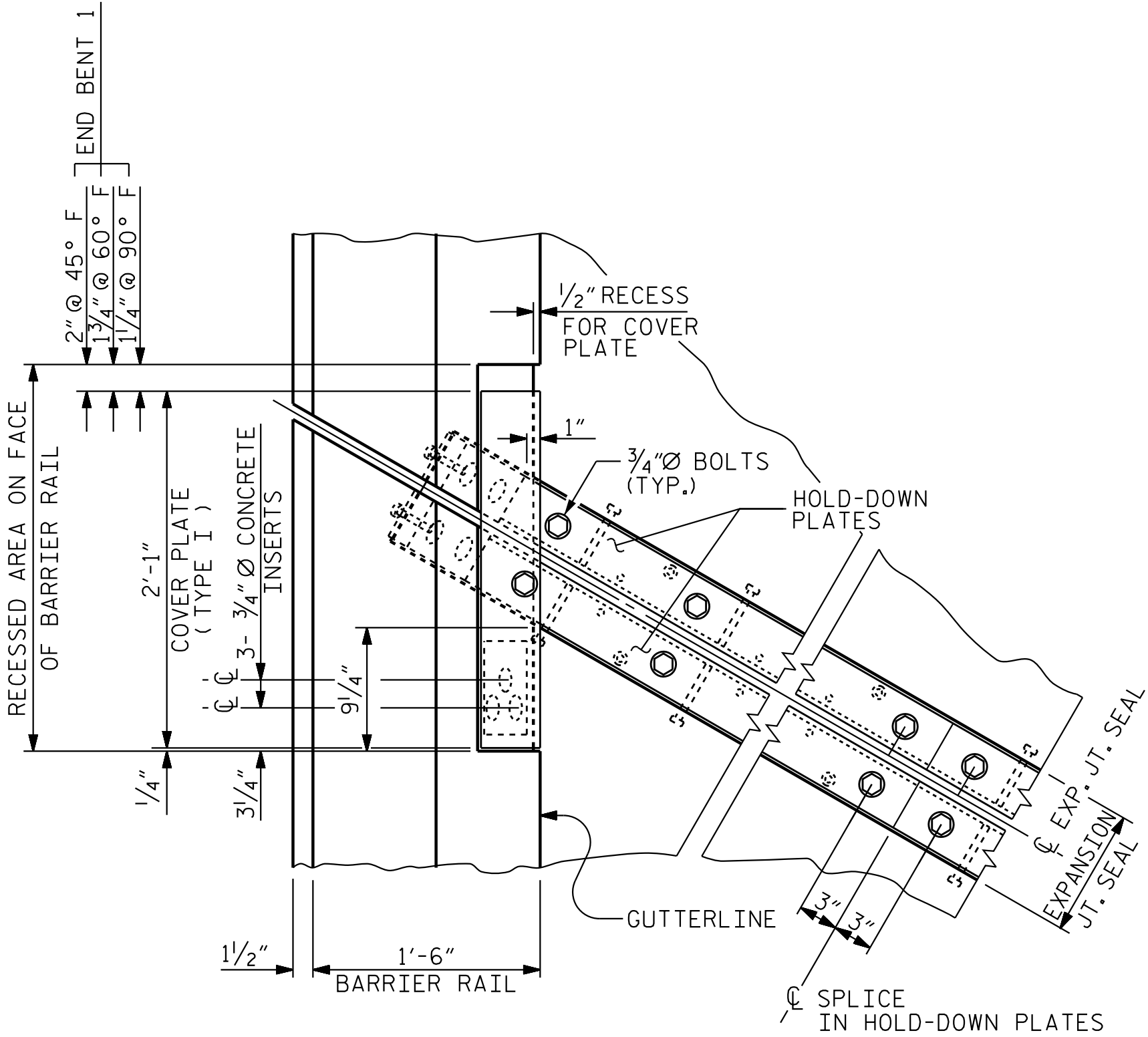
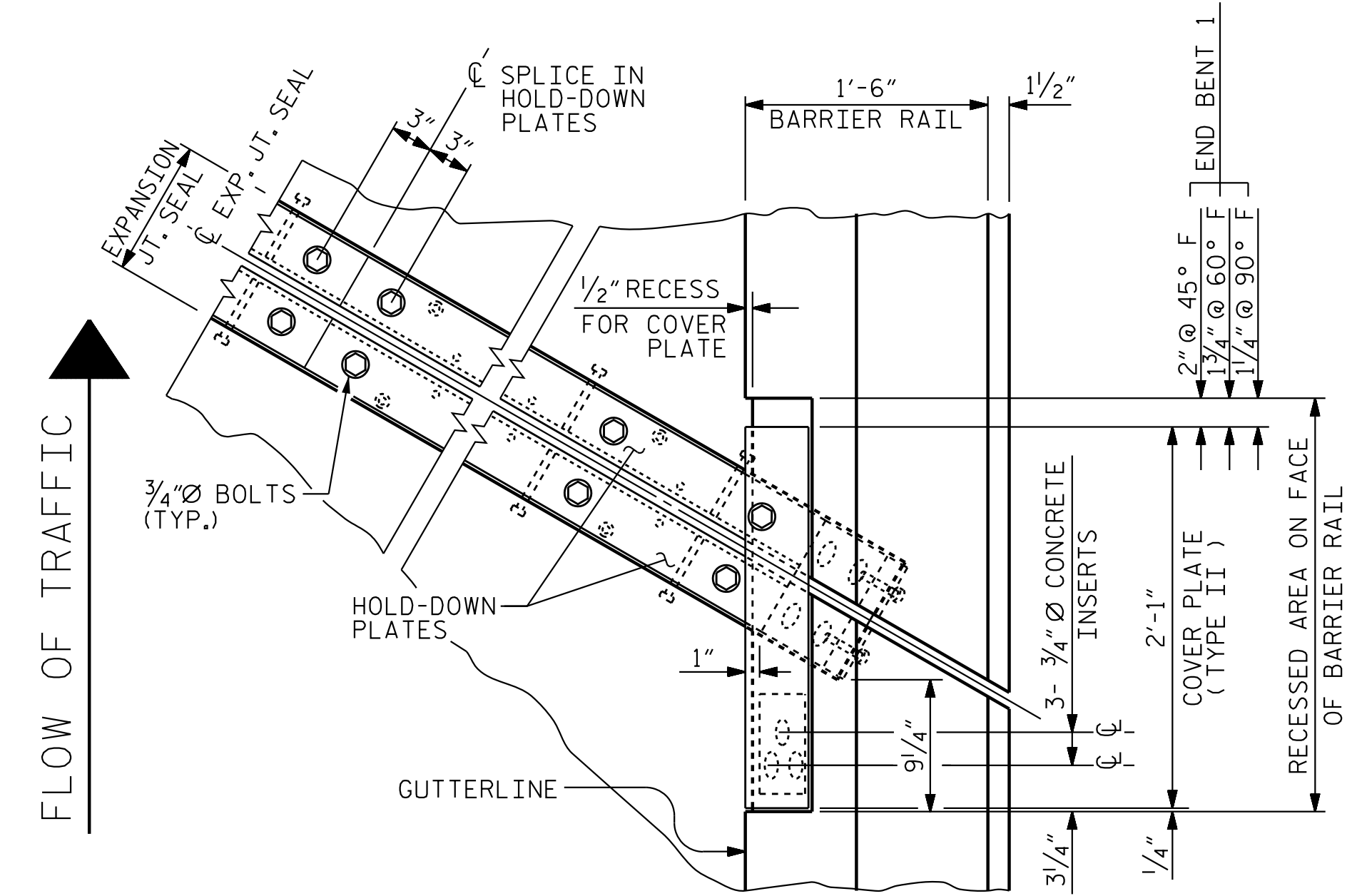


4/22/2025 8:25:27 PM jgelle
U:\Structures\BL-Y33RPCA-DR-offing\Final\R3300A-SML\EJ03.640209.dgn



PLAN OF EXPANSION JOINT SEAL - END BENT 1



PLAN OF EXPANSION JOINT SEAL - END BENT 2

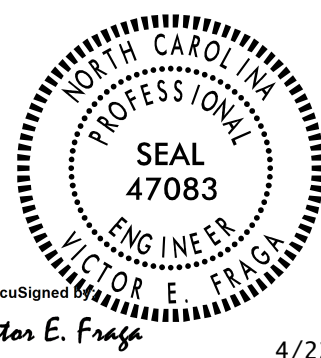


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DESIGN ENGINEER
OF RECORD: V. E. FRAGA DATE : 04/22/25

ASSEMBLED BY : V. E. FRAGA DATE : 08/23/18
CHECKED BY : S. S. POOLE DATE : 03/10/22

DRAWN BY : REK 9/87
CHECKED BY : CRK 10/87
REV. 7/12 MAA/GM
REV. 6/13 MAA/GM
REV. 12/17 MAA/THC



DocuSign
Victor E. Fraga
4/22/2025
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 219+49.69 -L1-

31+84.73 -Y33RPCA-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
EXPANSION JOINT
SEAL DETAILS
FOR BARRIER RAIL

REVISIONS						SHEET NO. S01-073
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			

STD. NO. EJS2

NOTES

FOR MODULAR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

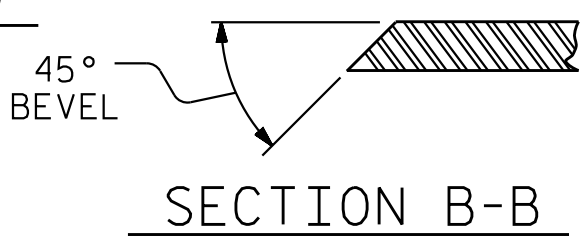
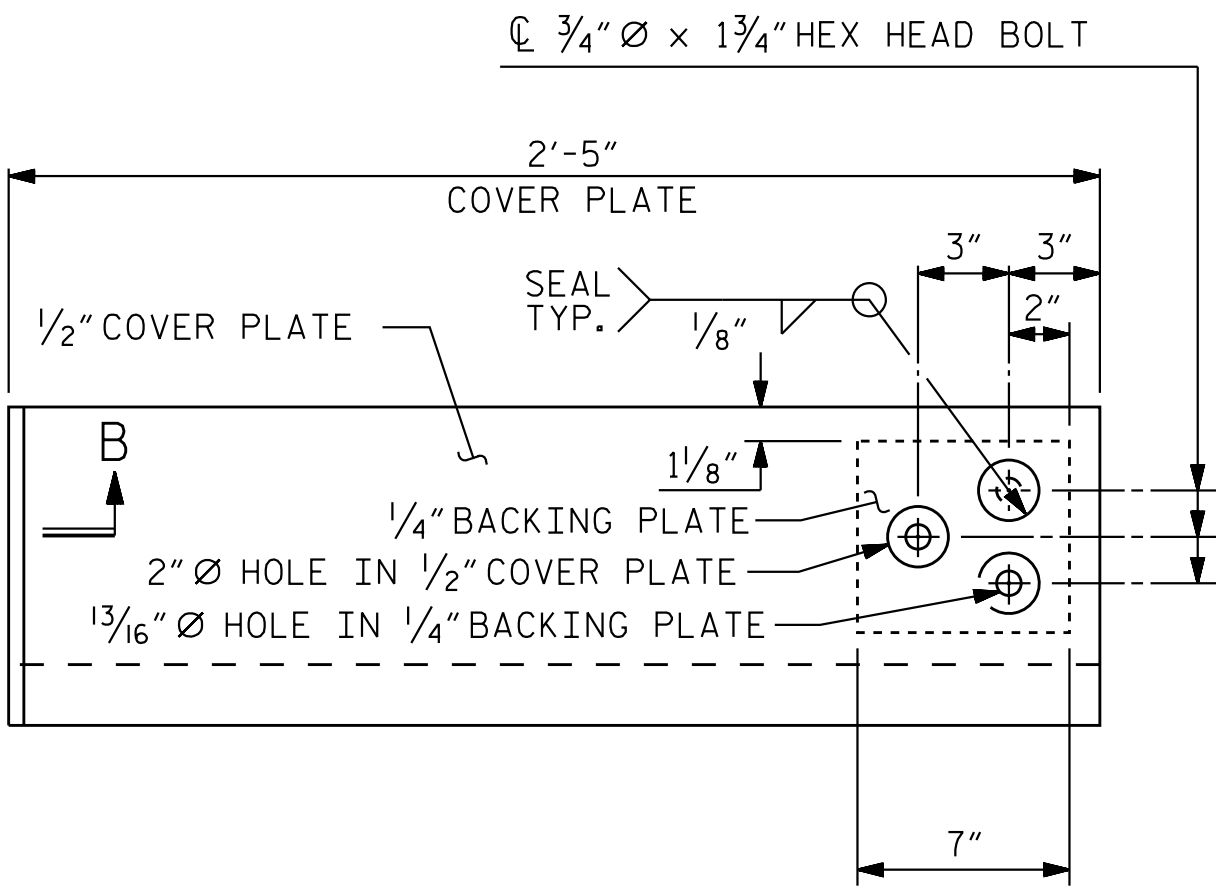
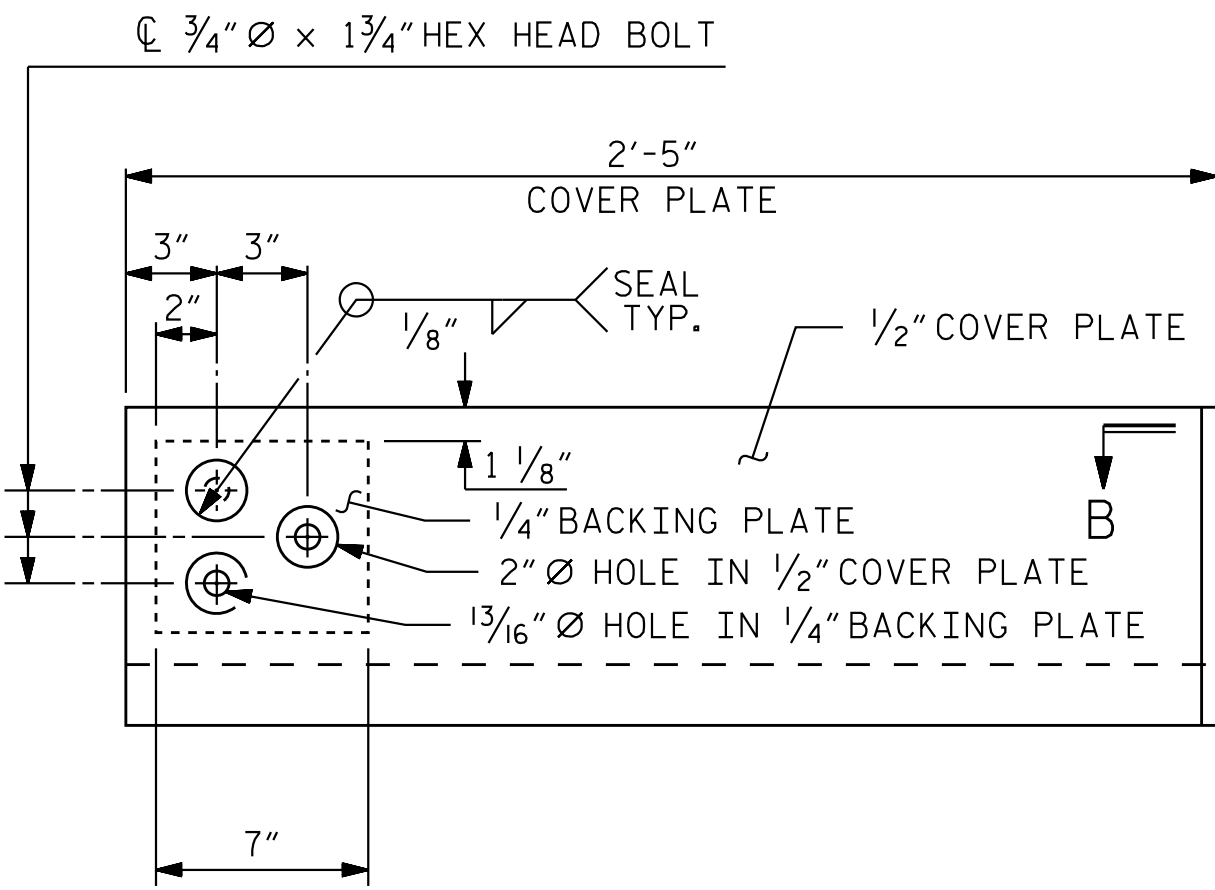
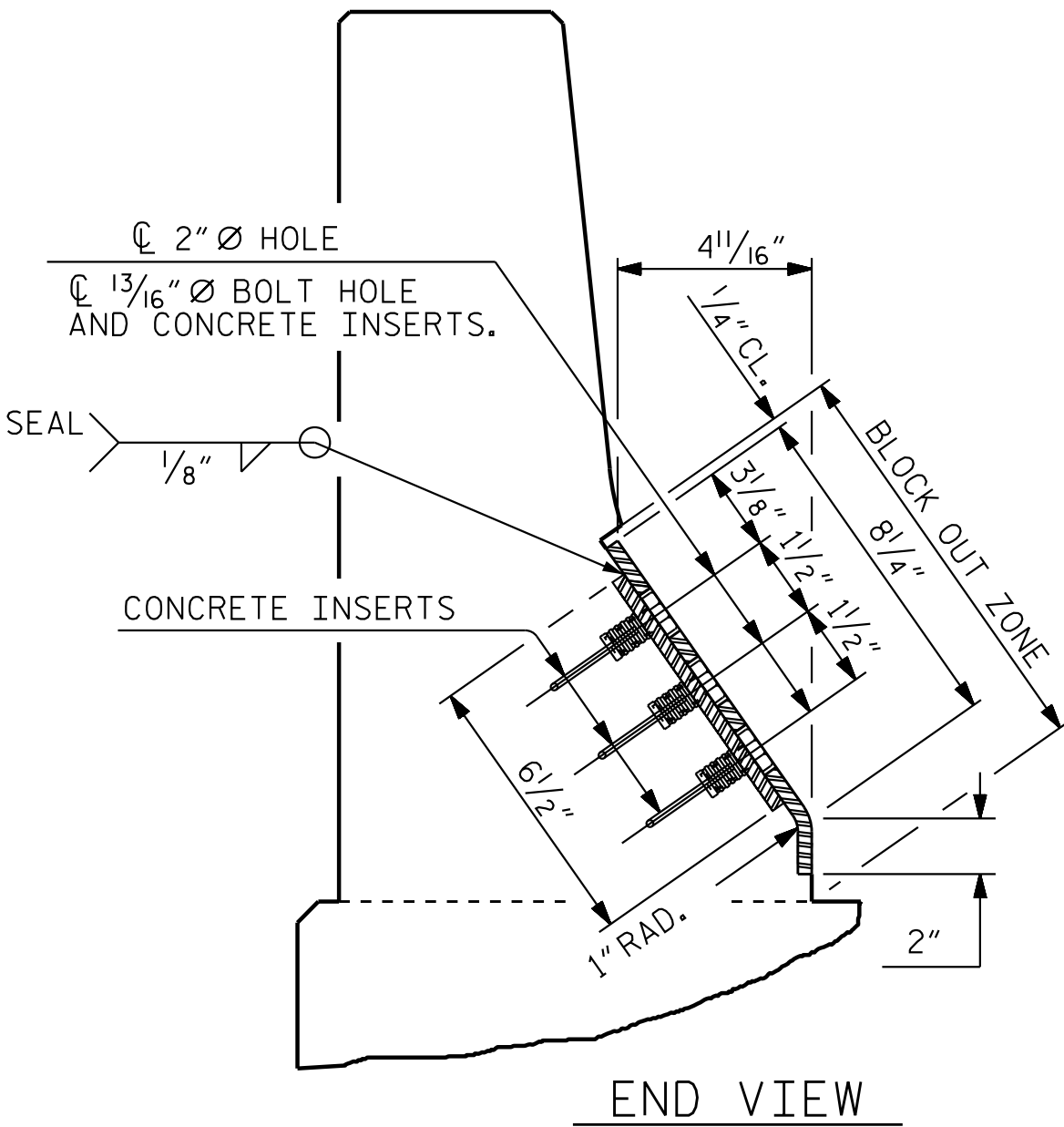
THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED EQUAL AND BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. AT THE CONTRACTOR'S OPTION, THE PLATES MAY BE METALLIZED AFTER FABRICATION. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

THE 3/4" Ø HEX HEAD BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL.

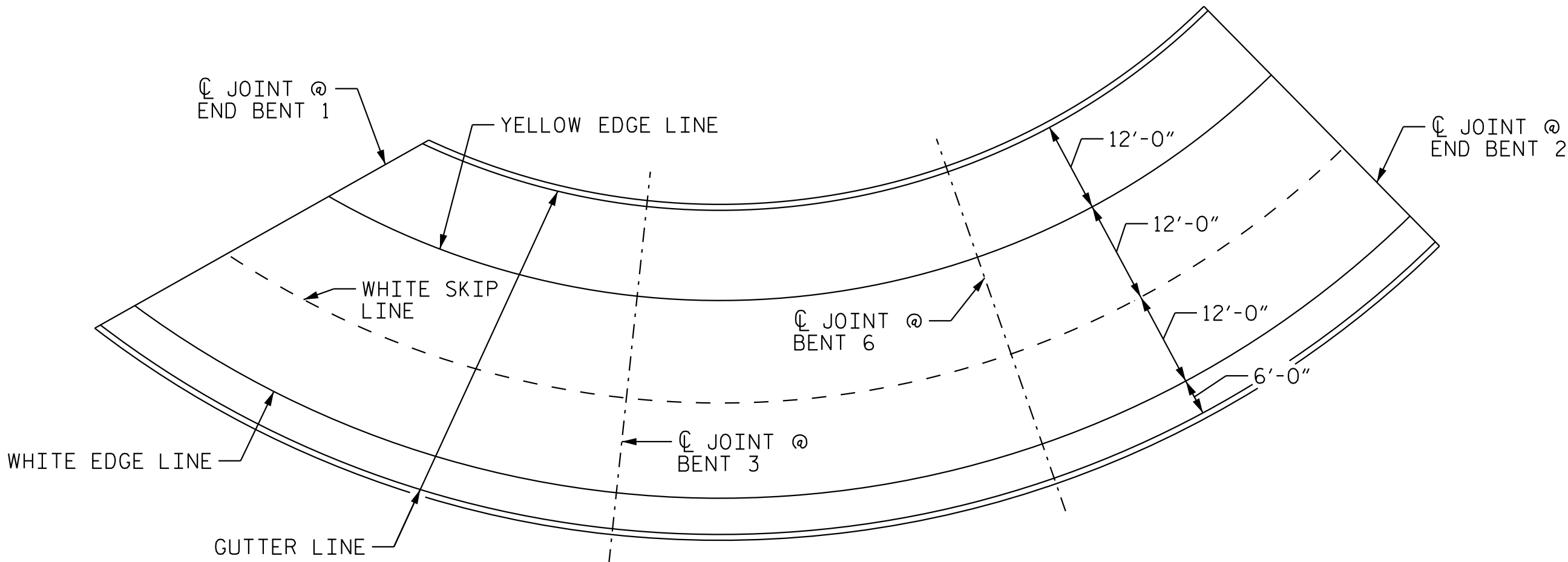
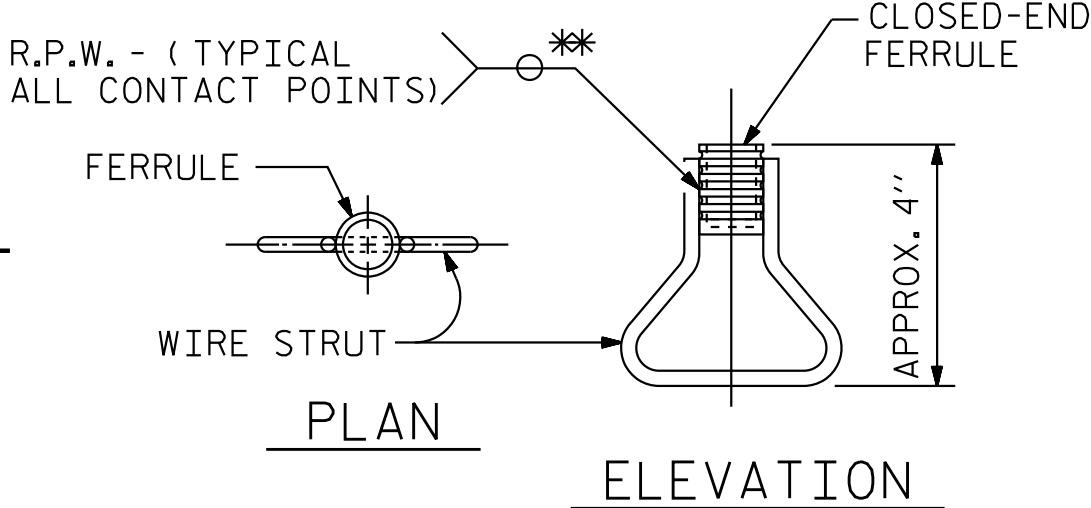
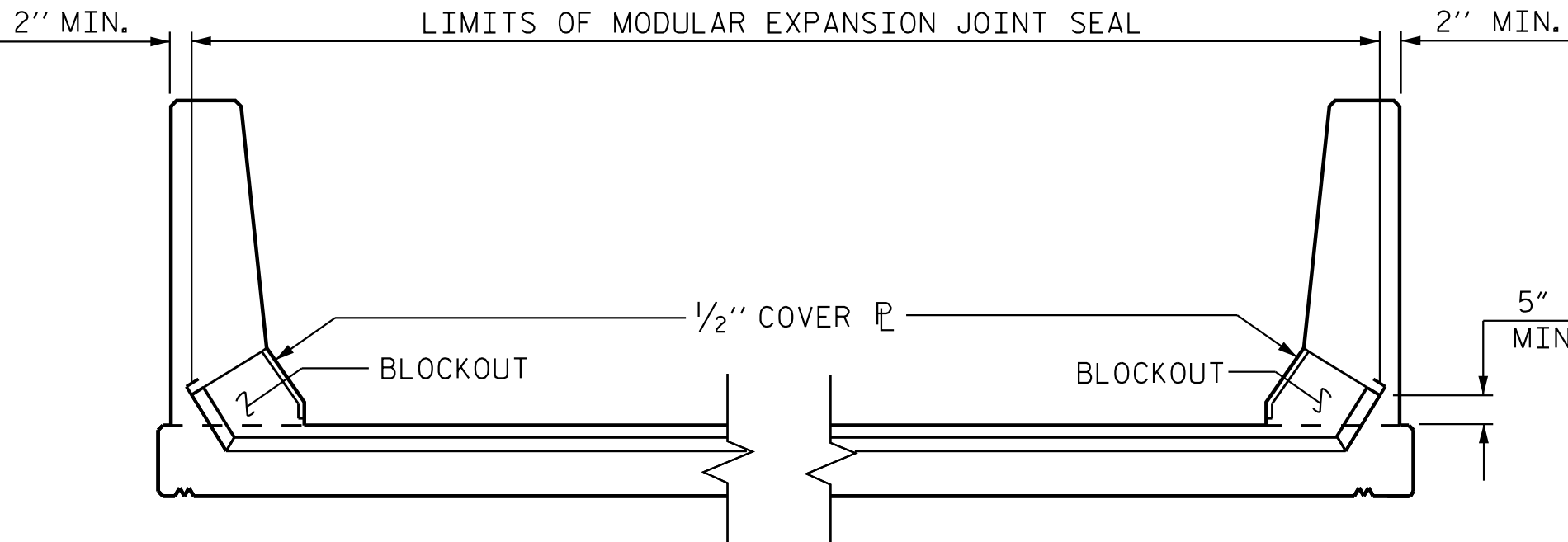
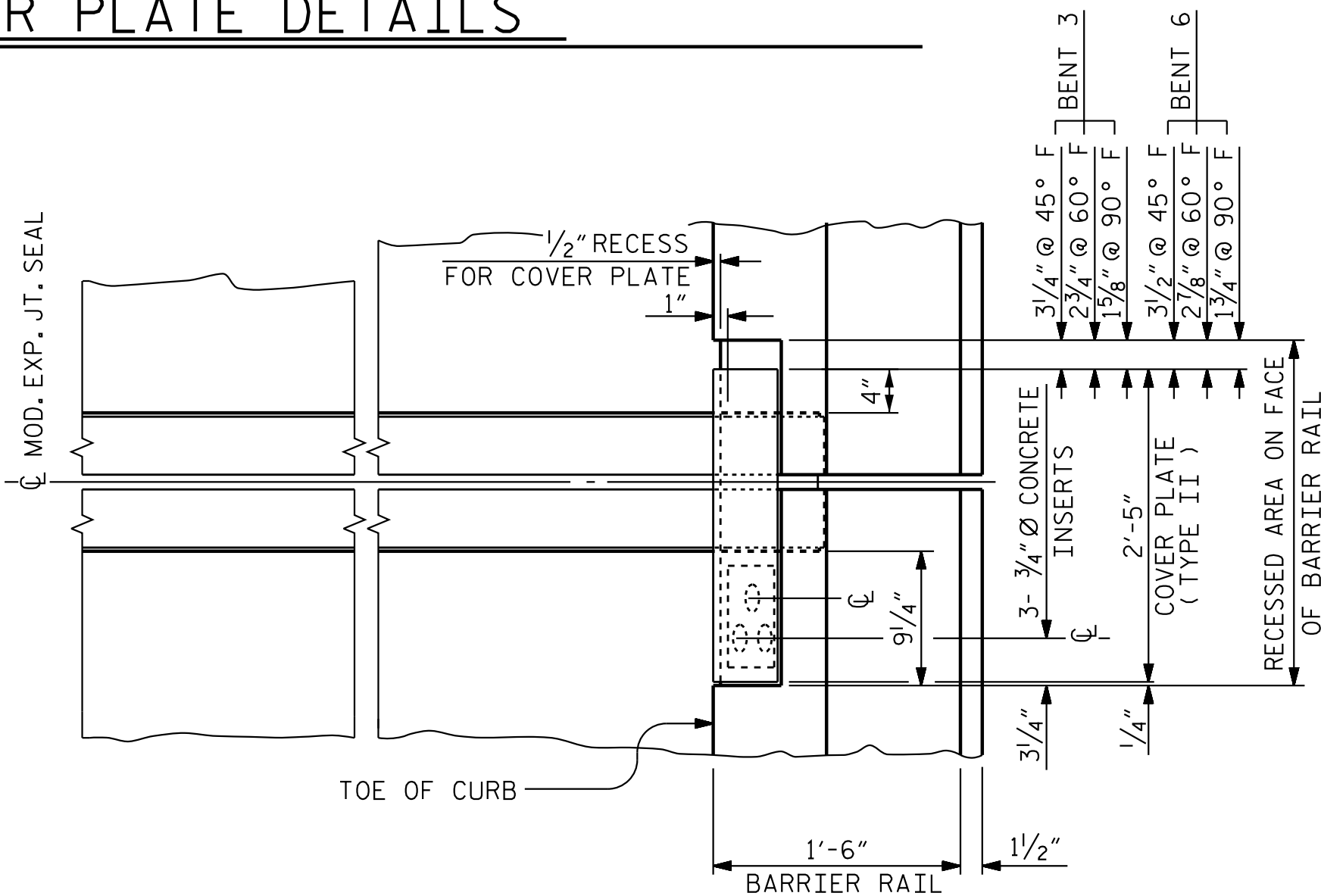
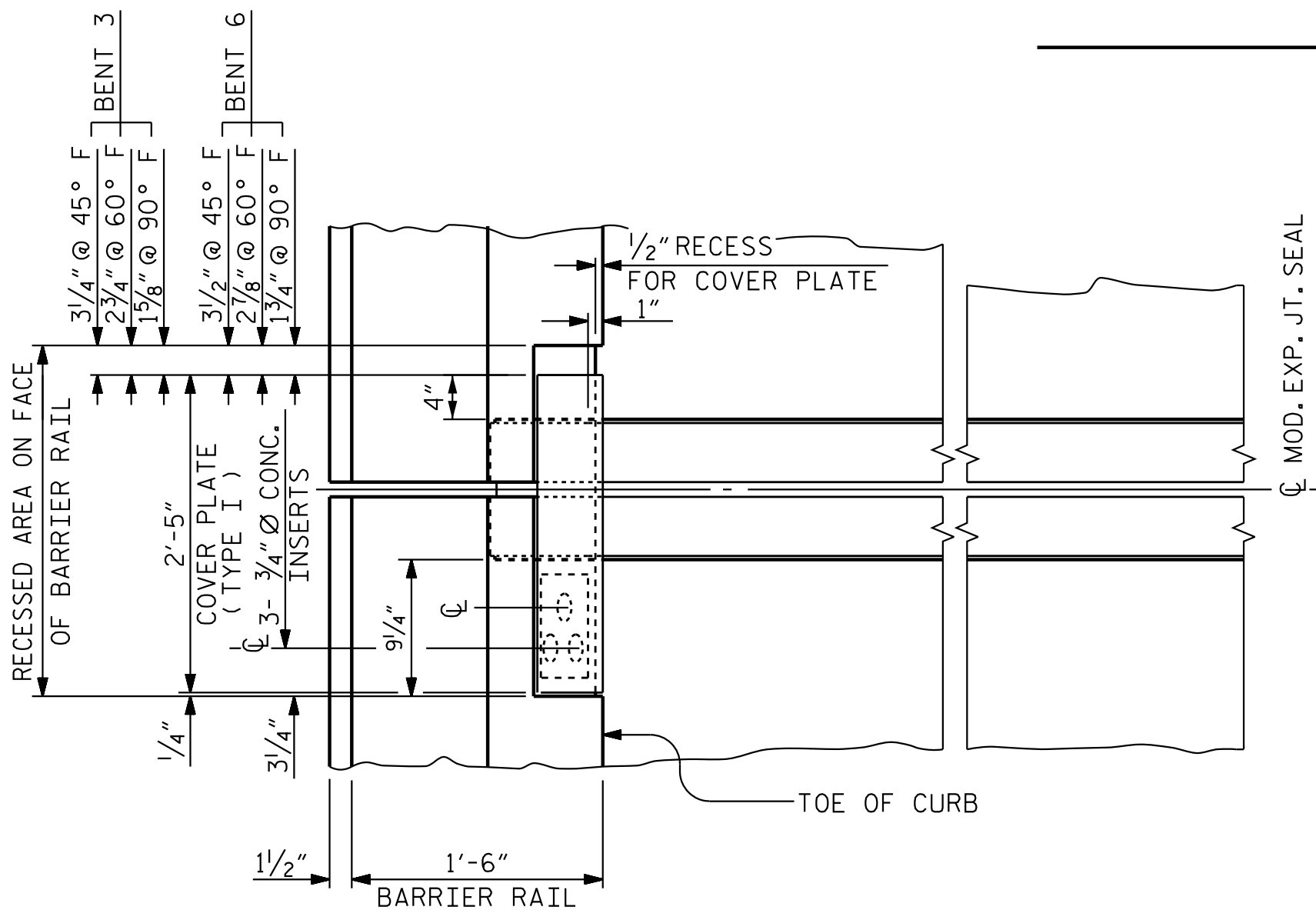
THE 3/4" CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO AASHTO M169, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3000 LBS.

NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER PLATE. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR "MODULAR EXPANSION JOINT SEALS".

	SKEW ANGLE (TAN. TO CURVE)	TOTAL MOVEMENT ALONG C ROADWAY
BENT 3	90°00'00"	3 3/8"
BENT 6	90°00'00"	3 3/4"

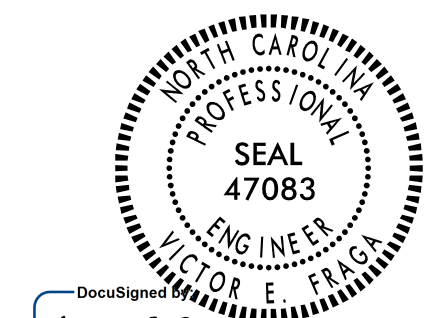


COVER PLATE DETAILS



PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-

REVISIONS						SHEET NO. S01-074
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



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DESIGN
ENGINEER
OF RECORD: V. E. FRAGA DATE : 04/22/25

ASSEMBLED BY : V. E. FRAGA DATE : 08/23/18
CHECKED BY : S. S. POOLE DATE : 03/10/22

DRAWN BY : EEM 7/96 MAA/GM
CHECKED BY : VAP 7/96 REV. 10/11/11 MAA/GM
REV. 6/13 MAA/GM
REV. 12/17 MAA/THC

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

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	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"			

CLASS AA CONC. BREAKDOWN	
POUR #1	80.6 C.Y.
POUR #2	249.5 C.Y.
POUR #3	244.3 C.Y.
POUR #4	14.6 C.Y.
TOTAL CLASS AA CONC.	589.0 C.Y.

GROOVING BRIDGE FLOORS	
APPROACH SLABS	Δ SQ.FT.
BRIDGE DECK (UNIT 1)	15,540 SQ.FT.
TOTAL	Δ SQ.FT.

Δ SEE "TOTAL BILL OF MATERIAL, UNIT 3",
SHEET 3 OF 3 FOR APPROACH
SLAB GROOVING QUANTITY AND
TOTAL.

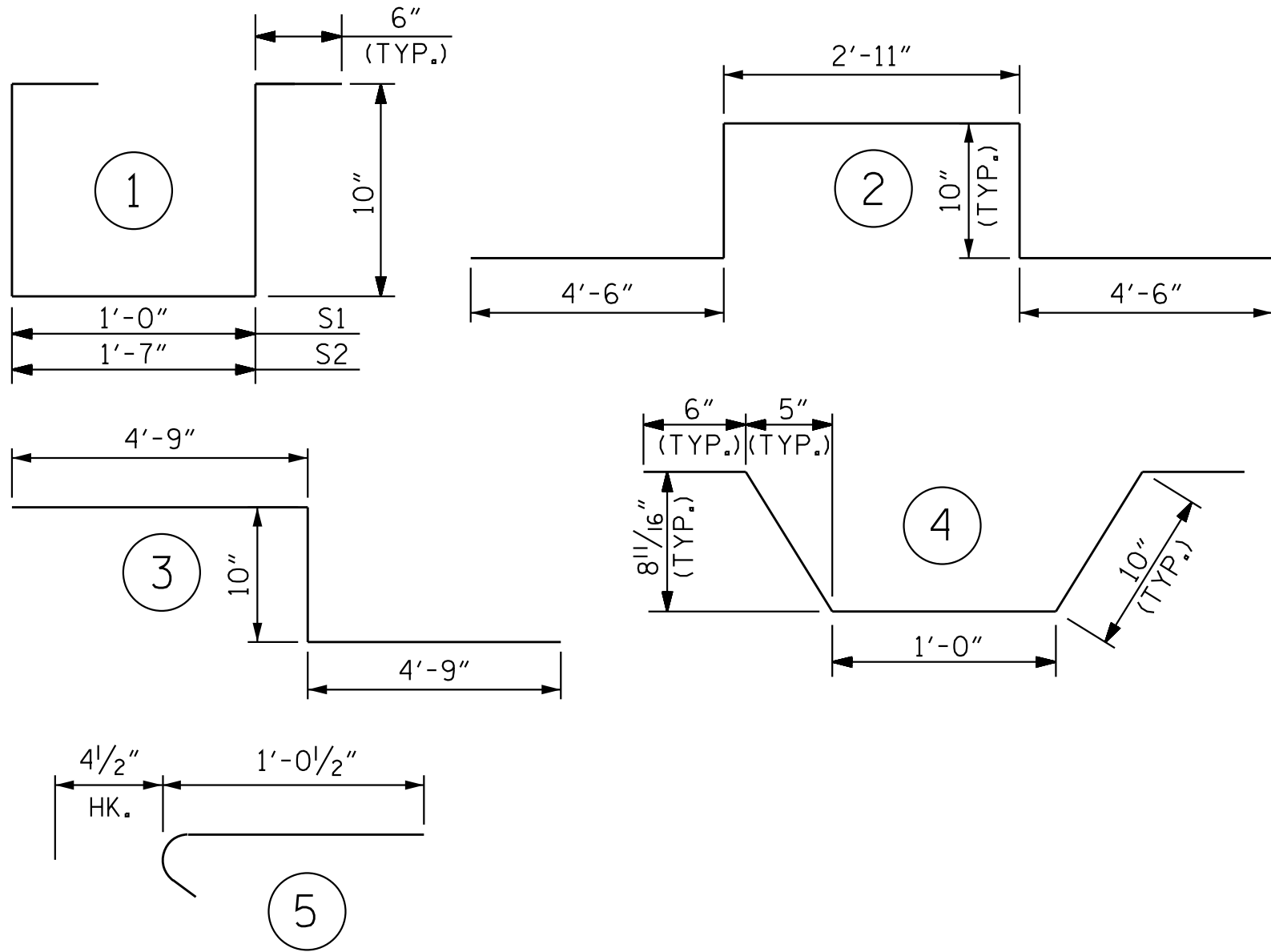
SUPERSTRUCTURE BILL OF MATERIAL (UNIT 1)

	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
TOTALS **	589.0	64,397	67,147

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED.

NOTE: 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.

BAR TYPES



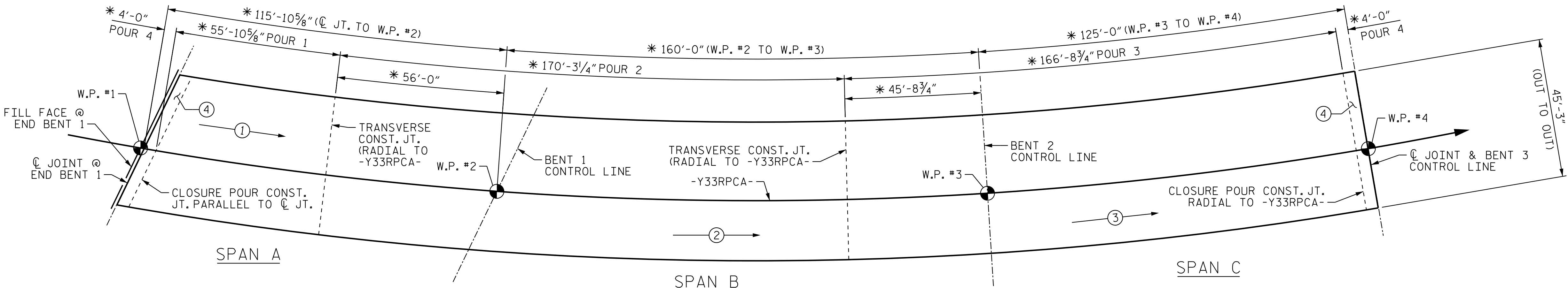
ALL BAR DIMENSIONS ARE OUT TO OUT

REINFORCING BAR SCHEDULE (DECK, UNIT 1)

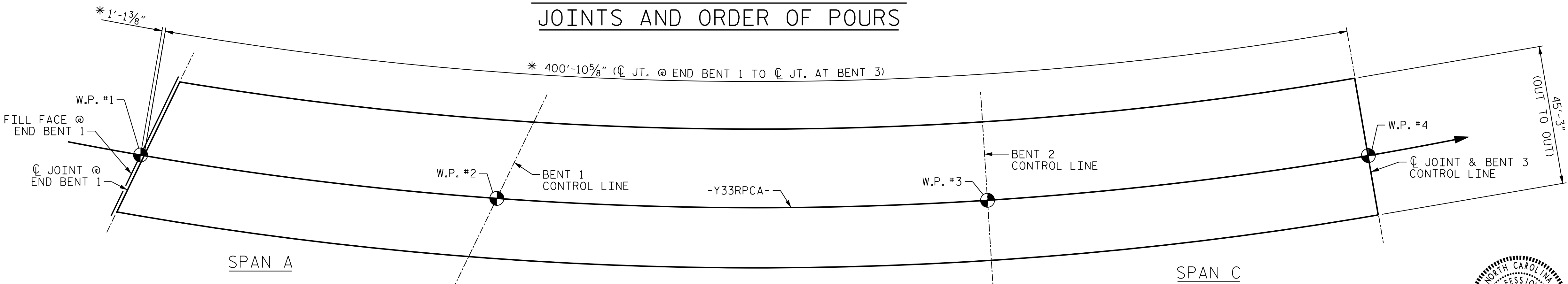
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A100	799	#5	STR	44'-11"	37,432	A207	2	#5	STR	22'-0"	46
* A101	2	#5	STR	42'-0"	88	A208	2	#5	STR	18'-7"	39
* A102	2	#5	STR	38'-9"	81	A209	2	#5	STR	15'-2"	32
* A103	2	#5	STR	35'-5"	74	A210	2	#5	STR	11'-9"	25
* A104	2	#5	STR	32'-1"	67	A211	2	#5	STR	8'-3"	18
* A105	2	#5	STR	28'-9"	60	A212	2	#5	STR	4'-9"	10
* A106	2	#5	STR	25'-5"	54	A213	2	#5	STR	3'-0"	7
* A107	2	#5	STR	22'-0"	46						
* A108	2	#5	STR	18'-7"	39	* B1	256	#5	STR	53'-9"	14,352
* A109	2	#5	STR	15'-2"	32	B2	464	#5	STR	53'-4"	25,811
* A110	2	#5	STR	11'-9"	25	* B3	510	#5	STR	27'-6"	14,629
* A111	2	#5	STR	8'-3"	18						
* A112	2	#5	STR	4'-9"	10	* G1	11	#5	4	3'-8"	42
* A113	2	#5	STR	3'-0"	7	* G2	1	#5	STR	46'-9"	49
A200	799	#5	STR	44'-11"	37,432	* J1	47	#4	5	1'-5"	45
A201	2	#5	STR	42'-0"	88						
A202	2	#5	STR	38'-9"	81	K1	18	#5	2	13'-7"	256
A203	2	#5	STR	35'-5"	74	K2	12	#5	3	10'-4"	130
A204	2	#5	STR	32'-1"	67						
A205	2	#5	STR	28'-9"	60	S1	34	#4	1	3'-8"	84
A206	2	#5	STR	25'-5"	54	S2	28	#4	1	4'-3"	80

REINFORCING STEEL 64,397 LBS.

* EPOXY COATED
REINFORCING STEEL 67,147 LBS.



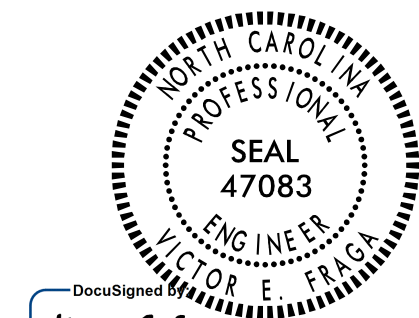
SKETCH SHOWING LOCATION
OF TRANSVERSE CONSTRUCTION
JOINTS AND ORDER OF POURS



LAYOUT FOR COMPUTING AREA
OF REINFORCED CONCRETE DECK SLAB
(UNIT 1 SQ. FT. = 18,046)

← ⊕ → INDICATES POUR NUMBER AND DIRECTION OF POUR

* DIMENSIONS ARE MEASURED ALONG -Y33RPCA-



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SIGNATURES COMPLETED

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
BILL OF MATERIALS

UNIT 1

REVISIONS						SHEET NO. S01-075
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



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DRAWN BY : V. E. FRAGA DATE : 09/17/18
CHECKED BY : S. S. POOLE DATE : 02/10/22

DESIGN
ENGINEER
OF RECORD: V. E. FRAGA DATE : 04/22/25

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS					
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	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"			

CLASS AA CONC. BREAKDOWN	
POUR #1	118.0 C.Y.
POUR #2	270.3 C.Y.
POUR #3	296.0 C.Y.
POUR #4	14.3 C.Y.
TOTAL CLASS AA CONC.	698.6 C.Y.

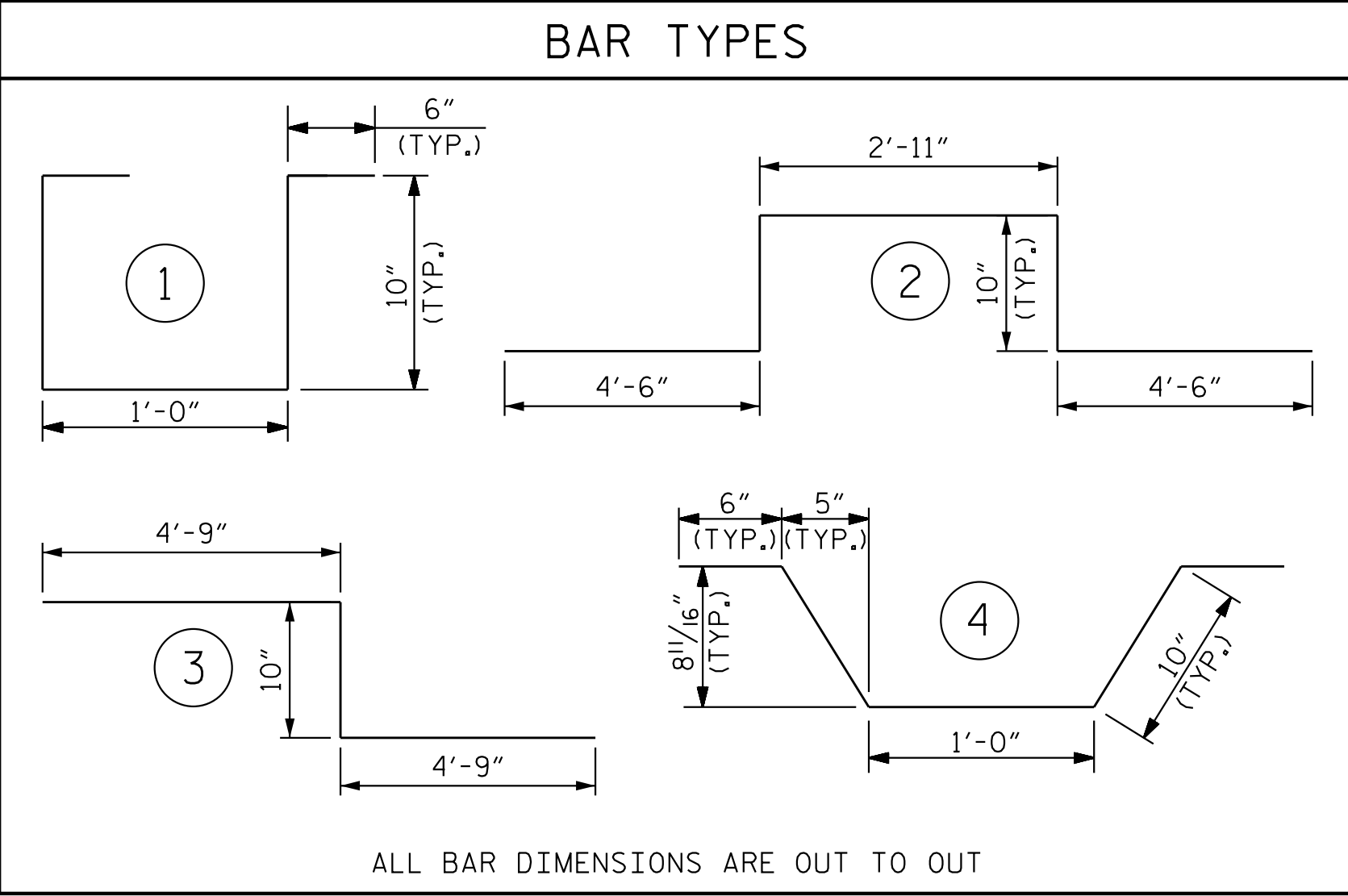
GROOVING BRIDGE FLOORS	
APPROACH SLABS	Δ SQ.FT.
BRIDGE DECK (UNIT 2)	18,456 SQ.FT.
TOTAL	Δ SQ.FT.

Δ SEE "TOTAL BILL OF MATERIAL, UNIT 3",
SHEET 3 OF 3 FOR APPROACH
SLAB GROOVING QUANTITY.

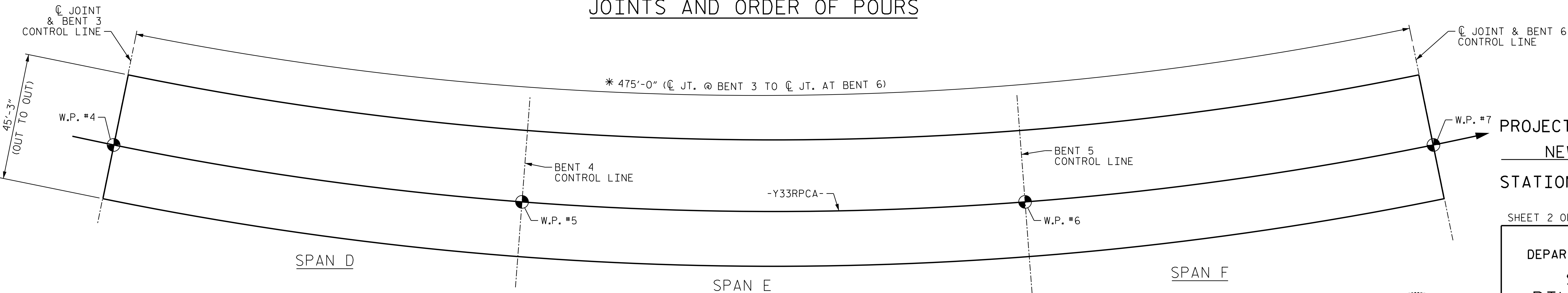
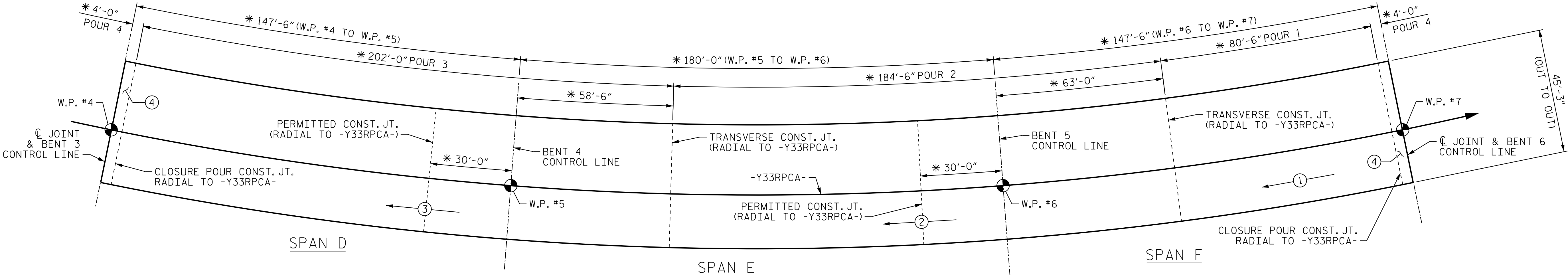
SUPERSTRUCTURE BILL OF MATERIAL (UNIT 2)			
	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
TOTALS **	698.6	75,941	79,499

** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED.

NOTE: 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.

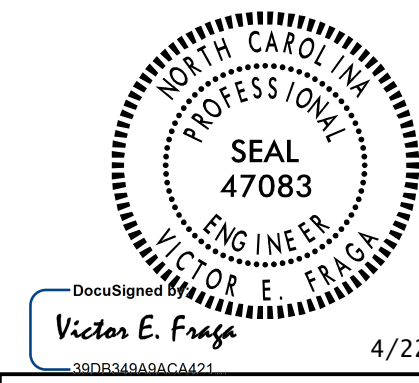


REINFORCING BAR SCHEDULE (DECK, UNIT 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A100	965	#5	STR	44'-11"	45,209
A200	965	#5	STR	44'-11"	45,209
* B1	288	#5	STR	55'-9"	16,747
B2	522	#5	STR	55'-5"	30,172
* B3	510	#5	STR	32'-10"	17,466
* G1	22	#5	4	3'-8"	84
K1	18	#5	2	13'-7"	256
K2	12	#5	3	10'-4"	130
S1	68	#4	1	3'-8"	167
REINFORCING STEEL					75,941 LBS.
* EPOXY COATED REINFORCING STEEL					79,499 LBS.



⊕ INDICATES POUR NUMBER AND DIRECTION OF POUR

* DIMENSIONS ARE MEASURED ALONG -Y33RPCA-



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-
SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE BILL OF MATERIALS UNIT 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S01-076					TOTAL SHEETS 113



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DRAWN BY : V. E. FRAGA DATE : 09/18/18
CHECKED BY : S. S. POOLE DATE : 02/10/22
DESIGN
ENGINEER
OF RECORD: V. E. FRAGA DATE : 04/22/25

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

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	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"			

CLASS AA CONC. BREAKDOWN

POUR #1	115.0 C.Y.
POUR #2	278.7 C.Y.
POUR #3	129.2 C.Y.
POUR #4	191.9 C.Y.
POUR #5	14.4 C.Y.
TOTAL CLASS AA CONC.	729.2 C.Y.

GROOVING BRIDGE FLOORS

APPROACH SLABS	1,884 SQ.FT.
BRIDGE DECK (UNIT 3)	19,271 SQ.FT.
TOTAL Δ	55,151 SQ.FT.

Δ TOTAL INCLUDES QUANTITIES FOR ALL THREE UNITS AND BOTH APPROACH SLABS.

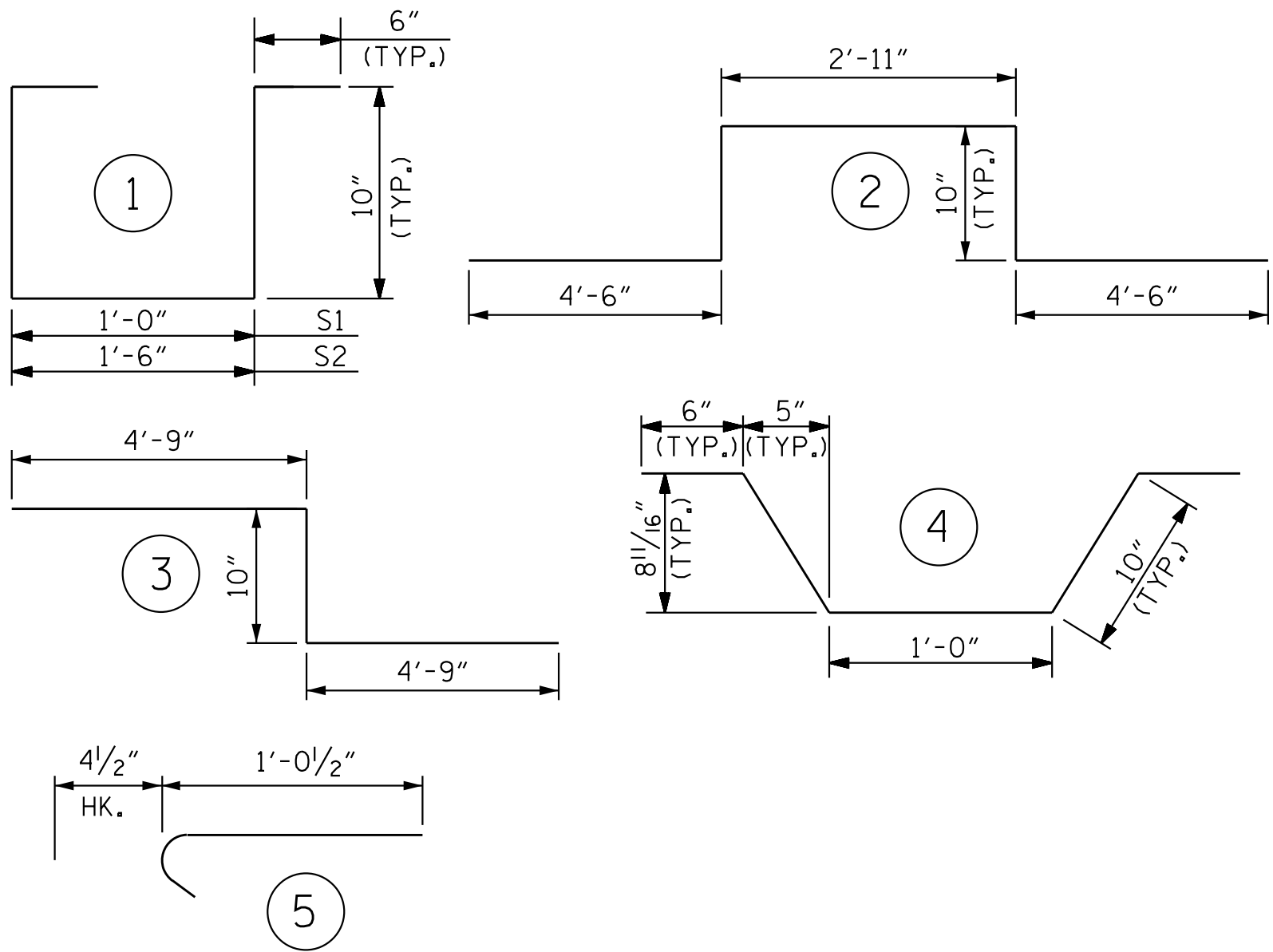
SUPERSTRUCTURE BILL OF MATERIAL (UNIT 3)

	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
TOTALS **	729.2	79,216	84,153

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED.

NOTE: 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.

BAR TYPES



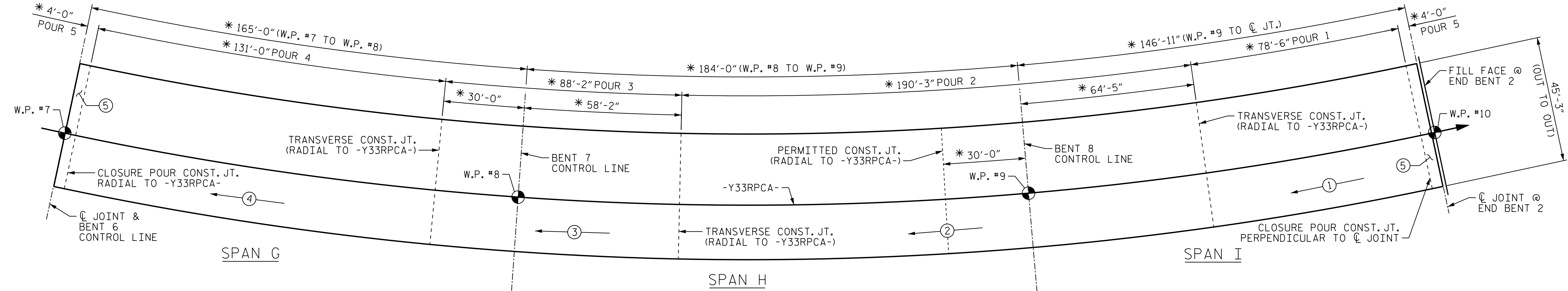
ALL BAR DIMENSIONS ARE OUT TO OUT

REINFORCING BAR
SCHEDULE (DECK UNIT 3)

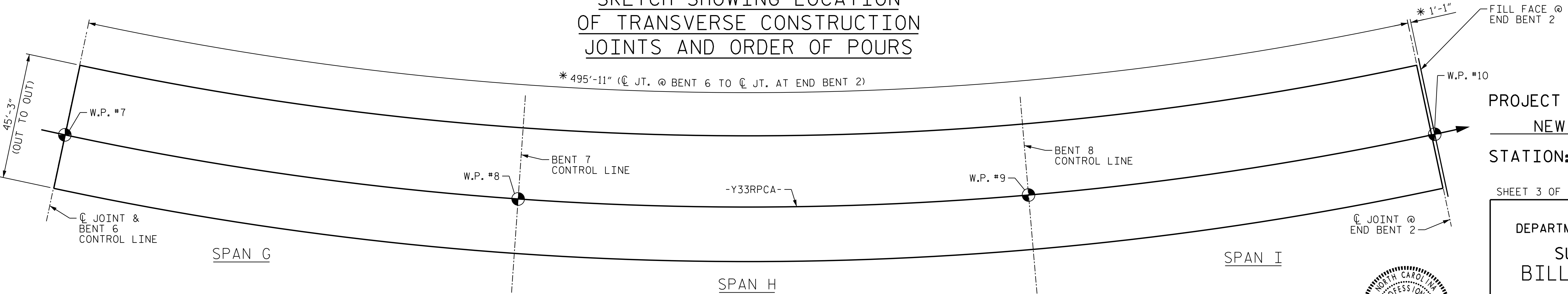
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A100	1008	#5	STR	44'-11"	47,223
A200	1008	#5	STR	44'-11"	47,223
* B1	288	#5	STR	58'-2"	17,473
B2	522	#5	STR	57'-9"	31,442
* B3	255	#5	STR	39'-6"	10,506
* B4	255	#5	STR	33'-2"	8,822
* G1	11	#5	4	3'-8"	42
* G2	1	#5	STR	44'-11"	47
* J1	45	#4	5	1'-5"	43
K1	18	#5	2	13'-7"	256
K2	12	#5	3	10'-4"	130
S1	34	#4	1	3'-8"	84
S2	28	#4	1	4'-2"	78

REINFORCING STEEL 79,216 LBS.

* EPOXY COATED REINFORCING STEEL 84,153 LBS.



SKETCH SHOWING LOCATION
OF TRANSVERSE CONSTRUCTION
JOINTS AND ORDER OF POURS



LAYOUT FOR COMPUTING AREA
OF REINFORCED CONCRETE DECK SLAB
(UNIT 3 SQ. FT. = 22,374)
(TOTAL SQ. FT. FOR ALL 3 UNITS = 61,848)

⊕ INDICATES POUR NUMBER AND DIRECTION OF POUR

* DIMENSIONS ARE MEASURED ALONG -Y33RPCA-



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SIGNATURES COMPLETED

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
BILL OF MATERIALS

UNIT 3

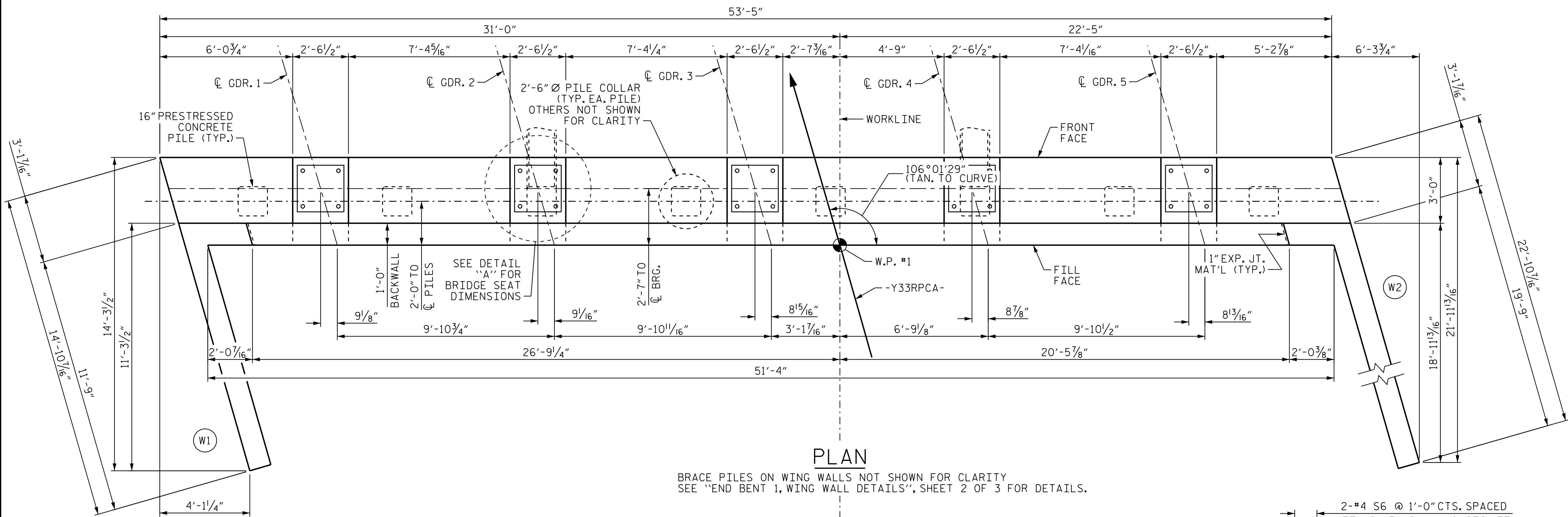
REVISIONS						SHEET NO. S01-077
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



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DRAWN BY : V. E. FRAGA DATE : 09/18/18
CHECKED BY : S. S. POOLE DATE : 02/10/22

DESIGN
ENGINEER
OF RECORD: V. E. FRAGA DATE : 04/22/25



NOTES

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

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 EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE TOP SURFACES OF THE CAP EXCEPT THE BRIDGE SEATS BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE FRONT FACE AT A RATE OF 2%.

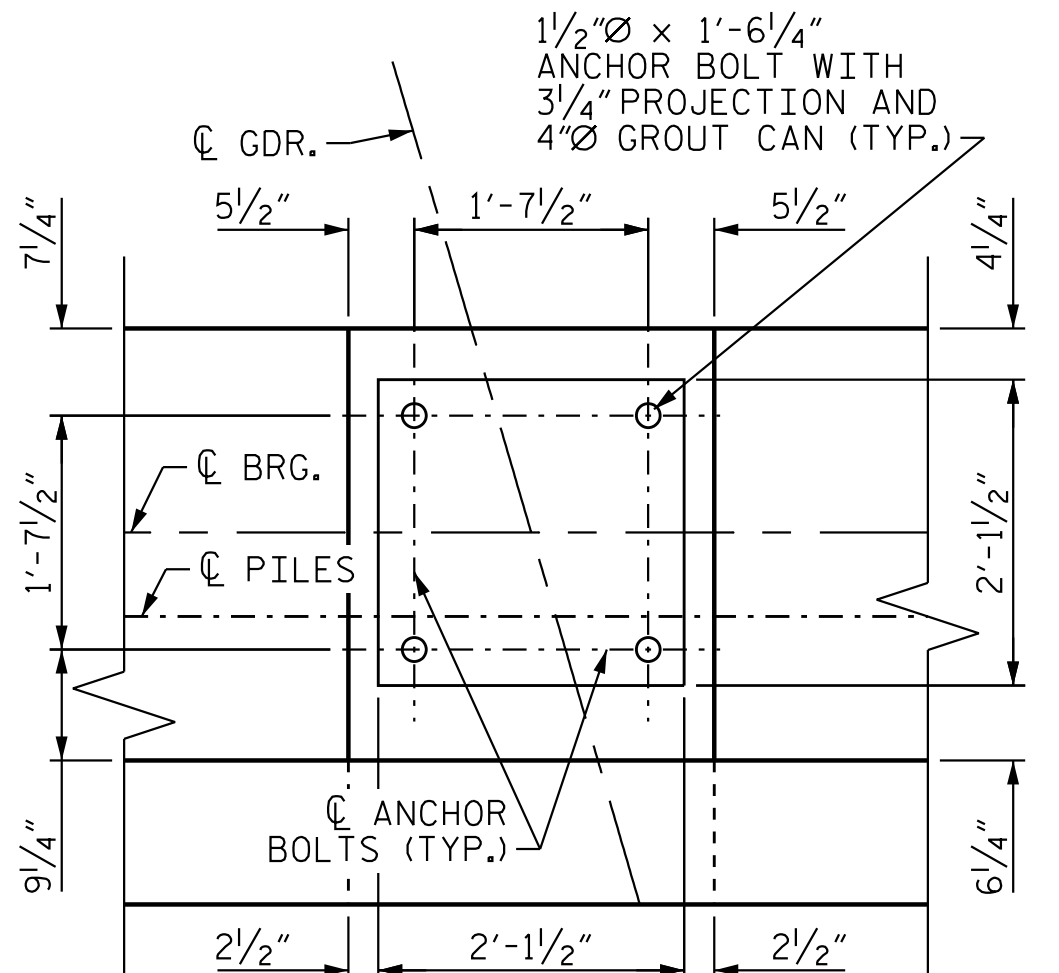
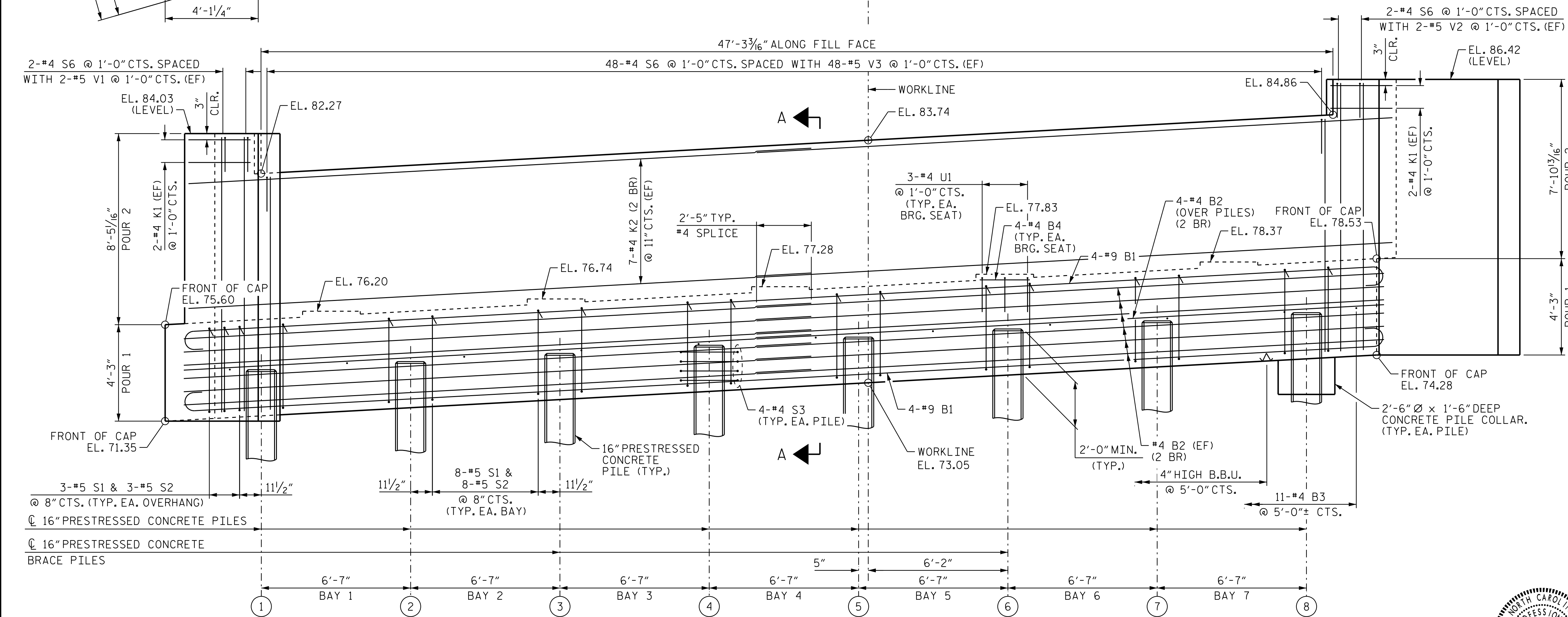
FOR THE WING WALL DETAILS, SEE "END BENT 1, WING WALL DETAILS" SHT. 2 OF 3.

(EF) - DENOTES EACH FACE

(2 BR) - DENOTES 2 BAR RUN

CHAMFERS ARE NOT REQUIRED EXCEPT AS NOTED.

INSTALL THE 6" DIA. DRAIN PIPE THROUGH THE WING WALLS REQUIRED FOR BRIDGE APPROACH FILLS, SEE ROADWAY PLANS FOR ADDITIONAL DETAILS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



FOR PIPE INSERT DETAILS, SEE BEARINGS SHEET.

PROJECT NO. R-3300A

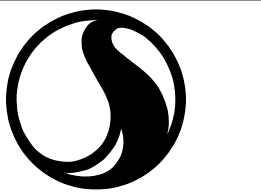
NEW HANOVER COUNTY

STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-

SHEET 1 OF 3

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

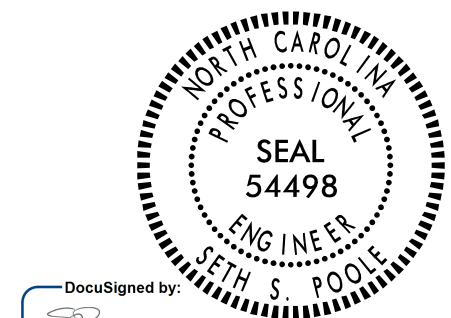
REVISIONS						SHEET NO. S01-078
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



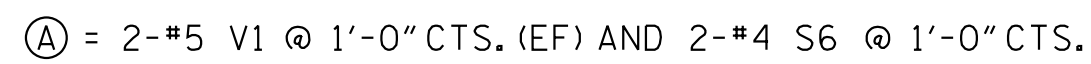
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DRAWN BY : V. E. FRAGA DATE : 12/04/18
CHECKED BY : S. S. POOLE DATE : 02/10/22

DESIGN ENGINEER OF RECORD: S. S. POOLE DATE : 04/22/25

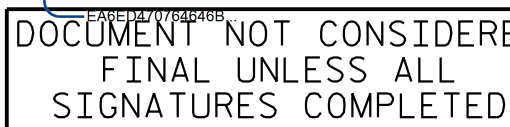


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ⓑ = 2-#5 V2 @ 1'-0" CTS. (EF) AND 2-#4 S6 @ 1'-0" CTS.

