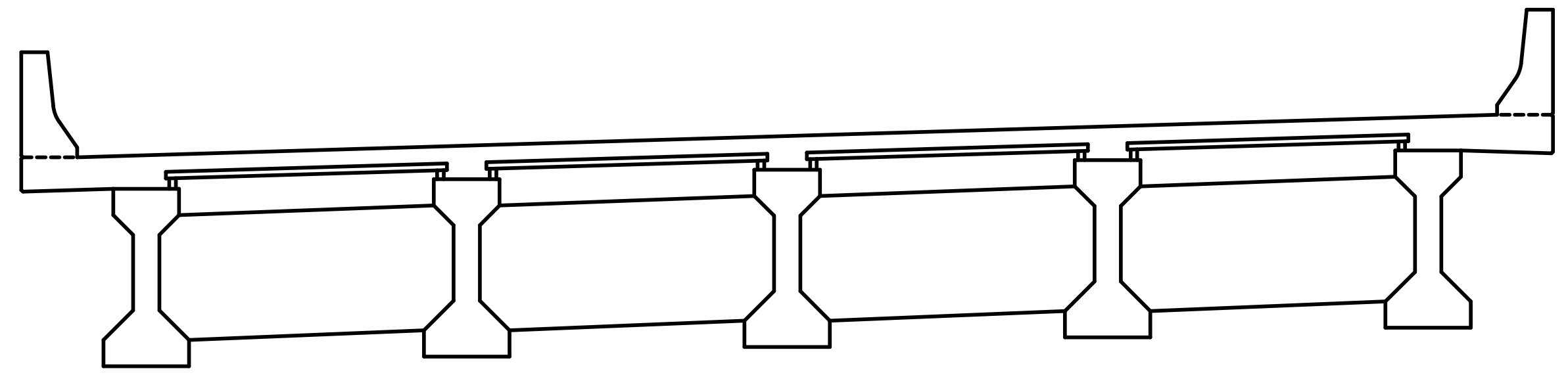
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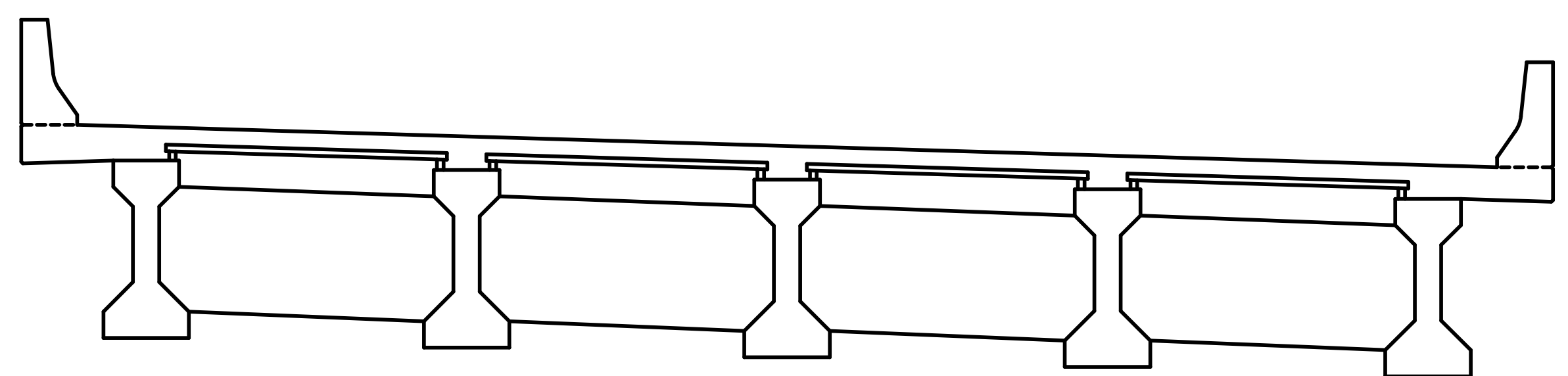
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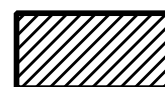
BENT 6 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM 1
WEST FACE



INTERMEDIATE DIAPHRAGM 1
EAST FACE

 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

NOTES:
FOR SPAN 7 QUANTITIES, SEE SHEET 8 OF 19.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 7 OF 19

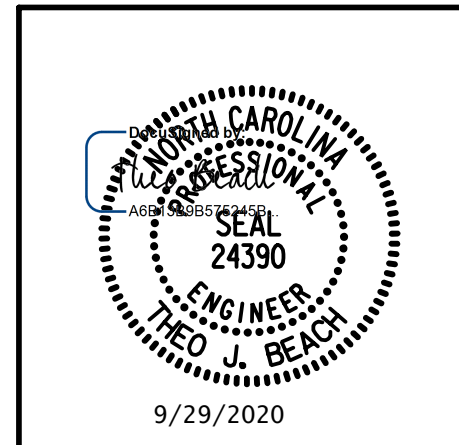
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DEPARTMENT OF TRANSPORTATION
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DIAPHRAGM REPAIRS

SPAN 7

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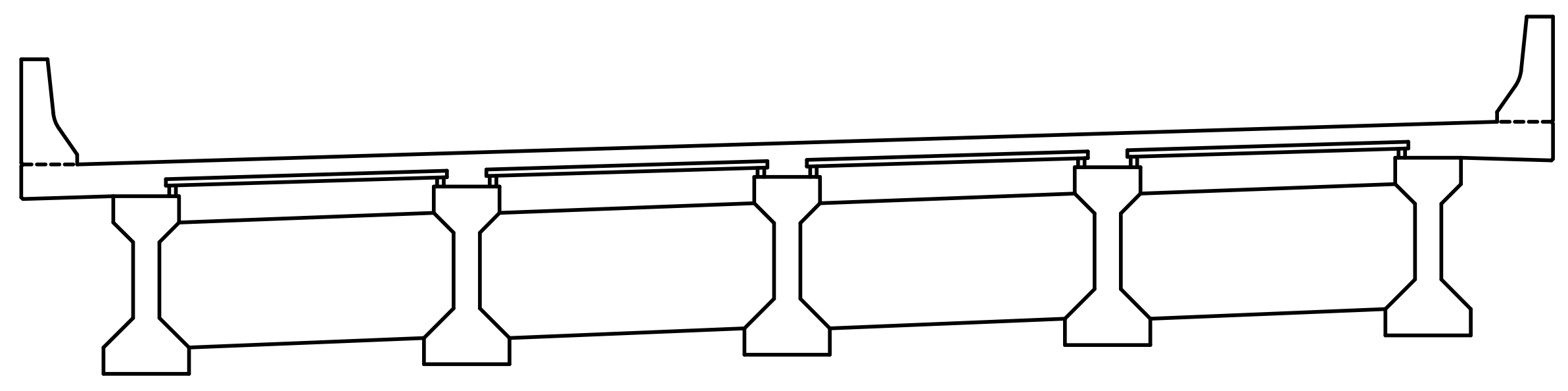


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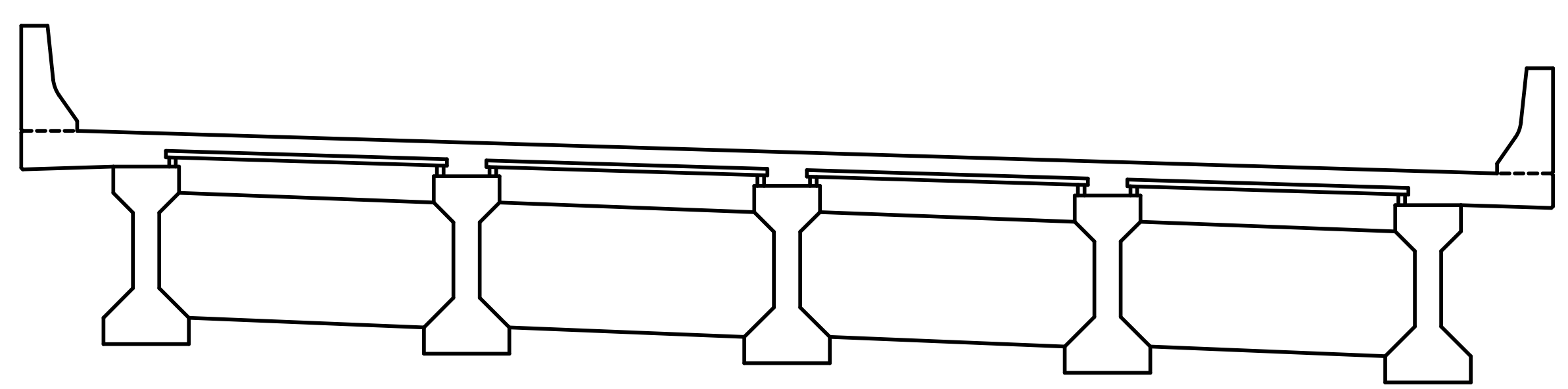
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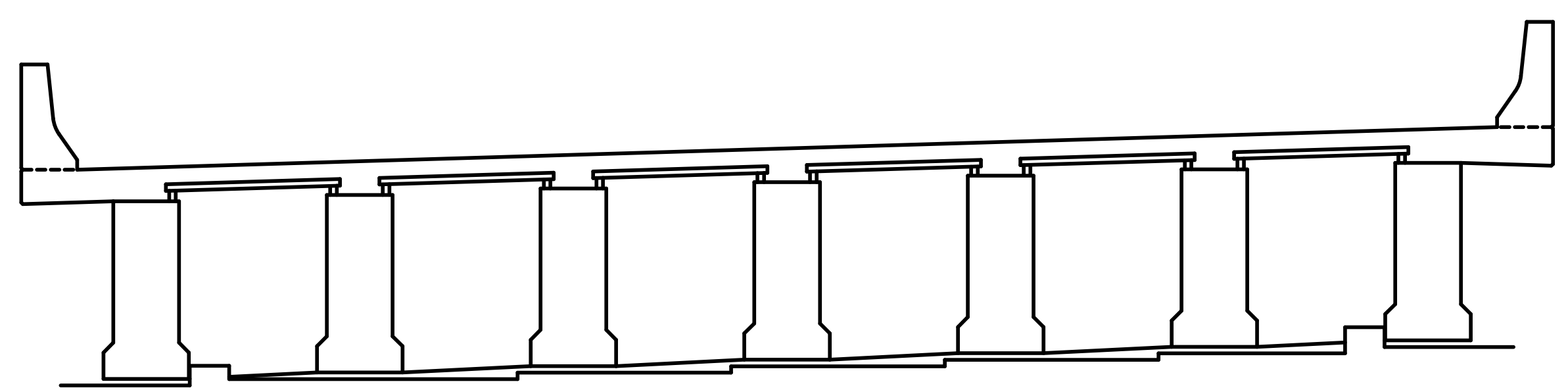
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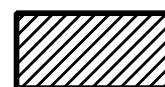
INTERMEDIATE DIAPHRAGM 2
WEST FACE



INTERMEDIATE DIAPHRAGM 2
EAST FACE



BENT 7 DIAPHRAGM
WEST FACE

 SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 6 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM 1	0.0	0.0			
INTERMEDIATE DIAPHRAGM 2	0.0	0.0			
BENT 7 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 6 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM 1		0.0			
INTERMEDIATE DIAPHRAGM 2		0.0			
BENT 7 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 8 OF 19

STATE OF NORTH CAROLINA
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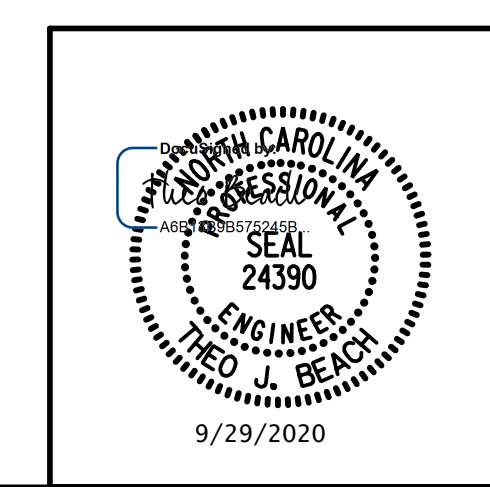
DIAPHRAGM REPAIRS

SPAN 7

REVISIONS						SHEET NO.
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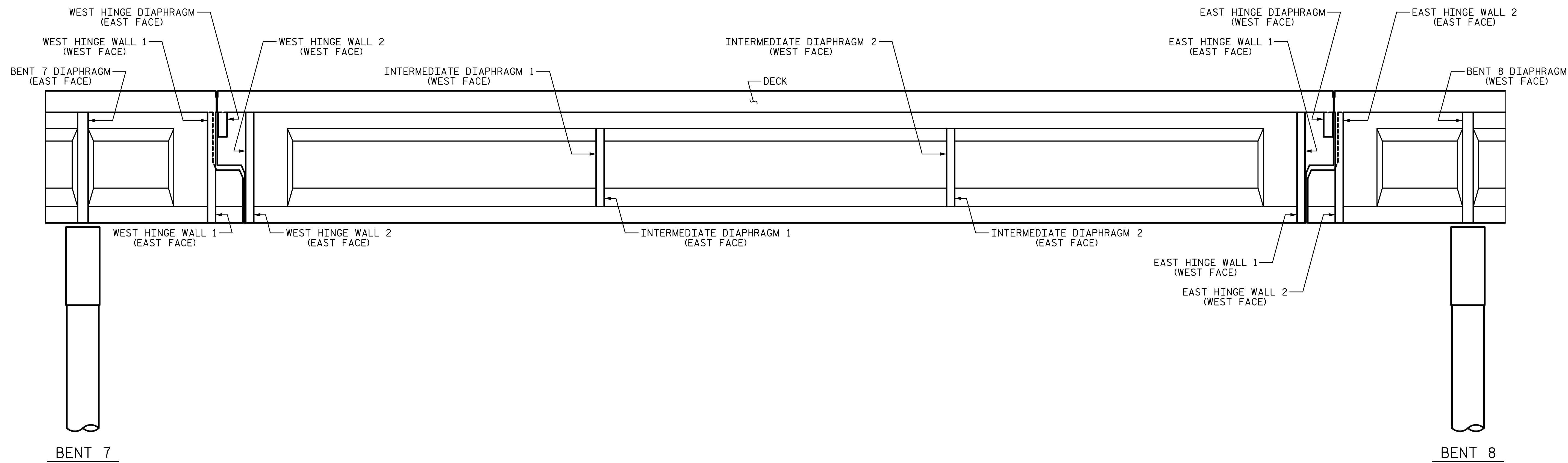
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SPAN 8 DIAPHRAGM LAYOUT

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 9 OF 19

STATE OF NORTH CAROLINA
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DIAPHRAGM REPAIRS

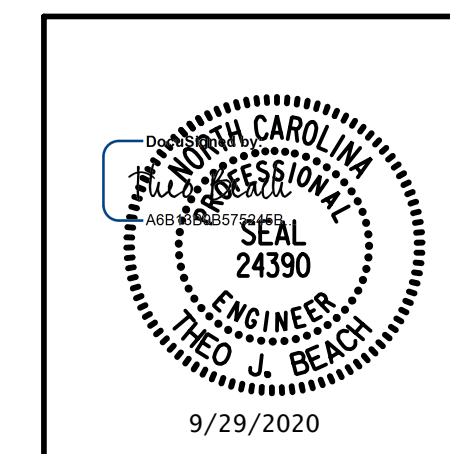
SPAN 8

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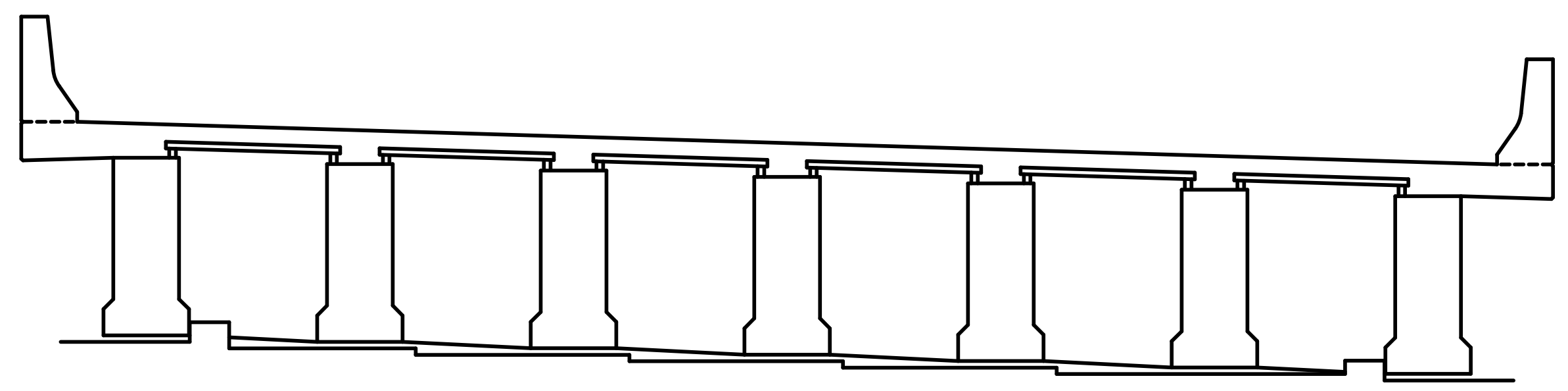
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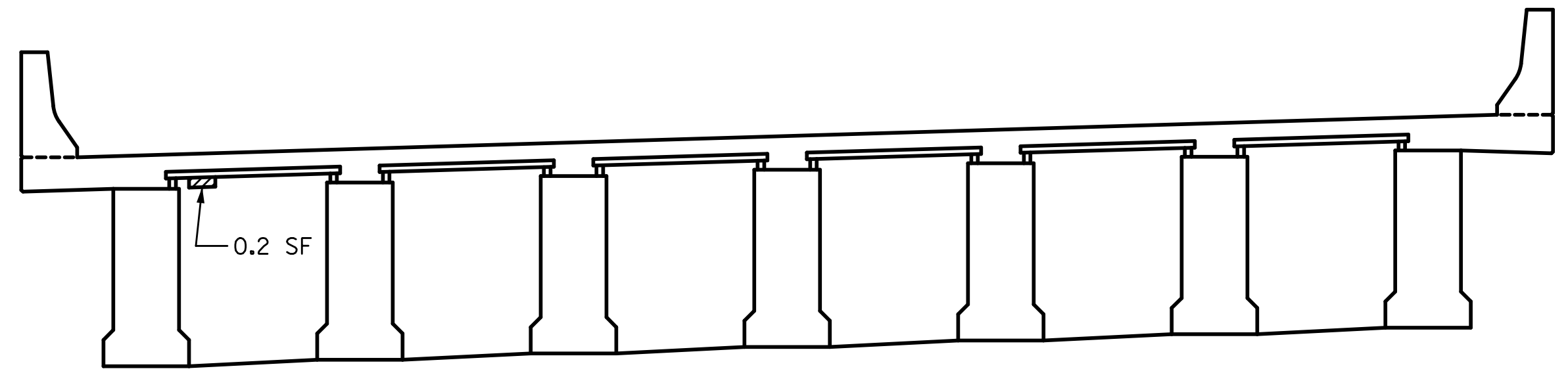
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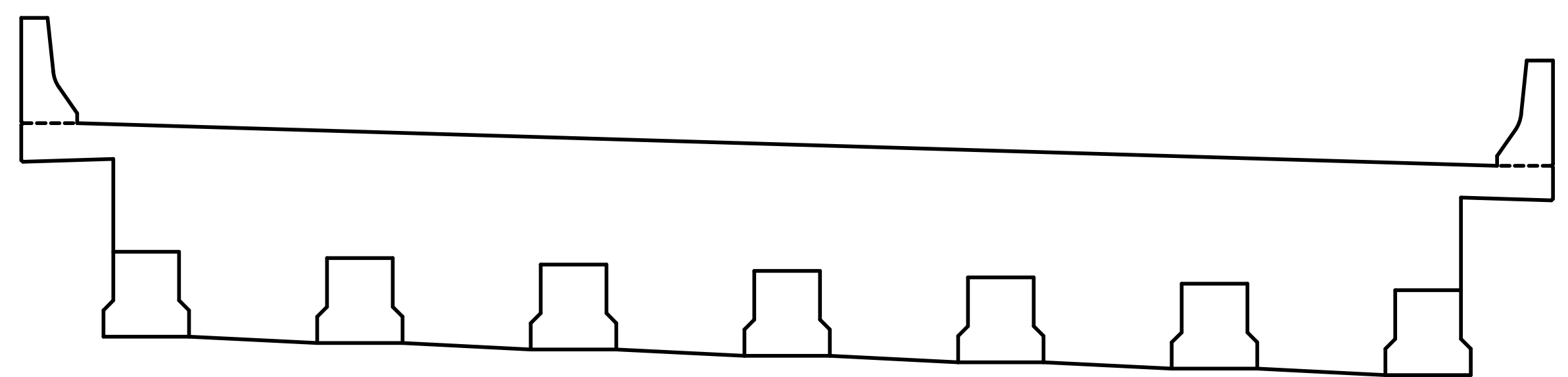
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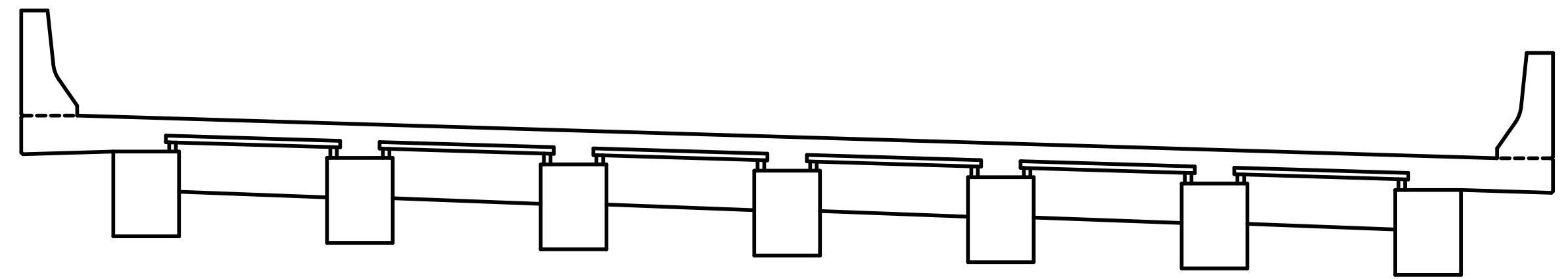
BENT 7 DIAPHRAGM
EAST FACE



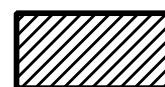
WEST HINGE WALL 1
WEST FACE



WEST HINGE WALL 1
EAST FACE



WEST HINGE DIAPHRAGM
EAST FACE

 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

NOTES:
FOR SPAN 8 QUANTITIES, SEE SHEET 13 OF 19.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 10 OF 19

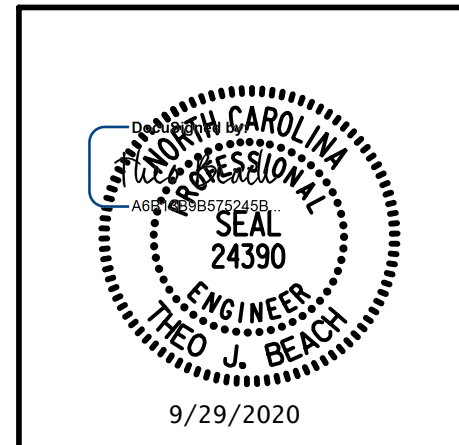
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DIAPHRAGM REPAIRS

SPAN 8

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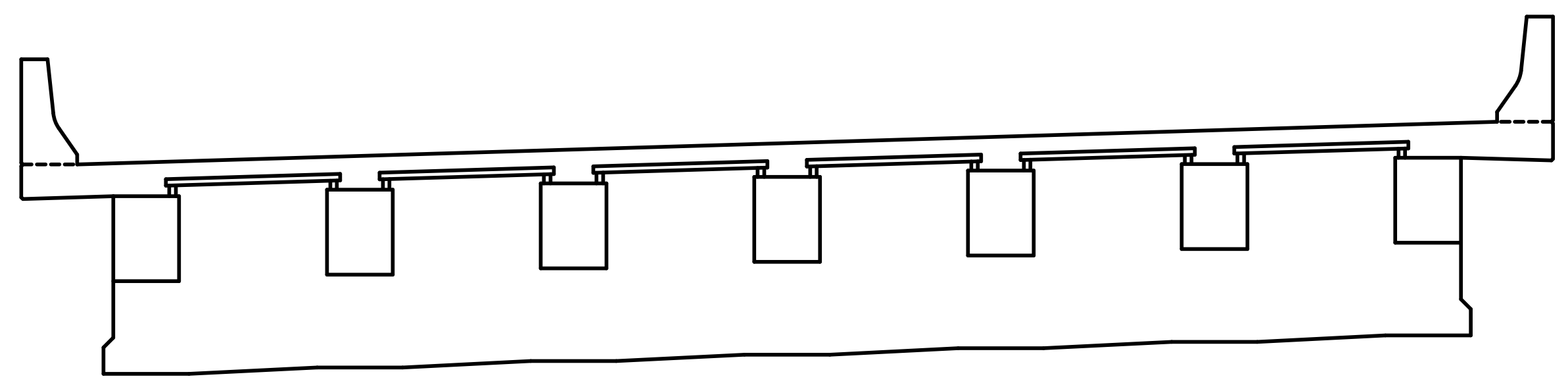


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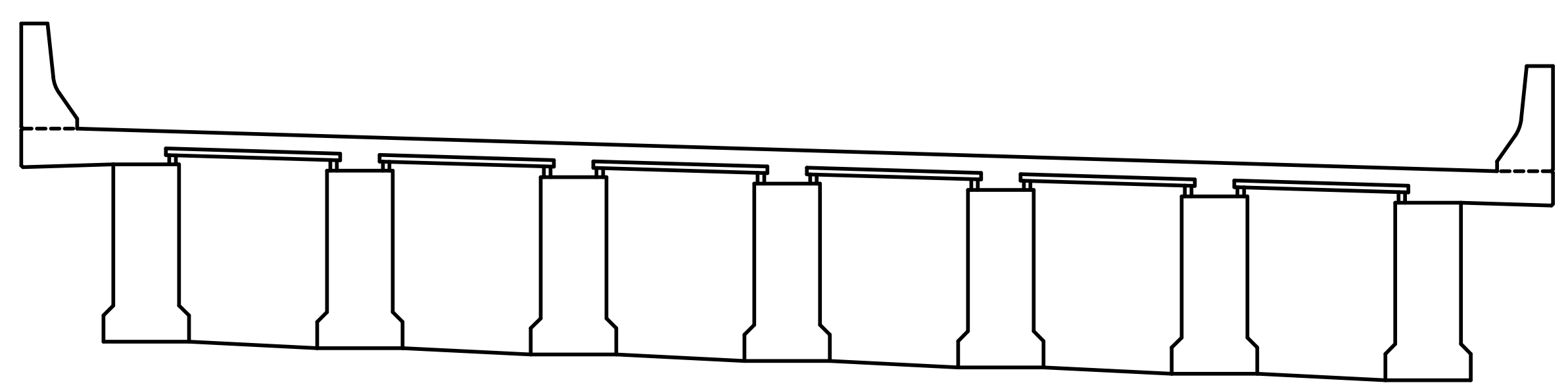
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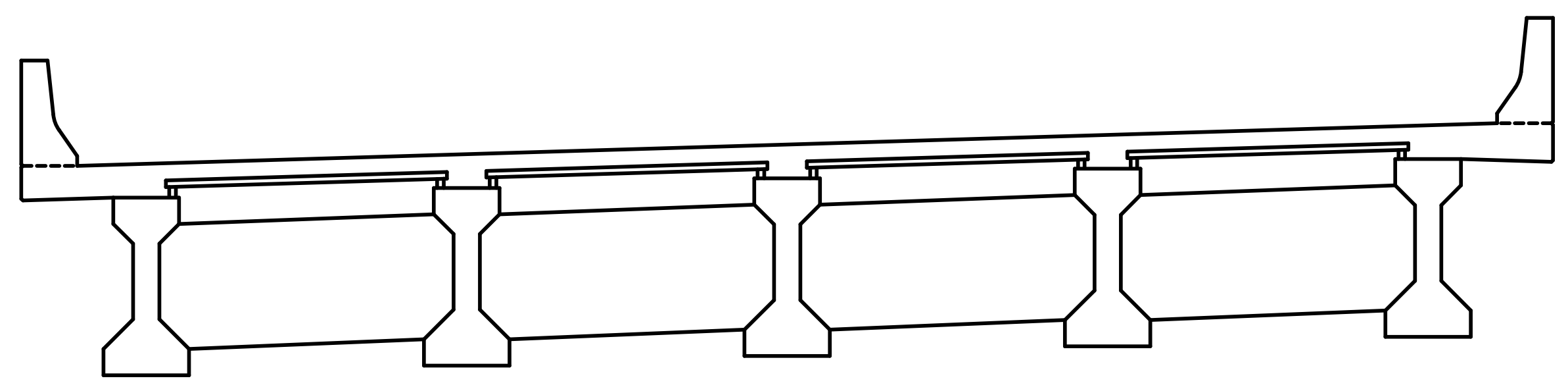
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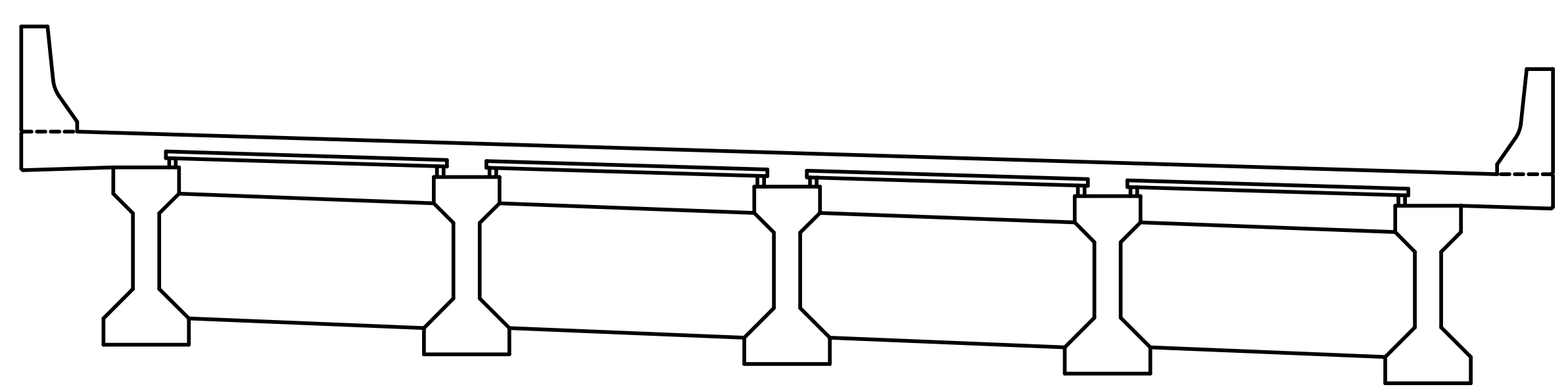
WEST HINGE WALL 2
WEST FACE



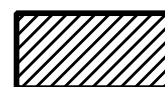
WEST HINGE WALL 2
EAST FACE



INTERMEDIATE DIAPHRAGM 1
WEST FACE



INTERMEDIATE DIAPHRAGM 1
EAST FACE

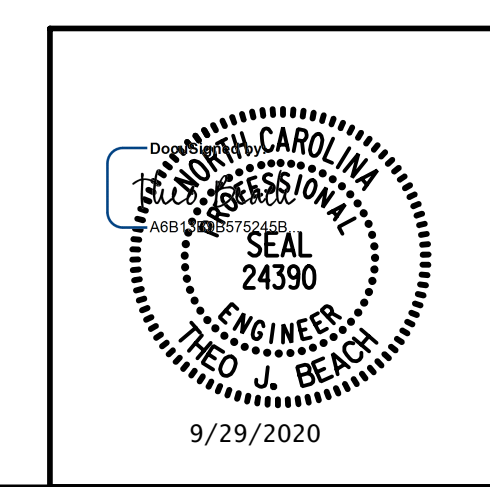
 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

NOTES:
FOR SPAN 8 QUANTITIES, SEE SHEET 13 OF 19.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 11 OF 19

PLANS PREPARED BY:
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DIAPHRAGM REPAIRS

SPAN 8

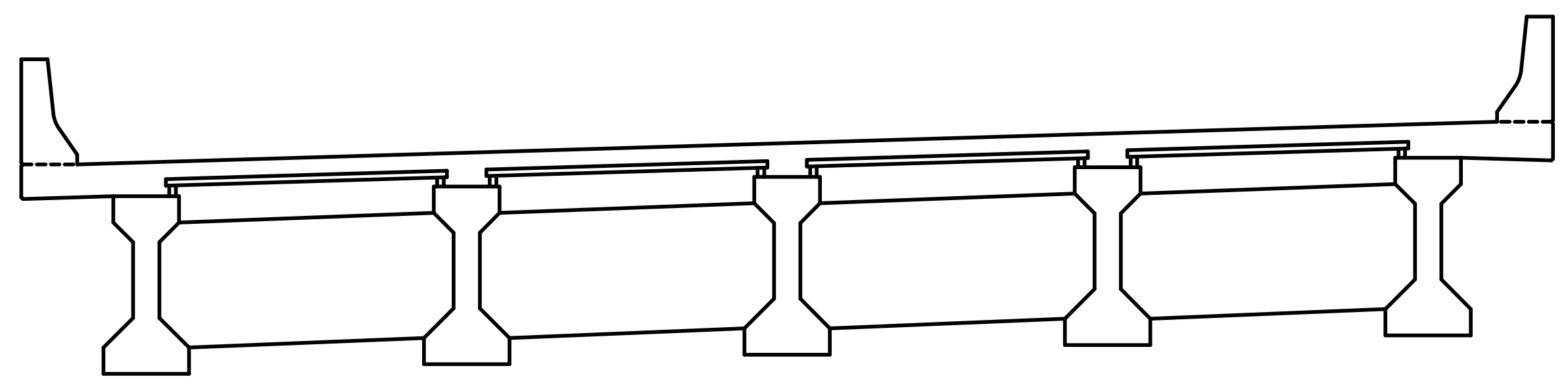
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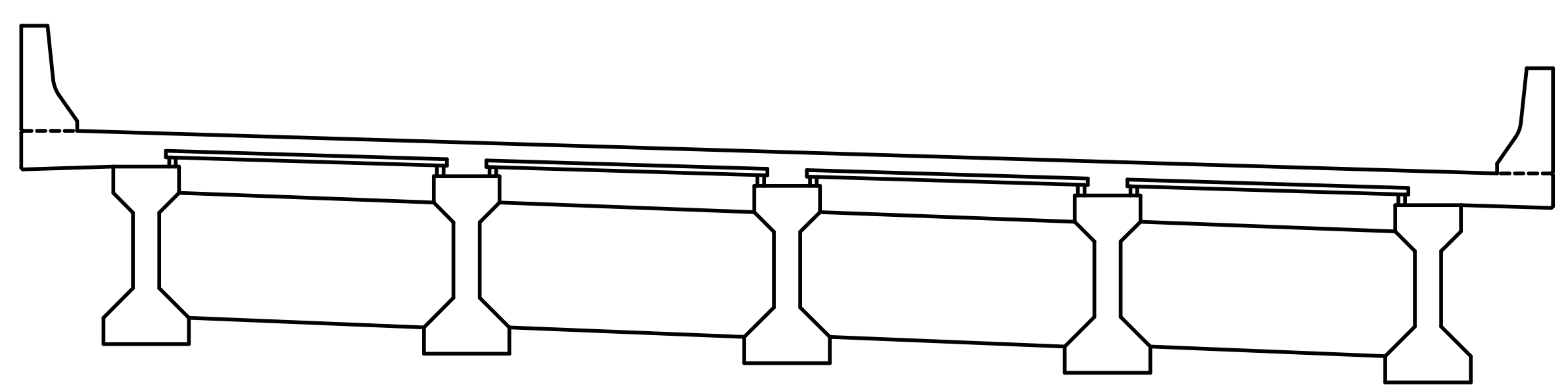
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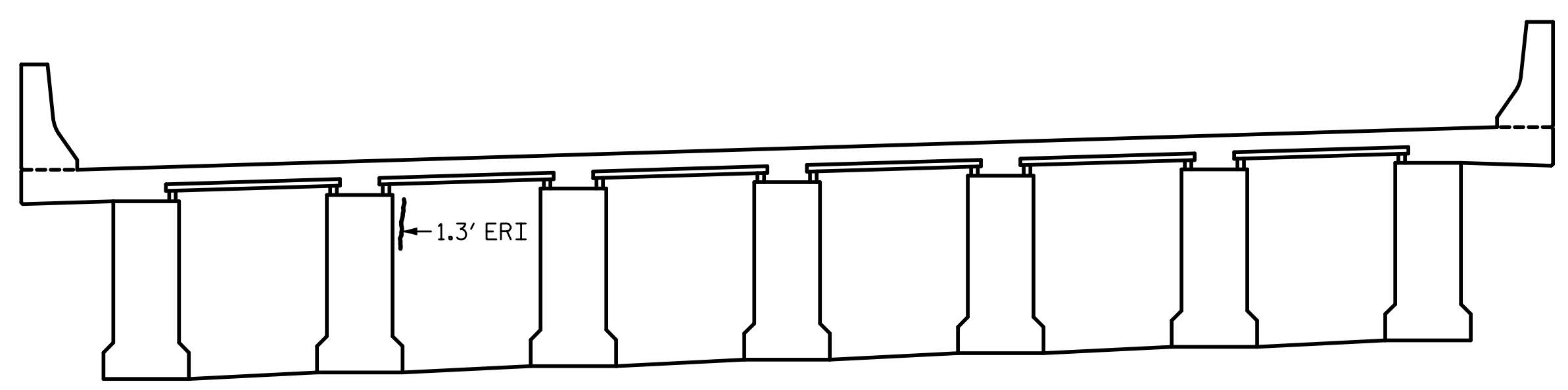
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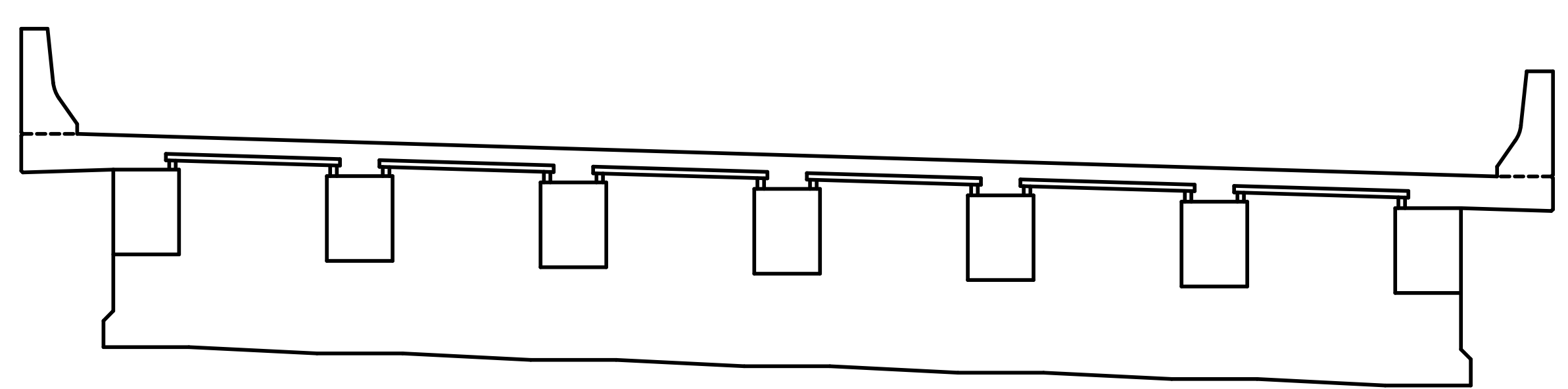
INTERMEDIATE DIAPHRAGM 2
WEST FACE



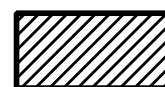
INTERMEDIATE DIAPHRAGM 2
EAST FACE



EAST HINGE WALL 1
WEST FACE



EAST HINGE WALL 1
EAST FACE

 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

NOTES:
FOR SPAN 8 QUANTITIES, SEE SHEET 13 OF 19.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 12 OF 19

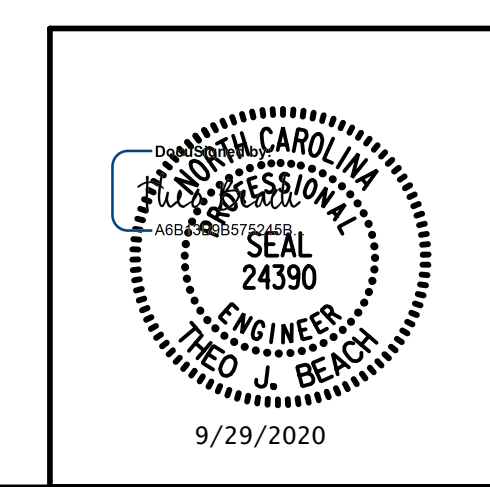
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DIAPHRAGM REPAIRS

SPAN 8

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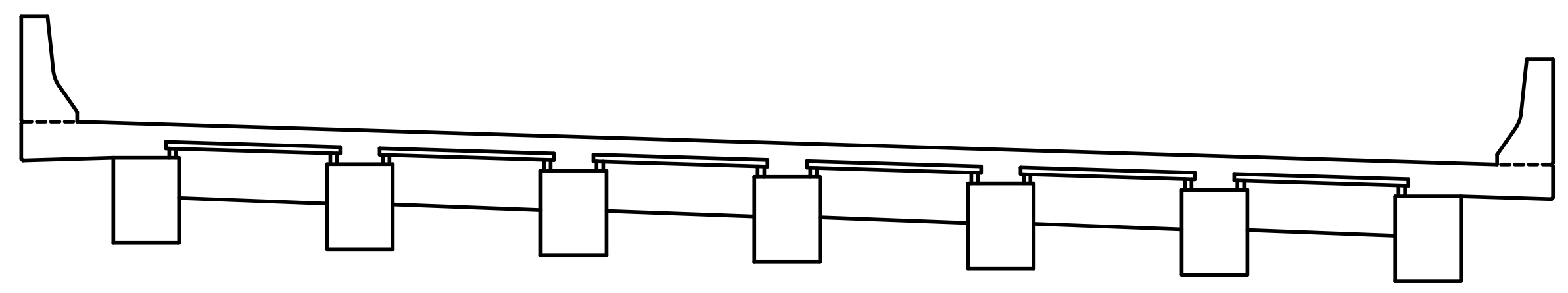


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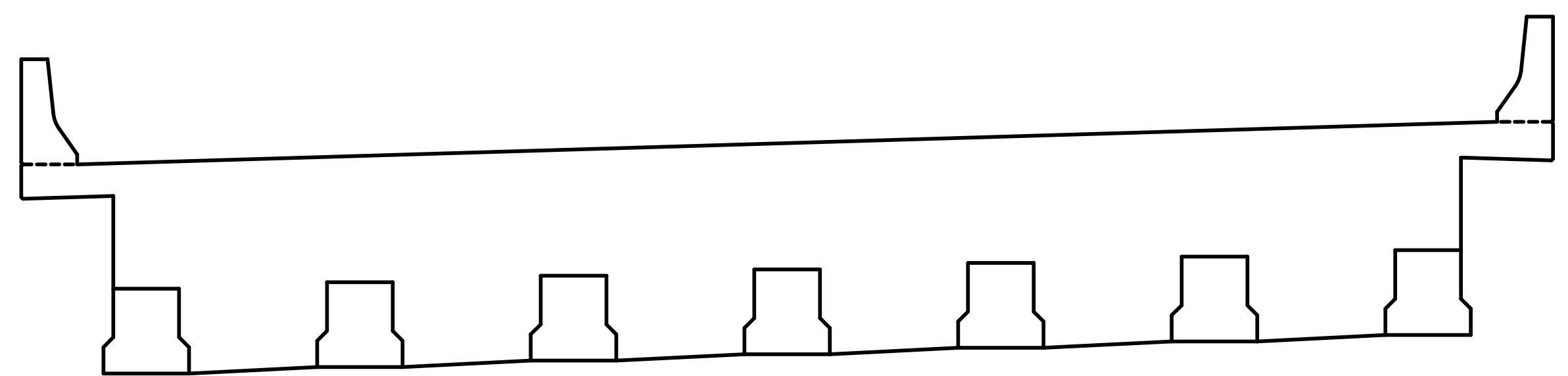
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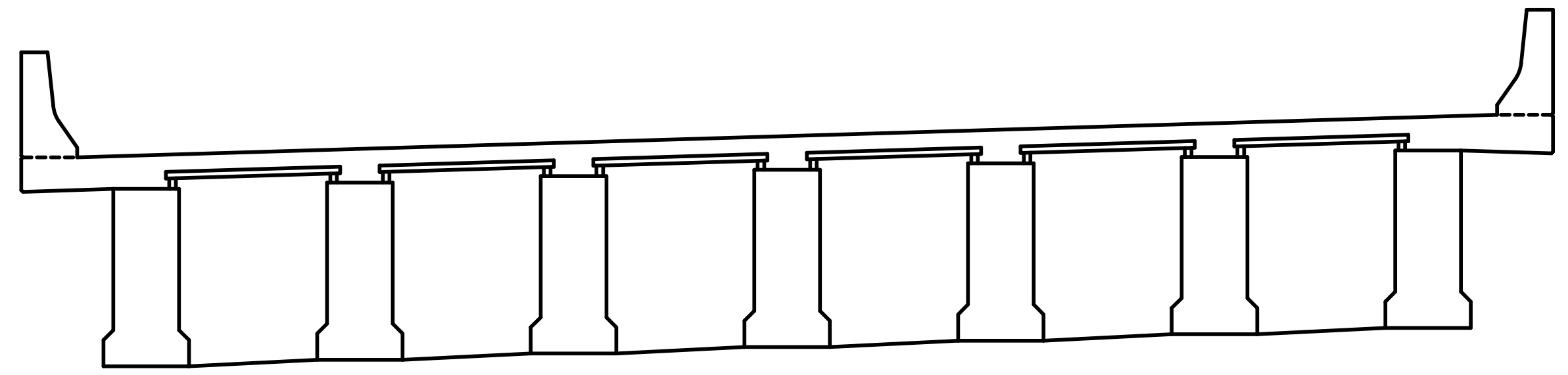
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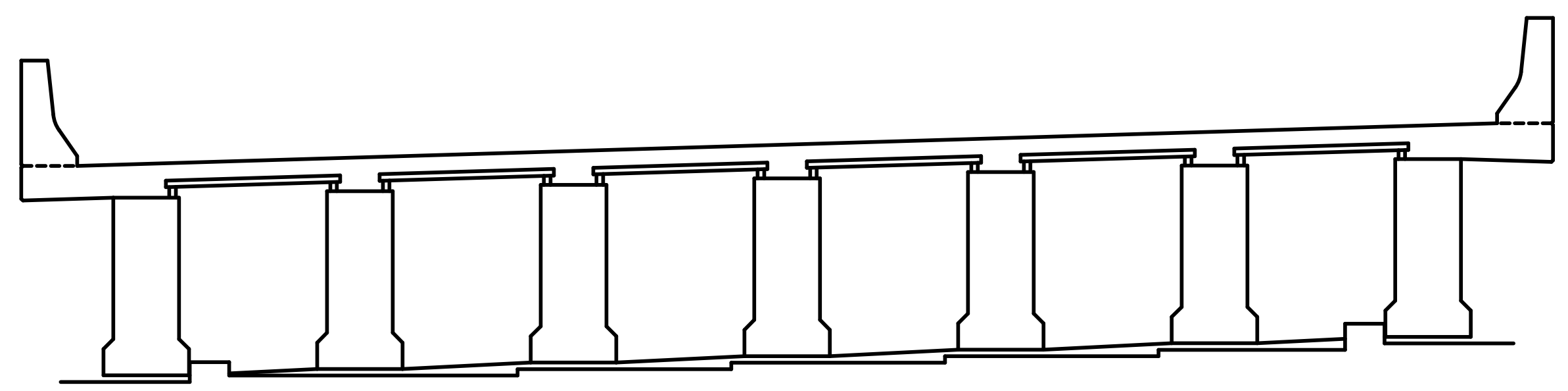
EAST HINGE DIAPHRAGM
WEST FACE



EAST HINGE WALL 2
WEST FACE



EAST HINGE WALL 2
EAST FACE



BENT 8 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIRS SPAN 8 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 7 DIAPHRAGM	0.0	0.0			
WEST HINGE WALL 1	0.2	0.1			
WEST HINGE DIAPHRAGM	0.0	0.0			
WEST HINGE WALL 2	0.0	0.0			
INTERMEDIATE DIAPHRAGM 1	0.0	0.0			
INTERMEDIATE DIAPHRAGM 2	0.0	0.0			
EAST HINGE WALL 1	0.0	0.0			
EAST HINGE DIAPHRAGM	0.0	0.0			
EAST HINGE WALL 2	0.0	0.0			
BENT 8 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 7 DIAPHRAGM		0.0			
WEST HINGE WALL 1		0.0			
WEST HINGE DIAPHRAGM		0.0			
WEST HINGE WALL 2		0.0			
INTERMEDIATE DIAPHRAGM 1		0.0			
INTERMEDIATE DIAPHRAGM 2		0.0			
EAST HINGE WALL 1		1.3			
EAST HINGE DIAPHRAGM		0.0			
EAST HINGE WALL 2		0.0			
BENT 8 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
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 BRIDGE NO.: 640049

SHEET 13 OF 19

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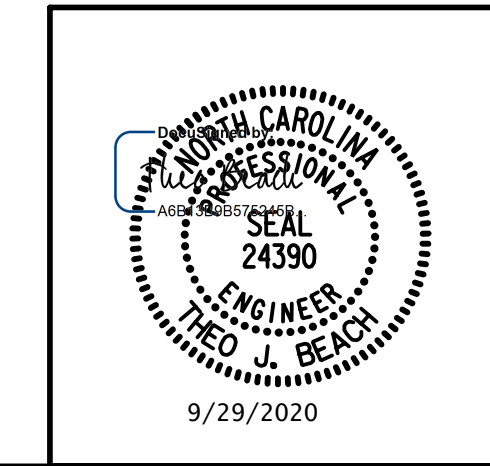
 DIAPHRAGM REPAIRS

 SPAN 8

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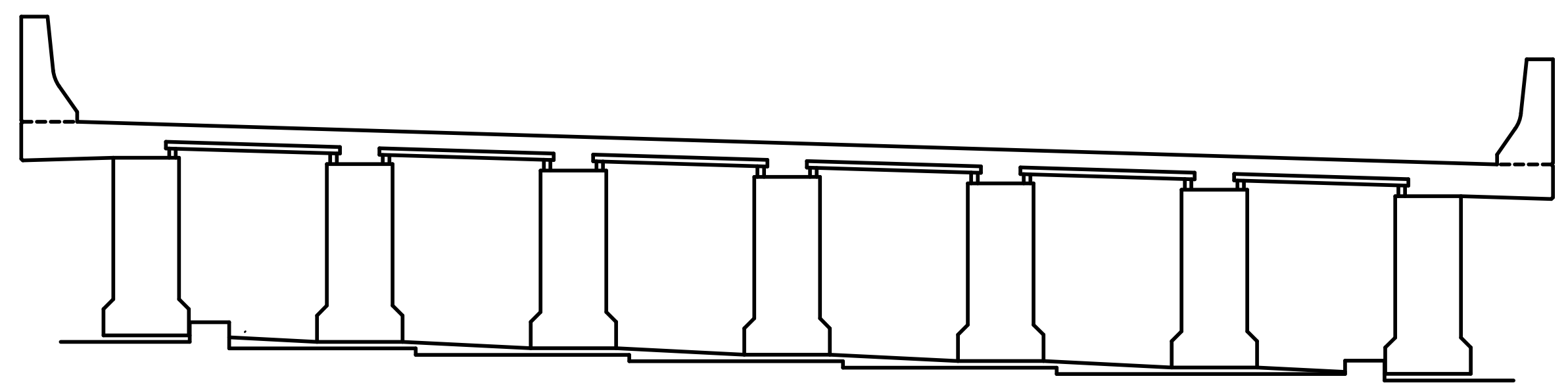
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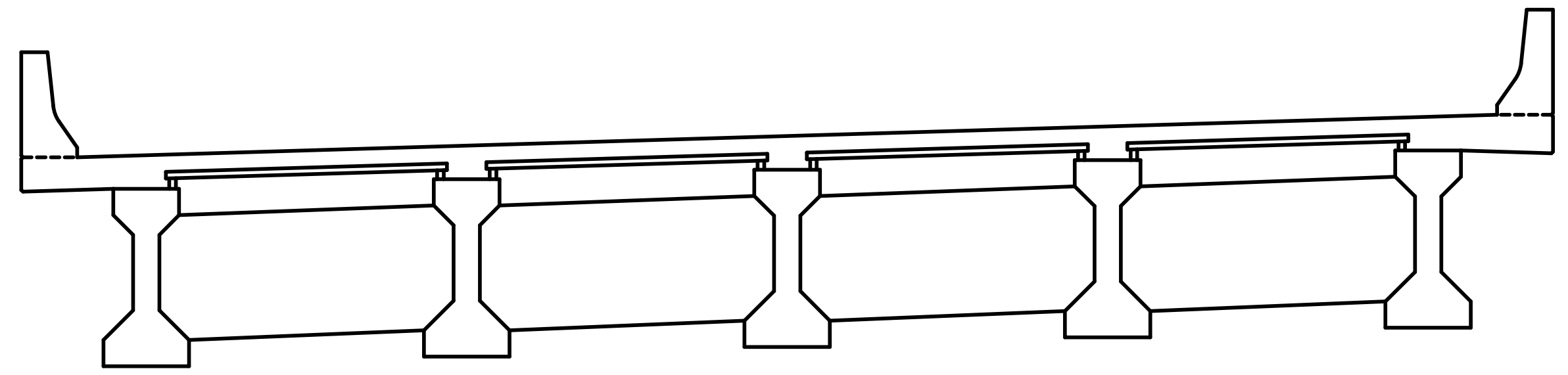
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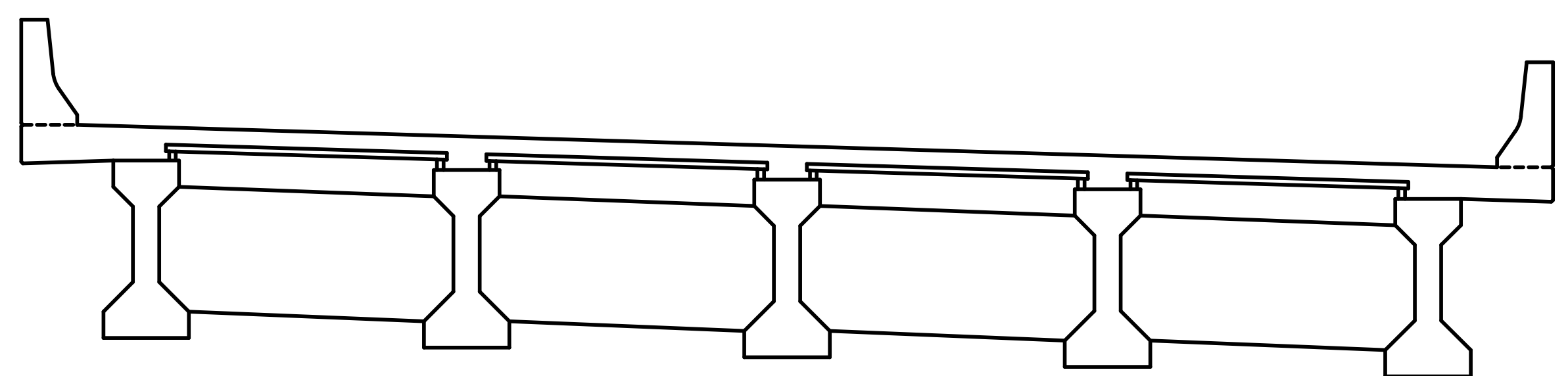
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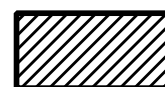
BENT 8 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM 1
WEST FACE



INTERMEDIATE DIAPHRAGM 1
EAST FACE

 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

NOTES:
FOR SPAN 9 QUANTITIES, SEE SHEET 15 OF 19.

