

AS-BUILT REPAIR QUANTITY TABLE

BENT 73

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	58.4 SF	23.0 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	170.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

BENT 74

CAP REPAIRS			
SHOTCRETE REPAIRS	18.3 SF	6.6 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	15.3 SF	7.2 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	121.0 SF		
FRP PROTECTIVE SYSTEM BWL	49.5 SF		

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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.

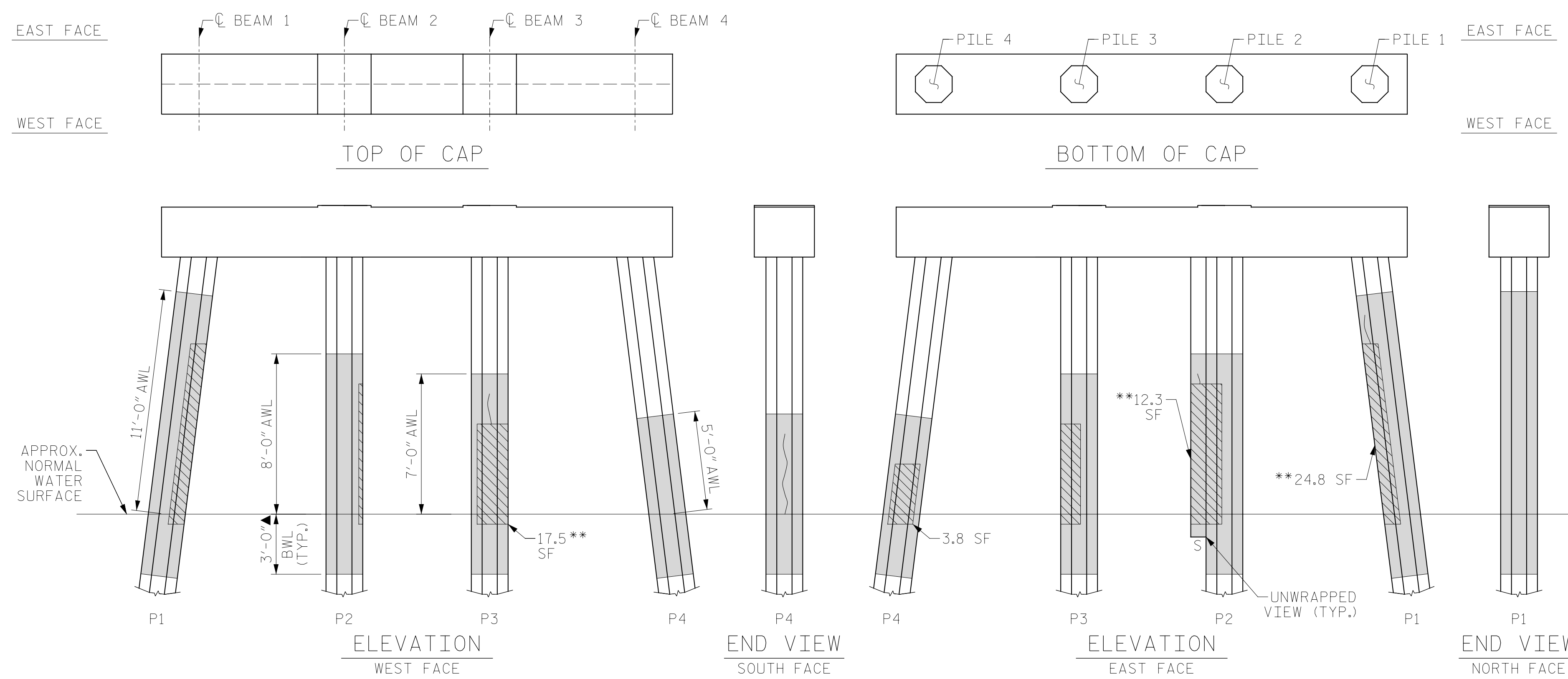
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

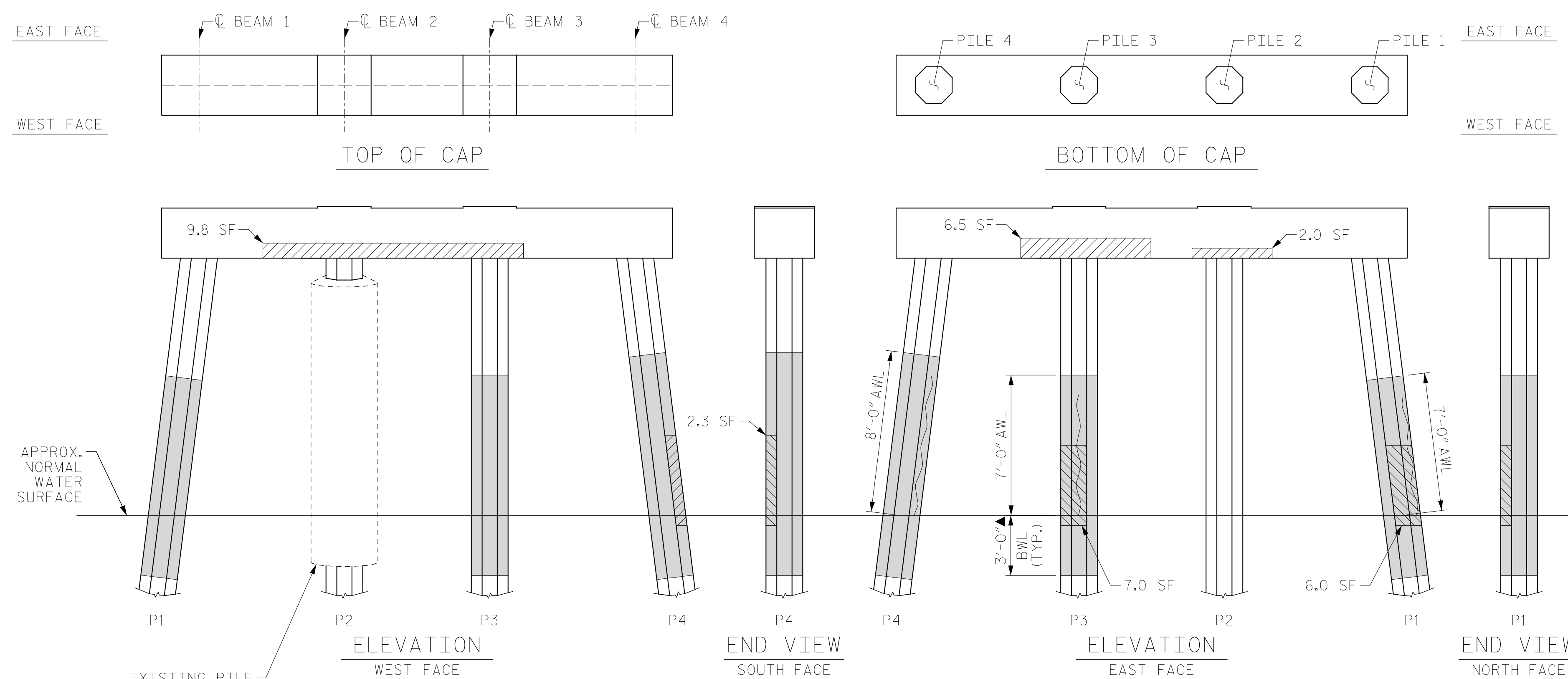
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 73

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 74

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

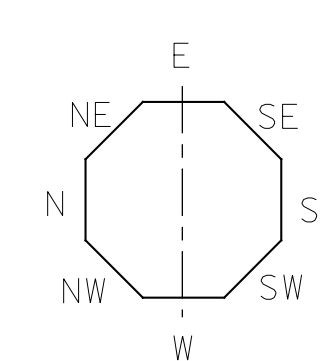
BENT	PILE	DIRECTION							
		NW	W	SW	S	SE	E	NE	N
73	PILE 1	3	-	-	-	10	5	-	-
	PILE 2	-	-	7	7	-	-	-	-
	PILE 3	-	6	6	-	-	4	-	-
	PILE 4	-	-	-	4	-	-	-	-
74	PILE 1	-	4	-	4	-	-	6	-
	PILE 2	-	-	-	-	-	-	-	-
	PILE 3	-	-	-	-	4	6	-	-
	PILE 4	4	4	4	-	4	-	7	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



DocuSigned by:
Eric B. Nelson, Jr.
7/14/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 73 & BENT 74

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			152
2			4			355

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



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AS-BUILT REPAIR QUANTITY TABLE

BENT 75

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	34.0 SF	13.4 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	148.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

BENT 76

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	26.3 SF	11.5 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	159.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

NOTES:

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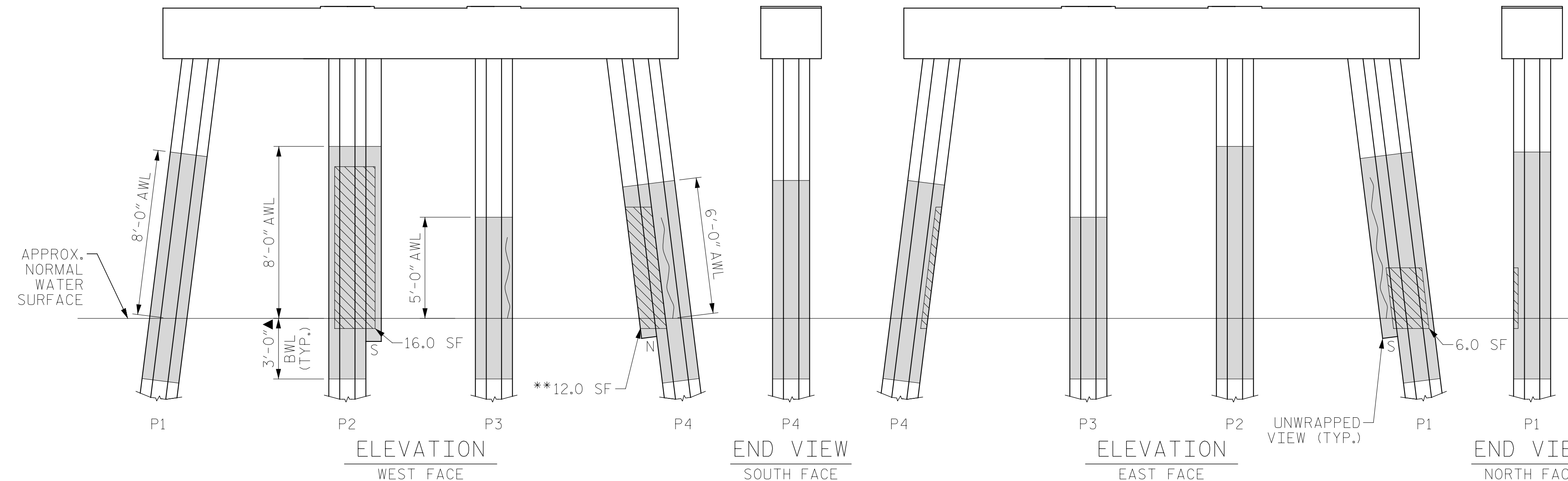
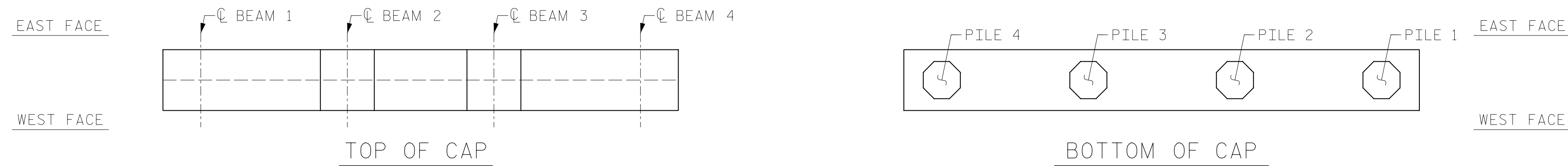
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

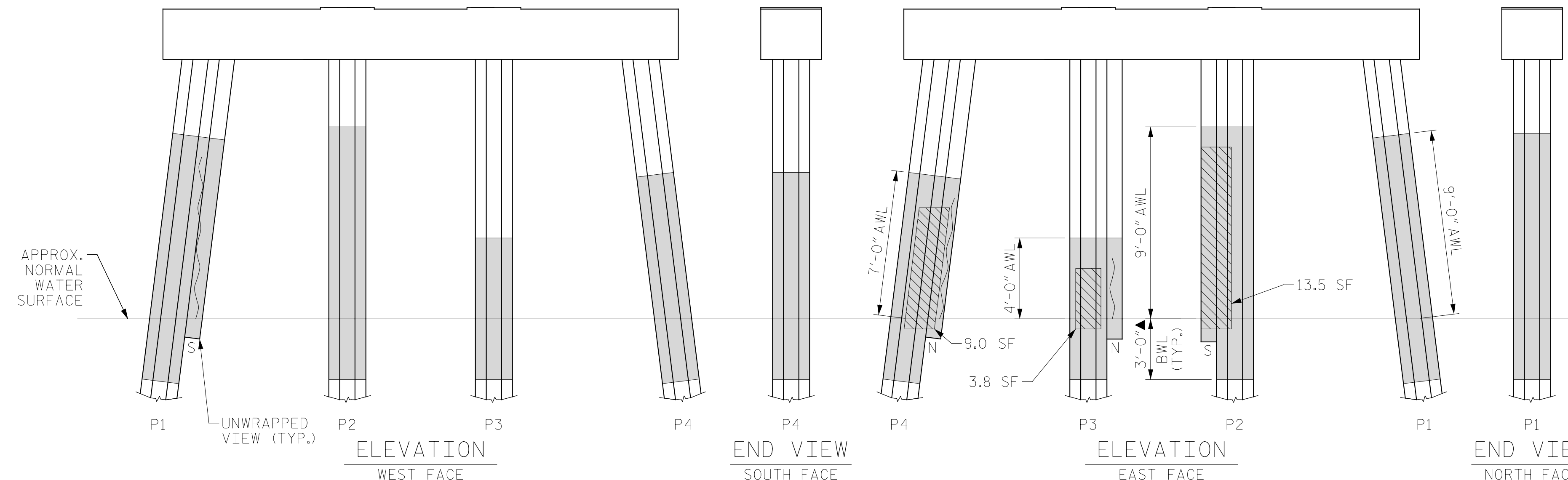
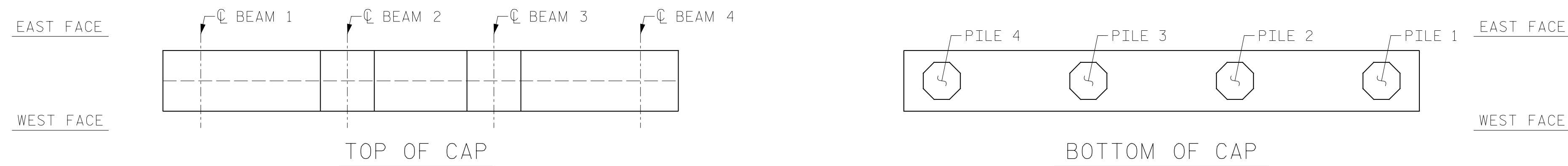
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 75

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

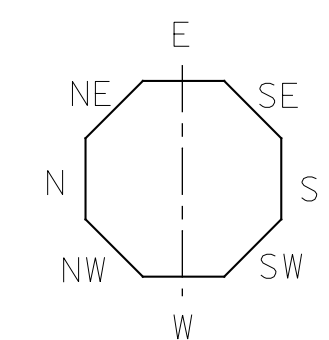


BENT 76

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

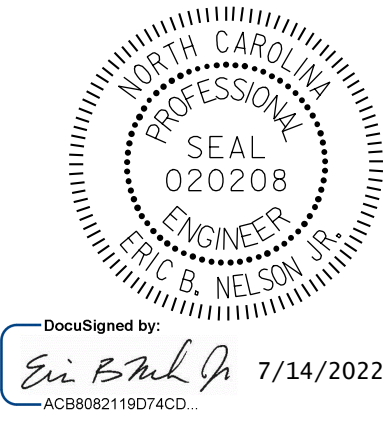
BENT	PILE	DIRECTION							
		NW	W	SW	S	SE	E	NE	N
75	PILE 1	3	-	-	7	-	-	-	-
	PILE 2	-	7	7	-	-	-	-	5
	PILE 3	4	-	4	-	-	-	-	-
	PILE 4	-	5	-	2	-	-	-	-
76	PILE 1	6	7	-	8	-	-	4	-
	PILE 2	-	-	-	8	6	-	7	-
	PILE 3	-	-	-	-	-	-	2	3
	PILE 4	-	-	4	2	5	-	-	6

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 75 & BENT 76					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



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AS-BUILT REPAIR QUANTITY TABLE

BENT 77			
CAP REPAIRS			
SHOTCRETE REPAIRS	1.5 SF	0.8 CF	
EPOXY RESIN INJECTION	- LF		
PILE REPAIRS			
PILE CONCRETE RESTORATION	28.5 SF	12.1 CF	
FRP PROTECTIVE SYSTEM AWL	121.0 SF		
FRP PROTECTIVE SYSTEM BWL	49.5 SF		

BENT 78			
CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	
EPOXY RESIN INJECTION	- LF		
PILE REPAIRS			
PILE CONCRETE RESTORATION	29.8 SF	12.6 CF	
FRP PROTECTIVE SYSTEM AWL	143.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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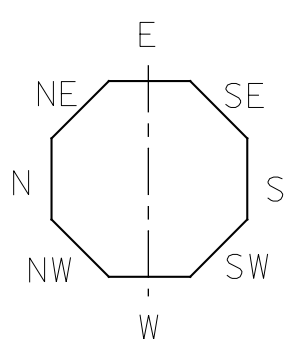
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

ESTIMATED PILE CRACK QTY. TABLE

		NW	W	SW	S	SE	E	NE	N
BENT 77	PILE 1	-	-	6	-	-	-	2	-
	PILE 2	-	-	-	-	-	-	-	-
	PILE 3	-	-	-	-	-	-	-	-
	PILE 4	6	-	3	3	-	-	-	-
	PILE 6	3	-	3	-	-	-	-	4
BENT 78	PILE 1	-	-	-	4	-	-	-	5
	PILE 2	2	4	3	-	-	-	-	-
	PILE 3	4	-	4	-	-	-	1	4
	PILE 4	3	-	4	-	-	2	4	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS

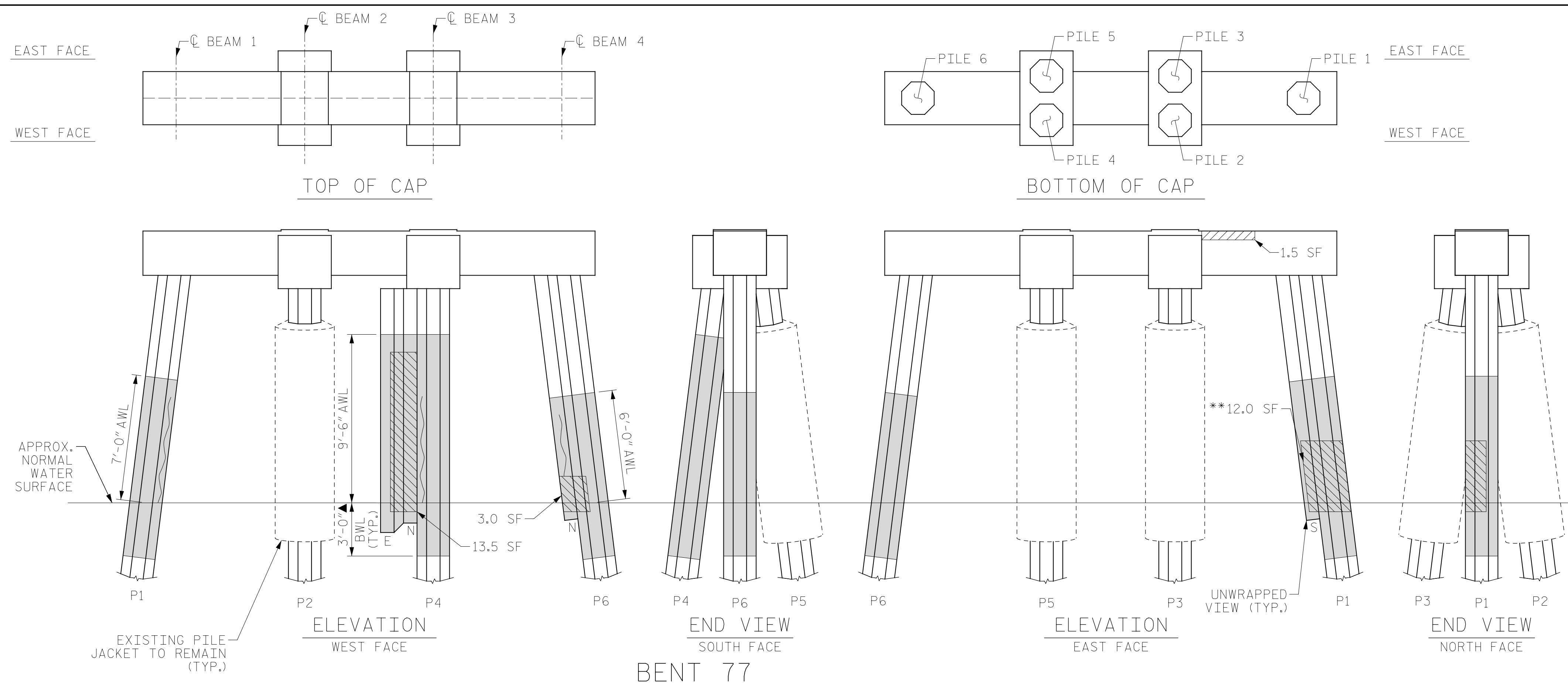


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

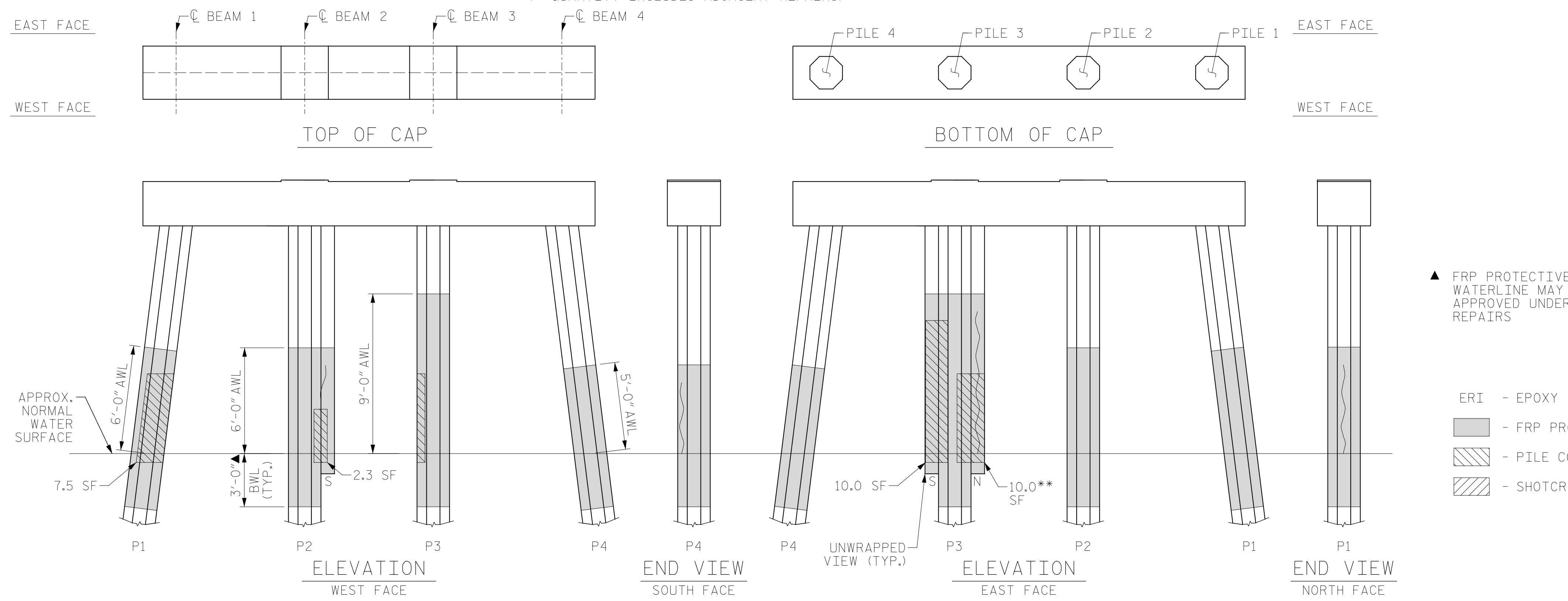
 BENT 77 & BENT 78

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-154
1			3			TOTAL SHEETS
2			4			355

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



BENT 77
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)
 (**QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 78
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)
 (**QUANTITY INCLUDES ADJACENT REPAIRS)

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: R. FISHER DATE: 3/2019

AS-BUILT REPAIR QUANTITY TABLE

BENT 79

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	18.5 SF	7.0 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	165.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

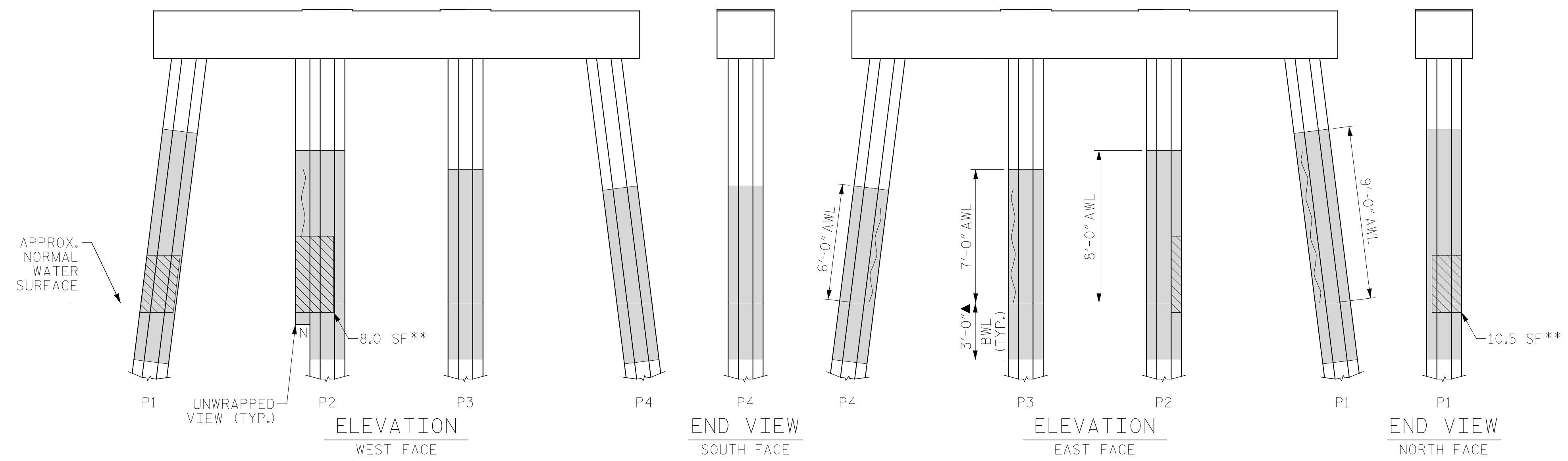
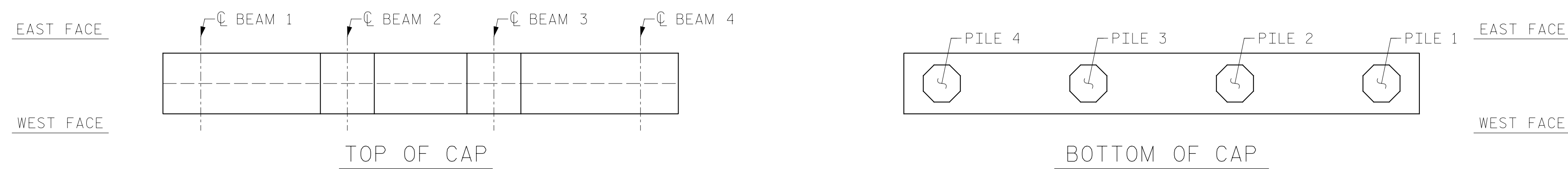
BENT 80

CAP REPAIRS			
SHOTCRETE REPAIRS	1.5 SF	0.8 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	25.0 SF	10.0 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	115.5 SF		
FRP PROTECTIVE SYSTEM BWL	49.5 SF		

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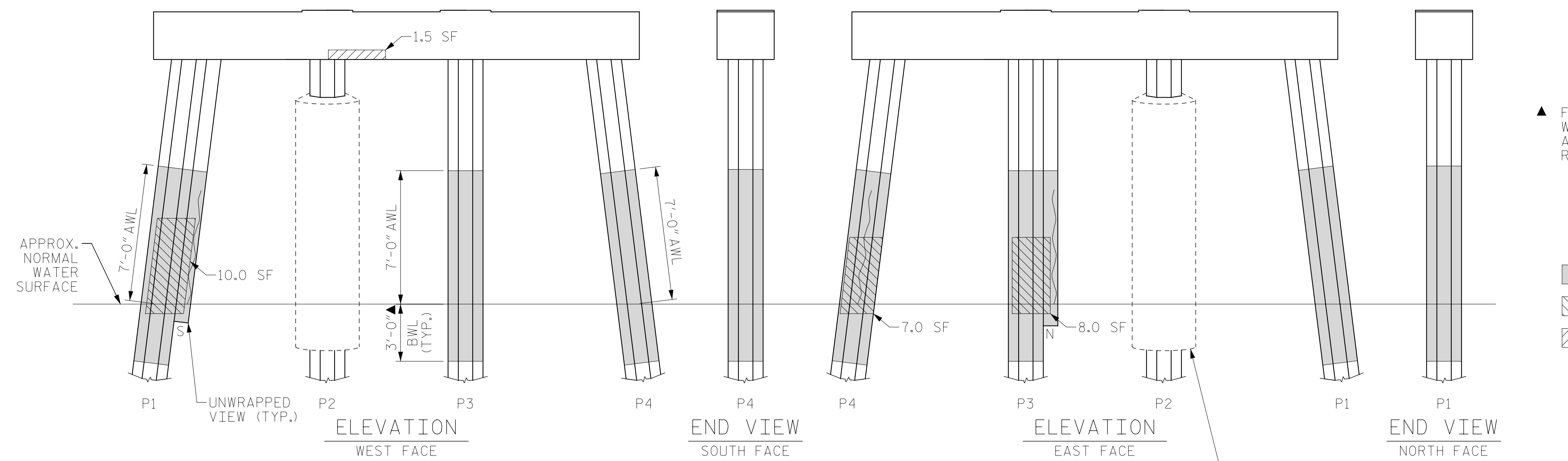
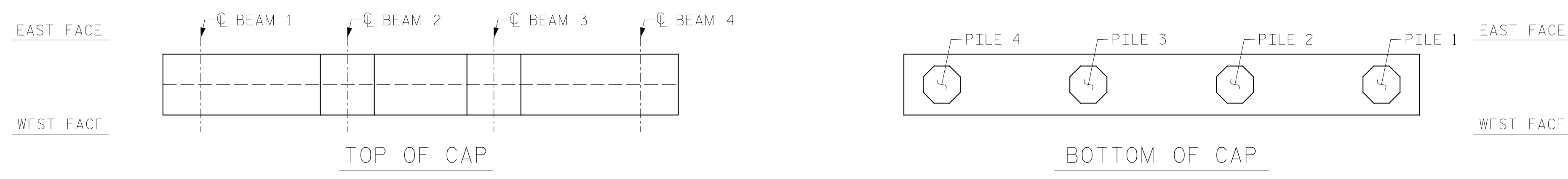
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FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



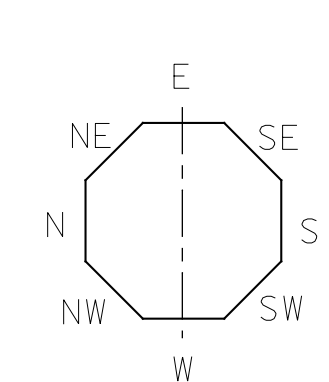
BENT 79

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 80

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



		NW	W	SW	S	SE	E	NE	N
BENT 79	PILE 1	1	4	-	6	8	-	-	1
	PILE 2	-	-	-	6.5	6	-	2	4
	PILE 3	-	-	6	3	6	-	6	4
	PILE 4	5	4	2	-	4	-	5	4
BENT 80	PILE 1	-	-	-	2	2	-	4	-
	PILE 2	-	-	-	-	-	-	-	-
	PILE 3	5	-	-	-	5	2	3	7
	PILE 4	2	-	-	3	3	2	2	5

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

- ▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS
- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- RCR - PILE CONCRETE RESTORATION
- SCR - SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 79 & BENT 80

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

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AS-BUILT REPAIR QUANTITY TABLE

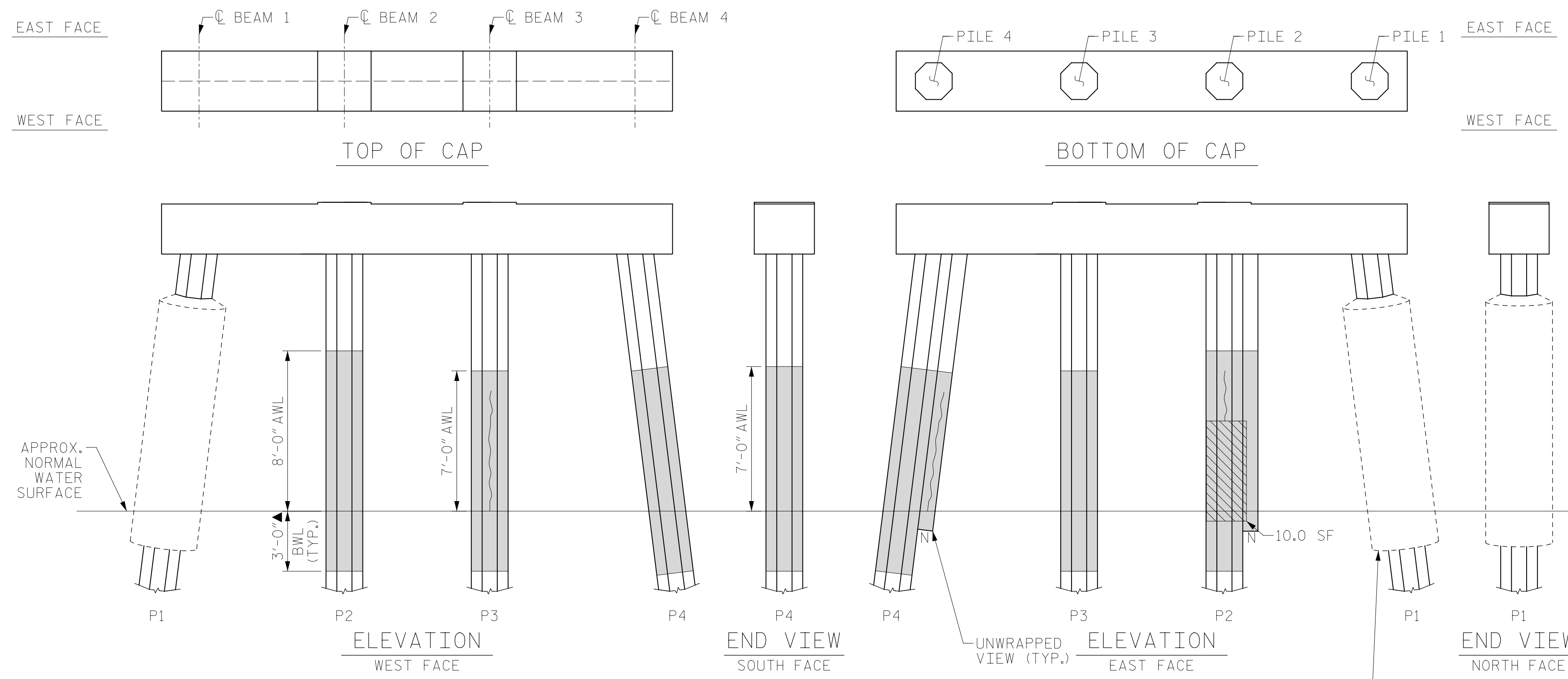
BENT 81				
CAP REPAIRS				
SHOTCRETE REPAIRS	- SF	- CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
PILE REPAIRS				
PILE CONCRETE RESTORATION	10.0 SF	4.0 CF	SF	CF
FRP PROTECTIVE SYSTEM AWL	121.0 SF			
FRP PROTECTIVE SYSTEM BWL	49.5 SF			

BENT 82				
CAP REPAIRS				
SHOTCRETE REPAIRS	1.0 SF	0.5 CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
PILE REPAIRS				
PILE CONCRETE RESTORATION	20.8 SF	8.7 CF	SF	CF
FRP PROTECTIVE SYSTEM AWL	121.0 SF			
FRP PROTECTIVE SYSTEM BWL	49.5 SF			

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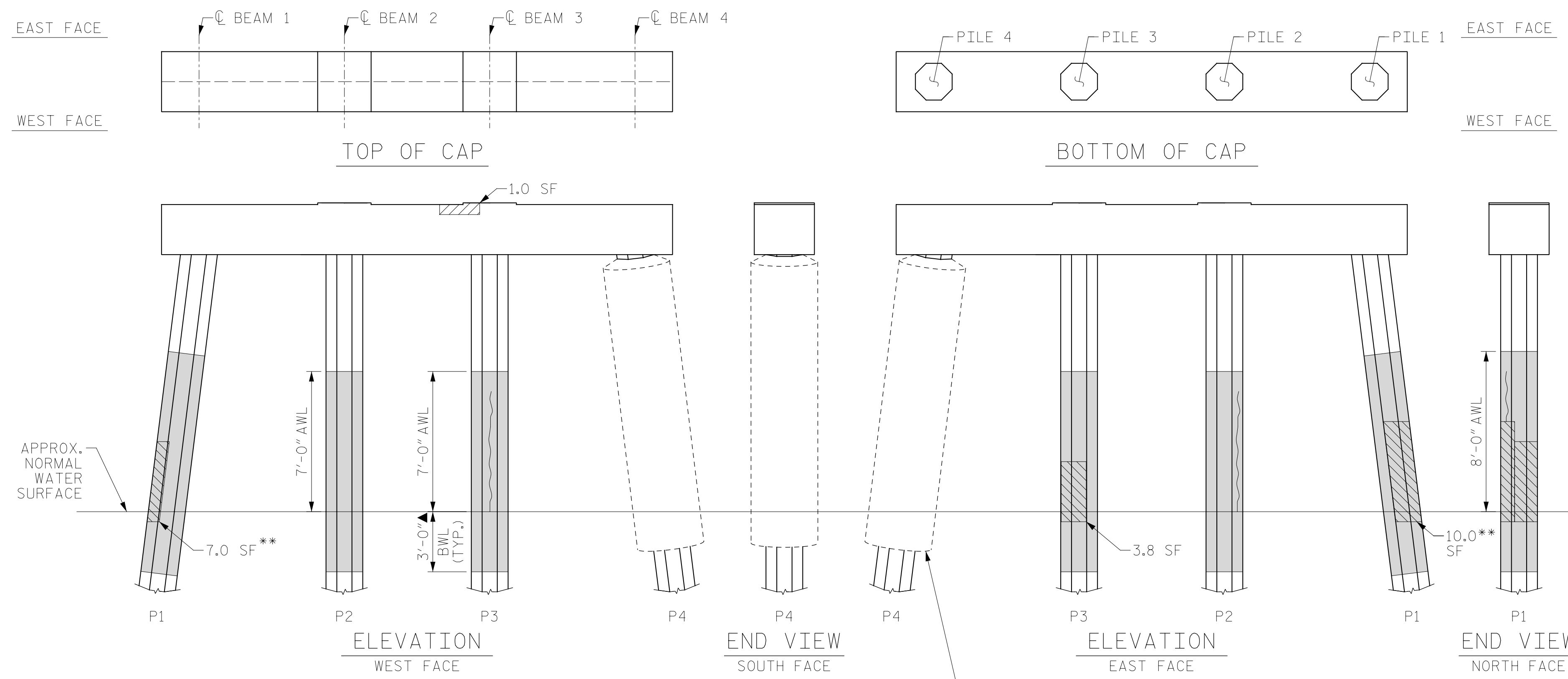
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FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
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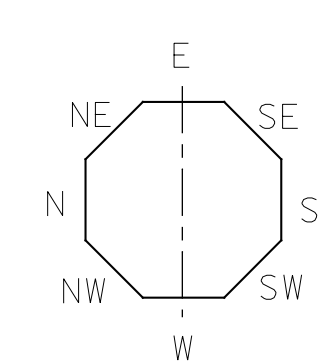
BENT 81

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 82

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



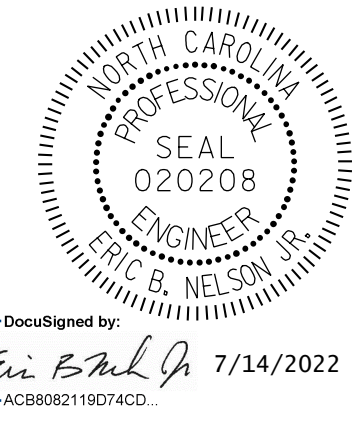
ESTIMATED PILE CRACK QTY. TABLE									
		NW	W	SW	S	SE	E	NE	N
BENT 81	PILE 1	-	-	-	-	-	-	-	-
	PILE 2	3	3	-	2	-	3	3	-
	PILE 3	-	6	2	-	2	-	-	6
	PILE 4	-	3	-	2	4	-	5	6
BENT 82	PILE 1	-	-	-	-	-	-	3	3
	PILE 2	-	3	-	-	4	5	6	3
	PILE 3	5	6	-	3	-	-	-	-
	PILE 4	-	-	-	-	-	-	-	-

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PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- PILE CONCRETE RESTORATION
- SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 81 & BENT 82

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: R. FISHER DATE: 3/2019



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

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AS-BUILT REPAIR QUANTITY TABLE

BENT 83

CAP REPAIRS			
SHOTCRETE REPAIRS	0.8 SF	0.4 CF	
EPOXY RESIN INJECTION	- LF		
PILE REPAIRS			
PILE CONCRETE RESTORATION	97.1 SF	37.8 CF	
FRP PROTECTIVE SYSTEM AWL	213.6 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

BENT 84

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	
EPOXY RESIN INJECTION	- LF		
PILE REPAIRS			
PILE CONCRETE RESTORATION	8.0 SF	3.2 CF	
FRP PROTECTIVE SYSTEM AWL	71.5 SF		
FRP PROTECTIVE SYSTEM BWL	33.0 SF		

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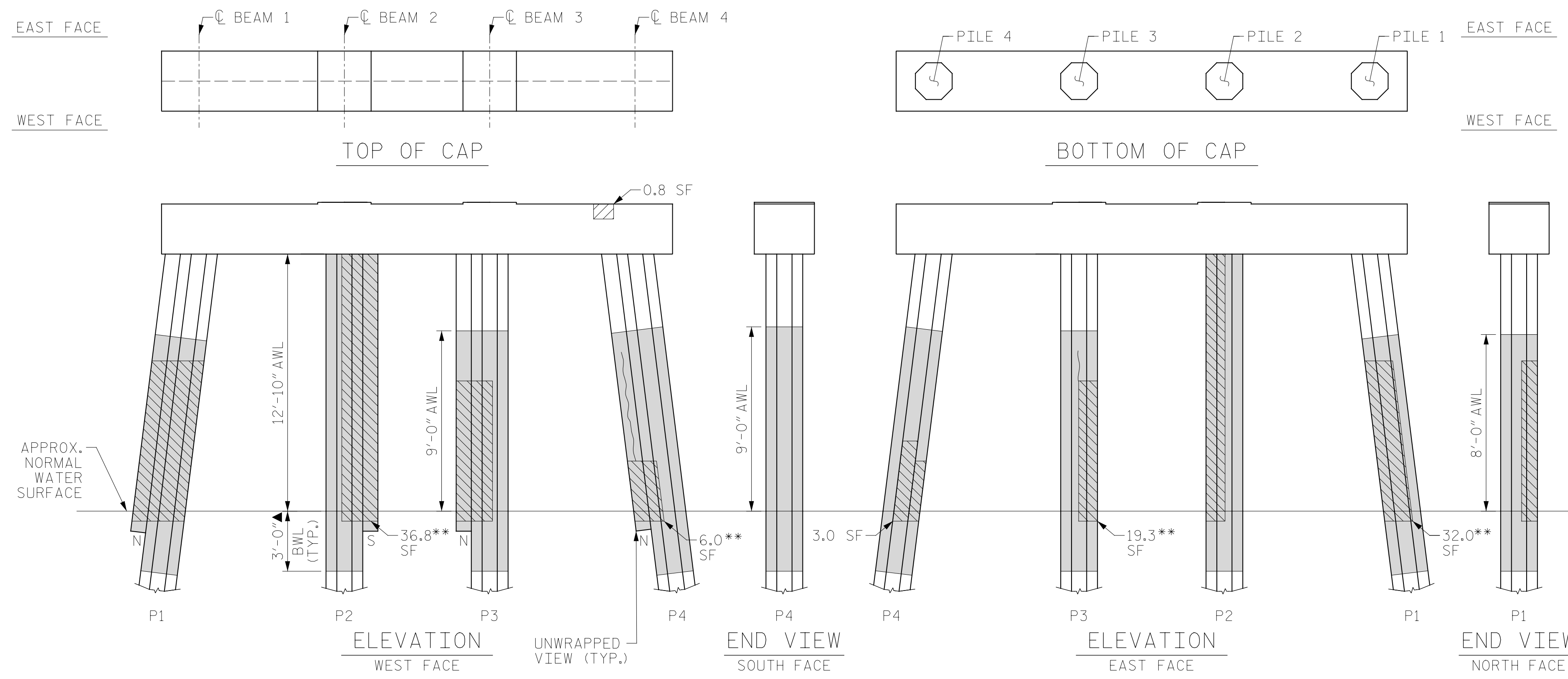
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FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

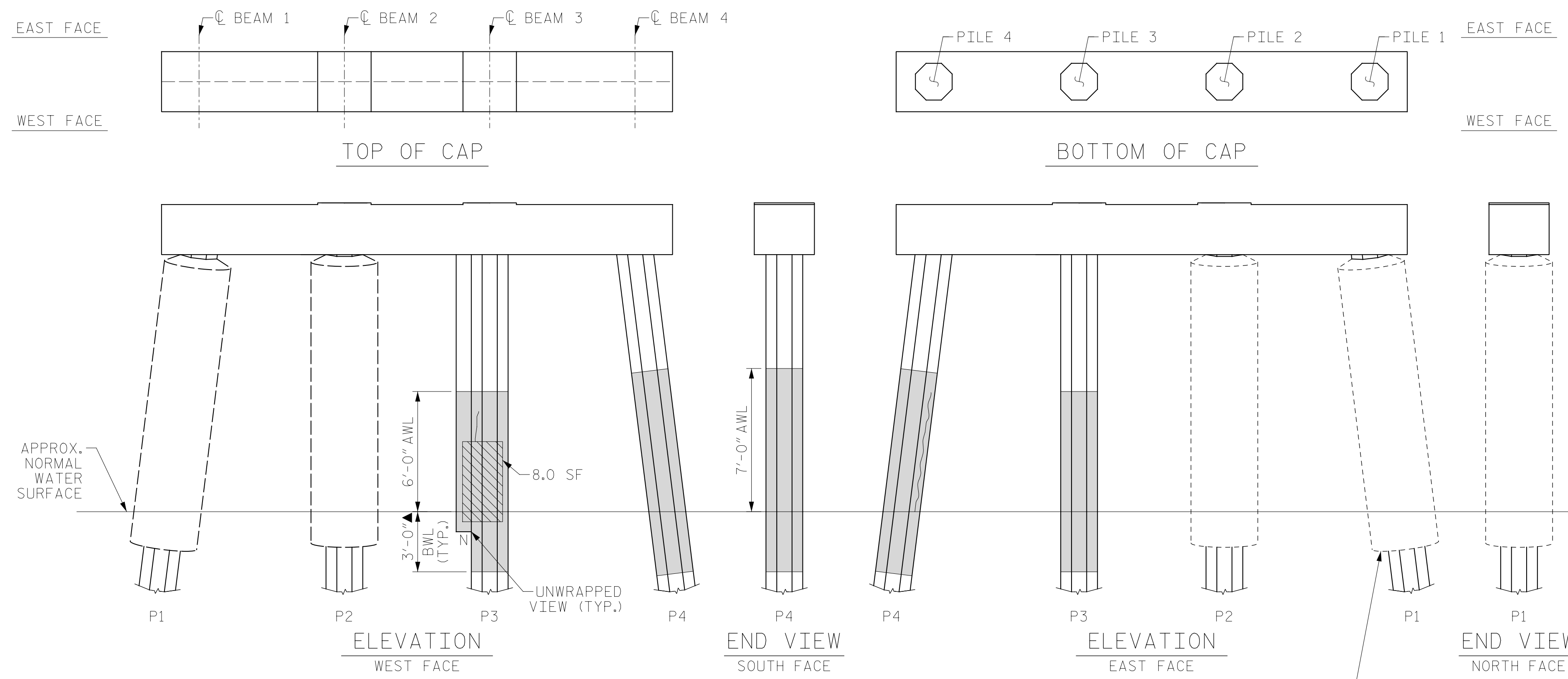
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 83

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



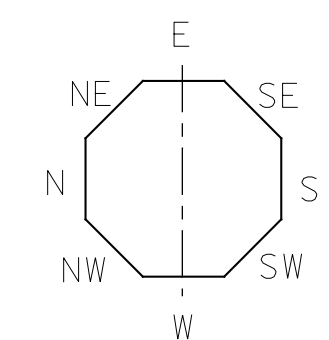
BENT 84

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

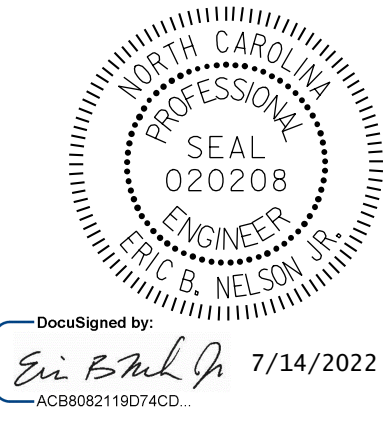
BENT	PILE	CRACK QUANTITIES							
		NW	W	SW	S	SE	E	NE	N
83	PILE 1	-	-	-	-	-	-	-	-
	PILE 2	2	-	-	-	-	-	7	6
	PILE 3	1	3	-	14	-	8	1	-
	PILE 4	6	4	3	-	-	3	-	6
84	PILE 1	-	-	-	-	-	-	-	-
	PILE 2	-	-	-	-	-	-	-	-
	PILE 3	2	-	-	-	-	-	4	-
	PILE 4	3	-	4	8	5	-	6	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



DocuSigned by:
Eric B. Nelson, Jr.
7/14/2022

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 83 & BENT 84

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			157
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 85

CAP REPAIRS			
SHOTCRETE REPAIRS	8.3 SF	4.1 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	78.0 SF	28.7 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	104.0 SF		
FRP PROTECTIVE SYSTEM BWL	33.0 SF		

BENT 86

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	44.5 SF	17.0 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	188.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

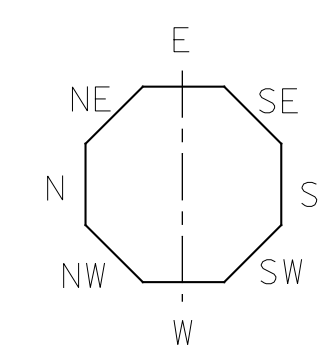
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

ESTIMATED PILE CRACK QTY. TABLE

		NW	W	SW	S	SE	E	NE	N
BENT 85	PILE 1	1	-	-	6	-	-	-	-
	PILE 2	-	-	-	-	-	-	-	-
	PILE 3	-	-	-	-	-	-	-	-
	PILE 4	-	-	-	-	-	-	-	-
	PILE 6	-	-	-	-	-	-	-	-
BENT 86	PILE 1	3	3	-	-	8	-	6	6
	PILE 2	-	6	-	2	-	-	-	2
	PILE 3	5	-	-	4	5	-	-	2
	PILE 4	5	-	6	5	6	5	3	6

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS

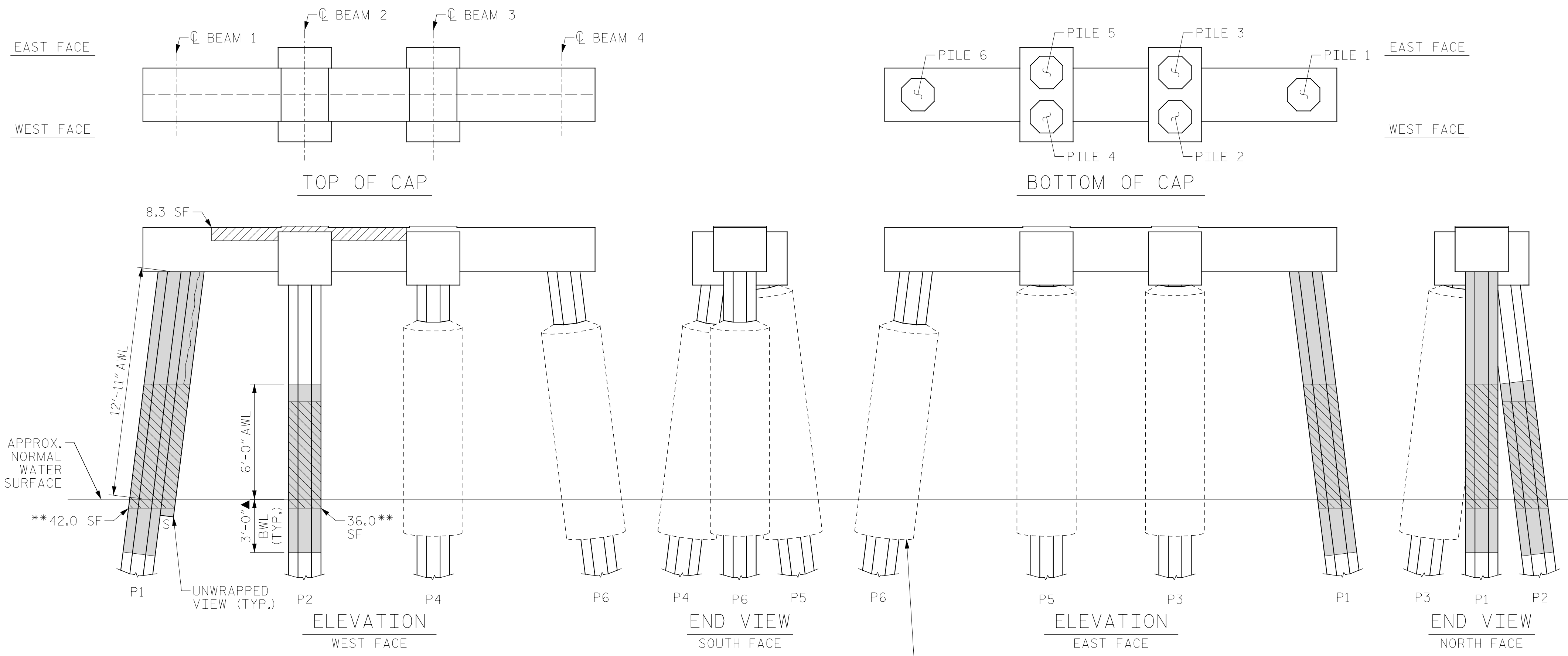


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 85 & BENT 86

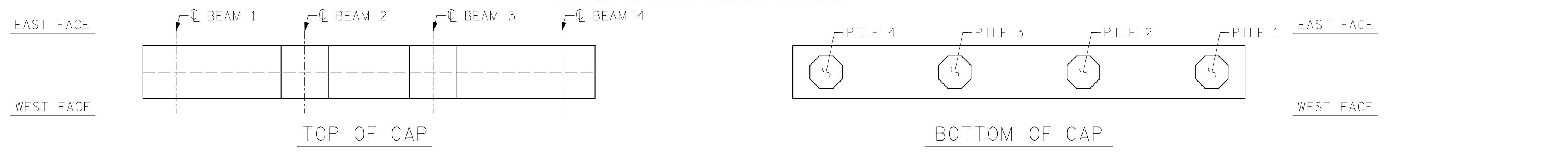
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-158
1			3			TOTAL SHEETS
2			4			355

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BENT 85

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)
 (** QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 86

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)
 (** QUANTITY INCLUDES ADJACENT REPAIRS)

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: R. FISHER DATE: 3/2019

AS-BUILT REPAIR QUANTITY TABLE

BENT 87

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	86.0 SF	33.1 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	176.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

BENT 88

CAP REPAIRS			
SHOTCRETE REPAIRS	4.2 SF	2.1 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	29.8 SF	12.2 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	170.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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.

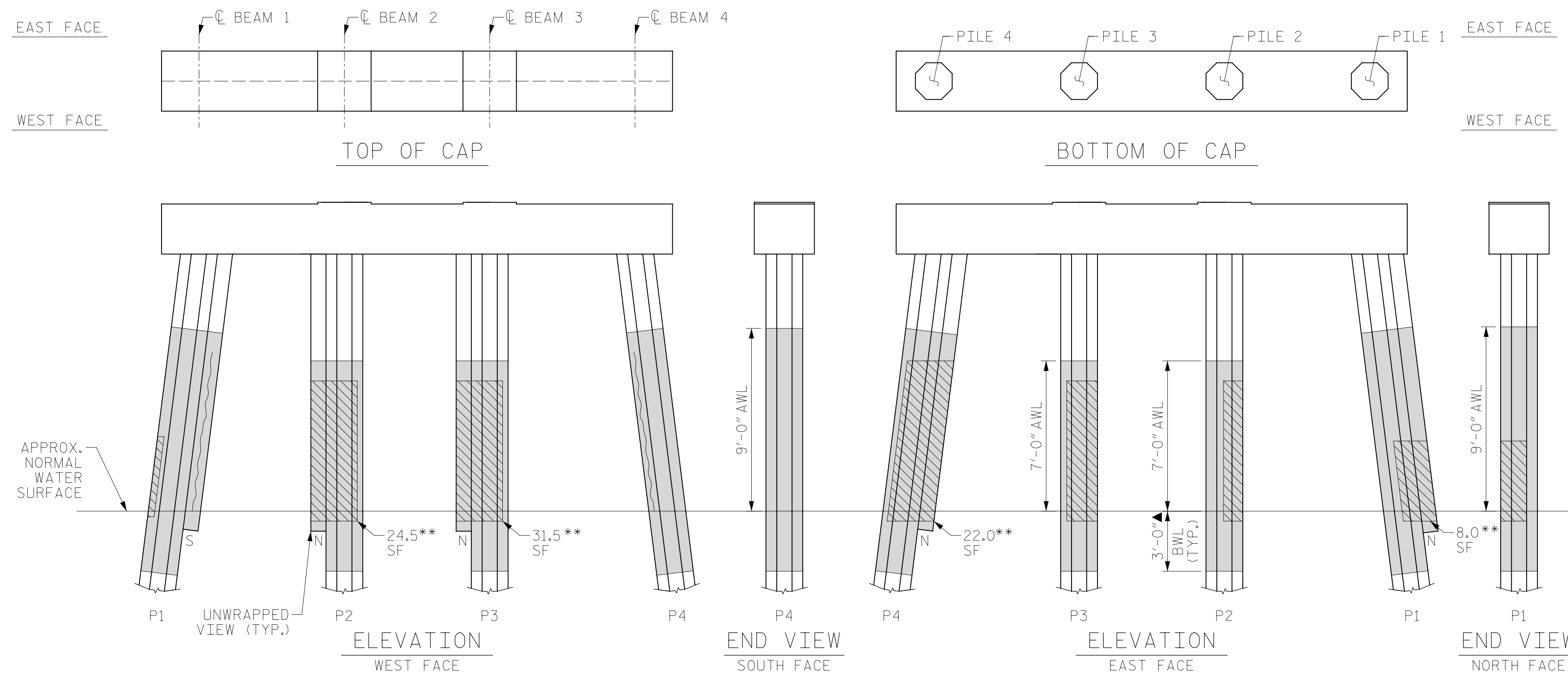
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

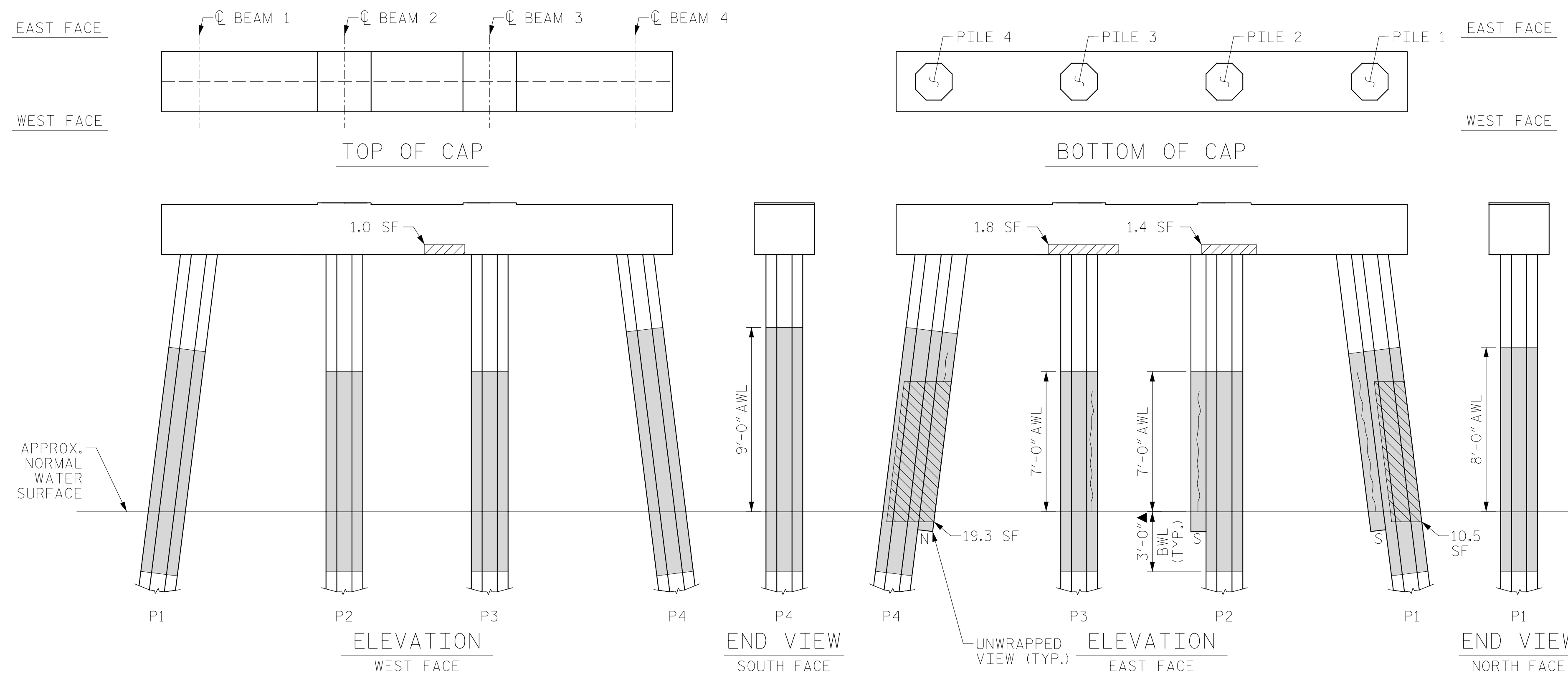
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 87

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



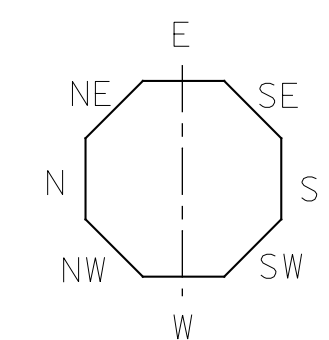
BENT 88

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

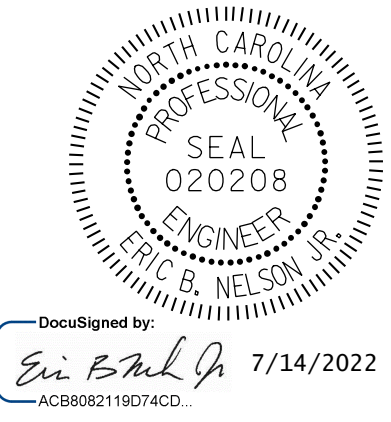
BENT	PILE	DIRECTION							
		NW	W	SW	S	SE	E	NE	N
87	PILE 1	-	-	-	8	8	-	3	-
	PILE 2	-	-	3	-	-	-	-	-
	PILE 3	-	-	2	2	3	-	-	-
	PILE 4	8	4	4	3	-	-	-	-
88	PILE 1	2	3	6	7	-	-	6	-
	PILE 2	-	4	9	6	5	4	5	-
	PILE 3	-	4	6	3	3	3	6	3
	PILE 4	-	2	3	4	5	-	1	2

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



DocuSigned by:
Eric B. Nelson, Jr.
7/14/2022
AC2860211974CD

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 87 & BENT 88

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-159
1			3			TOTAL SHEETS
2			4			355

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AS-BUILT REPAIR QUANTITY TABLE

BENT 89

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	57.8 SF	23.4 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	148.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

BENT 90

CAP REPAIRS			
SHOTCRETE REPAIRS	10.8 SF	5.4 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	60.8 SF	25.1 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	126.5 SF		
FRP PROTECTIVE SYSTEM BWL	49.5 SF		

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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.

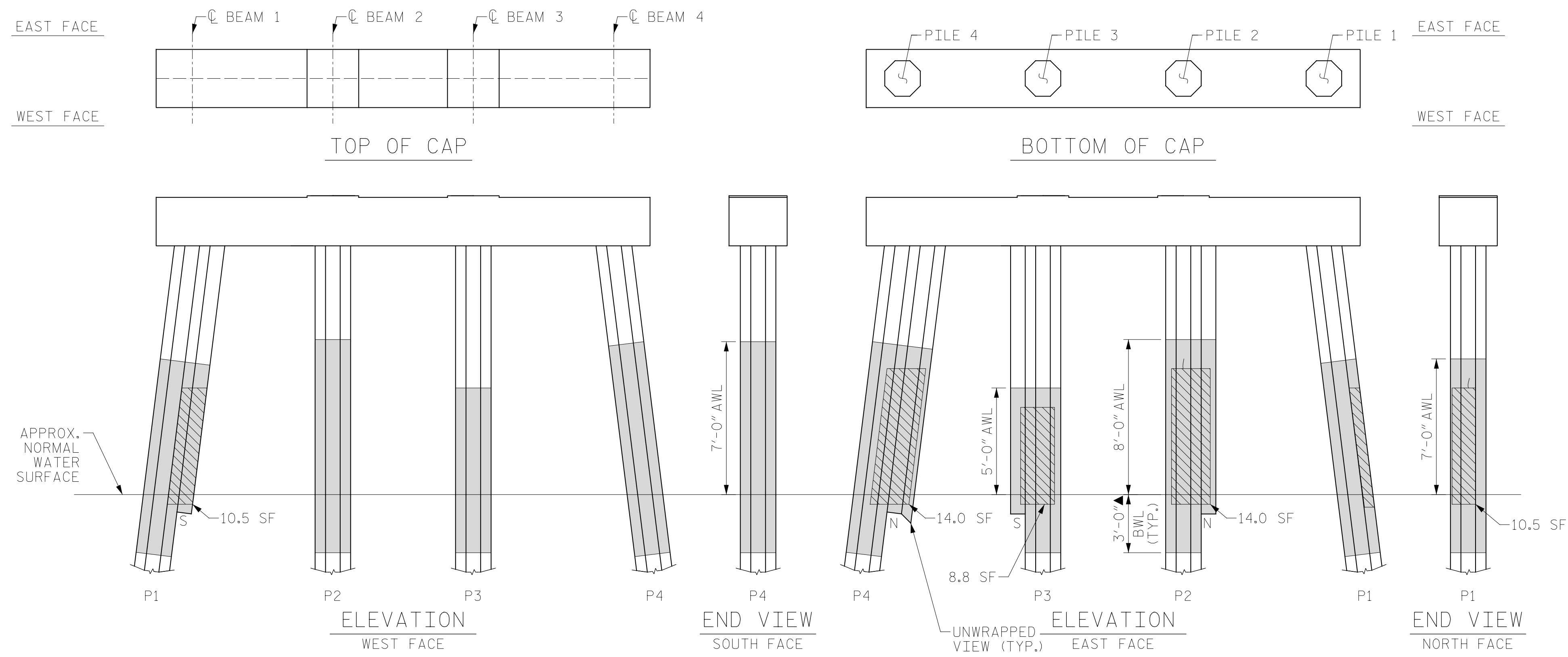
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

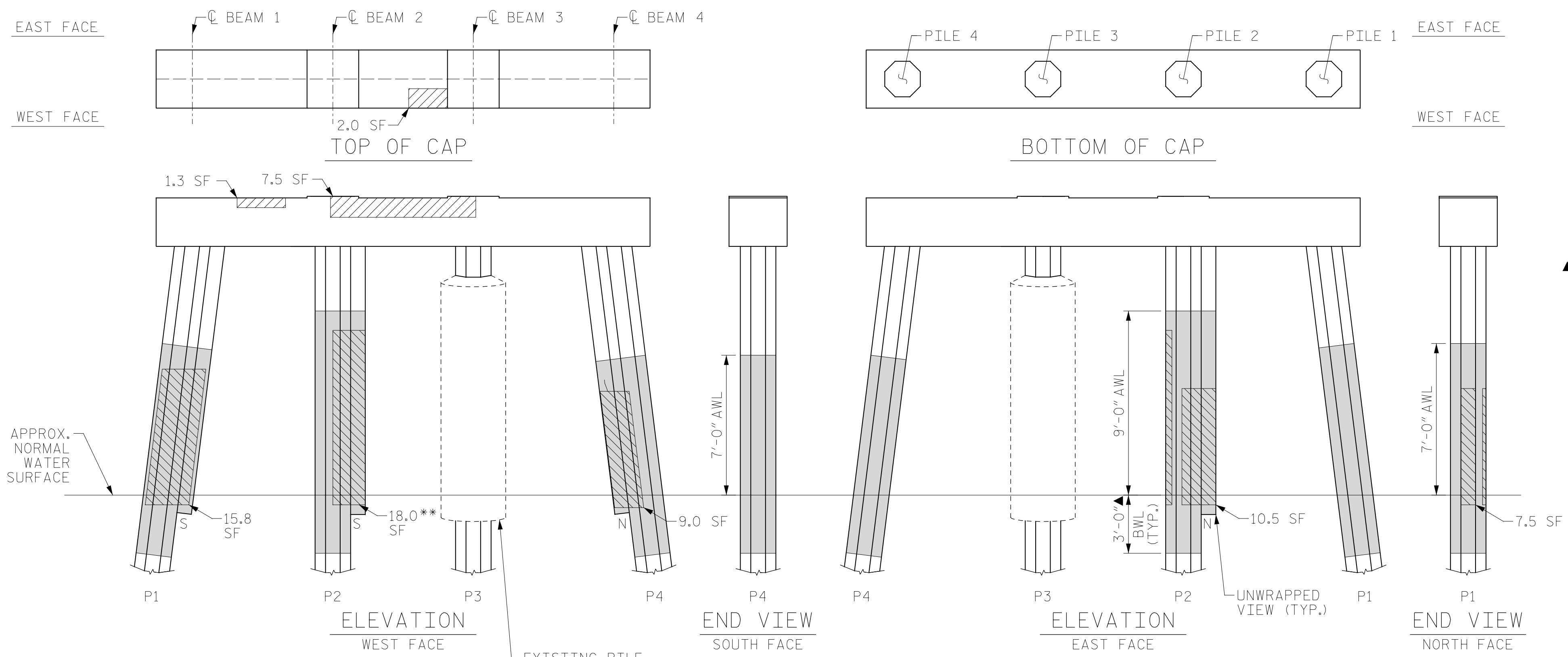
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 89

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 90

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

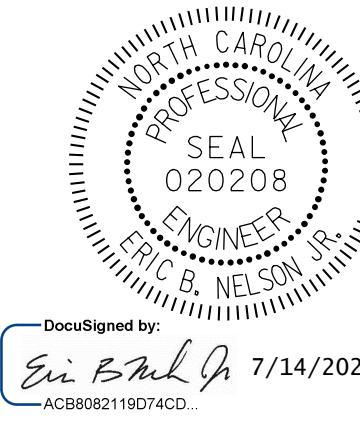
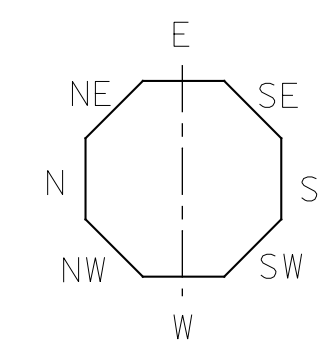
BENT	PILE	NW	W	SW	S	SE	E	NE	N
		BENT 89	5	3	-	-	-	4	-
	PILE 2	-	-	-	6	5	1	-	11
	PILE 3	4	2	3	3	-	-	4	-
	PILE 4	-	5	5	5	-	3	-	-
BENT 90	PILE 1	-	-	-	-	-	-	-	-
	PILE 2	3	4	-	-	-	5	-	-
	PILE 3	-	-	-	-	-	-	-	-
	PILE 4	-	5	2	-	4	3	6	1

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 89 & BENT 90

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			160
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 91

CAP REPAIRS			
SHOTCRETE REPAIRS	12.5 SF	6.3 CF	
EPOXY RESIN INJECTION		- LF	
PILE REPAIRS			
PILE CONCRETE RESTORATION	25.3 SF	10.2 CF	
FRP PROTECTIVE SYSTEM AWL	170.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

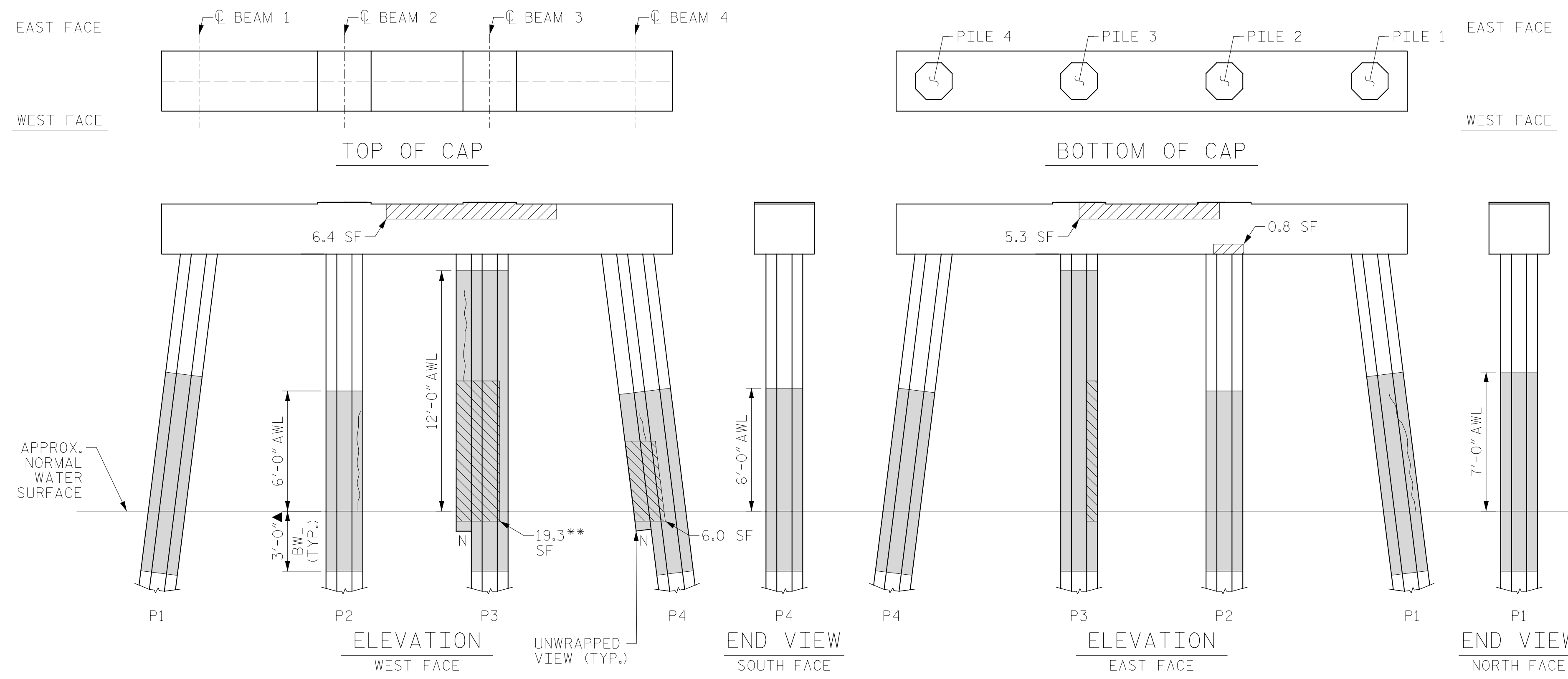
BENT 92

CAP REPAIRS			
SHOTCRETE REPAIRS	17.5 SF	8.8 CF	
EPOXY RESIN INJECTION		- LF	
PILE REPAIRS			
PILE CONCRETE RESTORATION	79.4 SF	30.8 CF	
FRP PROTECTIVE SYSTEM AWL	176.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

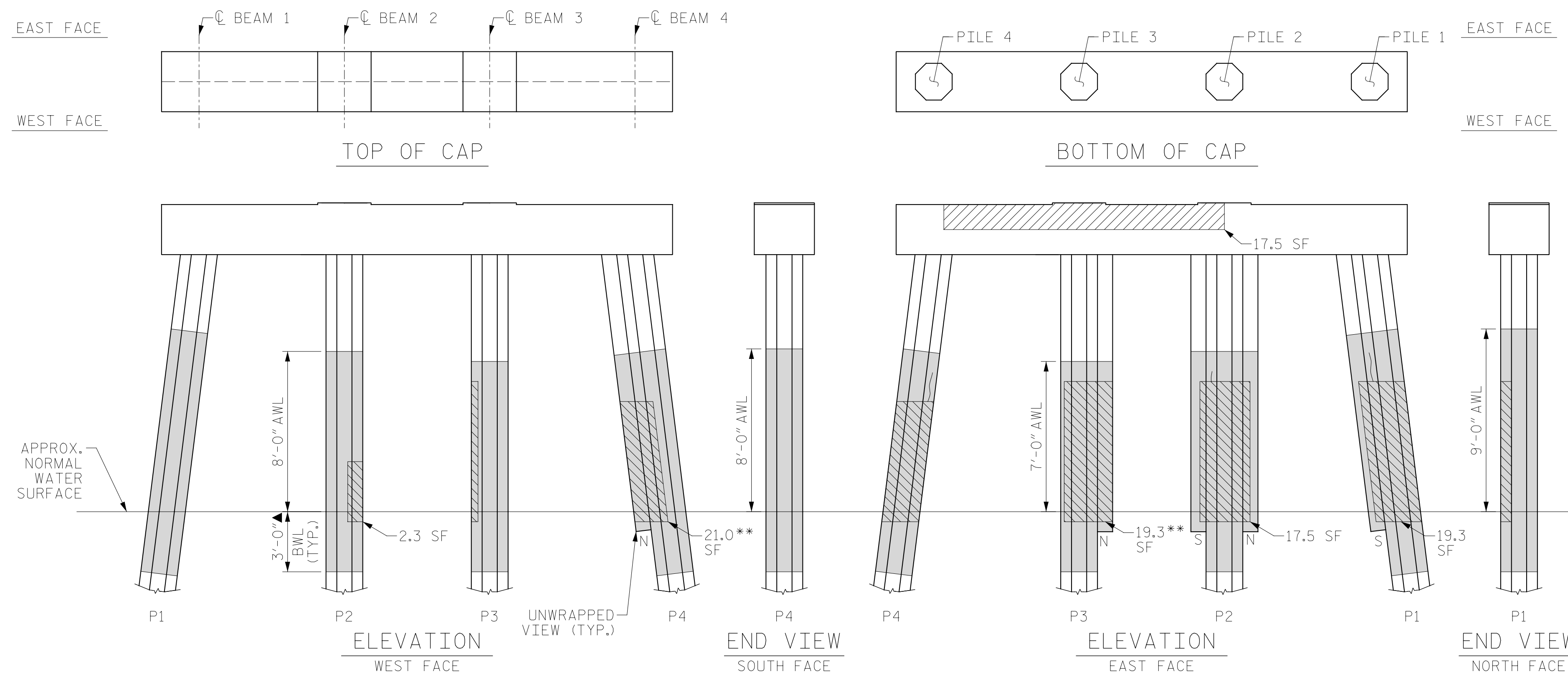
NOTES:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 91

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)



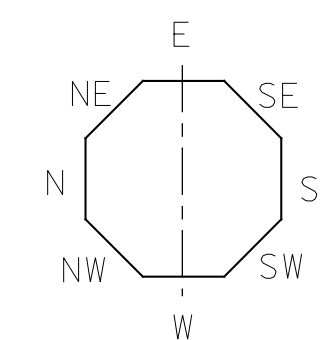
BENT 92

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

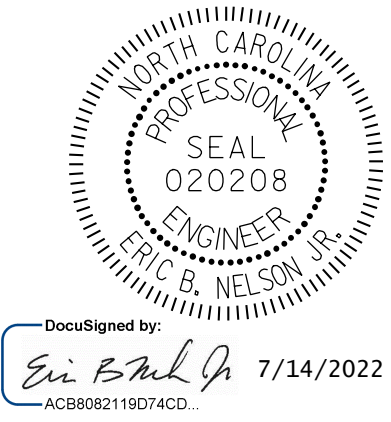
ESTIMATED PILE CRACK QTY. TABLE

		NW	W	SW	S	SE	E	NE	N
BENT 91	PILE 1	2	3	-	4	-	-	6	-
	PILE 2	-	3	5	-	-	-	5	5
	PILE 3	-	-	-	-	-	7	-	5
	PILE 4	2	4	-	2	4	4	4	-
BENT 92	PILE 1	-	-	3	2	2	-	-	5
	PILE 2	-	-	-	-	1	-	-	-
	PILE 3	3	-	-	4	5	-	-	-
	PILE 4	-	-	-	4	-	1	2	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.
PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



- ▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS
- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 91 & BENT 92

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			161
2			4			355

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

AS-BUILT REPAIR QUANTITY TABLE

BENT 93

CAP REPAIRS			
SHOTCRETE REPAIRS	18.7 SF	9.4 CF	
EPOXY RESIN INJECTION	- LF		
PILE REPAIRS			
PILE CONCRETE RESTORATION	72.5 SF	28.0 CF	
FRP PROTECTIVE SYSTEM AWL	275.0 SF		
FRP PROTECTIVE SYSTEM BWL	99.0 SF		

BENT 94

CAP REPAIRS			
SHOTCRETE REPAIRS	8.3 SF	4.1 CF	
EPOXY RESIN INJECTION	- LF		
PILE REPAIRS			
PILE CONCRETE RESTORATION	47.0 SF	18.6 CF	
FRP PROTECTIVE SYSTEM AWL	165.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

NOTES:
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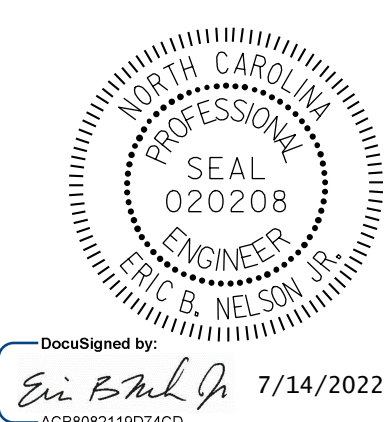
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

ESTIMATED PILE CRACK QTY. TABLE

		NW	W	SW	S	SE	E	NE	N
BENT 93	PILE 1	-	2	-	4	-	7	6	-
	PILE 2	-	-	4	8	-	1	1	6
	PILE 3	-	7	-	-	1	-	3	5
	PILE 4	1	6	2	-	-	4	-	-
	PILE 6	8	-	-	-	2	10	2	8
BENT 94	PILE 1	-	-	3	-	4	2	7	-
	PILE 2	2	-	-	-	2	-	7	4
	PILE 3	-	-	-	-	-	5	-	5
	PILE 4	-	4	3	-	4	-	5	2

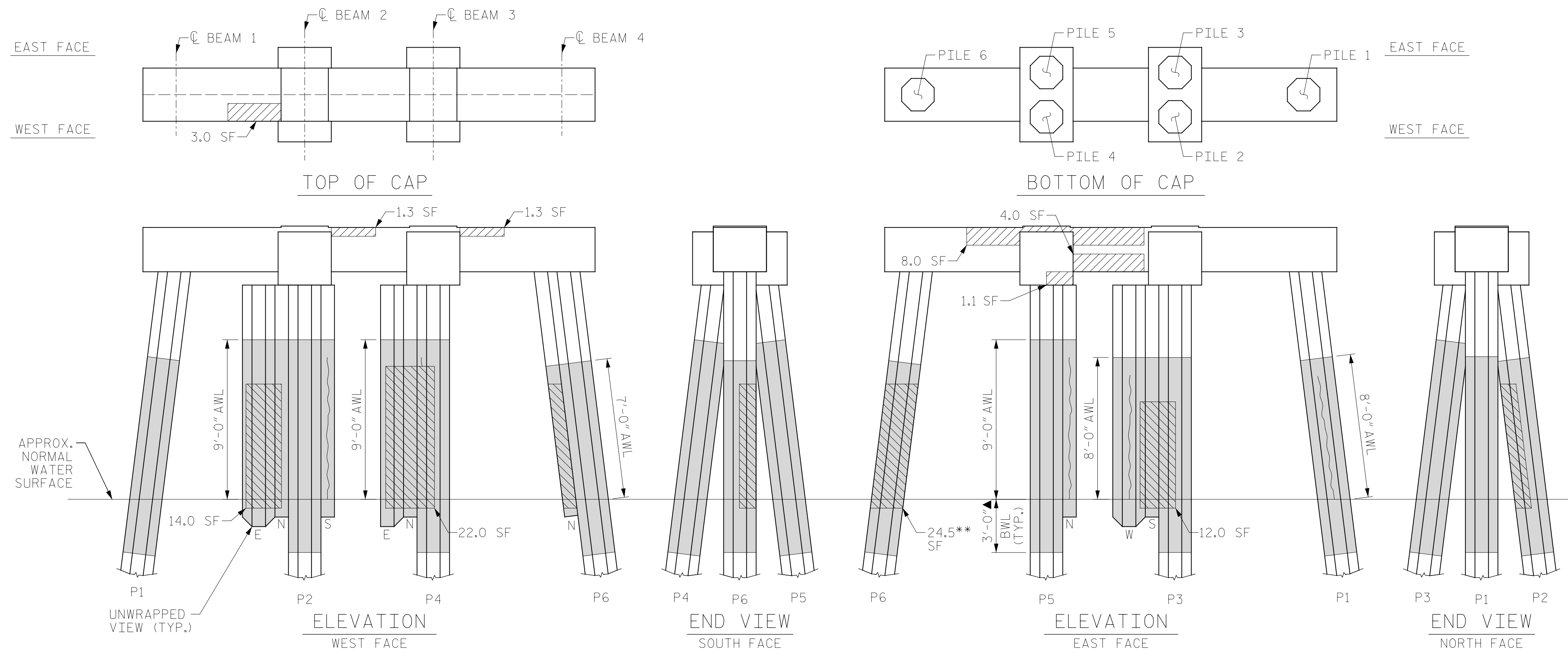
NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



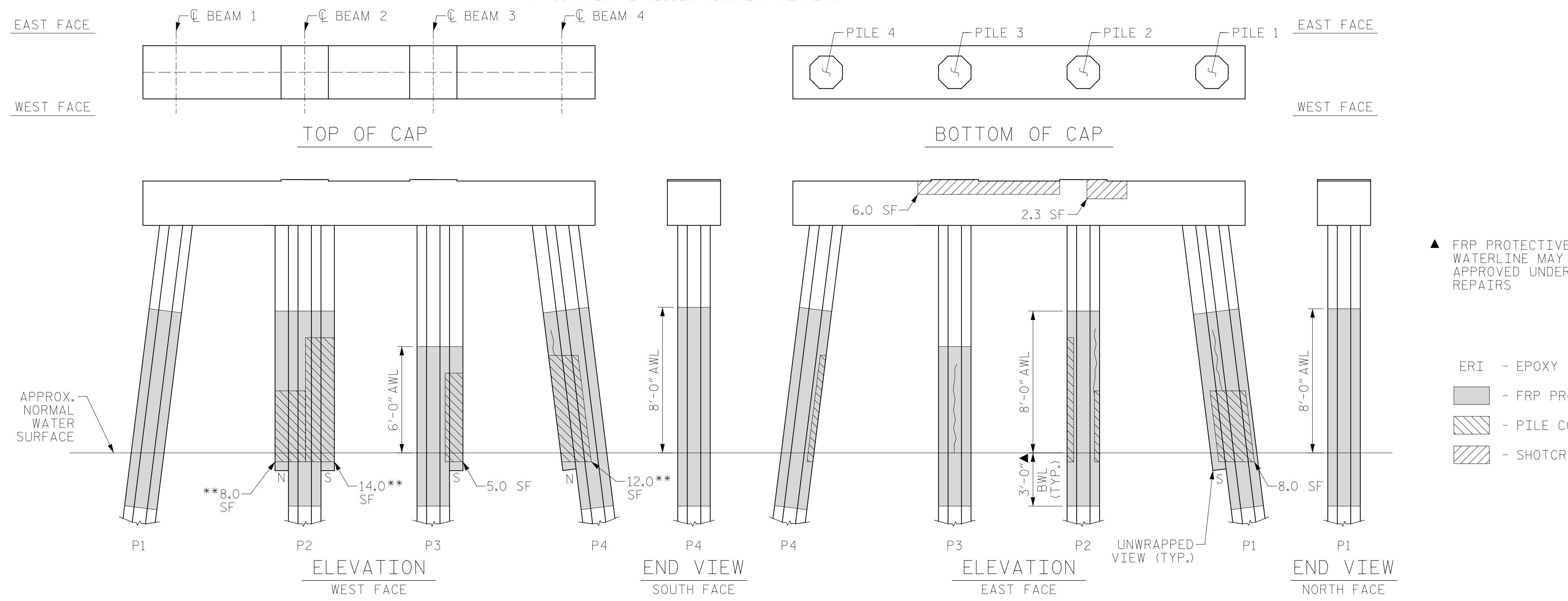
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 93 & BENT 94



BENT 93

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)
 (**QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 94

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)
 (**QUANTITY INCLUDES ADJACENT REPAIRS)

- ▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS
- ERI - EPOXY RESIN INJECTION
- - FRP PROTECTIVE SYSTEM
- ▨ - PILE CONCRETE RESTORATION
- ▩ - SHOTCRETE REPAIRS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-162
1			3			
2			4			TOTAL SHEETS 355

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: R. FISHER DATE: 3/2019



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AS-BUILT REPAIR QUANTITY TABLE

BENT 95

CAP REPAIRS			
SHOTCRETE REPAIRS	19.1 SF	9.6 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	64.8 SF	25.8 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	154.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

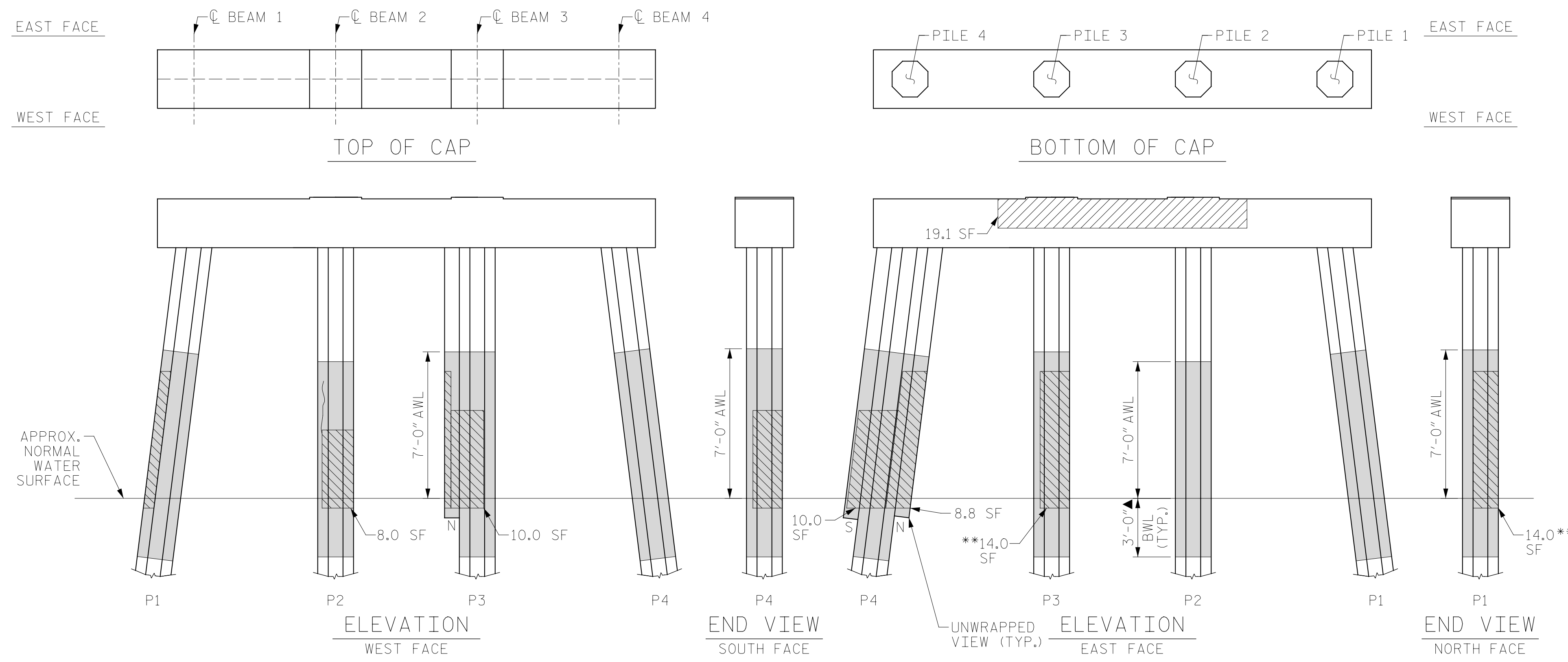
BENT 96

CAP REPAIRS			
SHOTCRETE REPAIRS	1.3 SF	0.7 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	33.5 SF	14.1 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	159.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

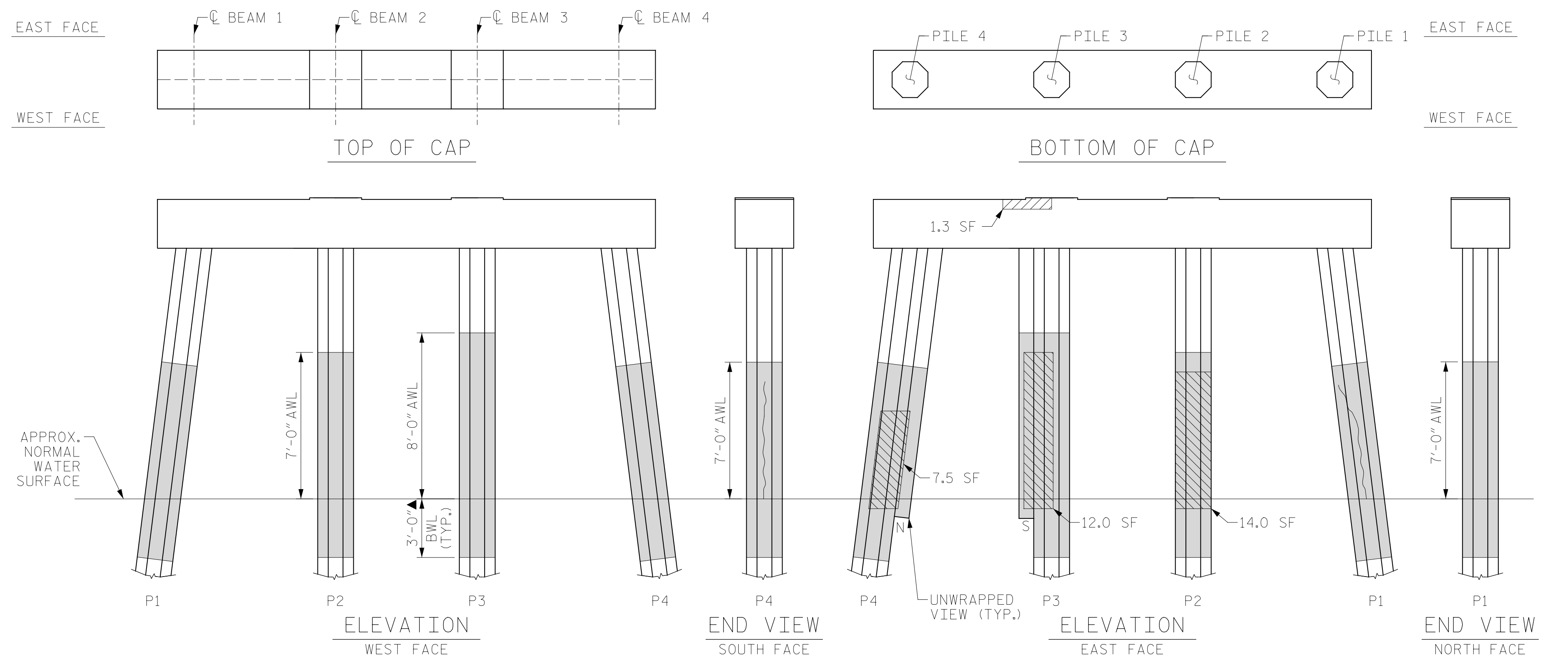
NOTES:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 95

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)



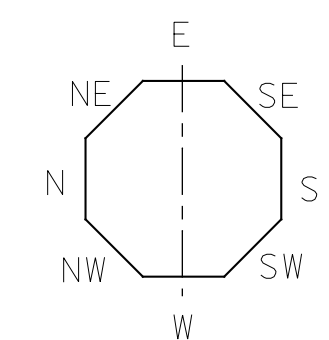
BENT 96

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

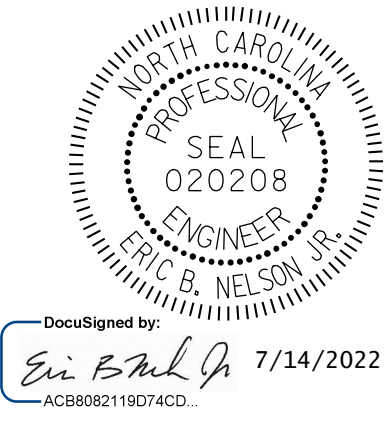
BENT	PILE	DIRECTION							
		NW	W	SW	S	SE	E	NE	N
95	PILE 1	-	-	-	-	-	-	-	-
	PILE 2	3	1	-	4	-	3	6	2
	PILE 3	2	-	4	-	4	-	-	-
	PILE 4	2	-	2	-	1	-	-	-
96	PILE 1	-	4	-	2	1	6	-	5
	PILE 2	-	3	-	3	-	-	-	6
	PILE 3	-	2	3	-	-	3	6	3
	PILE 4	-	2	-	6	-	-	2	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Hatched Box] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BENT 95 & BENT 96

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



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REVISIONS						SHEET NO. S-163
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 97

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	69.8 SF	28.1 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	176.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

BENT 98

CAP REPAIRS			
SHOTCRETE REPAIRS	1.8 SF	0.9 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	48.3 SF	18.4 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	170.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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.