DESIGN
ENGINEER
OF RECORD: S. S. POOLE DATE: 04/22/25





DESIGN
ENGINEER
OF RECORD: S. S. POOLE DATE: 04/22/25



● = M1 BAR
○ = V1 BAR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

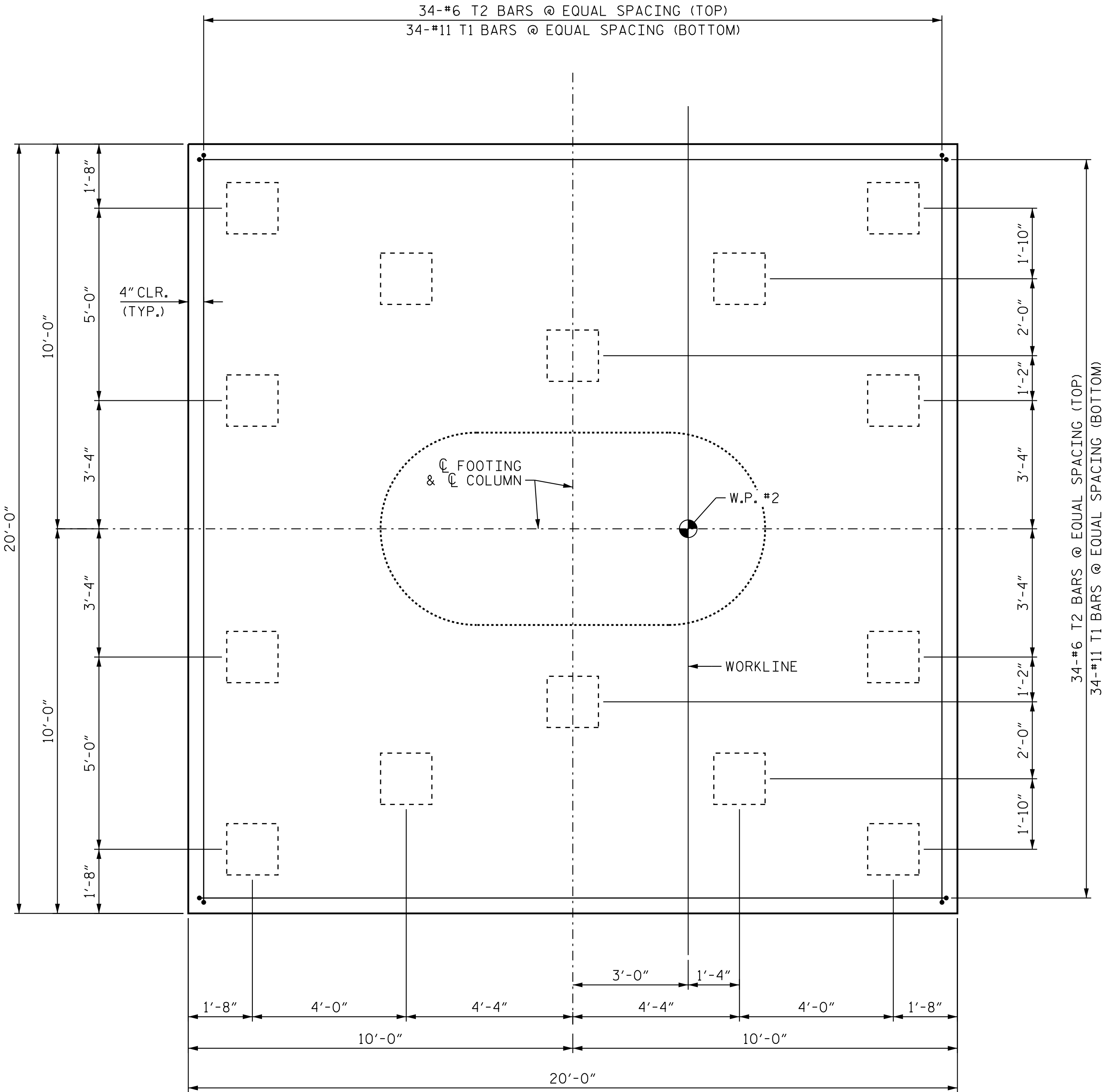
BENT 1

COLUMN DETAILS



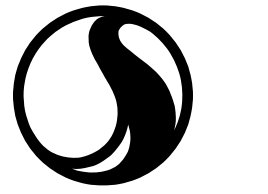
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FOOTING PLAN

(DIMENSIONS ARE TYPICAL EACH FACE)



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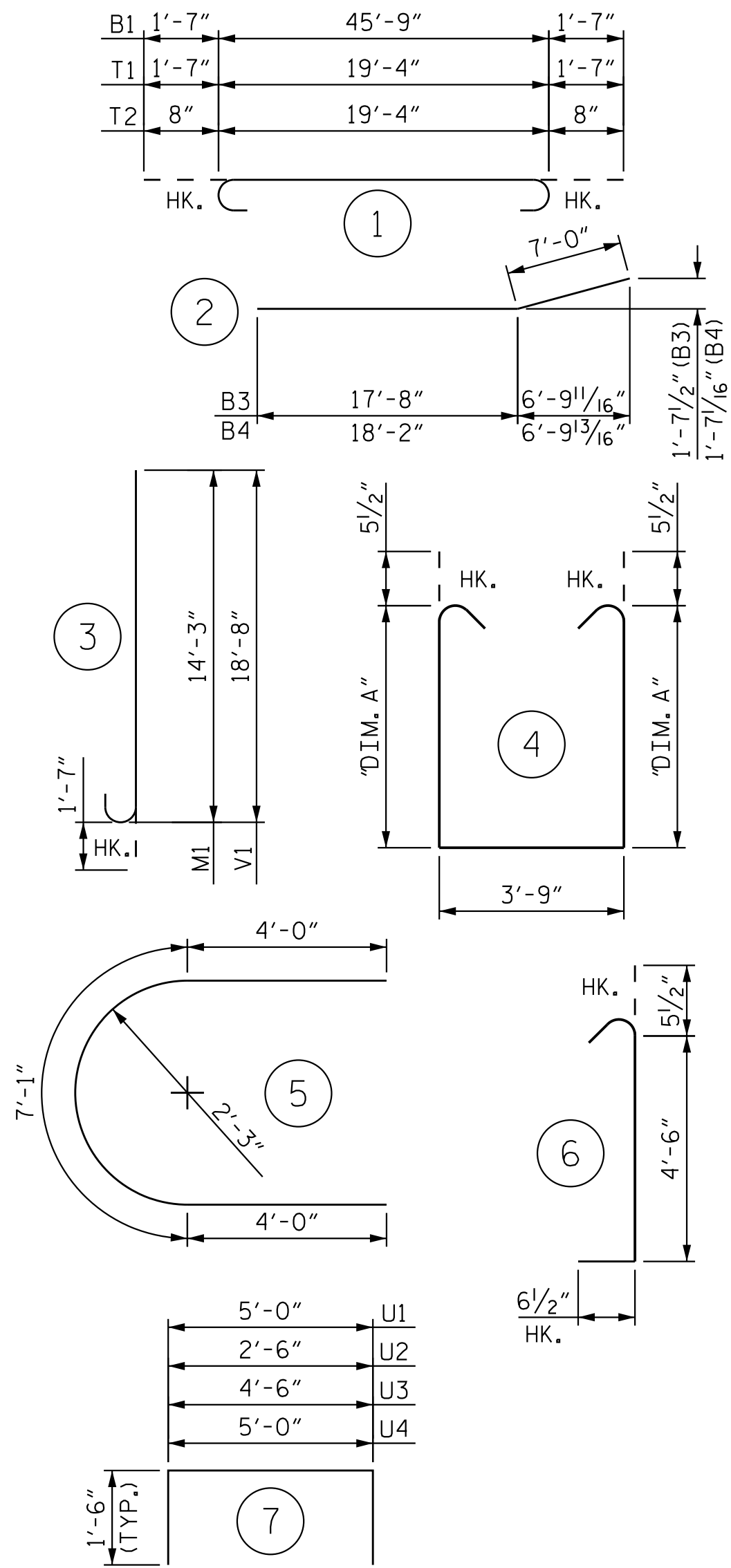
DRAWN BY : S. S. POOLE DATE : 11/08/18
CHECKED BY : V. E. FRAGA DATE : 04/04/19

DESIGN
ENGINEER
OF RECORD: S. S. POOLE DATE : 04/22/25

BILL OF MATERIAL

BENT #1

BAR TYPES



BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT
B1	16	#11	1	-	48'-11"	4,159	S38	4	#5	4	8'-6 $\frac{1}{2}$ "	21'-9"	91
B2	16	#11	STR	-	45'-9"	3,890	S39	26	#5	4	8'-7 $\frac{1}{2}$ "	21'-11"	595
B3	8	#9	2	-	24'-8"	671	S40	34	#5	5	-	15'-1"	535
B4	8	#9	2	-	25'-2"	685	S41	68	#5	6	-	5'-6"	391
B5	10	#8	STR	-	45'-9"	1,222							
B6	2	#8	STR	-	43'-4"	232	T1	68	#11	1	-	22'-6"	8,129
B7	2	#8	STR	-	36'-8"	196	T2	68	#6	1	-	20'-8"	2,111
B8	2	#8	STR	-	30'-0"	161	T3	16	#6	STR	-	19'-4"	465
B9	2	#8	STR	-	23'-3"	125							
B10	2	#8	STR	-	16'-7"	89	U1	30	#4	7	-	8'-0"	161
B11	12	#4	STR	-	5'-0"	41	U2	50	#4	7	-	5'-6"	184
							U3	14	#4	7	-	7'-6"	71
							U4	10	#4	7	-	8'-0"	54
M1	44	#11	3	-	15'-10"	3,702							
							V1	44	#11	3	-	20'-3"	4,734
S1	4	#5	4	4'-6"	13'-8"	58							
S2	4	#5	4	4'-7 $\frac{1}{2}$ "	13'-11"	59							
S3	4	#5	4	4'-9"	14'-2"	60							
S4	4	#5	4	4'-10"	14'-4"	60							
S5	4	#5	4	4'-11 $\frac{1}{2}$ "	14'-7"	61							
S6	4	#5	4	5'-1"	14'-10"	62							
S7	4	#5	4	5'-2"	15'-0"	63							
S8	4	#5	4	5'-3 $\frac{1}{2}$ "	15'-3"	64							
S9	4	#5	4	5'-4 $\frac{1}{2}$ "	15'-5"	65							
S10	4	#5	4	5'-6"	15'-8"	66							
S11	4	#5	4	5'-7"	15'-10"	67							
S12	4	#5	4	5'-8 $\frac{1}{2}$ "	16'-1"	68							
S13	4	#5	4	5'-10"	16'-4"	69							
S14	4	#5	4	5'-11"	16'-6"	69							
S15	4	#5	4	6'-0 $\frac{1}{2}$ "	16'-9"	70							
S16	4	#5	4	6'-1 $\frac{1}{2}$ "	16'-11"	71							
S17	4	#5	4	6'-3"	17'-2"	72							
S18	4	#5	4	6'-4 $\frac{1}{2}$ "	17'-5"	73							
S19	4	#5	4	6'-5 $\frac{1}{2}$ "	17'-7"	74							
S20	4	#5	4	6'-7"	17'-10"	75							
S21	4	#5	4	6'-8"	18'-0"	76							
S22	4	#5	4	6'-9 $\frac{1}{2}$ "	18'-3"	77							
S23	4	#5	4	6'-11"	18'-6"	78							
S24	4	#5	4	7'-0"	18'-8"	78							
S25	4	#5	4	7'-1 $\frac{1}{2}$ "	18'-11"	79							
S26	4	#5	4	7'-2 $\frac{1}{2}$ "	19'-1"	80							
S27	4	#5	4	7'-4"	19'-4"	81							
S28	4	#5	4	7'-5 $\frac{1}{2}$ "	19'-7"	82							
S29	4	#5	4	7'-6 $\frac{1}{2}$ "	19'-9"	83							
S30	4	#5	4	7'-8"	20'-0"	84							
S31	4	#5	4	7'-9"	20'-2"	85							
S32	4	#5	4	7'-10 $\frac{1}{2}$ "	20'-5"	86							
S33	4	#5	4	8'-0"	20'-8"	87							
S34	4	#5	4	8'-1"	20'-10"	87							
S35	4	#5	4	8'-2 $\frac{1}{2}$ "	21'-1"	88							
S36	4	#5	4	8'-3 $\frac{1}{2}$ "	21'-3"	89							
S37	4	#5	4	8'-5"	21'-6"	90							

PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1
FOOTING PLAN AND
BILL OF MATERIAL

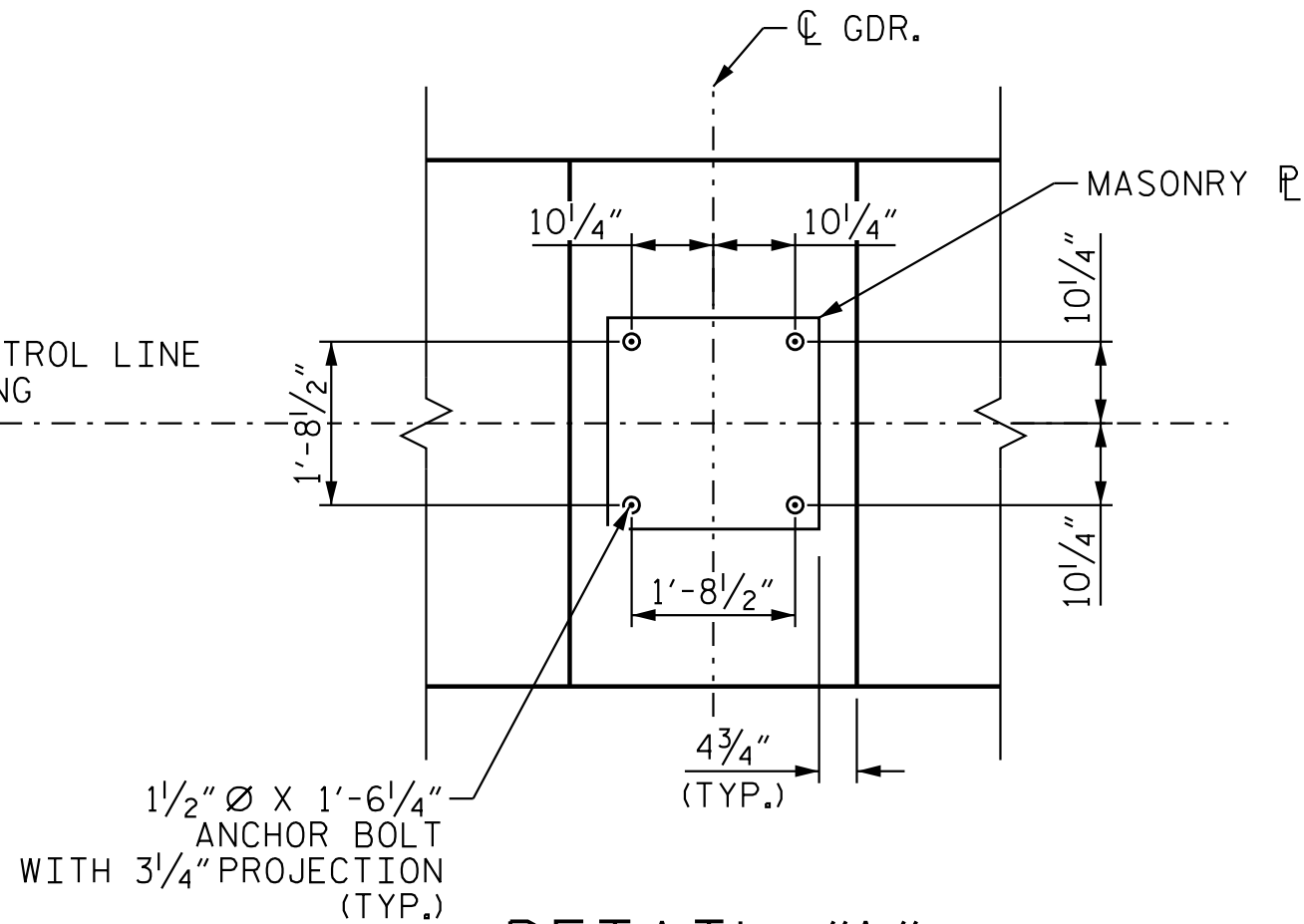
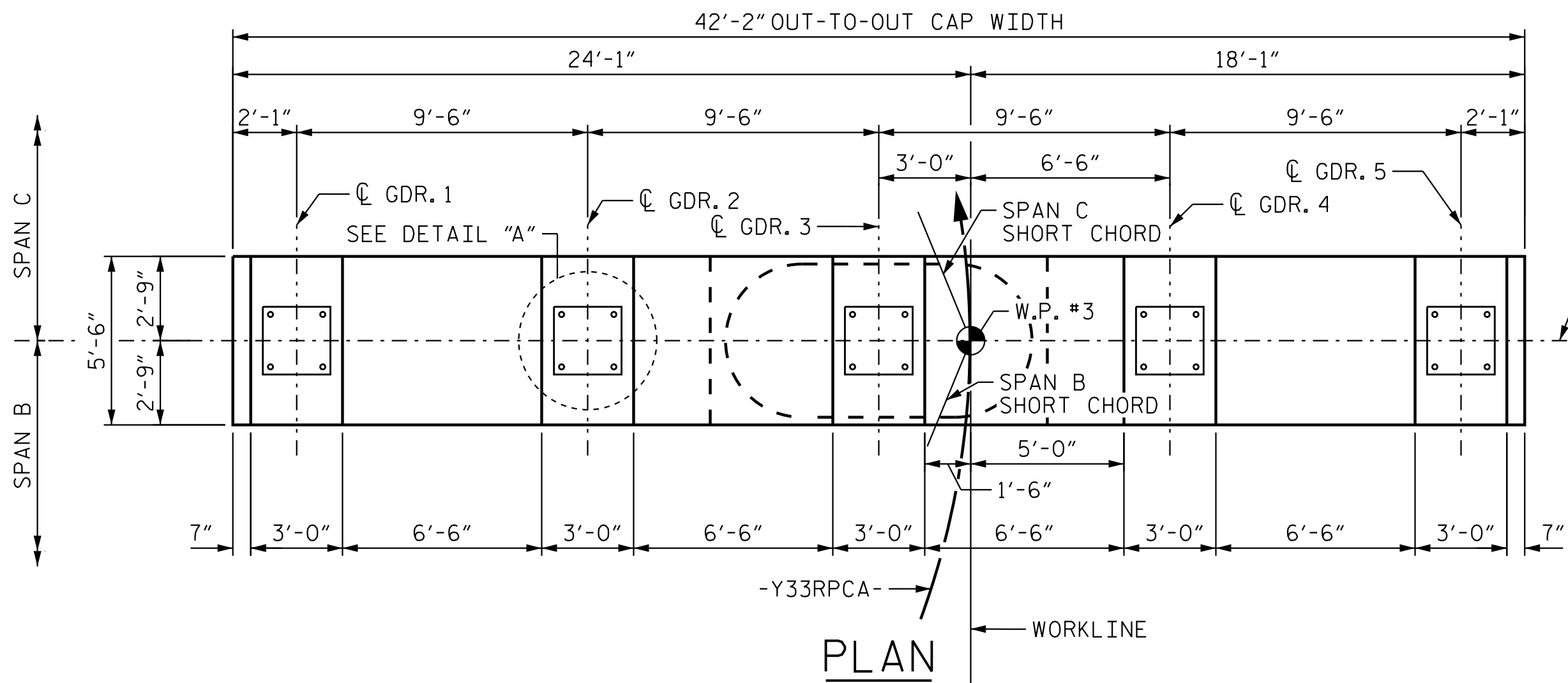


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4/22/2025

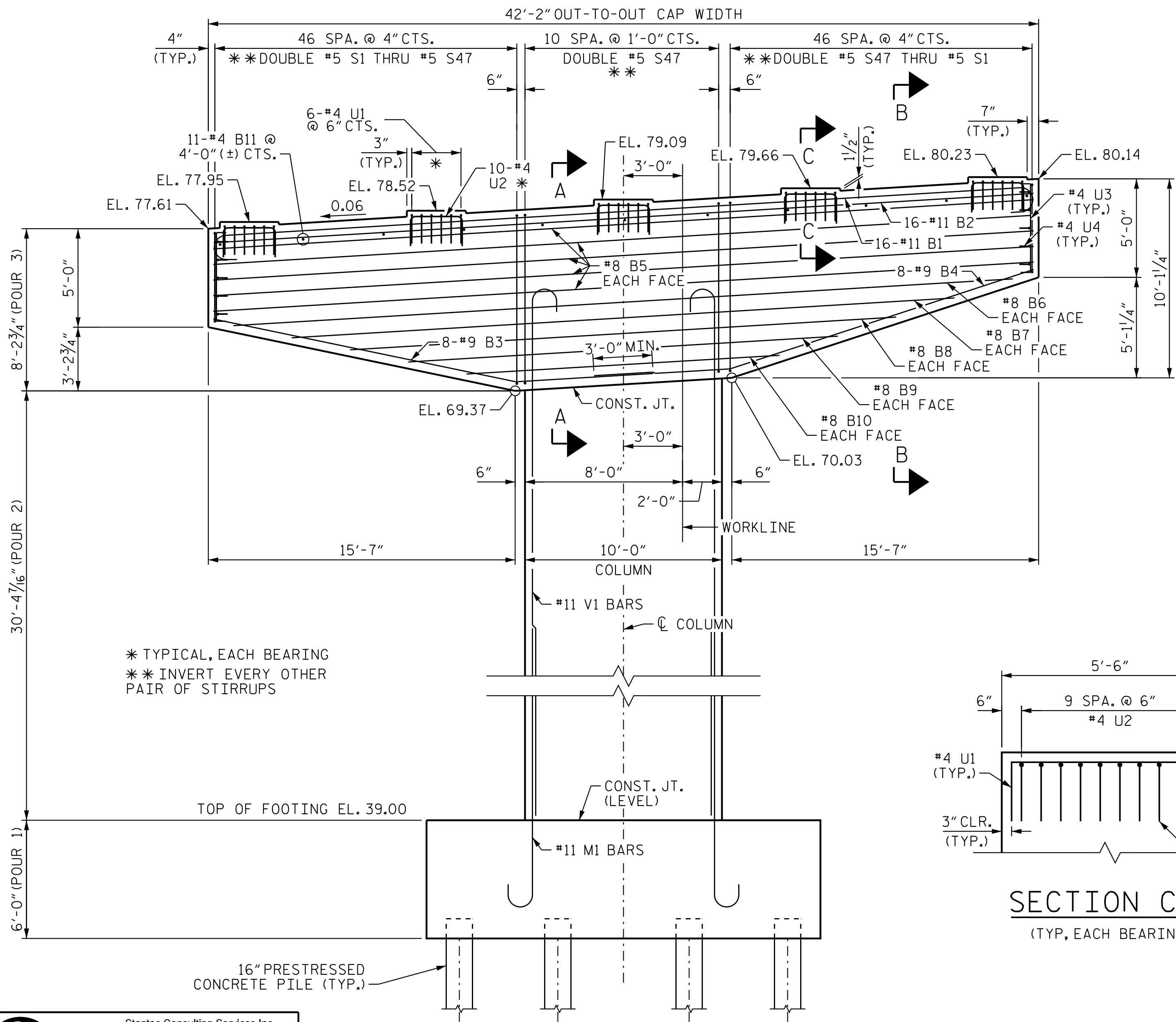
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REVISIONS						SHEET NO. S01-083
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			

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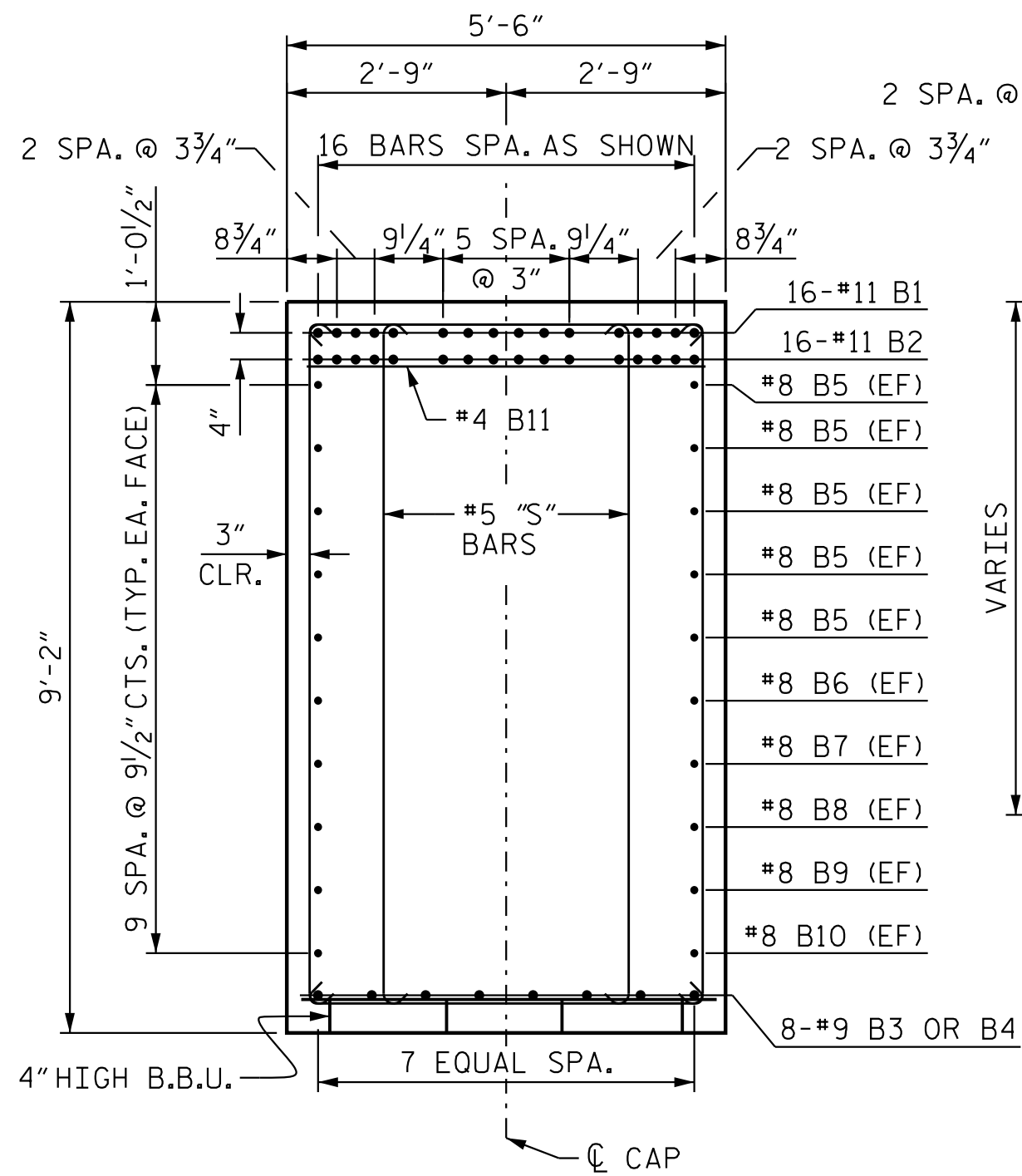


DETAIL "A"
(TYP, EACH BEARING)

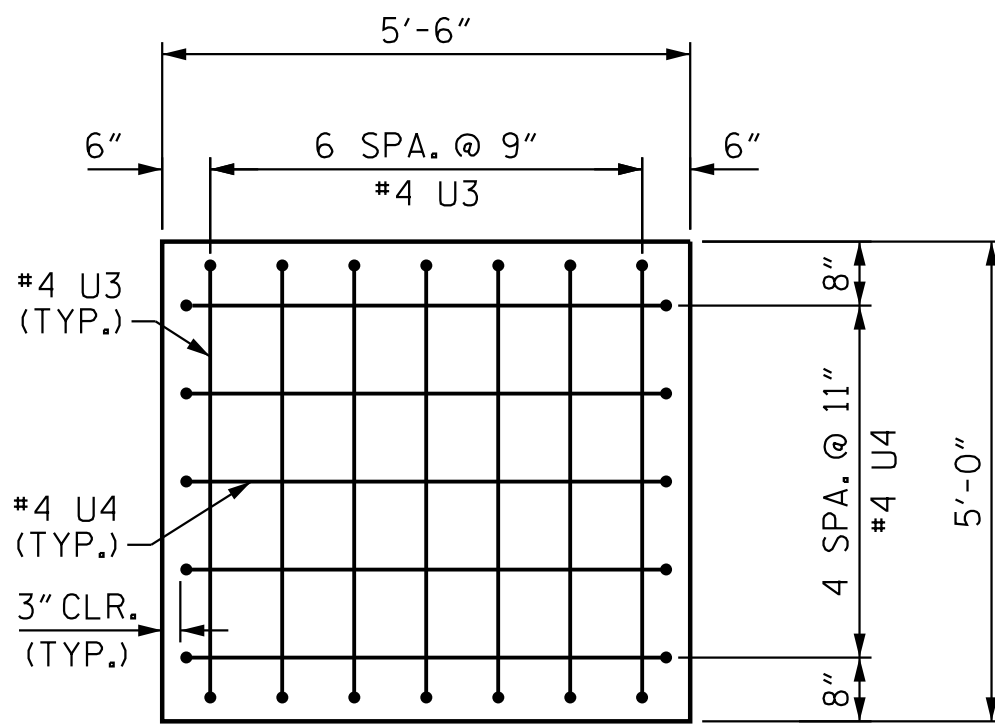


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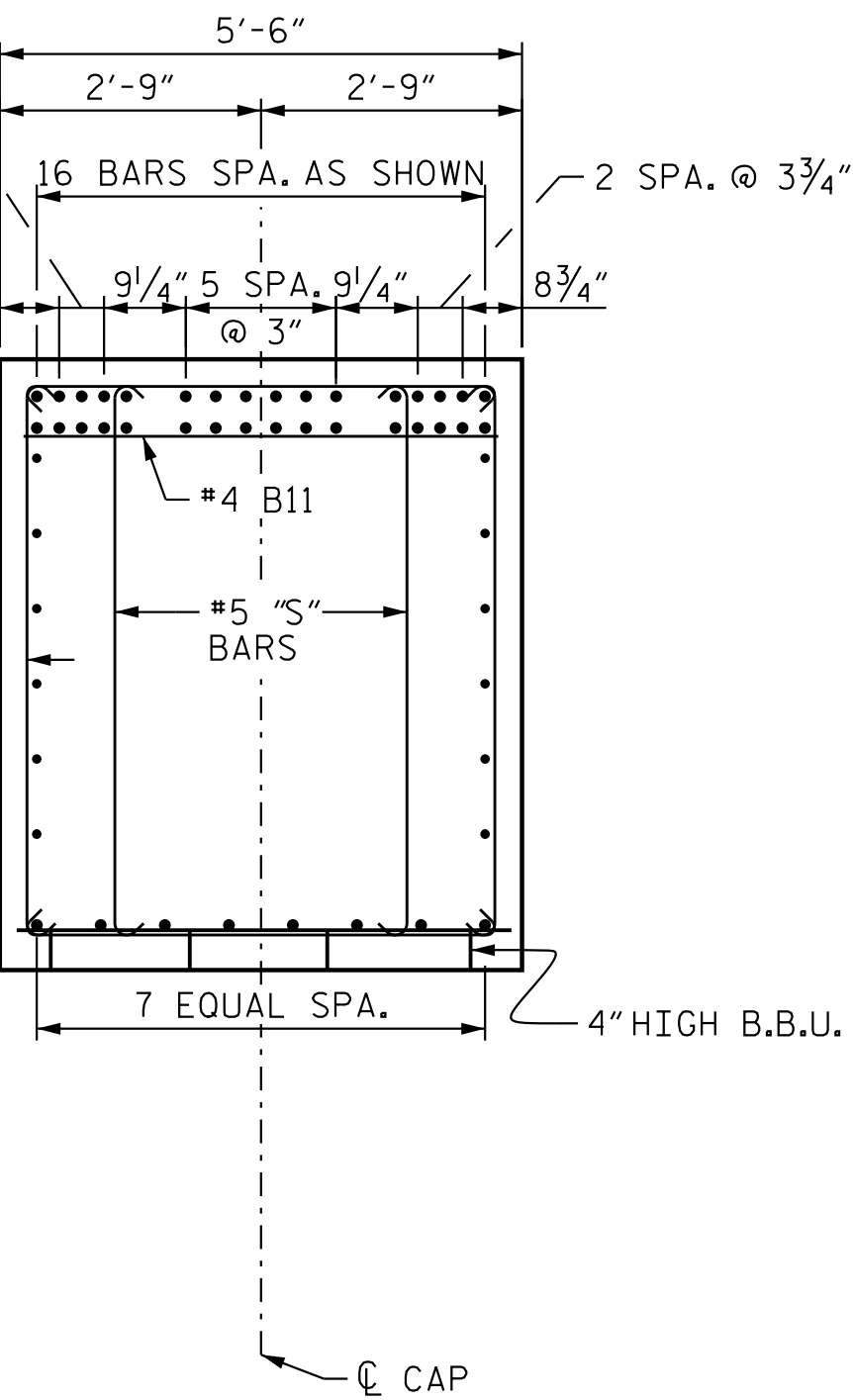
FOOTING REINFORCING NOT SHOWN FOR CLARITY.
SEE SHEET 3 OF 3 FOR DETAILS NOT SHOWN.



SECTION A-A
(COLUMN STEEL NOT SHOWN FOR CLARITY)



END VIEW
(TYP, EACH END)



SECTION B-B

NOTES:

FOR PILE CAP DETAILS SEE SHEET 3 OF 3, S01-086.

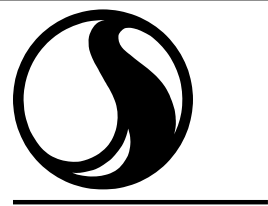
FOR BENT 2 QUANTITIES SEE SHEET 3 OF 3, S01-086.

FOR MASONRY PLATE DIMENSIONS, SEE SHEET S01-050.

EF DENOTES EACH FACE

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

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR
PLACING REINF. STEEL.



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DRAWN BY : S. S. POOLE DATE : 08/15/18
CHECKED BY : V. E. FRAGA DATE : 04/04/19

DESIGN ENGINEER OF RECORD: S. S. POOLE DATE : 04/22/25

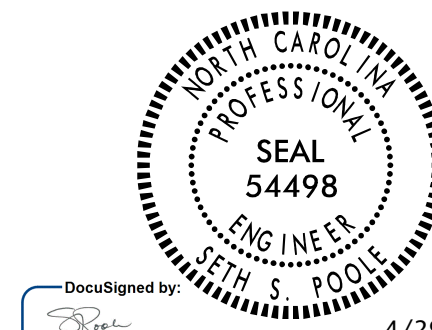
PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
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SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

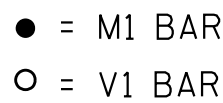
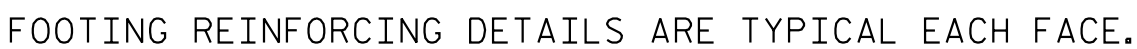
SUBSTRUCTURE

BENT 2
SECTION AND DETAILS



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REVISIONS						SHEET NO. S01-084
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



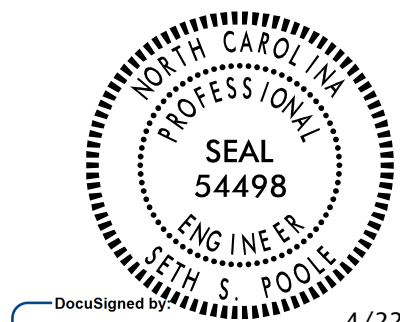
BENT 2
COLUMN DETAILS



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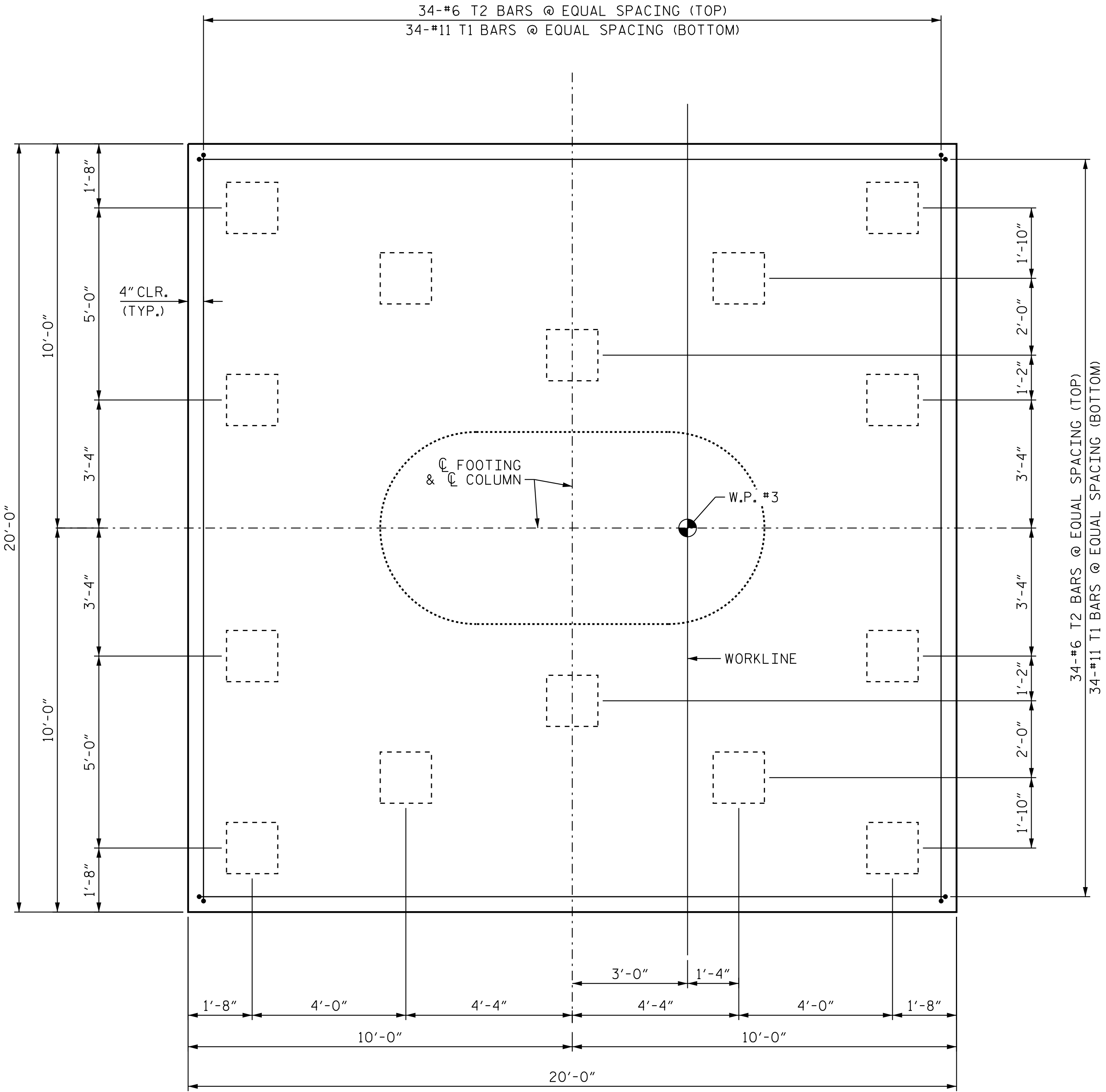
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REVISIONS						SHEET NO. S01-085
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FOOTING PLAN

(DIMENSIONS ARE TYPICAL EACH FACE)



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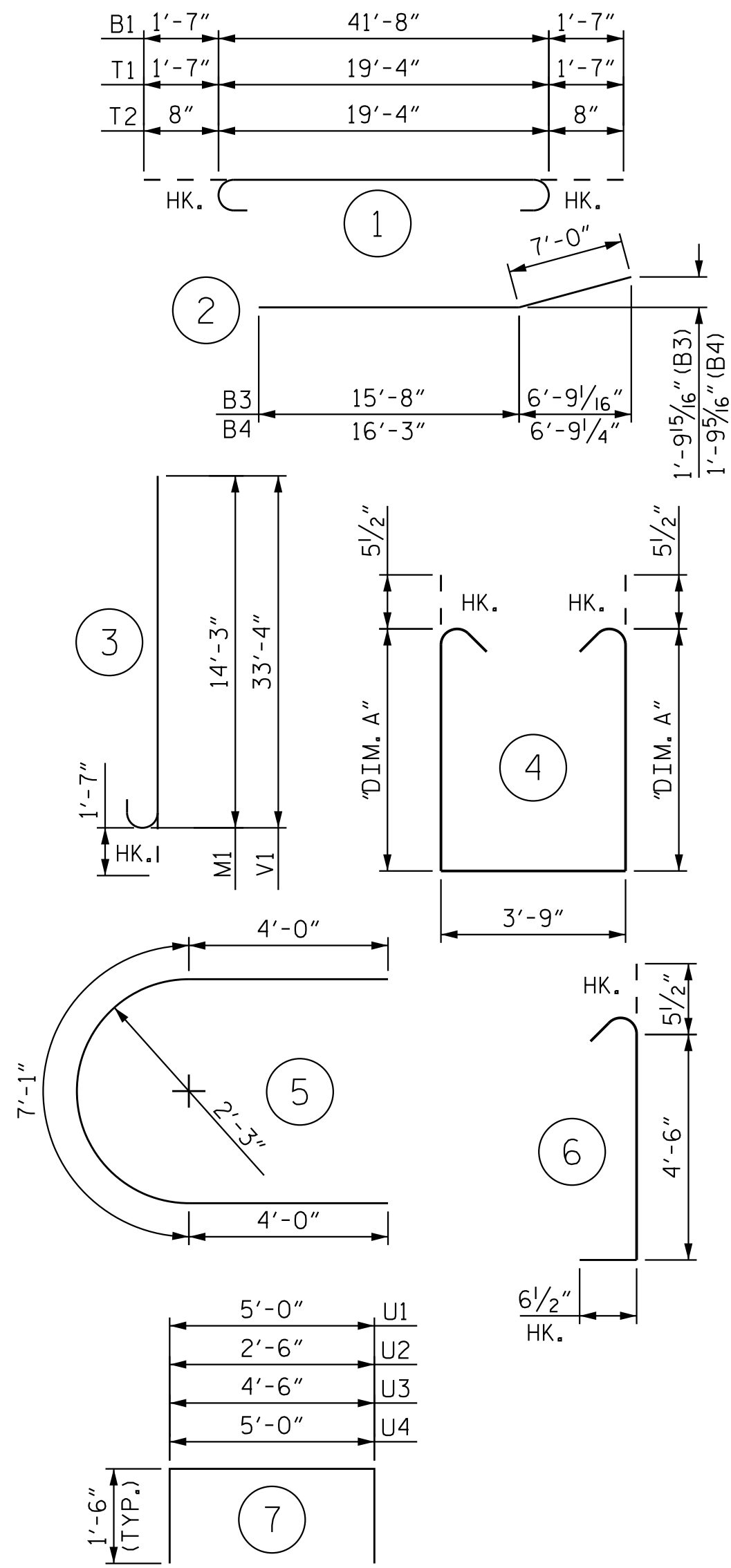
DRAWN BY : S. S. POOLE DATE : 08/15/18
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ENGINEER
OF RECORD: S. S. POOLE DATE : 04/22/25

BILL OF MATERIAL

BENT #2

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

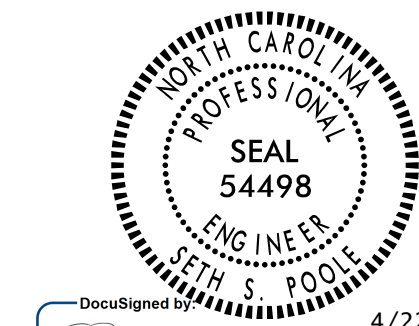
BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT
B1	16	#11	1	-	44'-10"	3,812	S38	4	#5	4	7'-10"	20'-4"	85
B2	16	#11	STR	-	41'-8"	3,542	S39	4	#5	4	7'-11"	20'-6"	86
B3	8	#9	2	-	22'-8"	617	S40	4	#5	4	8'-0"	20'-8"	87
B4	8	#9	2	-	23'-3"	633	S41	4	#5	4	8'-1"	20'-10"	87
B5	10	#8	STR	-	41'-8"	1,113	S42	4	#5	4	8'-2 1/2"	21'-1"	88
B6	2	#8	STR	-	39'-7"	212	S43	4	#5	4	8'-3 1/2"	21'-3"	89
B7	2	#8	STR	-	33'-8"	180	S44	4	#5	4	8'-4 1/2"	21'-5"	90
B8	2	#8	STR	-	27'-9"	149	S45	4	#5	4	8'-5 1/2"	21'-7"	91
B9	2	#8	STR	-	21'-10"	117	S46	4	#5	4	8'-6 1/2"	21'-9"	91
B10	2	#8	STR	-	15'-11"	85	S47	26	#5	4	8'-7 1/2"	21'-11"	595
B11	12	#4	STR	-	5'-0"	41	S48	64	#5	5	-	15'-1"	1,007
							S49	128	#5	6	-	5'-6"	735
M1	44	#11	3	-	15'-10"	3,702							
							T1	68	#11	1	-	22'-6"	8,129
S1	4	#5	4	4'-6 1/2"	13'-9"	58	T2	68	#6	1	-	20'-8"	2,111
S2	4	#5	4	4'-7 1/2"	13'-11"	59	T3	16	#6	STR	-	19'-4"	465
S3	4	#5	4	4'-8 1/2"	14'-1"	59							
S4	4	#5	4	4'-9 1/2"	14'-3"	60	U1	30	#4	7	-	8'-0"	161
S5	4	#5	4	4'-10 1/2"	14'-5"	61	U2	50	#4	7	-	5'-6"	184
S6	4	#5	4	5'-0"	14'-8"	62	U3	14	#4	7	-	7'-6"	71
S7	4	#5	4	5'-1"	14'-10"	62	U4	10	#4	7	-	8'-0"	54
S8	4	#5	4	5'-2"	15'-0"	63							
S9	4	#5	4	5'-3"	15'-2"	64	V1	44	#11	3	-	34'-11"	8,163
S10	4	#5	4	5'-4"	15'-4"	64	TOTAL REINFORCING STEEL (LBS.)						39,308
S11	4	#5	4	5'-5"	15'-6"	65	BENT #2 TOTAL QUANTITIES						
S12	4	#5	4	5'-6"	15'-8"	66	CLASS AA CONCRETE						
S13	4	#5	4	5'-7"	15'-10"	67							
S14	4	#5	4	5'-8 1/2"	16'-1"	68							
S15	4	#5	4	5'-9 1/2"	16'-3"	68							
S16	4	#5	4	5'-10 1/2"	16'-5"	69							
S17	4	#5	4	5'-11 1/2"	16'-7"	70	POUR 1 (FOOTING)						C.Y. 88.0
S18	4	#5	4	6'-0 1/2"	16'-9"	70	POUR 2 (COLUMN)						C.Y. 50.8
S19	4	#5	4	6'-1 1/2"	16'-11"	71	POUR 3 (CAP)						C.Y. 66.1
S20	4	#5	4	6'-2 1/2"	17'-1"	72	TOTAL C.Y.						204.9
S21	4	#5	4	6'-4"	17'-4"	73							
S22	4	#5	4	6'-5"	17'-6"	74							
S23	4	#5	4	6'-6"	17'-8"	74							
S24	4	#5	4	6'-7"	17'-10"	75							
S25	4	#5	4	6'-8"	18'-0"	76							
S26	4	#5	4	6'-9"	18'-2"	76							
S27	4	#5	4	6'-10"	18'-4"	77							
S28	4	#5	4	6'-11 1/2"	18'-7"	78							
S29	4	#5	4	7'-0 1/2"	18'-9"	79							
S30	4	#5	4	7'-1 1/2"	18'-11"	79							
S31	4	#5	4	7'-2 1/2"	19'-1"	80							
S32	4	#5	4	7'-3 1/2"	19'-3"	81							
S33	4	#5	4	7'-4 1/2"	19'-5"	82							
S34	4	#5	4	7'-5 1/2"	19'-7"	82							
S35	4	#5	4	7'-7"	19'-10"	83							
S36	4	#5	4	7'-8"	20'-0"	84							
S37	4	#5	4	7'-9"	20'-2"	85							

PROJECT NO. R-3300A

NEW HANOVER COUNTY

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SHEET 3 OF 3



4/22/2025

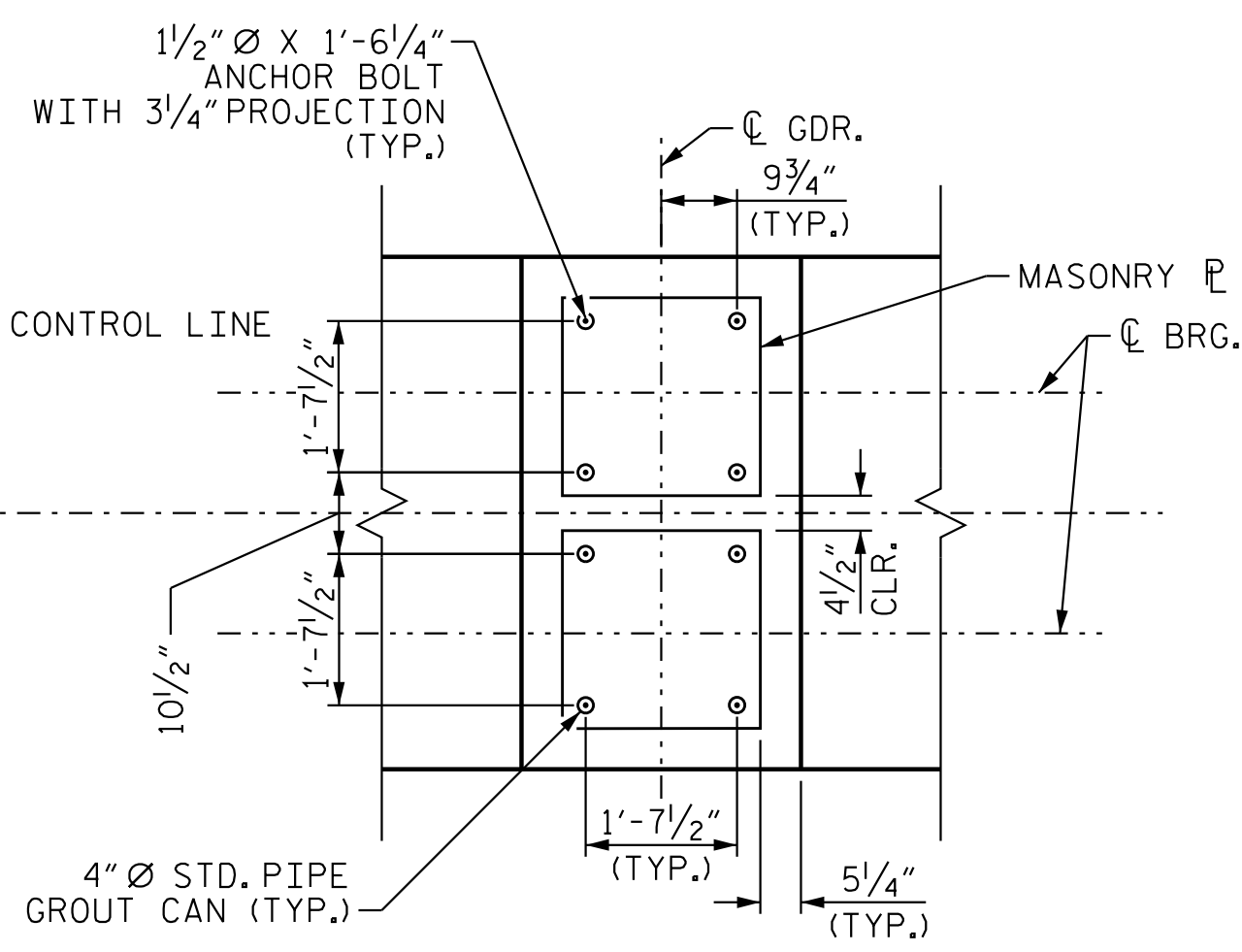
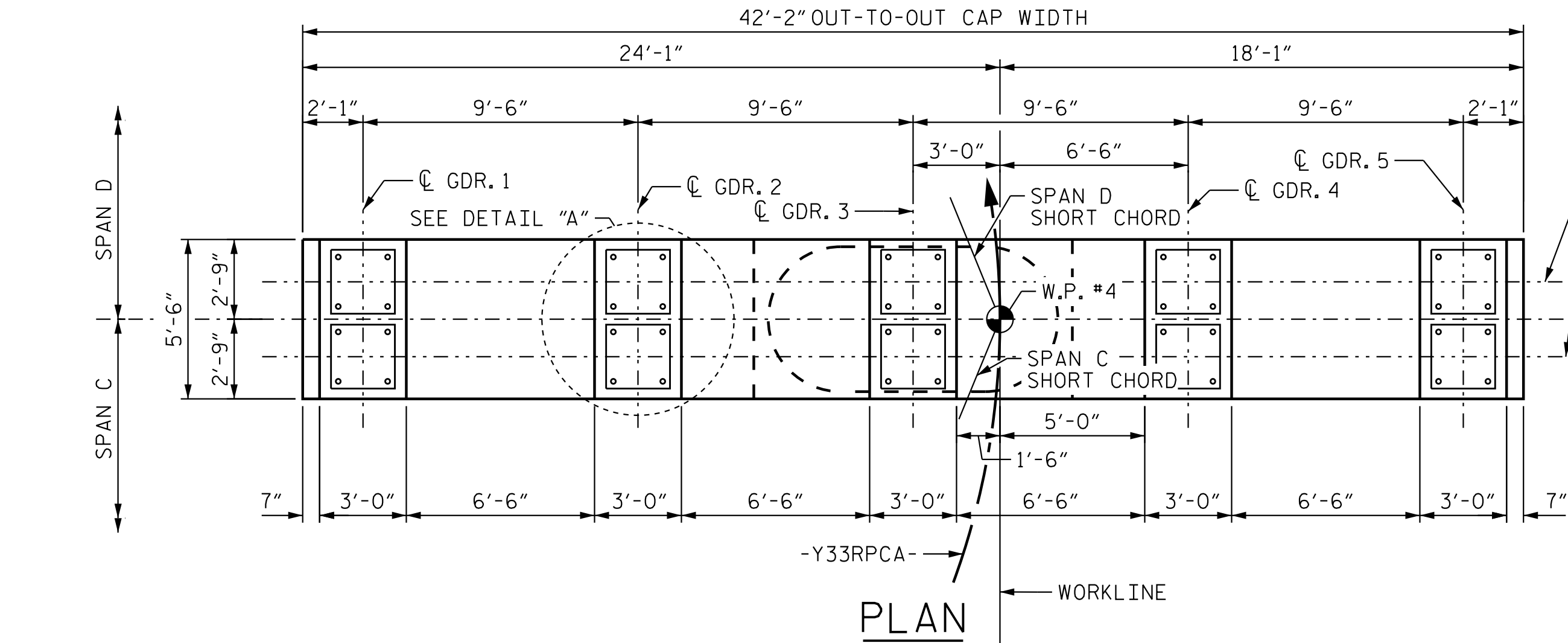
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SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

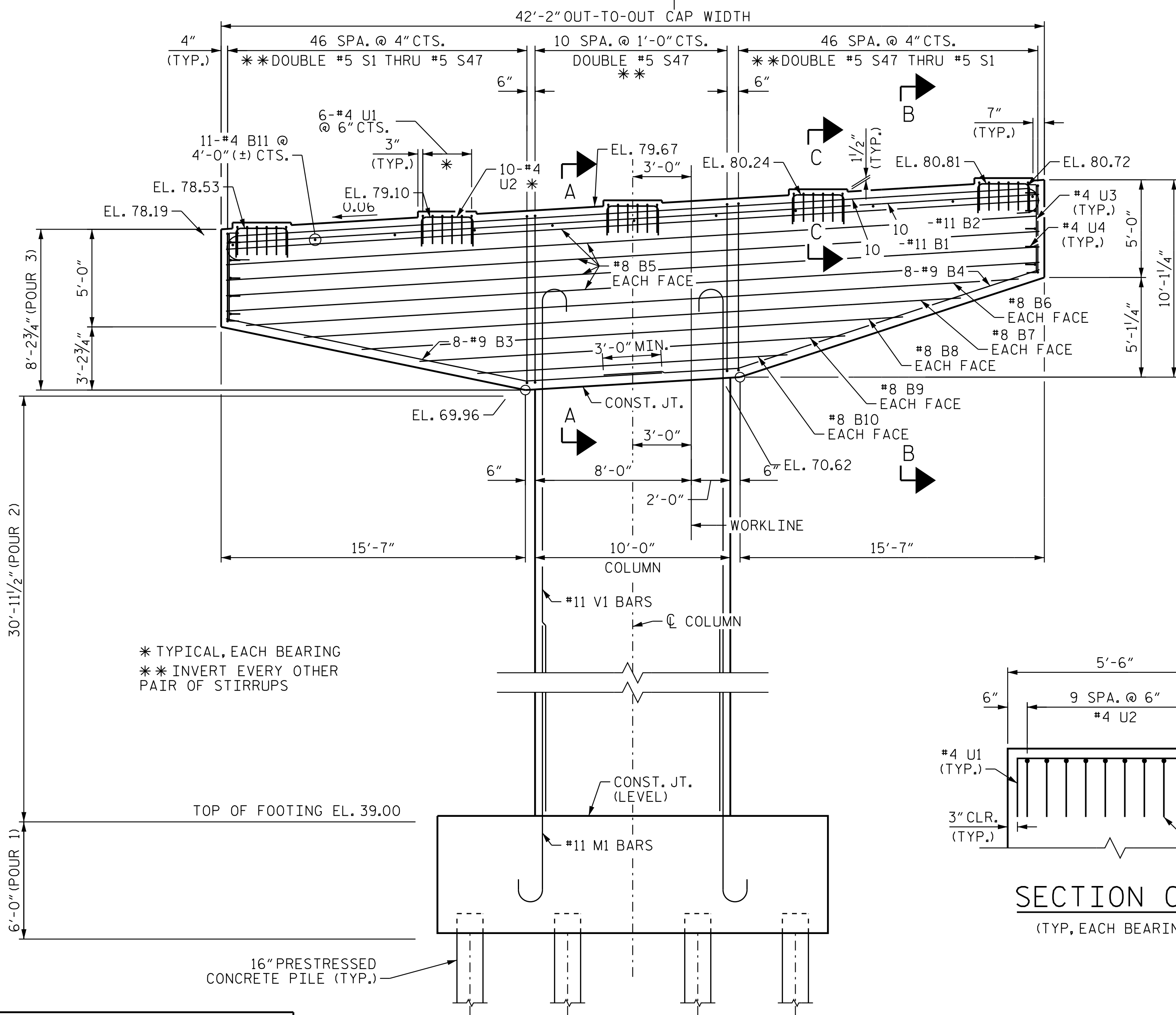
SUBSTRUCTURE
BENT 2
FOOTING PLAN AND
BILL OF MATERIAL

REVISIONS						SHEET NO. S01-086
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			

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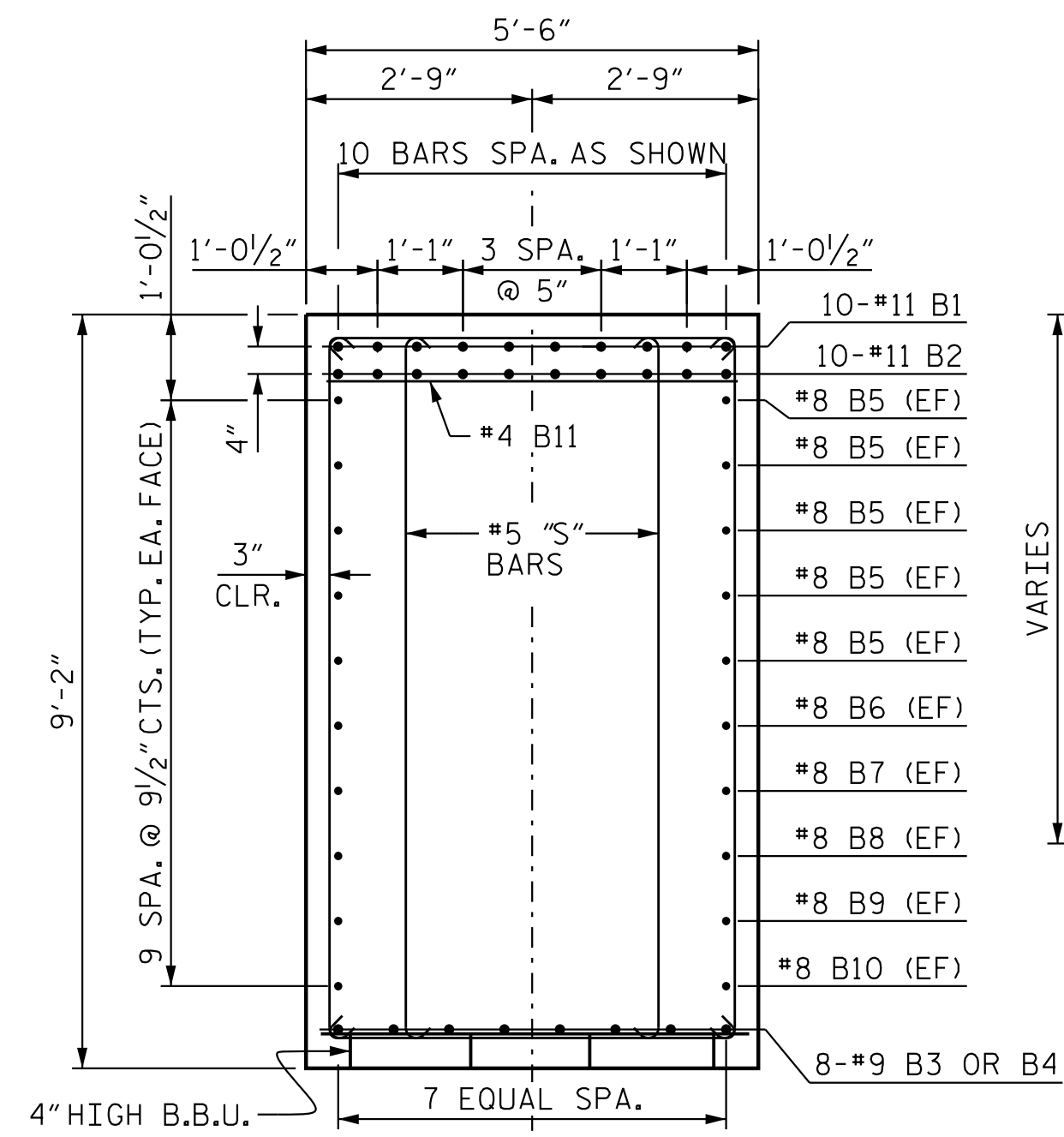


DETAIL "A"
(TYP, EACH BEARING)

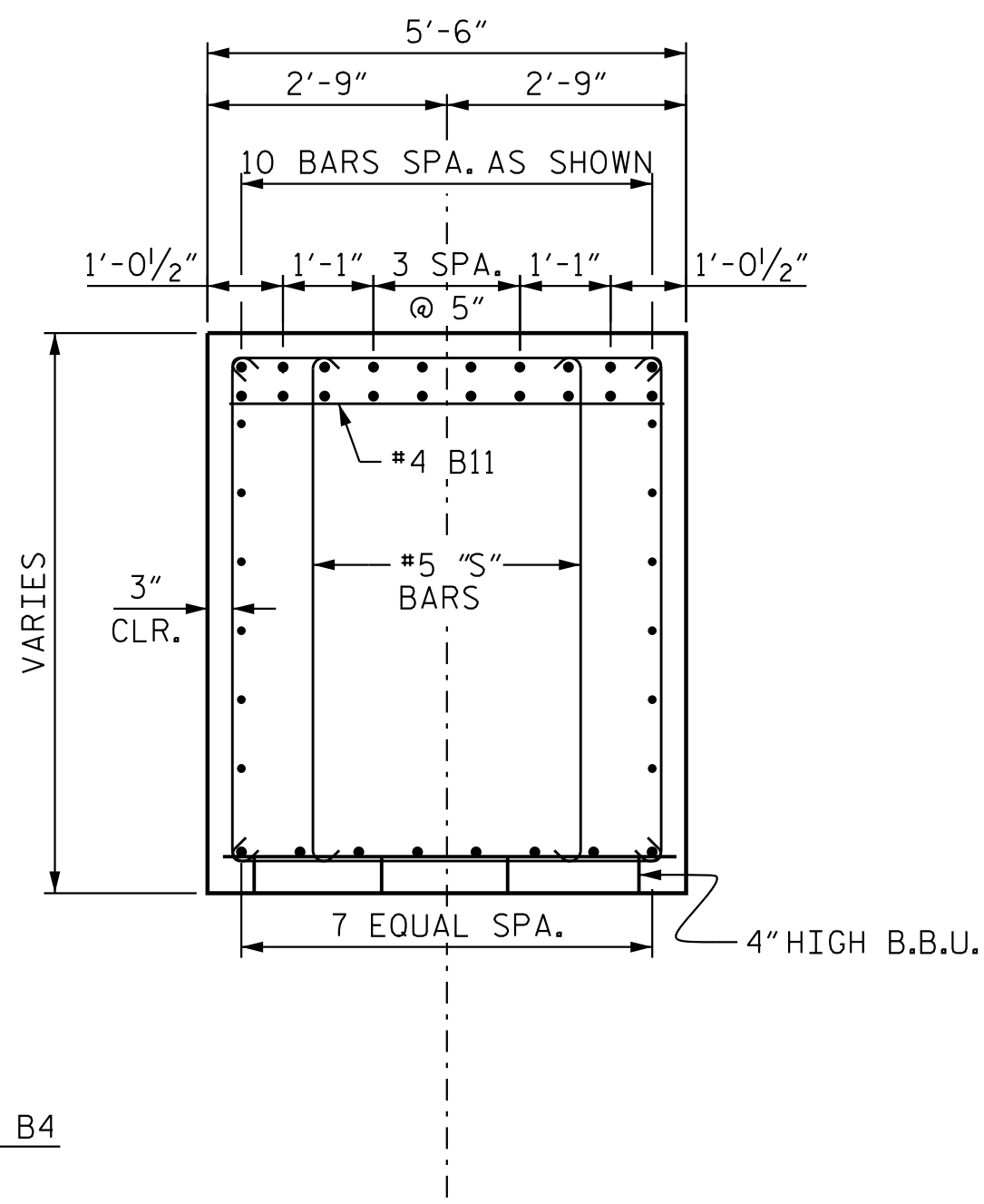


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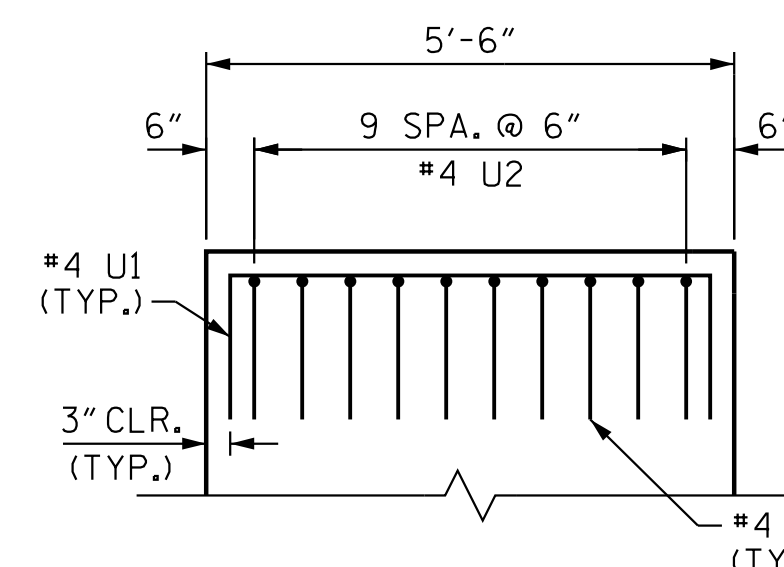
FOOTING REINFORCING NOT SHOWN FOR CLARITY.
SEE SHEET 3 OF 3 FOR DETAILS NOT SHOWN.



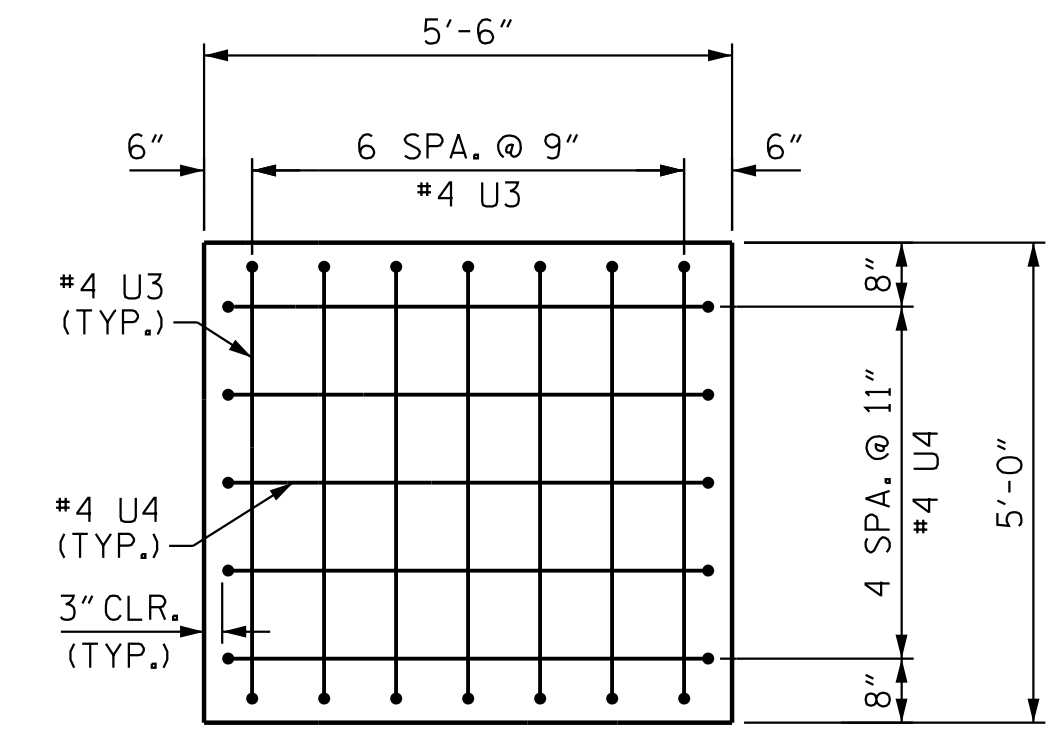
SECTION A-A
(COLUMN STEEL NOT SHOWN FOR CLARITY)



SECTION B-B



SECTION C-C
(TYP, EACH BEARING)



END VIEW
(TYP, EACH END)

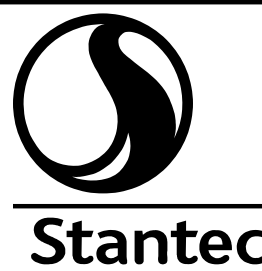
NOTES:

- FOR PILE CAP DETAILS SEE SHEET 3 OF 3, S01-089.
- FOR BENT 3 QUANTITIES SEE SHEET SHEET 3 OF 3, S01-089.
- FOR MASONRY PLATE DIMENSIONS, SEE SHEET S01-050.
- EF DENOTES EACH FACE
- STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINF. STEEL.

PROJECT NO. R-3300A
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SHEET 1 OF 3

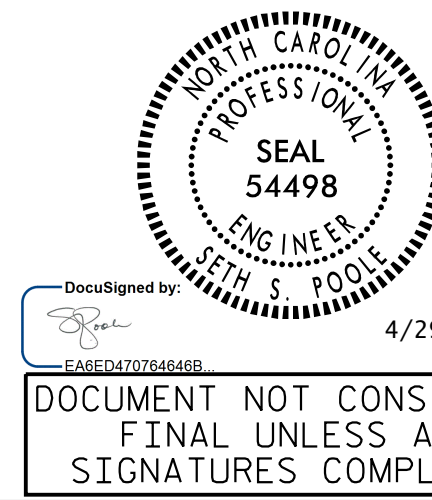
REVISIONS						SHEET NO. S01-087
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



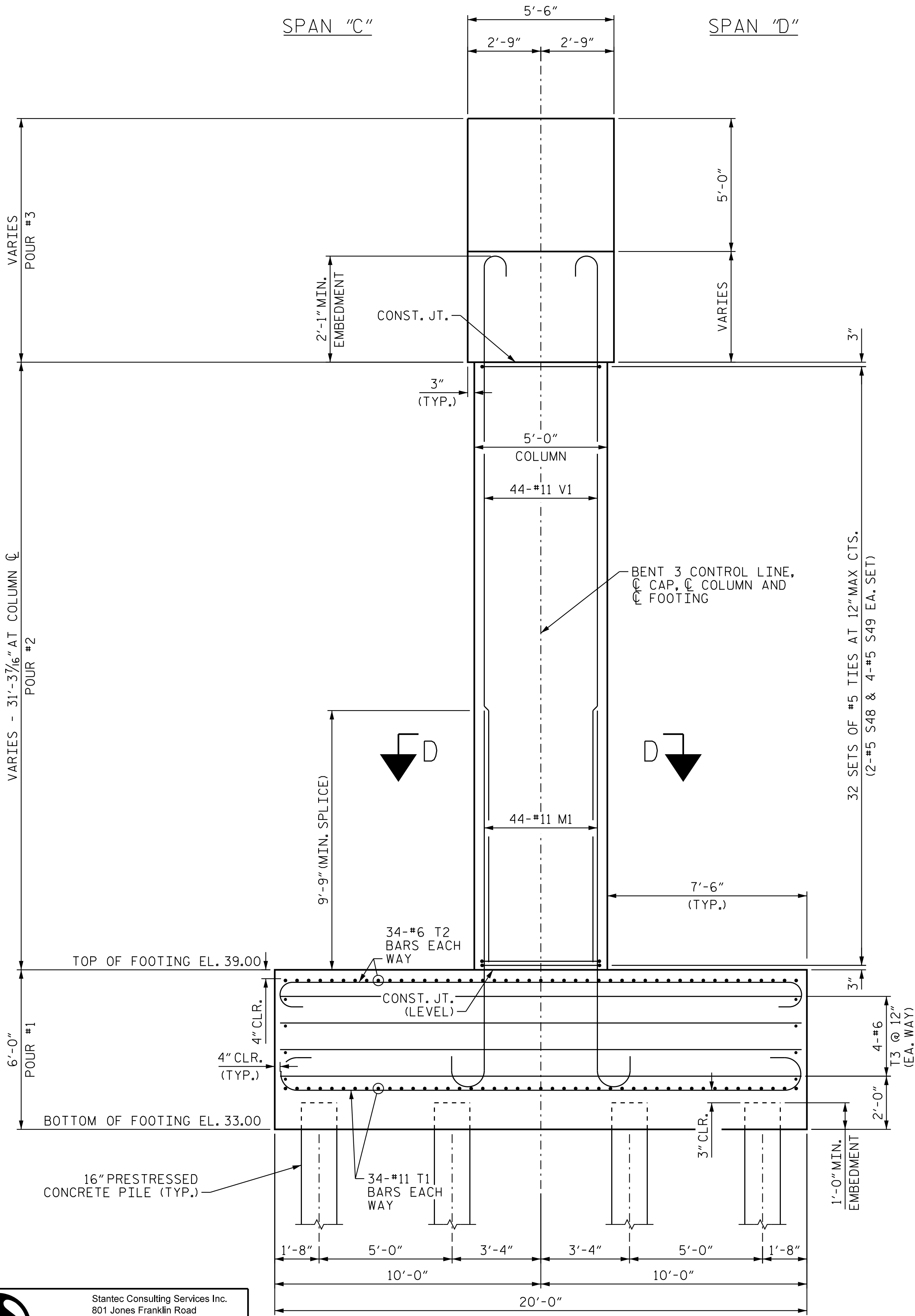
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OF RECORD: S. S. POOLE DATE: 04/22/25

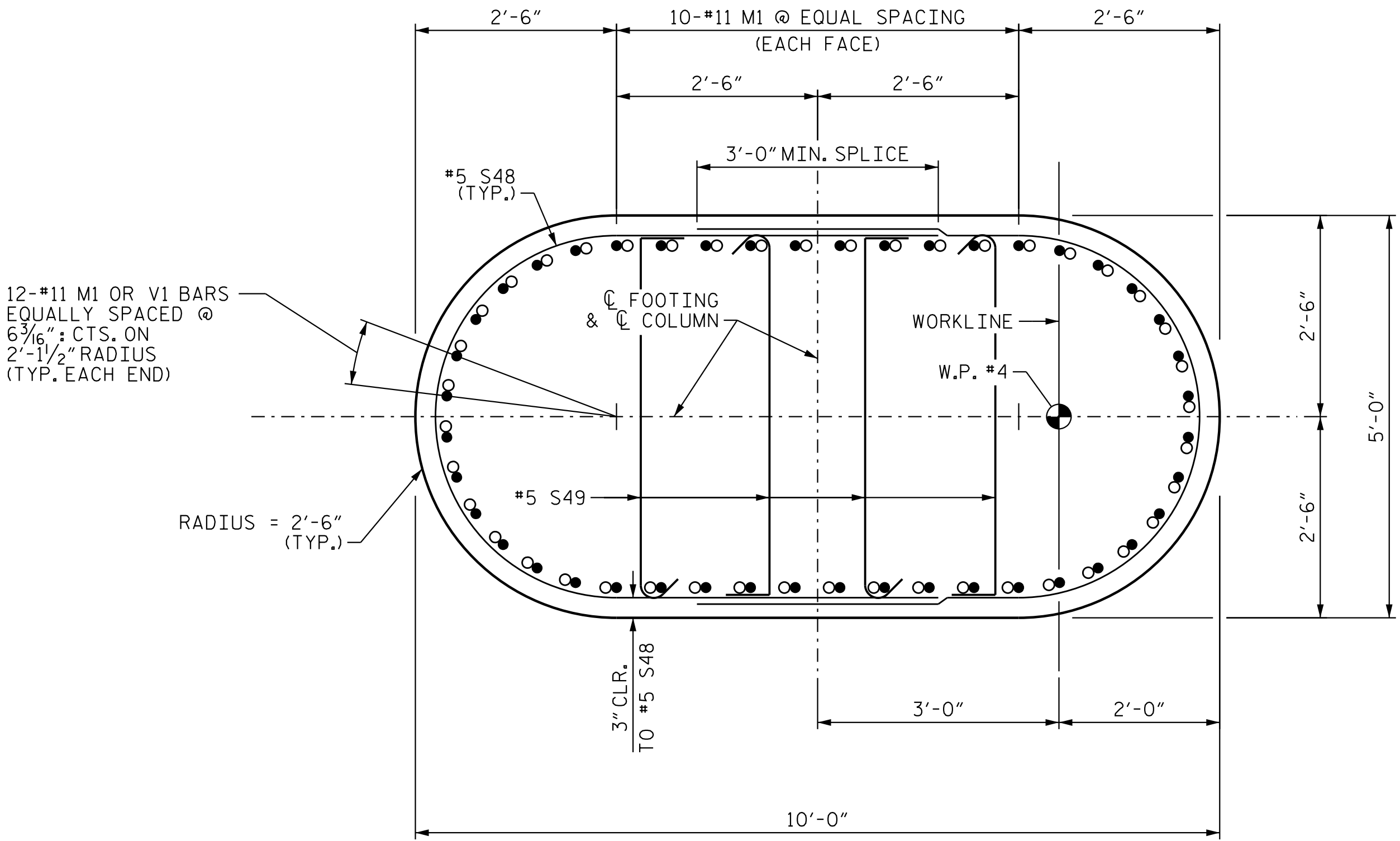


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END VIEW

FOOTING REINFORCING DETAILS ARE TYPICAL EACH FACE.