PROJECT NO. 15BPR.26
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BRIDGE NO.: 640049

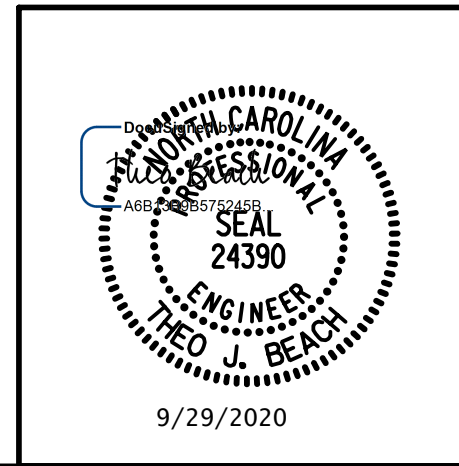
SHEET 14 OF 19

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DEPARTMENT OF TRANSPORTATION
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DIAPHRAGM REPAIRS

SPAN 9

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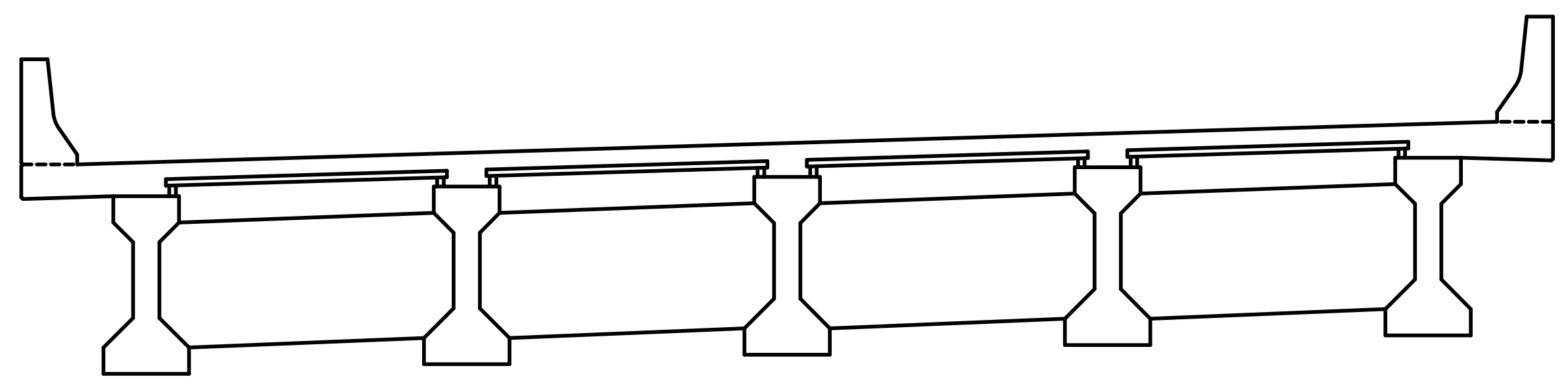


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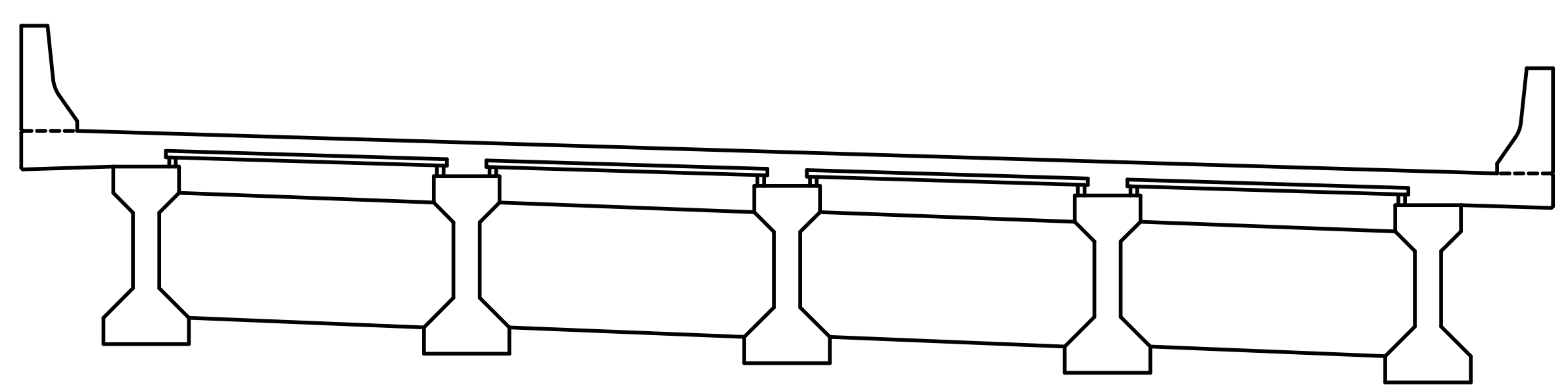
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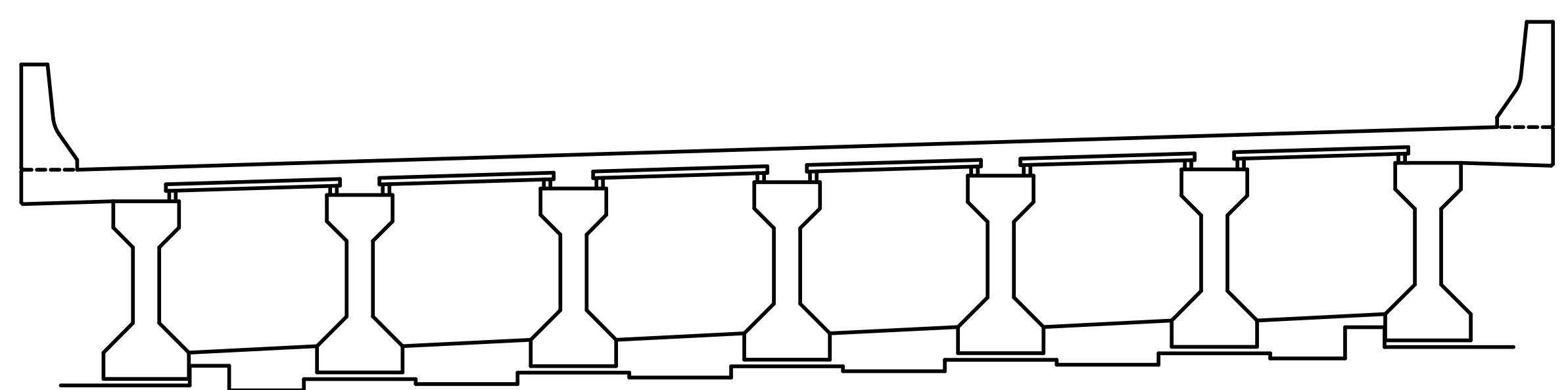
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INTERMEDIATE DIAPHRAGM 2
WEST FACE



INTERMEDIATE DIAPHRAGM 2
EAST FACE



BENT 9 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 8 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM 1	0.0	0.0			
INTERMEDIATE DIAPHRAGM 2	0.0	0.0			
BENT 9 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
BENT 8 DIAPHRAGM			0.0		
INTERMEDIATE DIAPHRAGM 1			0.0		
INTERMEDIATE DIAPHRAGM 2			0.0		
BENT 9 DIAPHRAGM			0.0		

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SHEET 15 OF 19

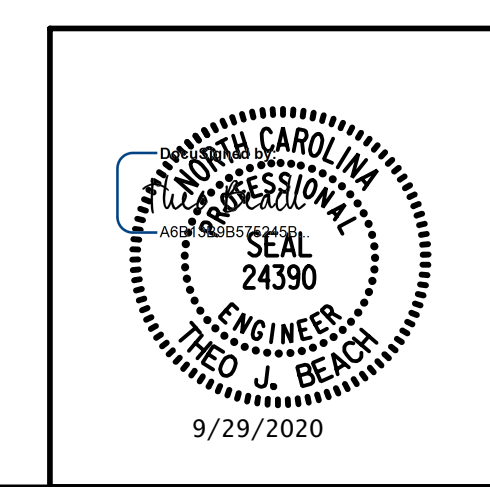
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 DIAPHRAGM REPAIRS

 SPAN 9

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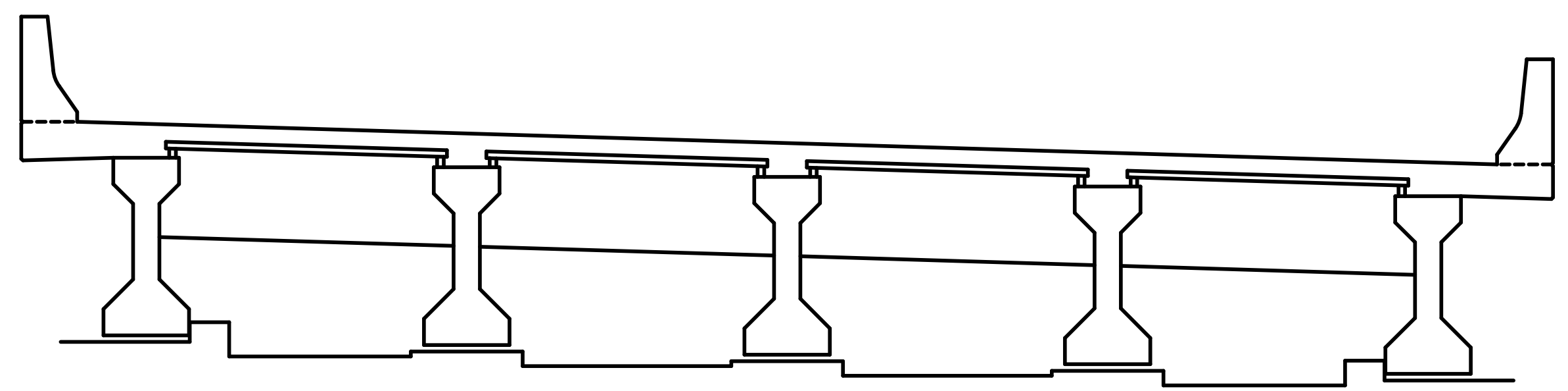
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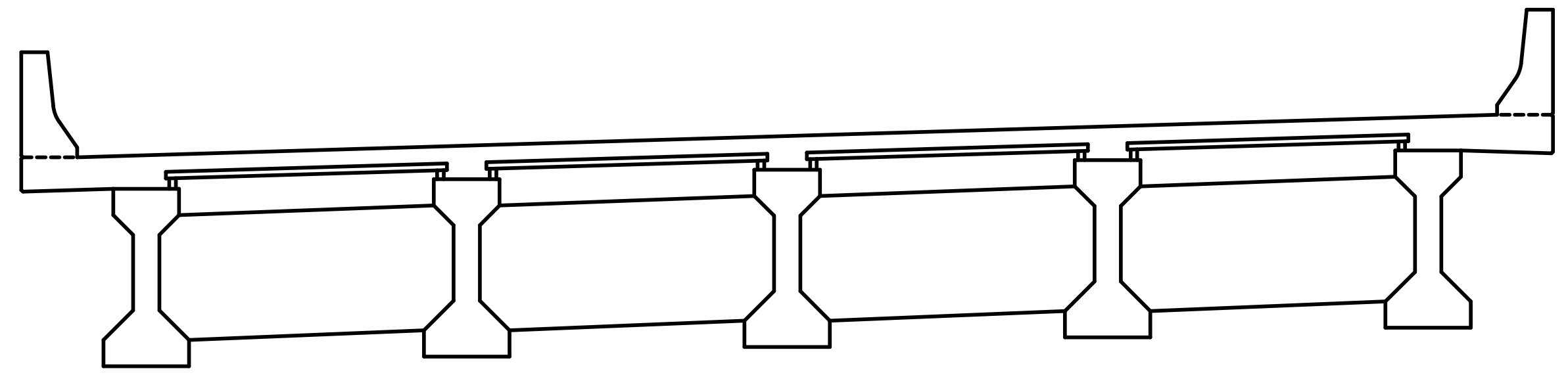
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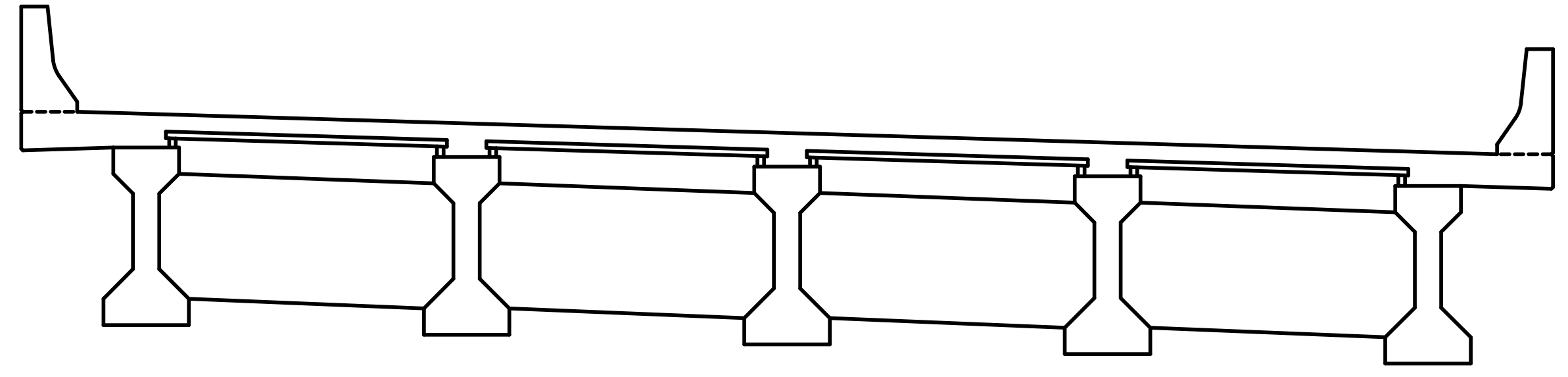
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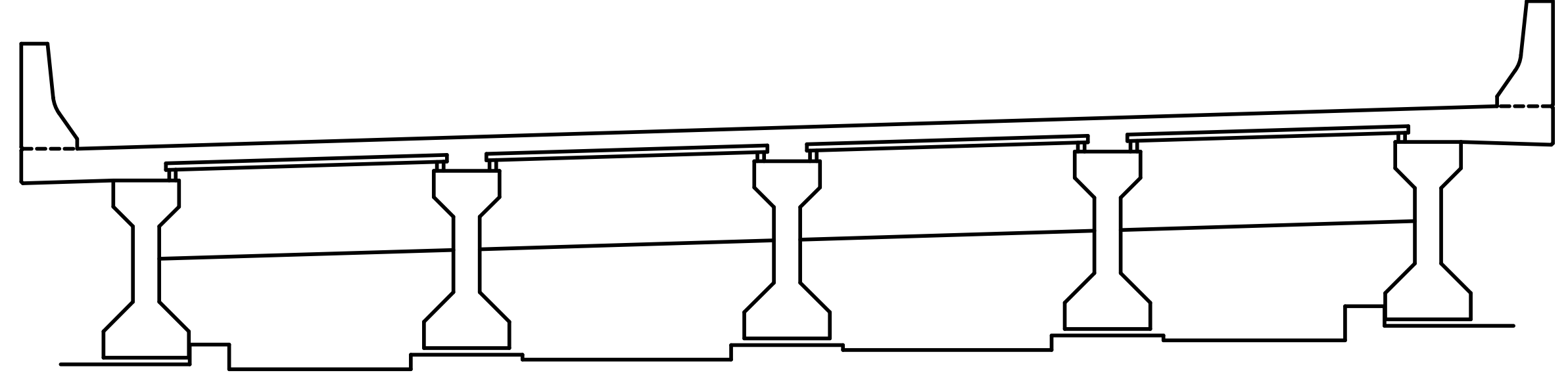
BENT 9 DIAPHRAGM
EAST FACE



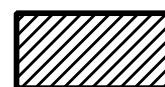
INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 10 DIAPHRAGM
WEST FACE

 SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIRS SPAN 10 DIAPH.					
REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 9 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 10 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 9 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 10 DIAPHRAGM		0.0			

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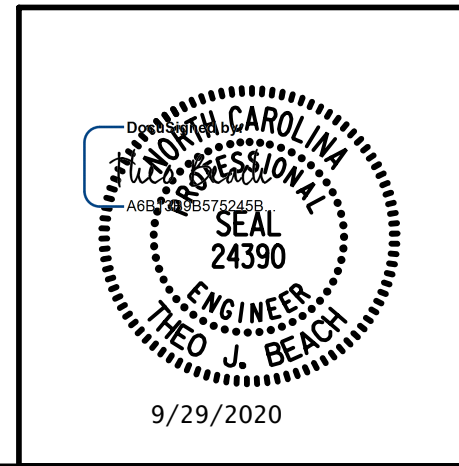
DIAPHRAGM REPAIRS

SPAN 10

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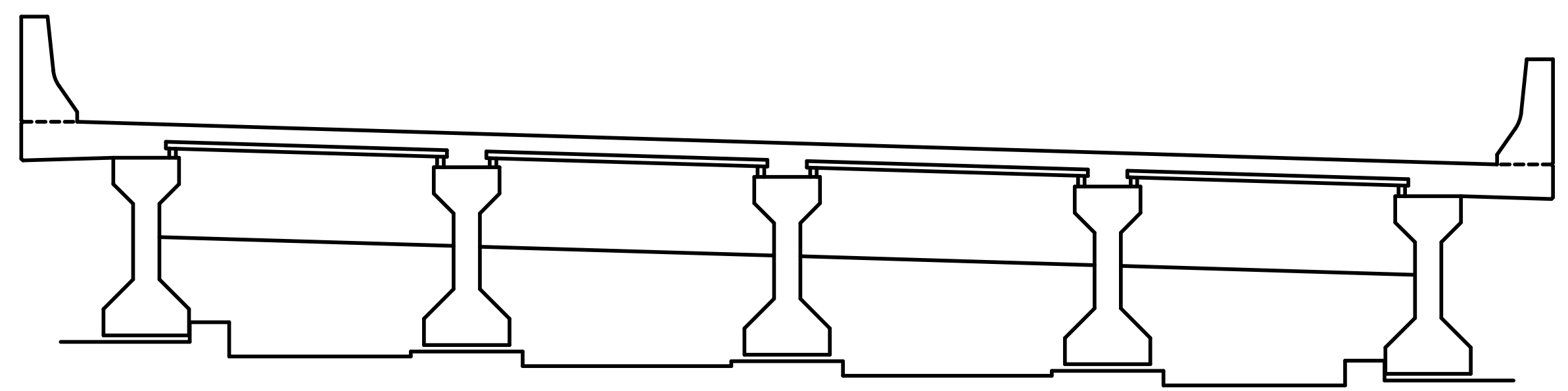
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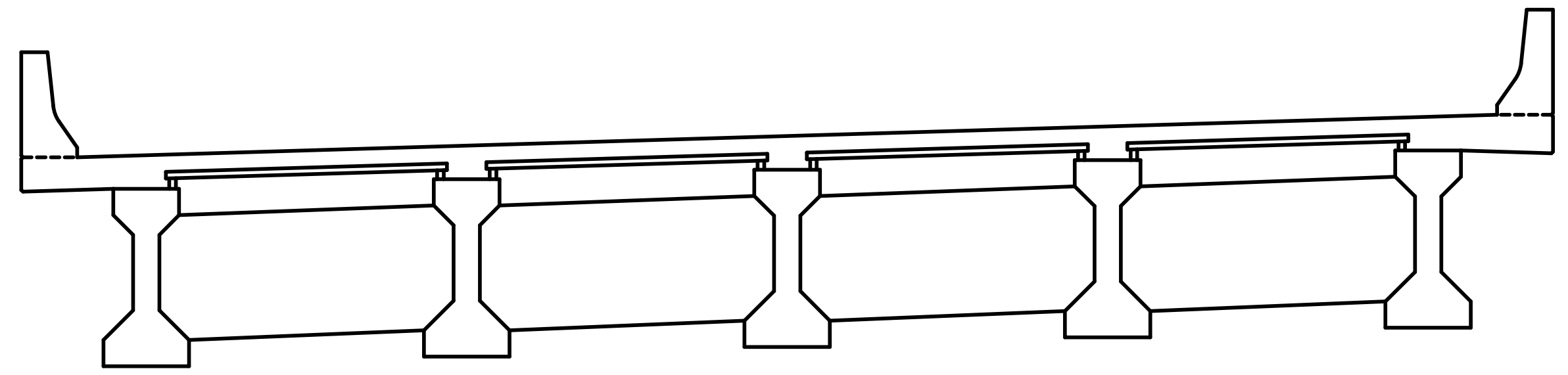
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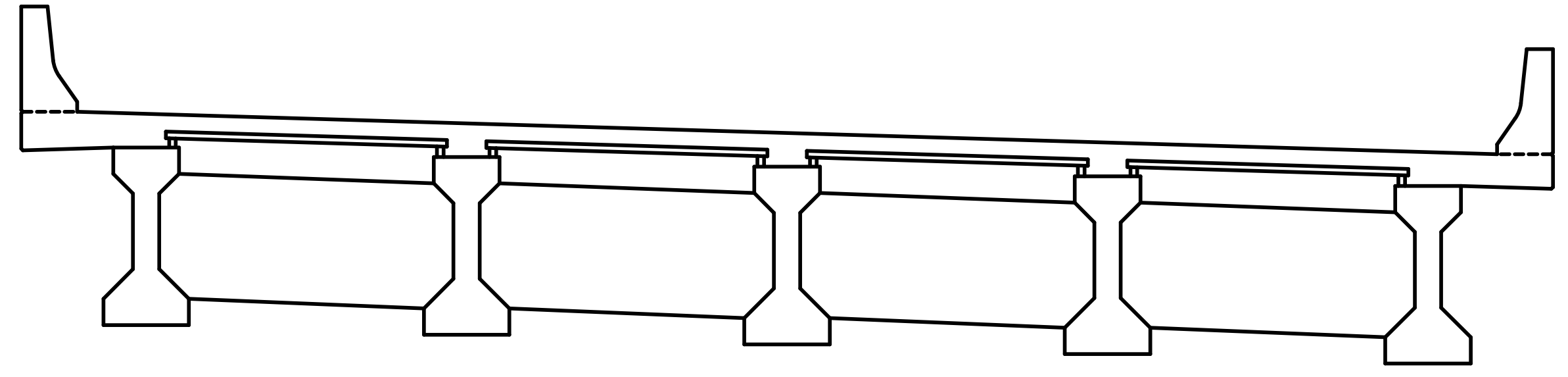
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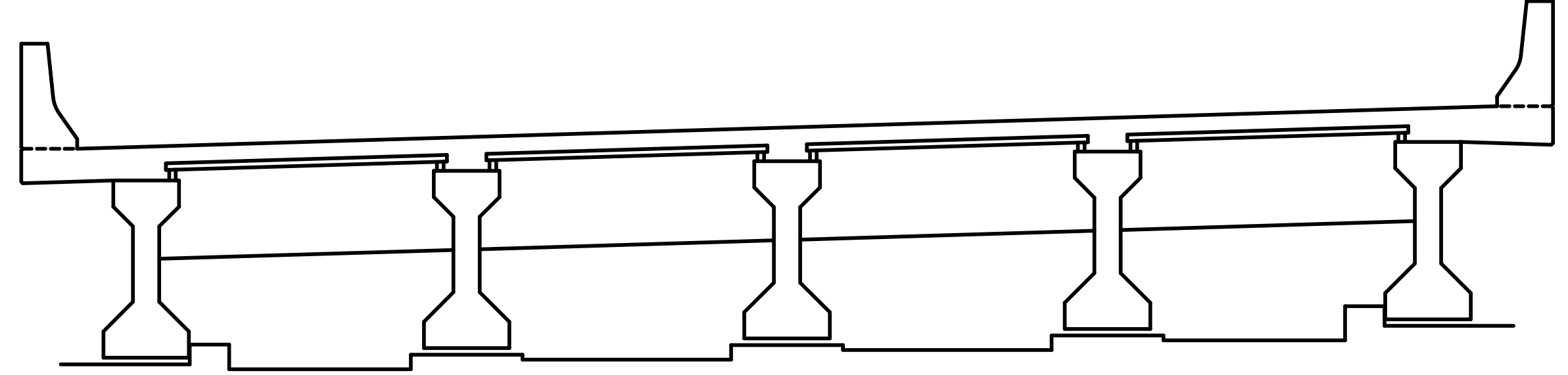
BENT 10 DIAPHRAGM
EAST FACE



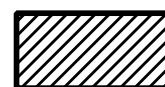
INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 11 DIAPHRAGM
WEST FACE

 SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 11 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 10 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 11 DIAPHRAGM	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 10 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 11 DIAPHRAGM		0.0			

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 BRIDGE NO.: 640049

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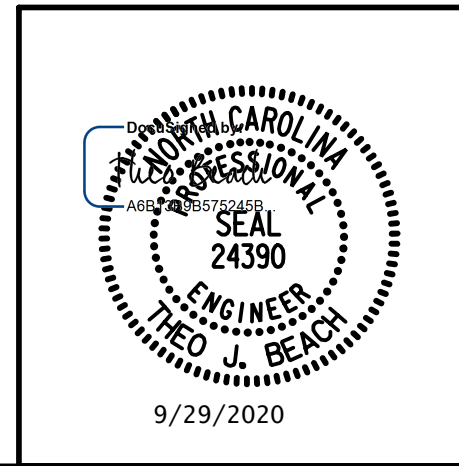
DIAPHRAGM REPAIRS

 SPAN 11

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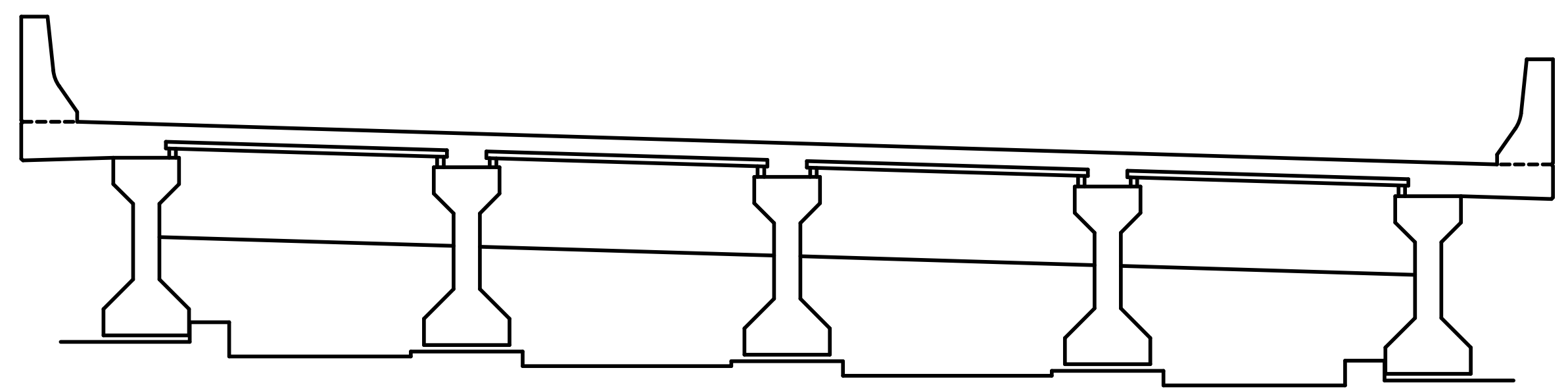
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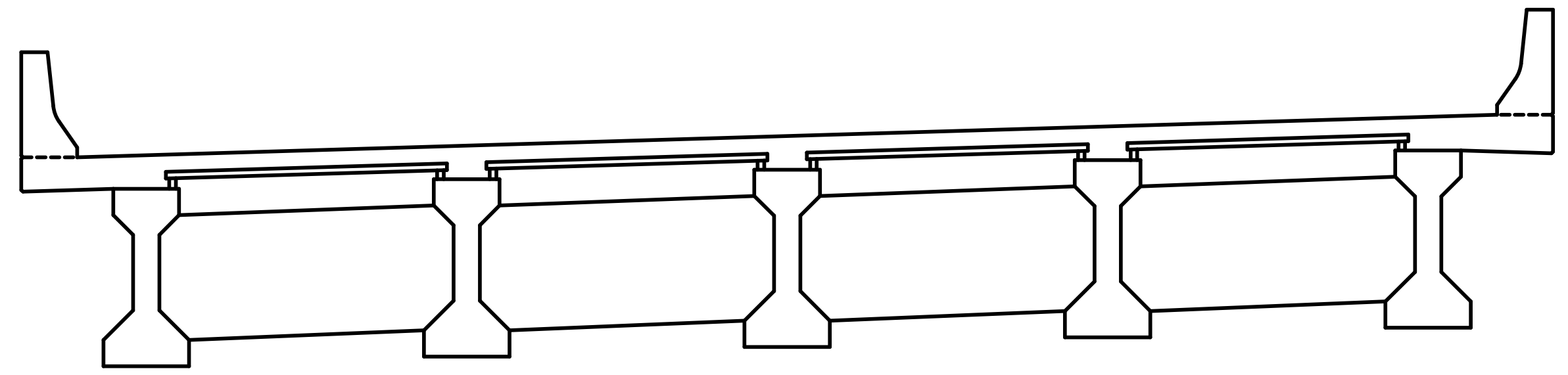
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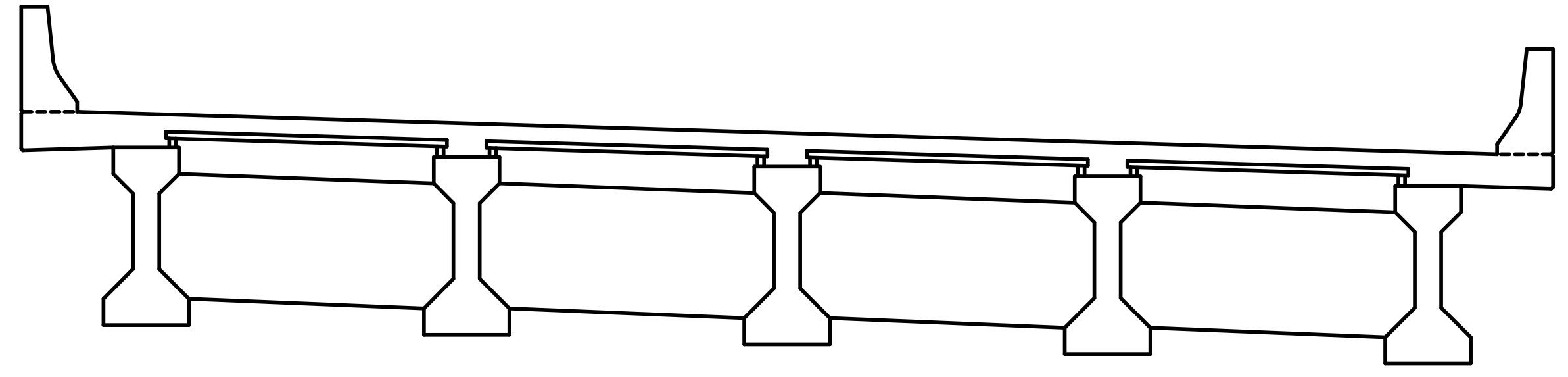
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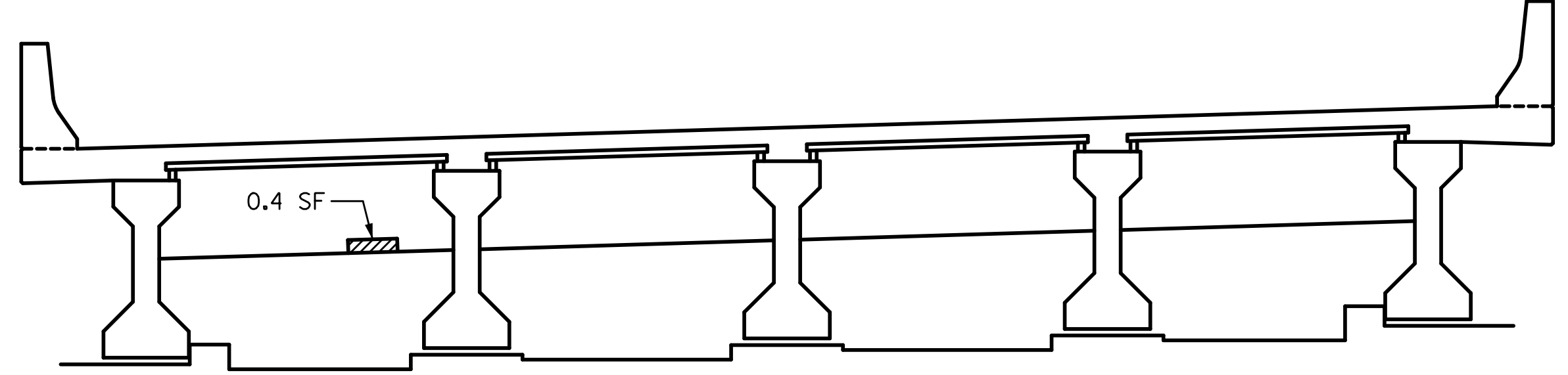
BENT 11 DIAPHRAGM
EAST FACE



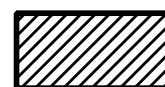
INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 12 DIAPHRAGM
WEST FACE

 SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 12 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 11 DIAPHRAGM	0.0	0.0			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 12 DIAPHRAGM	0.4	0.2			
EPOXY RESIN INJECTION		LF			LF
BENT 11 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 12 DIAPHRAGM		0.0			

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 18 OF 19

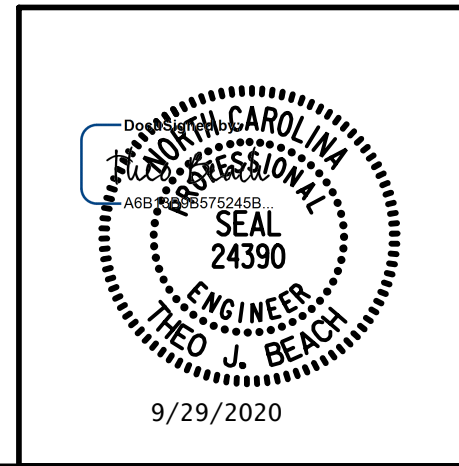
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 SPAN 12

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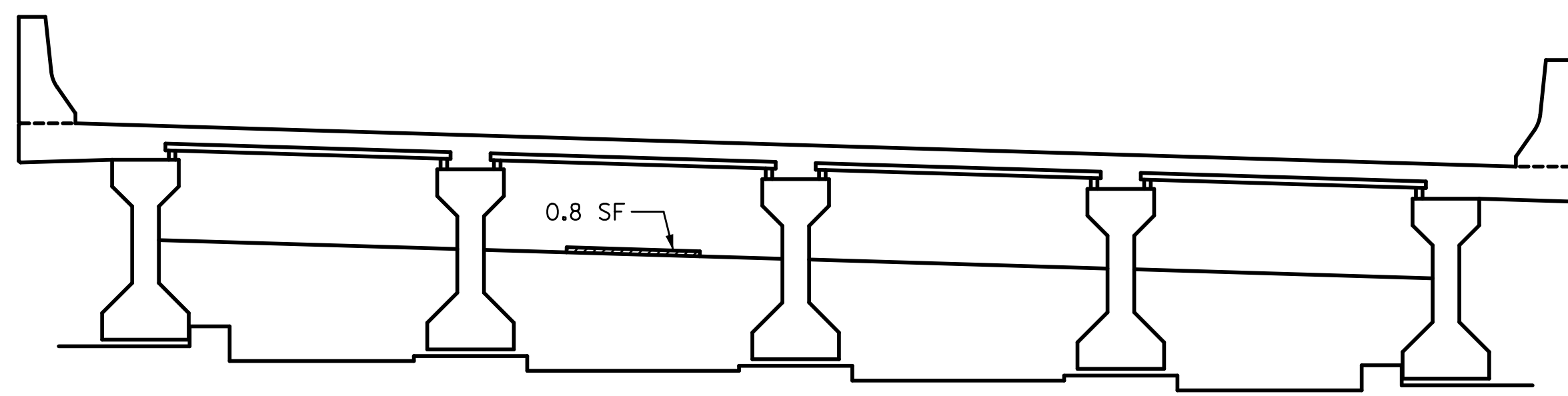


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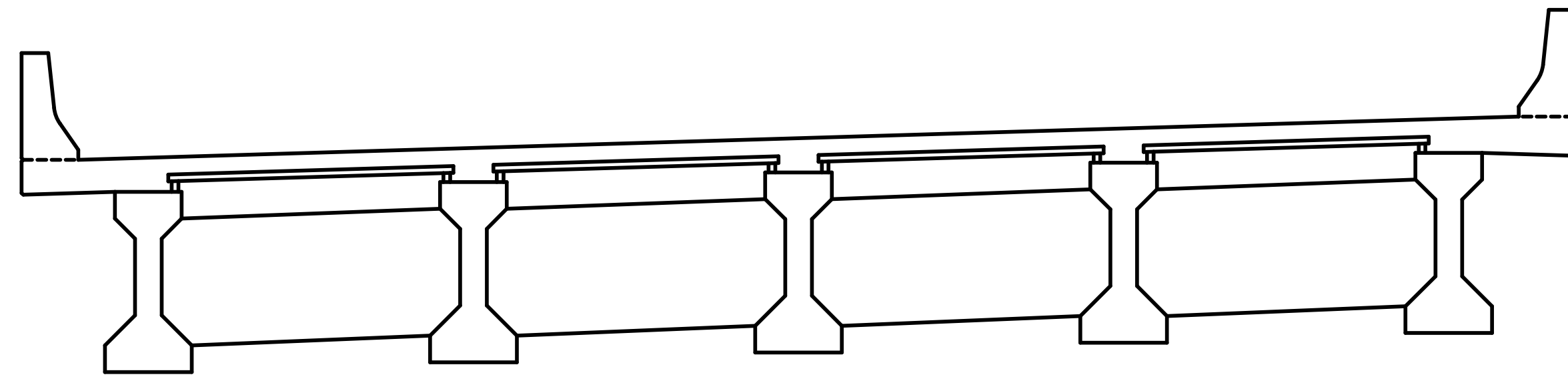
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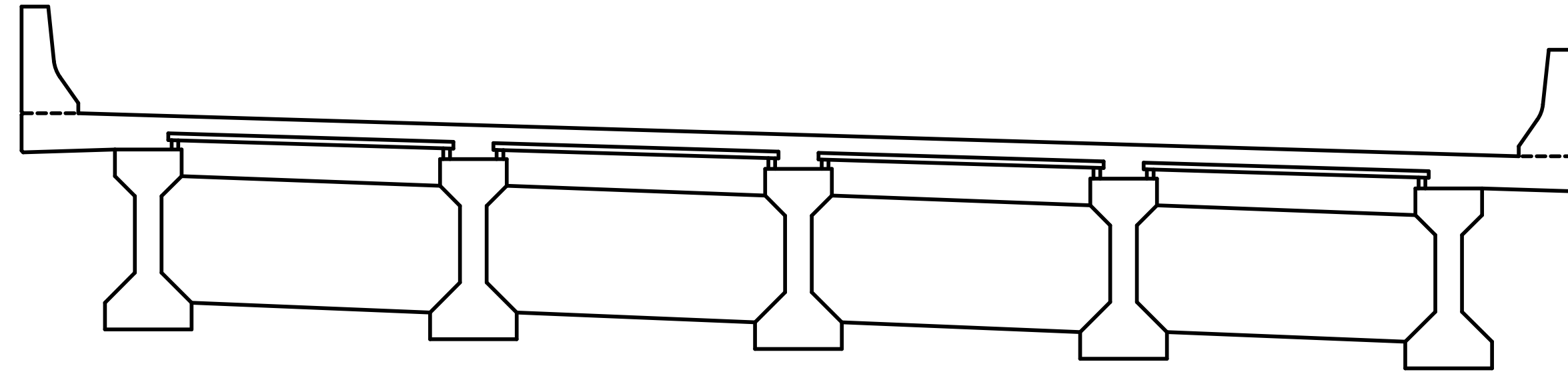
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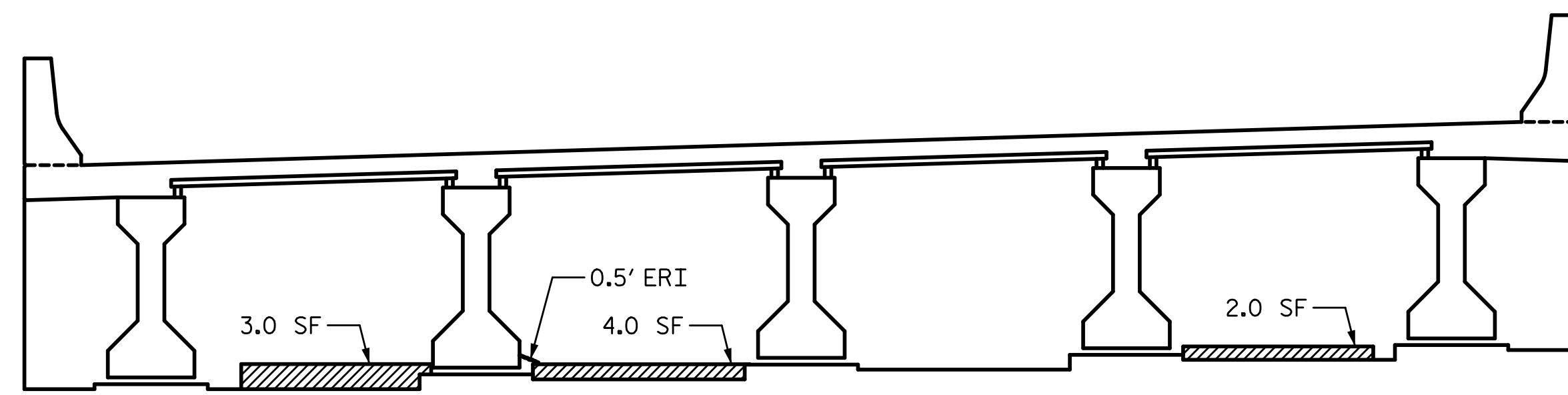
BENT 12 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



END BENT 2 CURTAIN WALL
WEST FACE

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIRS SPAN 13 DIAPH.					
REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 12 DIAPHRAGM	0.8	0.2			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
CURTAIN WALL	9.0	1.3			
EPOXY RESIN INJECTION		LF	LF		
BENT 12 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
CURTAIN WALL		0.5			

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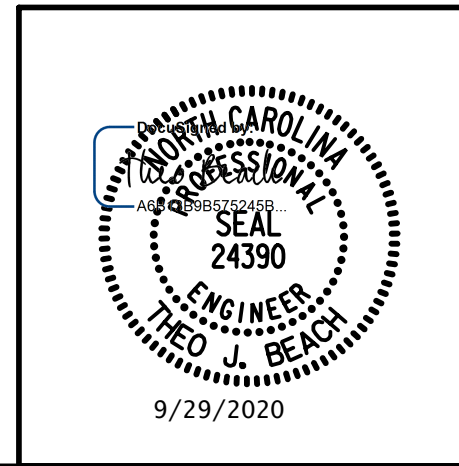
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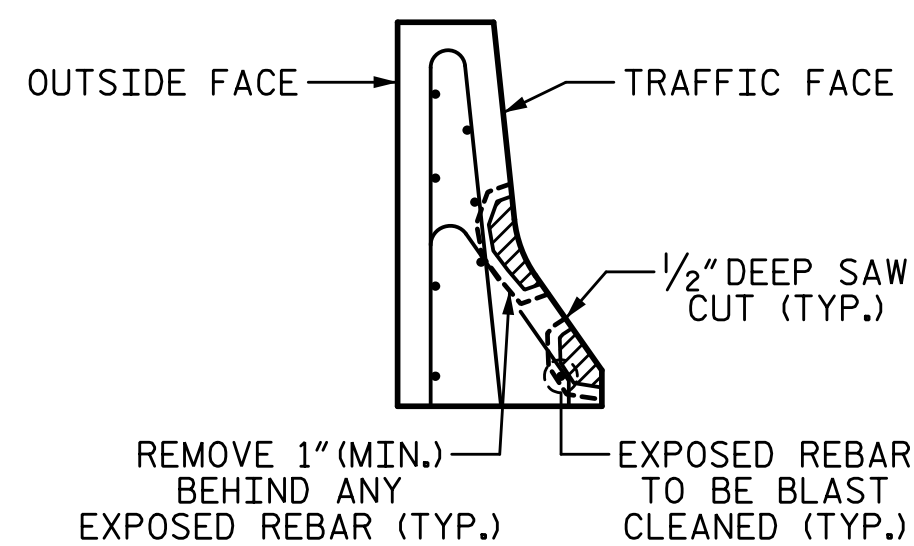


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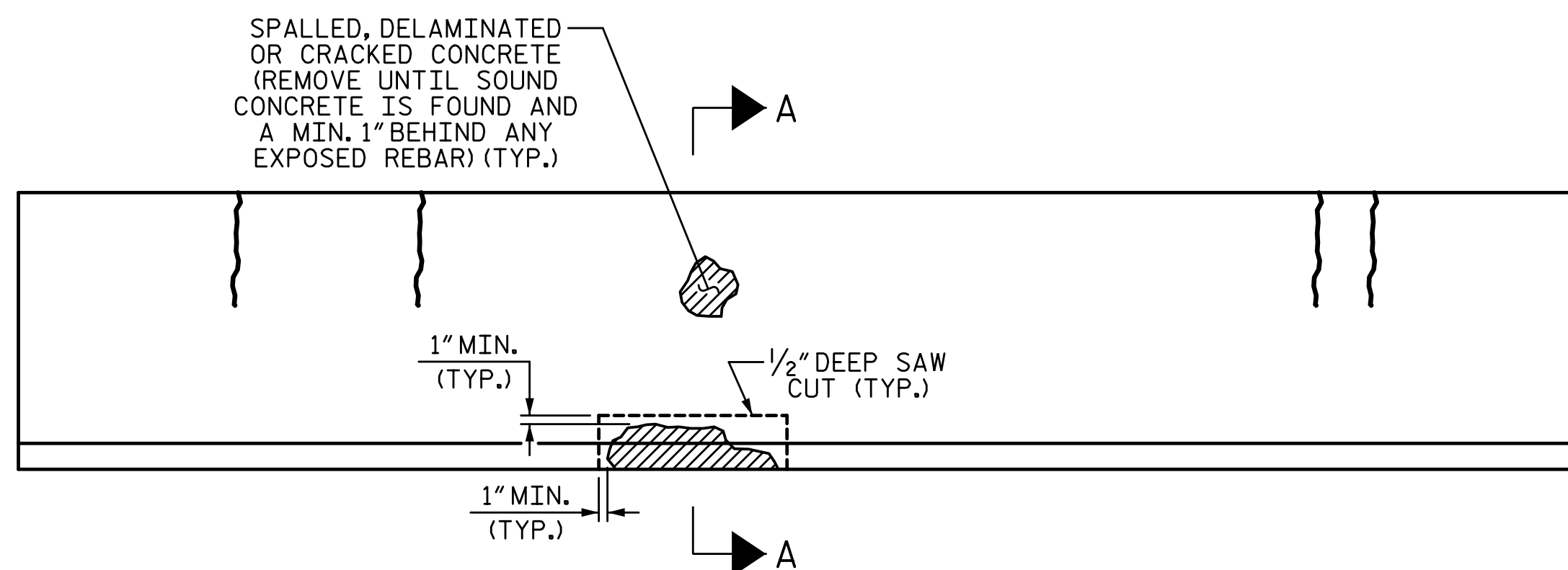
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 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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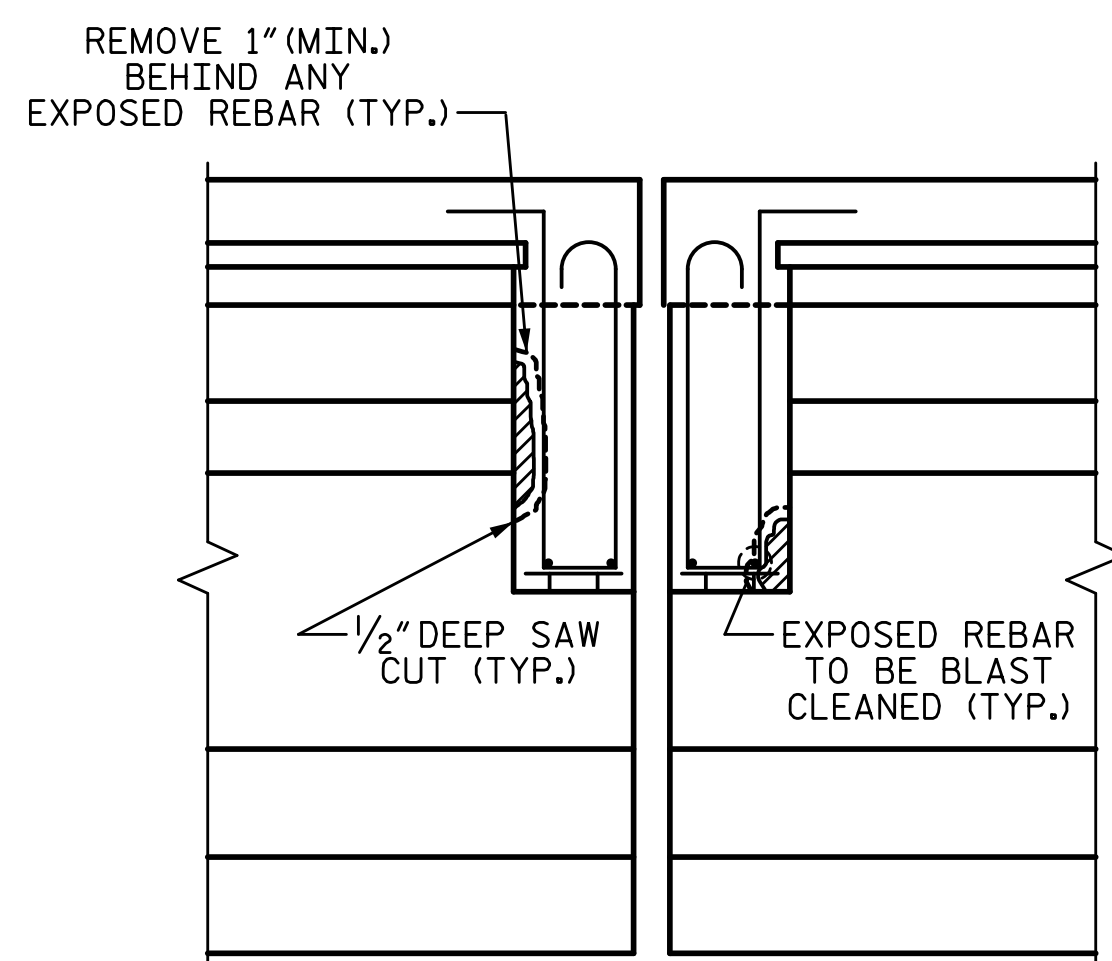
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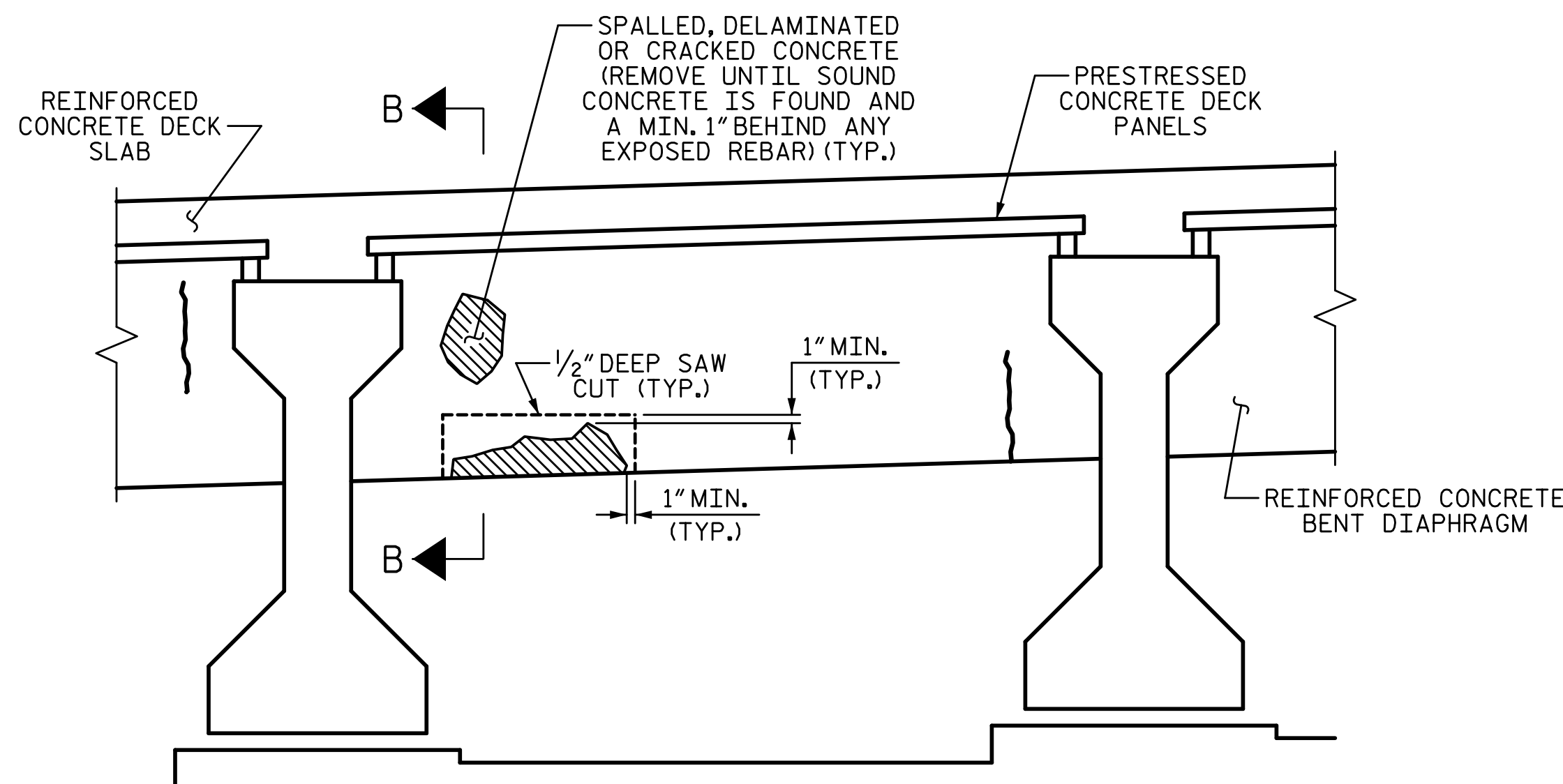
SECTION A-A



BARRIER RAIL REPAIRS

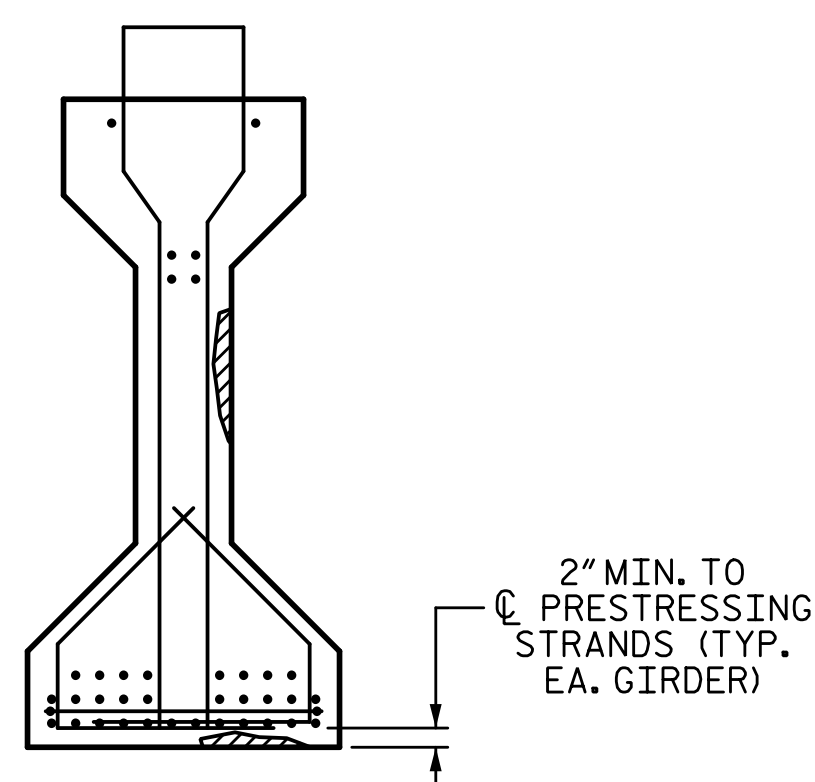


SECTION B-B

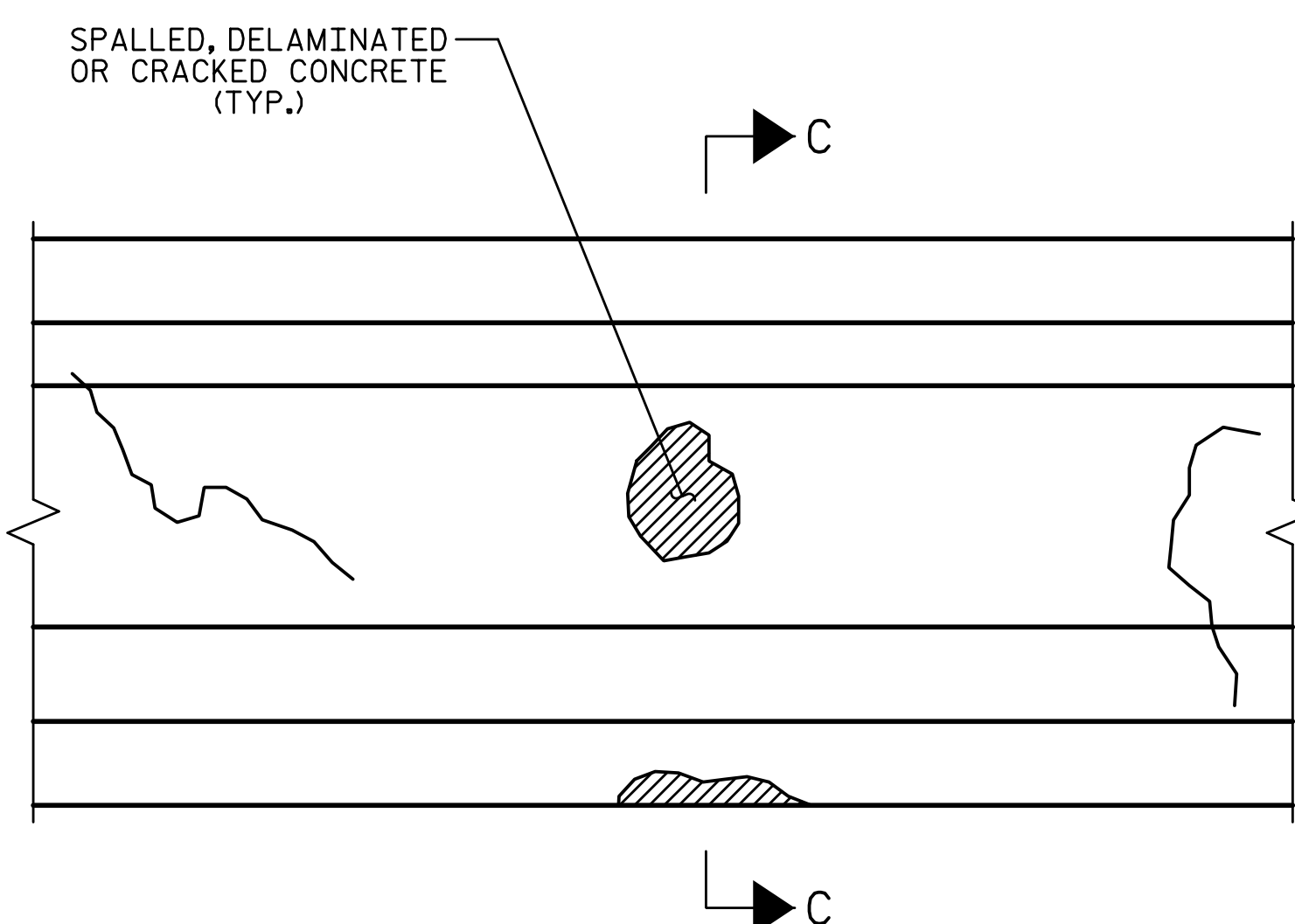


DIAPHRAGM REPAIRS

BENT DIAPHRAGM SHOWN, ALL OTHER DIAPHRAGM TYPES SIMILAR



SECTION C-C



PRESTRESSED CONCRETE GIRDER REPAIRS

NOTES:

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL OR PRESTRESSING STRANDS.

