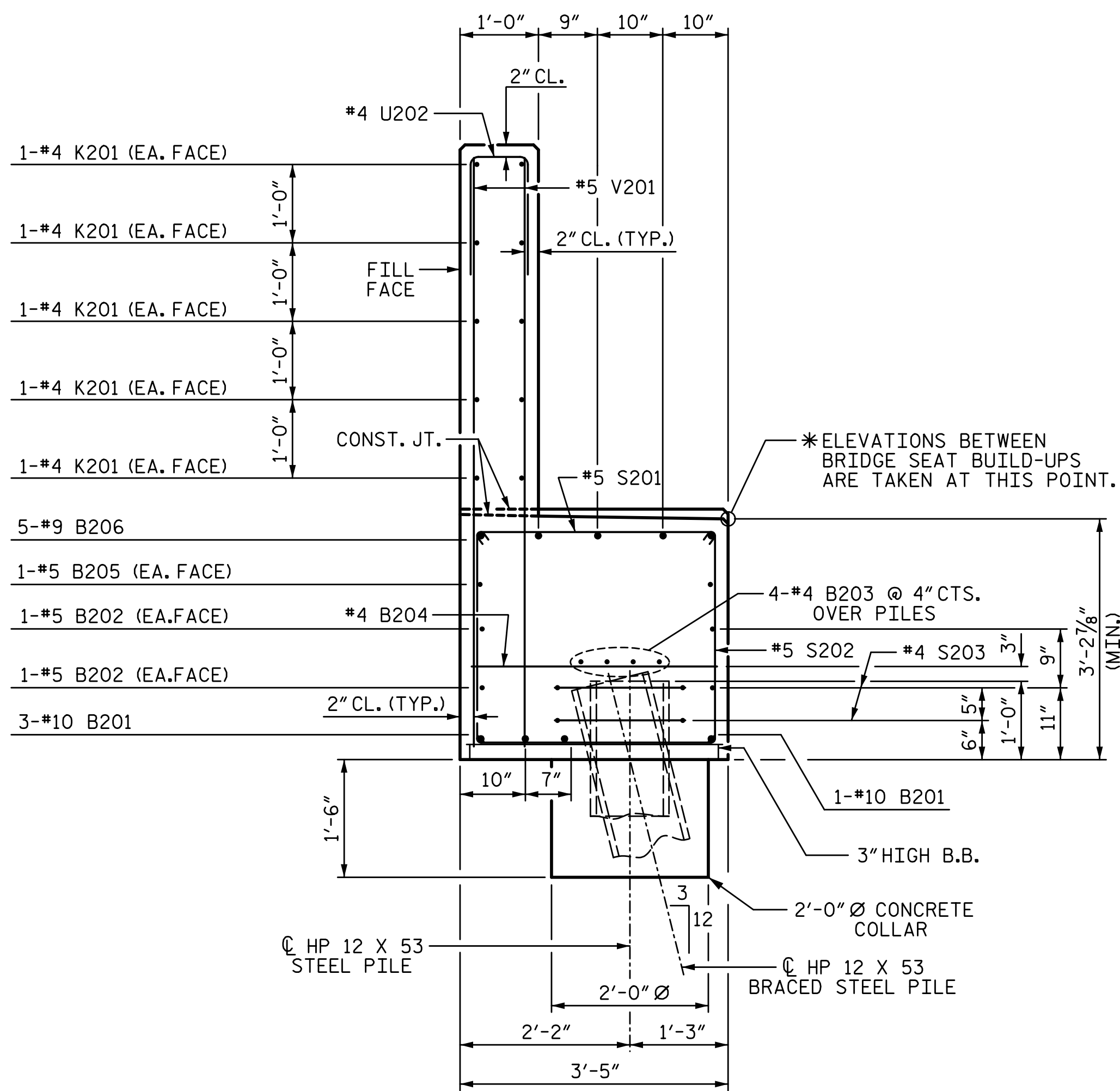
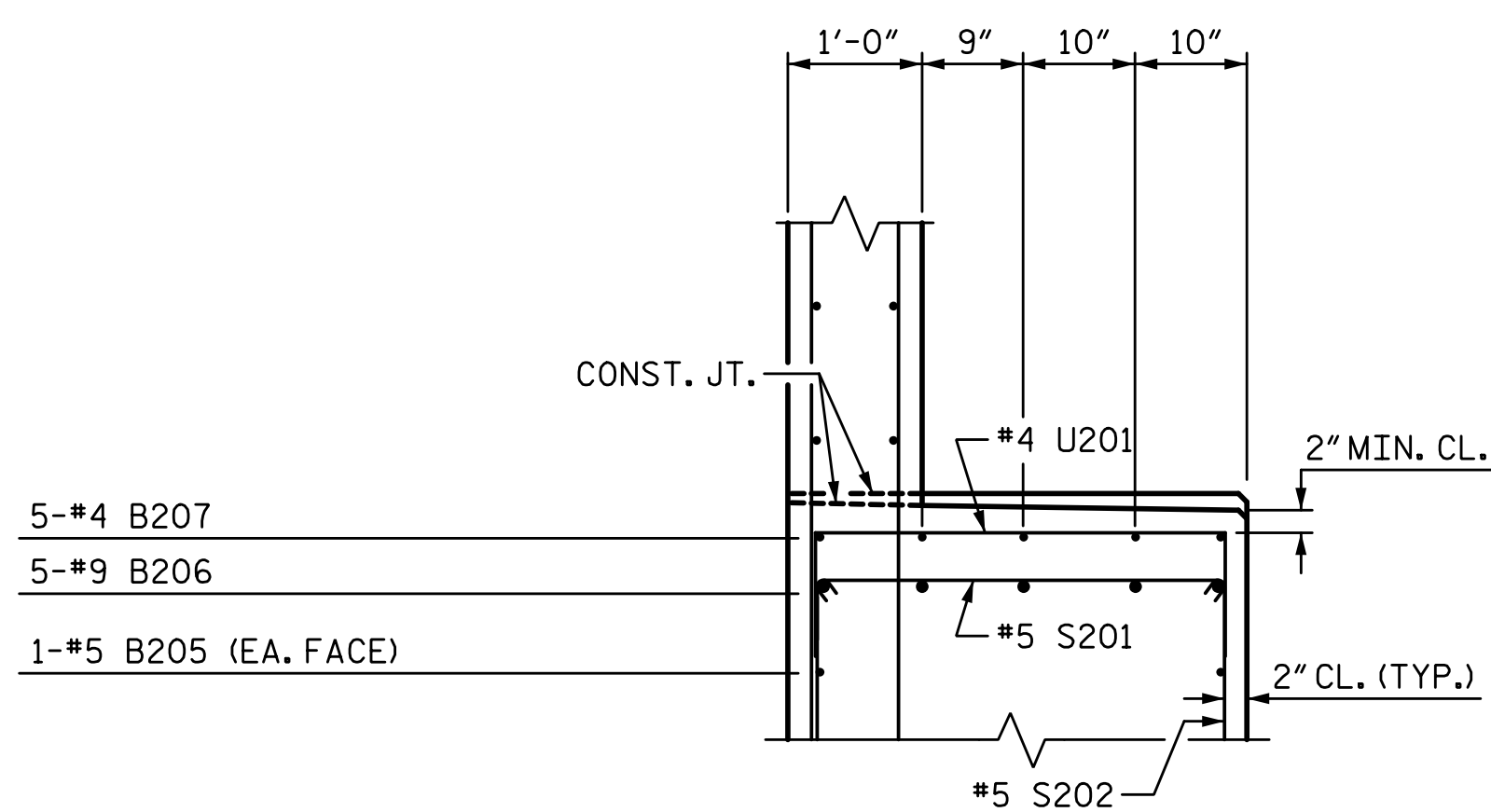


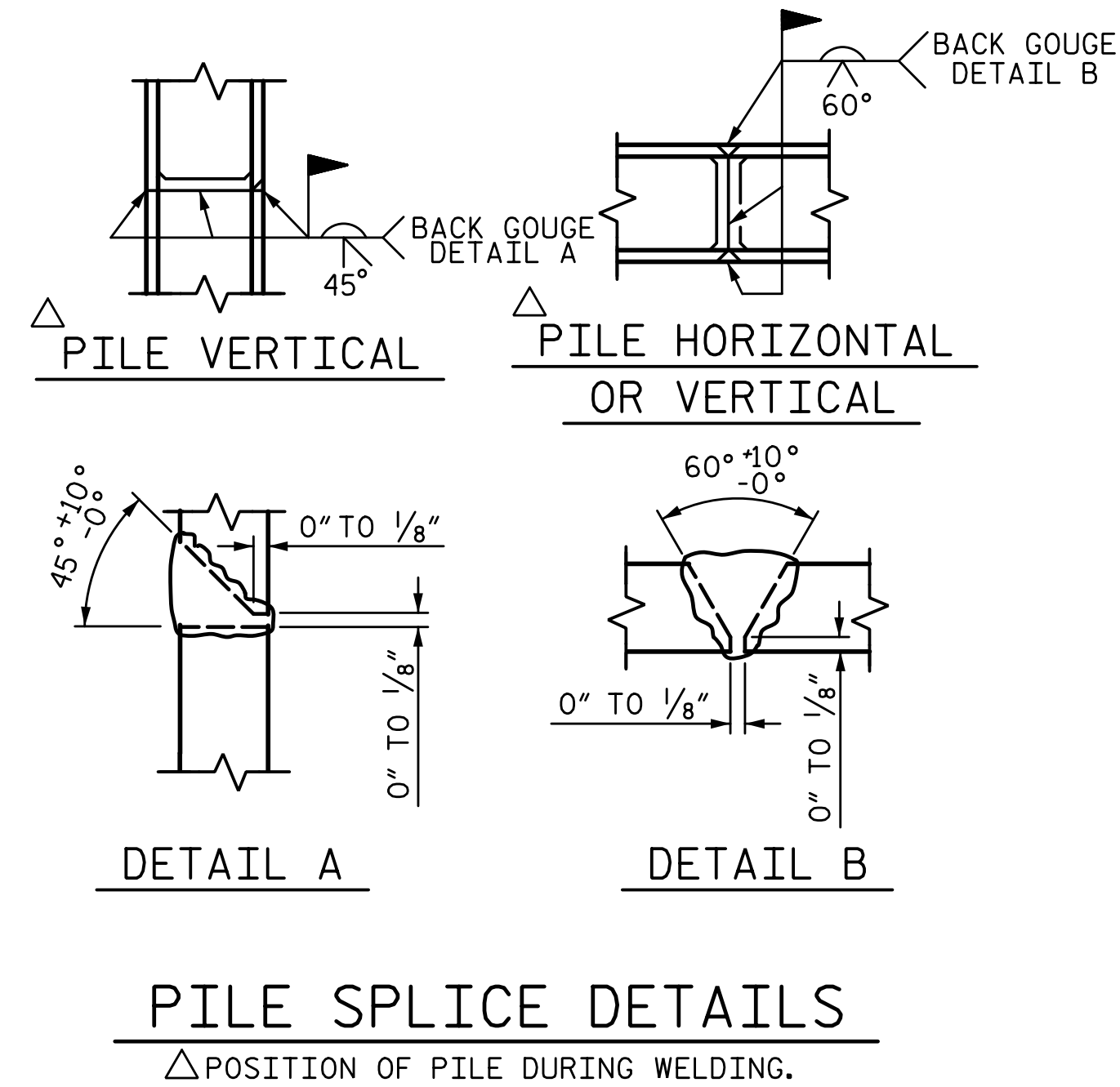
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SECTION A2-A2

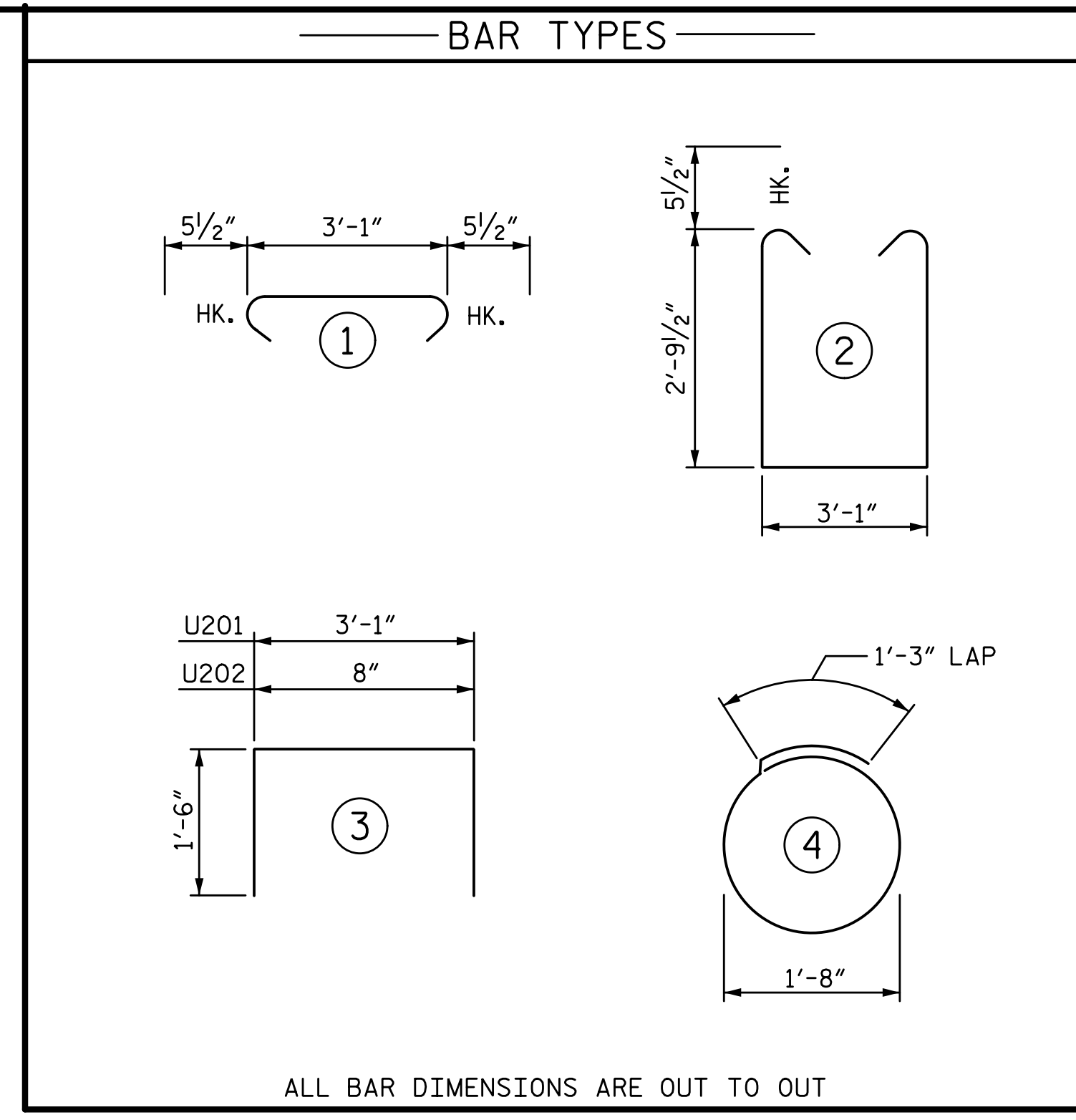


PART SECTION B2-B2

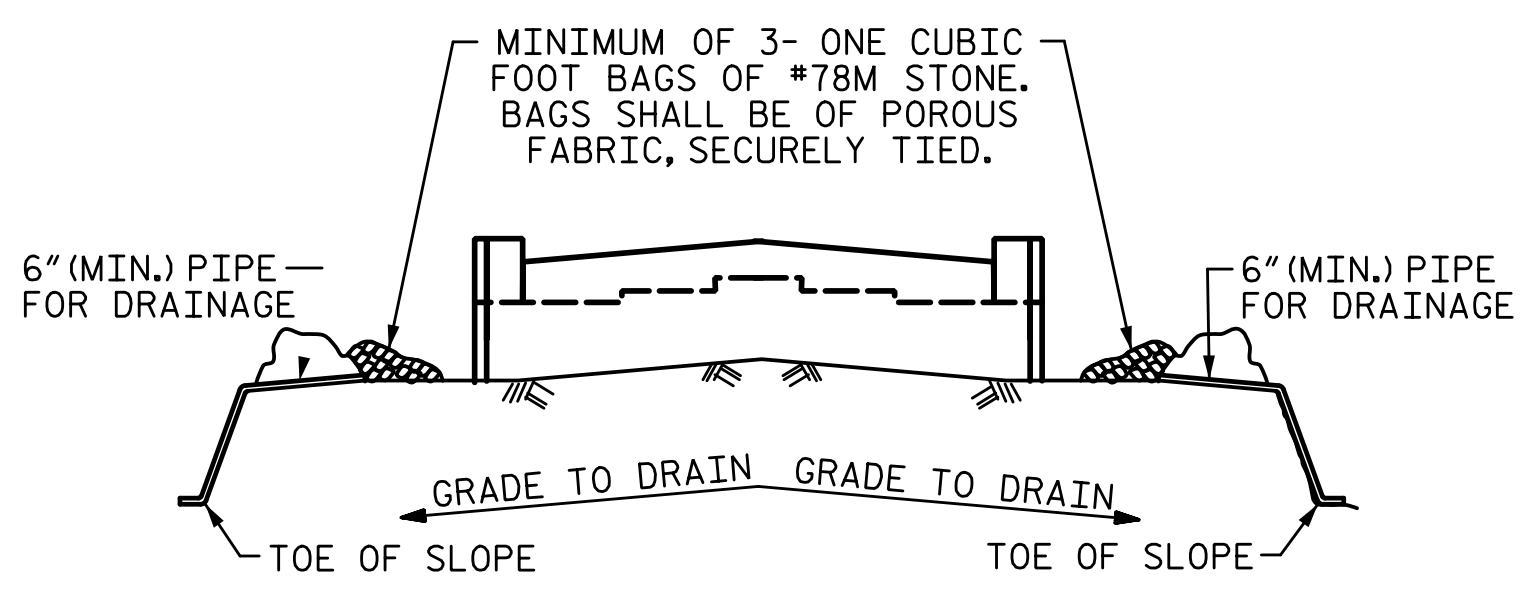


PILE SPLICE DETAILS

△ POSITION OF PILE DURING WELDING.



BILL OF MATERIAL					
END BENT 1 - STAGE II					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B201	4	#10	STR	41'-9"	719
B202	4	#5	STR	39'-7"	165
B203	4	#4	STR	39'-7"	106
B204	9	#4	STR	3'-1"	19
B205	2	#5	STR	39'-7"	83
B206	5	#9	STR	41'-1"	698
B207	5	#4	STR	26'-8"	89
B208	10	#4	STR	4'-4"	29
K201	10	#4	STR	39'-7"	264
S201	38	#5	1	4'-0"	159
S202	38	#5	2	9'-7"	380
S203	14	#4	4	6'-6"	61
U201	26	#4	3	6'-1"	106
U202	37	#4	3	3'-8"	91
V201	74	#5	STR	7'-4"	566
TOTAL REINFORCING STEEL					3535 LB
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP AND COLLARS) 17.4 CY					
POUR 2 (BACKWALL) 6.3 CY					
TOTAL CLASS A CONCRETE					23.7 CY



MINIMUM OF 3- ONE CUBIC FOOT BAGS OF #78M STONE. BAGS SHALL BE OF POROUS FABRIC, SECURELY TIED.

BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

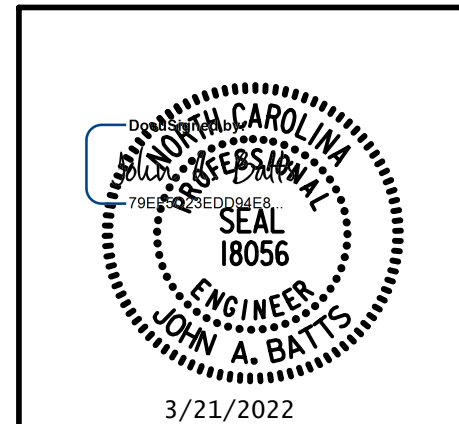
PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 5 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 1

STAGE II

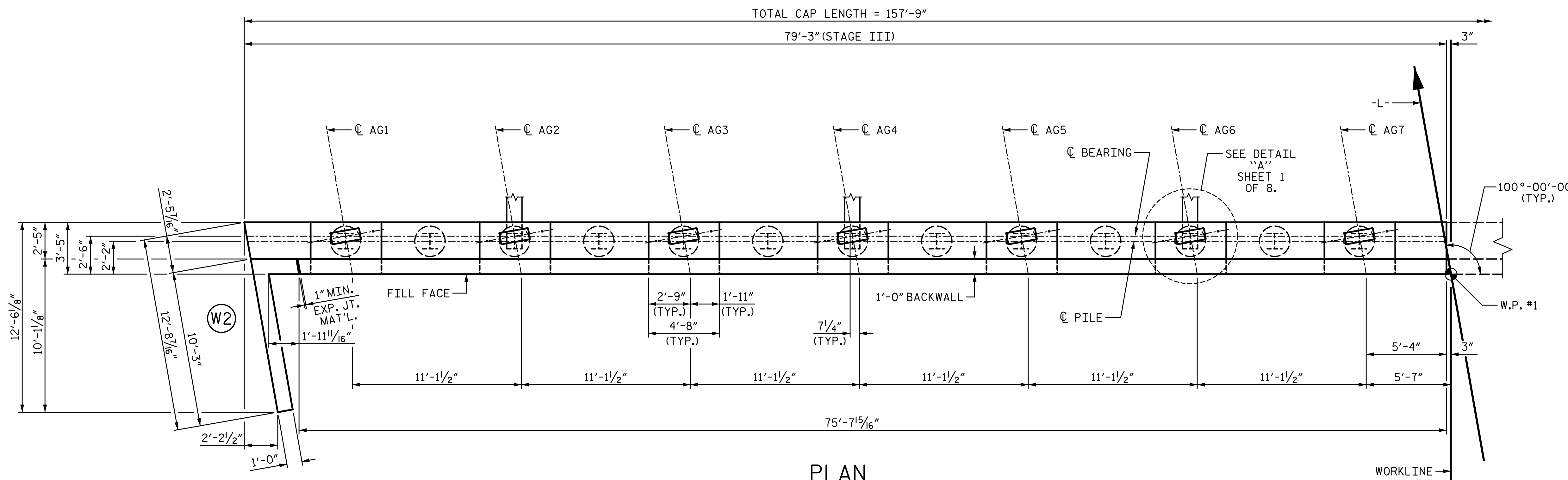


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 CHECKED BY: J.A. BATTS DATE: 3-22
 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE: 3-22

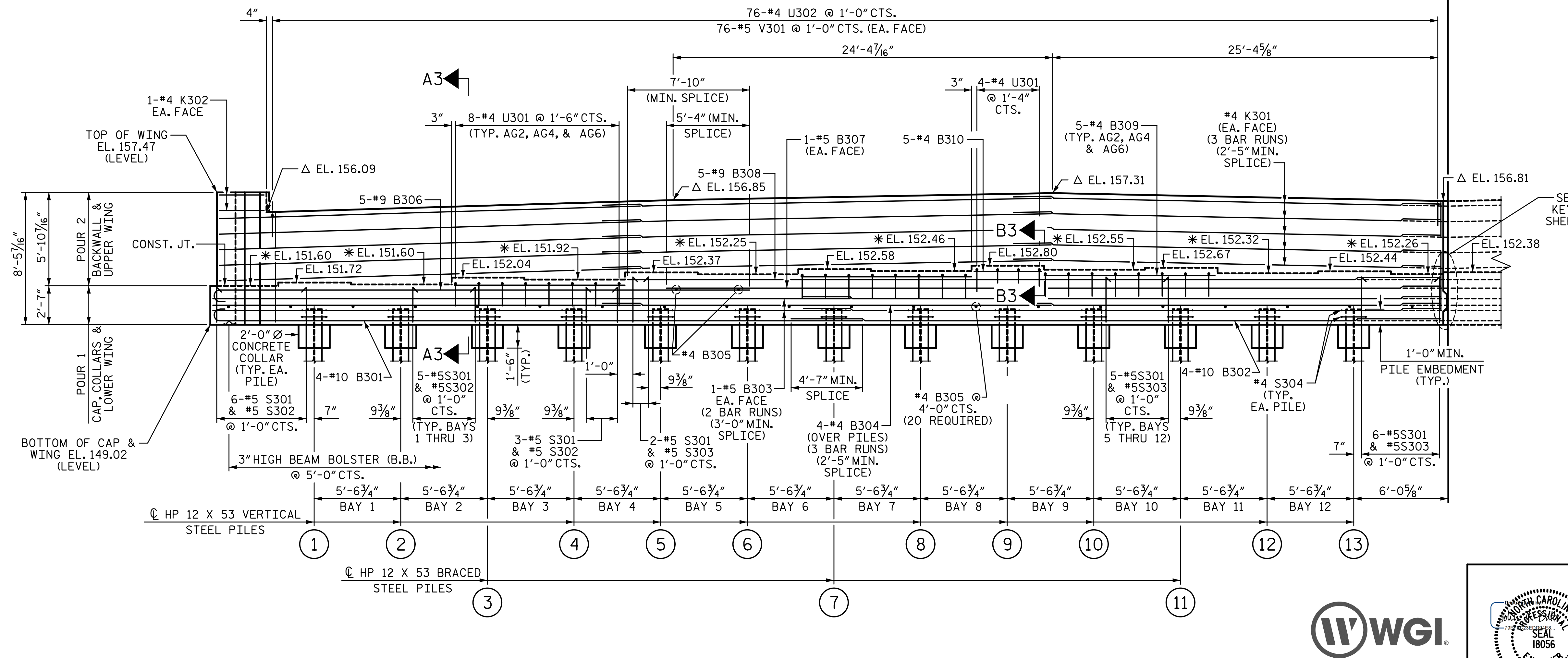
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2			4			69

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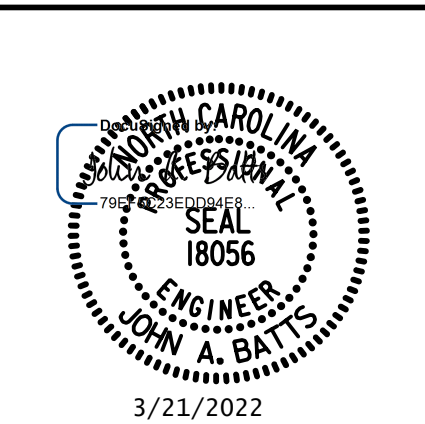


NOTES:
 FOR ADDITIONAL NOTES, SEE SHEET 1 OF 8.
 FOR SECTION A3-A3 AND PART SECTION B3-B3, SEE SHEET 8 OF 8.
 * FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILD-UPS, SEE SECTION A3-A3 SHEET 8 OF 8.
 Δ BACKWALL ELEVATIONS ARE GIVEN AT FILL FACE.



PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-
 SHEET 6 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1
 STAGE III

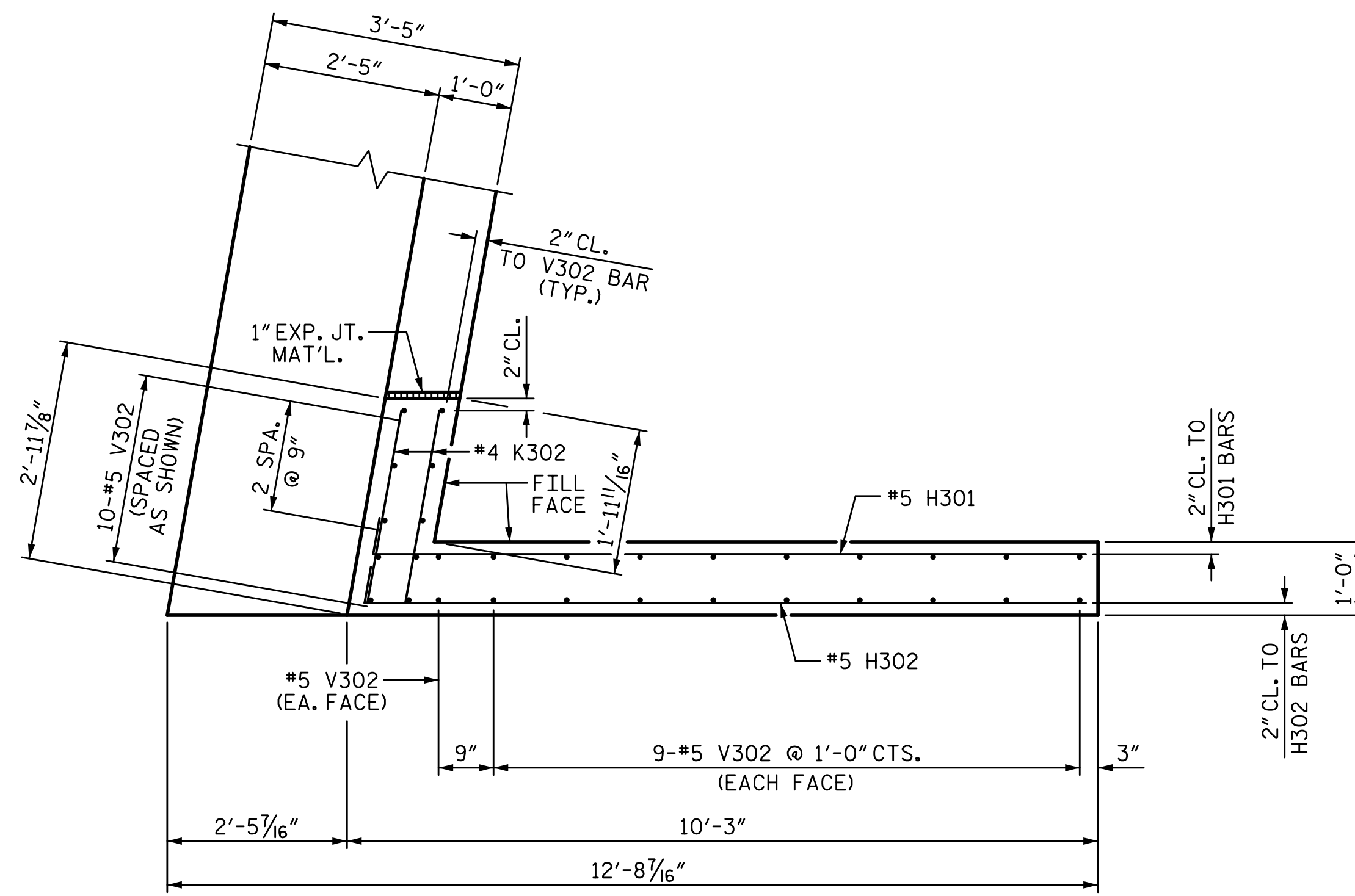


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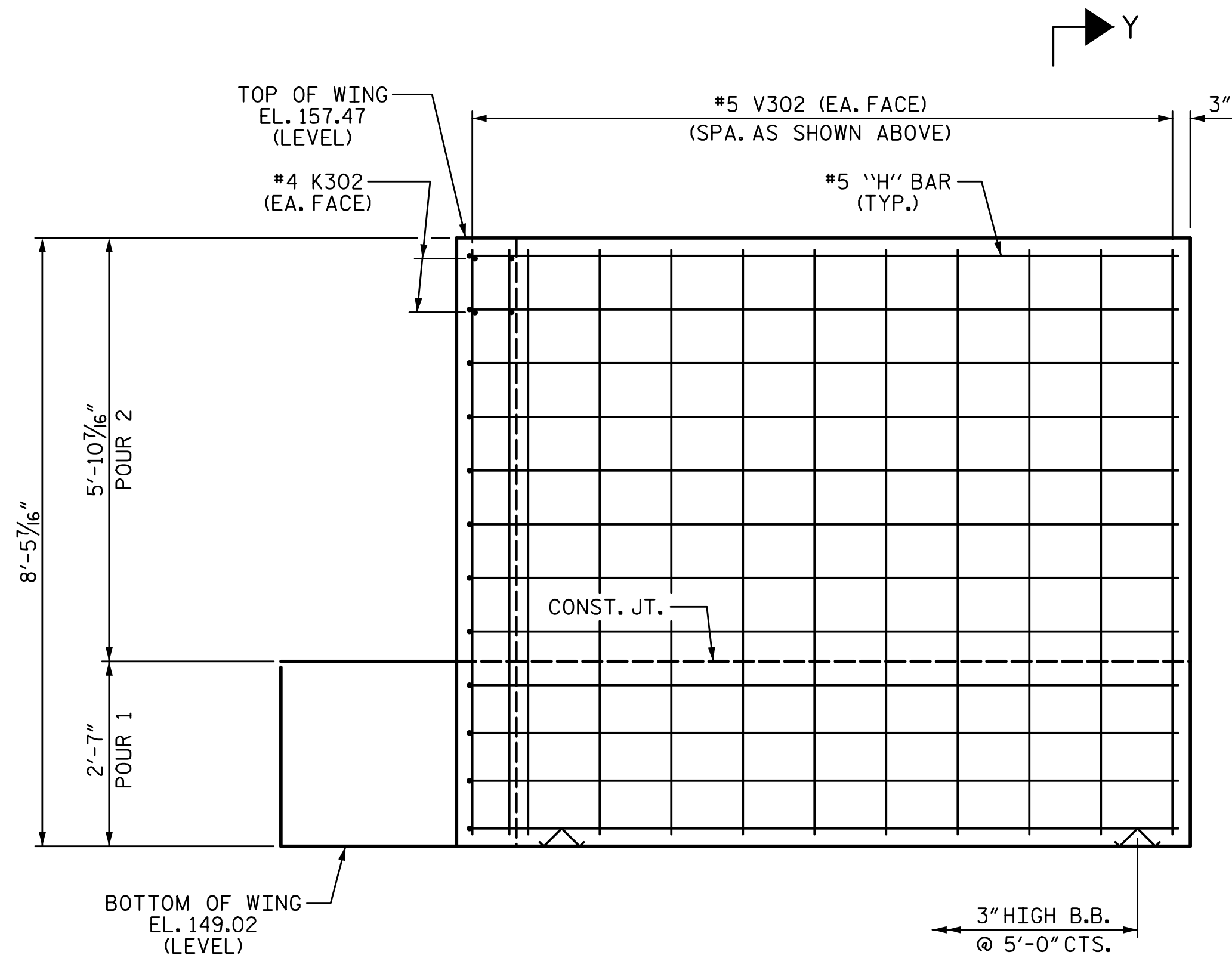
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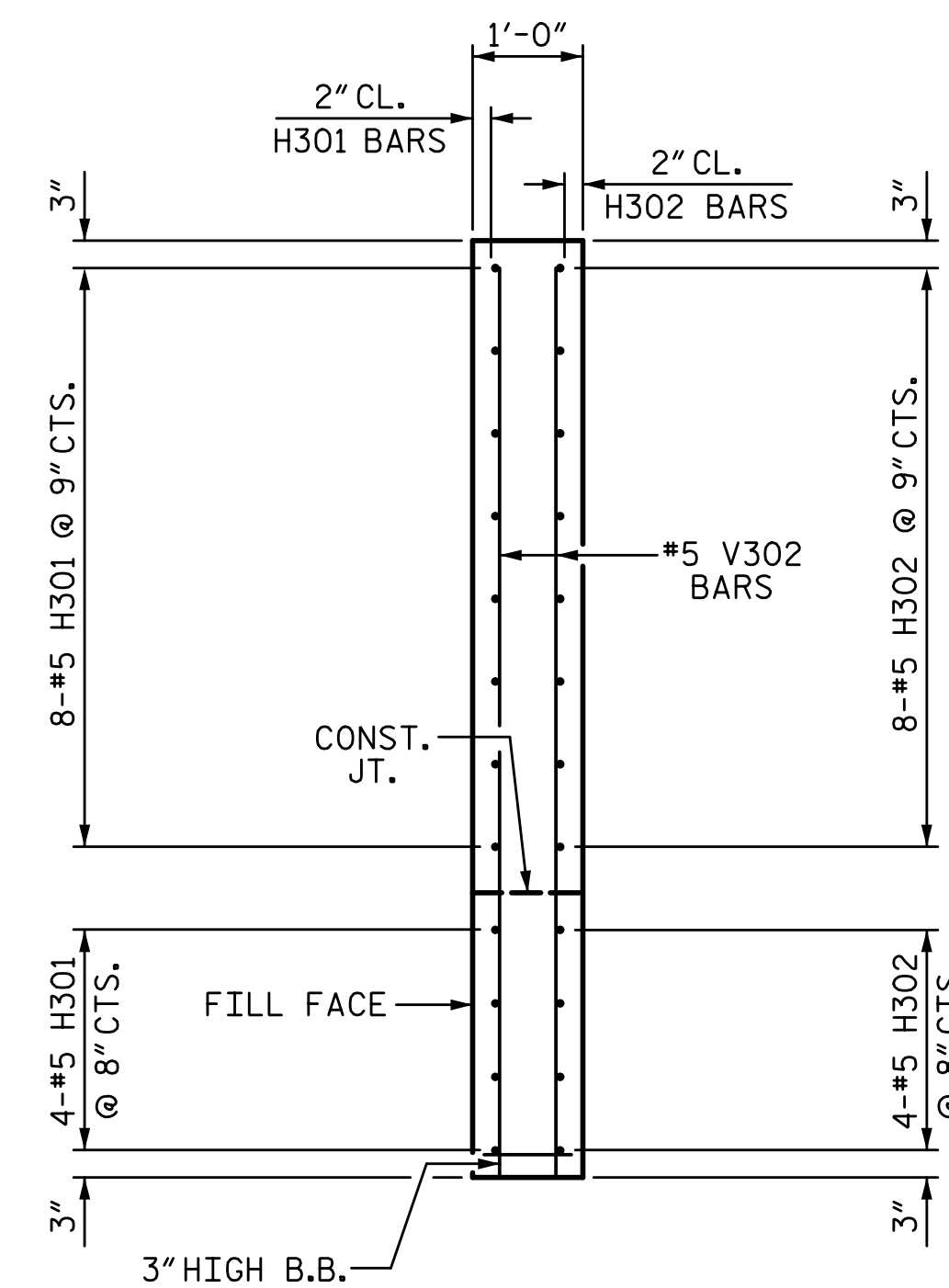
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PLAN OF WING (W2)



ELEVATION OF WING (W2)



SECTION Y-Y

PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 803+15.00 -L-

SHEET 7 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

END BENT 1

STAGE III

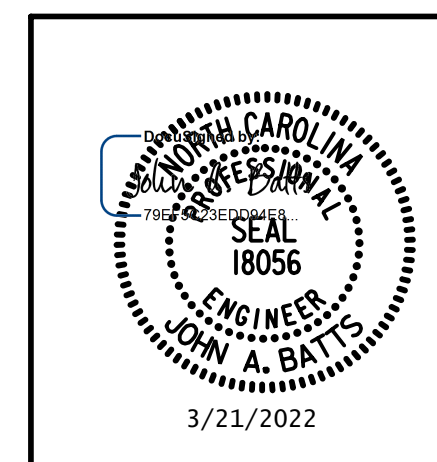
REVISIONS

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2			4			TOTAL SHEETS 69



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Cary, NC 27518

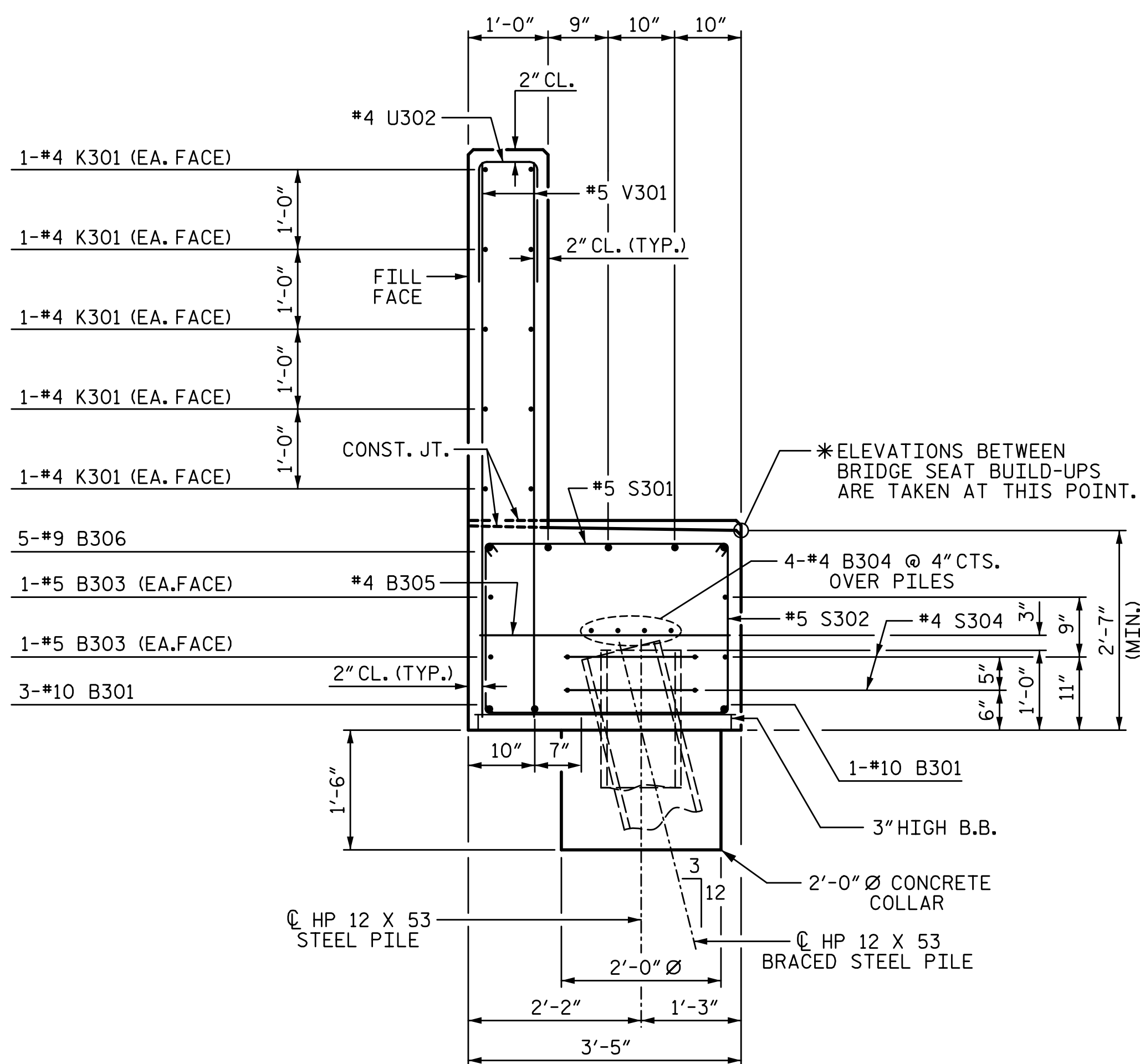
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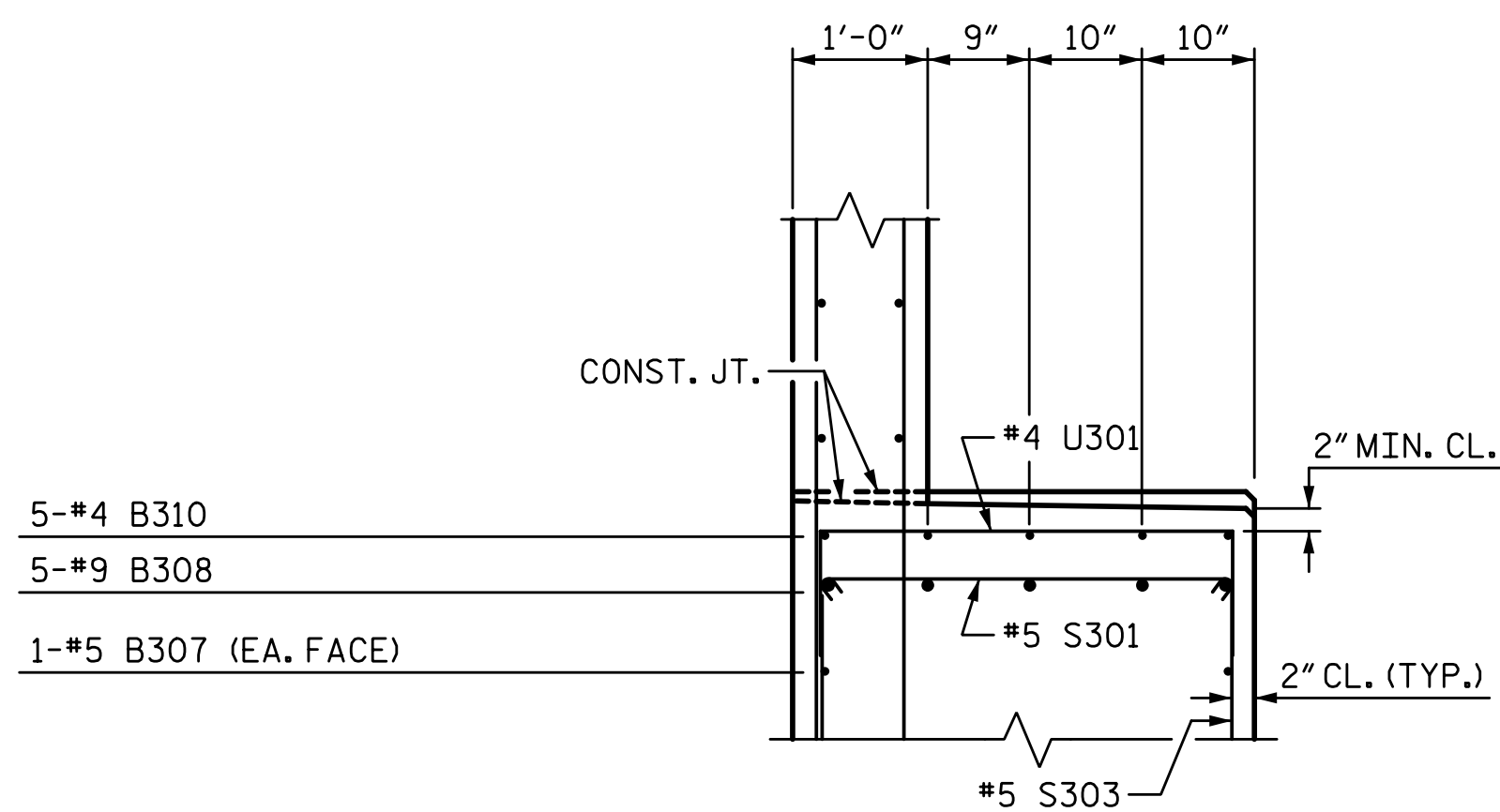
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CHECKED BY: J.A. BATTS DATE: 3-22
DESIGN ENGINEER OF RECORD: J.A. BATTS DATE: 3-22

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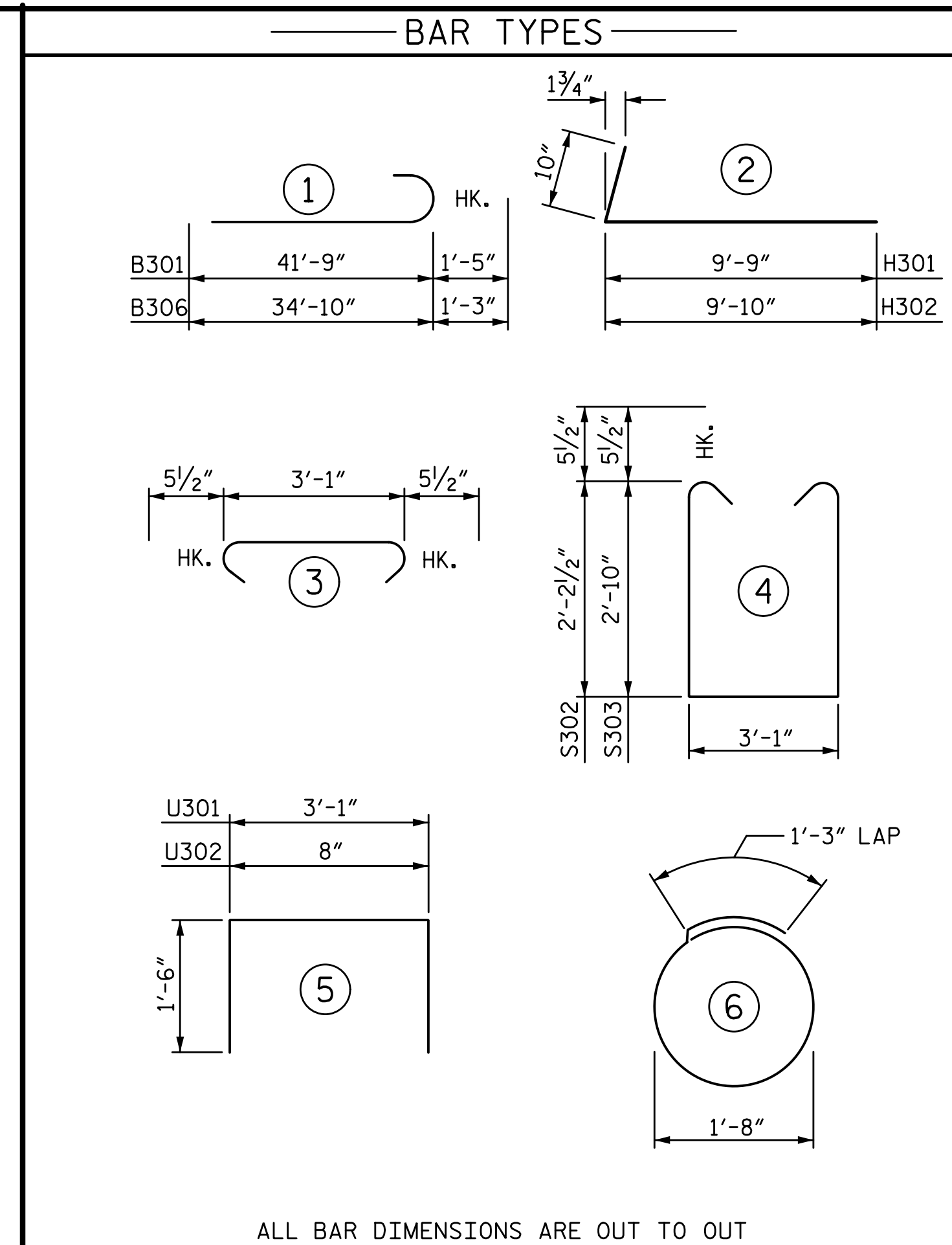
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SECTION A3-A3



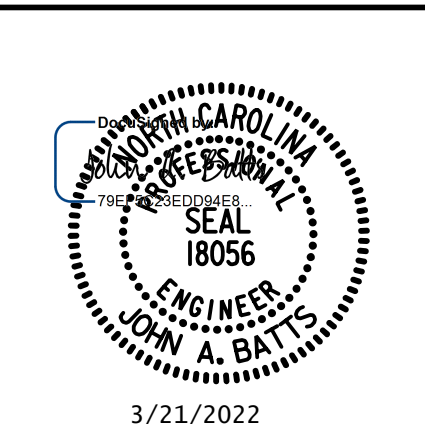
PART SECTION B3-B3



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL					
END BENT 1 - STAGE III					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B301	4	#10	1	43'-2"	743
B302	4	#10	STR	41'-9"	719
B303	8	#5	STR	40'-11"	341
B304	12	#4	STR	28'-0"	224
B305	22	#4	STR	3'-1"	45
B306	5	#9	1	36'-1"	613
B307	2	#5	STR	49'-5"	103
B308	5	#9	STR	52'-3"	888
B309	15	#4	STR	11'-1"	111
B310	5	#4	STR	4'-4"	14
H301	12	#5	2	10'-7"	132
H302	12	#5	2	10'-8"	134
K301	30	#4	STR	28'-0"	561
K302	4	#4	STR	2'-7"	7
S301	72	#5	3	4'-0"	300
S302	24	#5	4	8'-5"	211
S303	48	#5	4	9'-8"	484
S304	26	#4	6	6'-6"	113
U301	28	#4	5	6'-1"	114
U302	76	#4	5	3'-8"	186
V301	152	#5	STR	6'-9"	1070
V302	30	#5	STR	8'-1"	253
TOTAL REINFORCING STEEL					7366 LB
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP, COLLARS & LOWER WING) 35.3 CY					
POUR 2 (BACKWALL & UPPER WING) 15.6 CY					
TOTAL CLASS A CONCRETE					50.9 CY

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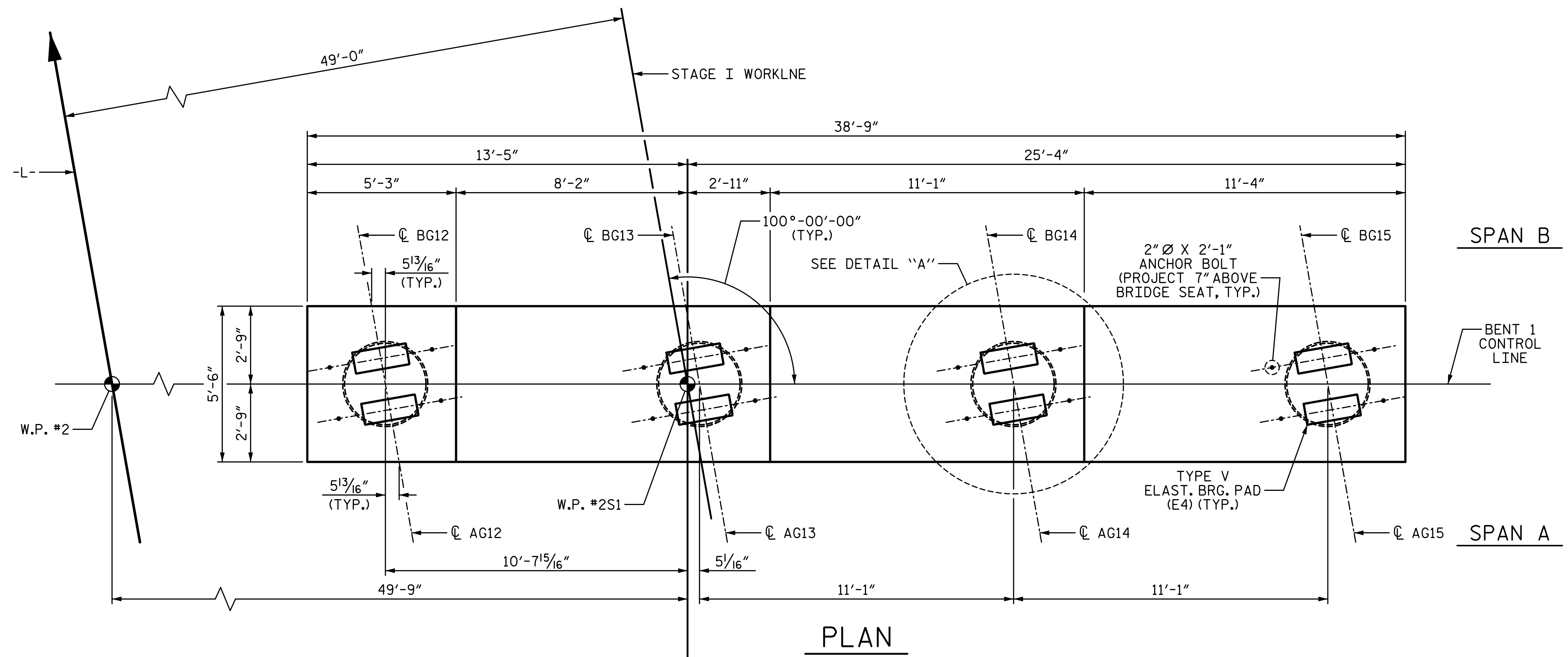
PROJECT NO. I-5987B
 ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 8 OF 8
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1
 STAGE III

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S9-50
1			3			TOTAL SHEETS
2			4			69

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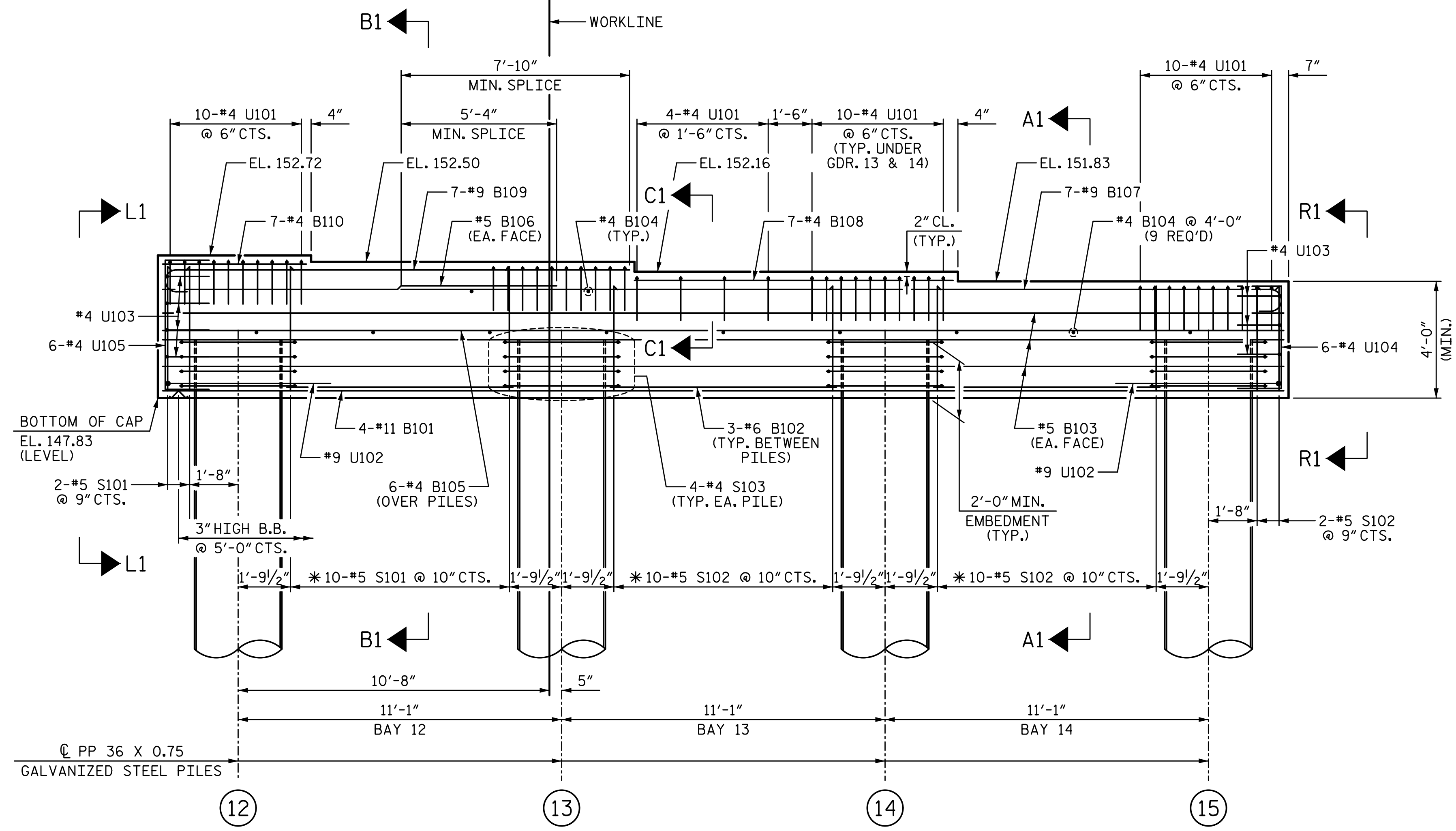
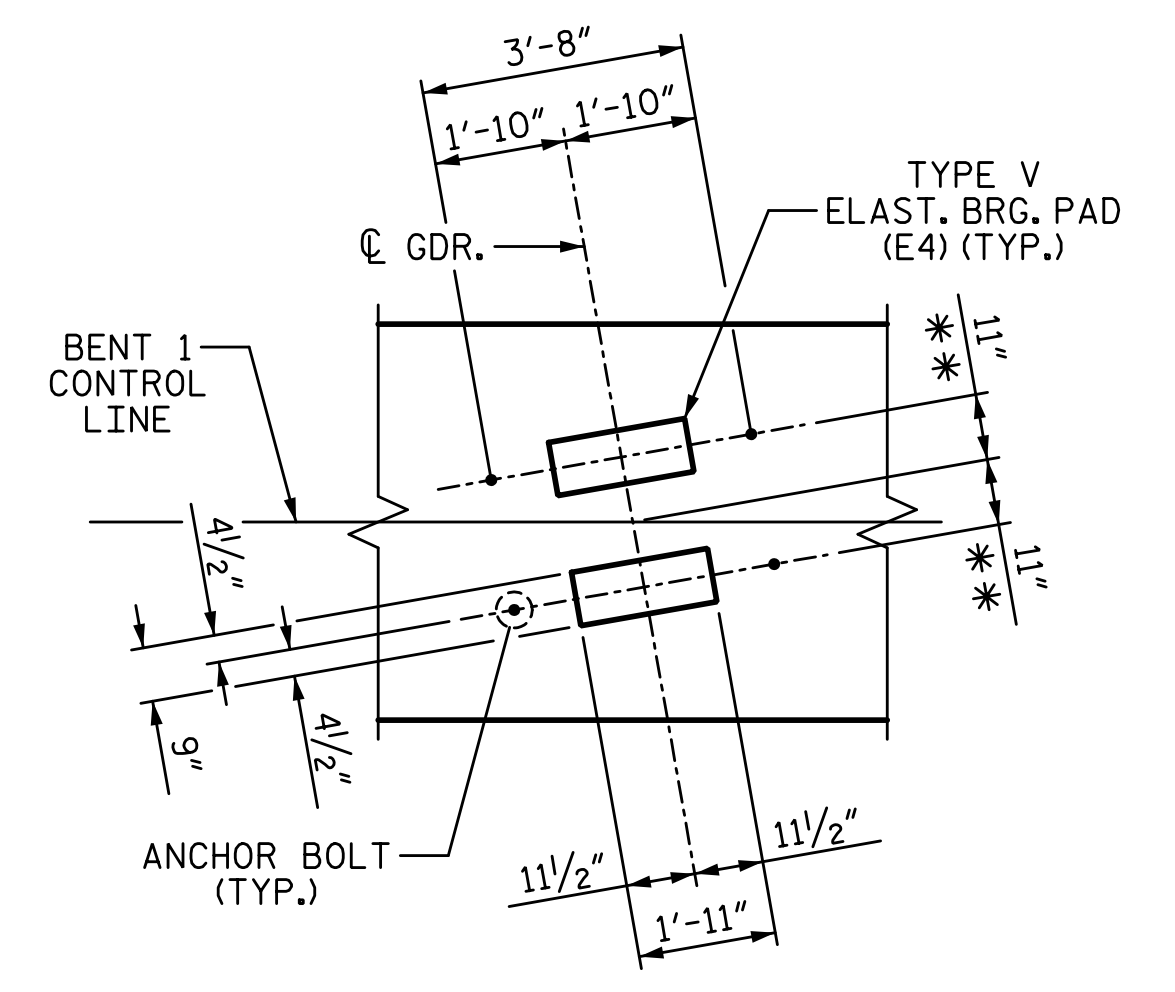
NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

* INVERT ALTERNATE STIRRUPS.

FOR ADDITIONAL REINFORCING STEEL IN PP 36 X 0.75 GALVANIZED STEEL PILES, SEE 36" STEEL PIPE PILE SHEET.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 33 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



ELEVATION

⊙ INDICATES PILE NUMBER

PROJECT NO. I-5987B

ROBESON COUNTY

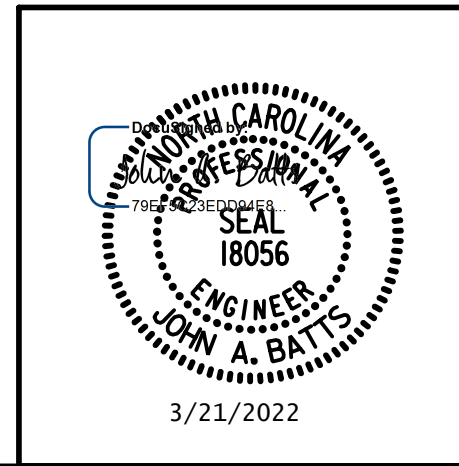
STATION: 803+15.00 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 1

STAGE I



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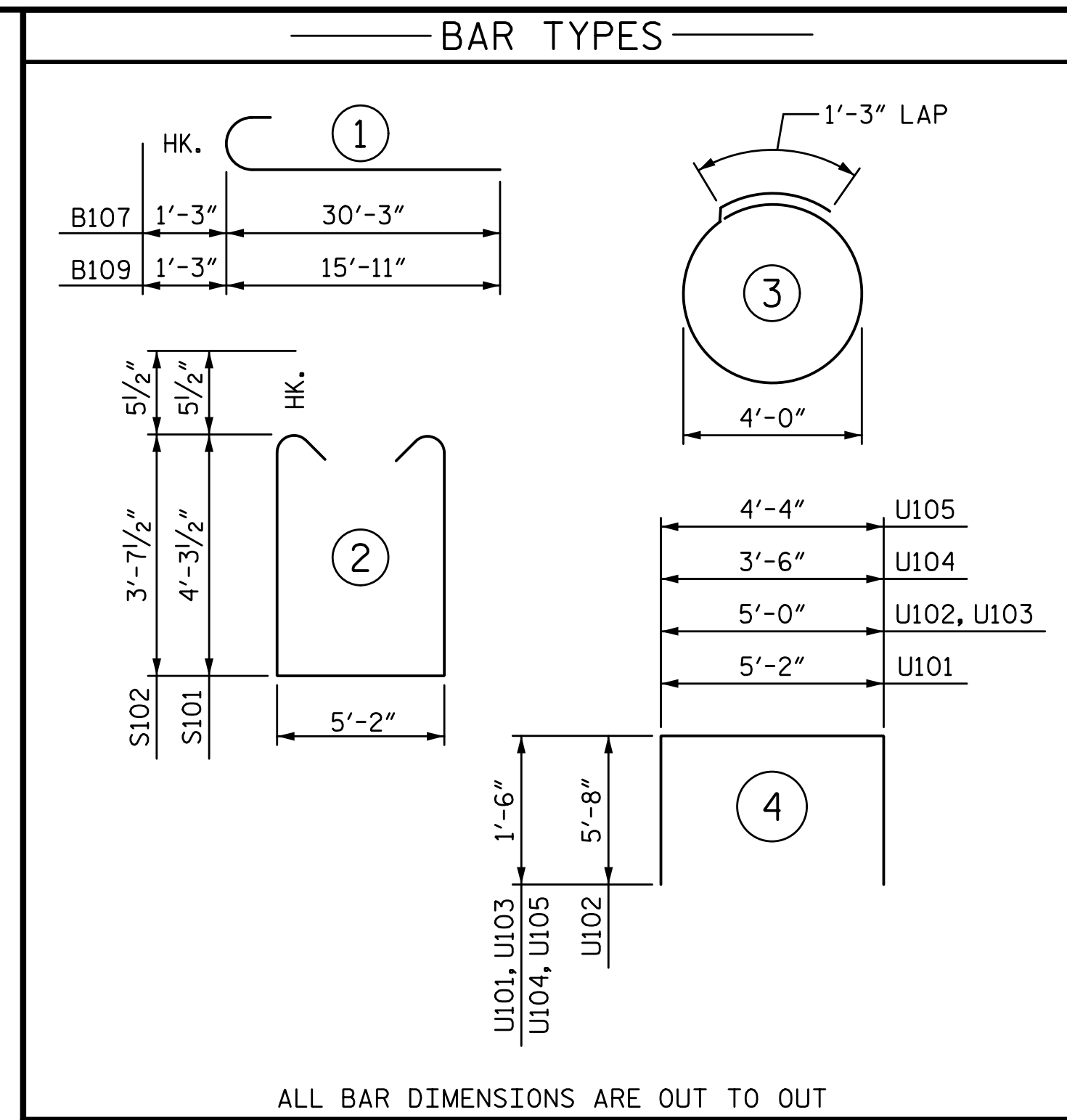
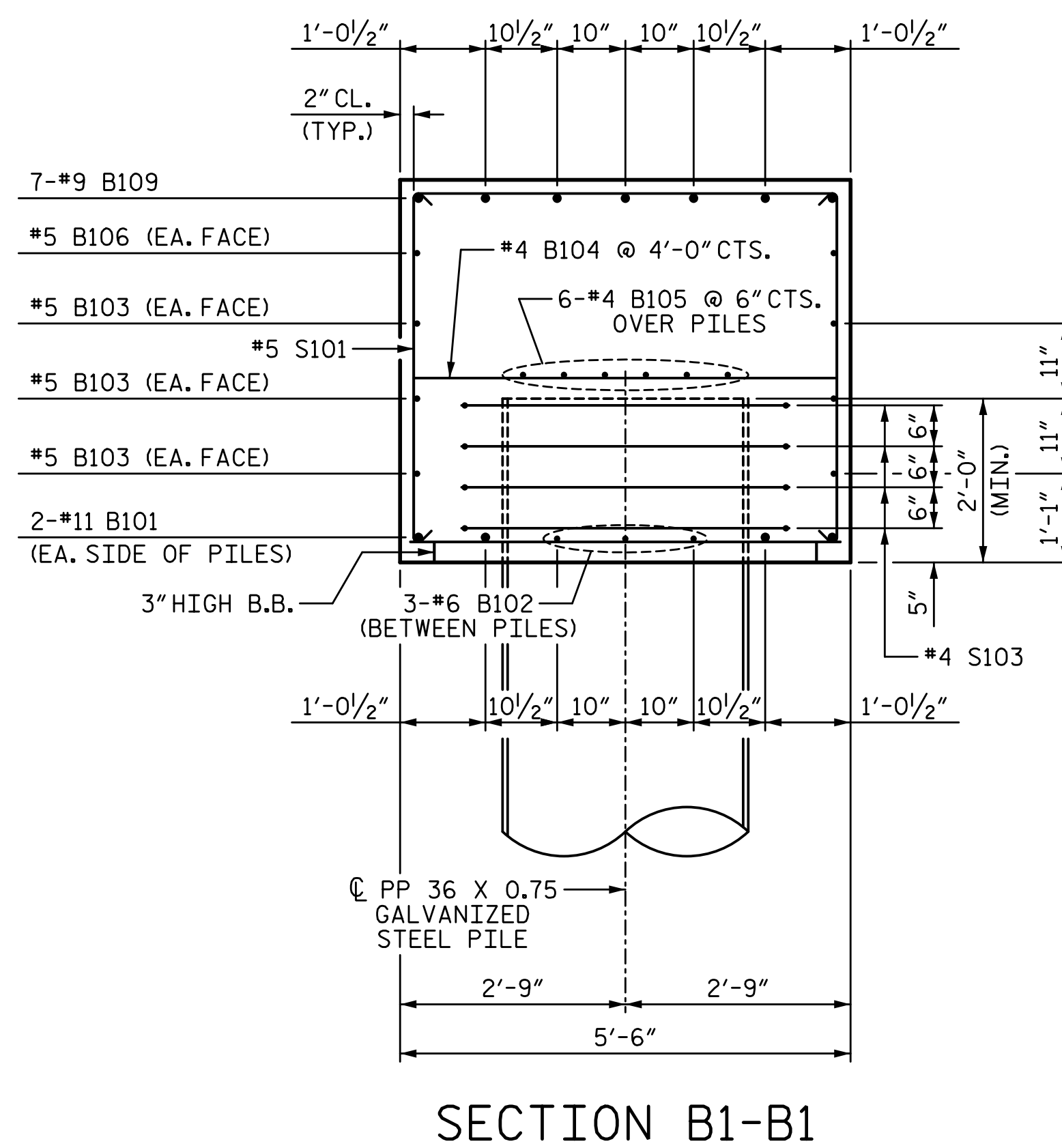
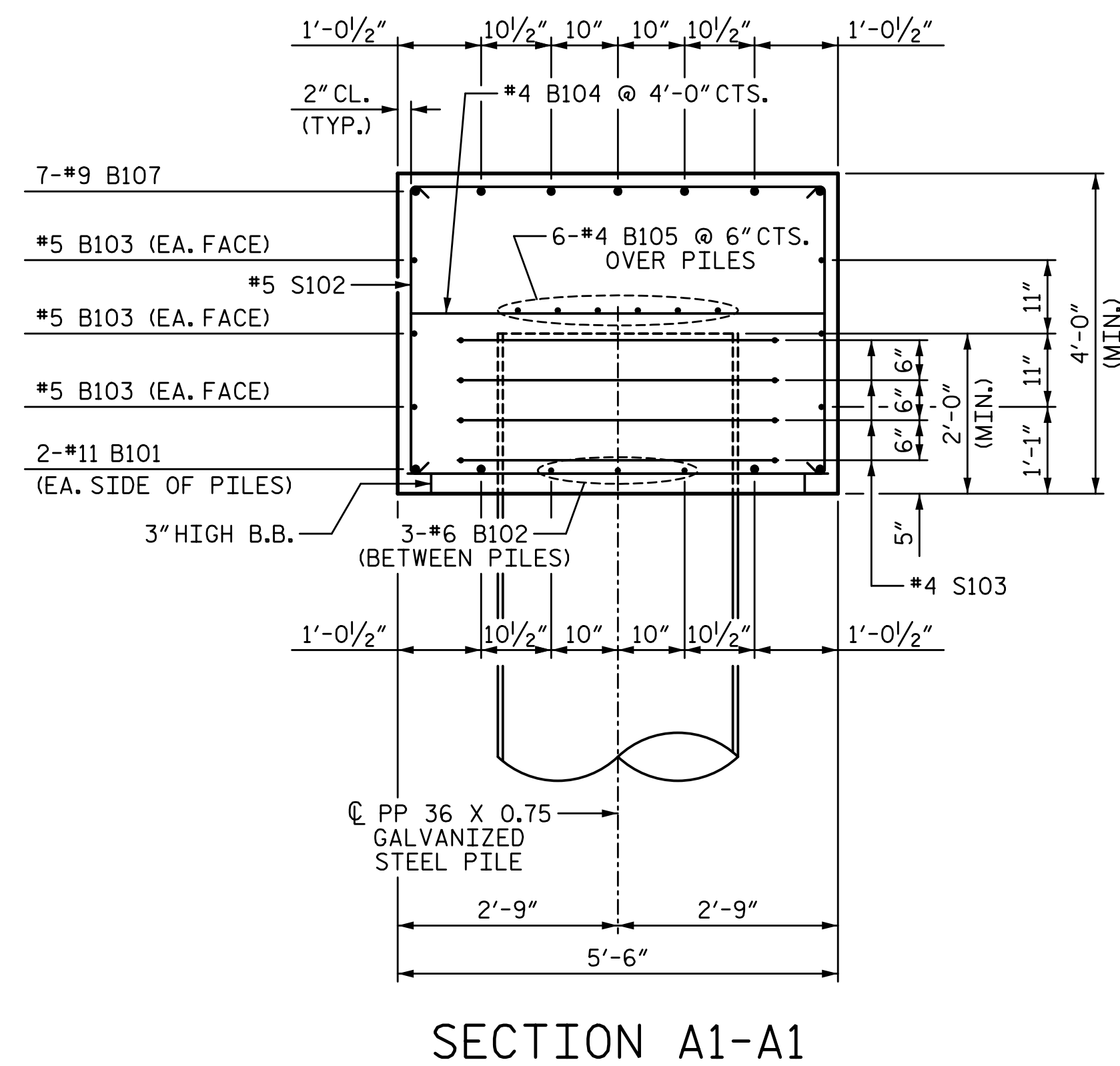
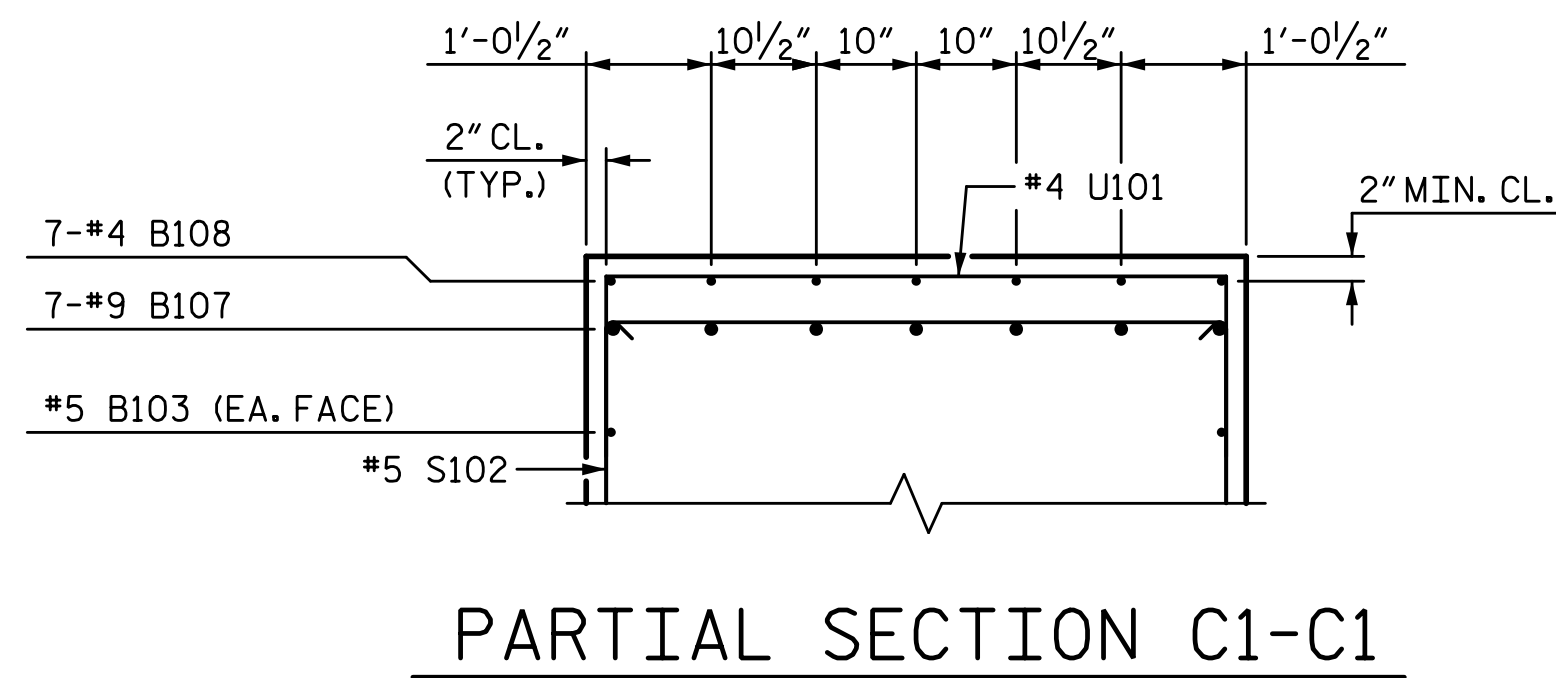
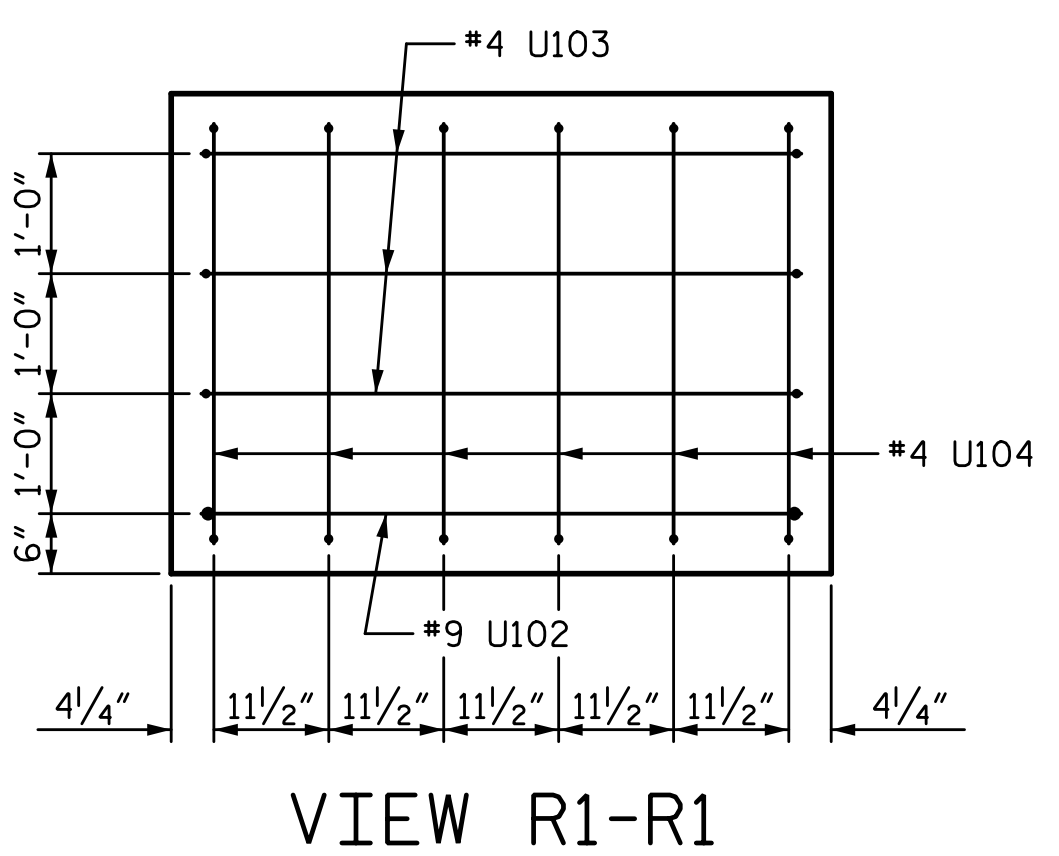
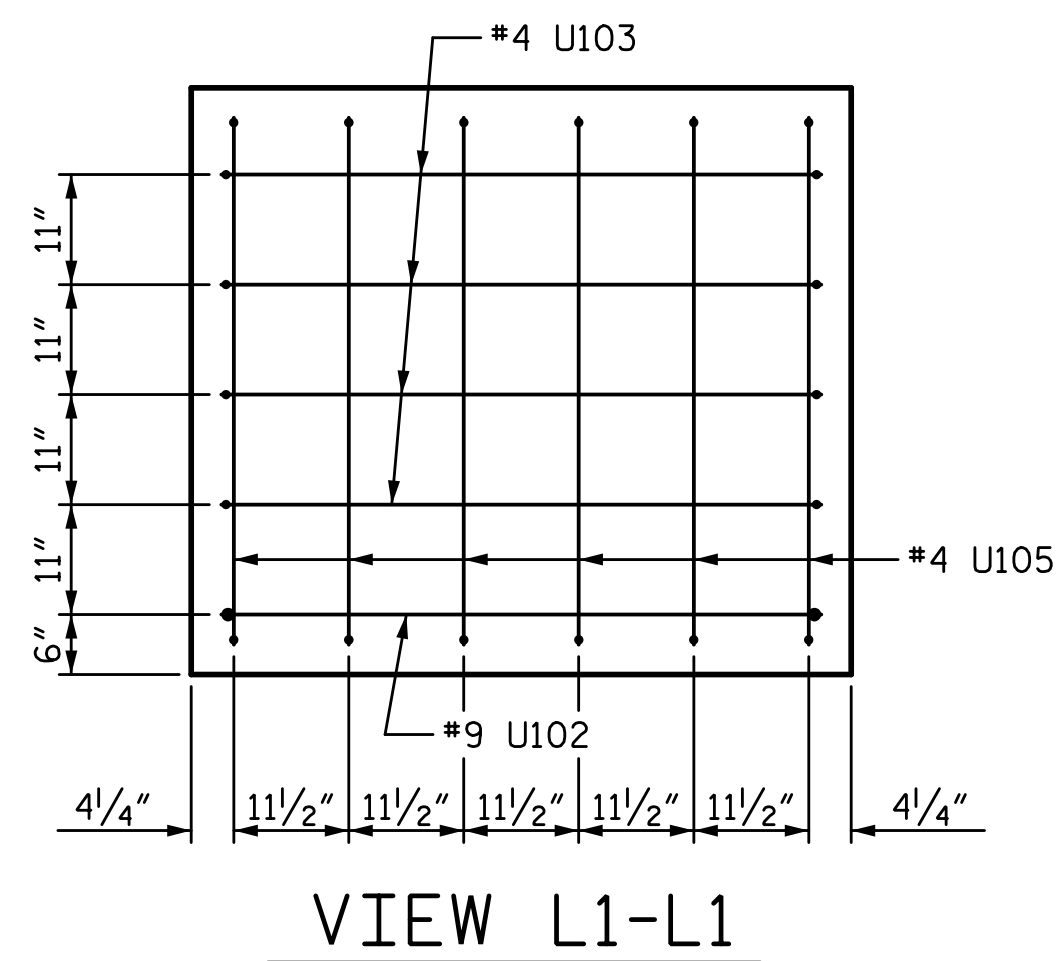
CHECKED BY: J.A. BATTS DATE: 3-22

DESIGN ENGINEER OF RECORD: J.A. BATTS DATE: 3-22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S9-51
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2			4			69

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BILL OF MATERIAL					
BENT 1 - STAGE I					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B101	4	#11	STR	38'-5"	816
B102	9	#6	STR	7'-9"	105
B103	6	#5	STR	38'-5"	240
B104	11	#4	STR	5'-2"	38
B105	6	#4	STR	38'-5"	154
B106	2	#5	STR	13'-10"	29
B107	7	#9	1	31'-6"	750
B108	7	#4	STR	10'-11"	51
B109	7	#9	1	17'-2"	409
B110	7	#4	STR	4'-11"	23
S101	12	#5	2	14'-8"	184
S102	22	#5	2	13'-4"	306
S103	16	#4	3	13'-10"	148
U101	44	#4	4	8'-2"	240
U102	2	#9	4	16'-4"	111
U103	7	#4	4	8'-0"	37
U104	6	#4	4	6'-6"	26
U105	6	#4	4	7'-4"	29
TOTAL REINFORCING STEEL					3696 LB
TOTAL CLASS A CONCRETE ***					32.7 CY

*** CONCRETE DISPLACED BY THE PP 36 X 0.75 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

ALL BAR DIMENSIONS ARE OUT TO OUT

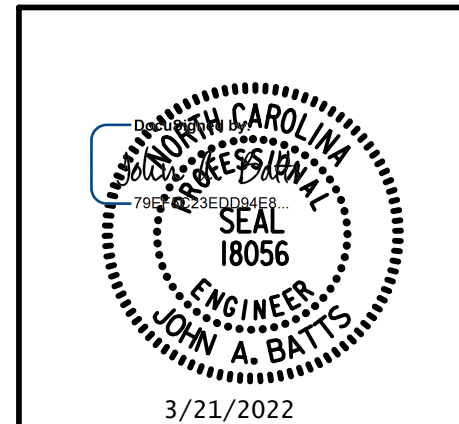
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ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

BENT 1

STAGE I



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

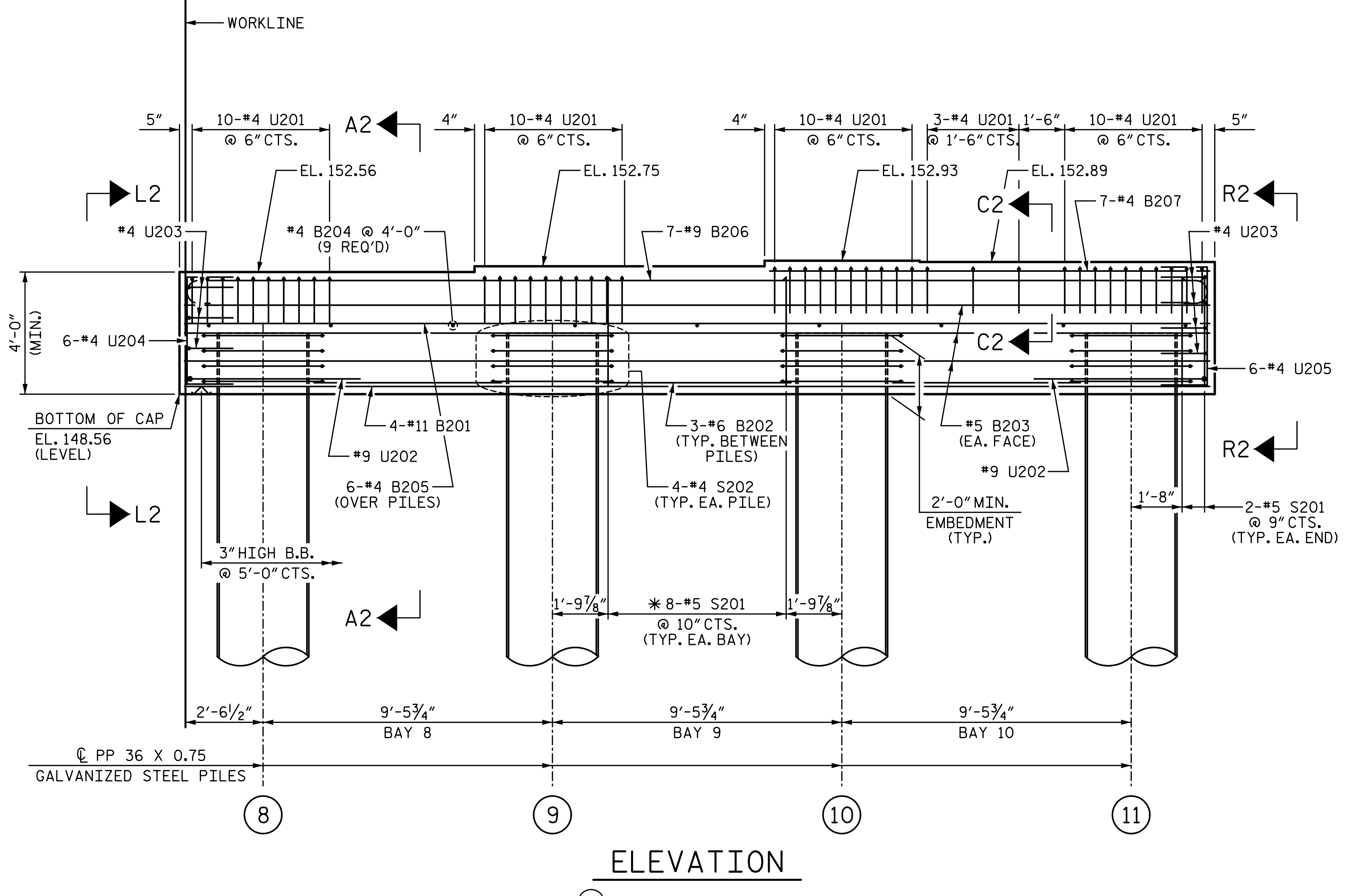
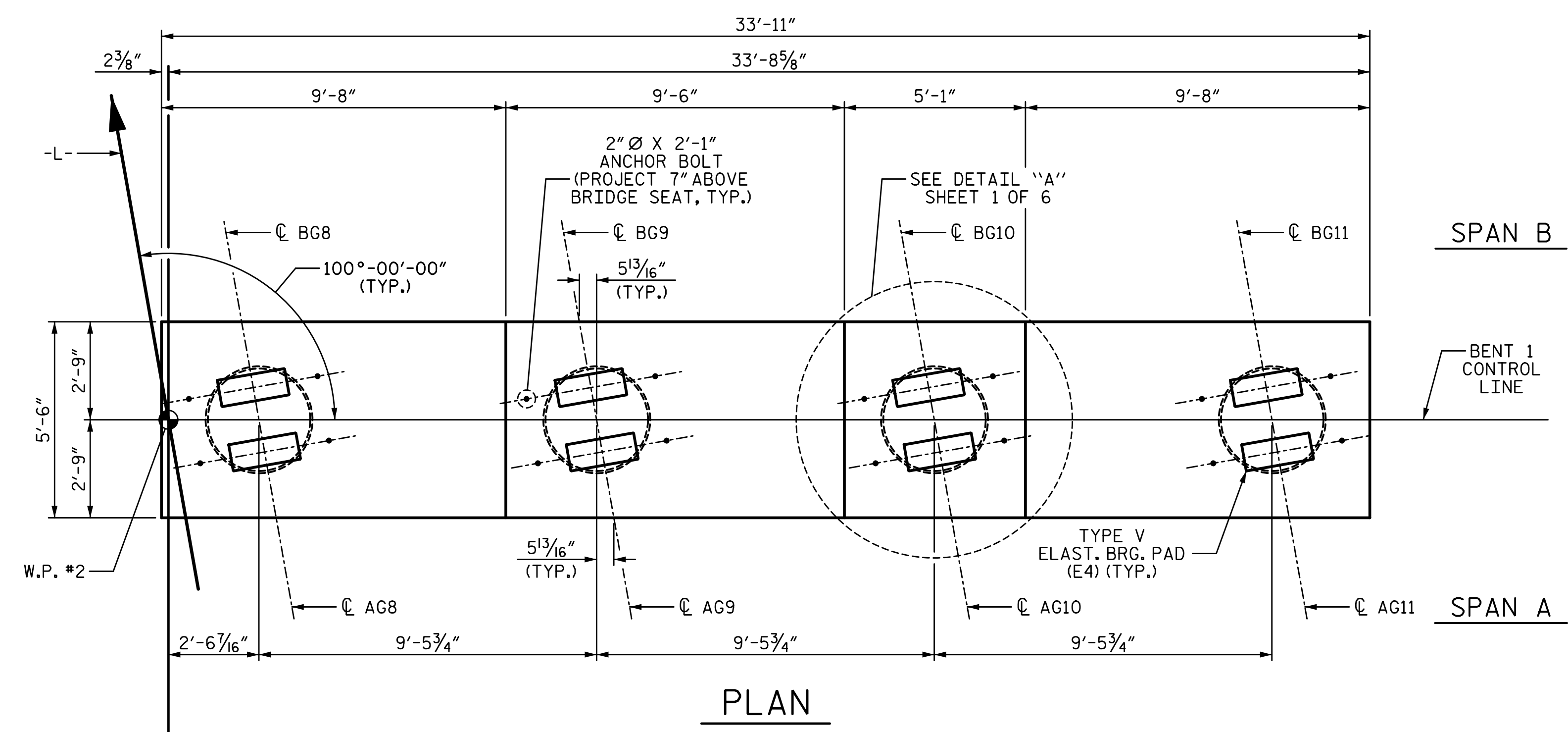
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SHEET NO.
 S9-52
 TOTAL SHEETS
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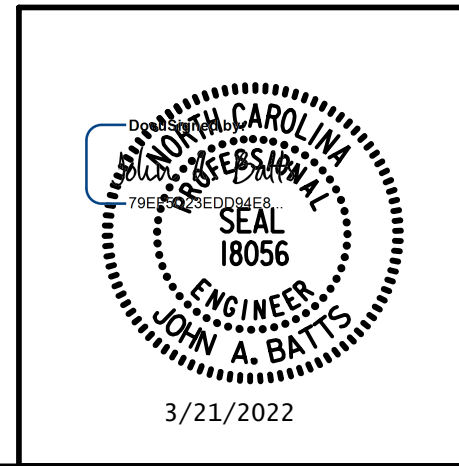
NOTES:
FOR NOTES, SEE SHEET 1 OF 6.