SECTION D-D

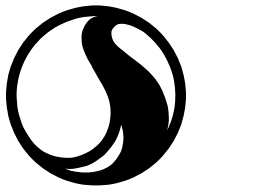
- = M1 BAR
- = V1 BAR

PROJECT NO. R-3300A

NEW HANOVER COUNTY

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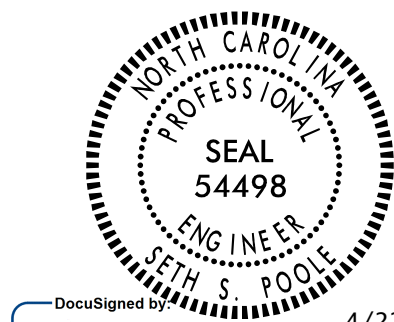
SHEET 2 OF 3



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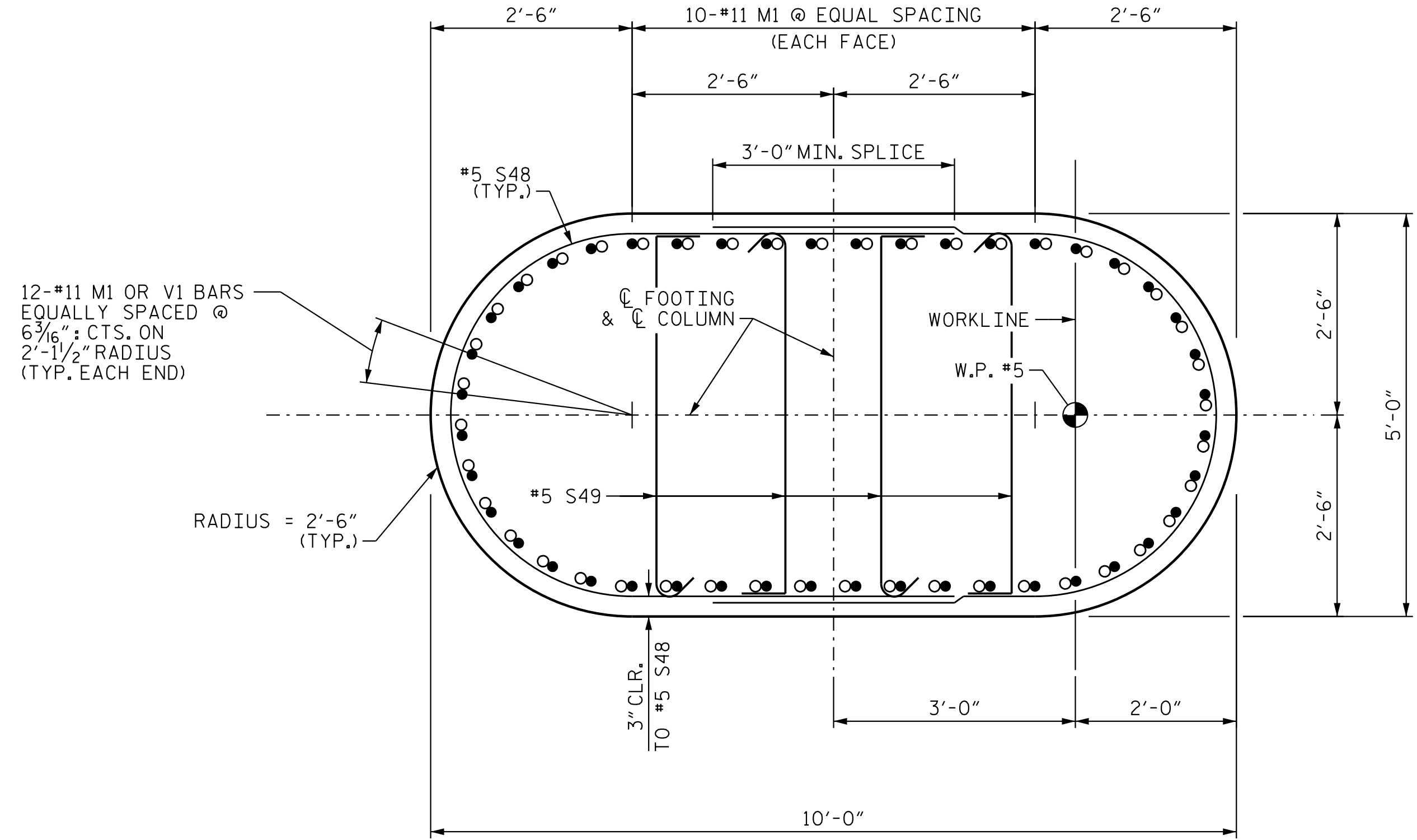
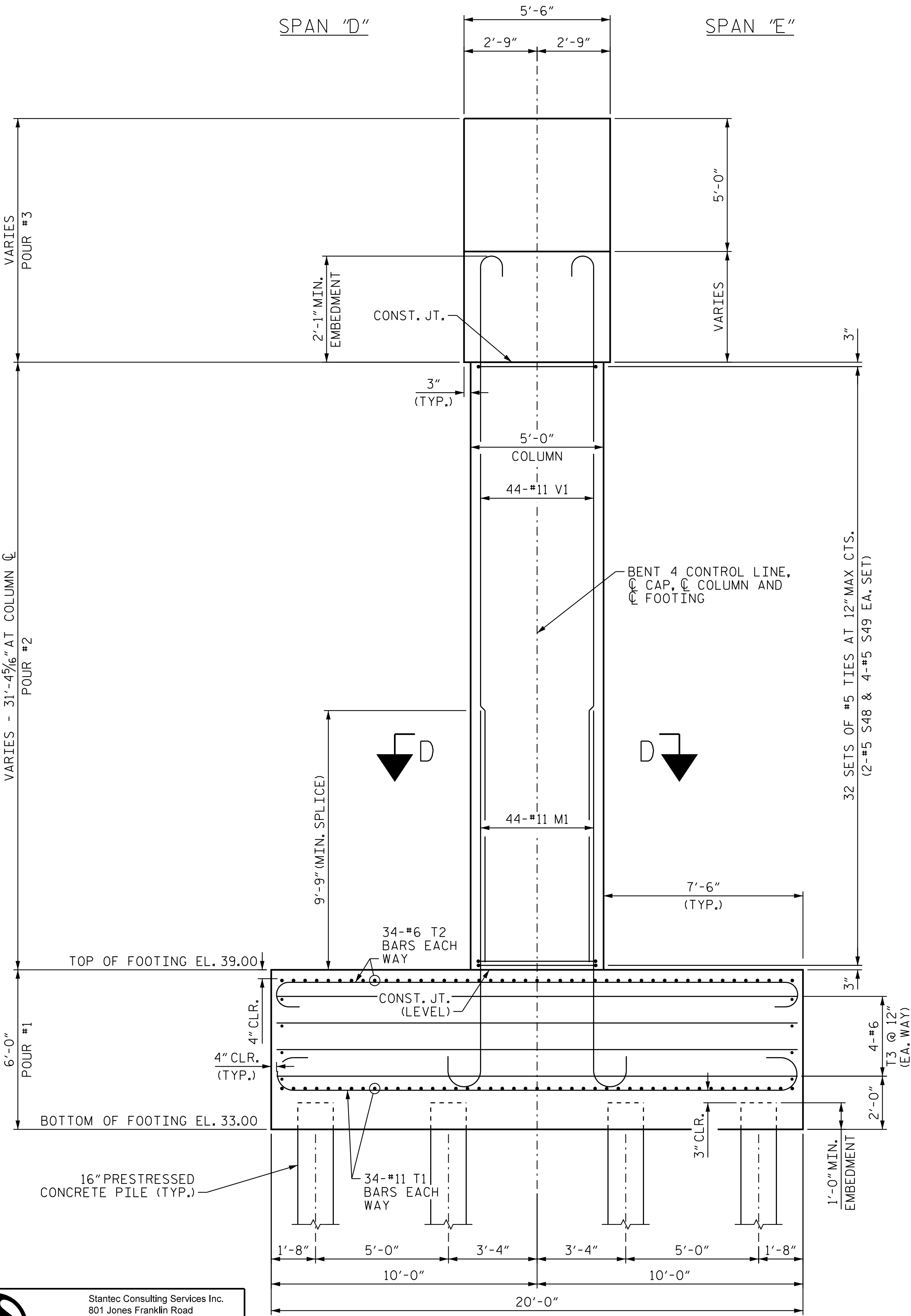
REVISIONS						SHEET NO. S01-088
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



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ENGINEER
OF RECORD: S. S. POOLE DATE: 04/22/25



REVISIONS						SHEET NO. S01-089
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



SECTION D-D

- = M1 BAR
- = V1 BAR

PROJECT NO. R-3300A
NEW HANOVER COUNTY
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SHEET 2 OF 3

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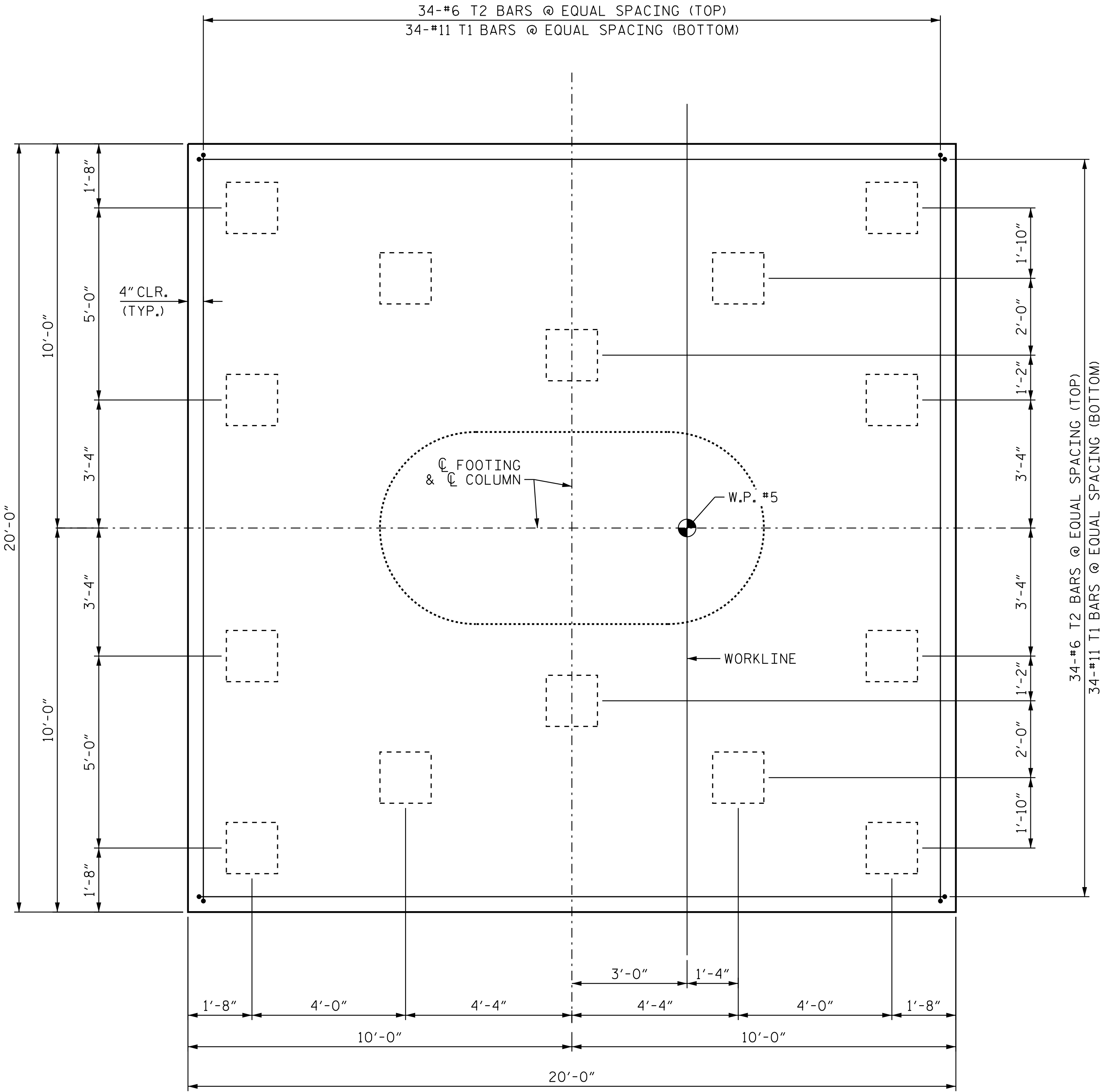
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH							
SUBSTRUCTURE							
BENT 4							
COLUMN DETAILS							
REVISIONS						SHEET NO. S01-091	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 113	
1			3				
2			4				

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FOOTING REINFORCING DETAILS ARE TYPICAL EACH FACE.



FOOTING PLAN

(DIMENSIONS ARE TYPICAL EACH FACE)



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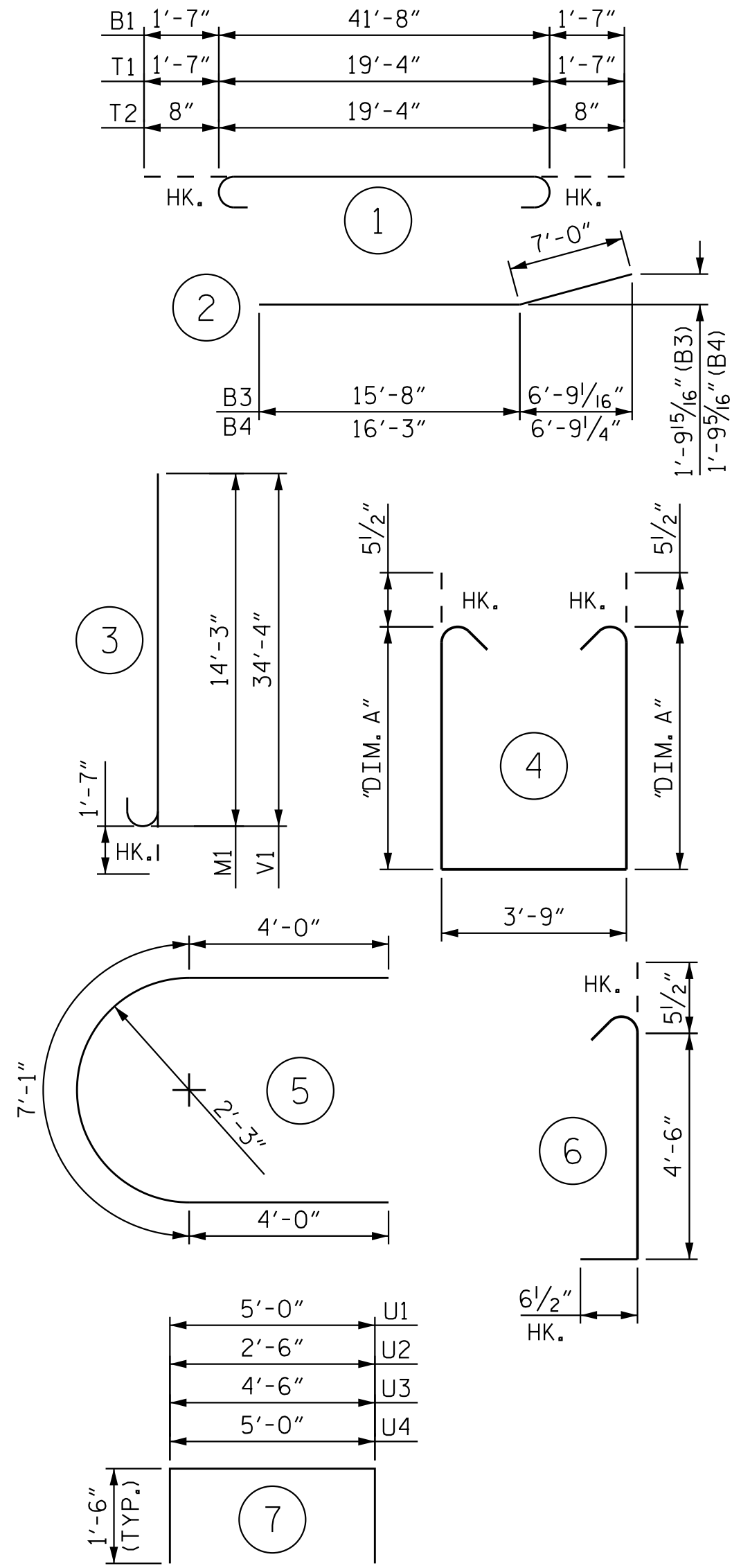
DRAWN BY : S. S. POOLE DATE : 08/15/18
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DESIGN
ENGINEER
OF RECORD: S. S. POOLE DATE : 04/22/25

BILL OF MATERIAL

BENT #4

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT
B1	16	#11	1	-	44'-10"	3,812	S38	4	#5	4	7'-10"	20'-4"	85
B2	16	#11	STR	-	41'-8"	3,542	S39	4	#5	4	7'-11"	20'-6"	86
B3	8	#9	2	-	22'-8"	617	S40	4	#5	4	8'-0"	20'-8"	87
B4	8	#9	2	-	23'-3"	633	S41	4	#5	4	8'-1"	20'-10"	87
B5	10	#8	STR	-	41'-8"	1,113	S42	4	#5	4	8'-2 1/2"	21'-1"	88
B6	2	#8	STR	-	39'-7"	212	S43	4	#5	4	8'-3 1/2"	21'-3"	89
B7	2	#8	STR	-	33'-8"	180	S44	4	#5	4	8'-4 1/2"	21'-5"	90
B8	2	#8	STR	-	27'-9"	149	S45	4	#5	4	8'-5 1/2"	21'-7"	91
B9	2	#8	STR	-	21'-10"	117	S46	4	#5	4	8'-6 1/2"	21'-9"	91
B10	2	#8	STR	-	15'-11"	85	S47	26	#5	4	8'-7 1/2"	21'-11"	595
B11	12	#4	STR	-	5'-0"	41	S48	64	#5	5	-	15'-1"	1,008
							S49	128	#5	6	-	5'-6"	735
M1	44	#11	3	-	15'-10"	3,702							
S1	4	#5	4	4'-6 1/2"	13'-9"	58	T1	68	#11	1	-	22'-6"	8,129
S2	4	#5	4	4'-7 1/2"	13'-11"	59	T2	68	#6	1	-	20'-8"	2,111
S3	4	#5	4	4'-8 1/2"	14'-1"	59	T3	16	#6	STR	-	19'-4"	465
S4	4	#5	4	4'-9 1/2"	14'-3"	60	U1	30	#4	7	-	8'-0"	161
S5	4	#5	4	4'-10 1/2"	14'-5"	61	U2	50	#4	7	-	5'-6"	184
S6	4	#5	4	5'-0"	14'-8"	62	U3	14	#4	7	-	7'-6"	71
S7	4	#5	4	5'-1"	14'-10"	62	U4	10	#4	7	-	8'-0"	54
S8	4	#5	4	5'-2"	15'-0"	63							
S9	4	#5	4	5'-3"	15'-2"	64	V1	44	#11	3	-	35'-11"	8,397
S10	4	#5	4	5'-4"	15'-4"	64	TOTAL REINFORCING STEEL (LBS.)						39,543
S11	4	#5	4	5'-5"	15'-6"	65	BENT #4 TOTAL QUANTITIES						
S12	4	#5	4	5'-6"	15'-8"	66	CLASS AA CONCRETE						
S13	4	#5	4	5'-7"	15'-10"	67							
S14	4	#5	4	5'-8 1/2"	16'-1"	68	POUR 1 (FOOTING)			C.Y.	88.0		
S15	4	#5	4	5'-9 1/2"	16'-3"	68	POUR 2 (COLUMN)			C.Y.	51.8		
S16	4	#5	4	5'-10 1/2"	16'-5"	69	POUR 3 (CAP)			C.Y.	66.1		
S17	4	#5	4	5'-11 1/2"	16'-7"	70	TOTAL C.Y.						205.9
S18	4	#5	4	6'-0 1/2"	16'-9"	70							
S19	4	#5	4	6'-1 1/2"	16'-11"	71							
S20	4	#5	4	6'-2 1/2"	17'-1"	72							
S21	4	#5	4	6'-4"	17'-4"	73							
S22	4	#5	4	6'-5"	17'-6"	74							
S23	4	#5	4	6'-6"	17'-8"	74							
S24	4	#5	4	6'-7"	17'-10"	75							
S25	4	#5	4	6'-8"	18'-0"	76							
S26	4	#5	4	6'-9"	18'-2"	76							
S27	4	#5	4	6'-10"	18'-4"	77							
S28	4	#5	4	6'-11 1/2"	18'-7"	78							
S29	4	#5	4	7'-0 1/2"	18'-9"	79							
S30	4	#5	4	7'-1 1/2"	18'-11"	79							
S31	4	#5	4	7'-2 1/2"	19'-1"	80							
S32	4	#5	4	7'-3 1/2"	19'-3"	81							
S33	4	#5	4	7'-4 1/2"	19'-5"	82							
S34	4	#5	4	7'-5 1/2"	19'-7"	82							
S35	4	#5	4	7'-7"	19'-10"	83							
S36	4	#5	4	7'-8"	20'-0"	84							
S37	4	#5	4	7'-9"	20'-2"	85							

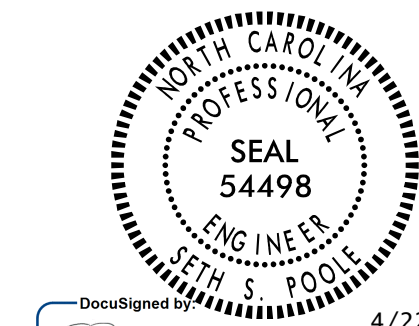
PROJECT NO. R-3300A

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SHEET 3 OF 3



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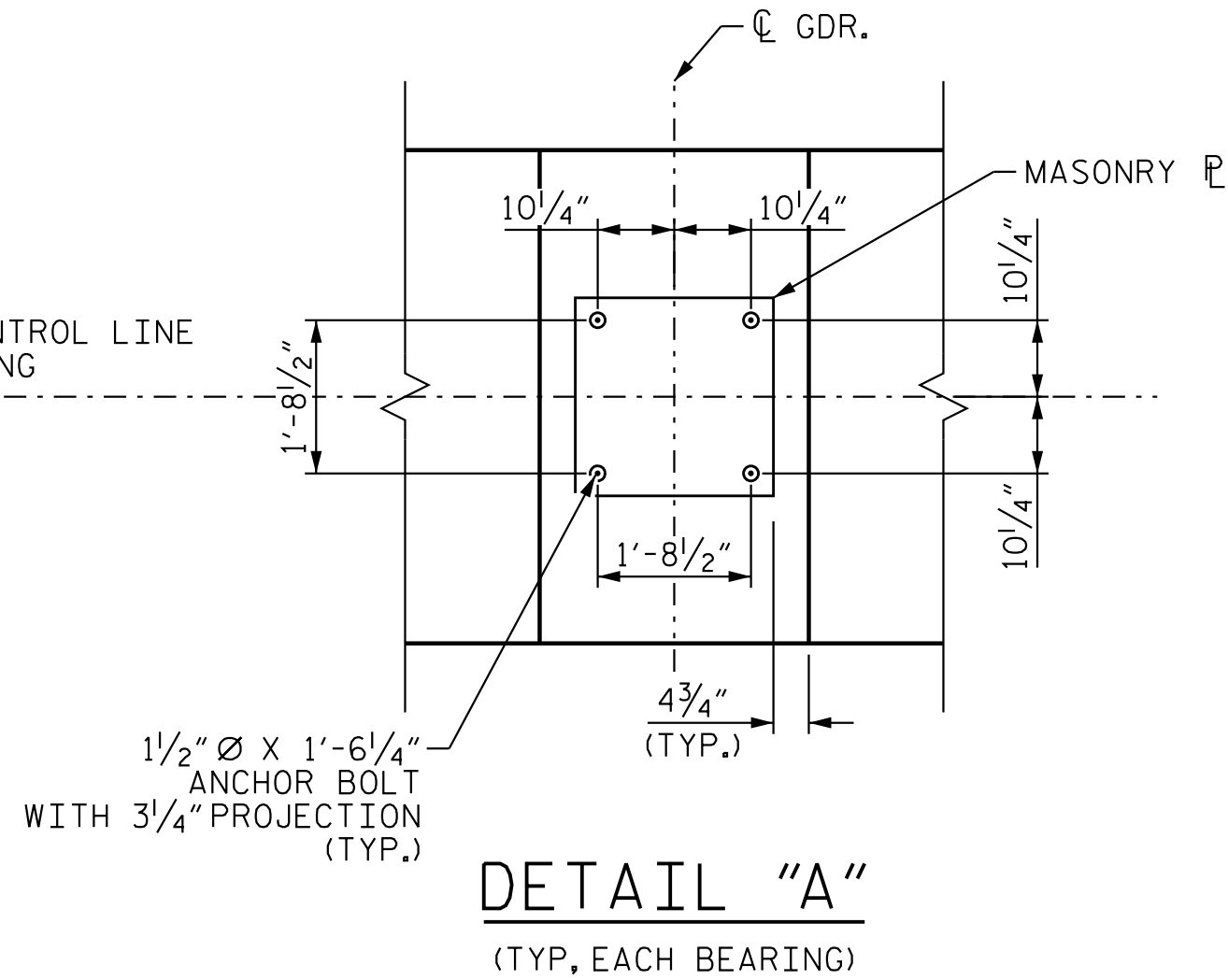
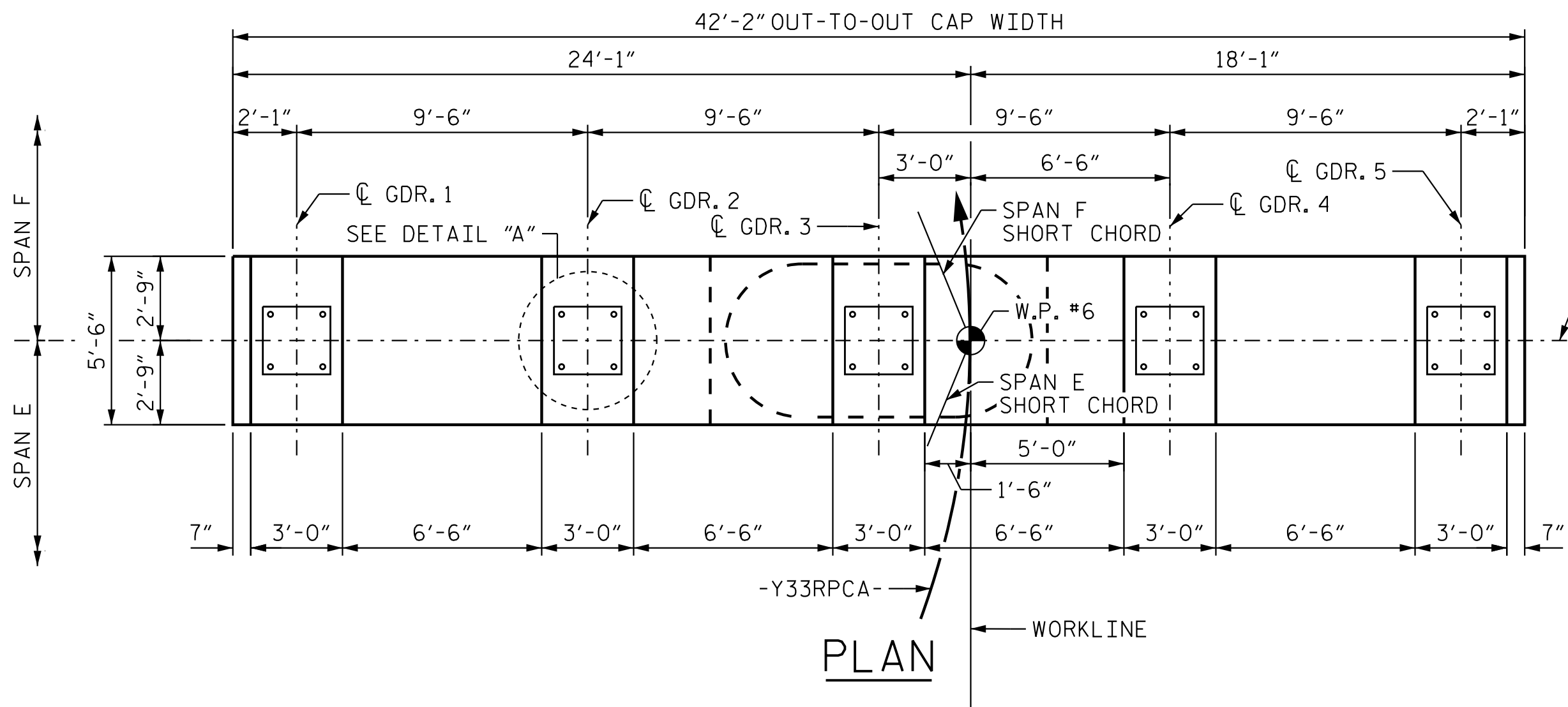
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 4
FOOTING PLAN AND
BILL OF MATERIAL

REVISIONS

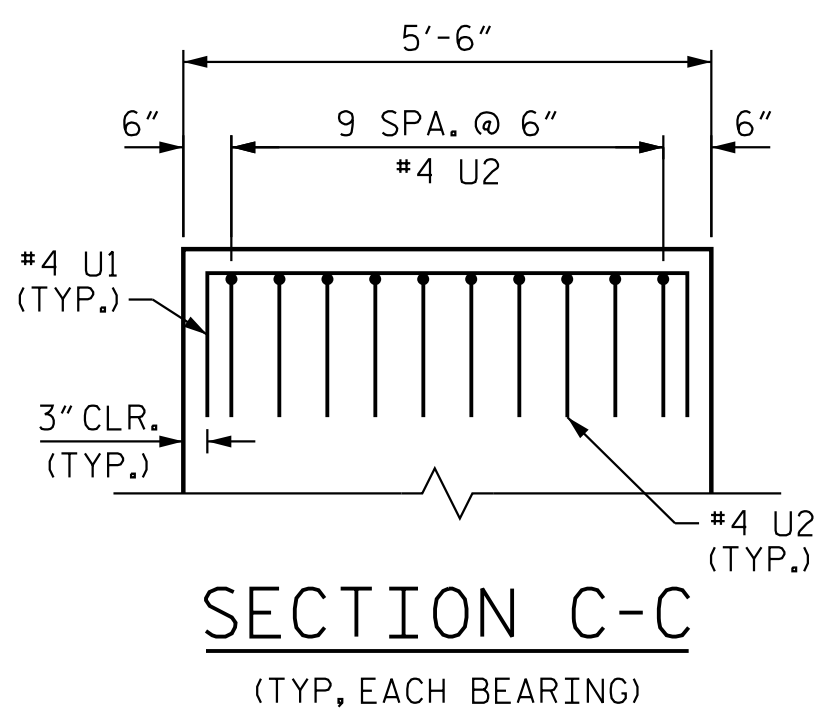
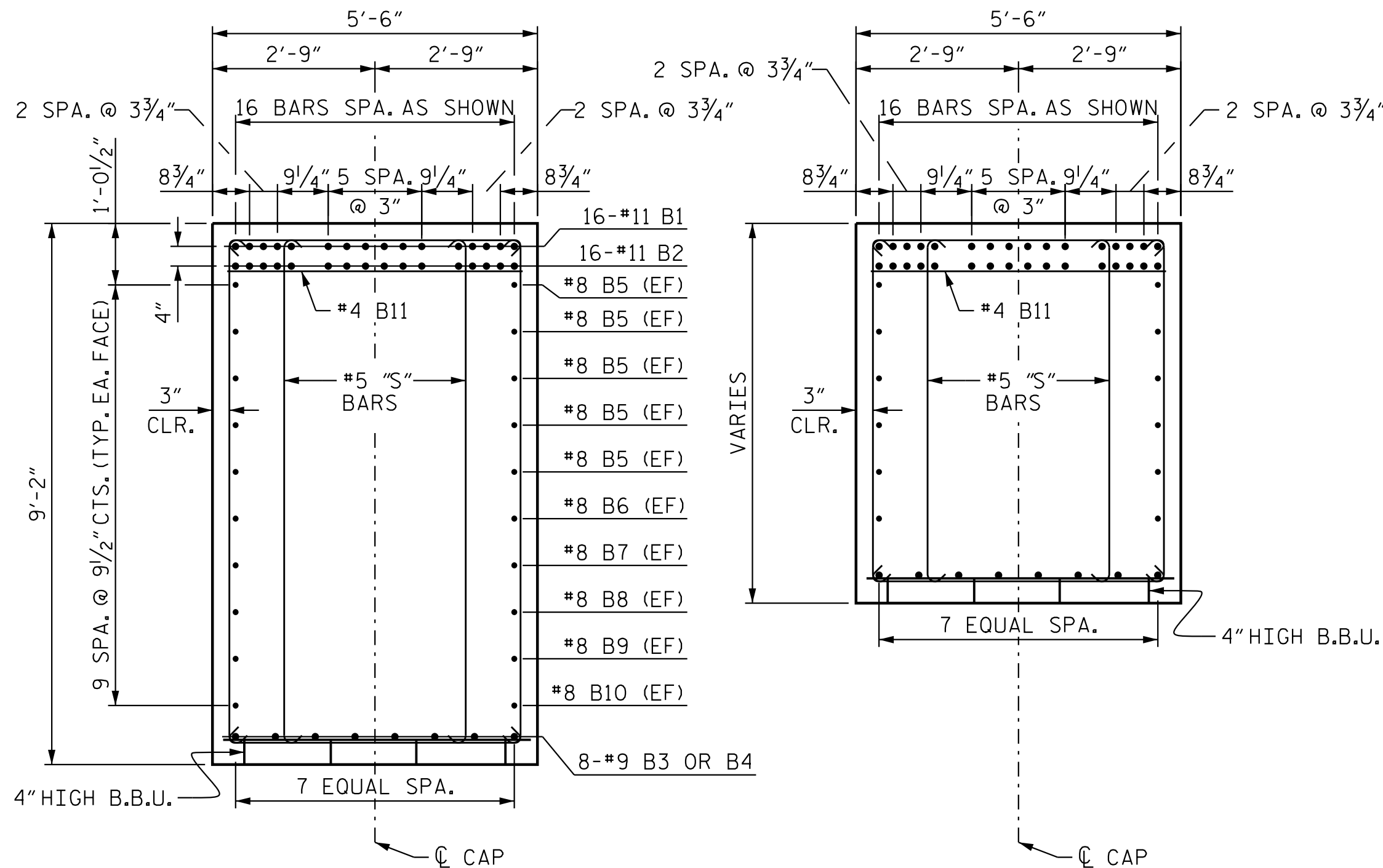
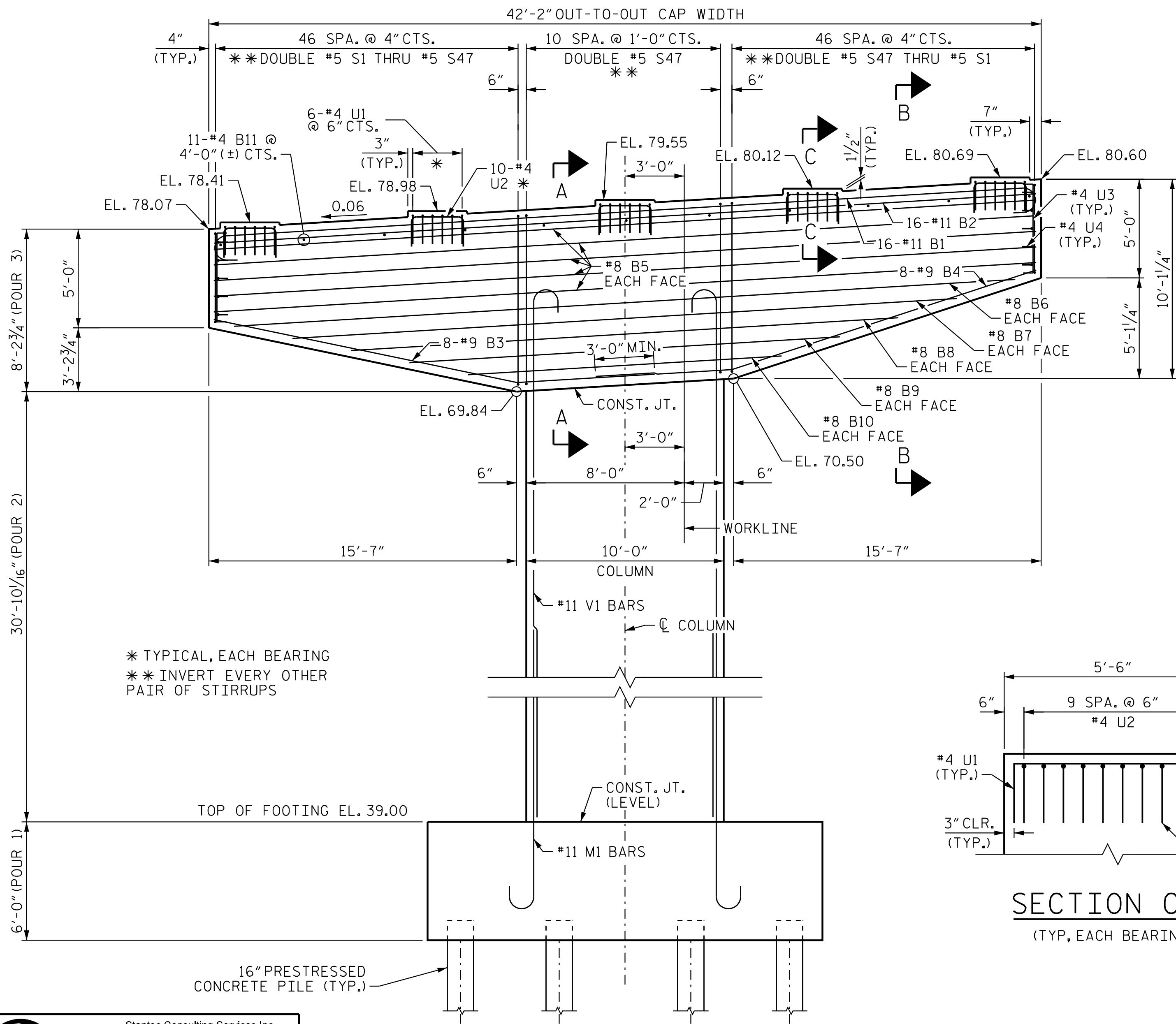
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S01-092
2			4			TOTAL SHEETS 113

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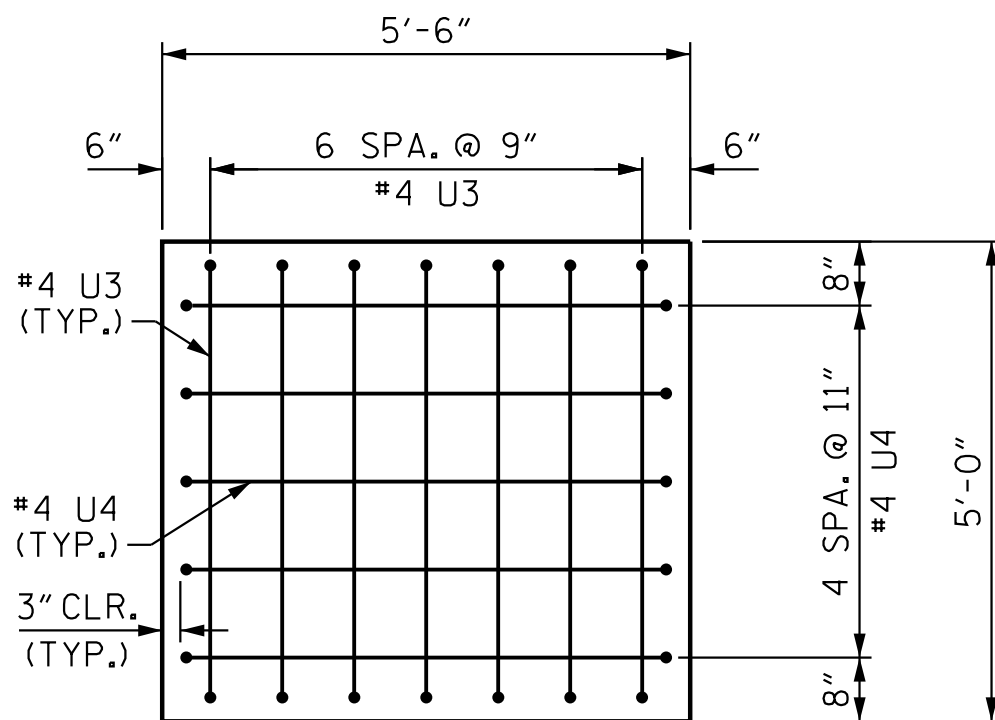
NOTES:

- 5FOR PILE CAP DETAILS SEE SHEET 3 OF 3, S01-095.
- FOR BENT 5 QUANTITIES SEE SHEET SHEET 3 OF 3, S01-095.
- FOR MASONRY PLATE DIMENSIONS, SEE SHEET S01-050.
- EF DENOTES EACH FACE
- STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINF. STEEL.



SECTION A-A
(COLUMN STEEL NOT SHOWN FOR CLARITY)

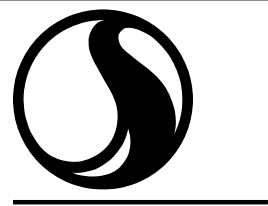
SECTION B-B



END VIEW
(TYP, EACH END)

ELEVATION

FOOTING REINFORCING NOT SHOWN FOR CLARITY.
SEE SHEET 3 OF 3 FOR DETAILS NOT SHOWN.



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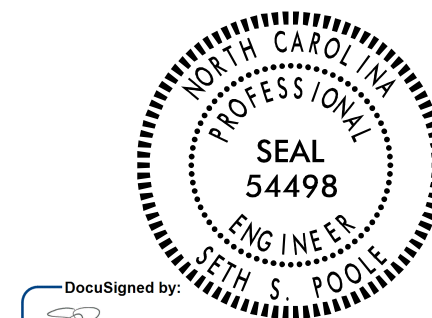
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PROJECT NO. R-3300A
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SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 5
SECTION AND DETAILS



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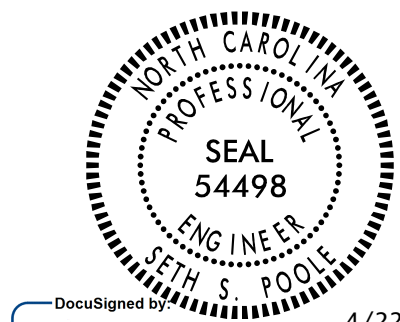


● = M1 BAR
○ = V1 BAR

SHEET 2 OF 3

SUBSTRUCTURE

BENT 5
COLUMN DETAILS



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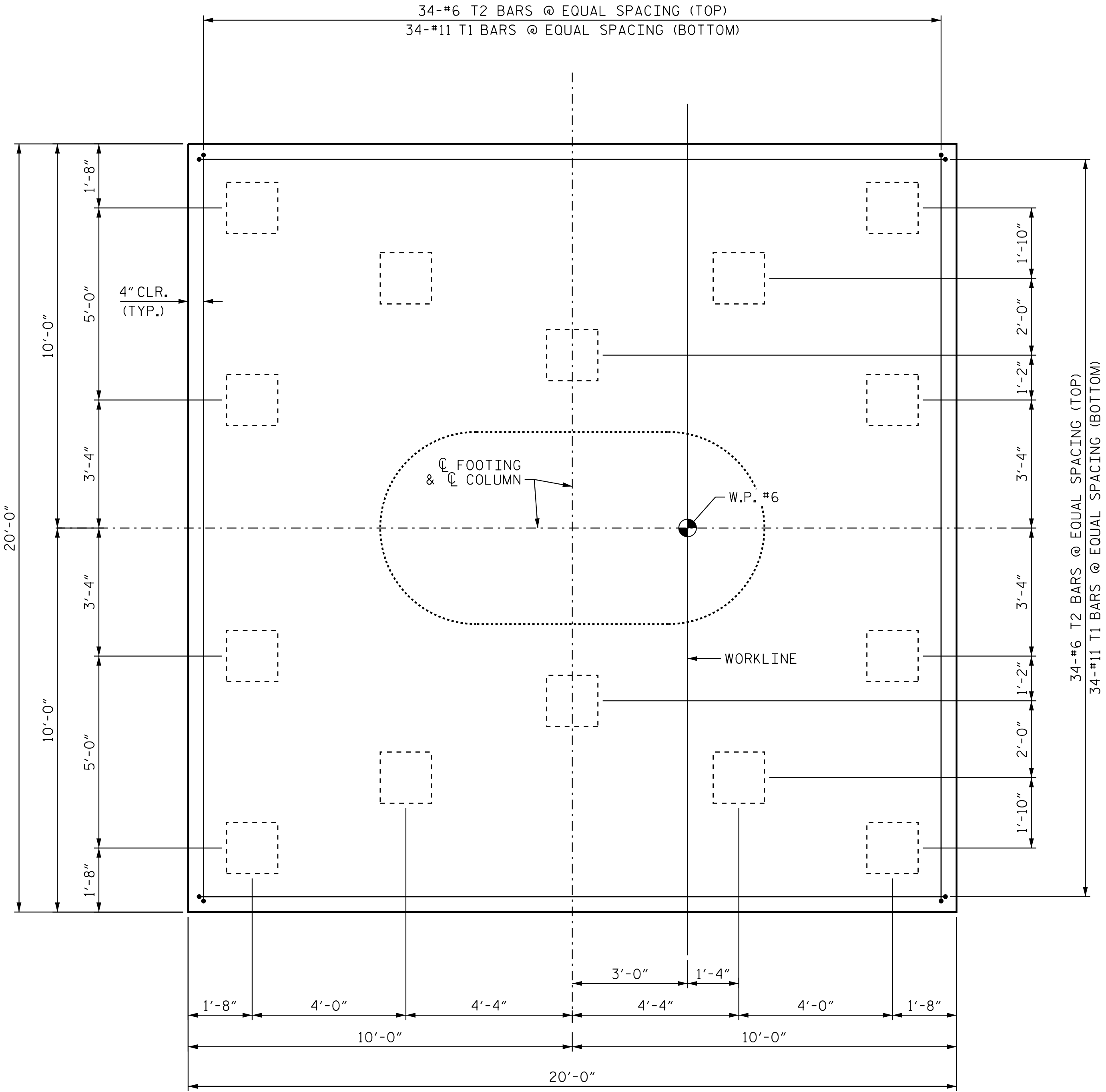
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			

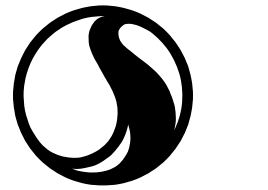
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FOOTING PLAN

(DIMENSIONS ARE TYPICAL EACH FACE)



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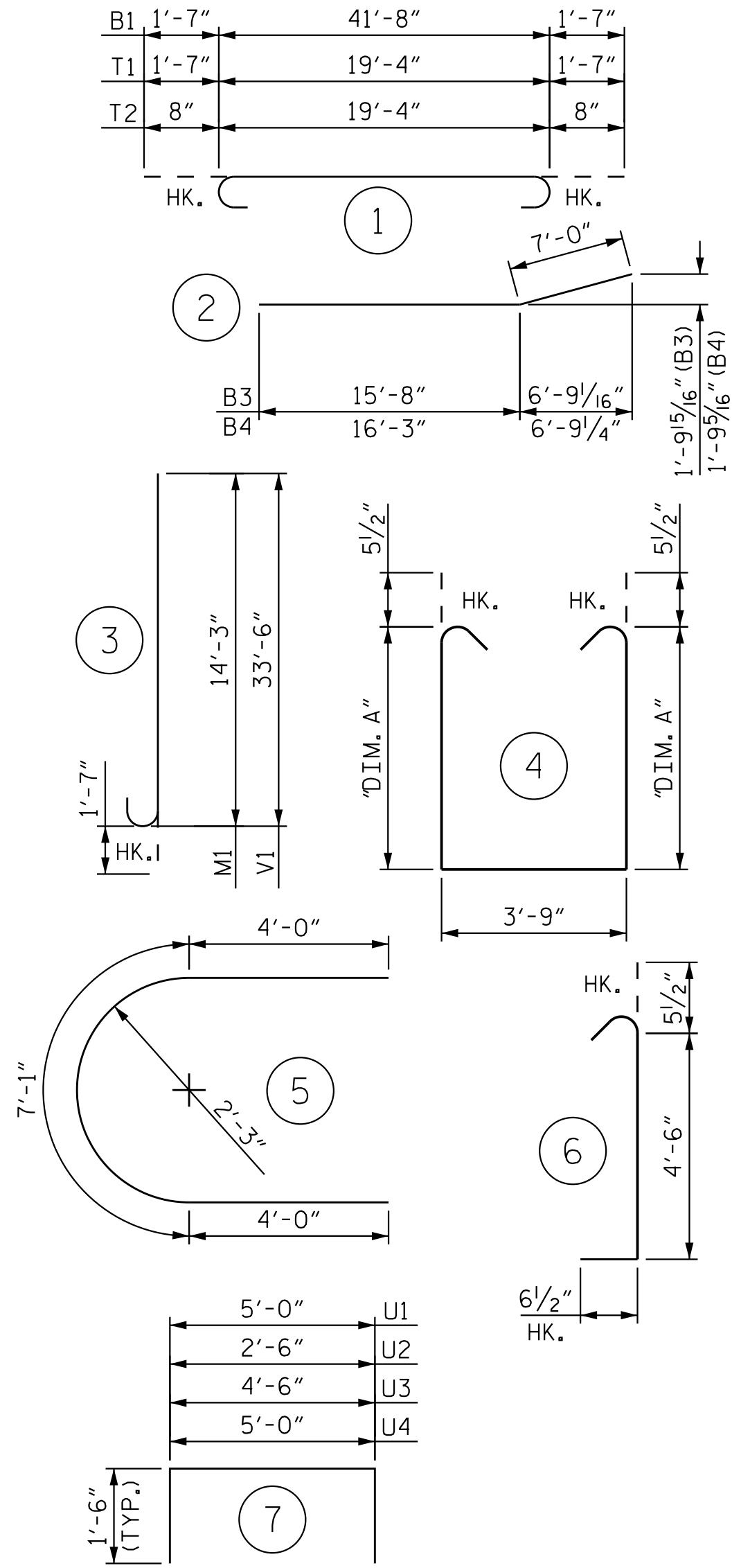
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ENGINEER
OF RECORD: S. S. POOLE DATE : 04/22/25

BILL OF MATERIAL

BENT #5

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT
B1	16	#11	1	-	44'-10"	3,812	S38	4	#5	4	7'-10"	20'-4"	85
B2	16	#11	STR	-	41'-8"	3,542	S39	4	#5	4	7'-11"	20'-6"	86
B3	8	#9	2	-	22'-8"	617	S40	4	#5	4	8'-0"	20'-8"	87
B4	8	#9	2	-	23'-3"	633	S41	4	#5	4	8'-1"	20'-10"	87
B5	10	#8	STR	-	41'-8"	1,113	S42	4	#5	4	8'-2 1/2"	21'-1"	88
B6	2	#8	STR	-	39'-7"	212	S43	4	#5	4	8'-3 1/2"	21'-3"	89
B7	2	#8	STR	-	33'-8"	180	S44	4	#5	4	8'-4 1/2"	21'-5"	90
B8	2	#8	STR	-	27'-9"	149	S45	4	#5	4	8'-5 1/2"	21'-7"	91
B9	2	#8	STR	-	21'-10"	117	S46	4	#5	4	8'-6 1/2"	21'-9"	91
B10	2	#8	STR	-	15'-11"	85	S47	26	#5	4	8'-7 1/2"	21'-11"	595
B11	12	#4	STR	-	5'-0"	41	S48	64	#5	5	-	15'-1"	1,007
							S49	128	#5	6	-	5'-6"	735
M1	44	#11	3	-	15'-10"	3,702							
S1	4	#5	4	4'-6 1/2"	13'-9"	58	T1	68	#11	1	-	22'-6"	8,129
S2	4	#5	4	4'-7 1/2"	13'-11"	59	T2	68	#6	1	-	20'-8"	2,111
S3	4	#5	4	4'-8 1/2"	14'-1"	59	T3	16	#6	STR	-	19'-4"	465
S4	4	#5	4	4'-9 1/2"	14'-3"	60	U1	30	#4	7	-	8'-0"	161
S5	4	#5	4	4'-10 1/2"	14'-5"	61	U2	50	#4	7	-	5'-6"	184
S6	4	#5	4	5'-0"	14'-8"	62	U3	14	#4	7	-	7'-6"	71
S7	4	#5	4	5'-1"	14'-10"	62	U4	10	#4	7	-	8'-0"	54
S8	4	#5	4	5'-2"	15'-0"	63							
S9	4	#5	4	5'-3"	15'-2"	64	V1	44	#11	3	-	35'-1"	8,202
S10	4	#5	4	5'-4"	15'-4"	64	TOTAL REINFORCING STEEL (LBS.)						39,347
S11	4	#5	4	5'-5"	15'-6"	65	BENT #5 TOTAL QUANTITIES						
S12	4	#5	4	5'-6"	15'-8"	66	CLASS AA CONCRETE						
S13	4	#5	4	5'-7"	15'-10"	67							
S14	4	#5	4	5'-8 1/2"	16'-1"	68							
S15	4	#5	4	5'-9 1/2"	16'-3"	68	POUR 1 (FOOTING)			C.Y.	88.0		
S16	4	#5	4	5'-10 1/2"	16'-5"	69	POUR 2 (COLUMN)			C.Y.	51.6		
S17	4	#5	4	5'-11 1/2"	16'-7"	70	POUR 3 (CAP)			C.Y.	66.1		
S18	4	#5	4	6'-0 1/2"	16'-9"	70	TOTAL C.Y.						205.7
S19	4	#5	4	6'-1 1/2"	16'-11"	71							
S20	4	#5	4	6'-2 1/2"	17'-1"	72							
S21	4	#5	4	6'-4"	17'-4"	73							
S22	4	#5	4	6'-5"	17'-6"	74							
S23	4	#5	4	6'-6"	17'-8"	74							
S24	4	#5	4	6'-7"	17'-10"	75							
S25	4	#5	4	6'-8"	18'-0"	76							
S26	4	#5	4	6'-9"	18'-2"	76							
S27	4	#5	4	6'-10"	18'-4"	77							
S28	4	#5	4	6'-11 1/2"	18'-7"	78							
S29	4	#5	4	7'-0 1/2"	18'-9"	79							
S30	4	#5	4	7'-1 1/2"	18'-11"	79							
S31	4	#5	4	7'-2 1/2"	19'-1"	80							
S32	4	#5	4	7'-3 1/2"	19'-3"	81							
S33	4	#5	4	7'-4 1/2"	19'-5"	82							
S34	4	#5	4	7'-5 1/2"	19'-7"	82							
S35	4	#5	4	7'-7"	19'-10"	83							
S36	4	#5	4	7'-8"	20'-0"	84							
S37	4	#5	4	7'-9"	20'-2"	85							

PROJECT NO. R-3300A

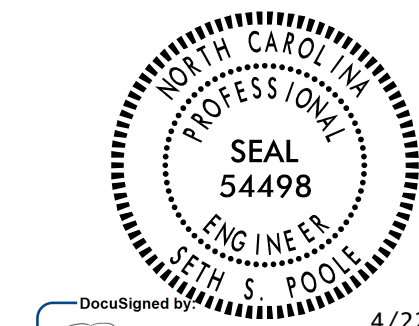
NEW HANOVER COUNTY

STATION: 219+49.69 -L1-
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SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 5
FOOTING PLAN AND
BILL OF MATERIAL

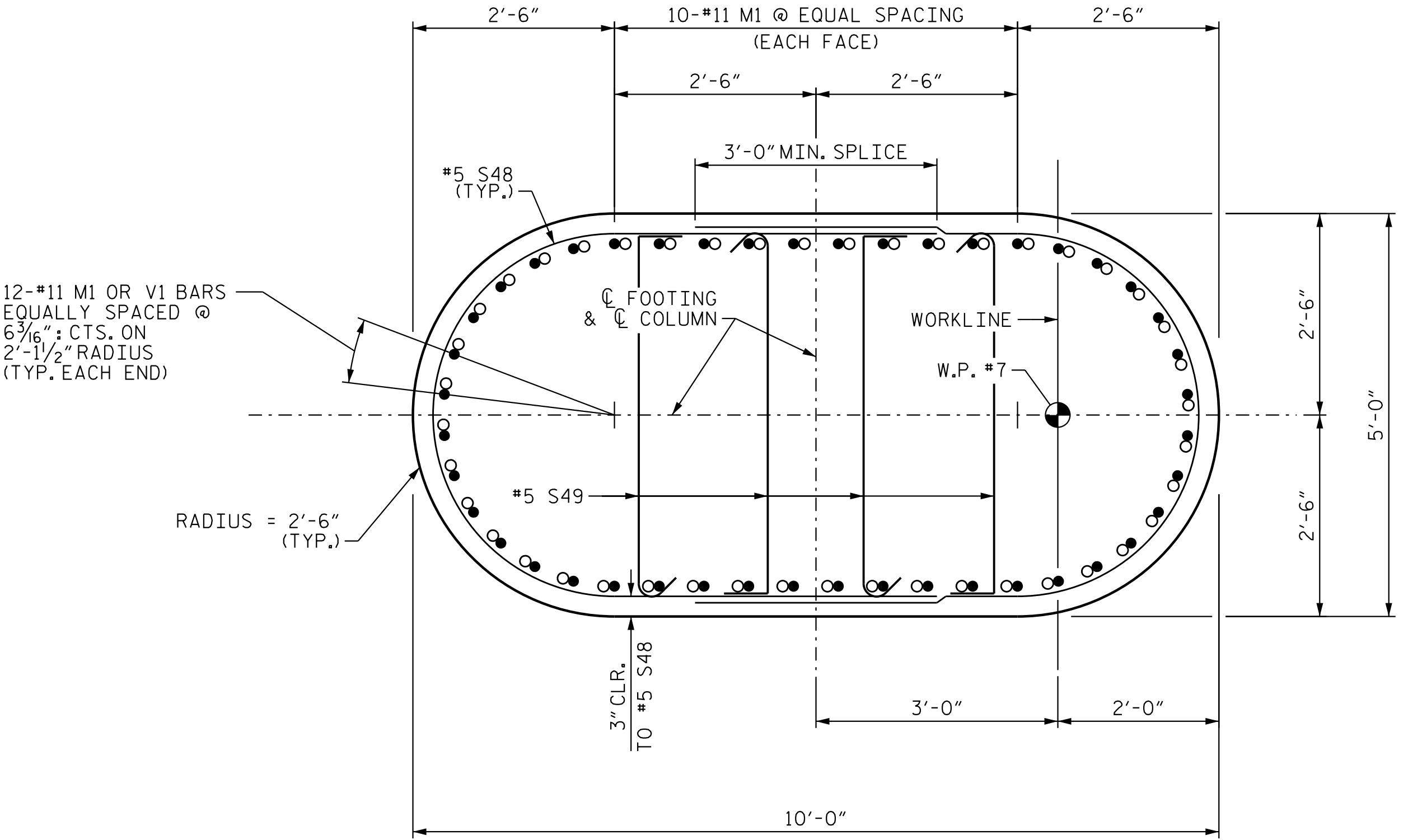
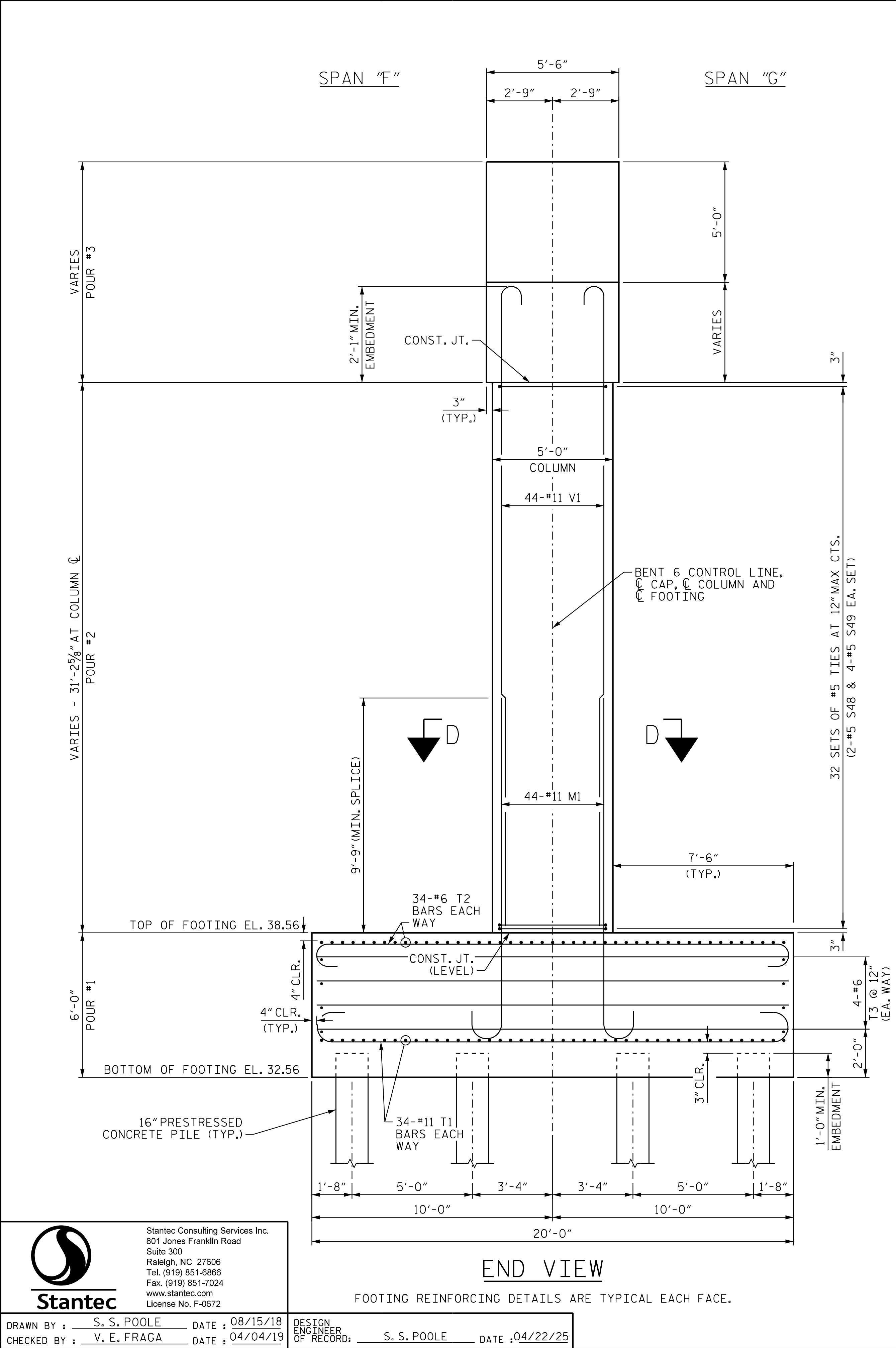


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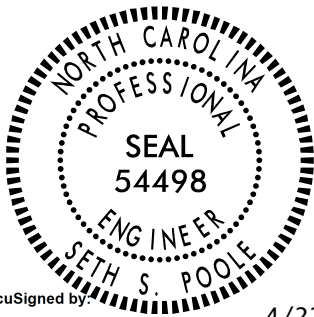
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SECTION D-D

- = M1 BAR
- = V1 BAR

PROJECT NO. R-3300A
NEW HANOVER COUNTY
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SHEET 2 OF 3



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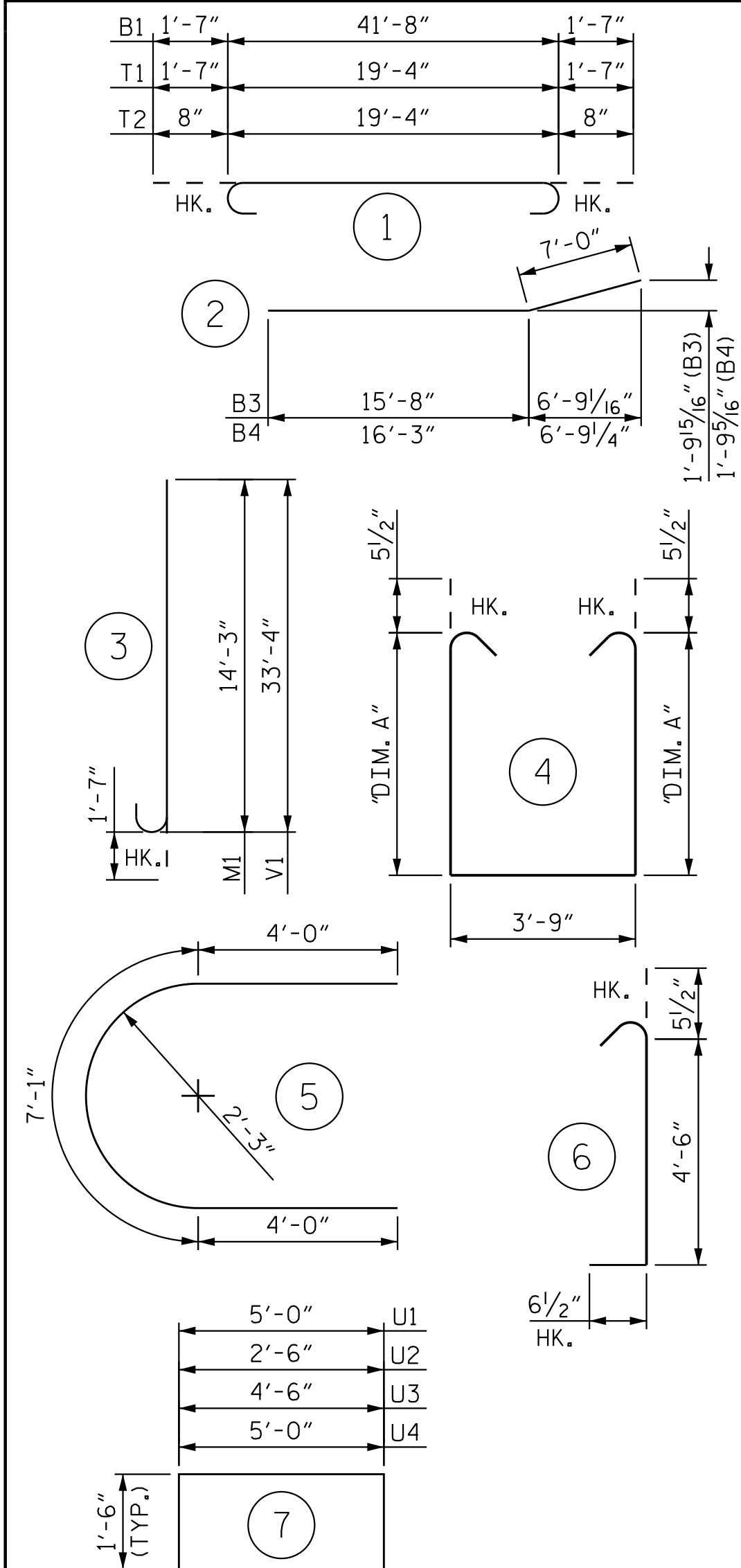
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CHECKED BY : V. E. FRAGA DATE : 04/04/19

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ENGINEER
OF RECORD: S. S. POOLE DATE : 04/22/25

FOOTING REINFORCING DETAILS ARE TYPICAL EACH FACE.

END VIEW



(DIMENSIONS ARE TYPICAL EACH FACE)



DESIGN
ENGINEER
OF RECORD: S. S. POOLE DATE: 04/22/25

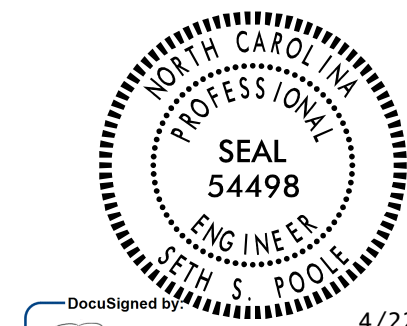
BENT #6

BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT
B1	10	#11	1	-	44'-10"	2,382	S38	4	#5	4	7'-10"	20'-4"	85
B2	10	#11	STR	-	41'-8"	2,214	S39	4	#5	4	7'-11"	20'-6"	86
B3	8	#9	2	-	22'-8"	617	S40	4	#5	4	8'-0"	20'-8"	87
B4	8	#9	2	-	23'-3"	633	S41	4	#5	4	8'-1"	20'-10"	87
B5	10	#8	STR	-	41'-8"	1,113	S42	4	#5	4	8'-2½"	21'-1"	88
B6	2	#8	STR	-	39'-7"	212	S43	4	#5	4	8'-3½"	21'-3"	89
B7	2	#8	STR	-	33'-8"	180	S44	4	#5	4	8'-4½"	21'-5"	90
B8	2	#8	STR	-	27'-9"	149	S45	4	#5	4	8'-5½"	21'-7"	91
B9	2	#8	STR	-	21'-10"	117	S46	4	#5	4	8'-6½"	21'-9"	91
B10	2	#8	STR	-	15'-11"	85	S47	26	#5	4	8'-7½"	21'-11"	595
B11	12	#4	STR	-	5'-0"	41	S48	64	#5	5	-	15'-1"	1,007
							S49	128	#5	6	-	5'-6"	735
M1	44	#11	3	-	15'-10"	3,702							
							T1	68	#11	1	-	22'-6"	8,129
S1	4	#5	4	4'-6½"	13'-9"	58	T2	68	#6	1	-	20'-8"	2,111
S2	4	#5	4	4'-7½"	13'-11"	59	T3	16	#6	STR	-	19'-4"	465
S3	4	#5	4	4'-8½"	14'-1"	59							
S4	4	#5	4	4'-9½"	14'-3"	60	U1	30	#4	7	-	8'-0"	161
S5	4	#5	4	4'-10½"	14'-5"	61	U2	50	#4	7	-	5'-6"	184
S6	4	#5	4	5'-0"	14'-8"	62	U3	14	#4	7	-	7'-6"	71
S7	4	#5	4	5'-1"	14'-10"	62	U4	10	#4	7	-	8'-0"	54
S8	4	#5	4	5'-2"	15'-0"	63							
S9	4	#5	4	5'-3"	15'-2"	64	V1	44	#11	3	-	34,-11"	8,163
S10	4	#5	4	5'-4"	15'-4"	64	TOTAL REINFORCING STEEL (LBS.)						36,550
S11	4	#5	4	5'-5"	15'-6"	65	BENT #6 TOTAL QUANTITIES						
S12	4	#5	4	5'-6"	15'-8"	66	CLASS AA CONCRETE						
S13	4	#5	4	5'-7"	15'-10"	67							
S14	4	#5	4	5'-8½"	16'-1"	68							
S15	4	#5	4	5'-9½"	16'-3"	68							
S16	4	#5	4	5'-10½"	16'-5"	69							
S17	4	#5	4	5'-11½"	16'-7"	70	POUR 1 (FOOTING)						C.Y. 88.0
S18	4	#5	4	6'-0½"	16'-9"	70	POUR 2 (COLUMN)						C.Y. 51.6
S19	4	#5	4	6'-1½"	16'-11"	71	POUR 3 (CAP)						C.Y. 66.1
S20	4	#5	4	6'-2½"	17'-1"	72	TOTAL C.Y.						205.7
S21	4	#5	4	6'-4"	17'-4"	73							
S22	4	#5	4	6'-5"	17'-6"	74							
S23	4	#5	4	6'-6"	17'-8"	74							
S24	4	#5	4	6'-7"	17'-10"	75							
S25	4	#5	4	6'-8"	18'-0"	76							
S26	4	#5	4	6'-9"	18'-2"	76							
S27	4	#5	4	6'-10"	18'-4"	77							
S28	4	#5	4	6'-11½"	18'-7"	78							
S29	4	#5	4	7'-0½"	18'-9"	79							
S30	4	#5	4	7'-1½"	18'-11"	79							
S31	4	#5	4	7'-2½"	19'-1"	80							
S32	4	#5	4	7'-3½"	19'-3"	81							
S33	4	#5	4	7'-4½"	19'-5"	82							
S34	4	#5	4	7'-5½"	19'-7"	82							
S35	4	#5	4	7'-7"	19'-10"	83							
S36	4	#5	4	7'-8"	20'-0"	84							
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SHEET 3 OF 3

SUBSTRUCTURE
BENT 6
FOOTING PLAN AND
BILL OF MATERIAL

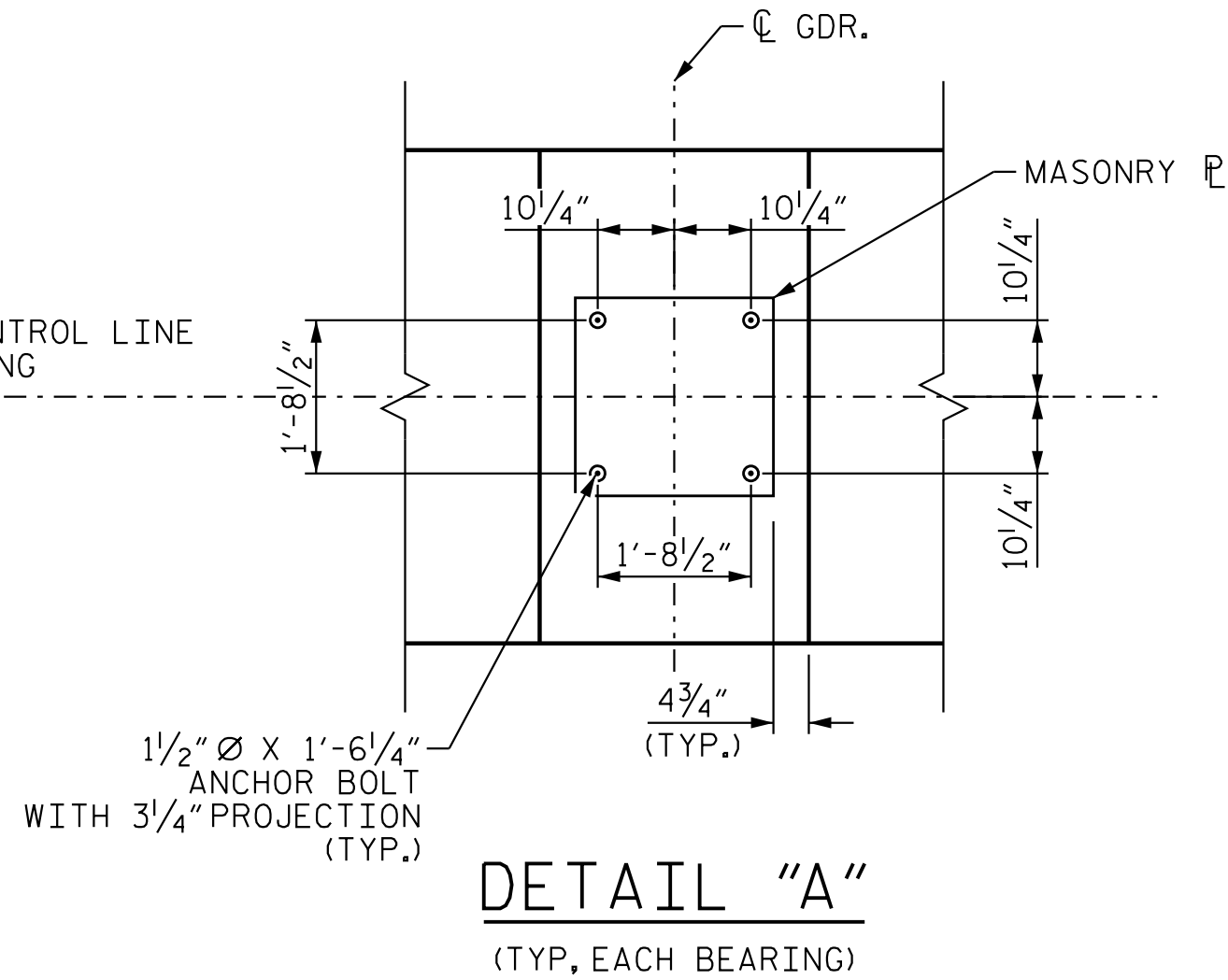
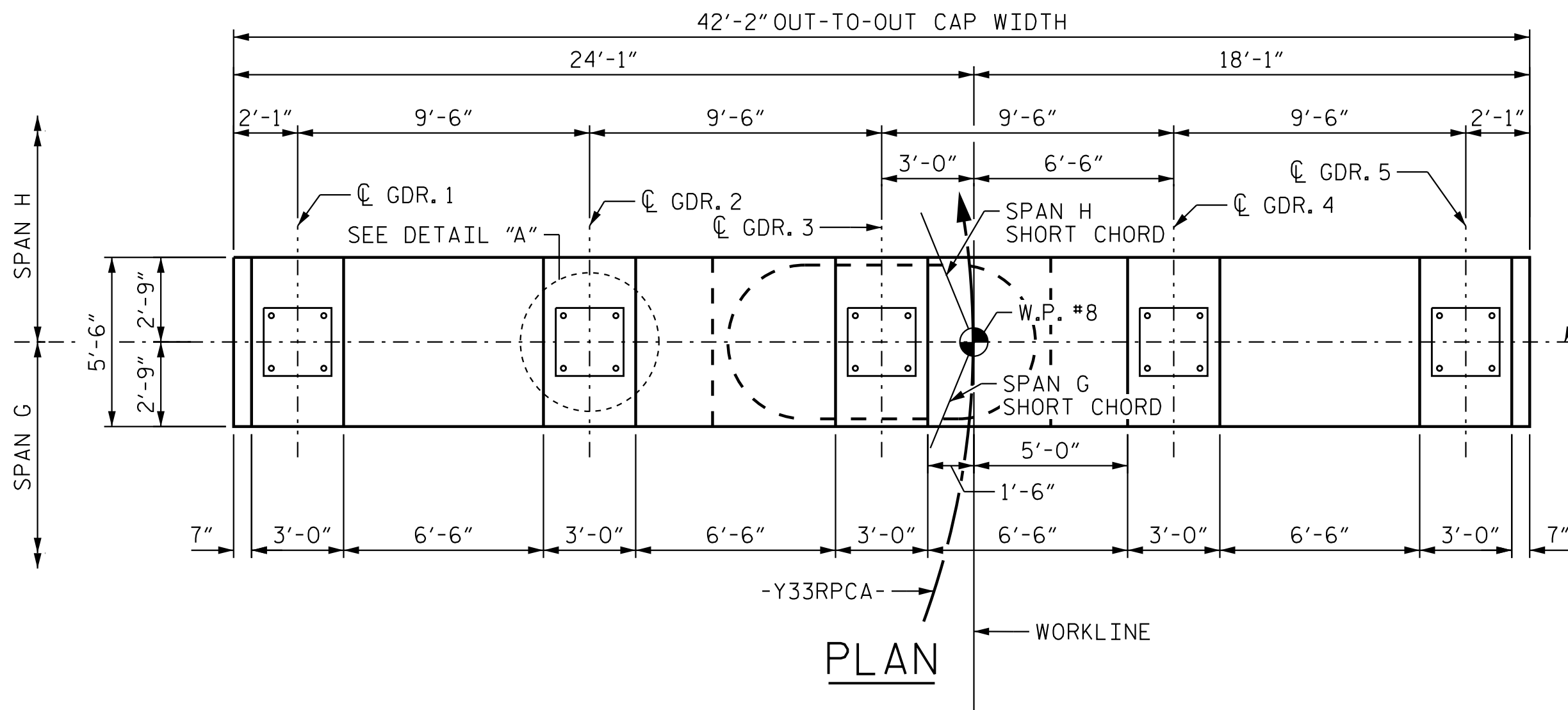
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NOTES:

FOR PILE CAP DETAILS SEE SHEET 3 OF 3, S01-101.