CONTRACTOR SHALL SAW CUT THE REPAIR AREAS SO THAT THE CORNERS ARE SQUARE AS INDICATED ON THE DETAILS.

SAW CUTTING IS NOT ALLOWED ON THE PRESTRESSED CONCRETE GIRDERS, SEE NOTE BELOW.

PRESTRESSED GIRDER REPAIR NOTES:

SOUND CONCRETE TO DETERMINE EXTENDS OF REPAIR LOCATION.

REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL AND PRESTRESSED STRANDS, SAW CUT AROUND REPAIR AREA TO A NOMINAL DEPTH OF 1/2".

REMOVE CONCRETE WITHIN SAW CUT AREA TO MINIMUM 1/2" DEPTH. IF CONCRETE IS DAMAGED BEYOND THE ORIGINAL SAW CUT, A NEW SAW CUT IS REQUIRED.

IF MORE THAN HALF THE CIRCUMFERENCE OF A REINFORCING BAR IS EXPOSED DURING THIS PROCESS, REMOVE ADDITIONAL CONCRETE TO 1" BEHIND THE BAR. THIS DOES NOT APPLY TO PRESTRESSED STRANDS.

ALL UNSOUND CONCRETE MUST BE REMOVED, HOWEVER, PRESTRESSED STRANDS SHOULD NOT BE DISTURBED UNLESS ABSOLUTELY NECESSARY. USE EXTREME CARE TO NOT DAMAGE STRANDS.

USE A WIRE BRUSH TO CLEAN ALL EXPOSED REINFORCING BARS AND PRESTRESSED STRANDS. FOR BARS WITH MORE THAN 10% SECTION LOSS, SPLICE AND SECURELY TIE SUPPLEMENTAL REINFORCING BARS AS NEEDED. NOT AND PROVIDE DETAILED DOCUMENTATION, INCLUDING LOCATION AND SEVERITY, OF ALL DAMAGE TO PRESTRESSED STRANDS THAT EXCEEDS 10% SECTION LOSS. IF FIVE OR MORE STRANDS ARE DAMAGED NOTIFY THE ENGINEER PRIOR TO PLACEMENT OF REPAIR MATERIALS.

REMOVE ALL LOOSE OR WEAKENED MATERIAL THEN CLEAN OF DIRT, GREASE, OIL, AND FOREIGN MATTER PRIOR TO PLACING SHOTCRETE OR CONCRETE TO THE REPAIR AREA.

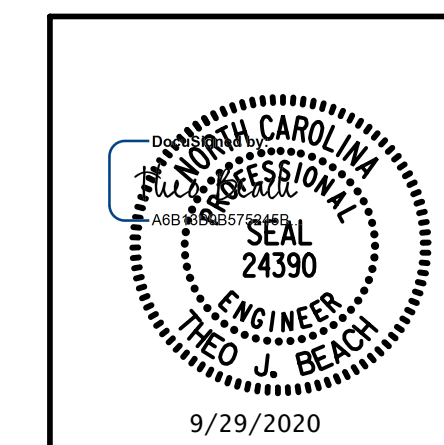
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SUPERSTRUCTURE
 REPAIR DETAIL**

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REVISIONS

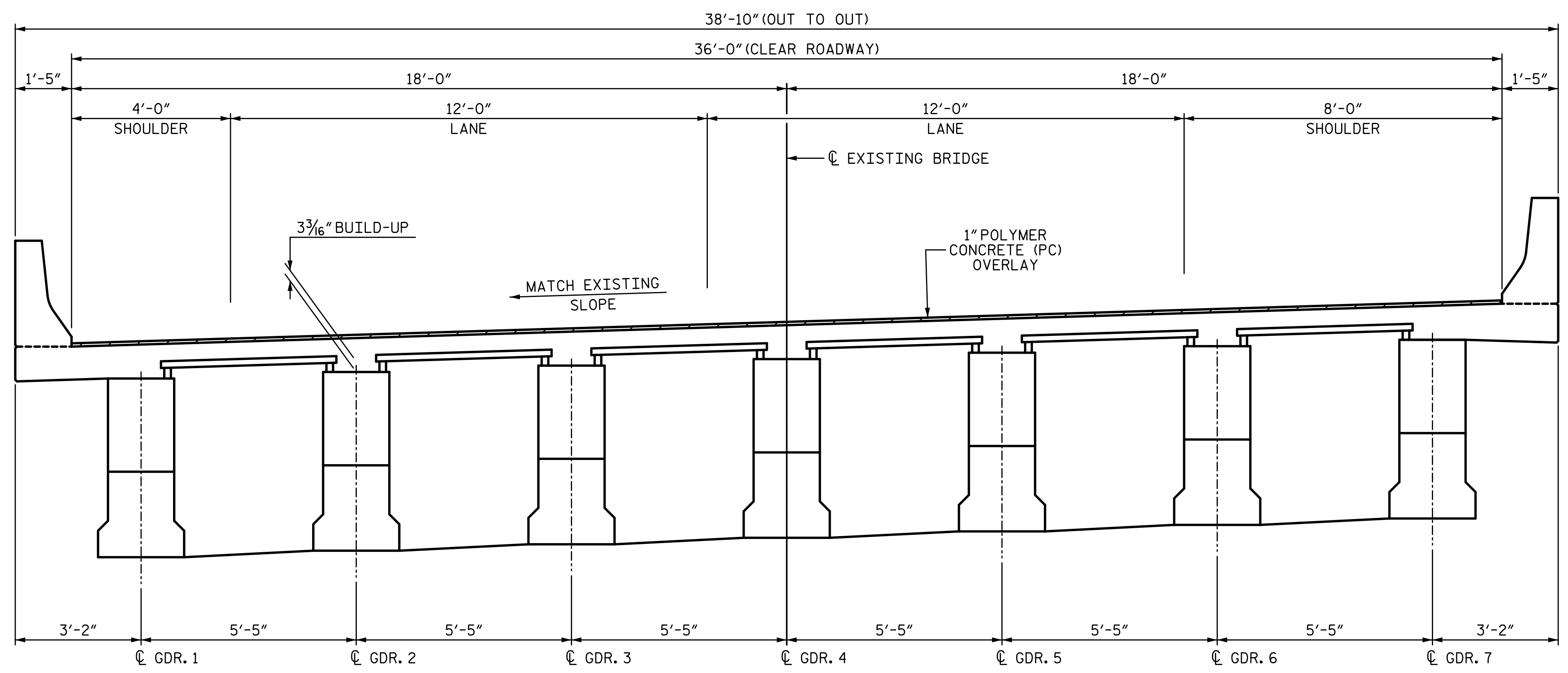
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2			4		

SHEET NO.
 S2-138
 TOTAL SHEETS
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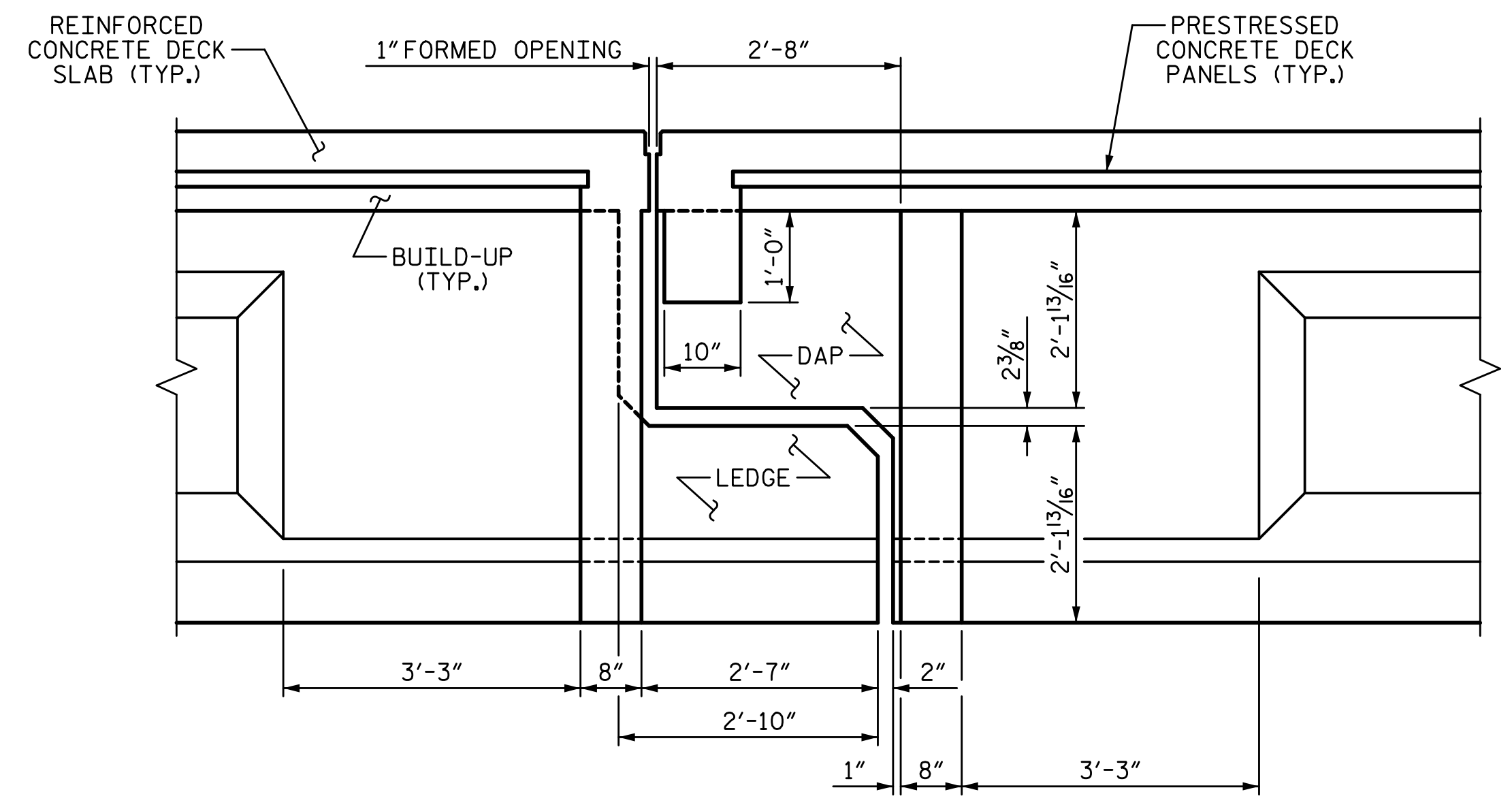
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TYPICAL SECTION
SECTION TAKEN AT HINGE LOCATIONS LOOKING EAST

NOTES:

- GIRDER STRENGTHENING INCLUDES ALL GIRDERS IN THE EAST AND WEST HINGE LOCATIONS.
- FRP = FIBER REINFORCED POLYMER
- DAP REFERS TO UPPER PORTION OF DROP-IN SECTION AT HINGE.
- LEDGE REFERS TO LOWER PORTION OF CANTILEVER SECTION AT HINGE.
- FOR SURFACE PREPARATION, SEE "FIBER REINFORCED POLYMER (FRP) STRENGTHENING" SPECIAL PROVISION.
- FOR FRP MATERIAL REQUIREMENTS, SEE "FIBER REINFORCED (FRP) STRENGTHENING" SPECIAL PROVISION.
- FOR PROTECTIVE COATING APPLICATION AFTER FRP SYSTEM INSTALLATION, SEE "FIBER REINFORCED (FRP) STRENGTHENING" SPECIAL PROVISION.
- ALL CORNERS SHALL BE ROUNDED BEFORE APPLYING FRP MATERIAL, SEE "FIBER REINFORCED POLYMER (FRP) STRENGTHENING" SPECIAL PROVISION.
- DRILLING OF FRP ANCHORAGE HOLES MAY VARY SLIGHTLY IN ORDER TO AVOID EXISTING REINFORCEMENT IN THE CONCRETE DIAPHRAGM.
- THE DIMENSIONS OF THE EXISTING HINGE INDICATED ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCE BETWEEN THE EXISTING HINGE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- MINIMUM END CAPACITY (AFTER FRP REPAIR) = 261.70 KPS/GIRDER.
- FOR HINGE LOCATIONS, SEE "DIAPHRAGM REPAIRS" SHEET 9 OF 19.



SECTION THRU HINGE
WEST HINGE SHOWN, EAST HINGE SIMILAR

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 1 OF 11

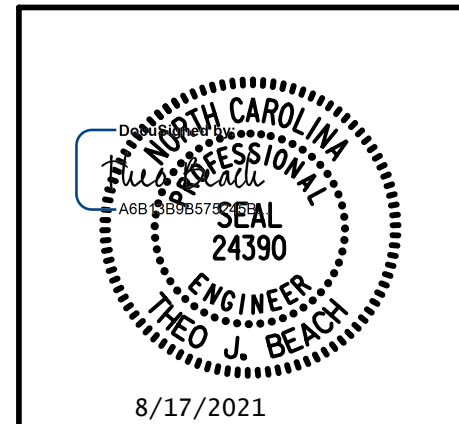
STATE OF NORTH CAROLINA
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TYPICAL SECTION
AT HINGES

FRP HINGE REPAIR

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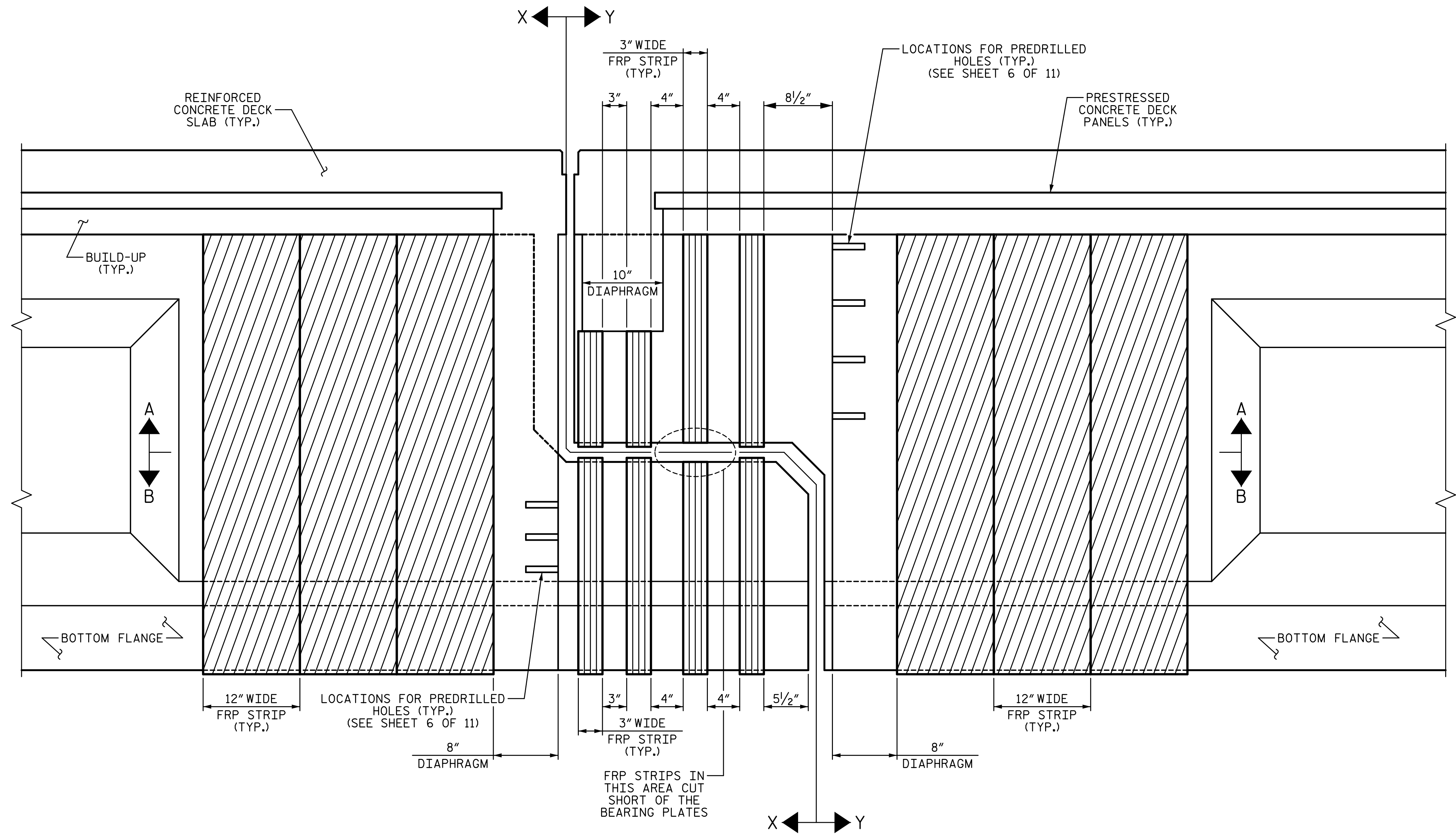


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DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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2			4			163

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NOTES:
FOR VIEWS, SEE SHEET 3 OF 11.



SECTION THRU HINGE
WEST HINGE SHOWN, EAST HINGE SIMILAR

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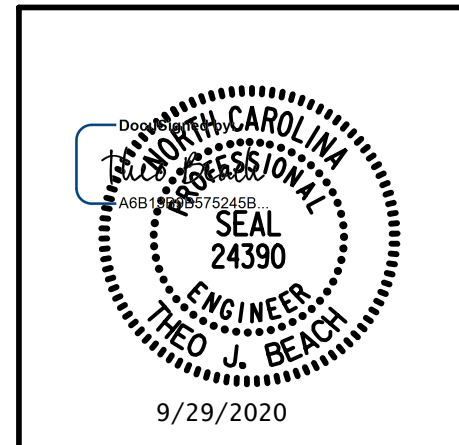
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NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 2 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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PRESERVATION
FRP STRIPS LAYER 1
FOR
INTERIOR GIRDERS
FRP HINGE REPAIR

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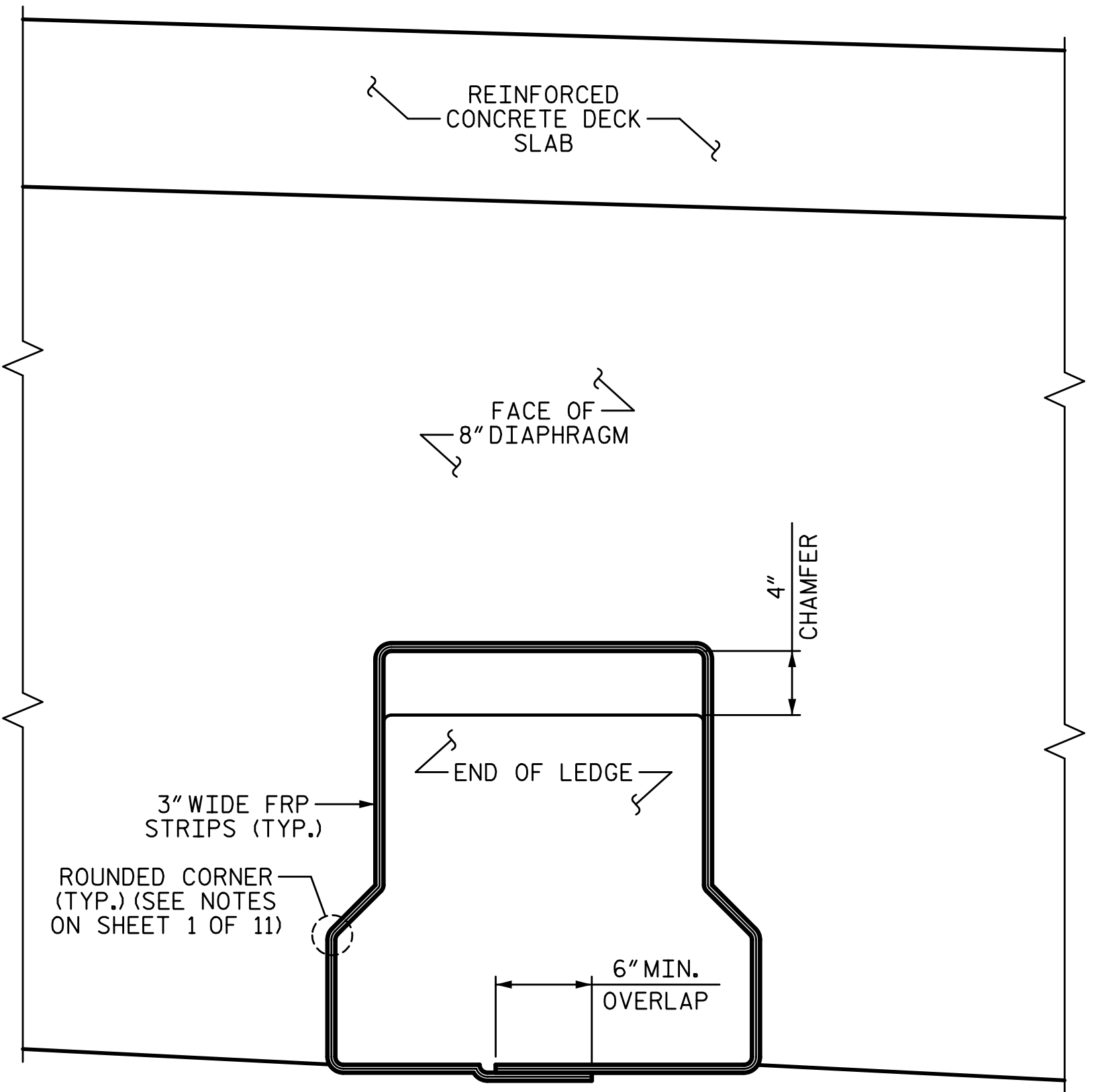


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DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

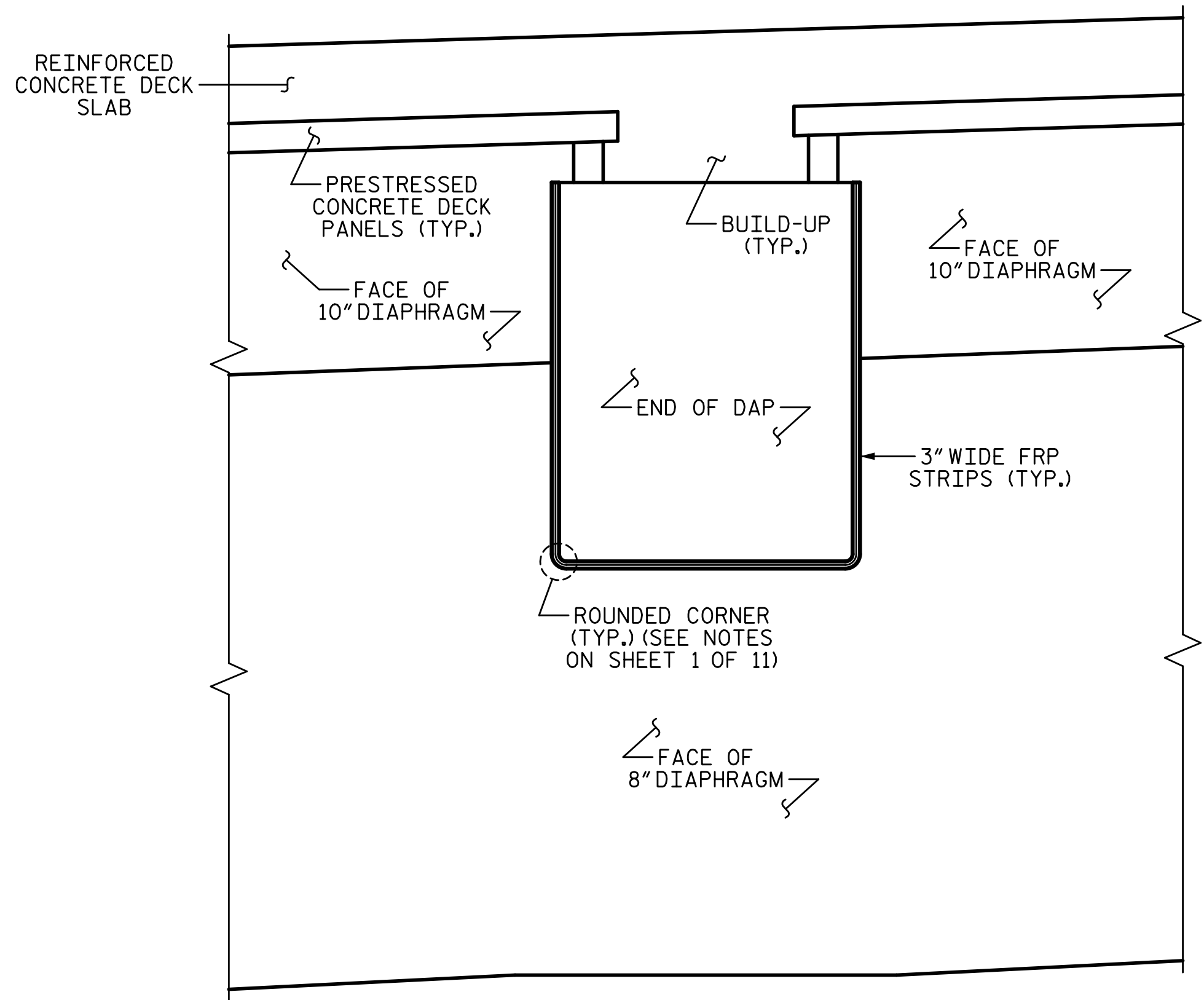
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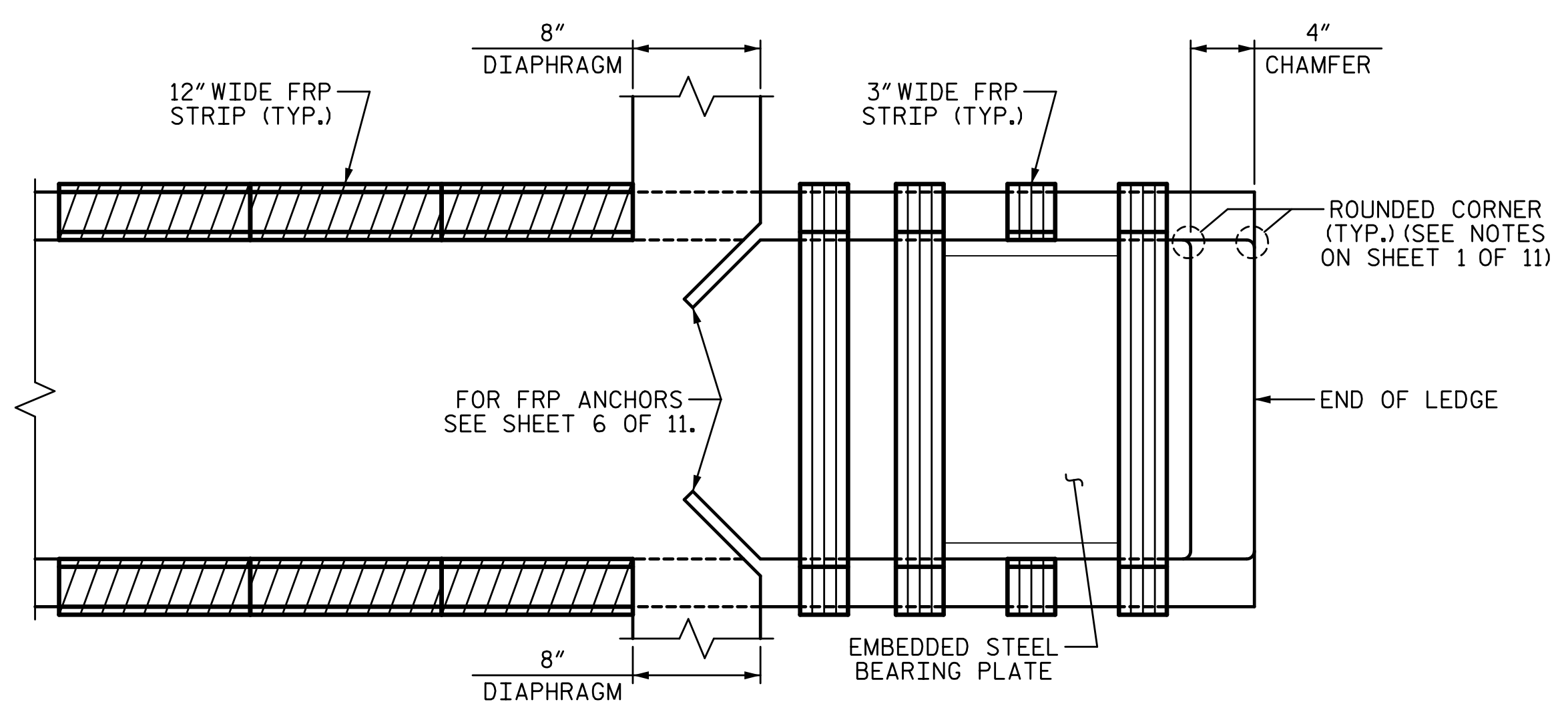
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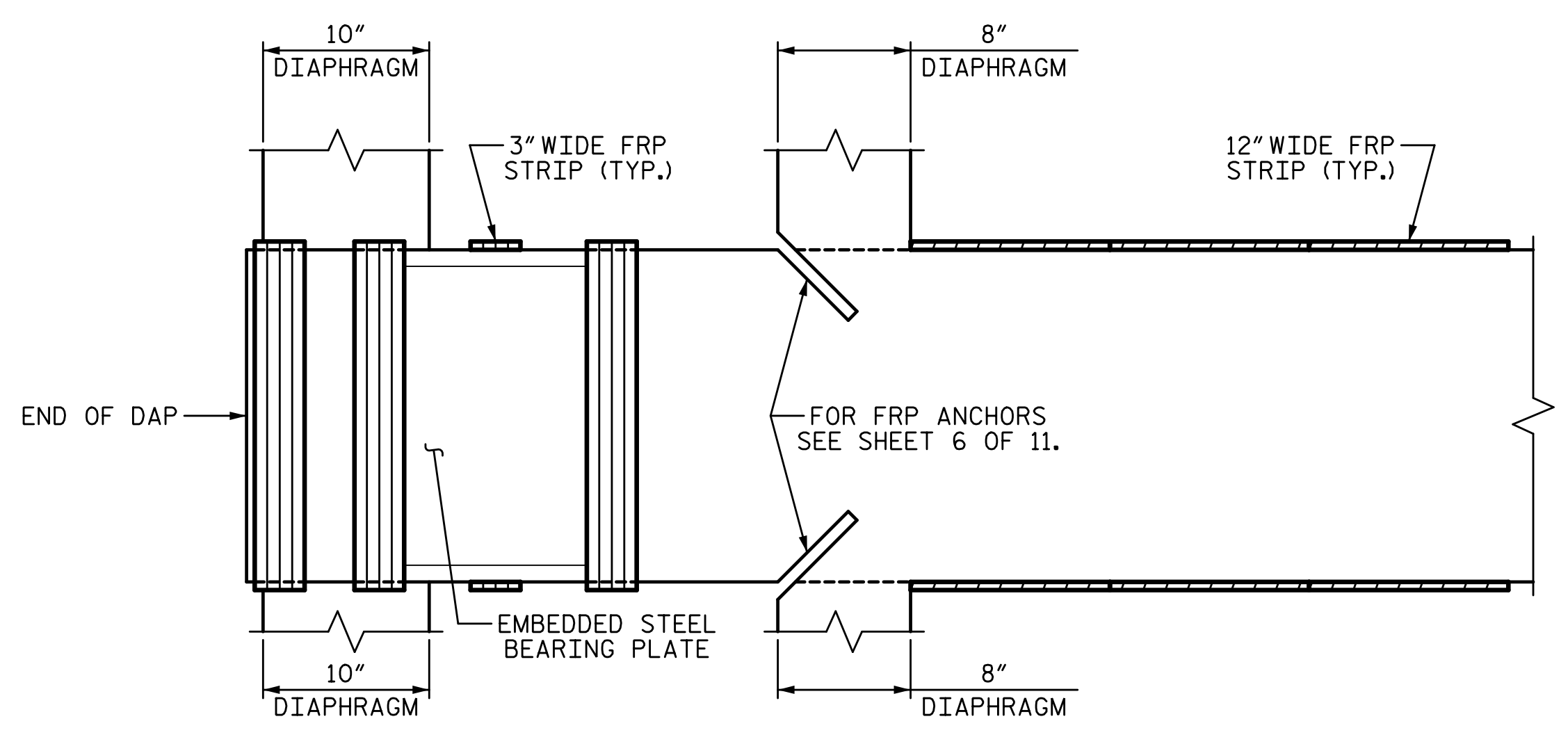
VIEW X-X



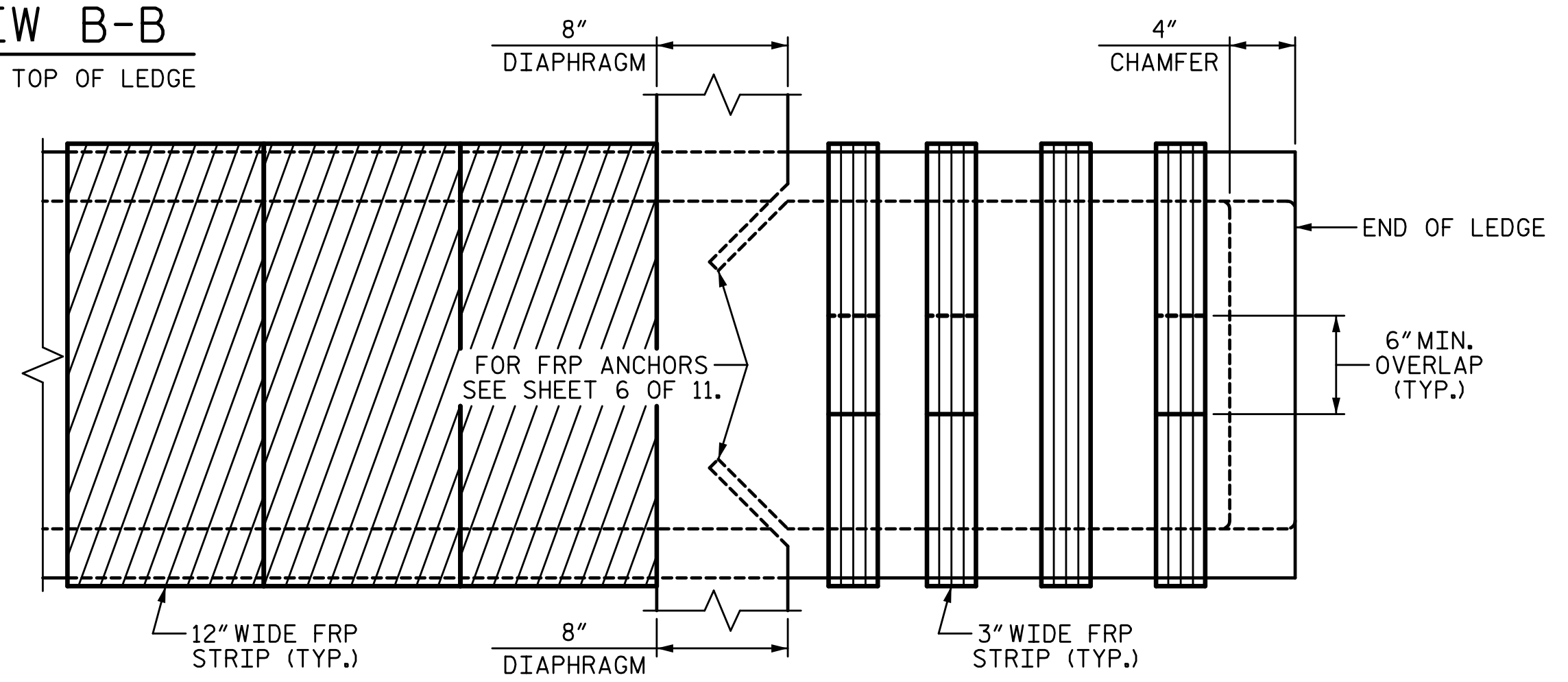
VIEW Y-Y



VIEW B-B
SHOWING TOP OF LEDGE



VIEW A-A
SHOWING BOTTOM OF DAP



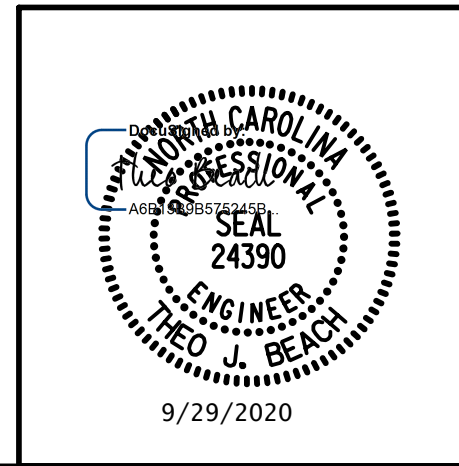
BOTTOM OF LEDGE

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 FRP STRIPS LAYER 1
 FOR
 INTERIOR GIRDERS
 FRP HINGE REPAIR

PLANS PREPARED BY:
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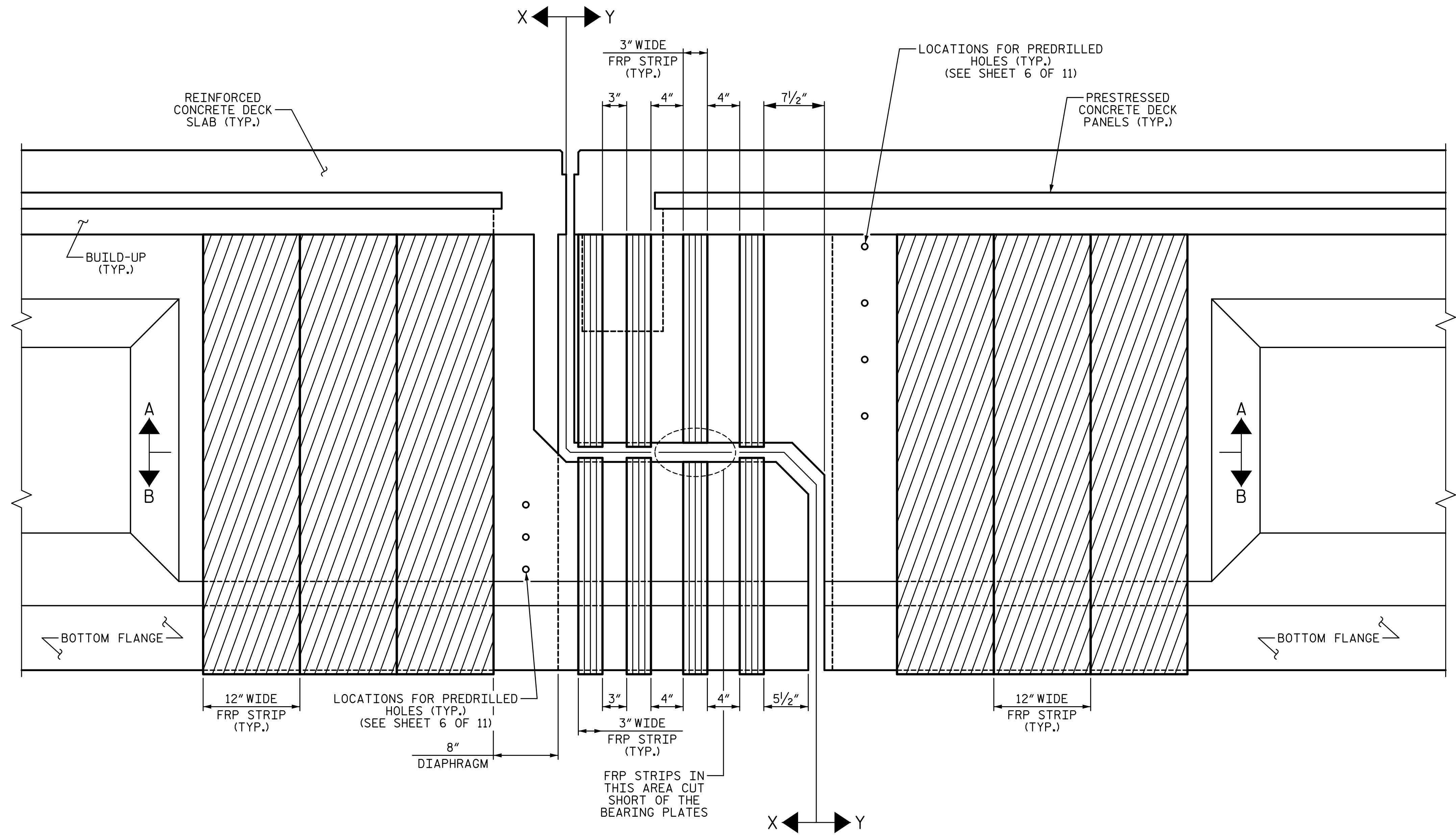
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2			4		

TOTAL SHEETS: 163

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NOTES:
FOR VIEWS, SEE SHEET 5 OF 11.



SECTION THRU HINGE

(EXTERIOR GIRDER 7 WEST HINGE SHOWN, EXTERIOR GIRDER 1 EAST HINGE SIMILAR AND EXTERIOR GIRDER 1 WEST HINGE AND GIRDER 7 EAST HINGE SIMILAR BY ROTATION)

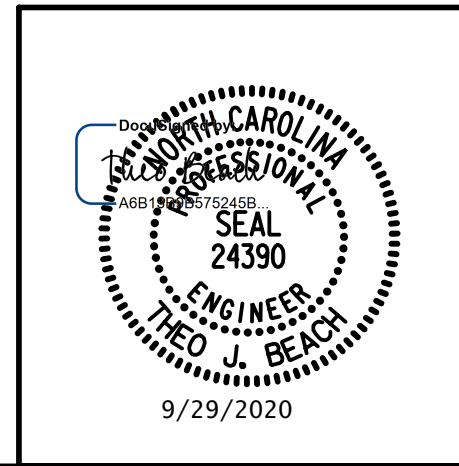
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SHEET 4 OF 11

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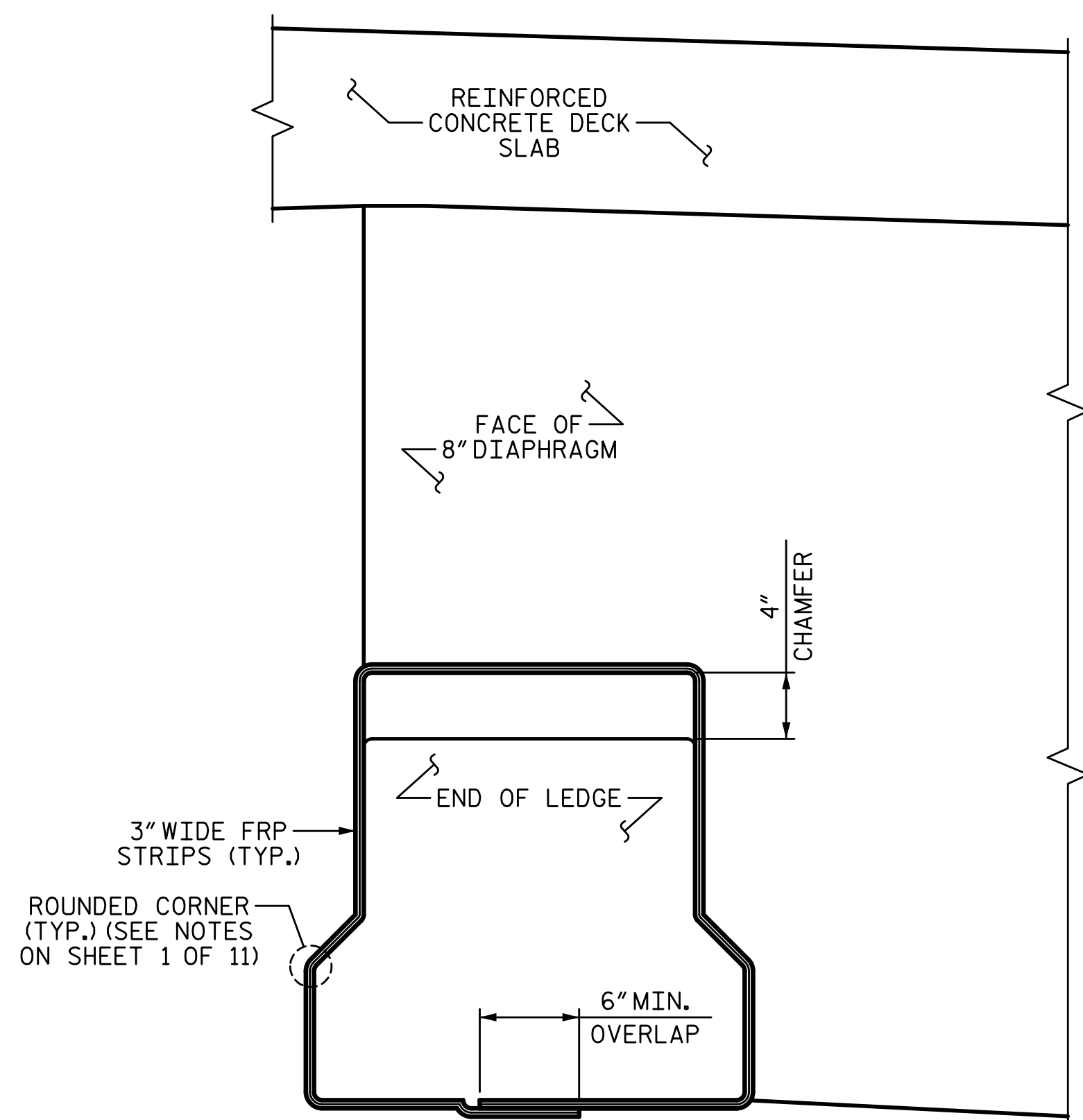
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EXTERIOR GIRDERS
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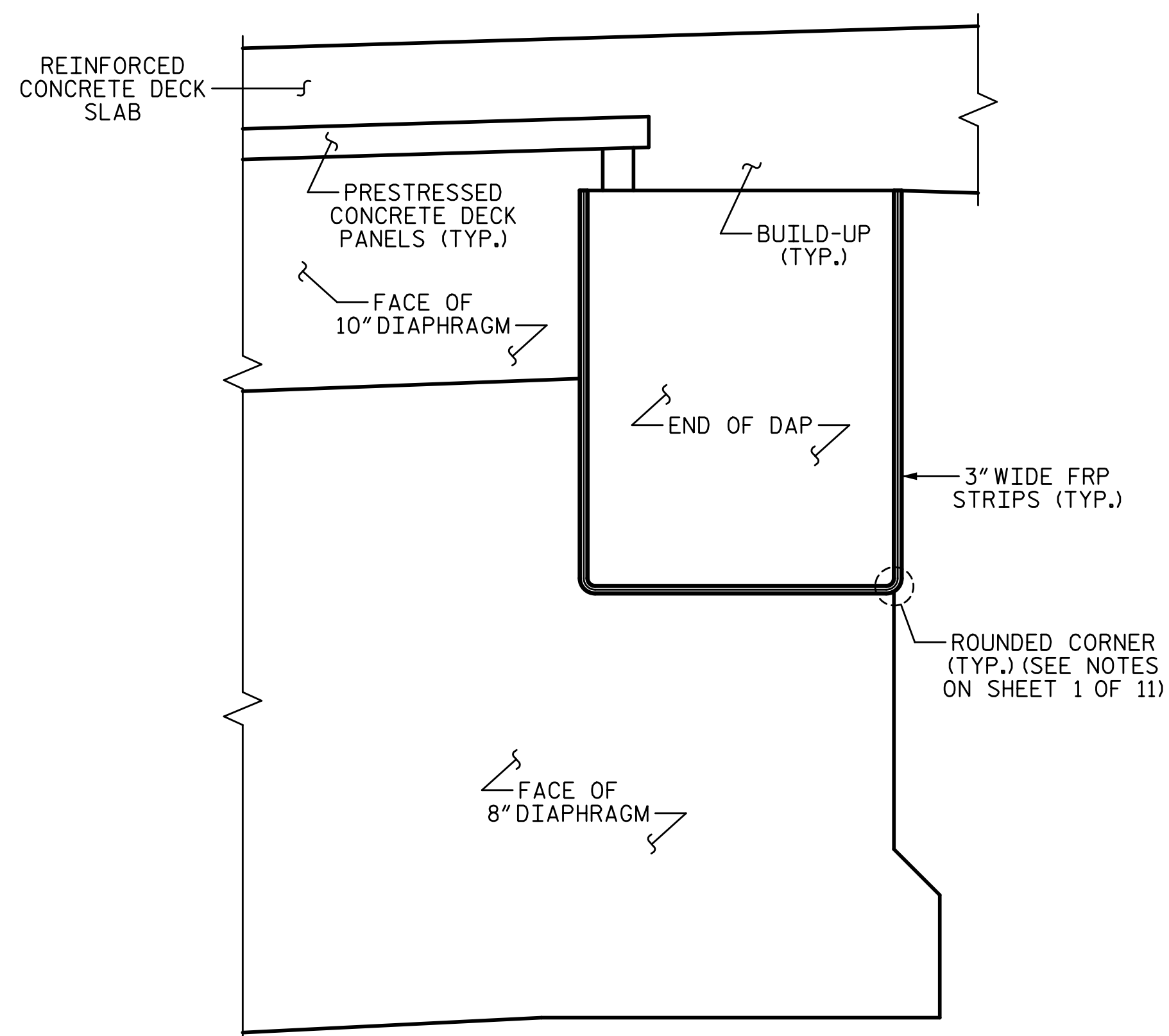
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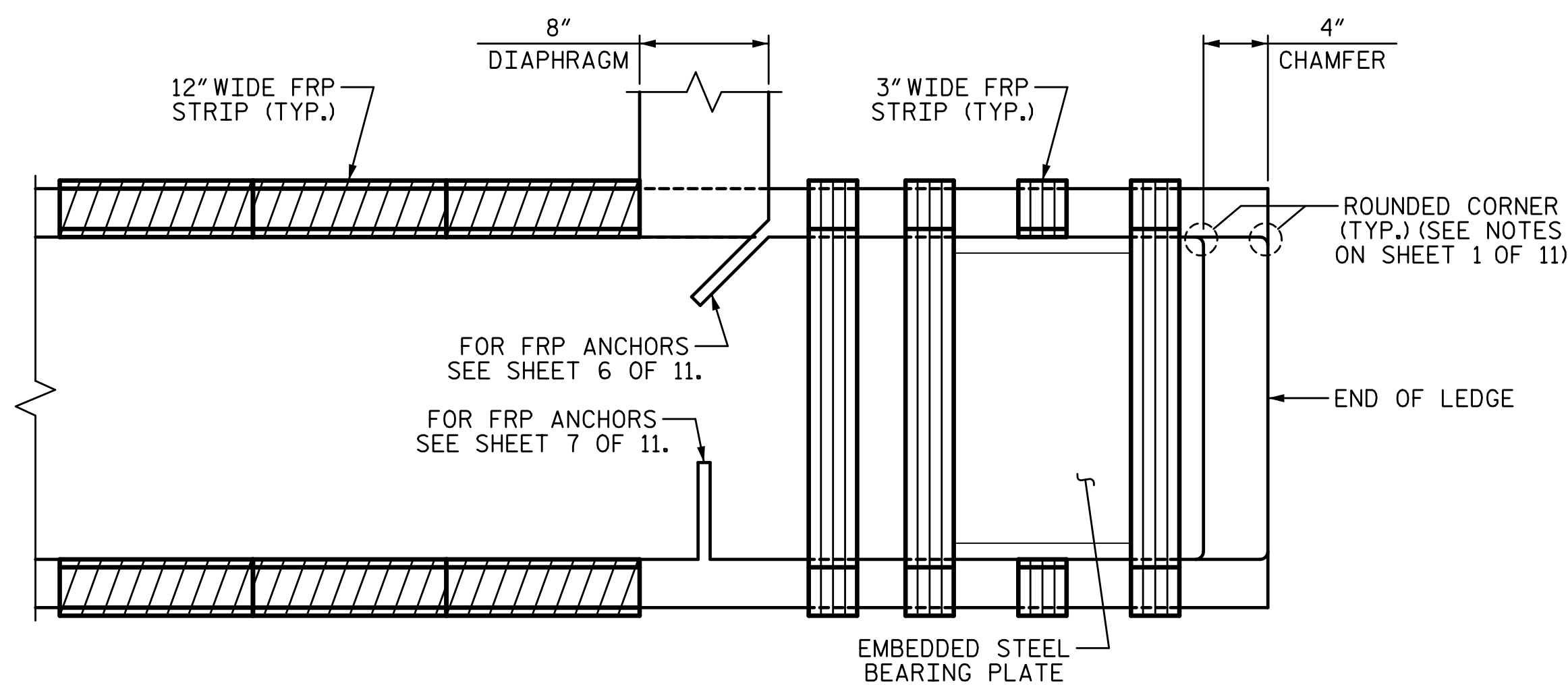
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VIEW X-X

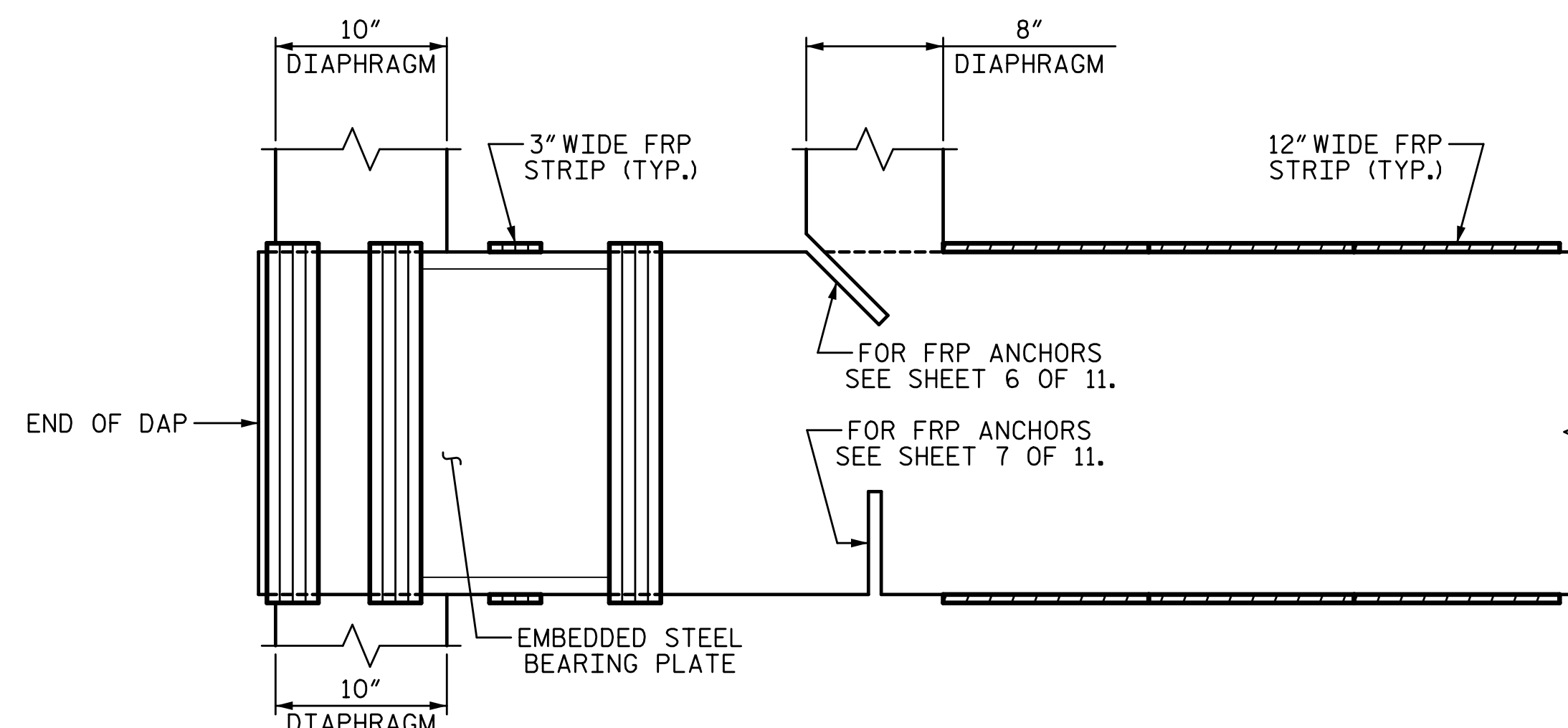


VIEW Y-Y



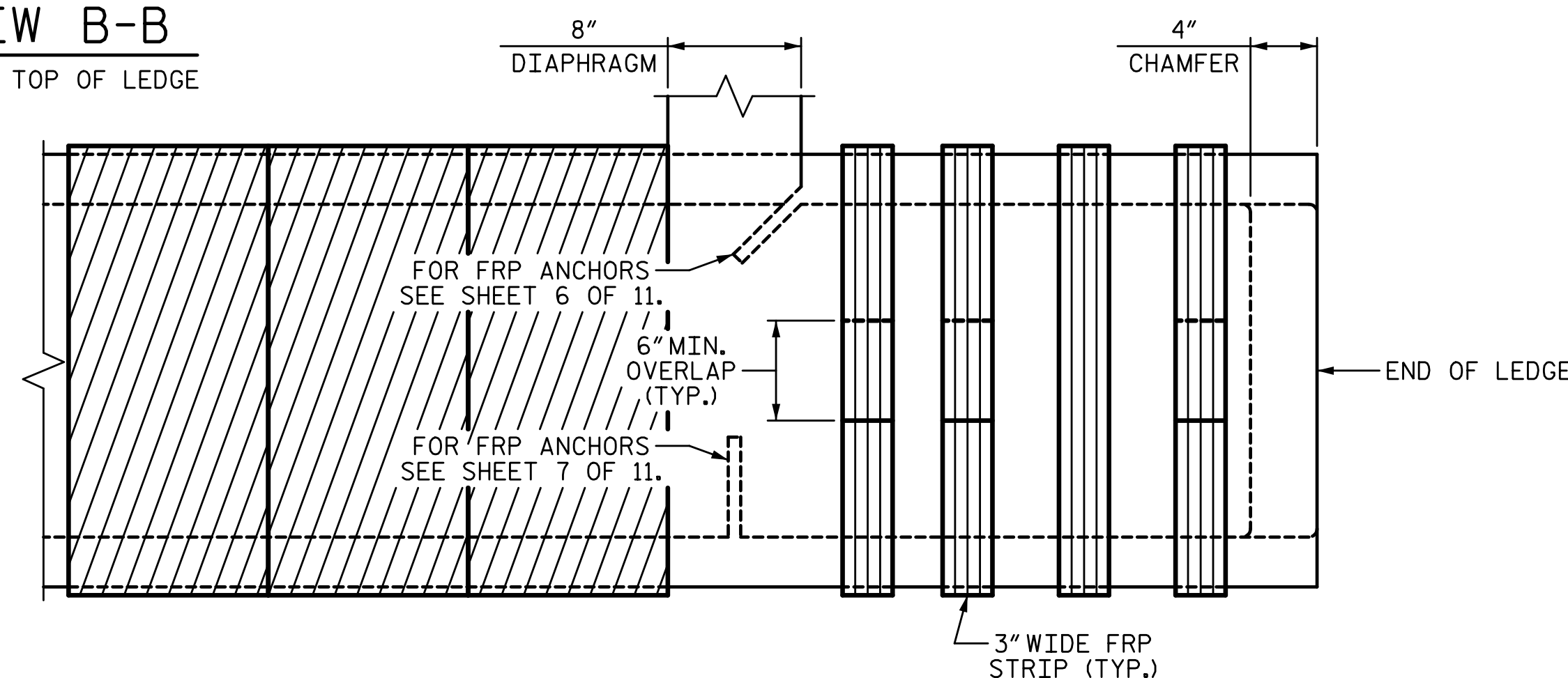
VIEW B-B

SHOWING TOP OF LEDGE



VIEW A-A

SHOWING BOTTOM OF DAP



BOTTOM OF LEDGE

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

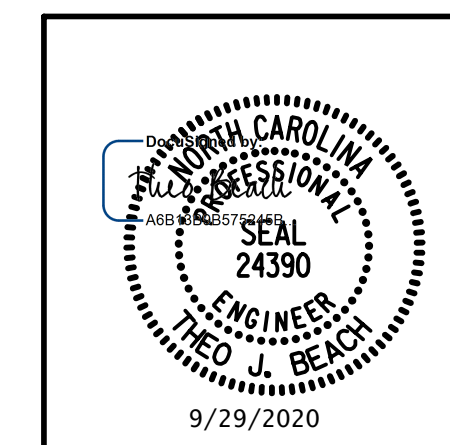
SHEET 5 OF 11

STATE OF NORTH CAROLINA
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 FRP STRIPS LAYER 1
 FOR
 EXTERIOR GIRDERS
 FRP HINGE REPAIR