Ⓢ INDICATES PILE NUMBER

DRAWN BY:	T. BANKOVICH	DATE:	3-22
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Cary, NC 27518
LICENSURE NO. C-4434



PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 803+15.00 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

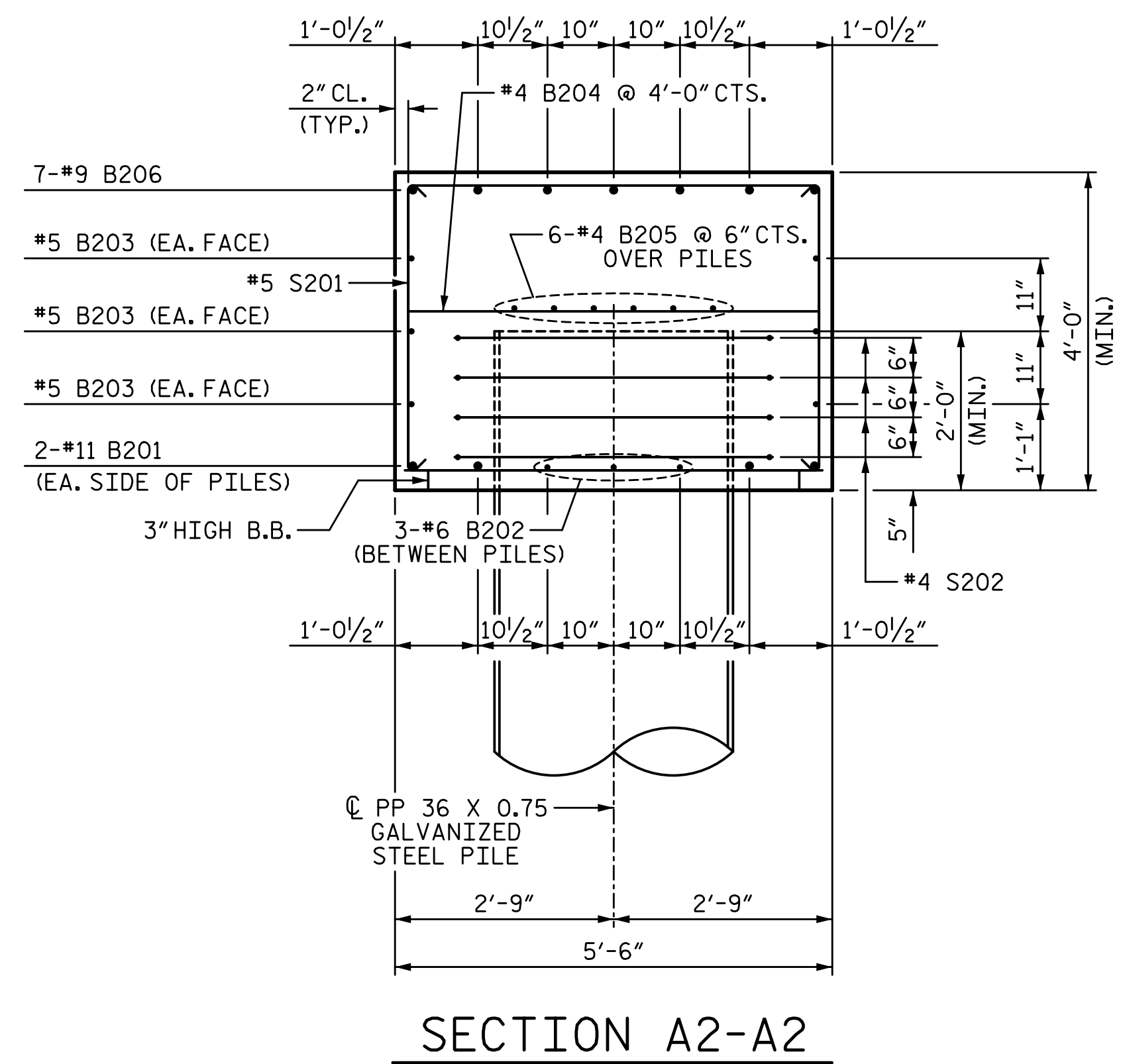
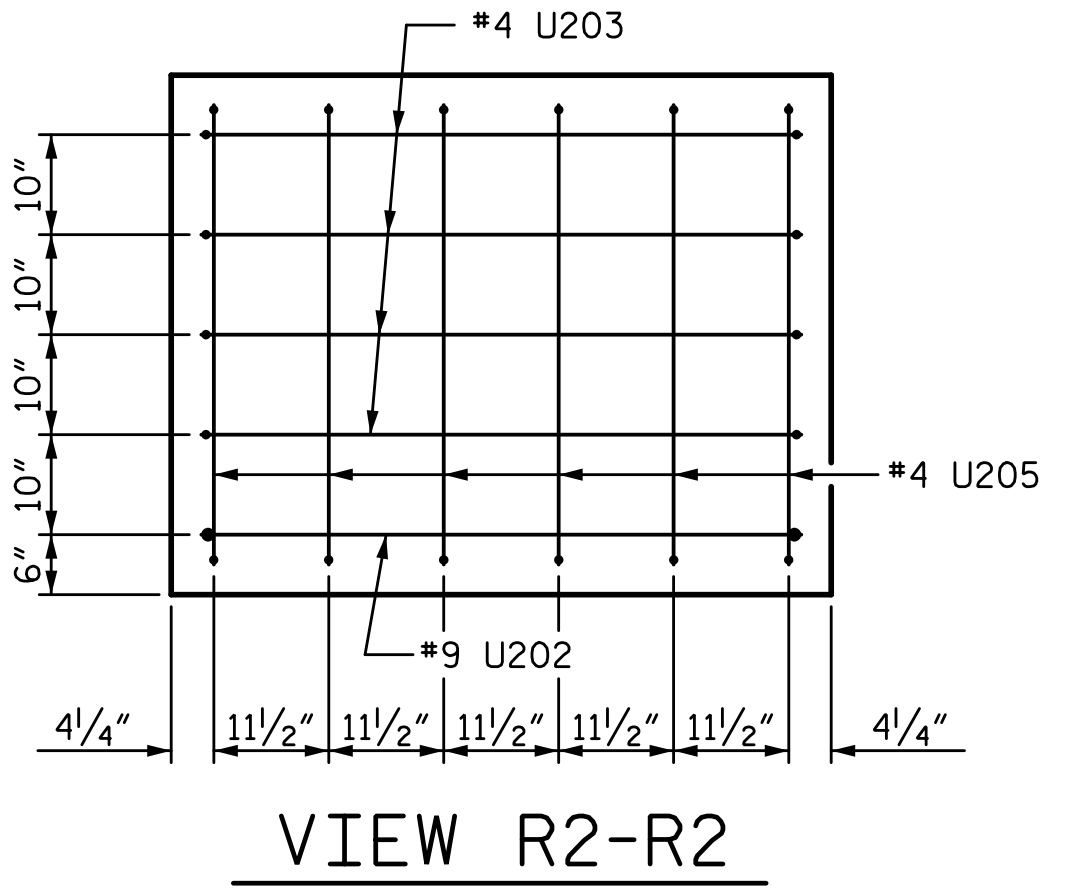
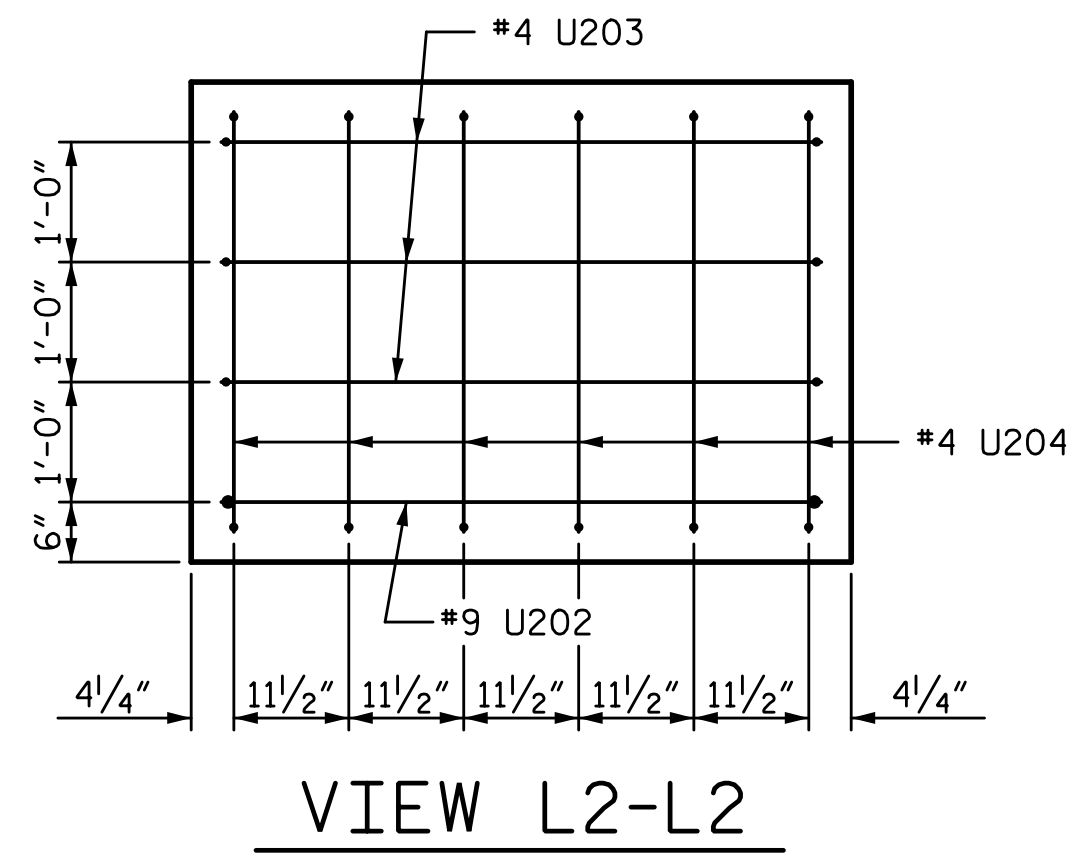
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STAGE II

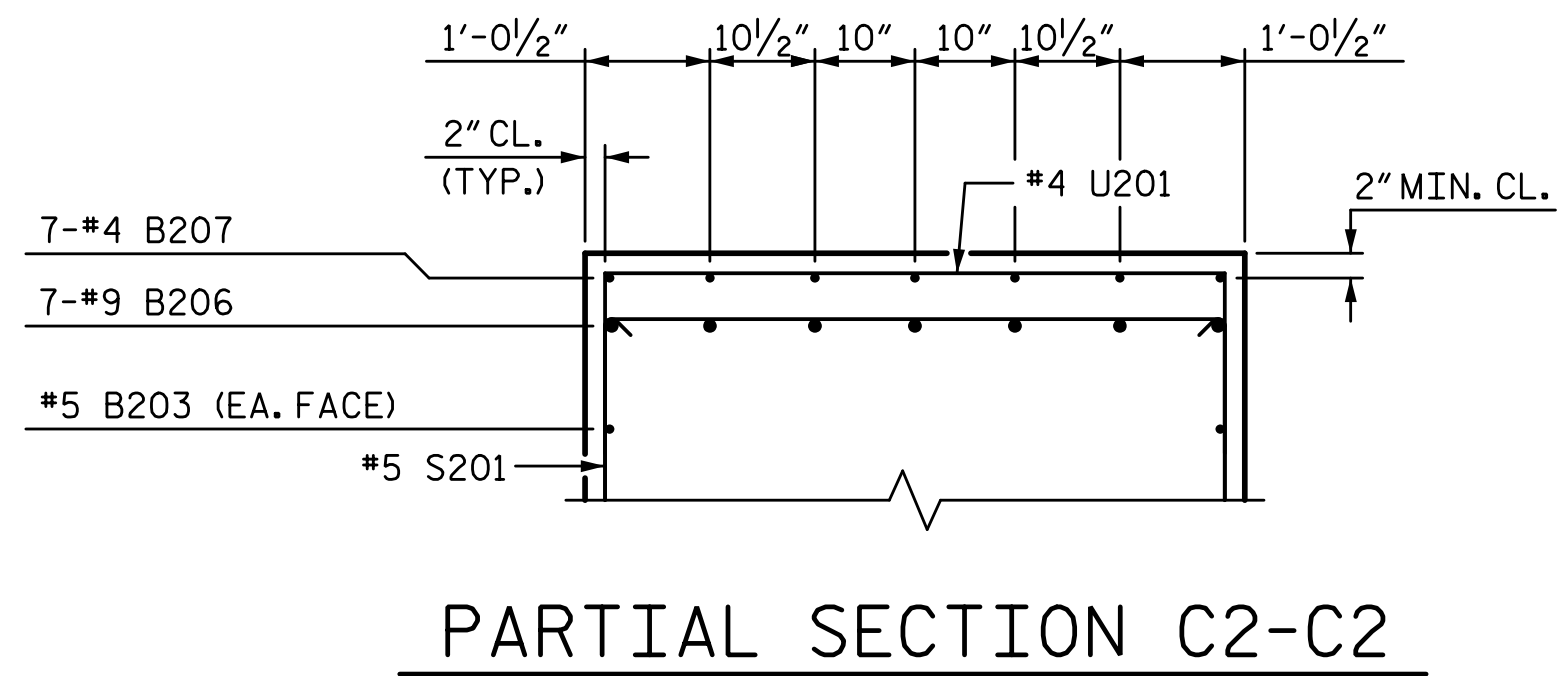
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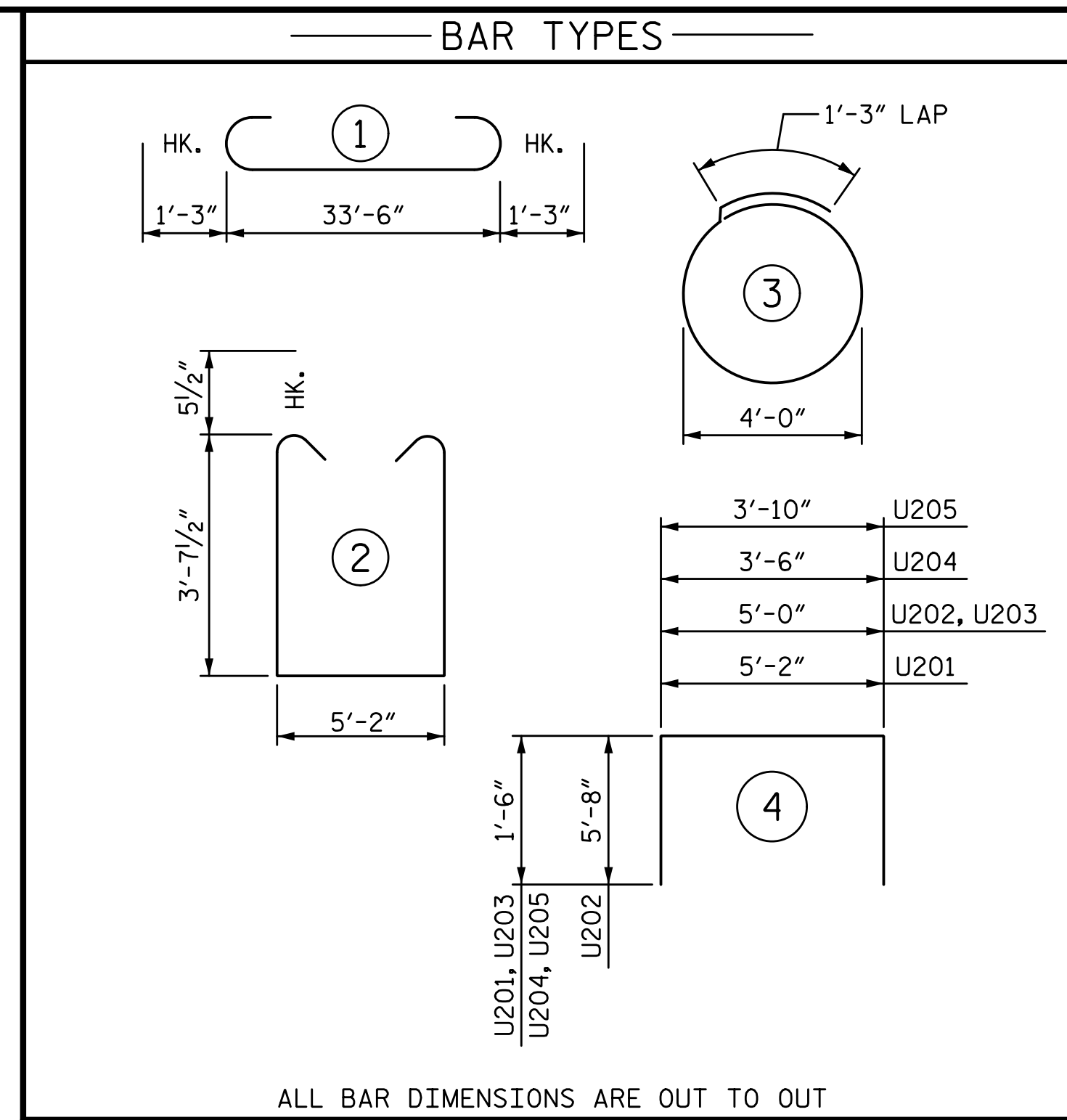
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SECTION A2-A2



PARTIAL SECTION C2-C2



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL					
BENT 1 - STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B201	4	#11	STR	33'-7"	714
B202	9	#6	STR	6'-1"	82
B203	6	#5	STR	33'-7"	210
B204	9	#4	STR	5'-2"	31
B205	6	#4	STR	33'-7"	135
B206	7	#9	1	36'-0"	857
B207	7	#4	STR	14'-5"	67
S201	28	#5	2	13'-4"	389
S202	16	#4	3	13'-10"	148
U201	43	#4	4	8'-2"	235
U202	2	#9	4	16'-4"	111
U203	7	#4	4	8'-0"	37
U204	6	#4	4	6'-6"	26
U205	6	#4	4	6'-10"	27
TOTAL REINFORCING STEEL					3069 LB
TOTAL CLASS A CONCRETE ***					26.9 CY

*** CONCRETE DISPLACED BY THE PP 36 X 0.75 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

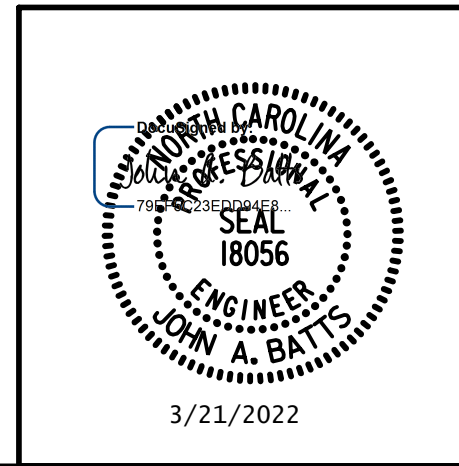
PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

BENT 1

STAGE II



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LICENSURE NO. C-4434

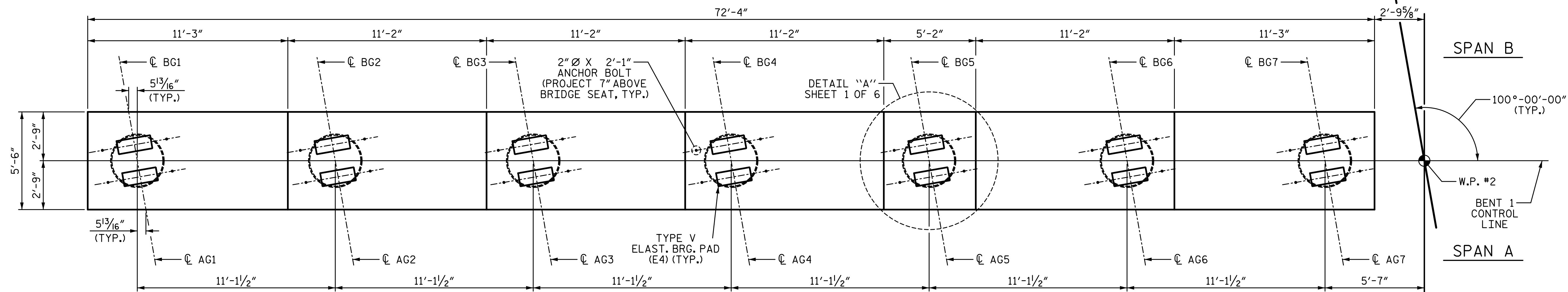
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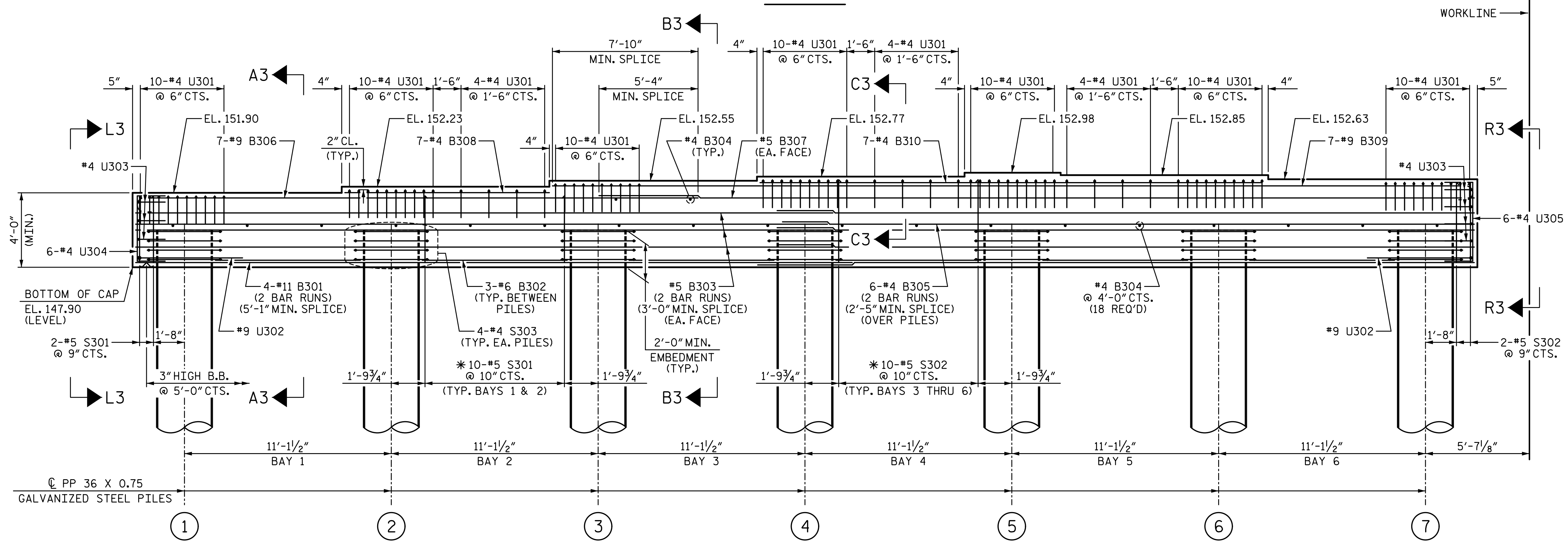
DRAWN BY: T. BANKOVICH DATE: 3-22
 CHECKED BY: J.A. BATTS DATE: 3-22
 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE: 3-22

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NOTES:
FOR NOTES, SEE SHEET 1 OF 6.



PLAN



ELEVATION

⊙ INDICATES PILE NUMBER

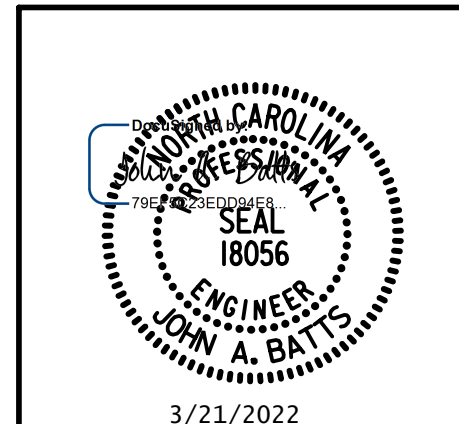
PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 803+15.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 1

STAGE III

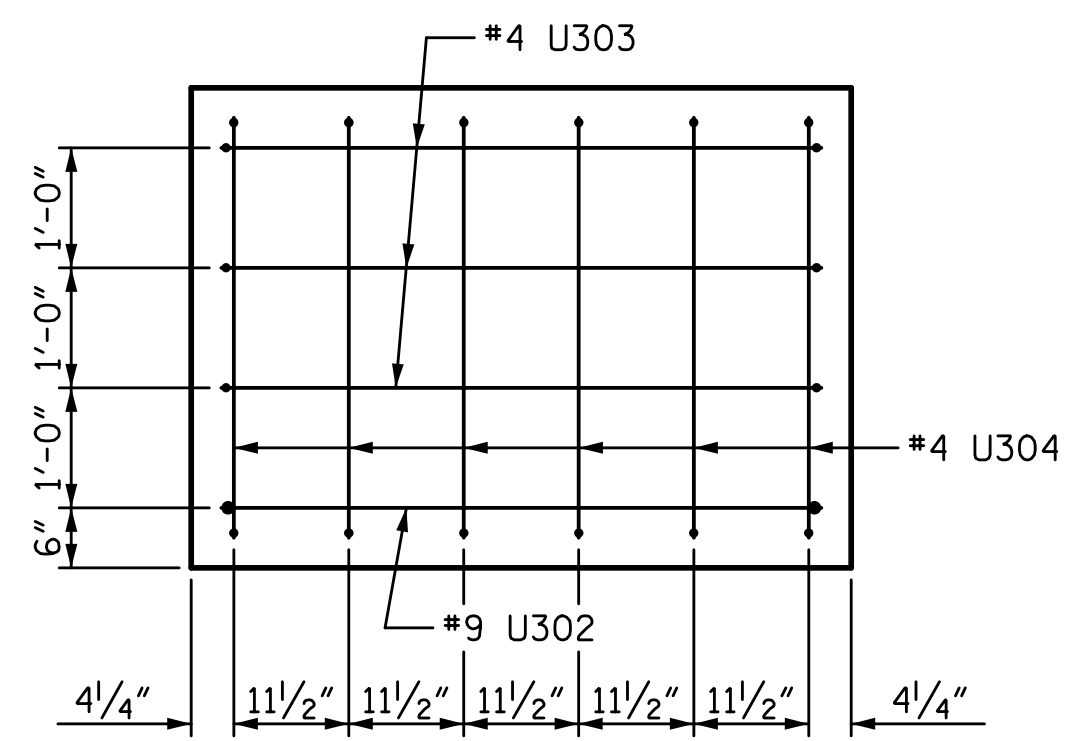


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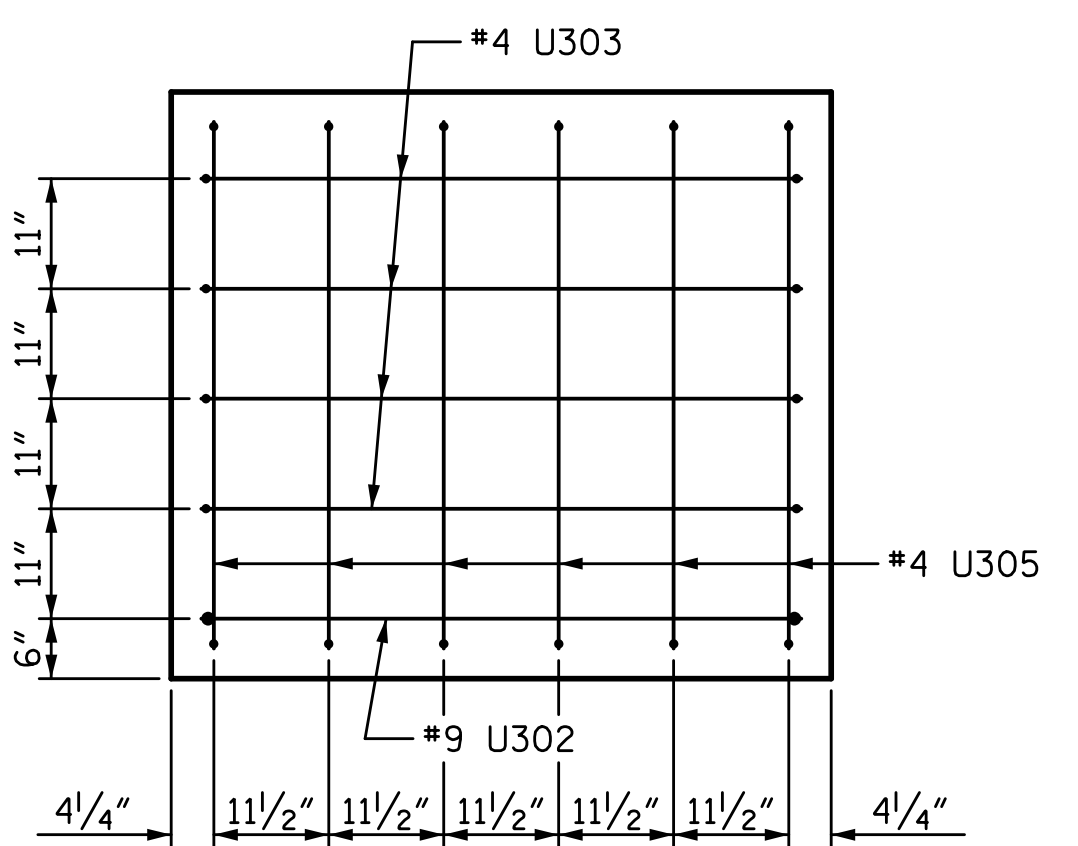
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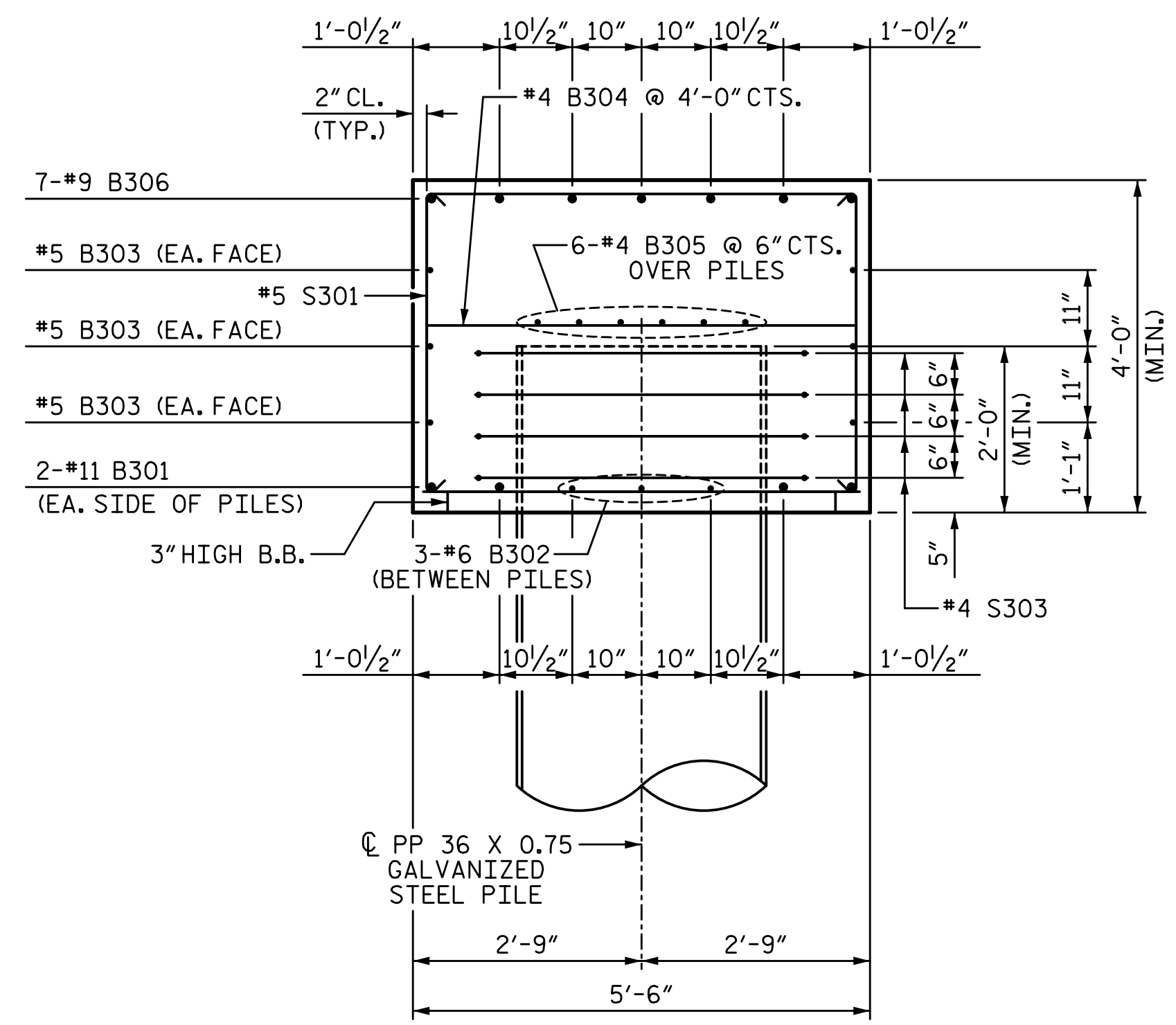
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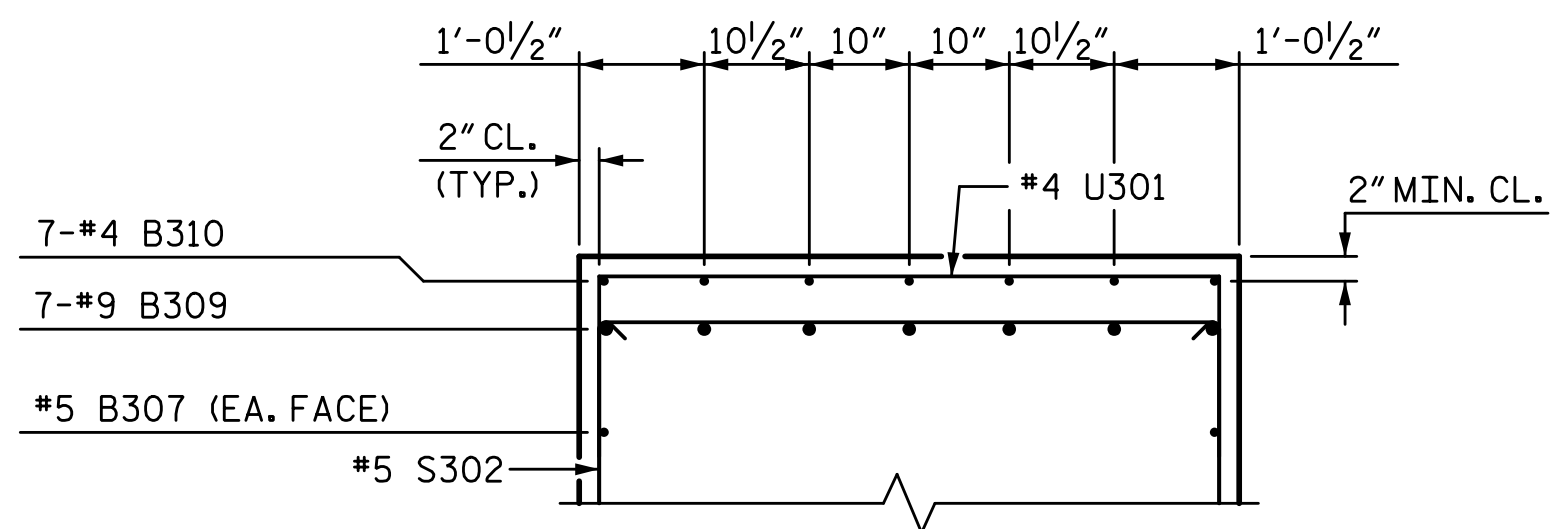
VIEW L3-L3



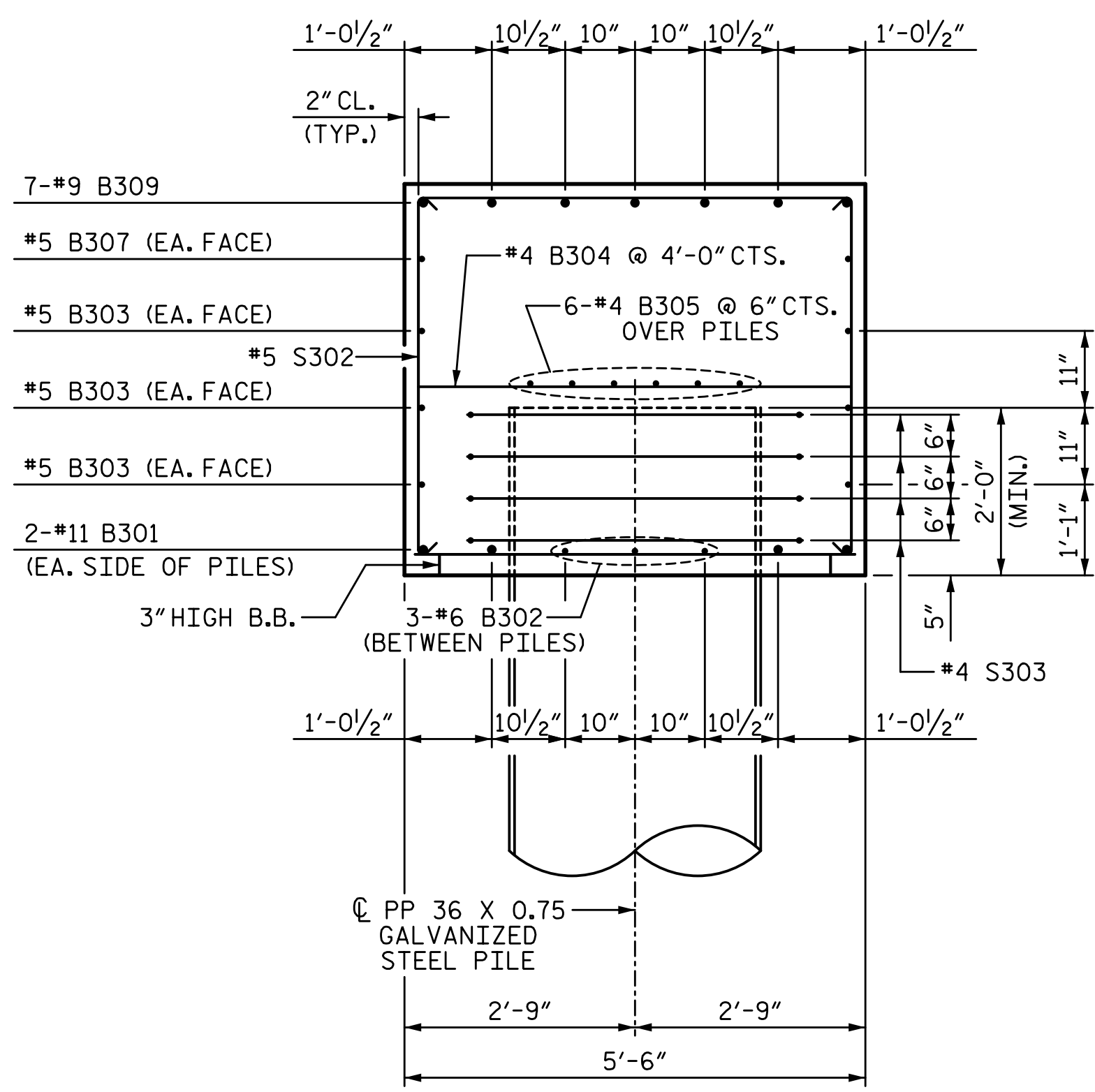
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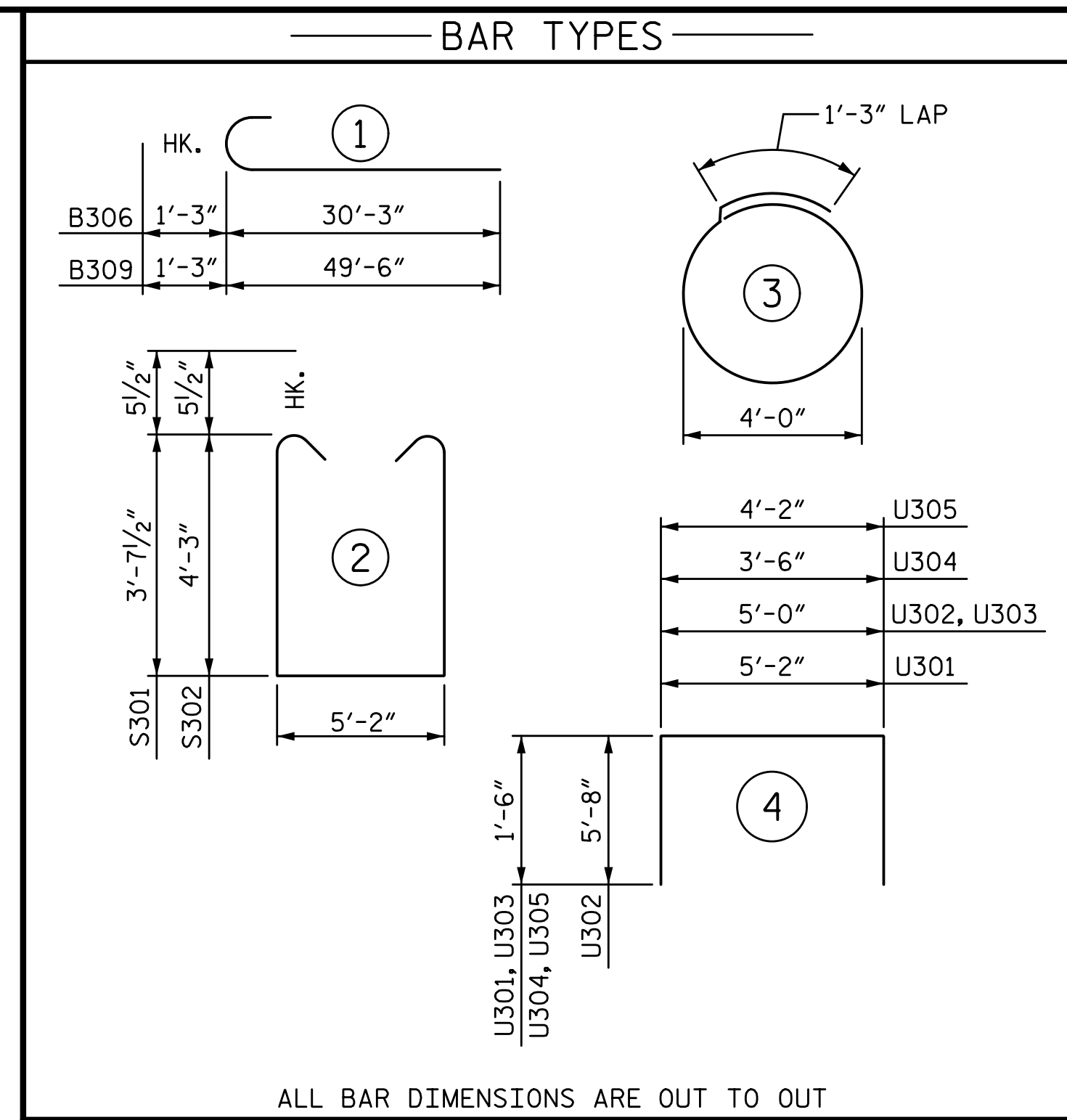
SECTION A3-A3



PARTIAL SECTION C3-C3



SECTION B3-B3



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL					
BENT 1 - STAGE III					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B301	8	#11	STR	38'-7"	1640
B302	18	#6	STR	7'-10"	212
B303	12	#5	STR	37'-6"	469
B304	20	#4	STR	5'-2"	69
B305	12	#4	STR	37'-3"	299
B306	7	#9	1	31'-6"	750
B307	2	#5	STR	47'-1"	98
B308	7	#4	STR	11'-0"	51
B309	7	#9	1	50'-9"	1208
B310	7	#4	STR	27'-2"	127
S301	22	#5	2	13'-4"	306
S302	42	#5	2	14'-7"	639
S303	28	#4	3	13'-10"	259
U301	82	#4	4	8'-2"	447
U302	2	#9	4	16'-4"	111
U303	7	#4	4	8'-0"	37
U304	6	#4	4	6'-6"	26
U305	6	#4	4	7'-2"	29
TOTAL REINFORCING STEEL				6777 LB	

TOTAL CLASS A CONCRETE *** 64.5 CY
 *** CONCRETE DISPLACED BY THE PP 36 X 0.75 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

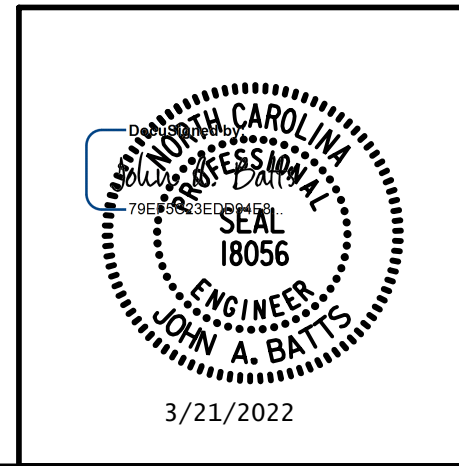
PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

 BENT 1

 STAGE III



W WGI
 5640 Dillard Drive, Suite 200
 Cary, NC 27518
 LICENSURE NO. C-4434

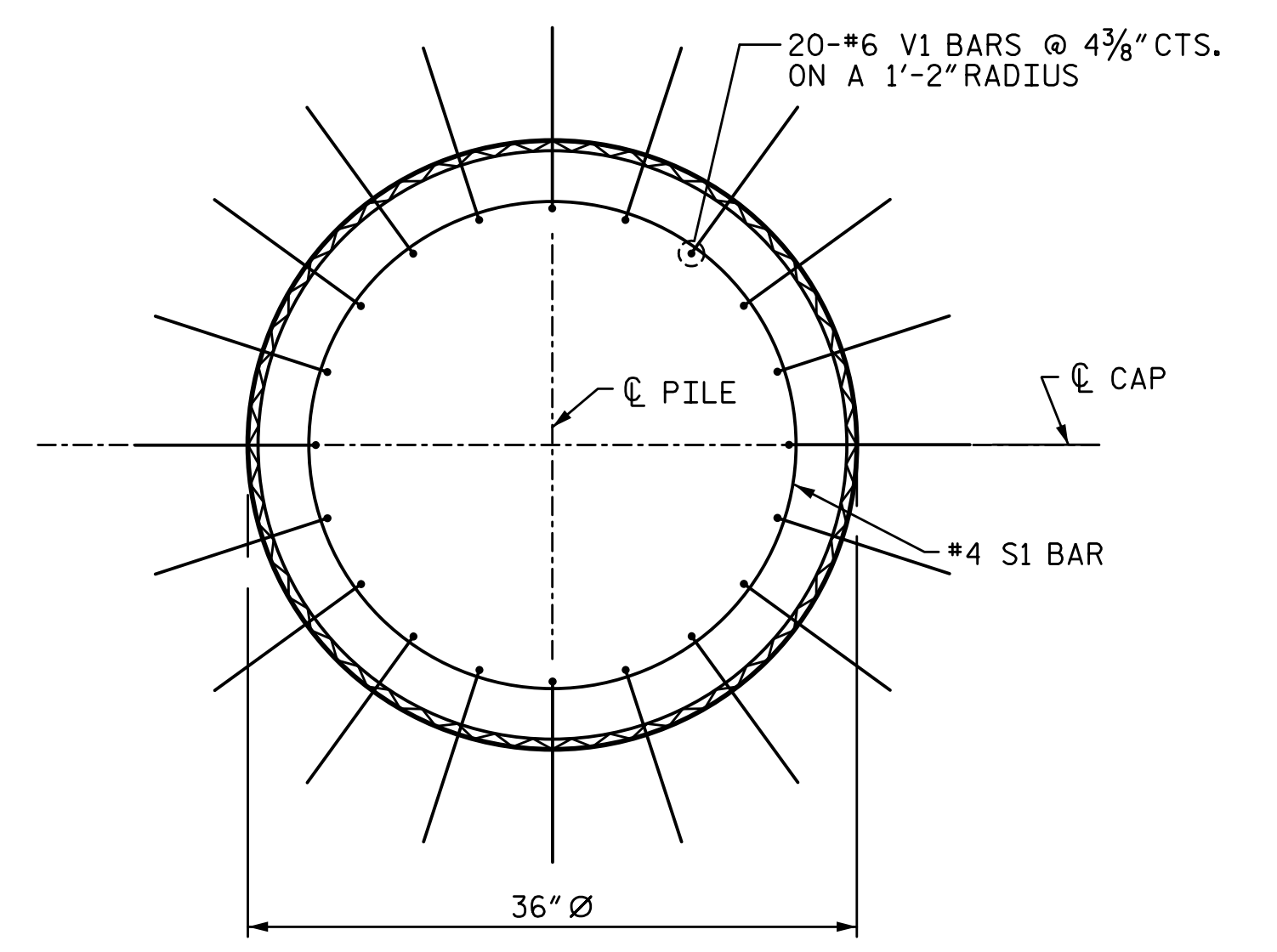
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SHEET NO.
 S9-56
 TOTAL SHEETS
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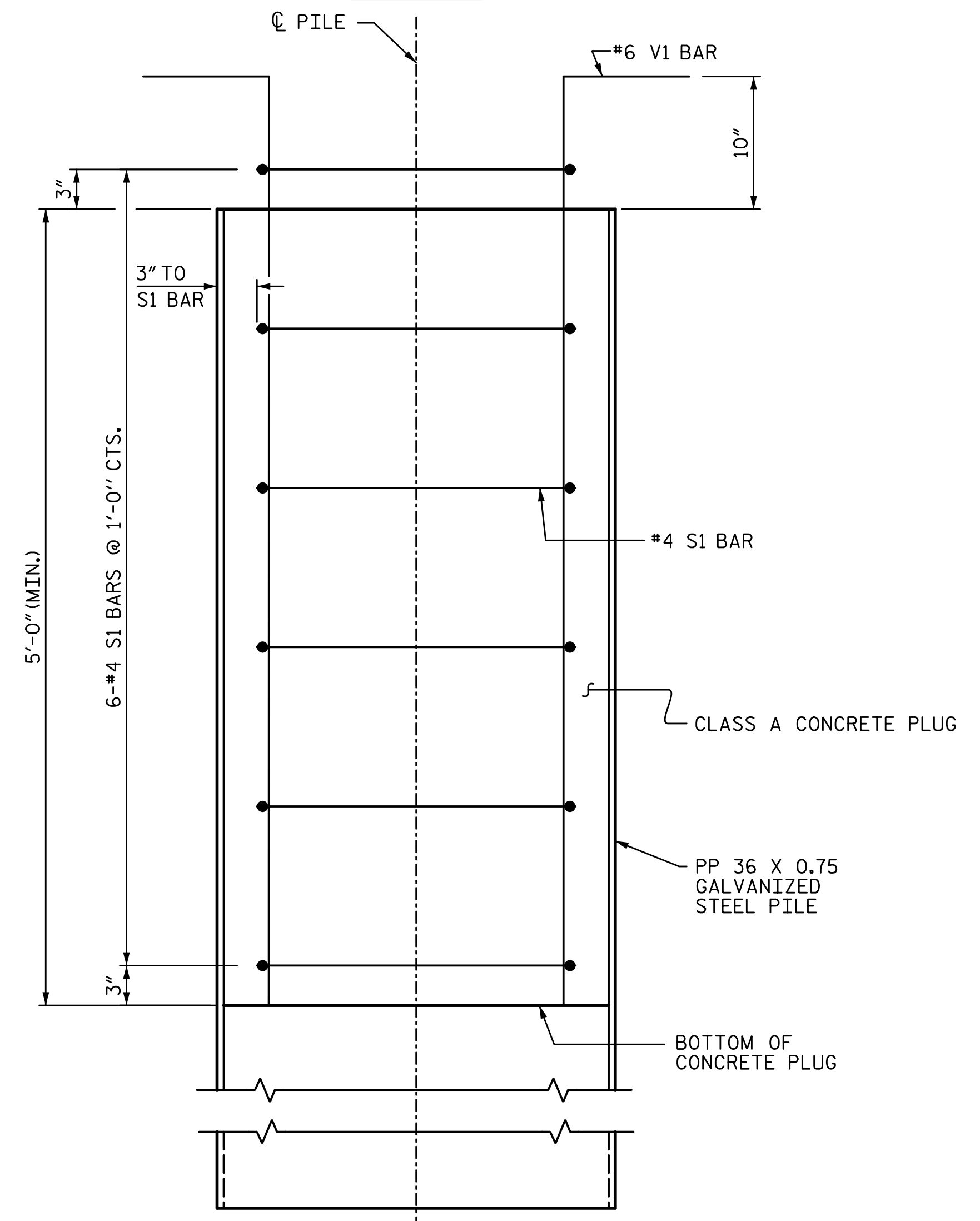
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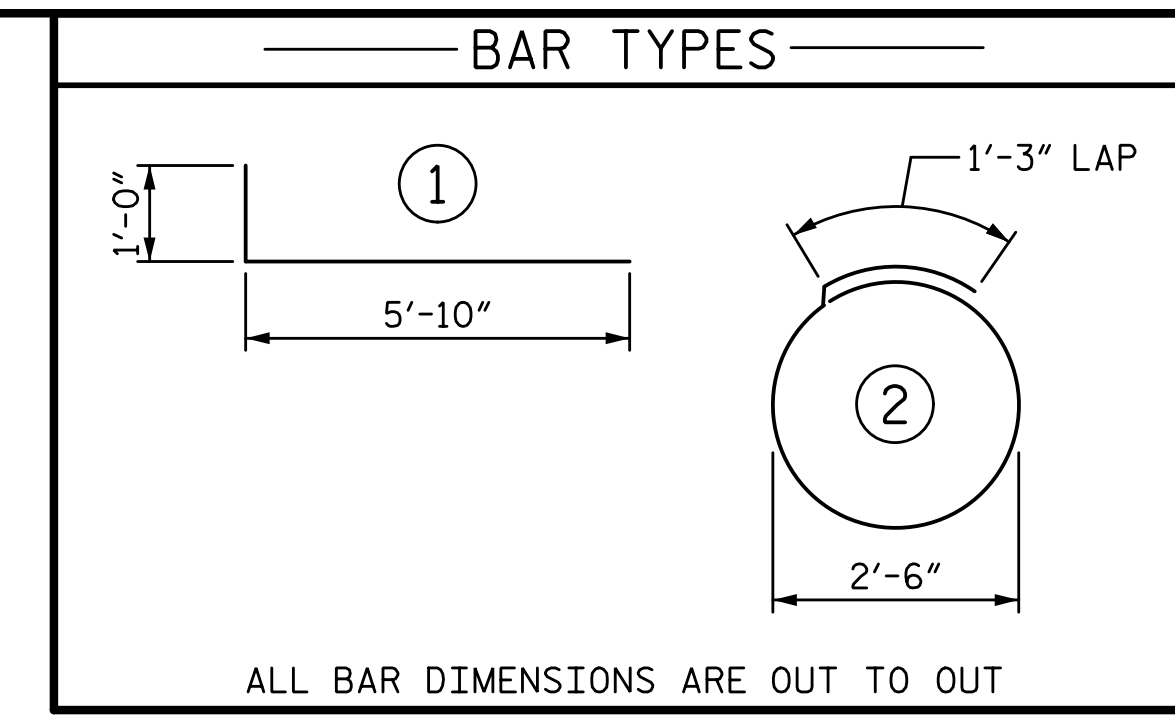
PLAN



ELEVATION

PP 36 X 0.75 GALVANIZED STEEL PILE
OPEN END

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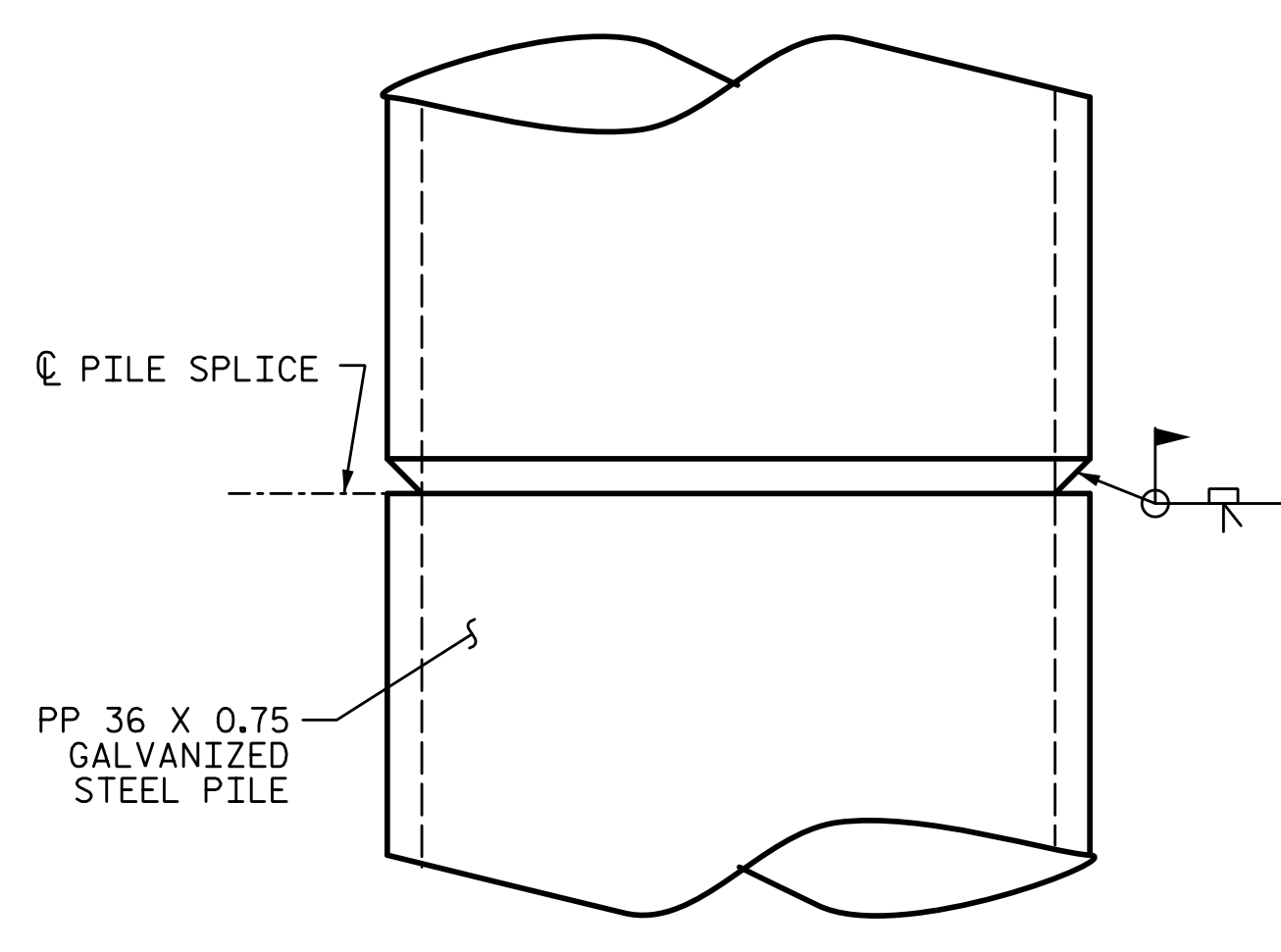


BILL OF MATERIAL FOR ONE PP 36 X 0.75 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	2	9'-2"	37
V1	20	#6	1	6'-10"	205
TOTAL REINFORCING STEEL					242 LB
CLASS A CONCRETE BREAKDOWN					
5'-0" MINIMUM PLUG					1.2 CY

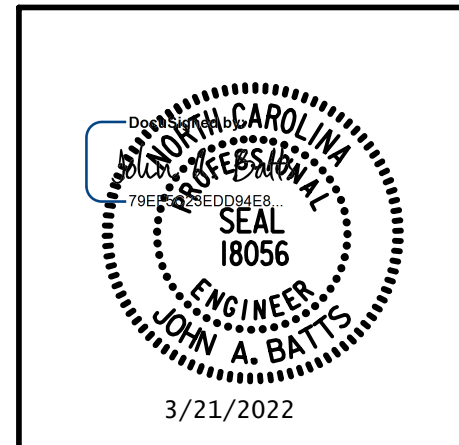
NOTES:

- PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.
- GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED.
- REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.
- PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.
- FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.
- FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.
- THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 36 X 0.75 GALVANIZED STEEL PILES.



PIPE PILE SPLICE DETAIL

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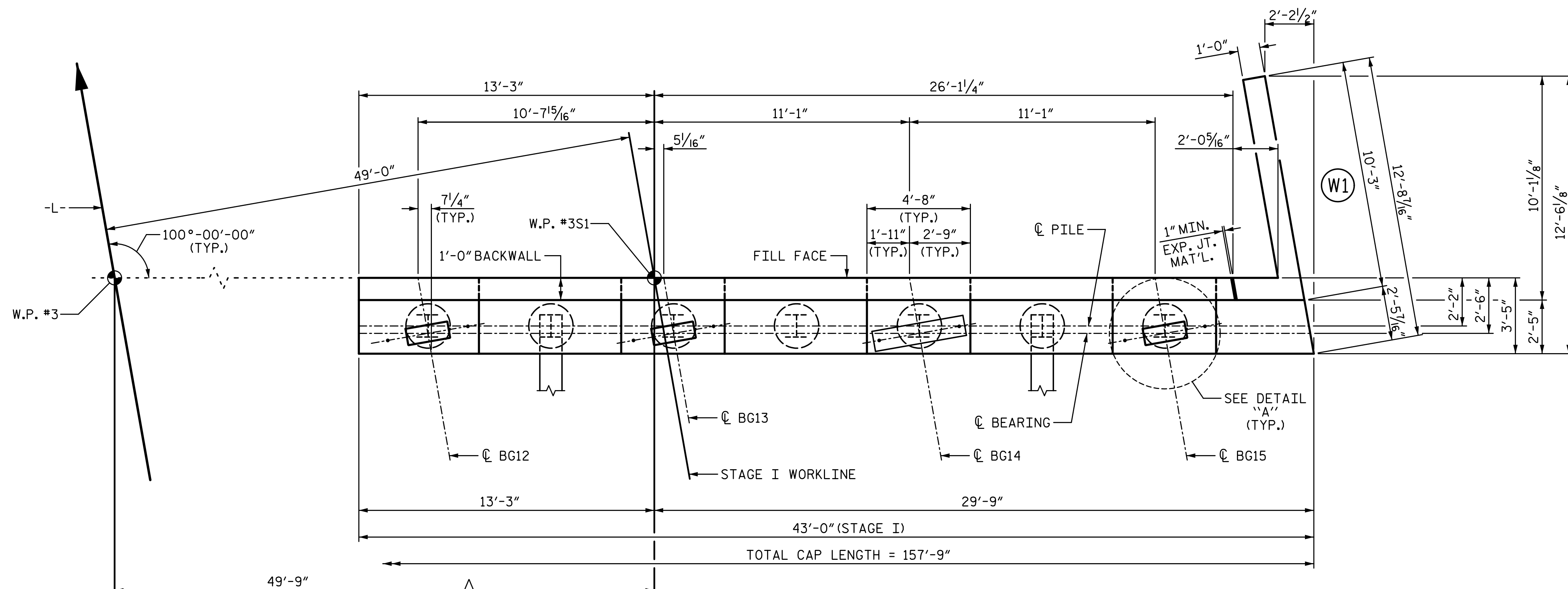


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
36" STEEL PIPE PILE

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			69

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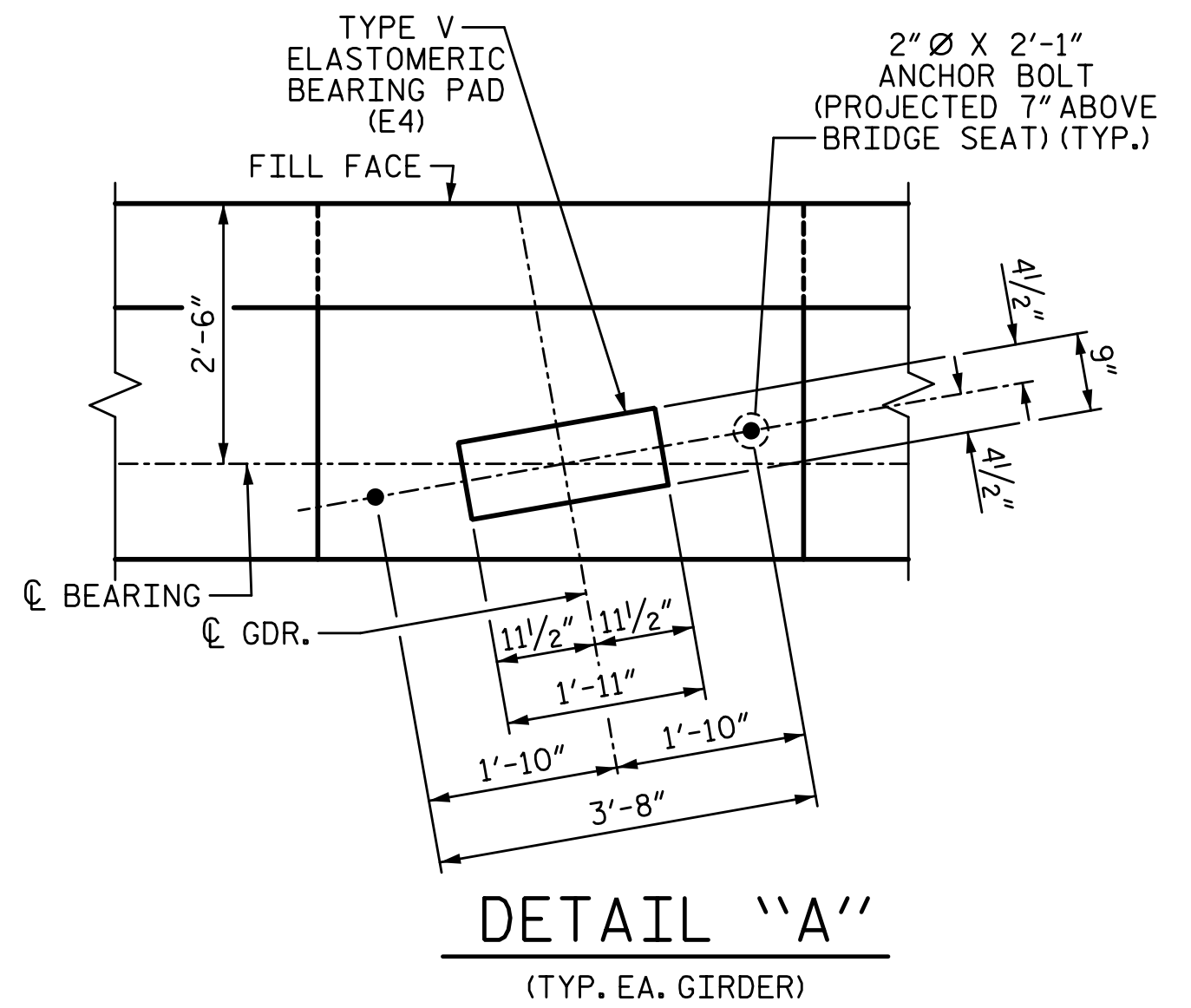
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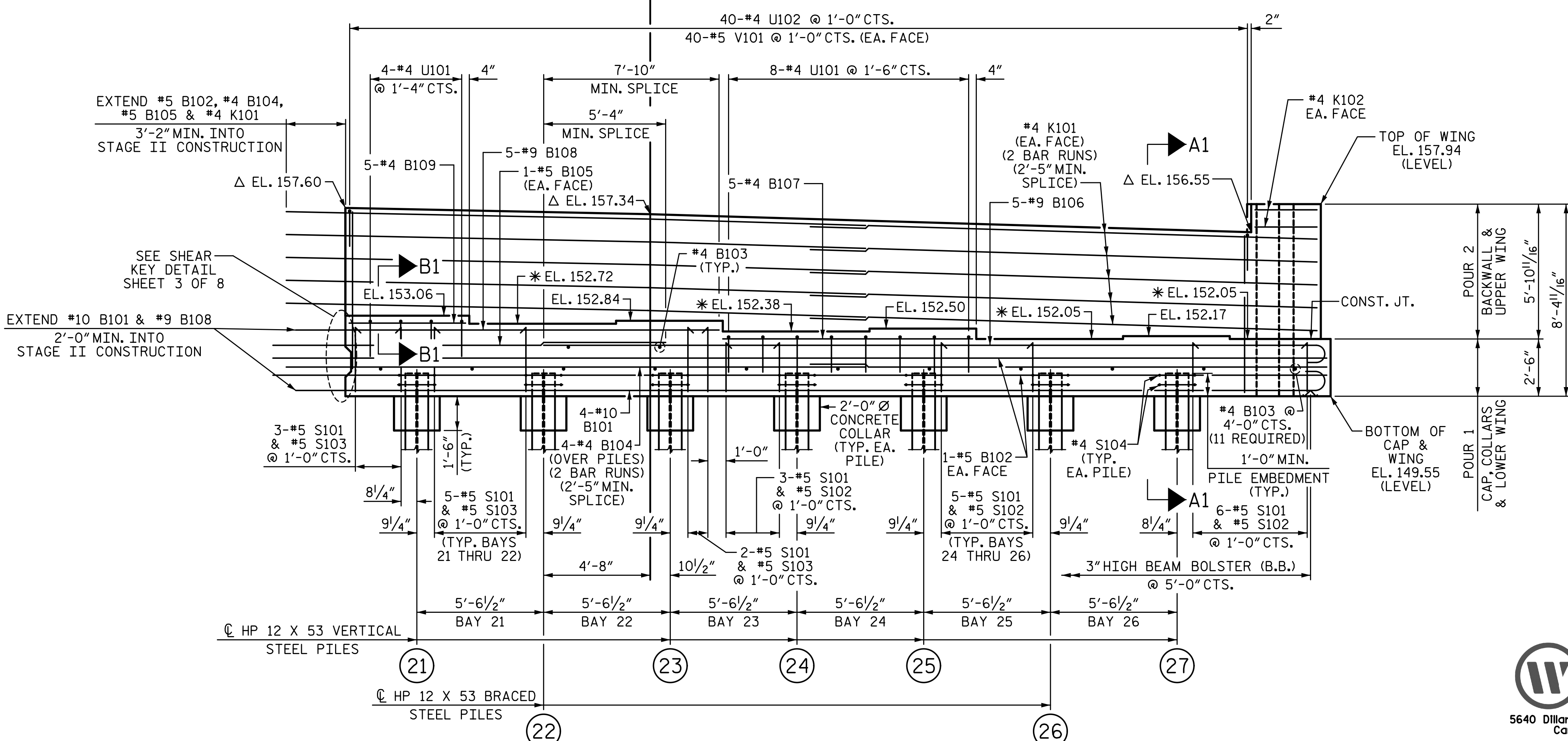
PLAN

NOTES:

- STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- MECHANICAL COUPLERS SHALL BE USED TO JOIN THE #9 AND THE #10 "B" BARS IN STAGE I WITH THE #9 AND THE #10 "B" BARS IN STAGE II. THE LOCATION OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 1 FOOT AND THE STAGE I BARS SHALL BE CUT ACCORDINGLY TO ALLOW A MINIMUM OF 1'-0" AND A MAXIMUM OF 2'-0" EXTENSION INTO STAGE II CONSTRUCTION.
- FOR MECHANICAL COUPLERS, SEE MECHANICAL BUTT SPLICE FOR REINFORCING STEEL IN STANDARD SPECIFICATIONS.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LENGTHS OF THE #9 AND THE #10 "B" BARS IN THE STAGED CONSTRUCTION JOINT MAY NEED TO BE ADJUSTED DUE TO THE TYPE OF MECHANICAL BUTT SPLICE CHOSEN BY THE CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY ADJUSTMENTS.
- FOR SECTION A1-A1 AND PART SECTION B1-B1, SEE SHEET 3 OF 8.
- *FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILD-UPS SEE SECTION A1-A1, SEE SHEET 3 OF 8.
- BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
- THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXPECT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.
- SEE GENERAL DRAWING "FOUNDATION LAYOUT" AND "PILE FOUNDATION TABLES" SHEETS FOR ADDITIONAL NOTES AND INFORMATION FOR STEEL PILES.
- FOR PILE SPLICE DETAILS, SEE SHEET 5 OF 8.
- FOR TEMPORARY DRAINAGE AT END BENT, SEE SHEET 5 OF 8.
- Δ BACKWALL ELEVATIONS ARE GIVEN AT FILL FACE.



DETAIL "A"
(TYP. EA. GIRDER)



ELEVATION

⊕ INDICATES PILE NUMBER

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ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 1 OF 8

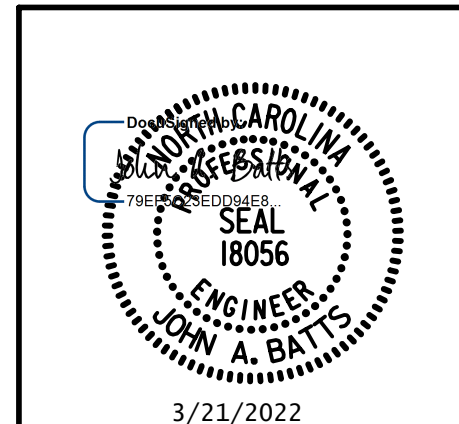
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 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 2

STAGE I

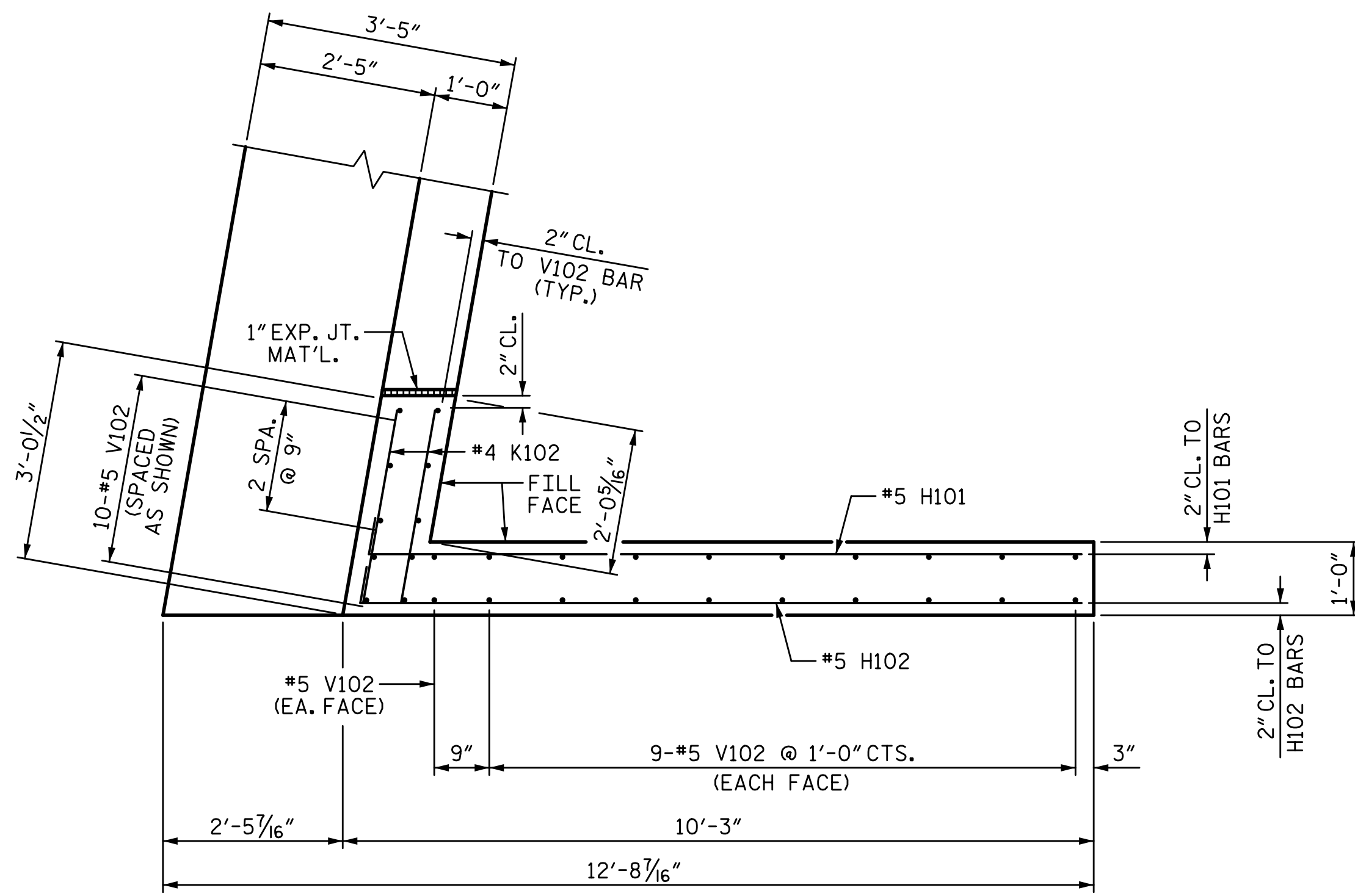
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2			4		
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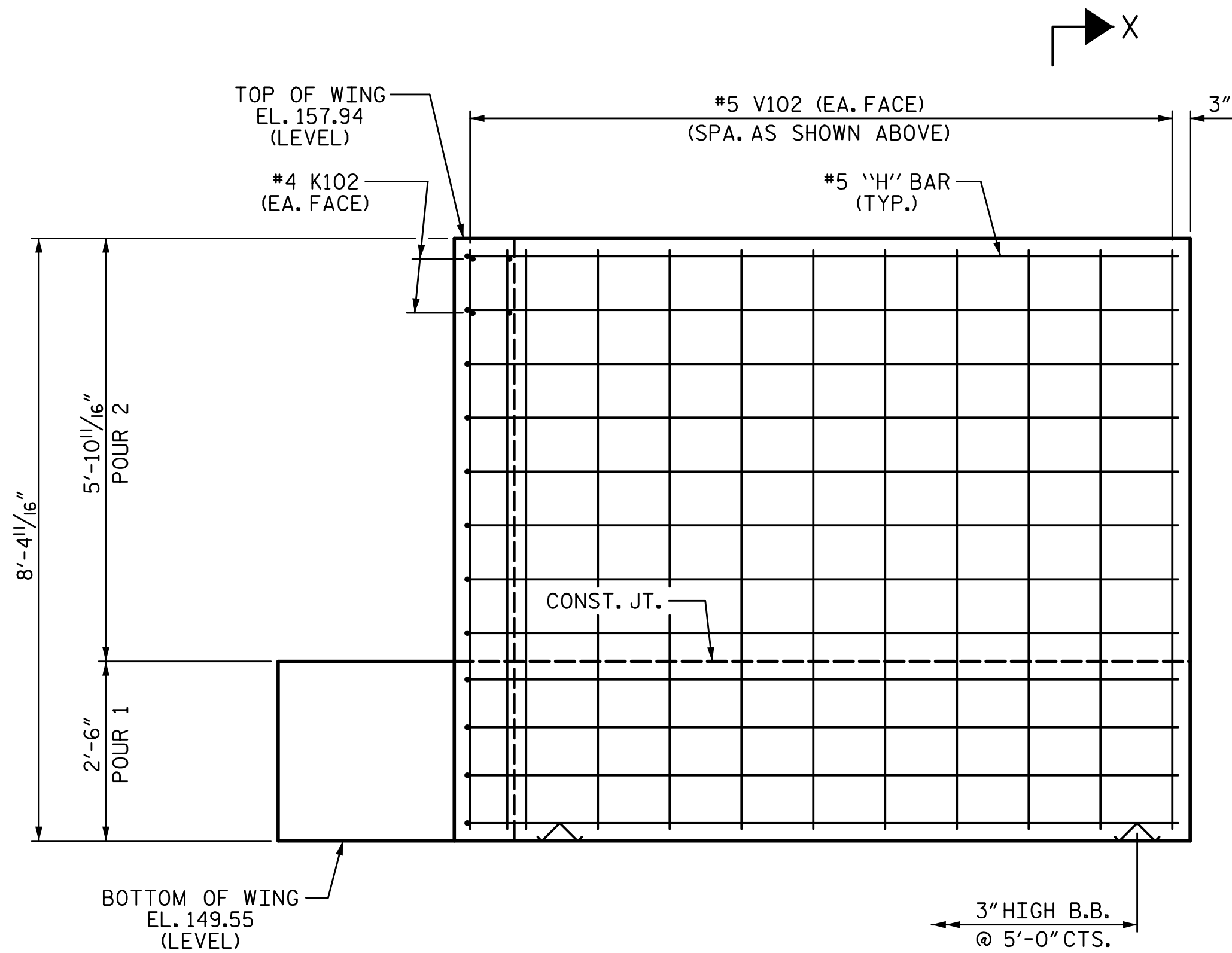


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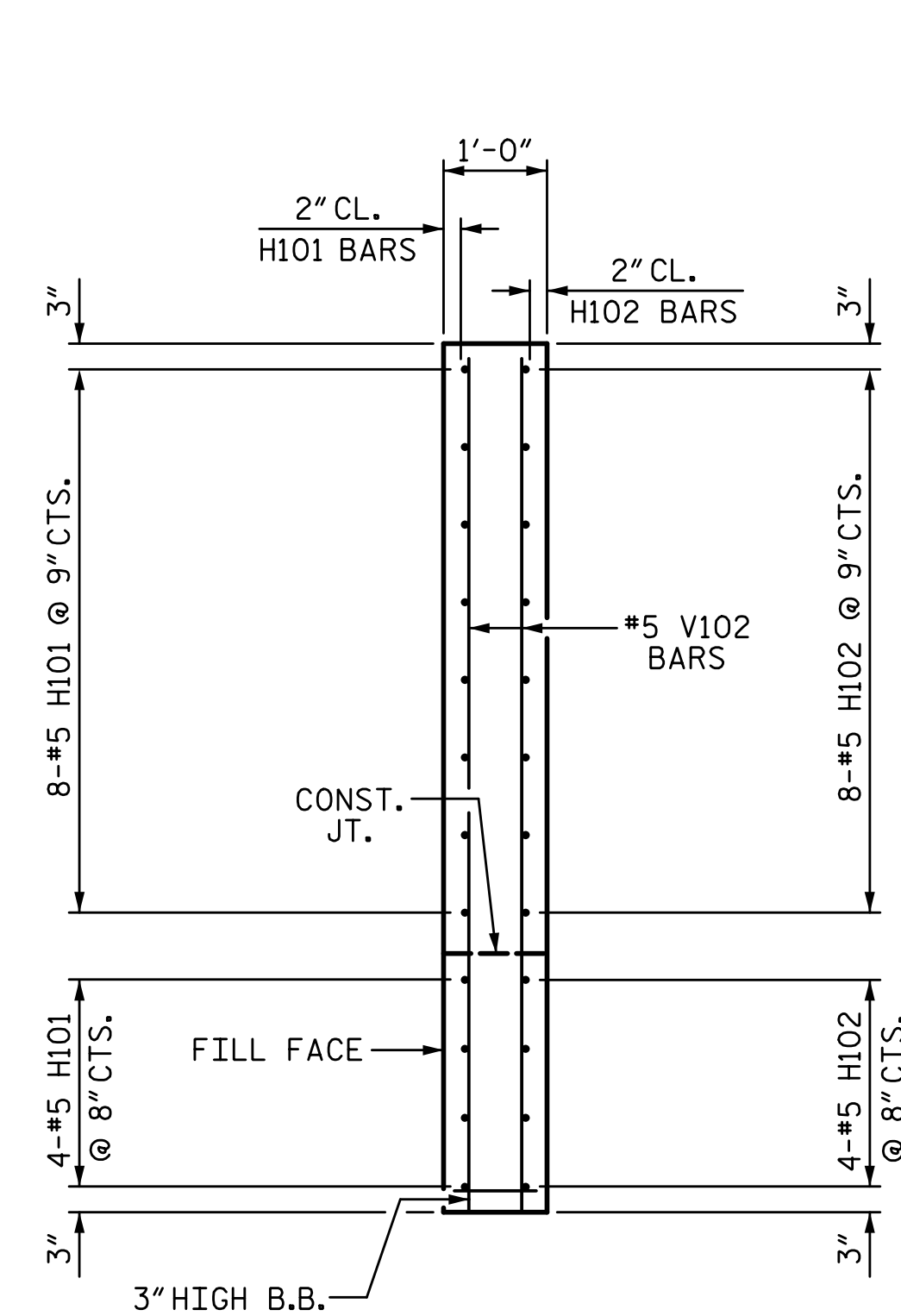
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PLAN OF WING (W1)



ELEVATION OF WING (W1)



SECTION X-X

PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 803+15.00 -L-

SHEET 2 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

END BENT 2

STAGE I

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2			4			TOTAL SHEETS 69



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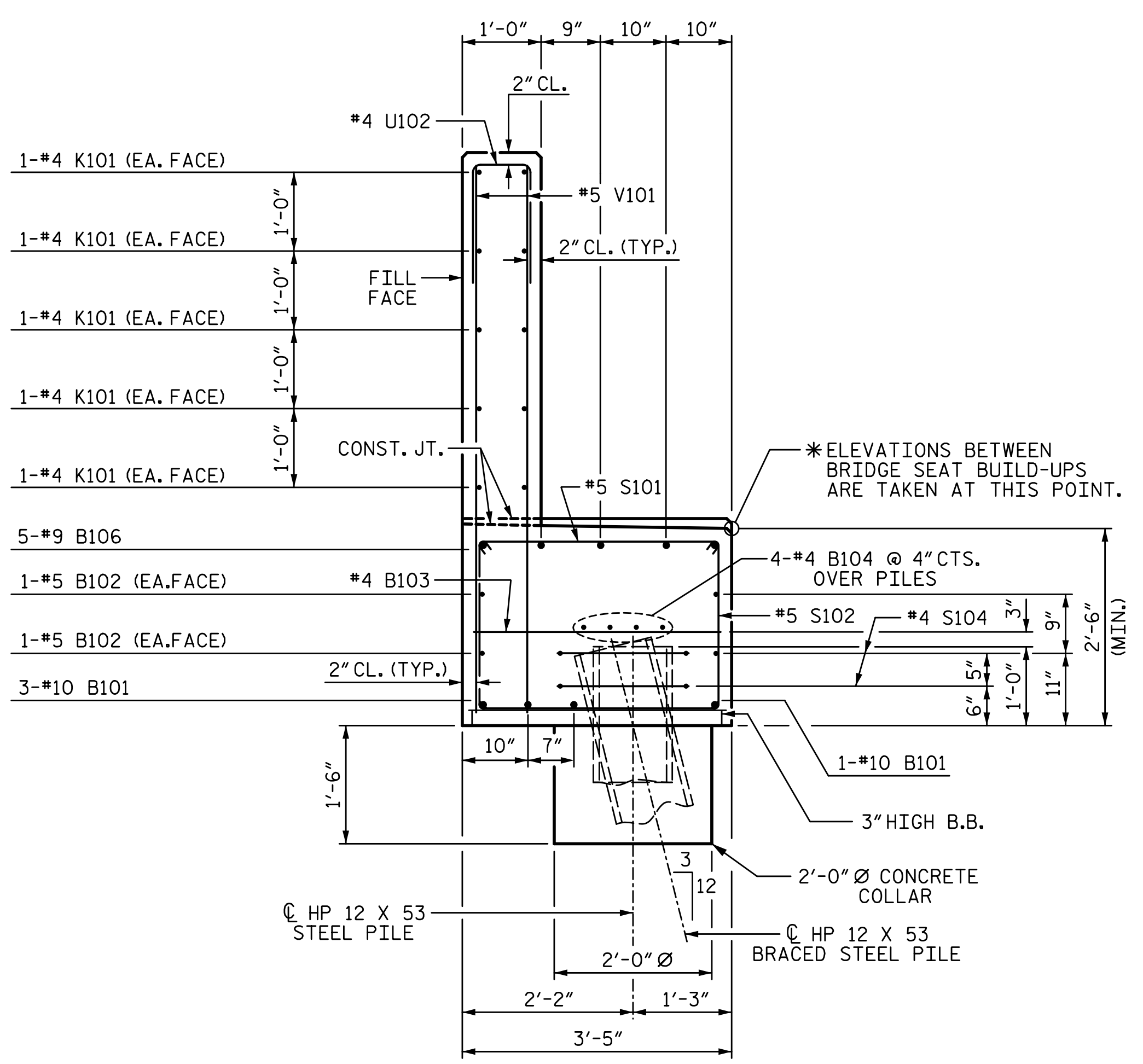


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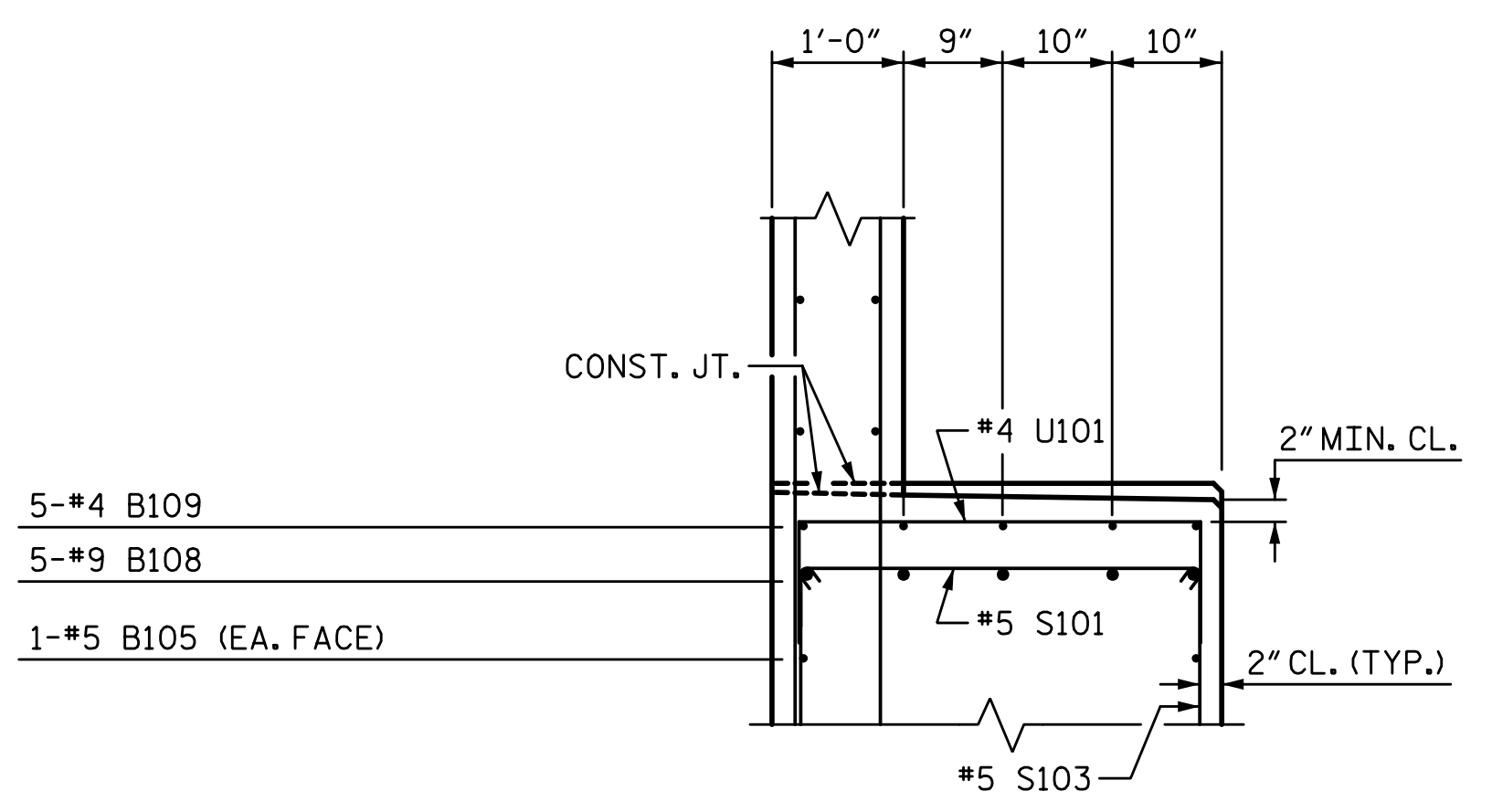
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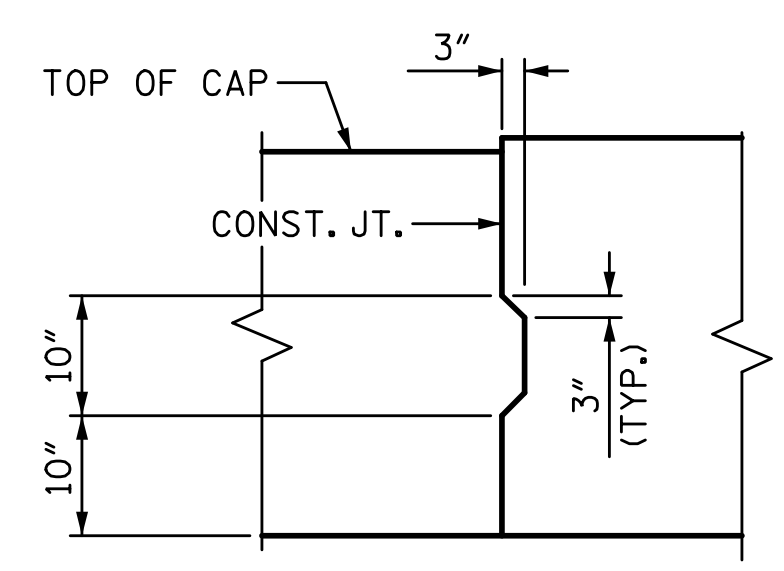
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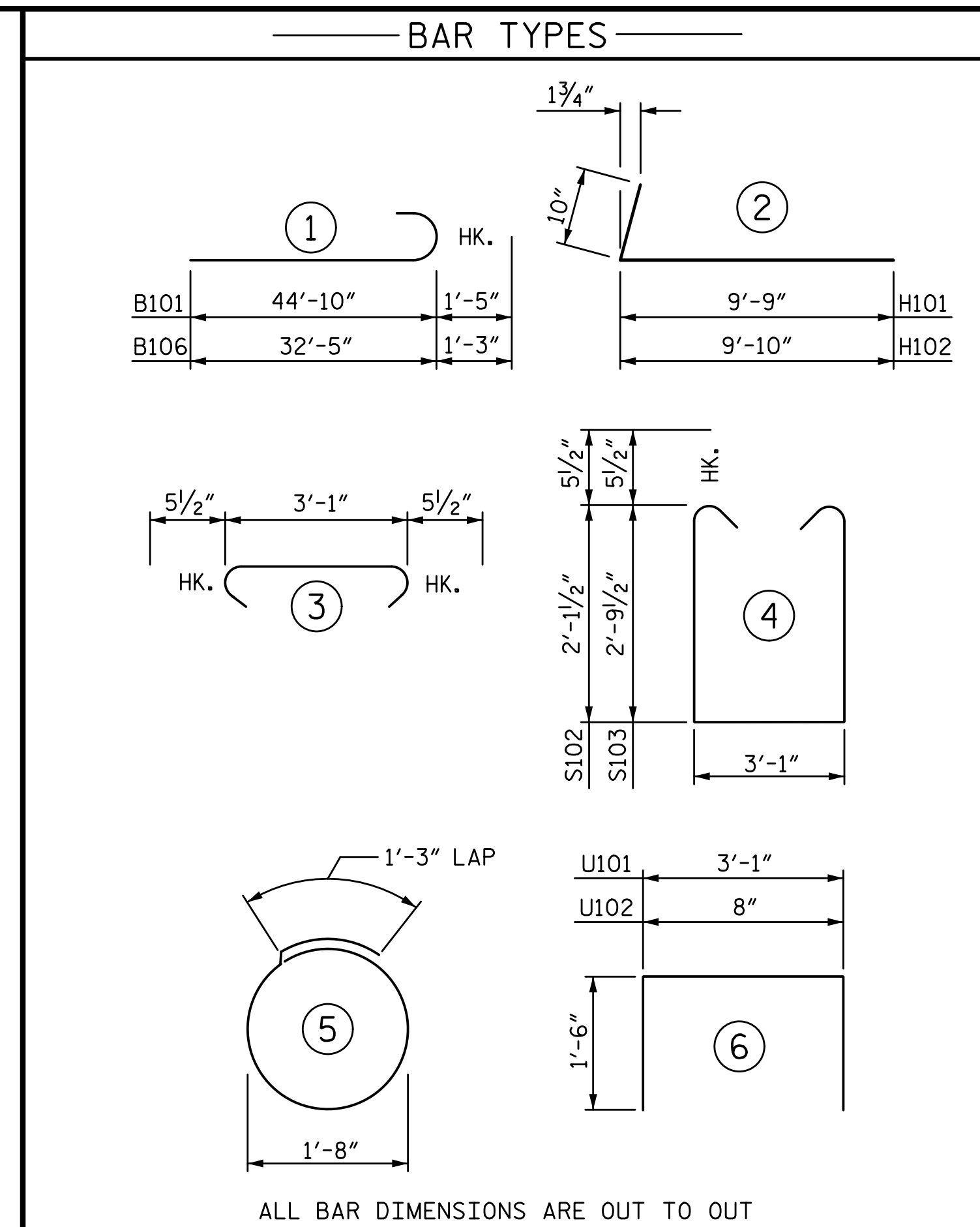
SECTION A1-A1



PART SECTION B1-B1



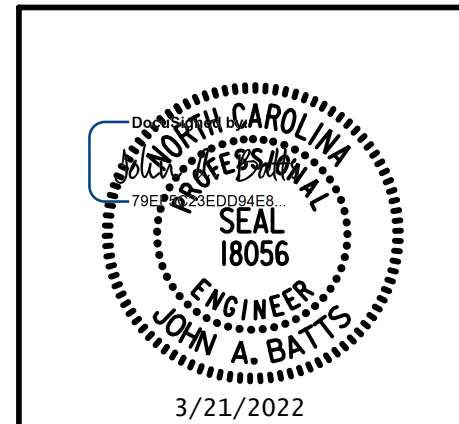
SHEAR KEY DETAIL
REINFORCING STEEL IN CAP NOT SHOWN.
"B" BARS SHALL BE CONTINUOUS THROUGH JOINT.