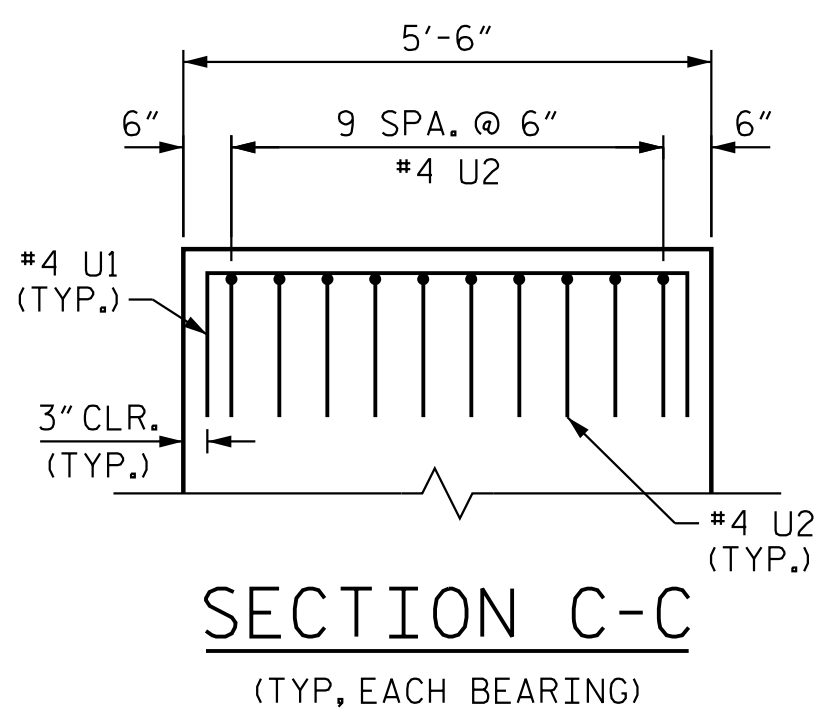
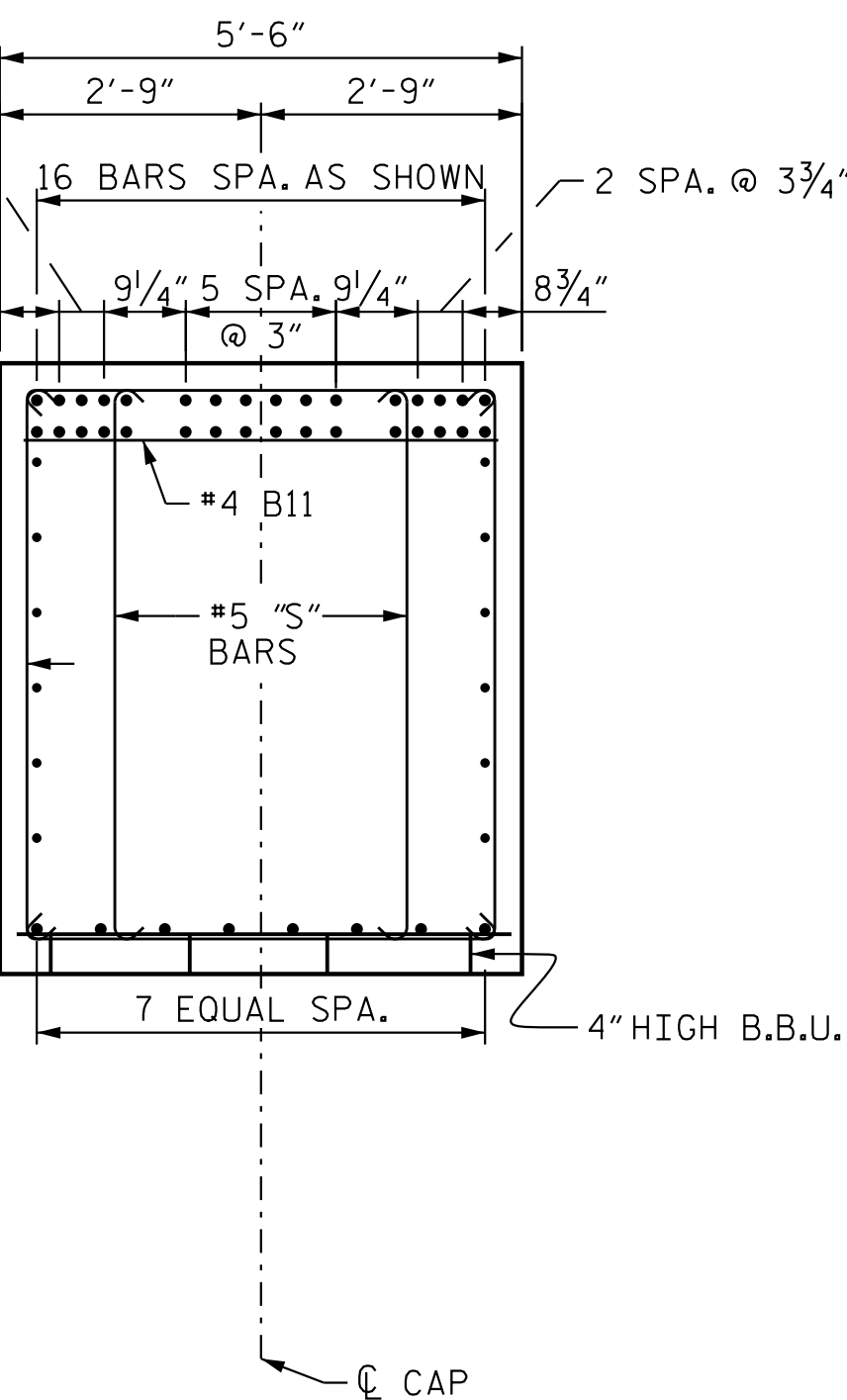
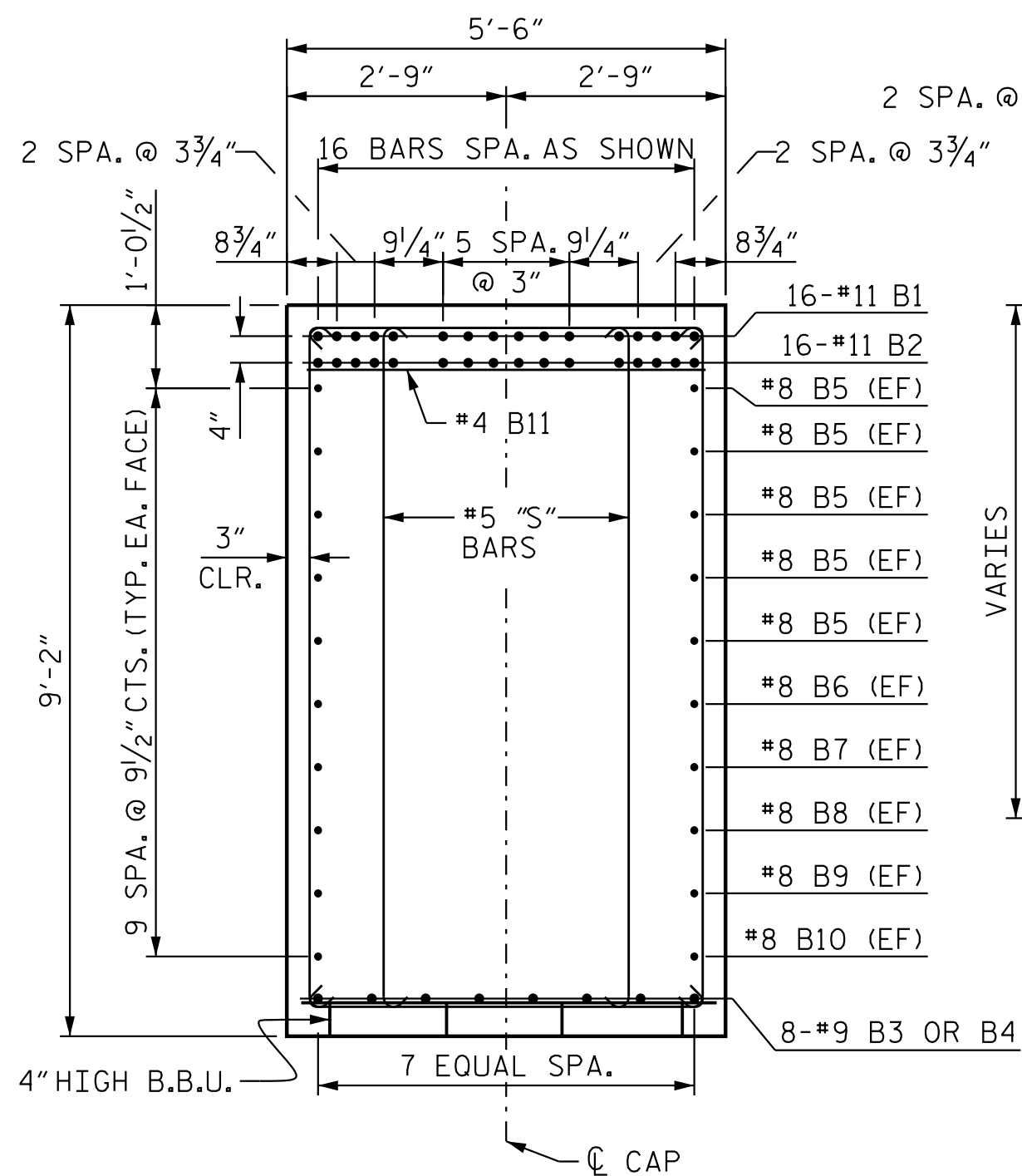
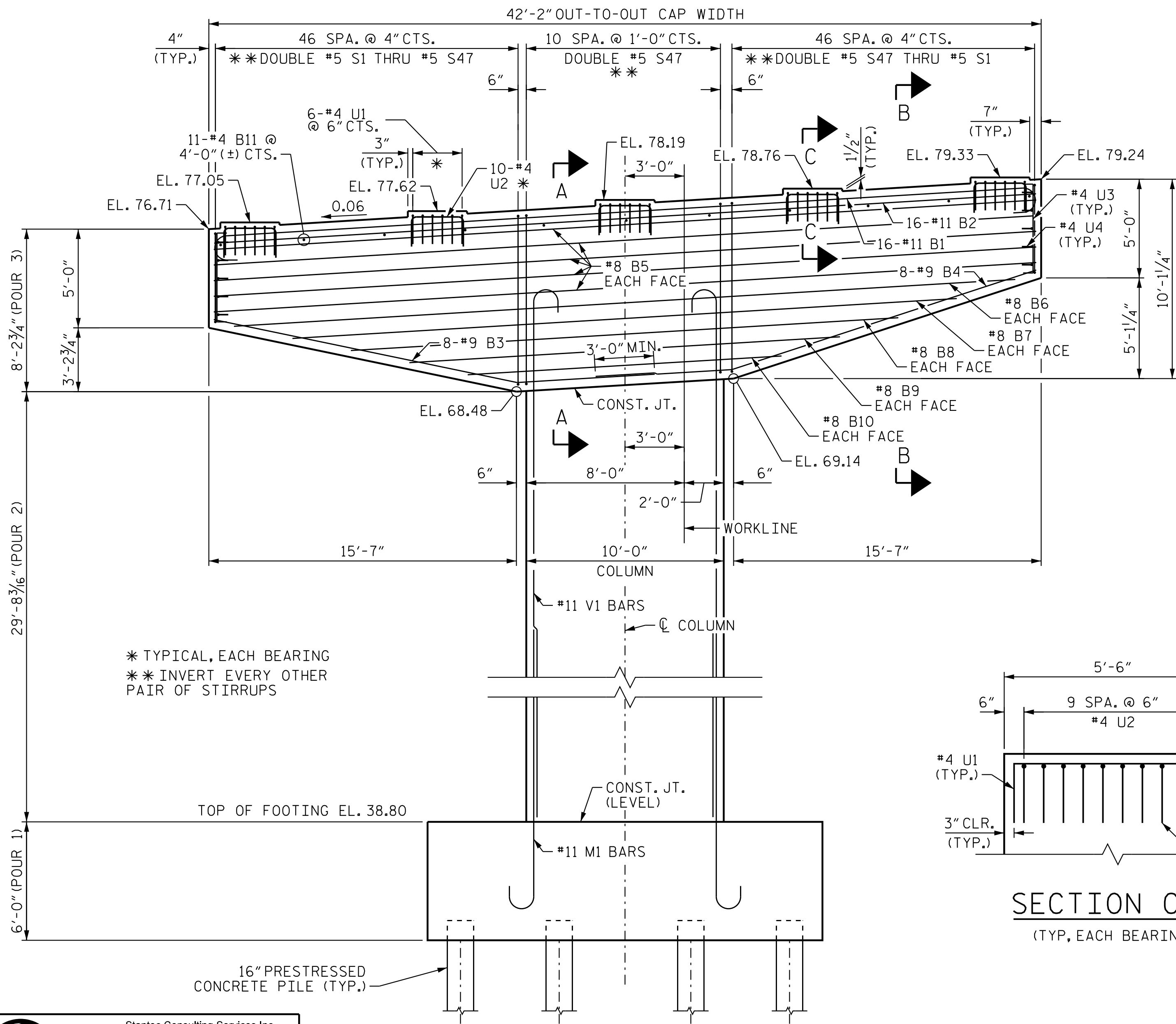
FOR BENT 7 QUANTITIES SEE SHEET SHEET 3 OF 3, S01-101.

FOR MASONRY PLATE DIMENSIONS, SEE SHEET S01-050.

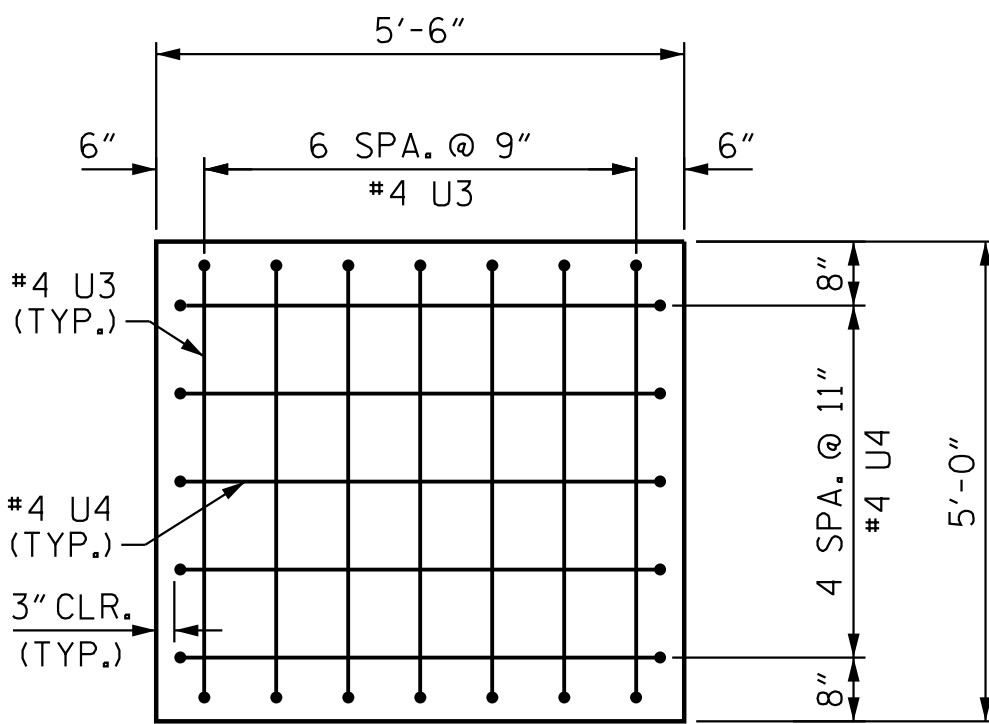
EF DENOTES EACH FACE

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

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINF. STEEL.



SECTION A-A (COLUMN STEEL NOT SHOWN FOR CLARITY)

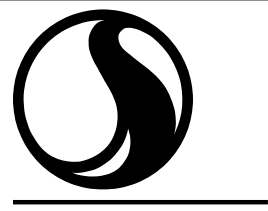


END VIEW (TYP, EACH END)

SECTION B-B

ELEVATION

FOOTING REINFORCING NOT SHOWN FOR CLARITY.
SEE SHEET 3 OF 3 FOR DETAILS NOT SHOWN.



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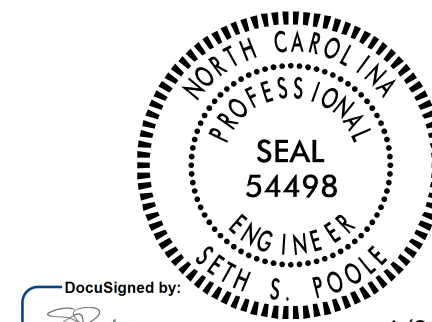
PROJECT NO. R-3300A
NEW HANOVER COUNTY
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SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

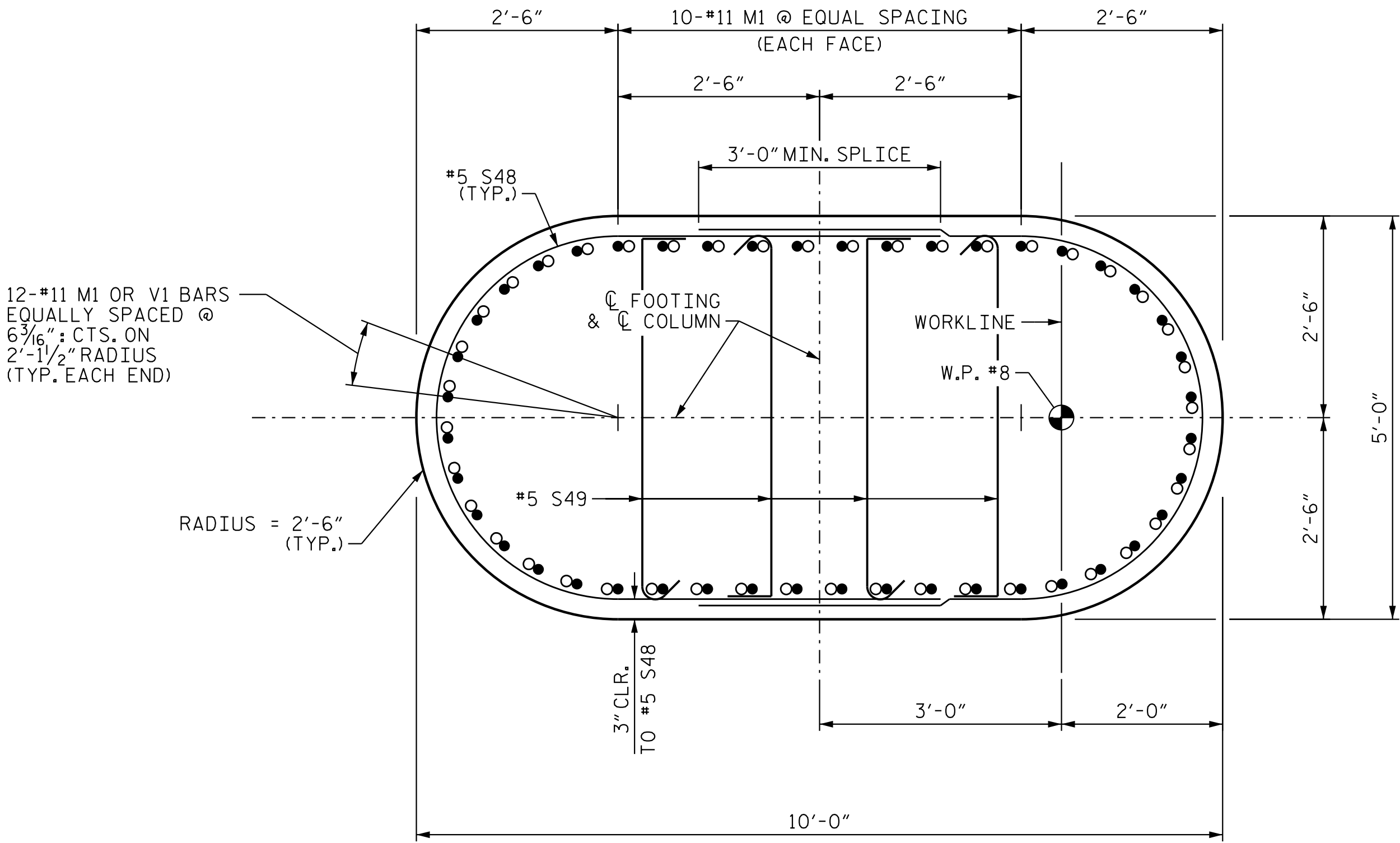
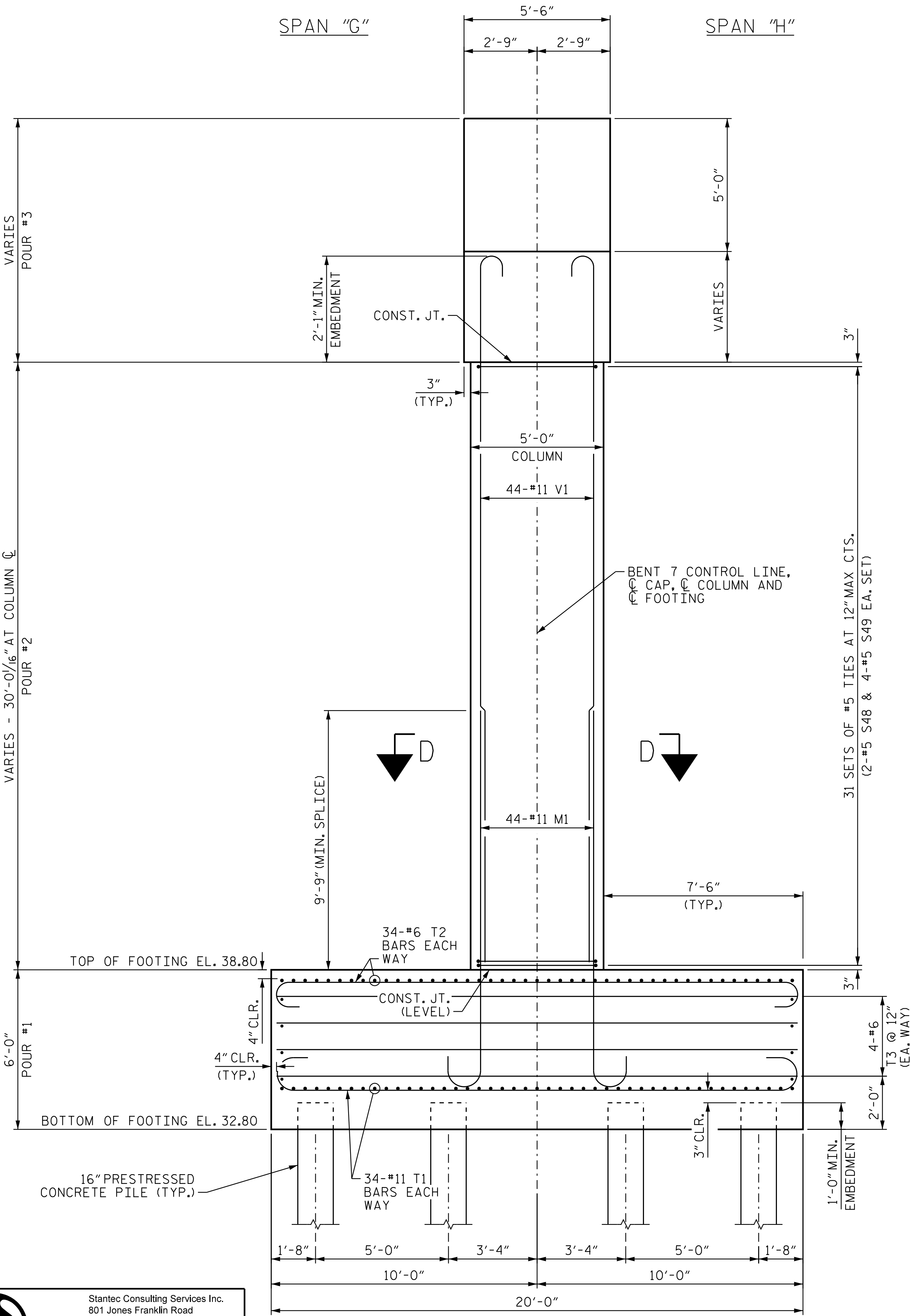
BENT 7
SECTION AND DETAILS



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● = M1 BAR
○ = V1 BAR

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SHEET 2 OF 3

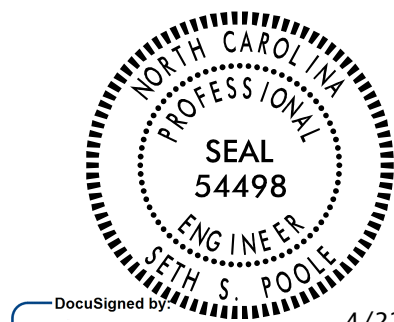


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FOOTING REINFORCING DETAILS ARE TYPICAL EACH FACE.

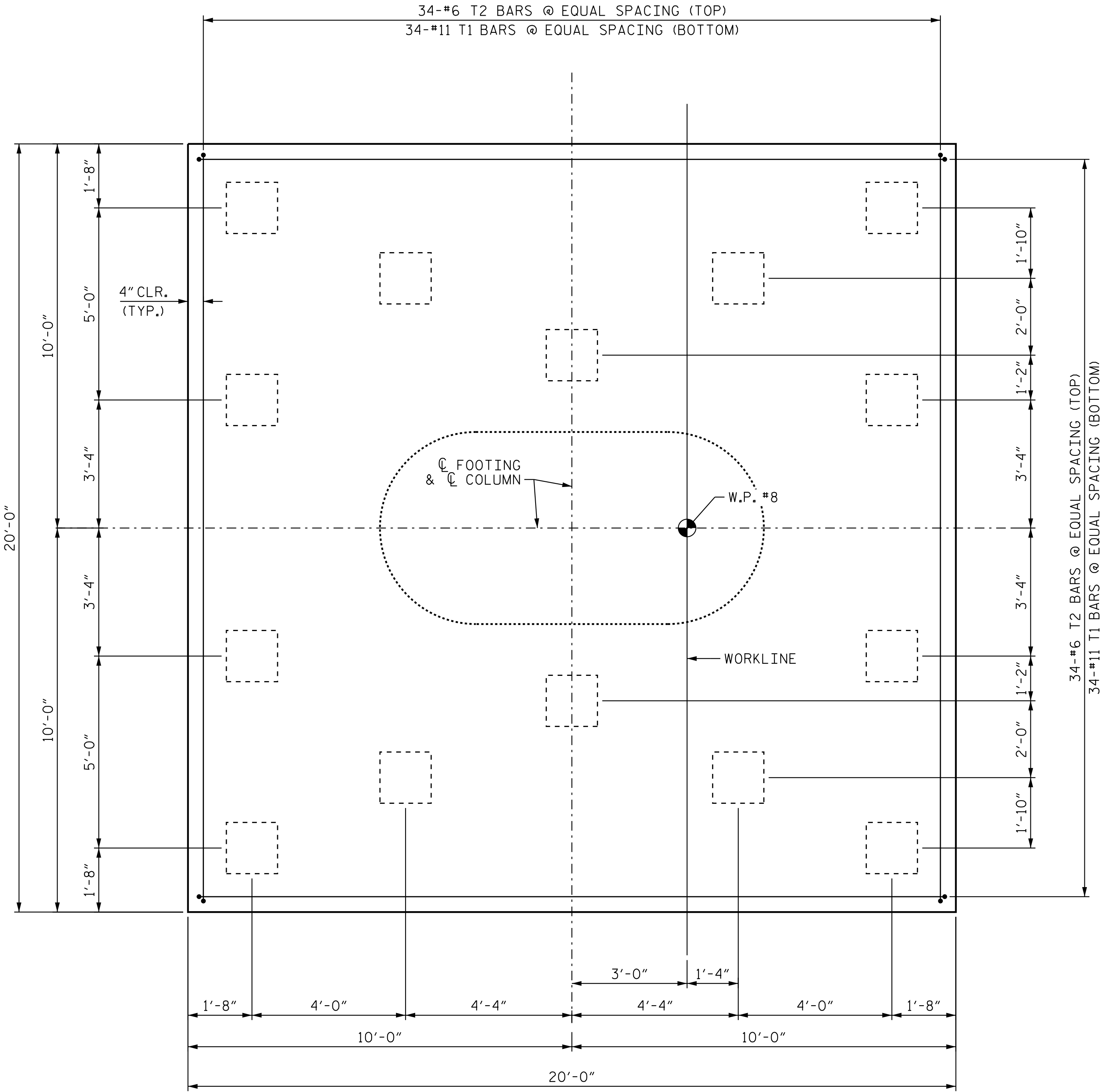


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SUBSTRUCTURE
BENT 7
COLUMN DETAILS

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FOOTING PLAN

(DIMENSIONS ARE TYPICAL EACH FACE)



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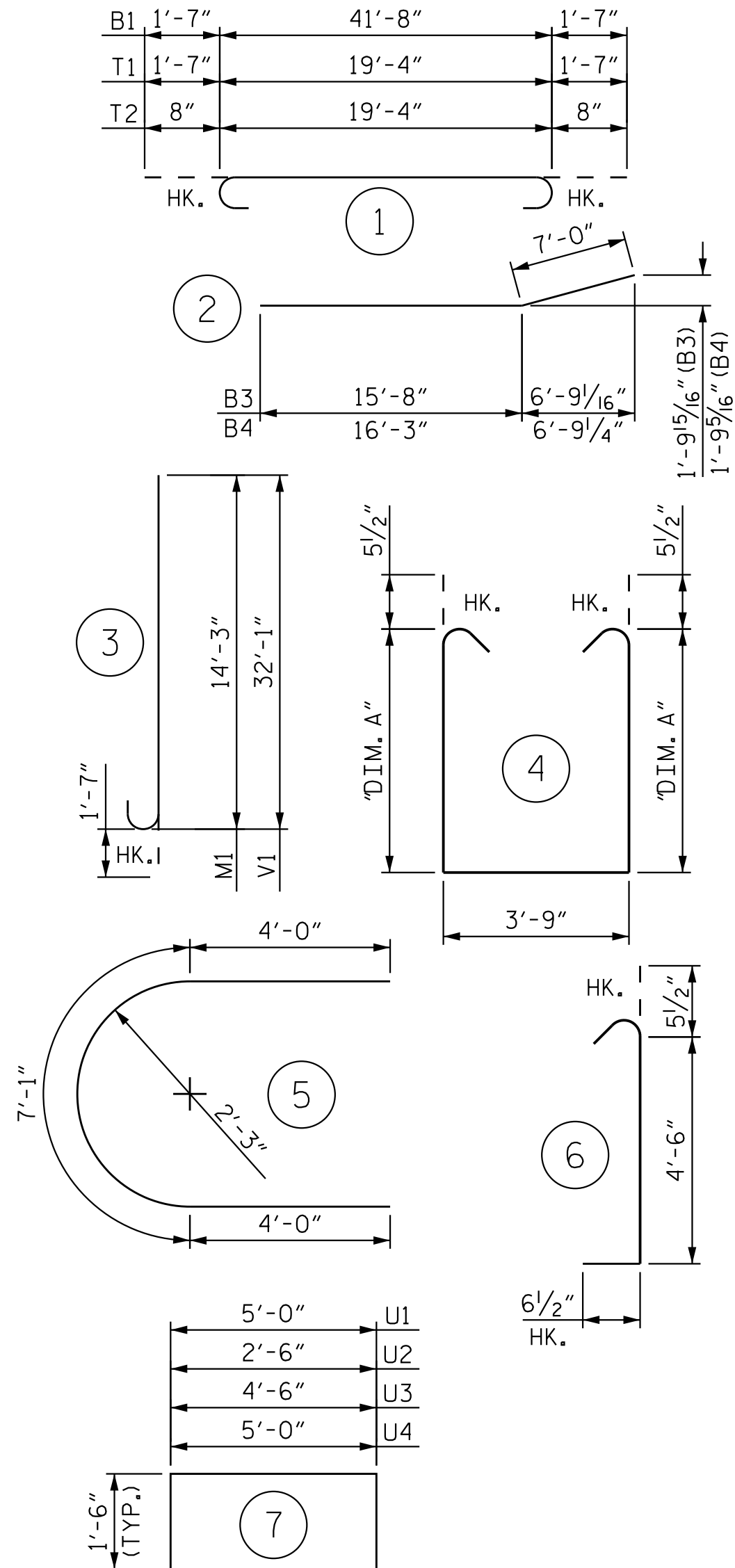
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BILL OF MATERIAL

BENT #7

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM "A"	LENGTH	WEIGHT	
B1	16	#11	1	-	44'-10"	3,812	S38	4	#5	4	7'-10"	20'-4"	85	
B2	16	#11	STR	-	41'-8"	3,542	S39	4	#5	4	7'-11"	20'-6"	86	
B3	8	#9	2	-	22'-8"	617	S40	4	#5	4	8'-0"	20'-8"	87	
B4	8	#9	2	-	23'-3"	633	S41	4	#5	4	8'-1"	20'-10"	87	
B5	10	#8	STR	-	41'-8"	1,113	S42	4	#5	4	8'-2½"	21'-1"	88	
B6	2	#8	STR	-	39'-7"	212	S43	4	#5	4	8'-3½"	21'-3"	89	
B7	2	#8	STR	-	33'-8"	180	S44	4	#5	4	8'-4½"	21'-5"	90	
B8	2	#8	STR	-	27'-9"	149	S45	4	#5	4	8'-5½"	21'-7"	91	
B9	2	#8	STR	-	21'-10"	117	S46	4	#5	4	8'-6½"	21'-9"	91	
B10	2	#8	STR	-	15'-11"	85	S47	26	#5	4	8'-7½"	21'-11"	595	
B11	12	#4	STR	-	5'-0"	41	S48	62	#5	5	-	15'-1"	976	
							S49	124	#5	6	-	5'-6"	712	
M1	44	#11	3	-	15'-10"	3,702								
							T1	68	#11	1	-	22'-6"	8,129	
S1	4	#5	4	4'-6½"	13'-9"	58	T2	68	#6	1	-	20'-8"	2,111	
S2	4	#5	4	4'-7½"	13'-11"	59	T3	16	#6	STR	-	19'-4"	465	
S3	4	#5	4	4'-8½"	14'-1"	59								
S4	4	#5	4	4'-9½"	14'-3"	60	U1	30	#4	7	-	8'-0"	161	
S5	4	#5	4	4'-10½"	14'-5"	61	U2	50	#4	7	-	5'-6"	184	
S6	4	#5	4	5'-0"	14'-8"	62	U3	14	#4	7	-	7'-6"	71	
S7	4	#5	4	5'-1"	14'-10"	62	U4	10	#4	7	-	8'-0"	54	
S8	4	#5	4	5'-2"	15'-0"	63								
S9	4	#5	4	5'-3"	15'-2"	64	V1	44	#11	3	-	33'-8"	7,871	
S10	4	#5	4	5'-4"	15'-4"	64	TOTAL REINFORCING STEEL (LBS.)						38,962	
S11	4	#5	4	5'-5"	15'-6"	65	BENT #7 TOTAL QUANTITIES							
S12	4	#5	4	5'-6"	15'-8"	66								
S13	4	#5	4	5'-7"	15'-10"	67								
S14	4	#5	4	5'-8½"	16'-1"	68	CLASS AA CONCRETE							
S15	4	#5	4	5'-9½"	16'-3"	68								
S16	4	#5	4	5'-10½"	16'-5"	69								
S17	4	#5	4	5'-11½"	16'-7"	70	POUR 1 (FOOTING)						C.Y.	88.0
S18	4	#5	4	6'-0½"	16'-9"	70	POUR 2 (COLUMN)						C.Y.	49.6
S19	4	#5	4	6'-1½"	16'-11"	71	POUR 3 (CAP)						C.Y.	66.1
S20	4	#5	4	6'-2½"	17'-1"	72	TOTAL C.Y.						203.7	
S21	4	#5	4	6'-4"	17'-4"	73								
S22	4	#5	4	6'-5"	17'-6"	74								
S23	4	#5	4	6'-6"	17'-8"	74								
S24	4	#5	4	6'-7"	17'-10"	75								
S25	4	#5	4	6'-8"	18'-0"	76								
S26	4	#5	4	6'-9"	18'-2"	76								
S27	4	#5	4	6'-10"	18'-4"	77								
S28	4	#5	4	6'-11½"	18'-7"	78								
S29	4	#5	4	7'-0½"	18'-9"	79								
S30	4	#5	4	7'-1½"	18'-11"	79								
S31	4	#5	4	7'-2½"	19'-1"	80								
S32	4	#5	4	7'-3½"	19'-3"	81								
S33	4	#5	4	7'-4½"	19'-5"	82								
S34	4	#5	4	7'-5½"	19'-7"	82								
S35	4	#5	4	7'-7"	19'-10"	83								
S36	4	#5	4	7'-8"	20'-0"	84								
S37	4	#5	4	7'-9"	20'-2"	85								

PROJECT NO. R-3300A

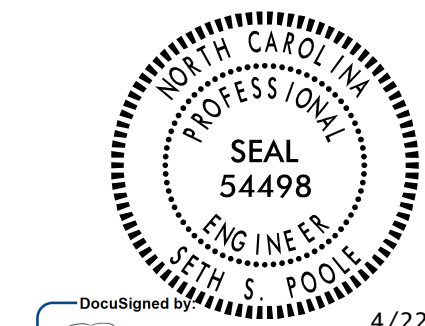
NEW HANOVER COUNTY

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SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 7
FOOTING PLAN AND
BILL OF MATERIAL



4/22/2025

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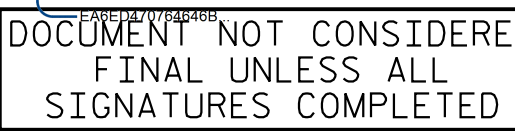


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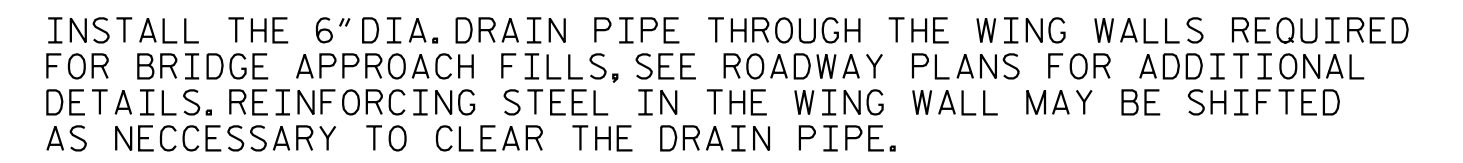


● = M1 BAR
○ = V1 BAR

BENT 8
COLUMN DETAILS

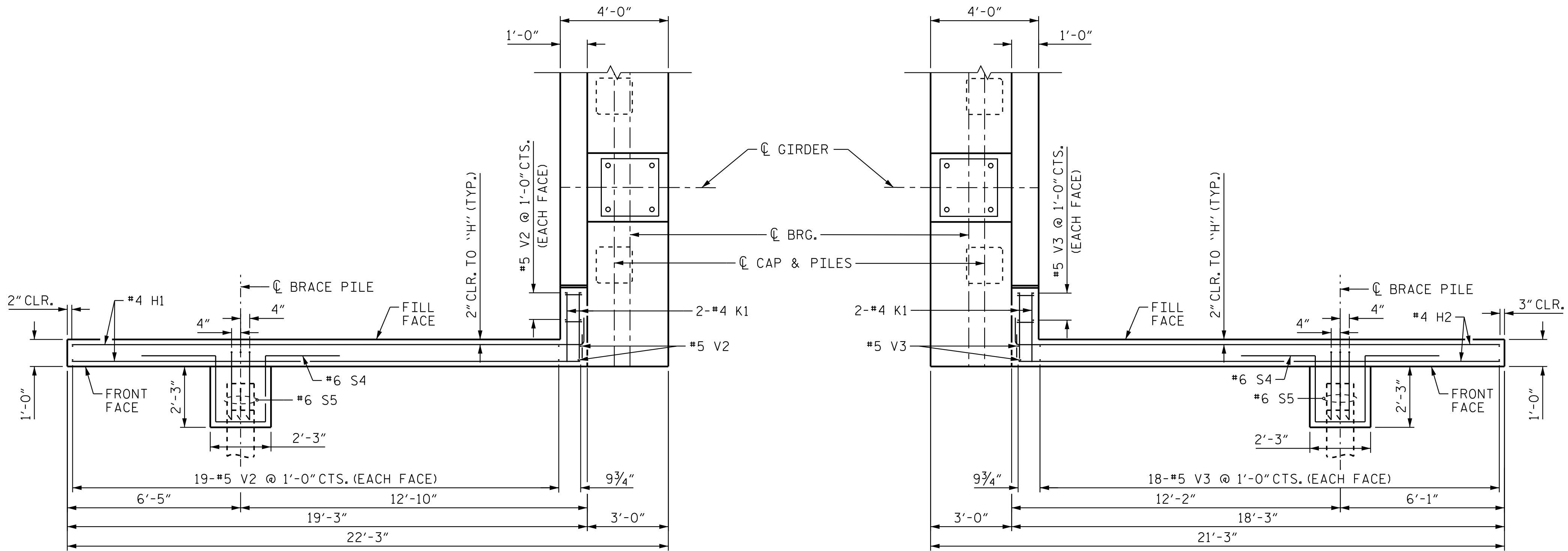


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1			3			TOTAL SHEETS 113
2			4			



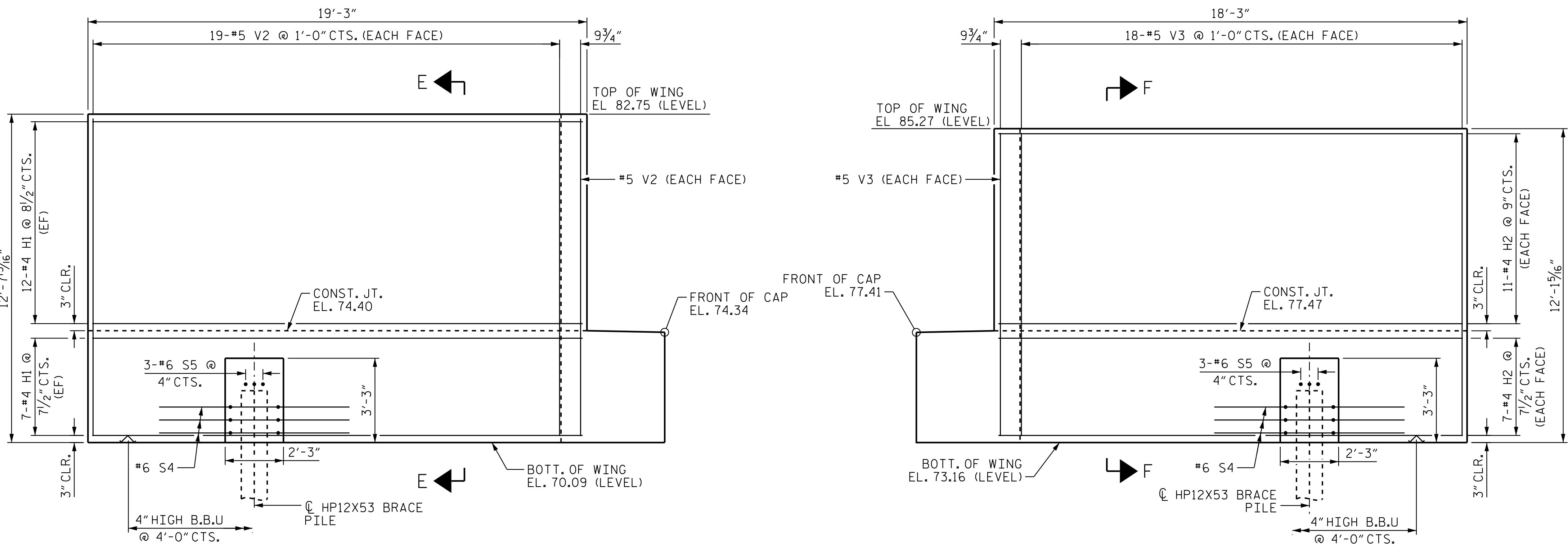
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2

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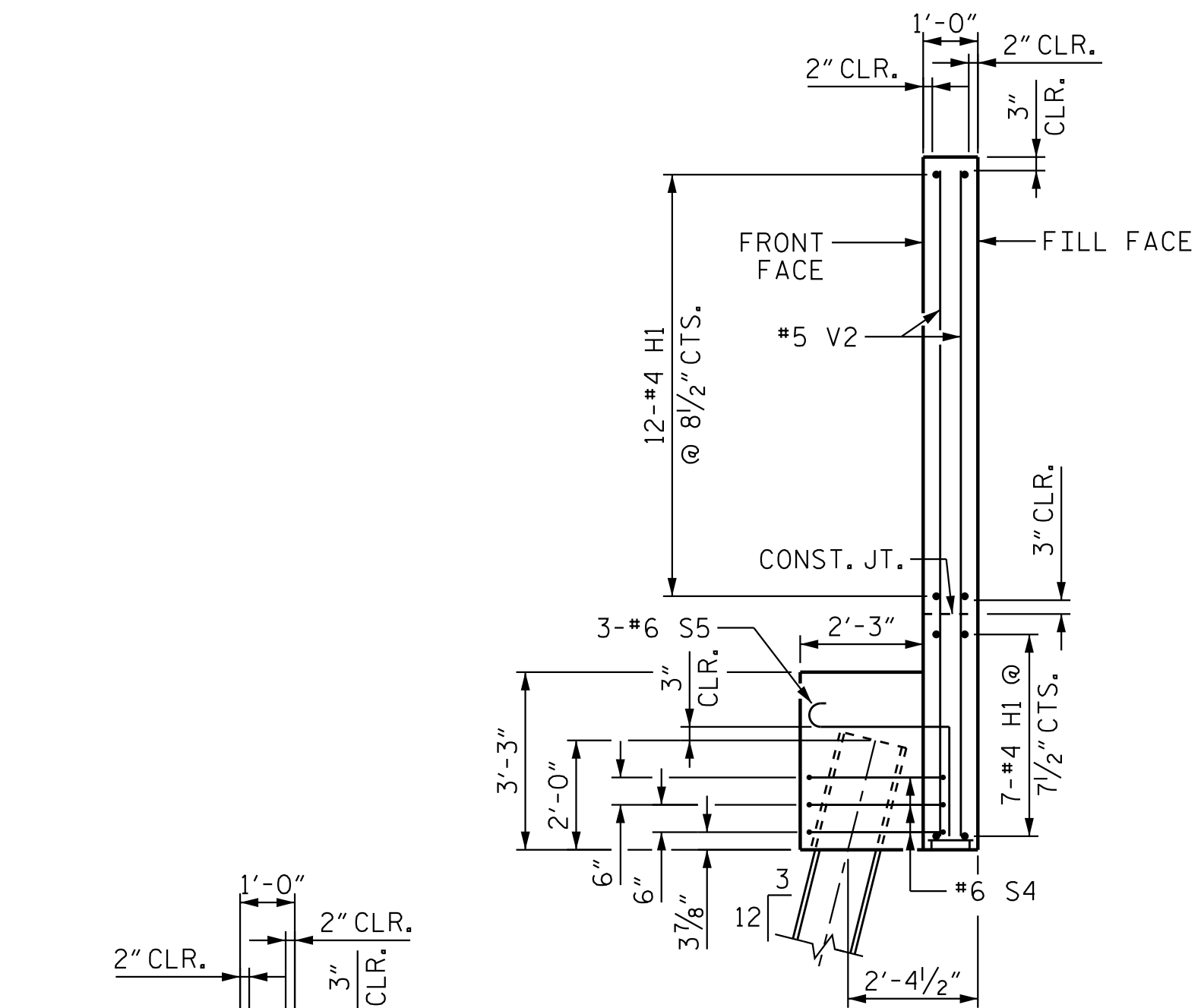
PLAN OF LEFT WING (W3)

PLAN OF RIGHT WING (W4)

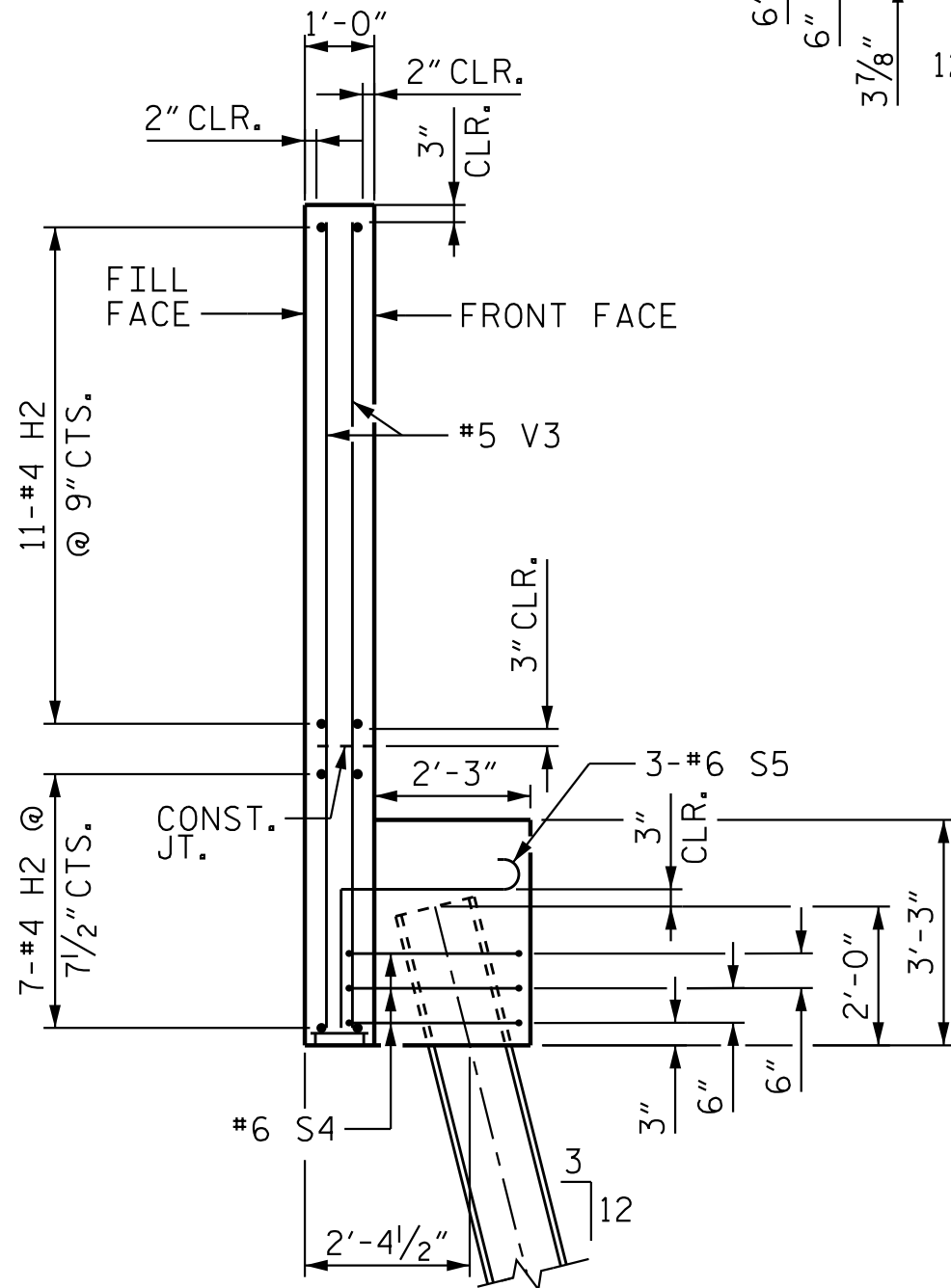


ELEVATION OF LEFT WING (W3)

ELEVATION OF RIGHT WING (W4)



SECTION E-E



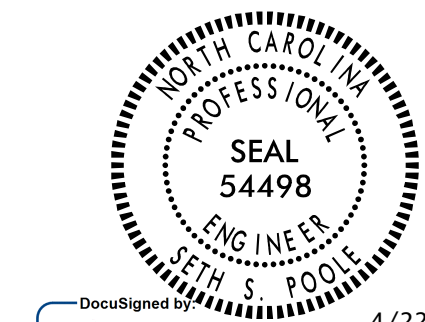
SECTION F-F

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-
SHEET 2 OF 3



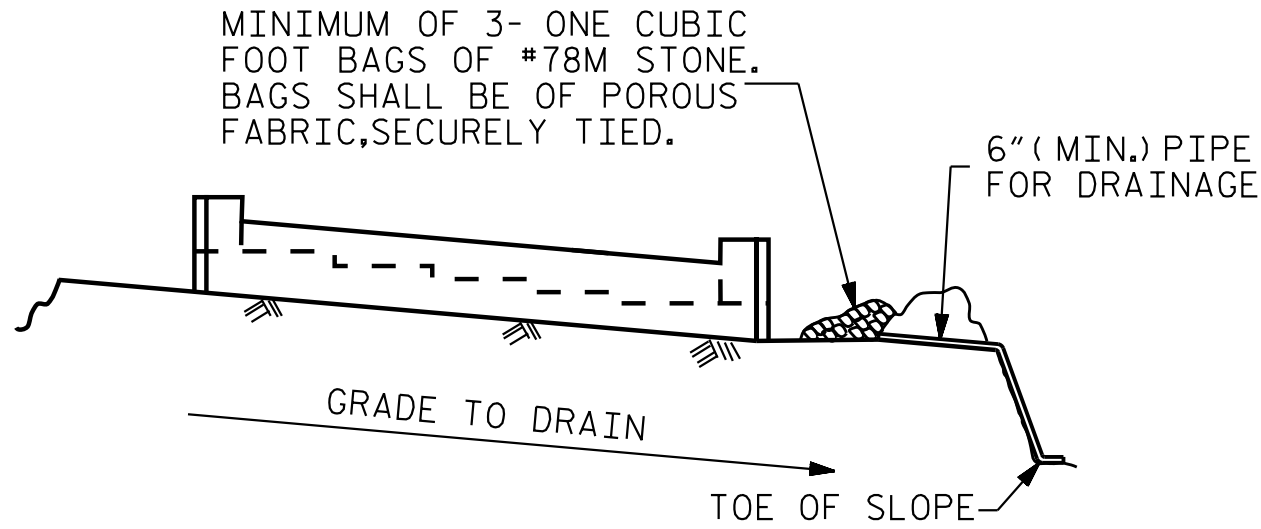
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DRAWN BY : T. N. ENNIS DATE : 12/03/18
CHECKED BY : V. E. FRAGA DATE : 02/27/25
DESIGN ENGINEER OF RECORD : S. S. POOLE DATE : 04/22/25



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REVISIONS						SHEET NO. S01-106
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



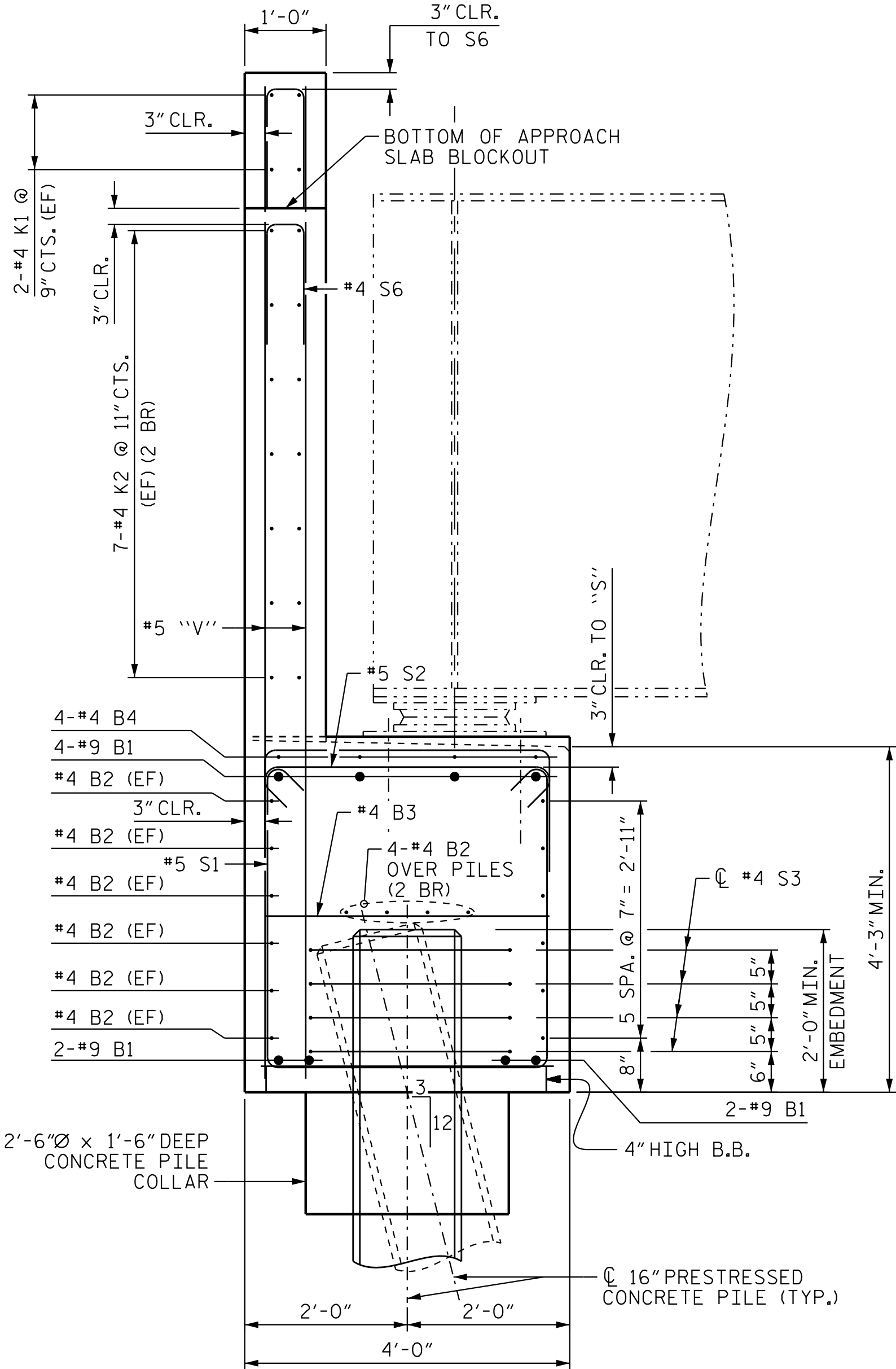
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

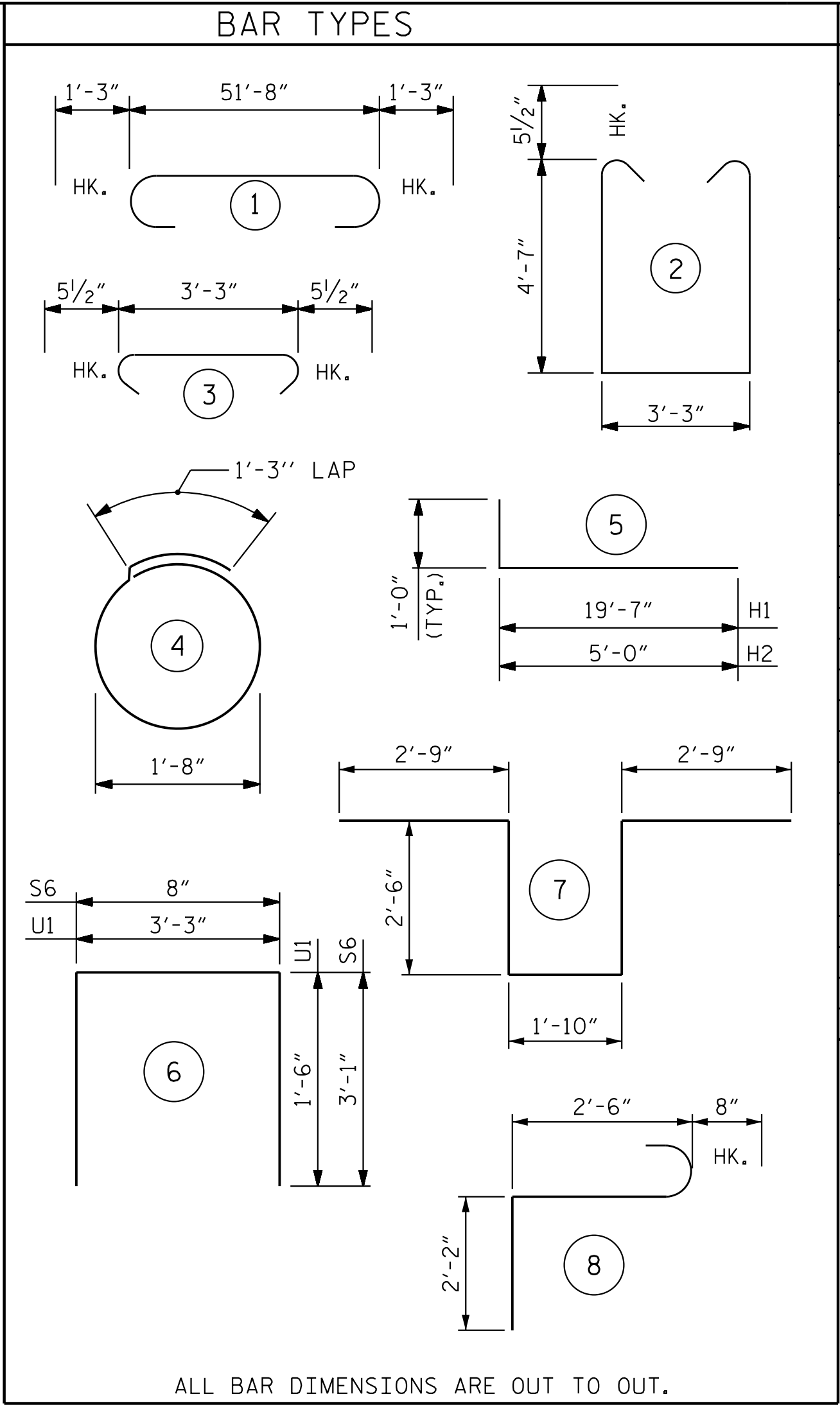
TEMPORARY DRAINAGE AT END BENT

PILE	CUTOFF ELEVATION
1	72.35
2	72.73
3	73.10
4	73.48
5	73.85
6	74.22
7	74.60
8	74.97



SECTION A-A

(2 BR) DENOTES TWO BAR RUN



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	53'-3"	1,449
B2	32	#4	STR	26'-8"	571
B3	11	#4	STR	3'-6"	26
B4	20	#4	STR	2'-3"	31
H1	38	#4	5	19'-11"	506
H2	32	#4	5	18'-11"	405
K1	8	#4	STR	2'-7"	14
K2	28	#4	STR	26'-8"	499
S1	55	#5	2	11'-9"	675
S2	55	#5	3	4'-5"	254
S3	32	#4	4	10'-9"	230
S4	6	#6	7	12'-4"	112
S5	6	#6	8	5'-4"	49
S6	50	#4	6	3'-6"	117
U1	15	#4	6	6'-6"	66
V1	42	#5	STR	12'-3"	537
V2	40	#5	STR	11'-8"	487
V3	92	#5	STR	10'-3"	984
REINFORCING STEEL					7,012 LBS.
CLASS AA CONCRETE BREAKDOWN:					
POUR #1: CAP, COLLARS, ETC.					40.7 C.Y.
POUR #2: BACKWALL					17.6 C.Y.
CLASS AA CONCRETE TOTAL					58.3 C.Y.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

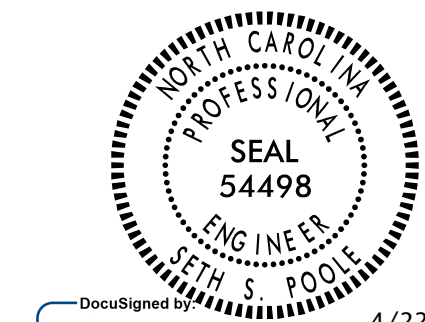
PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 219+49.69 -L1-
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SHEET 3 OF 3

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



DocuSigned by
S. S. POOLE
4/22/2025

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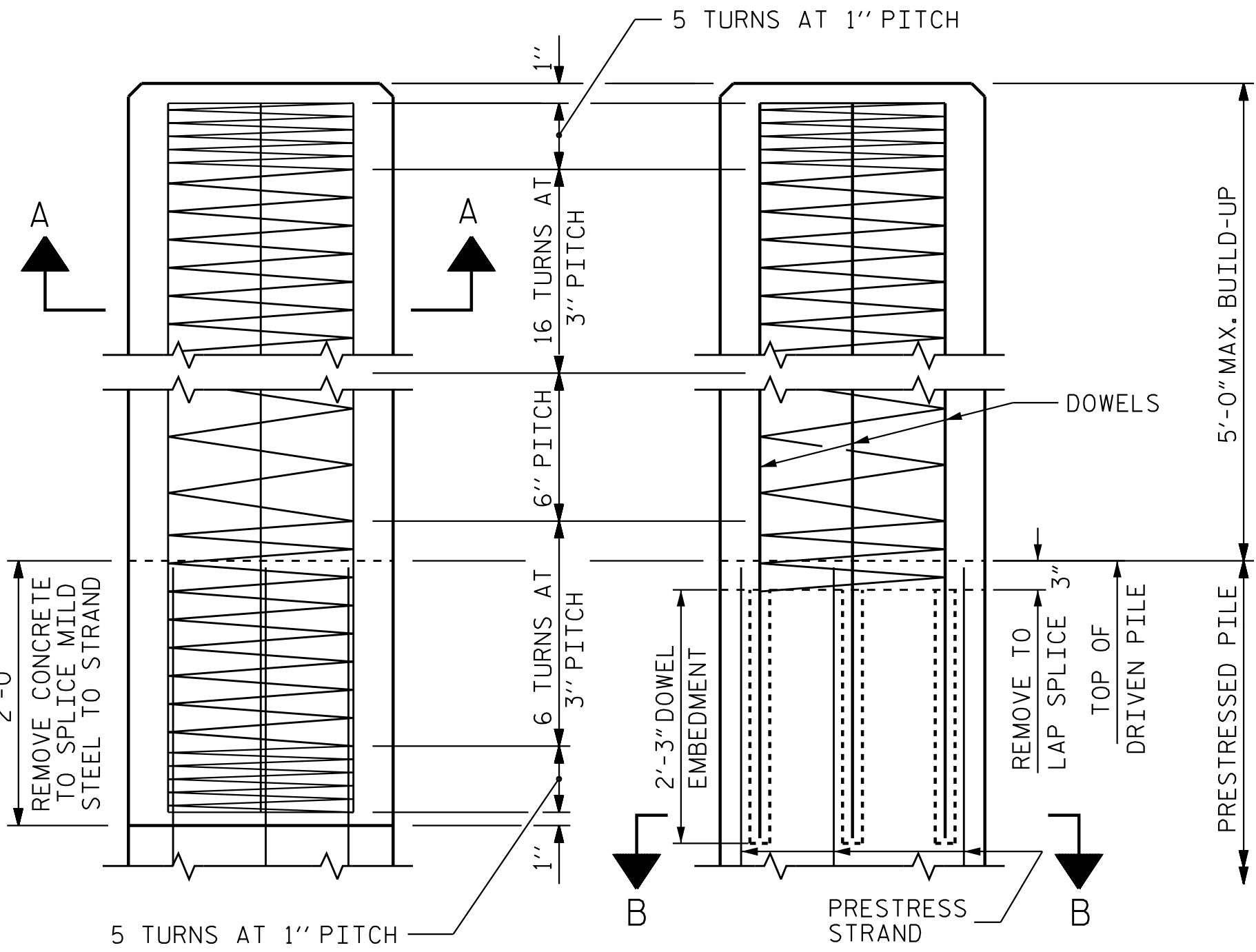
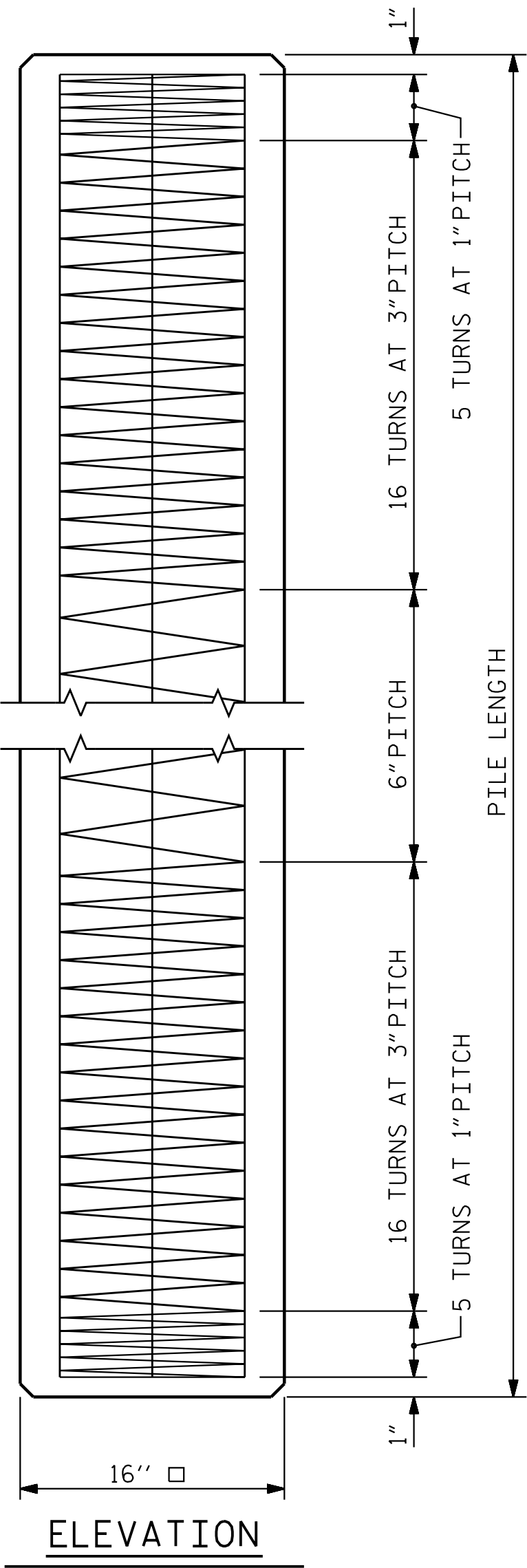
REVISIONS						SHEET NO. S01-107
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			



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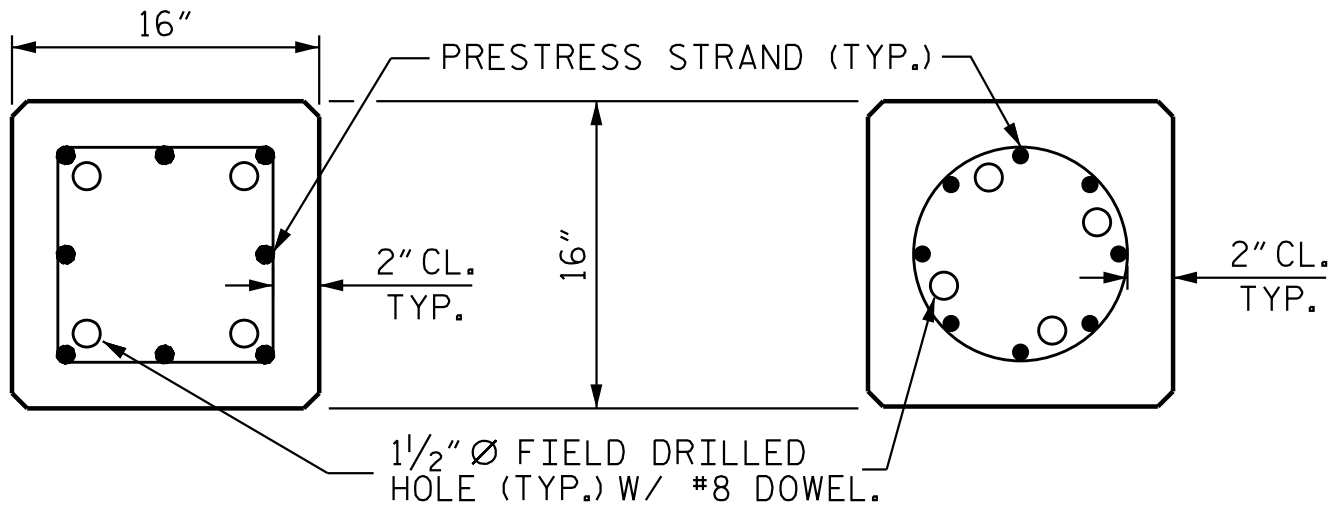
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CHECKED BY : S. S. POOLE DATE : 02/01/22
DESIGN
ENGINEER
OF RECORD: S. S. POOLE DATE : 04/22/25

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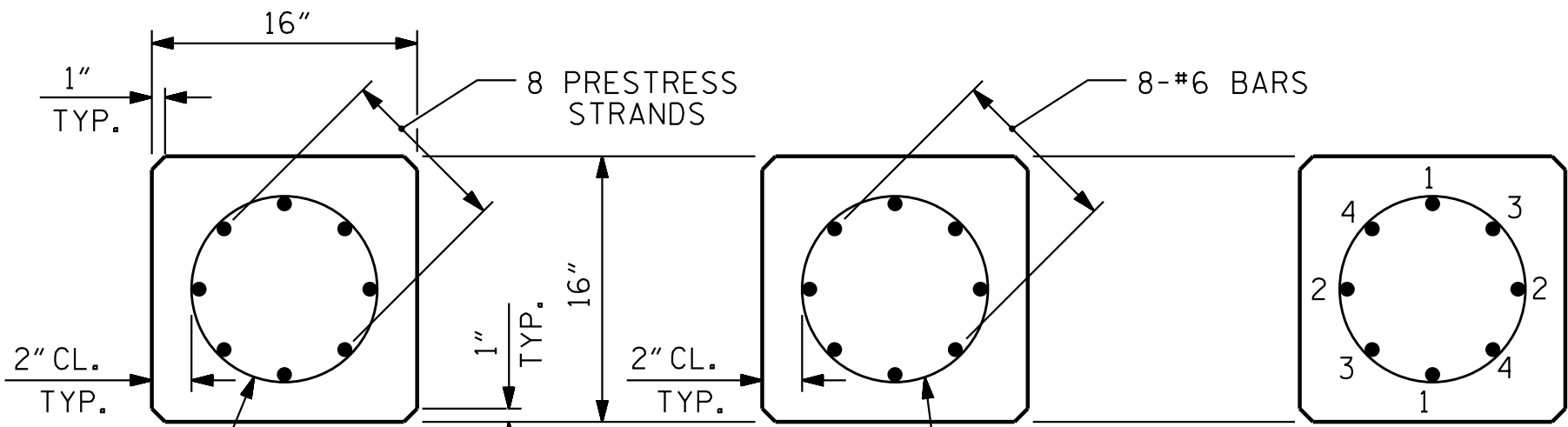
BUILD-UP AND
SPIRAL REINFORCING

OPTIONAL BUILD-UP
WITH DOWELS



SECTION "B-B"

(AT THE CONTRACTOR'S OPTION, PILE BUILD-UP MAY BE CONSTRUCTED WITH DOWELS.)

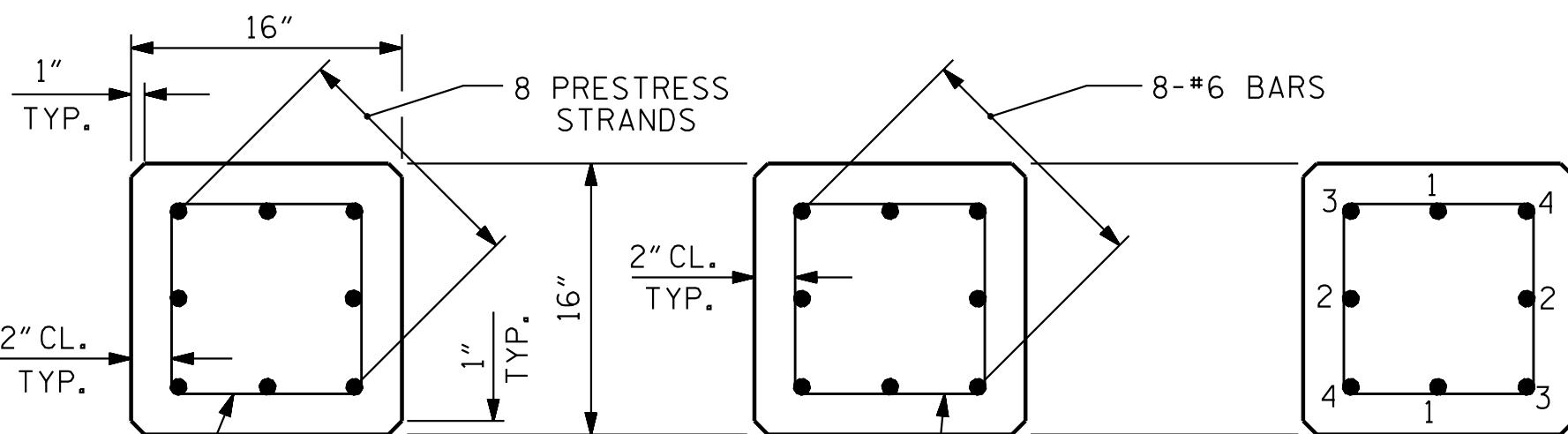


TYPICAL SECTION

SECTION "A-A"

TYPICAL PATTERN
FOR BURNING STRANDS

0.6" Ø GRADE 270 L.R. PRESTRESS STRANDS

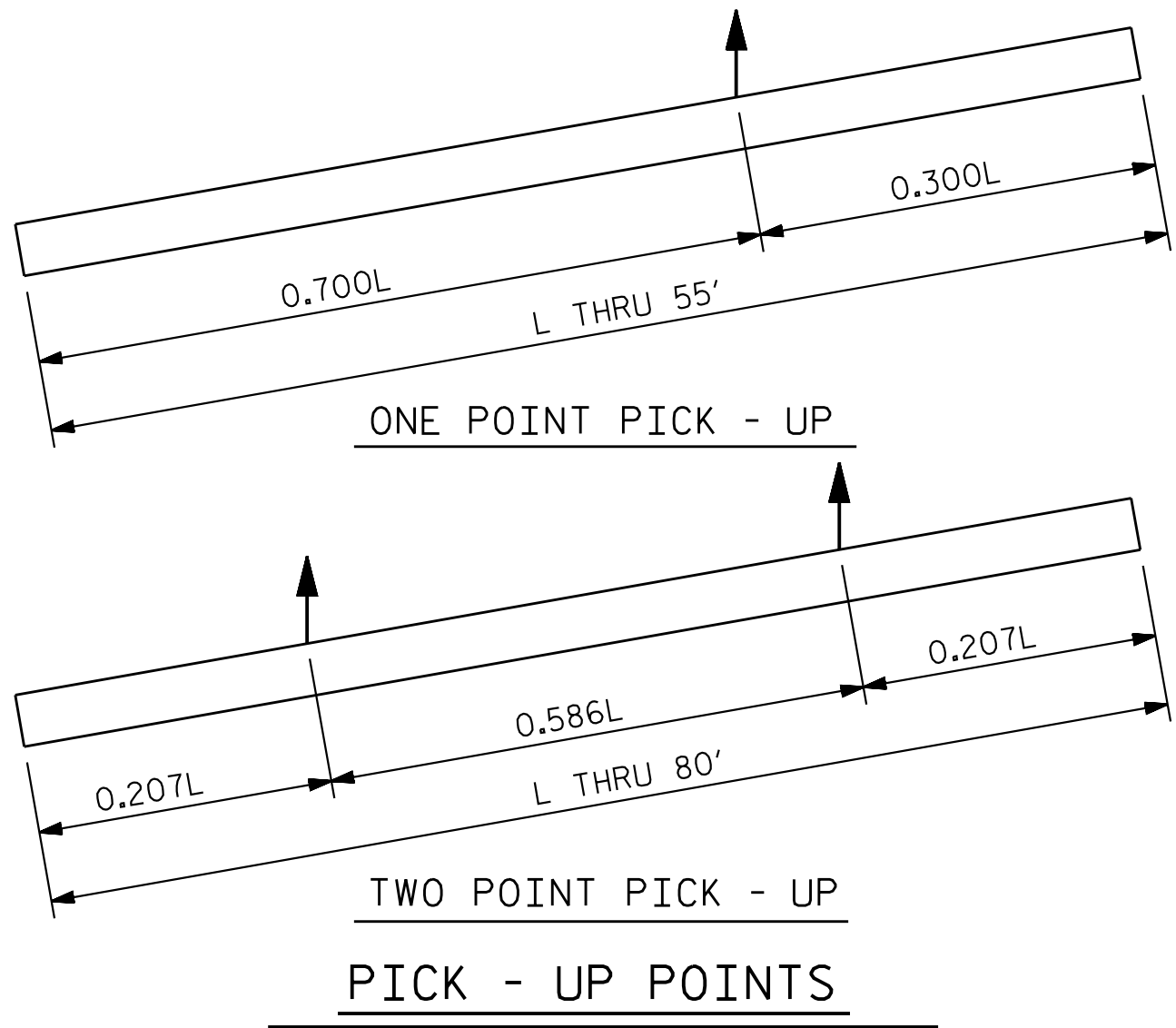


TYPICAL SECTION

SECTION "A-A"

TYPICAL PATTERN
FOR BURNING STRANDS

0.6" Ø GRADE 270 L.R. PRESTRESS STRANDS



PICK - UP POINTS

QUANTITIES FOR ONE 16"PRESTRESSED PILE

LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE POINT PICK-UP		TWO POINT PICK-UP	
			0.300L	0.700L	0.207L	0.586L
25'-0"	1.63	3.31	7'-6"	17'-6"	5'-2"	14'-8"
30'-0"	1.96	3.97	9'-0"	21'-0"	6'-2 1/2"	17'-7"
35'-0"	2.29	4.63	10'-6"	24'-6"	7'-3"	20'-6"
40'-0"	2.61	5.29	12'-0"	28'-0"	8'-3 1/2"	23'-5"
45'-0"	2.94	5.95	13'-6"	31'-6"	9'-4"	26'-4"
50'-0"	3.27	6.61	15'-0"	35'-0"	10'-4"	29'-4"
55'-0"	3.59	7.28	16'-6"	38'-6"	11'-4 1/2"	32'-3"
60'-0"	3.92	7.94			12'-5"	35'-2"
65'-0"	4.25	8.60			13'-5 1/2"	38'-1"
70'-0"	4.57	9.26			14'-6"	41'-0"
75'-0"	4.90	9.92			15'-6 1/2"	43'-11"
80'-0"	5.23	10.58			16'-7"	46'-10"

PRESTRESSED CONCRETE PILES SHALL CONTAIN CALCIUM NITRITE INHIBITOR. SEE SPECIAL PROVISIONS FOR CALCIUM NITRITE CORROSION INHIBITOR.

THE CONCRETE IN THE PILES OF ALL INTERIOR BENTS SHALL CONTAIN SILICA FUME. SILICA FUME SHALL BE SUBSTITUTED FOR 5% OF THE PORTLAND CEMENT BY WEIGHT. IF THE OPTION OF ARTICLE 1024-1 OF THE STANDARD SPECIFICATIONS TO PARTIALLY SUBSTITUTE CLASS F FLY ASH FOR PORTLAND CEMENT IS EXERCISED, THEN THE RATE OF FLY ASH SUBSTITUTION SHALL BE REDUCED TO 1.0 LB OF FLY ASH PER 1.0 LB OF CEMENT. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

NOTES

PRESTRESSED CONCRETE STRENGTH : f'c= 7,500 PSI

BUILD-UP CONCRETE STRENGTH : f'c= 7,500 PSI

STRAND DATA:

SIZE	GRADE	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
0.6"	270 L.R.	0.217	58,600# PER STRAND	43,940# PER STRAND

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS CONFORMING TO AASHTO M203. STRAND SAMPLING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

TRANSFER THE LOAD FROM THE ANCHORAGES TO THE PILE AFTER THE CONCRETE HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF STRANDS, BURN IN OPPOSITE PAIRS AND SYMMETRICALLY ABOUT BOTH THE VERTICAL AND HORIZONTAL AXES. STRANDS 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 STRANDS, SAY 3-3 AND 4-4, MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS ARE TO BE INDICATED WITH A 2" WIDE BLACK MARK.

DRIVE PILES USING A METHOD APPROVED BY THE ENGINEER, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

DRIVING OF THE BUILT-UP PILE WILL NOT BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 5,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.

DOWEL INSTALLATION FOR OPTIONAL BUILD-UP

GROUT COMPRESSIVE STRENGTH: f'c= 5,000 PSI

BEFORE DRILLING DOWEL HOLES, REMOVE THE UPPER 3" OF CONCRETE FROM THE TOP OF THE PILE WITHOUT DAMAGE TO THE REINFORCING STEEL. THE REMOVAL PLANE SHOULD BE NORMAL TO THE EDGE OF THE PILE.

DOWEL HOLES SHALL BE POSITIONED TO MAINTAIN 1/2" CLEAR TO ALL EXISTING PRESTRESSING STRANDS IN THE CONCRETE PILE.

FIELD DRILLED HOLES SHALL BE CLEAN AND FREE OF ANY OBSTRUCTIONS BEFORE GROUTING OF DOWELS. DOWEL BARS SHALL BE INSTALLED AND GROUTED WITH AN APPROVED NON-SHRINK GROUT.