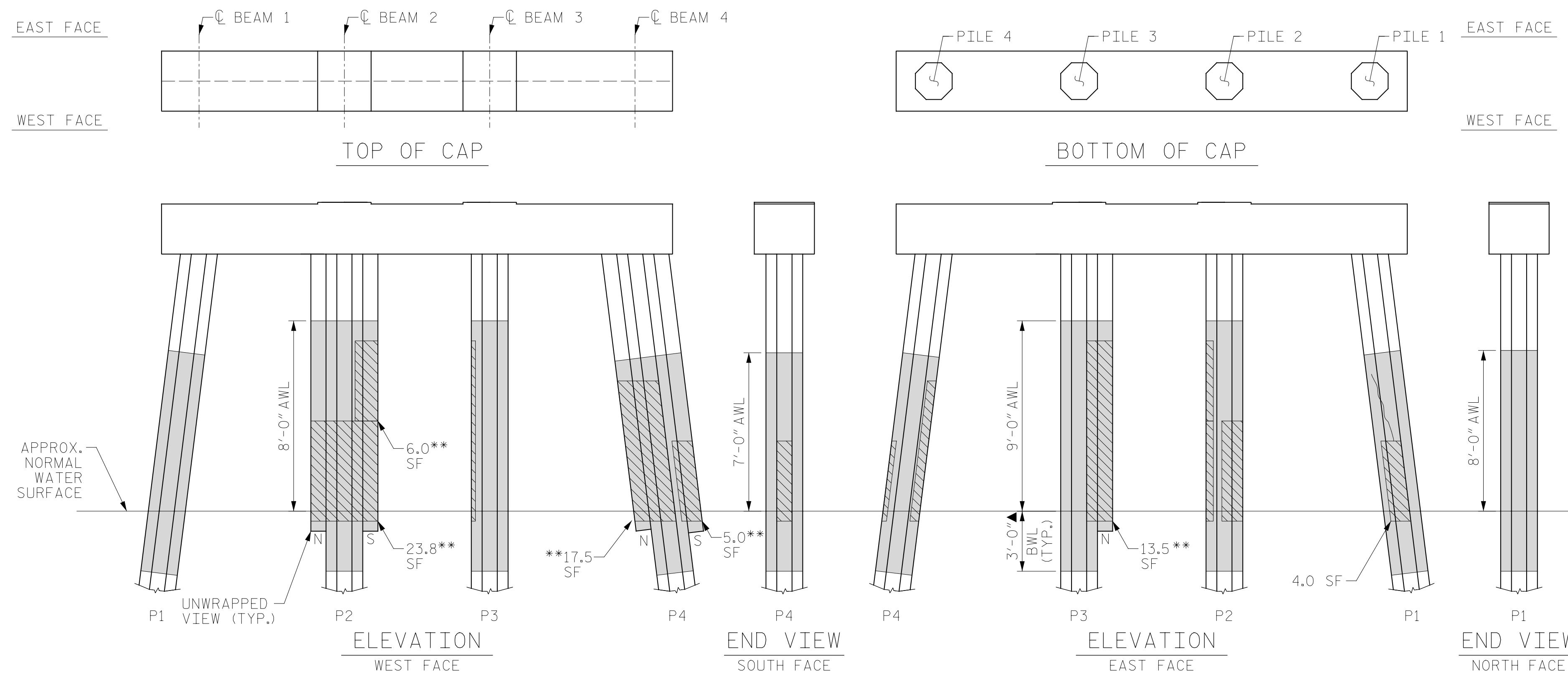
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

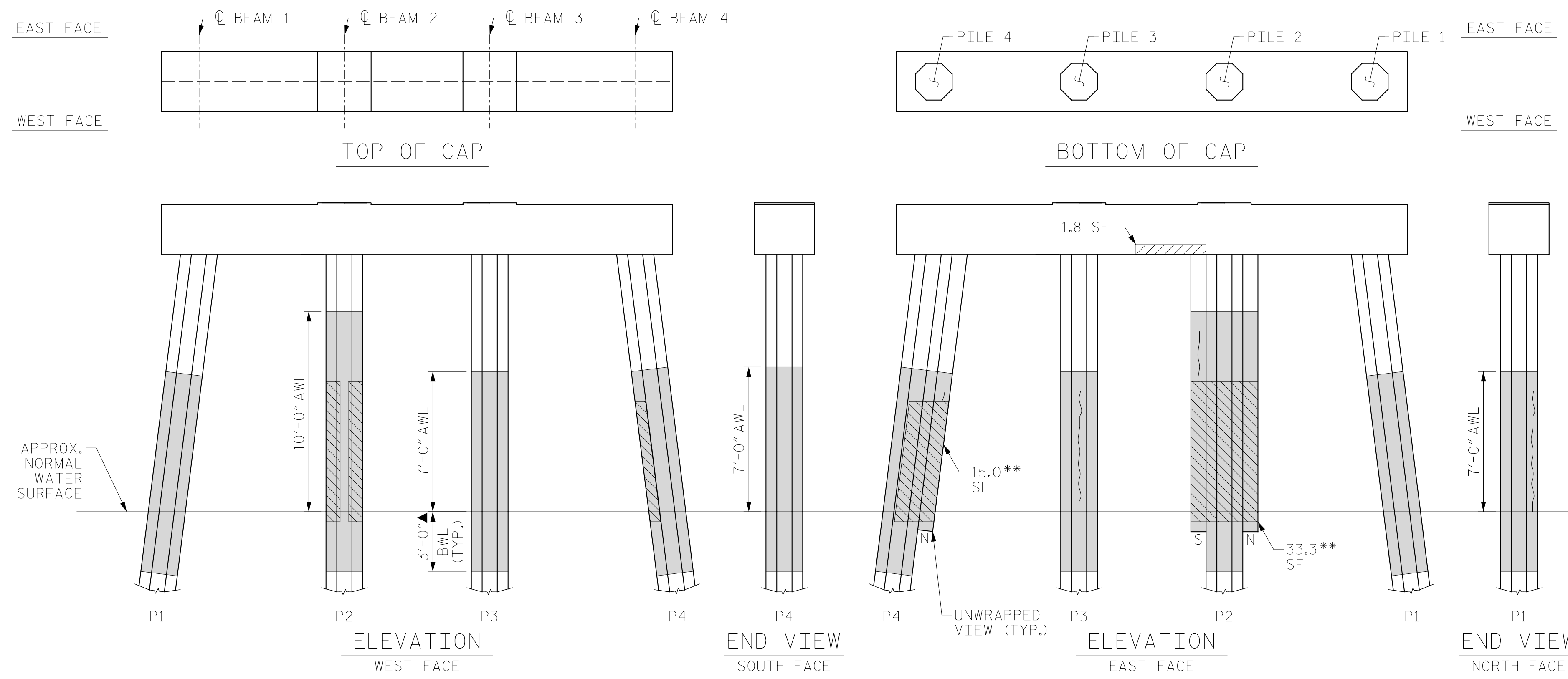
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 97

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)



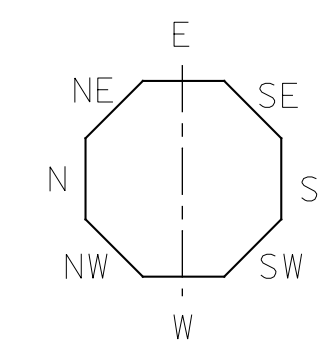
BENT 98

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

BENT	PILE	DIRECTION							
		NW	W	SW	S	SE	E	NE	N
97	PILE 1	5	2	-	4	-	4	3	-
	PILE 2	2	1	-	-	-	-	-	2
	PILE 3	6	-	3	-	5	-	-	-
	PILE 4	-	4	-	-	-	3	-	-
98	PILE 1	2	5	-	6	-	5	6	-
	PILE 2	3	-	-	3	-	-	-	2
	PILE 3	2	4	-	-	-	6	-	3
	PILE 4	-	-	3	4	5	-	-	1

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

 BENT 97 & BENT 98

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: R. FISHER DATE: 3/2019



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			164
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 99

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	76.0 SF	28.9 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	170.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

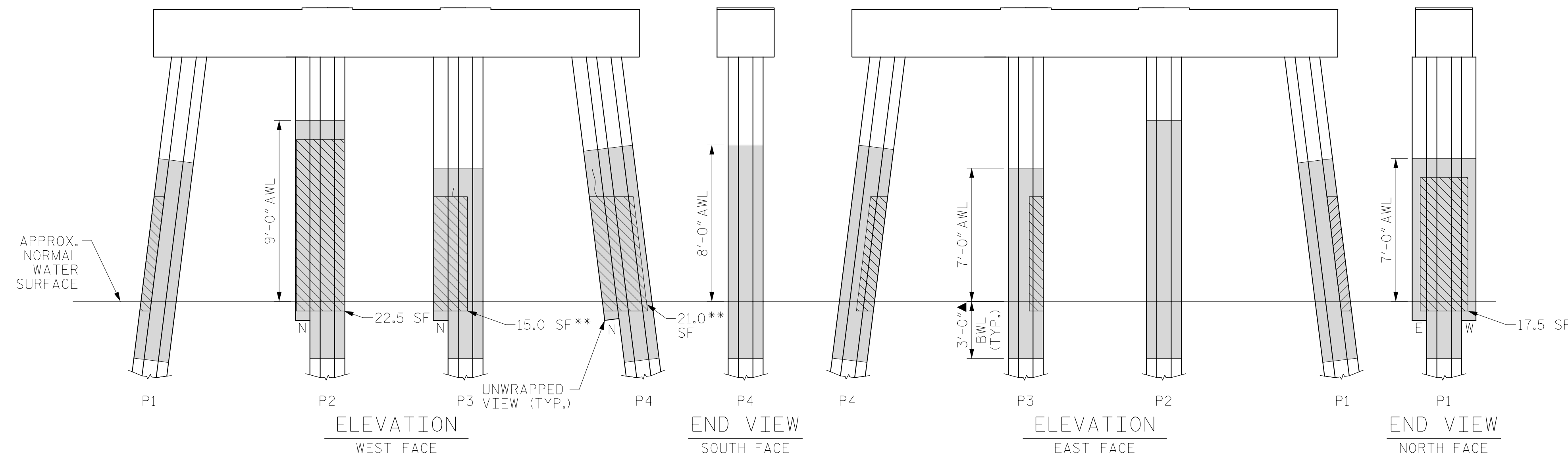
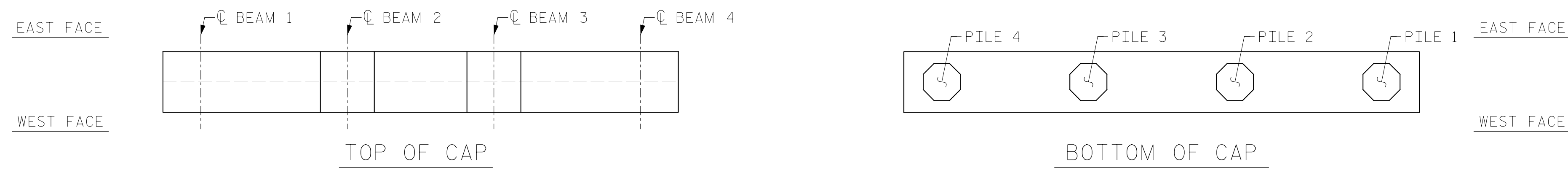
BENT 100

CAP REPAIRS			
SHOTCRETE REPAIRS	3.5 SF	1.8 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	56.0 SF	22.1 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	159.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

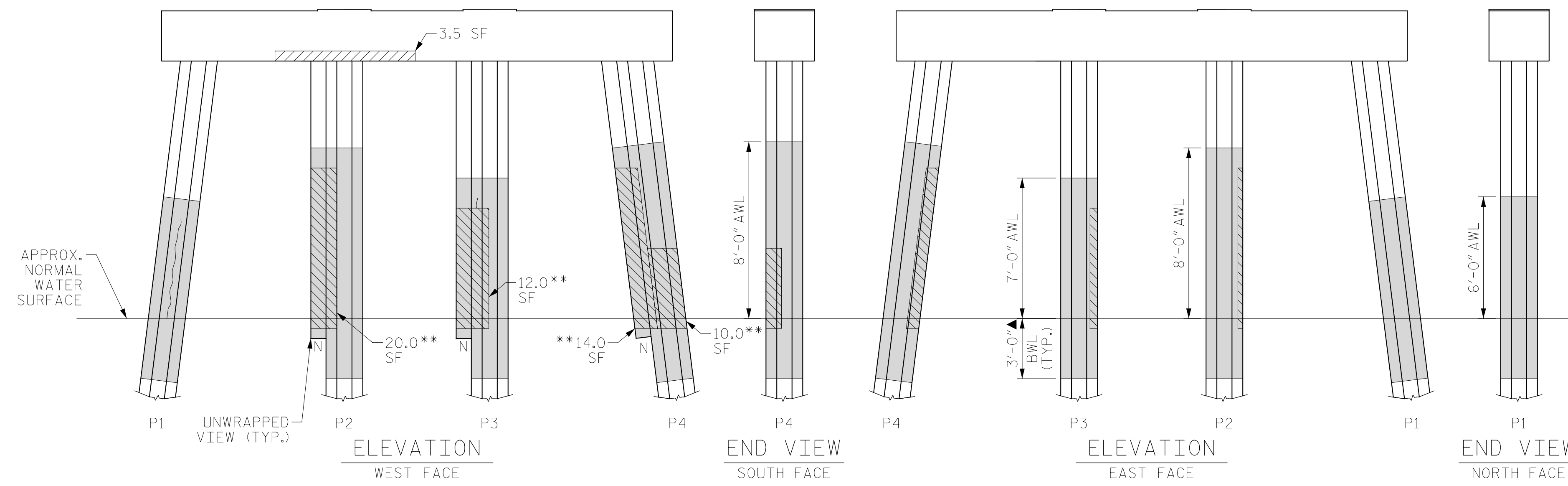
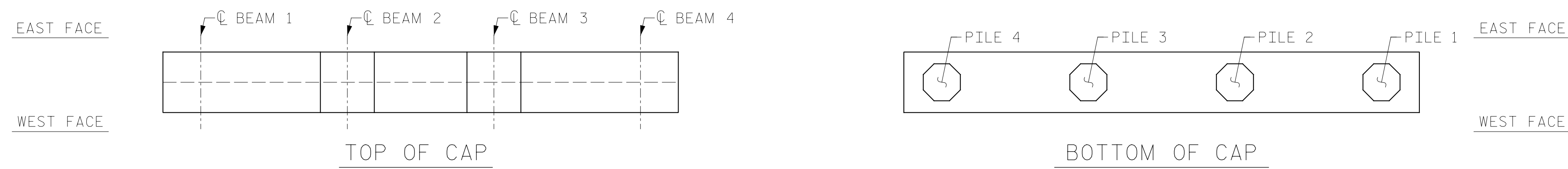
NOTES:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 99

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 100

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

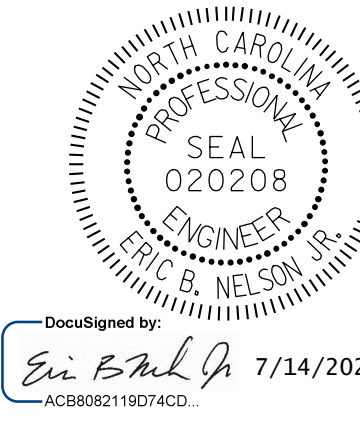
ESTIMATED PILE CRACK QTY. TABLE

		NW	W	SW	S	SE	E	NE	N
BENT 99	PILE 1	-	5	-	4	-	2	-	-
	PILE 2	-	-	-	-	-	-	-	-
	PILE 3	1	5	2	6	-	3	-	-
	PILE 4	-	1	-	3	5	-	-	2
BENT 100	PILE 1	5	4	-	4	-	-	-	4
	PILE 2	-	-	-	4	3	3	-	-
	PILE 3	1	4	6	3	3	-	-	-
	PILE 4	1	-	-	-	4	-	-	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

- ▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS
- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- PILE CONCRETE RESTORATION
- SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 99 & BENT 100

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-165
1			3			TOTAL SHEETS
2			4			355

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AS-BUILT REPAIR QUANTITY TABLE

BENT 101

CAP REPAIRS			
SHOTCRETE REPAIRS	1.0 SF	0.5 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	67.8 SF	27.2 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	269.5 SF		
FRP PROTECTIVE SYSTEM BWL	99.0 SF		

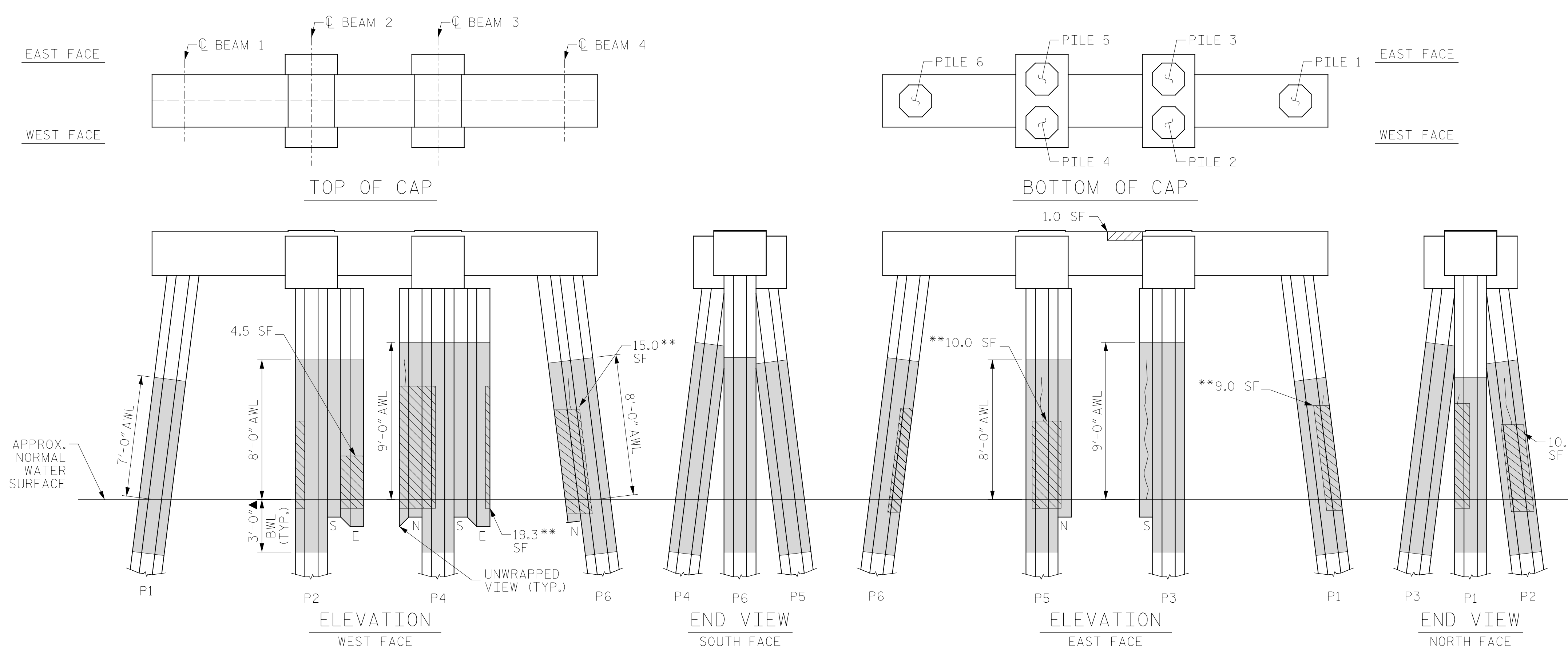
BENT 102

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	59.1 SF	23.0 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	165.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

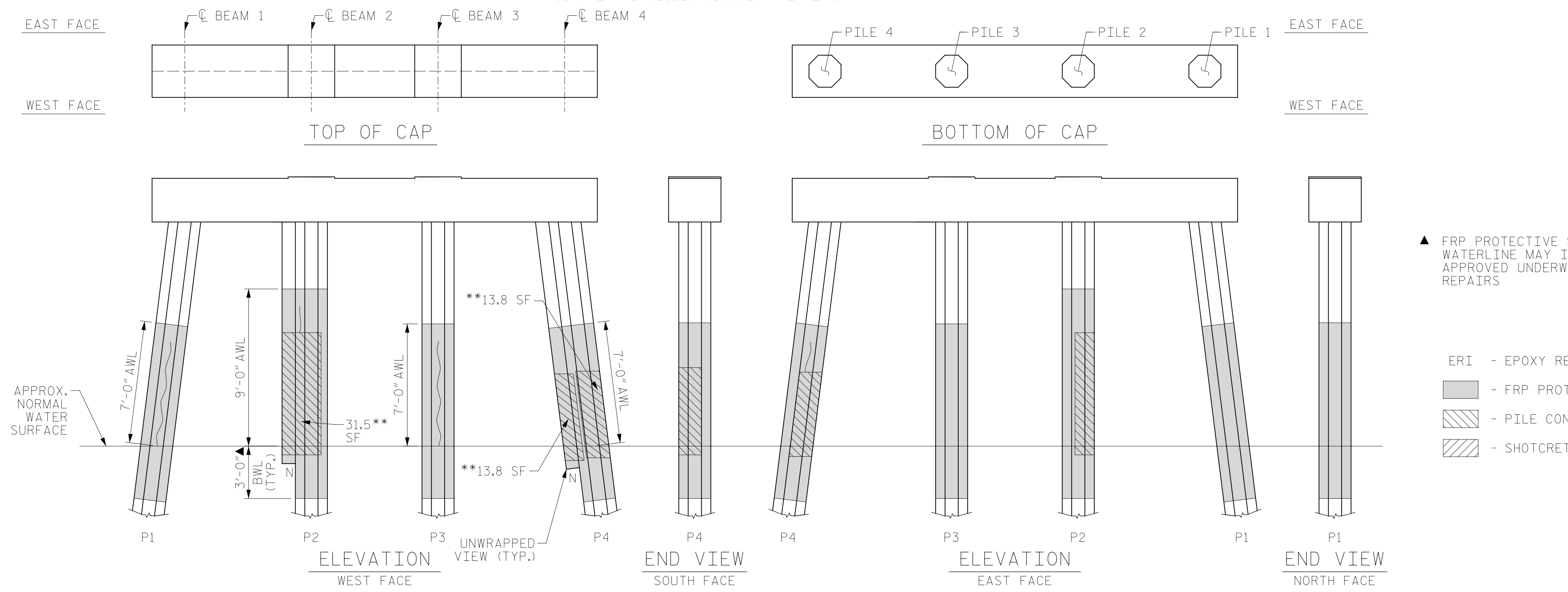
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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 101

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 102

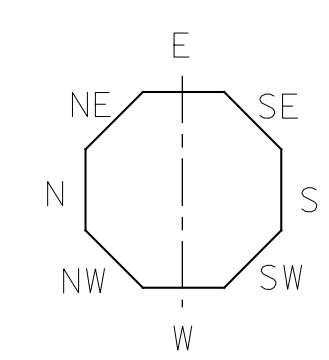
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

		DIRECTION							
		NW	W	SW	S	SE	E	NE	N
BENT 101	PILE 1	5	3	2	4	4	1	1	-
	PILE 2	2	-	2	4	-	-	7	3
	PILE 3	6	6	5	8	-	-	4	5
	PILE 4	-	-	3	6	7	-	2	1
	PILE 5	-	-	2	-	-	3	-	4
	PILE 6	2	6	4	-	-	-	2	-
BENT 102	PILE 1	6	6	5	6	3	3	3	4
	PILE 2	2	-	-	-	3	-	-	-
	PILE 3	-	6	-	6	5	3	-	-
	PILE 4	2	-	-	-	-	2	-	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

- ▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS
- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 101 & BENT 102

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			166
2			4			355

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



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AS-BUILT REPAIR QUANTITY TABLE

BENT 103

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	45.3 SF	17.7 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	165.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

BENT 104

CAP REPAIRS			
SHOTCRETE REPAIRS	2.3 SF	1.2 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	76.5 SF	29.3 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	176.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

NOTES:

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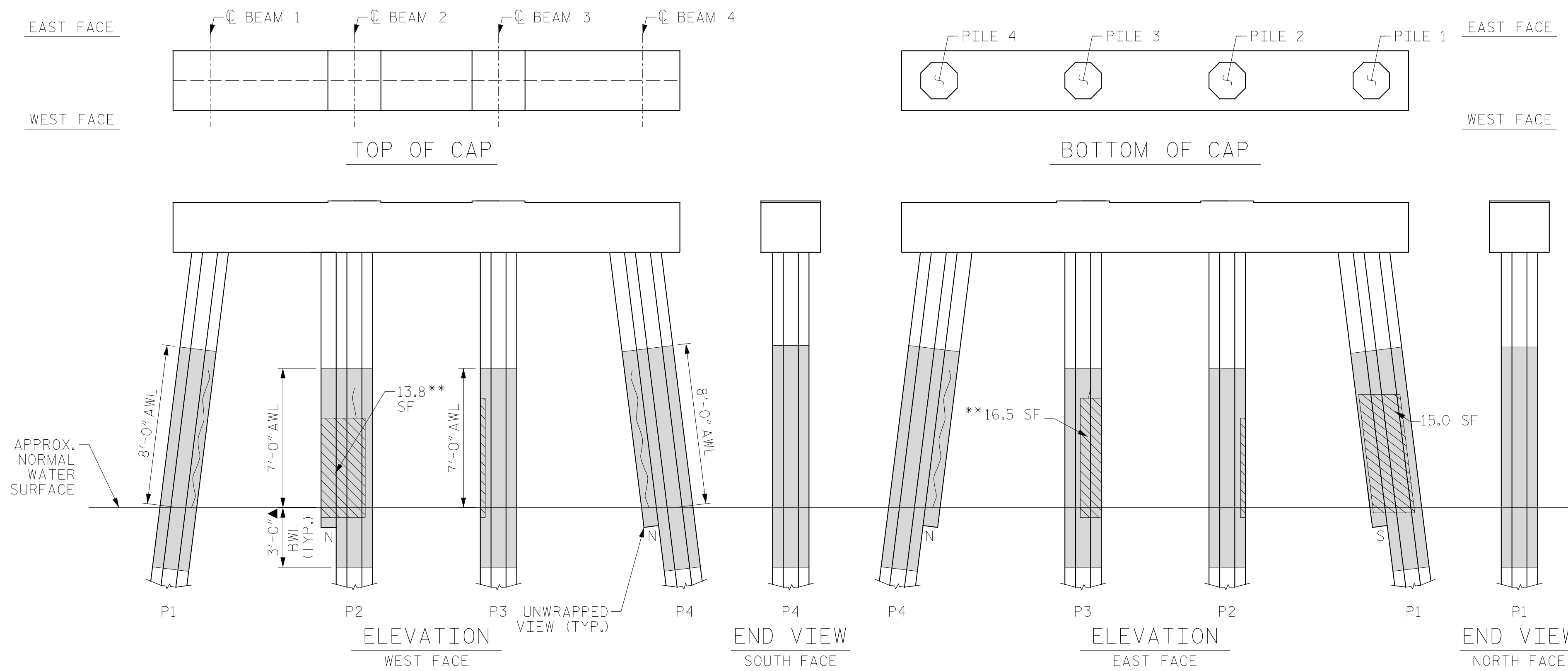
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

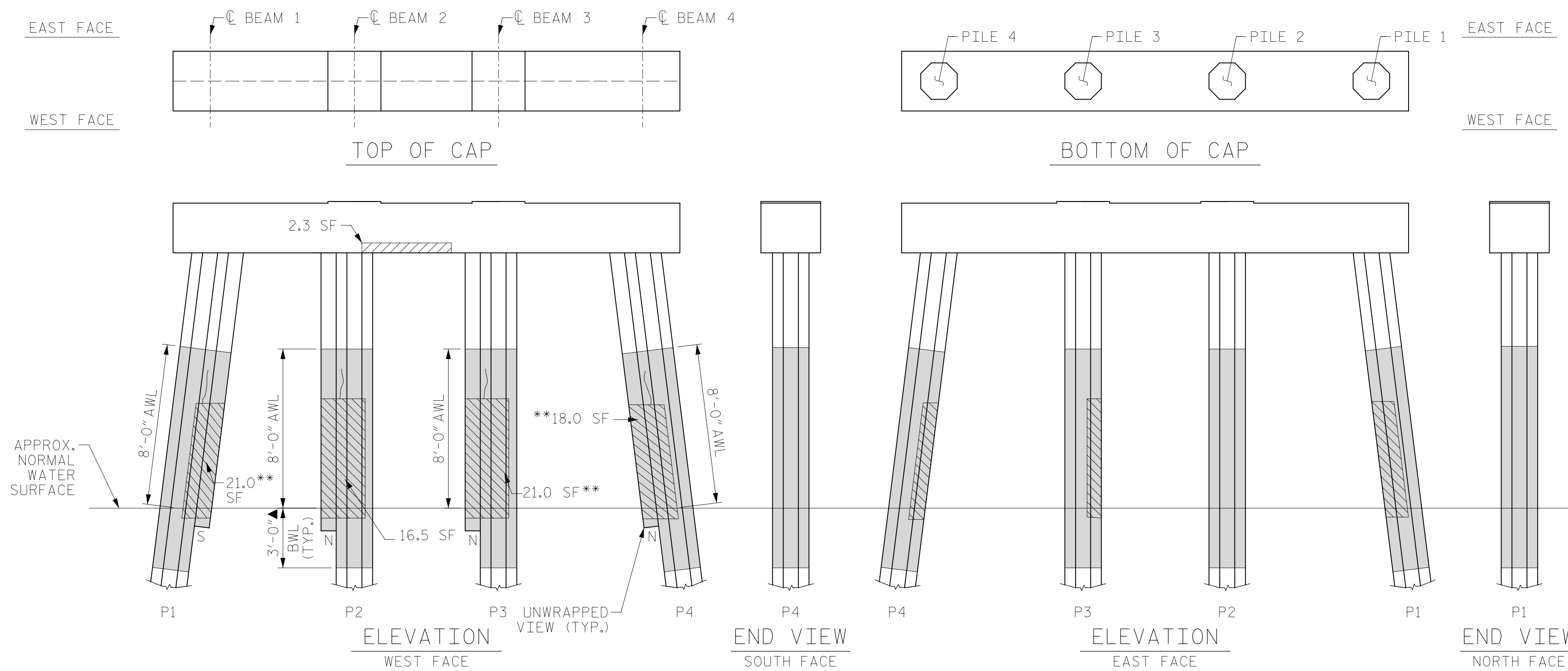
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 103

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 104

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

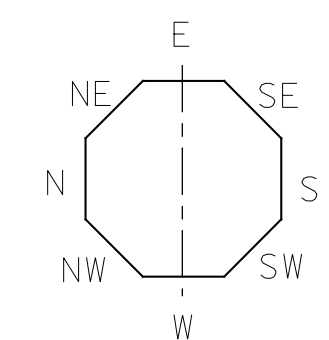
BENT	PILE	NW	W	SW	S	SE	E	NE	N
		103	PILE 1	5	5	7	-	-	-
	PILE 2	1	2	-	5	2	-	-	-
	PILE 3	5	3	3	-	6	-	1	-
	PILE 4	6	1	-	4	-	4	3	7
104	PILE 1	-	4	2	1	-	-	4	-
	PILE 2	2	1	3	3	-	-	4	2
	PILE 3	2	-	3	-	3	-	-	1
	PILE 4	2	-	4	-	4	1	1	1

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 103 & BENT 104

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			167
2			4			355

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

AS-BUILT REPAIR QUANTITY TABLE

BENT 105

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	52.5 SF	21.8 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	187.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

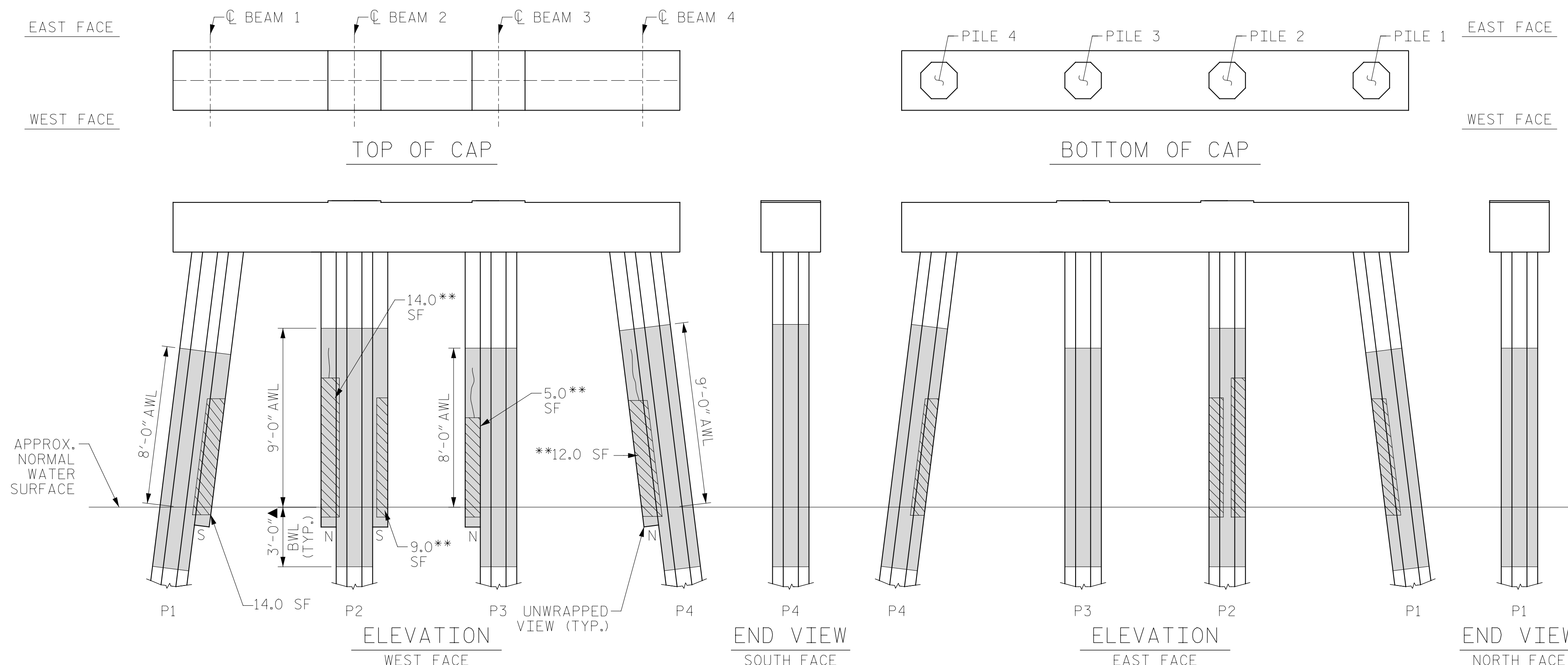
BENT 106

CAP REPAIRS			
SHOTCRETE REPAIRS	1.4 SF	0.7 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	49.1 SF	19.8 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	165.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

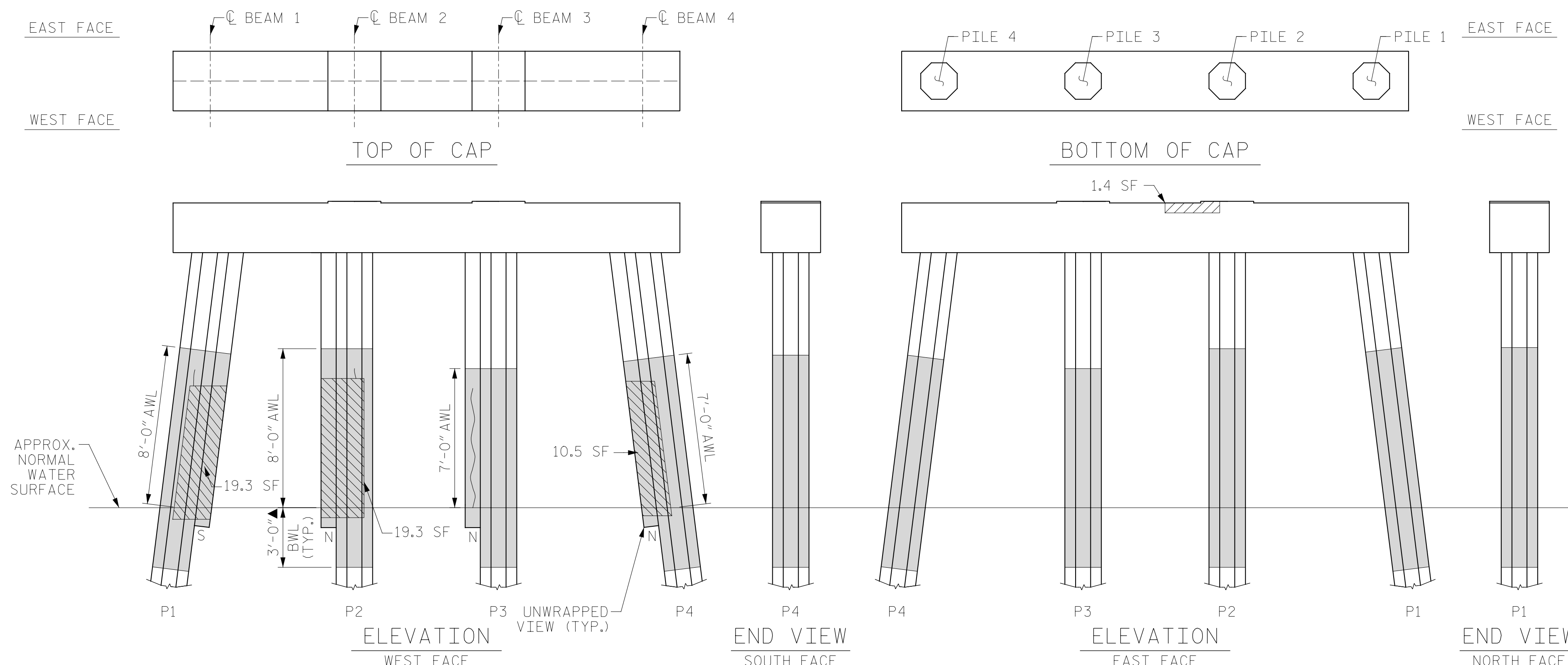
NOTES:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 105

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 106

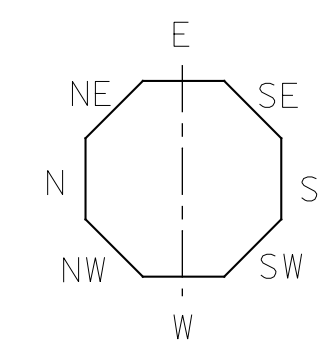
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

		NW	W	SW	S	SE	E	NE	N
BENT 105	PILE 1	-	-	4	1	-	-	4	-
	PILE 2	-	2	-	-	-	-	2	2
	PILE 3	-	-	4	-	6	2	7	3
	PILE 4	4	-	3	3	5	4	-	3
BENT 106	PILE 1	-	-	1	-	-	6	5	3
	PILE 2	-	1	4	11	4	-	-	-
	PILE 3	3	4	4	3	4	3	6	6
	PILE 4	-	6	5	4	-	-	6	-

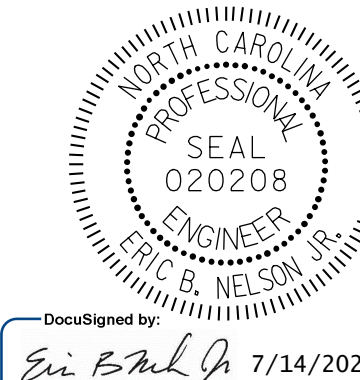
NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 105 & BENT 106

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			168
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 107

CAP REPAIRS				
SHOTCRETE REPAIRS	- SF	- CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
PILE REPAIRS				
PILE CONCRETE RESTORATION	24.5 SF	10.2 CF	SF	CF
FRP PROTECTIVE SYSTEM AWL	165.0 SF			
FRP PROTECTIVE SYSTEM BWL	66.0 SF			

BENT 108

CAP REPAIRS				
SHOTCRETE REPAIRS	- SF	- CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
PILE REPAIRS				
PILE CONCRETE RESTORATION	39.0 SF	15.7 CF	SF	CF
FRP PROTECTIVE SYSTEM AWL	170.5 SF			
FRP PROTECTIVE SYSTEM BWL	66.0 SF			

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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.

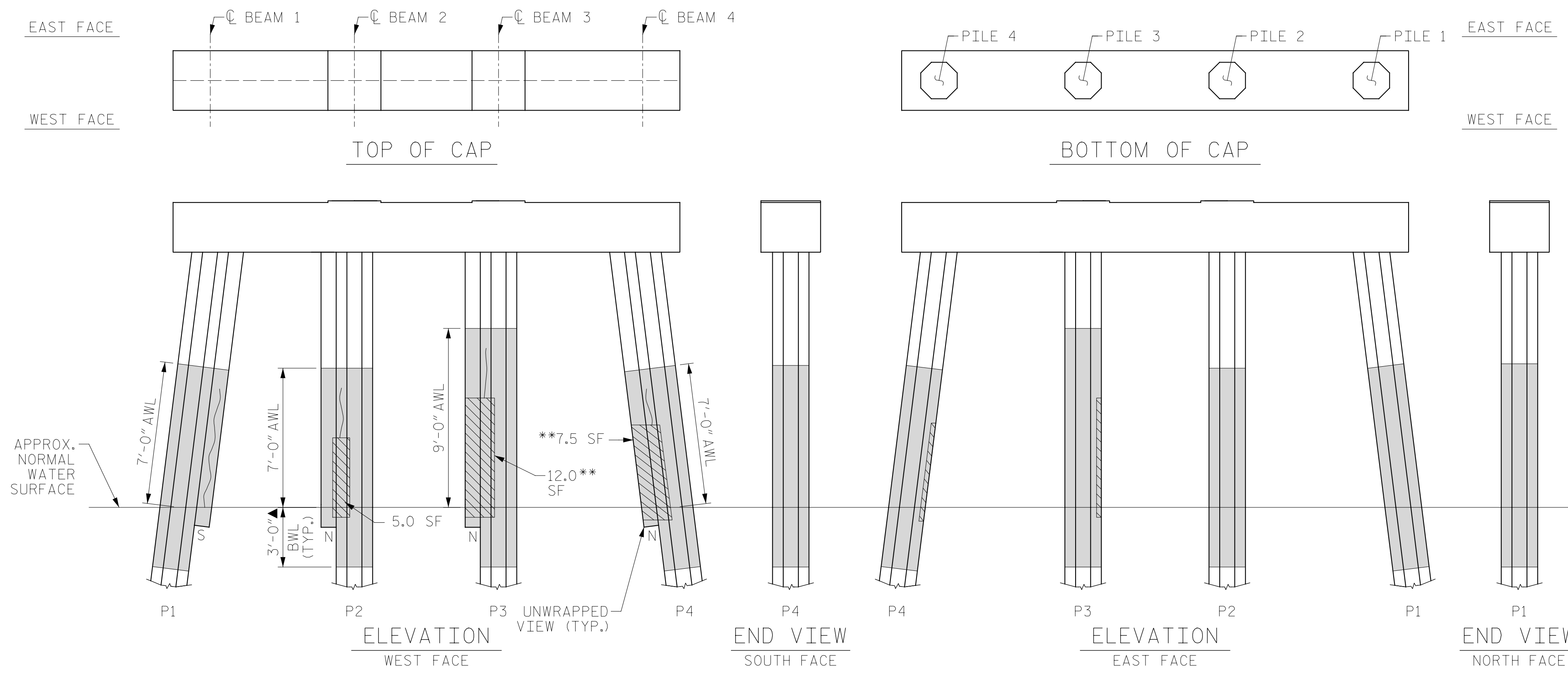
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

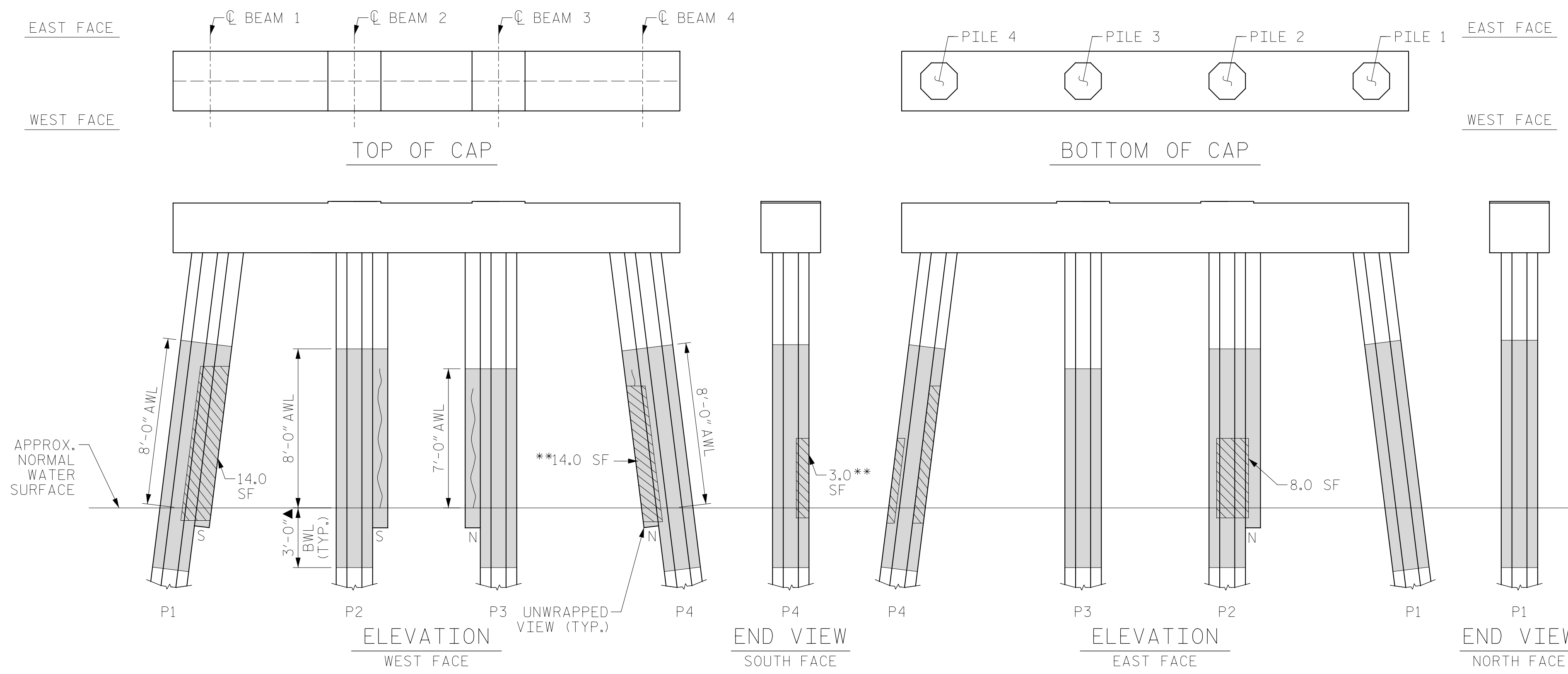
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 107

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



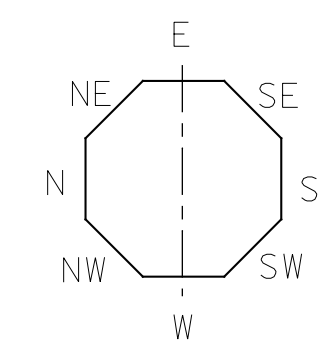
BENT 108

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

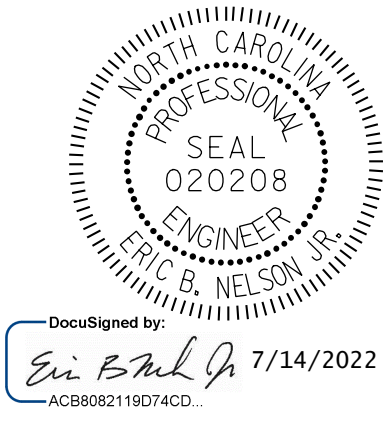
	NW	W	SW	S	SE	E	NE	N
BENT 107	PILE 1	5	-	5	8	3	3	-
	PILE 2	4	4	-	-	3	6	-
	PILE 3	3	4	4	-	3	3	4
	PILE 4	6	-	3	3	-	3	-
BENT 108	PILE 1	-	-	-	-	-	-	5
	PILE 2	2	2	-	7	3	-	3
	PILE 3	-	5	5	-	5	-	5
	PILE 4	5	4	2	-	4	-	1

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- PILE CONCRETE RESTORATION
- SHOTCRETE REPAIRS



PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 107 & BENT 108

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			169
2			4			355

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



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AS-BUILT REPAIR QUANTITY TABLE

BENT 109

CAP REPAIRS			
SHOTCRETE REPAIRS	2.1 SF	1.1 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	55.3 SF	22.2 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	269.5 SF		
FRP PROTECTIVE SYSTEM BWL	99.0 SF		

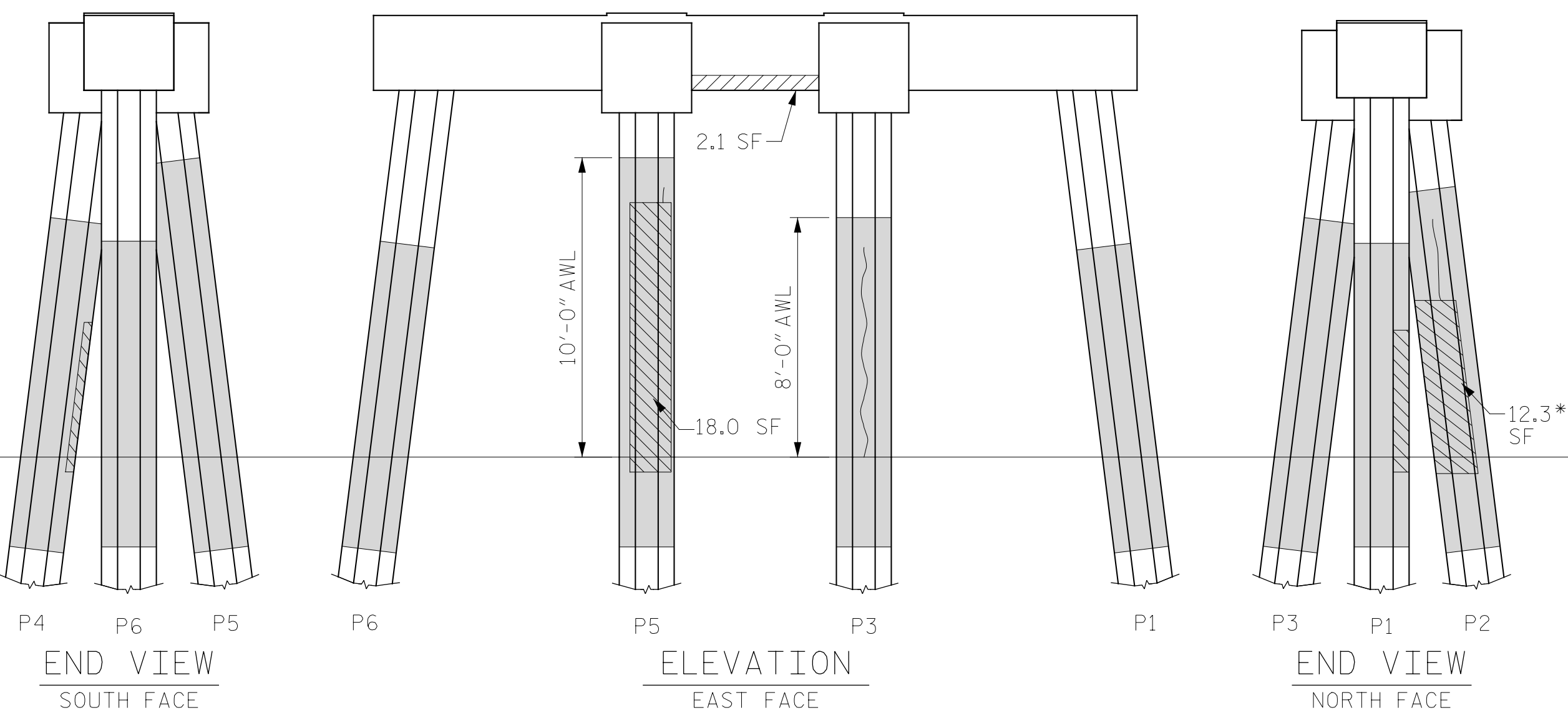
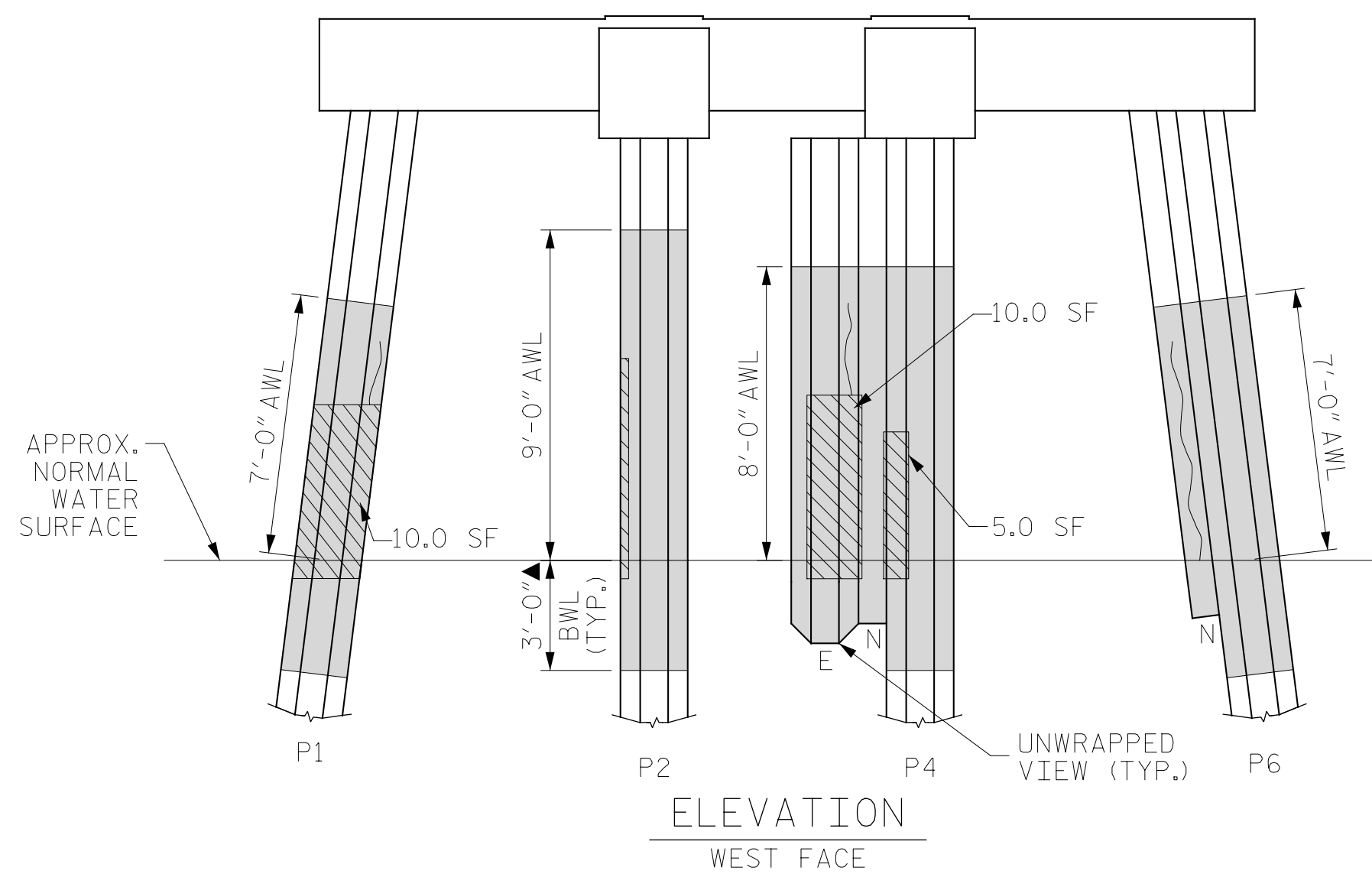
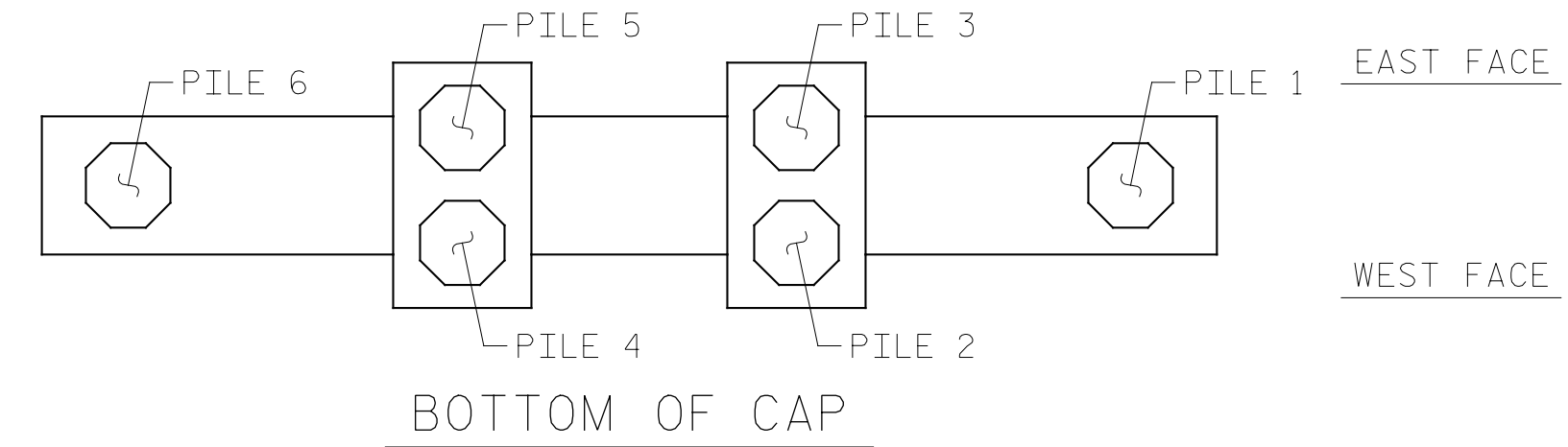
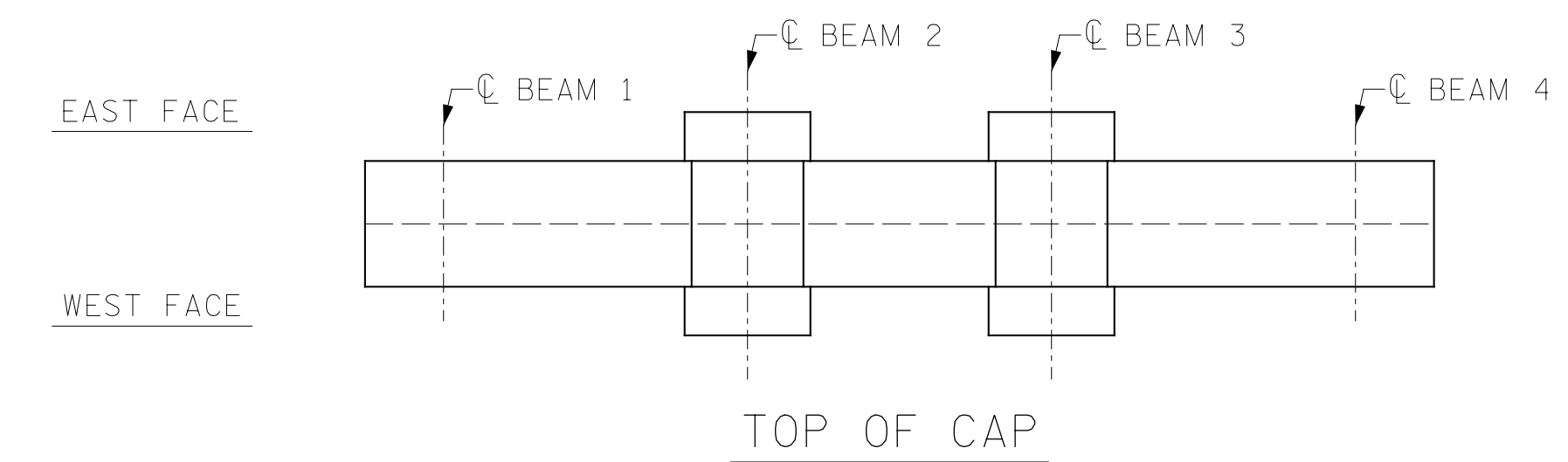
BENT 110

CAP REPAIRS			
SHOTCRETE REPAIRS	11.5 SF	5.8 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	55.8 SF	22.2 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	176.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

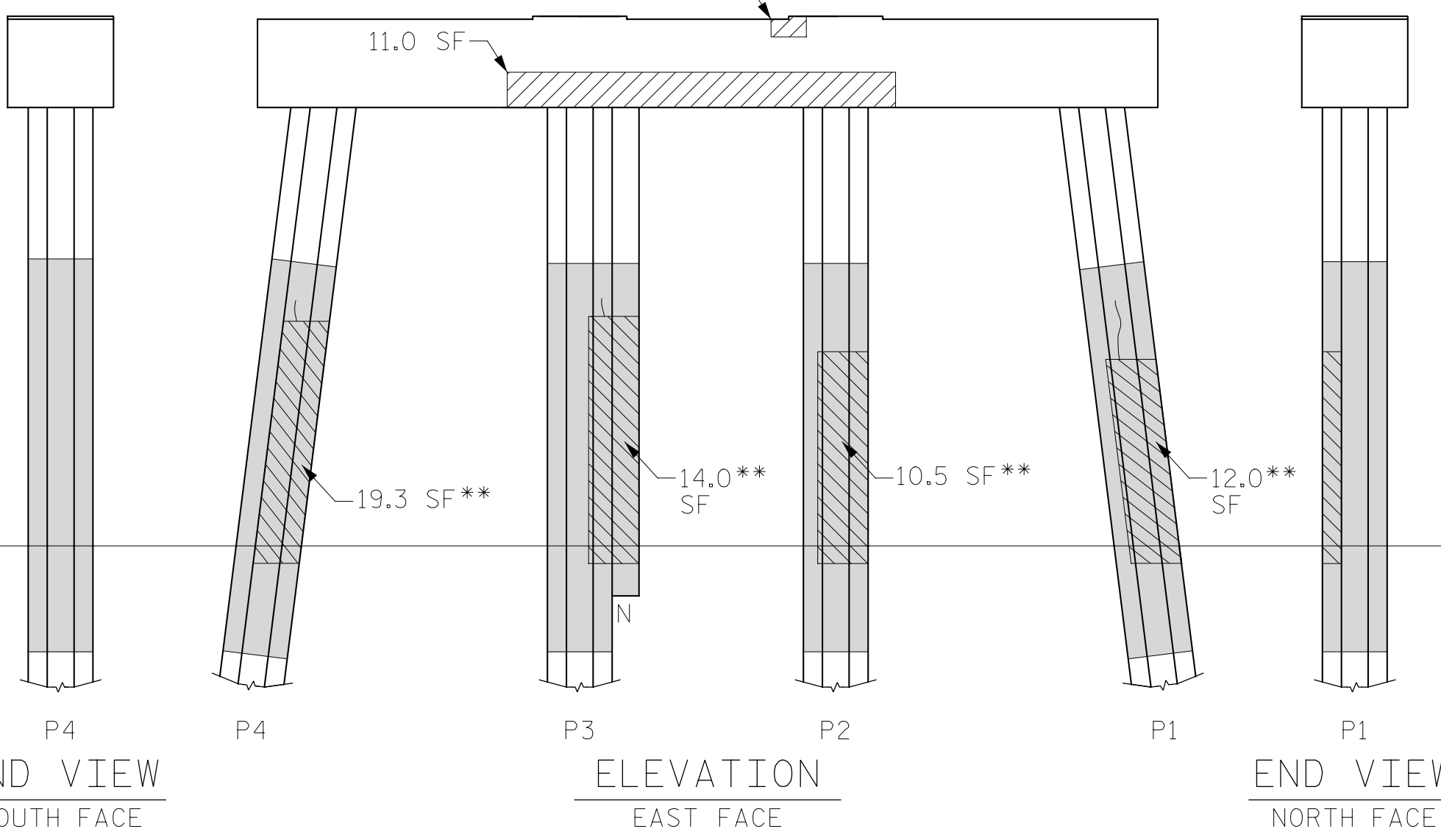
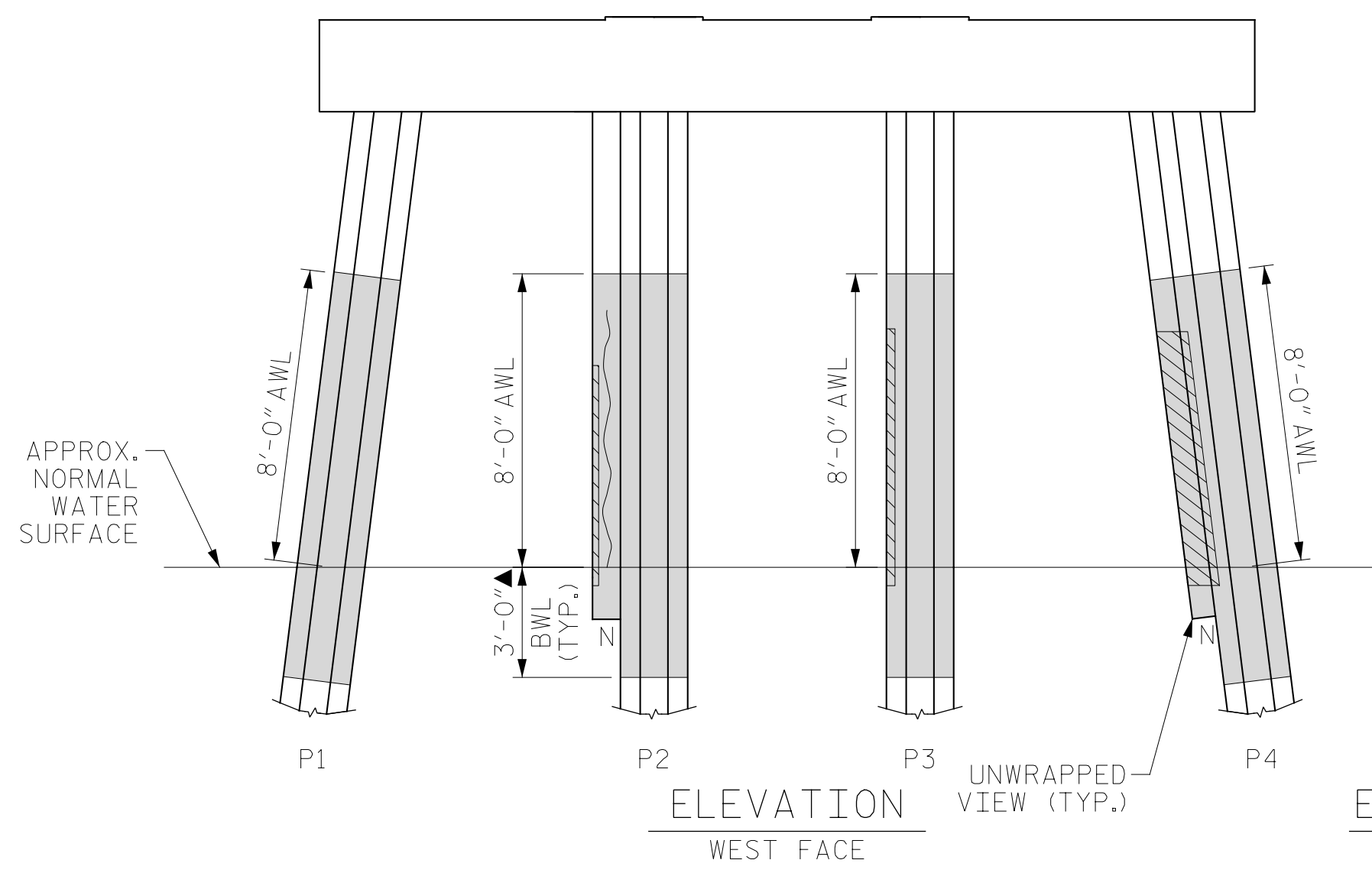
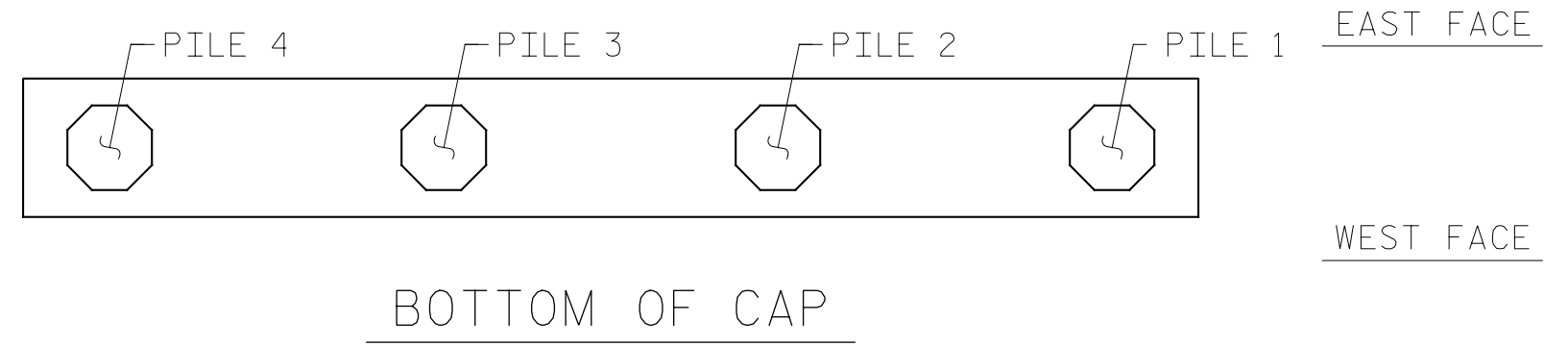
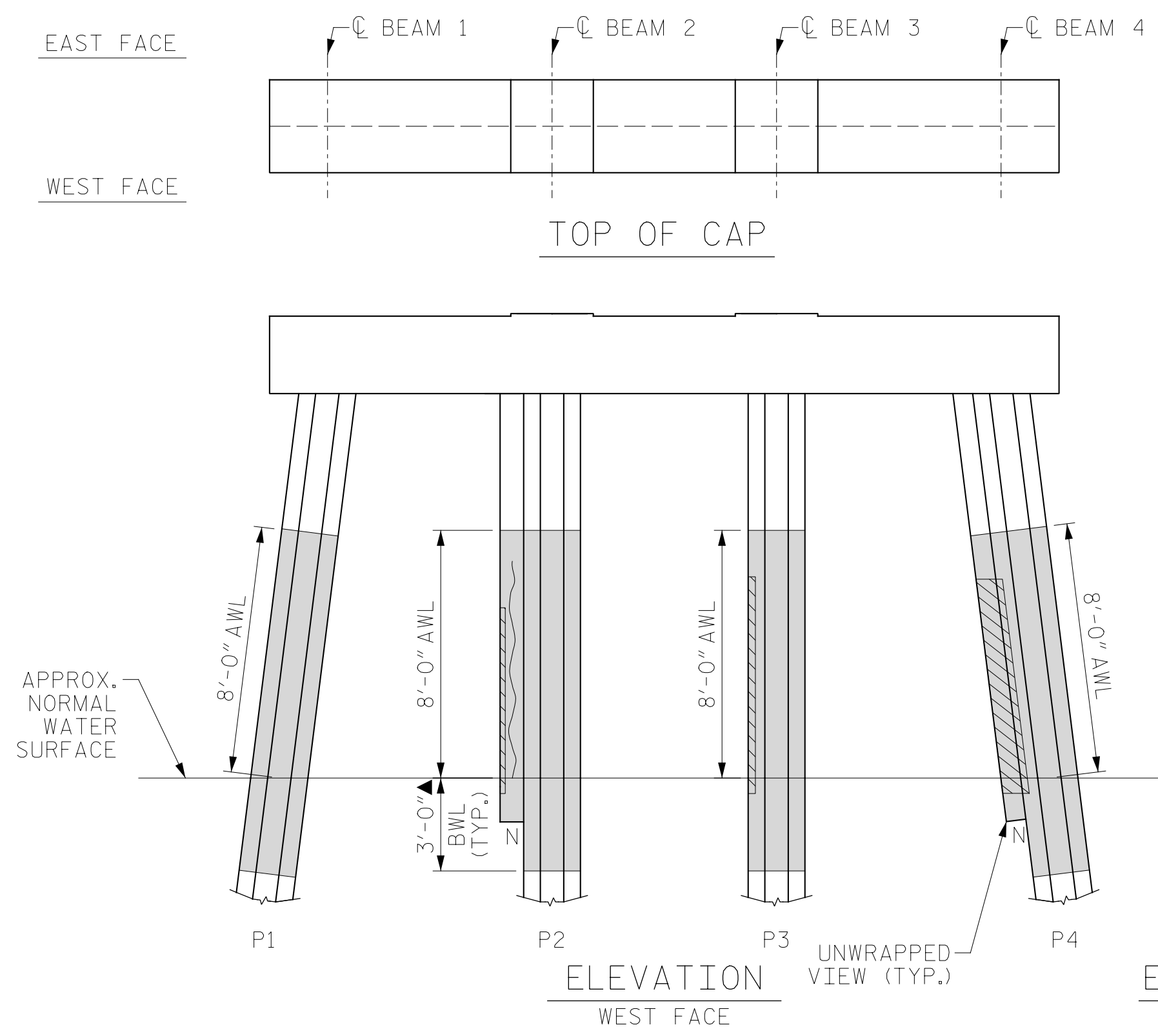
NOTES:
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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 109

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)



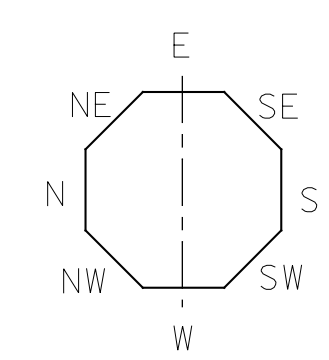
BENT 110

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

		DIRECTION							
		NW	W	SW	S	SE	E	NE	N
BENT 109	PILE 1	1	-	2	6	-	-	-	4
	PILE 2	4	-	-	4	4	2	2	2
	PILE 3	-	4	4	-	7	7	7	-
	PILE 4	-	-	-	-	-	-	3	6
	PILE 5	4	-	-	-	3	-	1	13
	PILE 6	3	4	4	-	4	4	4	6
BENT 110	PILE 1	-	-	-	6	-	2	1	-
	PILE 2	3	6	2	4	-	-	7	-
	PILE 3	4	3	-	4	5	-	1	1
	PILE 4	-	-	-	4	3	2	-	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 109 & BENT 110

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



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REVISIONS						SHEET NO. S-170
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 111

CAP REPAIRS			
SHOTCRETE REPAIRS	0.5 SF	0.3 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	142.0 SF	54.6 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	229.2 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

BENT 112

CAP REPAIRS			
SHOTCRETE REPAIRS	1.0 SF	0.5 CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	81.3 SF	31.8 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	176.0 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

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

NOTES:

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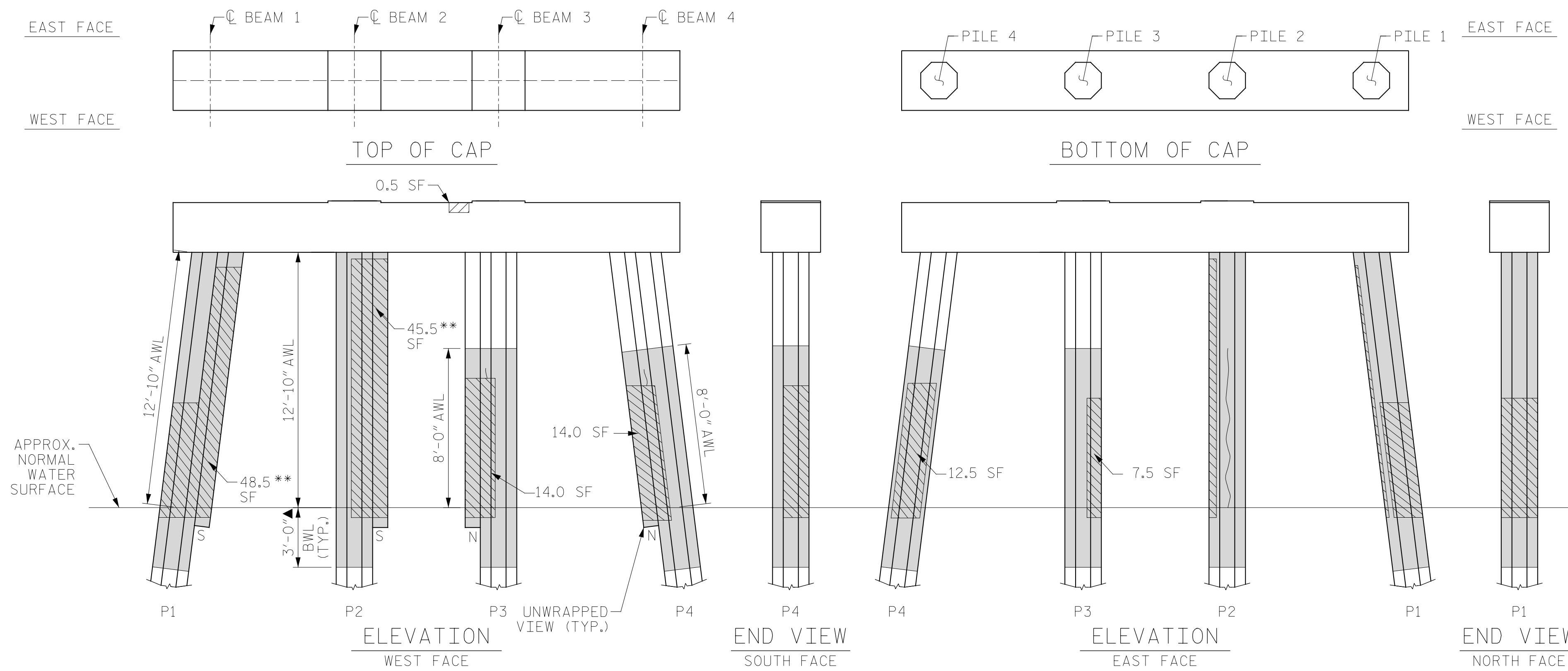
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

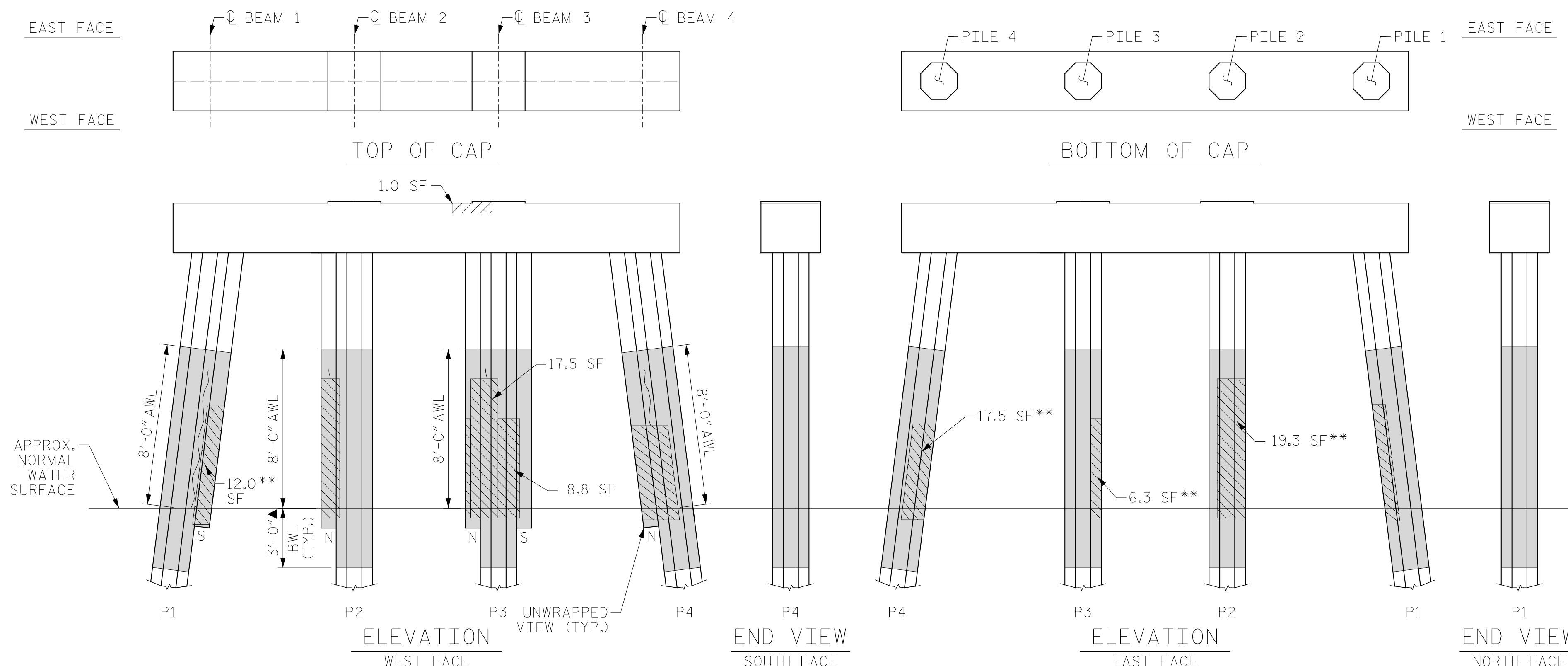
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 111

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)



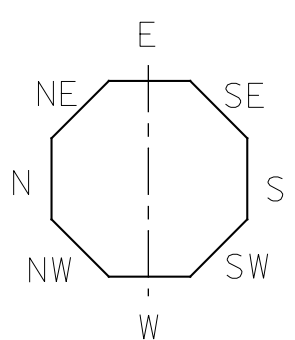
BENT 112

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

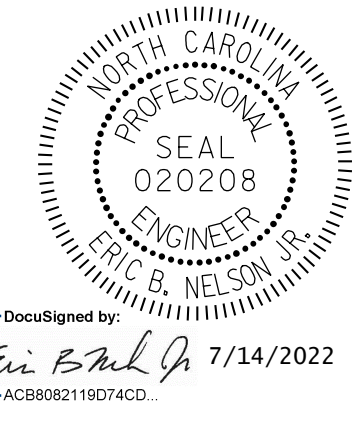
		NW	W	SW	S	SE	E	NE	N
BENT 111	PILE 1	-	-	-	-	2	-	-	-
	PILE 2	8	-	-	-	-	8	8	-
	PILE 3	1	2	2	3	-	-	-	-
	PILE 4	1	4	-	-	2	2	-	1
BENT 112	PILE 1	4	6	3	2	1	-	-	3
	PILE 2	2	-	-	-	-	-	1	1
	PILE 3	1	-	-	-	-	-	-	1
	PILE 4	3	-	3	-	-	-	-	2

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 111 & BENT 112

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-171
1			3			TOTAL SHEETS
2			4			355

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AS-BUILT REPAIR QUANTITY TABLE

BENT 113

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	0.9 SF	0.5 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
PILE CONCRETE RESTORATION	41.3 SF	16.6 CF	SF	CF	
FRP PROTECTIVE SYSTEM AWL	176.0 SF				SF
FRP PROTECTIVE SYSTEM BWL	66.0 SF				SF

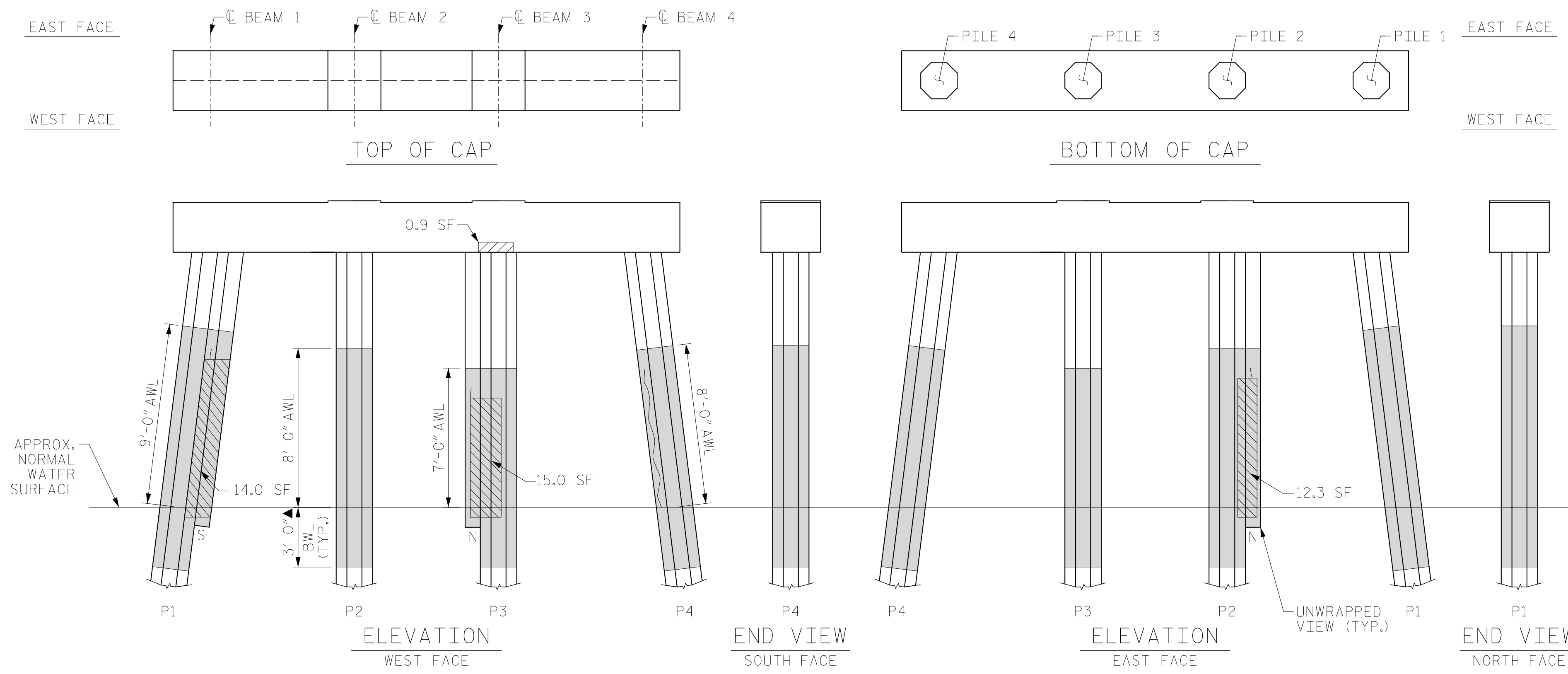
BENT 114

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	1.9 SF	1.0 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
PILE CONCRETE RESTORATION	50.8 SF	21.7 CF	SF	CF	
FRP PROTECTIVE SYSTEM AWL	143.0 SF				SF
FRP PROTECTIVE SYSTEM BWL	49.5 SF				SF
PILE SPLICE AND PRELOAD	14 LF				LF
FRP PROTECTIVE SYSTEM BWL	15 LF				LF

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

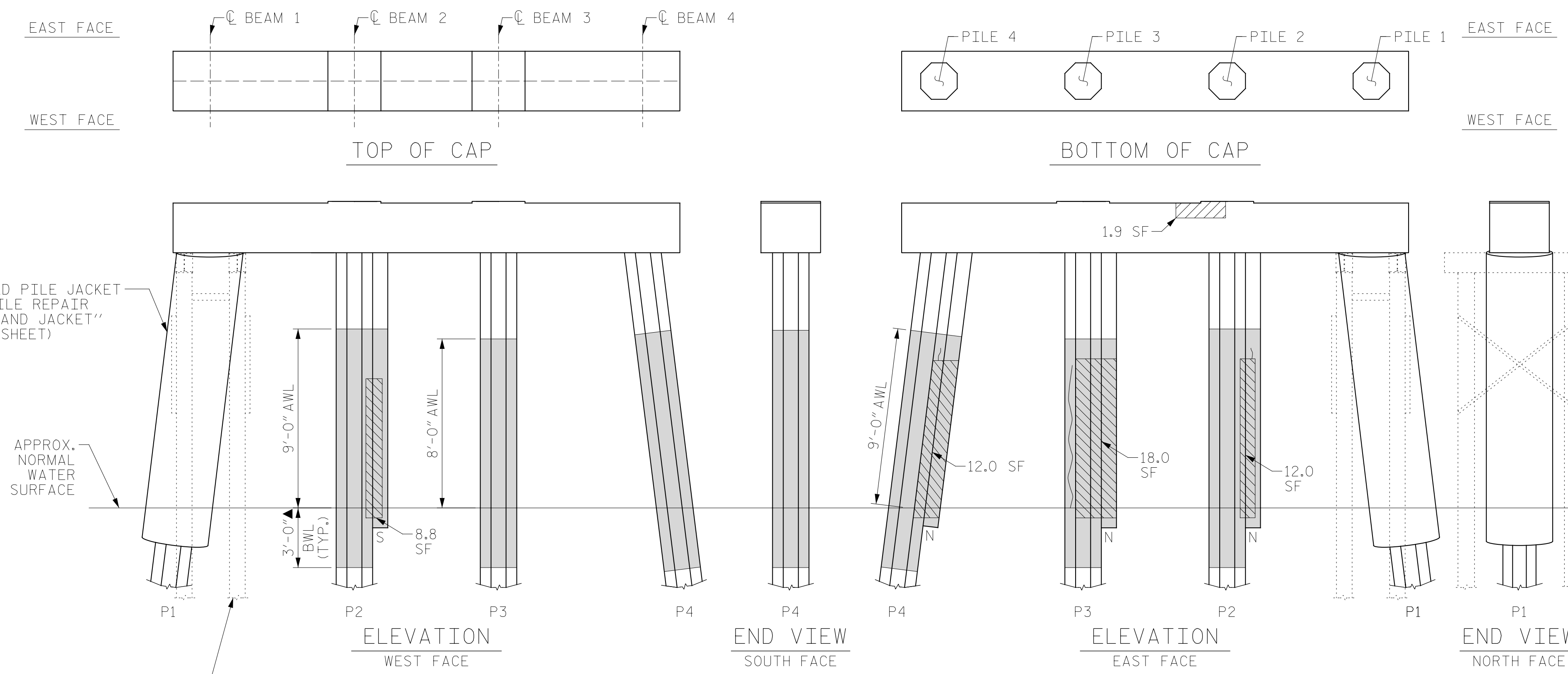
NOTES:
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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



BENT 113

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)



BENT 114

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(*QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

BENT	PILE	DIRECTION							
		NW	W	SW	S	SE	E	NE	N
113	PILE 1	-	-	1	1	-	6	7	5
	PILE 2	4	-	-	-	4	6	-	1
	PILE 3	-	-	4	-	-	-	-	1
	PILE 4	7	5	3	3	-	2	3	5
114	PILE 1	-	-	-	-	-	-	-	-
	PILE 2	5	-	-	-	3	-	-	1
	PILE 3	-	-	-	4	7	-	-	-
	PILE 4	5	5	2	6	-	7	-	1

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 113 & BENT 114

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

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DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019



AS-BUILT REPAIR QUANTITY TABLE

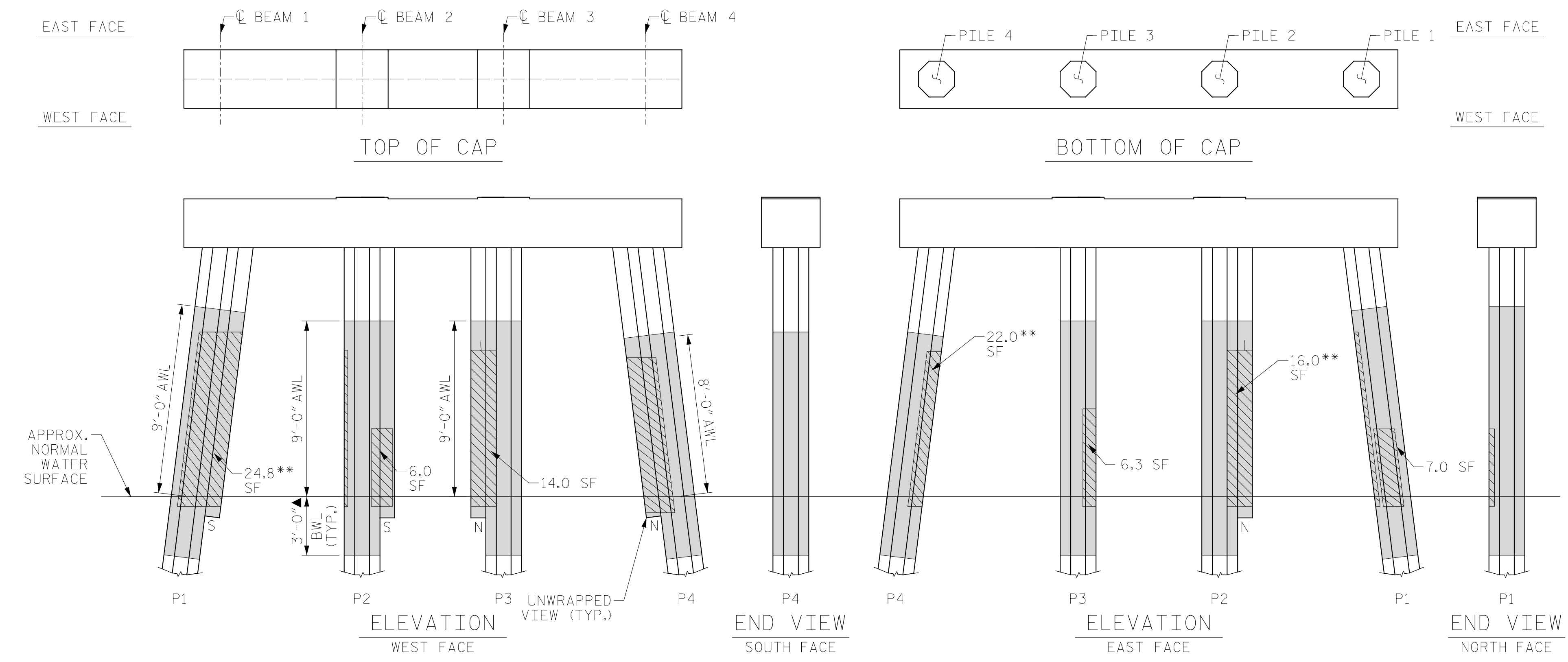
BENT 115

CAP REPAIRS			
SHOTCRETE REPAIRS	- SF	- CF	SF CF
EPOXY RESIN INJECTION	- LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	98.1 SF	39.3 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	192.5 SF		
FRP PROTECTIVE SYSTEM BWL	66.0 SF		

FOR CAP REPAIRS: VALUES IN CHART REPRESENT ESTIMATED 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.
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FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE SHEET "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET



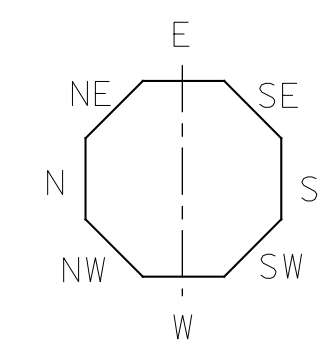
BENT 115

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

ESTIMATED PILE CRACK QTY. TABLE

		NW	W	SW	S	SE	E	NE	N
BENT 115	PILE 1	5	-	-	-	3	-	-	-
	PILE 2	4	3	-	4	-	2	-	2
	PILE 3	-	3	-	-	-	-	-	1
	PILE 4	-	-	2	4	-	6	-	-

NOTE: FOR INFORMATION ON PILE CONDITION ONLY.



▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- [Solid Gray Box] - FRP PROTECTIVE SYSTEM
- [Hatched Box] - PILE CONCRETE RESTORATION
- [Cross-hatched Box] - SHOTCRETE REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 115



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-173
1			3			TOTAL SHEETS
2			4			355

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: R. FISHER DATE: 3/2019

AS-BUILT REPAIR QUANTITY TABLE

BENT 116

CAP/FOOTING REPAIRS			
SHOTCRETE REPAIRS	279.1 SF	139.6 CF	SF CF
EPOXY RESIN INJECTION	3.0 LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	8.3 SF	3.9 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	- SF		
FRP PROTECTIVE SYSTEM BWL	205.2 SF		

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- PILE CONCRETE RESTORATION
- SHOTCRETE REPAIRS

APPROX. NORMAL WATER SURFACE

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 116

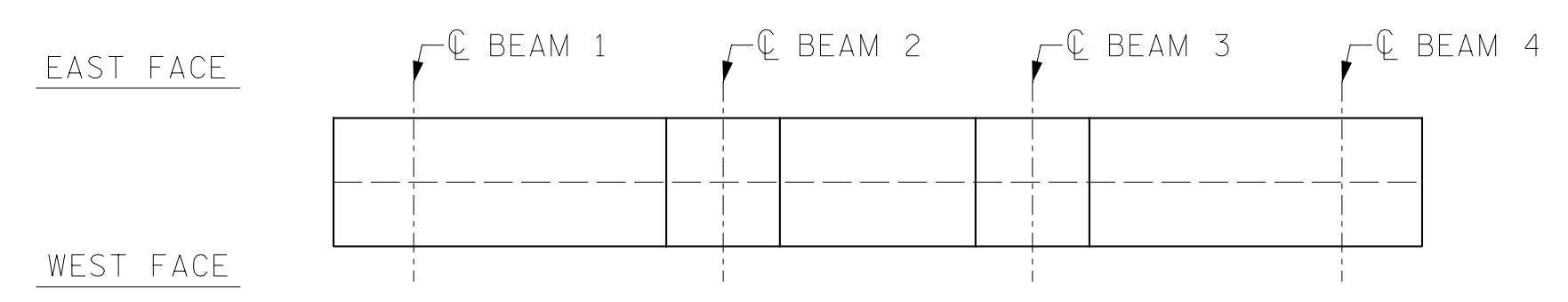
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			174
2			4			355



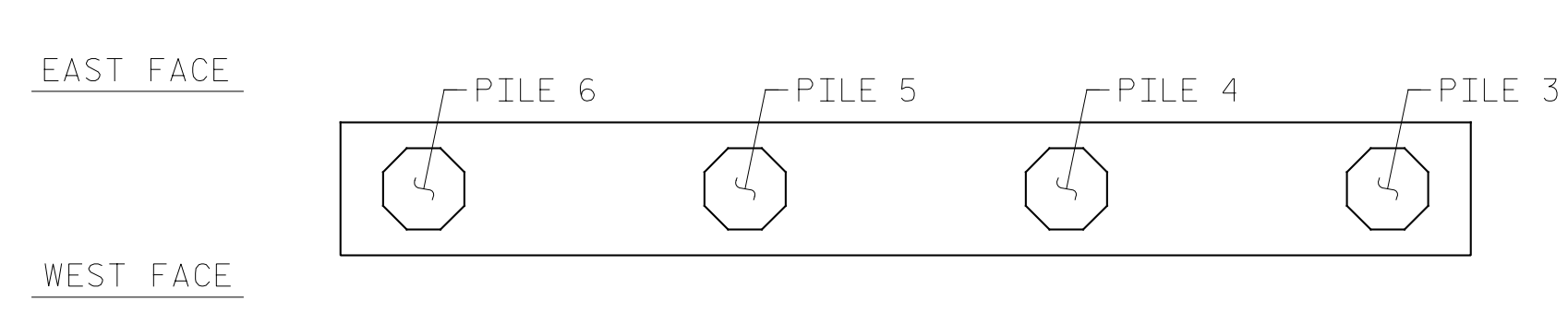
DocuSigned by:
 Eric B. Nelson, Jr. 7/14/2022
 AC888219074CD



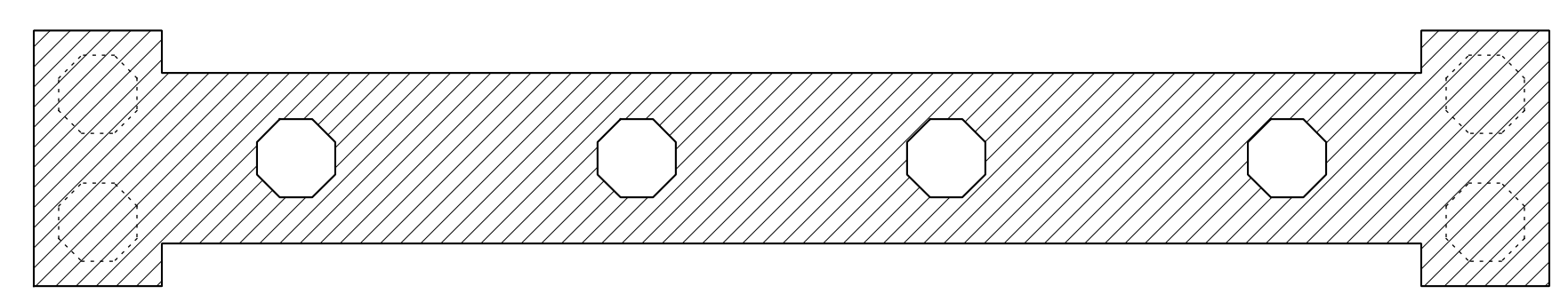
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



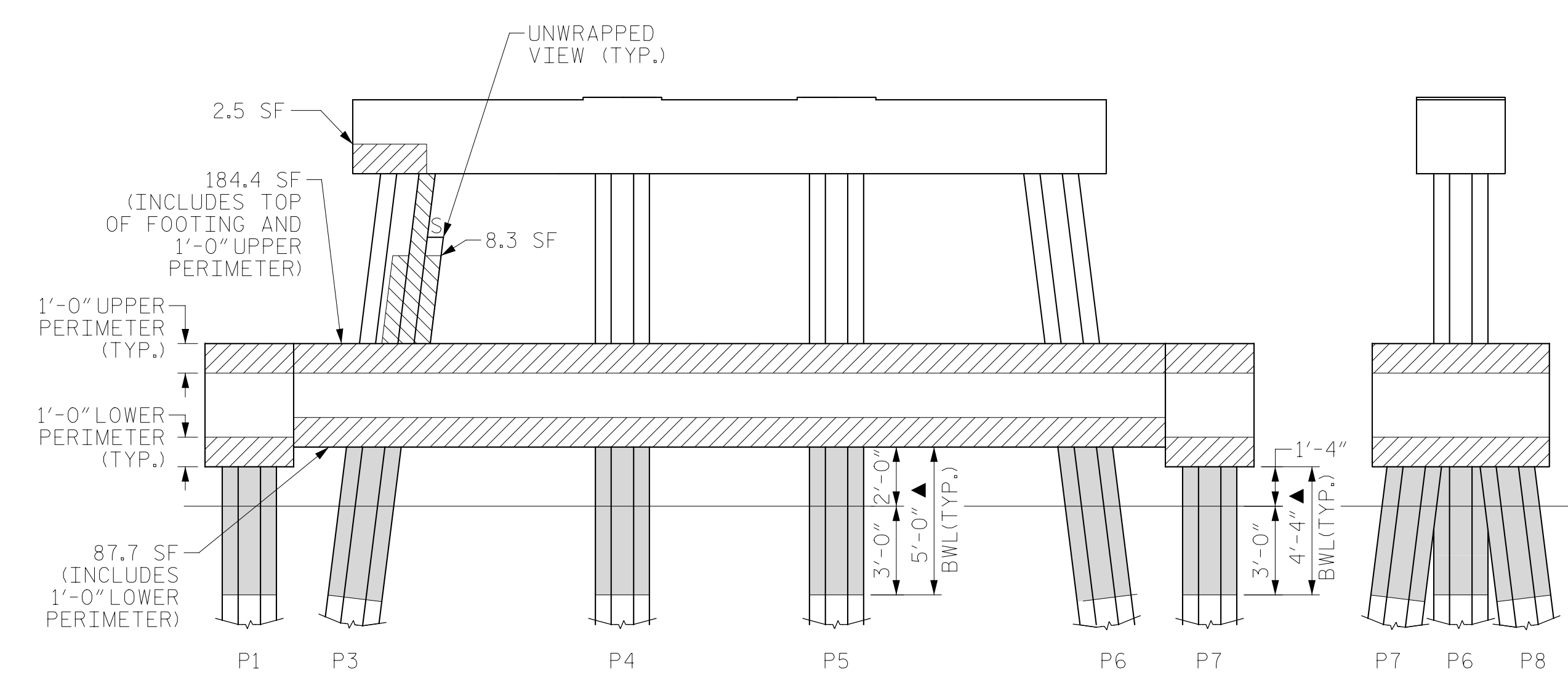
TOP OF CAP



BOTTOM OF CAP

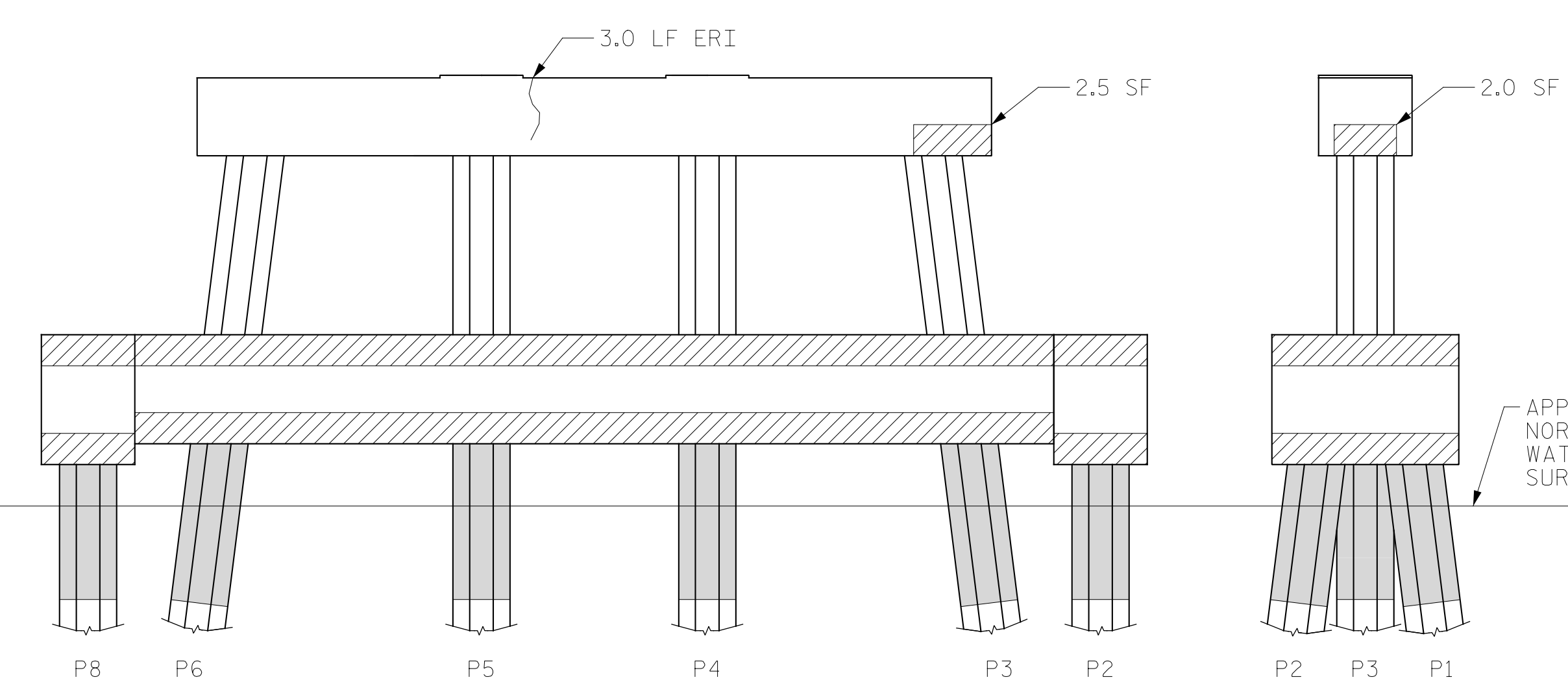


TOP OF FOOTING



ELEVATION WEST FACE

END VIEW SOUTH FACE



ELEVATION EAST FACE

END VIEW NORTH FACE

BENT 116
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019

AS-BUILT REPAIR QUANTITY TABLE

BENT 117

CAP/FOOTING REPAIRS			
SHOTCRETE REPAIRS	262.1 SF	131.1 CF	SF CF
EPOXY RESIN INJECTION	3.0 LF		LF
PILE REPAIRS			
PILE CONCRETE RESTORATION	43.8 SF	20.6 CF	SF CF
FRP PROTECTIVE SYSTEM AWL	107.3 SF		
FRP PROTECTIVE SYSTEM BWL	273.0 SF		

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

NOTES:

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

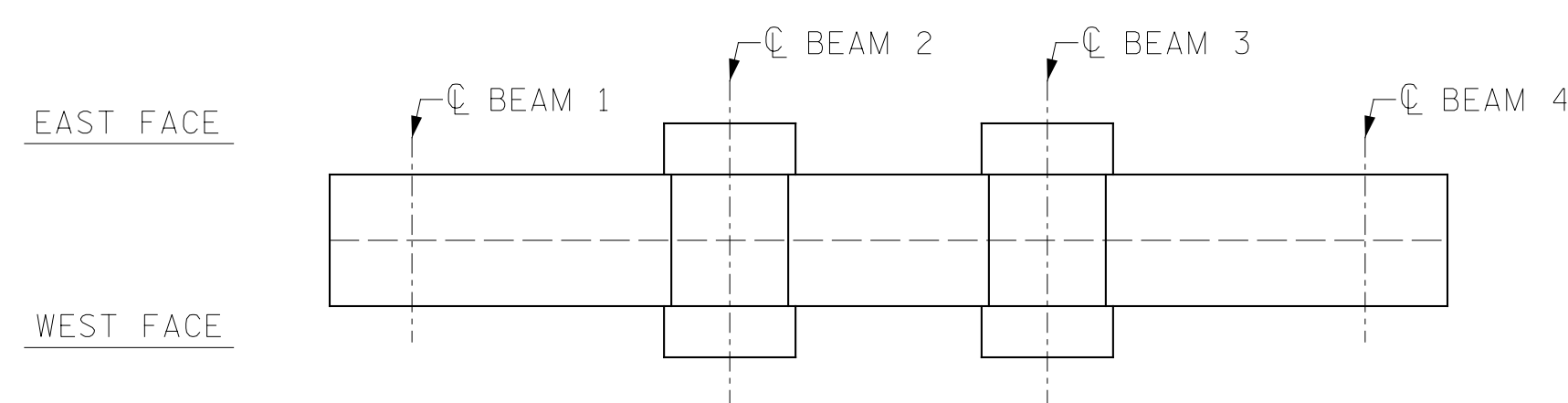
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

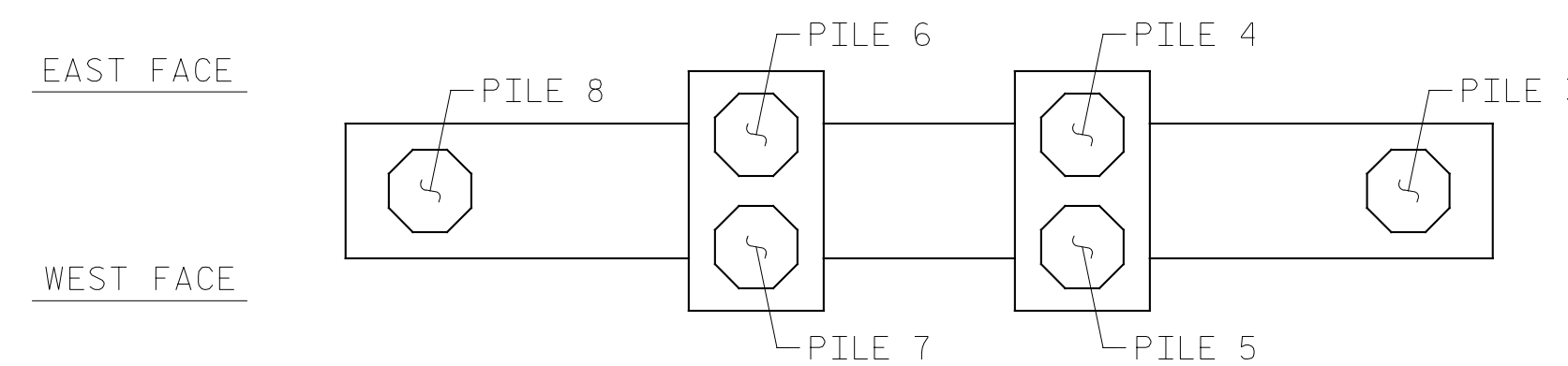
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

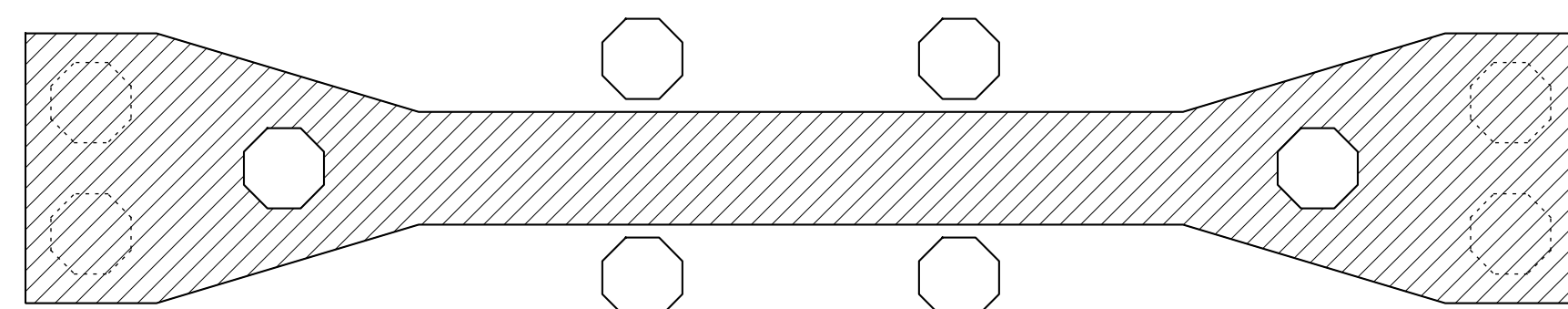
- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- PILE CONCRETE RESTORATION
- SHOTCRETE REPAIRS



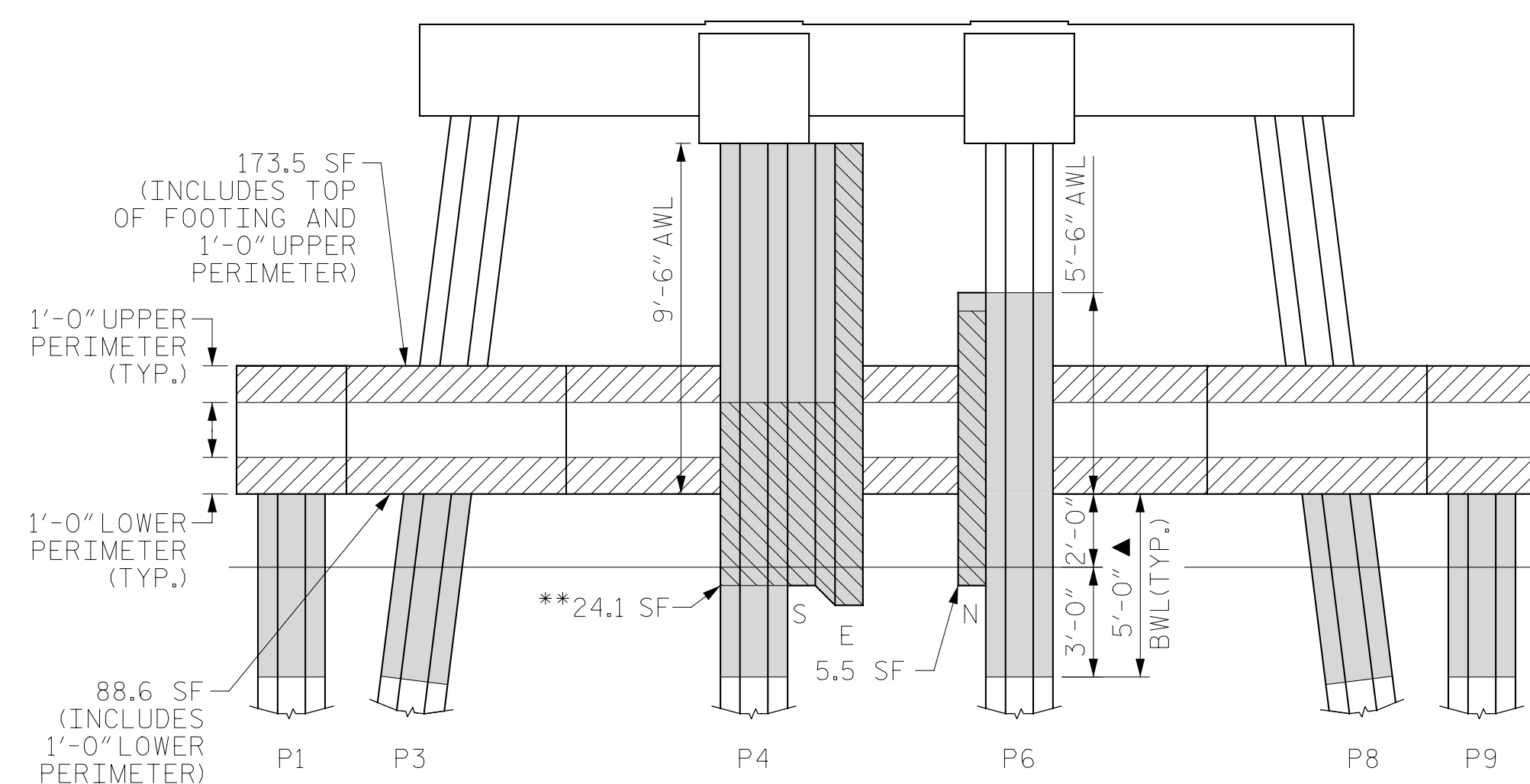
TOP OF CAP



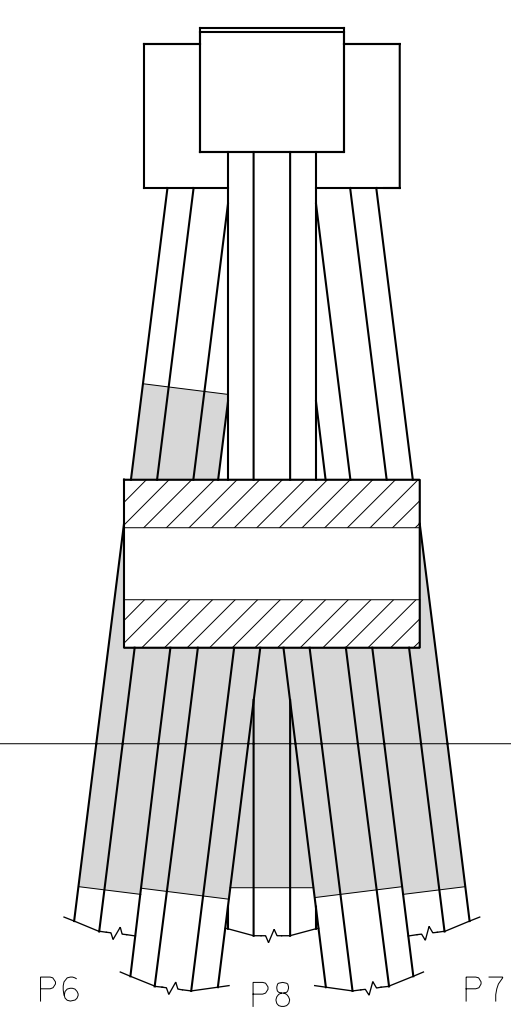
BOTTOM OF CAP



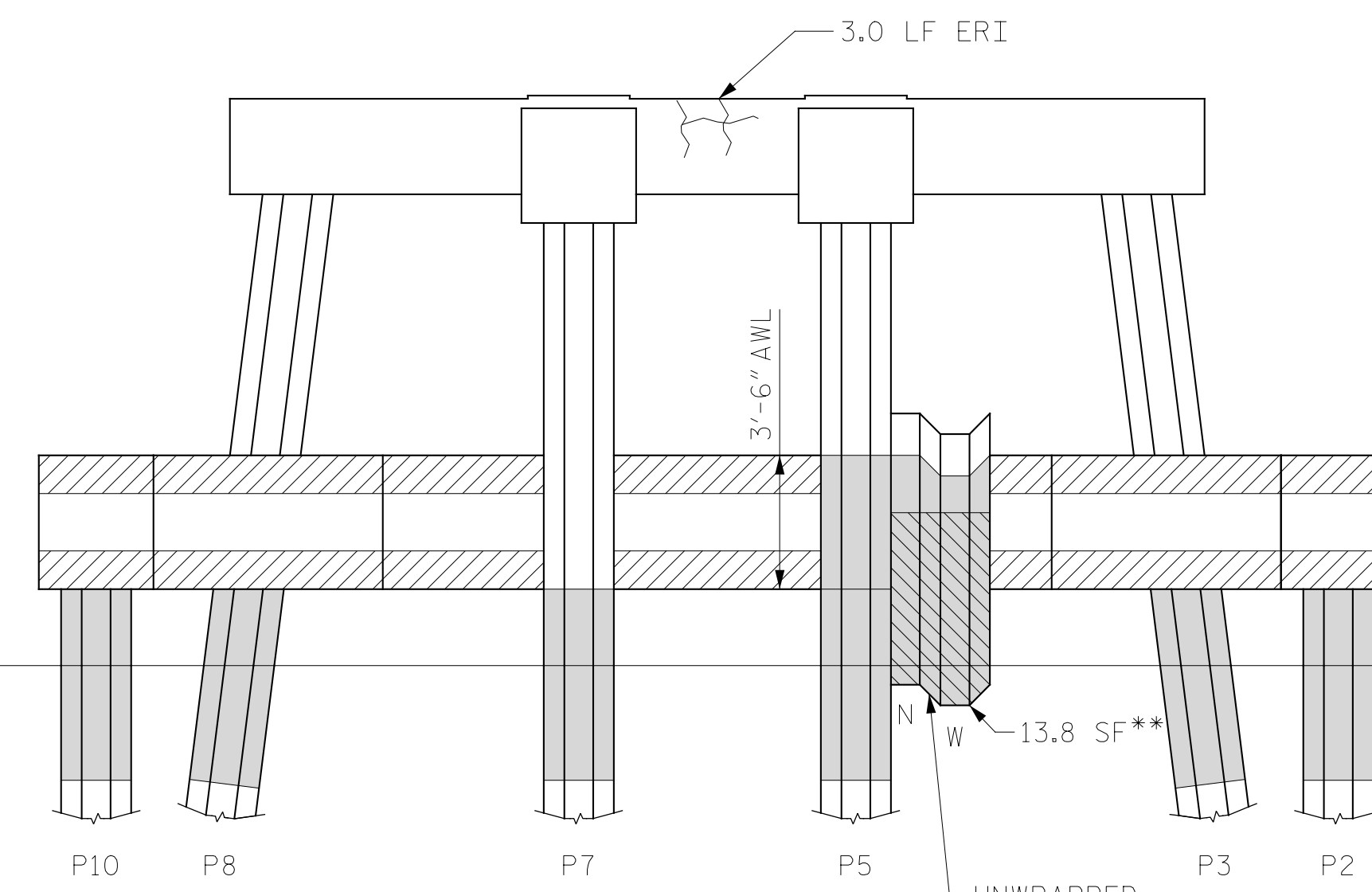
TOP OF FOOTING



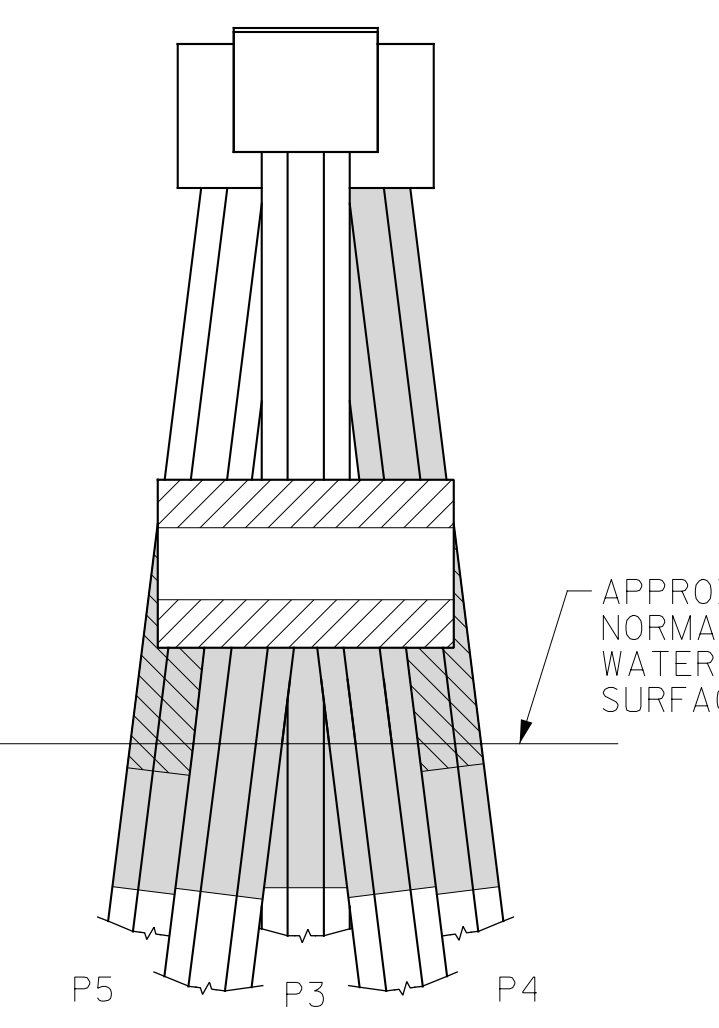
ELEVATION WEST FACE



END VIEW SOUTH FACE



ELEVATION EAST FACE

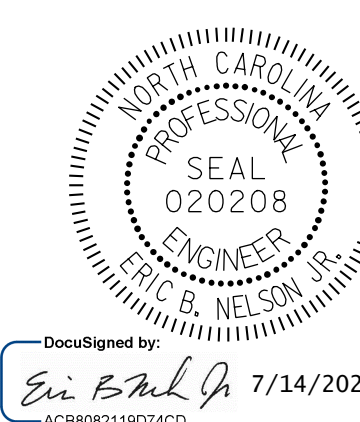


END VIEW NORTH FACE

BENT 117

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)
(**QUANTITY INCLUDES ADJACENT REPAIRS)

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 117					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: J. FARNHAM DATE: 5/2019



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SHEET NO. S-175
TOTAL SHEETS 355

AS-BUILT REPAIR QUANTITY TABLE

BENT 118

CAP/FOOTING REPAIRS					
SHOTCRETE REPAIRS	286.8 SF	143.4 CF	SF	CF	
EPOXY RESIN INJECTION		- LF			LF
PILE REPAIRS					
PILE CONCRETE RESTORATION	11.7 SF	5.2 CF	SF	CF	
FRP PROTECTIVE SYSTEM AWL		- SF			
FRP PROTECTIVE SYSTEM BWL		205.2 SF			

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

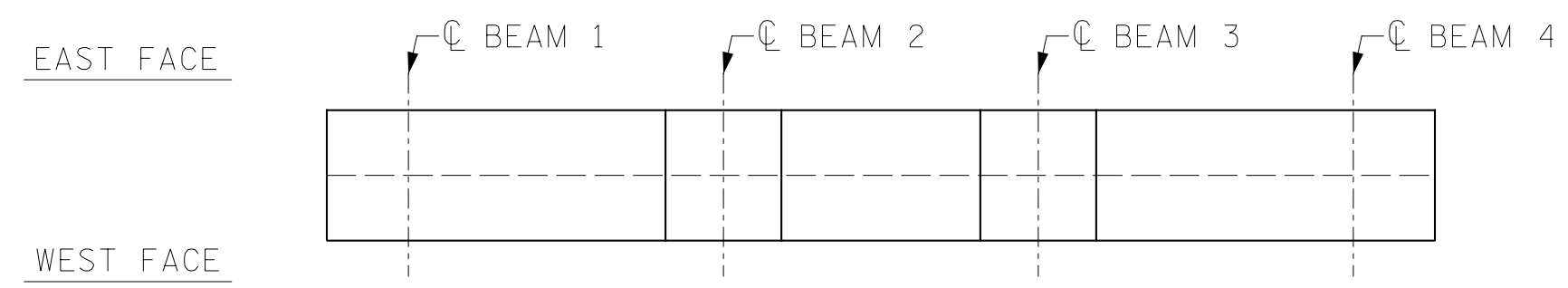
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

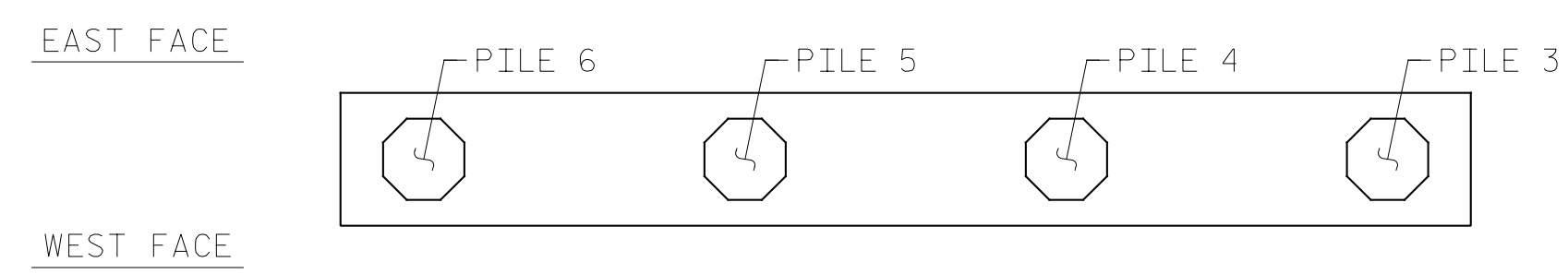
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

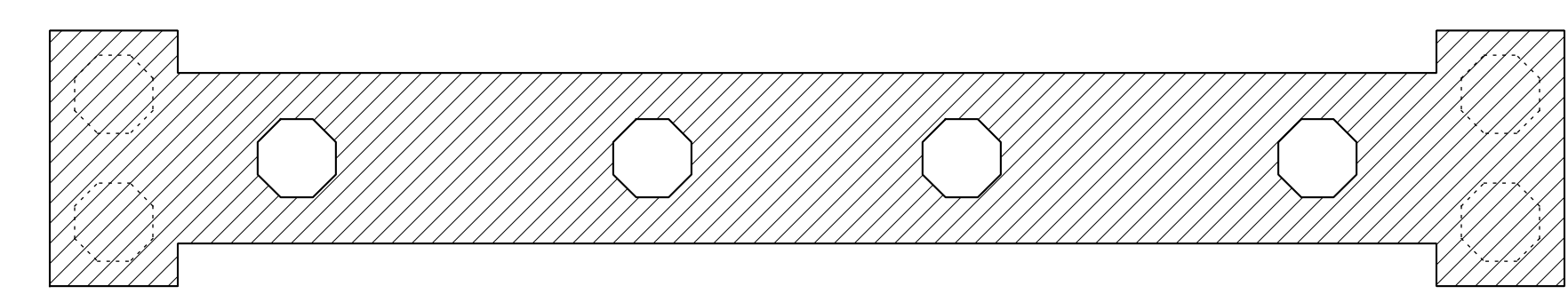
- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- PILE CONCRETE RESTORATION
- SHOTCRETE REPAIRS



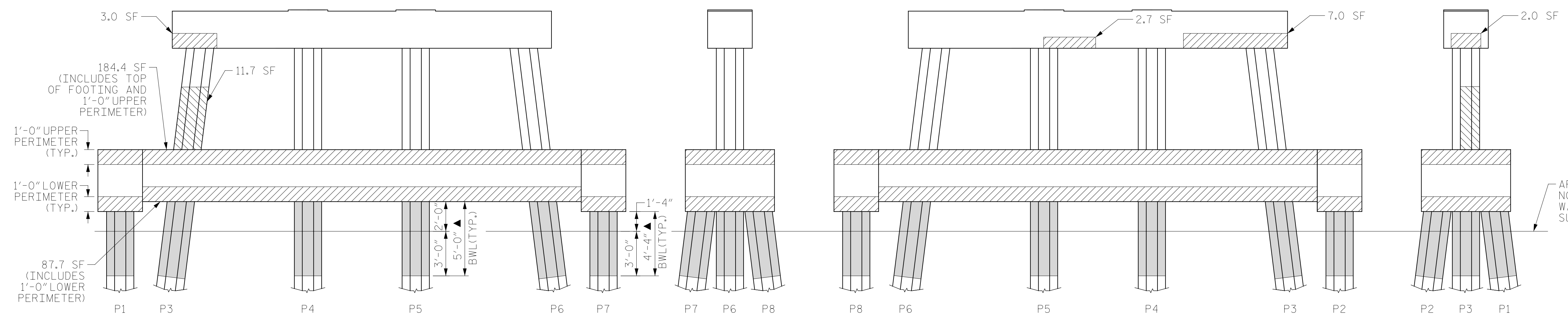
TOP OF CAP



BOTTOM OF CAP



TOP OF FOOTING



ELEVATION WEST FACE

END VIEW SOUTH FACE

ELEVATION EAST FACE

END VIEW NORTH FACE

PROJECT NO. HB-0017
 DARE COUNTY
 BRIDGE NO. 270009

BENT 118

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)
 (**QUANTITY INCLUDES ADJACENT REPAIRS)



DocuSigned by:
 Eric B. Nelson, Jr.
 7/14/2022

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 118

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 119

CAP/FOOTING REPAIRS	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	279.2 SF	139.6 CF	SF	CF
EPOXY RESIN INJECTION	- LF		LF	
PILE REPAIRS	ESTIMATE		ACTUAL	
PILE CONCRETE RESTORATION	26.0 SF	12.2 CF	SF	CF
FRP PROTECTIVE SYSTEM AWL	- SF		SF	
FRP PROTECTIVE SYSTEM BWL	205.2 SF		SF	
PILE JACKETS	5 LF		LF	

FOR CAP REPAIRS: VALUES IN CHART REPRESENT ESTIMATED 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 REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

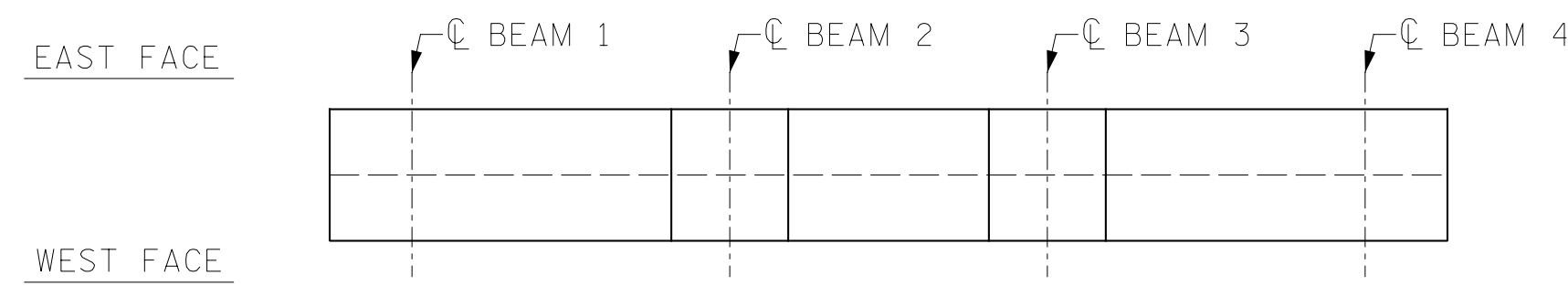
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

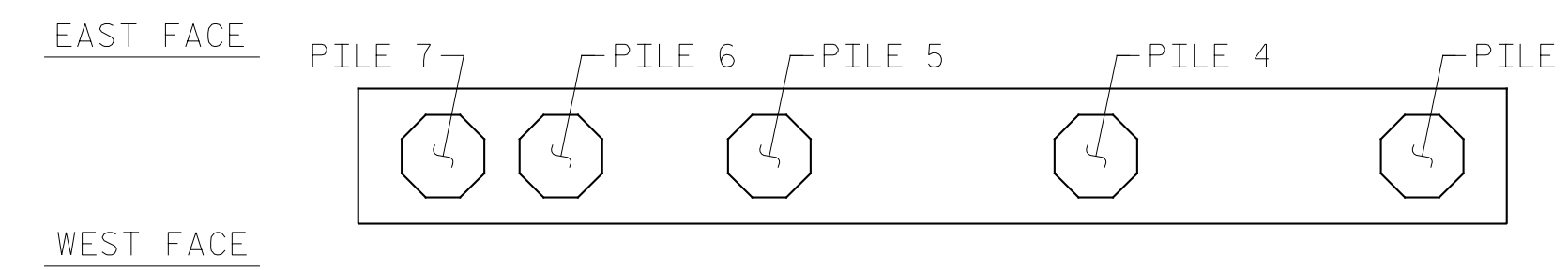
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

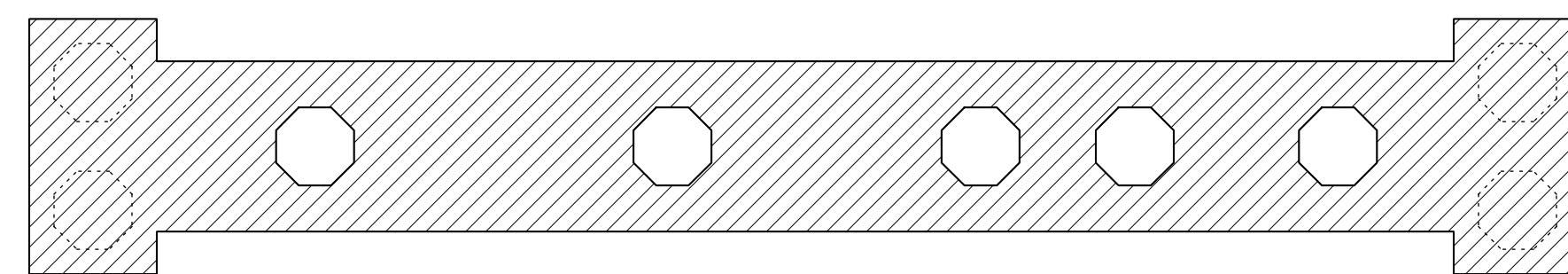
- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- PILE CONCRETE RESTORATION
- SHOTCRETE REPAIRS



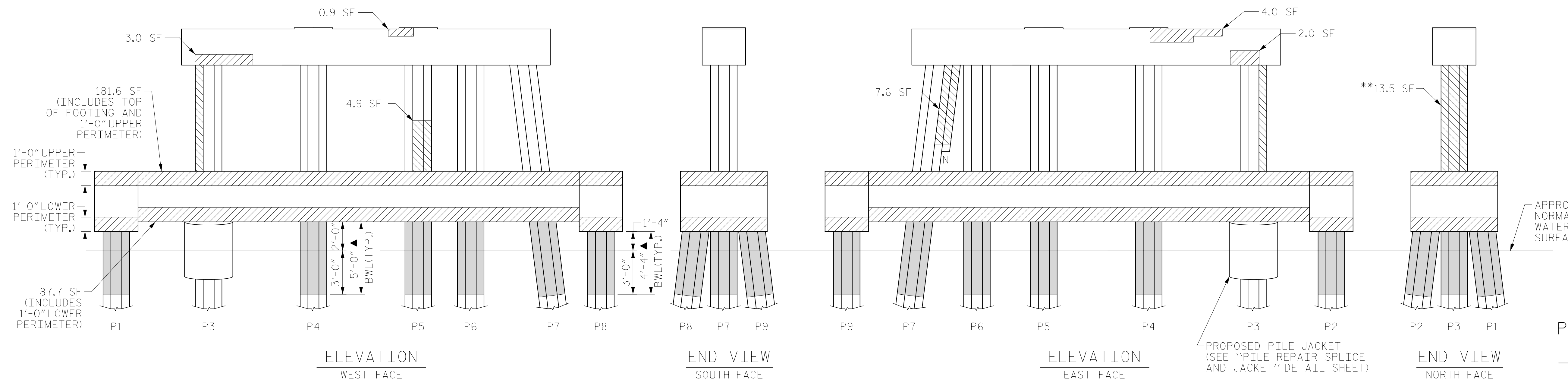
TOP OF CAP



BOTTOM OF CAP



TOP OF FOOTING



PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

BENT 119

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)
 (**QUANTITY INCLUDES ADJACENT REPAIRS)



DocuSigned by:
 Eric B. Nelson, Jr.
 7/14/2022

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 119

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 120

CAP/FOOTING REPAIRS					
SHOTCRETE REPAIRS	283.1 SF	141.6 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS					
PILE CONCRETE RESTORATION	7.6 SF	3.7 CF	SF	CF	
FRP PROTECTIVE SYSTEM AWL	- SF				
FRP PROTECTIVE SYSTEM BWL	205.2 SF				

FOR CAP REPAIRS: VALUES IN CHART REPRESENT ESTIMATED 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 REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

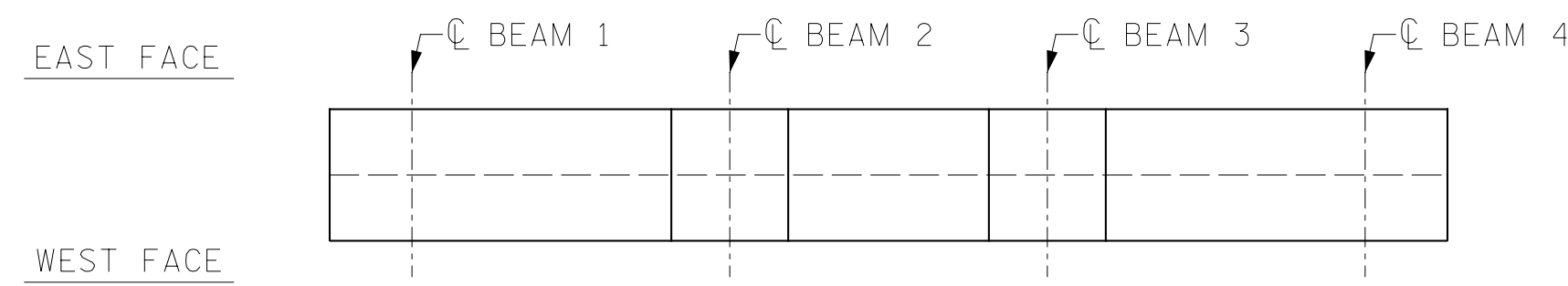
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

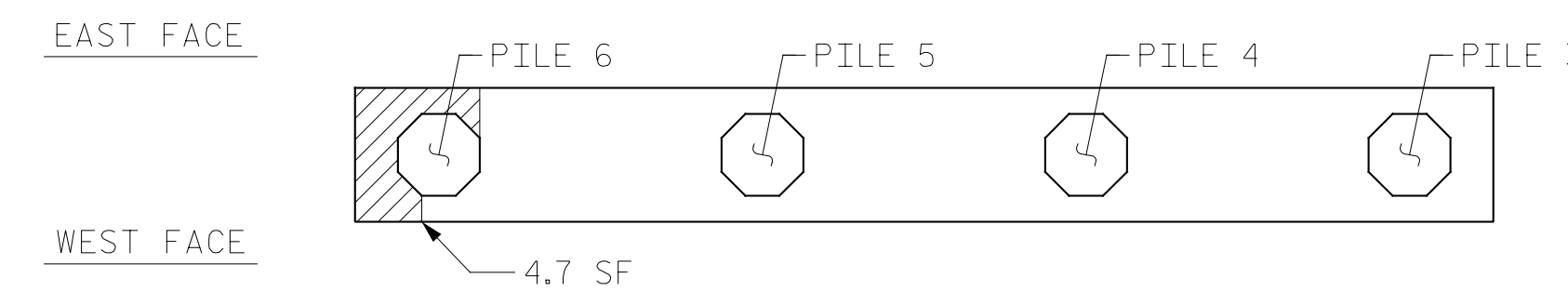
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

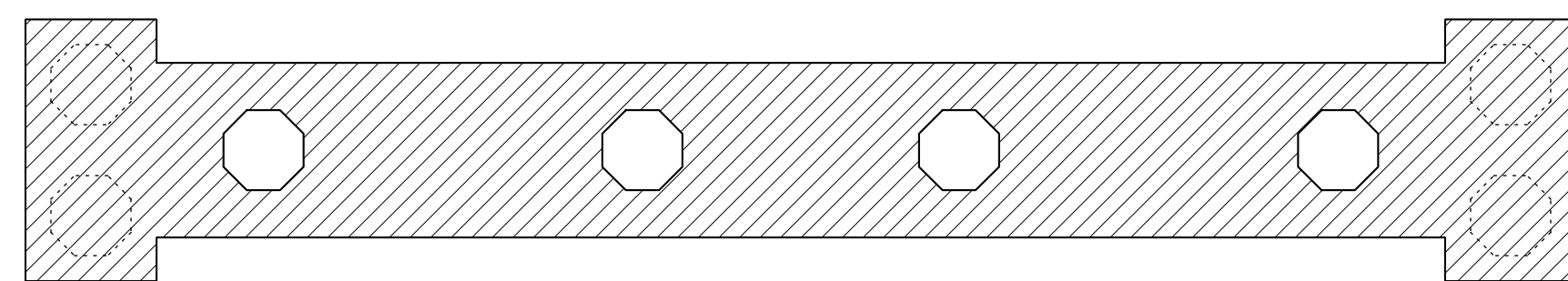
- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- PILE CONCRETE RESTORATION
- SHOTCRETE REPAIRS



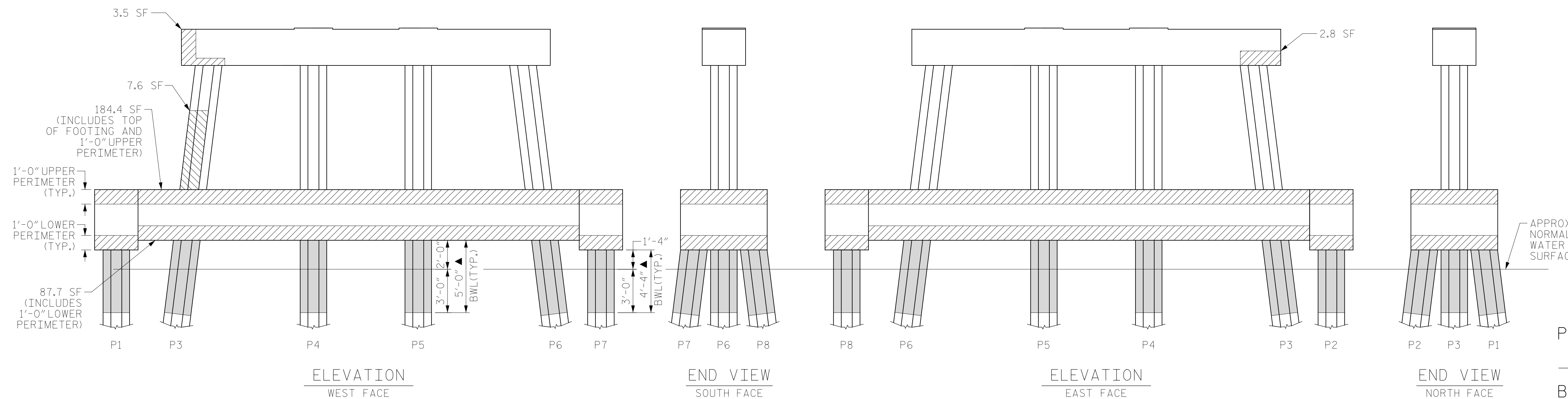
TOP OF CAP



BOTTOM OF CAP



TOP OF FOOTING



ELEVATION WEST FACE

END VIEW SOUTH FACE

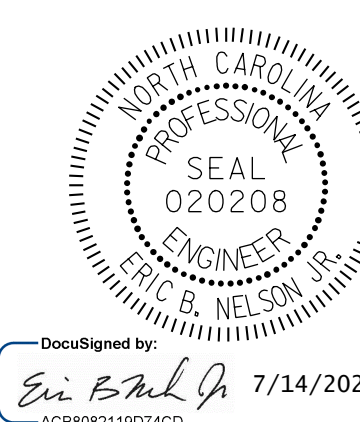
ELEVATION EAST FACE

END VIEW NORTH FACE

PROJECT NO. HB-0017
 DARE COUNTY
 BRIDGE NO. 270009

BENT 120

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



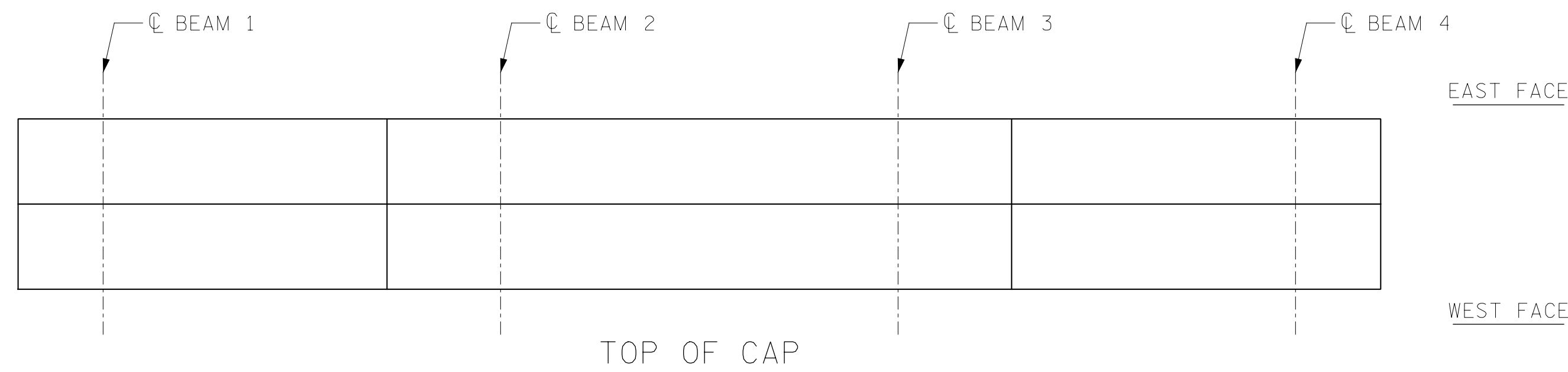
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 Eric B. Nelson, Jr.
 7/14/2022

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 120					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 355

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



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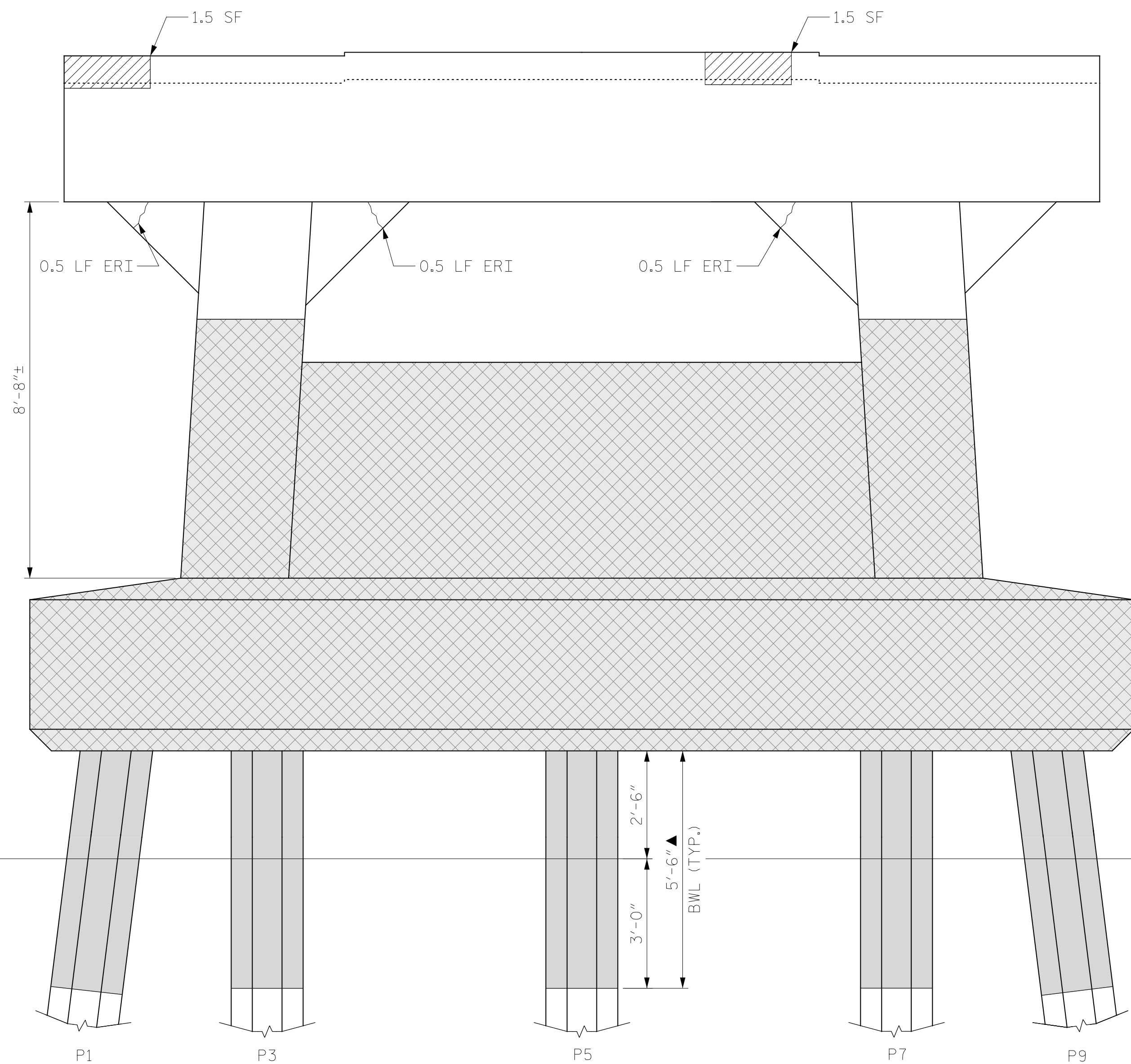


AS-BUILT REPAIR QUANTITY TABLE				
BENT 121				
CAP REPAIRS		ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	7.6 SF	3.8 CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
COLUMN REPAIRS		ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	1.6 SF	0.8 CF	SF	CF
EPOXY RESIN INJECTION	1.5 LF			LF
PILE REPAIRS		ESTIMATE		ACTUAL
FRP PROTECTIVE SYSTEM AWL	- SF			SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF			SF

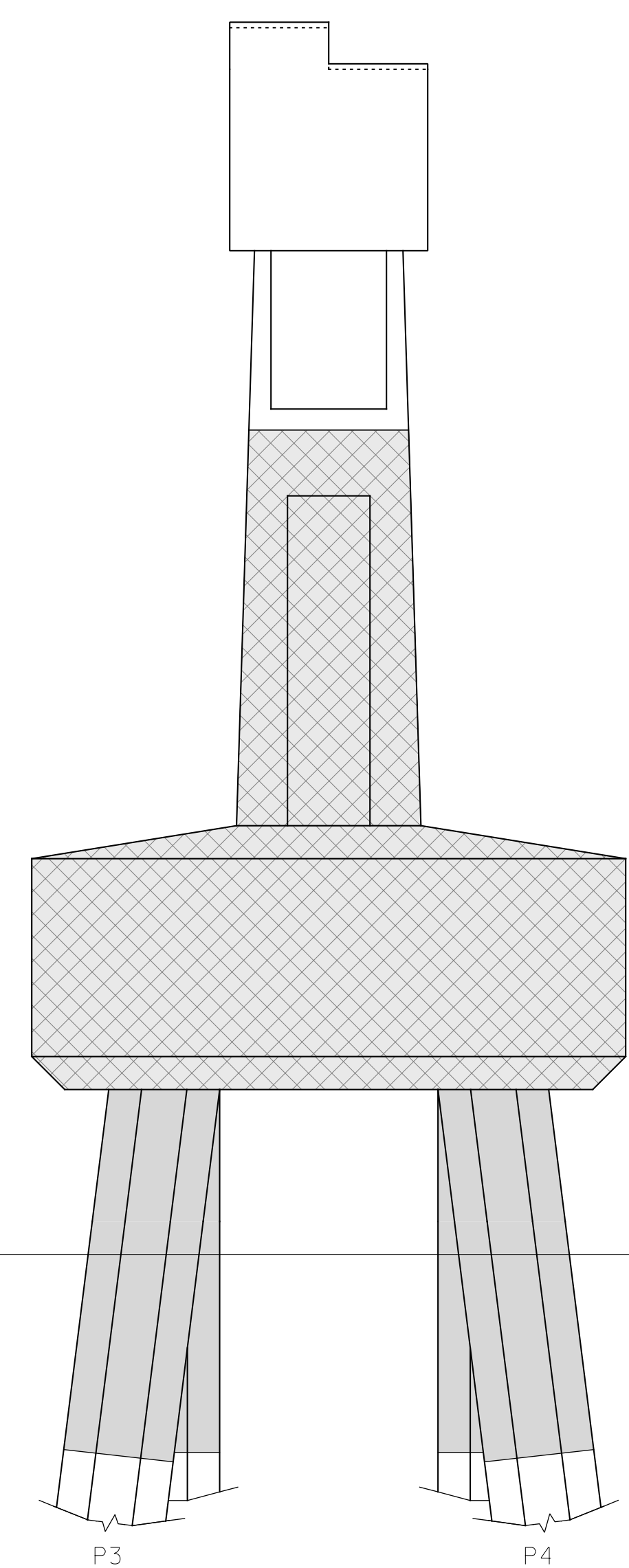
FOR CAP REPAIRS; VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.

NOTES:
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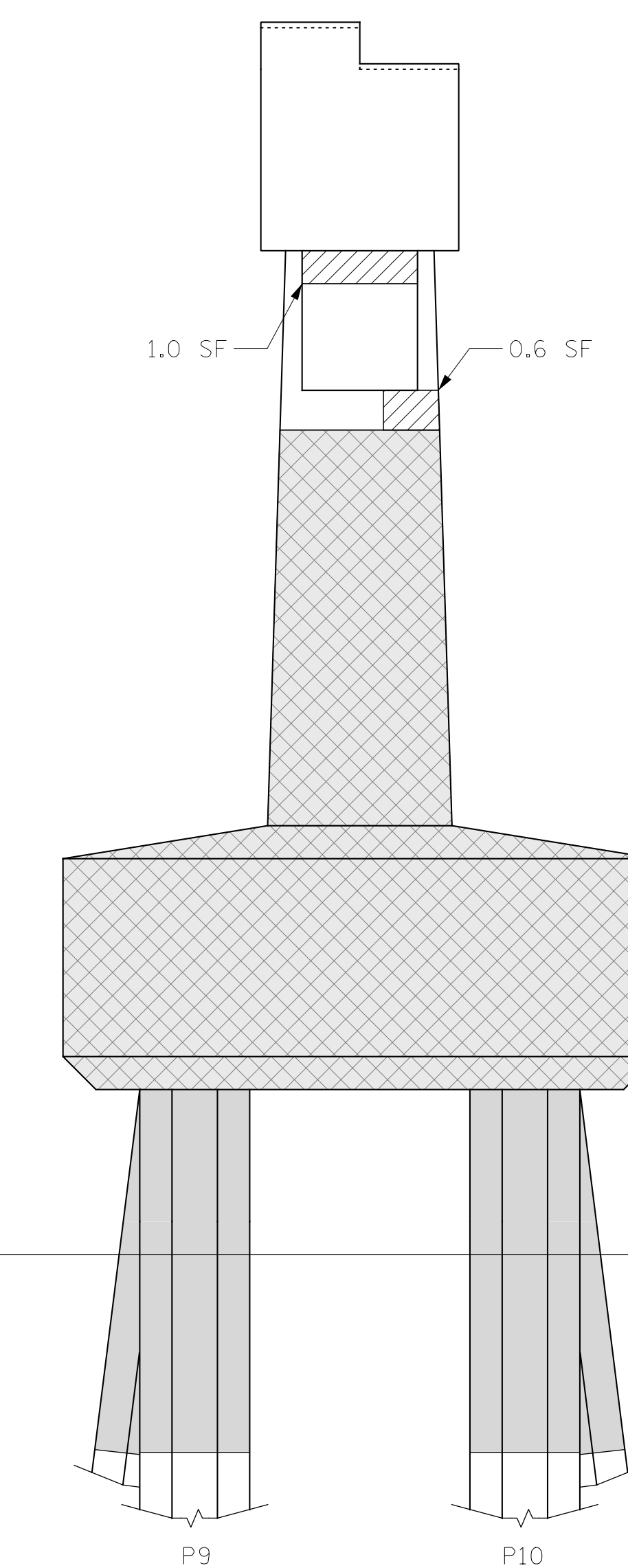
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
 FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
 FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



ELEVATION WEST FACE



INTERIOR VIEW SOUTH FACE COL.1



END VIEW SOUTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

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DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**BENT 121
 WEST FACE**

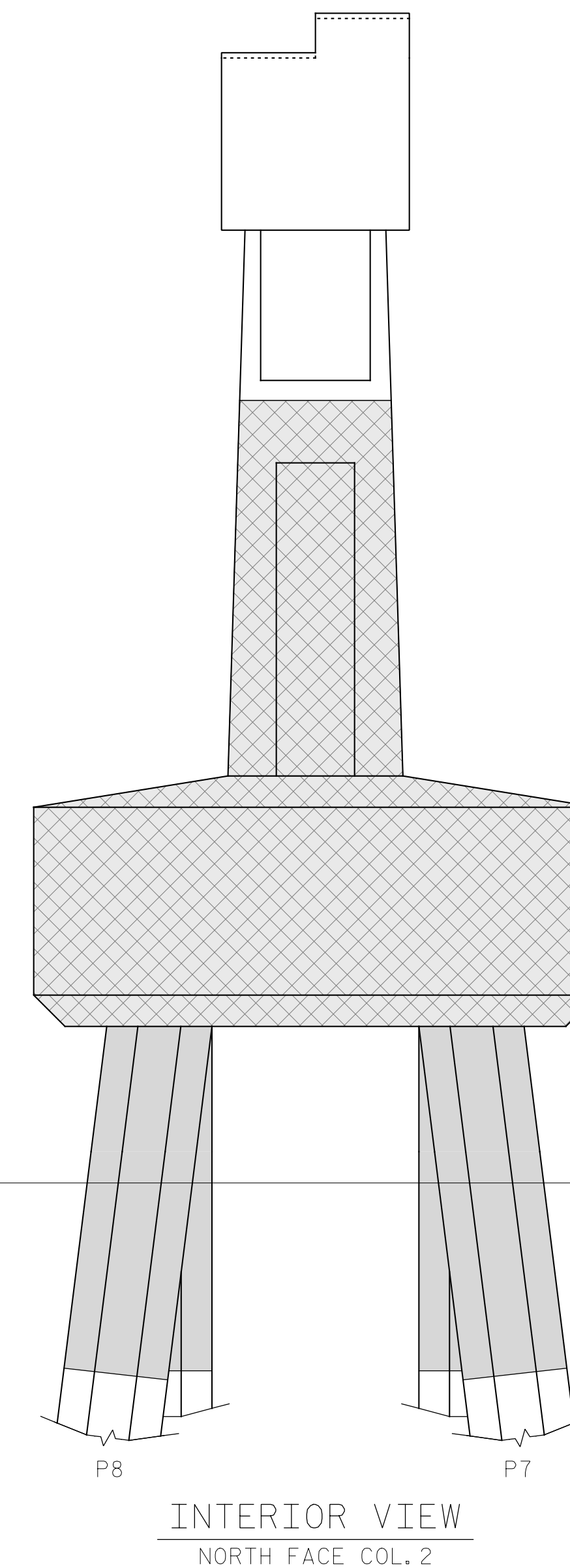
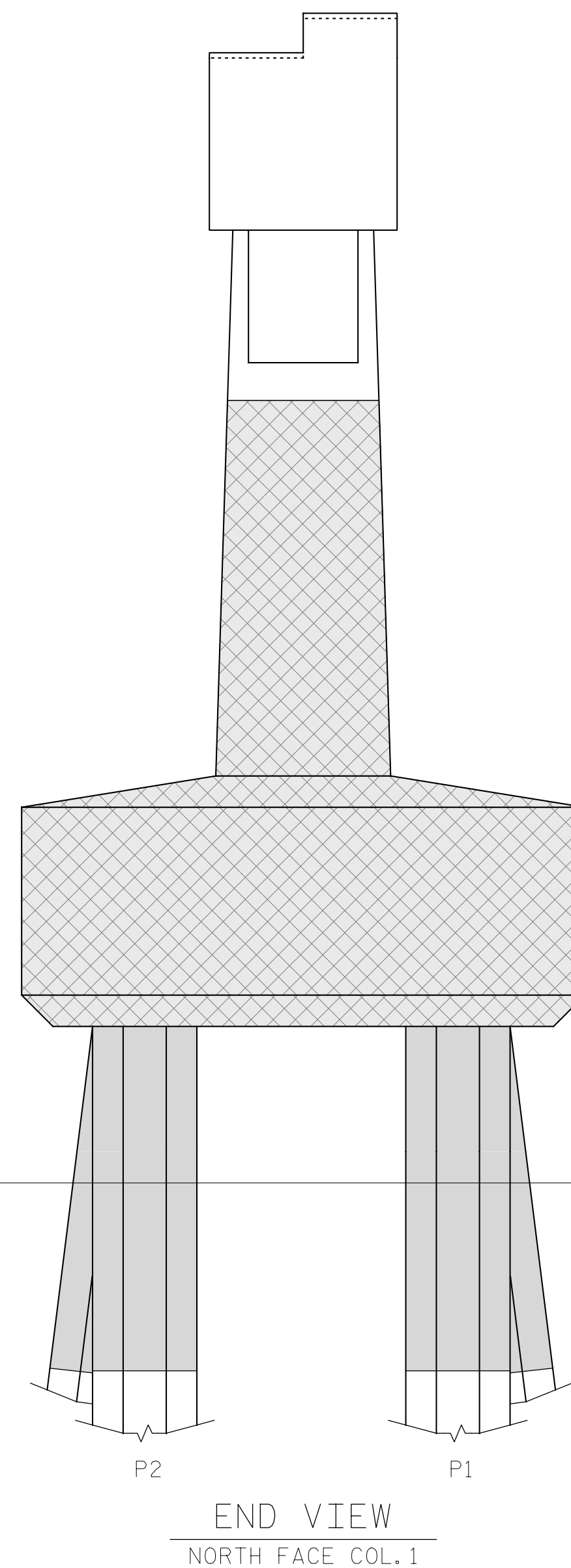
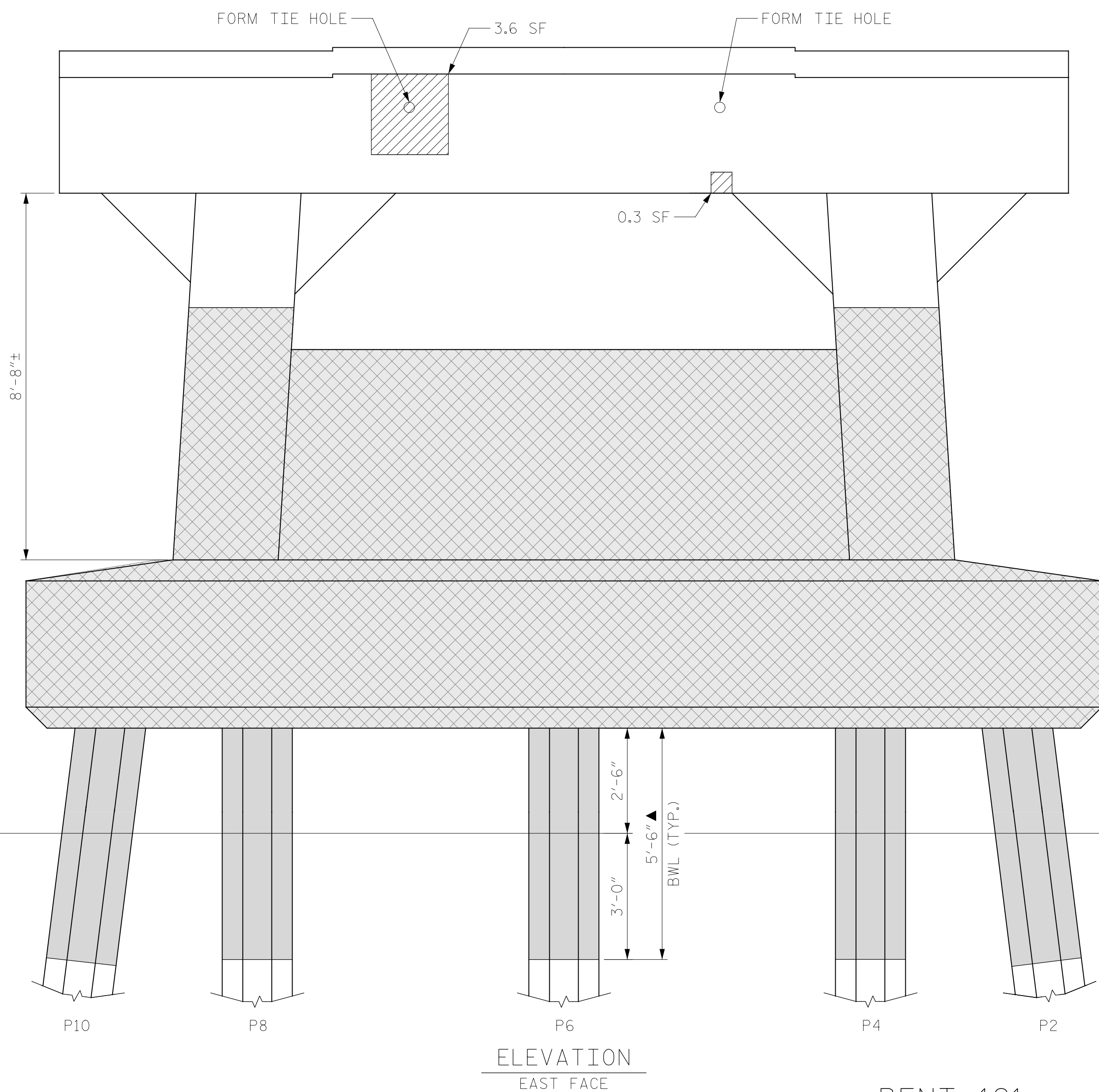
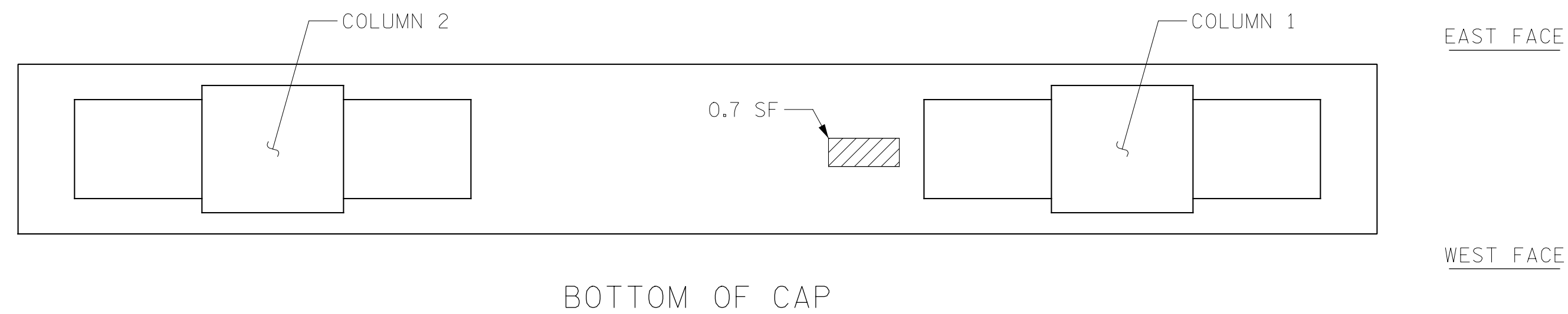
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 121
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

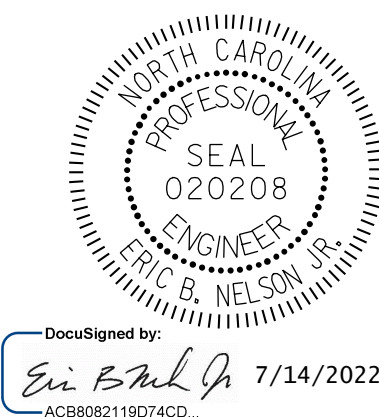


- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

APPROX. NORMAL WATER SURFACE



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 121
 EAST FACE**

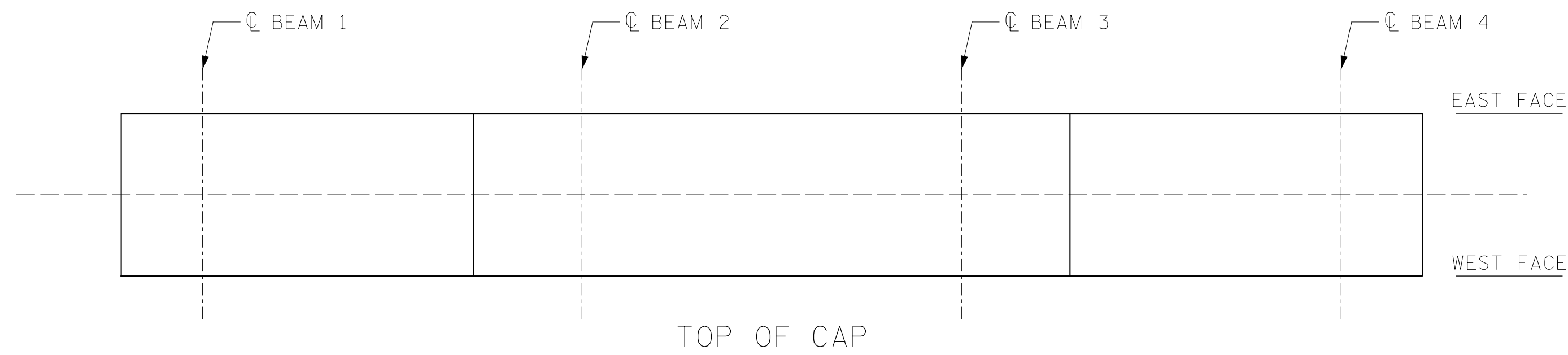
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 121
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			180
2			4			355



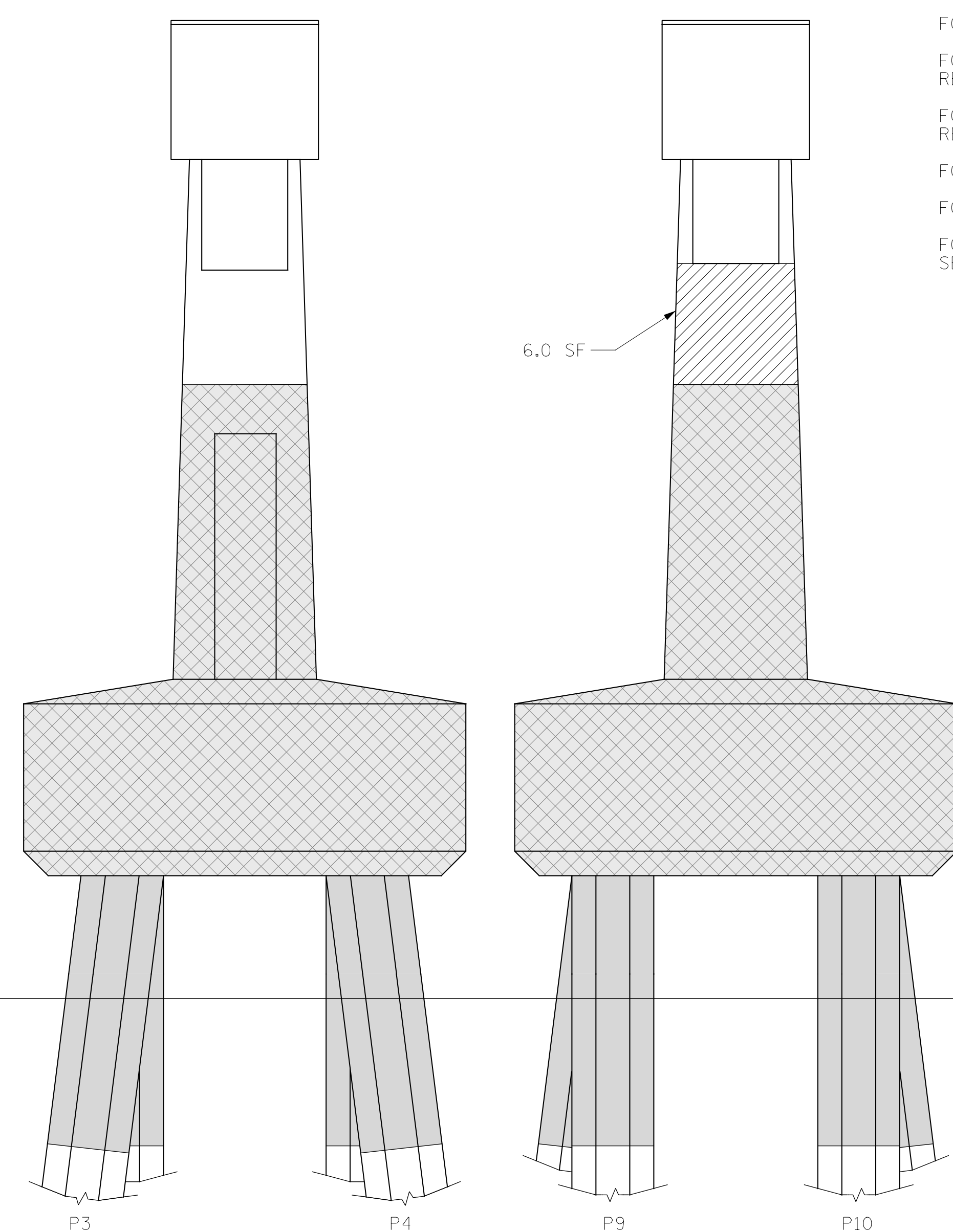
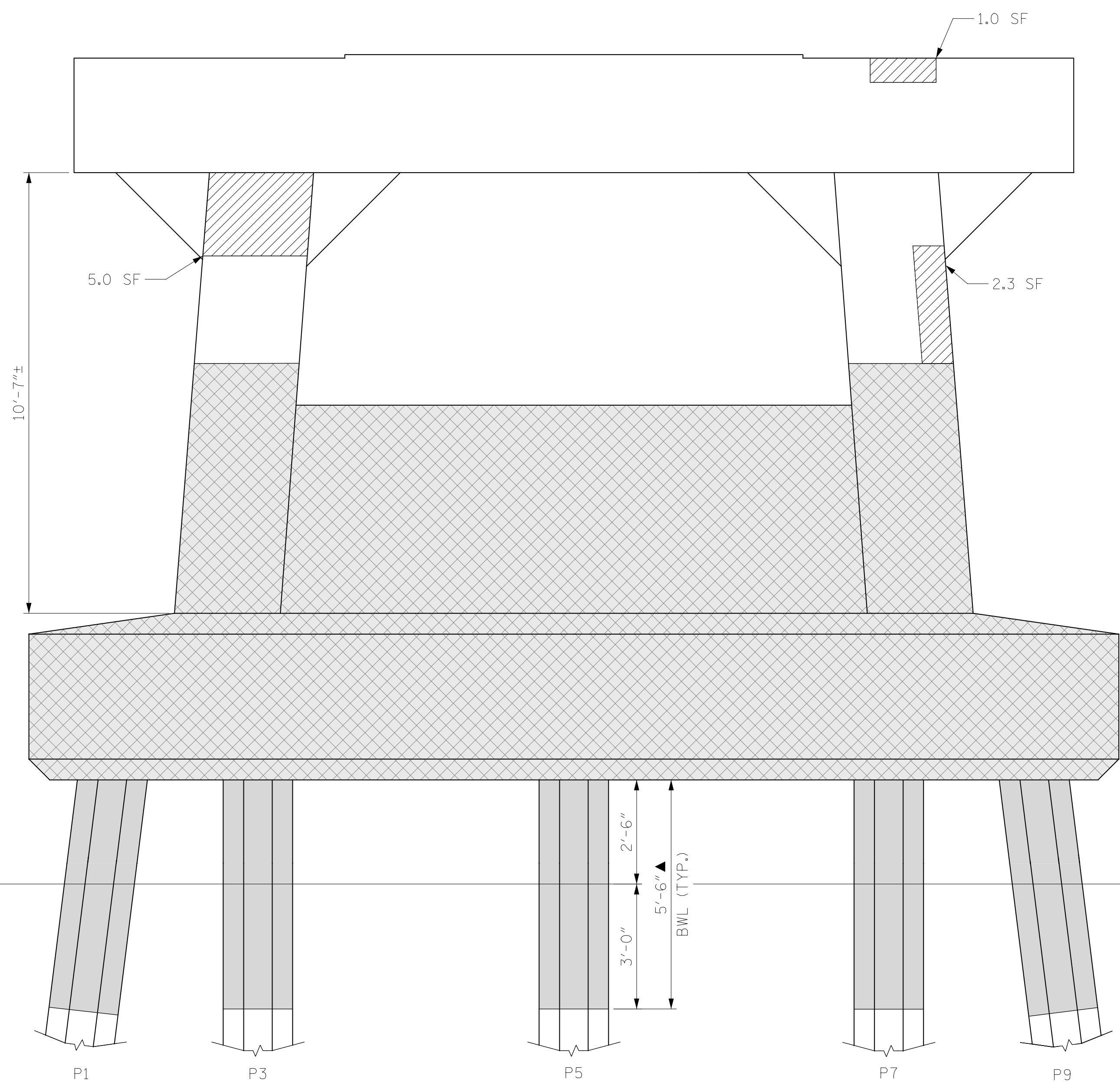
AS-BUILT REPAIR QUANTITY TABLE BENT 122

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	5.7 SF	2.9 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	32.4 SF	16.2 SF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF				SF

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

NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
 FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
 FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOT - SHOTCRETE REPAIRS
- PILE - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 122 WEST FACE

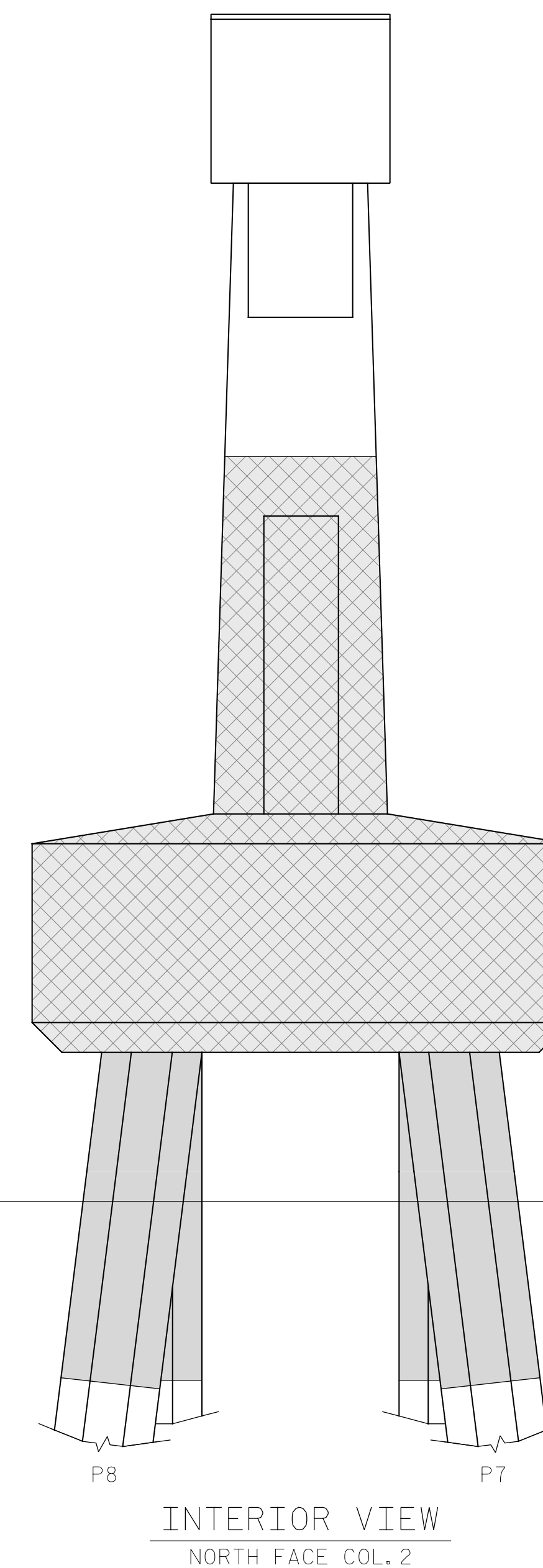
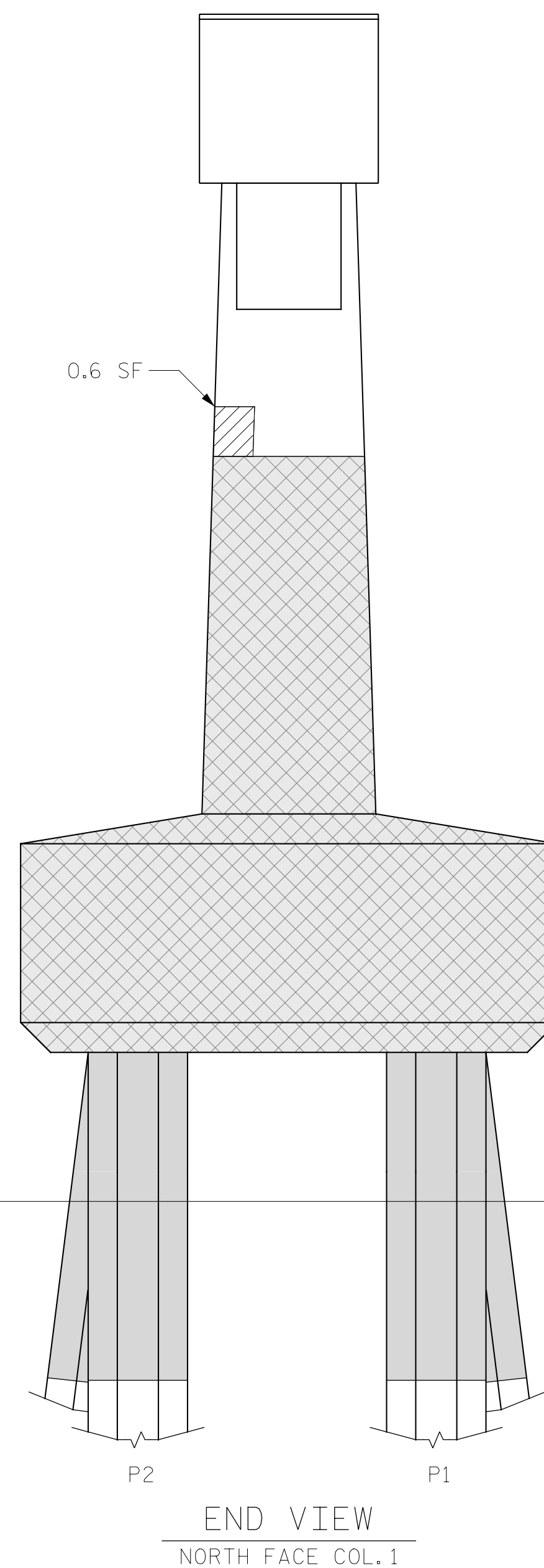
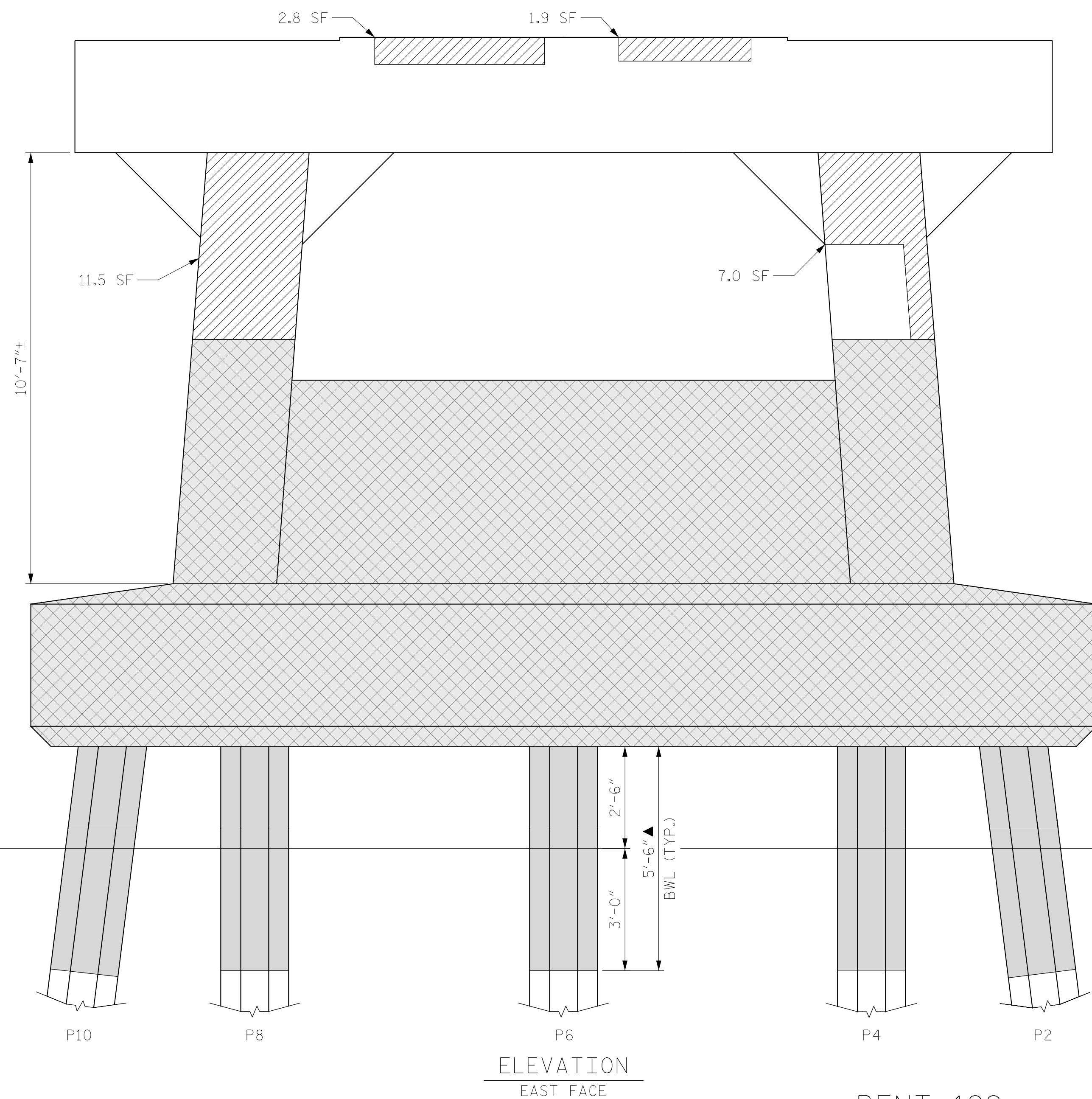
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 122
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			



- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
 DARE COUNTY
 BRIDGE NO. 270009

APPROX. NORMAL WATER SURFACE

DocuSigned by:
Eric B. Nelson Jr. 7/14/2022
 AC8802119716CD...



