
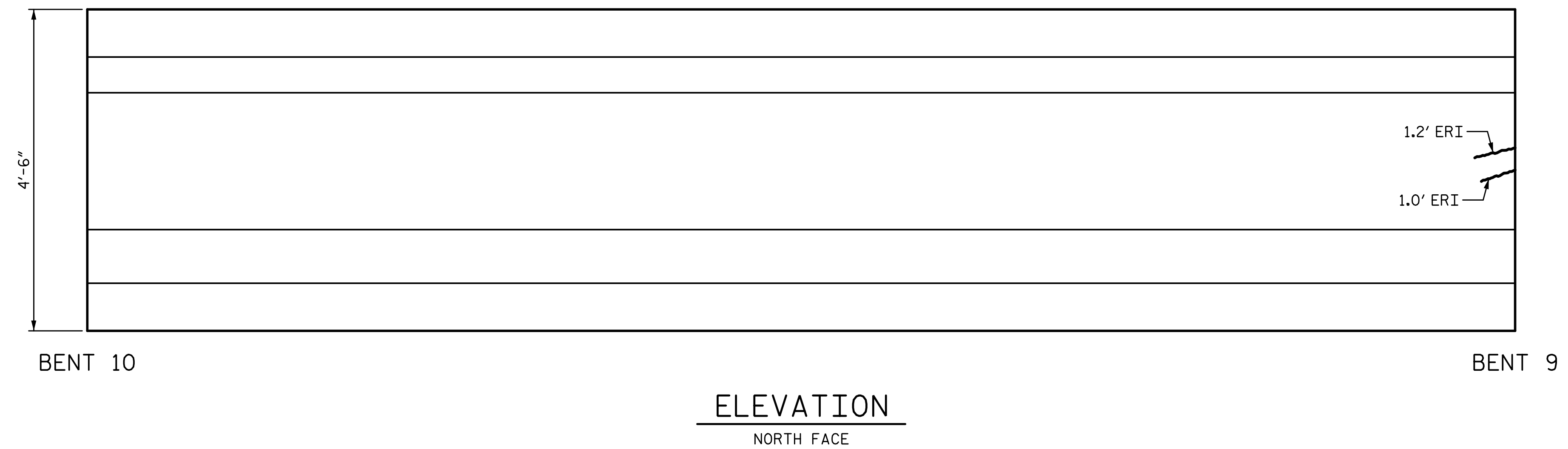
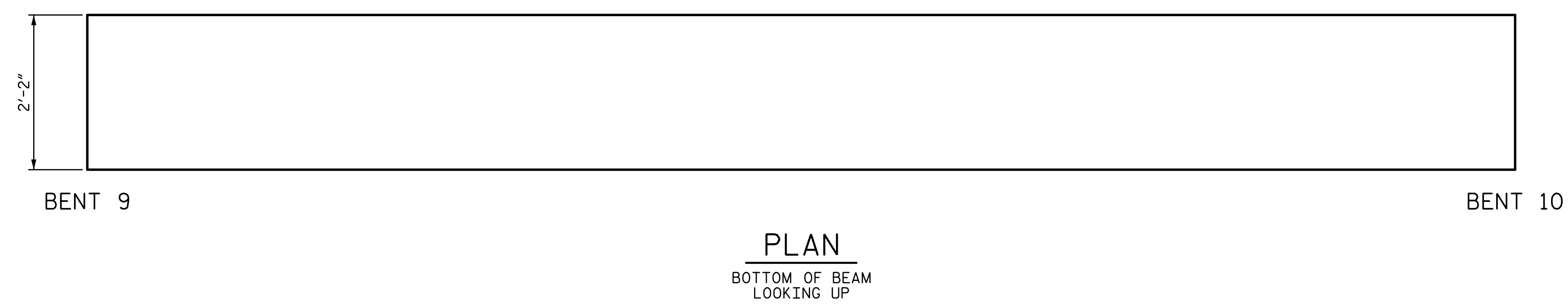
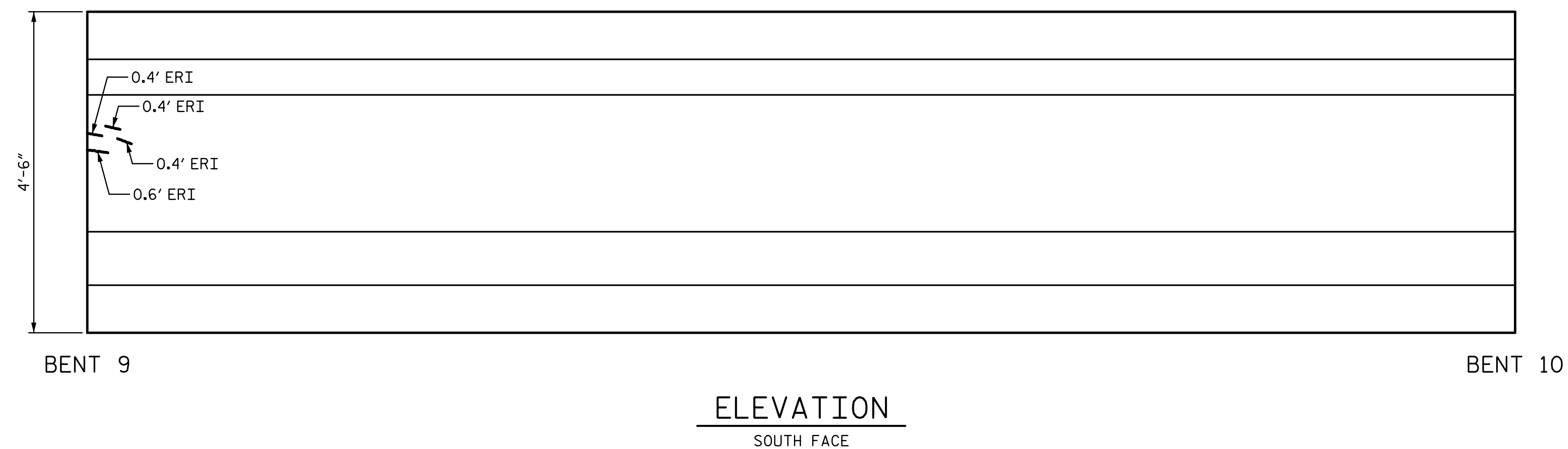


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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 10 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		4.0			



NOTES:
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 BRIDGE NO.: 640048

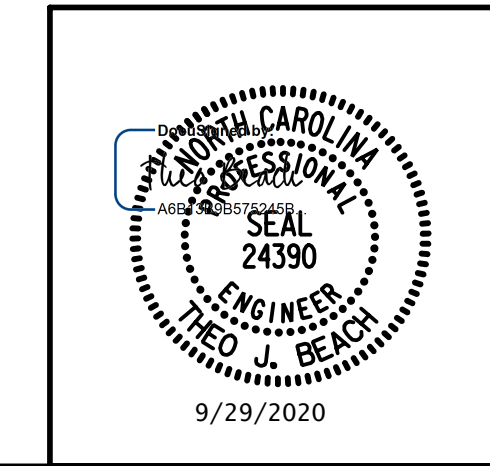
SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 10
 GIRDER 4**

PLANS PREPARED BY:

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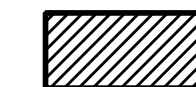


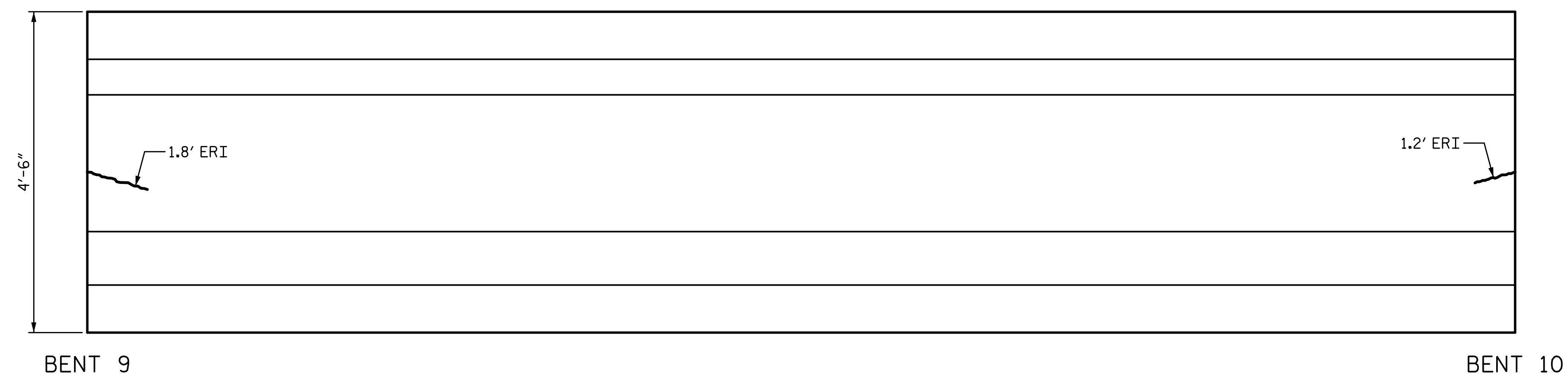
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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-101
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2			4			163

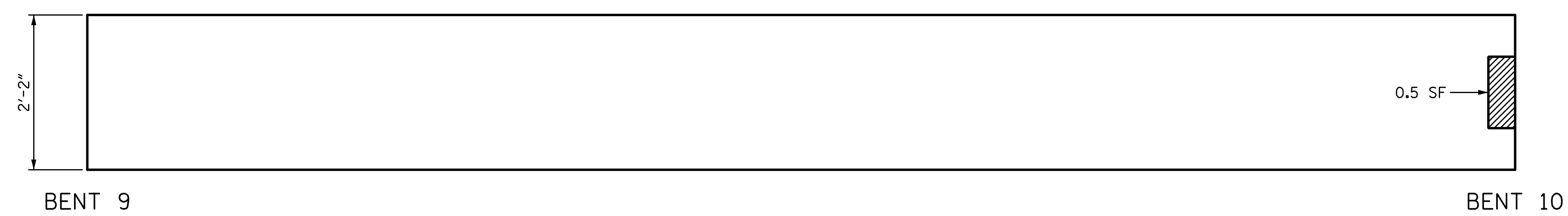
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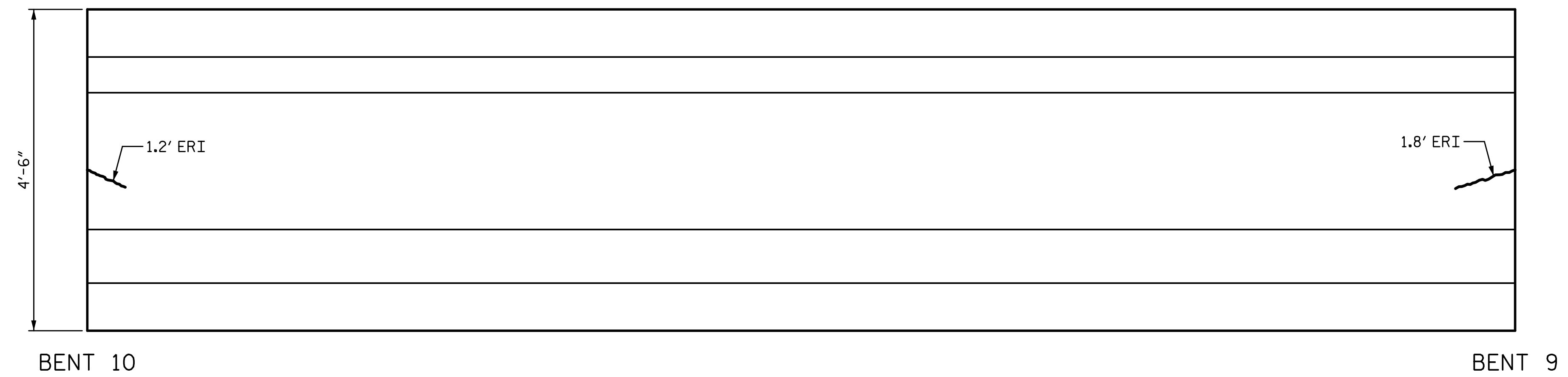
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 10 GRD. 5	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.5	0.3			
EPOXY RESIN INJECTION		LF			LF
GIRDER		6.0			

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 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 5 OF 5

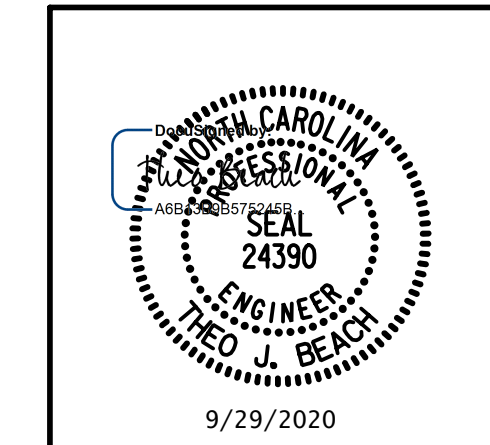
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 10
 GIRDER 5**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-102
1			3			TOTAL SHEETS
2			4			163

PLANS PREPARED BY:

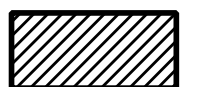
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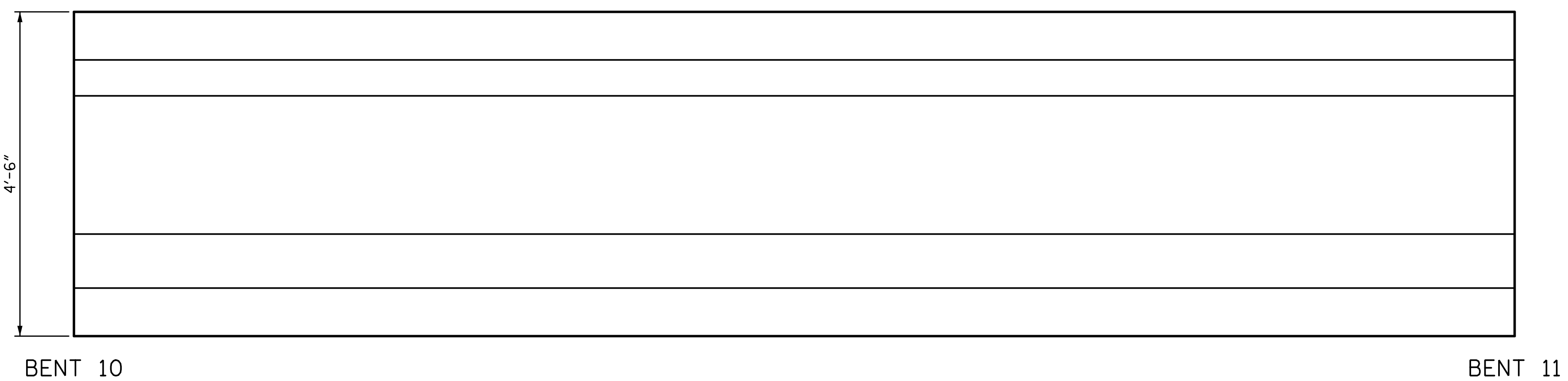


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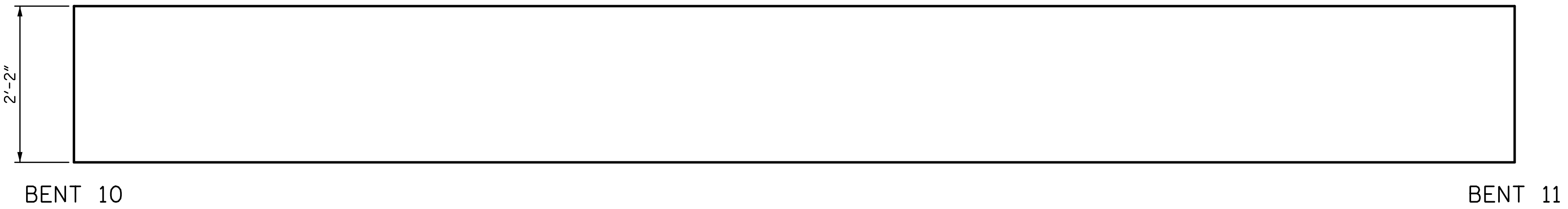
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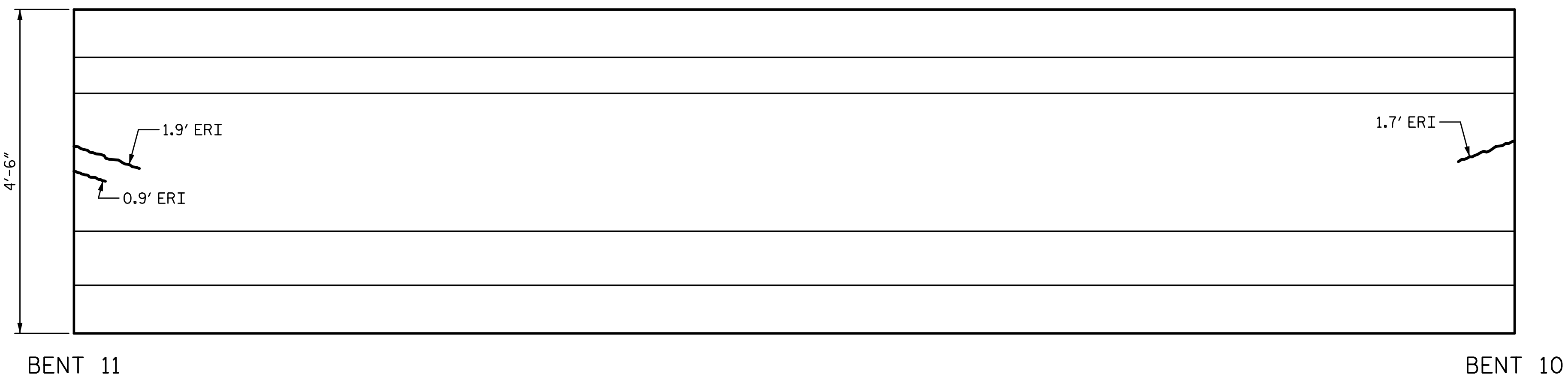
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 11 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		4.5			

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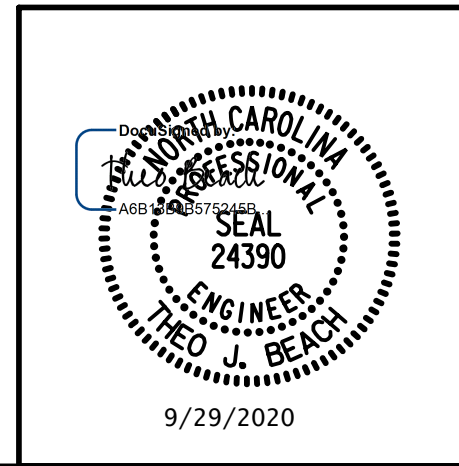
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 11
 GIRDER 1

PLANS PREPARED BY:

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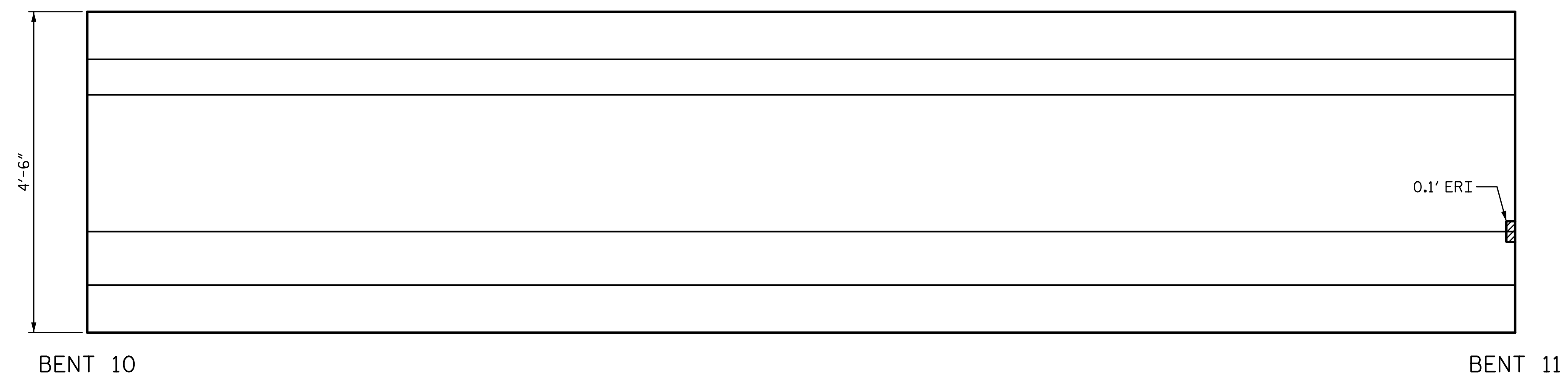
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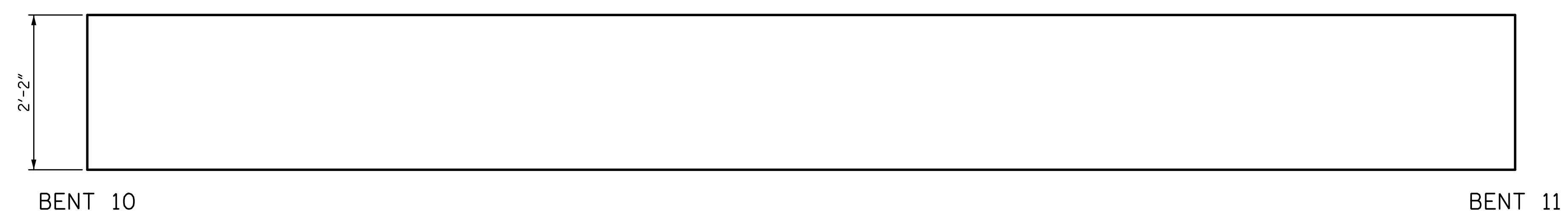
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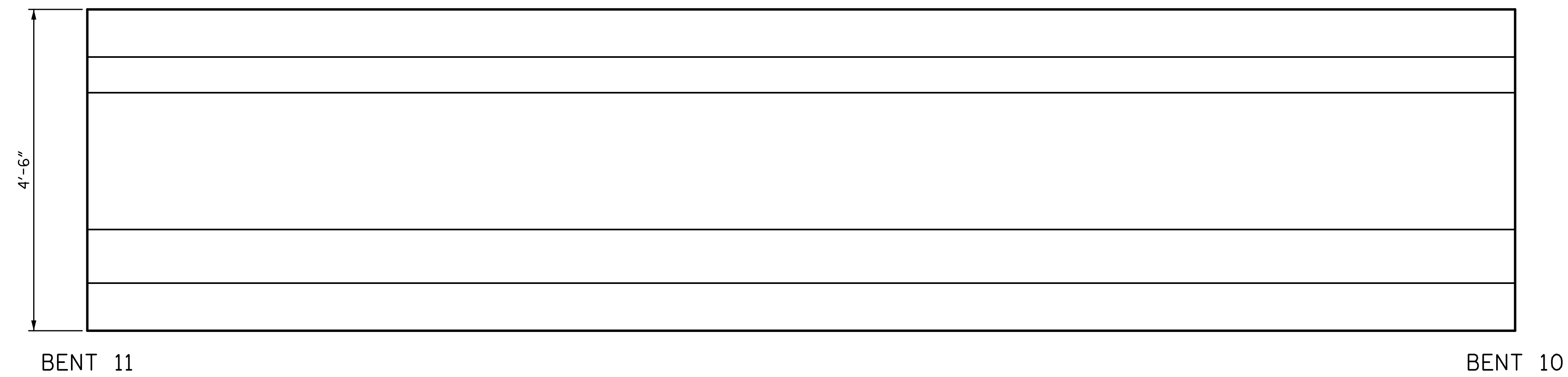
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



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	0.1	0.05			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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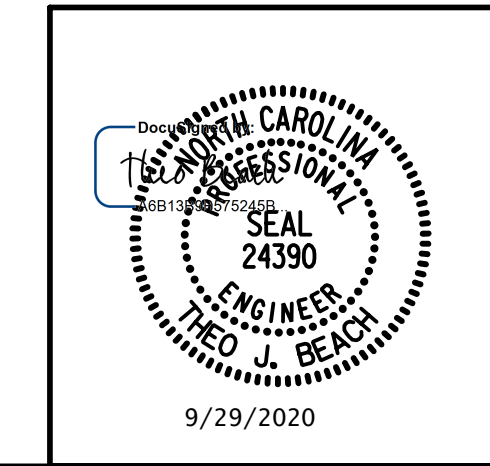
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 2 OF 5

STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION
 SPAN 11
 GIRDER 2

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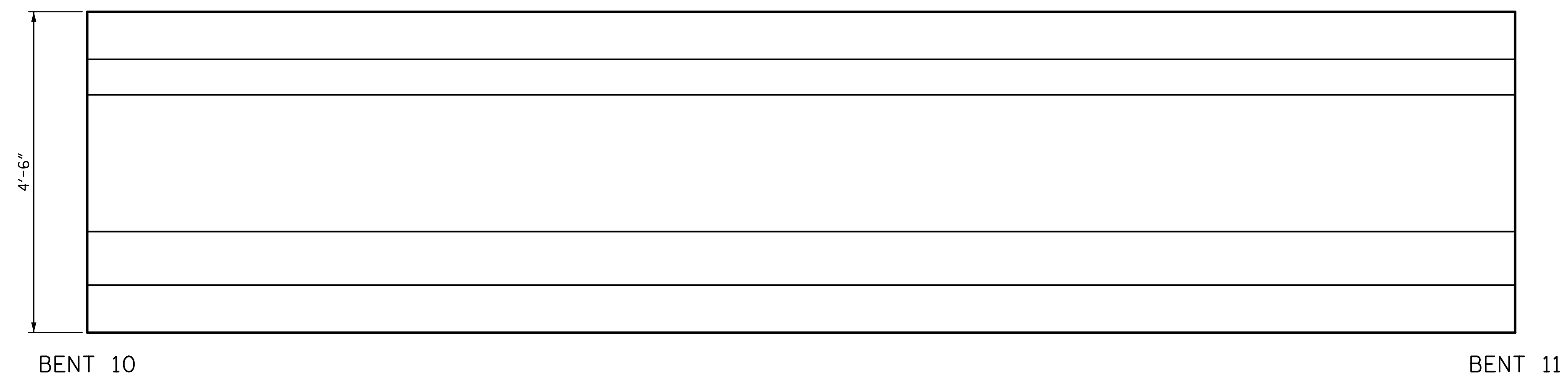
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2			4			163

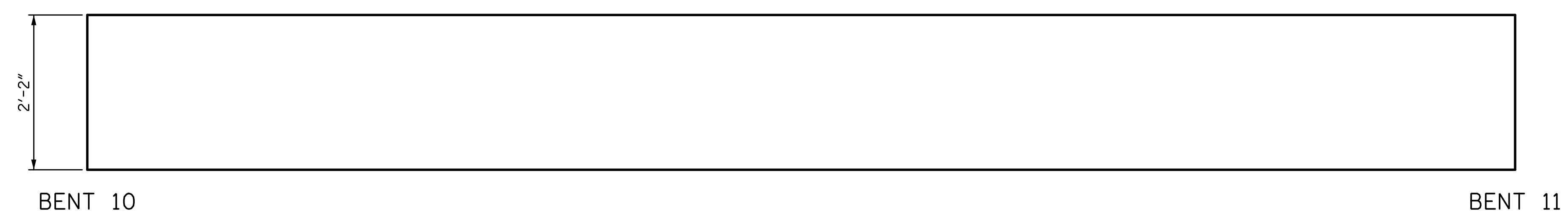
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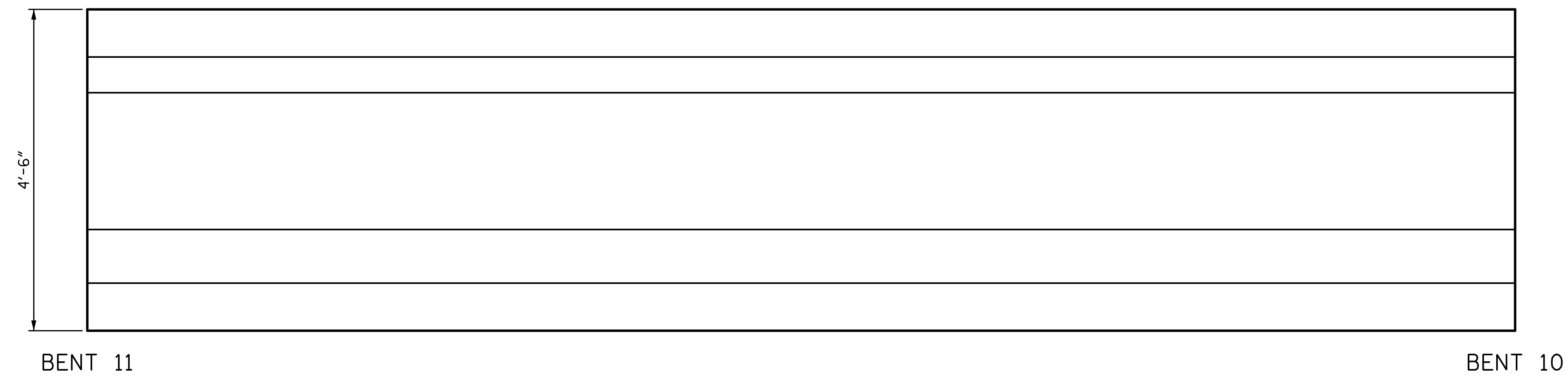
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



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	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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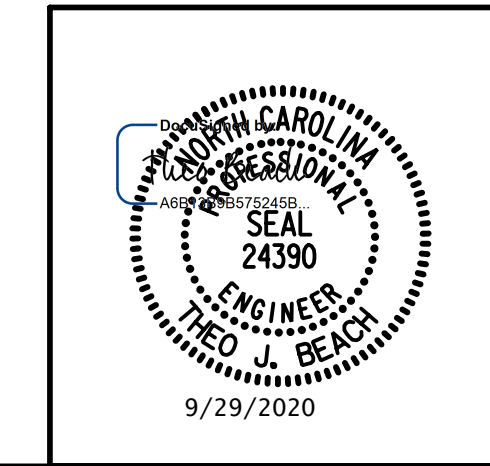
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
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SHEET 3 OF 5

STATE OF NORTH CAROLINA
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 PRESERVATION
 SPAN 11
 GIRDER 3

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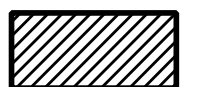


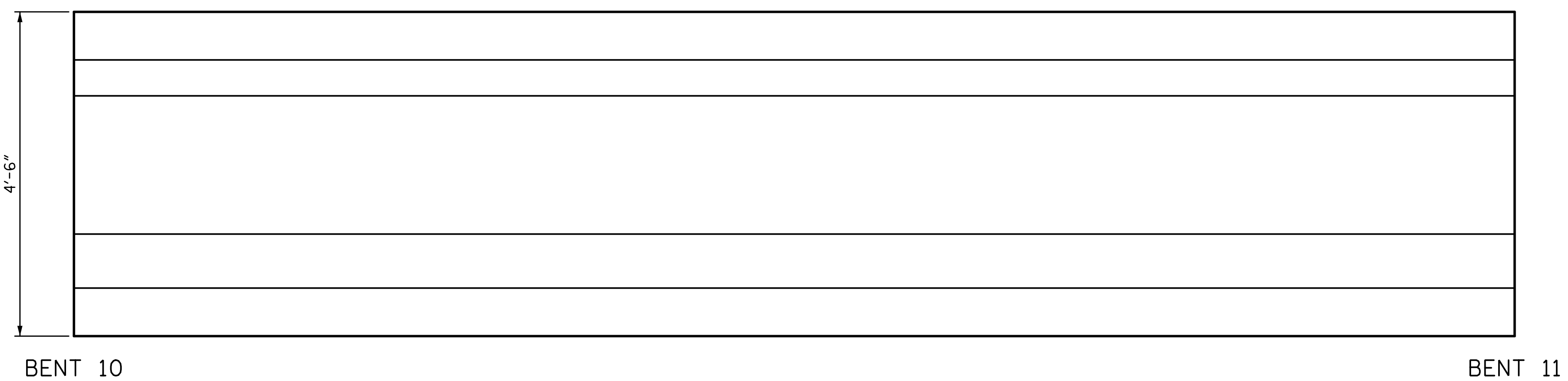
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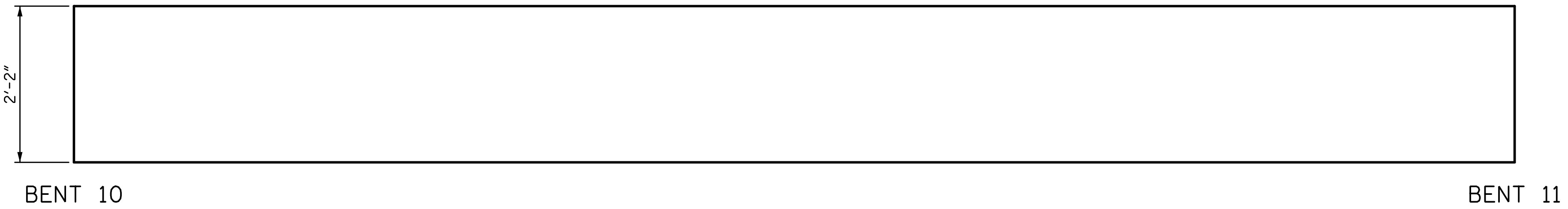
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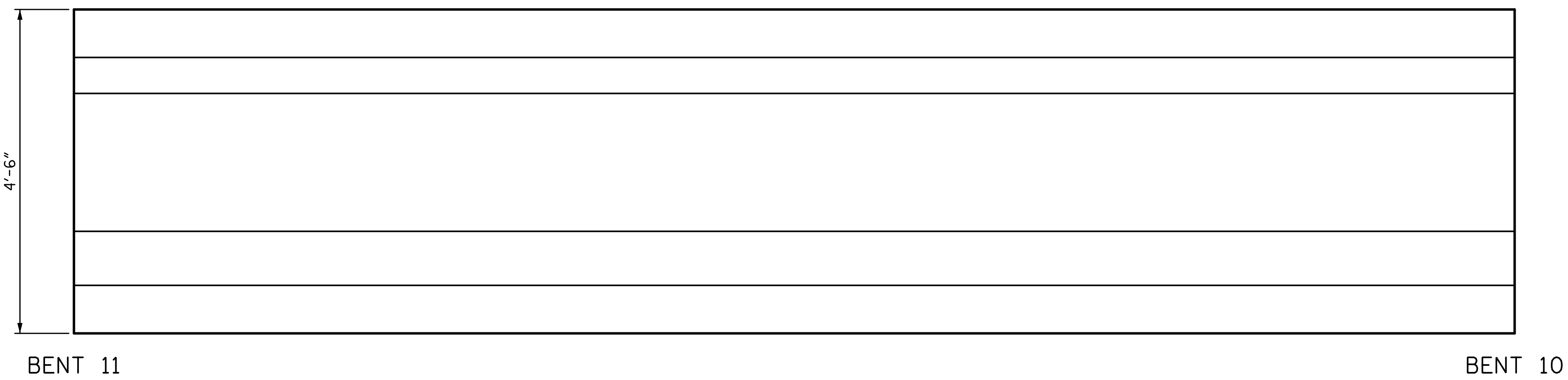
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



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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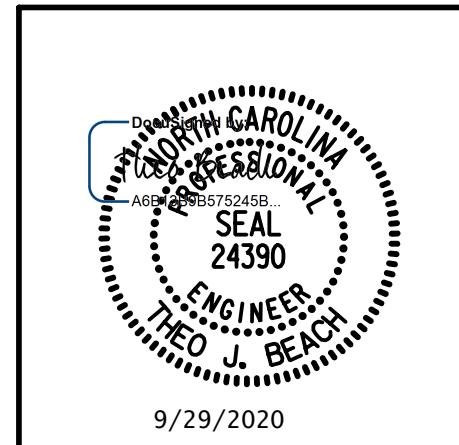
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 BRIDGE NO.: 640048

SHEET 4 OF 5

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

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

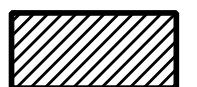


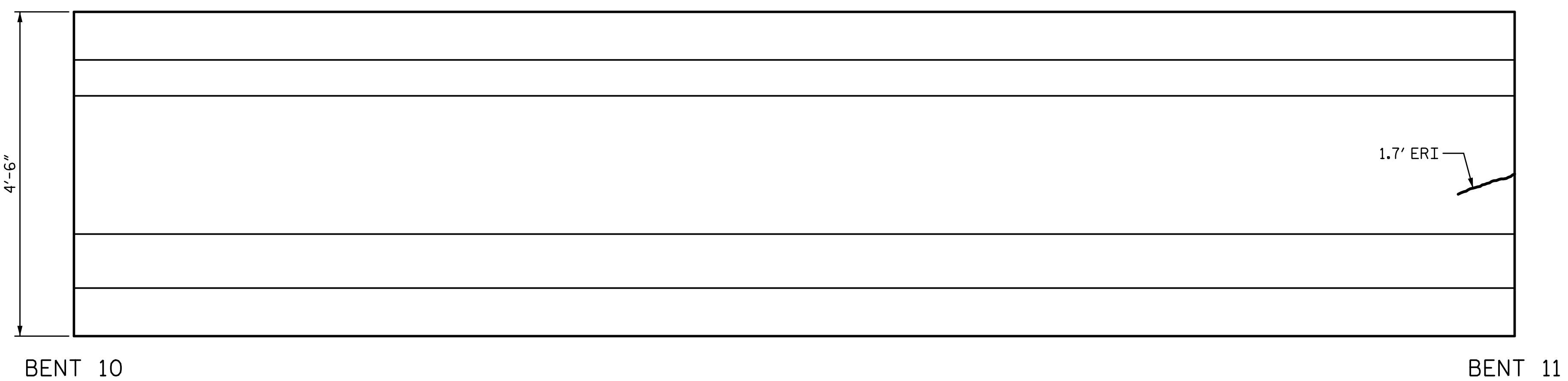
DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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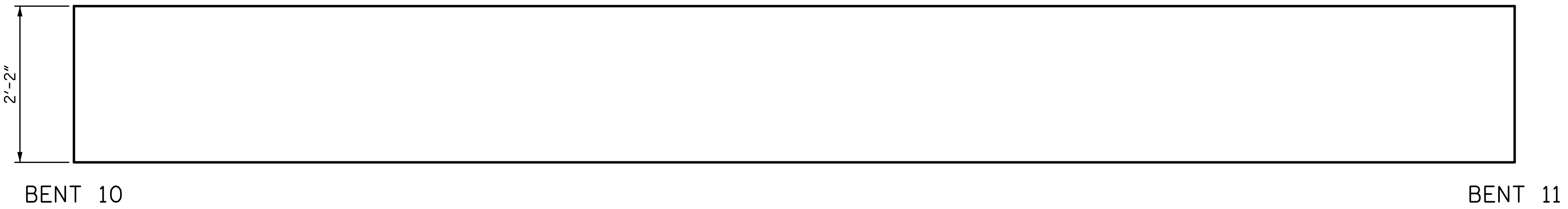
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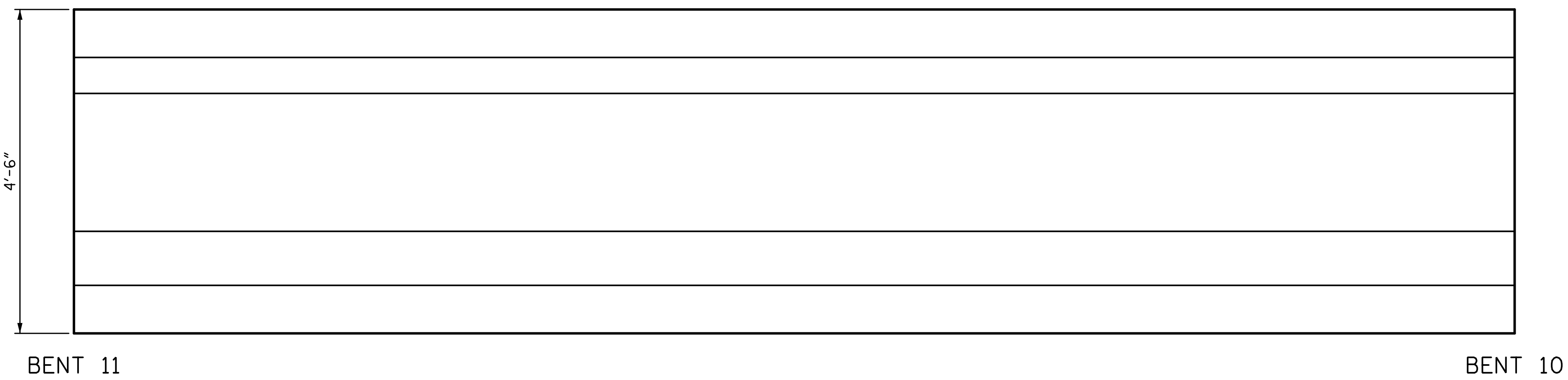
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 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		1.7			

NOTES:
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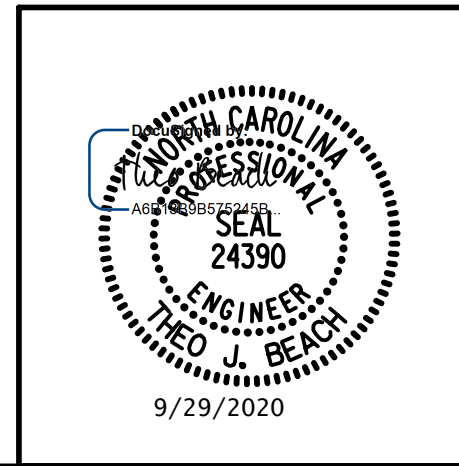
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 5 OF 5

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

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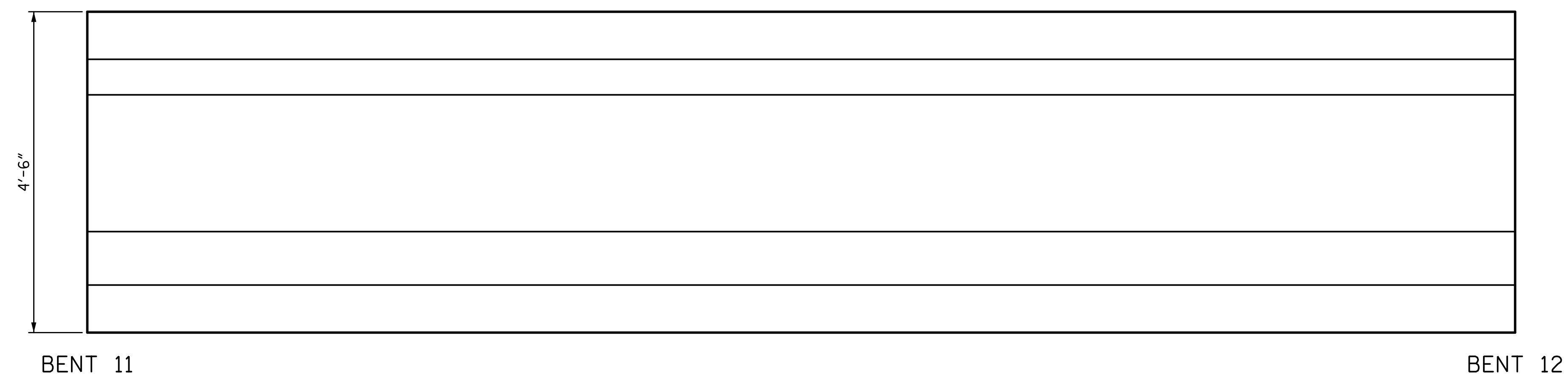
DRAWN BY: <u>T. BANKOVICH</u>	DATE: <u>9-20</u>
CHECKED BY: <u>T.J. BEACH</u>	DATE: <u>9-20</u>
DESIGN ENGINEER OF RECORD: <u>T.J. BEACH</u>	DATE: <u>9-20</u>

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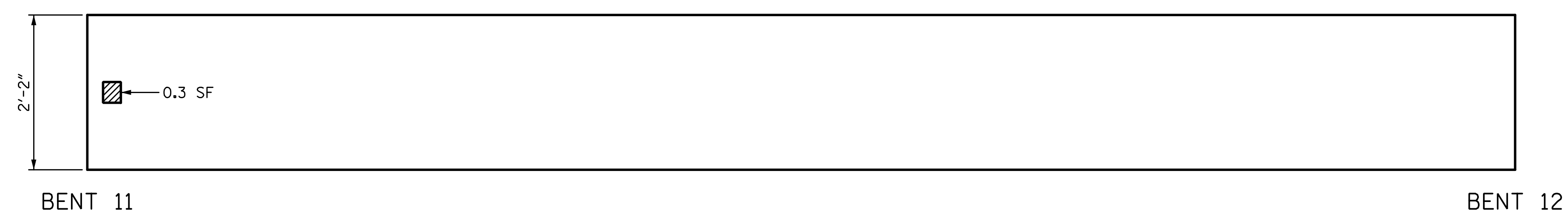
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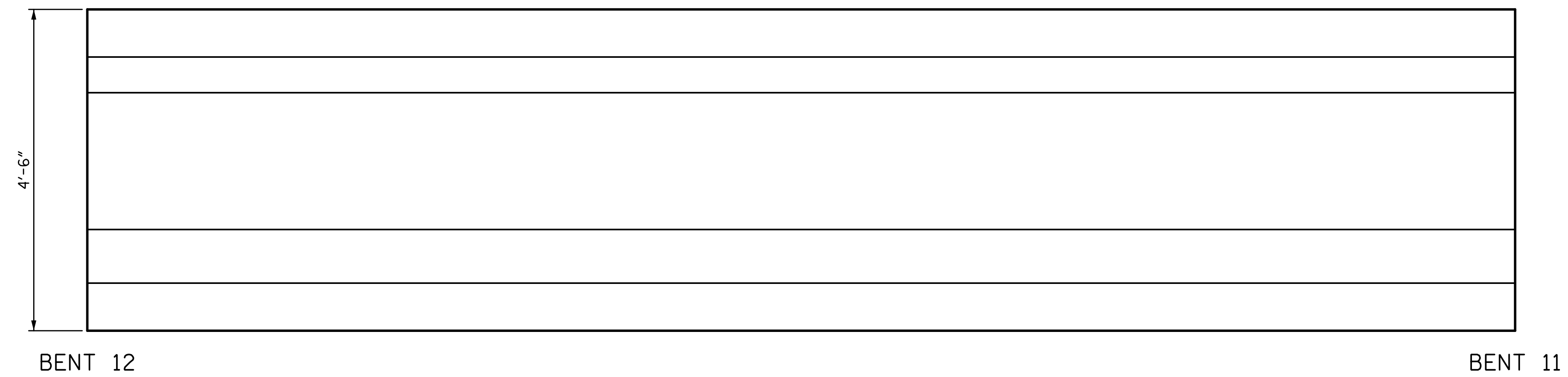
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 12 GRD. 1	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
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 BRIDGE NO.: 640048

SHEET 1 OF 5

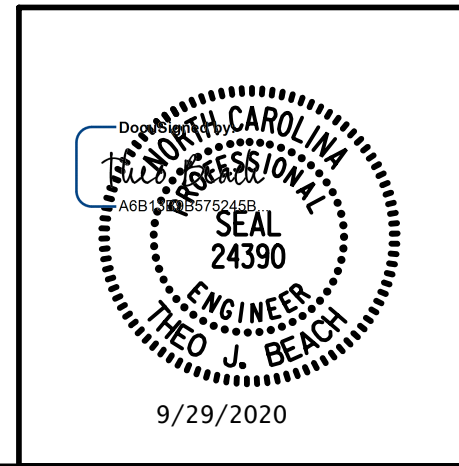
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 12
 GIRDER 1**

REVISIONS						SHEET NO.
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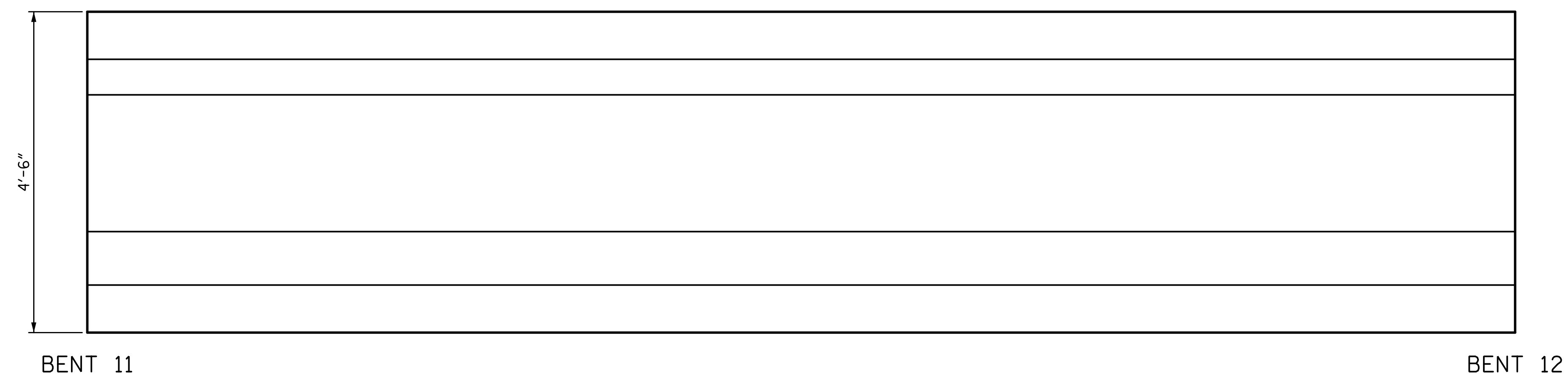


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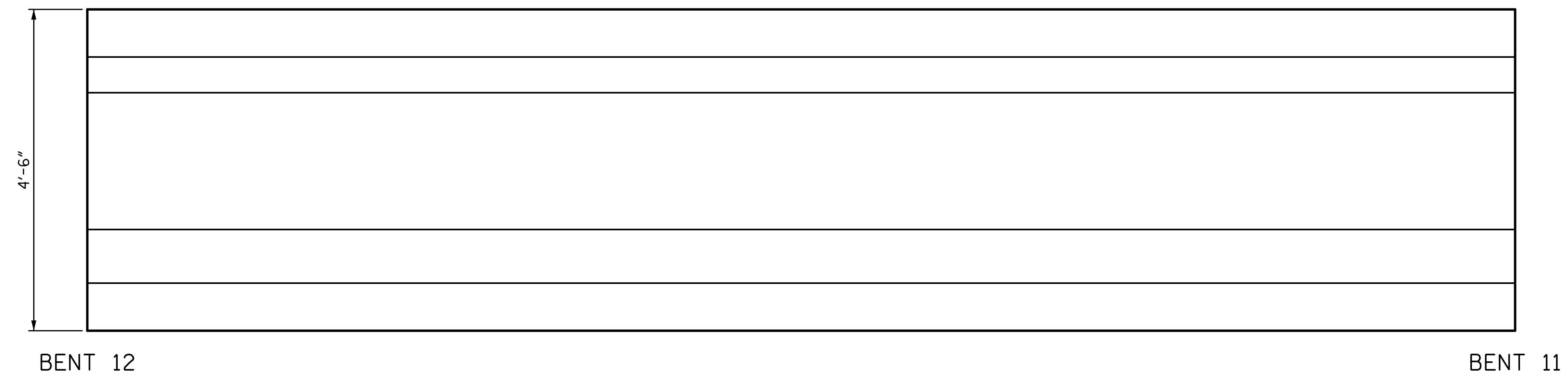
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 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 12 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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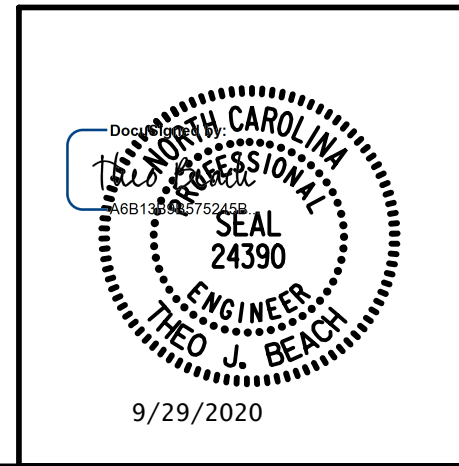
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 2 OF 5

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

PLANS PREPARED BY:

 SIMPSON ENGINEERS & ASSOCIATES
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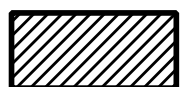


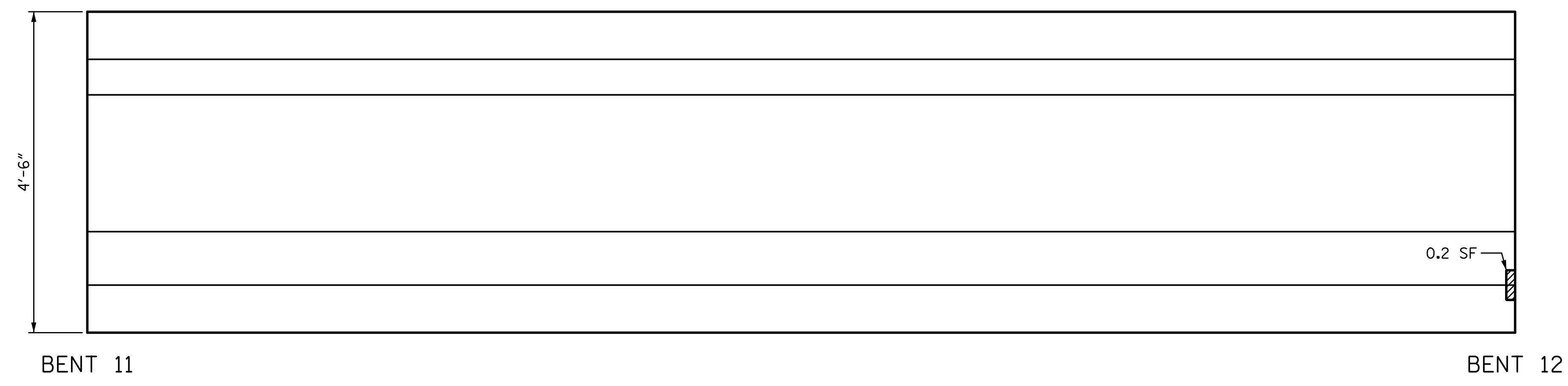
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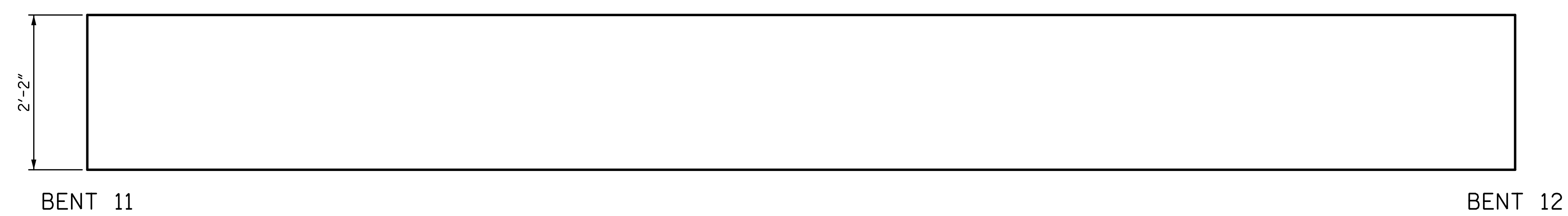
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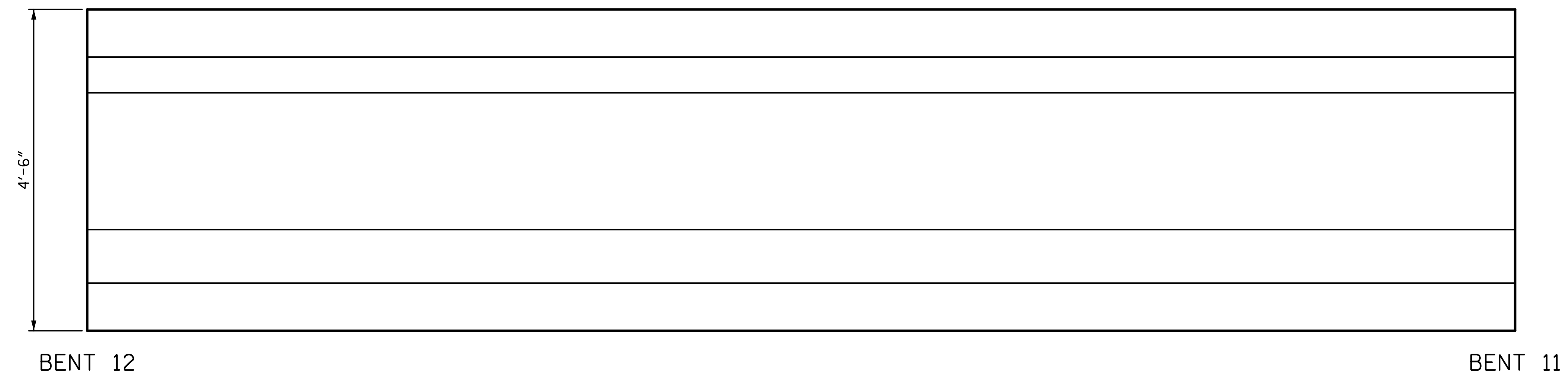
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 12 GRD. 3	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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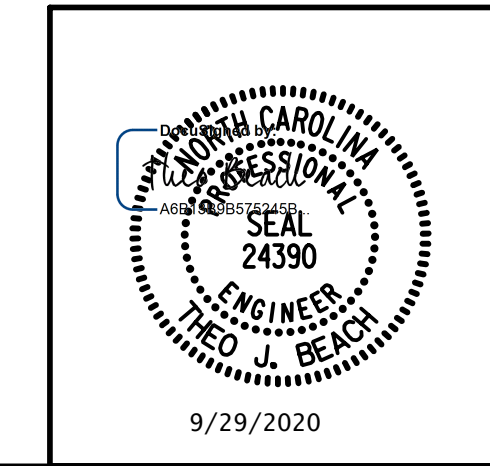
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 3 OF 5

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

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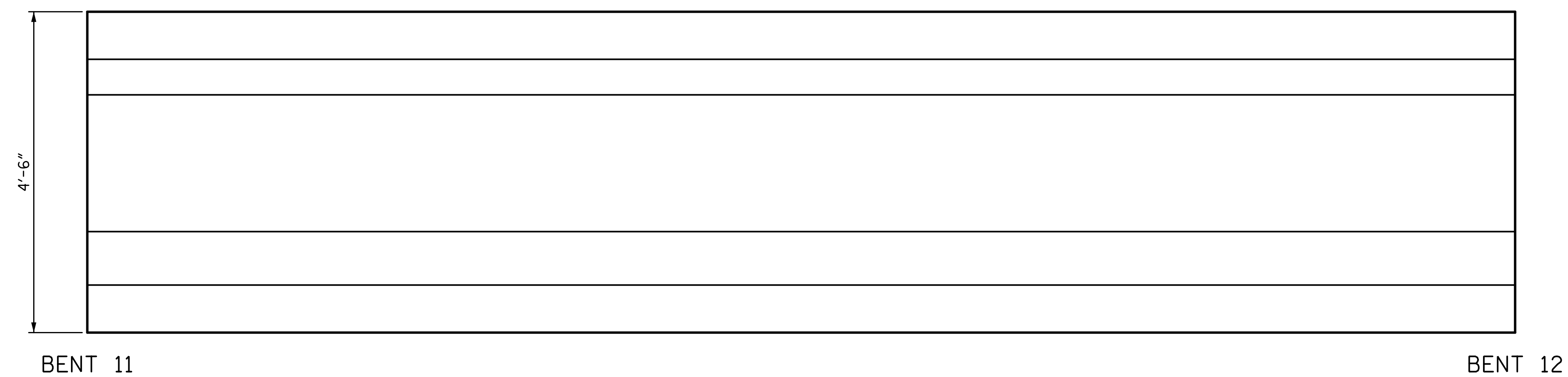
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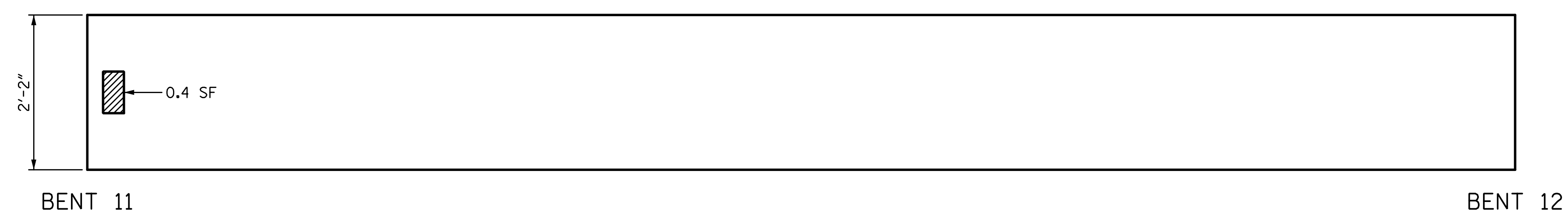
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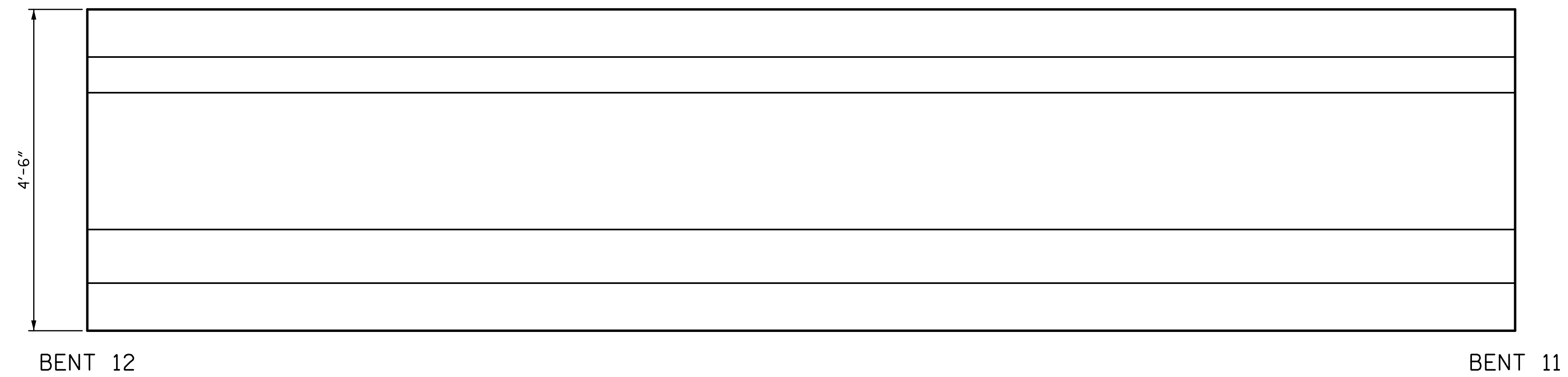
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 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 12 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.4	0.2			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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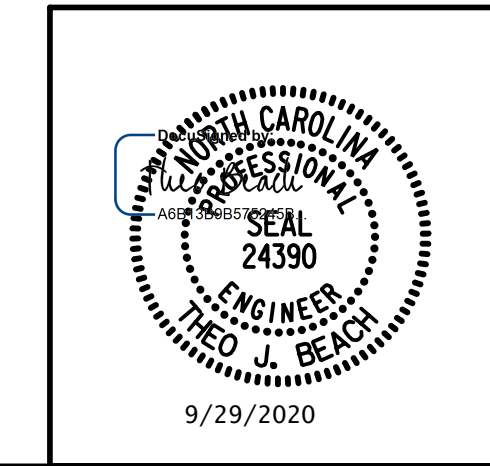
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SHEET 4 OF 5

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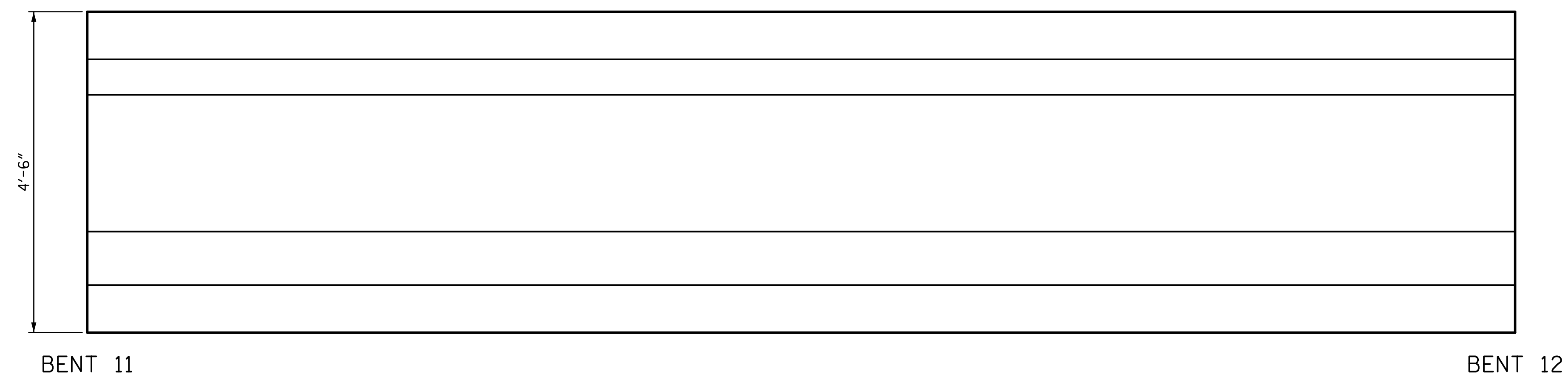
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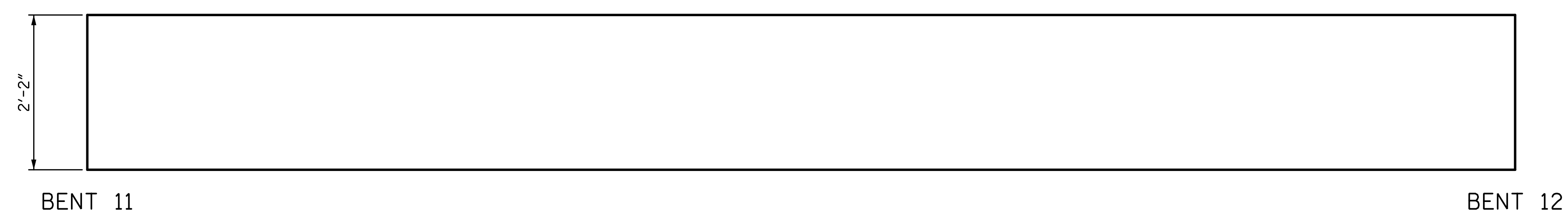
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 ERI — EPOXY RESIN INJECTION

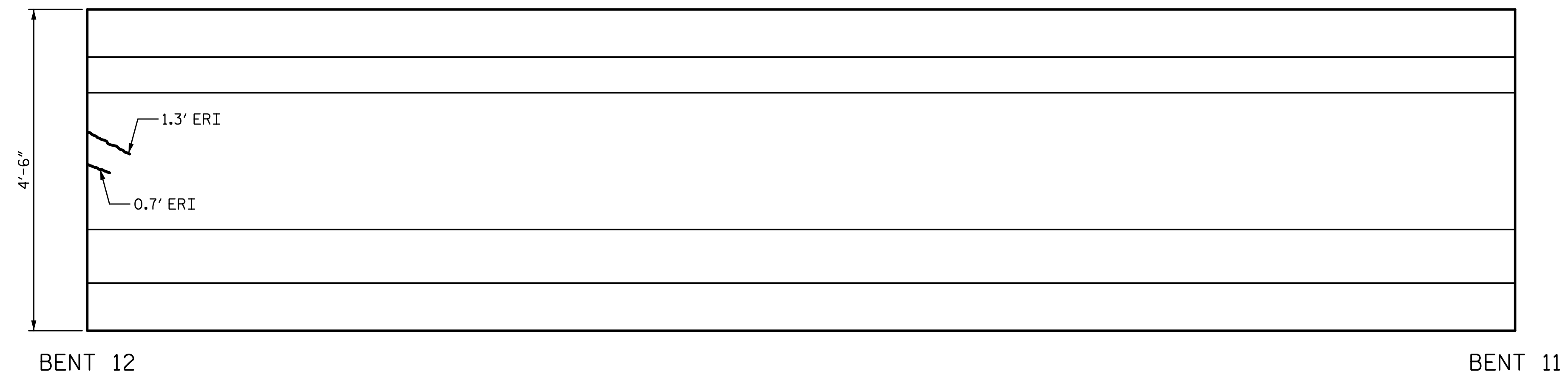
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GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		2.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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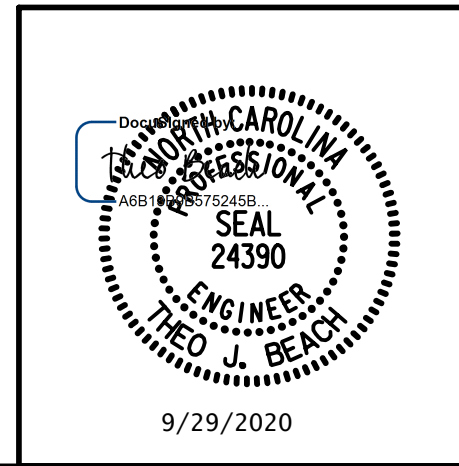
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 5 OF 5

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

PLANS PREPARED BY:

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




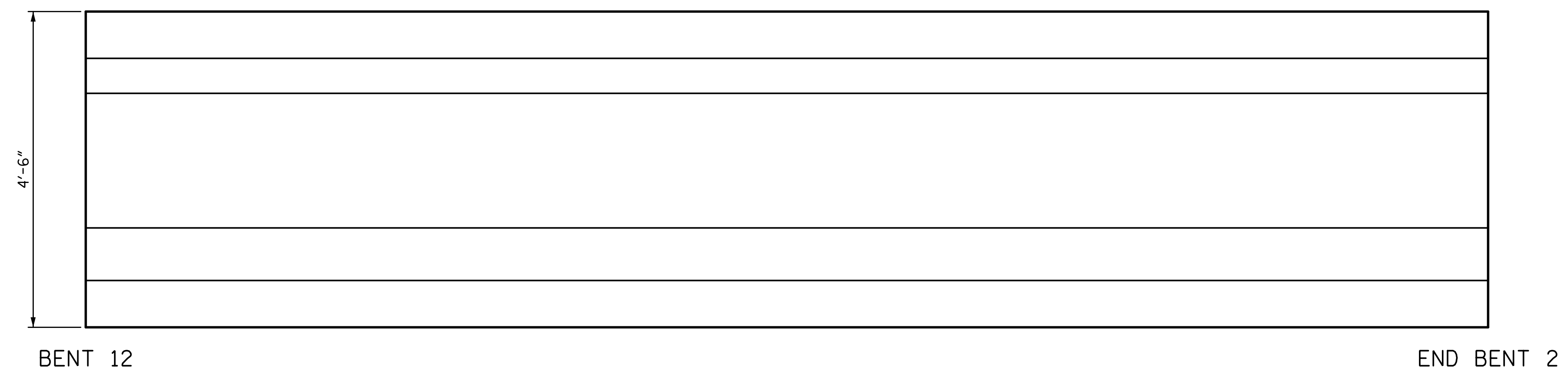
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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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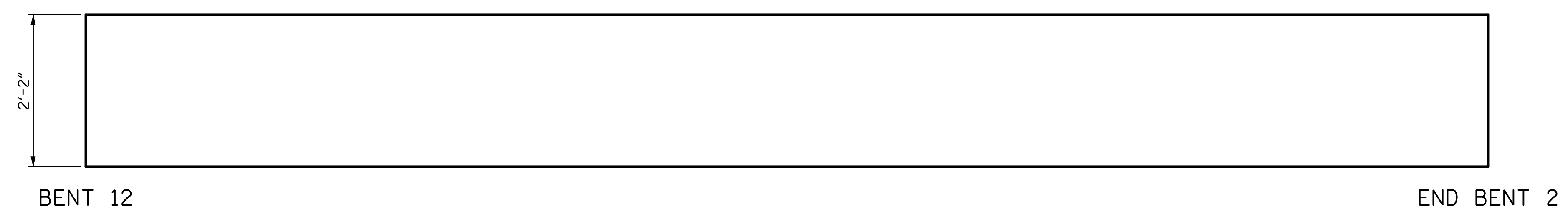
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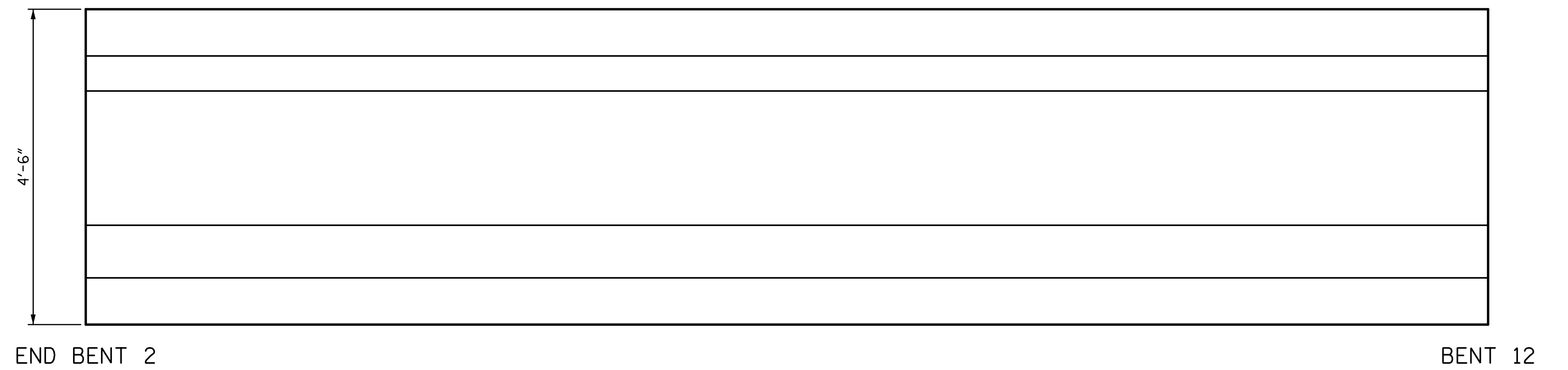
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 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			

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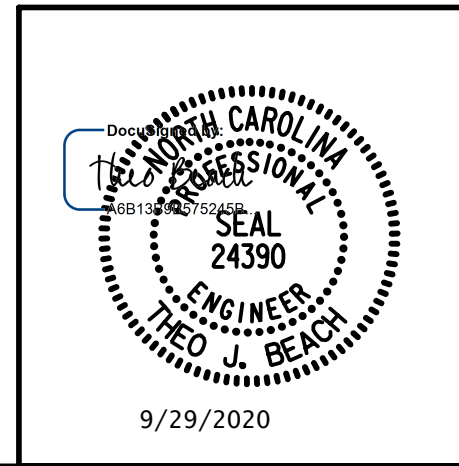
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 1 OF 5

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

PLANS PREPARED BY:

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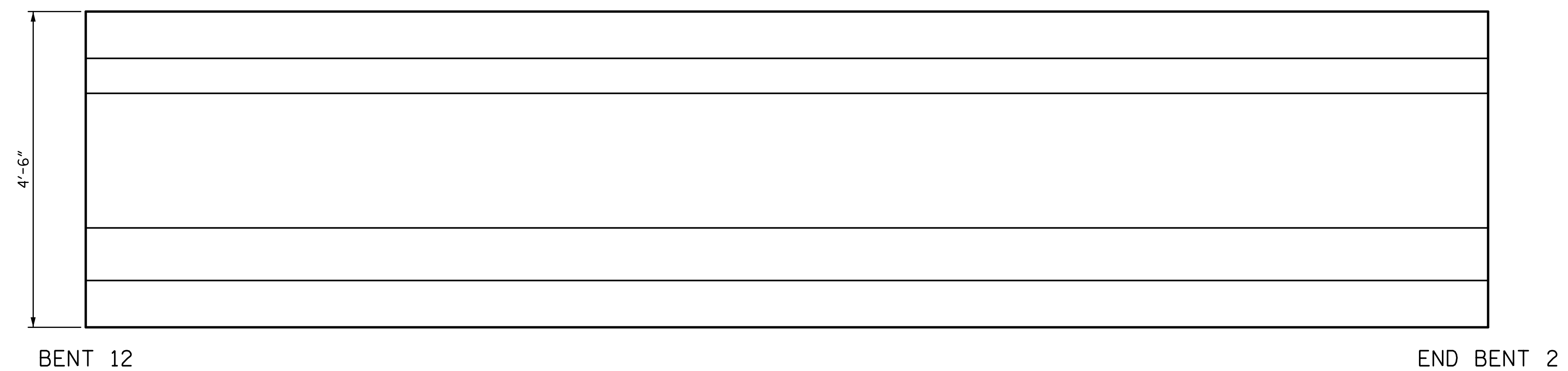
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			

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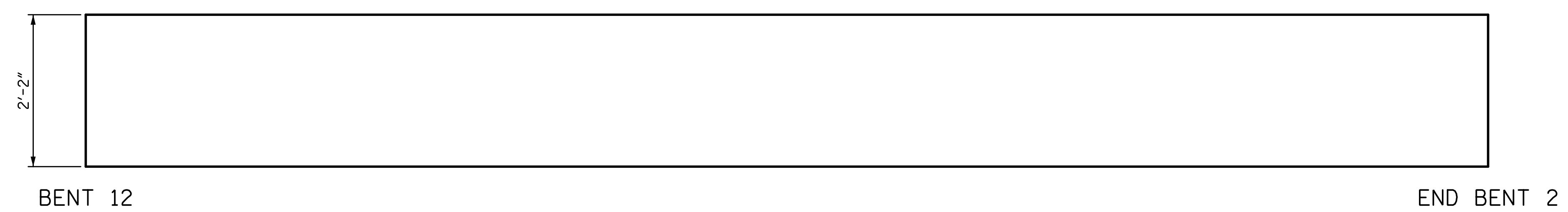
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

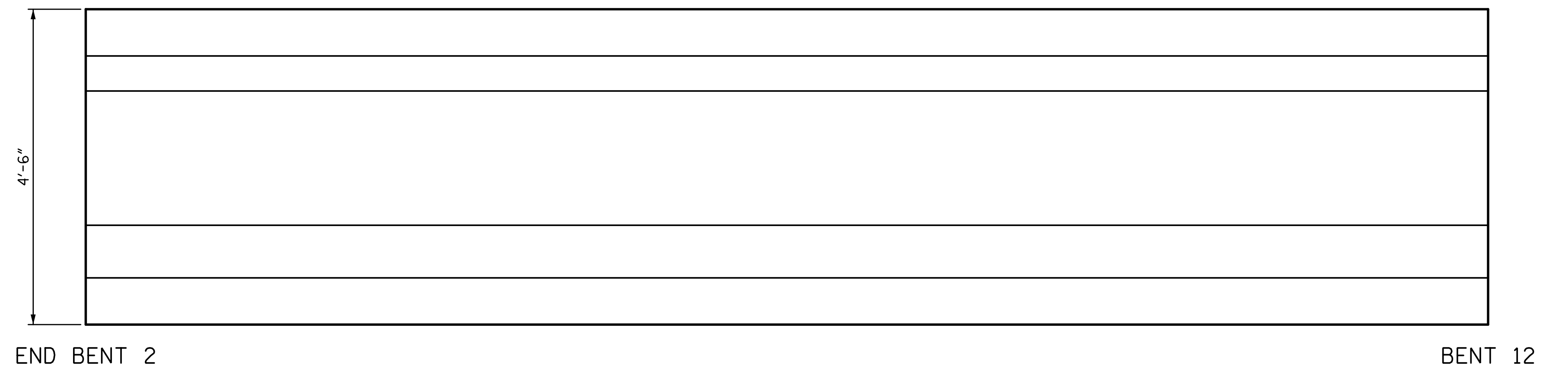
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	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.0	0.0			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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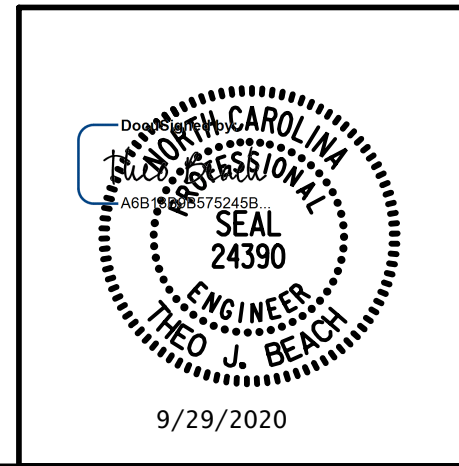
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 2 OF 5

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

PLANS PREPARED BY:

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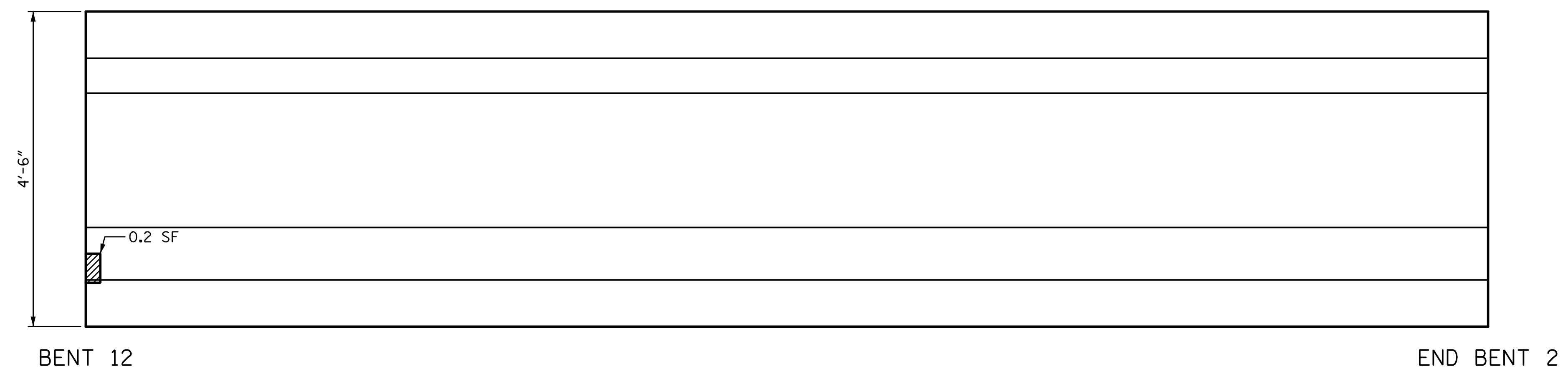
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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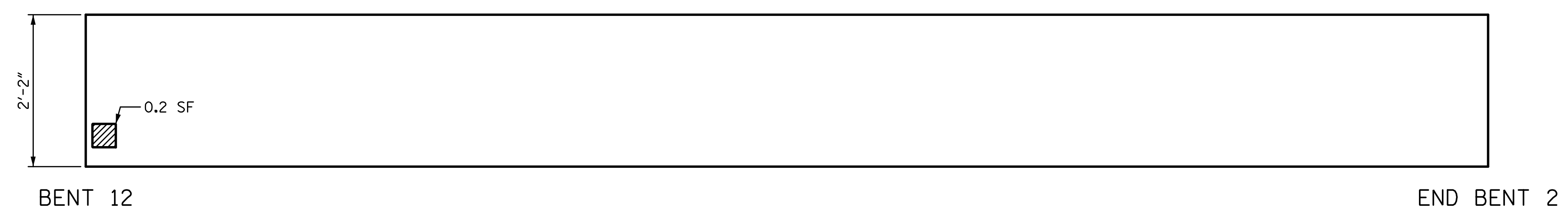
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

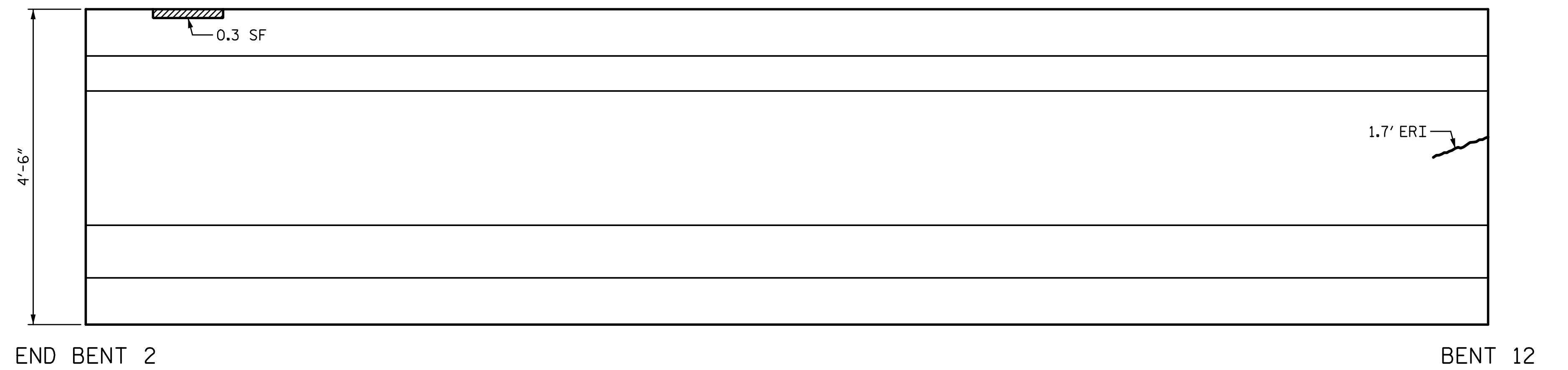
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REPAIRS SPAN 13 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.7	0.2			
EPOXY RESIN INJECTION			LF		LF
GIRDER		1.7			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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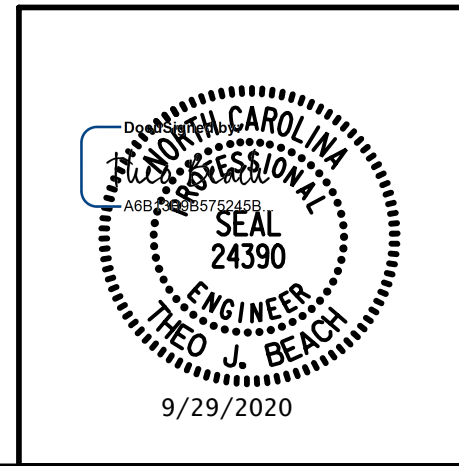
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 13
 GIRDER 3

PLANS PREPARED BY:

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 LICENSURE NO. C-2521




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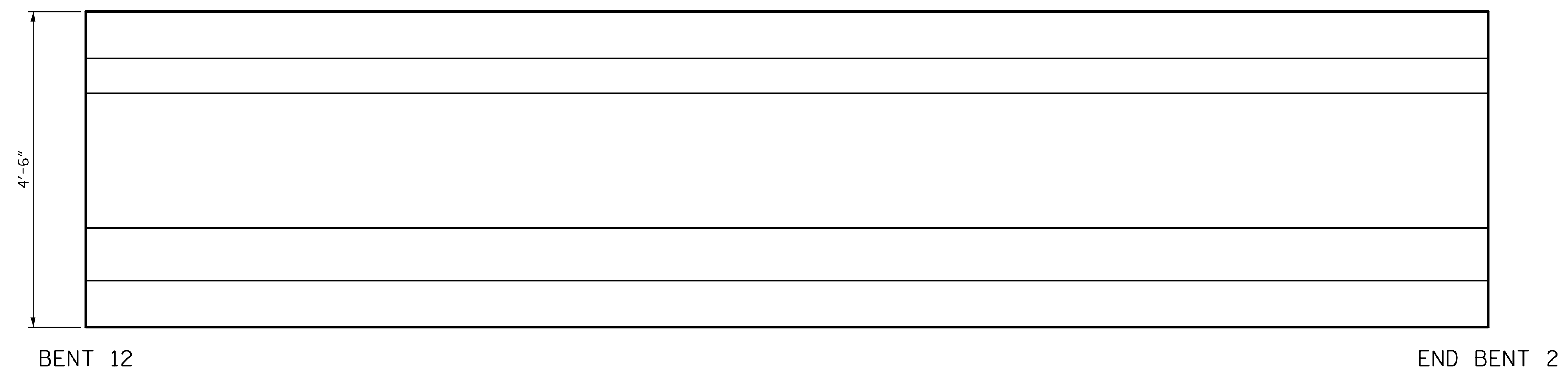
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

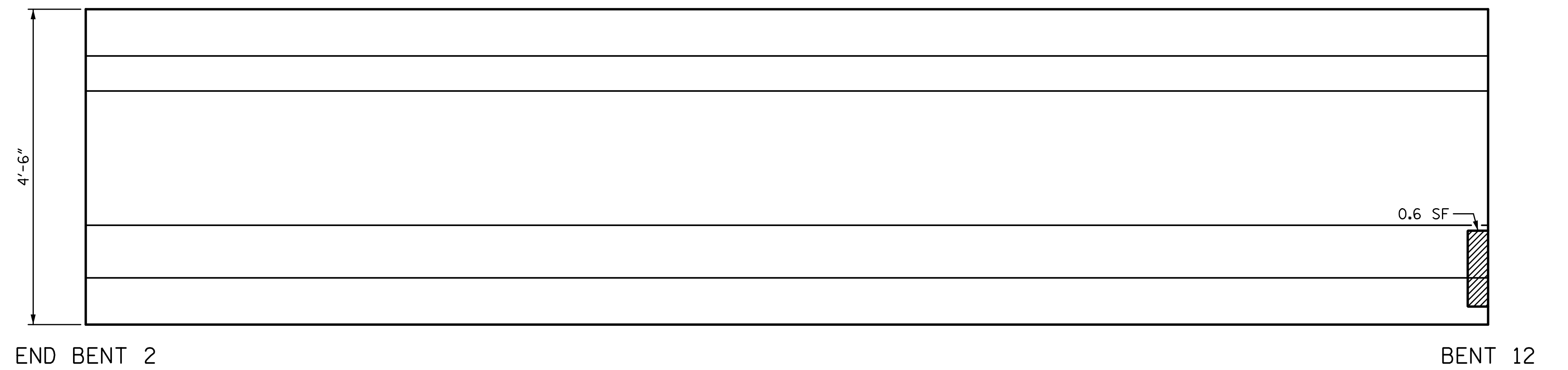
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	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.6	0.2			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

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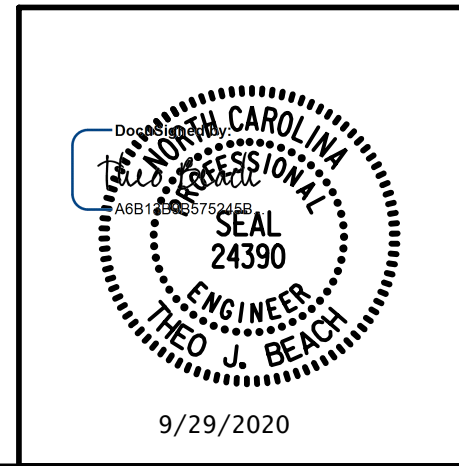
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 4 OF 5

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

PLANS PREPARED BY:

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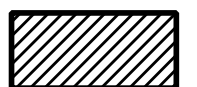


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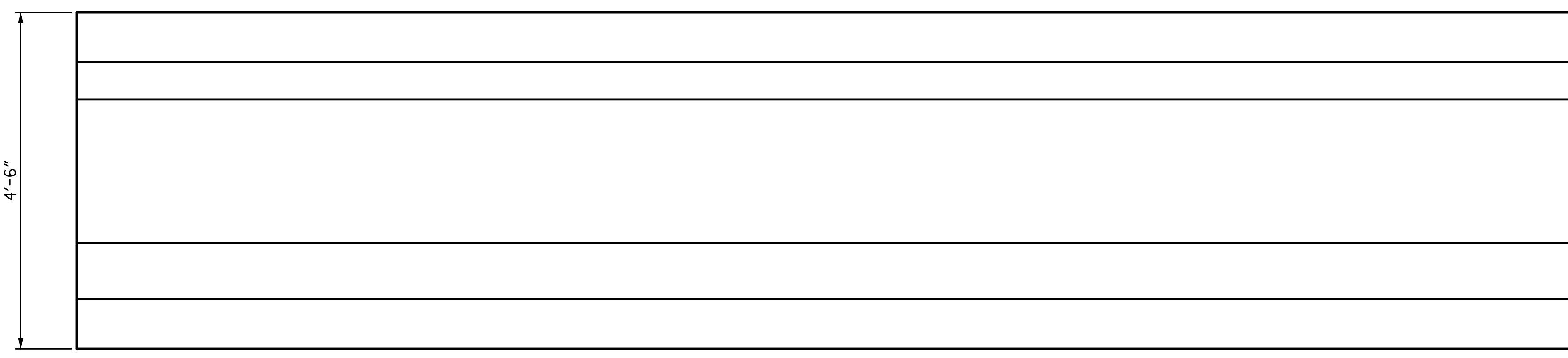
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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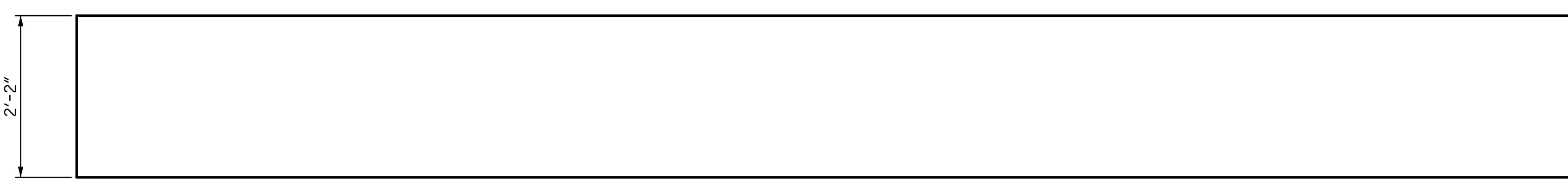
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION

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		0.0			



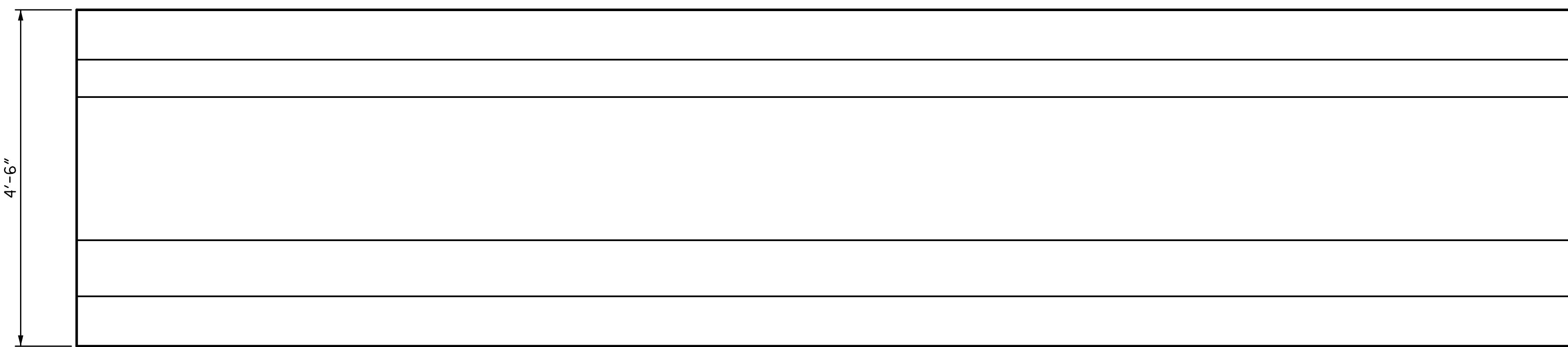
BENT 12 END BENT 2

ELEVATION
SOUTH FACE



BENT 12 END BENT 2

PLAN
BOTTOM OF BEAM
LOOKING UP



END BENT 2 BENT 12

ELEVATION
NORTH FACE

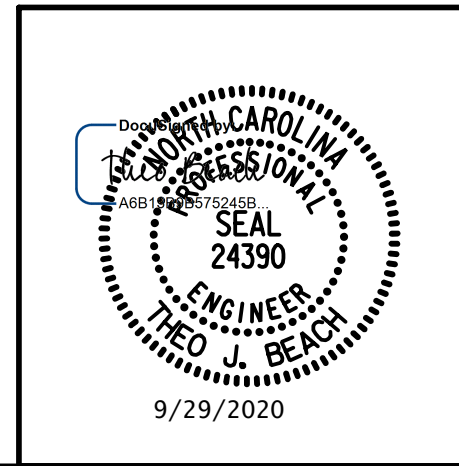
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SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 13
 GIRDER 5**



PLANS PREPARED BY:
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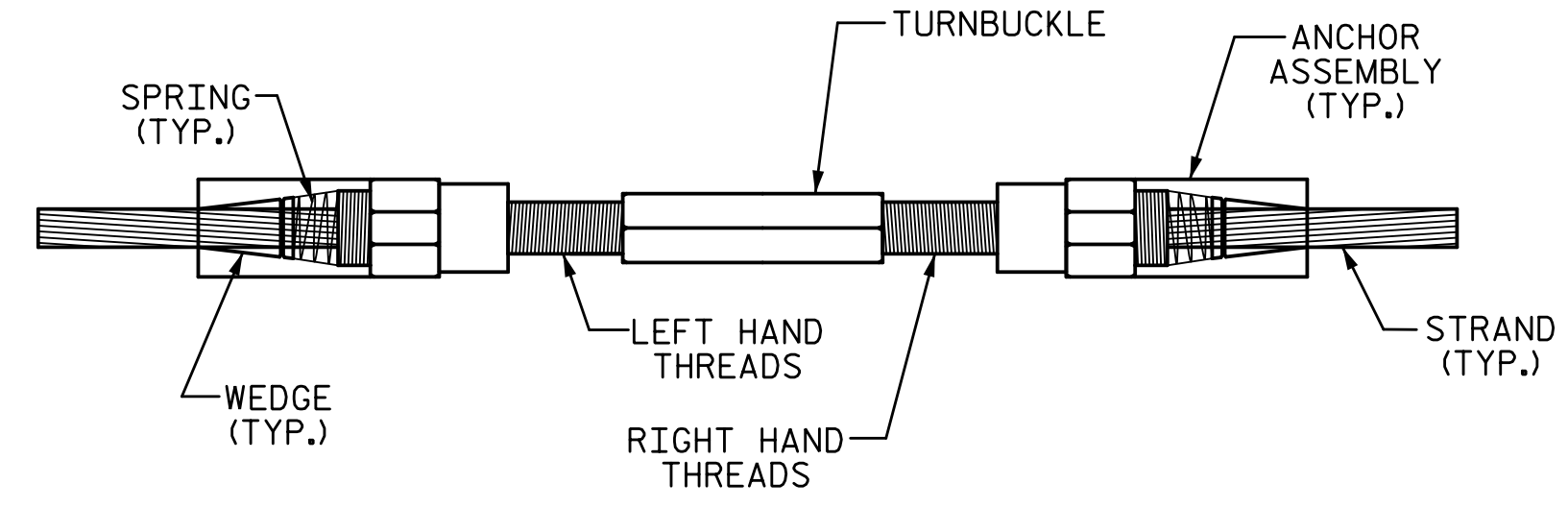
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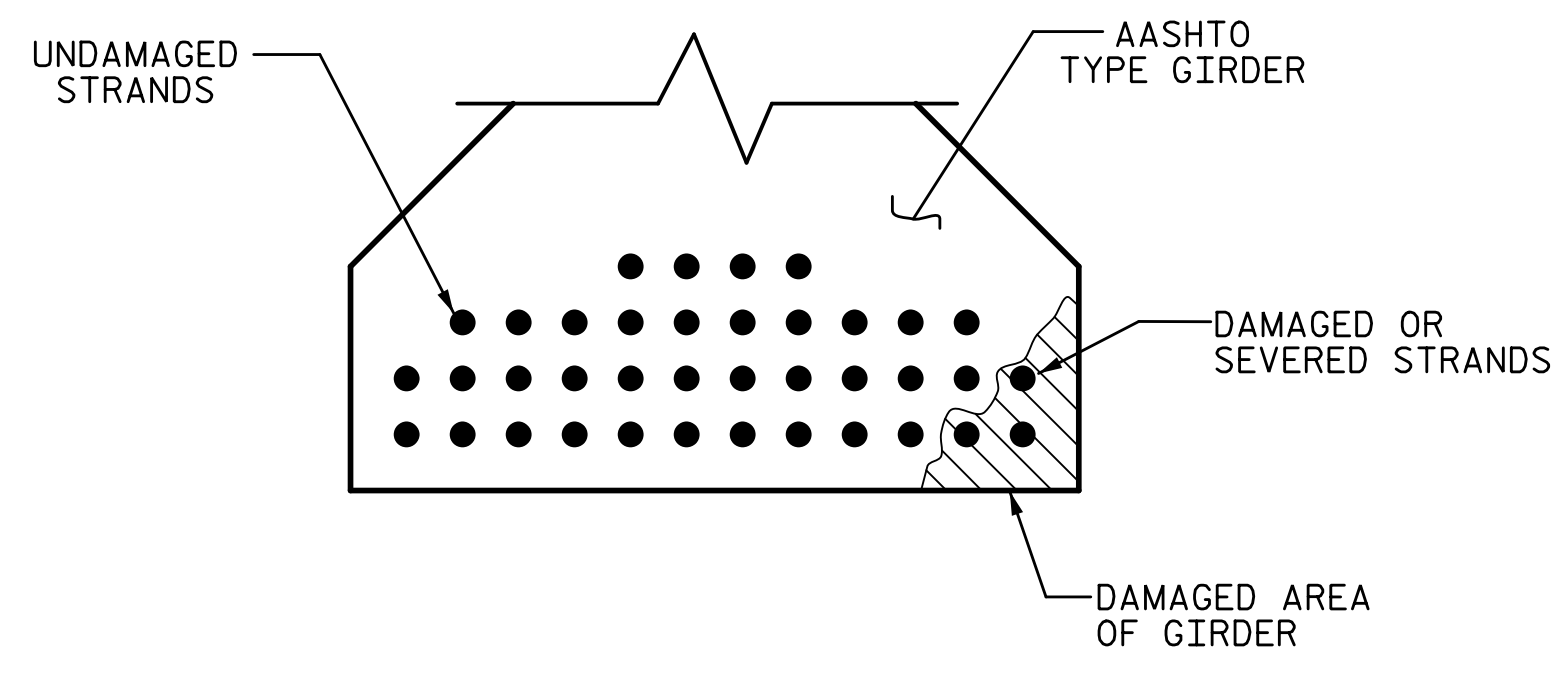
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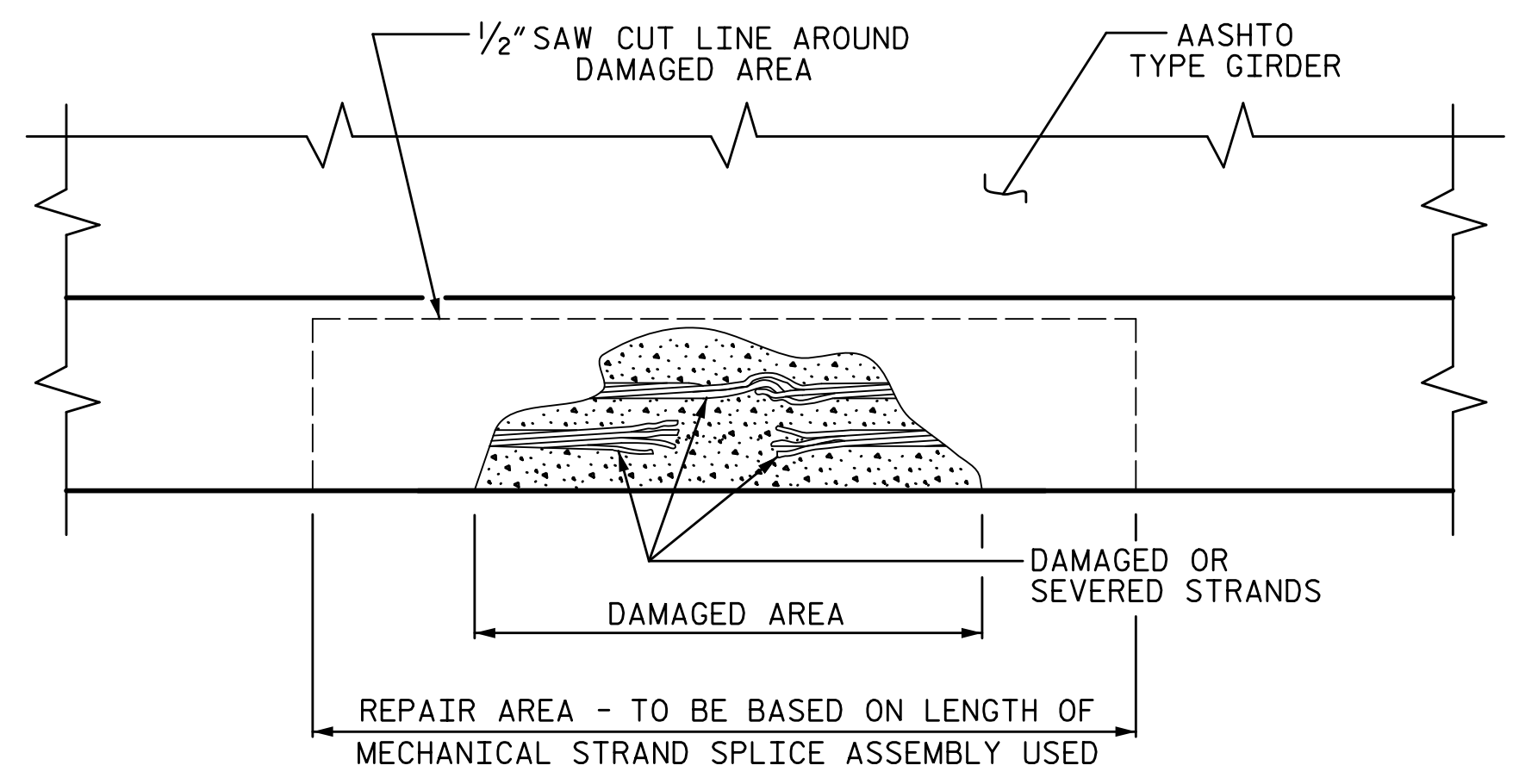
MECHANICAL STRAND SPLICE ASSEMBLY
(ASSEMBLIES MAY VARY DEPENDING ON MANUFACTURER)



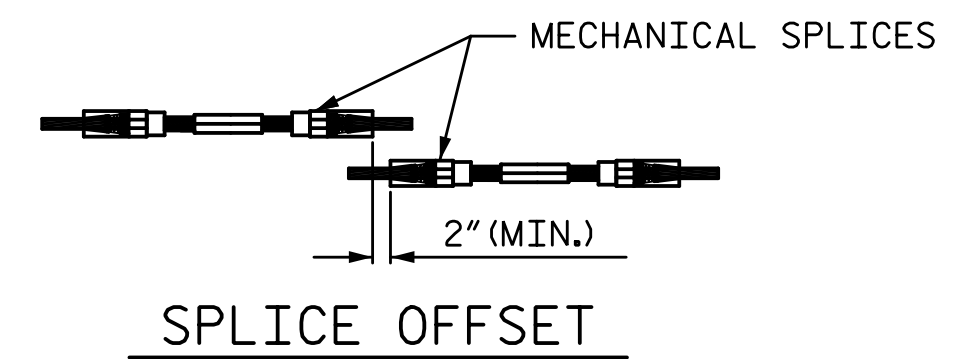
STRAND SPLICE DETAIL



SECTION VIEW OF DAMAGED GIRDER

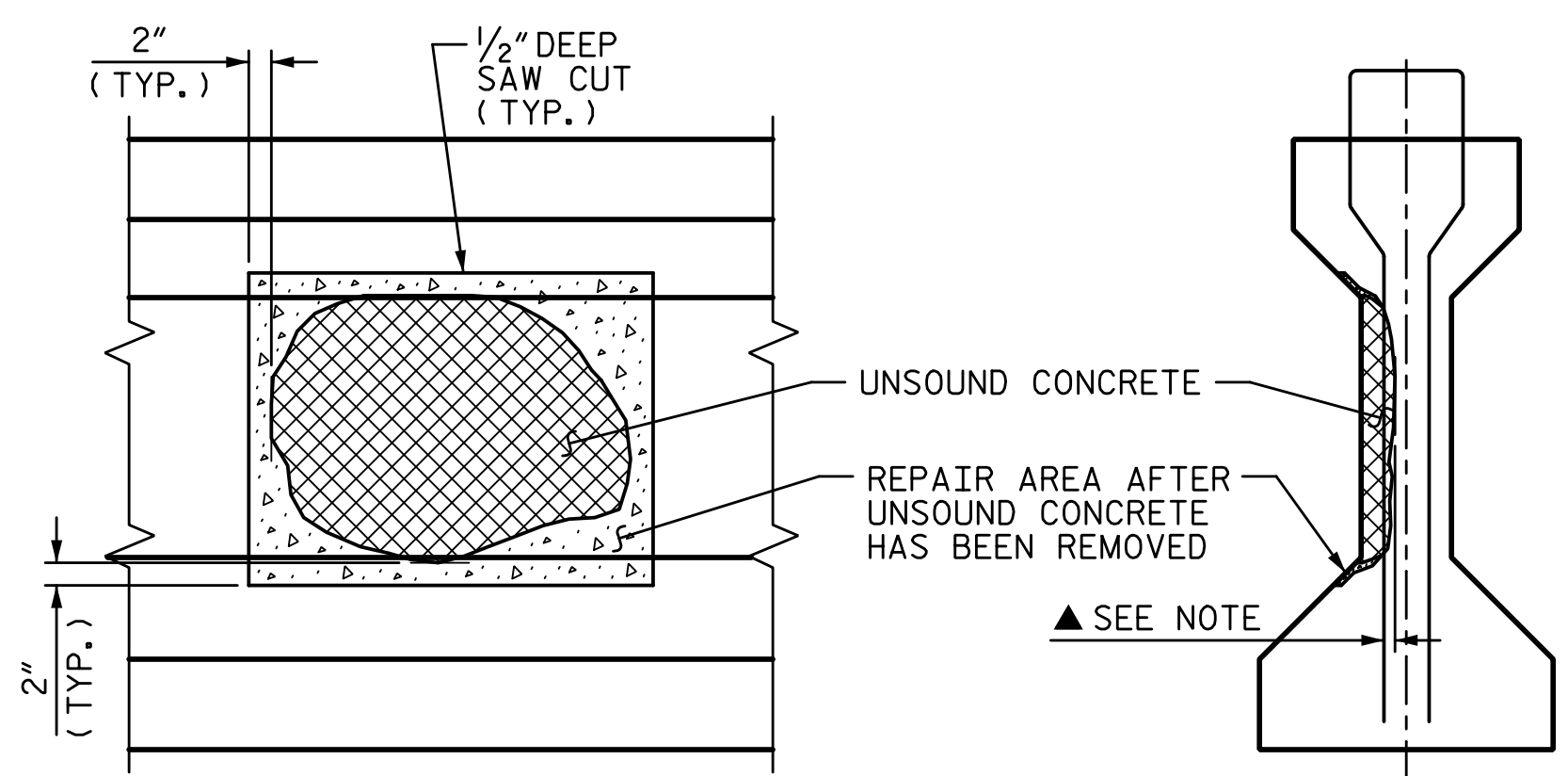


ELEVATION VIEW OF DAMAGED GIRDER



SPLICE OFFSET

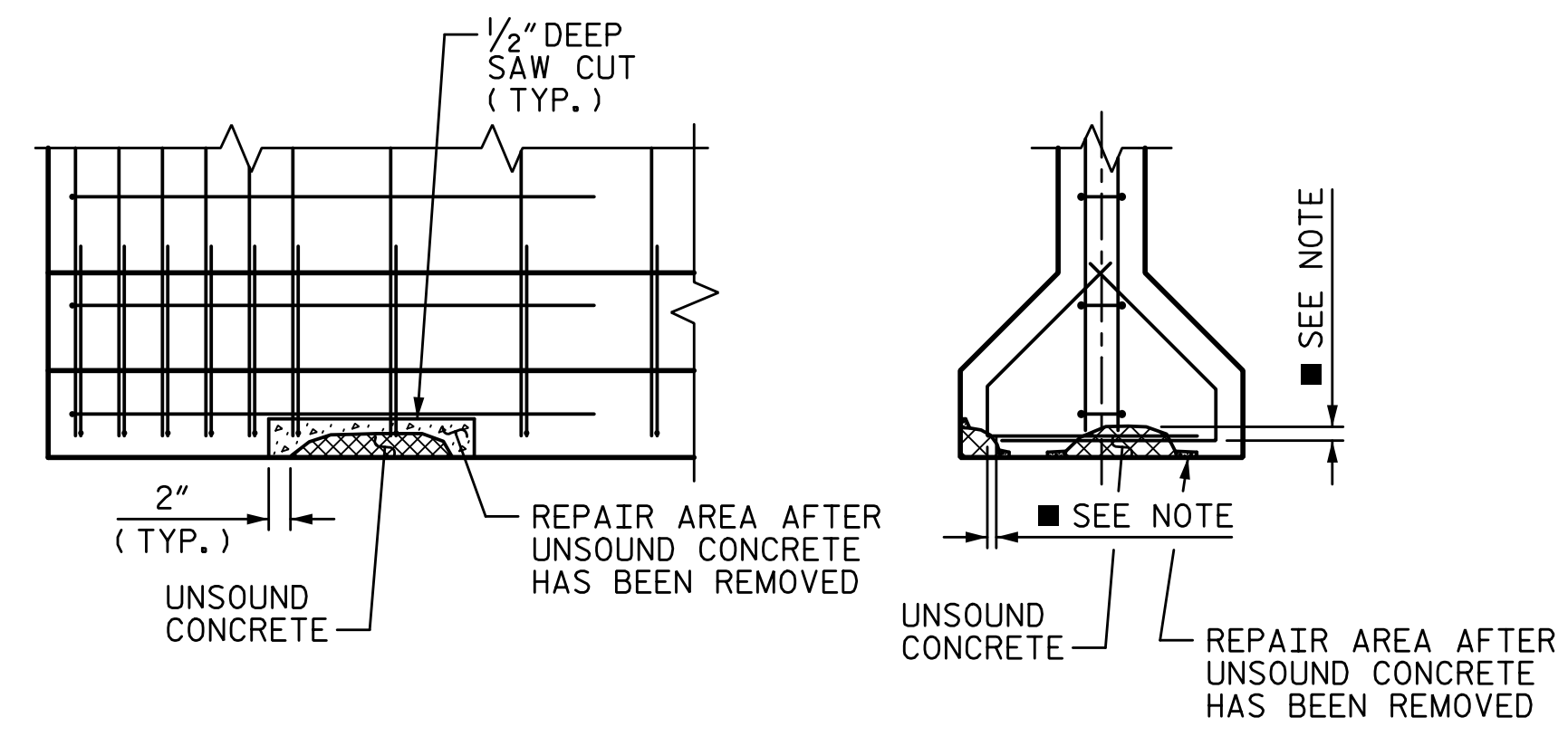
STRAND REPAIR DETAILS



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:

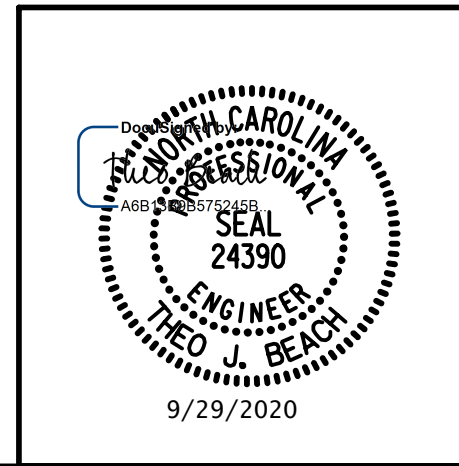
1. REMOVE LIVE LOAD FORM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.
2. MEASURE OUT THE AREA NEEDED TO HAVE ADEQUATE ROOM TO SPLICE THE BROKEN OR DAMAGED STRAND. IF MULTIPLE STRANDS ARE BROKEN ADJACENT TO ONE ANOTHER THEN THE SPLICES SHALL BE STAGGERED, 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.: 640048