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-143
1			3			TOTAL SHEETS
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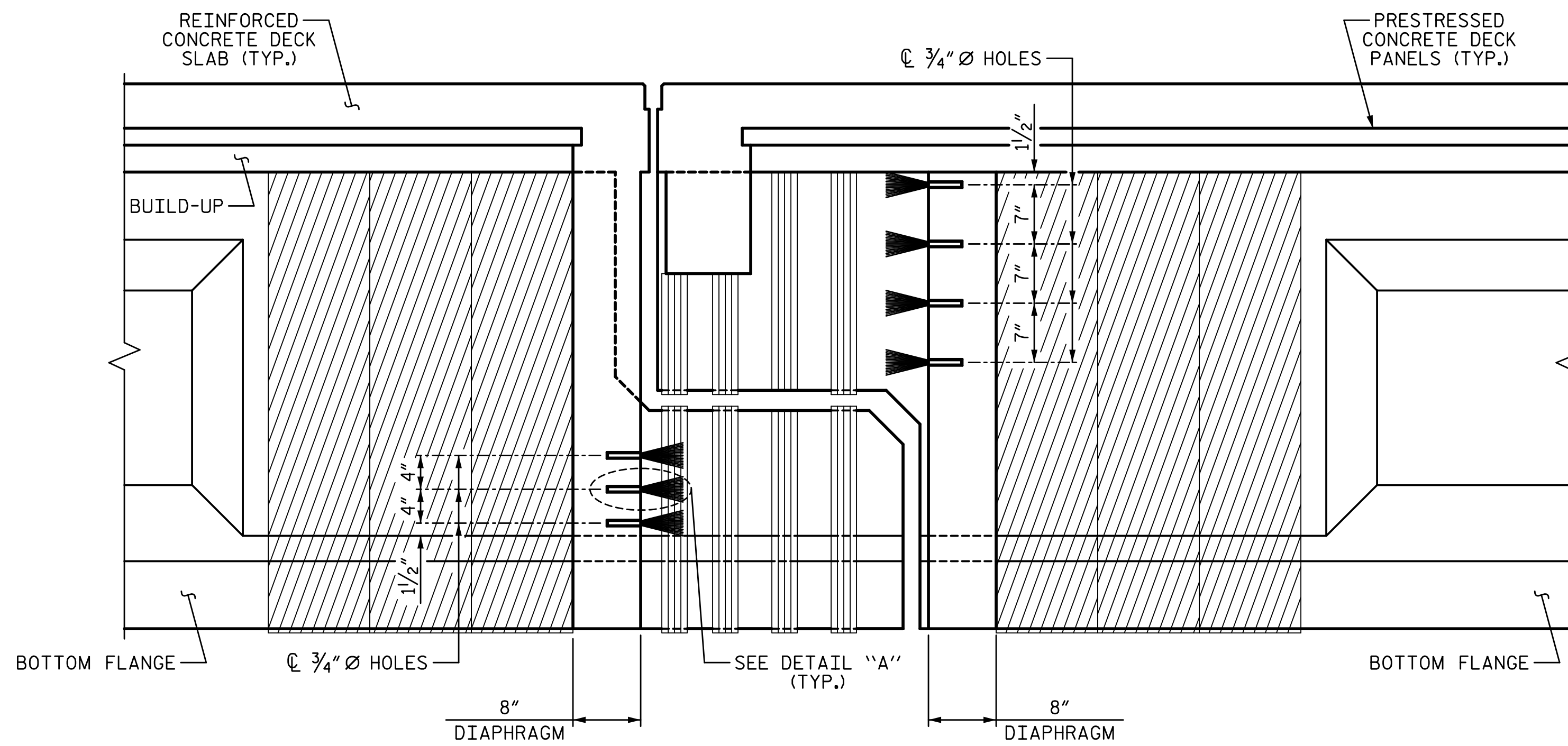
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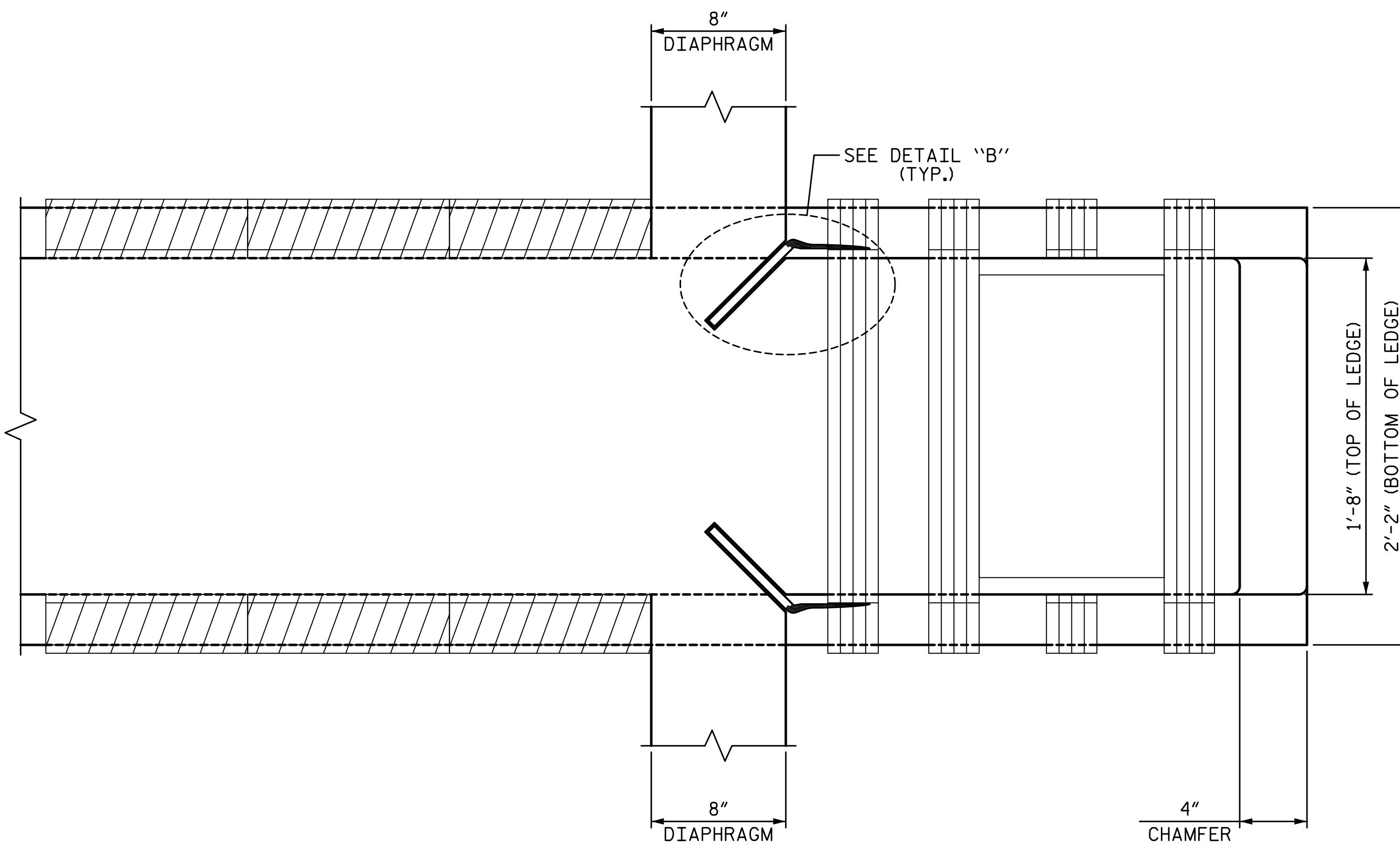
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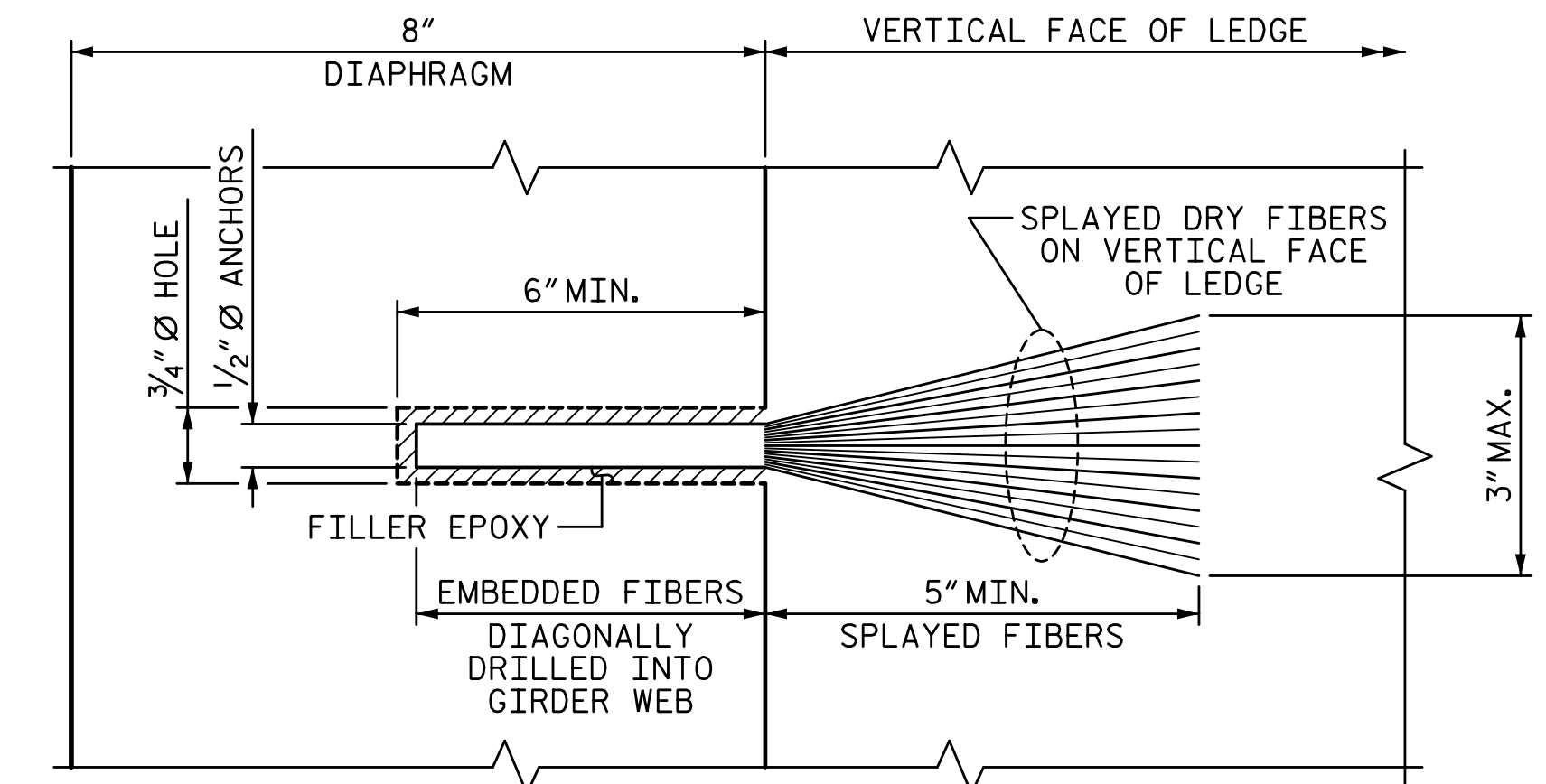


ELEVATION
(TYP. EA FACE OF DAP AND LEDGE)

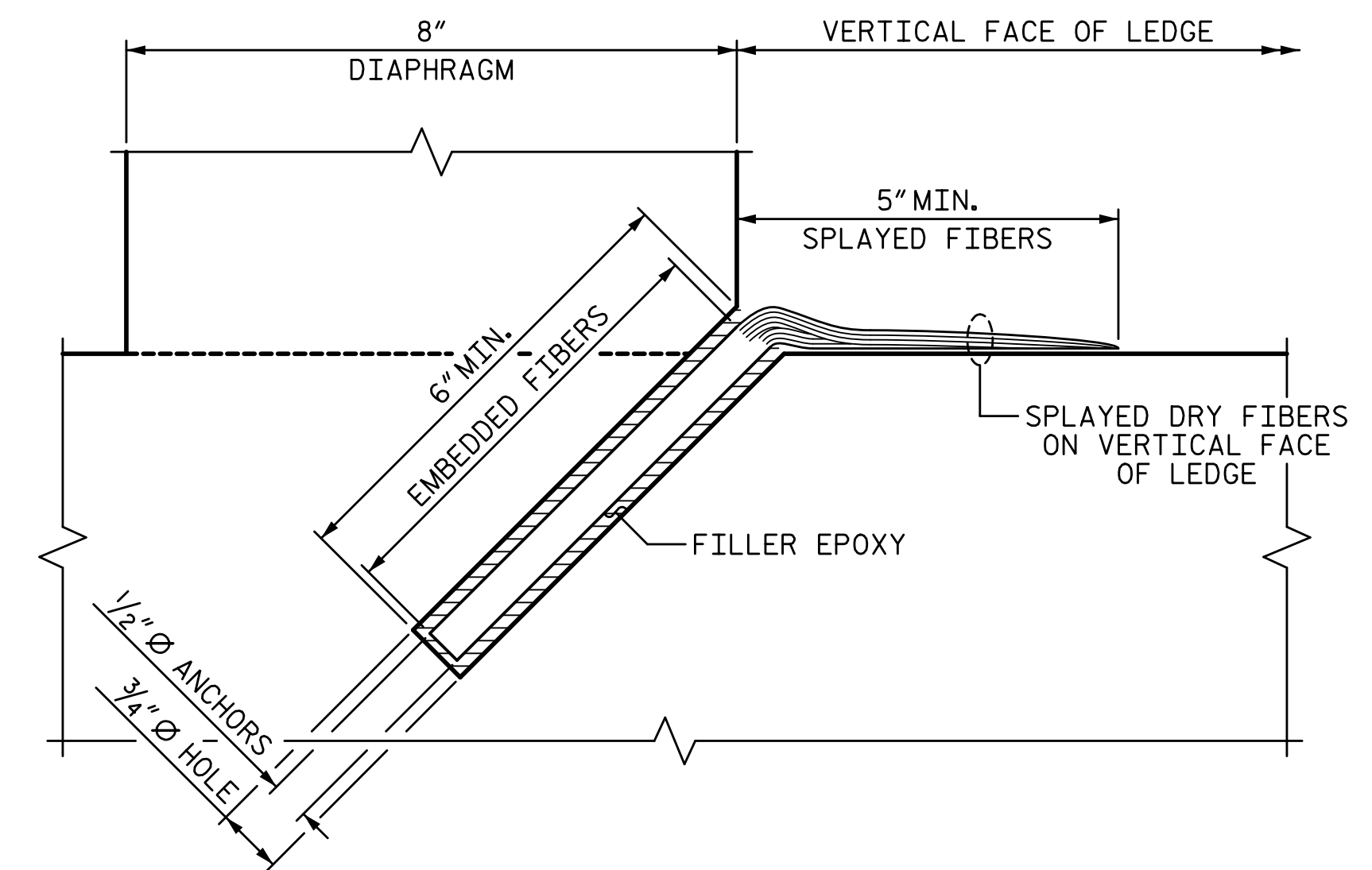
- PREVIOUS 3" WIDE LAYER
- PREVIOUS 12" WIDE LAYER



PLAN
(LEDGE SHOWN, DAP SIMILAR)



DETAIL "A"
(LEDGE SHOWN, DAP SIMILAR)



DETAIL "B"
(LEDGE SHOWN, DAP SIMILAR)

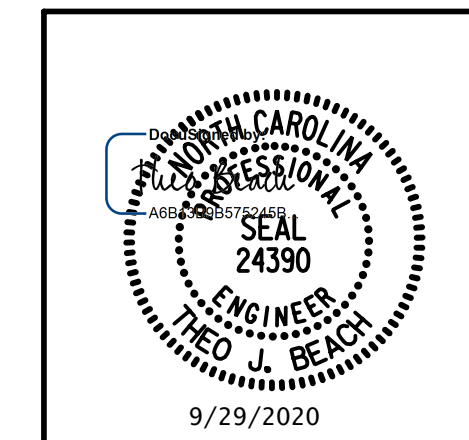
14 ANCHORS REQUIRED PER INTERIOR HINGE LOCATION

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 6 OF 11

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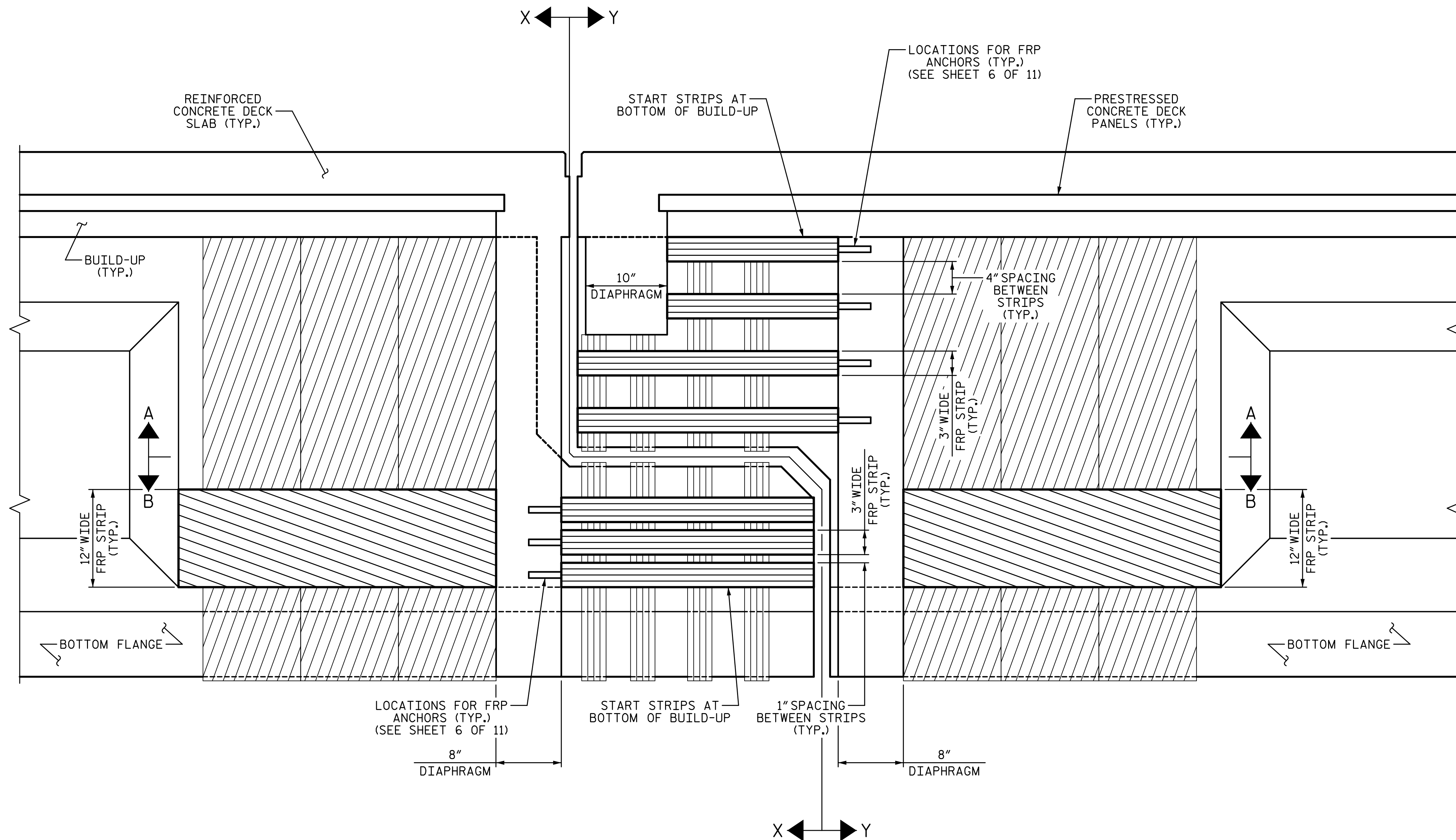
STATE OF NORTH CAROLINA
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FRP ANCHORAGE
 FOR INTERIOR GIRDERS
 FRP HINGE REPAIR

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1			3			TOTAL SHEETS
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SECTION THRU HINGE

WEST HINGE SHOWN, EAST HINGE SIMILAR

- PREVIOUS 3" WIDE LAYER
- PREVIOUS 12" WIDE LAYER
- CURRENT 3" WIDE LAYER
- CURRENT 12" WIDE LAYER

NOTES:

FOR VIEWS, SEE SHEET 9 OF 11.
FRP ANCHORAGE SHALL BE INSTALLED PRIOR TO INSTALLATION OF FRP LAYER 2.

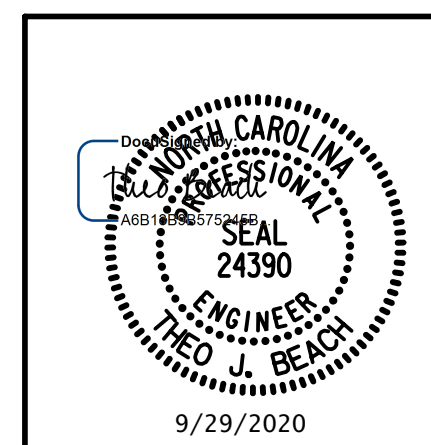
PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 8 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION
FRP STRIPS LAYER 2
FOR
INTERIOR GIRDERS
FRP HINGE REPAIR

PLANS PREPARED BY:

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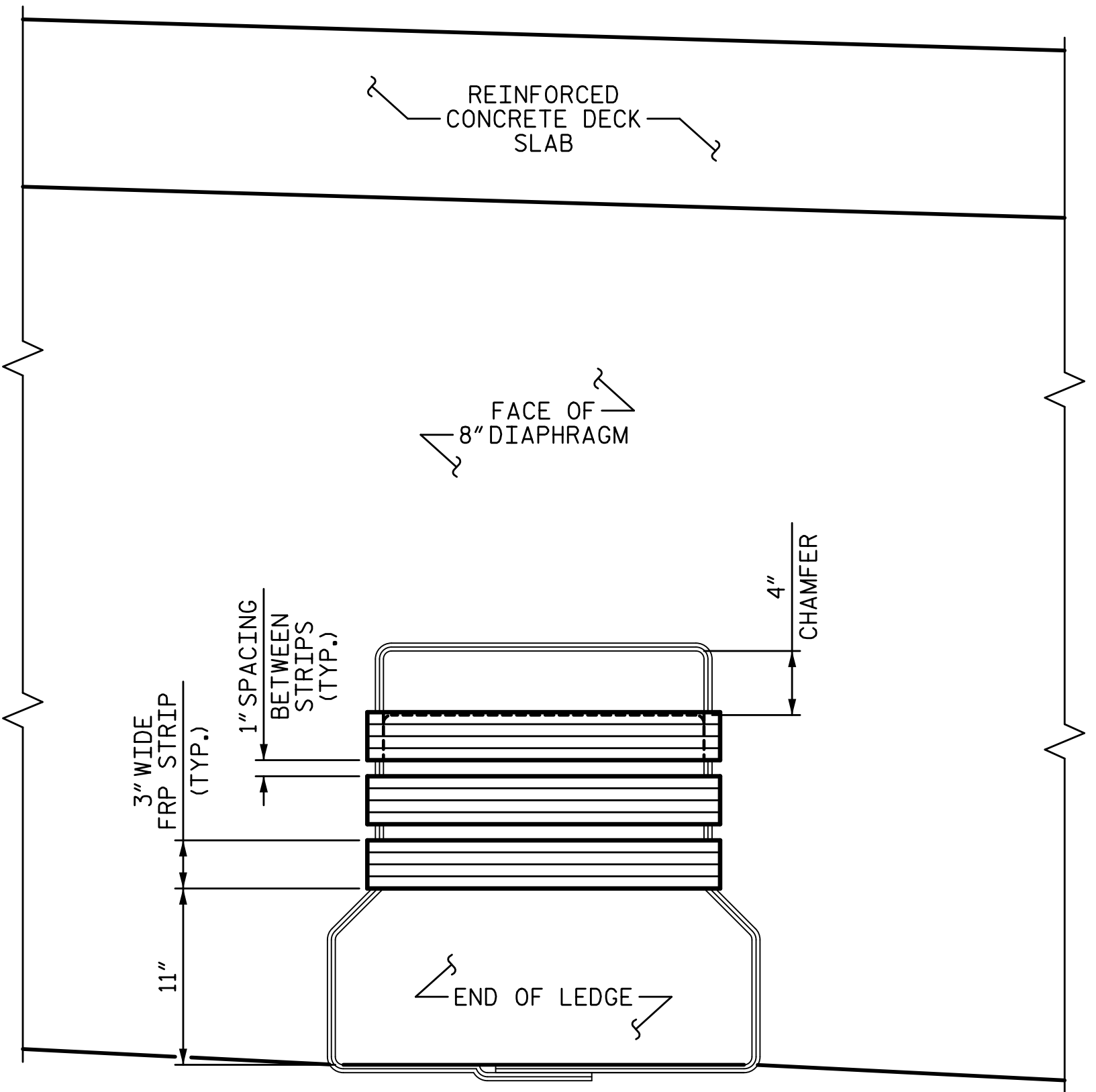
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1			3			TOTAL SHEETS
2			4			163

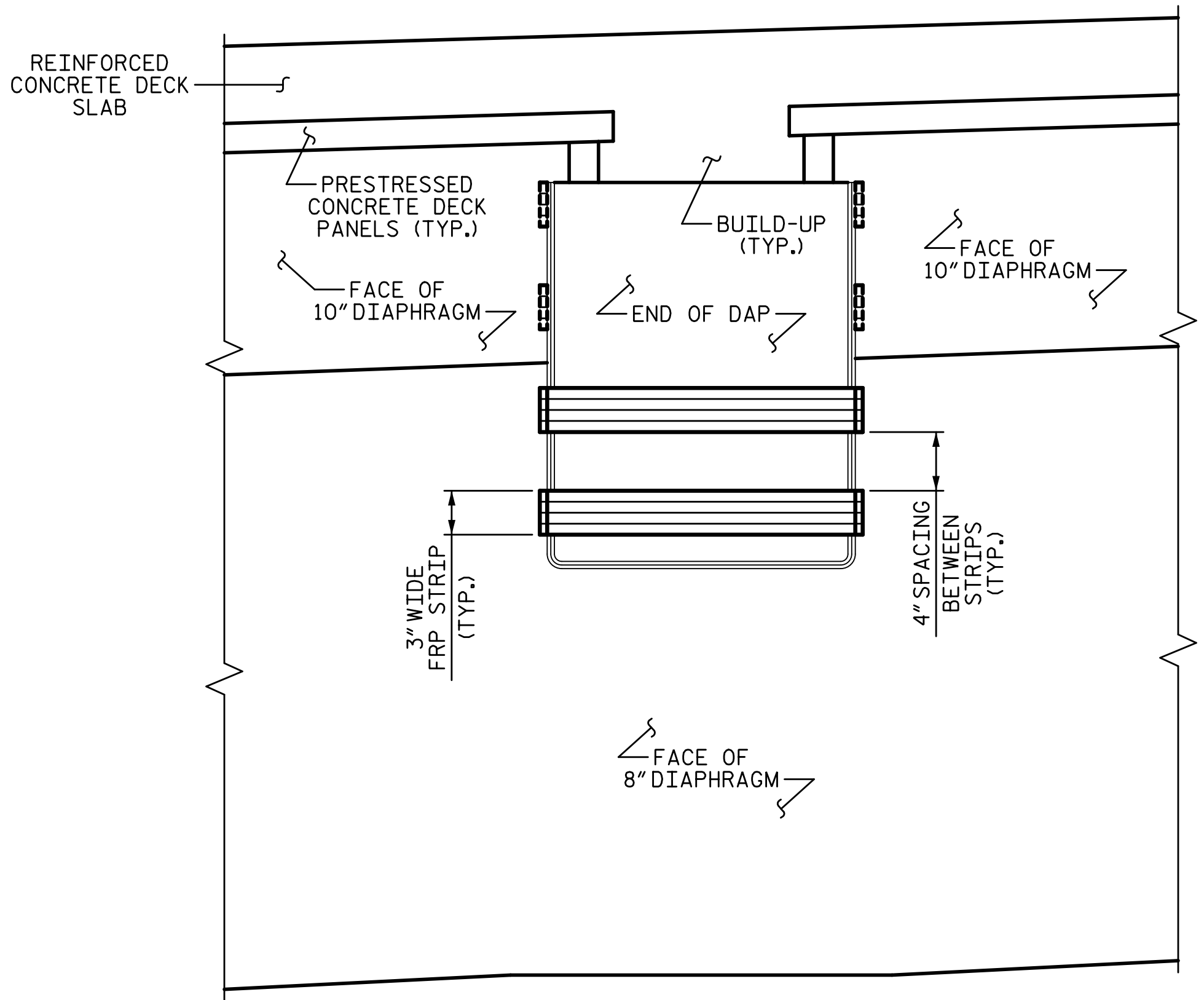
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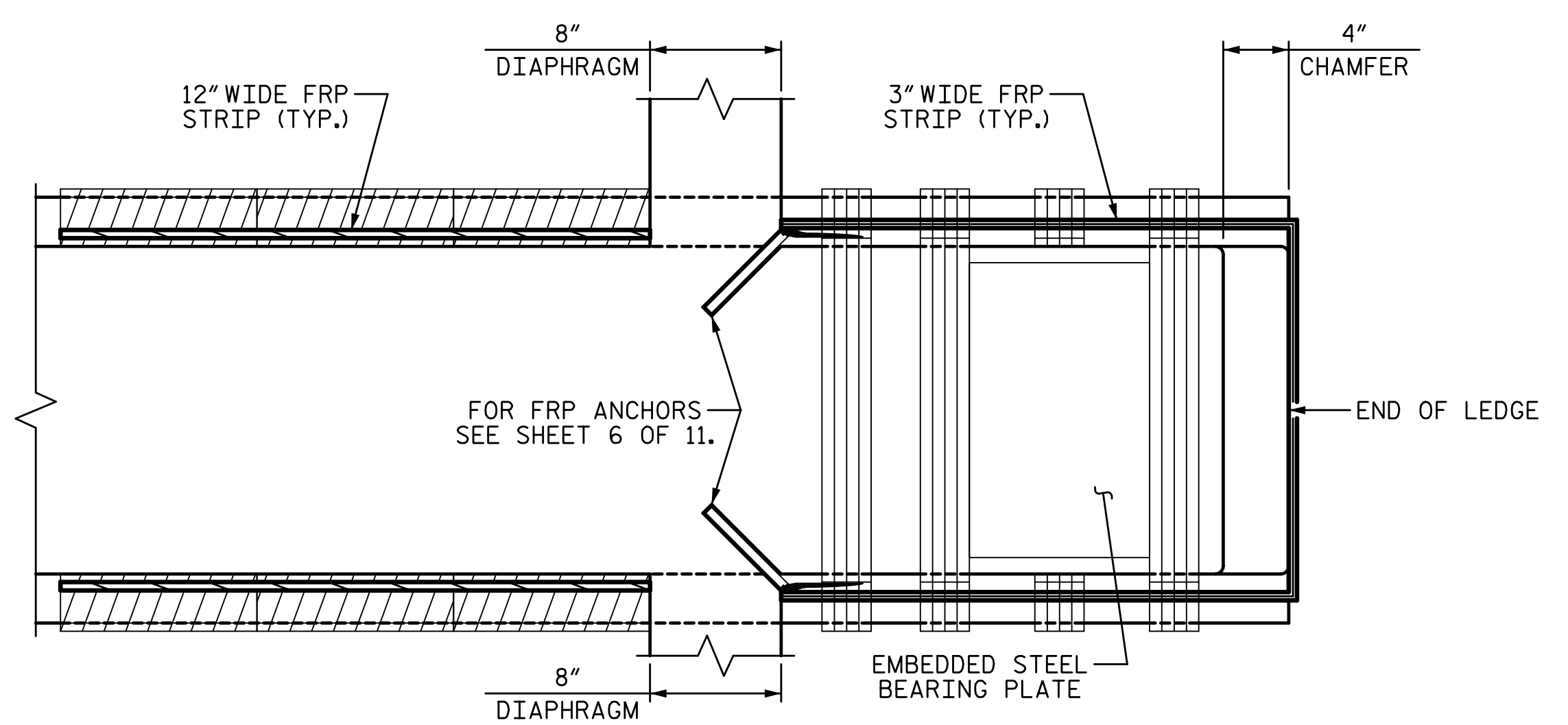
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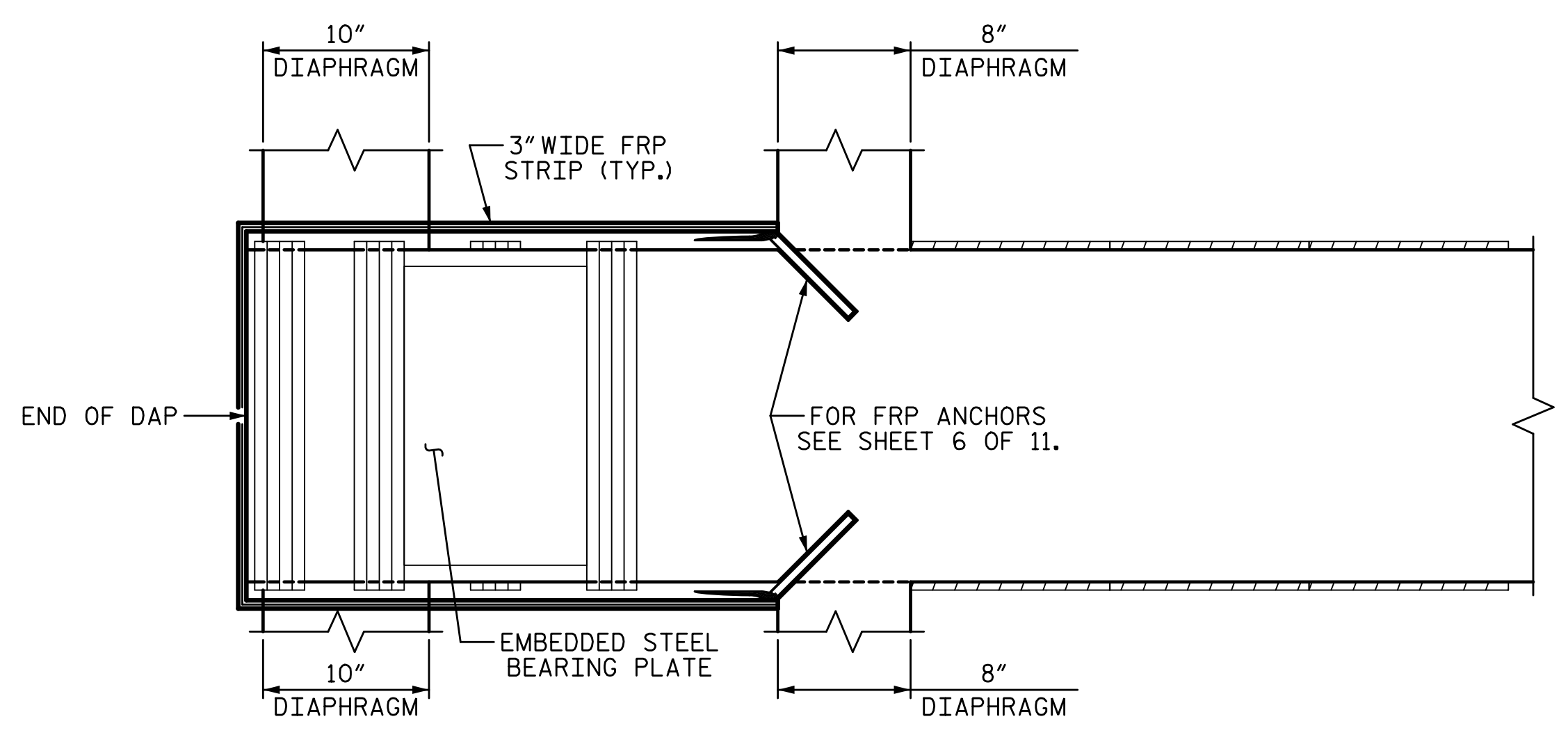
VIEW X-X



VIEW Y-Y



VIEW B-B
SHOWING TOP OF LEDGE



VIEW A-A
SHOWING BOTTOM OF DAP

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

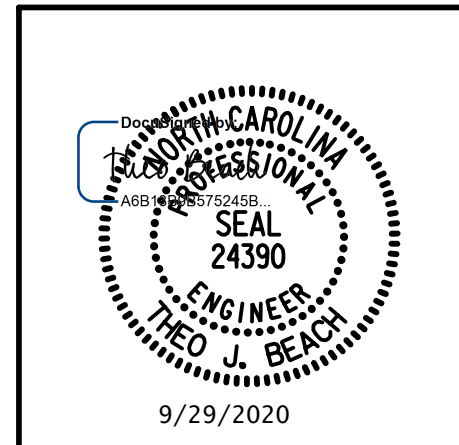
SHEET 9 OF 11

STATE OF NORTH CAROLINA
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 RALEIGH
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 FRP STRIPS LAYER 2
 FOR
 INTERIOR GIRDERS
 FRP HINGE REPAIR

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-147
1			3			TOTAL SHEETS
2			4			163

PLANS PREPARED BY:

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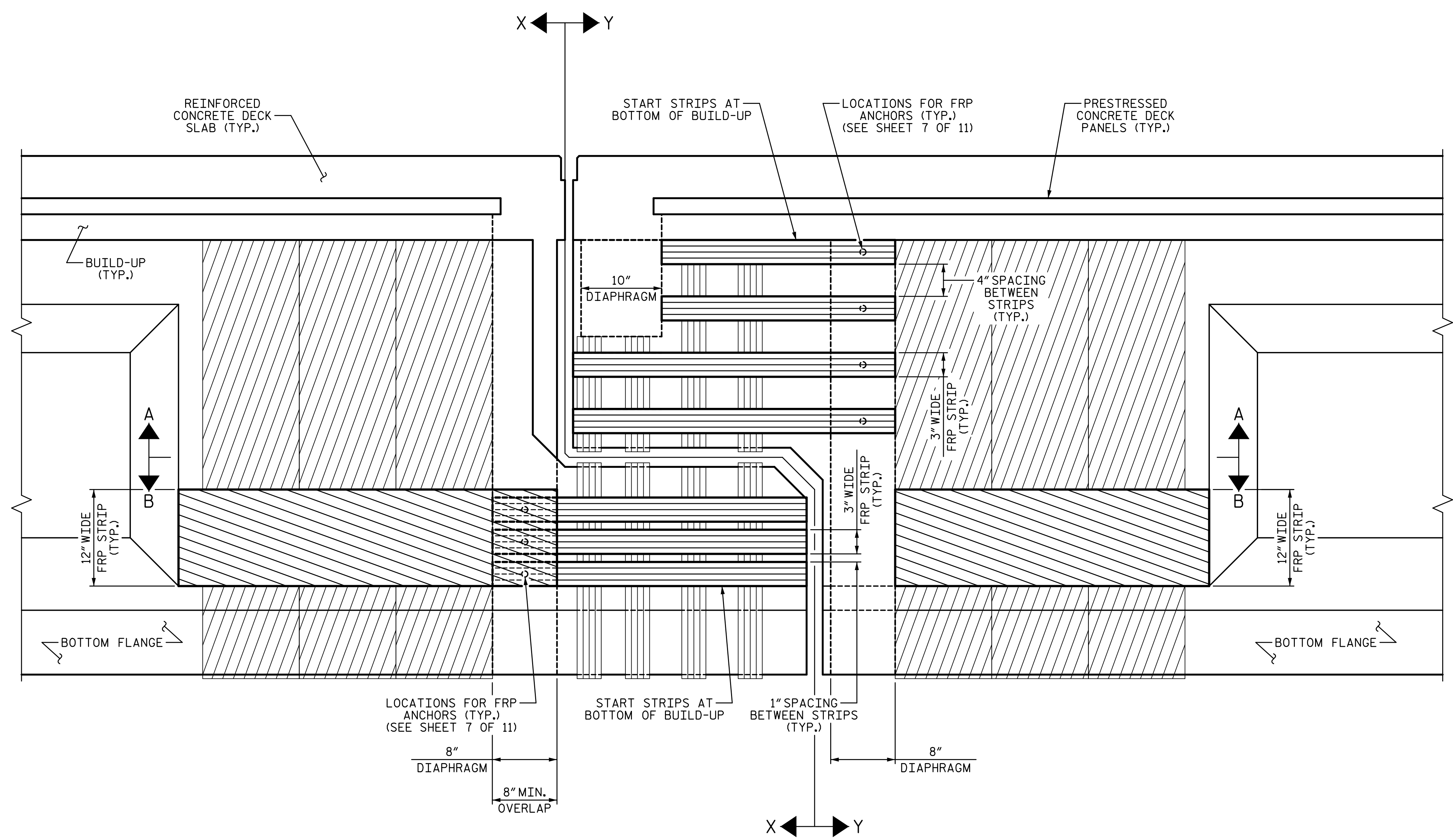


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DRAWN BY: T. BANKOVICH DATE: 9-20
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 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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NOTES:
 FOR VIEWS, SEE SHEET 11 OF 11.
 FRP ANCHORAGE SHALL BE INSTALLED PRIOR TO INSTALLATION OF FRP LAYER 2.



SECTION THRU HINGE

(EXTERIOR GIRDER 7 WEST HINGE SHOWN, EXTERIOR GIRDER 1 EAST HINGE SIMILAR AND EXTERIOR GIRDER 1 WEST HINGE AND GIRDER 7 EAST HINGE SIMILAR BY ROTATION)

- PREVIOUS 3" WIDE LAYER
- PREVIOUS 12" WIDE LAYER
- CURRENT 3" WIDE LAYER
- CURRENT 12" WIDE LAYER

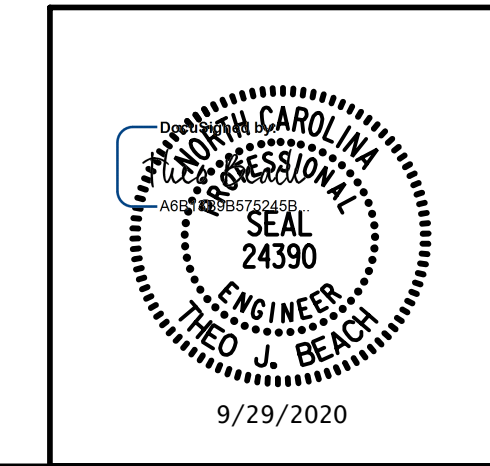
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 10 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 FRP STRIPS LAYER 2
 FOR
 EXTERIOR GIRDERS
 FRP HINGE REPAIR

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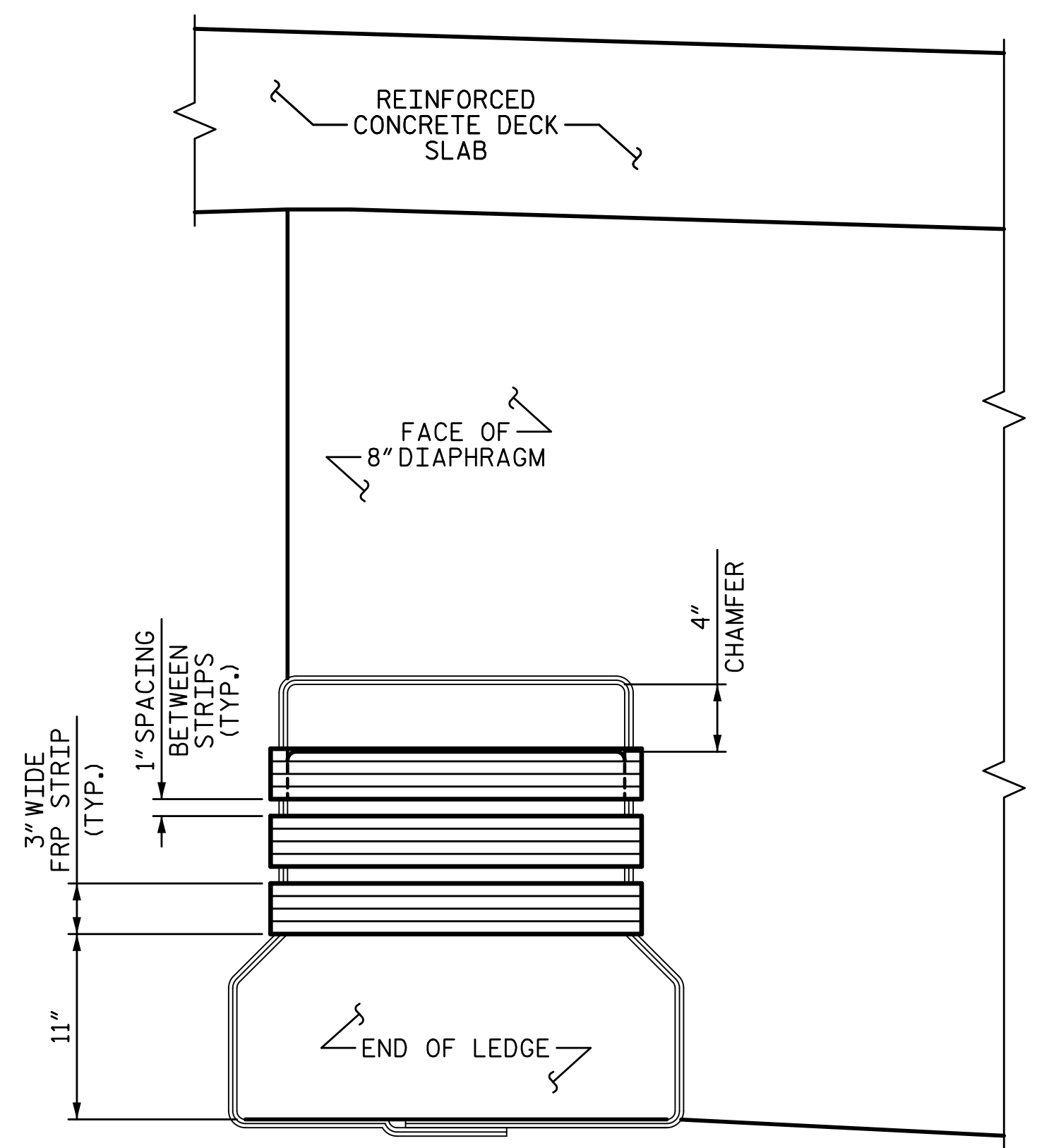


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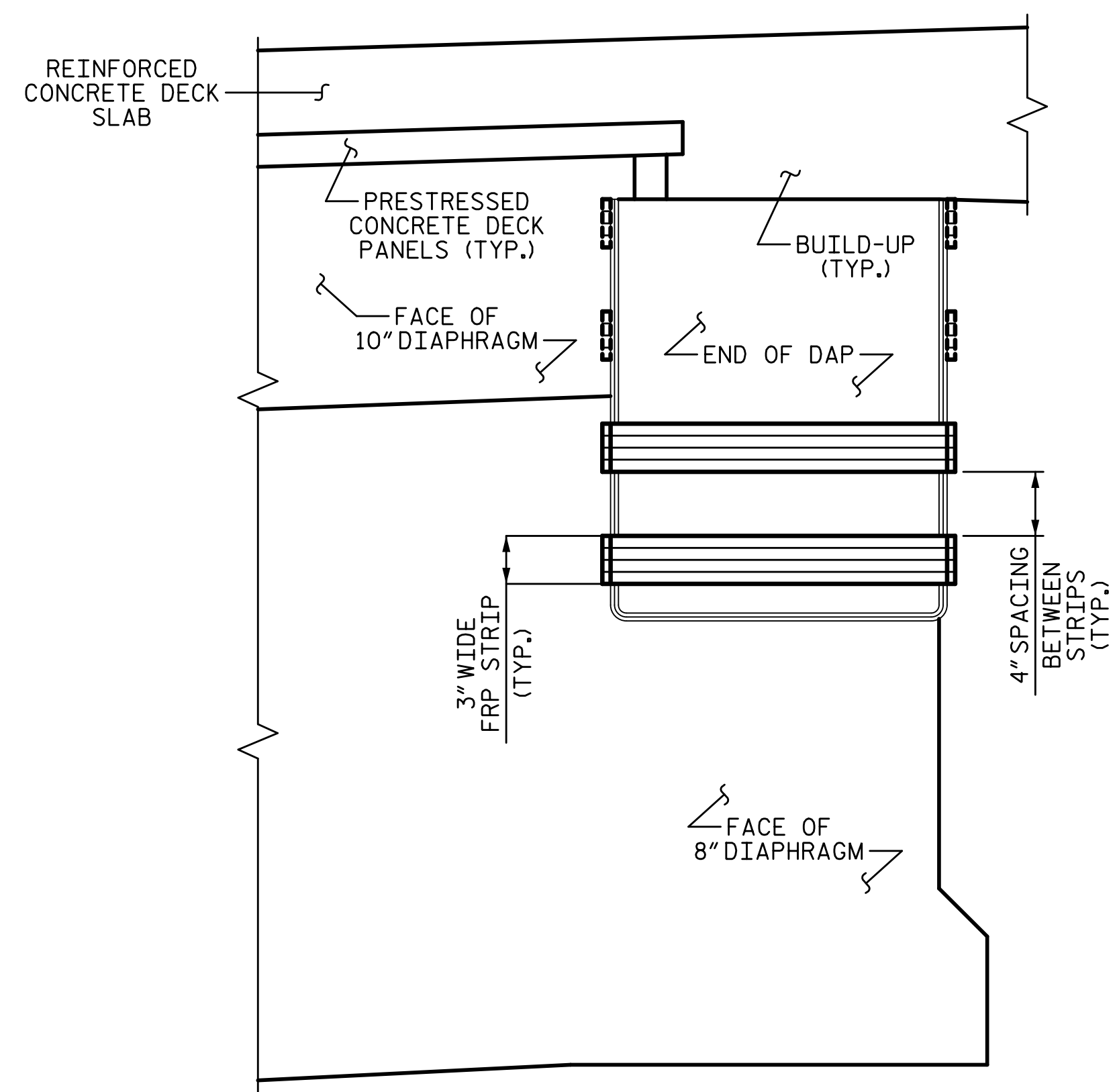
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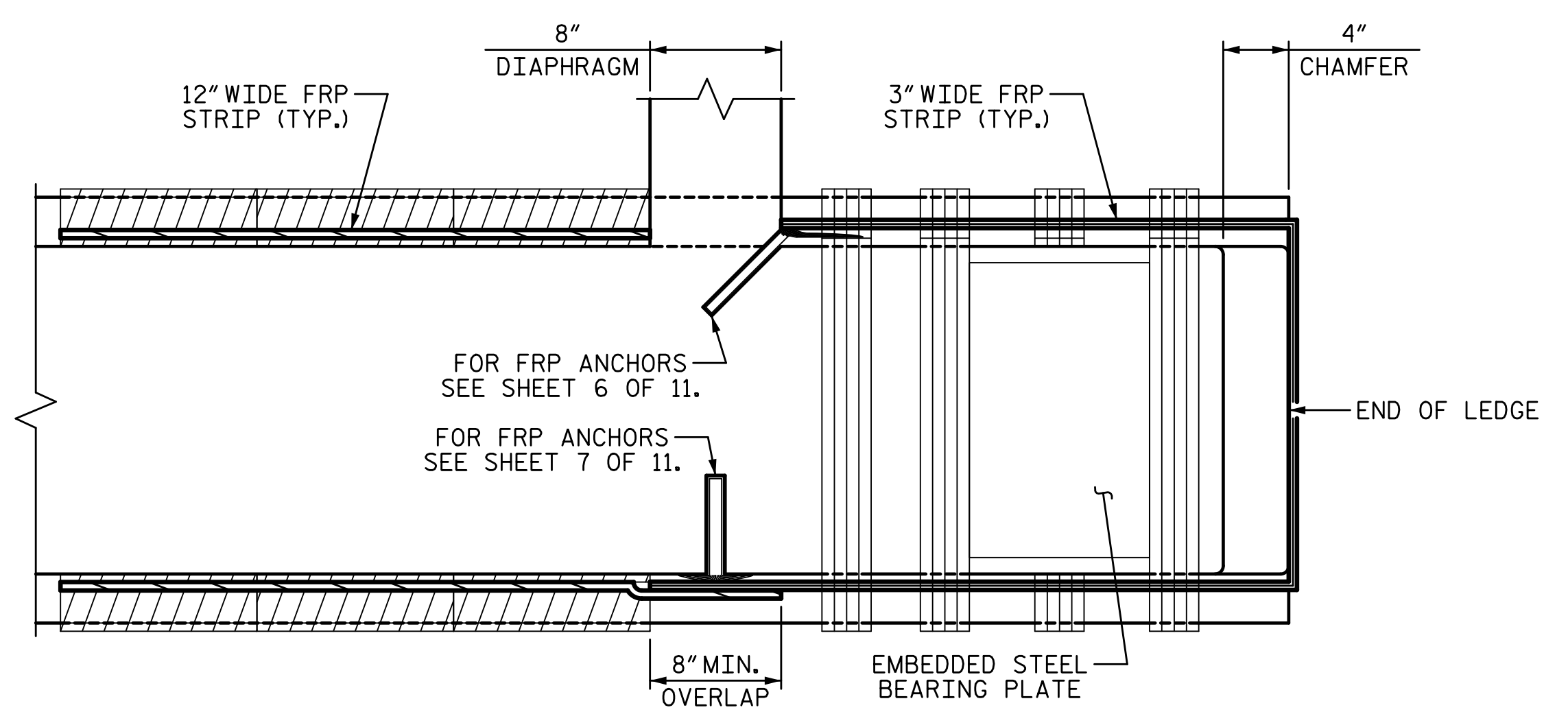
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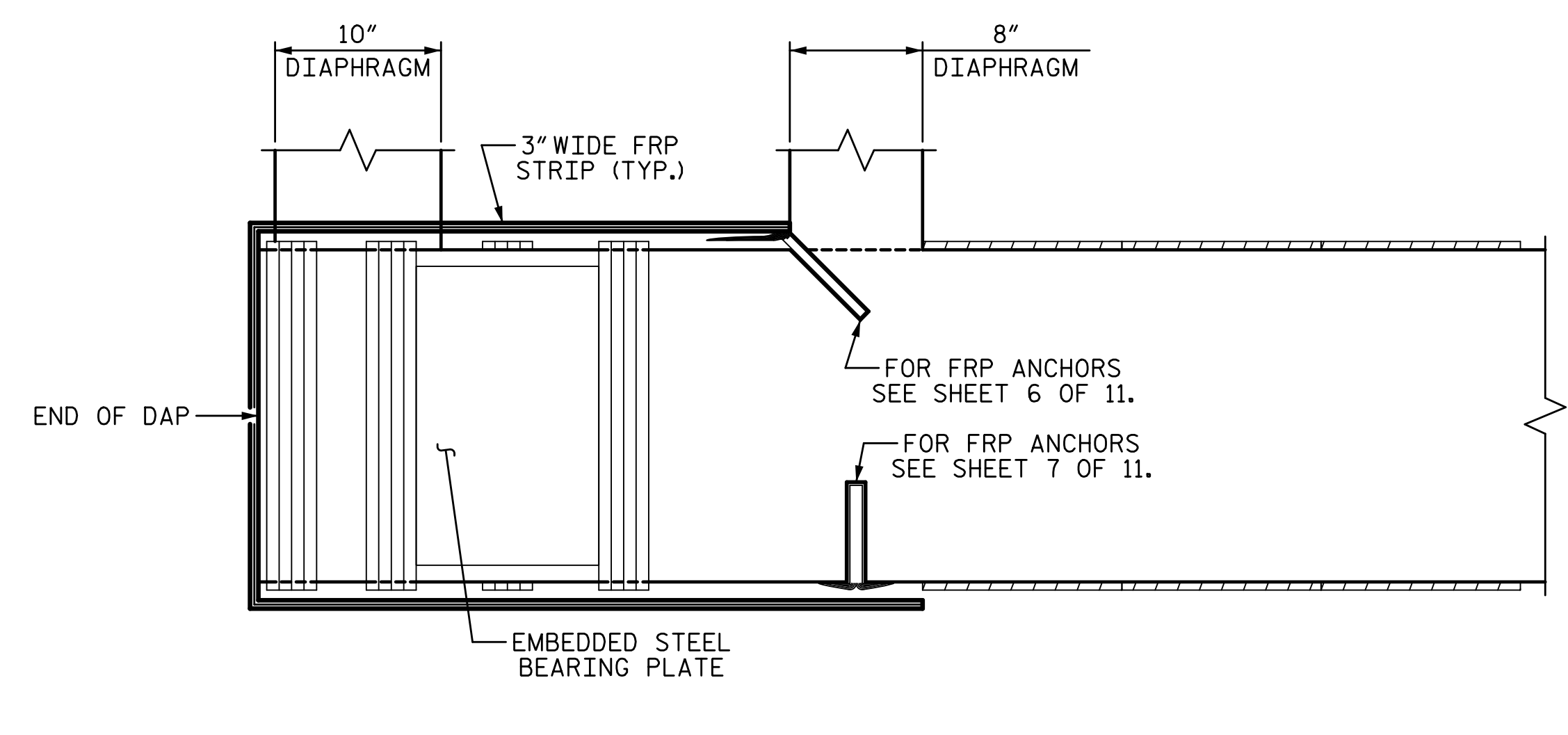
VIEW X-X