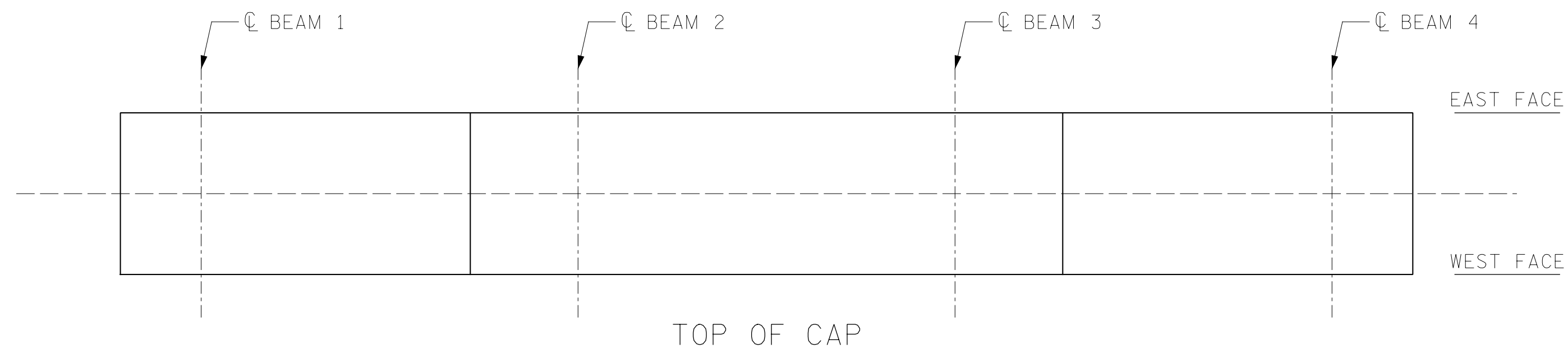
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
BENT 122 EAST FACE						S-182
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	355
1			3			
2			4			

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019

BENT 122
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

GANNETT FLEMING
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

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AS-BUILT REPAIR QUANTITY TABLE

BENT 123

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	16.4 SF	8.2 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	5.9 SF	3.0 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF				SF

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

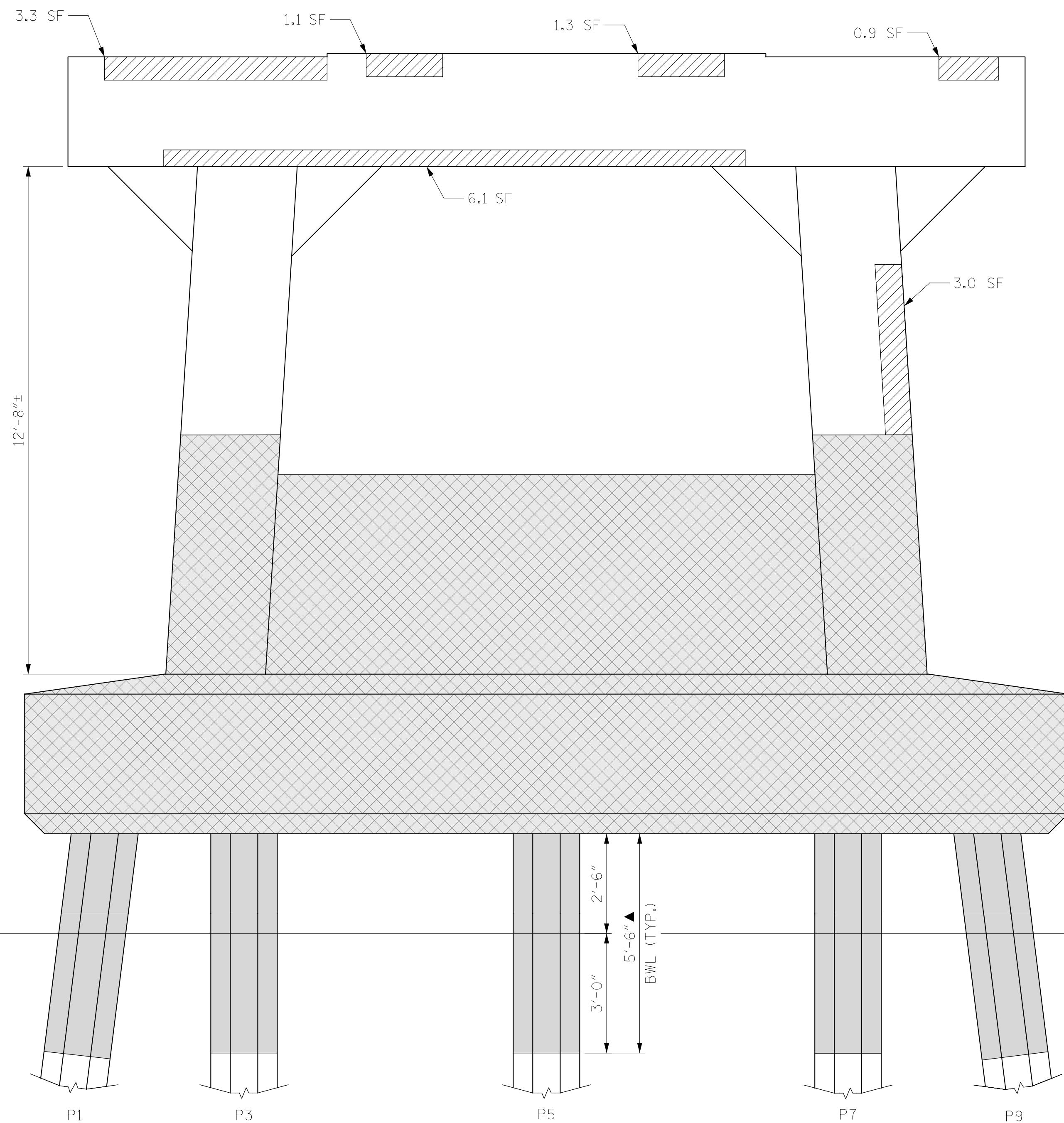
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

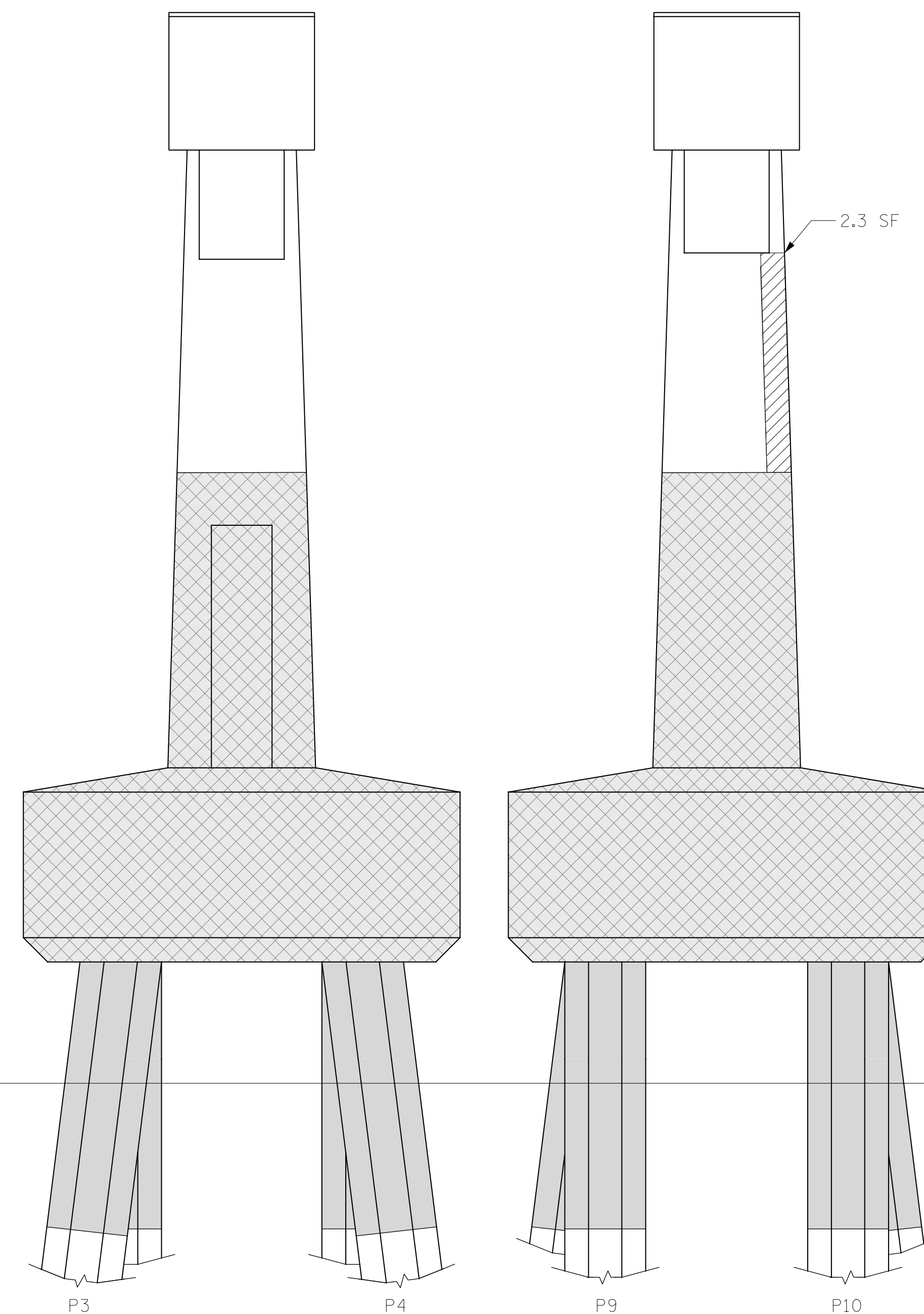
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1

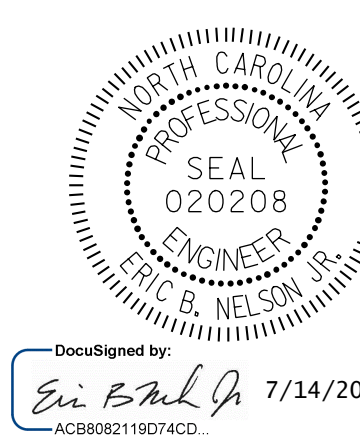
END VIEW
SOUTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

APPROX. NORMAL WATER SURFACE

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 123 WEST FACE

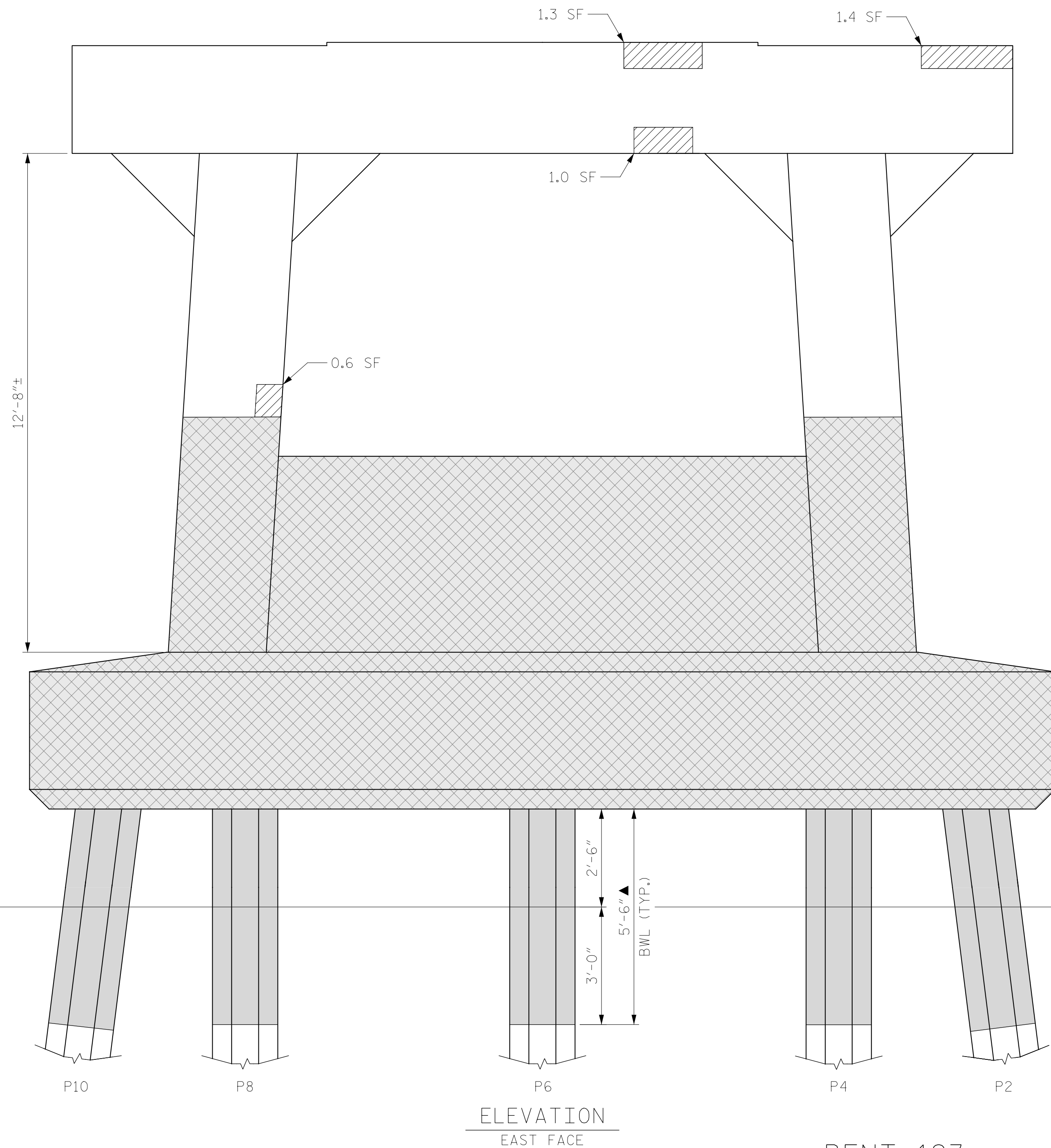
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 123
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

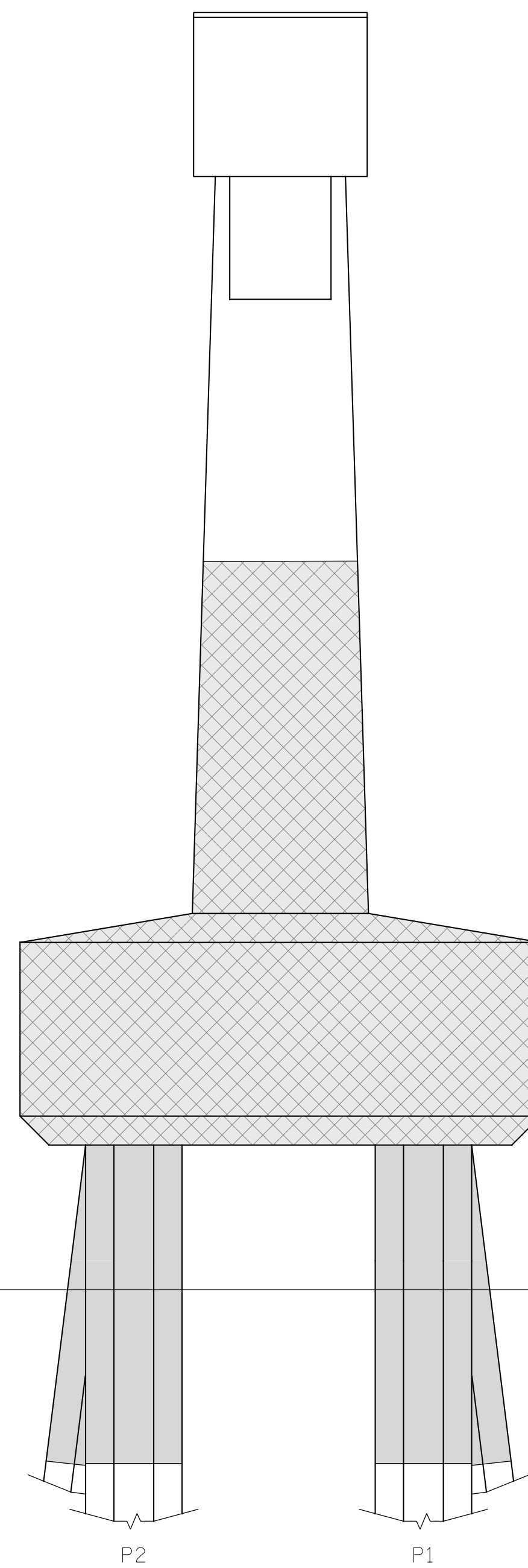
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			



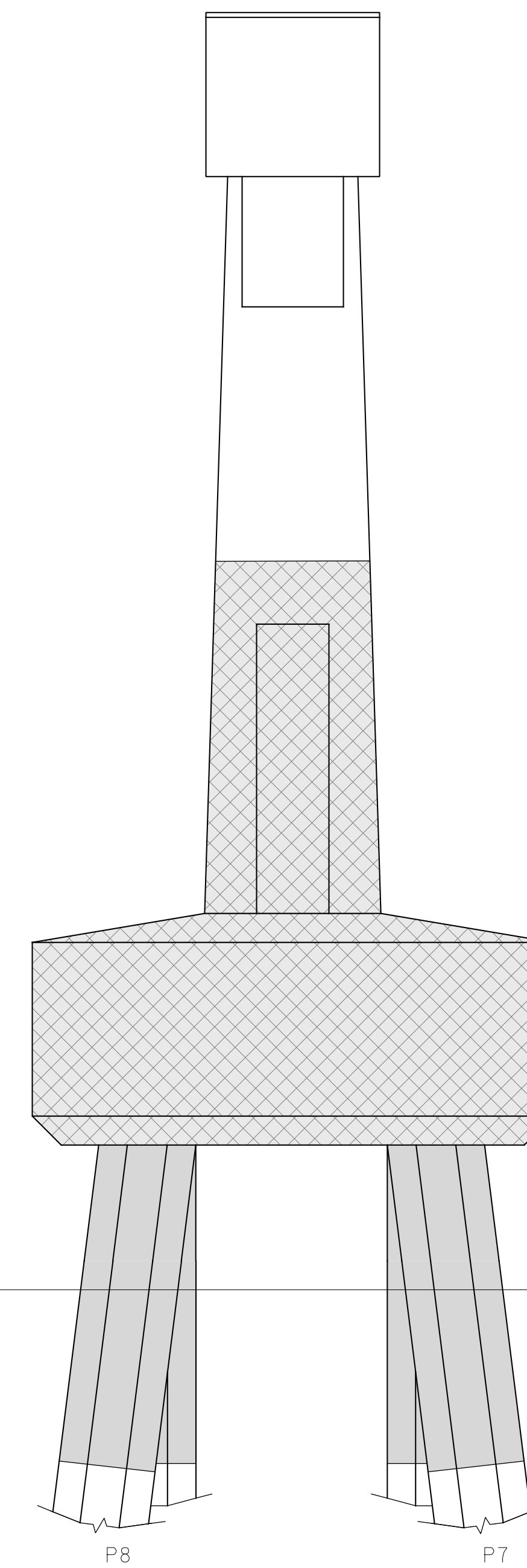
ELEVATION
EAST FACE

BENT 123

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)



END VIEW
NORTH FACE COL. 1



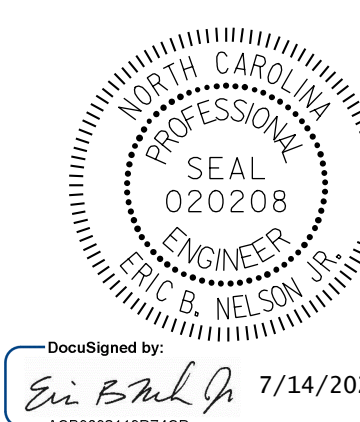
INTERIOR VIEW
NORTH FACE COL. 2

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

APPROX. NORMAL WATER SURFACE

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



DocuSigned by:
Eric B. Nelson, Jr. 7/14/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

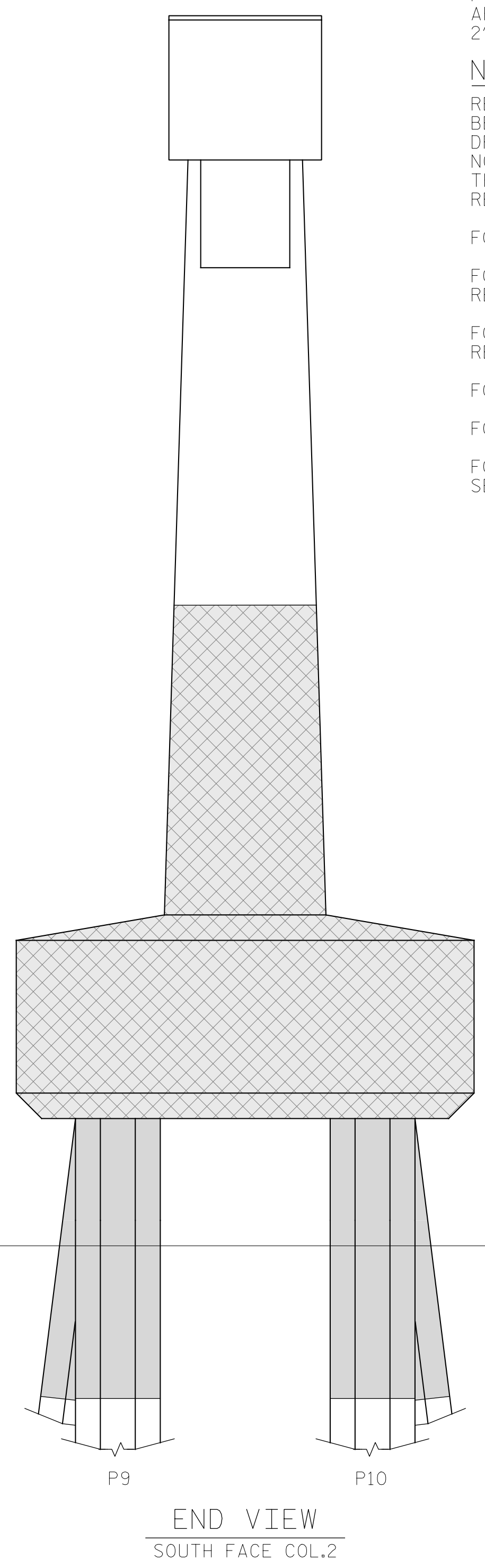
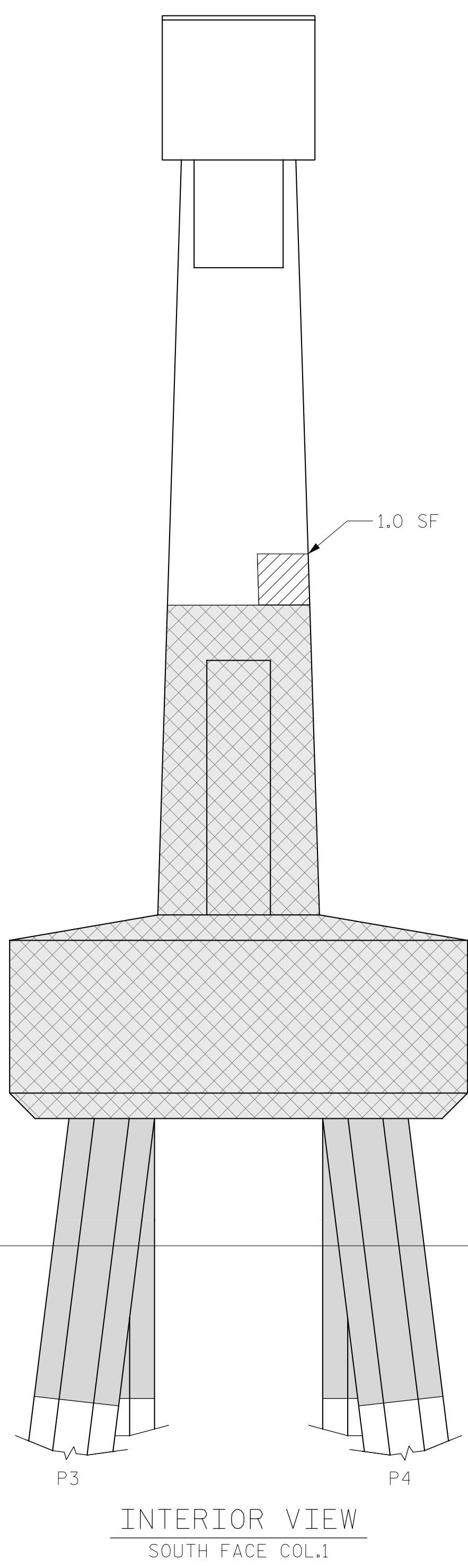
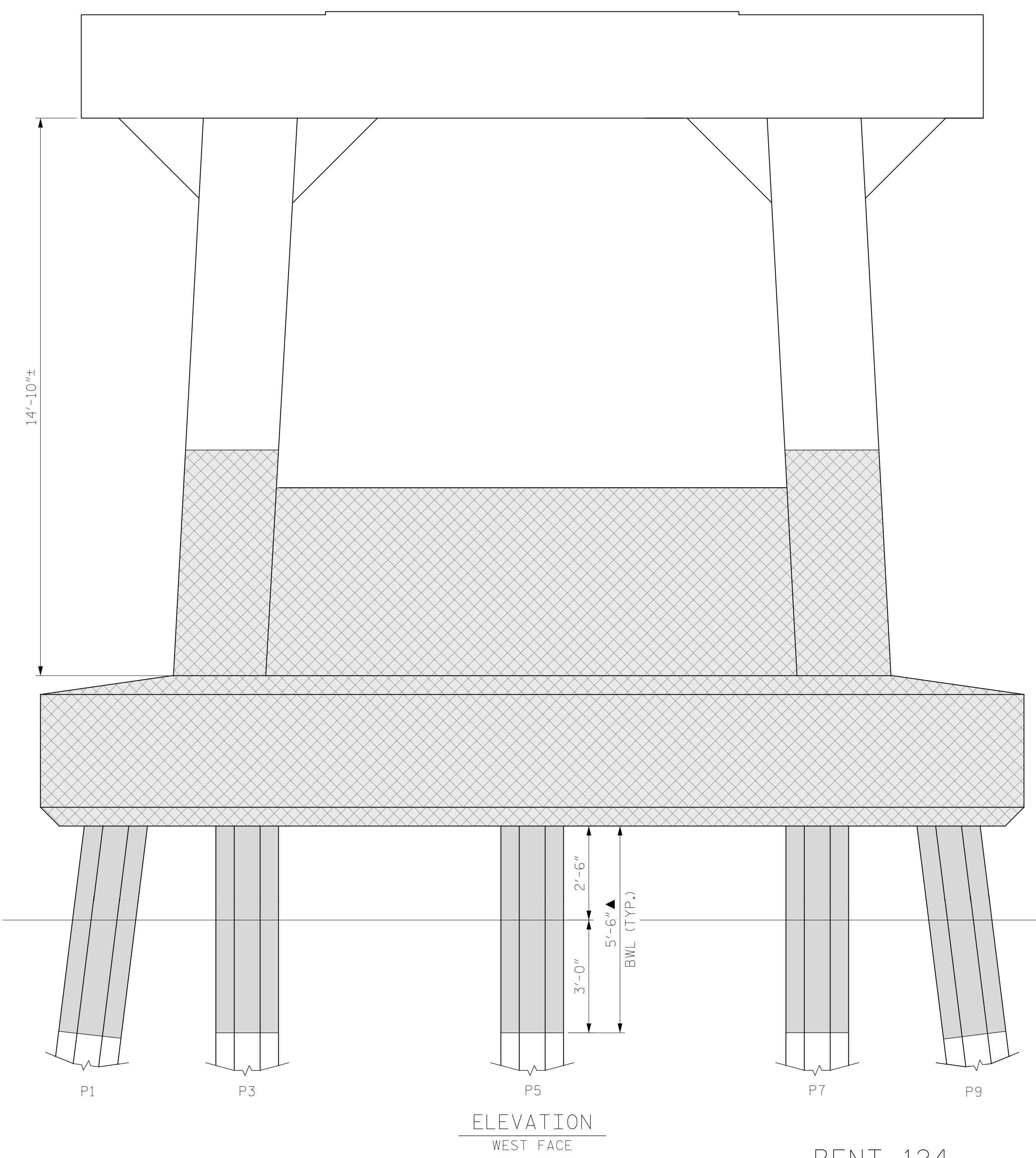
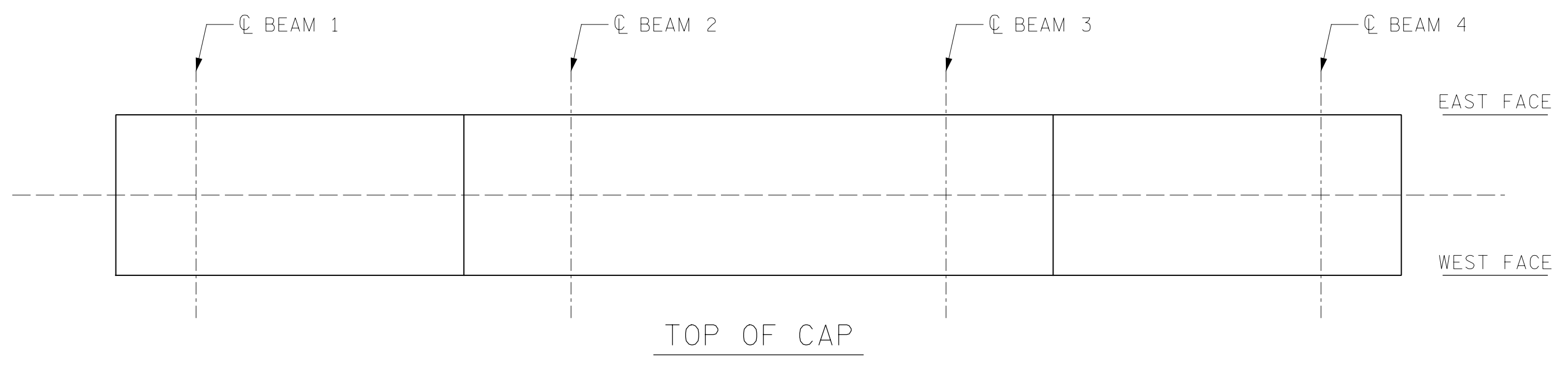
BENT 123
EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
CHECKED BY : J. FARNHAM DATE : 5/2019



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-184
2			4			355



AS-BUILT REPAIR QUANTITY TABLE BENT 124

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	2.8 SF	1.4 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	7.6 SF	3.8 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF				SF

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

NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
 FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
 FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

APPROX. NORMAL WATER SURFACE



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 124 WEST FACE

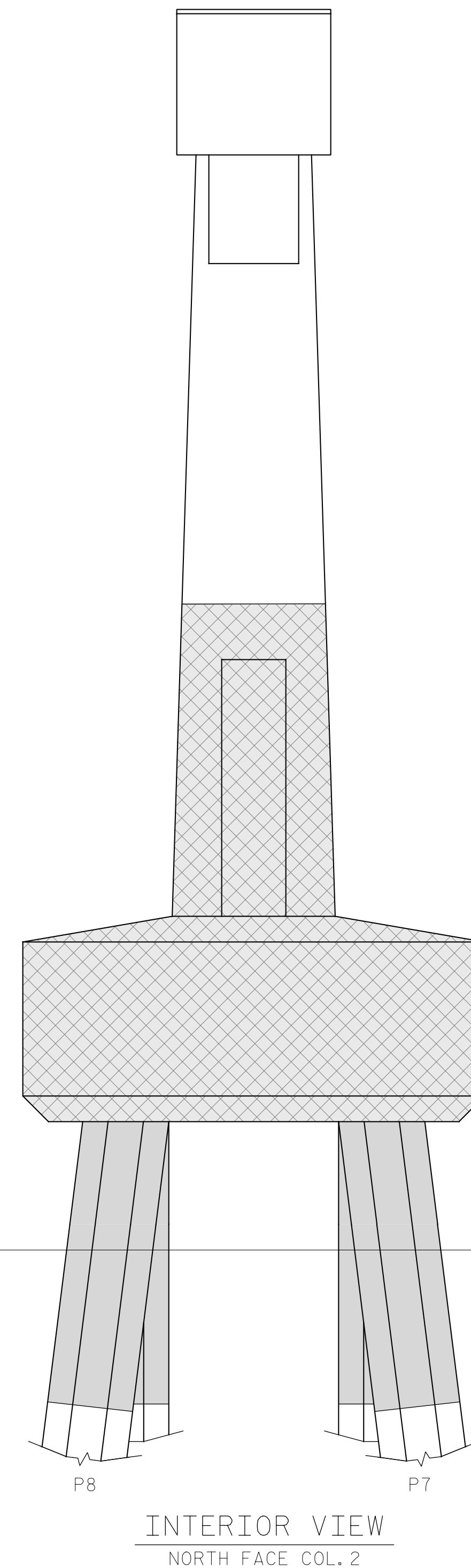
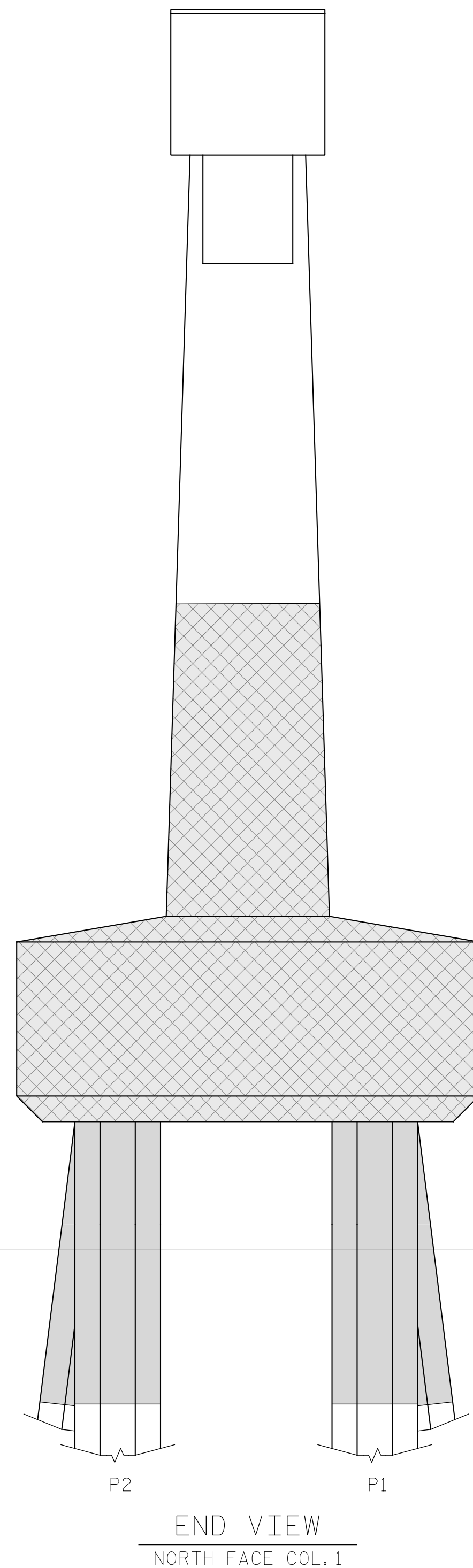
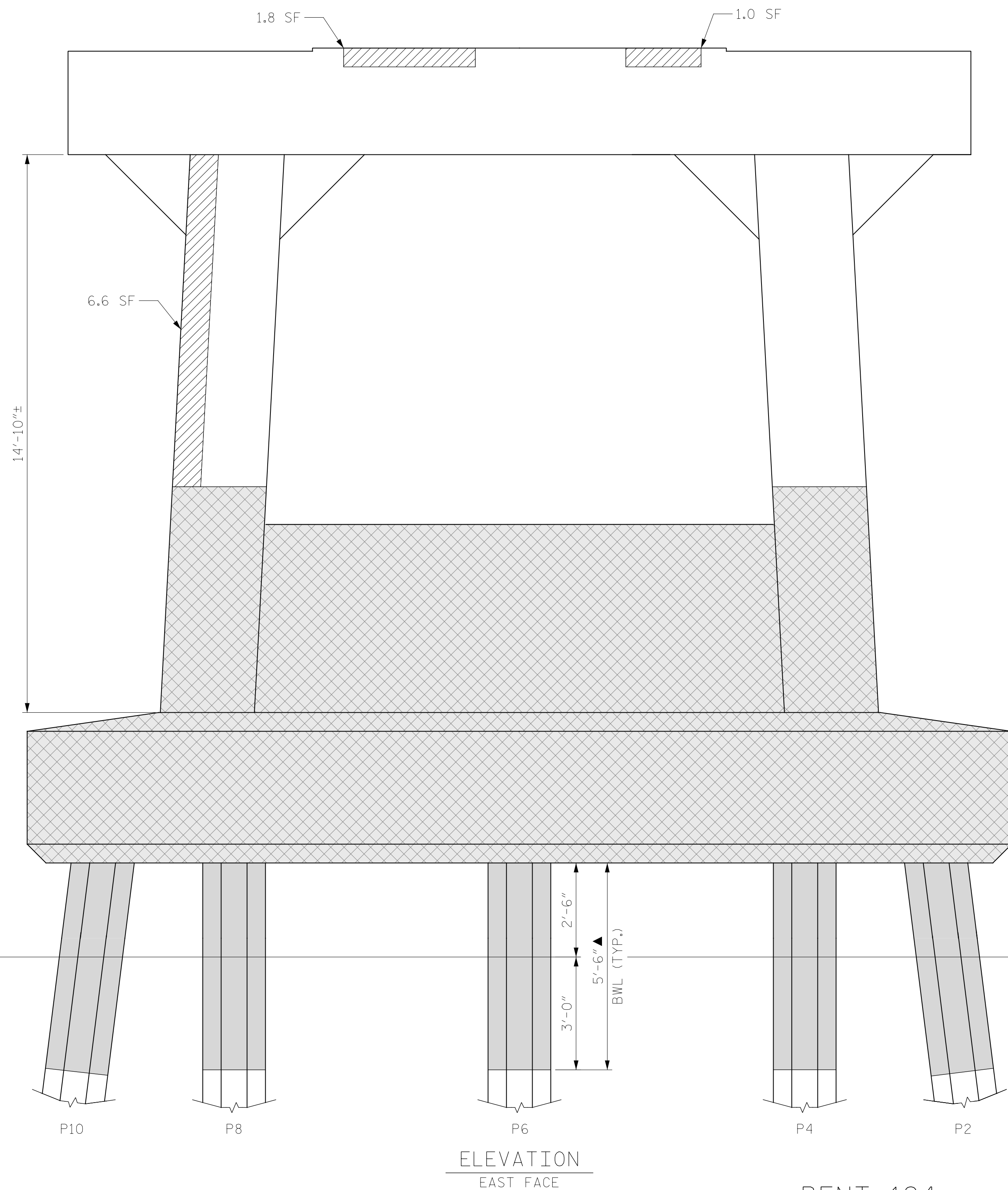
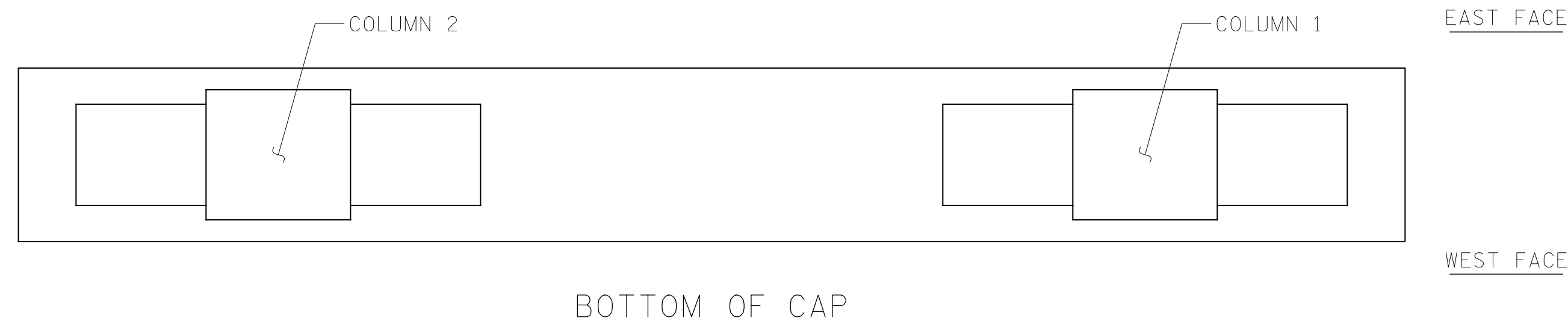
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 124
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

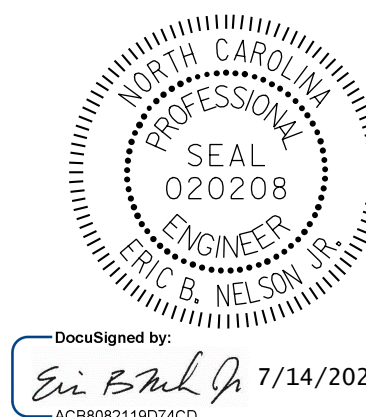


- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

APPROX. NORMAL WATER SURFACE

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 124
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 124
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

GANNETT FLEMING
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-186
2			4			355

AS-BUILT REPAIR QUANTITY TABLE BENT 125

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	5.8 SF	2.9 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	3.2 SF	1.6 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF				SF

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

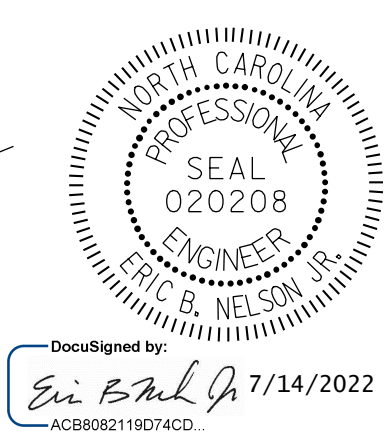
NOTES:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

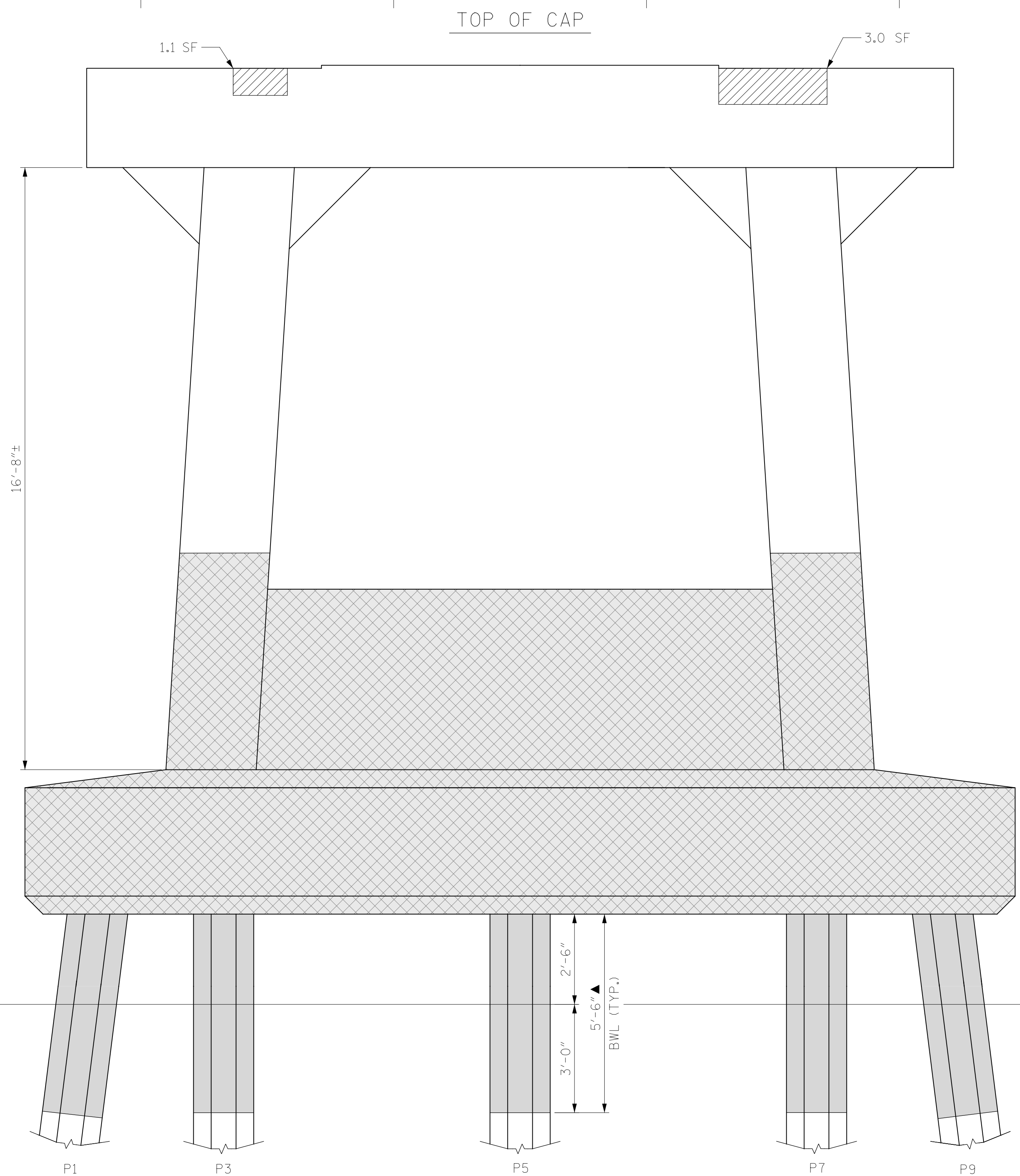
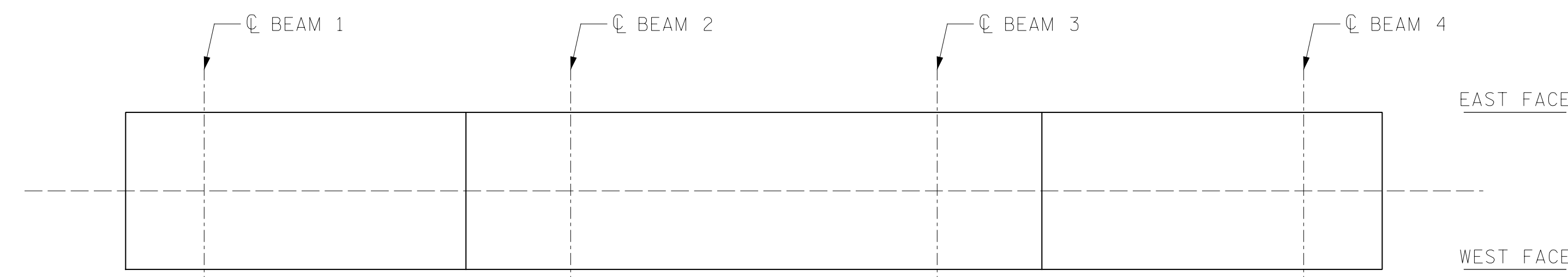
- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

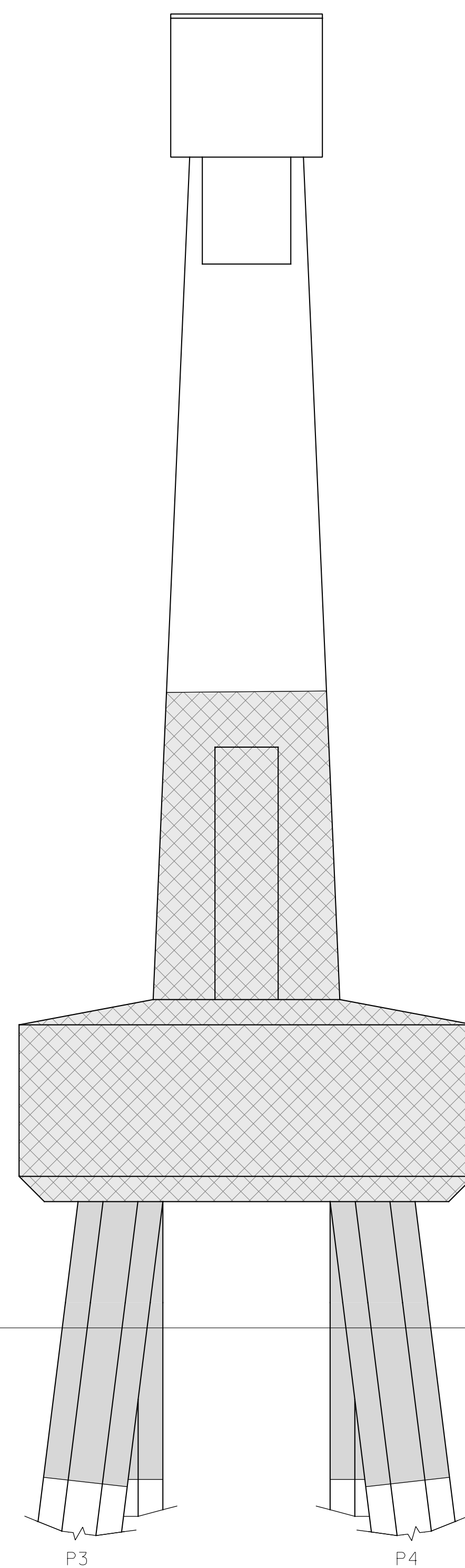
PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



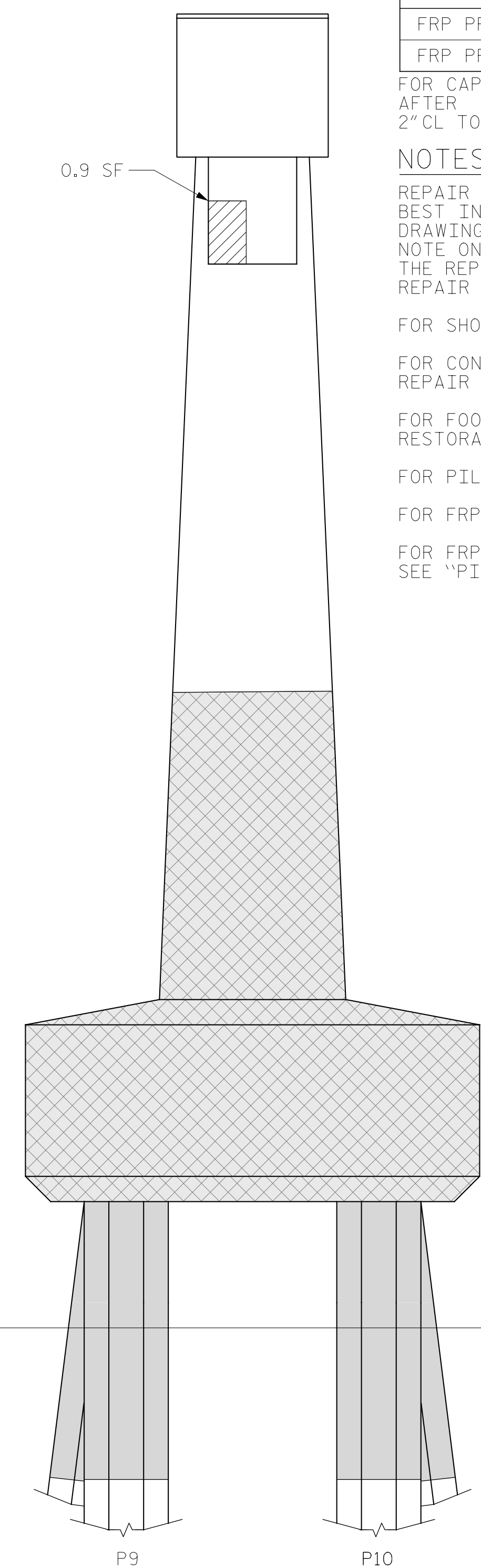
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 125 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



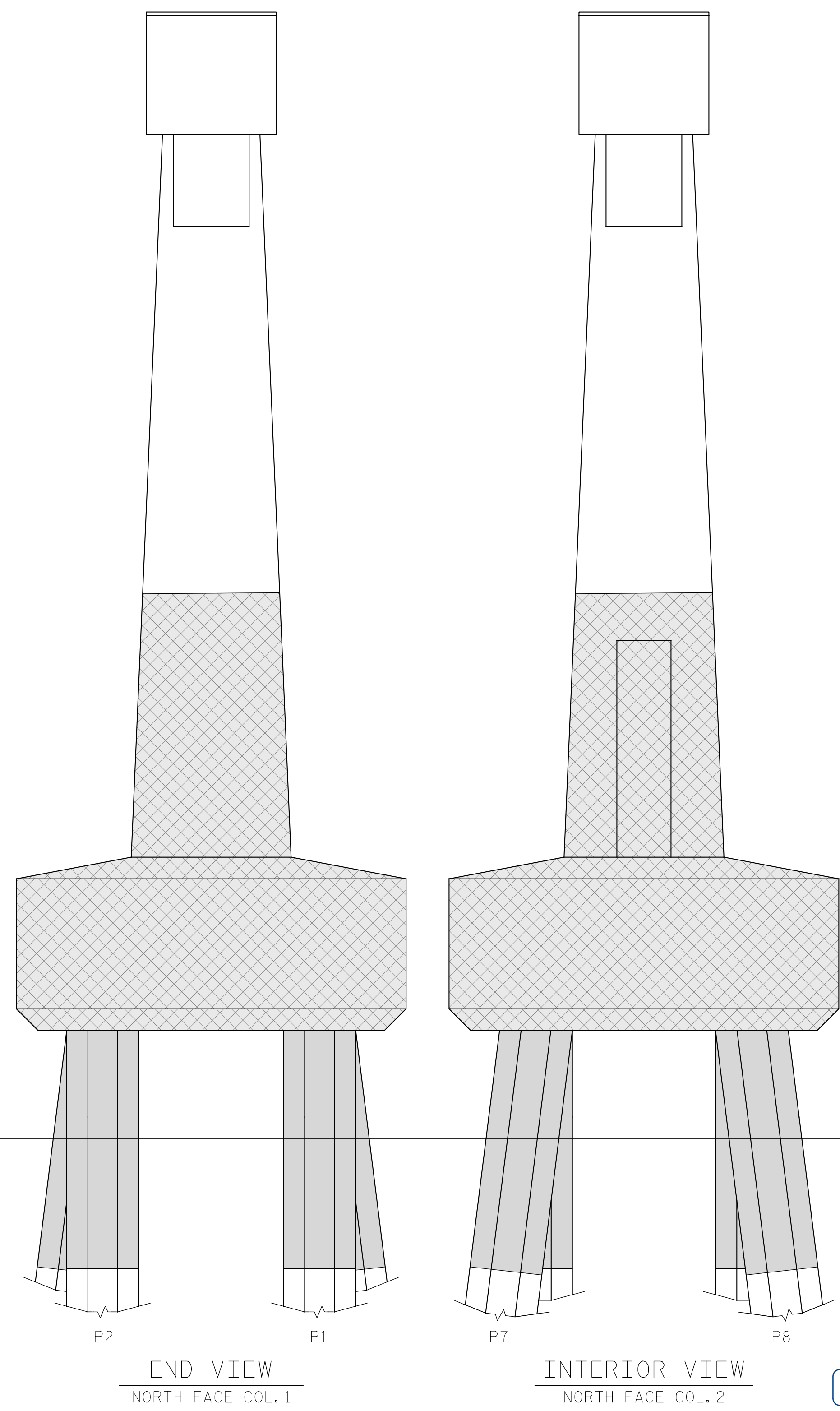
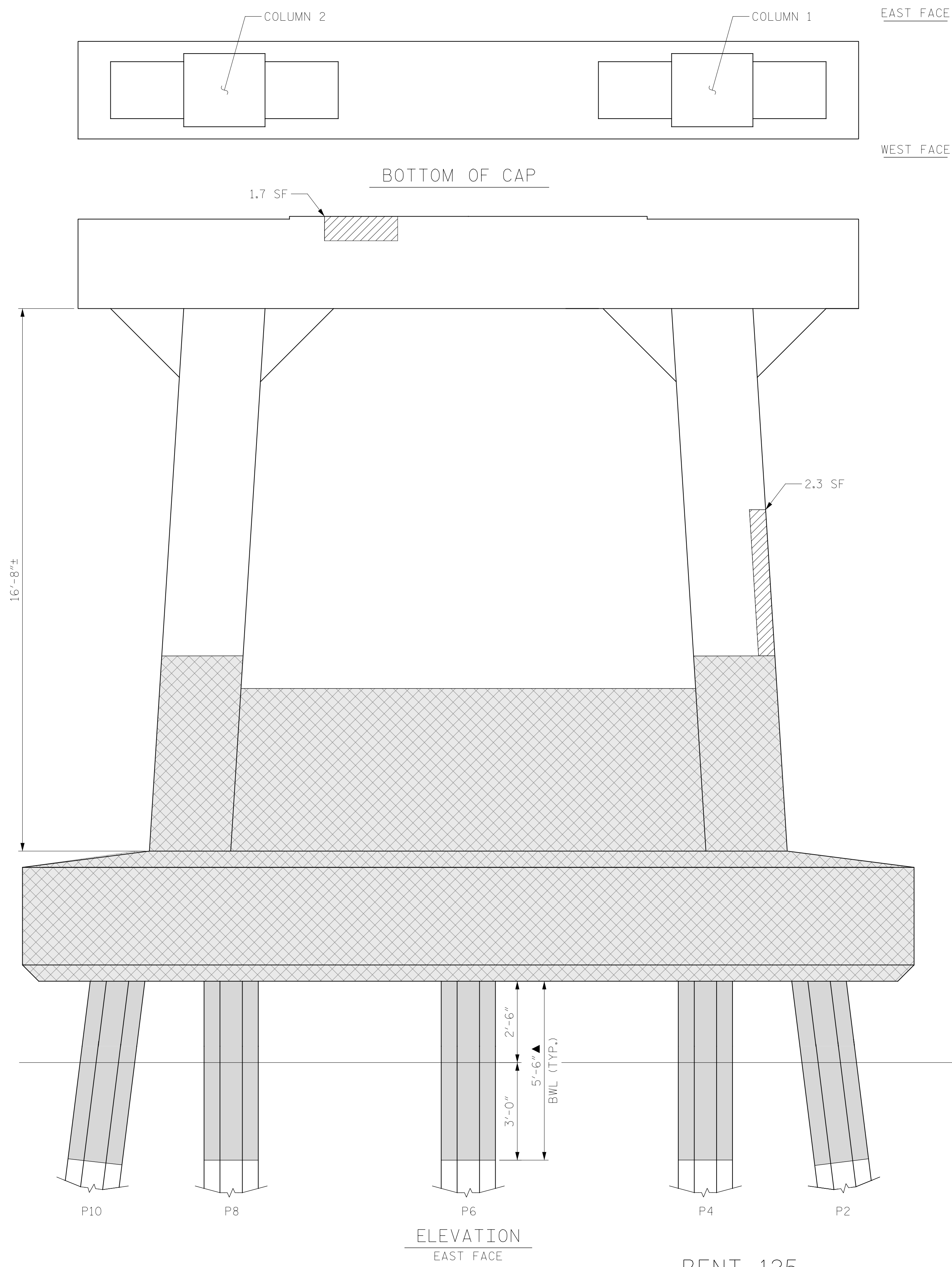
END VIEW
SOUTH FACE COL.2

BENT 125
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: J. FARNHAM DATE: 5/2019



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 125
 EAST FACE

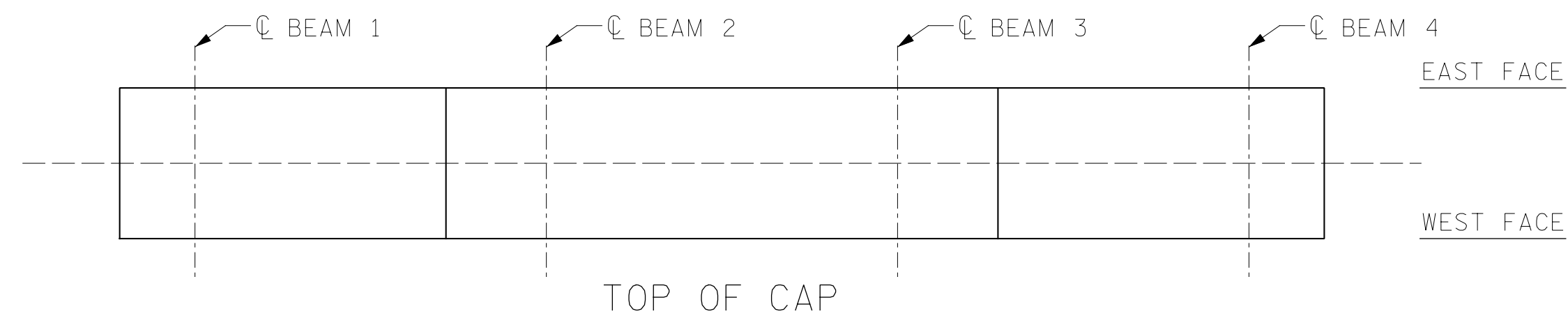
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 125
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-188
2			4			355



AS-BUILT REPAIR QUANTITY TABLE BENT 126

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	6.2 SF	3.1 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	11.3 SF	5.7 CF	SF	CF	
EPOXY RESIN INJECTION	1.0 LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF				SF

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

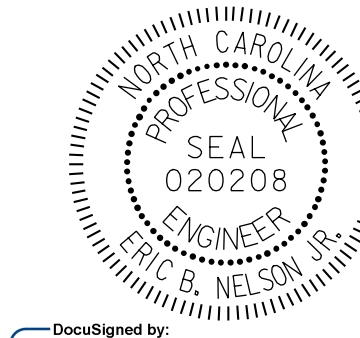
- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

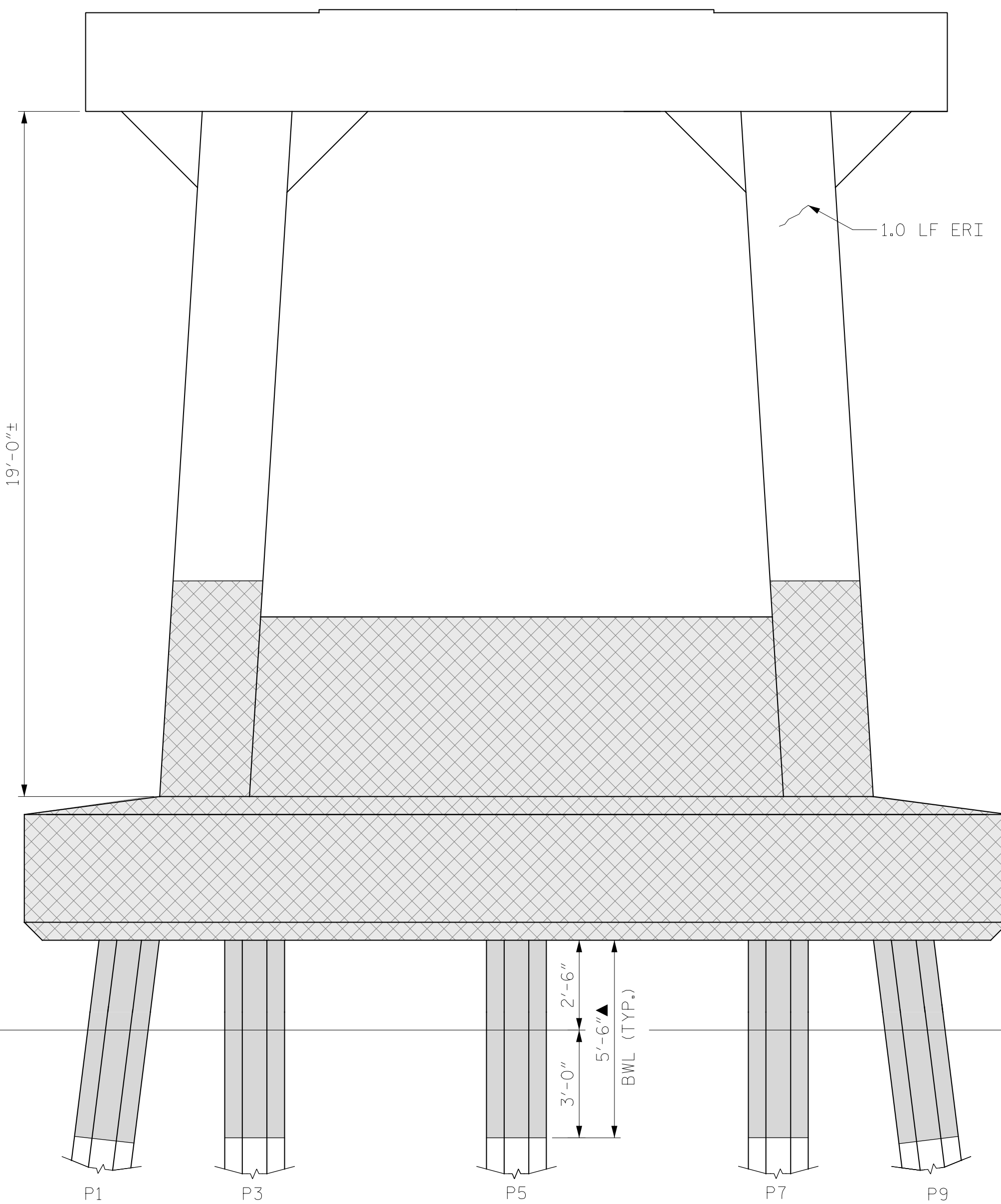
BENT 126
 WEST FACE



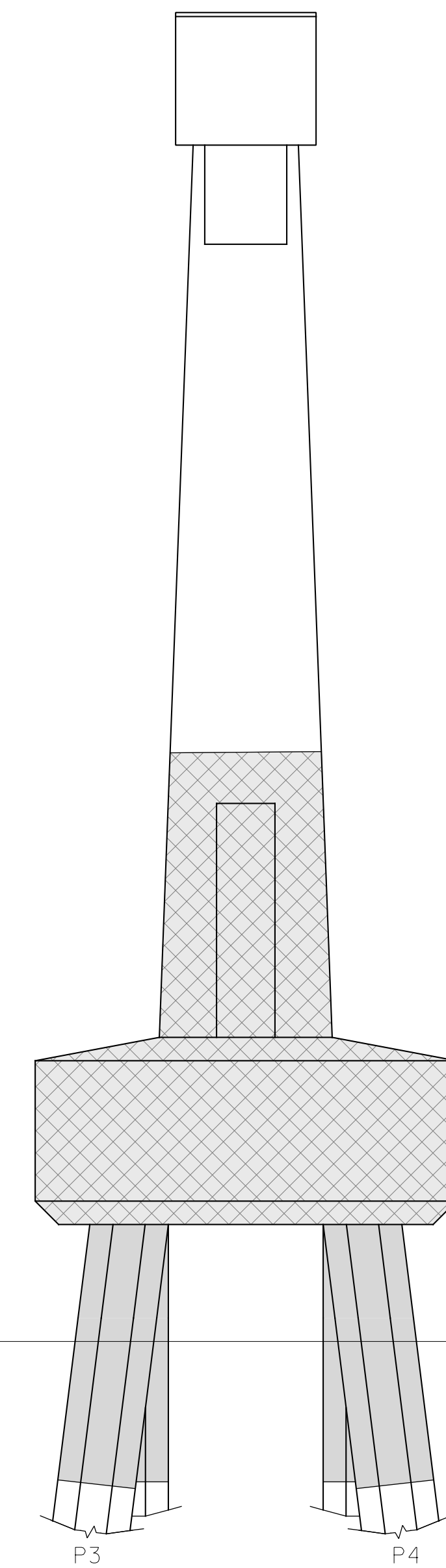
DocuSigned by:
Eric B. Nelson, Jr. 7/14/2022
 AC880211907ACD...

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

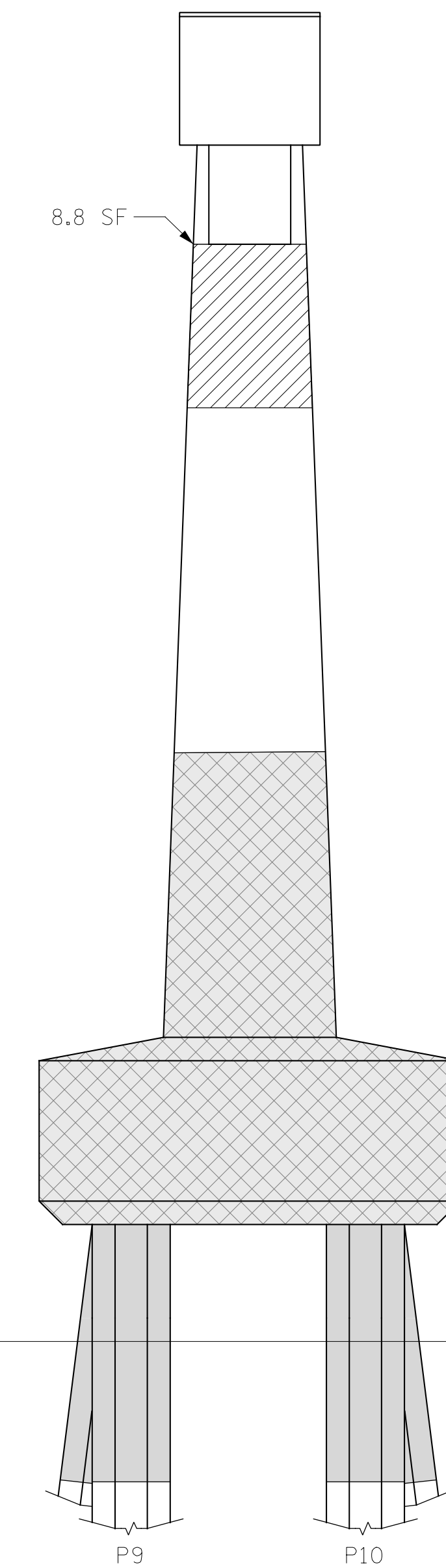
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



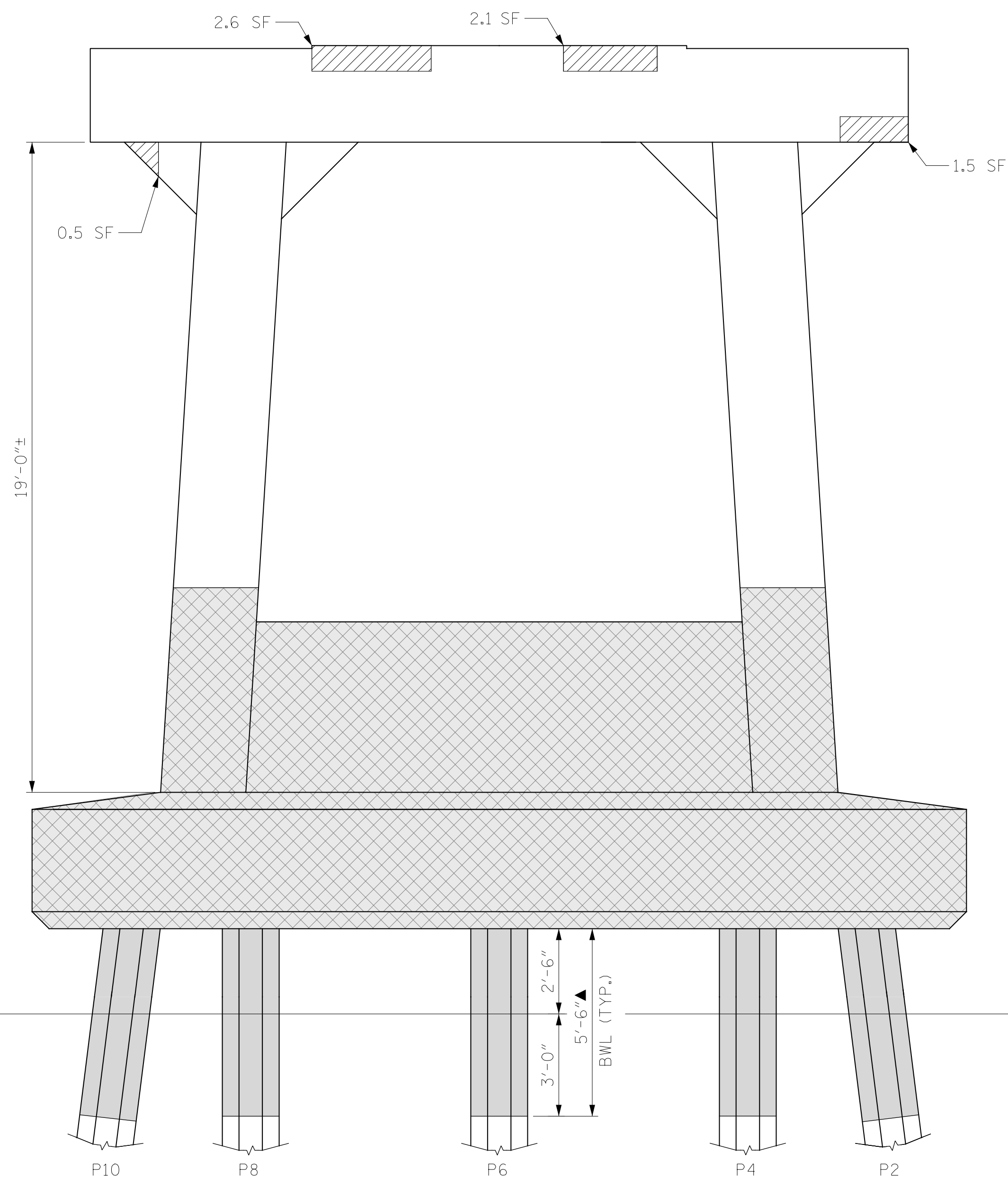
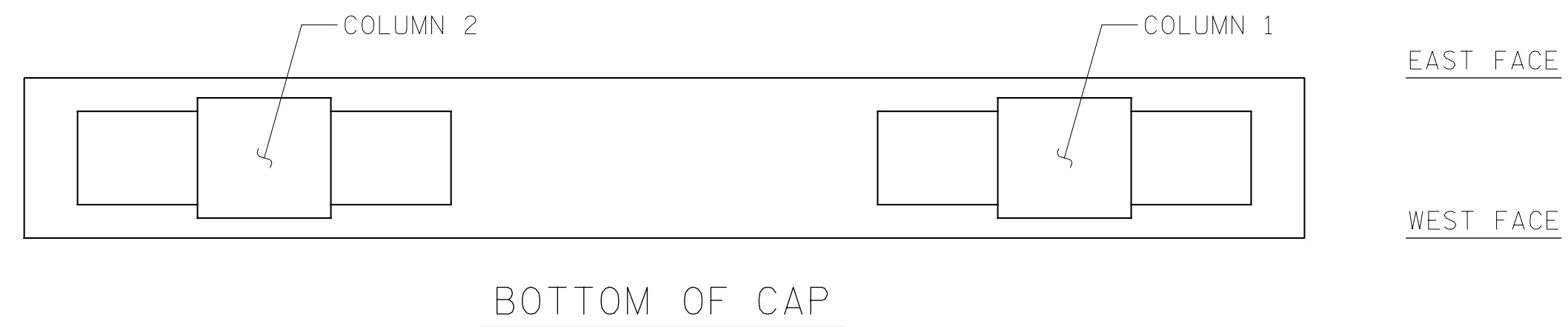
END VIEW
SOUTH FACE COL.2

APPROX. NORMAL WATER SURFACE

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019

BENT 126
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

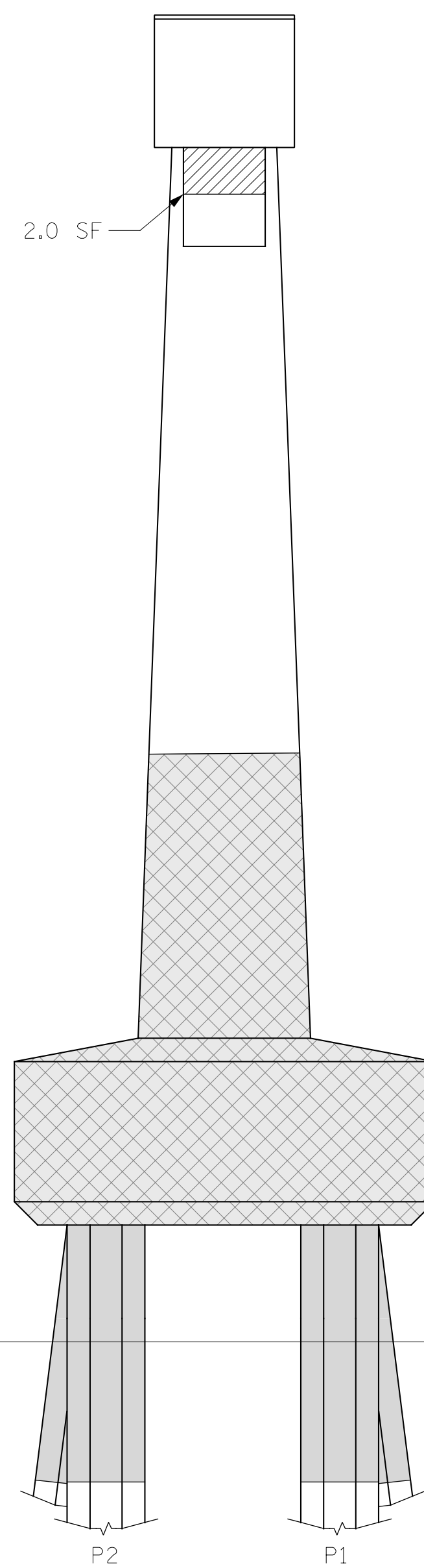




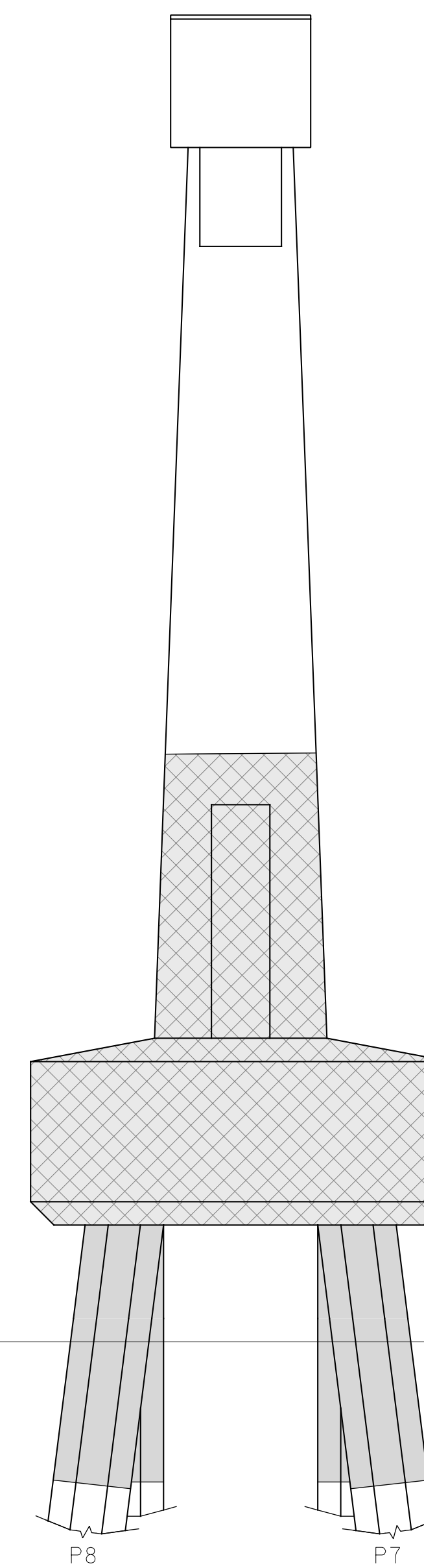
ELEVATION
EAST FACE

BENT 126

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)



END VIEW
NORTH FACE COL.1

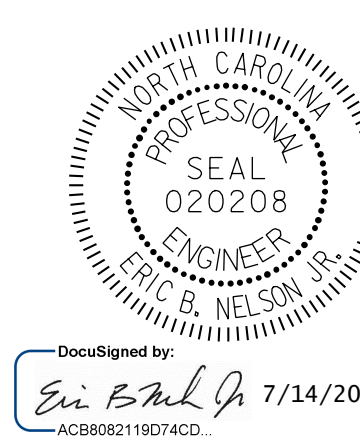


INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

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DARE COUNTY
BRIDGE NO. 270009



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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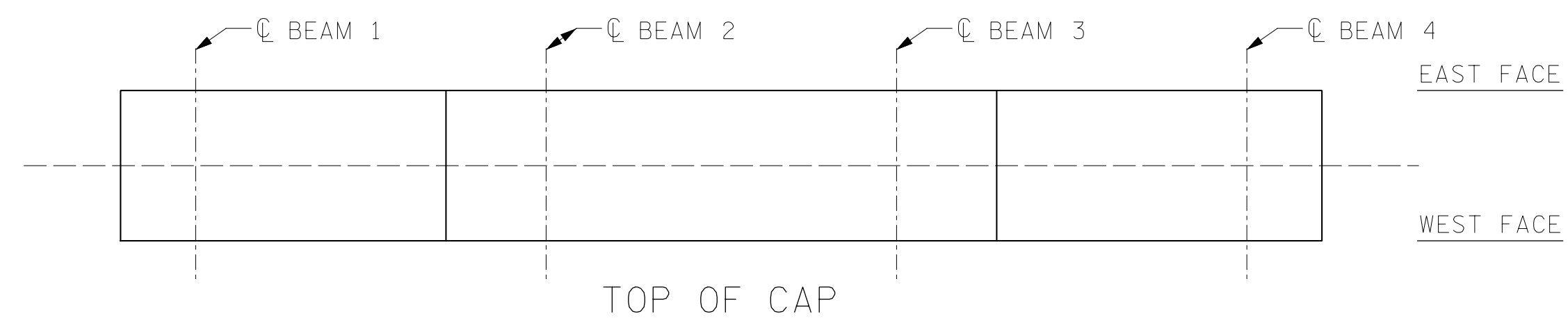
BENT 126
EAST FACE

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: J. FARNHAM DATE: 5/2019



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			190
2			4			355



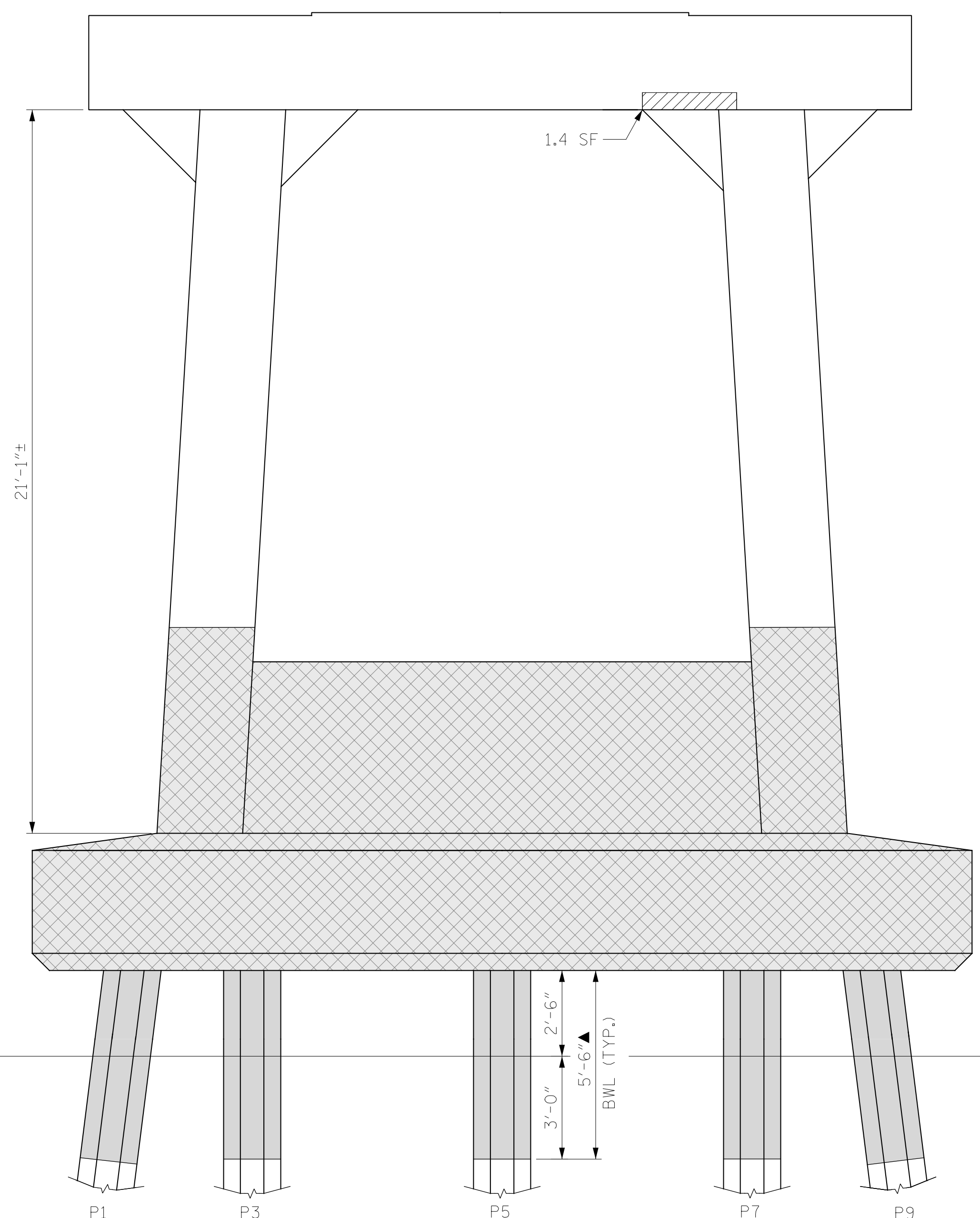
AS-BUILT REPAIR QUANTITY TABLE BENT 127

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	3.3 SF	1.7 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	10.0 SF	5.0 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF				SF

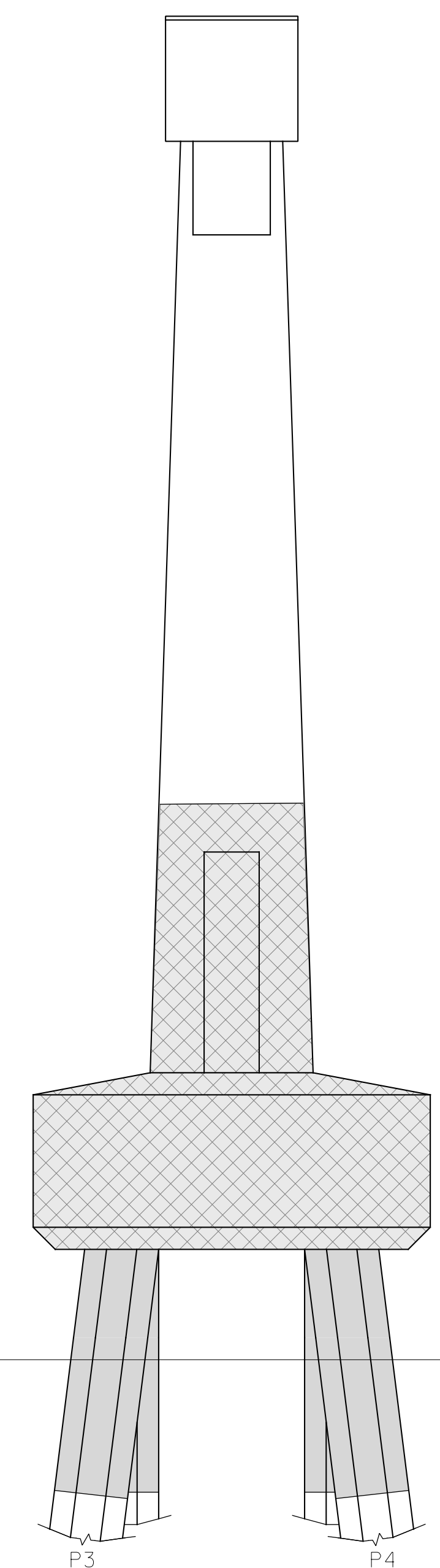
FOR CAP REPAIRS; VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.

NOTES:
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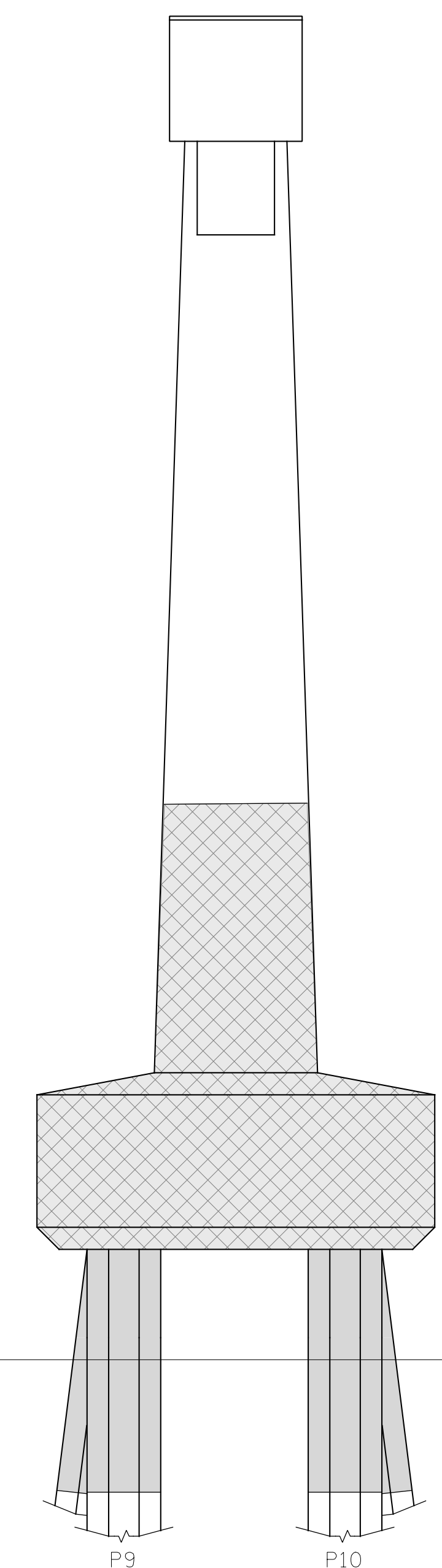
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1

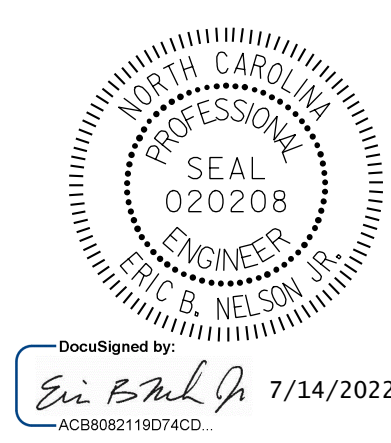


END VIEW
SOUTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 127 WEST FACE

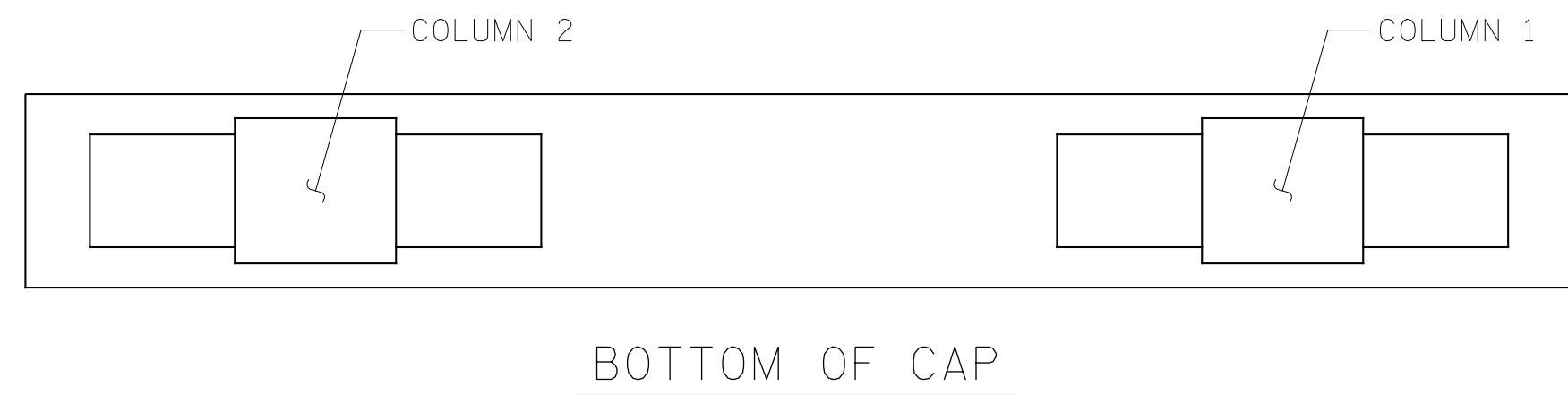
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 127
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



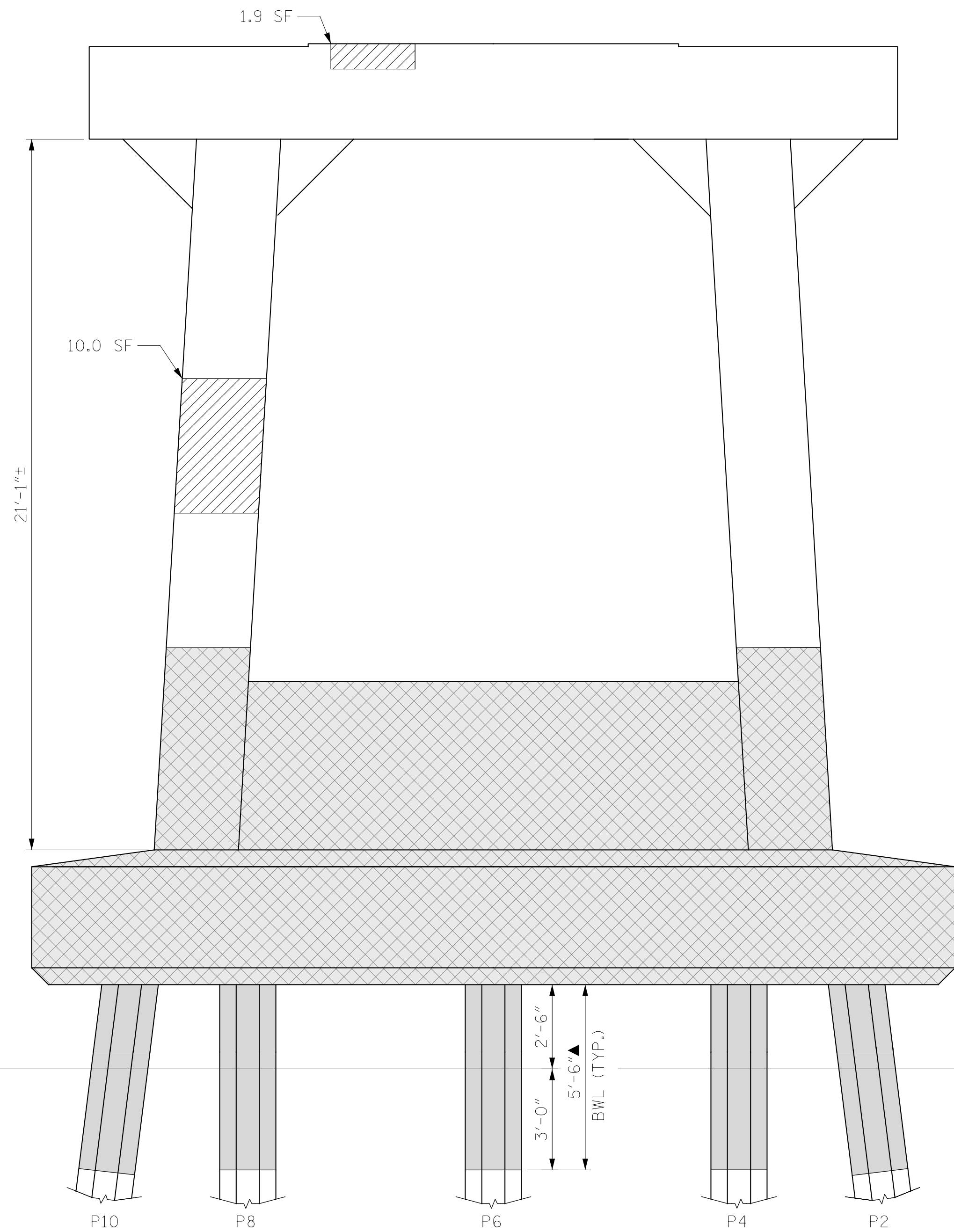
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			



EAST FACE
WEST FACE

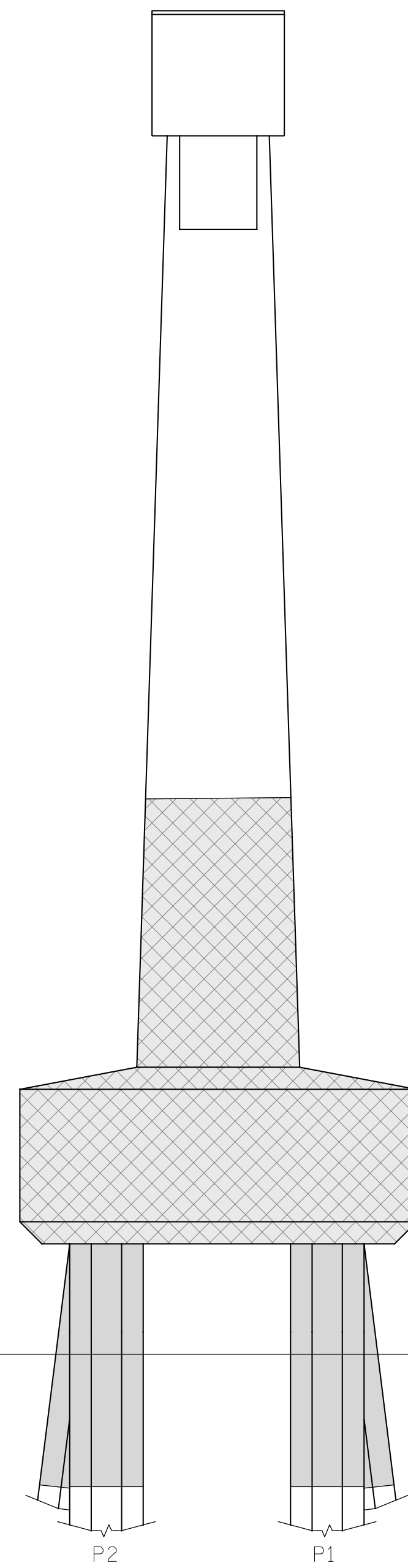
BOTTOM OF CAP



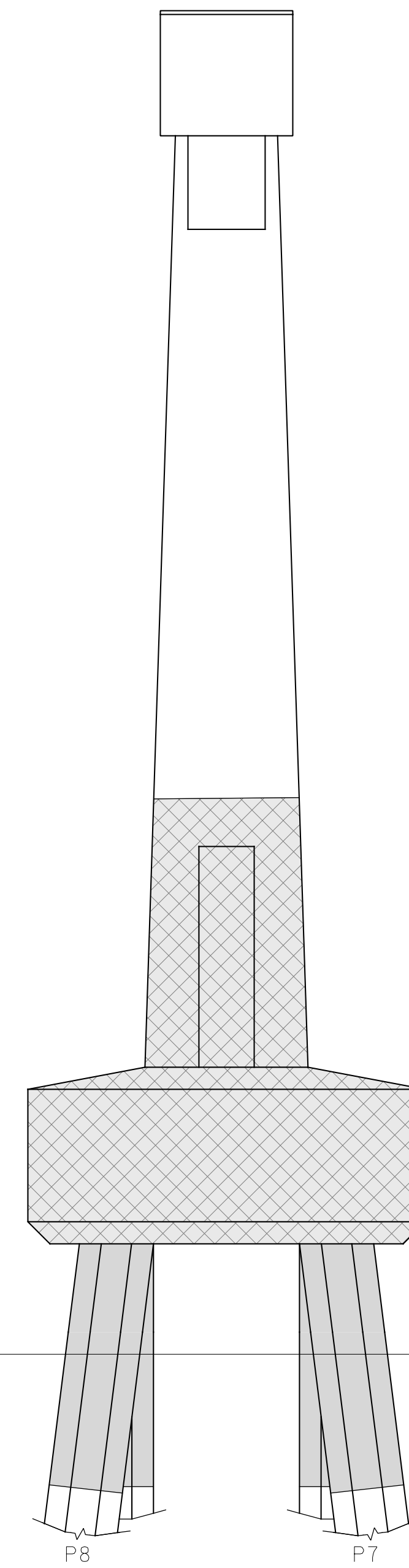
ELEVATION
EAST FACE

BENT 127

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)



END VIEW
NORTH FACE COL.1



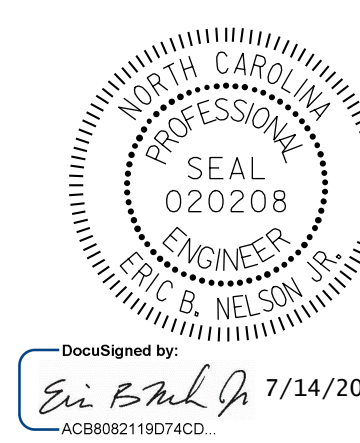
INTERIOR VIEW
NORTH FACE COL.2

APPROX.
NORMAL
WATER
SURFACE

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

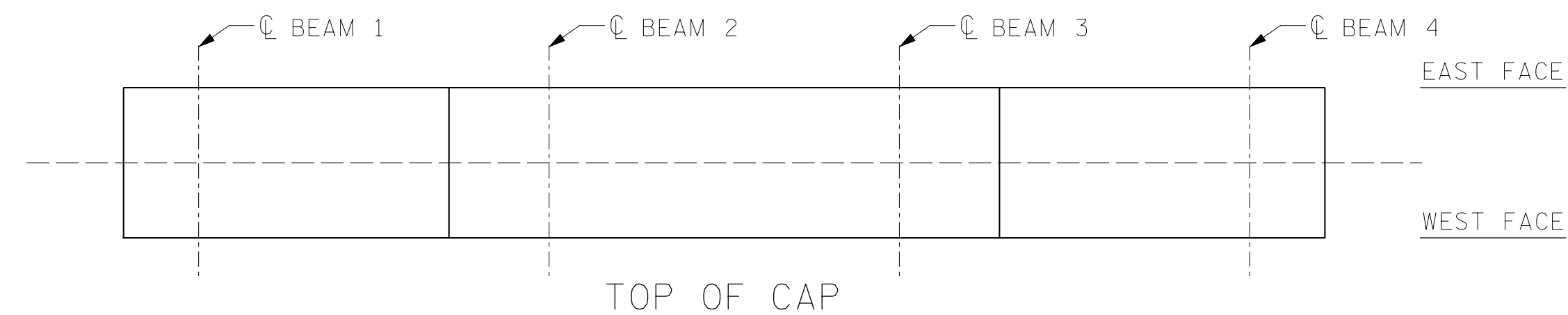
BENT 127
EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
CHECKED BY : J. FARNHAM DATE : 5/2019



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FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			355



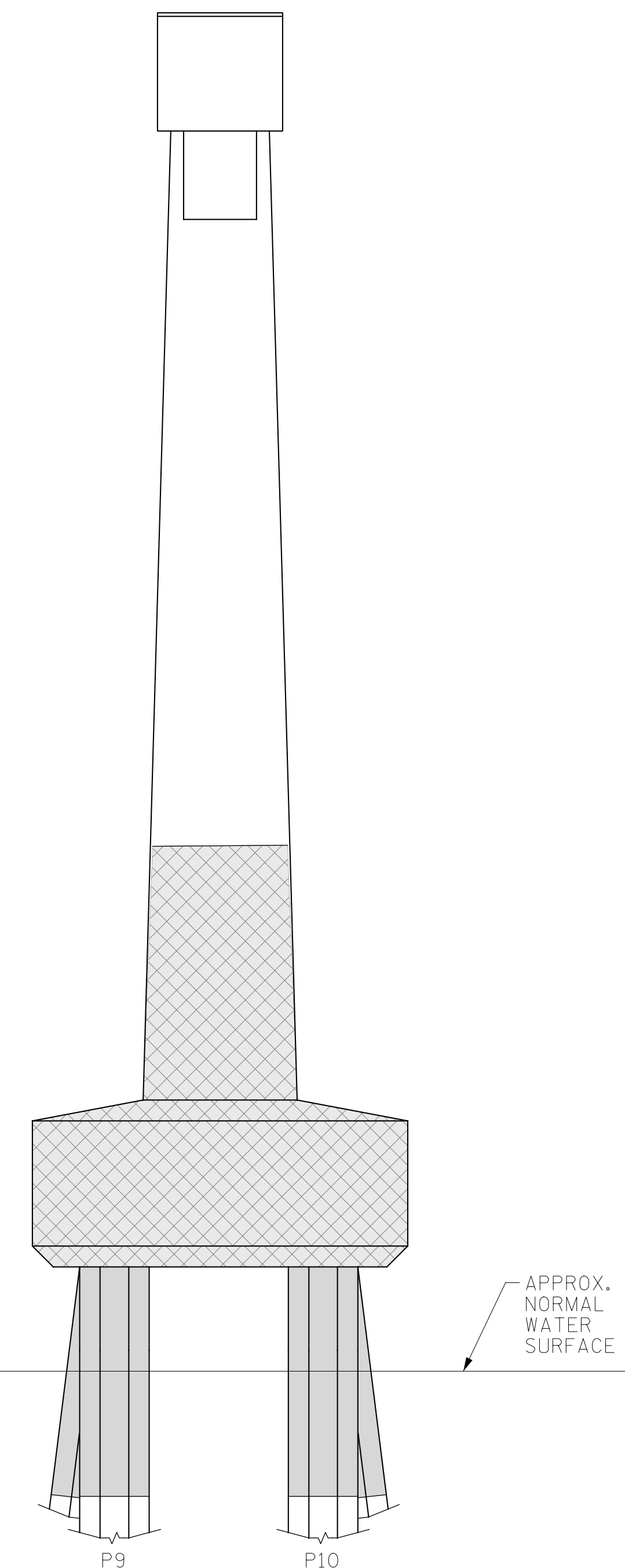
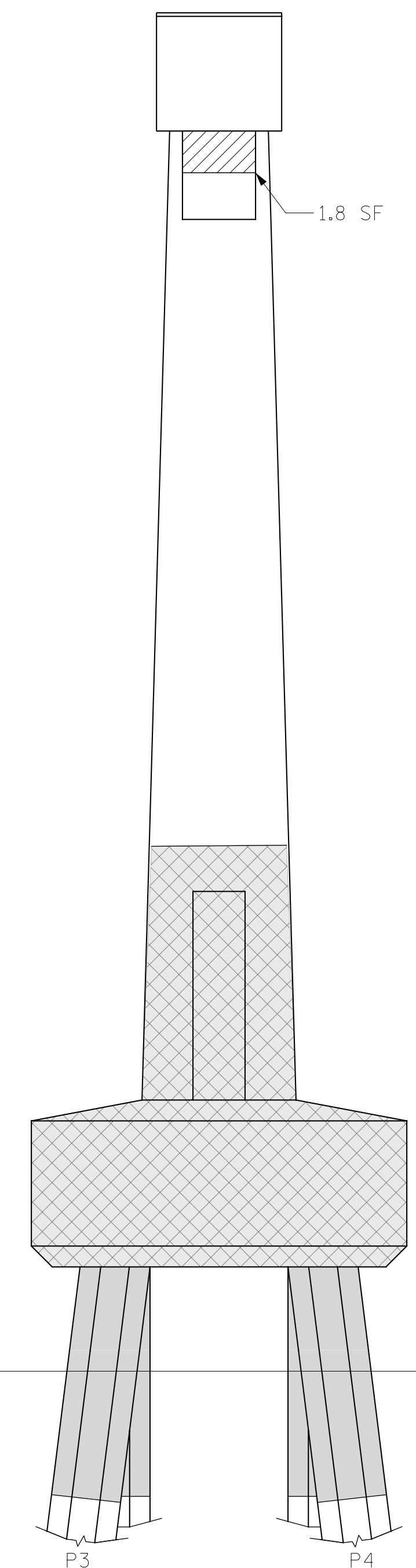
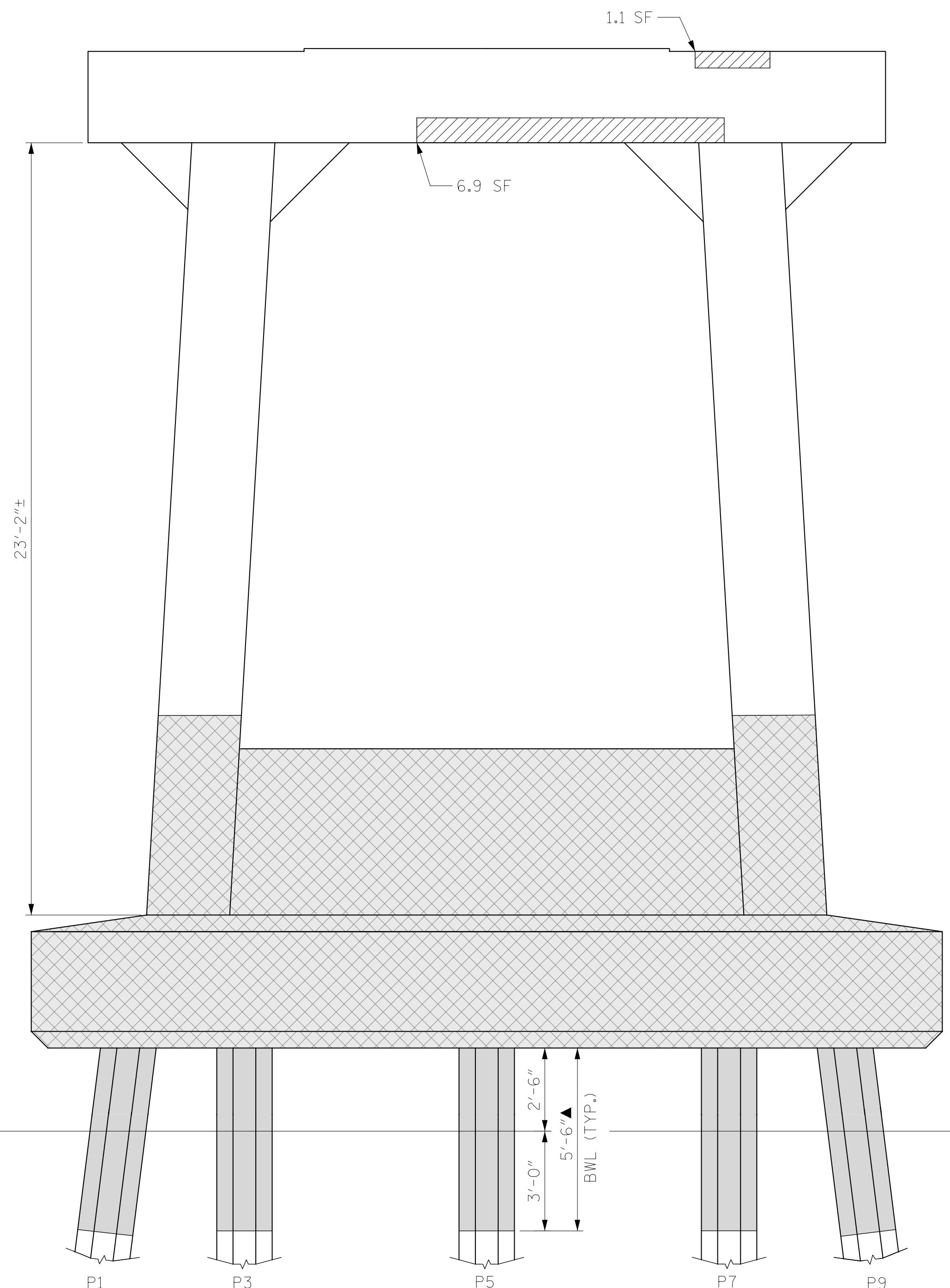
AS-BUILT REPAIR QUANTITY TABLE BENT 128

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	9.8 SF	4.9 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	44.3 SF	22.2 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF				SF

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

NOTES:
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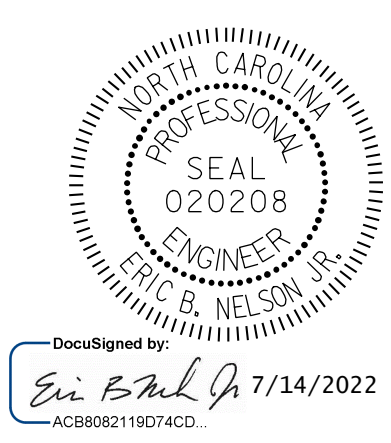
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 128 WEST FACE

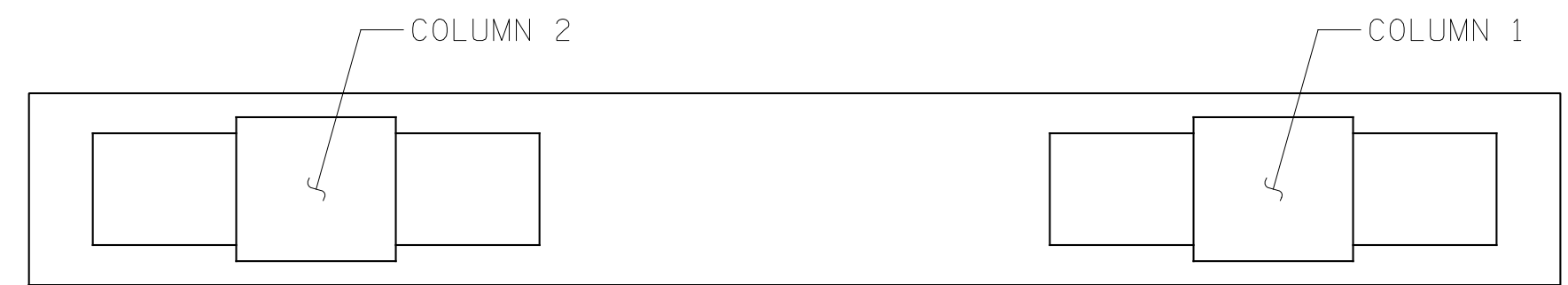
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 128
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