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PRESTRESSED CONCRETE GIRDER REPAIR DETAILS



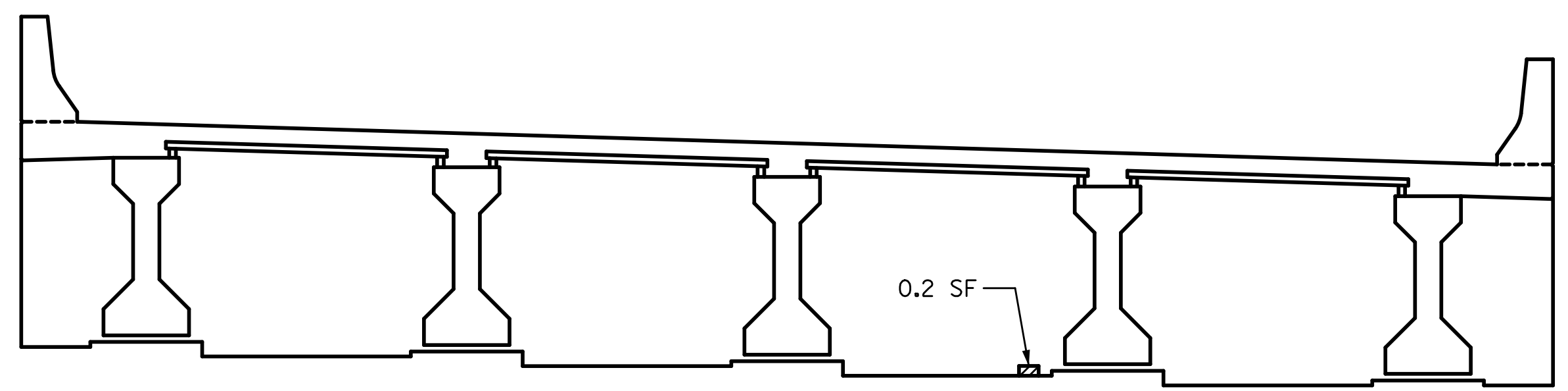
PLANS PREPARED BY:
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 www.simpsonengr.com
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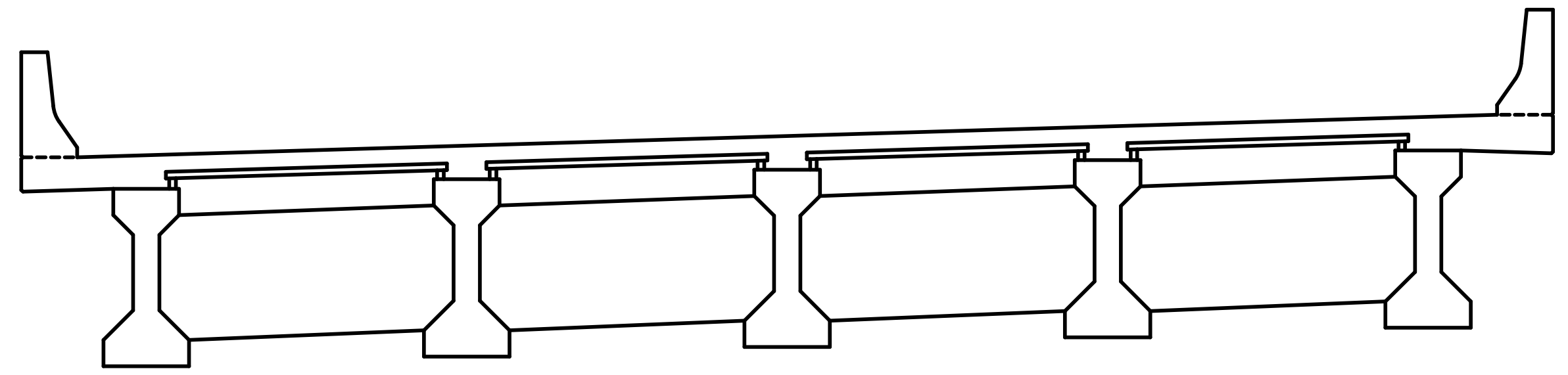
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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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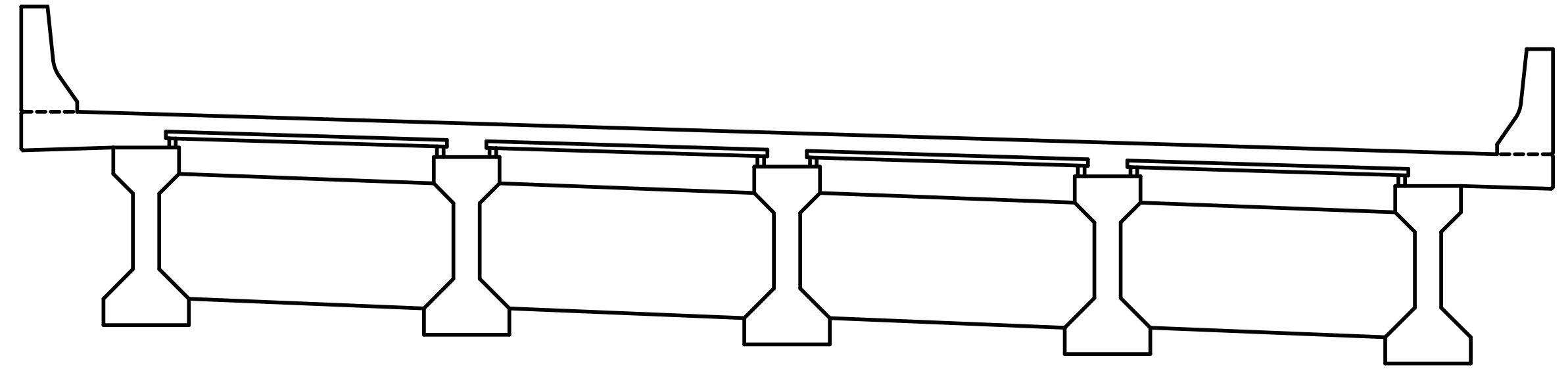
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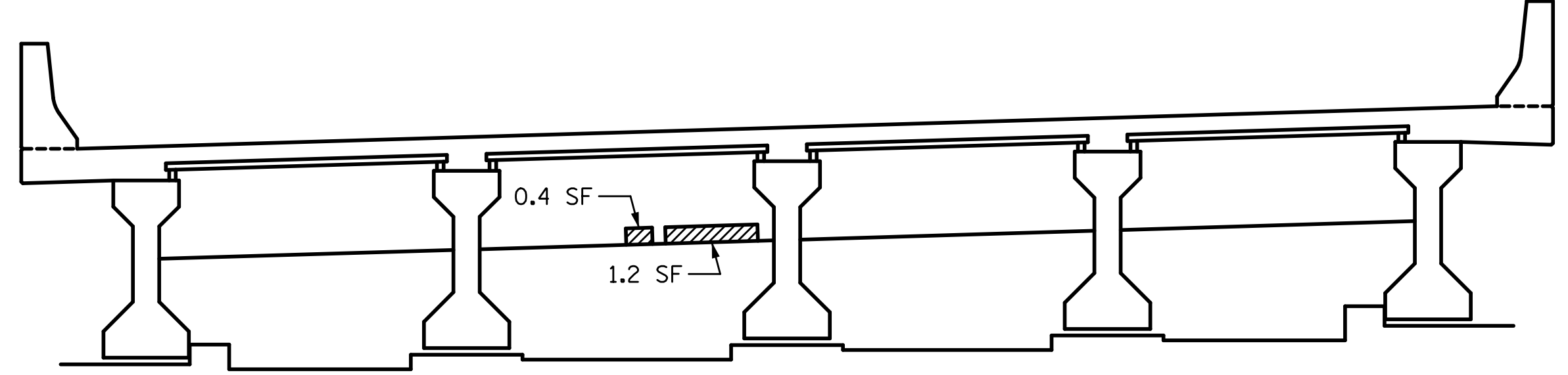
END BENT 1 CURTAIN WALL
EAST FACE



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	0.2	0.1			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 1 DIAPHRAGM	1.6	0.6			
EPOXY RESIN INJECTION		LF			LF
CURTAIN WALL		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 1 DIAPHRAGM		0.0			

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

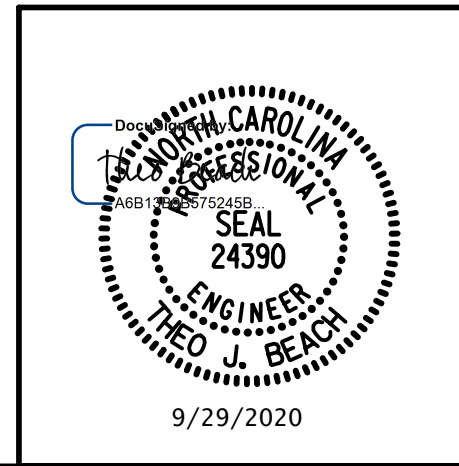
SHEET 1 OF 19

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

DIAPHRAGM REPAIRS

SPAN 1

PLANS PREPARED BY:
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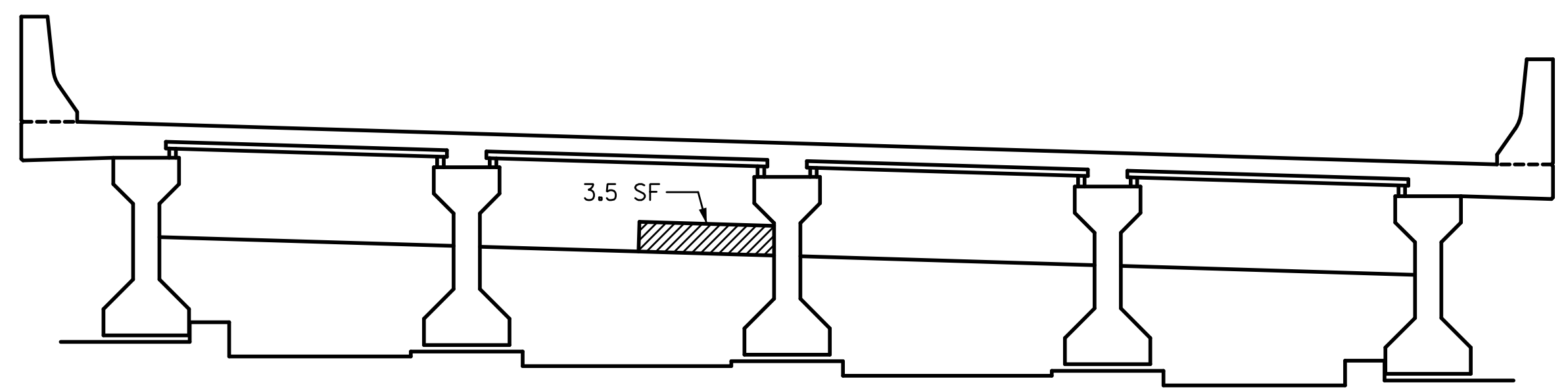


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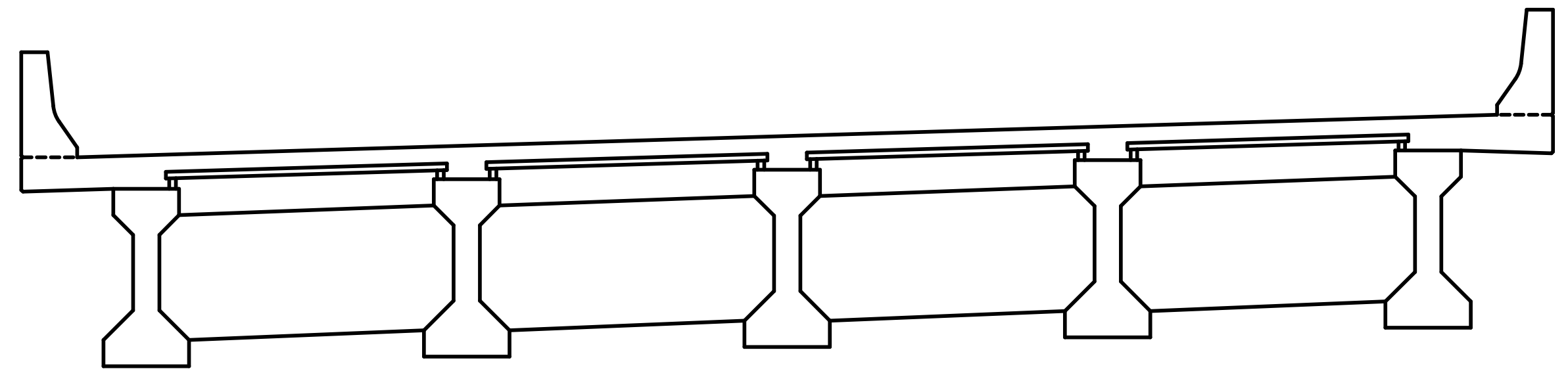
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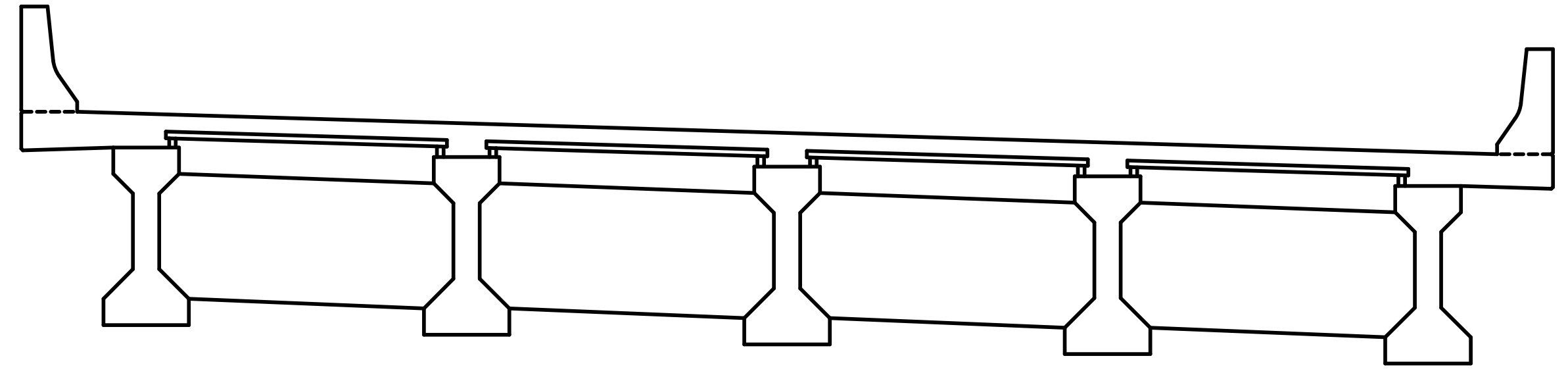
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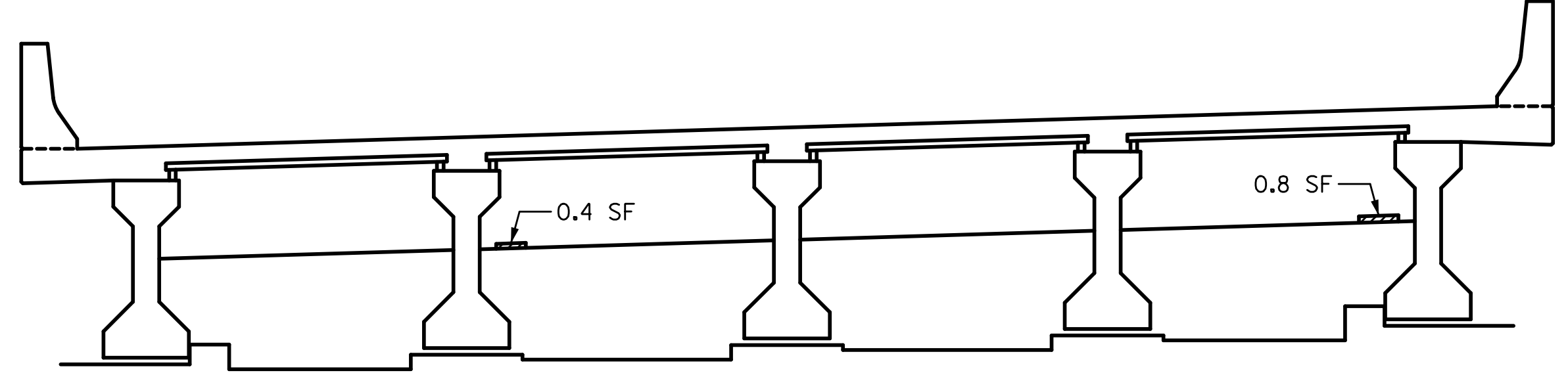
BENT 1 DIAPHRAGM
EAST FACE



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	3.5	1.5			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
BENT 2 DIAPHRAGM	1.2	0.3			
EPOXY RESIN INJECTION		LF			LF
BENT 1 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 2 DIAPHRAGM		0.0			

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 2 OF 19

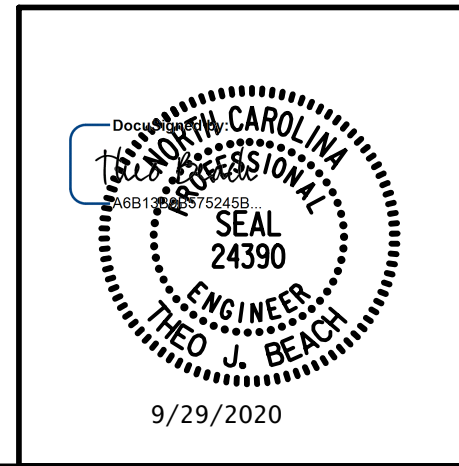
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

 DIAPHRAGM REPAIRS

 SPAN 2

PLANS PREPARED BY:

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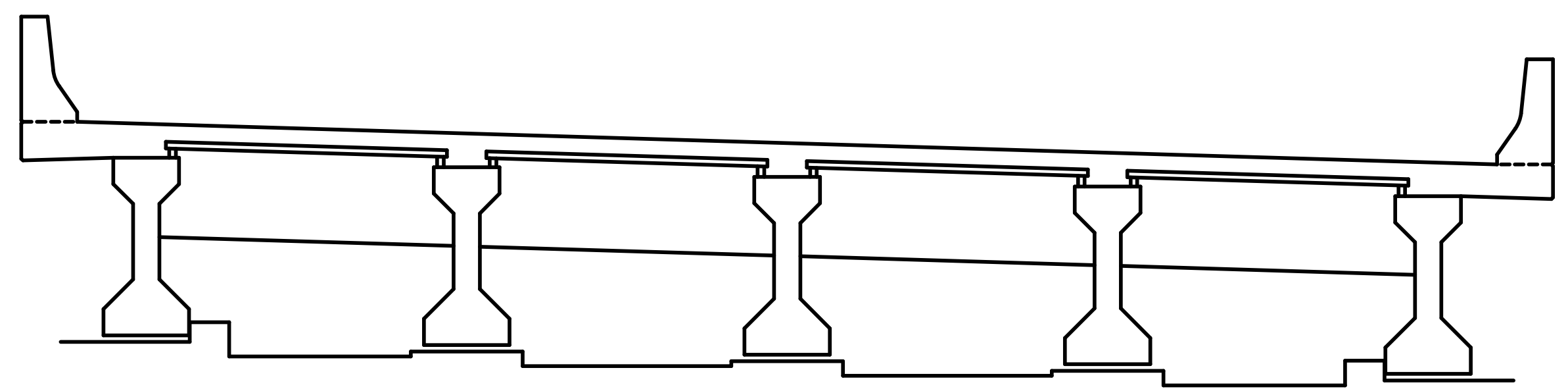


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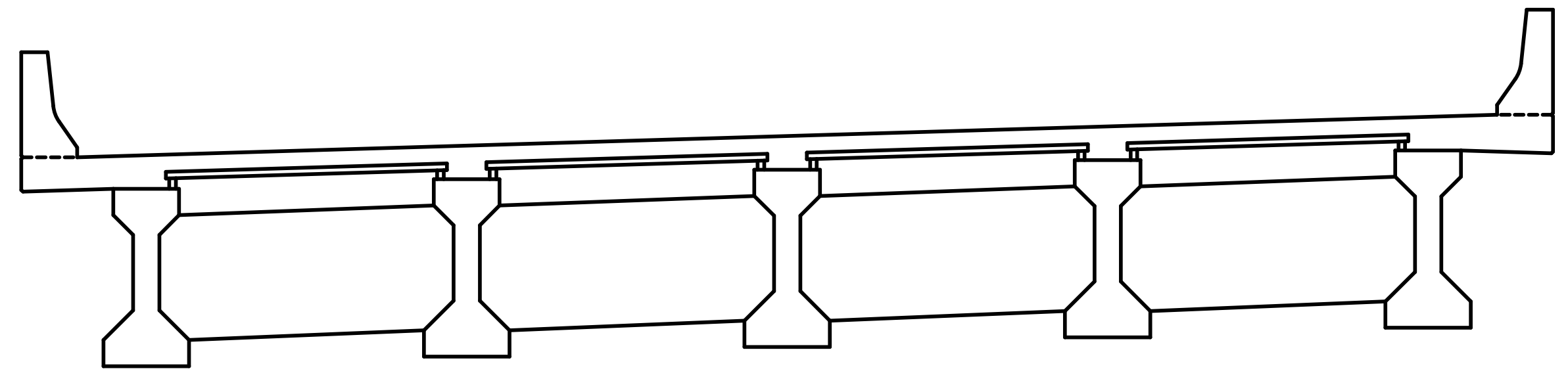
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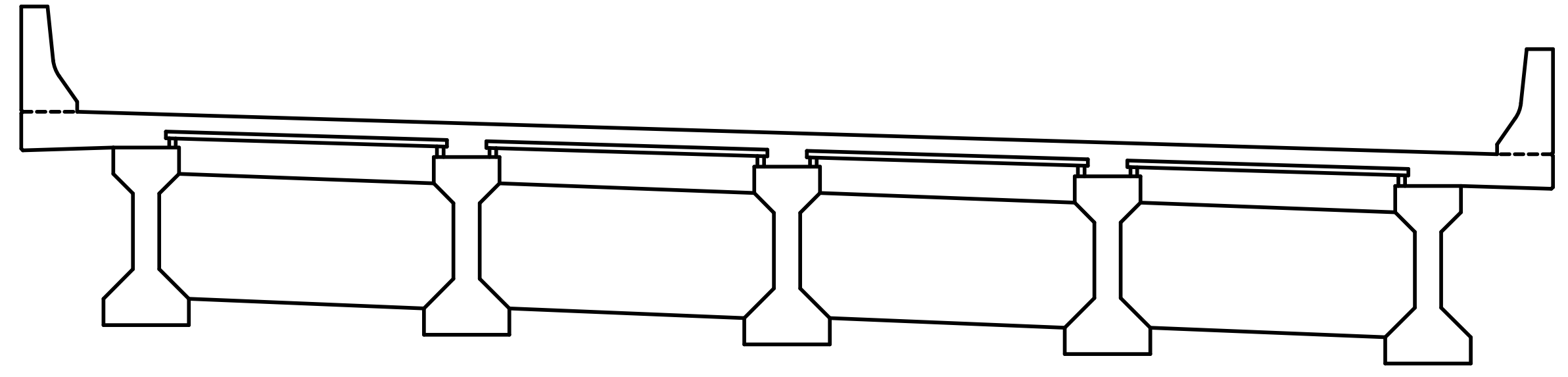
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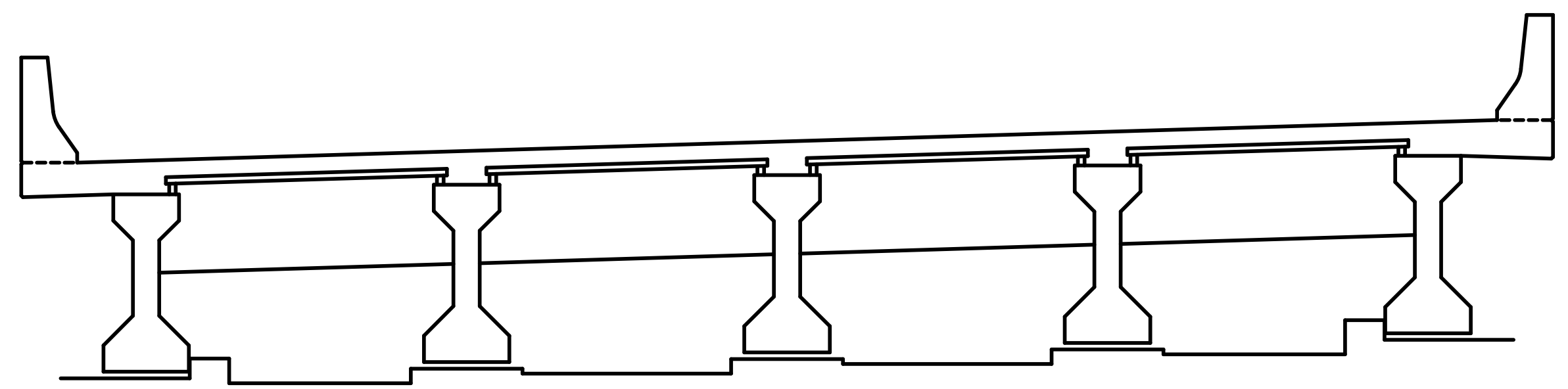
BENT 2 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 3 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 3 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	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			

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 3 OF 19

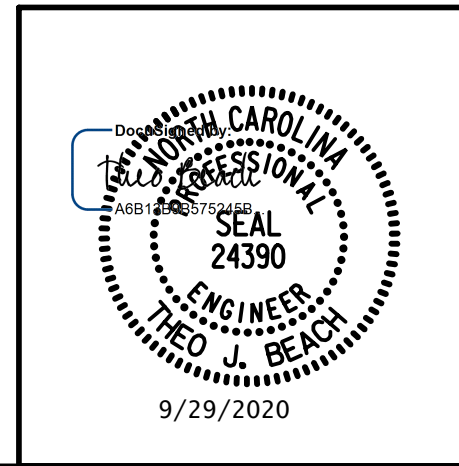
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

DIAPHRAGM REPAIRS

SPAN 3

PLANS PREPARED BY:

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 LICENSURE NO. C-2521

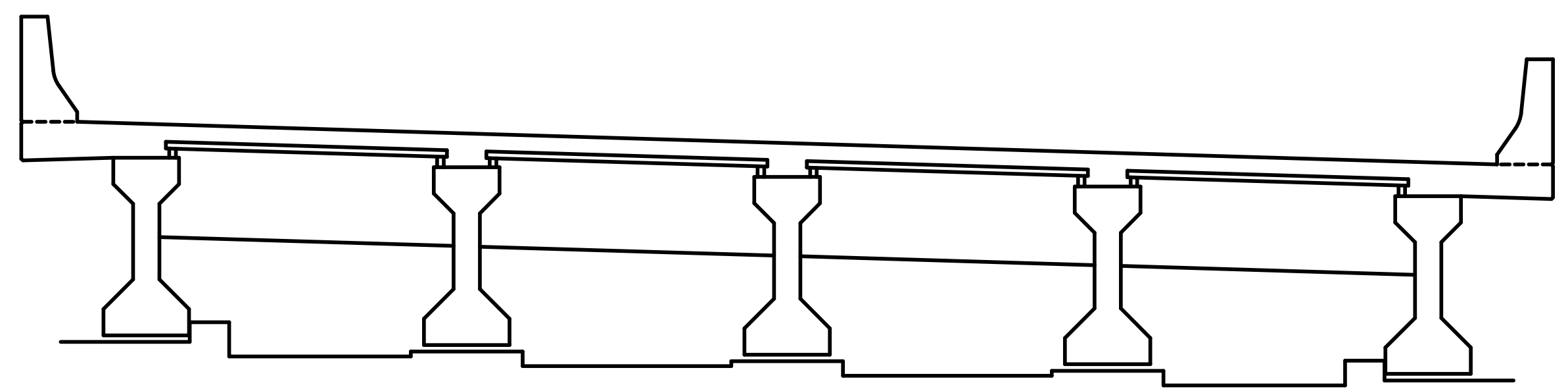


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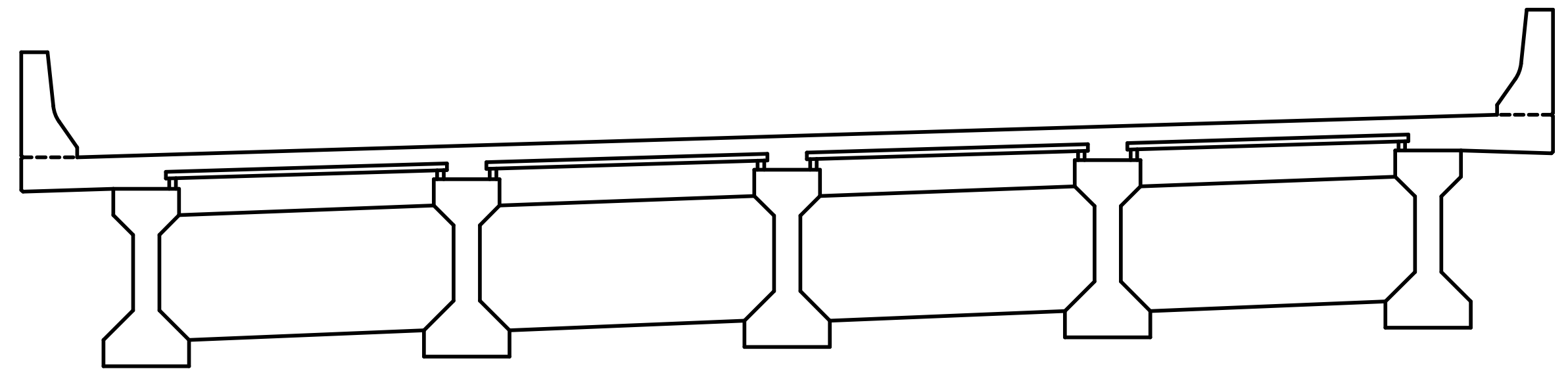
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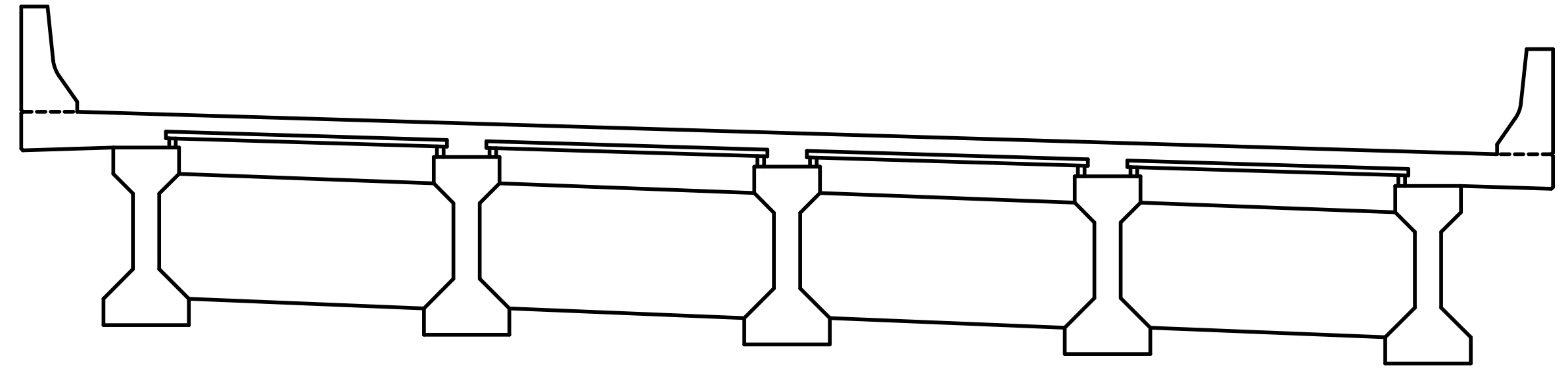
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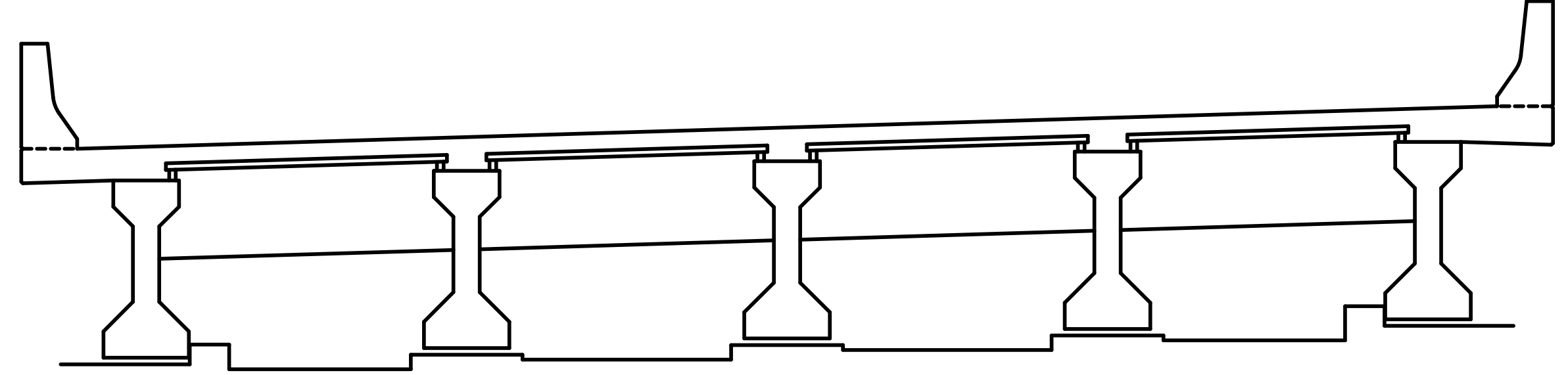
BENT 3 DIAPHRAGM
EAST FACE



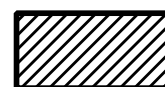
INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 4 DIAPHRAGM
WEST FACE

 SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIRS SPAN 4 DIAPH.		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		

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 4 OF 19

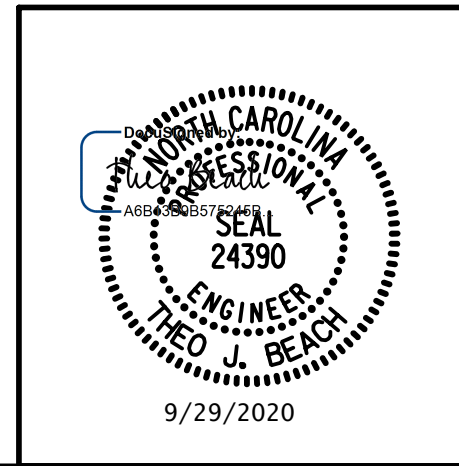
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

DIAPHRAGM REPAIRS

SPAN 4

PLANS PREPARED BY:

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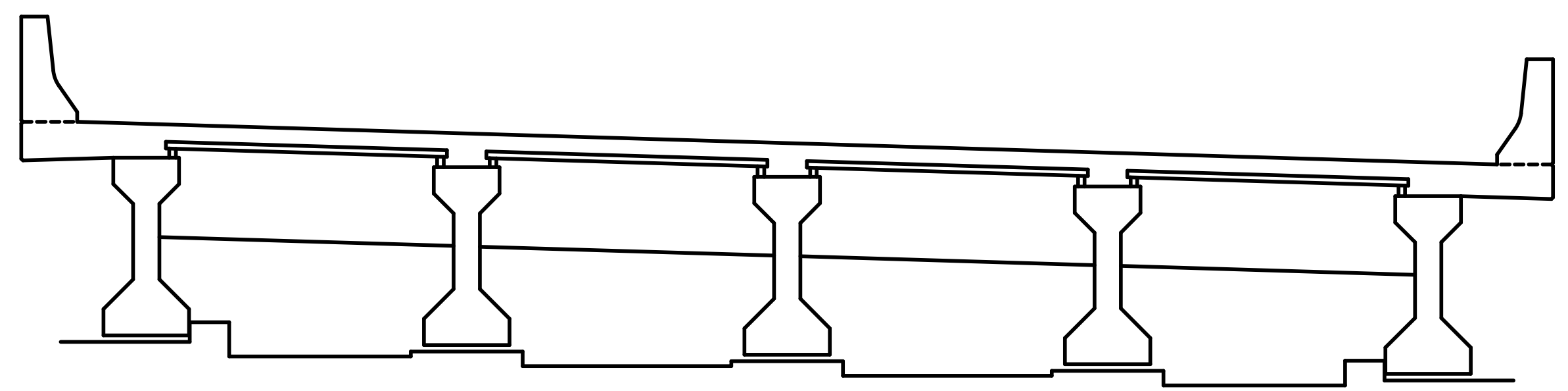


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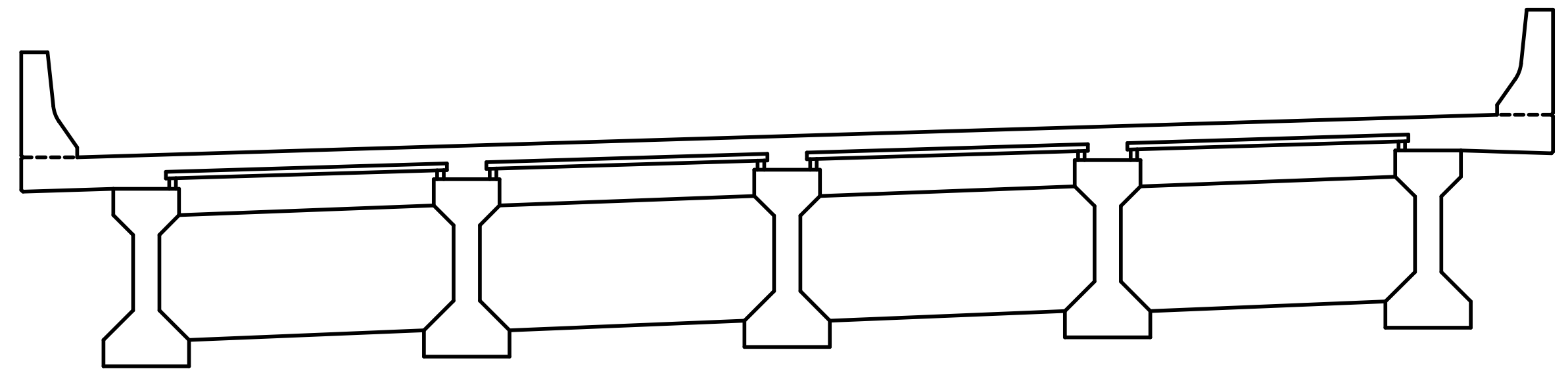
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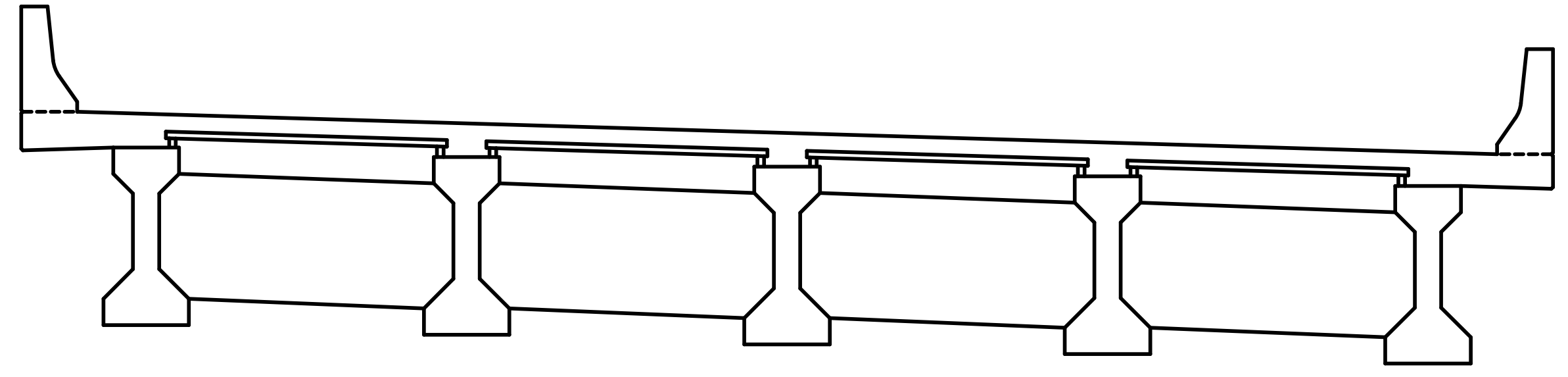
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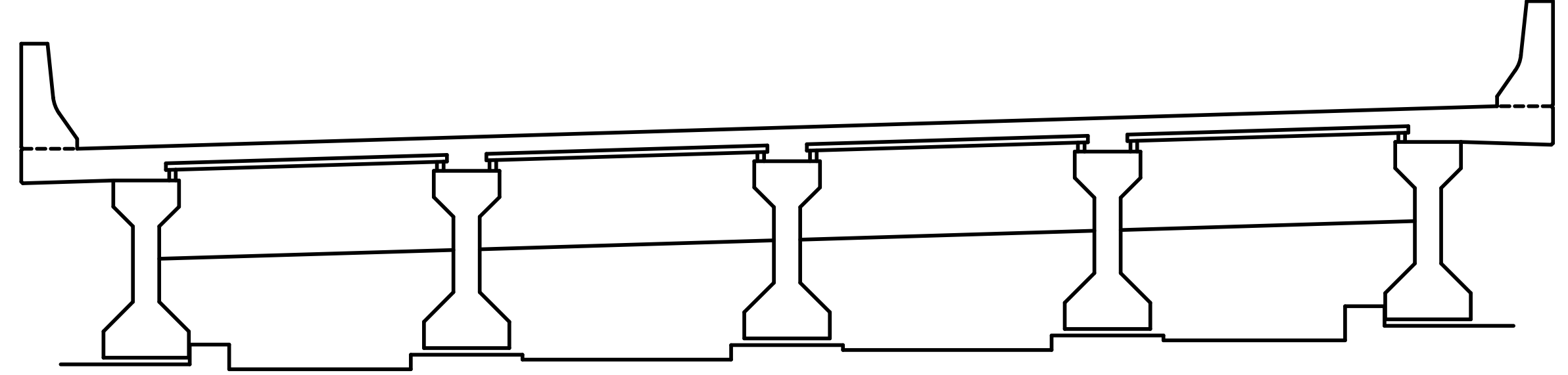
BENT 4 DIAPHRAGM
EAST FACE



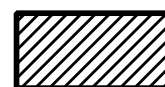
INTERMEDIATE DIAPHRAGM
WEST FACE



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	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 4 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 5 DIAPHRAGM		0.0			

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 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
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 FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR SUPERSTRUCTURE REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.

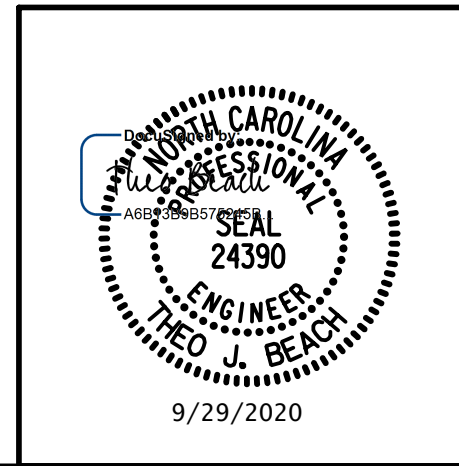
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 5 OF 19

STATE OF NORTH CAROLINA
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 PRESERVATION

DIAPHRAGM REPAIRS

SPAN 5



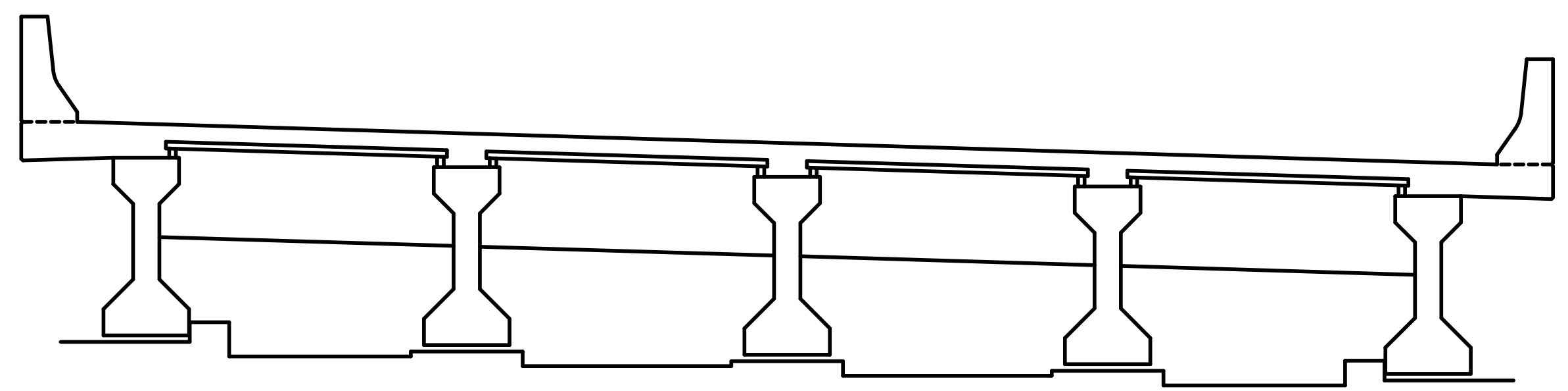
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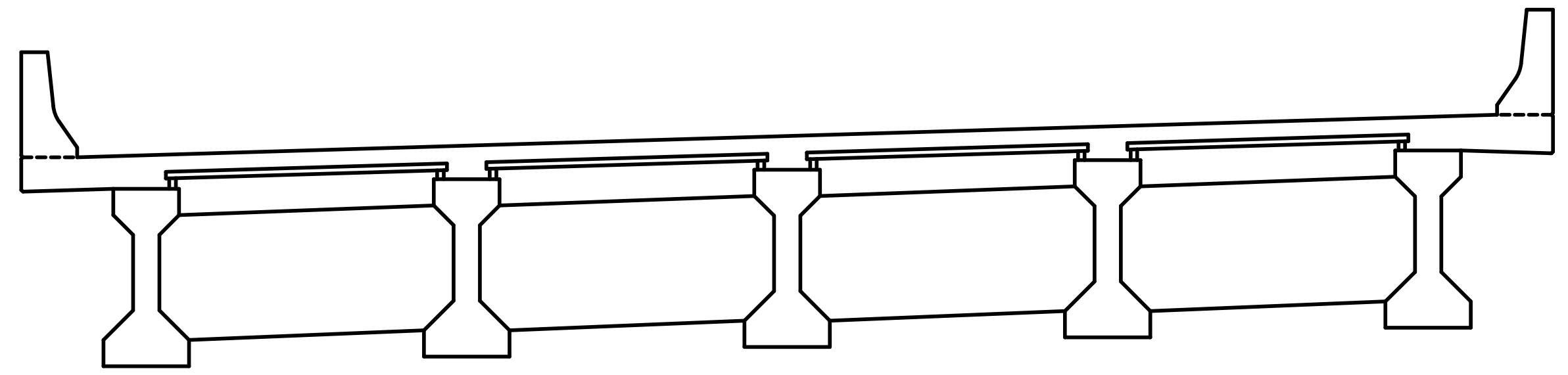
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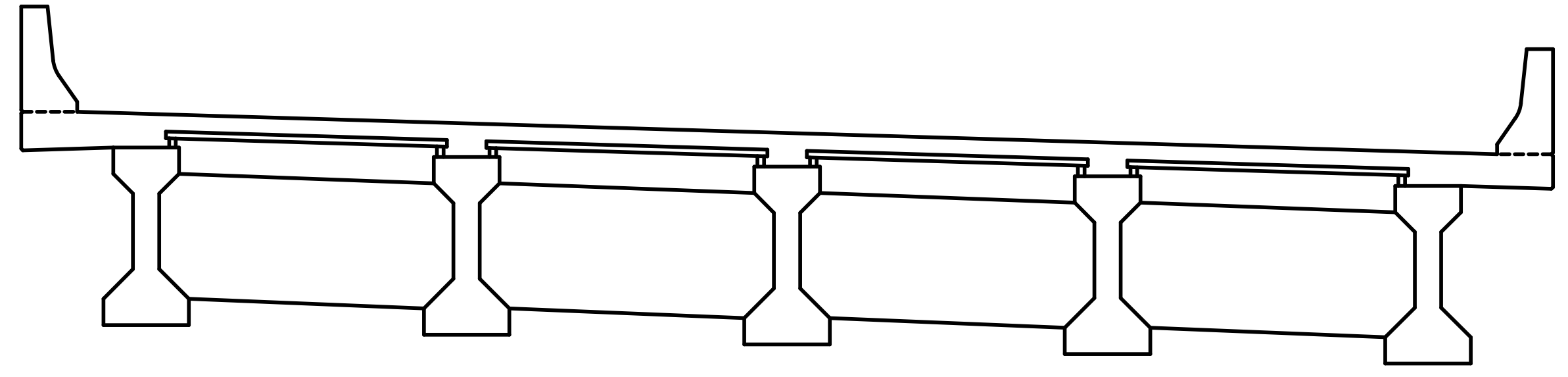
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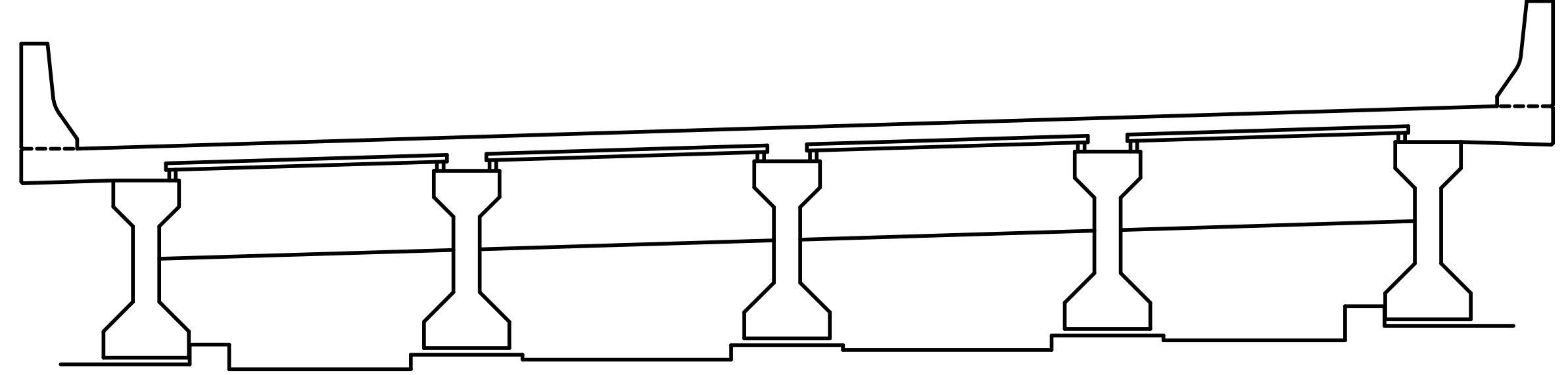
BENT 5 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 6 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 6 DIAPH.	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BENT 5 DIAPHRAGM	0.0	0.0			
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			

NOTES:
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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 6 OF 19

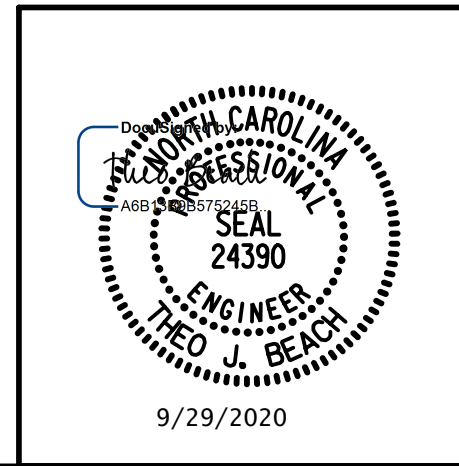
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DIAPHRAGM REPAIRS

SPAN 6

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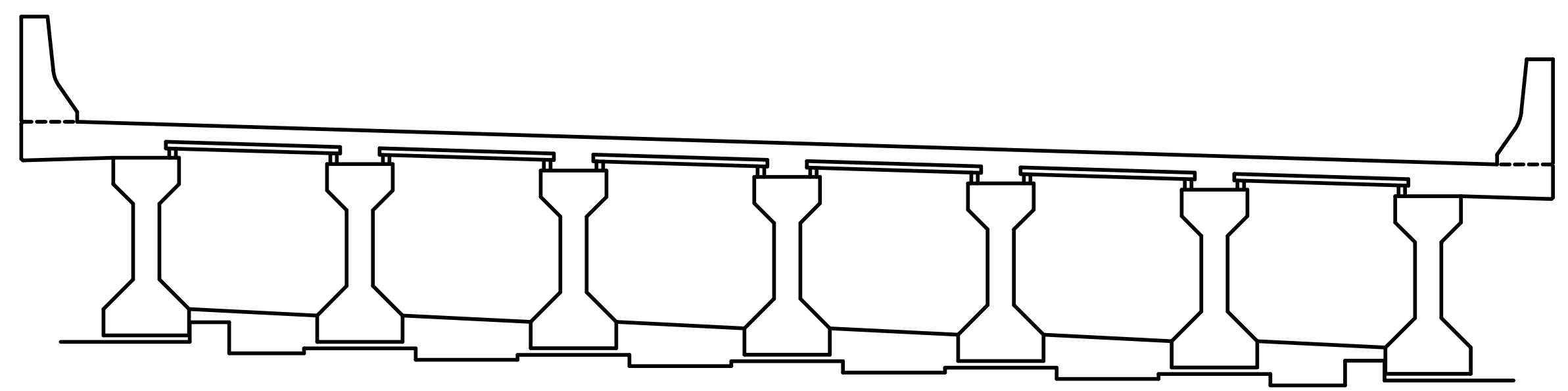


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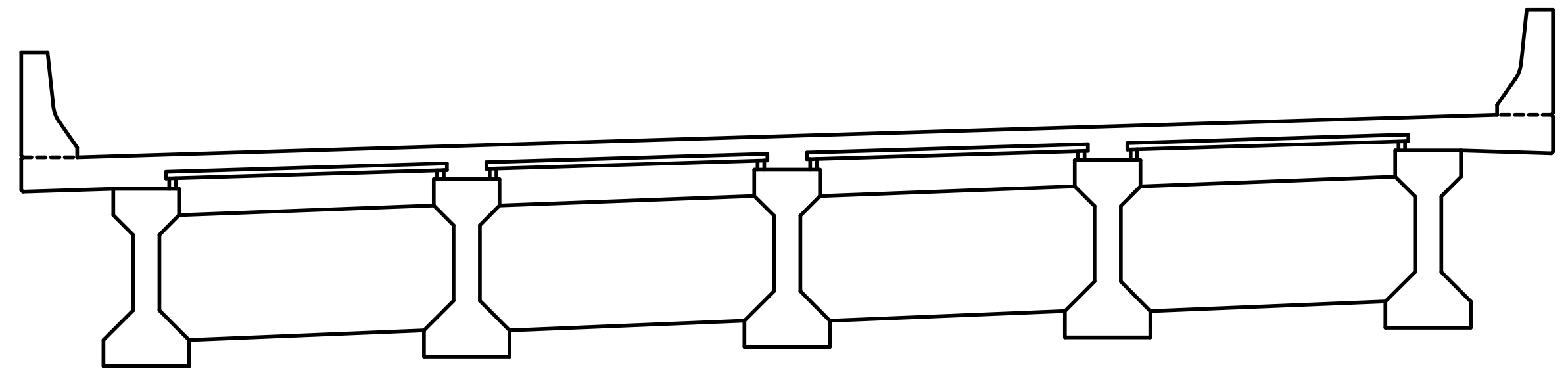
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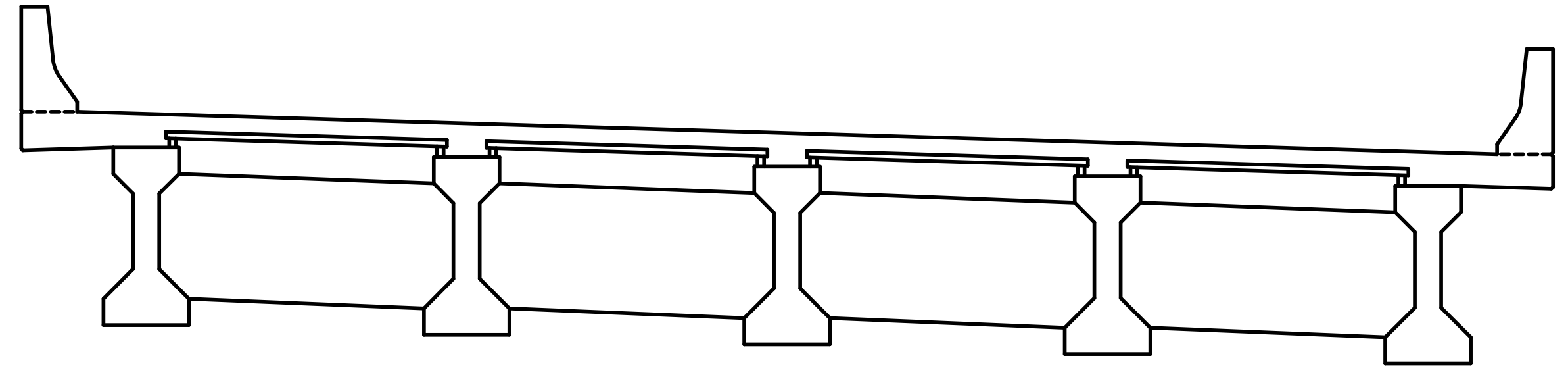
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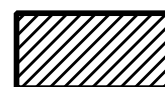
BENT 6 DIAPHRAGM
EAST FACE



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.: 640048

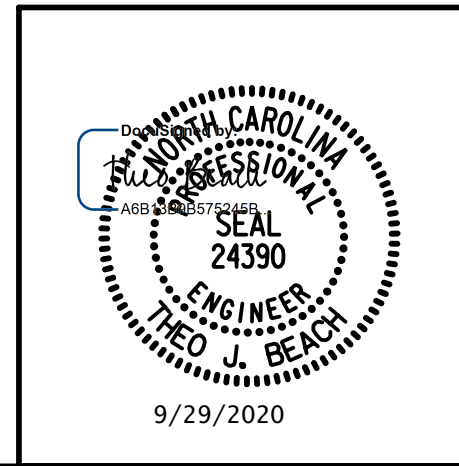
SHEET 7 OF 19

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DIAPHRAGM REPAIRS

SPAN 7

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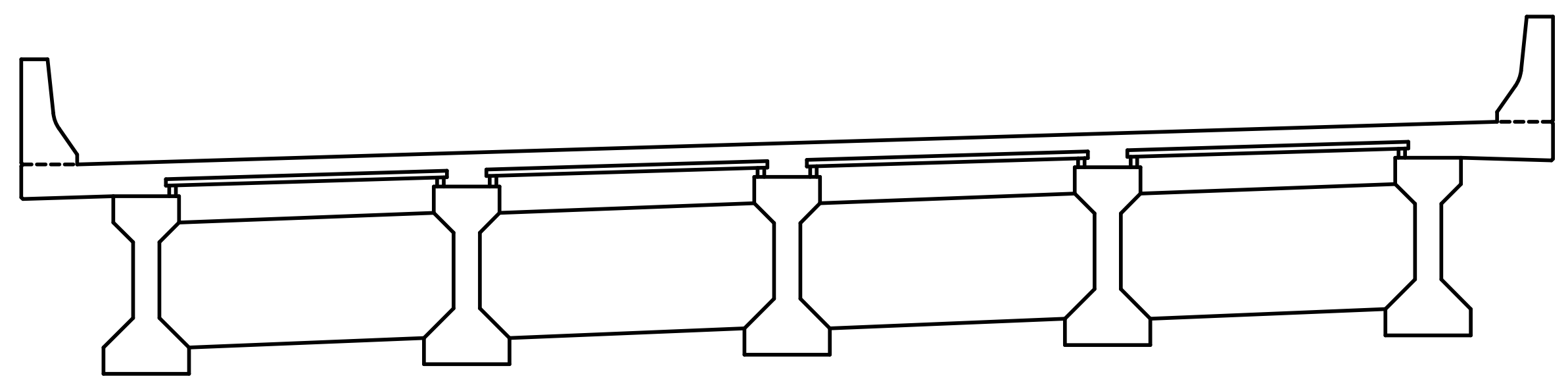


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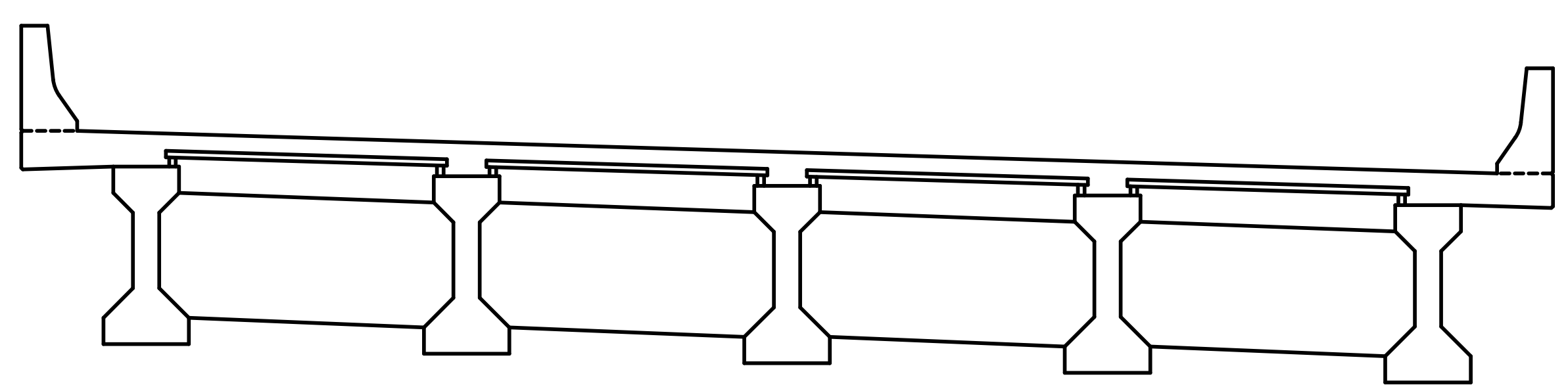
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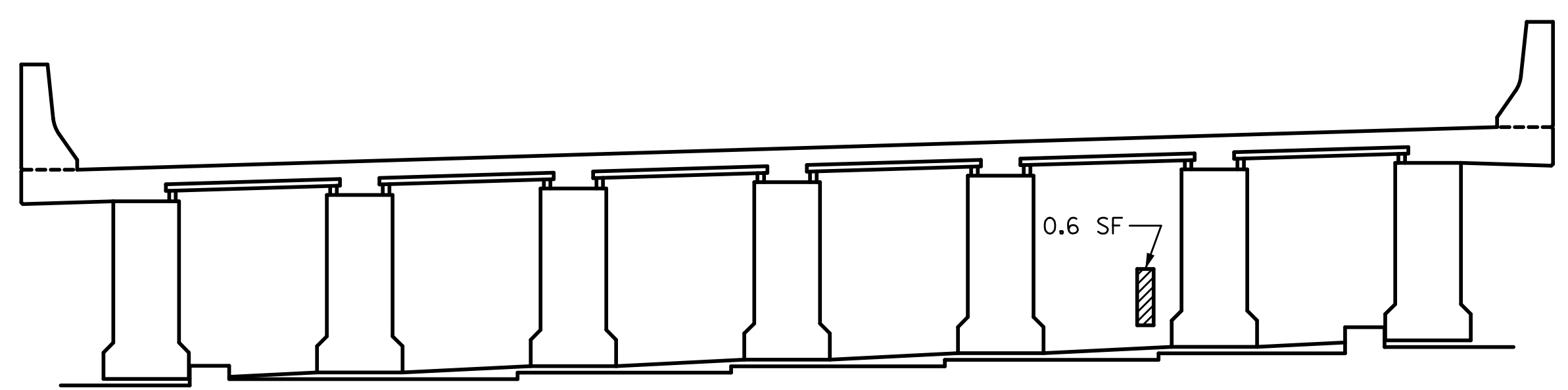
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INTERMEDIATE DIAPHRAGM 2
WEST FACE



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	0.6	0.1			
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			

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PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 8 OF 19

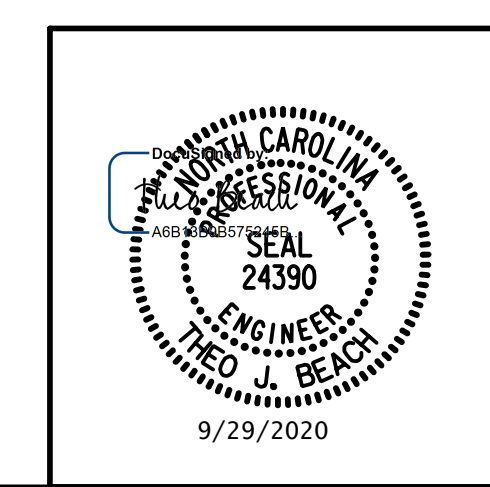
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DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

DIAPHRAGM REPAIRS

SPAN 7

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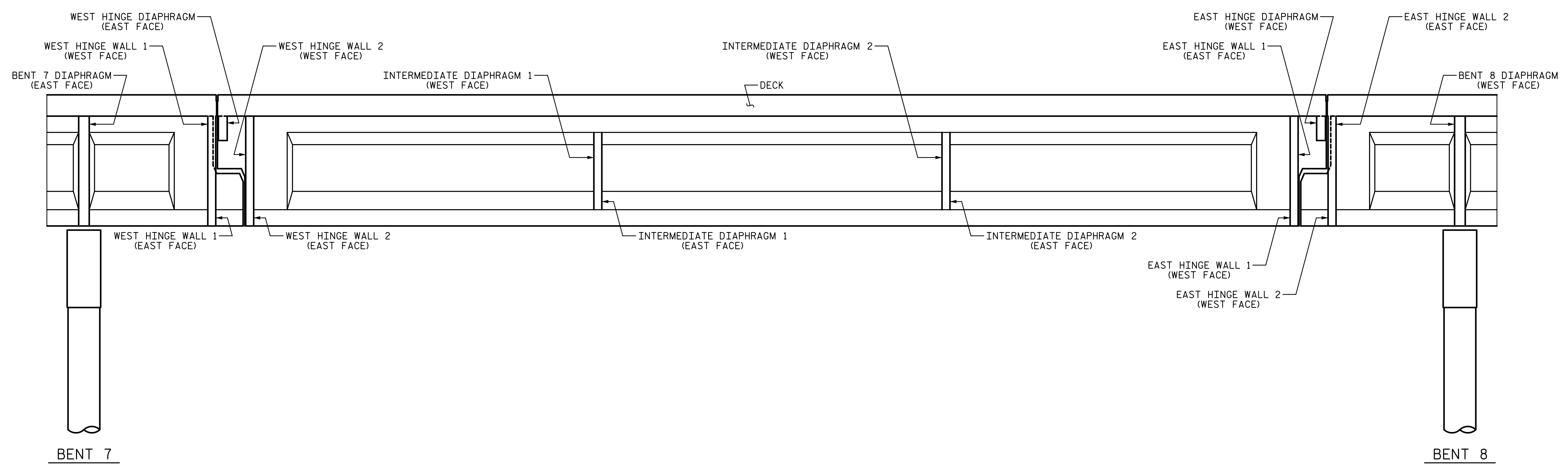
PLANS PREPARED BY:
SEMPSON ENGINEERS & ASSOCIATES
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 (919) 852-0468
 (919) 852-0538 (Fax)
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SPAN 8 DIAPHRAGM LAYOUT

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 9 OF 19

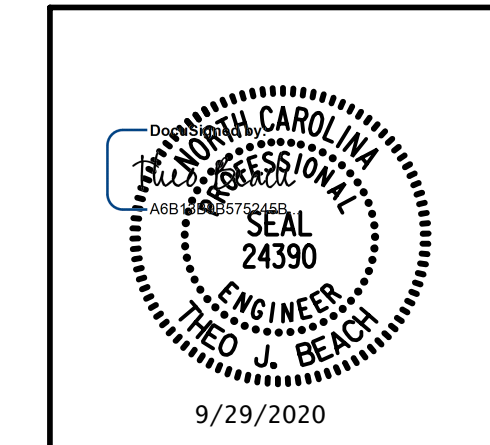
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 PRESERVATION

DIAPHRAGM REPAIRS

SPAN 8

PLANS PREPARED BY:

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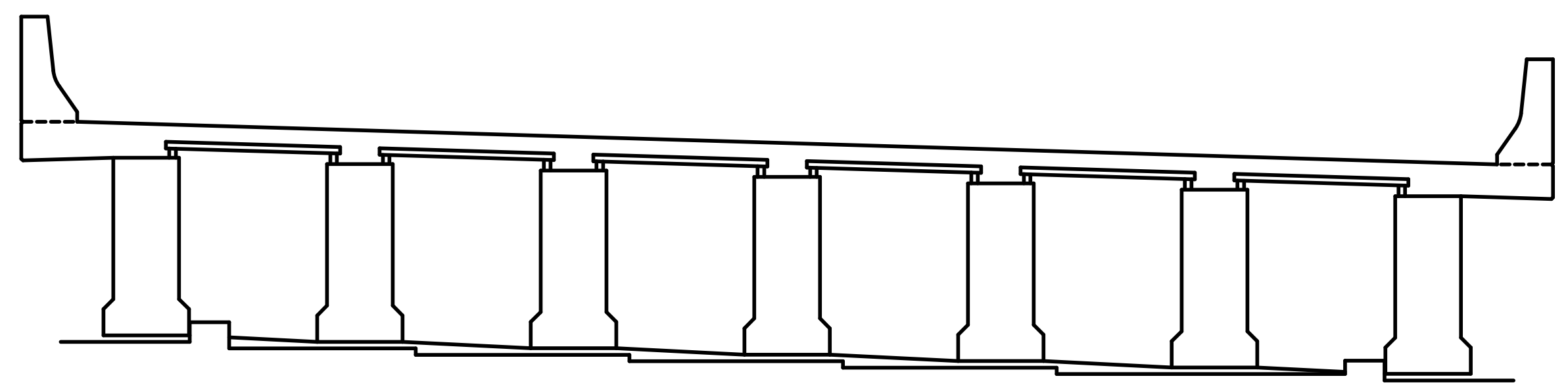


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DESIGN ENGINEER OF RECORD:	T.J. BEACH	DATE:	9-20

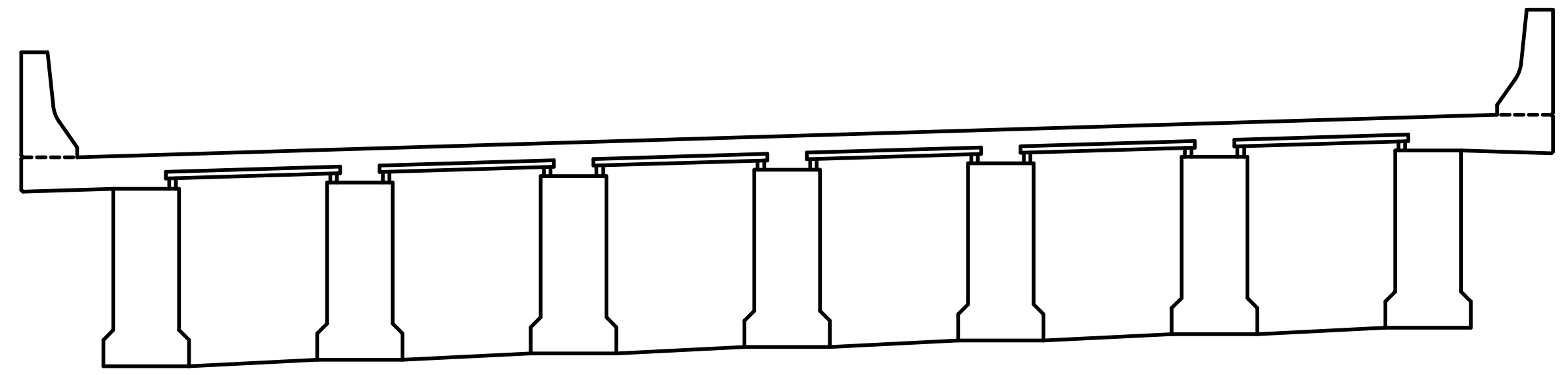
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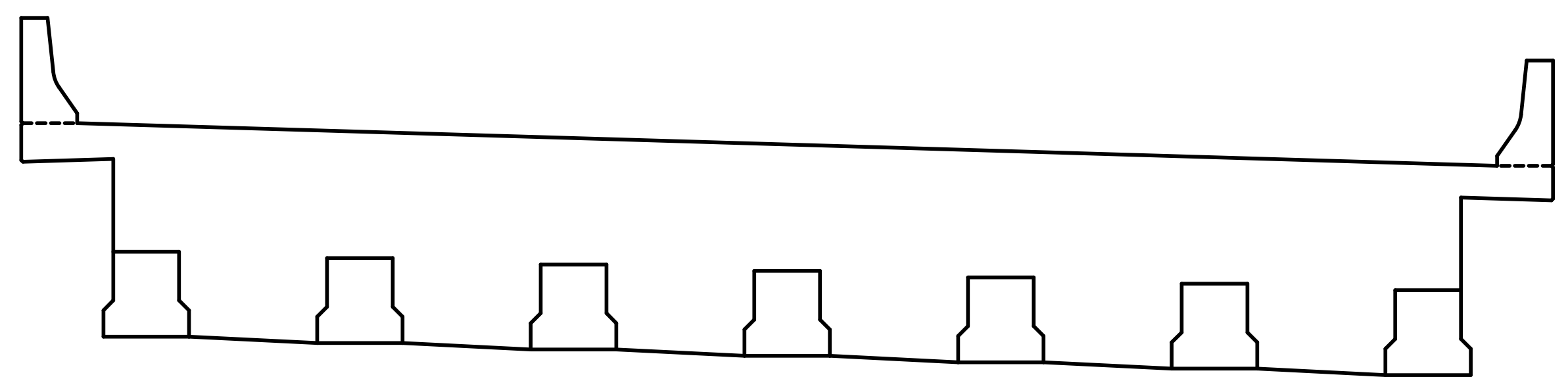
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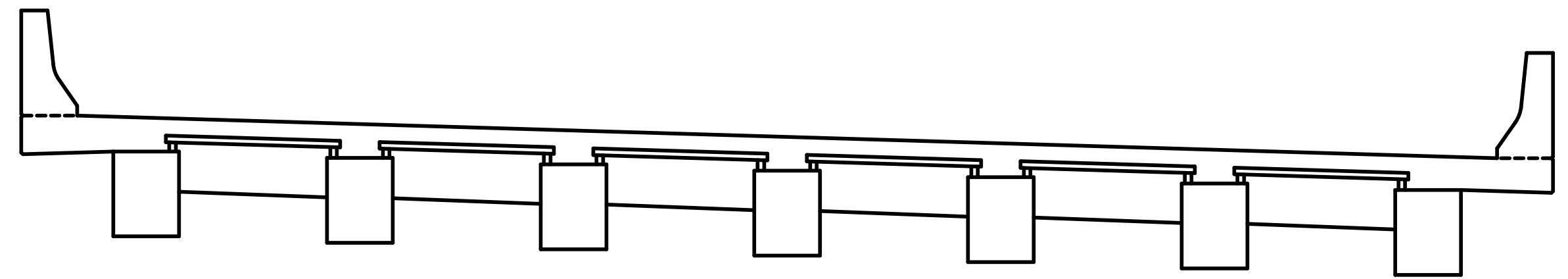
BENT 7 DIAPHRAGM
EAST FACE



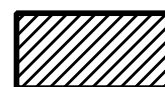
WEST HINGE WALL 1
WEST FACE



WEST HINGE WALL 1
EAST FACE



WEST HINGE DIAPHRAGM
EAST FACE

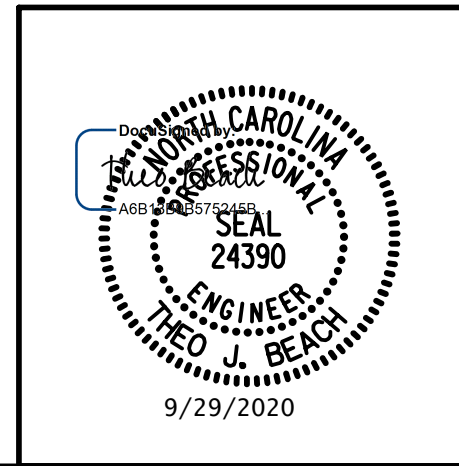
 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

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

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640048

SHEET 10 OF 19

PLANS PREPARED BY:
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DIAPHRAGM REPAIRS

SPAN 8

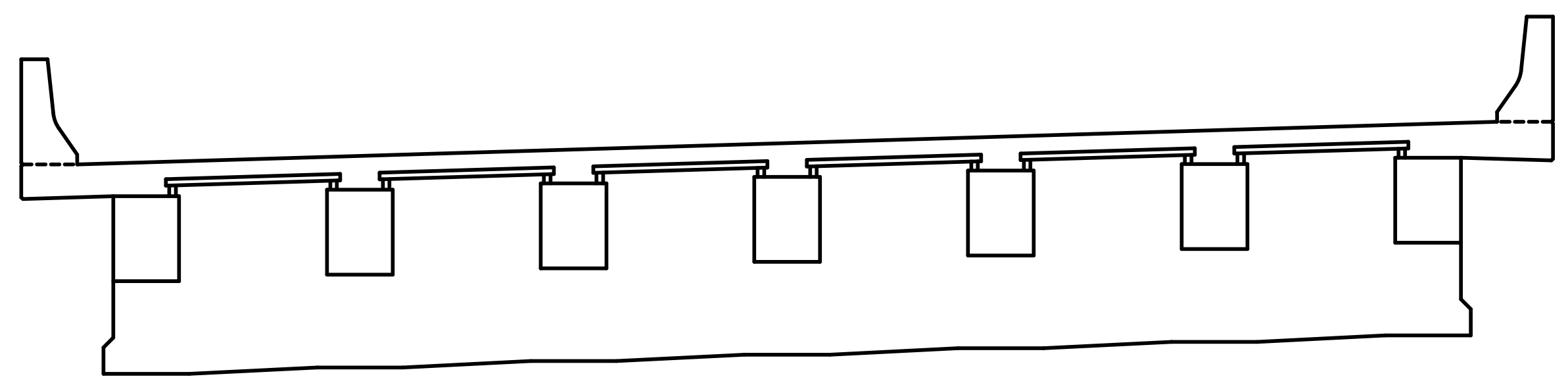
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DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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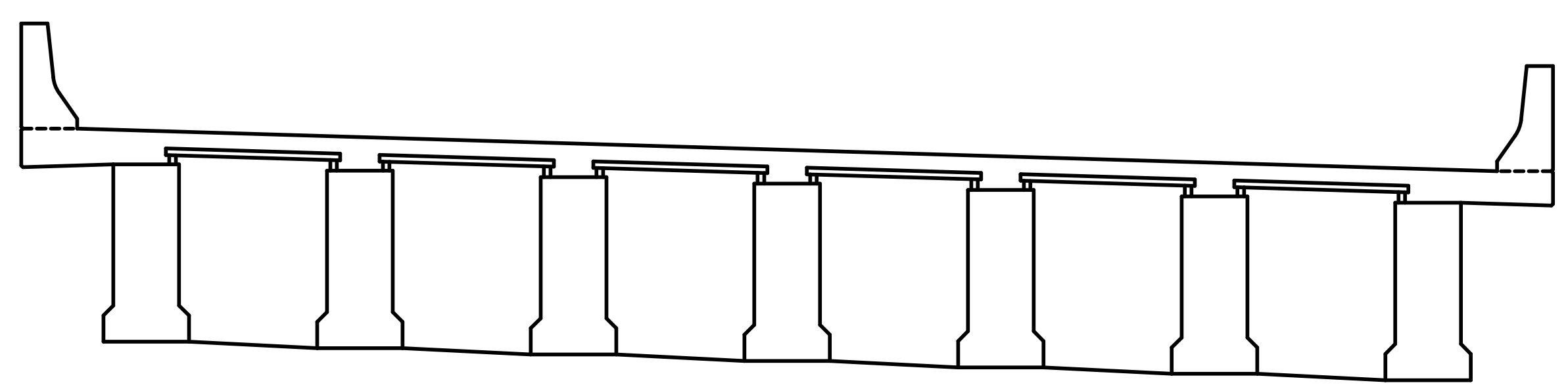
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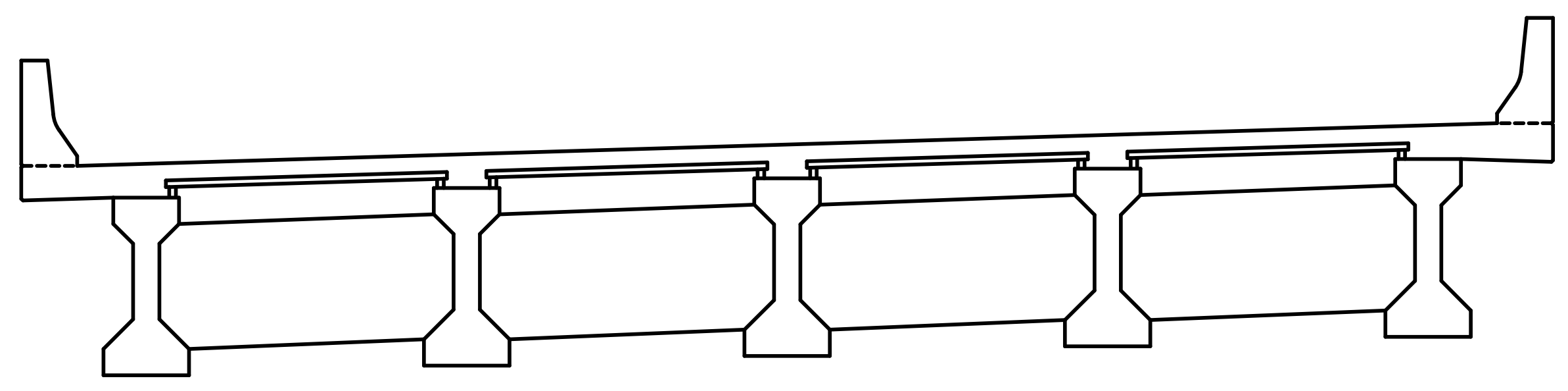
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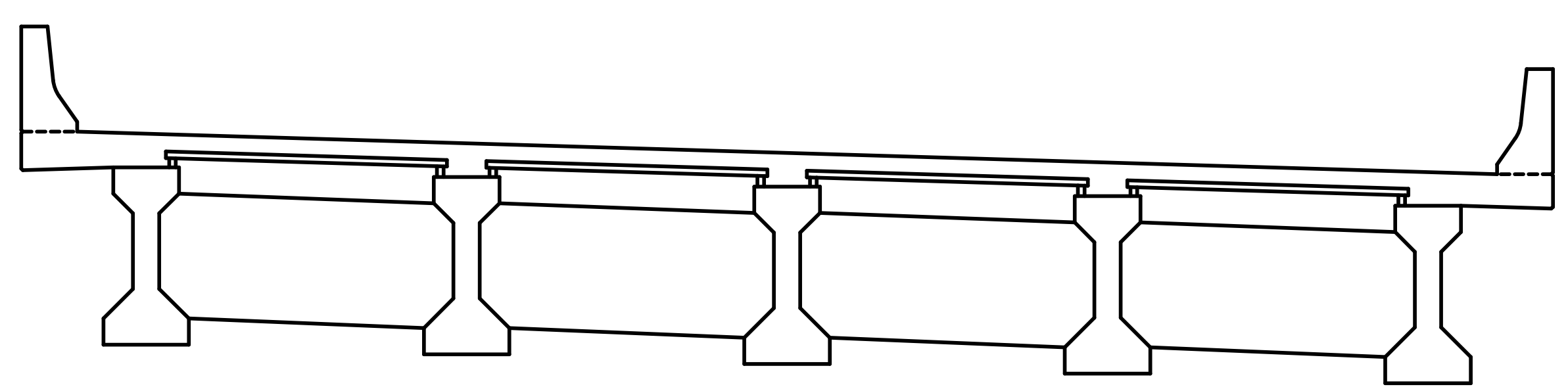
WEST HINGE WALL 2
WEST FACE



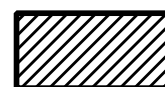
WEST HINGE WALL 2
EAST FACE



INTERMEDIATE DIAPHRAGM 1
WEST FACE



INTERMEDIATE DIAPHRAGM 1
EAST FACE

 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

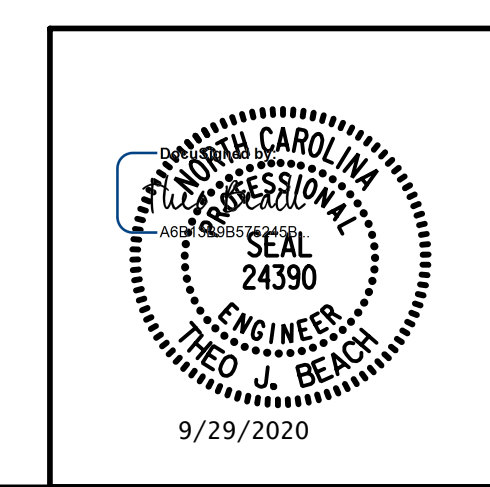
NOTES:
FOR SPAN 8 QUANTITIES, SEE SHEET 13 OF 19.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640048

SHEET 11 OF 19

PLANS PREPARED BY:

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DIAPHRAGM REPAIRS

SPAN 8

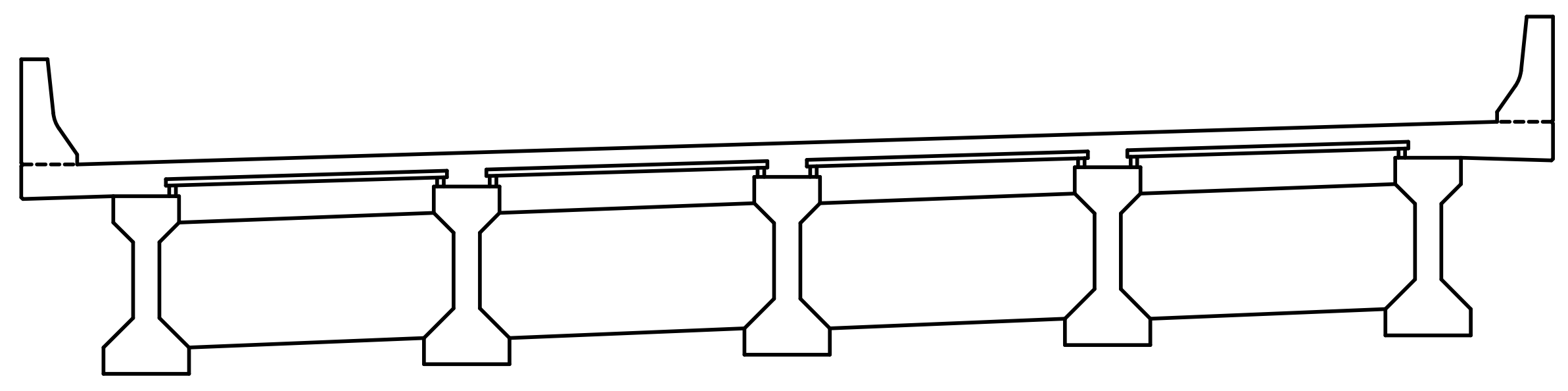
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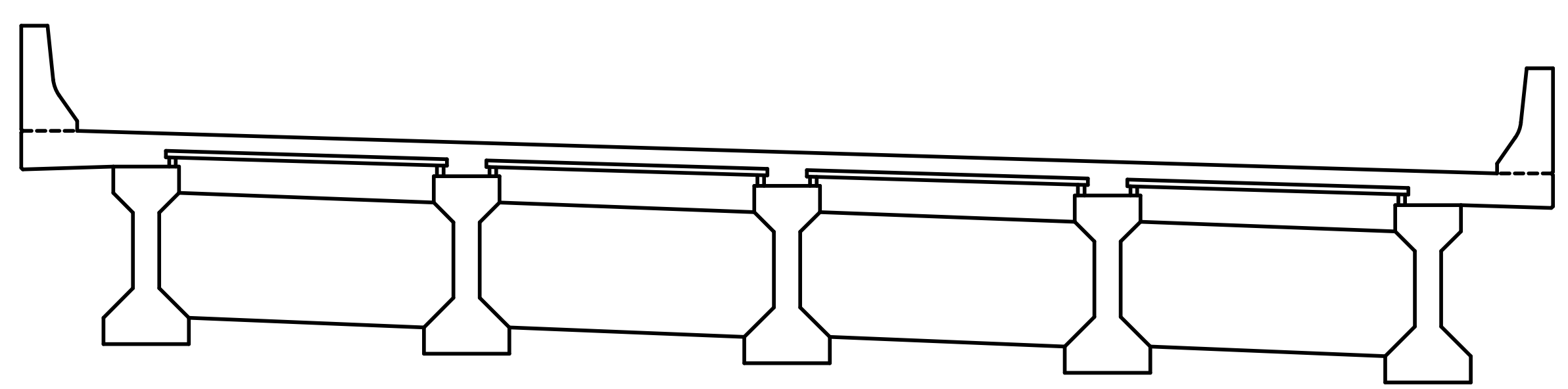
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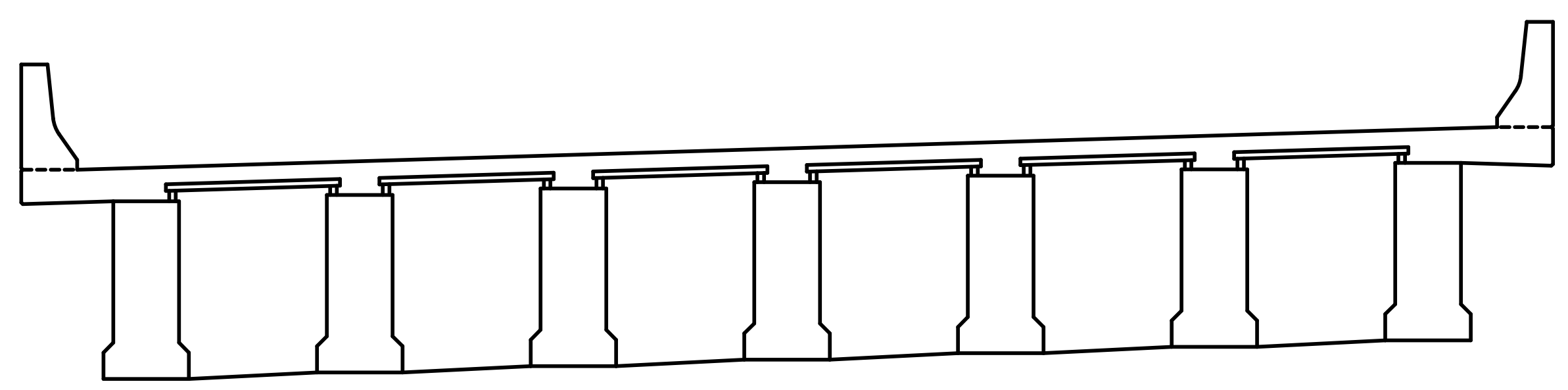
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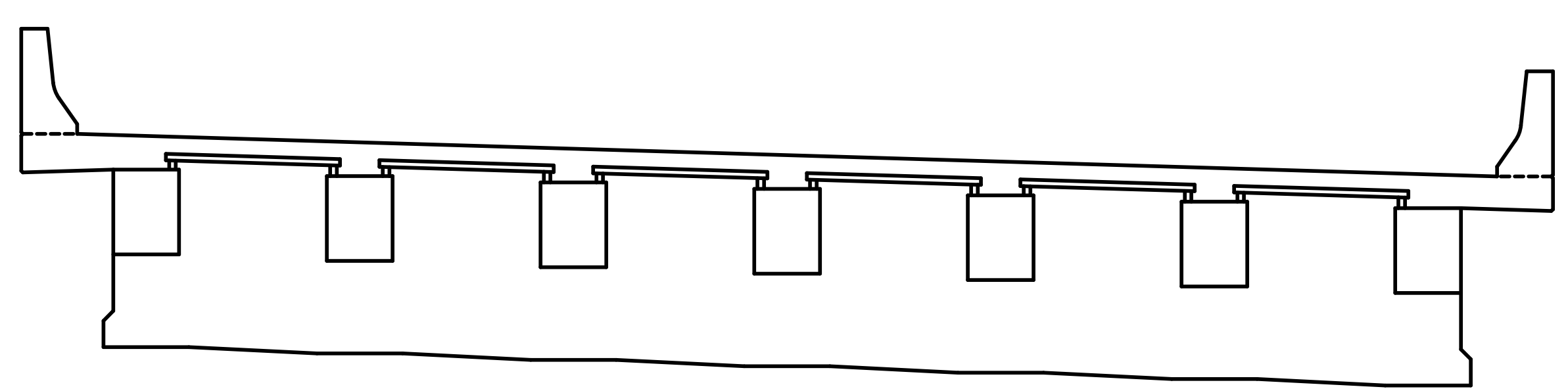
INTERMEDIATE DIAPHRAGM 2
WEST FACE



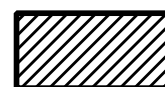
INTERMEDIATE DIAPHRAGM 2
EAST FACE



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.: 640048

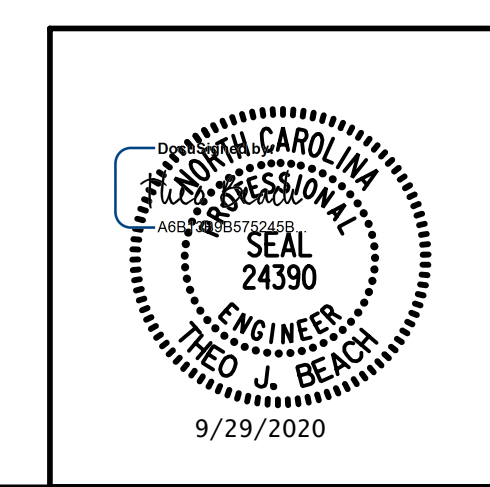
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DIAPHRAGM REPAIRS

SPAN 8

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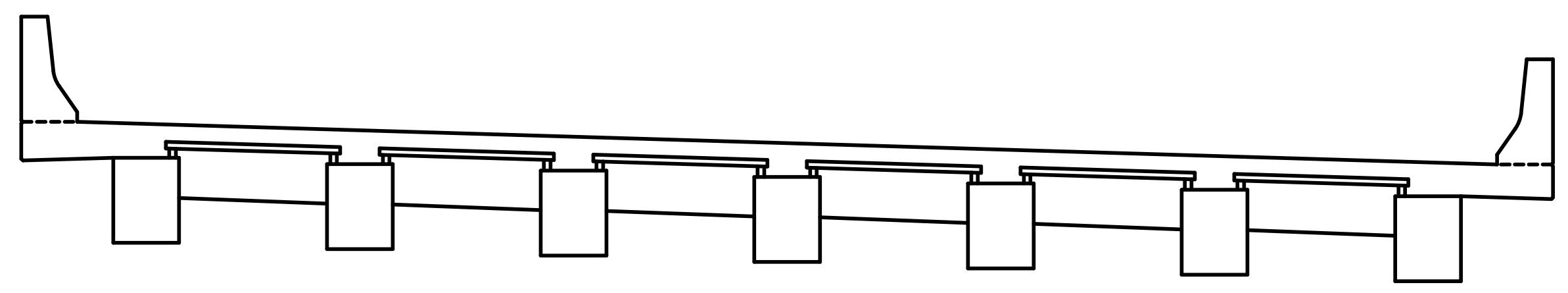


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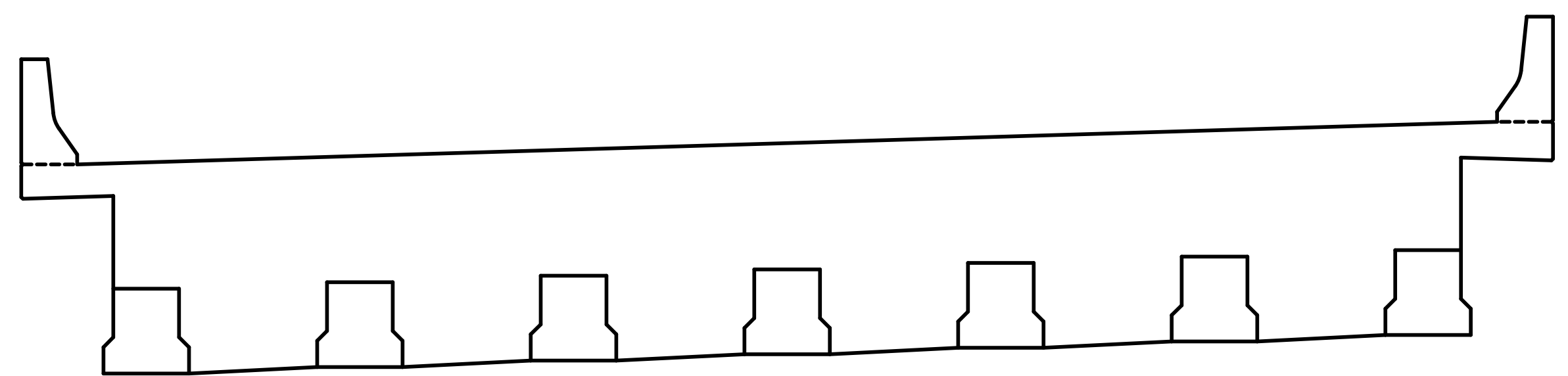
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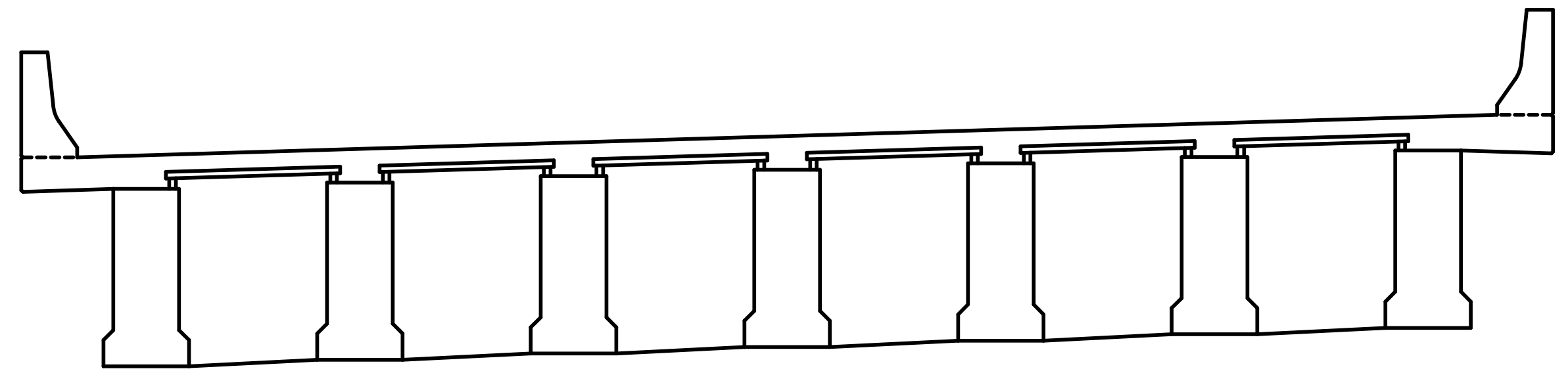
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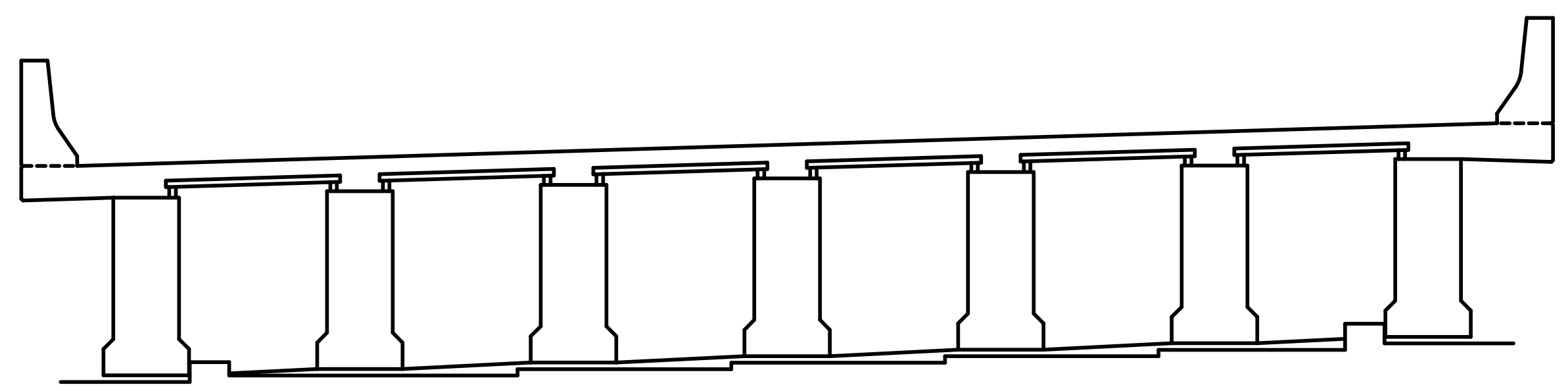
EAST HINGE DIAPHRAGM
WEST FACE



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		
	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
SHOTCRETE REPAIRS					
BENT 7 DIAPHRAGM	0.0	0.0			
WEST HINGE WALL 1	0.0	0.0			
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		0.0			
EAST HINGE DIAPHRAGM		0.0			
EAST HINGE WALL 2		0.0			
BENT 8 DIAPHRAGM		0.0			

NOTES:

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 13 OF 19

STATE OF NORTH CAROLINA
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 PRESERVATION

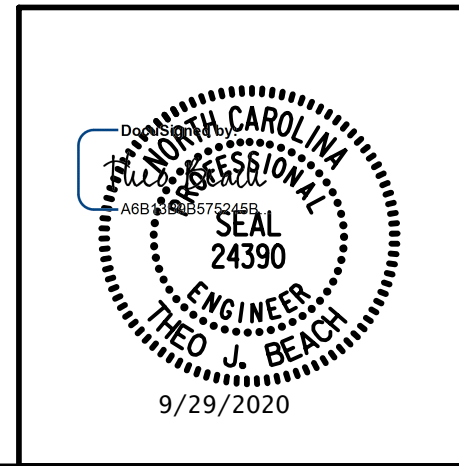
DIAPHRAGM REPAIRS

SPAN 8

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-131
1			3			TOTAL SHEETS
2			4			163

PLANS PREPARED BY:

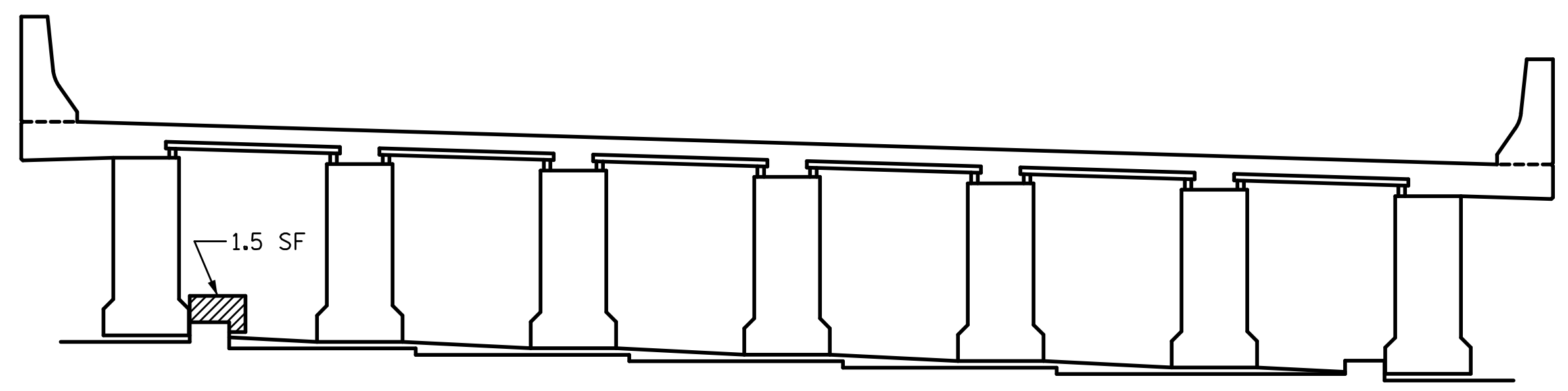
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 (919) 852-0468
 (919) 852-0598 (Fax)
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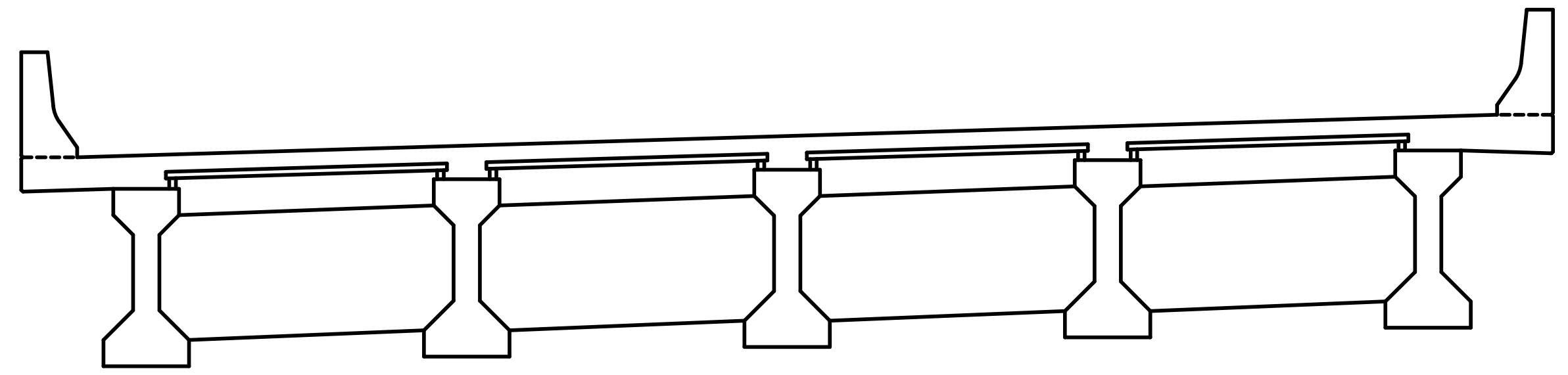
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DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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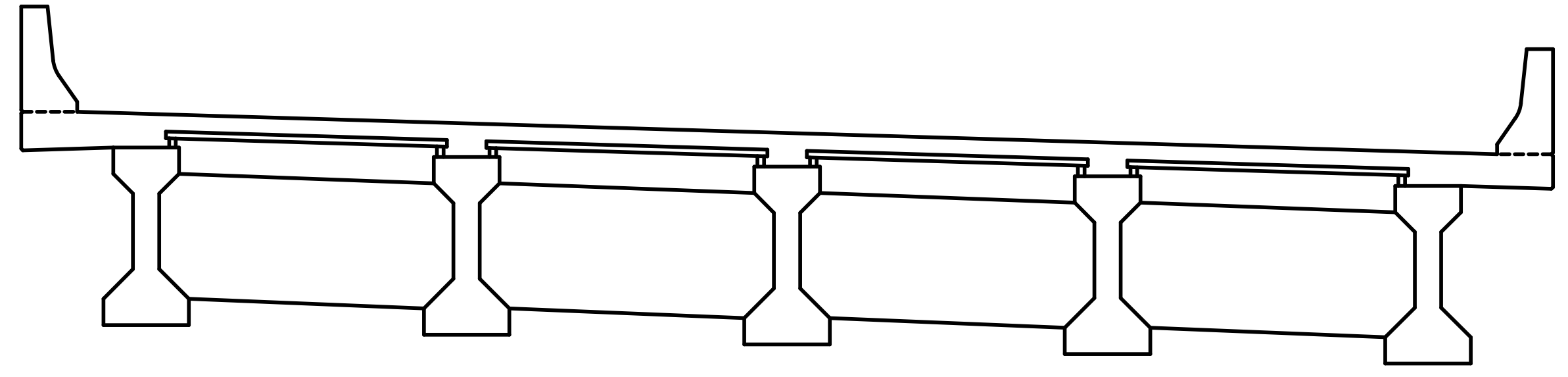
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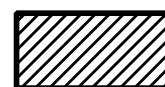
BENT 8 DIAPHRAGM
EAST FACE



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
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640048

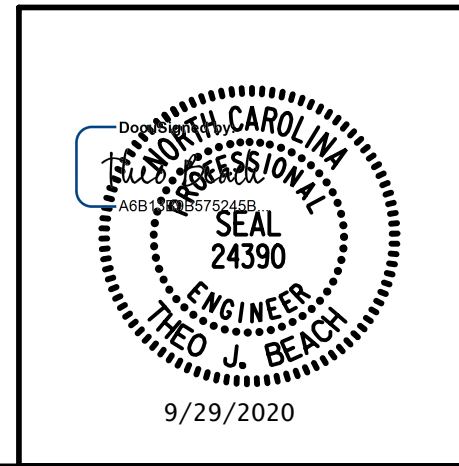
SHEET 14 OF 19

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DEPARTMENT OF TRANSPORTATION
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DIAPHRAGM REPAIRS

SPAN 9

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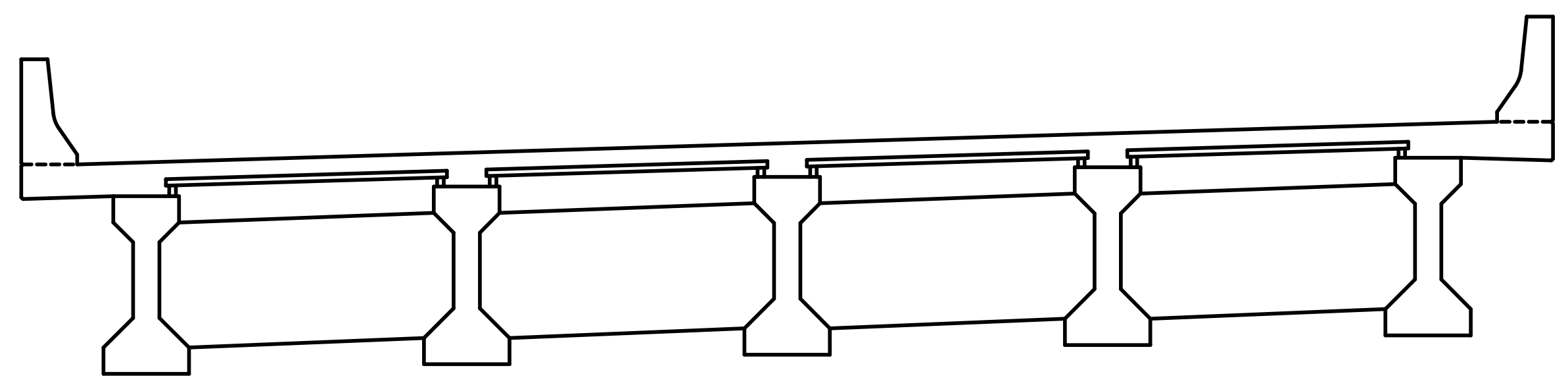


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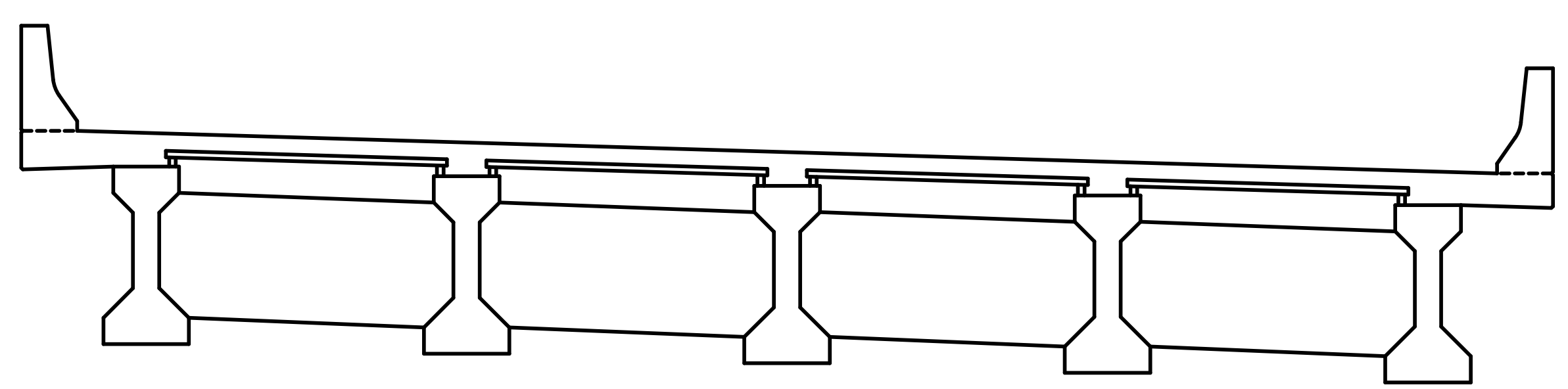
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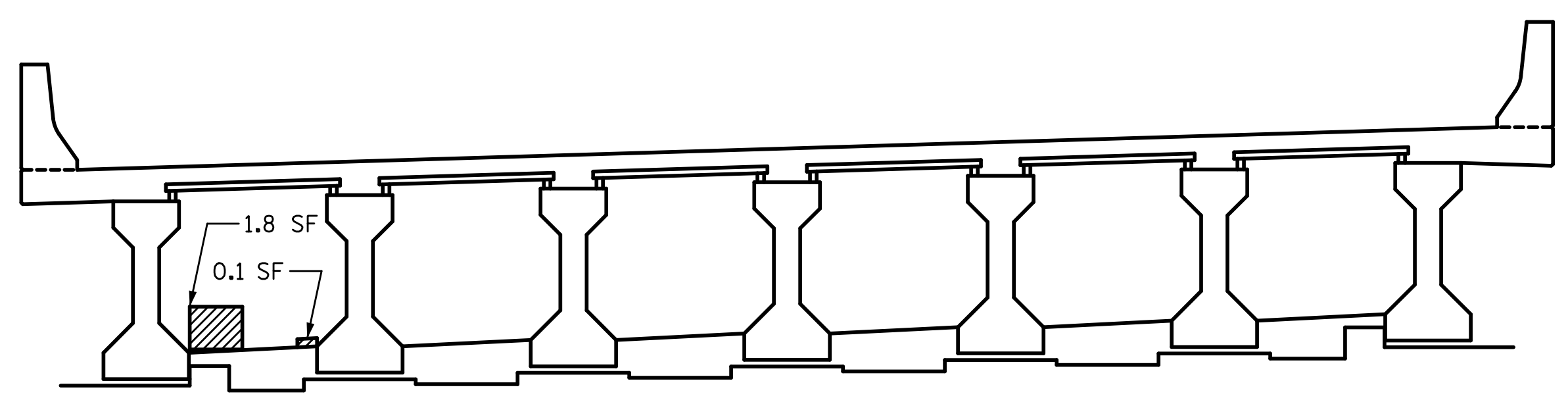
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INTERMEDIATE DIAPHRAGM 2
WEST FACE



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	1.5	0.2			
INTERMEDIATE DIAPHRAGM 1	0.0	0.0			
INTERMEDIATE DIAPHRAGM 2	0.0	0.0			
BENT 9 DIAPHRAGM	1.9	0.5			
EPOXY RESIN INJECTION			LF		LF
BENT 8 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM 1		0.0			
INTERMEDIATE DIAPHRAGM 2					
BENT 9 DIAPHRAGM					

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FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SUPERSTRUCTURE REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 15 OF 19

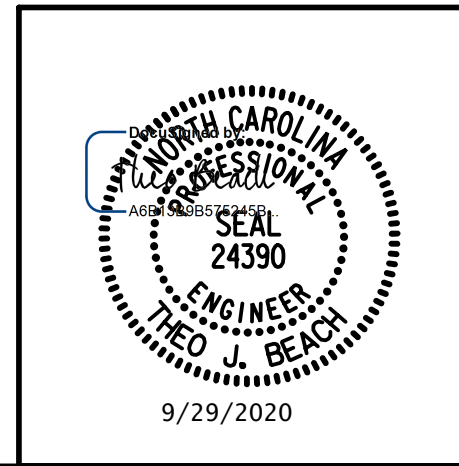
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DIAPHRAGM REPAIRS

SPAN 9

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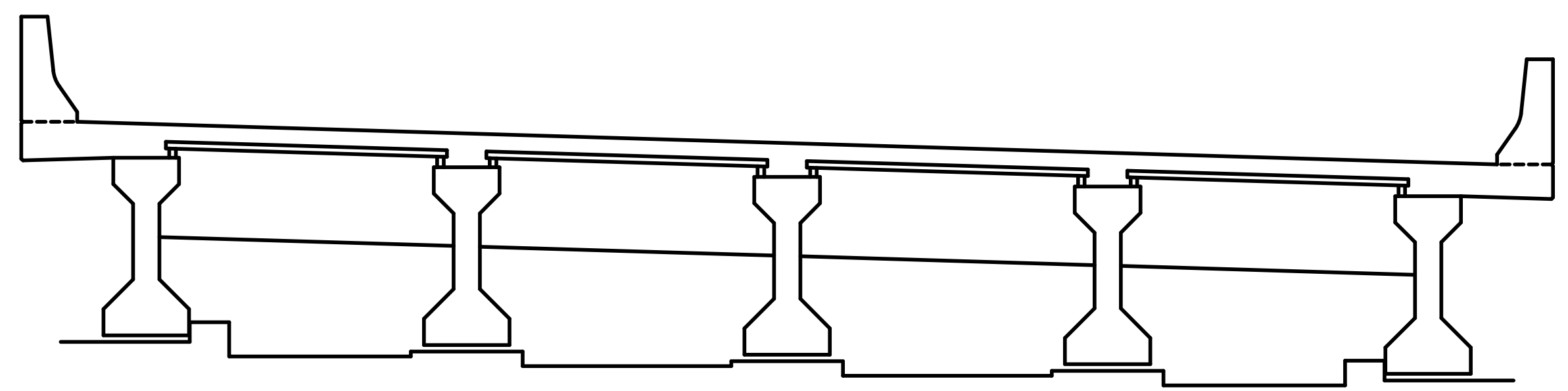


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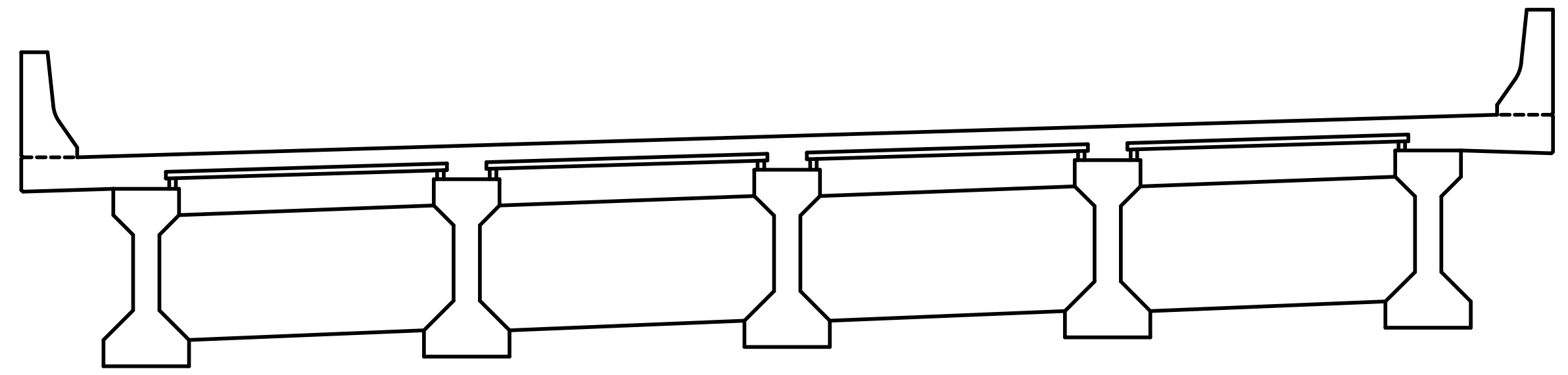
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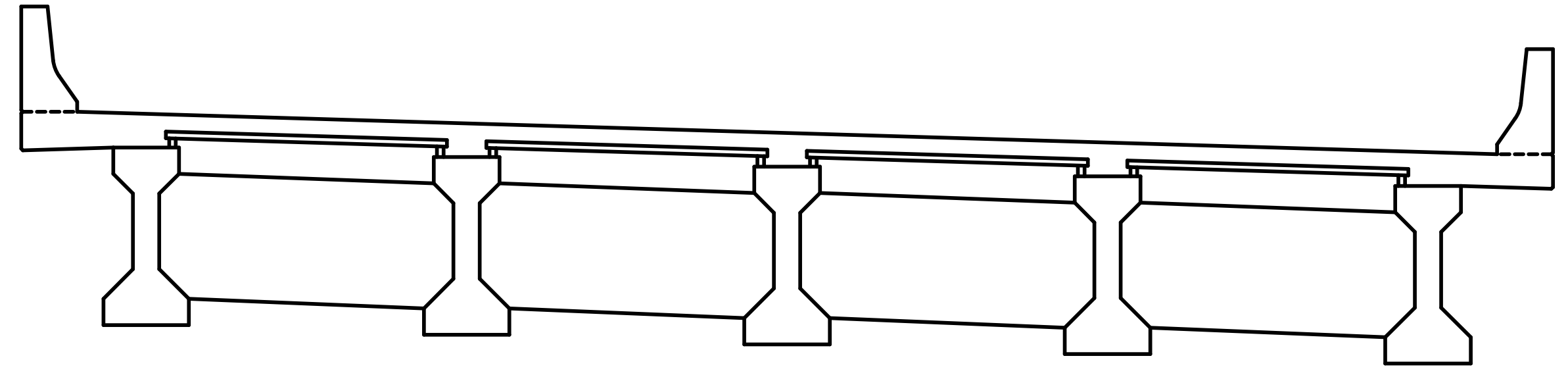
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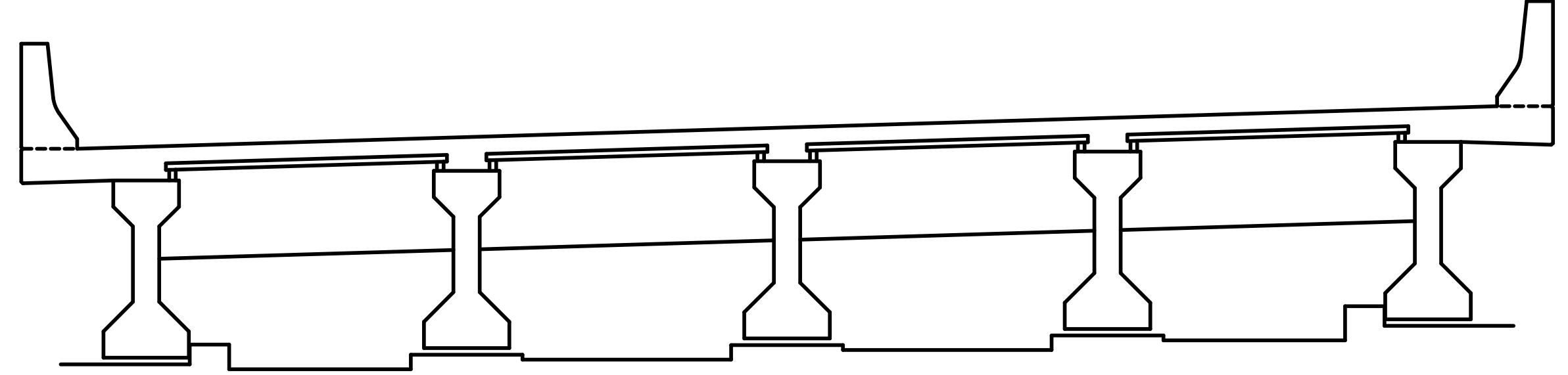
BENT 9 DIAPHRAGM
EAST FACE