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL					
END BENT 2 - STAGE I					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B101	4	#10		46'-3"	796
B102	4	#5	STR	46'-1"	192
B103	13	#4	STR	3'-1"	27
B104	8	#4	STR	24'-0"	128
B105	2	#5	STR	18'-11"	39
B106	5	#9		33'-8"	572
B107	5	#4	STR	10'-11"	36
B108	5	#9	STR	18'-3"	310
B109	5	#4	STR	5'-0"	17
H101	12	#5		10'-7"	132
H102	12	#5		10'-8"	134
K101	20	#4	STR	24'-0"	321
K102	4	#4	STR	2'-8"	7
S101	39	#5		4'-0"	163
S102	24	#5		8'-3"	207
S103	15	#5		9'-7"	150
S104	14	#4		6'-6"	61
U101	12	#4		6'-1"	49
U102	40	#4		3'-8"	98
V101	80	#5	STR	6'-8"	556
V102	30	#5	STR	8'-0"	250
TOTAL REINFORCING STEEL					4245 LB
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP, COLLARS & LOWER WING)					18.1 CY
POUR 2 (BACKWALL & UPPER WING)					9.7 CY
TOTAL CLASS A CONCRETE					27.8 CY

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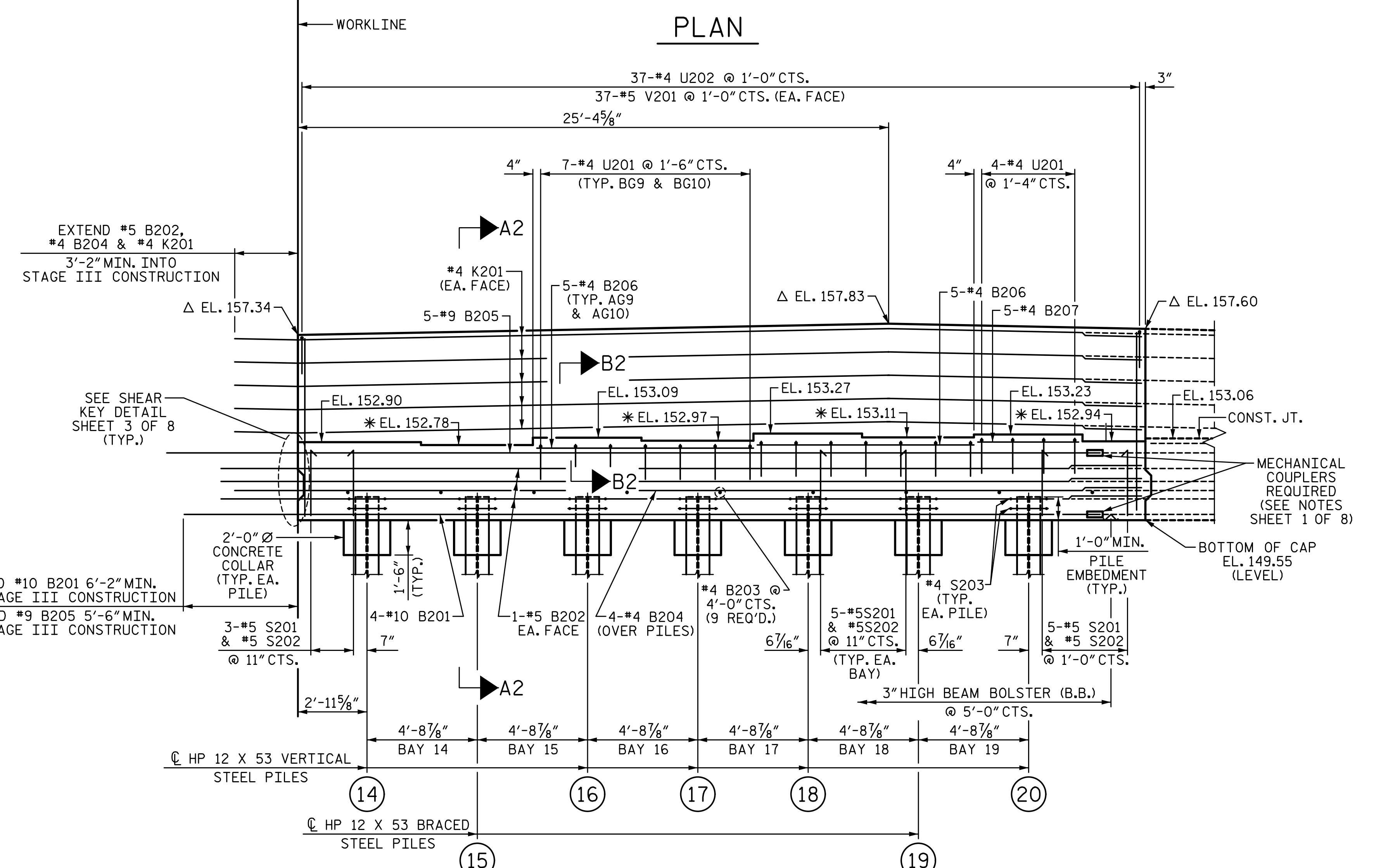
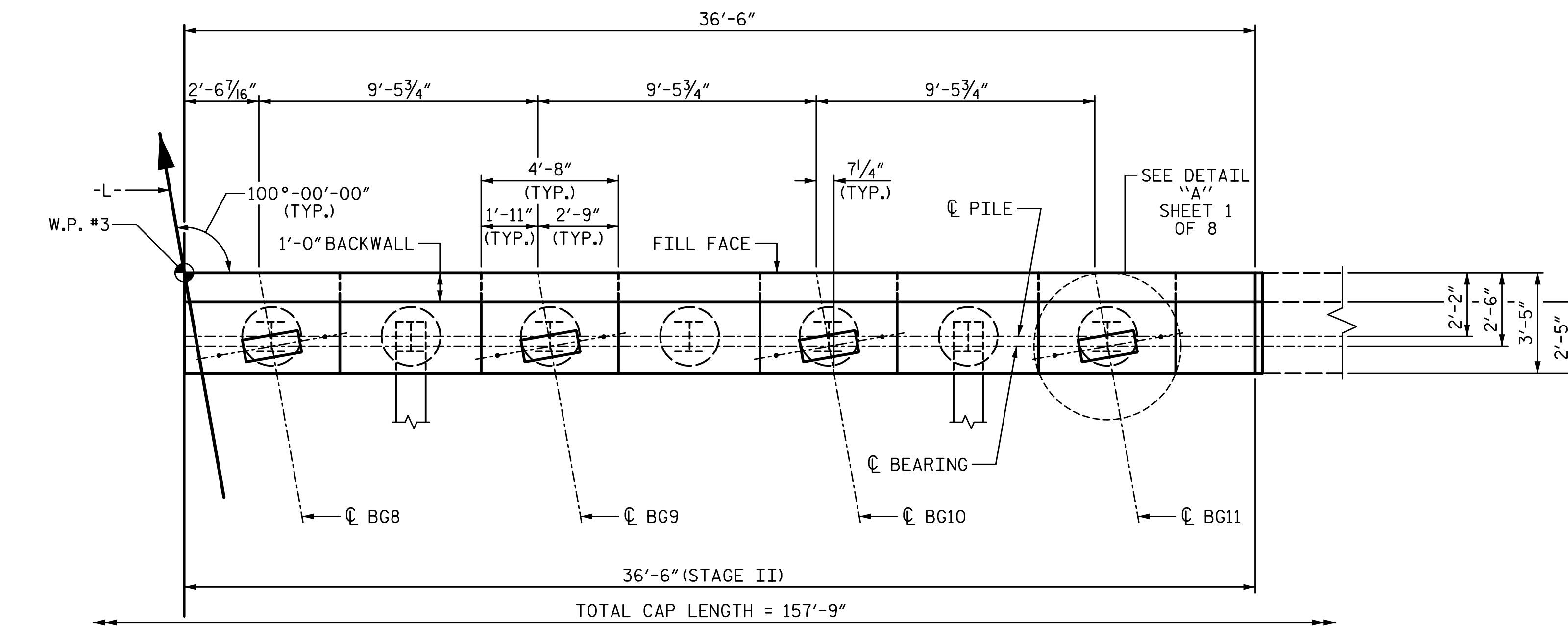


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ROBESON COUNTY
 STATION: 803+15.00 -L-
 SHEET 3 OF 8

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUBSTRUCTURE					
END BENT 2					
STAGE I					
REVISIONS					
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SHEET NO. S9-60					TOTAL SHEETS 69

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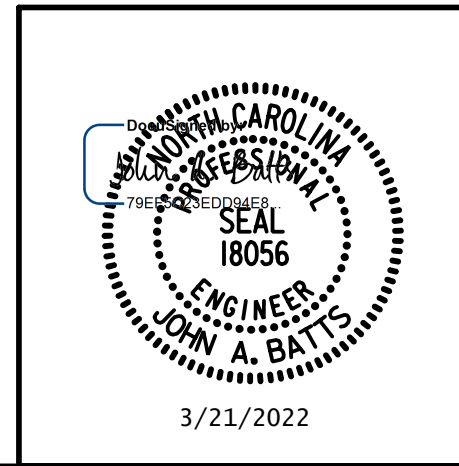


NOTES:

FOR ADDITIONAL NOTES, SEE SHEET 1 OF 8.
FOR SECTION A2-A2 AND PART SECTION B2-B2, SEE SHEET 5 OF 8.
*FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILD-UPS, SEE SECTION A2-A2 SHEET 5 OF 8.
Δ BACKWALL ELEVATIONS ARE GIVEN AT FILL FACE.

PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 803+15.00 -L-
SHEET 4 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 2
STAGE II



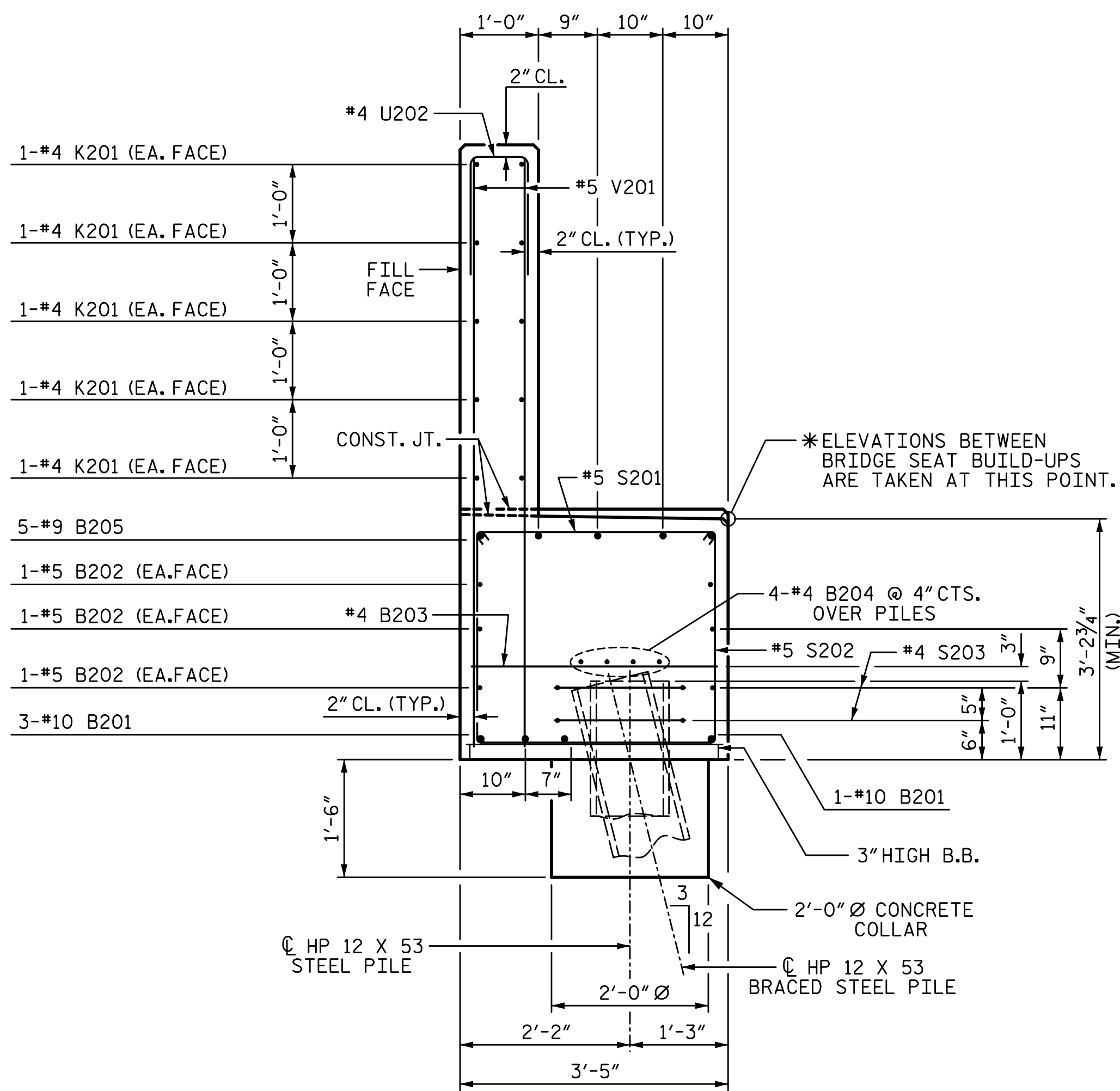
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Ⓜ INDICATES PILE NUMBER

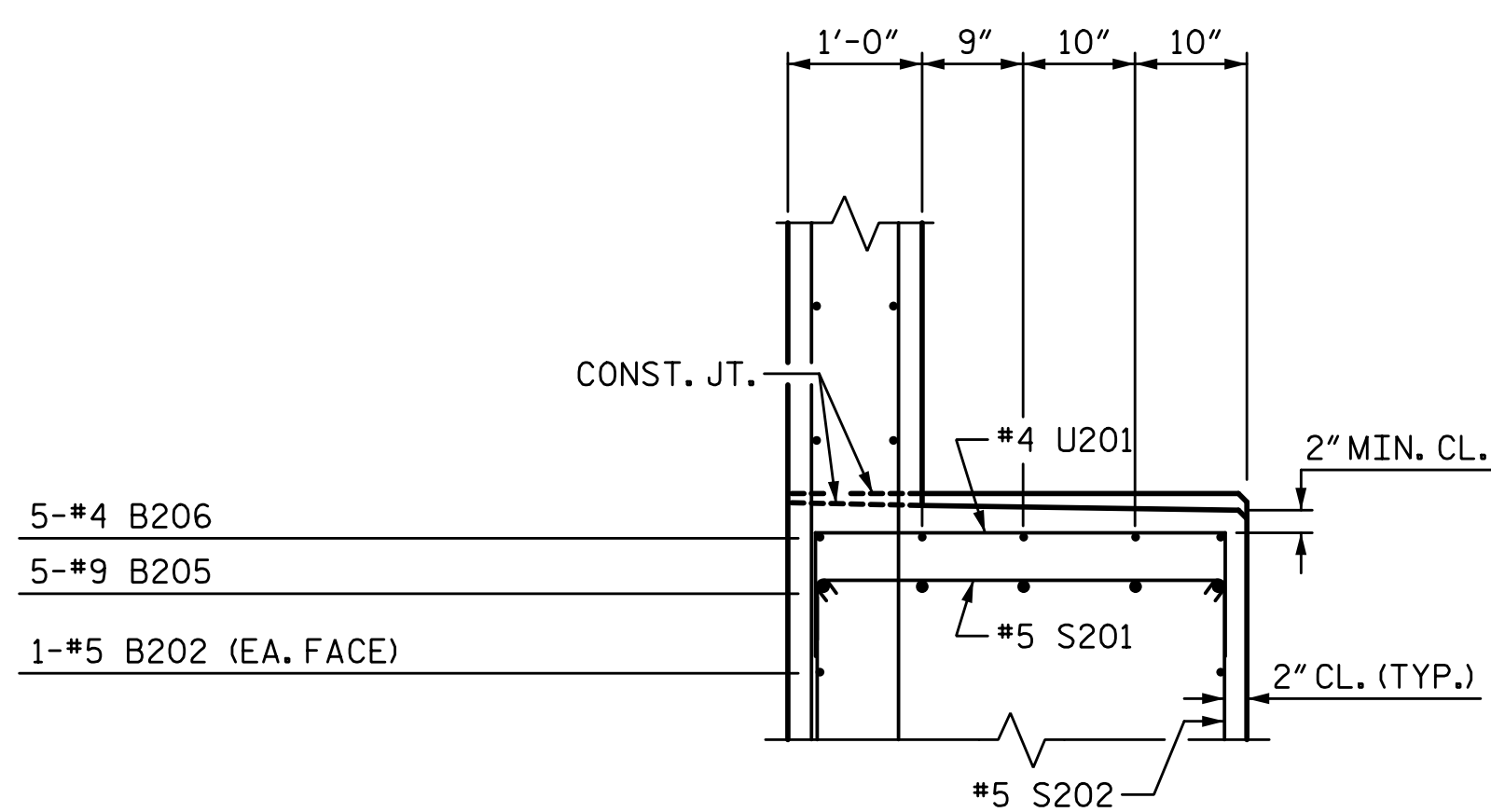
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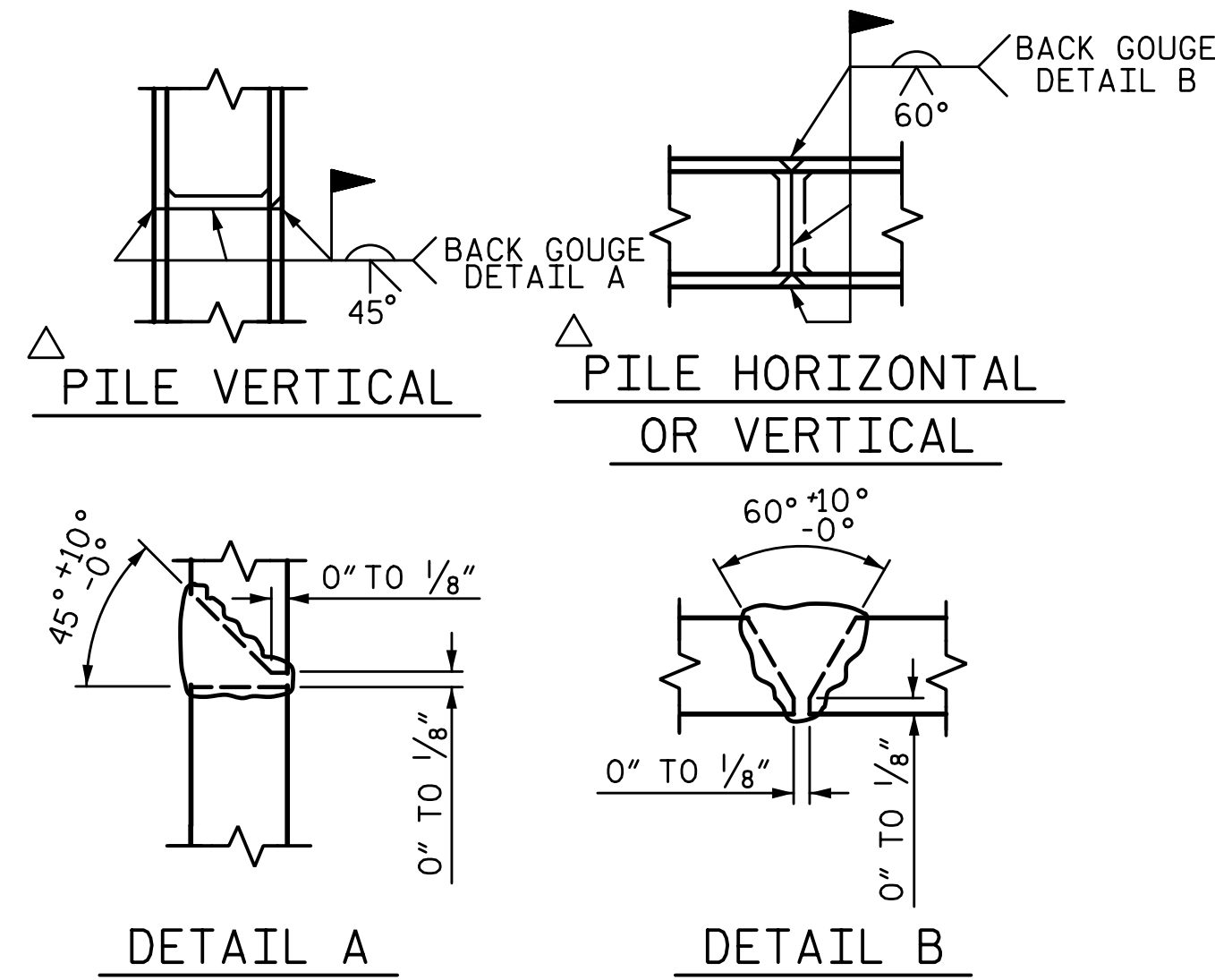
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SECTION A2-A2



PART SECTION B2-B2



PILE SPLICE DETAILS

△ POSITION OF PILE DURING WELDING.

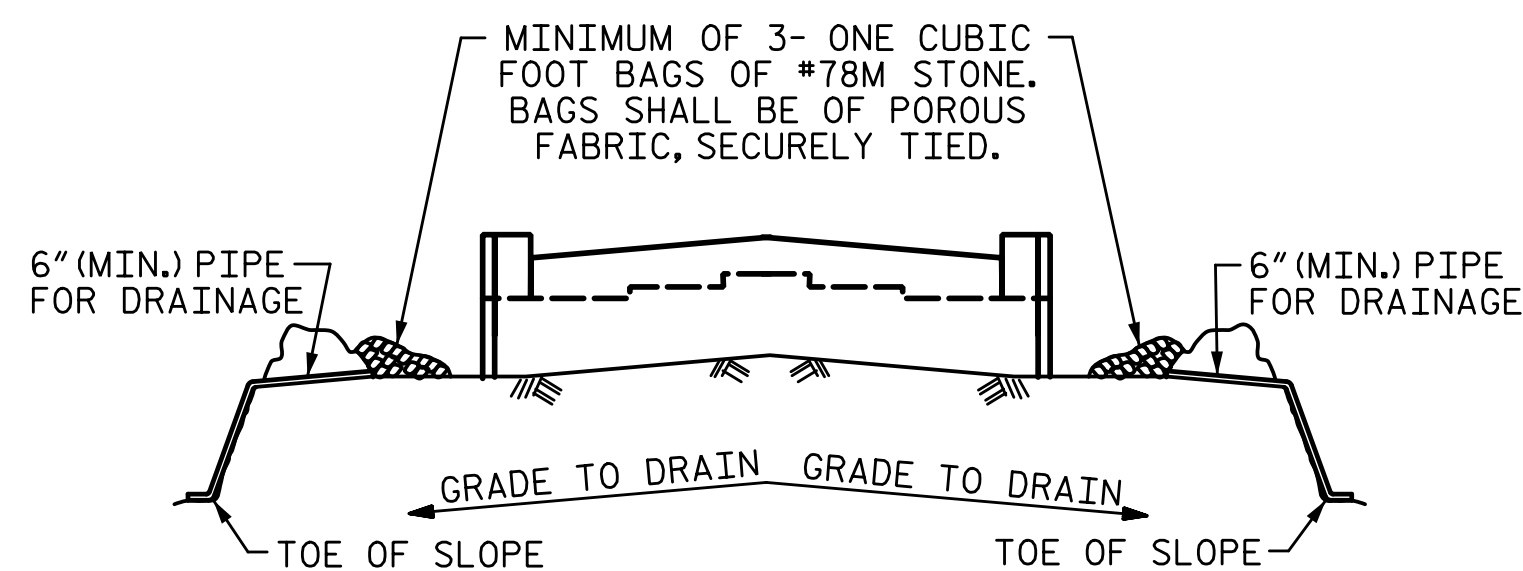
BAR TYPES

BILL OF MATERIAL

END BENT 2 - STAGE II

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B201	4	#10	STR	41'-8"	717
B202	6	#5	STR	39'-6"	247
B203	9	#4	STR	3'-1"	19
B204	4	#4	STR	39'-6"	106
B205	5	#9	STR	41'-0"	697
B206	10	#4	STR	9'-3"	62
B207	5	#4	STR	4'-4"	14
K201	10	#4	STR	39'-6"	264
S201	38	#5	1	4'-0"	159
S202	38	#5	2	9'-7"	380
S203	14	#4	3	6'-6"	61
U201	18	#4	4	6'-1"	73
U202	37	#4	4	3'-8"	91
V201	74	#5	STR	7'-5"	572
TOTAL REINFORCING STEEL					3462 LB
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP & COLLARS)					17.3 CY
POUR 2 (BACKWALL)					6.3 CY
TOTAL CLASS A CONCRETE					23.6 CY

ALL BAR DIMENSIONS ARE OUT TO OUT



BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

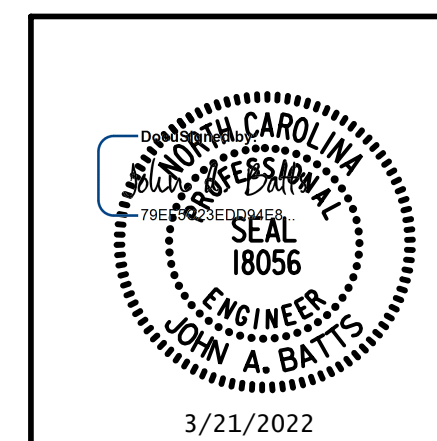
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ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 5 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 2

STAGE II

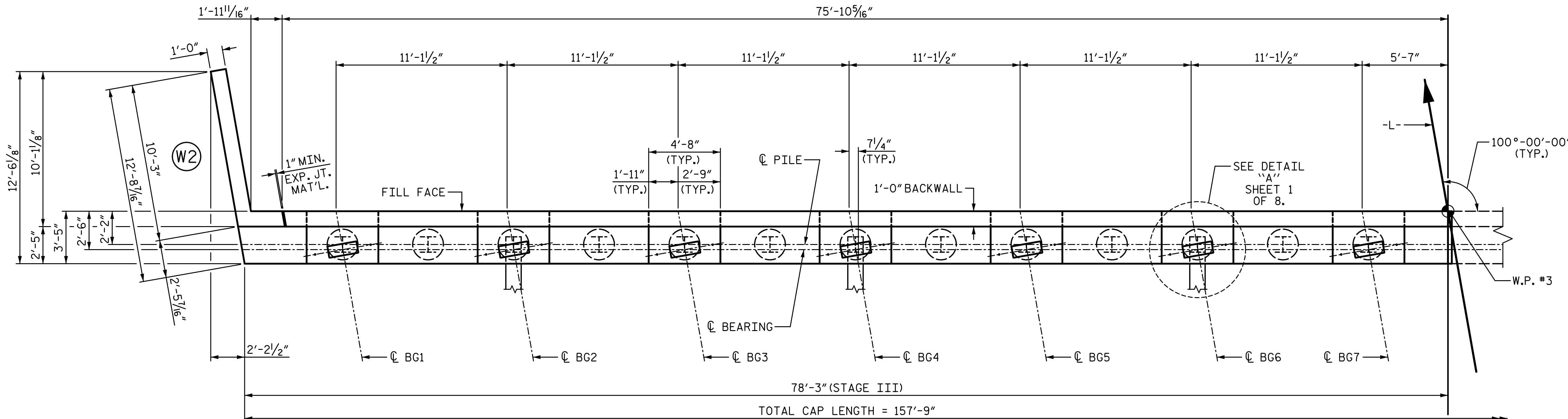


DRAWN BY: S.D. COOPER DATE: 3-22
 CHECKED BY: J.A. BATTS DATE: 3-22
 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE: 3-22

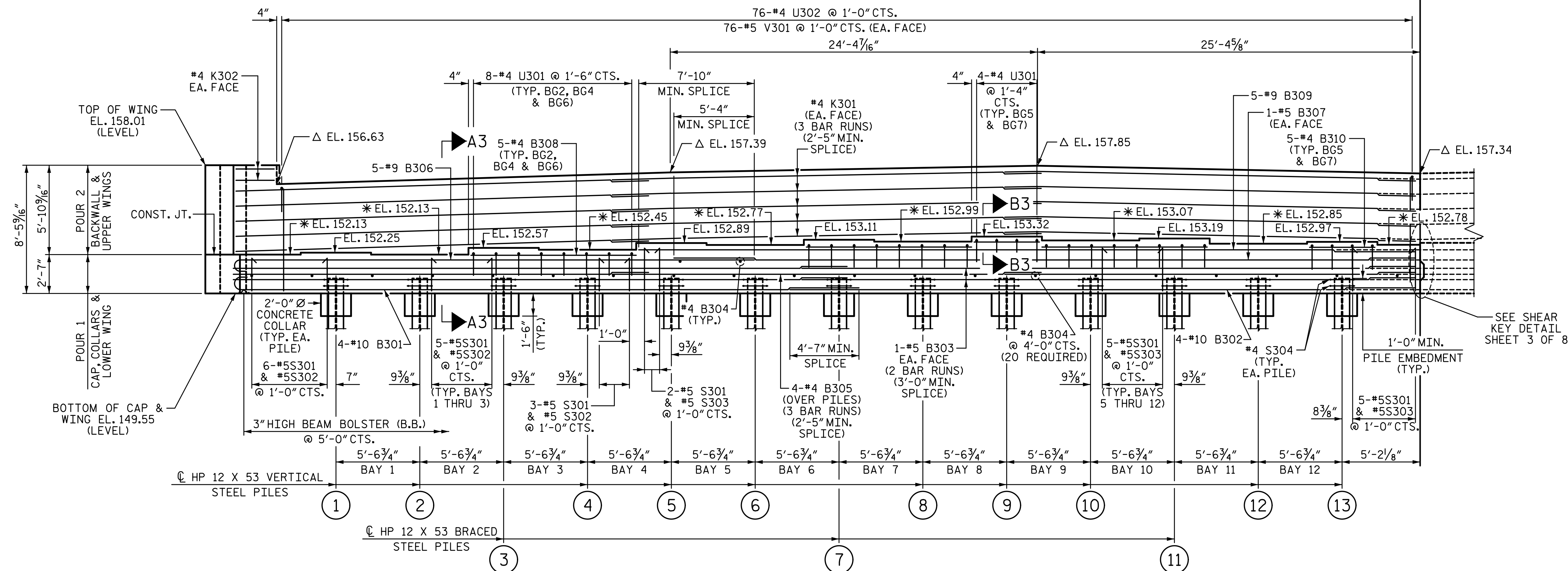
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2			4		
TOTAL SHEETS					69

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PLAN



ELEVATION

⊕ INDICATES PILE NUMBER

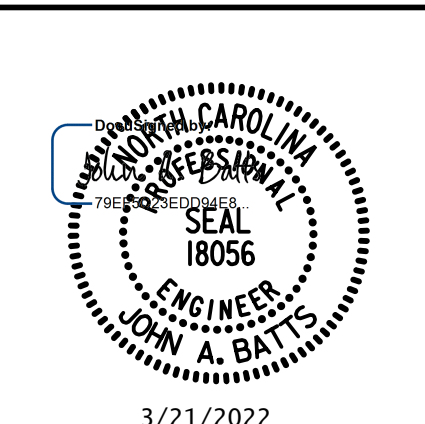
NOTES:

FOR ADDITIONAL NOTES, SEE SHEET 1 OF 8.
 FOR SECTION A3-A3 AND PART SECTION B3-B3, SEE SHEET 8 OF 8.
 * FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILD-UPS, SEE SECTION A3-A3 SHEET 8 OF 8.
 Δ BACKWALL ELEVATIONS ARE GIVEN AT FILL FACE.

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 6 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2
 STAGE III

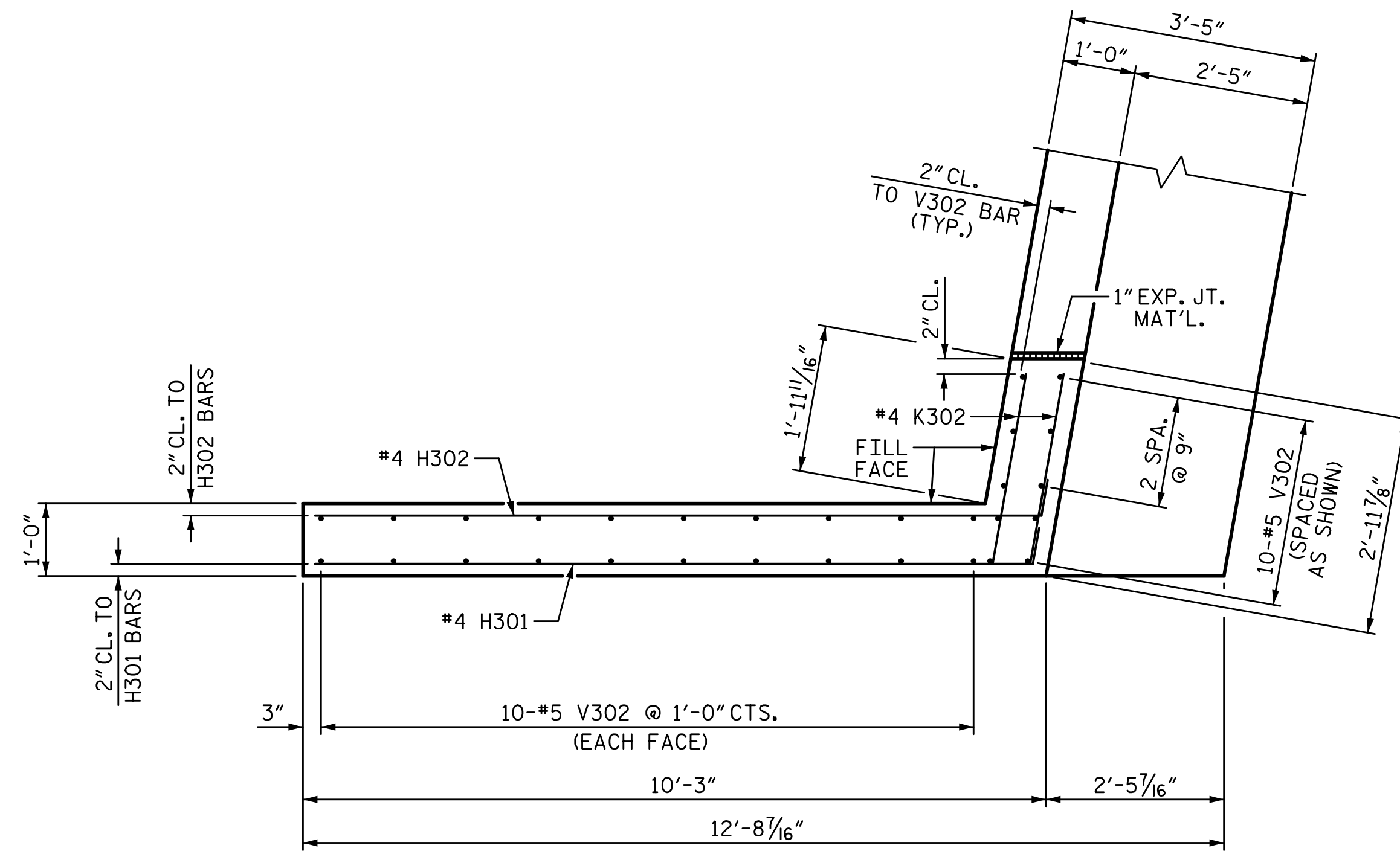


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 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE: 3-22

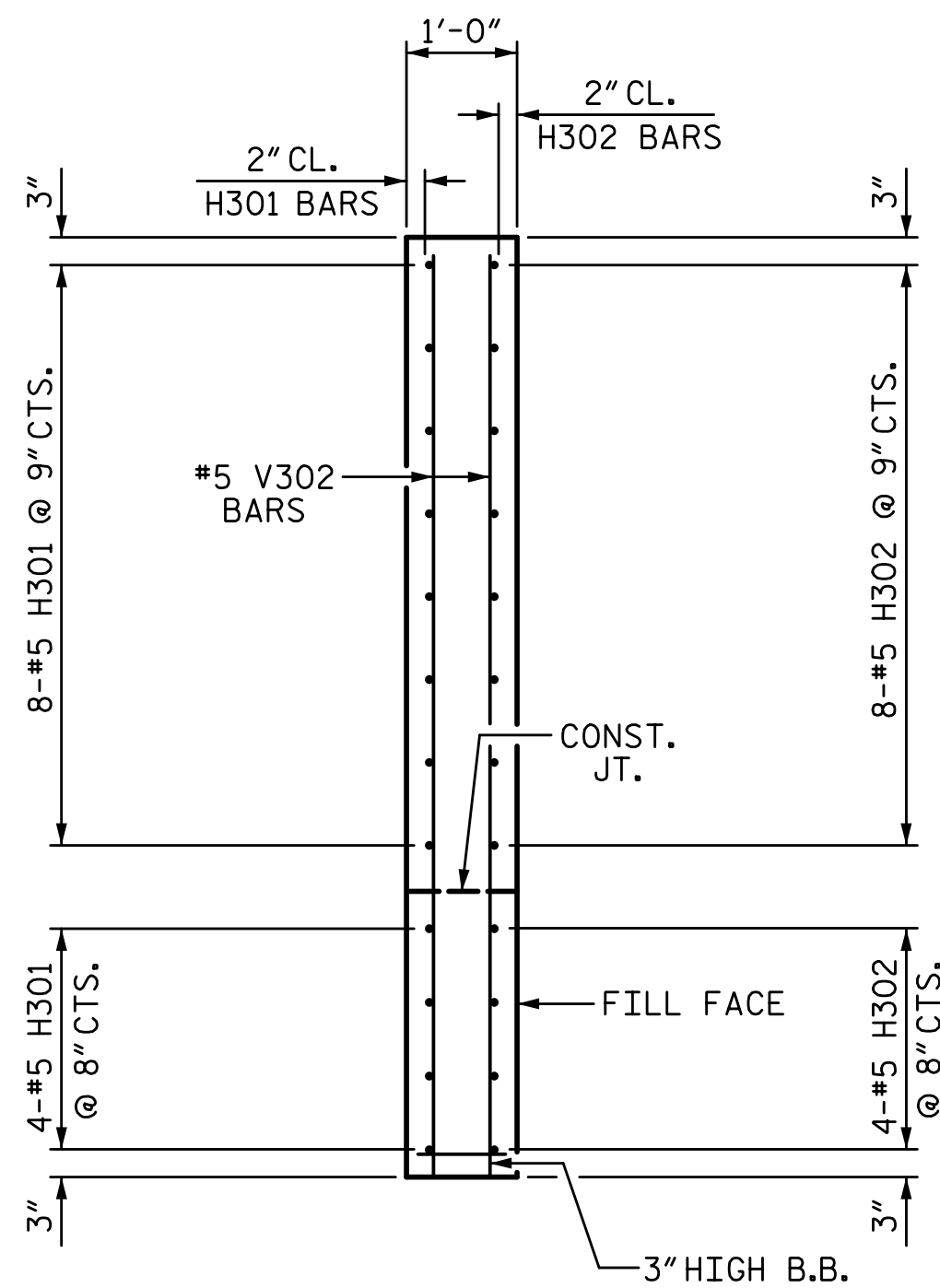
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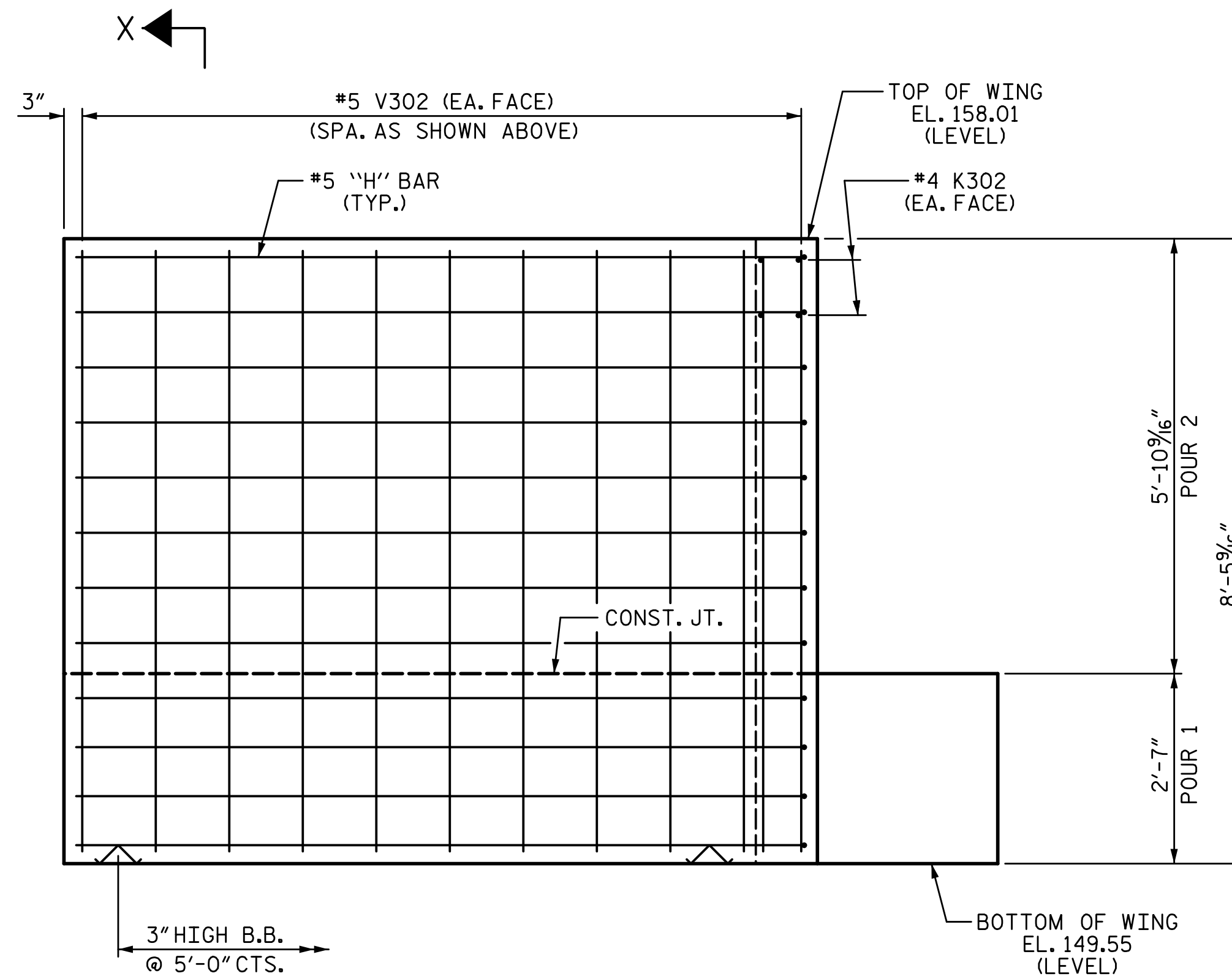
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PLAN OF WING (W2)



SECTION X-X



ELEVATION OF WING (W2)

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 7 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

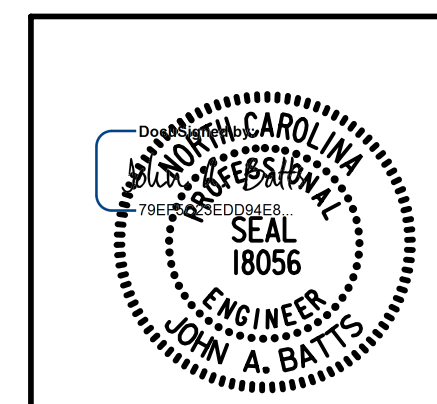
END BENT 2

STAGE III



5640 Dillard Drive, Suite 200
 Cary, NC 27518

LICENSURE NO. C-4434



3/21/2022

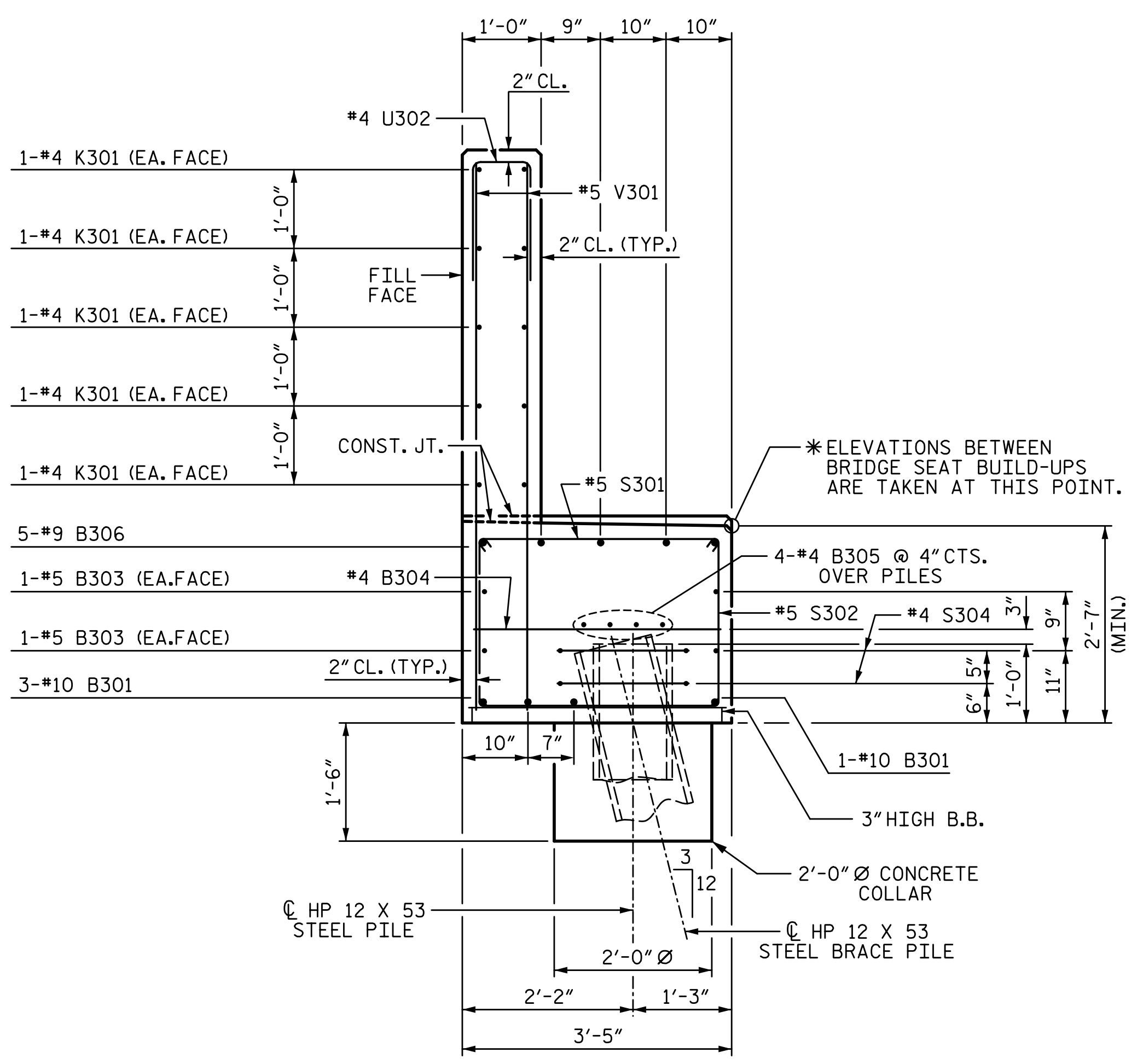
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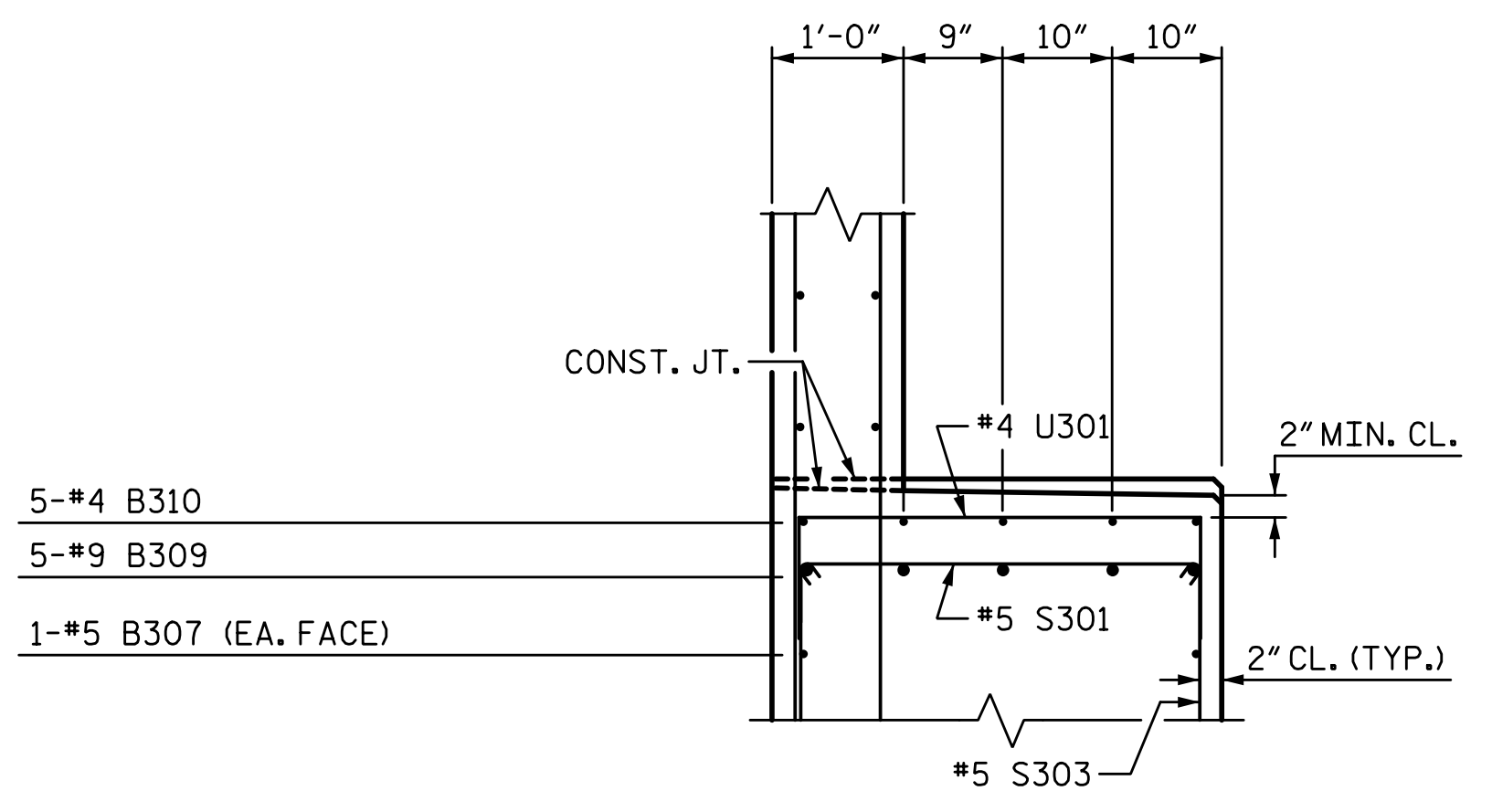
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CHECKED BY: <u>J.A. BATTS</u>	DATE: <u>3-22</u>
DESIGN ENGINEER OF RECORD: <u>J.A. BATTS</u>	DATE: <u>3-22</u>

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SECTION A3-A3



PART SECTION B3-B3

BAR TYPES

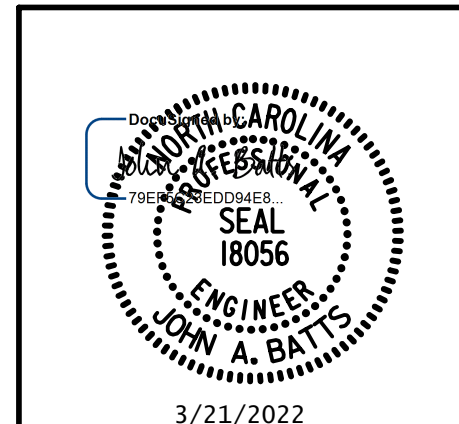
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

END BENT 2 - STAGE III

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B301	4	#10	1	43'-0"	740
B302	4	#10	STR	41'-7"	716
B303	8	#5	STR	40'-9"	340
B304	22	#4	STR	3'-1"	45
B305	12	#4	STR	27'-10"	223
B306	5	#9	1	36'-0"	612
B307	2	#5	STR	49'-3"	103
B308	15	#4	STR	10'-11"	109
B309	5	#9	STR	51'-8"	878
B310	10	#4	STR	4'-4"	29
H301	12	#5	2	10'-9"	135
H302	12	#5	2	10'-10"	136
K301	30	#4	STR	27'-10"	558
K302	4	#4	STR	2'-7"	7
S301	71	#5	3	4'-0"	296
S302	24	#5	4	8'-5"	211
S303	47	#5	4	9'-8"	474
S304	26	#4	5	6'-6"	113
U301	32	#4	6	6'-1"	130
U302	76	#4	6	3'-8"	186
V301	152	#5	STR	6'-9"	1070
V302	30	#5	STR	8'-1"	253
TOTAL REINFORCING STEEL					7364 LB
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP, COLLARS & LOWER WING)					35.1 CY
POUR 2 (BACKWALL & UPPER WINGS)					15.9 CY
TOTAL CLASS A CONCRETE					51.0 CY

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PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-
 SHEET 8 OF 8

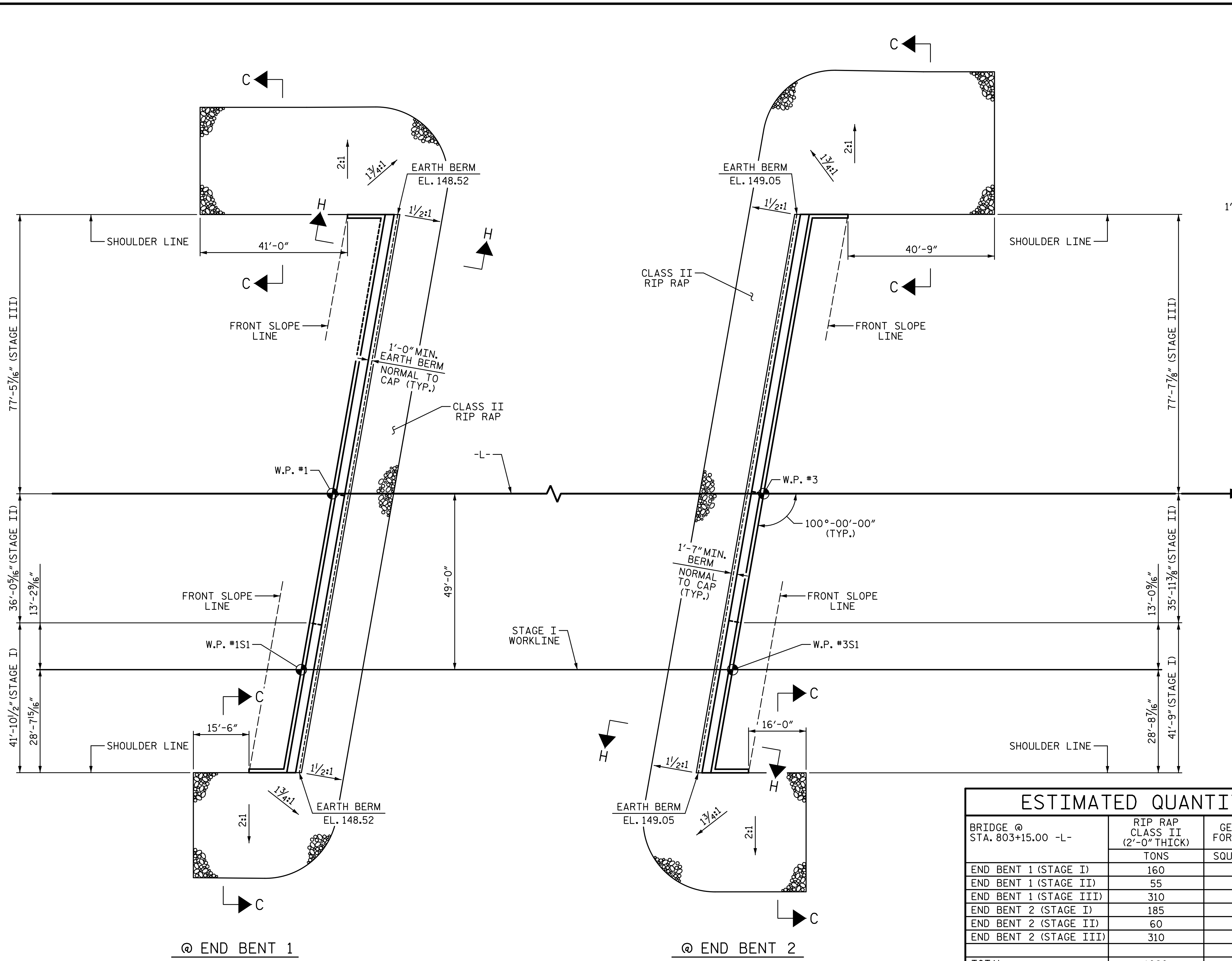
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 2
 STAGE III

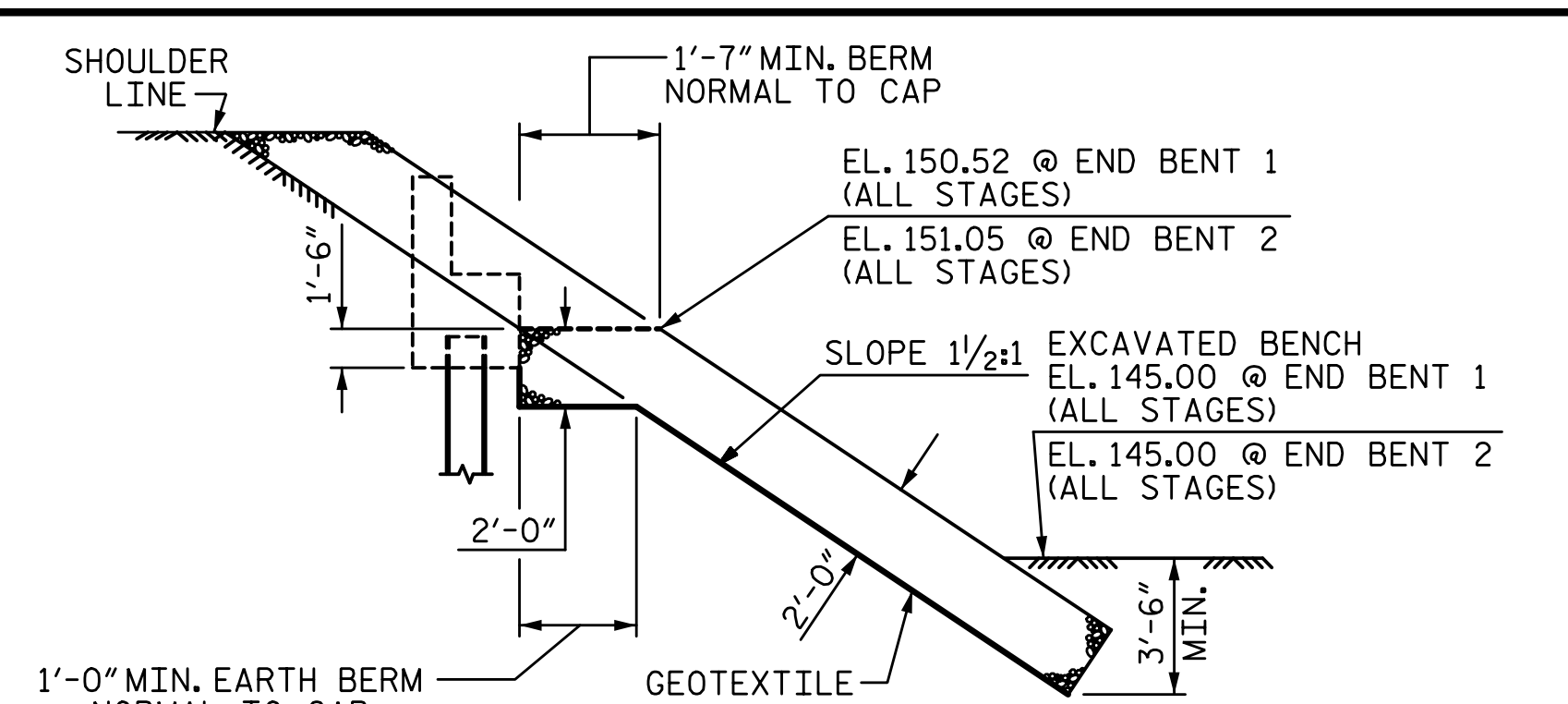
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NO.	BY:	DATE:	NO.	BY:	DATE:	S9-65
1			3			TOTAL SHEETS
2			4			69

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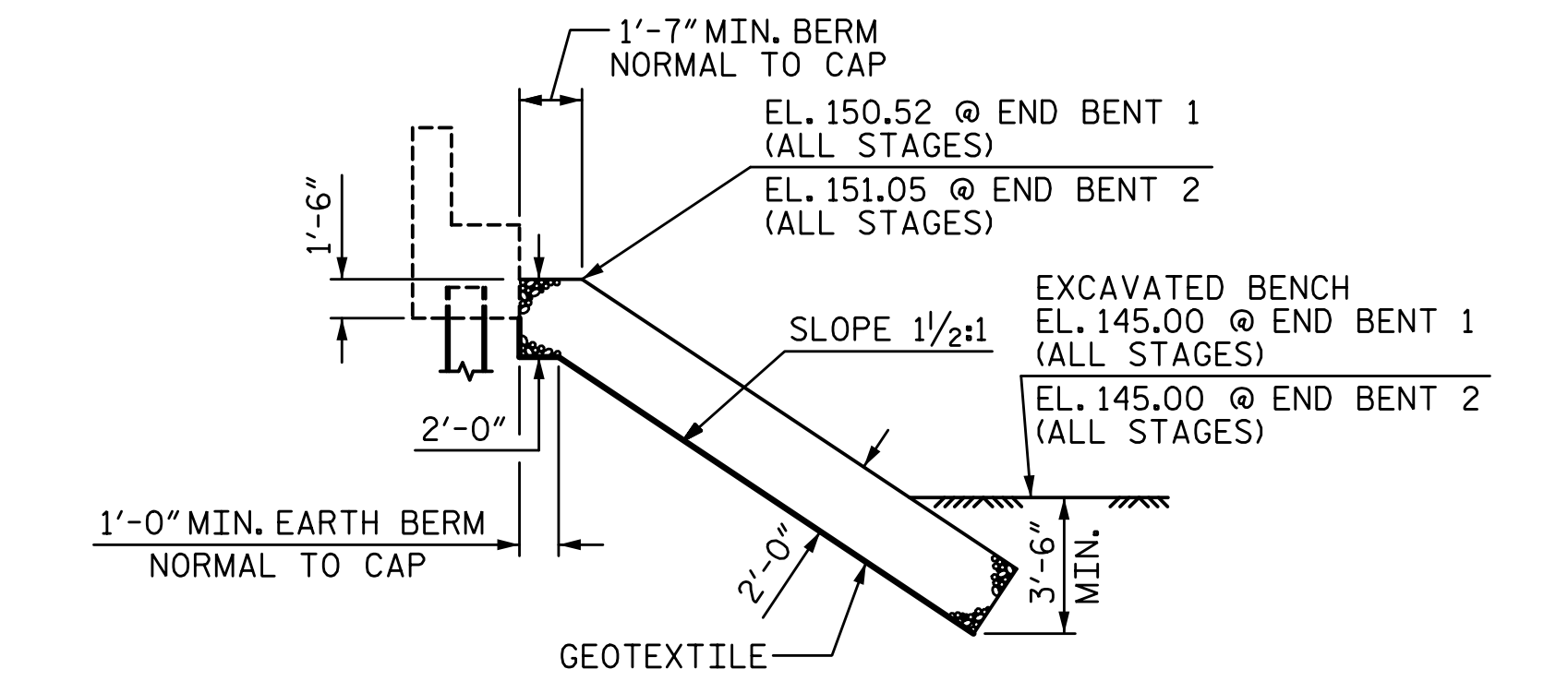
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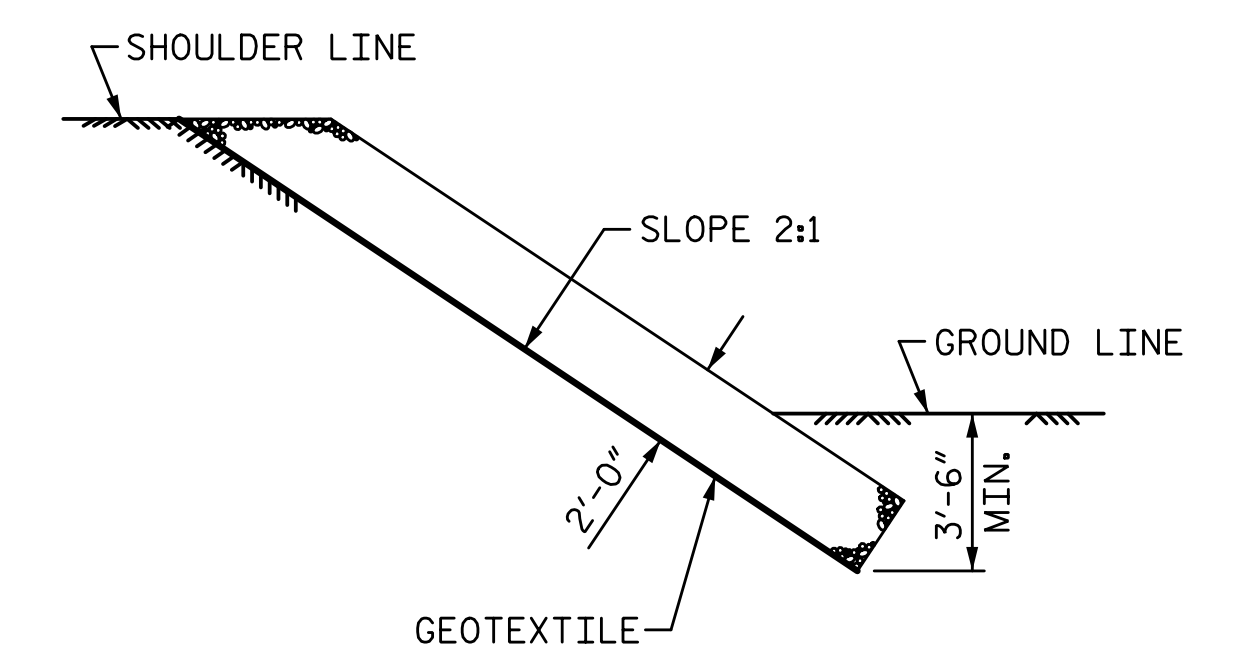
PLAN OF RIP RAP



SECTION H-H
END BENT 1 SHOWN, END BENT 2 SIMILAR



SECTION C-C
END BENT 1 SHOWN, END BENT 2 SIMILAR



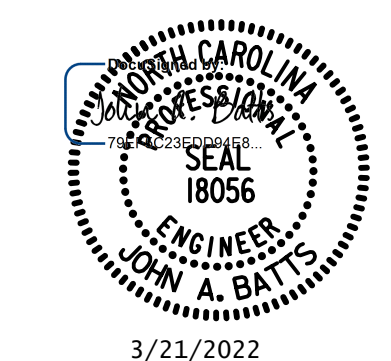
SECTION BERM RIP RAPPED

ESTIMATED QUANTITIES		
BRIDGE @ STA. 803+15.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1 (STAGE I)	160	180
END BENT 1 (STAGE II)	55	60
END BENT 1 (STAGE III)	310	345
END BENT 2 (STAGE I)	185	205
END BENT 2 (STAGE II)	60	65
END BENT 2 (STAGE III)	310	345
TOTAL	1080	1200

PROJECT NO. I-5987B
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 STATION: 803+15.00 -L-

STATE OF NORTH CAROLINA
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RIP RAP DETAILS

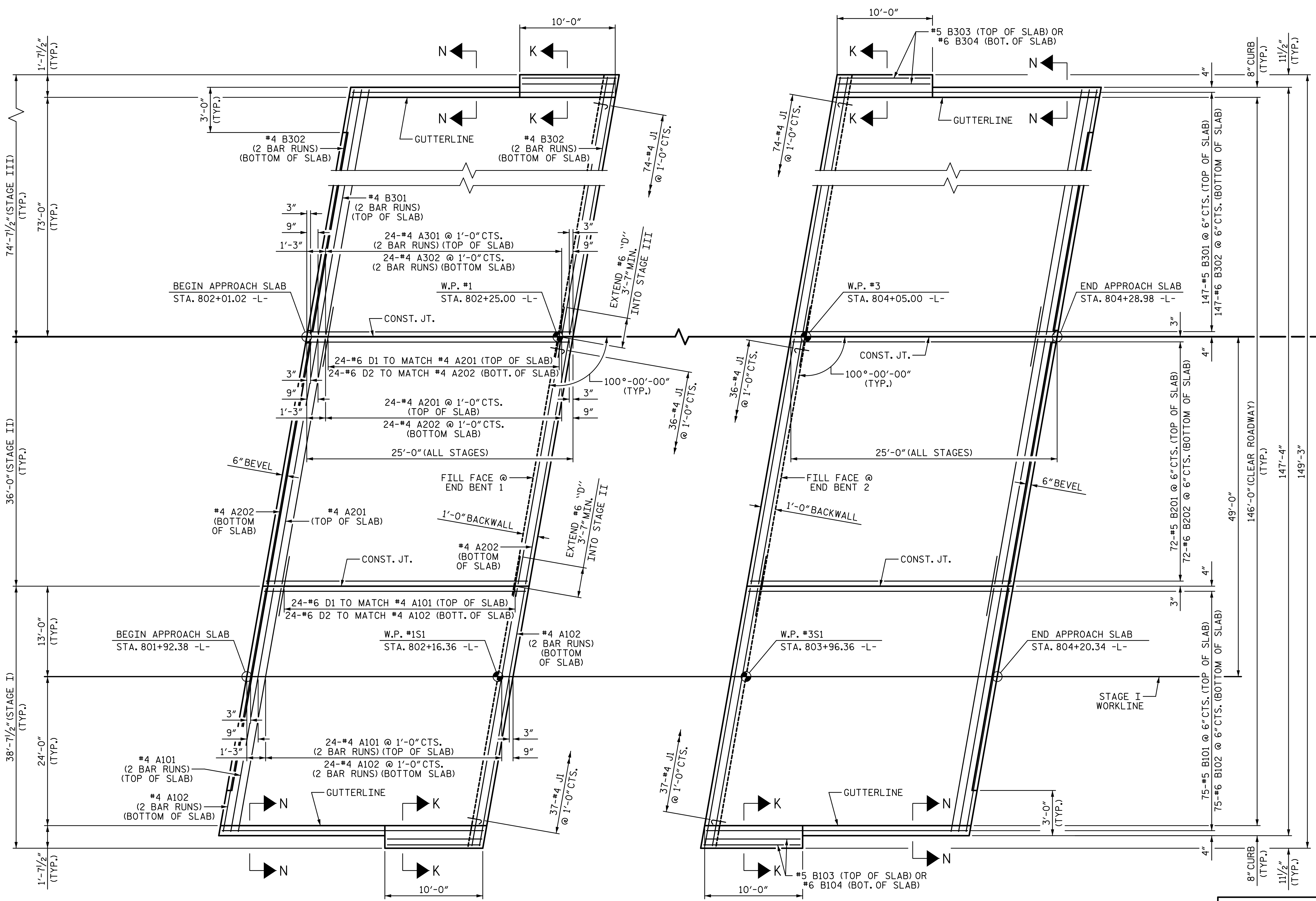


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PLAN AT END BENT 1

"A" BARS AND "D" BARS SIMILAR FOR APPROACH SLAB AT END BENT 2

PLAN AT END BENT 2

"B" BARS SIMILAR FOR APPROACH SLAB AT END BENT 1

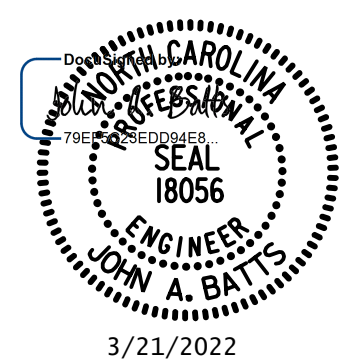
- NOTES:**
- FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.
 - GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.
 - SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.
 - SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.
 - FOR EACH STAGE, APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.
 - FOR THE 6" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.
 - AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.
 - FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
 - CONCRETE MEDIAN BARRIER ON APPROACH SLABS NOT SHOWN. SEE "CONCRETE MEDIAN BARRIER" SHEET FOR REINFORCING STEEL IN APPROACH SLAB AND MEDIAN BARRIER.

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB

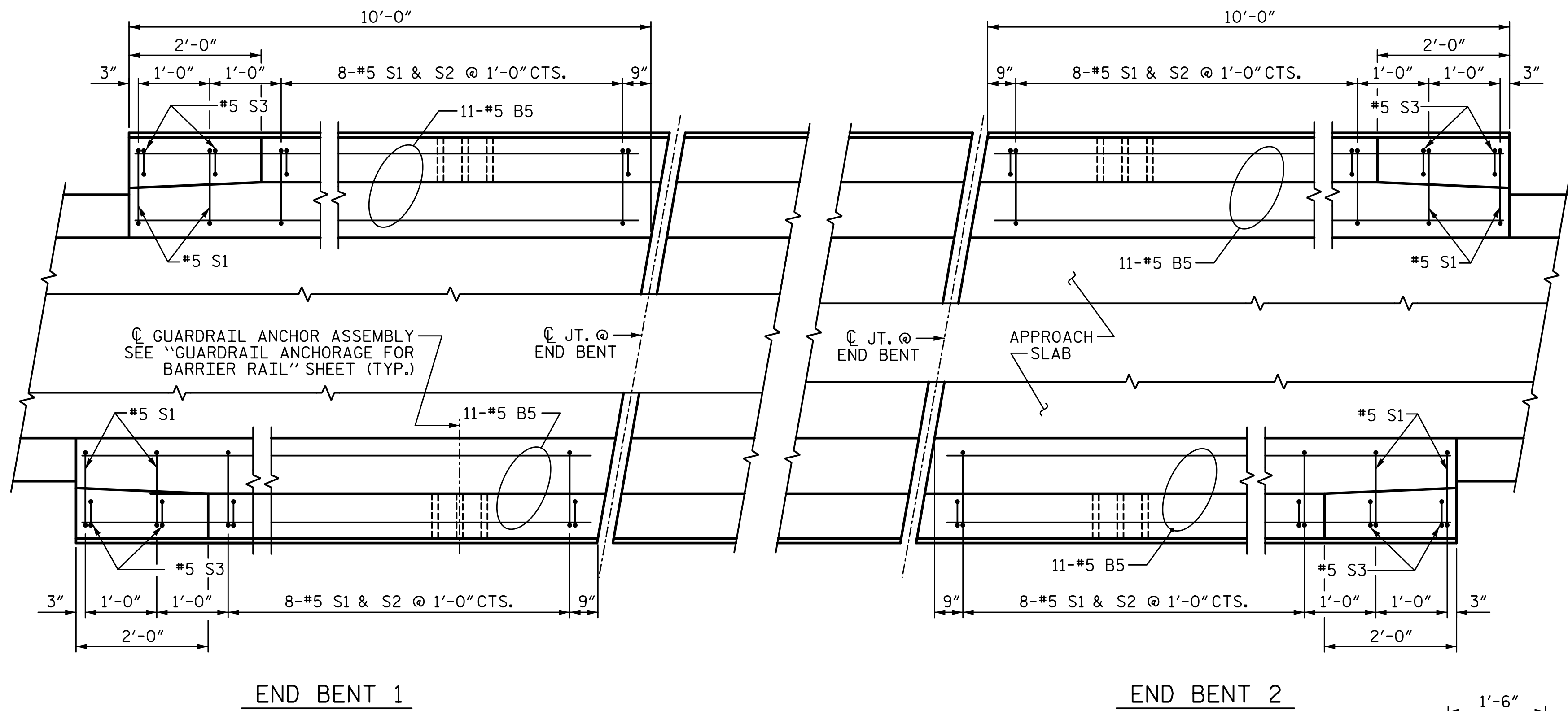


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2			4			69

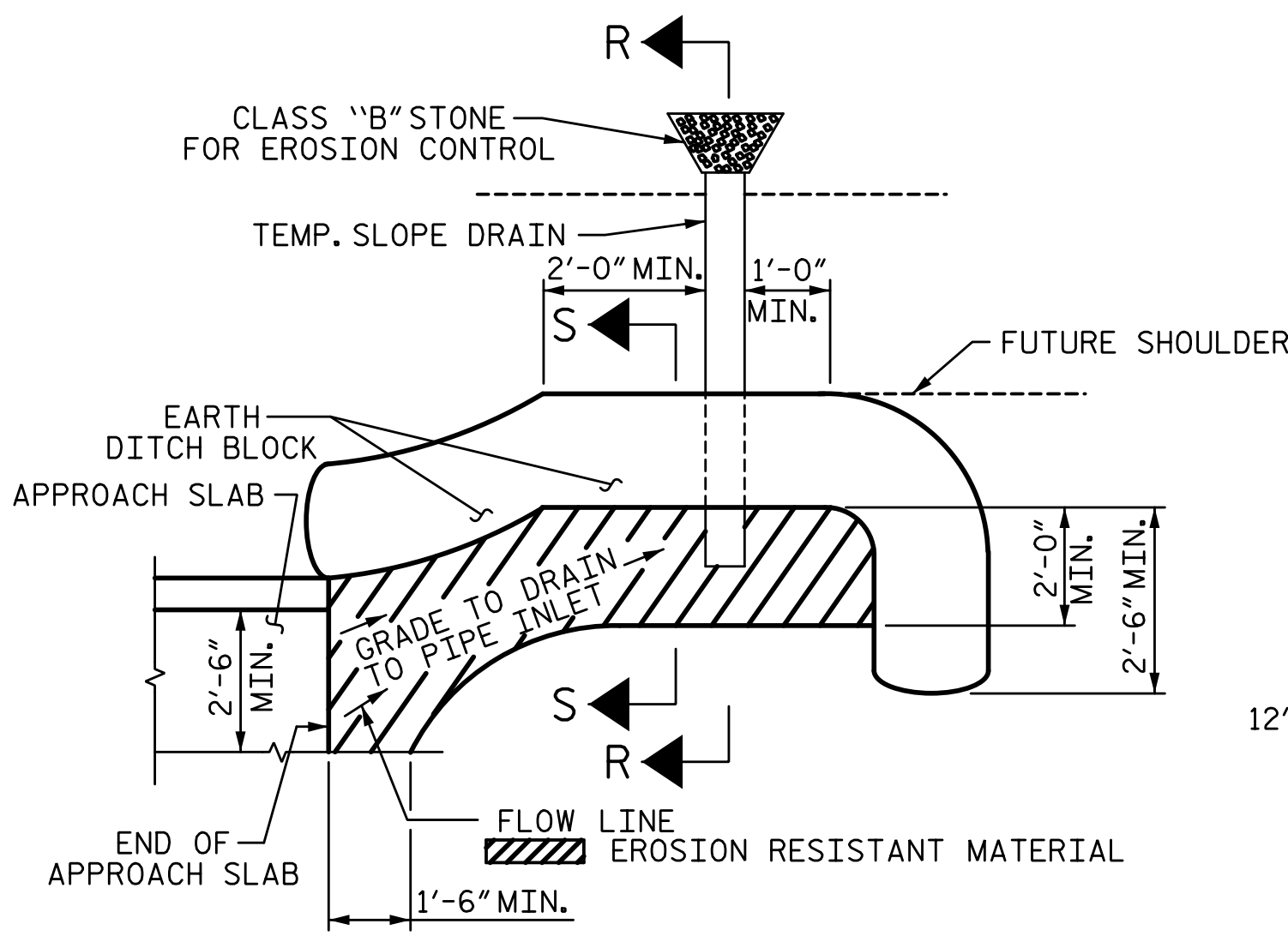
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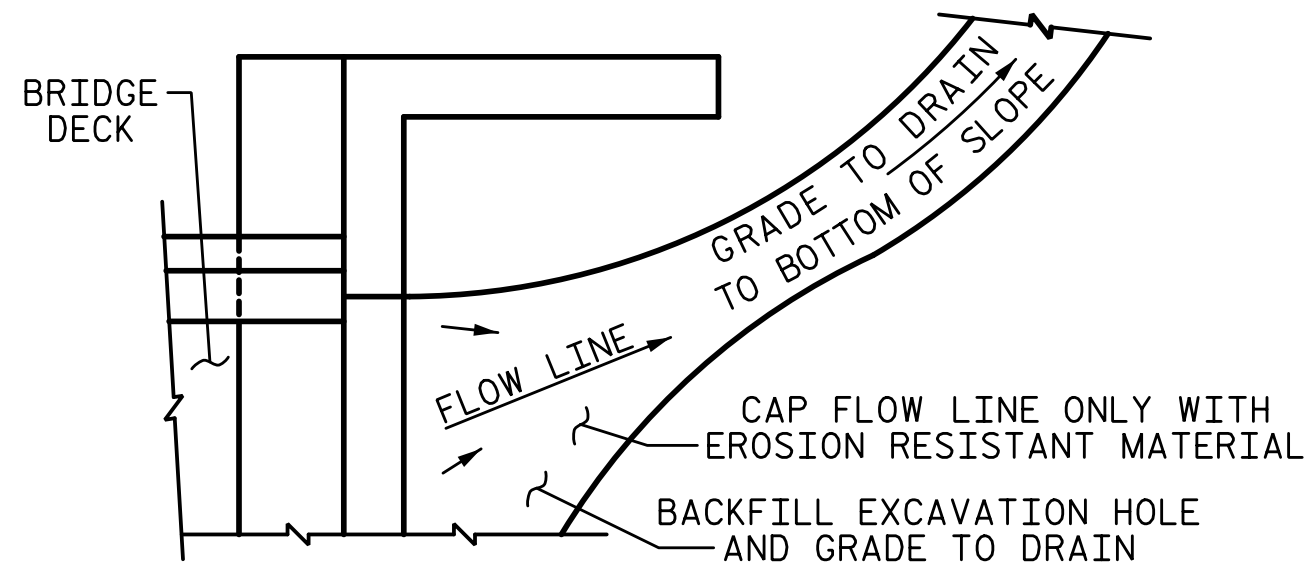
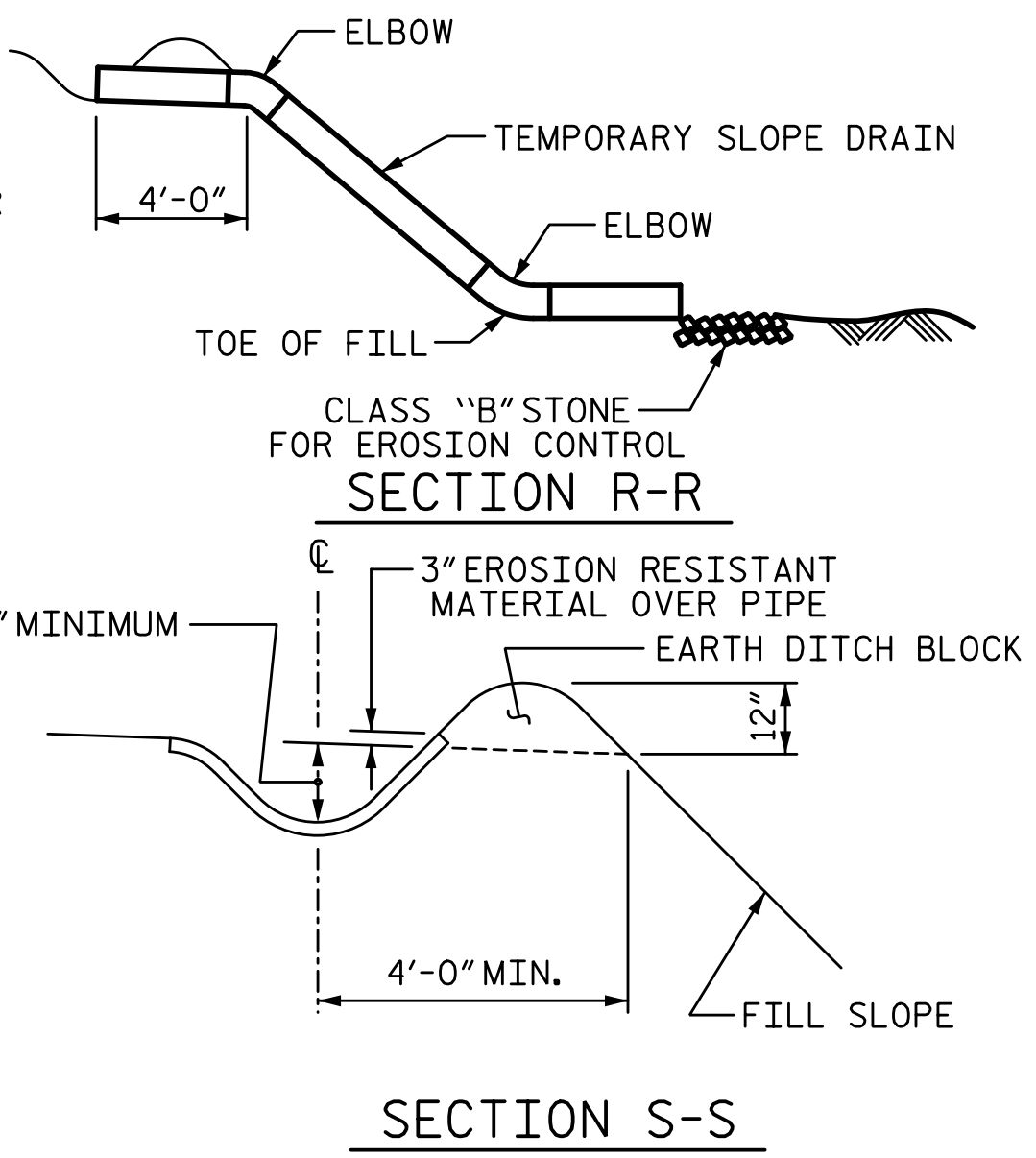


PLAN OF BARRIER RAIL



TEMPORARY BERM AND SLOPE DRAIN DETAILS
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

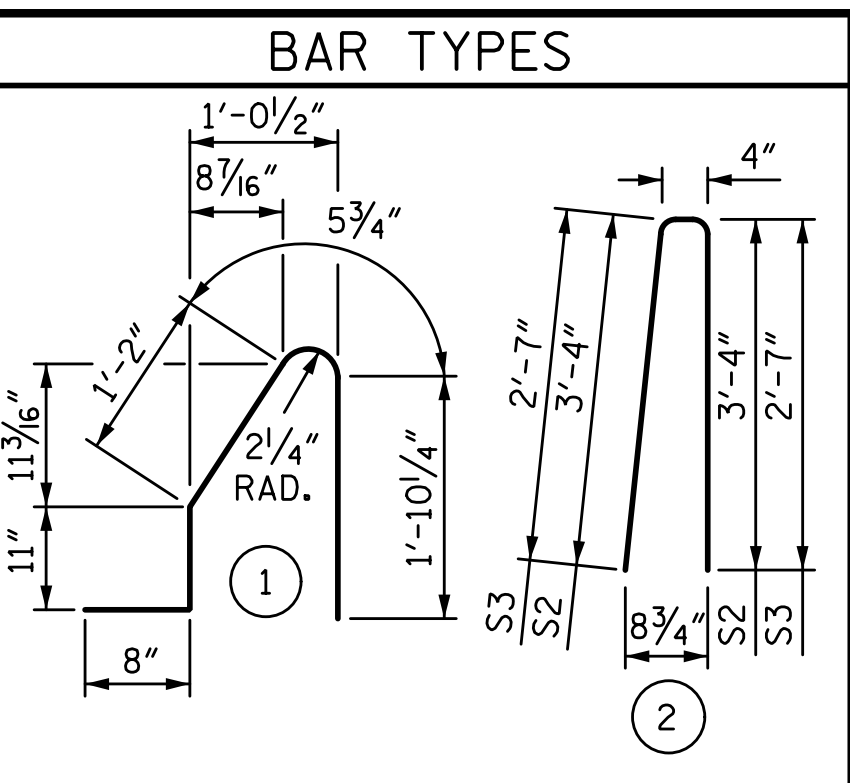
TEMPORARY DRAINAGE DETAIL

NOTES:

THE COST OF THE BARRIER RAIL ON THE APPROACH SLABS SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "CONCRETE BARRIER RAIL".