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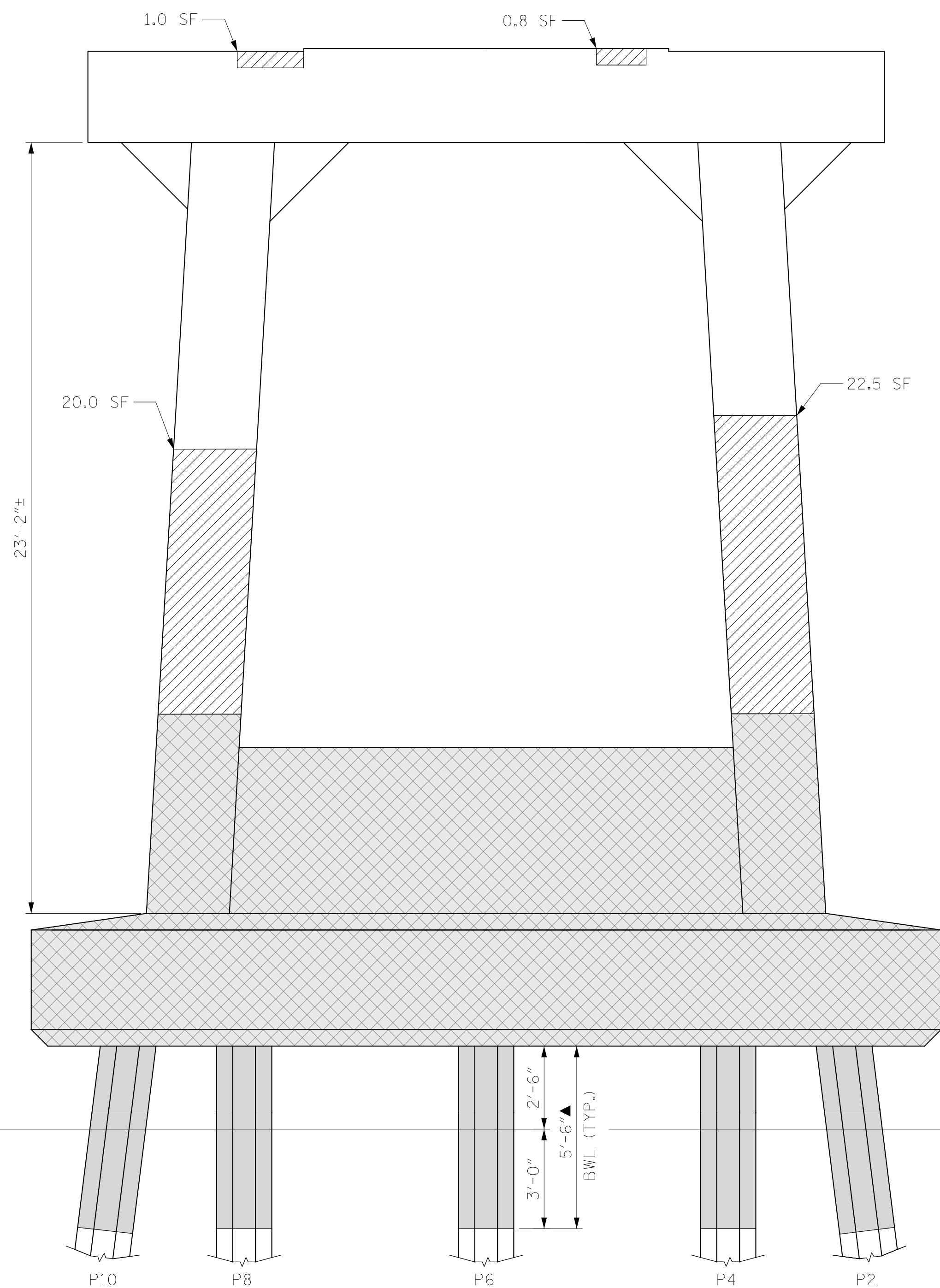
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			



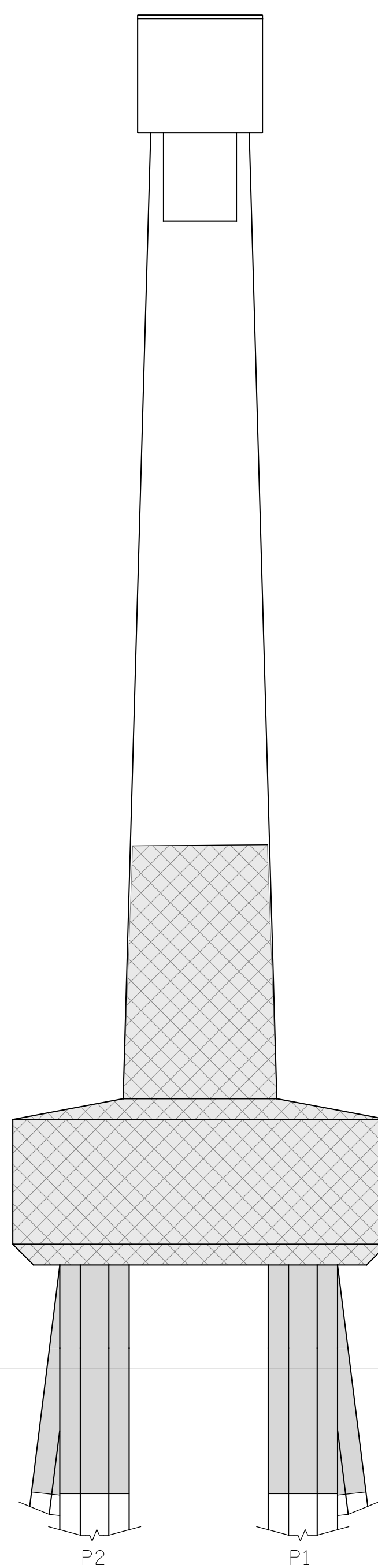
EAST FACE

WEST FACE

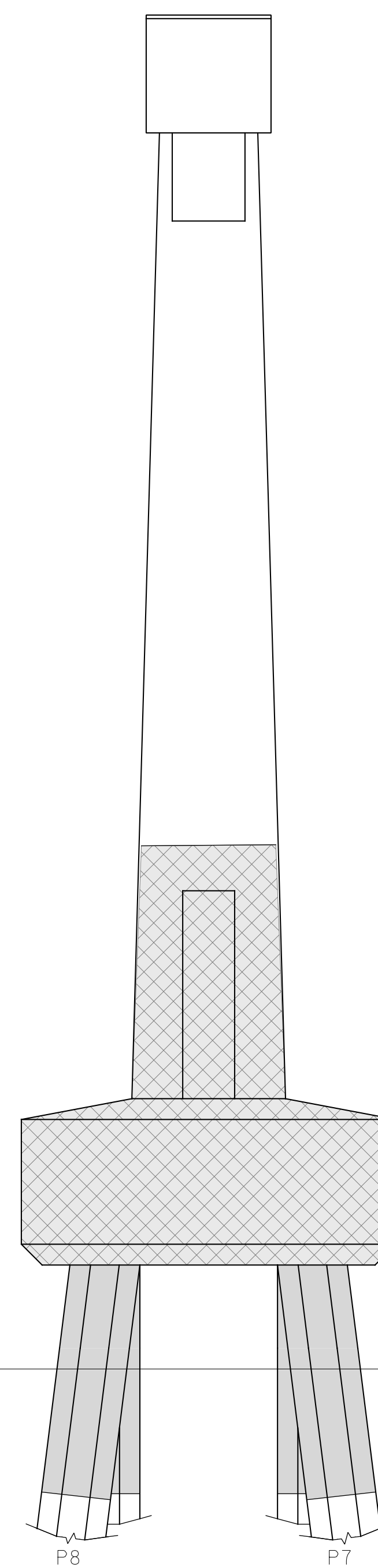
BOTTOM OF CAP



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1

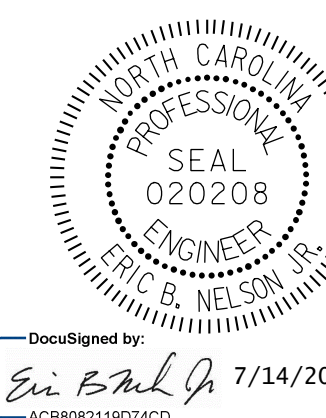


INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
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 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 128
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 128
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			194
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 129

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	7.1 SF	3.6 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	50.5 SF	25.3 CF	SF	CF	
EPOXY RESIN INJECTION	4.3 LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	363.0 SF				SF

FOR CAP REPAIRS; VALUES IN CHART REPRESENT ESTIMATED 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 REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

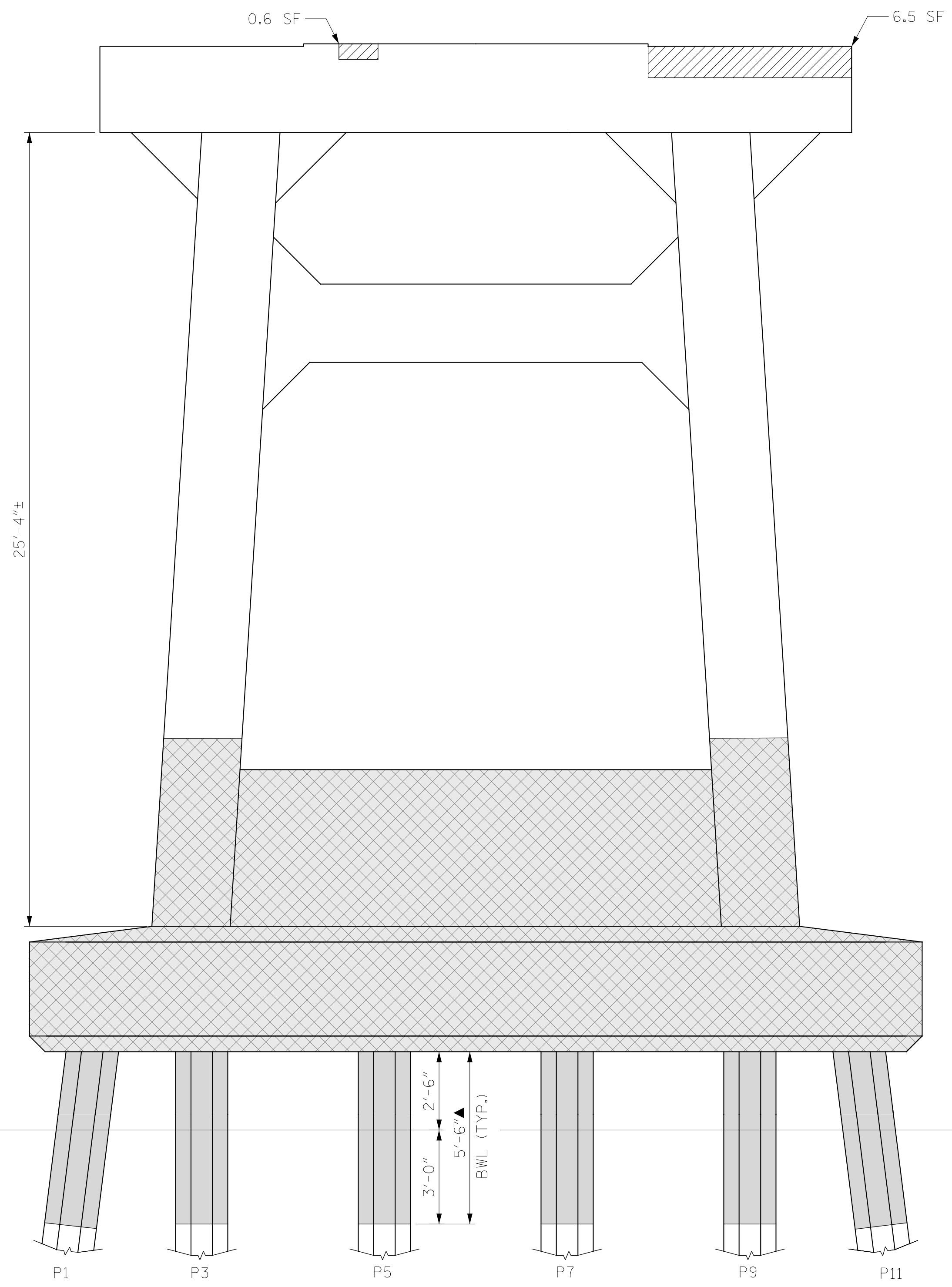
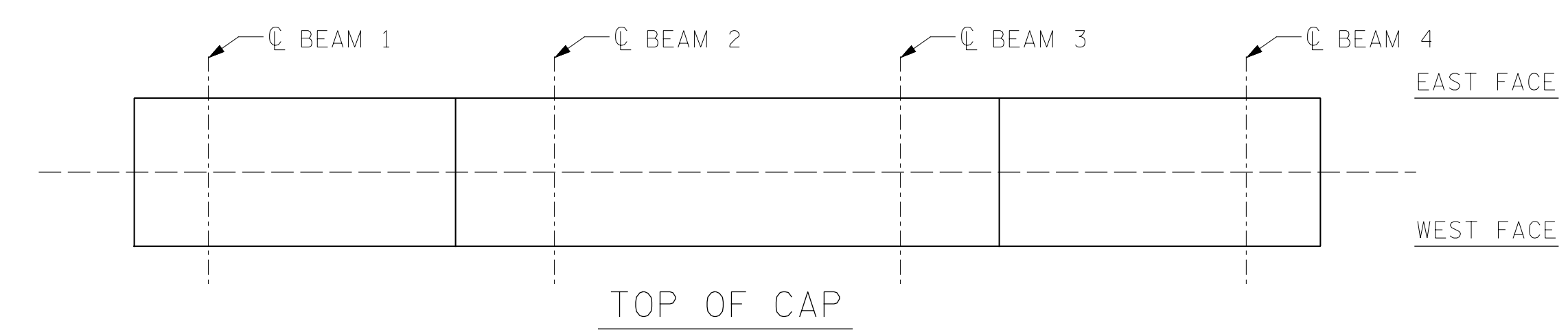
- ERI - EPOXY RESIN INJECTION
- [Solid Grey Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Hatching Box] - SHOTCRETE REPAIRS
- [Cross-hatching Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

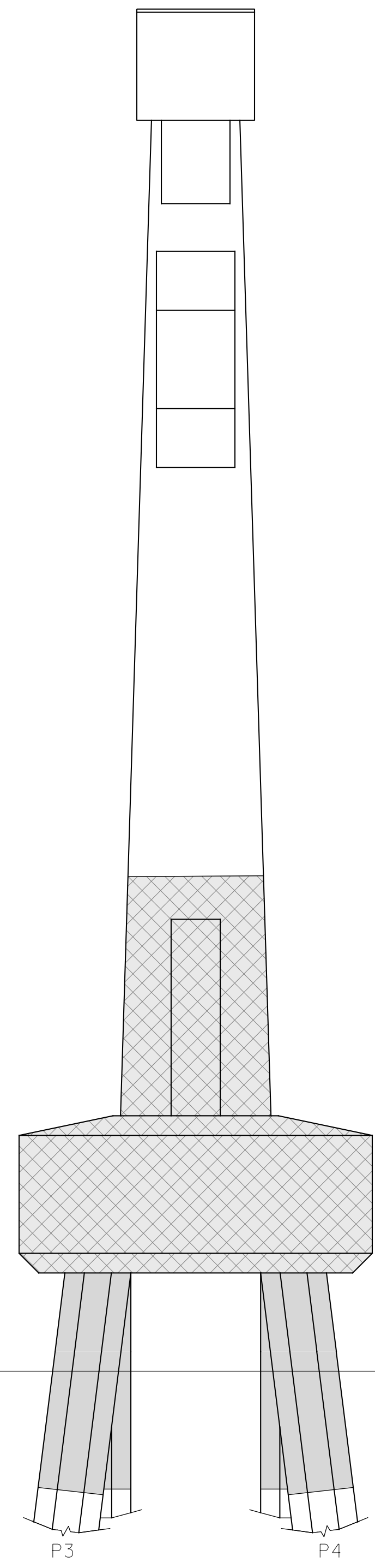
PROJECT NO. HB-0017
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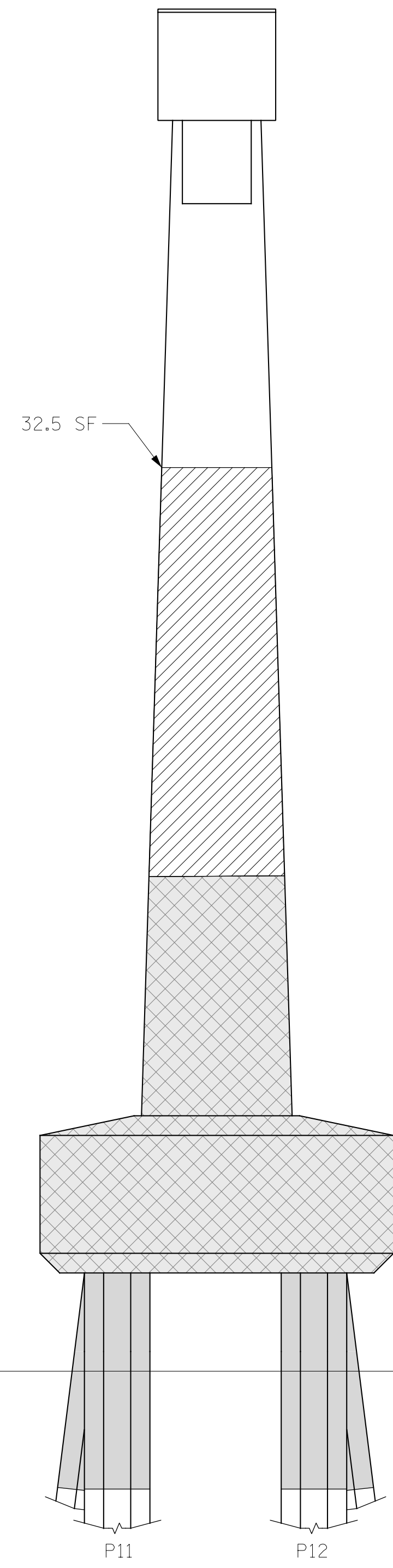
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
BENT 129 WEST FACE						S-195
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	355
1			3			
2			4			



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



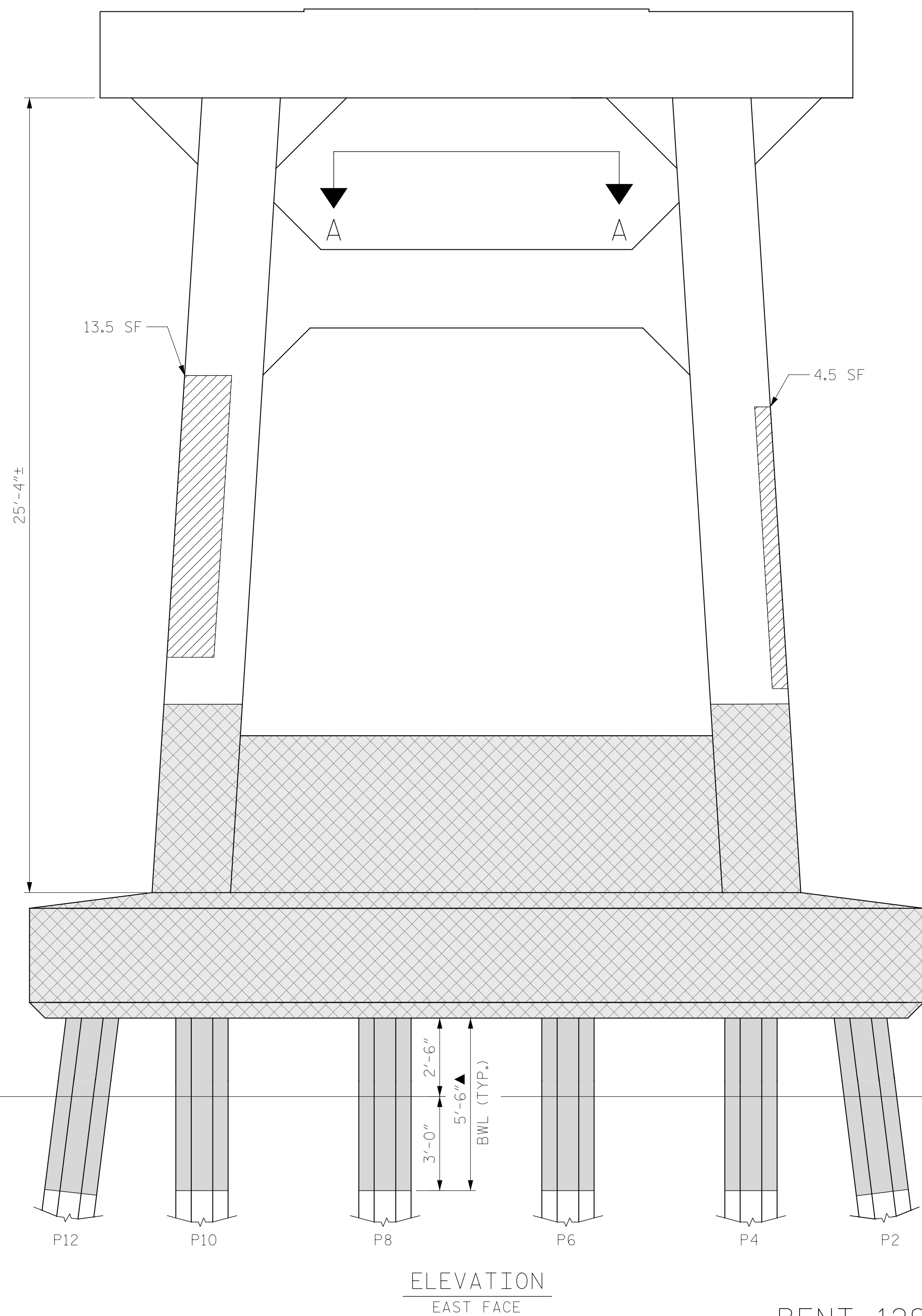
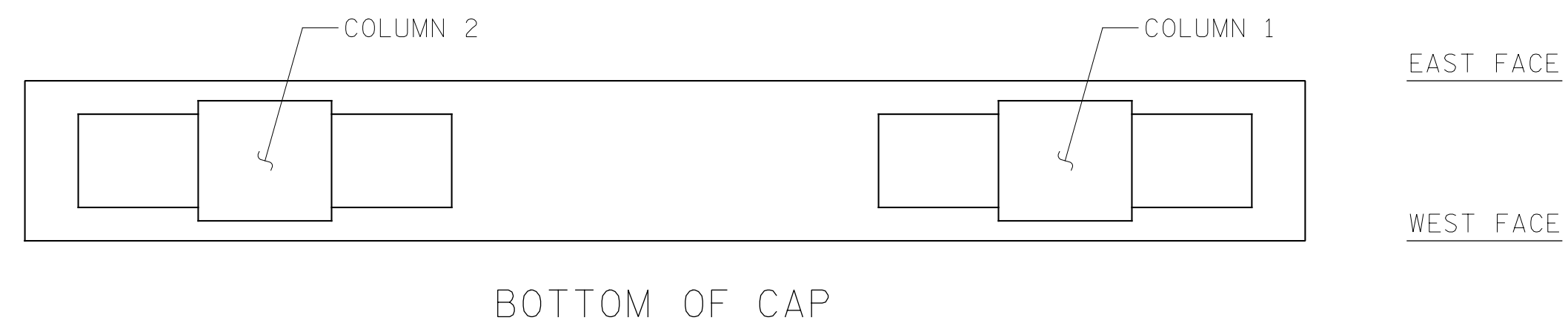
END VIEW
SOUTH FACE COL.2

BENT 129
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



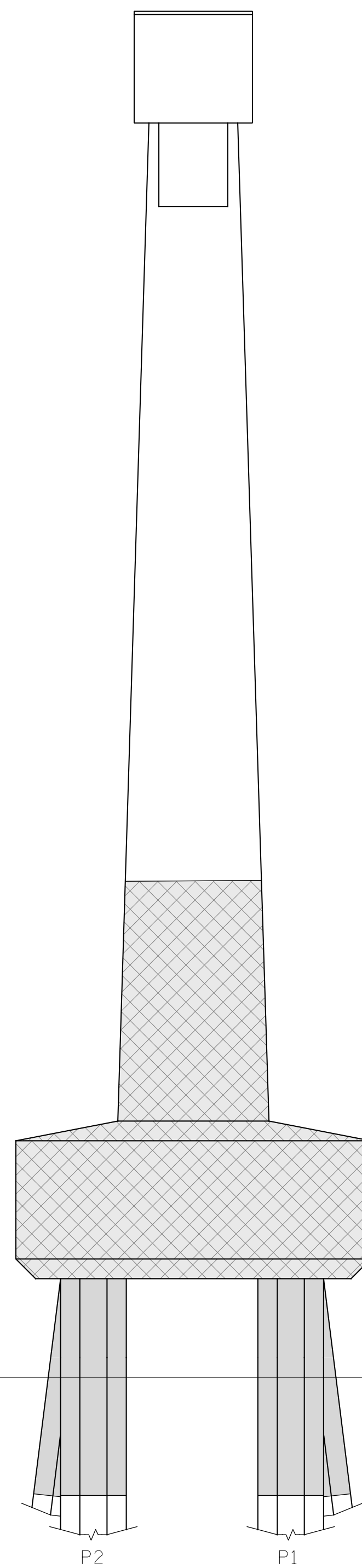
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



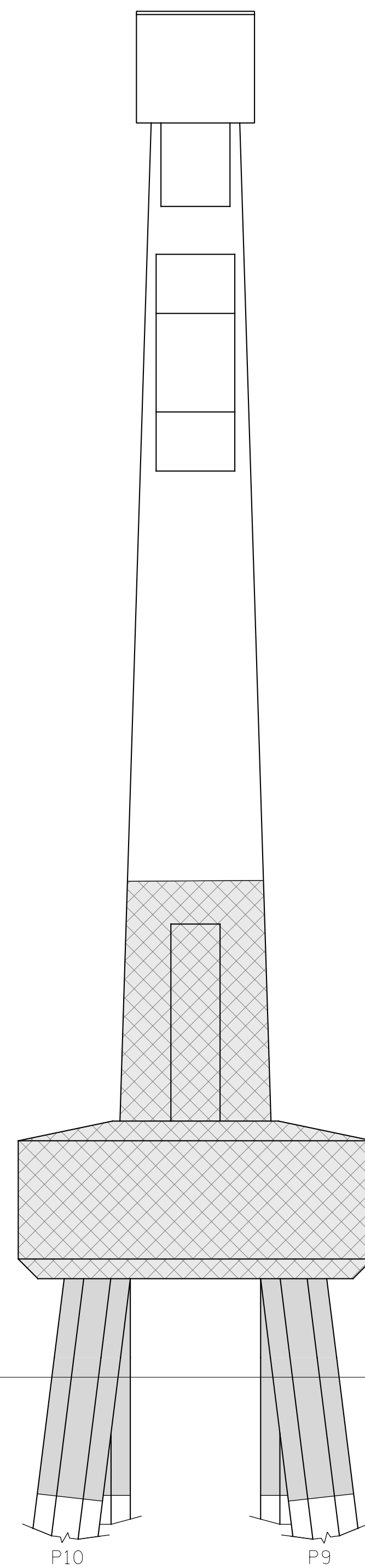
ELEVATION
EAST FACE

BENT 129

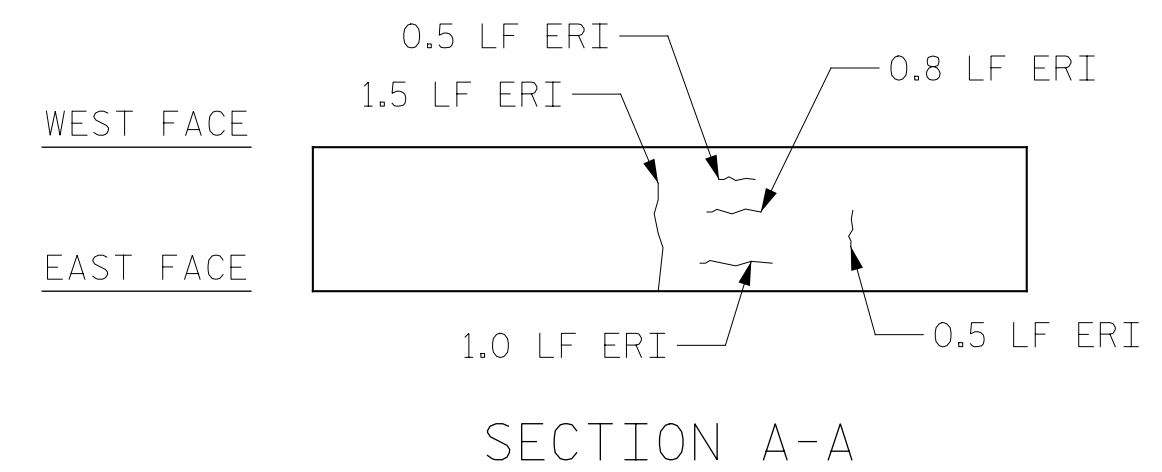
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)



END VIEW
NORTH FACE COL.1



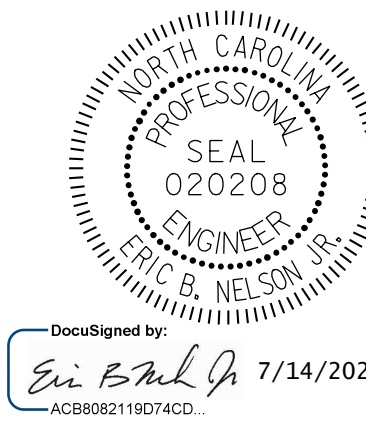
INTERIOR VIEW
NORTH FACE COL.2



- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

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 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 129
 EAST FACE

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-196
2			4			355

AS-BUILT REPAIR QUANTITY TABLE
BENT 130

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION	- LF			LF	
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	33.0 SF	16.5 CF	SF	CF	
EPOXY RESIN INJECTION	- LF			LF	
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF			SF	
FRP PROTECTIVE SYSTEM BWL	363.0 SF			SF	

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

NOTES:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

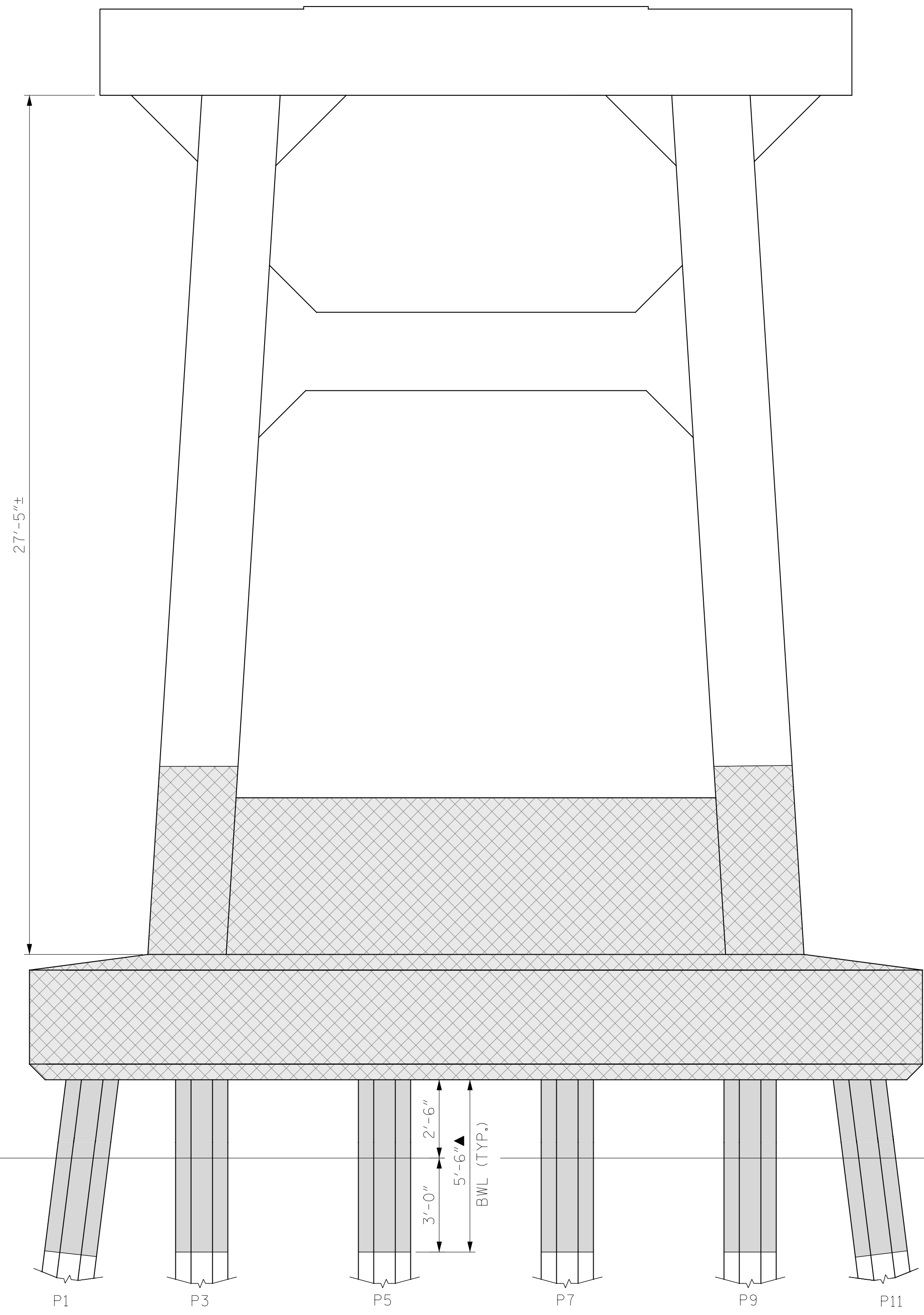
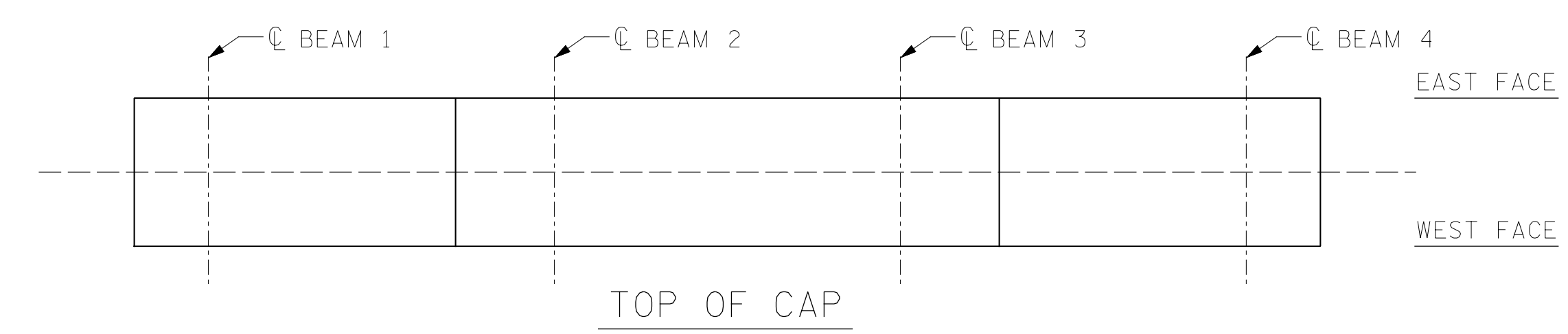
- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

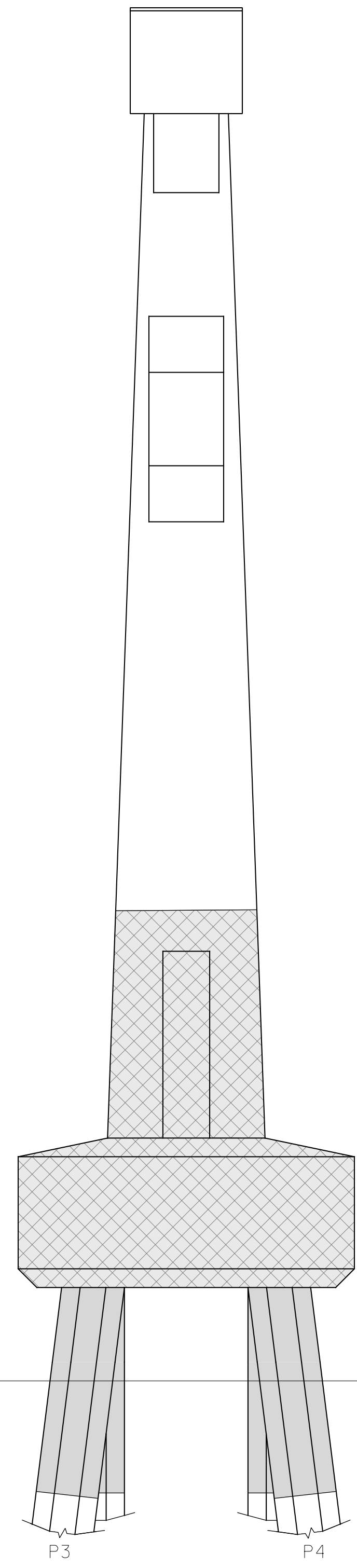
PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



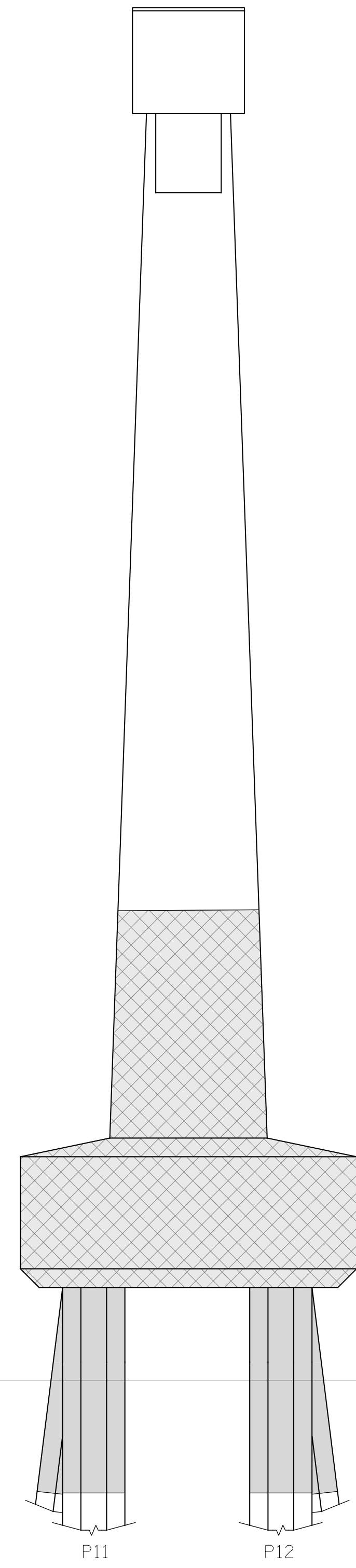
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 130 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



END VIEW
SOUTH FACE COL.2

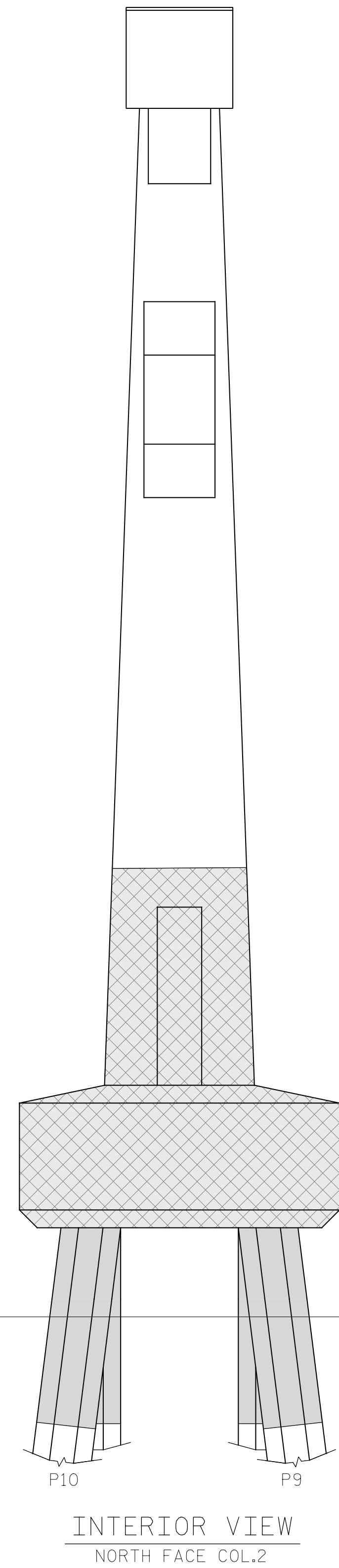
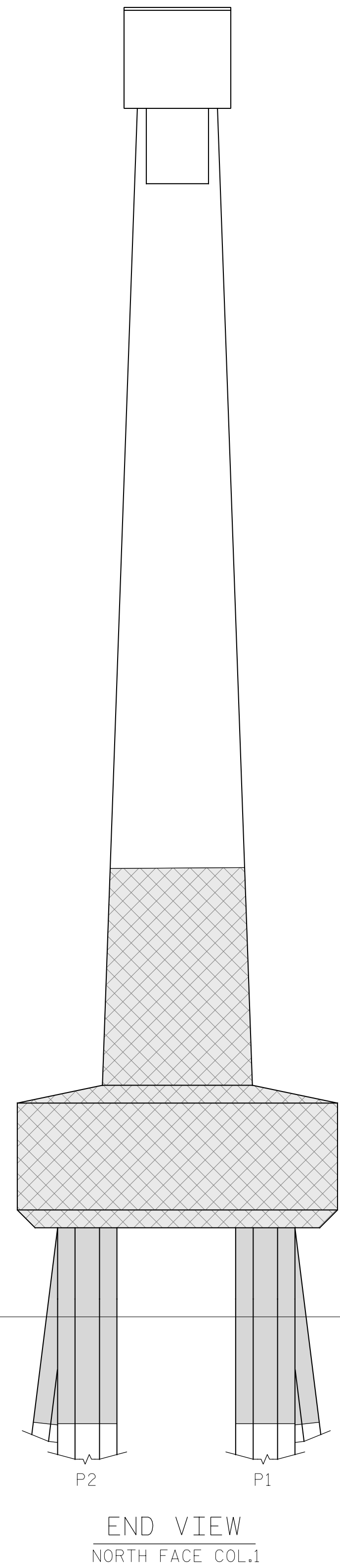
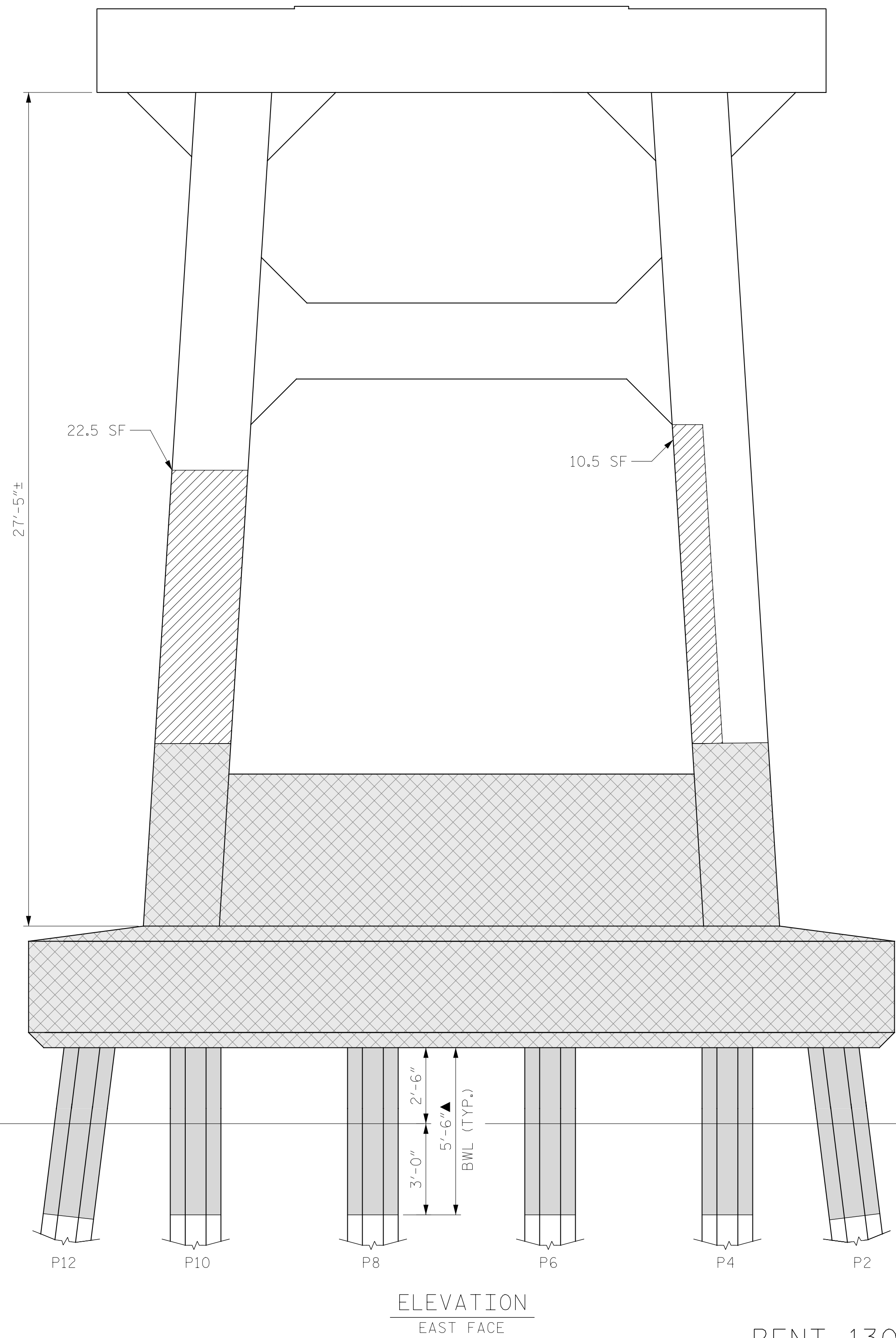
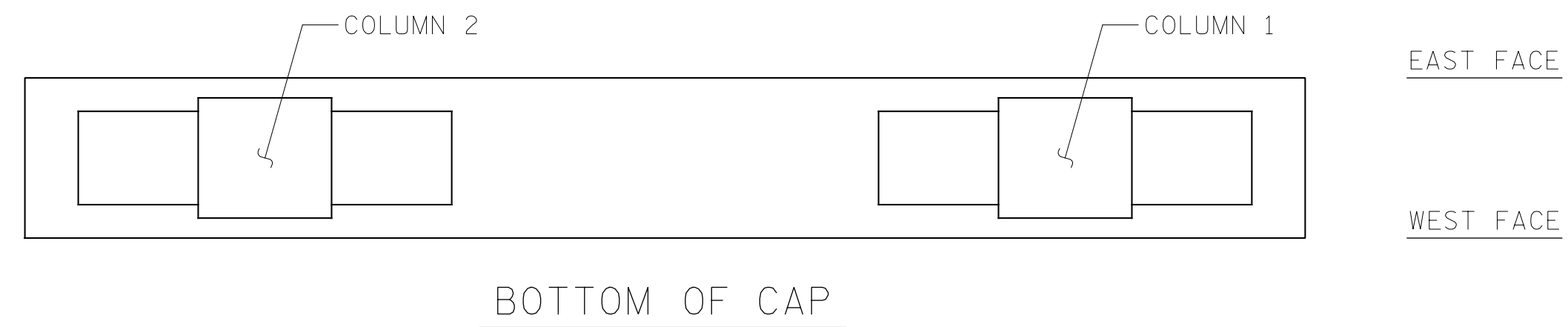
APPROX. NORMAL WATER SURFACE

BENT 130
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)

DRAWN BY : T. HARTLEY DATE : 2/2019
CHECKED BY : J. FARNHAM DATE : 5/2019



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 130
 EAST FACE**

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 130
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			198
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 131

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION	- LF			LF	
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	3.0 SF	1.5 CF	SF	CF	
EPOXY RESIN INJECTION	- LF			LF	
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF			SF	
FRP PROTECTIVE SYSTEM BWL	363.0 SF			SF	

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.




FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

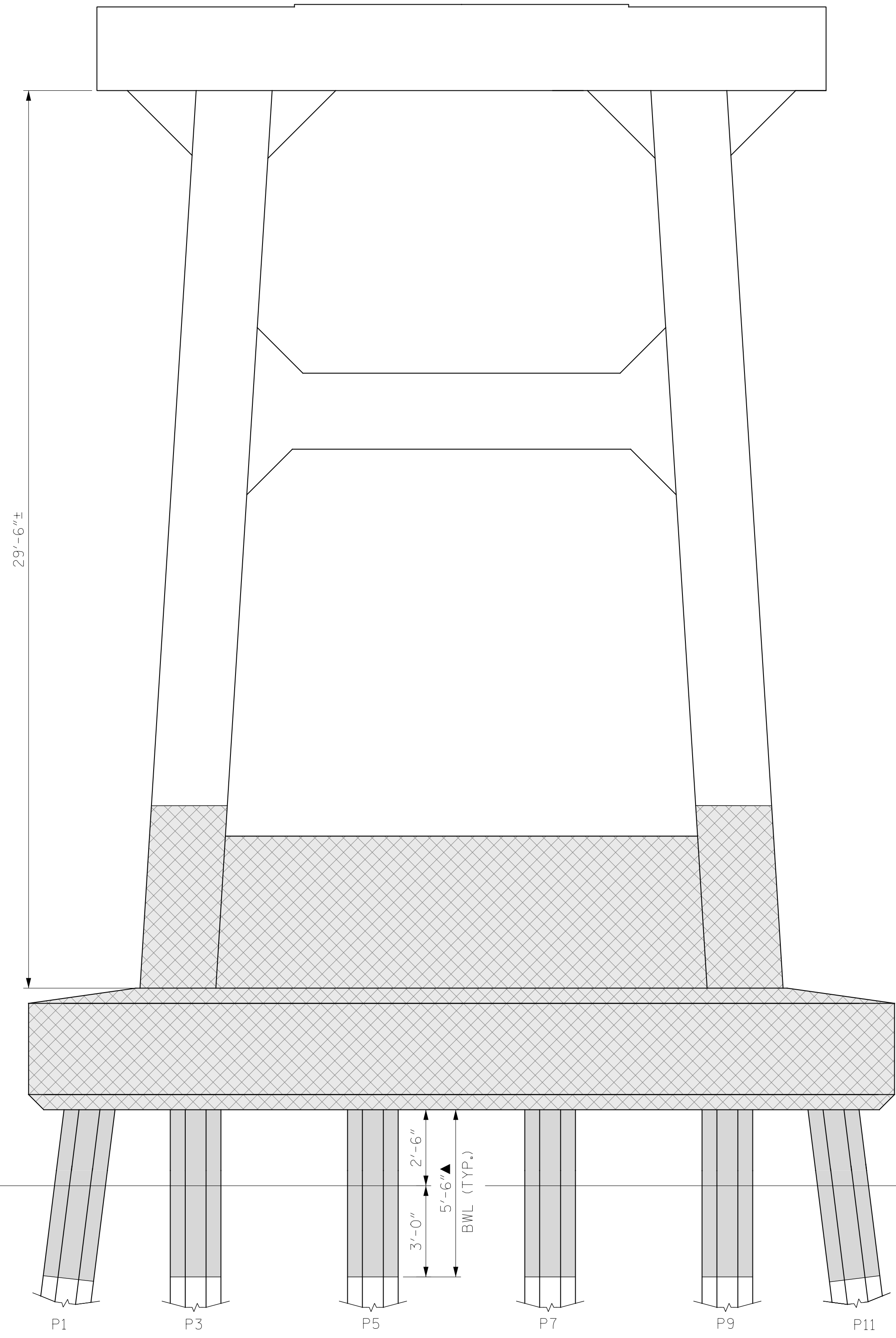
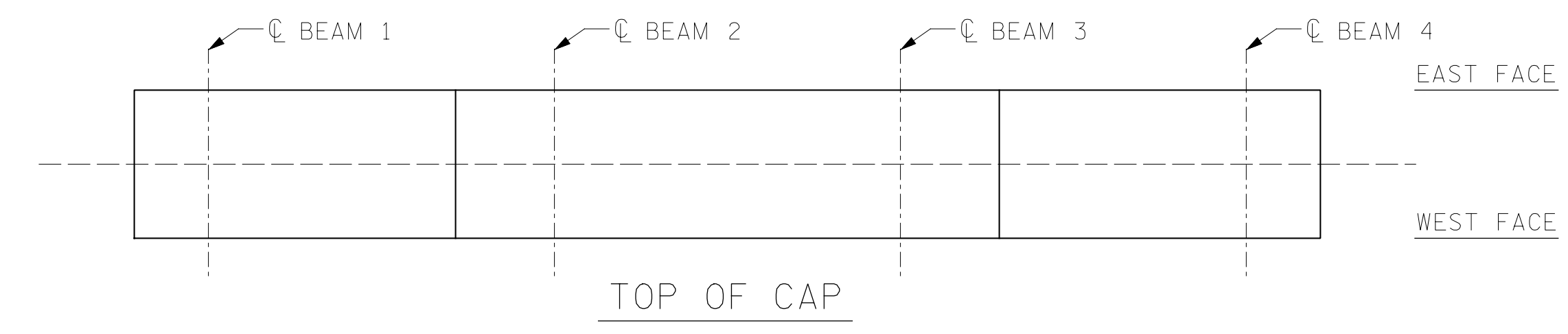
- ERI - EPOXY RESIN INJECTION
-  - FRP PROTECTIVE SYSTEM
-  - SHOTCRETE REPAIRS
-  - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

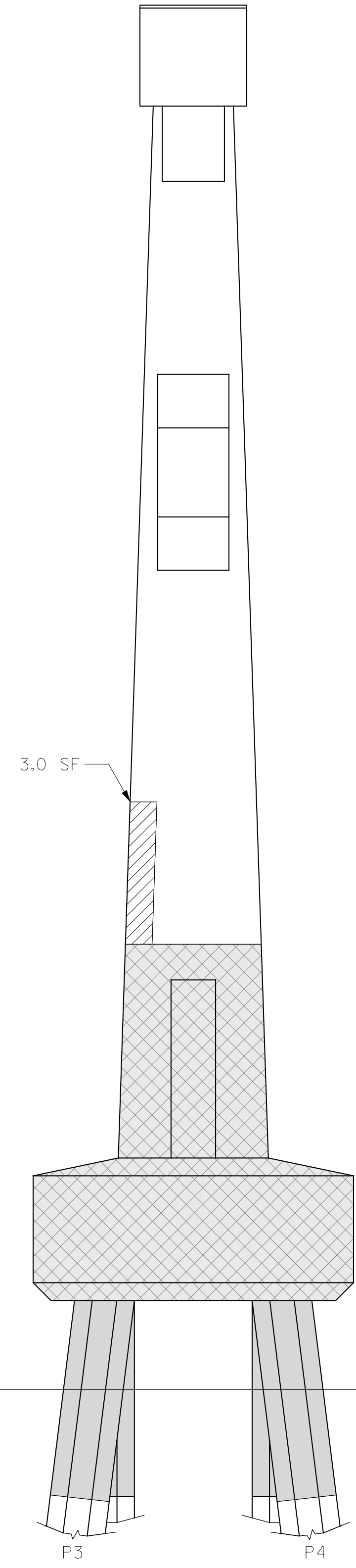
PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



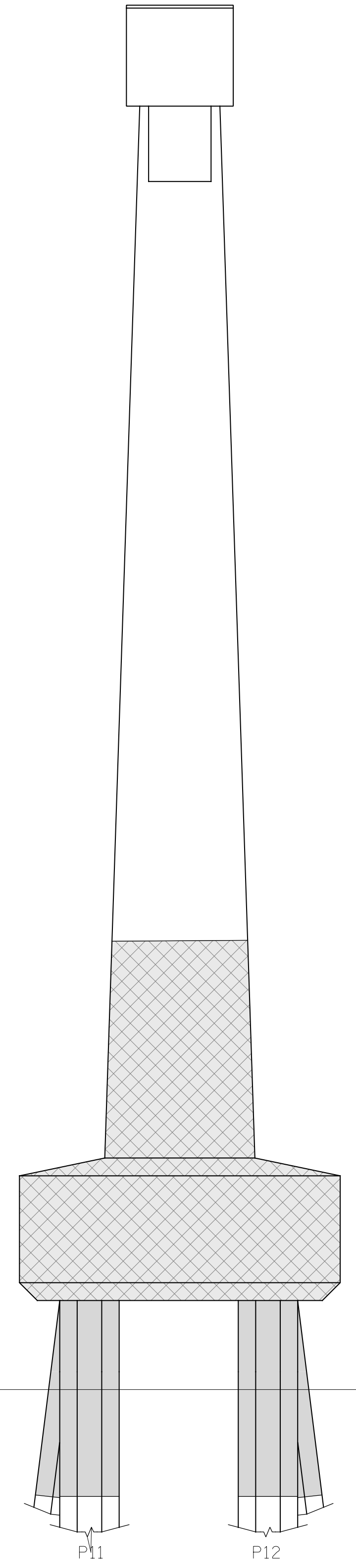
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 131 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



END VIEW
SOUTH FACE COL.2

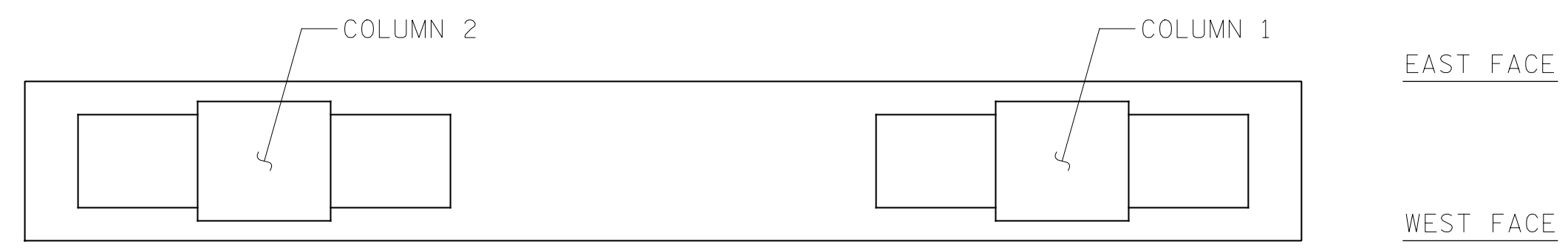
APPROX. NORMAL WATER SURFACE

BENT 131
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

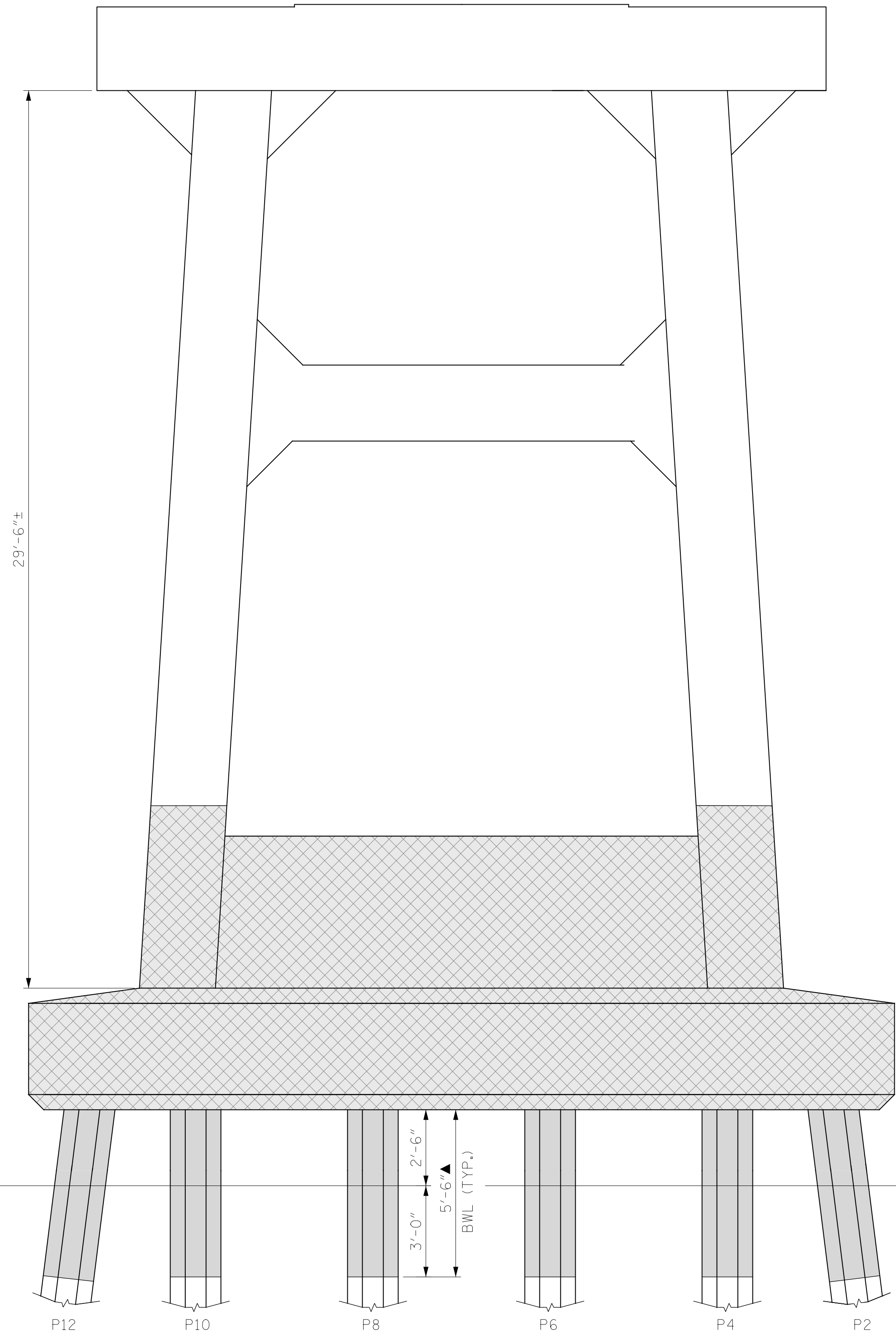
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



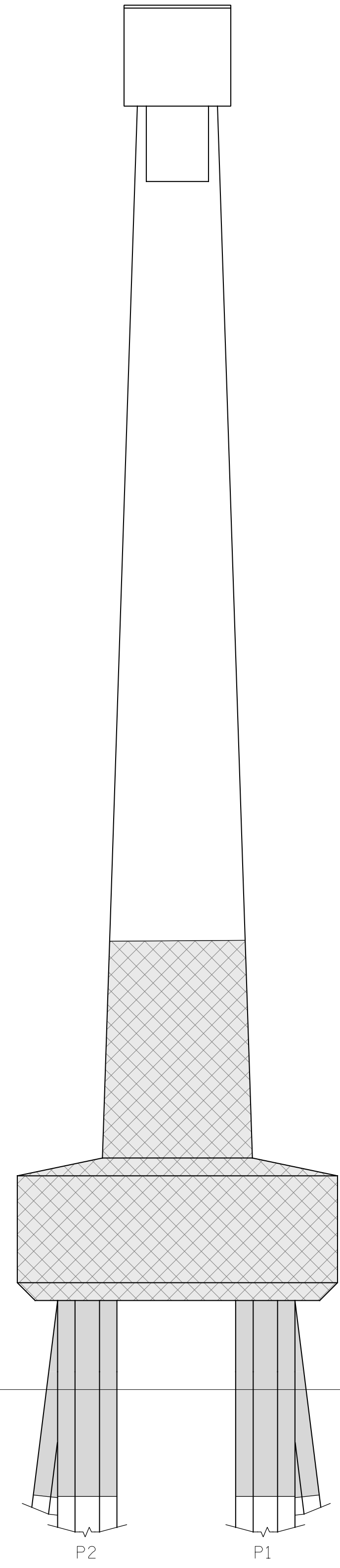
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



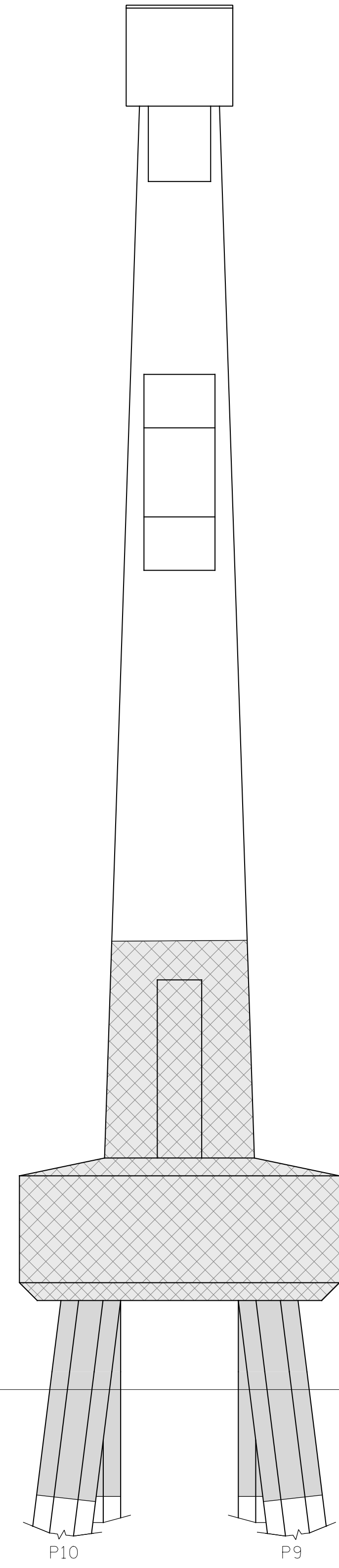
BOTTOM OF CAP



ELEVATION EAST FACE



END VIEW NORTH FACE COL.1



INTERIOR VIEW NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 131
 EAST FACE**

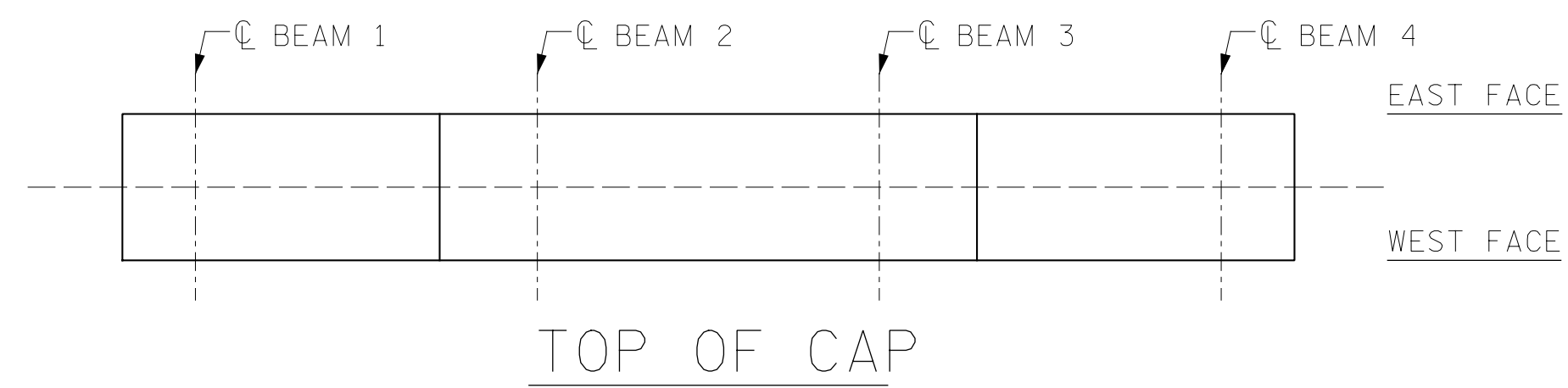
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 131
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			



AS-BUILT REPAIR QUANTITY TABLE				
BENT 132				
CAP REPAIRS		ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	- SF	- CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
COLUMN REPAIRS		ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	42.3 SF	21.2 CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
PILE REPAIRS		ESTIMATE		ACTUAL
FRP PROTECTIVE SYSTEM AWL	- SF			SF
FRP PROTECTIVE SYSTEM BWL	363.0 SF			SF

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

NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
 FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
 FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
- [Solid Grey Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Hatching Box] - SHOTCRETE REPAIRS
- [Cross-hatching Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

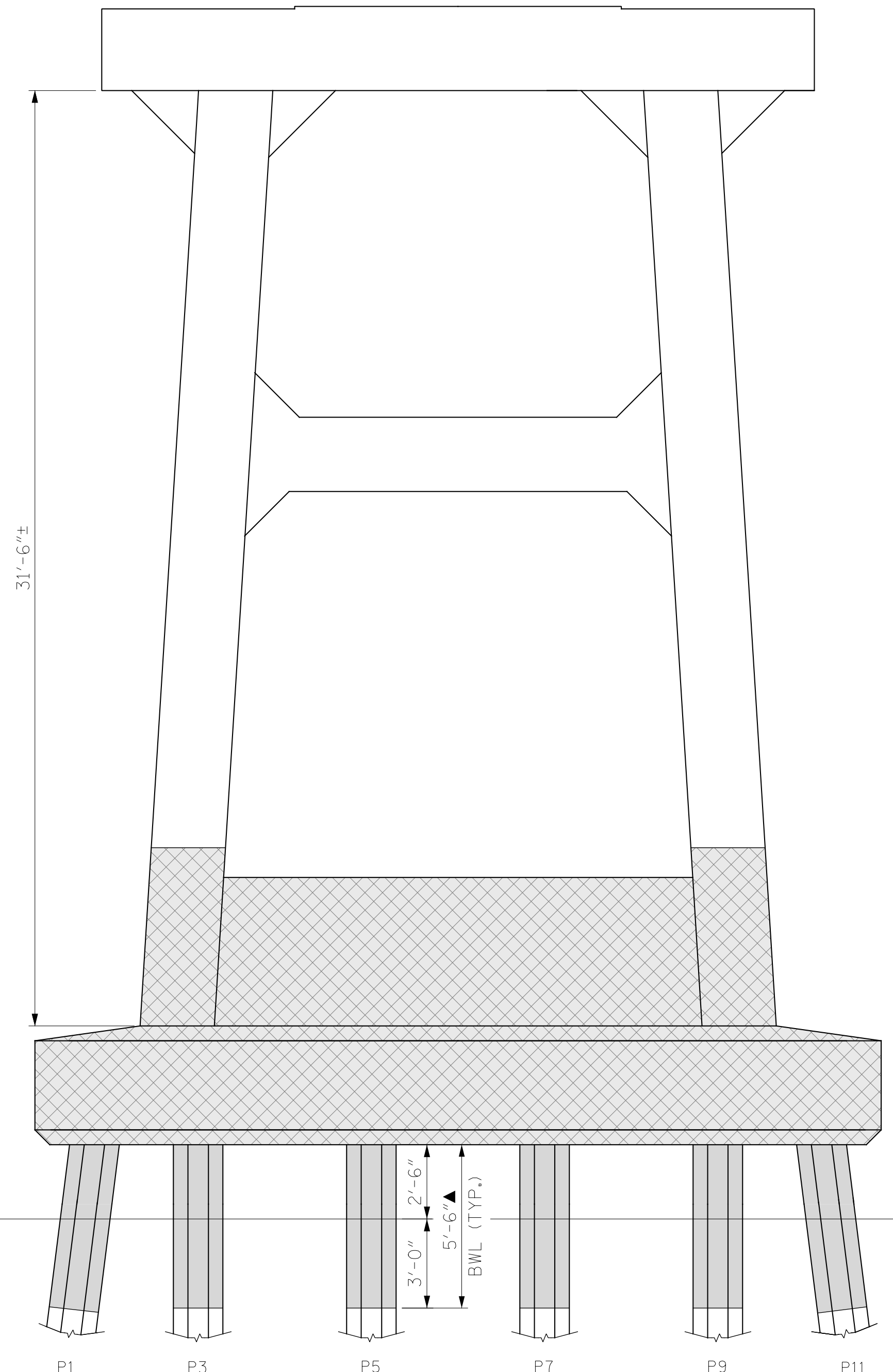
PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

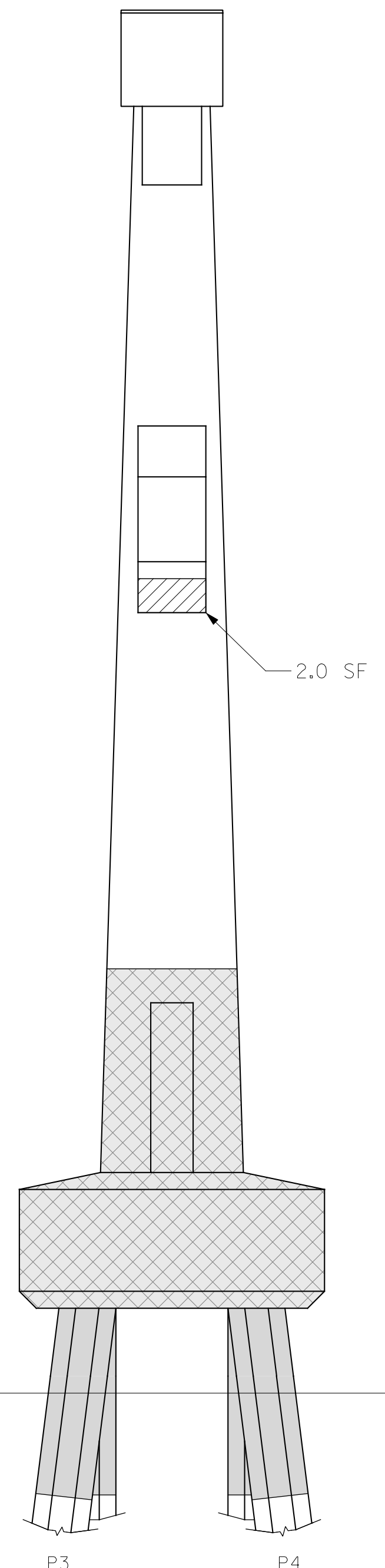
**BENT 132
 WEST FACE**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

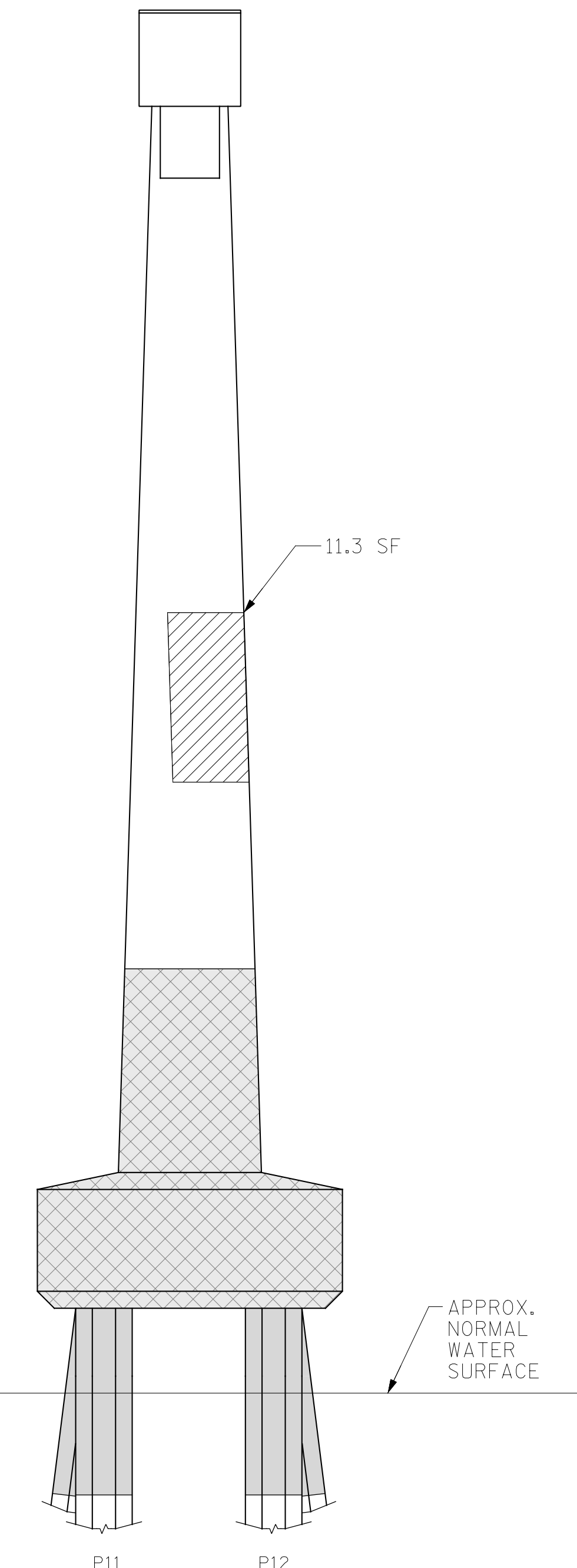
S-201



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



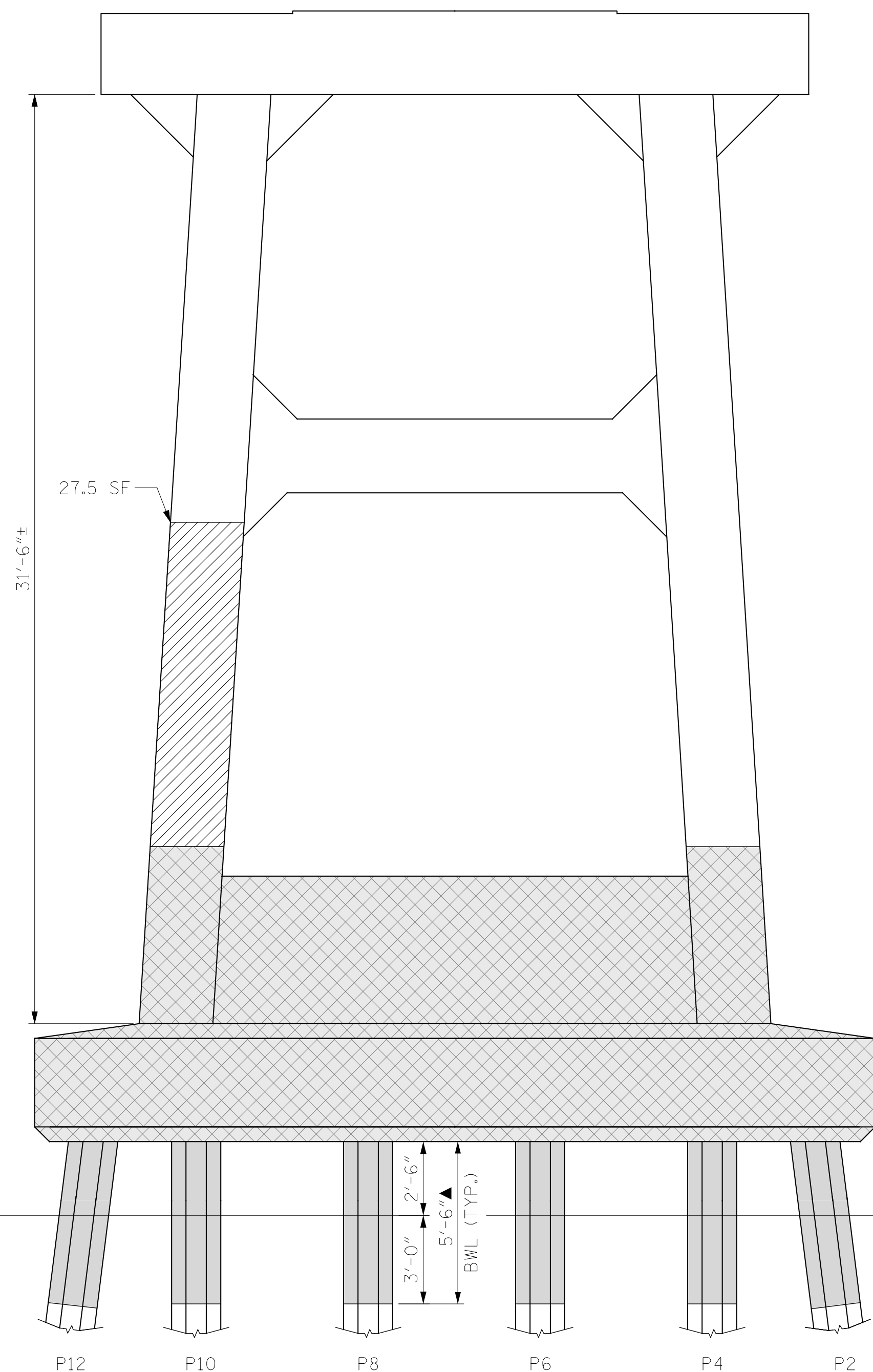
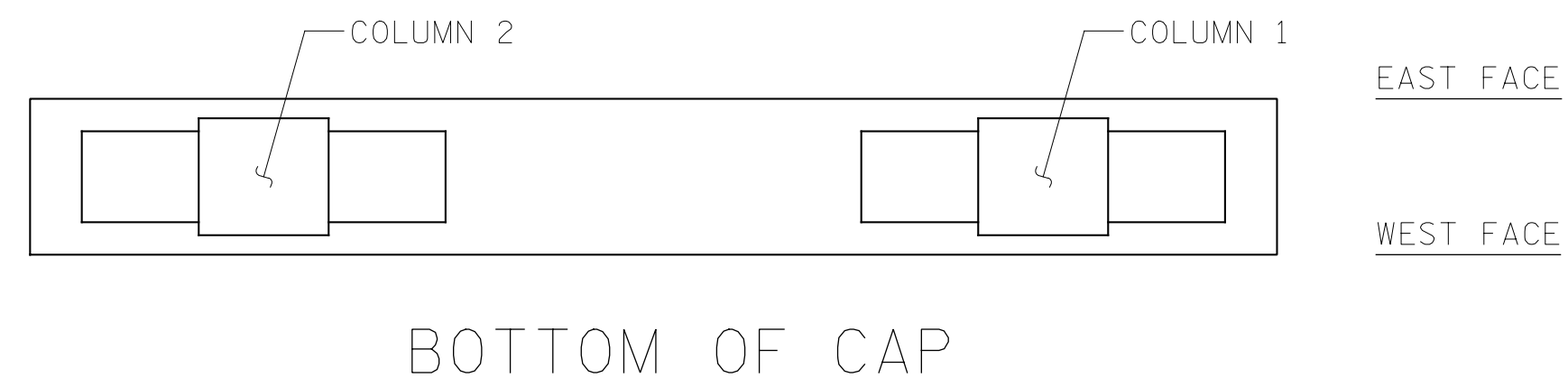
END VIEW
SOUTH FACE COL.2

BENT 132
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

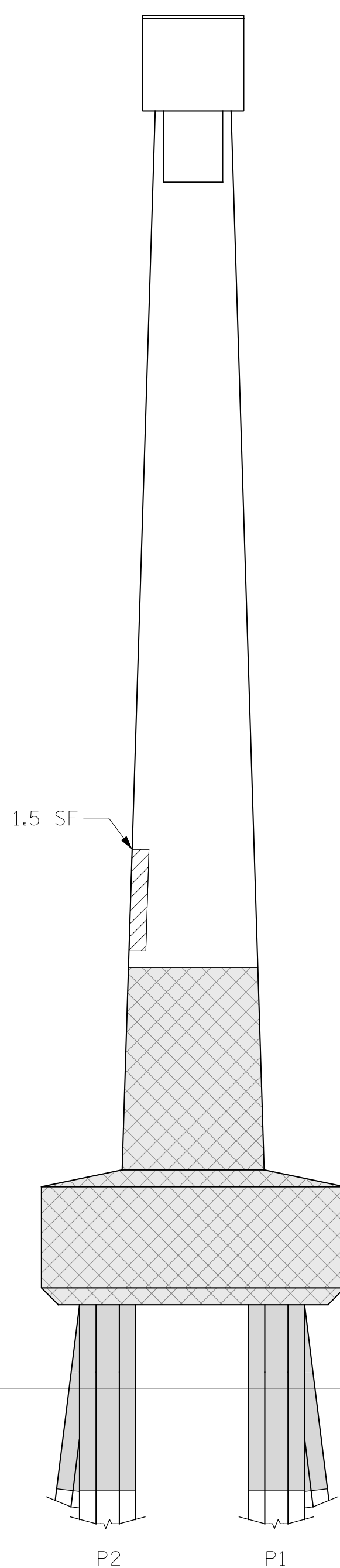
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



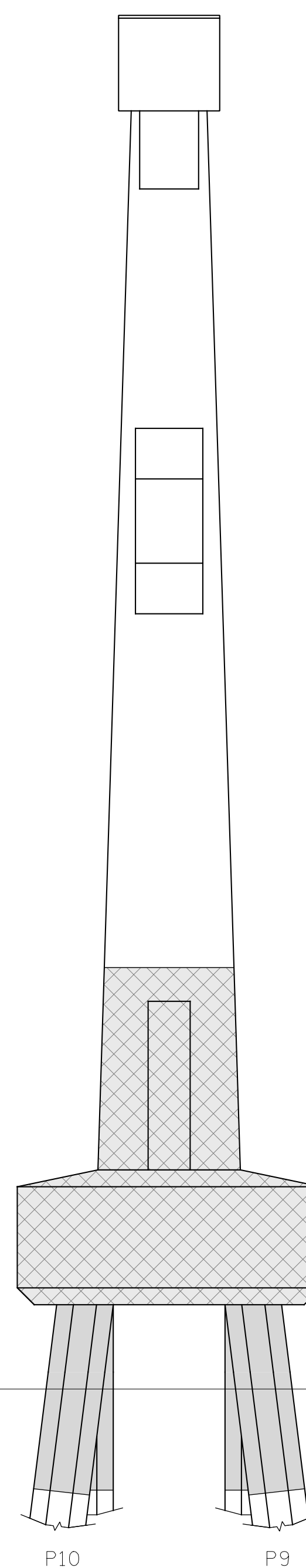
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ELEVATION
EAST FACE



INTERIOR VIEW
NORTH FACE COL.1

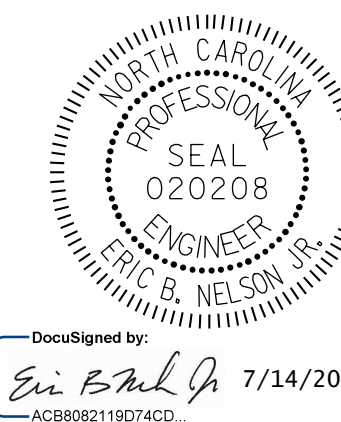


END VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

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 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 132
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 132

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE BENT 133

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION	1.5 LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	14.0 SF	7.0 CF	SF	CF	
EPOXY RESIN INJECTION	2.5 LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	363.0 SF				SF

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

NOTES:
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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

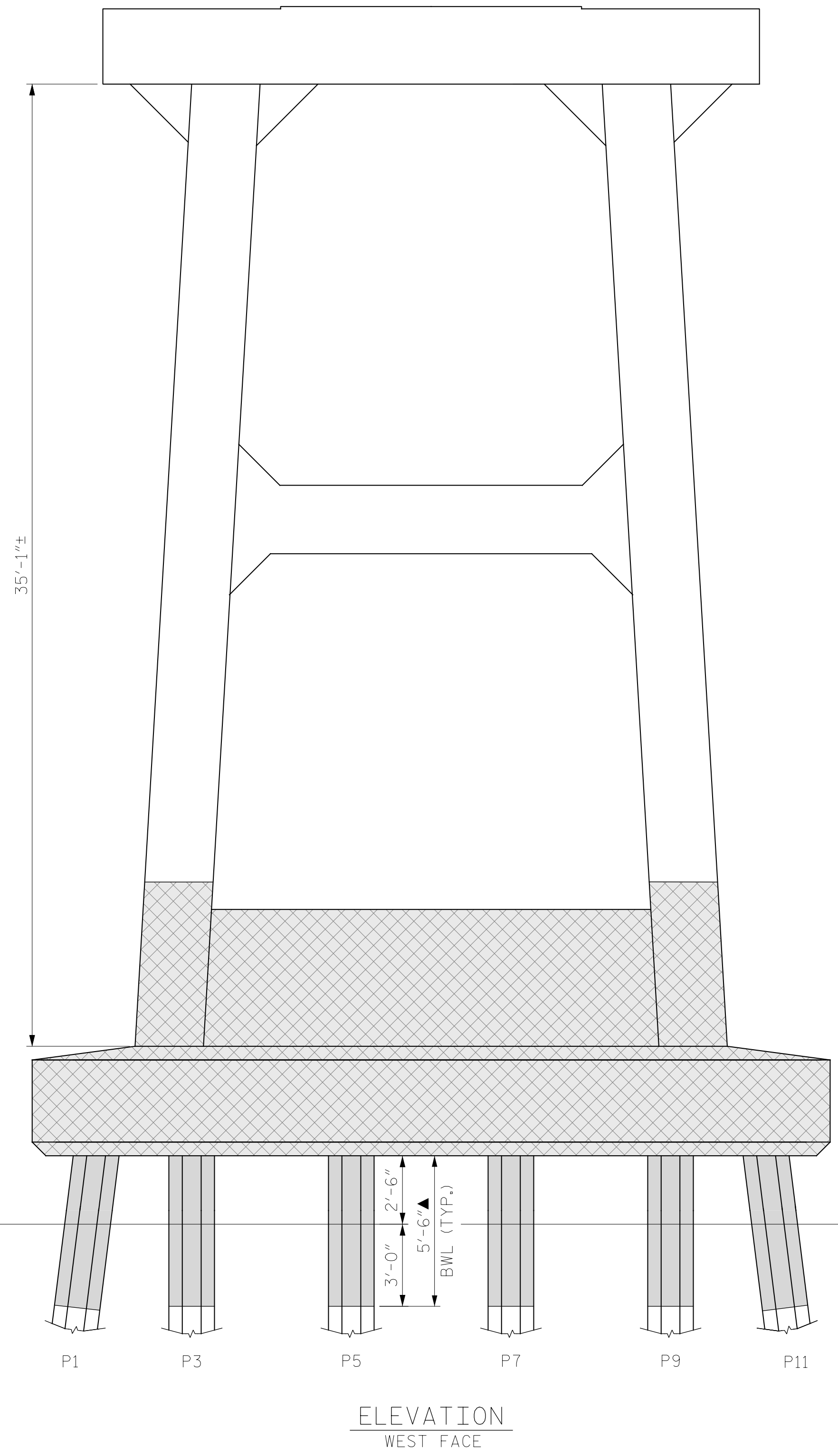
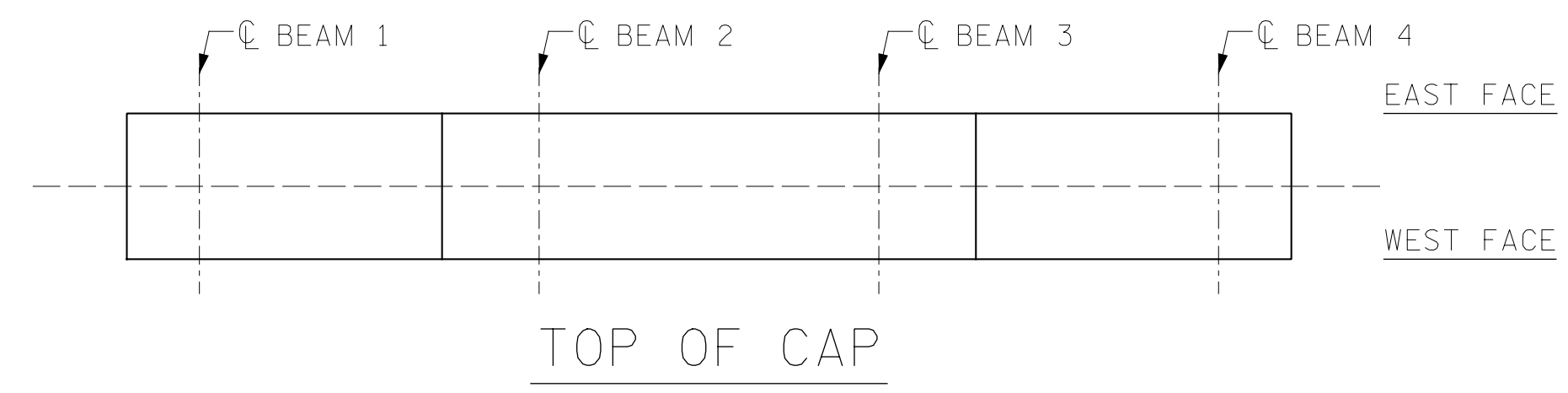
▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

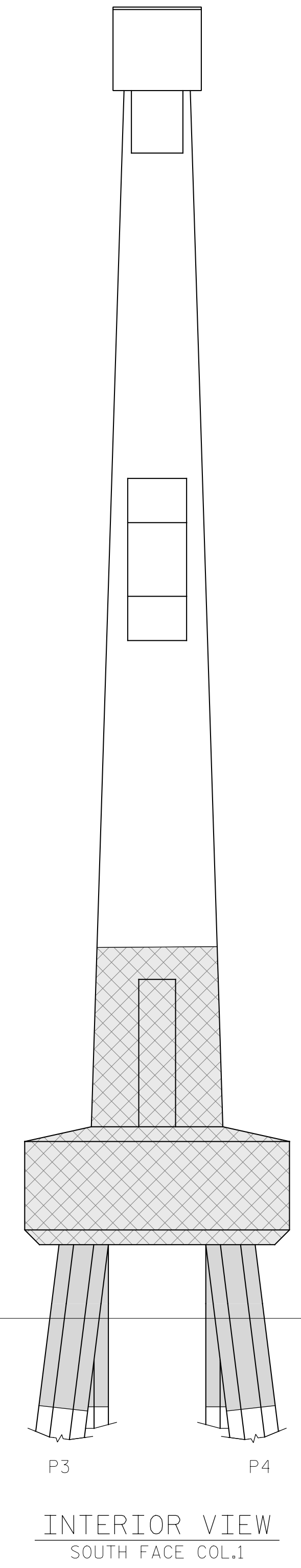
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BENT 133
WEST FACE**

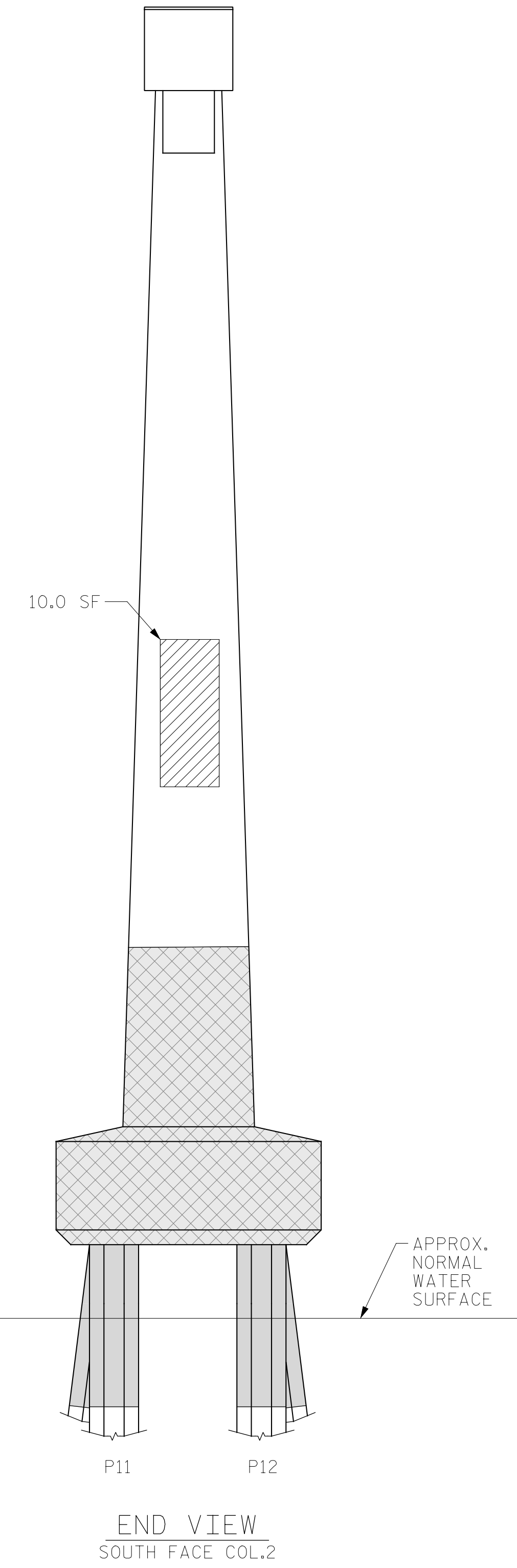
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



END VIEW
SOUTH FACE COL.2

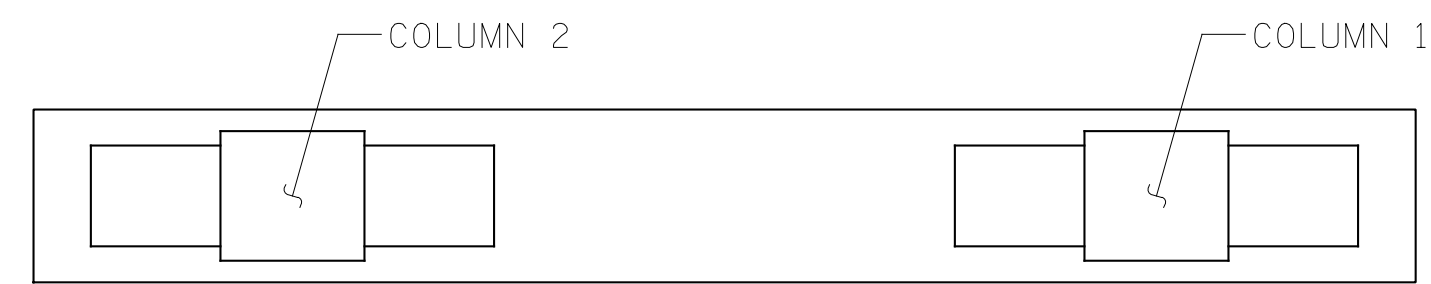
BENT 133

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)

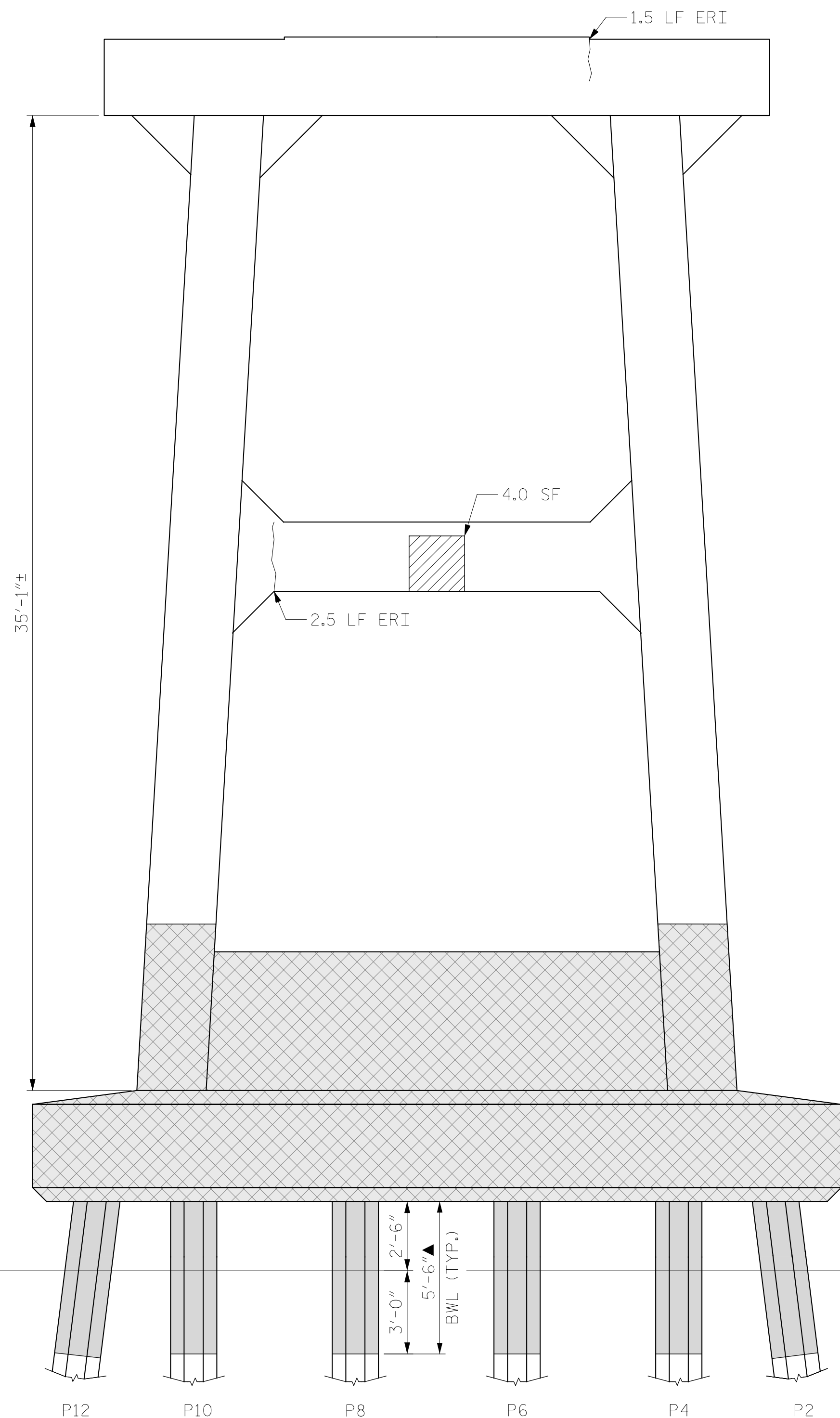
DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: J. FARNHAM DATE: 5/2019



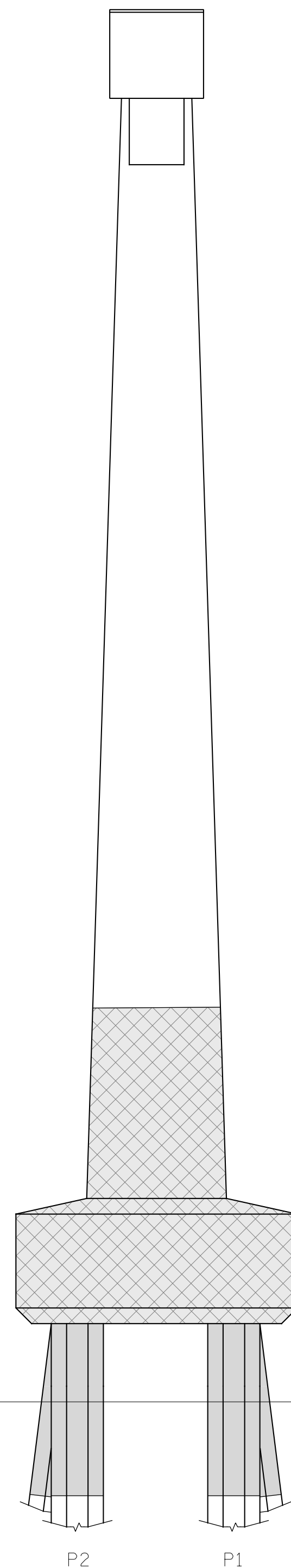
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