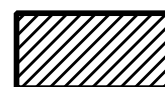
INTERMEDIATE DIAPHRAGM
WEST FACE



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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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 16 OF 19

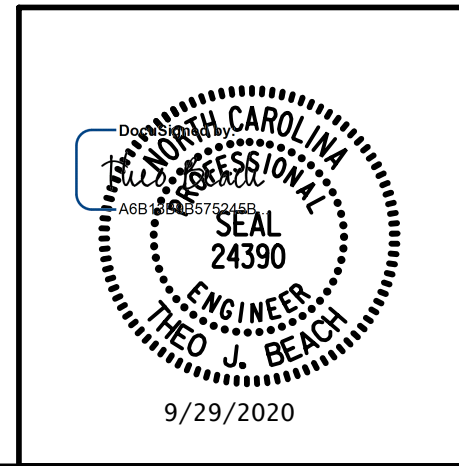
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 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

DIAPHRAGM REPAIRS

SPAN 10

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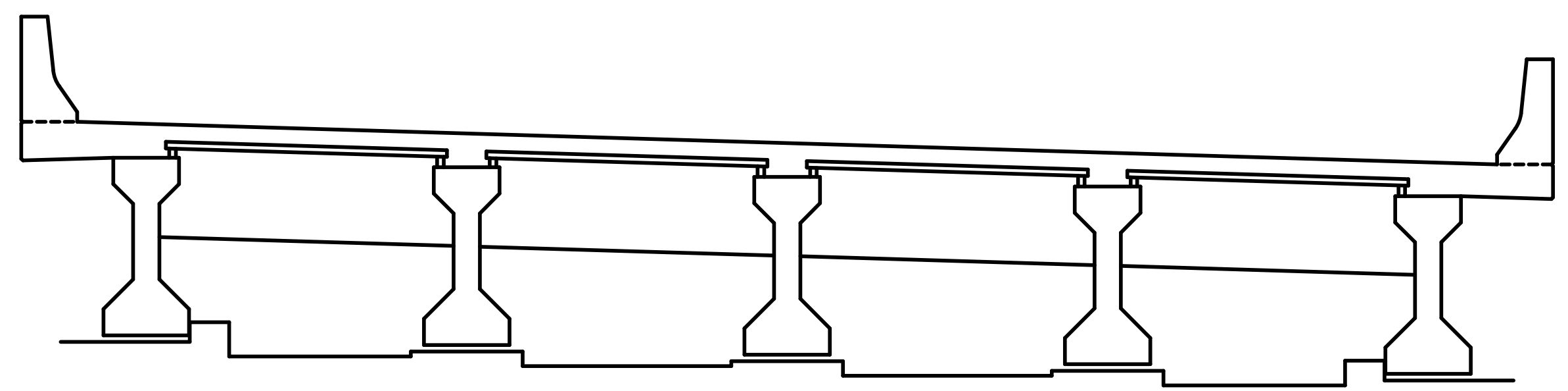
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 Suite 200
 Cary, NC 27518
 (919) 852-0468
 (919) 852-0598 (Fax)
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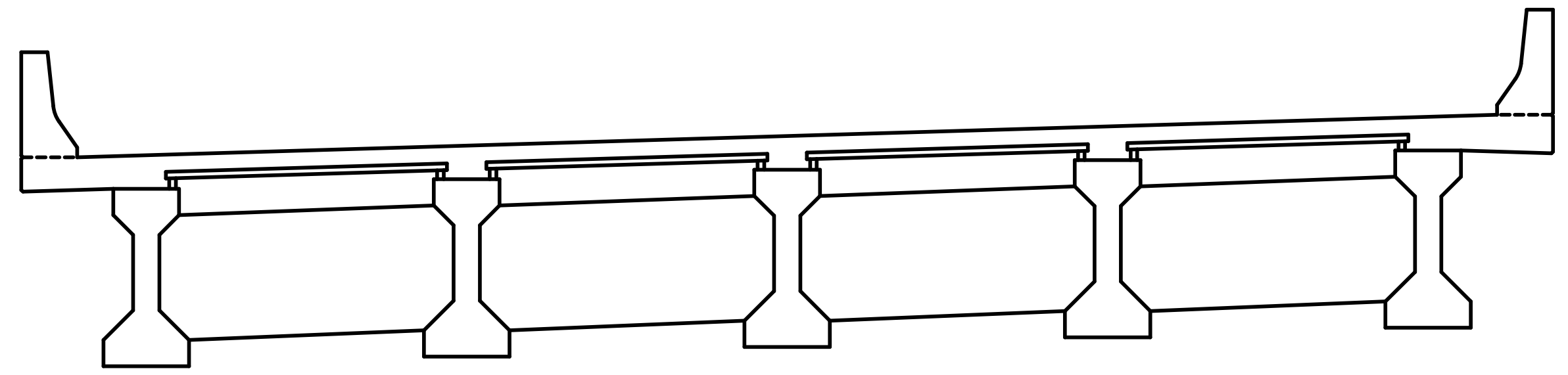
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CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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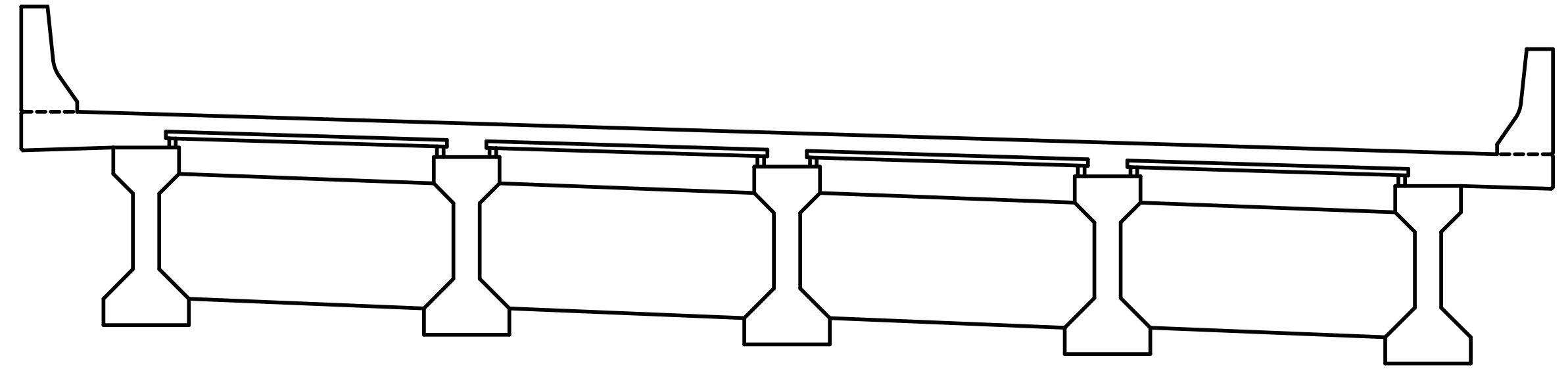
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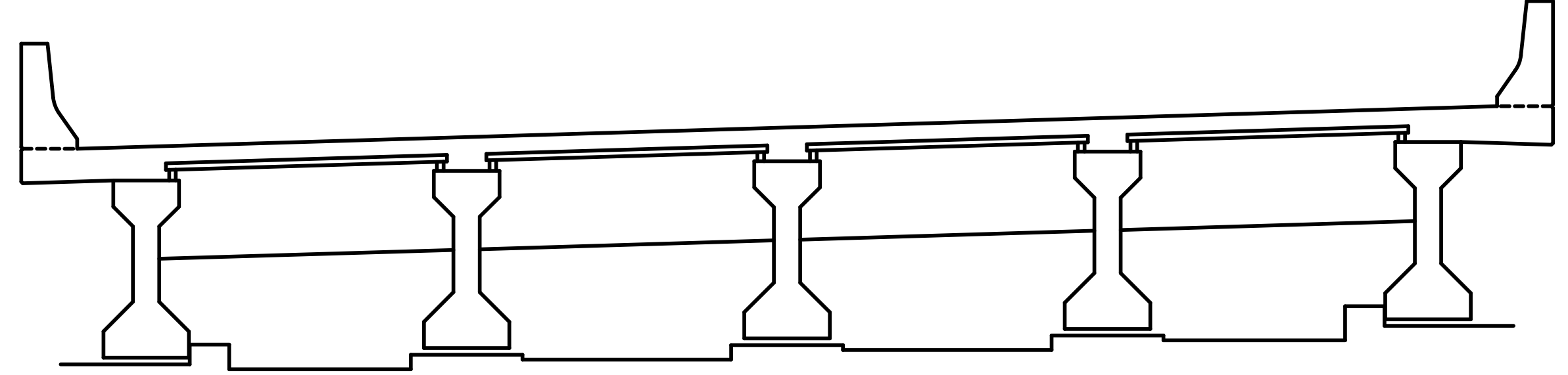
BENT 10 DIAPHRAGM
EAST FACE



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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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 17 OF 19

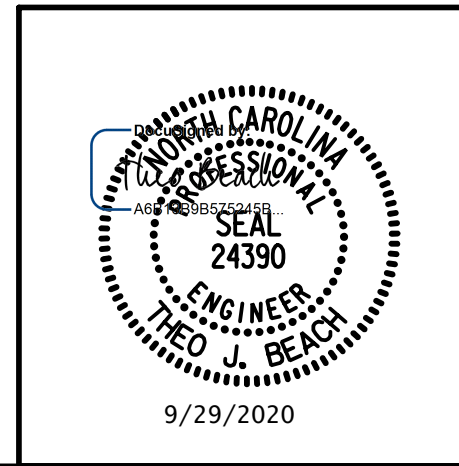
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 RALEIGH
 PRESERVATION

DIAPHRAGM REPAIRS

SPAN 11

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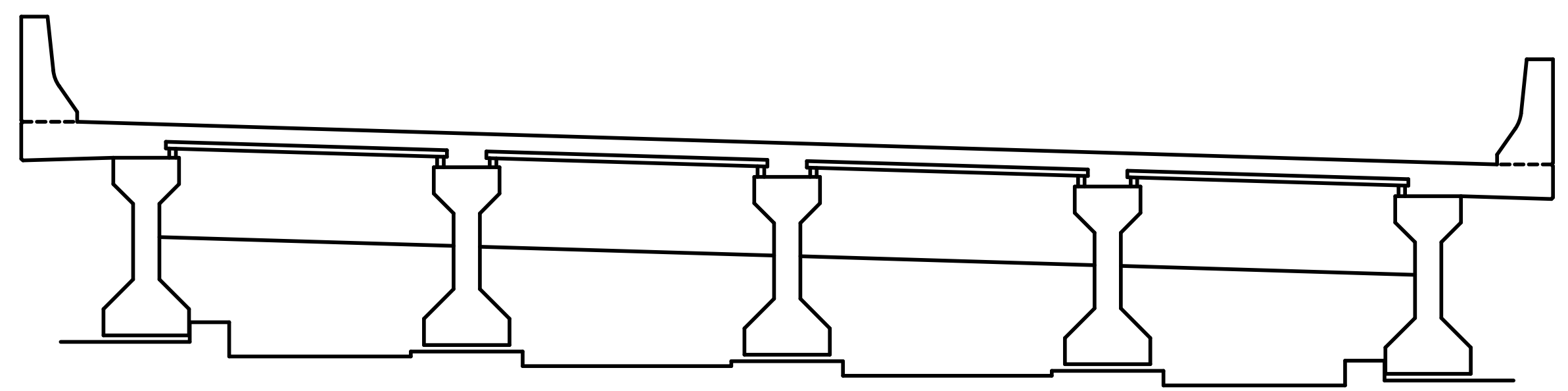
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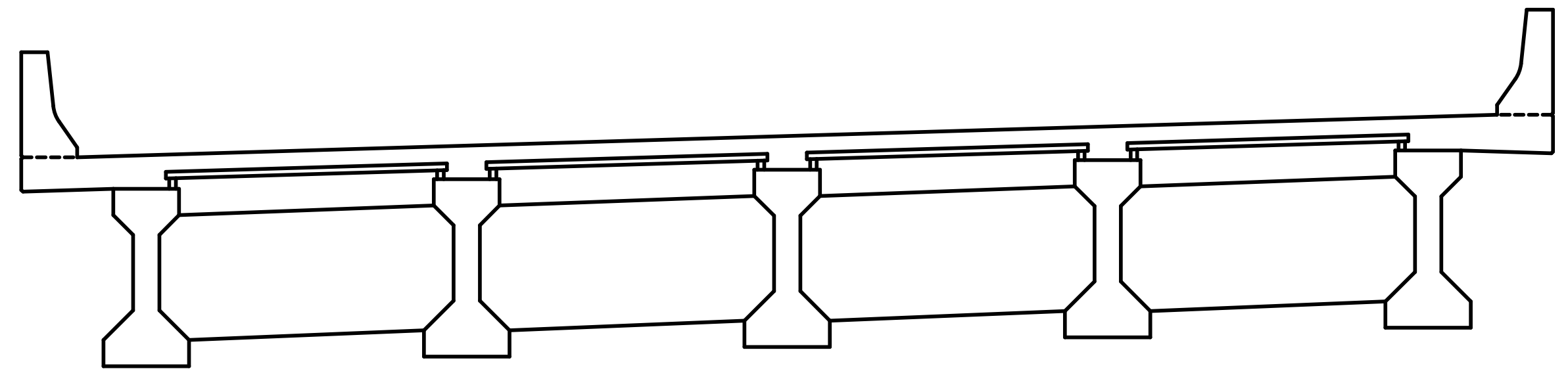
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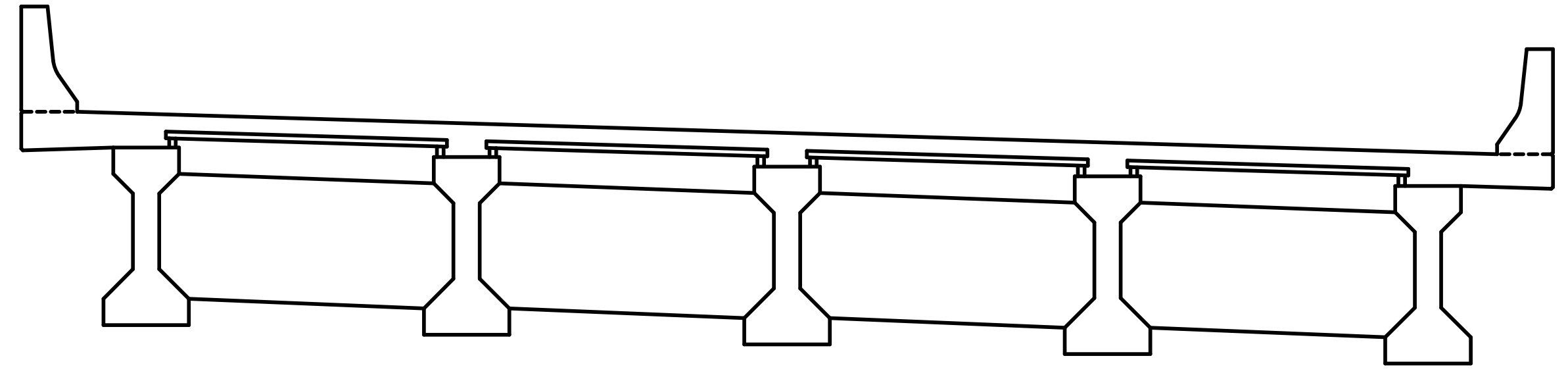
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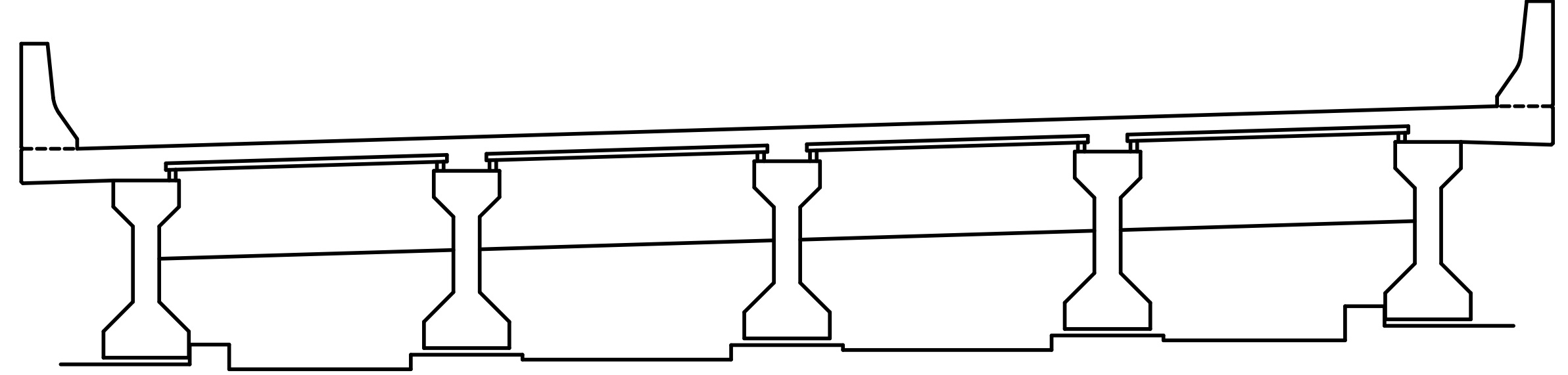
BENT 11 DIAPHRAGM
EAST FACE



INTERMEDIATE DIAPHRAGM
WEST FACE



INTERMEDIATE DIAPHRAGM
EAST FACE



BENT 12 DIAPHRAGM
WEST FACE

SHOTCRETE REPAIR

ERI — EPOXY RESIN INJECTION

REPAIRS SPAN 12 DIAPH.					
REPAIRS	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	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 11 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
BENT 12 DIAPHRAGM		0.0			

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SHEET 18 OF 19

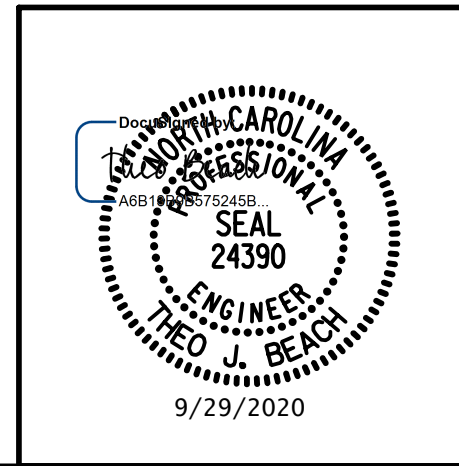
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DIAPHRAGM REPAIRS

SPAN 12

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

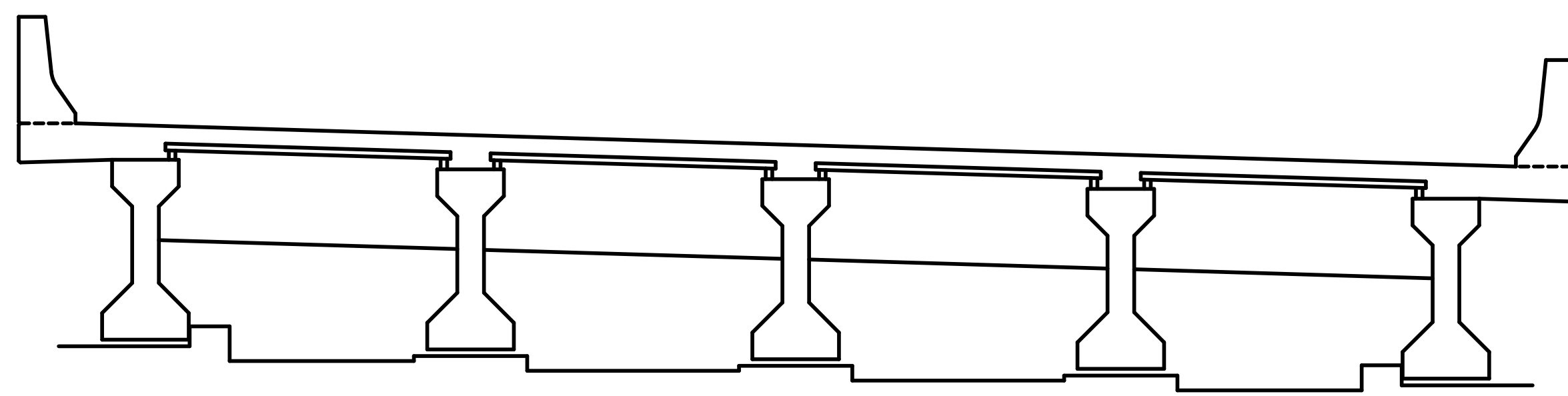
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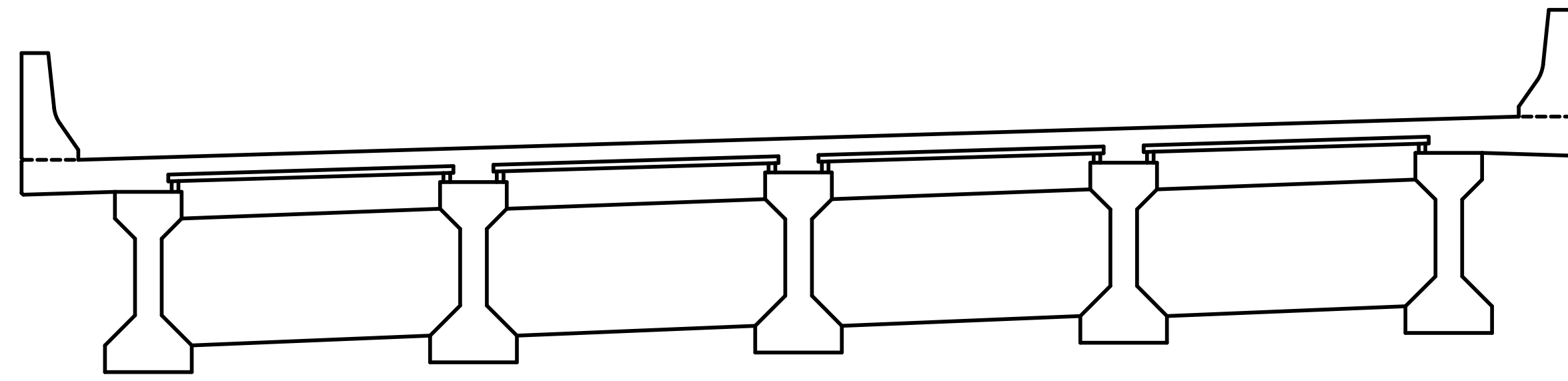
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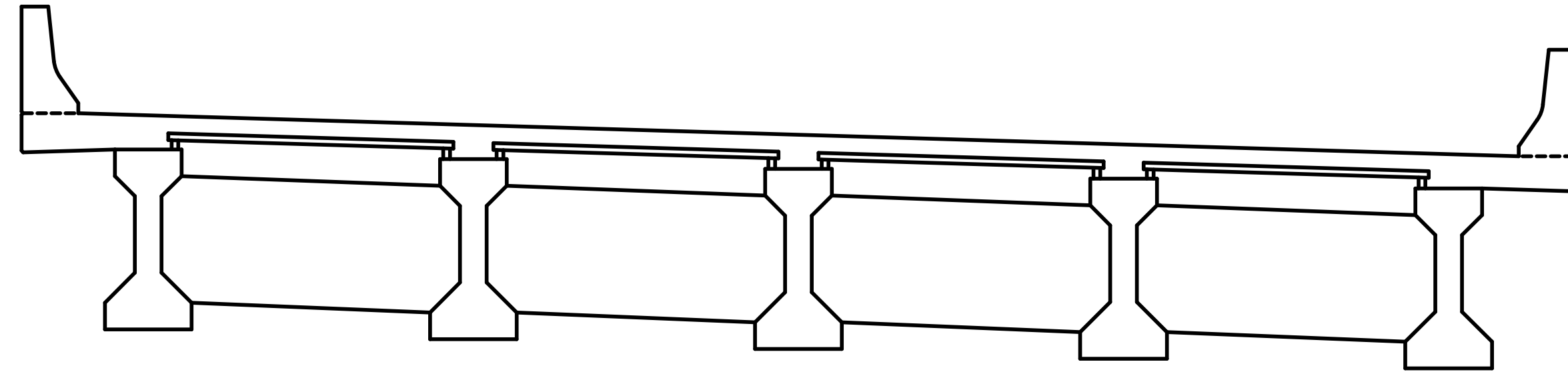
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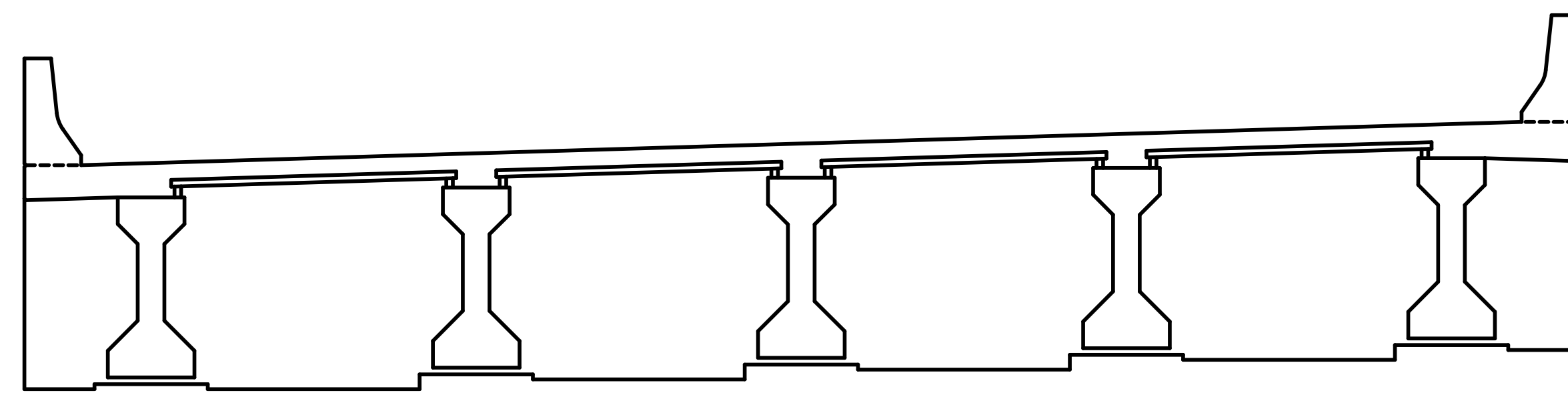
BENT 12 DIAPHRAGM
EAST FACE



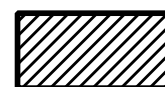
INTERMEDIATE DIAPHRAGM
WEST FACE



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	0.0	0.0			
INTERMEDIATE DIAPHRAGM	0.0	0.0			
CURTAIN WALL	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BENT 12 DIAPHRAGM		0.0			
INTERMEDIATE DIAPHRAGM		0.0			
CURTAIN WALL		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.
 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.
 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 DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 19 OF 19

STATE OF NORTH CAROLINA
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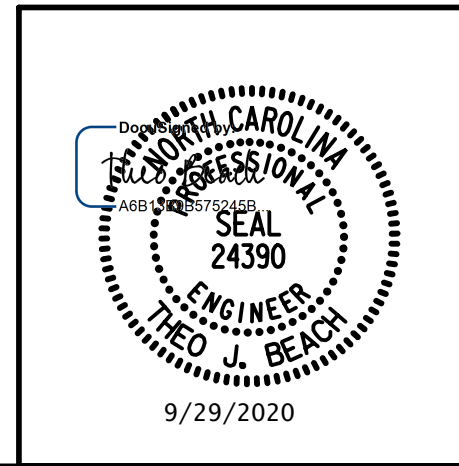
DIAPHRAGM REPAIRS

SPAN 13

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

PLANS PREPARED BY:

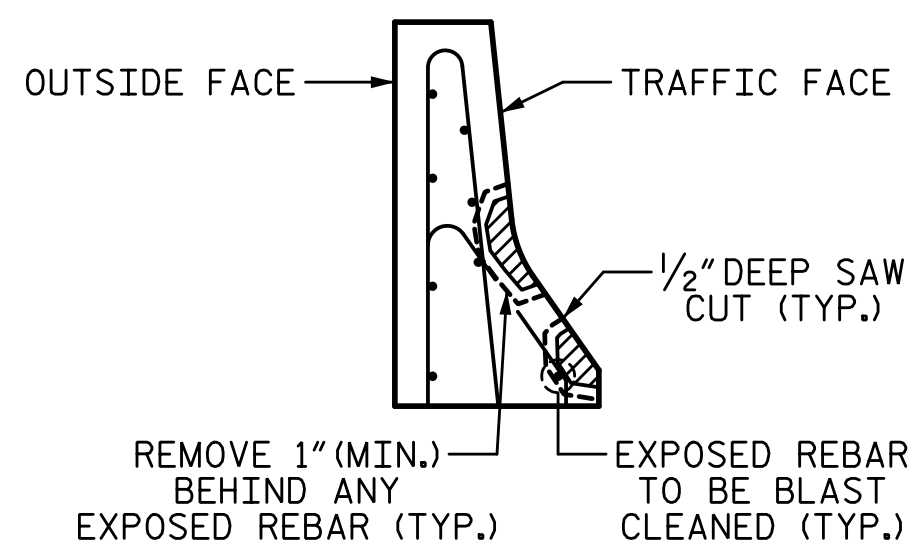
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 (919) 852-0468
 (919) 852-0598 (Fax)
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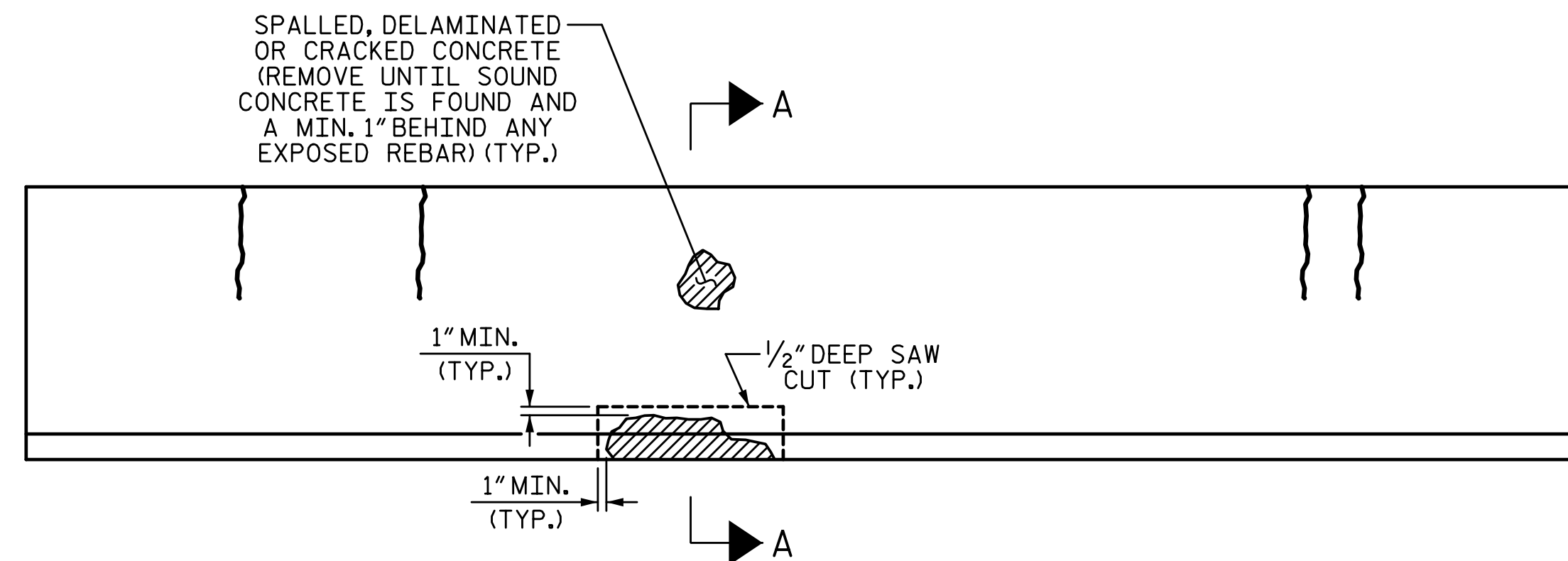
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CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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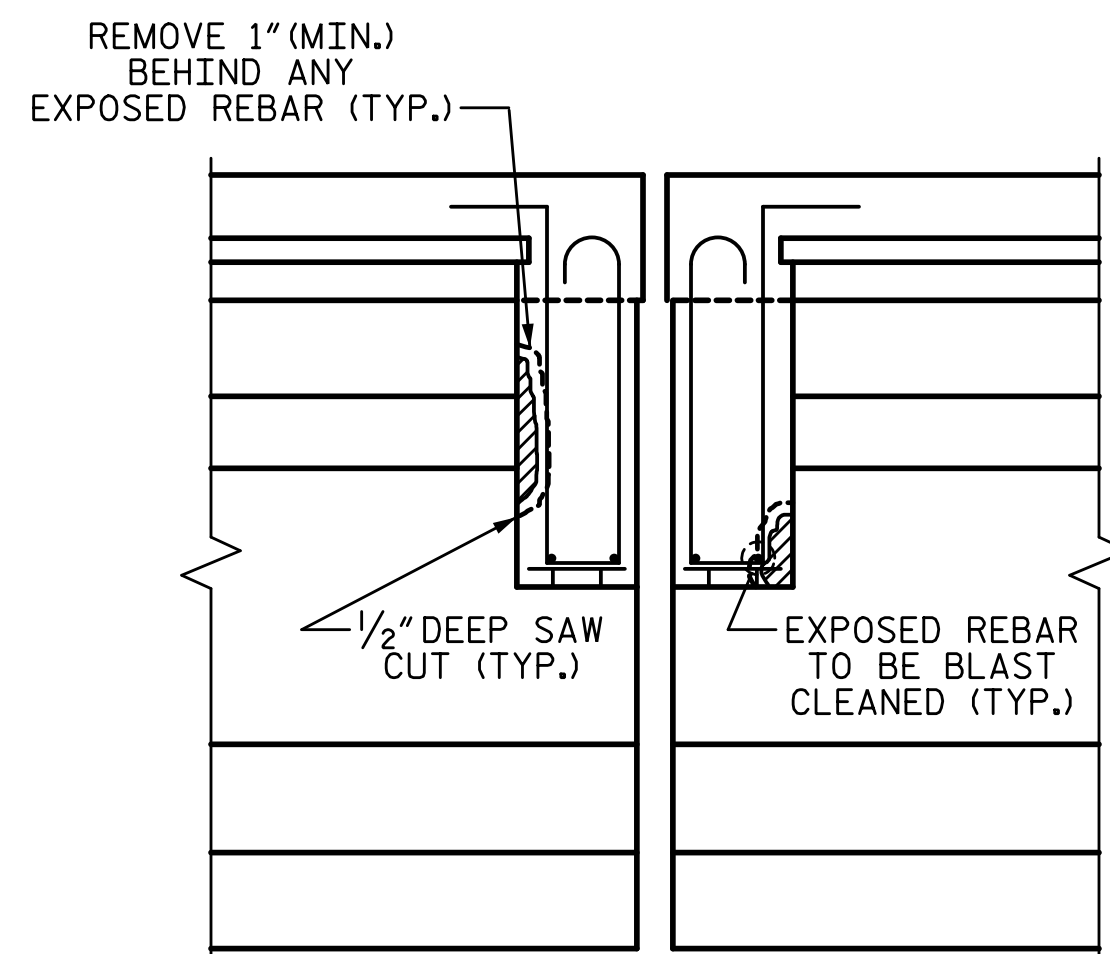
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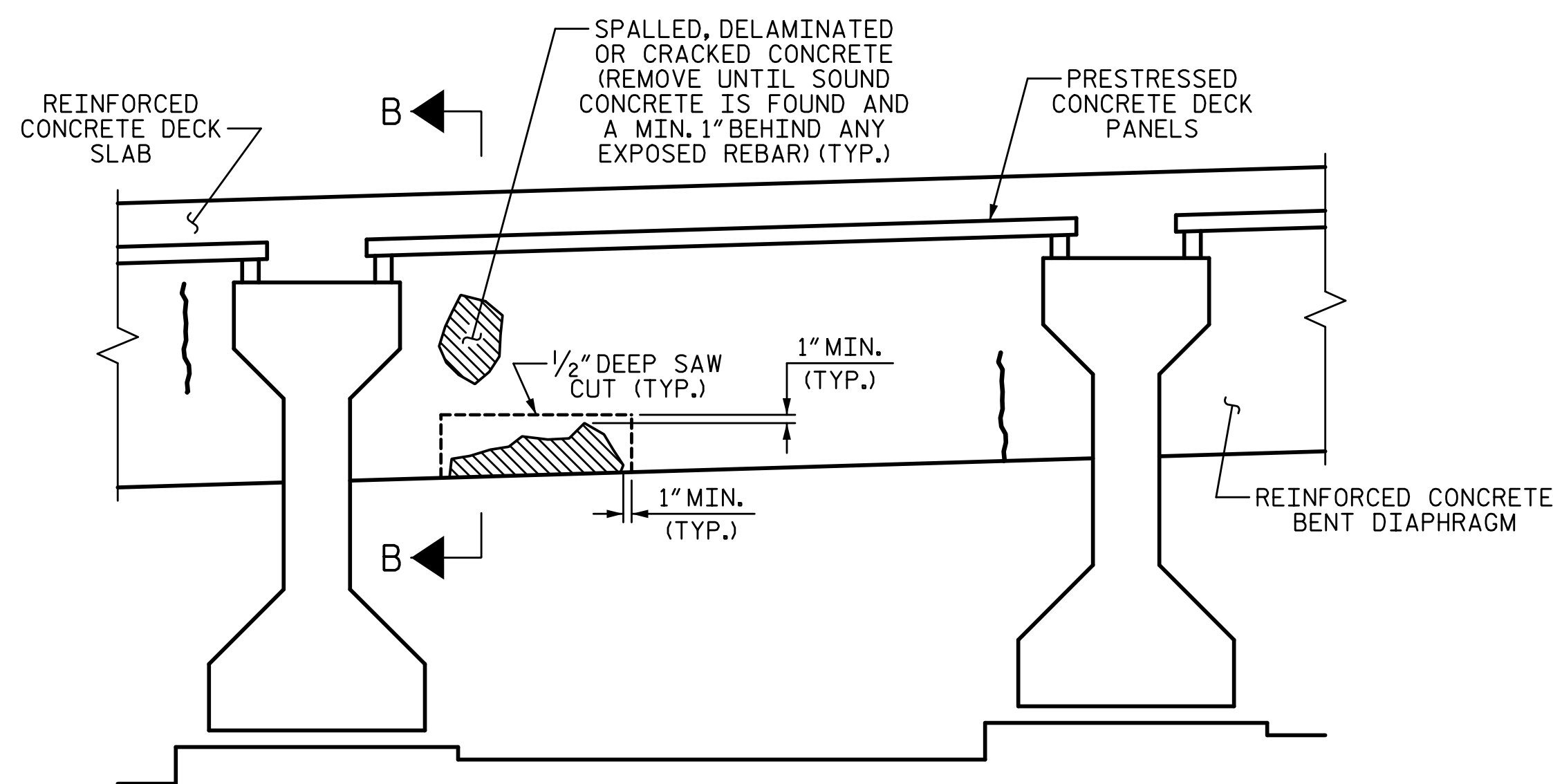
SECTION A-A



BARRIER RAIL REPAIRS



SECTION B-B



DIAPHRAGM REPAIRS

BENT DIAPHRAGM SHOWN, ALL OTHER DIAPHRAGM TYPES SIMILAR

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.

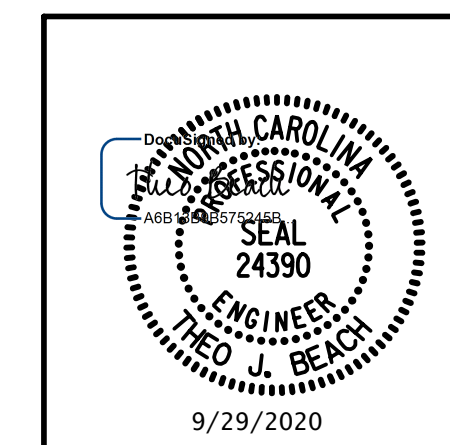
PROJECT NO. 15BPR.26
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**SUPERSTRUCTURE
 REPAIR DETAIL**

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2			4		

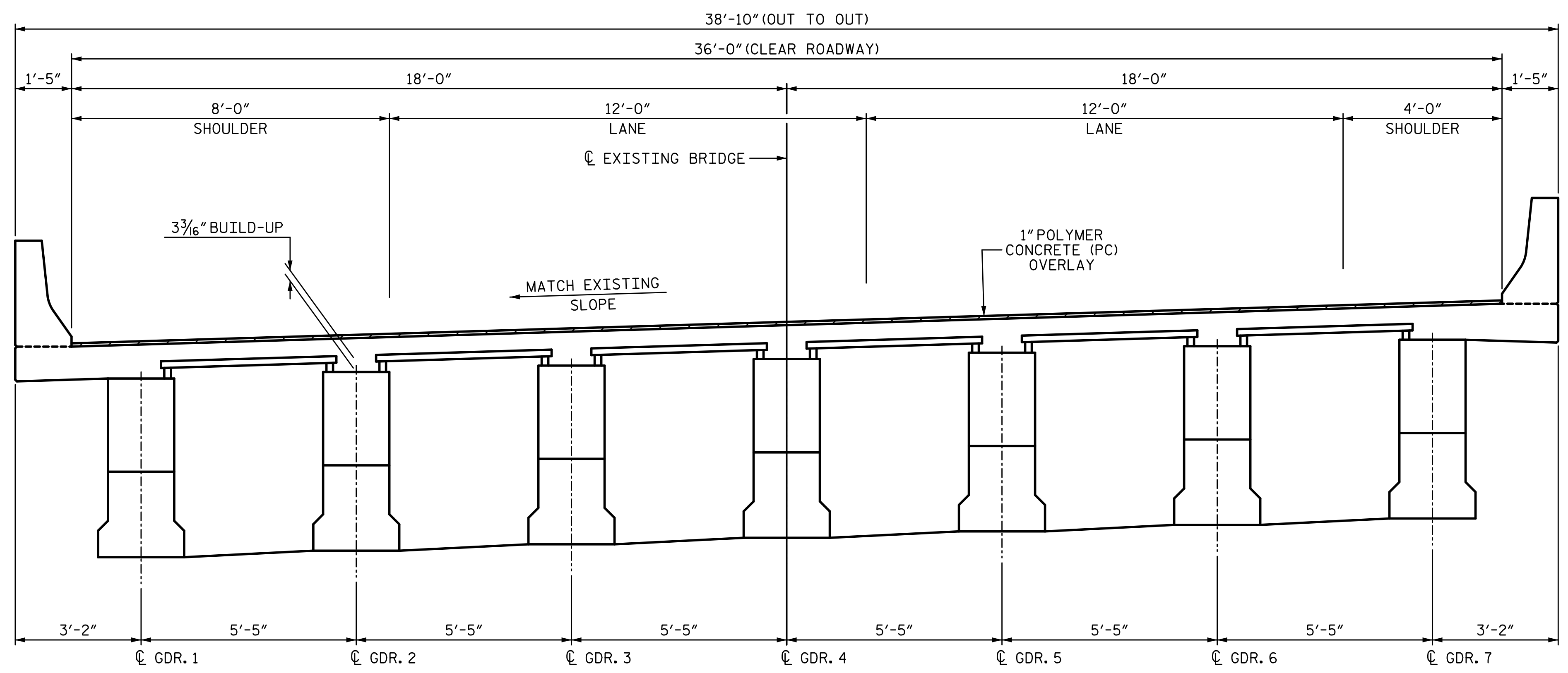
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S1-138
 TOTAL SHEETS
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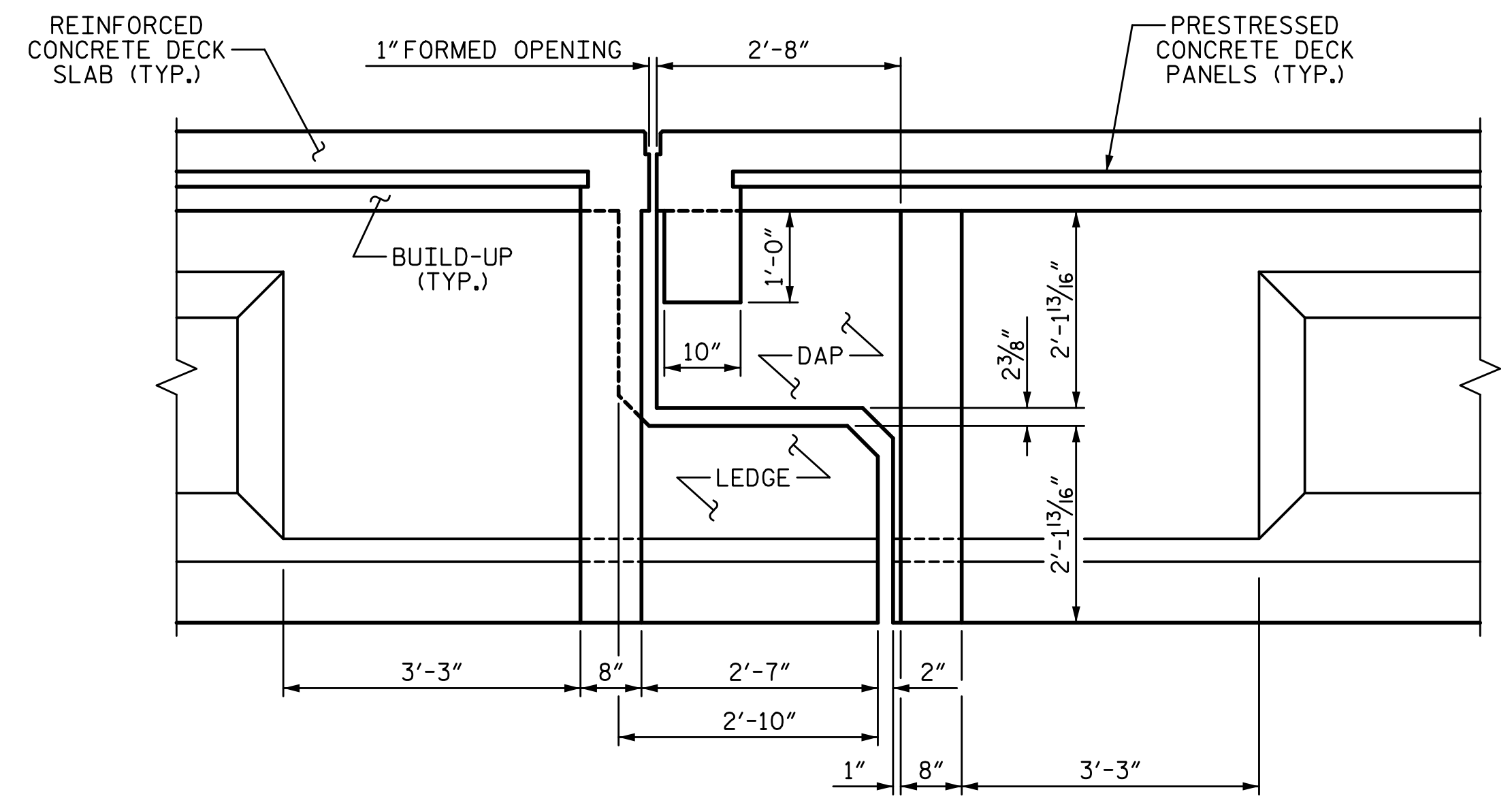
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TYPICAL SECTION
SECTION TAKEN AT HINGE LOCATIONS LOOKING EAST

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

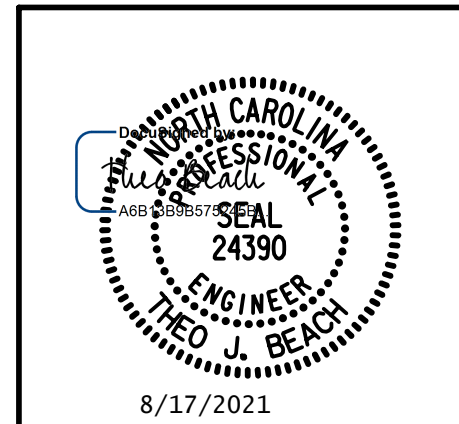
PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640048

SHEET 1 OF 11

STATE OF NORTH CAROLINA
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**TYPICAL SECTION
AT HINGES**

FRP HINGE REPAIR



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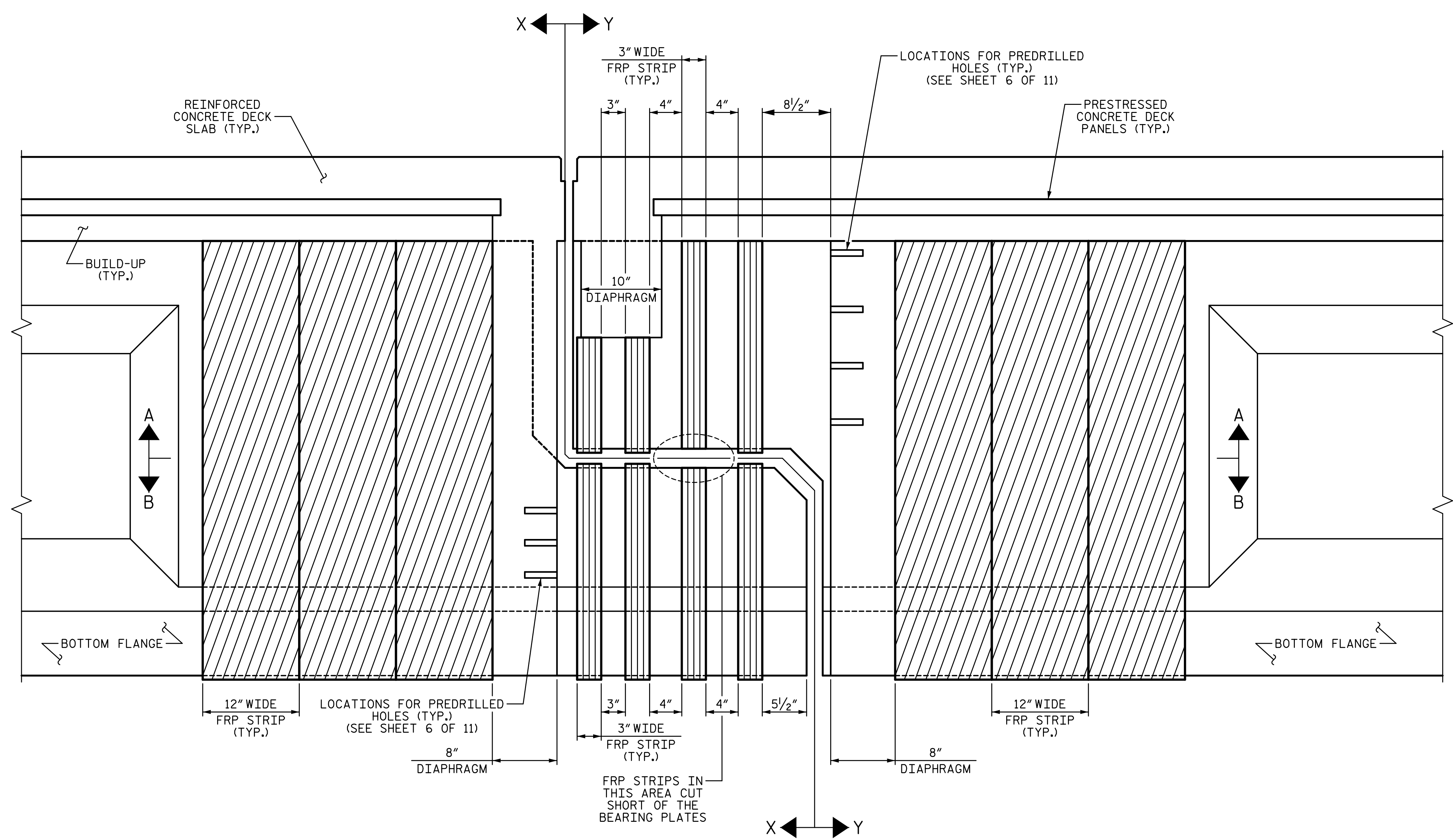
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CHECKED BY: N.J. MABRY	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-139
1			3			TOTAL SHEETS
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NOTES:
FOR VIEWS, SEE SHEET 3 OF 11.



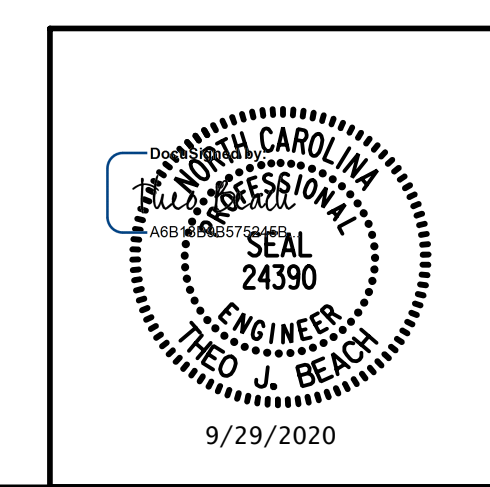
SECTION THRU HINGE
WEST HINGE SHOWN, EAST HINGE SIMILAR

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640048

SHEET 2 OF 11

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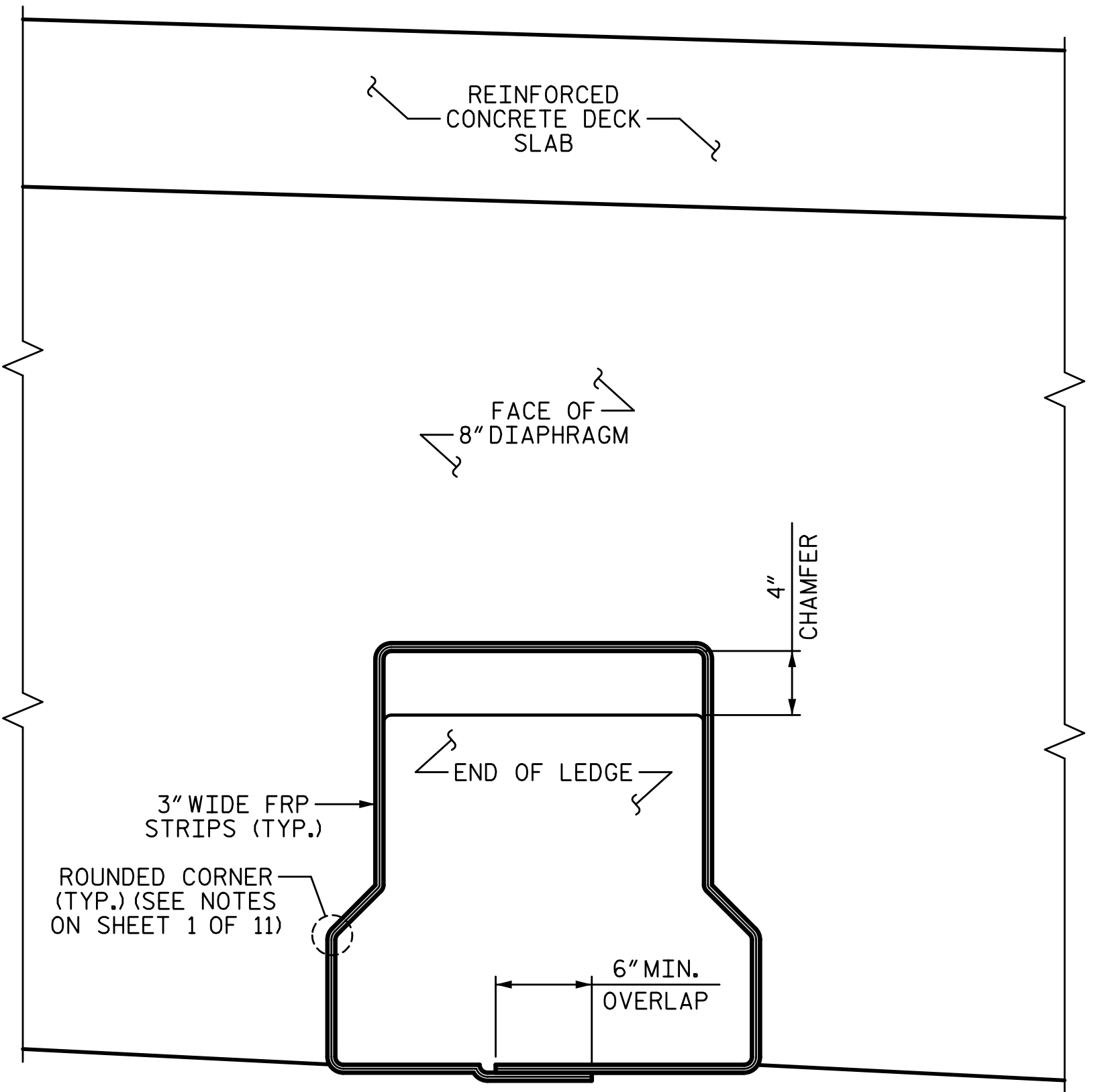
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION
FRP STRIPS LAYER 1
FOR
INTERIOR GIRDERS
FRP HINGE REPAIR

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-140
1			3			TOTAL SHEETS
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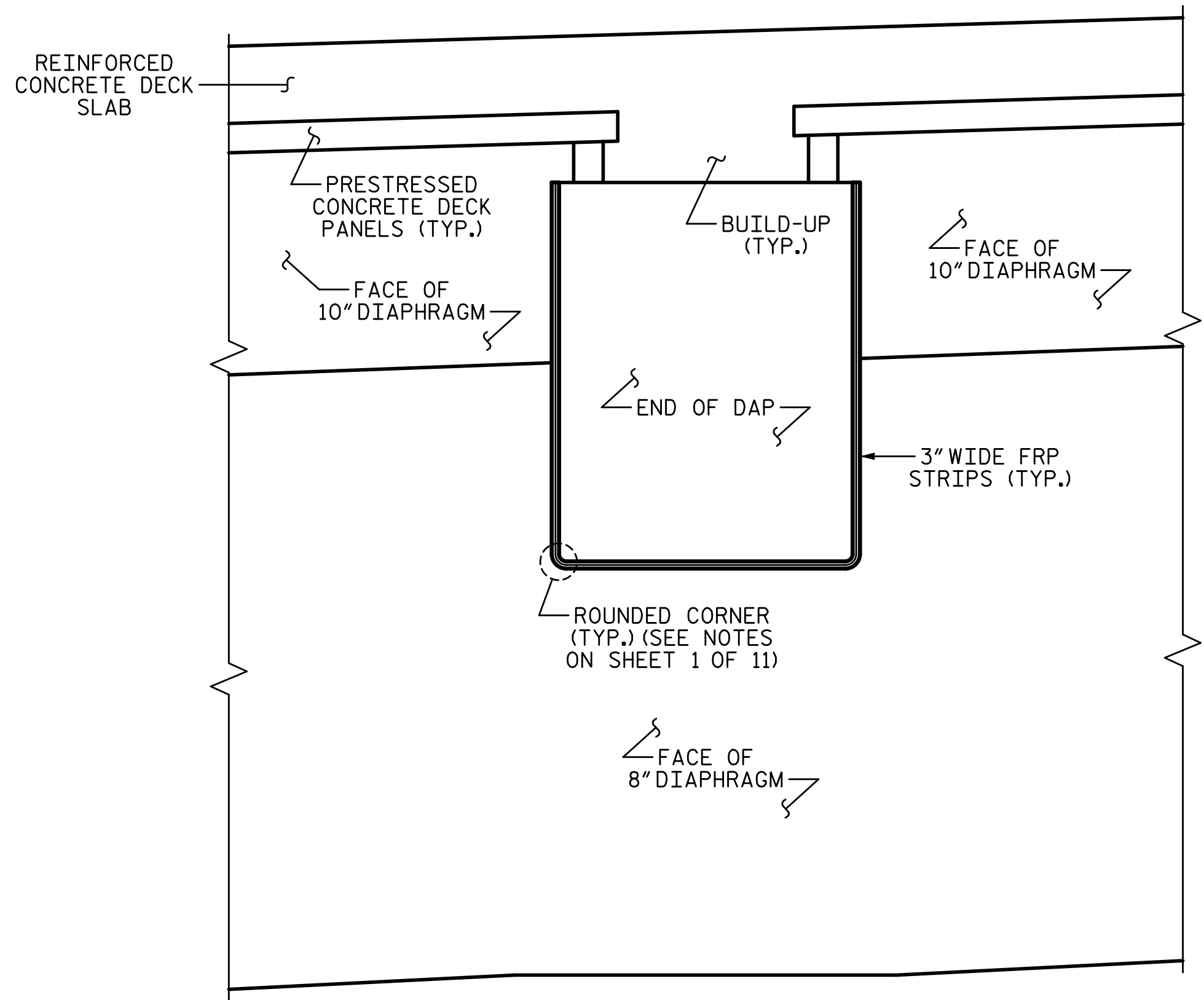
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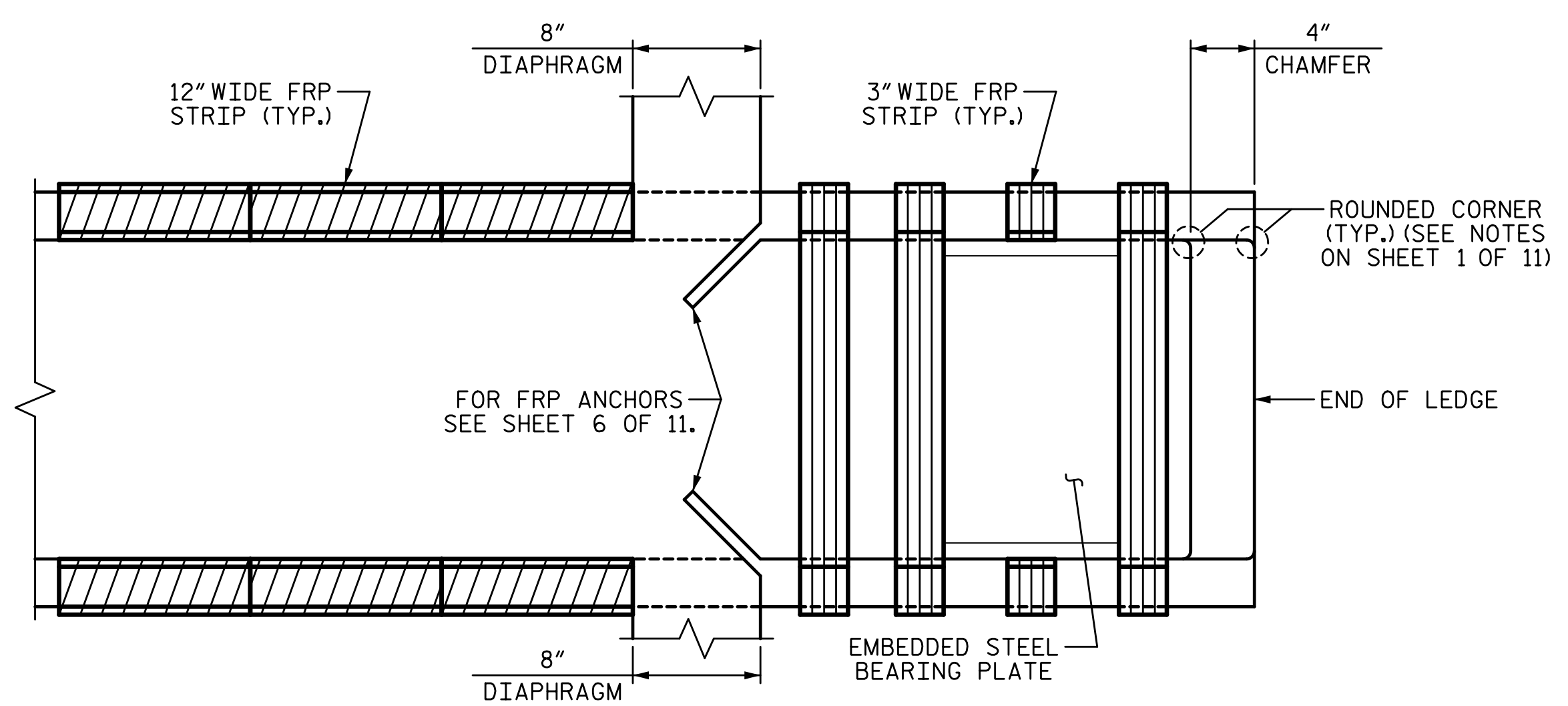
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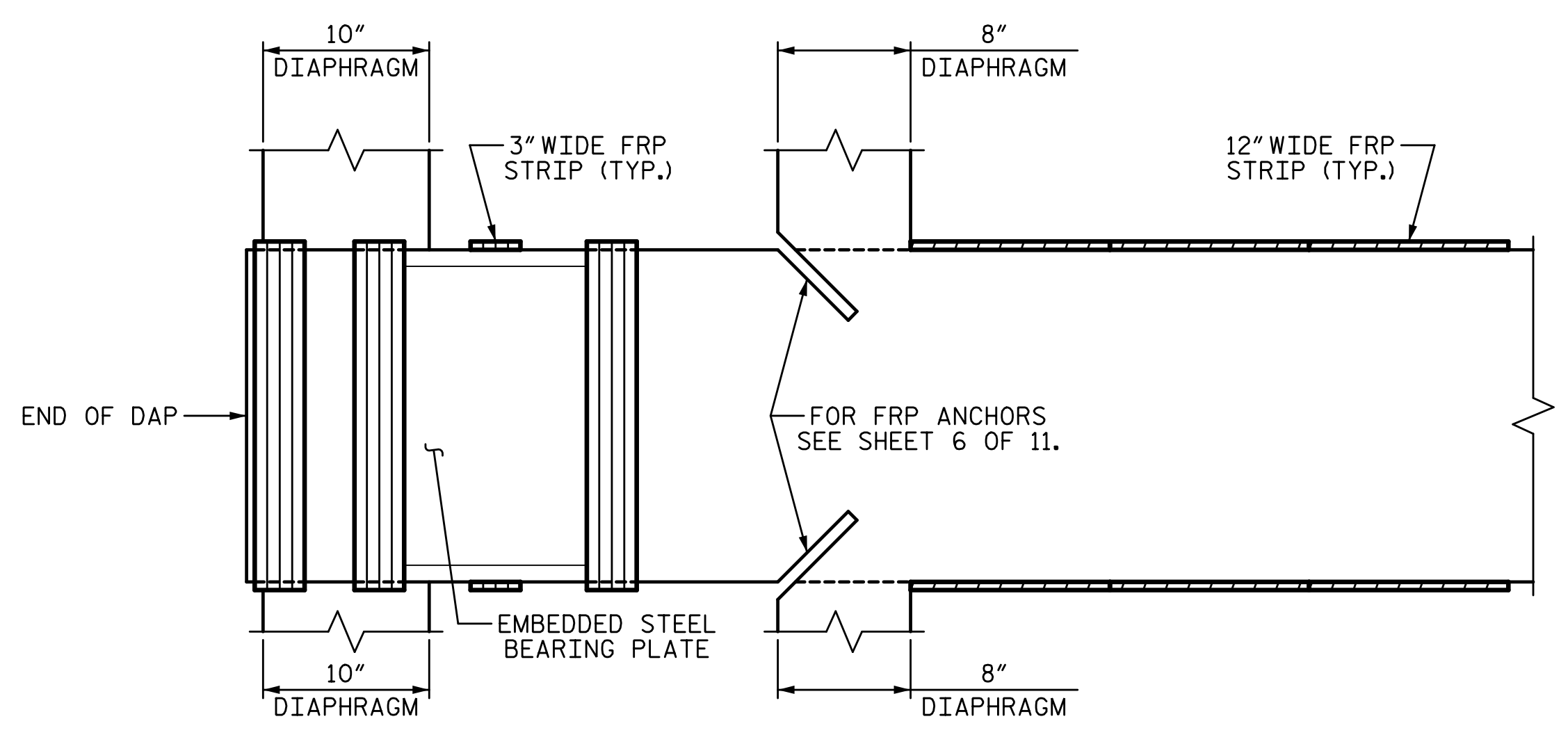
VIEW X-X



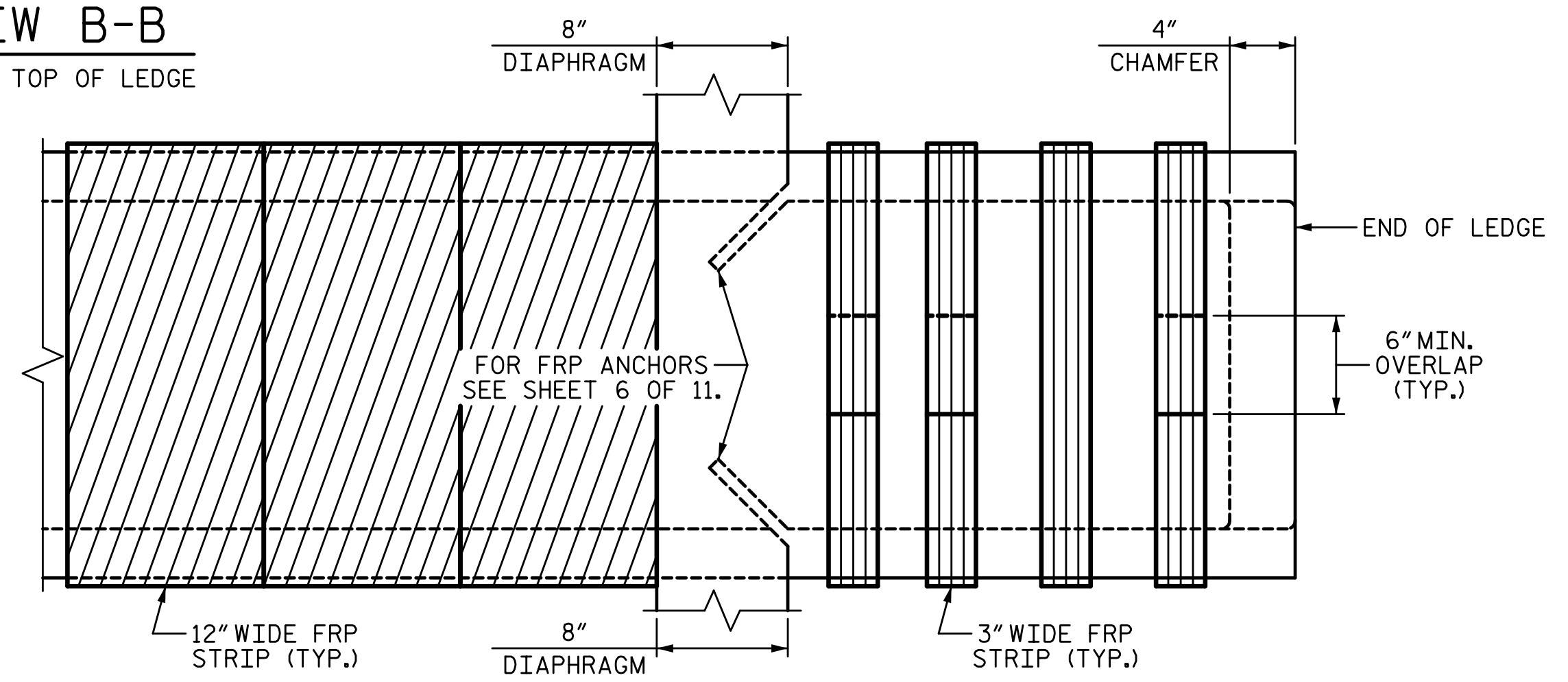
VIEW Y-Y



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.: 640048

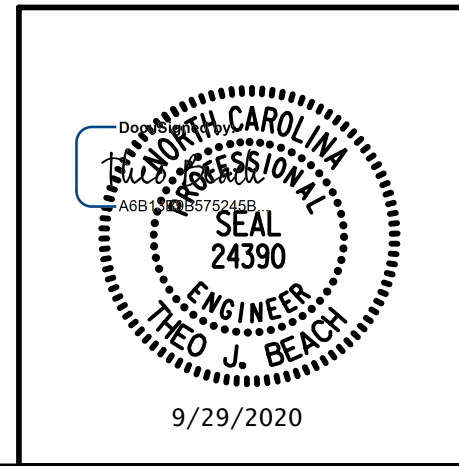
SHEET 3 OF 11

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

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 163

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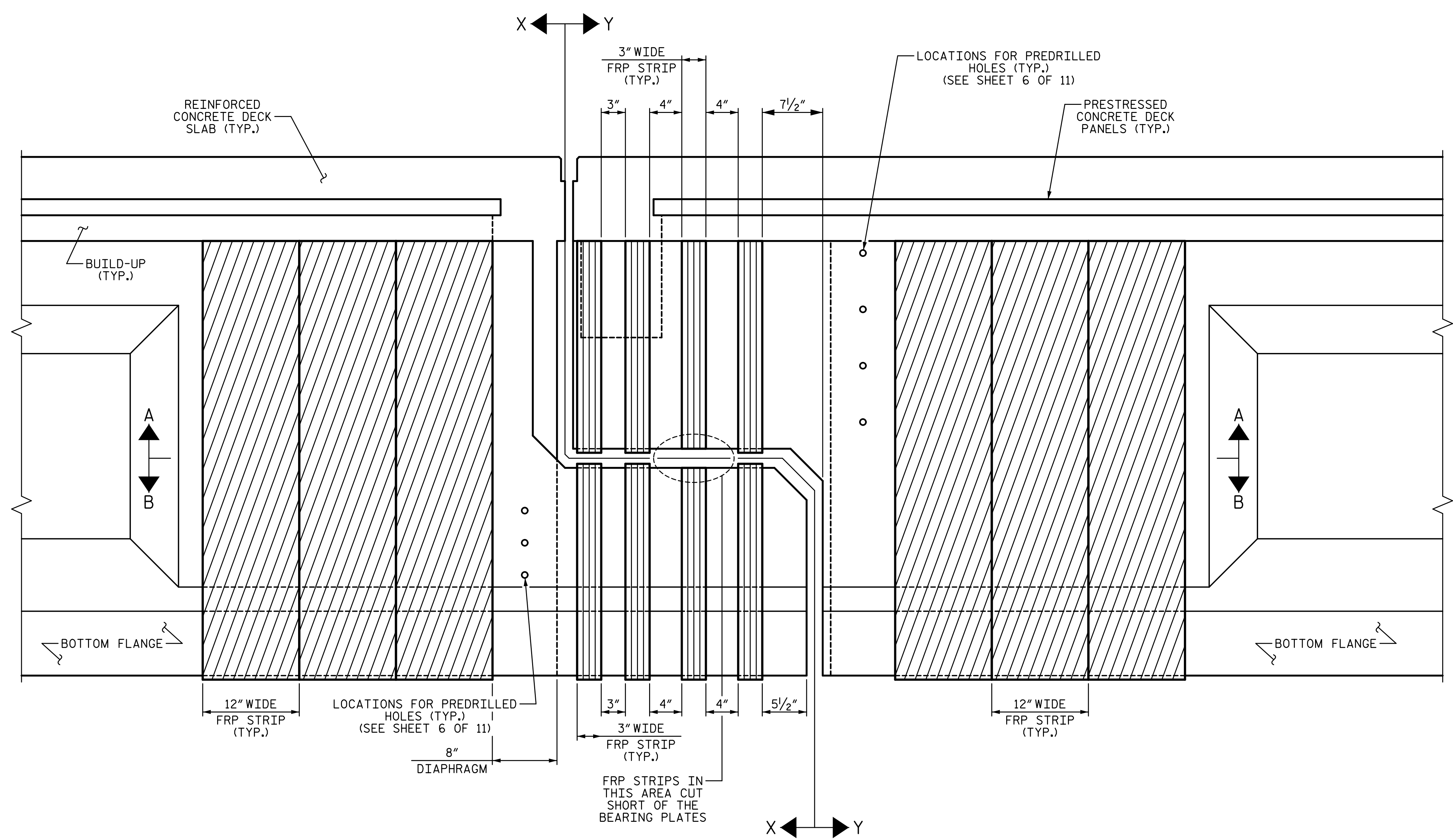


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NOTES:
FOR VIEWS, SEE SHEET 5 OF 11.



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)

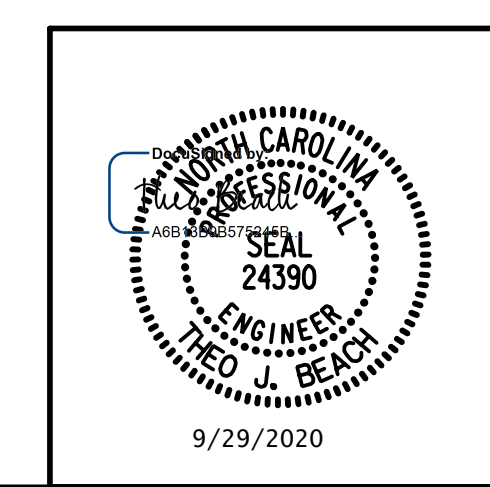
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 BRIDGE NO.: 640048

SHEET 4 OF 11

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

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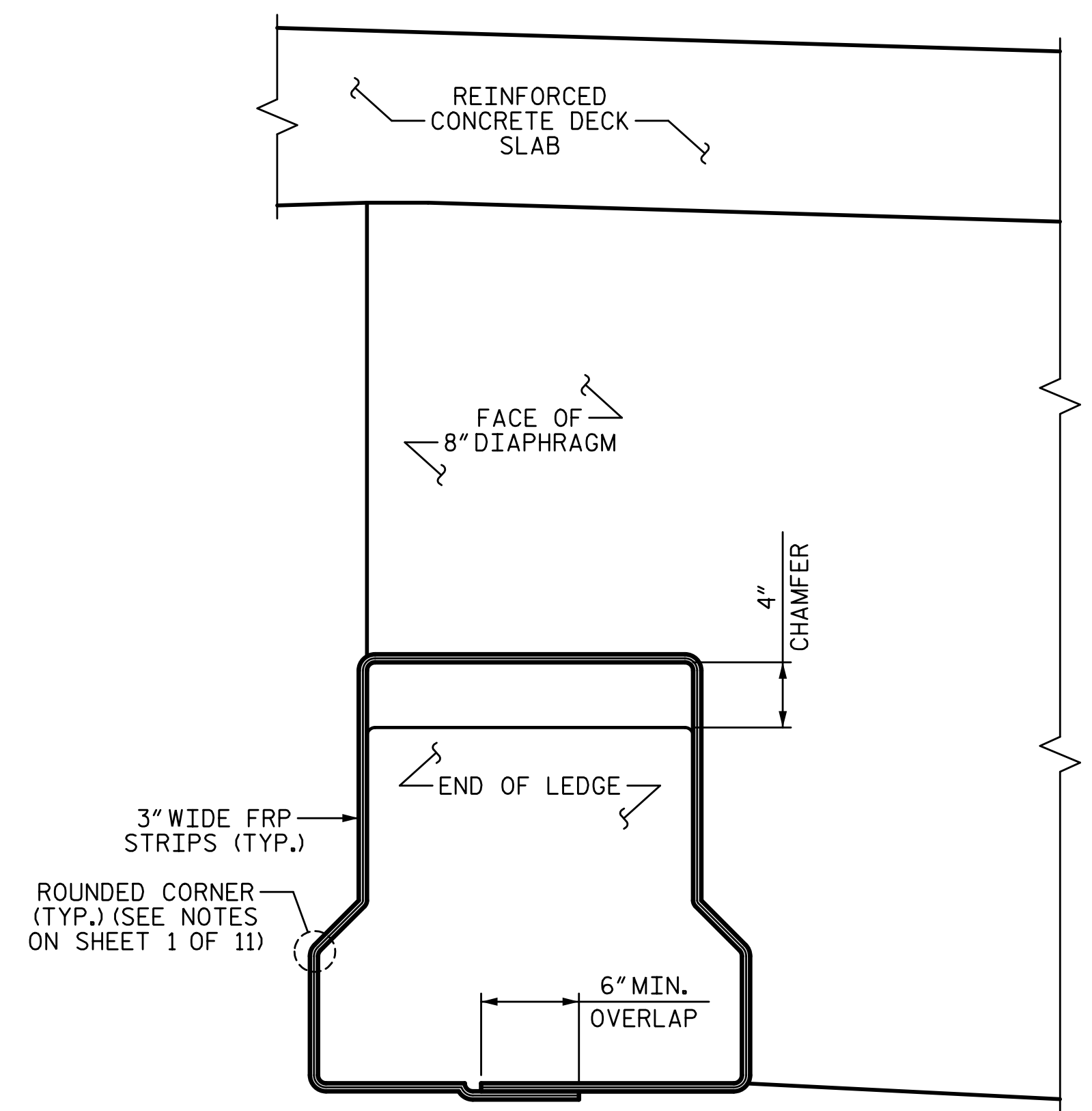
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SHEET NO.	S1-142

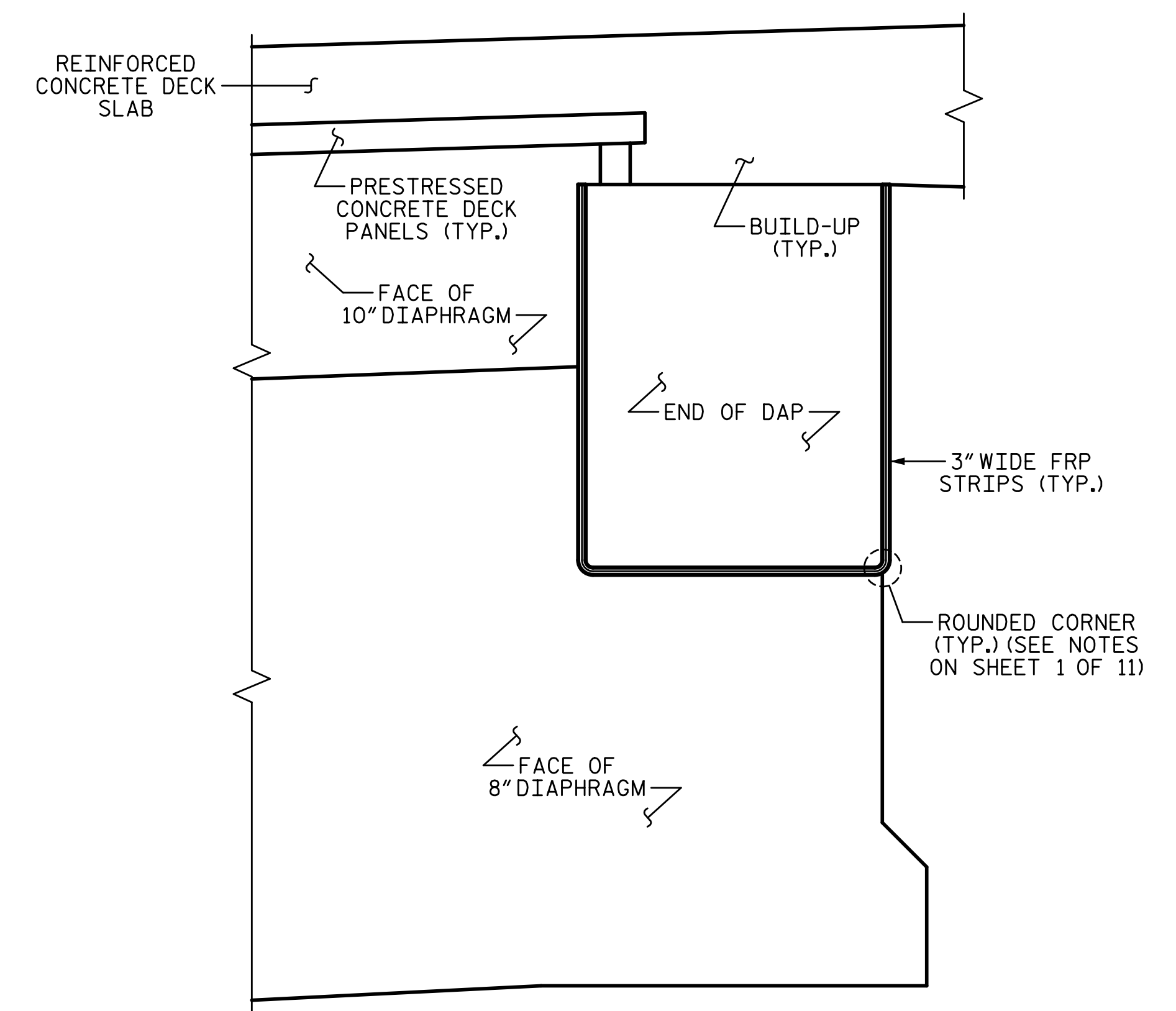
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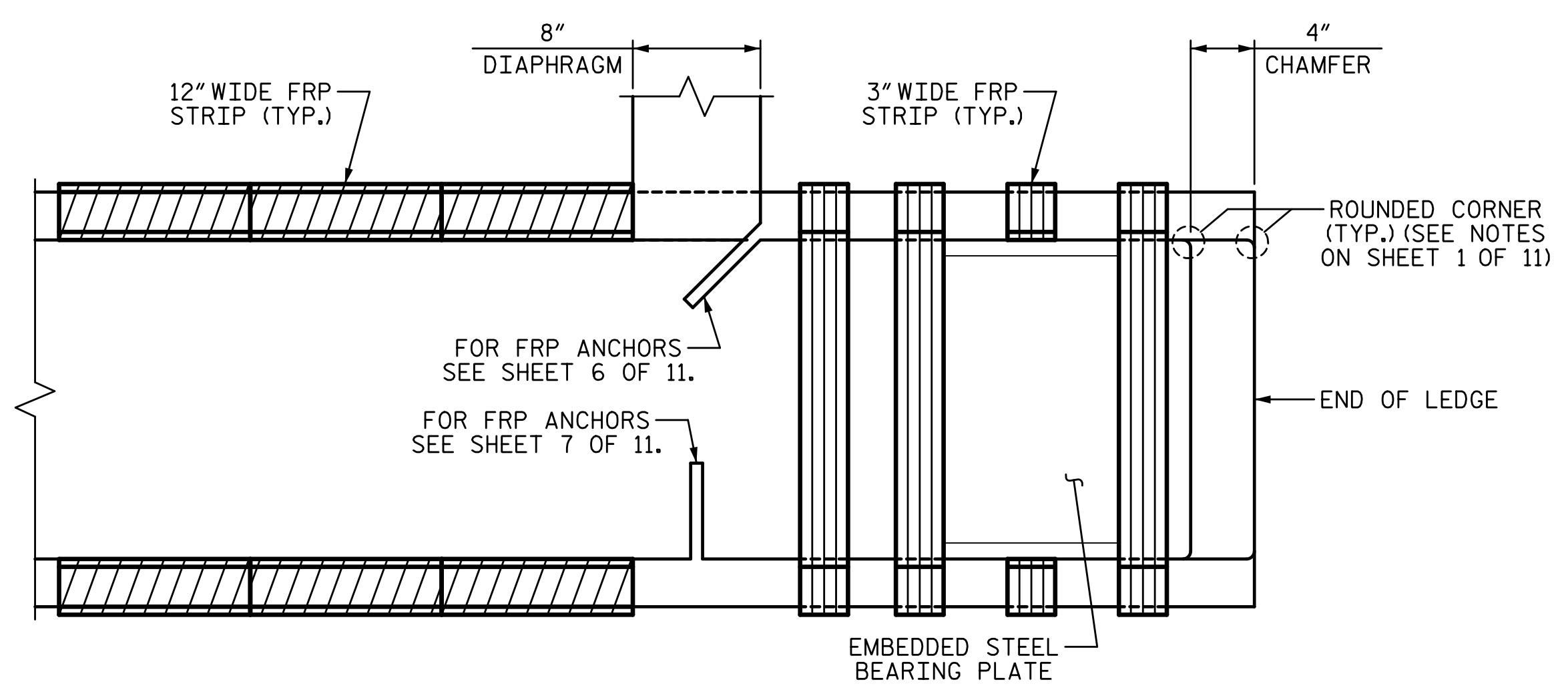
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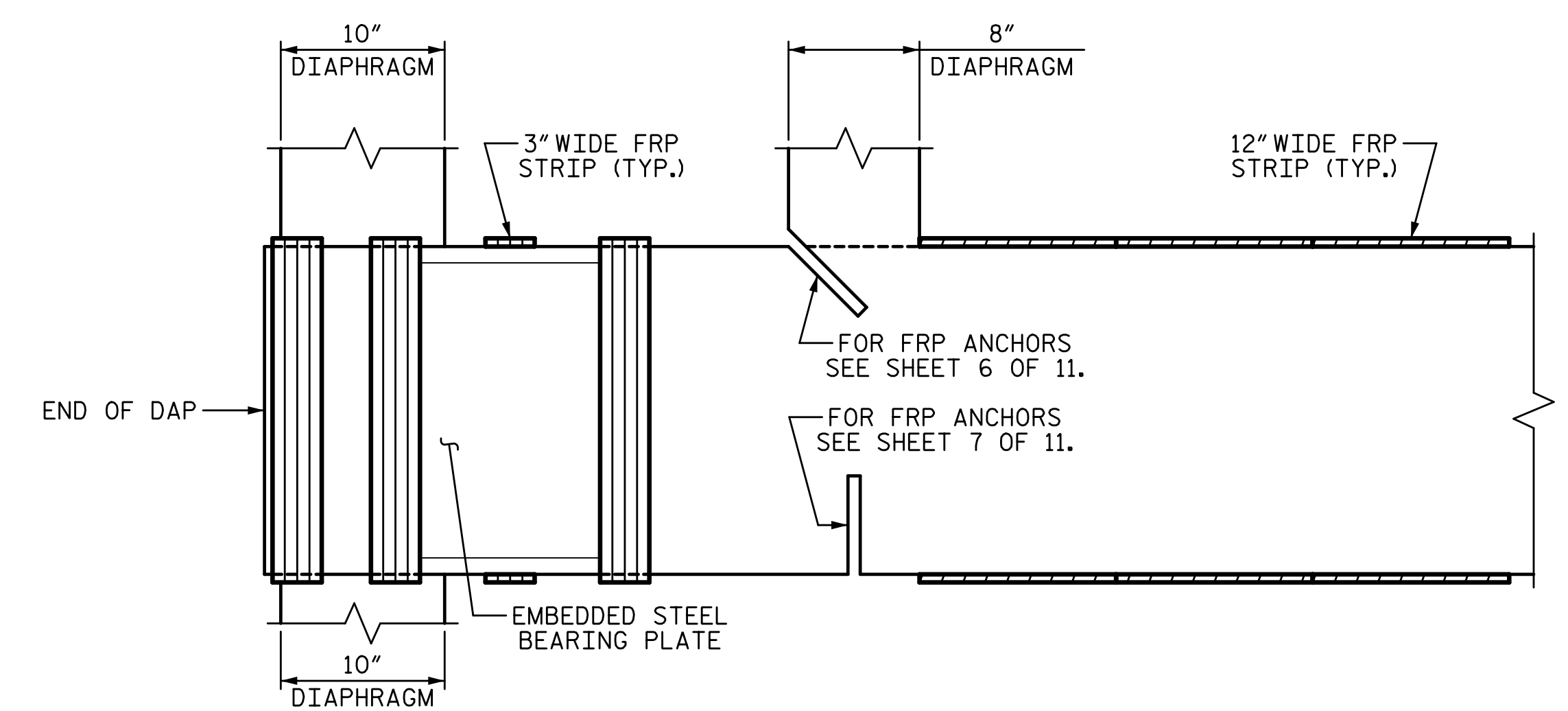
VIEW X-X



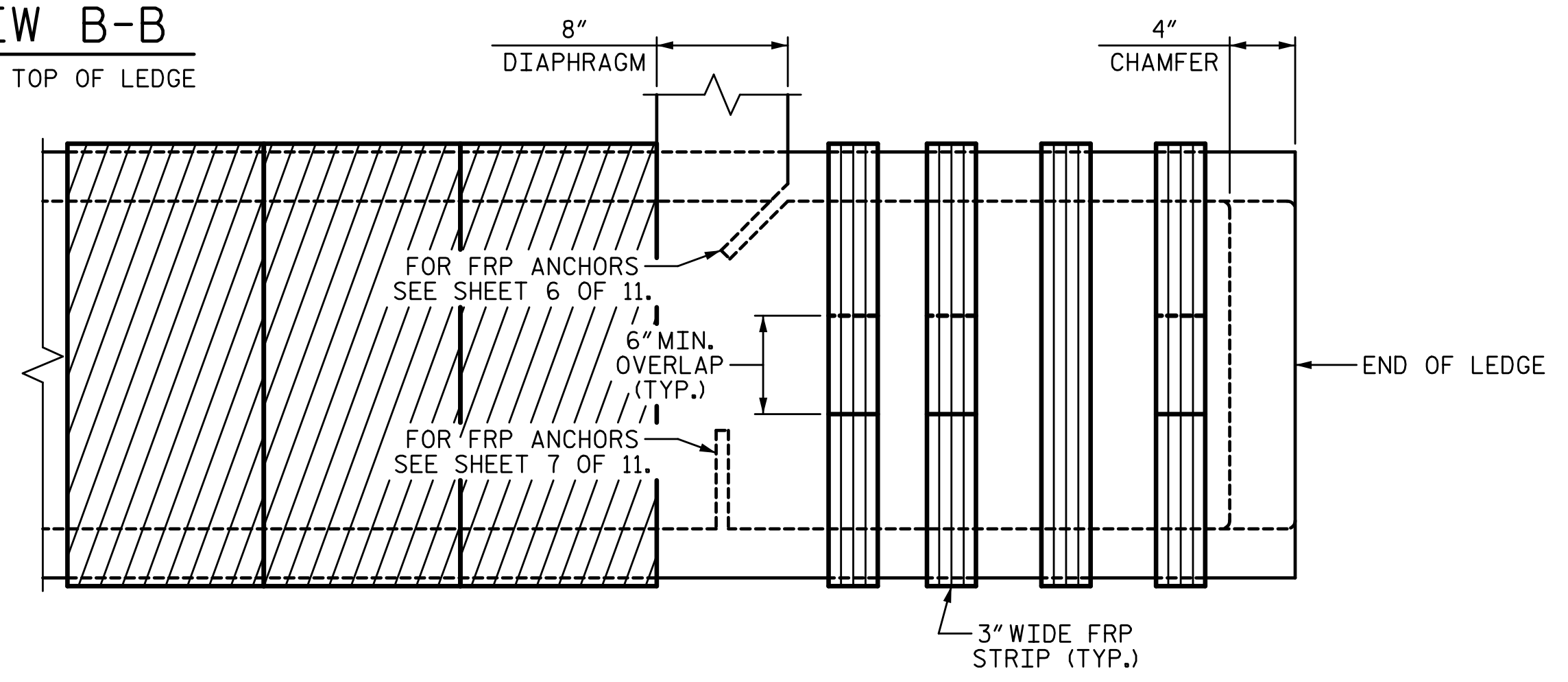
VIEW Y-Y



VIEW B-B
SHOWING TOP OF LEDGE



VIEW A-A
SHOWING BOTTOM OF DAP



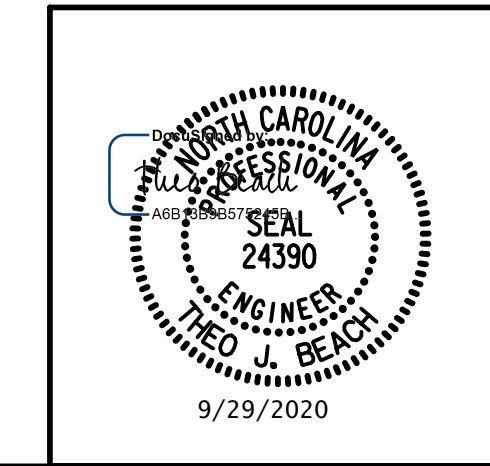
BOTTOM OF LEDGE

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 5 OF 11

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

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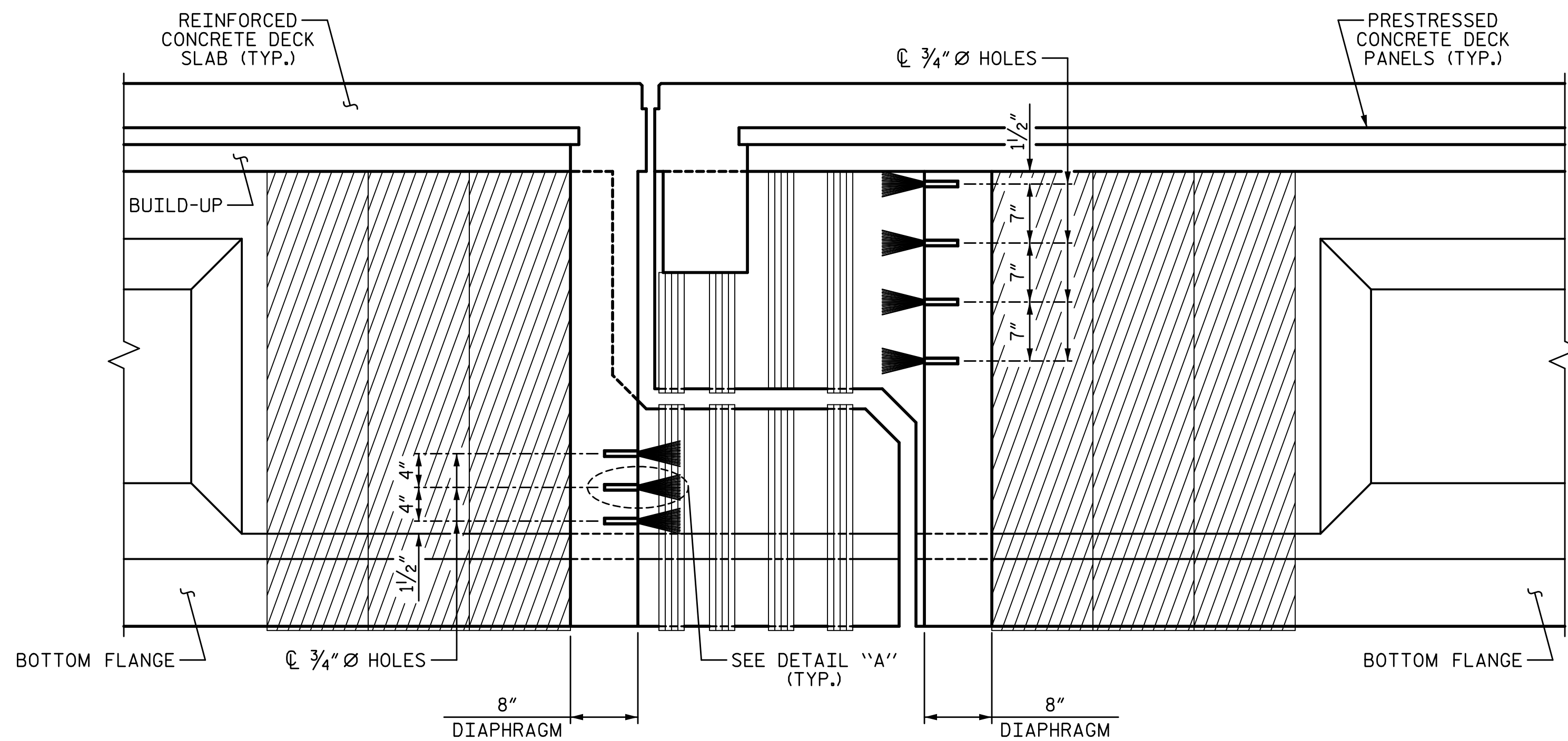


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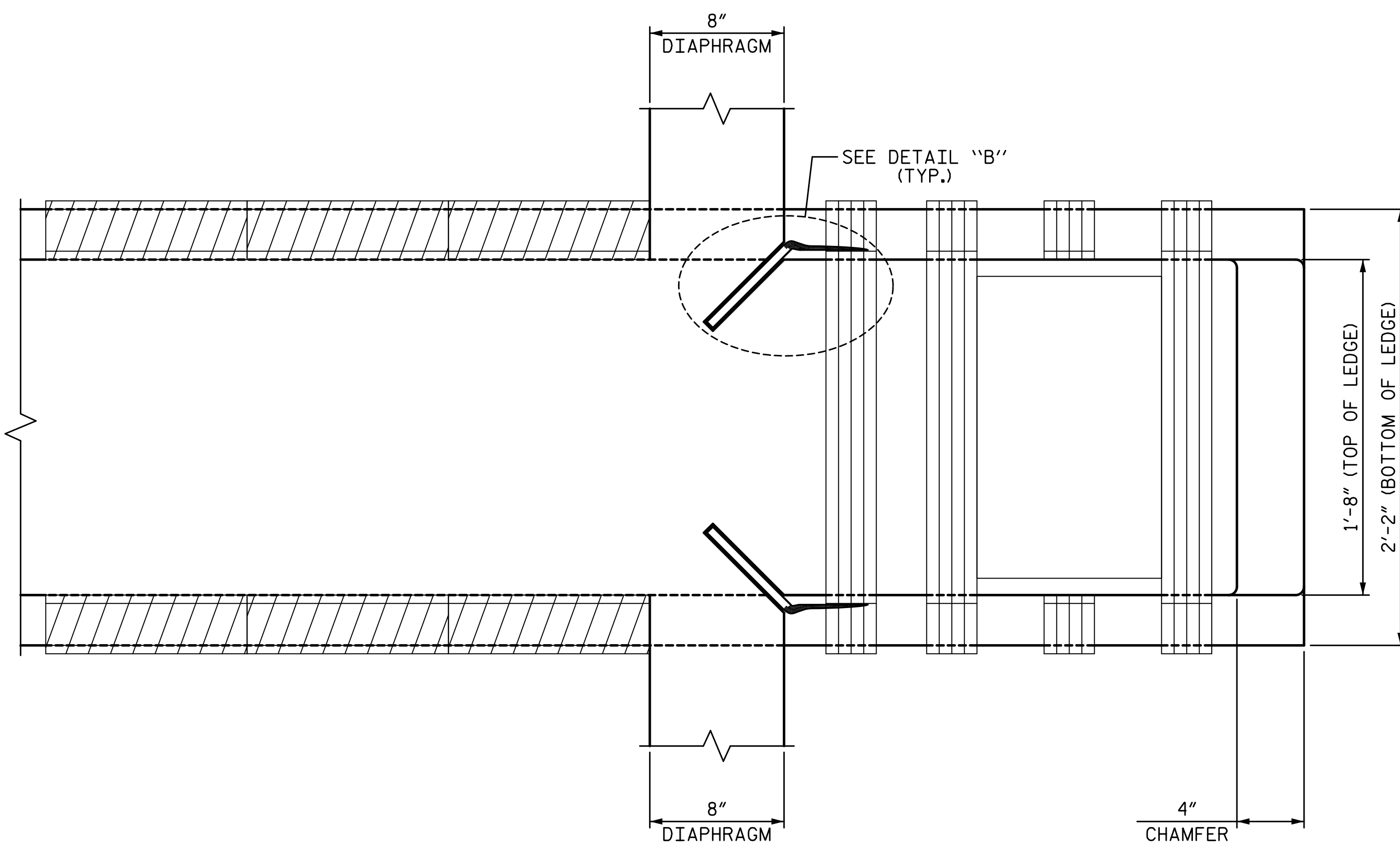
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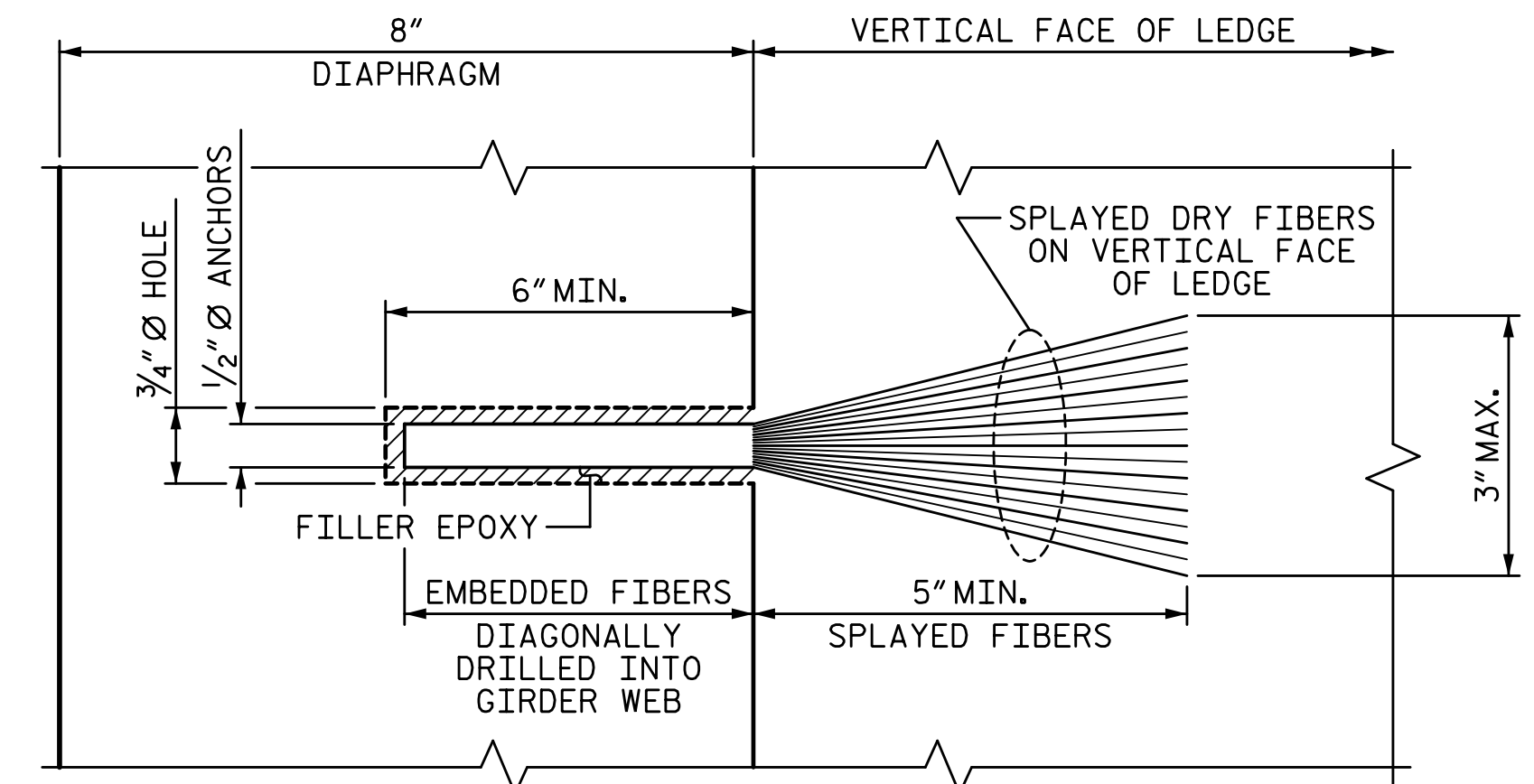
ELEVATION
(TYP. EA FACE OF DAP AND LEDGE)

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

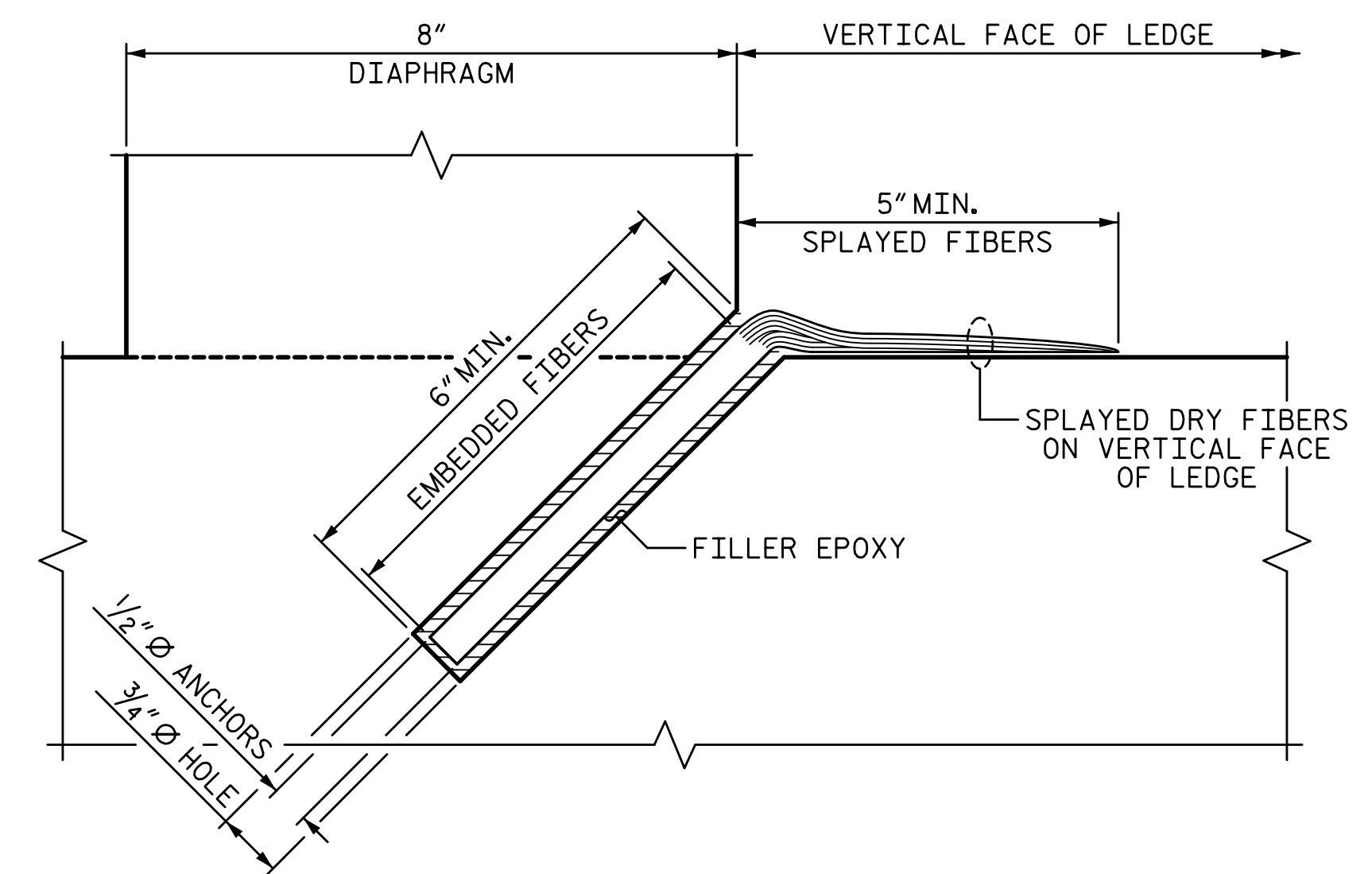


PLAN
(LEDGE SHOWN, DAP SIMILAR)

14 ANCHORS REQUIRED PER INTERIOR HINGE LOCATION



DETAIL "A"
(LEDGE SHOWN, DAP SIMILAR)

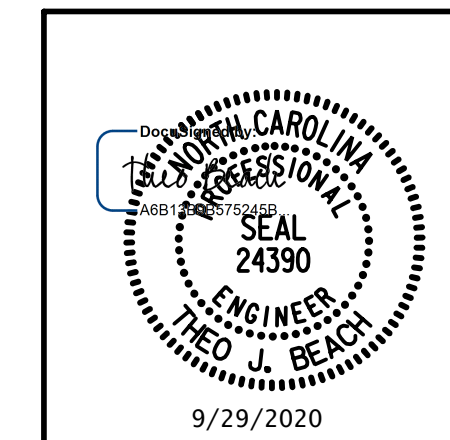


DETAIL "B"
(LEDGE SHOWN, DAP SIMILAR)

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SHEET 6 OF 11

STATE OF NORTH CAROLINA
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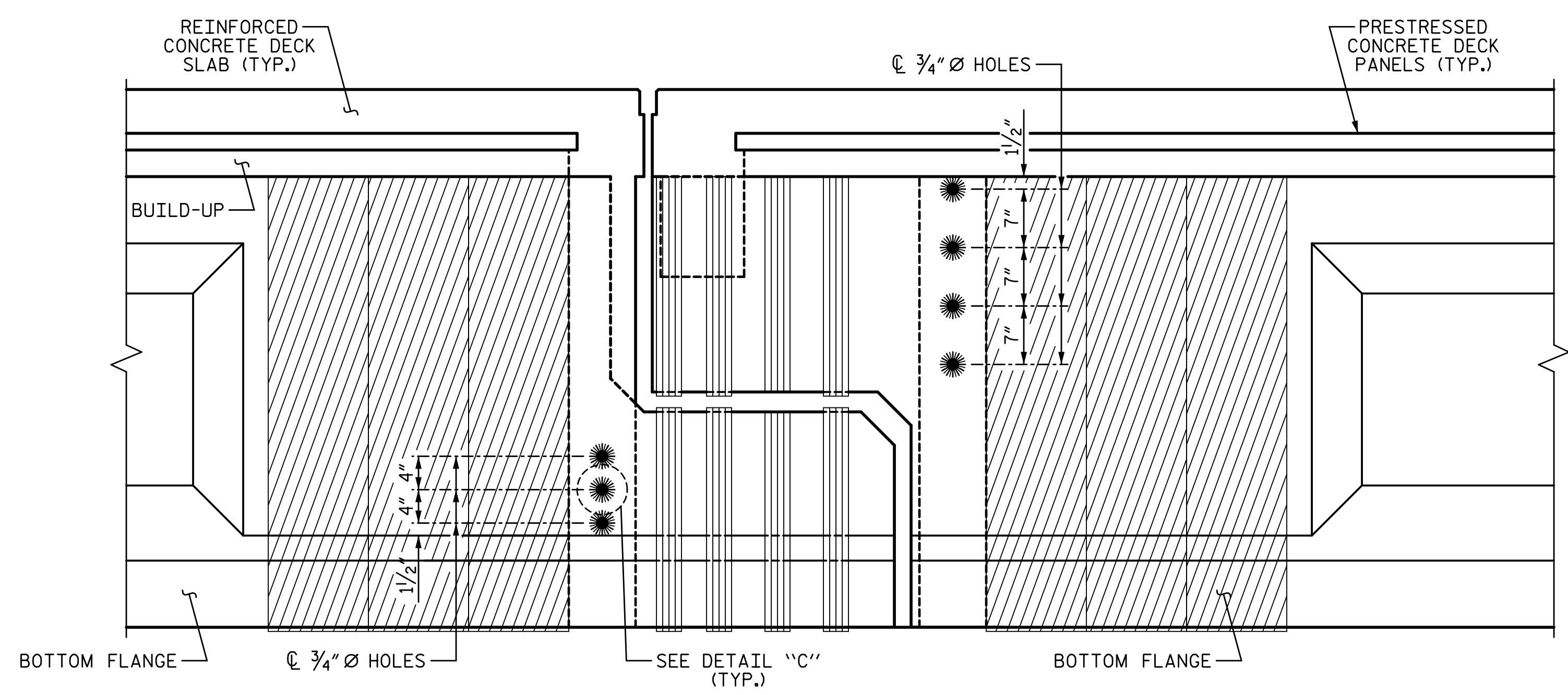
FRP ANCHORAGE
FOR INTERIOR GIRDERS