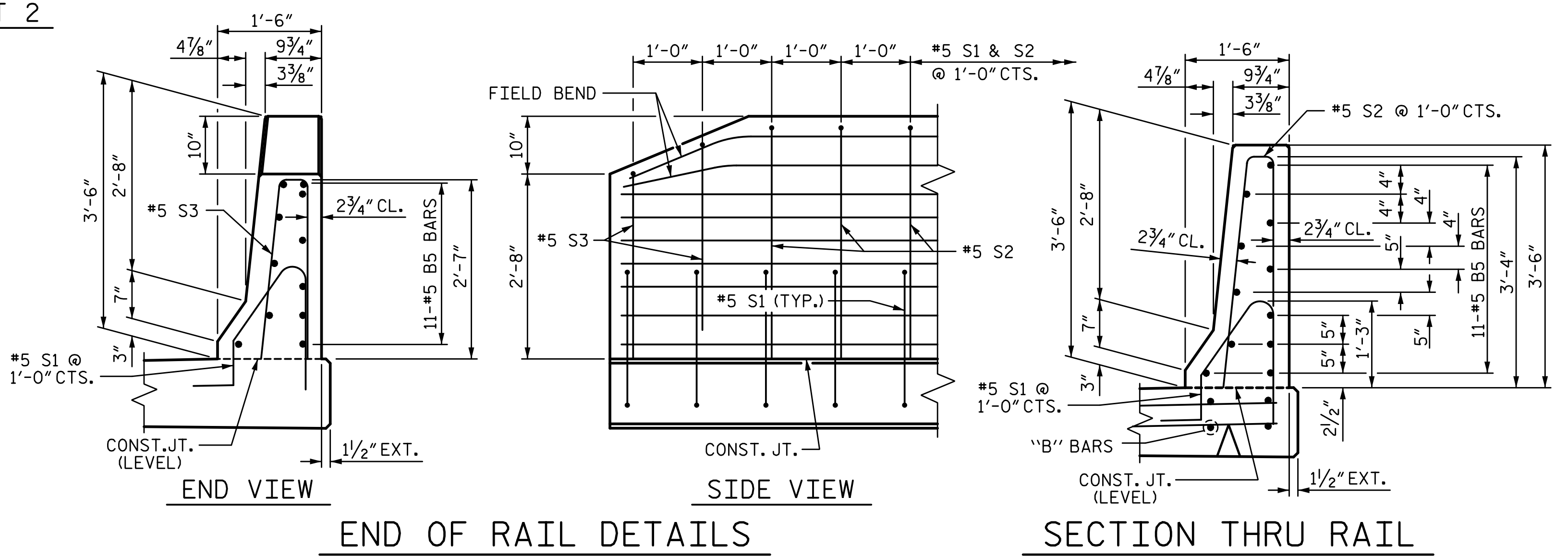
FOR STAGE I AND STAGE III, THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL					
BARRIER RAIL ONLY					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B5	44	#5	STR	9'-8"	444
*S1	40	#5	1	5'-1"	212
*S2	32	#5	2	7'-0"	234
*S3	8	#5	2	5'-6"	46
* EPOXY COATED REINFORCING STEEL					936 LB
CLASS AA CONCRETE					5.4 CY
CONCRETE BARRIER RAIL					41.06 LF



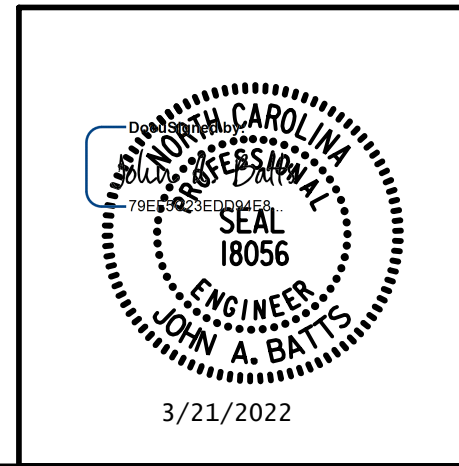
END OF RAIL DETAILS

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 803+15.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB

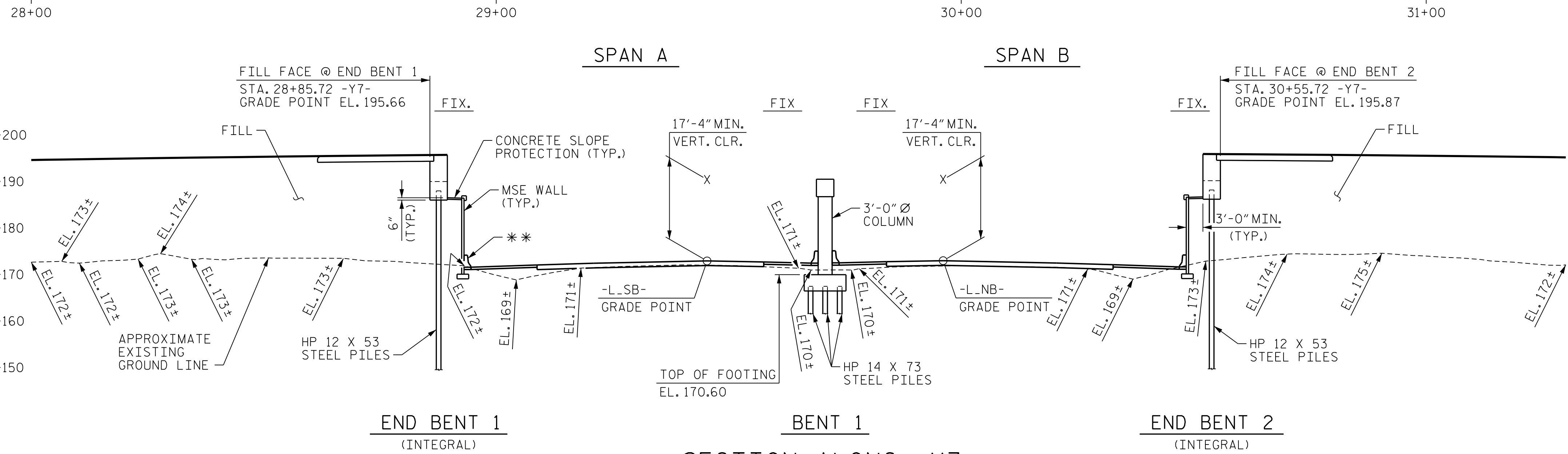


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SHEET NO. S9-69
 TOTAL SHEETS 69

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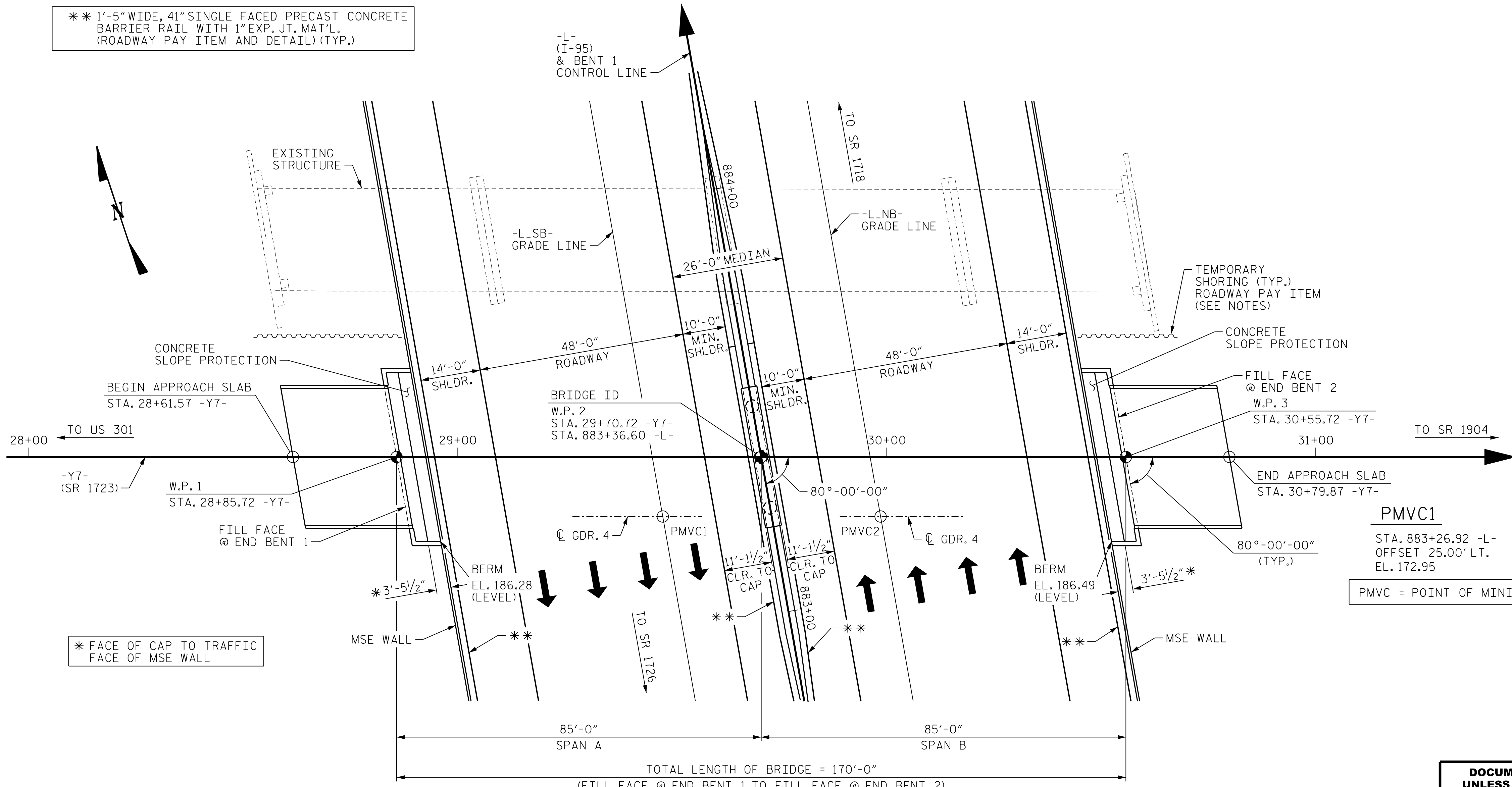
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 +4.0182% Δ -4.1962%
 PVI = 29+95.00 -Y7-
 EL. = 205.74
 V.C. = 940.00'

GRADE DATA -L_NB-
 +0.3012% Δ -0.3312%
 PVI = 879+10.00 -L-
 EL. = 174.33
 V.C. = 580.00'

GRADE DATA -L_SB-
 +0.3012% Δ -0.3312%
 PVI = 879+10.00 -L-
 EL. = 174.33
 V.C. = 580.00'

SECTION ALONG -Y7-
 (SECTION TAKEN AT RIGHT ANGLES TO END BENTS AND BENT)

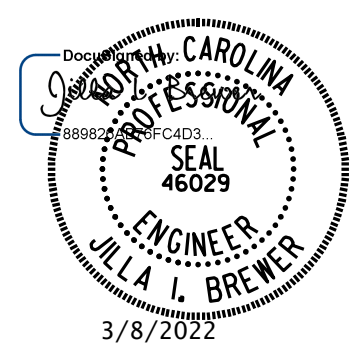
** 1'-5" WIDE, 41" SINGLE FACED PRECAST CONCRETE BARRIER RAIL WITH 1" EXP. JT. MAT'L. (ROADWAY PAY ITEM AND DETAIL) (TYP.)



PLAN
 (PILES AND FOOTINGS NOT SHOWN FOR CLARITY)

PMVC1	PMVC2
STA. 883+26.92 -L- OFFSET 25.00' LT. EL. 172.95	STA. 883+18.10 -L- OFFSET 25.00' RT. EL. 172.98
PMVC = POINT OF MINIMUM VERTICAL CLEARANCE	

PROJECT NO. **I-5987B**
ROBESON COUNTY
 STATION: **29+70.72 -Y7-**
883+36.60 -L-
 SHEET 1 OF 2 REPLACES BRIDGE NO. 770167



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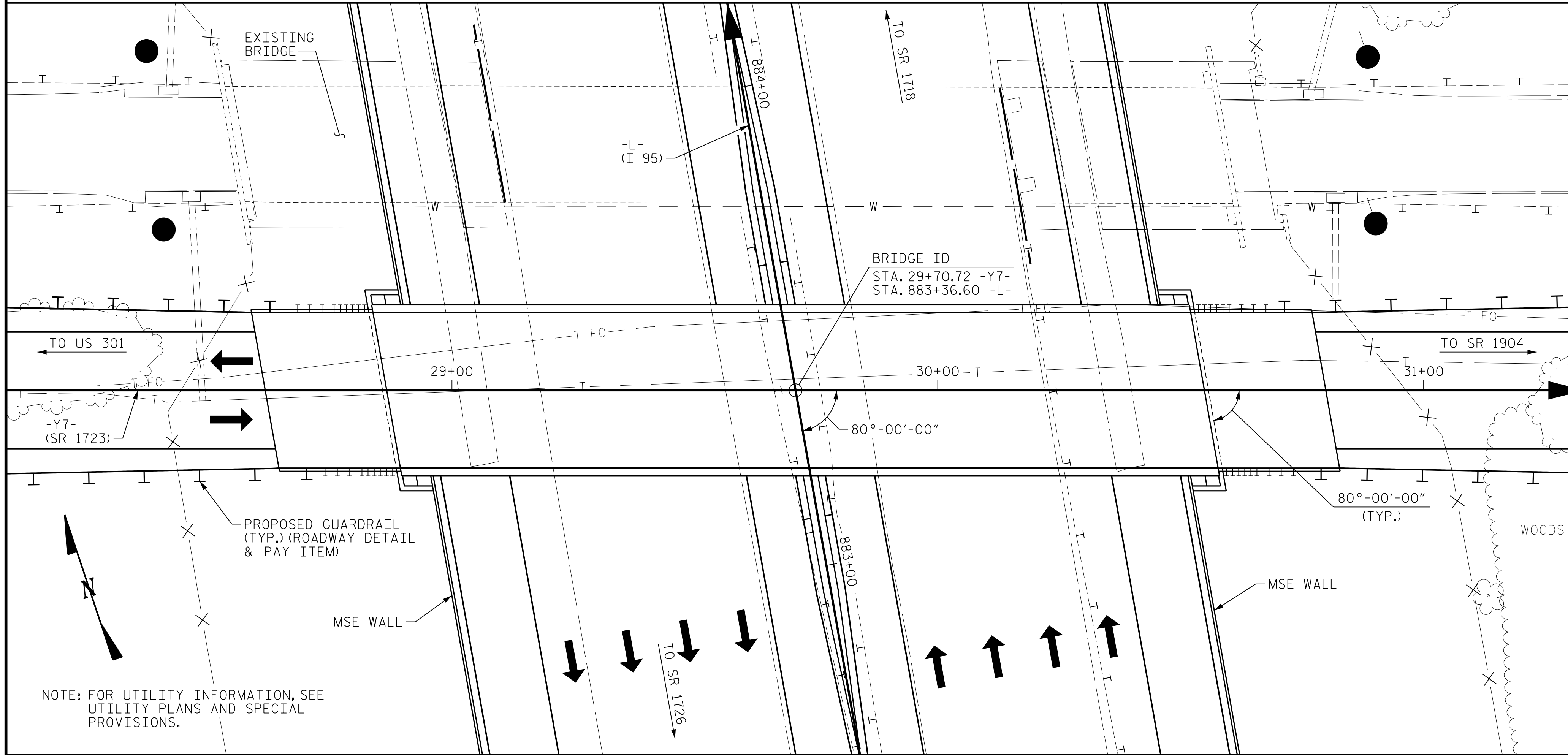
MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE ON SR 1723 (PARKTON TOBEMORY ROAD) OVER I-95 BETWEEN US 301 & SR 1904					
SHEET NO. S10-1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS 33					

DRAWN BY : B.E. LANNING	DATE : 06/2021
CHECKED BY : J.I. BREWER	DATE : 09/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

3/8/2022 10:37:30 AM User: blanning
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B.M. #60: TIE SPIKE SET IN 20" OAK; 129.02' RIGHT OF STA. 885+19.67 -L-, EL. 174.61



LOCATION SKETCH

NOTES:

- ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 2.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
- REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- ALL FALSEWORK AND FORMS SHALL REMAIN IN PLACE UNTIL THE ENTIRE UNIT IS CAST AND CURED. CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFICATIONS IN THE LINK SLAB REGION.
- FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.
- FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING STRUCTURE CONSISTING OF 4 SPANS (2 @ 52'-6" AND 2 @ 55'-0") REINFORCED CONCRETE DECK WITH CLEAR ROADWAY OF 24'-0" WIDE WITH CHAIN LINK FENCE; ON REINFORCED PRESTRESSED CONCRETE GIRDERS AND REINFORCED CONCRETE CORED SLAB UNITS; ON REINFORCED CONCRETE END BENTS AND BENTS AND LOCATED AT 50 FT. NORTH OF THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING THE CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR FOUNDATION NOTES, SEE "PILE FOUNDATION TABLES" SHEET.

THE ELEVATIONS AND CLEARANCES SHOWN ON THE PLANS AT THE POINTS OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATIONS ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

FOR MSE RETAINING WALLS, SEE GEOTECHNICAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STA. 29+70.72 -Y7-	ASBESTOS ASSESSMENT	FOUNDATION EXCAVATION FOR BENT 1	PDA TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL
	LUMP SUM	LUMP SUM	LUMP SUM	EACH	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.
SUPERSTRUCTURE	LUMP SUM				5,993	6,292				
END BENT 1							28.8	LUMP SUM	3,567	
BENT 1			LUMP SUM				55.4		10,184	1,723
END BENT 2							28.7	LUMP SUM	3,567	
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	1	5,993	6,292	112.9	LUMP SUM	17,318	1,723

TOTAL BILL OF MATERIAL

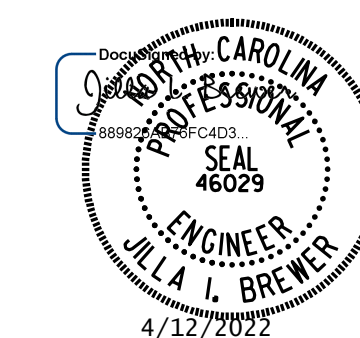
	54" PRESTRESSED CONCRETE GIRDERS	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES	HP 12 X 53 STEEL PILES	HP 14 X 73 STEEL PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	84" CHAIN LINK FENCE	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS
	LIN. FT.	EACH	EACH	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	NO.
SUPERSTRUCTURE	669.08						336.62		328.00	
END BENT 1		6		6	540.0				14	
BENT 1			15		15	1200.0				
END BENT 2		6		6	570.0				14	
TOTAL	669.08	12	15	12	1110.0	15	1200.0	14	336.62	328.00

PROJECT NO. I-5987B

ROBESON COUNTY

STATION: 29+70.72 -Y7-
883+36.60 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON SR 1723
(PARKTON TOBEMORY ROAD)
OVER I-95 BETWEEN
US 301 & SR 1904

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

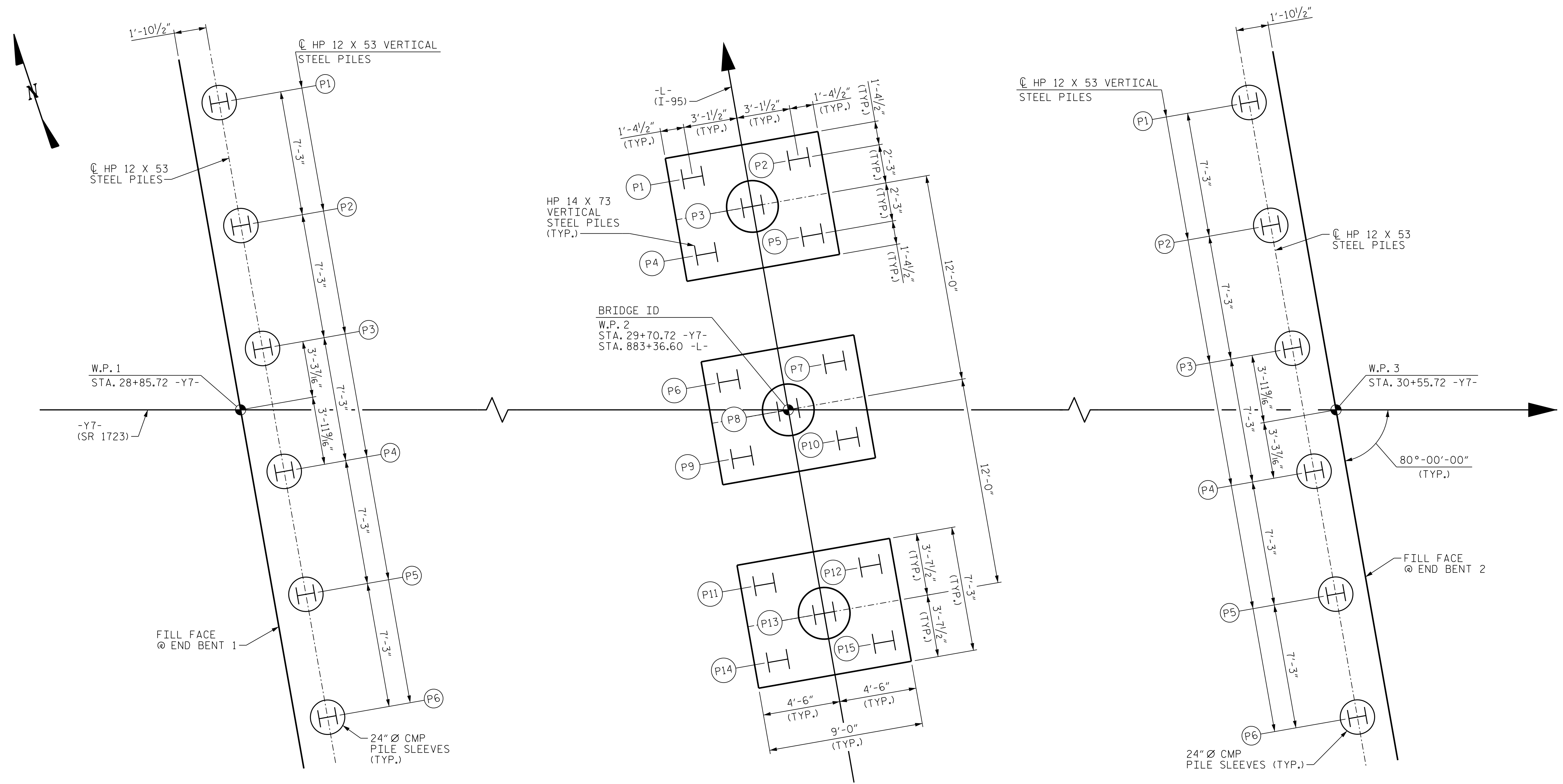
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-2 TOTAL SHEETS 33
2			4			

DRAWN BY: B.E. LANNING DATE: 07/2021
CHECKED BY: J.I. BREWER DATE: 11/2021
DESIGN ENGINEER OF RECORD: J.I. BREWER DATE: 03/2022

4/12/2022 3:31:38 PM User: blanning Filename: N:\NC Bridges\20003 I-5987A&B I-95\I5987B\Structures\410_003_I5987B_SMU_G002_T00167.dgn

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END BENT 1

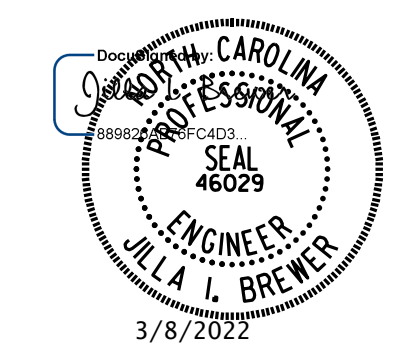
BENT 1

END BENT 2

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE AT THE BOTTOM OF CAP OR FOOTING.
 FOR FOUNDATION NOTES, SEE "PILE FOUNDATION TABLES" SHEET.

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
FOUNDATION LAYOUT

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

DRAWN BY : B.E. LANNING DATE : 07/2021
 CHECKED BY : J.I. BREWER DATE : 11/2021
 DESIGN ENGINEER OF RECORD : J.I. BREWER DATE : 03/2022

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

REVISIONS						SHEET NO. 10-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 33
2			4			

SUMMARY OF PILE INFORMATION/ INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) ## (e.g., "Bent 1, Piles 1-5")	Factored Resistance per Pile TONS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles*			Drilled-In Piles		
					Min Pile Tip (Tip No Higher Than) Elev FT	Required Driving Resistance (RDR)** per Pile TONS	Total Pile Redrives Quantity EACH	Predrilling Length per Pile Lin FT	Predrilling Elevation (Elev Not To Predrill Below) FT	Maximum Predrilling Dia INCHES	Pile Excavation (Bottom of Hole) Elev FT	Pile Exc Not In Soil per Pile Lin FT	Pile Exc In Soil per Pile Lin FT
End Bent No. 1, Piles 1-6	115	187.78	90		195								
End Bent No. 2, Piles 1-6	115	187.99	95		195								
Bent No. 1, Piles 1-15	150	168.60	80		250	14							

*Predrilling for Piles is required for end bents/bents with a predrilling length and at the Contractor's option for end bents/bents with predrilling information but no predrilling length.

$$**RDR = \frac{\text{Factored Resistance} + \text{Factored Downdrag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \frac{\text{Nominal Downdrag Resistance} + \text{Nominal Scour Resistance}}{\text{Scour Resistance Factor}}$$

SUMMARY OF PDA/ PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Pile Driving Analyzer (PDA)				Pile Order Lengths	
End Bent/ Bent No	PDA Testing Required? YES or MAYBE	PDA Test Pile Length FT	Total PDA Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or PDA
End Bent No. 1	MAYBE	95			
End Bent No. 2	MAYBE	100	1		
Bent No. 1	MAYBE	85			

*EST = Pile order lengths from estimated pile lengths; PDA = Pile order lengths based on PDA testing. For groups of end bents/bents with pile order lengths based on PDA testing, the first end bent/bent no. listed for each group is the representative end bent/bent with the PDA.

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

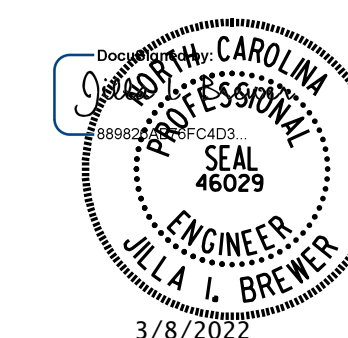
End Bent/ Bent No, Pile(s) ## (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile TONS	Factored Downdrag Load per Pile TONS	Factored Dead Load* per Pile TONS	Dynamic Resistance Factor	Nominal Downdrag Resistance per Pile TONS	Nominal Scour Resistance per Pile TONS	Scour Resistance Factor (Default = 1.00)
End Bent No. 1, Piles 1-6	113			0.60			
End Bent No. 2, Piles 1-6	113			0.60			
Bent No. 1, Piles 1-15	146			0.60			

*Factored Dead Load is factored weight of pile above the ground line.

NOTES:

1. THE PILE FOUNDATION TABLES ARE BASED ON THE BRIDGE SUBSTRUCTURE DESIGN AND FOUNDATION RECOMMENDATIONS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER (STEPHEN C. CROCKETT, 048207) ON 12/06/21.
2. TOTAL PILE DRIVING EQUIPMENT SETUP QUANTITY (NOT SHOWN IN PILE FOUNDATION TABLES) EQUALS THE NUMBER OF DRIVEN PILES, I.E., THE NUMBER OF PILES WITH A REQUIRED DRIVING RESISTANCE.
3. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING WHEN PDAs MAY BE REQUIRED.
4. FOR PILES, SEE PILES PROVISION AND SECTION 450 OF THE STANDARD SPECIFICATIONS.
5. SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS FOR THE SETTLEMENT GAUGES REQUIRED AT END BENTS 1 AND 2.
6. INSTALL PILE SLEEVES BEFORE CONSTRUCTING THE MECHANICALLY STABILIZED EARTH (MSE) ABUTMENT WALL AT END BENTS 1 AND 2. OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTING THE MSE ABUTMENT WALL AND THE REINFORCED BRIDGE APPROACH FILL TO WITHIN 1 FT. OF THE FINAL GRADE ELEVATION. THEN, INSTALL PILES THROUGH THE CORRUGATED STEEL PIPES AND FILL PILES WITH LOOSE UNCOMPACTED SAND BEFORE CONSTRUCTING END BENT CAPS. FOR PILE SLEEVES, SEE MSE RETAINING WALL PLANS AND PROVISION. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
7. FOR REINFORCED BRIDGE APPROACH FILL, SEE APPROACH FILL FOR INTEGRAL ABUTMENT AT MSE WALLS (SPECIAL) PROVISION.

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-



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

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PILE FOUNDATION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-4 TOTAL SHEETS 33
2			4			

DRAWN BY : B.E. LANNING DATE : 09/2021
 CHECKED BY : J.I. BREWER DATE : 12/2021
 DESIGN ENGINEER OF RECORD : J.I. BREWER DATE : 03/2022

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LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS (γ _{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ _{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.49	--	1.75	0.827	1.58	A	E	41.1	0.939	1.72	A	I	16.4	0.80	0.827	1.49	A	E	41.1		
	HL-93 (OPERATING)	N/A		2.05	--	1.35	0.827	2.05	A	E	41.1	0.939	2.27	A	I	16.4	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.00	2	2.00	72.00	1.75	0.827	2.13	A	E	41.1	0.939	2.20	A	I	16.4	0.80	0.827	2.00	A	E	41.1		
	HS-20 (OPERATING)	36.00		2.76	99.36	1.35	0.827	2.76	A	E	41.1	0.939	2.89	A	I	16.4	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.50		4.65	62.78	1.40	0.827	6.18	A	E	41.1	0.939	6.83	A	I	16.4	0.80	0.827	4.65	A	E	41.1	
		SNGARBS2	20.00		3.41	68.20	1.40	0.827	4.52	A	E	41.1	0.939	4.81	A	I	16.4	0.80	0.827	3.41	A	E	41.1	
		SNAGRIS2	22.00		3.19	70.18	1.40	0.827	4.24	A	E	41.1	0.939	4.45	A	I	16.4	0.80	0.827	3.19	A	E	41.1	
		SNCOTTS3	27.25		2.30	62.68	1.40	0.827	3.05	A	E	41.1	0.939	3.34	A	I	16.4	0.80	0.827	2.30	A	E	41.1	
		SNAGGRS4	34.93		1.90	66.36	1.40	0.827	2.53	A	E	41.1	0.939	2.72	A	I	16.4	0.80	0.827	1.90	A	E	41.1	
		SNS5A	35.55		1.86	66.12	1.40	0.827	2.47	A	E	41.1	0.939	2.78	A	I	16.4	0.80	0.827	1.86	A	E	41.1	
		SNS6A	39.95		1.70	67.92	1.40	0.827	2.25	A	E	41.1	0.939	2.52	A	I	16.4	0.80	0.827	1.70	A	E	41.1	
	SNS7B	42.00		1.62	68.04	1.40	0.827	2.15	A	E	41.1	0.939	2.47	A	I	16.4	0.80	0.827	1.62	A	E	41.1		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.00		2.07	68.31	1.40	0.827	2.75	A	E	41.1	0.939	3.03	A	I	16.4	0.80	0.827	2.07	A	E	41.1	
		TNT4A	33.08		2.08	68.80	1.40	0.827	2.76	A	E	41.1	0.939	2.95	A	I	16.4	0.80	0.827	2.08	A	E	41.1	
		TNT6A	41.60		1.69	70.30	1.40	0.827	2.25	A	E	41.1	0.939	2.62	A	I	16.4	0.80	0.827	1.69	A	E	41.1	
		TNT7A	42.00		1.69	70.98	1.40	0.827	2.25	A	E	41.1	0.939	2.56	A	I	16.4	0.80	0.827	1.69	A	E	41.1	
		TNT7B	42.00		1.74	73.08	1.40	0.827	2.31	A	E	41.1	0.939	2.41	A	I	16.4	0.80	0.827	1.74	A	E	41.1	
		TNAGRIT4	43.00		1.67	71.81	1.40	0.827	2.21	A	E	41.1	0.939	2.33	A	I	16.4	0.80	0.827	1.67	A	E	41.1	
TNAGRT5A		45.00		1.58	71.10	1.40	0.827	2.09	A	E	41.1	0.939	2.31	A	I	16.4	0.80	0.827	1.58	A	E	41.1		
TNAGRT5B	45.00		3	1.56	70.20	1.40	0.827	2.07	A	E	41.1	0.939	2.19	A	I	16.4	0.80	0.827	1.56	A	E	41.1		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ _{DC}	γ _{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

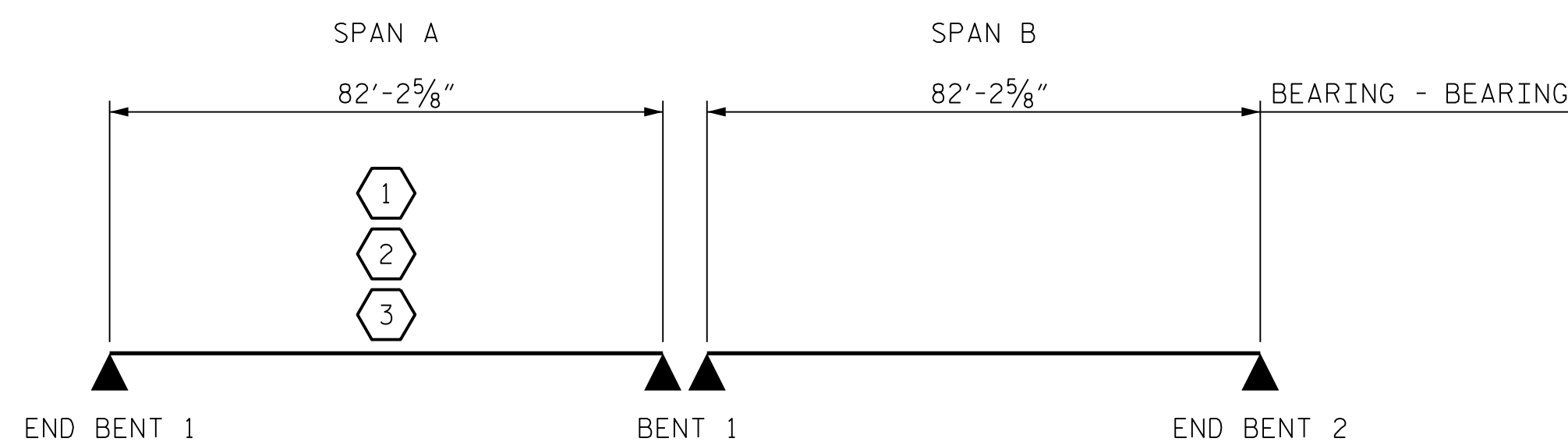
NOTES:

- MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
- ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.
- DISTANCE FROM LEFT END OF SPAN IS MEASURED FROM C BEARING.

COMMENTS:

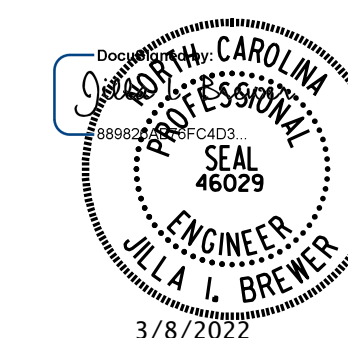
- BARRIER LOADS DISTRIBUTED ACCORDING TO NCDOT DESIGN MANUAL SECTION 2.1.2.1.
- THE GIRDERS ARE ASSUMED TO BE SIMPLY SUPPORTED. FIXITY AT INTEGRAL END BENTS IS NOT CONSIDERED.
- SPANS ARE EQUAL. RATINGS FOR SPAN B ARE SIMILAR TO SPAN A.

#	CONTROLLING LOAD RATING
1	DESIGN LOAD RATING (HL-93)
2	DESIGN LOAD RATING (HS-20)
3	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	
GIRDER LOCATION	
I - INTERIOR GIRDER E - EXTERIOR GIRDER	



LRFR SUMMARY

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-



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

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (NON-INTERSTATE TRAFFIC)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S10-5					TOTAL SHEETS 33

ASSEMBLED BY: D.R. BROWN	DATE: 03/2021
CHECKED BY: J.I. BREWER	DATE: 03/2021
DESIGN ENGINEER OF RECORD: J.I. BREWER	DATE: 12/2021
DRAWN BY: MAA 1/08	REV. 11/2/08RR MAA/GM
CHECKED BY: GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

NOTES:

PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) AT 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

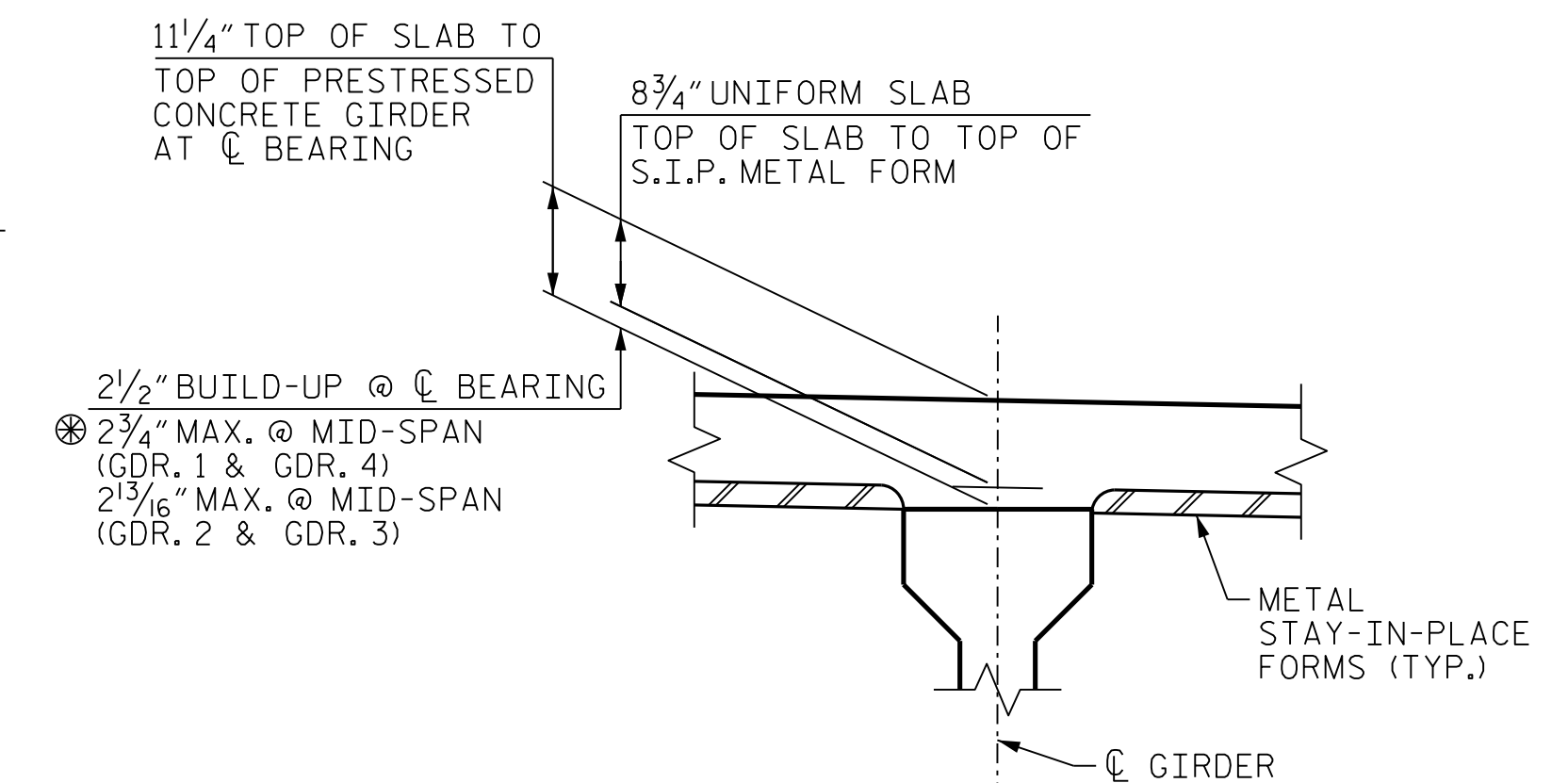
PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

CONCRETE BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL UNLESS OTHERWISE NOTED.

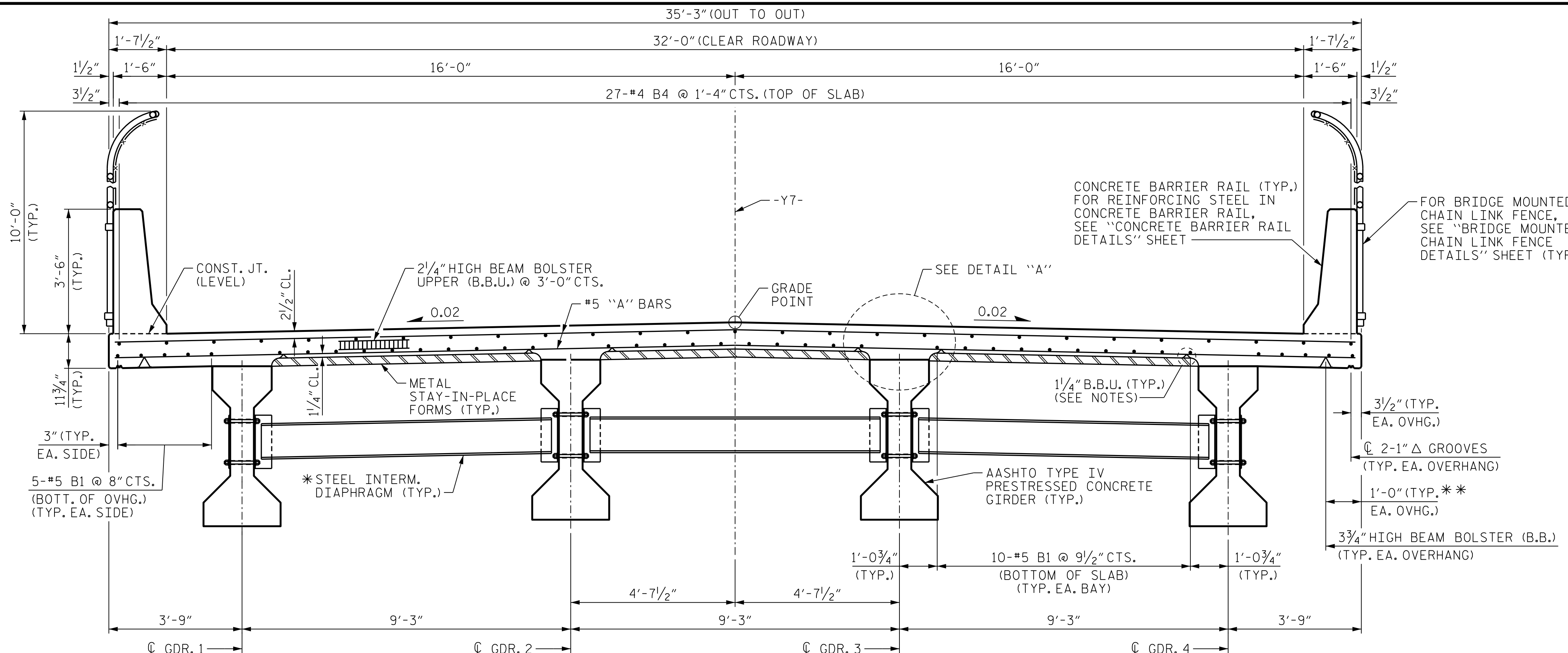
* FOR INTERMEDIATE STEEL DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.

** ADJUST LOCATION OF MID-SPAN BEAM BOLSTERS AS NEEDED TO MAINTAIN BAR CLEARANCES.

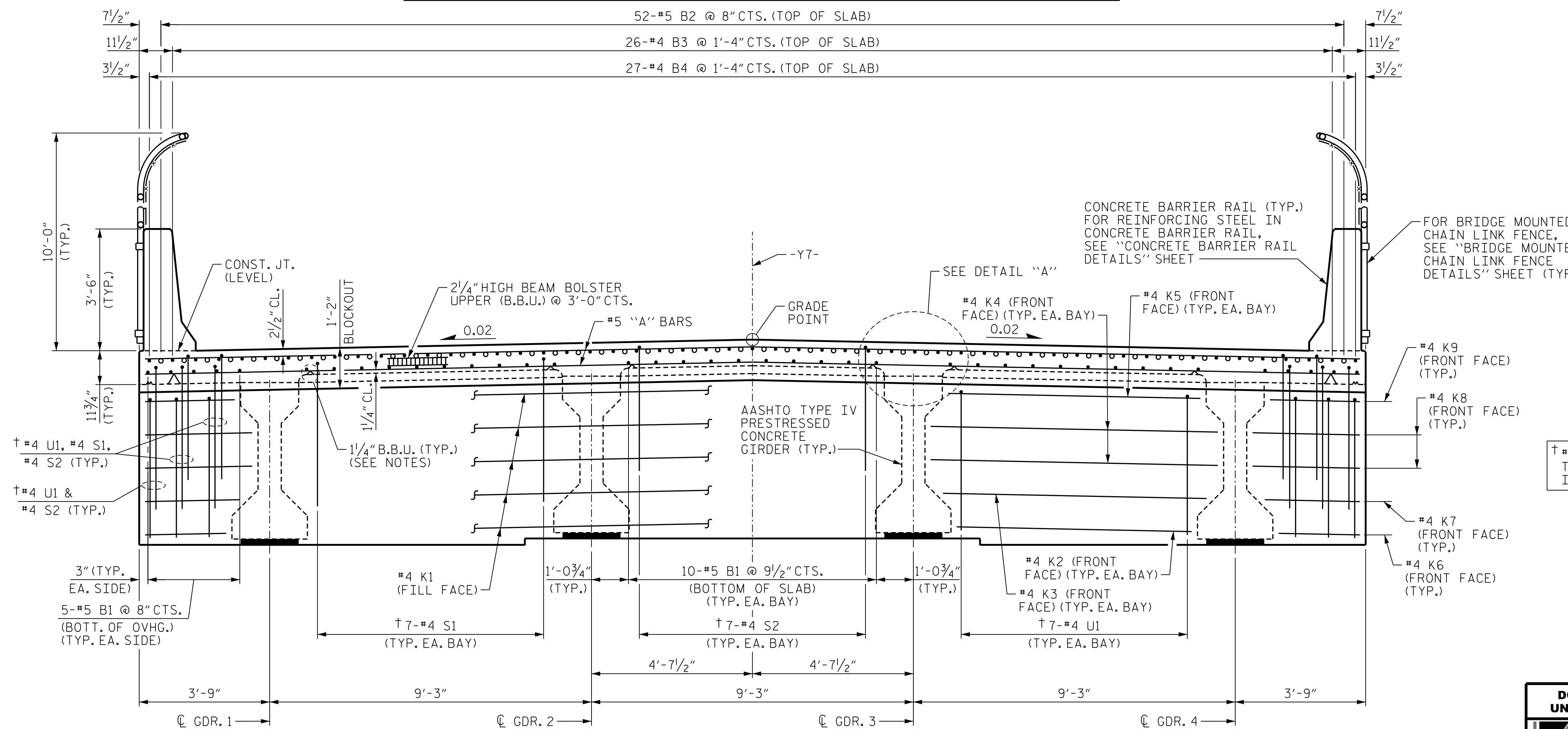


DETAIL "A"

* BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.



TYPICAL SECTION AT INTERMEDIATE DIAPHRAGM



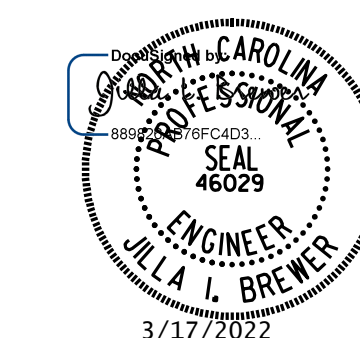
TYPICAL SECTION AT INTEGRAL END BENT

(FOR ADDITIONAL DIMENSIONS, SEE TYPICAL SECTION ABOVE)

† #4 S1, #4 S2, AND #4 U1 BARS TO MATCH WITH #4 "V" BARS IN INTEGRAL END BENT CAP.

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 1 OF 3



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION AT
 INTERMEDIATE DIAPHRAGM
 AND INTEGRAL END BENT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			33
2			4			

DRAWN BY : B.E. LANNING DATE : 03/2021
 CHECKED BY : J.I. BREWER DATE : 03/2021
 DESIGN ENGINEER OF RECORD : J.I. BREWER DATE : 03/2022

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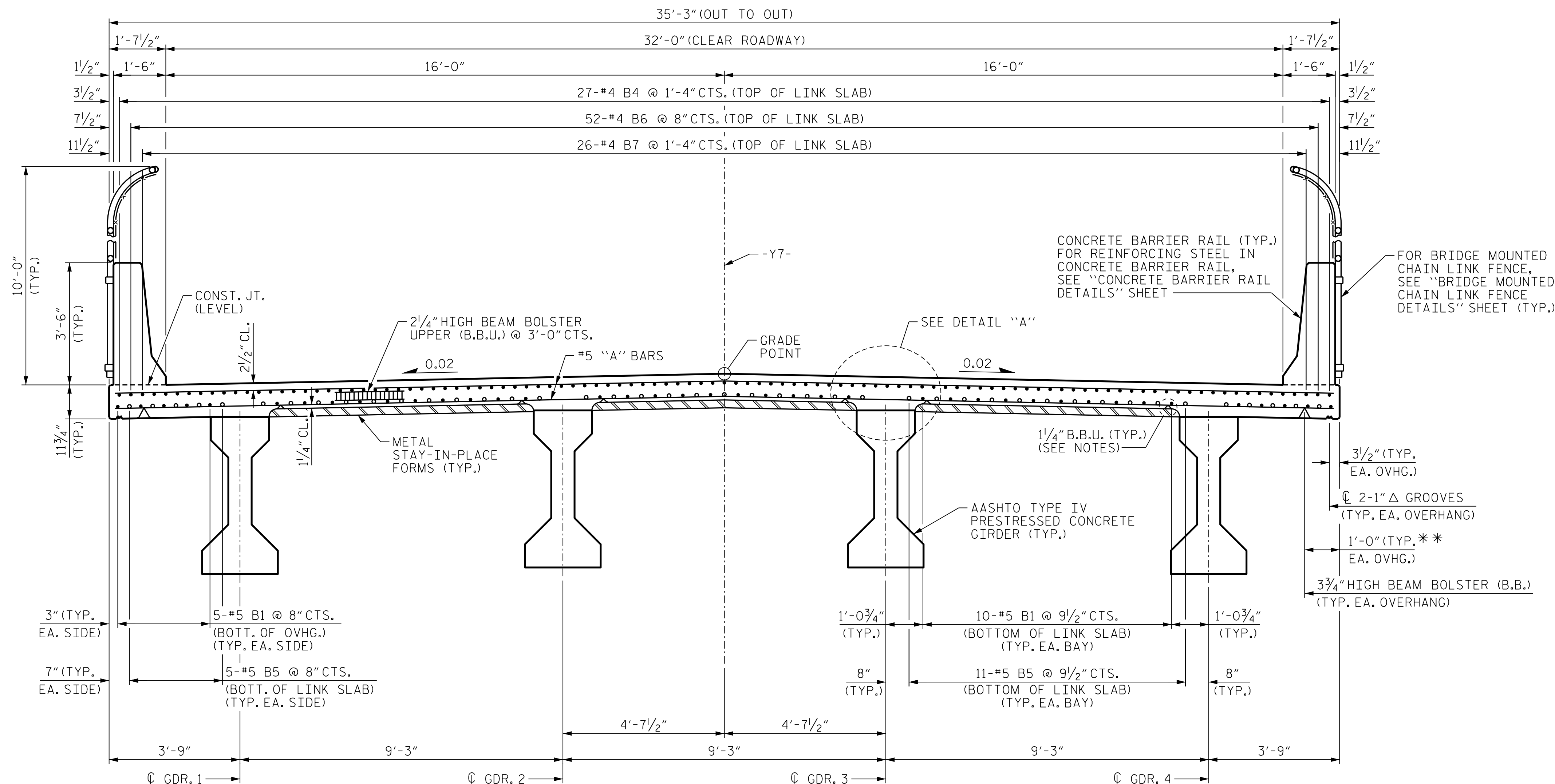
NOTES:

FOR ADDITIONAL NOTES, SEE SHEET 1 OF 3.

** ADJUST LOCATION OF MID-SPAN BEAM BOLSTERS AS NEEDED TO MAINTAIN BAR CLEARANCES.

FOR DETAIL "A", SEE SHEET 1 OF 3.

NO WELDING OF FORMS OR FALSEWORK WILL BE PERMITTED IN THE LINK SLAB AREA.

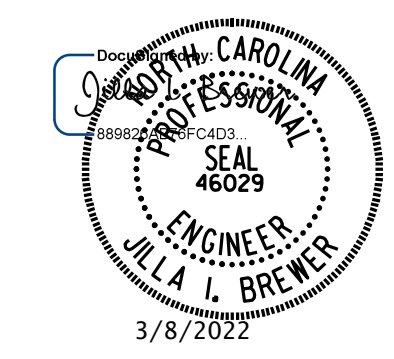


TYPICAL SECTION AT LINK SLAB REGION OVER INTERIOR BENT

3/8/2022 10:37:47 AM User: blanning
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PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 AT LINK SLAB REGION
 OVER INTERIOR BENT

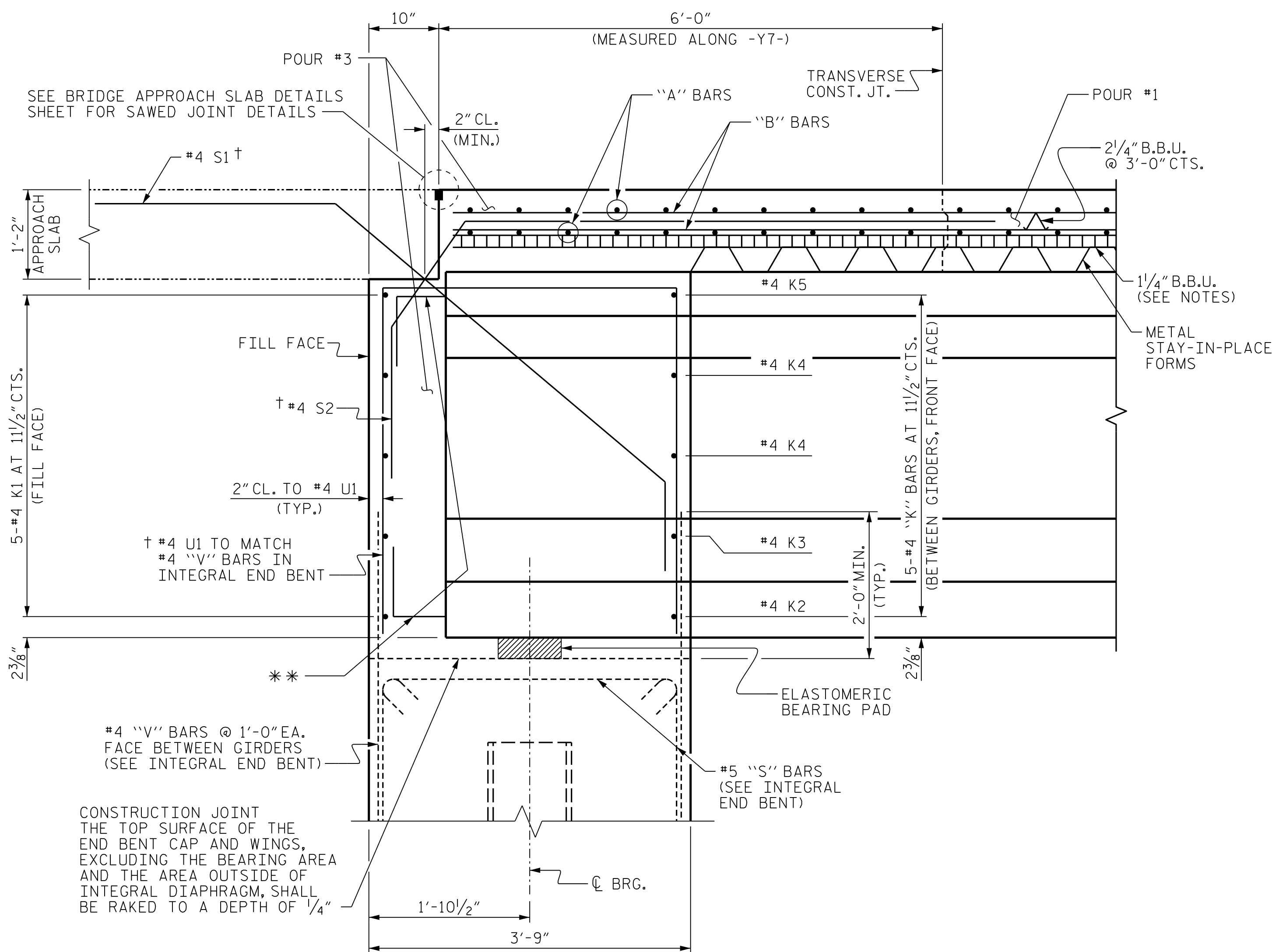
**DOCUMENT NOT CONSIDERED FINAL
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MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			10-7
2			4			

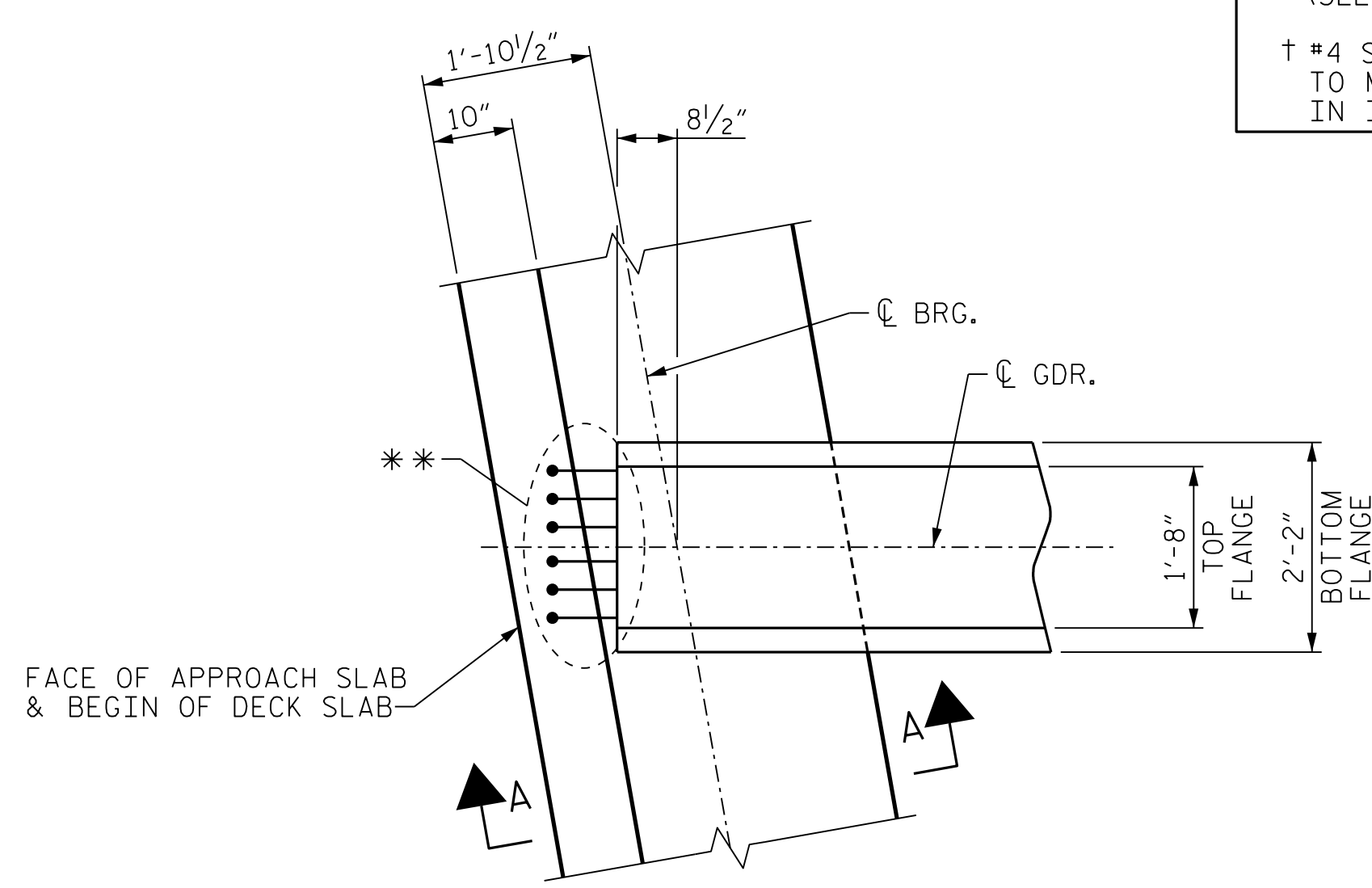
TOTAL SHEETS: 33

DRAWN BY : B.E. LANNING	DATE : 03/2021
CHECKED BY : J.I. BREWER	DATE : 03/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

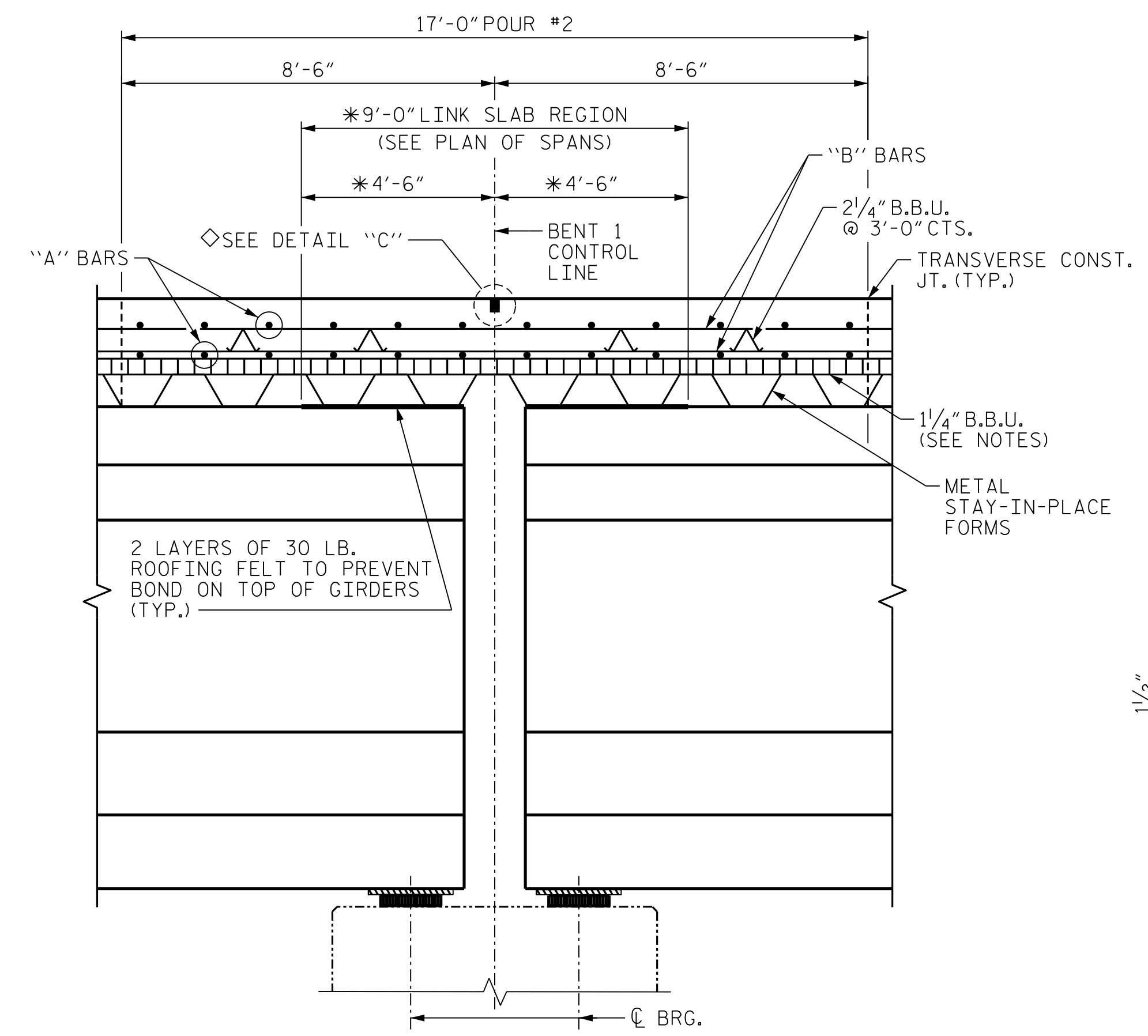


SECTION A-A
INTEGRAL END BENT

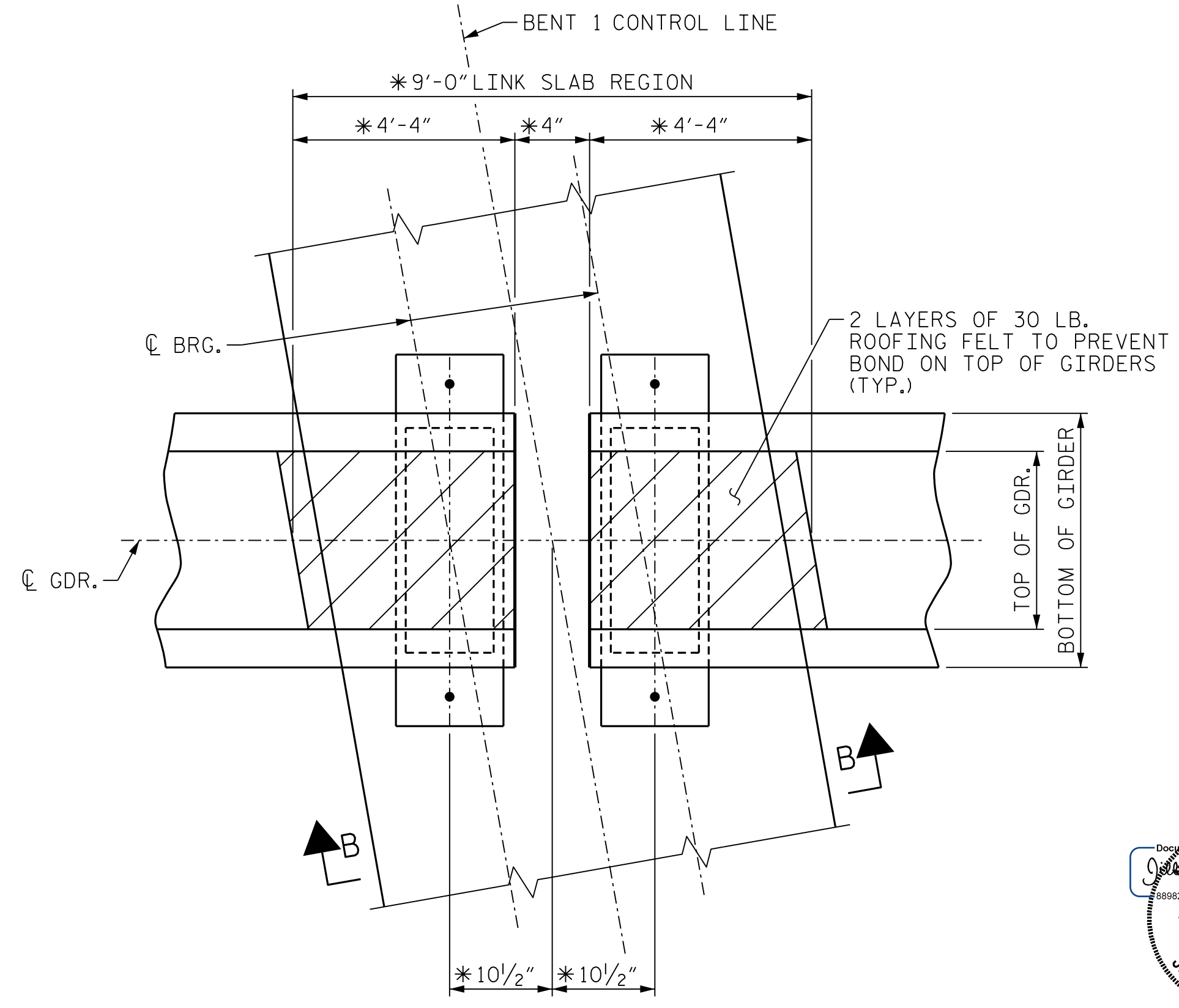
* MEASURED ALONG C GIRDER
 ** #5 'S' BARS (TYP.) (SEE GIRDER SHEETS)
 † #4 S1, #4 S2, AND #4 U1 BARS TO MATCH WITH #4 'V' BARS IN INTEGRAL END BENT CAP.



PLAN OF GIRDER AT INTEGRAL END BENT
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

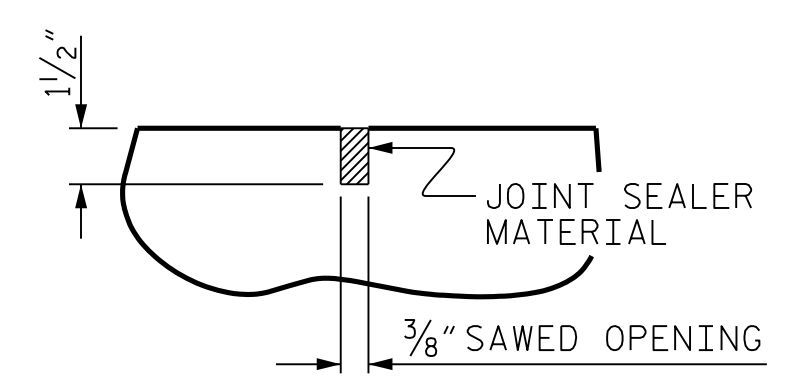


SECTION B-B
SECTION SHOWN ALONG GIRDER

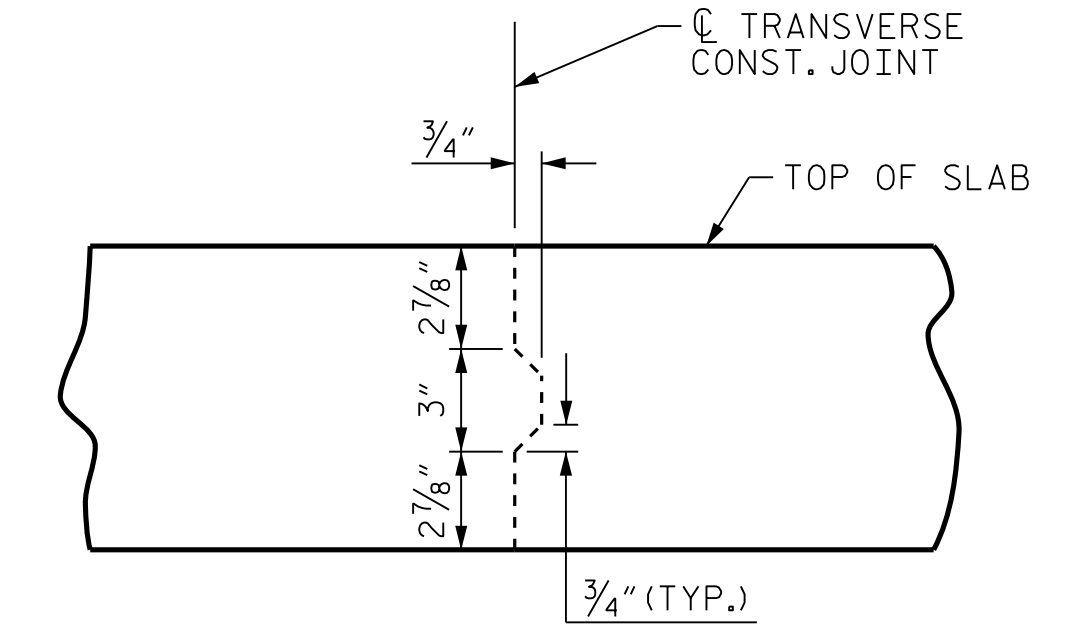


PLAN OF GIRDER AT INTERIOR BENT

◊ A 1/2" DEEP, 3/8" WIDE CONTRACTION JOINT AT BENT CONTROL LINE SHALL BE SAWN WITHIN 24 HOURS OF POURING THE DECK. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.



DETAIL 'C'
SAW CUT CONTRACTION JOINT



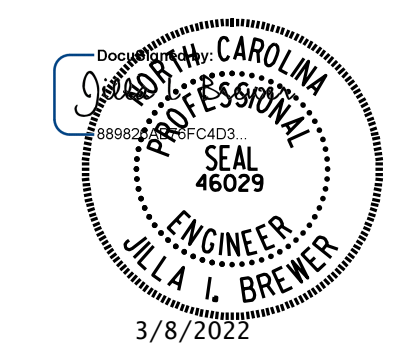
TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT.

PROJECT NO. **I-5987B**
ROBESON COUNTY
 STATION: **29+70.72 -Y7-**

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 DETAILS



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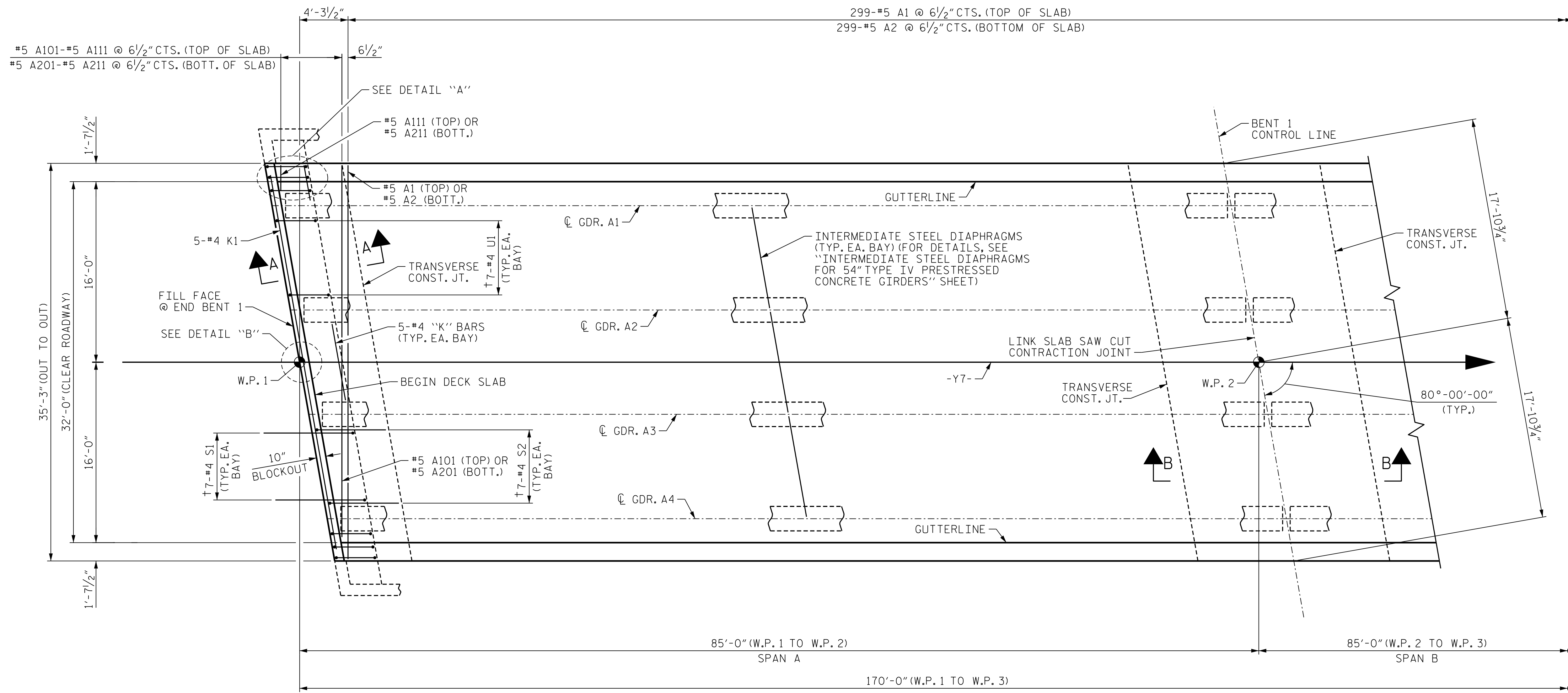
MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-8 TOTAL SHEETS 33
2			4			

THE TOP OF GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS, ANCHOR STUDS, DECK FORMWORK ATTACHMENTS, AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.

3/8/2022 10:37:49 AM User: blanning
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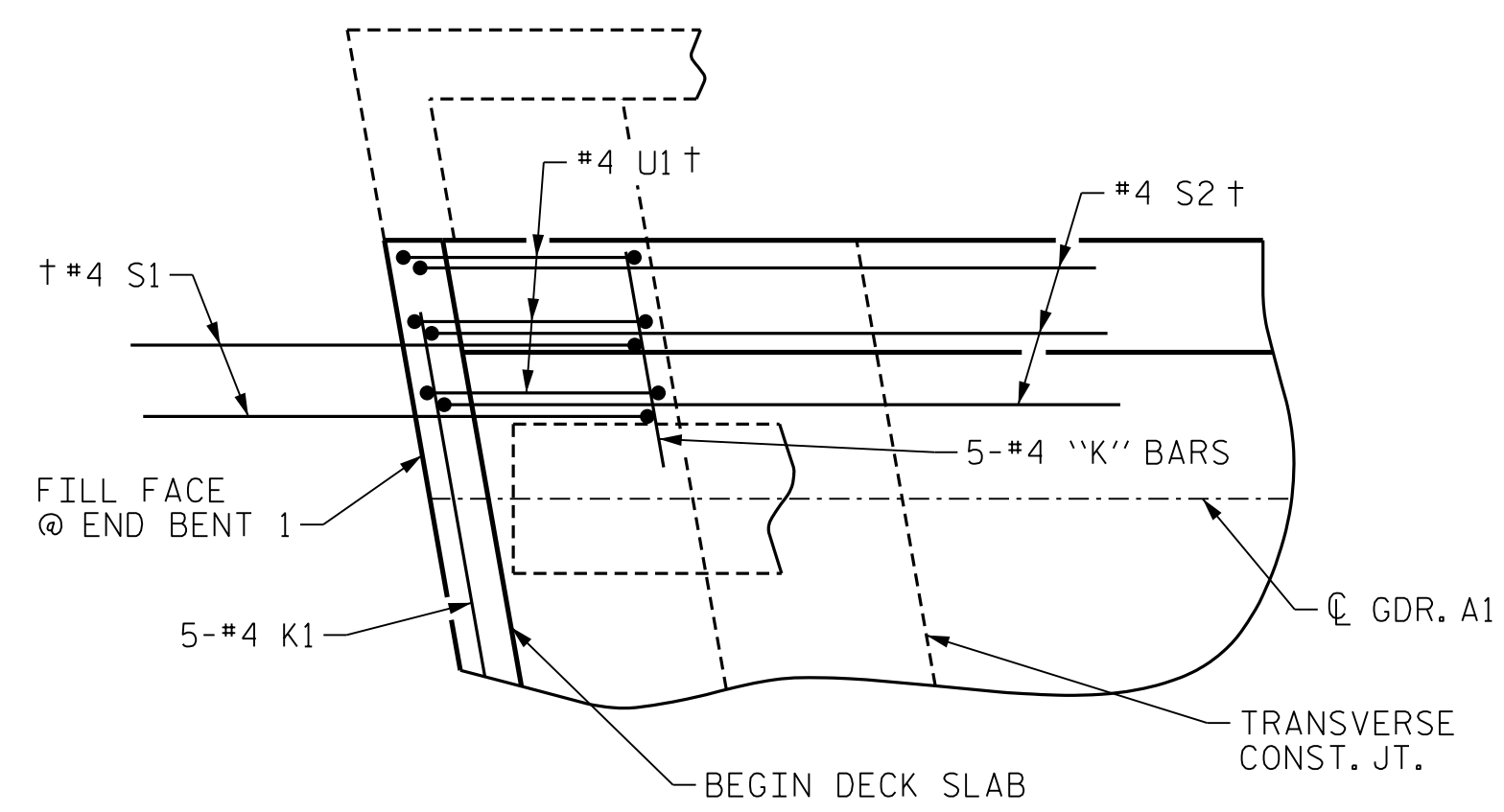
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 CHECKED BY: **J.I. BREWER** DATE: **03/2021**
 DESIGN ENGINEER OF RECORD: **J.I. BREWER** DATE: **03/2022**



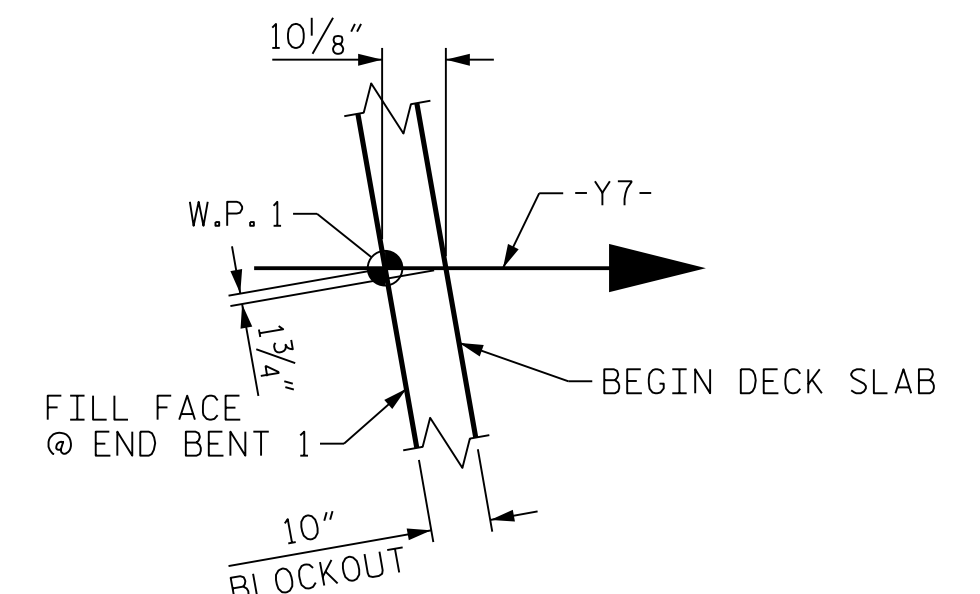
PLAN OF SPAN A

NOTES:

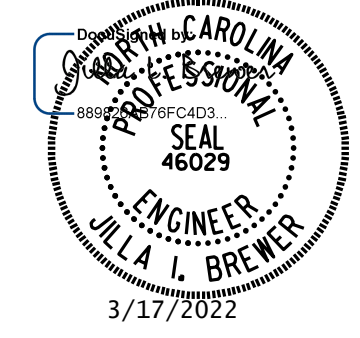
- FOR REINFORCING STEEL IN CONCRETE BARRIER RAIL, SEE "CONCRETE BARRIER RAIL DETAILS" SHEETS.
- FOR SECTION VIEWS, SEE "SUPERSTRUCTURE TYPICAL SECTION AND DETAILS" SHEETS.
- FOR LOCATION OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEET.
- FOR TOP AND BOTTOM "B" BARS NOT SHOWN, SEE SHEET 3 OF 3.
- #4 S1, #4 S2 & #4 U1 TO MATCH WITH #4 "V" BARS IN INTEGRAL END BENT CAP.
- FOR TRANSVERSE CONSTRUCTION JOINT DETAIL, SEE "SUPERSTRUCTURE TYPICAL SECTION AND DETAILS" SHEET 3 OF 3.
- FOR LOCATION OF TRANSVERSE CONSTRUCTION JOINTS, SEE POURING SEQUENCE ON "SUPERSTRUCTURE BILL OF MATERIAL" SHEETS.
- FOR LOCATION OF LINK SLAB SAW CUT CONTRACTION JOINT, SEE SECTION B-B ON "SUPERSTRUCTURE TYPICAL SECTION, SHEET 3 OF 3".
- LINK SLAB SAW CUT CONTRACTION JOINT EXTENDS TO THE EDGE OF DECK ON BOTH SIDES.



DETAIL "A"
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)



DETAIL "B"



PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPANS
 SPAN A

DOCUMENT NOT CONSIDERED FINAL
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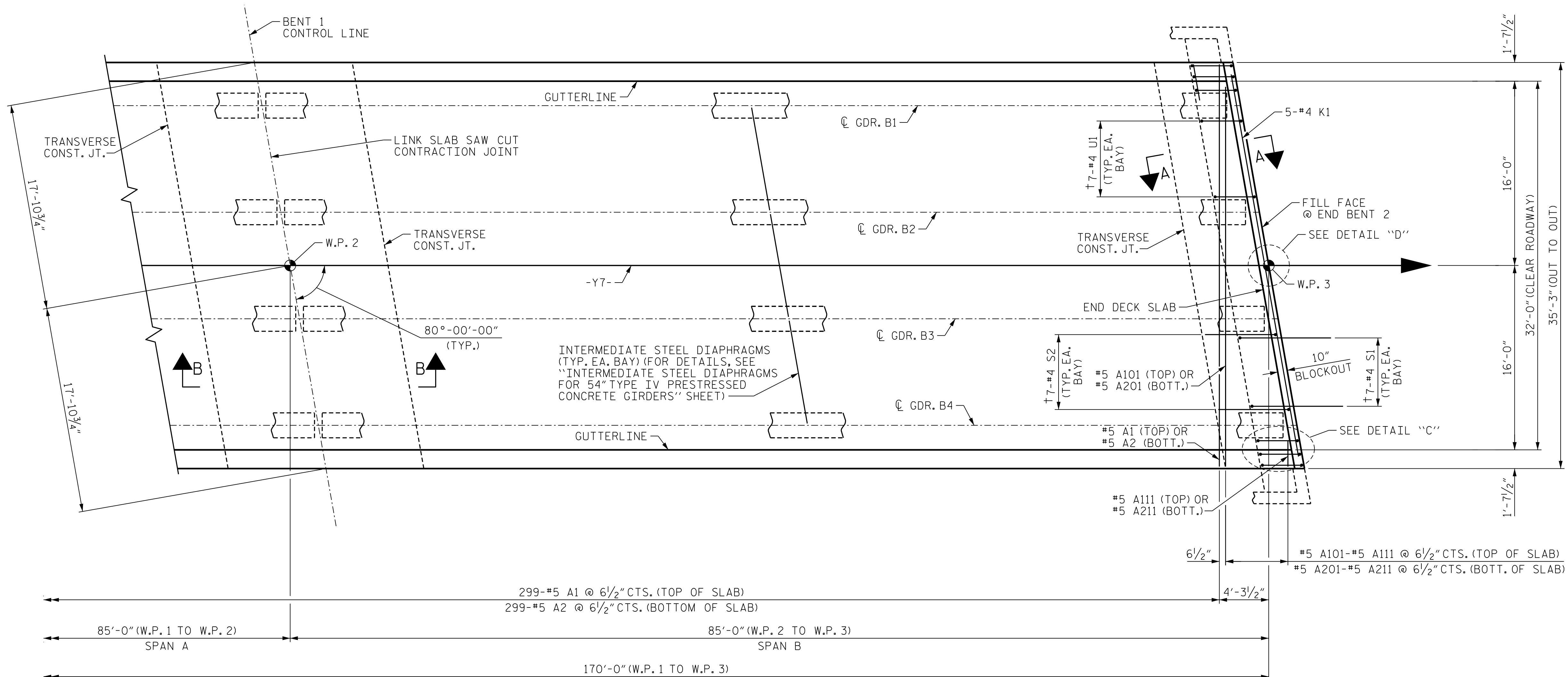
MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-9 TOTAL SHEETS 33
2			4			

DRAWN BY : B.E. LANNING	DATE : 03/2021
CHECKED BY : J.I. BREWER	DATE : 03/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

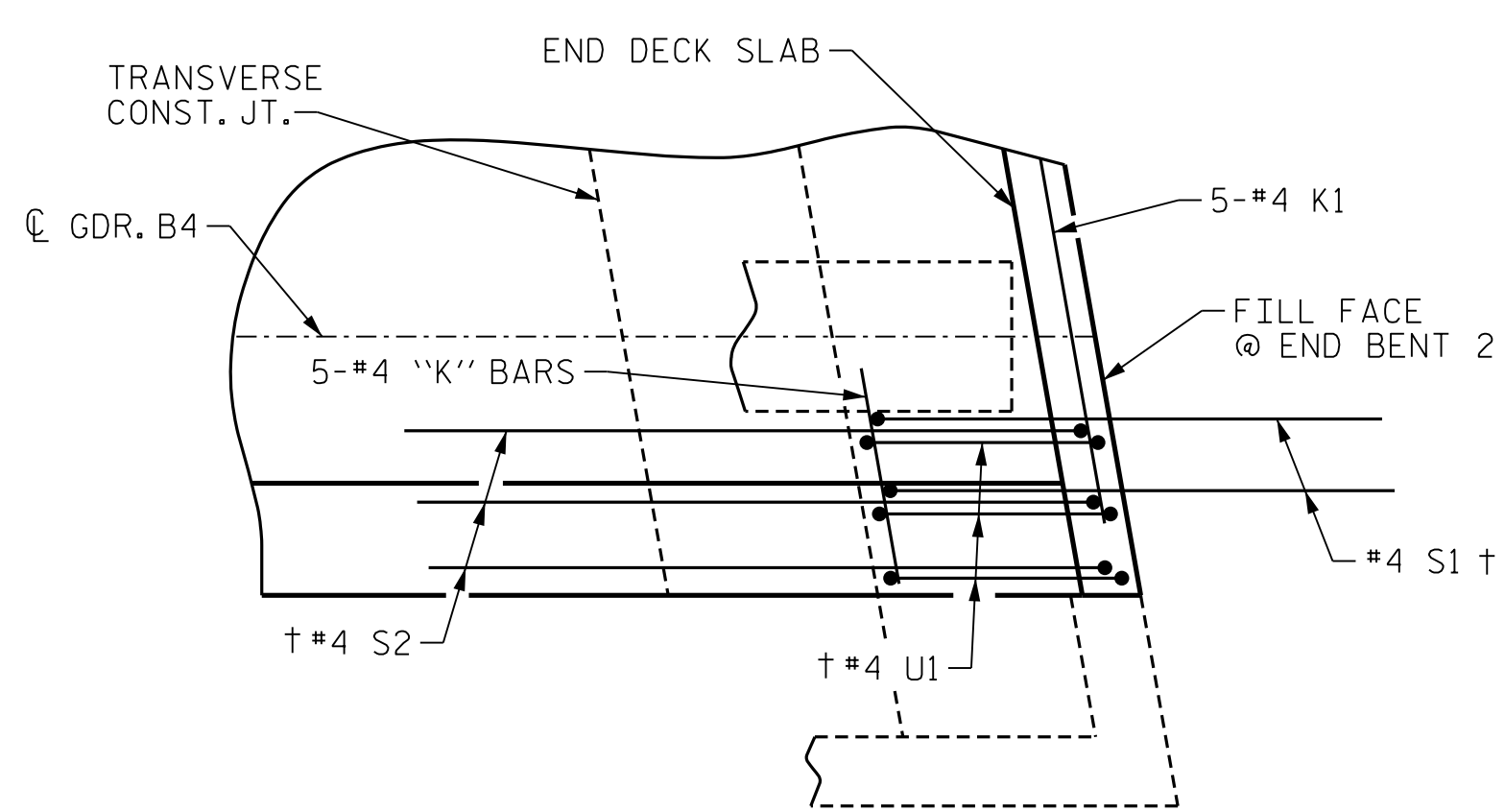
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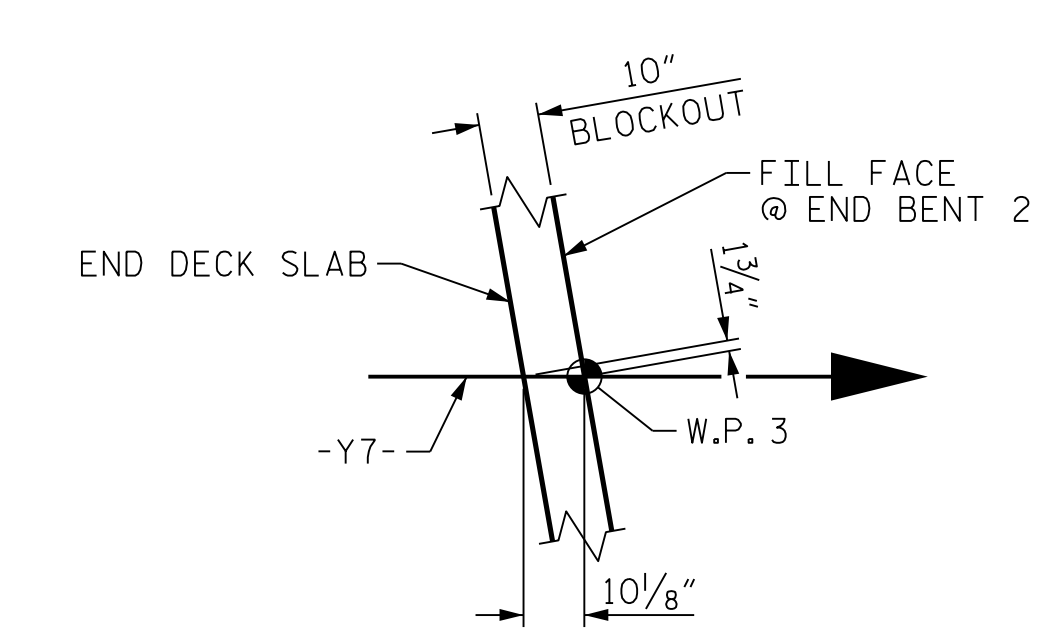


PLAN OF SPAN B

- NOTES:**
- FOR REINFORCING STEEL IN CONCRETE BARRIER RAIL, SEE "CONCRETE BARRIER RAIL DETAILS" SHEETS.
 - FOR SECTION VIEWS, SEE "SUPERSTRUCTURE TYPICAL SECTION AND DETAILS" SHEETS.
 - FOR LOCATION OF INTERMEDIATE STEEL DIAPHRAGMS, SEE "SUPERSTRUCTURE FRAMING PLAN" SHEET.
 - FOR TOP AND BOTTOM "B" BARS NOT SHOWN, SEE SHEET 3 OF 3.
 - † #4 S1, #4 S2 & #4 U1 TO MATCH WITH #4 "V" BARS IN INTEGRAL END BENT CAP.
 - FOR TRANSVERSE CONSTRUCTION JOINT DETAIL, SEE "SUPERSTRUCTURE TYPICAL SECTION AND DETAILS" SHEET 3 OF 3.
 - FOR LOCATION OF TRANSVERSE CONSTRUCTION JOINTS, SEE POURING SEQUENCE ON "SUPERSTRUCTURE BILL OF MATERIAL" SHEETS.
 - FOR LOCATION OF LINK SLAB SAW CUT CONTRACTION JOINT, SEE SECTION B-B ON "SUPERSTRUCTURE TYPICAL SECTION, SHEET 3 OF 3".
 - LINK SLAB SAW CUT CONTRACTION JOINT EXTENDS TO THE EDGE OF DECK ON BOTH SIDES.