VIEW Y-Y



VIEW B-B
SHOWING TOP OF LEDGE

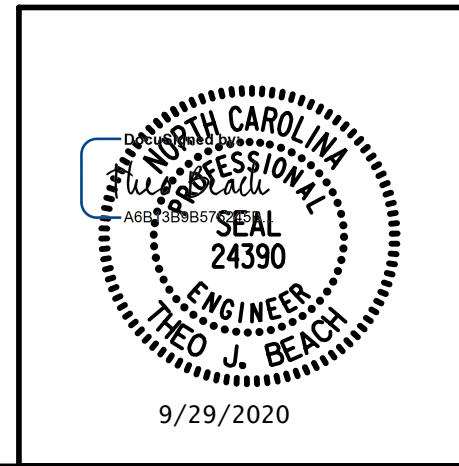


VIEW A-A
SHOWING BOTTOM OF DAP

BILL OF MATERIAL		
	INTERIOR GIRDER	EXTERIOR GIRDER
	SF	SF
LAYER 1	808	326
LAYER 2	234	101
TOTAL	1042	427
** FRP STRENGTHENING SYSTEM		1469 SF
TOTAL FRP ANCHORS		196
** QUANTITIES INCLUDED BOTH HINGE LOCATIONS FOR ALL INTERIOR AND EXTERIOR GIRDERS		

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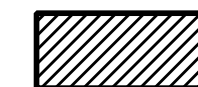
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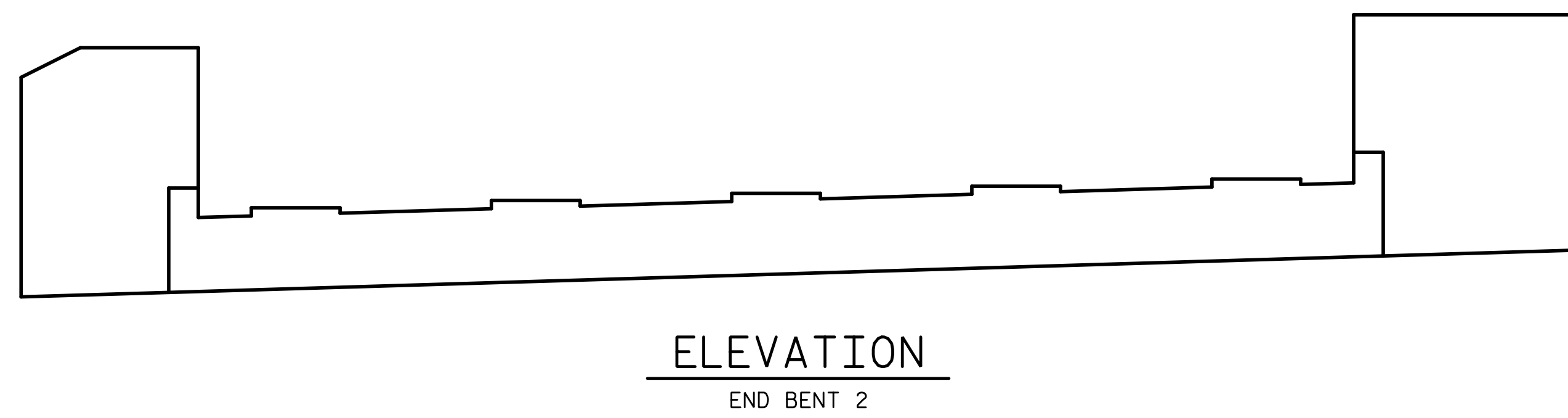
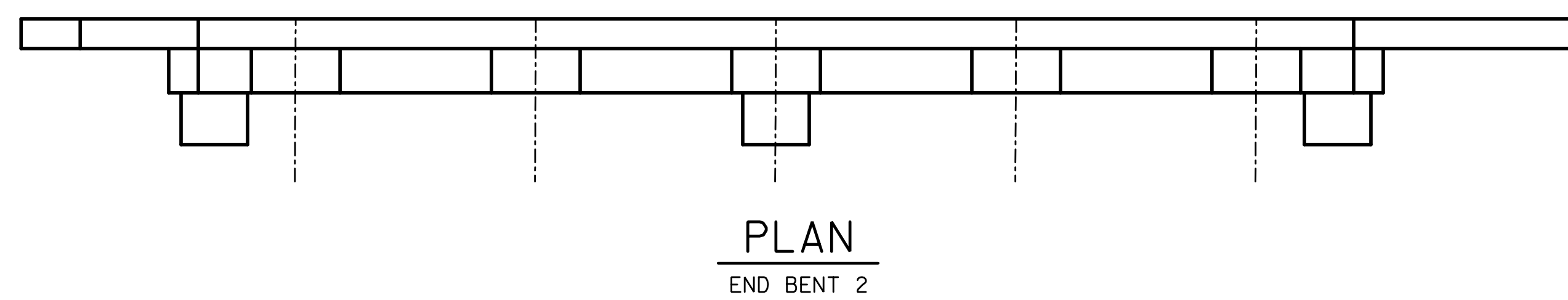
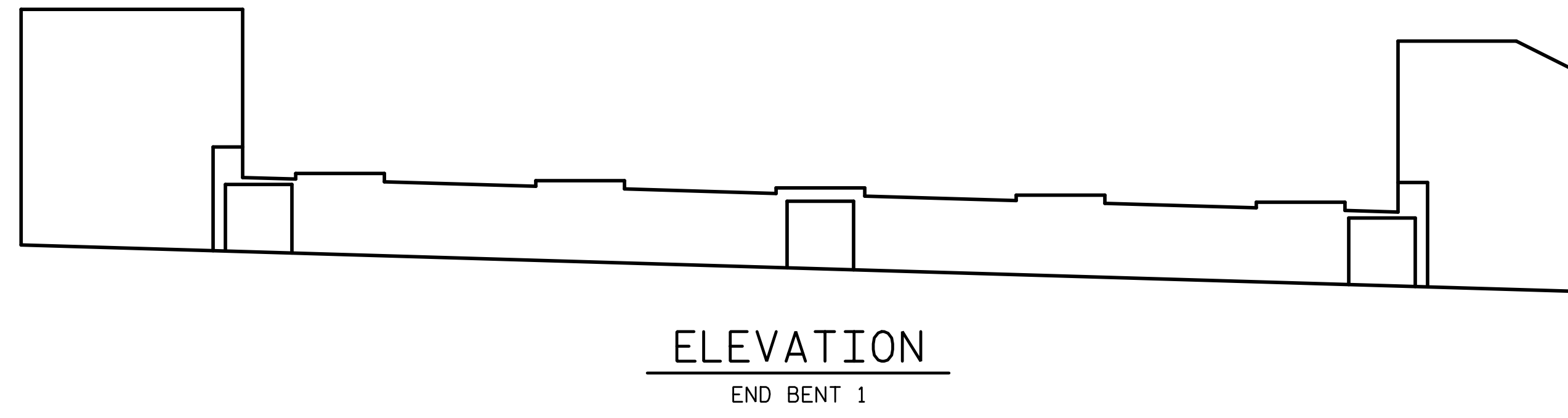
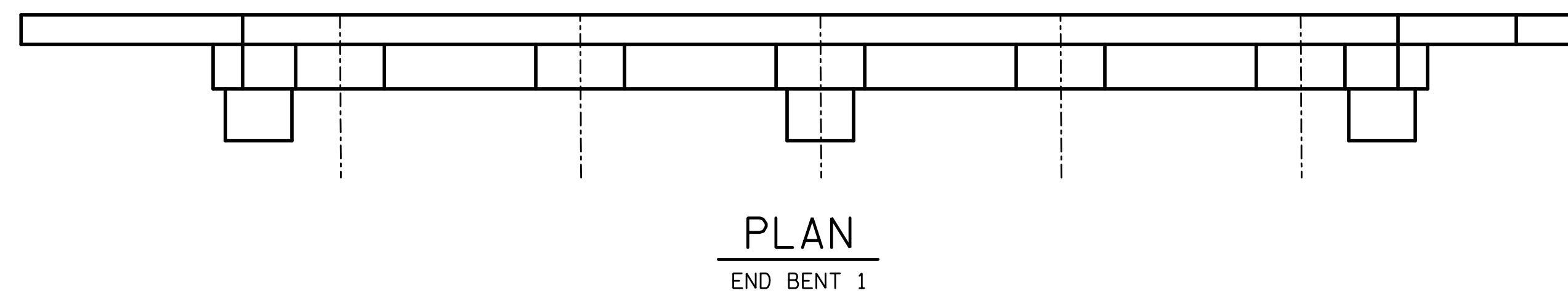
SHEET 11 OF 11
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 FRP STRIPS LAYER 2
 FOR
 EXTERIOR GIRDERS
 FRP HINGE REPAIR

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-149
1			3			TOTAL SHEETS
2			4			163

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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION



REPAIR QUANTITY TABLE					
REPAIRS END BENT 1	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
CAP		0.0			
EPOXY COATING			AREA SF		
TOP OF CAP & TOP OF PILE CAPS			102.0		
REPAIRS END BENT 2	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
CAP		0.0			
EPOXY COATING			AREA SF		
TOP OF CAP & TOP OF PILE CAPS			102.0		

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF END BENT CAP AND TOP OF PILE CAPS.

VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

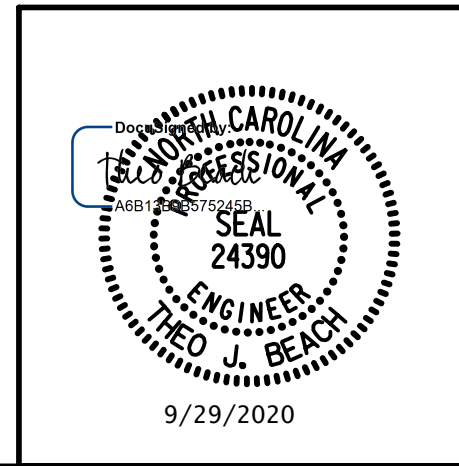
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 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

END BENT 1 & 2

REVISIONS						SHEET NO.
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1			3			163
2			4			

PLANS PREPARED BY:

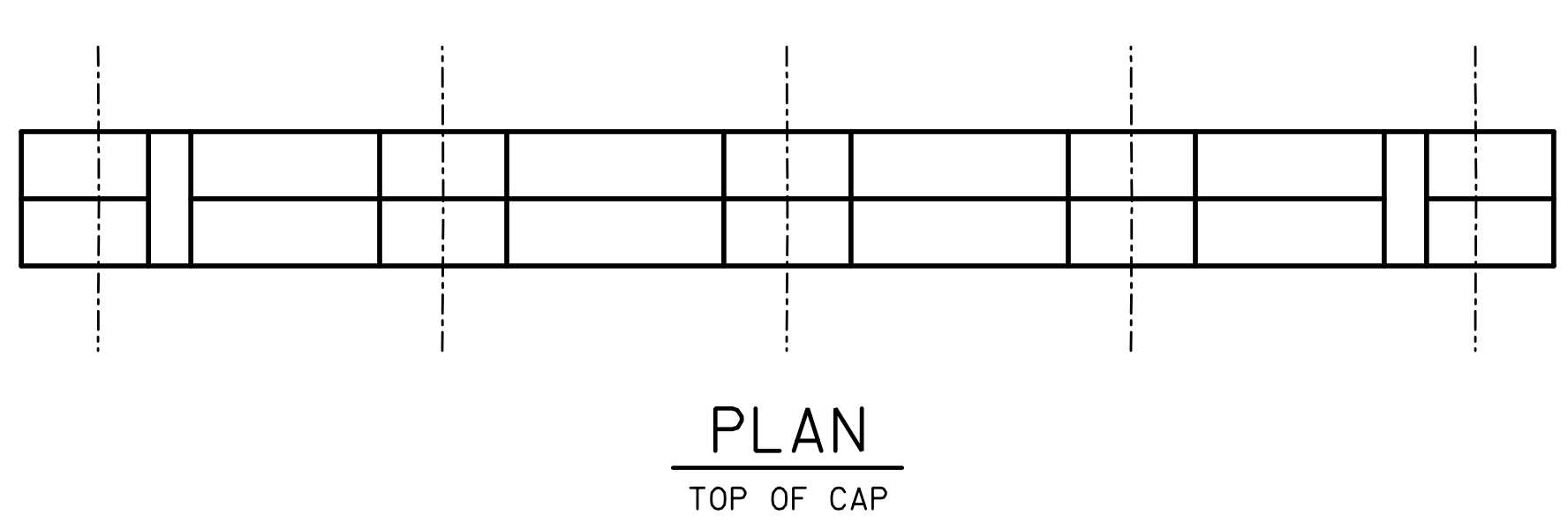
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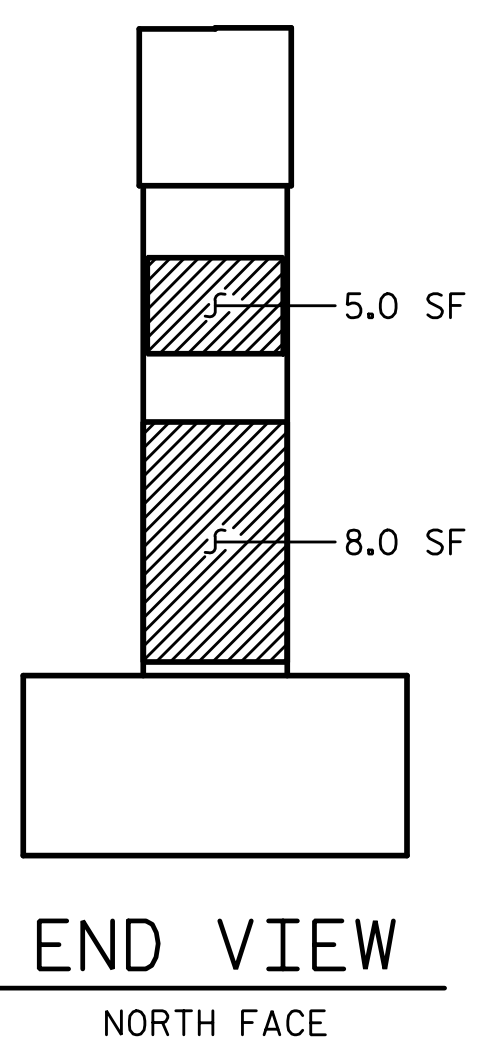
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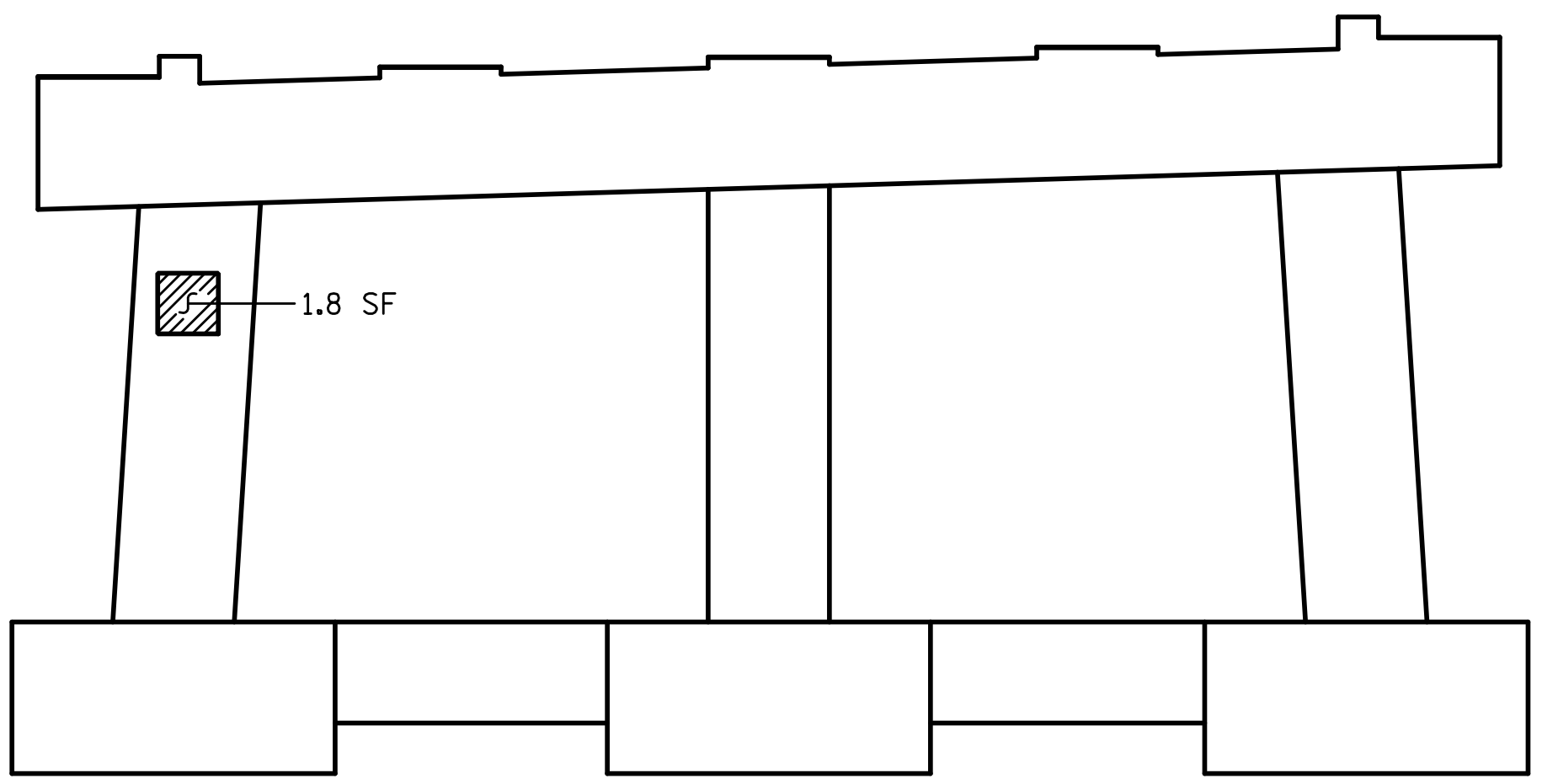
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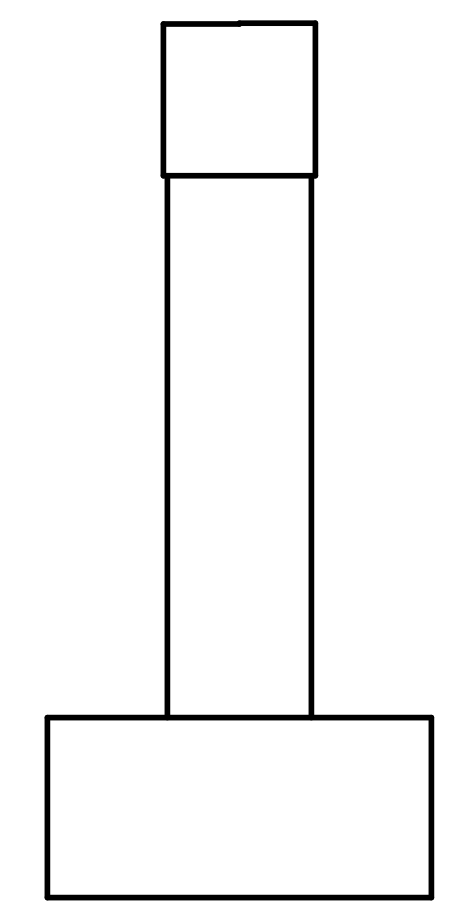
PLAN
TOP OF CAP



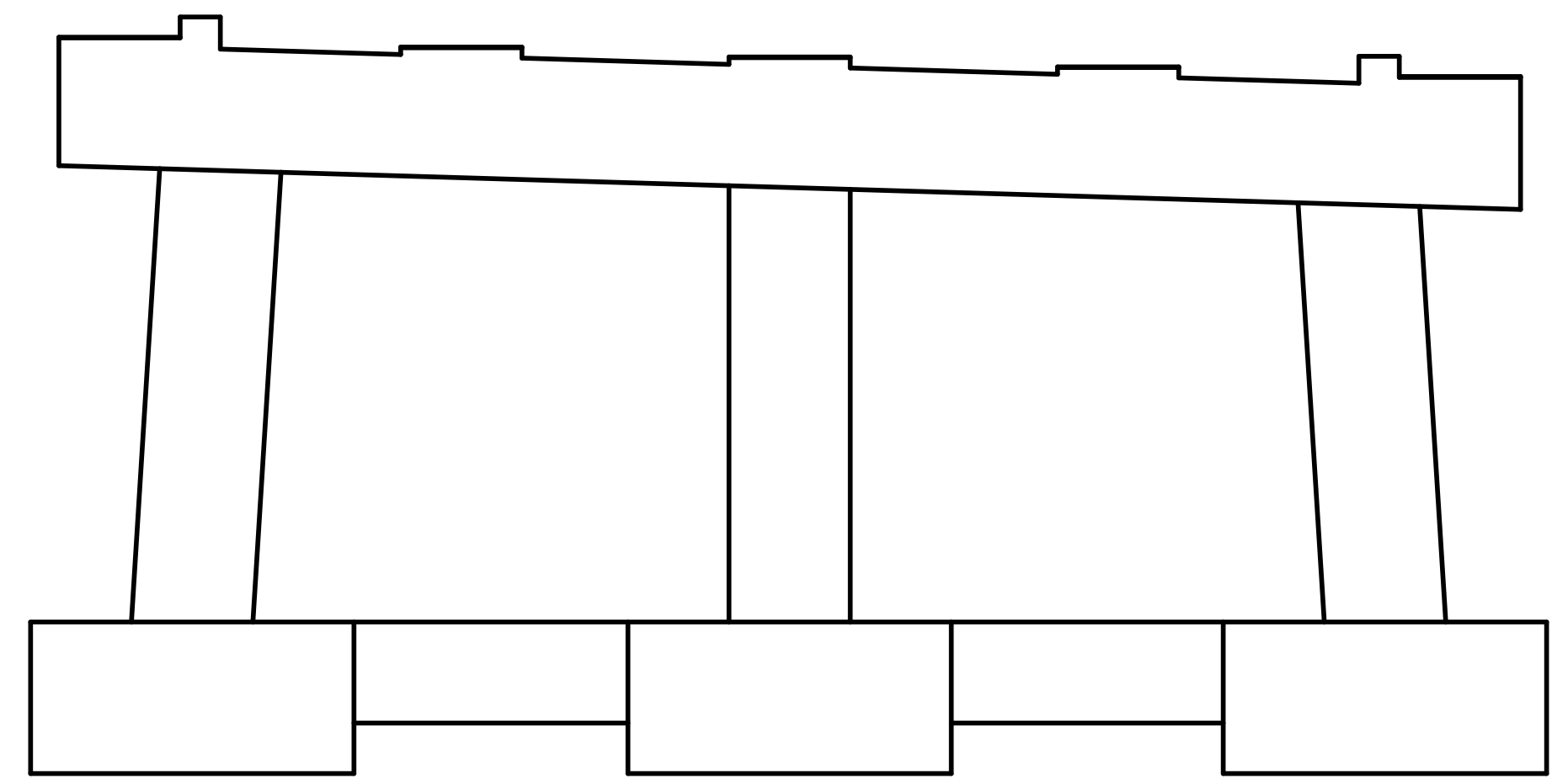
END VIEW
NORTH FACE



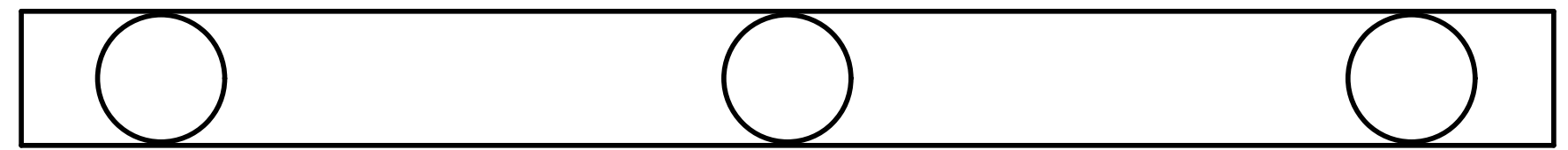
ELEVATION
SPAN 1



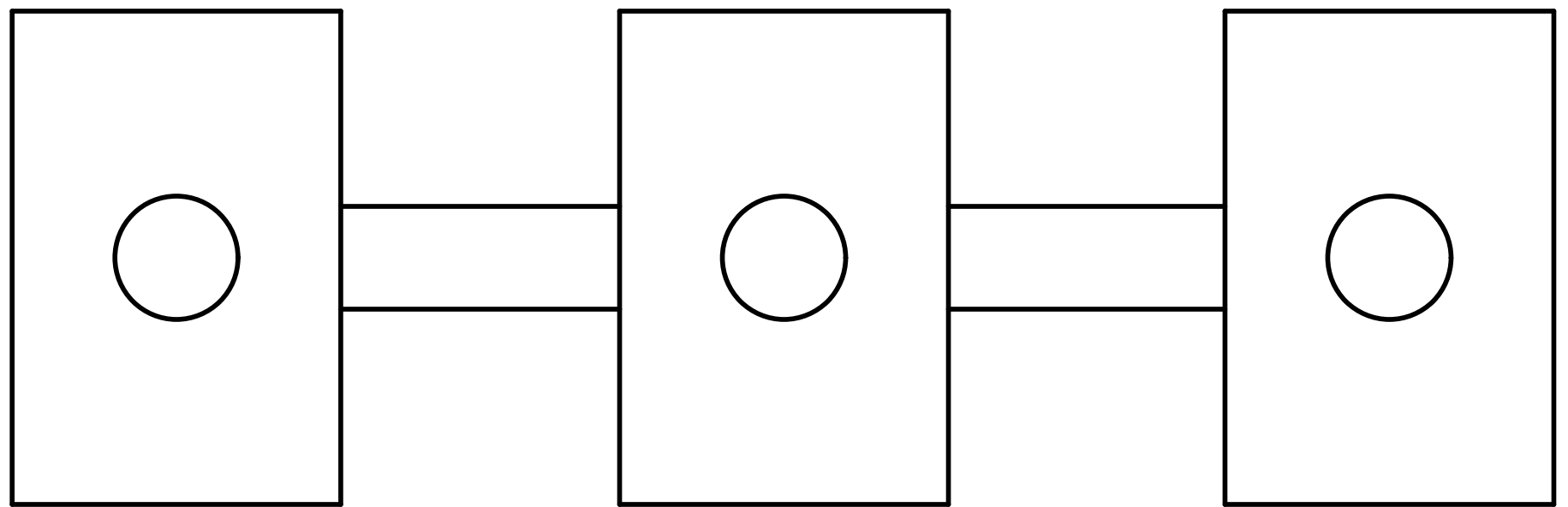
END VIEW
SOUTH FACE



ELEVATION
SPAN 2



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS BENT 1	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	14.8	2.7			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

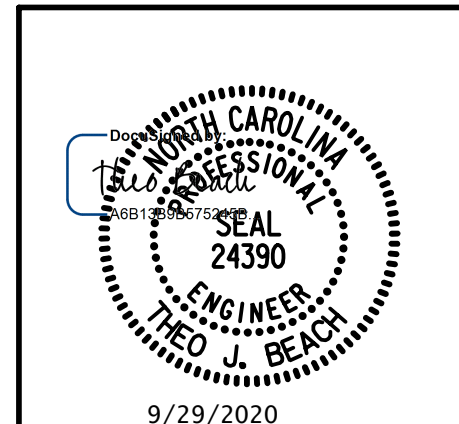
FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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PRESERVATION

BENT 1



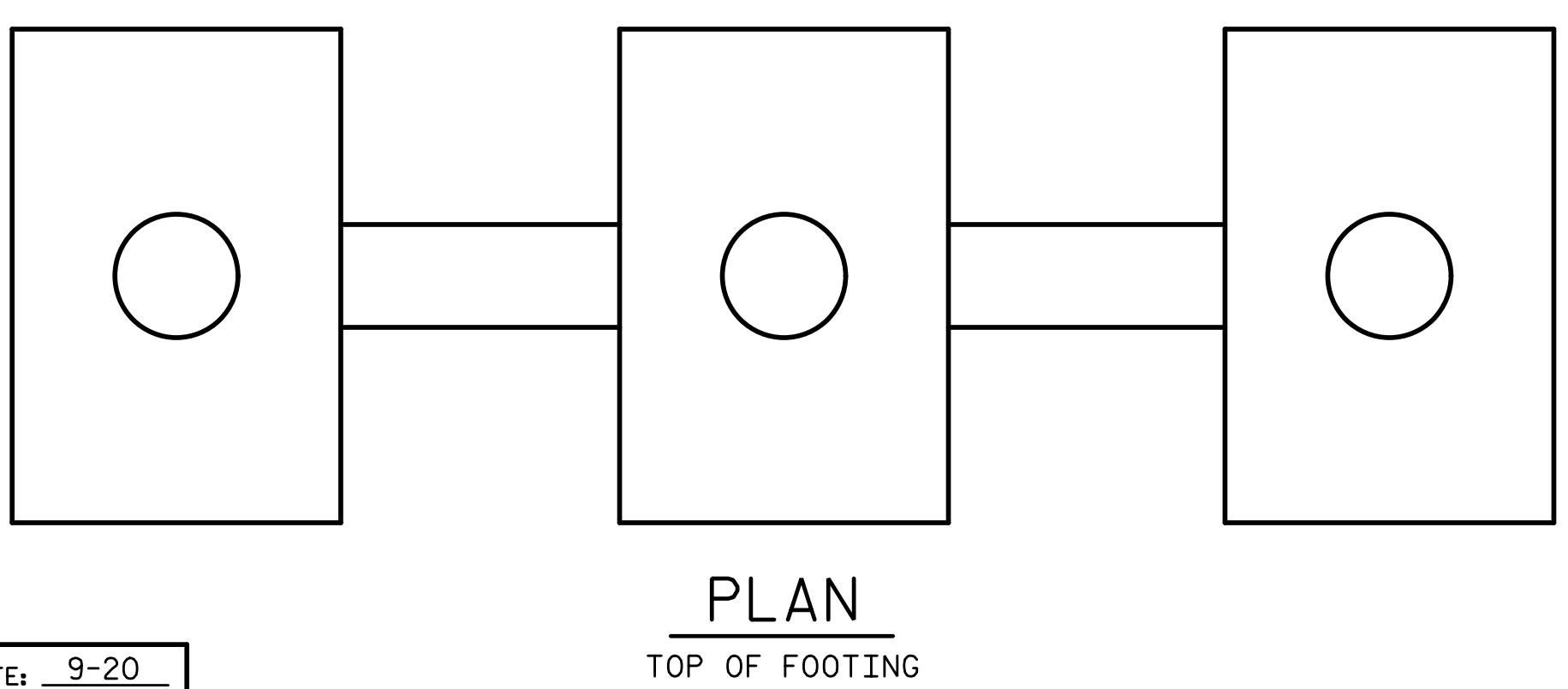
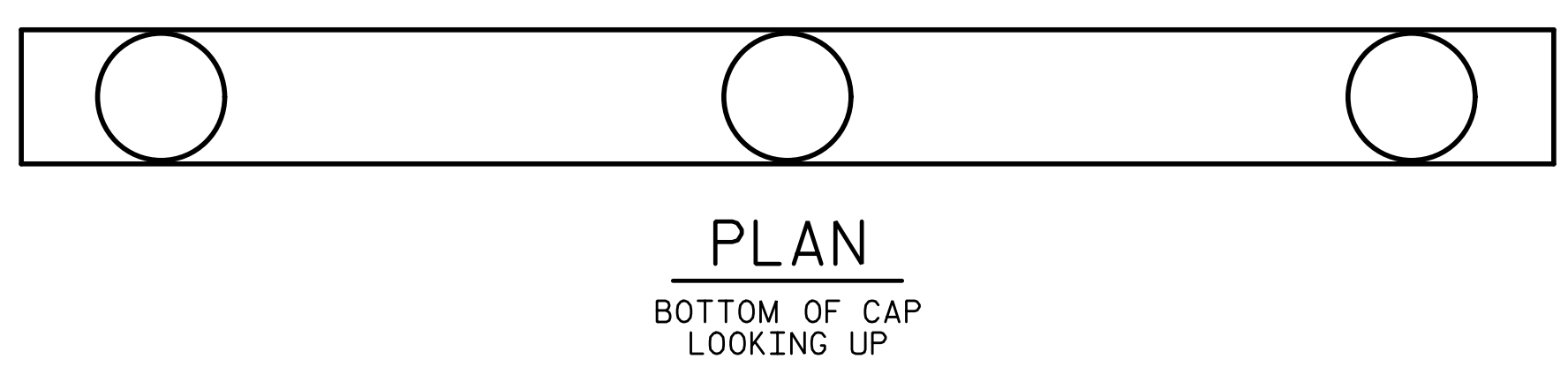
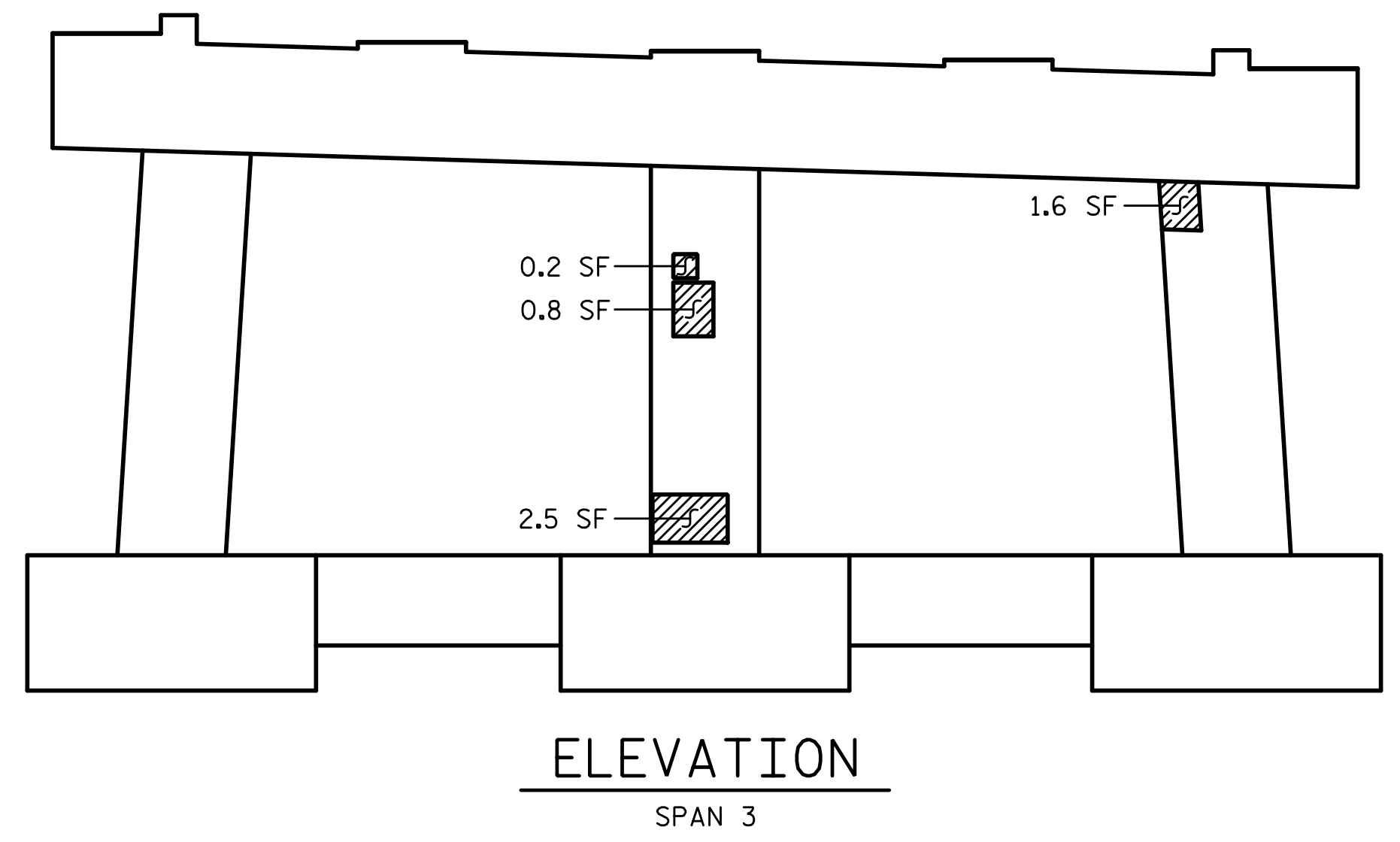
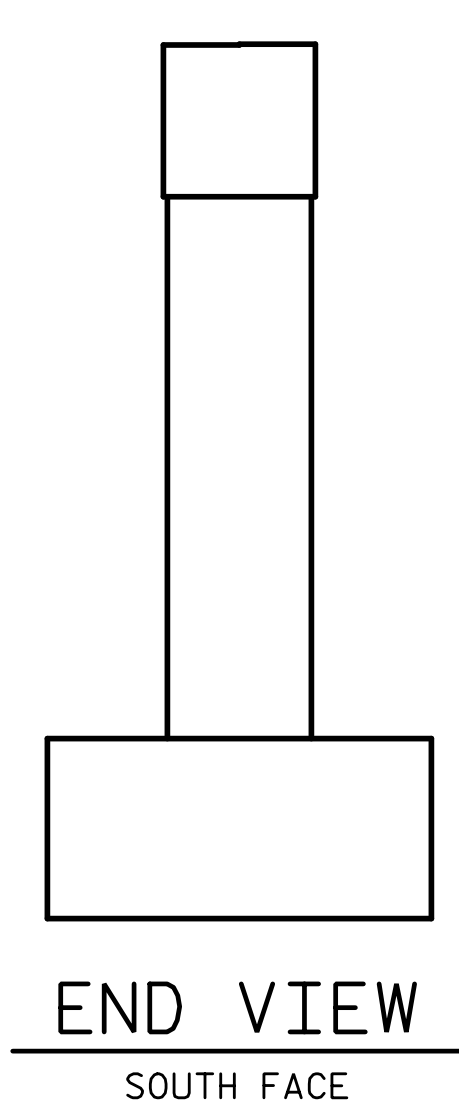
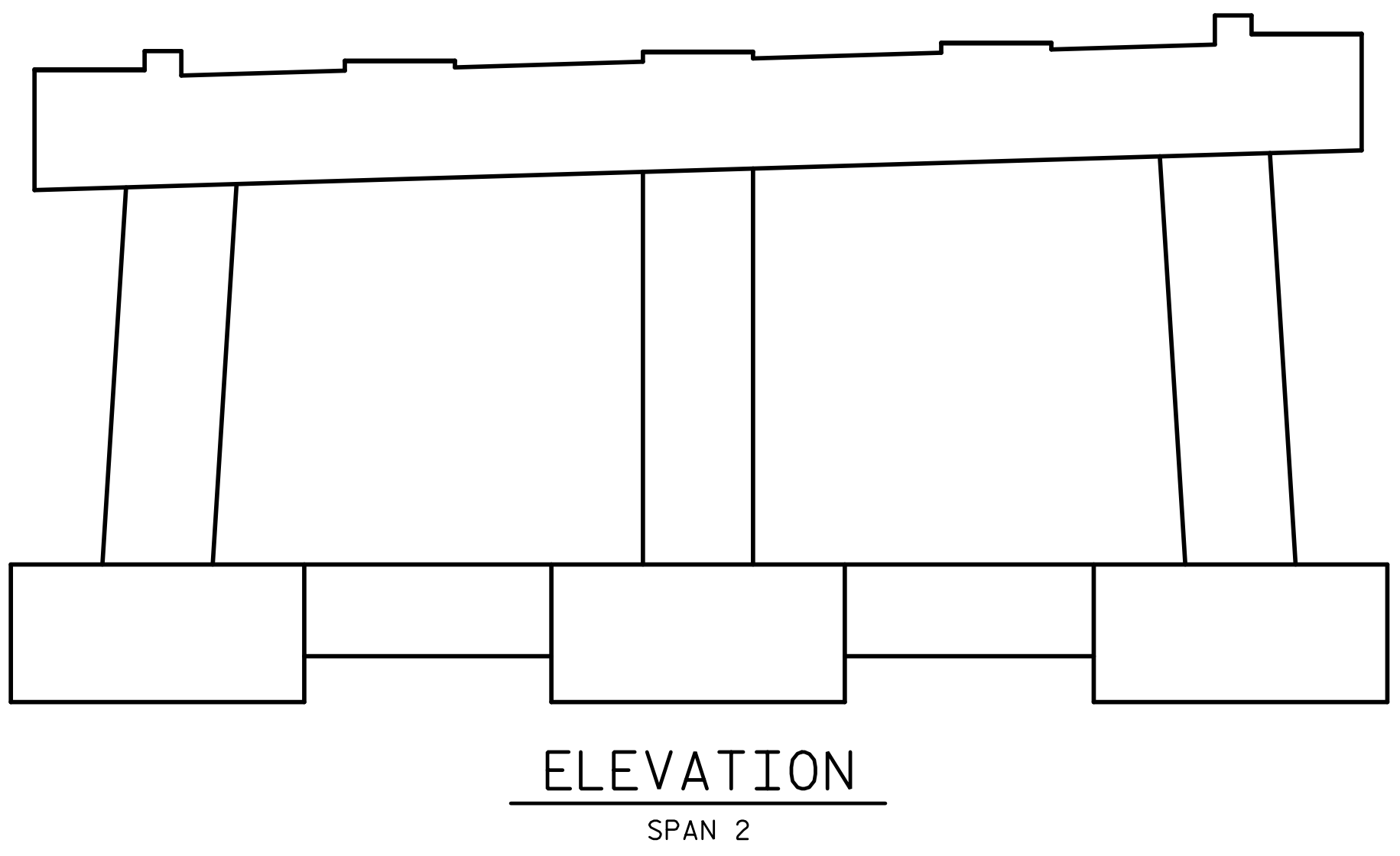
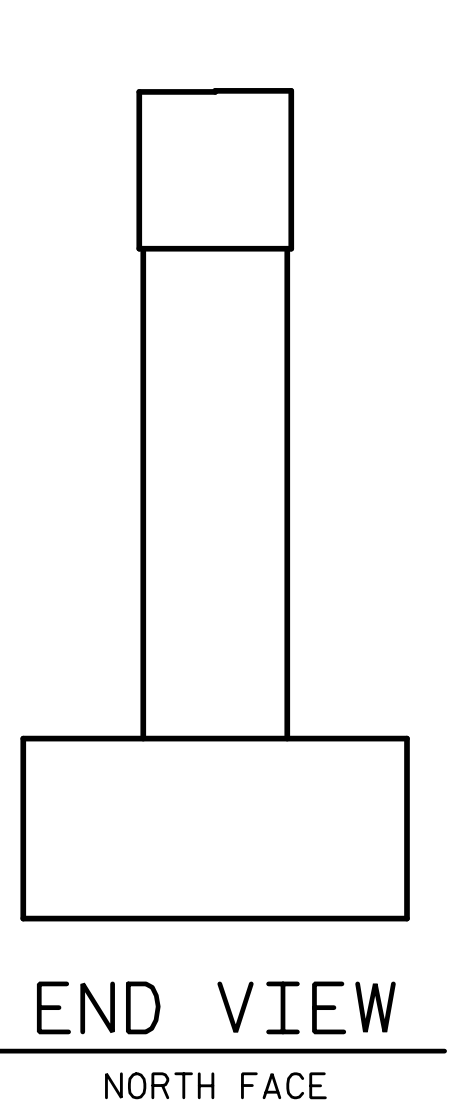
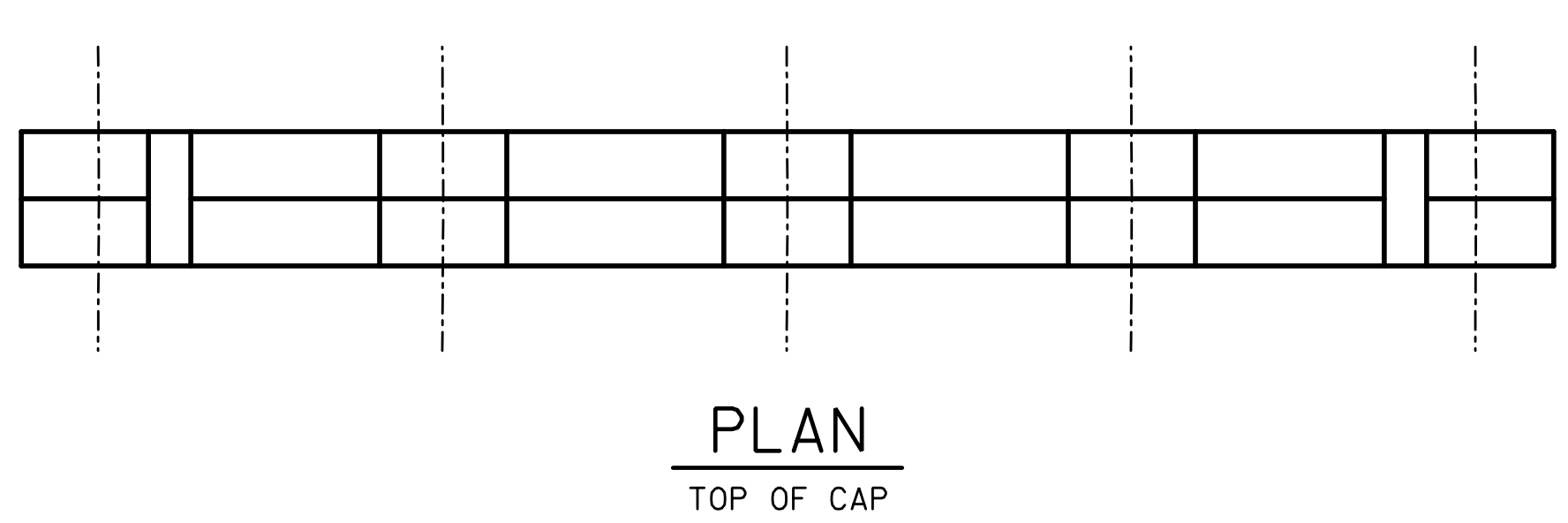
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SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS BENT 2	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	5.1	1.7			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			

NOTES:

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FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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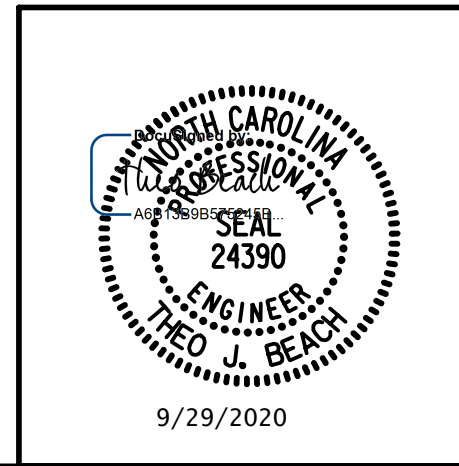
STATE OF NORTH CAROLINA
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BENT 2

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1			3			TOTAL SHEETS
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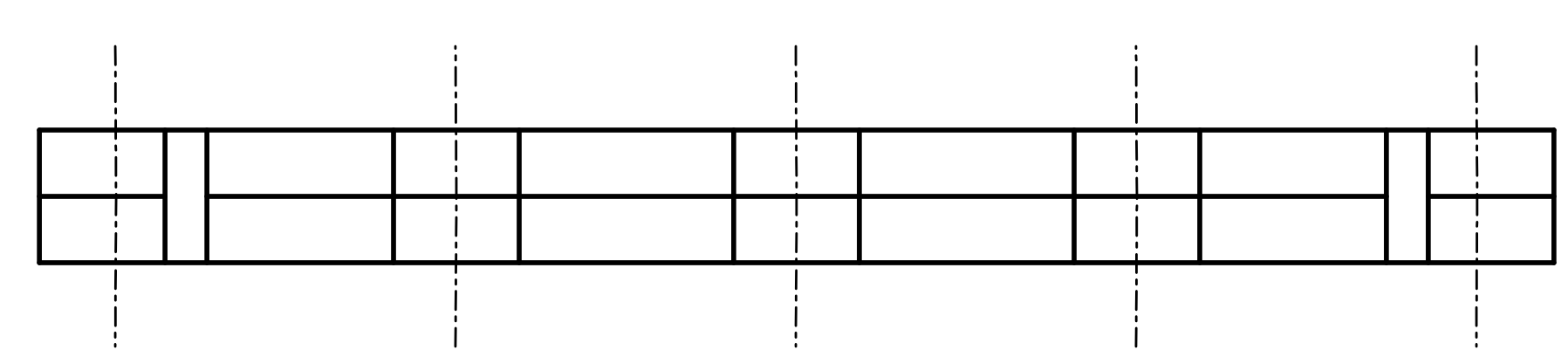
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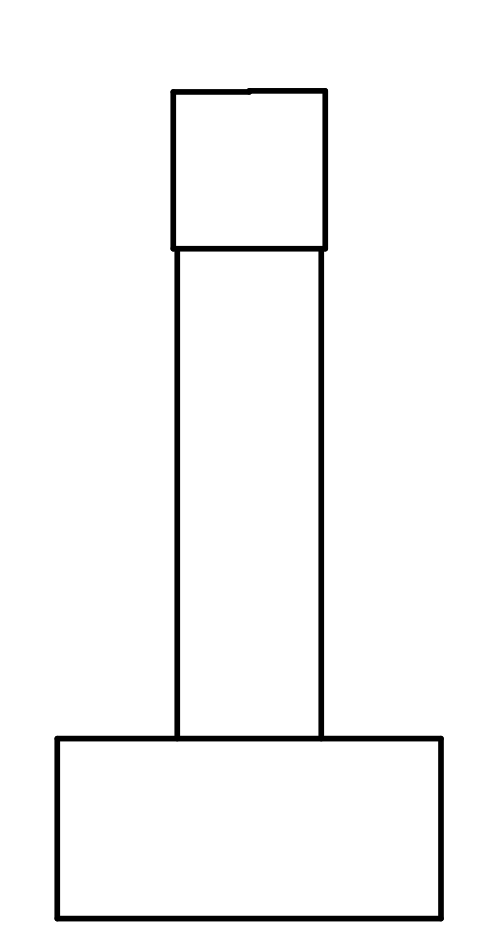
PLAN
TOP OF CAP

SPAN 4

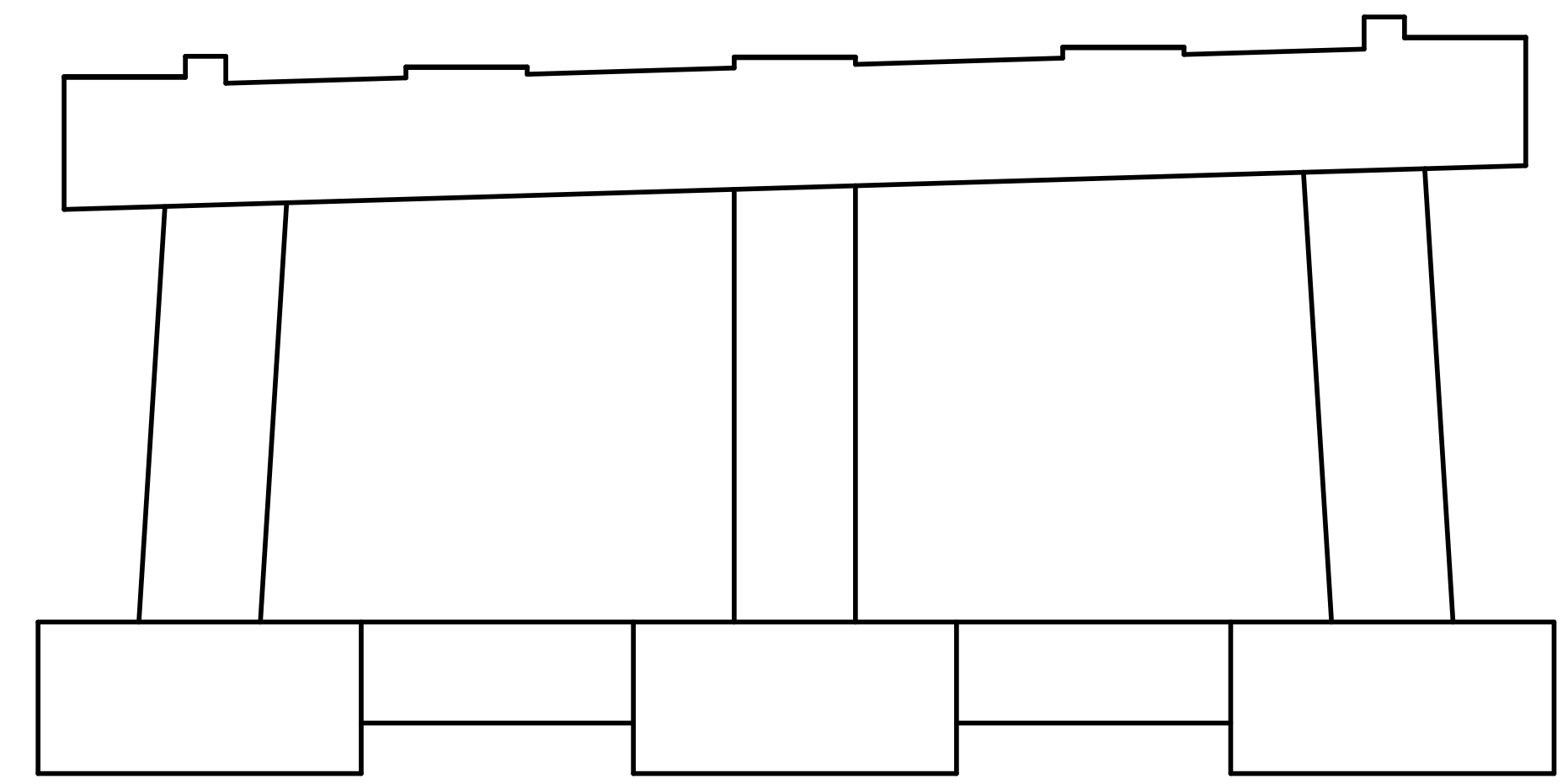
SPAN 3

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

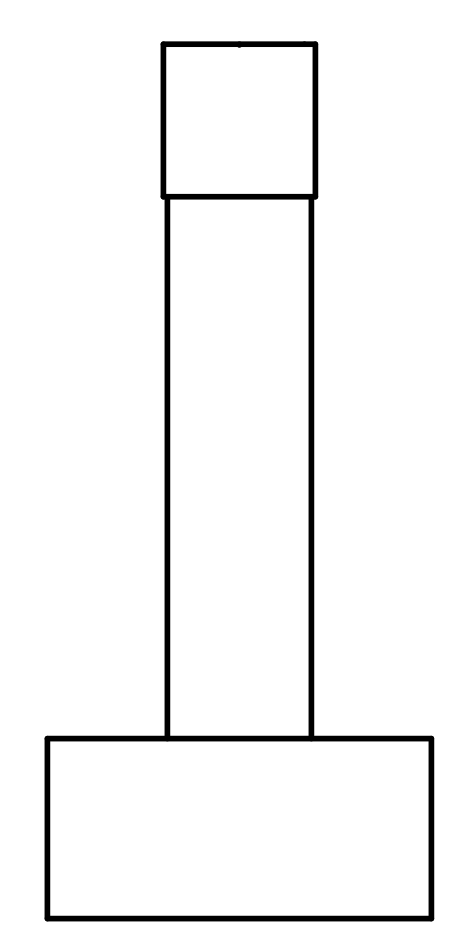
REPAIR QUANTITY TABLE					
REPAIRS BENT 3	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	0.0	0.0			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			