FRP HINGE REPAIR

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-144
1			3			TOTAL SHEETS
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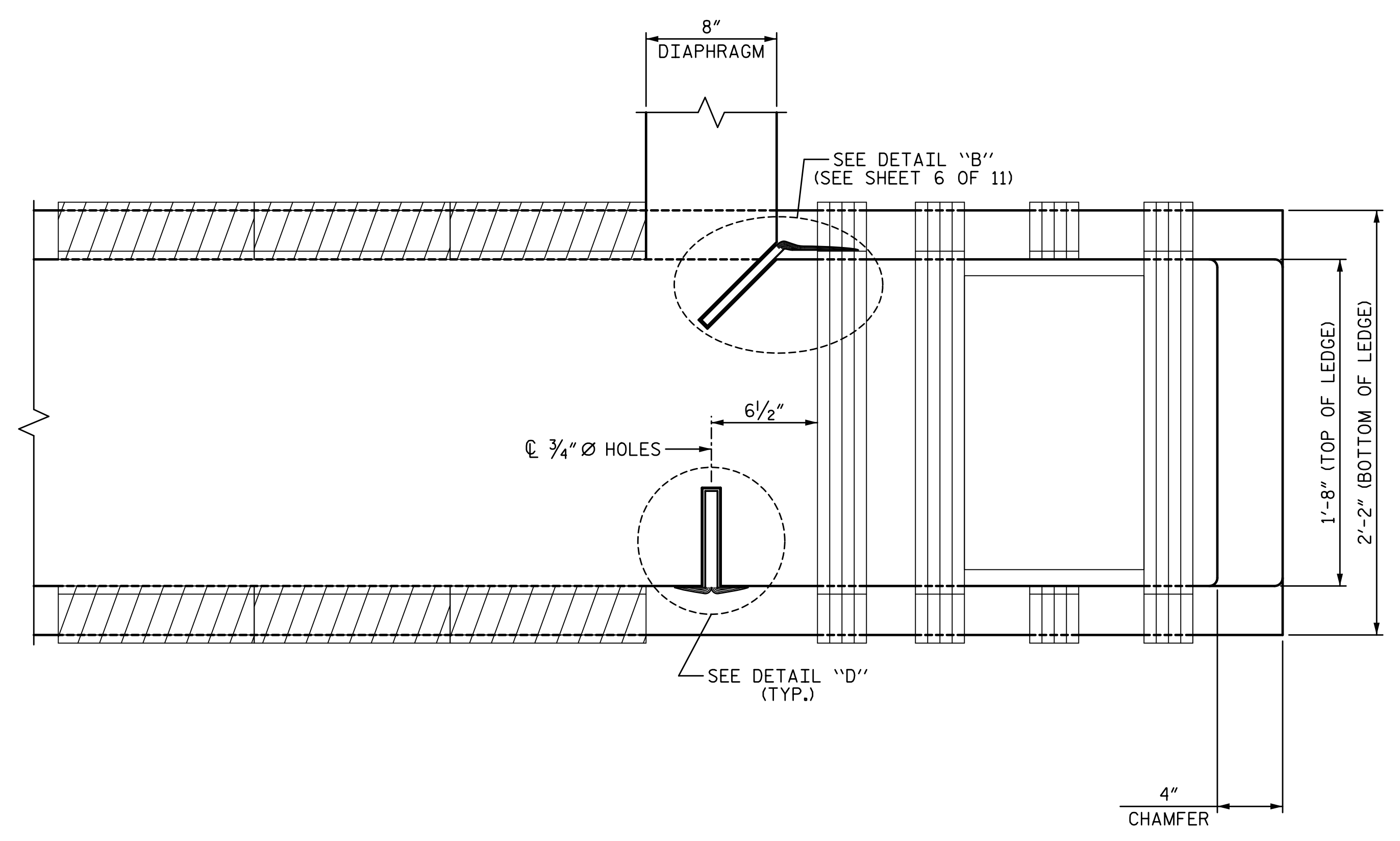
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ELEVATION

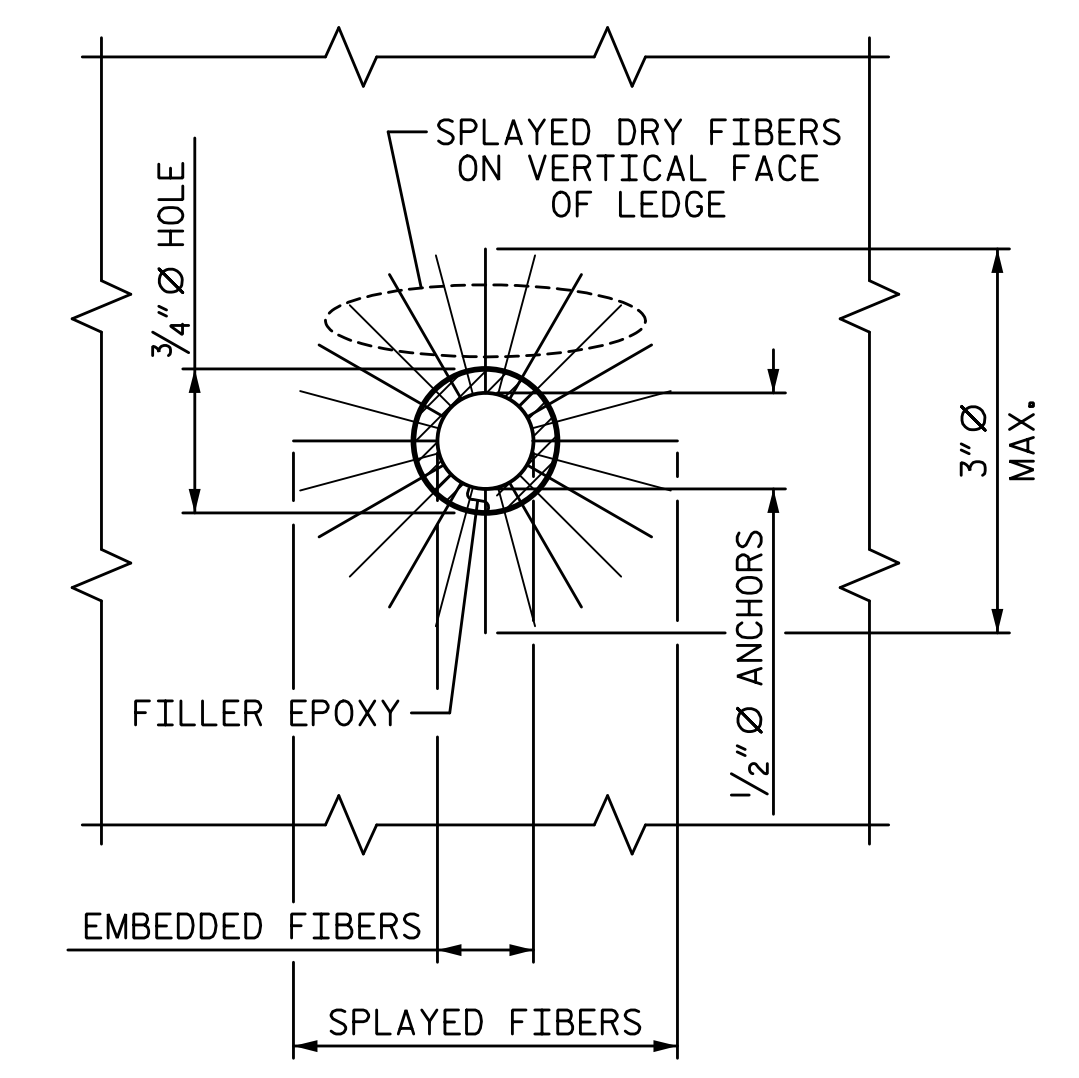
(TYP. EA FACE OF DAP AND LEDGE)

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

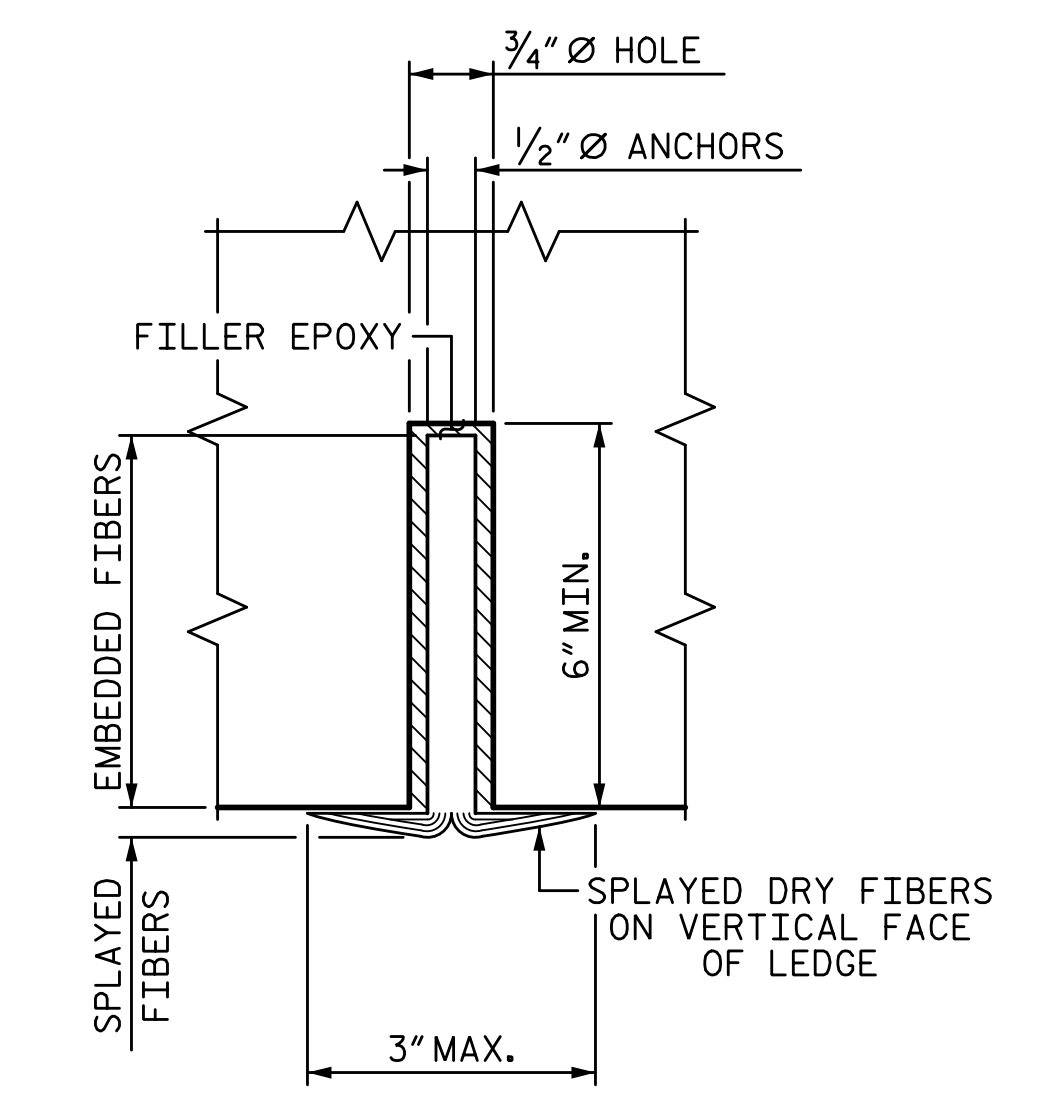


PLAN

(LEDGE SHOWN, DAP SIMILAR)



DETAIL "C"



DETAIL "D"

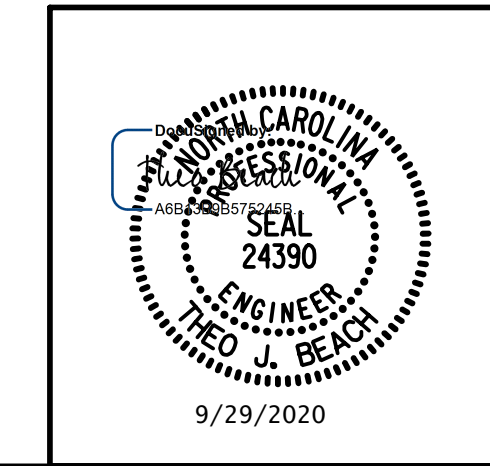
14 ANCHORS REQUIRED PER INTERIOR HINGE LOCATION

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 7 OF 11

PLANS PREPARED BY:

SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
 Suite 200
 Cary, NC 27518
 (919) 852-0468
 (919) 852-0598 (Fax)
 www.simpsonengr.com
 LICENSURE NO. C-2521

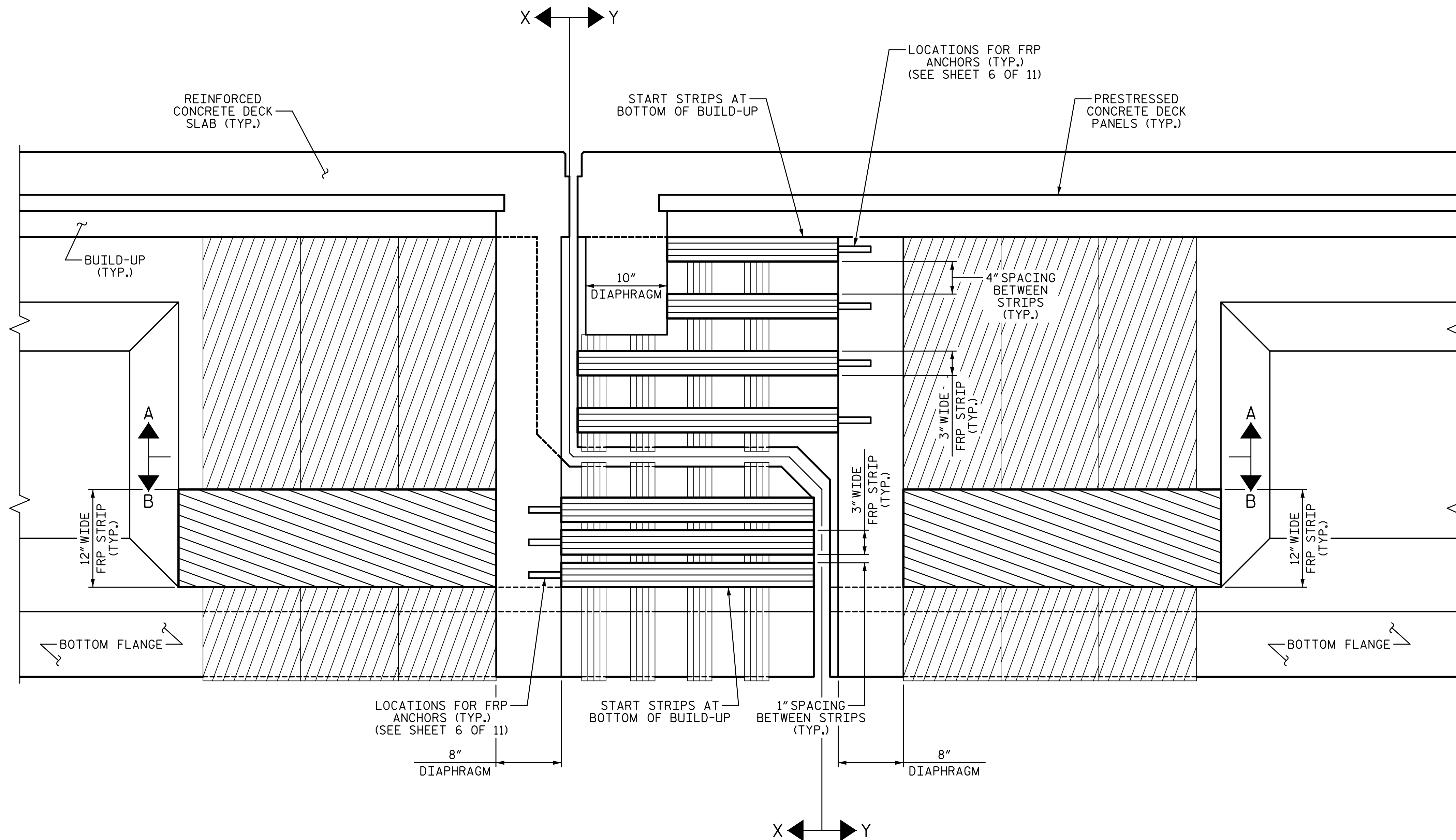


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
**FRP ANCHORAGE
 FOR EXTERIOR GIRDERS**
 FRP HINGE REPAIR

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-145
1			3			TOTAL SHEETS
2			4			163

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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.: 640048

SHEET 8 OF 11

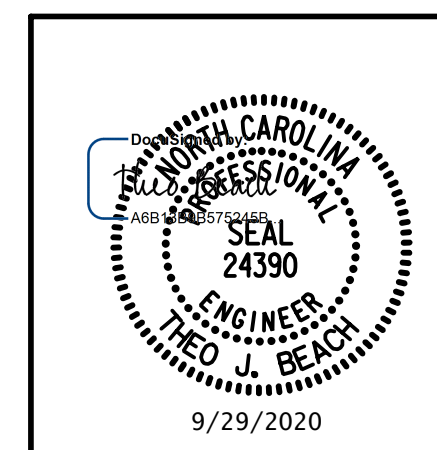
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION
FRP STRIPS LAYER 2
FOR
INTERIOR GIRDERS
FRP HINGE REPAIR

REVISIONS

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

PLANS PREPARED BY:

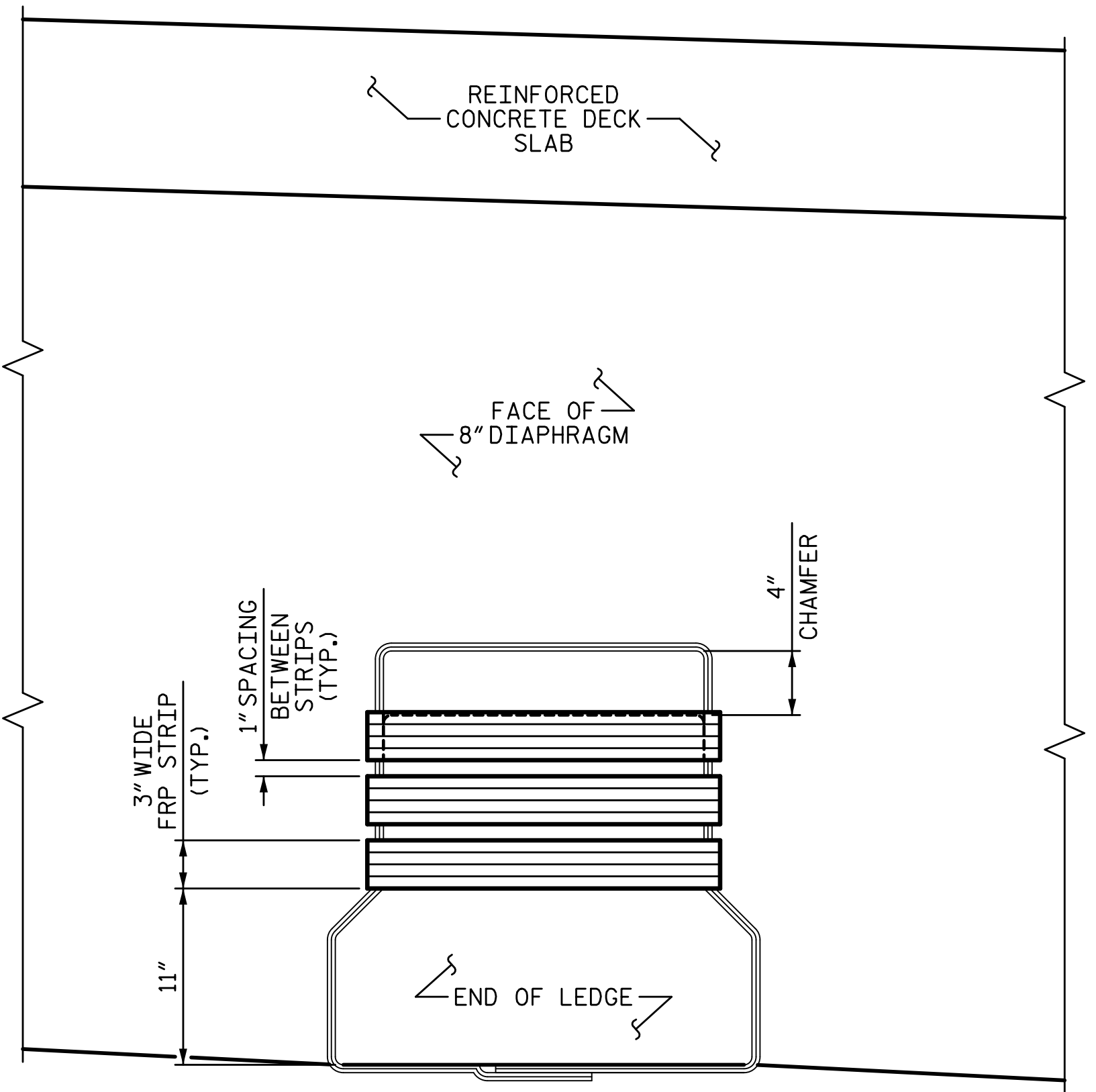
S&A
IMPSON ENGINEERS ASSOCIATES
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Cary, NC 27518
(919) 852-0468
(919) 852-0538 (Fax)
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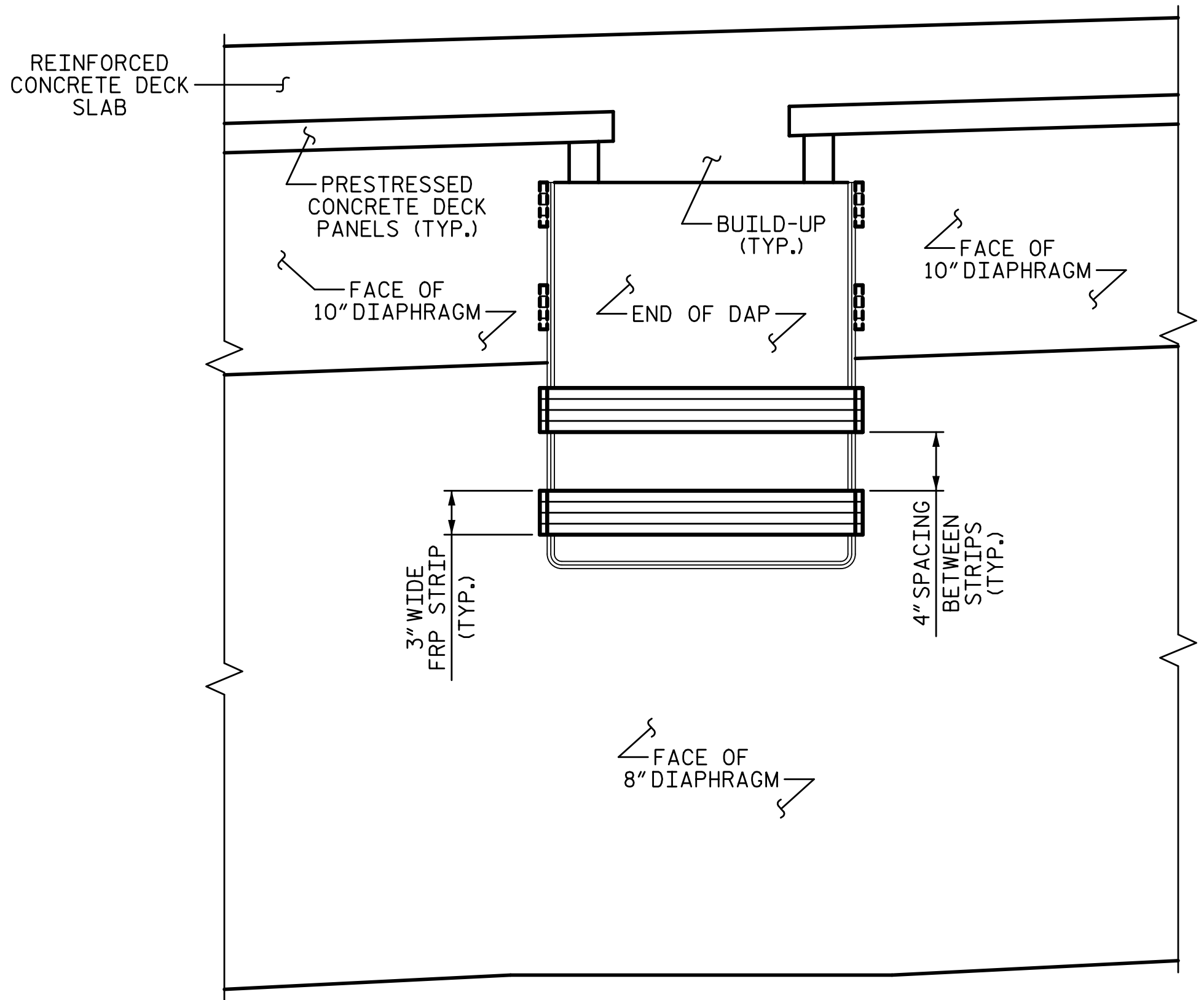
DRAWN BY: T. BANKOVICH DATE: 9-20
CHECKED BY: N.J. MABRY DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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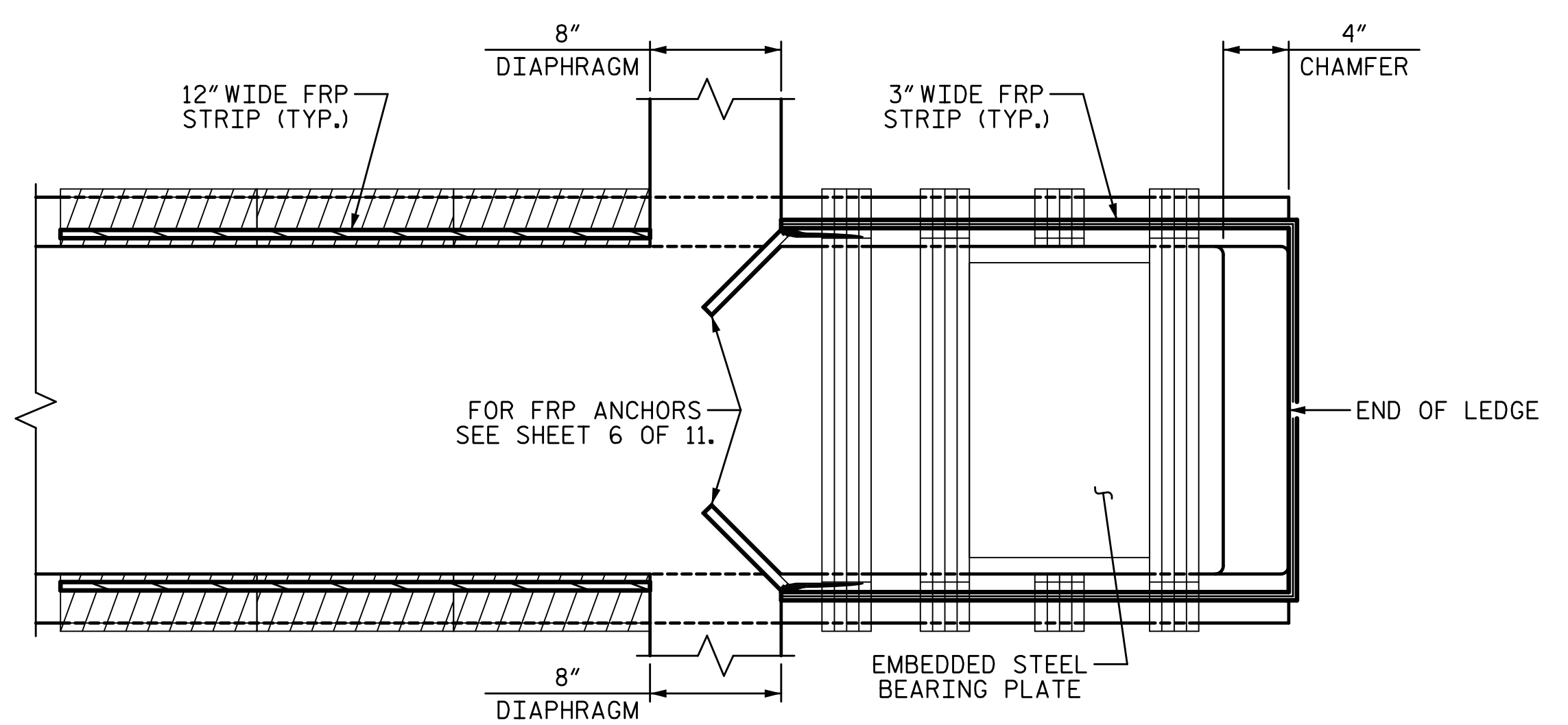
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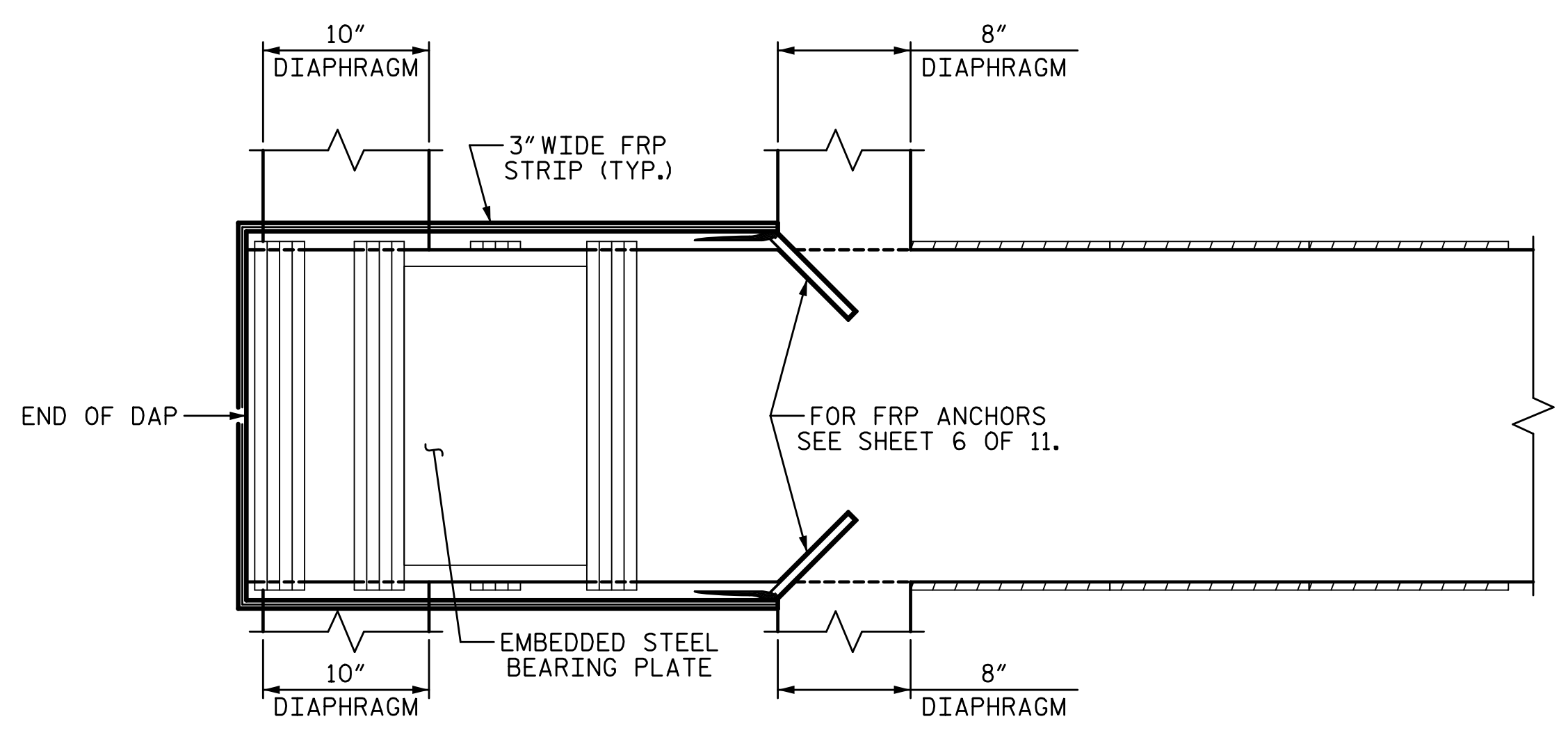
VIEW X-X



VIEW Y-Y



VIEW B-B
SHOWING TOP OF LEDGE



VIEW A-A
SHOWING BOTTOM OF DAP

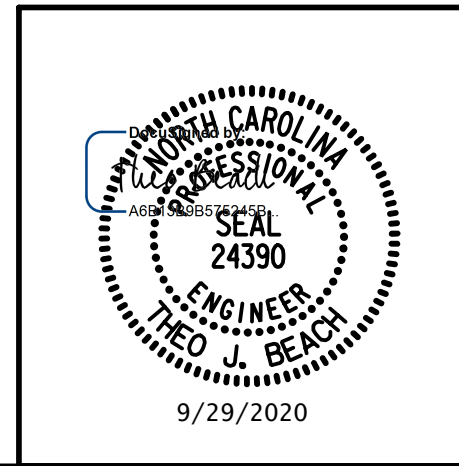
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 9 OF 11

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-147
1			3			TOTAL SHEETS
2			4			163

PLANS PREPARED BY:
SE & A
 SIMPSON ENGINEERS & ASSOCIATES
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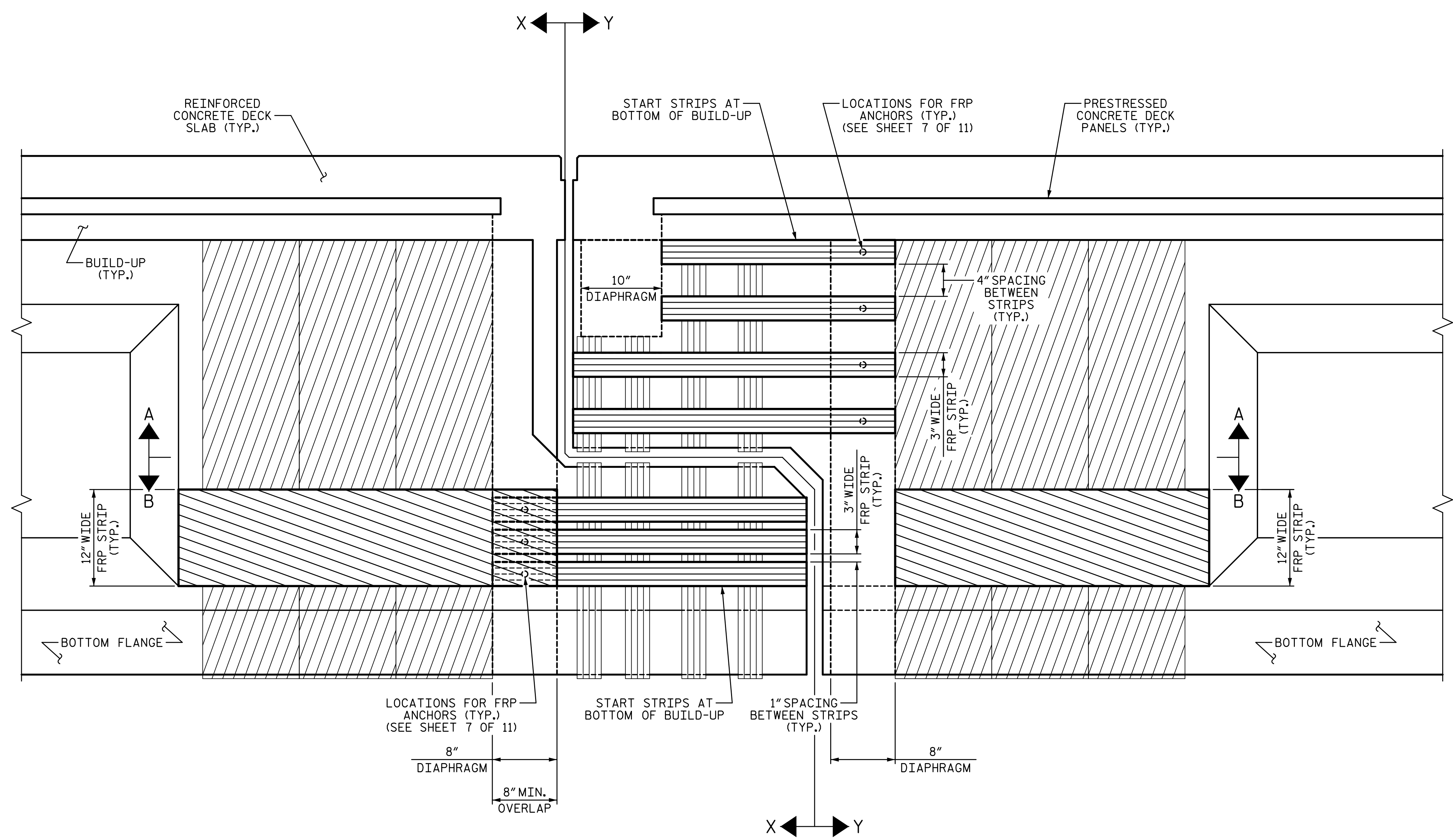


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 CHECKED BY: N.J. MABRY DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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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

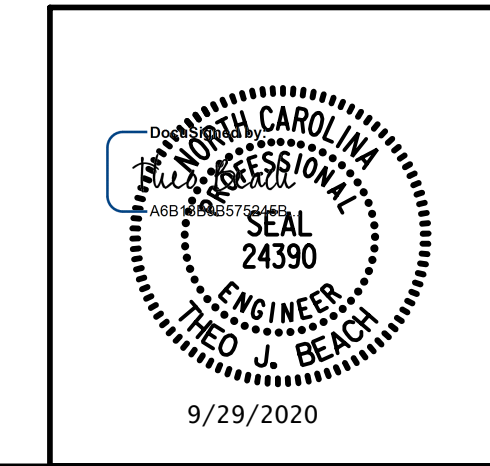
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

SHEET 10 OF 11

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

PLANS PREPARED BY:

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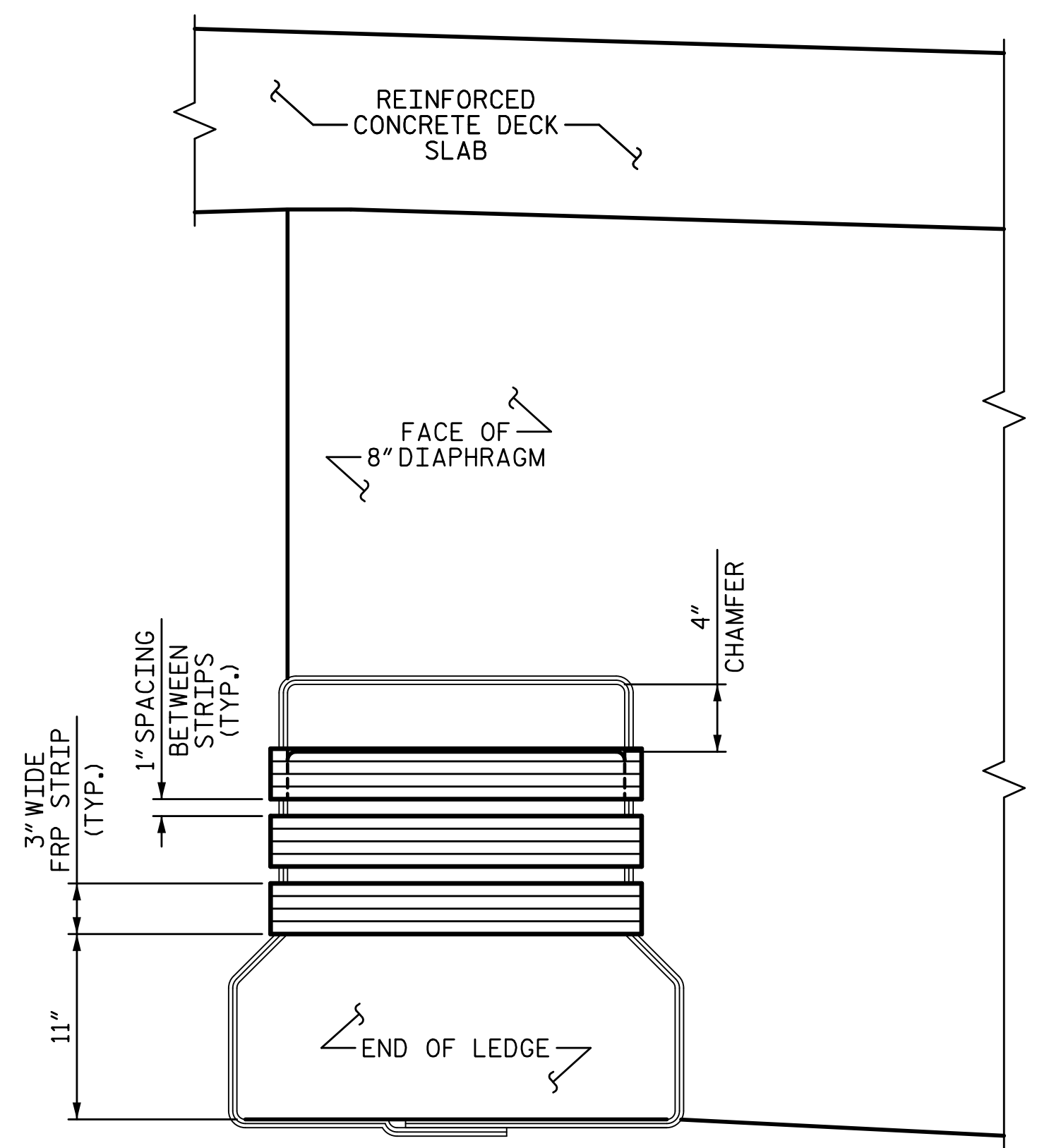


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-148
1			3			TOTAL SHEETS
2			4			163

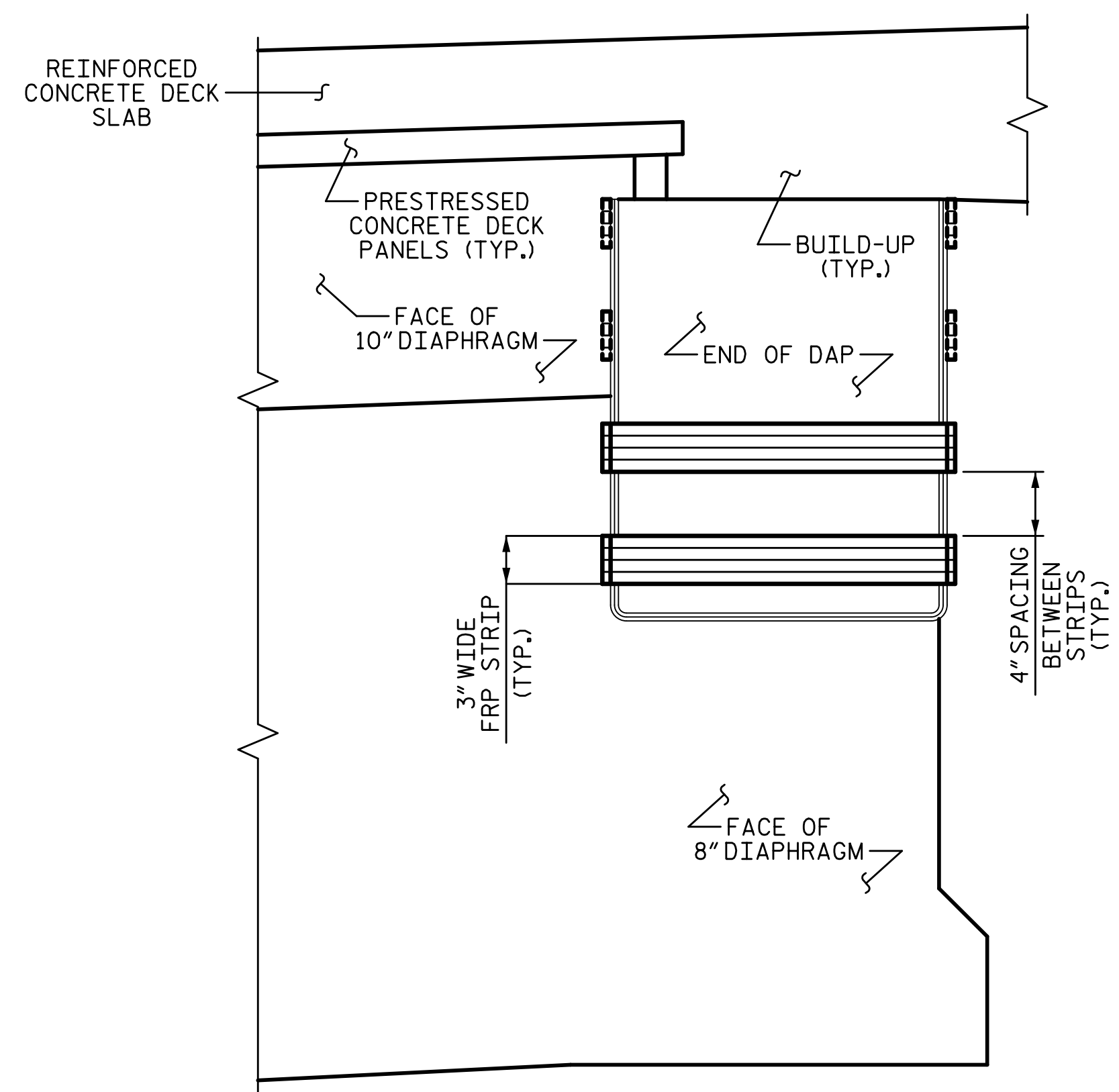
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 CHECKED BY: N.J. MABRY DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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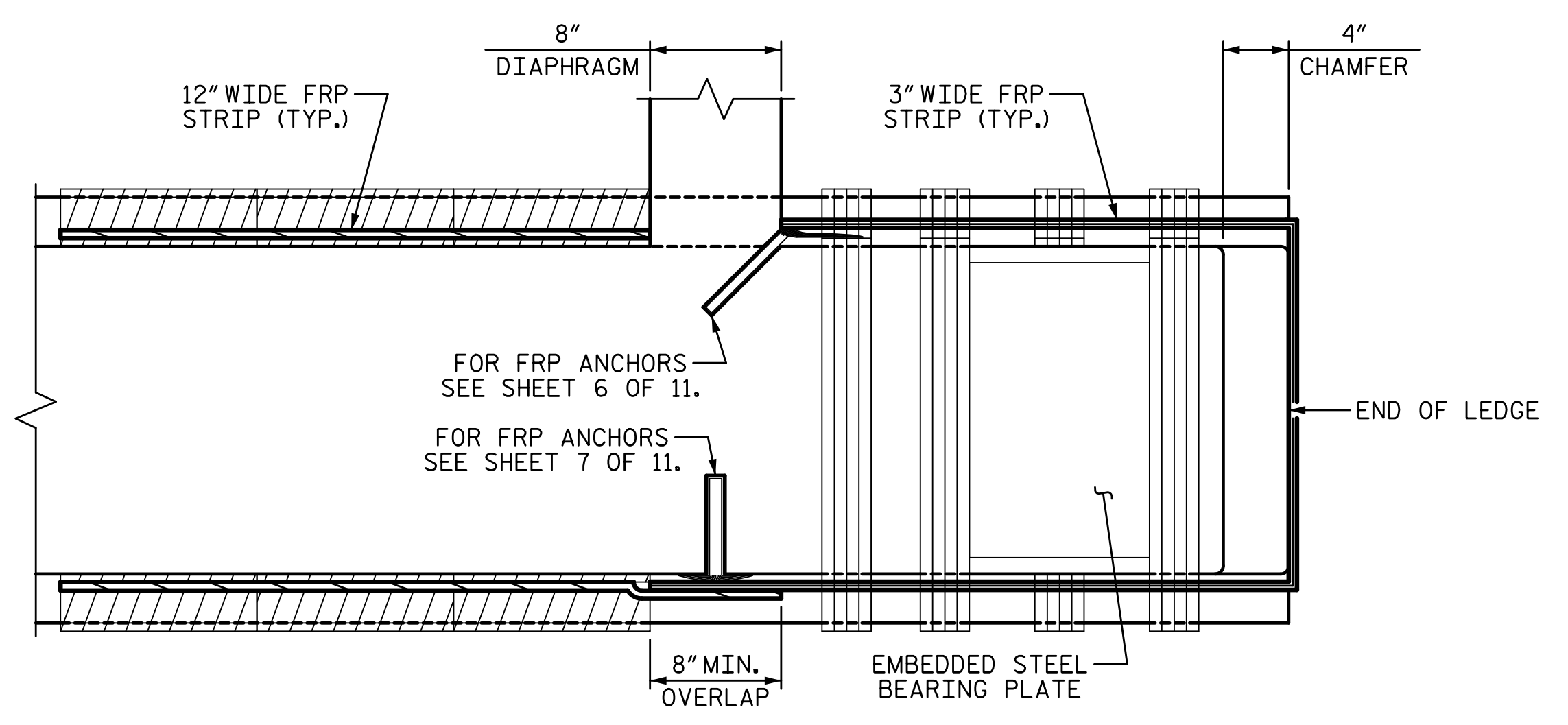
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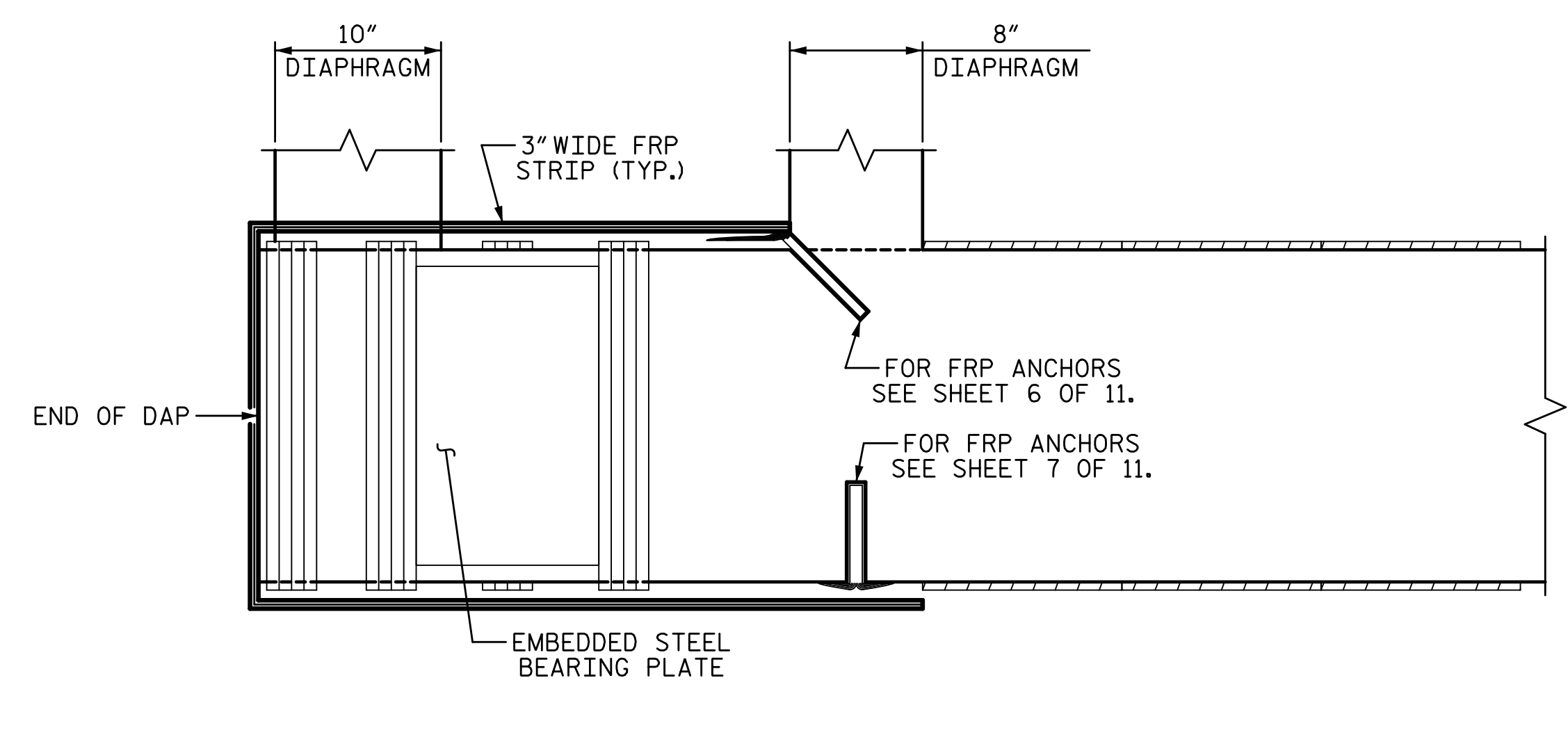
VIEW X-X



VIEW Y-Y



VIEW B-B
SHOWING TOP OF LEDGE

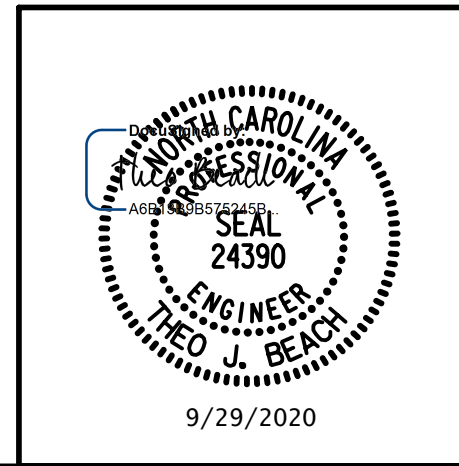


VIEW A-A
SHOWING BOTTOM OF DAP

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		

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

PLANS PREPARED BY:
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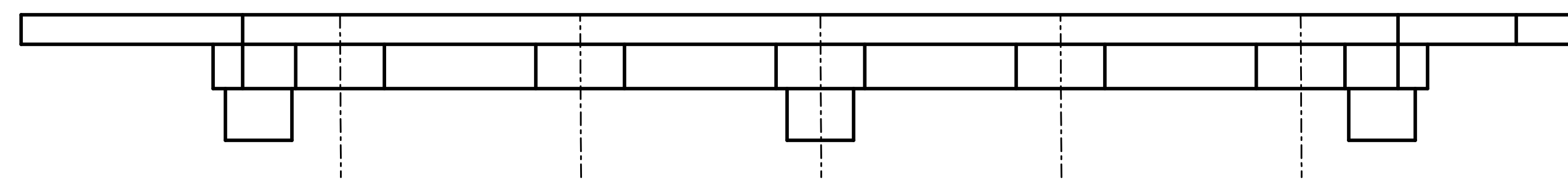


PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048
 SHEET 11 OF 11

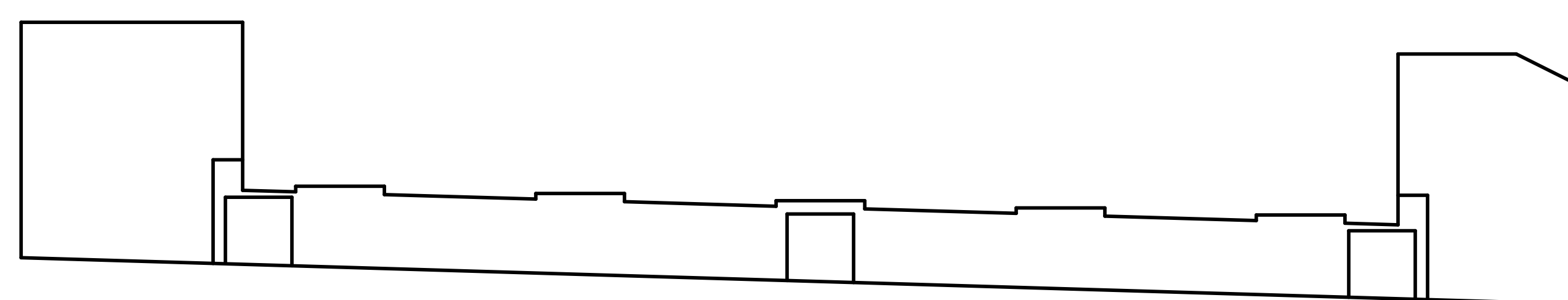
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH PRESERVATION					
FRP STRIPS LAYER 2 FOR EXTERIOR GIRDERS FRP HINGE REPAIR					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 163

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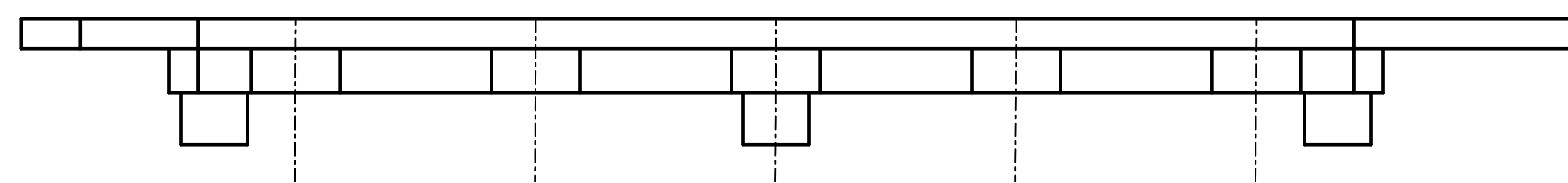
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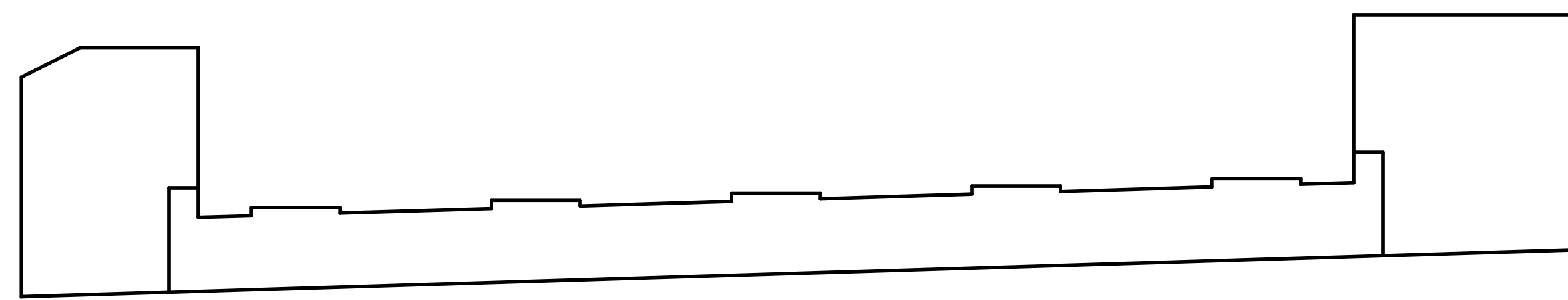
PLAN
END BENT 1



ELEVATION
END BENT 1



PLAN
END BENT 2



ELEVATION
END BENT 2

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 PILE CAPS.

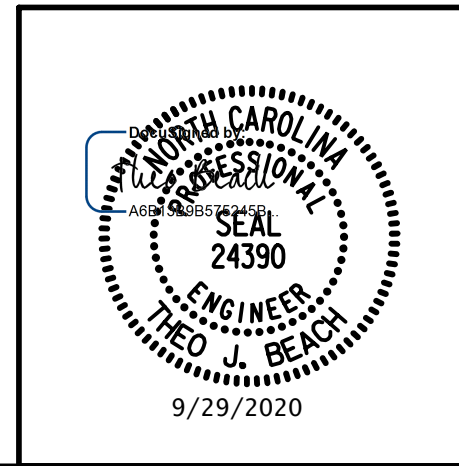
VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

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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 (919) 852-0468
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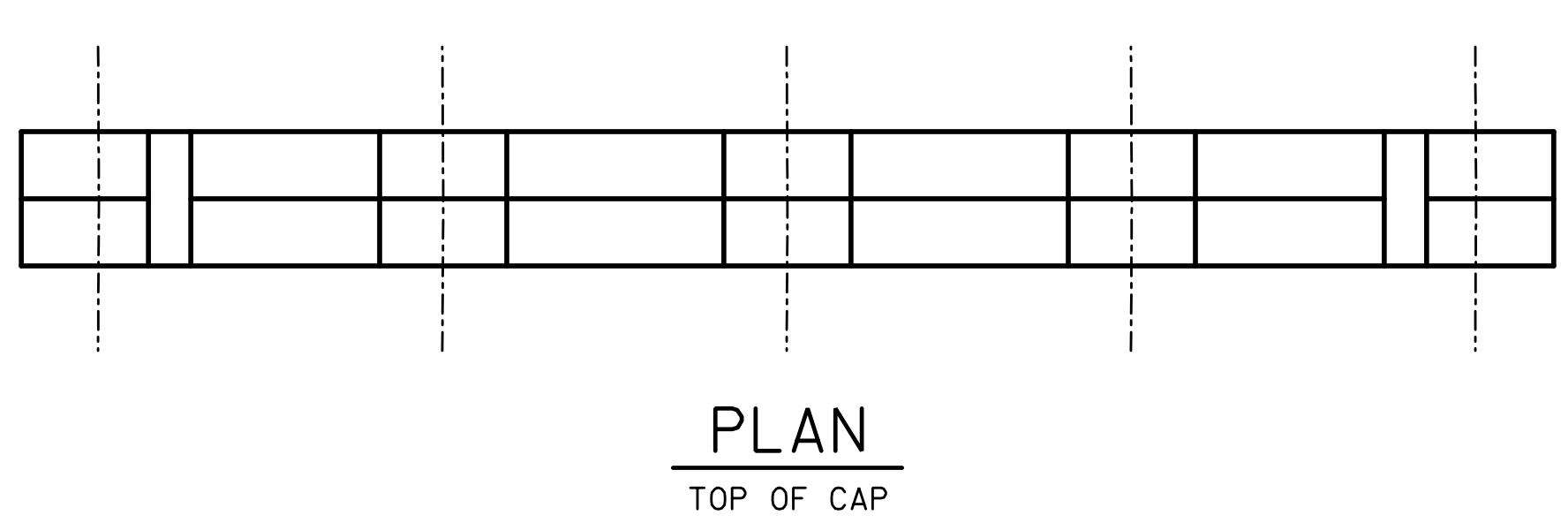
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

END BENT 1 & 2

REVISIONS						SHEET NO. S1-150
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 163
2			4			

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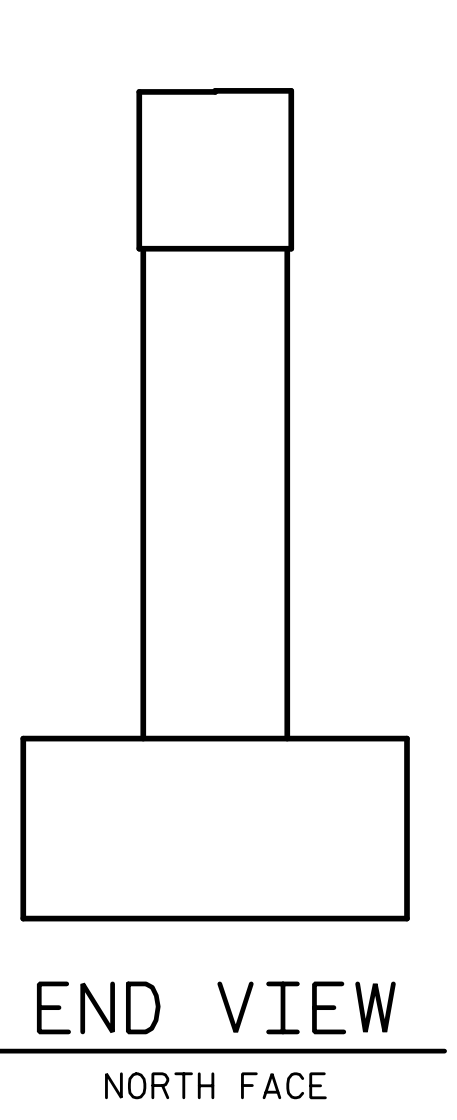
PLAN
TOP OF CAP

SPAN 2

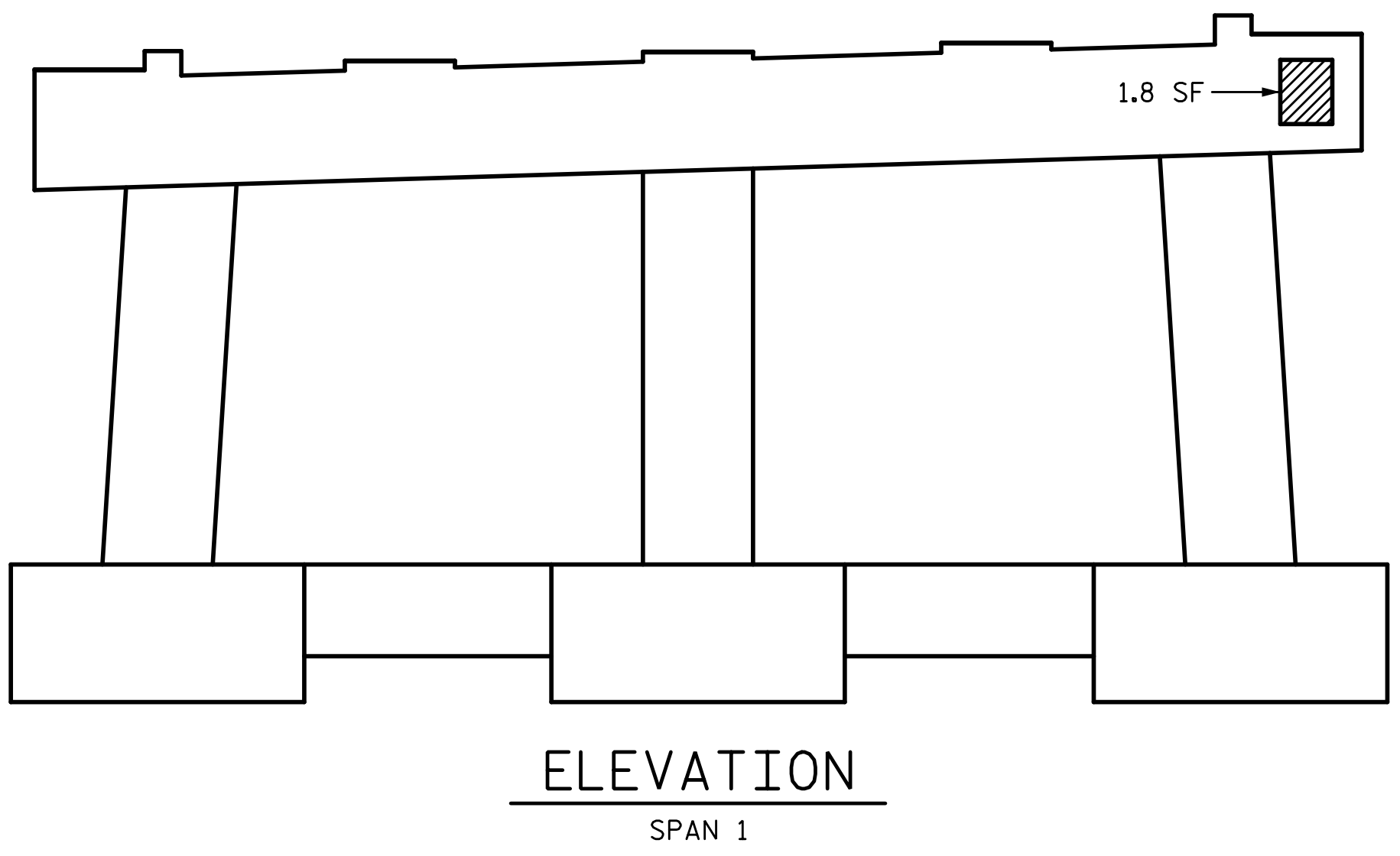
SPAN 1

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

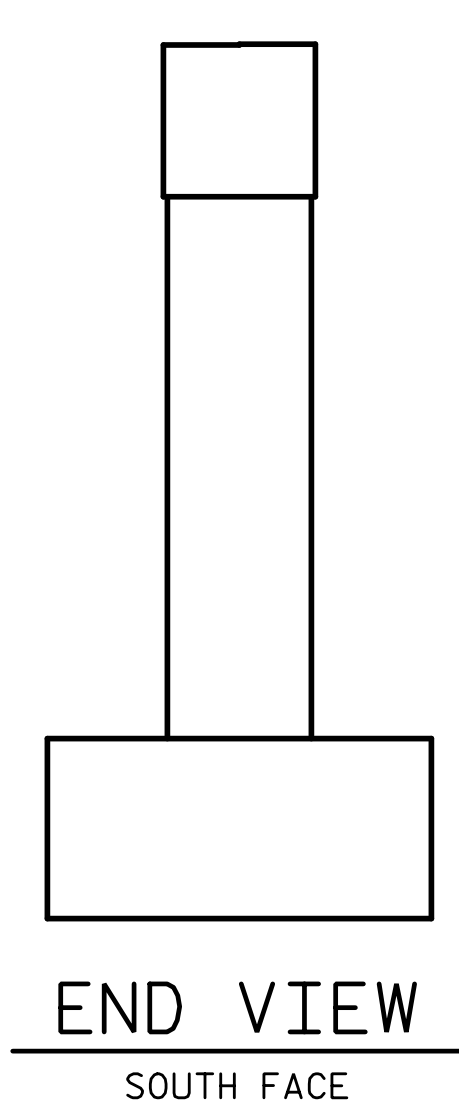
REPAIR QUANTITY TABLE					
REPAIRS BENT 1	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	1.8	0.3			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	0.0	0.0			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			



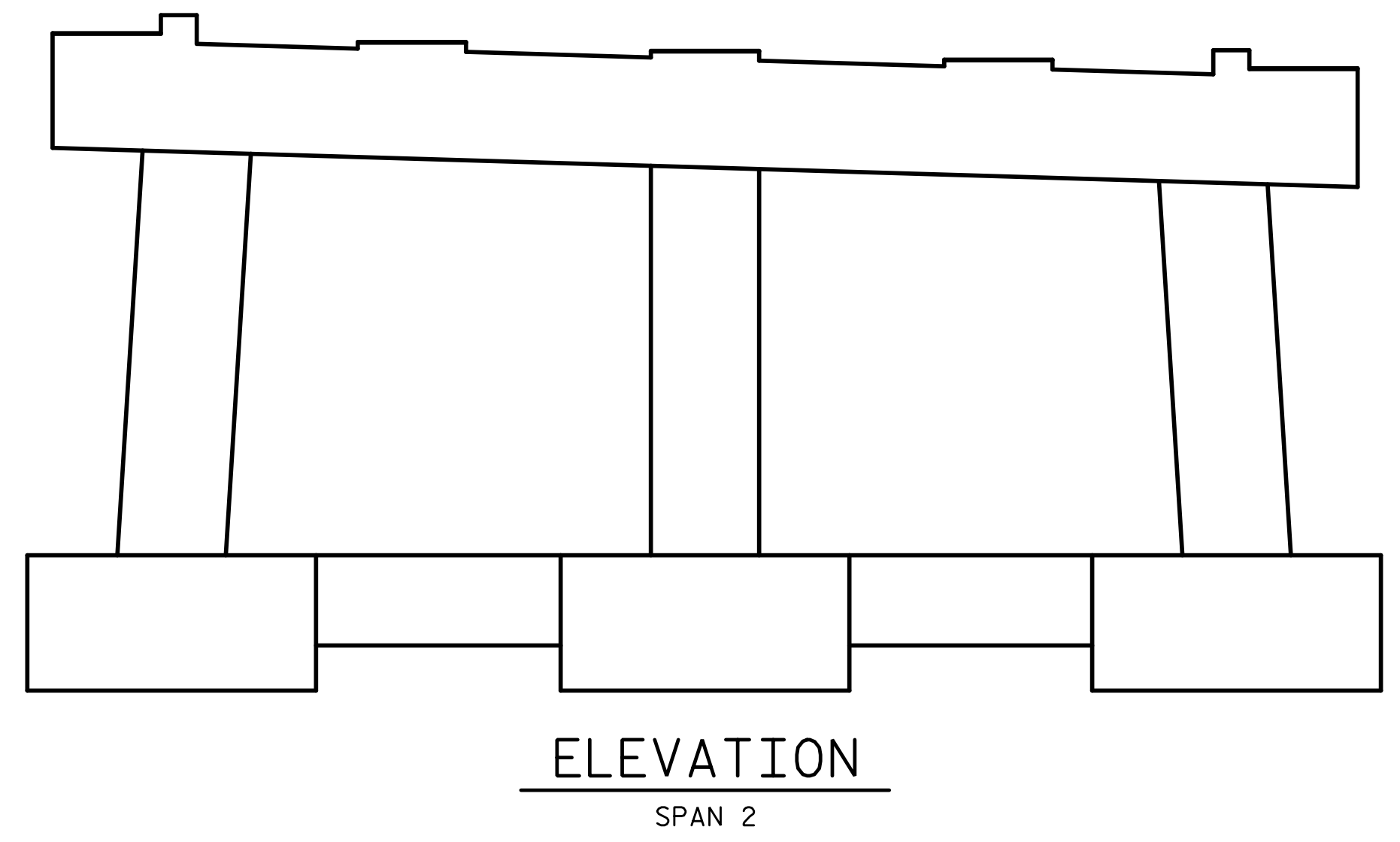
END VIEW
NORTH FACE



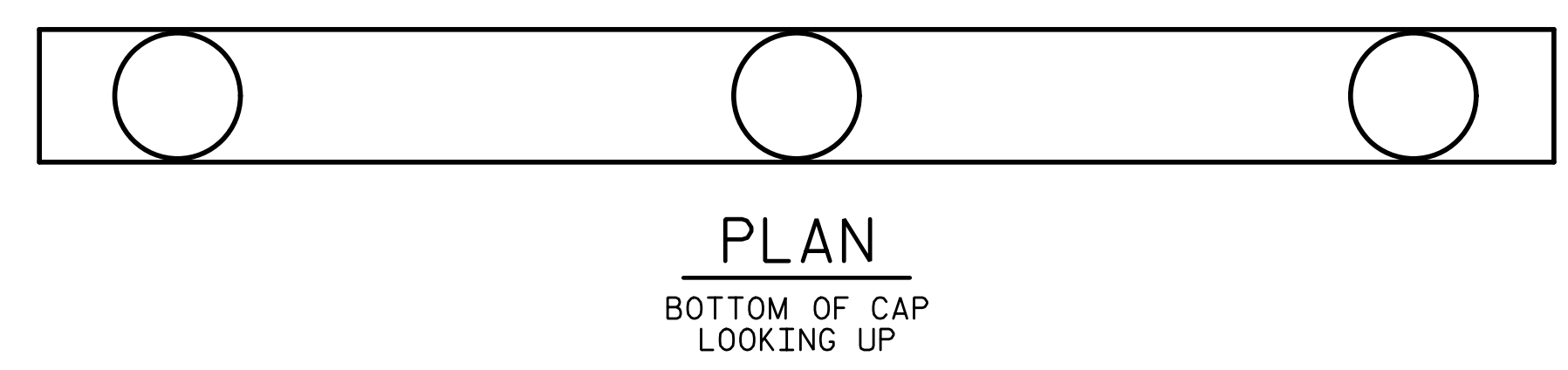
ELEVATION
SPAN 1



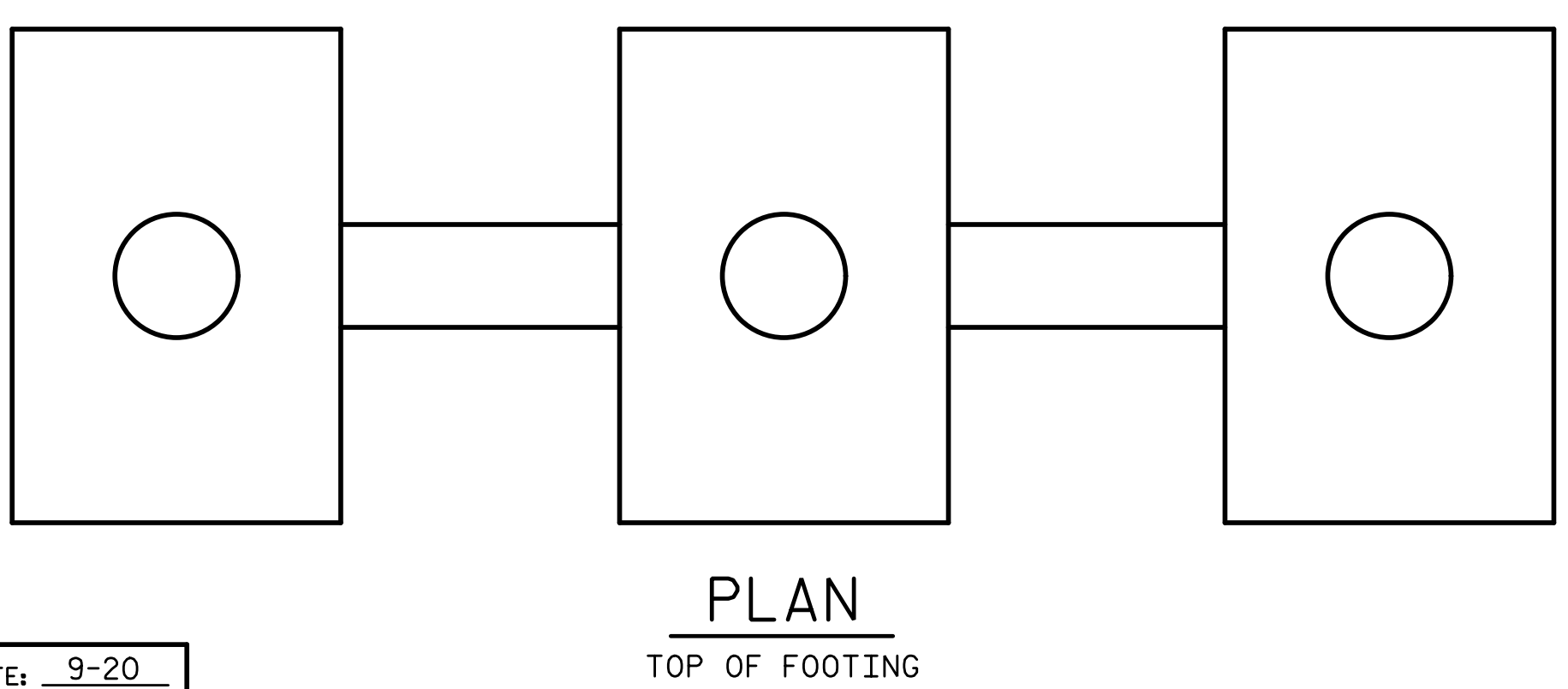
END VIEW
SOUTH FACE



ELEVATION
SPAN 2



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.

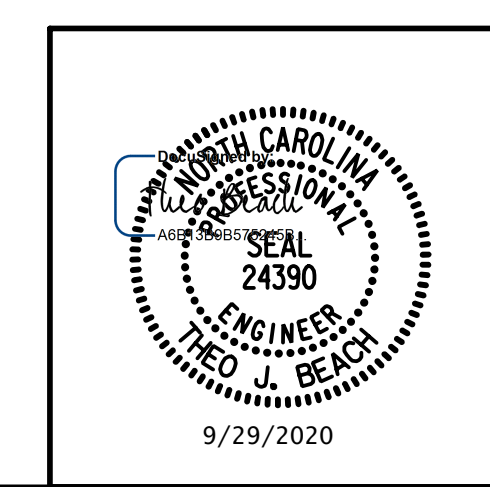
FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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.

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

PLANS PREPARED BY:

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STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION

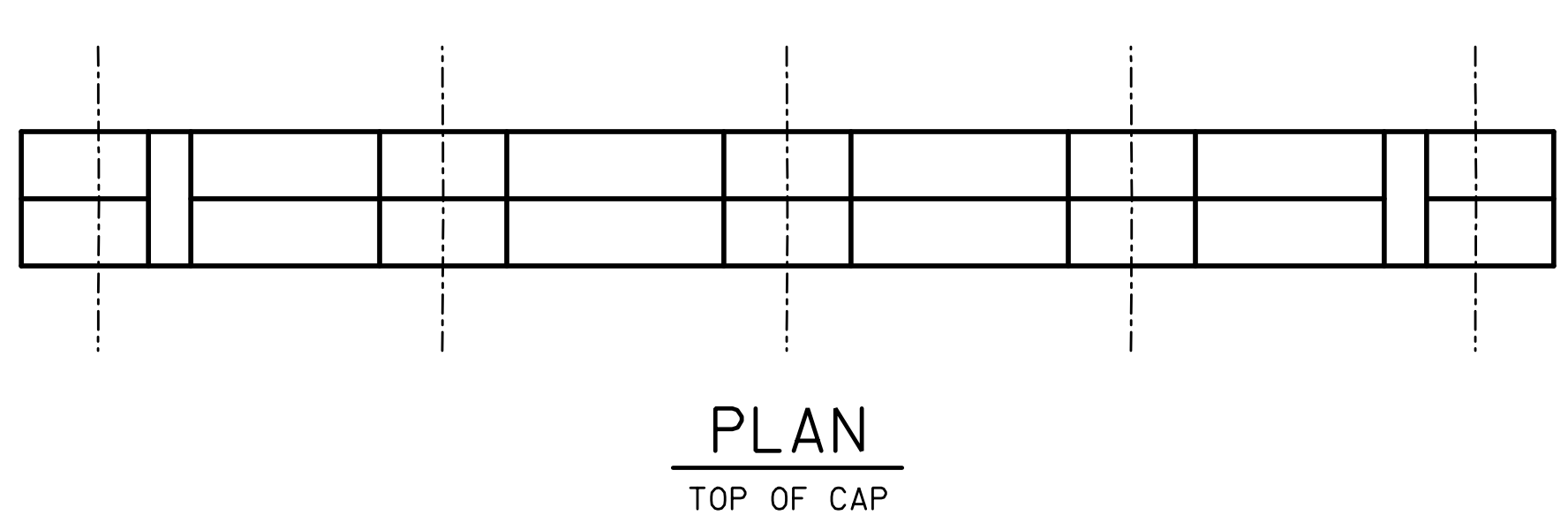
BENT 1

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-151
1			3			TOTAL SHEETS
2			4			163

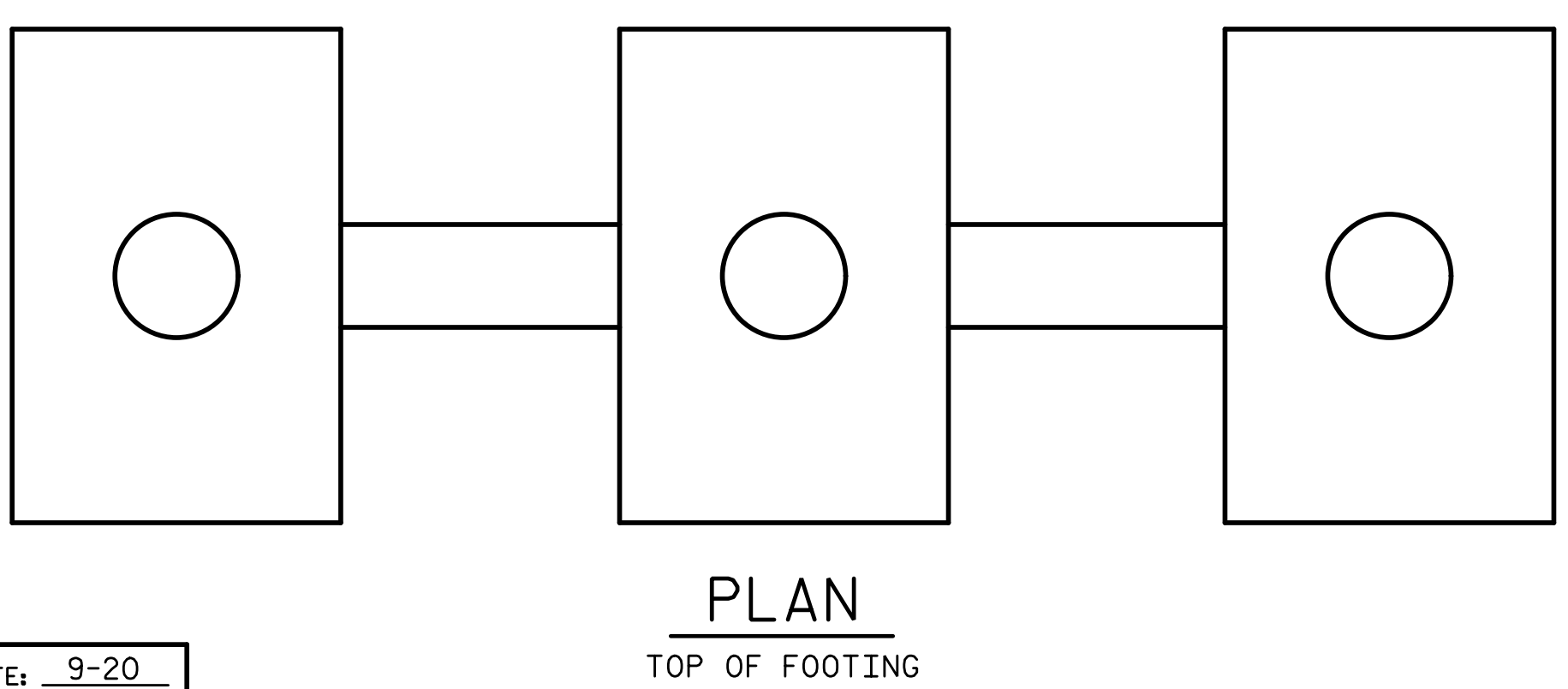
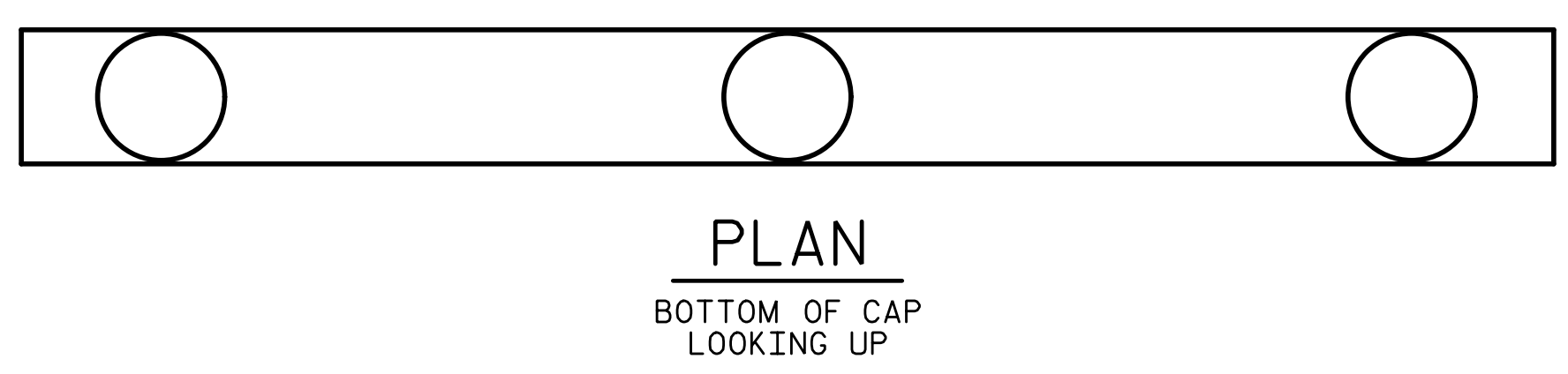
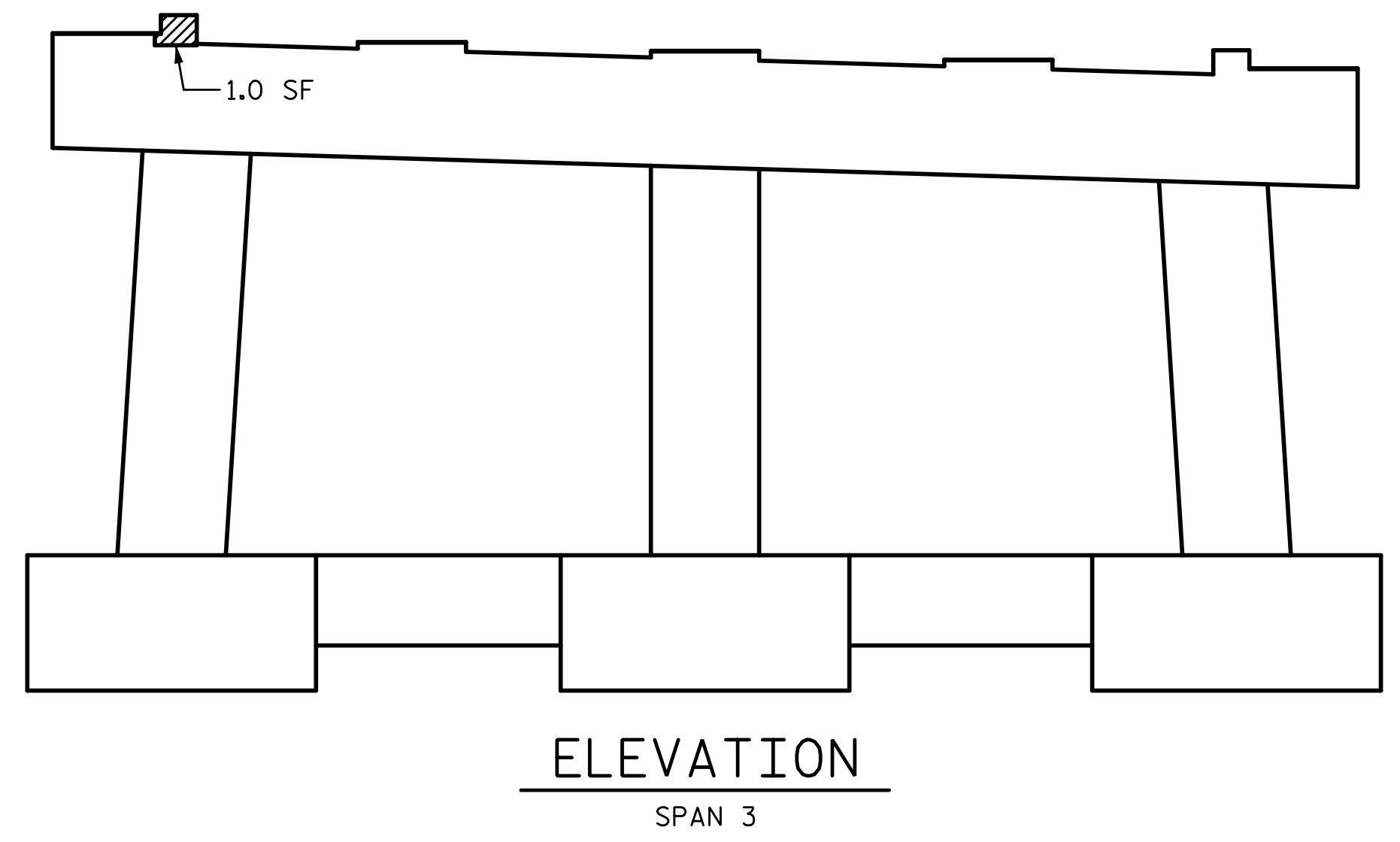
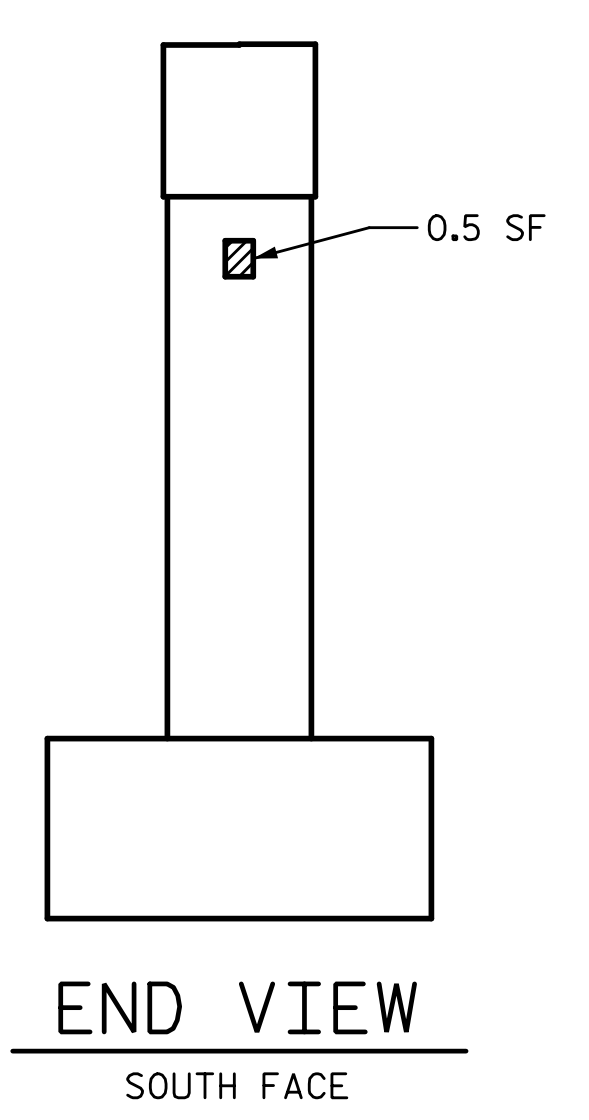
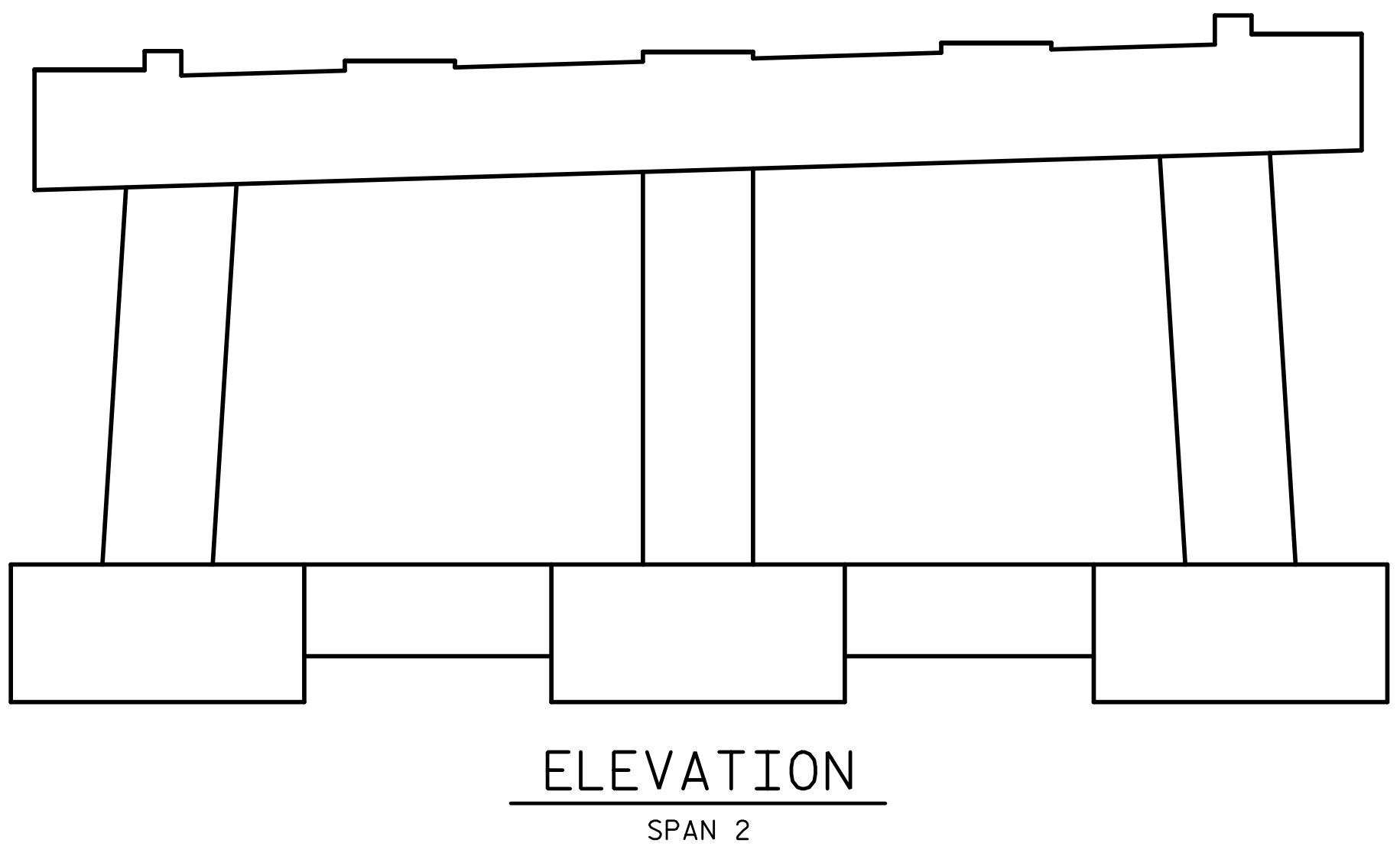
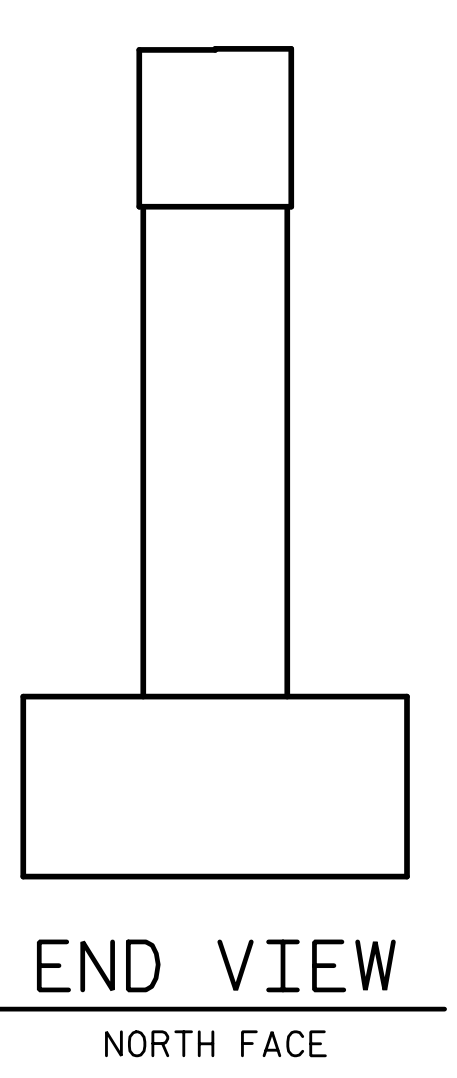
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SPAN 3

SPAN 2



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)	1.0	0.5			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	0.5	0.1			
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.

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.: 640048

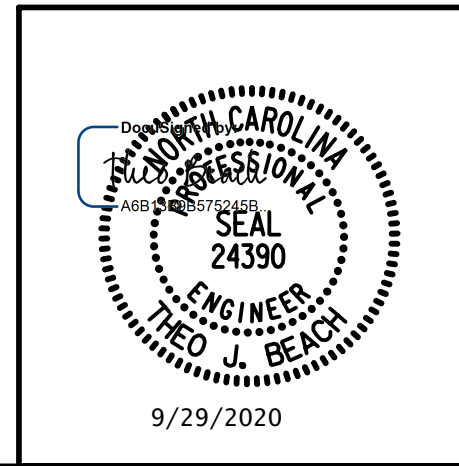
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-152
1			3			TOTAL SHEETS
2			4			163

PLANS PREPARED BY:

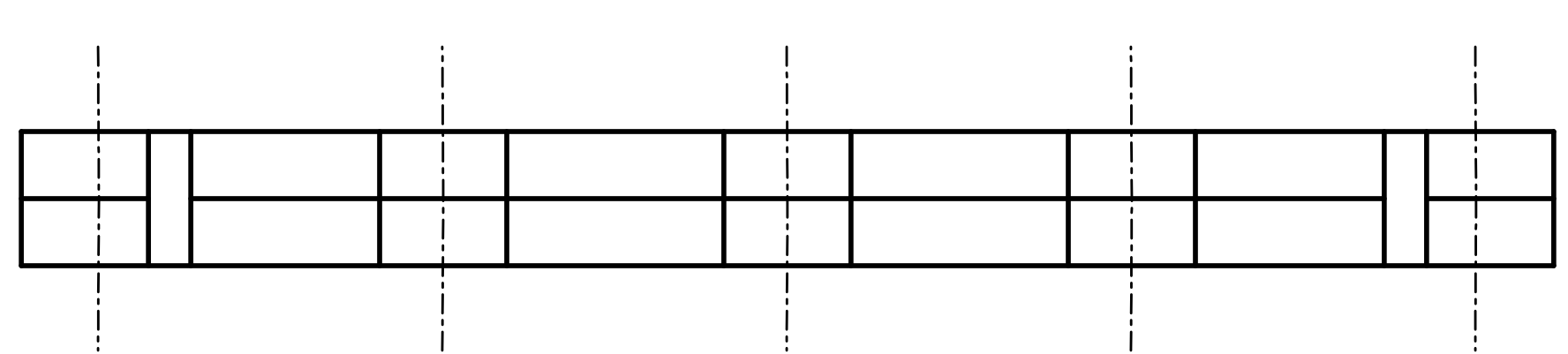
 5640 Dillard Drive
 Suite 200
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 (919) 852-0468
 (919) 852-0598 (Fax)
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DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

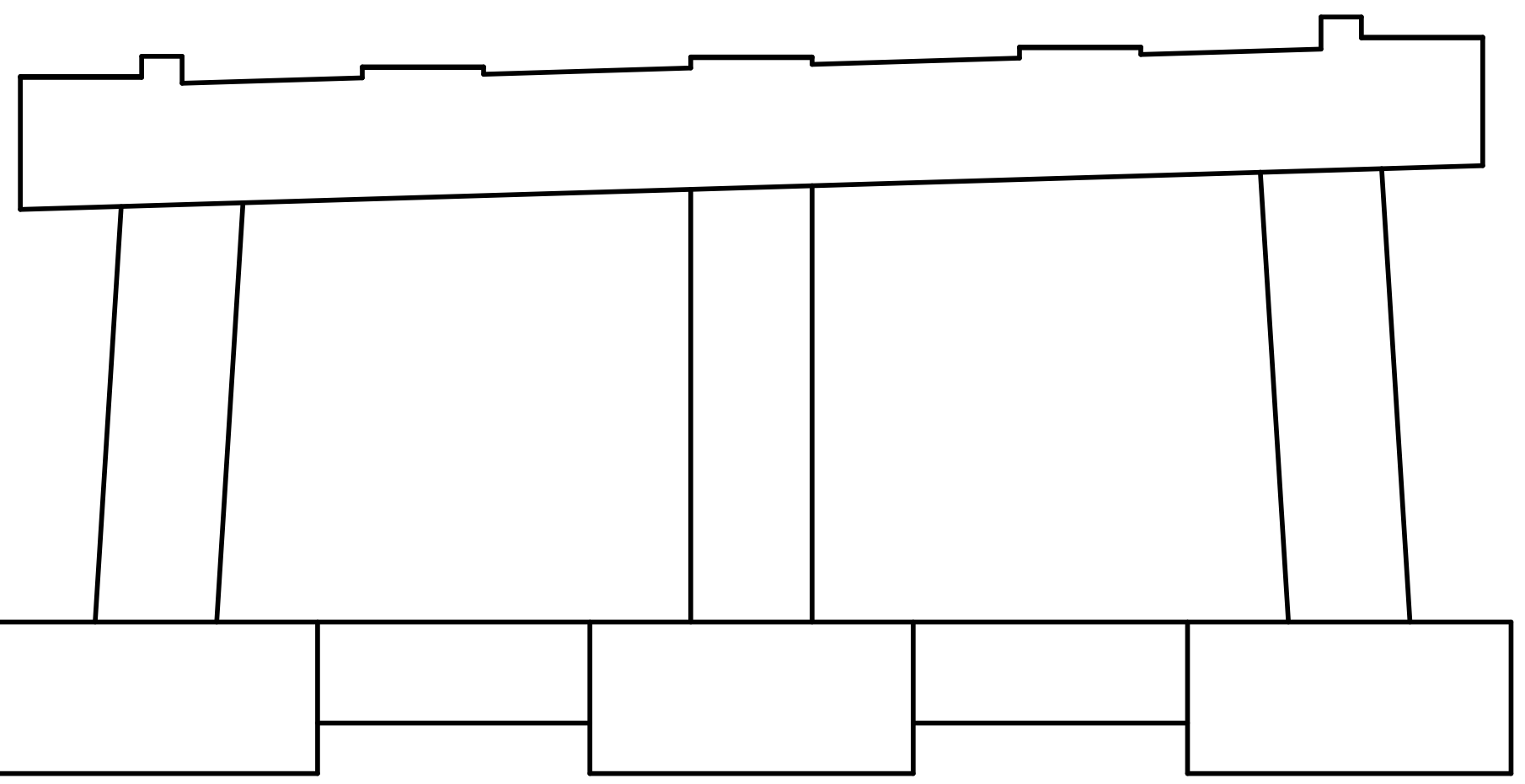
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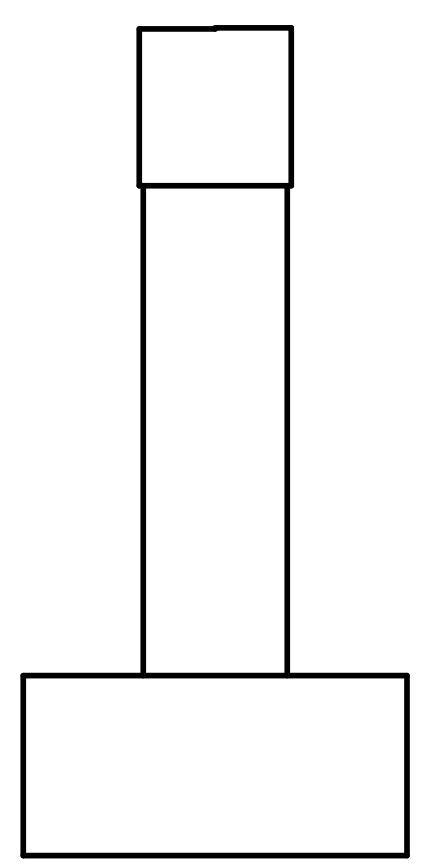


PLAN
TOP OF CAP

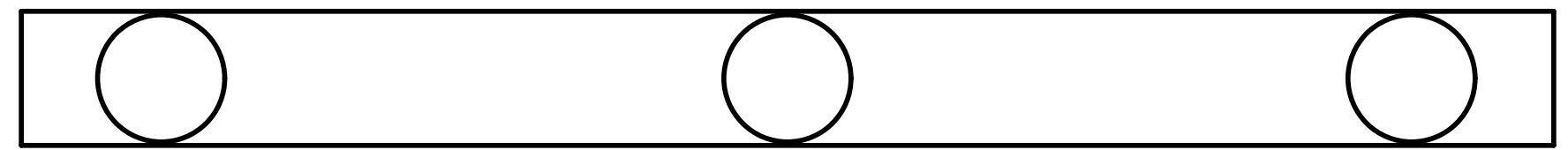
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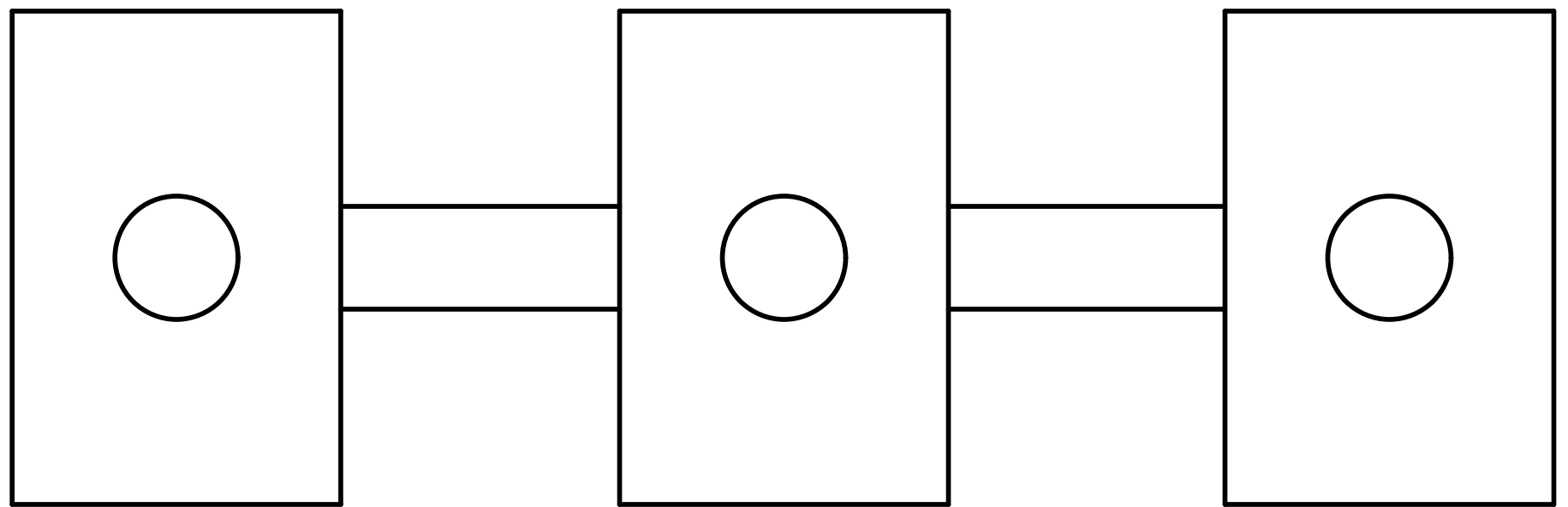
ELEVATION
SPAN 3
NORTH FACE



END VIEW
NORTH FACE



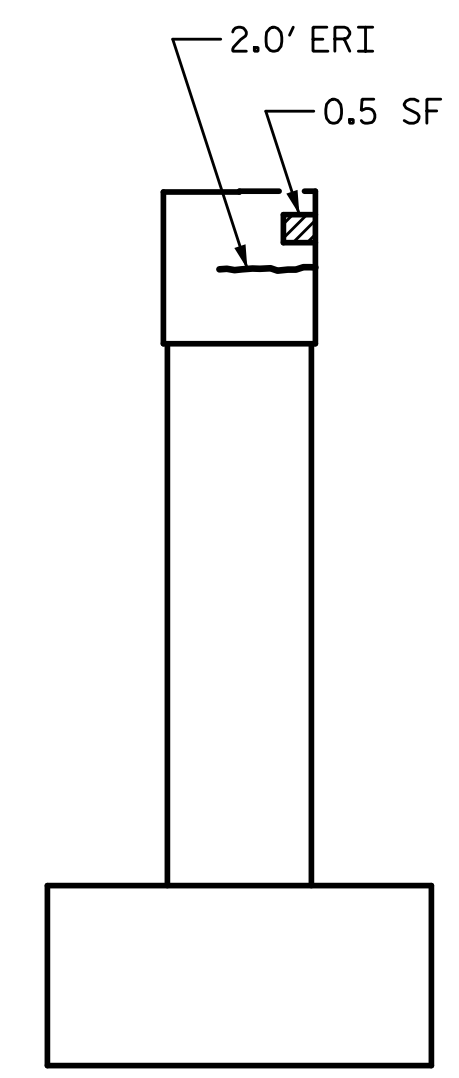
PLAN
BOTTOM OF CAP
LOOKING UP



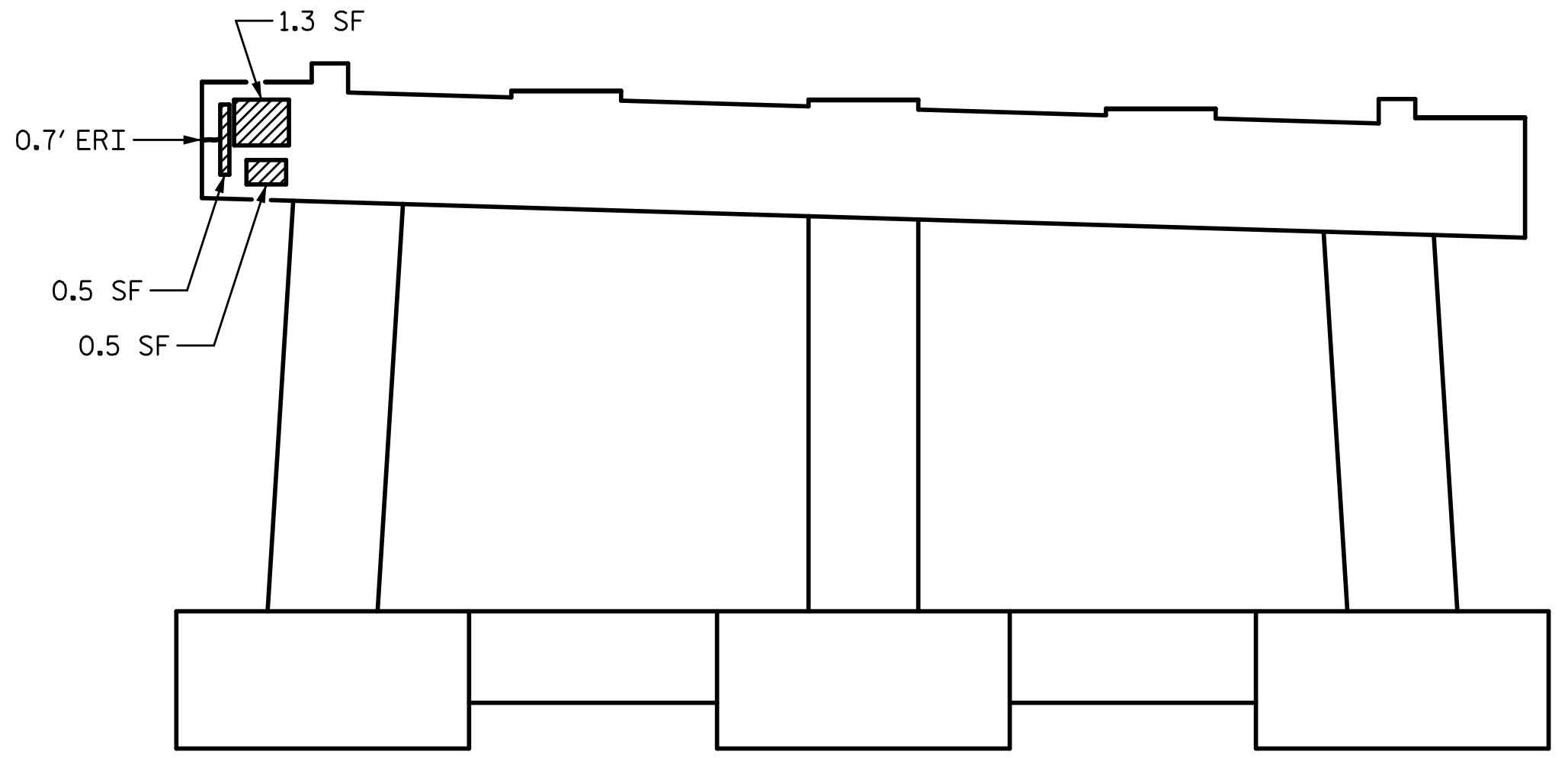
PLAN
TOP OF FOOTING

SPAN 3

SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION



END VIEW
SOUTH FACE



ELEVATION
SPAN 4

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.

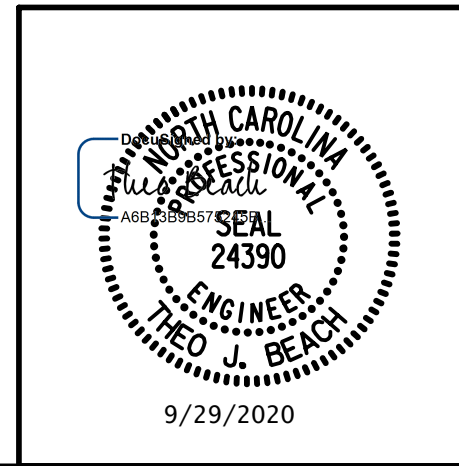
VALUES IN CHART REPRESENT ESTIMATE REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL. TO SAWCUT. SEE REPAIR DETAILS.