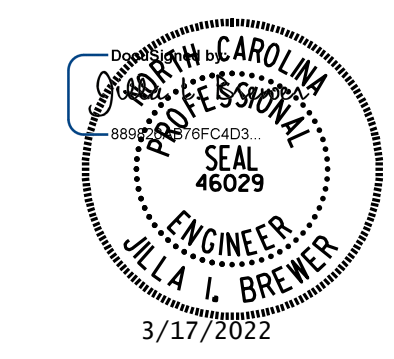
DETAIL "C"
(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)



DETAIL "D"

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPANS
 SPAN B

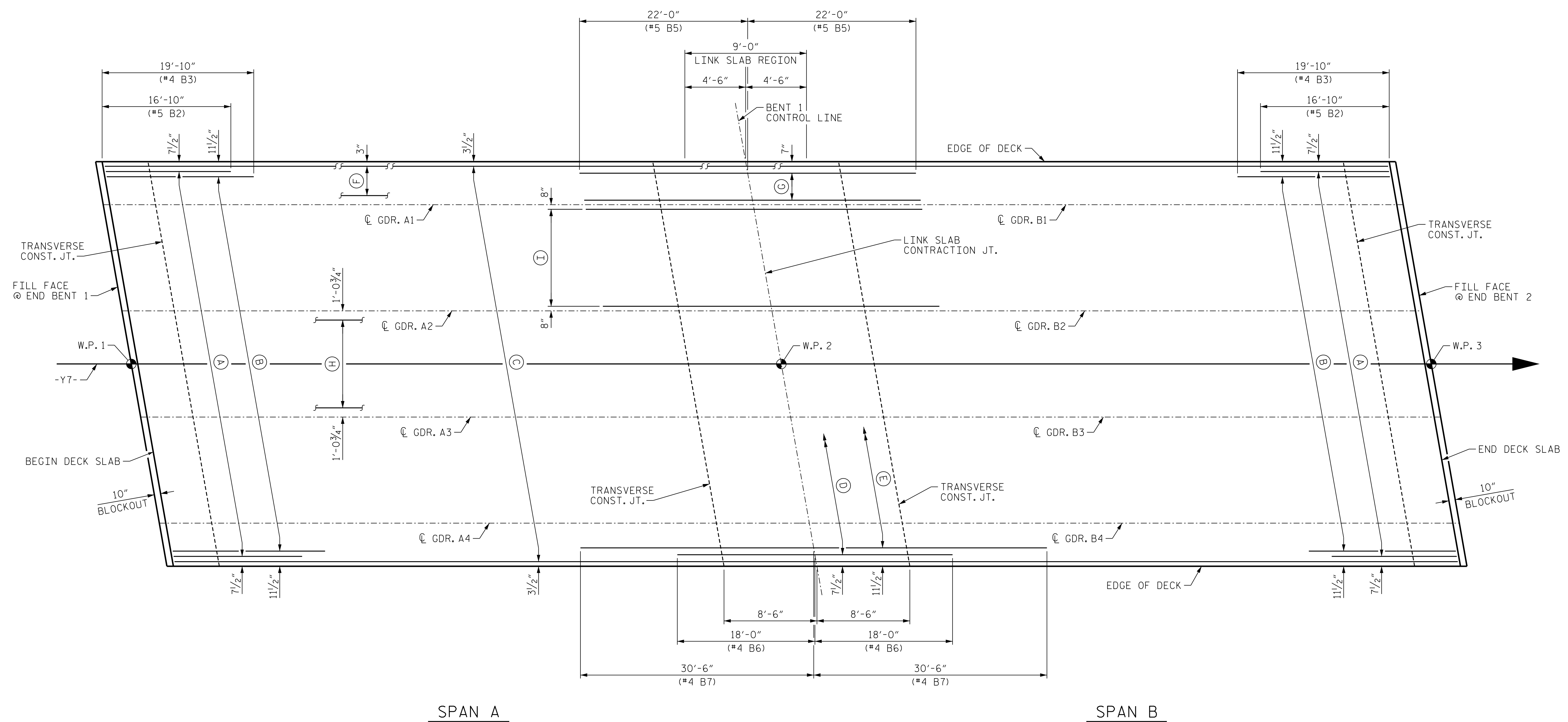
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DRAWN BY : B.E. LANNING DATE : 03/2021
 CHECKED BY : J.I. BREWER DATE : 03/2021
 DESIGN ENGINEER OF RECORD : J.I. BREWER DATE : 03/2022

REVISIONS						SHEET NO. S10-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 33
2			4			

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

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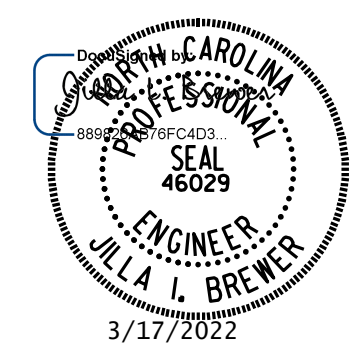


PLAN - "B" BAR LAYOUT
 (GUTTERLINE NOT SHOWN FOR CLARITY)

- (A) 52-#5 B2 @ 8" CTS. (TOP OF SLAB)
- (B) 26-#4 B3 @ 1'-4" CTS. (TOP OF SLAB)
- (C) 27-#4 B4 @ 1'-4" CTS. (TOP OF SLAB) (5 BAR RUN) (1'-11" MIN. SPLICE)
- (D) 52-#4 B6 @ 8" CTS. (TOP OF LINK SLAB)
- (E) 26-#4 B7 @ 1'-4" CTS. (TOP OF LINK SLAB) (3 BAR RUN) (1'-11" MIN. SPLICE)
- (F) 5-#5 B1 @ 8" CTS. (BOTTOM OF SLAB) (3 BAR RUN) (2'-0" MIN. SPLICE) (TYP. EACH OVERHANG)
- (G) 5-#5 B5 @ 8" CTS. (BOTTOM OF LINK SLAB) (TYP. EACH OVERHANG)
- (H) 10-#5 B1 @ 9 1/2" CTS. (BOTTOM OF SLAB) (3 BAR RUN) (2'-0" MIN. SPLICE) (TYP. EACH BAY)
- (I) 11-#5 B5 @ 9 1/2" CTS. (BOTTOM OF LINK SLAB) (TYP. EACH BAY)

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 3 OF 3



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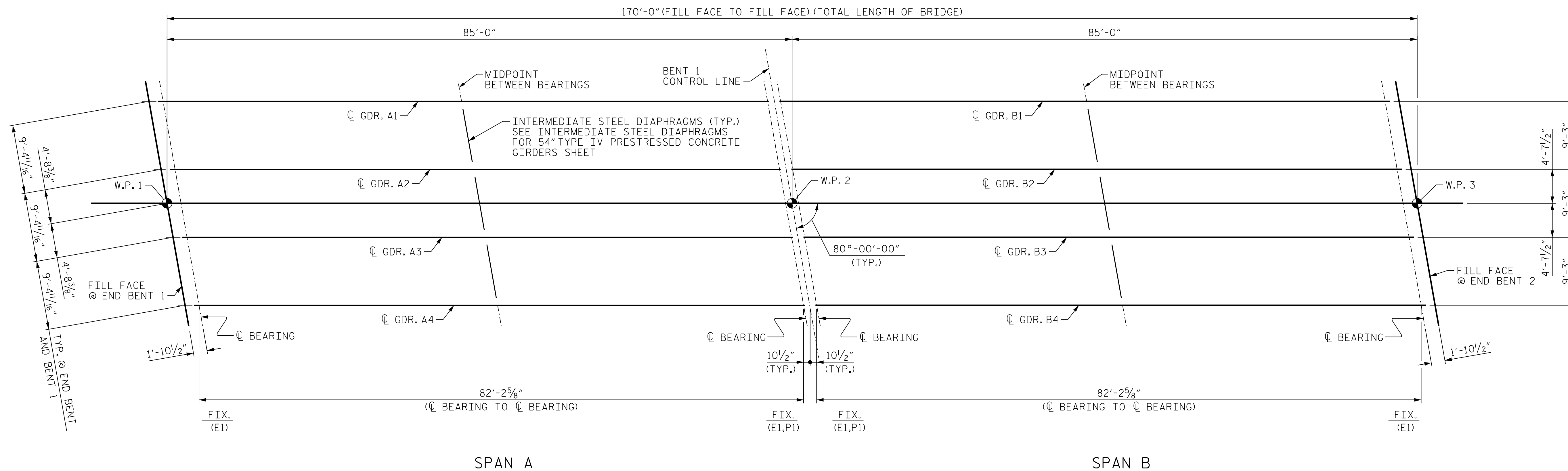
MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

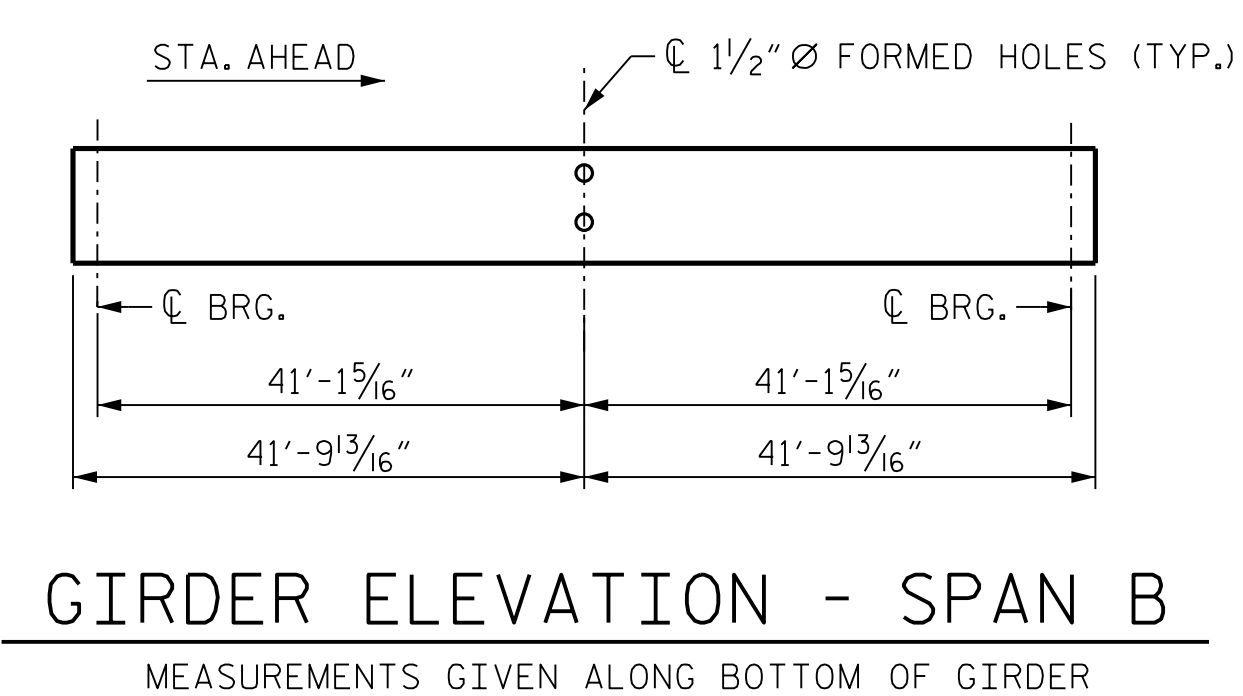
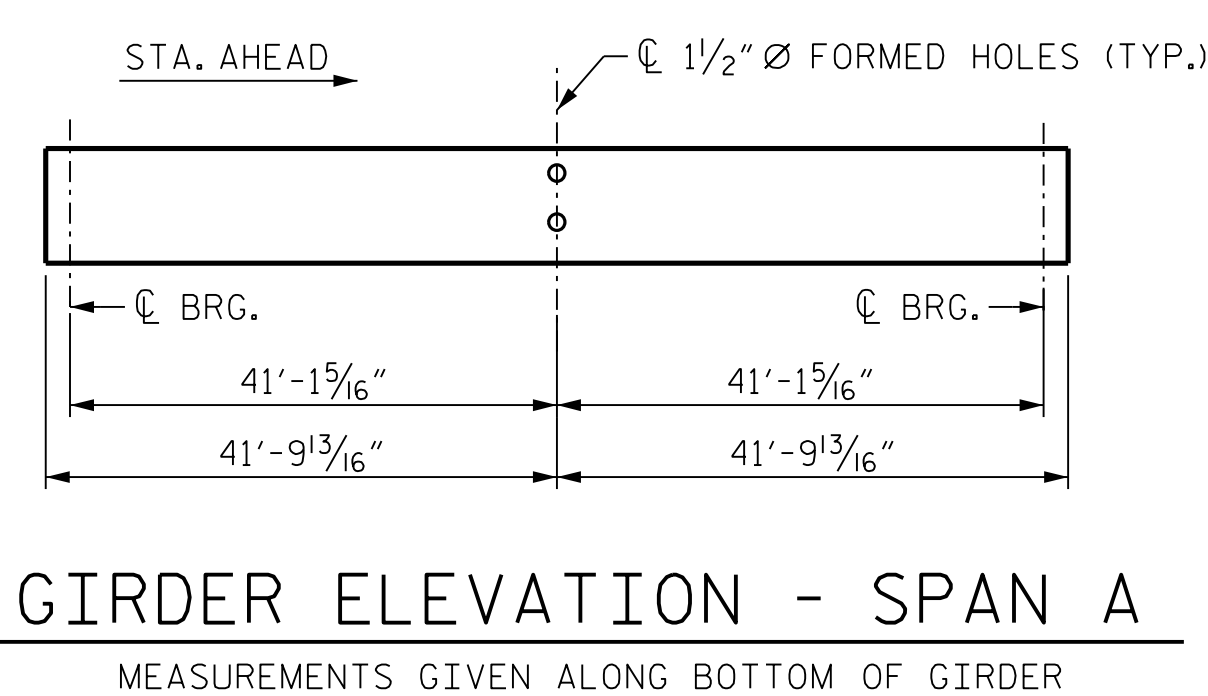
**SUPERSTRUCTURE
 PLAN OF SPANS
 "B" BAR LAYOUT**

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

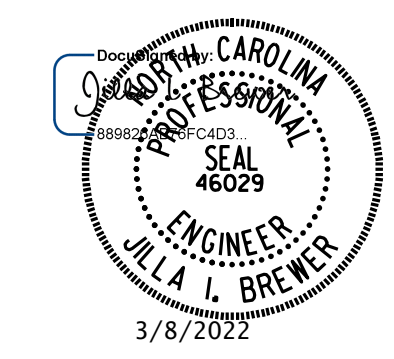
SHEET NO. **S10-11**
 TOTAL SHEETS **33**



FRAMING PLAN
ALL DIMENSIONS HORIZONTAL U.O.N.



PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 29+70.72 -Y7-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUPERSTRUCTURE
FRAMING PLAN**

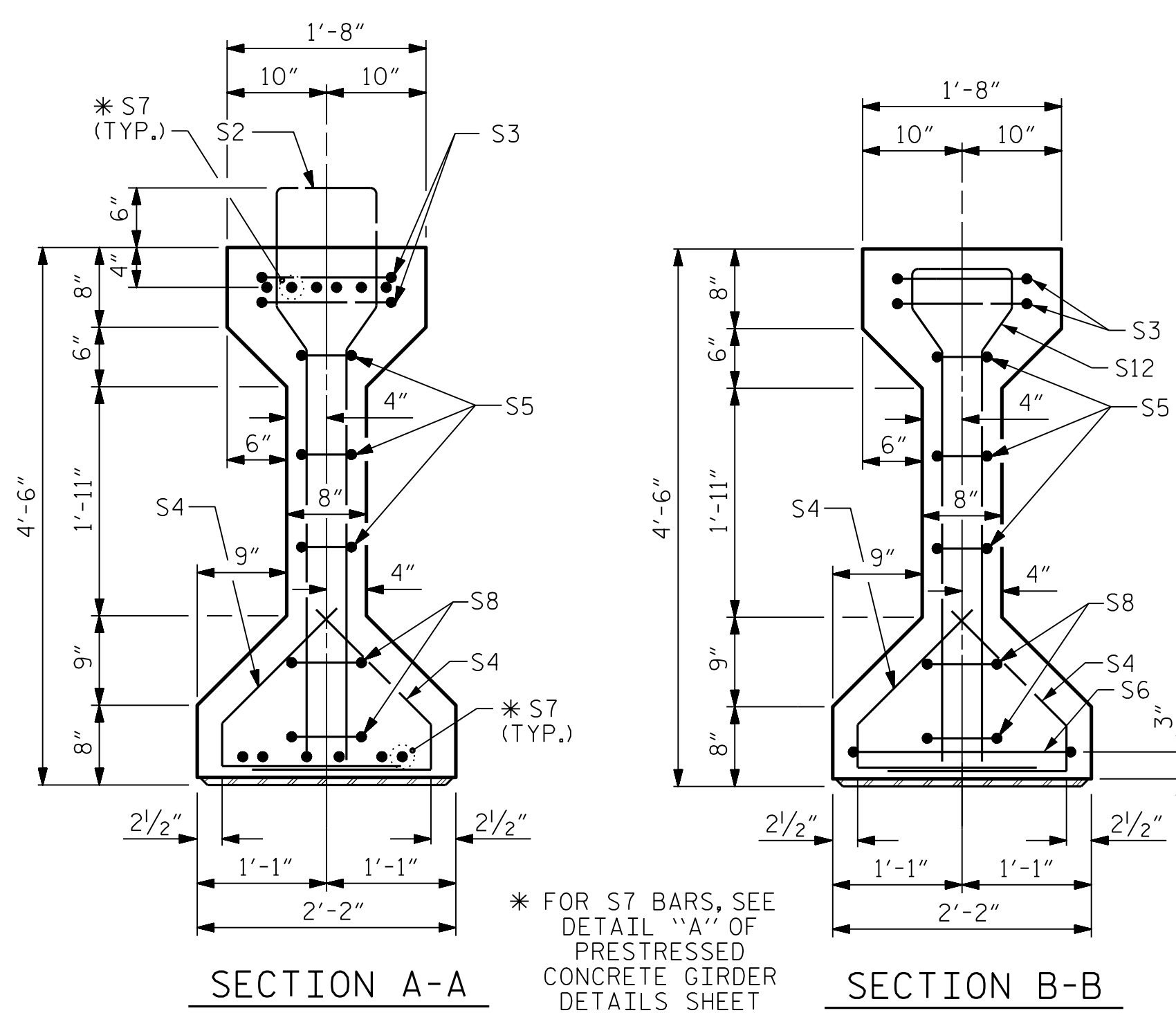
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MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

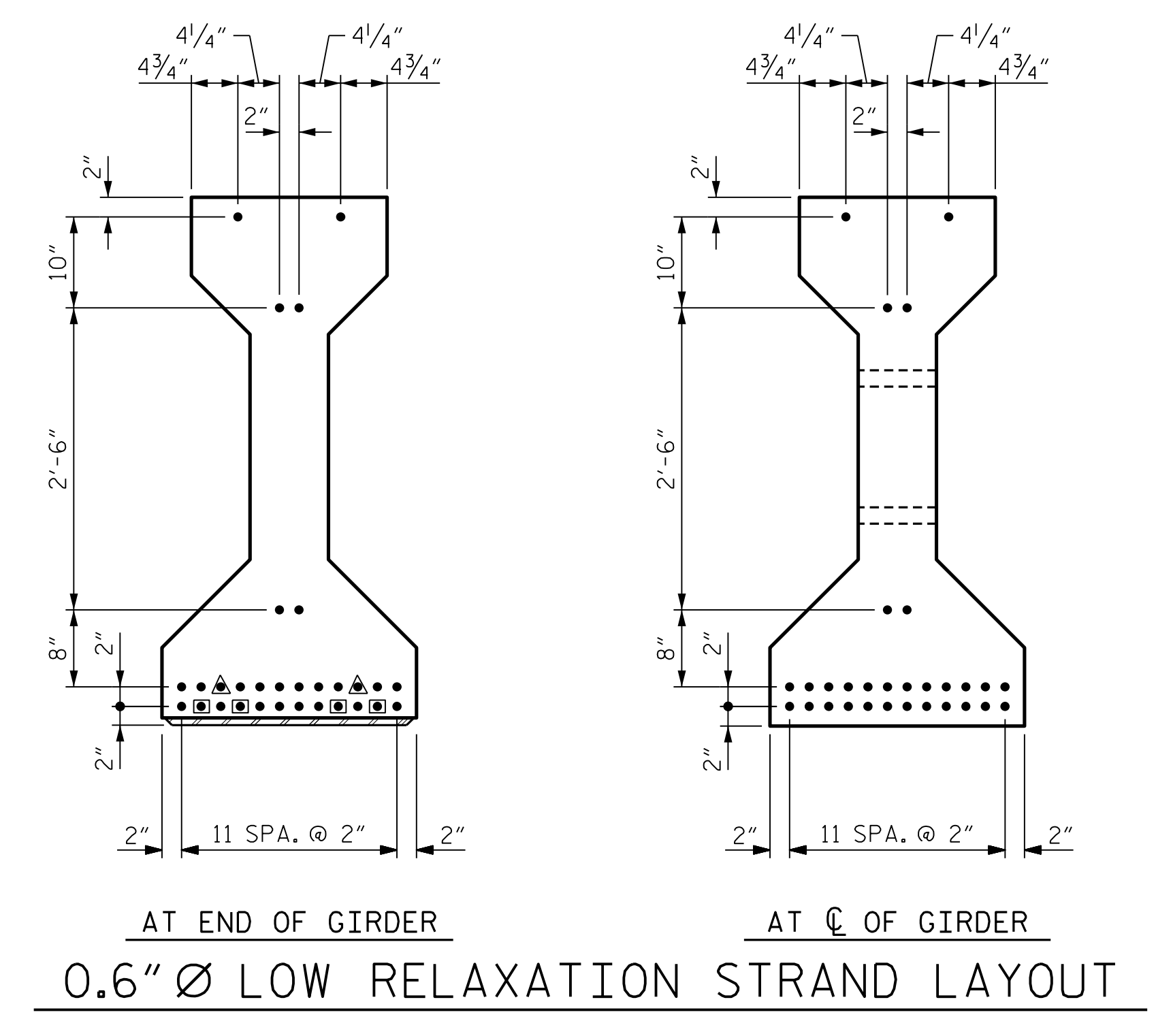
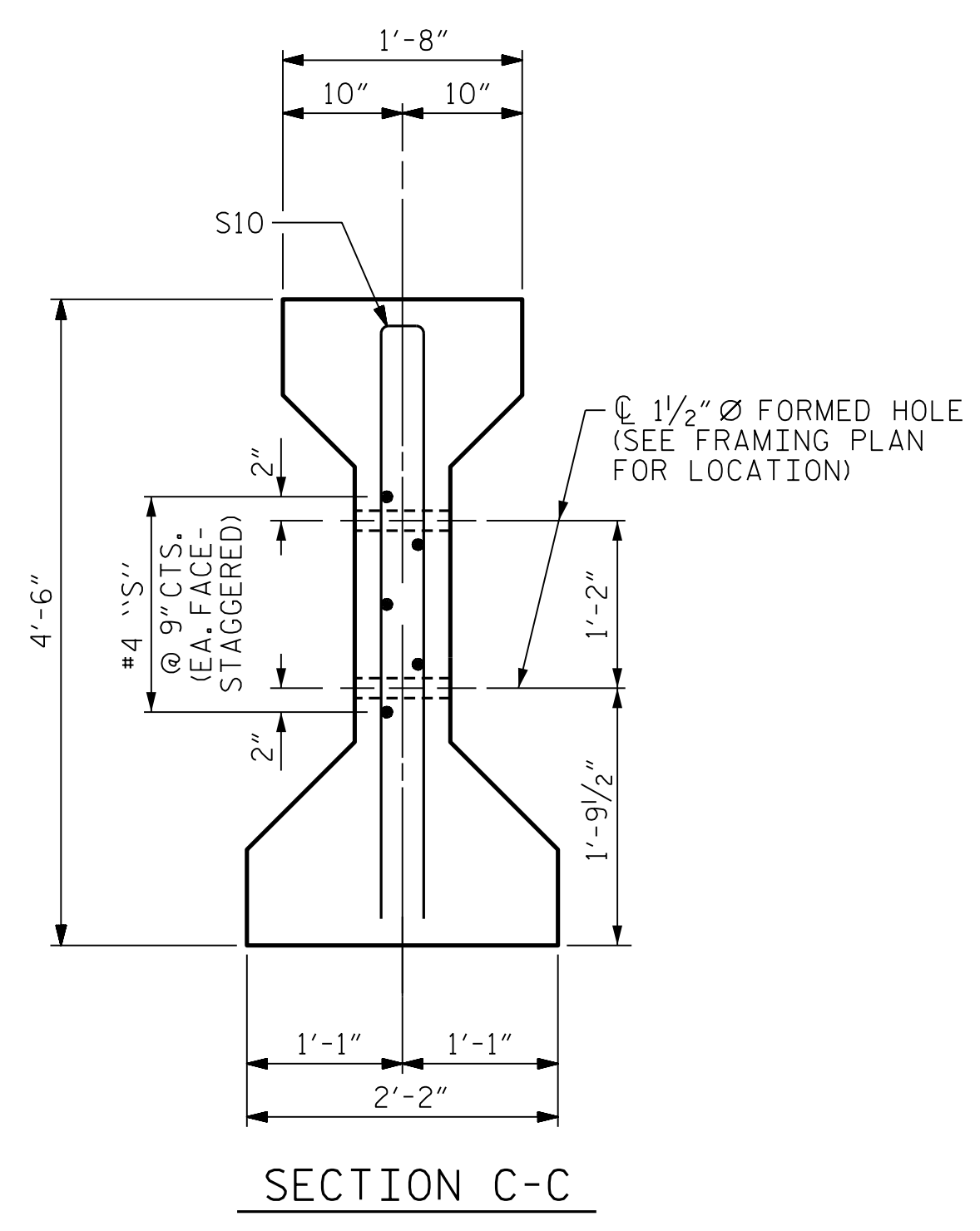
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			33
2			4			

DRAWN BY : D.R. BROWN DATE : 02/2021
CHECKED BY : J.I. BREWER DATE : 03/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER DATE : 03/2022

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* FOR S7 BARS, SEE
DETAIL "A" OF
PRESTRESSED
CONCRETE GIRDER
DETAILS SHEET



0.6" Ø LOW RELAXATION STRAND LAYOUT

DEBONDING LEGEND

- FULLY BONDED STRANDS
- ▲ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 8'-0" FROM END OF GIRDER

0.6" Ø L. R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

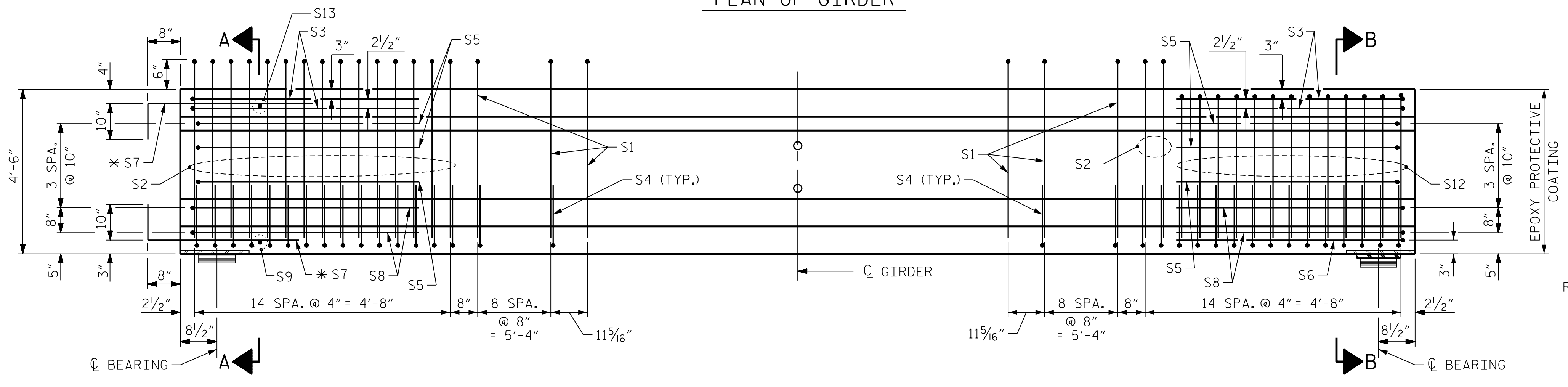
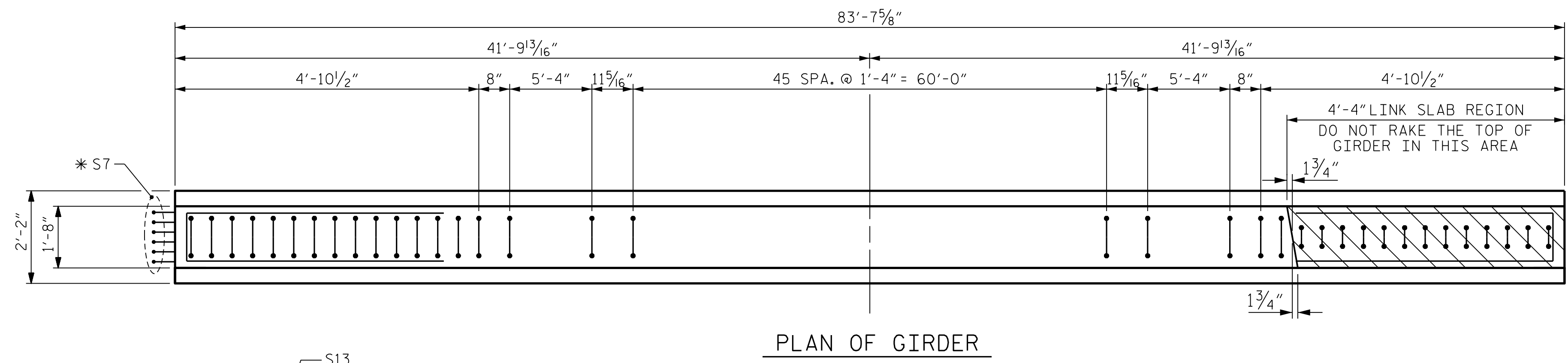
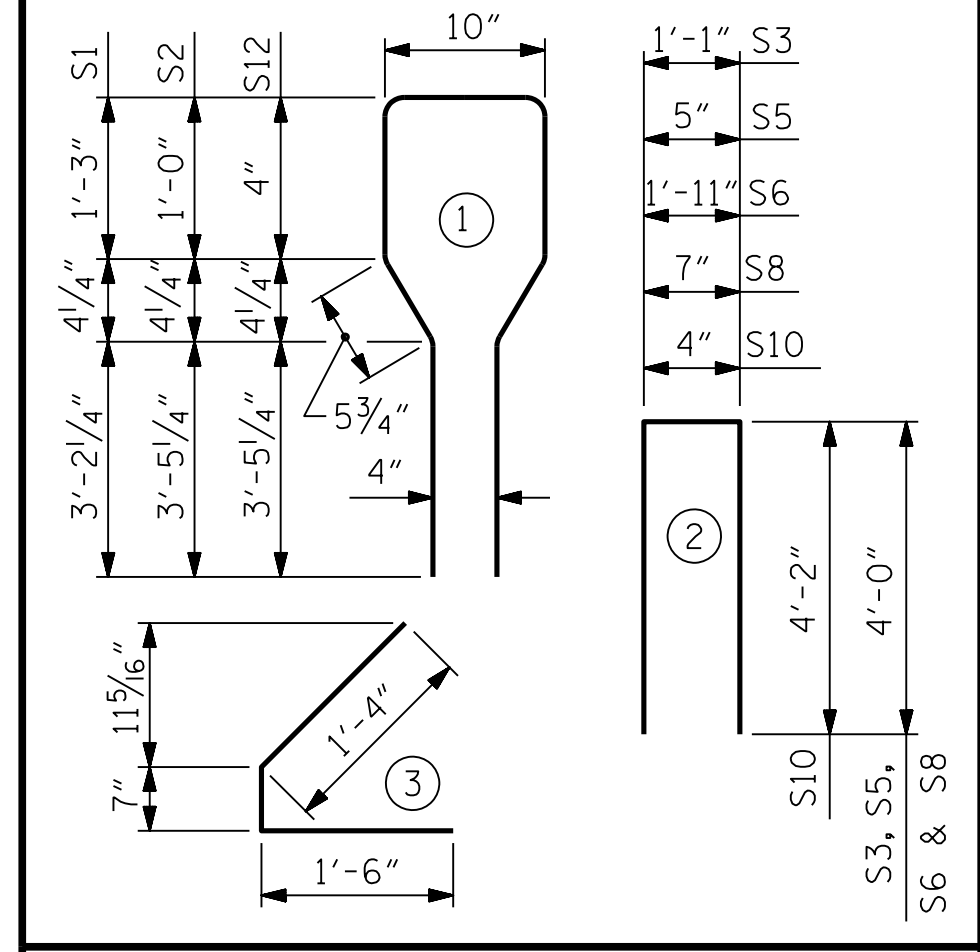
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	64	#4	1	10'-8"	456
S2	17	#6	1	10'-8"	272
S3	4	#4	2	9'-1"	24
S4	96	#4	3	3'-5"	219
S5	6	#4	2	8'-5"	34
S6	1	#4	2	9'-11"	7
*S7	12	#5	STR	3'-8"	46
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23
S12	13	#6	1	9'-4"	182
S13	1	#3	STR	1'-4"	1

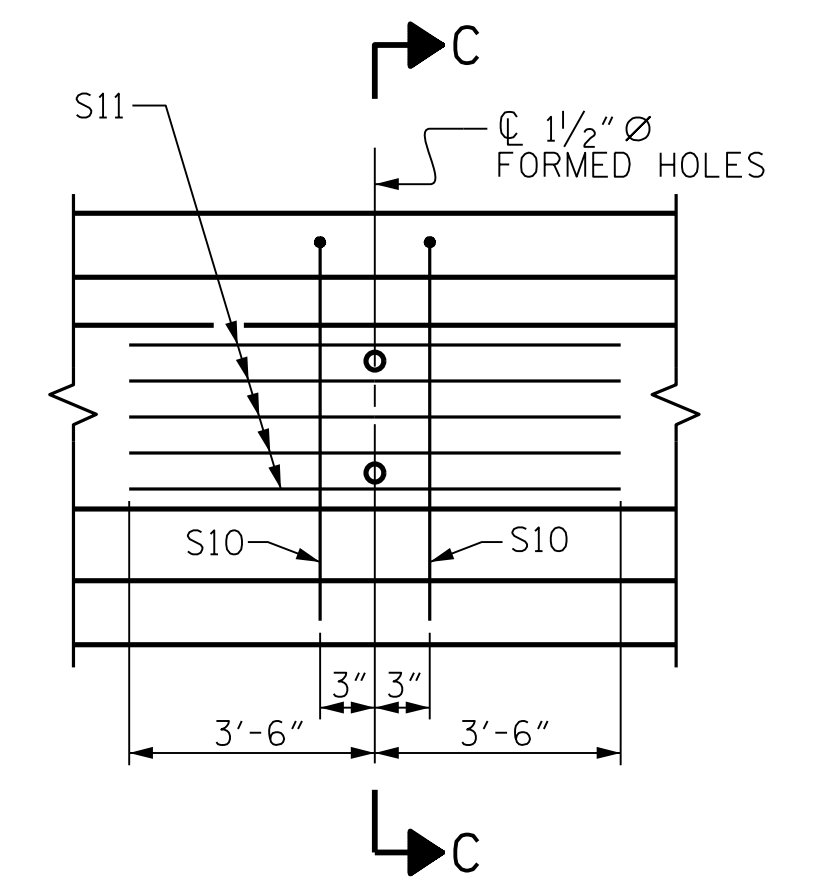
* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT.



ELEVATION OF GIRDER
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



QUANTITIES FOR ONE GIRDER

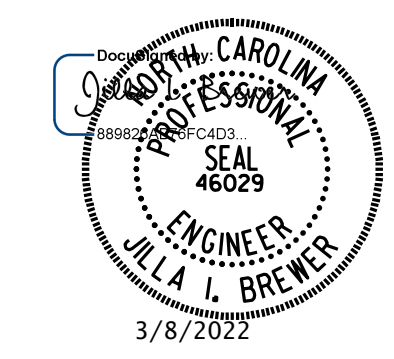
	REINFORCING STEEL	7000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
GDR. A1 - GDR. A4	1,306	17.0	30

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	83.64'	334.54'

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 1 OF 4



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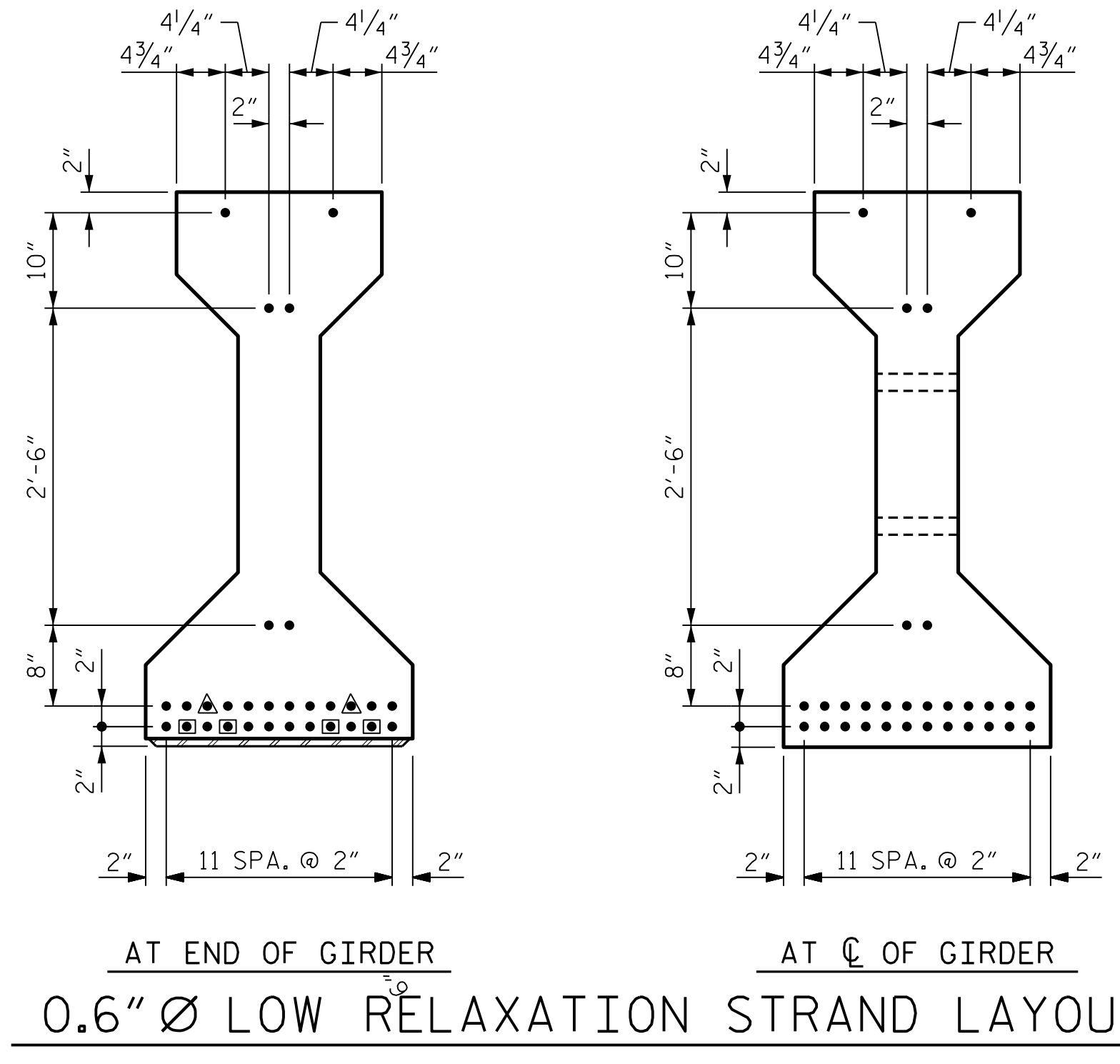
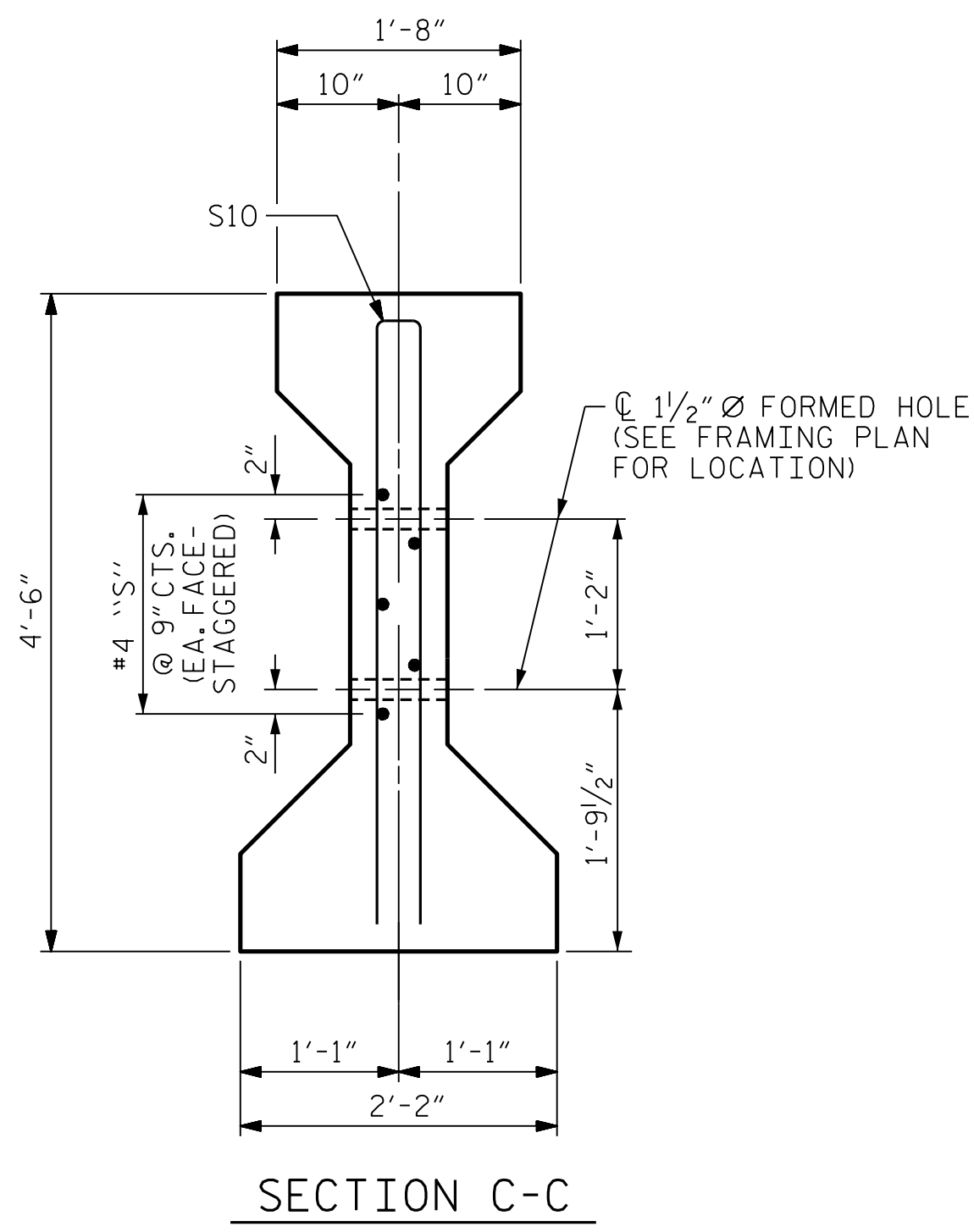
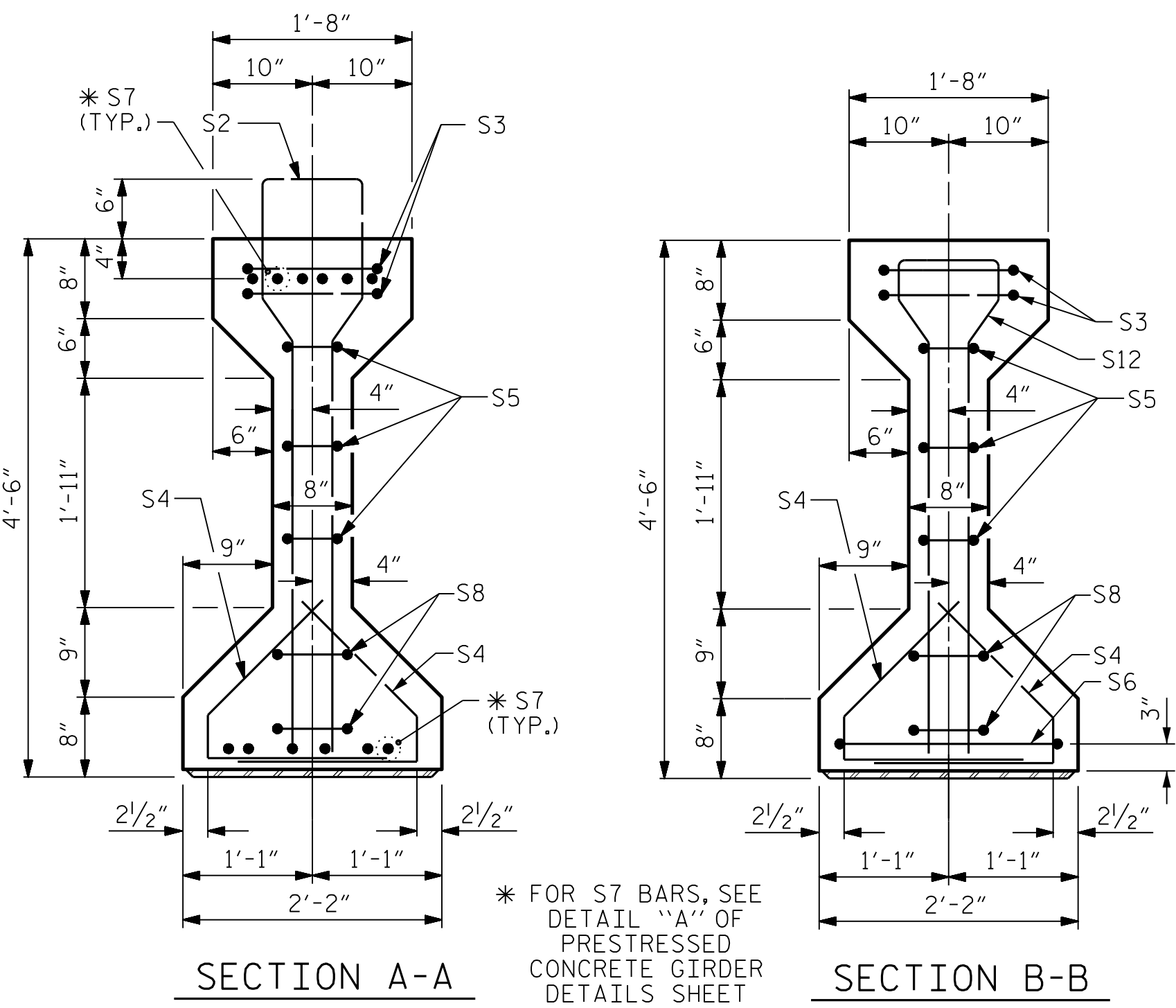
MI ENGINEERING
1011 SCHAUH DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
AASHTO TYPE IV
PRESTRESSED CONCRETE
GIRDER - LINK SLAB
SPAN A

REVISIONS						SHEET NO. S10-13
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 33
2			4			

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DRAWN BY : D.R. BROWN	DATE : 02/2021
CHECKED BY : J.I. BREWER	DATE : 03/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022



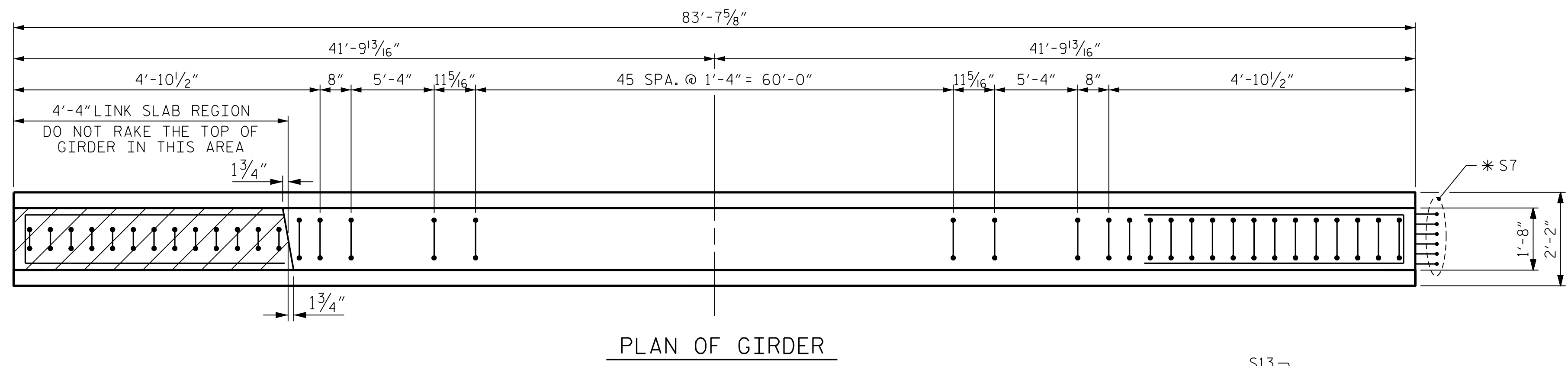
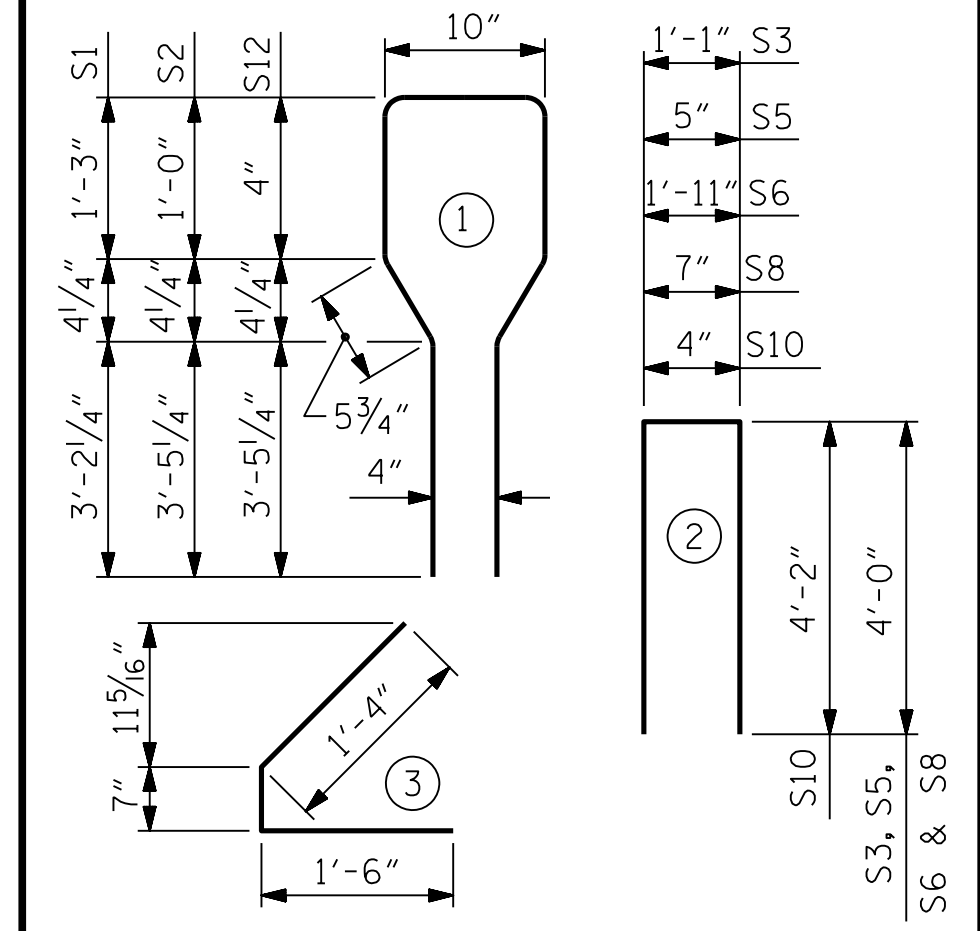
0.6" Ø L. R. GRADE 270 STRANDS		
AREA (SQ. INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	64	#4	1	10'-8"	456
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S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23
S12	13	#6	1	9'-4"	182
S13	1	#3	STR	1'-4"	1

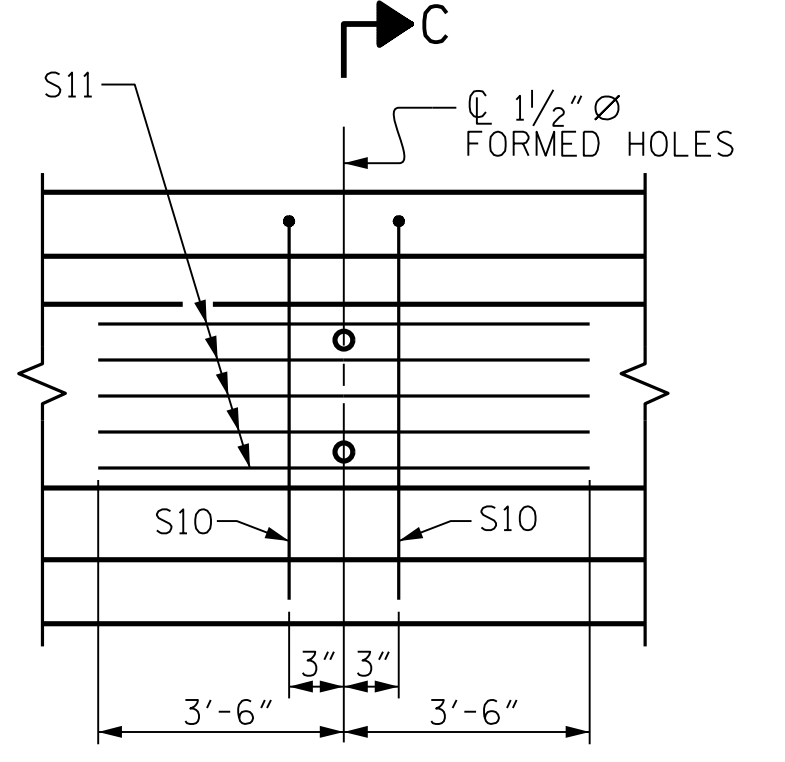
* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT.



- DEBONDING LEGEND
- FULLY BONDED STRANDS
 - ▲ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
 - STRANDS DEBONDED FOR 8'-0" FROM END OF GIRDER



QUANTITIES FOR ONE GIRDER

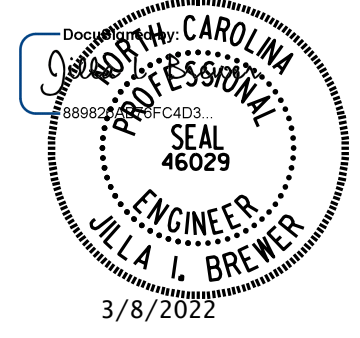
	REINFORCING STEEL	7000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
GDR. B1-GDR. B4	1,306	17.0	30

GIRDERS REQUIRED		
NUMBER	LENGTH	TOTAL LENGTH
4	83.64'	334.54'

PROJECT NO. I-5987B
 ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 AASHTO TYPE IV
 PRESTRESSED CONCRETE
 GIRDER - LINK SLAB
 SPAN B



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MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

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

SHEET NO.
 S10-14
 TOTAL SHEETS
 33

DRAWN BY : D.R. BROWN	DATE : 02/2021
CHECKED BY : J.I. BREWER	DATE : 03/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

3/8/2022 10:37:57 AM User: blanning File: I:\Projects\202003 I-5987A&B I-5987B\Structures\410-027-I5987B-SMU.G2-770167.dgn

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
0.60" Ø LOW RELAXATION STRANDS	GIRDERS 1 & 4																				
	SPAN A																				
TWENTIETH POINTS	0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.021	0.041	0.061	0.078	0.094	0.107	0.118	0.126	0.130	0.132	0.130	0.126	0.118	0.107	0.094	0.078	0.061	0.041	0.021	0
** DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.013	0.025	0.038	0.050	0.060	0.070	0.076	0.082	0.084	0.086	0.084	0.082	0.076	0.070	0.060	0.050	0.038	0.026	0.013	0
FINAL CAMBER ↑	0	1/8"	3/16"	1/4"	5/16"	7/16"	7/16"	1/2"	1/2"	9/16"	9/16"	9/16"	1/2"	1/2"	7/16"	7/16"	5/16"	1/4"	3/16"	1/8"	0
0.60" Ø LOW RELAXATION STRANDS	GIRDERS 2 & 3																				
	SPAN A																				
TWENTIETH POINTS	0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.021	0.041	0.061	0.078	0.094	0.107	0.118	0.126	0.130	0.132	0.130	0.126	0.118	0.107	0.094	0.078	0.061	0.041	0.021	0
** DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.013	0.026	0.039	0.052	0.062	0.072	0.079	0.085	0.087	0.090	0.087	0.085	0.079	0.072	0.062	0.052	0.039	0.027	0.013	0
FINAL CAMBER ↑	0	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	7/16"	3/8"	5/16"	1/4"	3/16"	1/16"	0
0.60" Ø LOW RELAXATION STRANDS	GIRDERS 1 & 4																				
	SPAN B																				
TWENTIETH POINTS	0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.021	0.041	0.061	0.078	0.094	0.107	0.118	0.126	0.130	0.132	0.130	0.126	0.118	0.107	0.094	0.078	0.061	0.041	0.021	0
** DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.013	0.026	0.038	0.050	0.060	0.070	0.076	0.082	0.084	0.086	0.084	0.082	0.076	0.070	0.060	0.050	0.038	0.025	0.013	0
FINAL CAMBER ↑	0	1/8"	3/16"	1/4"	5/16"	7/16"	7/16"	1/2"	1/2"	9/16"	9/16"	9/16"	1/2"	1/2"	7/16"	7/16"	5/16"	1/4"	3/16"	1/8"	0
0.60" Ø LOW RELAXATION STRANDS	GIRDERS 2 & 3																				
	SPAN B																				
TWENTIETH POINTS	0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.021	0.041	0.061	0.078	0.094	0.107	0.118	0.126	0.130	0.132	0.130	0.126	0.118	0.107	0.094	0.078	0.061	0.041	0.021	0
** DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.013	0.027	0.039	0.052	0.062	0.072	0.079	0.085	0.087	0.090	0.087	0.085	0.079	0.072	0.062	0.052	0.039	0.026	0.013	0
FINAL CAMBER ↑	0	1/16"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	7/16"	3/8"	5/16"	1/4"	3/16"	1/8"	0

** INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD.
 ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS SHOWN IN INCHES (FRACTION FORM).

NOTES:

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL SHALL BE GRADE 60.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.

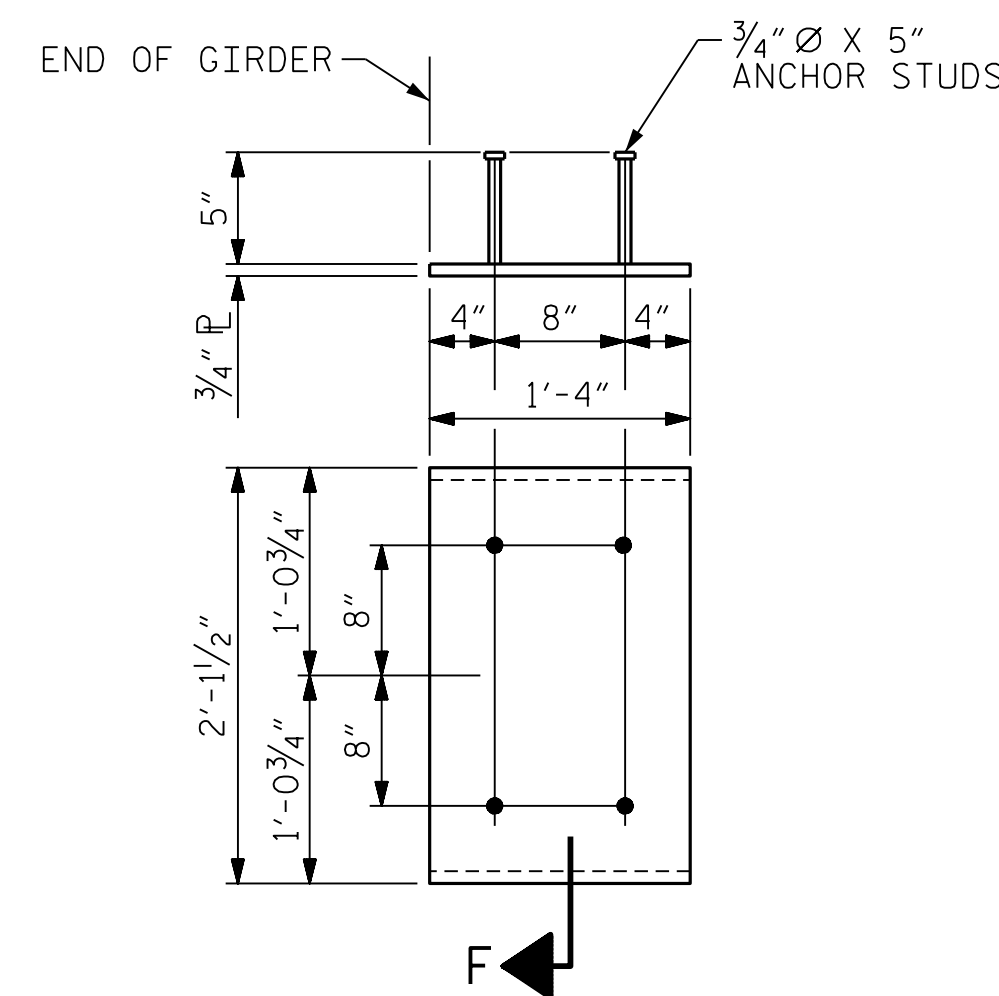
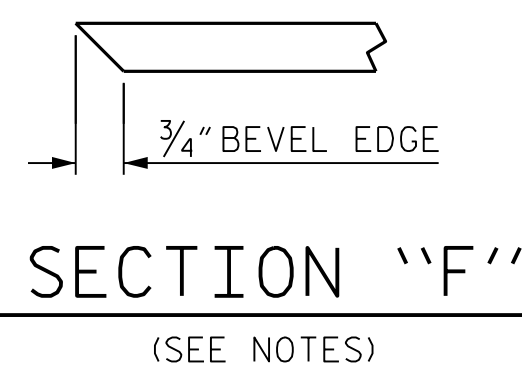
DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4" AND THE SHADED AREA NEAR BENT 1, SHALL BE RAKED TO A DEPTH OF 1/4".

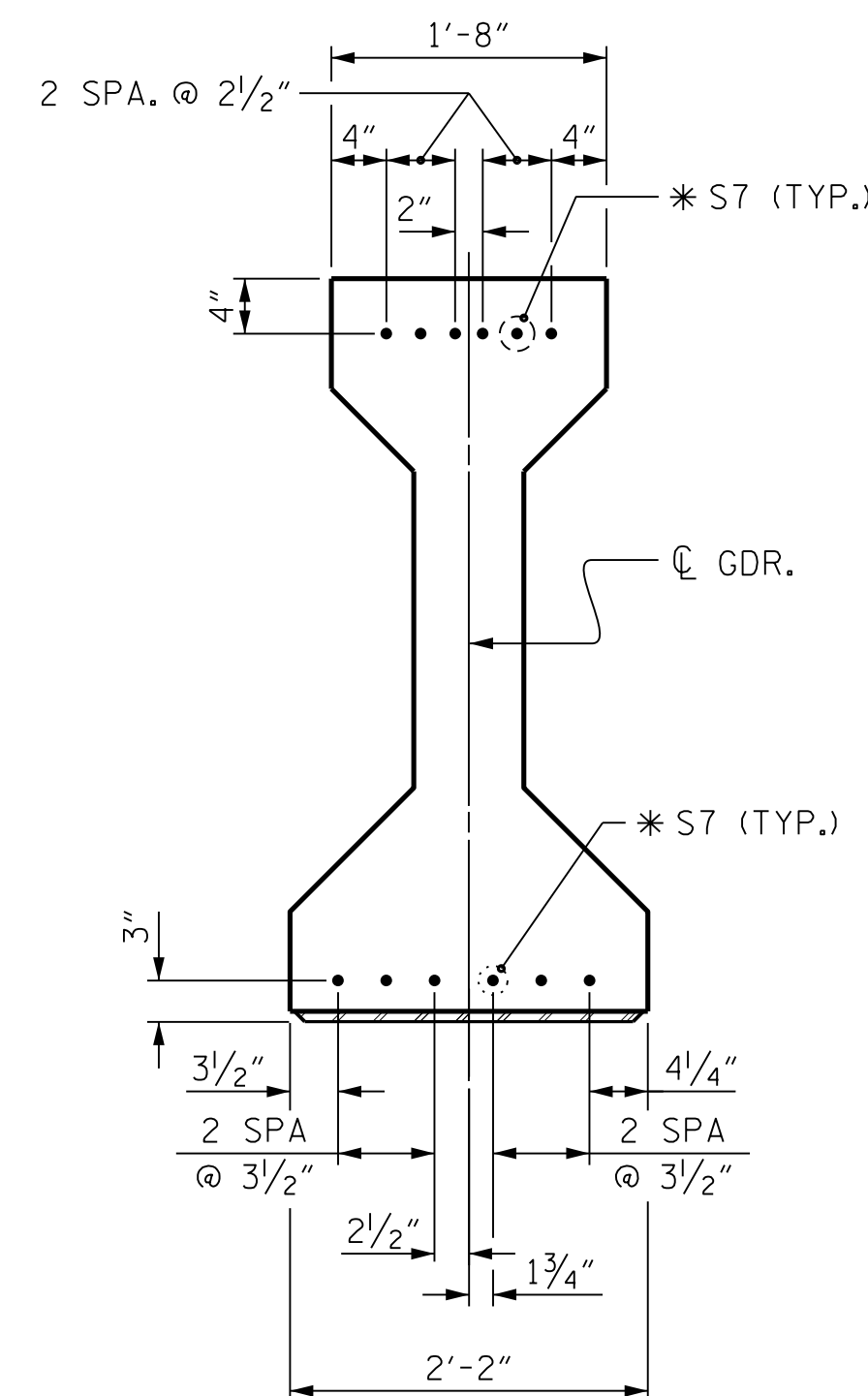
THE CONTRACTOR HAS THE OPTION TO PROVIDE, AT NO ADDITIONAL COST TO THE DEPARTMENT, 2 ADDITIONAL STRANDS AT THE TOP OF THE GIRDER TO FACILITATE TYING OF THE REINFORCING STEEL. THESE STRANDS SHALL BE PULLED TO A LOAD OF 4500 LBS.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW ON SHEETS 1 AND 2 OF 4.

THE TOP OF THE GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS/STUDS, ANCHOR STUDS, DECK FORMWORK ATTACHMENTS, AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.



EMBEDDED PLATE "B-1" DETAILS
 FOR AASHTO TYPE IV GIRDER
 (2 REQ'D. PER GIRDER)

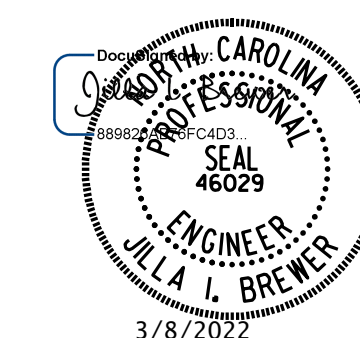


DETAIL "A"
 AT INTEGRAL END BENT

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 DETAILS

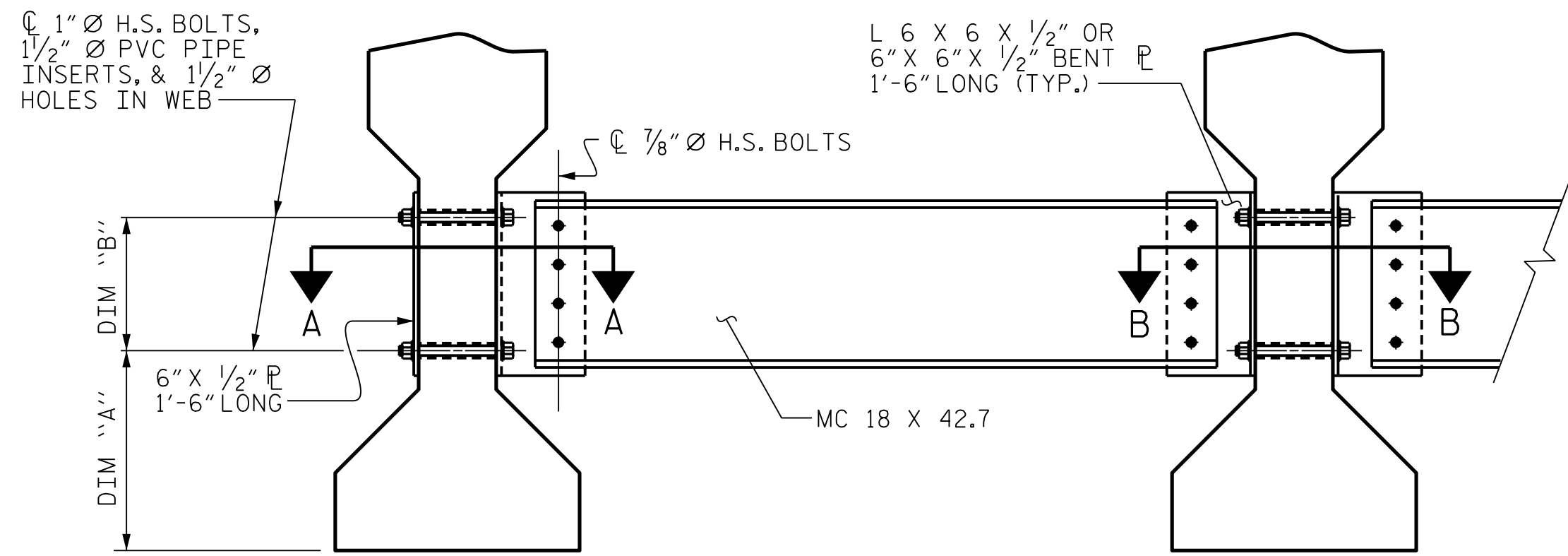


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 UNLESS ALL SIGNATURES COMPLETED**

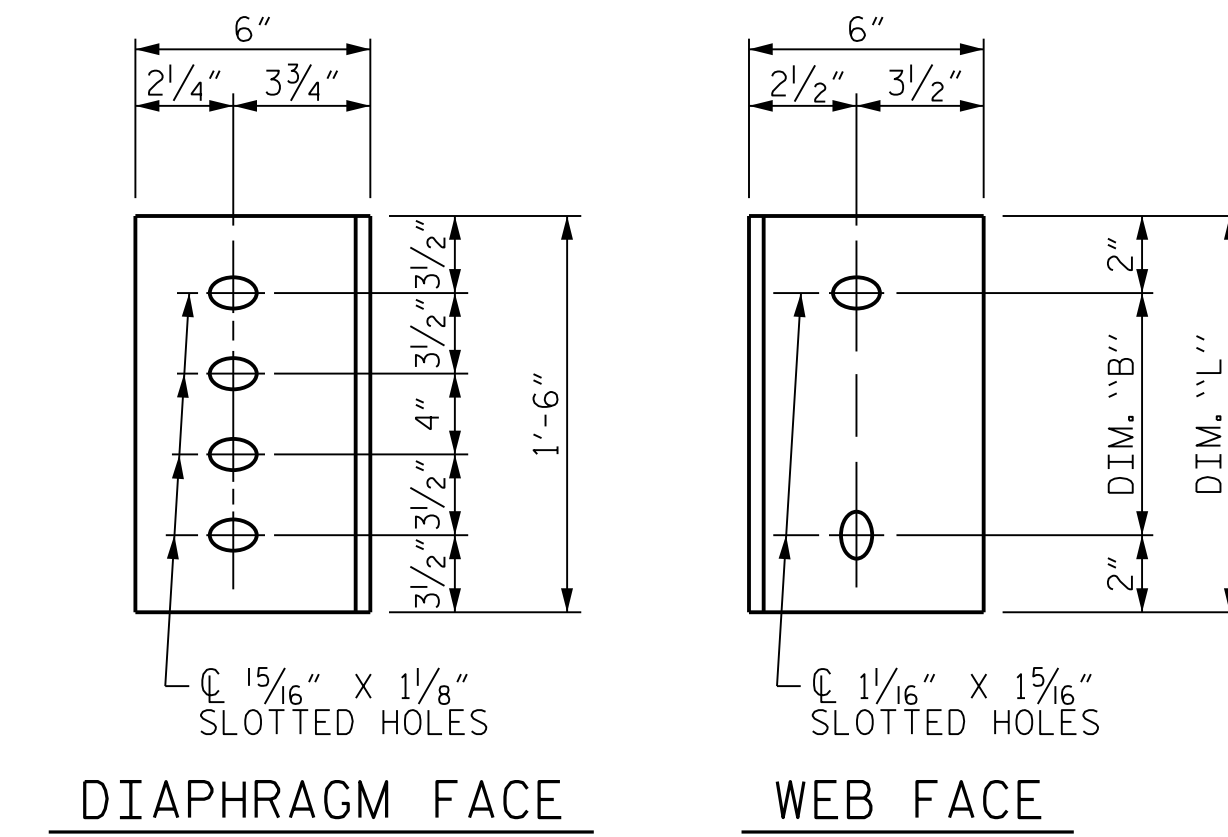
MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S10-15
2			4			TOTAL SHEETS 33

3/8/2022 10:37:58 AM User: blanning
 File: C:\Users\blanning\Documents\I-5987A&B I-5987B Structures\410-029-I5987B-SMU-03-770167.dgn



EXTERIOR GIRDER INTERIOR GIRDER
PART SECTION AT INTERMEDIATE DIAPHRAGM



DIAPHRAGM FACE WEB FACE
CONNECTOR PLATE DETAILS

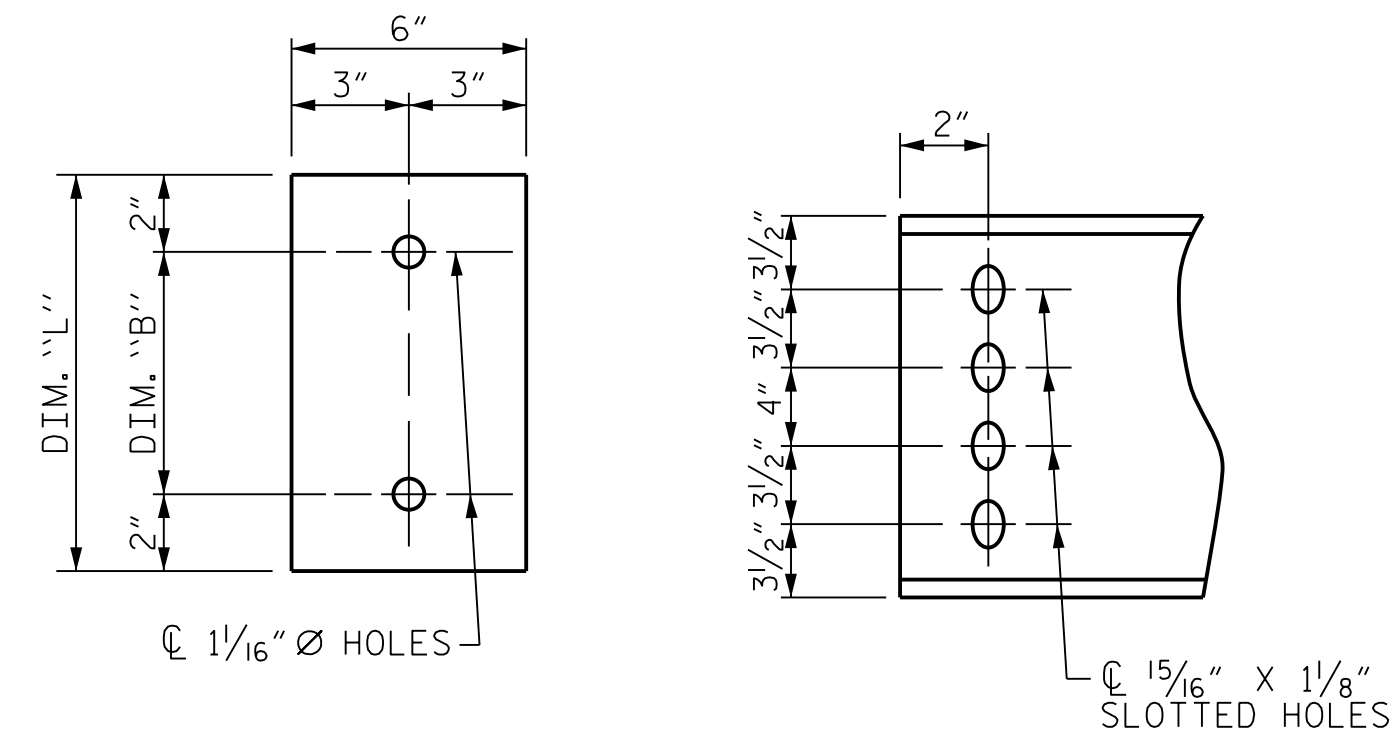


PLATE DETAILS CHANNEL END

NOTES:

ALL INTERMEDIATE DIAPHRAGM STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1*4 TURN.

THE PLATES, BENT PLATES, CHANNELS, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM, THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1*4" PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

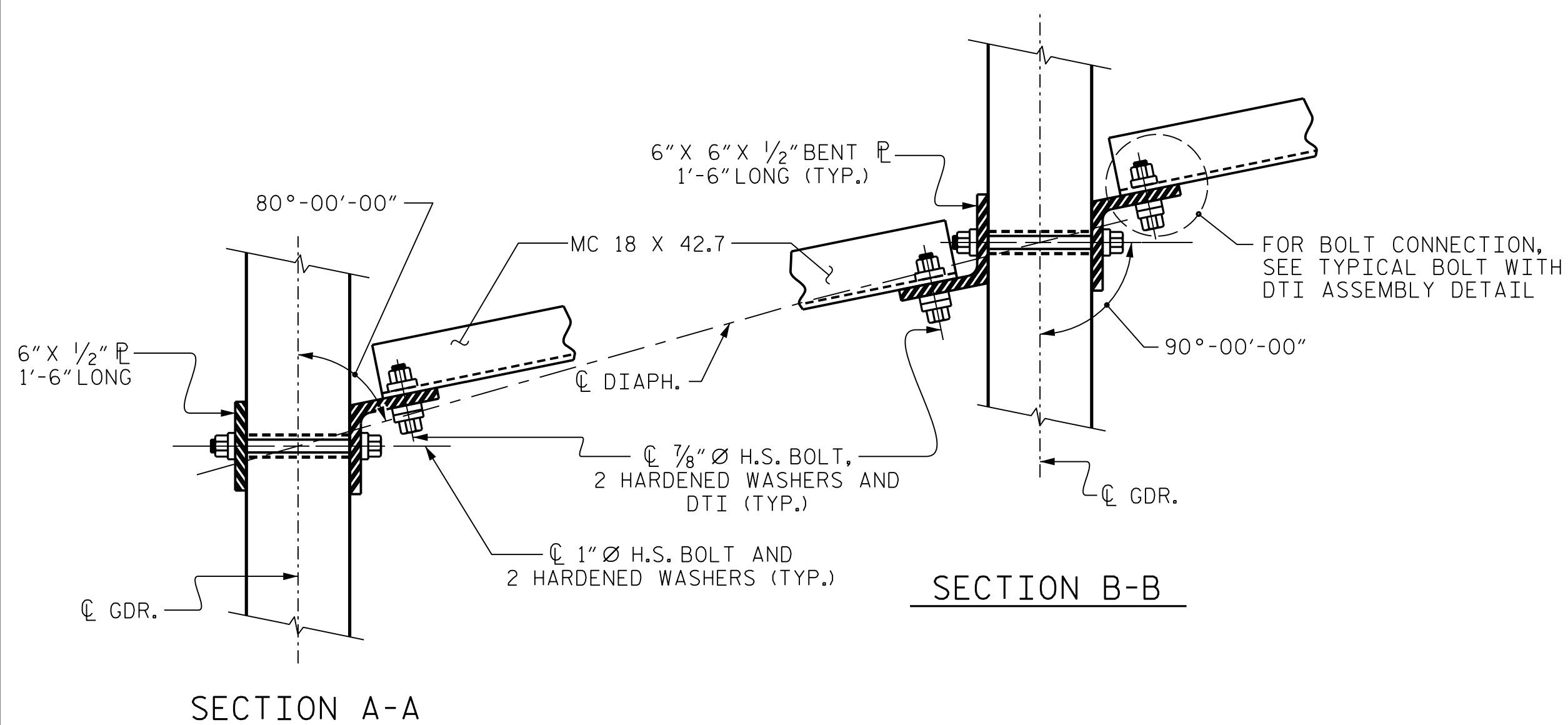
SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

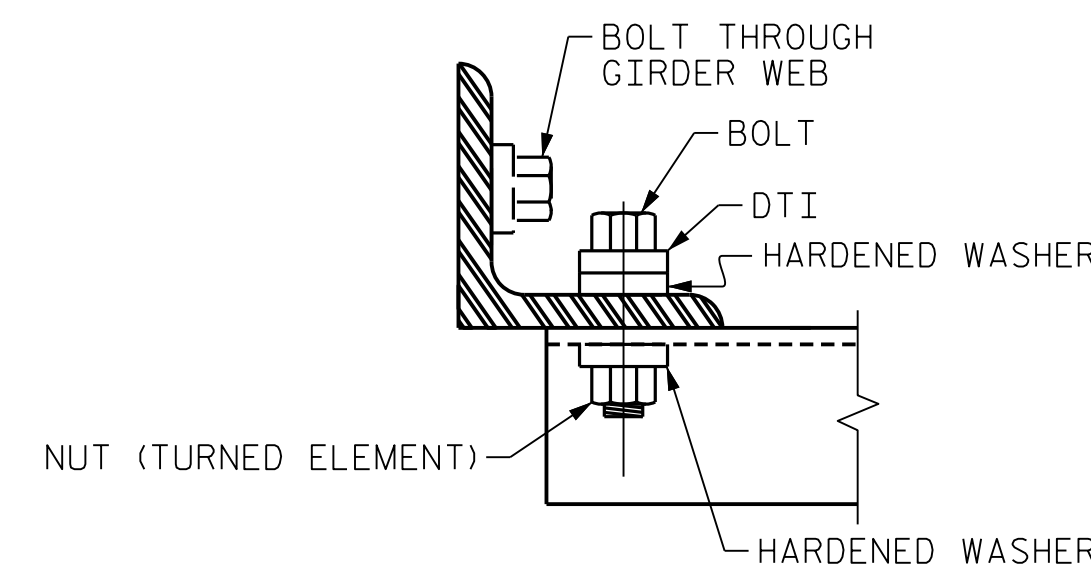
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
IV	MC 18 x 42.7	1'-9 1/2"	1'-2"	1'-6"



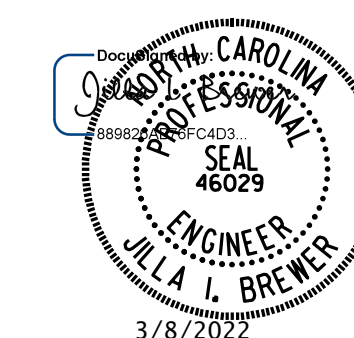
SECTION A-A SECTION B-B
CONNECTION DETAILS



BOLT WITH DTI ASSEMBLY DETAIL

PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 29+70.72 -Y7-

SHEET 4 OF 4



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MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

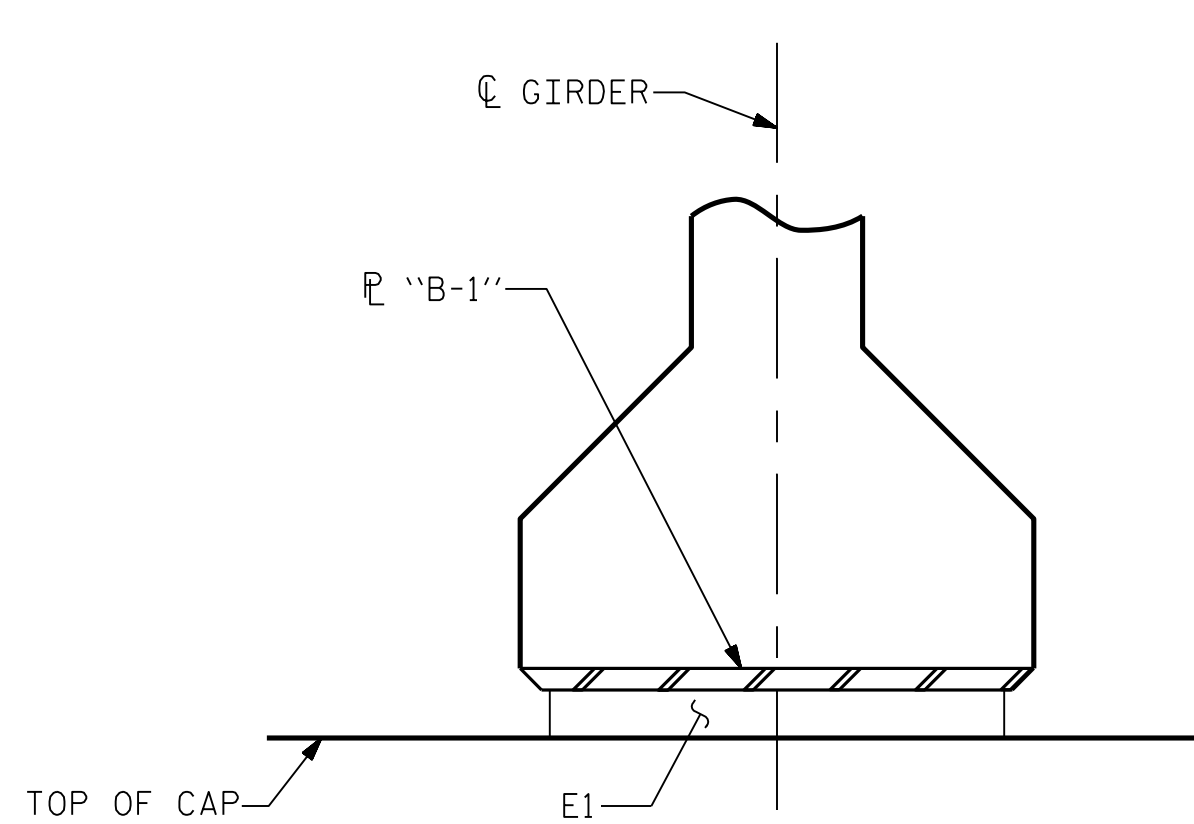
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S10-16
TOTAL SHEETS
33

STD. NO. PCG10

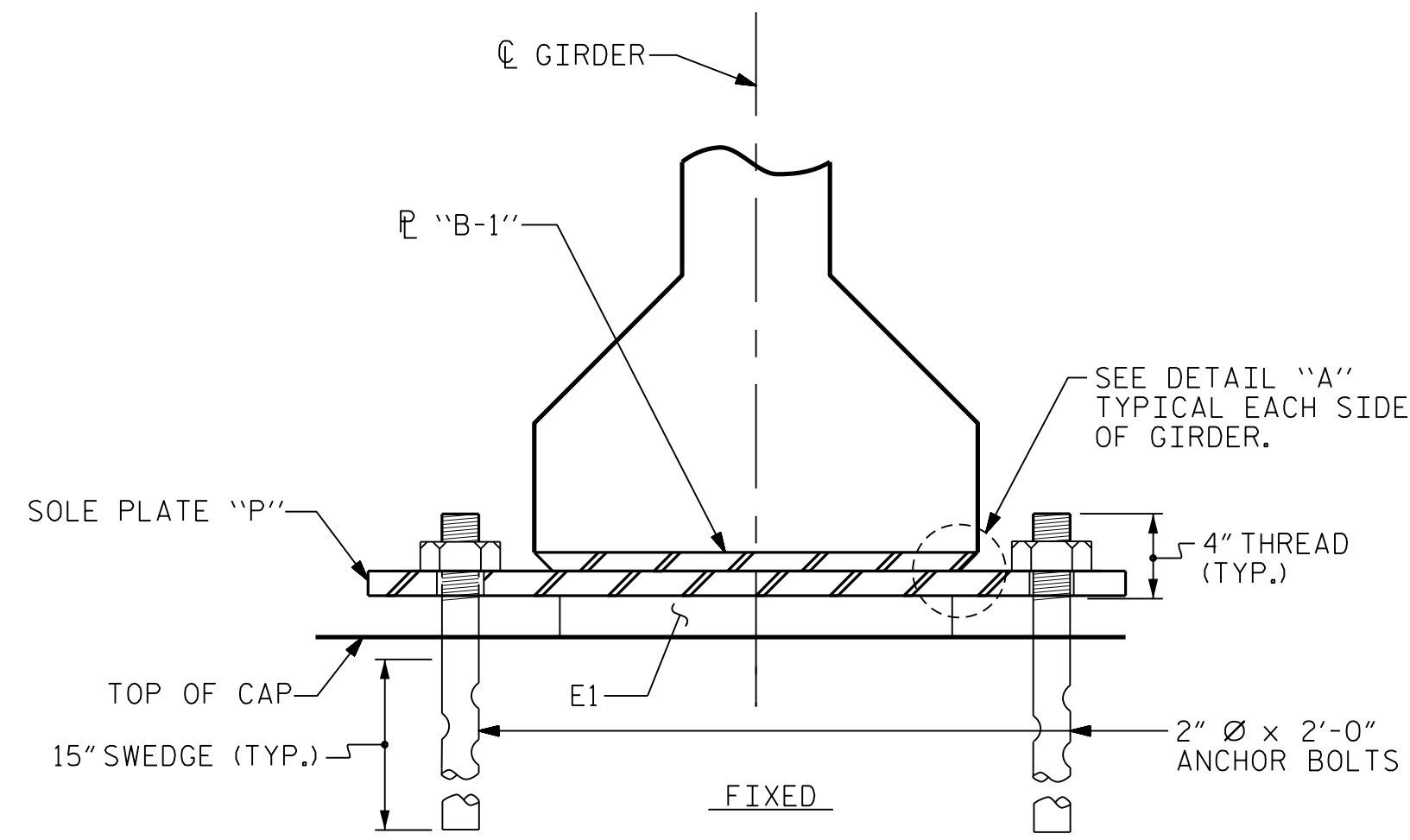
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ASSEMBLED BY: D.R. BROWN	DATE: 02/2021
CHECKED BY: J.I. BREWER	DATE: 03/2021
DESIGN ENGINEER OF RECORD: J.I. BREWER	DATE: 12/2021
DRAWN BY: TLA 6/05	REV. 5/1/06RRR KMM/GM
CHECKED BY: VC 6/05	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

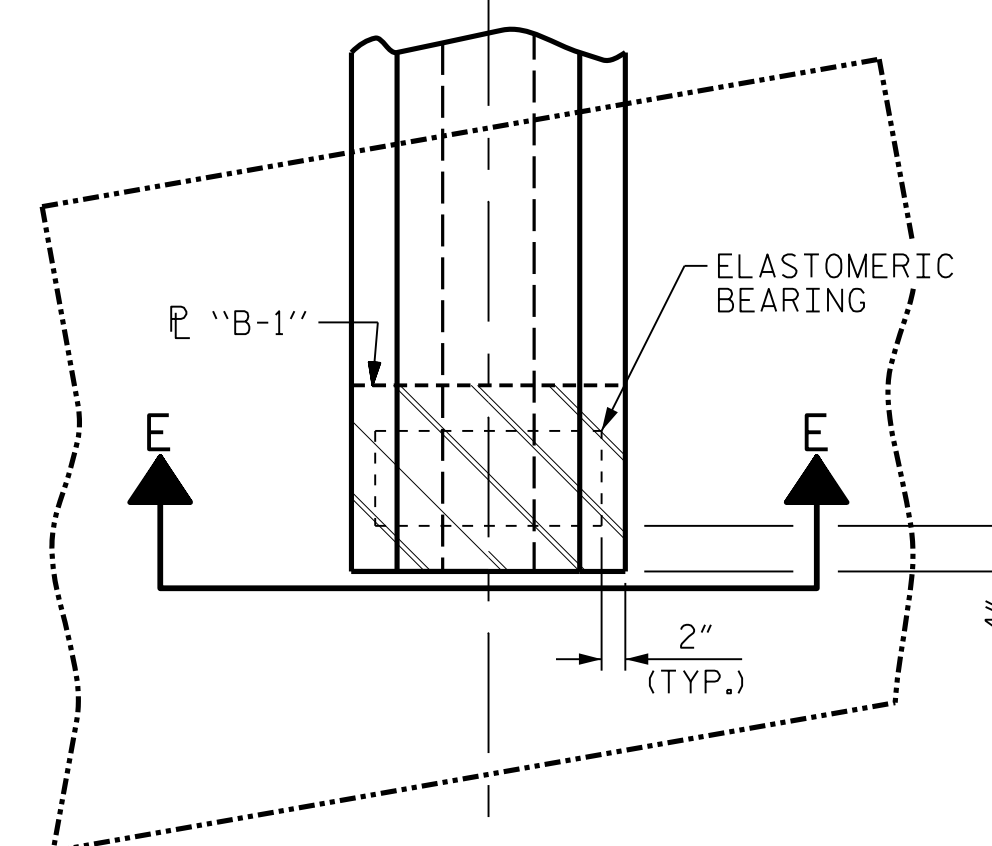


FIXED (AT INTEGRAL)

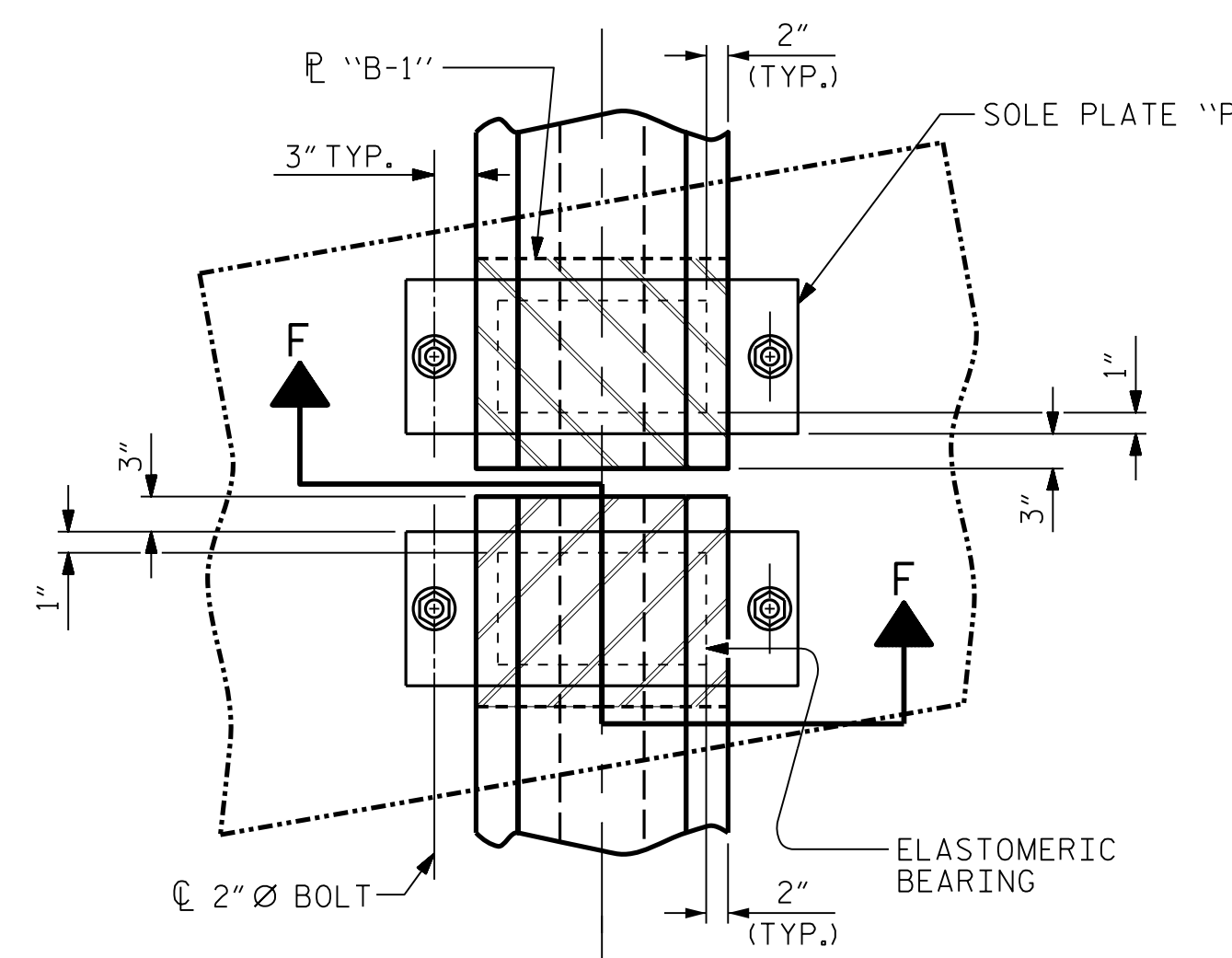
SECTION E-E



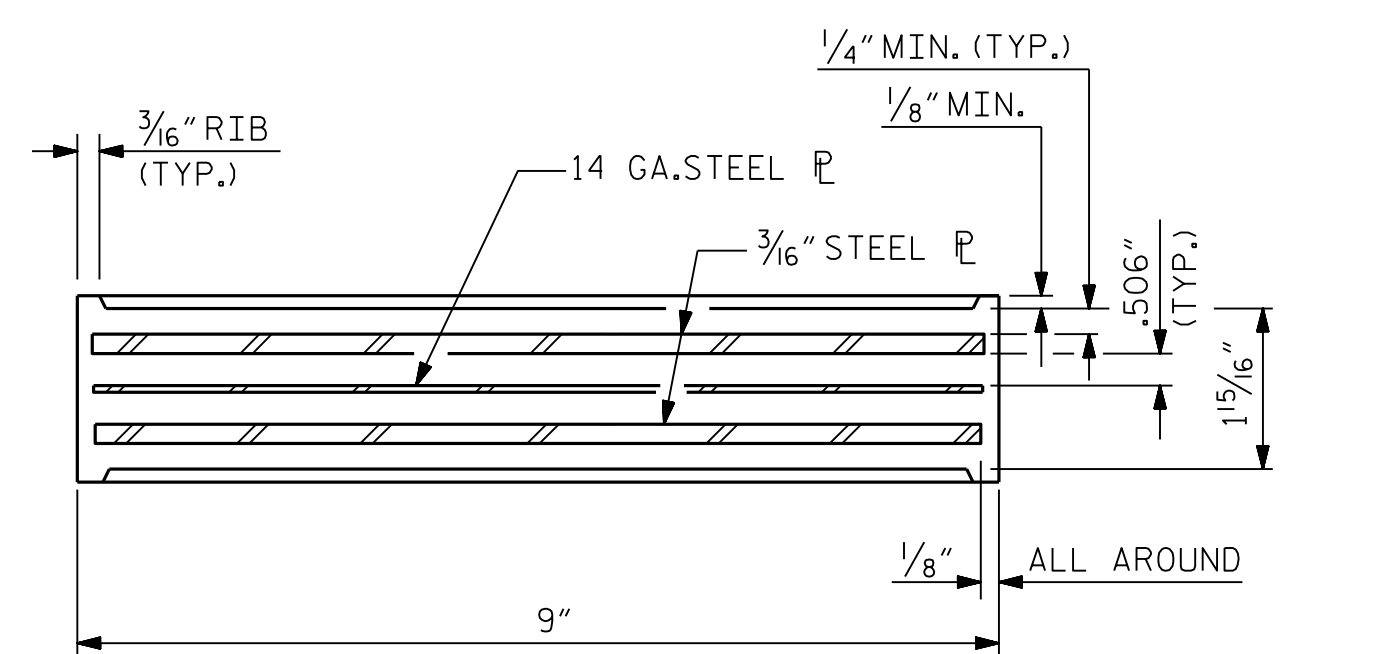
SECTION F-F



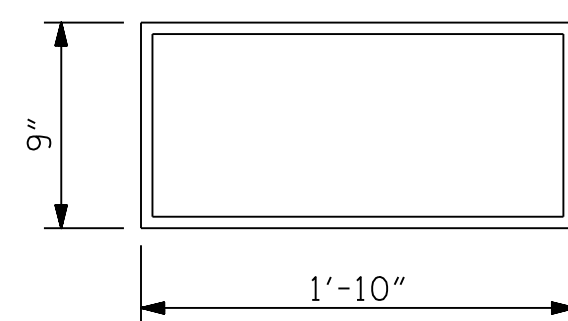
TYPICAL HALF-PLAN
(SHOWING INTEGRAL END BENT)



TYPICAL HALF-PLAN
(SHOWING INTERIOR BENT)



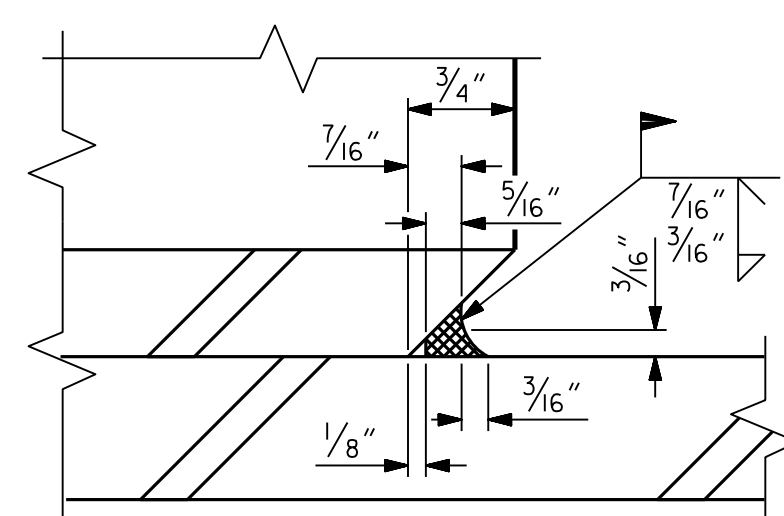
TYPICAL SECTION OF ELASTOMERIC BEARINGS



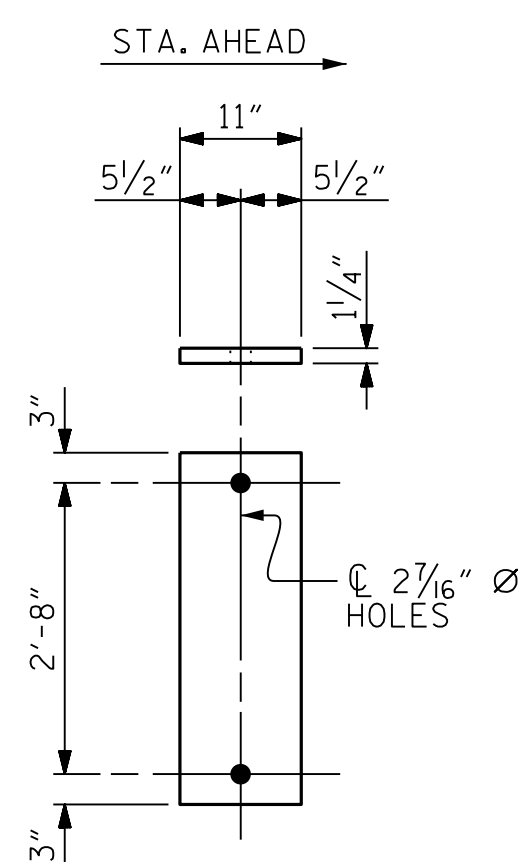
E1 (16 REQ'D.)