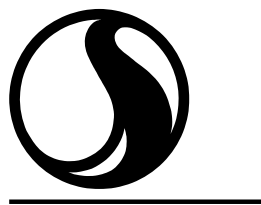
THE SPIRAL REINFORCING IN ALL BUILD-UPS SHALL BE W4.0 COLD DRAWN WIRE WHICH SHALL BE SECURED TO THE LONGITUDINAL REINFORCEMENT TO MAINTAIN PITCH.

THE SPIRAL REINFORCING IN THE BUILD-UP AND THE PRESTRESSED CONCRETE PILE SHALL BE SPLICED BY OVERLAPPING A MIN. OF ONE TURN.

PROJECT NO. R-3300A

NEW HANOVER COUNTY

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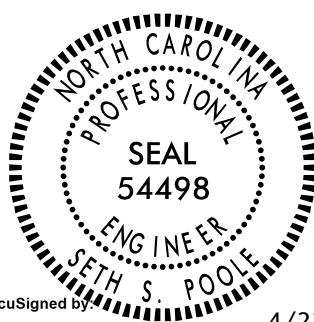


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DESIGN
ENGINEER
OF RECORD: S. S. POOLE DATE: 04/22/25

ASSEMBLED BY: V. E. FRAGA DATE: 08/29/18
CHECKED BY: S. S. POOLE DATE: 02/24/25

DRAWN BY: FCJ 7/88 MAA/TWG
CHECKED BY: CRK 3/89 REV. 12/14 MAA/TWG
REV. 12/17 MAA/TWG
REV. 12/20 MAA/THC



4/22/2025

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

16" PRESTRESSED
CONCRETE PILE

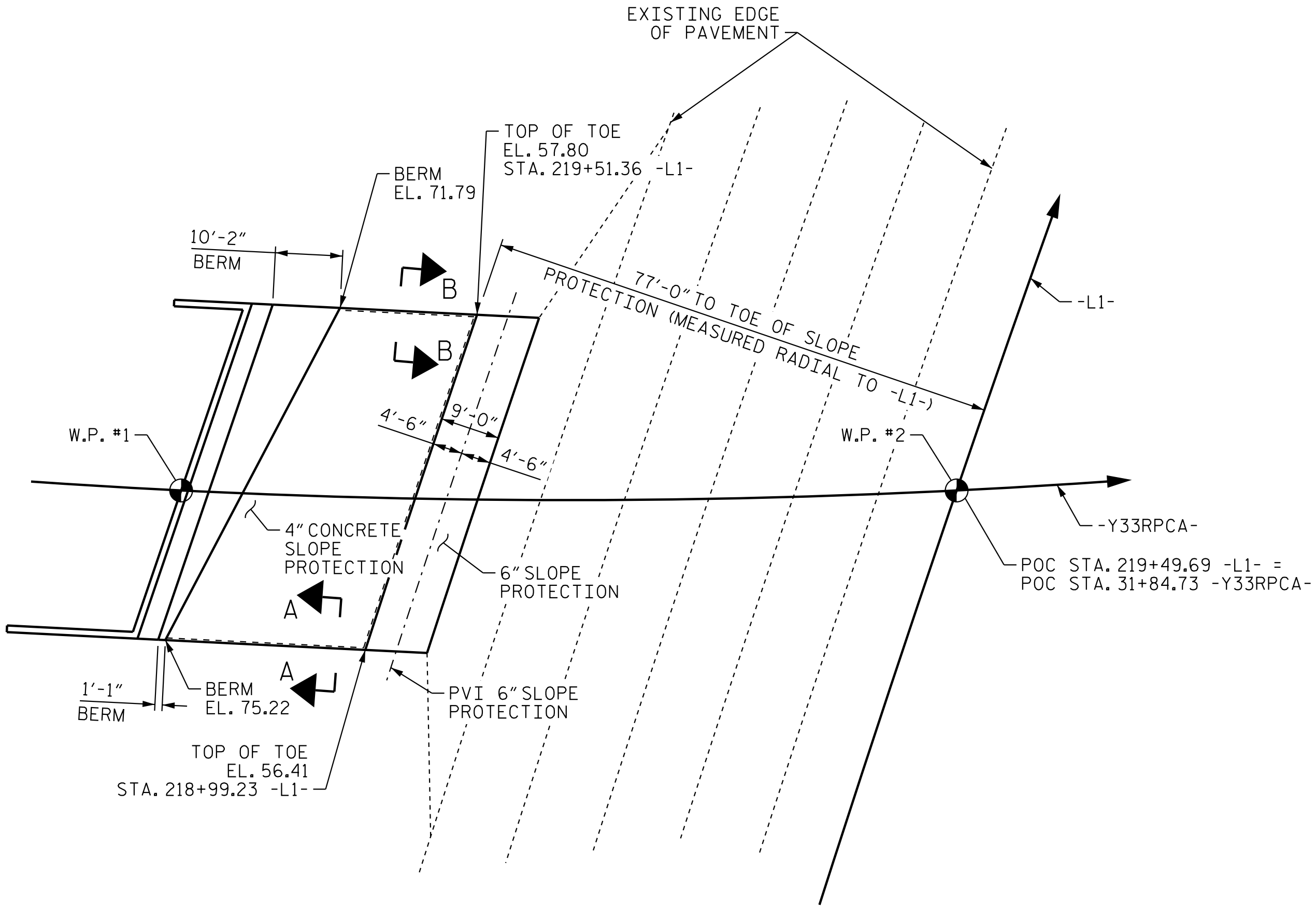
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2			4		

SHEET NO.
S01-108

TOTAL
SHEETS
113

STD. NO. PCP2

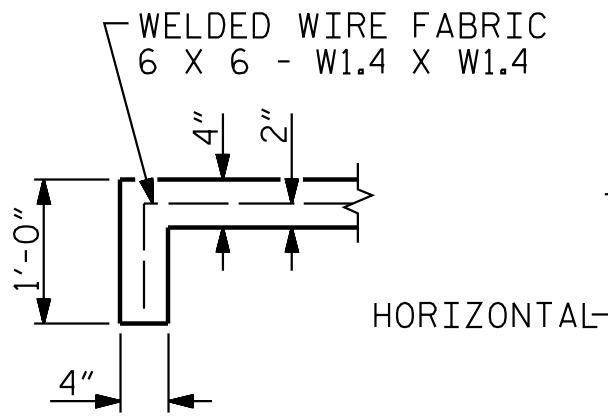


GENERAL NOTES

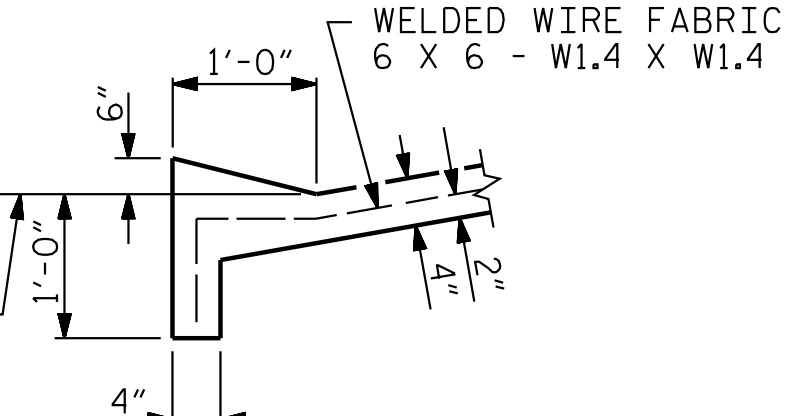
SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN THE DETAILS. THE CONTRACTOR, AT HIS OPTION, MAY USE ALTERNATE "B" ONLY FOR HIGHWAY OVER HIGHWAY GRADE SEPARATIONS WITH 2:1 END BENT SLOPE IN RURAL, UNPOPULATED AREAS. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS. FOR BERM WIDTH, SEE GENERAL DRAWING.

ALTERNATE "A"

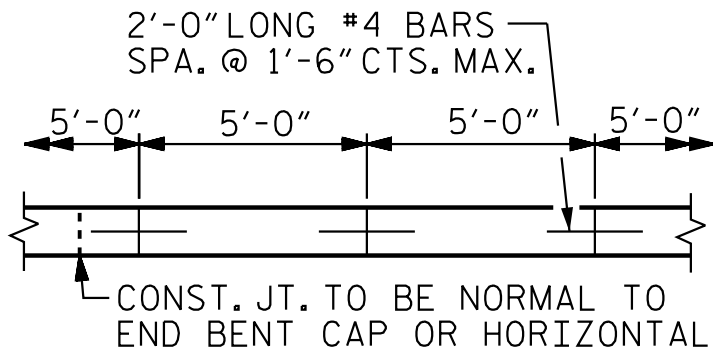
ALTERNATE "A" SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B", THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE 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.



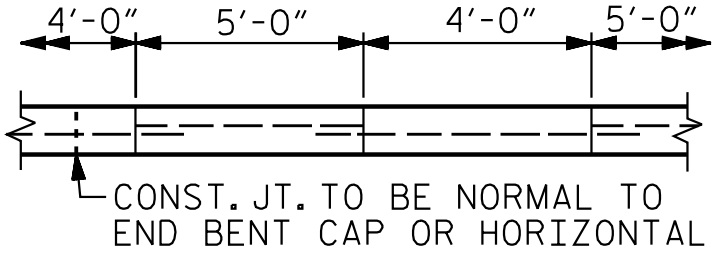
SECTION A-A



SECTION B-B



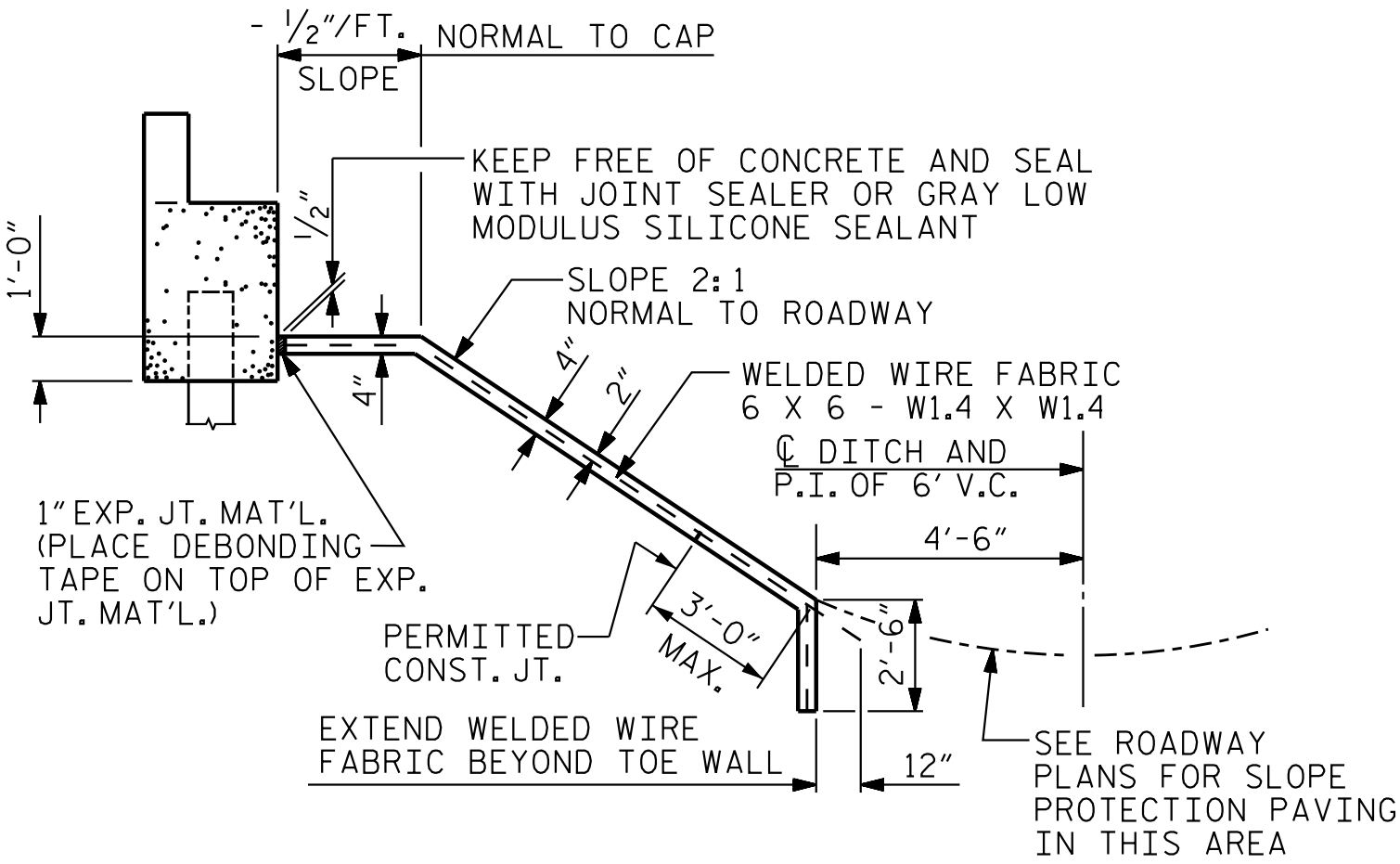
POURING DETAIL



OPTIONAL POURING DETAIL

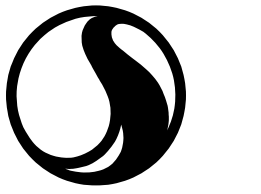
STRIP WIDTHS MAY VARY IN CURVED PORTION.

POUR A 4'-0" STRIP FIRST. STRIP WIDTHS MAY VARY IN CURVED PORTION.



SECTION ALONG C SURVEY WHEN FILL CATCHES IN DITCH

DETAILS FOR ALTERNATE "A"



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DRAWN BY : V. E. FRAGA DATE : 09/19/18
CHECKED BY : S. S. POOLE DATE : 12/02/21

DESIGN ENGINEER OF RECORD: V. E. FRAGA DATE : 04/22/25



Victor E. Fraga
4/22/2025
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NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
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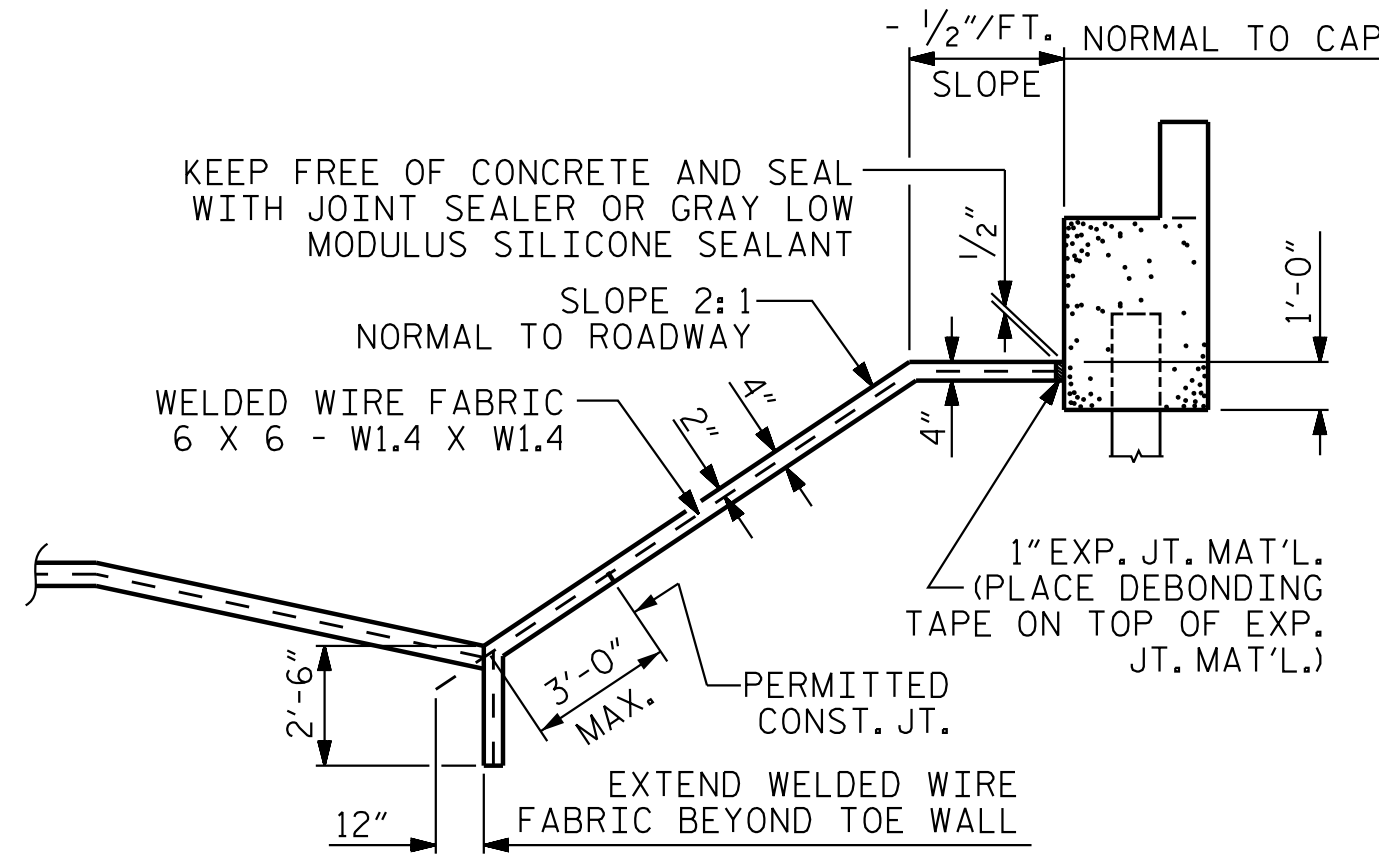
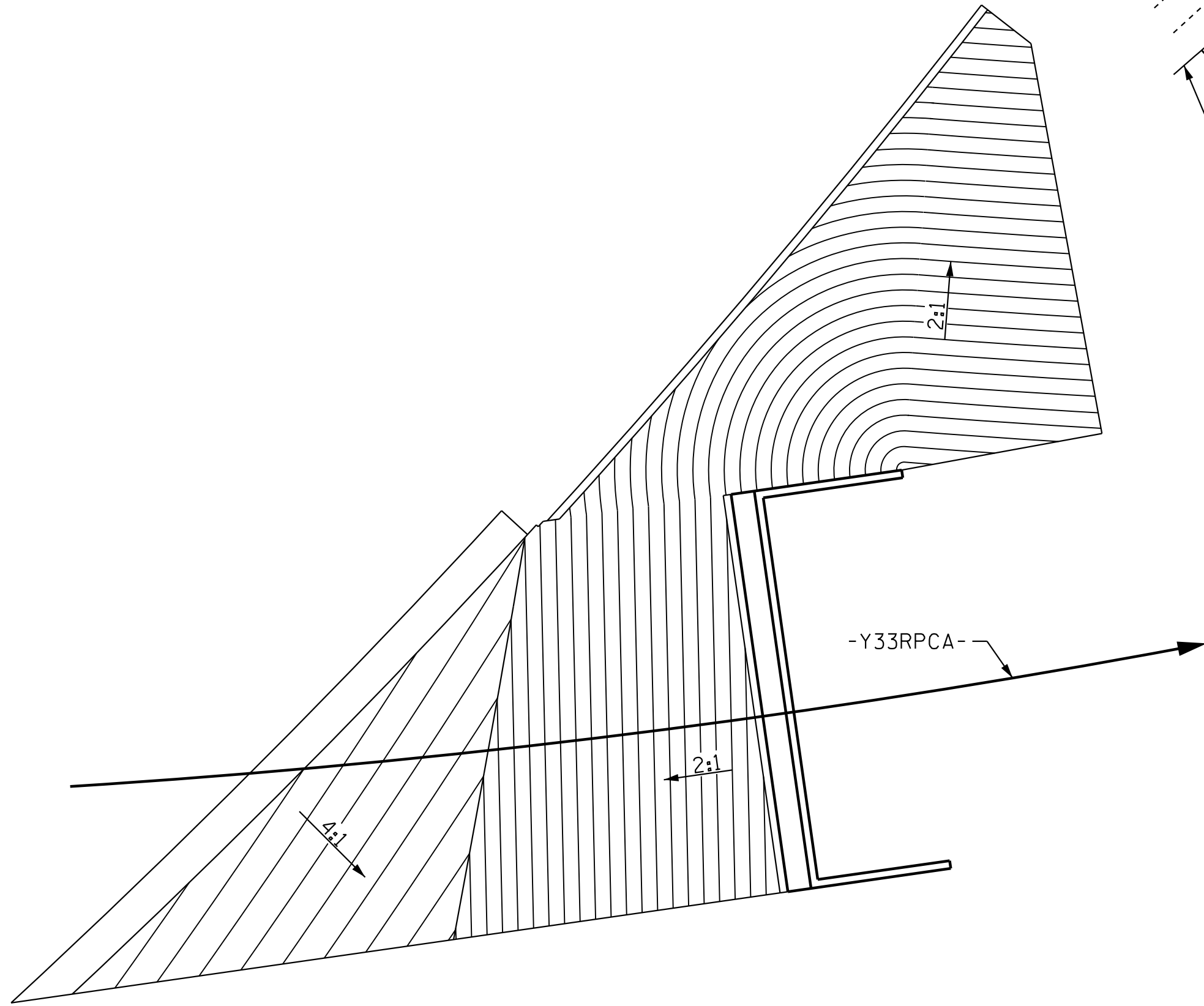
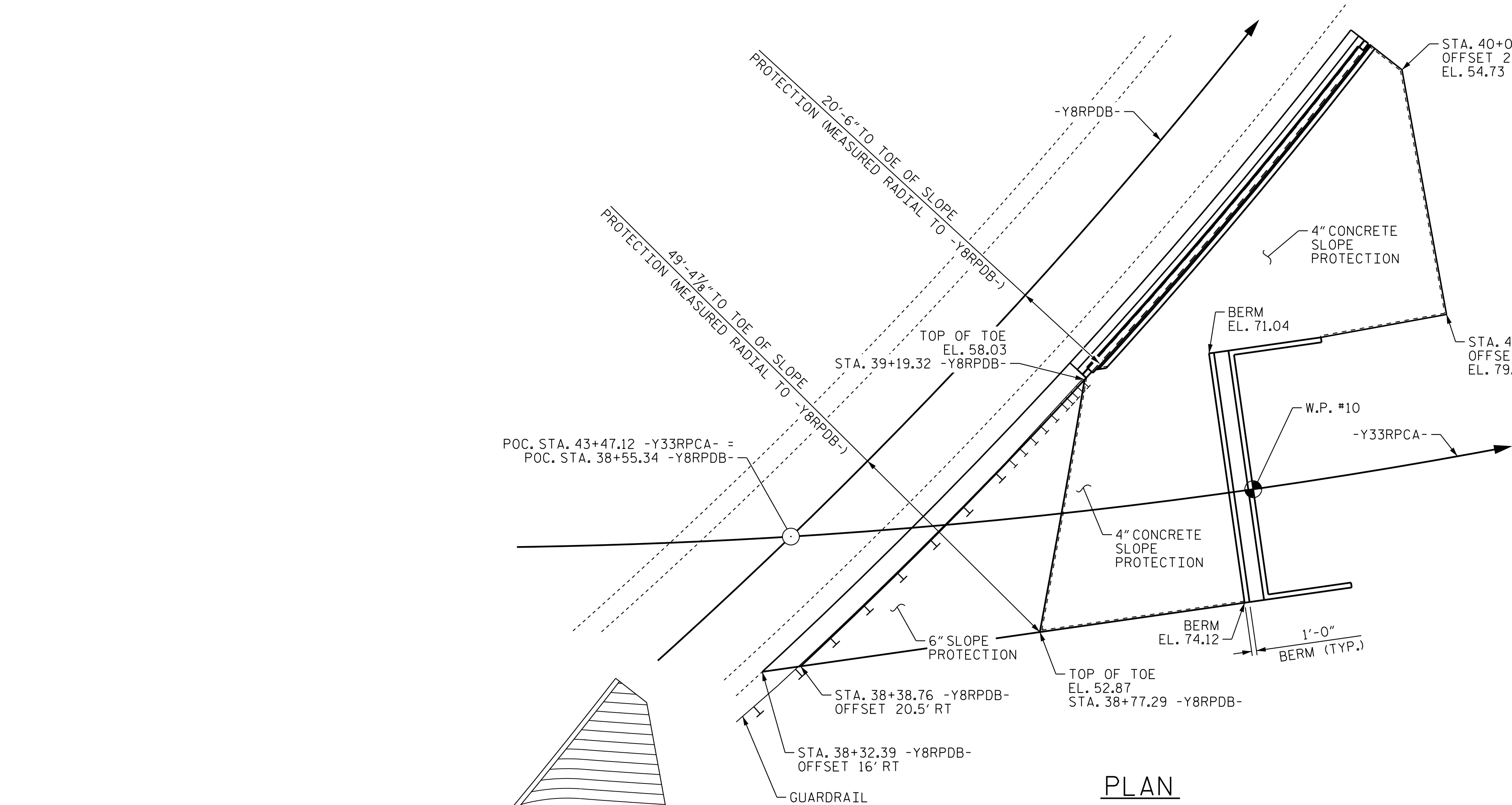
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SLOPE PROTECTION
END BENT 1

REVISIONS						SHEET NO. S01-109
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 113
2			4			

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GENERAL NOTES

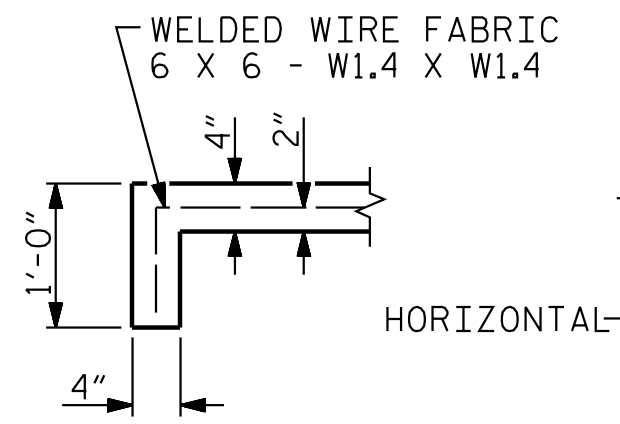
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ALTERNATE "A"

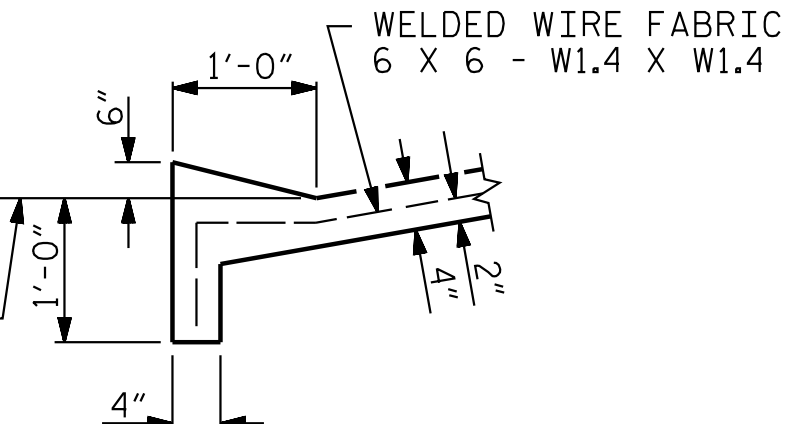
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BRIDGE @ STA. 31+84.73 -Y33RPCA-	4 INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	195	355
END BENT 2	480	865
TOTAL	675	1220

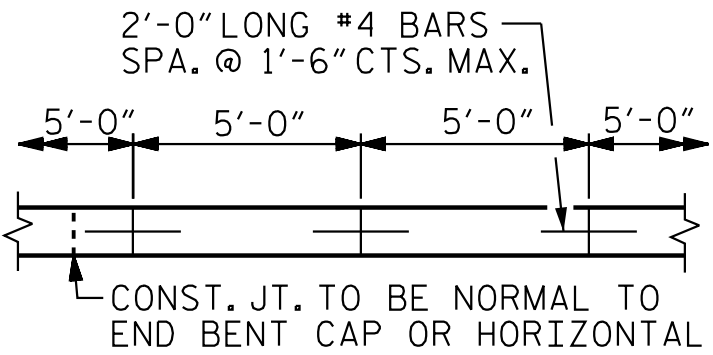
* QUANTITY SHOWN IS BASED ON 5' POURS.



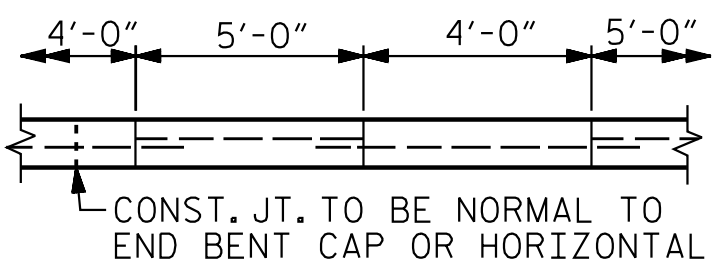
SECTION A-A



SECTION B-B



POURING DETAIL

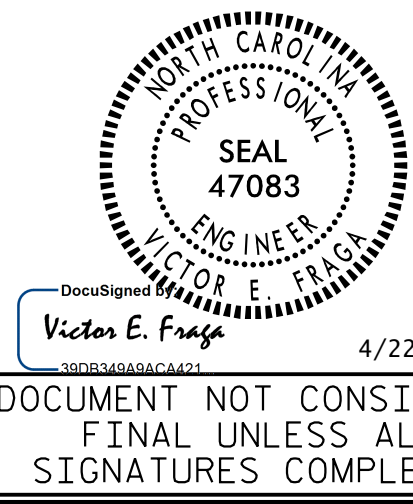


OPTIONAL POURING DETAIL

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SLOPE PROTECTION
END BENT 2



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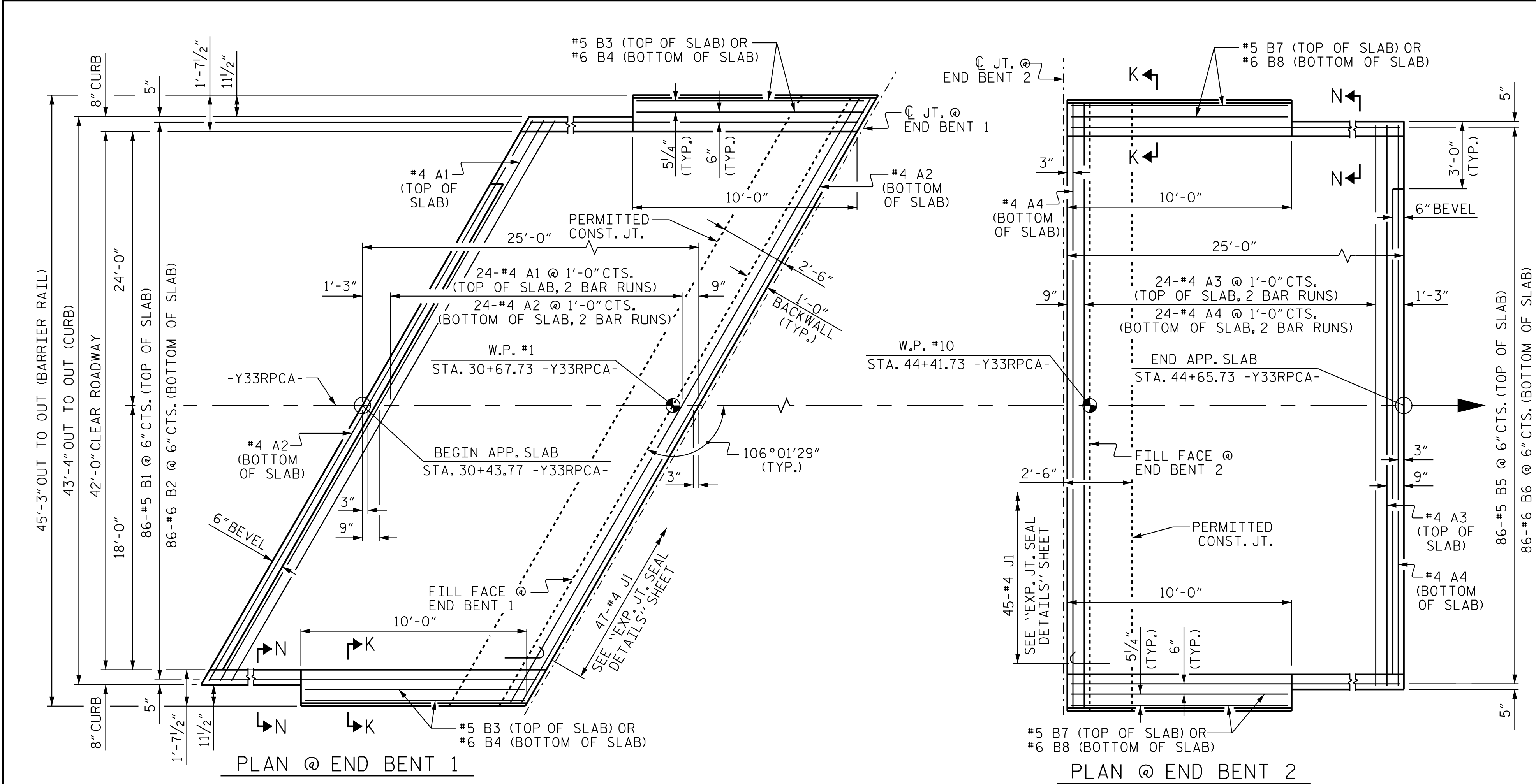
REVISIONS						SHEET NO. S01-110
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1			3			TOTAL SHEETS 113
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DRAWN BY : V. E. FRAGA DATE : 09/19/18
CHECKED BY : S. S. POOLE DATE : 02/13/22
DESIGN ENGINEER OF RECORD: V. E. FRAGA DATE : 04/22/25

4/22/2025 8:28:25 PM jgelle
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NOTES

FOR BRIDGE APPROACH FILL SEE ROADWAY PLANS.

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

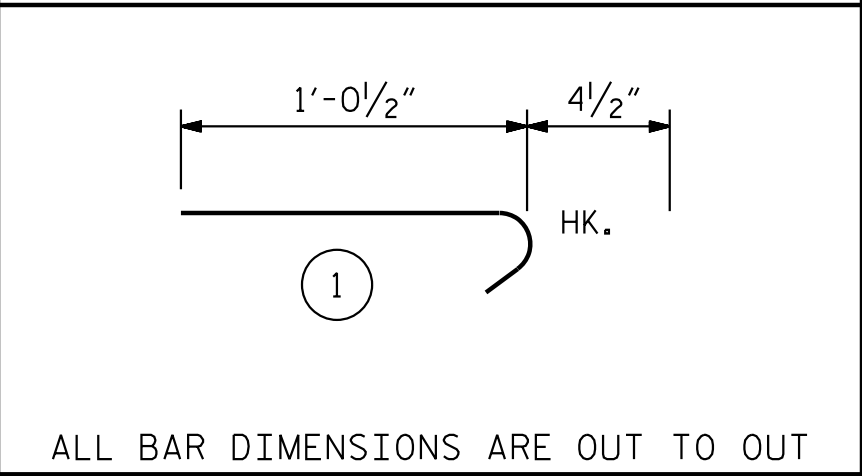
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

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

BILL OF MATERIAL					
APPROACH SLAB AT BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	24'-4"	813
A2	50	#4	STR	24'-2"	807
*B1	86	#5	STR	24'-1"	2,160
B2	86	#6	STR	24'-1"	3,111
*B3	4	#5	STR	9'-7"	40
B4	4	#6	STR	9'-7"	58
*J1	47	#4	1	1'-5"	44
REINFORCING STEEL					3,976 LBS.
*EPOXY COATED REINFORCING STEEL					3,057 LBS.

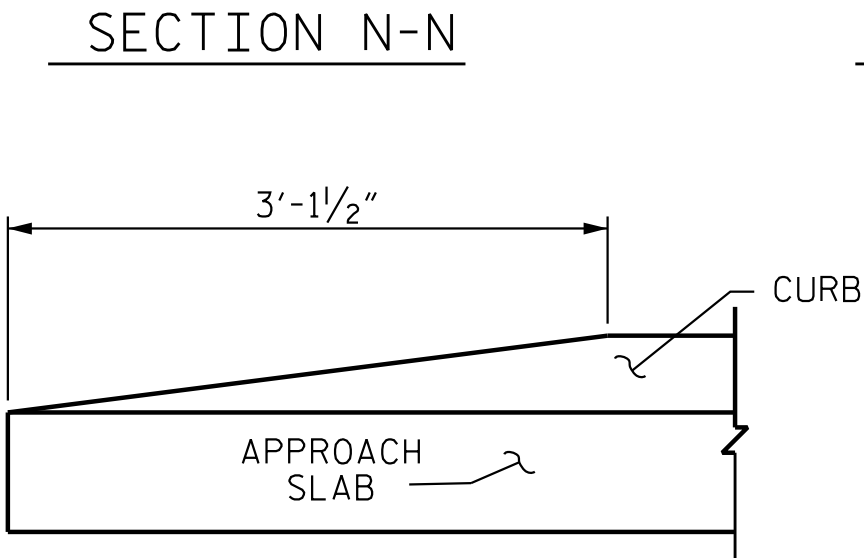
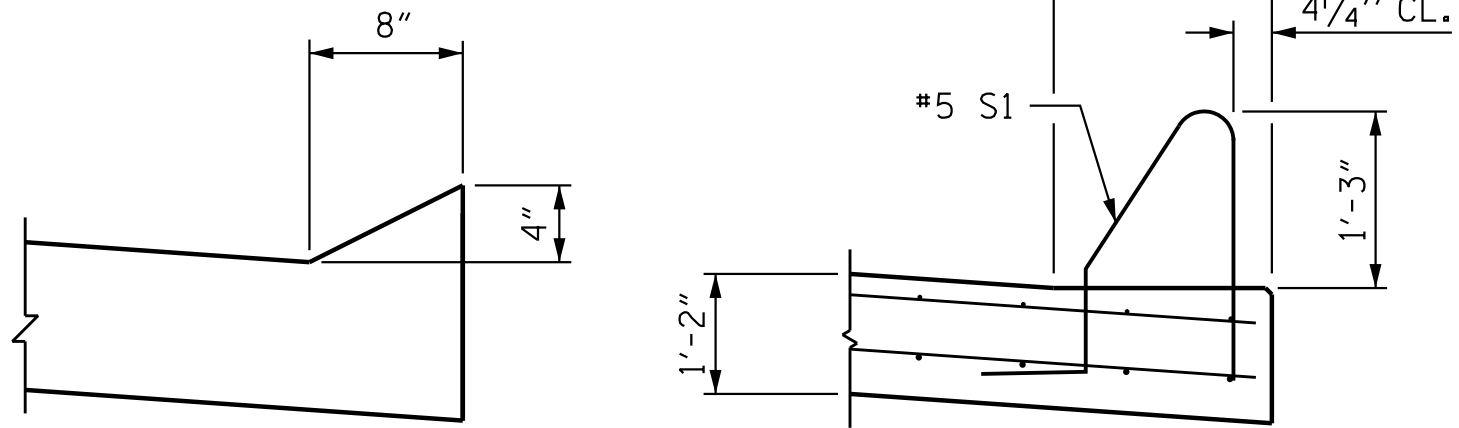
CLASS AA CONCRETE					
47.9 C. Y.					
APPROACH SLAB AT BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A3	50	#4	STR	23'-5"	782
A4	50	#4	STR	23'-3"	777
*B5	86	#5	STR	24'-2"	2,168
B6	86	#6	STR	24'-2"	3,122
*B7	4	#5	STR	9'-7"	40
B8	4	#6	STR	9'-7"	58
*J1	45	#4	1	1'-5"	43
REINFORCING STEEL					3,957 LBS.
*EPOXY COATED REINFORCING STEEL					3,033 LBS.
CLASS AA CONCRETE					47.9 C. Y.



ALL BAR DIMENSIONS ARE OUT TO OUT

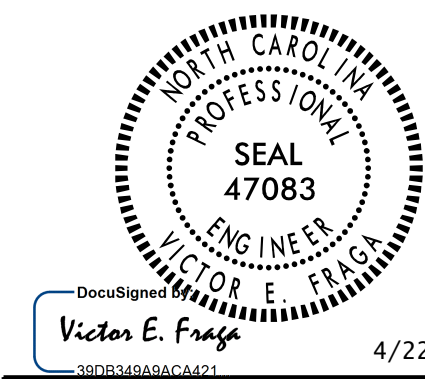
** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED. SEE SHEET 2 OF 3.

THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.



END OF CURB WITHOUT
SHOULDER BERM GUTTER

CURB DETAILS



PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-

SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S01-111					TOTAL SHEETS 113

STD. NO. BAS2 (SHT 3b)



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DESIGN ENGINEER OF RECORD: V. E. FRAGA DATE: 04/22/25

ASSEMBLED BY: V. E. FRAGA DATE: 08/24/18
CHECKED BY: S. S. POOLE DATE: 02/13/22

DRAWN BY: EEM 3/95 REV. 12/21/11 MAA/GM
CHECKED BY: VAP 3/95 REV. 6/13 MAA/GM
REV. 12/17 MAA/THC

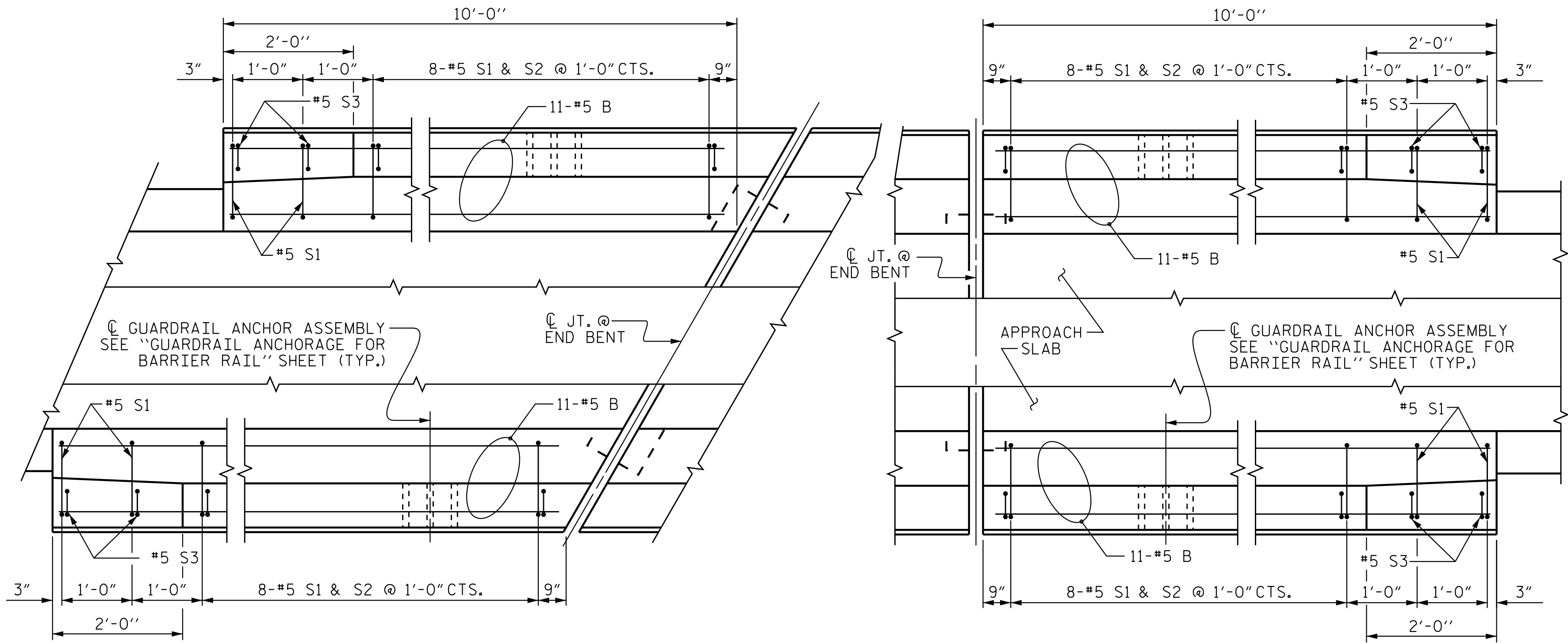


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ENGINEER
OF RECORD: V. E. FRAGA DATE : 04/22/25

ASSEMBLED BY : V. E. FRAGA DATE : 08/24/18
CHECKED BY : S. S. POOLE DATE : 02/01/22

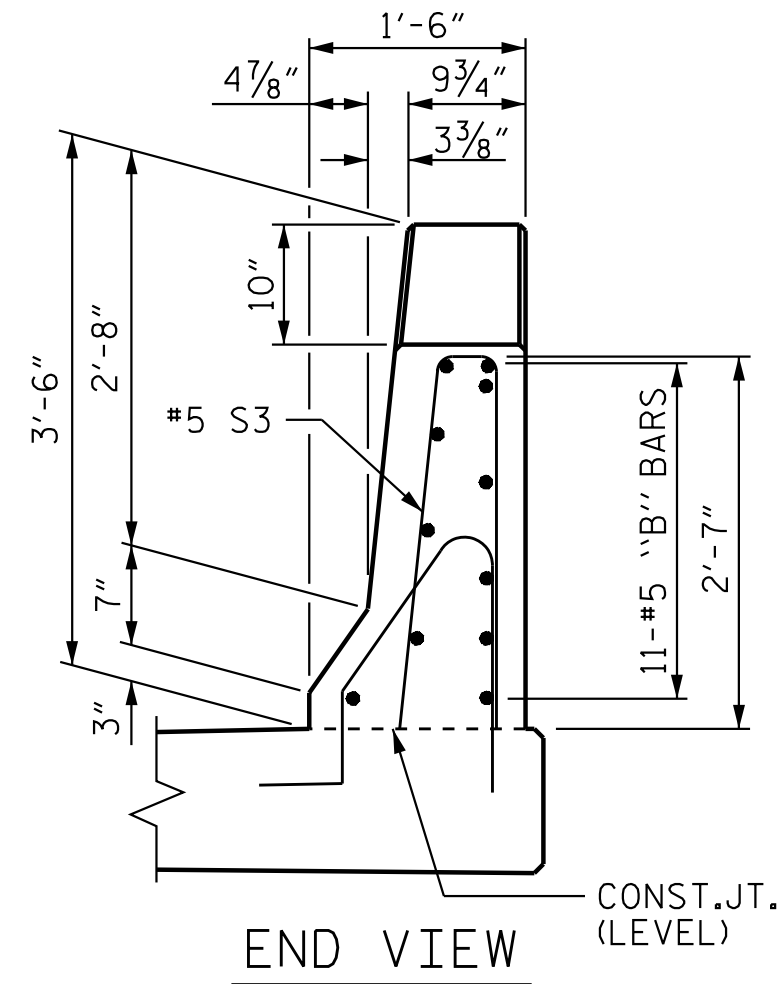
DRAWN BY : FCJ 11/88 MAA/GM
CHECKED BY : ARB 11/88 REV. 12/17 MAA/THC
REV. 5/18 MAA/THC



END BENT 1

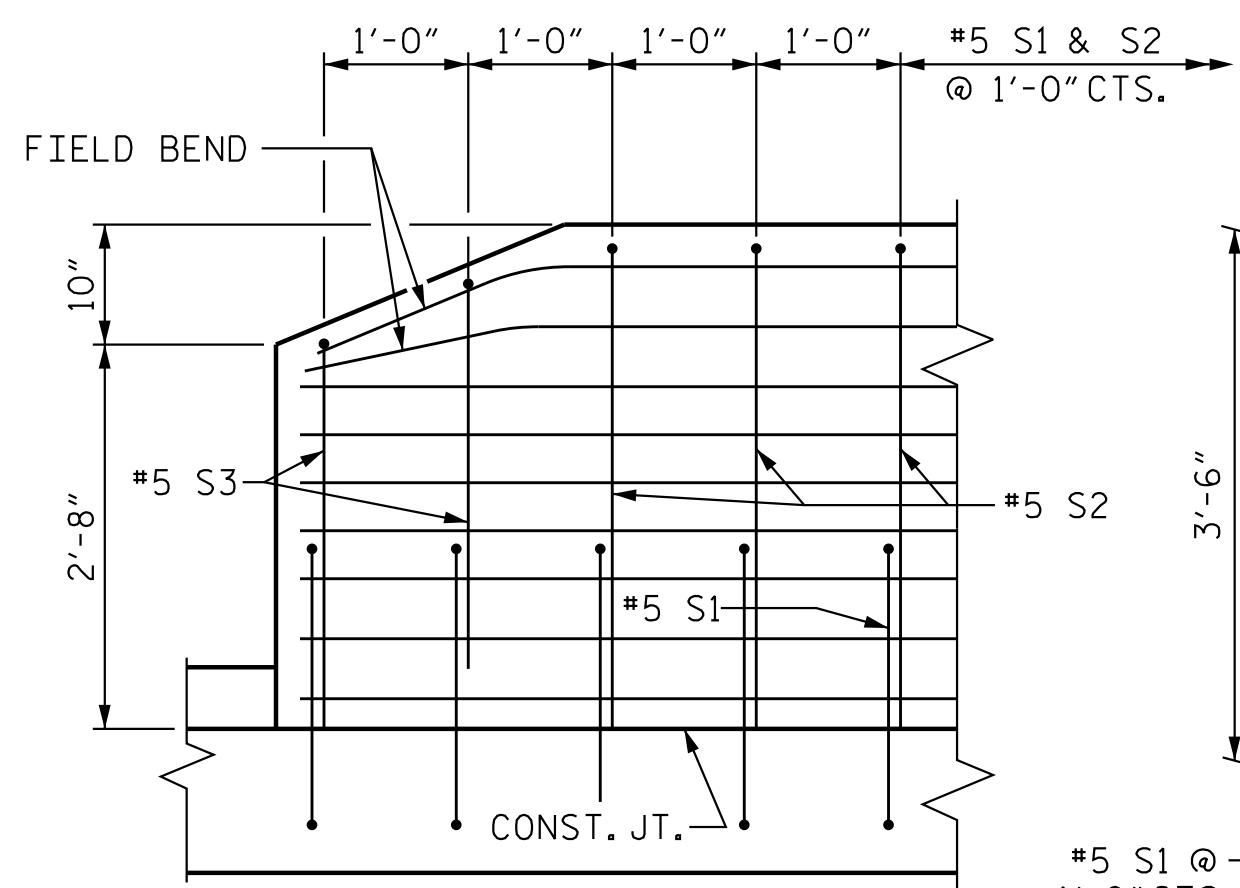
END BENT 2

PLAN OF BARRIER RAIL



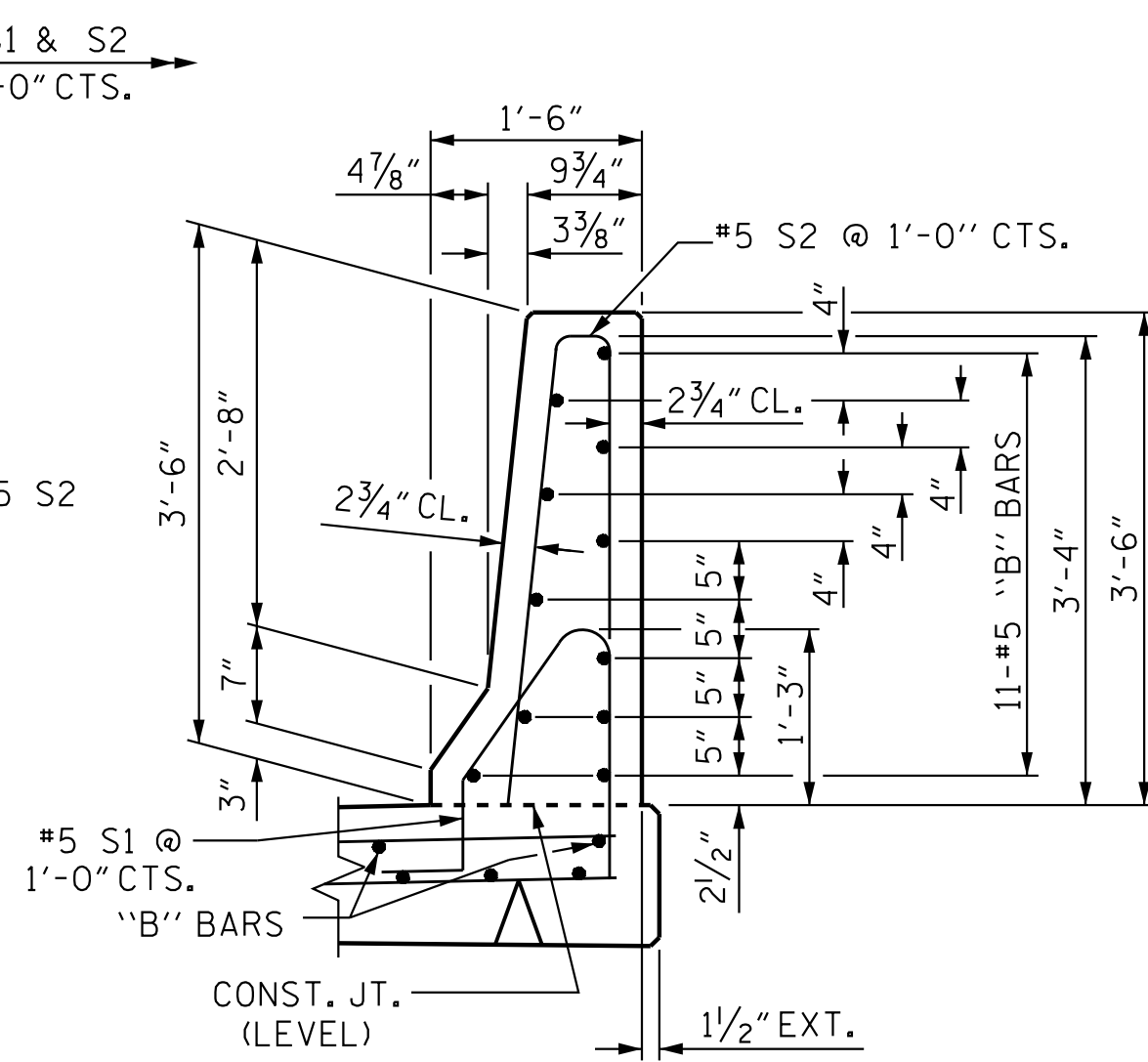
END VIEW

CONST. JT.
(LEVEL)



SIDE VIEW

END OF RAIL DETAILS



SECTION THRU RAIL

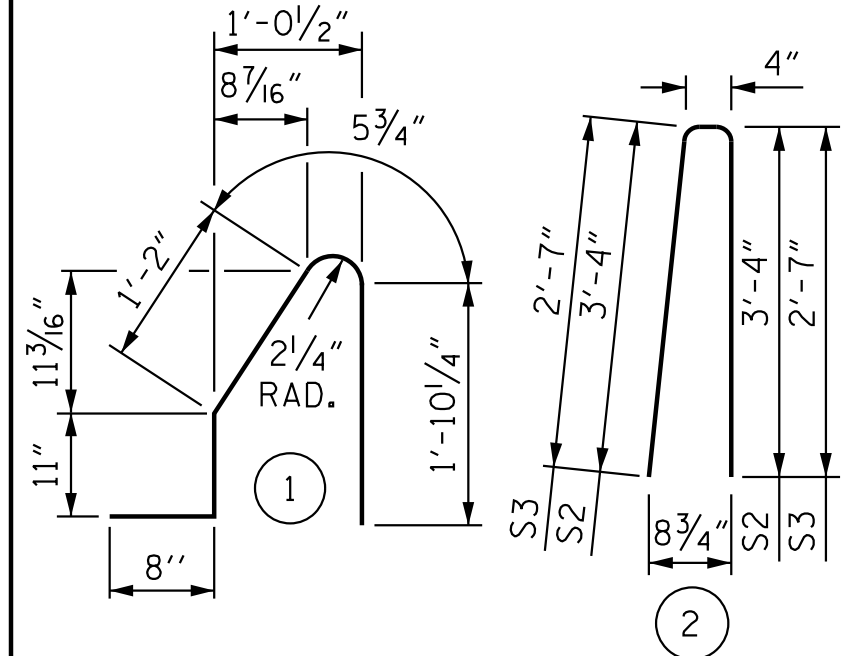
NOTES

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

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.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B9	44	#5	STR	9'-7"	440
* 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 932 LBS.					
CLASS AA CONCRETE				5.5 C. Y.	
CONCRETE BARRIER RAIL				40 LIN. FT.	

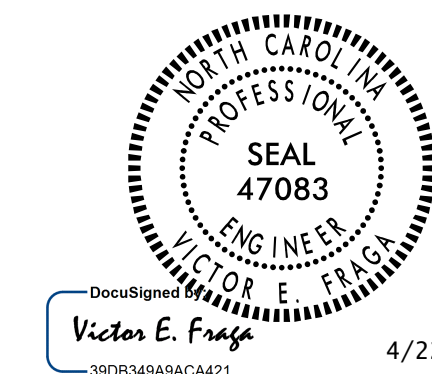
PROJECT NO. R-3300A

 NEW HANOVER COUNTY

STATION: 219+49.69 -L1-

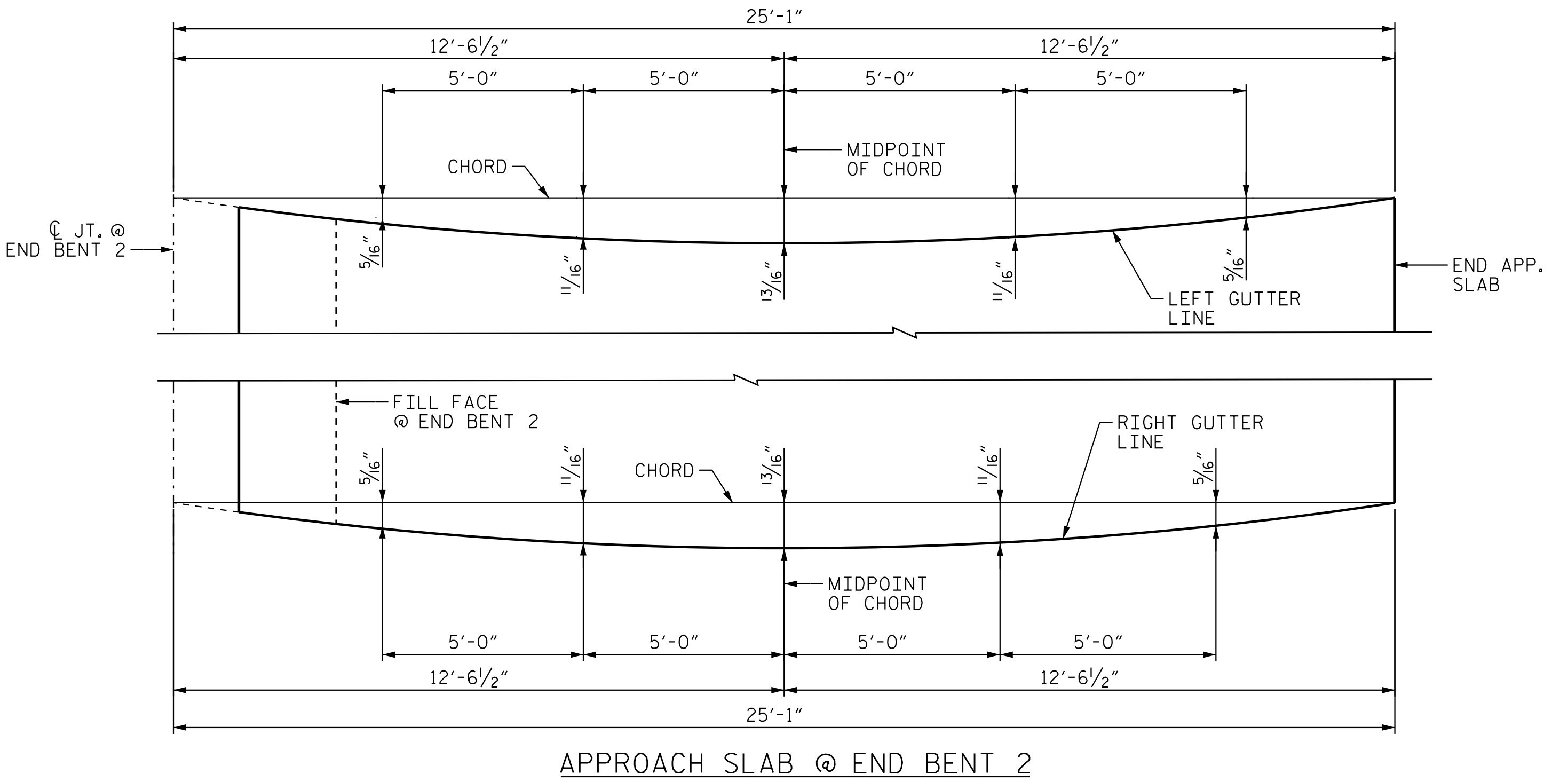
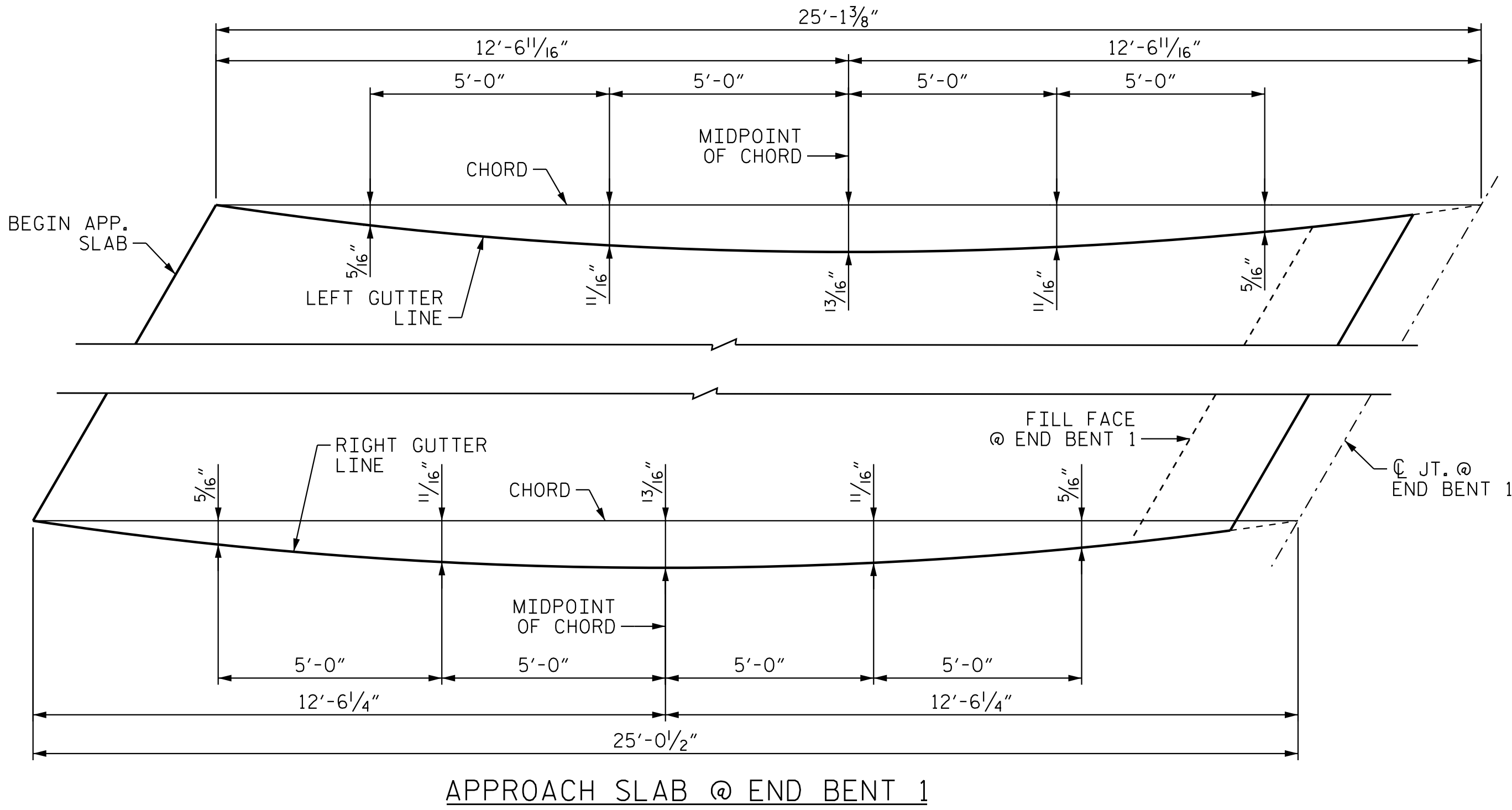
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SHEET 2 OF 3

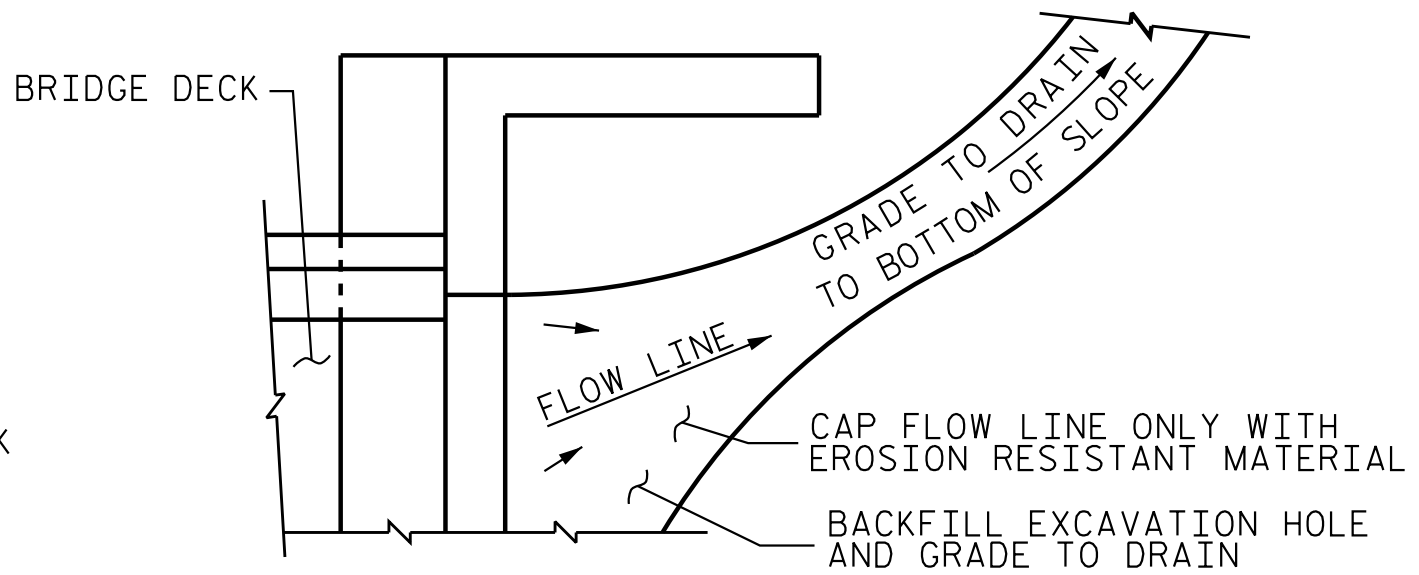
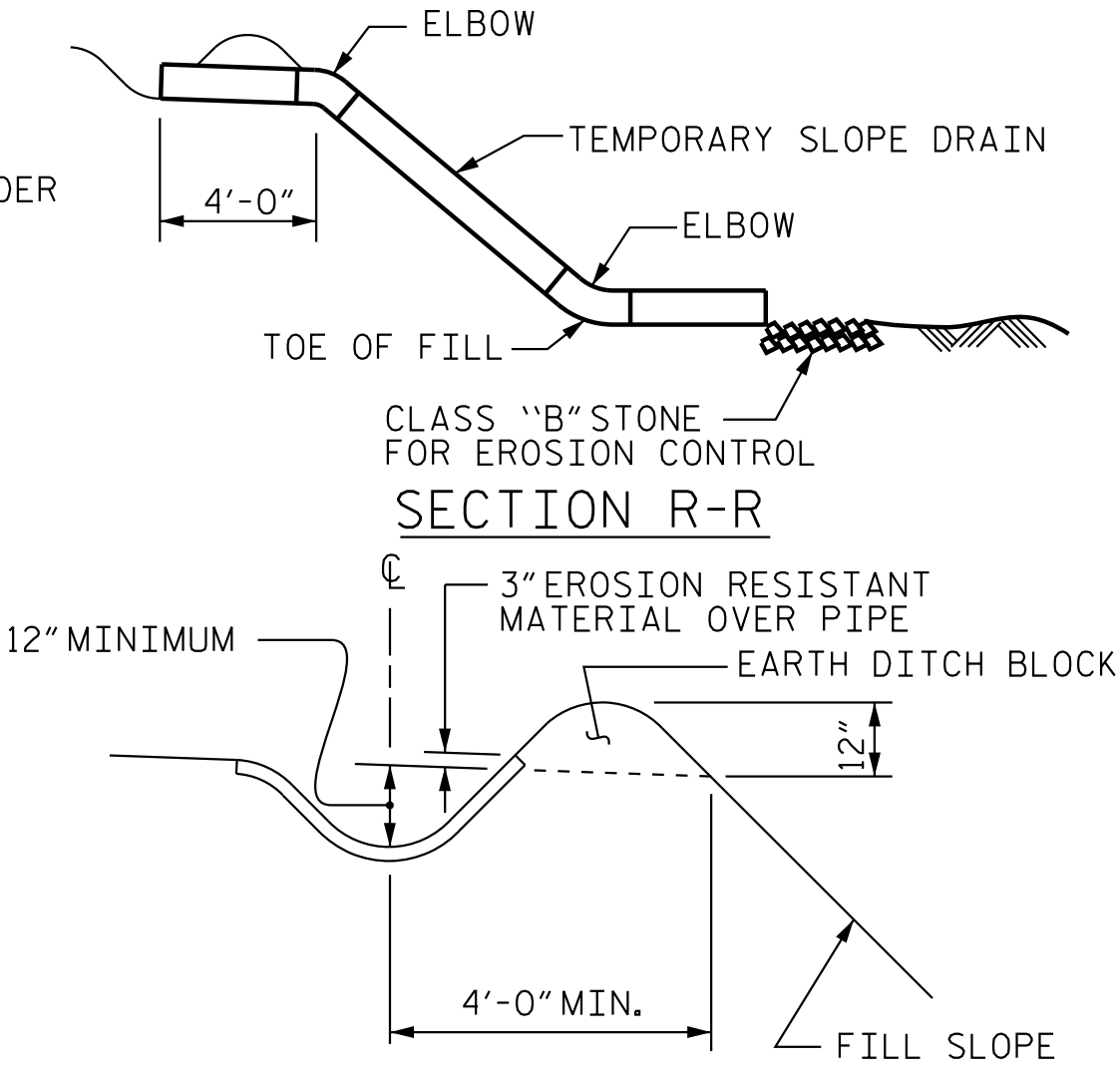
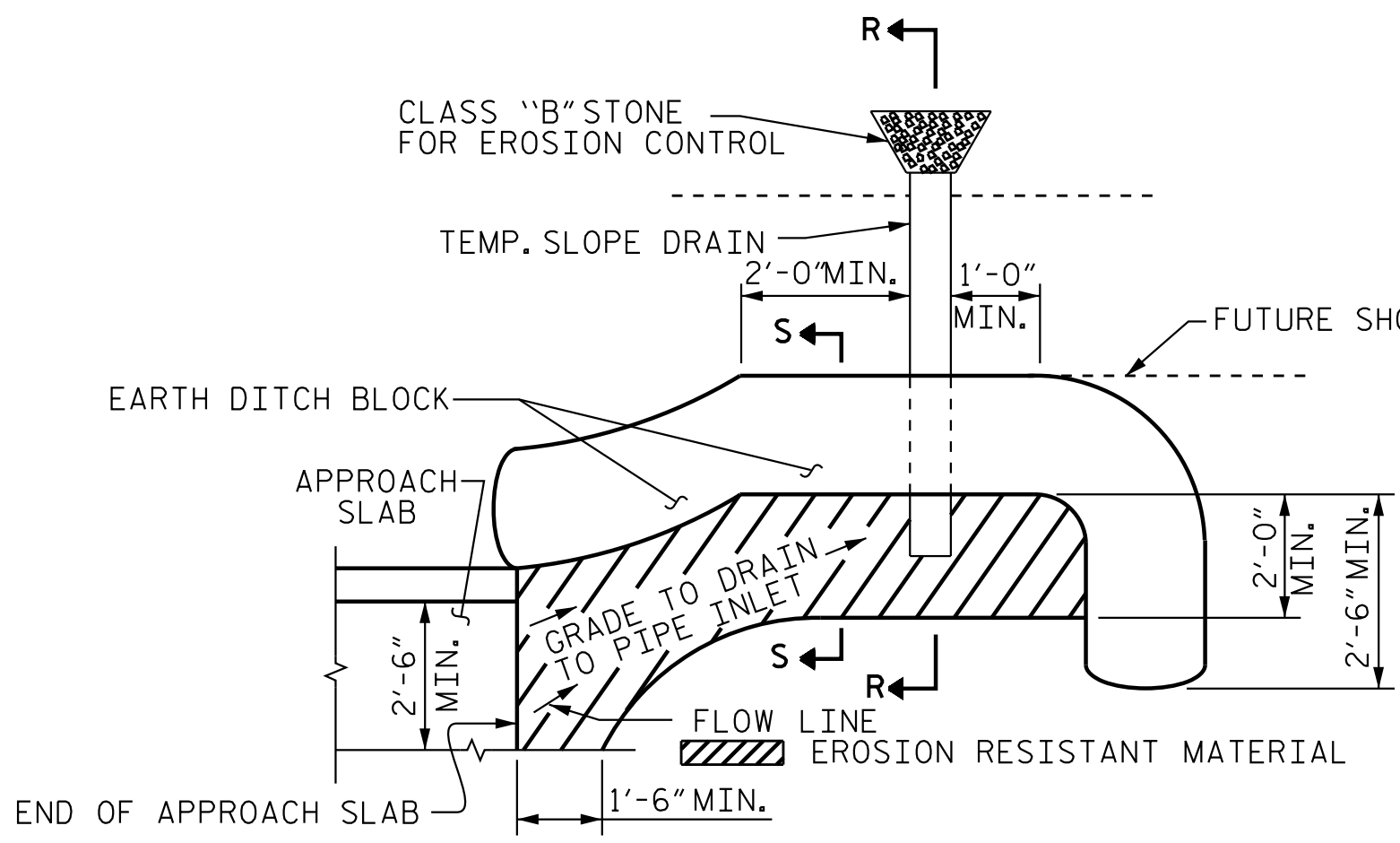


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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S01-112					TOTAL SHEETS 113



CHORD TO ARC OFFSETS



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

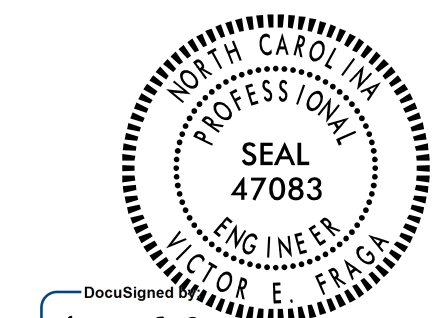
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 219+49.69 -L1-
31+84.73 -Y33RPCA-

SHEET 3 OF 3

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1			3			TOTAL SHEETS 113
2			4			



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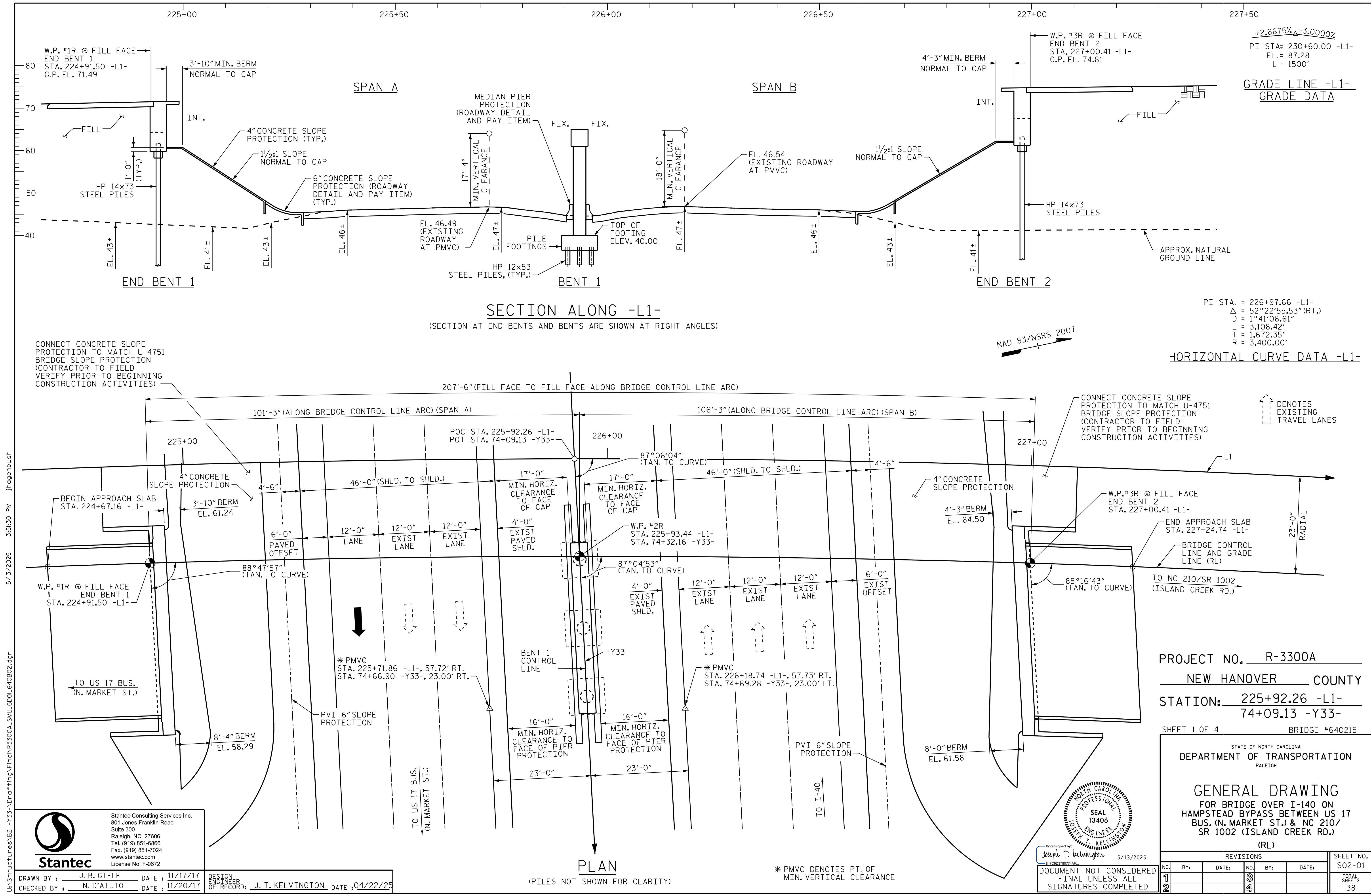


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ENGINEER
OF RECORD: V. E. FRAGA DATE : 04/22/25

ASSEMBLED BY : V. E. FRAGA DATE : 08/24/18
CHECKED BY : S. S. POOLE DATE : 02/01/22

DRAWN BY : FCJ 11/88
CHECKED BY : ARB 11/88
REV. 6/13 MAA/GM
REV. 12/17 MAA/THC
REV. 5/18 MAA/THC



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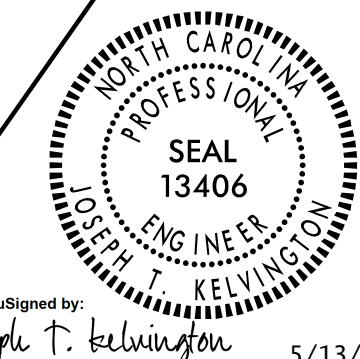
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DRAWN BY: J. B. GIELE DATE: 11/17/17
CHECKED BY: N. D'AIUTO DATE: 11/20/17
DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE: 04/22/25

PLAN
(PILES NOT SHOWN FOR CLARITY)

* PMVC DENOTES PT. OF MIN. VERTICAL CLEARANCE



DocuSigned by:
Joseph T. Kelvington
5/13/2025

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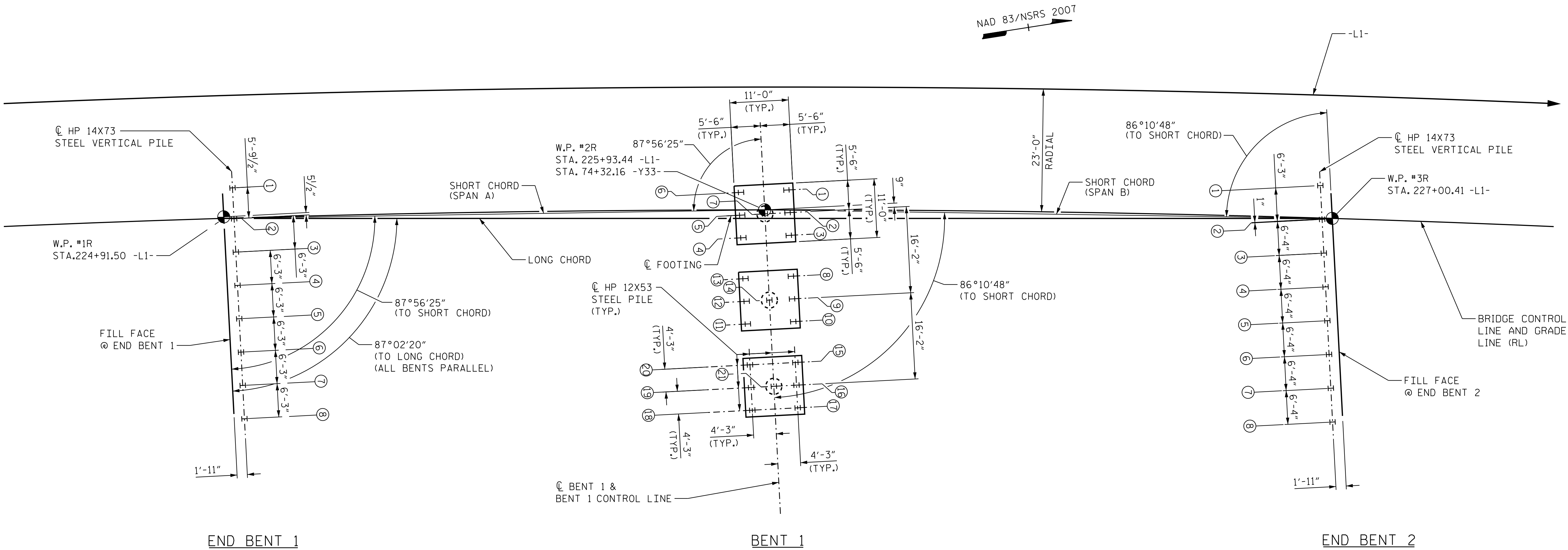
PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-
74+09.13 -Y33-

SHEET 1 OF 4 BRIDGE #640215

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER I-140 ON
HAMPSTEAD BYPASS BETWEEN US 17
BUS. (N. MARKET ST.) & NC 210/
SR 1002 (ISLAND CREEK RD.)
(RL)

REVISIONS						SHEET NO. S02-01
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1			3			TOTAL SHEETS 38
2			4			



FOUNDATION LAYOUT

NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT BEFORE BEGINNING END BENT CONSTRUCTION AT END BENTS NO.1 AND 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 130 TONS PER PILE.

DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.

PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 135 TONS PER PILE.

DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 225 TONS PER PILE.

PILES AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 95 TONS PER PILE.

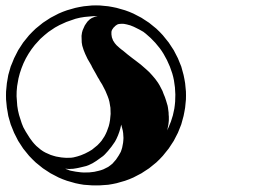
DRIVE PILES AT BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 55 TO 70 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENTS NO.1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING PILES WITH THE PDA DURING DRIVING RESTRIKING, OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

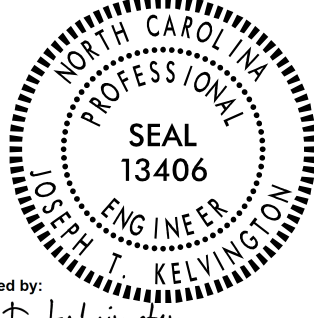
SHEET 2 OF 5



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DRAWN BY : M. R. SMITH DATE : 06/06/18
CHECKED BY : A. E. COOK DATE : 02/09/19

DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25



Drawn by: Joseph T. Kelvington 5/15/2025
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER I-140 ON
HAMPSTEAD BYPASS BETWEEN US 17
BUS. (N. MARKET ST.) & NC 210/
SR 1002 (ISLAND CREEK RD.)

REVISIONS						SHEET NO. S02-02
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
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")	Number of Piles per Line	Factored Resistance per Pile KIPS	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		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
End Bent 1, Piles 1-8	8	260	See Substructure Plans	70			435	4						
Bent 1, Piles 1-21	21	220	See Substructure Plans	50			370	12						
End Bent 2, Piles 1-8	8	270	See Substructure Plans	65			450	4						
TOTAL QUANTITY:								20						

* $RDR = \frac{\text{Factored Resistance} + \text{Factored Drag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Drag Load Resistance} + \text{Nominal Resistance from Scourable Material}$

** 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.

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 KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent 1, Piles 1-8	252			0.6		
Bent 1, Piles 1-21	220			0.6		
End Bent 2, Piles 1-8	268			0.6		

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates EACH	Steel Pile Points		
		Pipe Pile Cutting Shoes EACH	Pipe Pile Conical Points EACH	H-Pile Points EACH
TOTAL QUANTITY:				

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)			Pile Order Lengths for Concrete Piles	
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	DPT Test Pile Length FT	DPT Testing Quantity EACH	End Bent / Bent No (e.g., "Bent 1 - Bent 3")	Pile Order Length Basis* EST or DPT
End Bent 1	75	1		
End Bent 2	70			
TOTAL QUANTITY:		1		

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

PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 225+93.44 -L1-

SHEET 3 OF 5

NOTES:

- The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Jeremy R. Hamm, #039779) on 04/23/2025.
- 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.
- The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.



DecoSigned by
Joseph T. Kelvington 2025
SIGNATURE DATE

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE
FOUNDATION
TABLES

REVISIONS

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

SHEET NO.
S2-03

TOTAL
SHEETS
36

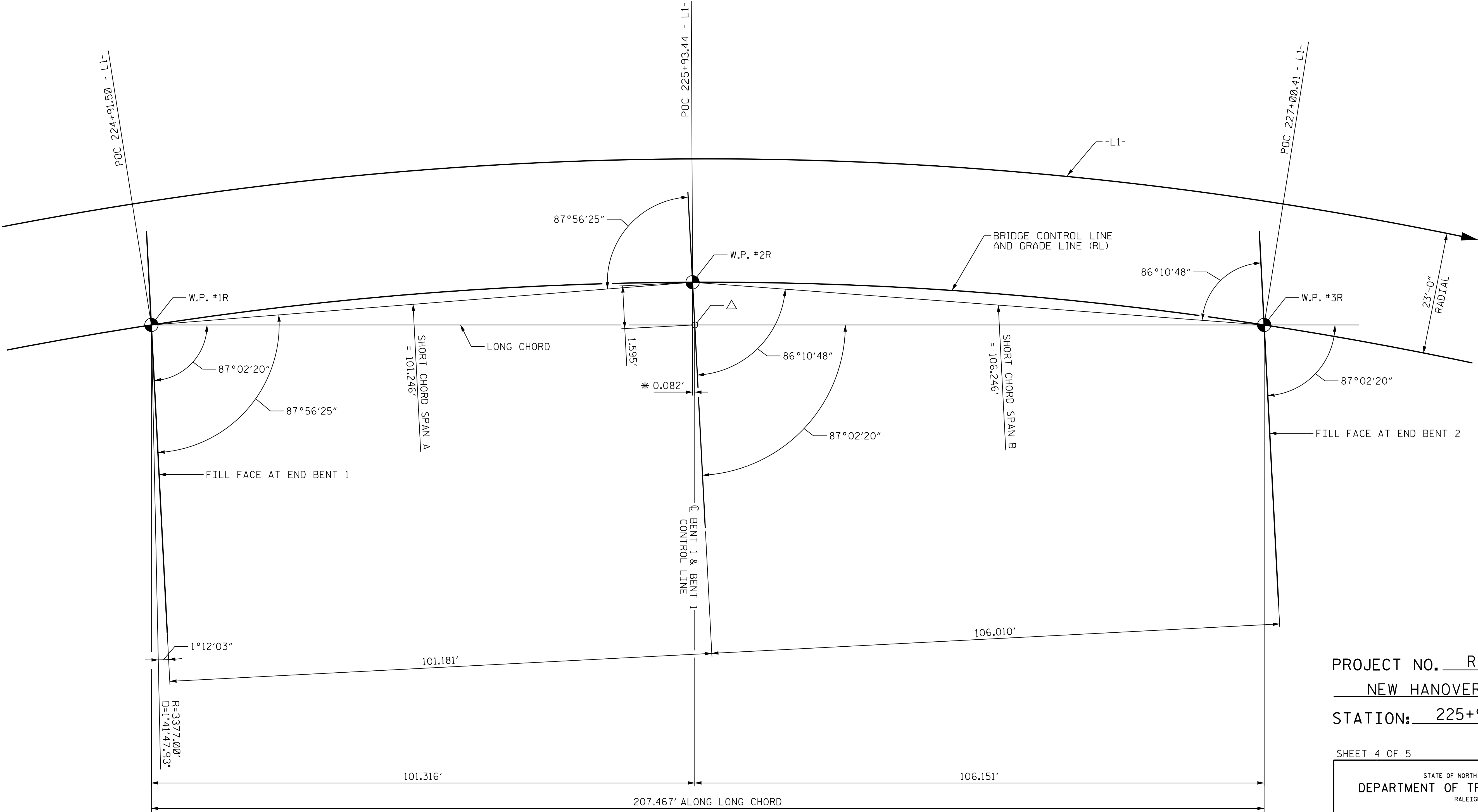
NOTES:

ALL BENTS ARE PARALLEL.

* POINT PROJECTED ON LONG CHORD TO LONG CHORD
INTERSECTION POINT WITH BENT 1 CONTROL LINE.

Δ C.P. *2R INTERSECTION POINT - LONG CHORD
WITH/ $\varnothing$ BENT 1 AND BENT CONTROL LINE

NAD 83/NSRS 2007



LONG CHORD LAYOUT

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 4 OF 5

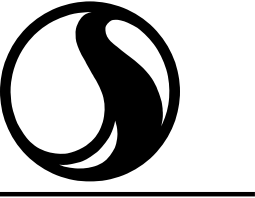
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DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER I-140 ON
HAMPSTEAD BYPASS BETWEEN US 17
BUS. (N. MARKET ST.) & NC 210/
SR 1002 (ISLAND CREEK RD.)



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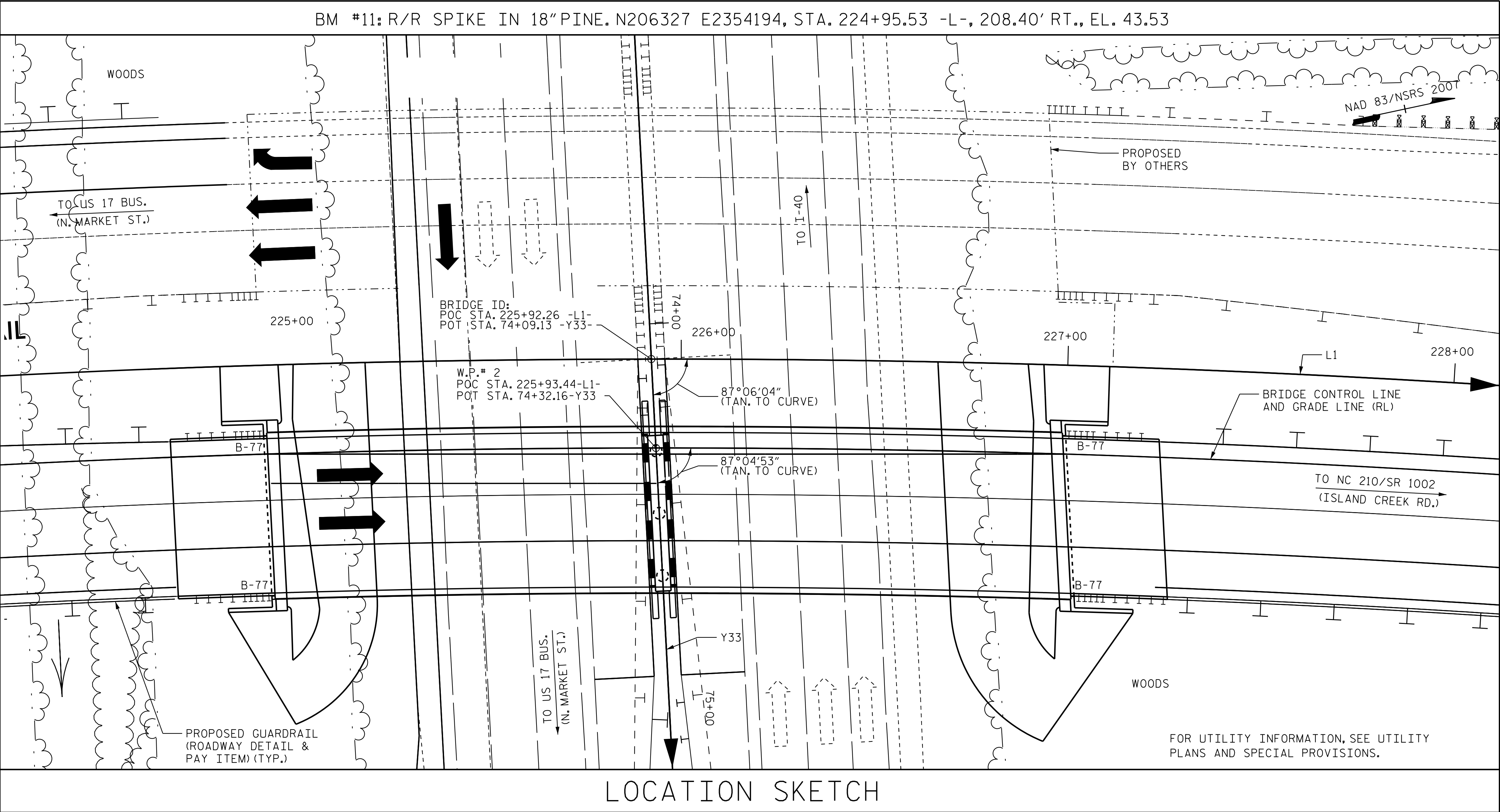
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DRAWN BY : M. R. SMITH DATE : 05/31/18
CHECKED BY : A. E. COOK DATE : 02/05/19

DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE : 04/22/25

5/16/2025 11:00:06 AM jhagenbush

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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 1.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- 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.
- PRESTRESSED CONCRETE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.
- NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- THE ELEVATION(S) AND CLEARANCE(S) SHOWN ON THE PLANS AT THE POINT(S) OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION(S) 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 CALCIUM NITRITE CORROSION INHIBITOR, SEE STANDARD SPECIFICATIONS.

TOTAL BILL OF MATERIAL																					
	FOUNDATION EXCAVATION FOR BENT	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	MODIFIED 72" PRESTRESSED CONC. GIRDERS		PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 14x73 STEEL PILES	HP 12x53 STEEL PILES		HP 14x73 STEEL PILES		PILE REDRIVES	DYNAMIC PILE TESTING	CONCRETE BARRIER RAIL	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	
	LUMP SUM	SQ.FT.	SQ.FT.	CU.YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN.FT.	EA.	EA.	NO.	LIN.FT.	NO.	LIN.FT.	EA.	EA.	LIN.FT.	SQ.YDS.	LUMP SUM	
SUPERSTRUCTURE		8,974	9,392		LUMP SUM			8	817.0										411.67		LUMP SUM
END BENT NO.1				36.4		6,020					8			8	560	4			441		
BENT NO.1	LUMP SUM			107.9		13,076	1,346			21		21	1,050			12					
END BENT NO.2				36.7		6,200					8			8	520	4			504		
TOTAL	LUMP SUM	8,974	9,392	181.0	LUMP SUM	25,296	1,346	8	817.0	21	16	21	1,050	16	1,080	20	1	411.67	945	LUMP SUM	

PROJECT NO. R-3300A

NEW HANOVER COUNTY

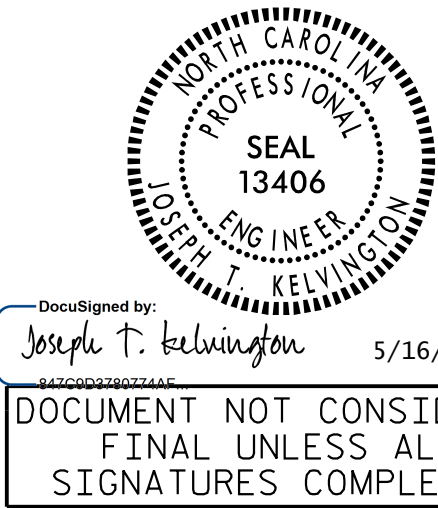
STATION: 225+92.26 -L1-

SHEET 4 OF 4



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DRAWN BY : M. R. SMITH DATE : 05/31/18
CHECKED BY : A. E. COOK DATE : 02/09/19
DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25



DocuSigned by:
Joseph T. Kelvington
5/16/2025

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SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER I-140 ON
HAMPSTEAD BYPASS BETWEEN US 17
BUS. (N. MARKET ST.) & NC 210/
SR 1002 (ISLAND CREEK RD.)

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S02-05	
1			3			TOTAL SHEETS 38	
2			4				

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.

SPANS SHOWN IN LRFR SUMMARY CORRESPONDS TO COMPOSITE DEAD LOAD AND LIVE LOAD MODEL USED FOR ANALYSIS AND DESIGN.

CONTROLLING LOAD RATING

1

DESIGN LOAD RATING (HL-93)

2

DESIGN LOAD RATING (HS-20)

3

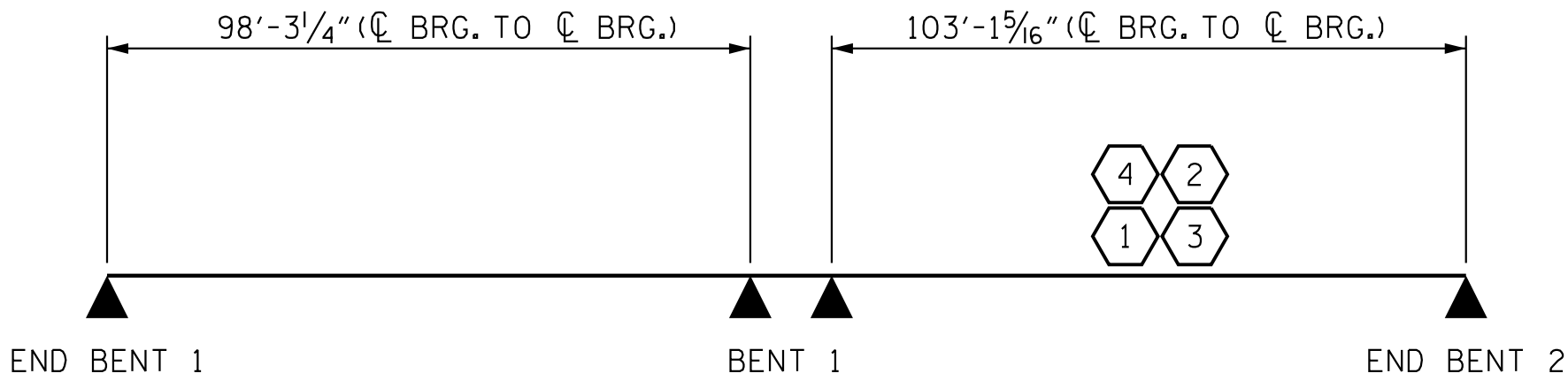
LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

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 × RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER	
						LIVE-LOAD FACTORS (γ _{LL})	MOMENT				SHEAR				LIVE-LOAD FACTORS (γ _{LL})	MOMENT								
							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)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.39	--	1.75	1.008	1.41	B	EL	51.60	1.011	1.54	B	I	72.50	0.80	1.008	1.39	B	I	51.60		
	HL-93 (OPERATING)	N/A		1.82	--	1.35	1.008	1.82	B	EL	51.60	1.011	2.19	B	I	82.90	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	2	1.94	69.8	1.75	1.008	1.98	B	EL	51.60	1.011	2.22	B	I	82.90	0.80	1.008	1.94	B	I	51.60		
	HS-20 (OPERATING)	36.000		2.57	92.5	1.35	1.008	2.57	B	EL	51.60	1.011	2.92	B	I	82.90	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		1.52	20.5	1.40	1.008	2.32	B	EL	51.60	1.011	2.70	B	I	82.90	0.80	1.008	1.52	B	I	51.60	
		SNGARBS2	20.000		2.52	50.4	1.40	1.008	3.84	B	EL	51.60	1.011	4.39	B	I	82.90	0.80	1.008	2.52	B	I	51.60	
		SNAGRIS2	22.000		1.86	40.9	1.40	1.008	2.84	B	EL	51.60	1.011	3.33	B	I	82.90	0.80	1.008	1.86	B	I	51.60	
		SNCOTTS3	27.250		2.71	73.8	1.40	1.008	4.13	B	EL	51.60	1.011	4.76	B	I	82.90	0.80	1.008	2.71	B	I	51.60	
		SNAGGRS4	34.925		1.49	52.0	1.40	1.008	2.27	B	EL	51.60	1.011	2.71	B	I	82.90	0.80	1.008	1.49	B	I	51.60	
		SNS5A	35.550		1.36	48.3	1.40	1.008	2.07	B	EL	51.60	1.011	2.45	B	I	82.90	0.80	1.008	1.36	B	I	51.60	
		SNS6A	39.950		1.36	54.3	1.40	1.008	2.07	B	EL	51.60	1.011	2.45	B	I	82.90	0.80	1.008	1.36	B	I	51.60	
		SNS7B	42.000		1.29	54.2	1.40	1.008	1.96	B	EL	51.60	1.011	2.38	B	I	82.90	0.80	1.008	1.29	B	I	51.60	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.65	54.5	1.40	1.008	2.52	B	EL	51.60	1.011	2.96	B	I	82.90	0.80	1.008	1.65	B	I	51.60	
		TNT4A	33.075		1.31	43.3	1.40	1.008	2.00	B	EL	51.60	1.011	2.27	B	I	82.90	0.80	1.008	1.31	B	I	51.60	
		TNT6A	41.600		1.24	51.6	1.40	1.008	1.89	B	EL	51.60	1.011	2.23	B	I	82.90	0.80	1.008	1.24	B	I	51.60	
		TNT7A	42.000		1.23	51.7	1.40	1.008	1.88	B	EL	51.60	1.011	2.15	B	I	82.90	0.80	1.008	1.23	B	I	51.60	
		TNT7B	42.000		1.65	69.3	1.40	1.008	2.52	B	EL	51.60	1.011	2.89	B	I	82.90	0.80	1.008	1.65	B	I	51.60	
		TNAGRIT4	43.000	3	1.34	57.6	1.40	1.008	2.04	B	EL	51.60	1.011	2.46	B	I	82.90	0.80	1.008	1.34	B	I	51.60	
		TNAGT5A	45.000		1.33	59.9	1.40	1.008	2.03	B	EL	51.60	1.011	2.51	B	I	82.90	0.80	1.008	1.33	B	I	51.60	
		TNAGT5B	45.000		1.36	61.2	1.40	1.008	2.08	B	EL	51.60	1.011	2.33	B	I	82.90	0.80	1.008	1.36	B	I	51.60	
EMERGENCY VEHICLE (EV)	EV1	45.000		1.90	54.6	1.30	1.008	2.90	B	EL	51.60	1.011	3.29	B	I	82.90	0.80	1.008	1.90	B	I	51.60		
	EV2	45.000	4	1.26	54.2	1.30	1.008	1.91	B	EL	51.60	1.011	2.17	B	I	82.90	0.80	1.008	1.26	B	I	51.60		

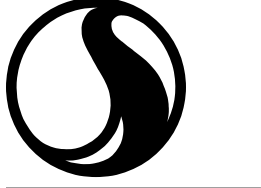


LRFR SUMMARY

PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 225+92.26 -L1-



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ASSEMBLED BY : G. A. TURNER DATE : 11/19/18
CHECKED BY : A. E. COOK DATE : 02/06/19

DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08

REV. 11/12/08RR MAA/GM
REV. 10/11/11 MAA/GM
REV. 12/17 MAA/THC

DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE : 04/22/25



J. T. Kelvington
4/29/2025

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

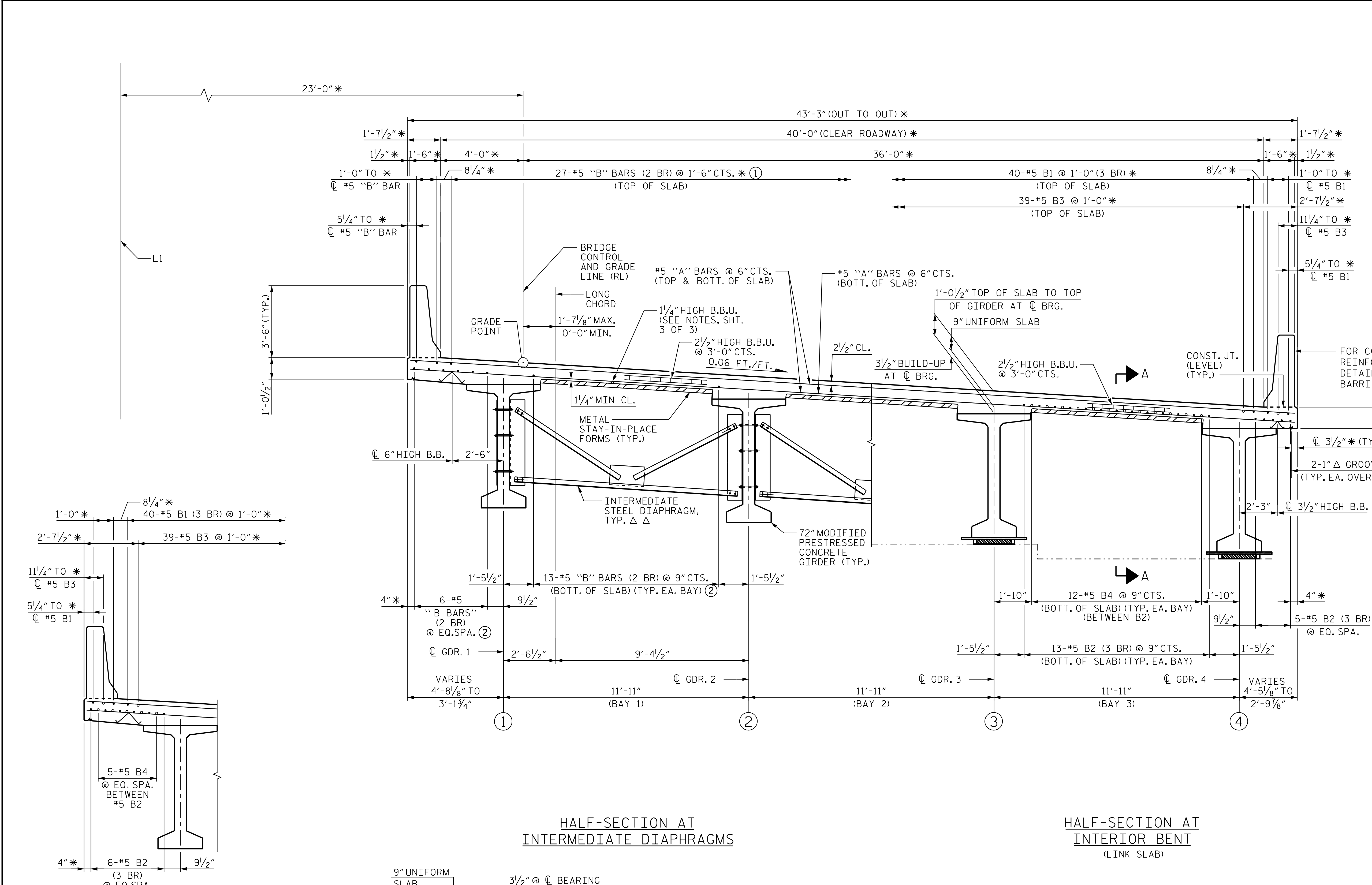
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
PRESTRESSED
CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S02-06
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			

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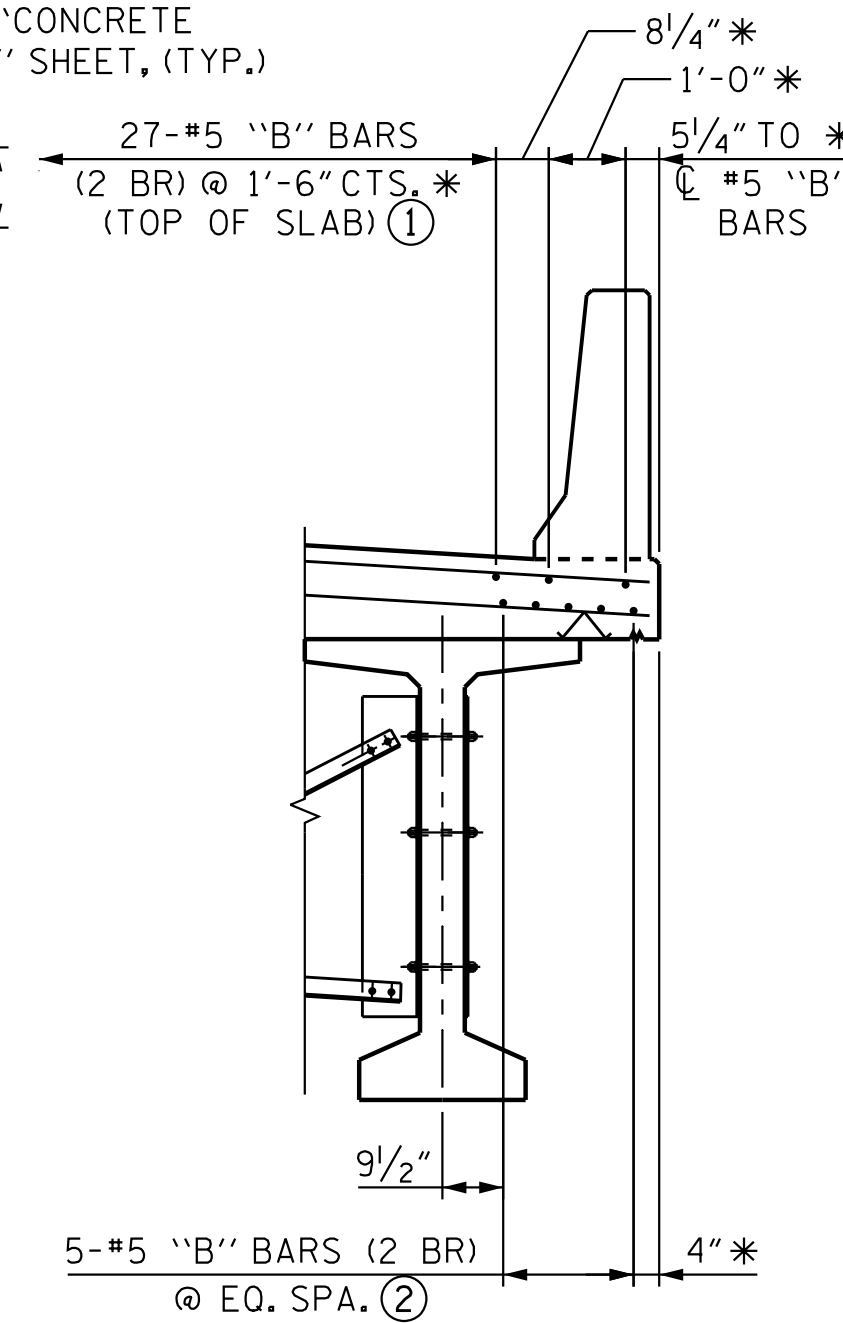
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NOTES

- SEE "TYPICAL SECTION (DETAILS)",
SHEET 3 OF 3 FOR ADDITIONAL NOTES.
- (2 BR) DENOTES 2 BAR RUN.
(3 BR) DENOTES 3 BAR RUN.
* DENOTES RADIAL DIMENSION.
- △ △ FOR INTERMEDIATE STEEL
DIAPHRAGM DETAILS, SEE
"INTERMEDIATE STEEL
DIAPHRAGMS FOR 72" MODIFIED
BULB TEE PRESTRESSED CONCRETE
GIRDERS" SHEET.
- DENOTES CONTINUOUS DECK
REINFORCEMENT RUN FROM
END BENT 1 TO END BENT 2
- DENOTES NON-CONTINUOUS
DECK REINFORCEMENT
- ** BASED ON PREDICTED FINAL
CAMBER AND THEORETICAL
GRADE LINE ELEVATIONS
- ① #5 B5 (SPAN "A")
#5 B9 (SPAN "B")
- ② #5 B8 (SPAN "A")
#5 B10 (SPAN "B")



HALF-SECTION AT
INTERMEDIATE DIAPHRAGMS

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

TYPICAL SECTION

REVISIONS						SHEET NO. S02-07
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			

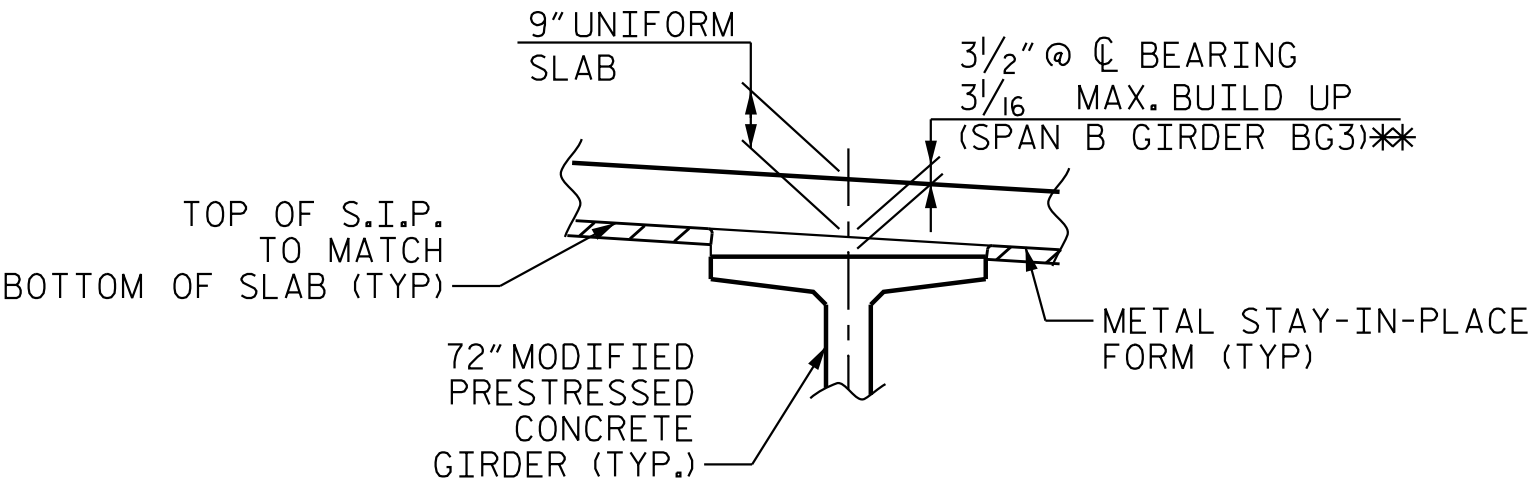
TYPICAL SECTION

NOTE : GIRDERS ARE PARALLEL TO LONG CHORD. HORIZONTAL DIMENSIONS
TO GIRDER CENTERLINES ARE NORMAL TO THE LONG CHORD.

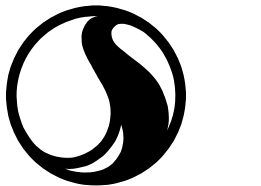
HALF-SECTION AT
INTERMEDIATE DIAPHRAGMS

HALF-SECTION AT
INTERIOR BENT
(LINK SLAB)

HALF-SECTION AT
INTERIOR BENT
(LINK SLAB)



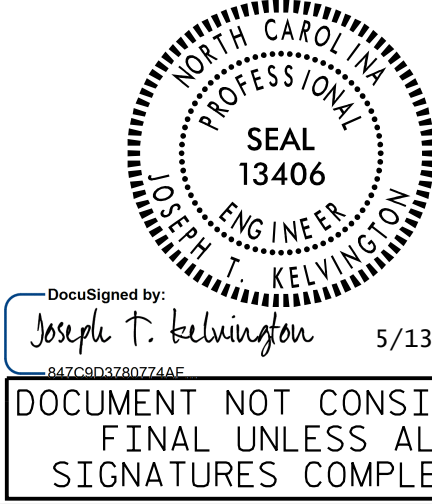
MAXIMUM BUILD-UP
DETAIL @ MID-SPAN



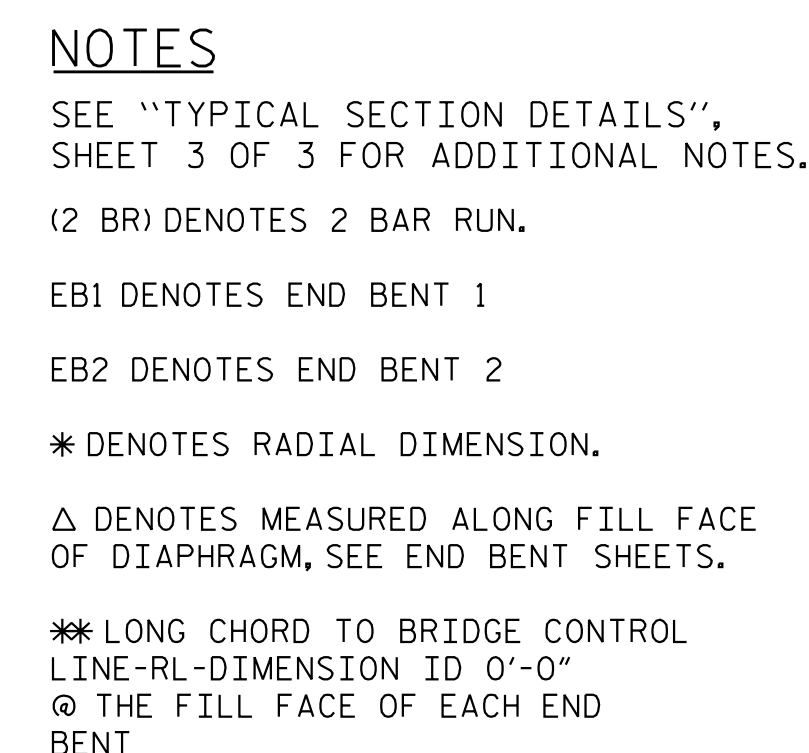
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DRAWN BY : M. R. SMITH DATE : 06/27/18
CHECKED BY : A. E. COOK DATE : 02/20/19

DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE : 04/22/25



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- ① #5 B5 (SPAN "A")
#5 B9 (SPAN "B")
- ② #5 B8 (SPAN "A")
#5 B10 (SPAN "B")
- ③ 1'-7" (MIN.), #4 K1 LAP SPLICE (TYP.)

TYPICAL SECTION



PROJECT NO. R-3300A
NEW HANOVER COUNTY
 STATION: 225+92.26 -L1-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

TYPICAL SECTION

REVISIONS						SHEET NO. S02-08
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



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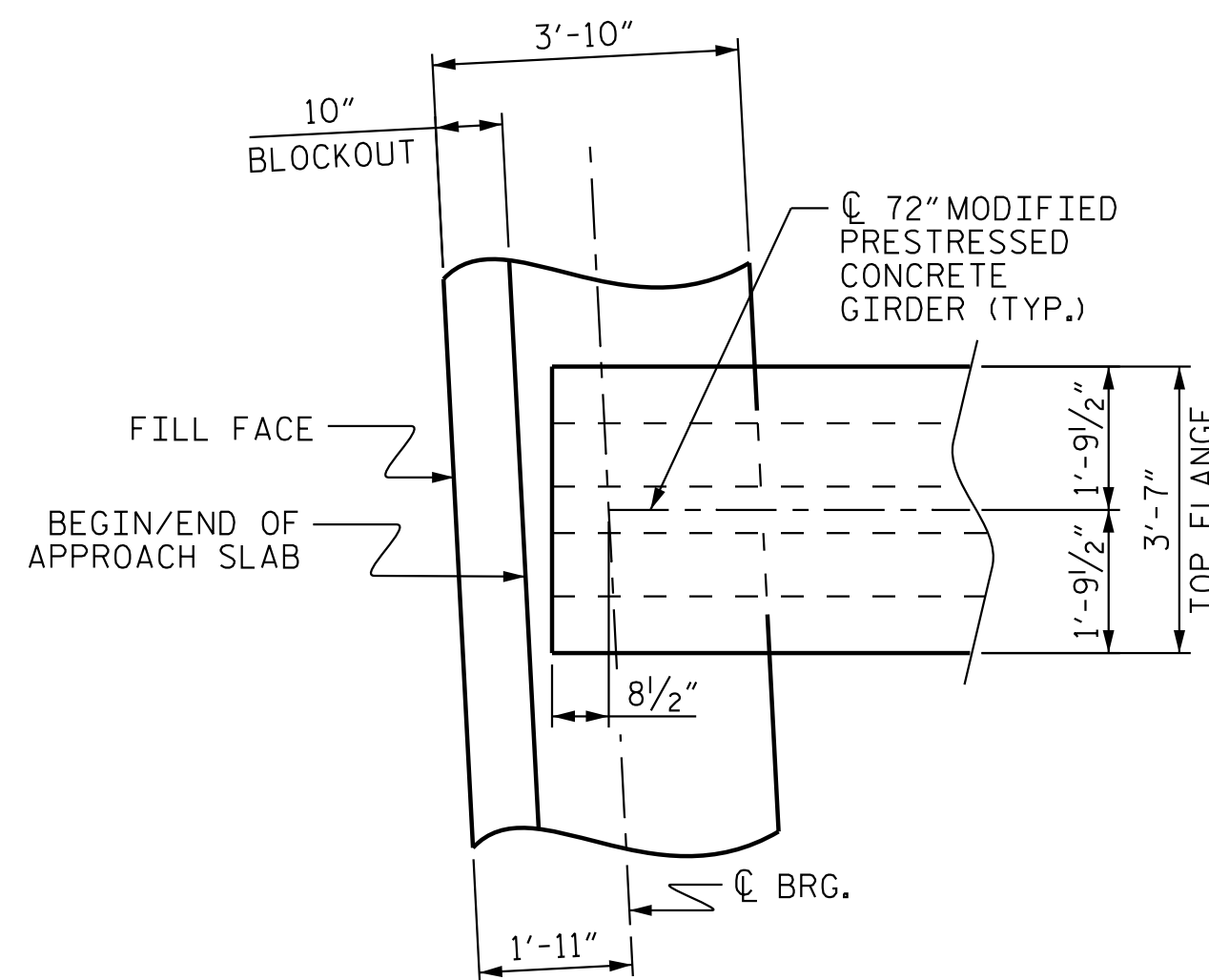
DRAWN BY : M. R. SMITH DATE : 07/27/18
CHECKED BY : A. E. COOK DATE : 02/20/19

DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE: 04/22/25

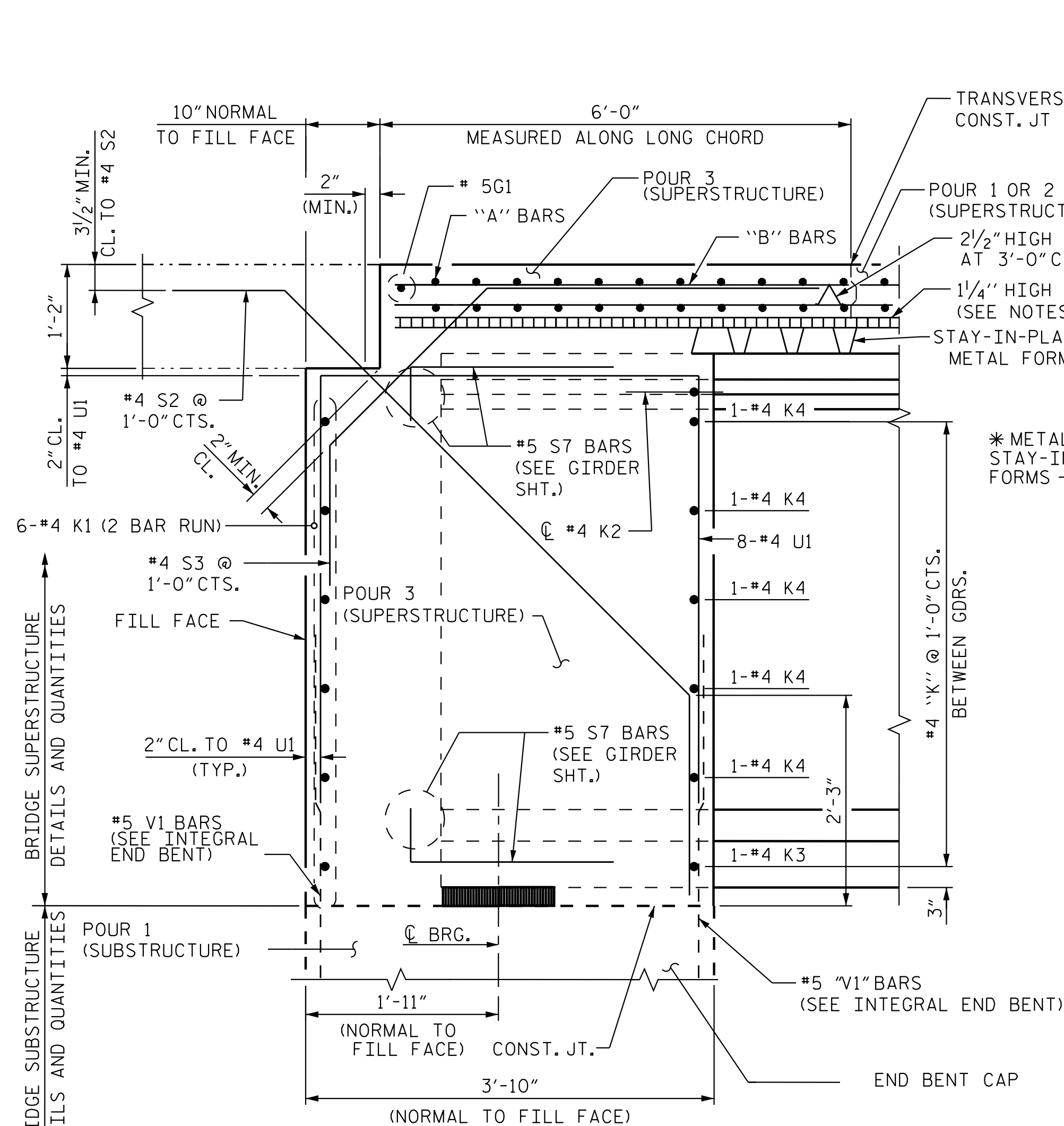


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Joseph T. Kelvington 5/13/202

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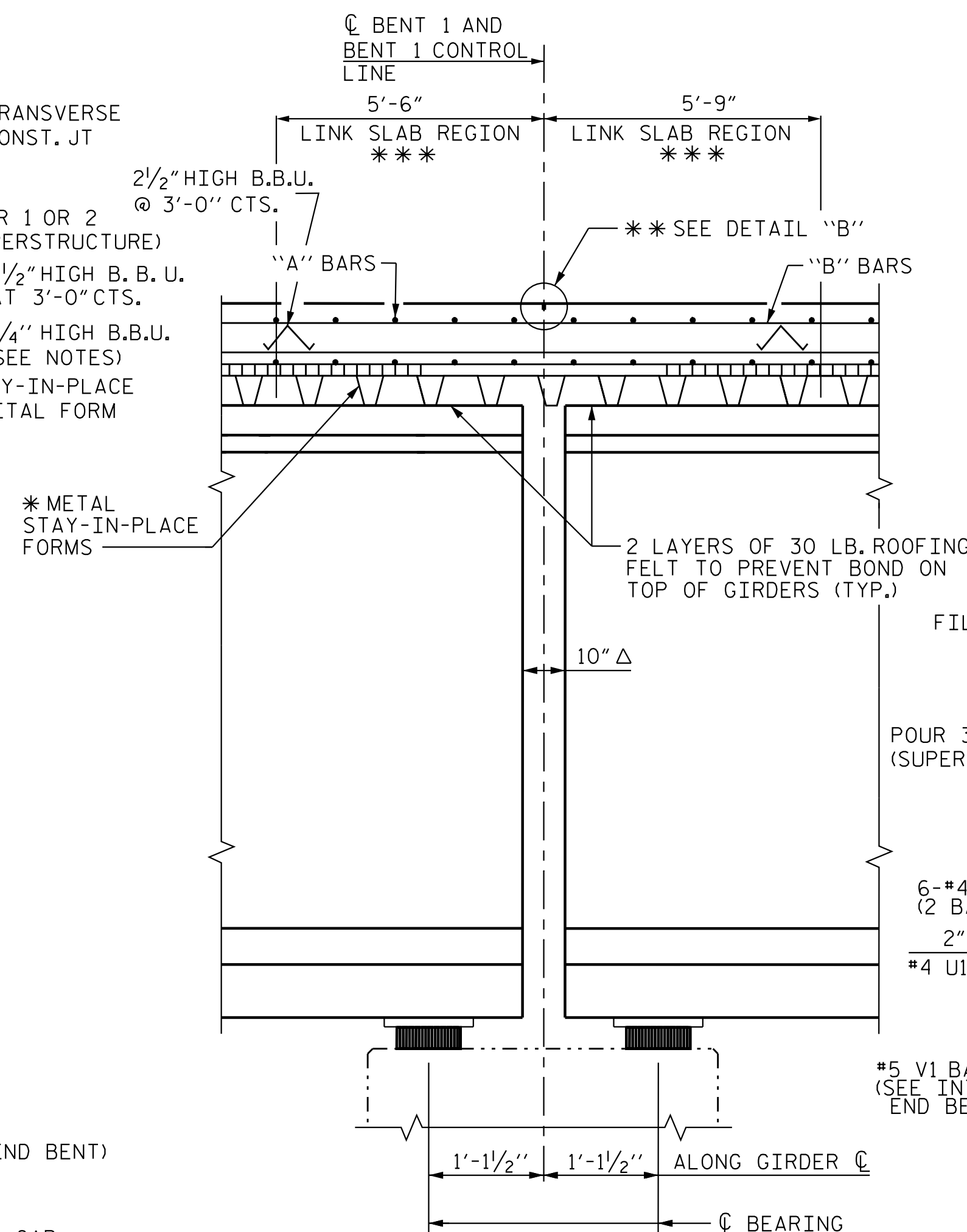


PLAN OF INTEGRAL END BENT



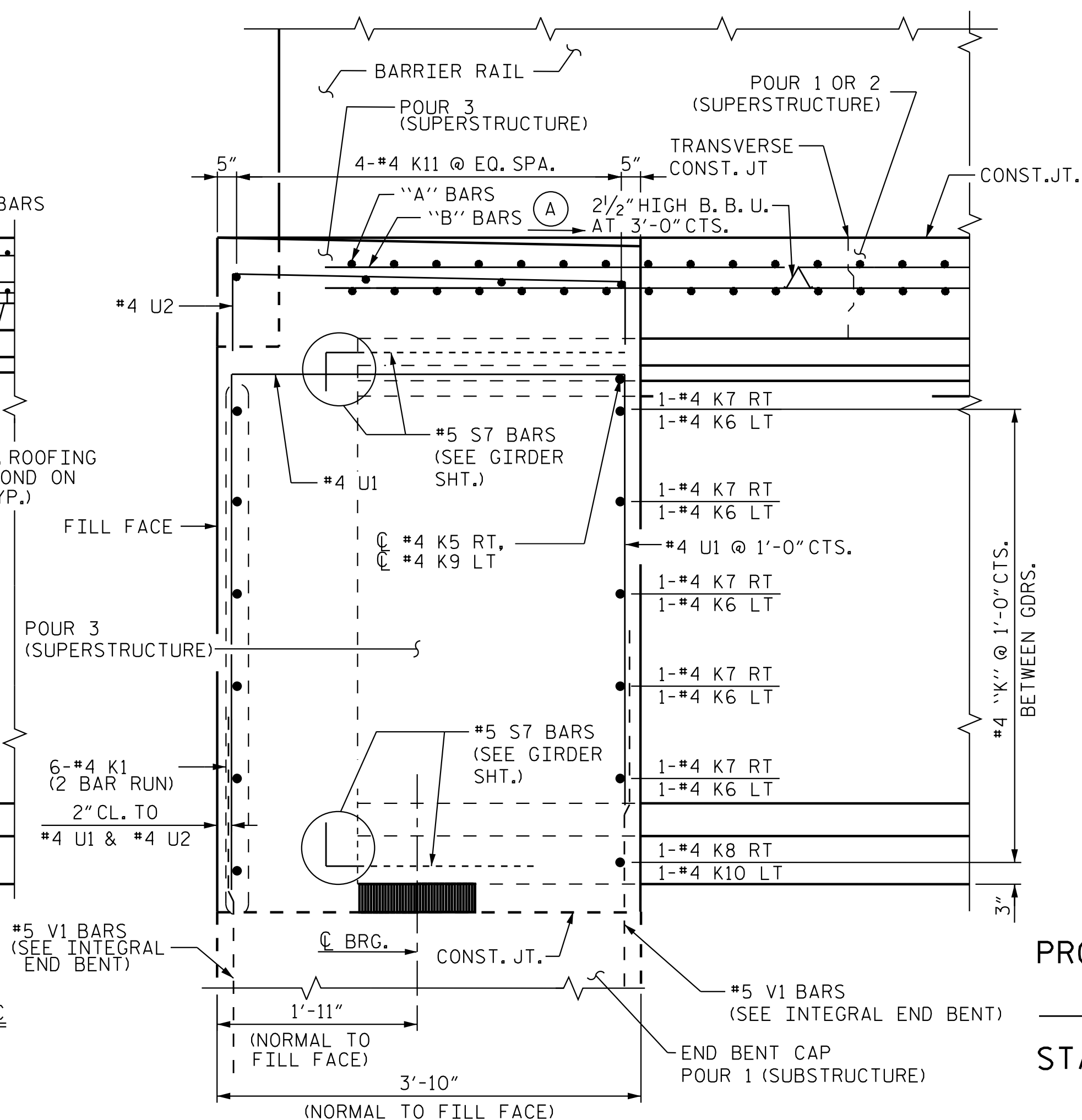
SECTION B-B

SECTION THRU INTEGRAL END BENT DIAPHRAGM
WORK WITH "PLAN OF SPAN DETAILS - DIAPHRAGMS", SH. 3 OF 5"



SECTION A-A

SECTION THRU DIAPHRAGM @ LINK SLAB INTERIOR BENT
WORK WITH "PLAN OF SPAN DETAILS - DIAPHRAGMS". SH. 3 OF 5"



SECTION C-C

SECTION THRU INTEGRAL END BENT DIAPHRAGM BEYOND EXTERIOR GIRDER
WORK WITH "PLAN OF SPAN DETAILS - DIAPHRAGMS" SH. 3 OF 5"

△ NOMINAL DIMENSIONS. 6½" MIN. CLEARANCE @ TOP FLANGE DUE TO BEAM CAMBER AND FABRICATION TOLERANCES.

PROJECT NO. R-3300A
NEW HANOVER COUNTY
 STATION: 225+92.26 -L1-

SHEET 3 OF 3

SUPERSTRUCTURE

TYPICAL SECTION
(DETAILS)

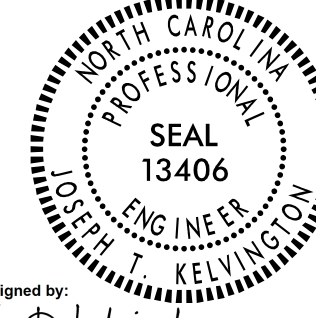
REVISONS						SHEET NO. S02-09
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



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DRAWN BY : M. R. SMITH DATE : 08/09/18
CHECKED BY : A. E. COOK DATE : 02/20/19

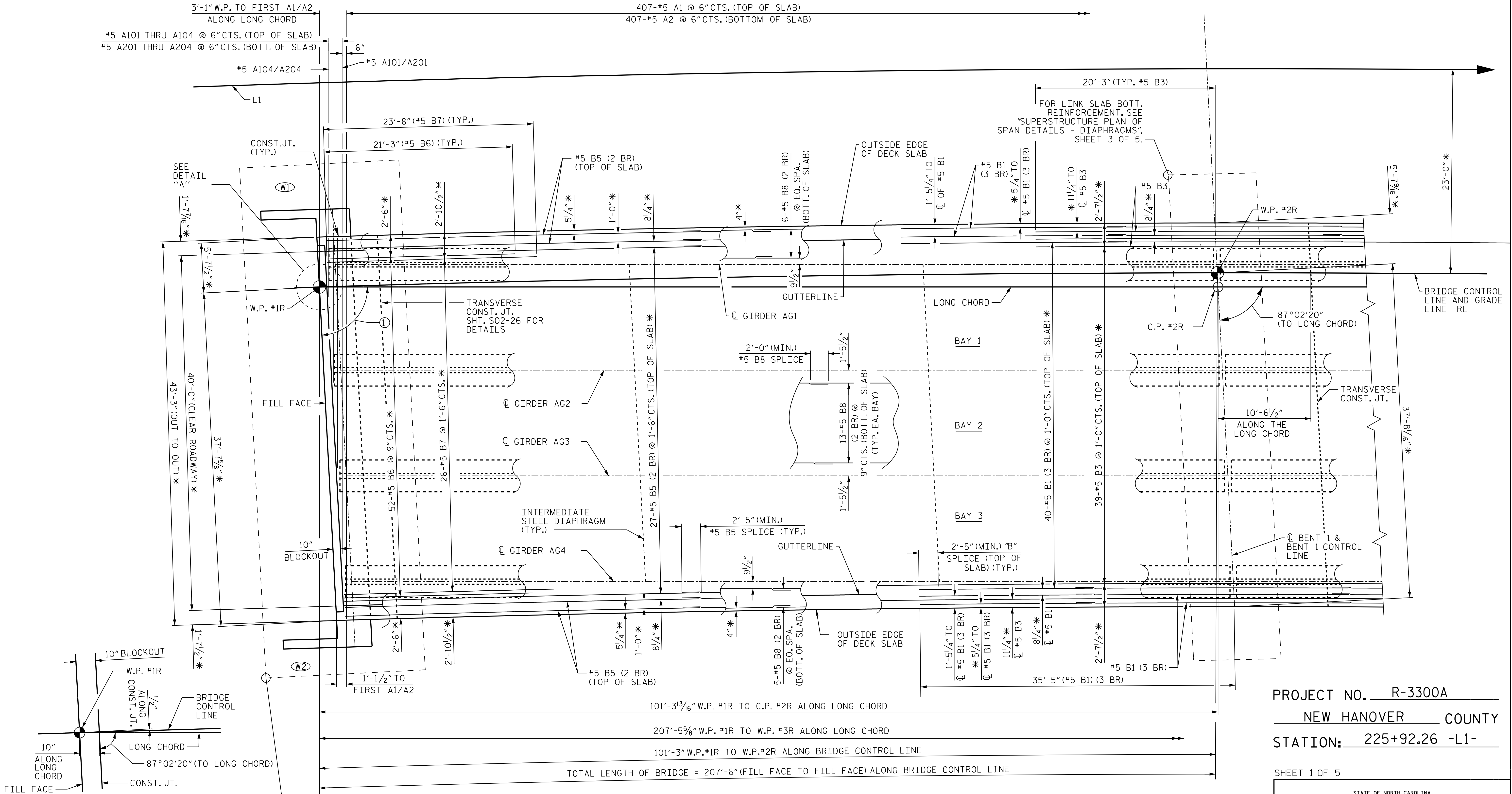
DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE: 04/22/25



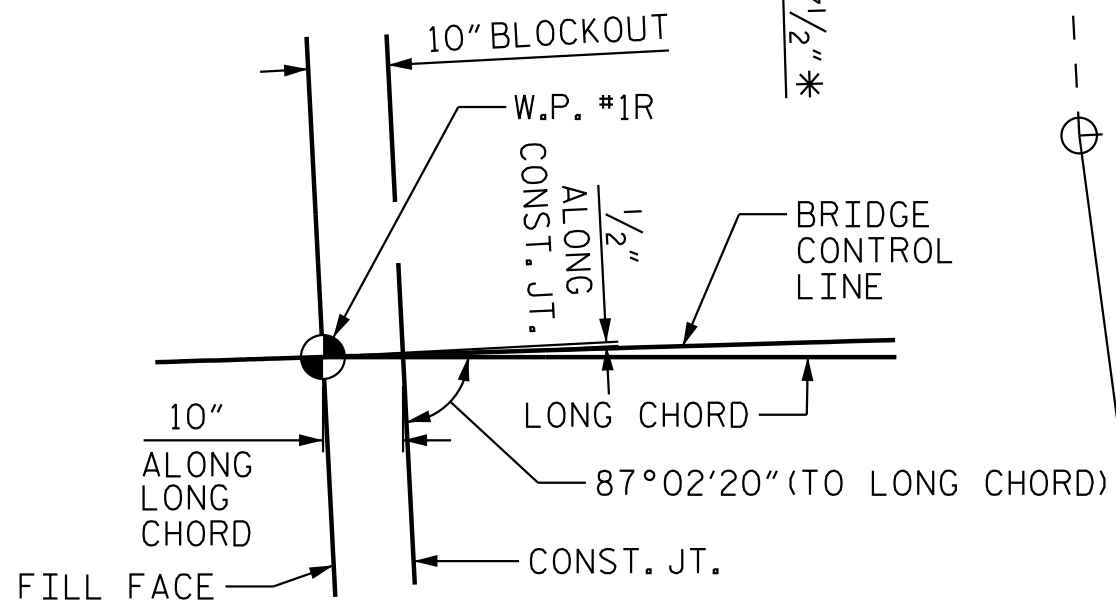
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Joseph T. Kelvington 5/13/2025

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DETAIL "A"



FOR REINFORCEMENT IN
END BENT DIAPHRAGM, SEE
"SUPERSTRUCTURE PLAN OF
SPAN DETAILS - DIAPHRAGMS",
SHEET 3 OF 5.

NOTES

(2 BR) DENOTES 2 BAR RUN.

(3 BR) DENOTES 3 BAR RUN.

* DENOTES RADIAL DIMENSION.

FOR C.P. #2R AND W.P. #2R LAYOUT,
SEE GENERAL DWG., SHT S2 04 OF 05
AND FRAMING PLAN.

PLACE ENDS OF #5 B5, #5 B6, #5 B7
AND #5 B8 BARS 1'-0" CLEAR
FROM FILL FACE.

① 87°02'20"
(TO LONG CHORD)

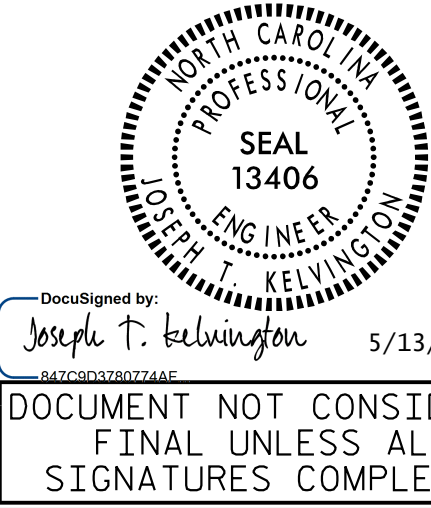
PLAN OF SPAN
SPAN A

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

PLAN OF SPAN
(SPAN A)



REVISIONS						SHEET NO. S02-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			

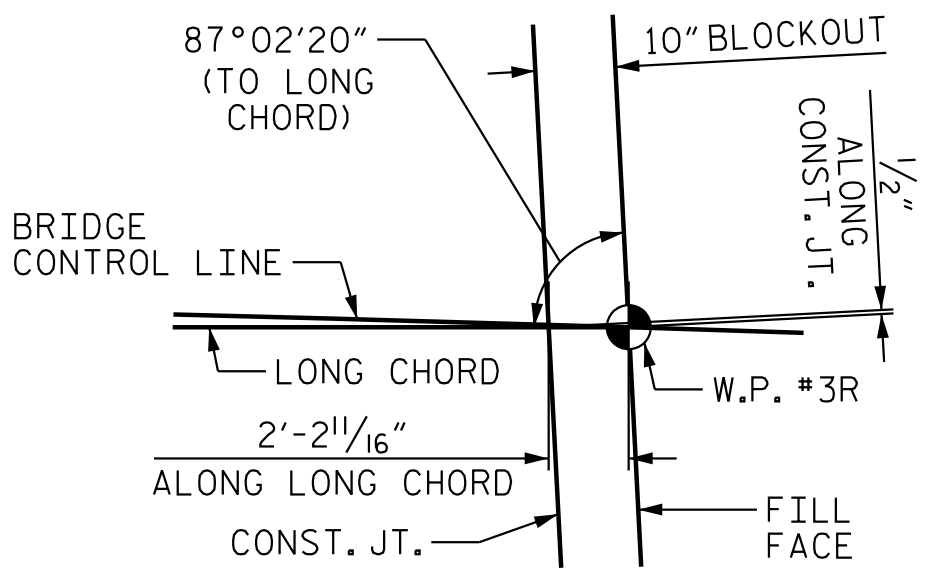
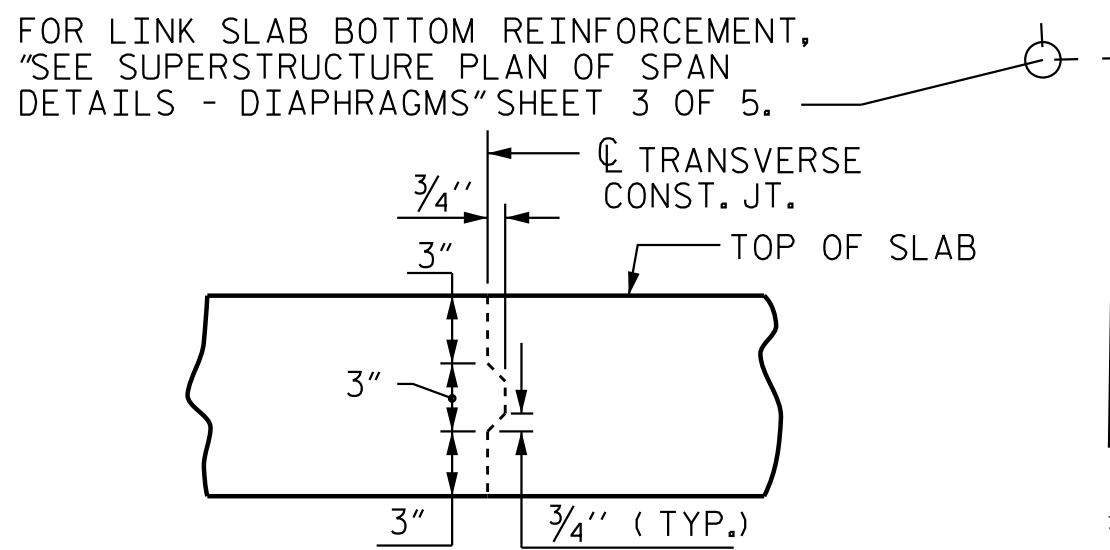
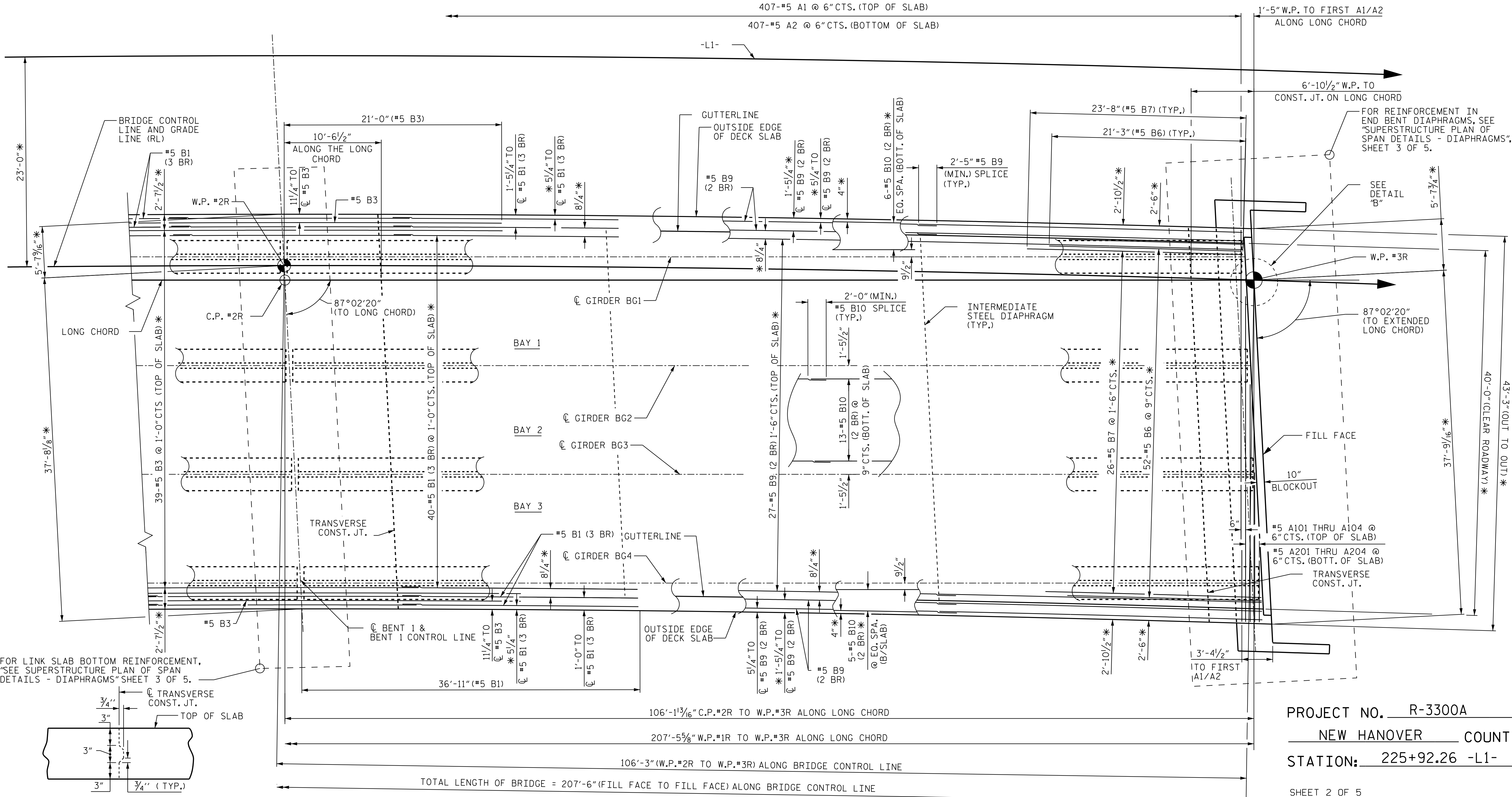


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DRAWN BY : M. R. SMITH DATE : 06/25/18
CHECKED BY : A. E. COOK DATE : 02/21/19

DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE : 04/22/25

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DETAIL "B"

PLAN OF SPAN
SPAN B

NOTES

(2 BR) DENOTES 2 BAR RUN.

(3 BR) DENOTES 3 BAR RUN.

* DENOTES RADIAL DIMENSION.

FOR C.P. #2R AND W.P. #2R LAYOUT, SEE GENERAL DRAWING SHT. 4 OF 5 AND FRAMING PLAN.

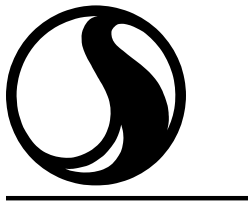
PLACE ENDS OF #5 B6, #5 B7, #5 B9, AND #5 B10 BARS 1'-0" CLEAR OF FILL FACE.