REPAIR QUANTITY TABLE					
REPAIRS BENT 3	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	2.8	0.5			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	0.0	0.0			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		2.7			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			

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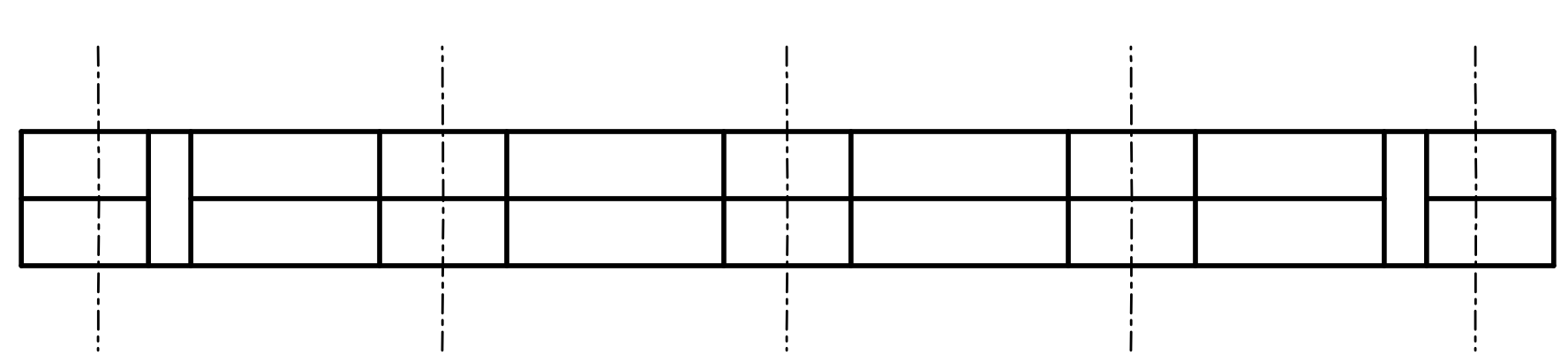
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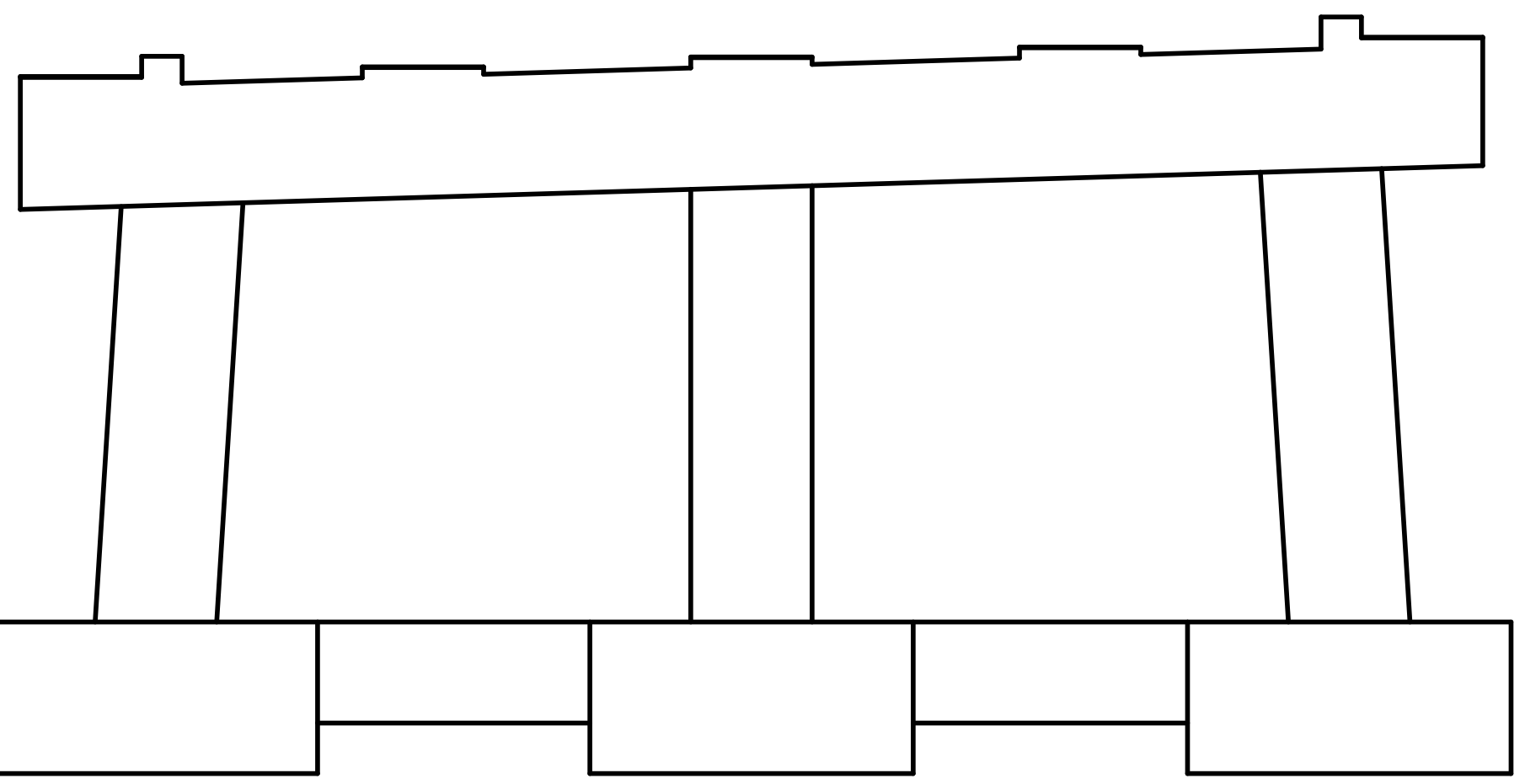
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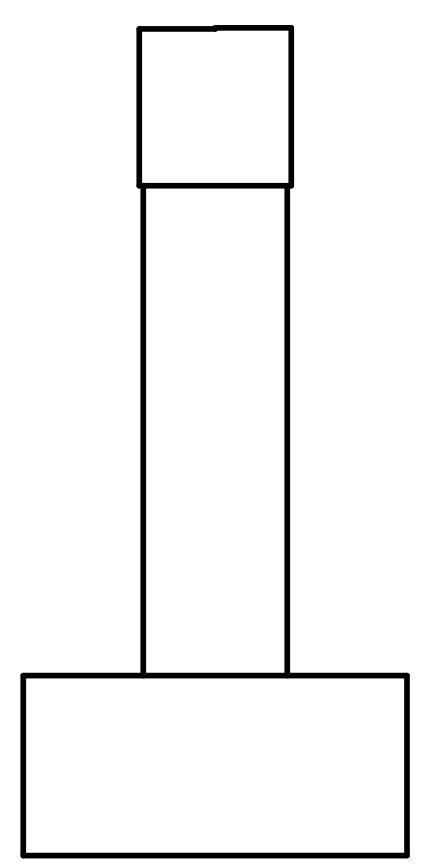
PLAN
TOP OF CAP

SPAN 5

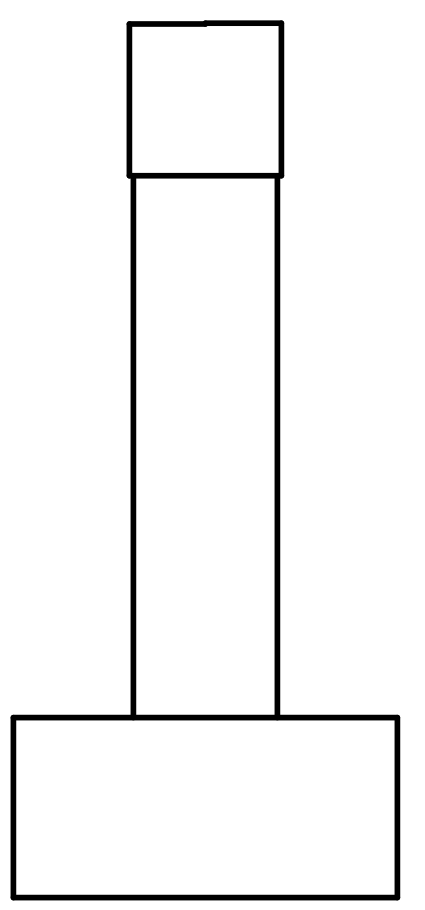
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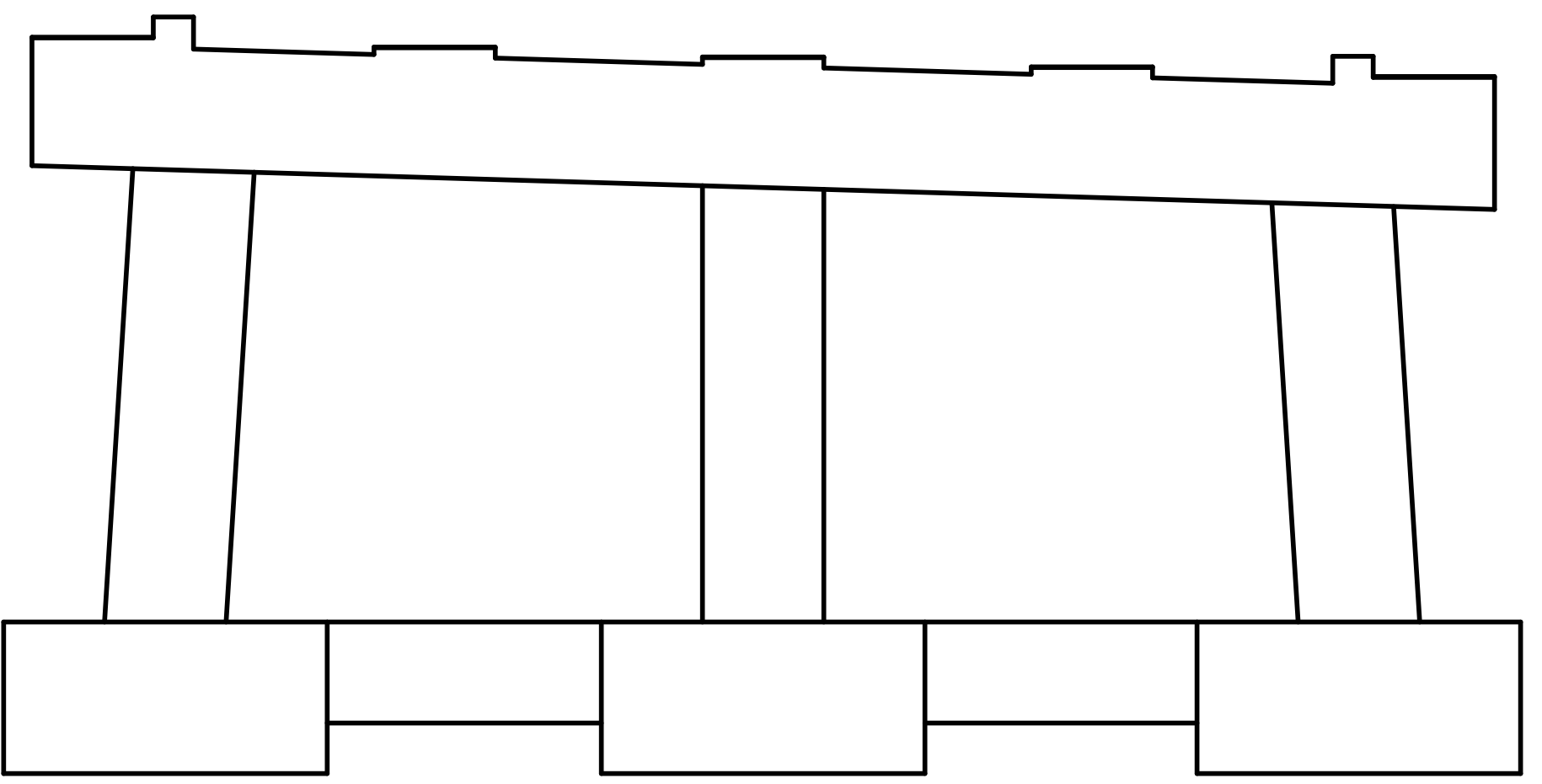
ELEVATION
SPAN 4



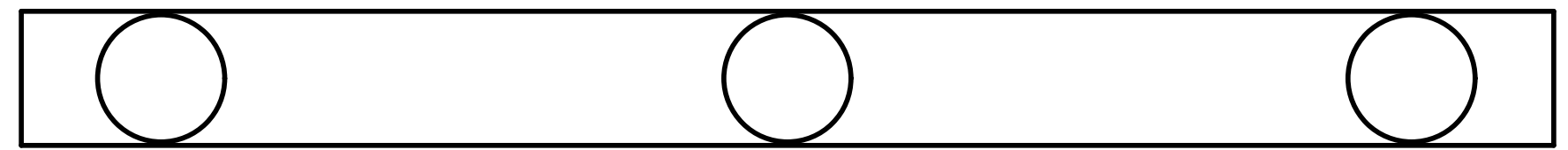
END VIEW
NORTH FACE



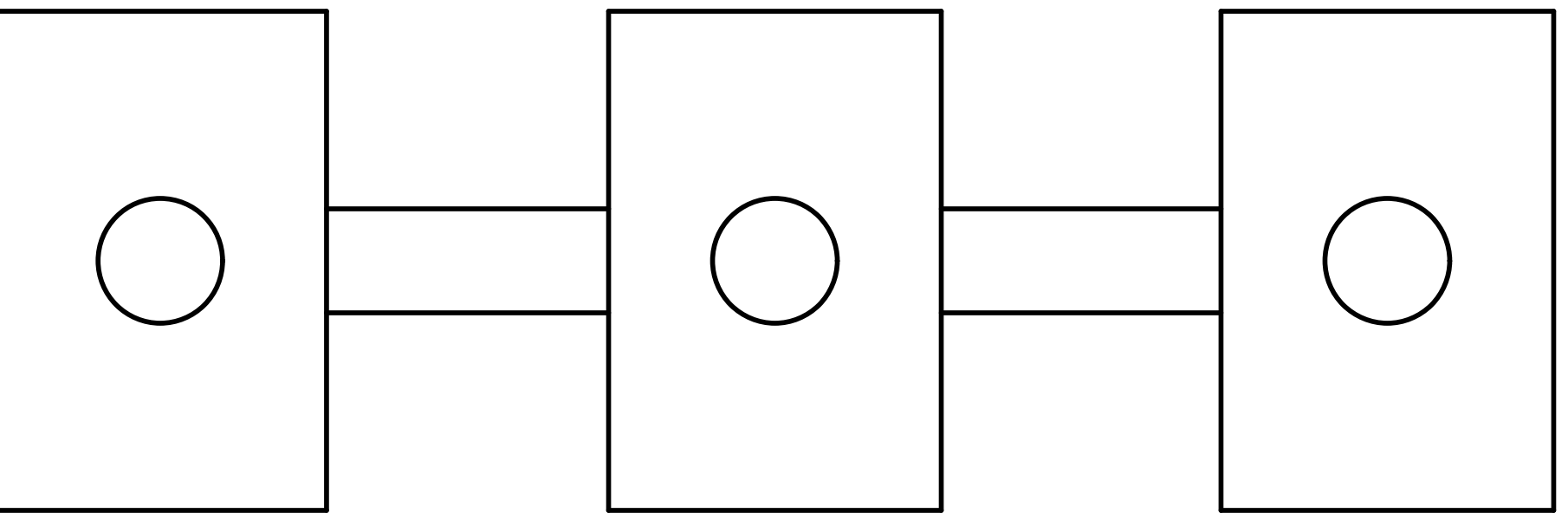
END VIEW
SOUTH FACE



ELEVATION
SPAN 5



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

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	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			

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.

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.

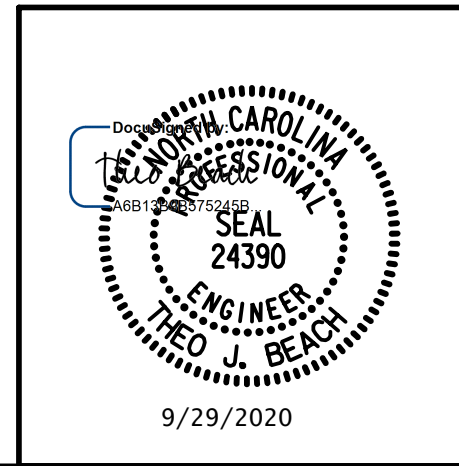
FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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.: 640048

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

BENT 4



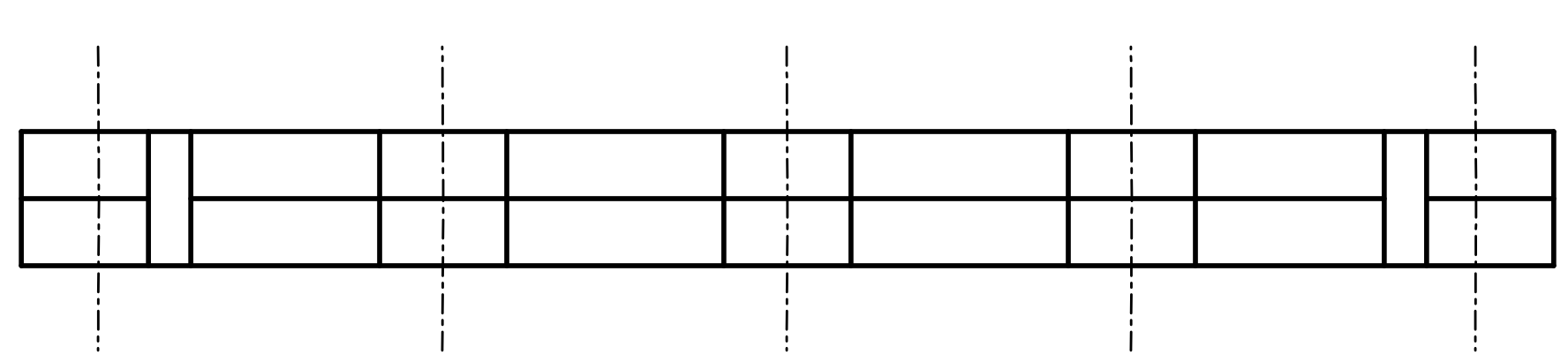
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DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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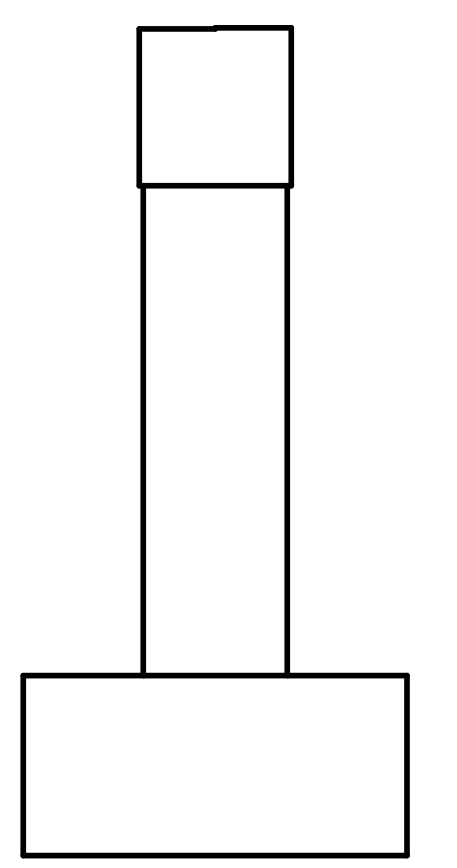


PLAN
TOP OF CAP

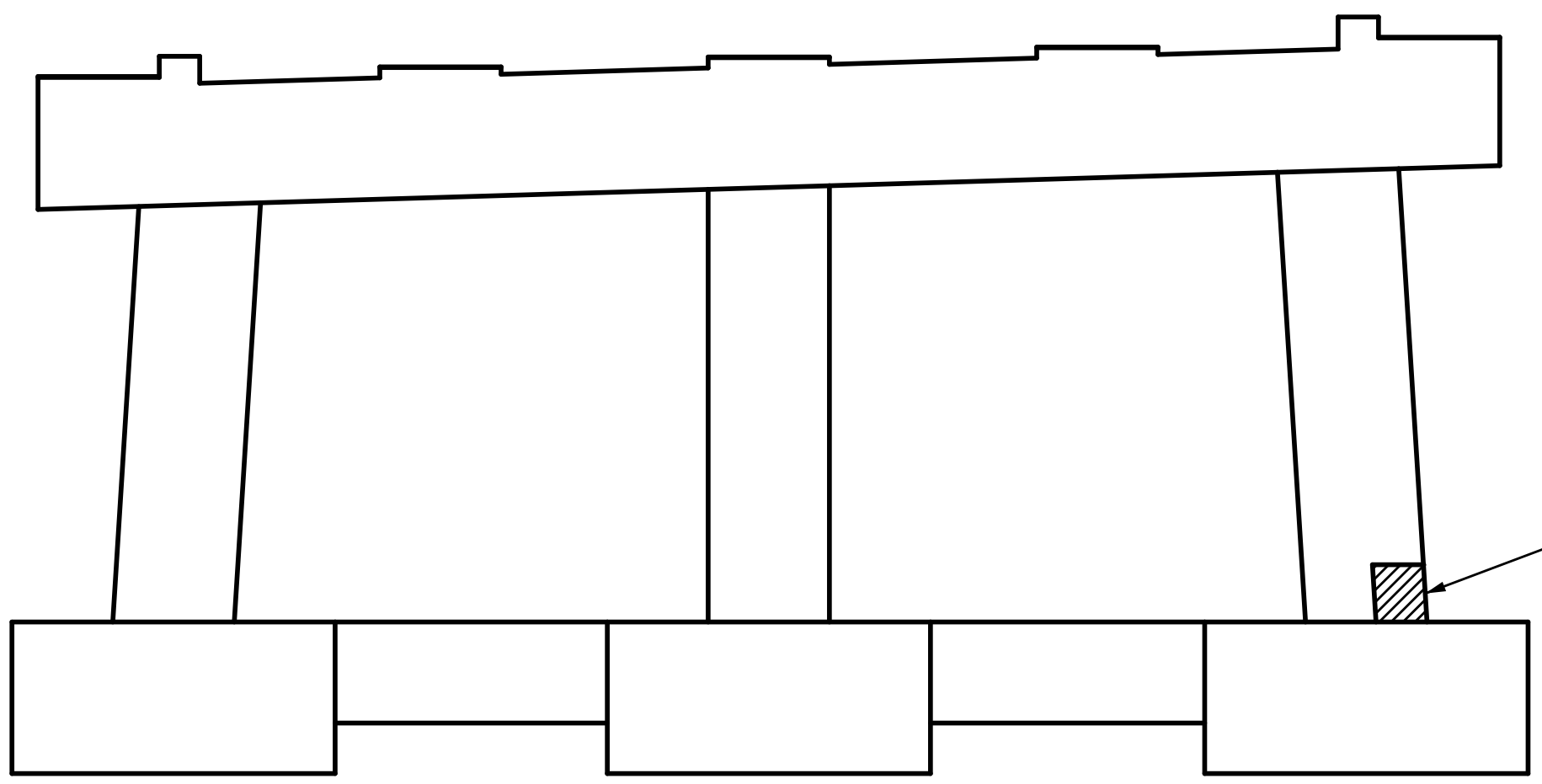
SPAN 6

SPAN 5

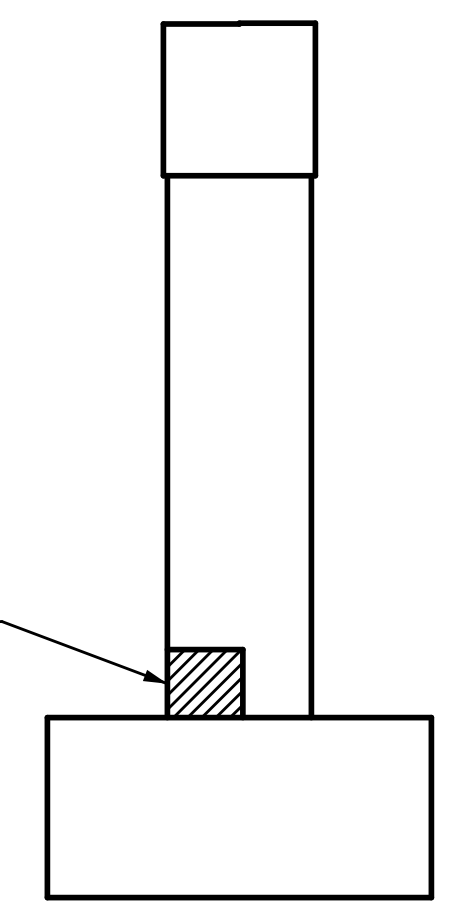
SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION



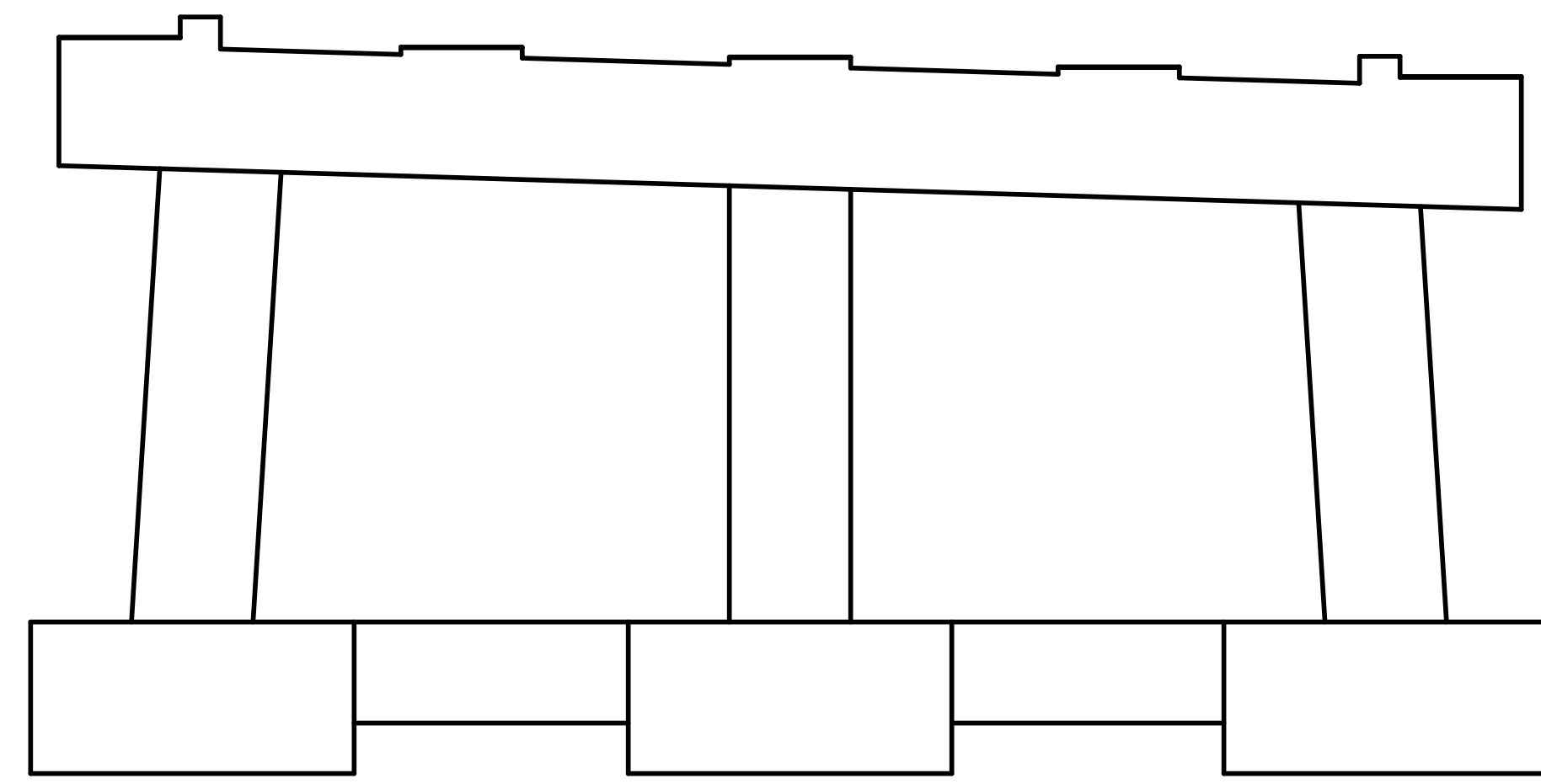
END VIEW
NORTH FACE



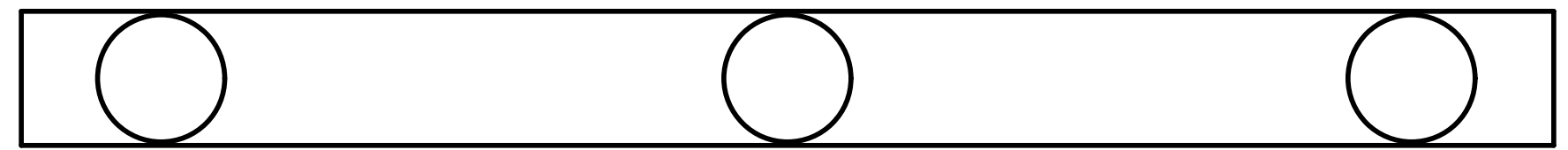
ELEVATION
SPAN 5



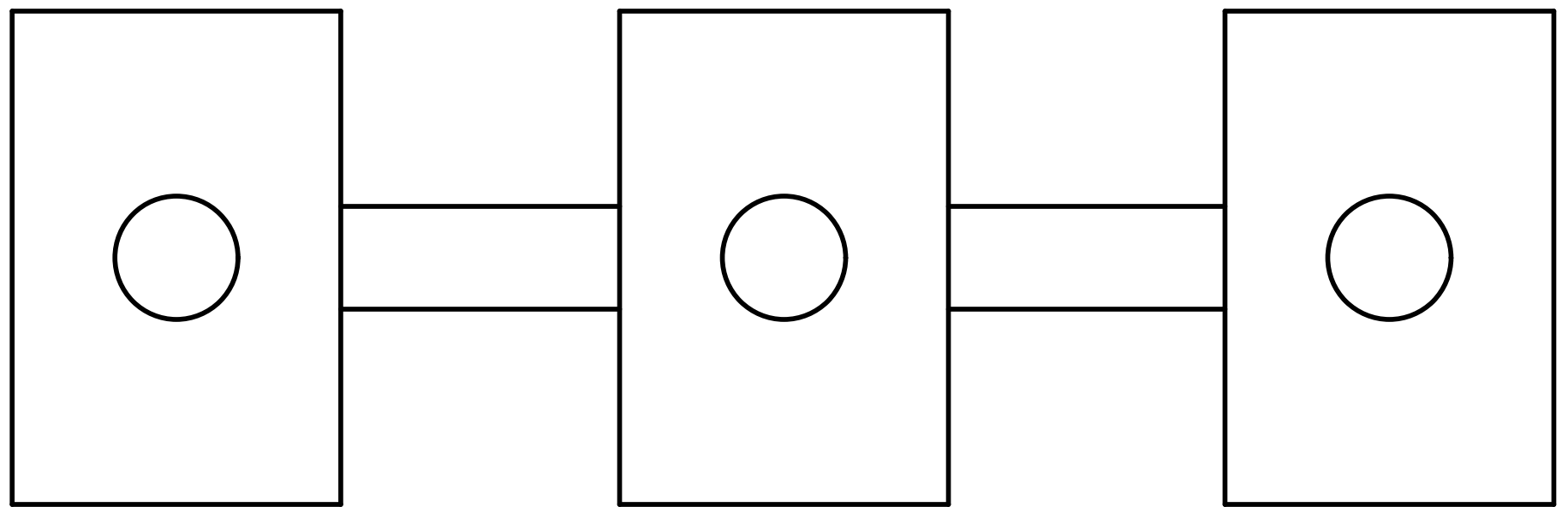
END VIEW
SOUTH FACE



ELEVATION
SPAN 6



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

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)	0.0	0.0			
COLUMN	6.3	0.8			
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			

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.

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.

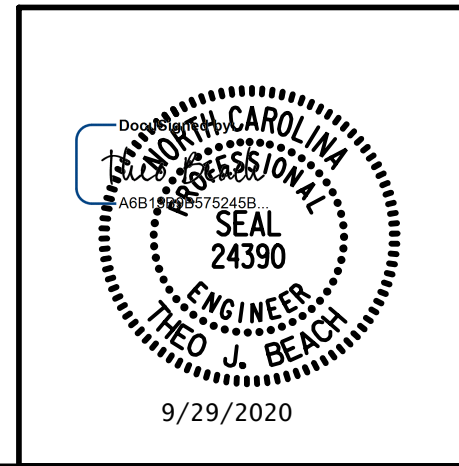
FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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.: 640048

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

BENT 5



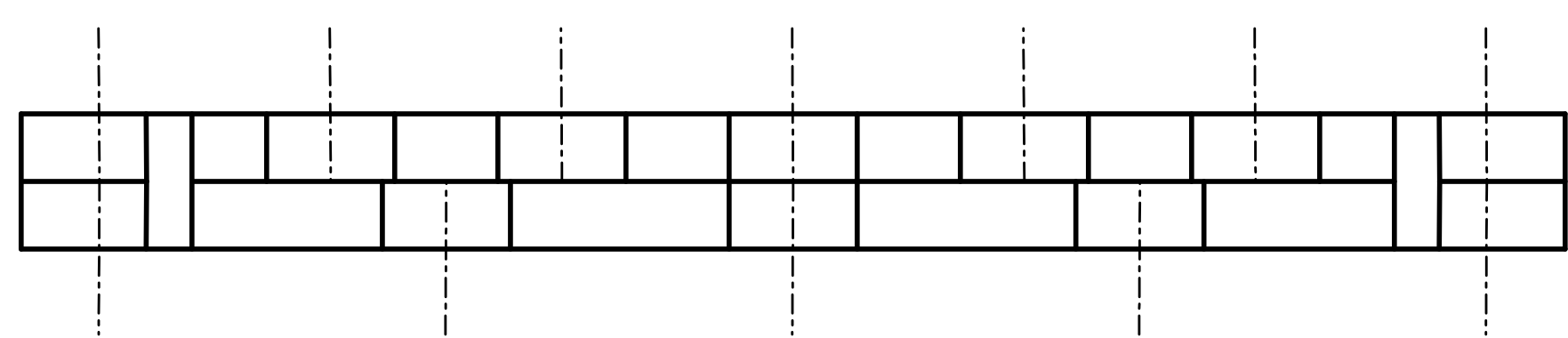
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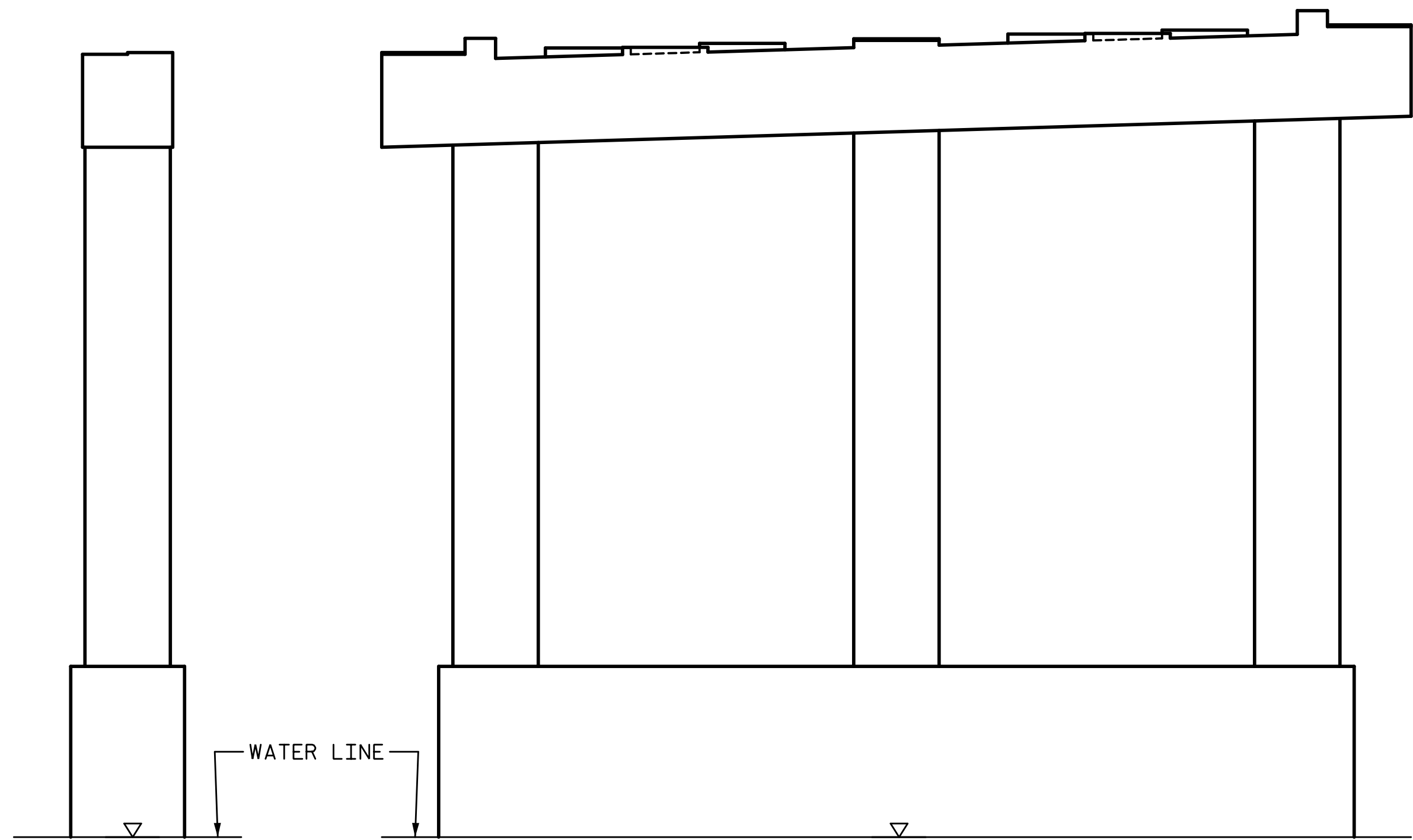


PLAN
TOP OF CAP

SPAN 7

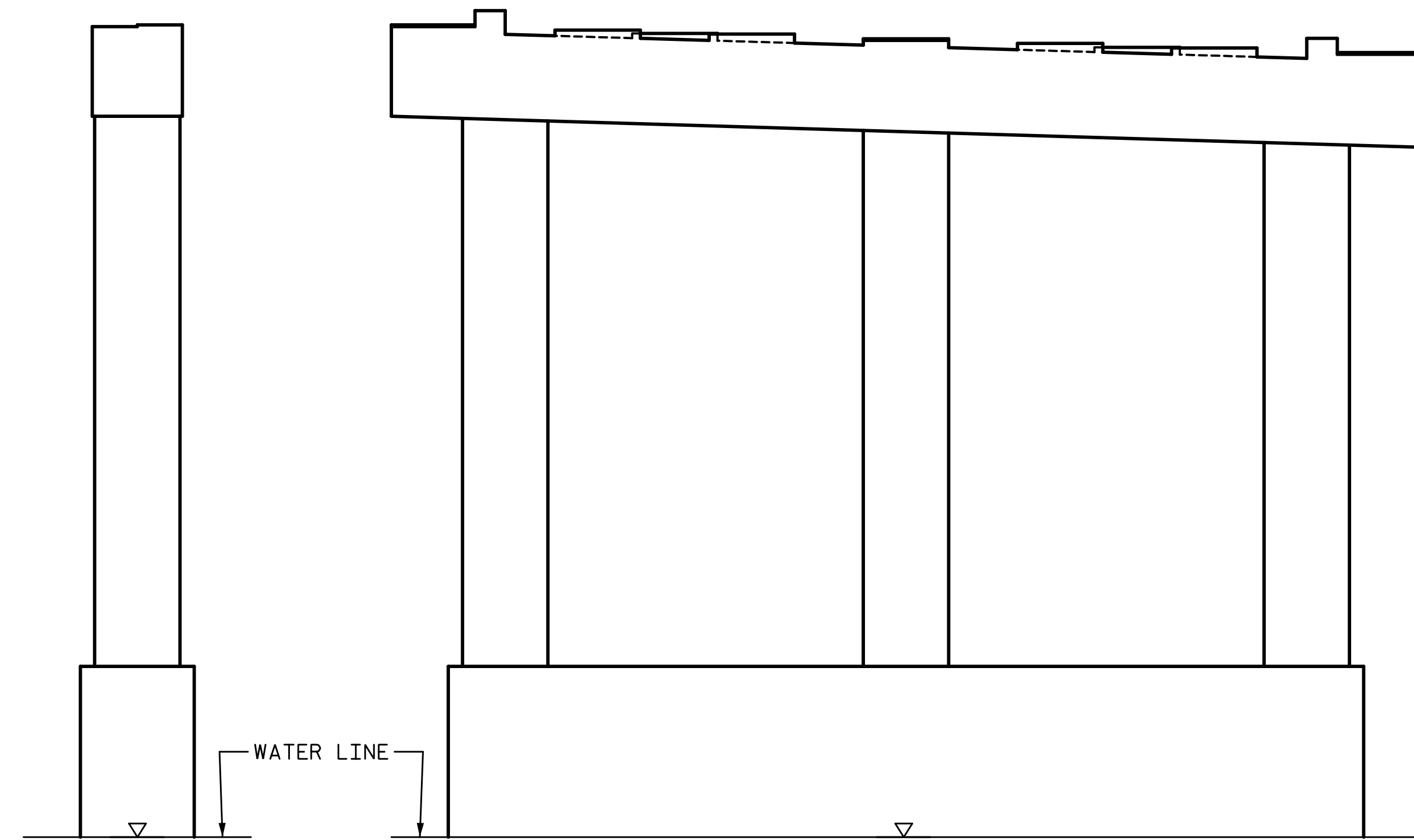
SPAN 6

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION



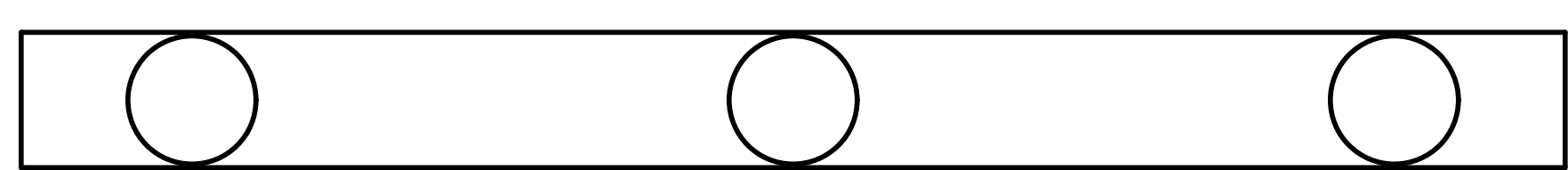
END VIEW
NORTH FACE

ELEVATION
SPAN 6

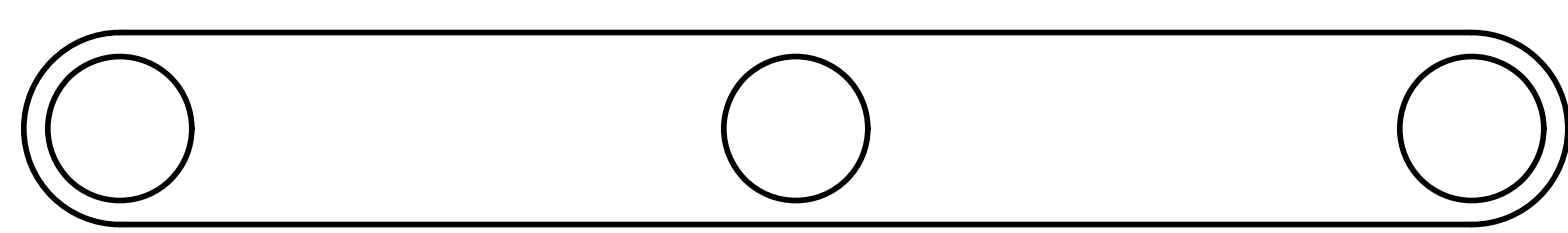


END VIEW
SOUTH FACE

ELEVATION
SPAN 7



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

NOTES:

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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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.

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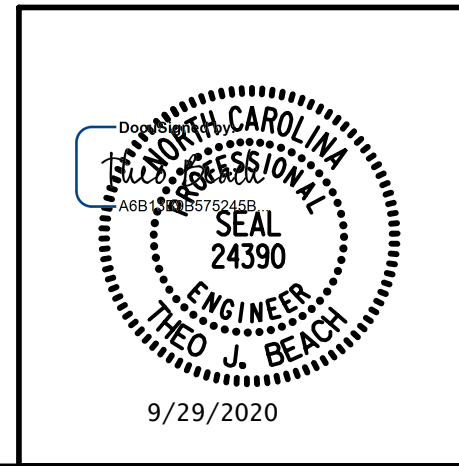
REPAIR QUANTITY TABLE

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	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		0.0			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		91.0			

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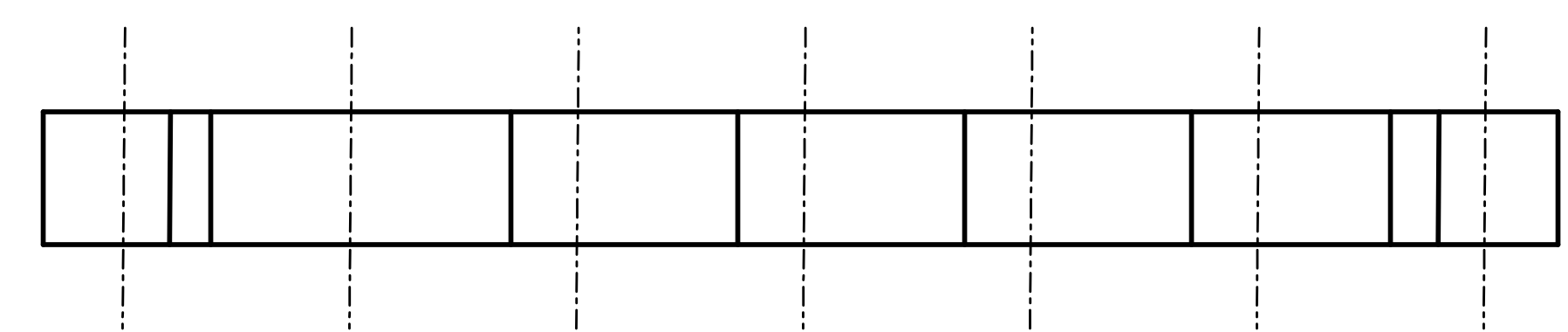
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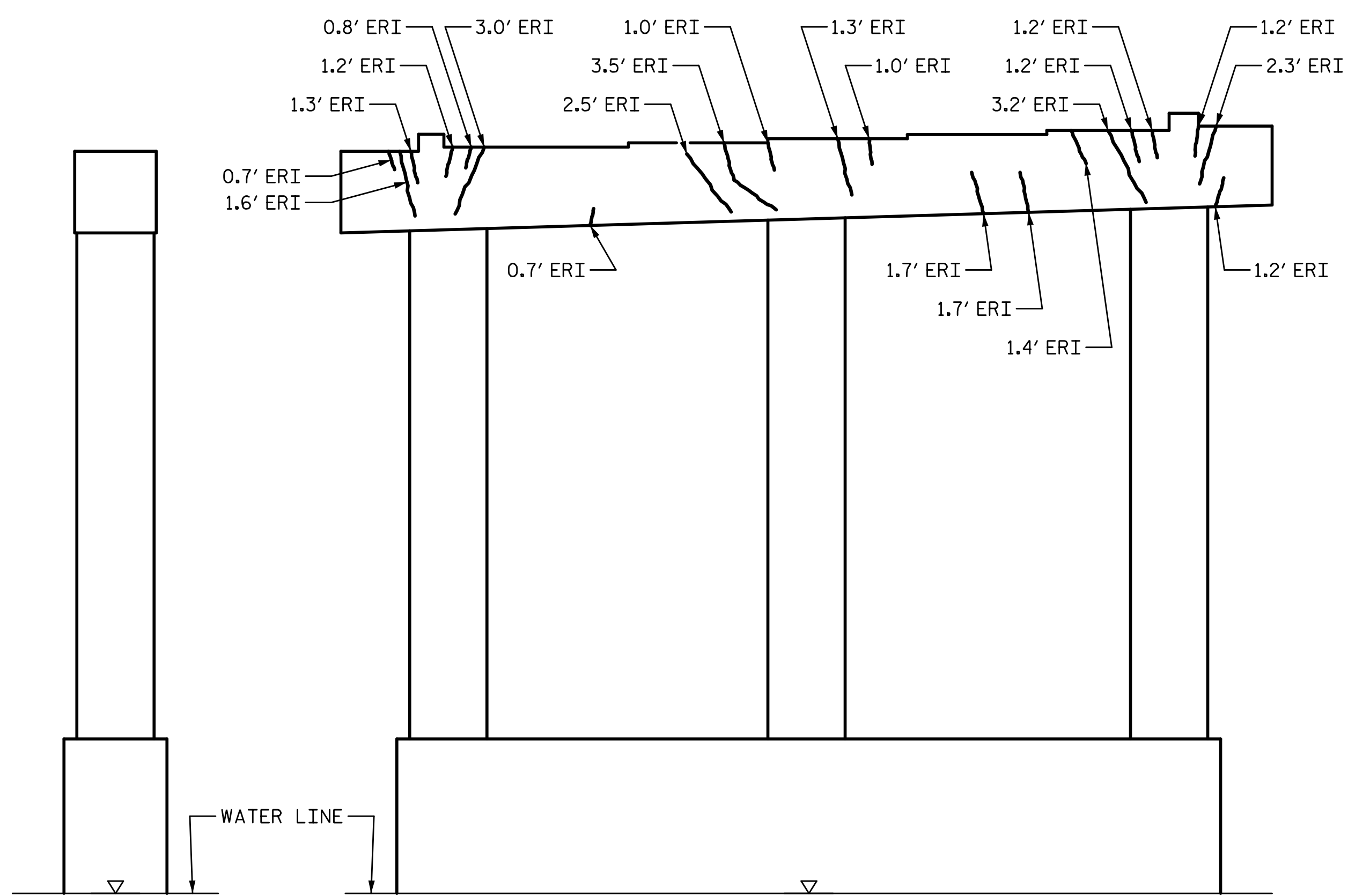


PLAN
TOP OF CAP

SPAN 8

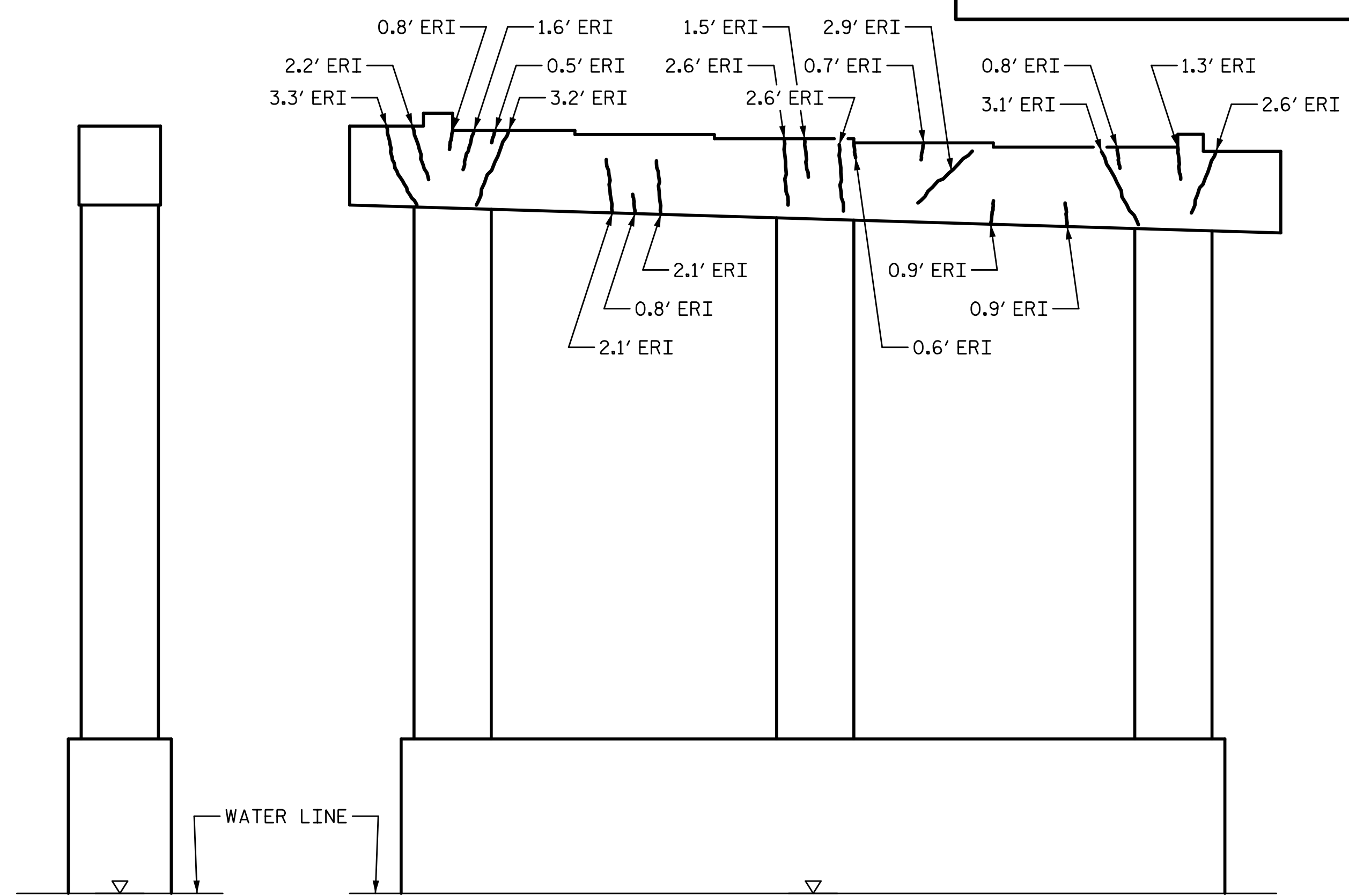
SPAN 7

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION



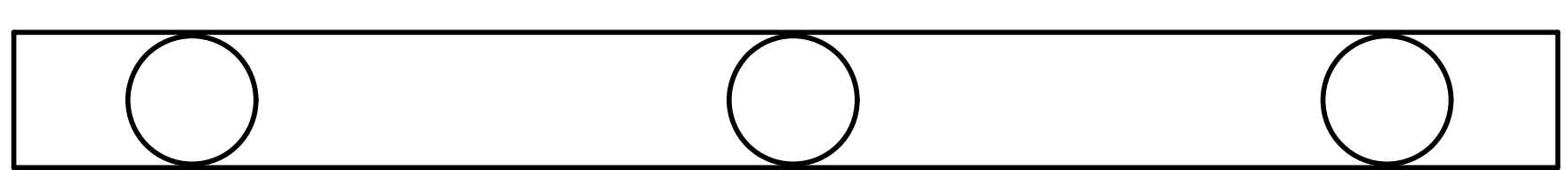
END VIEW
NORTH FACE

ELEVATION
SPAN 7

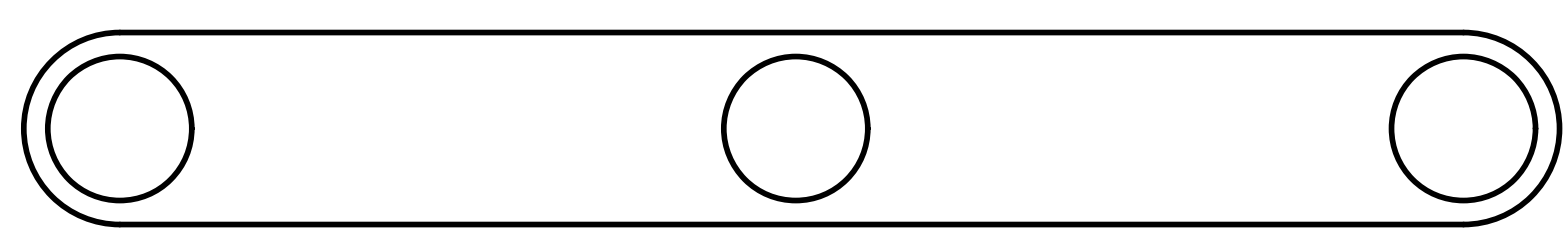


END VIEW
SOUTH FACE

ELEVATION
SPAN 8



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

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		70.8			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		87.0			

NOTES:

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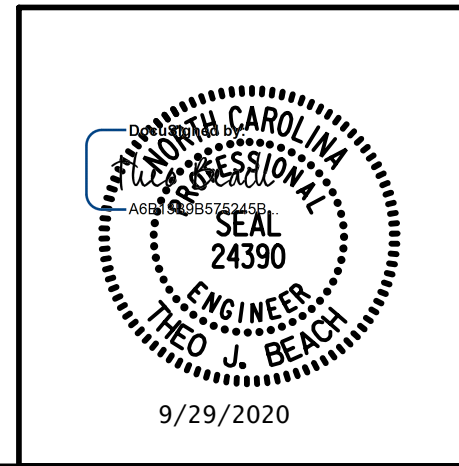
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

BENT 7



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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			163

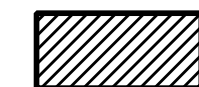
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CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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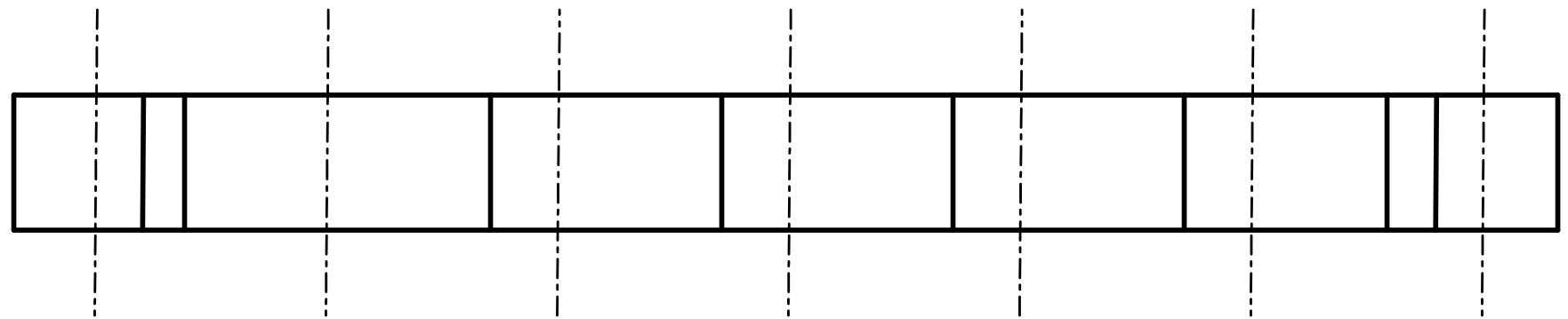
REPAIR QUANTITY TABLE

REPAIRS BENT 8	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	0.3	0.1			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	0.0	0.0			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		82.5			
COLUMN		0.0			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		87.0			

 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

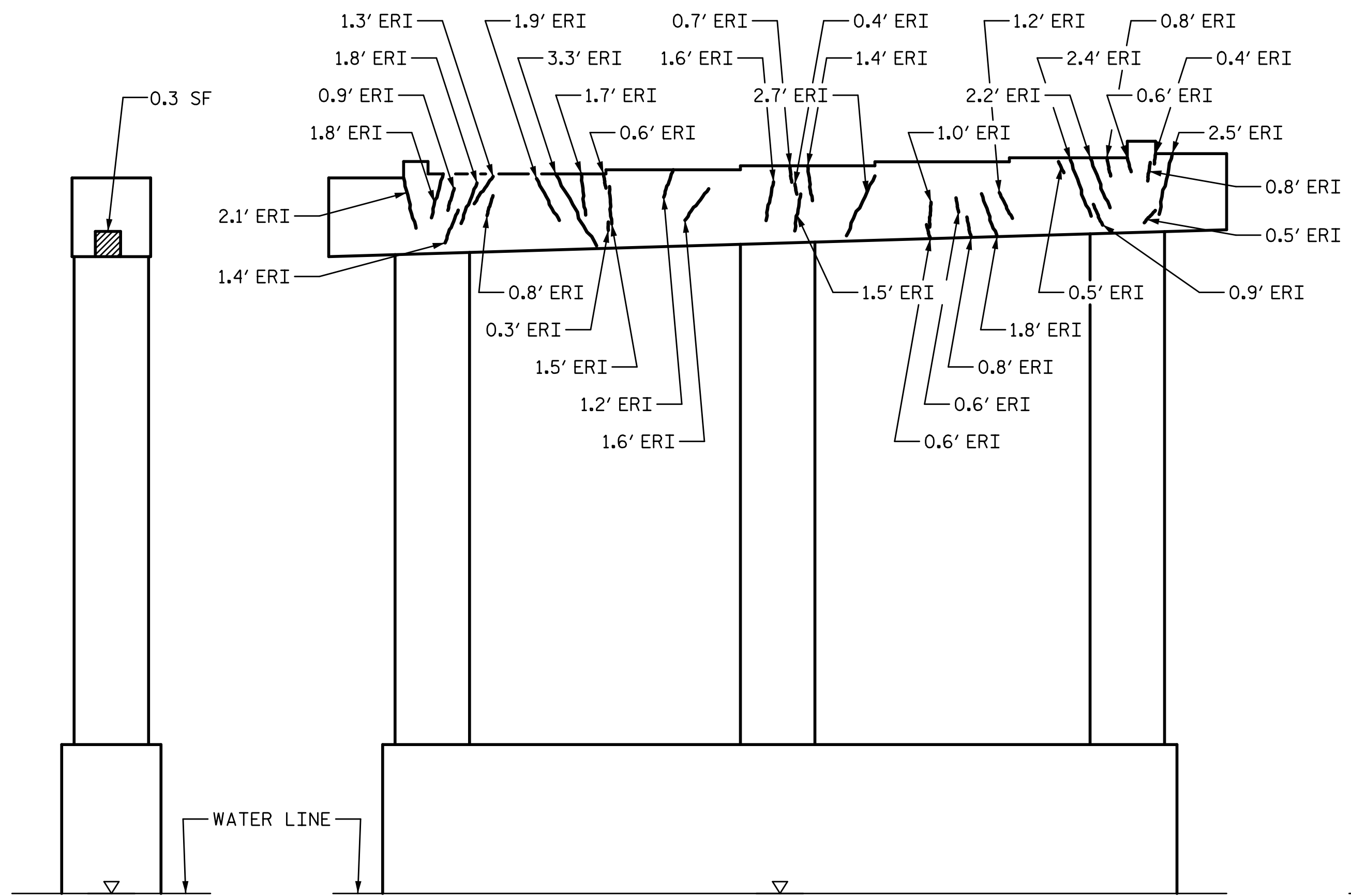
SPAN 9

SPAN 8



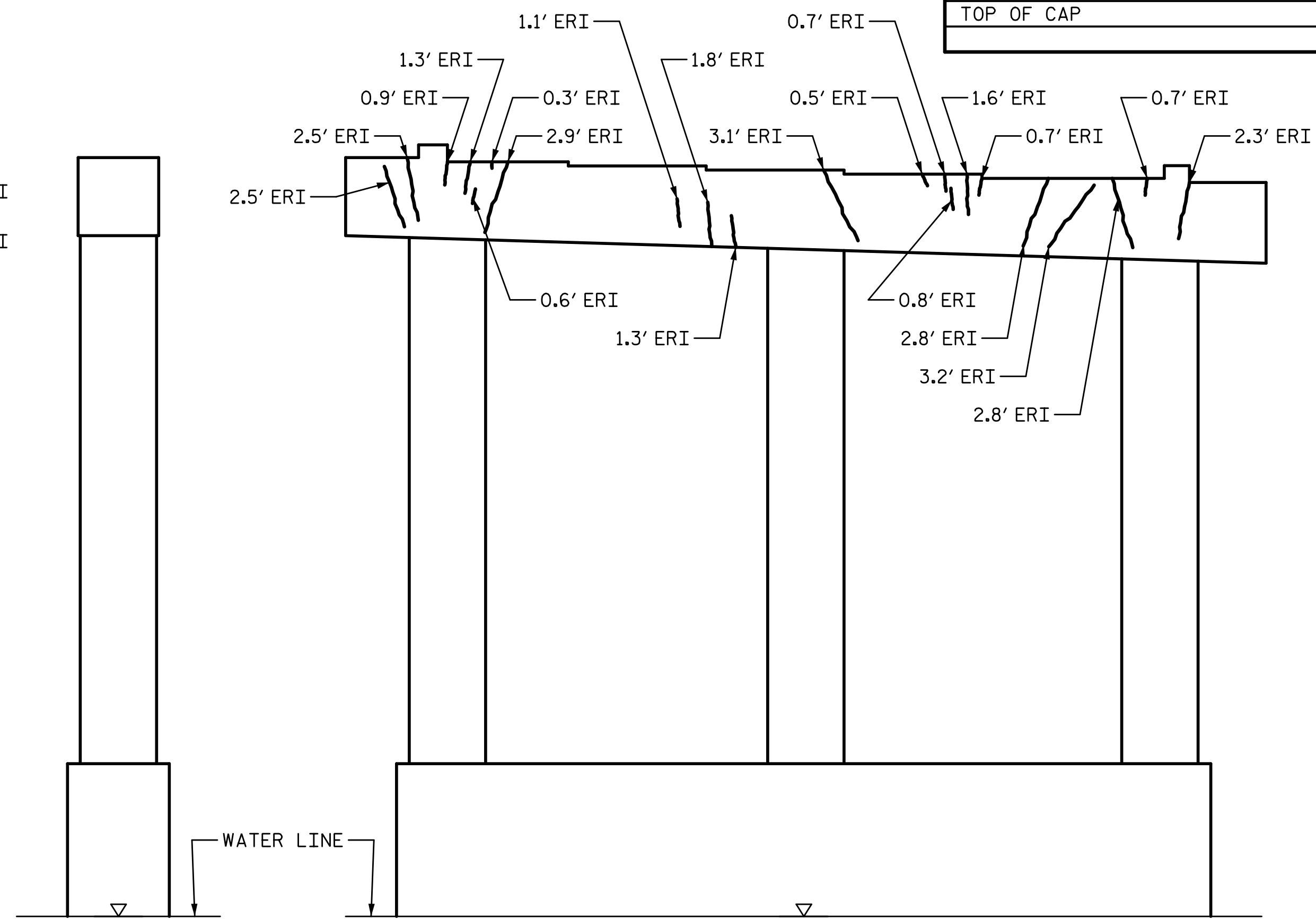
PLAN

TOP OF CAP



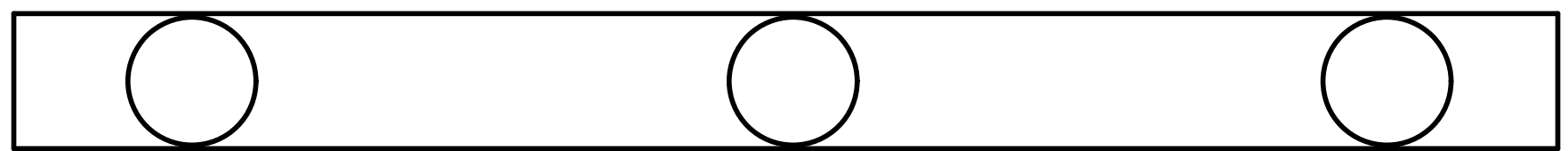
END VIEW
NORTH FACE

ELEVATION
SPAN 8



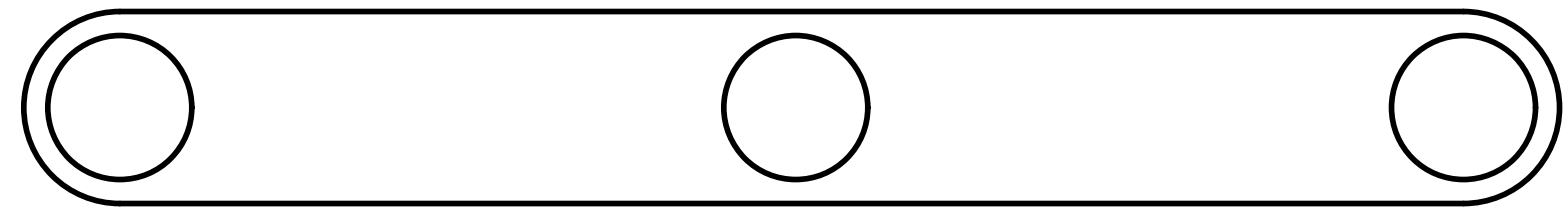
END VIEW
SOUTH FACE

ELEVATION
SPAN 9



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.

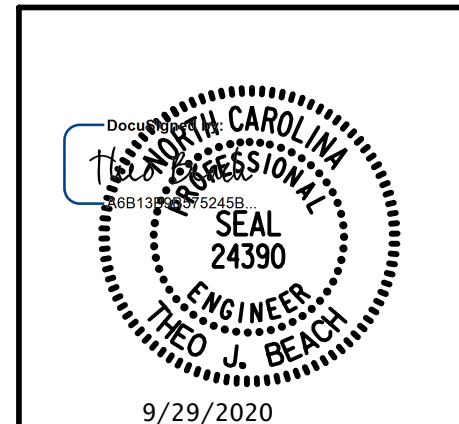
FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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.

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640048

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 DEPARTMENT OF TRANSPORTATION
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 PRESERVATION

BENT 8



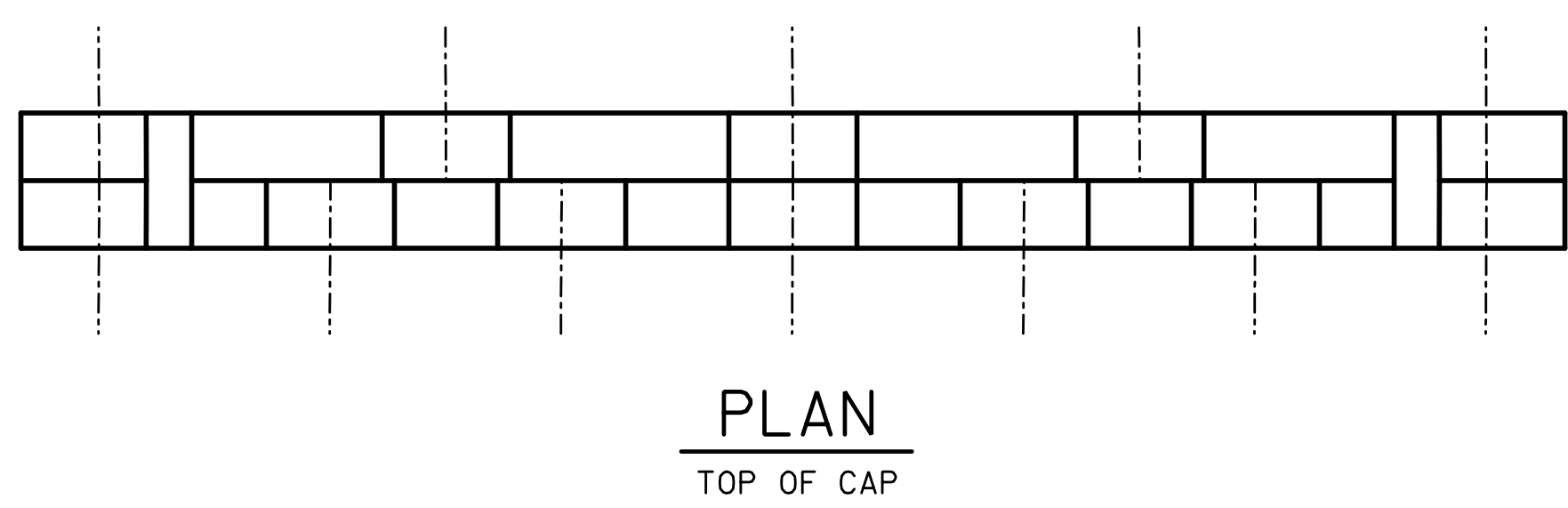
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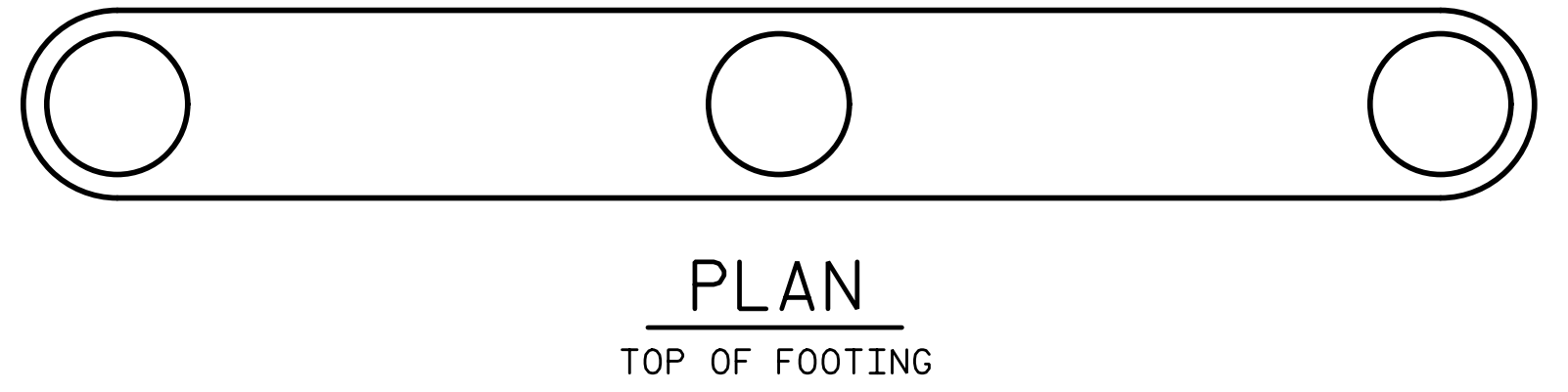
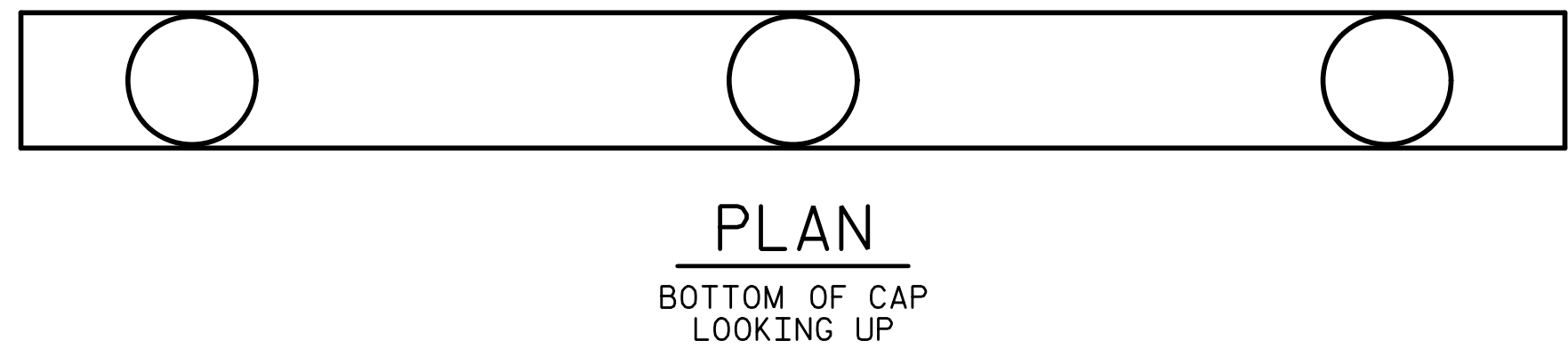
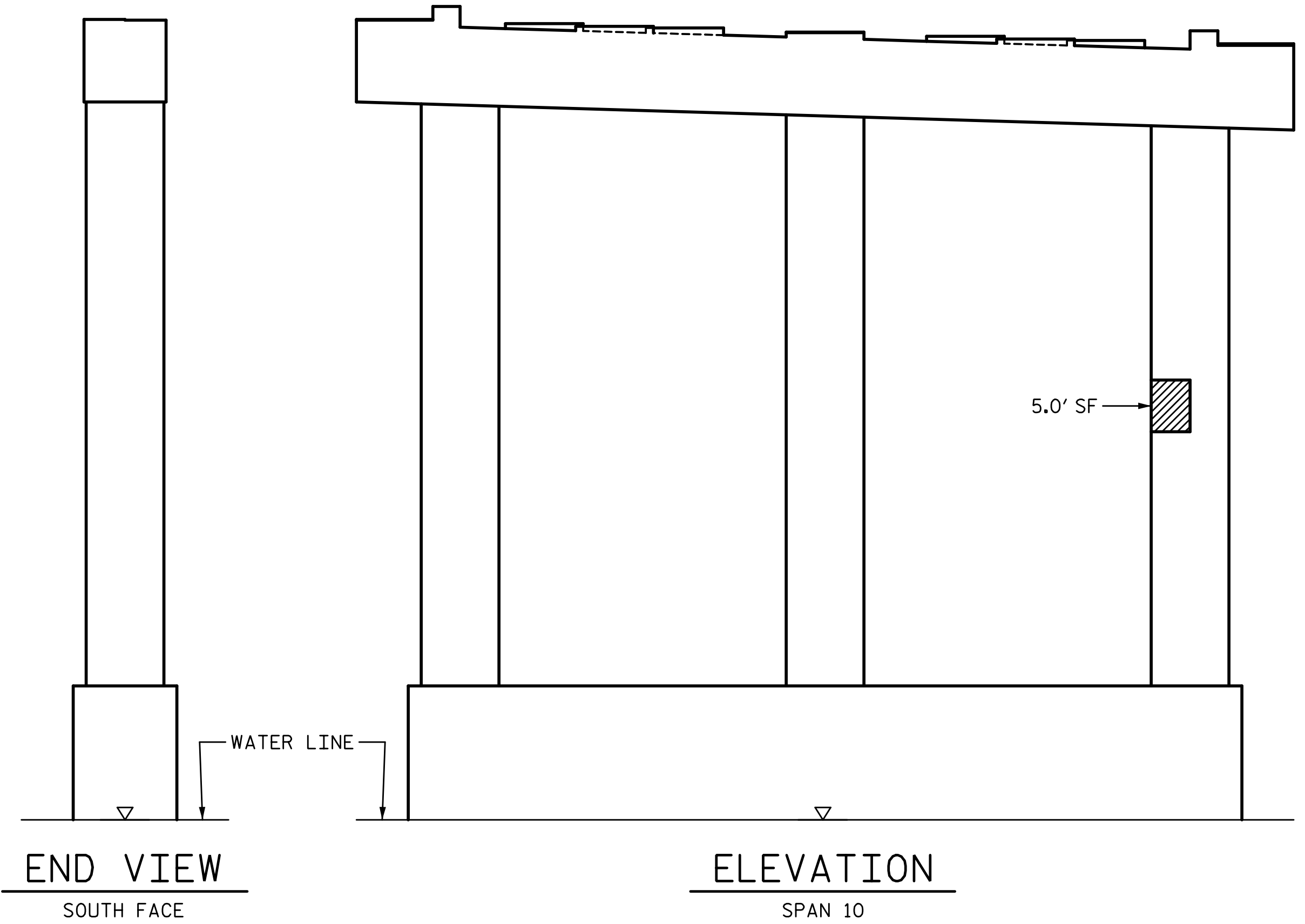
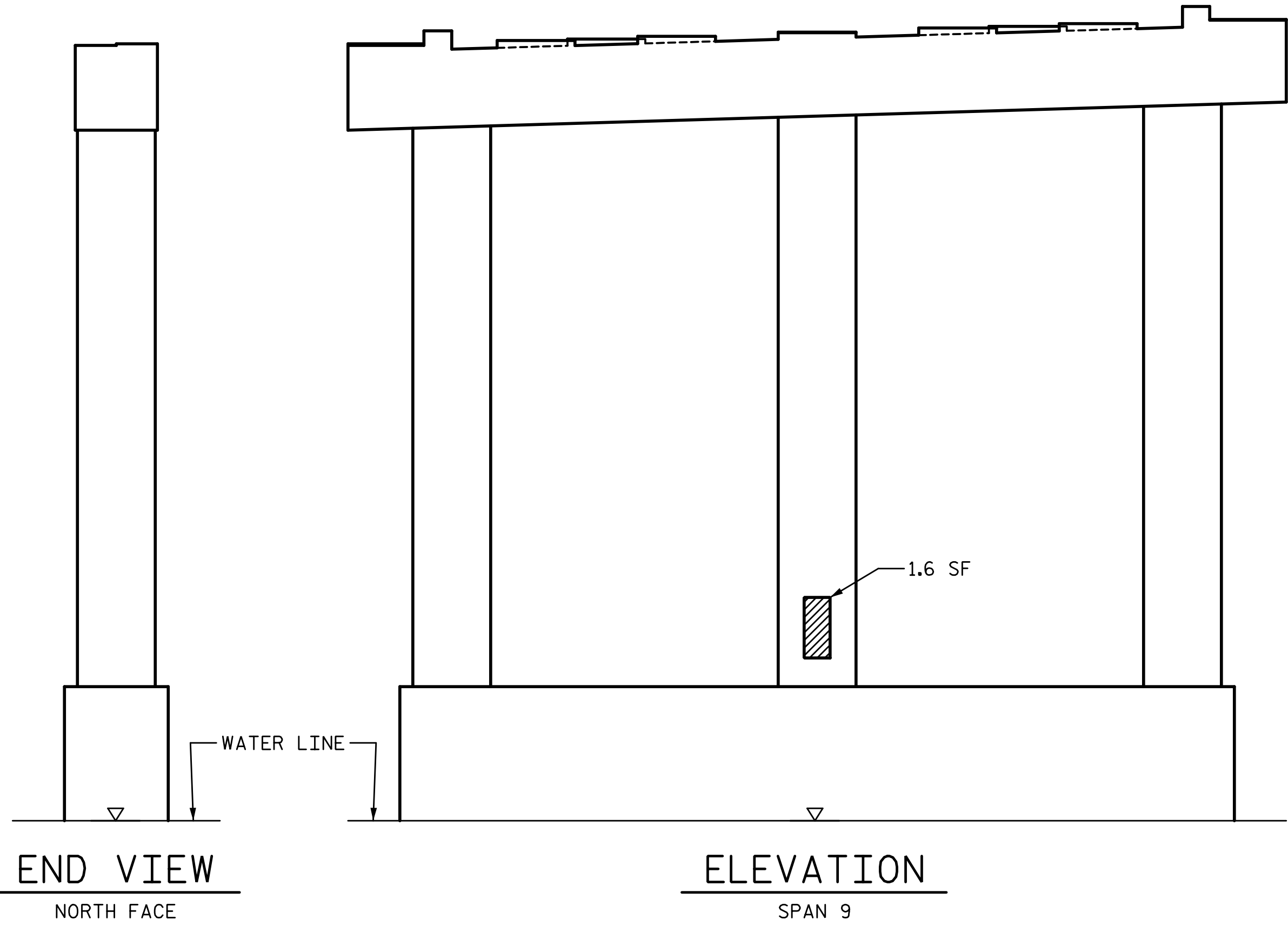
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SPAN 10

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)	0.0	0.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	6.6	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		91.0			

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.
- 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.: 640048

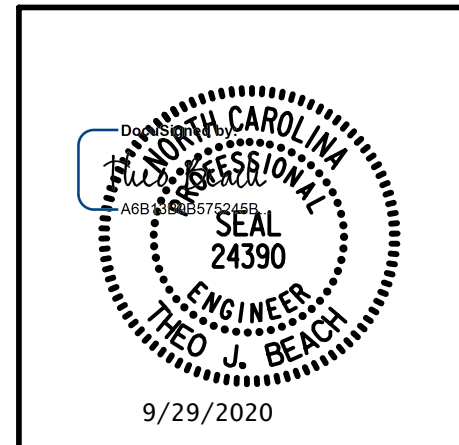
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DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

BENT 9

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

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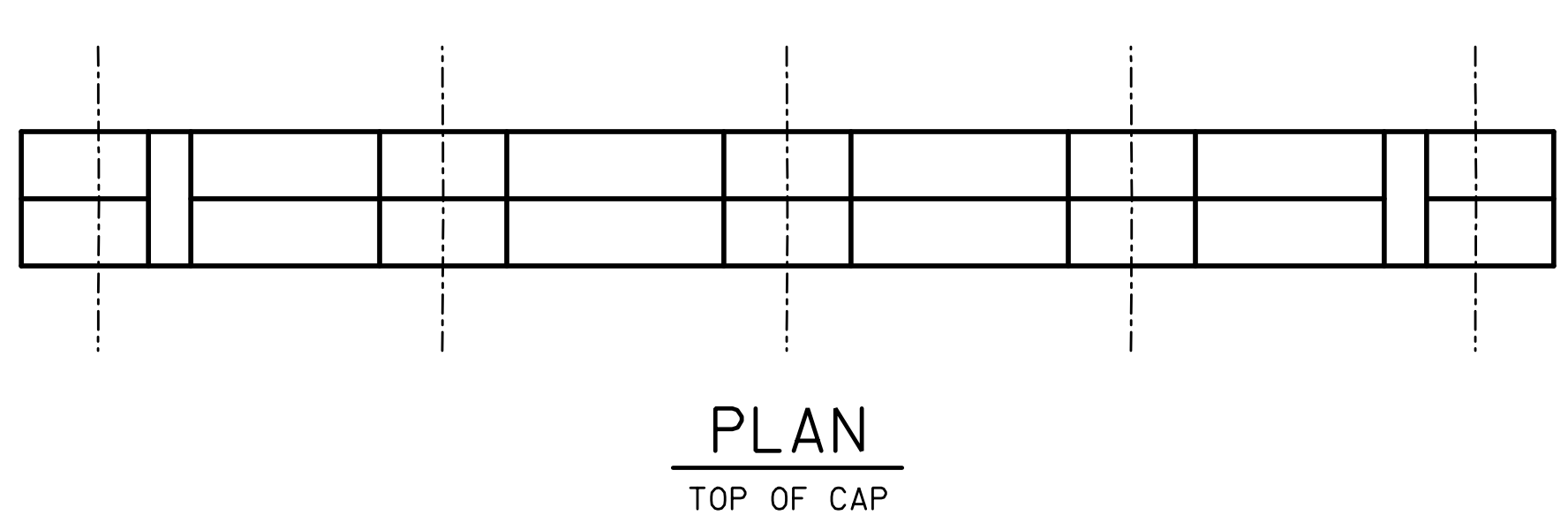
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 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

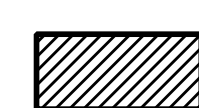
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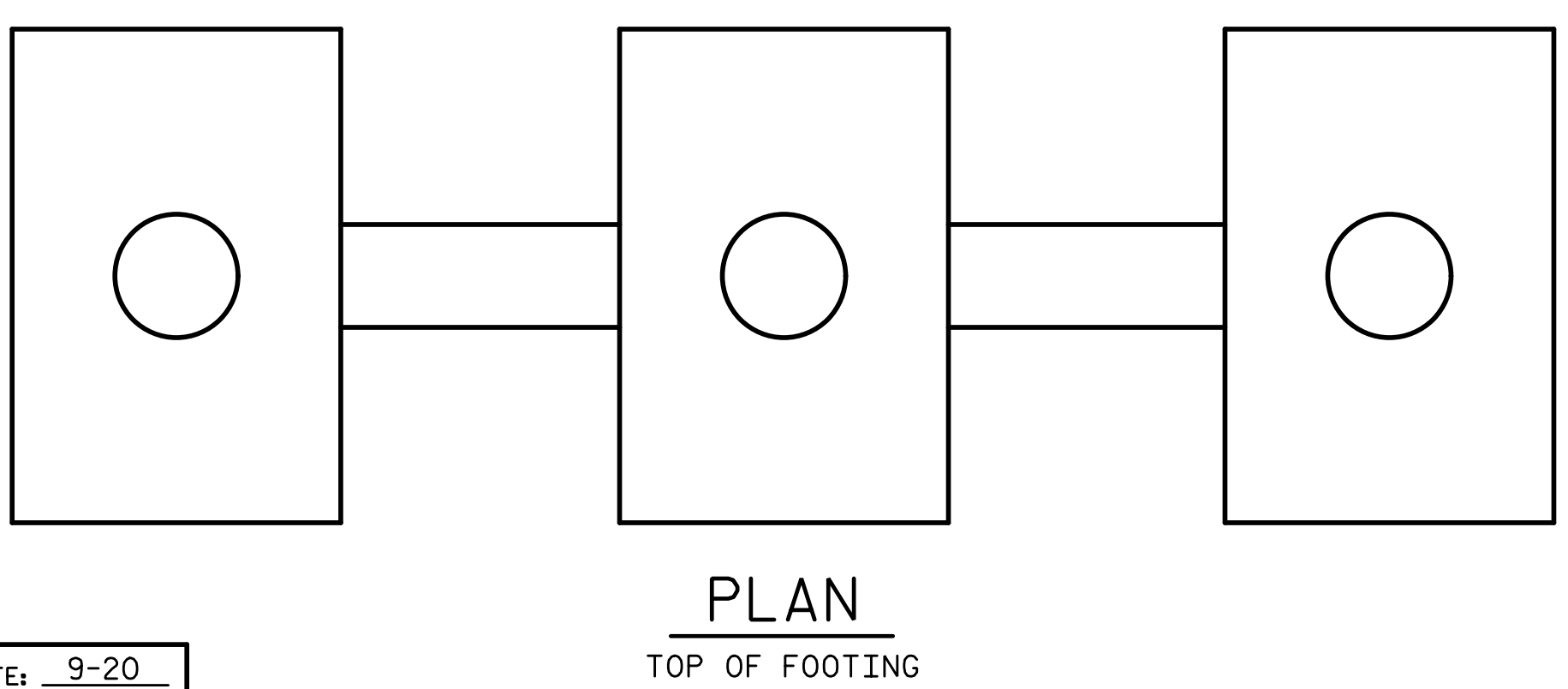
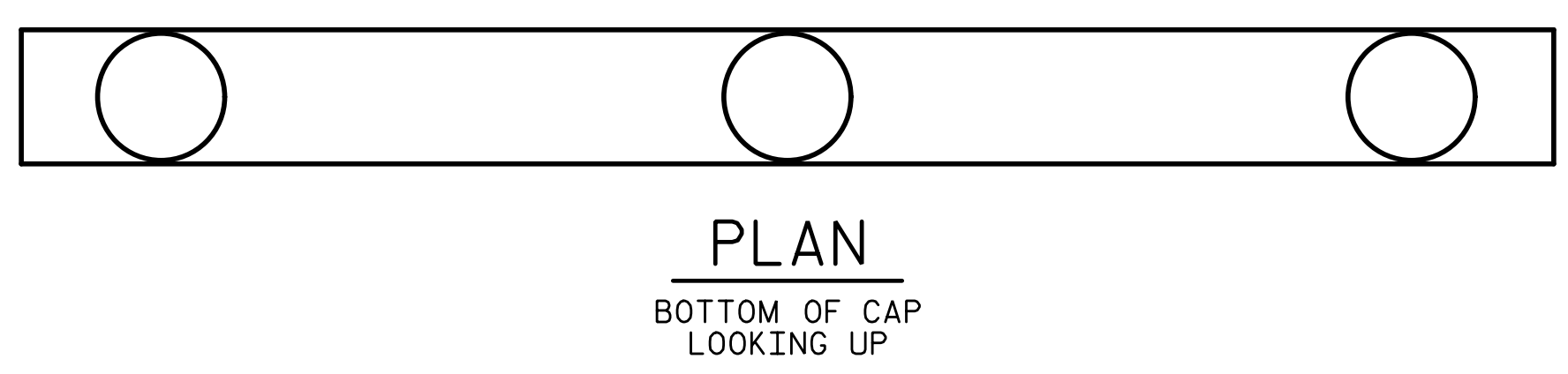
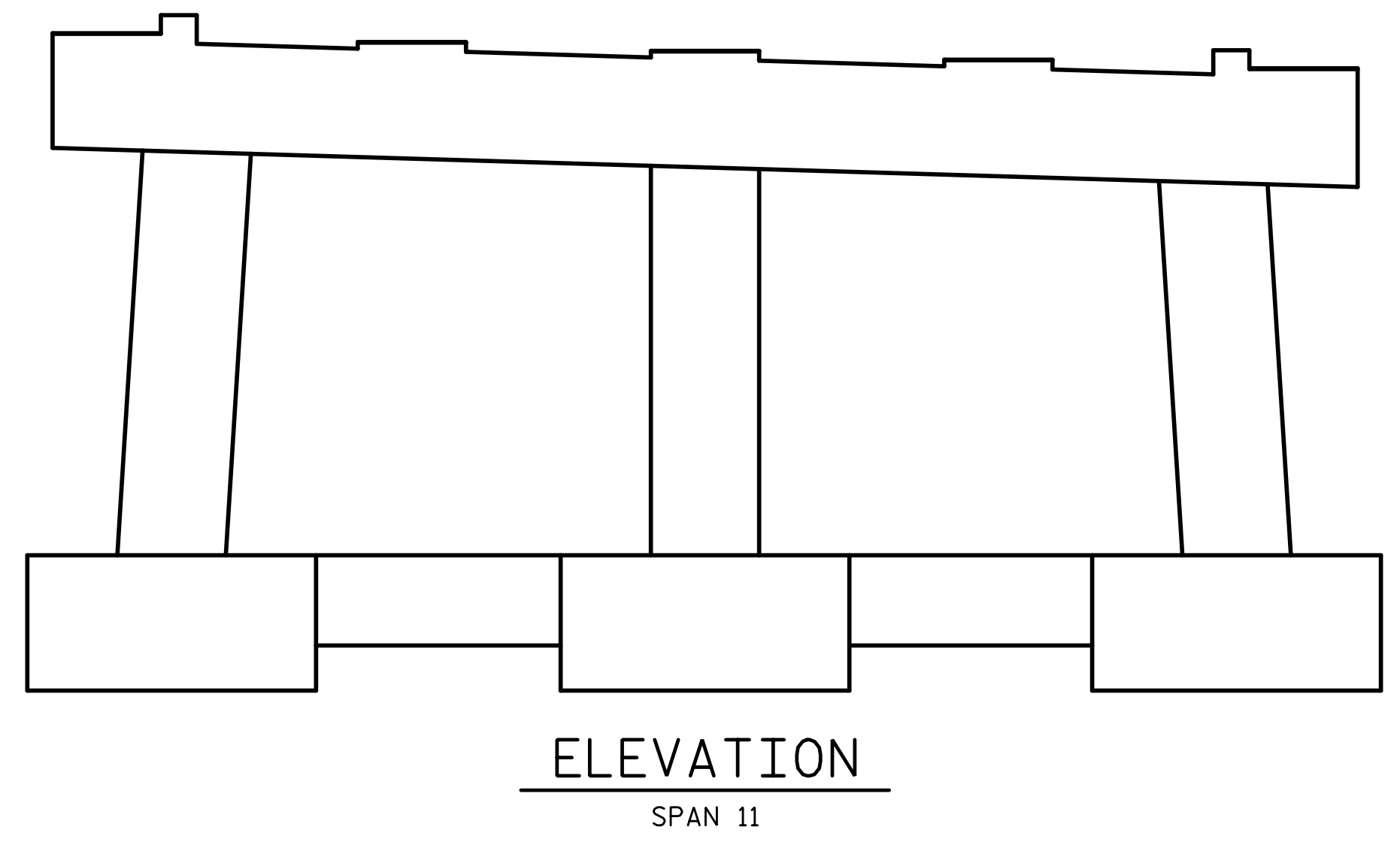
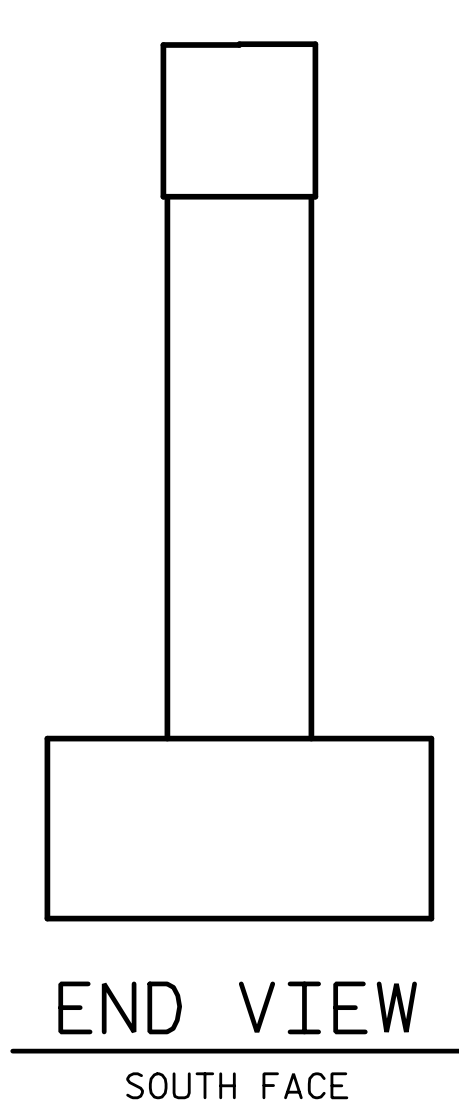
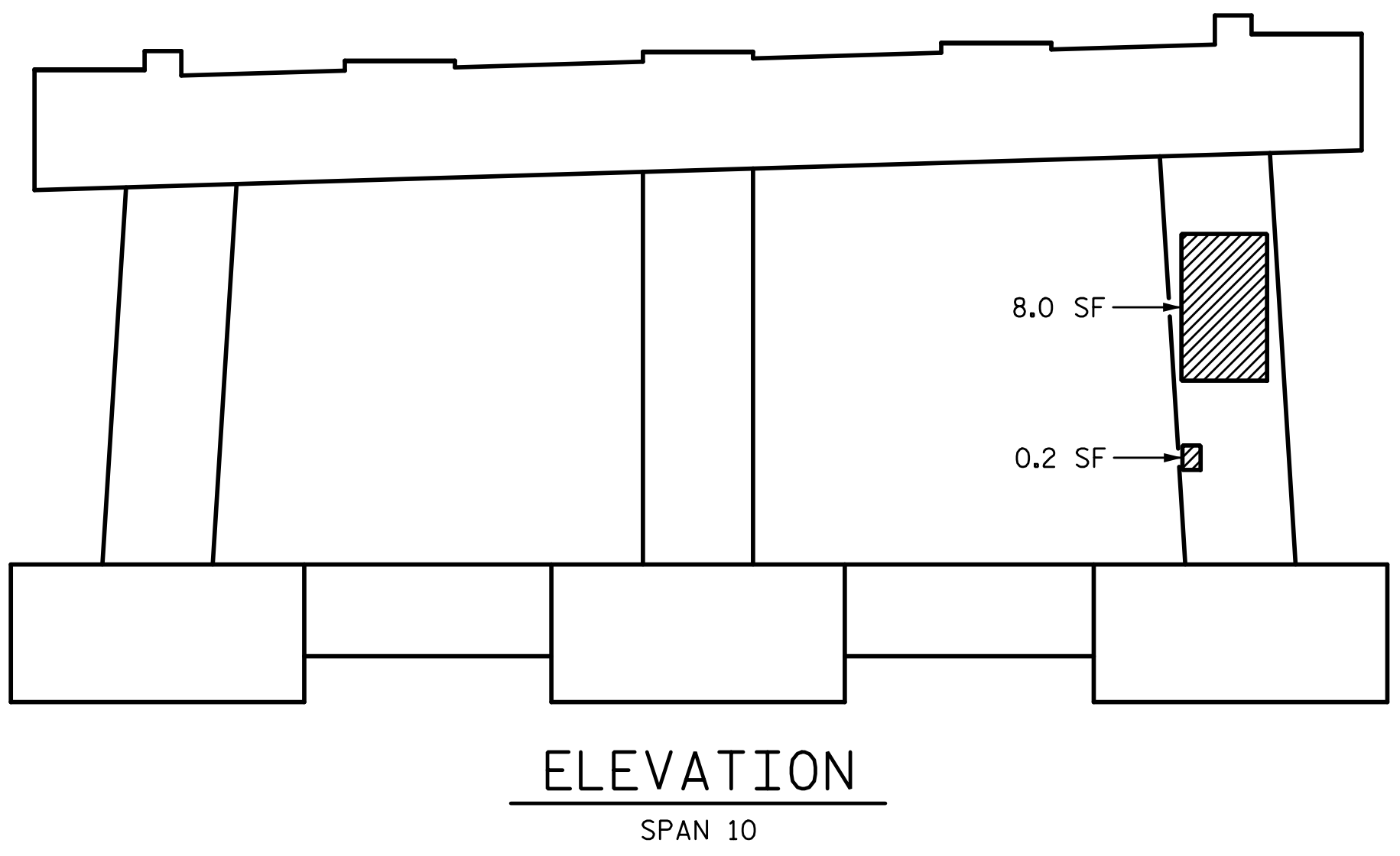
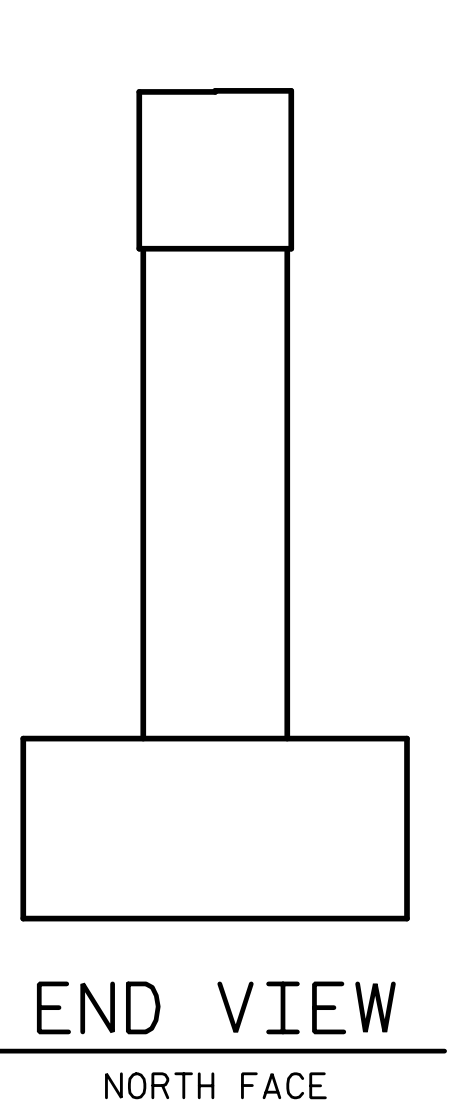
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SPAN 11

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	8.2	2.1			
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.

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.: 640048

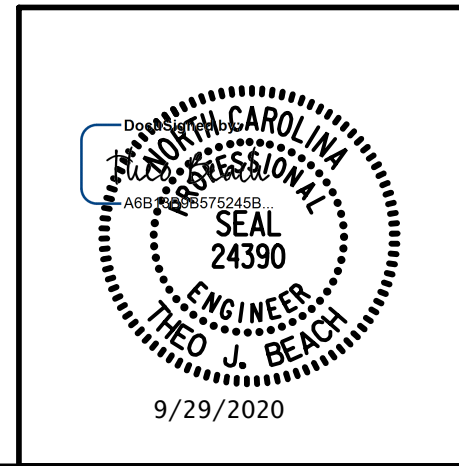
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 RALEIGH
 PRESERVATION

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2			4			163

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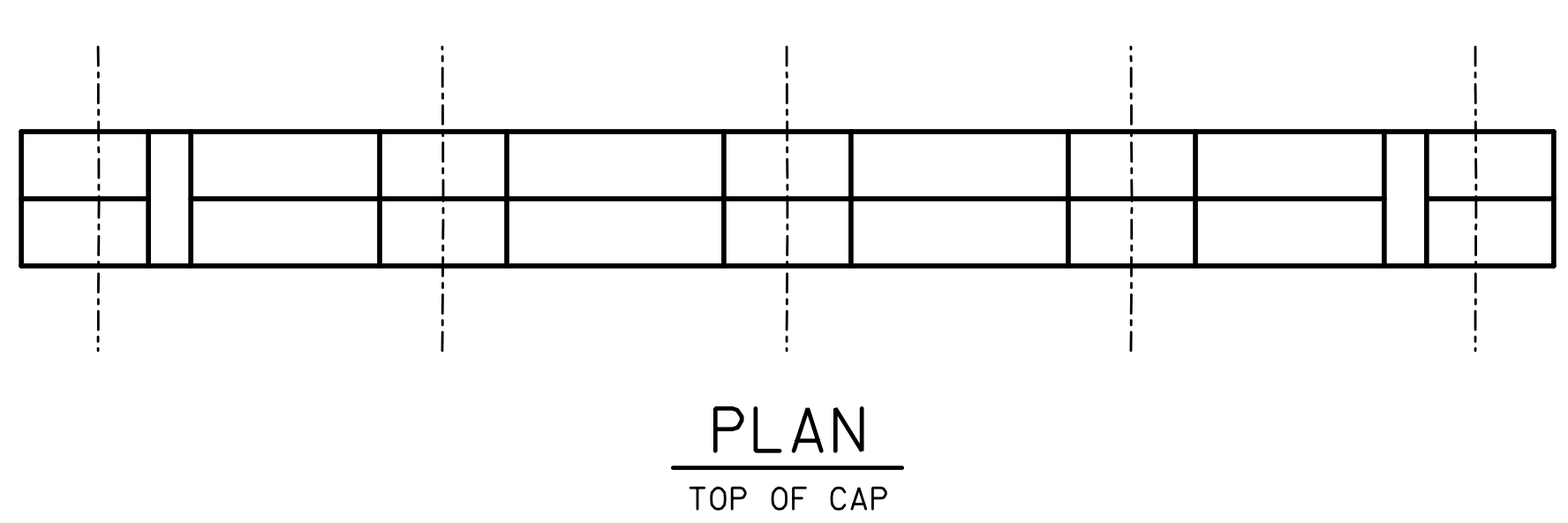
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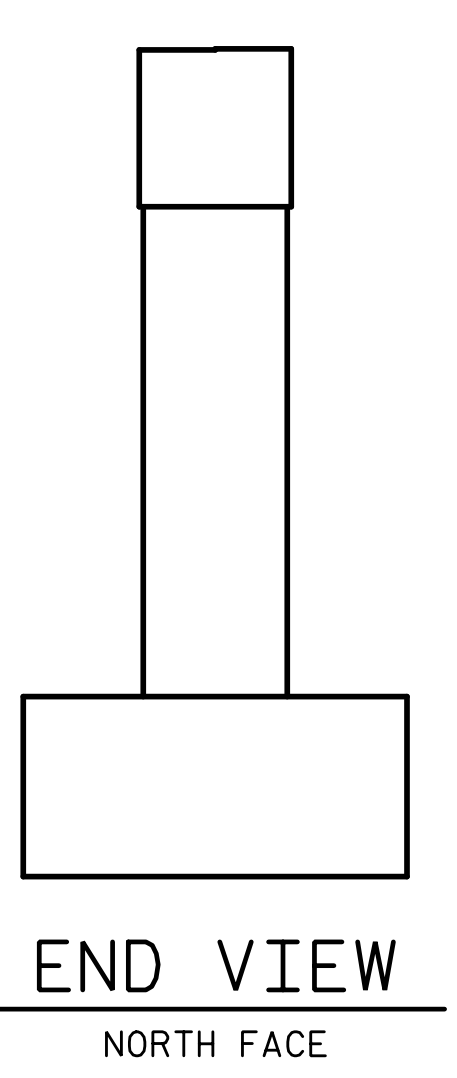


PLAN
TOP OF CAP

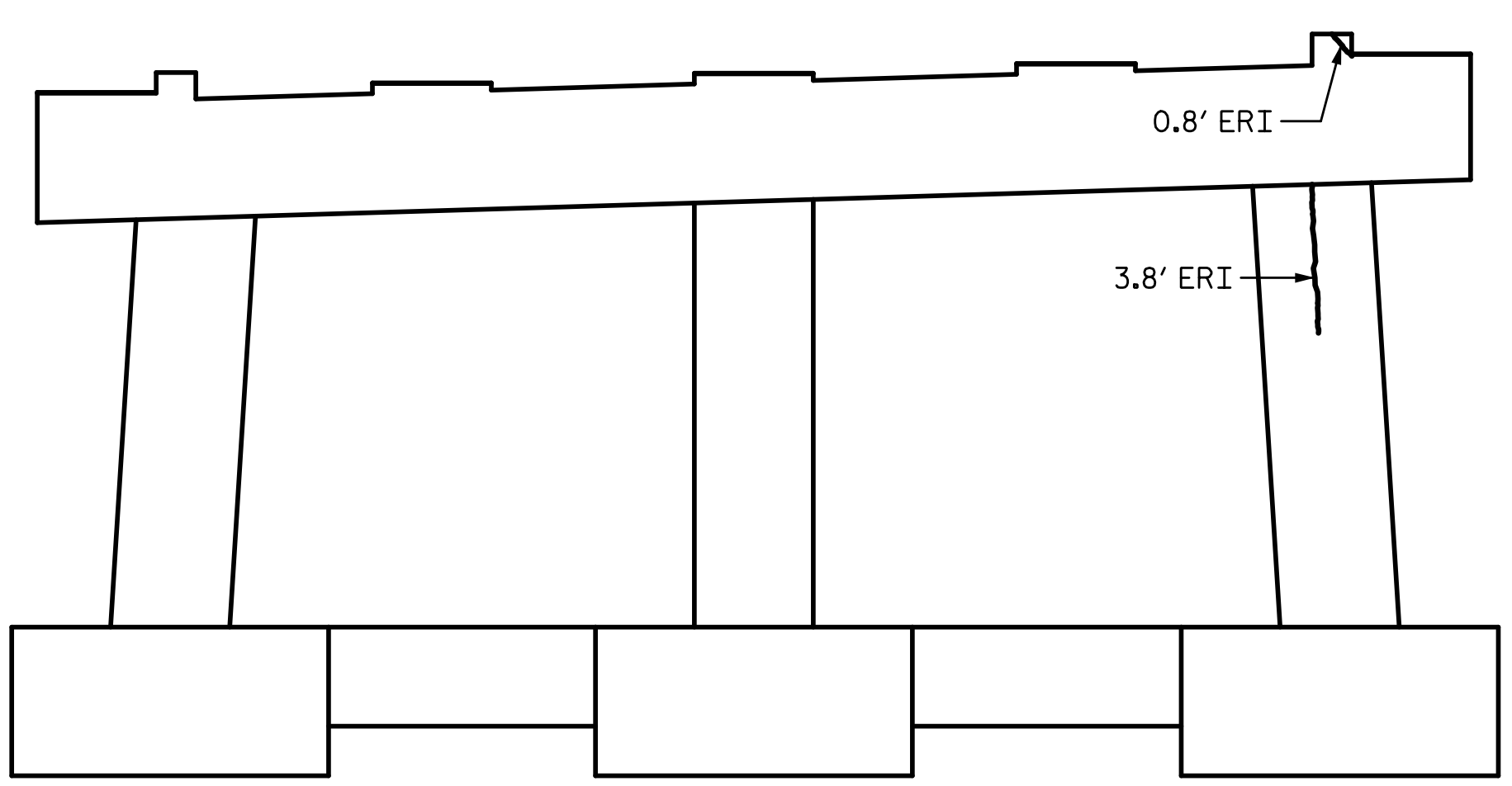
SPAN 12

SPAN 11

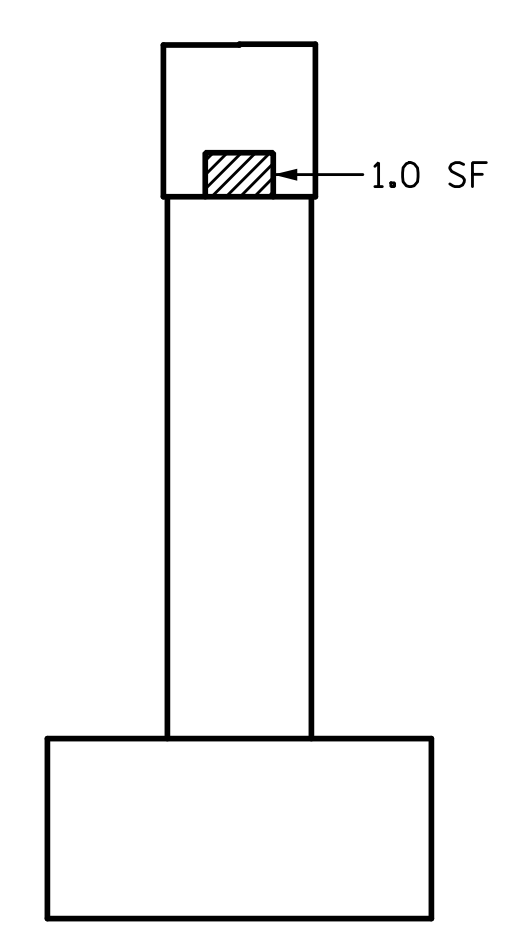
SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION



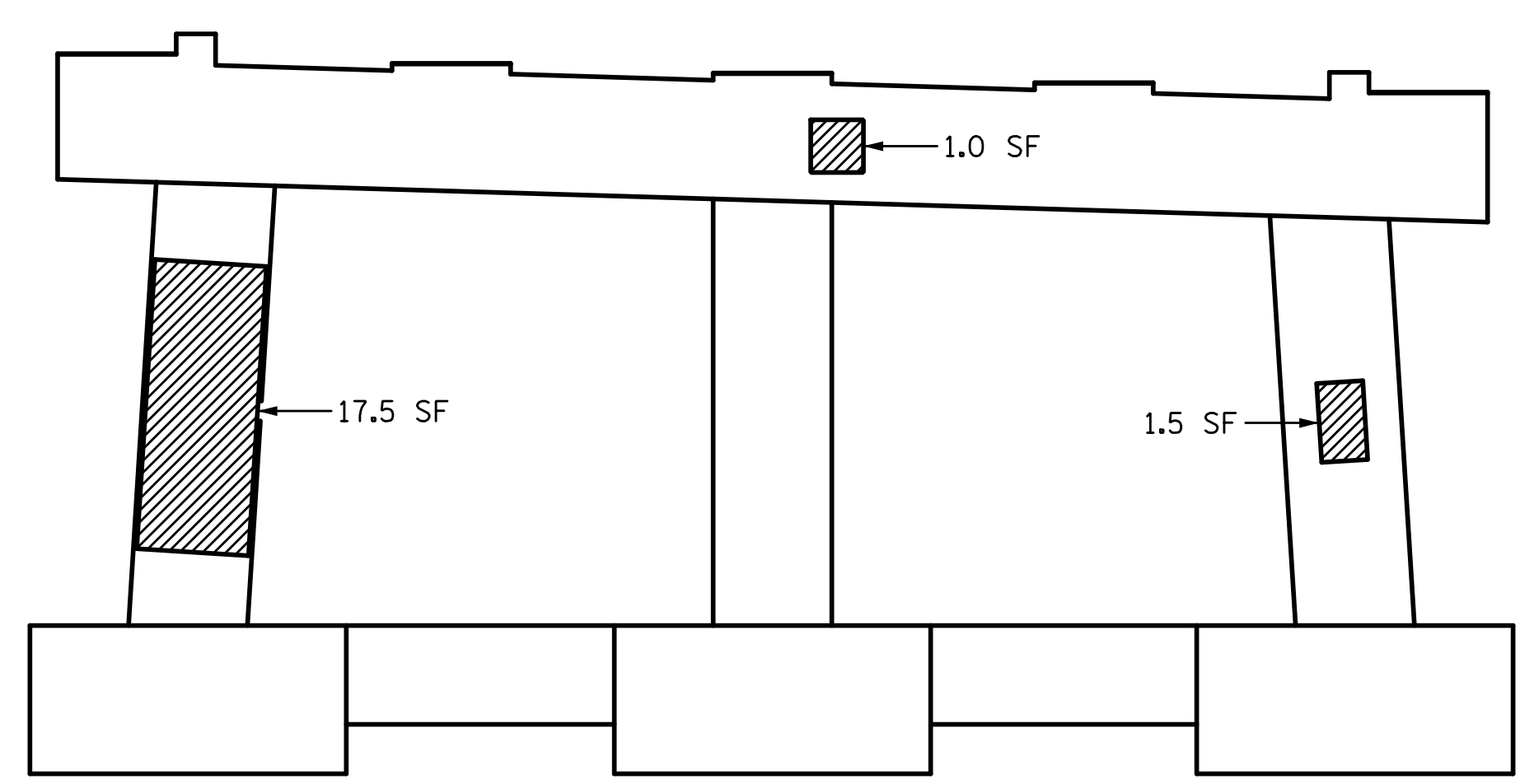
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NORTH FACE



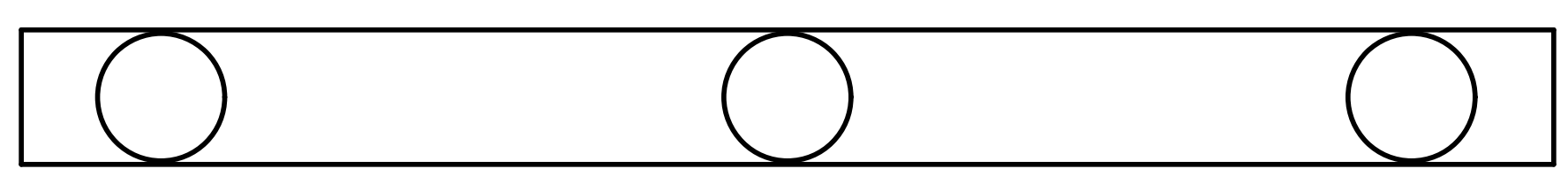
ELEVATION
SPAN 11



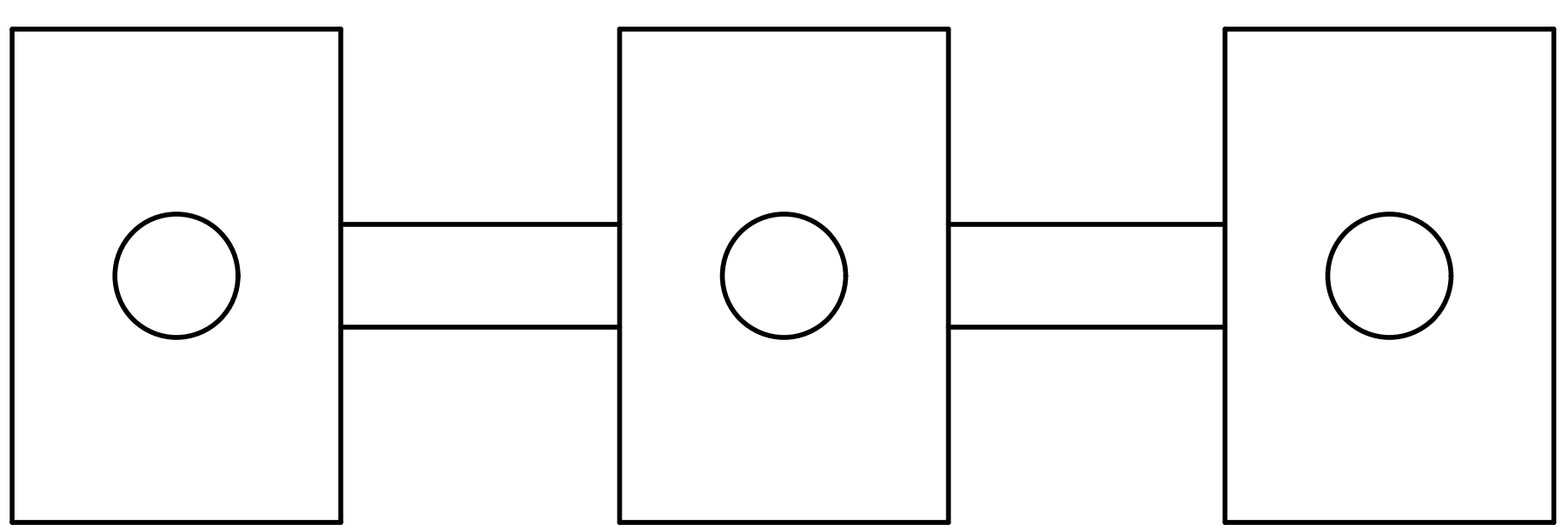
END VIEW
SOUTH FACE



ELEVATION
SPAN 12



PLAN
BOTTOM OF CAP
LOOKING UP



PLAN
TOP OF FOOTING

REPAIR QUANTITY TABLE					
REPAIRS BENT 11	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL FACE)	2.0	0.7			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	19.0	5.0			
FOOTING	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
CAP		0.8			
COLUMN		3.8			
FOOTING		0.0			
EPOXY COATING		AREA SF			
TOP OF CAP		95.0			

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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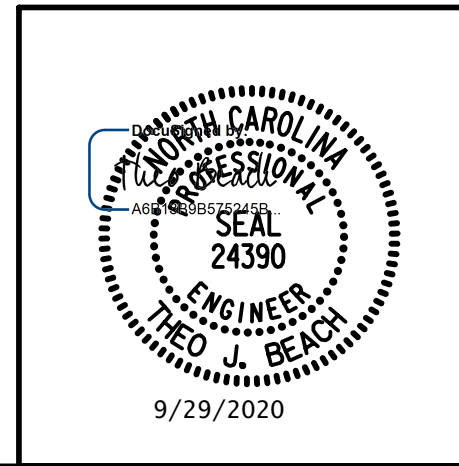
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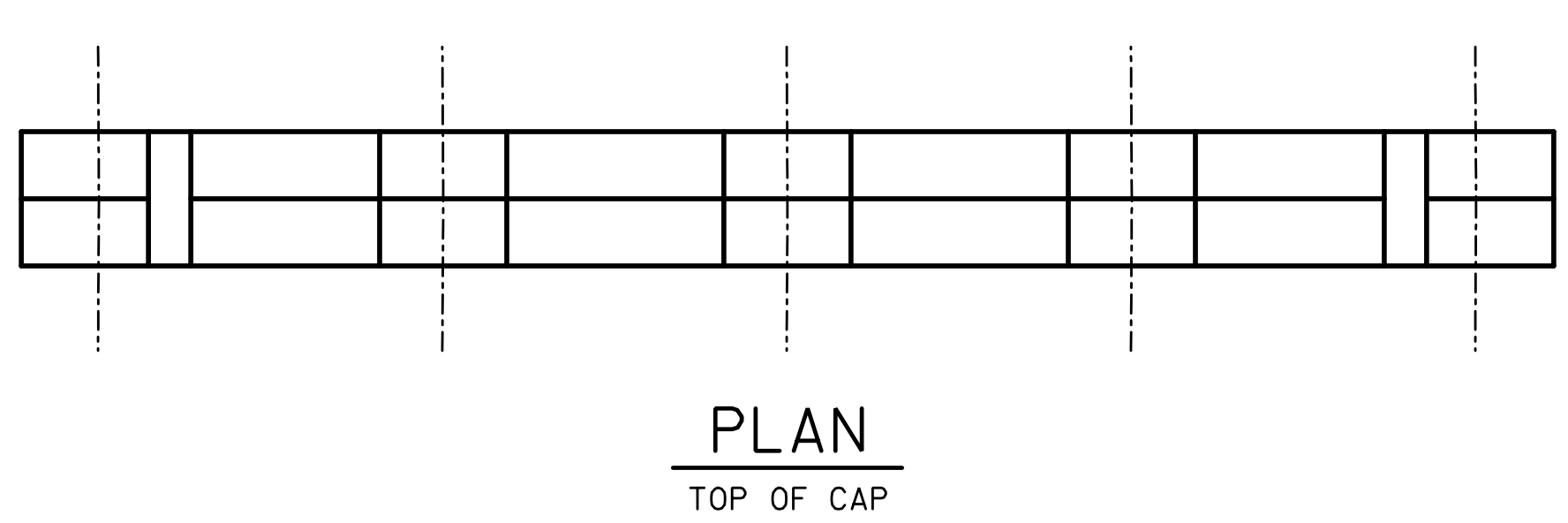
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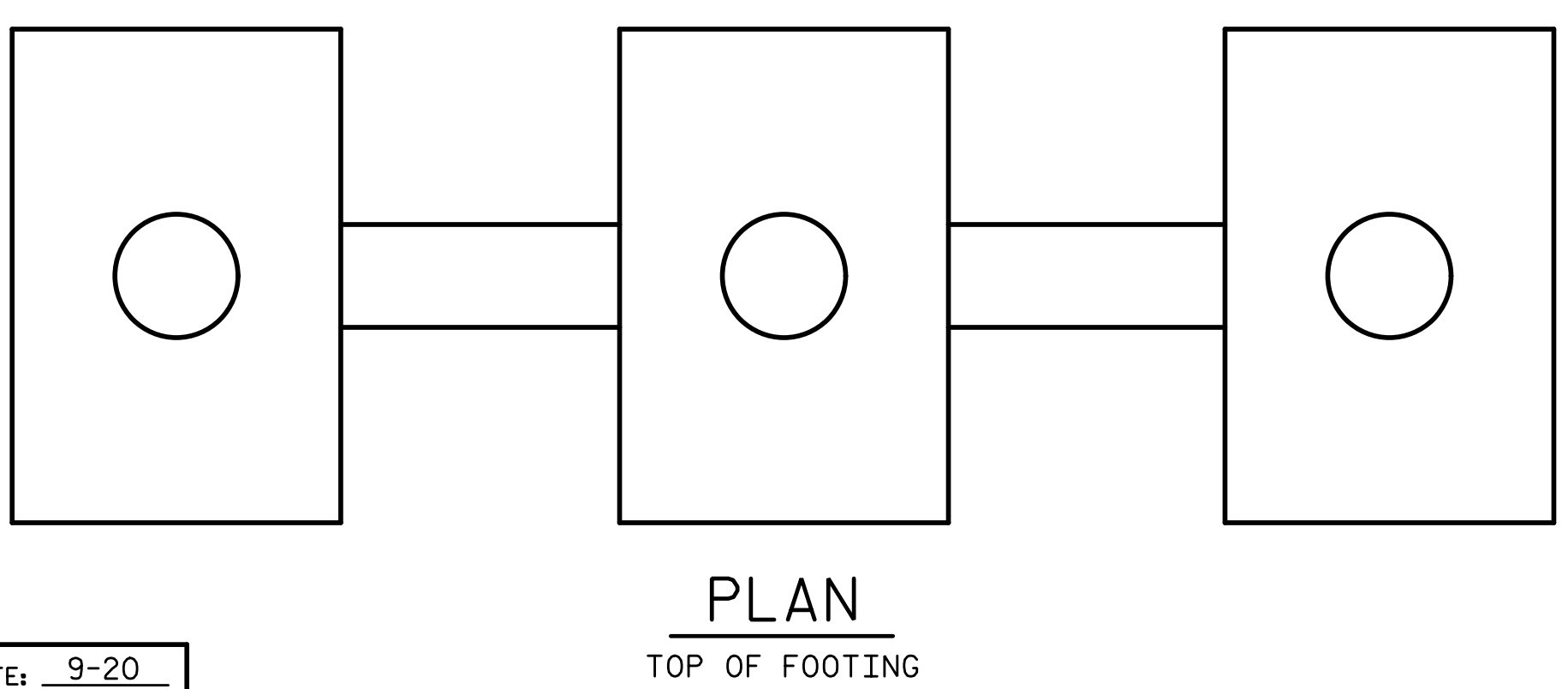
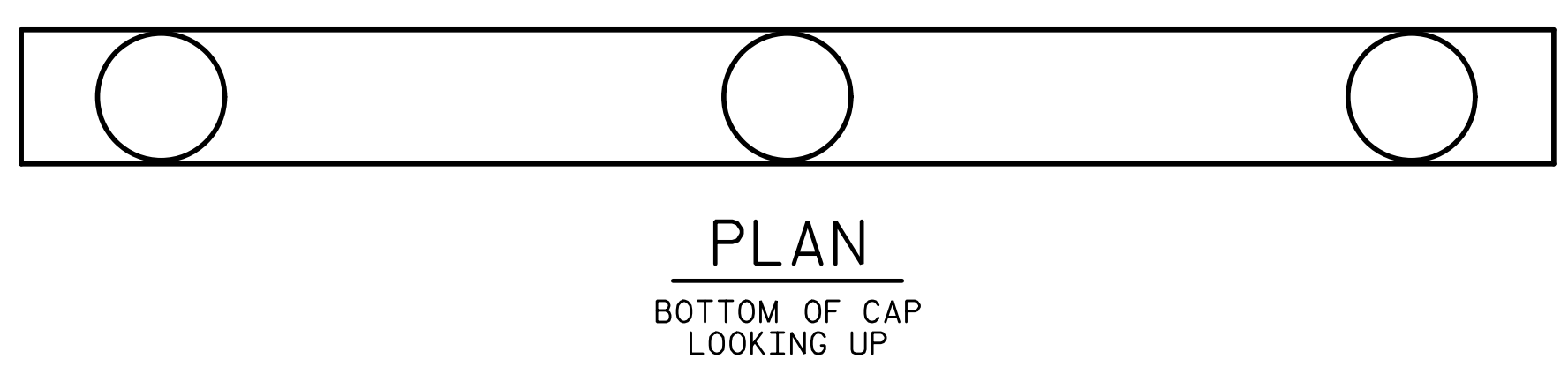
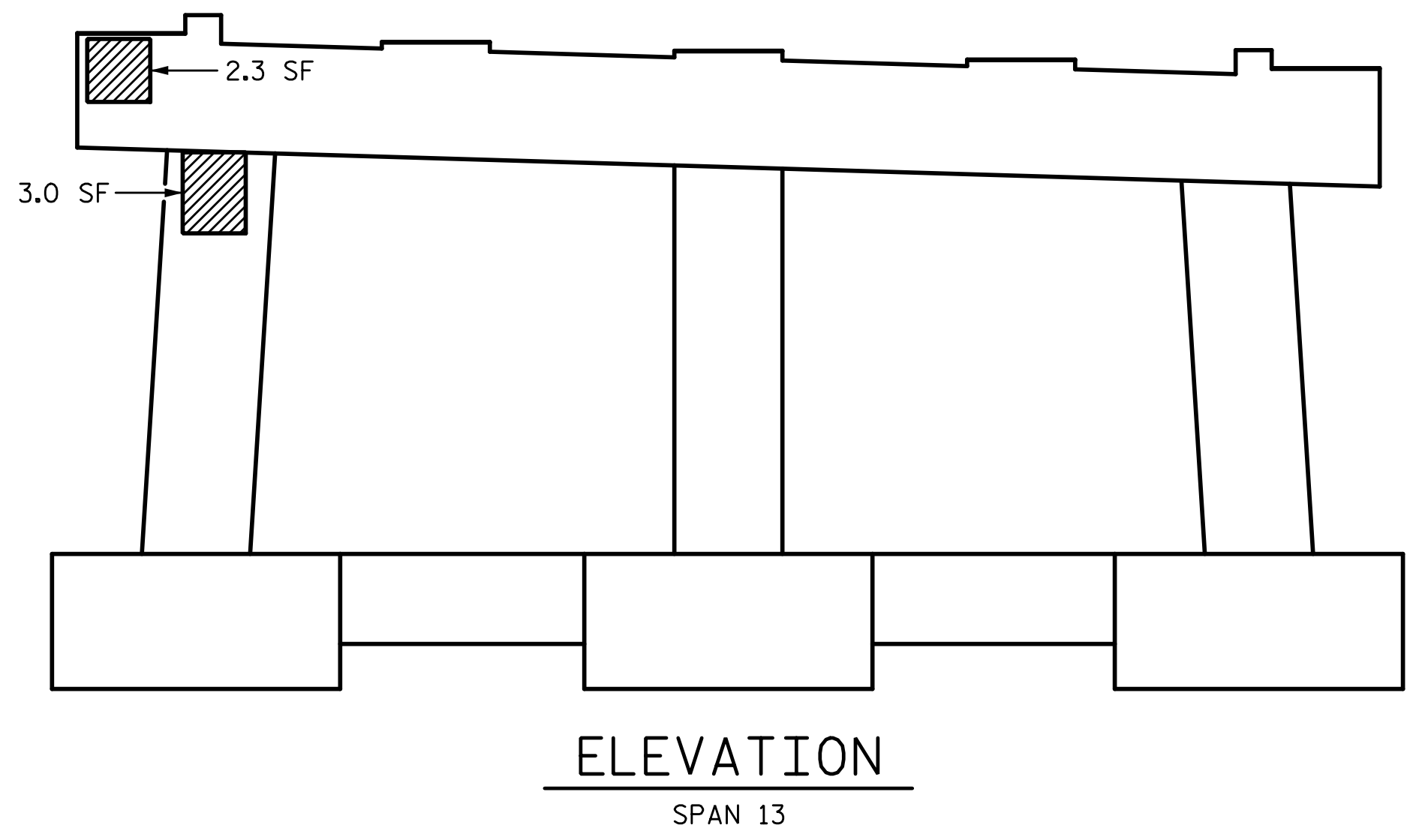
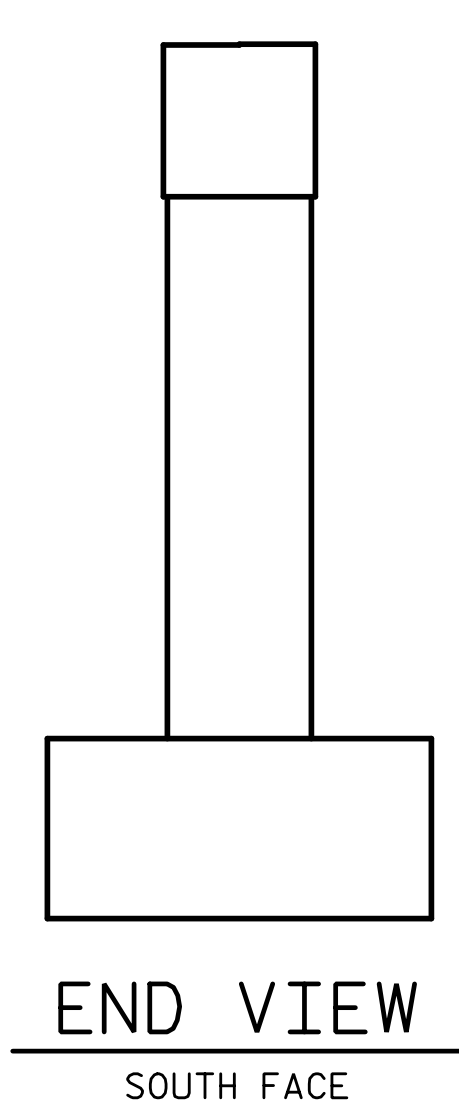
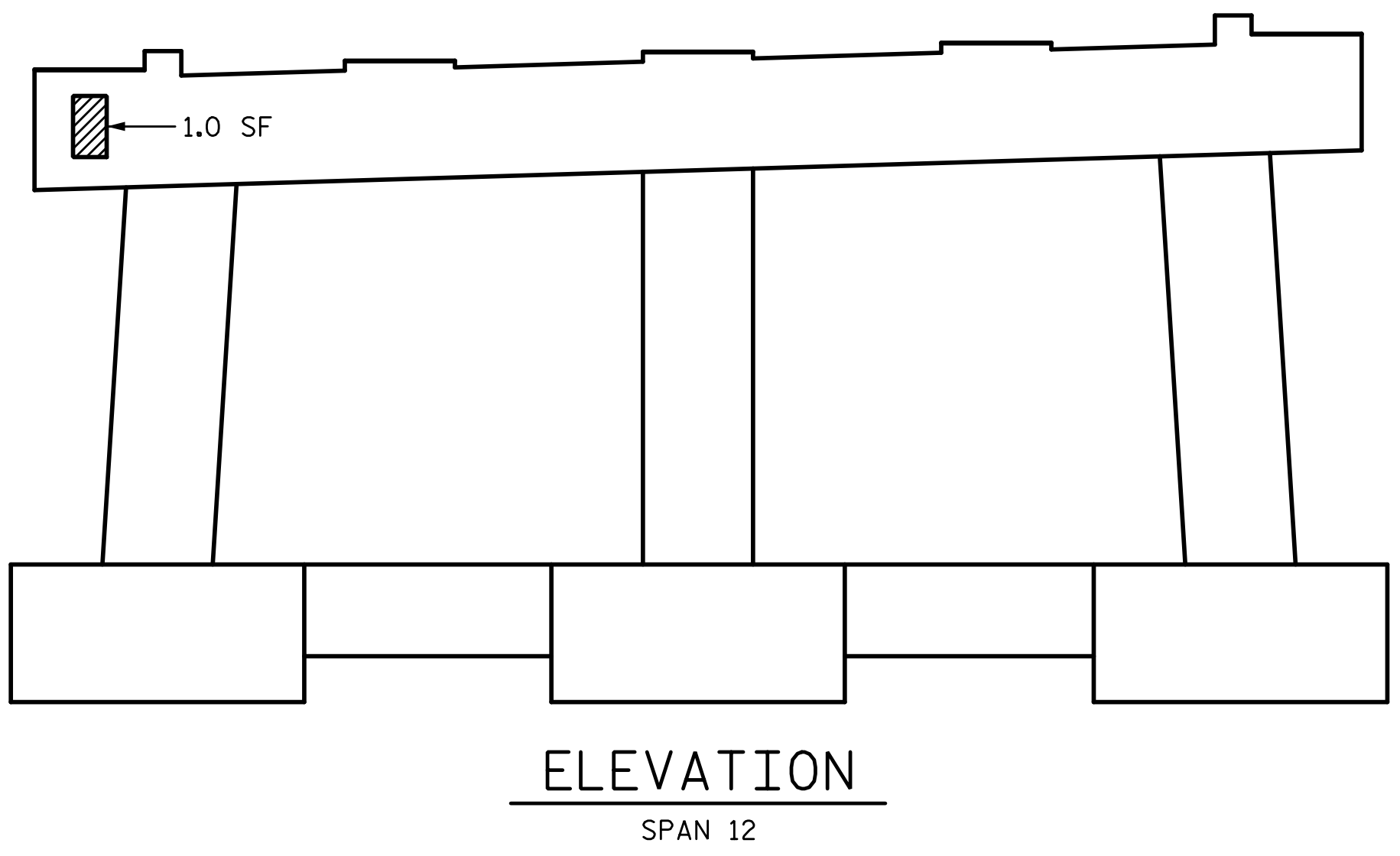
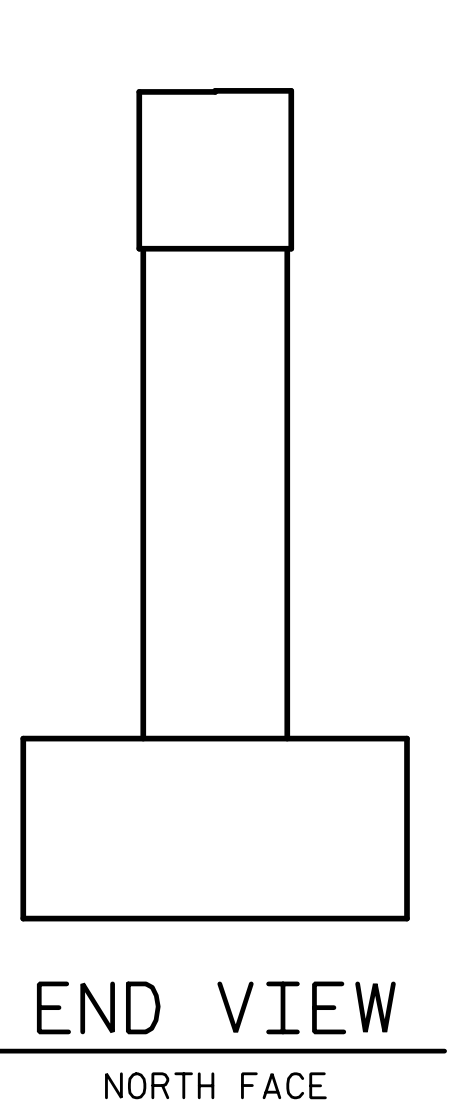


SPAN 13

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)	3.3	1.0			
CAP (HORIZONTAL, CORNER)	0.0	0.0			
COLUMN	3.0	0.8			
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			



NOTES:

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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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.