PLAN VIEW OF ELASTOMERIC BEARING

TYPE IV



DETAIL "A"



P1 (FIXED)

P1 (8 REQ'D.)

SOLE PLATE DETAILS ("P")

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE IV	225 k

NOTES:

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE "P", BOLTS, NUTS AND WASHERS, SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

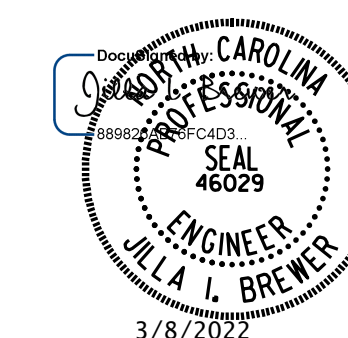
ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-



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 FIRM PE NUMBER: P-0671

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 ELASTOMERIC BEARING
 DETAILS
 PRESTRESSED CONCRETE GIRDER
 SUPERSTRUCTURE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			33
2			4			

3/8/2022 10:38:01 AM User: blanning
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ASSEMBLED BY: D.R. BROWN	DATE: 02/2021
CHECKED BY: J.I. BREWER	DATE: 03/2021
DESIGN ENGINEER OF RECORD: J.I. BREWER	DATE: 12/2021
DRAWN BY: WJH 8/89	REV. 1/15 MAA/TMG
CHECKED BY: CRK 8/89	REV. 12/17 MAA/THC
	REV. 10/21 BNB/AAI

NOTES

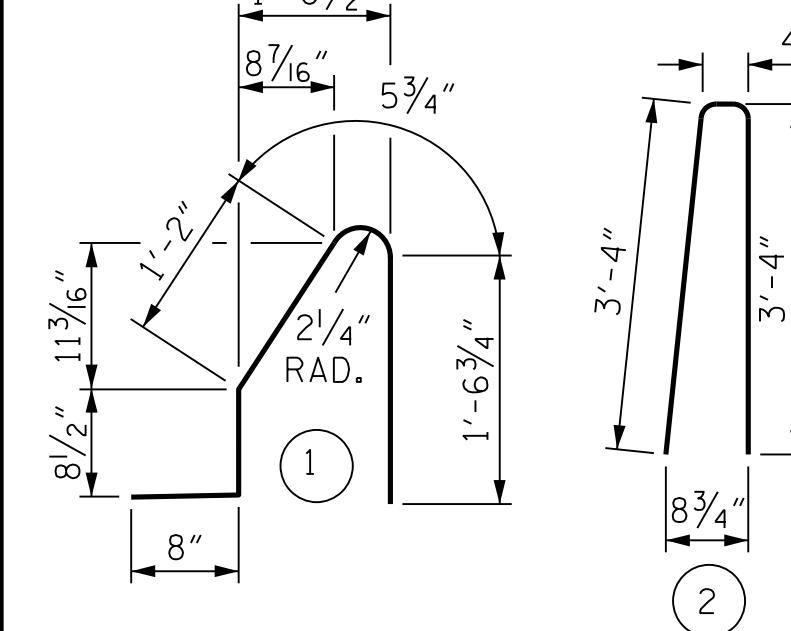
THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE #5 S1 AND #5 S2 MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO 1/2" EXPANSION JOINT MATERIAL IN BARRIER RAIL.

BAR TYPES



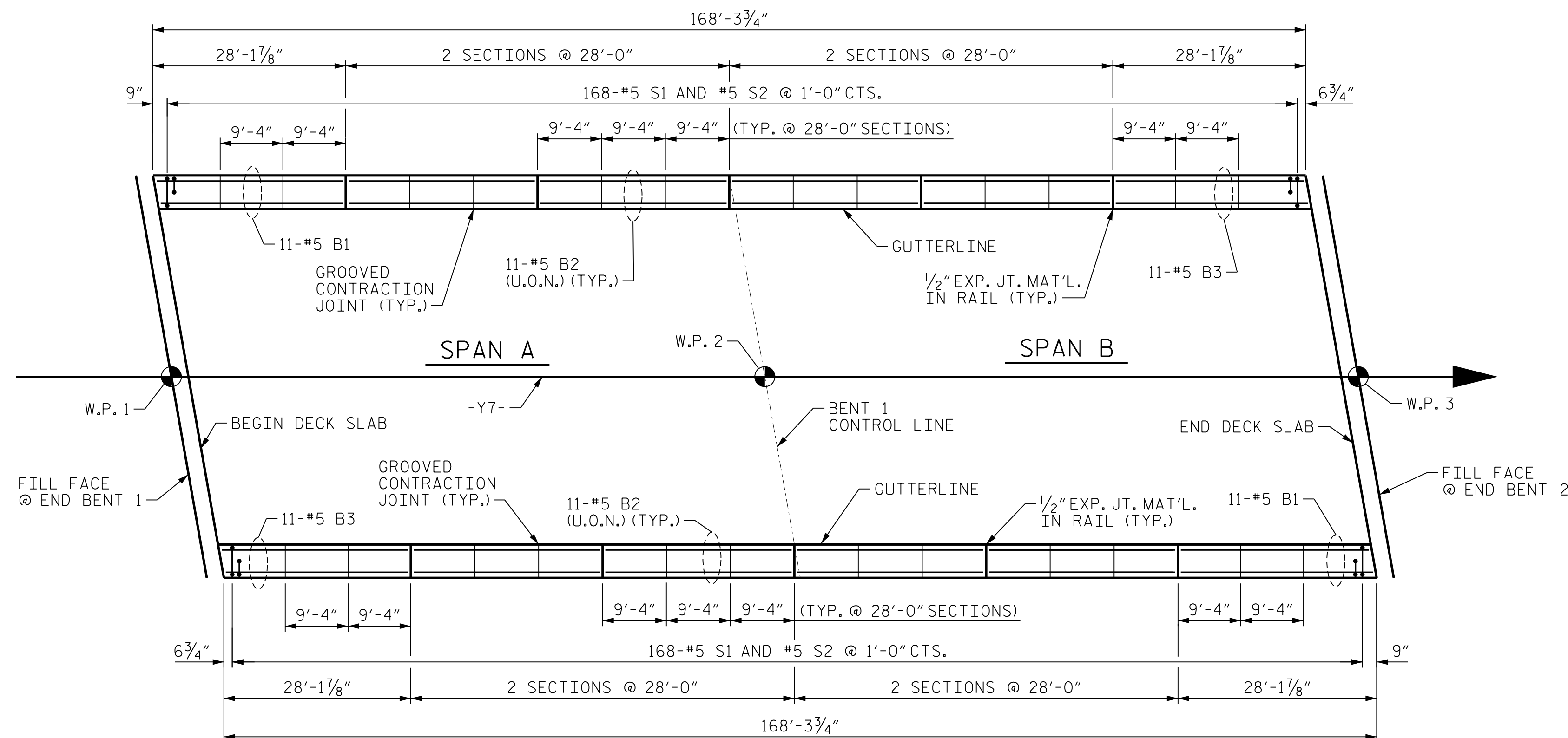
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

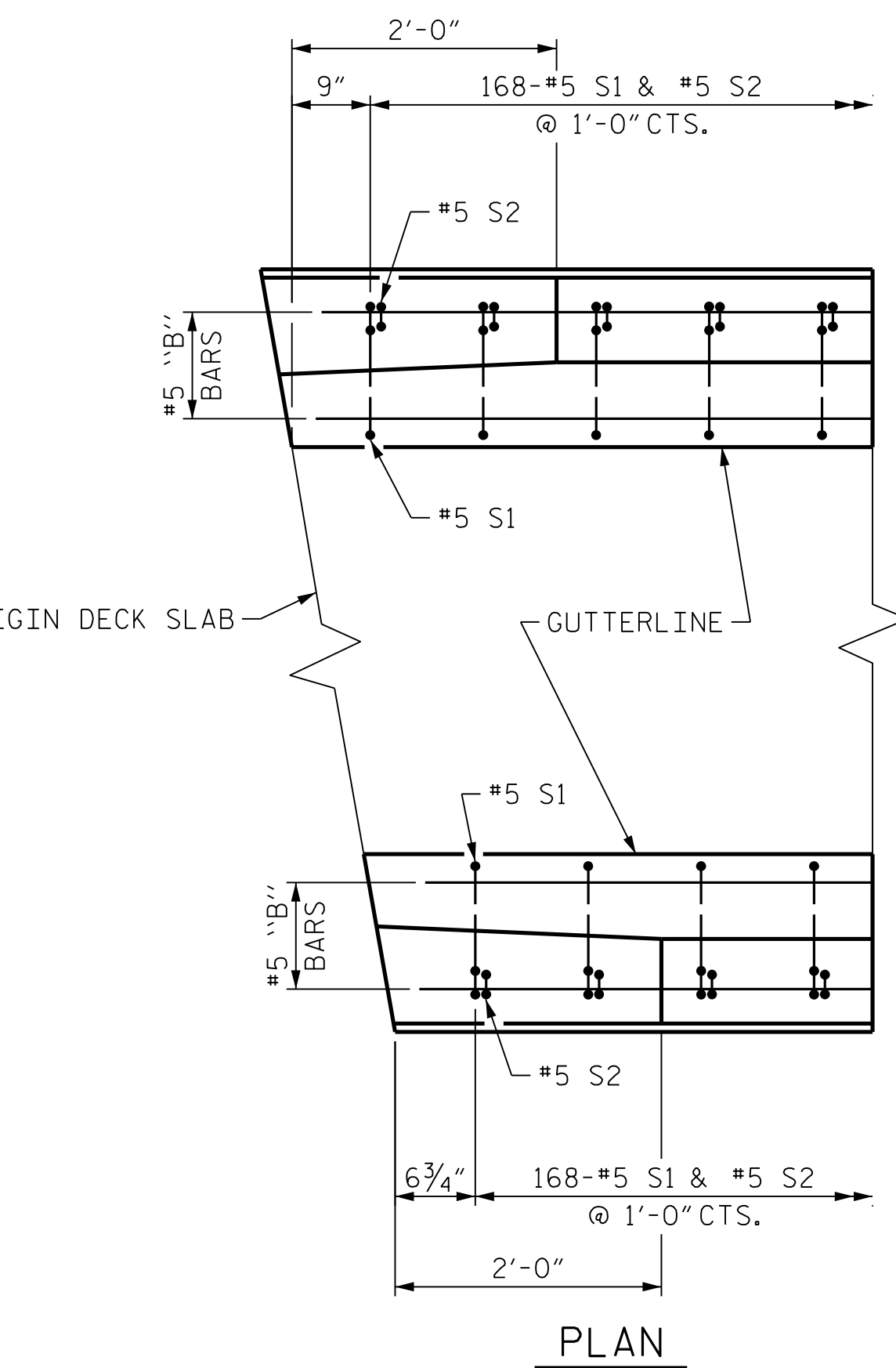
FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B1	22	#5	STR.	27'-6"	631
*B2	88	#5	STR.	27'-7"	2,532
*B3	22	#5	STR.	27'-9"	637
*S1	336	#5	1	4'-7"	1,606
*S2	336	#5	2	7'-0"	2,453

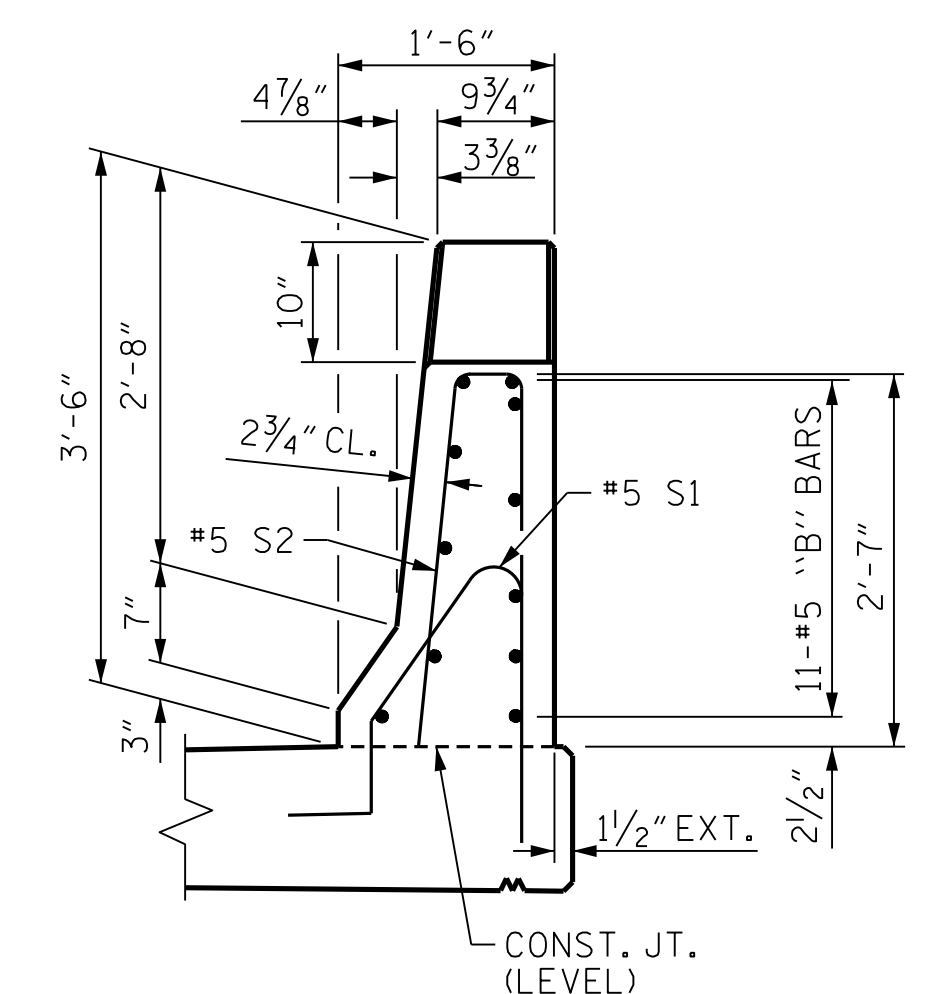
* EPOXY COATED REINFORCING STEEL 7,859 LBS.
CLASS AA CONCRETE 45.8 CU. YDS.
CONCRETE BARRIER RAIL 336.62 LIN. FT.



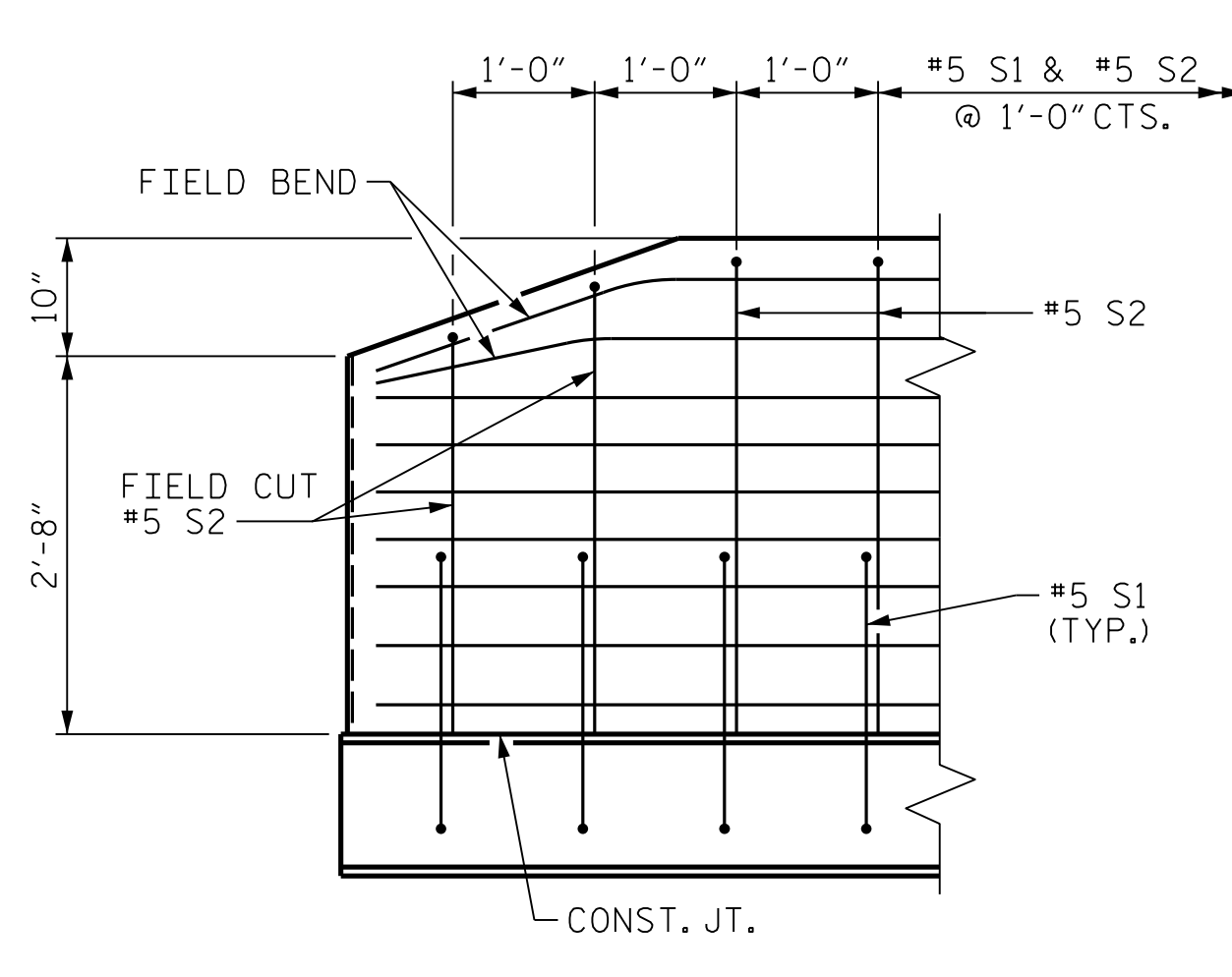
PLAN OF BARRIER RAIL



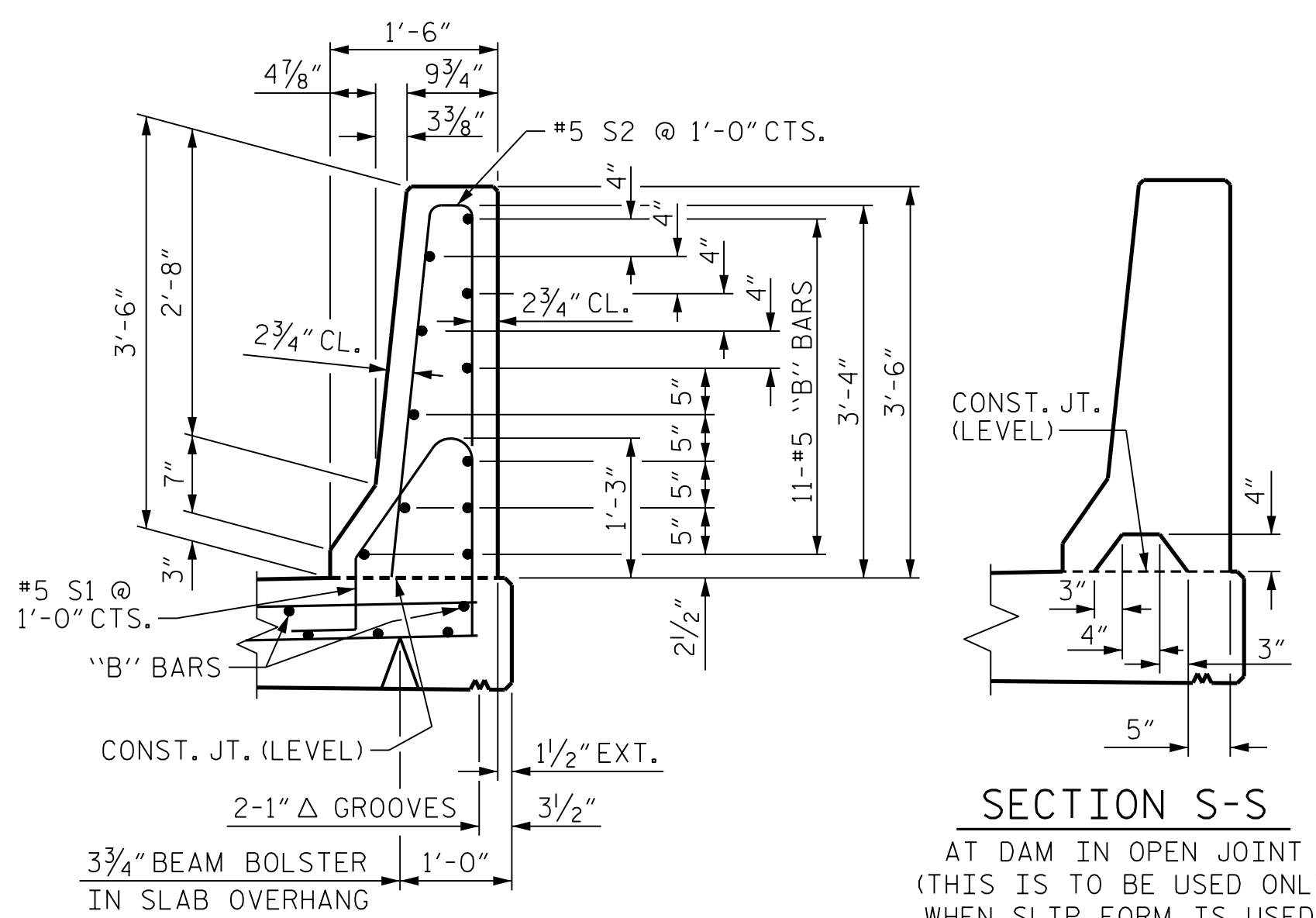
PLAN



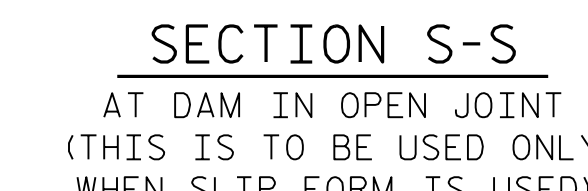
END OF RAIL DETAILS



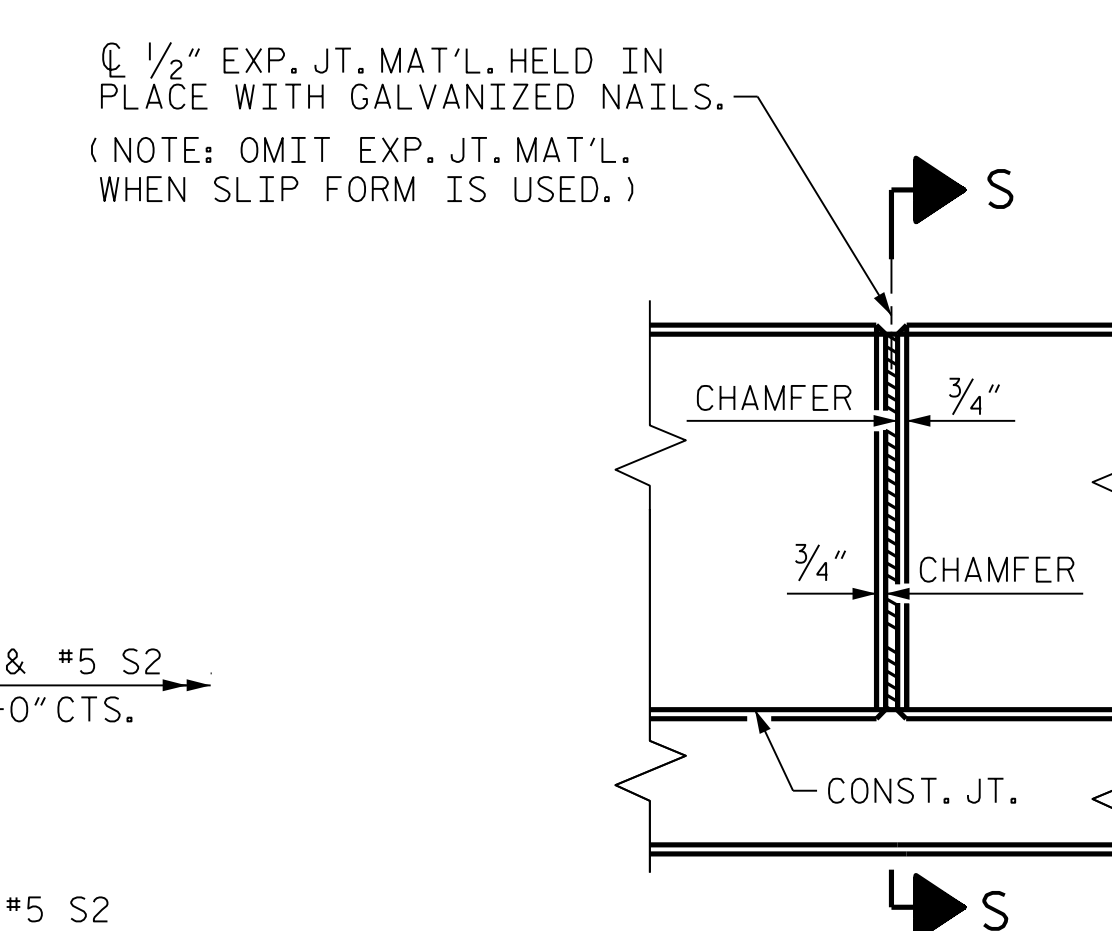
SIDE VIEW



SECTION THRU RAIL

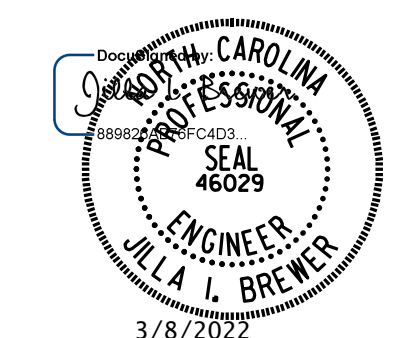


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS

1/2" EXP. JT. MAT'L. HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



PROJECT NO. **I-5987B**
ROBESON COUNTY
STATION: **29+70.72 -Y7-**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD CONCRETE BARRIER RAIL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

REVISIONS						SHEET NO.
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2			4			

STD. NO. CBRI (SHT 3)

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 ASSEMBLED BY: D.R. BROWN DATE: 02/2021
 CHECKED BY: J.I. BREWER DATE: 03/2021
 DESIGN ENGINEER OF RECORD: J.I. BREWER DATE: 12/2021
 DRAWN BY: ARB 5/87 REV. 7/12 MAA/GM
 CHECKED BY: SJD 9/87 REV. 6/13 MAA/GM
 REV. 12/17 MAA/THC

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1*4" HOLD-DOWN PLATE AND 4 - 7/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

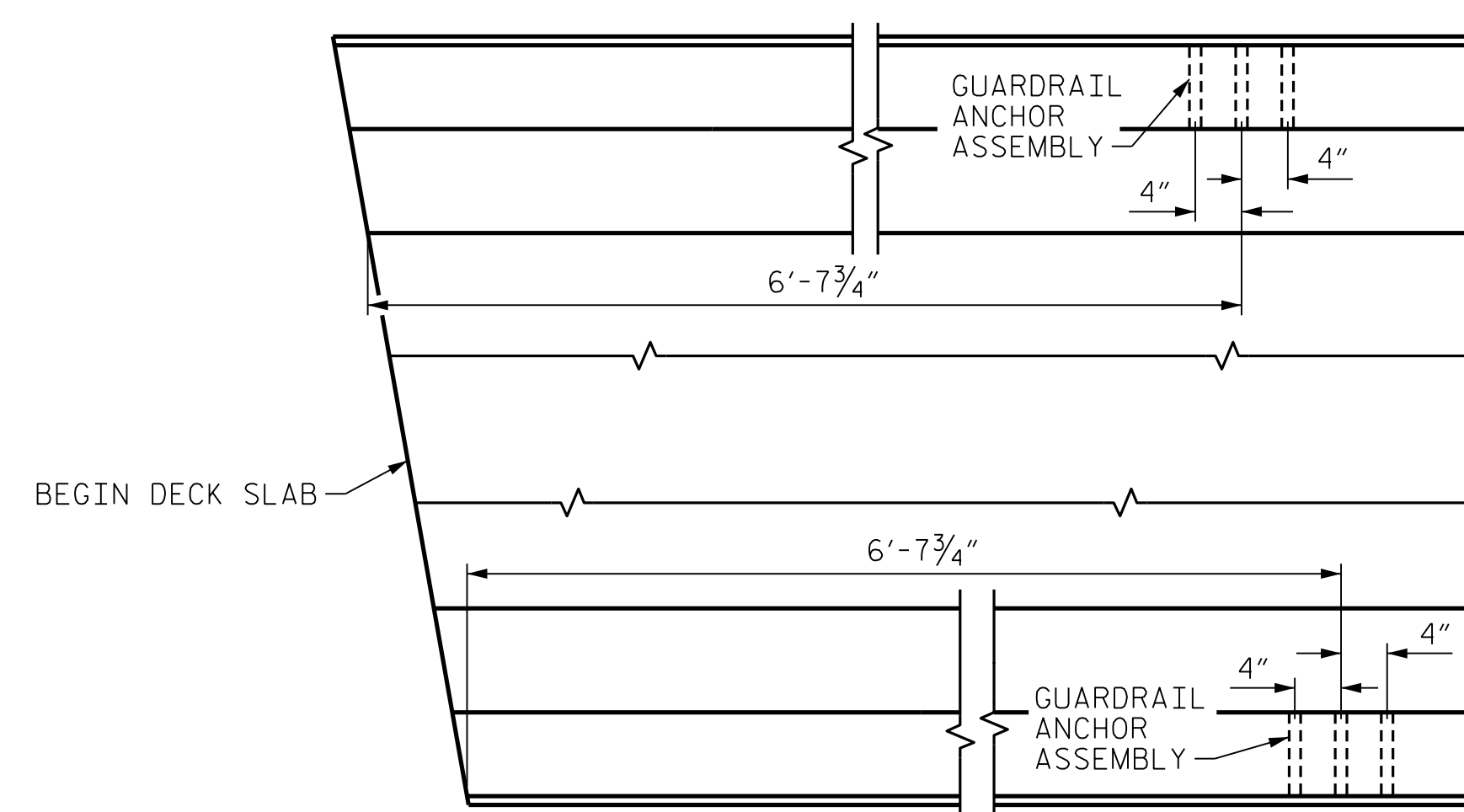
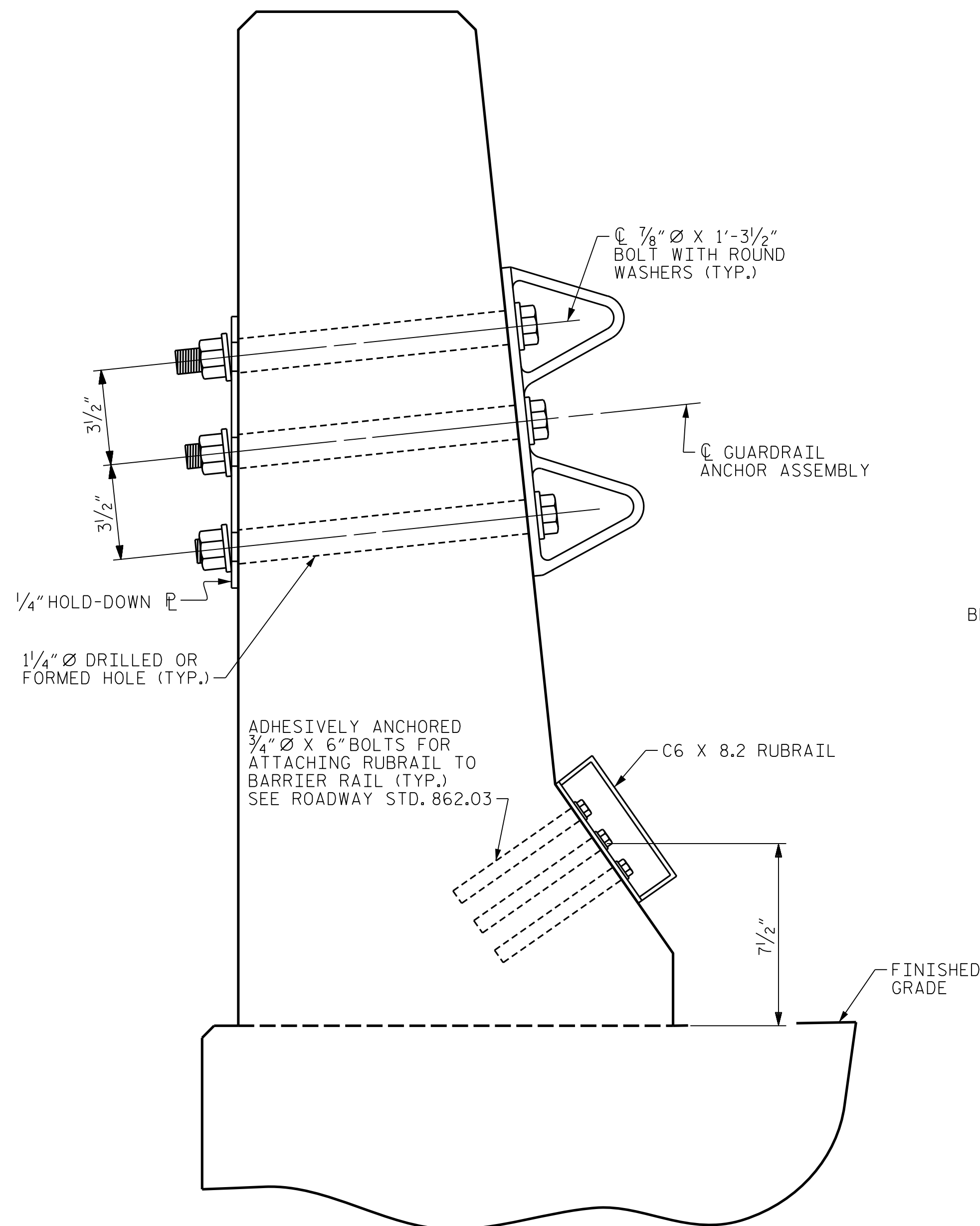
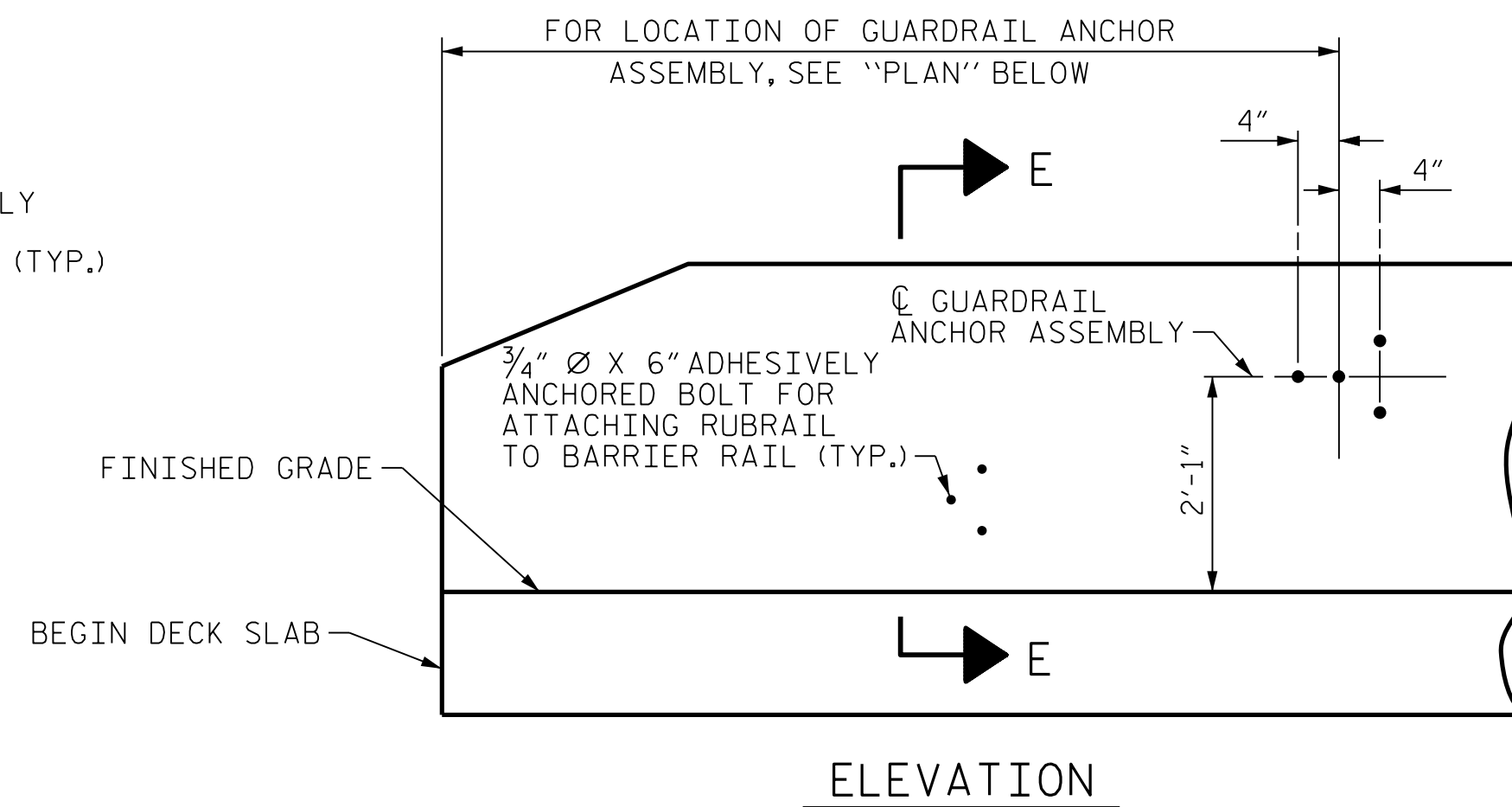
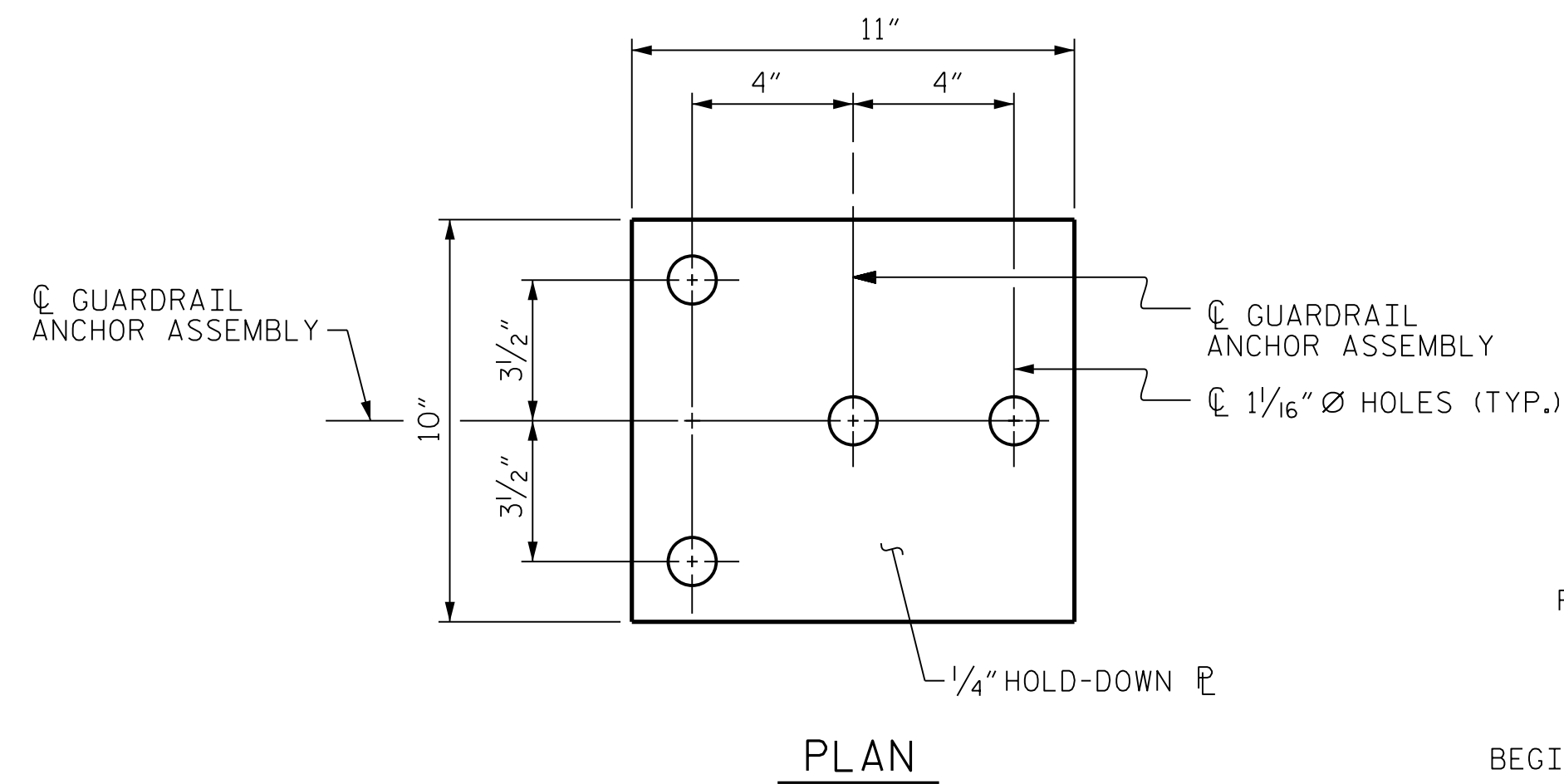
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

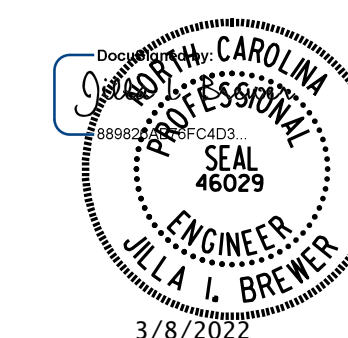


LOCATION OF ANCHORS FOR GUARDRAIL
END BENT 1 SHOWN, END BENT 2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 29+70.72 -Y7-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
GUARDRAIL ANCHORAGE
FOR BARRIER RAIL

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

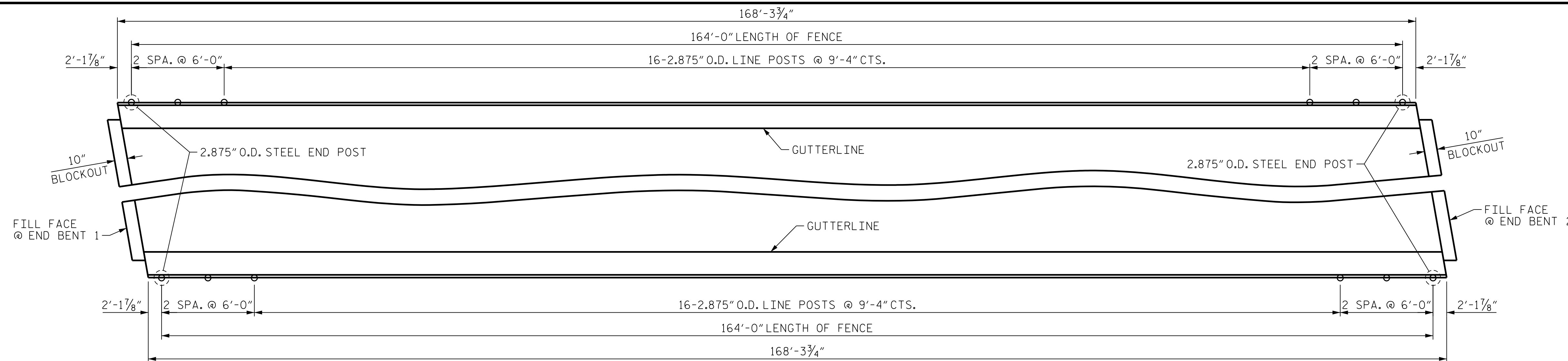
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
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2			4			

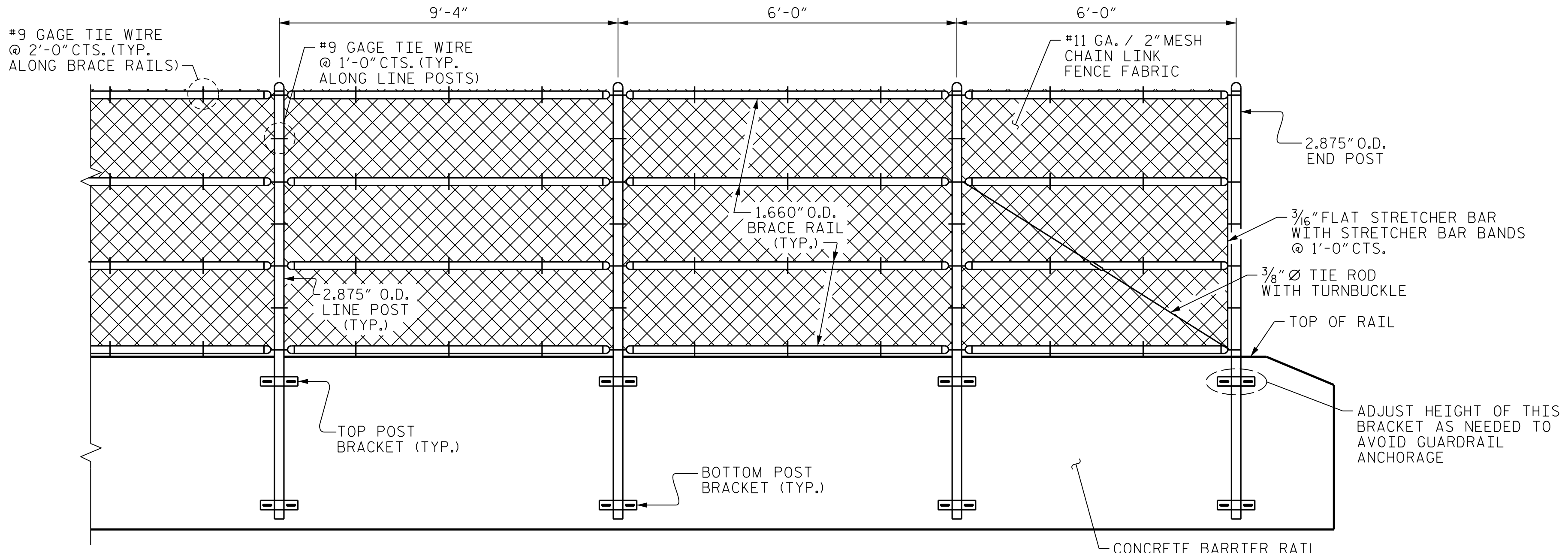
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ASSEMBLED BY: D.R. BROWN	DATE: 02/2021
CHECKED BY: J.I. BREWER	DATE: 03/2021
DESIGN ENGINEER OF RECORD: J.I. BREWER	DATE: 12/2021
DRAWN BY: TLA 5/06	REV. 7/12 MAA/GM
CHECKED BY: GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

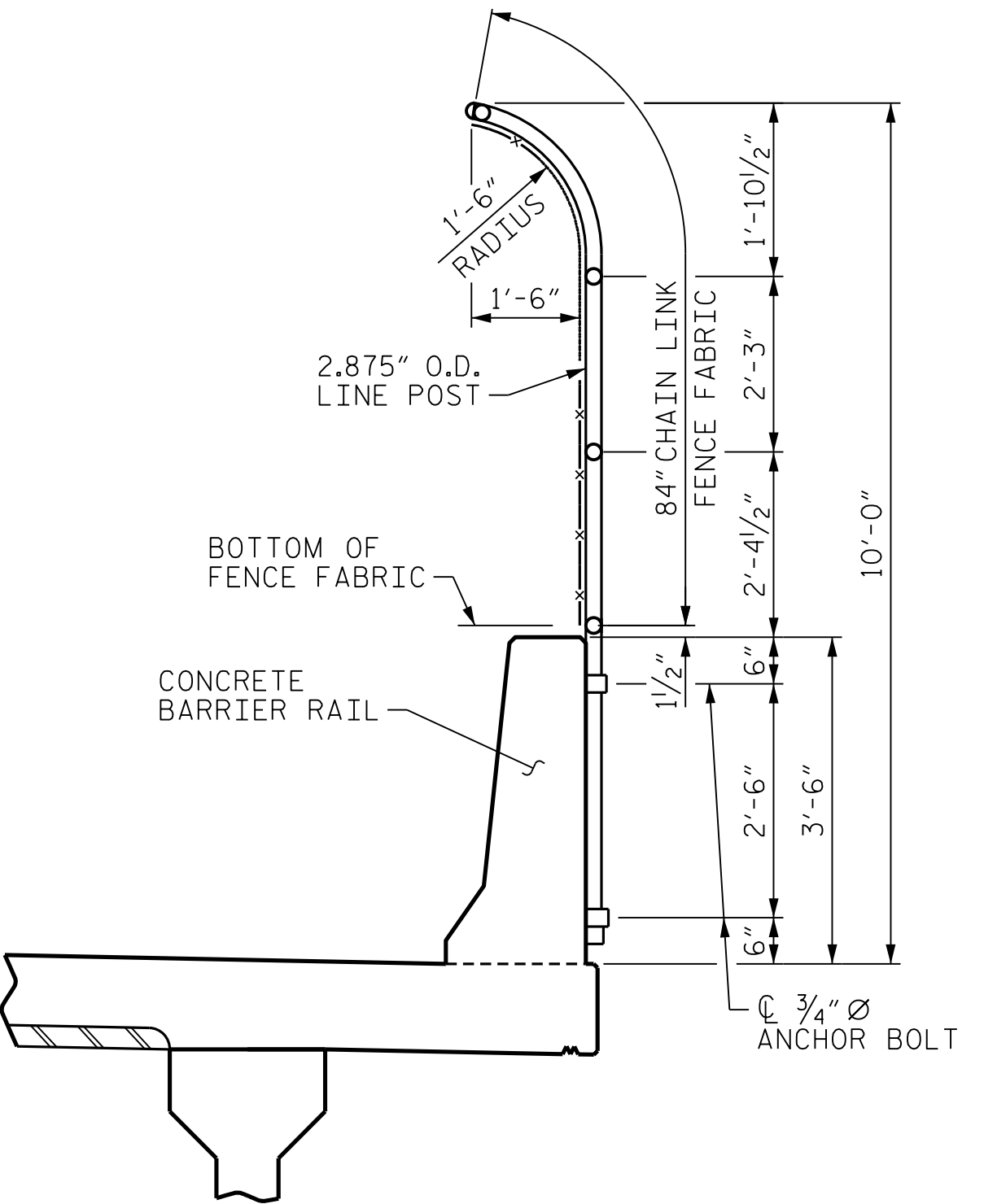


PLAN OF FENCE POST SPACING

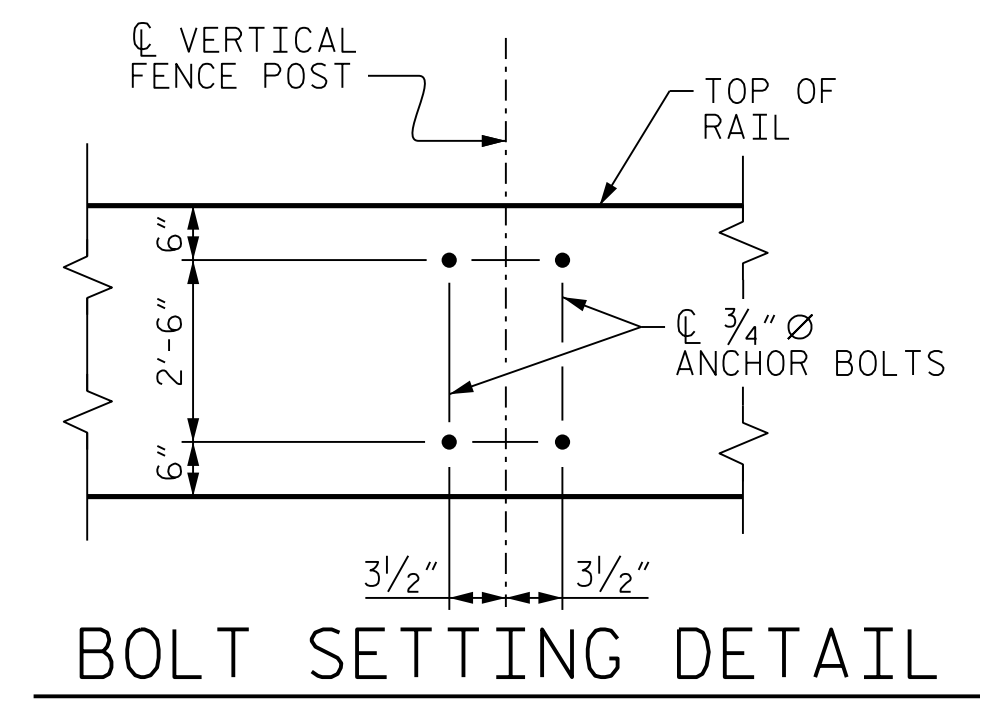
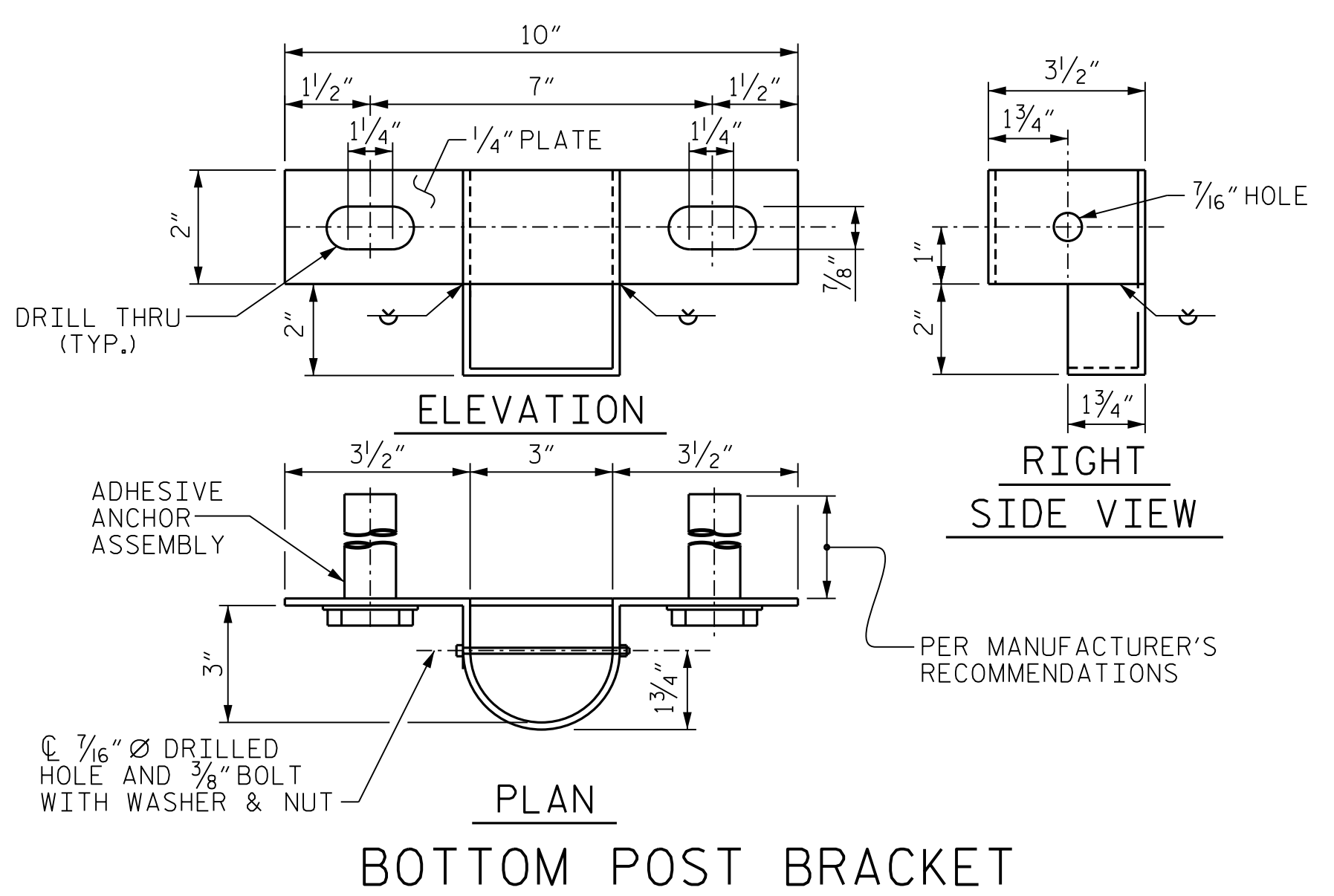
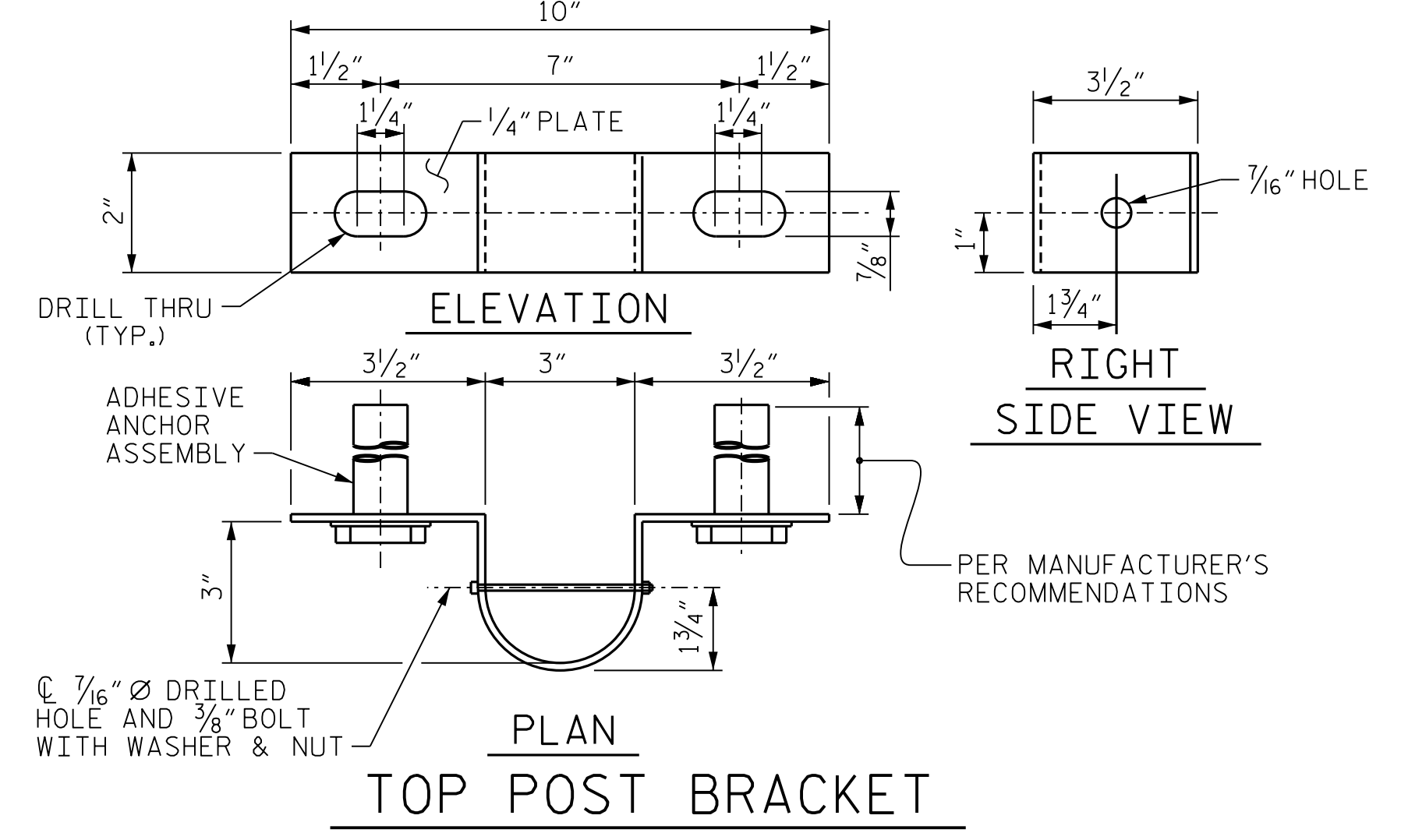


PARTIAL ELEVATION

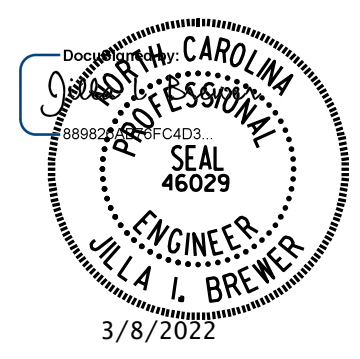
84" CHAIN LINK FENCE
 TOTAL PAY LENGTH 328.0 LIN. FT.



SECTION THRU FENCE



PROJECT NO. I-5987B
 ROBESON COUNTY
 STATION: 29+70.72 -Y7-



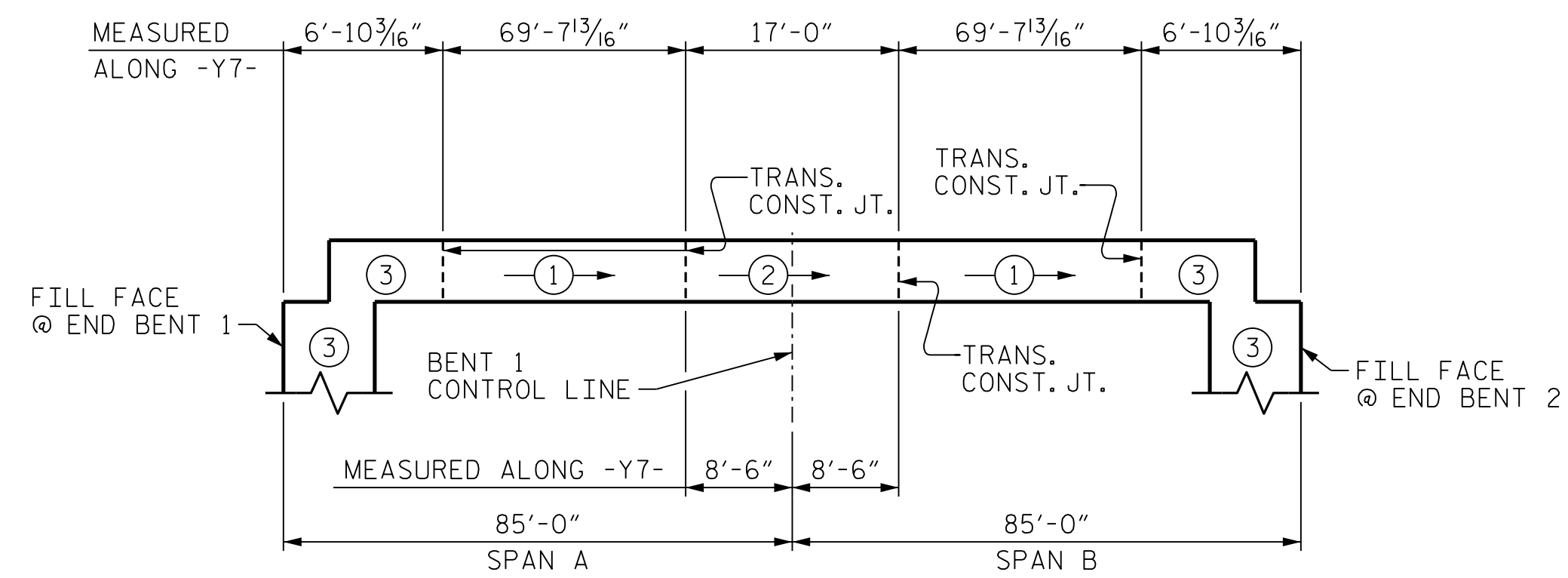
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE MOUNTED
 CHAIN LINK FENCE
 DETAILS

DOCUMENT NOT CONSIDERED FINAL
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 MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
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2			4			

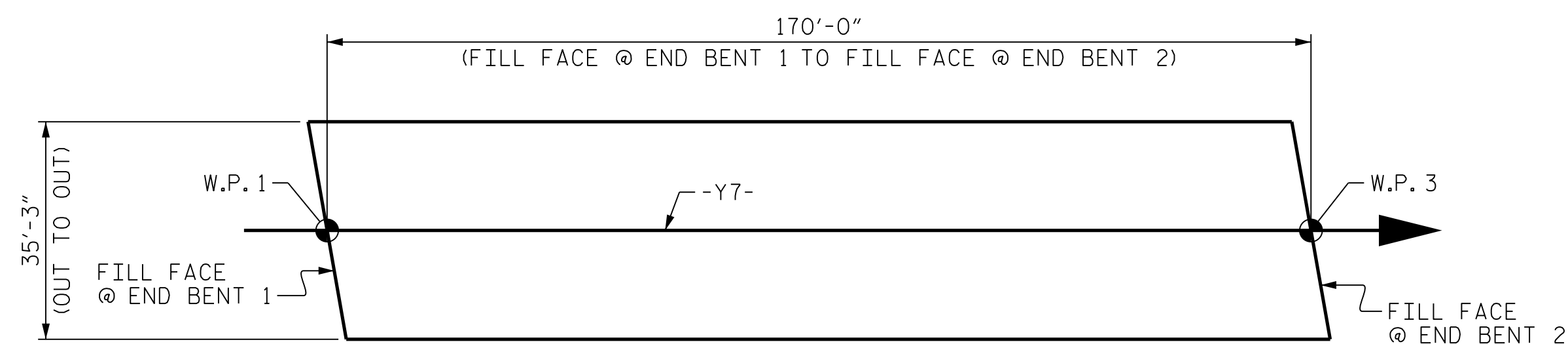
DRAWN BY: B.E. LANNING DATE: 03/2021
 CHECKED BY: A.K. ORR / J.I. BREWER DATE: 03/2021
 DESIGN ENGINEER OF RECORD: J.I. BREWER DATE: 03/2022

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POURING SEQUENCE

POUR ② SHALL NOT BE STARTED UNTIL BOTH ADJACENT ① POURS REACH A MINIMUM OF 3,000 PSI.
 ① INDICATES POUR NUMBER AND DIRECTION OF POUR



LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB
 (SQ. FT. = 5,993)

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

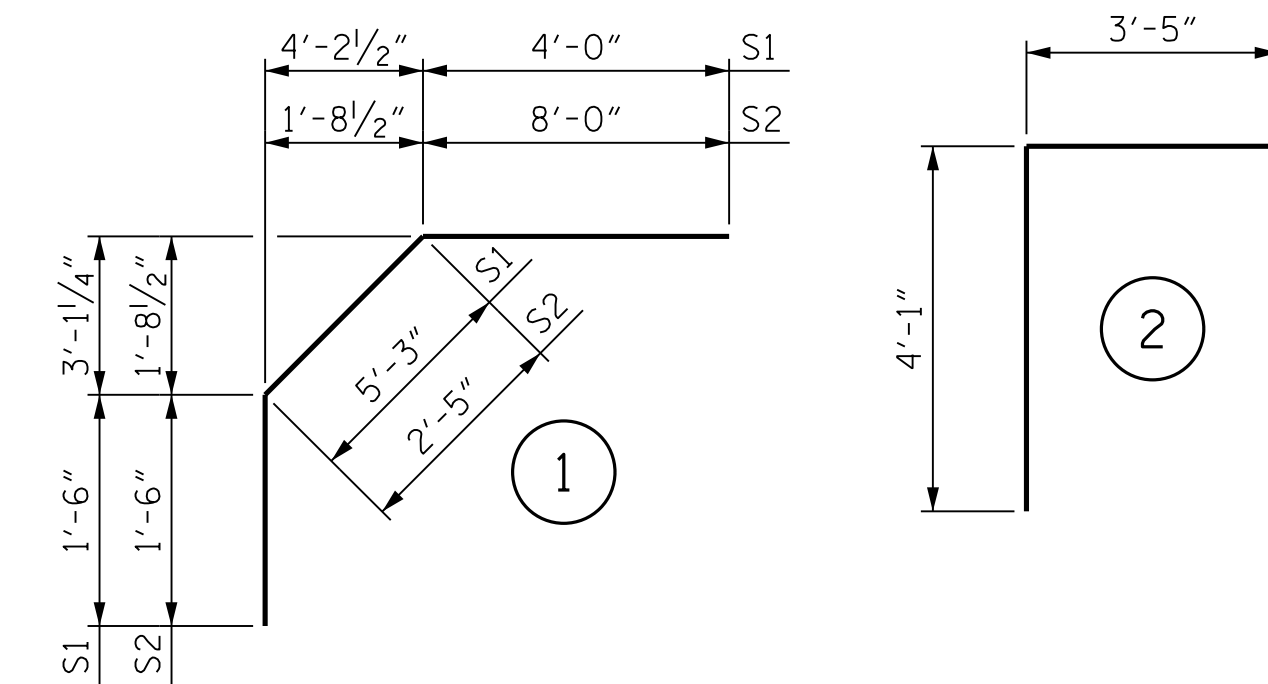
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPETS, AND BARRIER RAILS		APPROACH SLABS		PARAPETS AND BARRIER RAILS
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"			
#8	4'-9"	3'-2"			

REINFORCING BAR SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	299	#5	STR	34'-11"	10,889
A2	299	#5	STR	34'-11"	10,889
*A101	2	#5	STR	32'-9"	68
*A102	2	#5	STR	29'-8"	62
*A103	2	#5	STR	26'-7"	55
*A104	2	#5	STR	23'-7"	49
*A105	2	#5	STR	20'-6"	43
*A106	2	#5	STR	17'-5"	36
*A107	2	#5	STR	14'-4"	30
*A108	2	#5	STR	11'-3"	23
*A109	2	#5	STR	8'-2"	17
*A110	2	#5	STR	5'-1"	11
*A111	2	#5	STR	2'-1"	4
A201	2	#5	STR	32'-9"	68
A202	2	#5	STR	29'-8"	62
A203	2	#5	STR	26'-7"	55
A204	2	#5	STR	23'-7"	49
A205	2	#5	STR	20'-6"	43
A206	2	#5	STR	17'-5"	36
A207	2	#5	STR	14'-4"	30
A208	2	#5	STR	11'-3"	23
A209	2	#5	STR	8'-2"	17
A210	2	#5	STR	5'-1"	11
A211	2	#5	STR	2'-1"	4
B1	120	#5	STR	57'-4"	7,176
*B2	104	#5	STR	16'-8"	1,808
*B3	52	#4	STR	19'-8"	683
*B4	135	#4	STR	35'-2"	3,171
B5	43	#5	STR	44'-0"	1,973
*B6	52	#4	STR	36'-0"	1,250
*B7	78	#4	STR	21'-8"	1,129
K1	10	#4	STR	35'-5"	237
K2	6	#4	STR	6'-10"	27
K3	6	#4	STR	7'-8"	31
K4	12	#4	STR	8'-4"	67
K5	6	#4	STR	7'-4"	29
K6	4	#4	STR	2'-4"	6
K7	4	#4	STR	2'-9"	7
K8	8	#4	STR	3'-1"	16
K9	4	#4	STR	2'-7"	7
*S1	50	#4	1	10'-9"	359
*S2	54	#4	1	11'-11"	430
U1	54	#4	2	11'-7"	418

*EPOXY COATED REINFORCING STEEL

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

—SUPERSTRUCTURE BILL OF MATERIAL—

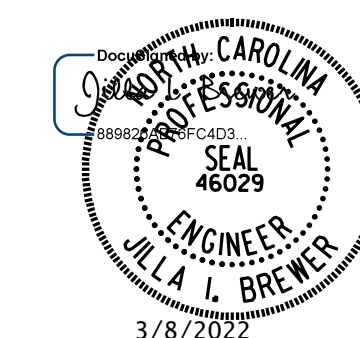
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
POUR #1	156.7	-	-
POUR #2	19.1	-	-
POUR #3	55.5	-	-
TOTALS**	231.3	21,281	20,117

**QUANTITIES FOR CONCRETE BARRIER RAIL ARE NOT INCLUDED.

GROOVING BRIDGE FLOORS

APPROACH SLABS	1,411 SQ.FT.
BRIDGE DECK	4,881 SQ.FT.
TOTAL	6,292 SQ.FT.

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-



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MI ENGINEERING
 1011 SCHAUH DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

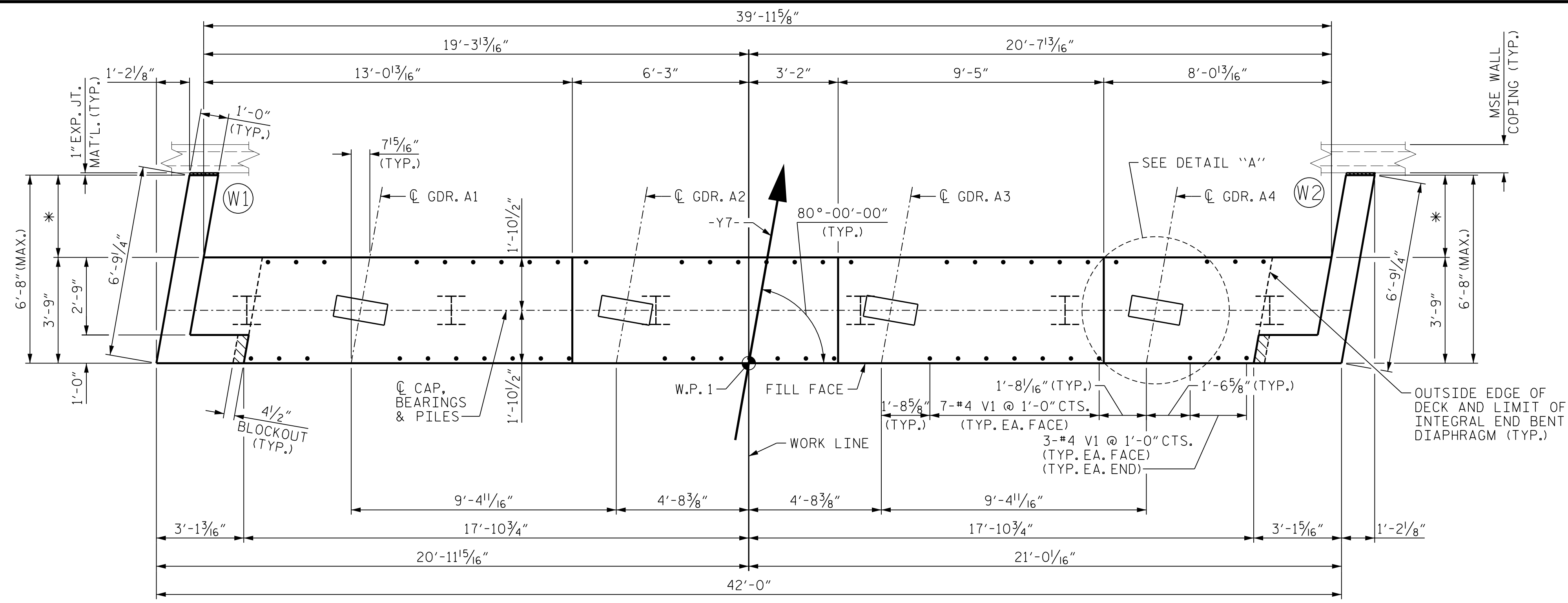
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 SUPERSTRUCTURE
 BILL OF MATERIAL

REVISIONS						SHEET NO.
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2			4			

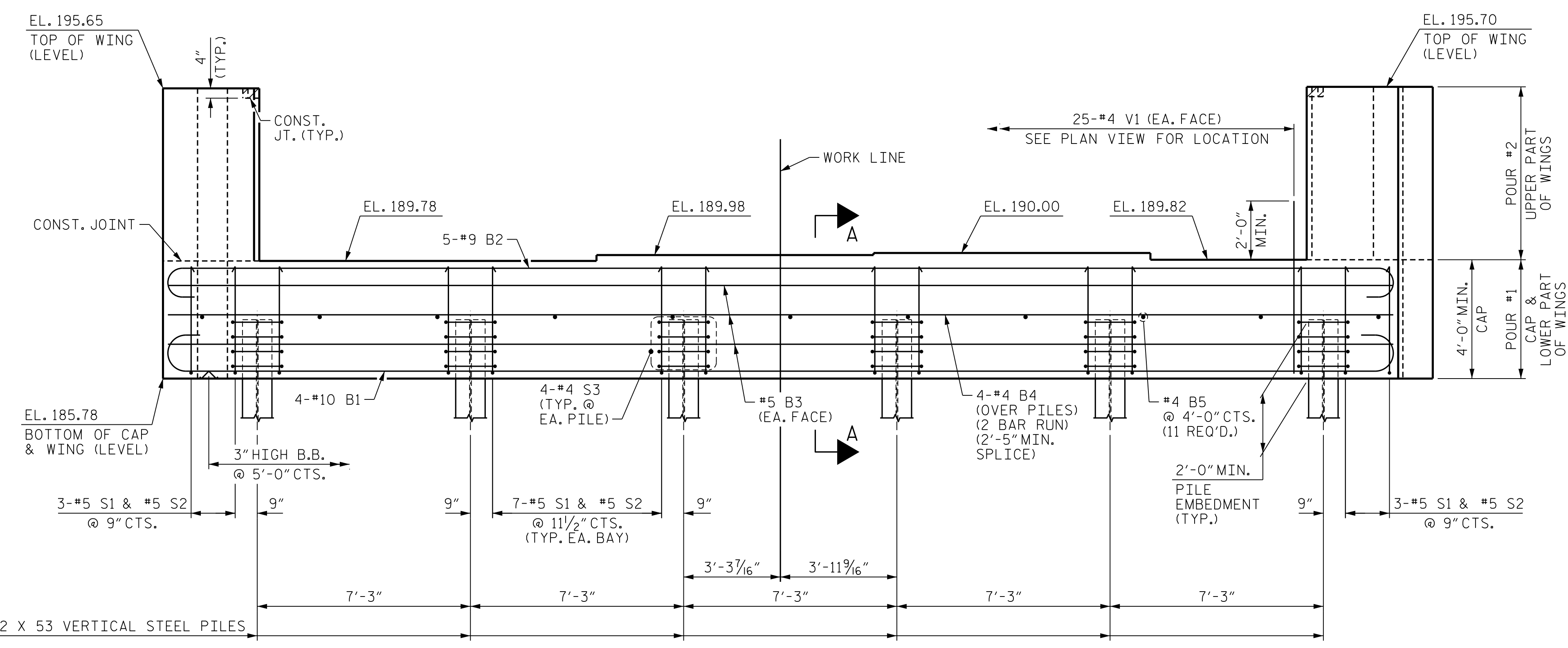
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ASSEMBLED BY: D.R. BROWN	DATE: 03/2021
CHECKED BY: J.I. BREWER	DATE: 03/2021
DESIGN ENGINEER OF RECORD: J.I. BREWER	DATE: 12/2021
DRAWN BY: EEM 3/95	REV. 5/7/03R RWW/JTE
CHECKED BY: VAP 3/95	REV. 5/1/06RR KMM/GM
	REV. 10/1/11 MAA/GM



PLAN

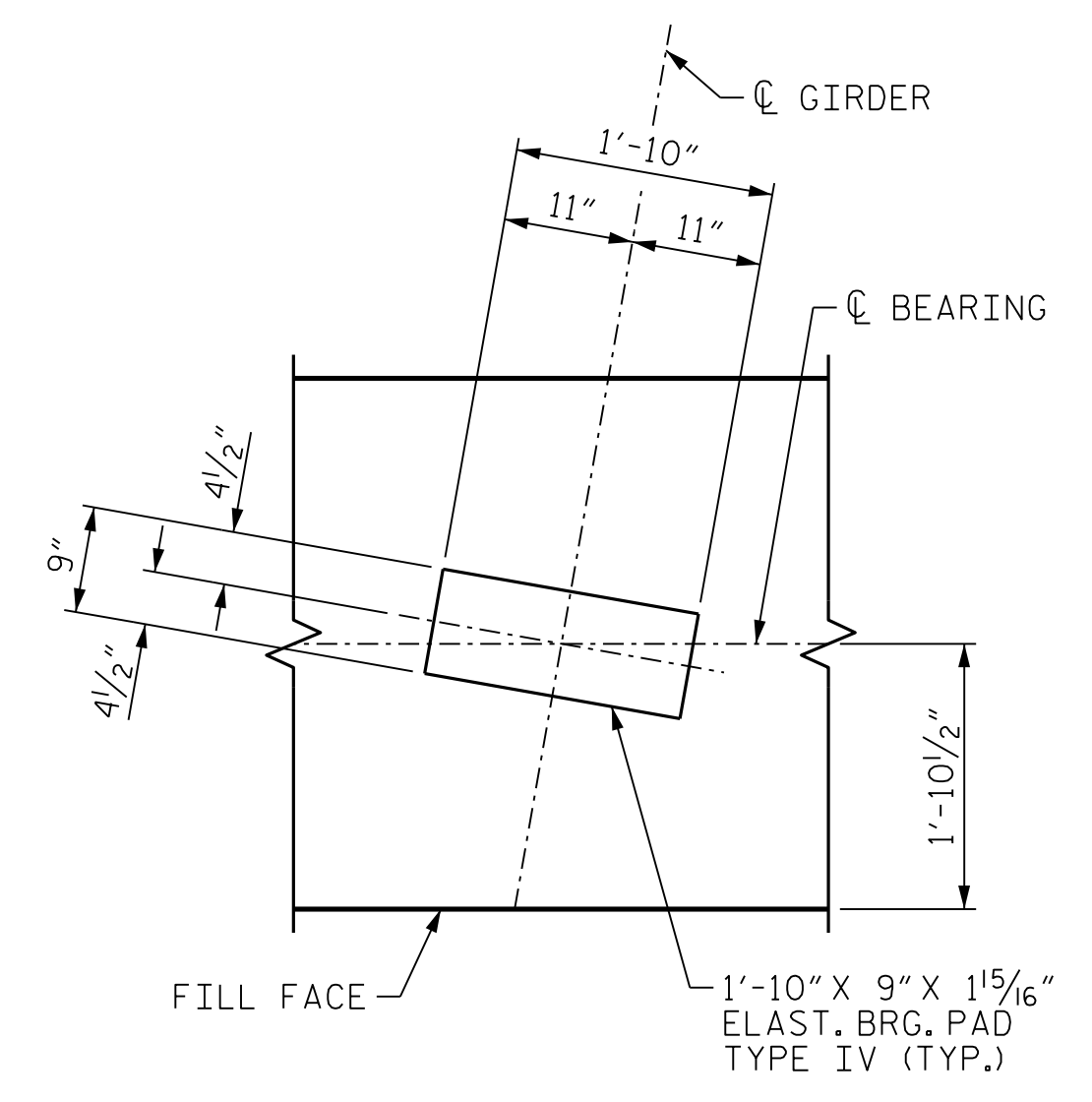


ELEVATION

PILE SLEEVES NOT SHOWN FOR CLARITY. SEE SECTION A-A.