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 2 OF 5

TRANSVERSE CONSTRUCTION
JOINT IN DECK SLAB

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


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DRAWN BY : M. R. SMITH DATE : 06/27/18
CHECKED BY : A. E. COOK DATE : 02/20/19

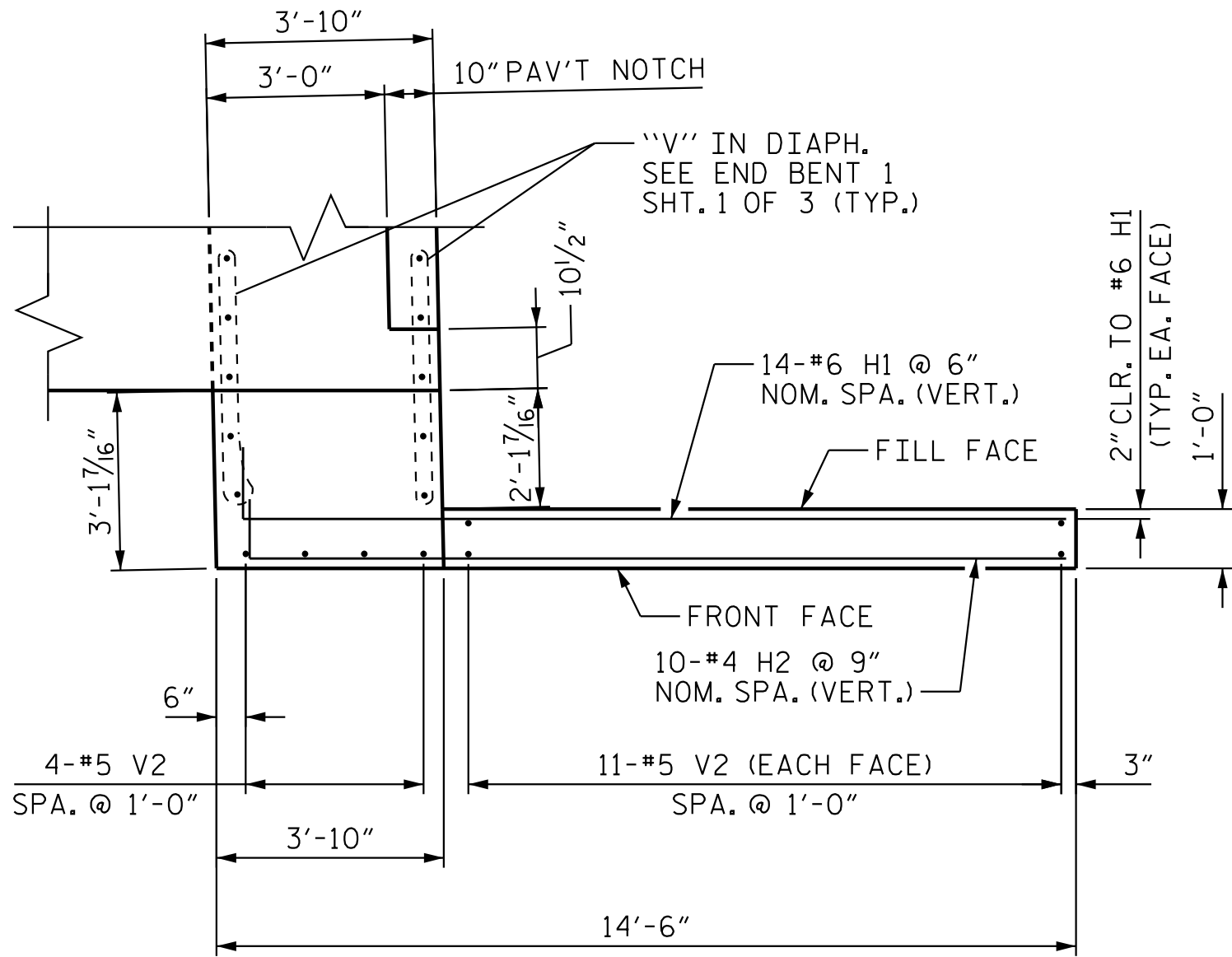
DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25

DocuSigned by:
Joseph T. Kelvington
5/13/2025

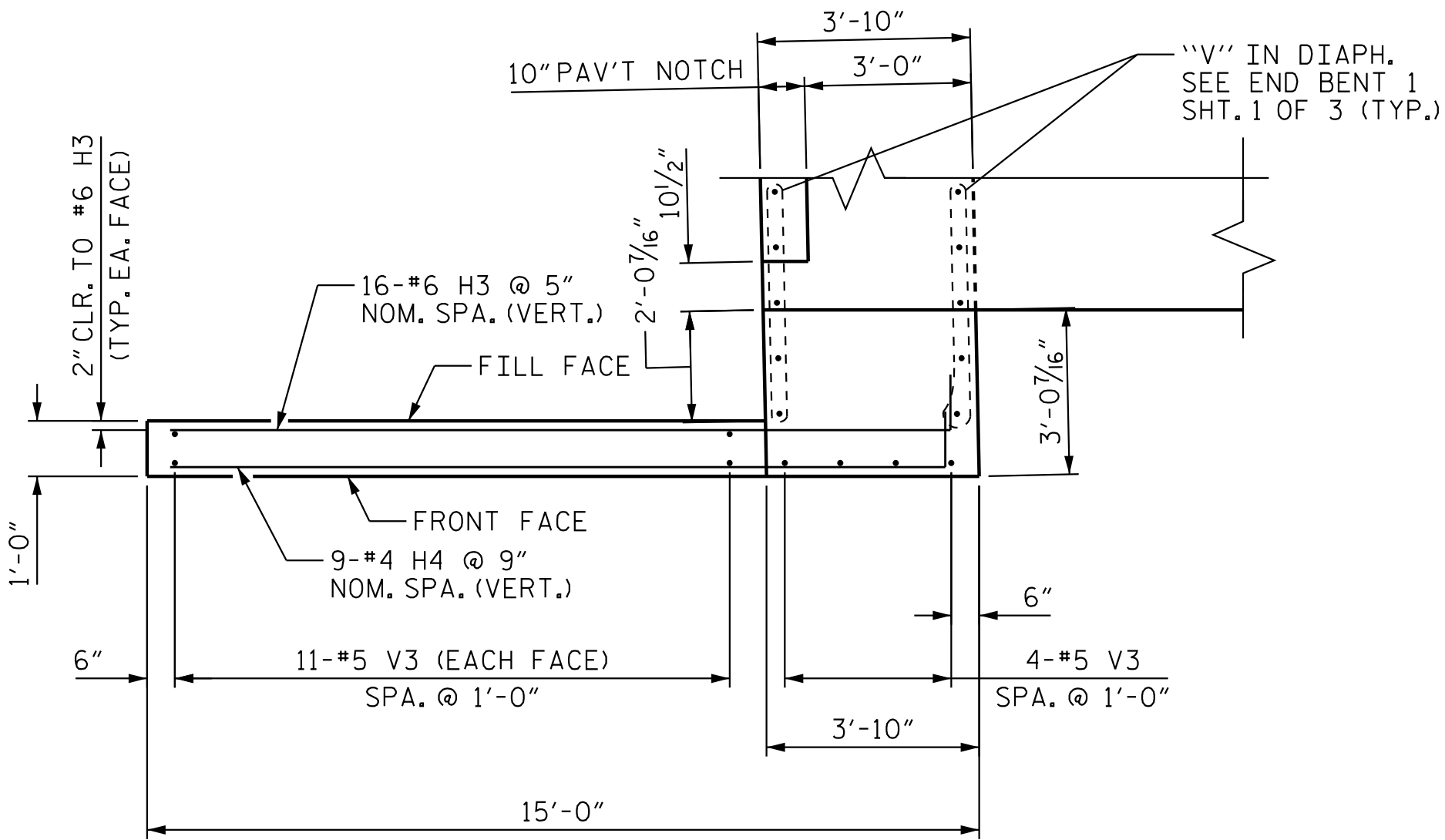
SEAL
13406
NORTH CAROLINA
PROFESSIONAL
ENGINEER
J. T. KELVINGTON

DOCUMENT NOT CONSIDERED
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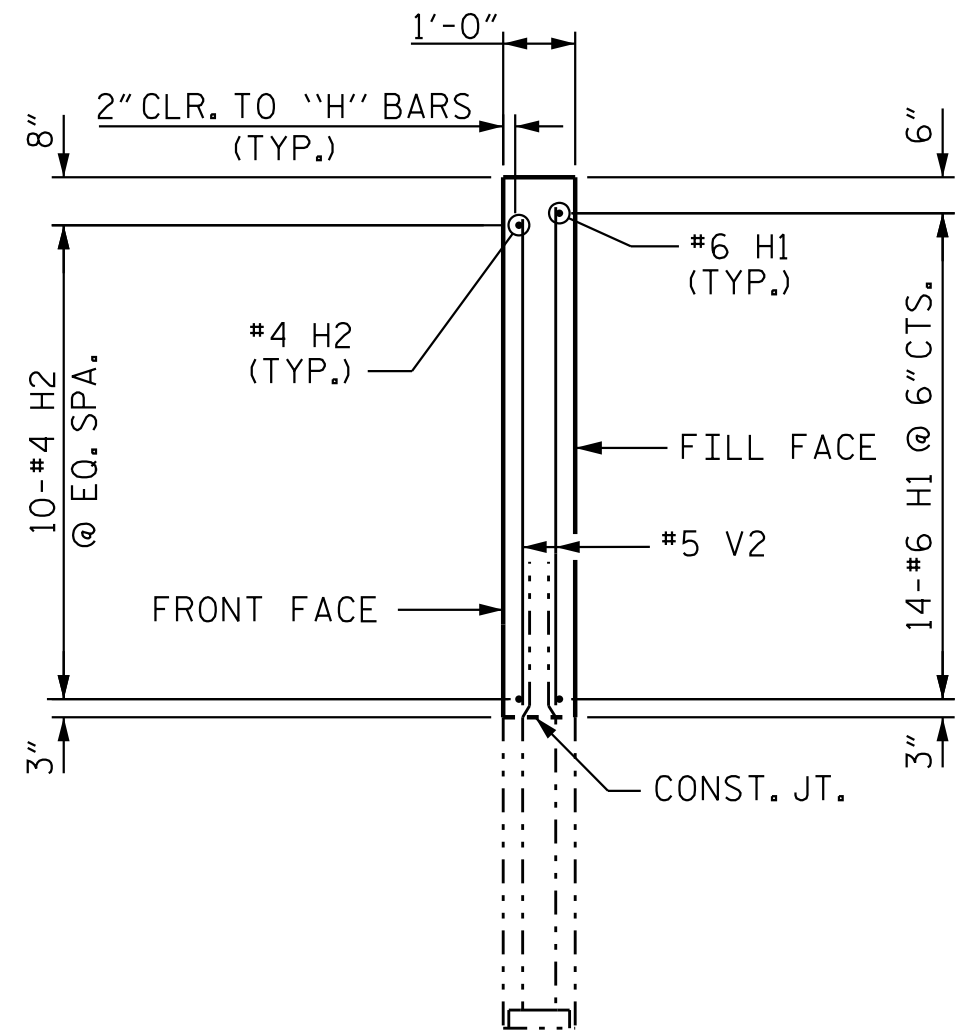
REVISIONS						SHEET NO. S02-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



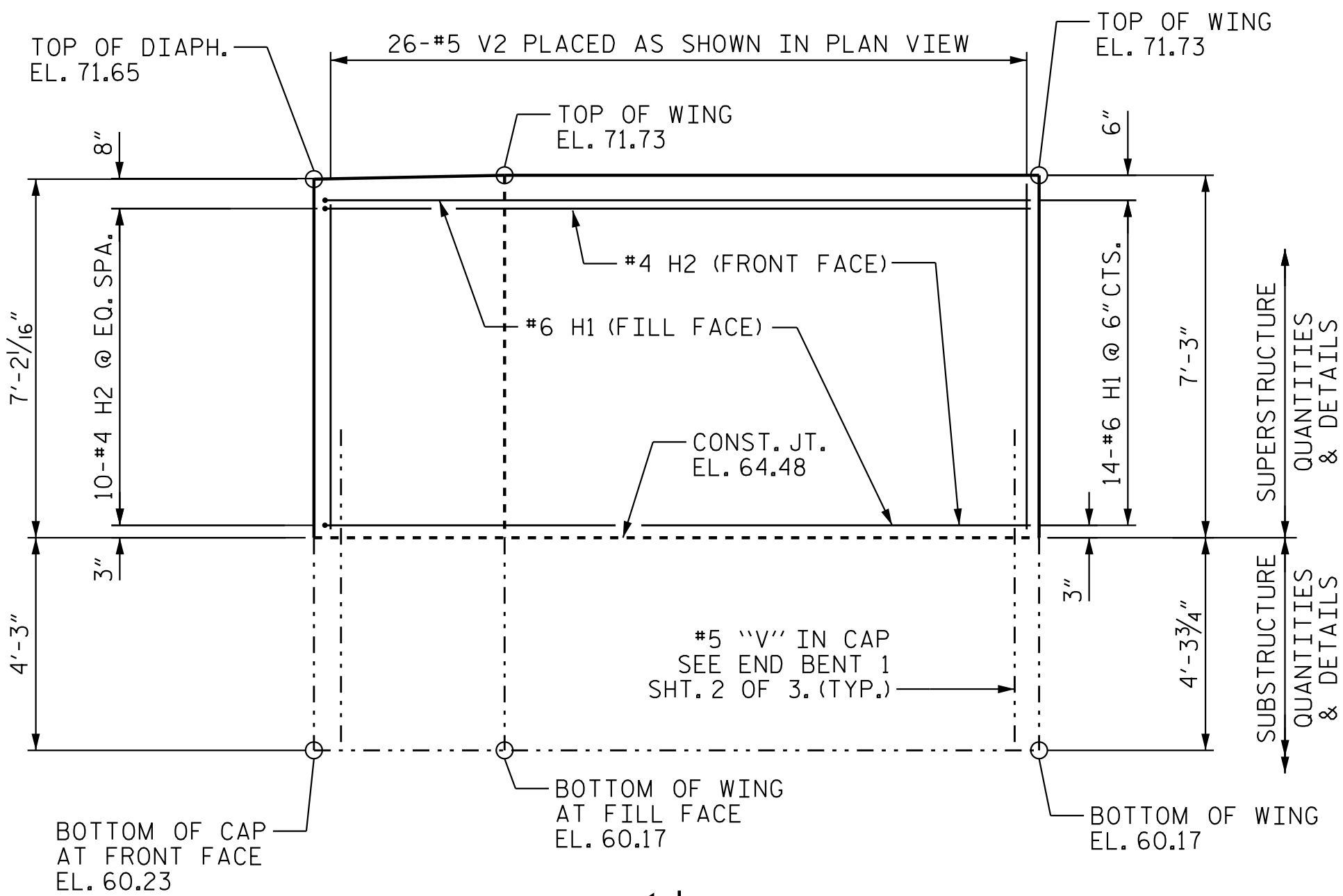
PLAN OF LEFT WING (W1)



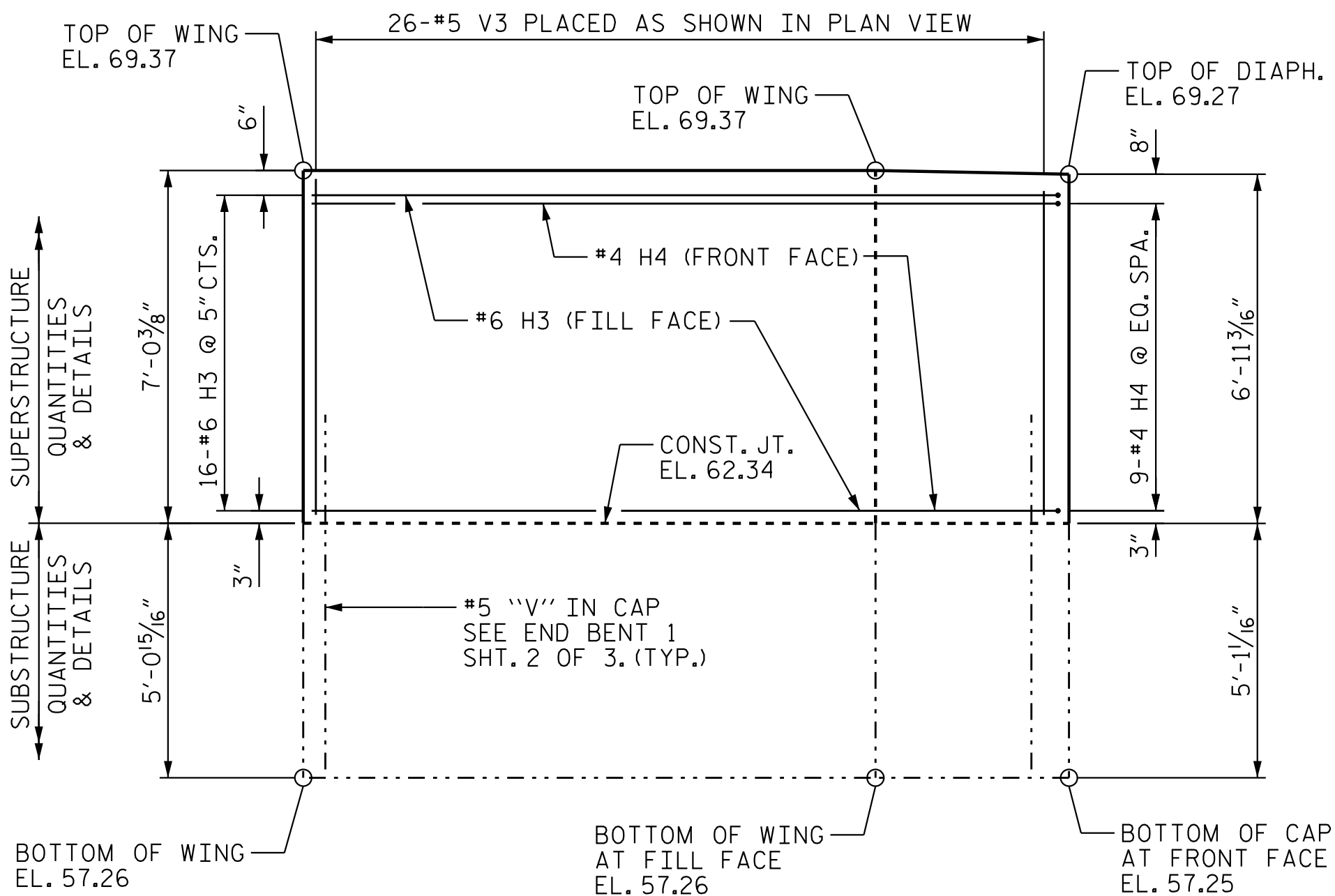
PLAN OF RIGHT WING (W2)



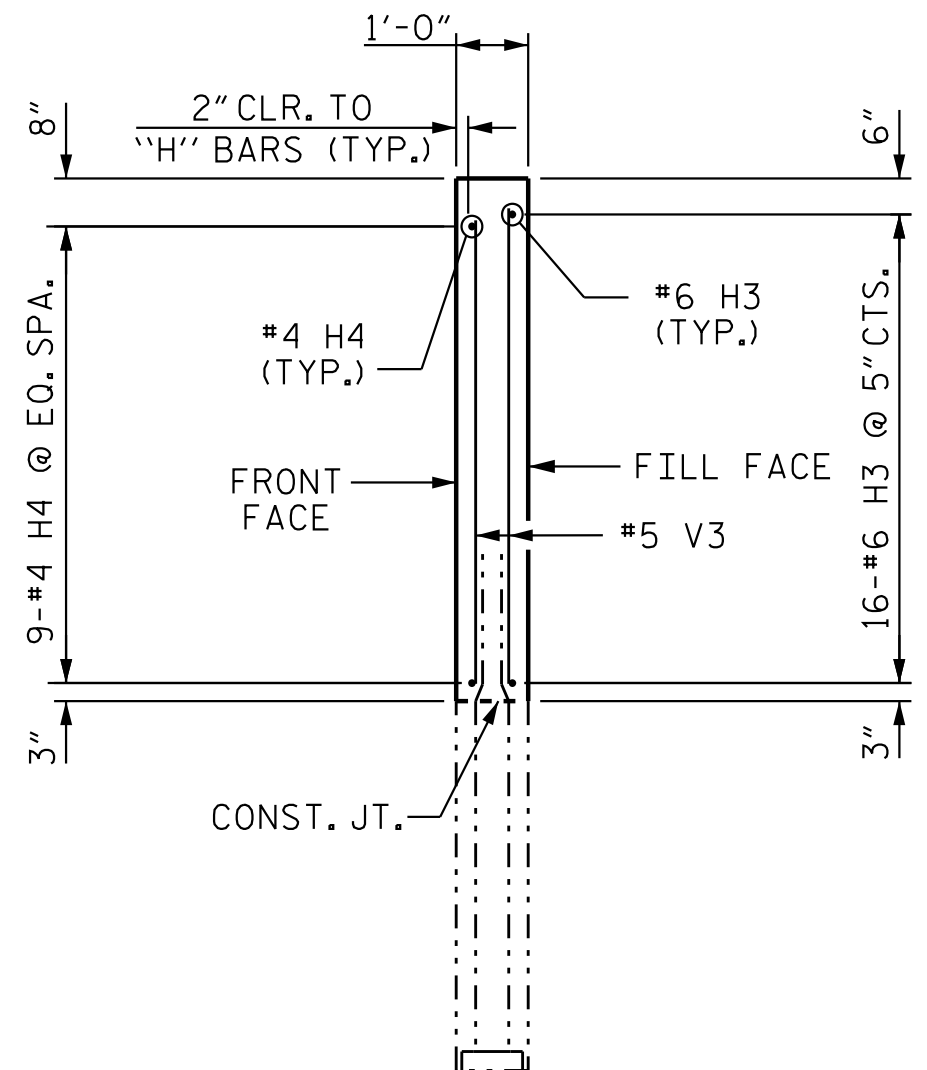
SECTION E-E



ELEVATION OF LEFT WING (W1)



ELEVATION OF RIGHT WING (W2)



SECTION F-F

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 4 OF 5



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DRAWN BY : V. E. FRAGA DATE : 04/11/25
CHECKED BY : J. B. GEILE DATE : 04/11/25
DESIGN ENGINEER OF RECORD : J. T. KELVINGTON DATE : 04/22/25



Designed by: Joseph T. Kelvington 5/15/2025

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1			3			TOTAL SHEETS 38
2			4			



SHEET 5 OF 5

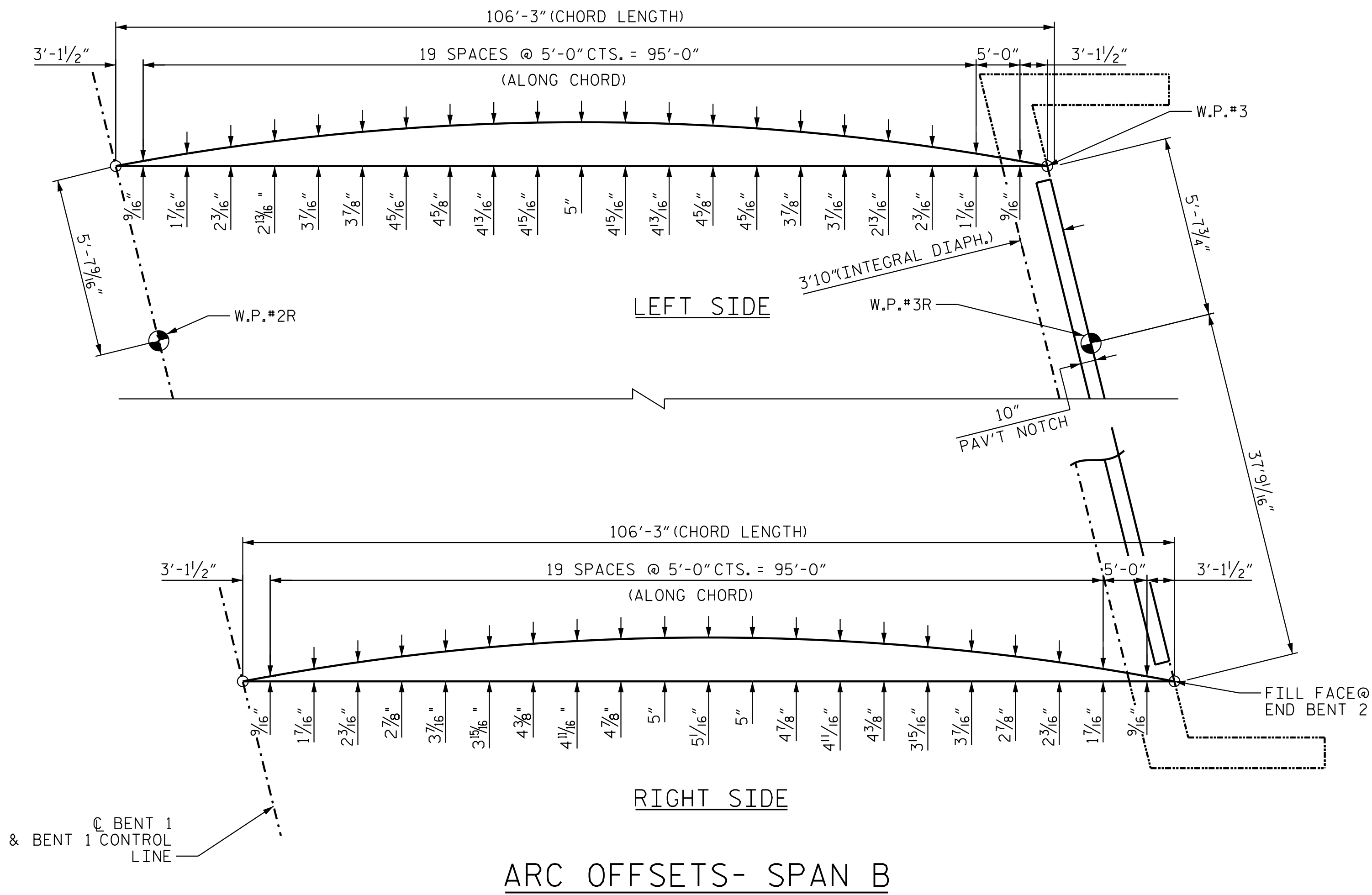
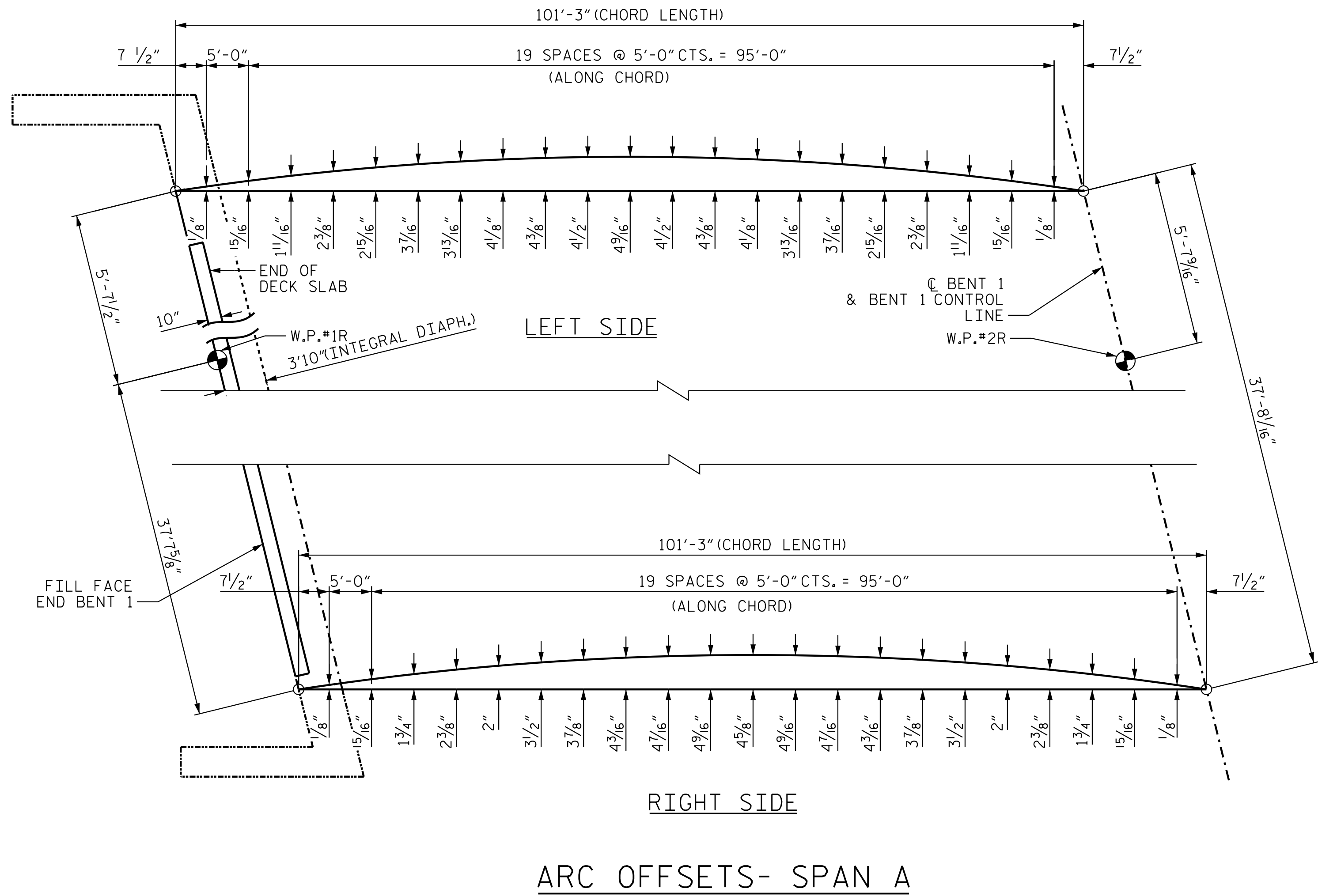


DESIGN
ENGINEER
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TOP SURFACE OF DIAPHRAGM BETWEEN EDGE OF DECK SLAB
AND END OF DIAPHRAGM SHALL BE SLOPED TRANSVERSELY FROM FRONT
FACE TO FILL FACE AT A RATE OF $\frac{1}{4}"$ / FT.



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN DETAILS
 WING WALLS
 @ END BENT 2



PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 225+92.26 -L1-

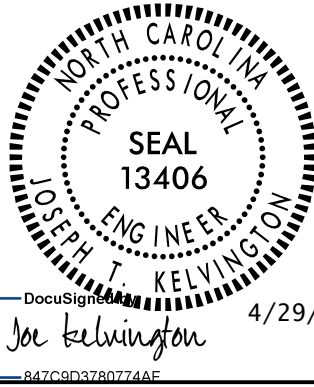
SHEET 1 OF 1



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OF RECORD: J. T. KELVINGTON DATE : 04/22/25

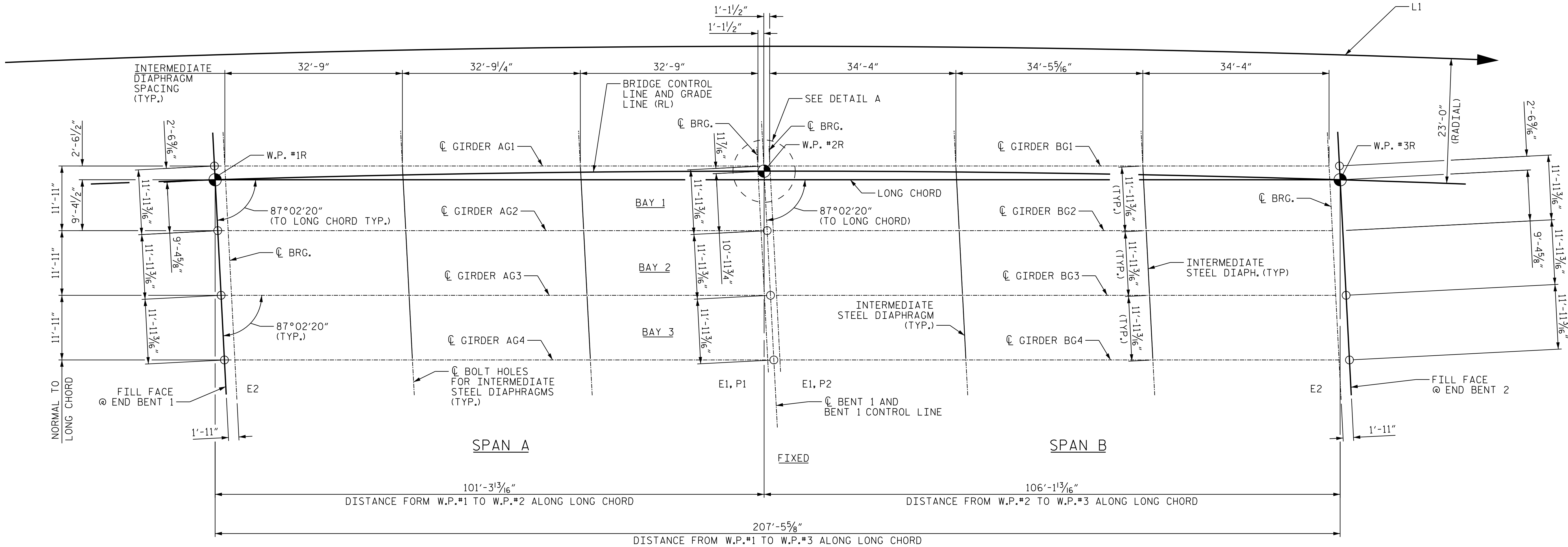


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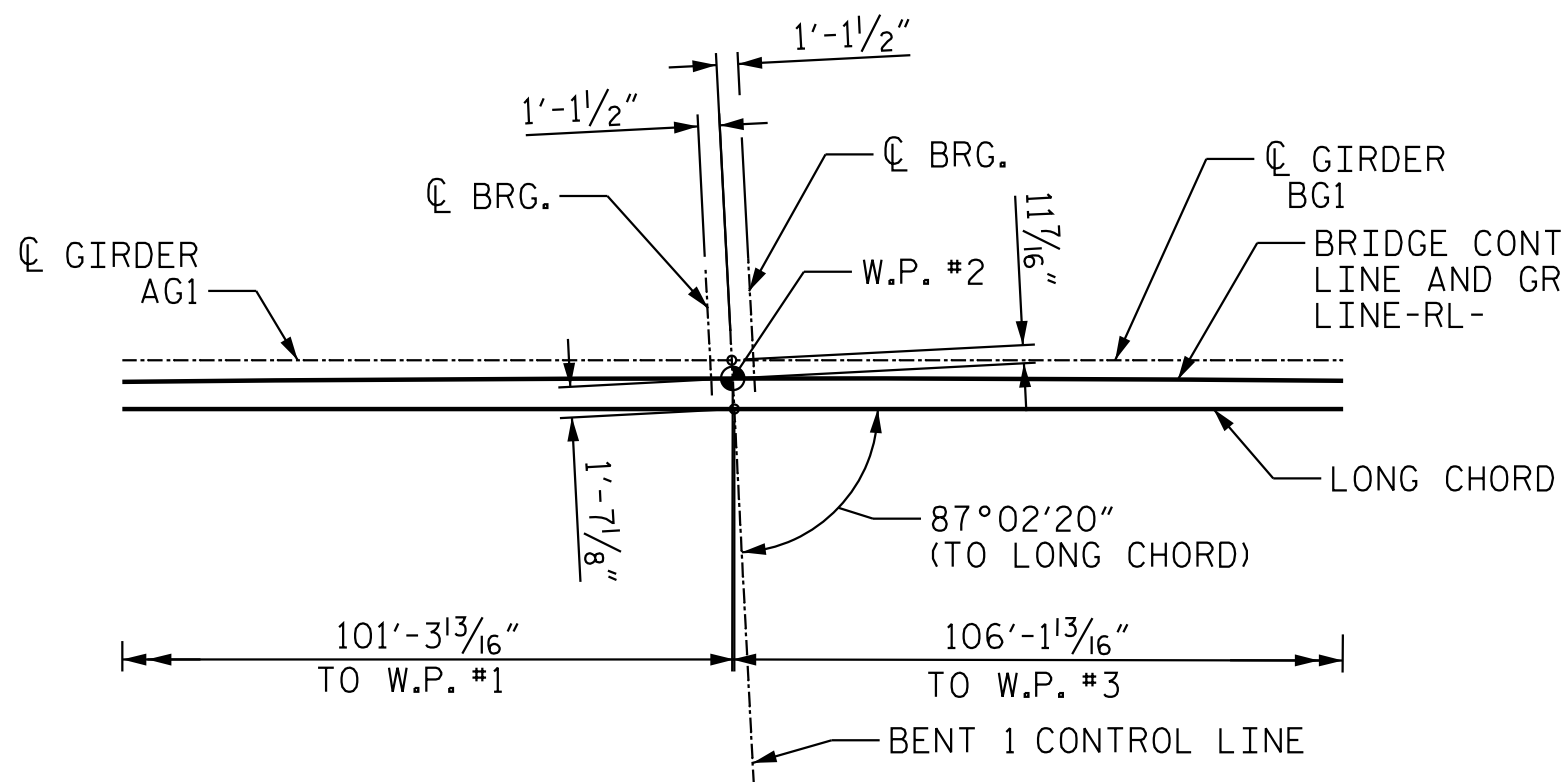
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
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4/29/2025 4:26:39 PM jgelle

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FRAMING PLAN



DETAIL "A"

NOTES

ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL UNLESS NOTED.

REFER TO "PLAN OF SPAN DETAILS-DIAPHRAGMS" FOR END BENT DIAPHRAGMS. SEE "TYPICAL SECTION" FOR END BENT DIAPHRAGM DETAILS.

E1, E2 AND P1 DENOTE ELASTOMETRIC BEARING OR SOLE PLATE, SEE "ELASTOMERIC BEARING DETAILS".

GIRDERS ARE PARALLEL TO LONG CHORD.

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 1 OF 1

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CHECKED BY : A. E. COOK DATE : 02/26/19

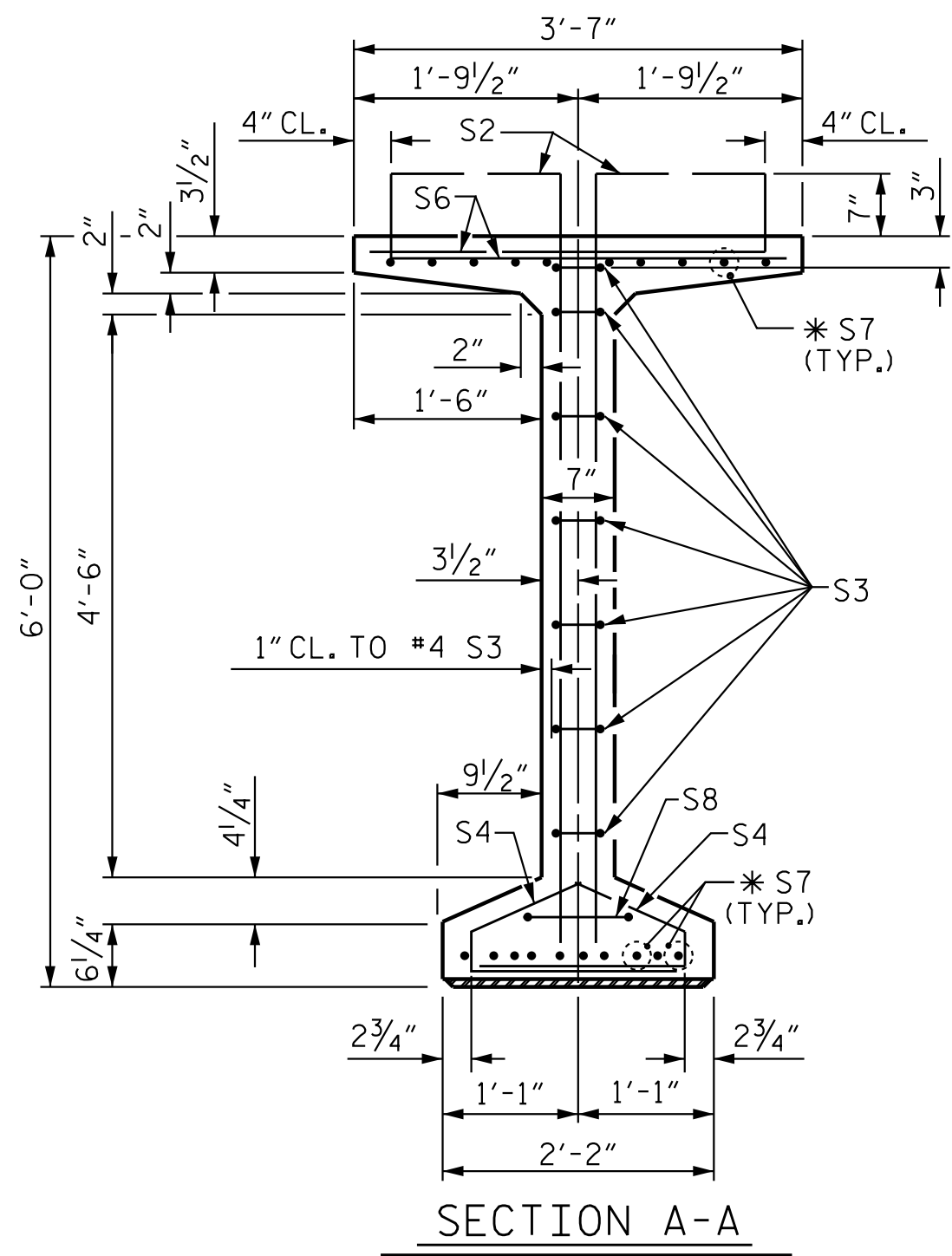
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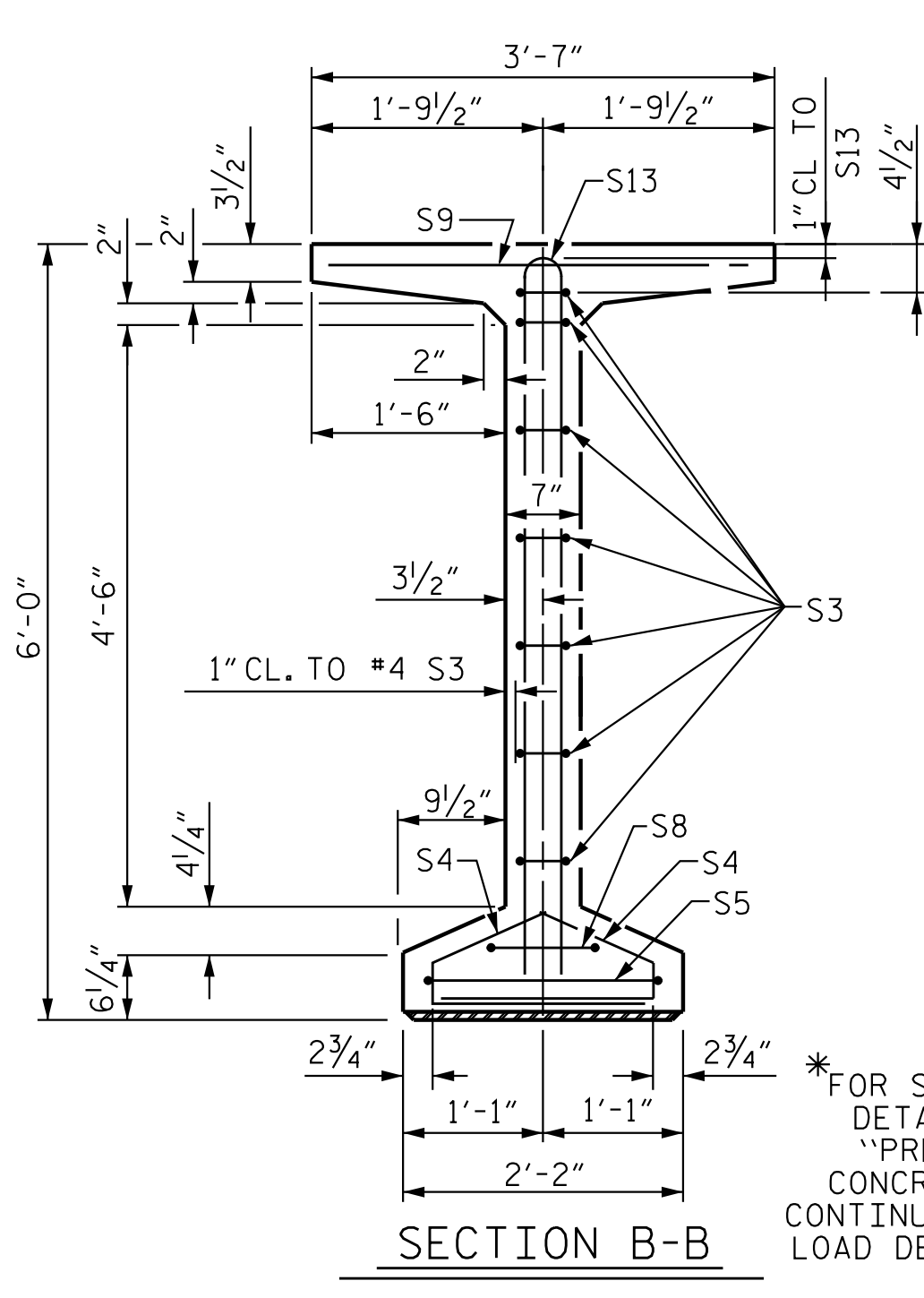
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SIGNATURES COMPLETED

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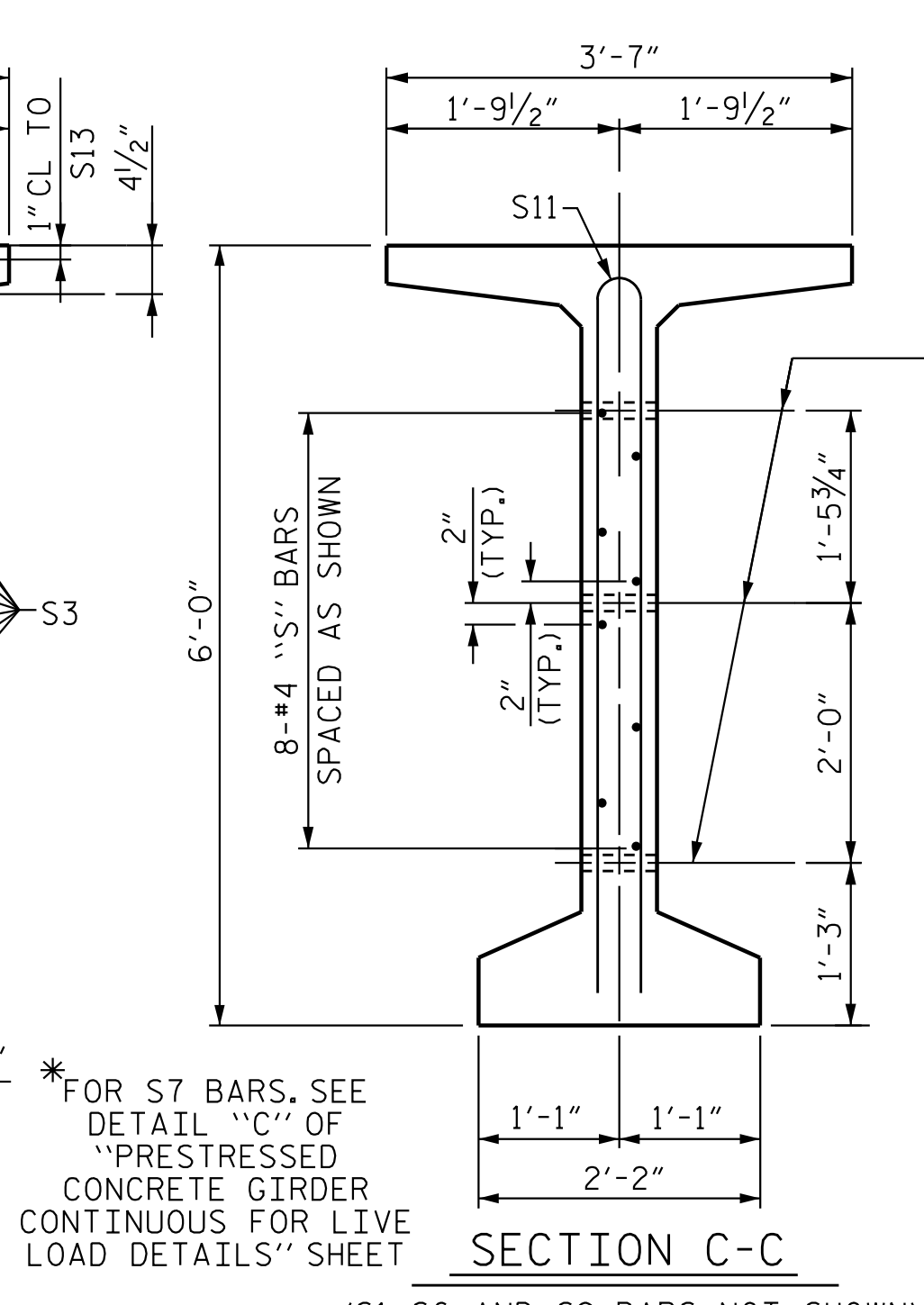
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SECTION A-A



SECTION B-B



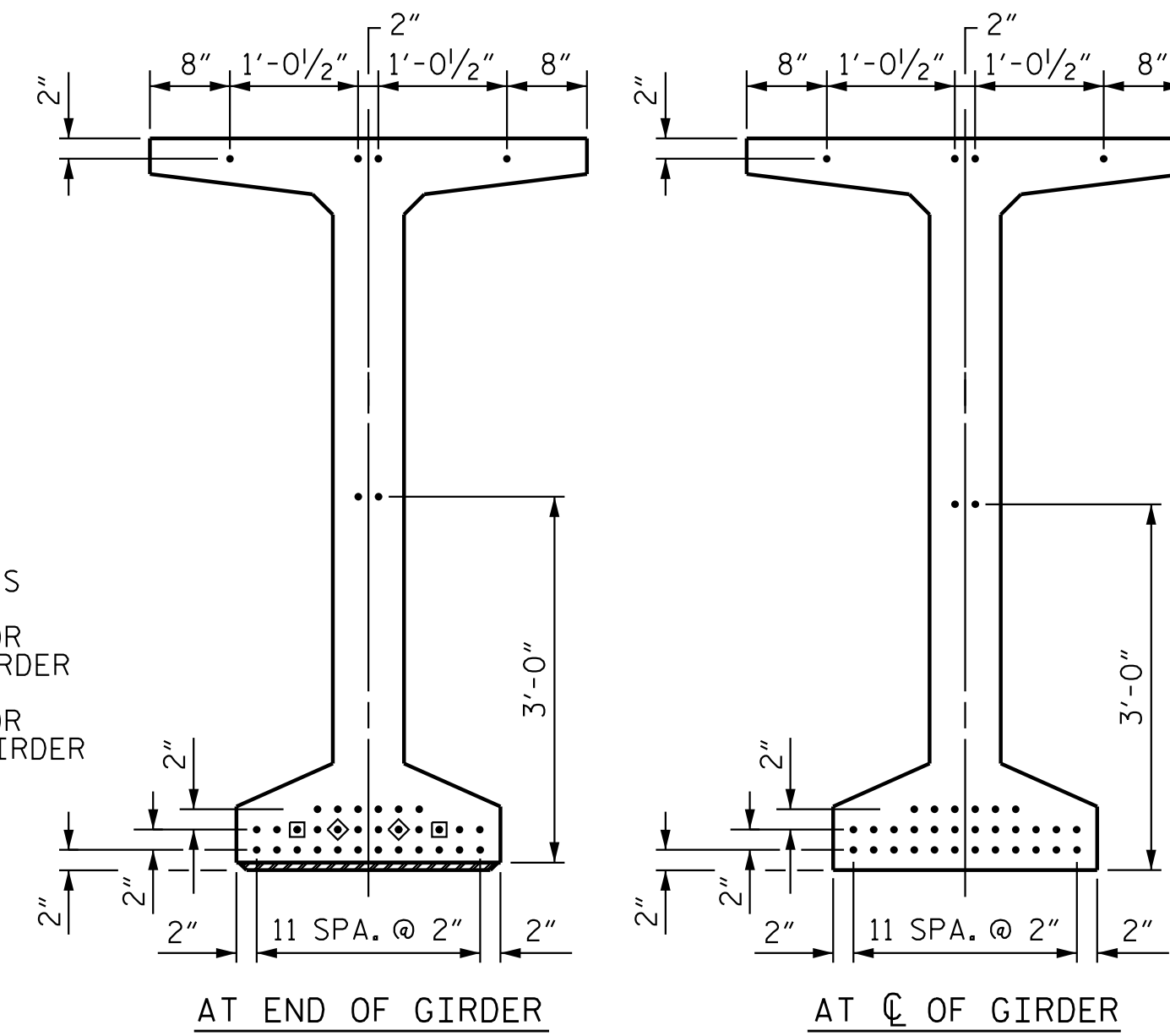
SECTION C-C

(S1, S6 AND S9 BARS NOT SHOWN)

1/2" Ø FORMED HOLE.

DEBONDING LEGEND

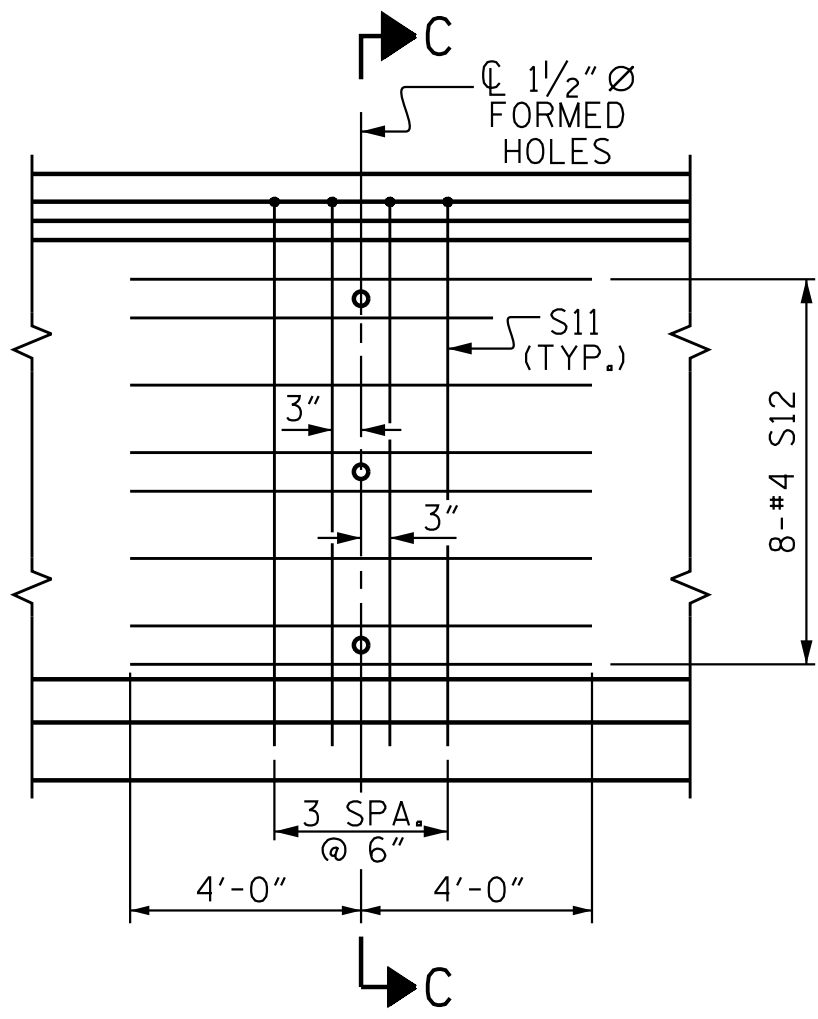
- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER



AT END OF GIRDER

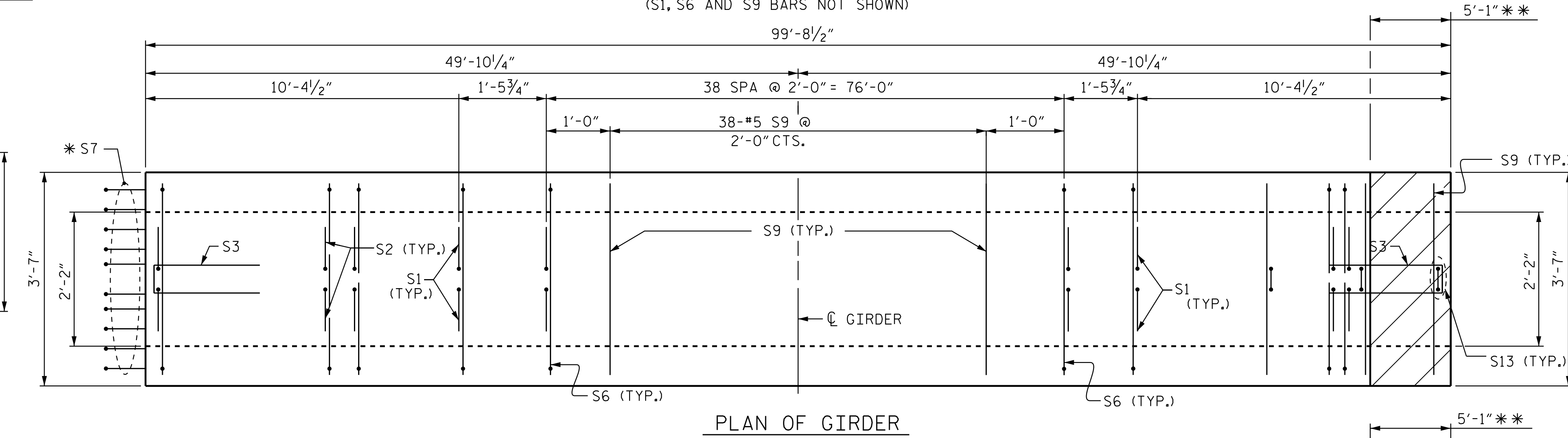
AT CL OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

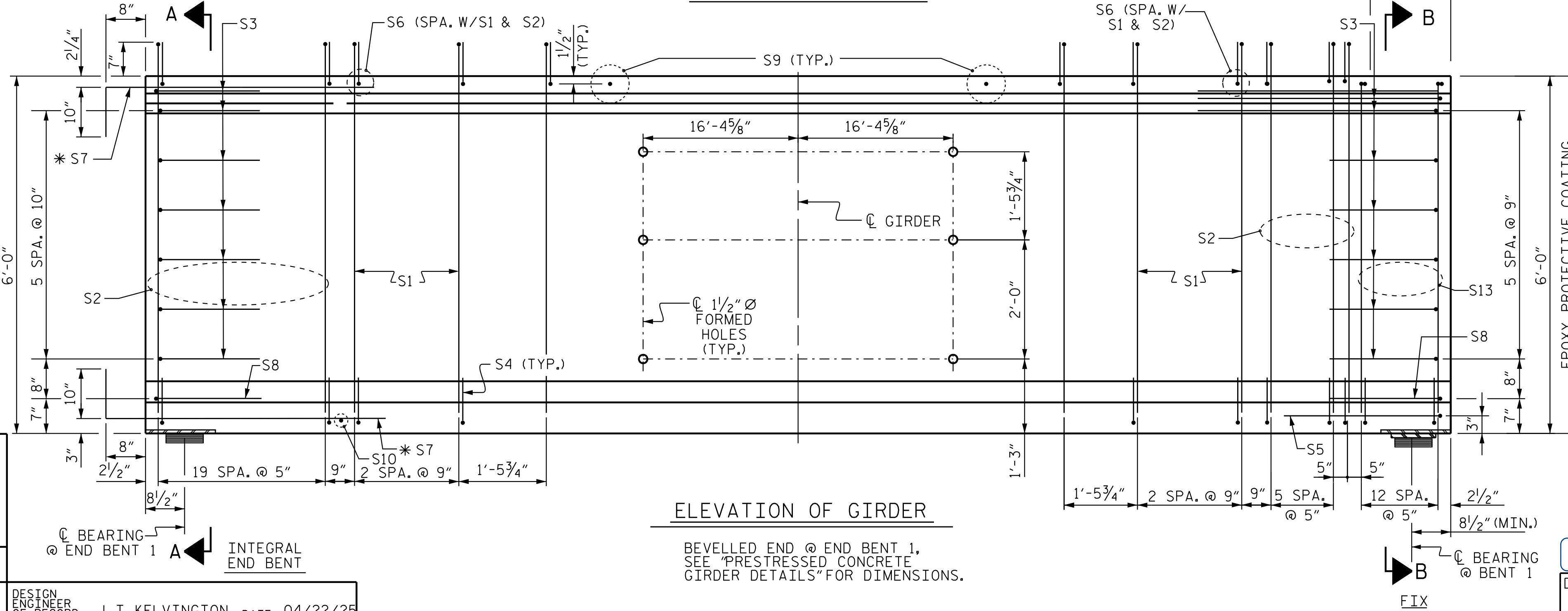


PARTIAL ELEVATION

SHOWING INTERMEDIATE
STEEL DIAPHRAGM
REINFORCING STEEL FOR
GIRDERS AG1-AG4



PLAN OF GIRDER



ELEVATION OF GIRDER

BEVELLED END @ END BENT 1,
SEE "PRESTRESSED CONCRETE
GIRDER DETAILS" FOR DIMENSIONS.

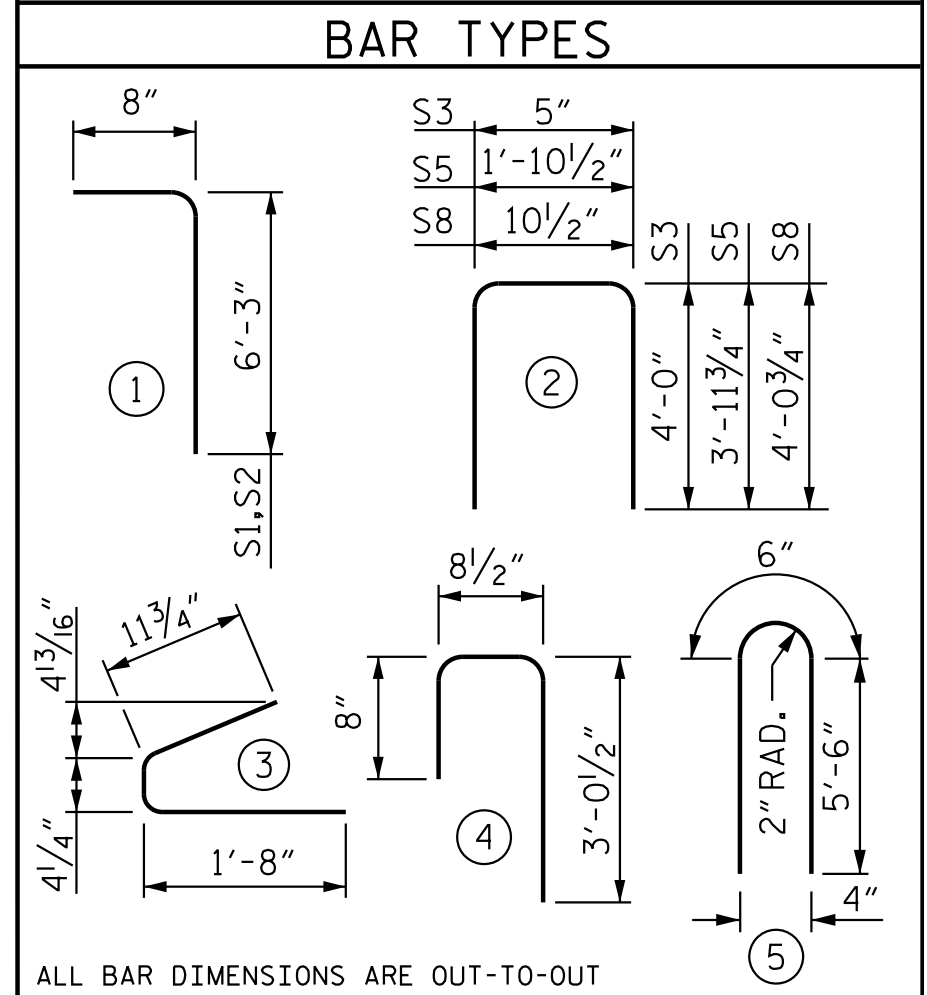


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Final Unless All
Signatures Completed

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 GDR					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	90	#5	1	6'-11"	649
S2	54	#6	1	6'-11"	561
S3	14	#4	2	8'-5"	79
S4	92	#4	3	3'-0"	184
S5	1	#4	2	9'-10"	7
S6	144	#5	4	4'-5"	663
* S7	20	#5	STR	3'-8"	76
S8	2	#5	2	9'-0"	19
S9	51	#5	STR	3'-3"	173
S10	1	#3	STR	1'-10"	1
S11	8	#5	5	11'-6"	96
S12	16	#4	STR	8'-0"	86
S13	13	#6	5	11'-6"	225

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



ALL BAR DIMENSIONS ARE OUT-TO-OUT

QUANTITIES FOR ONE GIRDER			
	REINFORCING STEEL	8,500 PSI CONCRETE	0.6" Ø L.R. STRANDS
	LB.	C.Y.	No.
	2819	21.4	36

GIRDERS REQUIRED		
NUMBER	LENGTH	TOTAL LENGTH
4	99'-8 1/2"	398'-10"

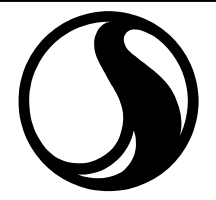
** LINK SLAB REGION, DO NOT RAKE TOP
OF GIRDER IN THE LINK SLAB REGION.

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD MODIFIED 72" PRESTRESSED CONCRETE GIRDER					
SPAN A					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					TOTAL SHEETS 38

STR. #2



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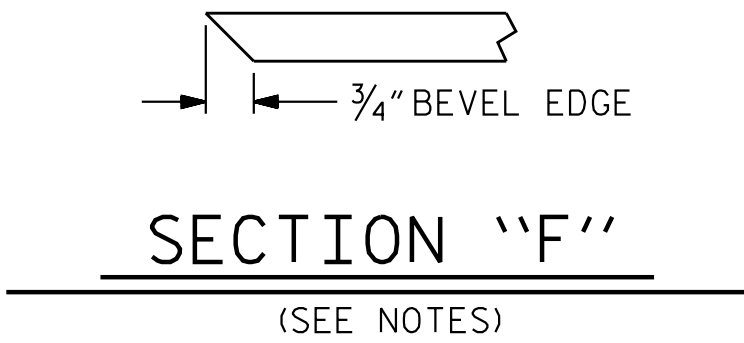
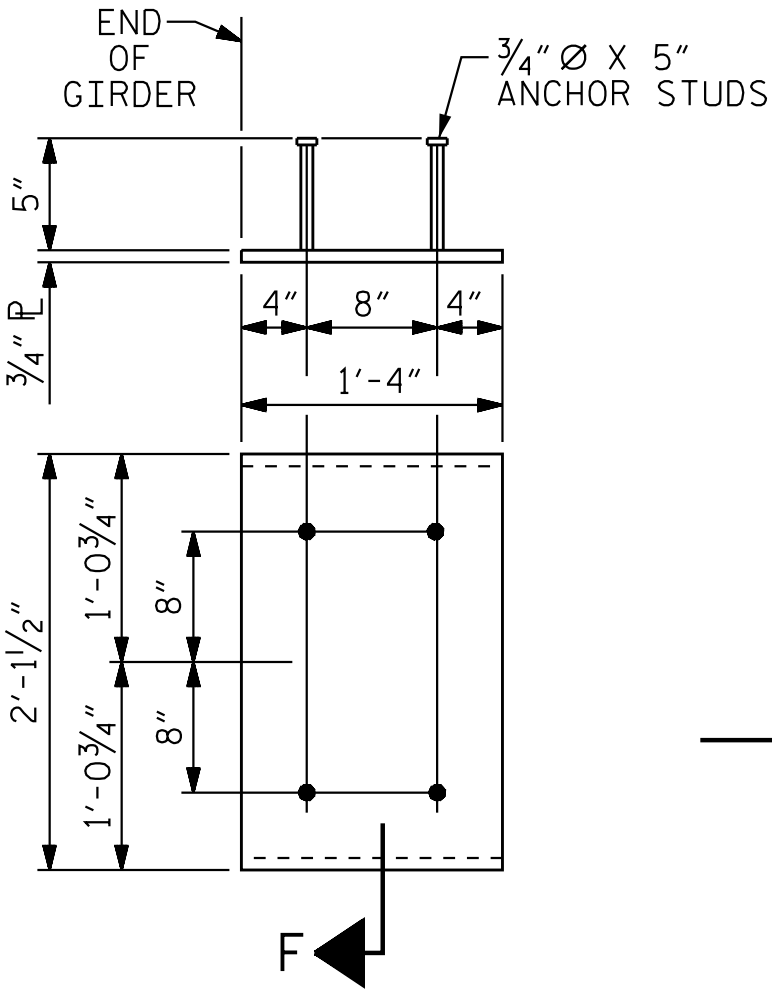
ASSEMBLED BY : M. R. SMITH
CHECKED BY : A. E. COOK
DATE : 08/16/18
DATE : 02/05/19

DRAWN BY : BNB 09/21
CHECKED BY : AAI 09/21

REV.
REV.

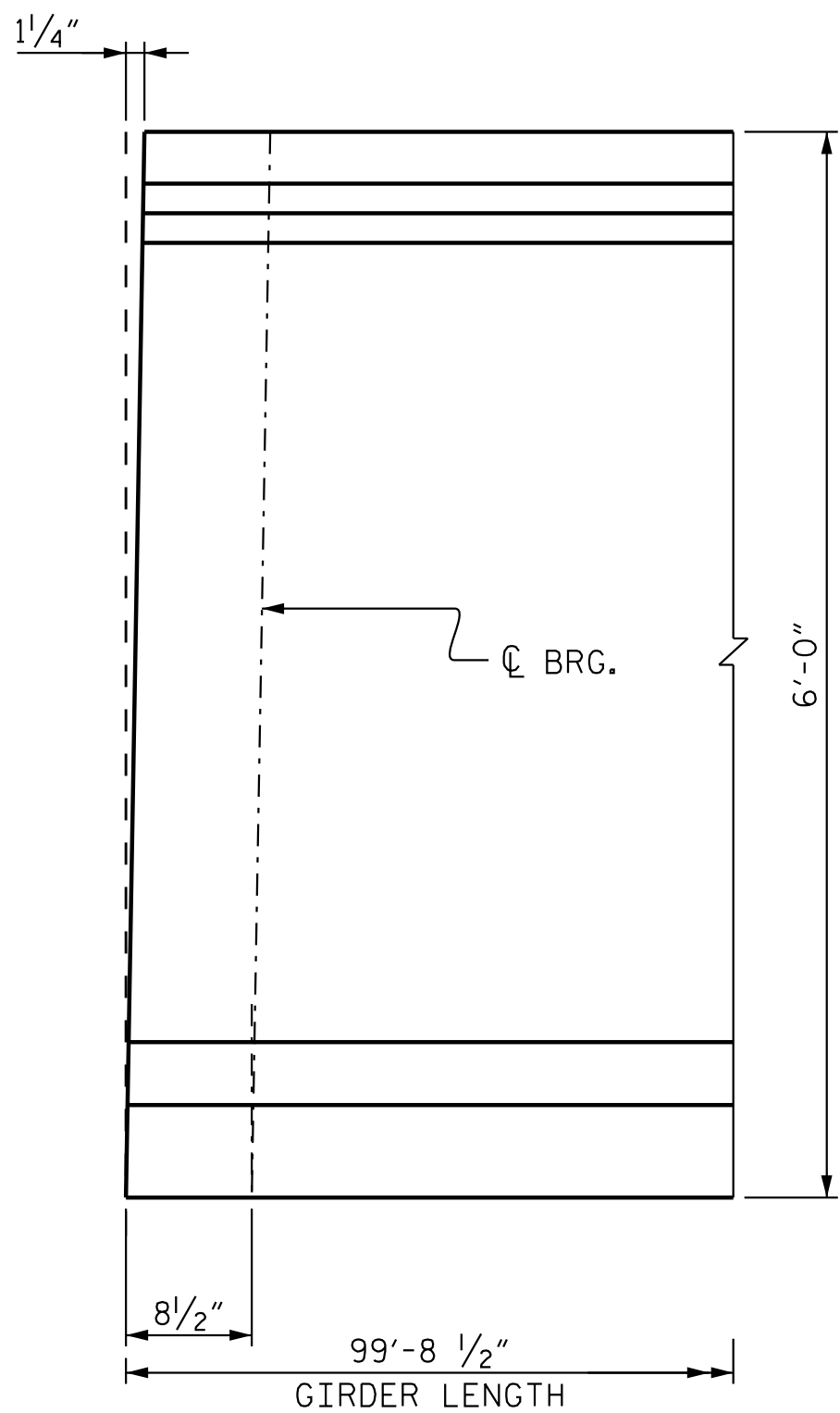
DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON
DATE : 04/22/25

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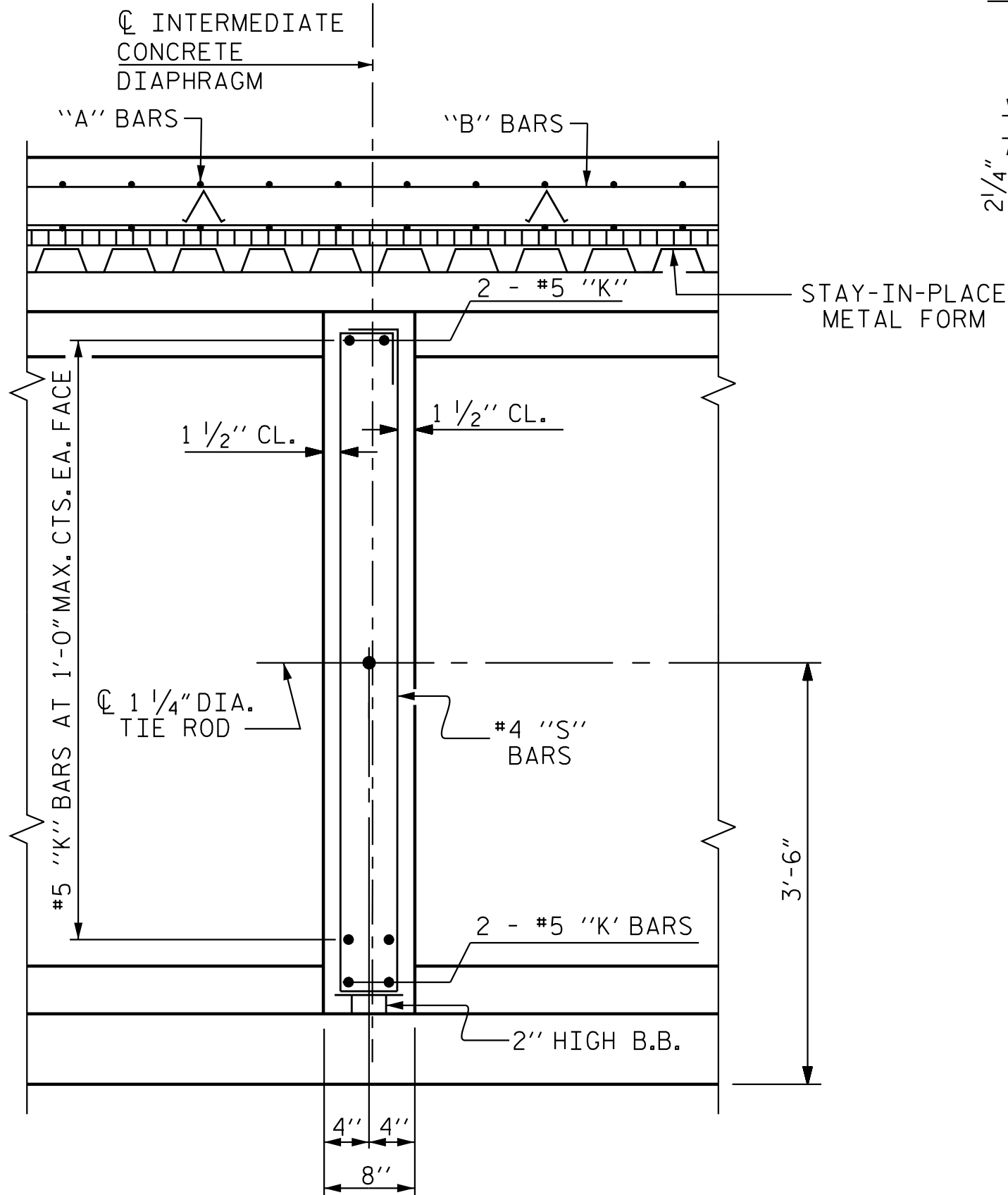
EMBEDDED PLATE "B-1" DETAILS FOR 72" MODIFIED BULB TEES

(2 REQ'D PER GIRDER)



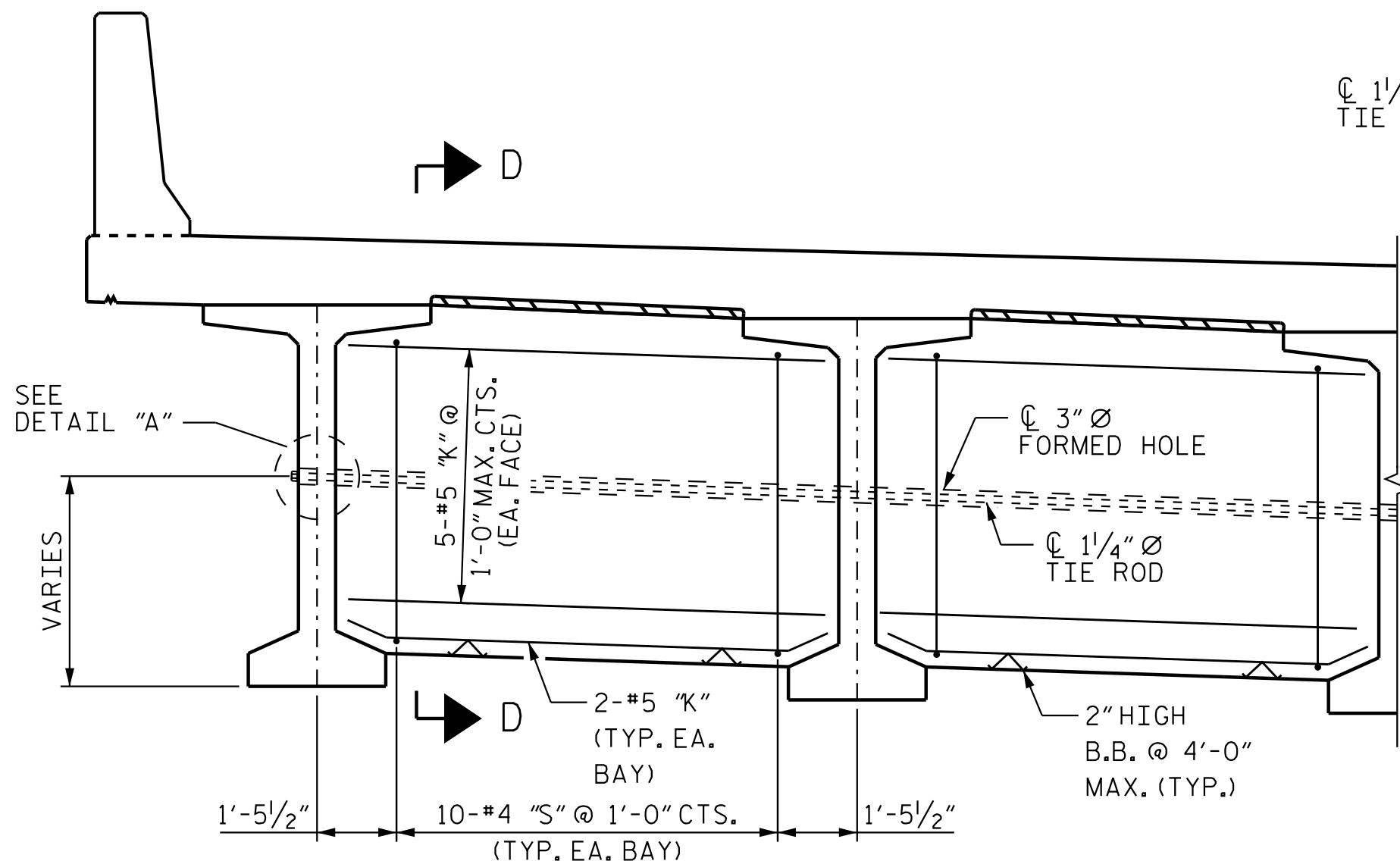
BEVELED END DETAIL

(SPAN "A" GIRDER @ END BENT SUPPORT ONLY)

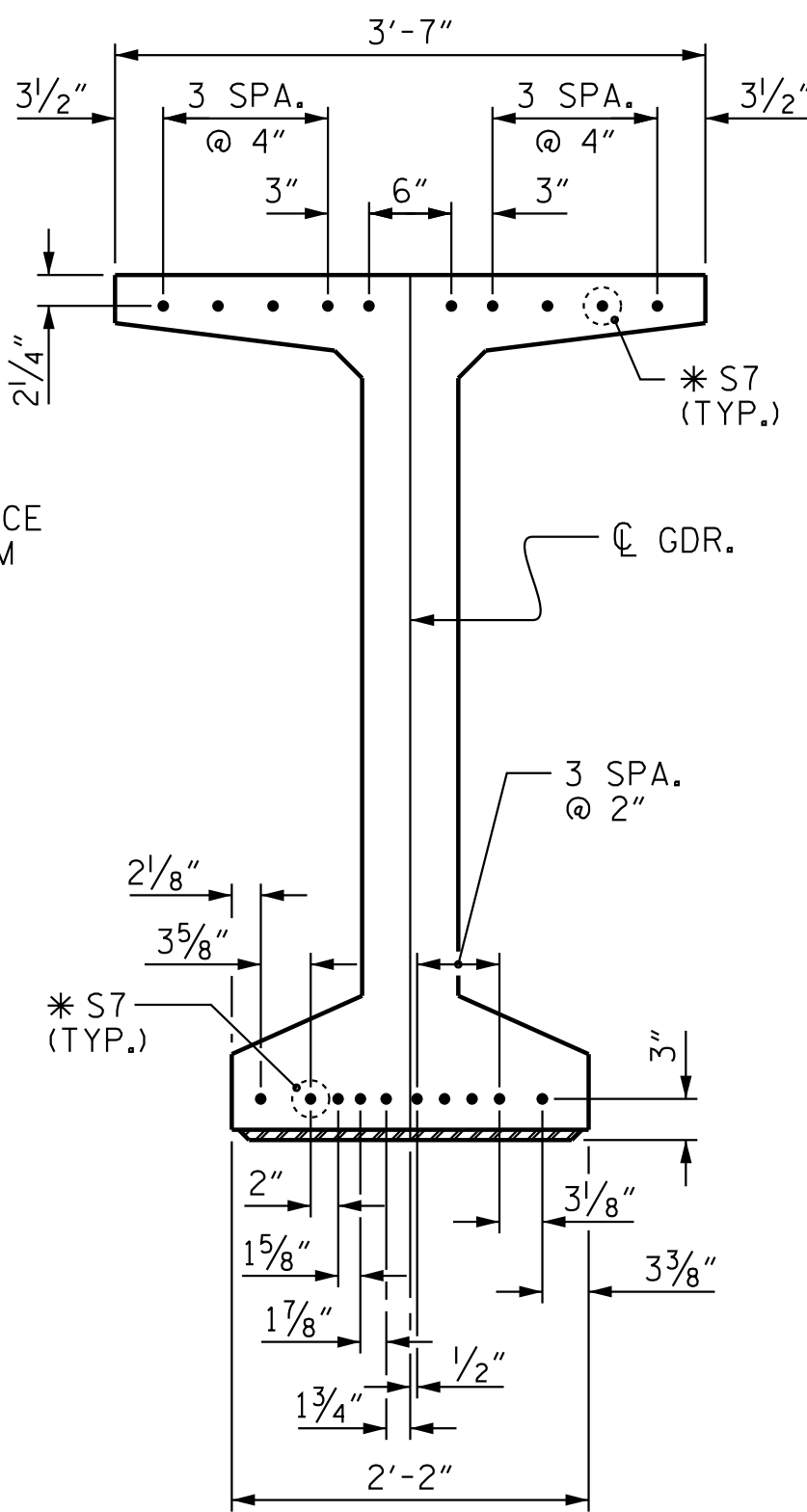


SECTION D-D

SECTION THRU CAST-IN-PLACE
CONCRETE INTERMEDIATE DIAPHRAGM

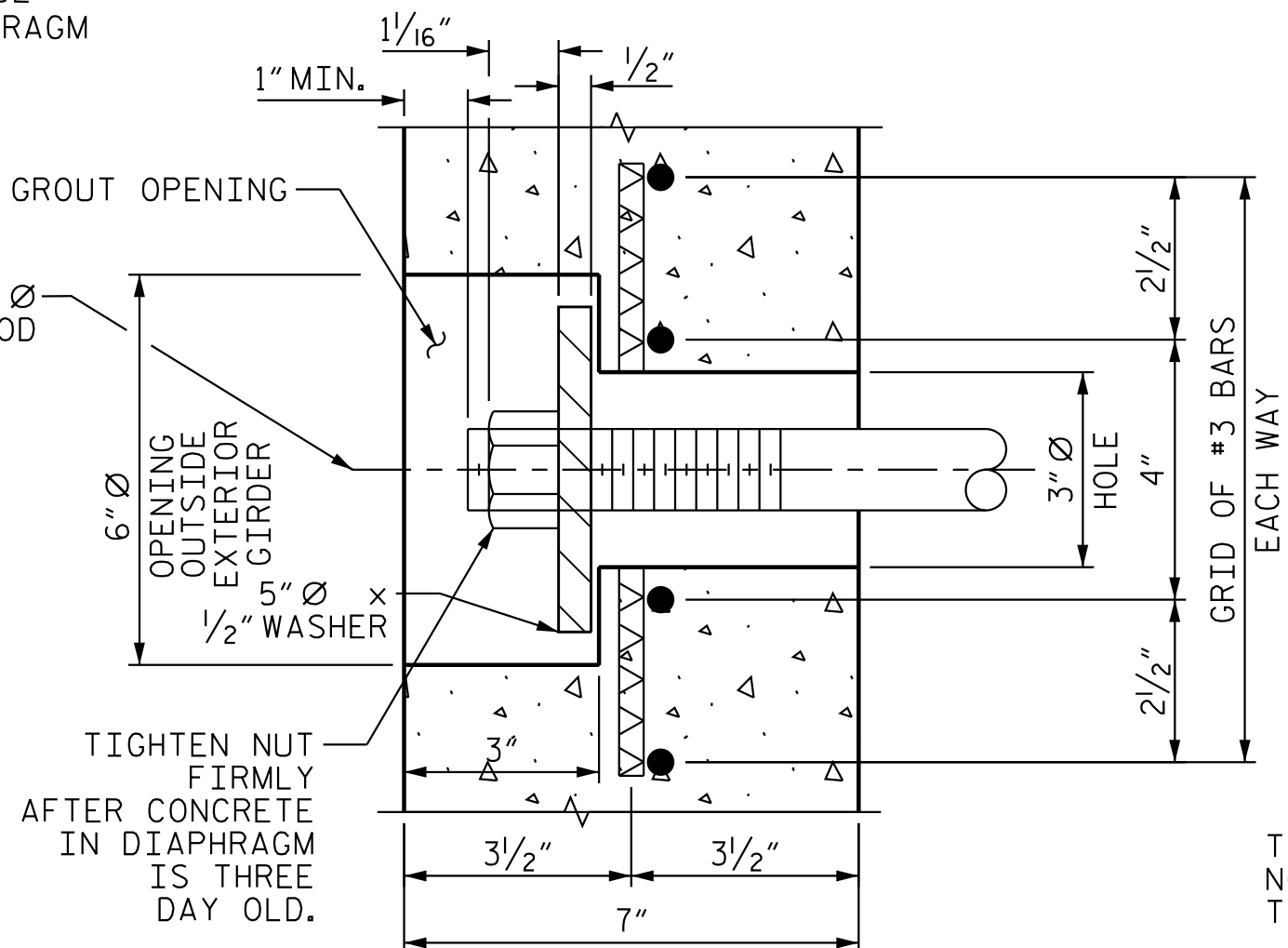


PART - SECTION AT OPTIONAL CAST-IN-PLACE CONCRETE INTERMEDIATE DIAPHRAGM



DETAIL "C"

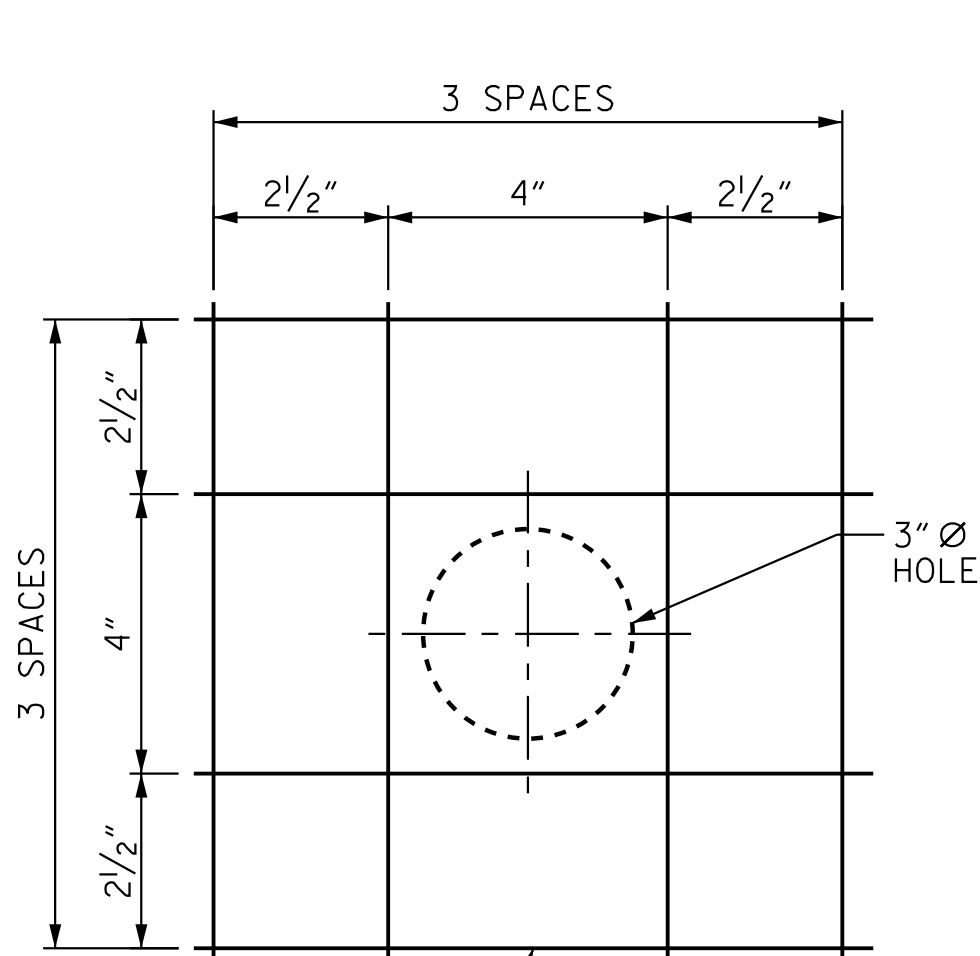
(FOR 63" & 72" MODIFIED BULB TEES)



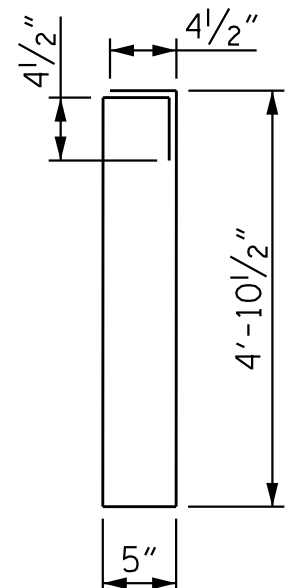
DETAIL "A"

GROUTED RECESS FOR END OF TIE ROD

WEIGHT OF #3 BARS ARE NOT INCLUDED IN THE BILL OF MATERIAL.