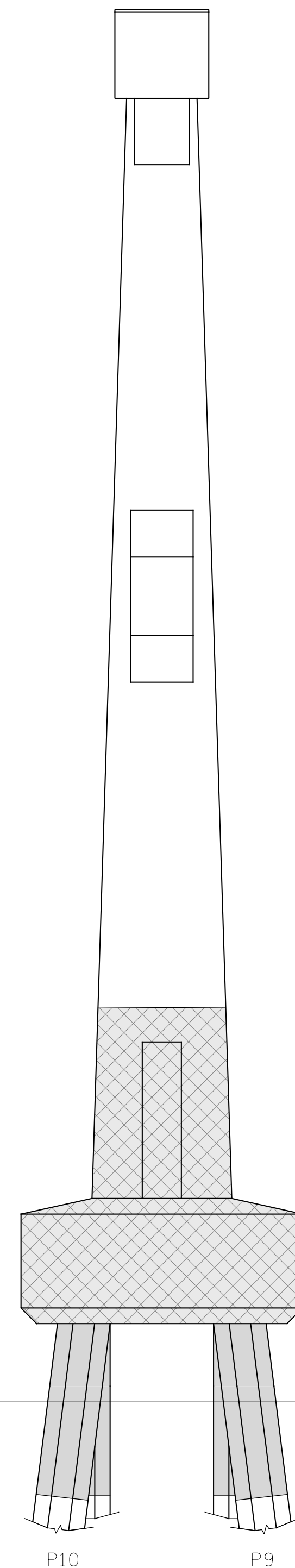
BOTTOM OF CAP



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 133
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 133
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			204
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 134

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION	- LF			LF	
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	49.4 SF	24.7 CF	SF	CF	
EPOXY RESIN INJECTION	- LF			LF	
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF			SF	
FRP PROTECTIVE SYSTEM BWL	363.0 SF			SF	

FOR CAP REPAIRS; VALUES IN CHART REPRESENT ESTIMATED 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 REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

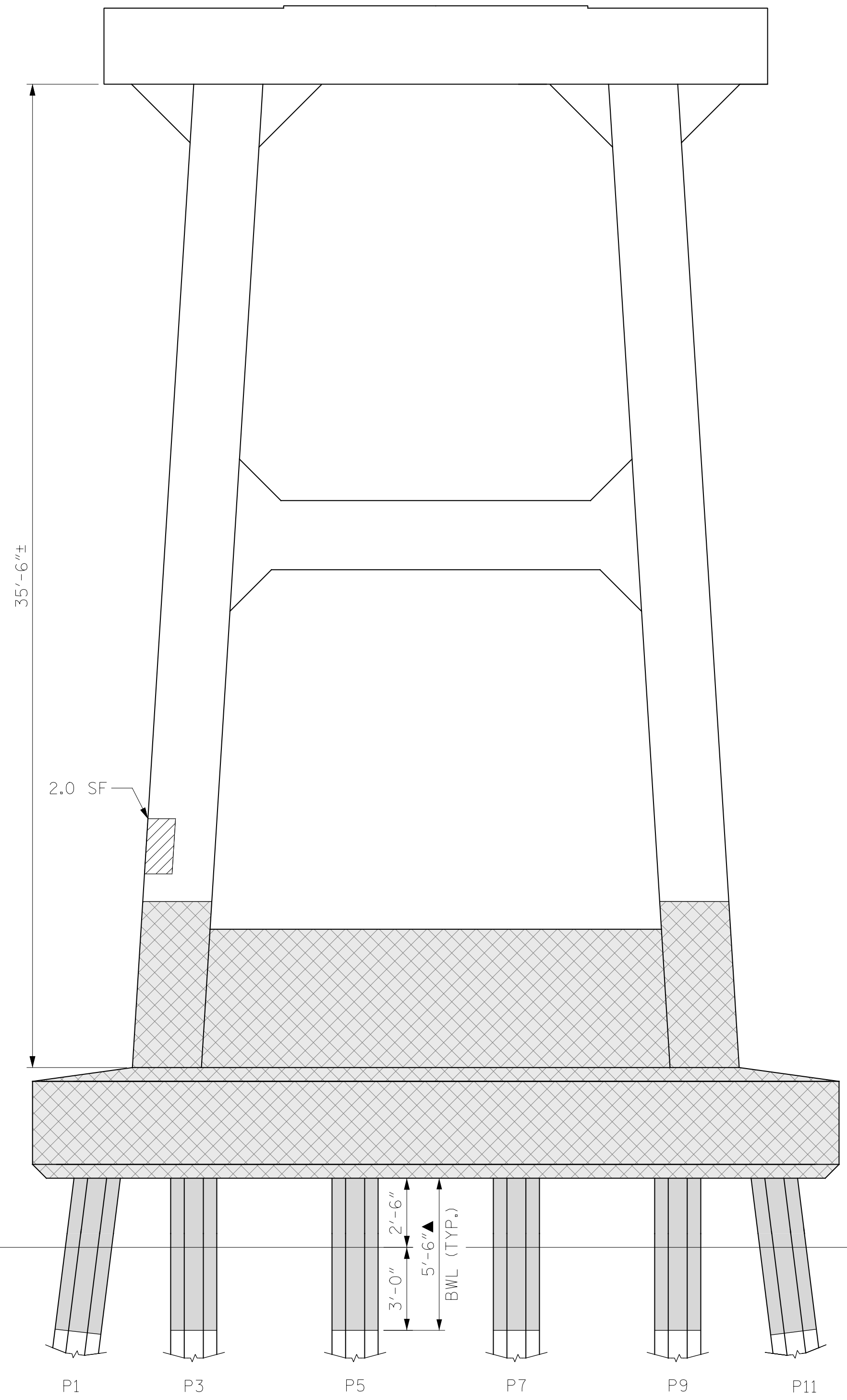
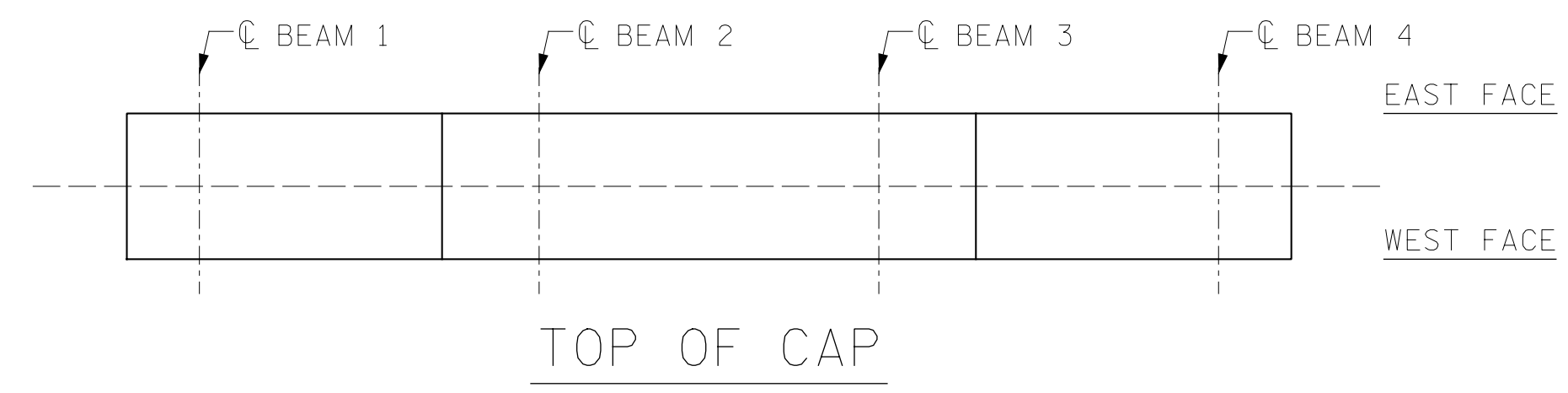
- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

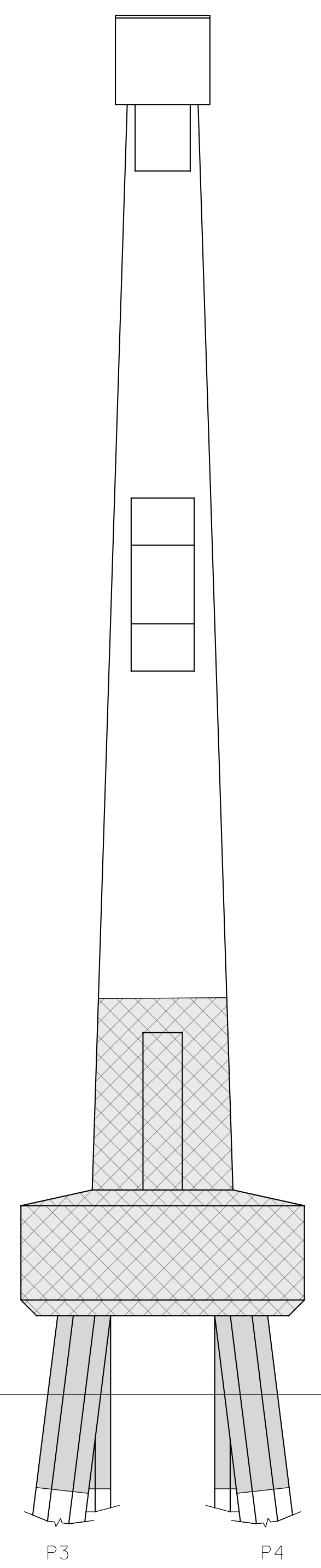
PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



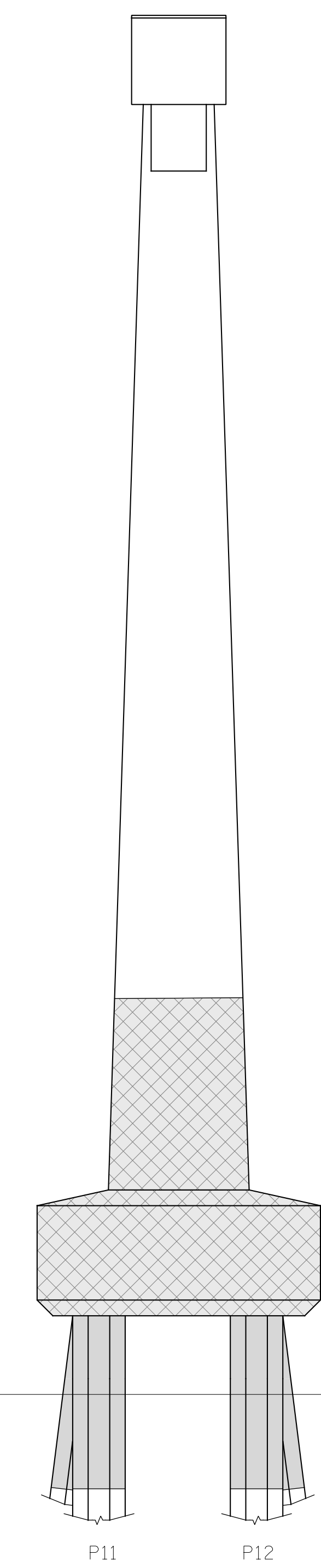
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 134 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



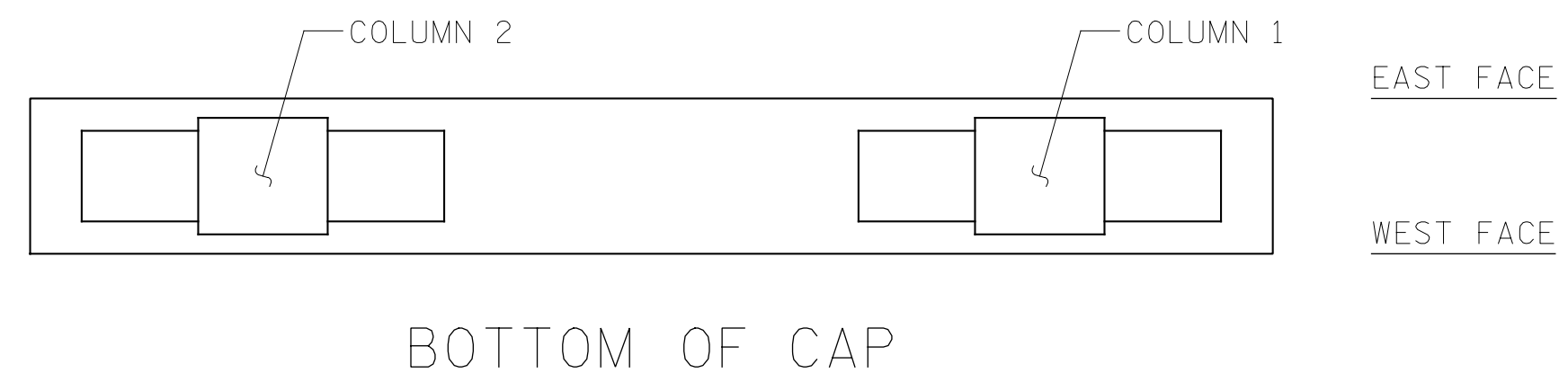
END VIEW
SOUTH FACE COL.2

BENT 134
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

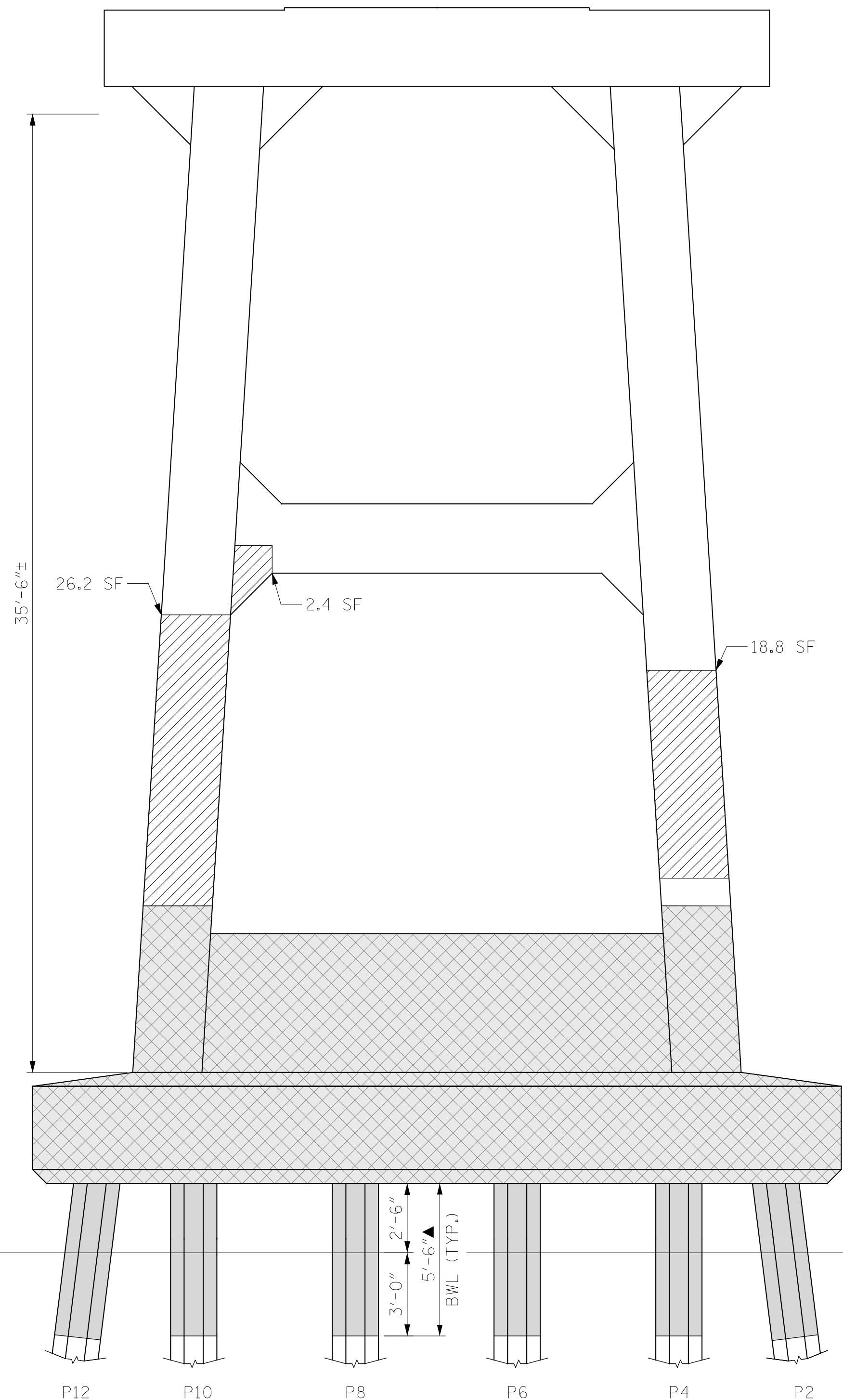
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



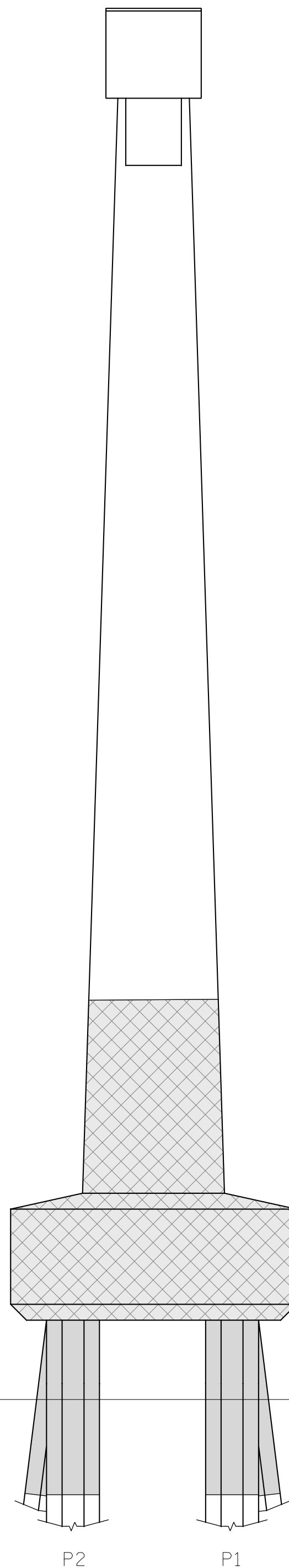
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



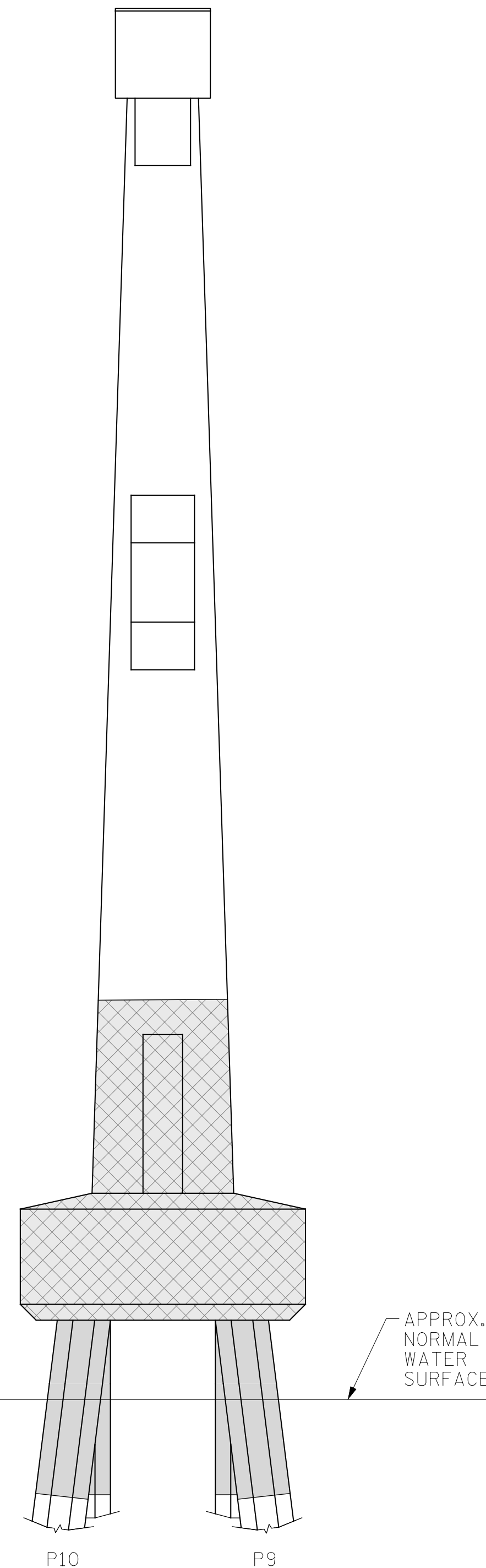
BOTTOM OF CAP



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 134
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 134

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 135

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION	- LF			LF	
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	29.8 SF	14.9 CF	SF	CF	
EPOXY RESIN INJECTION	- LF			LF	
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF			SF	
FRP PROTECTIVE SYSTEM BWL	363.0 SF			SF	

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

NOTES:

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

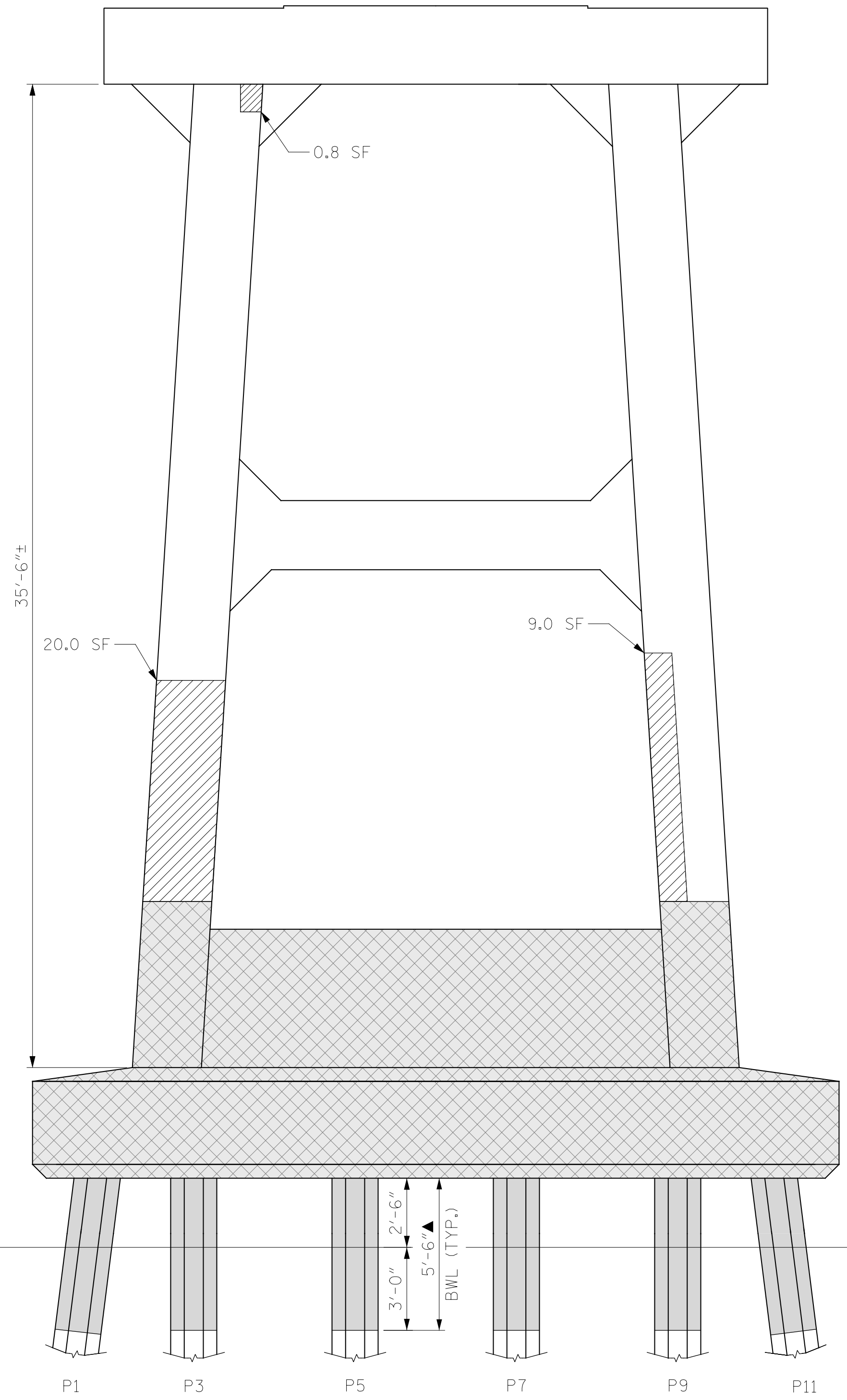
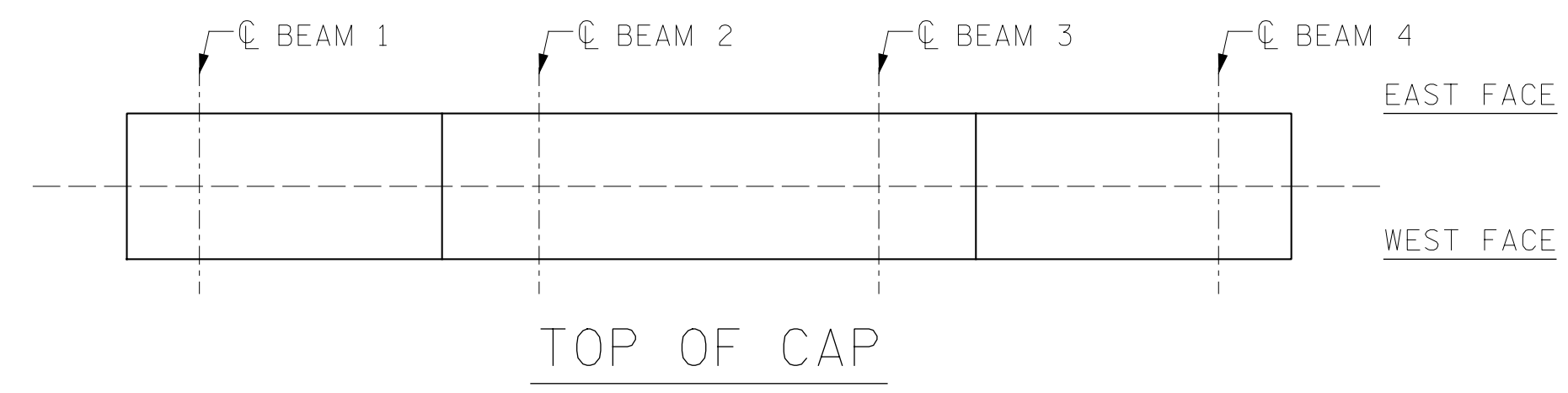
- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

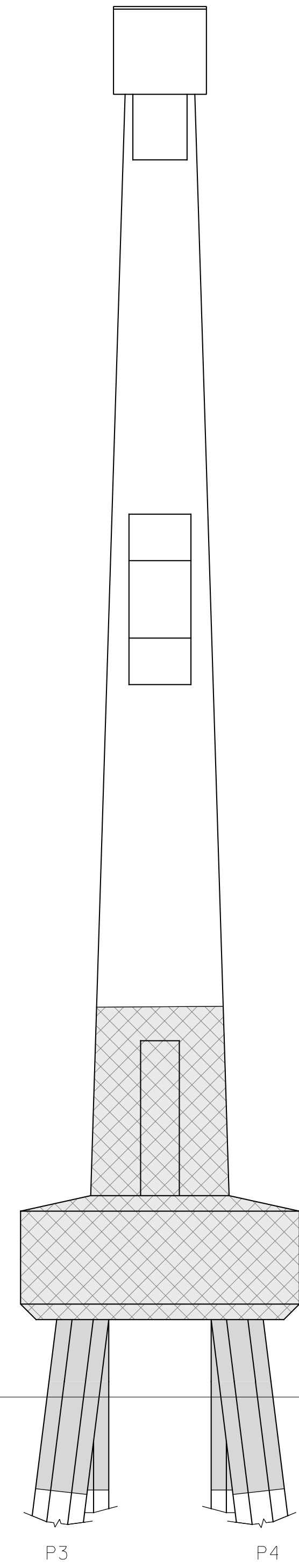
PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



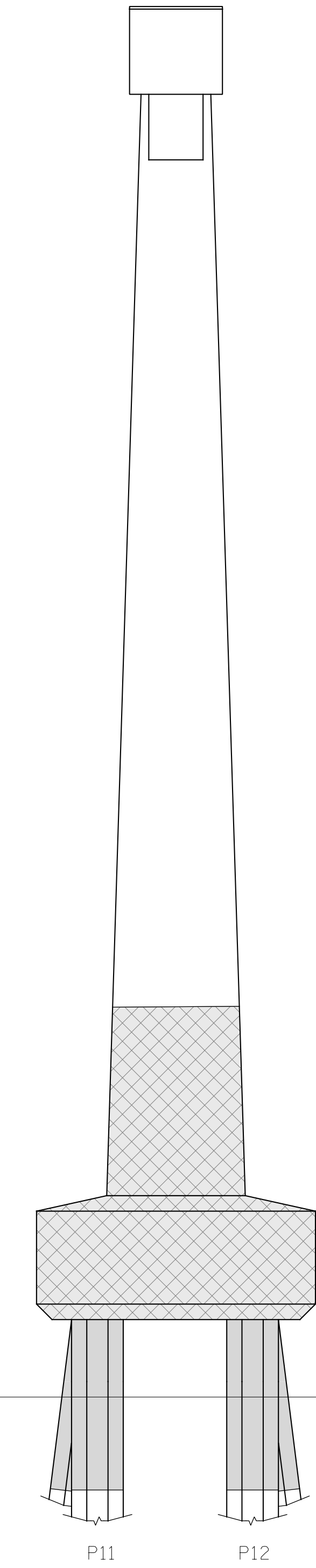
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 135 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



END VIEW
SOUTH FACE COL.2

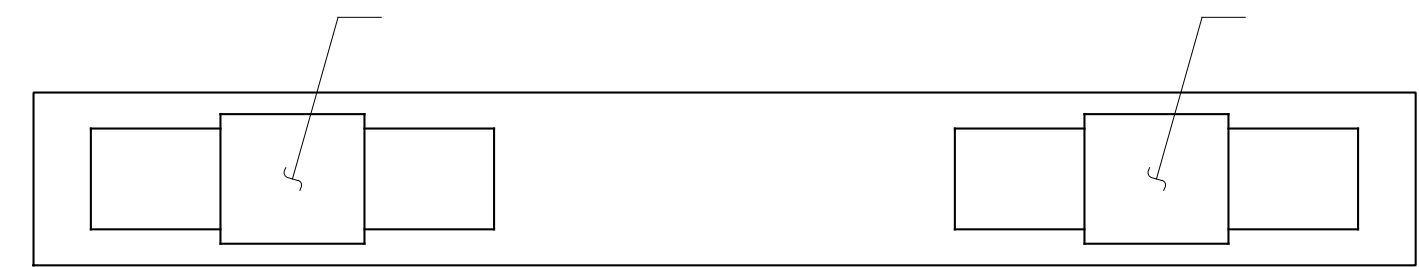
APPROX. NORMAL WATER SURFACE

BENT 135
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

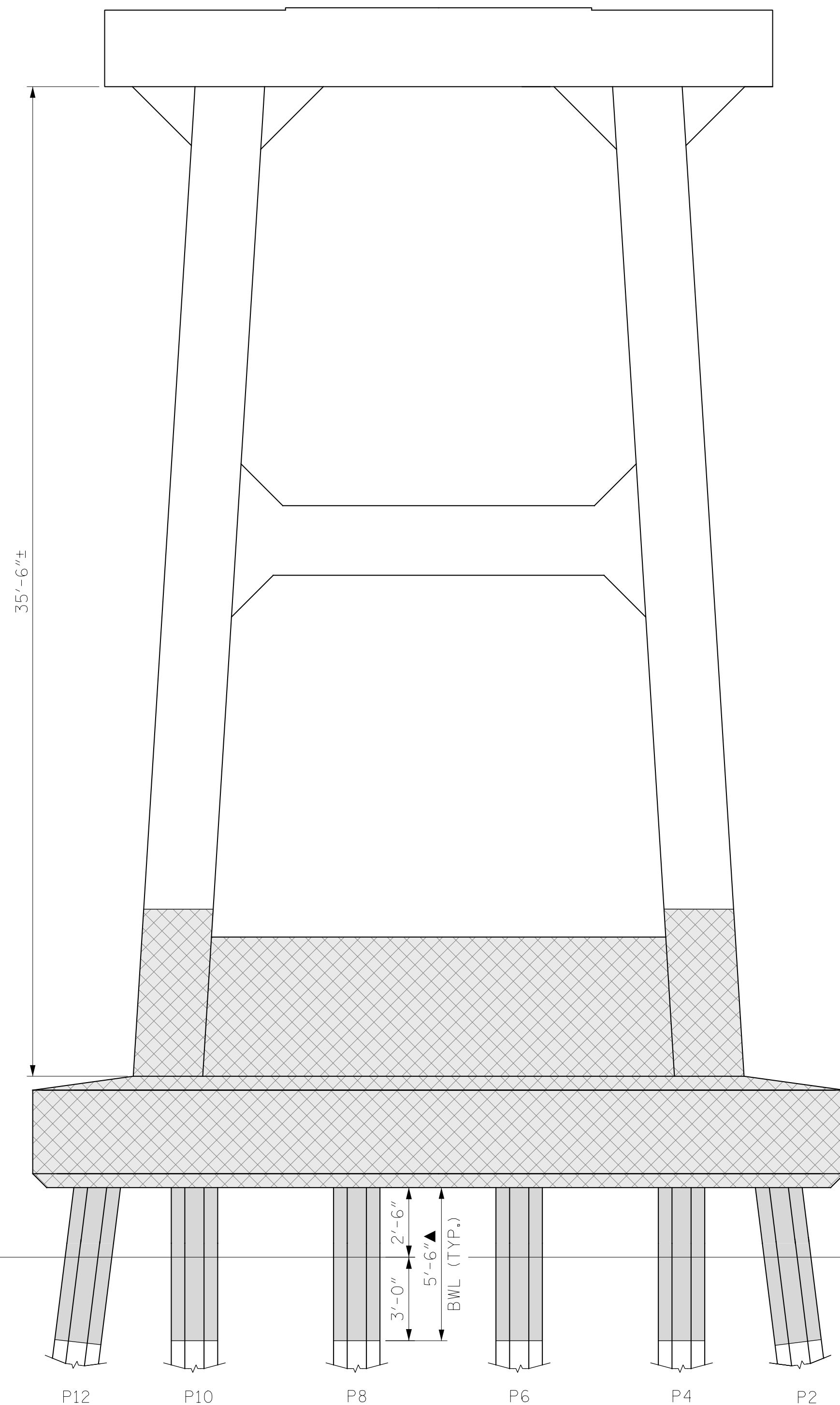
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



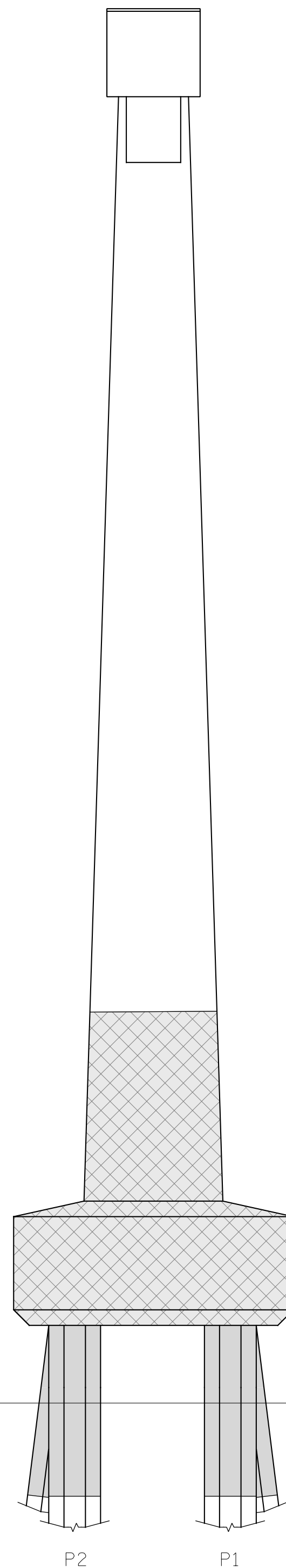
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



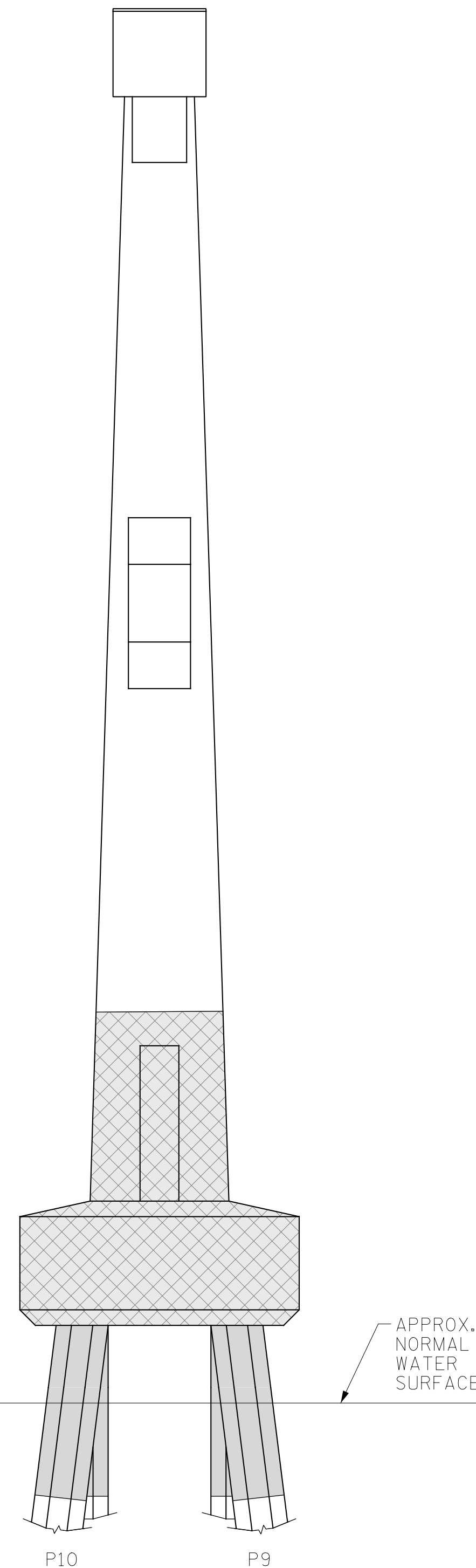
BOTTOM OF CAP



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1

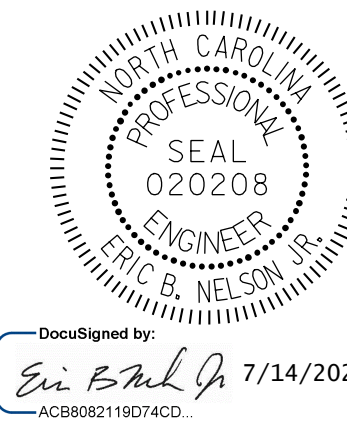


INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 135
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 135
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 136

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	0.8 SF	0.4 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	46.0 SF	23.0 CF	SF	CF	
EPOXY RESIN INJECTION	5.3 LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	363.0 SF				SF

FOR CAP REPAIRS; VALUES IN CHART REPRESENT ESTIMATED 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 REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
-  - FRP PROTECTIVE SYSTEM
-  - SHOTCRETE REPAIRS
-  - PILE FOOTING RESTORATION

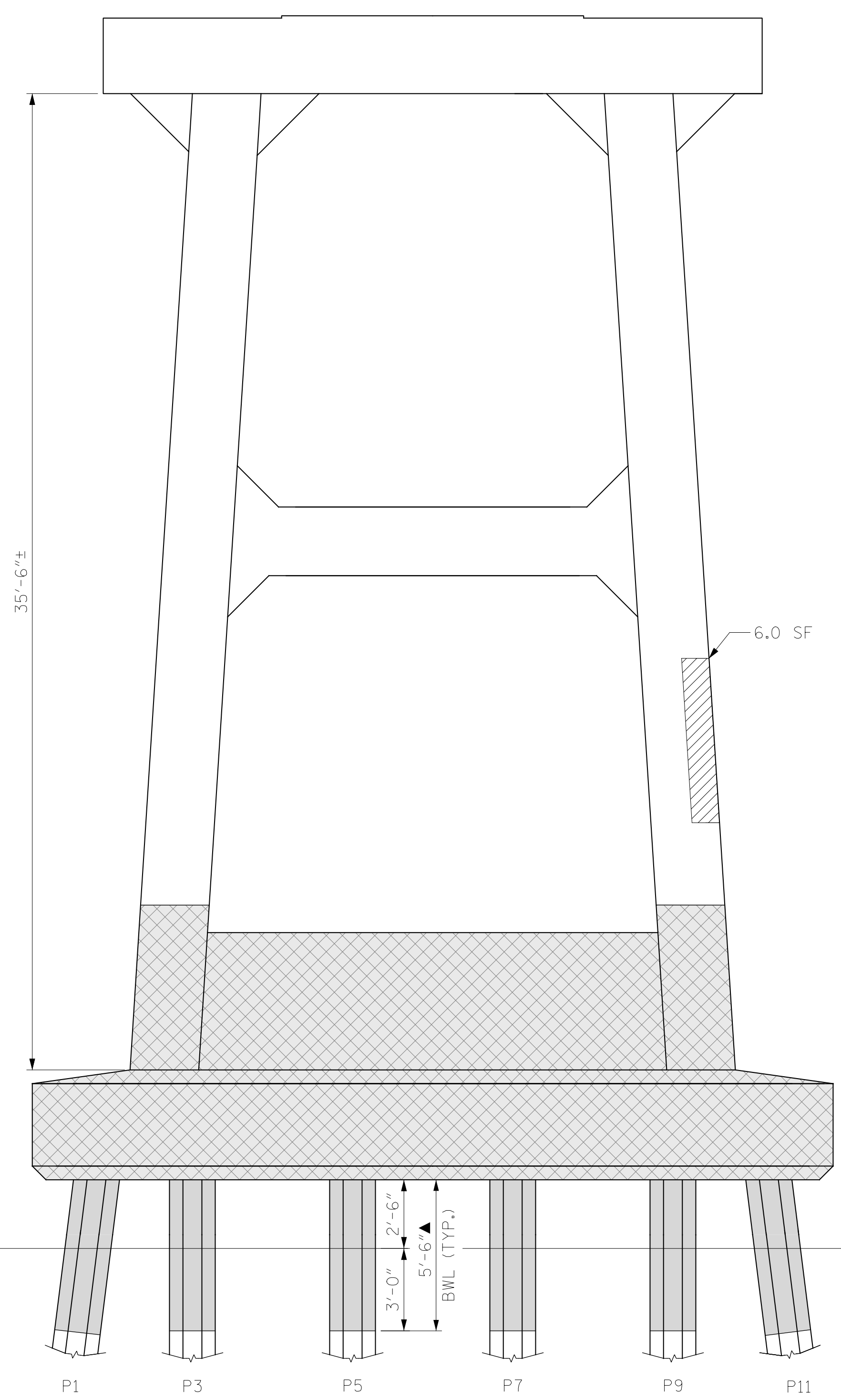
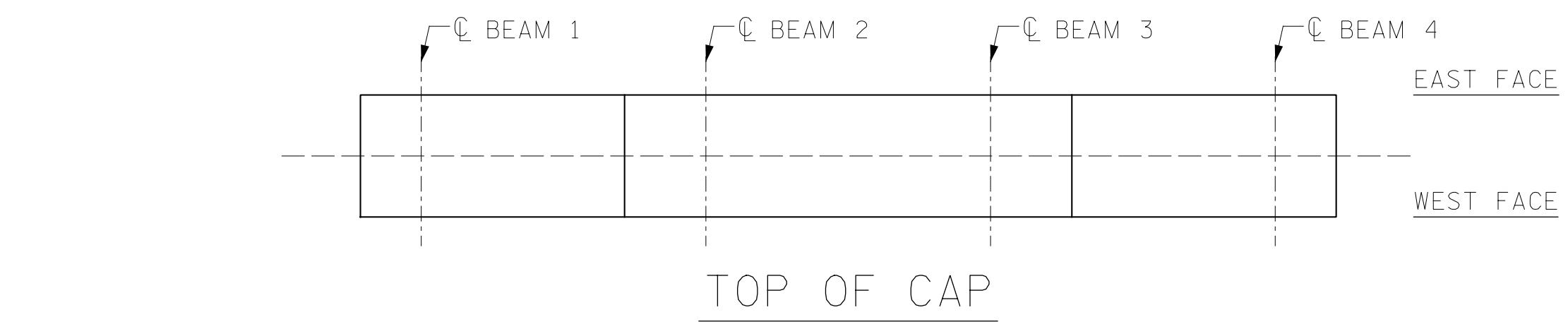
▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

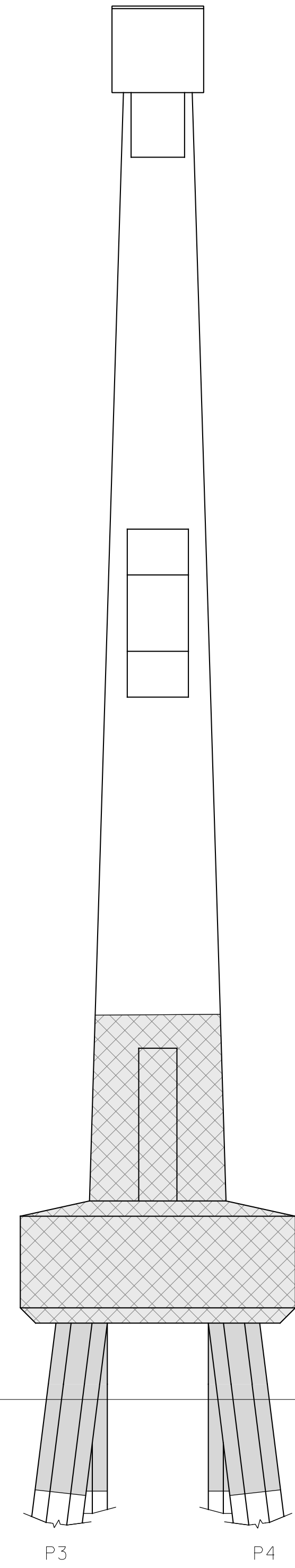


DocuSigned by:
Eric B. Nelson, Jr. 7/14/2022
 AC88021197ACD...

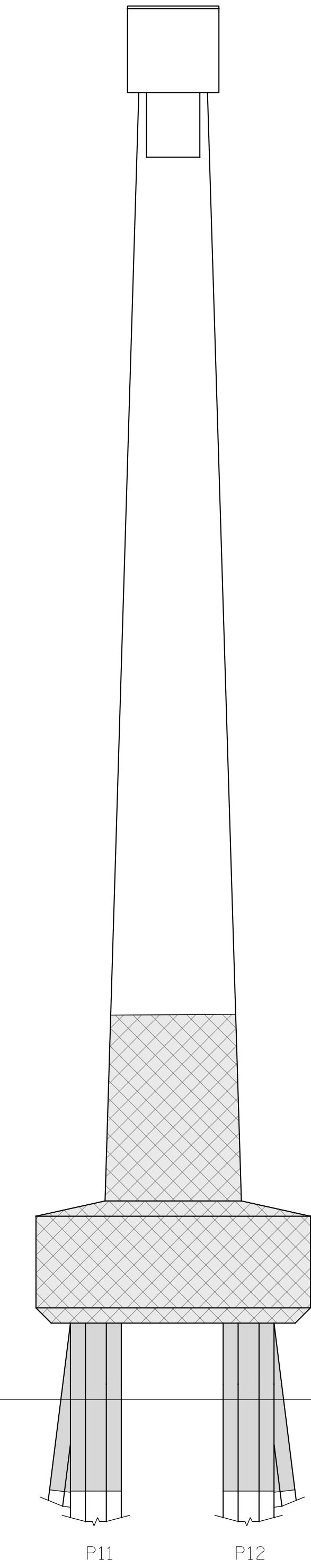
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
BENT 136 WEST FACE						S-209
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	355
1			3			
2			4			



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



END VIEW
SOUTH FACE COL.2

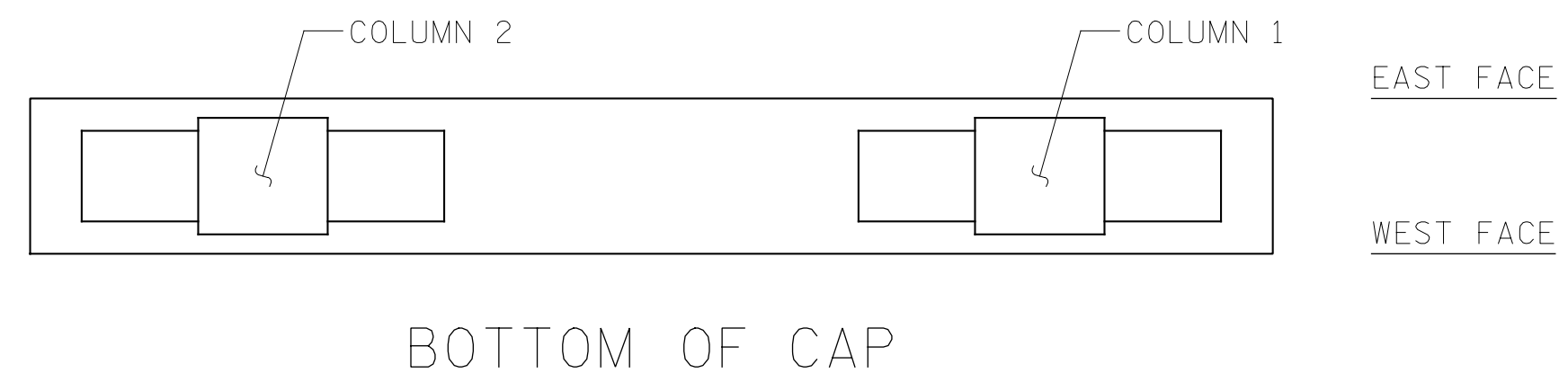
BENT 136

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

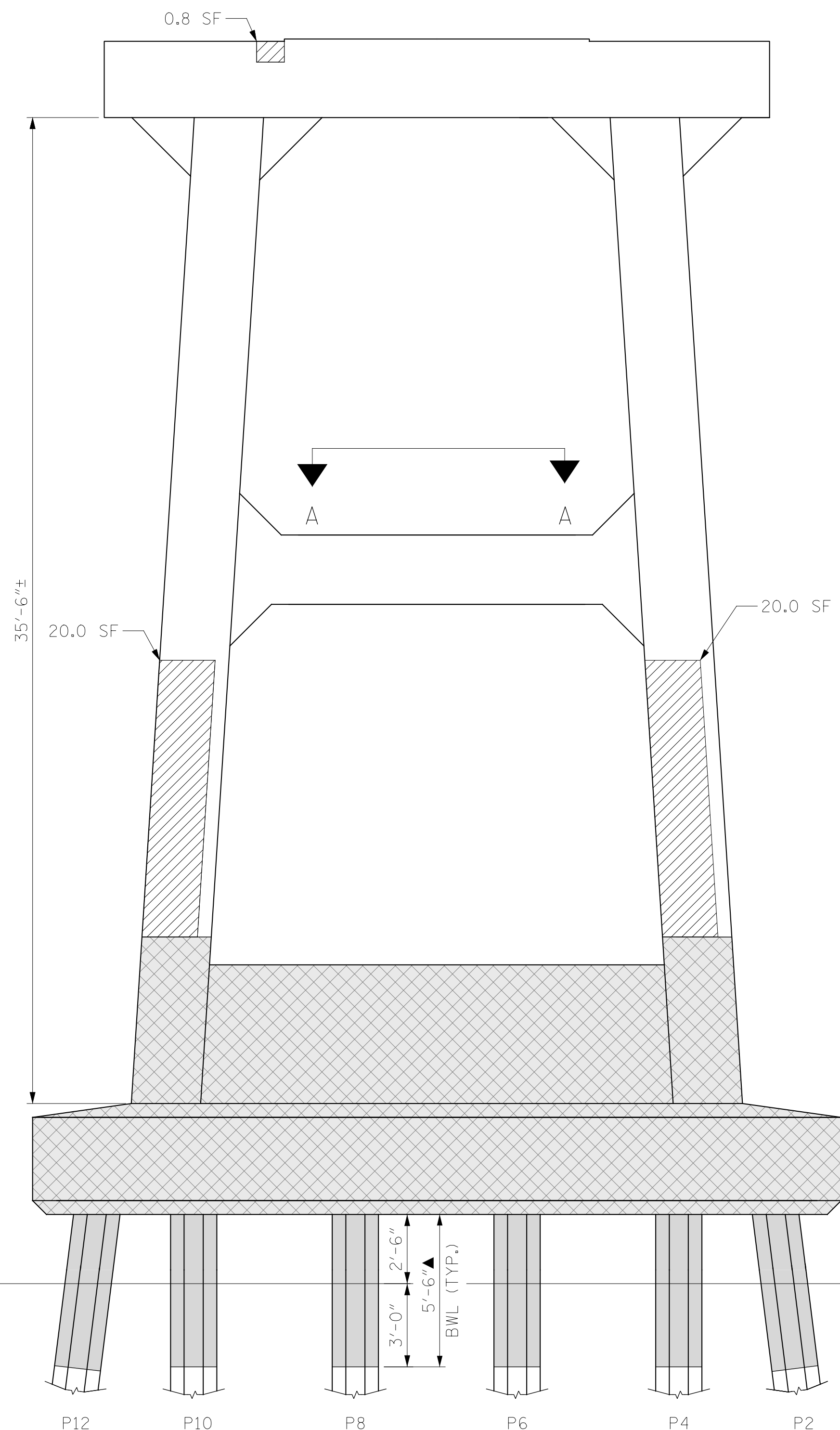
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



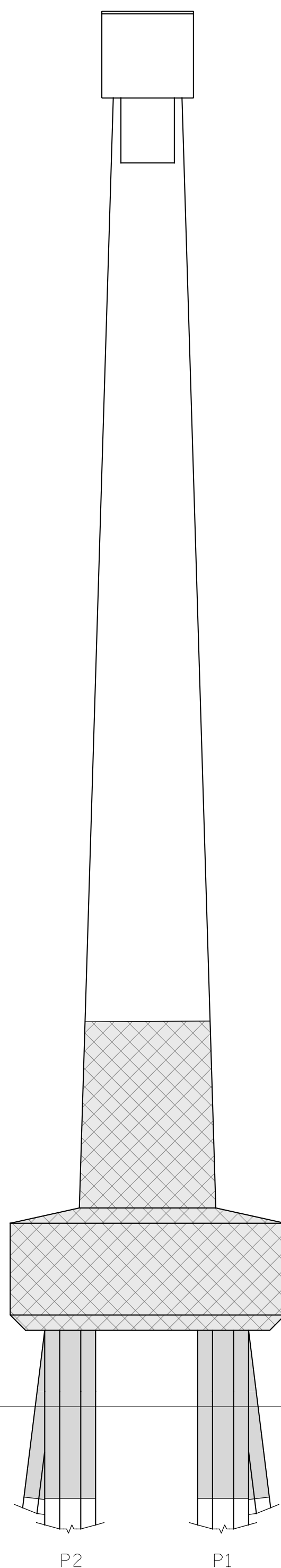
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



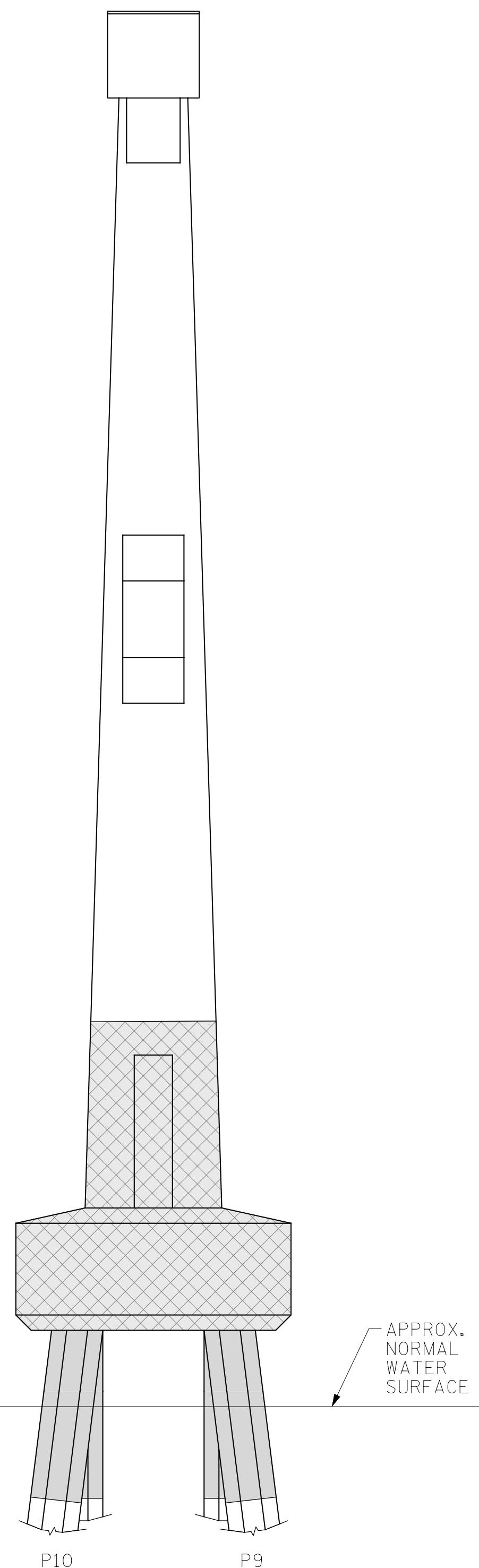
BOTTOM OF CAP



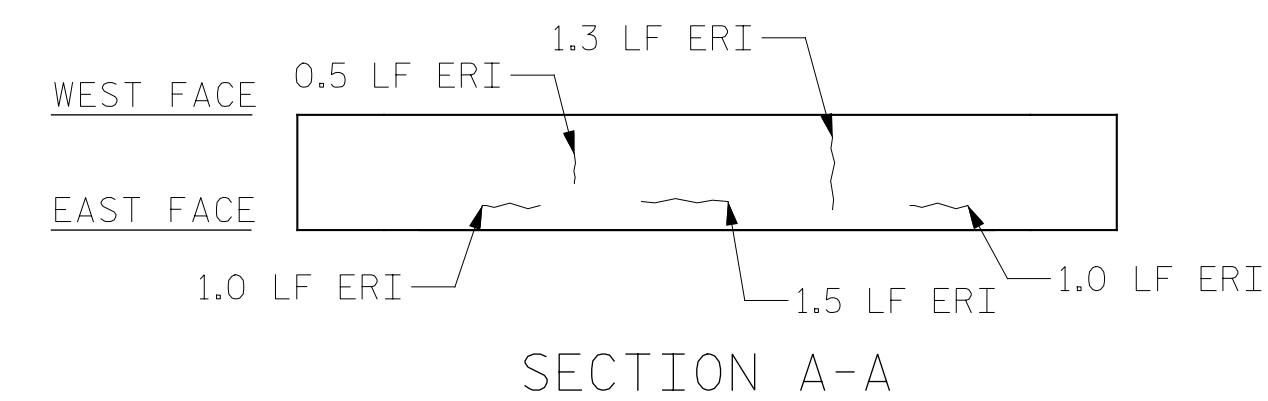
ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



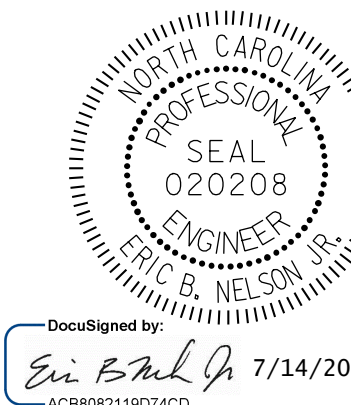
INTERIOR VIEW
NORTH FACE COL.2



- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



DocuSigned by:
Eric B. Nelson, Jr. 7/14/2022

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 136
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 136

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-210
2			4			355

AS-BUILT REPAIR QUANTITY TABLE BENT 137

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	8.3 SF	4.2 CF	SF	CF	
EPOXY RESIN INJECTION	21.0 LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	227.7 SF	113.9 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	484.0 SF				SF

FOR CAP REPAIRS; VALUES IN CHART REPRESENT ESTIMATED 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 PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
- - FRP PROTECTIVE SYSTEM
- ▨ - SHOTCRETE REPAIRS
- ▩ - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

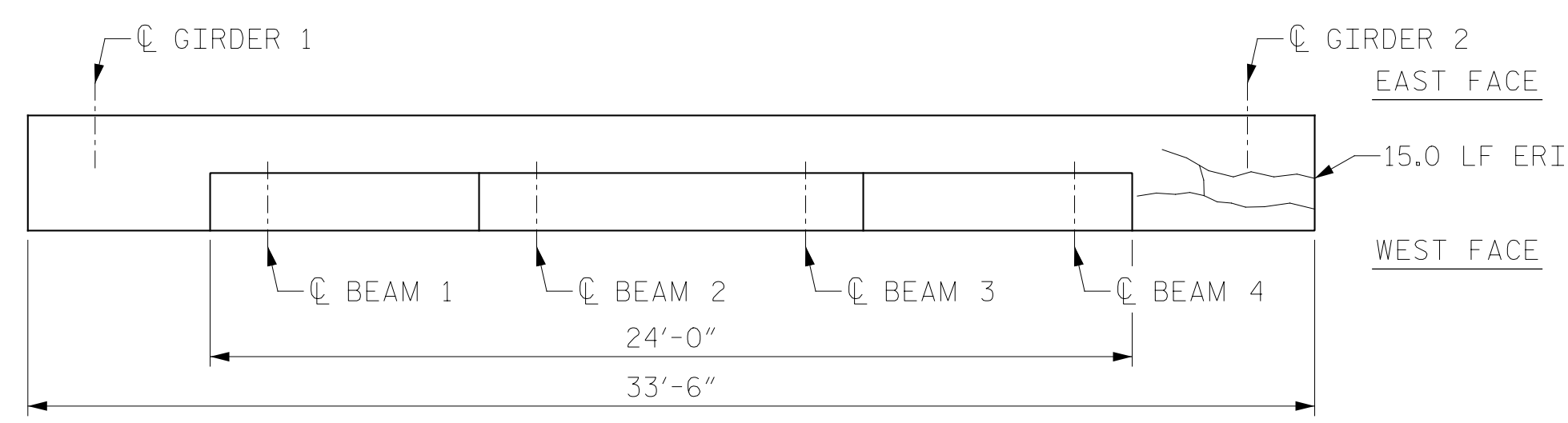
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 137
WEST FACE

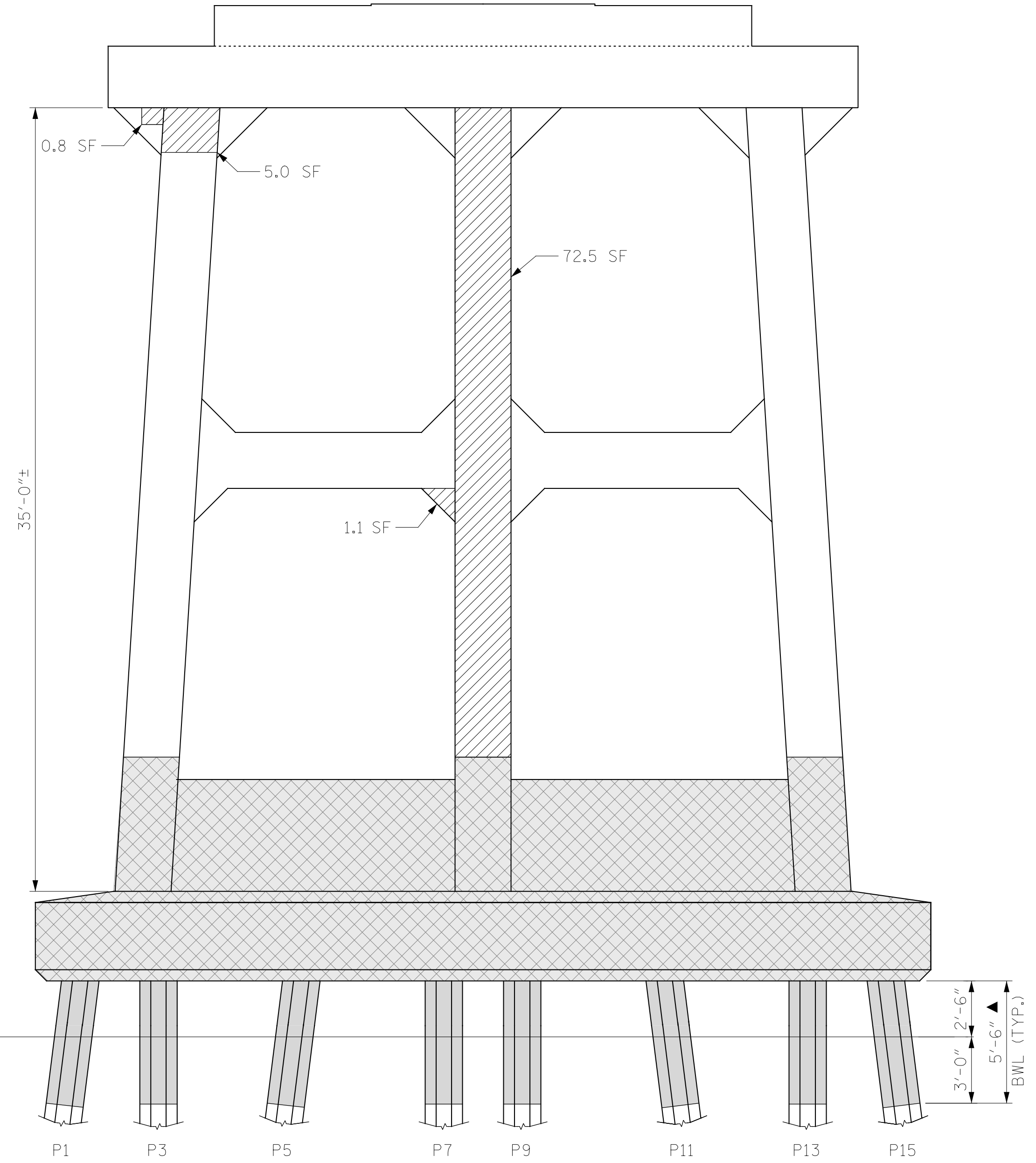
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			



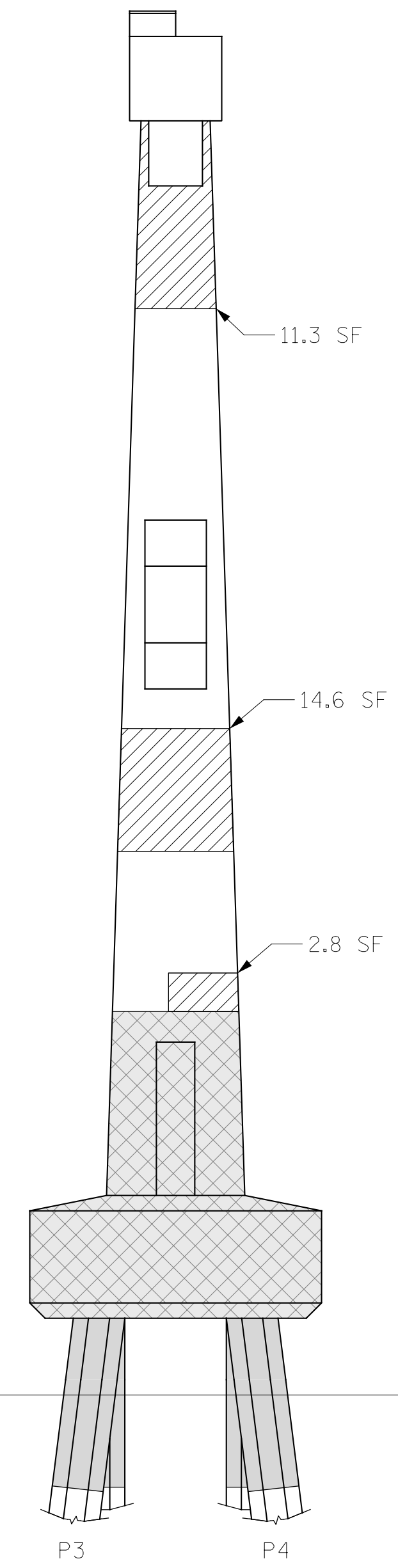
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



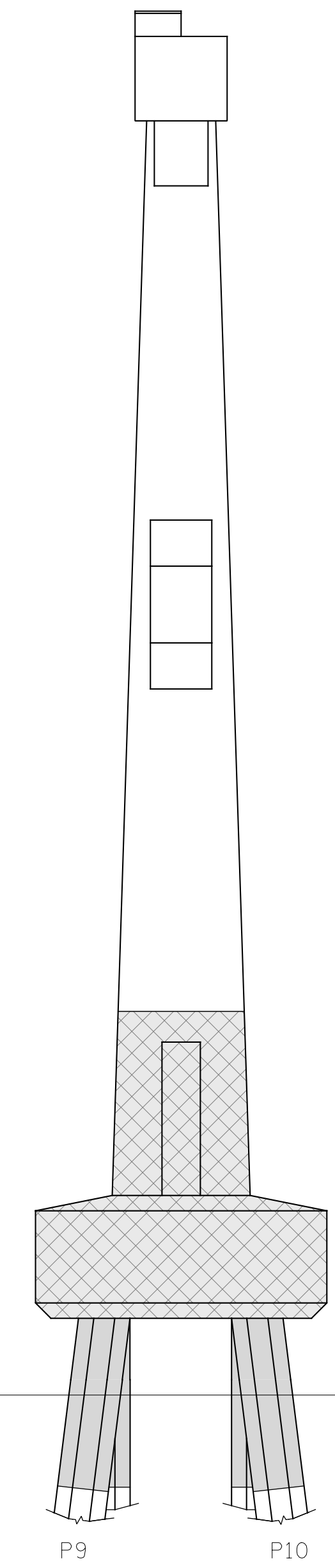
TOP OF CAP



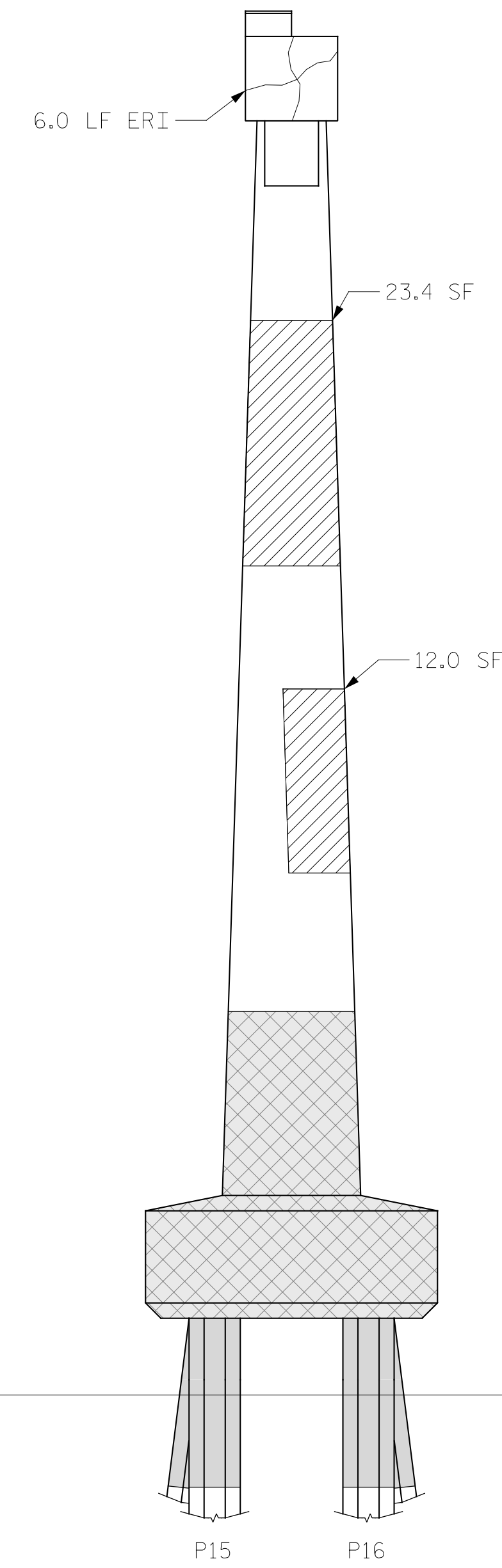
ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



INTERIOR VIEW
SOUTH FACE COL.2

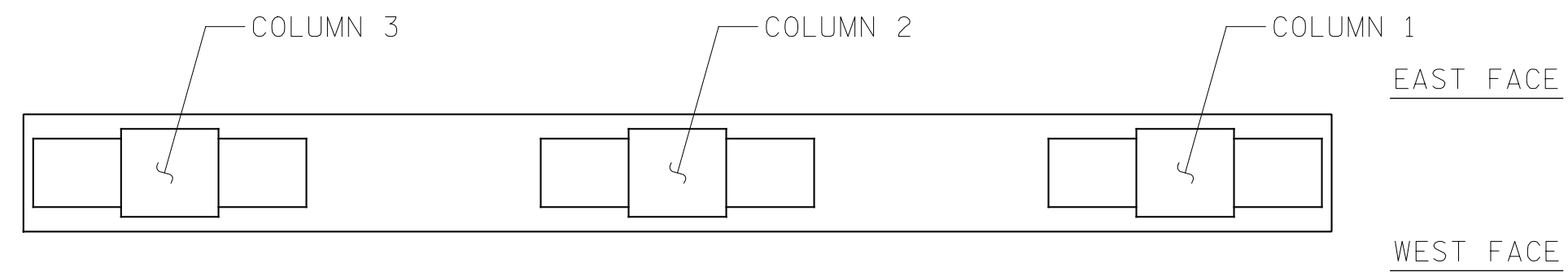


END VIEW
SOUTH FACE COL.3

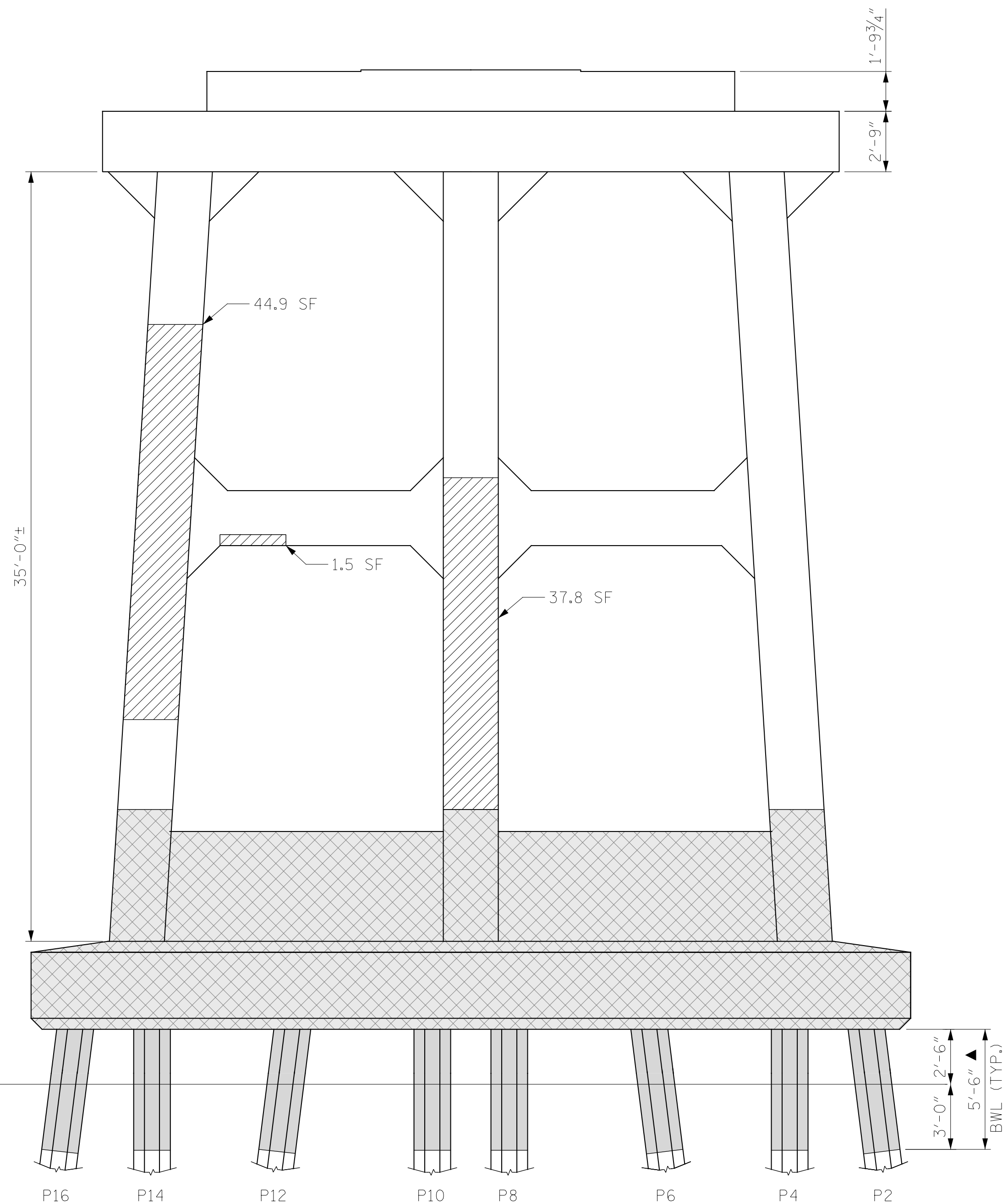
APPROX. NORMAL WATER SURFACE

BENT 137
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)

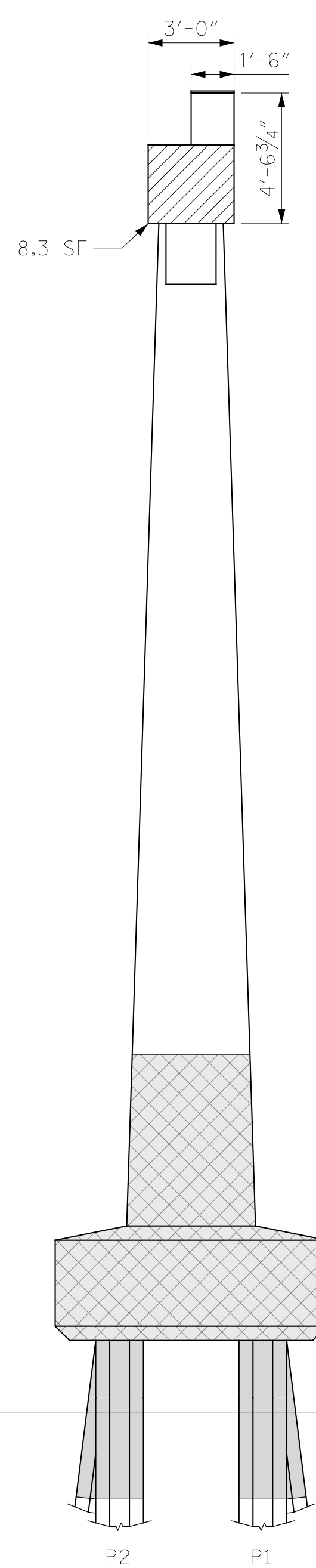
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



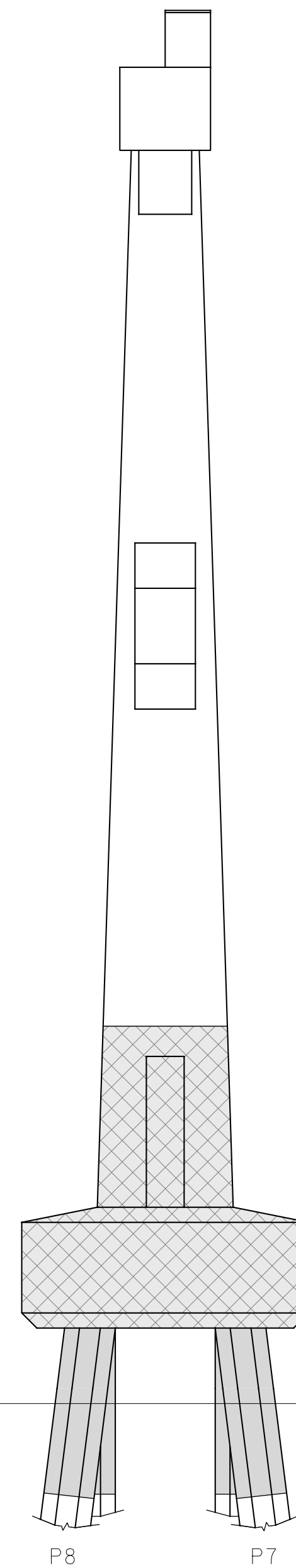
BOTTOM OF CAP



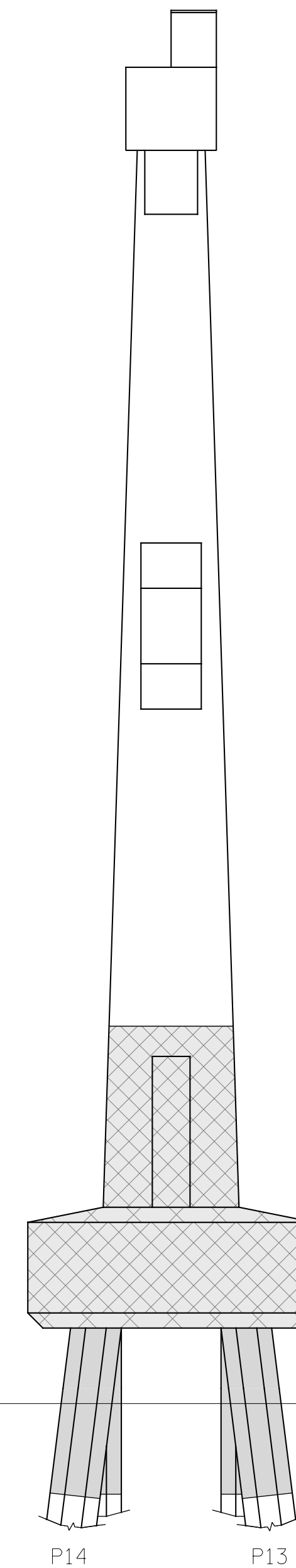
ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2



INTERIOR VIEW
NORTH FACE COL.3

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

APPROX. NORMAL WATER SURFACE



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 137
 EAST FACE**

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019

BENT 137
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

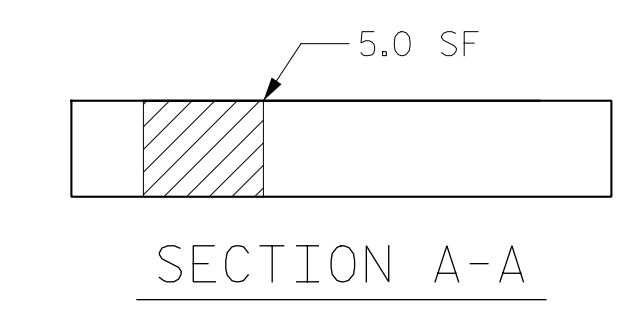
AS-BUILT REPAIR QUANTITY TABLE BENT 138

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION	5.0 LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	103.3 SF	51.7 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	484.0 SF				SF

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

NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
 FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
 FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION



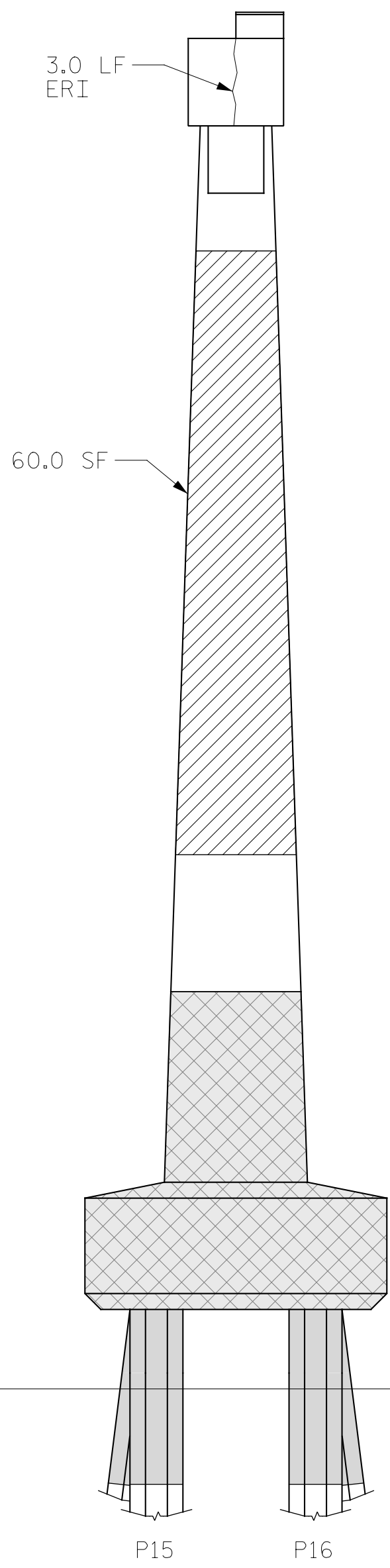
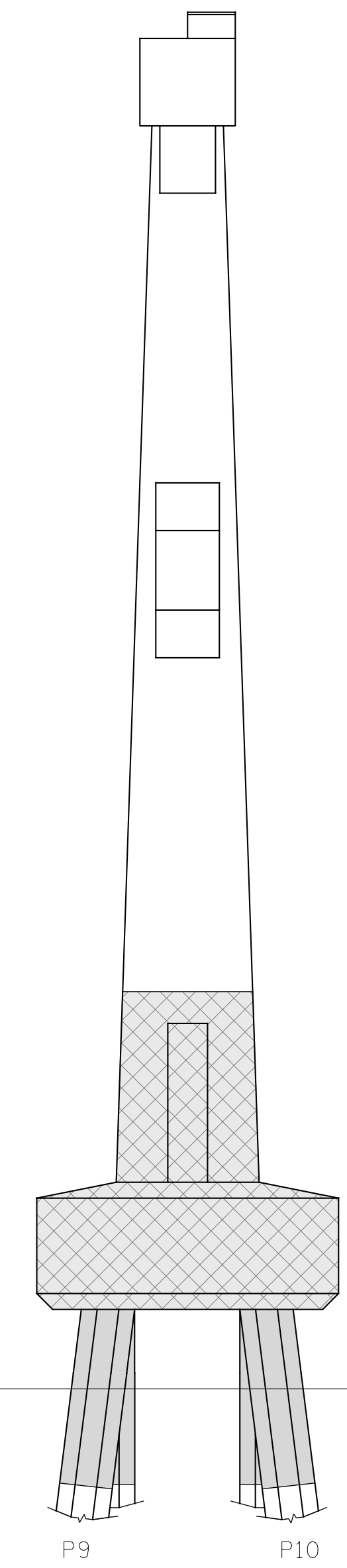
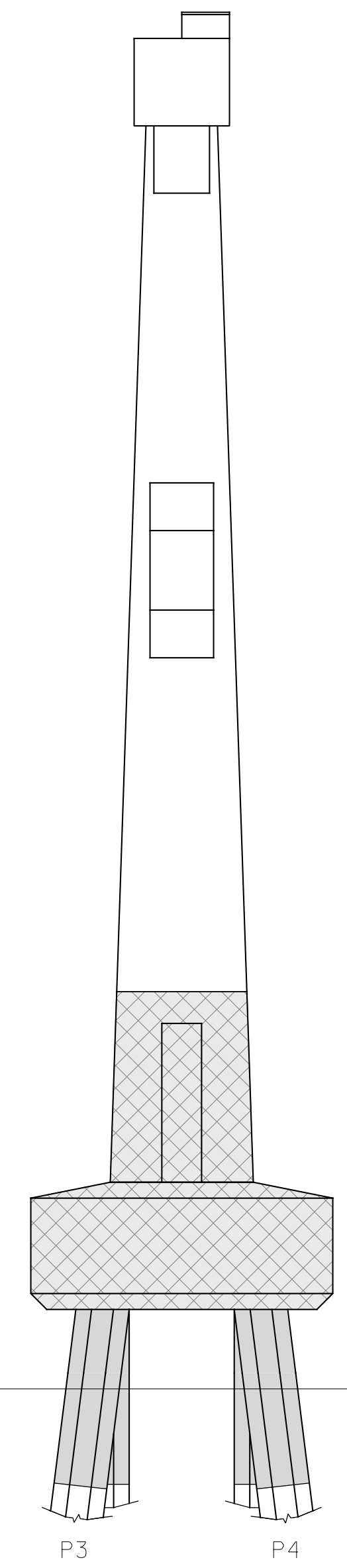
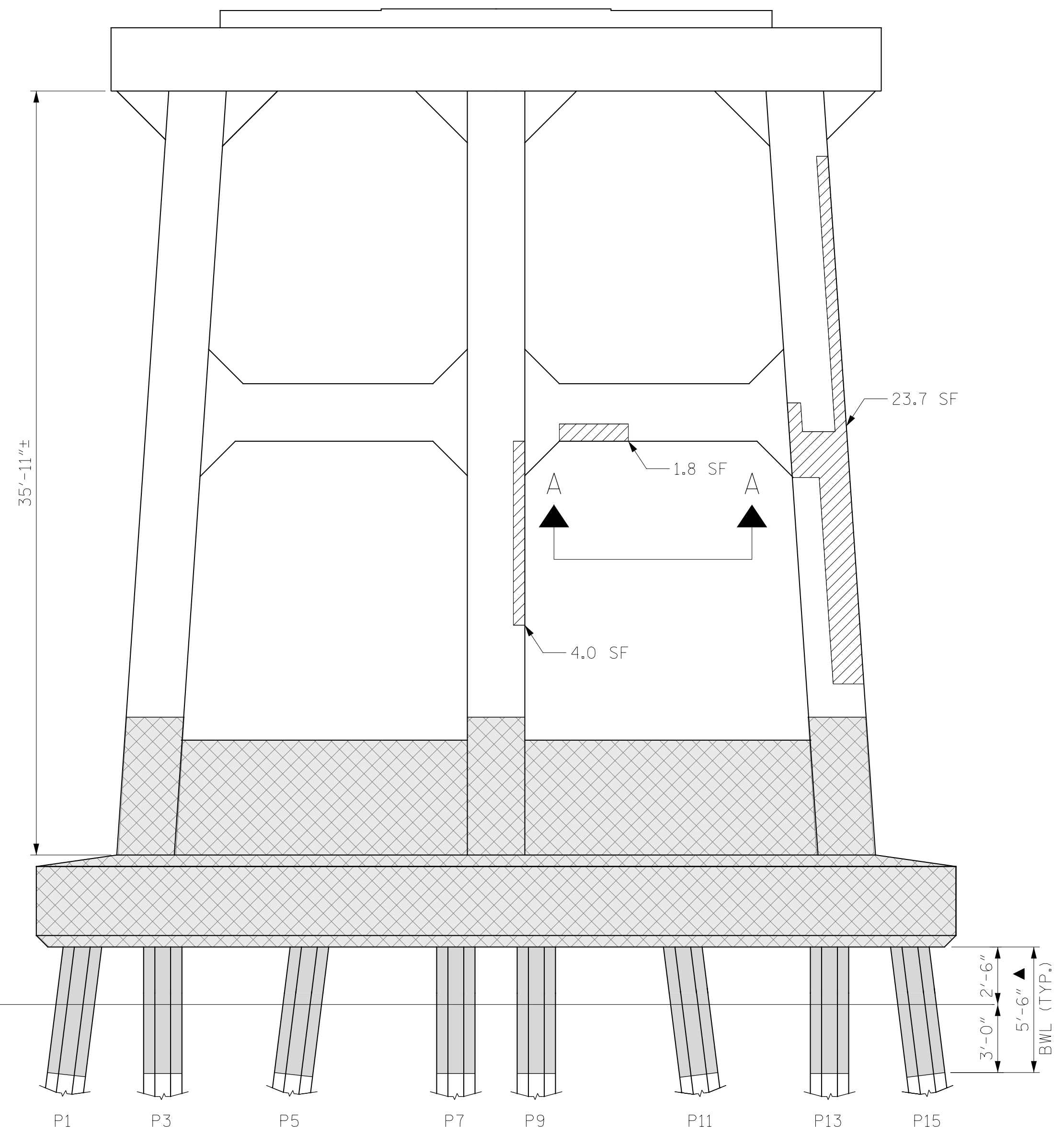
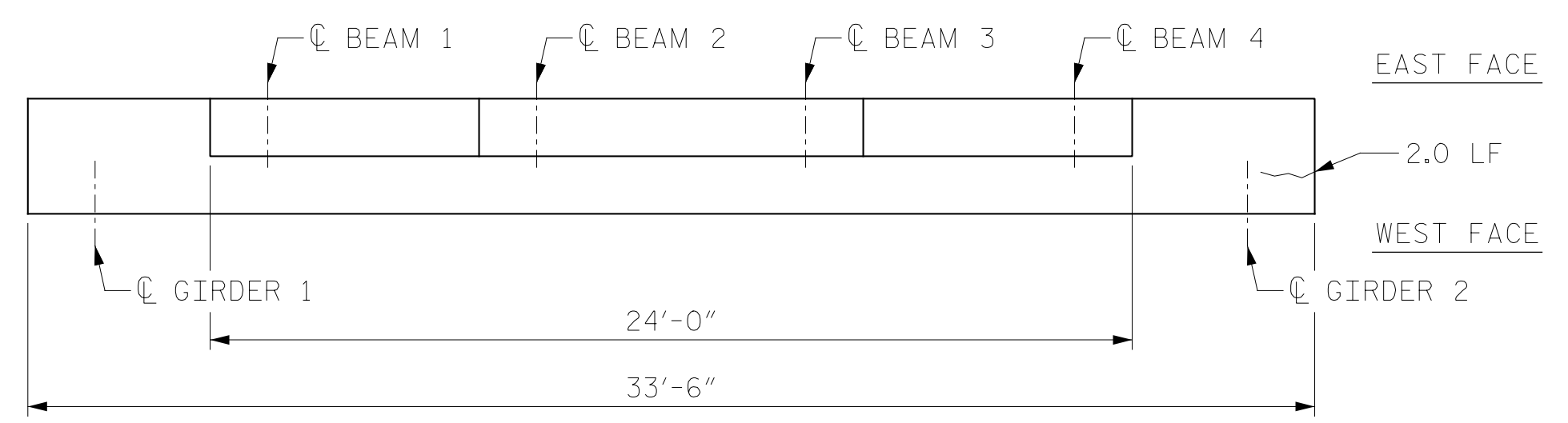
▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

APPROX. NORMAL WATER SURFACE



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 138 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355

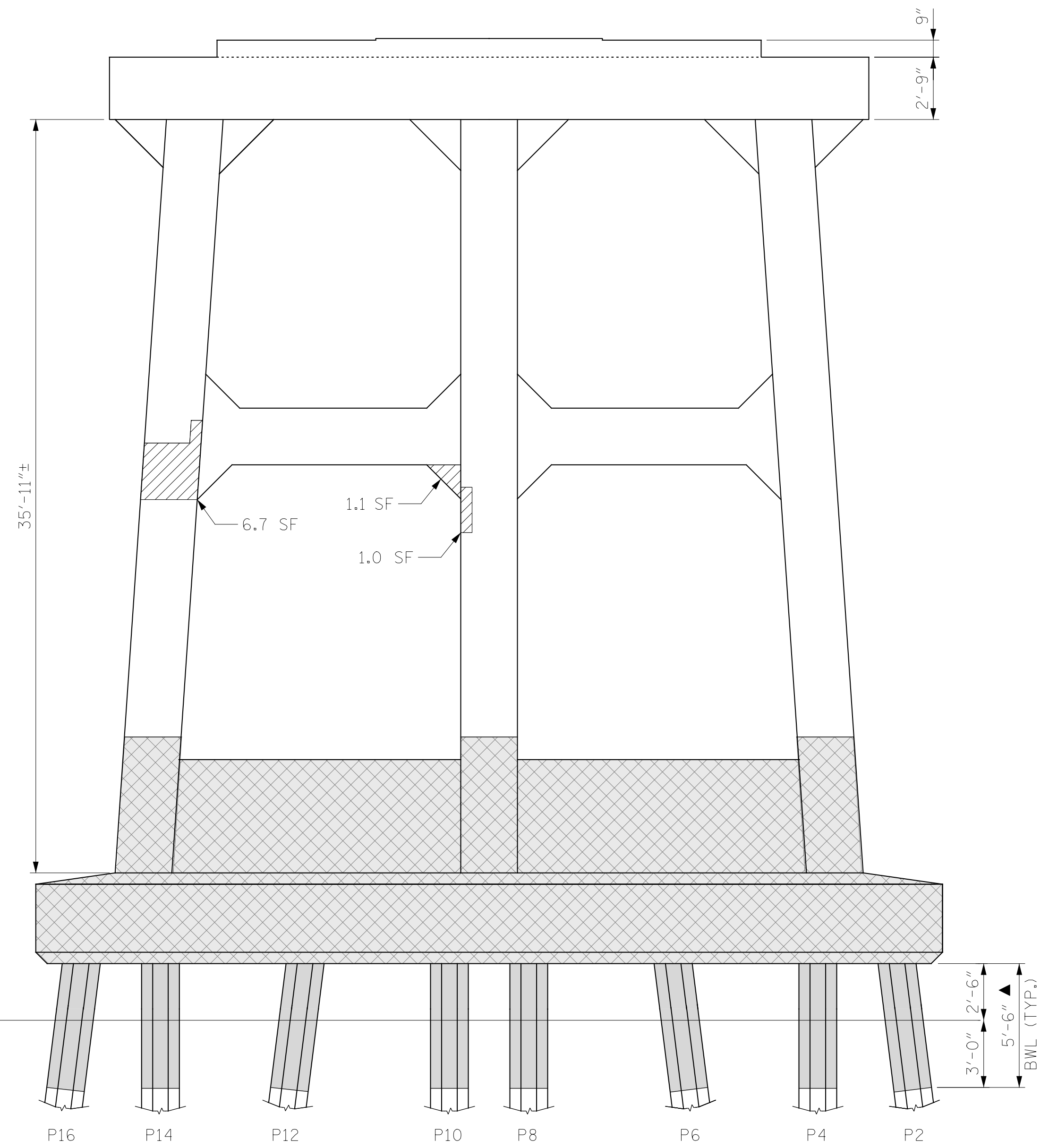
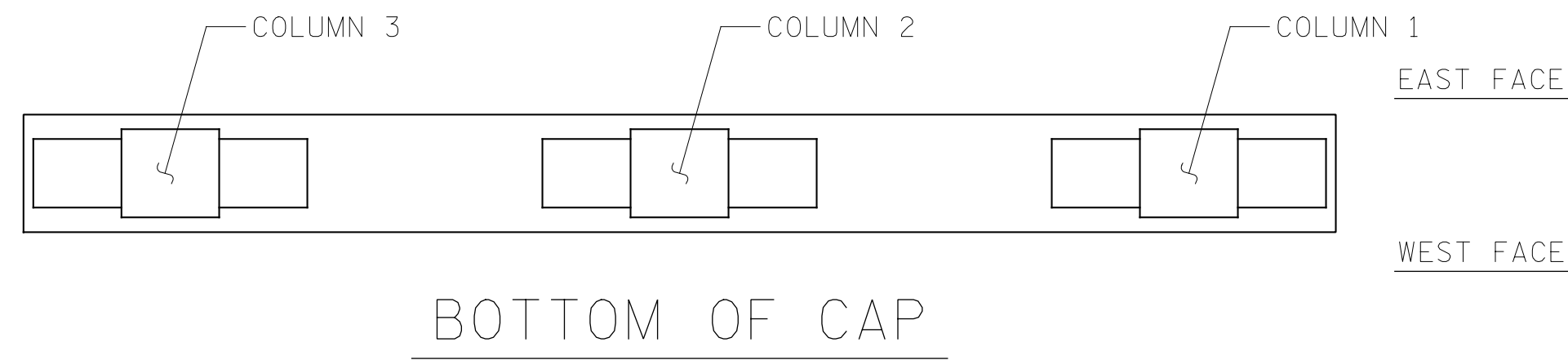


BENT 138
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

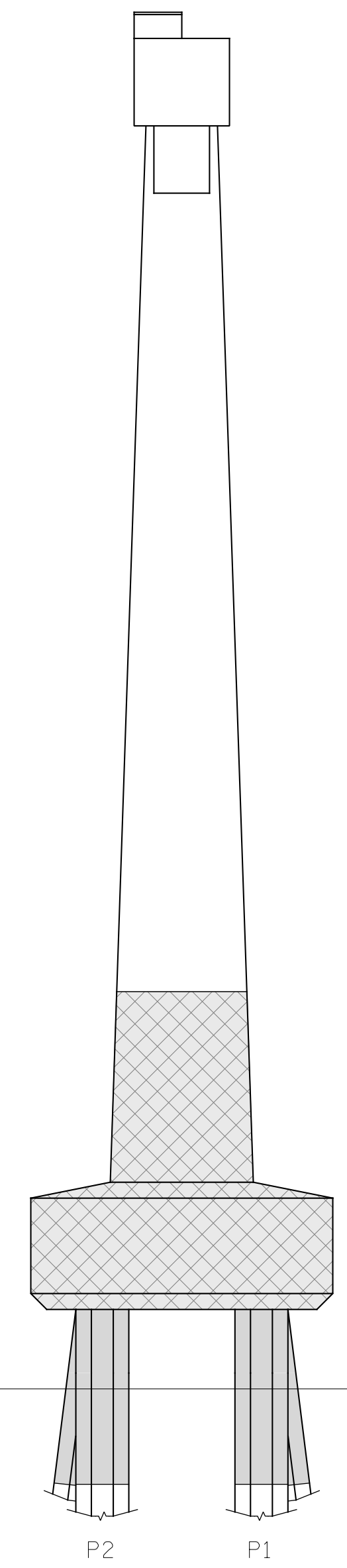
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