NOTES:

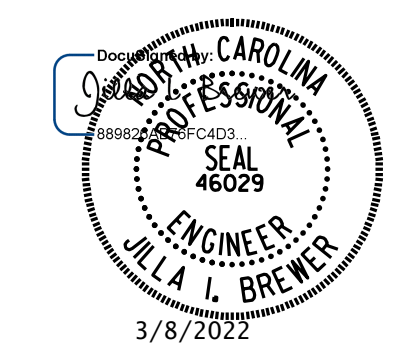
- THE TOP SURFACE OF THE END BENT CAP AND WINGS (POUR 1), EXCEPT THE BEARING AREAS AND THE NON-INTEGRAL AREAS AT CAP ENDS, SHALL BE RAKED TO A DEPTH OF 1/4".
- FOR SECTION A-A, PILE SPLICE DETAILS AND TEMPORARY DRAINAGE DETAILS, SEE SHEET 3 OF 3.
- THE CONCRETE IN THE HATCHED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #4 V1 BARS.
- * LENGTH OF EACH WING SHALL BE FIELD ADJUSTED AS REQUIRED TO PROVIDE 1" EXPANSION JOINT MATERIAL AS SHOWN BETWEEN THE COMPONENT AND THE MSE WALL COPING. (2'-11 1/2" MAX.)



DETAIL "A"
(TYP. AT EACH BEARING)

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1
 PLAN AND ELEVATION

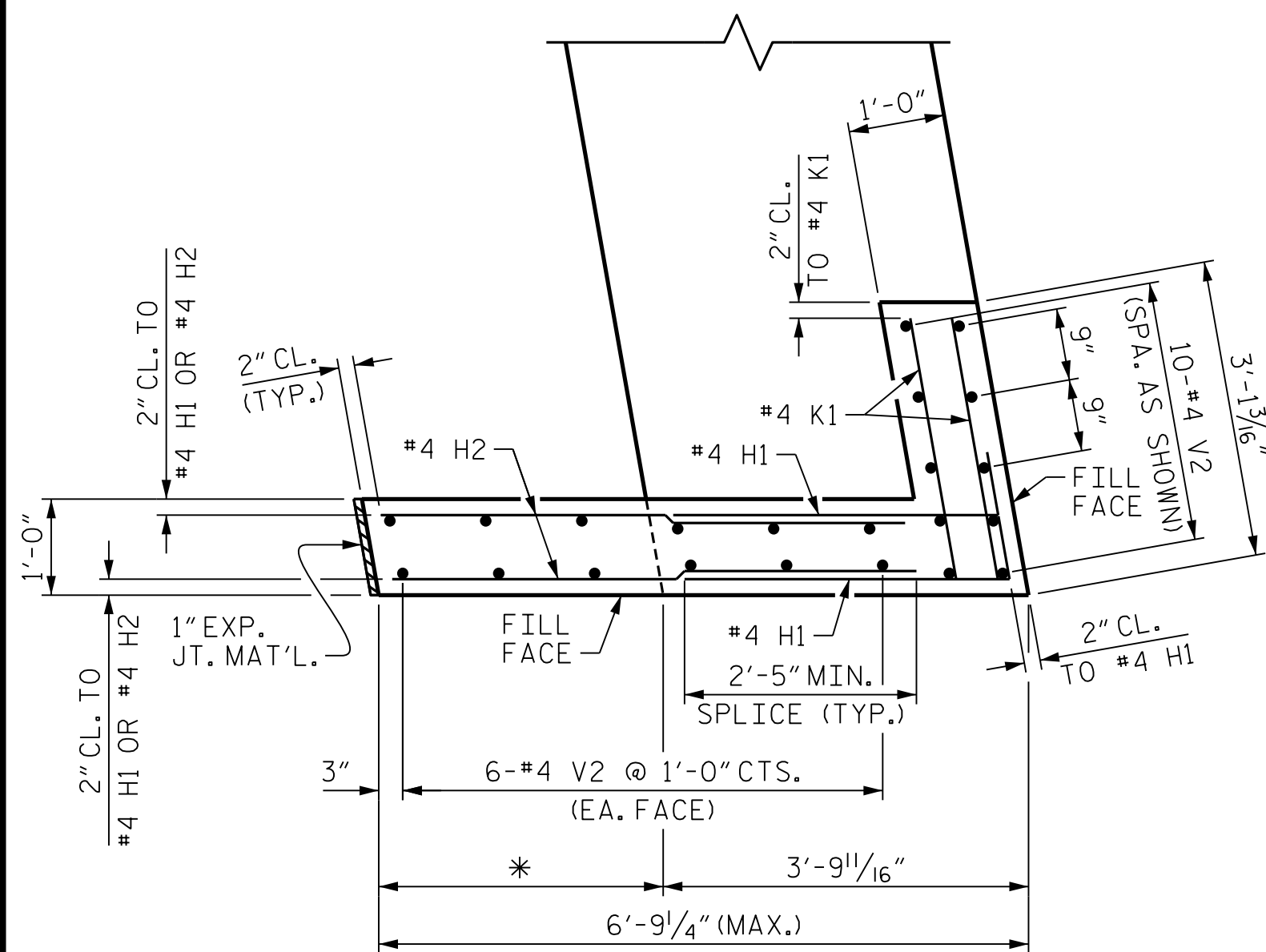
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MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
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2			4			

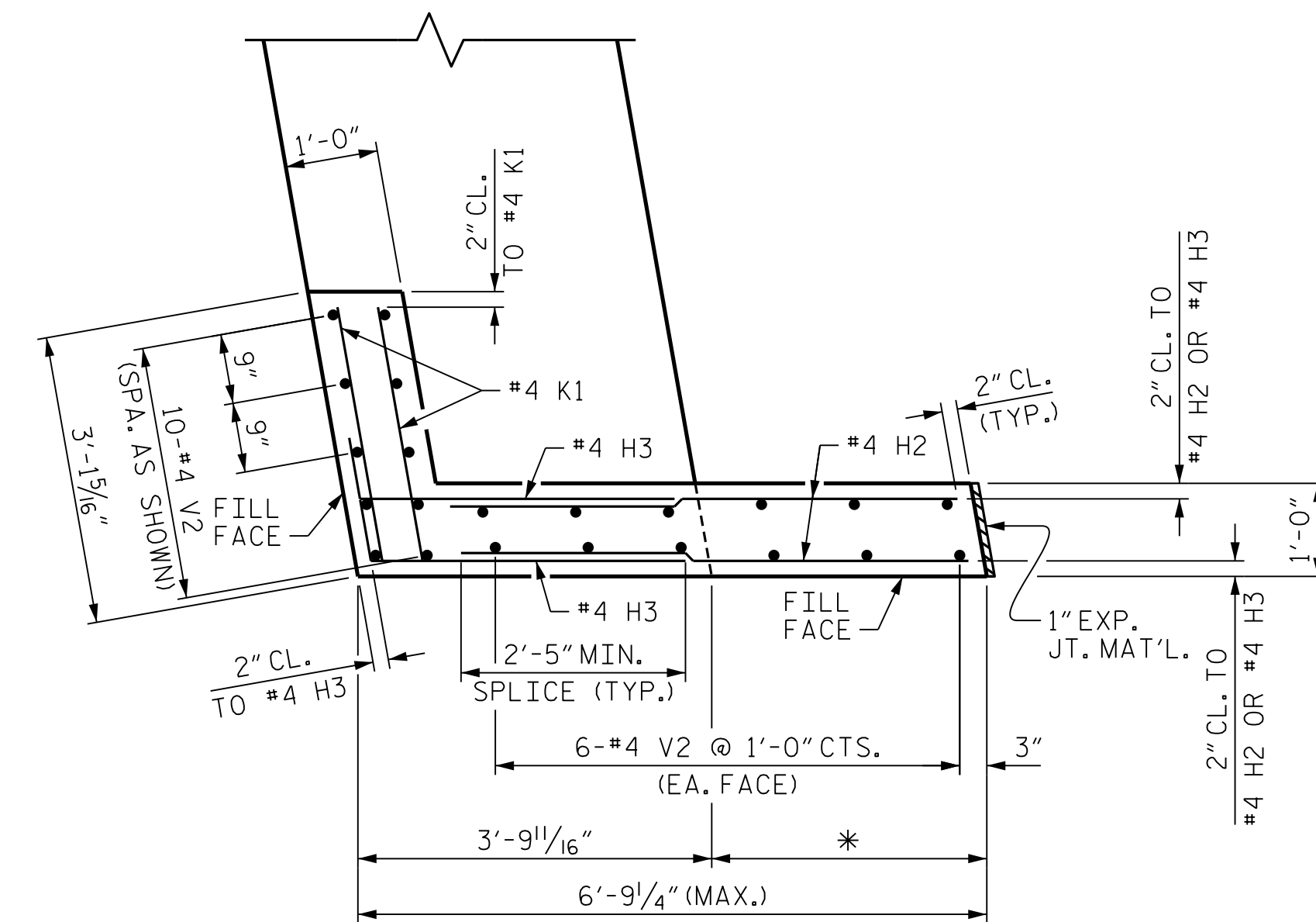
DRAWN BY : B.E. LANNING	DATE : 07/2021
CHECKED BY : J.I. BREWER	DATE : 07/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

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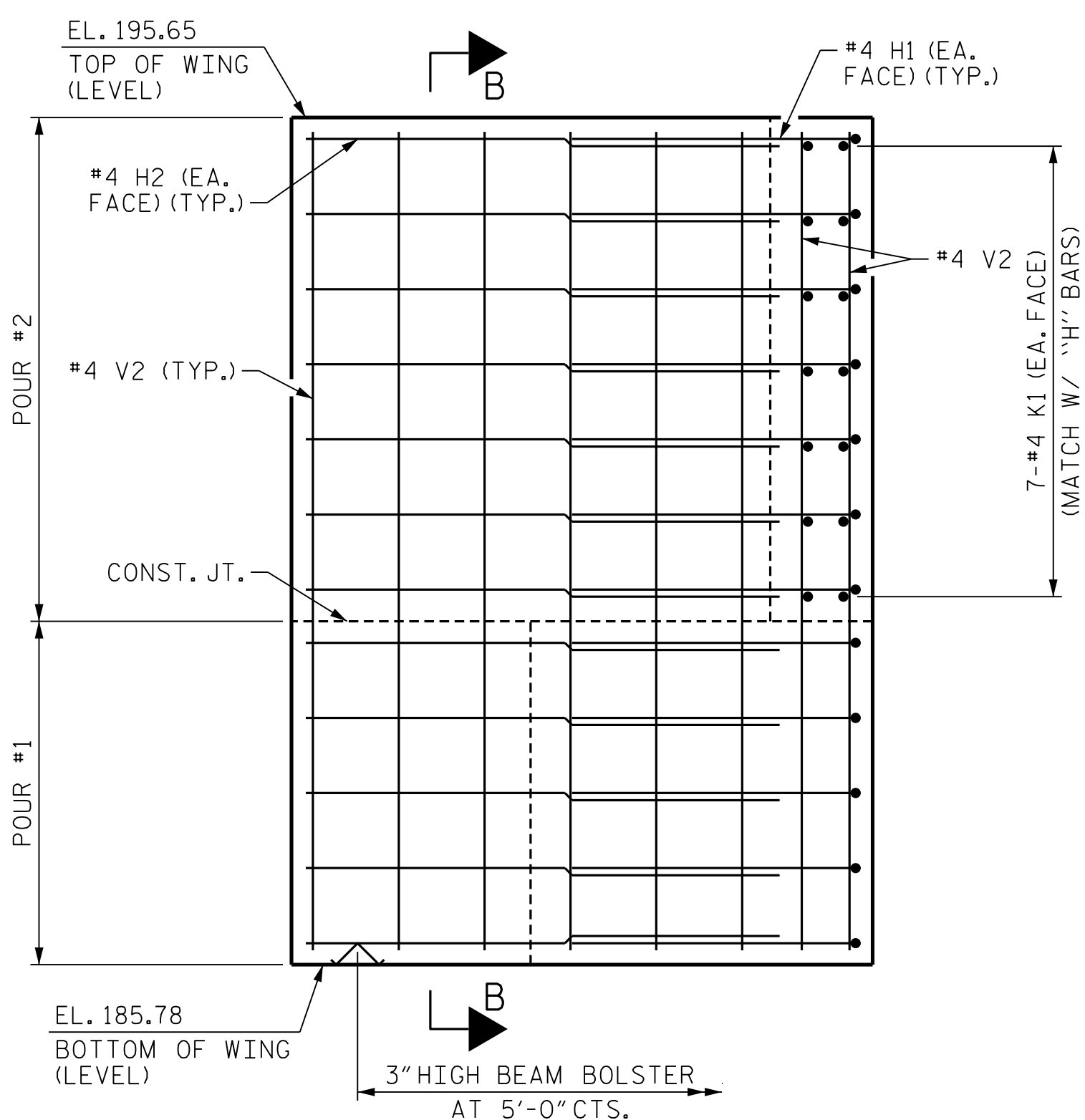


PLAN OF WING (W1)

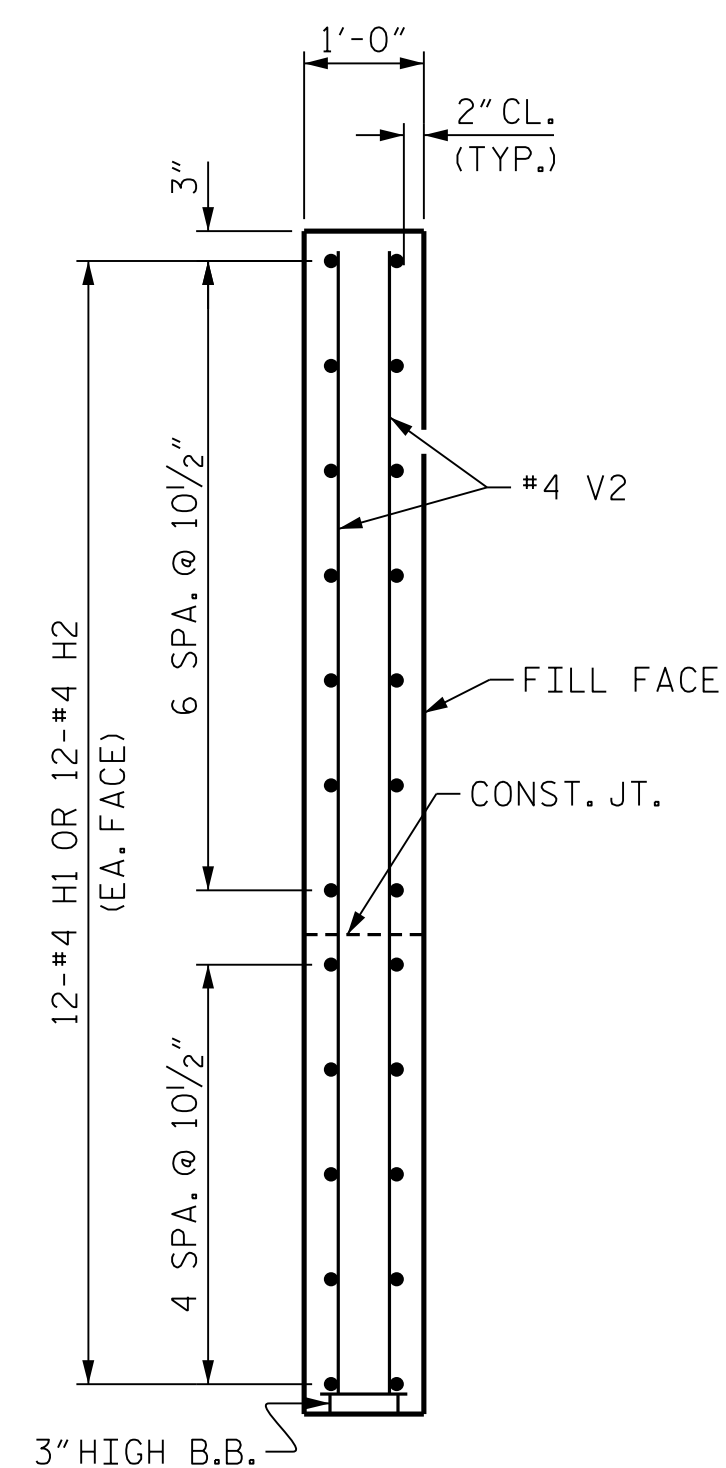
NOTE:
 * WINGWALL EXTENSION DISTANCE TO BE FIELD ADJUSTED AS REQUIRED TO PROVIDE 1" EXP. JT. MAT'L. BETWEEN THE MSE WALL COPING AND THE EXTENDED WINGWALL.



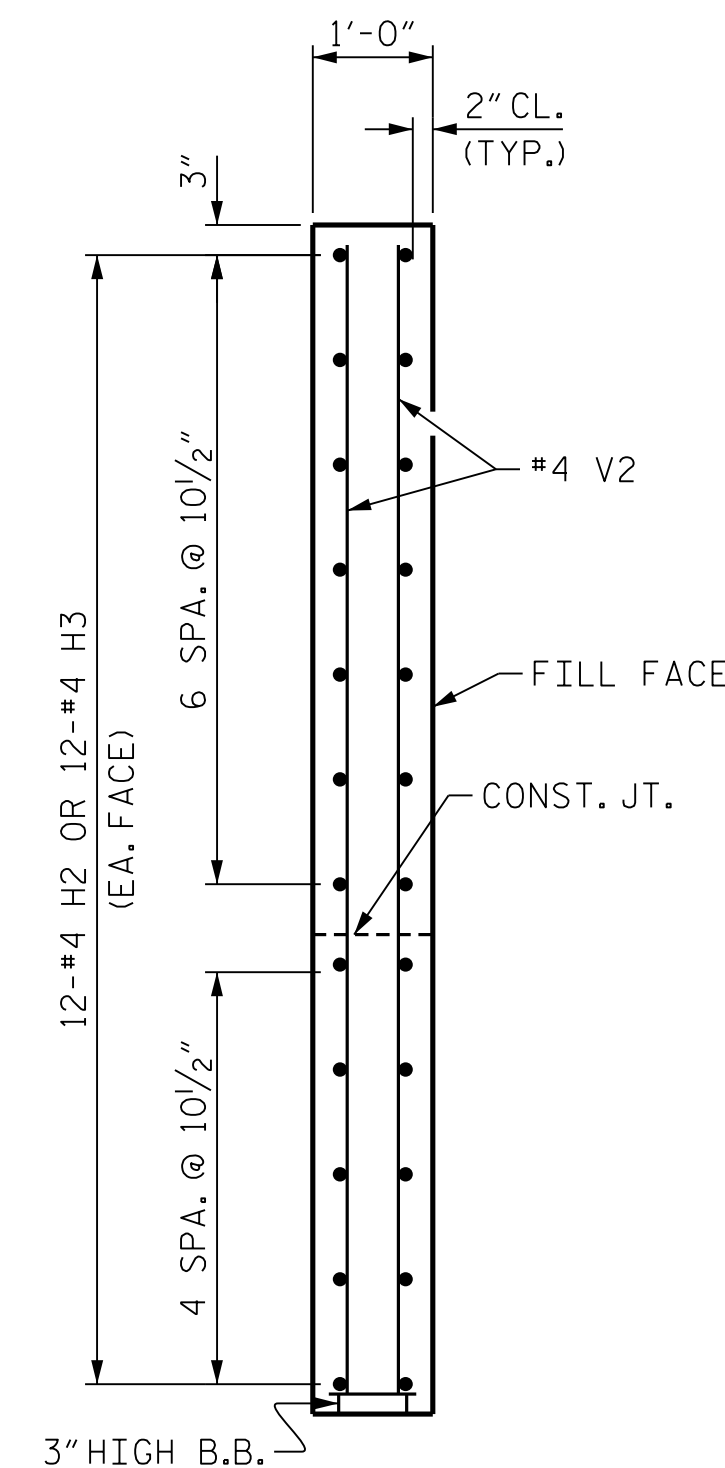
PLAN OF WING (W2)



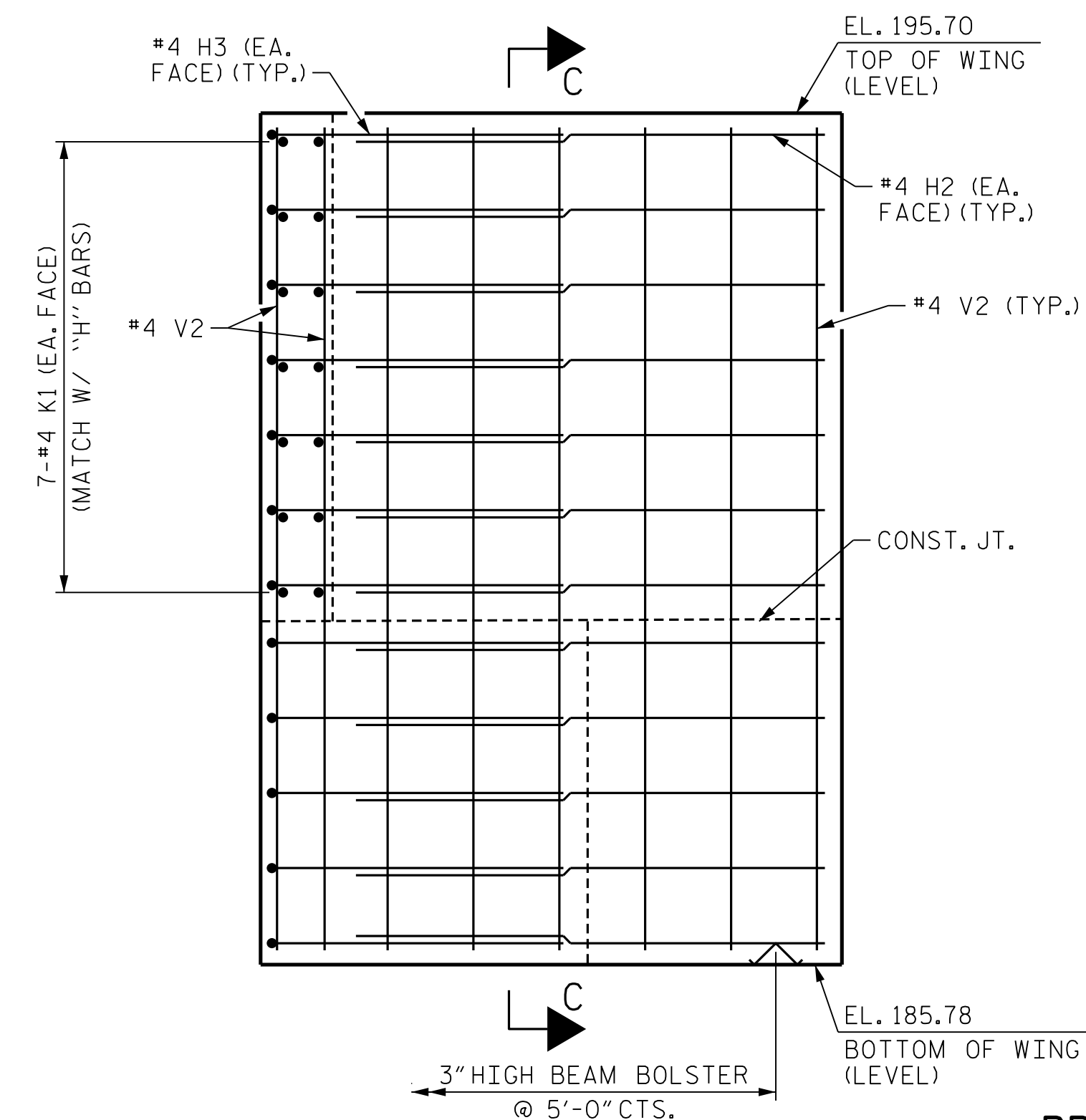
ELEVATION OF WING (W1)



SECTION B-B



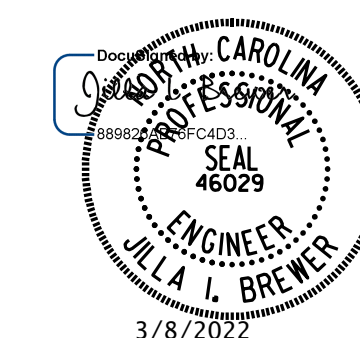
SECTION C-C



ELEVATION OF WING (W2)

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 2 OF 3



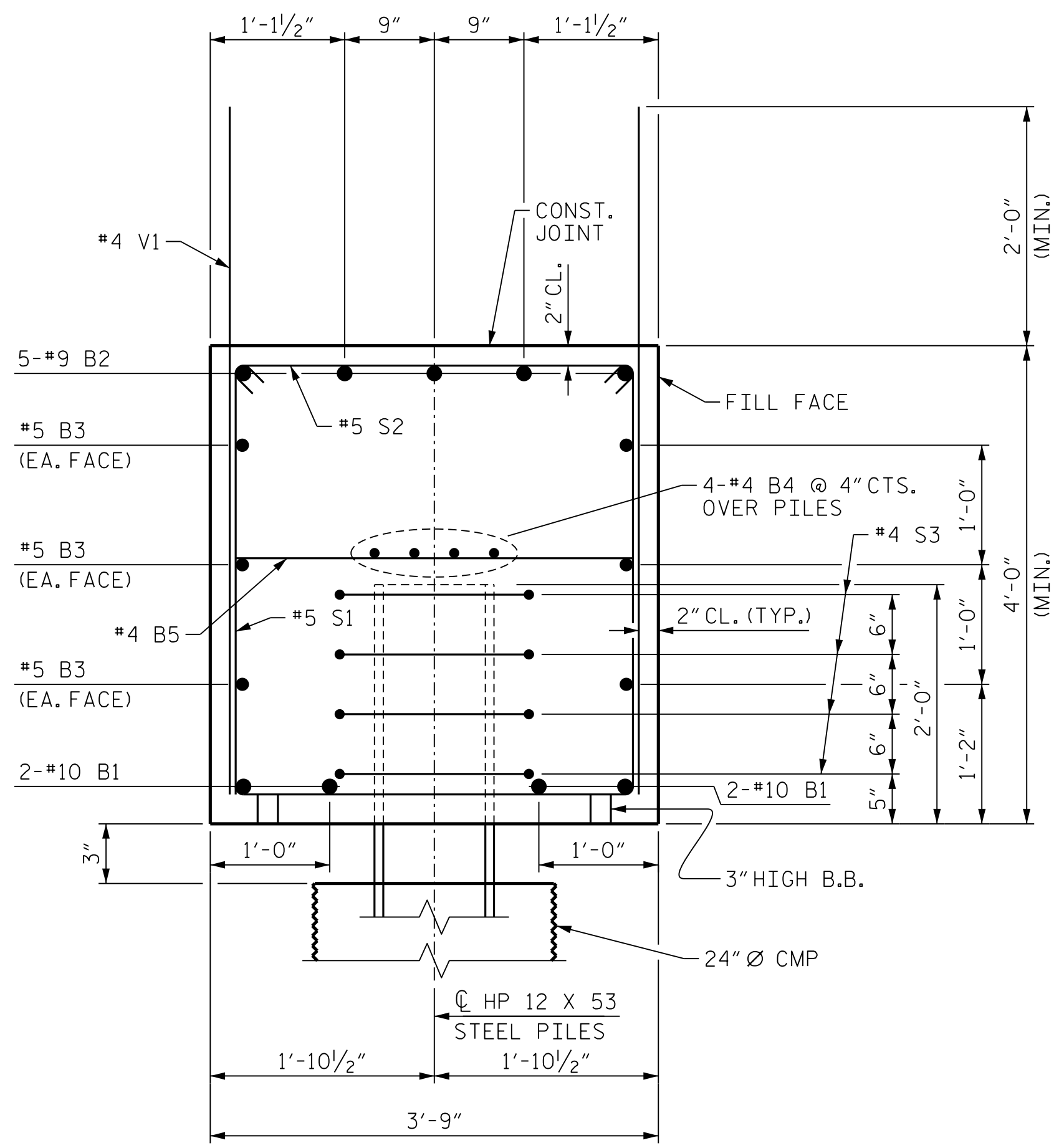
**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

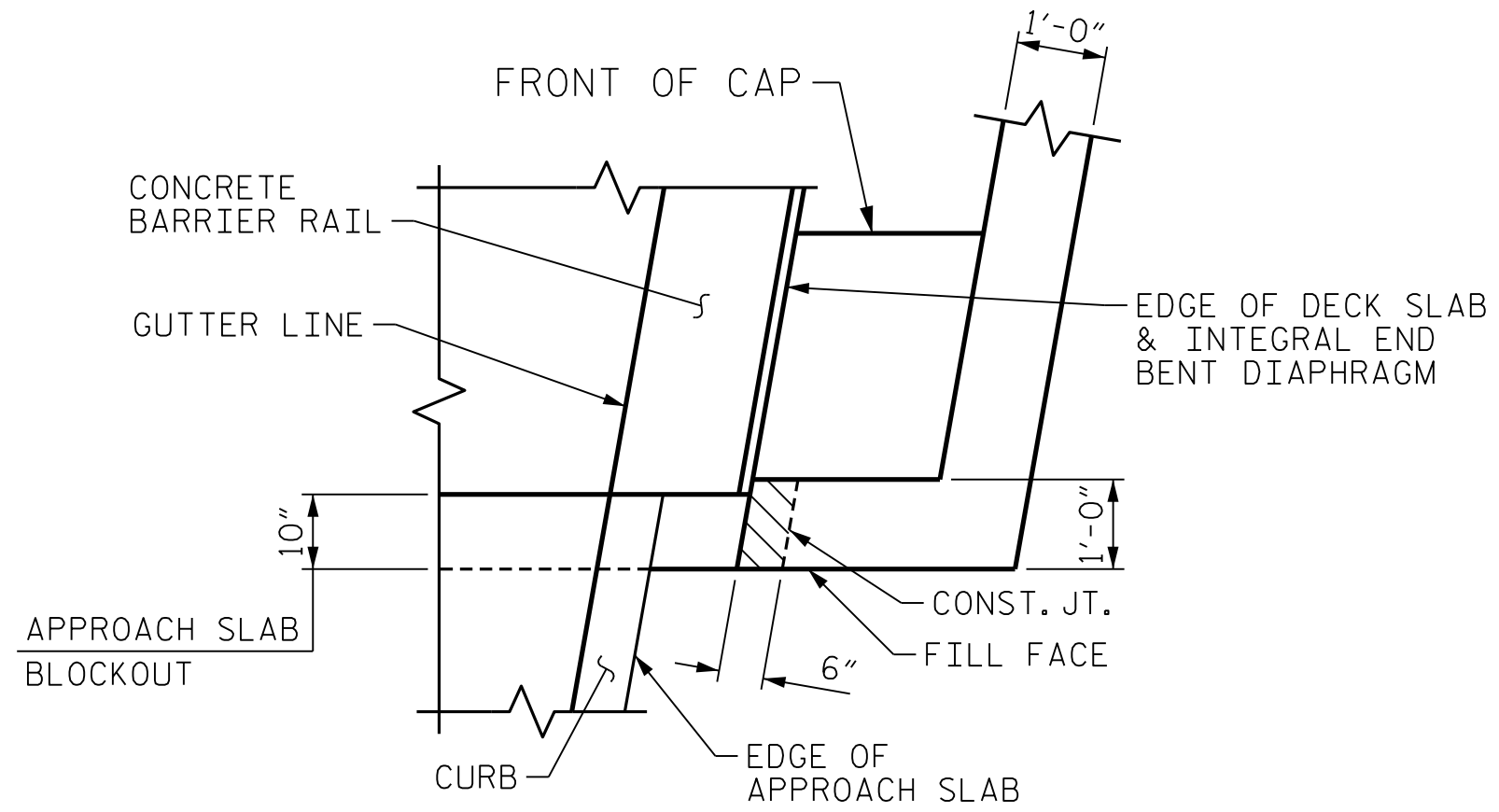
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1 WINGWALL DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S10-23					TOTAL SHEETS 33

DRAWN BY : B.E. LANNING DATE : 07/2021
 CHECKED BY : J.I. BREWER DATE : 07/2021
 DESIGN ENGINEER OF RECORD : J.I. BREWER DATE : 03/2022

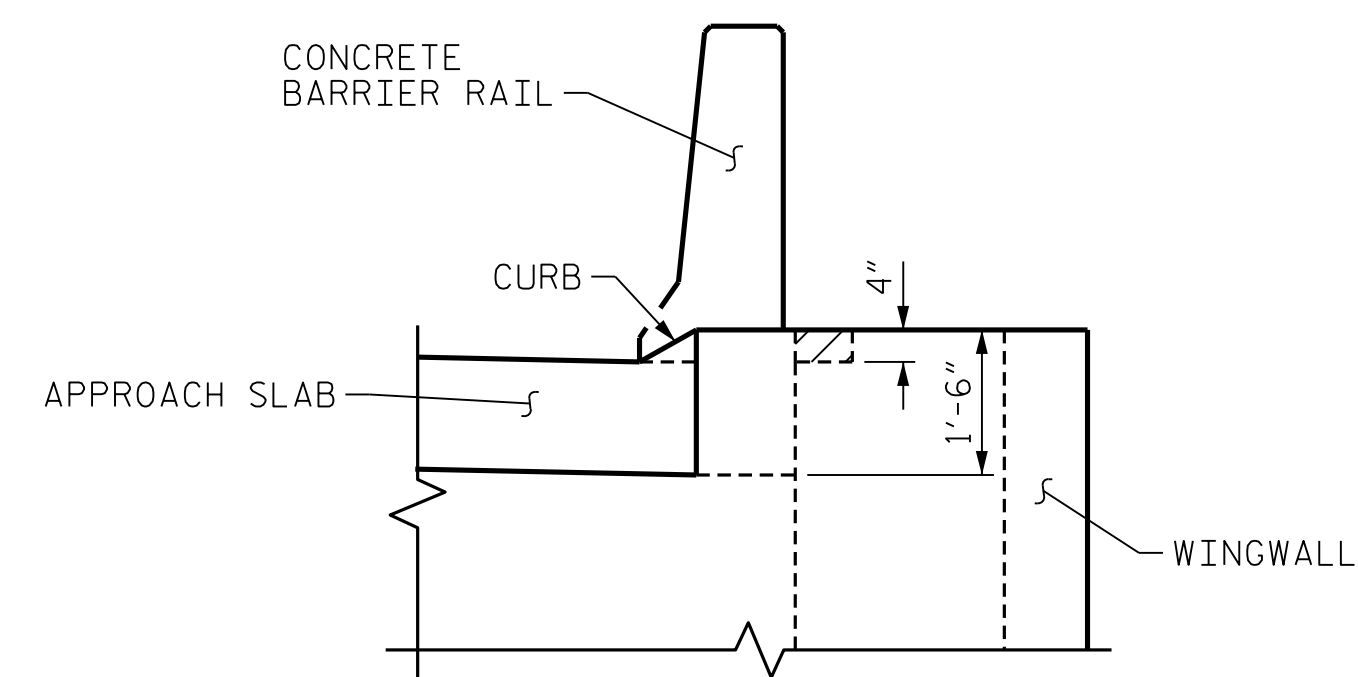
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SECTION A-A



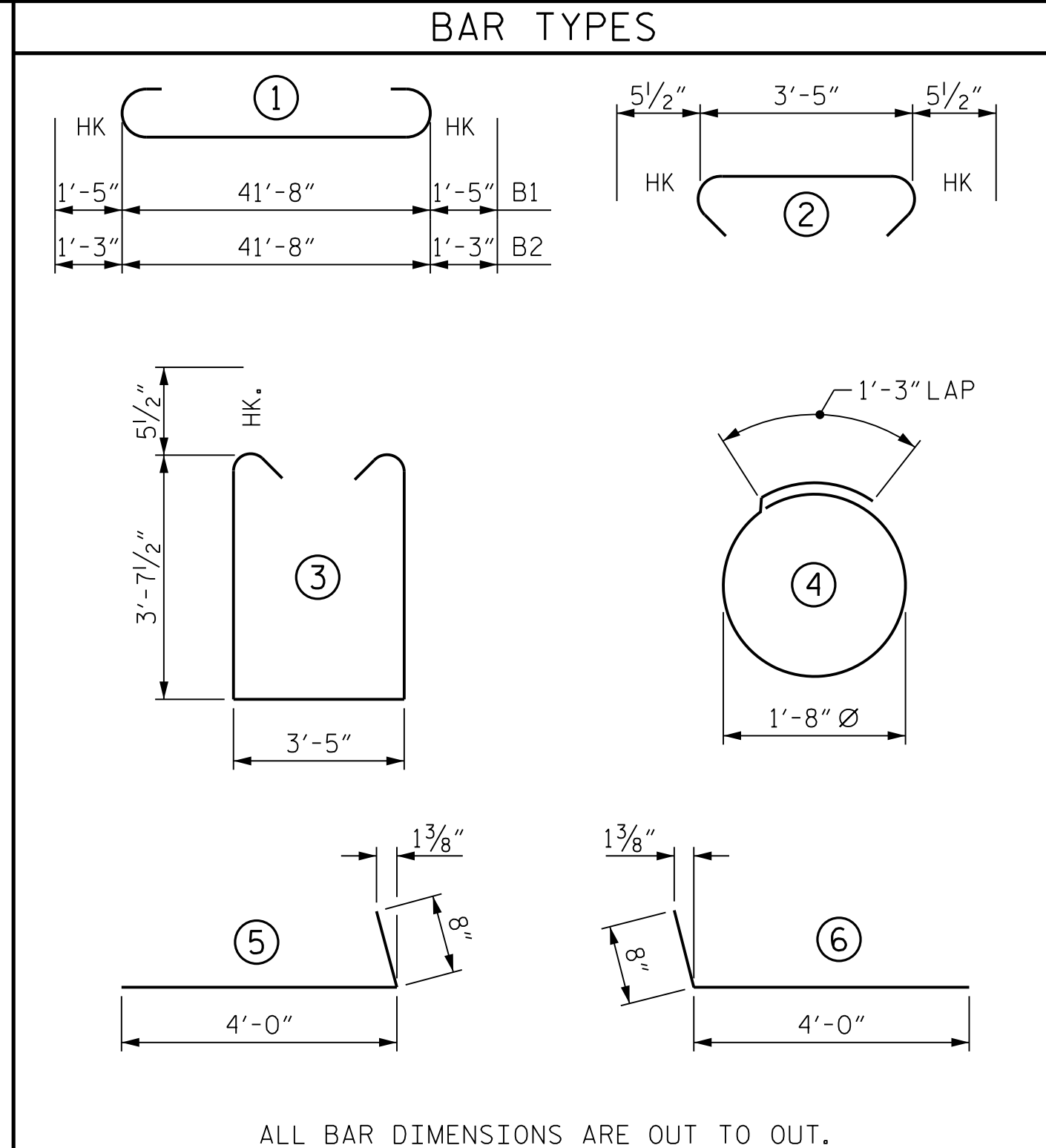
PLAN



ELEVATION

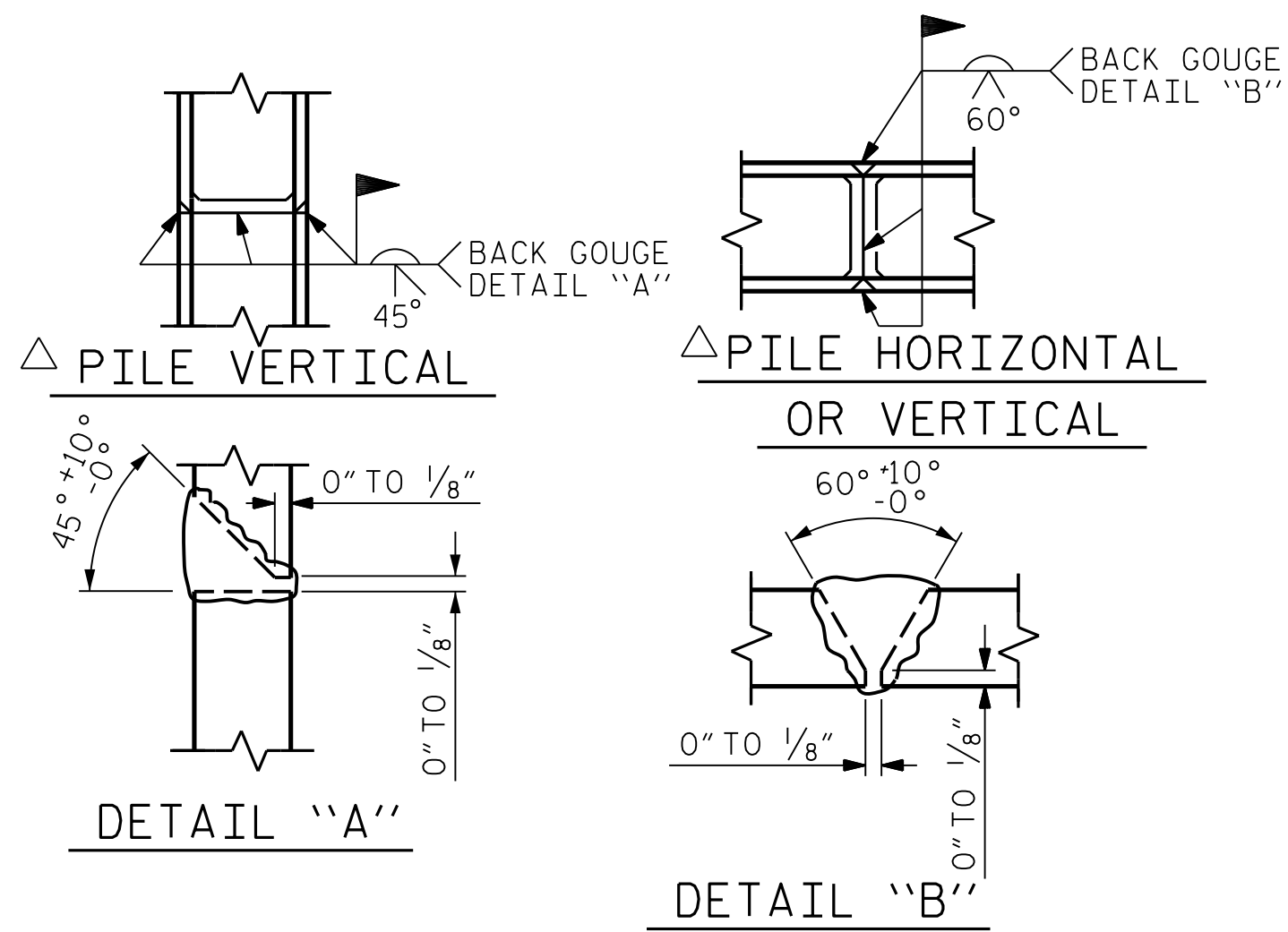
WINGWALL BLOCKOUT

THE CONCRETE IN THE SHADED AREA SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND APPROACH SLAB HAS BEEN SAWED AND THE CONCRETE PARAPET IS CAST IF SLIP FORMING IS USED.

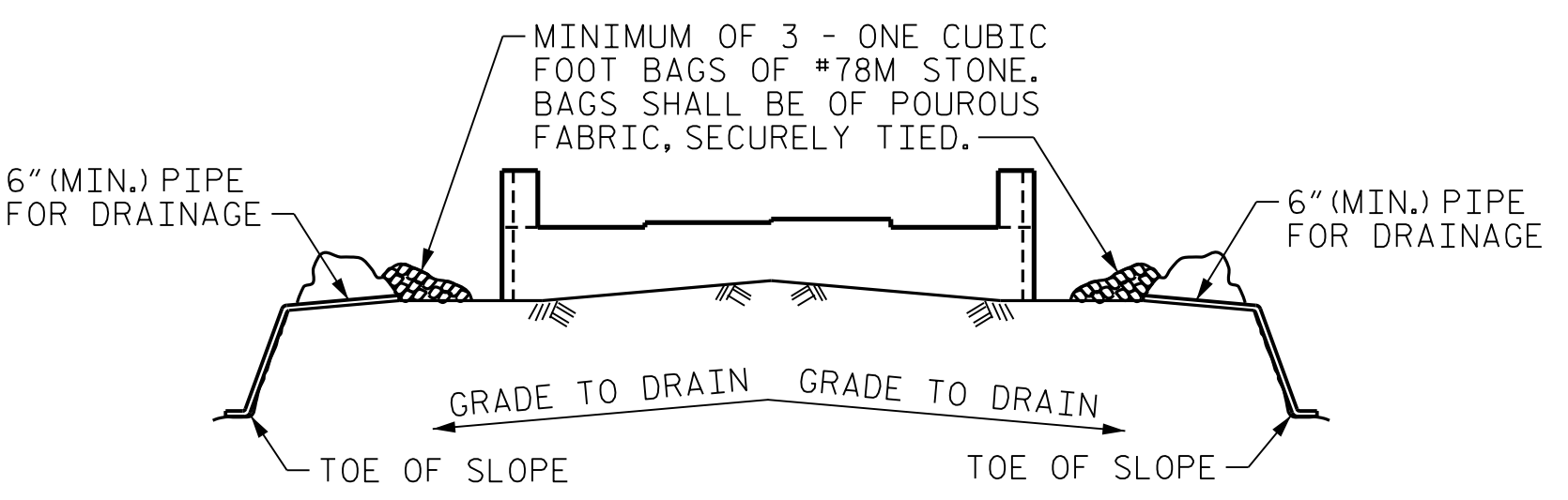


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	44'-6"	766
B2	5	#9	1	44'-2"	751
B3	6	#5	STR	41'-8"	261
B4	8	#4	STR	22'-1"	118
B5	11	#4	STR	3'-5"	25
H1	24	#4	5	4'-8"	75
H2	48	#4	STR	5'-3"	168
H3	24	#4	6	4'-8"	75
K1	28	#4	STR	2'-9"	51
S1	41	#5	3	11'-7"	495
S2	41	#5	2	4'-4"	185
S3	24	#4	4	6'-6"	104
V1	54	#4	STR	6'-0"	216
V2	44	#4	STR	9'-5"	277
REINFORCING STEEL					3,567 LBS.
CLASS A CONCRETE BREAKDOWN					
POUR #1 (CAP & LOWER PART OF WINGS)					24.9 C.Y.
POUR #2 (UPPER PART OF WINGS)					3.9 C.Y.
TOTAL					28.8 C.Y.



PILE SPLICE DETAILS



BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

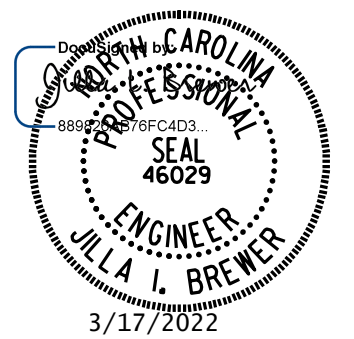
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 29+70.72 -Y7-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1
DETAILS AND
BILL OF MATERIAL



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

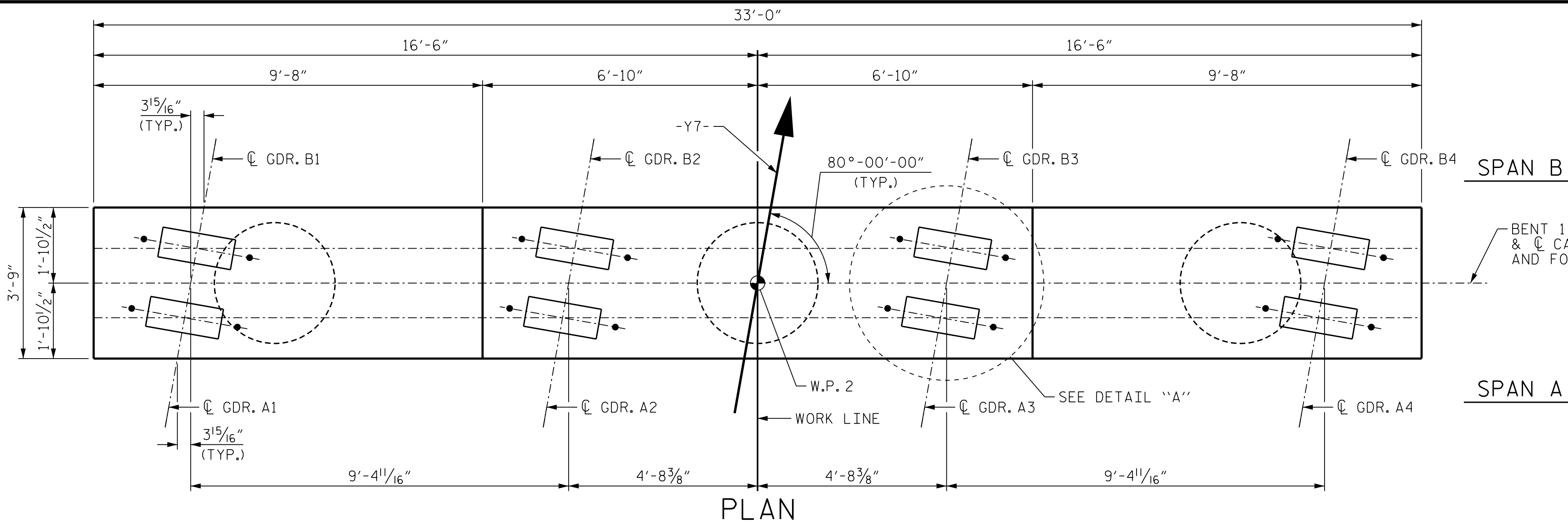
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

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

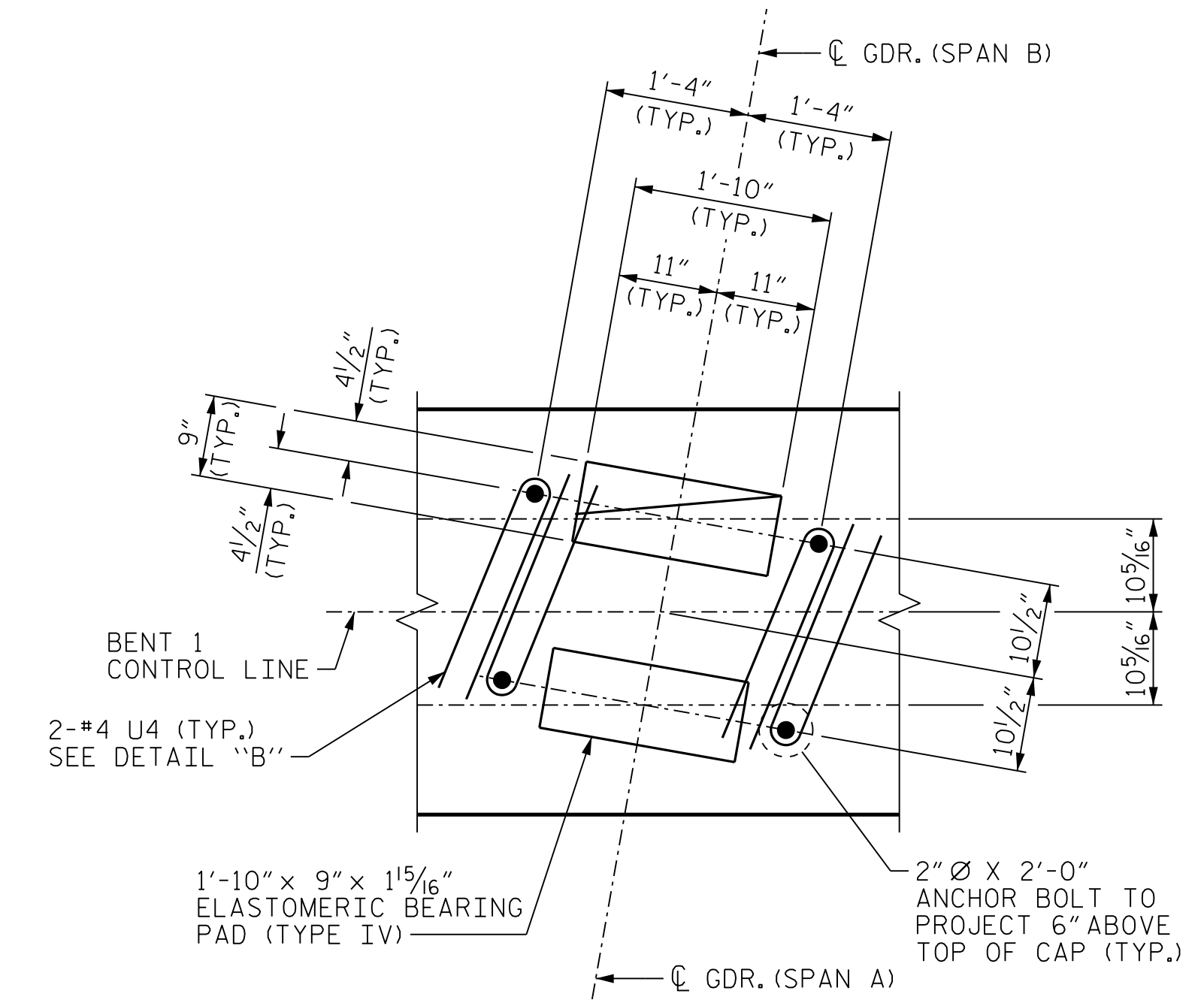
SHEET NO.
S10-24
TOTAL SHEETS
33

DRAWN BY : B.E. LANNING	DATE : 07/2021
CHECKED BY : J.I. BREWER	DATE : 07/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

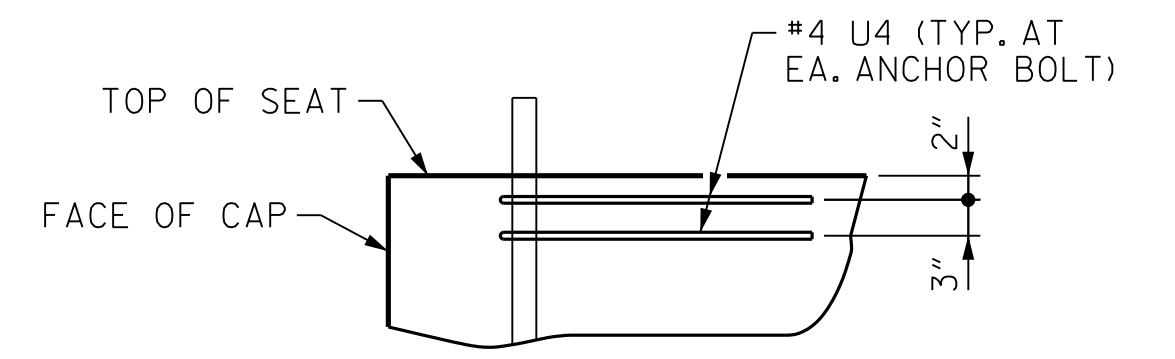
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NOTES:
 STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 FOR SECTION A-A, VIEW B-B AND END ELEVATION SEE SHEET 2 OF 3.
 FOR FOOTING DETAILS, SEE SHEET 3 OF 3.
 ⊗ INVERT ALTERNATE PAIRS OF STIRRUPS.
 FOR PILE SPLICE DETAILS, SEE END BENT 1 SHEET 3 OF 3.
 SPLICES IN SPIRAL REINFORCEMENT WITHIN 3'-0" FROM TOP OR BOTTOM OF COLUMN MUST BE FULLY WELDED OR MECHANICAL SPLICES. NO LAP SPLICES PERMITTED.



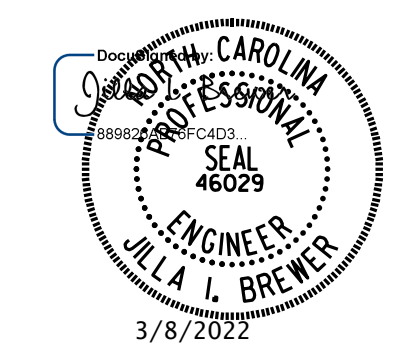
DETAIL "A"
 (TYP. EA. BEARING)



DETAIL "B"

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 1 OF 3

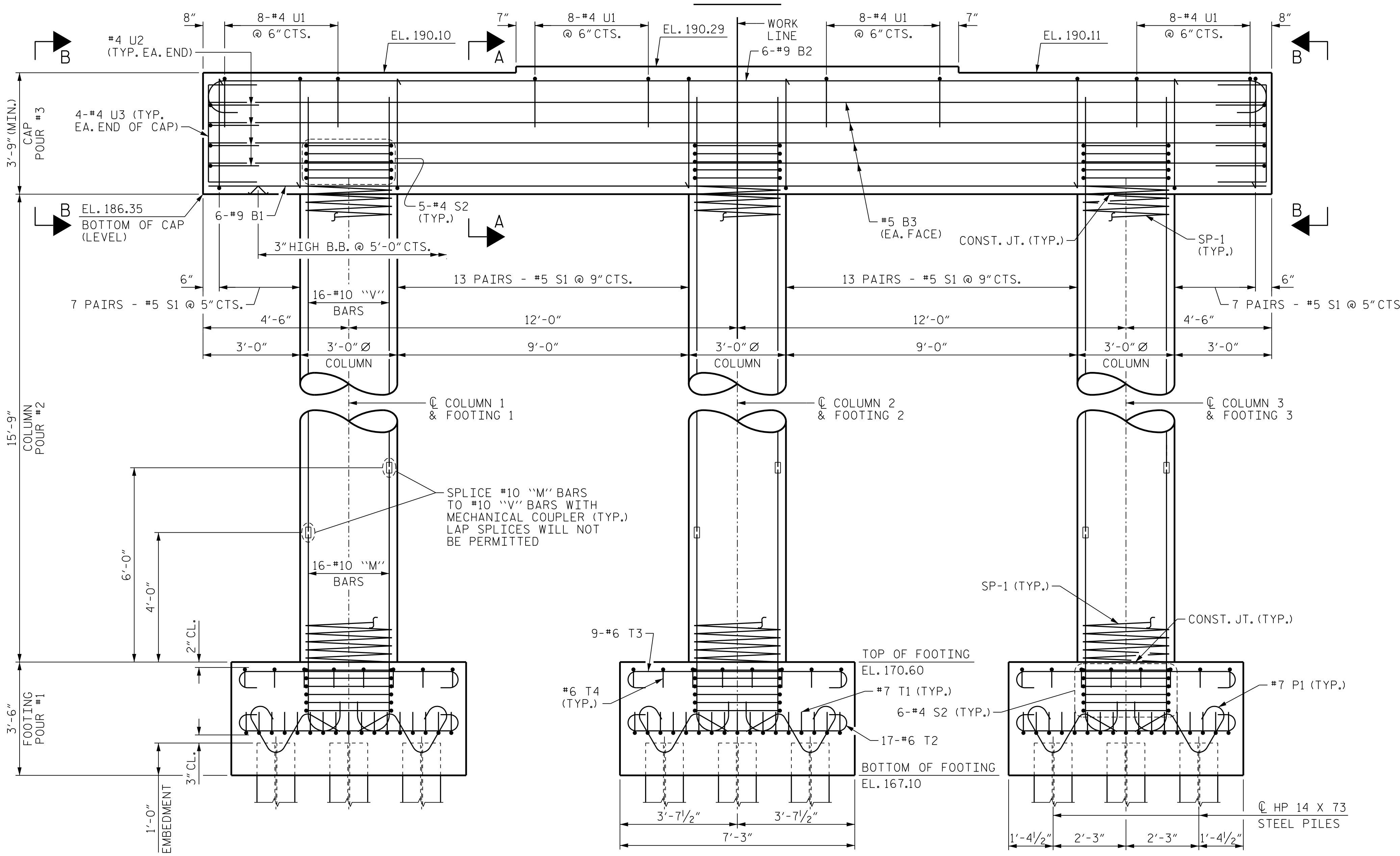


**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1 PLAN AND ELEVATION					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. **S10-25**
 TOTAL SHEETS **33**



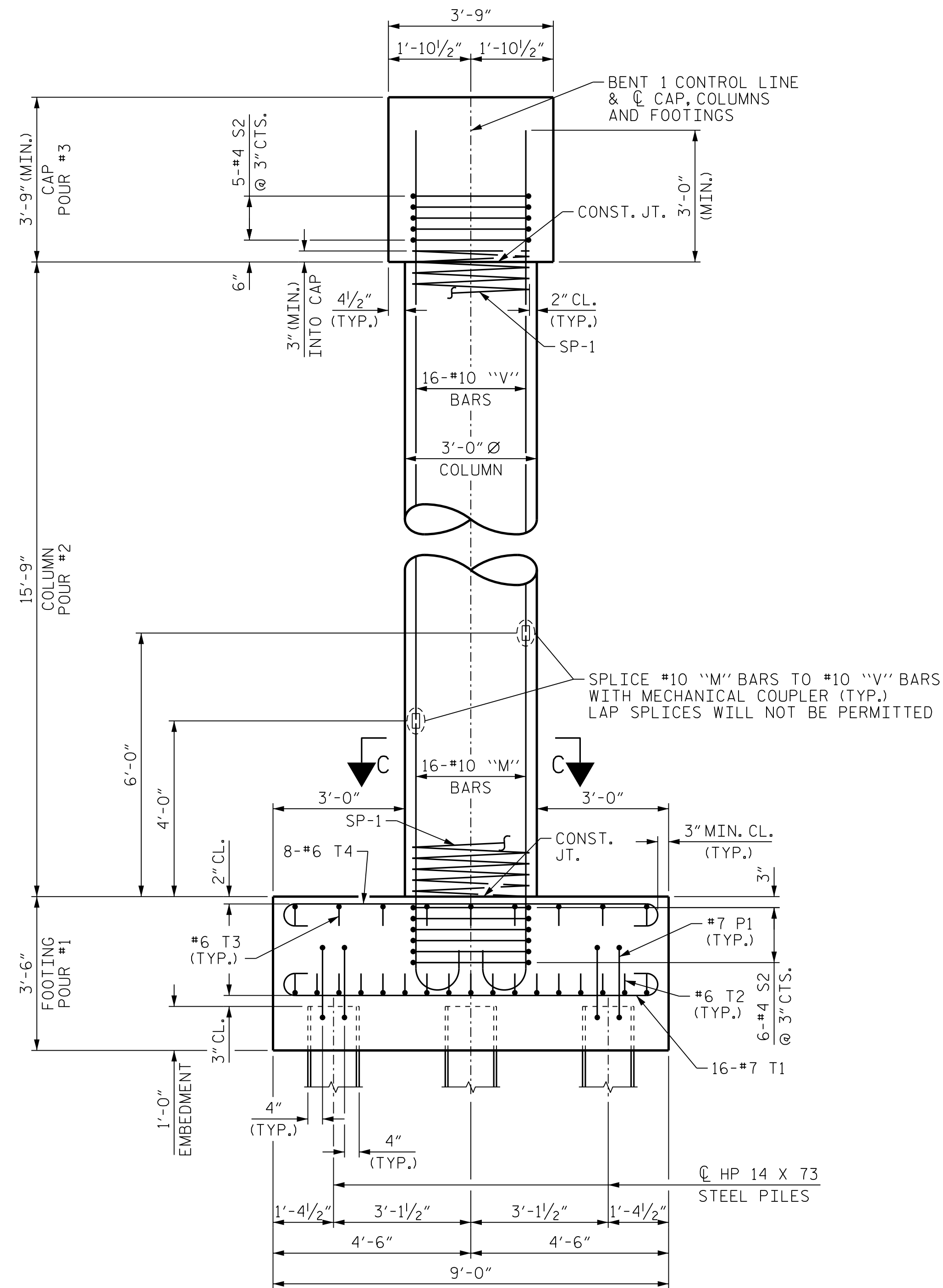
ELEVATION

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & FOOTINGS UNLESS OTHERWISE NOTED

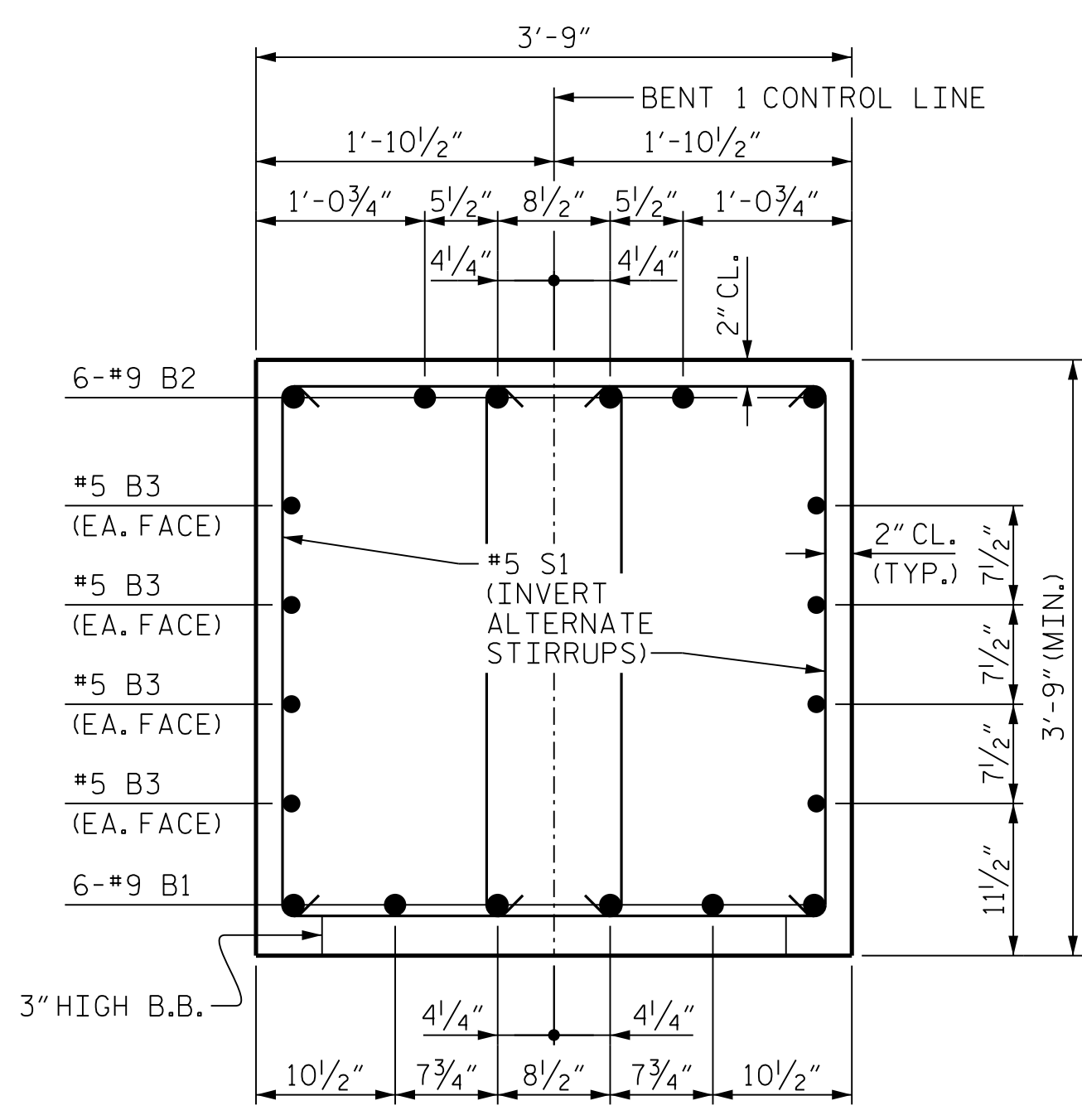
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DRAWN BY: B.E. LANNING DATE: 07/2021
 CHECKED BY: J.I. BREWER DATE: 07/2021
 DESIGN ENGINEER OF RECORD: J.I. BREWER DATE: 03/2022

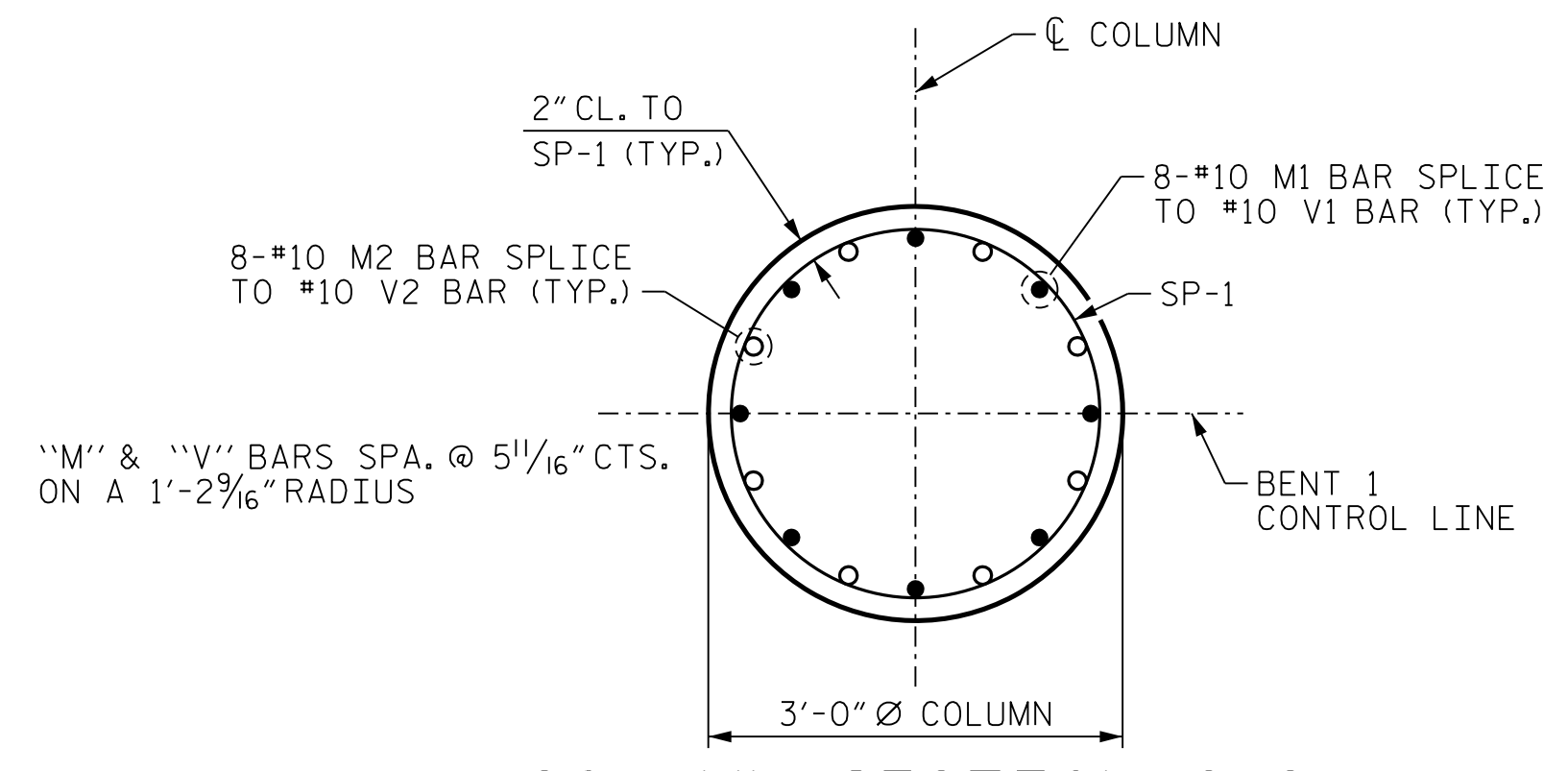
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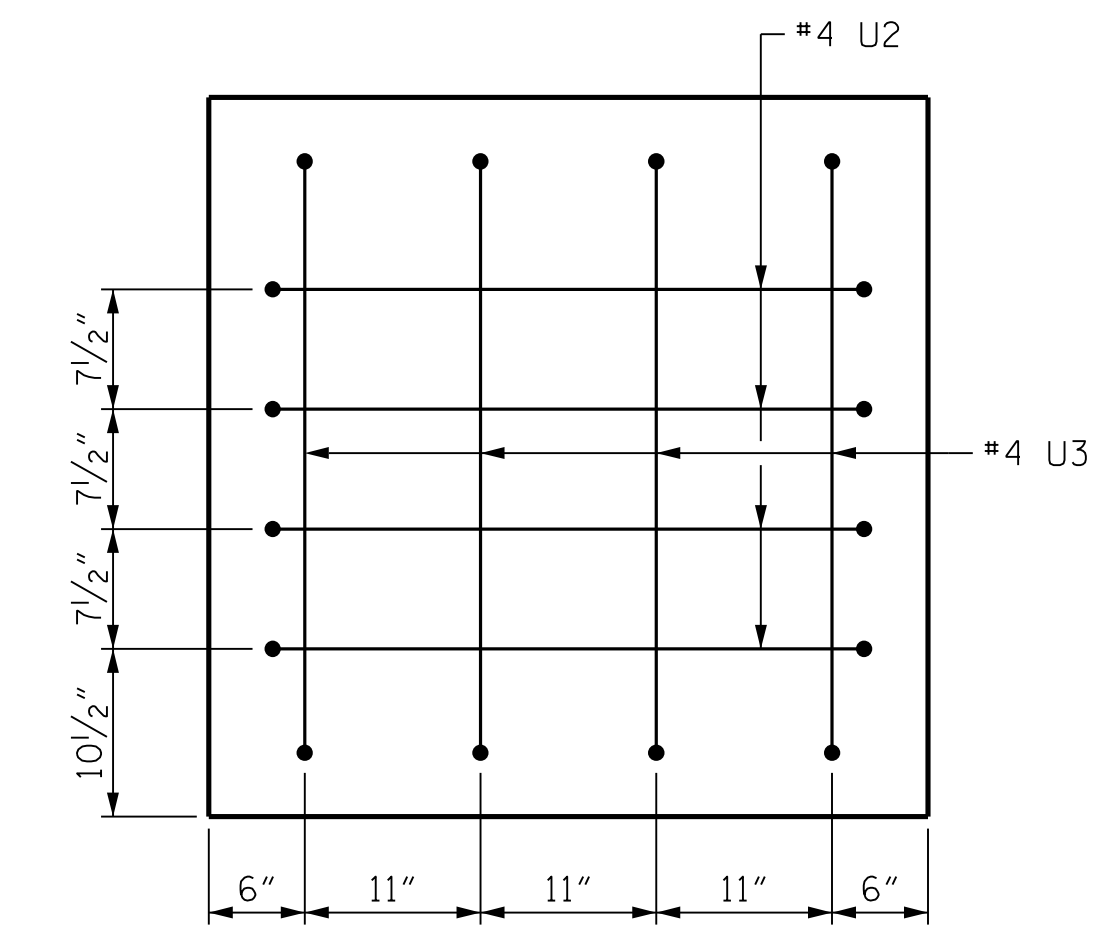
END ELEVATION



SECTION A-A



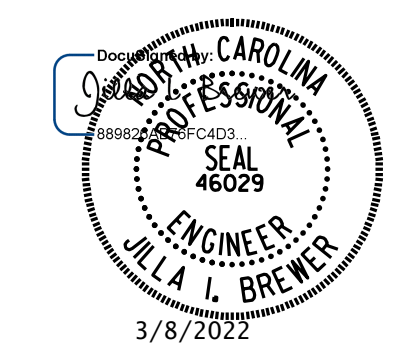
COLUMN SECTION C-C



VIEW B-B

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 1
 DETAILS

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

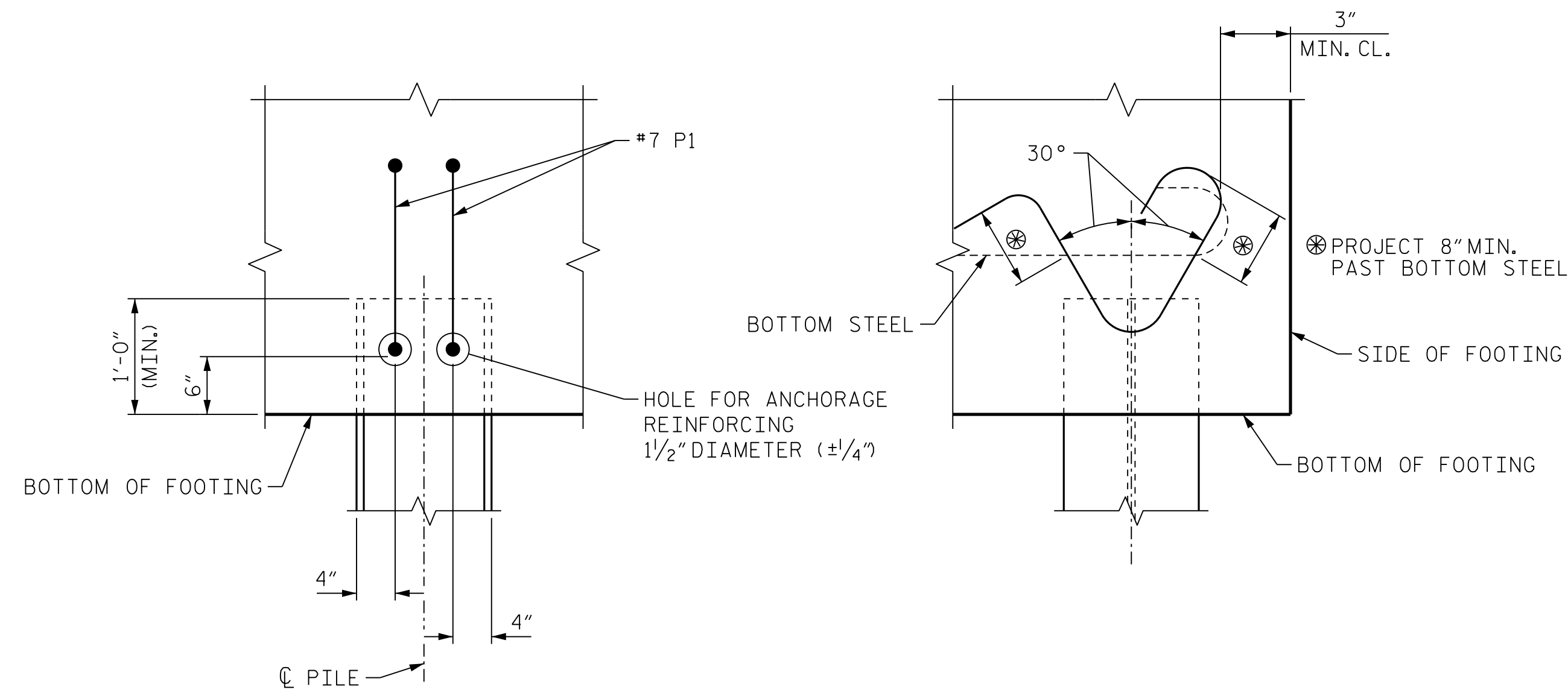
MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

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

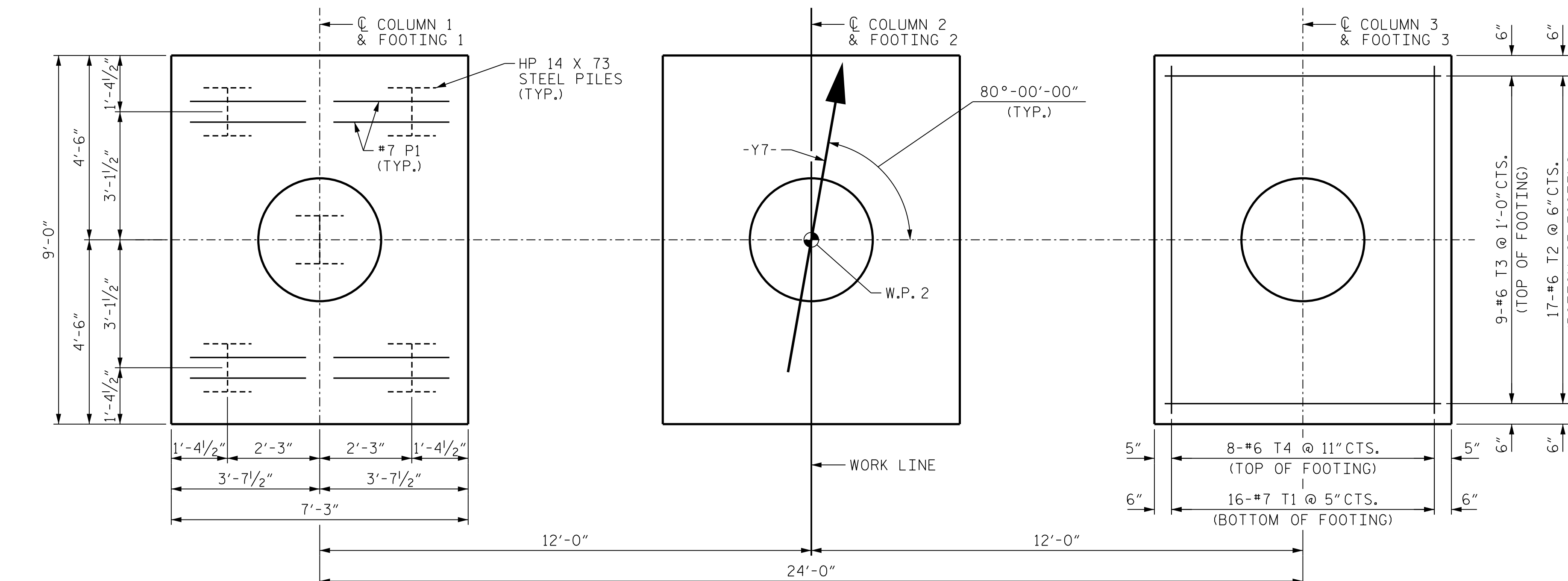
SHEET NO.
S10-26
 TOTAL SHEETS
33

DRAWN BY: B.E. LANNING DATE: 07/2021
 CHECKED BY: J.I. BREWER DATE: 07/2021
 DESIGN ENGINEER OF RECORD: J.I. BREWER DATE: 03/2022

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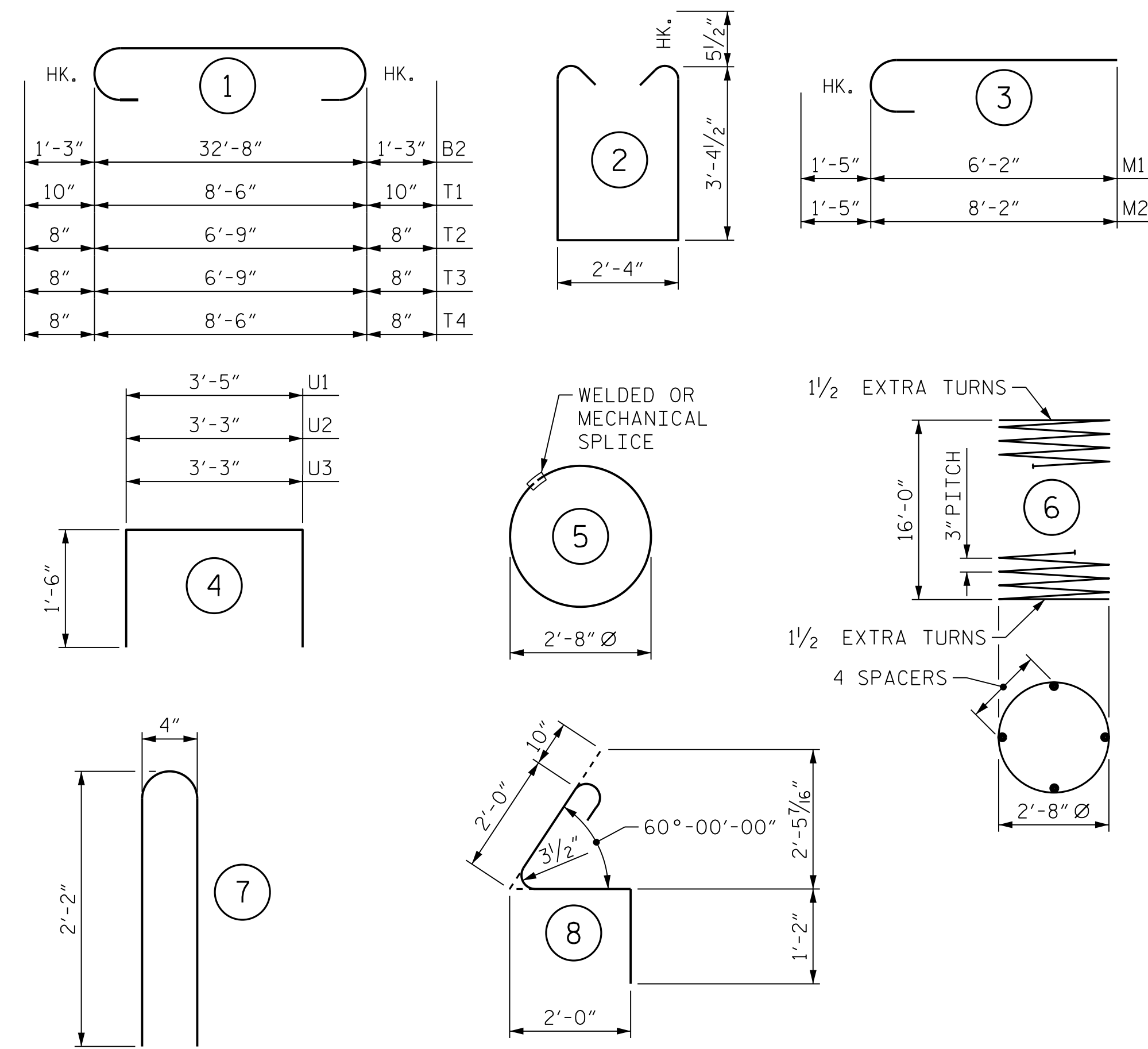
STEEL H-PILE ANCHORAGE DETAIL



PLAN OF COLUMNS AND FOOTINGS

(DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND FOOTING, UNLESS OTHERWISE NOTED)

BAR TYPES



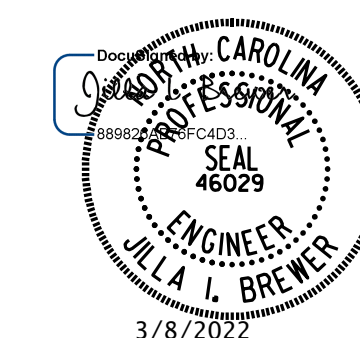
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#9	STR	32'-8"	666
B2	6	#9	1	35'-2"	717
B3	8	#5	STR	32'-8"	273
M1	24	#10	3	7'-7"	783
M2	24	#10	3	9'-7"	990
P1	24	#7	8	6'-0"	294
S1	80	#5	2	10'-0"	834
S2	33	#4	5	8'-5"	186
U1	32	#4	4	6'-5"	137
U2	8	#4	4	6'-3"	33
U3	8	#4	4	6'-3"	33
U4	32	#4	7	4'-8"	100
T1	48	#7	1	10'-2"	997
T2	51	#6	1	8'-1"	619
T3	27	#6	1	8'-1"	328
T4	24	#6	1	9'-10"	354
V1	24	#10	STR	14'-9"	1,523
V2	24	#10	STR	12'-9"	1,317
REINFORCING STEEL					10,184 LBS.
SPIRAL COLUMN REINFORCING STEEL					1,723 LBS.
SP-1	3	*	6	550'-7"	1,723
CLASS A CONCRETE BREAKDOWN					
POUR #1 (FOOTING)					25.4 C.Y.
POUR #2 (COLUMNS)					12.4 C.Y.
POUR #3 (CAP)					17.6 C.Y.
TOTAL					55.4 C.Y.

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 3 OF 3



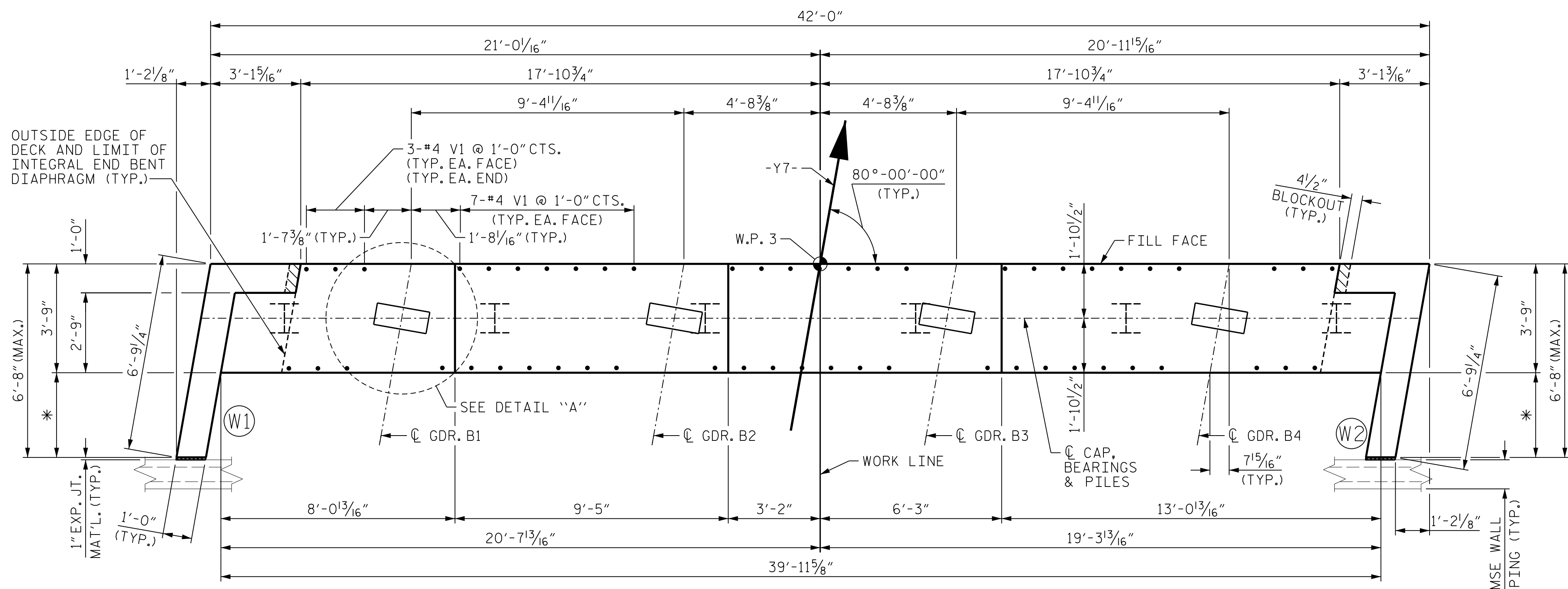
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

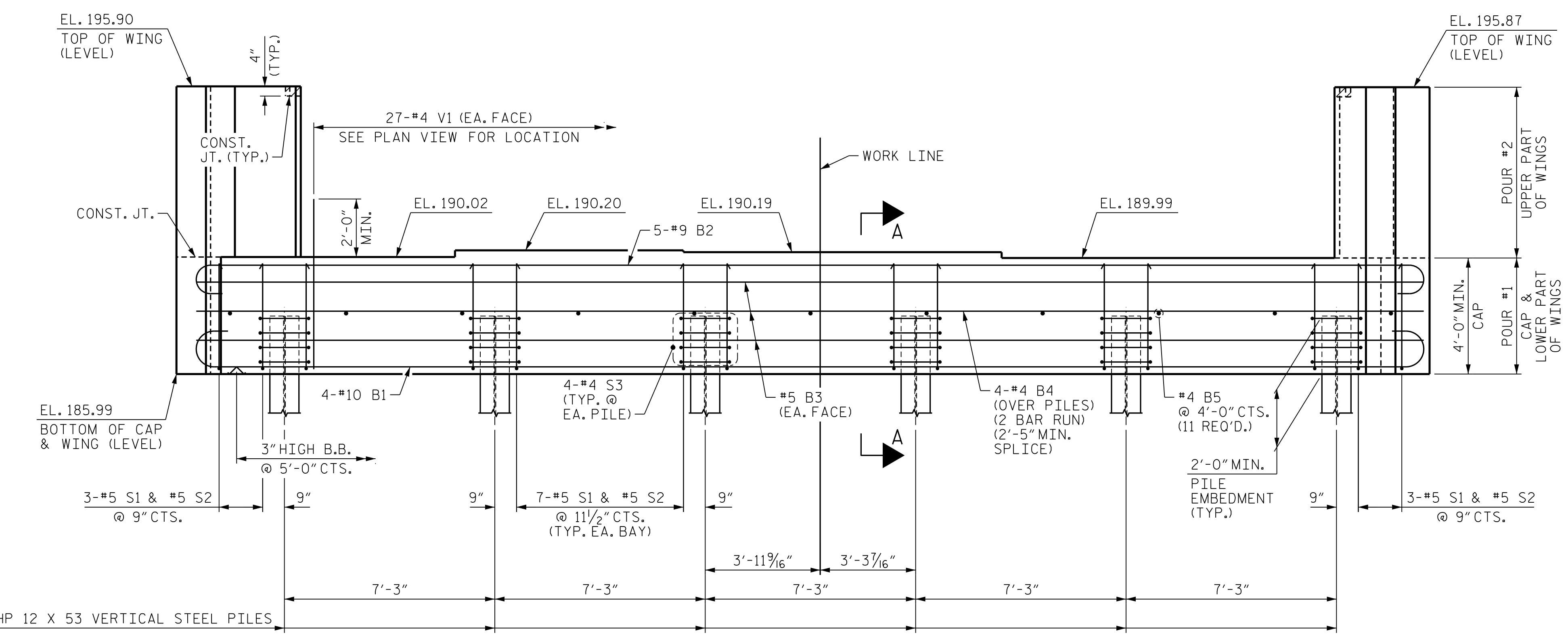
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1 DETAILS AND BILL OF MATERIAL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY : B.E. LANNING	DATE : 07/2021
CHECKED BY : J.I. BREWER	DATE : 07/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

SHEET NO.
S10-27
 TOTAL SHEETS
33



PLAN

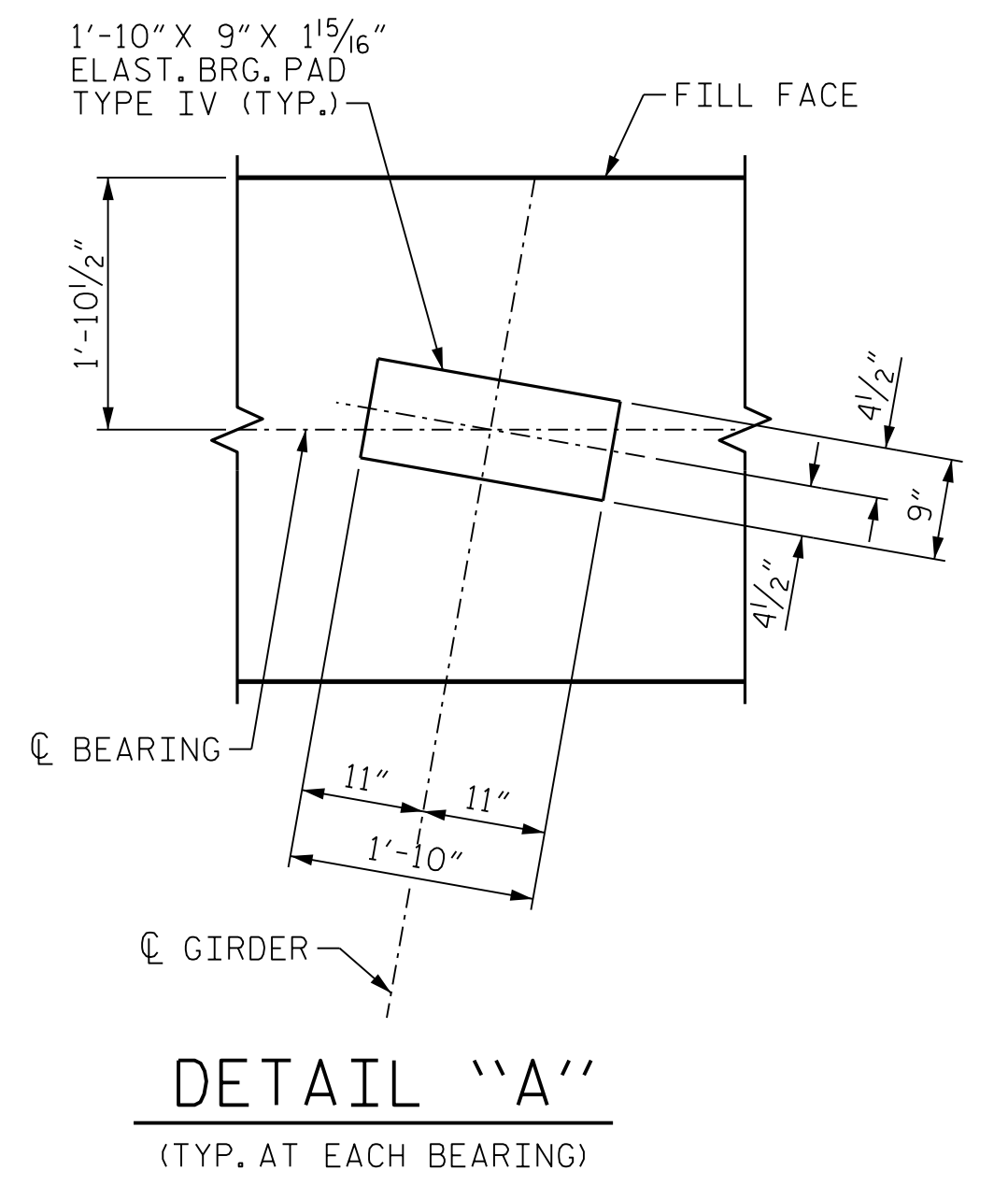


ELEVATION

PILE SLEEVES NOT SHOWN FOR CLARITY, SEE SECTION A-A.