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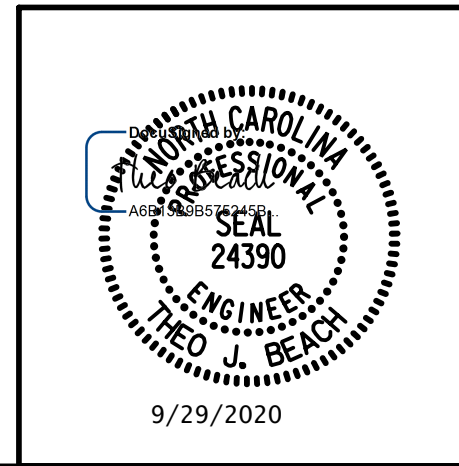
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2			4			163

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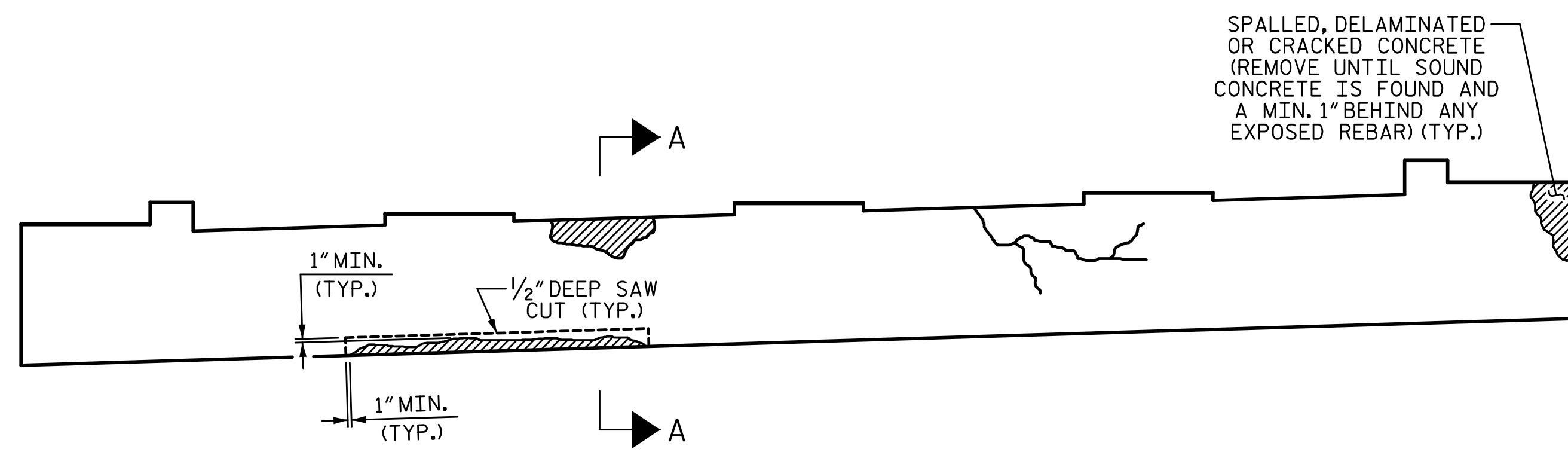
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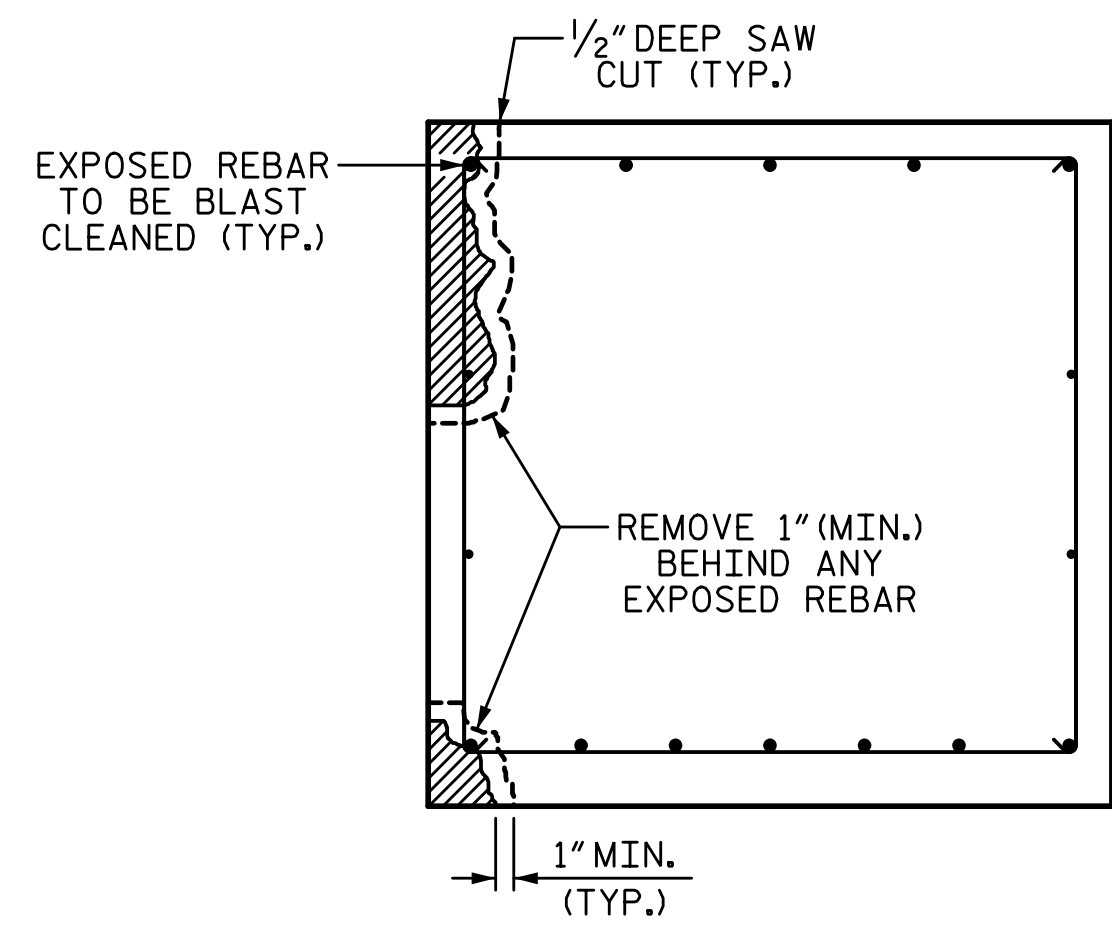
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 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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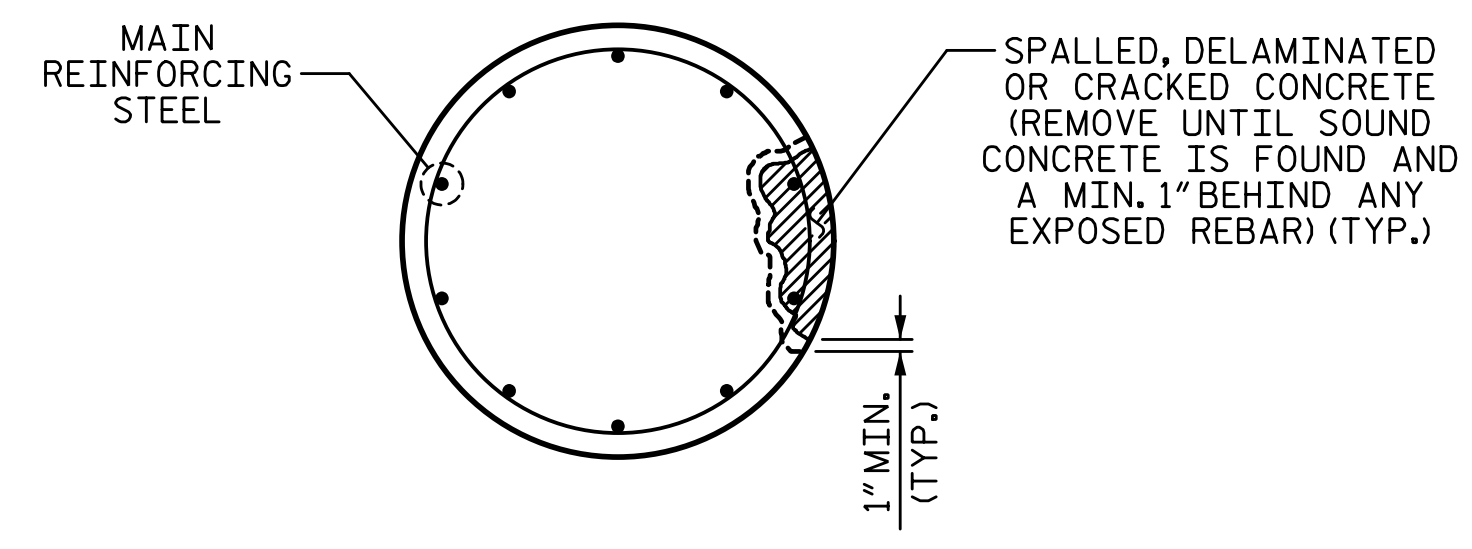
CAP REPAIRS
BENT SHOWN, END BENT CAP SIMILAR



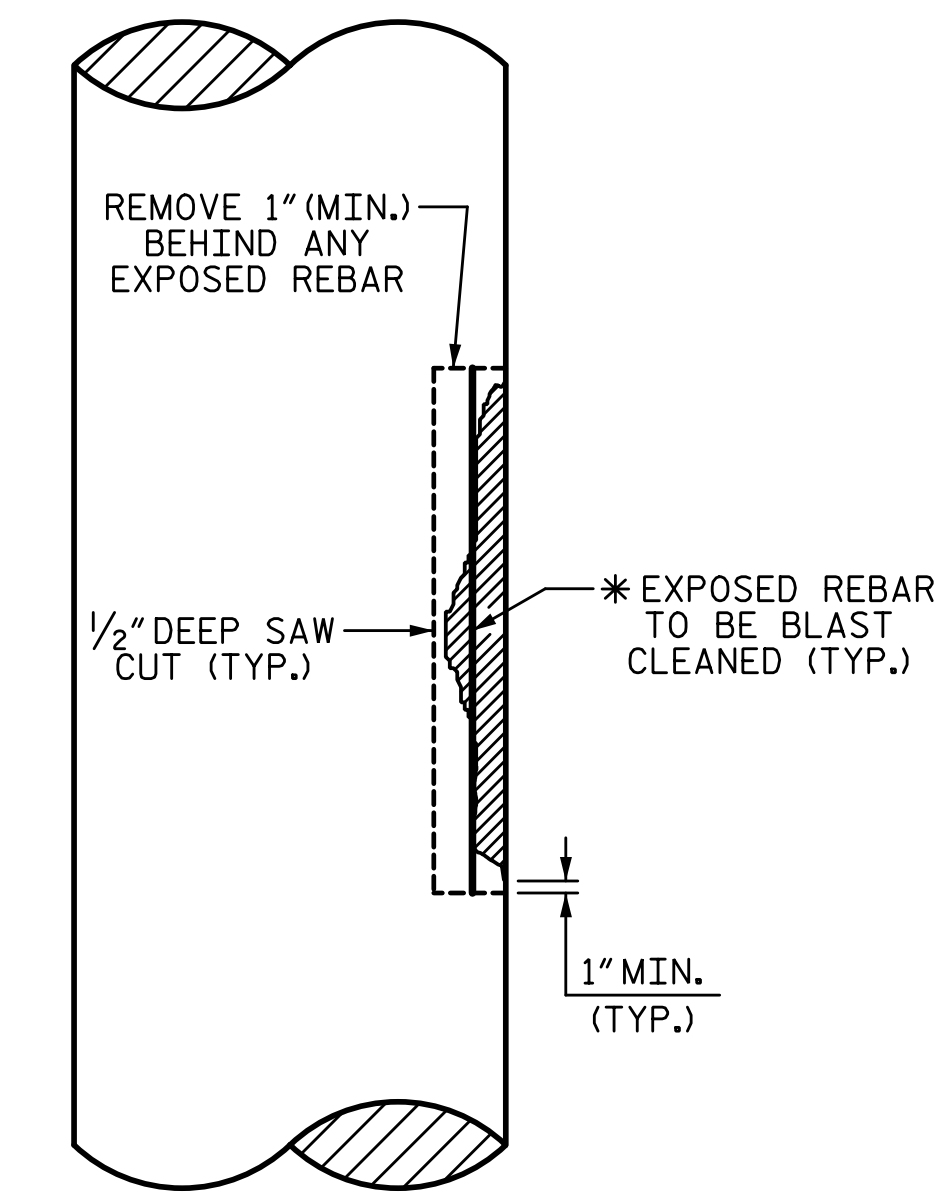
SECTION A-A
BENT SHOWN, END BENT CAP SIMILAR

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.

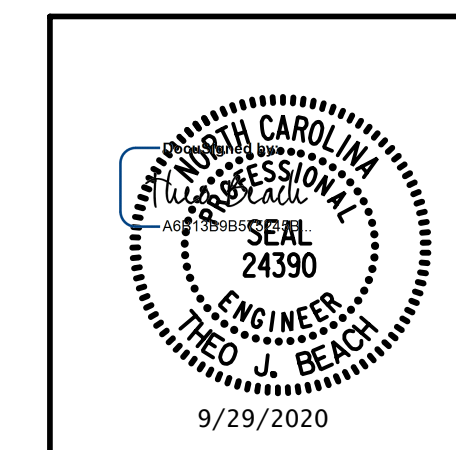
FOR EPOXY RESIN INJECTIONS (ERI), SEE SPECIAL PROVISIONS.

PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640048

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION
SUBSTRUCTURE REPAIR DETAILS

PLANS PREPARED BY:

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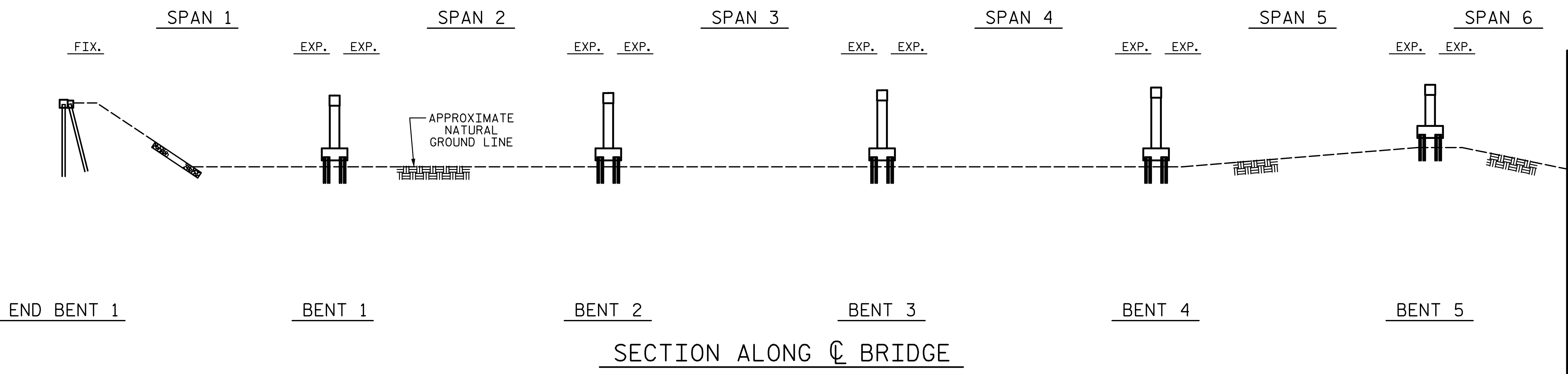


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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-163
1			3			TOTAL SHEETS
2			4			163

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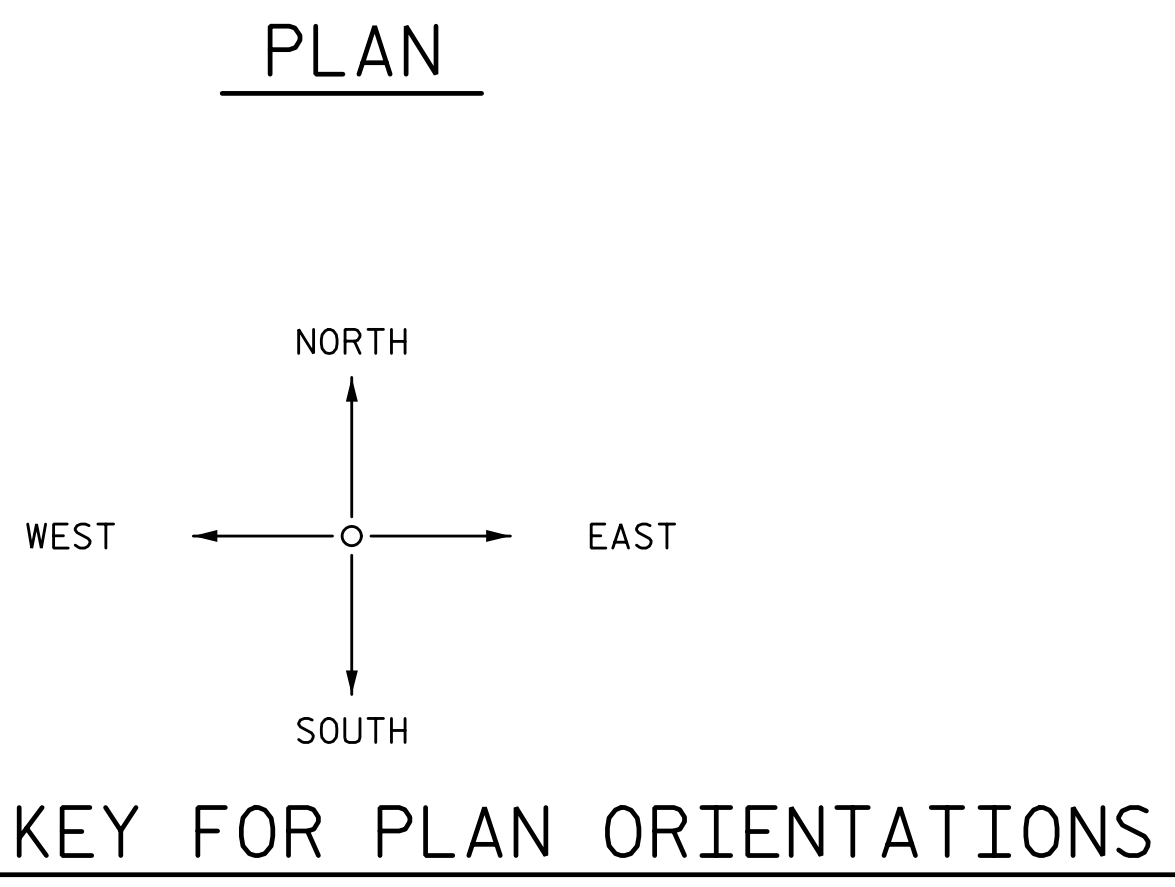
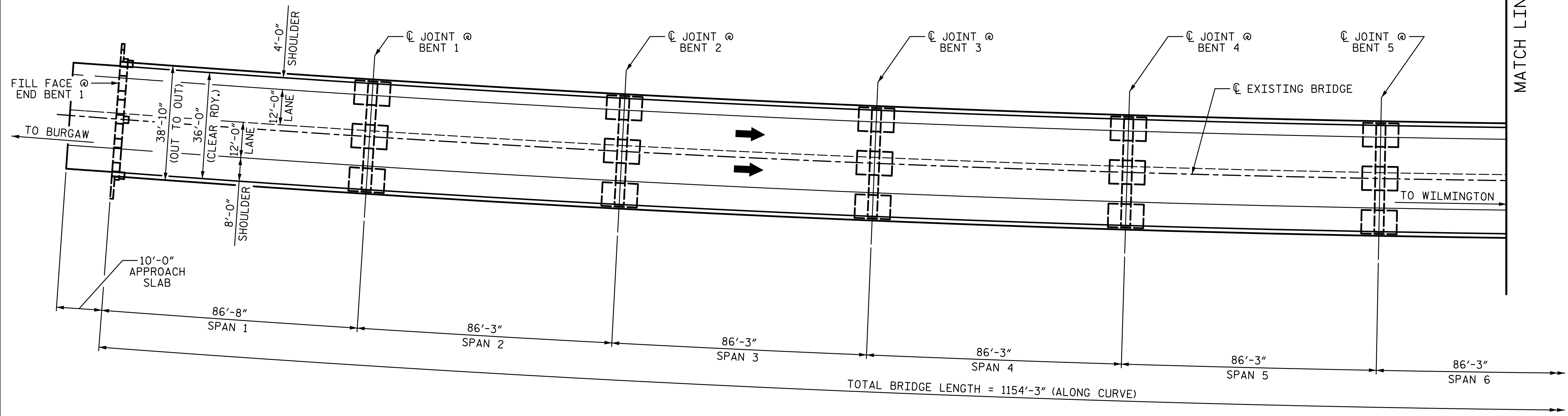
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- SCOPE OF WORK:**
- PARTIALLY REMOVE BRIDGE DECK AND APPROACH SLABS BY SCARIFICATION AND SHOTBLASTING AS SHOWN IN THE PLANS.
 - PERFORM DECK REPAIRS PRIOR TO OVERLAYING THE BRIDGE DECK AND APPROACH SLABS.
 - OVERLAY PREPARED BRIDGE DECK AND APPROACH SLAB WITH POLYMER CONCRETE.
 - REMOVE EXISTING BRIDGE EXP. JOINT MATERIAL AND REPLACE WITH SILICONE JOINT SEALS. INSTALL SILICONE JOINT SEALS AT ALL EXISTING OPEN JOINTS.
 - GROOVE THE POLYMER CONCRETE.
 - PERFORM SUPERSTRUCTURE AND SUBSTRUCTURE REPAIRS USING EPOXY RESIN INJECTION OR SHOTCRETE AS SHOWN IN THE PLANS.
 - CLEAN AND EPOXY COAT THE TOP OF THE BENT CAPS.
 - FRP STRENGTHENING.
 - APPLY SILANE RAIL TREATMENT

NOTES:
 PROFILE INFORMATION IS TAKEN FROM THE EXISTING BRIDGE PLANS.
 BRIDGE ORIENTATION CONFORMS TO "DIRECTION KEY FOR PLANS ORIENTATIONS."



I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER _____ DATE _____

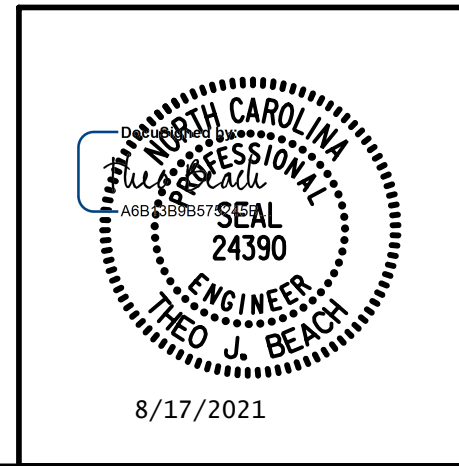
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
GENERAL DRAWING
 FOR BRIDGE ON I-40 EBL
 OVER NORTHEAST CAFE FEAR RIVER
 BETWEEN BURGAW AND WILMINGTON

DRAWN BY: T. BANKOVICH DATE: 9-20
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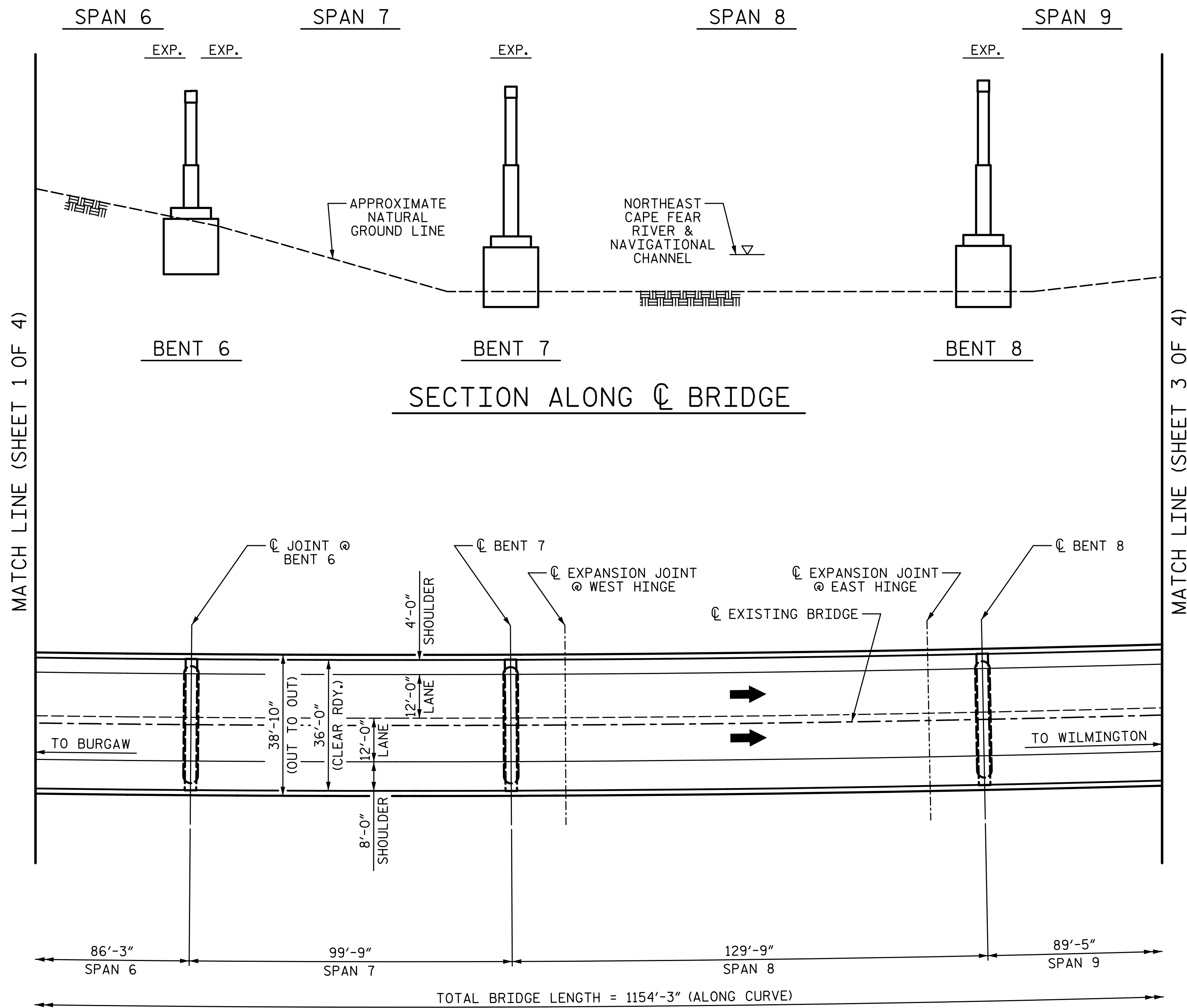
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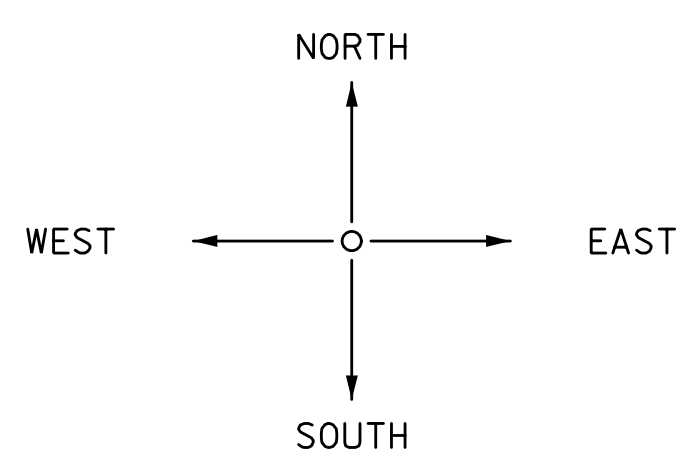
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PLAN



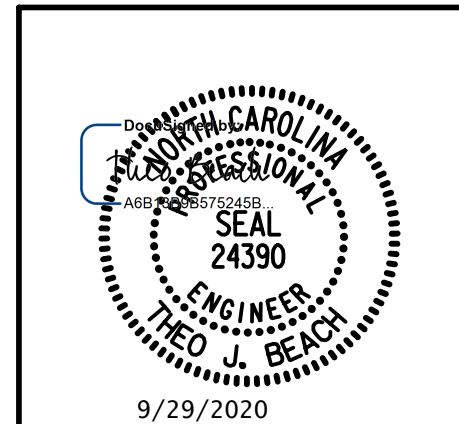
DIRECTION KEY FOR PLAN ORIENTATIONS

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

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
GENERAL DRAWING
 FOR BRIDGE ON I-40 EBL
 OVER NORTHEAST CAPE FEAR RIVER
 BETWEEN BURGAW AND WILMINGTON

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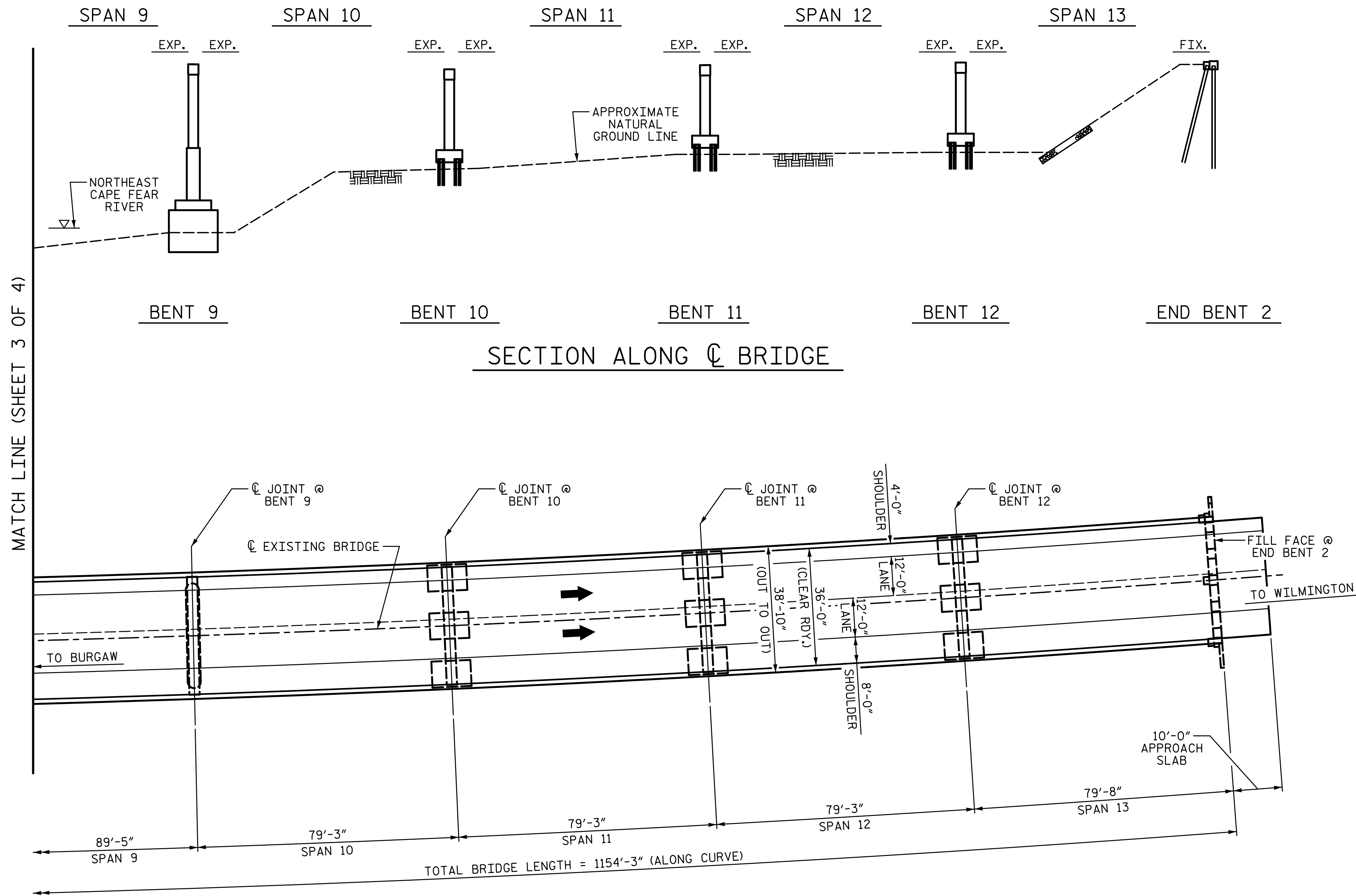


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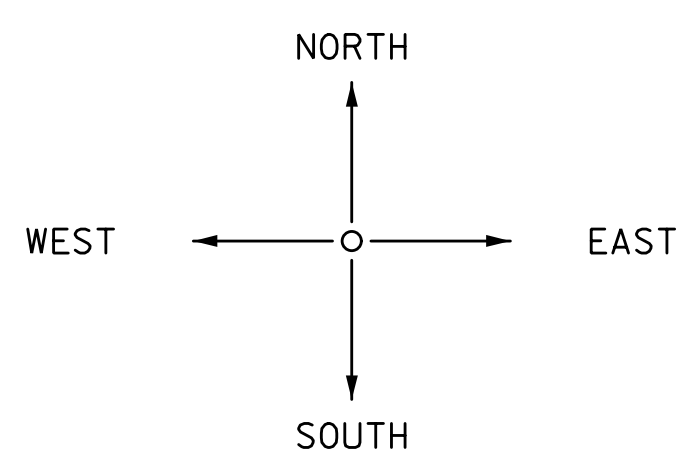
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PLAN



DIRECTION KEY FOR PLAN ORIENTATIONS

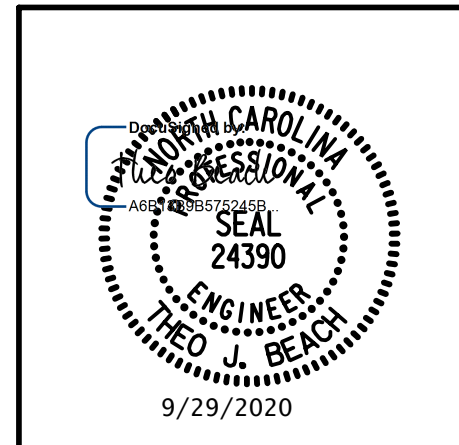
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
GENERAL DRAWING
 FOR BRIDGE ON I-40 EBL
 OVER NORTHEAST CAPE FEAR RIVER
 BETWEEN BURGAW AND WILMINGTON

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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LATITUDE: 34°-21'-50.77"
LONGITUDE: 77°-53'-18.38"

LOCATION SKETCH

NOTES:

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT TYPE I BRIDGE JACKING WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT TYPE I BRIDGE JACKING, 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. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN THE PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COST WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR PC OVERLAY, PC MATERIALS, PLACING AND FINISHING PC OVERLAY, SEE "POLYMER CONCRETE BRIDGE DECK OVERLAY" SPECIAL PROVISION.

FOR SCARIFYING BRIDGE DECK, SHOTBLASTING BRIDGE DECK, AND CLASS II SURFACE PROTECTION, SEE "OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE" SPECIAL PROVISION.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIRS TO PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SILANE RAIL TREATMENT, SEE SPECIAL PROVISIONS.

FOR SECURING VESSELS, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF WATER TRAFFIC, SEE SPECIAL PROVISIONS.

FOR WORK IN, OVER, OR ADJACENT TO NAVIGABLE WATERS, SEE SPECIAL PROVISIONS.

FOR FRP REPAIRS, SEE "FIBER REINFORCED POLYMER (FRP) STRENGTHENING" SPECIAL PROVISION.

NORTH, SOUTH, EAST AND WEST INDICATED ON THE PLANS ARE BASED ON I-40 HIGHWAY BEING AN EAST-WEST INTERSTATE AND NOT NECESSARILY ON GEODETIC DIRECTIONS

FOR OTHER DESIGN DATA AND GENERAL NOTES. SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

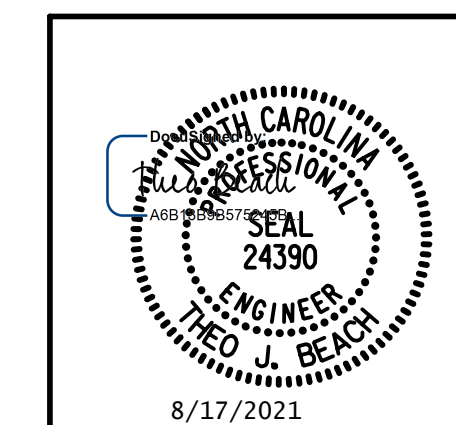
BRIDGE NO.	GROOVING BRIDGE FLOORS	CLASS II SURFACE PREPARATION	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	POURABLE SILICONE JOINT SEALANT	POLYESTER POLYMER CONCRETE MATERIALS	EPOXY POLYMER CONCRETE MATERIALS (ALTERNATE)	REPAIRS TO PRESTRESSED CONCRETE GIRDERS	EPOXY COATING	FIBER REINFORCED POLYMER STRENGTHENING SYSTEM	SURFACE PREPARATION FOR CONCRETE BARRIER	SILANE BARRIER RAIL TREATMENT	CONCRETE DECK REPAIR FOR POLYMER CONCRETE OVERLAY	PLACING AND FINISHING POLYMER CONCRETE OVERLAY	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK
	SF	SY	CF	LF	LF	CY	CY	CF	SF	SF	SF	SF	SY	SY	SY	SY
640049	38,522.1	59.1	23.8	801.2	518.0	130.7	128.90	13.1	1,320.0	1,469	14,244.9	14,244.9	59.1	4,697.3	4,697.3	4,697.3
TOTAL	38,522.1	59.1	23.8	801.2	518.0	130.7	128.90	13.1	1,320.0	1,469	14,244.9	14,244.9	59.1	4,697.3	4,697.3	4,697.3

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

SHEET 4 OF 4

PLANS PREPARED BY:

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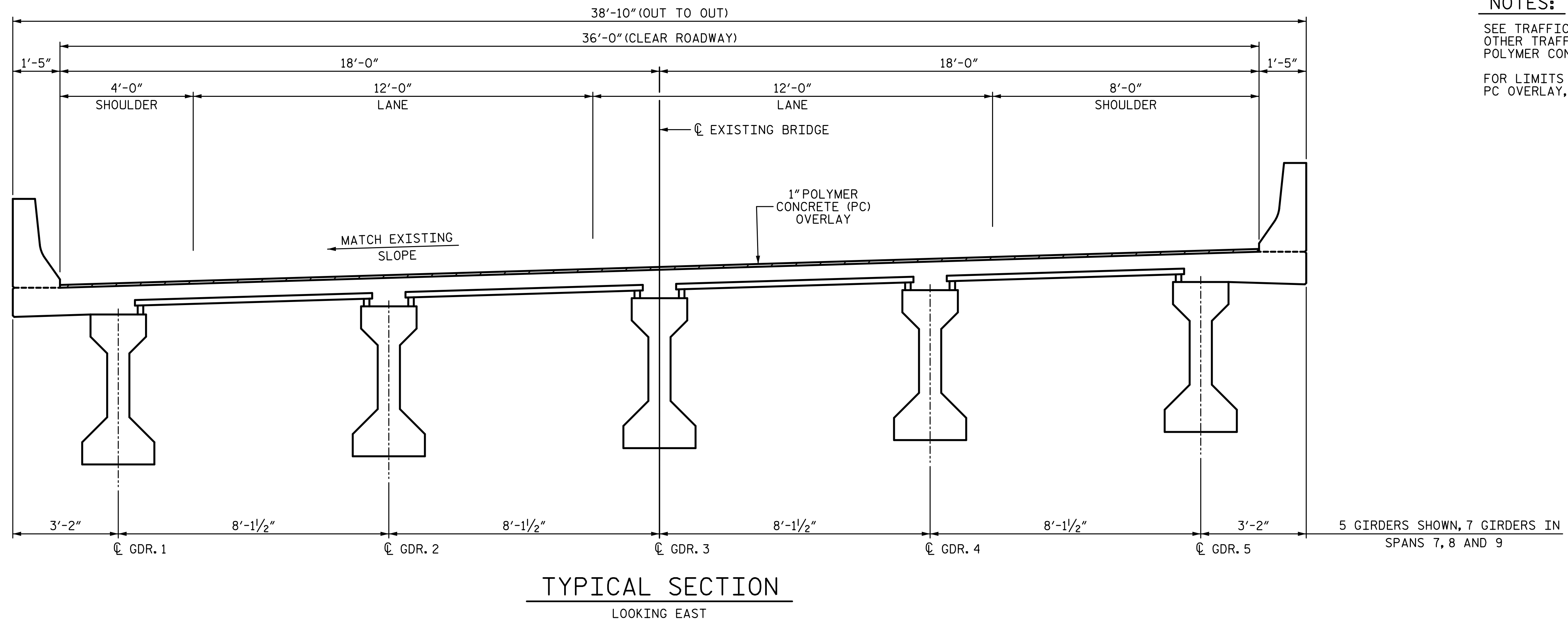
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
GENERAL DRAWING
 FOR BRIDGE ON I-40 EBL
 OVER NORTHEAST CAPE FEAR RIVER
 BETWEEN BURGAW AND WILMINGTON

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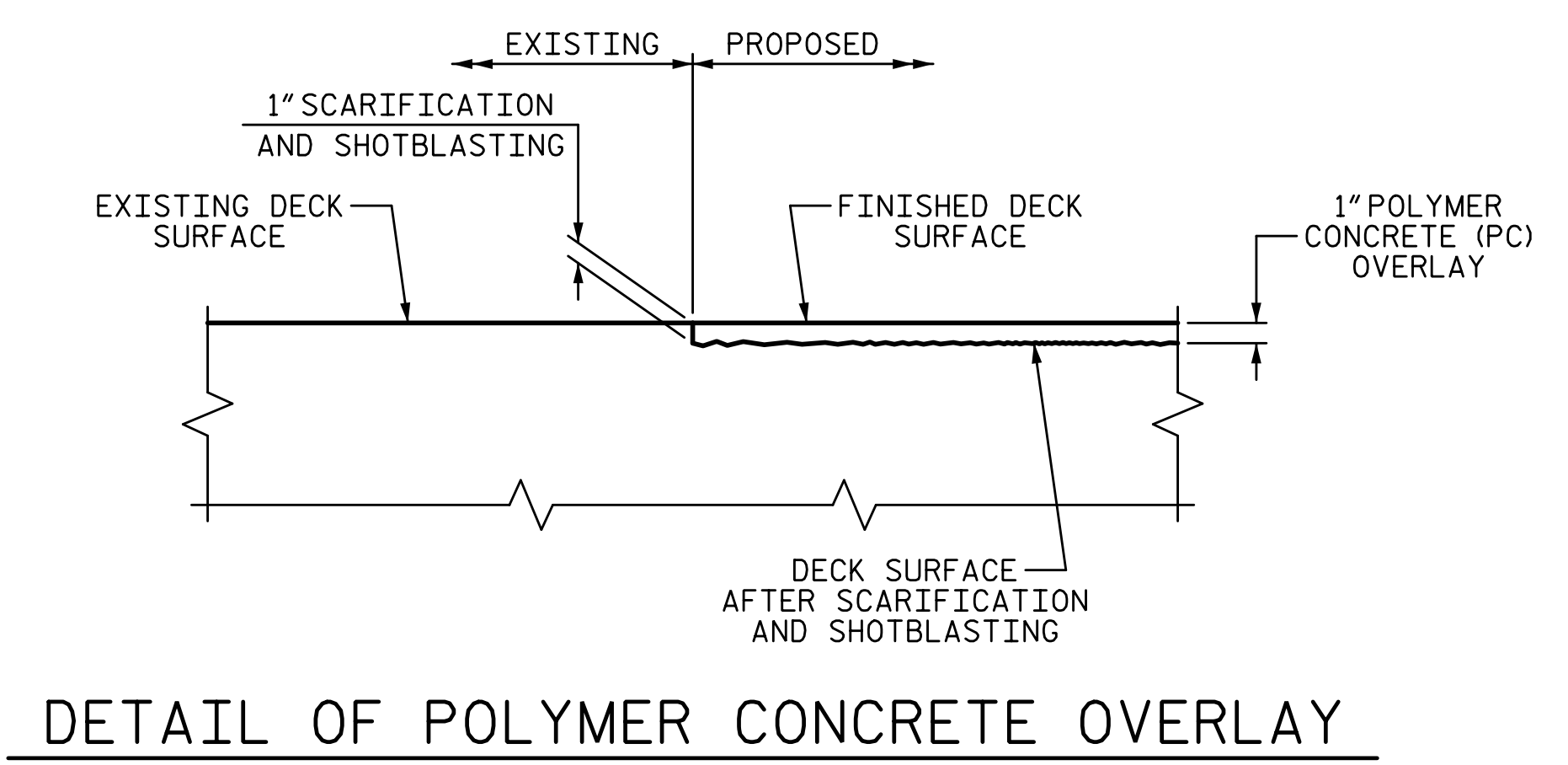
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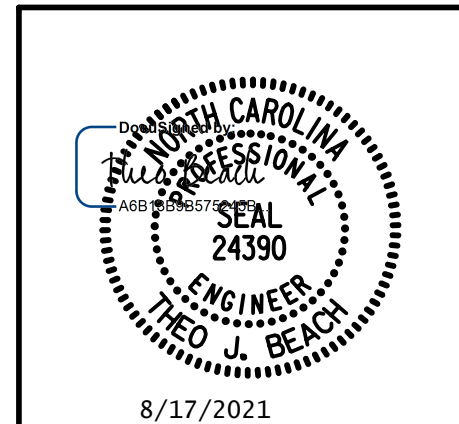


NOTES:
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF POLYESTER POLYMER CONCRETE (PPC) SYSTEM AND SURFACE PREPARATION.
FOR LIMITS OF SCARIFICATION, SHOTBLASTING, CLASS II REPAIR AND PC OVERLAY, SEE SURFACE PREPARATION SHEETS.



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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION
SURFACE PREPARATION
TYPICAL SECTION
& DETAILS



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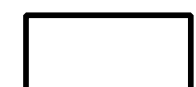

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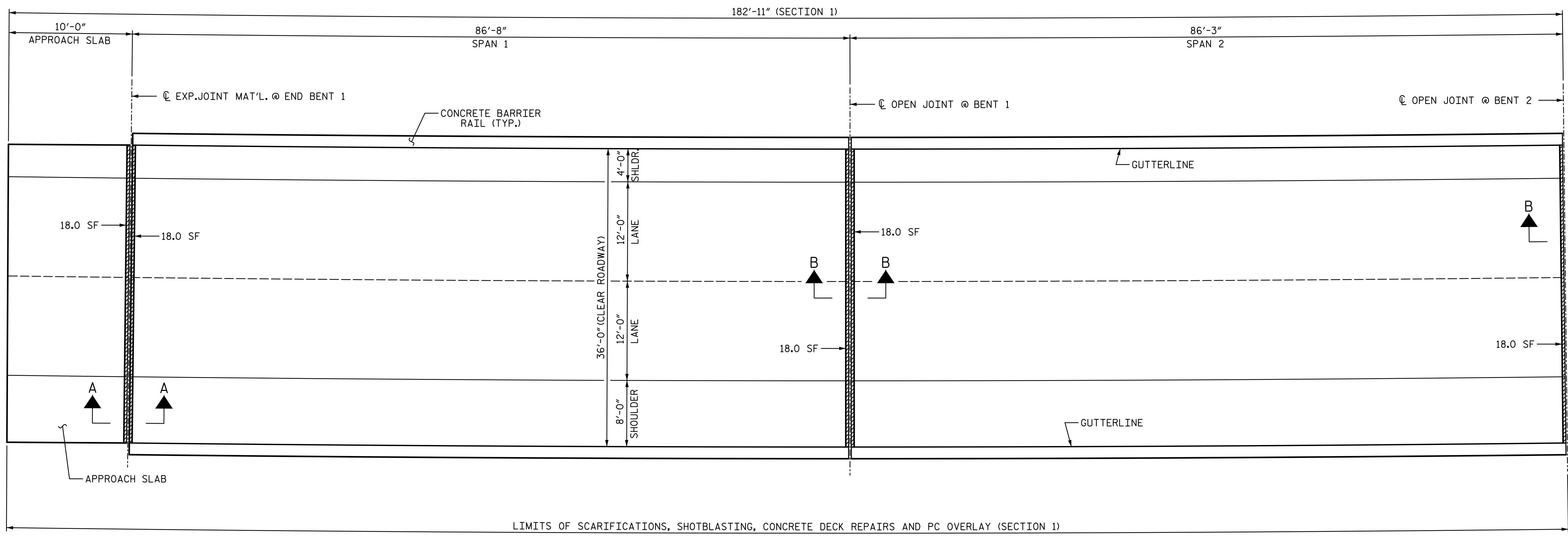
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SECTION 1 QUANTITIES		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	731.7 SY	
CLASS II SURFACE PREPARATION	10.0 SY	
CONCRETE DECK REPAIR FOR PC OVERLAY	10.0 SY	
SHOTBLASTING BRIDGE DECK	731.7 SY	
PC MATERIALS	20.3 CY	
PLACING AND FINISHING PC OVERLAY	731.7 SY	
GROOVING BRIDGE FLOORS	5995.0 SF	

 SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
 CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY



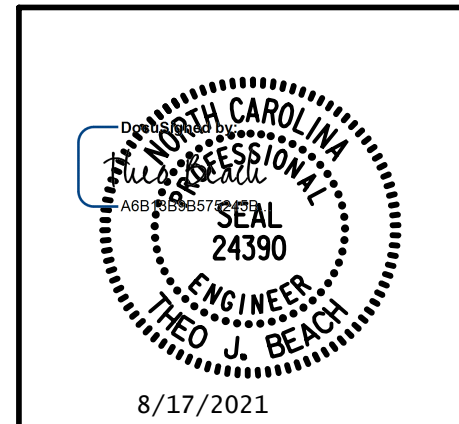
PLAN OF SPANS

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

SHEET 1 OF 8
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SURFACE PREPARATION
 (SPANS 1 AND 2)

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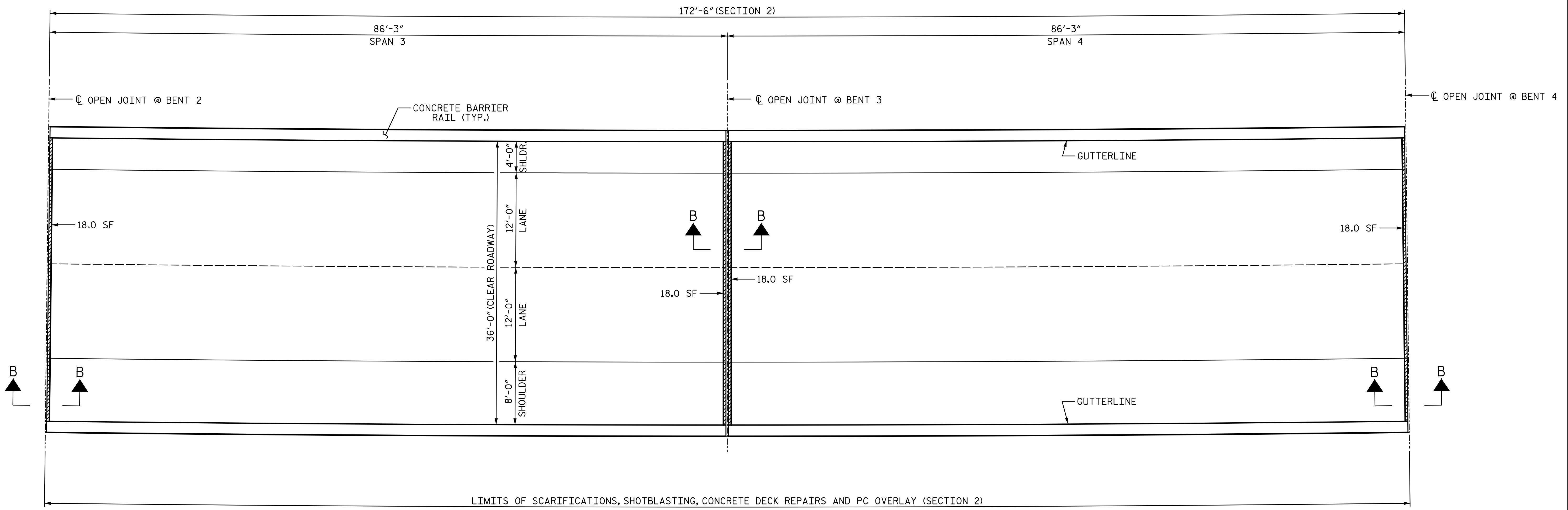
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SECTION 2 QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	690.0 SY	
CLASS II SURFACE PREPARATION	8.0 SY	
CONCRETE DECK REPAIR FOR PC OVERLAY	8.0 SY	
SHOTBLASTING BRIDGE DECK	690.0 SY	
PC MATERIALS	19.2 CY	
PLACING AND FINISHING PC OVERLAY	690.0 SY	
GROOVING BRIDGE FLOORS	5659.5 SF	

- SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
- CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY



PLAN OF SPANS

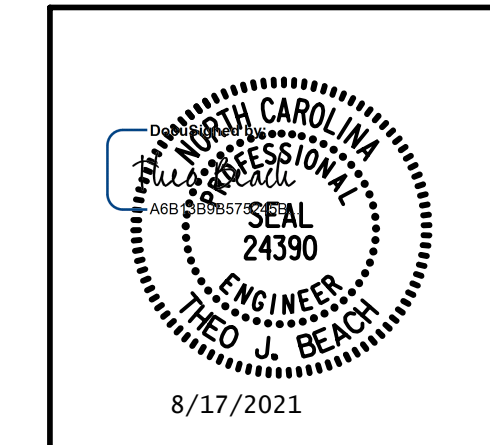
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
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SHEET 2 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SURFACE PREPARATION
 (SPANS 3 AND 4)

PLANS PREPARED BY:

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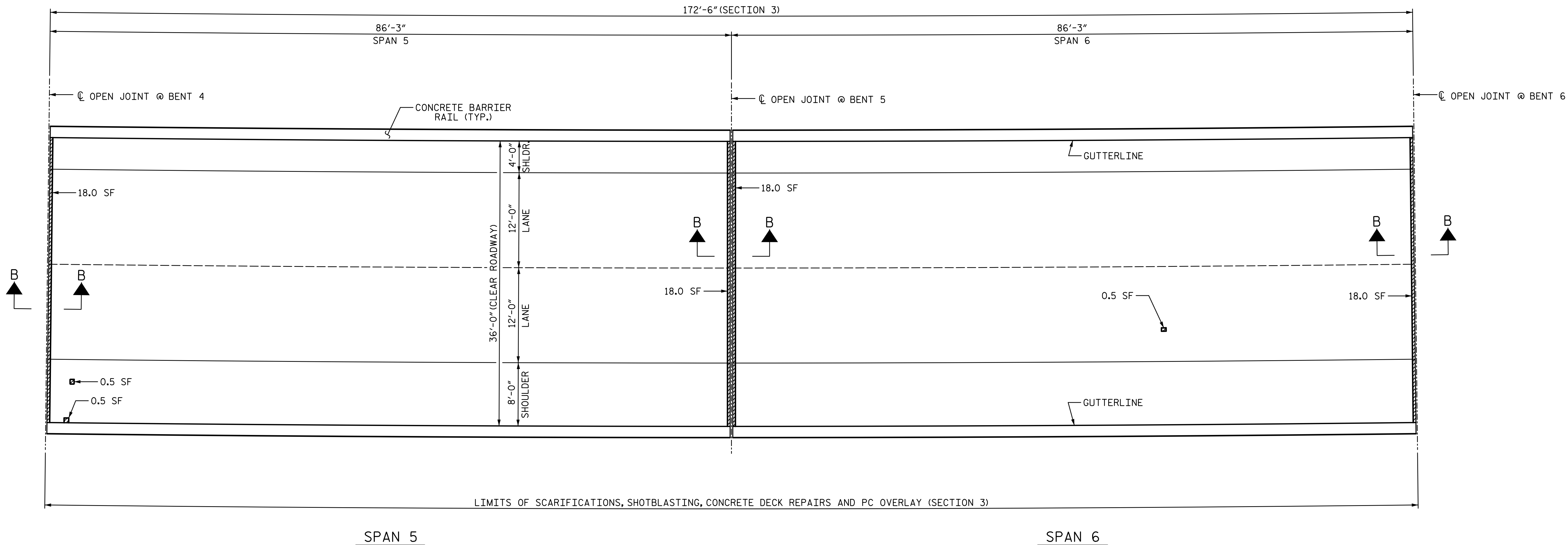
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SECTION 3 QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	690.0 SY	
CLASS II SURFACE PREPARATION	8.2 SY	
CONCRETE DECK REPAIR FOR PC OVERLAY	8.2 SY	
SHOTBLASTING BRIDGE DECK	690.0 SY	
PC MATERIALS	19.2 CY	
PLACING AND FINISHING PC OVERLAY	690.0 SY	
GROOVING BRIDGE FLOORS	5659.5 SF	

-  SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
-  CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY



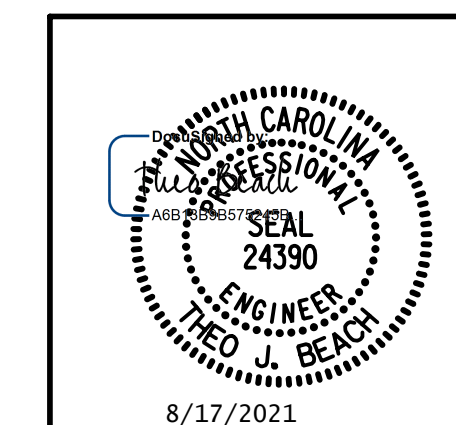
PLAN OF SPANS

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

SHEET 3 OF 8

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STATE OF NORTH CAROLINA
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SURFACE PREPARATION
 (SPANS 5 AND 6)

REVISIONS

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2			4			TOTAL SHEETS 163

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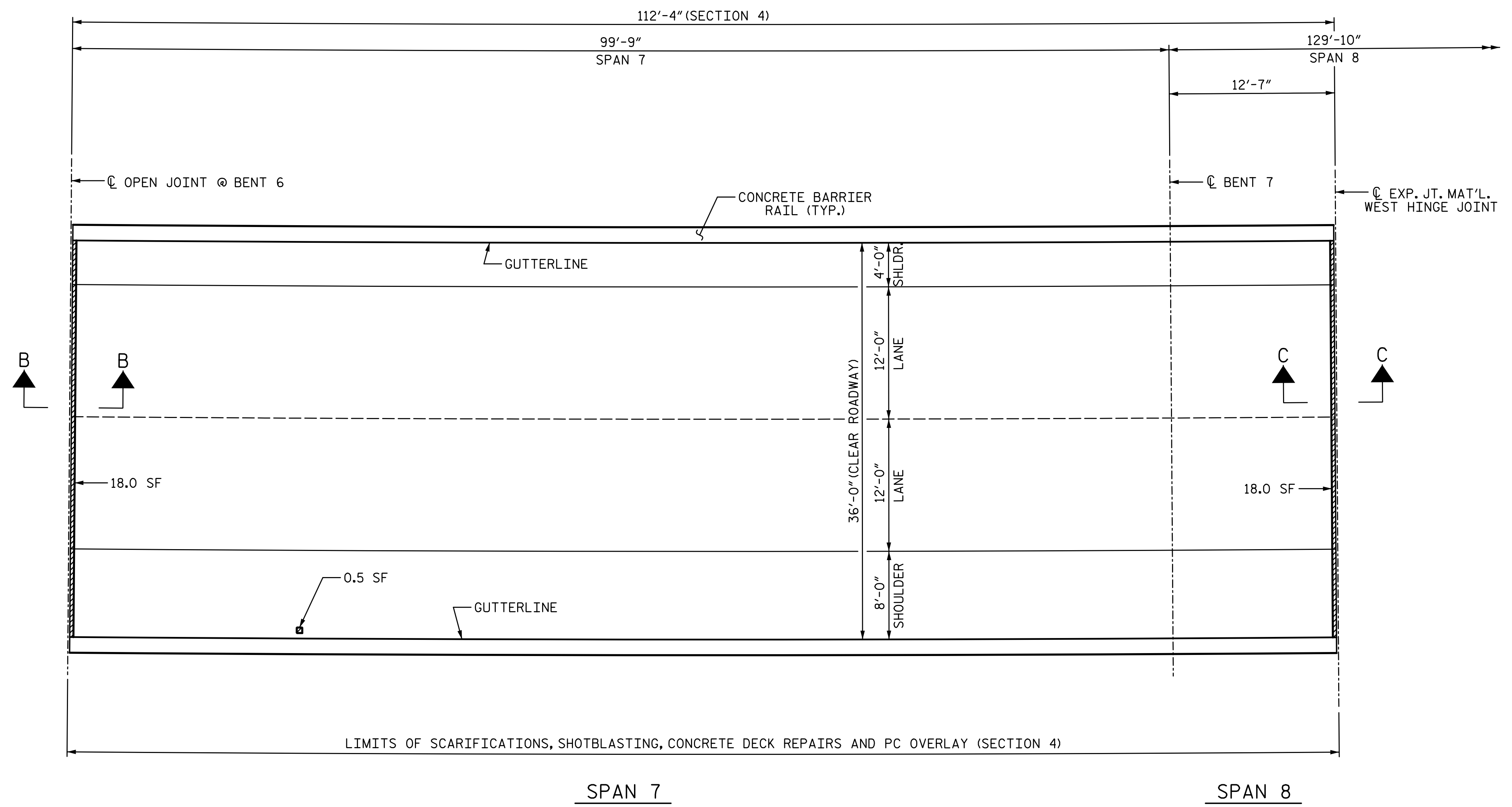
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SECTION 4 QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	449.3 SY	
CLASS II SURFACE PREPARATION	4.1 SY	
CONCRETE DECK REPAIR FOR PC OVERLAY	4.1 SY	
SHOTBLASTING BRIDGE DECK	449.3 SY	
PC MATERIALS	12.5 CY	
PLACING AND FINISHING PC OVERLAY	449.3 SY	
GROOVING BRIDGE FLOORS	3690.5 SF	

- SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
- CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY



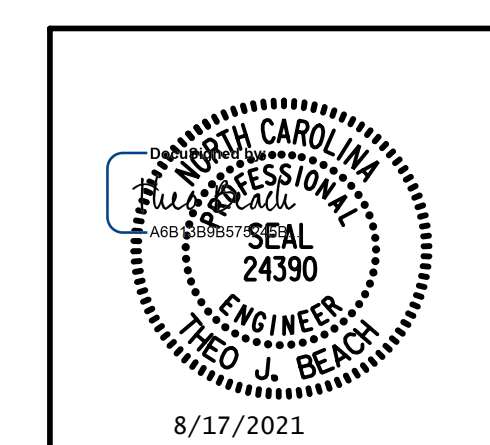
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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 8

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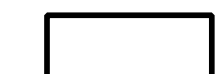

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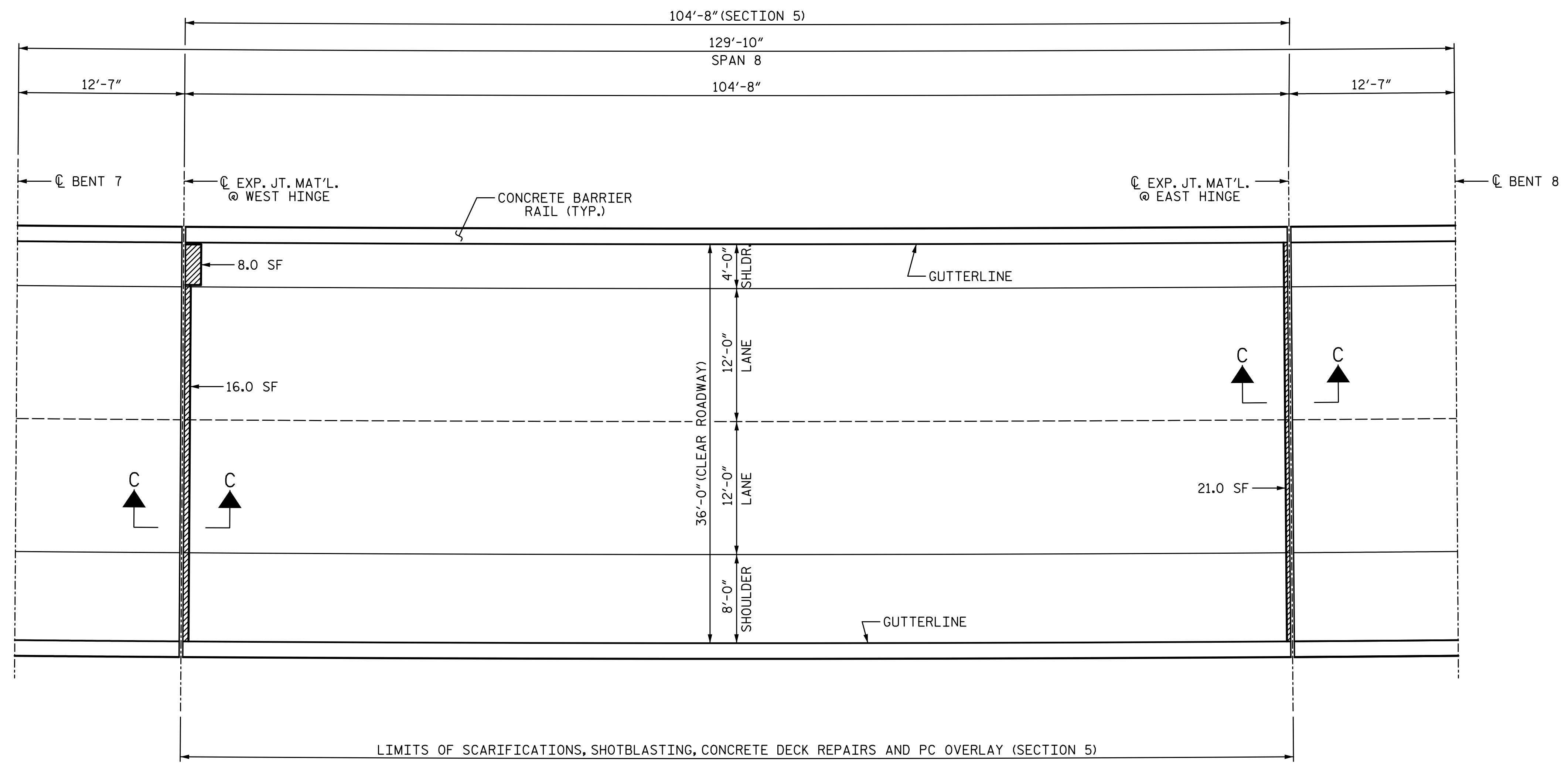
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SECTION 5 QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	418.7 SY	
CLASS II SURFACE PREPARATION	5.0 SY	
CONCRETE DECK REPAIR FOR PC OVERLAY	5.0 SY	
SHOTBLASTING BRIDGE DECK	418.7 SY	
PC MATERIALS	11.6 CY	
PLACING AND FINISHING PC OVERLAY	418.7 SY	
GROOVING BRIDGE FLOORS	3437.5 SF	

-  SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
-  CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY



LIMITS OF SCARIFICATIONS, SHOTBLASTING, CONCRETE DECK REPAIRS AND PC OVERLAY (SECTION 5)

SPAN 8
PLAN OF SPAN

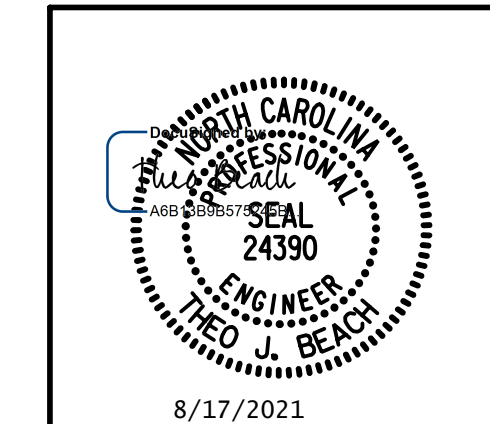
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SHEET 5 OF 8

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**SURFACE PREPARATION
 (SPAN 8)**

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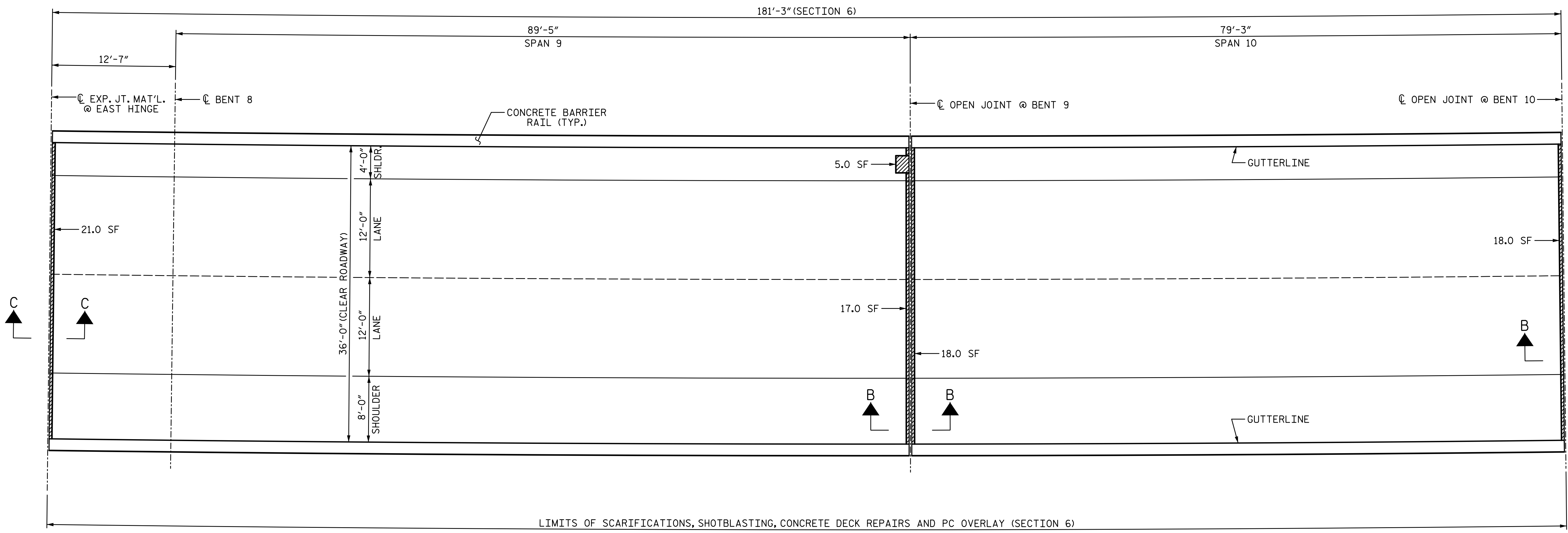
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SECTION 6 QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	725.0 SY	
CLASS II SURFACE PREPARATION	8.8 SY	
CONCRETE DECK REPAIR FOR PC OVERLAY	8.8 SY	
SHOTBLASTING BRIDGE DECK	725.0 SY	
PC MATERIALS	20.1 CY	
PLACING AND FINISHING PC OVERLAY	725.0 SY	
GROOVING BRIDGE FLOORS	5948.3 SF	

-  SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
-  CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY



LIMITS OF SCARIFICATIONS, SHOTBLASTING, CONCRETE DECK REPAIRS AND PC OVERLAY (SECTION 6)

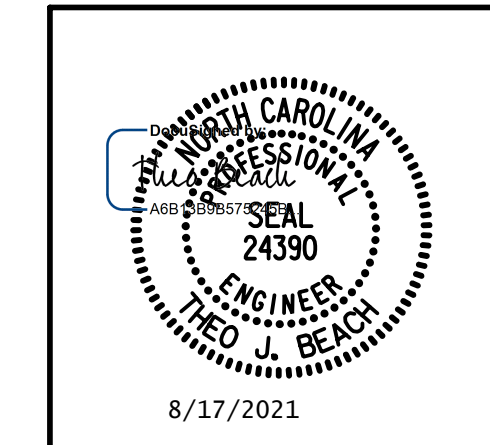
PLAN OF SPANS

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

SHEET 6 OF 8

STATE OF NORTH CAROLINA
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 PRESERVATION
 SURFACE PREPARATION
 (SPANS 8, 9 AND 10)

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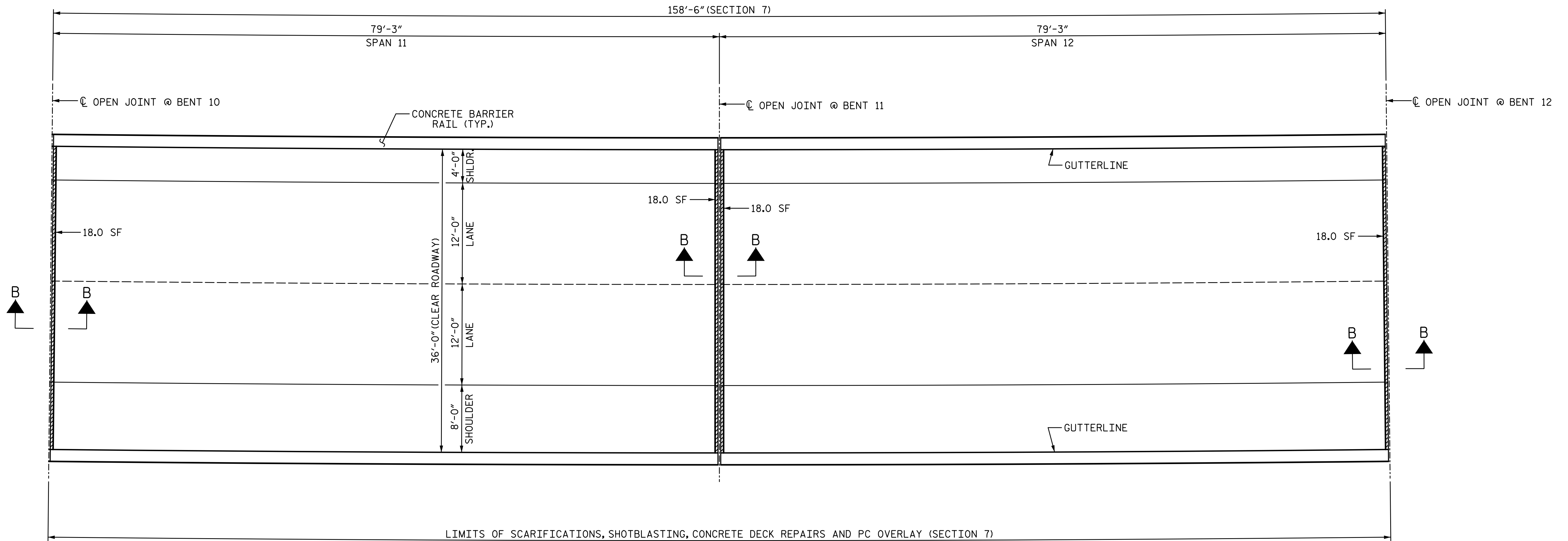
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SECTION 7 QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	634.0 SY	
CLASS II SURFACE PREPARATION	8.0 SY	
CONCRETE DECK REPAIR FOR PC OVERLAY	8.0 SY	
SHOTBLASTING BRIDGE DECK	634.0 SY	
PC MATERIALS	17.8 CY	
PLACING AND FINISHING PC OVERLAY	634.0 SY	
GROOVING BRIDGE FLOORS	5197.5 SF	

-  SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
-  CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY



SPAN 11

SPAN 12

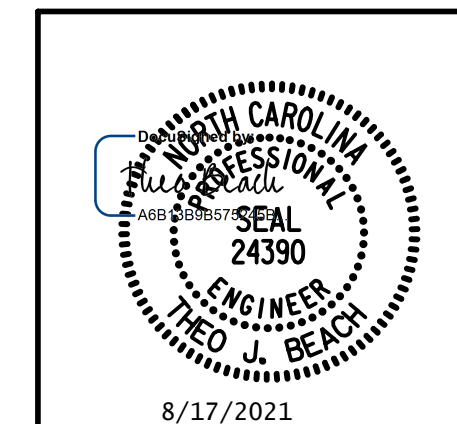
PLAN OF SPANS

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

SHEET 7 OF 8

PLANS PREPARED BY:

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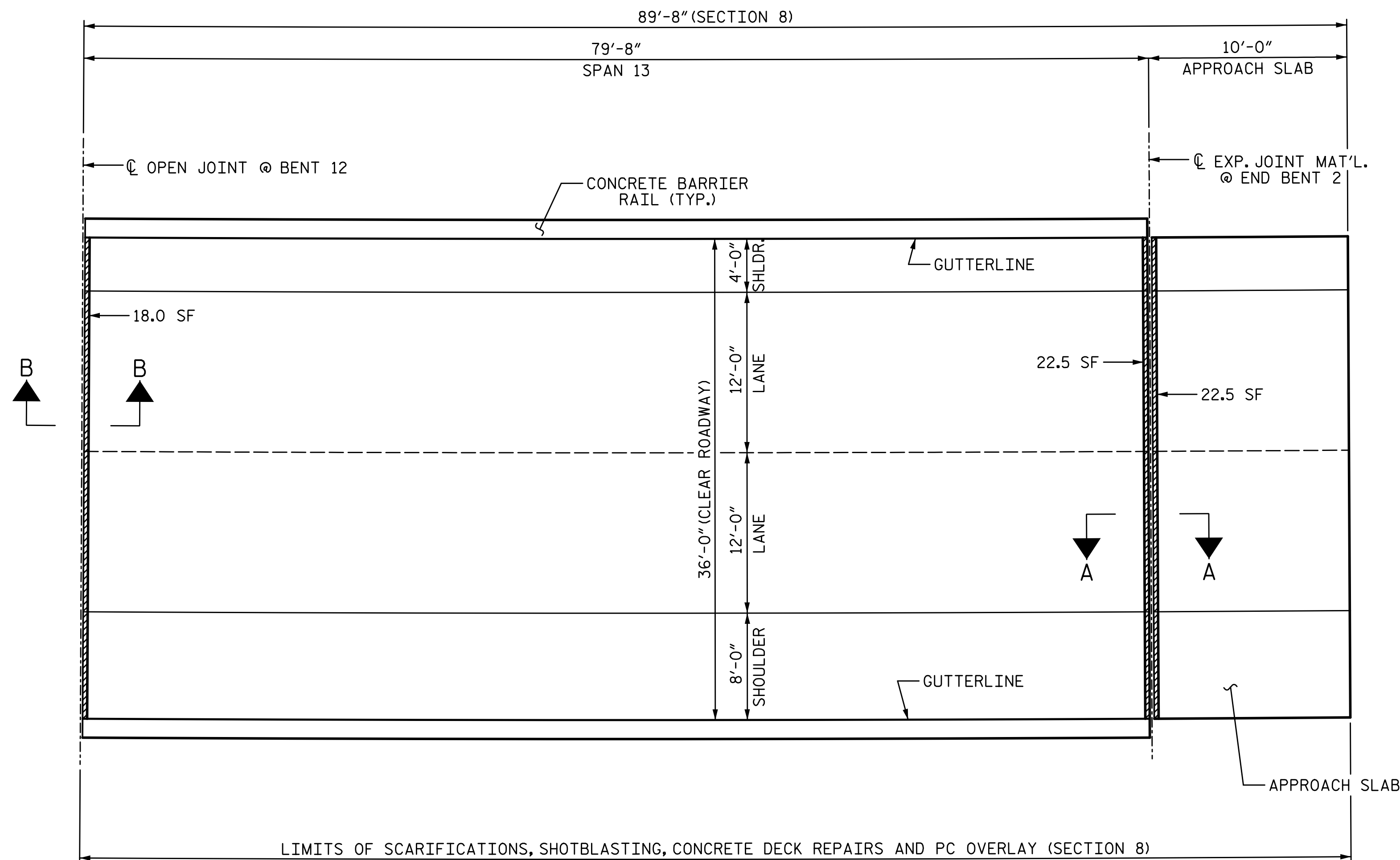
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SECTION 8 QUANTITIES

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	358.7 SY	
CLASS II SURFACE PREPARATION	7.0 SY	
CONCRETE DECK REPAIR FOR PC OVERLAY	7.0 SY	
SHOTBLASTING BRIDGE DECK	358.7 SY	
PC MATERIALS	10.0 CY	
PLACING AND FINISHING PC OVERLAY	358.7 SY	
GROOVING BRIDGE FLOORS	2934.3 SF	

-  SCARIFICATION, SHOTBLASTING, AND POLYMER CONCRETE OVERLAY
-  CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY



SPAN 13
PLAN OF SPAN

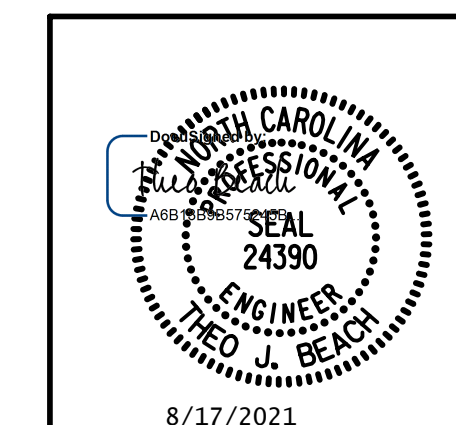
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NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 8 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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**SURFACE PREPARATION
 (SPAN 13)**

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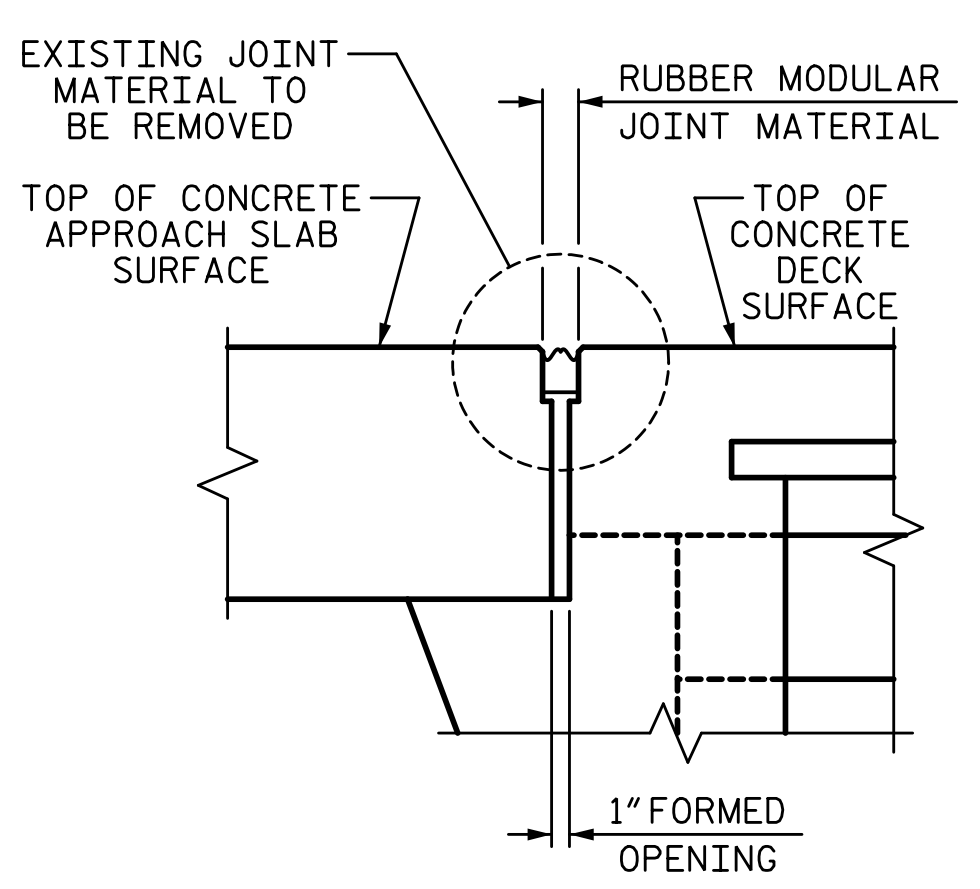


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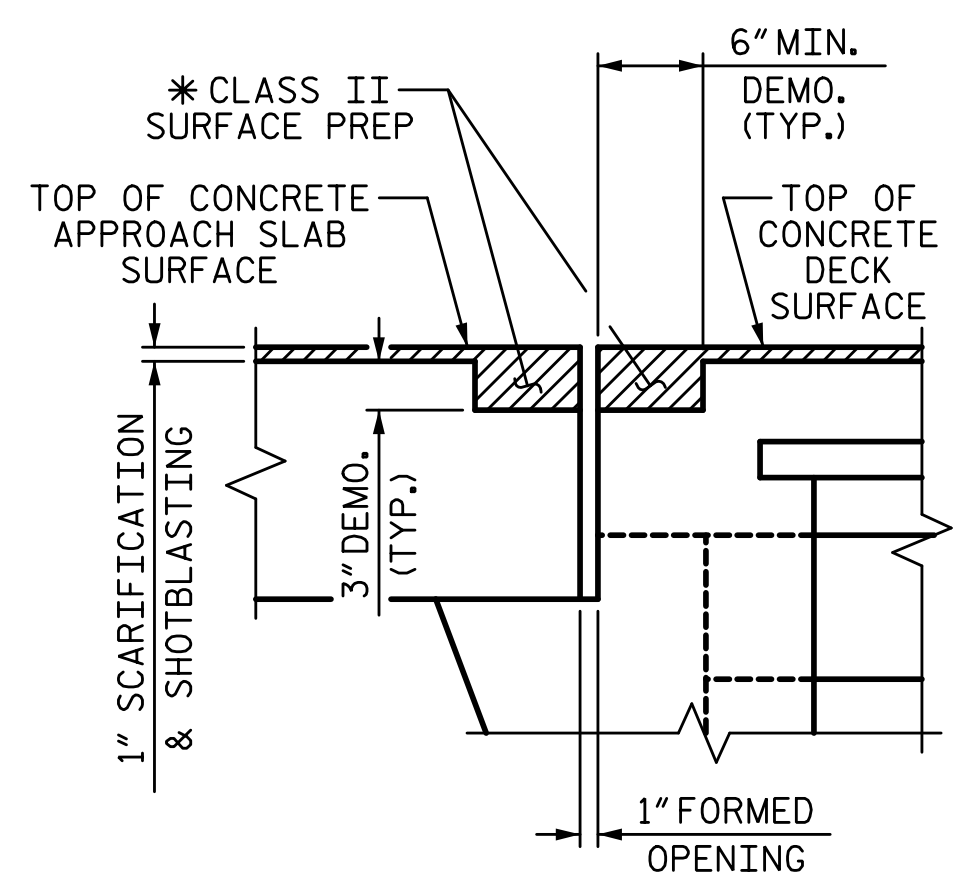
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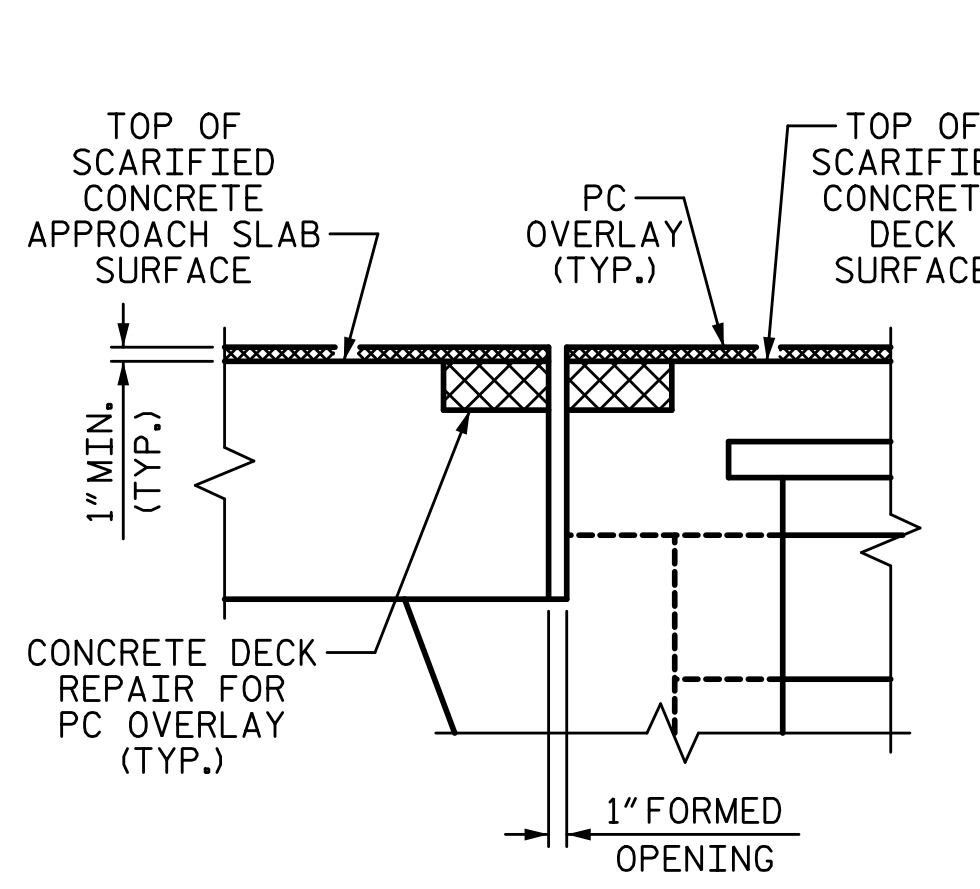
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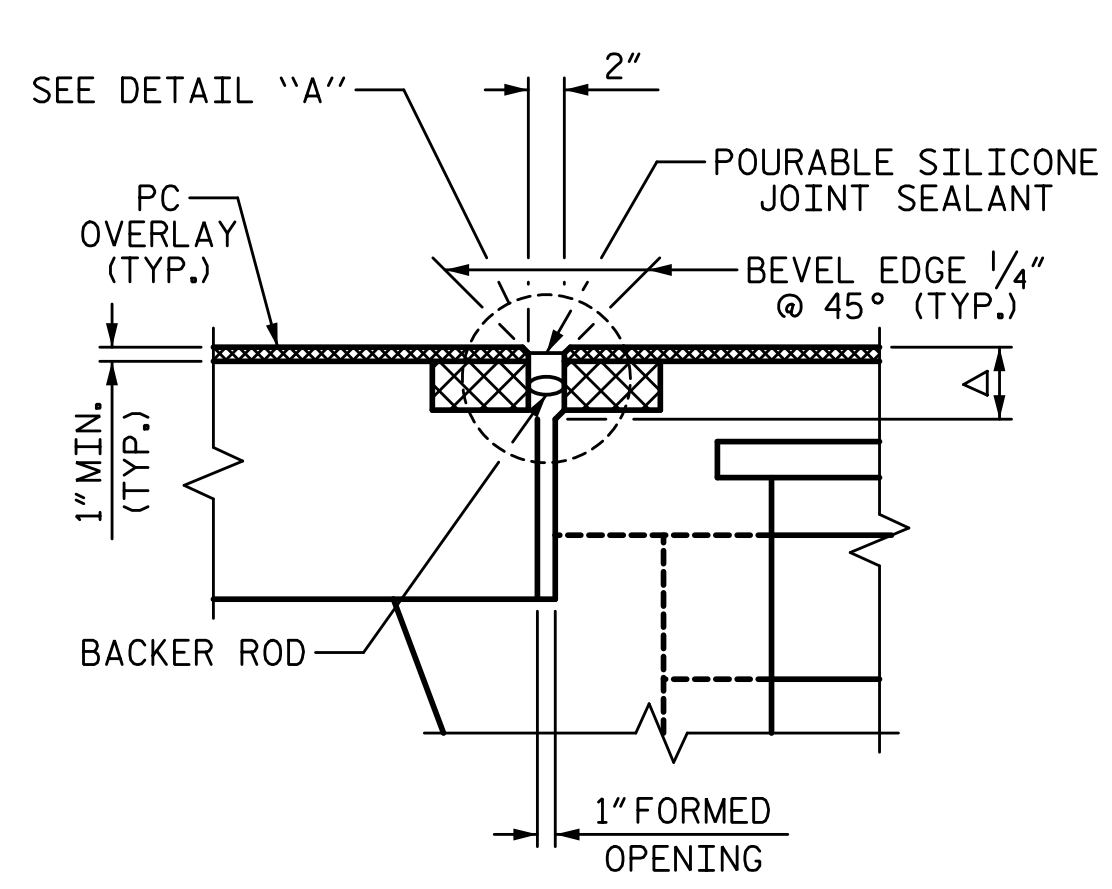
EXISTING



MINIMUM EXISTING JOINT DEMOLITION & SCARIFICATION



PROPOSED JOINT PRE-SAWED & PPC OVERLAY

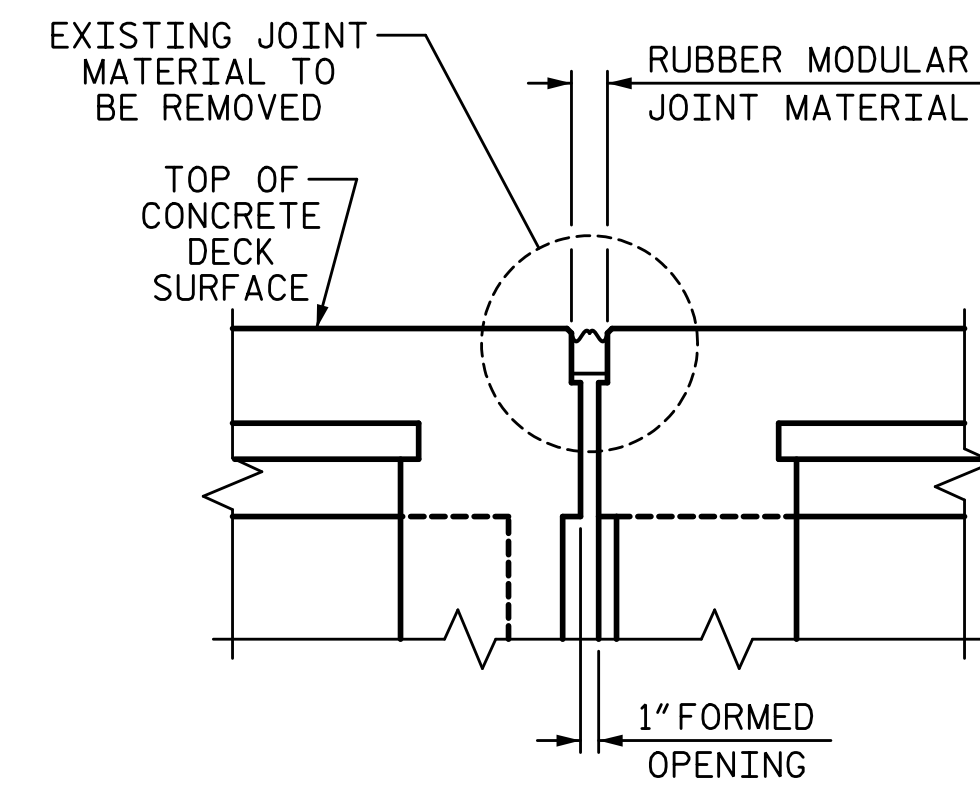


PROPOSED JOINT WITH SAWED DIMENSIONS

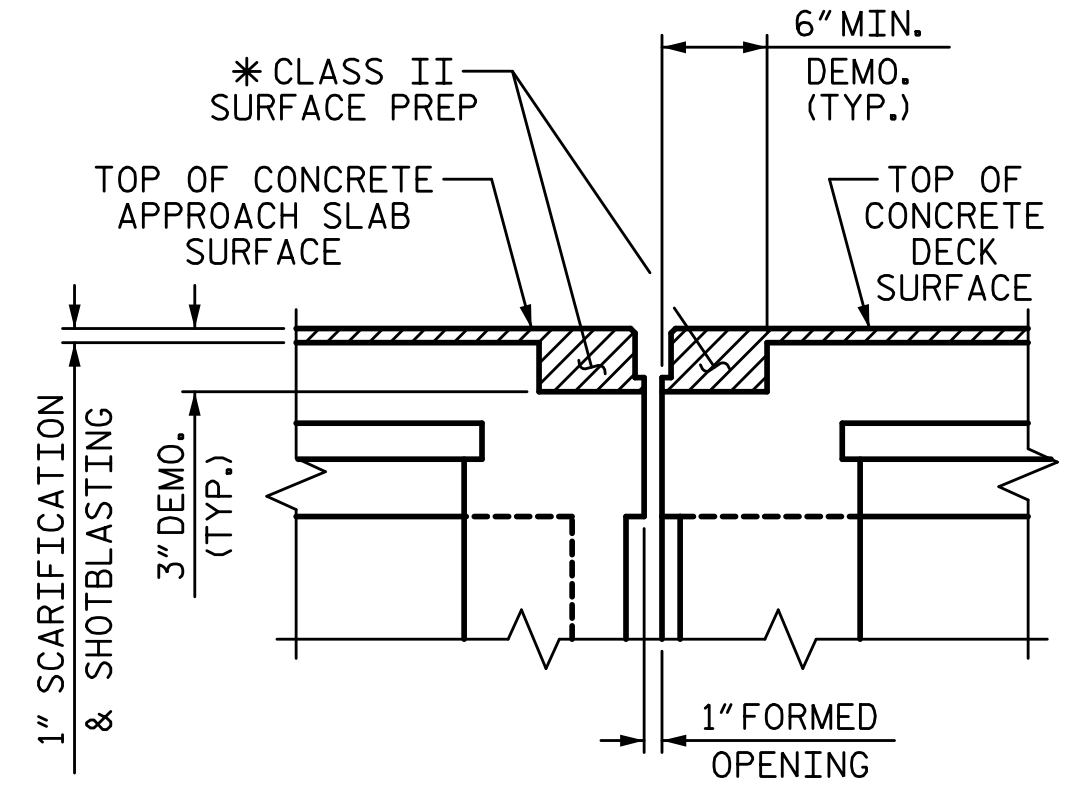
Δ SAW CUT SHALL BE 3/4" BELOW THE BOTTOM OF THE JOINT SEAL

JOINT INSTALLATION SEQUENCE AT END BENTS

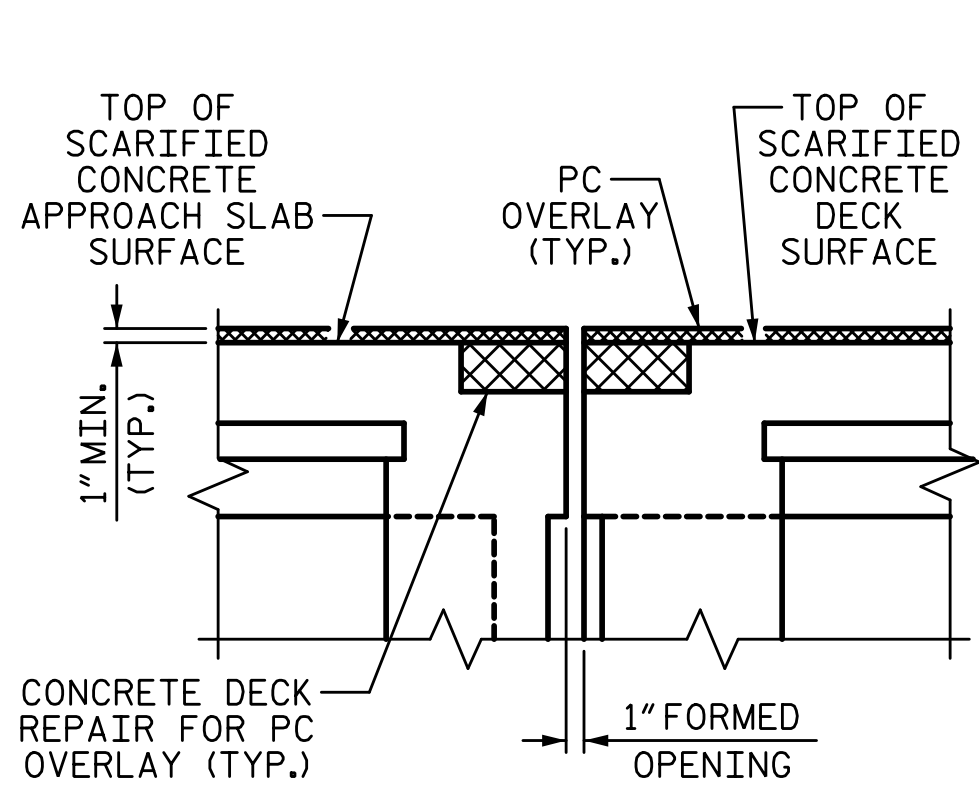
SECTION A-A (END BENT 1 SHOWN, END BENT 2 SIMILAR)



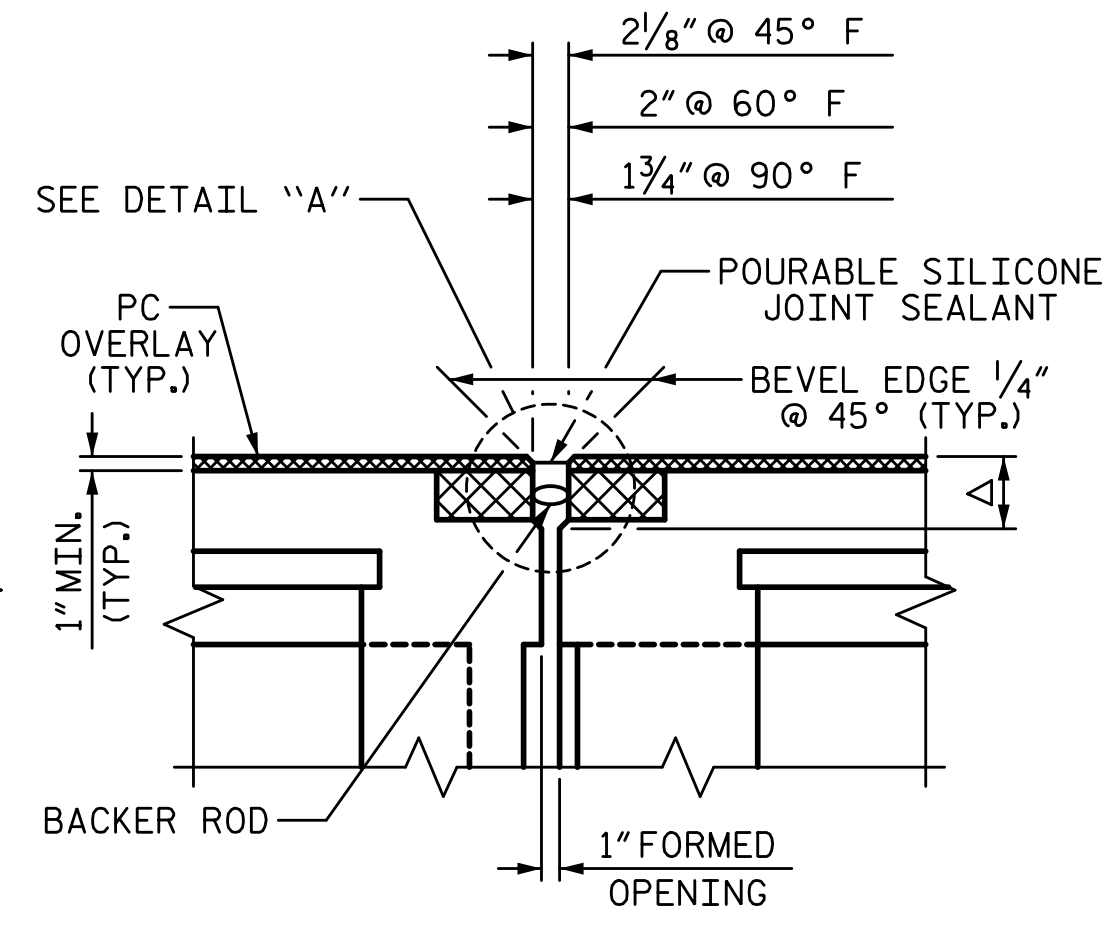
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MINIMUM EXISTING JOINT DEMOLITION & SCARIFICATION



PROPOSED JOINT PRE-SAWED & PPC OVERLAY

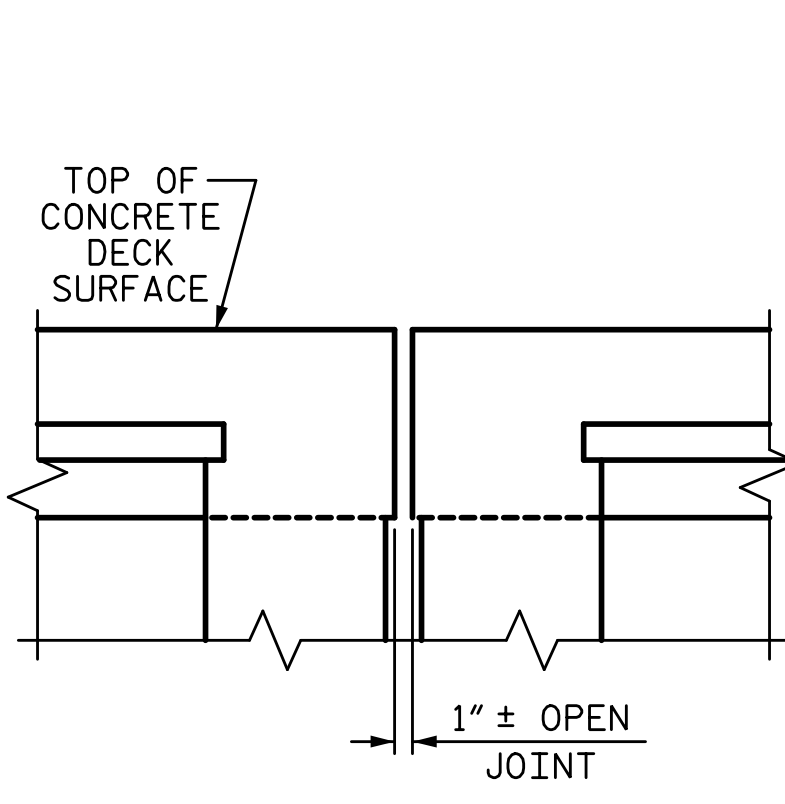


PROPOSED JOINT WITH SAWED DIMENSIONS

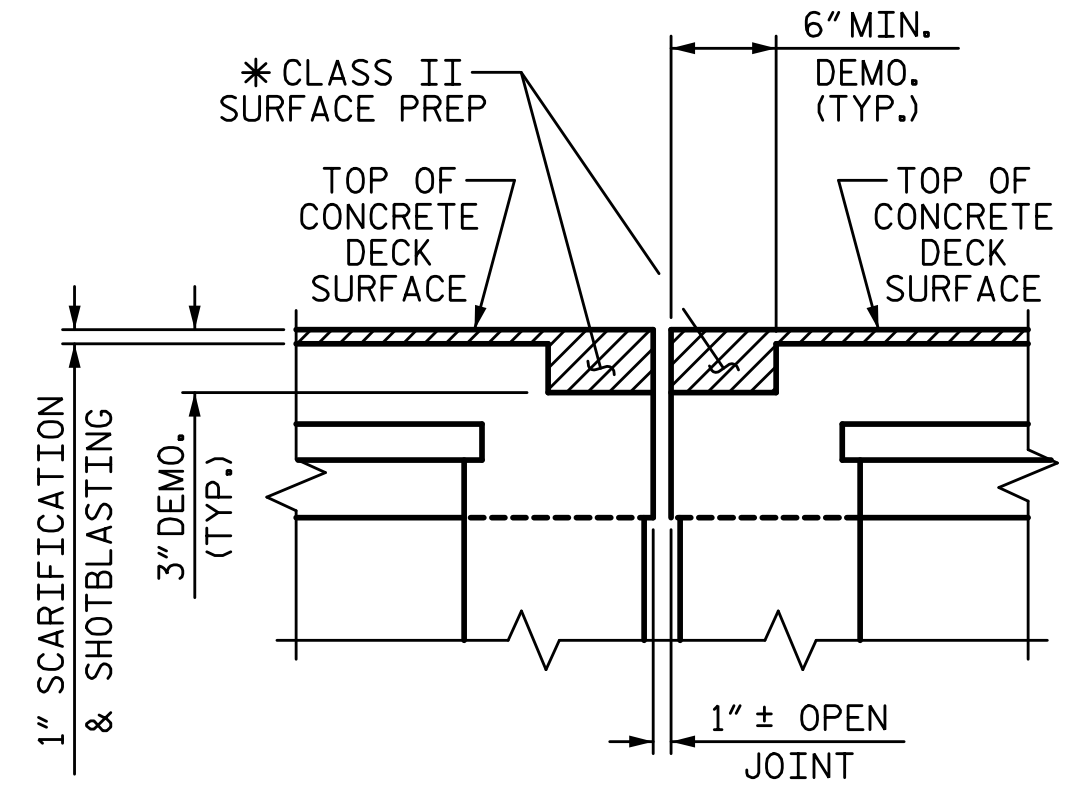
Δ SAW CUT SHALL BE 3/4" BELOW THE BOTTOM OF THE JOINT SEAL

JOINT INSTALLATION SEQUENCE AT BENTS

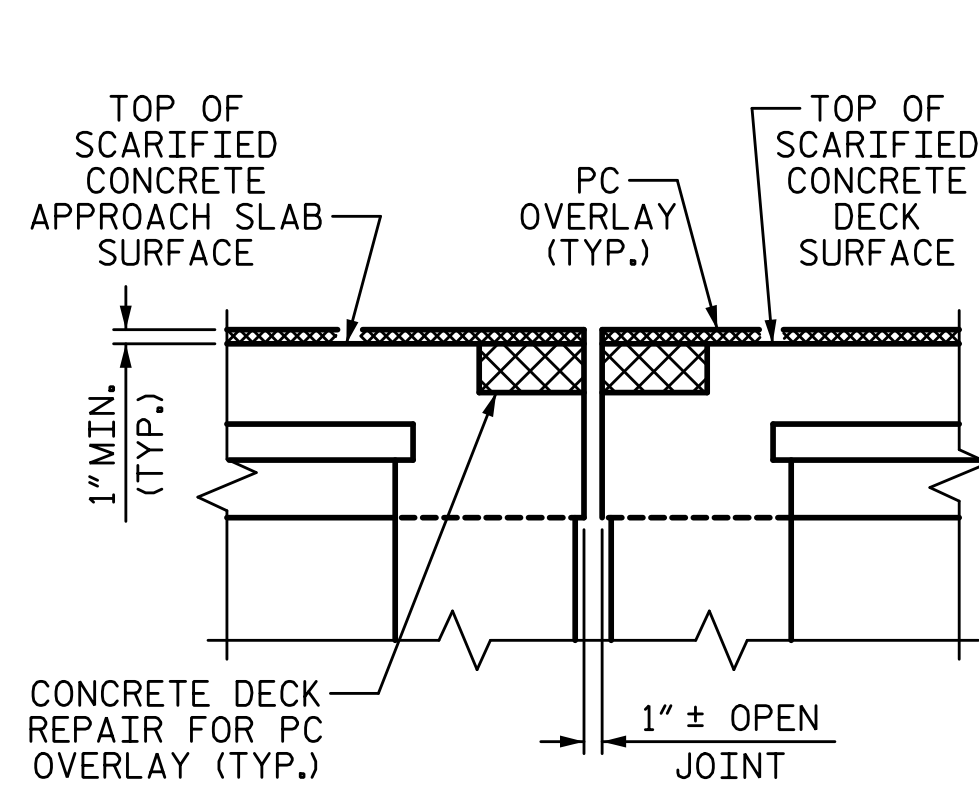
SECTION C-C (WEST HINGE SHOWN, EAST HINGE SIMILAR)



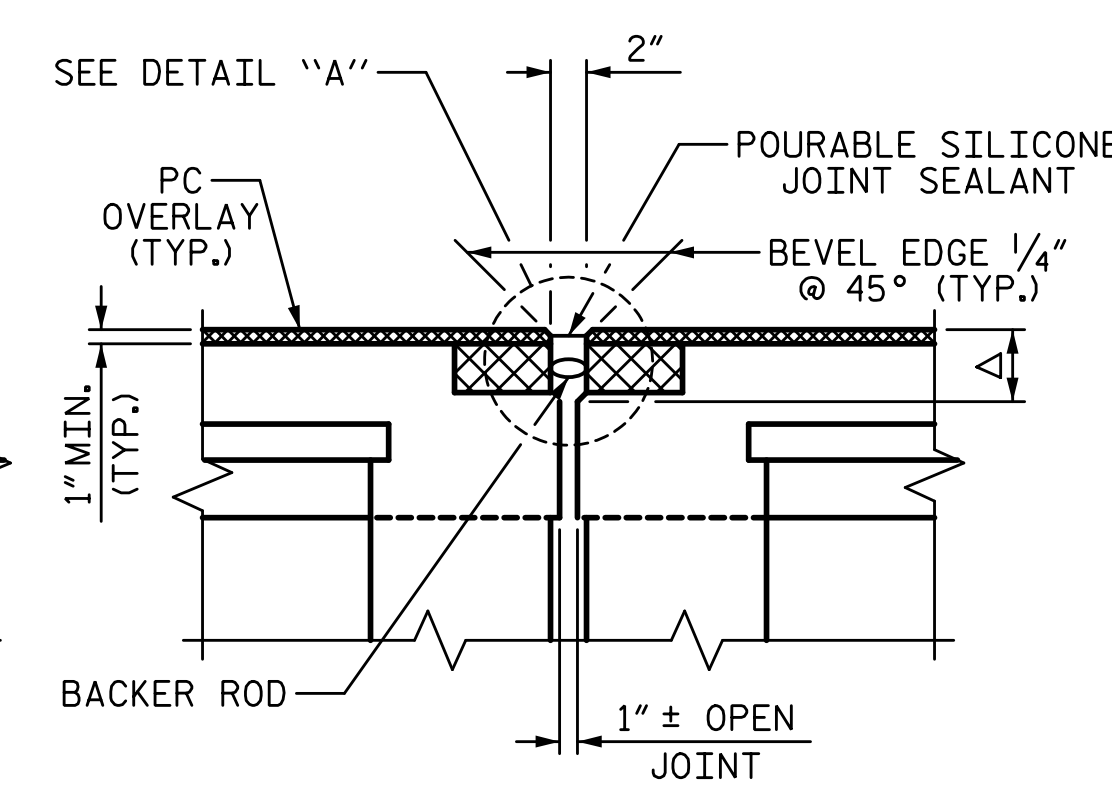
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MINIMUM EXISTING JOINT DEMOLITION & SCARIFICATION



PROPOSED JOINT PRE-SAWED & PPC OVERLAY

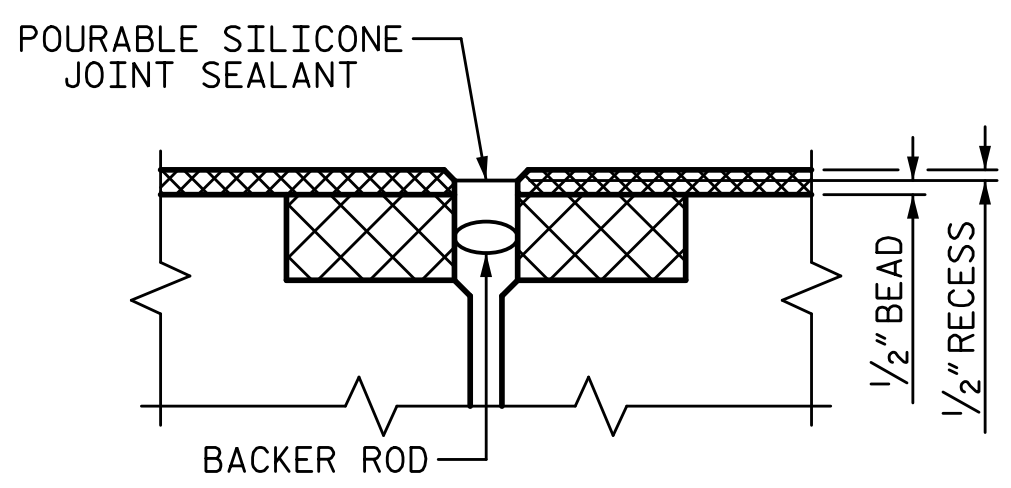


PROPOSED JOINT WITH SAWED DIMENSIONS

Δ SAW CUT SHALL BE 3/4" BELOW THE BOTTOM OF THE JOINT SEAL

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B (OPEN JOINTS)



DETAIL "A"

NOTES:

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN DETAIL BY MORE THAN 1/4", NOTIFY ENGINEER. REVISION TO THE JOINT SEAL SIZE MIGHT BE NECESSARY.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REHAB OPERATIONS NOT TO DROP ANY MATERIAL BELOW THE BRIDGE WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

DURING THE JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE BACKER ROD FOR THE EXISTING JOINT SIZE AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

THE INSTALLATION OF THE JOINT SEAL SHALL BE WATERTIGHT.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.