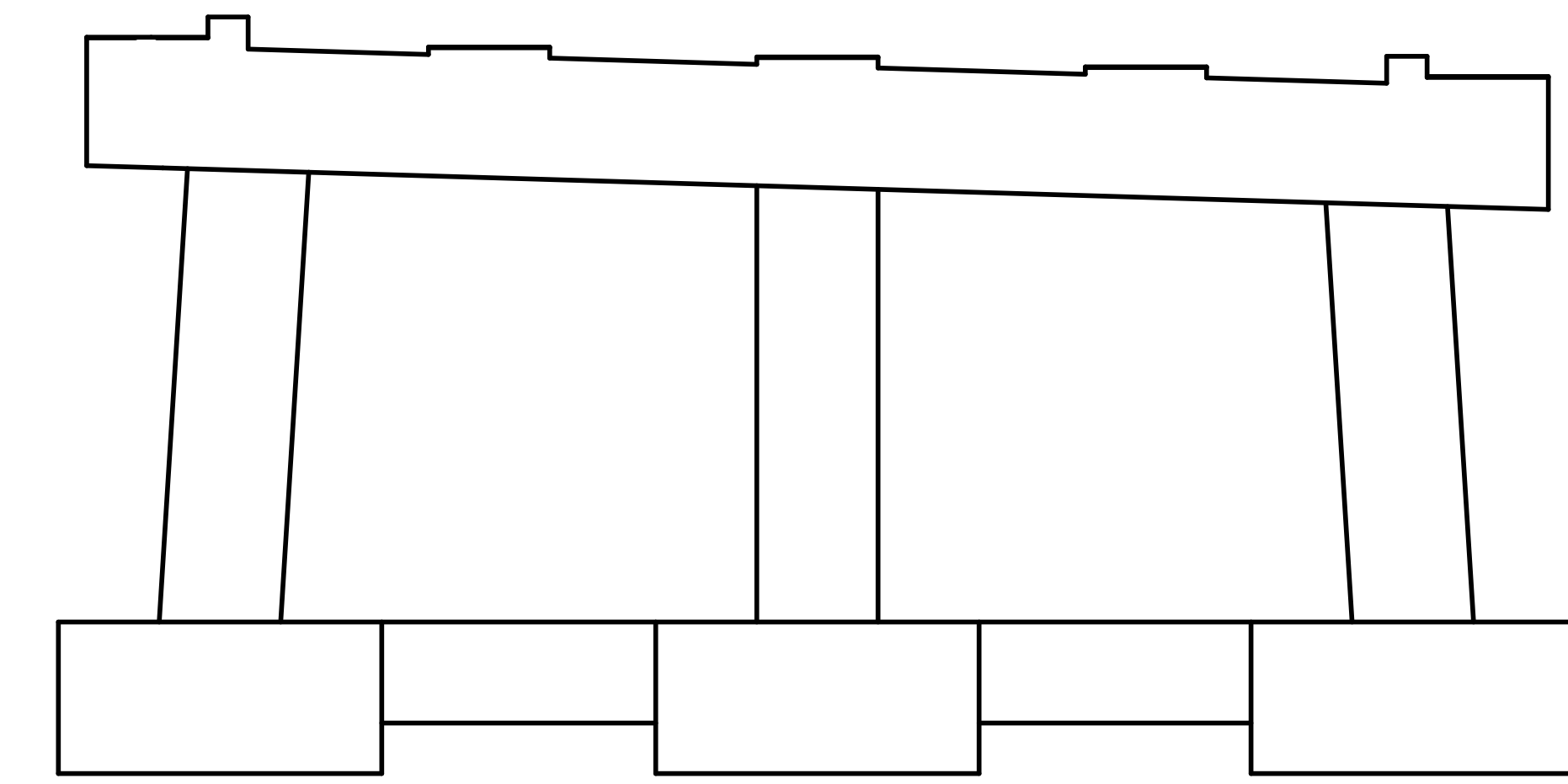
END VIEW
NORTH FACE



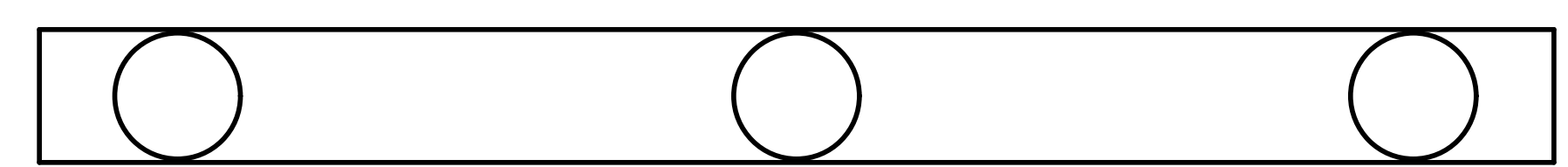
ELEVATION
SPAN 3



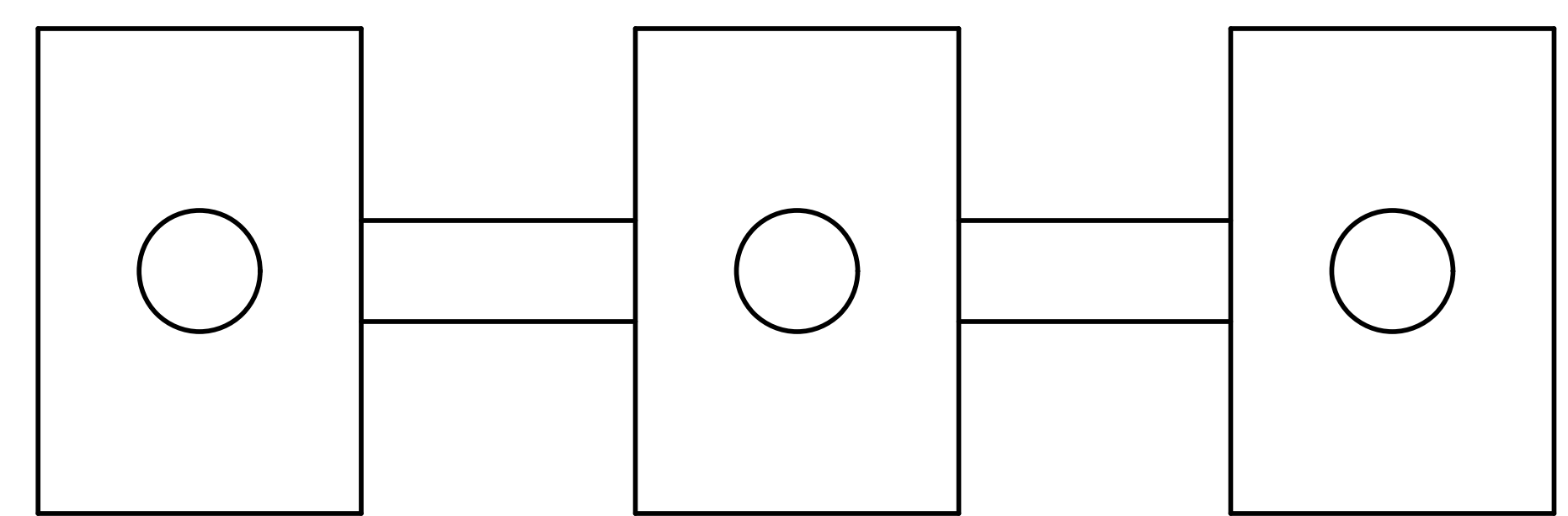
END VIEW
SOUTH FACE



ELEVATION
SPAN 4



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

NOTES:

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FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

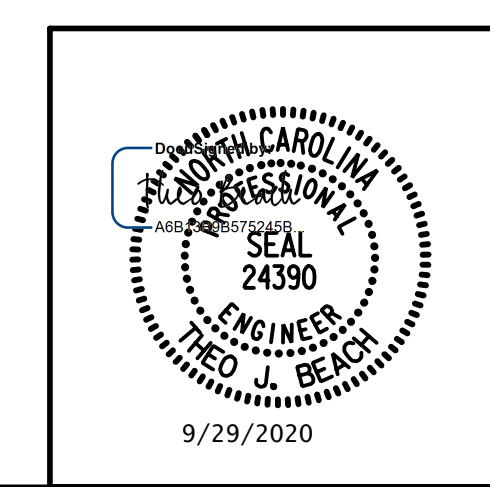
VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

BENT 3

PLANS PREPARED BY:
SE & A
SIMPSON ENGINEERS & ASSOCIATES
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Cary, NC 27518
(919) 852-0468
(919) 852-0598 (Fax)
www.simpsonengr.com
LICENSURE NO. C-2521

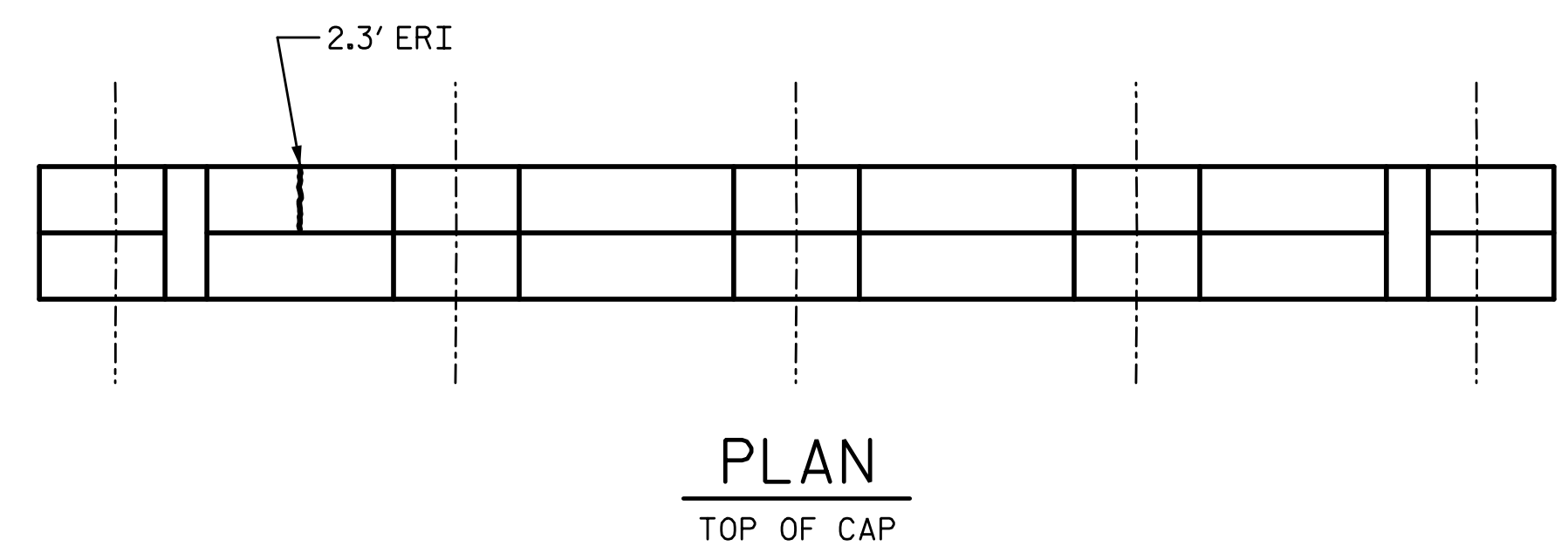


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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-153
1			3			TOTAL SHEETS
2			4			163

DRAWN BY: T. BANKOVICH	DATE: 9-20
CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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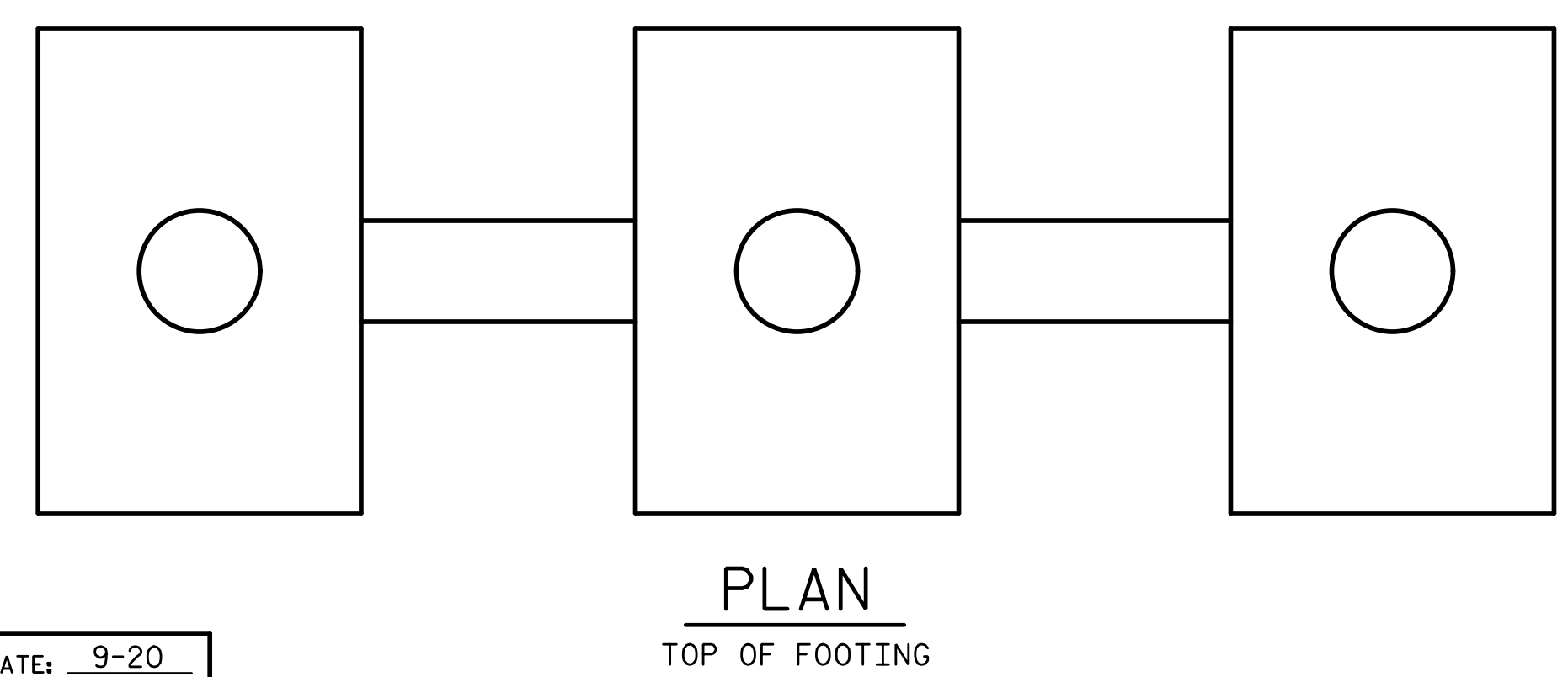
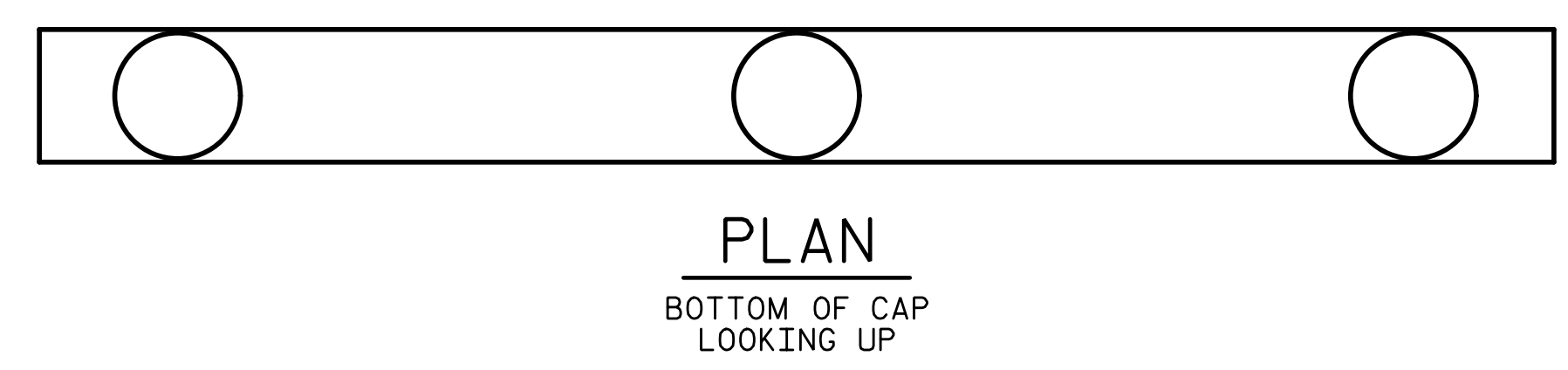
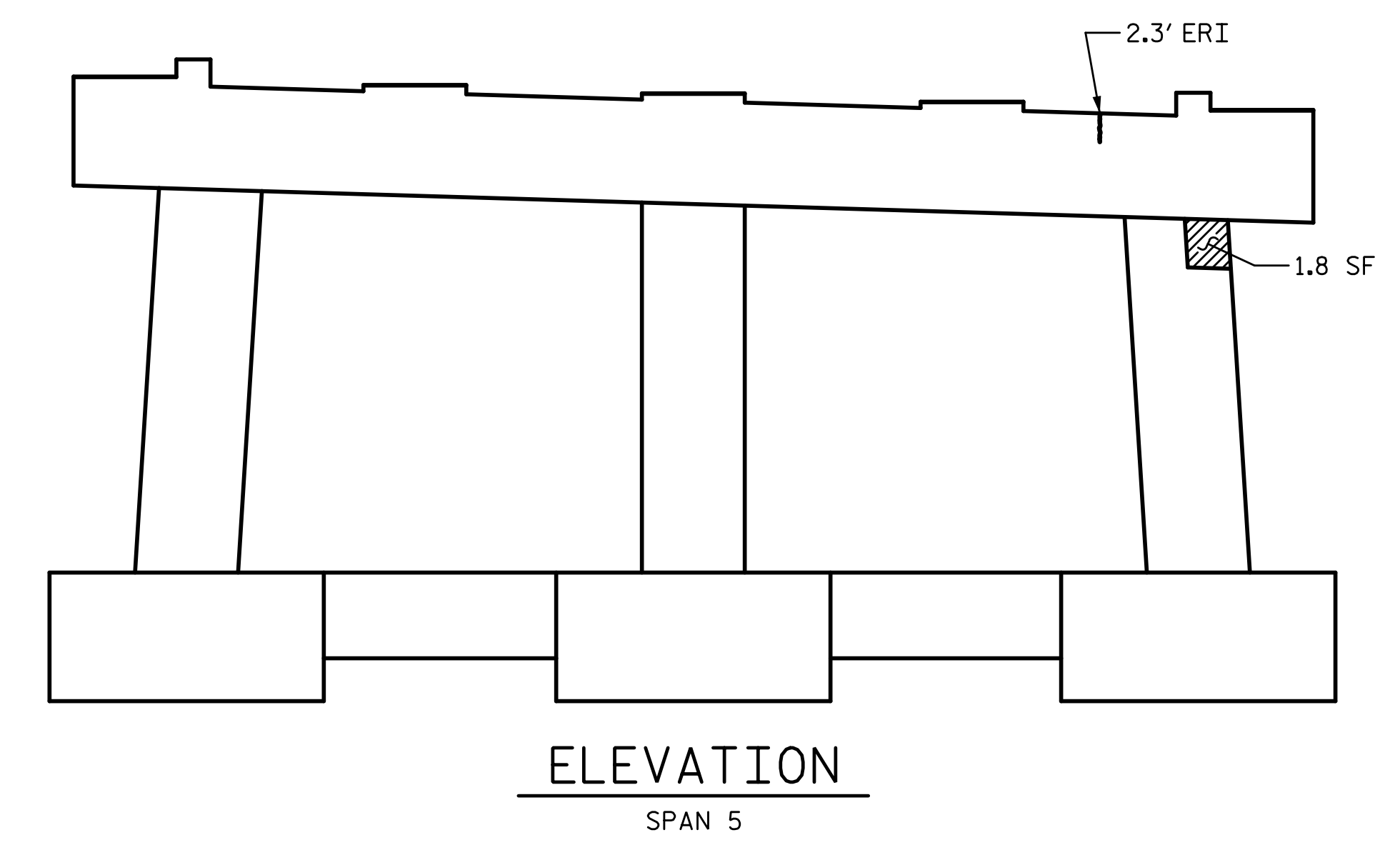
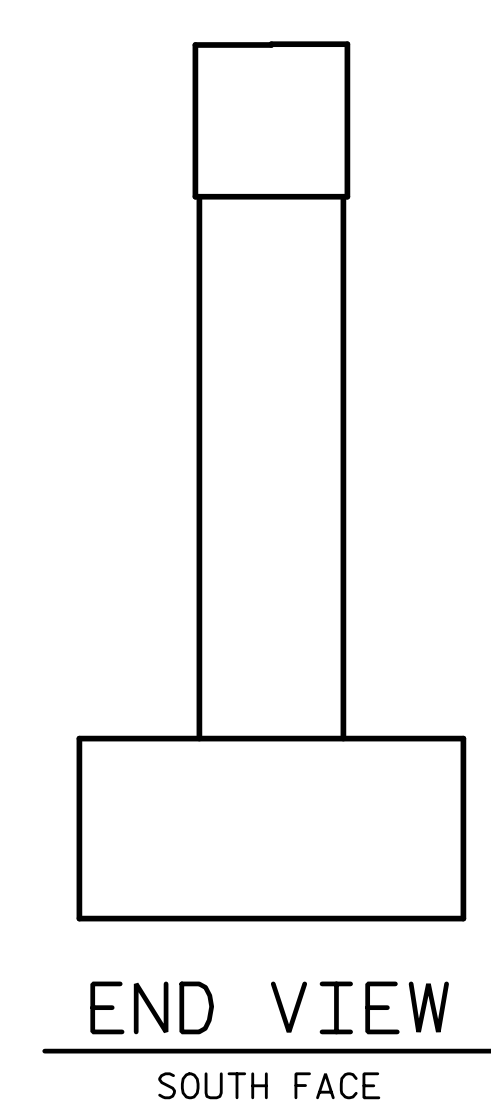
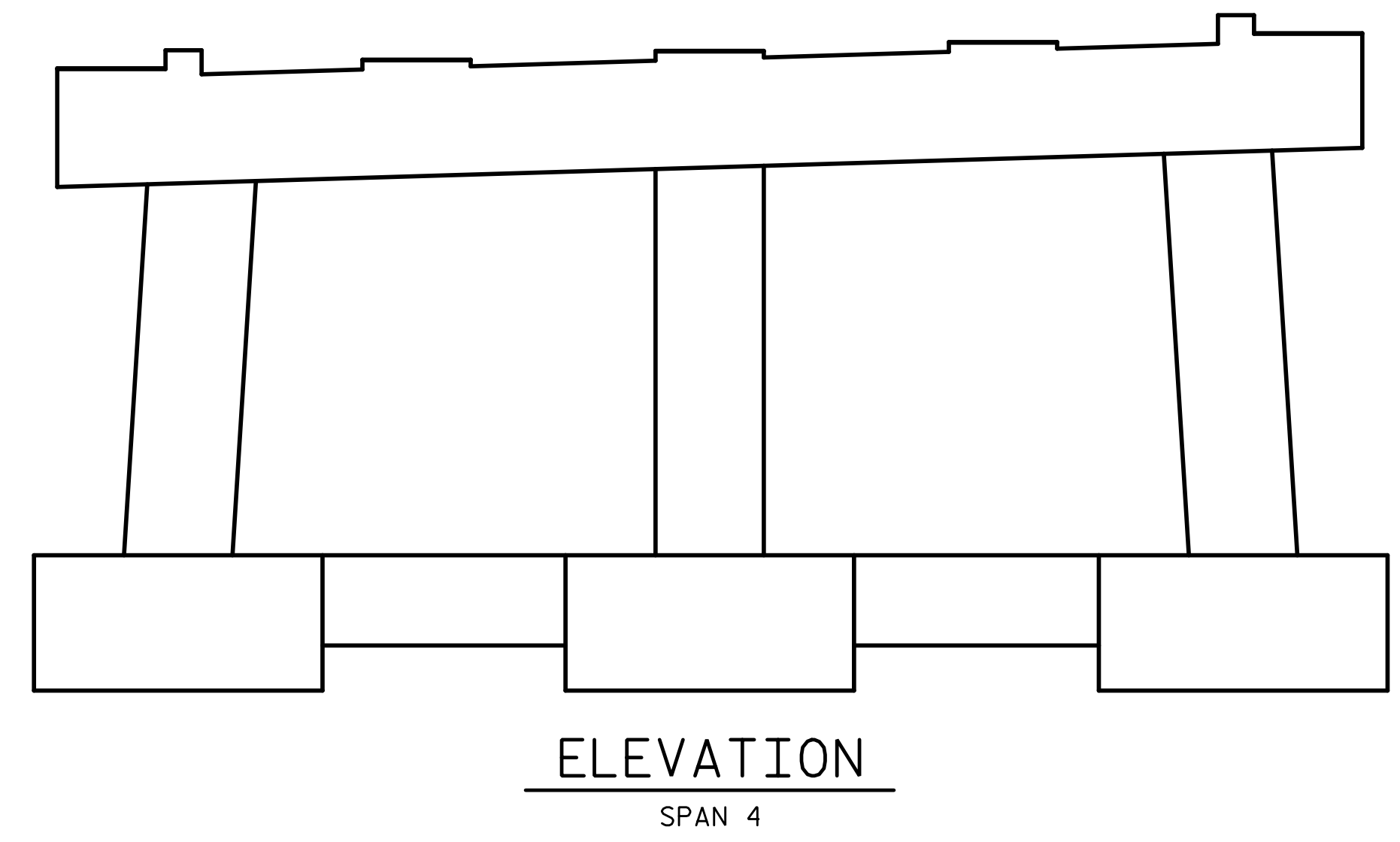
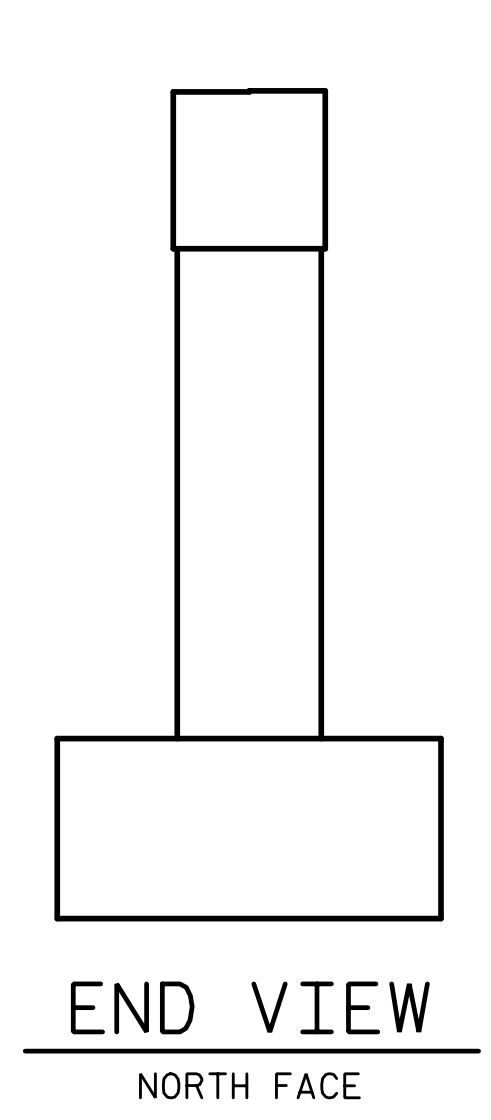


SPAN 5

SPAN 4

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS BENT 4	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	1.8	0.3			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		4.6			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			



NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

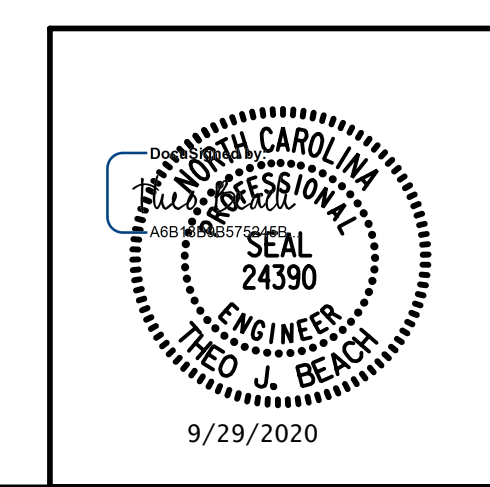
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

BENT 4

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			

PLANS PREPARED BY:

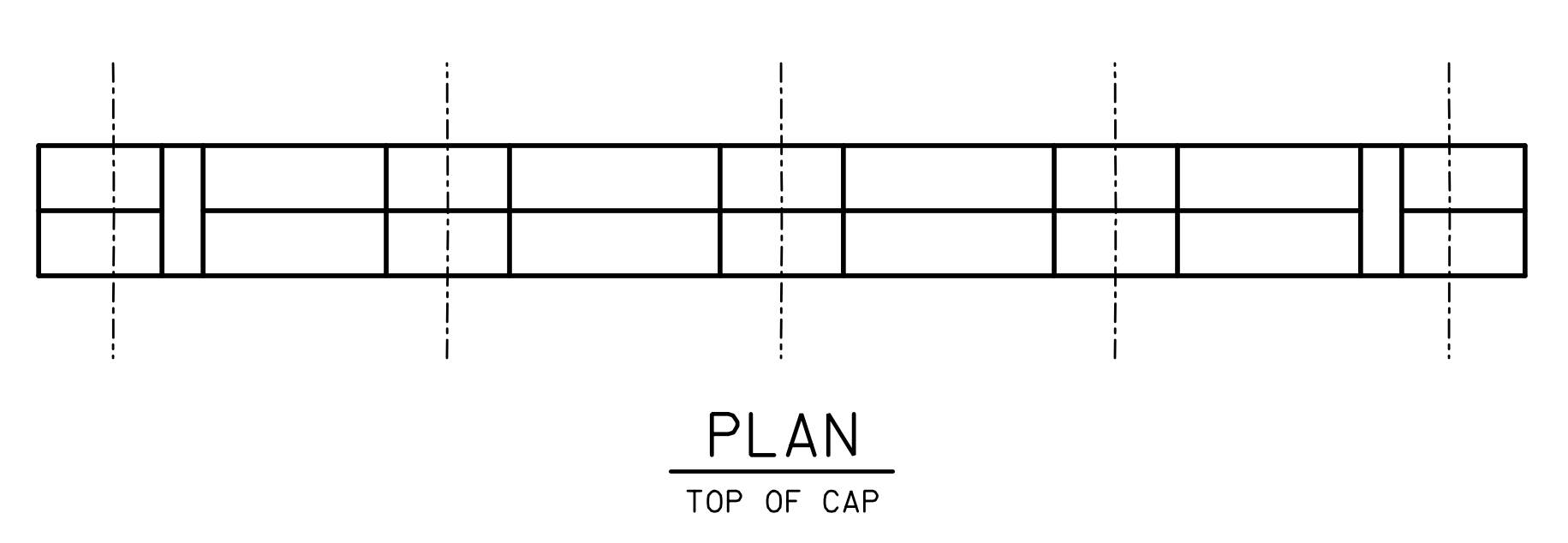
 5640 Dillard Drive
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 (919) 852-0598 (Fax)
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 LICENSURE NO. C-2521



DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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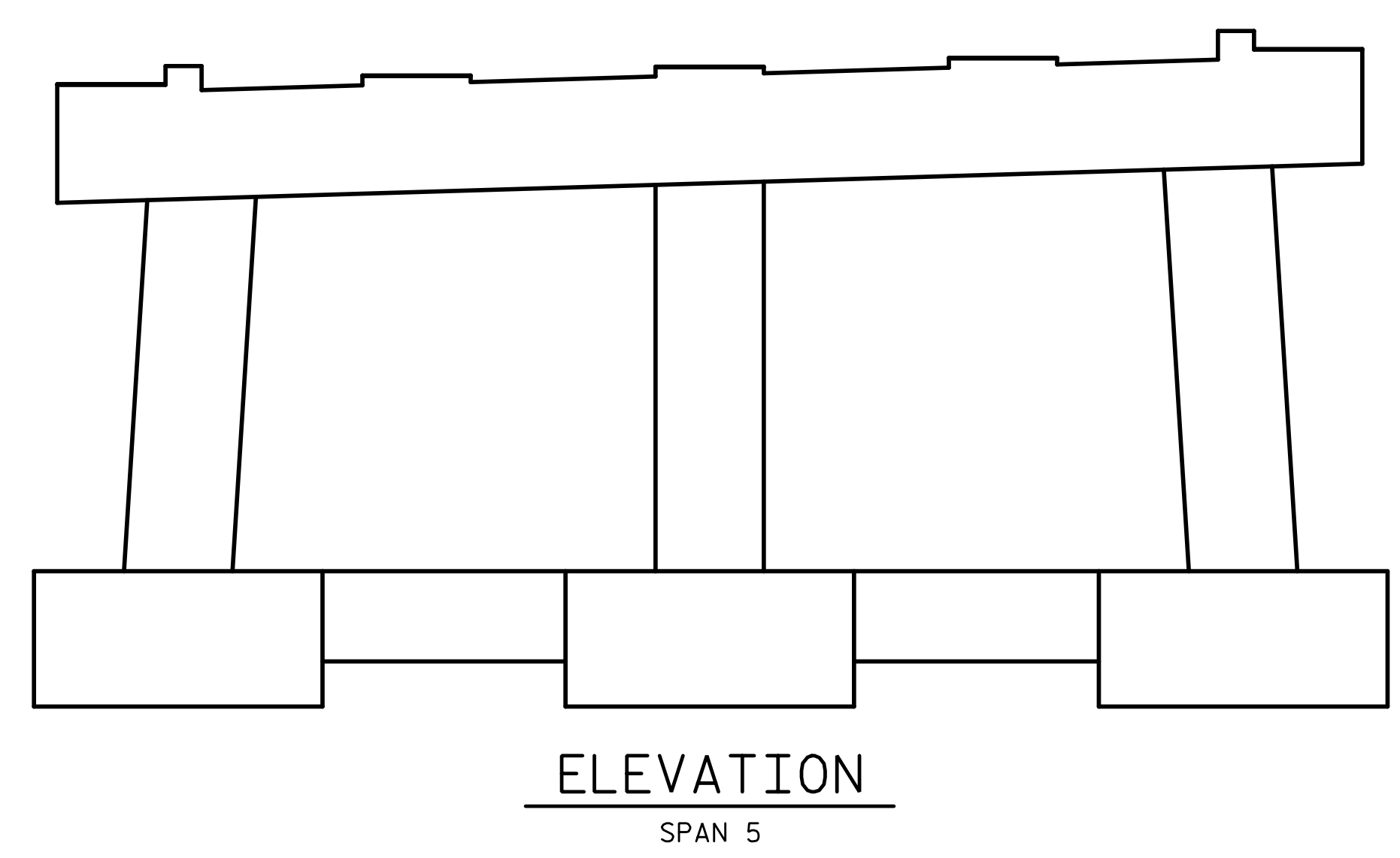
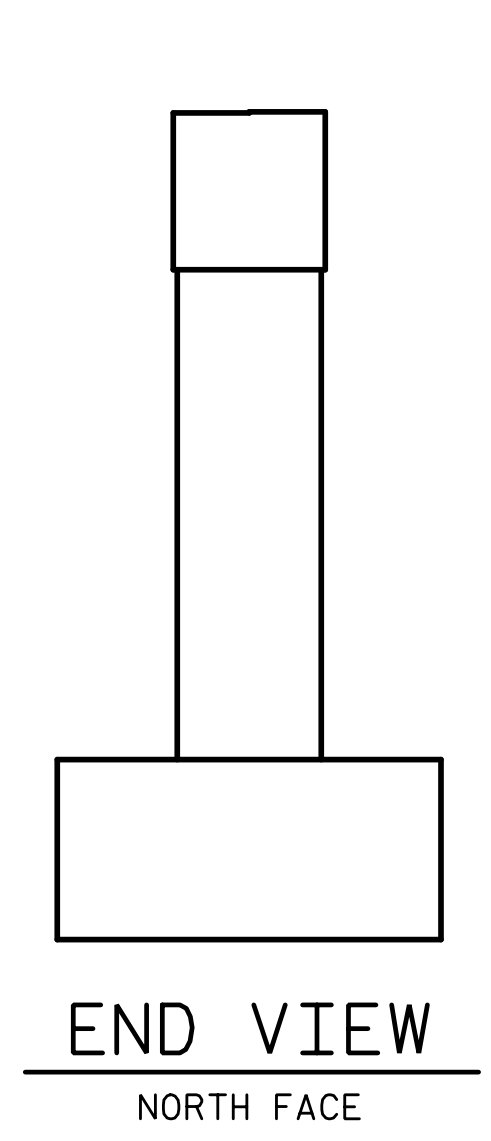
SPAN 6

SPAN 5

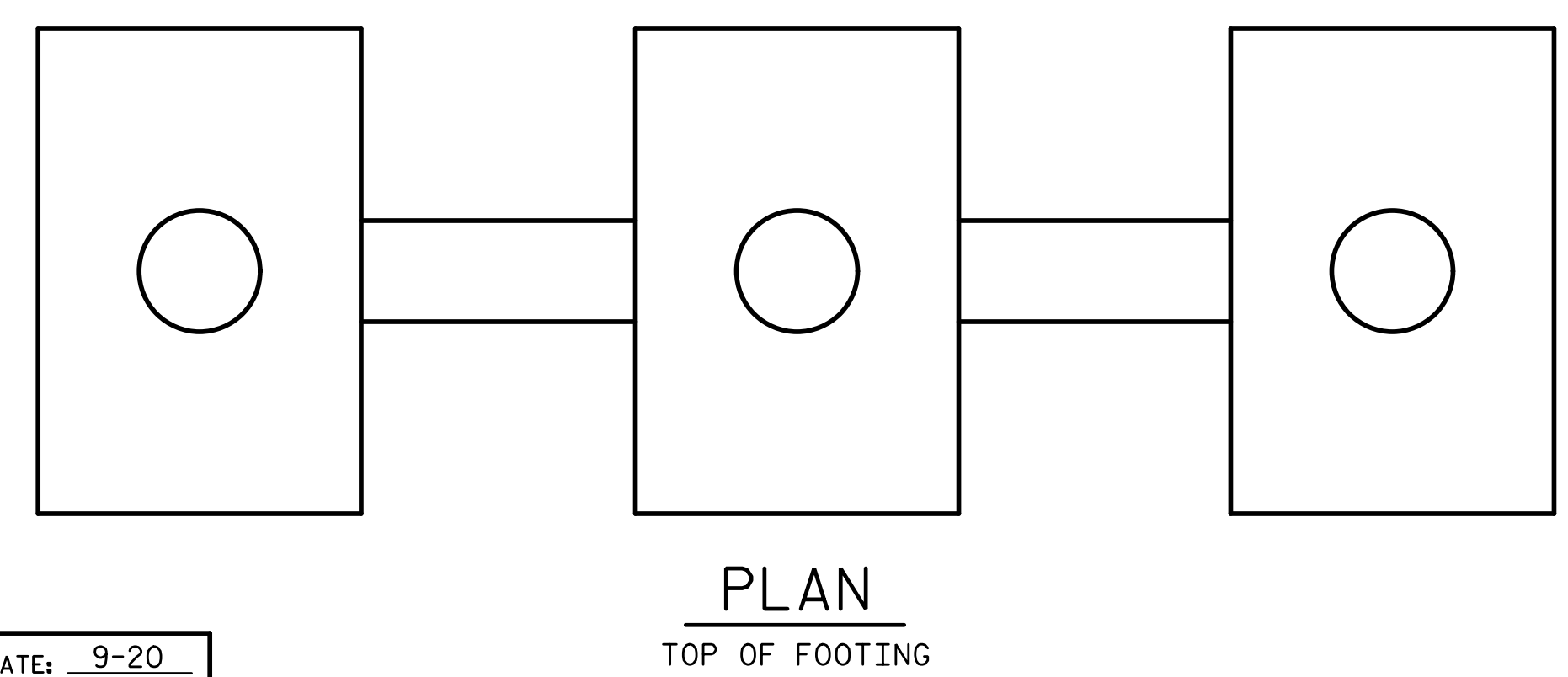
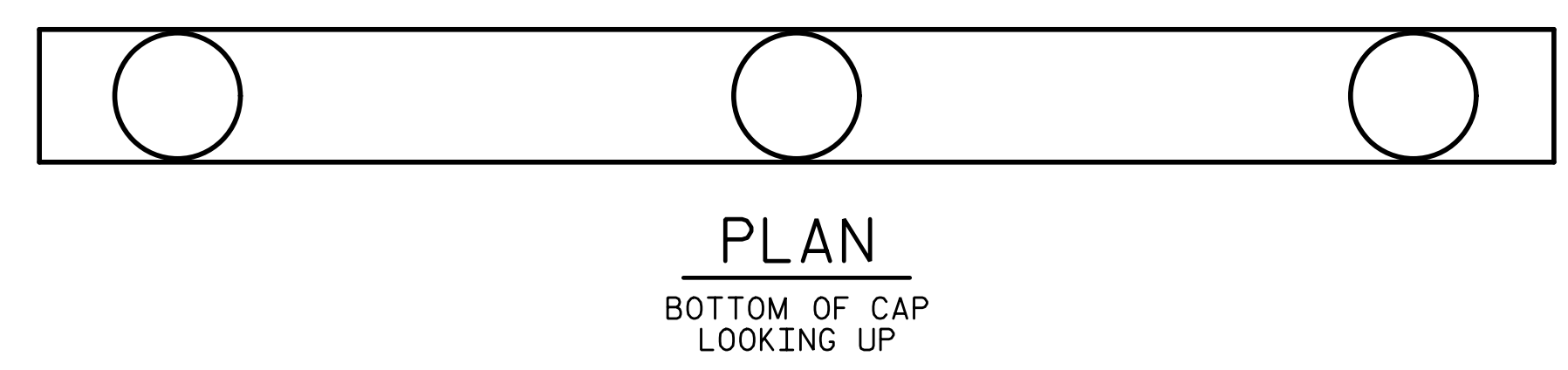
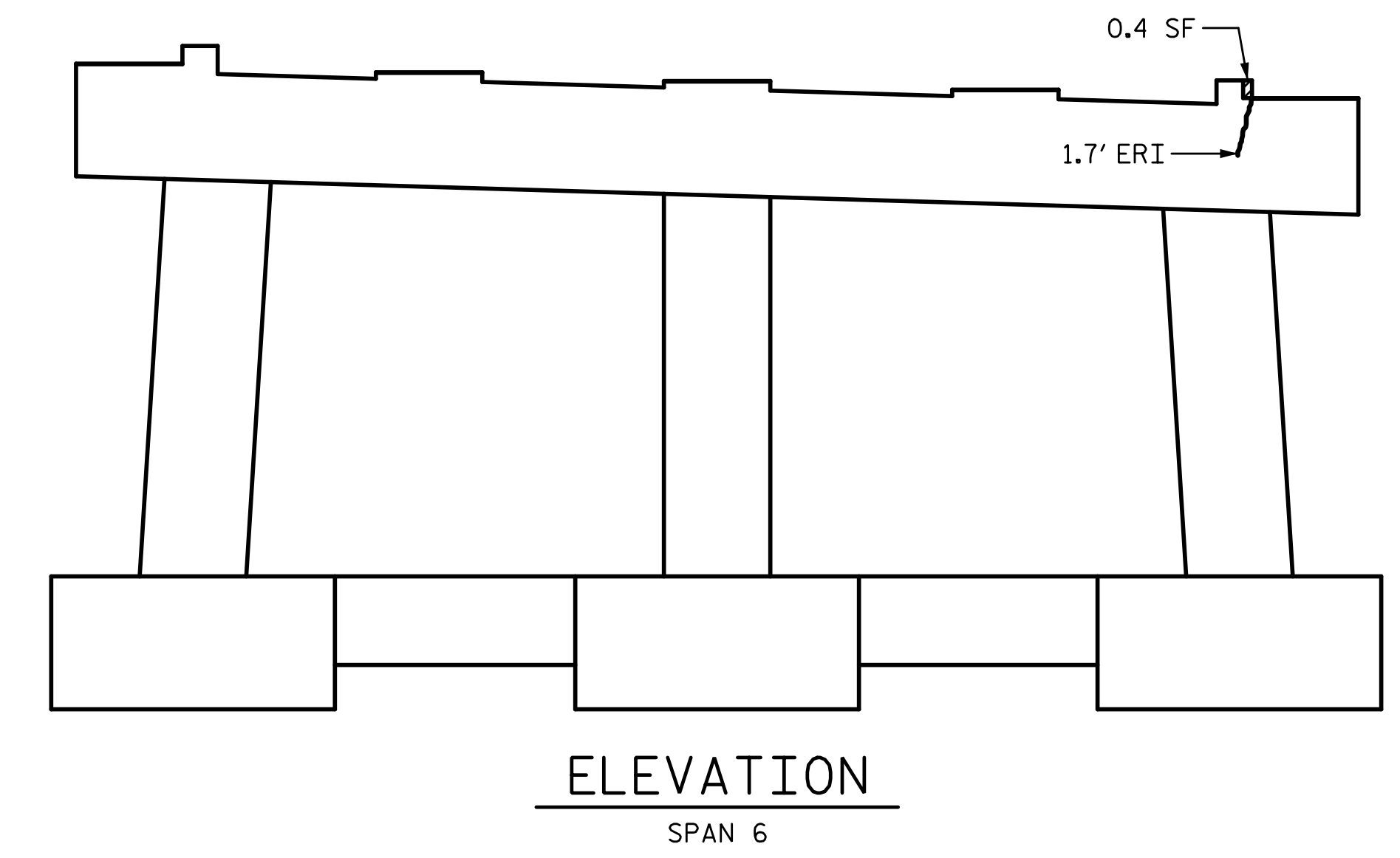
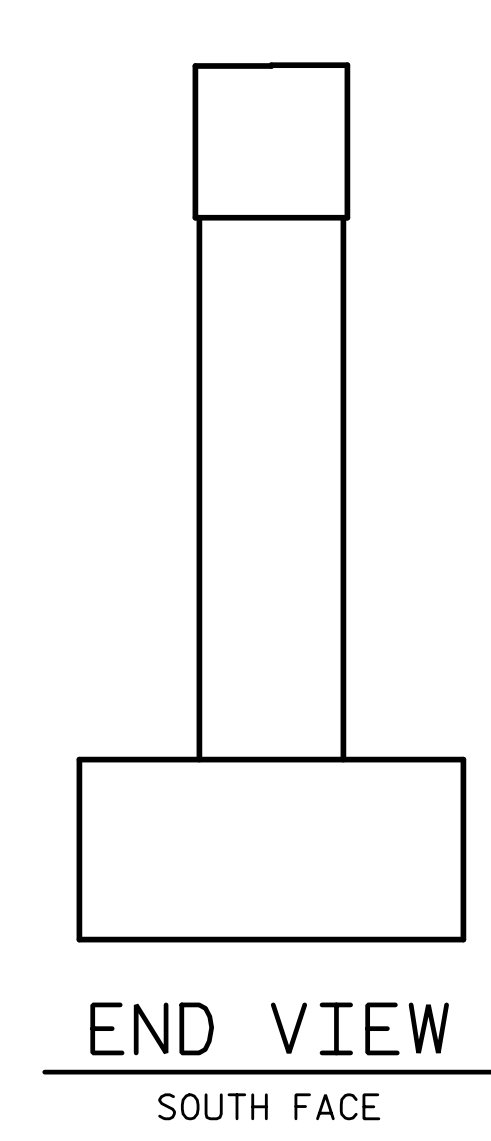
SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS BENT 5	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.4	0.2			
COLUMN	0.0	0.0			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		1.7			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			



6.3 SF



NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.26

NEW HANOVER/PENDER COUNTY

BRIDGE NO.: 640049

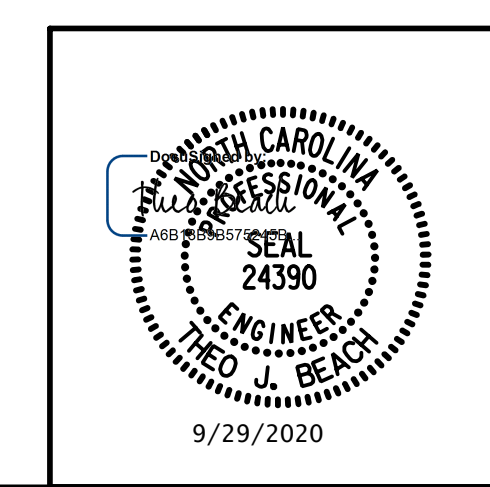
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

BENT 5

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			163
2			4			

PLANS PREPARED BY:

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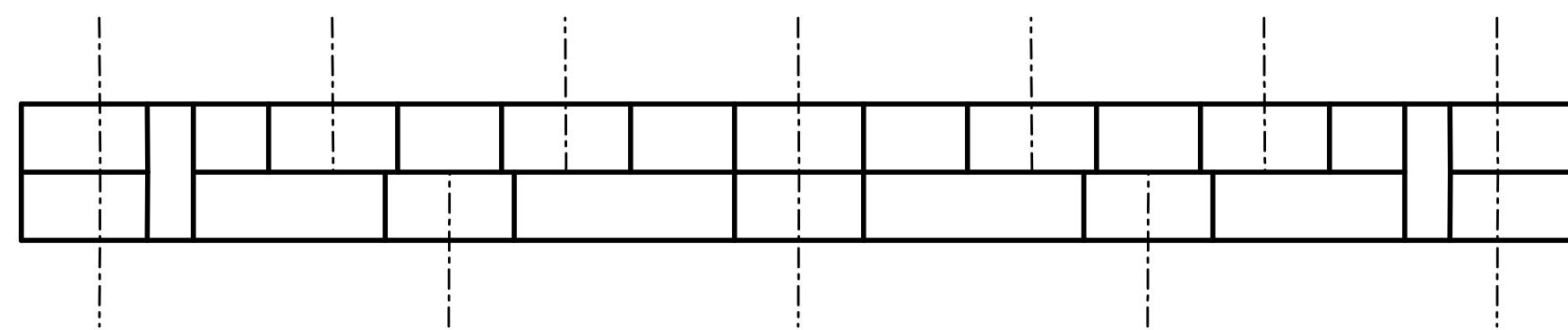
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CHECKED BY: T.J. BEACH DATE: 9-20

DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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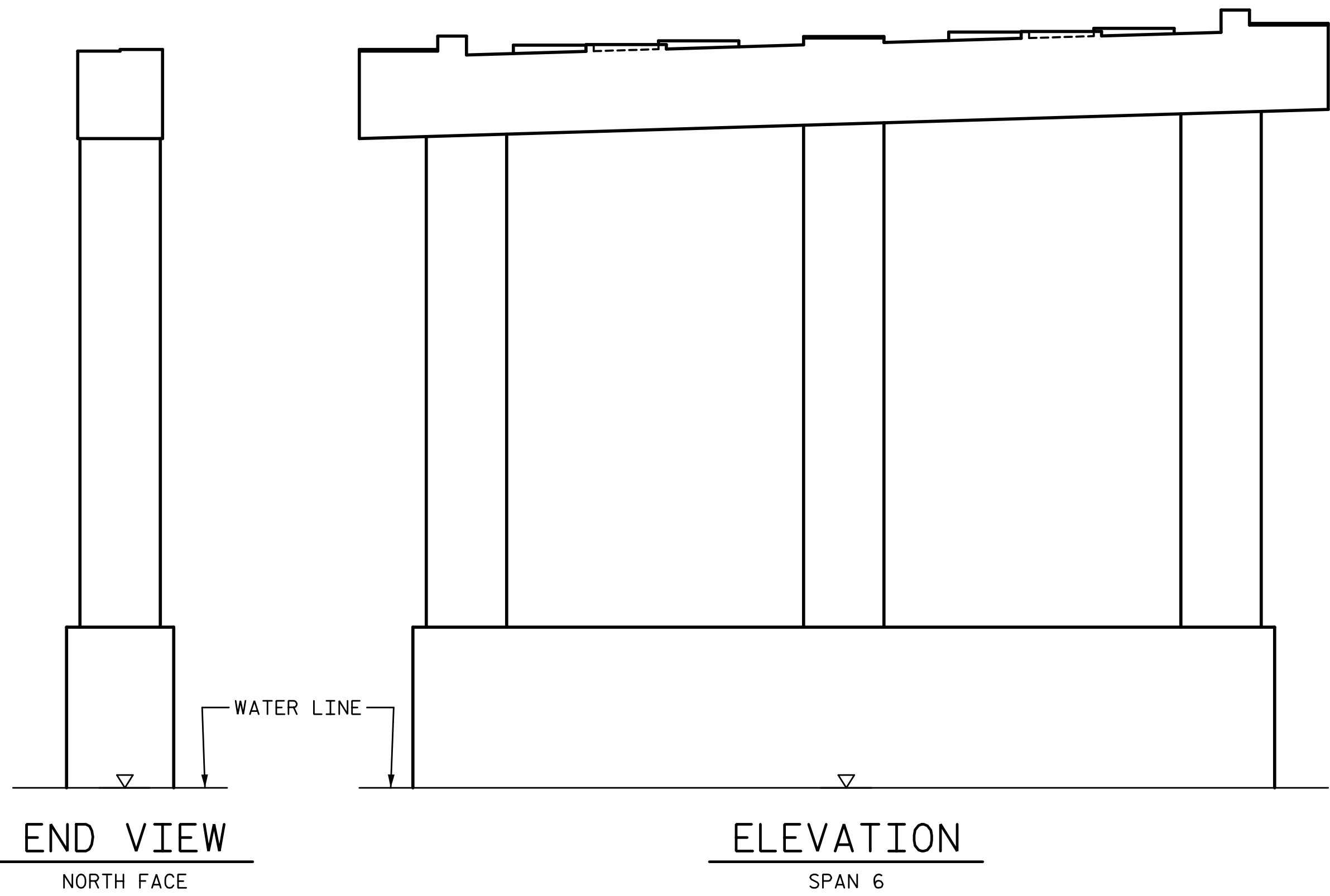
PLAN
TOP OF CAP

SPAN 7

SPAN 6

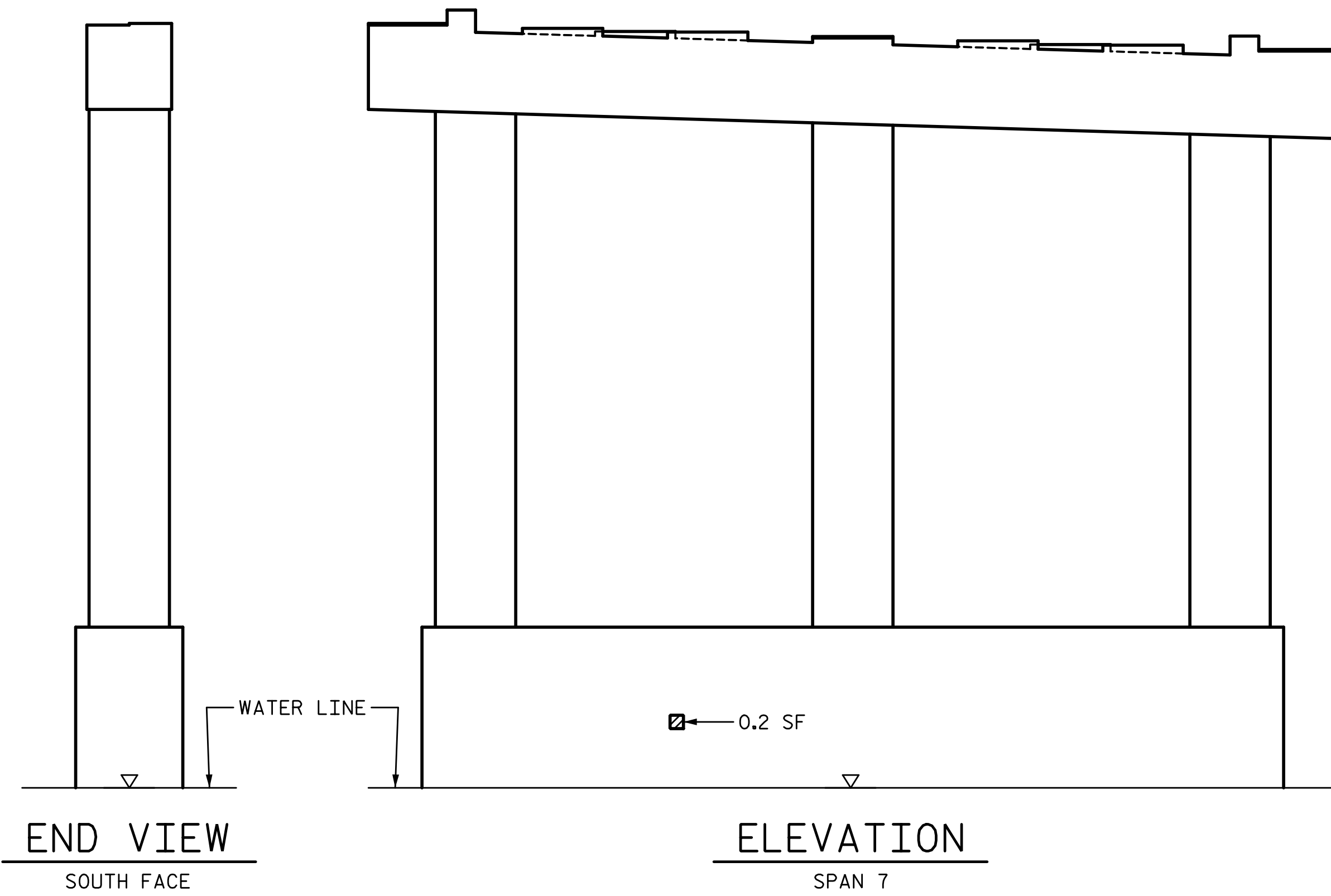
SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS BENT 6	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	0.0	0.0			
FOOTING	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		91.0			