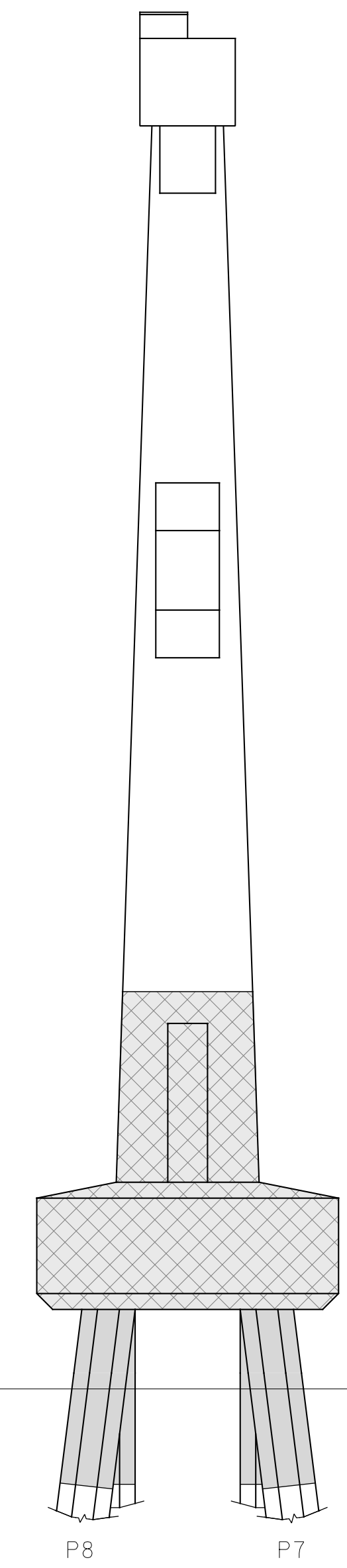
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



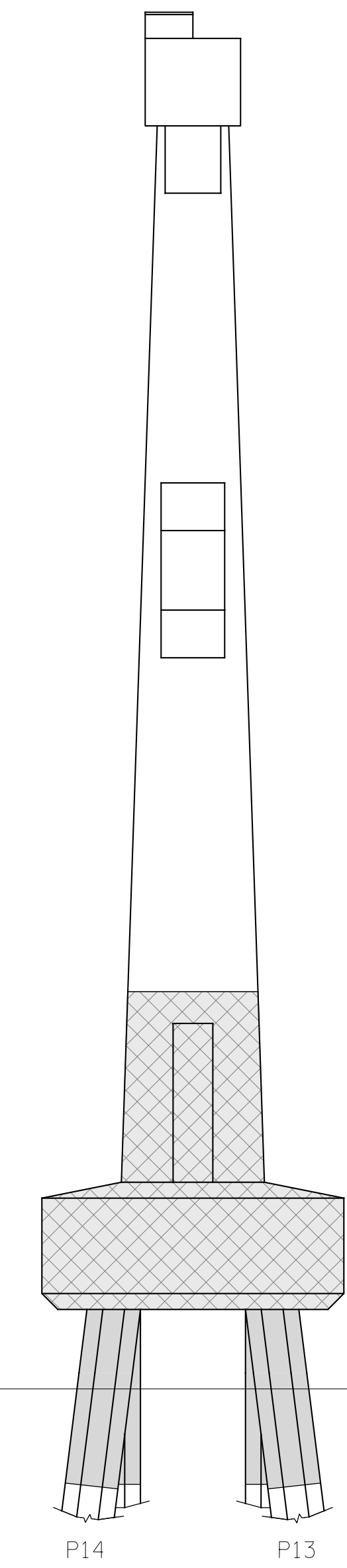
ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2



INTERIOR VIEW
NORTH FACE COL.3

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

APPROX. NORMAL WATER SURFACE



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BENT 138
EAST FACE

DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: J. FARNHAM DATE: 5/2019

BENT 138
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			214
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 139

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF		SF	CF
EPOXY RESIN INJECTION		- LF			LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	92.6 SF	46.3 SF		SF	CF
EPOXY RESIN INJECTION		- LF			LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF			SF	
FRP PROTECTIVE SYSTEM BWL	544.5 SF				SF

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

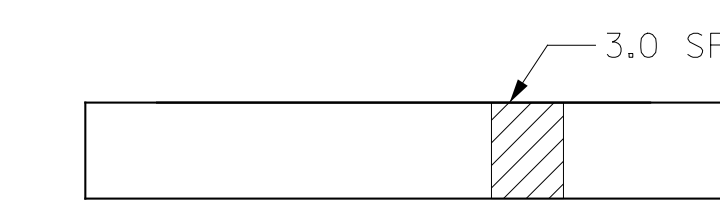
FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION



SECTION A-A

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

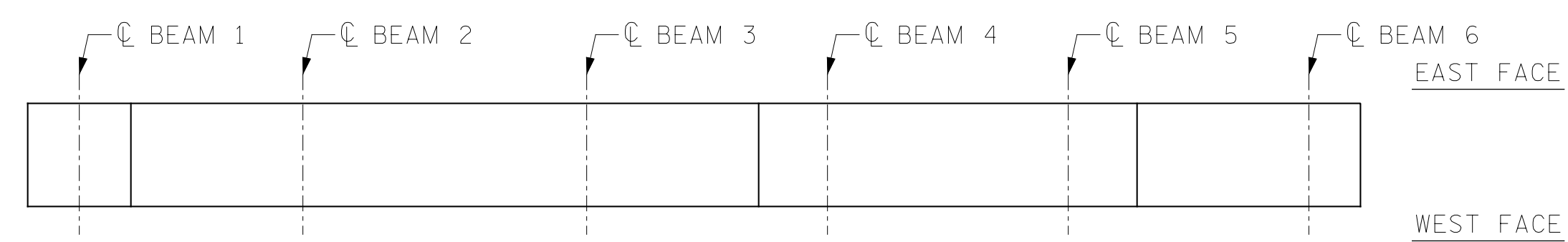
BENT 139
 WEST FACE



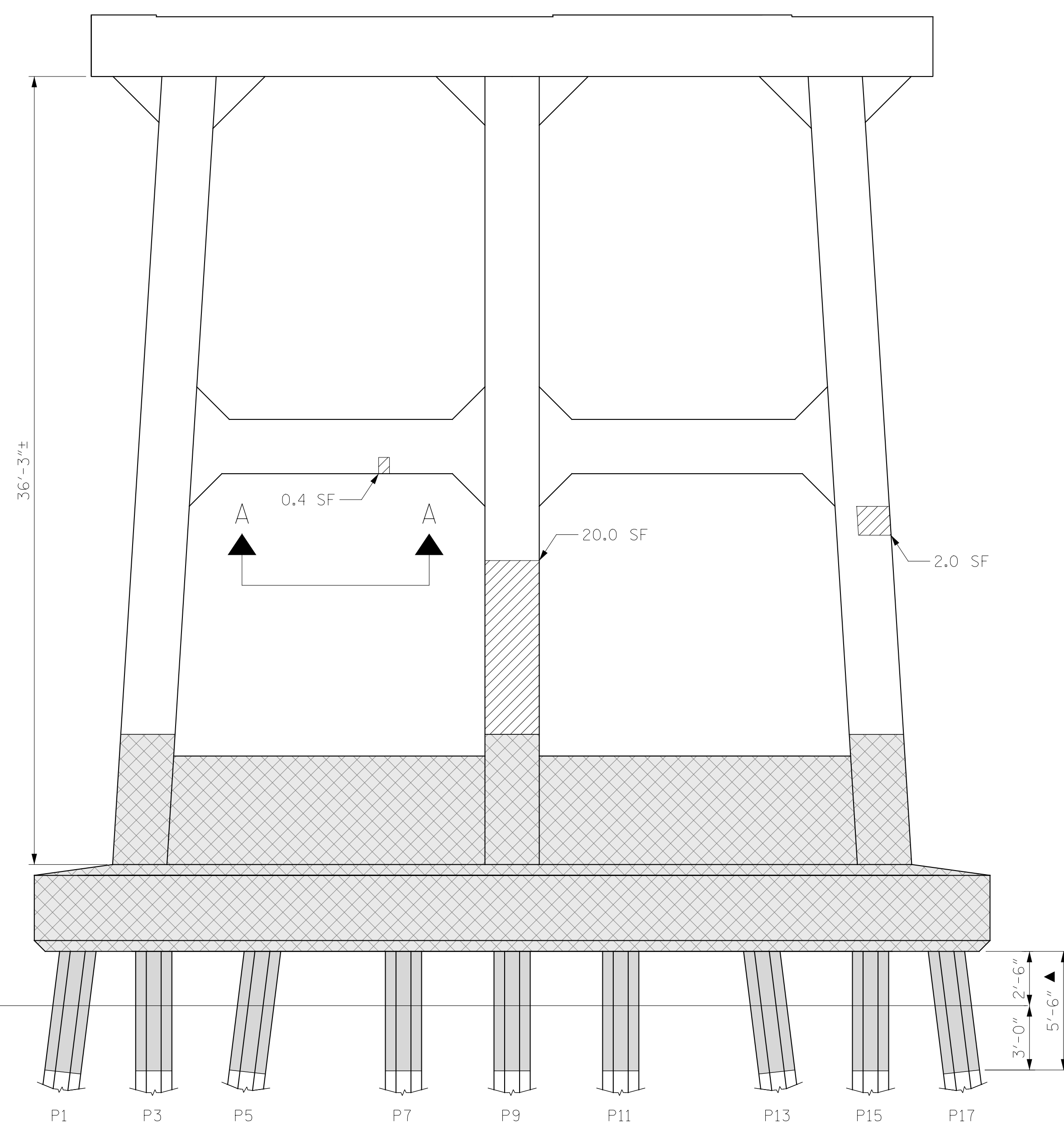
DocuSigned by:
 Eric B. Nelson, Jr.
 7/14/2022

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-215
1			3			TOTAL SHEETS
2			4			355

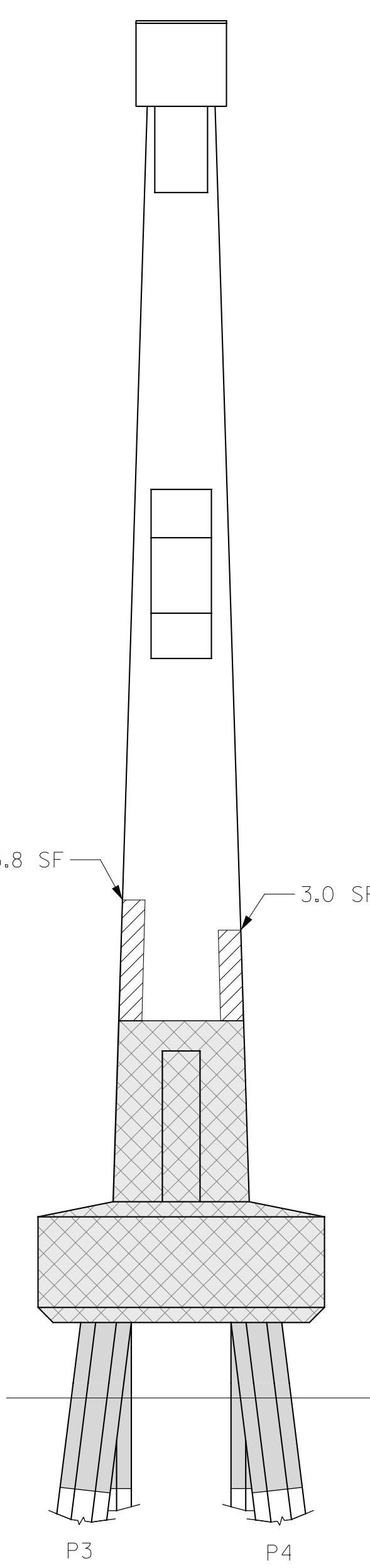
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



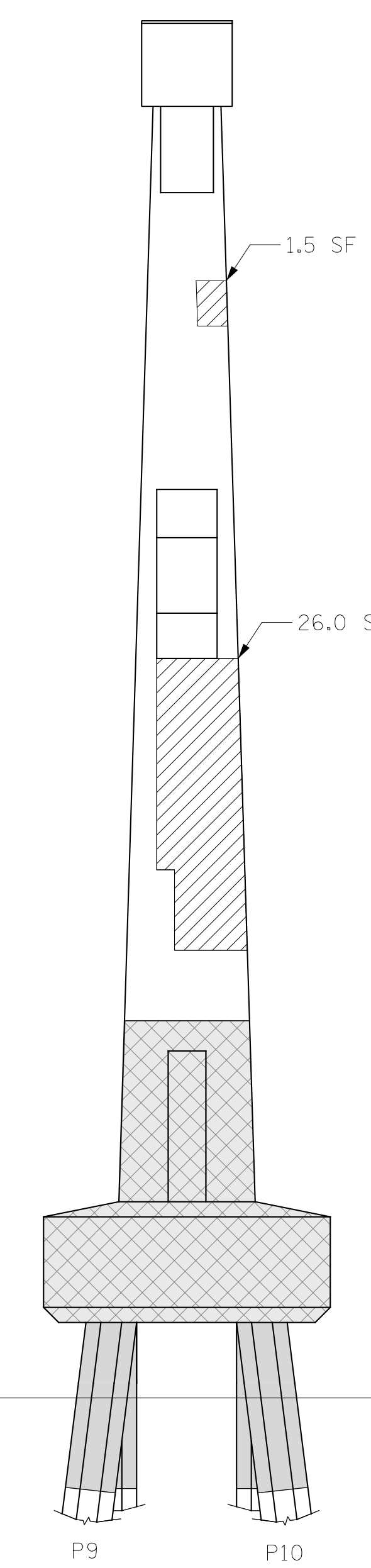
TOP OF CAP



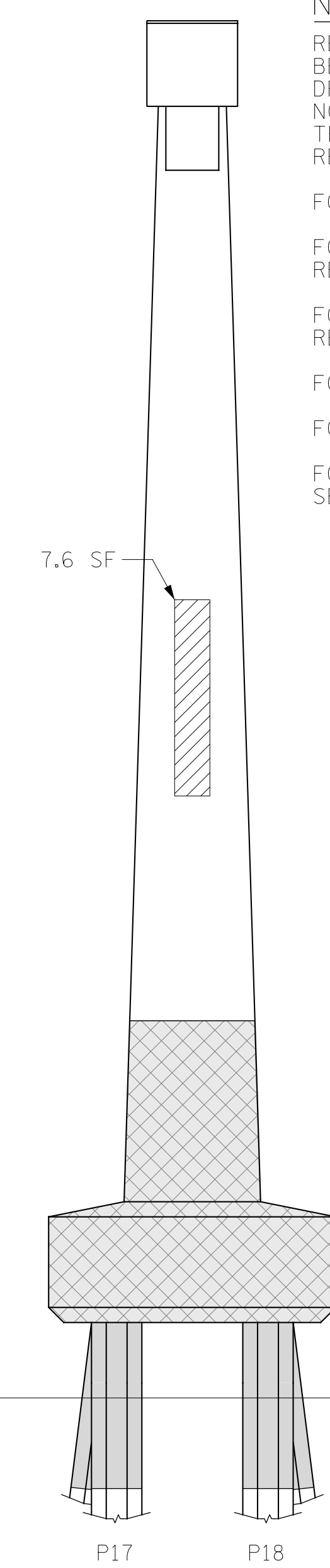
ELEVATION WEST FACE



INTERIOR VIEW SOUTH FACE COL.1



INTERIOR VIEW SOUTH FACE COL.2



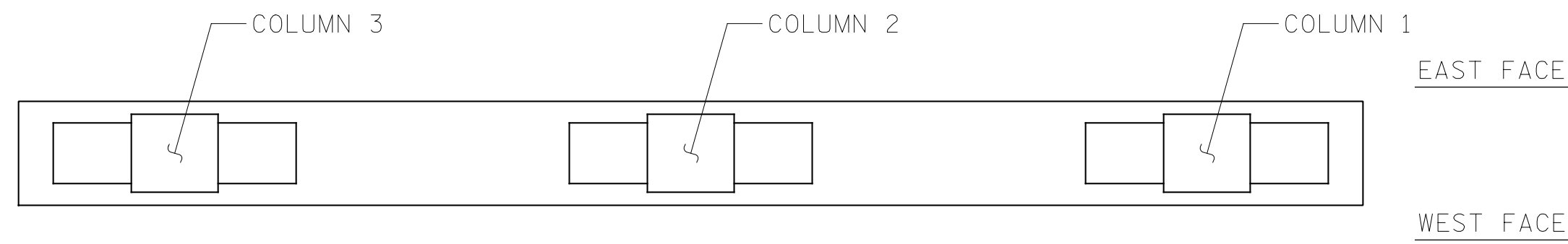
END VIEW SOUTH FACE COL.3

BENT 139
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

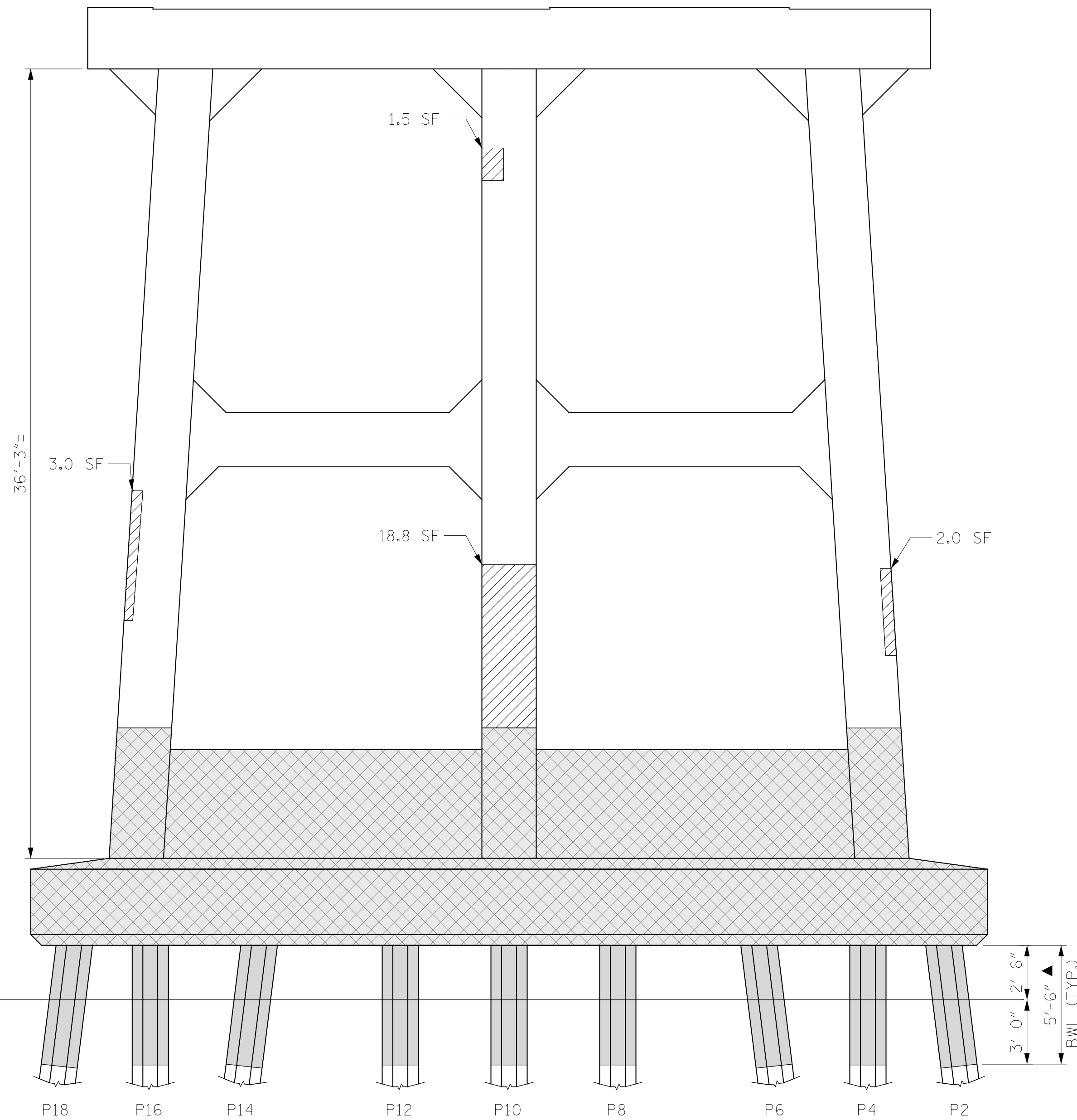
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



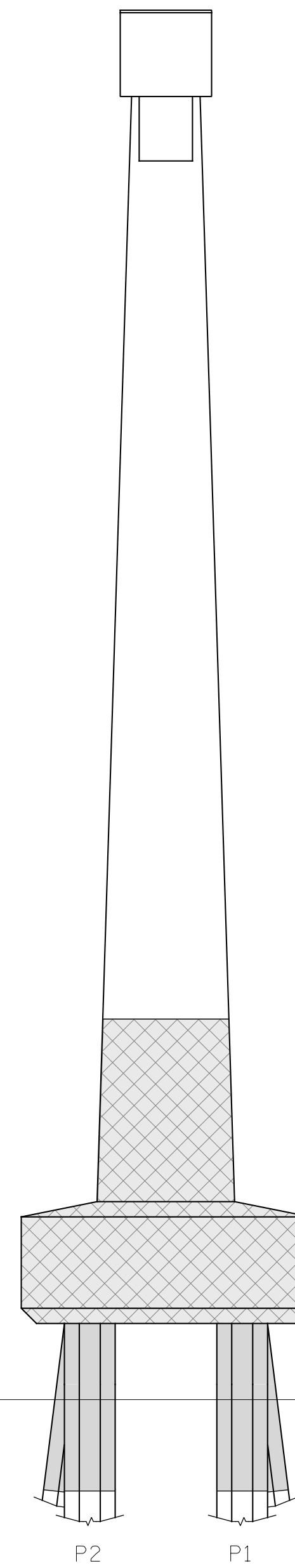
7/14/2022



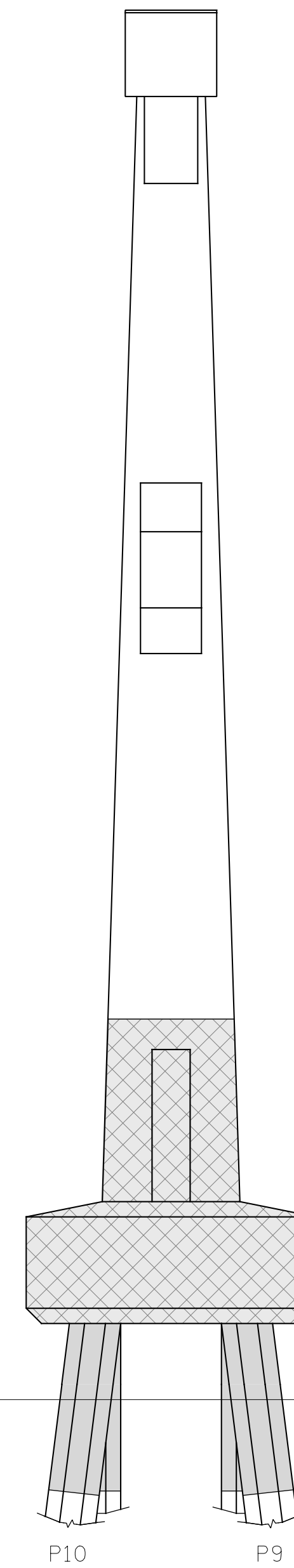
BOTTOM OF CAP



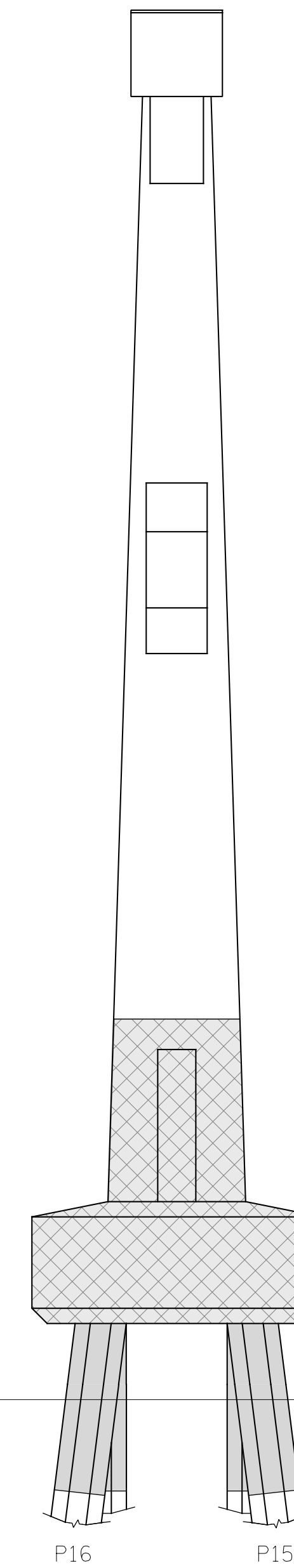
ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2

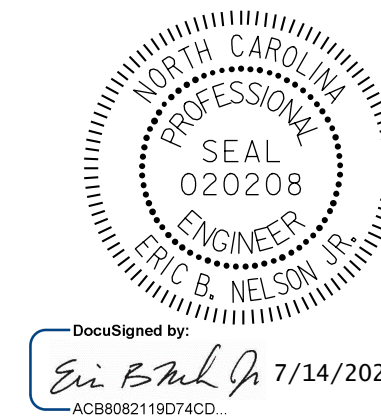


INTERIOR VIEW
NORTH FACE COL.3

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 139
EAST FACE**

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019

BENT 139
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			216
2			4			355

AS-BUILT REPAIR QUANTITY TABLE BENT 140

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION		- LF		LF	
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	25.4 SF	12.7 CF	SF	CF	
EPOXY RESIN INJECTION		- LF		LF	
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF		SF		
FRP PROTECTIVE SYSTEM BWL	544.5 SF			SF	

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

NOTES:
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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

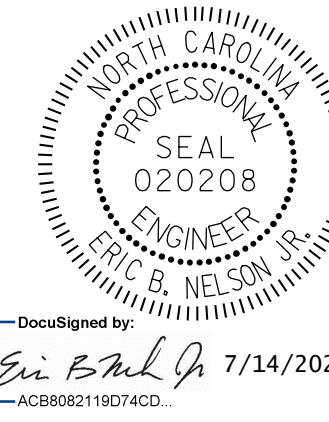
- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION



SECTION A-A

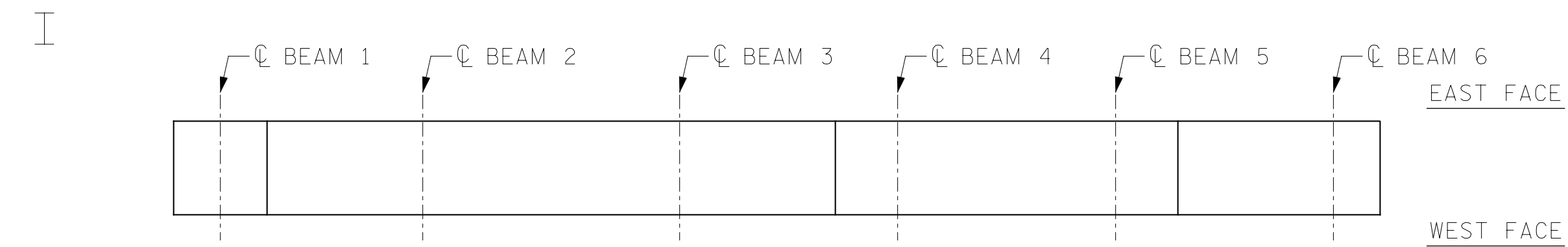
▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009

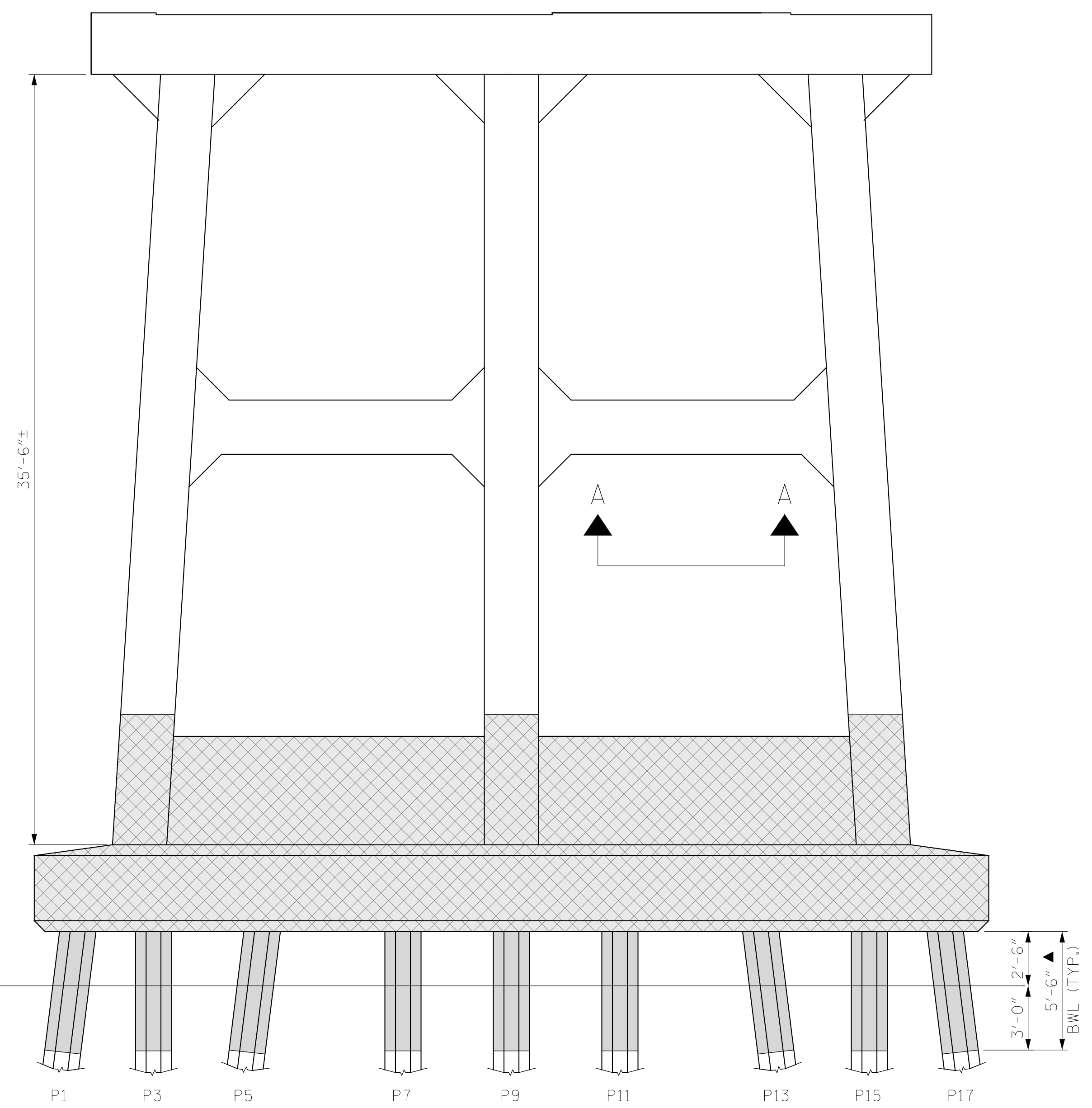


DocuSigned by:
Eric B. Nelson 7/14/2022

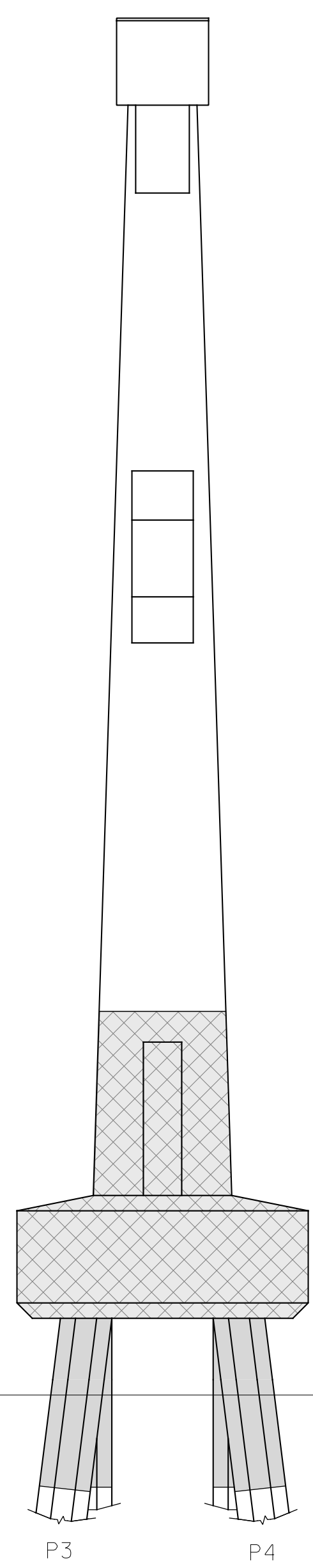
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
BENT 140 WEST FACE						S-217
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	355
1			3			
2			4			



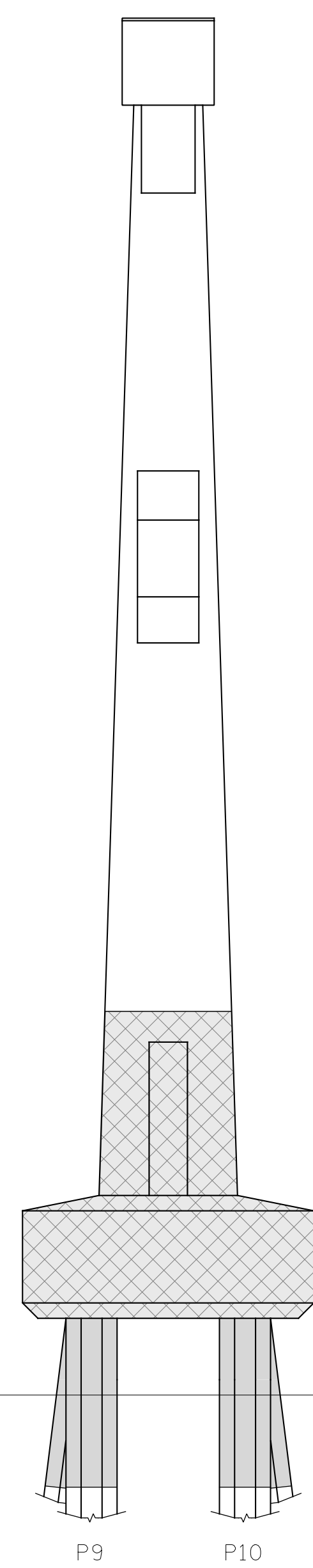
TOP OF CAP



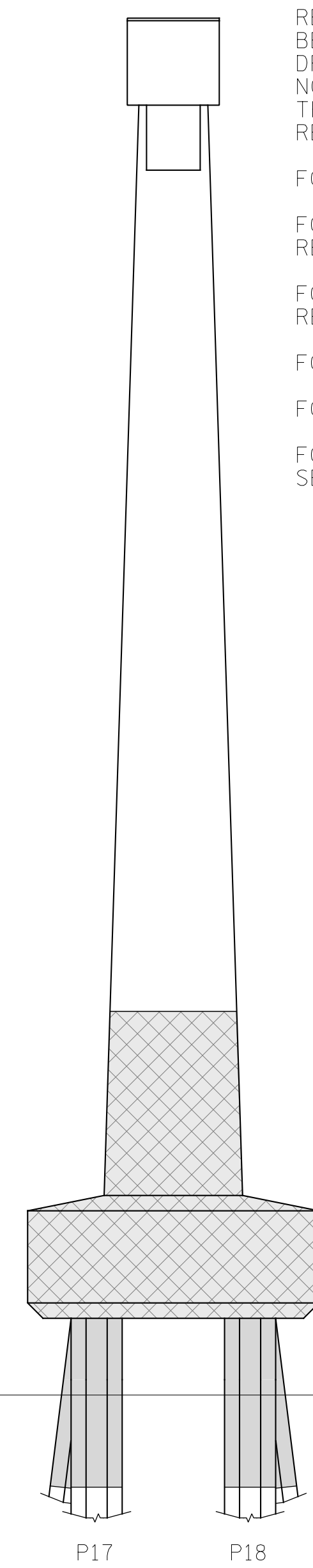
ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



INTERIOR VIEW
SOUTH FACE COL.2



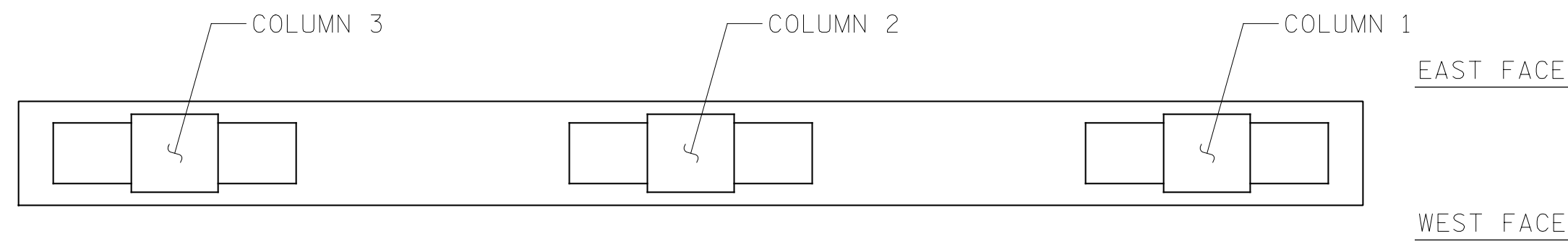
END VIEW
SOUTH FACE COL.3

BENT 140
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)

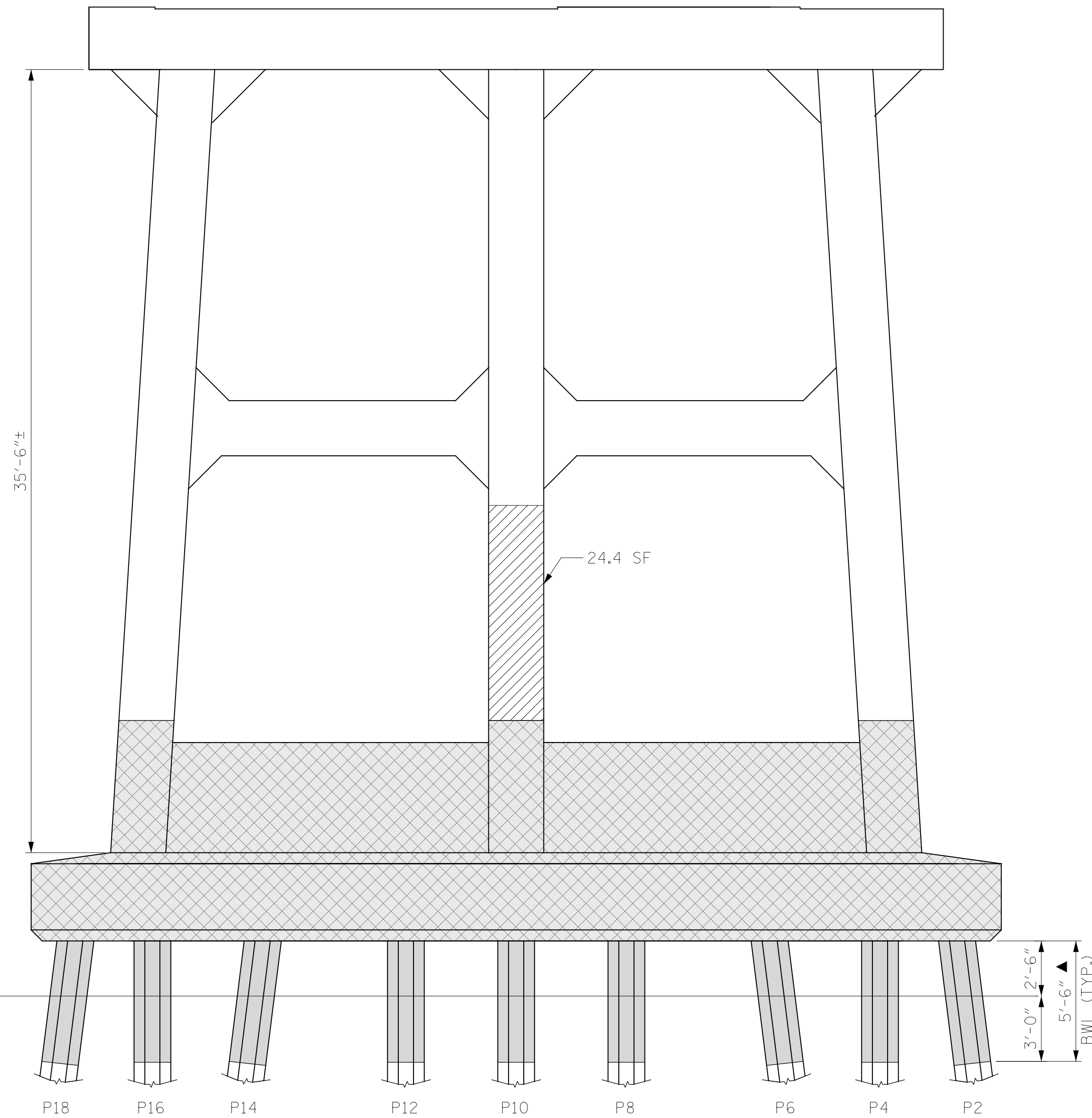
DRAWN BY: T. HARTLEY DATE: 2/2019
CHECKED BY: J. FARNHAM DATE: 5/2019



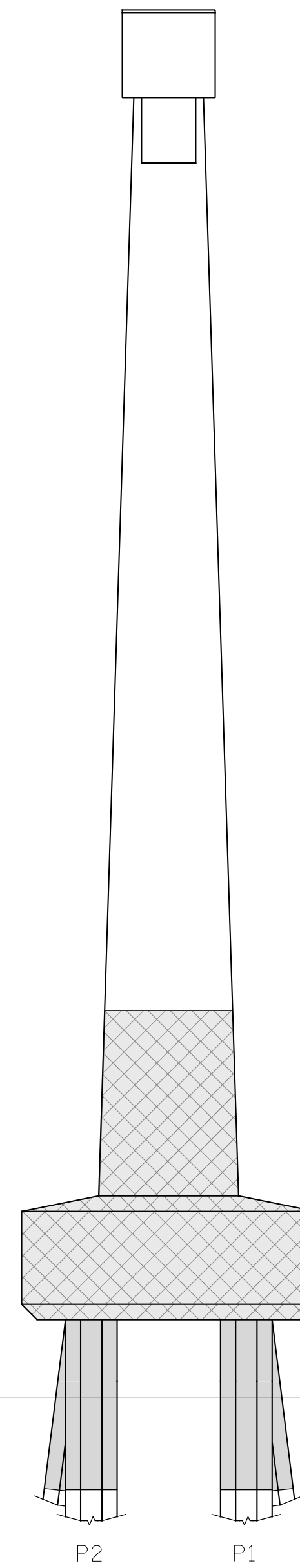
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



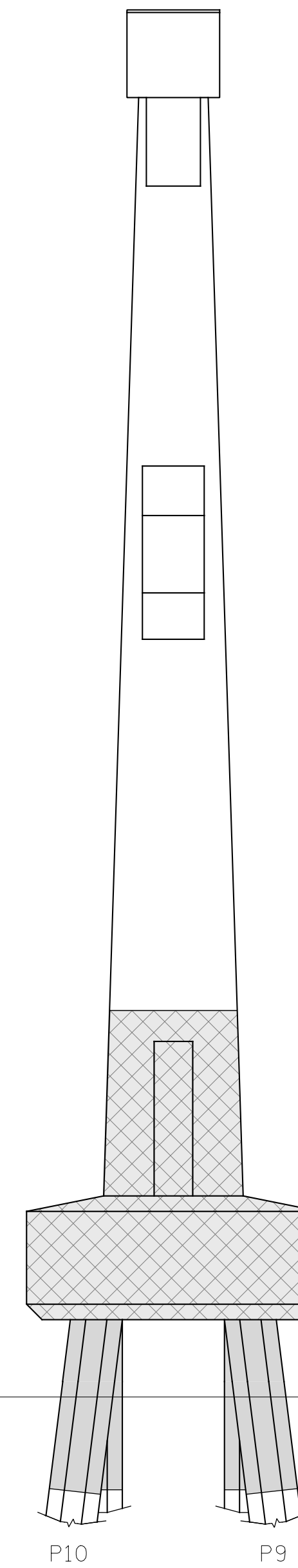
BOTTOM OF CAP



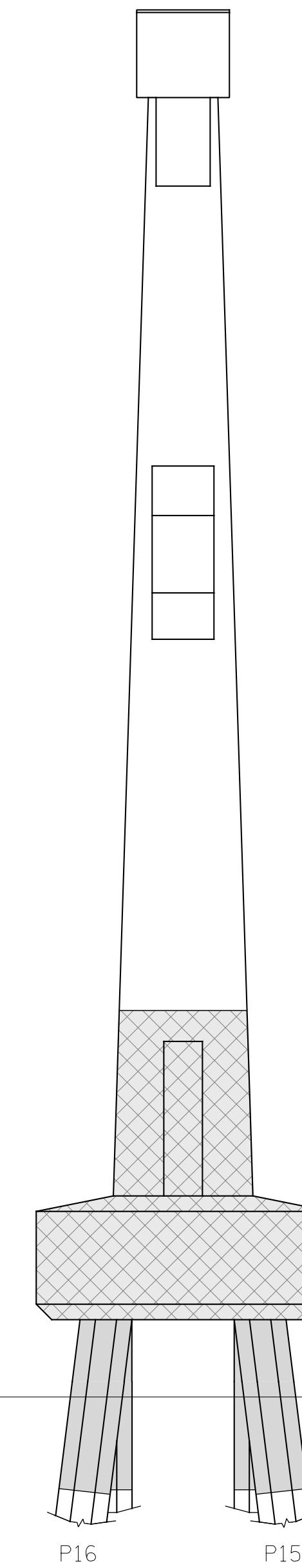
ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2



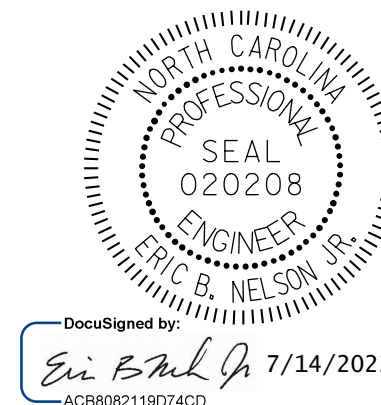
INTERIOR VIEW
NORTH FACE COL.3

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

APPROX.
NORMAL
WATER
SURFACE



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 140
 EAST FACE**

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019

BENT 140
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5
2			4			355

AS-BUILT REPAIR QUANTITY TABLE

BENT 141

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	1.5 SF	0.8 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	60.2 SF	30.1 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	363.0 SF				SF

FOR CAP REPAIRS; VALUES IN CHART REPRESENT ESTIMATED 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 REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

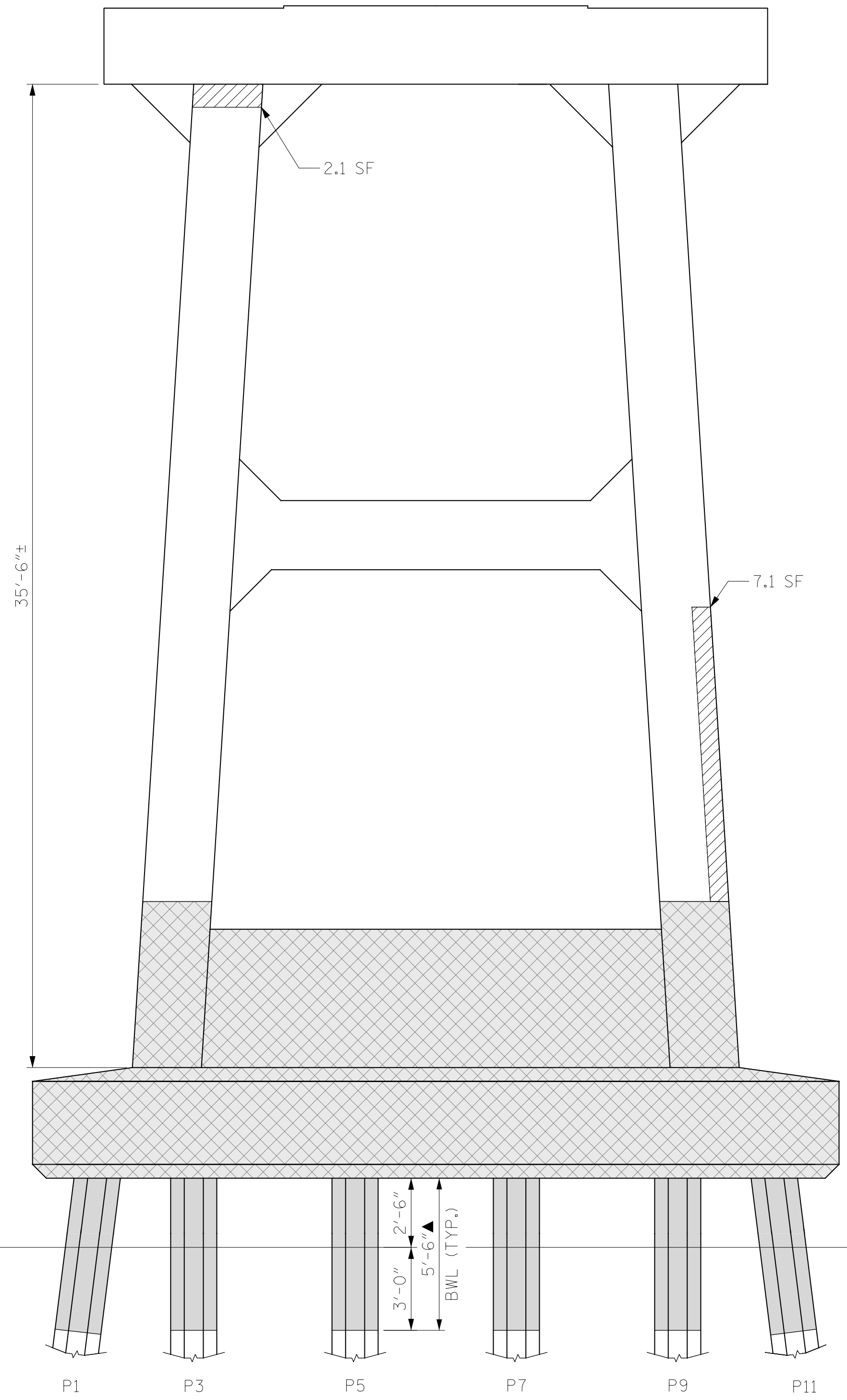
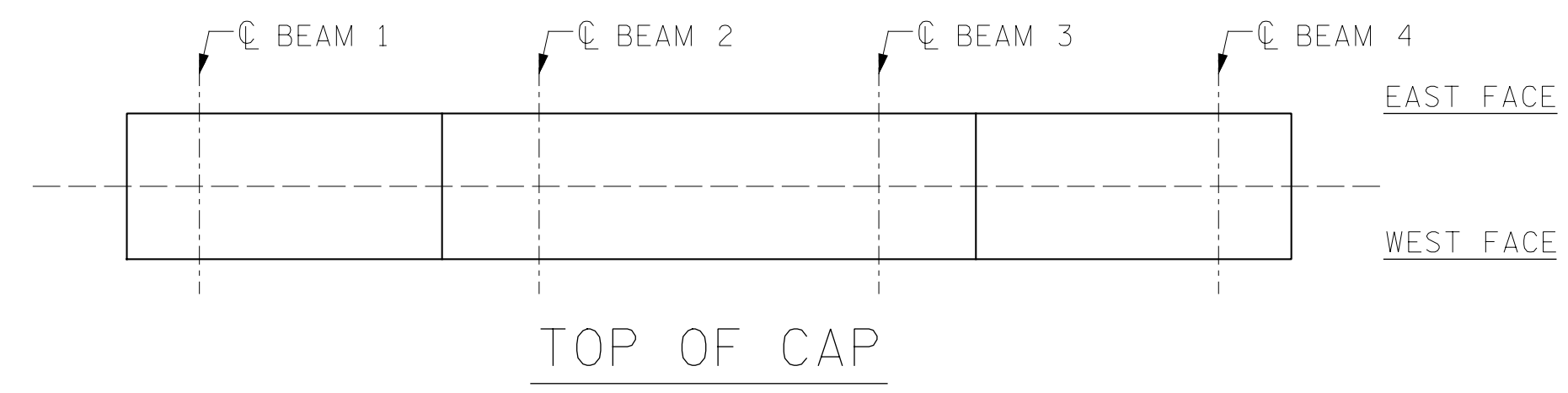
- ERI - EPOXY RESIN INJECTION
- [Solid Grey Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatch Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

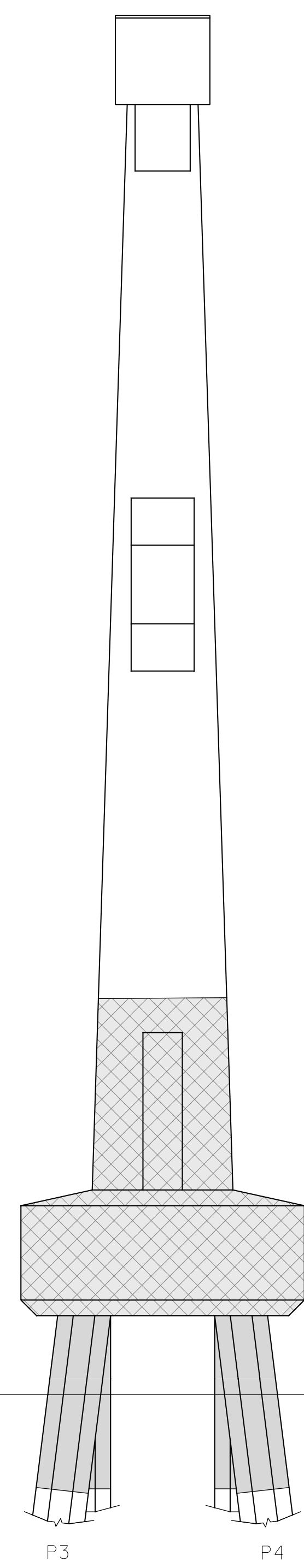
PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



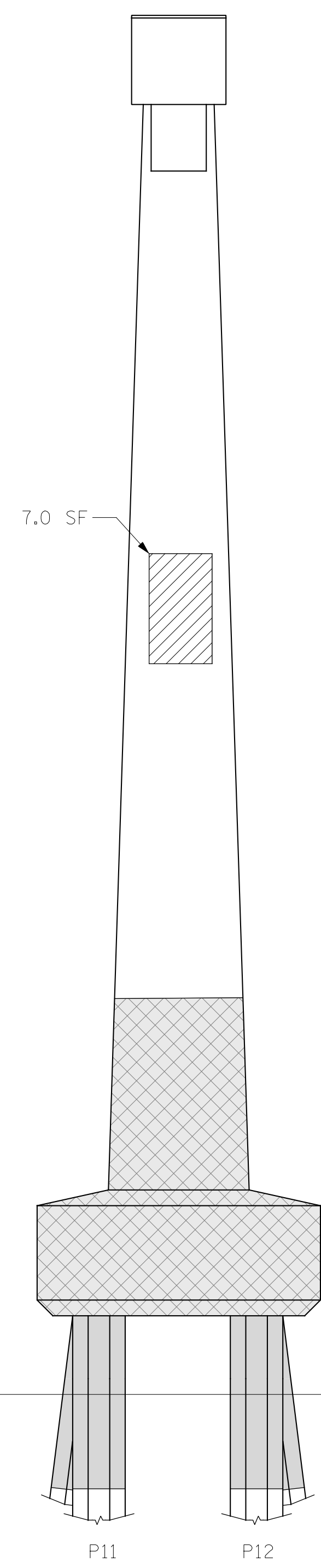
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 141 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



END VIEW
SOUTH FACE COL.2

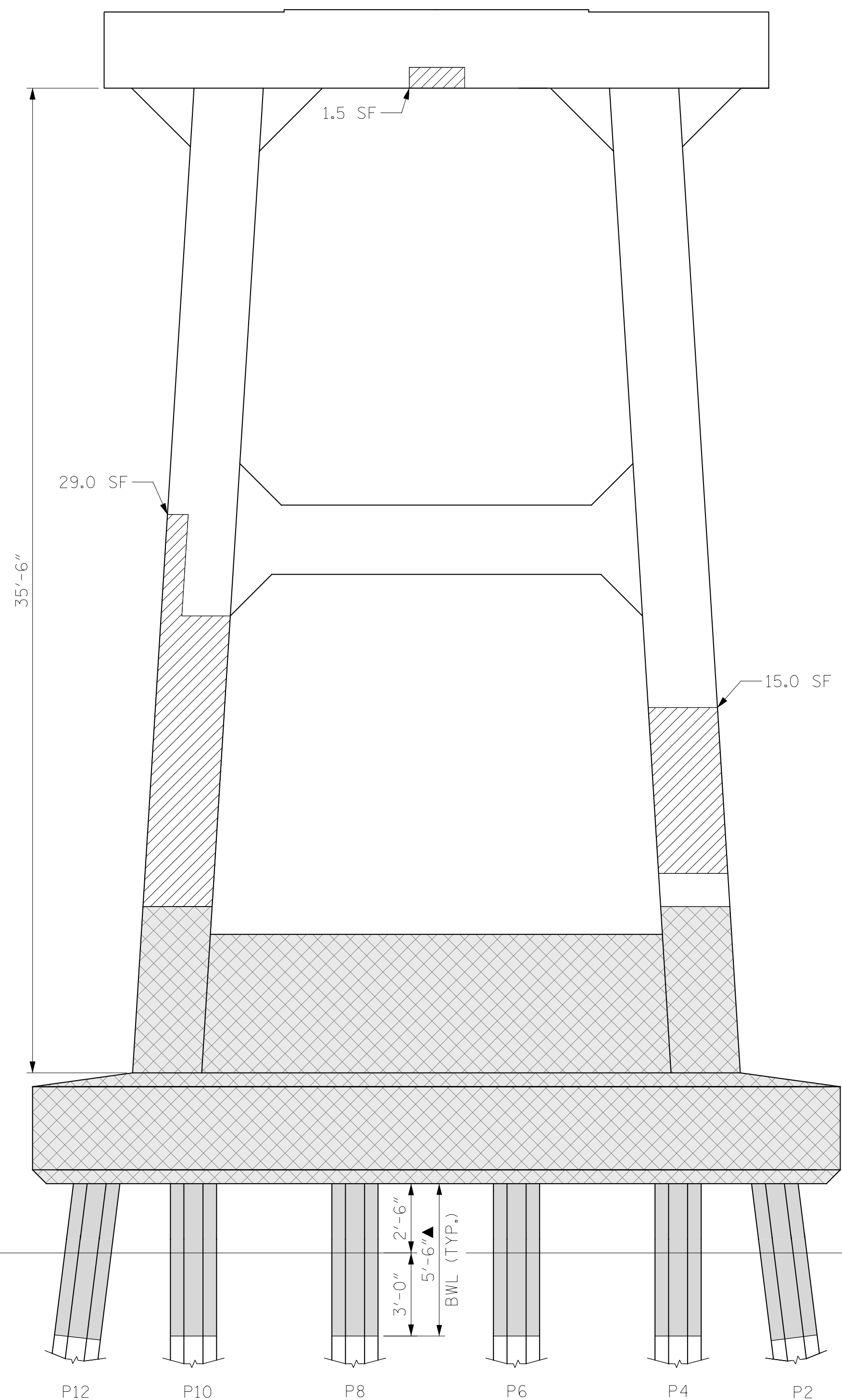
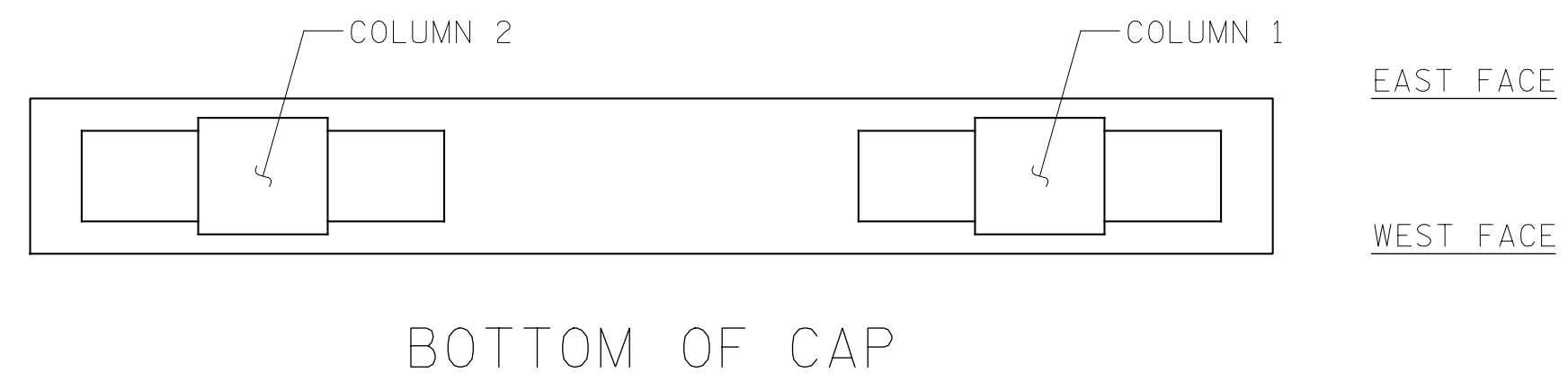
APPROX. NORMAL WATER SURFACE

BENT 141
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

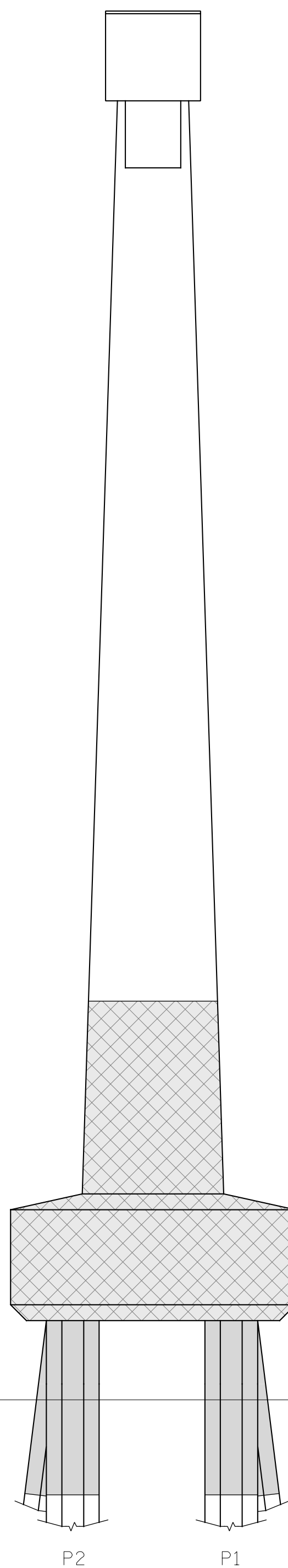
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



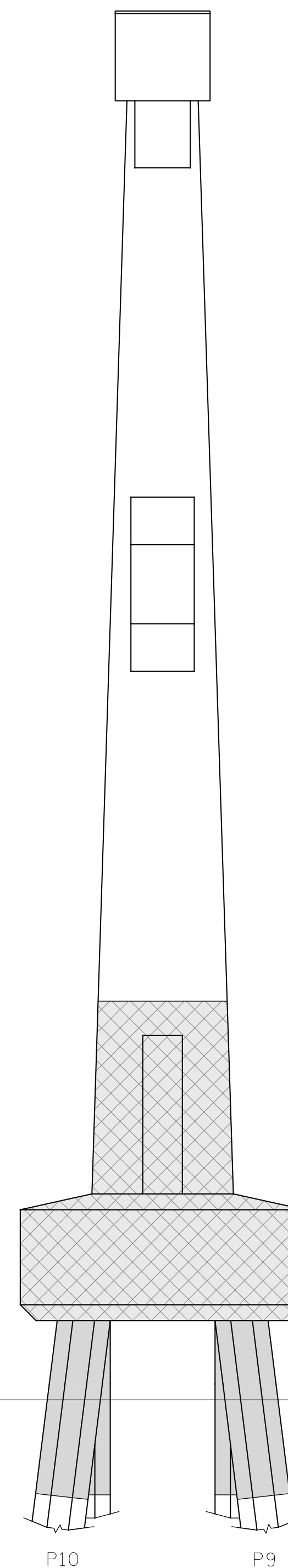
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1

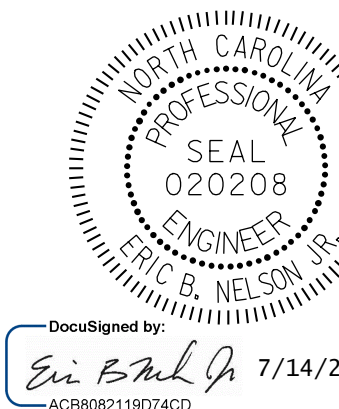


INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 141
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 141
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 142

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	3.0 SF	1.5 CF	SF	CF	
EPOXY RESIN INJECTION	-	LF			LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	55.6 SF	27.8 CF	SF	CF	
EPOXY RESIN INJECTION	-	LF			LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	-	SF			SF
FRP PROTECTIVE SYSTEM BWL	363.0	SF			SF

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

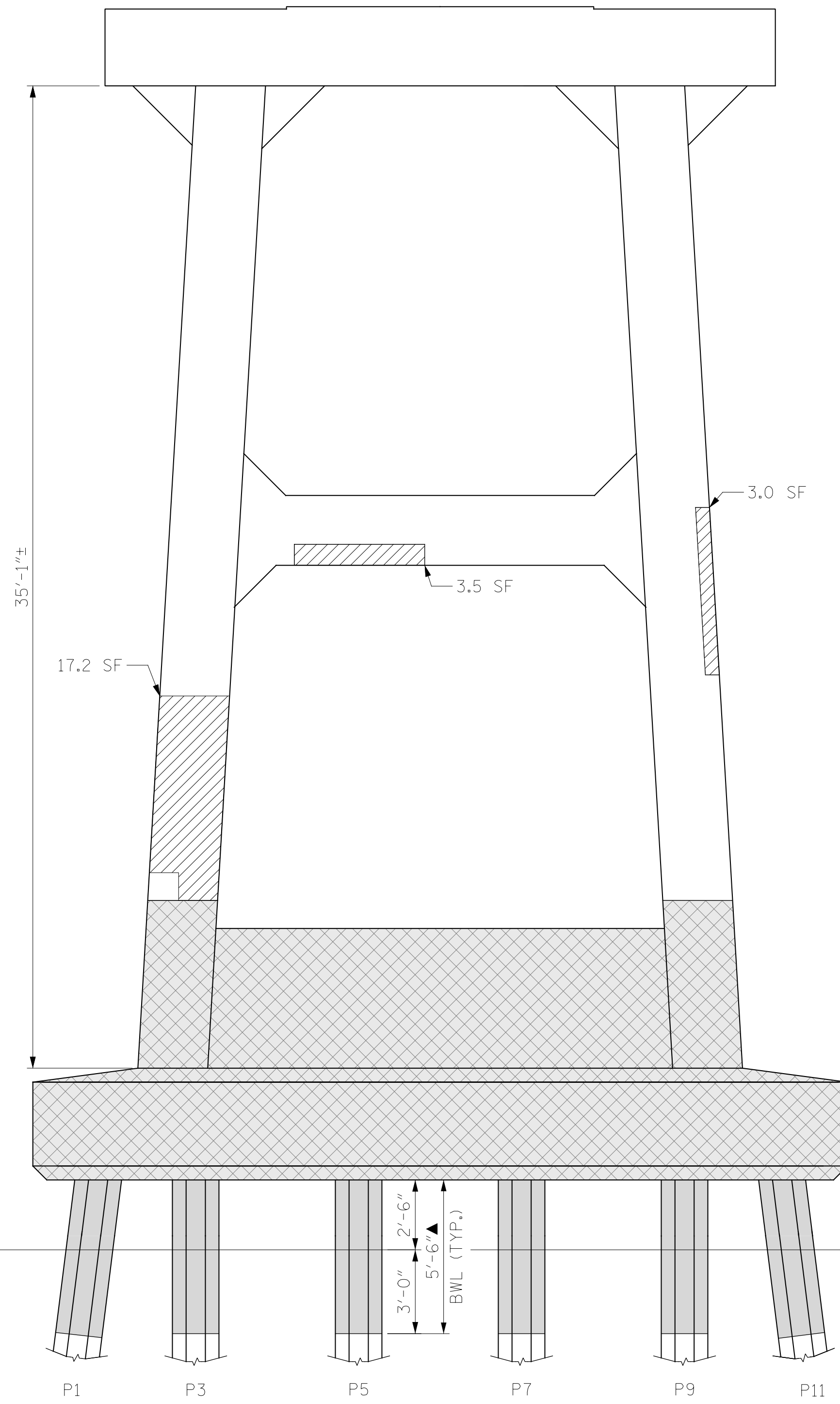
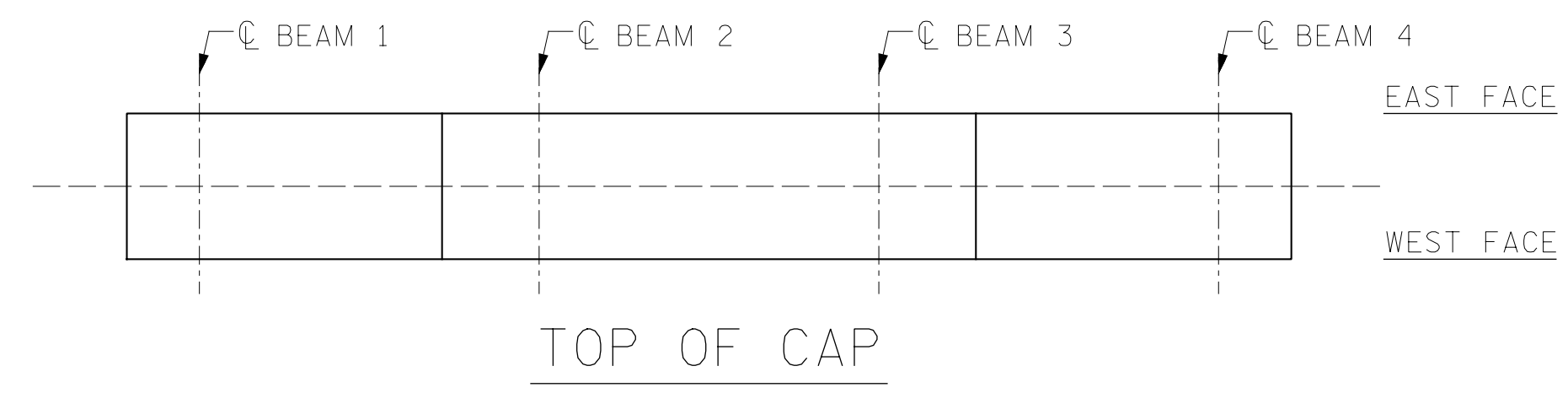


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

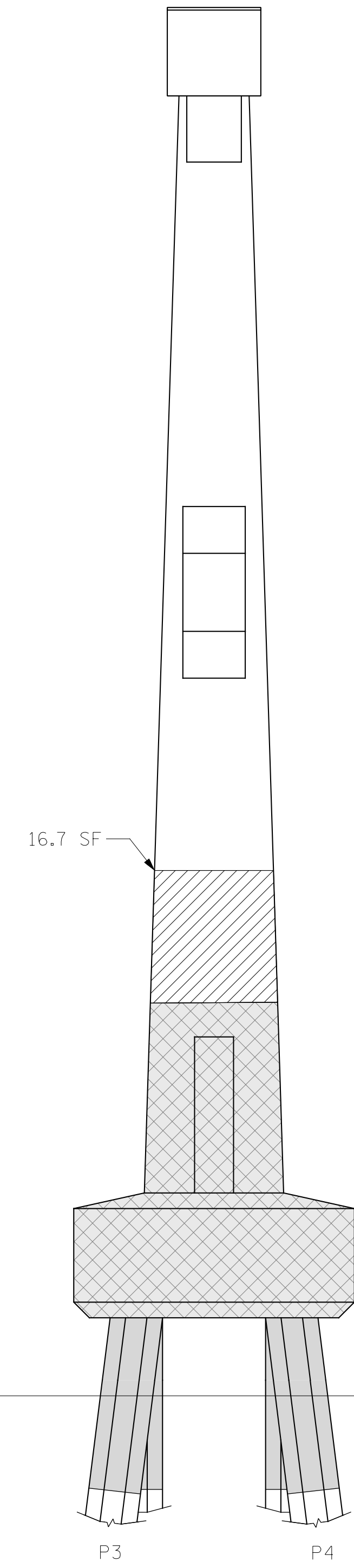
**BENT 142
 WEST FACE**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

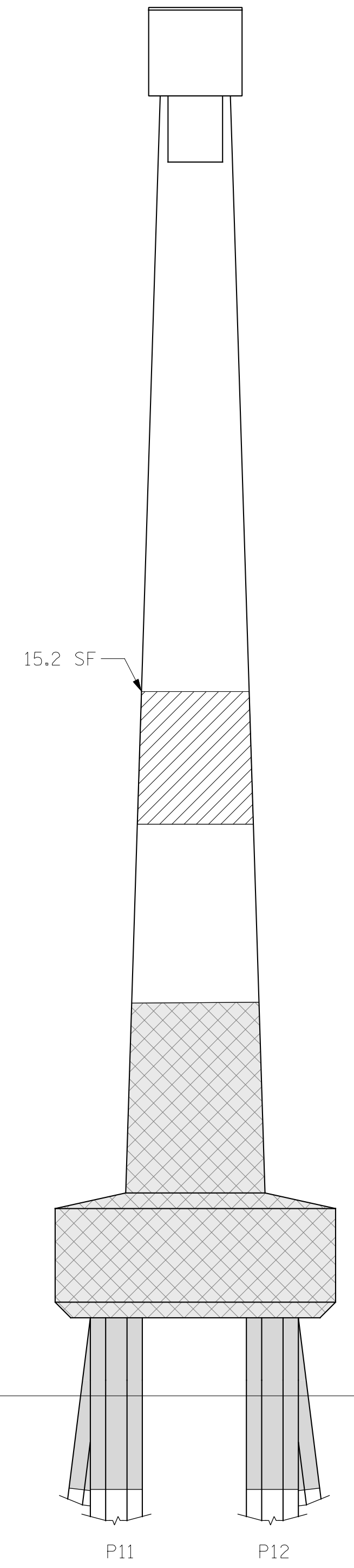
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



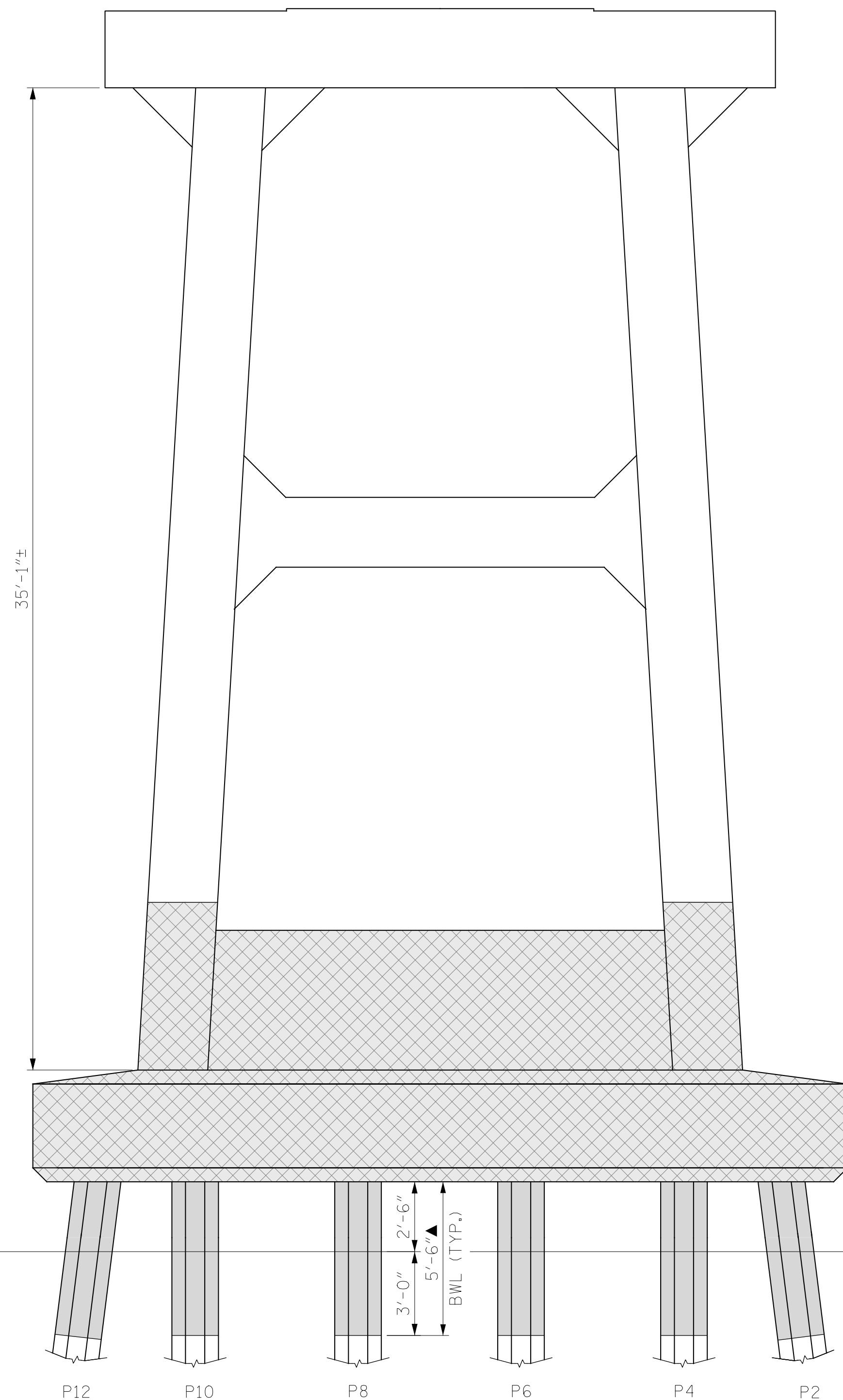
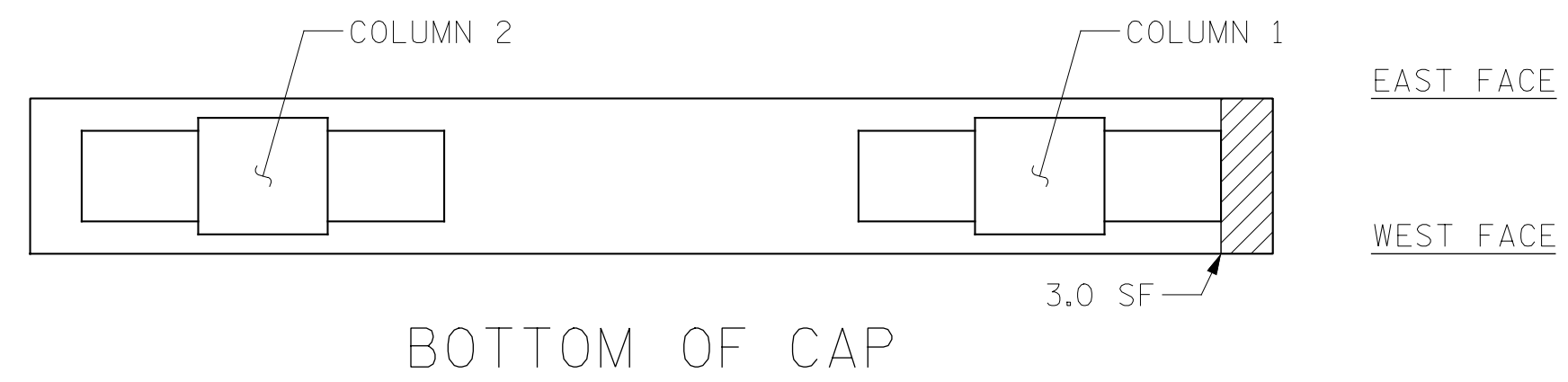
END VIEW
SOUTH FACE COL.2

BENT 142

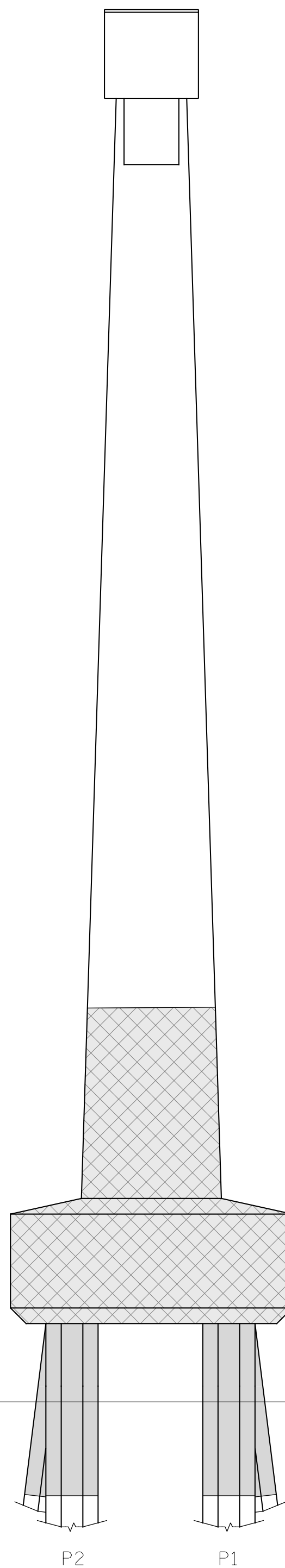
(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019

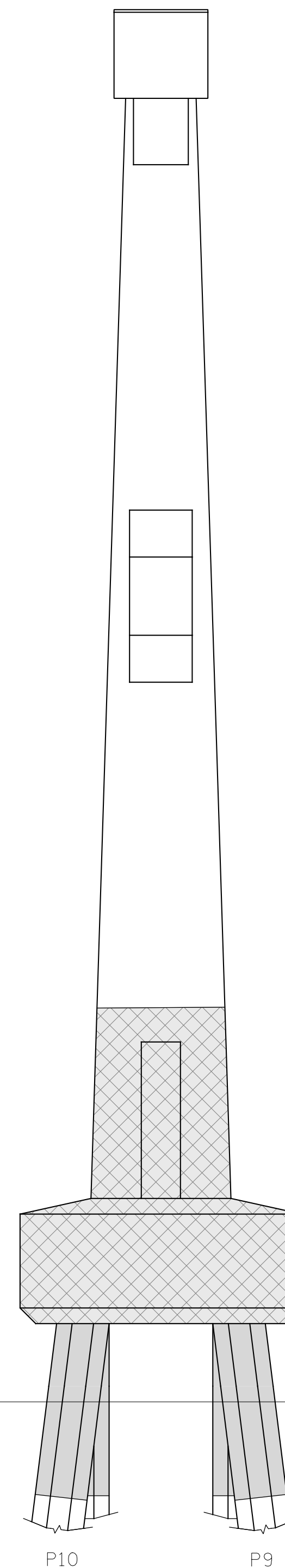




ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



DocuSigned by:
Eric B. Nelson, Jr. 7/14/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 142
EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 142
(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 143

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION	4.0 LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	8.9 SF	4.5 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	363.0 SF				SF

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

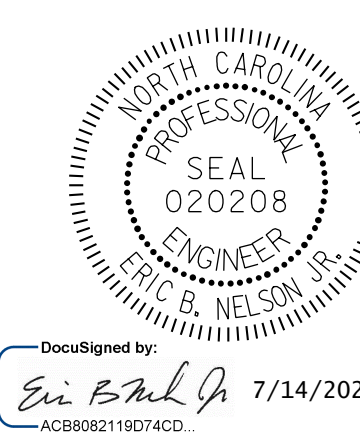
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

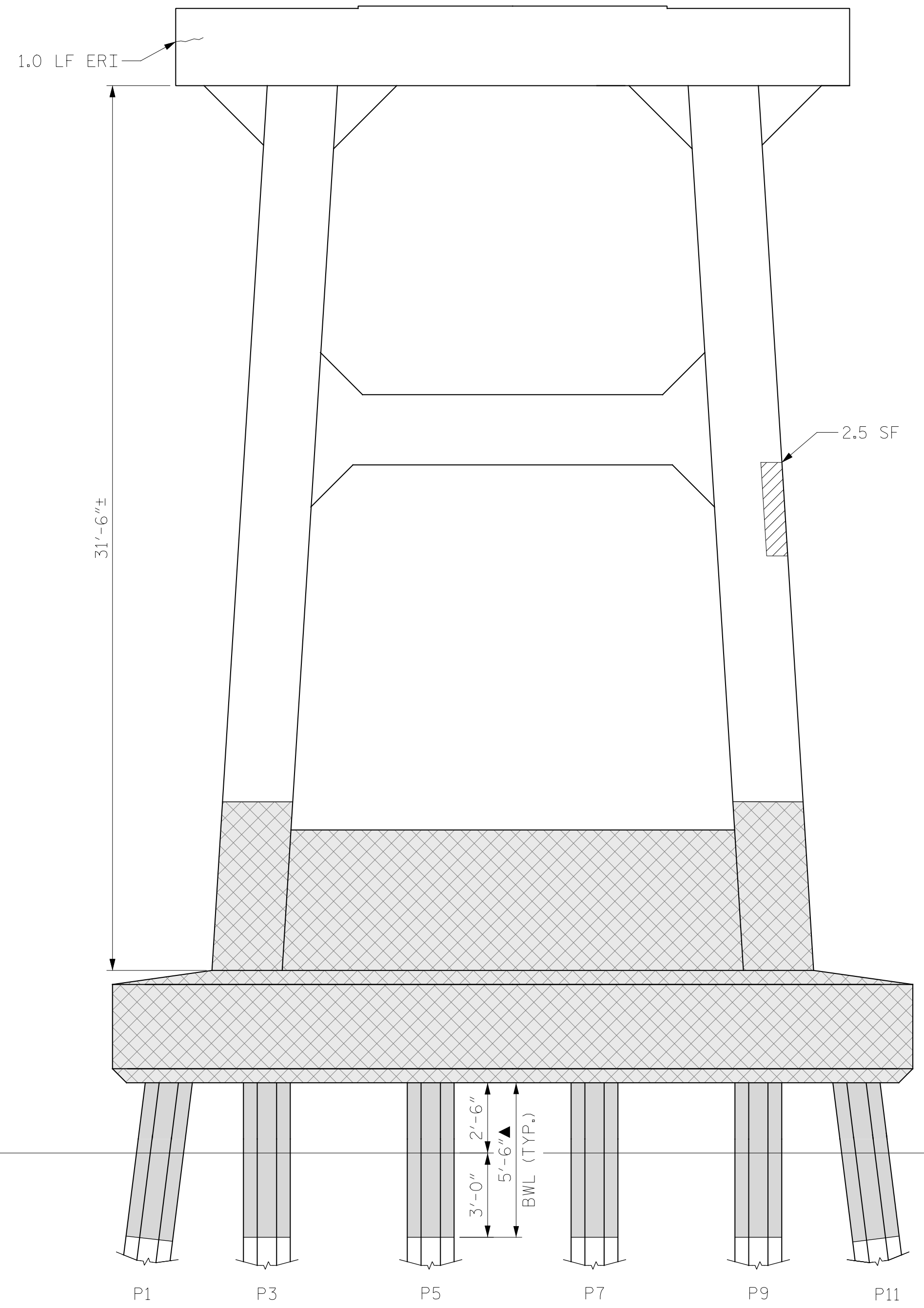
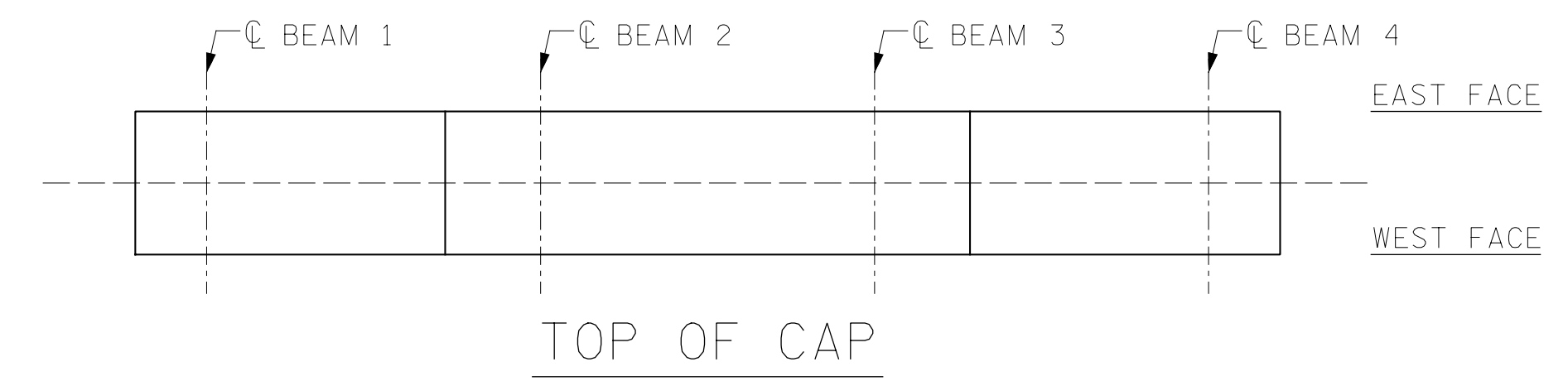
- ERI - EPOXY RESIN INJECTION
- [Solid Grey Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Hatching Box] - SHOTCRETE REPAIRS
- [Cross-hatching Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

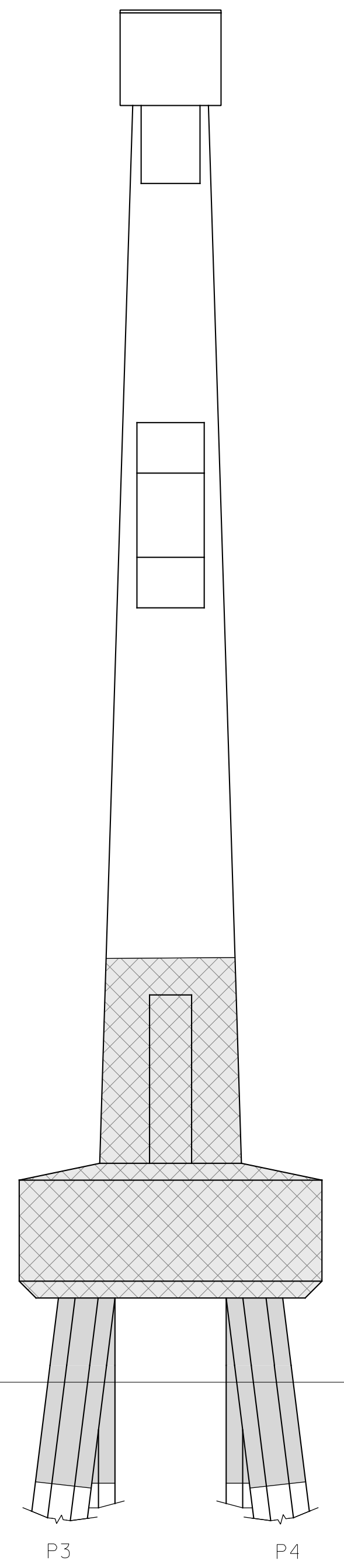
PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



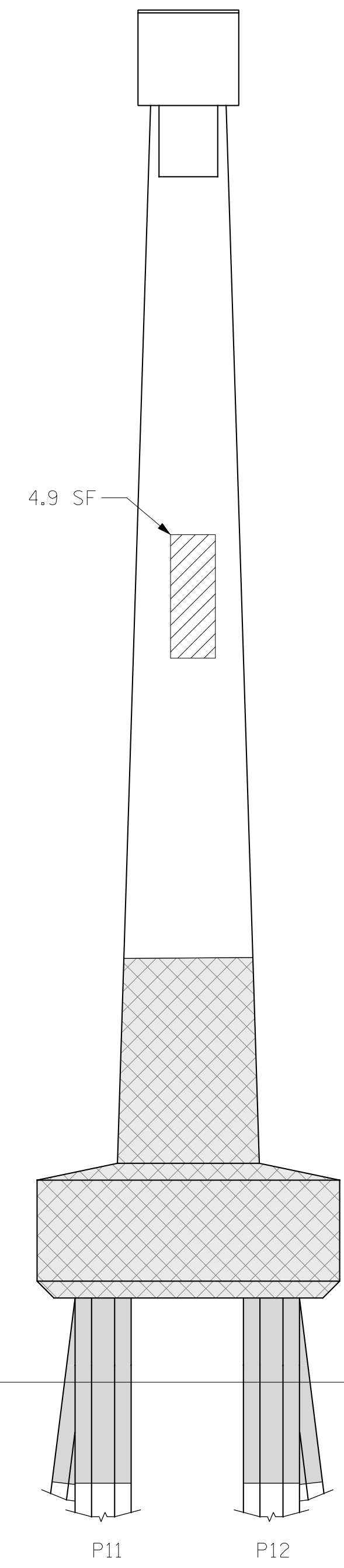
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 143 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



END VIEW
SOUTH FACE COL.2

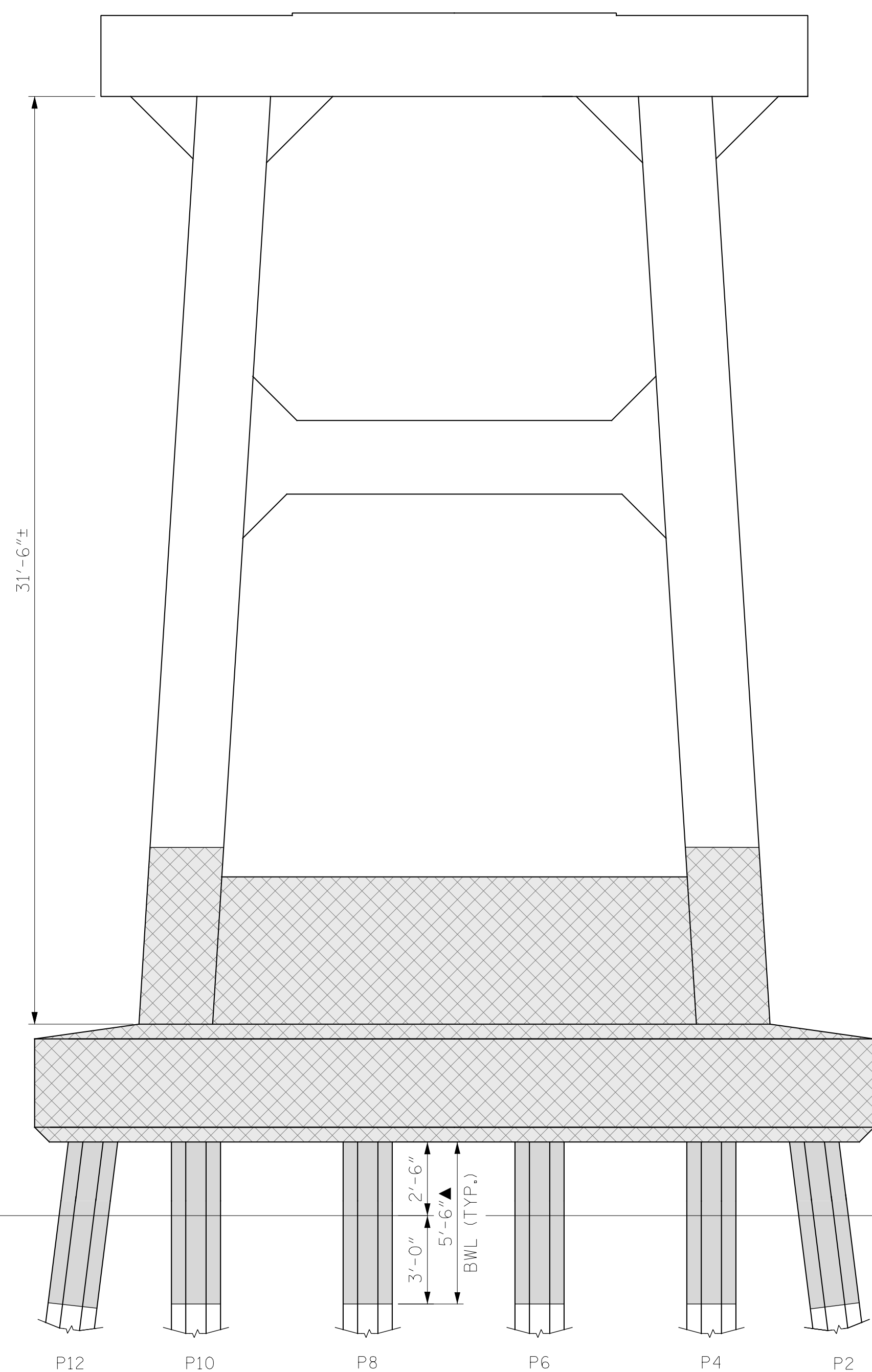
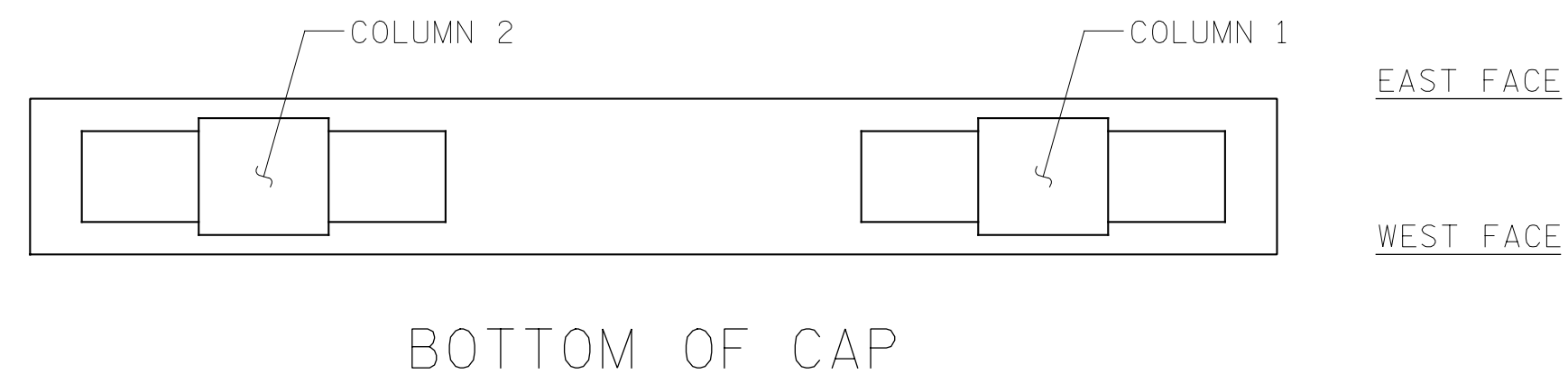
APPROX. NORMAL WATER SURFACE

BENT 143
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

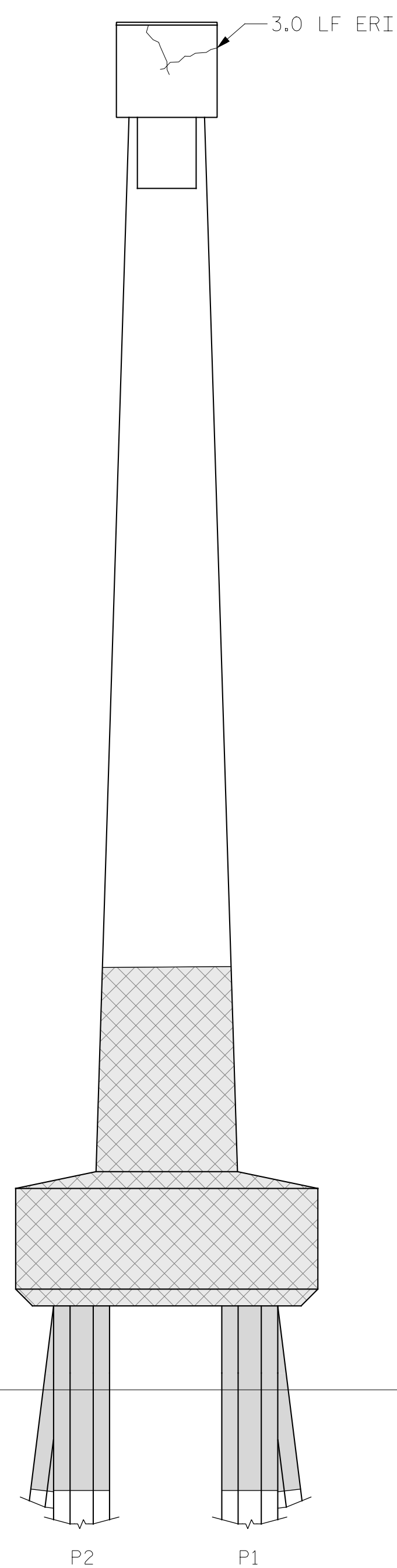
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