* FOR CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY QUANTITIES SEE SURFACE PREPARATION SHEETS 1 THROUGH 8.

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

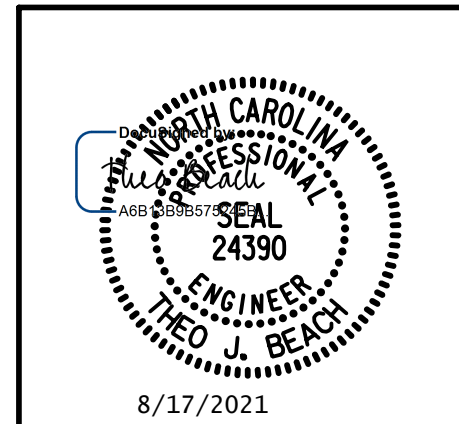
SHEET 1 OF 2

STATE OF NORTH CAROLINA
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JOINT REPAIR DETAILS

PLANS PREPARED BY:

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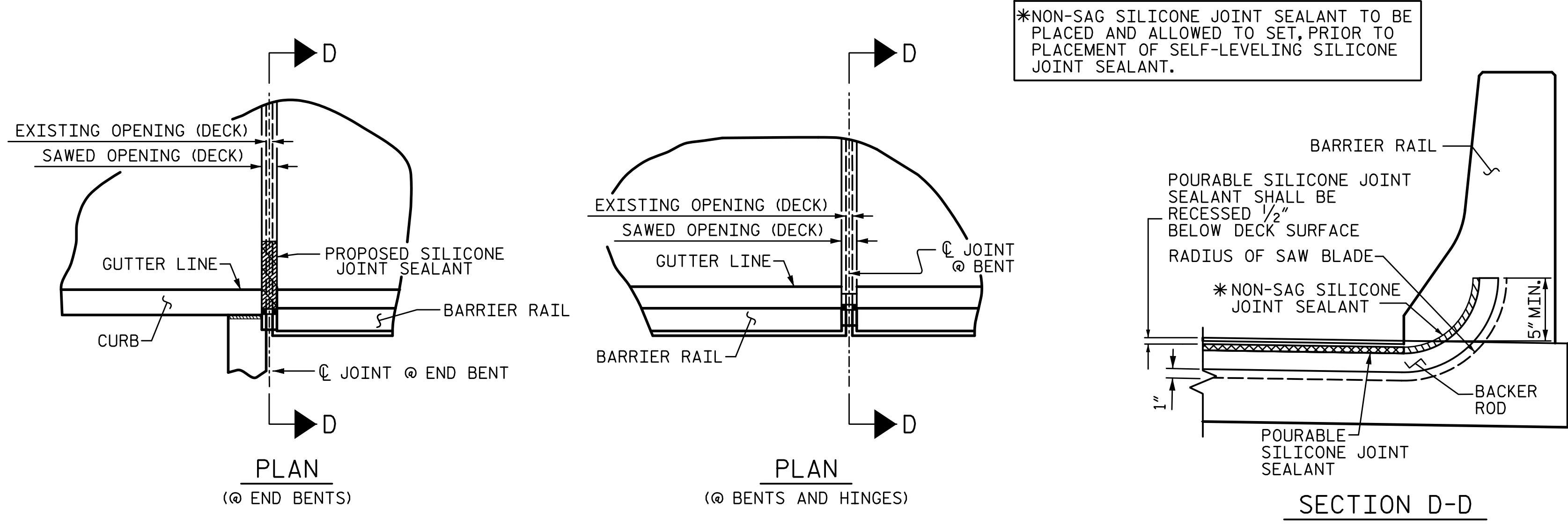
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JOINT REPAIR QUANTITY TABLE		
POURABLE SILICONE JOINT SEALANT	ESTIMATE	ACTUAL
	LF	LF
END BENT 1	37.0	
BENT 1	37.0	
BENT 2	37.0	
BENT 3	37.0	
BENT 4	37.0	
BENT 5	37.0	
BENT 6	37.0	
BENT 7	37.0	
BENT 8	37.0	
BENT 9	37.0	
BENT 10	37.0	
BENT 11	37.0	
BENT 12	37.0	
END BENT 2	37.0	



JOINT DETAIL AT BARRIER RAIL

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

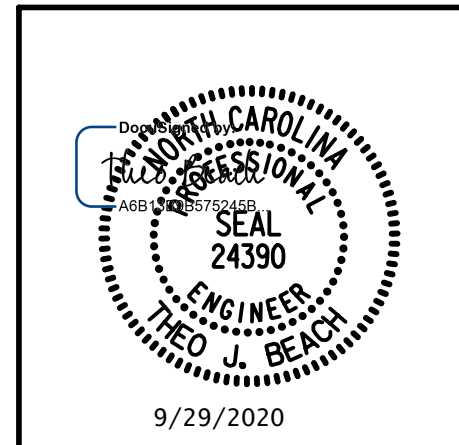
SHEET 2 OF 2

STATE OF NORTH CAROLINA
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JOINT REPAIR DETAILS

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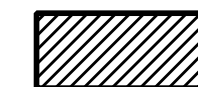
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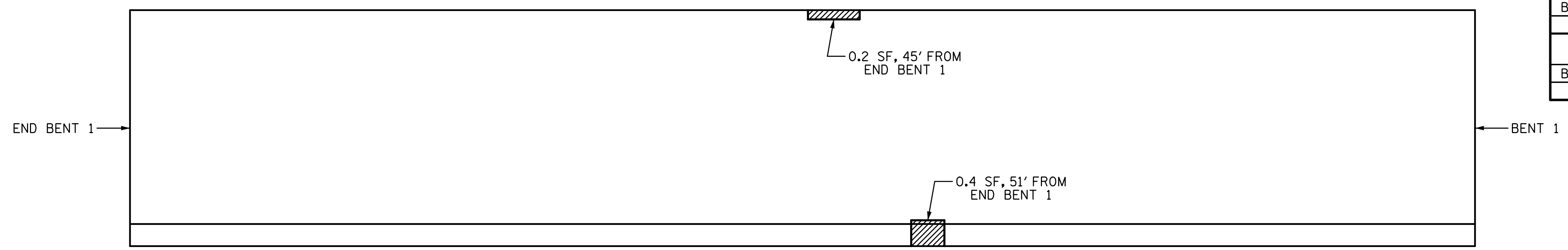


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1			3			TOTAL SHEETS
2			4			163

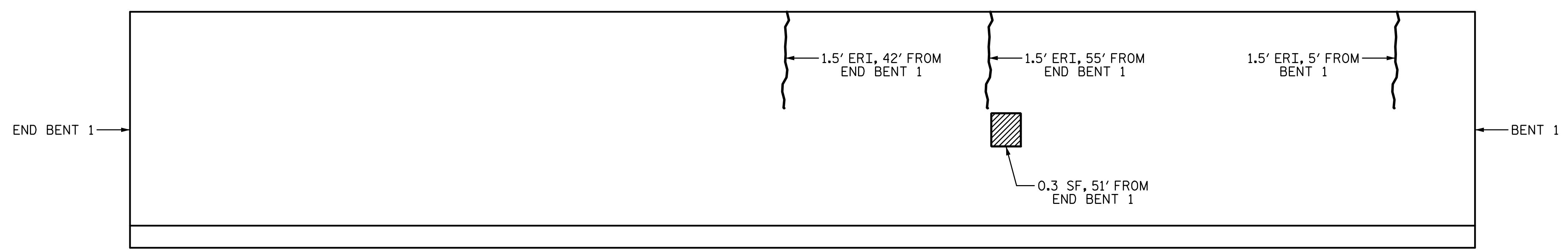
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 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

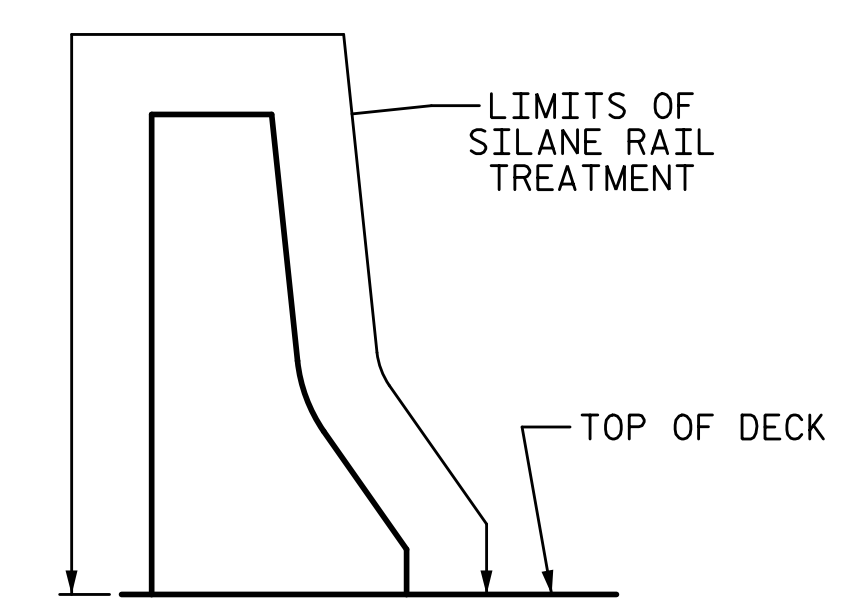


LEFT RAIL



RIGHT RAIL

SPAN 1



SECTION THRU BARRIER RAIL
LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

REPAIR QUANTITY TABLE					
REPAIRS SPAN 1	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.9	0.2			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		4.5			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1069.5			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1069.5			

NOTES:
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 FOR SILANE RAIL TREATMENT, SEE SPECIAL PROVISIONS.

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

SHEET 1 OF 13

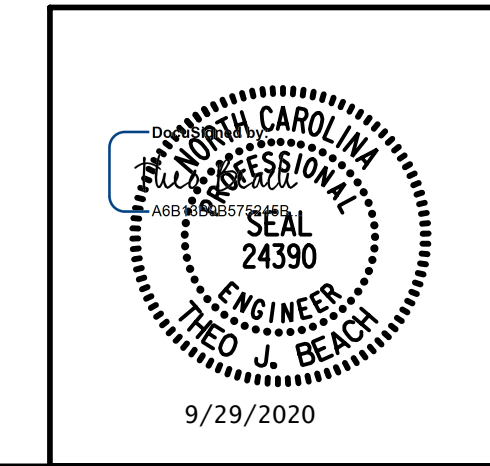
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 1
 BARRIER RAIL

REVISIONS						SHEET NO.
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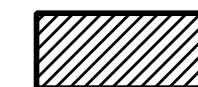
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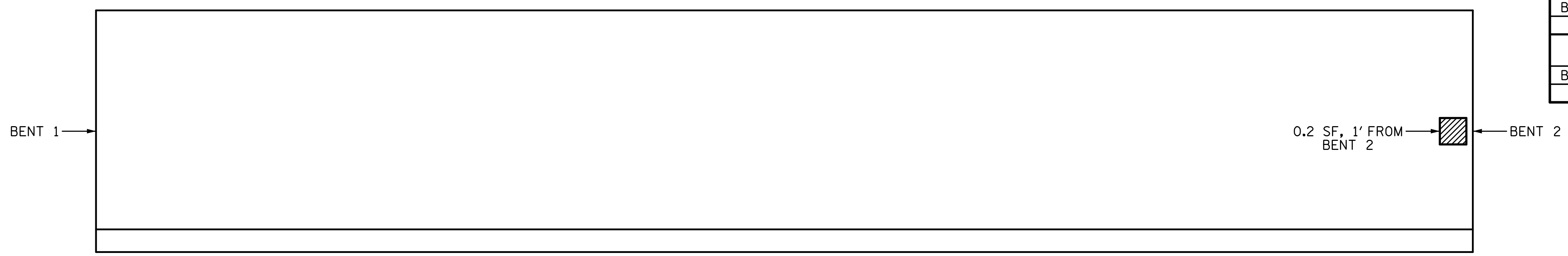
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 (919) 852-0598 (Fax)
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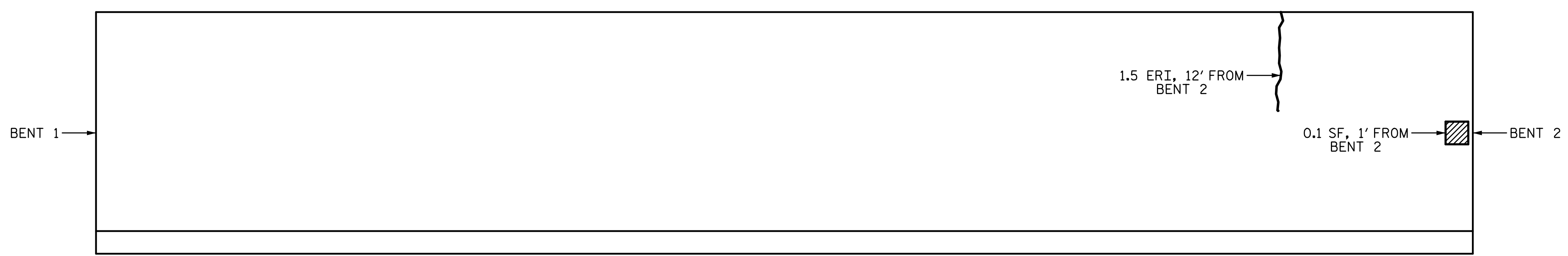
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 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

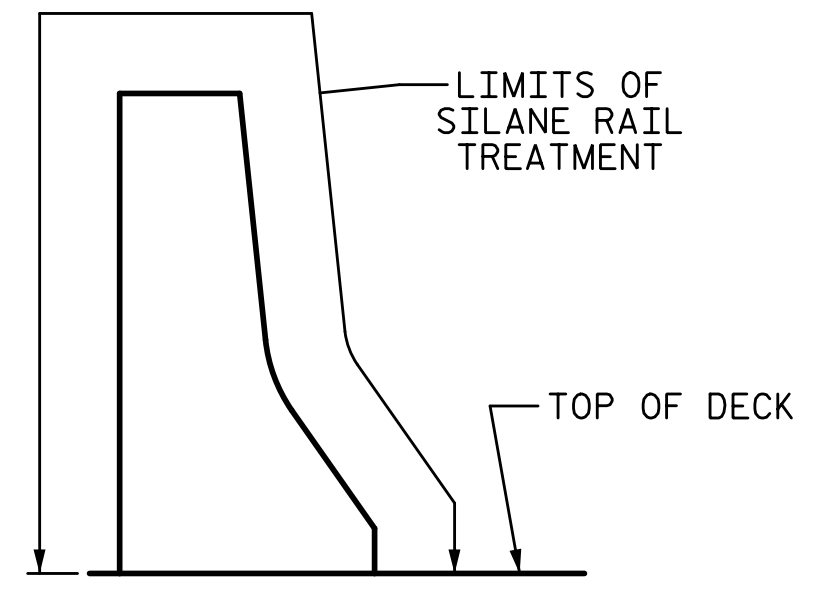


LEFT RAIL



RIGHT RAIL

SPAN 2



SECTION THRU BARRIER RAIL
LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

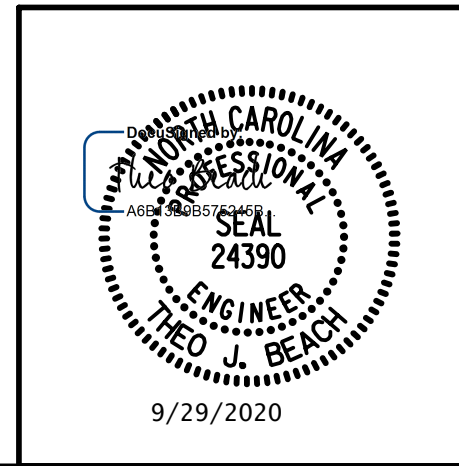
REPAIR QUANTITY TABLE					
REPAIRS SPAN 2	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.3	0.1			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		1.5			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1064.4			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1064.4			

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

SHEET 2 OF 13

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 2
 BARRIER RAIL




PLANS PREPARED BY:
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 (919) 852-0598 (Fax)
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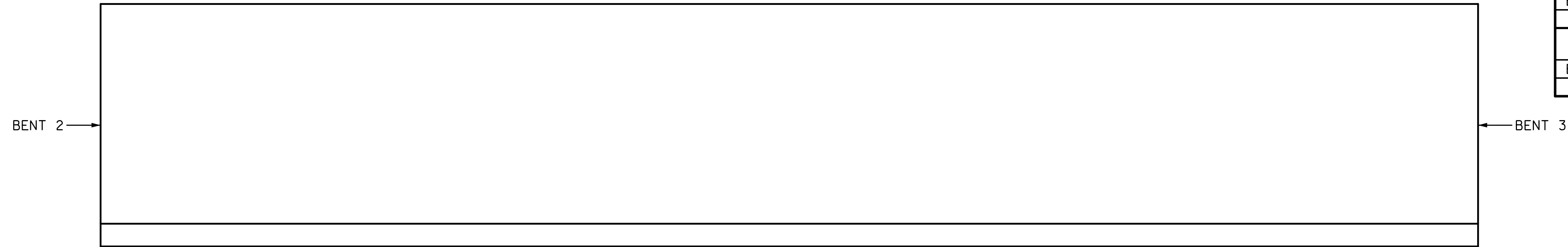
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-17
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2			4			163

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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

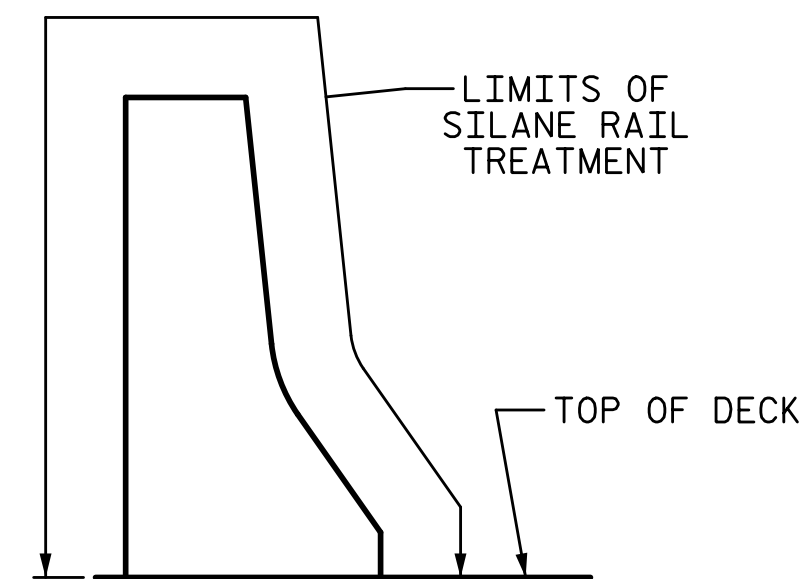


LEFT RAIL



RIGHT RAIL

SPAN 3



SECTION THRU BARRIER RAIL
 LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

REPAIR QUANTITY TABLE					
REPAIRS SPAN 3	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		0.0			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1064.4			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1064.4			

NOTES:

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

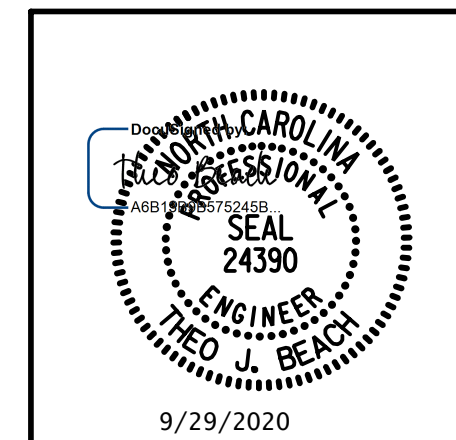
SHEET 3 OF 13

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

SPAN 3
 BARRIER RAIL

PLANS PREPARED BY:

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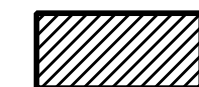
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SHEET NO.
S2-18
TOTAL SHEETS
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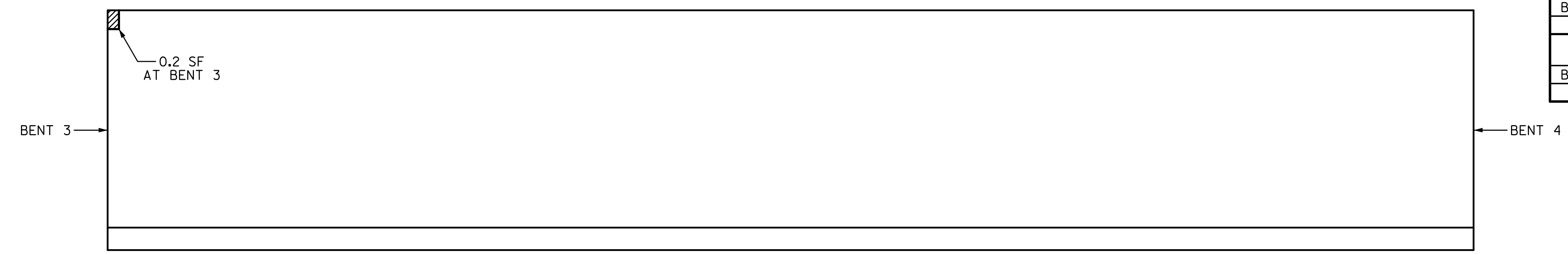
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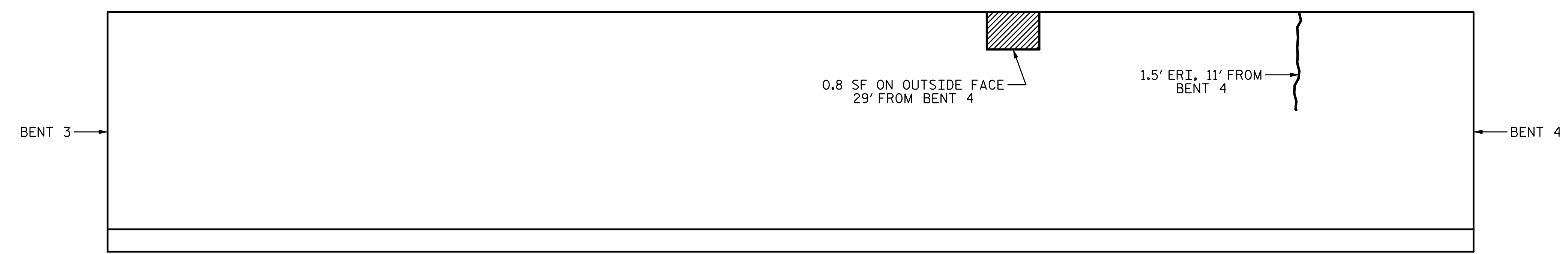
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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 4	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	1.0	0.3			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		1.5			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1064.4			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1064.4			

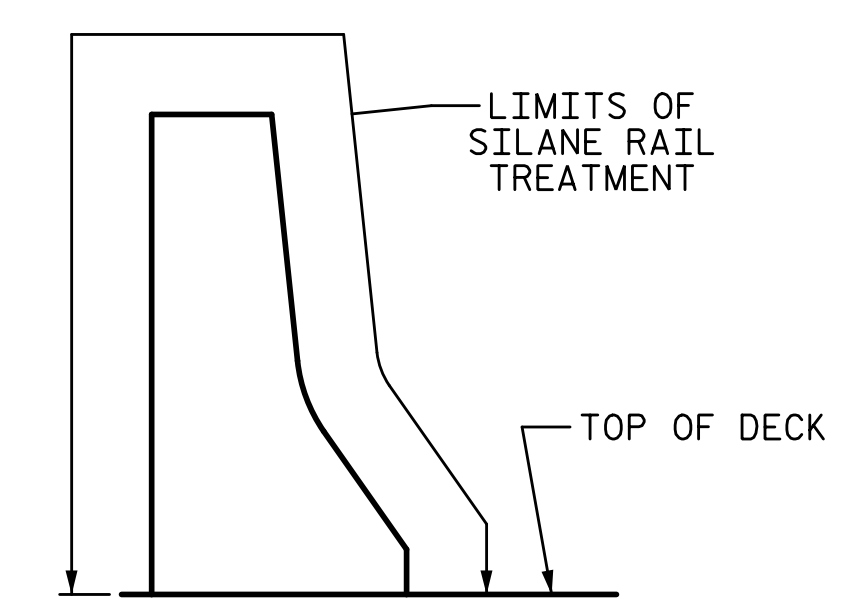


LEFT RAIL



RIGHT RAIL

SPAN 4



SECTION THRU BARRIER RAIL
 LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

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

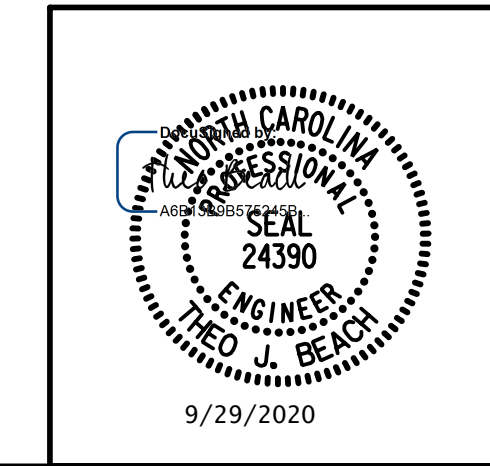
SHEET 4 OF 13

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 4
 BARRIER RAIL

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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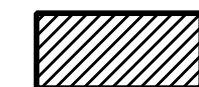
 SIMPSON ENGINEERS & ASSOCIATES
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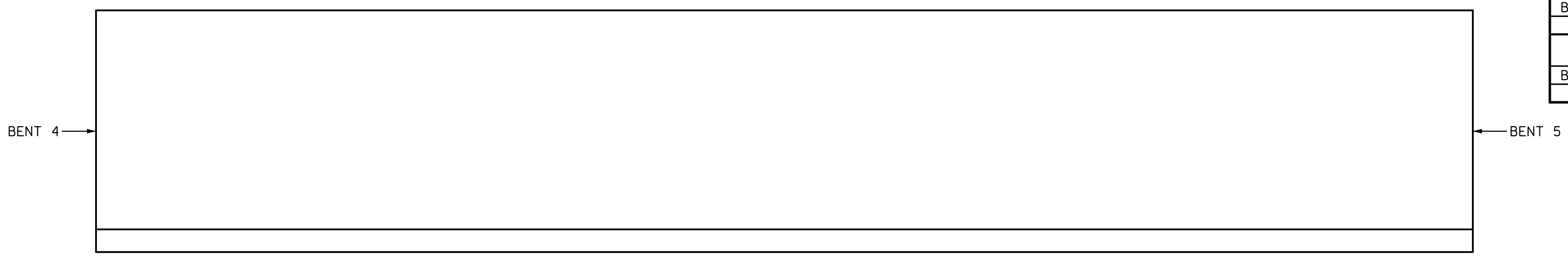


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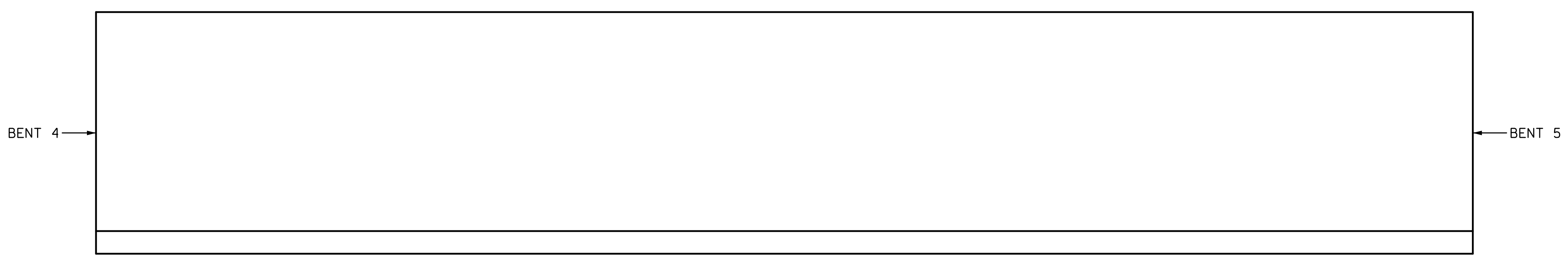
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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

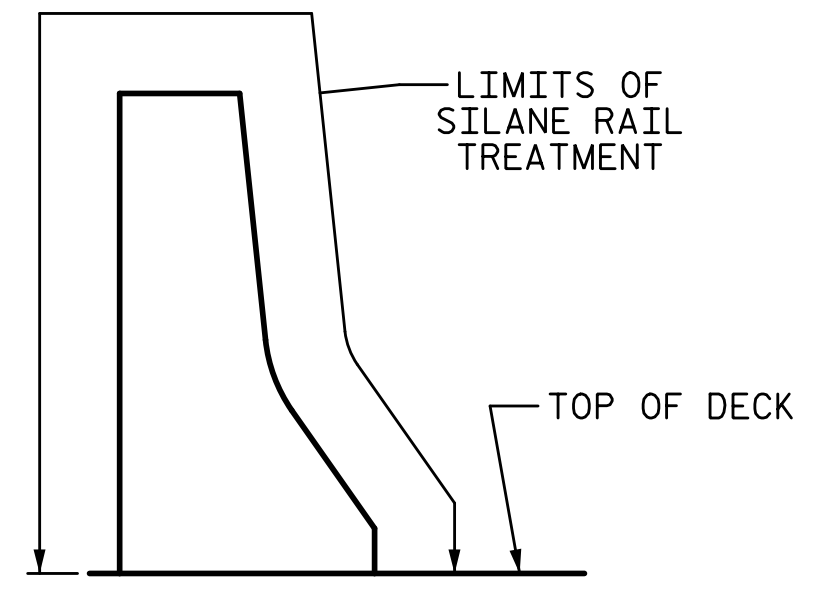


LEFT RAIL



RIGHT RAIL

SPAN 5



SECTION THRU BARRIER RAIL
 LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

REPAIR QUANTITY TABLE					
REPAIRS SPAN 5	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		0.0			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1064.4			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1064.4			

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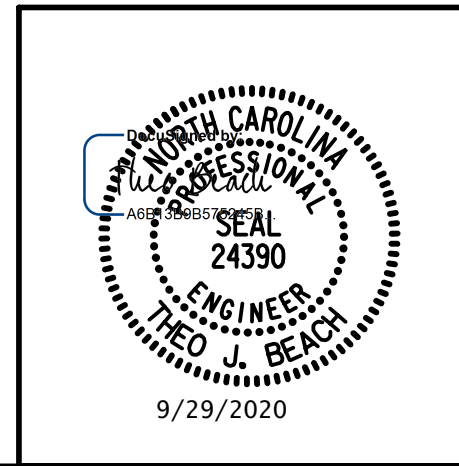
FOR SILANE RAIL TREATMENT, SEE SPECIAL PROVISIONS.

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

SHEET 5 OF 13

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

 SPAN 5
 BARRIER RAIL



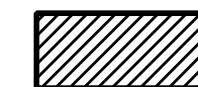
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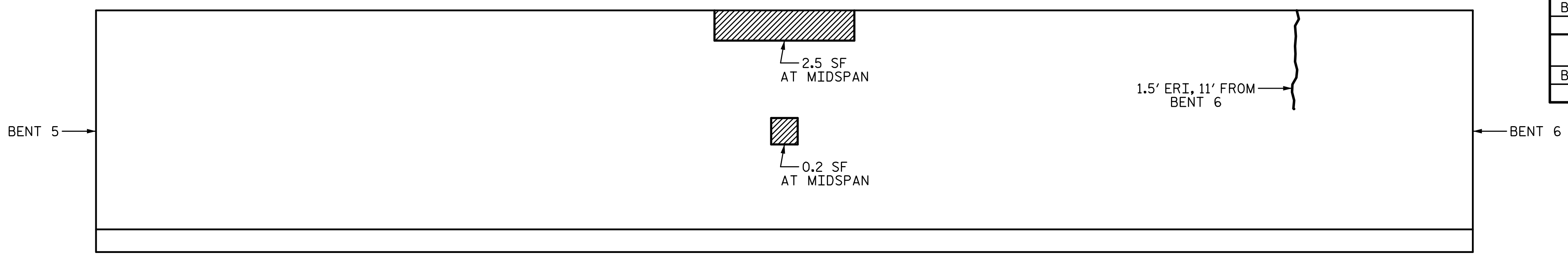
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-20
1			3			TOTAL SHEETS
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 CHECKED BY: T.J. BEACH DATE: 9-20
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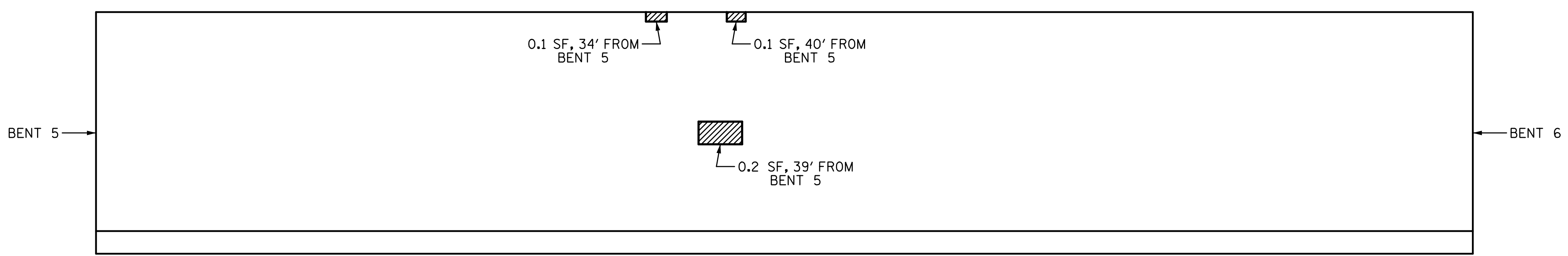
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 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

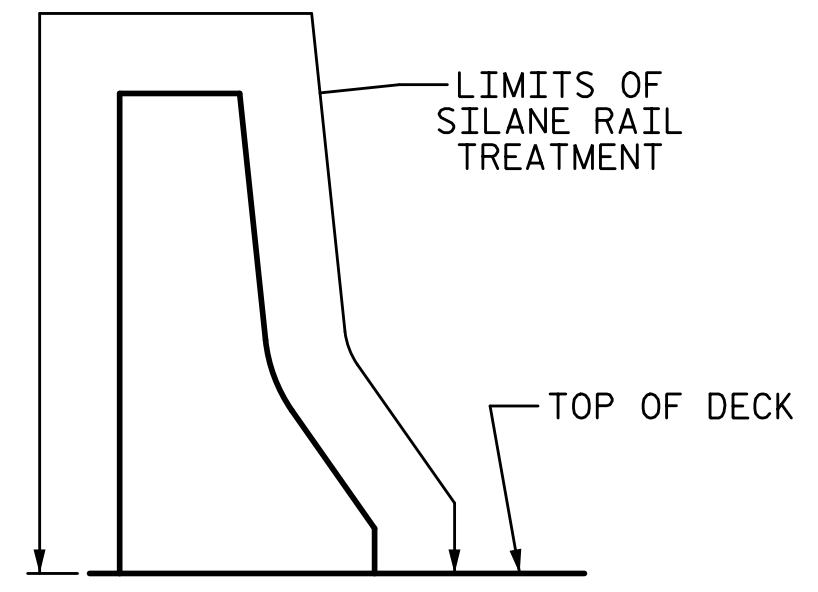


LEFT RAIL



RIGHT RAIL

SPAN 6



SECTION THRU BARRIER RAIL
LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

REPAIR QUANTITY TABLE					
REPAIRS SPAN 6	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	3.1	1.6			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		1.5			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1064.4			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1064.4			

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

SHEET 6 OF 13

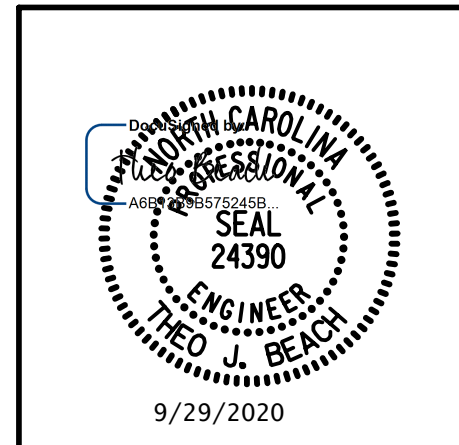
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DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

**SPAN 6
BARRIER RAIL**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-21
1			3			TOTAL SHEETS
2			4			163

PLANS PREPARED BY:

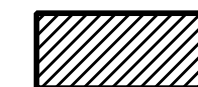
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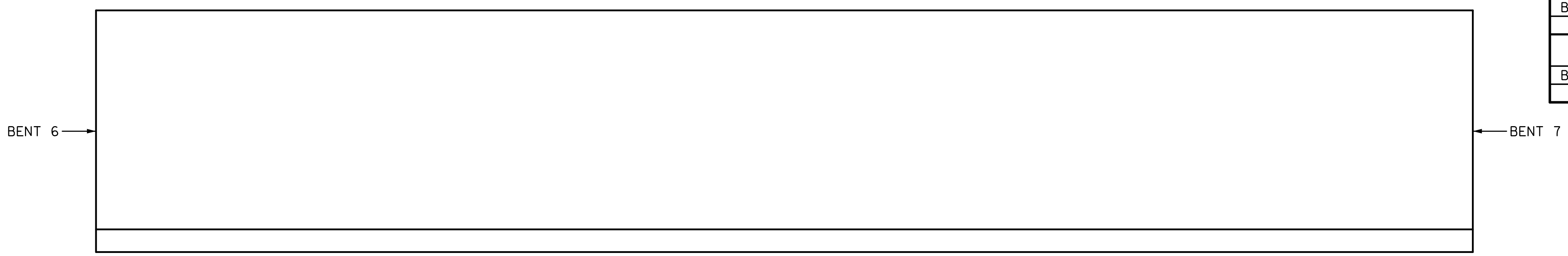


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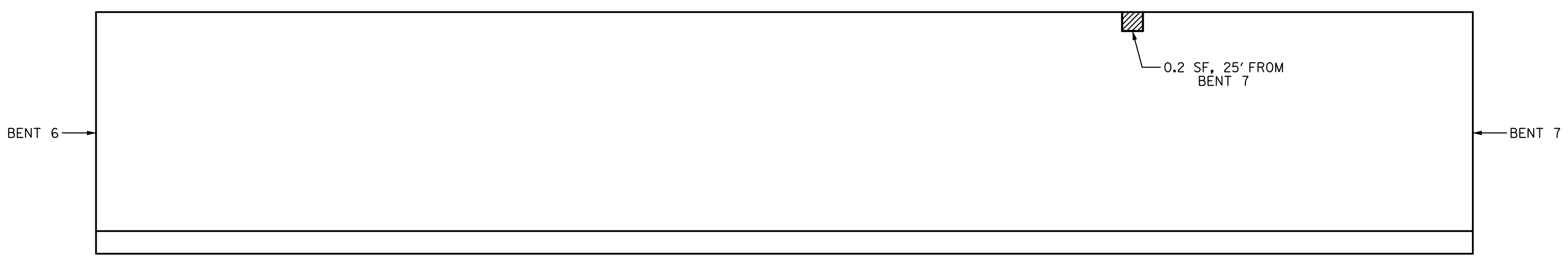
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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

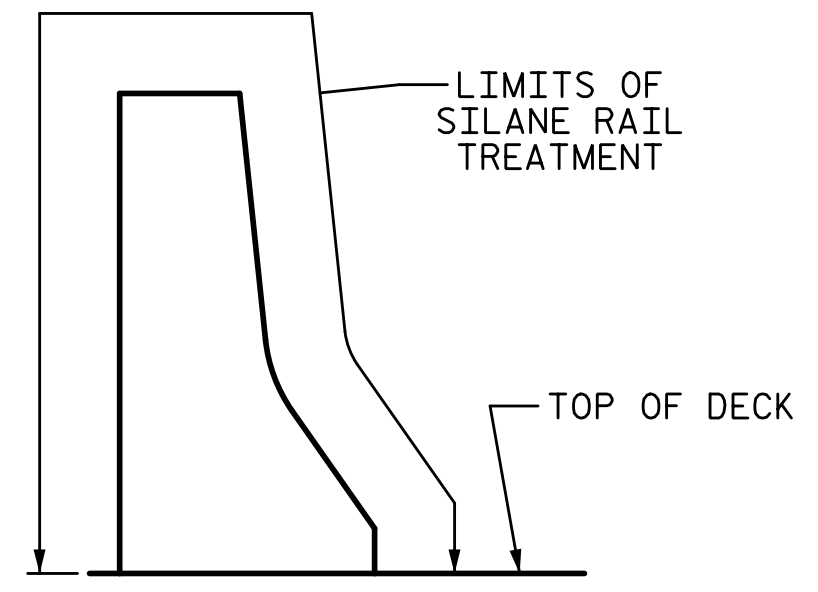


LEFT RAIL



RIGHT RAIL

SPAN 7



SECTION THRU BARRIER RAIL
 LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

REPAIR QUANTITY TABLE					
REPAIRS SPAN 7	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		0.0			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1231.3			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1231.3			

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.

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

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FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SUPERSTRUCTURE REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.

AFTER ALL REPAIRS ARE MADE TO THE BARRIER RAILS, ADD SILANE RAIL TREATMENT TO THE LIMITS SHOWN ON THE PLANS.

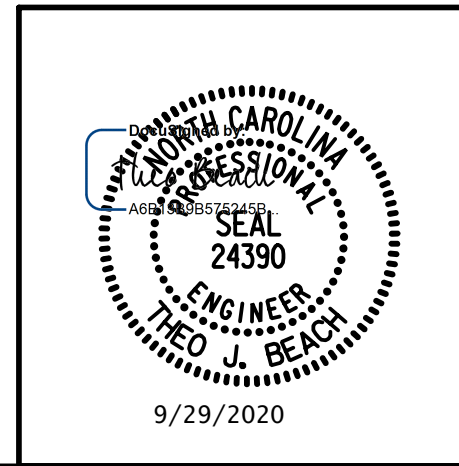
FOR SILANE RAIL TREATMENT, SEE SPECIAL PROVISIONS.

PROJECT NO. 15BPR.26
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SHEET 7 OF 13

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**SPAN 7
 BARRIER RAIL**



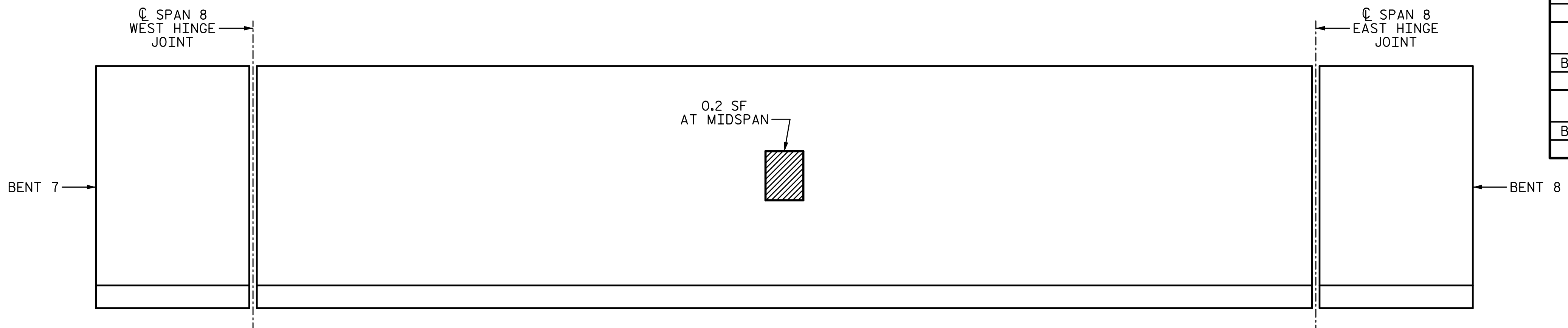
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1			3			TOTAL SHEETS
2			4			163

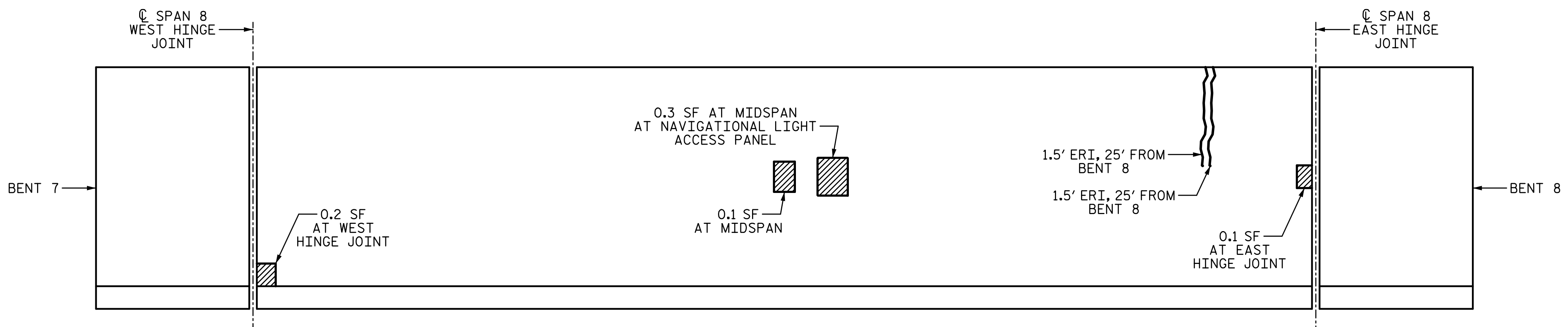
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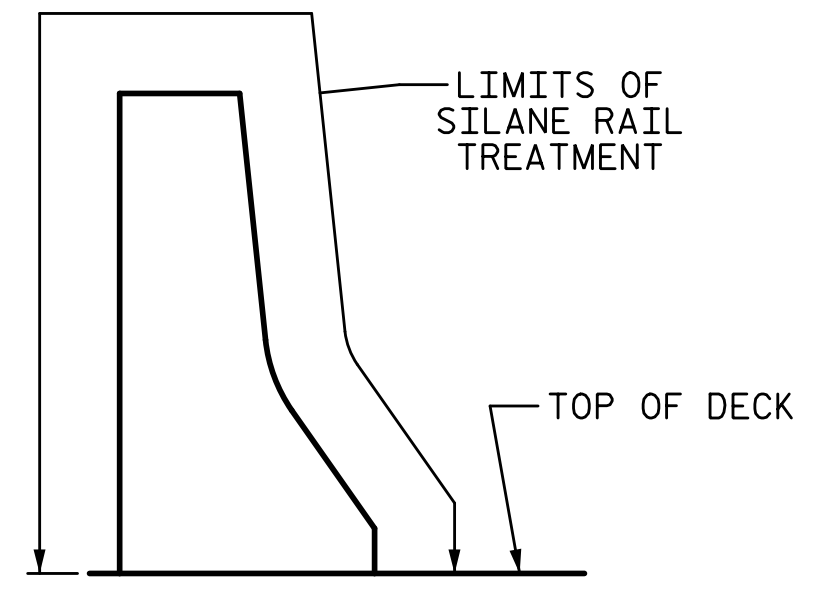


LEFT RAIL



RIGHT RAIL

SPAN 8



SECTION THRU BARRIER RAIL

LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

REPAIR QUANTITY TABLE					
REPAIRS SPAN 8	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.9	0.2			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		3.0			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1602.2			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1602.2			

NOTES:

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

SHEET 8 OF 13

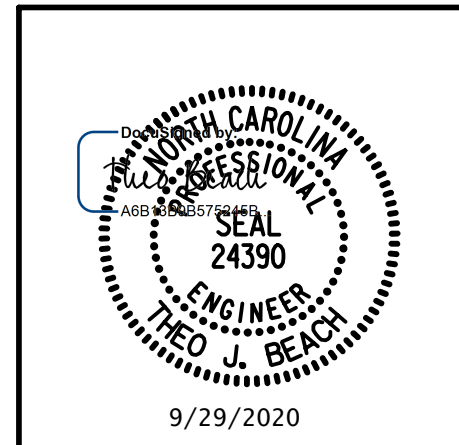
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**SPAN 8
 BARRIER RAIL**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-23
1			3			TOTAL SHEETS
2			4			163

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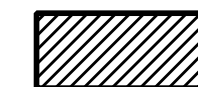
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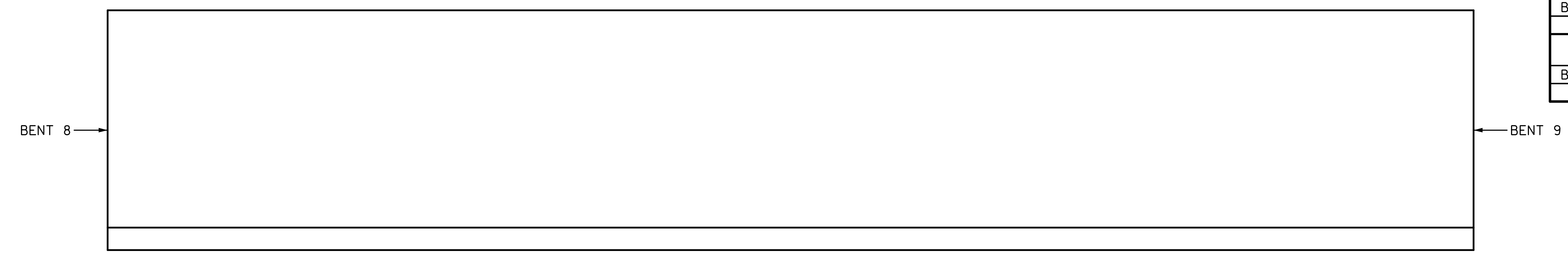
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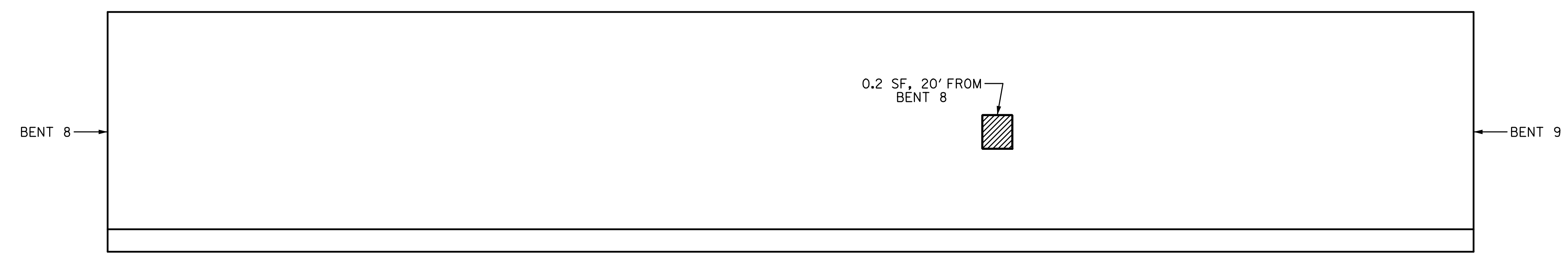
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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 9	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.2	0.1			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		0.0			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		1103.5			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		1103.5			

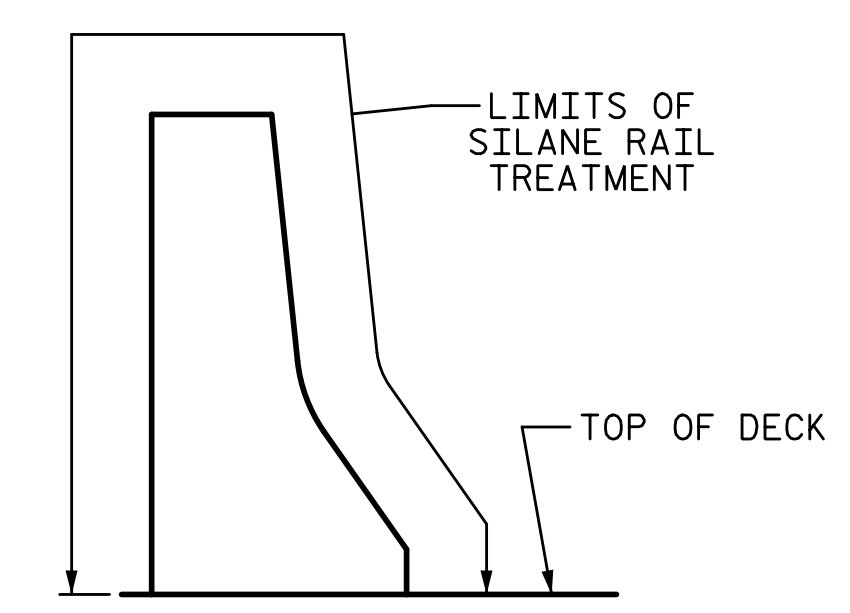


LEFT RAIL



RIGHT RAIL

SPAN 9



SECTION THRU BARRIER RAIL
 LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

NOTES:

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FOR SUPERSTRUCTURE REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.

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FOR SILANE RAIL TREATMENT, SEE SPECIAL PROVISIONS.

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

SHEET 9 OF 13

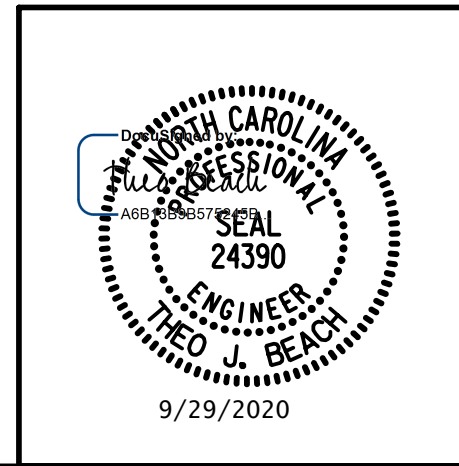
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**SPAN 9
 BARRIER RAIL**

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1			3			TOTAL SHEETS
2			4			163

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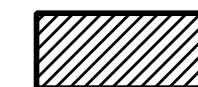
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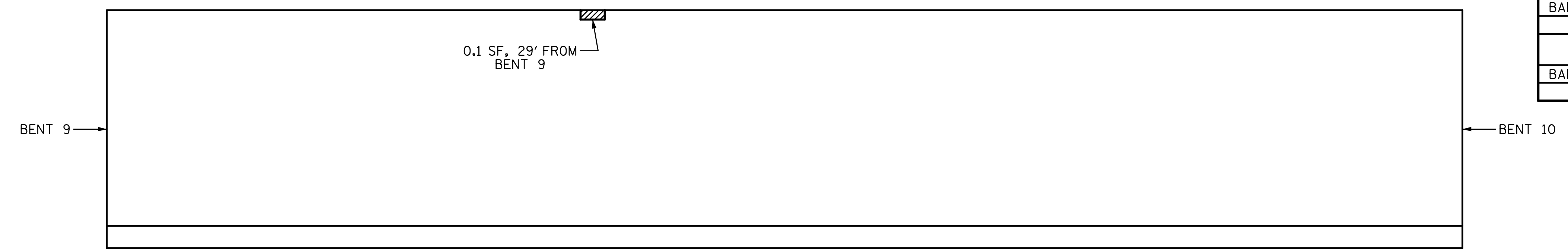
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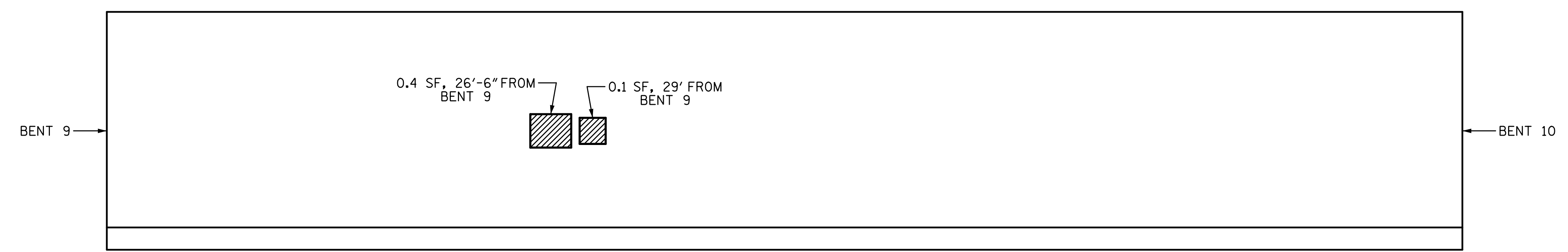
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 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 10	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.6	0.2			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		0.0			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		977.8			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		977.8			

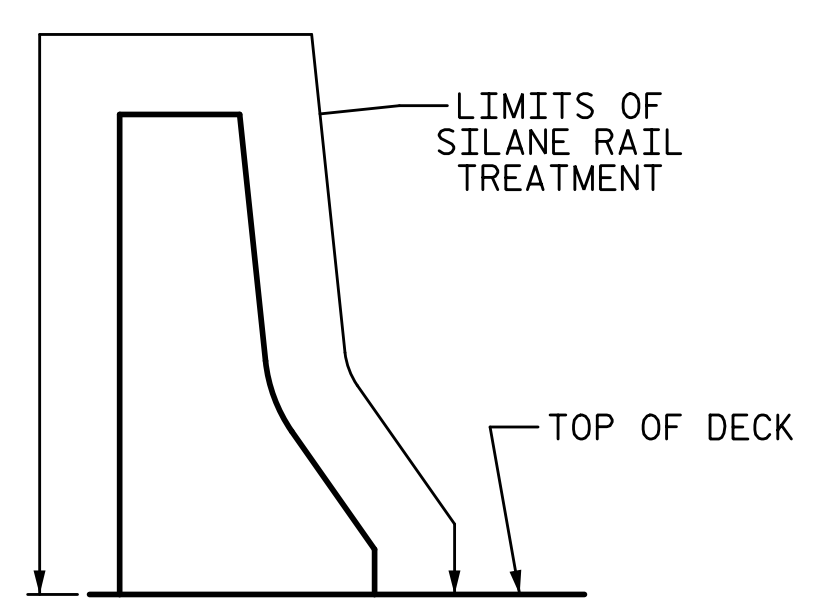


LEFT RAIL



RIGHT RAIL

SPAN 10



SECTION THRU BARRIER RAIL
LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

NOTES:

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FOR SILANE RAIL TREATMENT, SEE SPECIAL PROVISIONS.

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

SHEET 10 OF 13

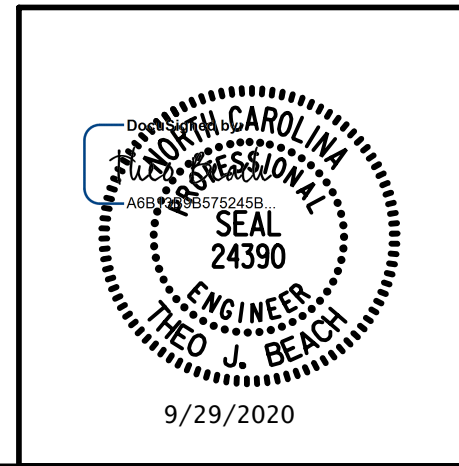
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 DEPARTMENT OF TRANSPORTATION
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 SPAN 10
 BARRIER RAIL

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1			3			TOTAL SHEETS
2			4			163

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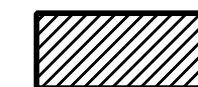
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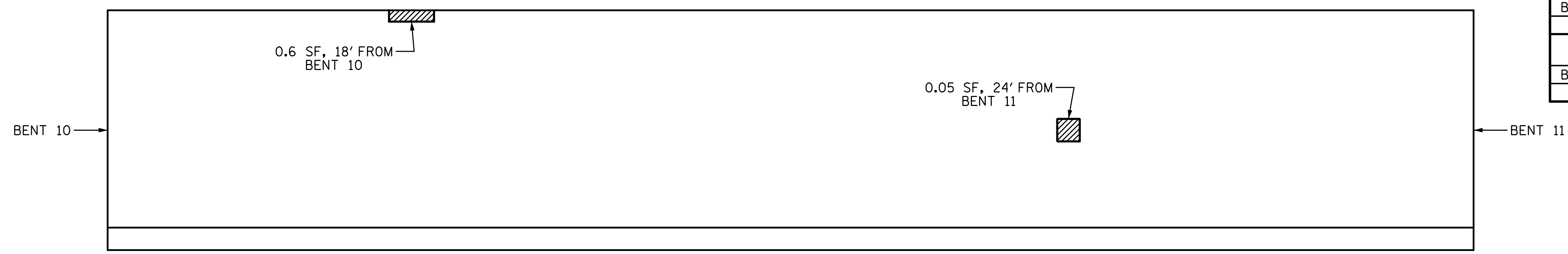


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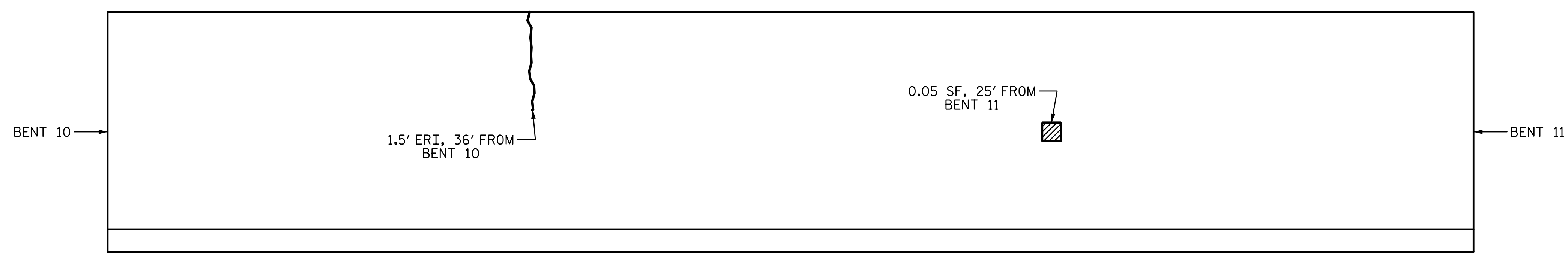
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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

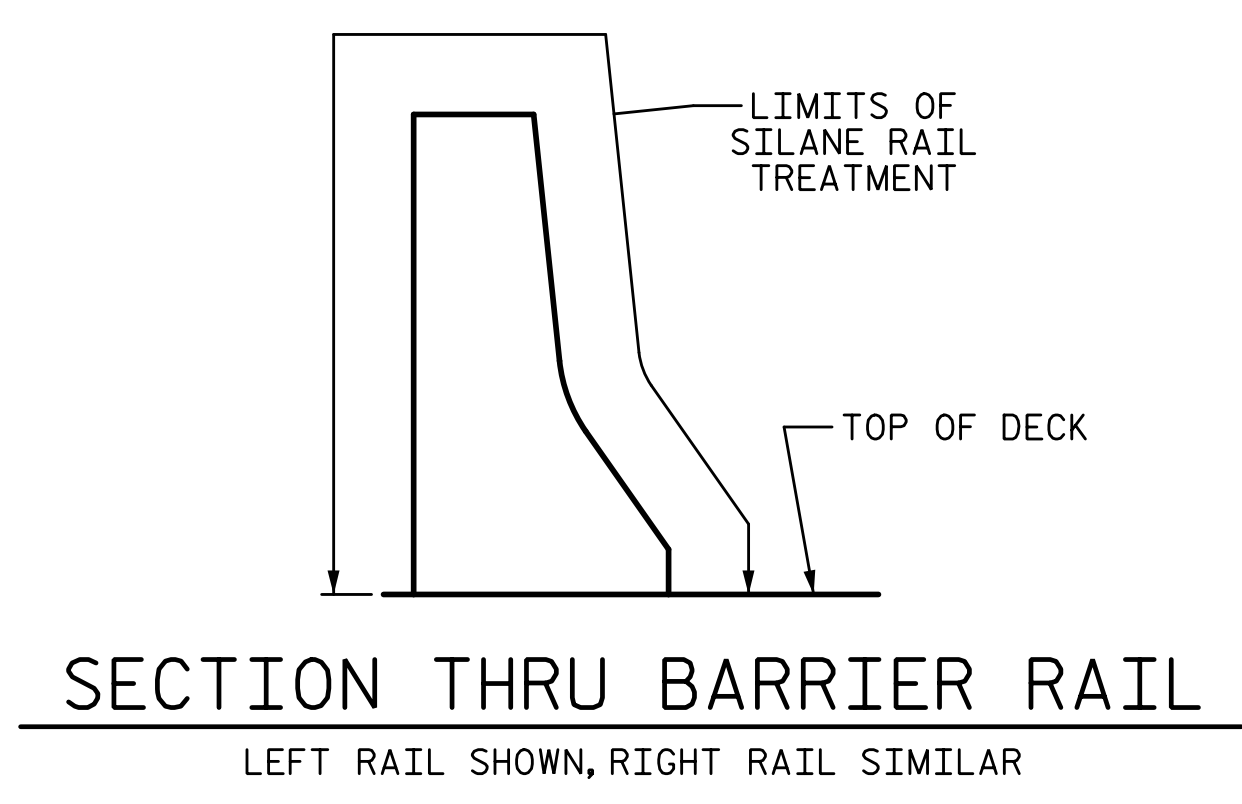


LEFT RAIL



RIGHT RAIL

SPAN 11



REPAIR QUANTITY TABLE					
REPAIRS SPAN 11	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.7	0.1			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		1.5			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		977.8			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		977.8			

NOTES:

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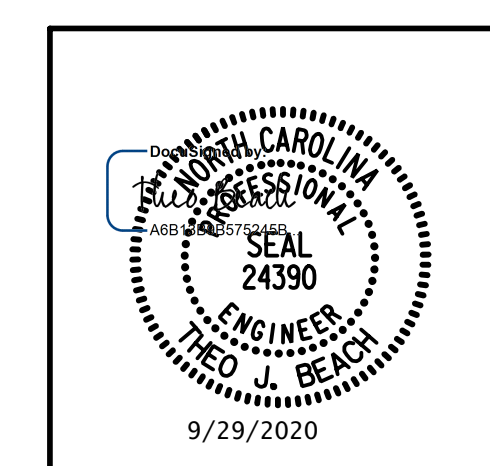
FOR SILANE RAIL TREATMENT, SEE SPECIAL PROVISIONS.

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STATE OF NORTH CAROLINA
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 RALEIGH
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**SPAN 11
 BARRIER RAIL**



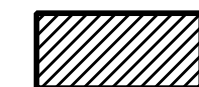
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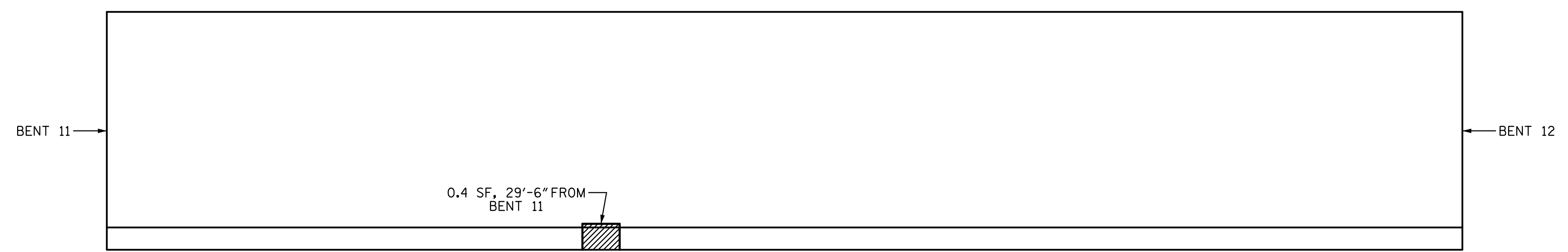
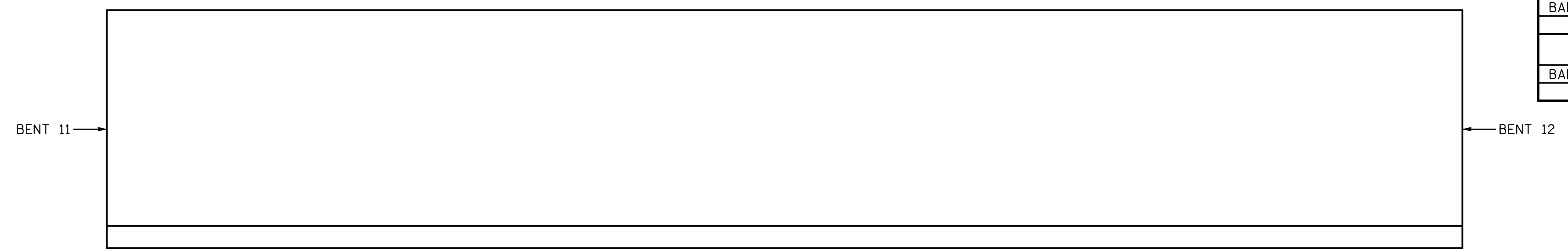
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2			4			163

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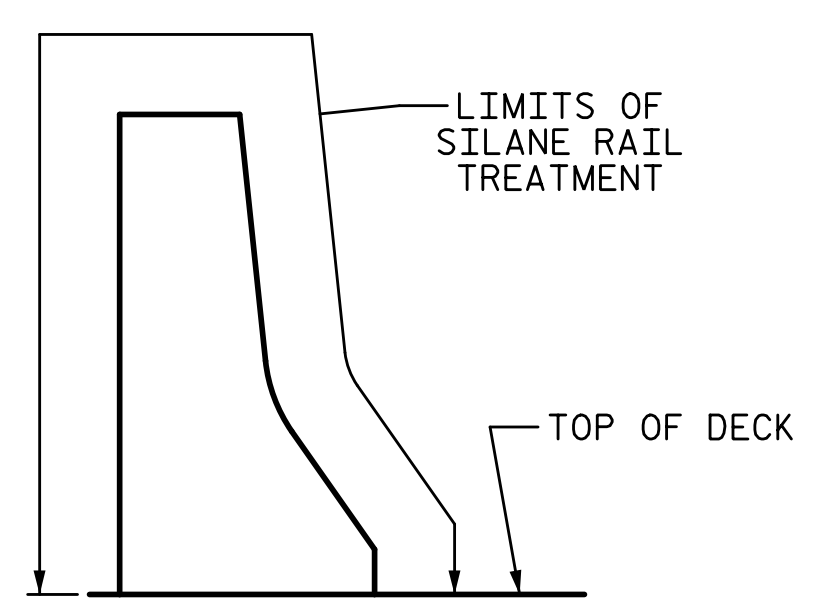
 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 12	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.4	0.1			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		0.0			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		977.8			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		977.8			



RIGHT RAIL

SPAN 12



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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 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 12 OF 13

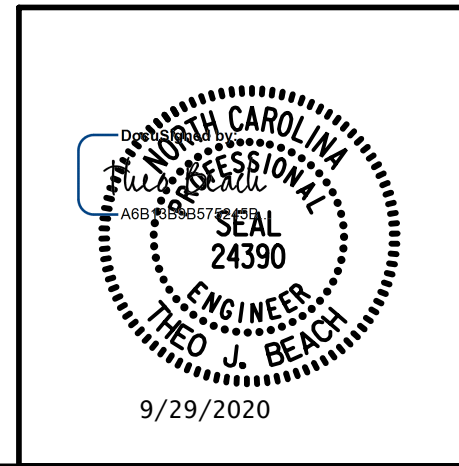
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 RALEIGH
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SPAN 12
 BARRIER RAIL

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

PLANS PREPARED BY:

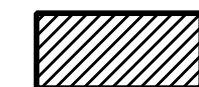
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 5640 Dillard Drive
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 (919) 852-0468
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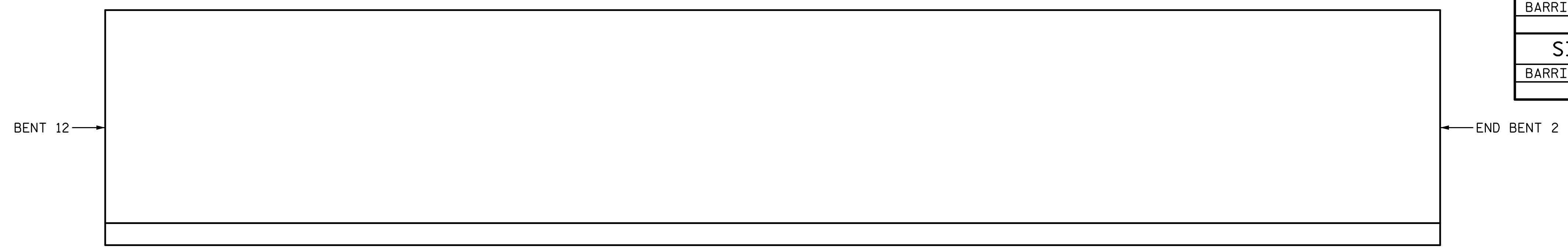
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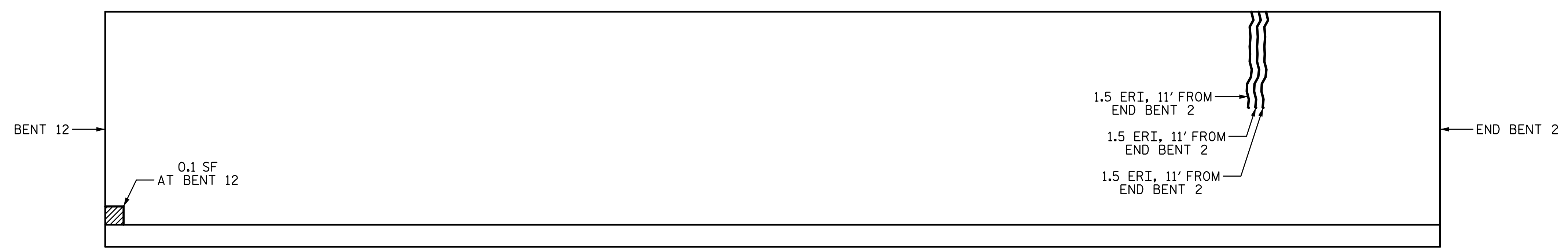
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 SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPAN 13	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
BARRIER RAIL	0.1	0.1			
EPOXY RESIN INJECTION		LF			LF
BARRIER RAIL		4.5			
SURFACE PREPARATION		SF			SF
BARRIER RAIL		983.0			
SILANE RAIL TREATMENT		SF			SF
BARRIER RAIL		983.0			

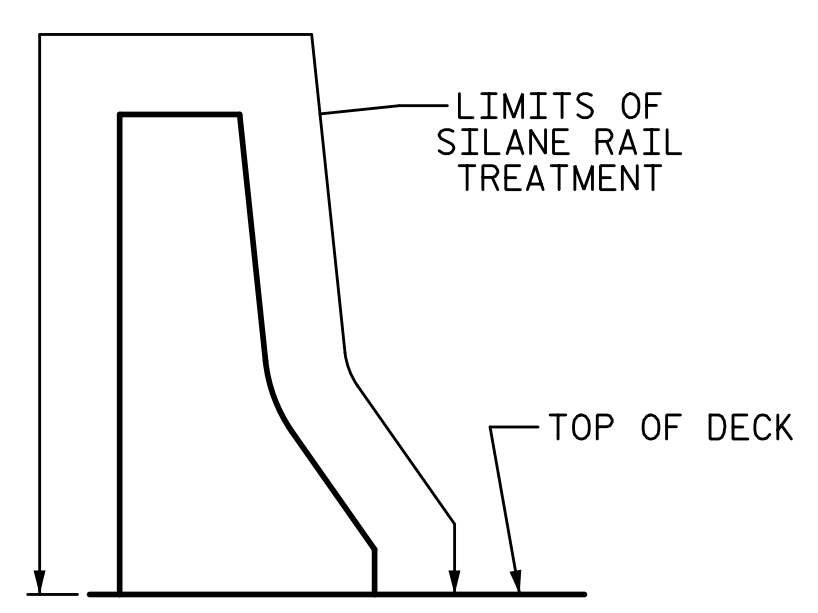


LEFT RAIL



RIGHT RAIL

SPAN 13



SECTION THRU BARRIER RAIL
LEFT RAIL SHOWN, RIGHT RAIL SIMILAR

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.
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 DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.
AFTER ALL REPAIRS ARE MADE TO THE BARRIER RAILS, ADD SILANE RAIL TREATMENT TO THE LIMITS SHOWN ON THE PLANS.
FOR SILANE RAIL TREATMENT, SEE SPECIAL PROVISIONS.

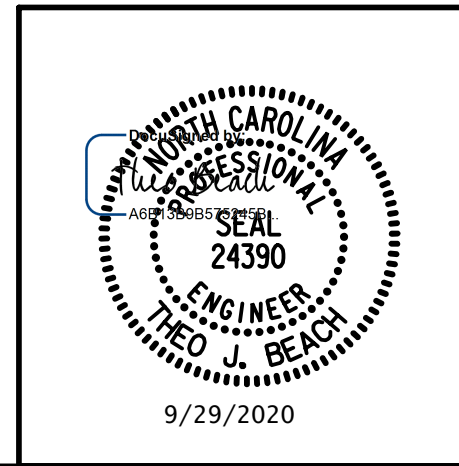
PROJECT NO. 15BPR.26
NEW HANOVER/PENDER COUNTY
BRIDGE NO.: 640049

SHEET 13 OF 13

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRESERVATION

SPAN 13
BARRIER RAIL

PLANS PREPARED BY:
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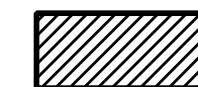


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DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

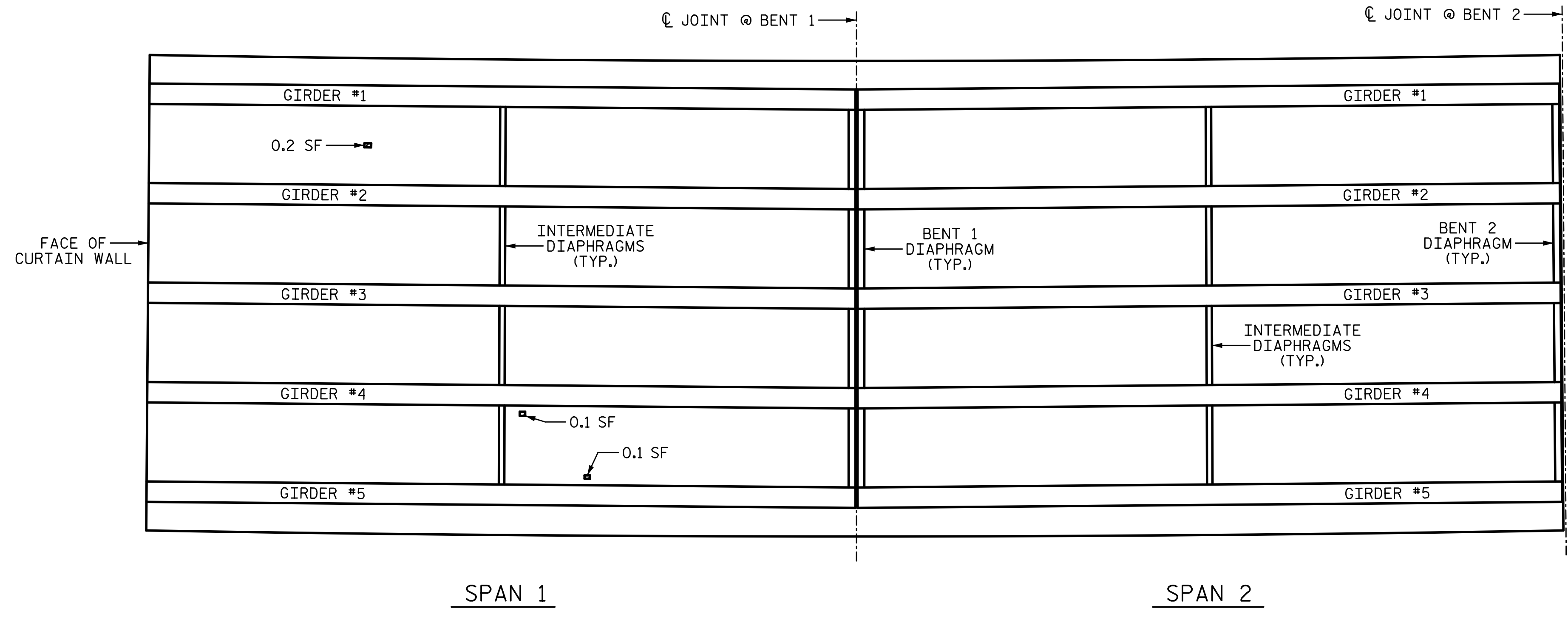
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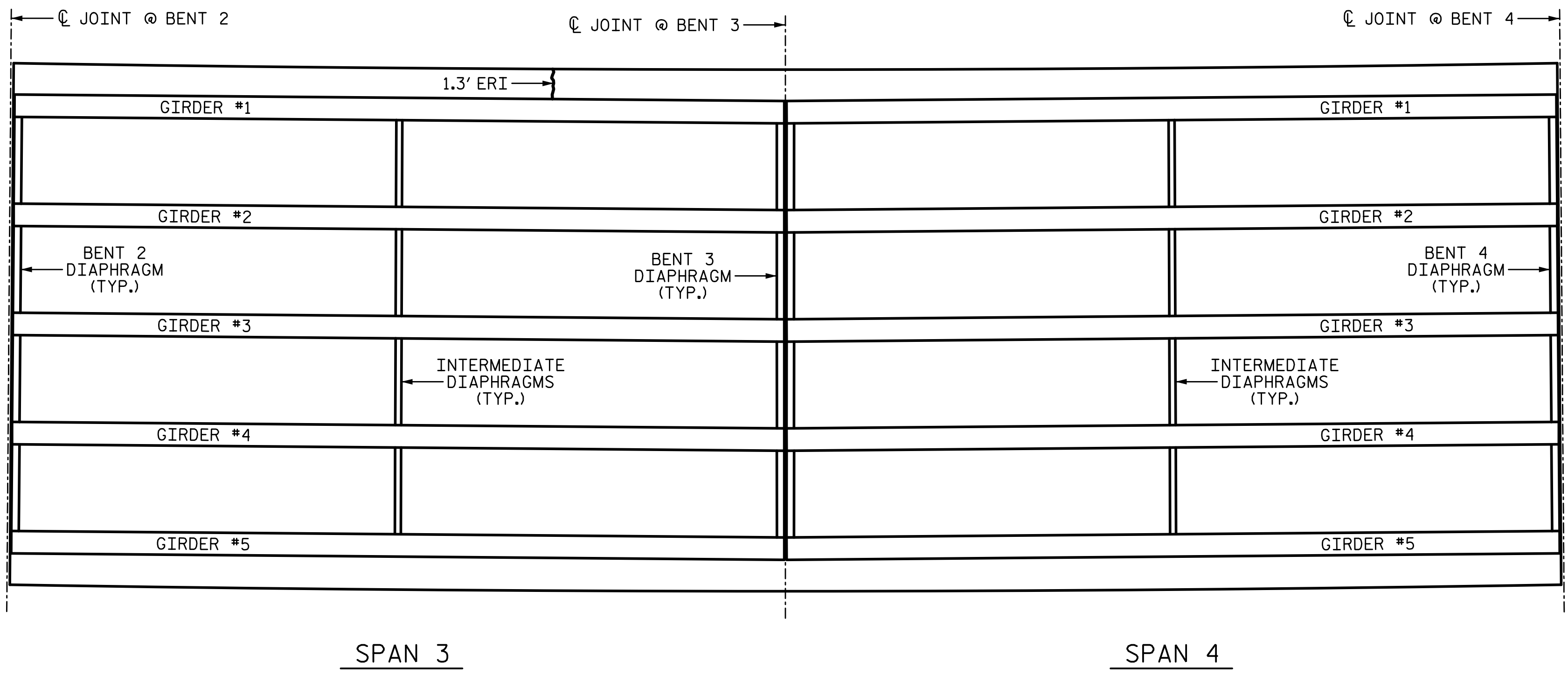
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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPANS 1 - 4	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
SPAN 1	0.4	0.1			
SPAN 2	0.0	0.0			
SPAN 3	0.0	0.0			
SPAN 4	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
SPAN 1		0.0			
SPAN 2		0.0			
SPAN 3		1.3			
SPAN 4		0.0			



NOTES:
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 FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR SUPERSTRUCTURE REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.



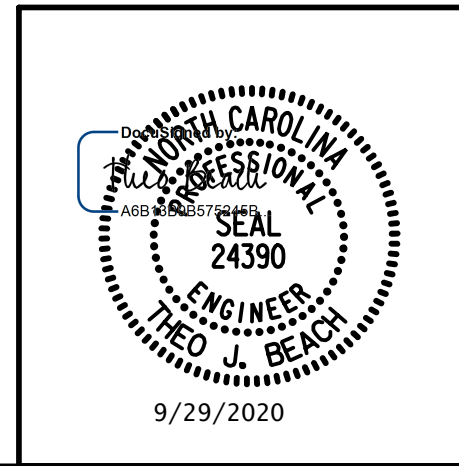
UNDERSIDE OF DECK SLAB
 FOR GIRDER REPAIRS SEE GIRDER SHEETS

PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049
 SHEET 1 OF 4

DRAWN BY: T. BANKOVICH DATE: 9-20
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PLANS PREPARED BY:

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 PRESERVATION

UNDERSIDE OF DECK SLAB
 SPANS 1 - 4

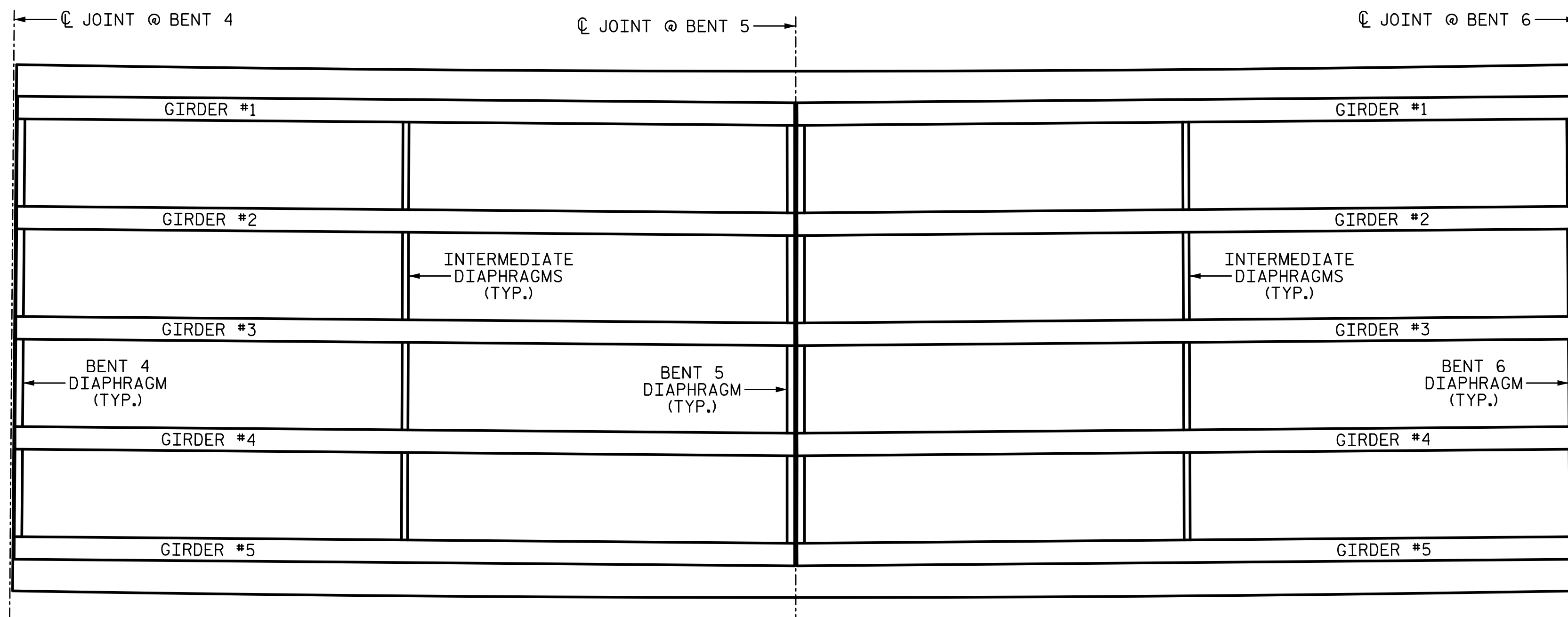
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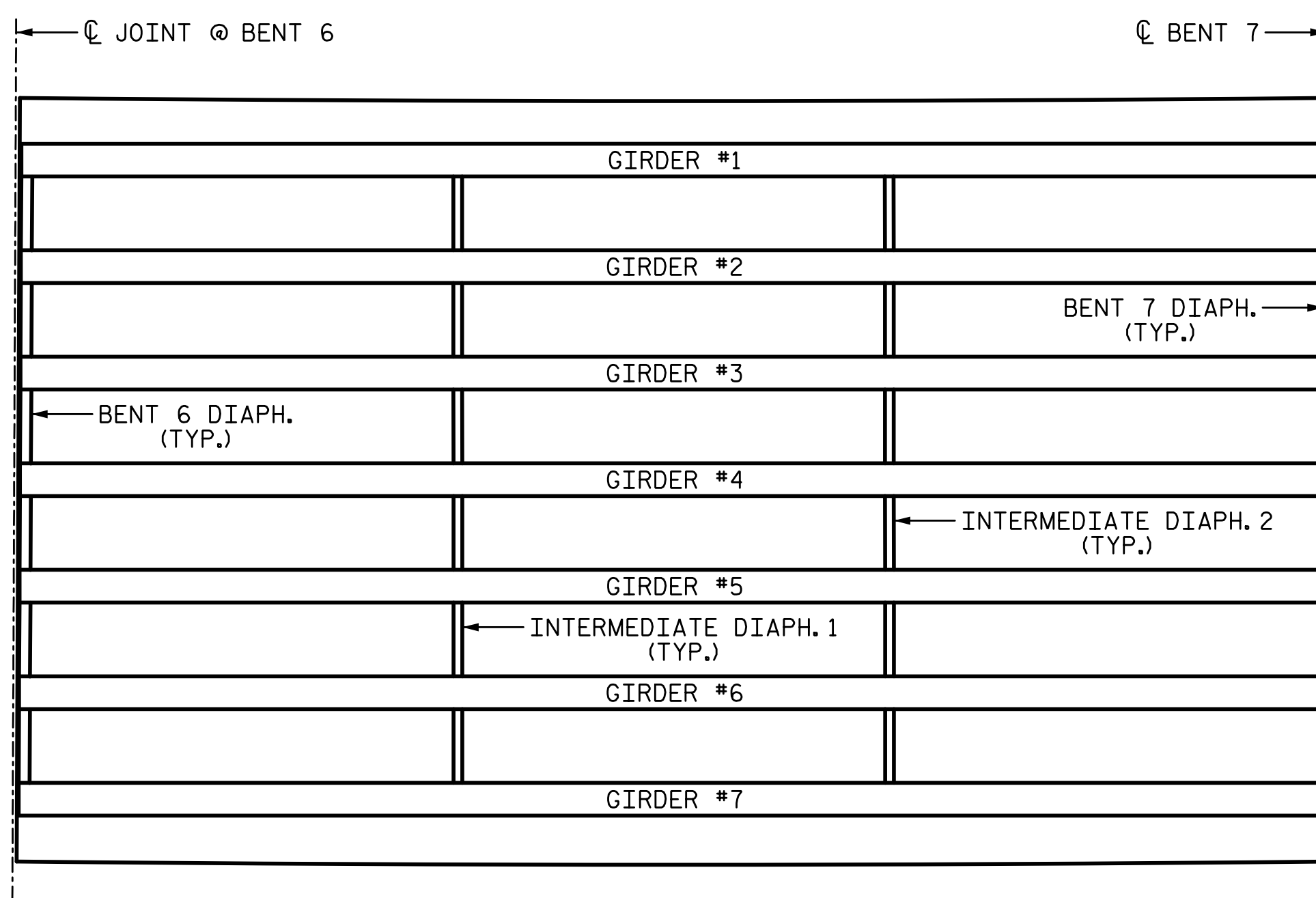


ERI — EPOXY RESIN INJECTION



SPAN 5

SPAN 6



SPAN 7

UNDERSIDE OF DECK SLAB

FOR GIRDER REPAIRS SEE GIRDER SHEETS

REPAIR QUANTITY TABLE

REPAIRS SPANS 5 - 7	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
SPAN 5	0.0	0.0			
SPAN 6	0.0	0.0			
SPAN 7	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
SPAN 5		0.0			
SPAN 6		0.0			
SPAN 7		0.0			

NOTES:

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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.

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SUPERSTRUCTURE REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.

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

SHEET 2 OF 4

STATE OF NORTH CAROLINA
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RALEIGH
PRESERVATION

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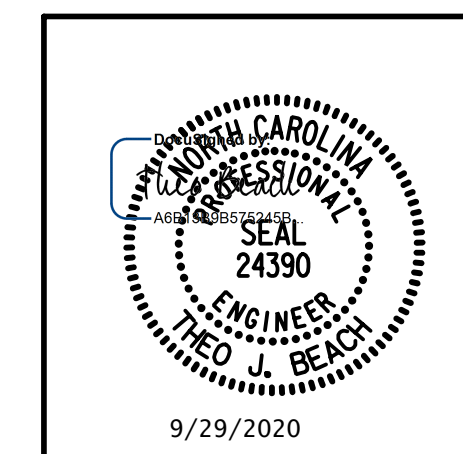
SPANS 5 - 7

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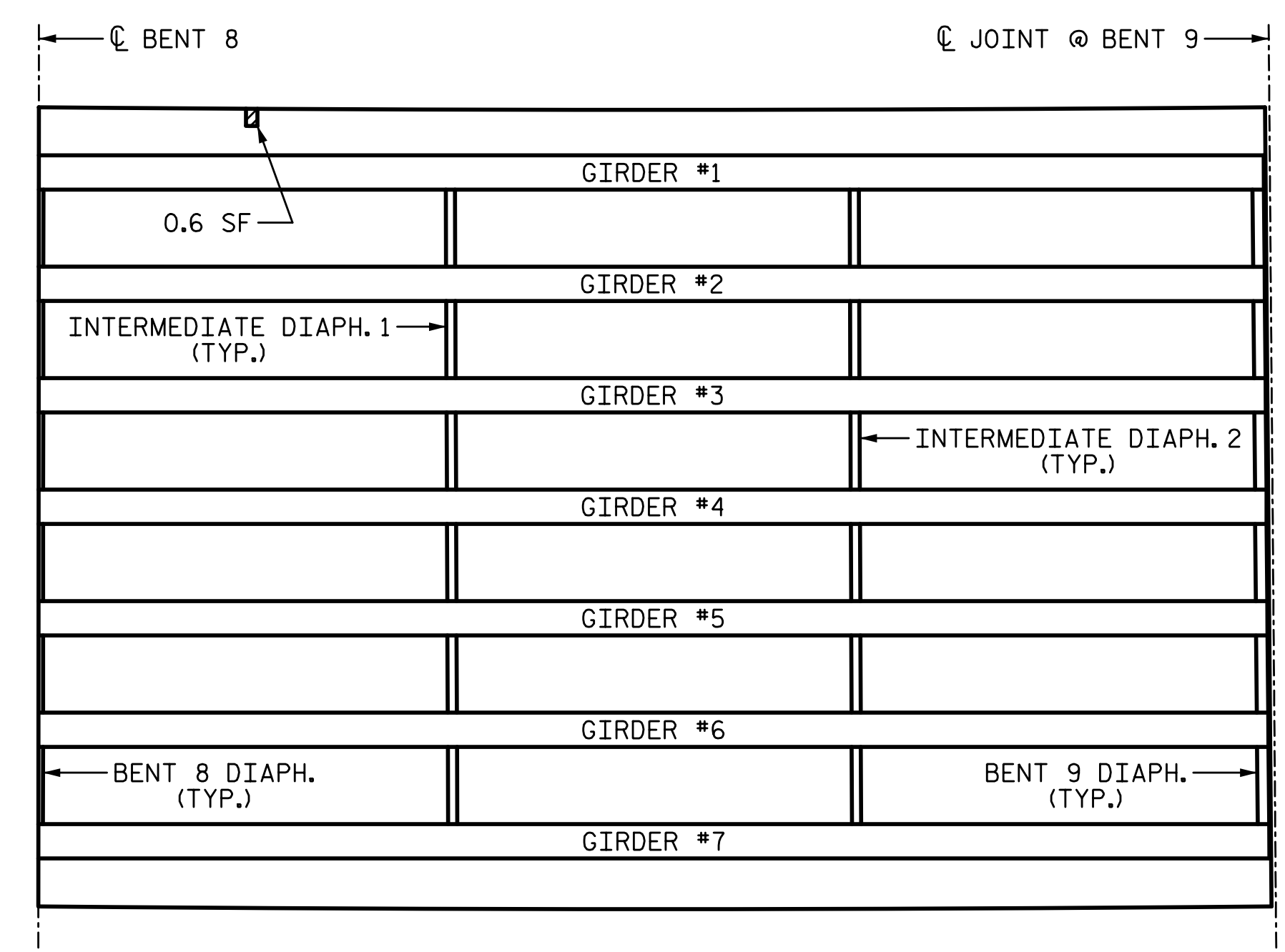
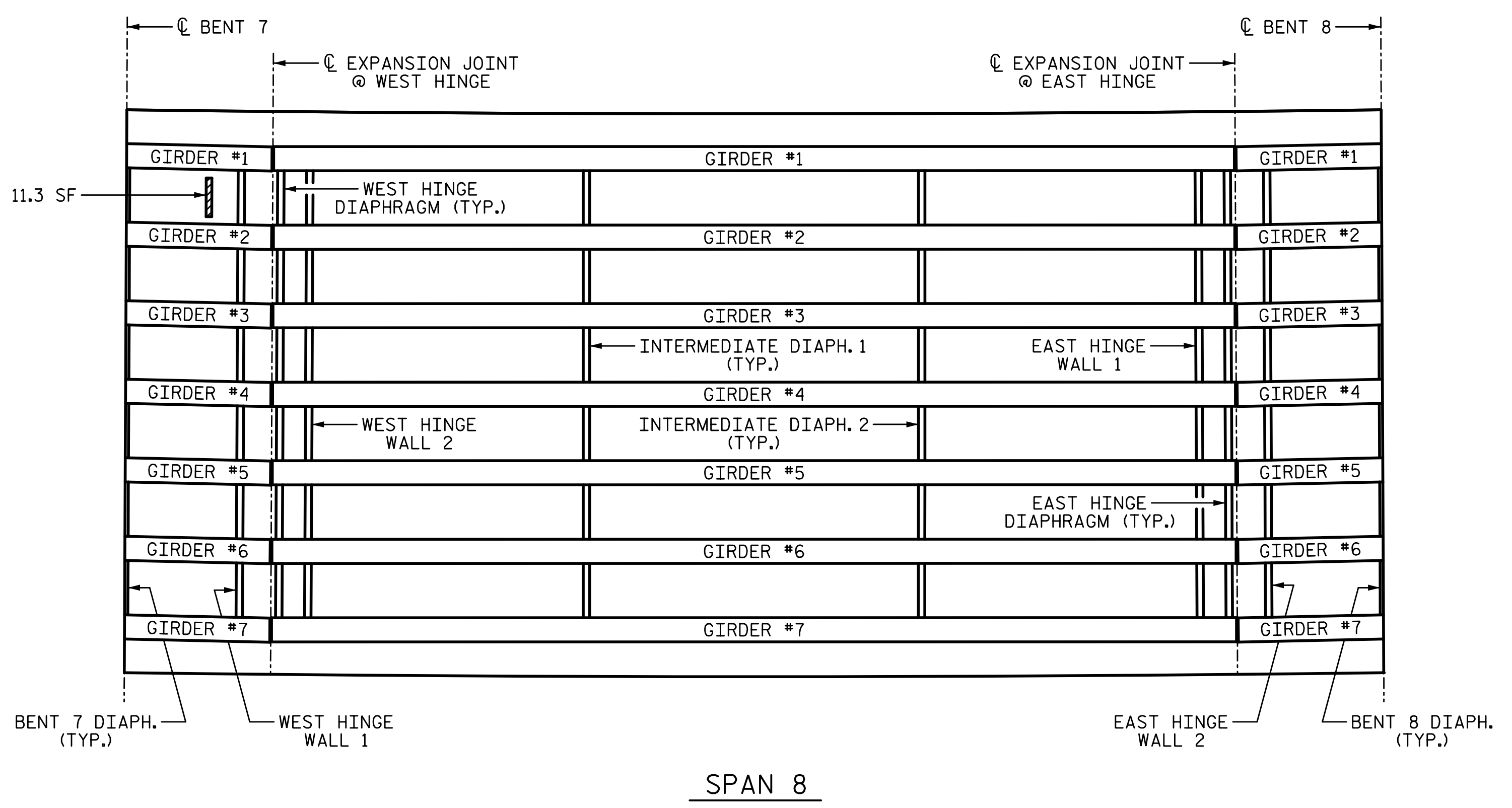
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(919) 852-0468
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UNDERSIDE OF DECK SLAB
FOR GIRDER REPAIRS SEE GIRDER SHEETS

SHOTCRETE REPAIR
ERI — EPOXY RESIN INJECTION

REPAIRS SPANS 8 & 9		QUANTITIES				
		ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS		AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
SPAN 8		1.3	0.4			
SPAN 9		0.6	0.2			
EPOXY RESIN INJECTION			LF			LF
SPAN 8			0.0			
SPAN 9			0.0			

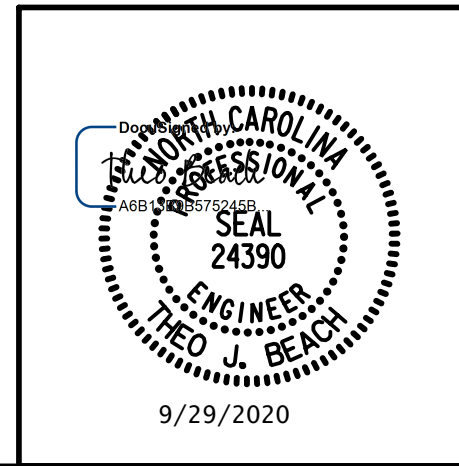
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PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049
 SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
UNDERSIDE OF DECK SLAB
 SPANS 8 & 9

PLANS PREPARED BY:

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 SHOTCRETE REPAIR
 ERI — EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE					
REPAIRS SPANS 10 - 13	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
SPAN 10	0.0	0.0			
SPAN 11	0.0	0.0			
SPAN 12	0.0	0.0			
SPAN 13	0.0	0.0			
EPOXY RESIN INJECTION		LF			LF
SPAN 10		0.0			
SPAN 11		0.0			
SPAN 12		0.0			
SPAN 13		0.0			

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

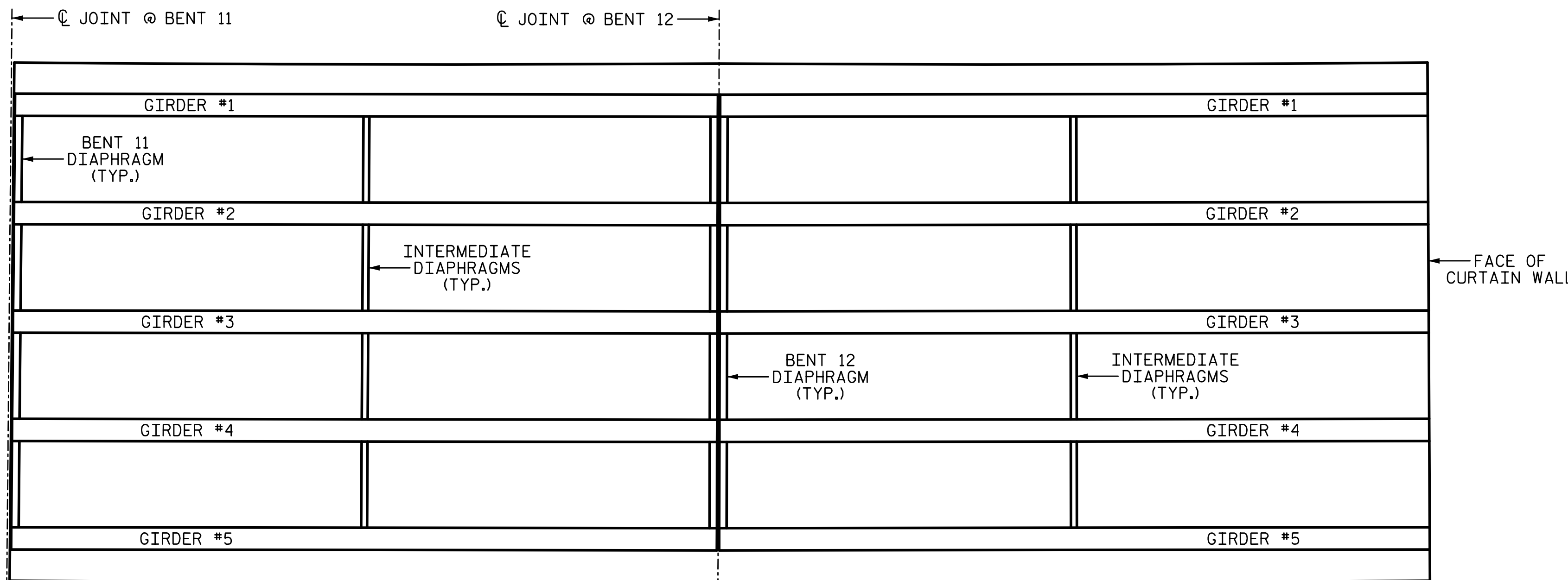
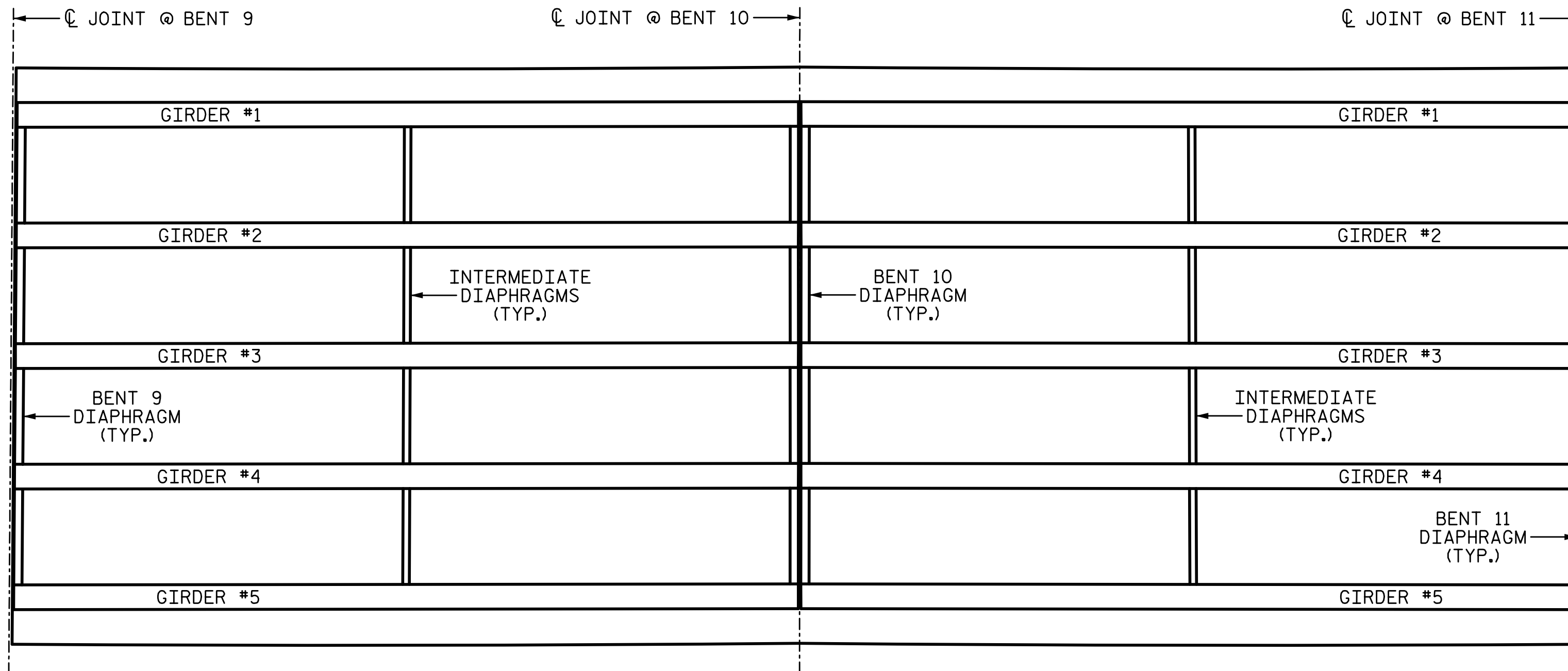
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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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FOR SUPERSTRUCTURE REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAIL" SHEET.