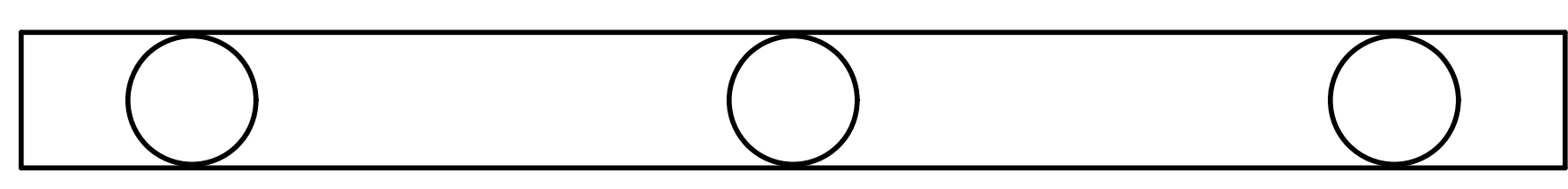
END VIEW
NORTH FACE

ELEVATION
SPAN 6

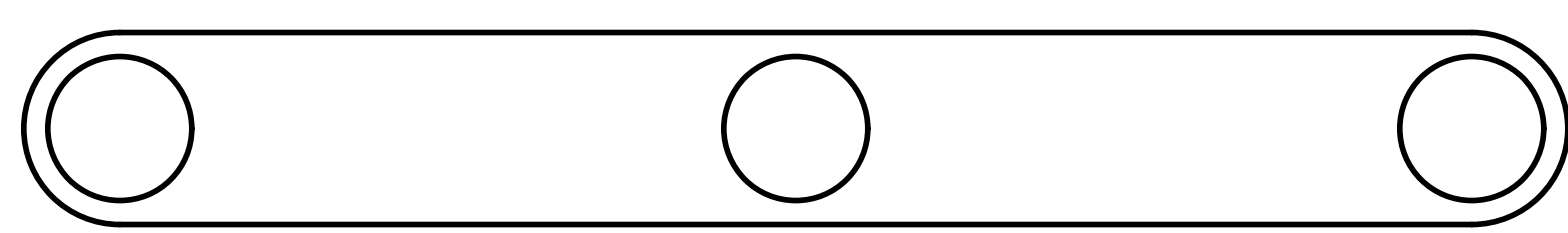


END VIEW
SOUTH FACE

ELEVATION
SPAN 7



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

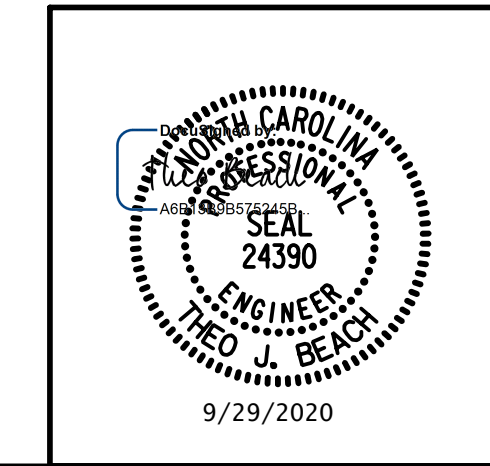
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

PLANS PREPARED BY:
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NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

BENT 6

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-156
1			3			TOTAL SHEETS
2			4			163

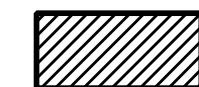
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CHECKED BY: T.J. BEACH DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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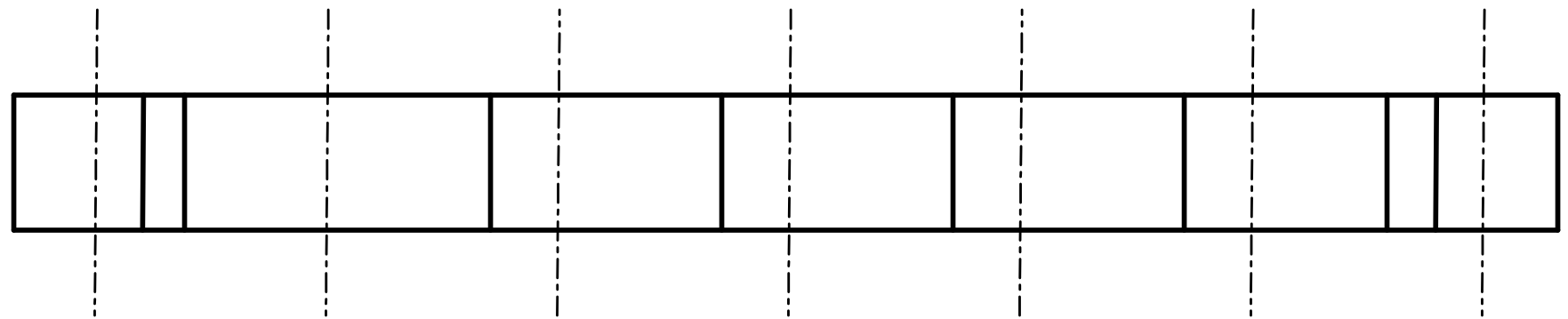
REPAIR QUANTITY TABLE

REPAIRS BENT 7	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	0.0	0.0			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		67.8			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		87.0			

 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

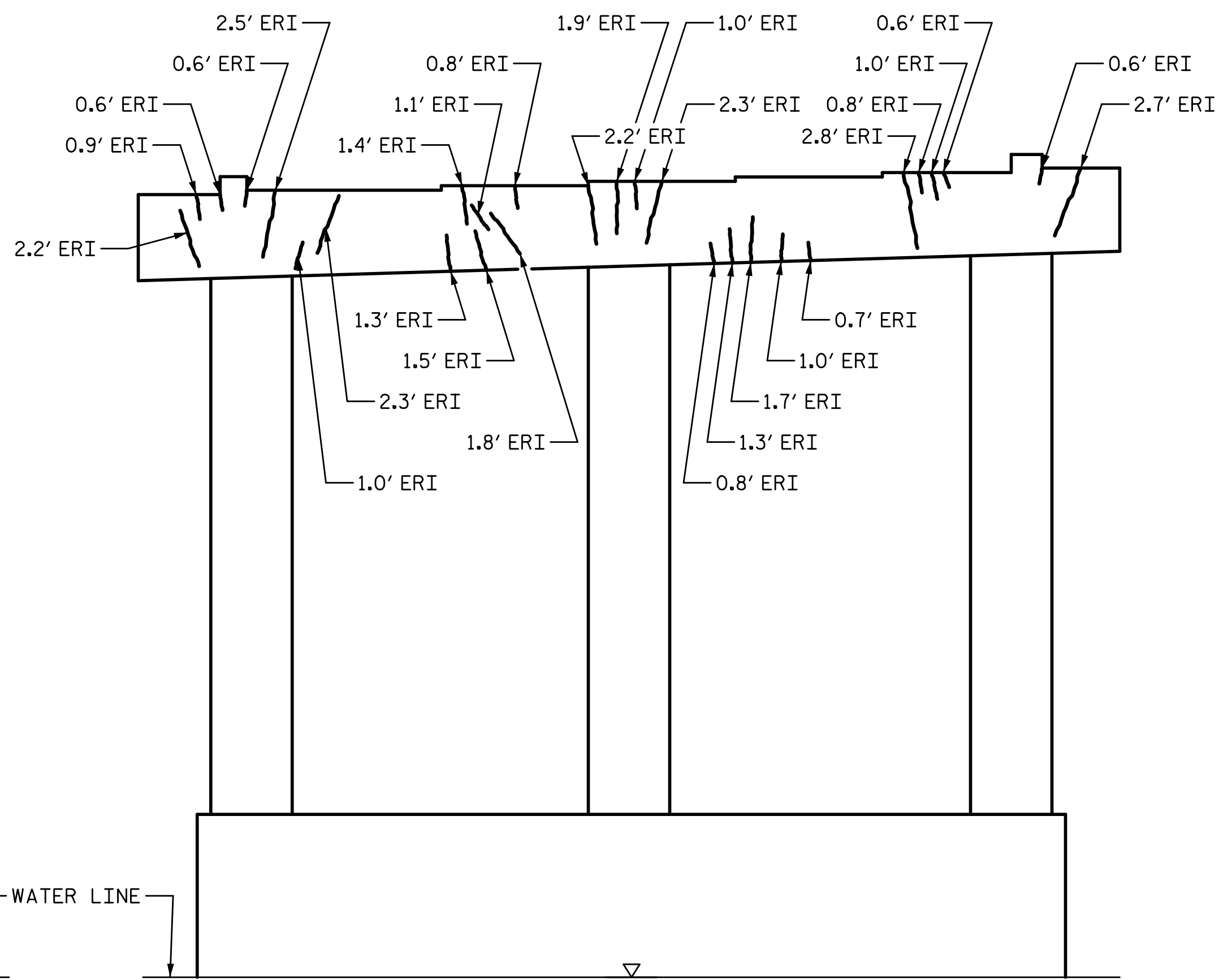
SPAN 8

SPAN 7



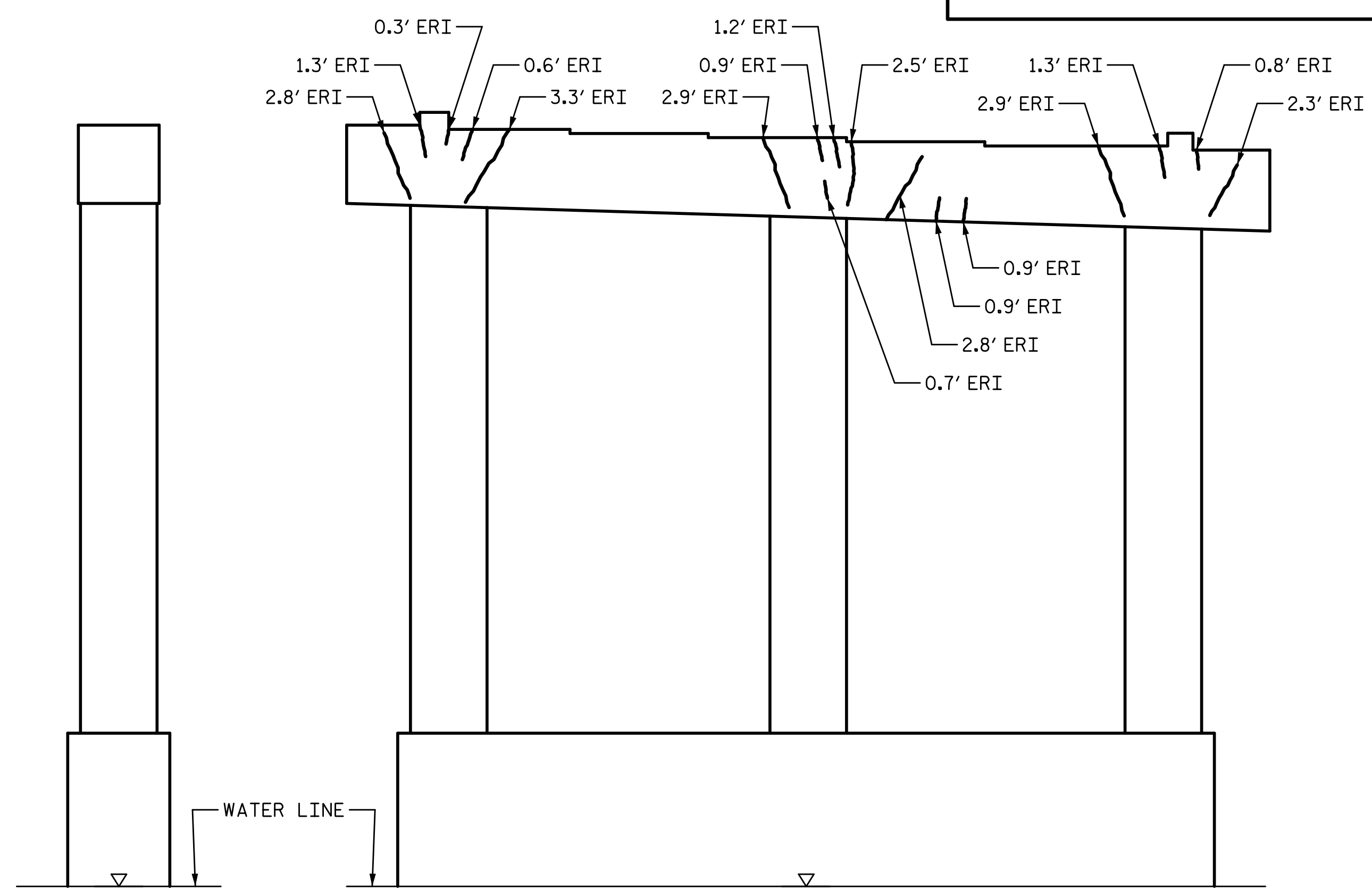
PLAN

TOP OF CAP



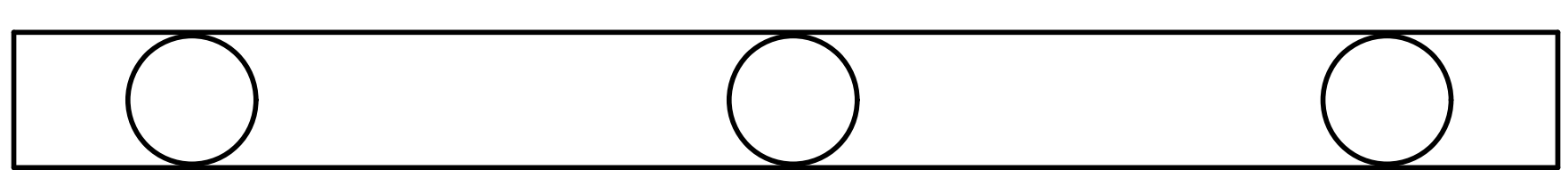
END VIEW
NORTH FACE

ELEVATION
SPAN 7



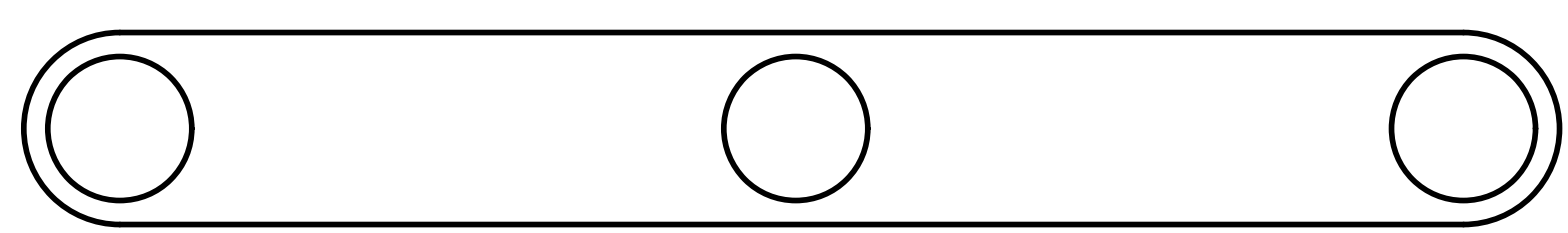
END VIEW
SOUTH FACE

ELEVATION
SPAN 8



PLAN

BOTTOM OF CAP
LOOKING UP



PLAN

TOP OF FOOTING

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

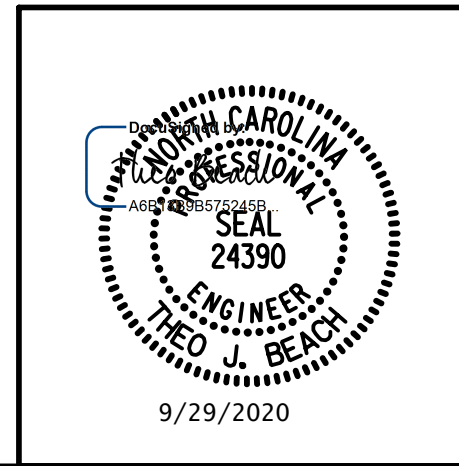
FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
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BENT 7



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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-157
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2			4			163

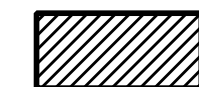
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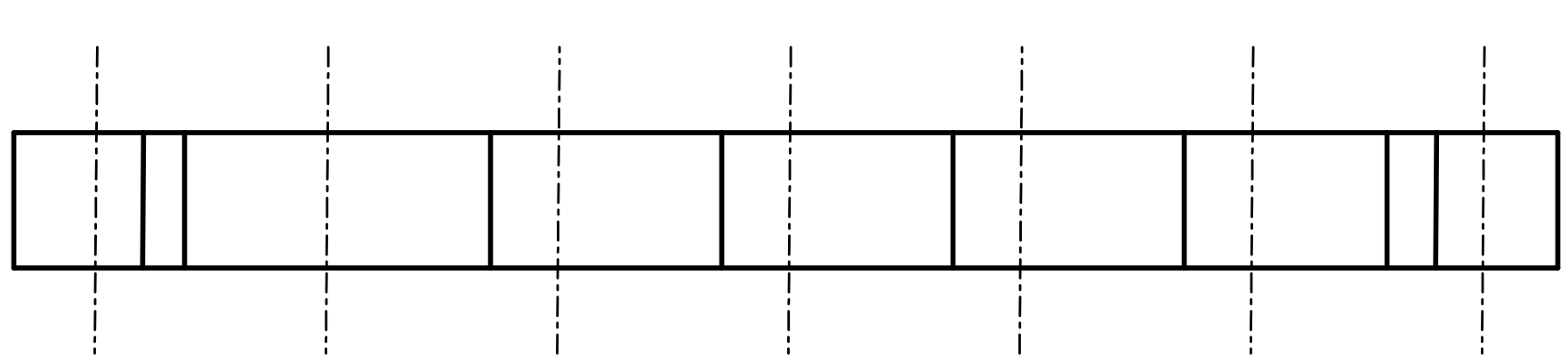
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REPAIR QUANTITY TABLE

REPAIRS BENT 8	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	0.0	0.0			
FOOTING	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
CAP		61.1			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		87.0			

 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

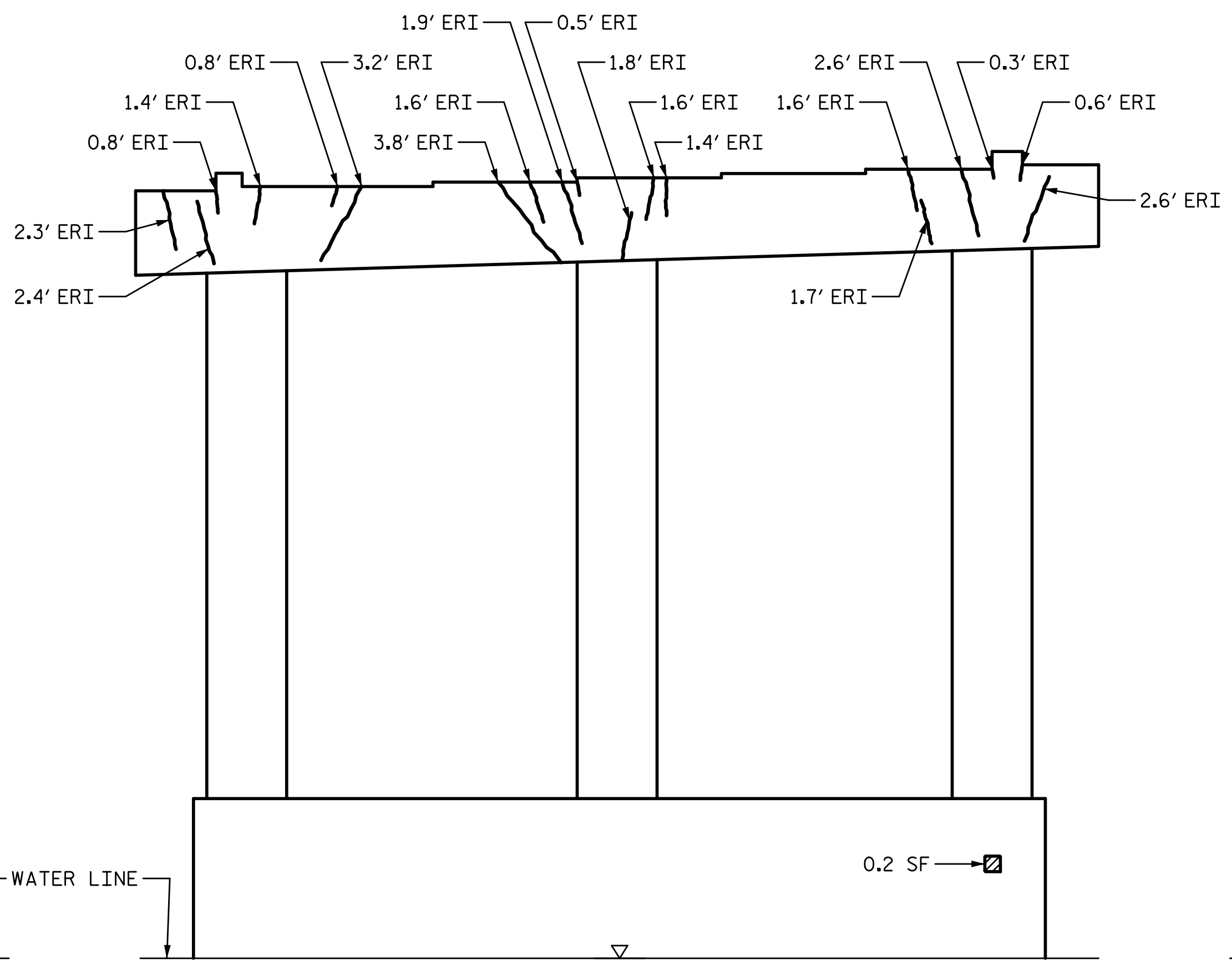


SPAN 9

SPAN 8

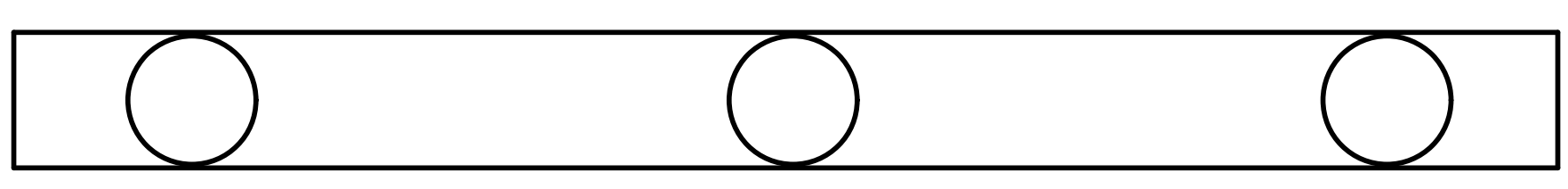
PLAN

TOP OF CAP



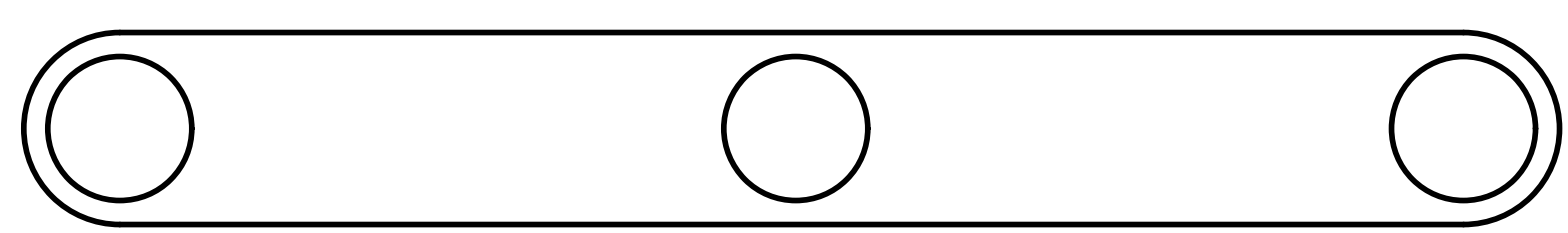
END VIEW
NORTH FACE

ELEVATION
SPAN 8



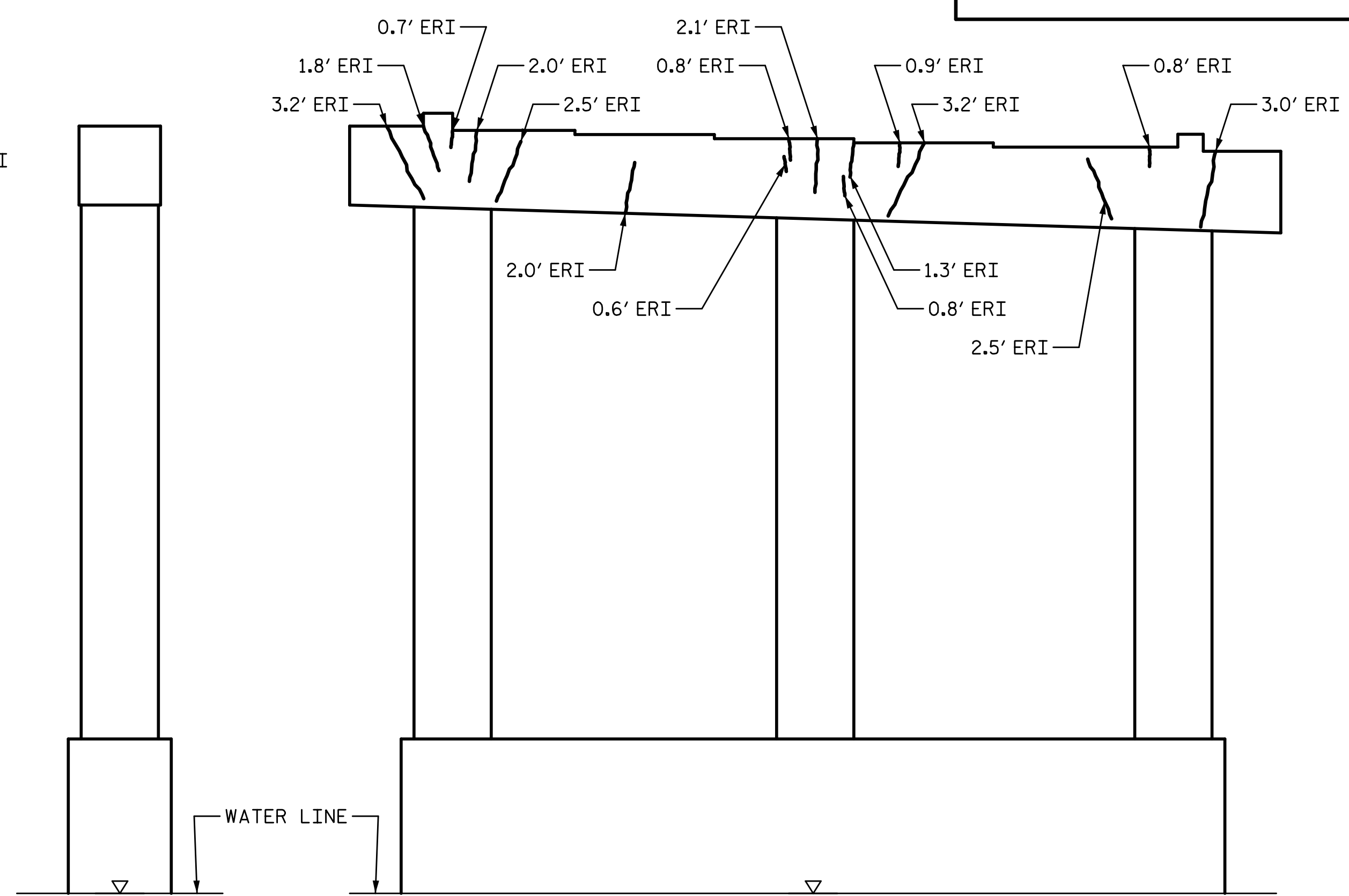
PLAN

BOTTOM OF CAP
LOOKING UP



PLAN

TOP OF FOOTING



END VIEW
SOUTH FACE

ELEVATION
SPAN 9

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

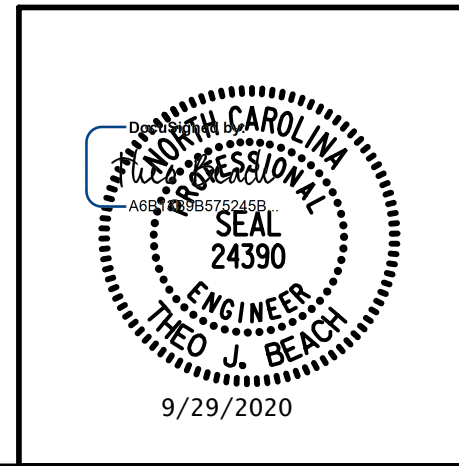
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VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

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 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

BENT 8



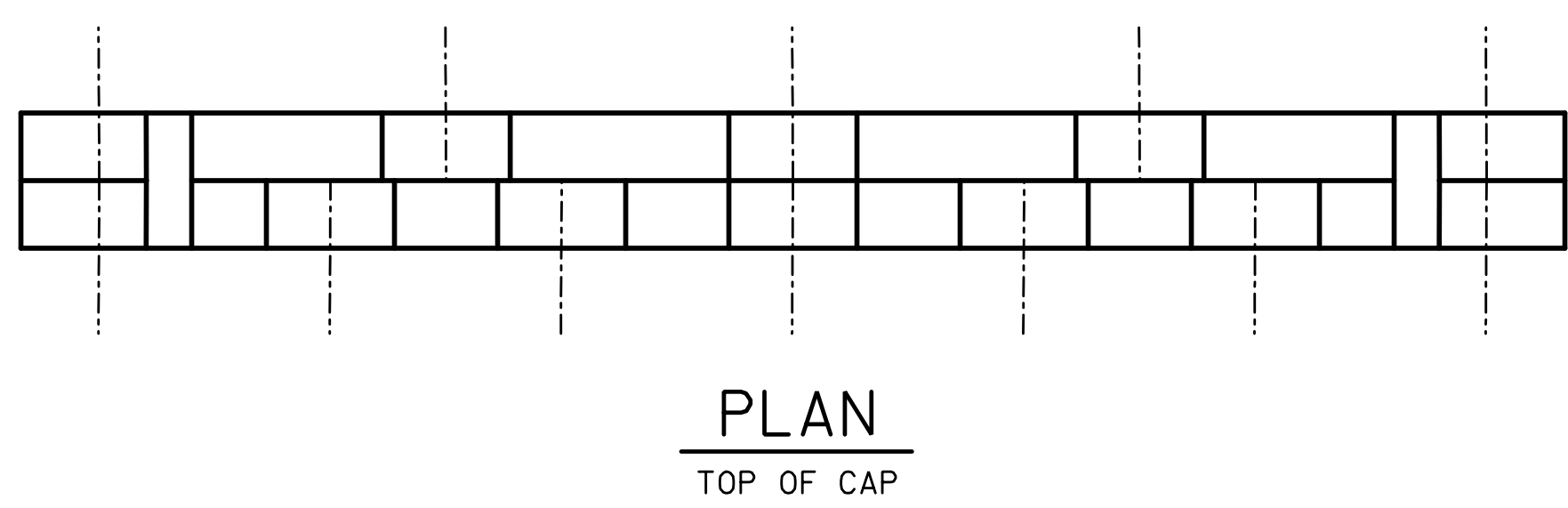
PLANS PREPARED BY:
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 SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
 Suite 200
 Cary, NC 27518
 (919) 852-0468
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 www.simpsonengr.com
 LICENSURE NO. C-2521

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

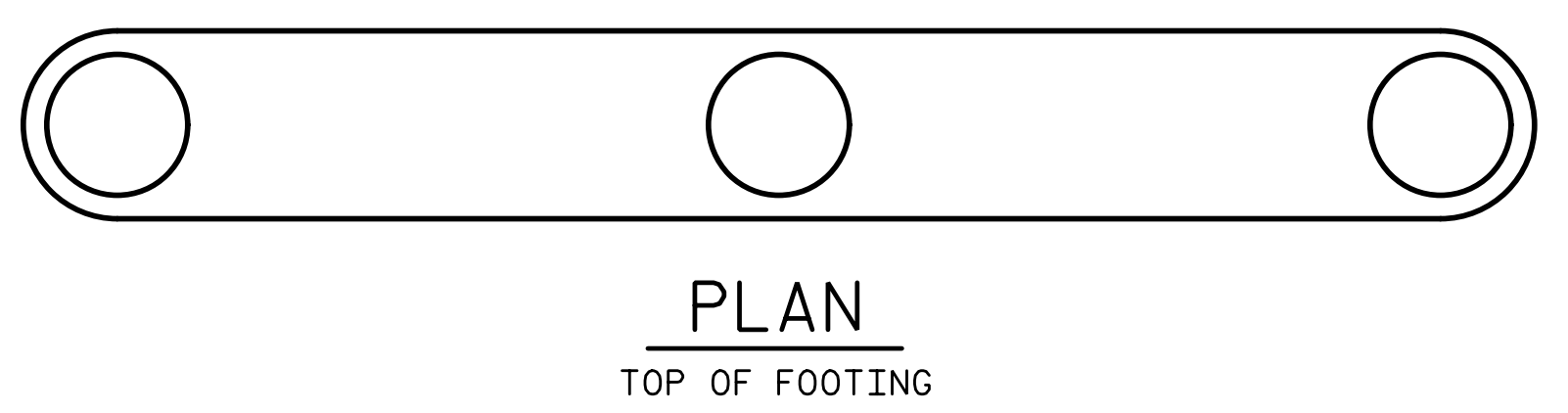
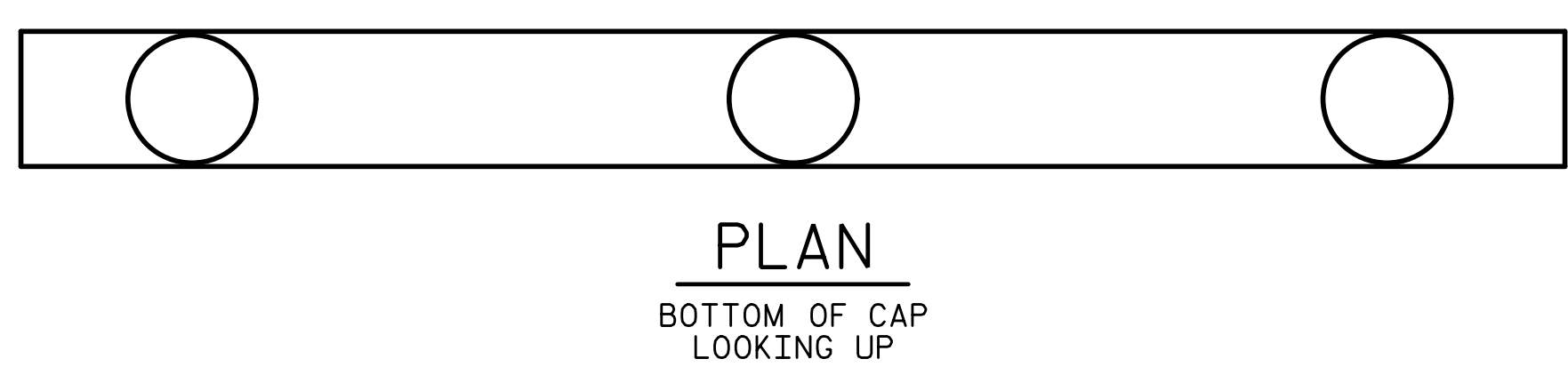
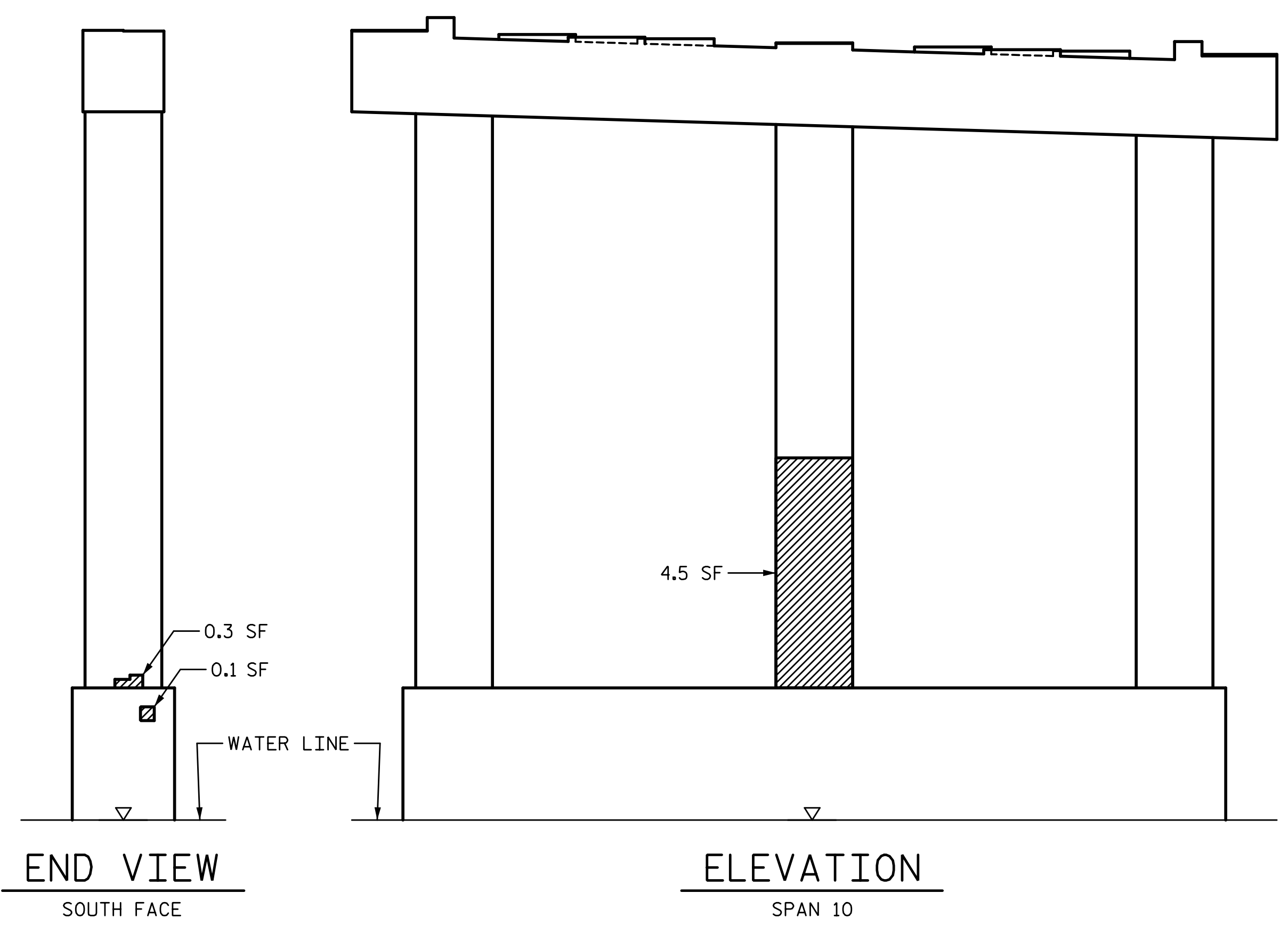
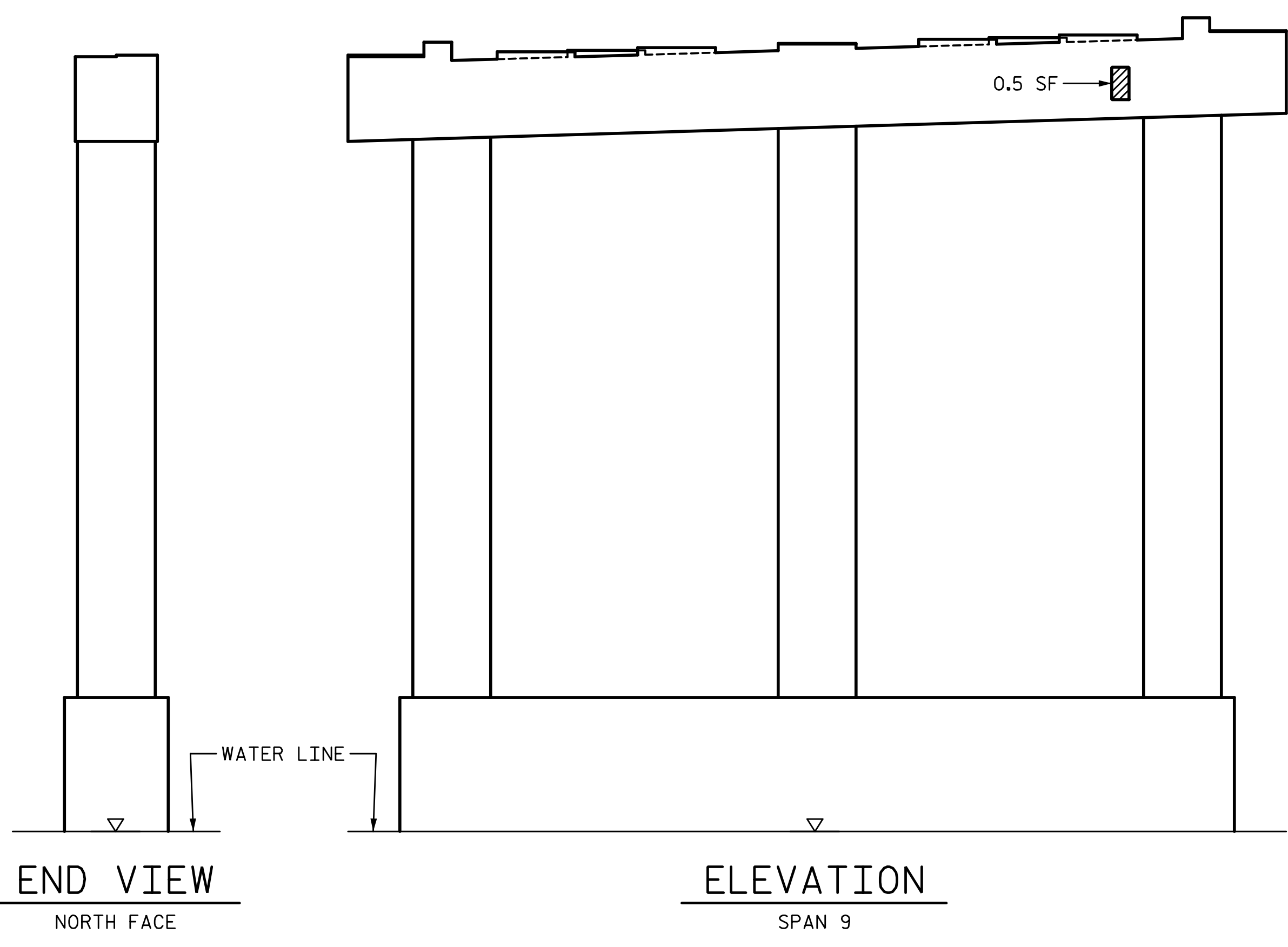
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SPAN 10

SPAN 9

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION



REPAIR QUANTITY TABLE					
REPAIRS BENT 9	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.5	0.2			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	4.8	1.2			
FOOTING	0.1	0.1			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		91.0			

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF THE QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

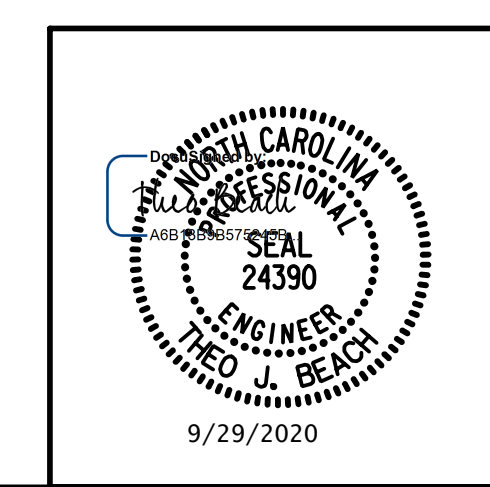
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BRIDGE NO.: 640049

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PRESERVATION

BENT 9

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2			4			

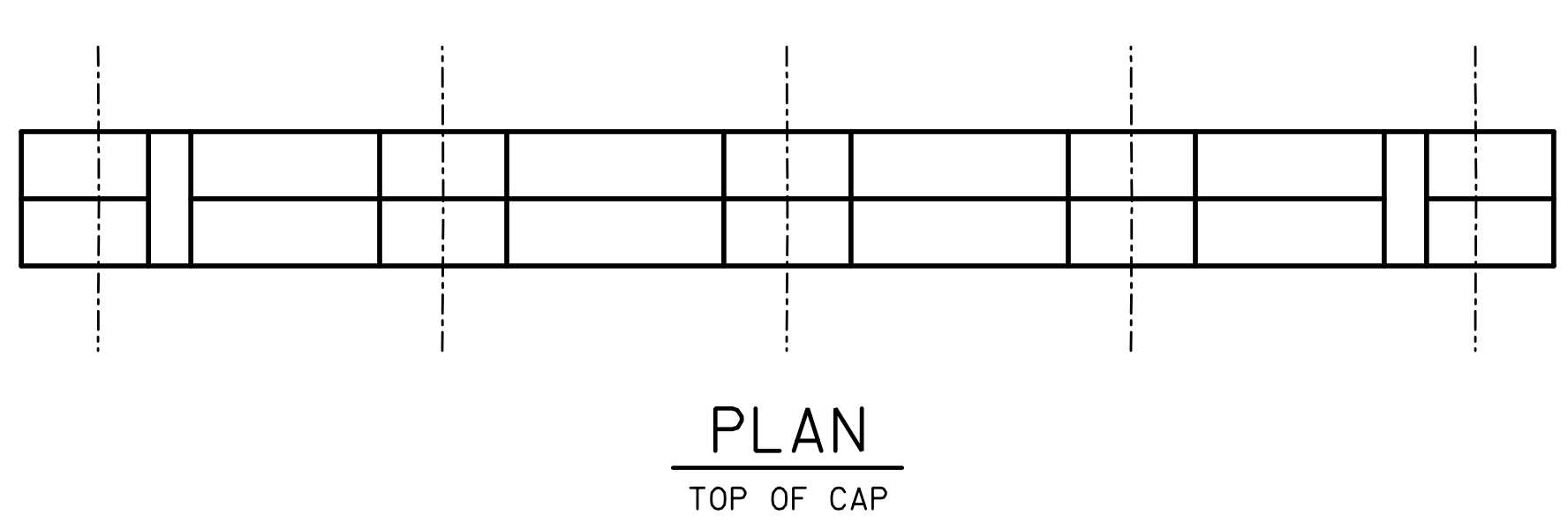
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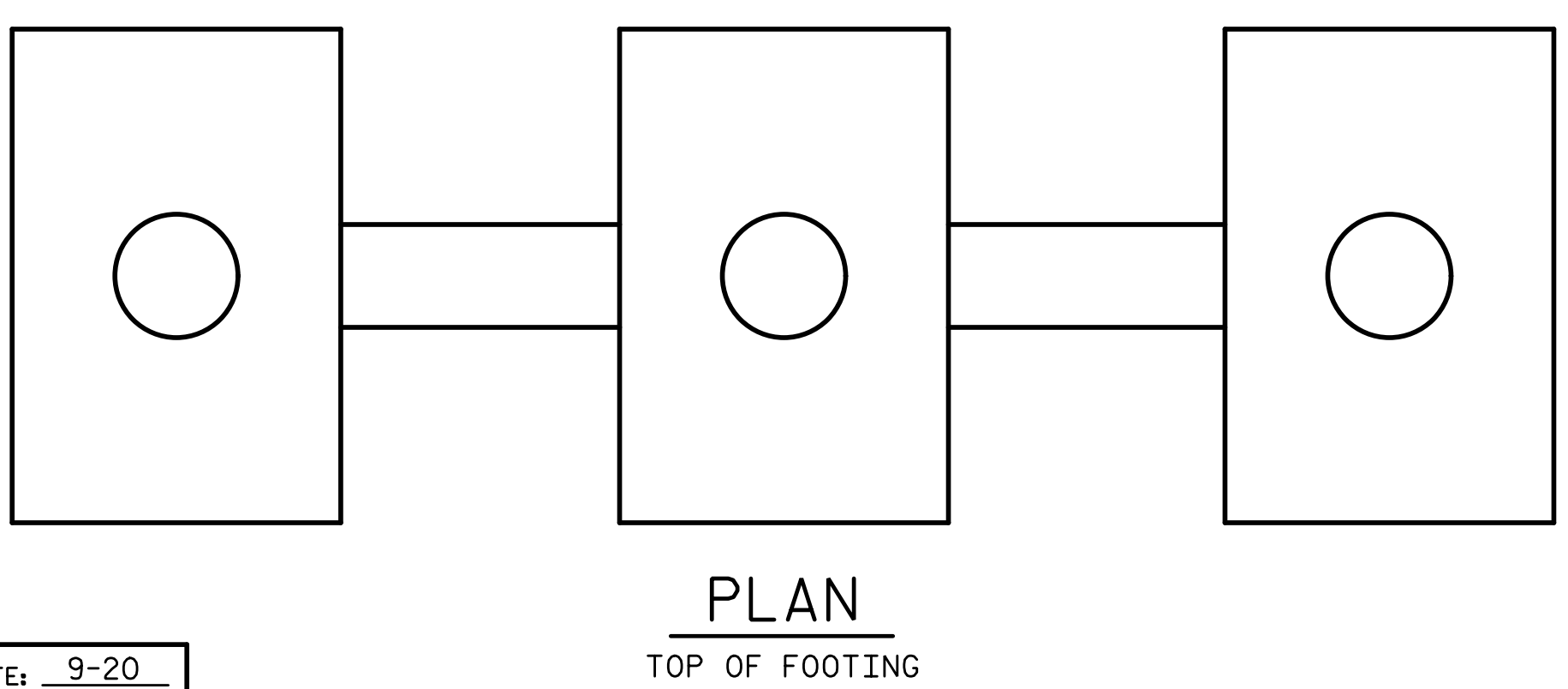
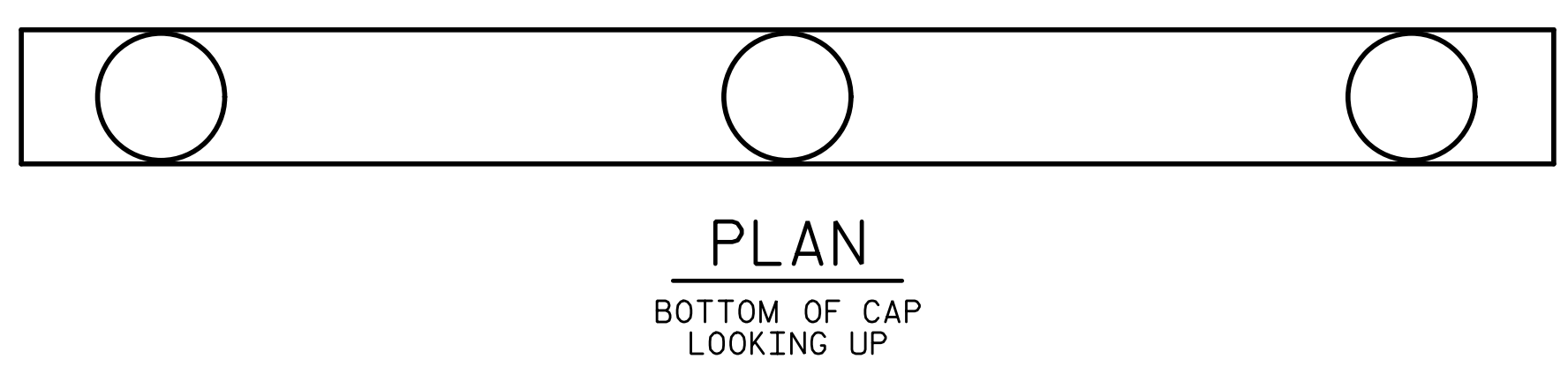
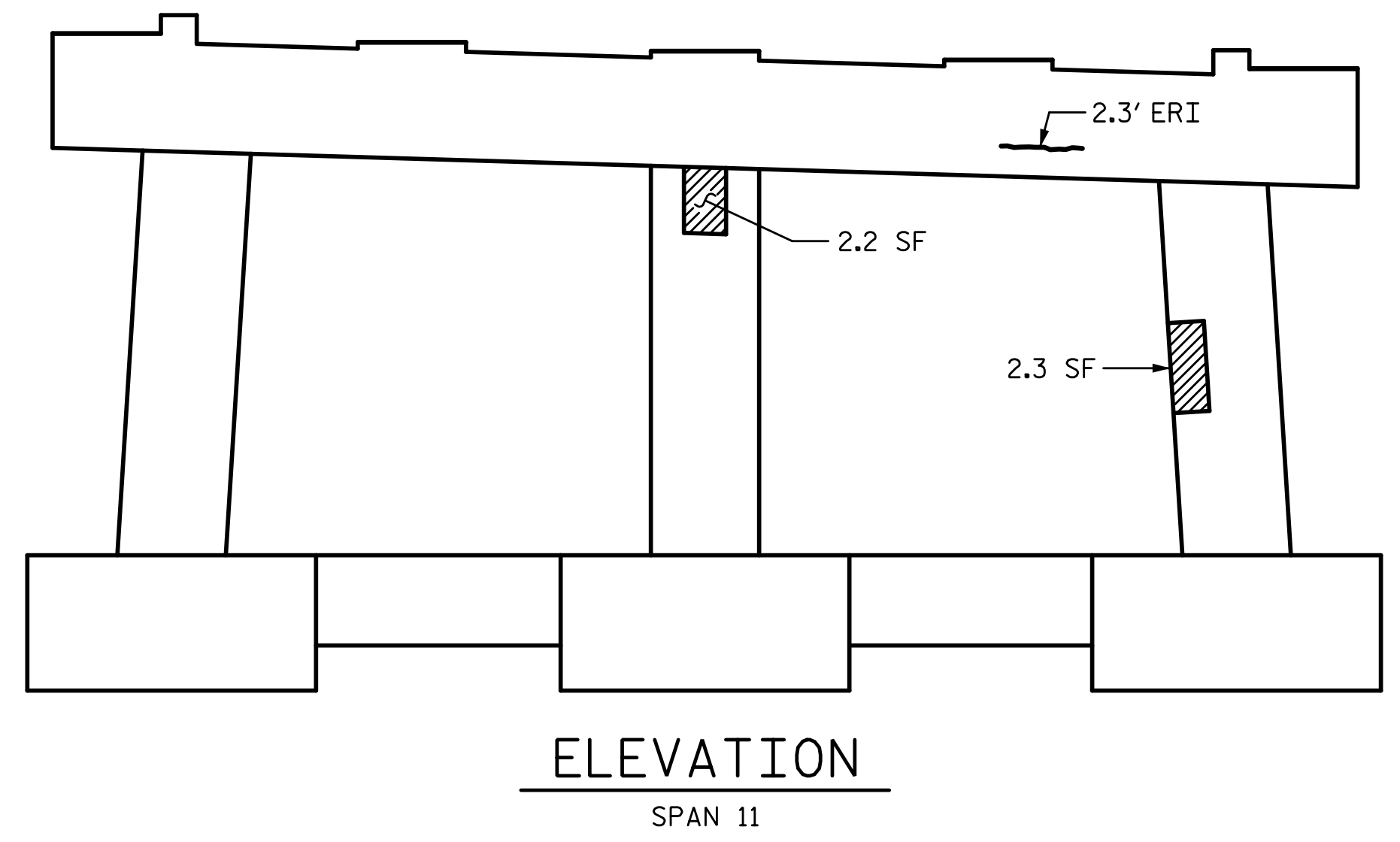
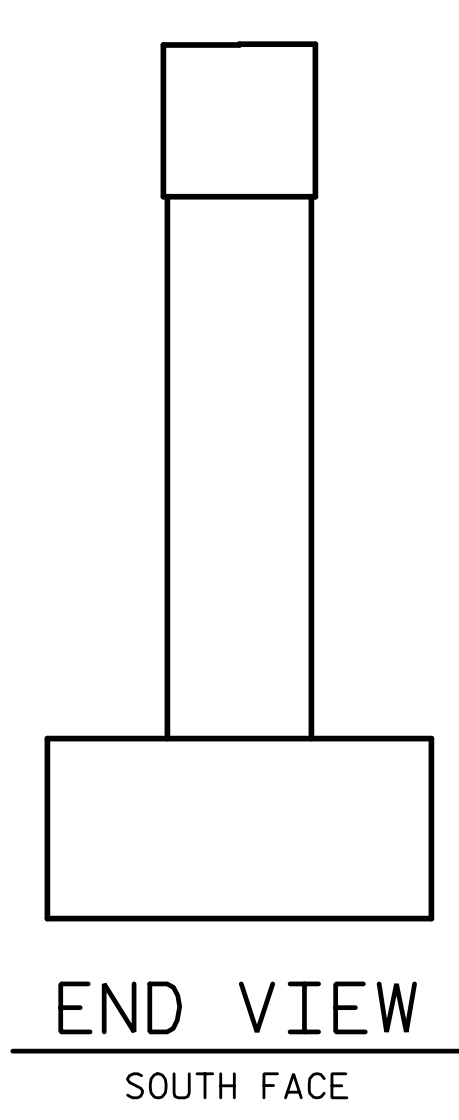
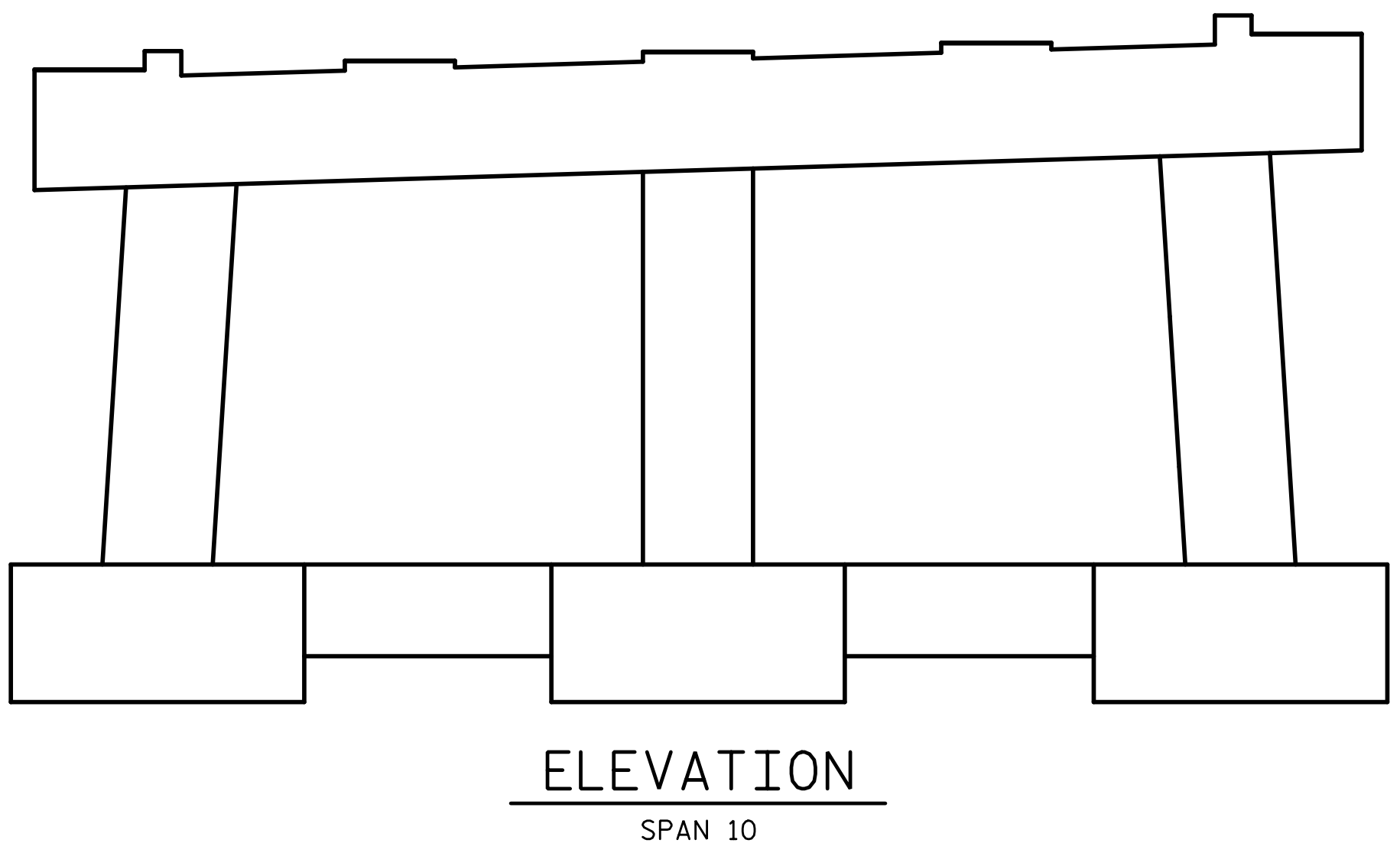
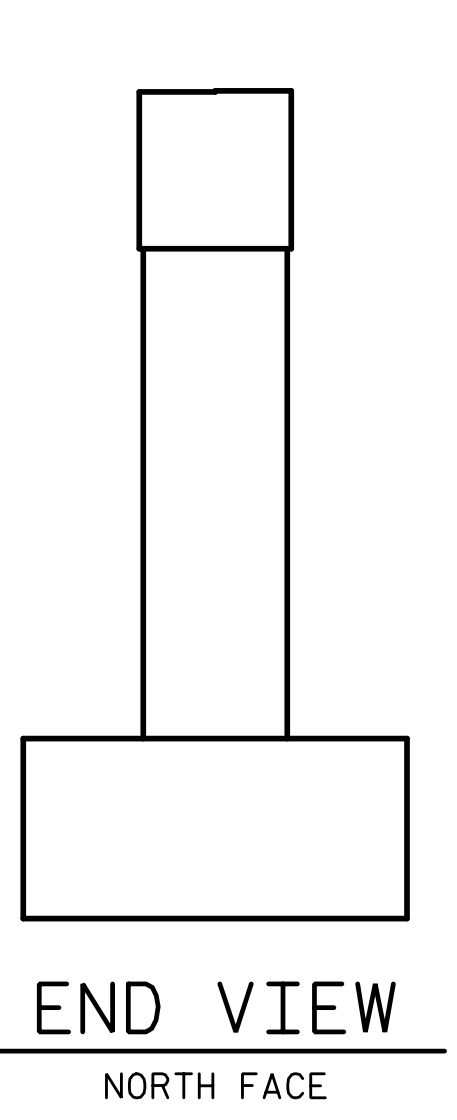


SPAN 11

SPAN 10

SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS BENT 10	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	4.5	0.8			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		2.3			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			



NOTES:

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FOR SUBSTRUCTURE REPAIR DETAIL, SEE "SUBSTRUCTURE REPAIR DETAIL" SHEET.