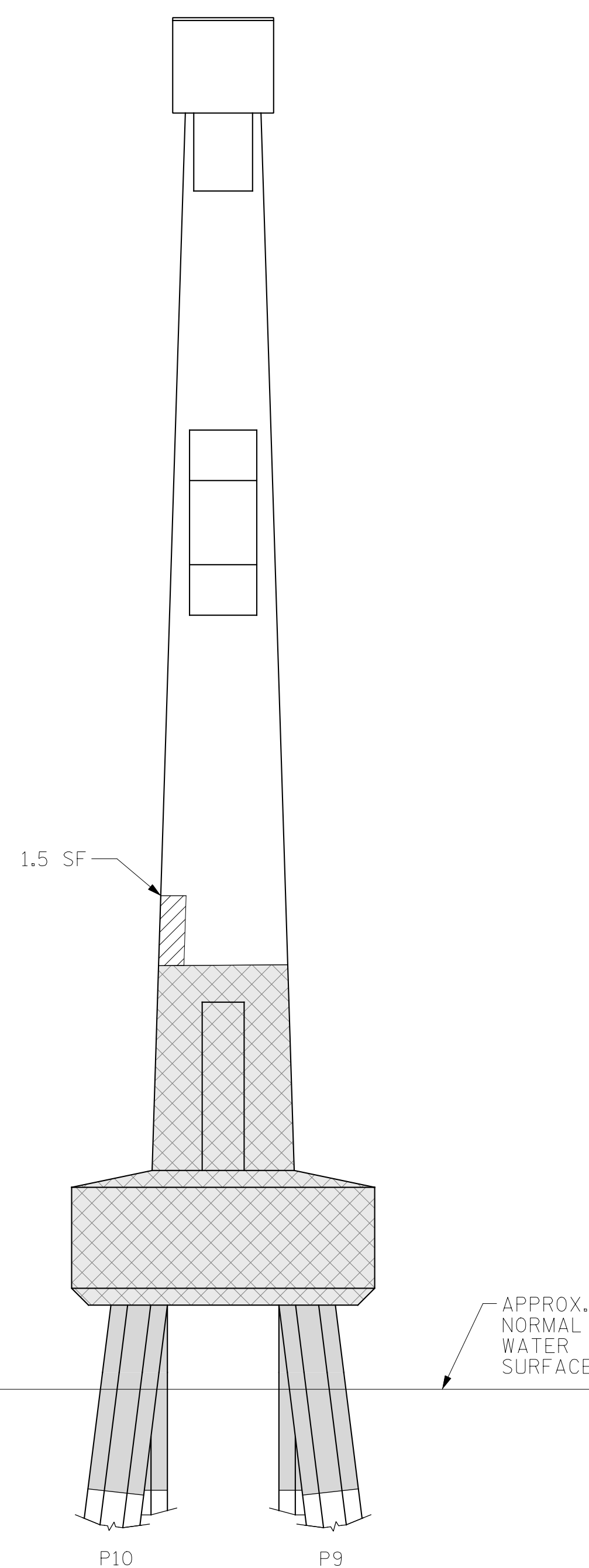
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



DocuSigned by:
Eric B. Nelson, Jr. 7/14/2022
ACB002116D74CD...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 143
EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 143

(AWL = ABOVE WATERLINE)
(BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 144

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION		- LF		LF	
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	57.9 SF	29.0 CF	SF	CF	
EPOXY RESIN INJECTION		- LF		LF	
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF		SF		
FRP PROTECTIVE SYSTEM BWL	363.0 SF		SF		

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

NOTES:

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

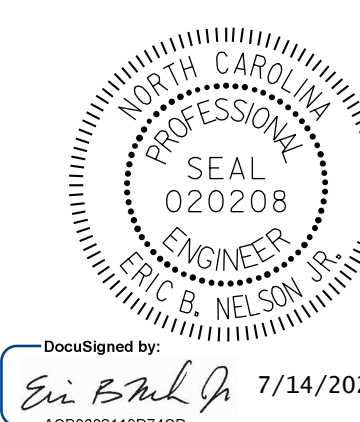
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

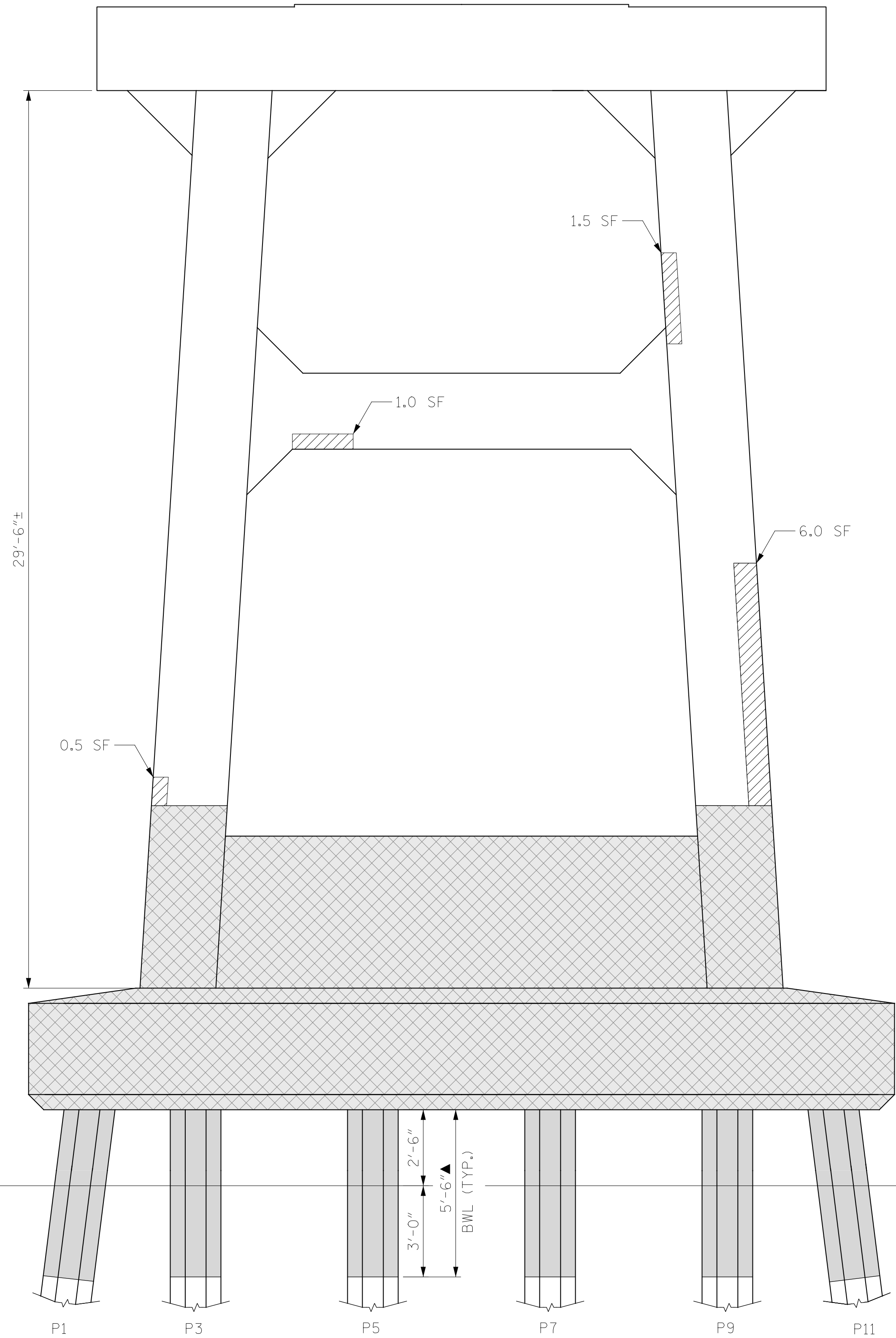
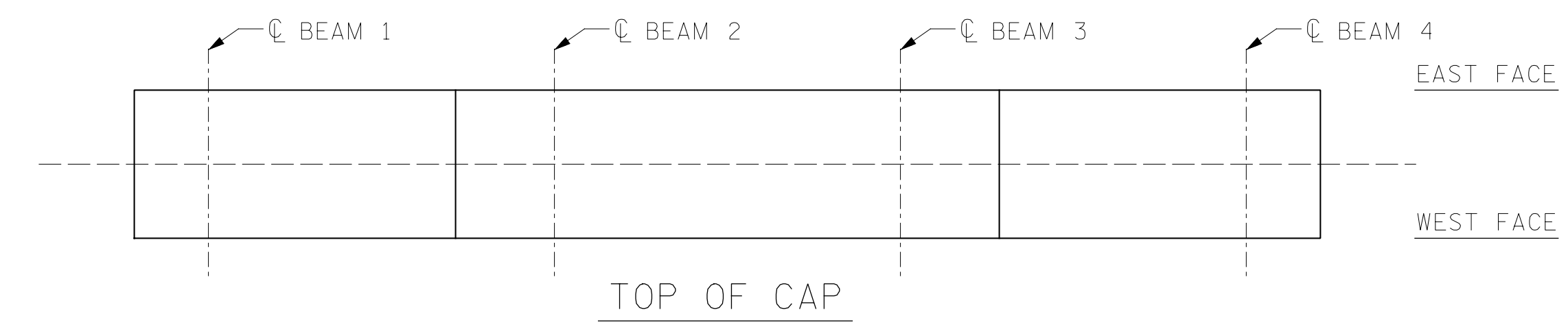
- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

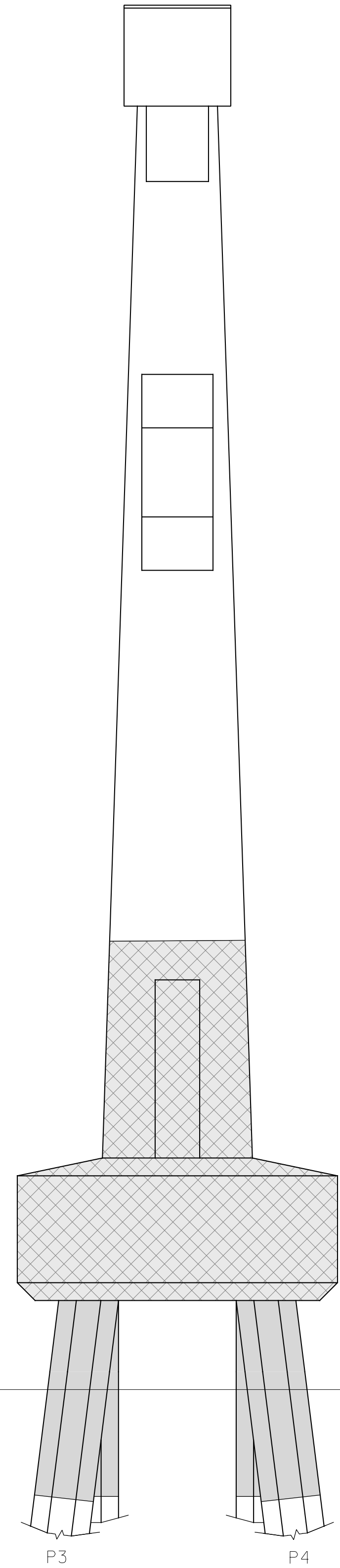
PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



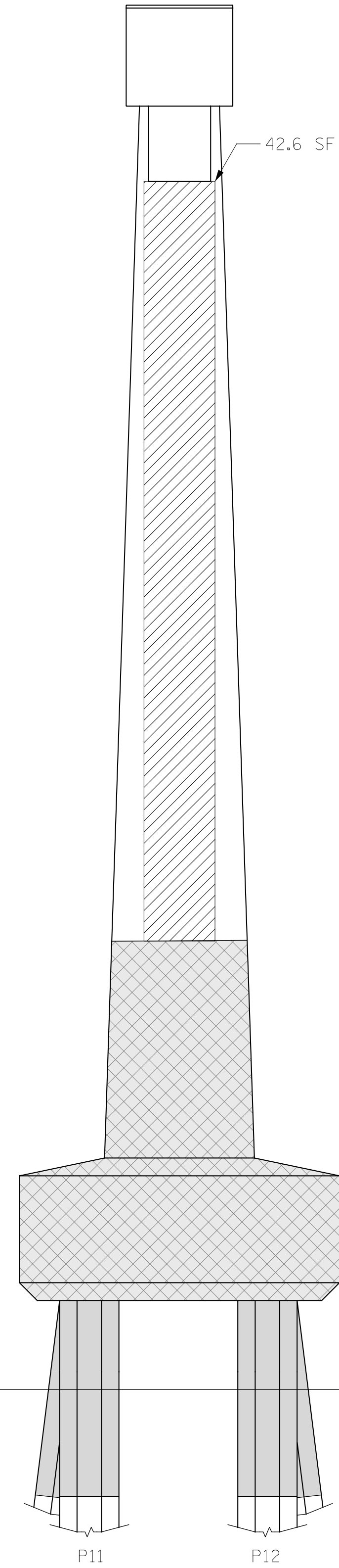
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BENT 144 WEST FACE					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					355



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



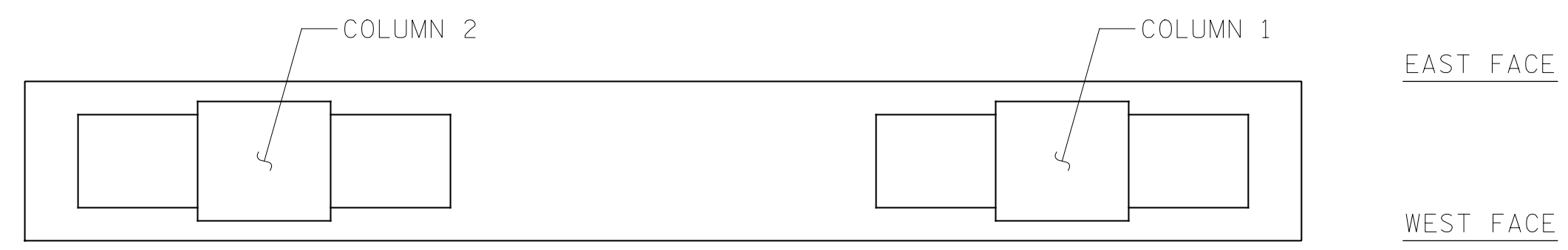
END VIEW
SOUTH FACE COL.2

BENT 144
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

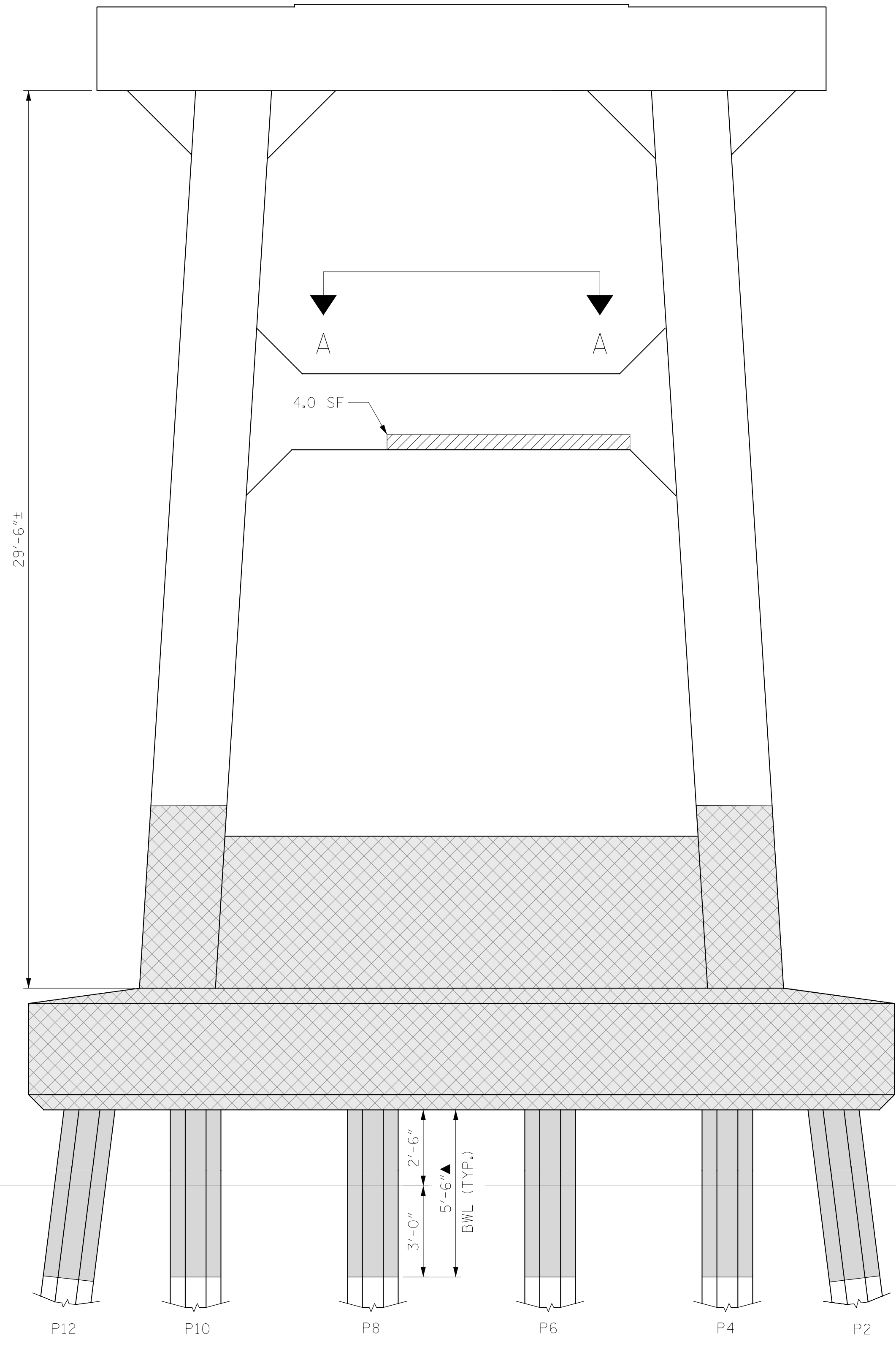
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



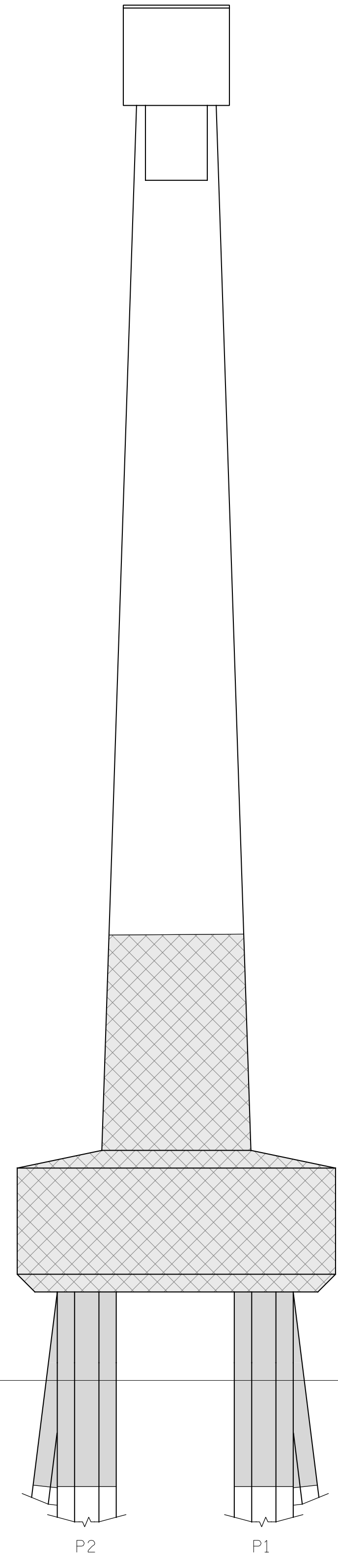
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



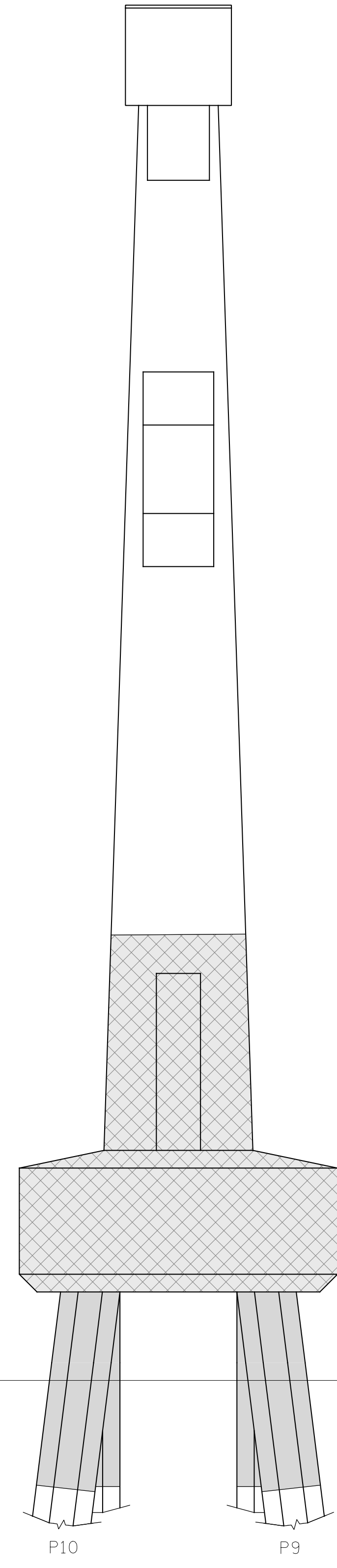
BOTTOM OF CAP



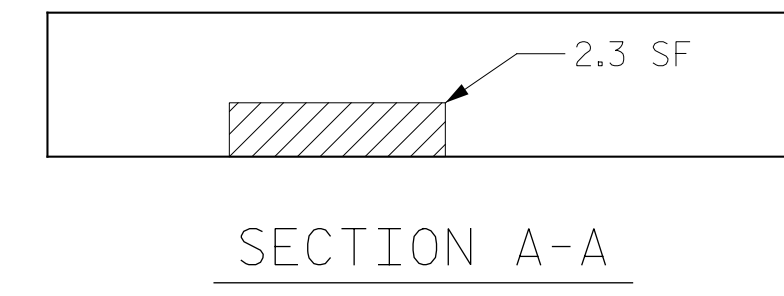
ELEVATION EAST FACE



END VIEW NORTH FACE COL.1



INTERIOR VIEW NORTH FACE COL.2



SECTION A-A

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 144
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 144
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 145

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION	3.0 LF				LF
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	46.0 SF	23.0 CF	SF	CF	
EPOXY RESIN INJECTION	- LF				LF
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF				SF
FRP PROTECTIVE SYSTEM BWL	363.0 SF				SF

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

NOTES:

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.




FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

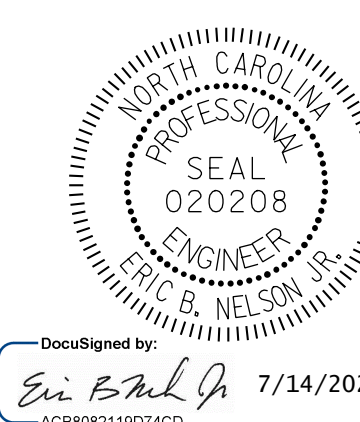
FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

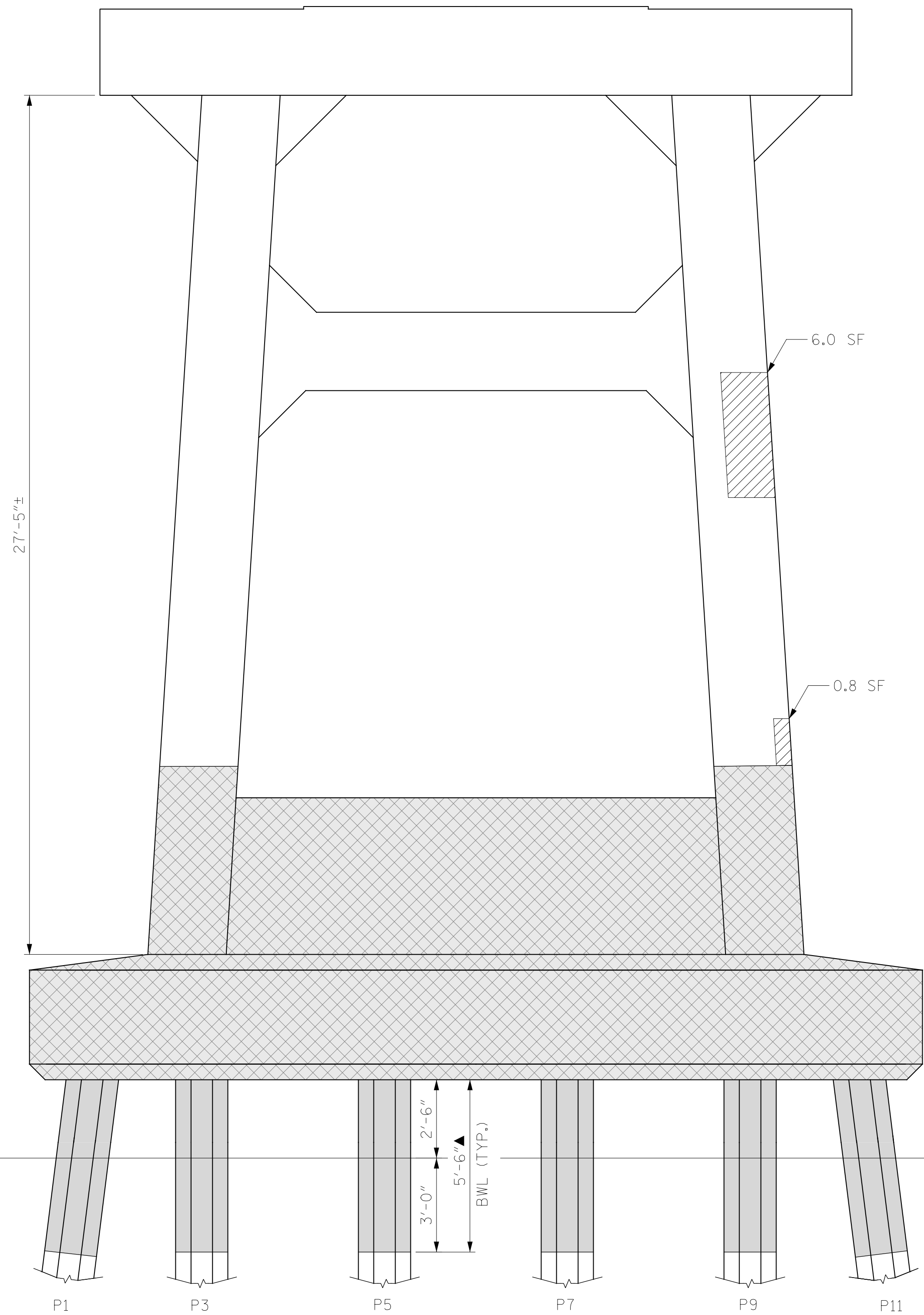
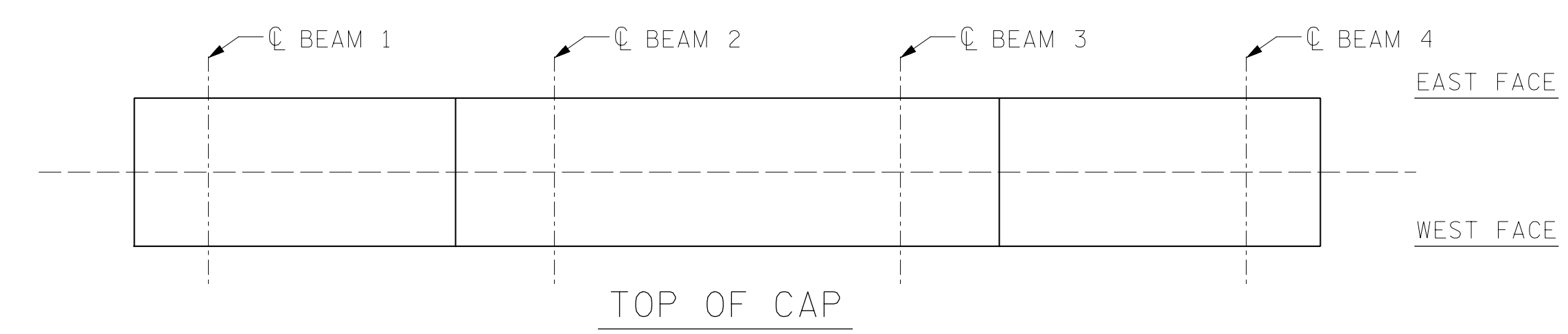
- ERI - EPOXY RESIN INJECTION
-  - FRP PROTECTIVE SYSTEM
-  - SHOTCRETE REPAIRS
-  - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

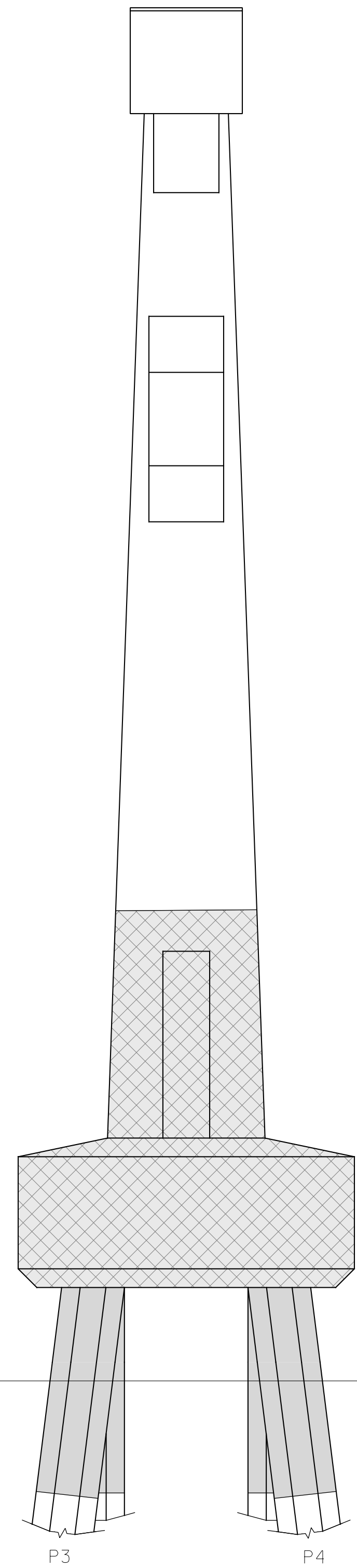
PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



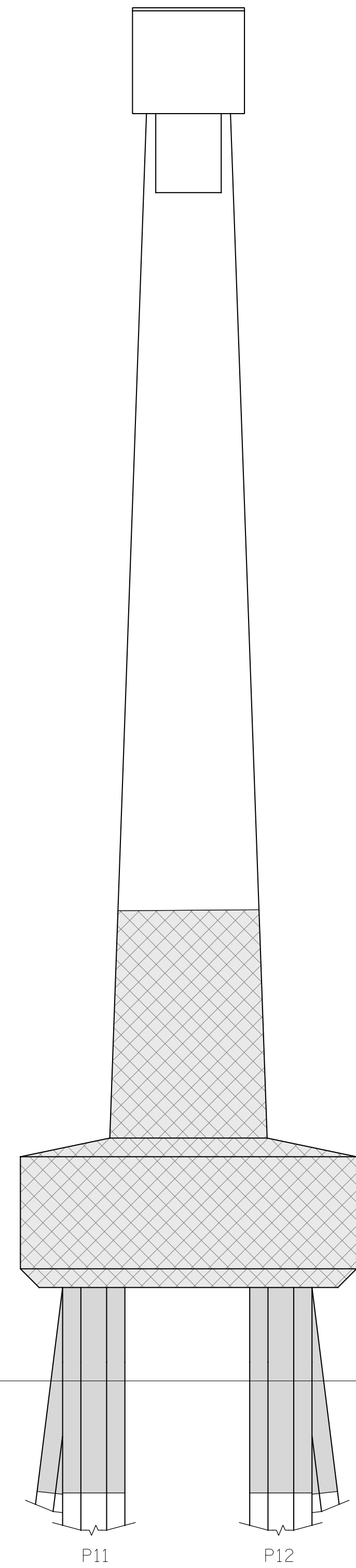
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
BENT 145 WEST FACE						S-227
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	355
1			3			
2			4			



ELEVATION
WEST FACE



INTERIOR VIEW
SOUTH FACE COL.1



END VIEW
SOUTH FACE COL.2

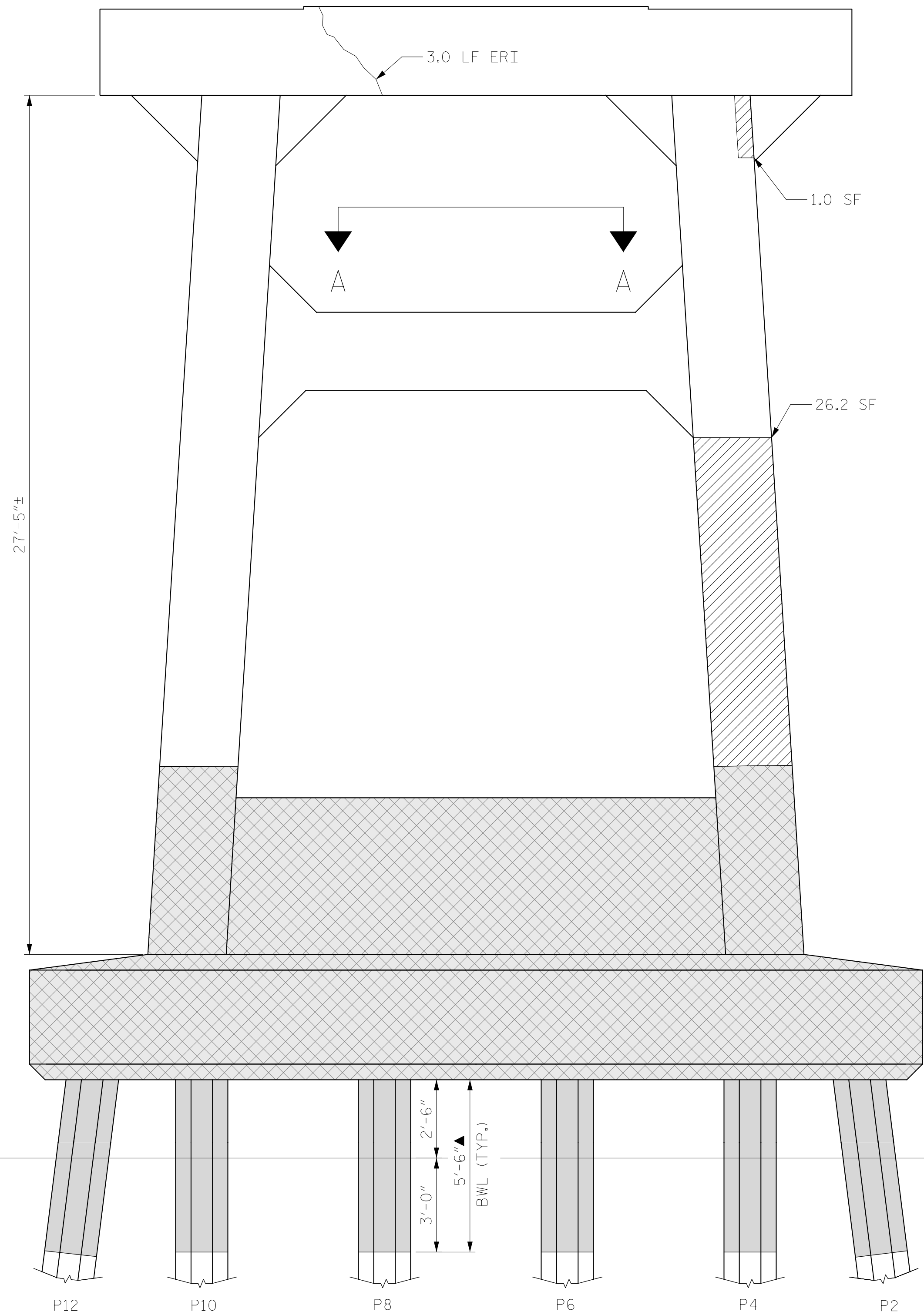
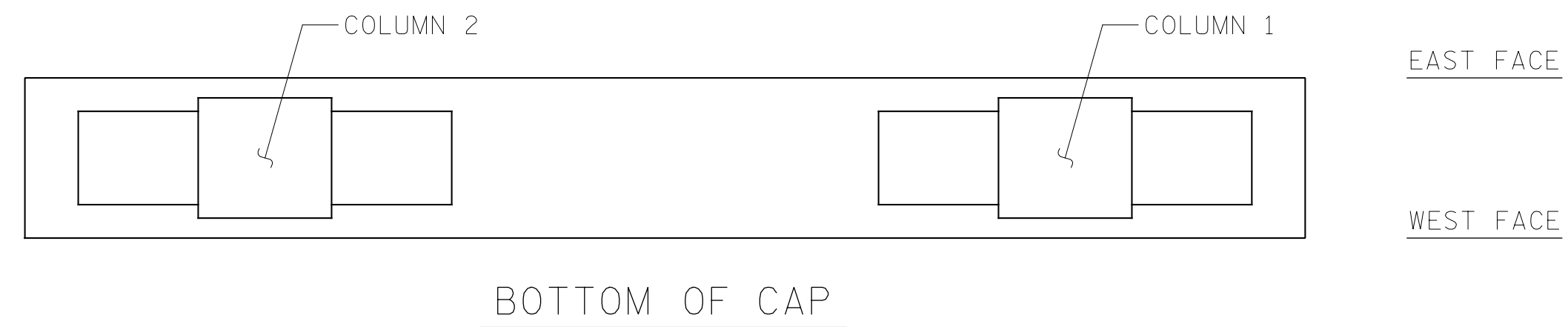
APPROX. NORMAL WATER SURFACE

BENT 145
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

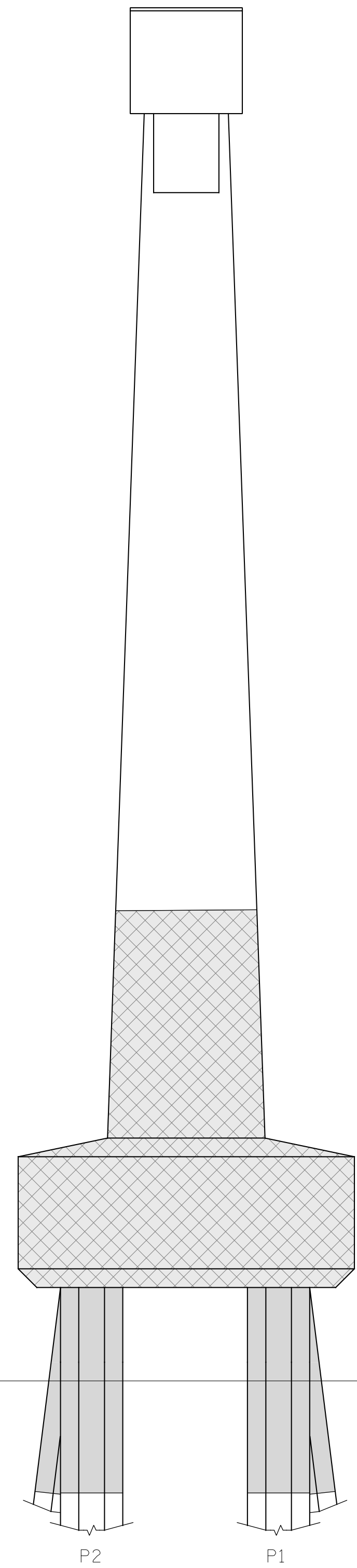
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019



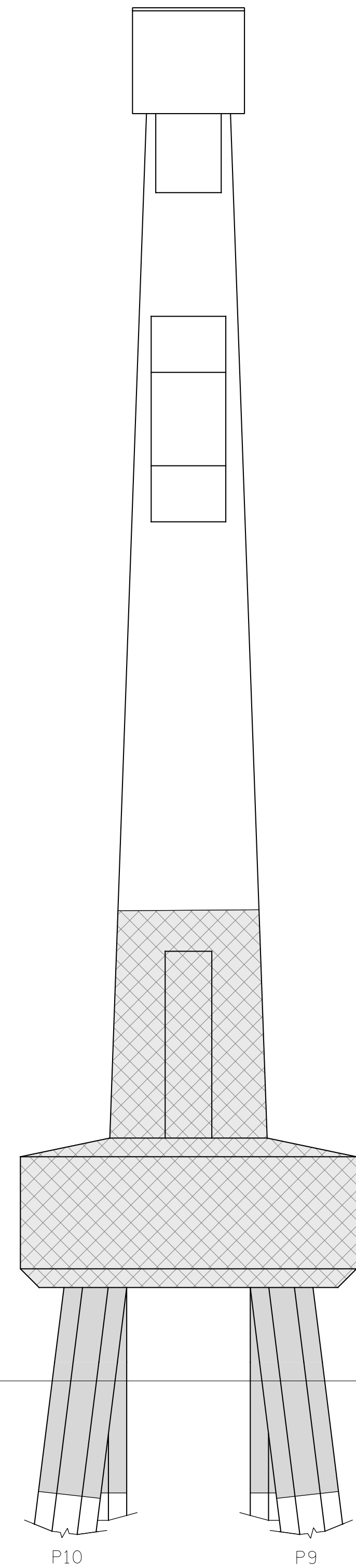
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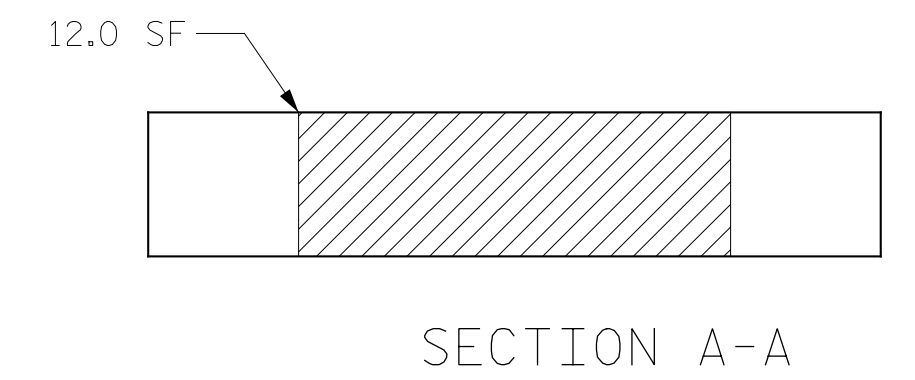
ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



INTERIOR VIEW
NORTH FACE COL.2



SECTION A-A

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 145
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 145
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 146

CAP REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	- SF	- CF	SF	CF	
EPOXY RESIN INJECTION		- LF		LF	
COLUMN REPAIRS		ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	11.0 SF	5.5 CF	SF	CF	
EPOXY RESIN INJECTION		- LF		LF	
PILE REPAIRS		ESTIMATE		ACTUAL	
FRP PROTECTIVE SYSTEM AWL	- SF		SF		
FRP PROTECTIVE SYSTEM BWL	363.0 SF		SF		

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.

FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.

FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.

FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.

- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

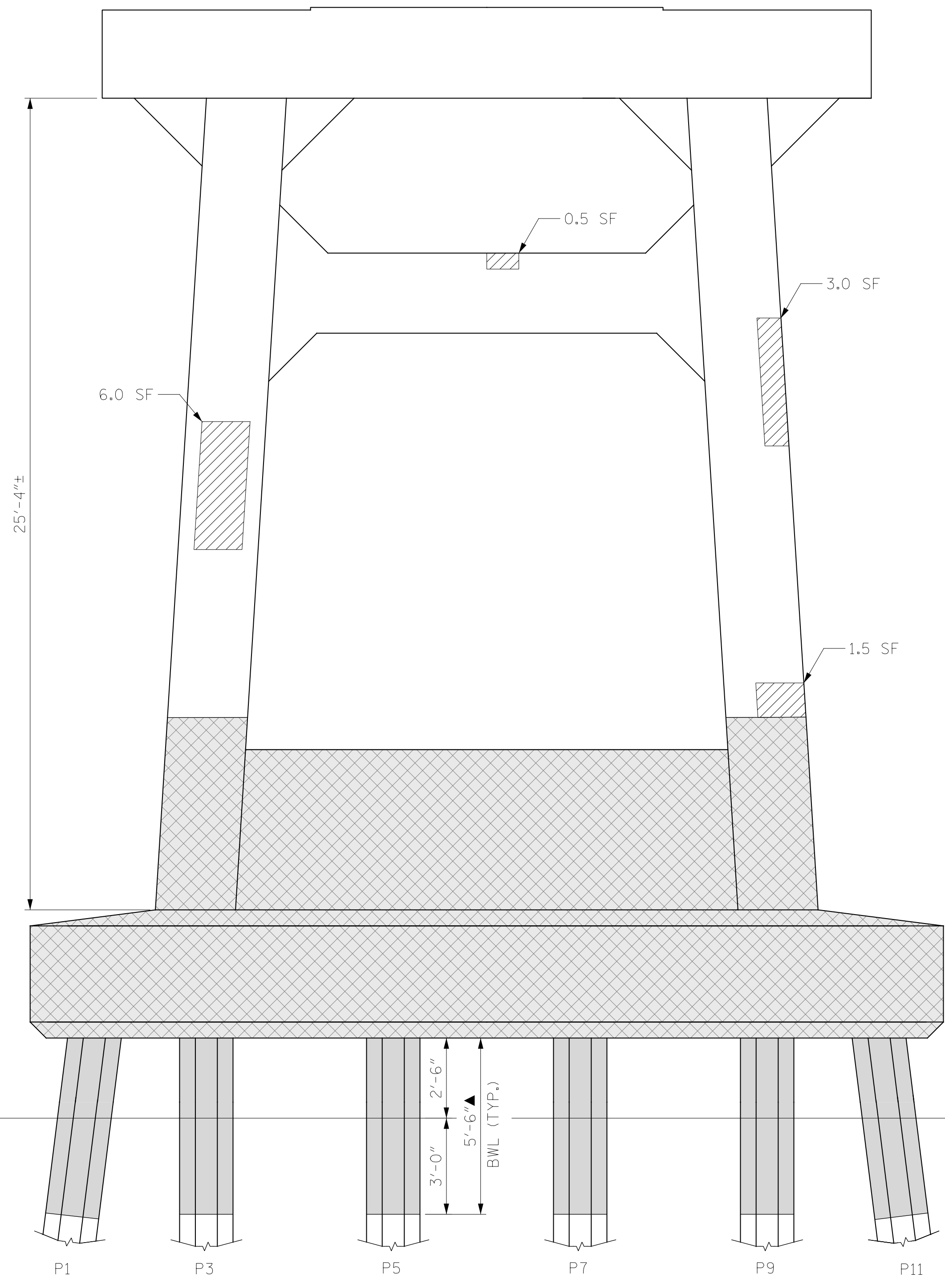
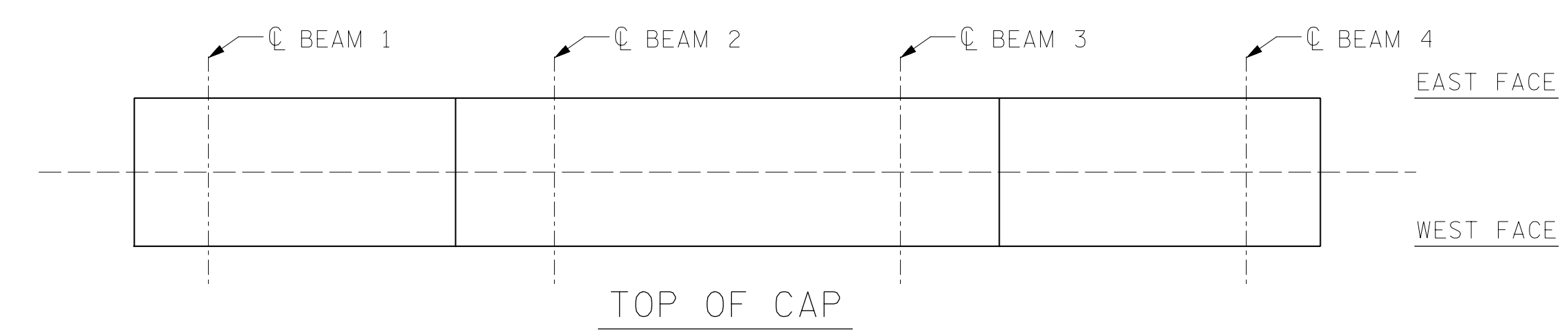


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

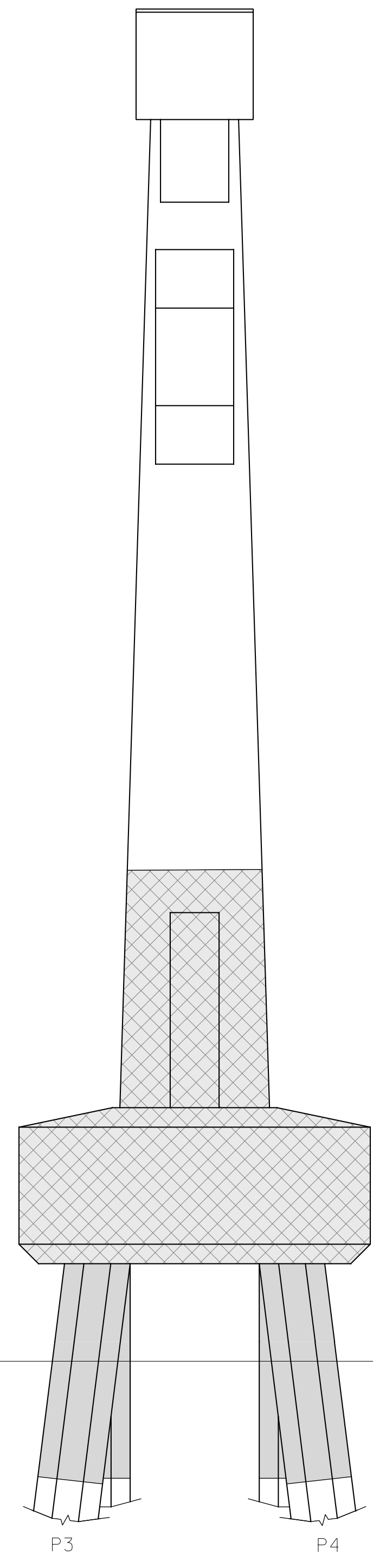
BENT 146
 WEST FACE

REVISIONS						SHEET NO.
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2			4			

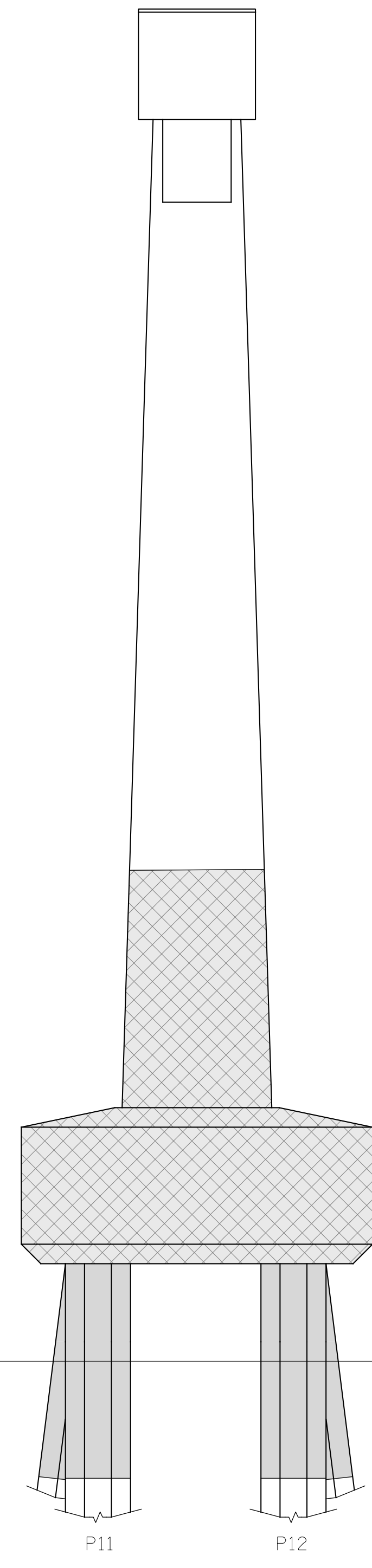
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ELEVATION
 WEST FACE



INTERIOR VIEW
 SOUTH FACE COL.1

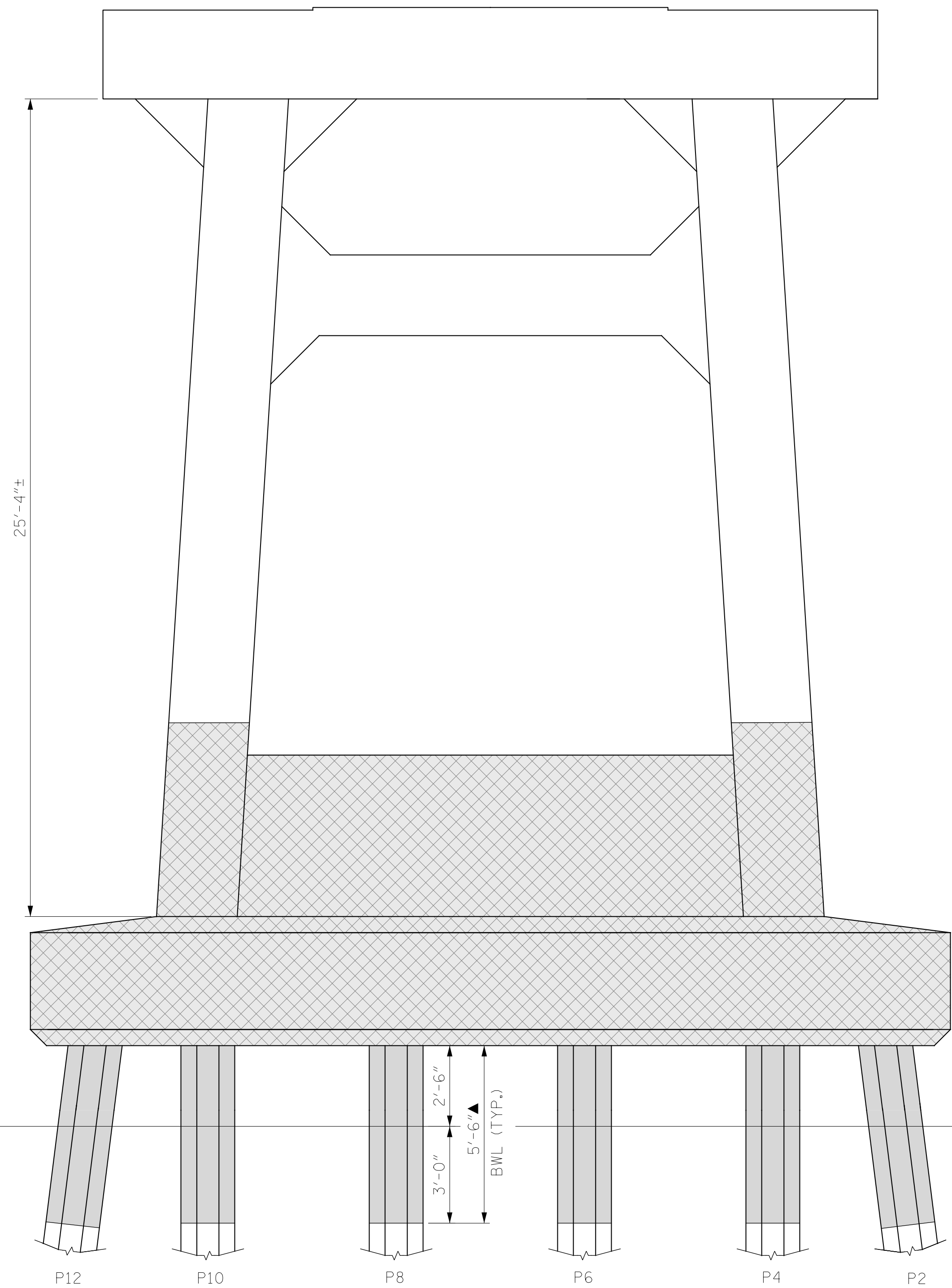
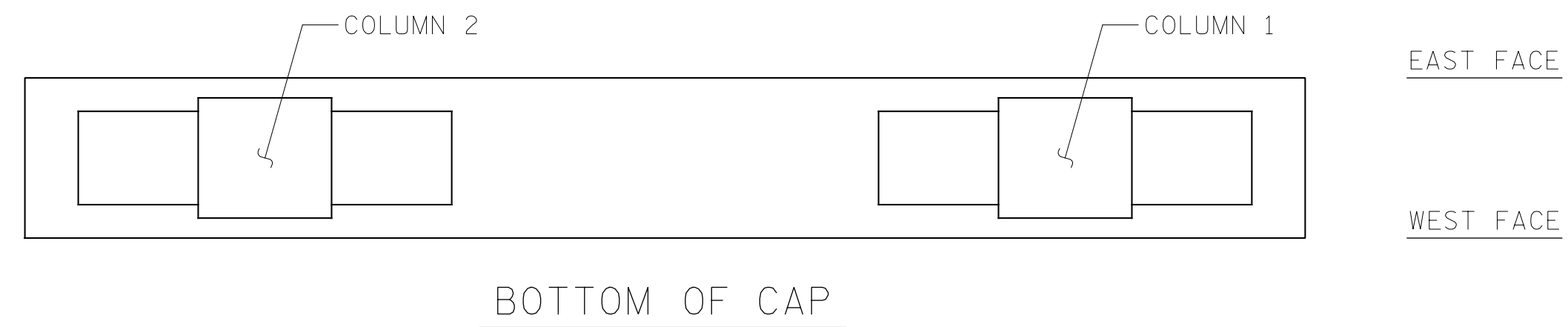


END VIEW
 SOUTH FACE COL.2

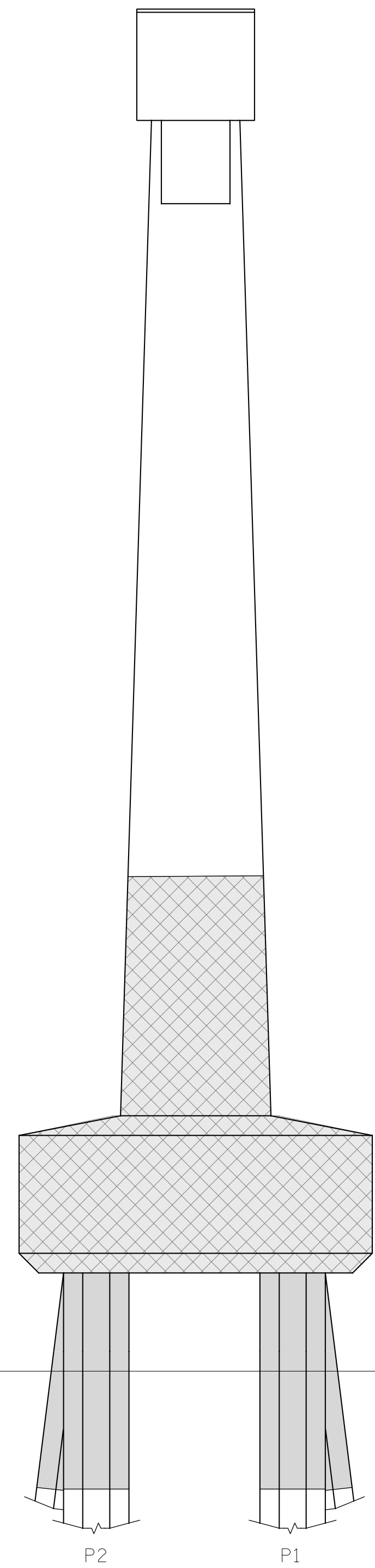
BENT 146

(AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)

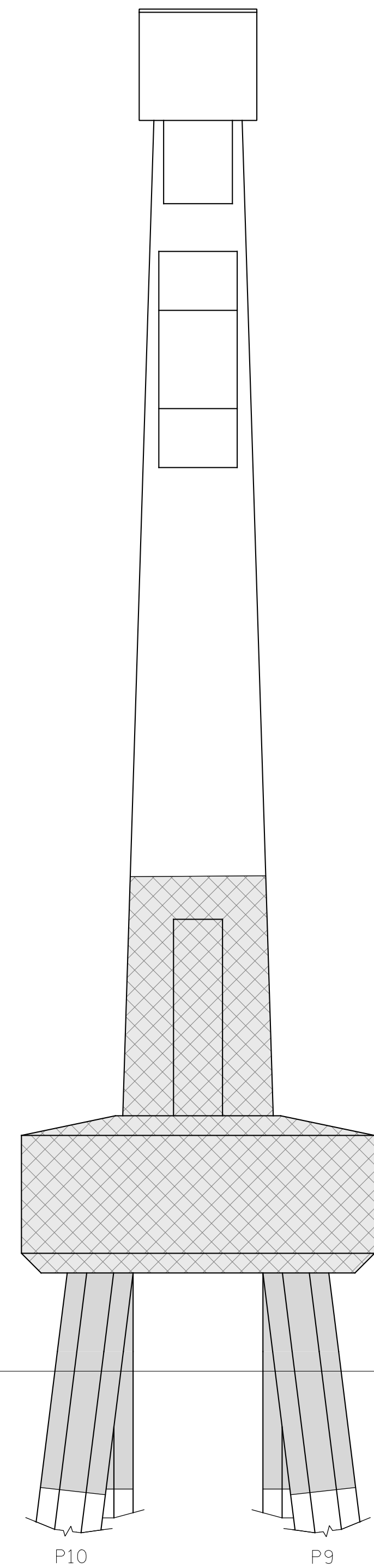
DRAWN BY: T. HARTLEY DATE: 2/2019
 CHECKED BY: J. FARNHAM DATE: 5/2019



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



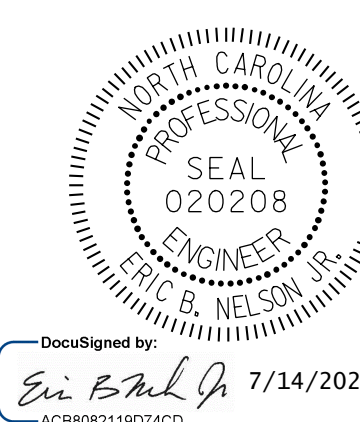
INTERIOR VIEW
NORTH FACE COL.2

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009

APPROX. NORMAL WATER SURFACE



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 146
 EAST FACE

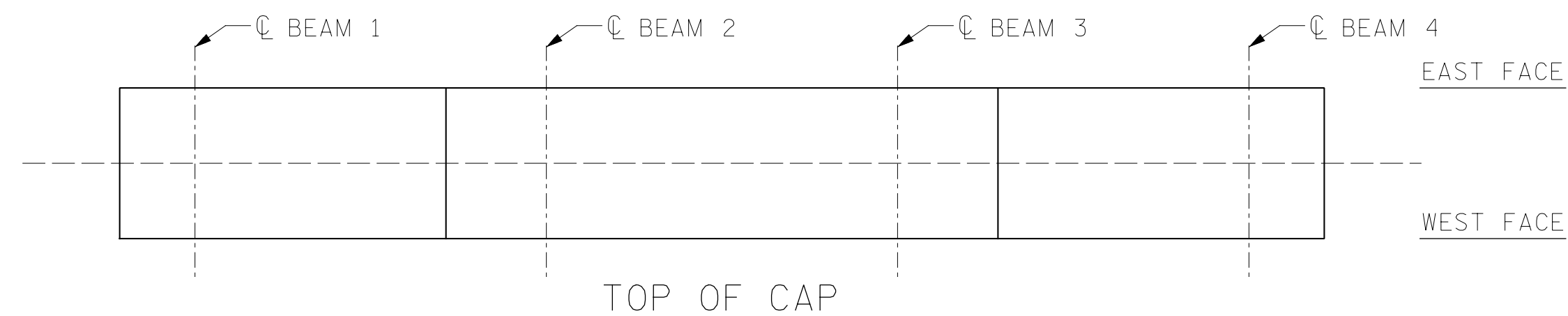
DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 146
 (AWL = ABOVE WATERLINE)
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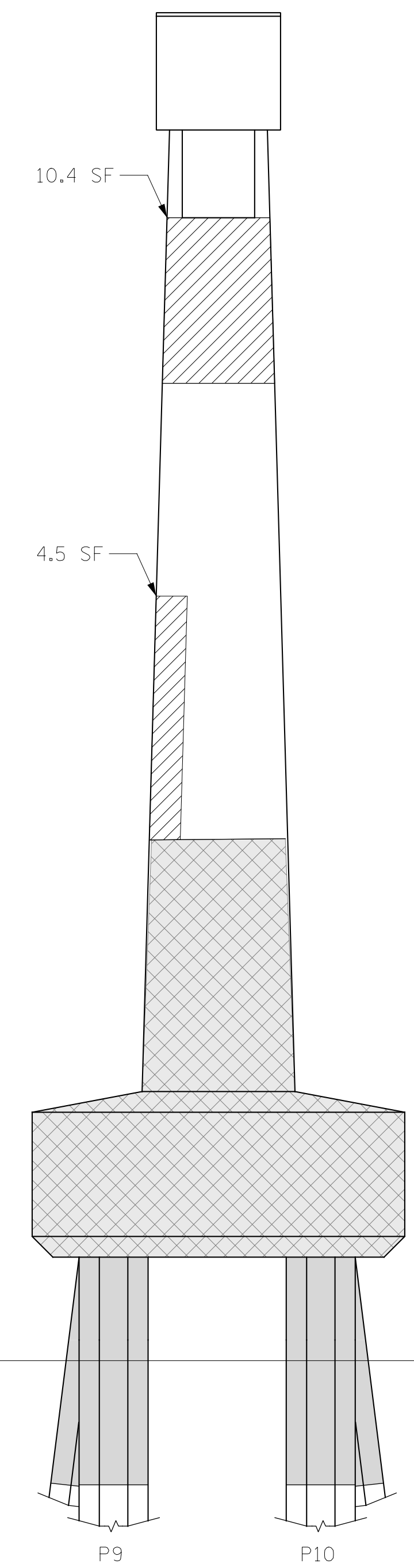
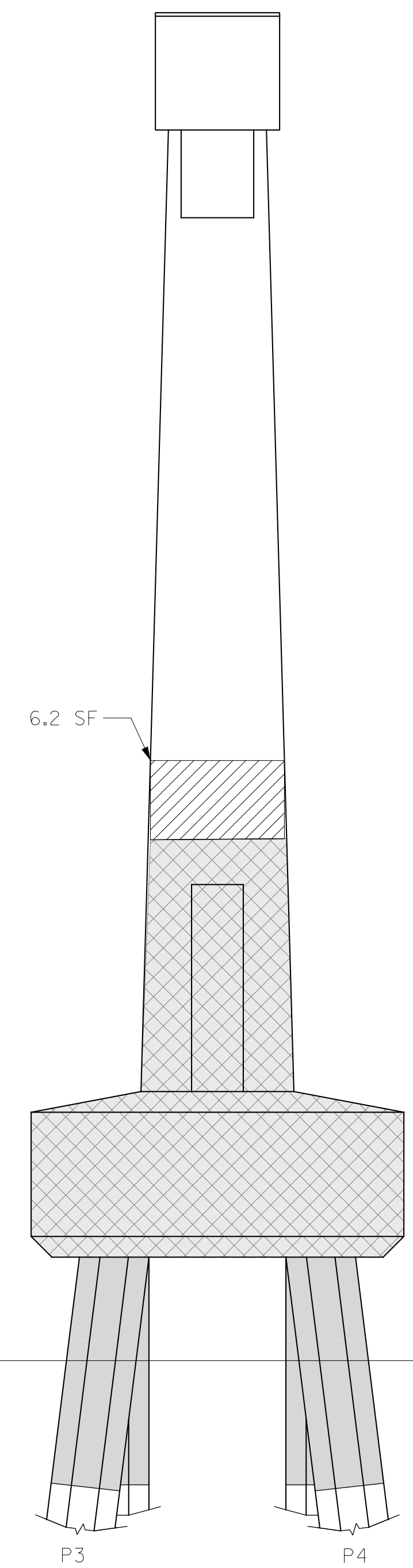
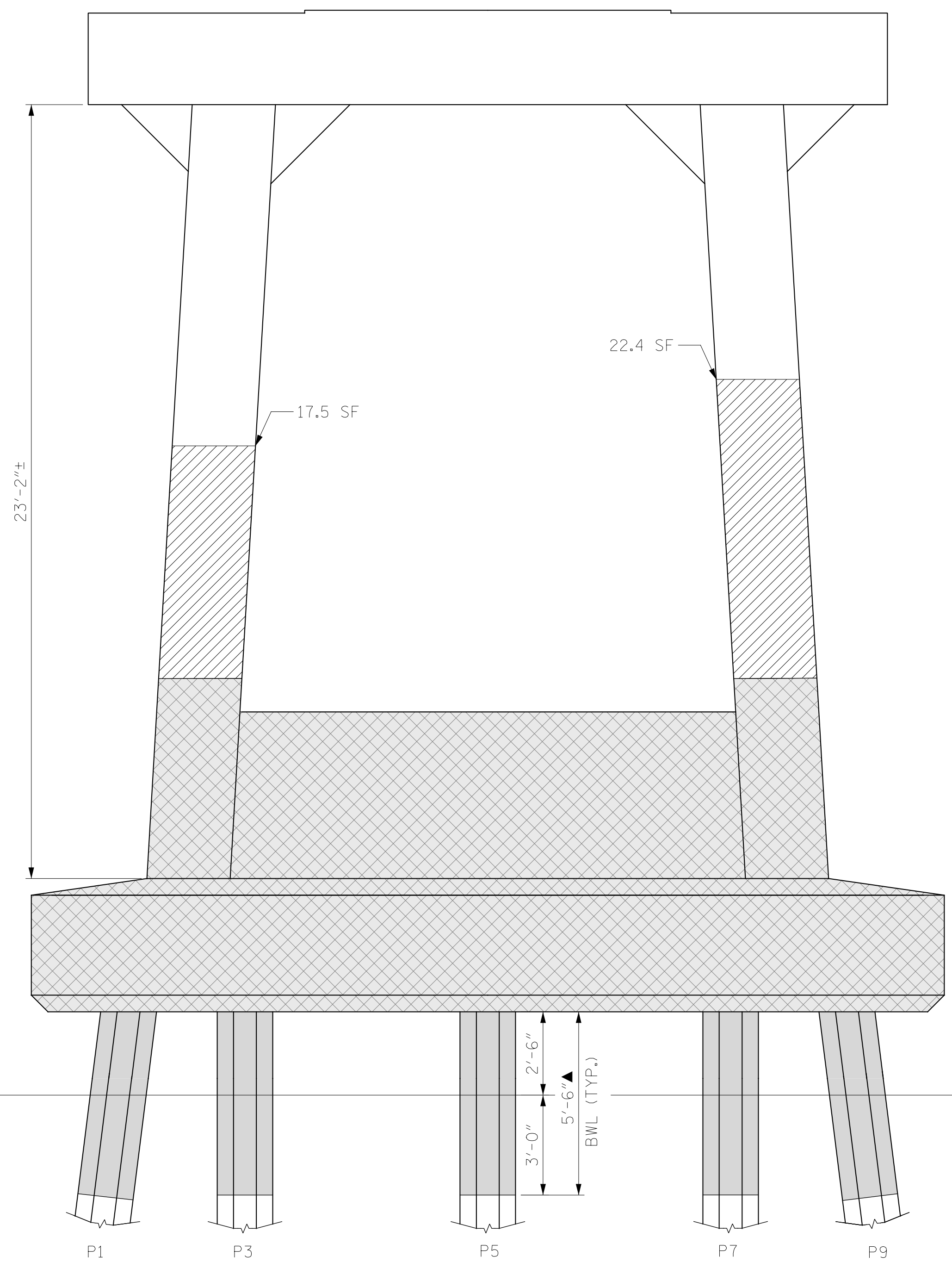


AS-BUILT REPAIR QUANTITY TABLE

BENT 147				
CAP REPAIRS		ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	- SF	- CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
COLUMN REPAIRS		ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	61.0 SF	30.5 CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
PILE REPAIRS		ESTIMATE		ACTUAL
FRP PROTECTIVE SYSTEM AWL	- SF			SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF			SF

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

NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
 FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
 FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



- ERI - EPOXY RESIN INJECTION
- [Hatched Box] - FRP PROTECTIVE SYSTEM
- [Diagonal Lines Box] - SHOTCRETE REPAIRS
- [Cross-hatched Box] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 147
 WEST FACE**

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 147
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



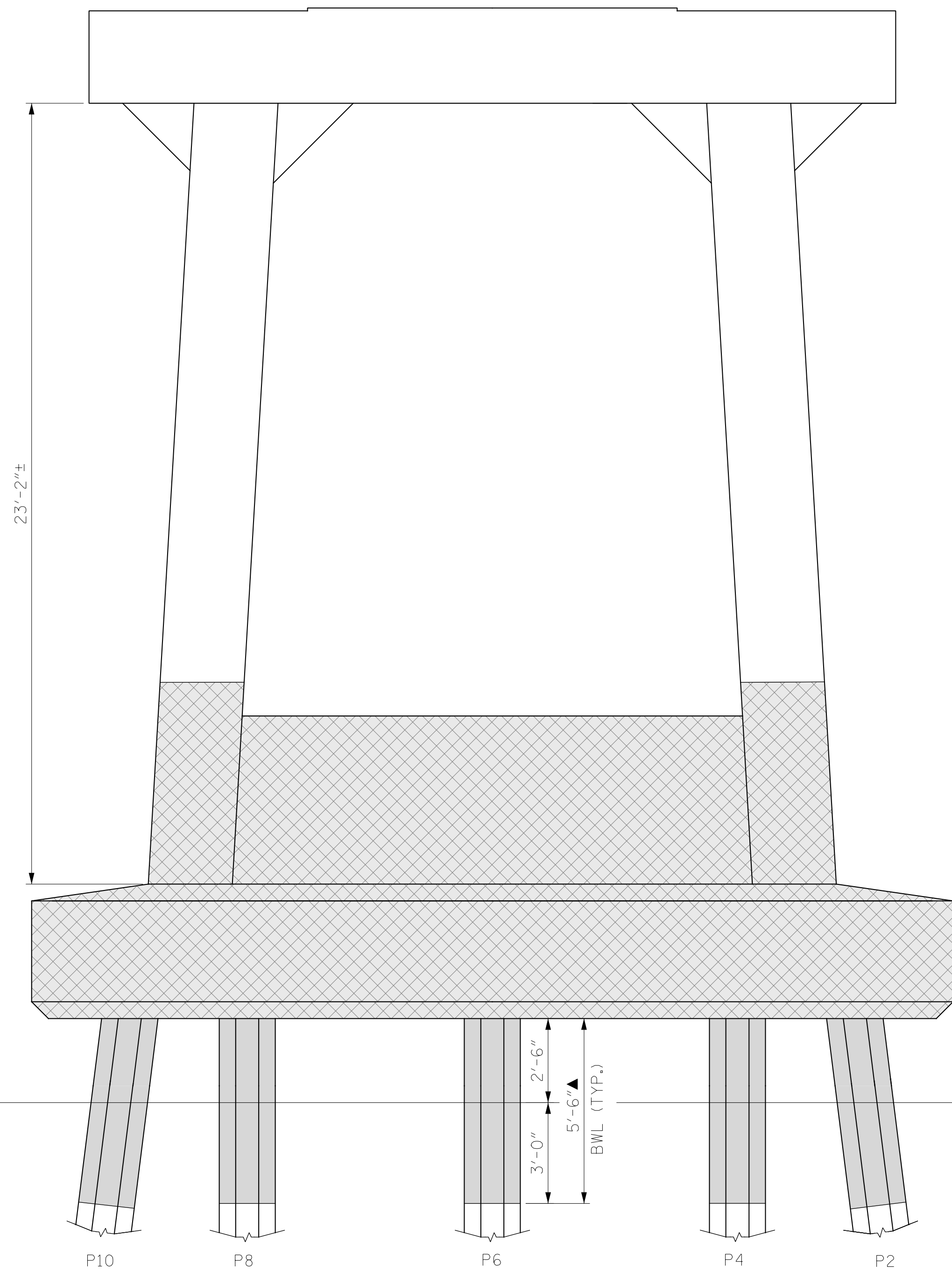
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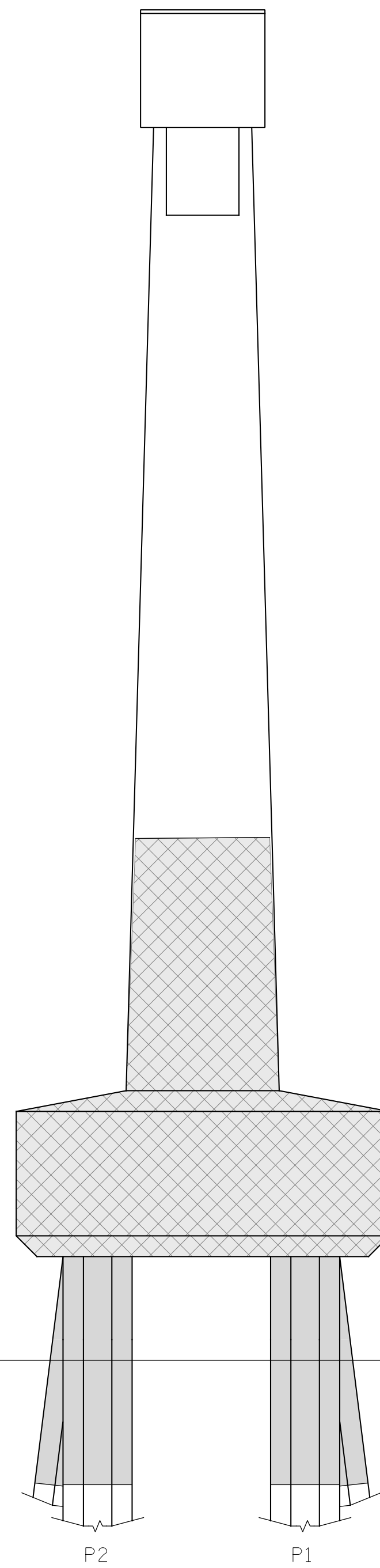


EAST FACE
WEST FACE

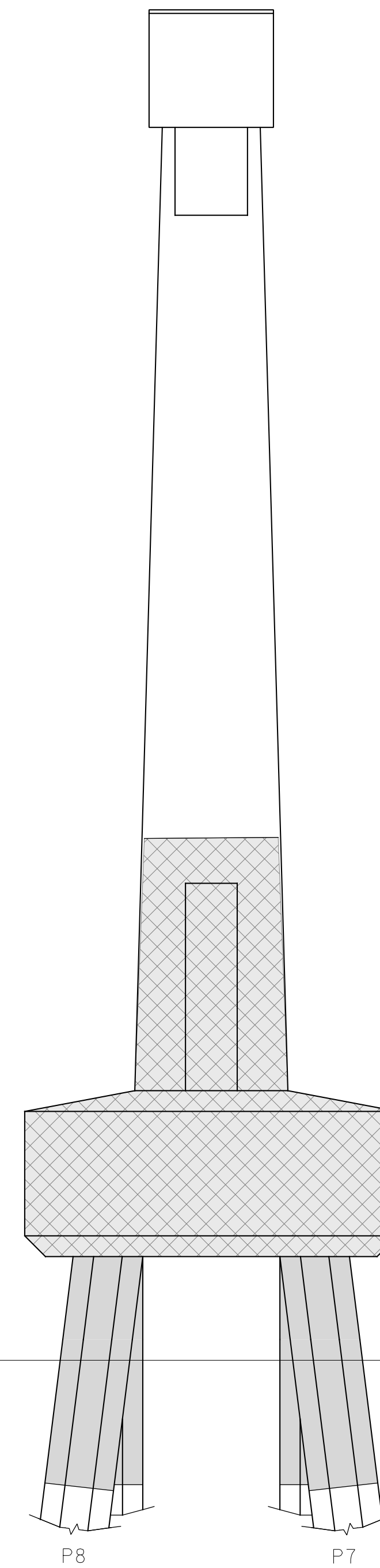
BOTTOM OF CAP



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



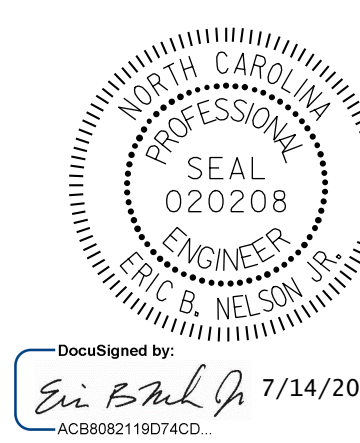
INTERIOR VIEW
NORTH FACE COL.2

APPROX. NORMAL WATER SURFACE

- ERI - EPOXY RESIN INJECTION
- FRP PROTECTIVE SYSTEM
- SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
BRIDGE NO. 270009



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BENT 147
EAST FACE**

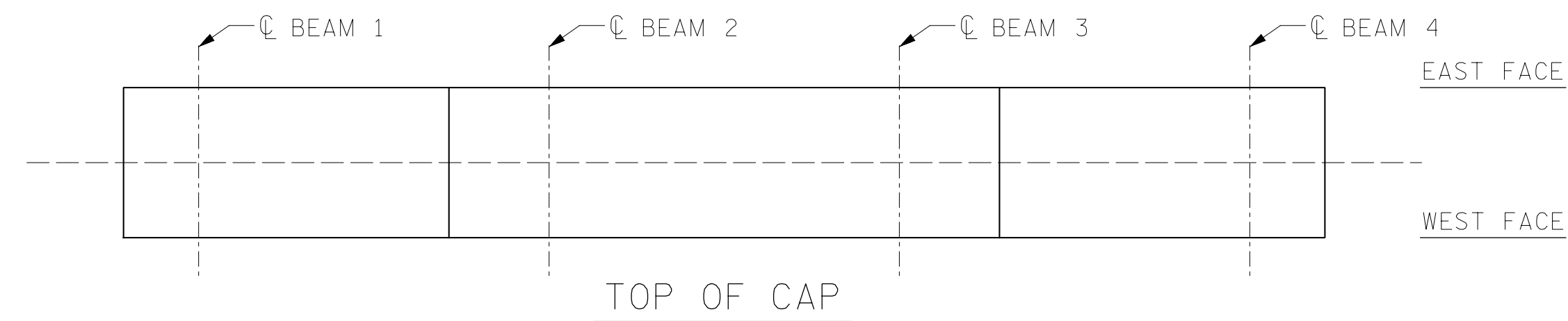
DRAWN BY : T. HARTLEY DATE : 2/2019
CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 147
(AWL = ABOVE WATERLINE)
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REVISIONS						SHEET NO.
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2			4			355



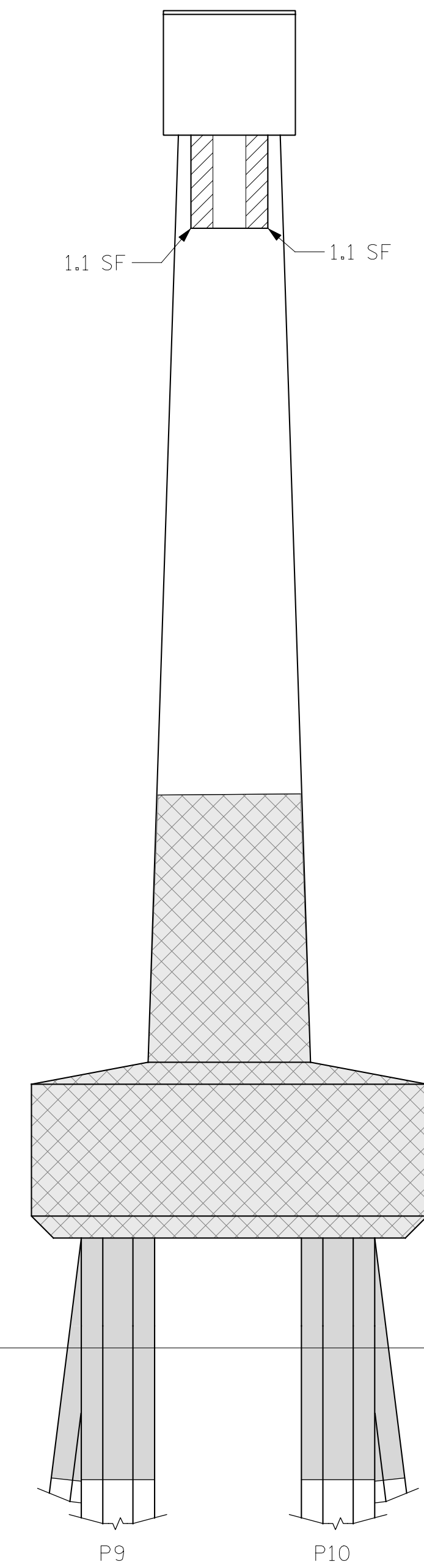
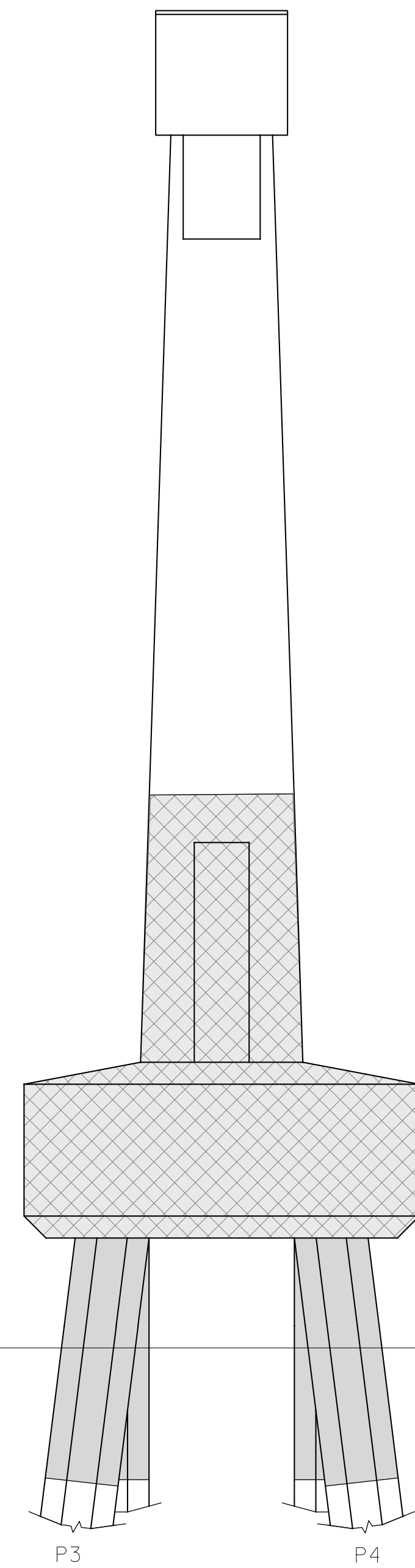
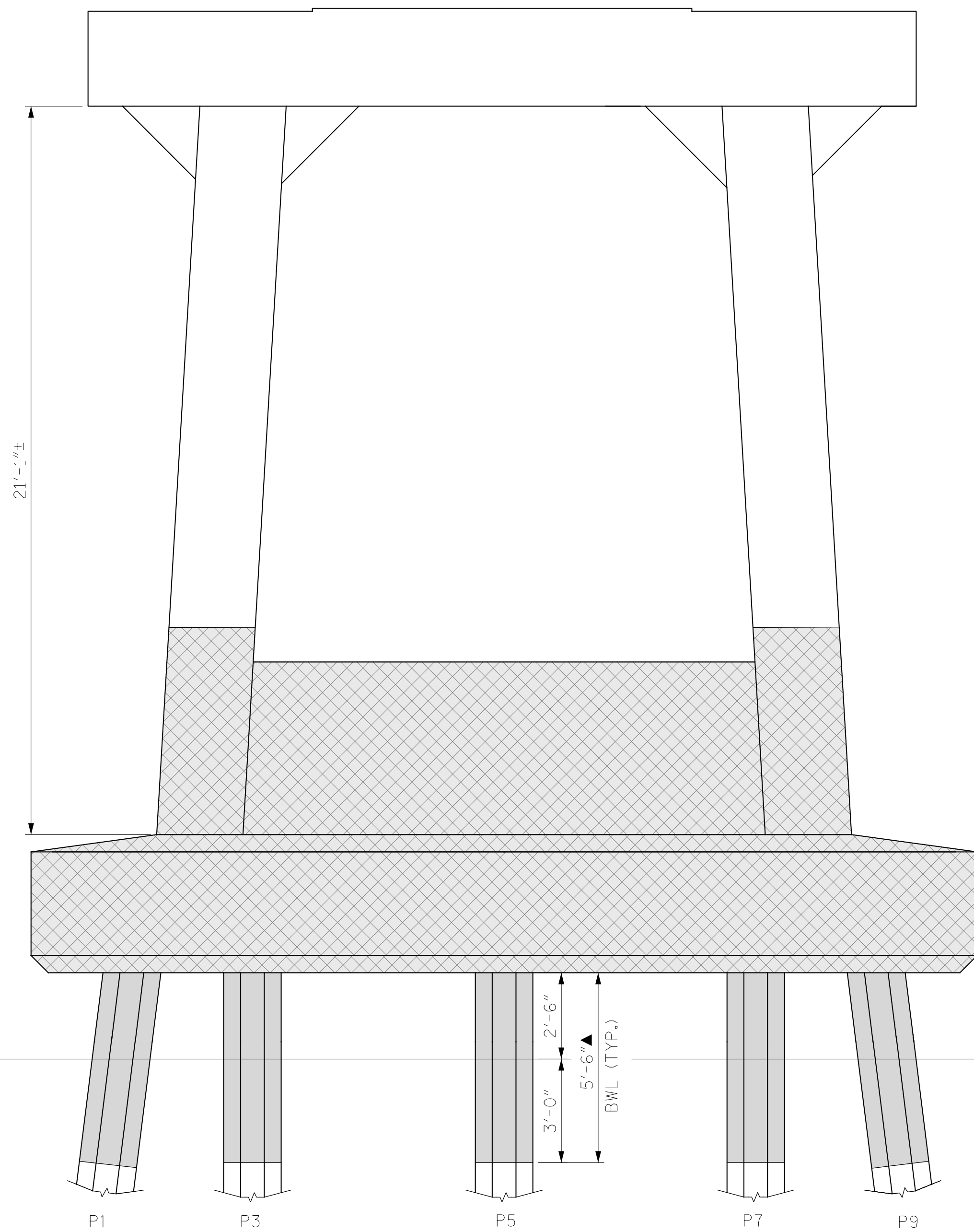
AS-BUILT REPAIR QUANTITY TABLE

BENT 148				
CAP REPAIRS		ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	- SF	- CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
COLUMN REPAIRS		ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	3.3 SF	1.7 CF	SF	CF
EPOXY RESIN INJECTION	- LF			LF
PILE REPAIRS		ESTIMATE		ACTUAL
FRP PROTECTIVE SYSTEM AWL	- SF			SF
FRP PROTECTIVE SYSTEM BWL	302.5 SF			SF

FOR CAP REPAIRS; VALUES IN CHART REPRESENT ESTIMATED 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 CONCRETE REPAIR DETAILS, SEE "TYPICAL CAP, COLUMN & UNDERDECK REPAIR DETAILS" & "PILE CONCRETE RESTORATION DETAILS" SHEETS.
 FOR FOOTING, COLUMN, AND STRUT REPAIR DETAILS, SEE "PILE FOOTING RESTORATION" SHEET.
 FOR PILE CONCRETE RESTORATION, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM, SEE SPECIAL PROVISIONS.
 FOR FRP PROTECTIVE SYSTEM DETAILS AND UNDERWATER MORTAR REPAIRS, SEE "PILE FRP PROTECTIVE SYSTEM DETAILS" SHEET.



- ERI - EPOXY RESIN INJECTION
- [Cross-hatch pattern] - FRP PROTECTIVE SYSTEM
- [Diagonal lines pattern] - SHOTCRETE REPAIRS
- [Grid pattern] - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 148
 WEST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 148
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



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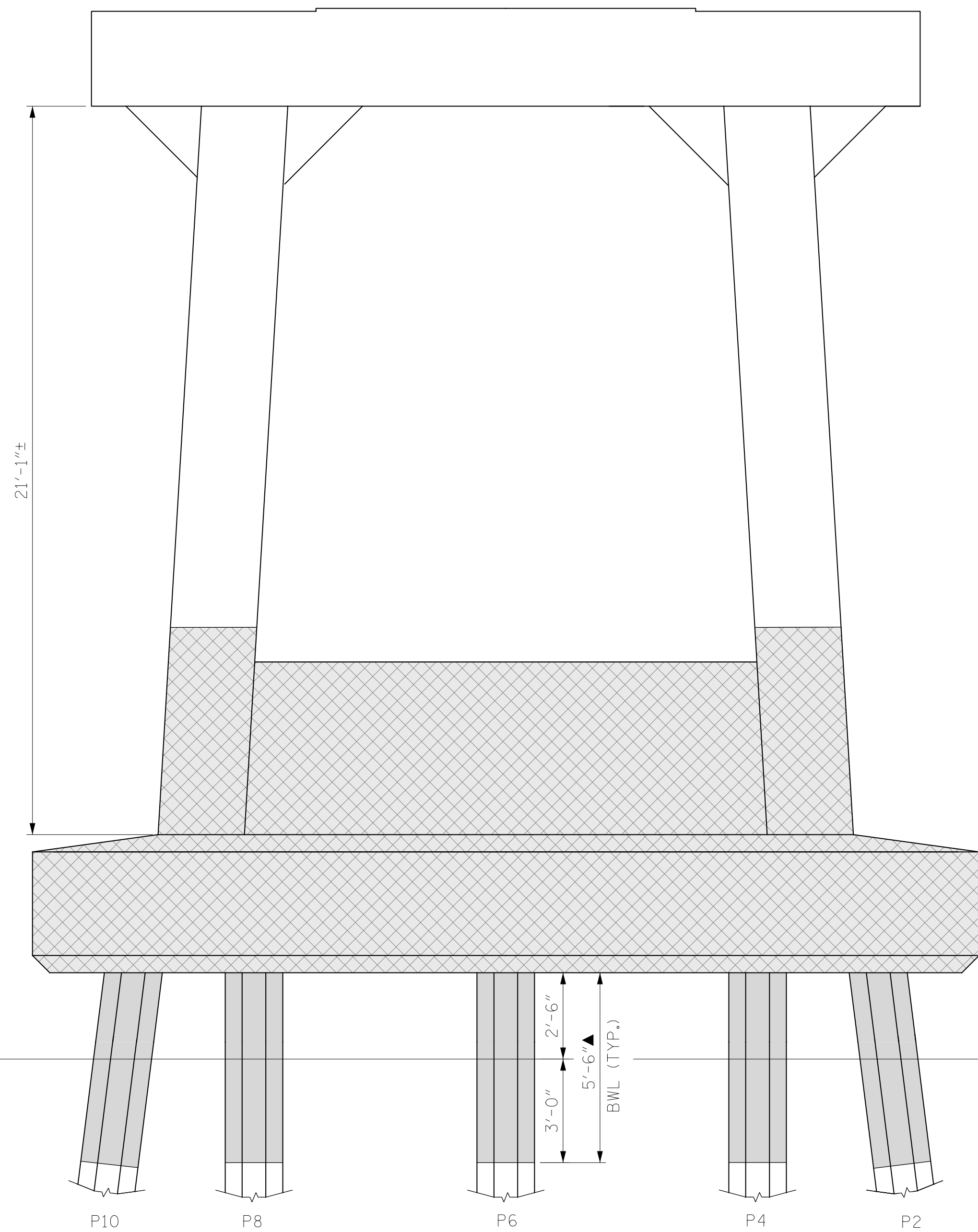
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			355
2			4			



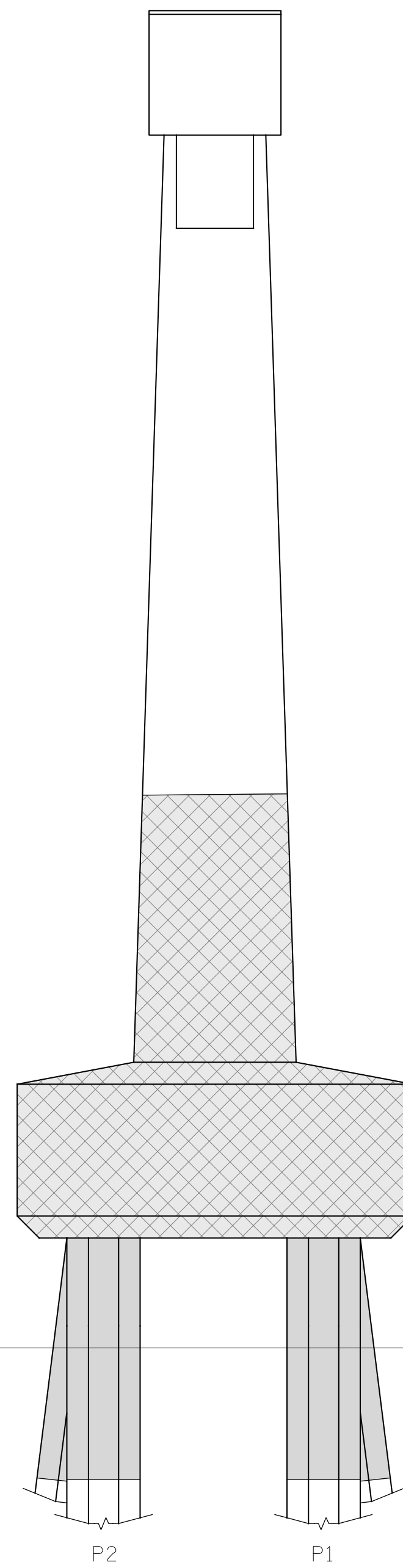
EAST FACE

WEST FACE

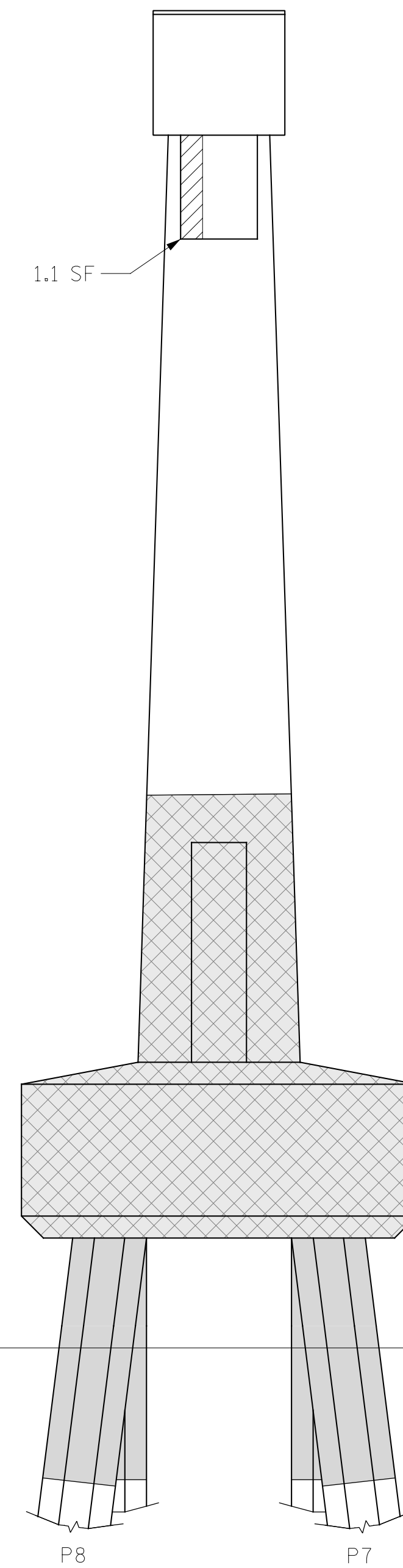
BOTTOM OF CAP



ELEVATION
EAST FACE



END VIEW
NORTH FACE COL.1



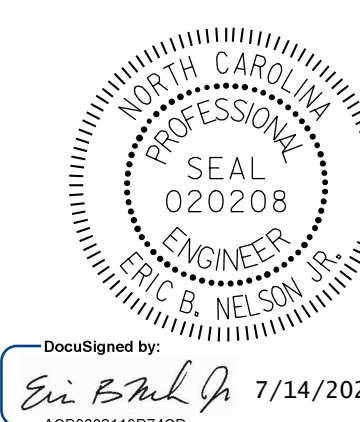
INTERIOR VIEW
NORTH FACE COL.2

APPROX. NORMAL WATER SURFACE

- ERI - EPOXY RESIN INJECTION
- FRP - FRP PROTECTIVE SYSTEM
- SHOTCRETE - SHOTCRETE REPAIRS
- PILE FOOTING RESTORATION - PILE FOOTING RESTORATION

▲ FRP PROTECTIVE SYSTEM BELOW WATERLINE MAY INCLUDE APPROVED UNDERWATER MORTAR REPAIRS

PROJECT NO. HB-0017
DARE COUNTY
 BRIDGE NO. 270009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT 148
 EAST FACE

DRAWN BY : T. HARTLEY DATE : 2/2019
 CHECKED BY : J. FARNHAM DATE : 5/2019

BENT 148
 (AWL = ABOVE WATERLINE)
 (BWL = BELOW WATERLINE)



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