NOTES:

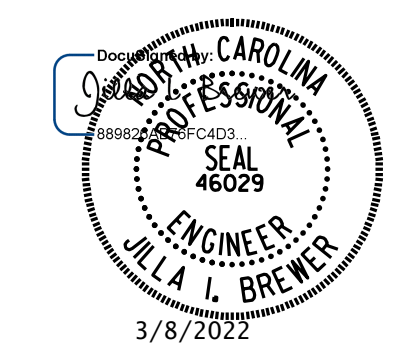
- THE TOP SURFACE OF THE END BENT CAP AND WINGS (POUR 1), EXCEPT THE BEARING AREAS AND THE NON-INTEGRAL AREAS AT CAP ENDS, SHALL BE RAKED TO A DEPTH OF 1/4".
- FOR SECTION A-A, PILE SPLICE DETAILS AND TEMPORARY DRAINAGE DETAILS, SEE SHEET 3 OF 3.
- THE CONCRETE IN THE HATCHED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #4 V1 BARS.
- * LENGTH OF EACH WING SHALL BE FIELD ADJUSTED AS REQUIRED TO PROVIDE 1" EXPANSION JOINT MATERIAL AS SHOWN BETWEEN THE COMPONENT AND THE MSE WALL COPING. (2'-11 1/2" MAX.)



DETAIL "A"
(TYP. AT EACH BEARING)

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2
 PLAN AND ELEVATION

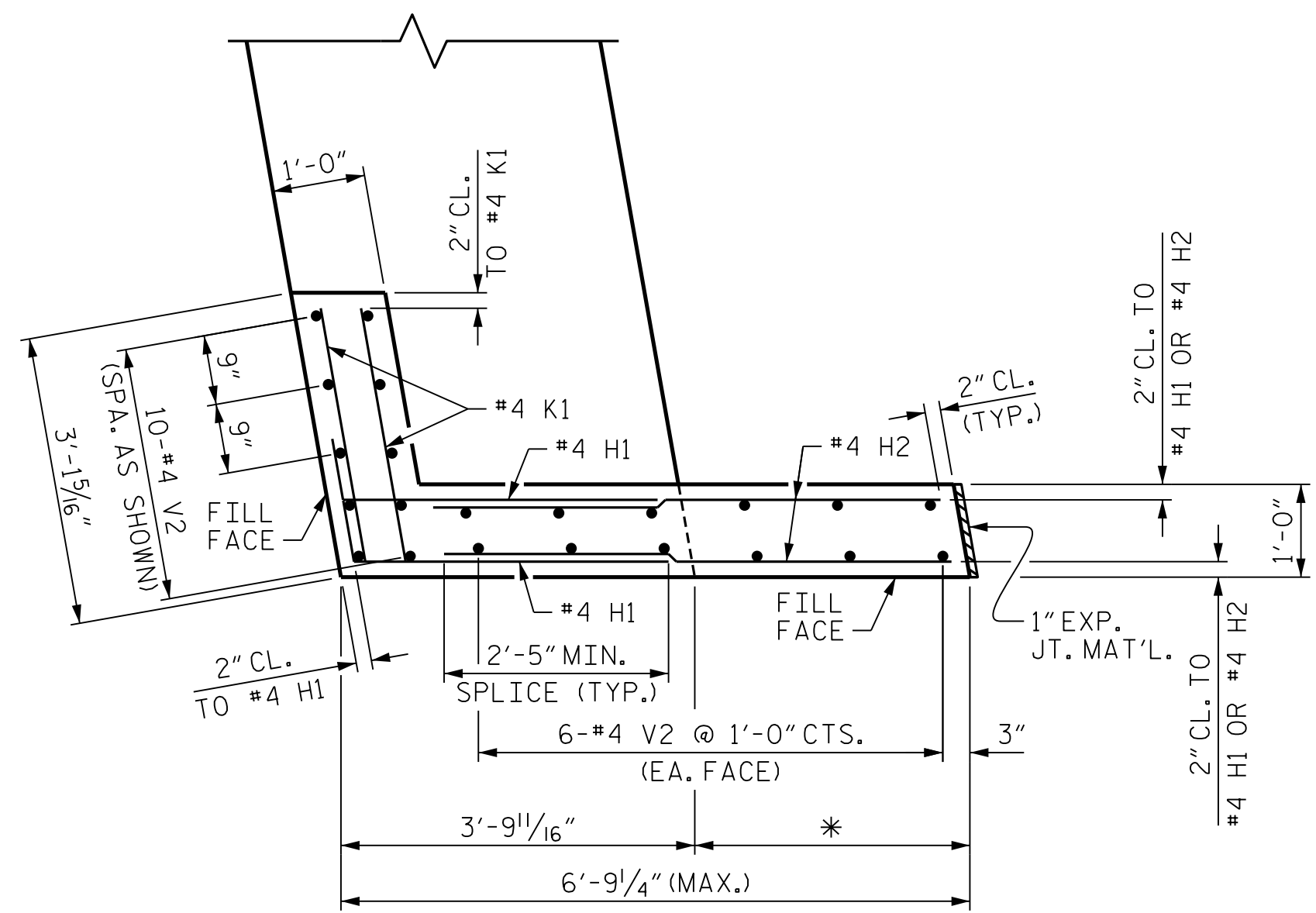
DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

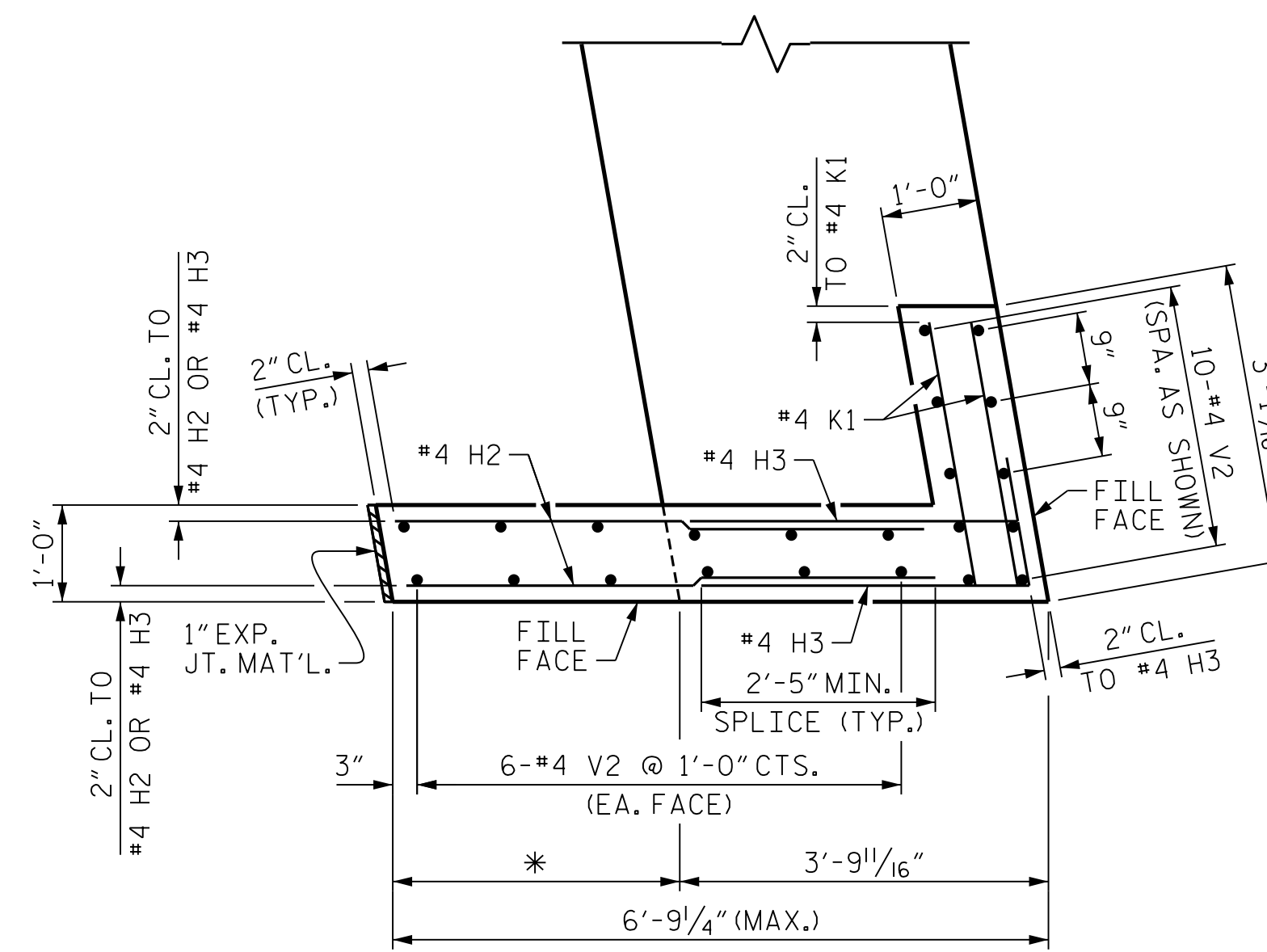
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S10-28	
1			3			TOTAL SHEETS	
2			4			33	

DRAWN BY : B.E. LANNING	DATE : 07/2021
CHECKED BY : J.I. BREWER	DATE : 07/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

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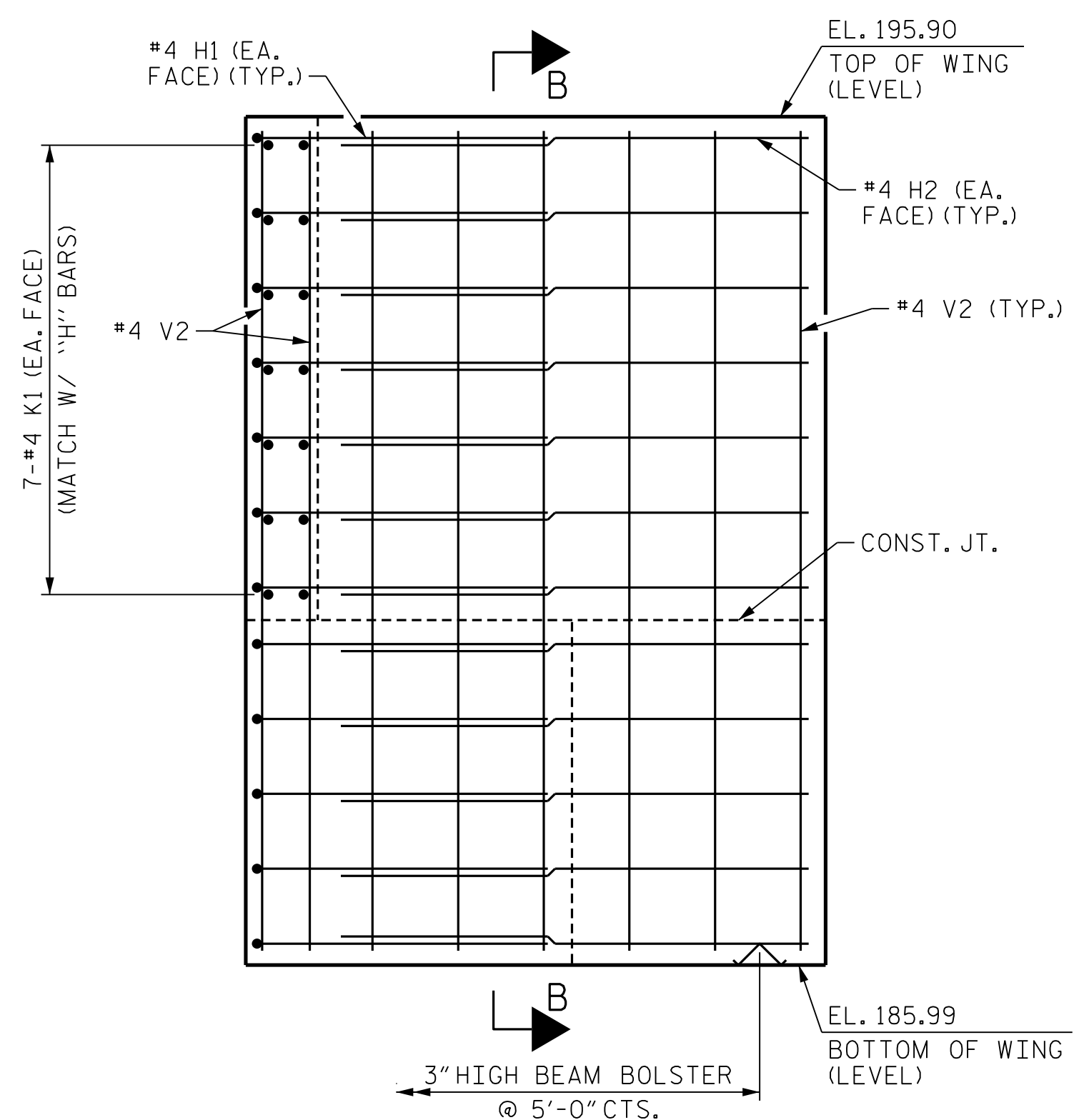


PLAN OF WING (W1)

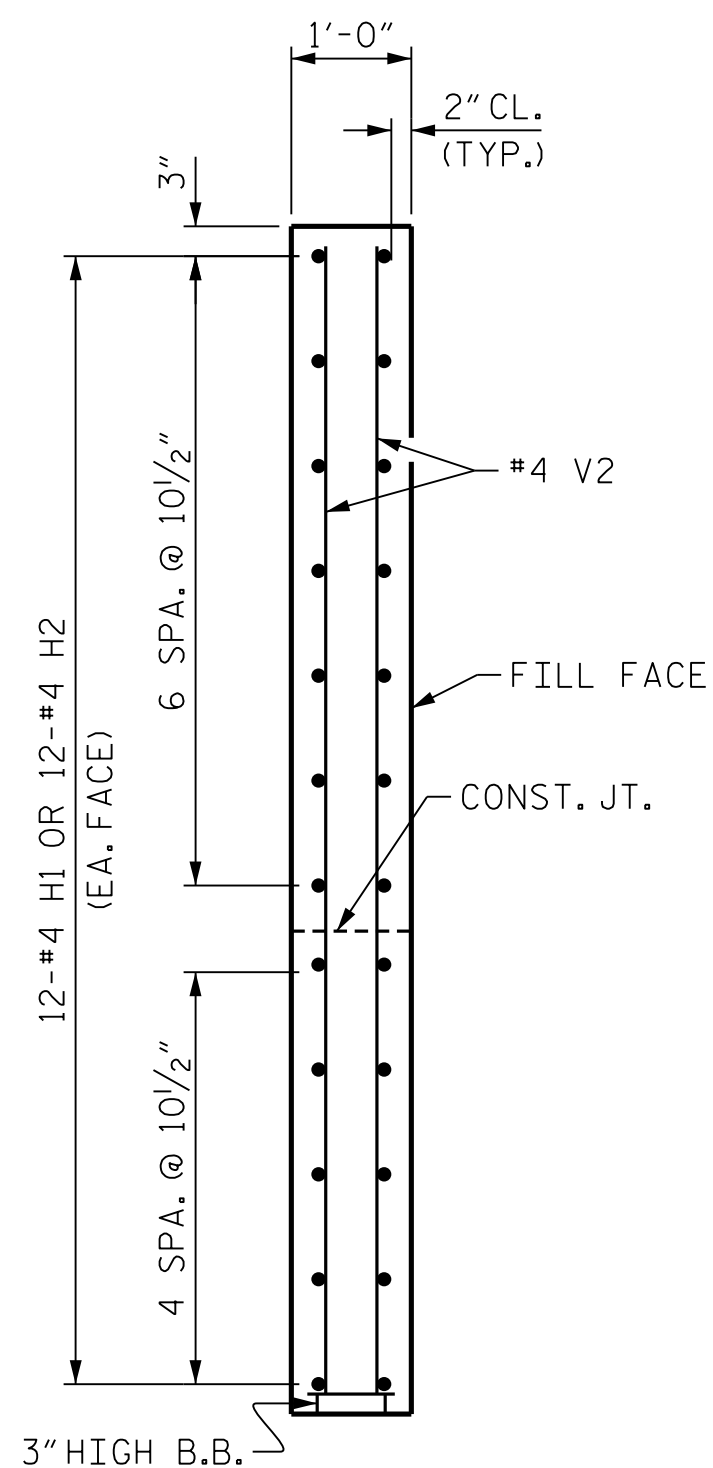


PLAN OF WING (W2)

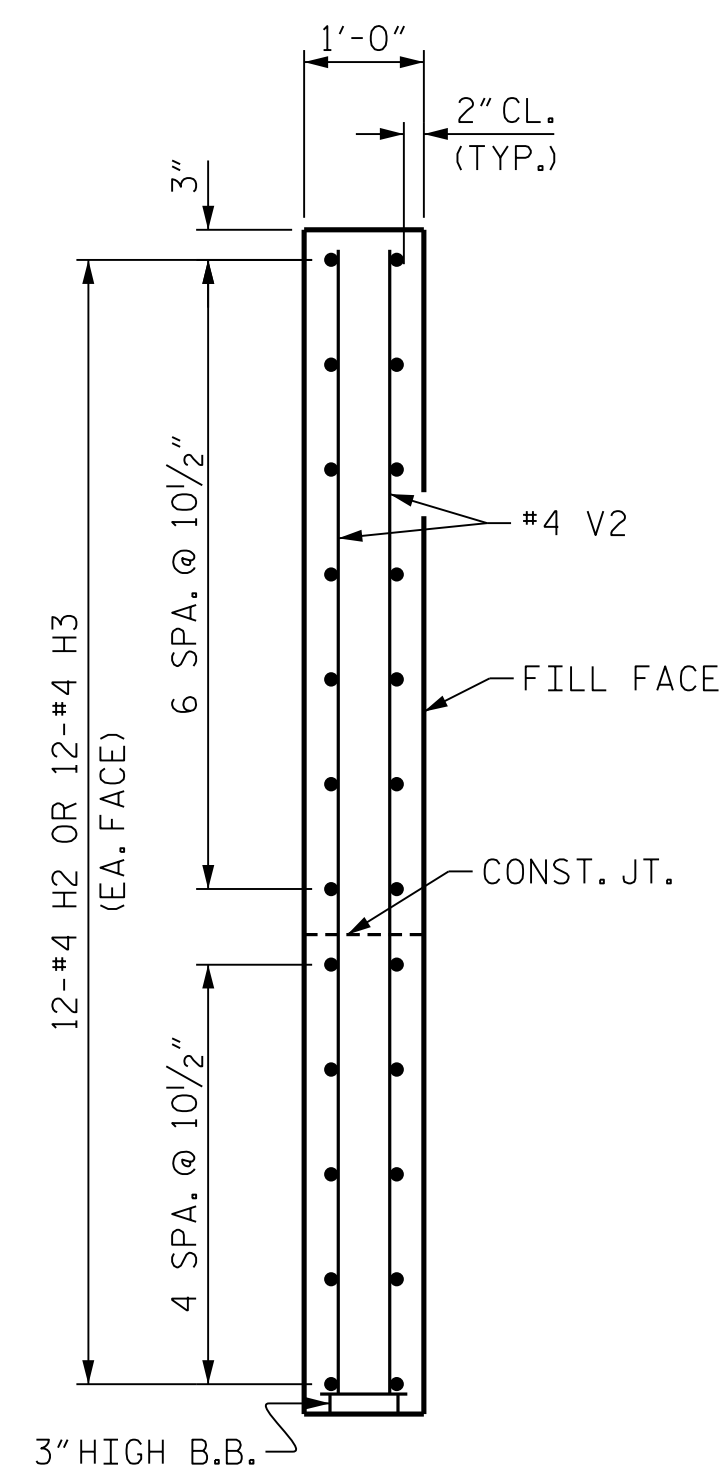
NOTE:
 * WINGWALL EXTENSION DISTANCE TO BE FIELD ADJUSTED AS REQUIRED TO PROVIDE 1" EXP. JT. MAT'L. BETWEEN THE MSE WALL COPING AND THE EXTENDED WINGWALL.



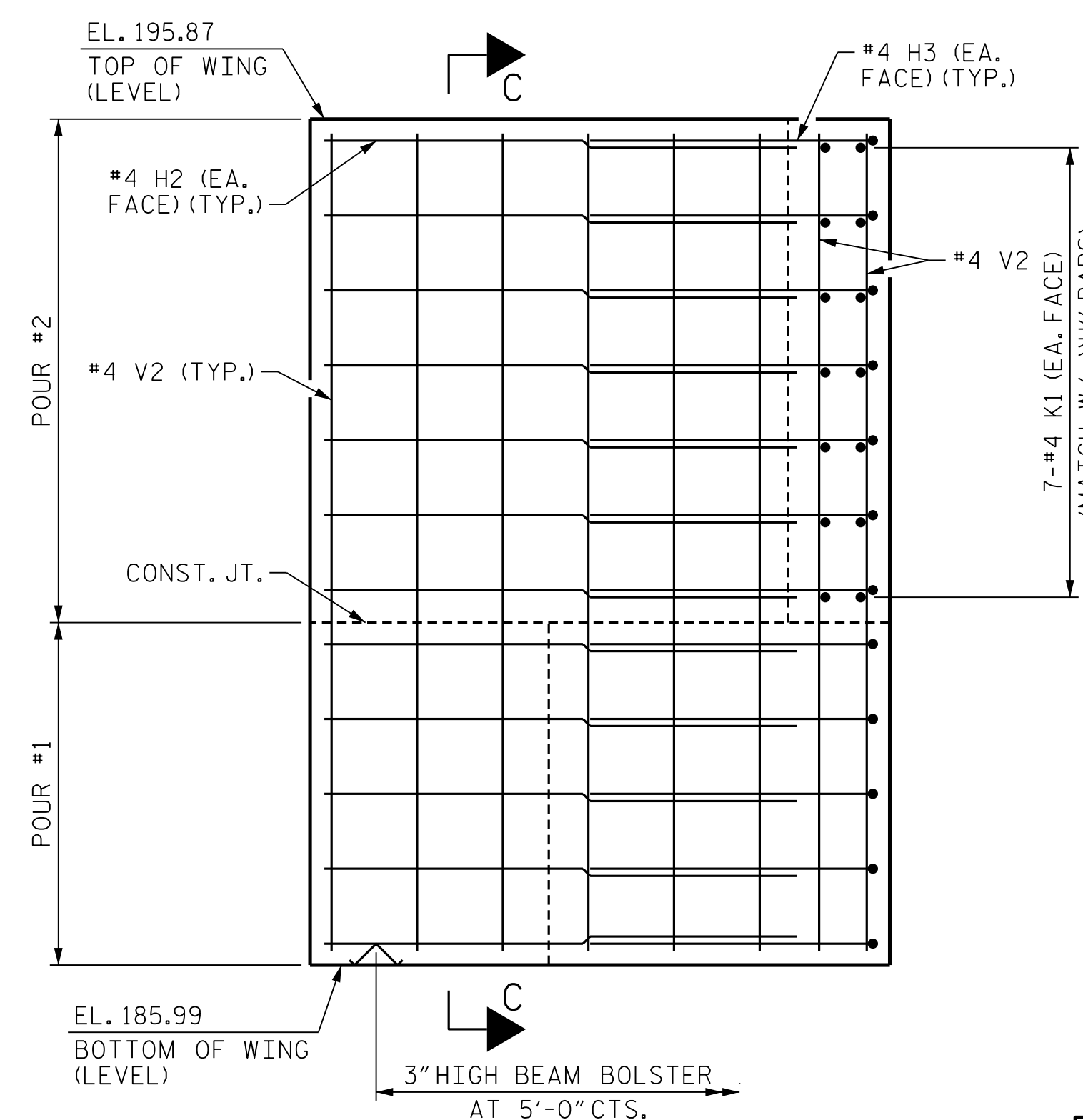
ELEVATION OF WING (W1)



SECTION B-B



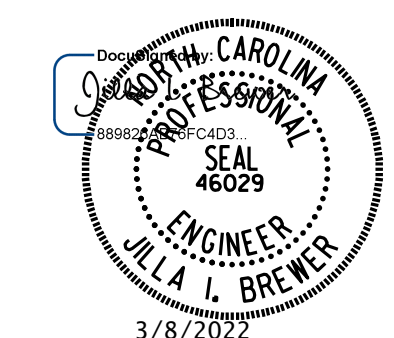
SECTION C-C



ELEVATION OF WING (W2)

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 2 OF 3



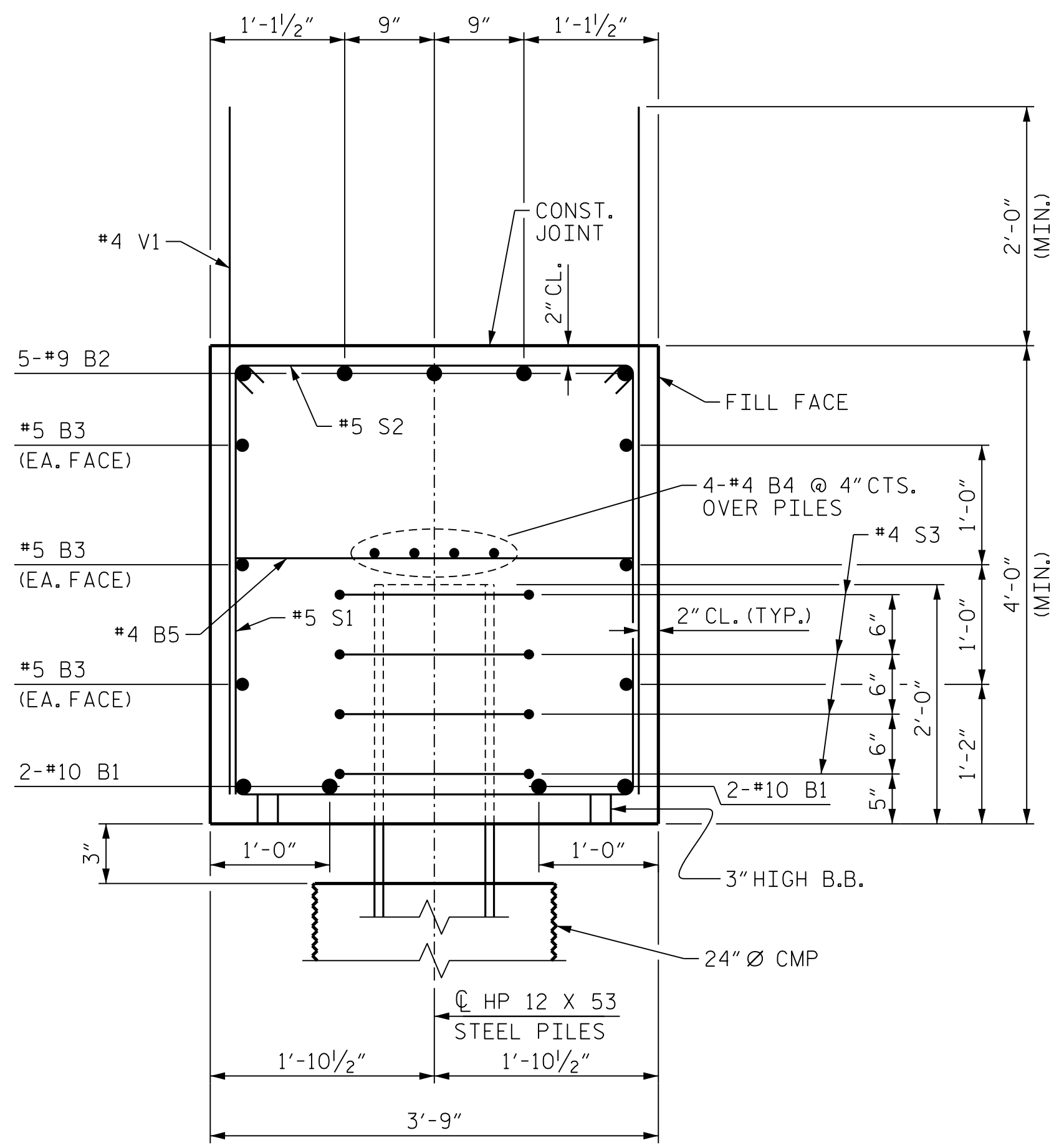
**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

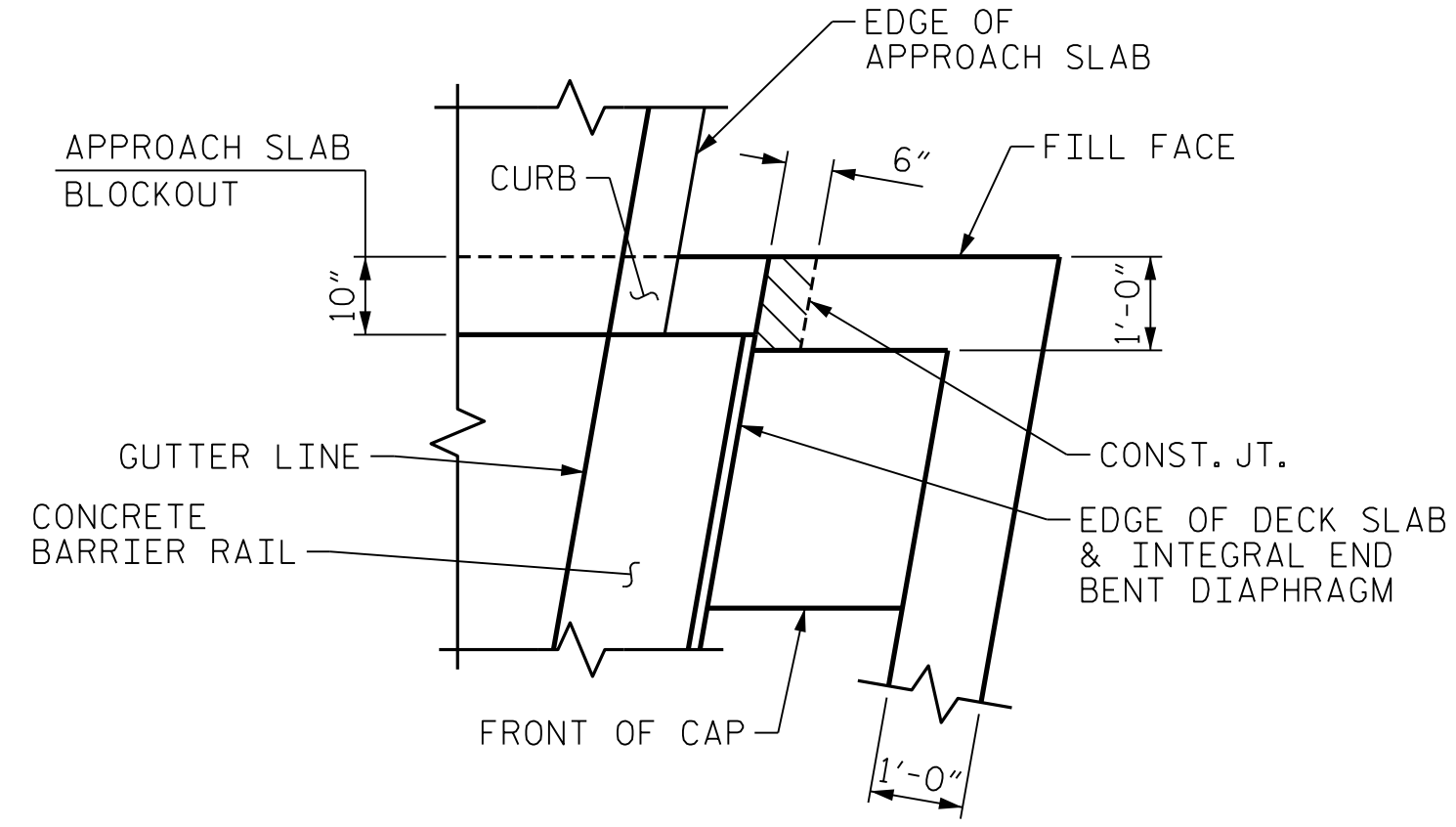
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 2 WINGWALL DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S10-29					TOTAL SHEETS 33

DRAWN BY : <u>B.E. LANNING</u>	DATE : <u>07/2021</u>
CHECKED BY : <u>J.I. BREWER</u>	DATE : <u>07/2021</u>
DESIGN ENGINEER OF RECORD : <u>J.I. BREWER</u>	DATE : <u>03/2022</u>

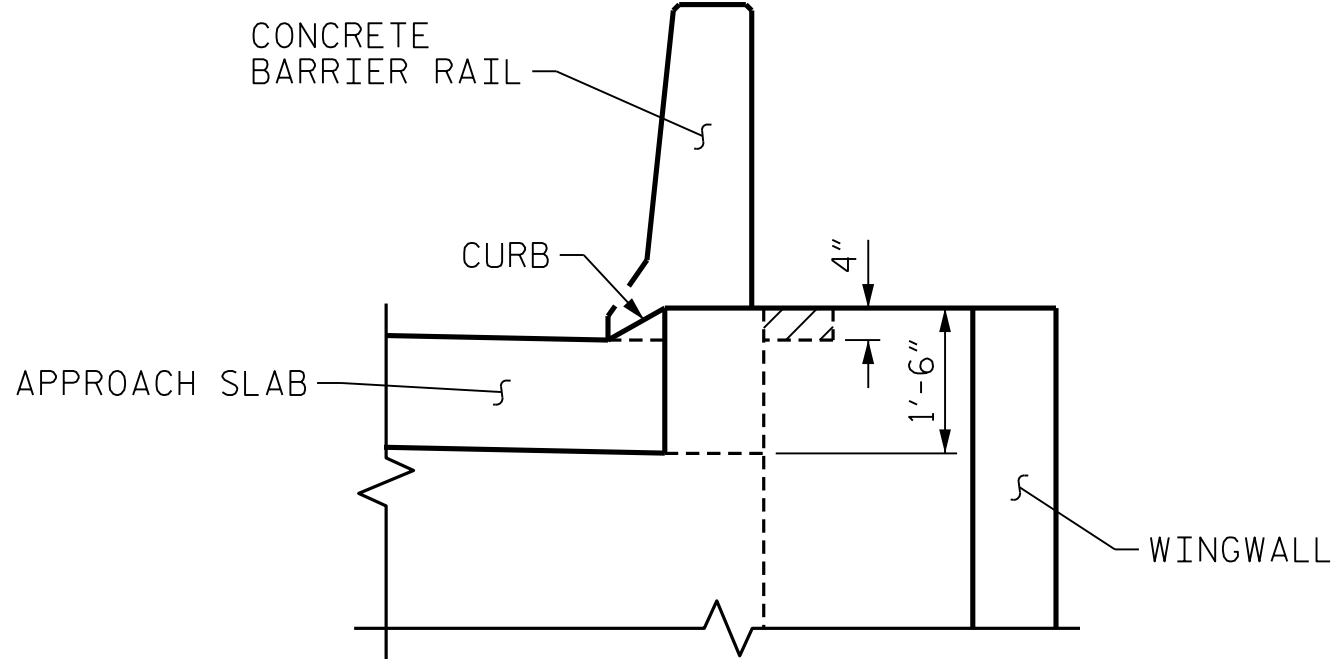
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SECTION A-A



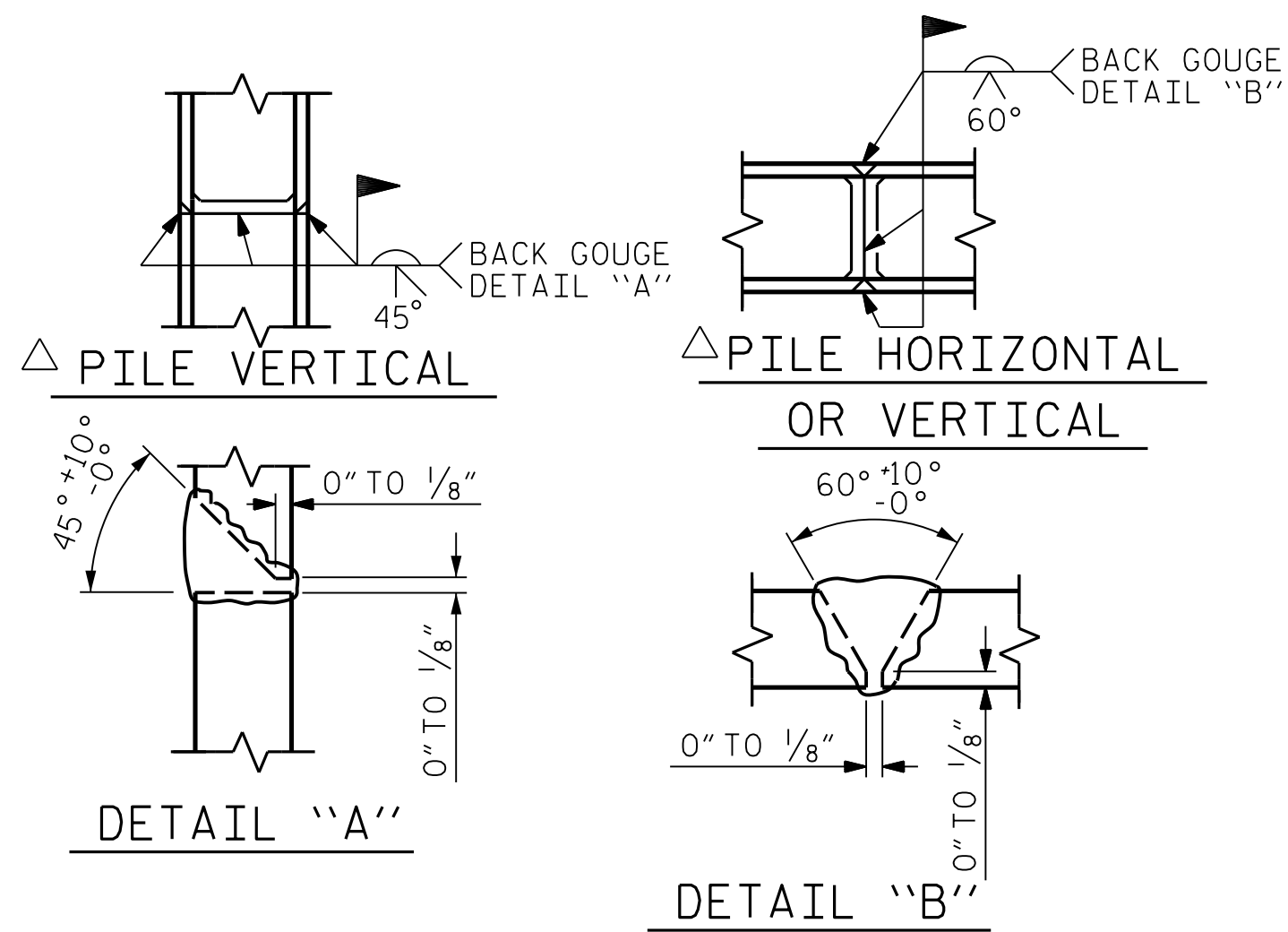
PLAN



ELEVATION

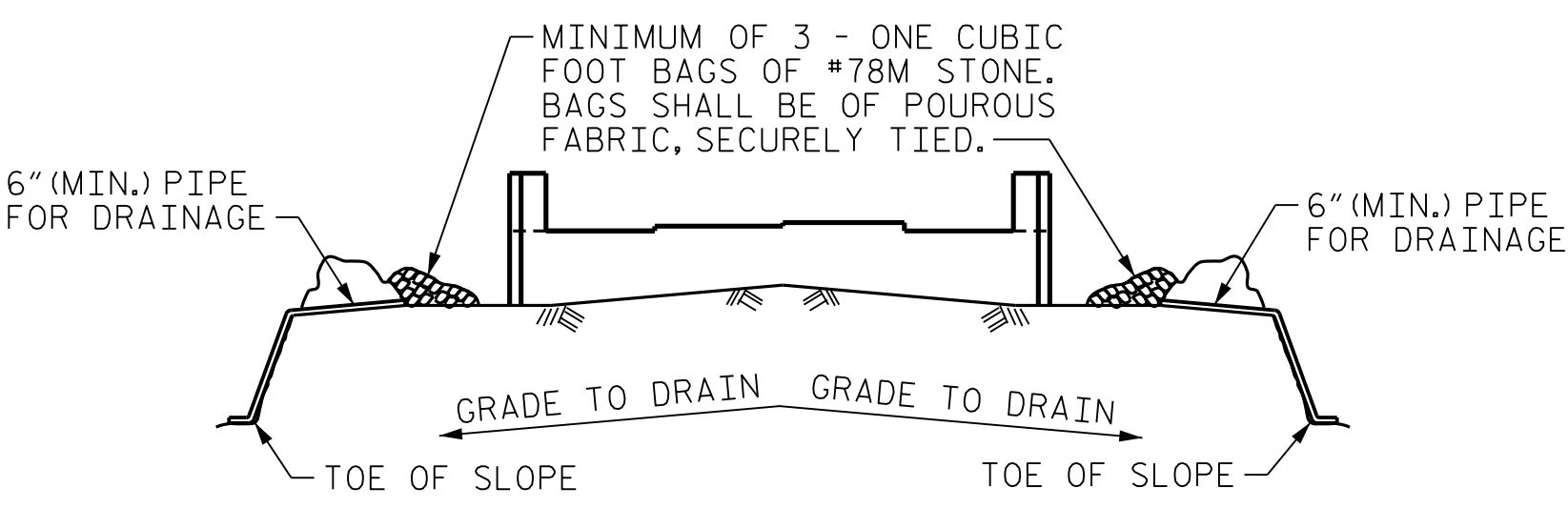
WINGWALL BLOCKOUT

THE CONCRETE IN THE SHADED AREA SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND APPROACH SLAB HAS BEEN SAWED AND THE CONCRETE PARAPET IS CAST IF SLIP FORMING IS USED.



PILE SPLICE DETAILS

△ POSITION OF PILE DURING WELDING.

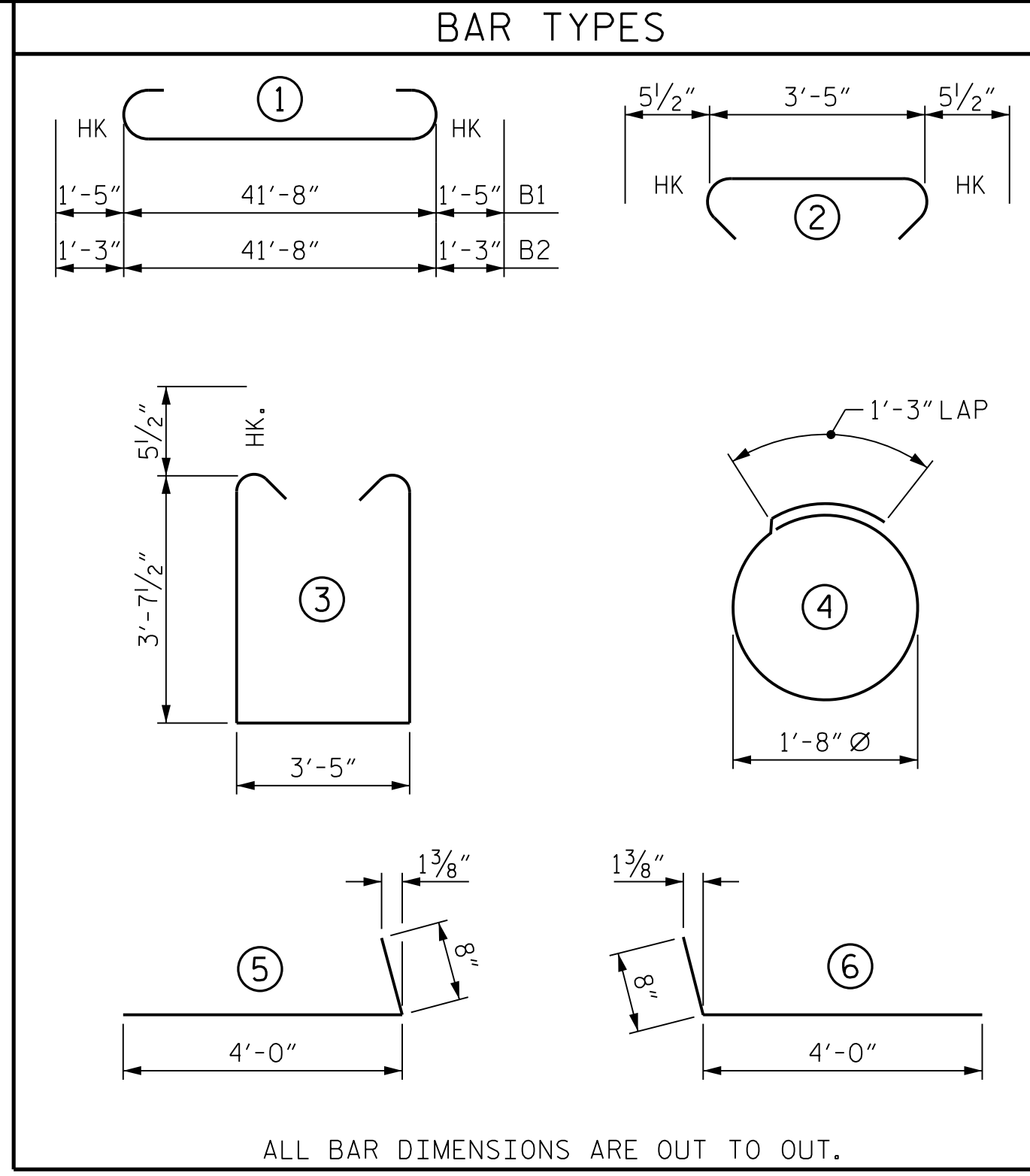


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

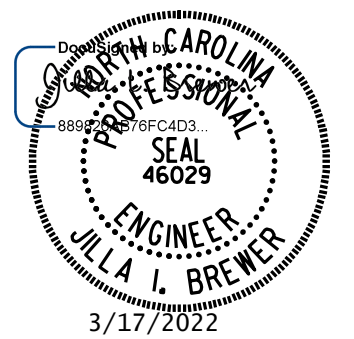


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT 2					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	#4	#10	1	44'-6"	766
B2	5	#9	1	44'-2"	751
B3	6	#5	STR	41'-8"	261
B4	8	#4	STR	22'-1"	118
B5	11	#4	STR	3'-5"	25
H1	24	#4	6	4'-8"	75
H2	48	#4	STR	5'-3"	168
H3	24	#4	5	4'-8"	75
K1	28	#4	STR	2'-9"	51
S1	41	#5	3	11'-7"	495
S2	41	#5	2	4'-4"	185
S3	24	#4	4	6'-6"	104
V1	54	#4	STR	6'-0"	216
V2	44	#4	STR	9'-5"	277
REINFORCING STEEL					3,567 LBS.
CLASS A CONCRETE BREAKDOWN					
POUR #1 (CAP & LOWER PART OF WINGS)				24.8	C.Y.
POUR #2 (UPPER PART OF WINGS)				3.9	C.Y.
TOTAL				28.7	C.Y.

PROJECT NO. I-5987B
ROBESON COUNTY
STATION: 29+70.72 -Y7-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 2
DETAILS AND
BILL OF MATERIAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

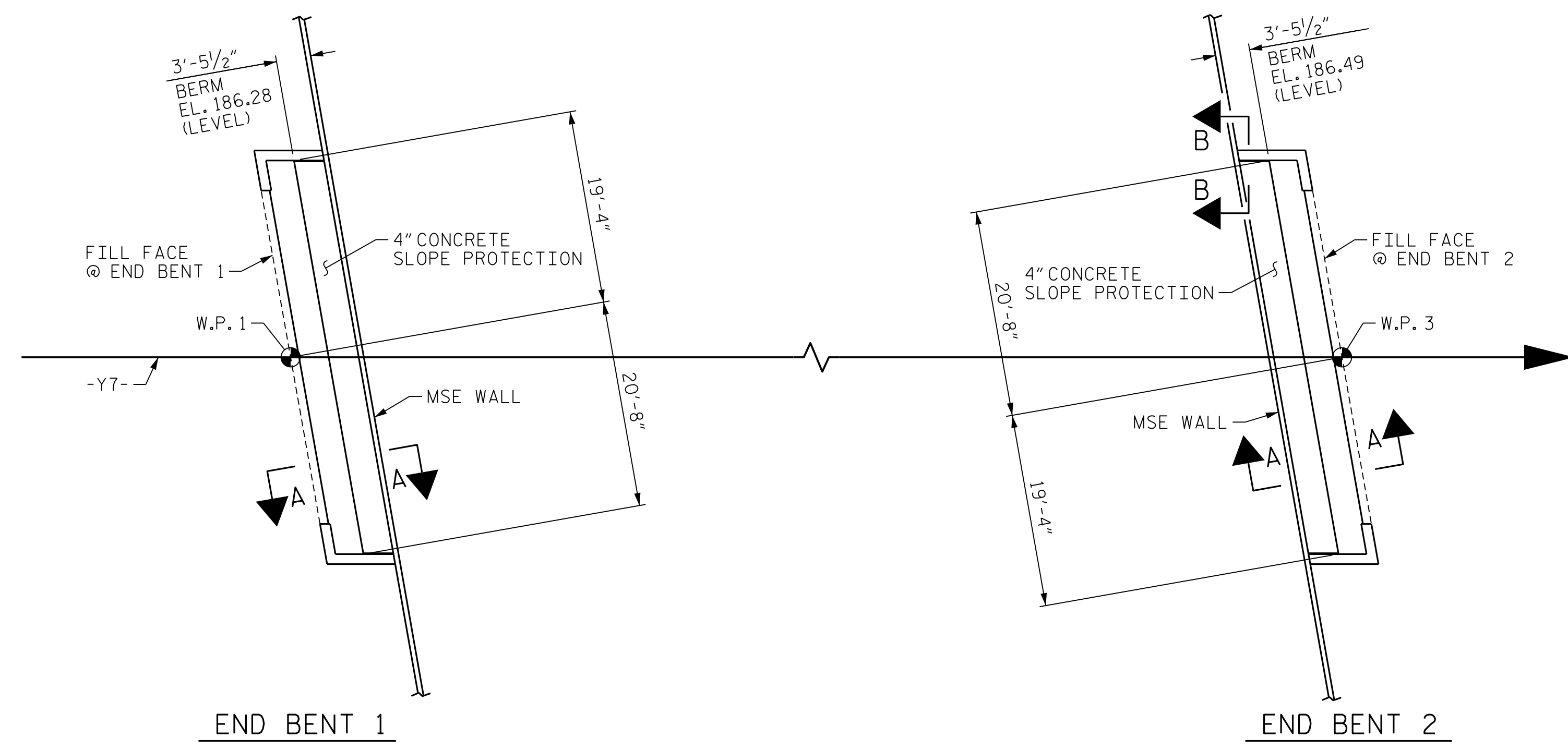
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-30 TOTAL SHEETS 33
2			4			

DRAWN BY : B.E. LANNING	DATE : 07/2021
CHECKED BY : J.I. BREWER	DATE : 07/2021
DESIGN ENGINEER OF RECORD : J.I. BREWER	DATE : 03/2022

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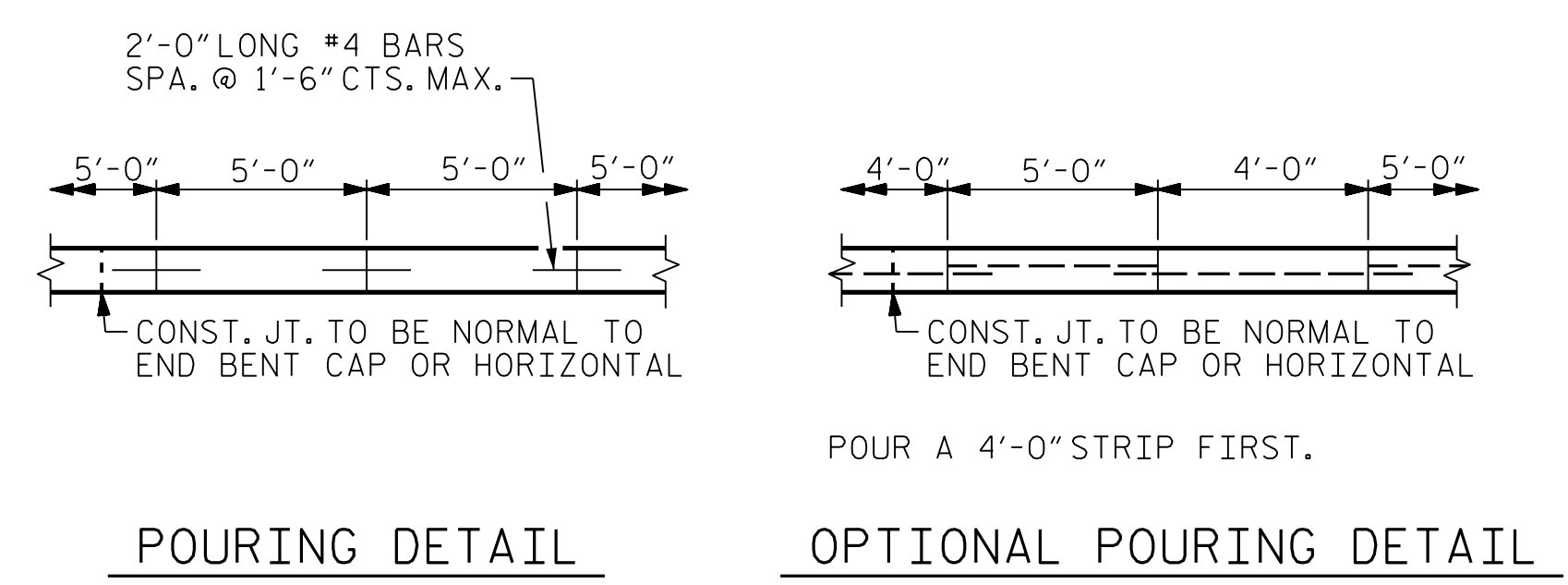


PLAN

NOTES:

SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN SECTION A-A. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT.

SLOPE PROTECTION SHALL CONSIST OF 4"POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE SECTIONS ON THIS SHEET. CONCRETE SHALL BE CLASS "B", THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60"WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0"LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

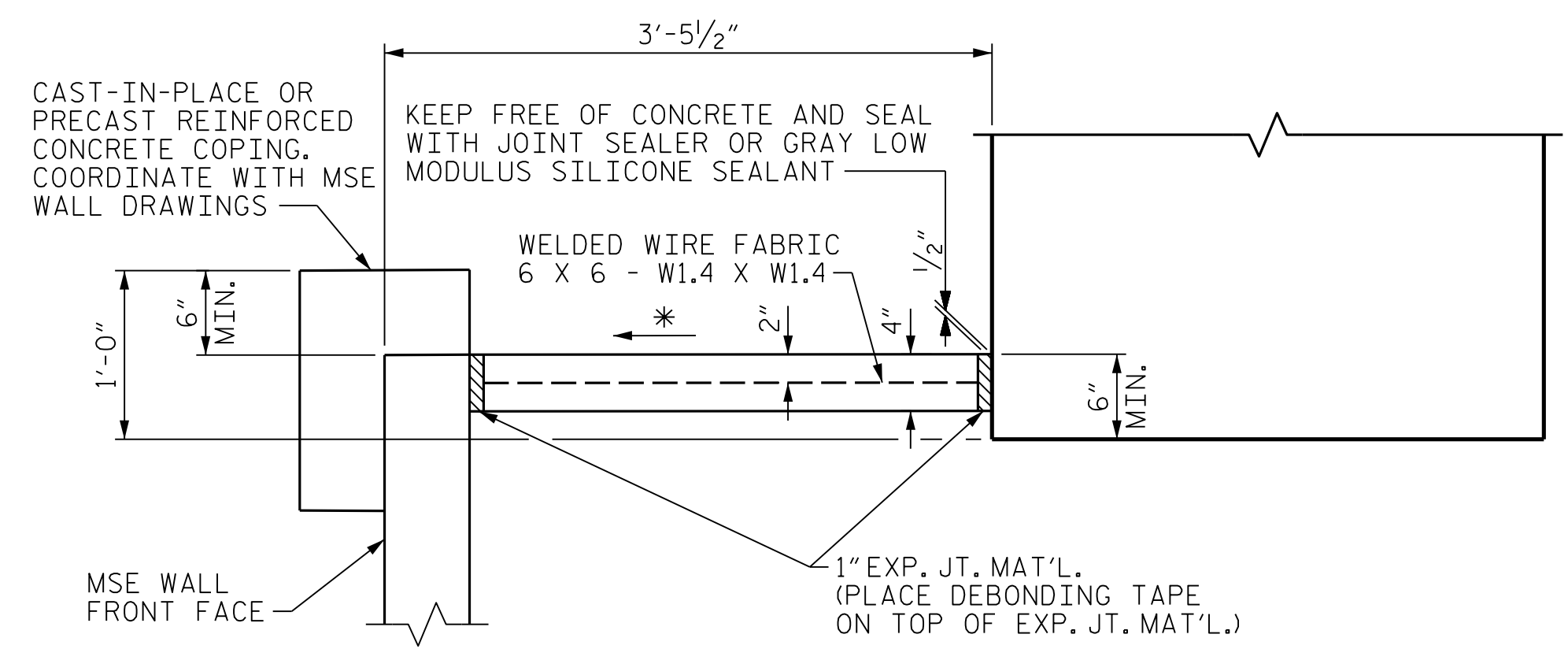


POURING DETAIL

OPTIONAL POURING DETAIL

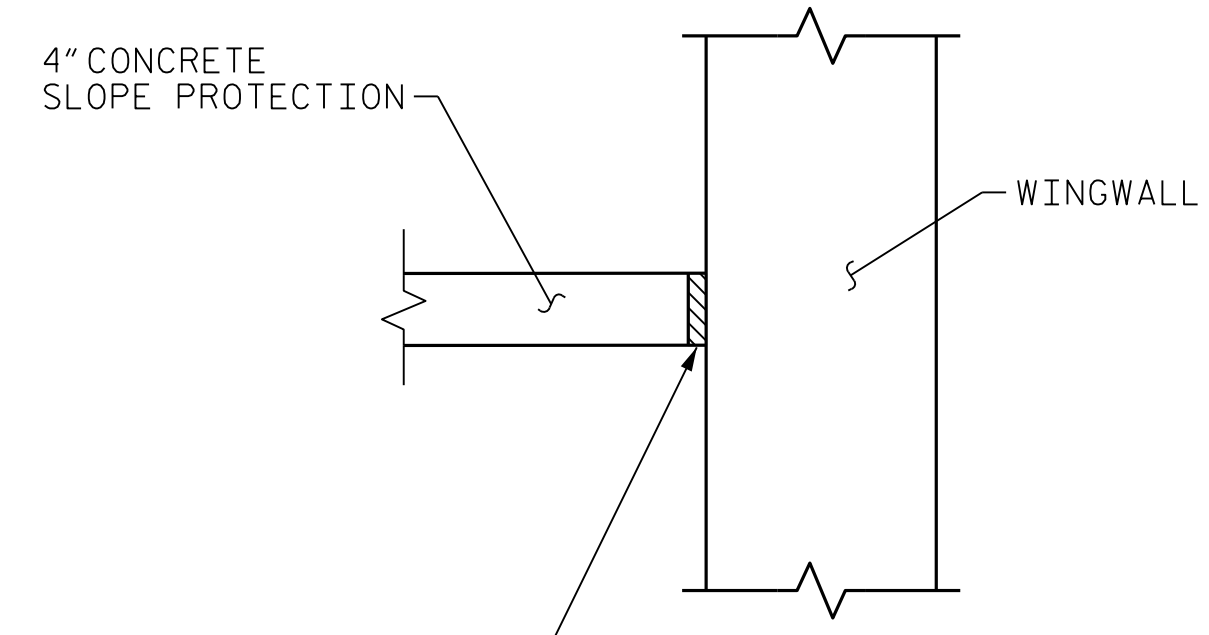
BRIDGE @ STA. 29+70.72 -Y7-	4 INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	14	28
END BENT 2	14	28

* QUANTITY SHOWN IS BASED ON 5' POURS.



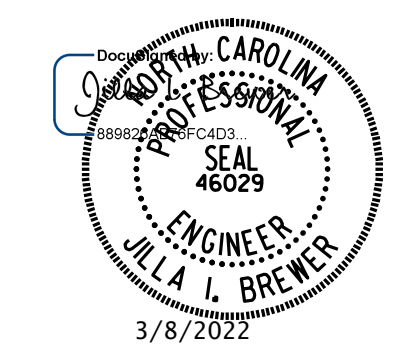
SECTION A-A

* 2% SLOPE (NORMAL TO CAP)



SECTION B-B

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-



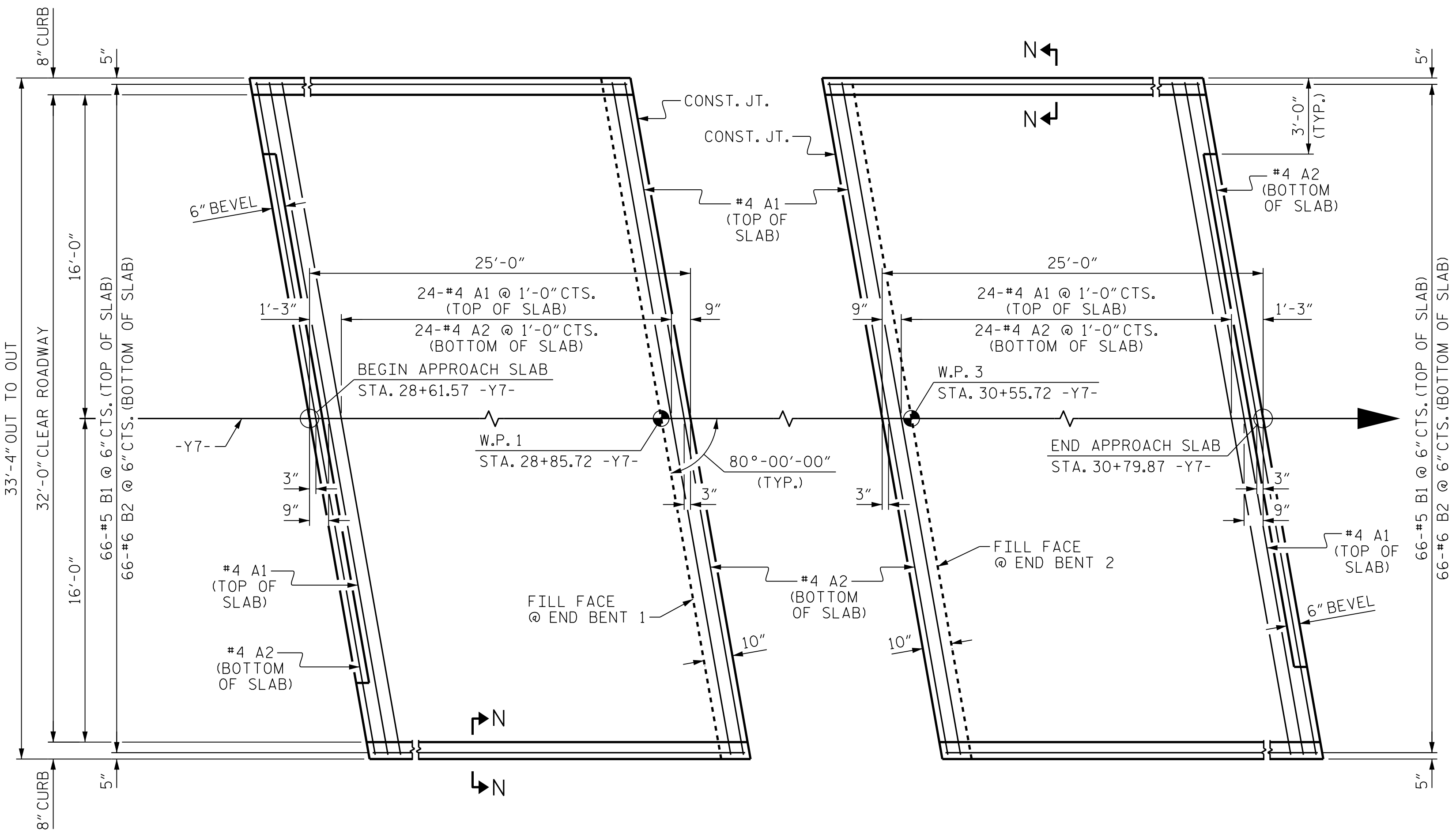
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SLOPE PROTECTION

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

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			33
2			4			

DRAWN BY : <u>B.E. LANNING</u>	DATE : <u>06/2021</u>
CHECKED BY : <u>J.I. BREWER</u>	DATE : <u>09/2021</u>
DESIGN ENGINEER OF RECORD : <u>J.I. BREWER</u>	DATE : <u>03/2022</u>



PLAN AT END BENT 1
 PLAN AT END BENT 2
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

NOTES:

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

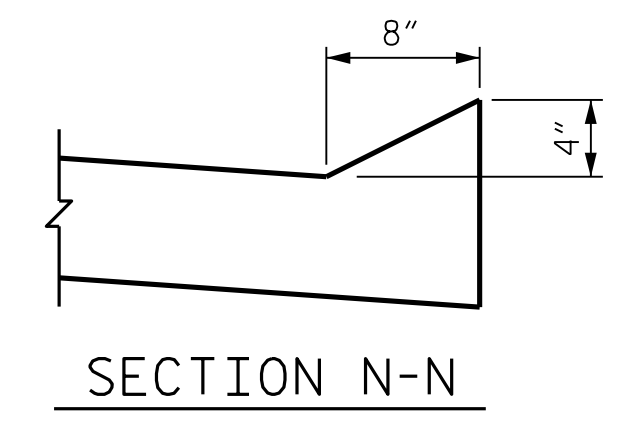
FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE AND SELECT MATERIAL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

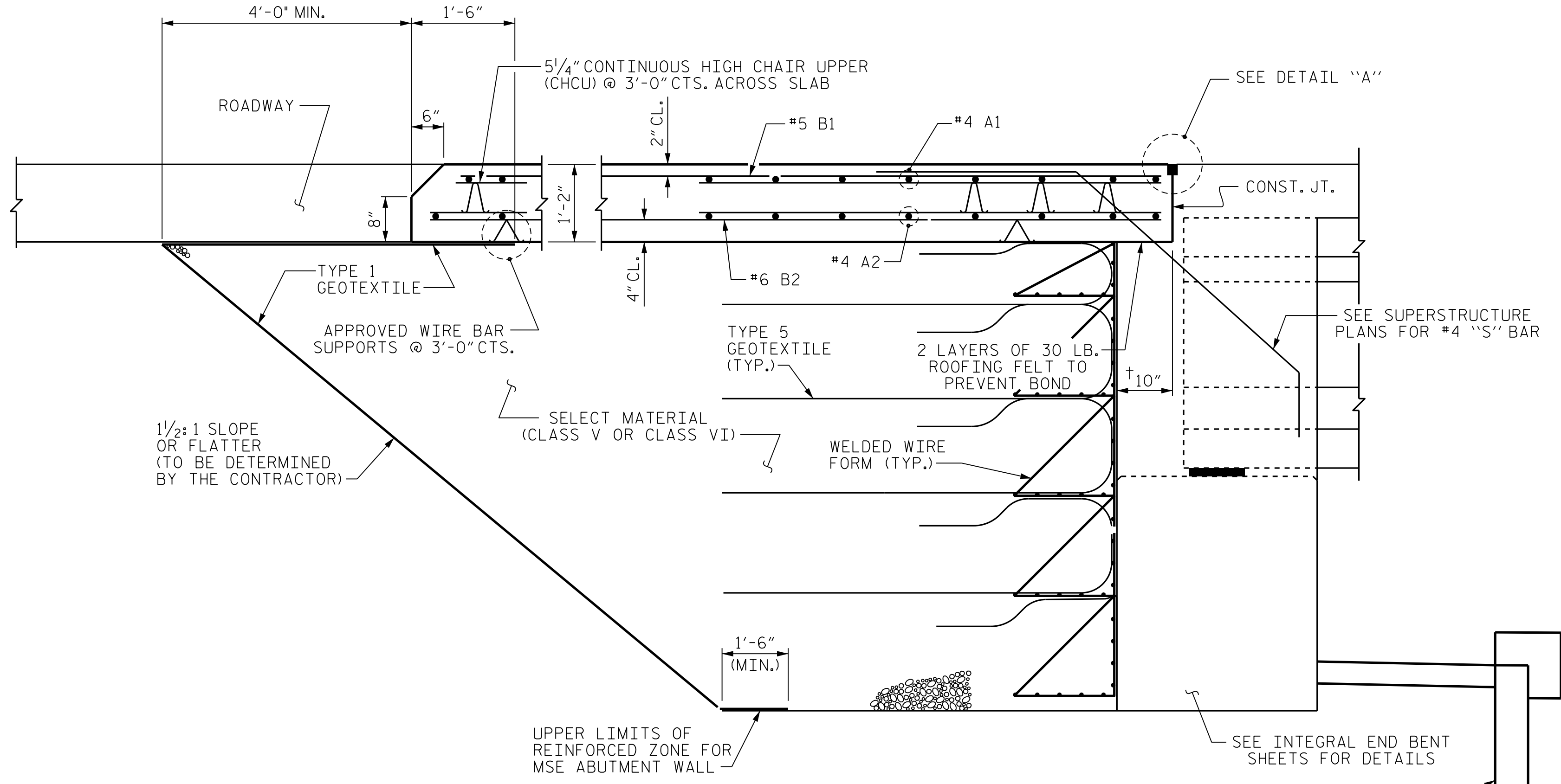
THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.



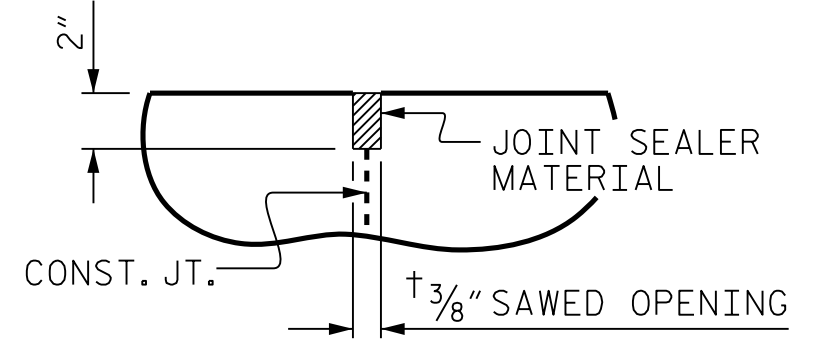
SECTION N-N

BILL OF MATERIAL					
FOR ONE APPROACH SLAB (2 REQ'D.)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	33'-6"	582
A2	26	#4	STR	33'-6"	582
*B1	66	#5	STR	24'-1"	1,658
B2	66	#6	STR	24'-7"	2,437
REINFORCING STEEL					3,019 LBS.
* EPOXY COATED REINFORCING STEEL					2,240 LBS.
CLASS AA CONCRETE					36.2 C.Y.

SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"



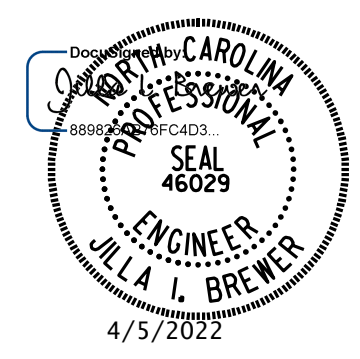
SECTION THRU SLAB
 (SPECIAL BRIDGE APPROACH FILL)



DETAIL "A"
 † NORMAL TO END BENT

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR INTEGRAL ABUTMENT
 WITH FLEXIBLE PAVEMENT

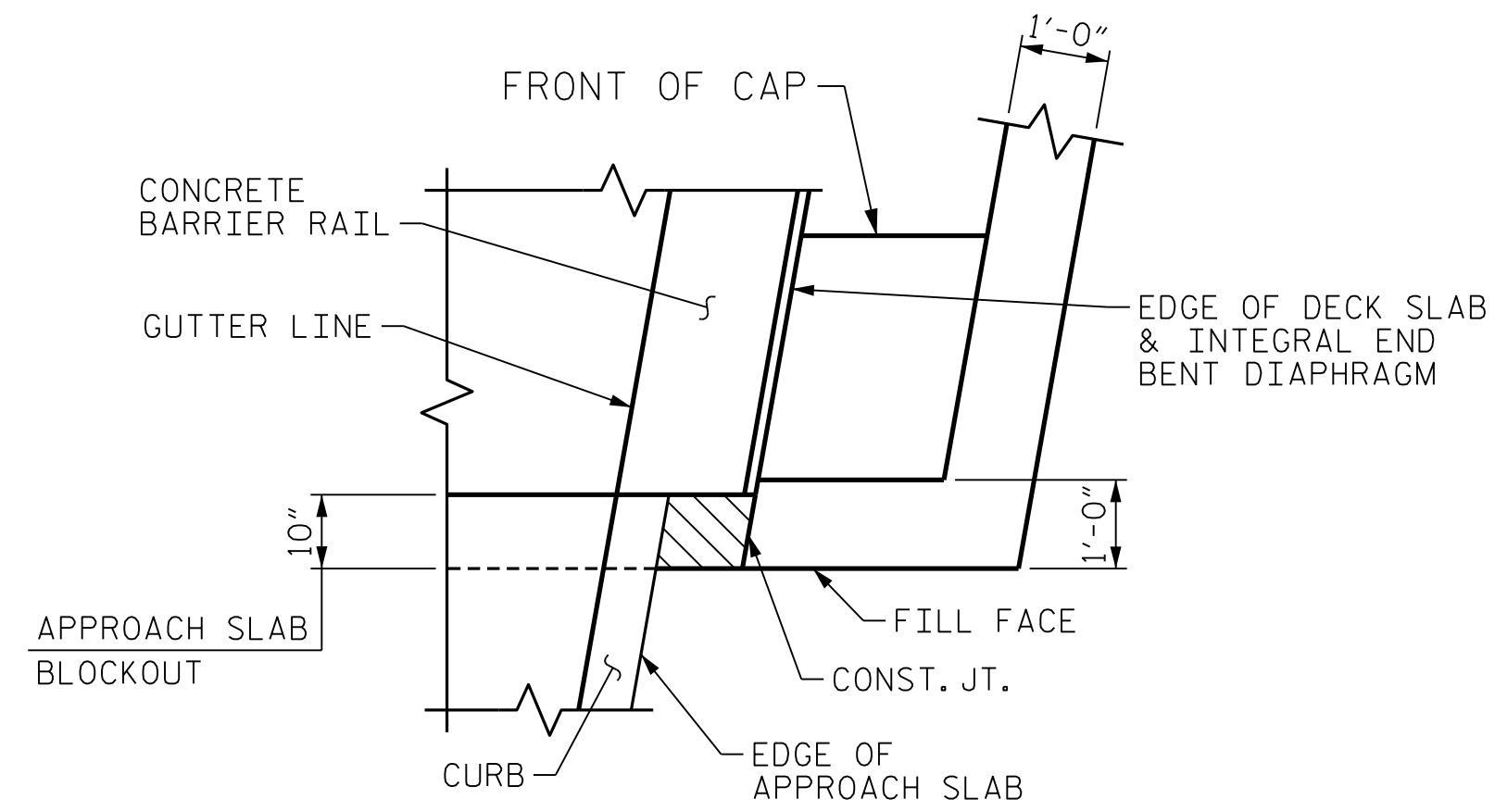
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 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

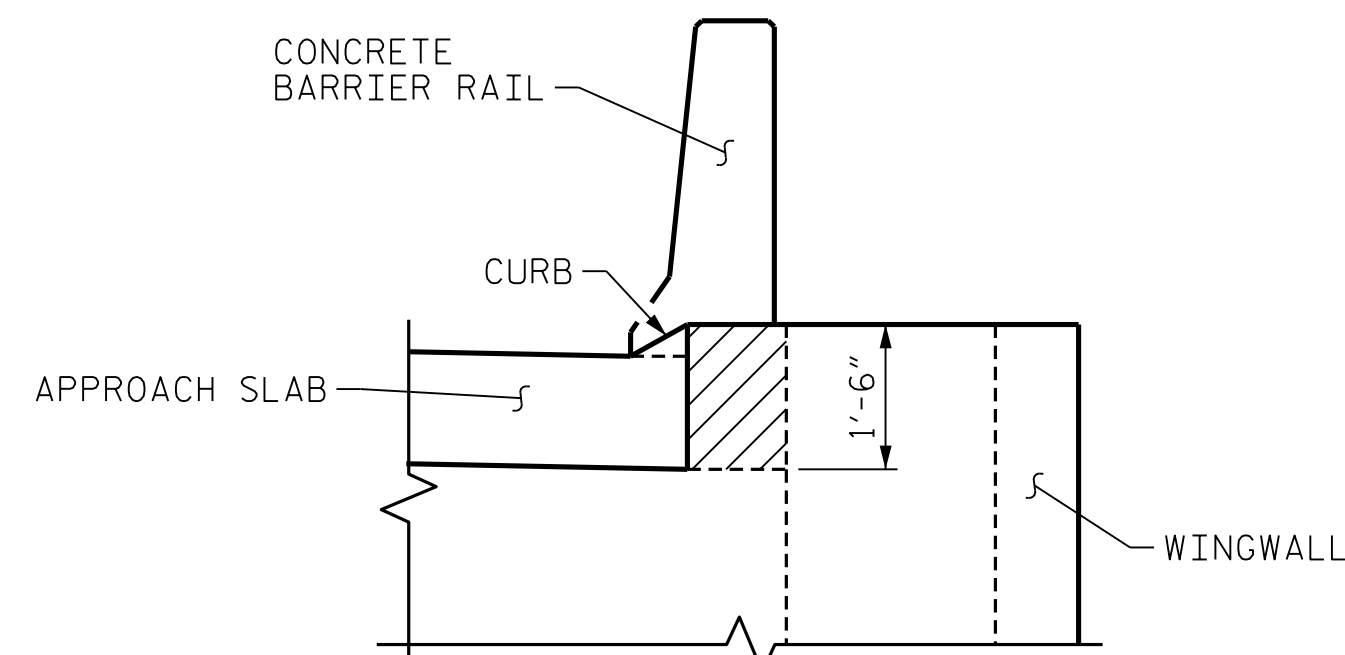
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NO.	BY:	DATE:	NO.	BY:	DATE:	S10-32	
1			3			TOTAL SHEETS 33	
2			4				

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ASSEMBLED BY: B.E. LANNING	DATE: 02/2021
CHECKED BY: J.I. BREWER	DATE: 03/2021
DESIGN ENGINEER OF RECORD: J.I. BREWER	DATE: 12/2021
DRAWN BY: TLA 10/05	REV. 6/13 MAA/GM
CHECKED BY: GM 5/06	REV. 12/17 MAA/THC
	REV. 06/19 BNB/THC



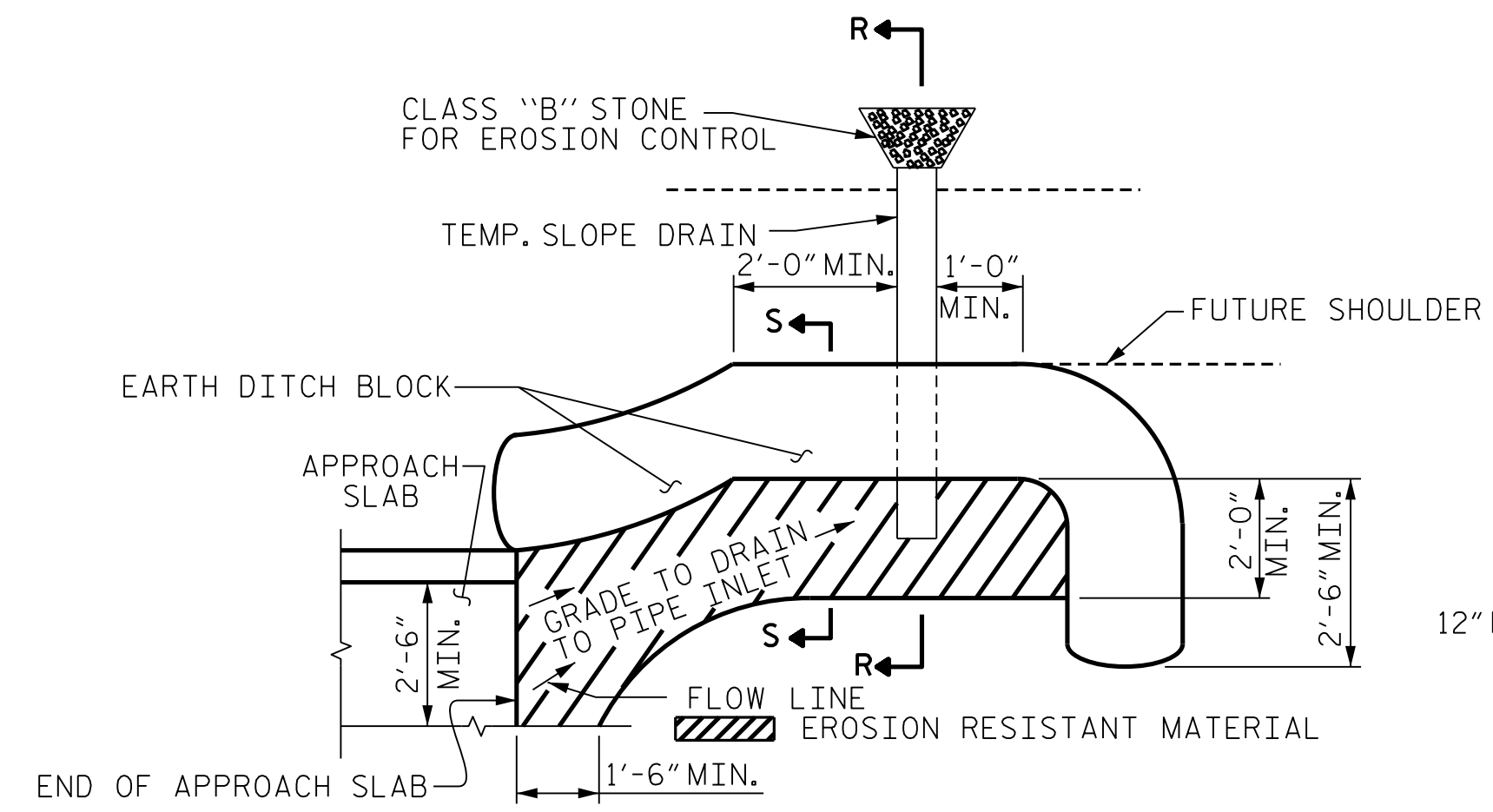
PLAN



ELEVATION

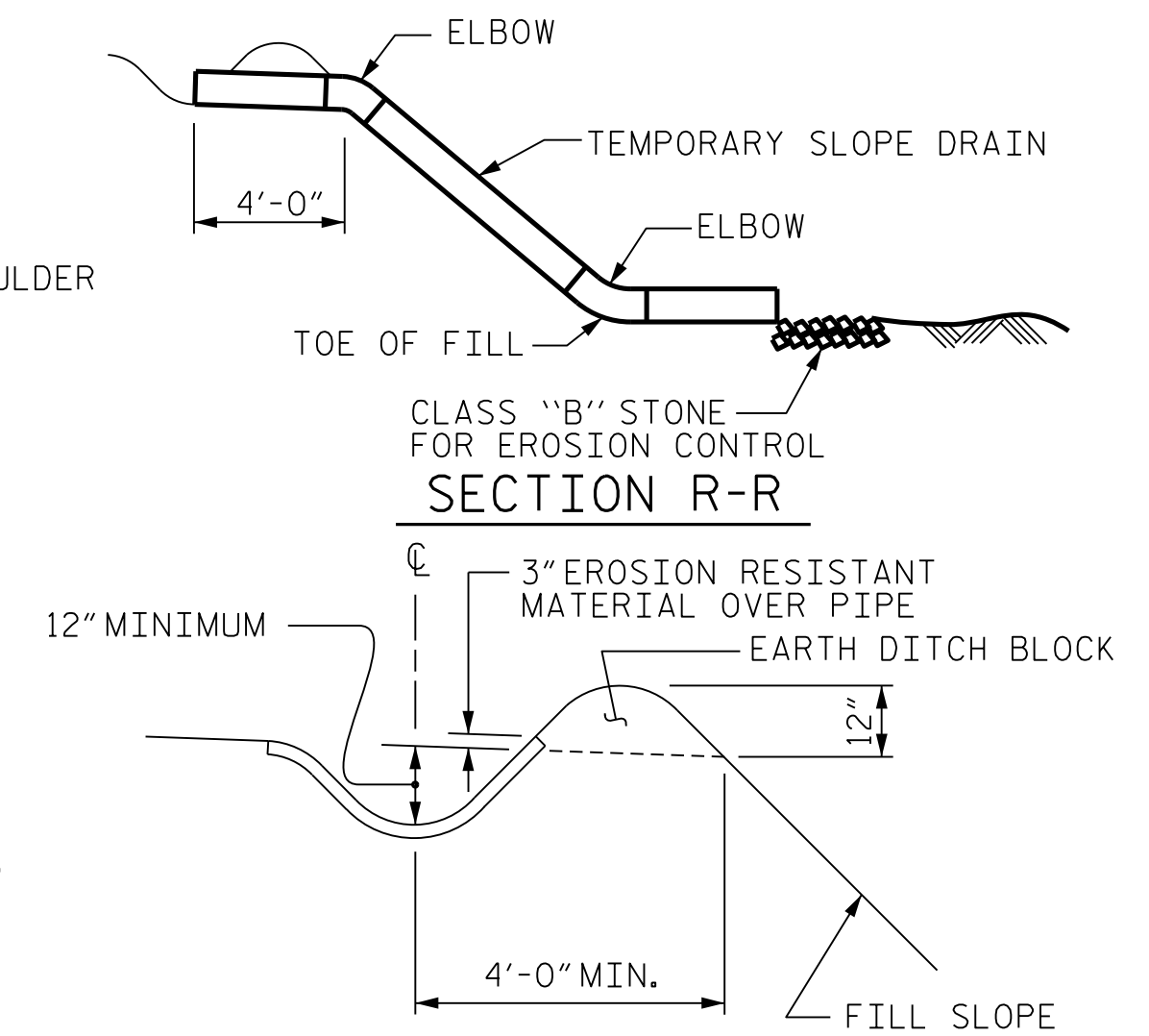
WINGWALL BLOCKOUT

THE CONCRETE IN THE SHADED AREA SHALL BE POURED ALONG WITH THE APPROACH SLAB CONSTRUCTION AND AFTER BARRIER RAIL HAS BEEN CAST IF SLIP FORMING IS USED.



PLAN VIEW

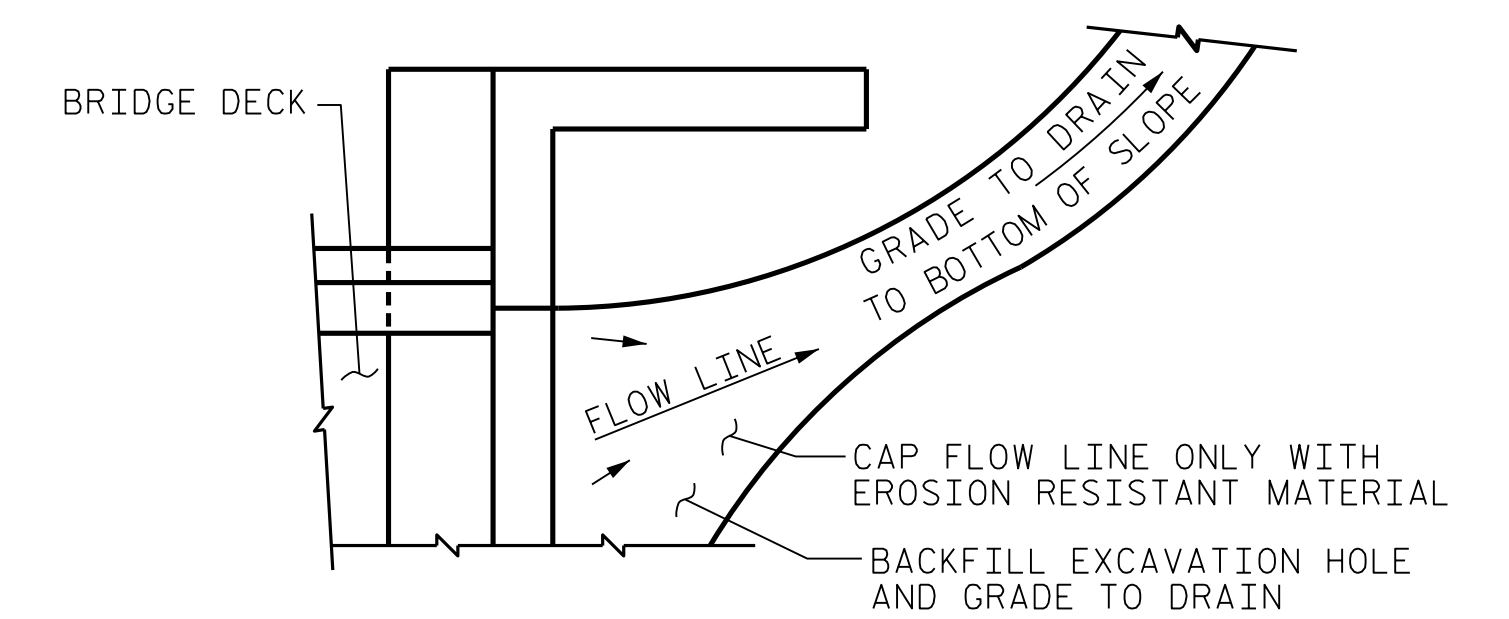
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

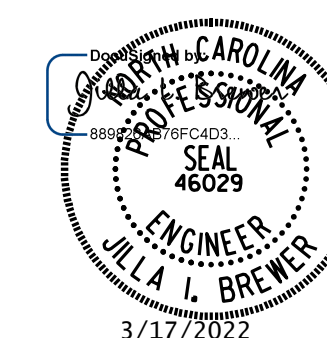


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

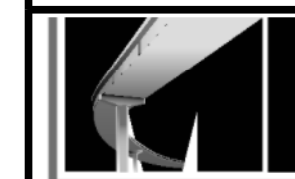
TEMPORARY DRAINAGE DETAIL

PROJECT NO. I-5987B
ROBESON COUNTY
 STATION: 29+70.72 -Y7-

SHEET 2 OF 2



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 (919) 851-6606
 FIRM PE NUMBER: P-0671

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
BRIDGE APPROACH SLAB DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S10-33
TOTAL SHEETS					33

STD. NO. BAS5 (SHT 1a)

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	REV. 12/17 MAA/THC