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THE CONTRACTOR SHALL CLEAN AND EPOXY COAT PAINT THE TOP SURFACE OF BENT CAPS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

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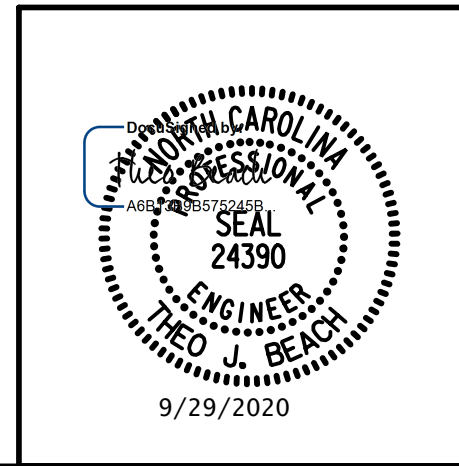
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BENT 10

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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			163

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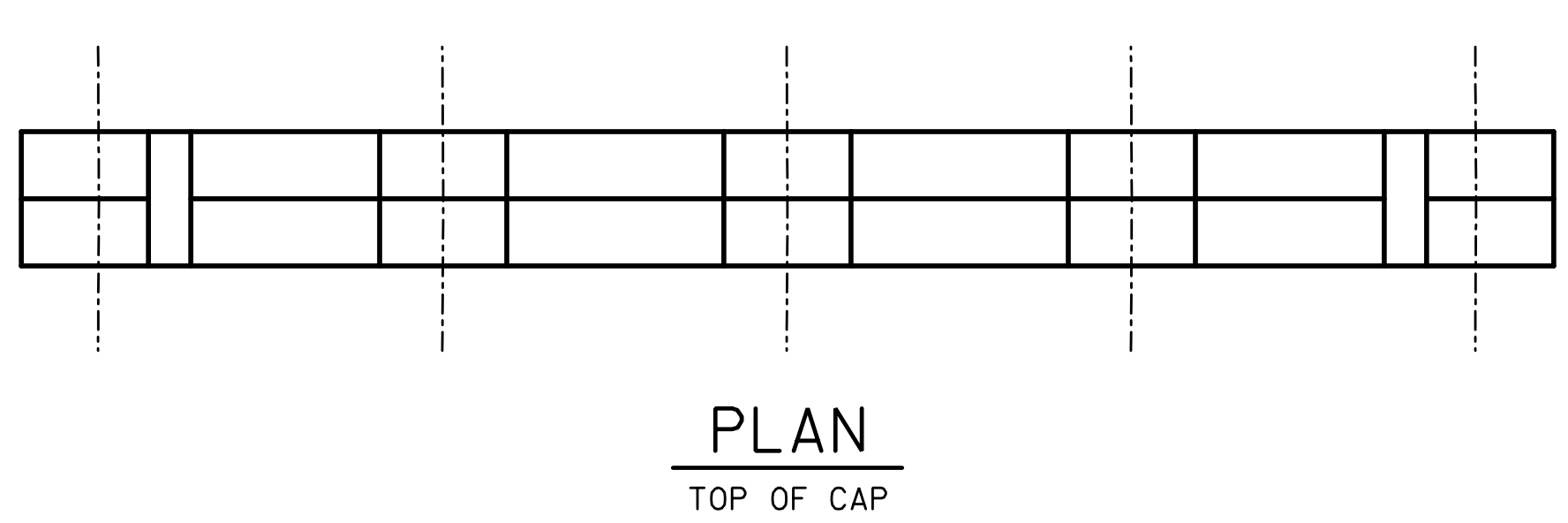
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PLAN
TOP OF CAP

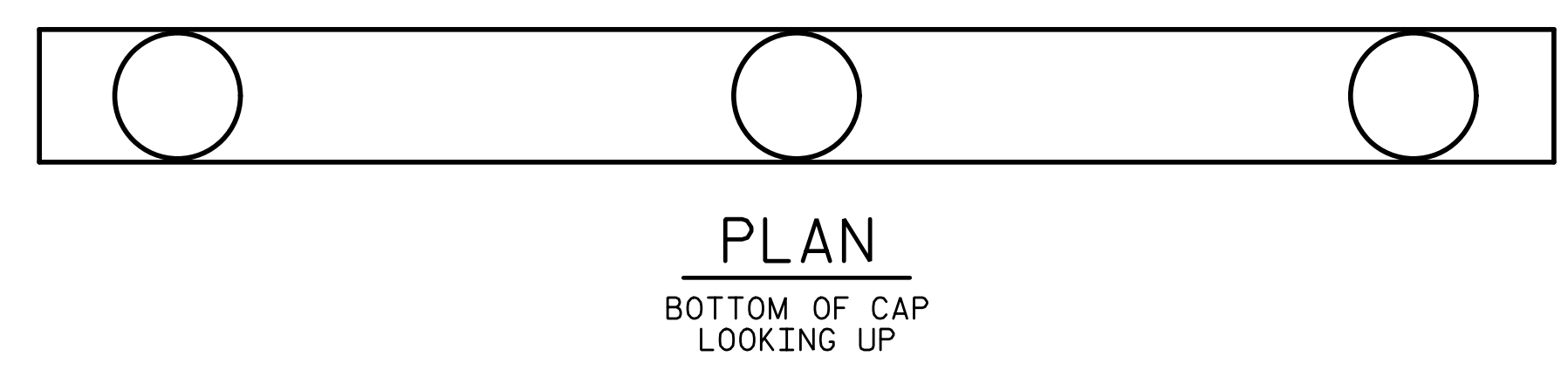
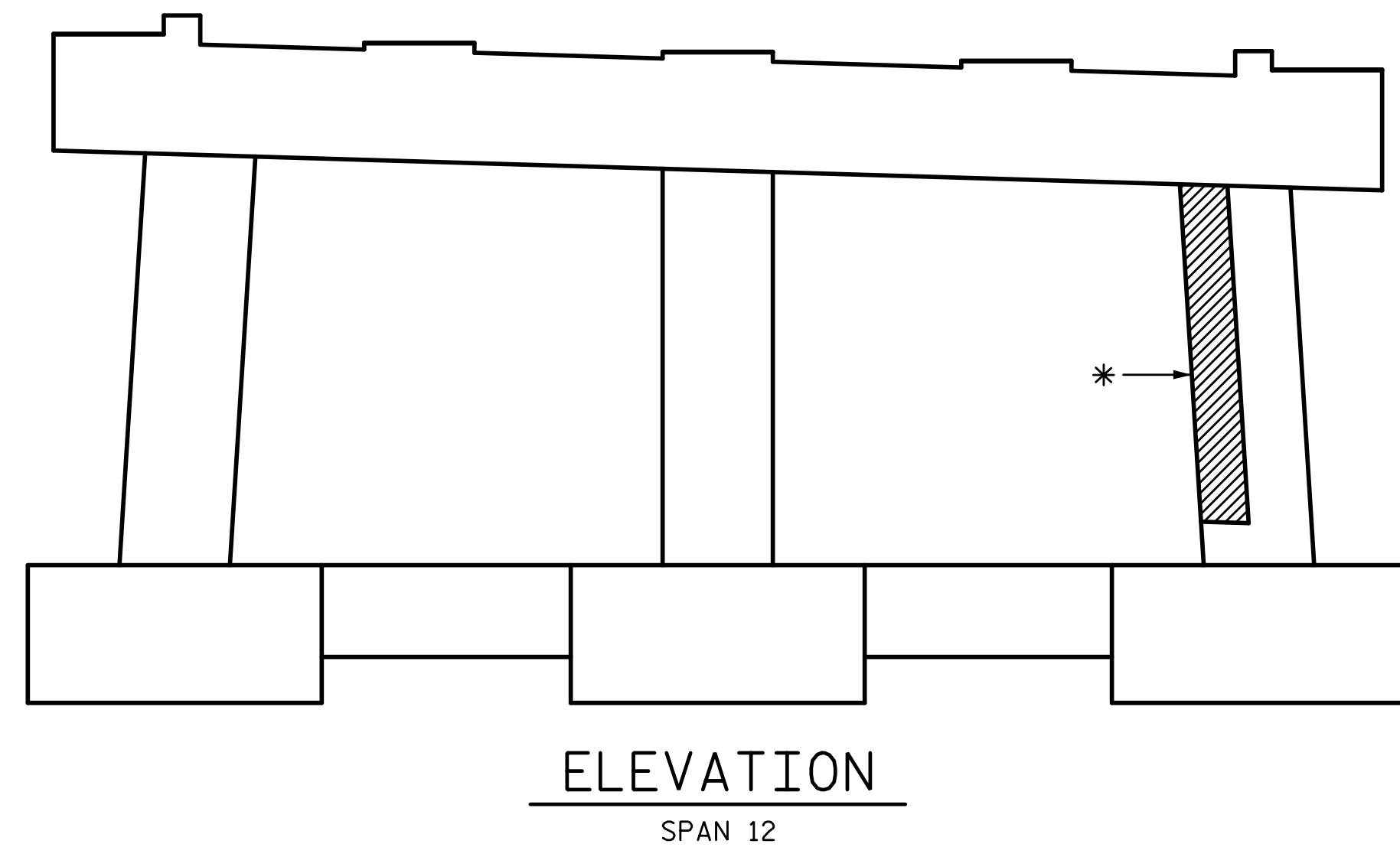
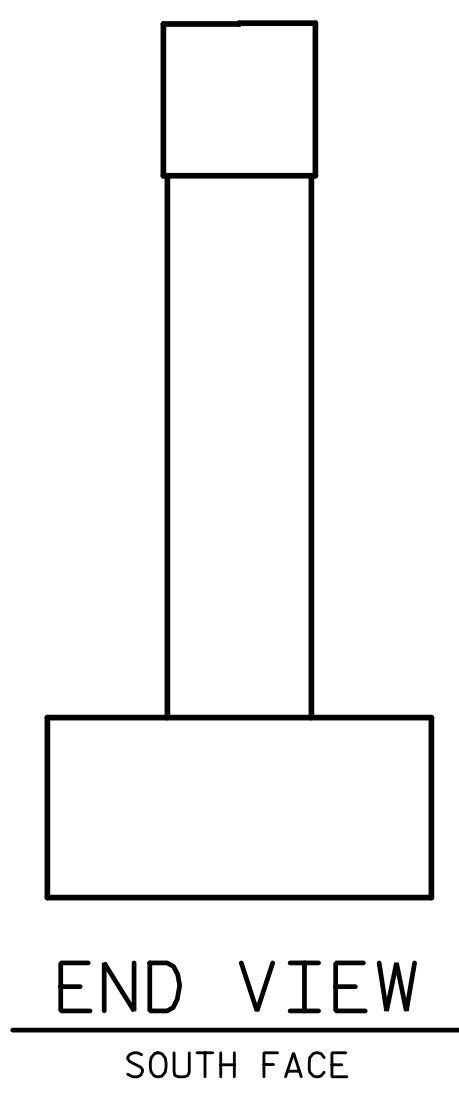
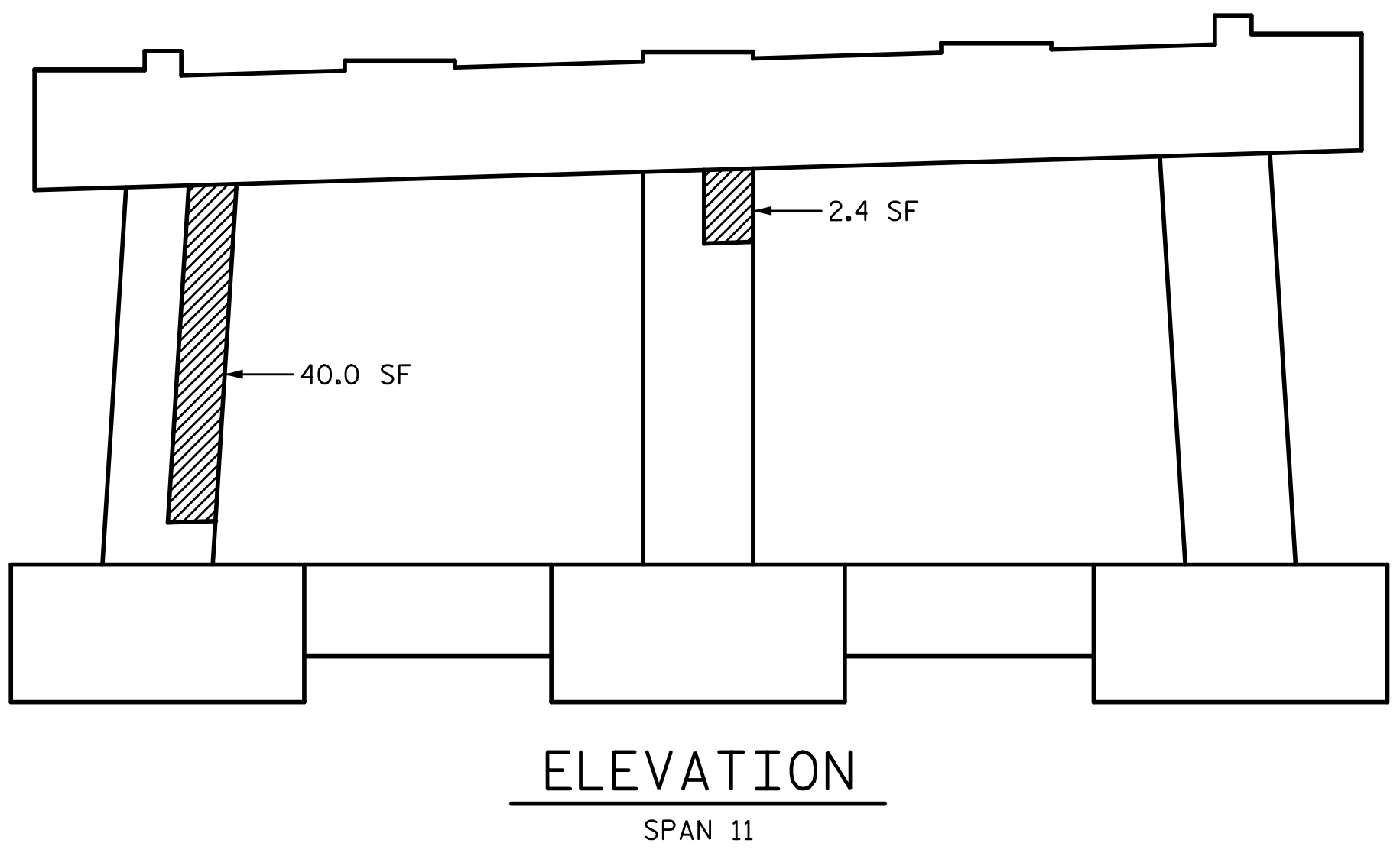
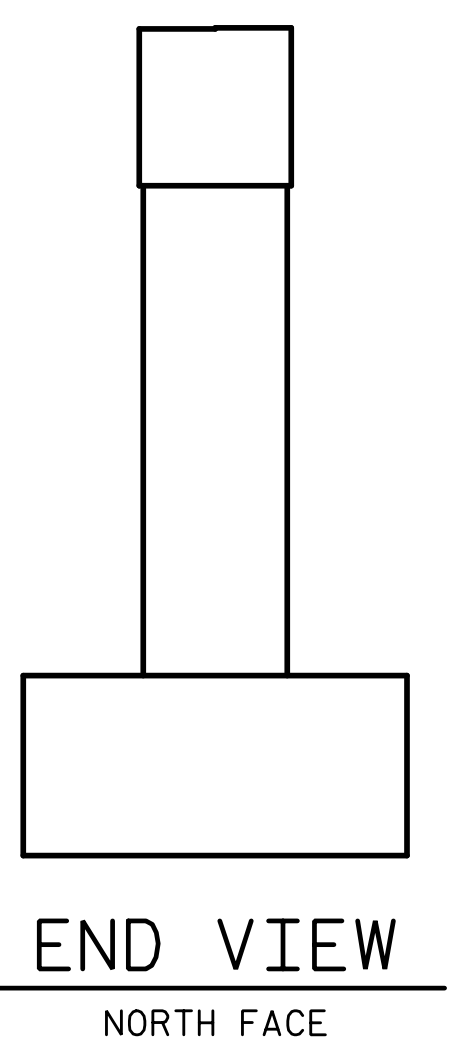
SPAN 12

SPAN 11

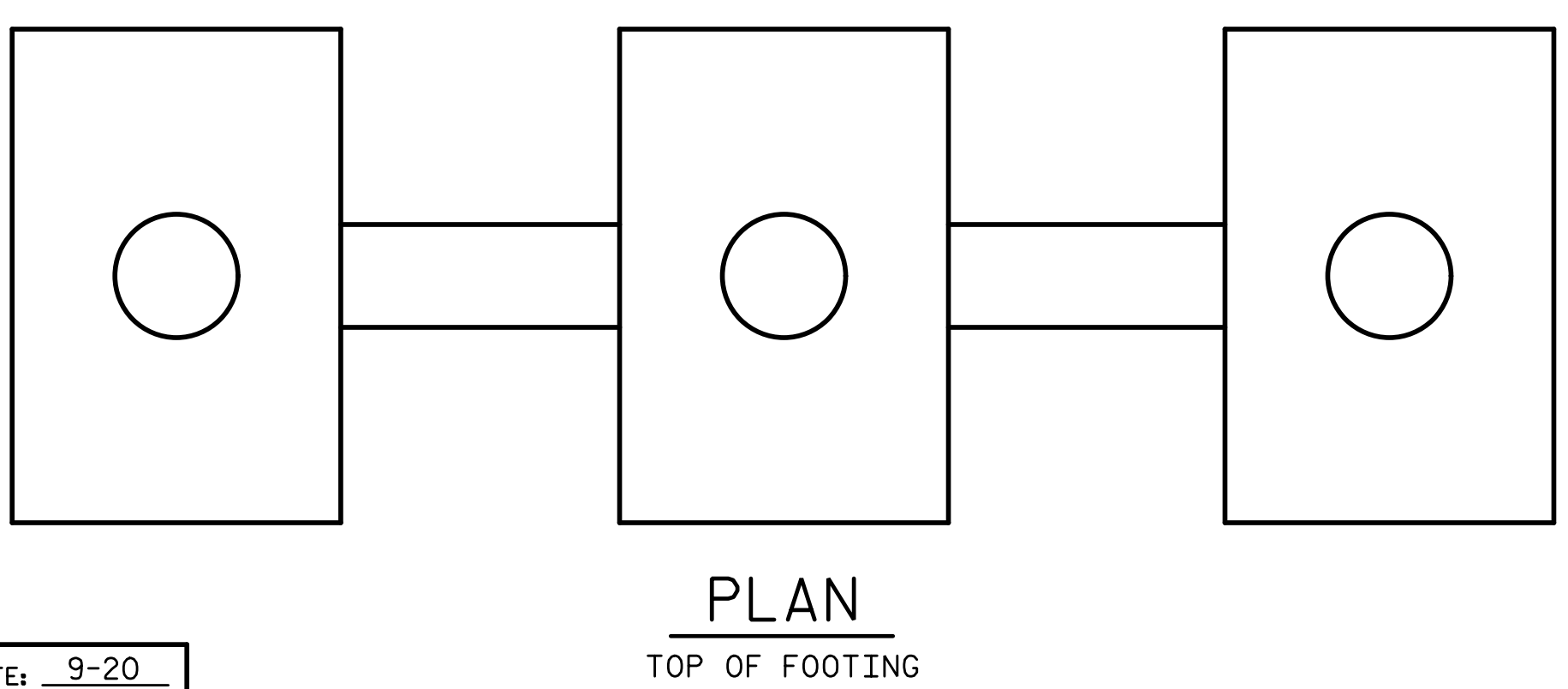
SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS BENT 11	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	42.4	7.4			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			

* SAME REPAIR NOTED AND QUANTIFIED IN SPAN 11 "ELEVATION" VIEW.



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

NOTES:

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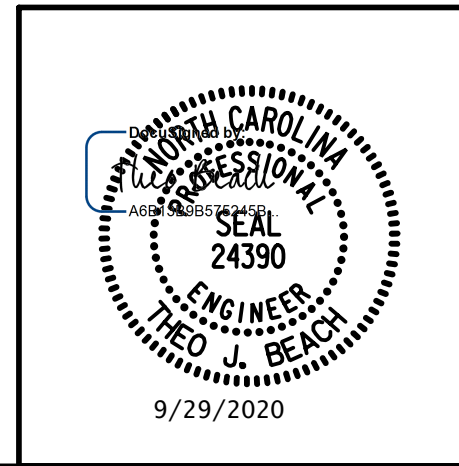
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1			3			TOTAL SHEETS
2			4			163

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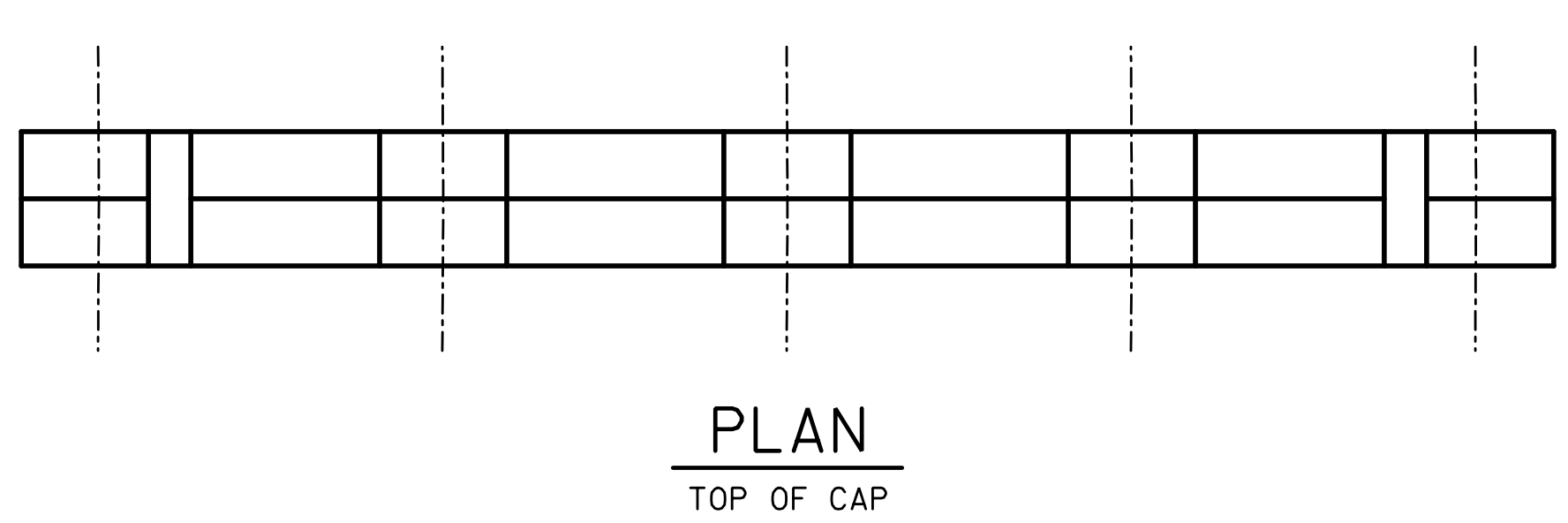
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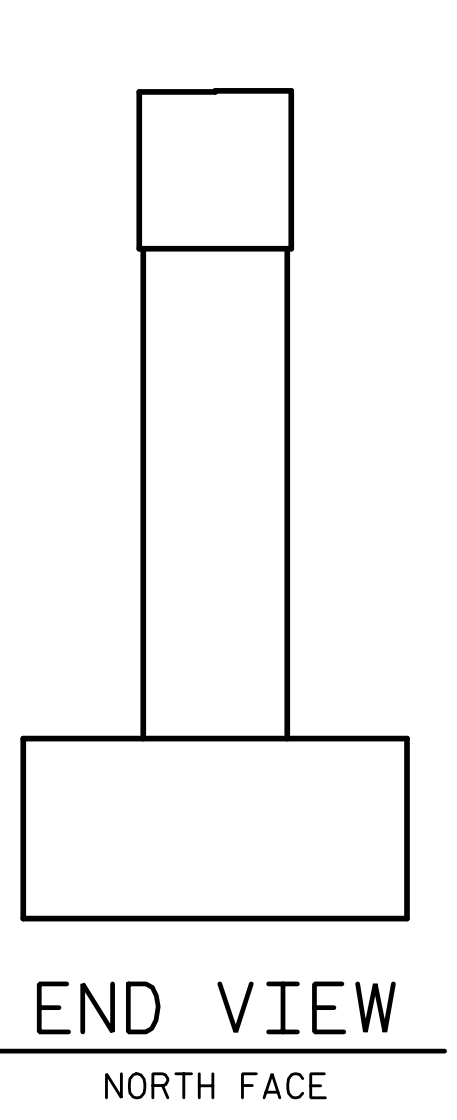
PLAN
TOP OF CAP

SPAN 13

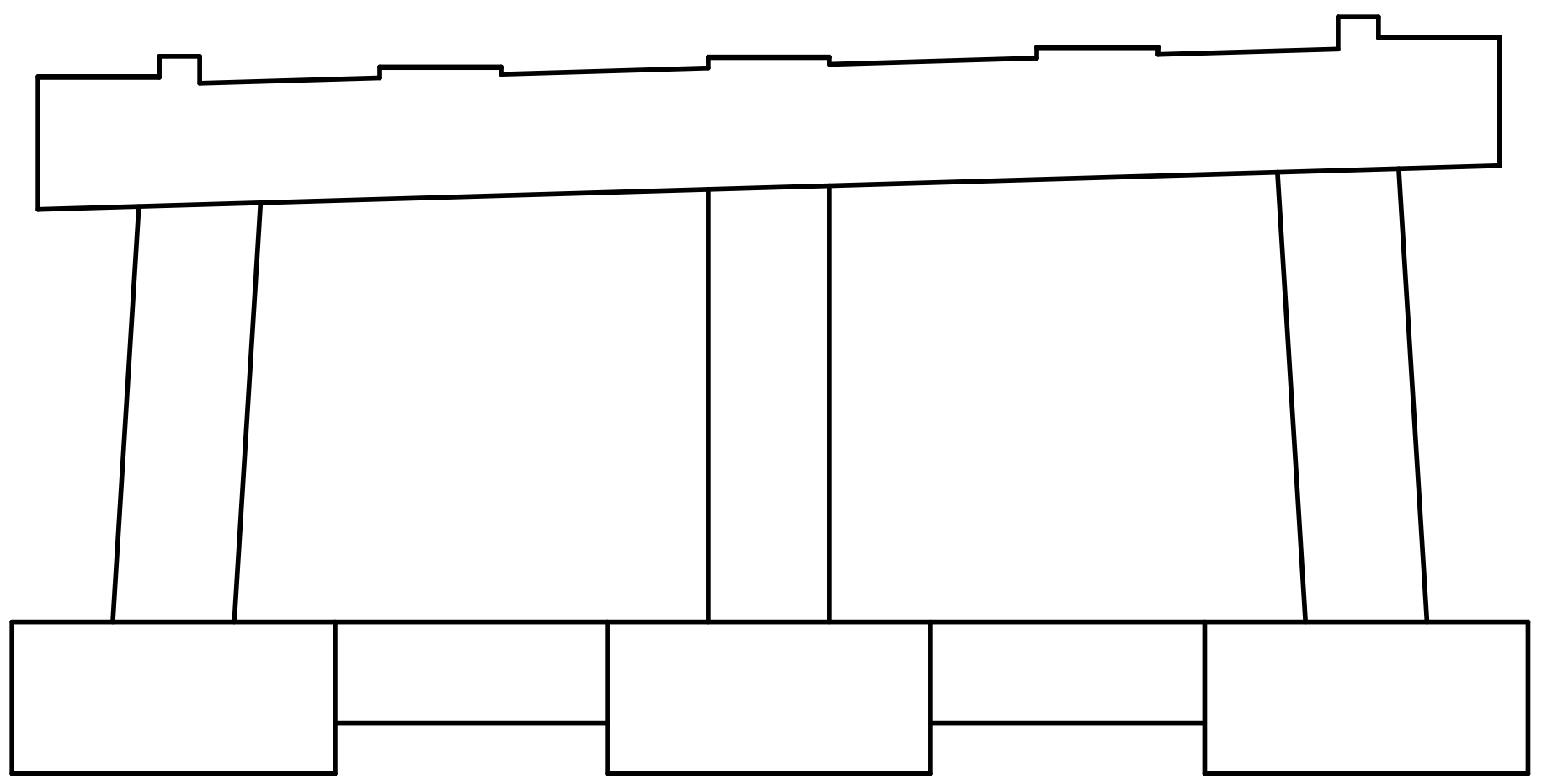
SPAN 12

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

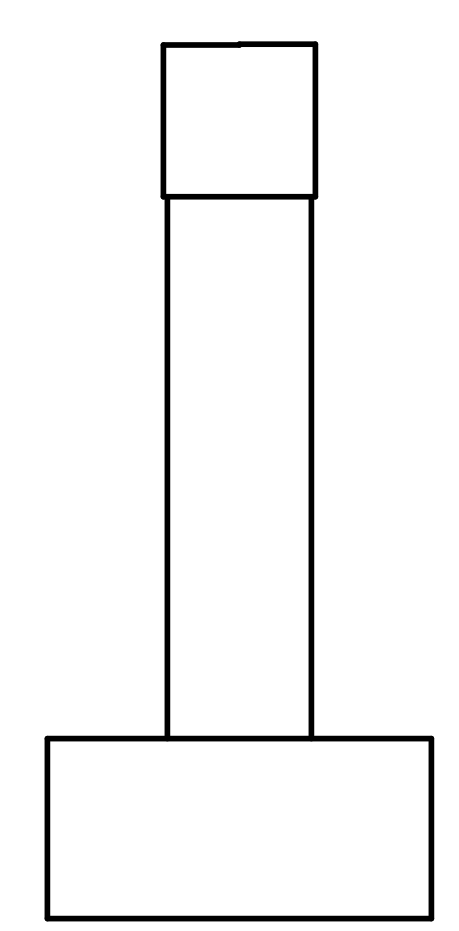
REPAIR QUANTITY TABLE					
REPAIRS BENT 12	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	5.5	1.8			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			



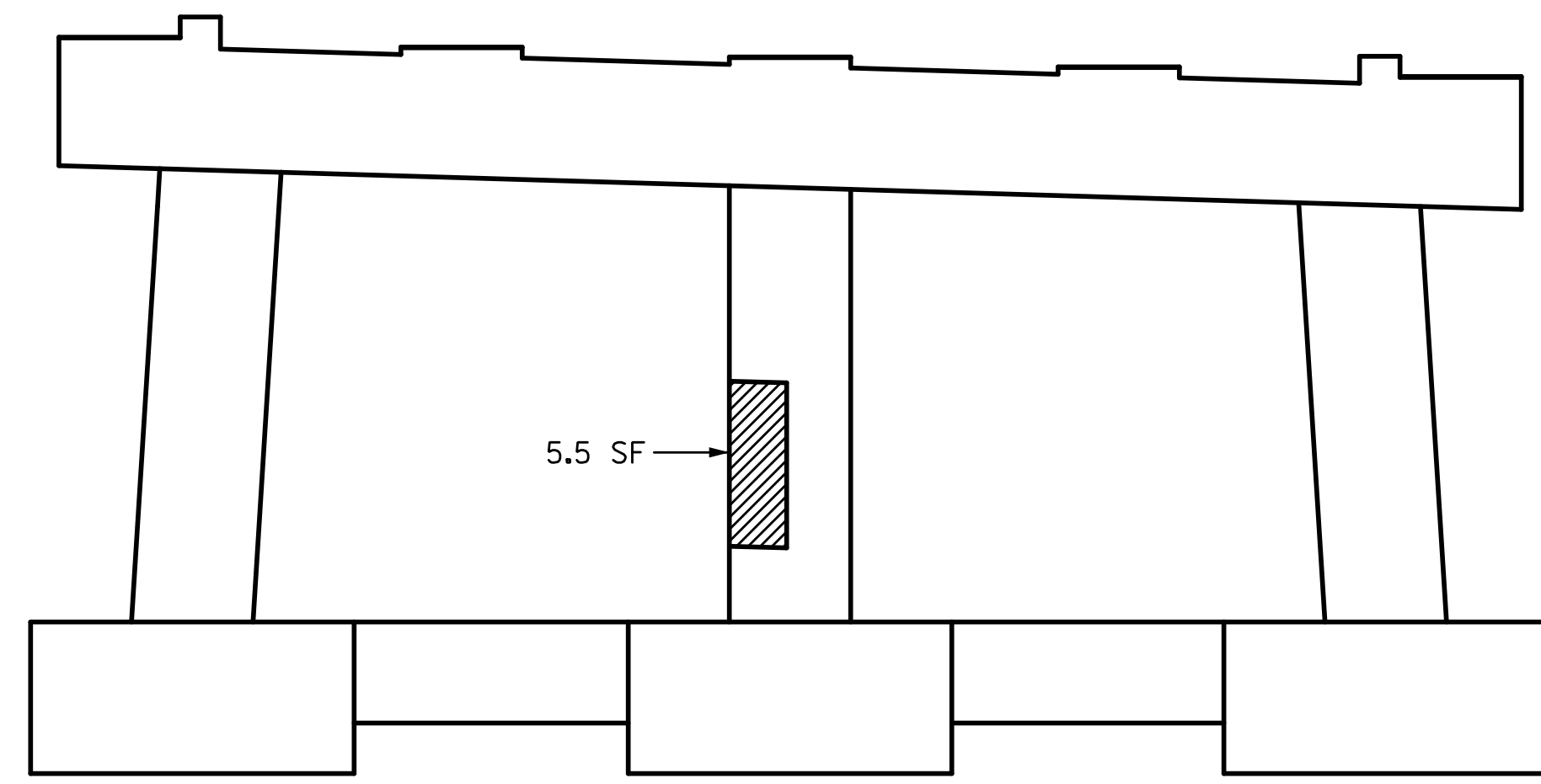
END VIEW
NORTH FACE



ELEVATION
SPAN 12

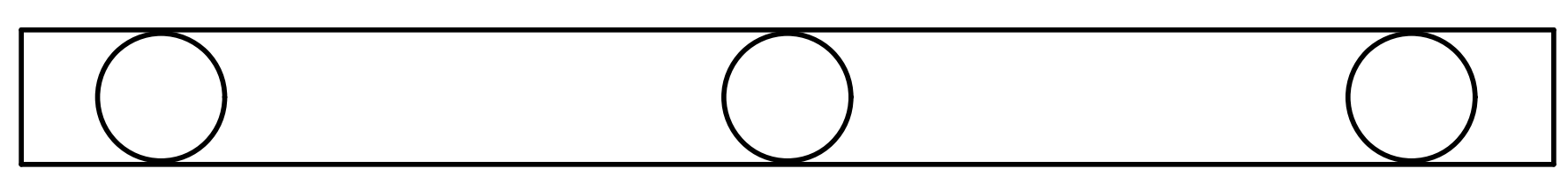


END VIEW
SOUTH FACE

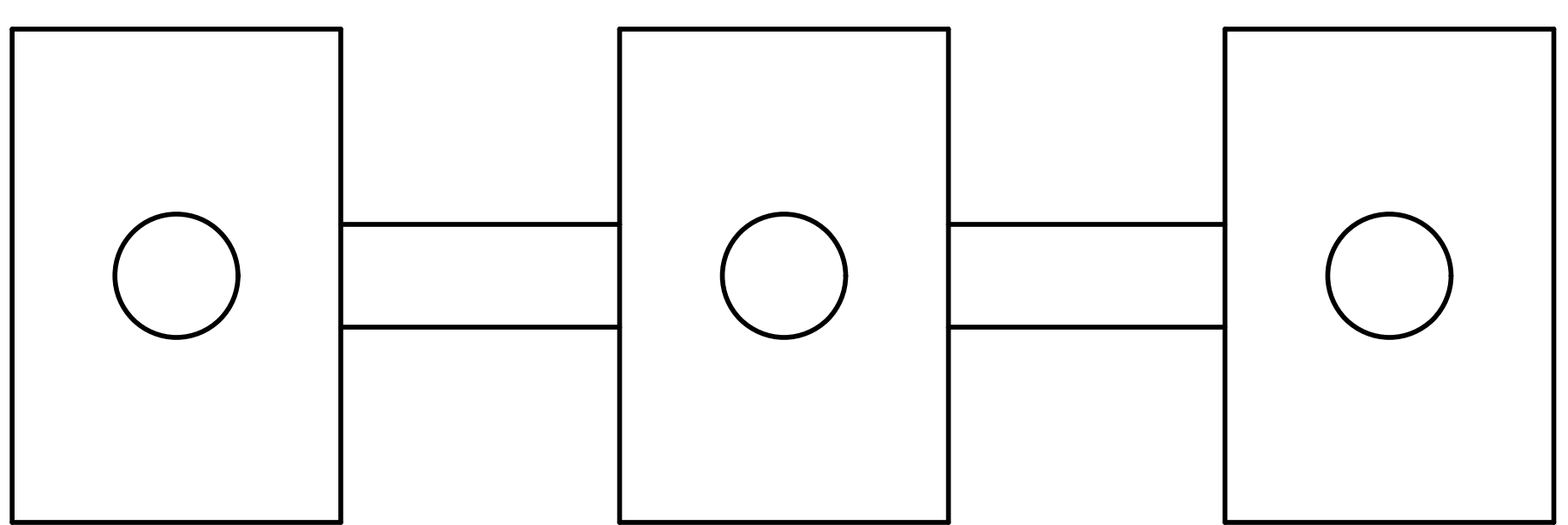


5.5 SF →

ELEVATION
SPAN 13



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

NOTES:

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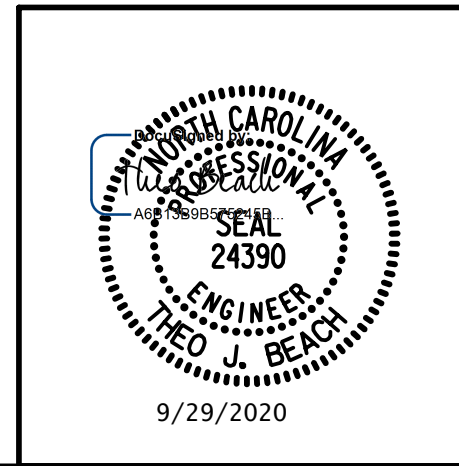
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1			3			163
2			4			

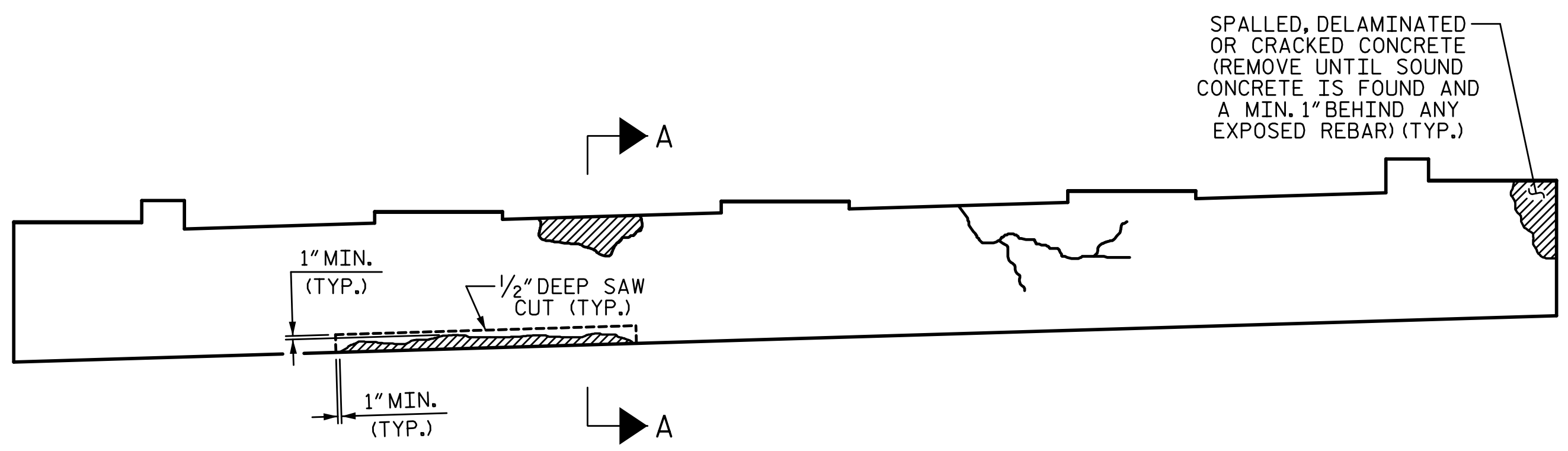
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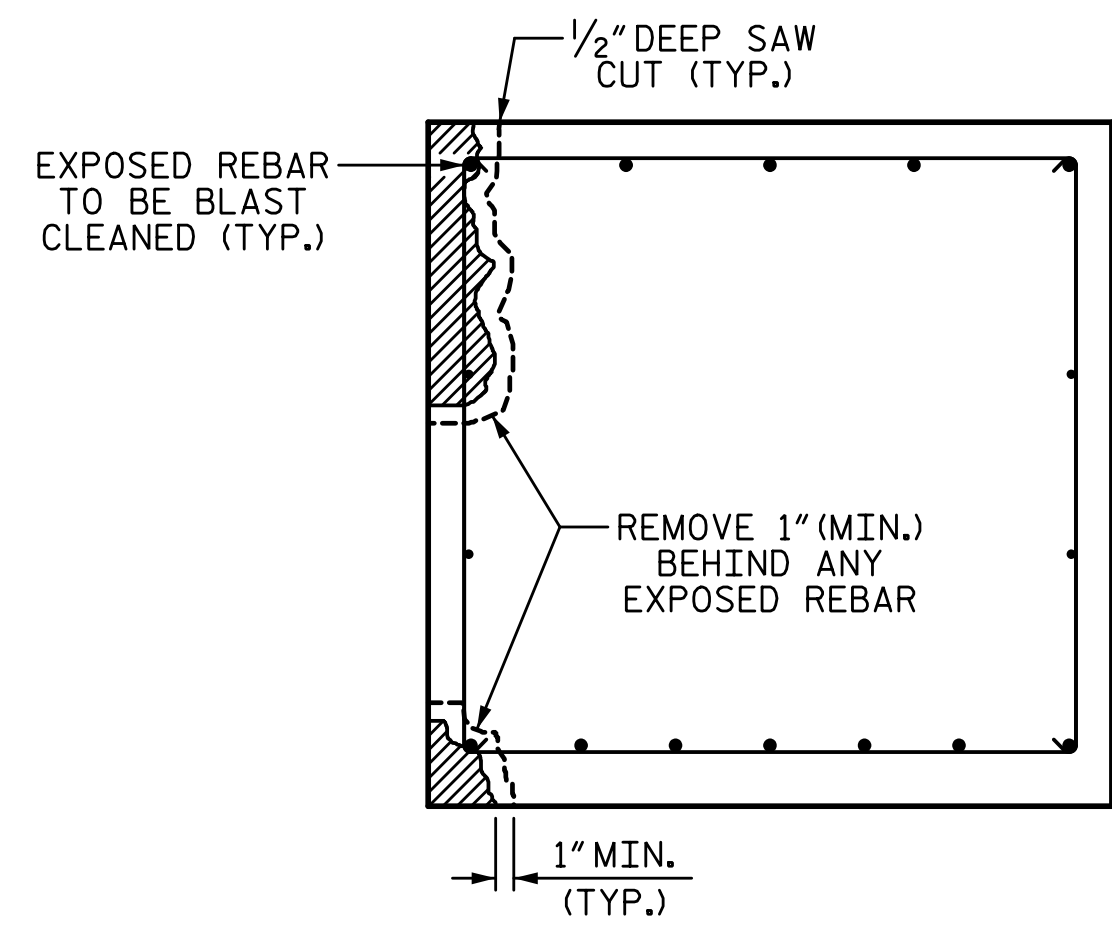
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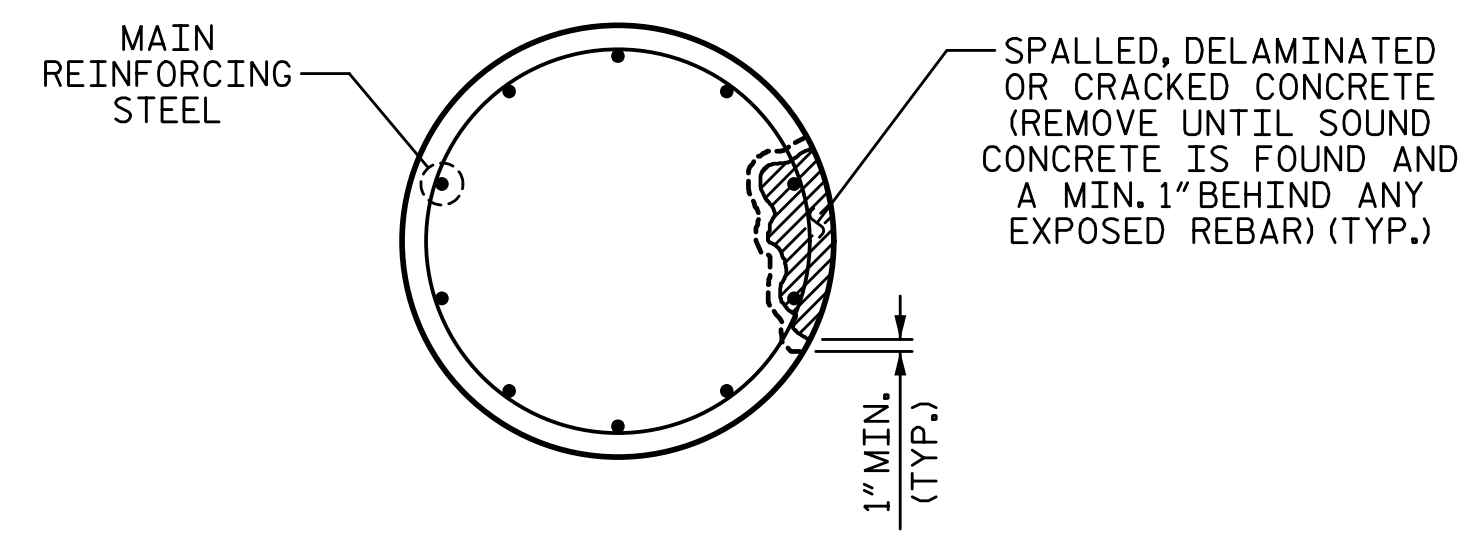
CAP REPAIRS
BENT SHOWN, END BENT CAP SIMILAR



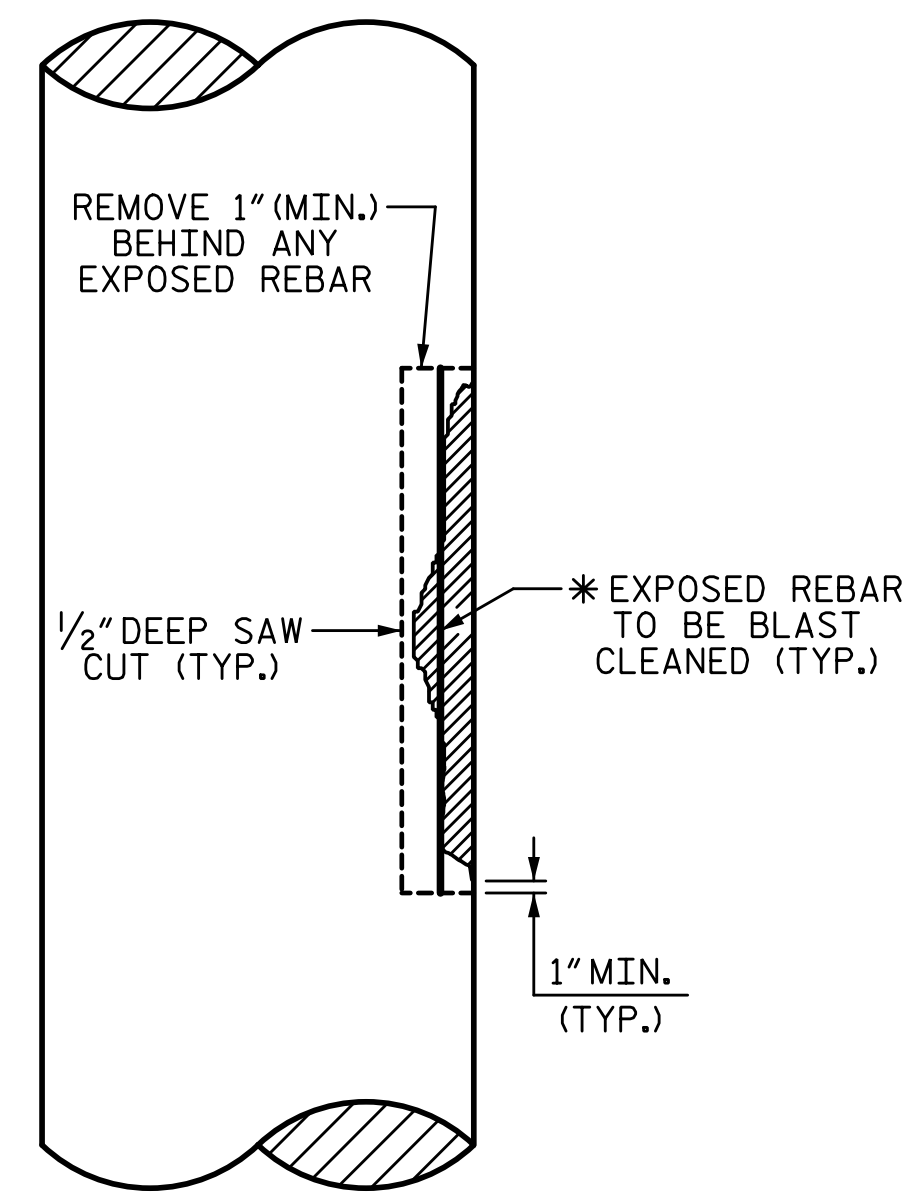
SECTION A-A
BENT SHOWN, END BENT CAP SIMILAR

CAP REPAIR

SPLICE LENGTH TABLE	
BAR SIZE	MIN. SPLICE LENGTH
#4	2'-4"
#5	2'-9"
#6	4'-0"
#7	5'-3"
#8	6'-9"
#9	8'-6"
#10	10'-11"
#11	13'-4"



PLAN OF COLUMN



ELEVATION OF COLUMN
* IF CONFINEMENT STEEL IS NOT PRESENT, THEN REPAIR LENGTH SHALL NOT EXCEED 10 FEET

COLUMN REPAIR

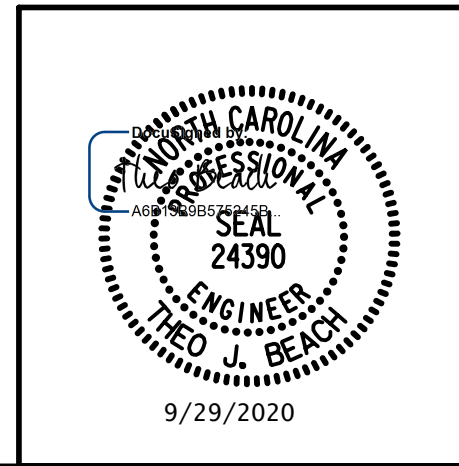
NOTES:

- TYPICAL BENT CAP REPAIRS ARE SHOWN, REPAIR DETAILS SIMILAR FOR END BENT CAPS AND STRUTS.
- THE METHOD USED TO DELINEATE THE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL OF REQUIRE HARSH CHEMICALS TO REMOVE.
- THE CONTRACTOR SHALL REMOVE THE DETEIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.
- REMOVE UNSOUND CONCRETE TO THE EXTEND NECESSARY, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT.
- NO MORE THAN ONE-THIRD OF THE CAP OR COLUMN CROSS SECTIONAL AREA SHALL BE REMOVED AT ONE TIME. SHOULD IT BECOME NECESSARY TO REMOVE MORE THAN 30% OF A CAP OR COLUMN CROSS SECTIONAL AREA, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.
- SIMULTANEOUS REMOVAL OF UNSOUND CONCRETE MAY BE PERMITTED ON MORE THAN ONE FACE OF A CAP AND/OR COLUMN, IF THE AREAS OF REMOVAL ARE NOT ADJACENT TO OR DIRECTLY OPPOSITE ONE ANOTHER. IF REMOVAL EXTENDS MORE THAN 1/2" BEHIND THE MAIN REINFORCING BARS. NOTIFY THE ENGINEER PRIOR TO PROCEEDING.
- REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THIS SHEET.
- FOR ADHESIVELY ANCHORED ANCHOR BOLTS OF DOWEL, SEE STANDARD SPECIFICATIONS.
- COAT ALL REPAIR SURFACE AREAS ON THE TOP OF CAPS, INCLUDING CHAMFERS, WITH EPOXY COATING, OVERLAPPING THE REPAIR ARE BY A MINIMUM OF 3" ON ALL POSSIBLE SIDES.
- FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
- FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.
- FOR EPOXY COATING, SEE SPECIAL PROVISIONS.
- FOR EPOXY RESIN INJECTIONS (ERI), SEE SPECIAL PROVISIONS.

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PLANS PREPARED BY:
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
SUBSTRUCTURE REPAIR DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-163
1			3			TOTAL SHEETS
2			4			163

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
	GRADE 60	-- 24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT: ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

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JANUARY, 1990