SPAN 10

SPAN 11

SPAN 12

SPAN 13

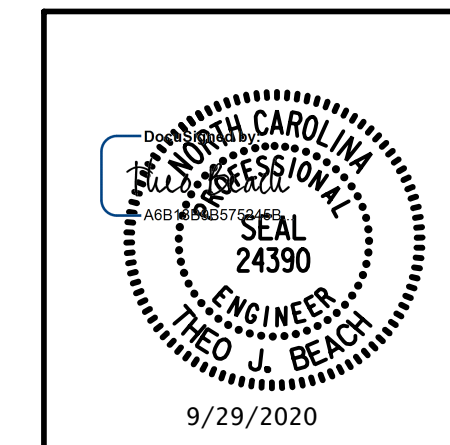
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 FOR GIRDER REPAIRS SEE GIRDER SHEETS

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

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PLANS PREPARED BY:

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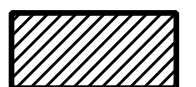
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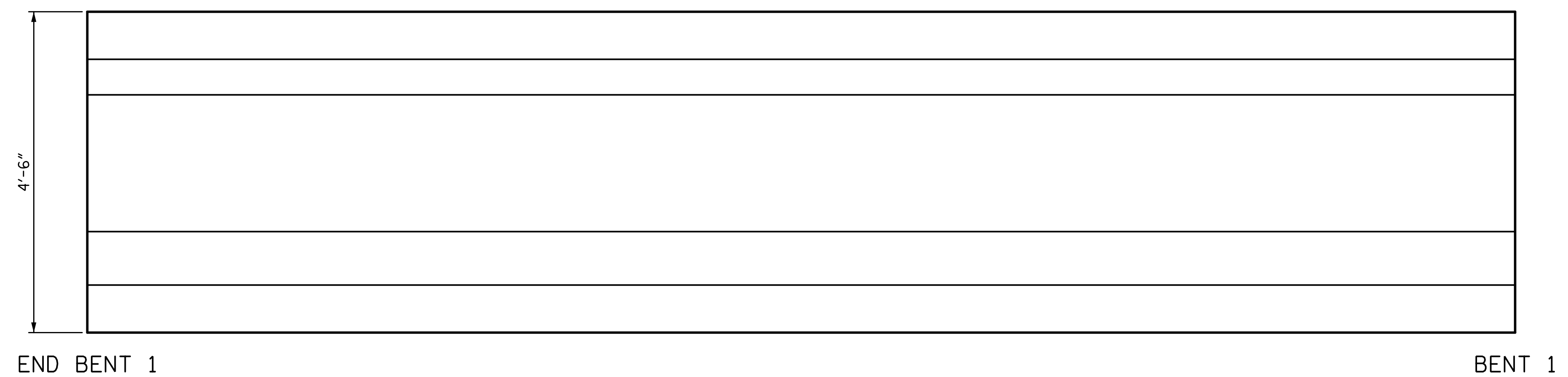
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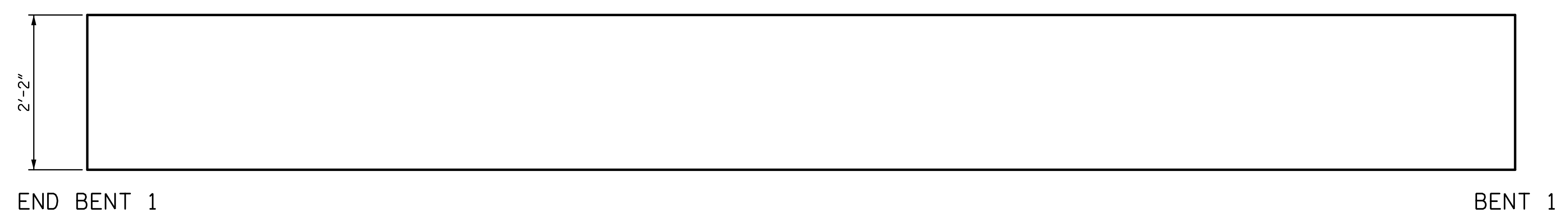
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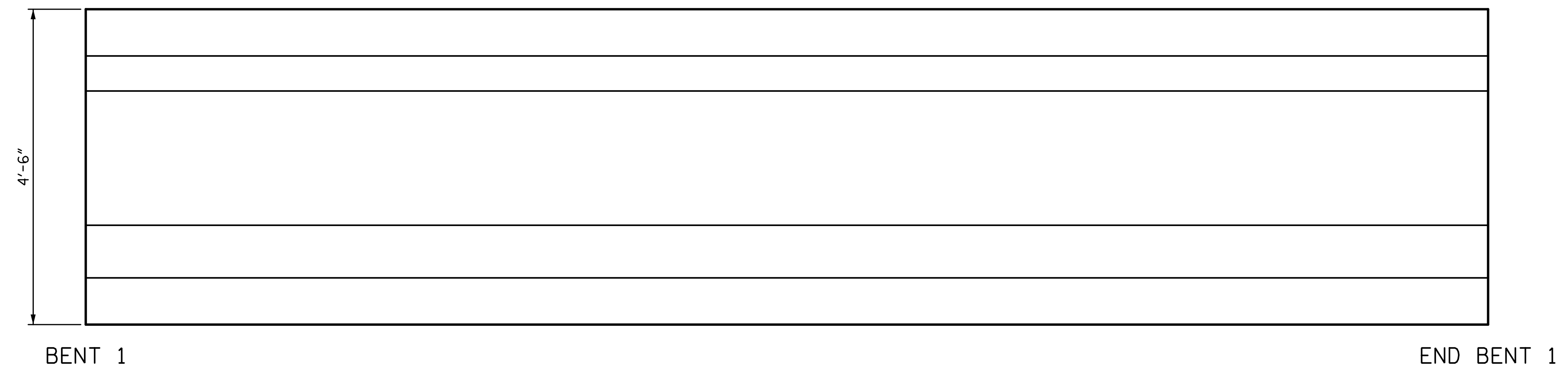
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 1 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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 FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.
 FOR REPAIRS OF PRESTRESSED CONCRETE GIRDERS DETAILS, SEE "PRESTRESSED CONCRETE GIRDER REPAIR DETAILS" SHEET.
 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.

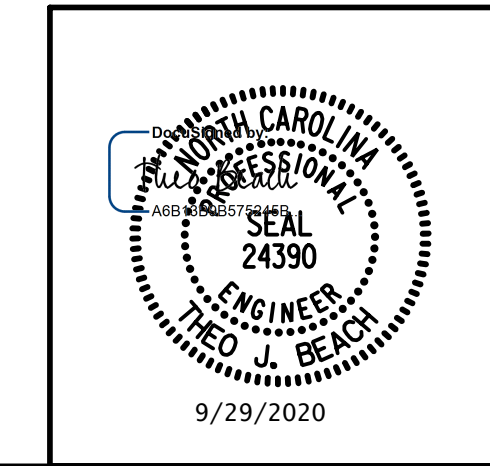
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 BRIDGE NO.: 640049

SHEET 1 OF 5

STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION
 SPAN 1
 GIRDER 1

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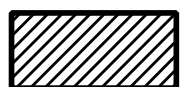


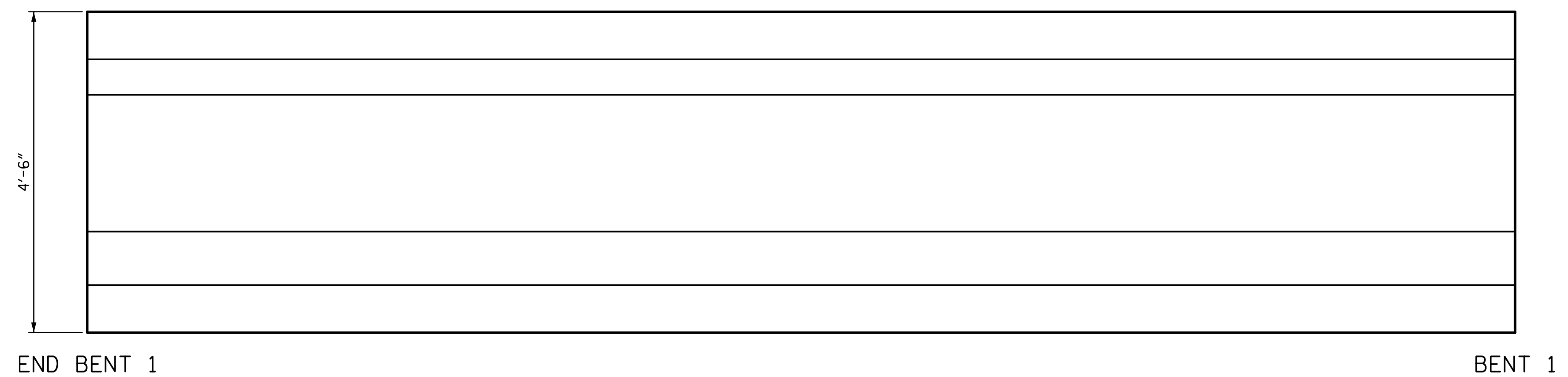
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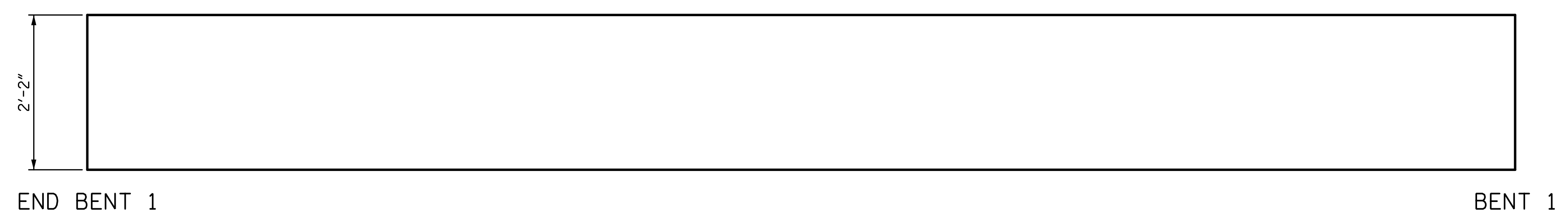
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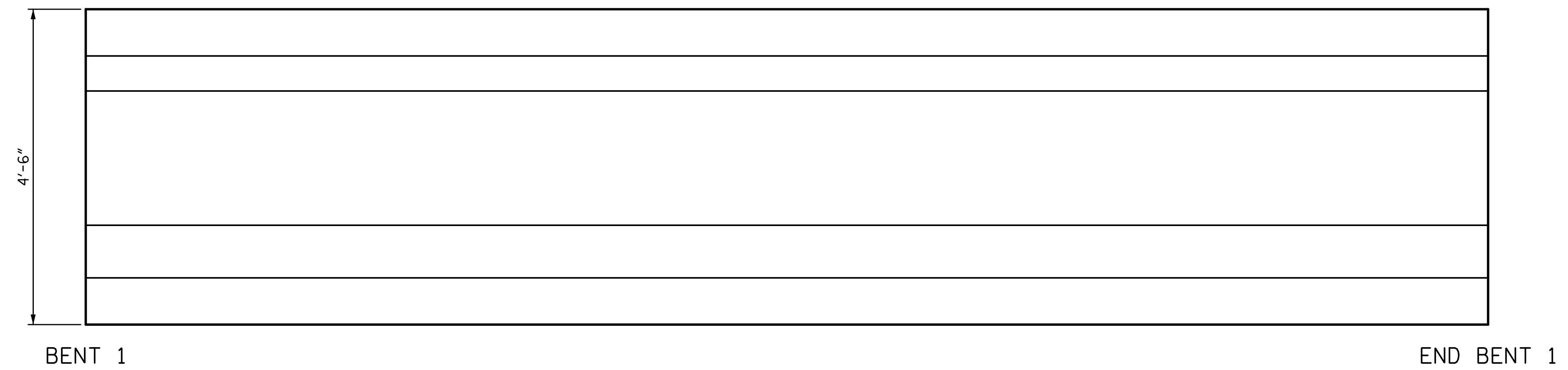
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 1 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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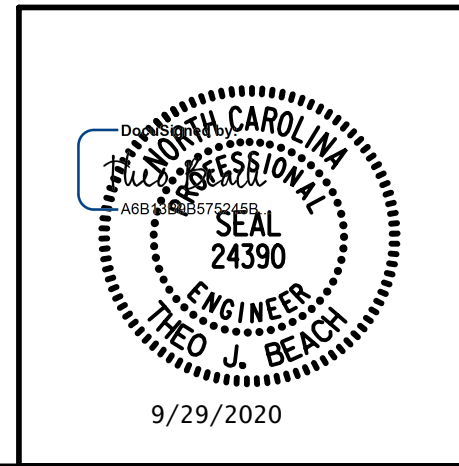
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 1
 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

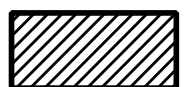


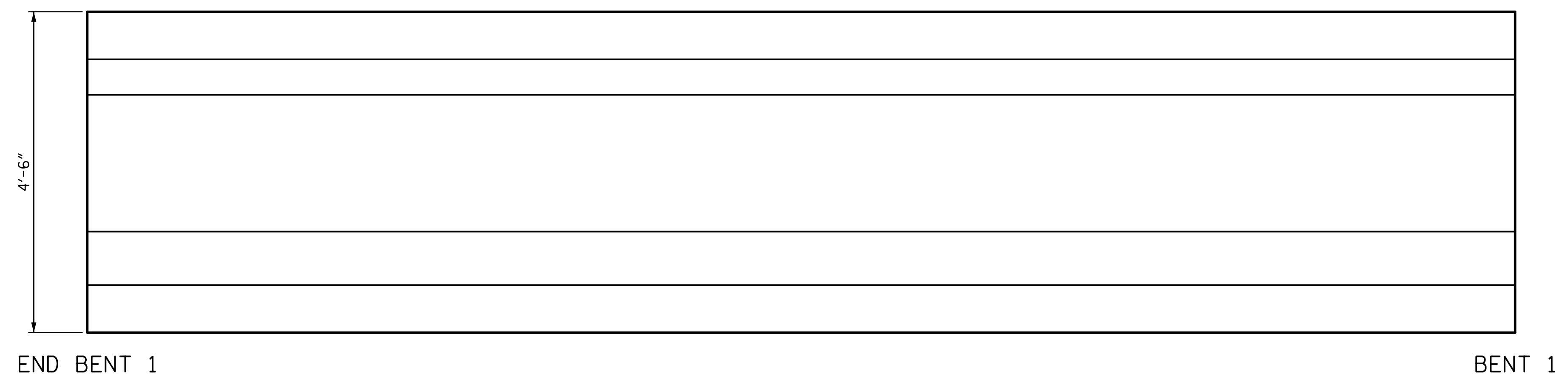
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CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-34
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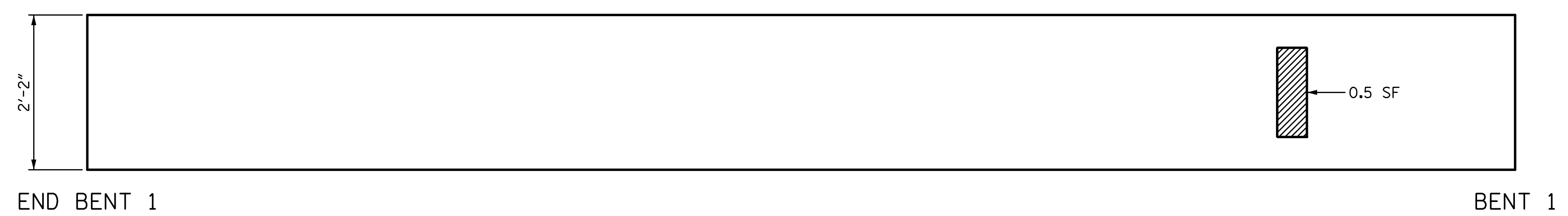
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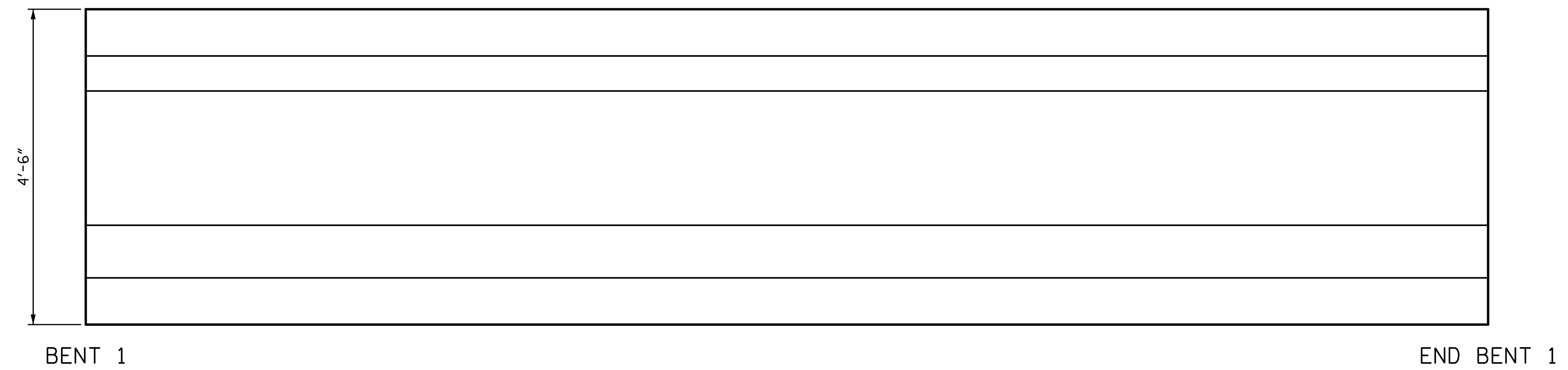
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 1 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			

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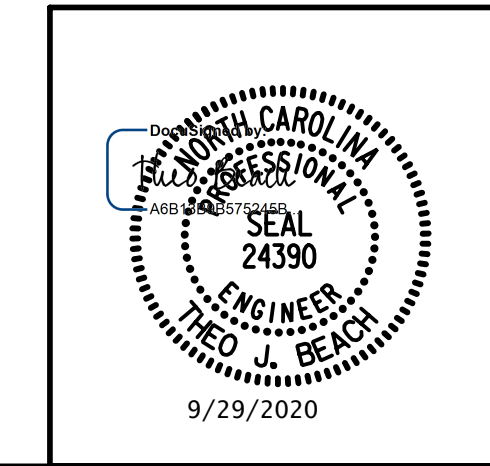
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 1
 GIRDER 3

PLANS PREPARED BY:

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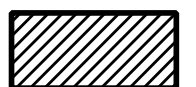


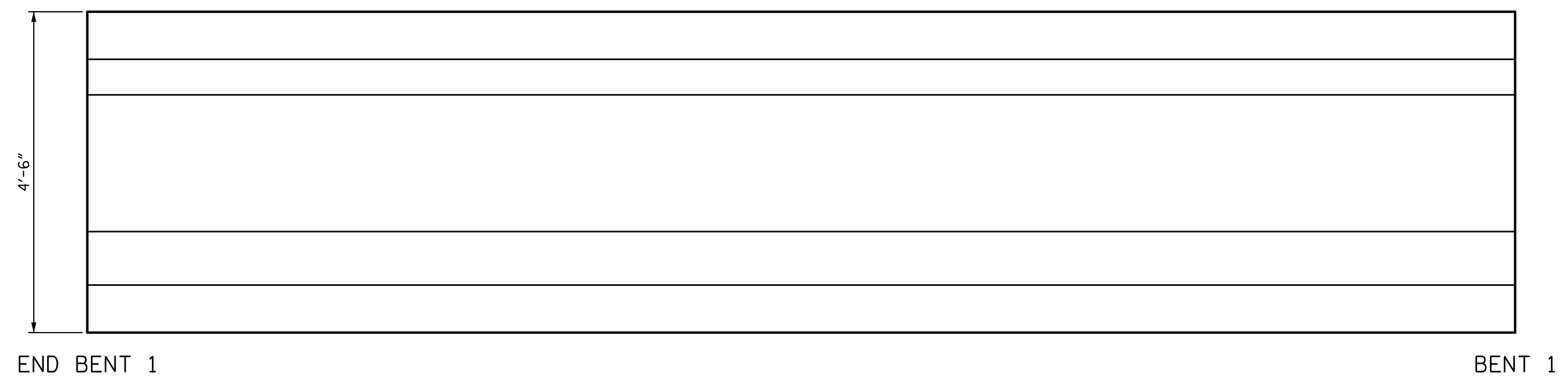
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1			3			TOTAL SHEETS
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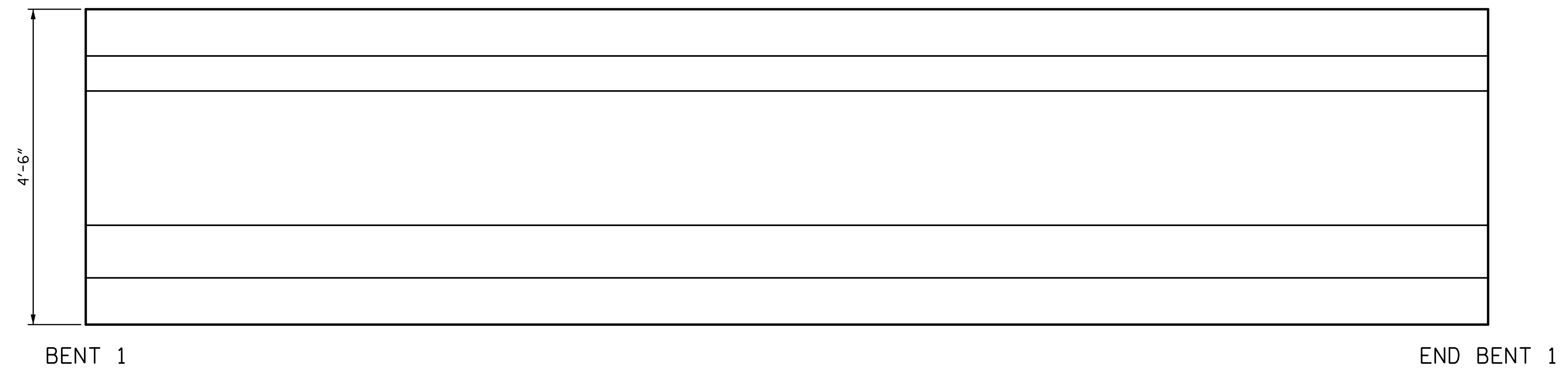
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 1 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	2.0	0.3			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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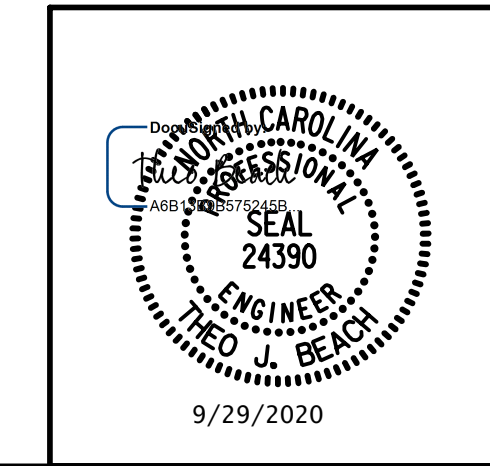
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 1
 GIRDER 4

PLANS PREPARED BY:

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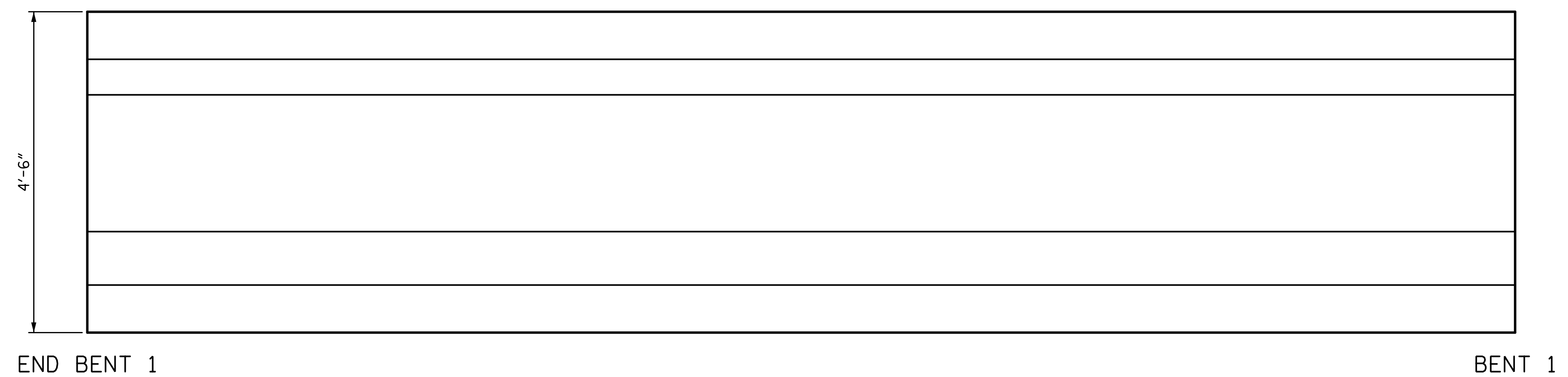
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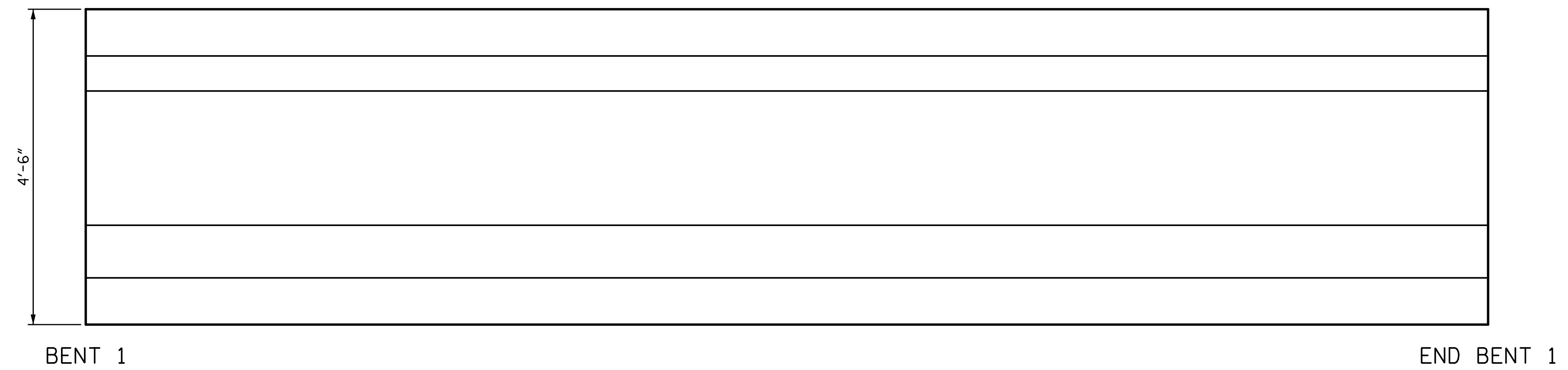
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 1 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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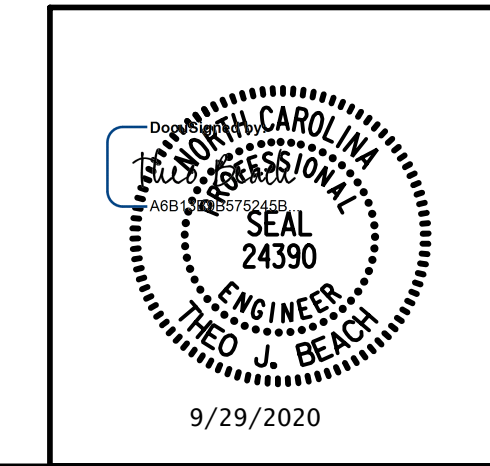
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 5

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

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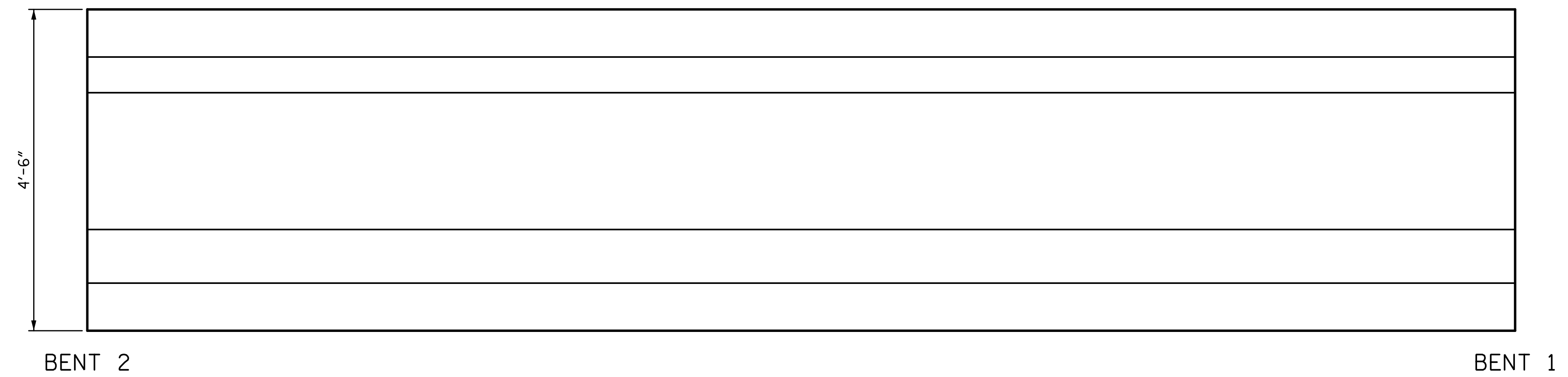
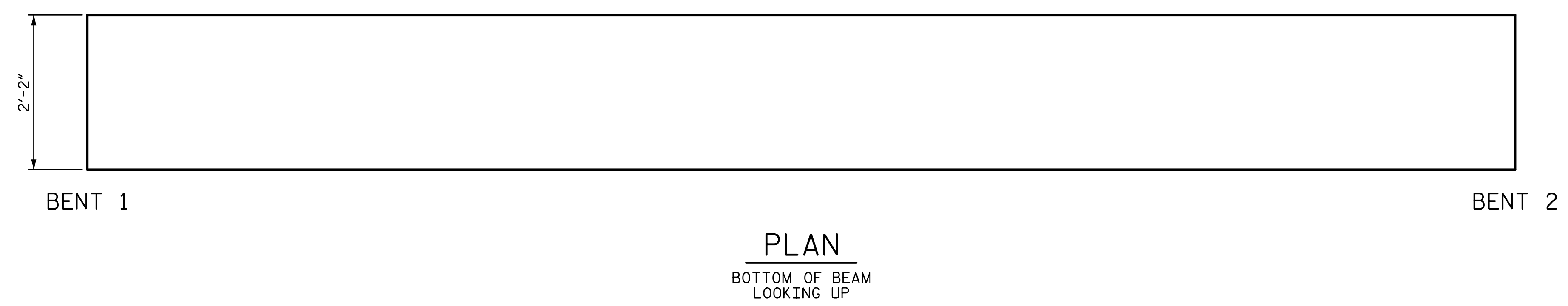
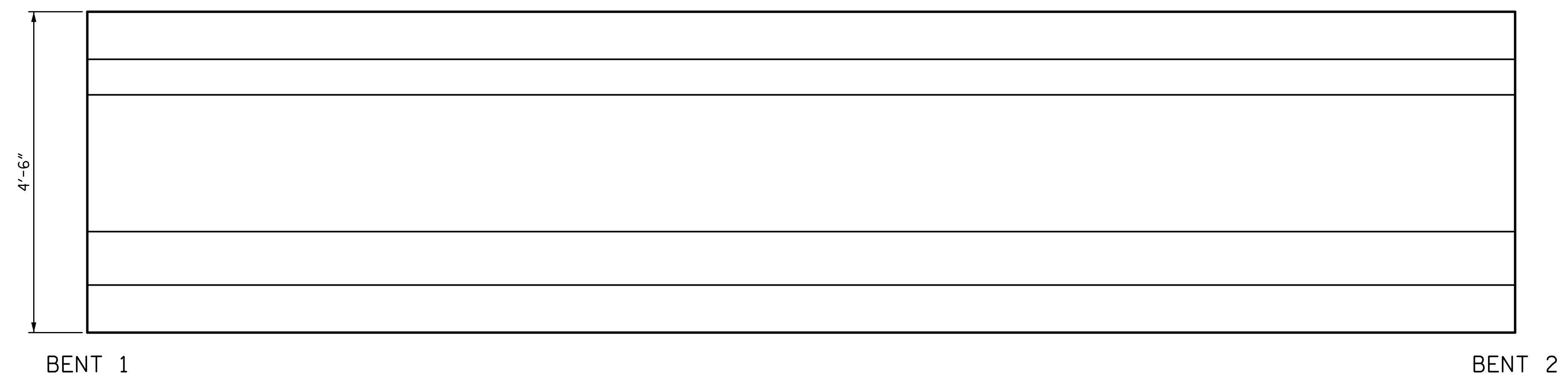
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



REPAIR QUANTITY TABLE					
REPAIRS SPAN 2 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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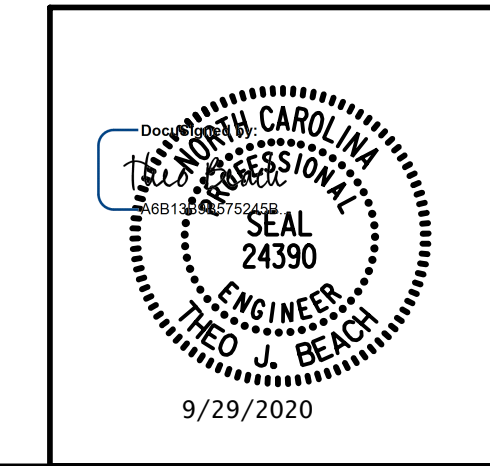
SHEET 1 OF 5

STATE OF NORTH CAROLINA
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 PRESERVATION

**SPAN 2
 GIRDER 1**

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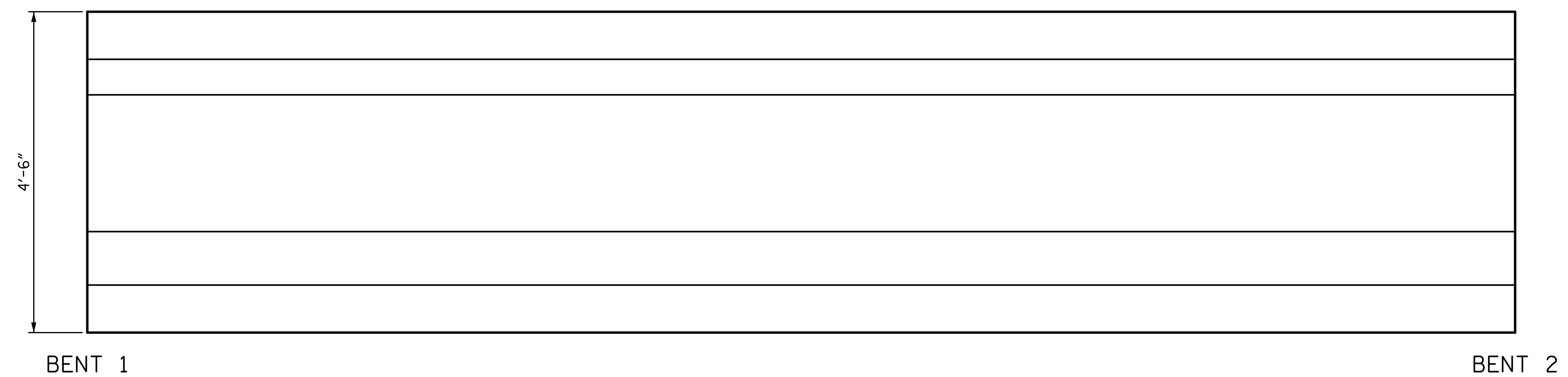
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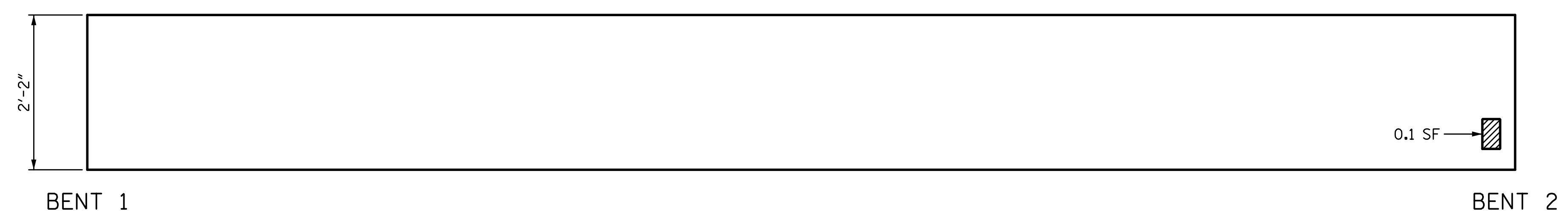
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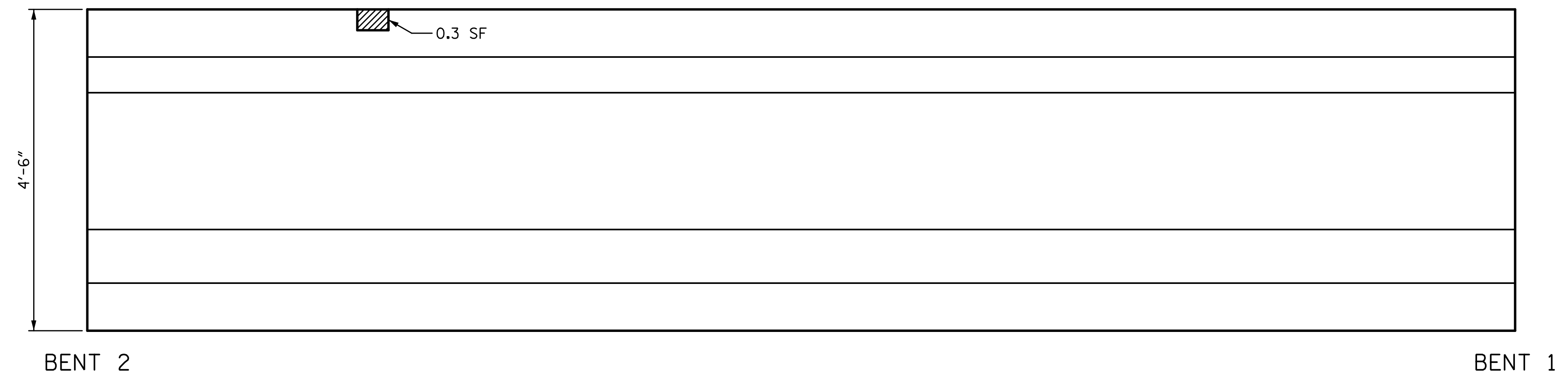
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 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 2 GRD. 2	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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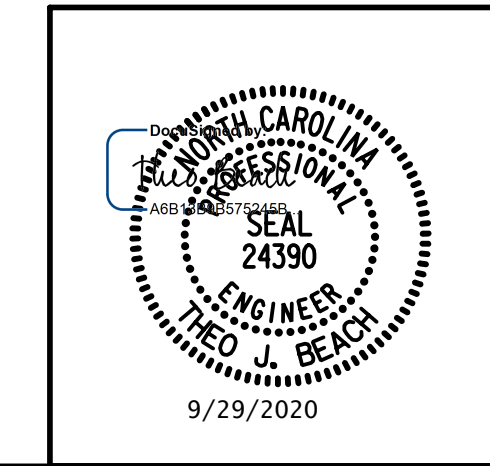
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SHEET 2 OF 5

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 PRESERVATION
 SPAN 2
 GIRDER 2

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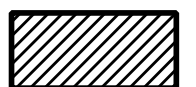


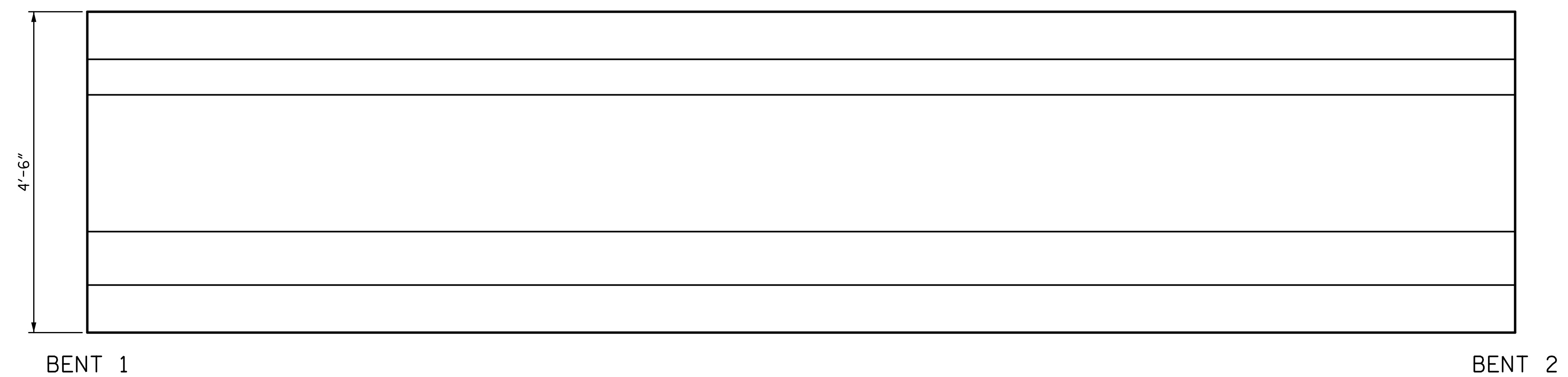
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1			3			TOTAL SHEETS
2			4			163

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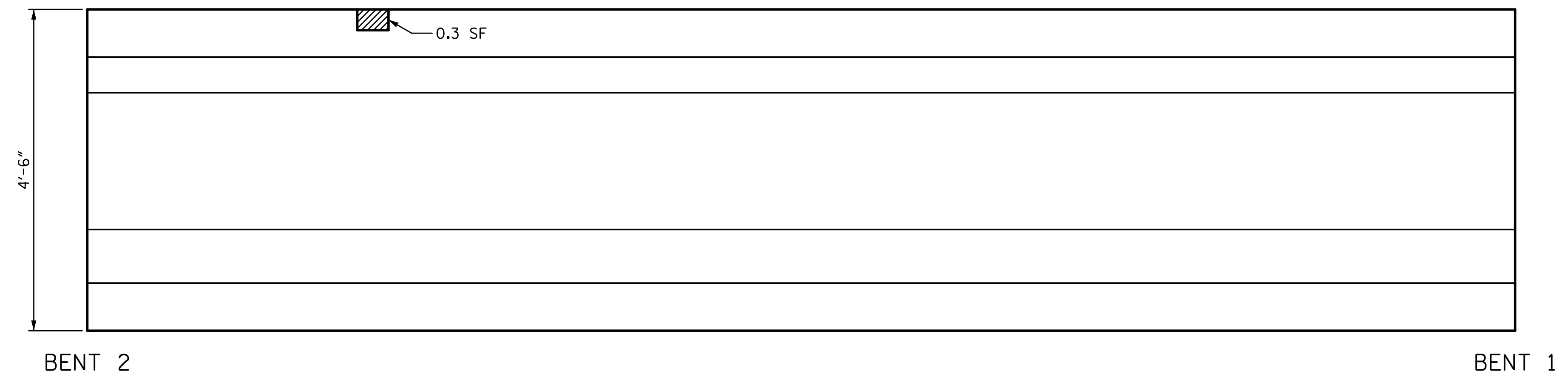
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 2 GRD. 3	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.6	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

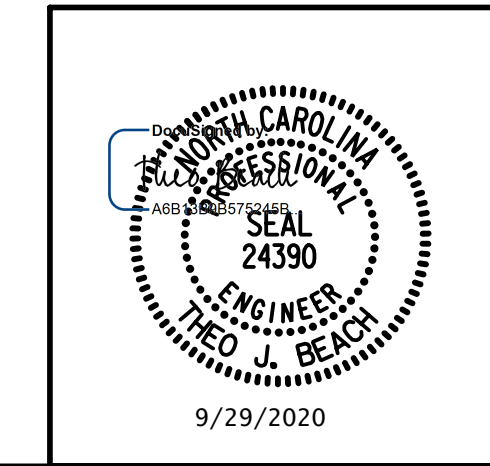
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 2
 GIRDER 3**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-40
1			3			TOTAL SHEETS
2			4			163

PLANS PREPARED BY:

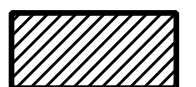
 SIMPSON ENGINEERS & ASSOCIATES
 5640 Dillard Drive
 Suite 200
 Cary, NC 27518
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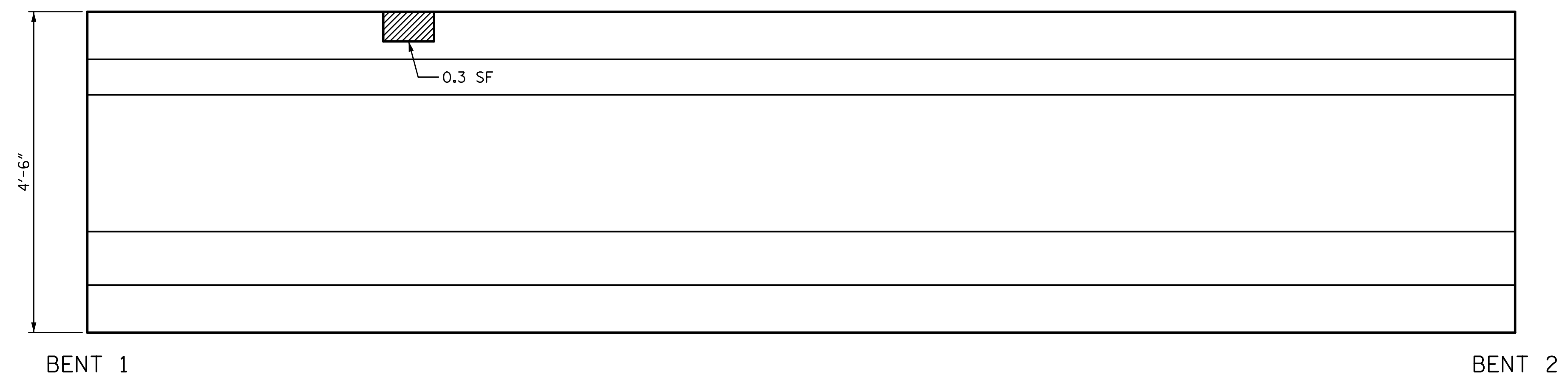


DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

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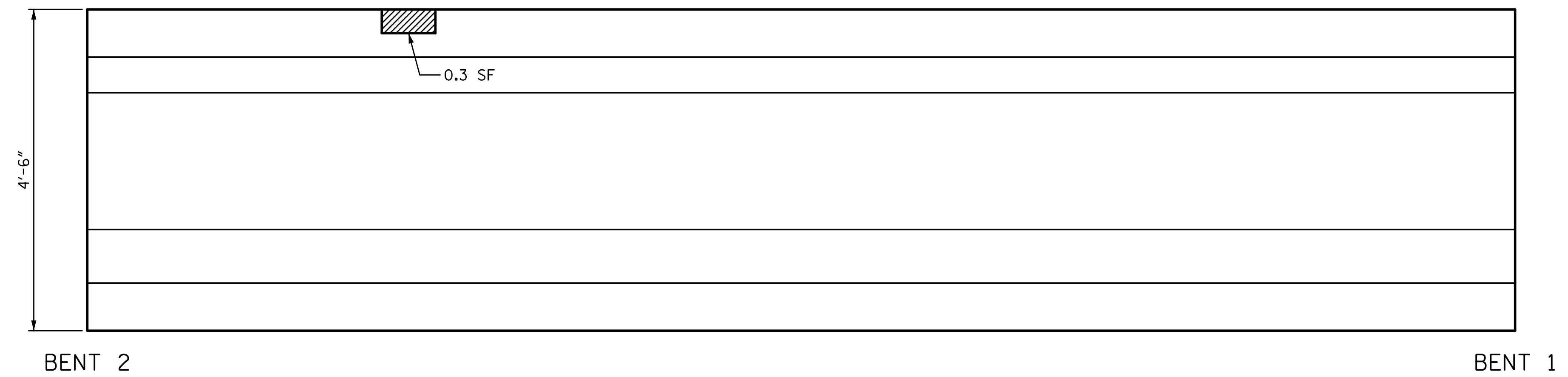
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 2 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.6	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

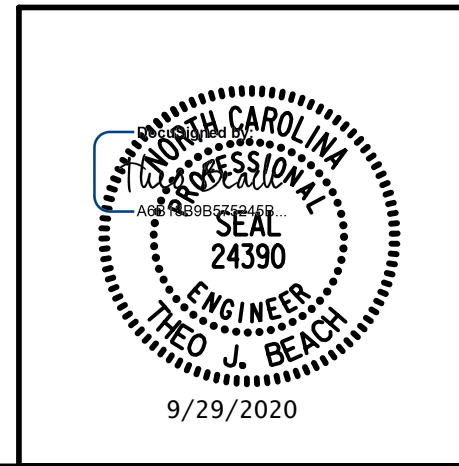
SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 2
 GIRDER 4**

PLANS PREPARED BY:

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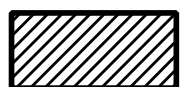


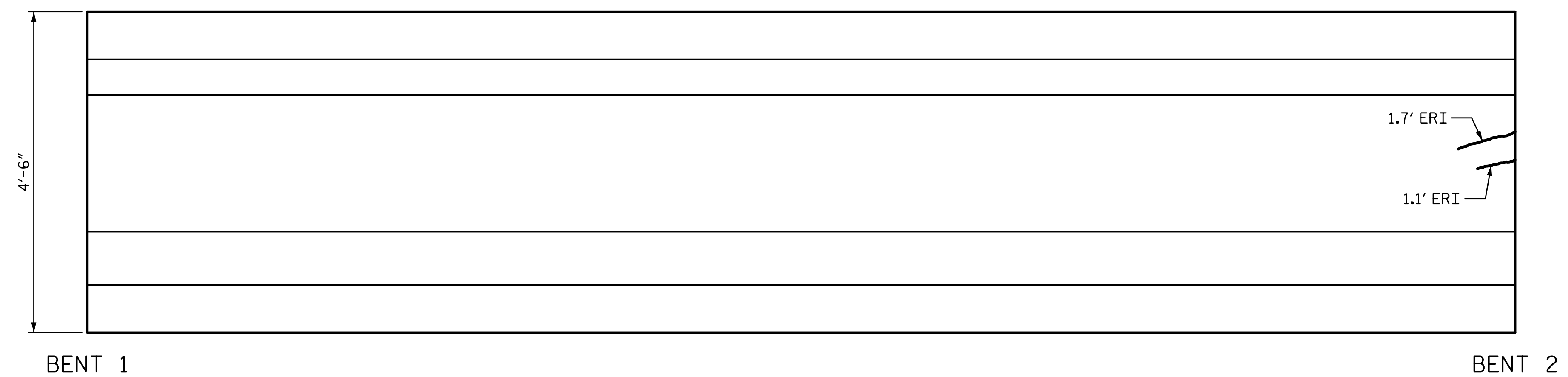
DRAWN BY: <u>T. BANKOVICH</u>	DATE: <u>9-20</u>
CHECKED BY: <u>T.J. BEACH</u>	DATE: <u>9-20</u>
DESIGN ENGINEER OF RECORD: <u>T.J. BEACH</u>	DATE: <u>9-20</u>

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-41
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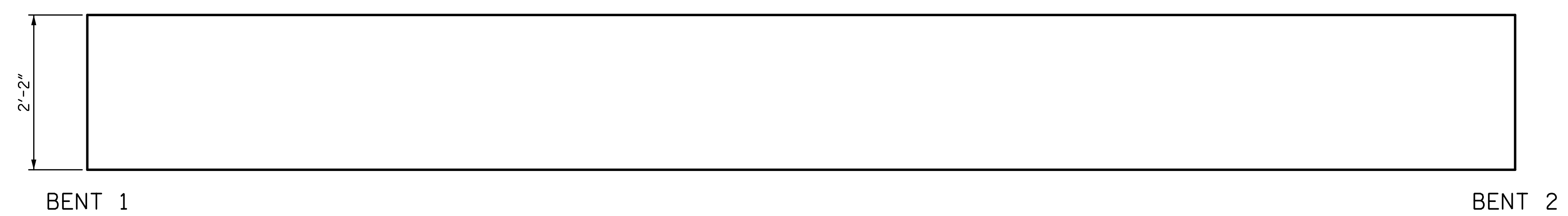
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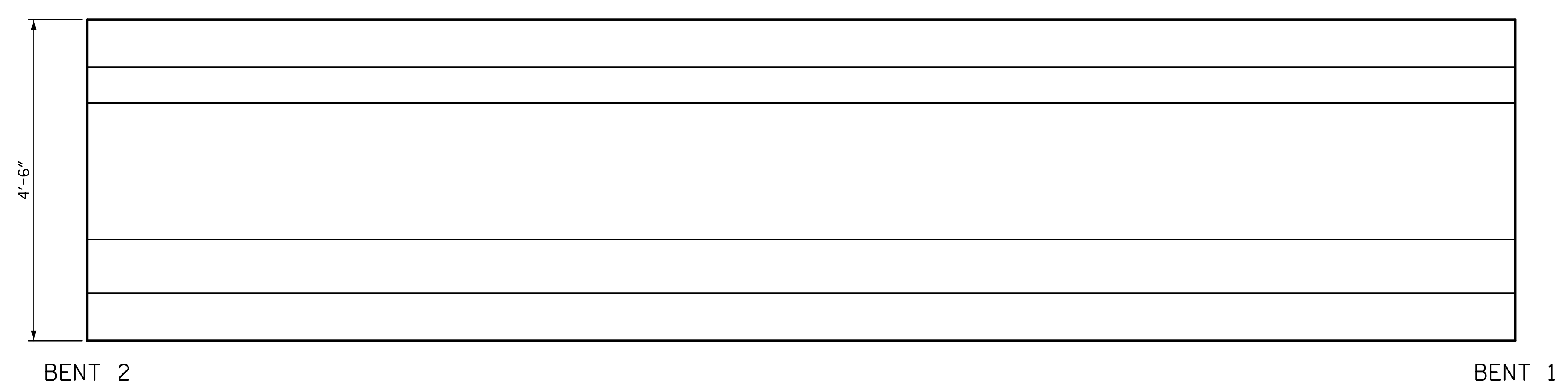
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 2 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		2.8			

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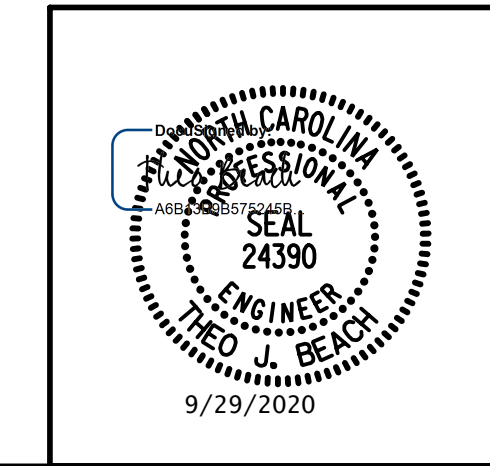
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 2
 GIRDER 5

PLANS PREPARED BY:

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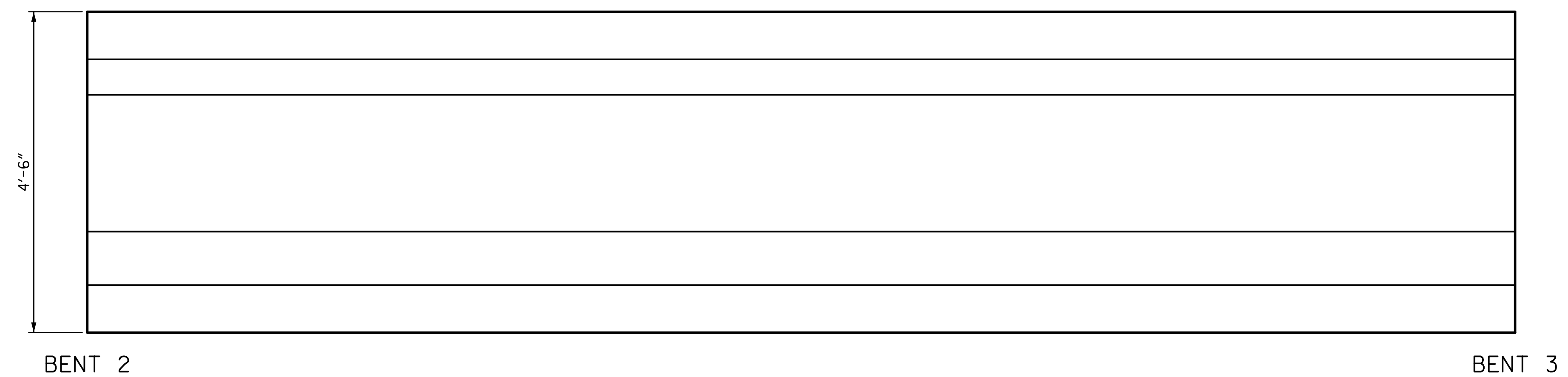
DRAWN BY: T. BANKOVICH	DATE: 9-20
CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-42
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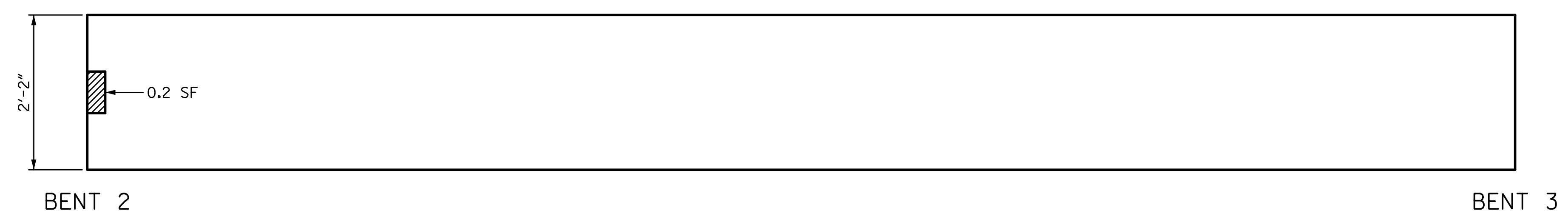
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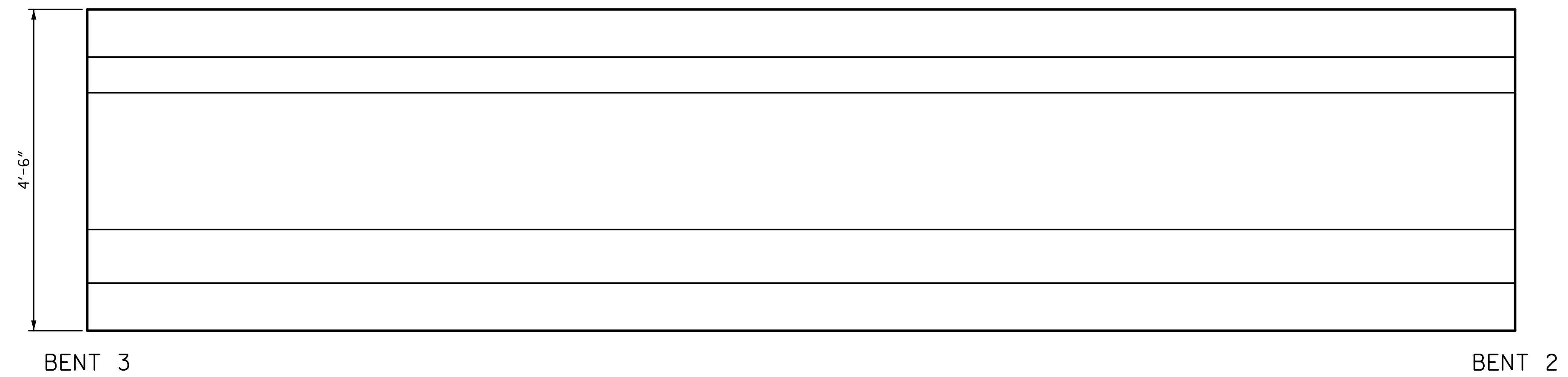
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 3 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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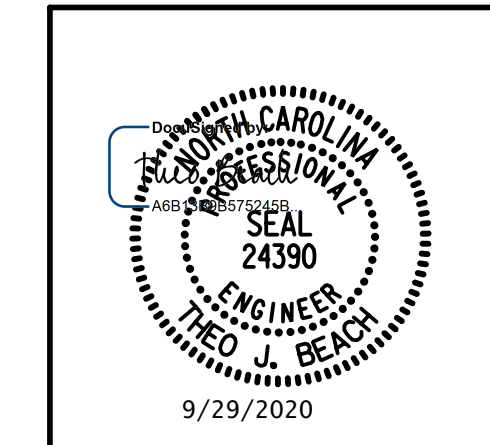
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 3
 GIRDER 1

PLANS PREPARED BY:

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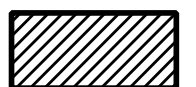


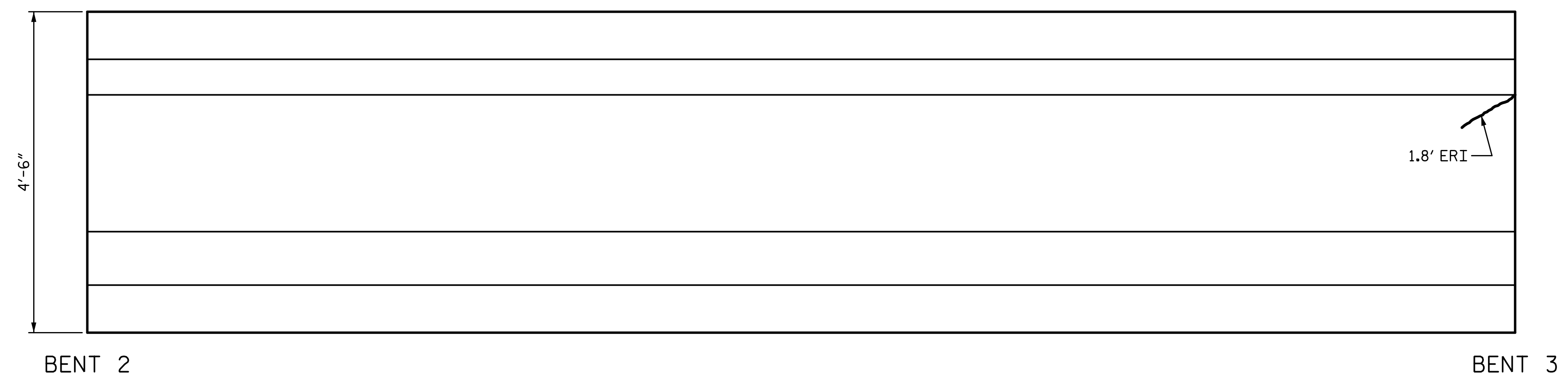
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-43
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2			4			163

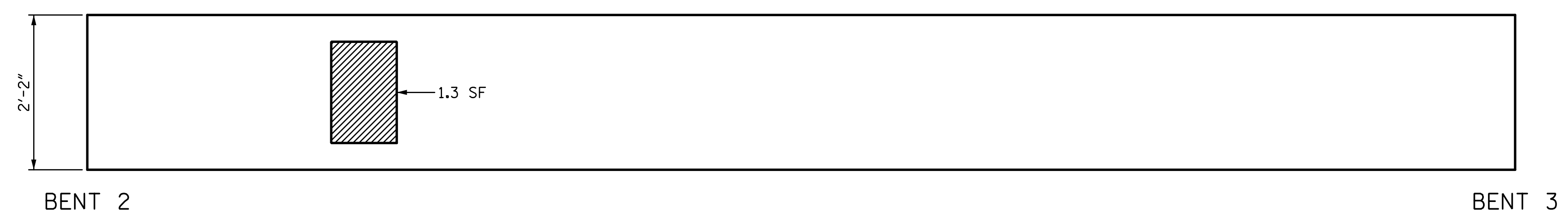
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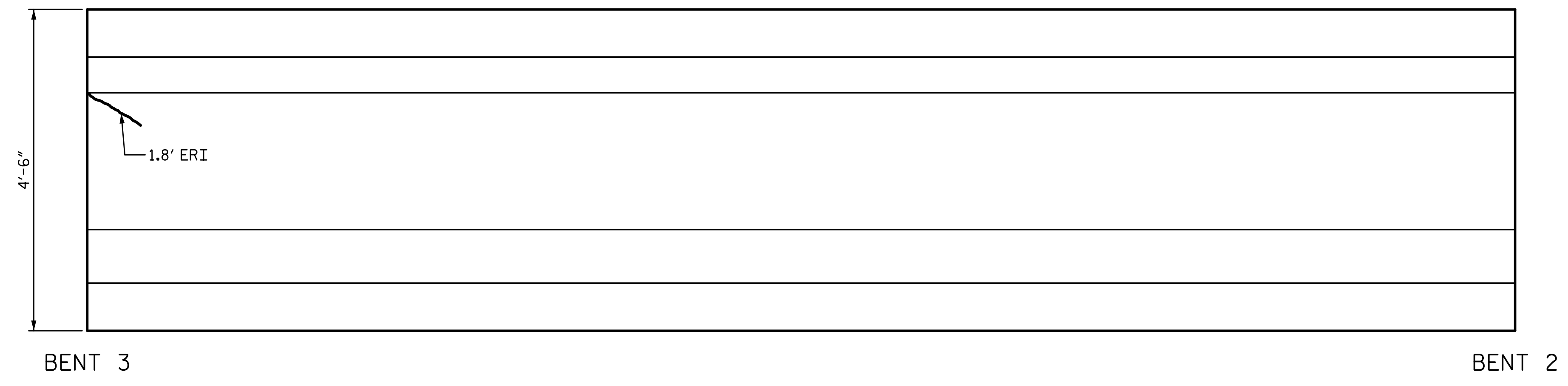
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 3 GRD. 2	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.3	0.2			
EPOXY RESIN INJECTION		LF			LF
GIRDER		3.6			

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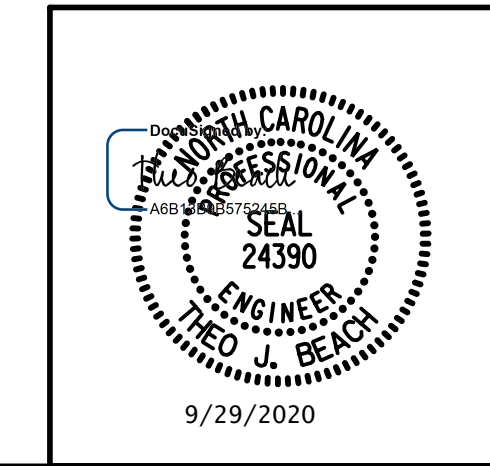
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 5

STATE OF NORTH CAROLINA
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 SPAN 3
 GIRDER 2

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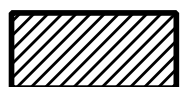


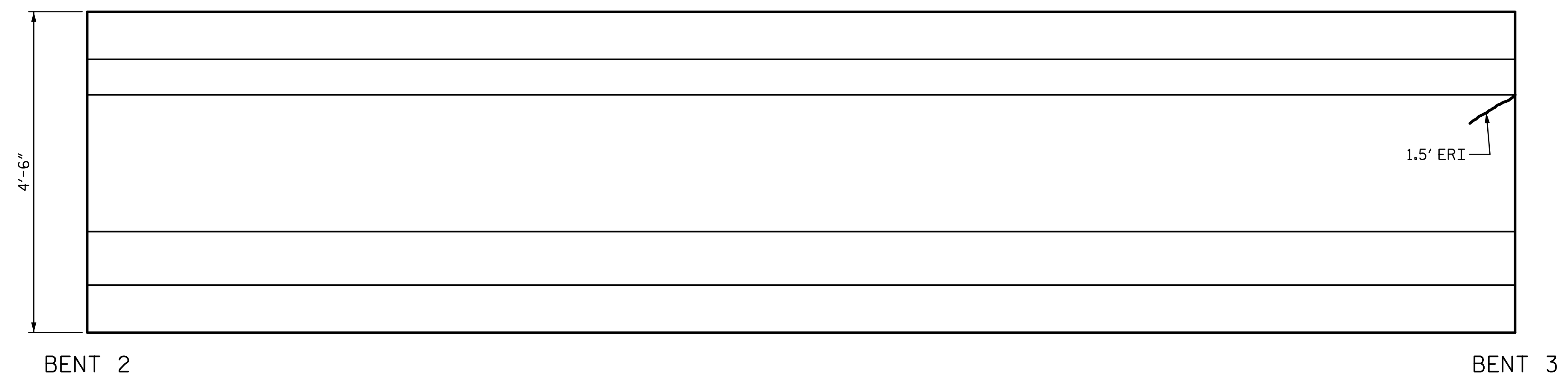
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-44
1			3			TOTAL SHEETS
2			4			163

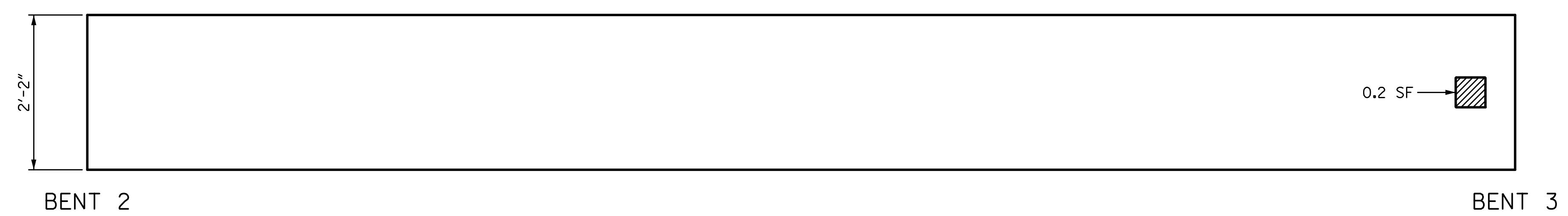
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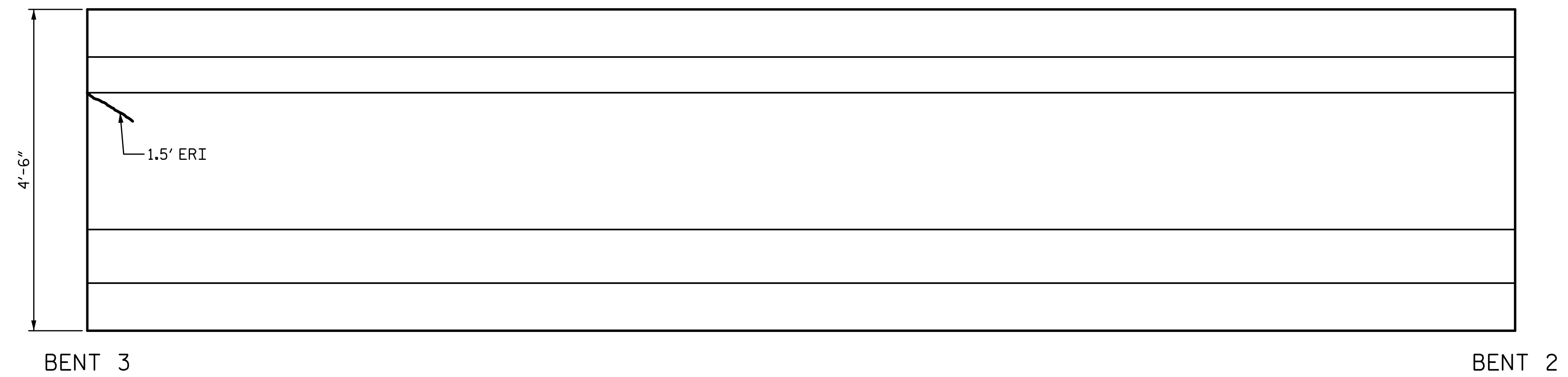
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 3 GRD. 3	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		3.0			

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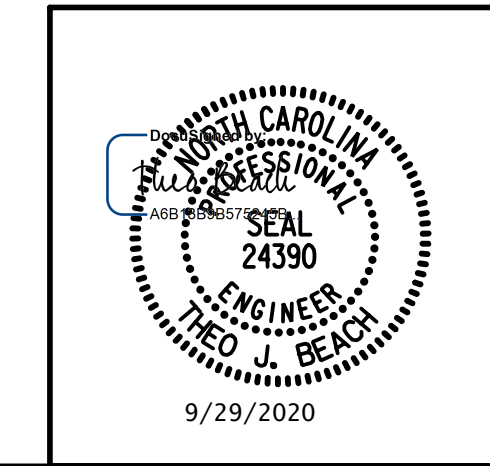
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SHEET 3 OF 5

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 RALEIGH
 PRESERVATION
 SPAN 3
 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

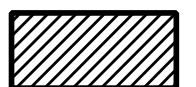


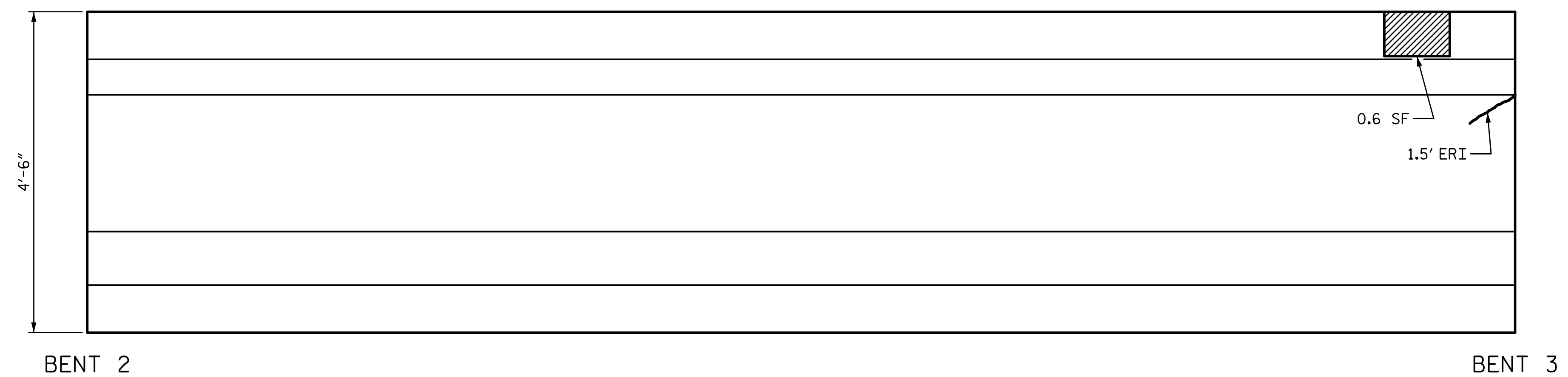
DRAWN BY: T. BANKOVICH	DATE: 9-20
CHECKED BY: T.J. BEACH	DATE: 9-20
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 9-20

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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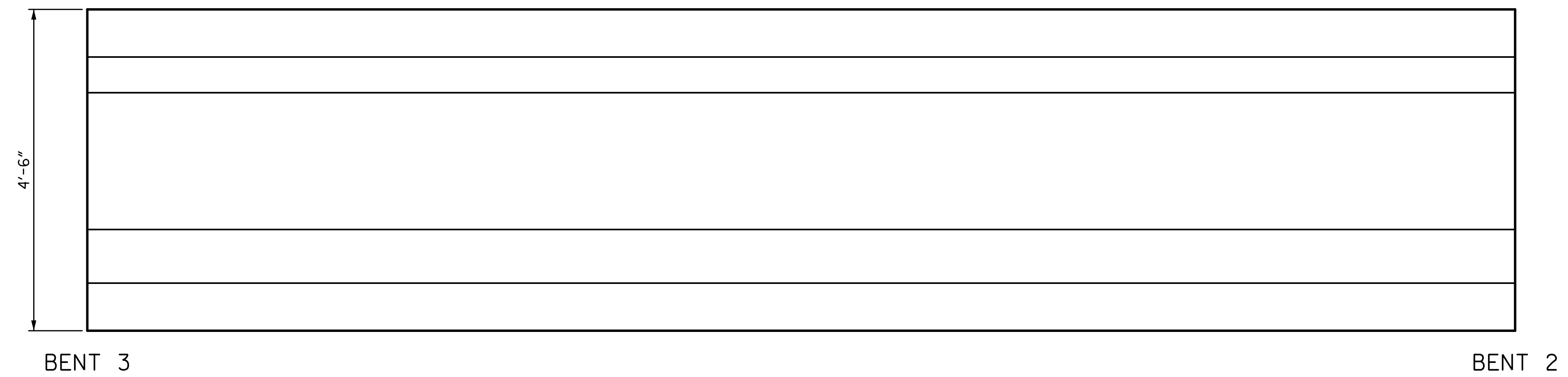
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 3 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	0.6	0.1			
EPOXY RESIN INJECTION		LF			LF
GIRDER		1.5			

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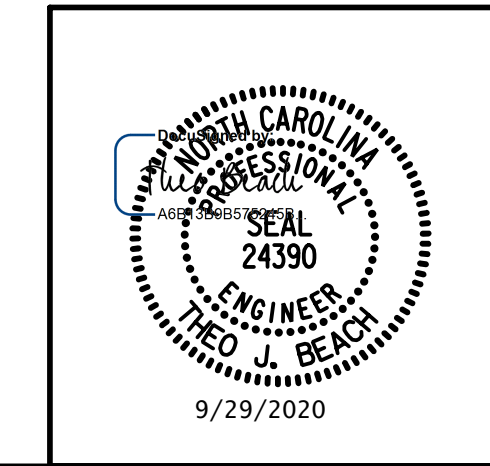
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 3
 GIRDER 4

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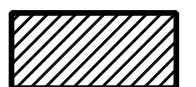


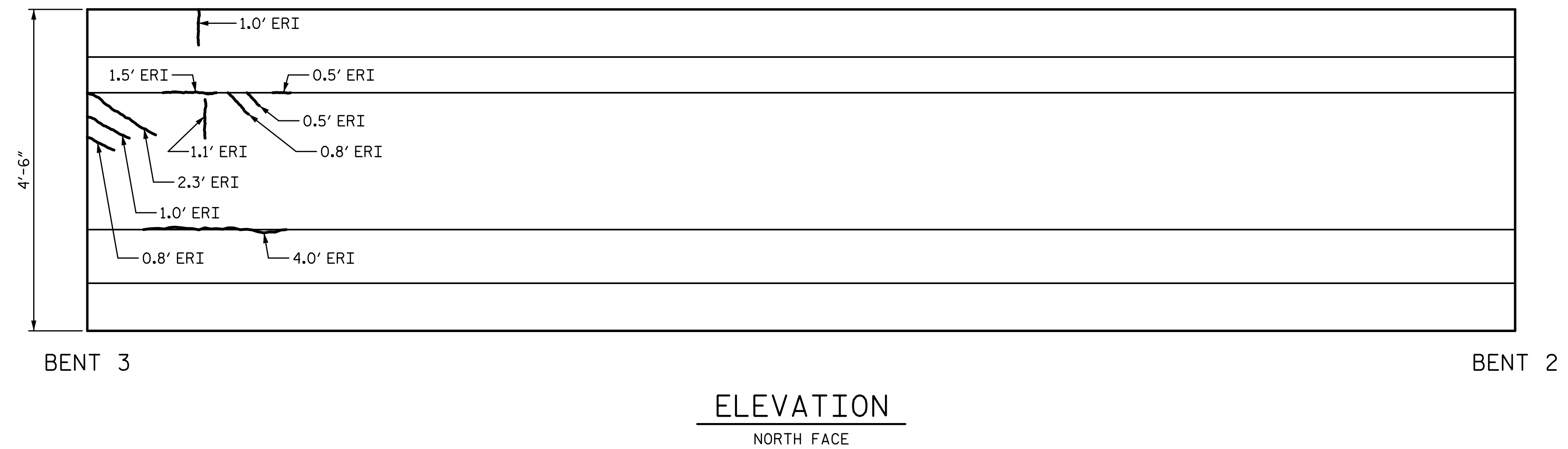
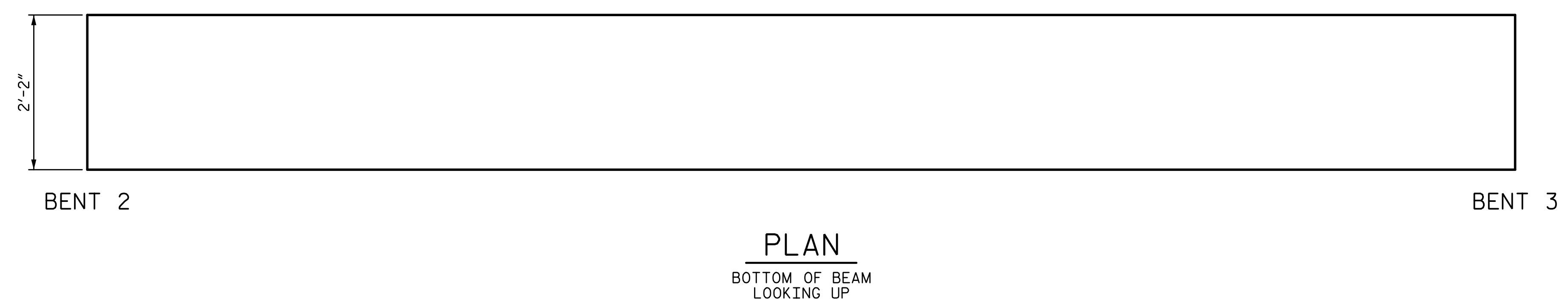
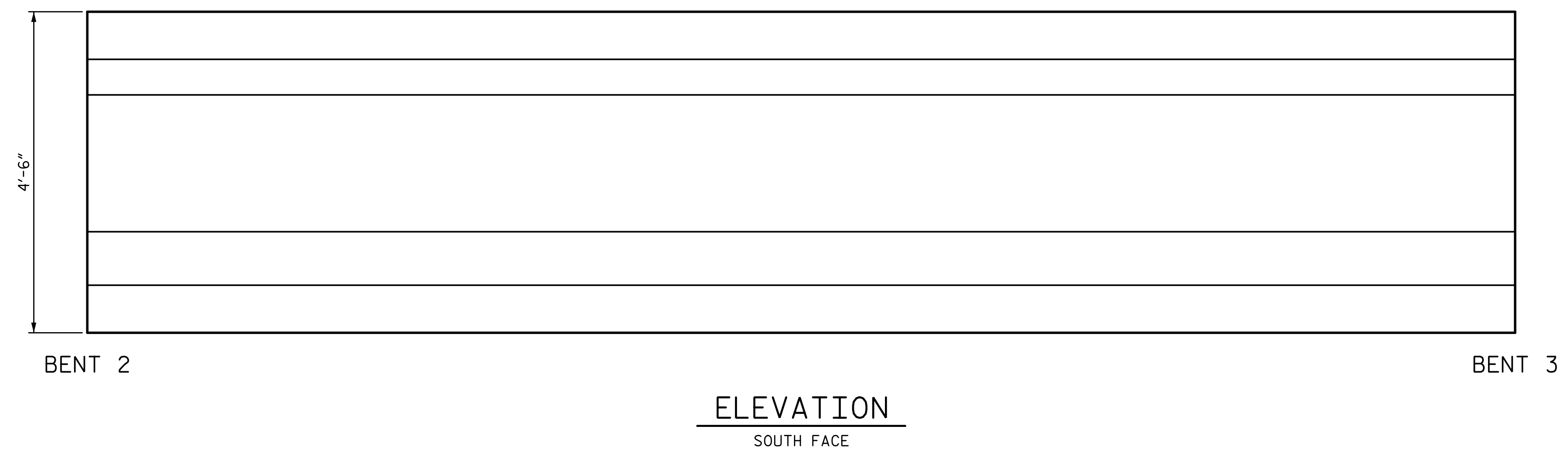
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 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



REPAIR QUANTITY TABLE					
REPAIRS SPAN 3 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		13.5			

NOTES:
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PROJECT NO. 15BPR.26
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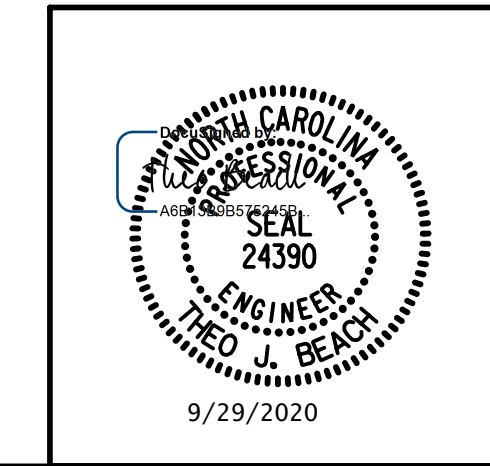
SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION

**SPAN 3
 GIRDER 5**

PLANS PREPARED BY:

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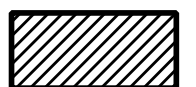


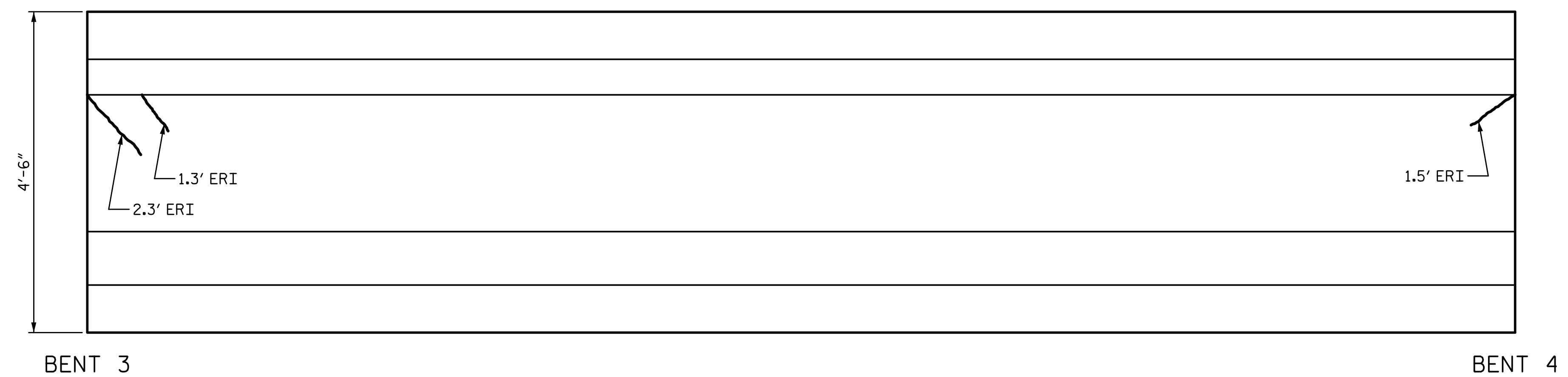
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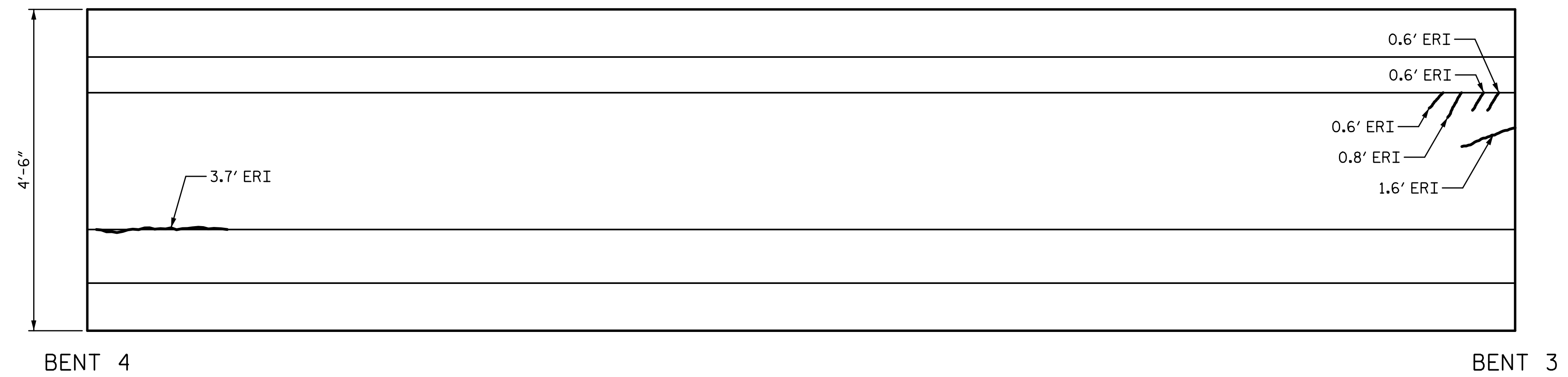
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 4 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		13.0			

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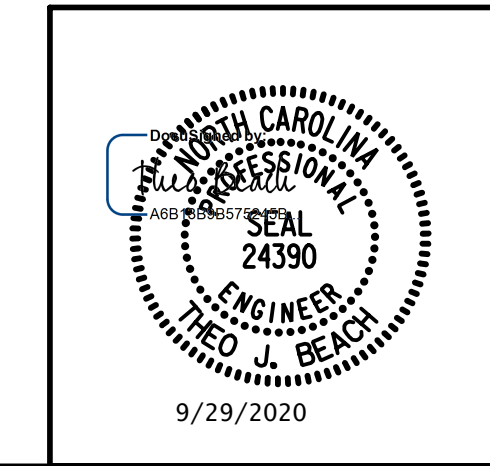
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRESERVATION
 SPAN 4
 GIRDER 1

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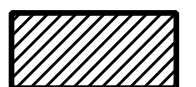


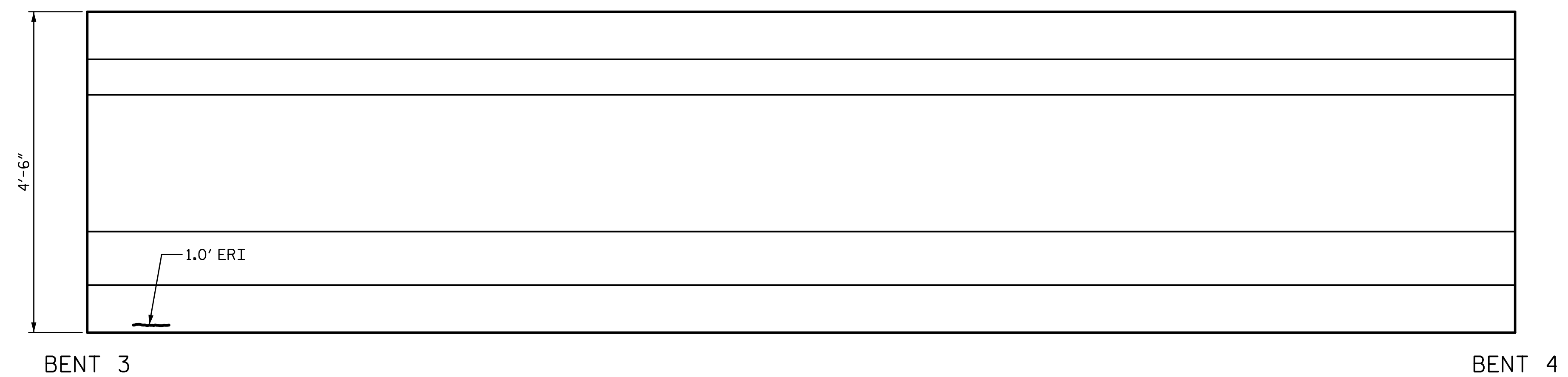
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REVISIONS						SHEET NO.
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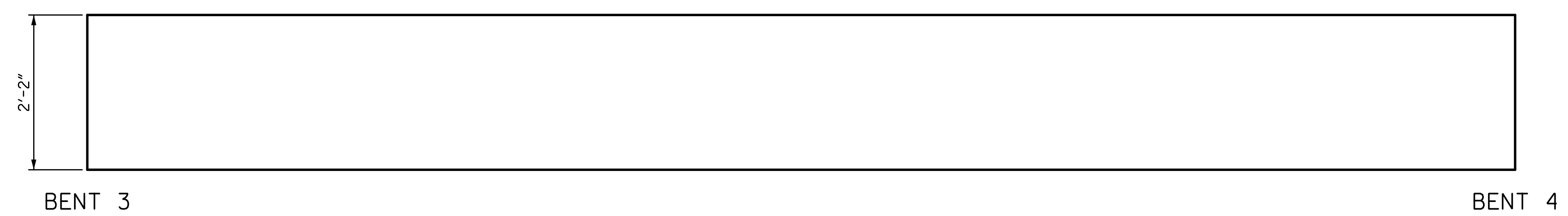
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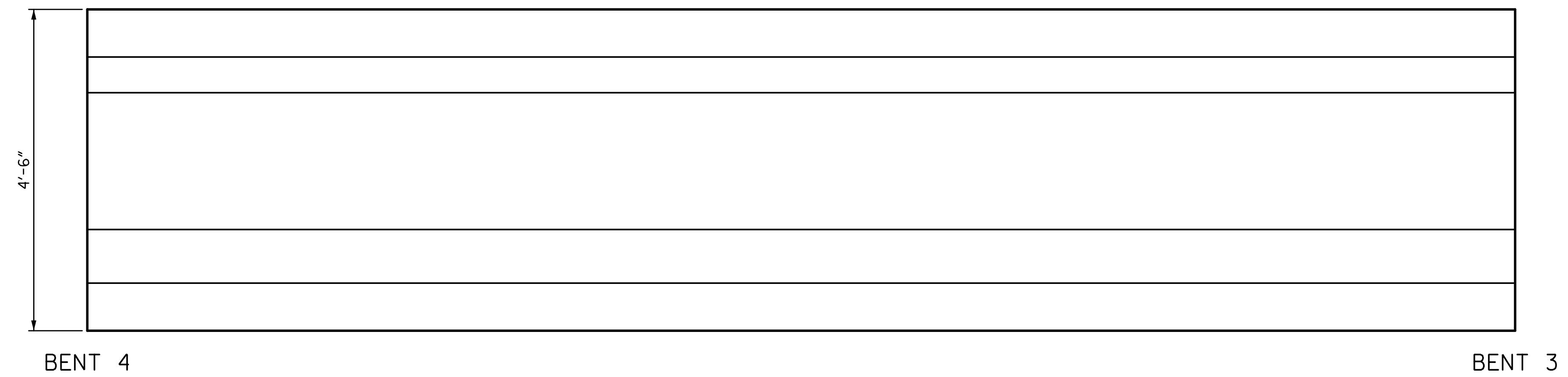
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 4 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		1.0			

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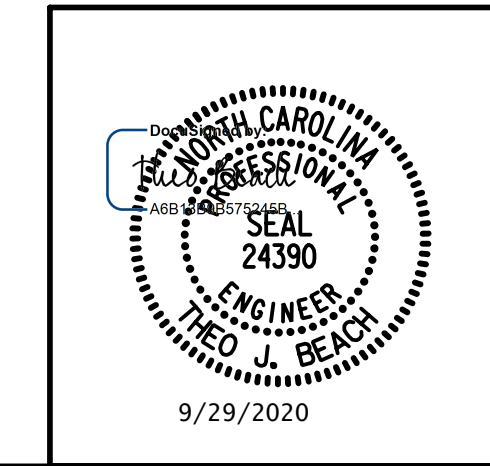
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 2 OF 5

STATE OF NORTH CAROLINA
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 RALEIGH
 PRESERVATION
 SPAN 4
 GIRDER 2

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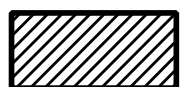


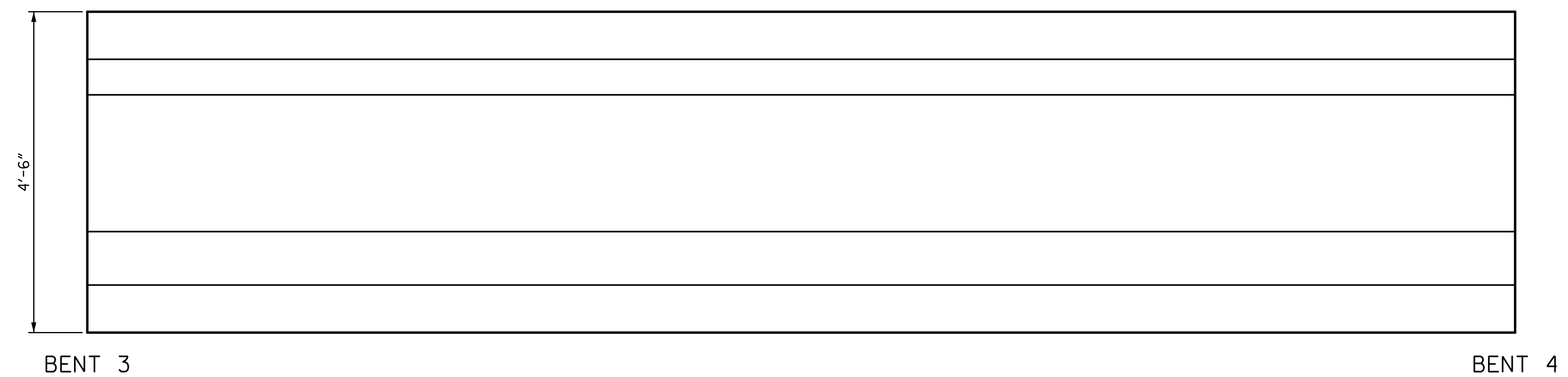
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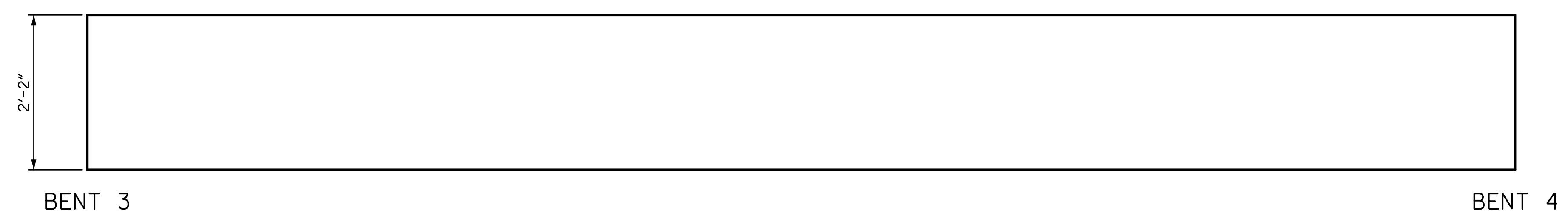
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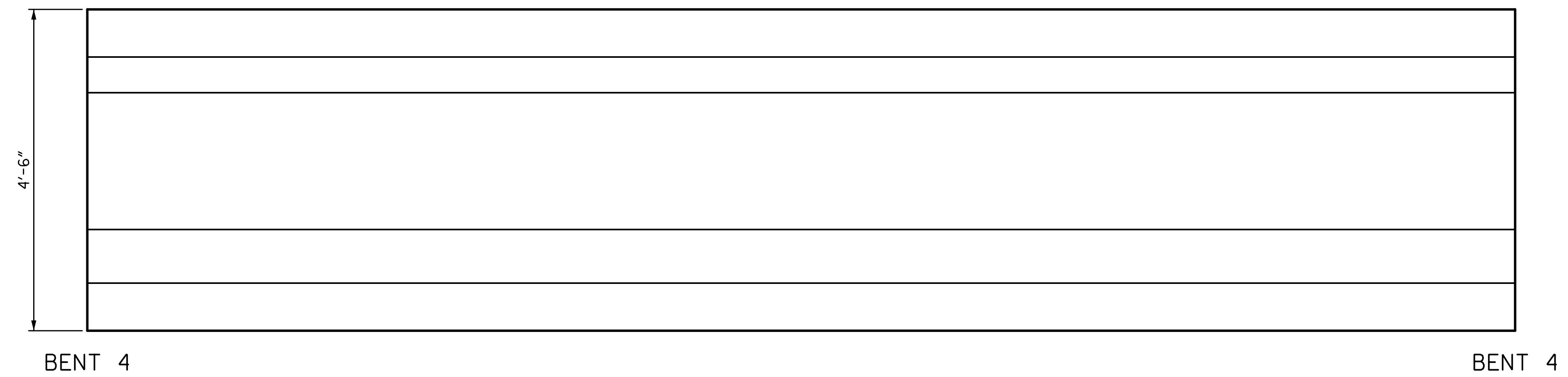
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 4 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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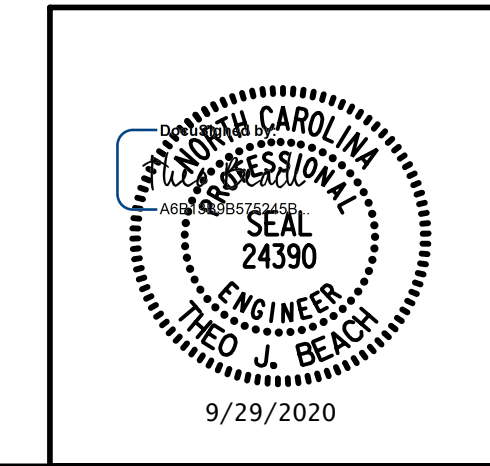
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SHEET 3 OF 5

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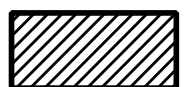


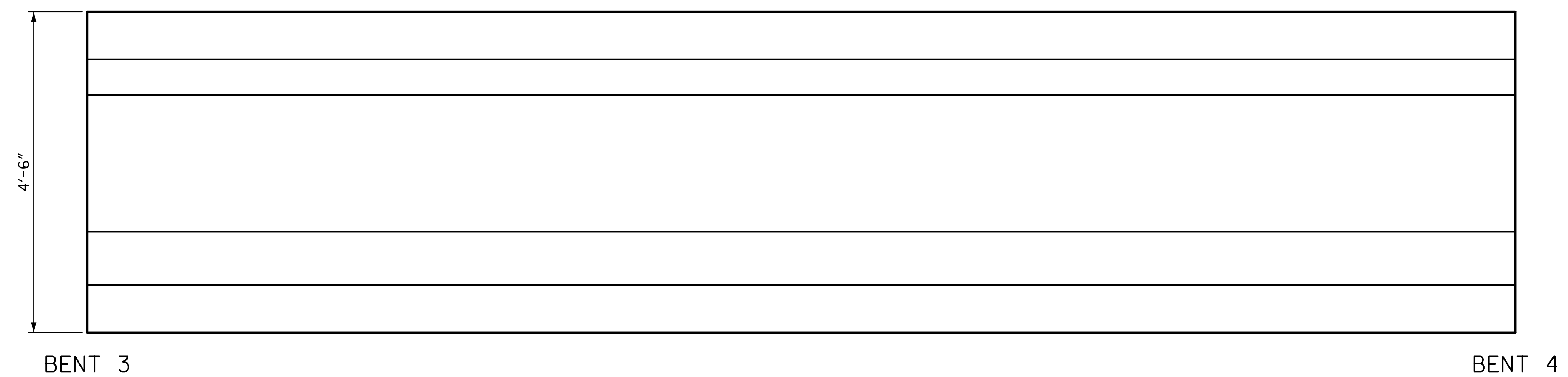
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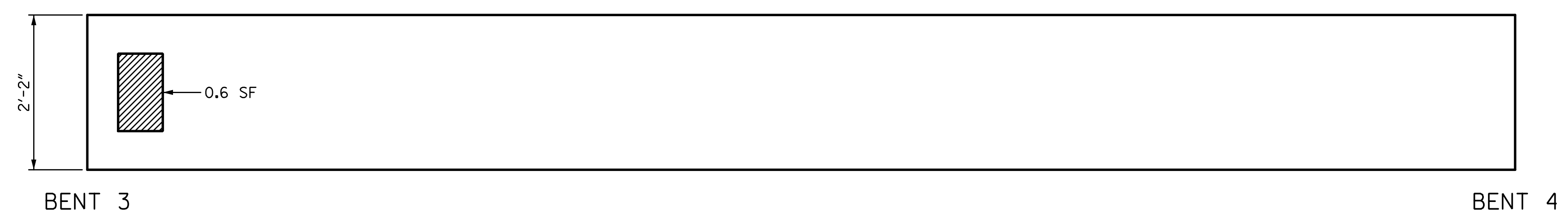
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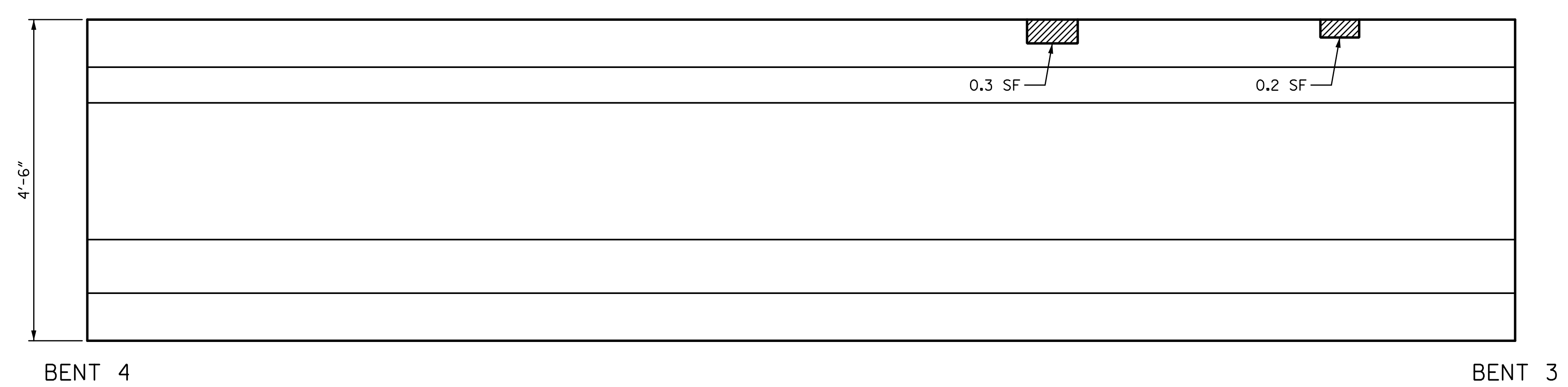
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 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 4 GRD. 4	QUANTITIES				
	ESTIMATE		ACTUAL		
REPAIRS OF PRESTR. CONCRETE GIRDERS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
GIRDER	1.1	0.3			
EPOXY RESIN INJECTION			LF		LF
GIRDER		0.0			

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

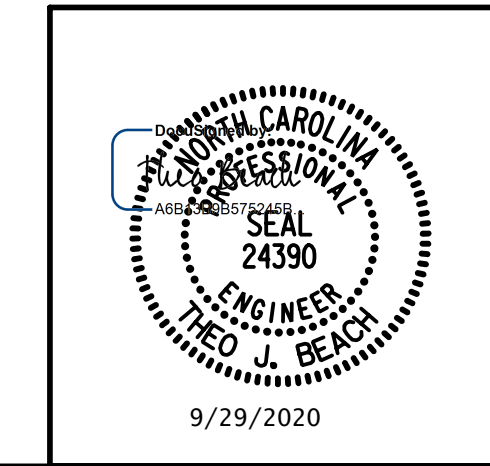
PROJECT NO. 15BPR.26
 NEW HANOVER/PENDER COUNTY
 BRIDGE NO.: 640049

SHEET 4 OF 5

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

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

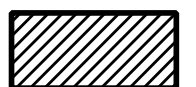


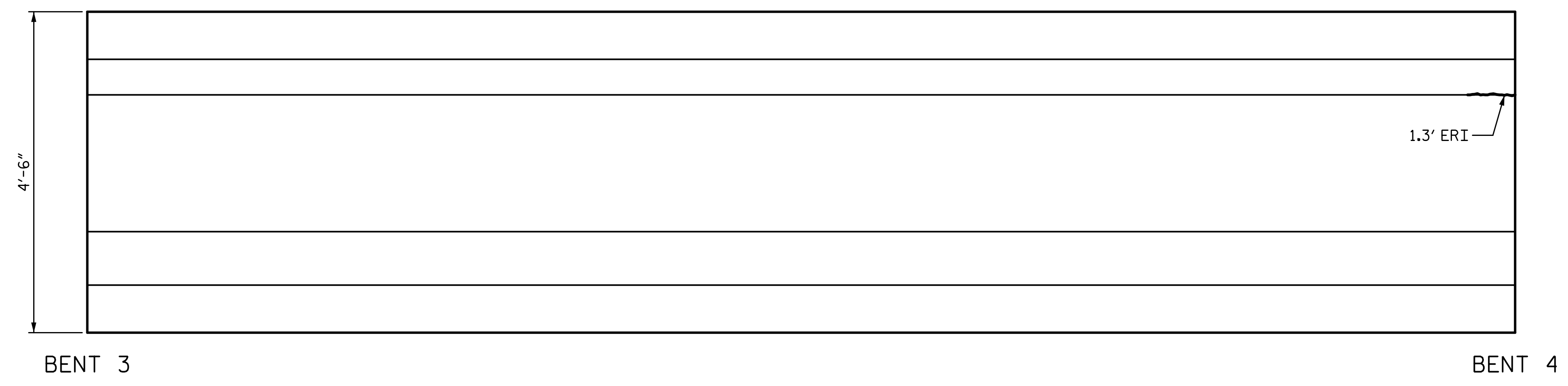
DRAWN BY: T. BANKOVICH DATE: 9-20
 CHECKED BY: T.J. BEACH DATE: 9-20
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 9-20

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-51
1			3			TOTAL SHEETS
2			4			163

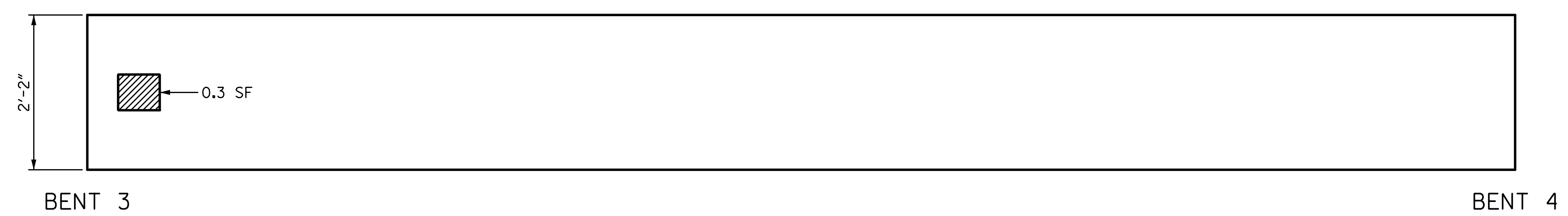
**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

9/28/2020 12:02:14 PM G:\Projects\2018\15BPR26 New Hanover_Preservation\Structures\Drawings\Final\Bridges\49 (Eastbound Lane)\401\15BPR26_SMU_G_SPAN 4_640049.dgn

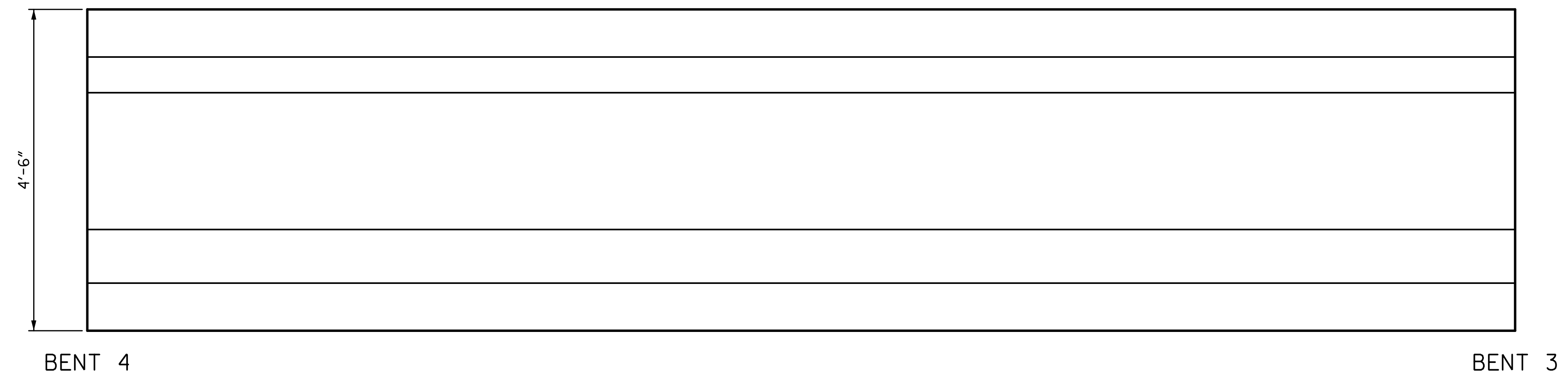
 PRESTRESSED CONCRETE GIRDER REPAIR
 ERI — EPOXY RESIN INJECTION



ELEVATION
SOUTH FACE



PLAN
BOTTOM OF BEAM
LOOKING UP



ELEVATION
NORTH FACE

REPAIR QUANTITY TABLE					
REPAIRS SPAN 4 GRD. 5	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		1.3			

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.
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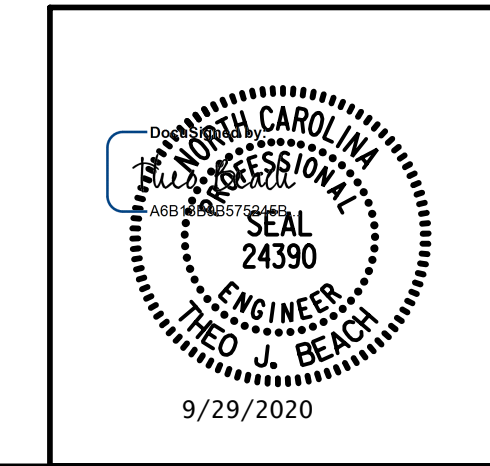
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SHEET 5 OF 5

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2			4			163

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