#3 BAR GRID



#4 "S" BAR

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 6,800 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", SHALL BE RAKED TO A DEPTH OF 1/4".

A 2" x 2" CHAMFER IS ALLOWED AT THE INTERSECTION OF THE WEB AND THE BOTTOM FLANGE OF THE 72" MODIFIED BULB TEES ONLY.

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.

PRESTRESSED CONCRETE (GIRDERS, PRECAST DECK PANELS) SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR. SEE ARTICLE 1078-4(H) OF STANDARD SPECIFICATIONS FOR CALCIUM NITRITE CORROSION INHIBITOR.

OPTIONAL CONCRETE INTERMEDIATE DIAPHRAGMS

TEMPORARY STRUTS SHALL BE PLACED BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE DIAPHRAGMS AND THE NUTS ON THE 1/4" Ø TIE RODS SHALL BE FULLY TIGHTENED BEFORE DIAPHRAGMS ARE CAST. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED. THE TIE RODS SHALL BE RE-TIGHTENED AFTER THE STRUTS HAVE BEEN REMOVED.

CONCRETE IN INTERMEDIATE DIAPHRAGMS MAY BE CLASS A IN LIEU OF CLASS AA. PAYMENT SHALL BE MADE UNDER THE UNIT CONTRACT PRICE FOR REINFORCED CONCRETE DECK SLAB.

PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 225+92.26 -L1-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
PRESTRESSED CONCRETE GIRDER
DETAILS



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ASSEMBLED BY : M. R. SMITH DATE : 08/16/18
CHECKED BY : A. E. COOK DATE : 02/05/19

DRAWN BY : ELR 11/91
CHECKED BY : GRP 11/91

REV. 1/15 MAA/TMG
REV. 2/15 MAA/TMG
REV. 12/17 MAA/THC

DESIGN ENGINEER
OF RECORD: J. T. KELVINGTON DATE : 04/22/25

STRUCTURAL STEEL 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 ANGLE 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, AND ANGLES SHALL BE METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALIZATION, APPLY A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALIZATION) 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.

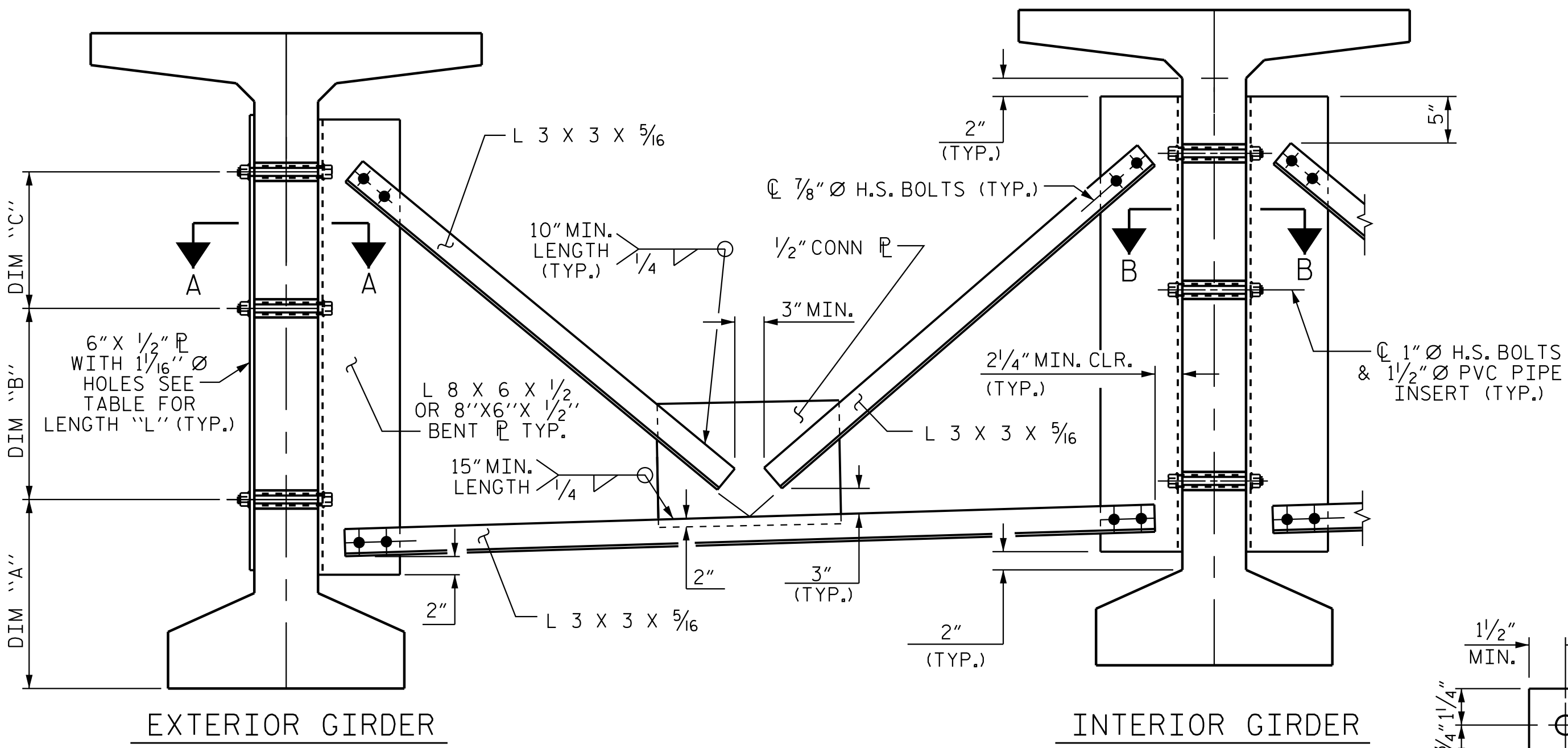
SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

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.

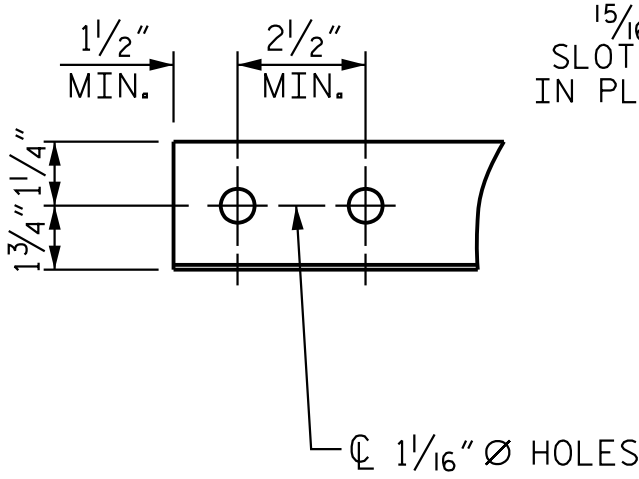
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

TABLE

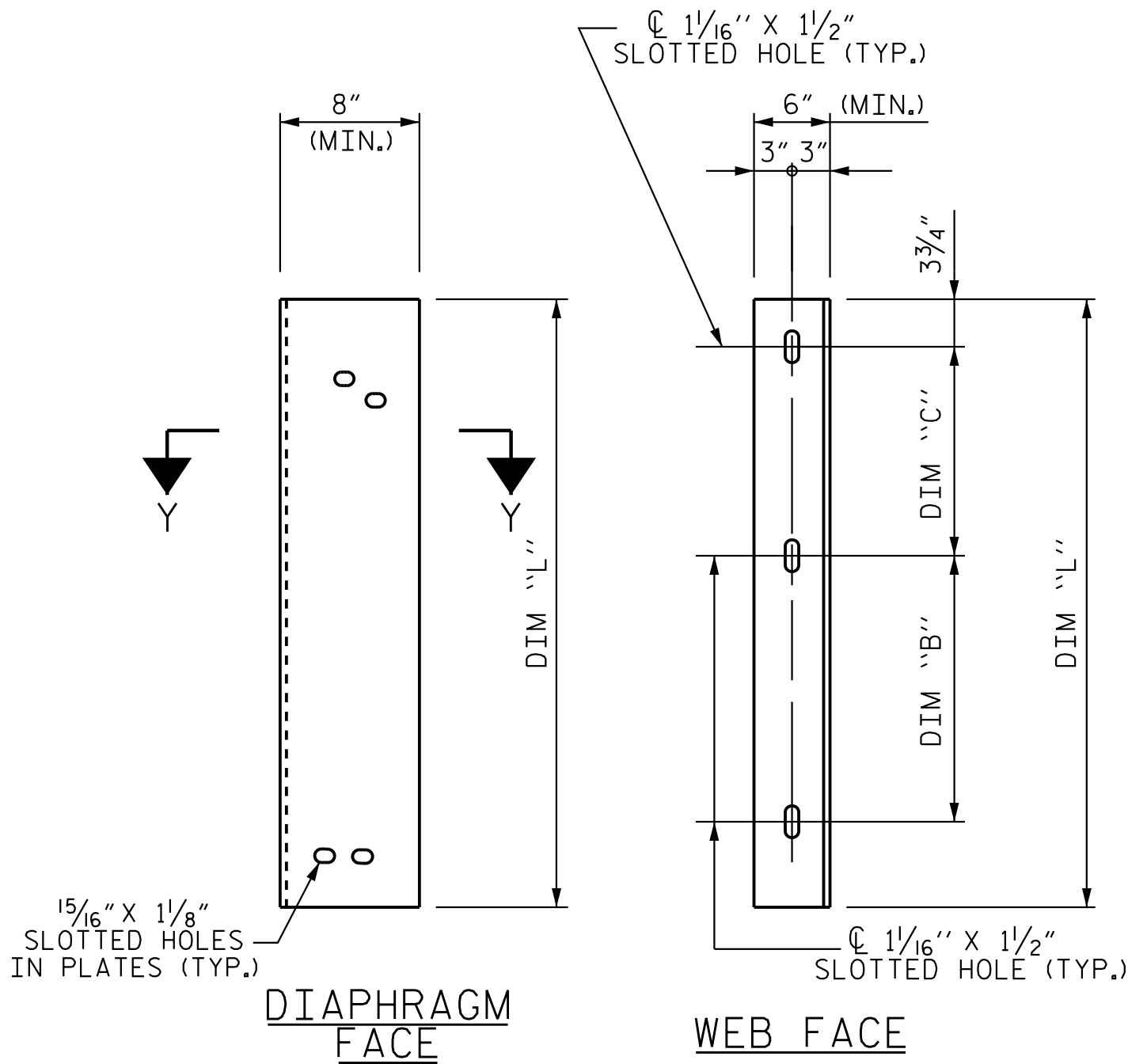
GIRDER TYPE	DIM "A"	DIM "B"	DIM "C"	DIM "L"
MODIFIED 72" PRESTRESSED CONCRETE GIRDER	1'-3"	2'-0"	1'-5 3/4"	4'-2"



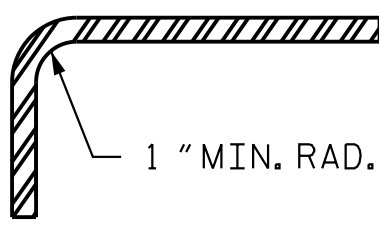
PART SECTION AT INTERMEDIATE DIAPHRAGM



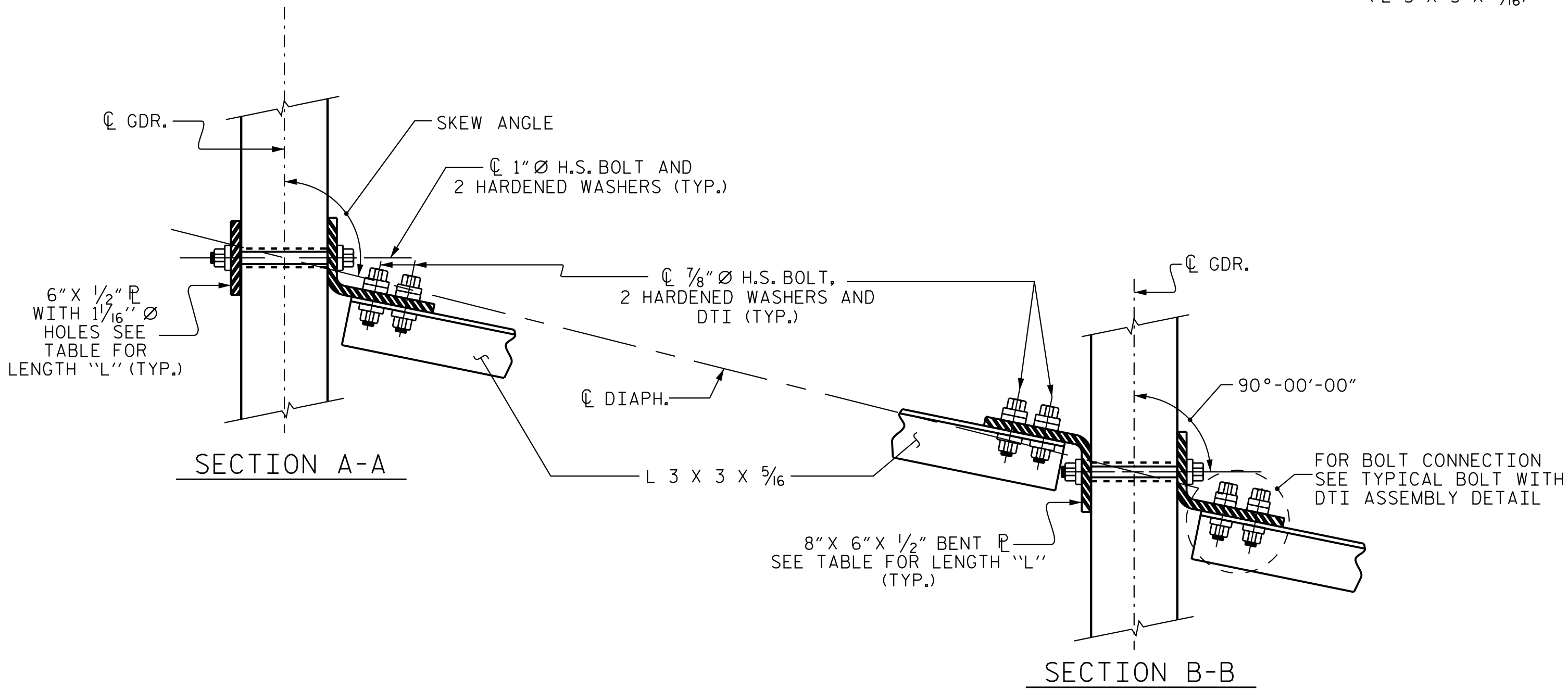
ANGLE END
(L 3 x 3 x 5/16)



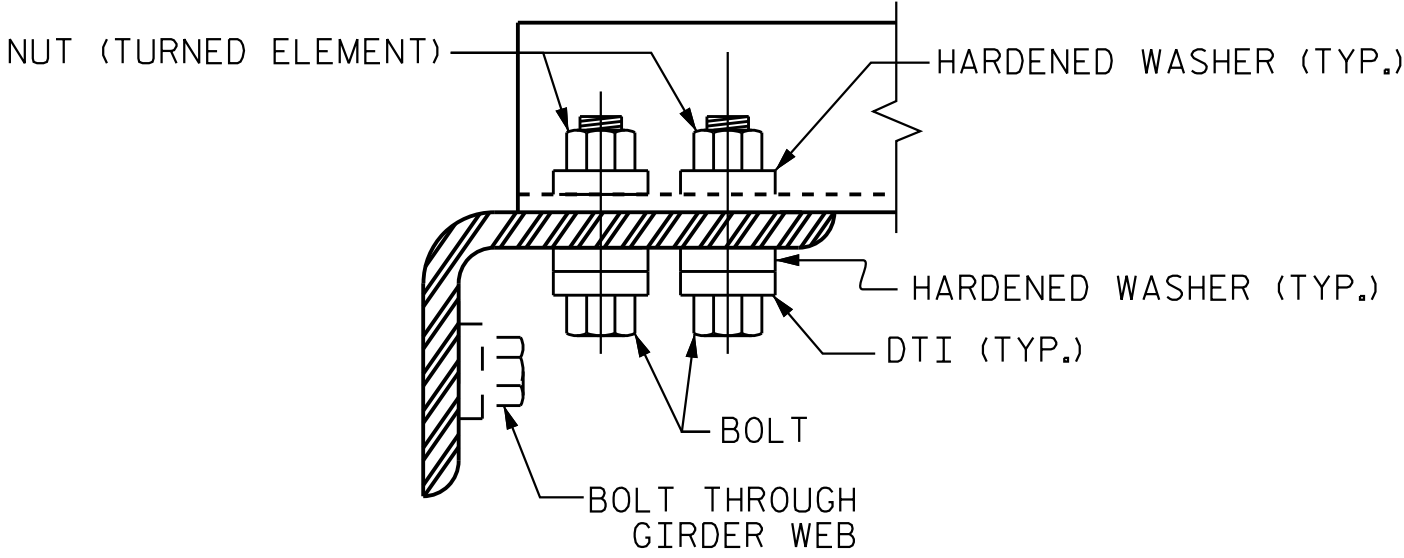
CONNECTOR PLATE DETAIL



SECTION Y-Y



CONNECTION DETAILS



BOLT WITH DTI ASSEMBLY DETAIL

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 4 OF 4



Stantec Consulting Services Inc.
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www.stantec.com
License No. F-0672

ASSEMBLED BY : M. R. SMITH
CHECKED BY : A. E. COOK
DATE : 06/05/18
DATE : 02/05/19

DRAWN BY : RWW 11/09
CHECKED BY : GM 11/09
REV. 10/11/11
REV. 12/17
MAA/GM
MAA/THC

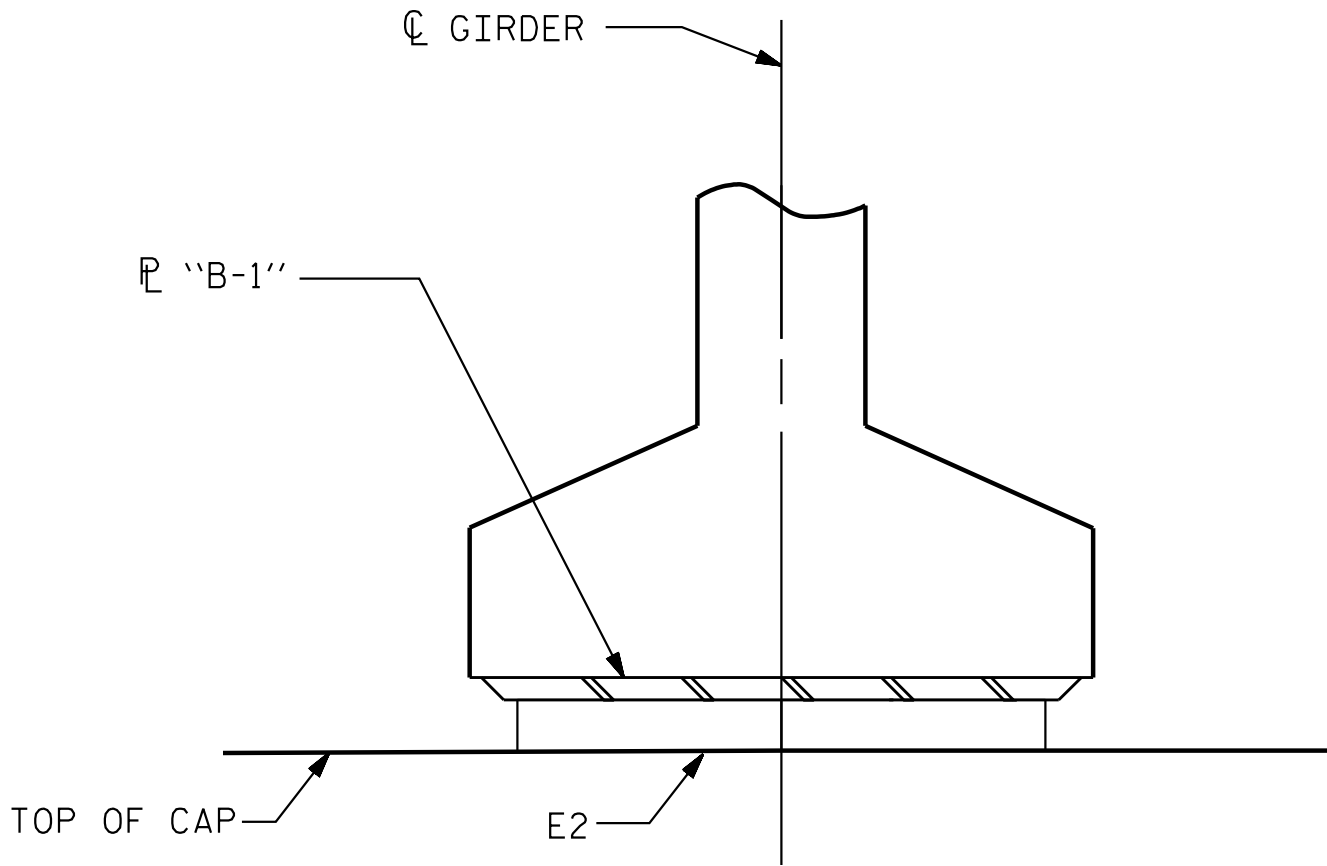
DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON
DATE : 04/22/25



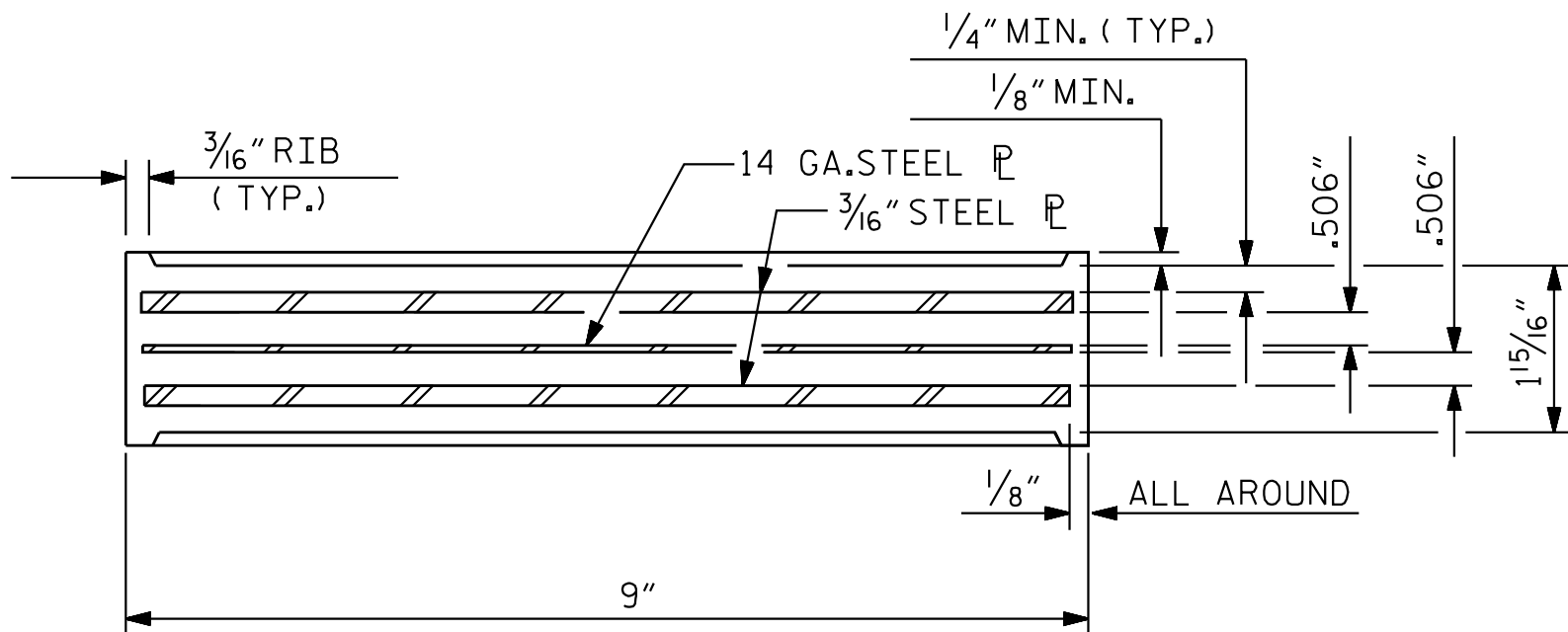
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FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
INTERMEDIATE
STEEL DIAPHRAGMS
FOR MODIFIED 72"
PRESTRESSED CONCRETE
GIRDERS

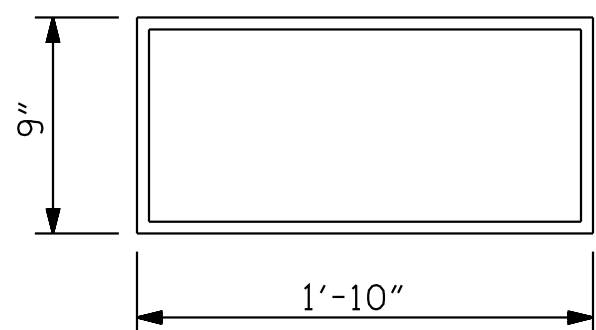
REVISIONS						SHEET NO. S02-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



INTEGRAL
SECTION E-E



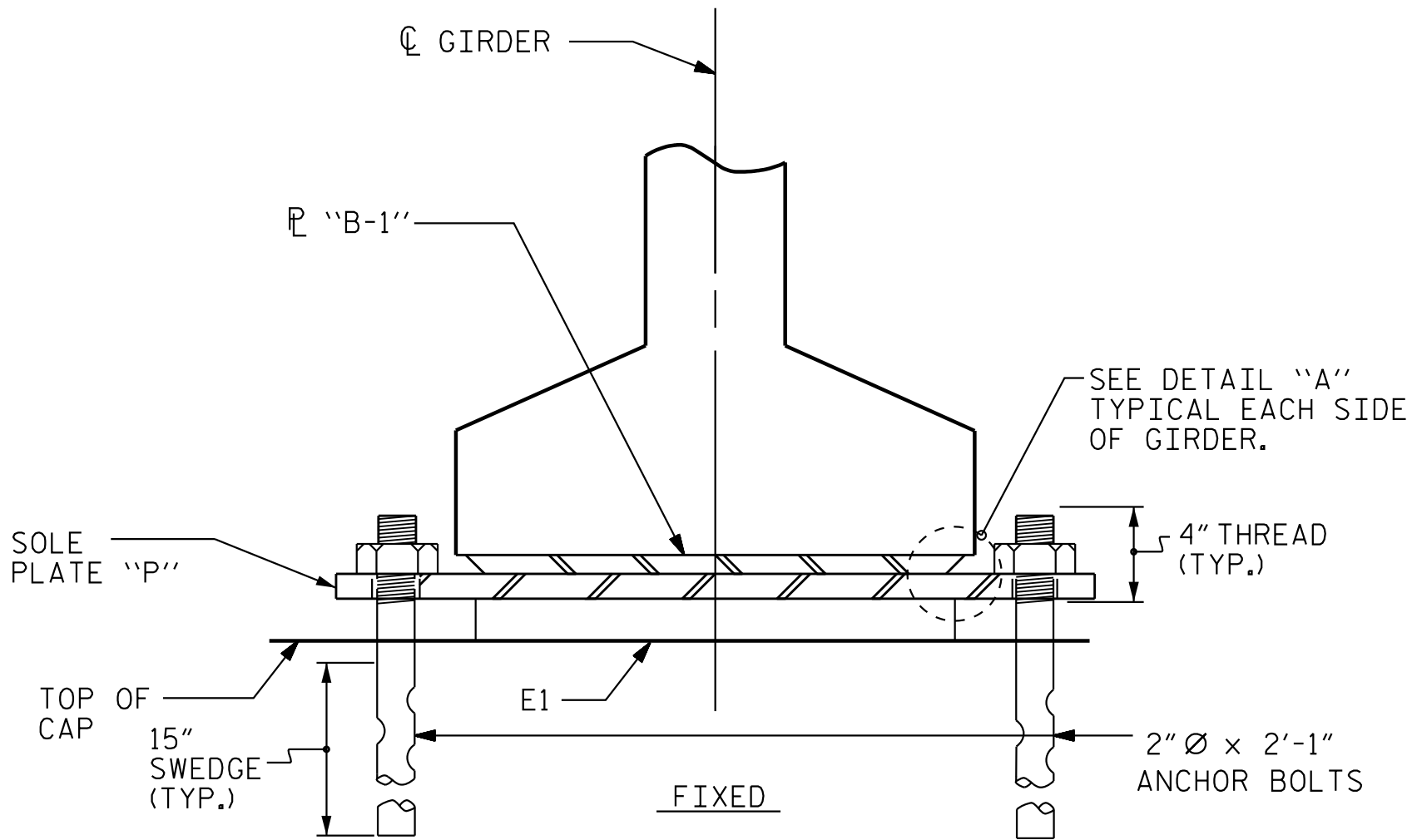
TYPICAL SECTION OF ELASTOMERIC BEARINGS



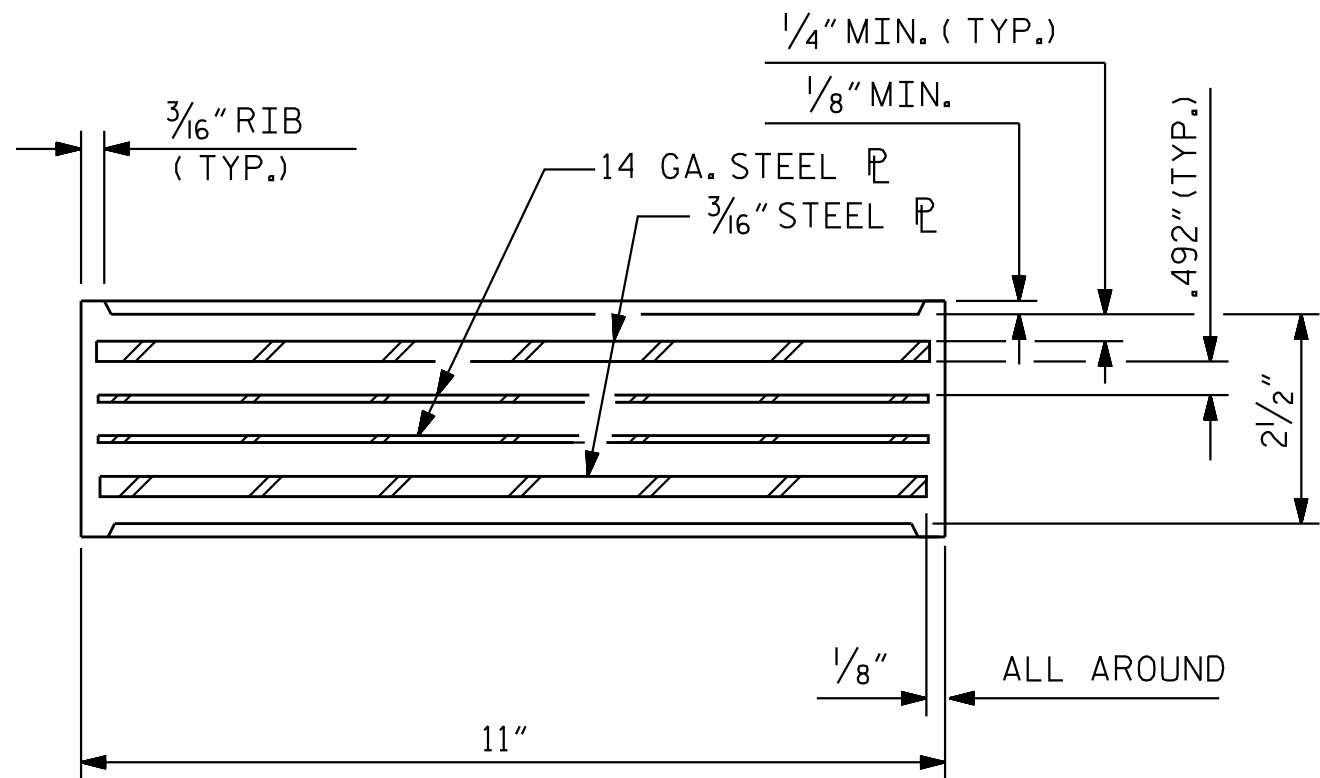
E2 (8 REQ'D)
PLAN VIEW OF ELASTOMERIC BEARING

TYPE IV

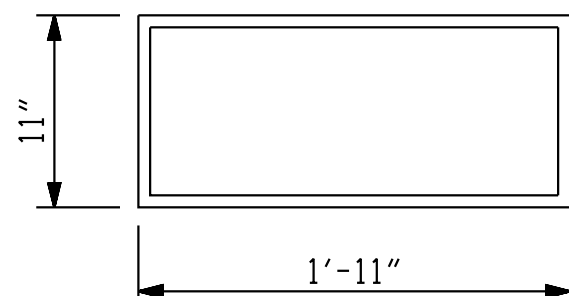
MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L.(NO IMPACT)	
TYPE IV	225 k
TYPE VI	420 k



SECTION F-F



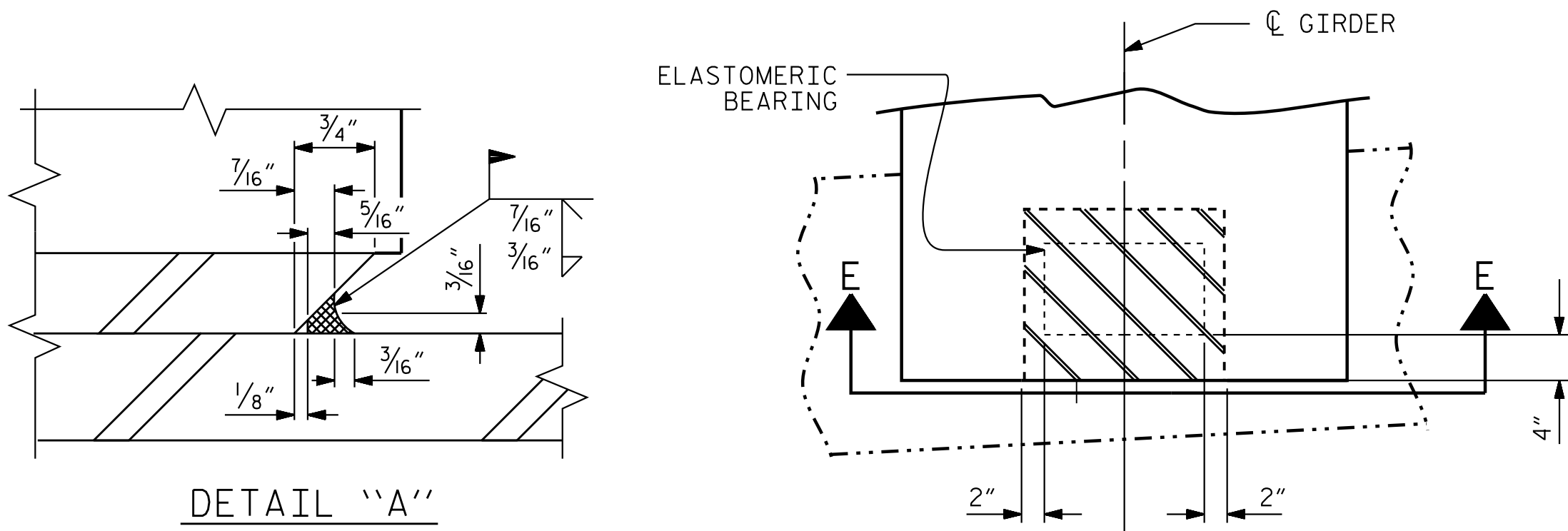
TYPICAL SECTION OF ELASTOMERIC BEARINGS



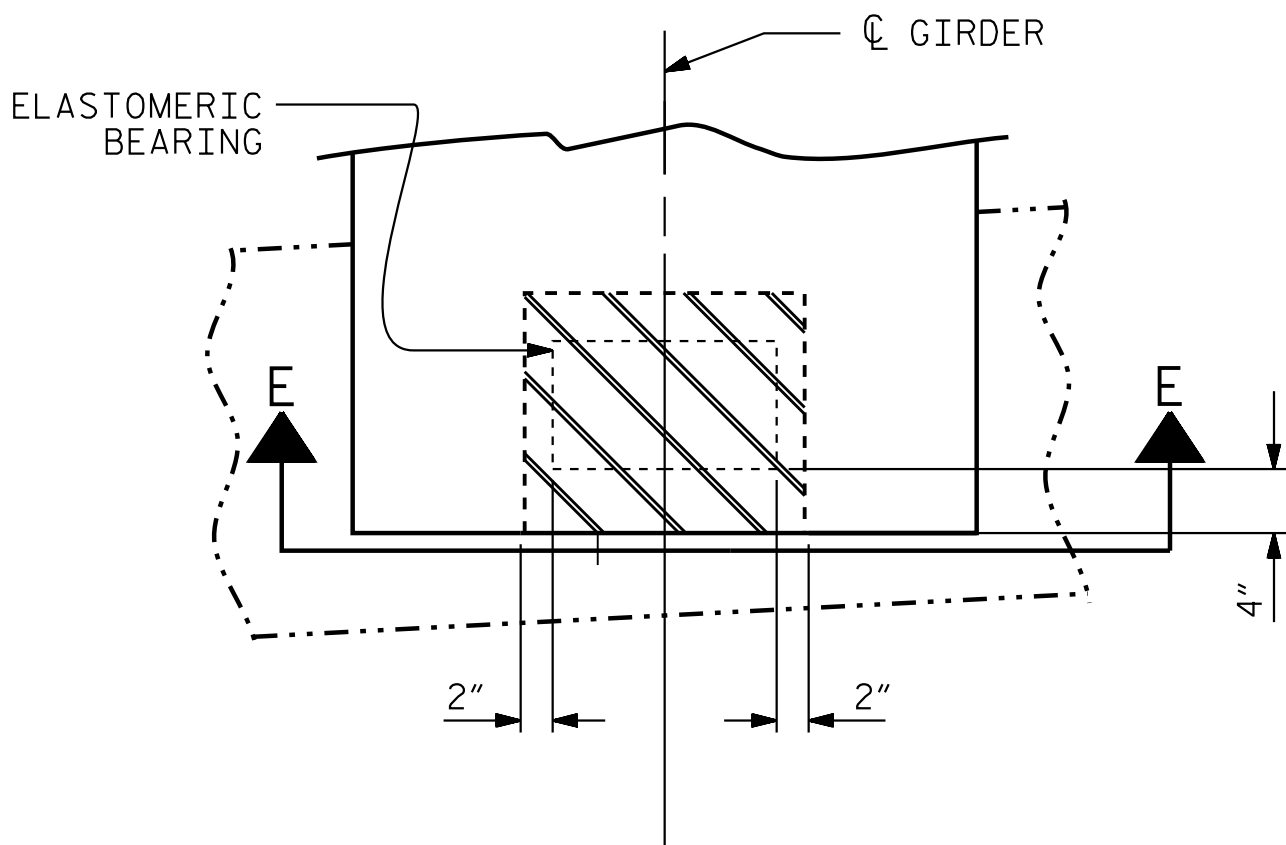
E1 (8 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

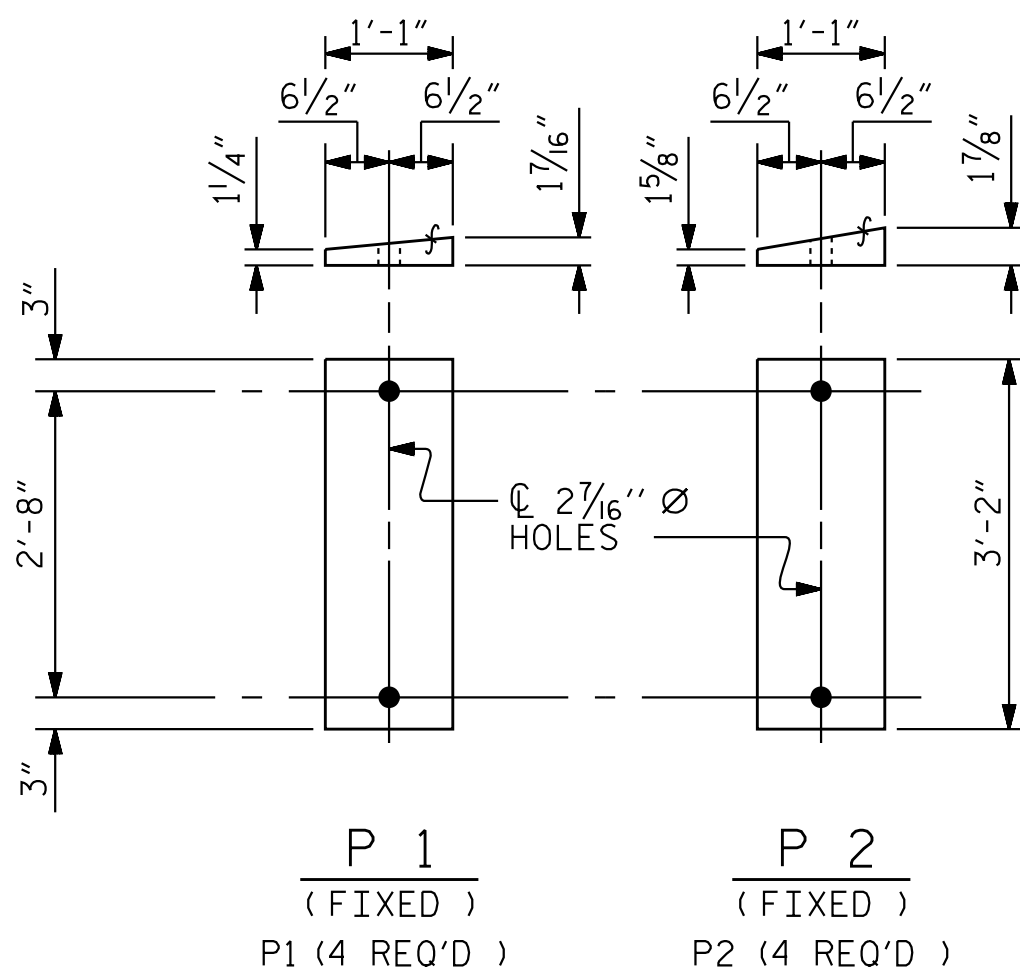
TYPE VI



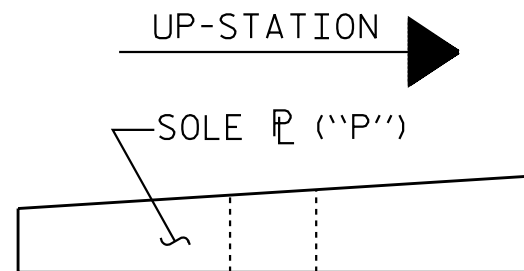
DETAIL "A"



TYPICAL PLAN
(SHOWING INTEGRAL END BENT)



SOLE PLATE DETAILS ("P")



SOLE "P" PLACEMENT DETAIL

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,AND NUTS 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,AND NUTS SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

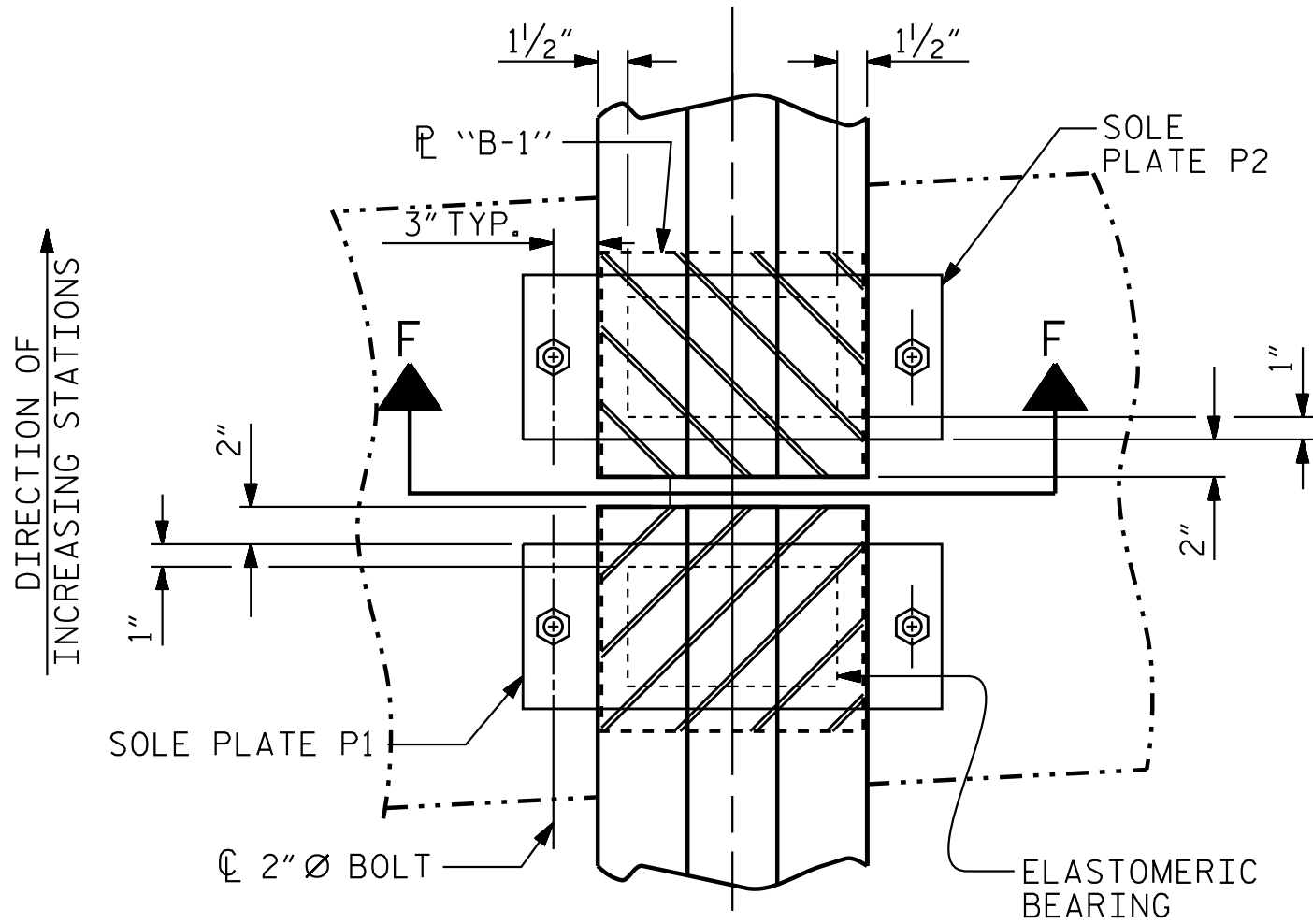
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449.NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H.SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT AND NUTS. SHOP INSPECTION IS REQUIRED.

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.

ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.

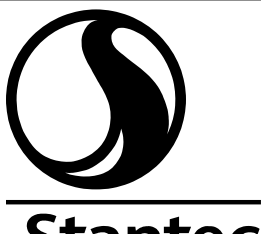
FOR STEEL REINFORCED ELASTOMERIC BEARINGS,SEE STANDARD SPECIFICATIONS.



TYPICAL PLAN

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 1 OF 1



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DRAWN BY : G. TURNER DATE : 8/20/18
CHECKED BY : A. COOK DATE : 2/16/19

DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25



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

REVISIONS						SHEET NO. S02-21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



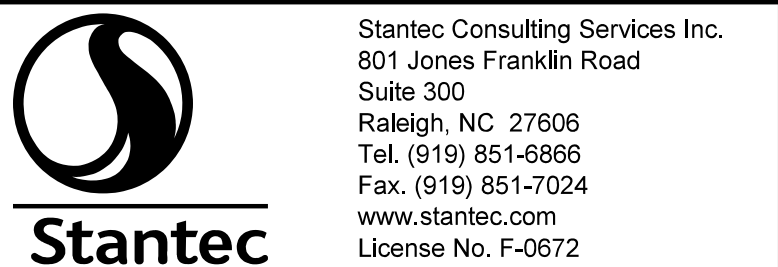
ALL VALUES ARE SHOWN IN DECIMALS OF A FOOT EXCEPT
"FINAL CAMBER (OR DEFLECTION)" WHICH IS SHOWN IN INCHES.

(+) FINAL CAMBER INDICATES NET UPWARD DISPLACEMENT.

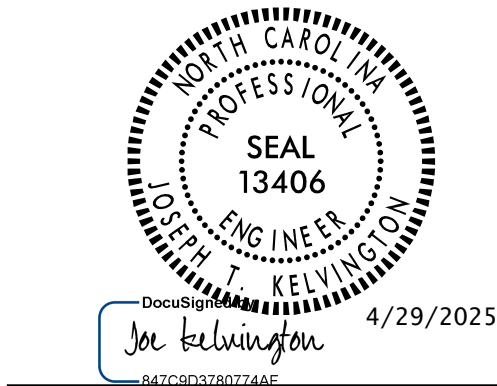
PROJECT NO. R-3300A
NEW HANOVER COUNTY
 STATION: 225+92.26 -L1-

SHEET 1 OF 2

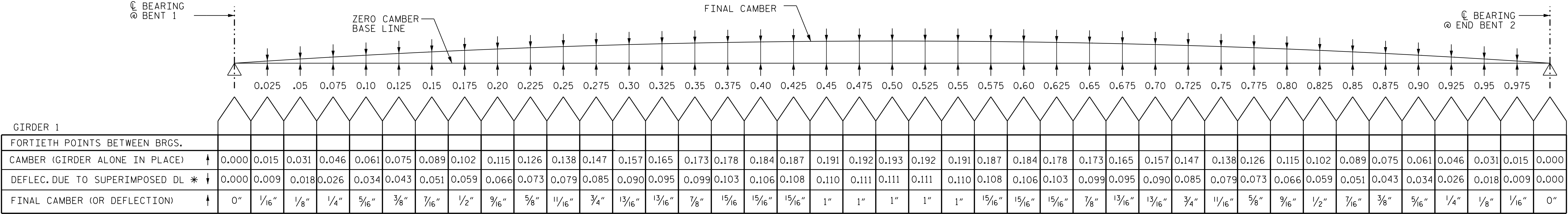
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD
DEFLECTIONS
SPAN A



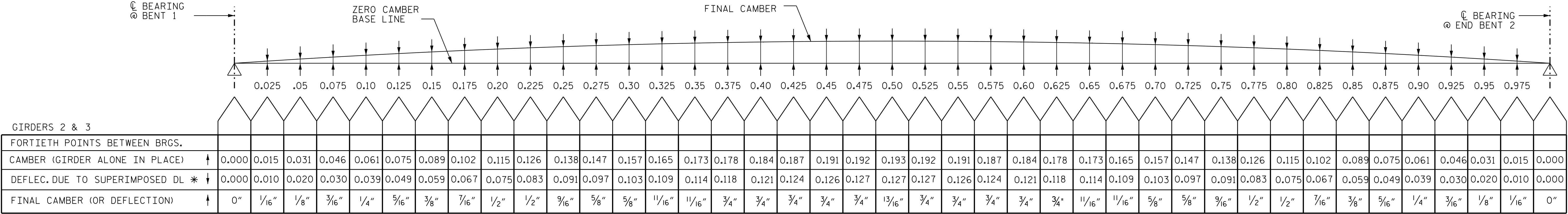
DRAWN BY : M. R. SMITH DATE : 06/06/18 DESIGN ENGINEER OF RECORD : J. T. KELVINGTON DATE : 04/22/25
 CHECKED BY : A. E. COOK DATE : 02/07/19



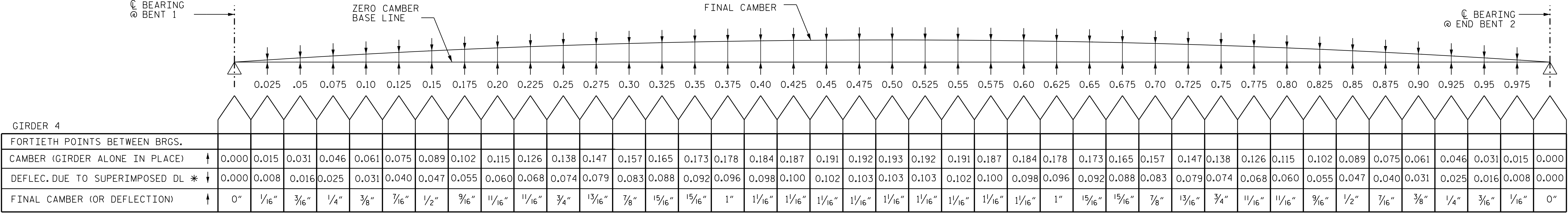
DOCUMENT NOT CONSIDERED
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* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD.



* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD.



* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD.

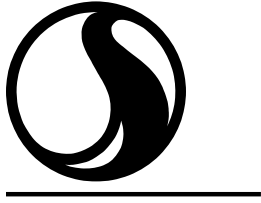
SCHEMATIC CAMBER ORDINATES SPAN B

ALL VALUES ARE SHOWN IN DECIMALS OF A FOOT EXCEPT "FINAL CAMBER (OR DEFLECTION)" WHICH IS SHOWN IN INCHES.

(+) FINAL CAMBER INDICATES NET UPWARD DISPLACEMENT.

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 2 OF 2



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DRAWN BY : M. R. SMITH DATE : 06/06/18
CHECKED BY : A. E. COOK DATE : 02/07/19

DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE DEAD LOAD DEFLECTIONS SPAN B						SHEET NO. S02-23	
REVISIONS						TOTAL SHEETS 38	
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

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. 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.)

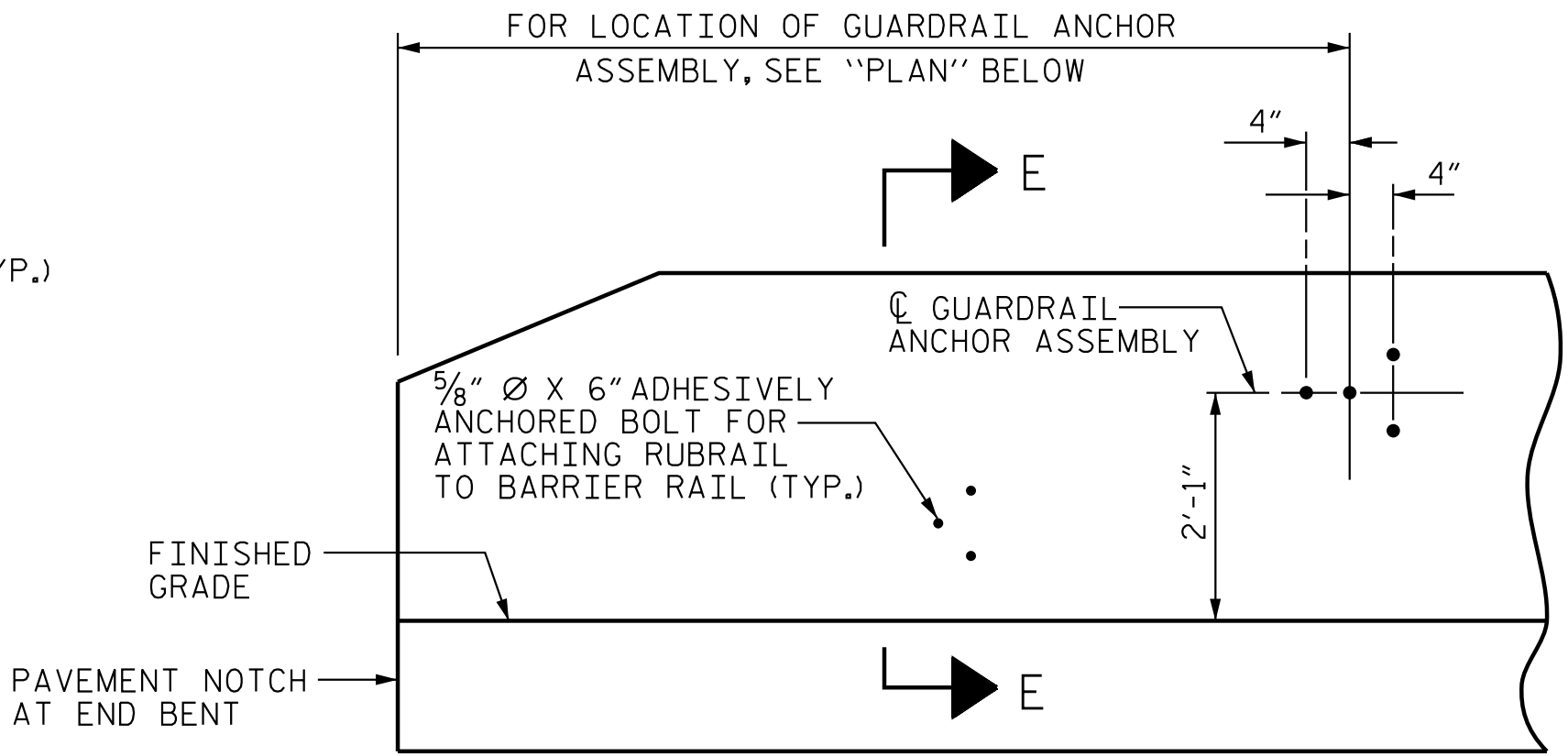
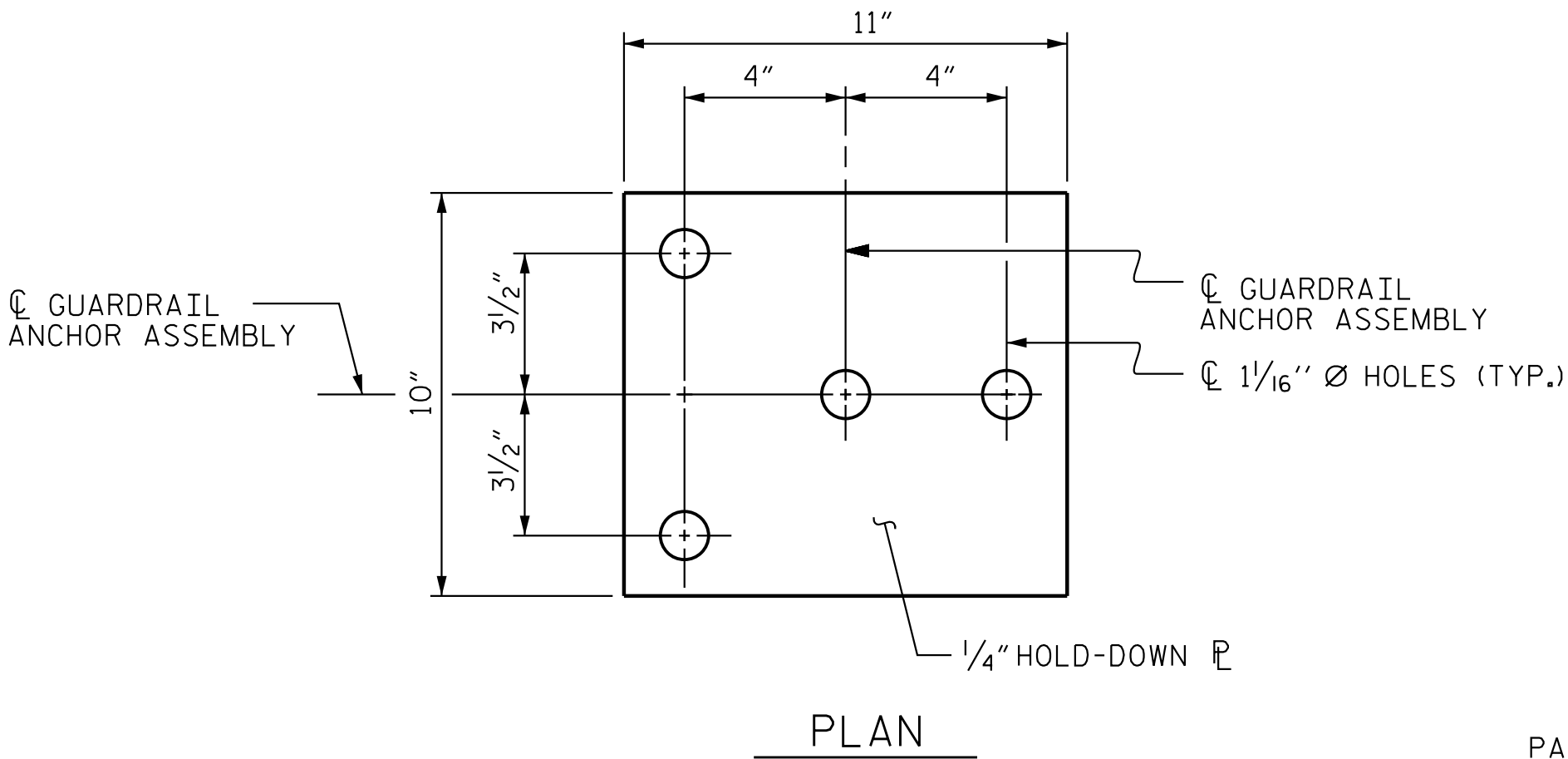
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

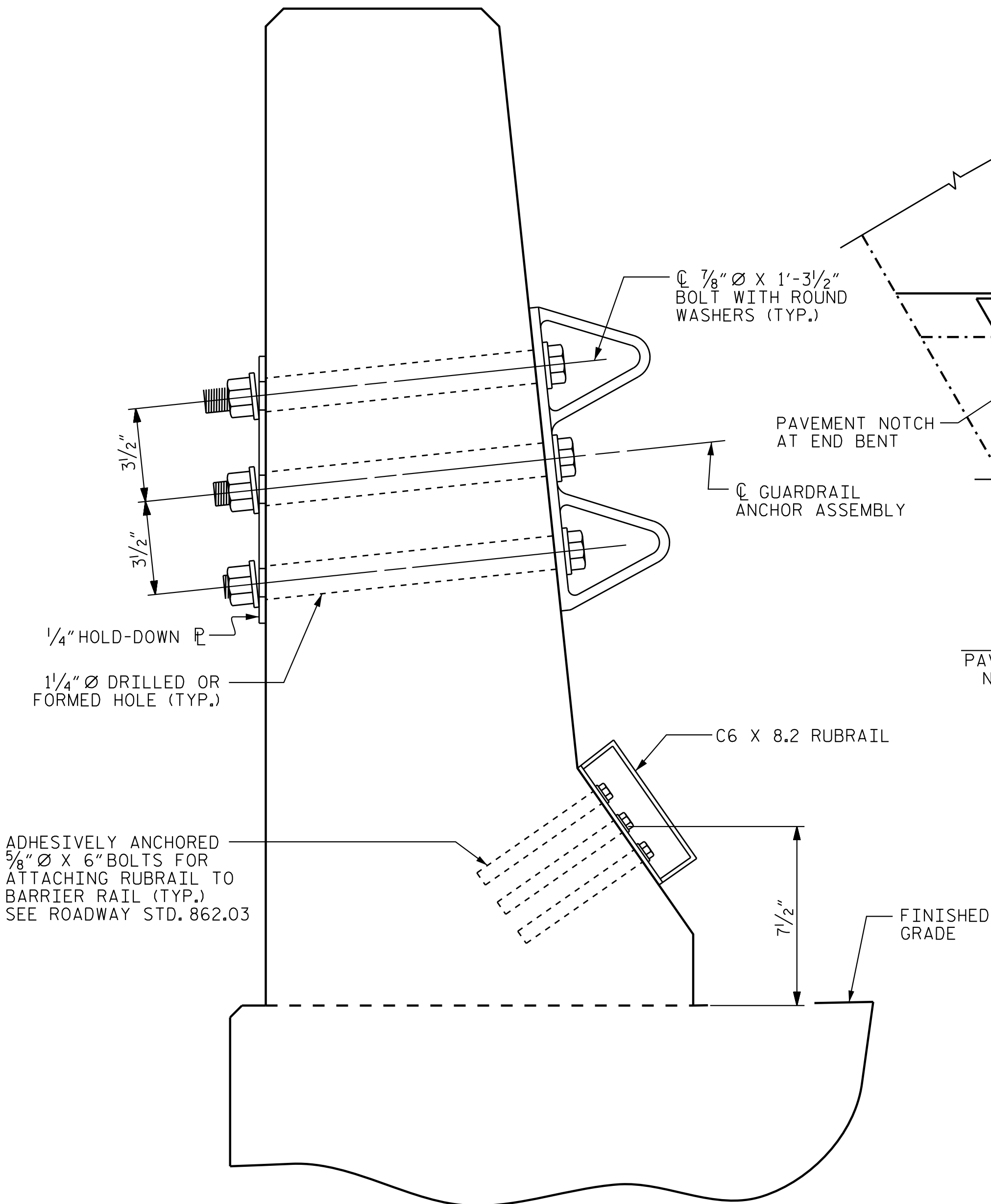
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 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.

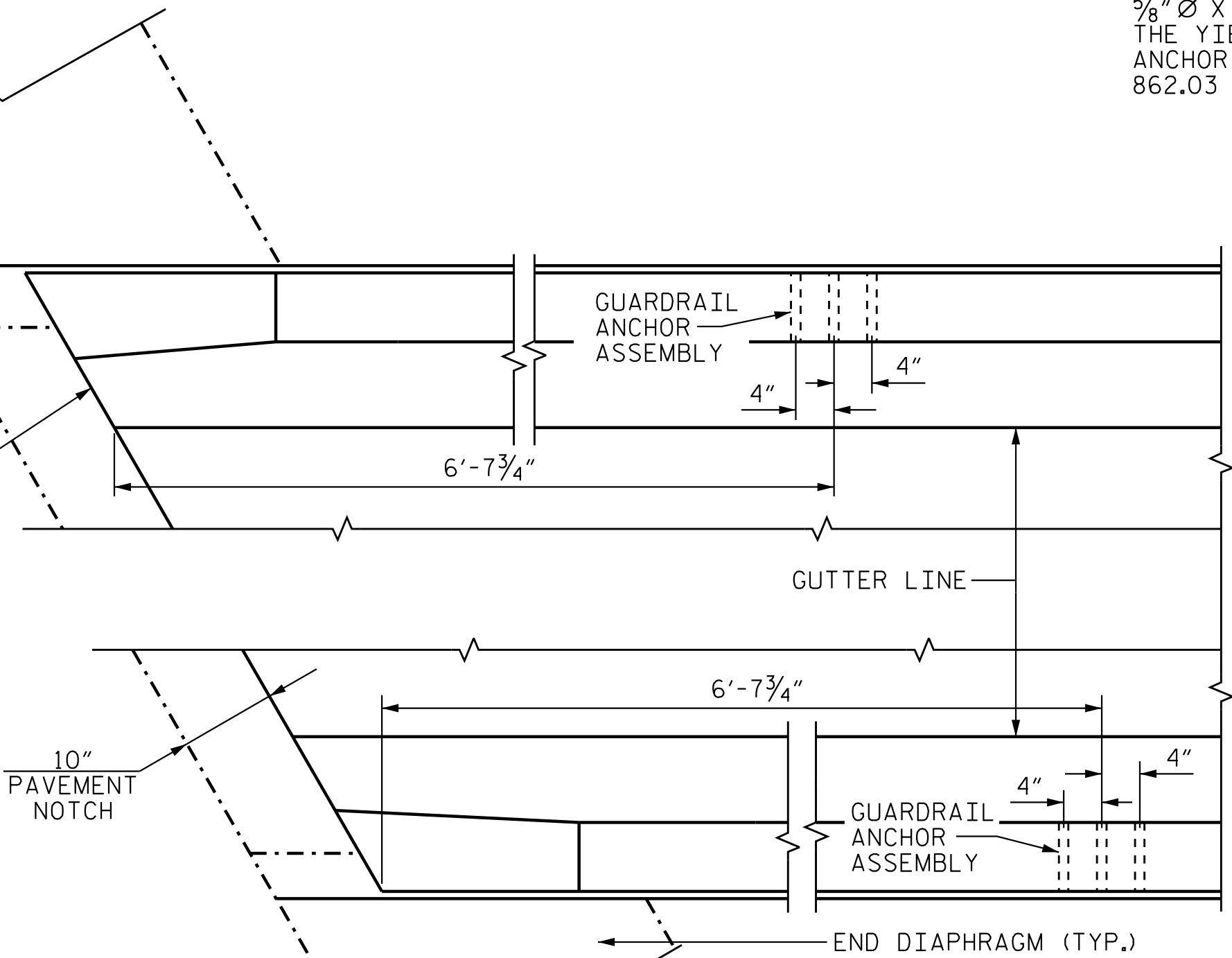
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 5/8" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 5/8" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



ELEVATION

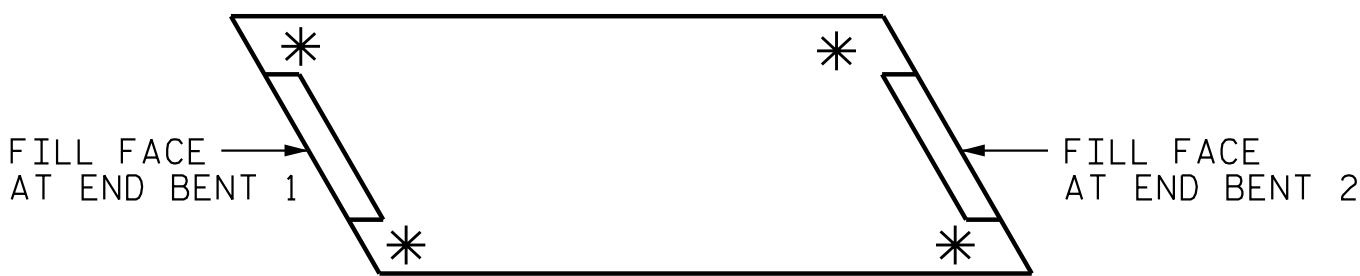


SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-



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ASSEMBLED BY : M. R. SMITH
CHECKED BY : A. E. COOK
DATE : 06/06/18
DATE : 02/26/19

DRAWN BY : TLA 5/06
CHECKED BY : GM 5/06

REV. 7/12
REV. 6/13
REV. 12/17
MAA/GM
MAA/GM
MAA/THC

DESIGN ENGINEER
OF RECORD: J. T. KELVINGTON
DATE : 04/22/25



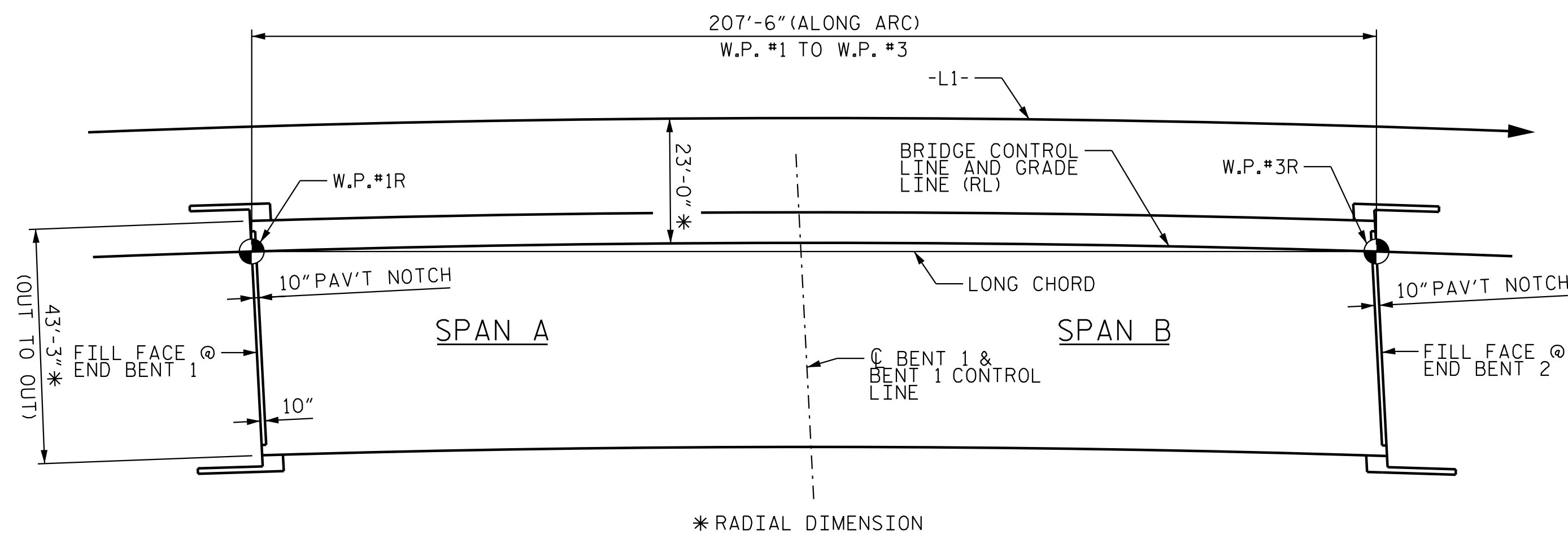
4/29/2025

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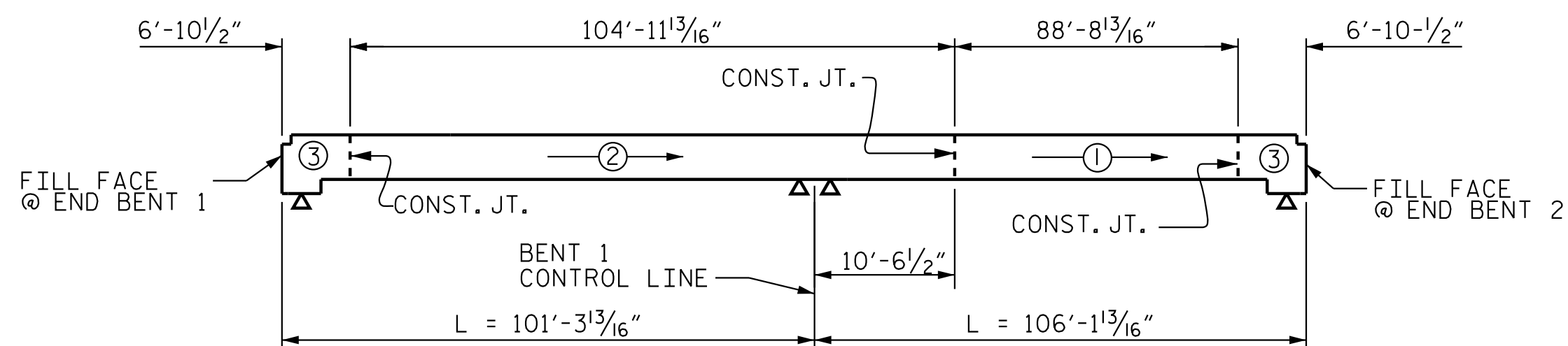
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE
FOR BARRIER RAIL

REVISIONS						SHEET NO. S02-25
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



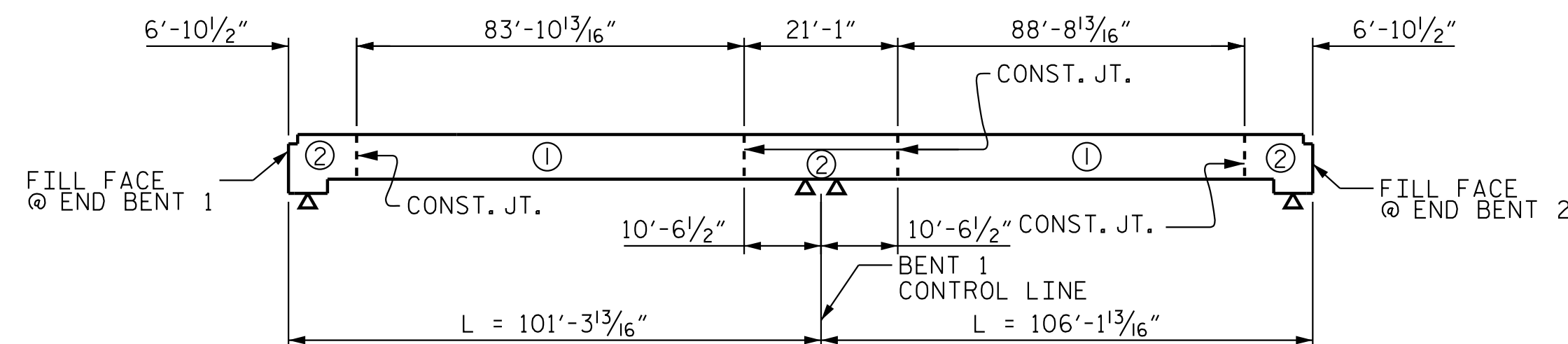
LAYOUT FOR COMPUTING AREA
= REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 8,974)



POURING SEQUENCE

(DIMENSIONS SHOWN ARE ALONG LONG CHORD)

—(#)→ = INDICATES POUR NUMBER
AND DIRECTION OF POUR



OPTIONAL POURING SEQUENCE

(DIMENSIONS SHOWN ARE ALONG LONG CHORD)

POUR ② CAN NOT BE STARTED UNTIL CONCRETE IN BOTH
ADJACENT ① POURS REACH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI

GROOVING BRIDGE FLOORS	
APPROACH SLABS	1,788 SQ.FT.
BRIDGE DECK	7,604 SQ.FT.
TOTAL	9,392 SQ.FT.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS					
BAR SIZE	EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	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"			

SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
POUR #1	130.0	36,227	33,497
POUR #2	153.6		
POUR #3	118.9		
TOTALS **	402.5	36,227	33,497

*** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED



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DRAWN BY : A. E. COOK DATE : 02/09/19
CHECKED BY : G. A. TURNER DATE : 02/19/19

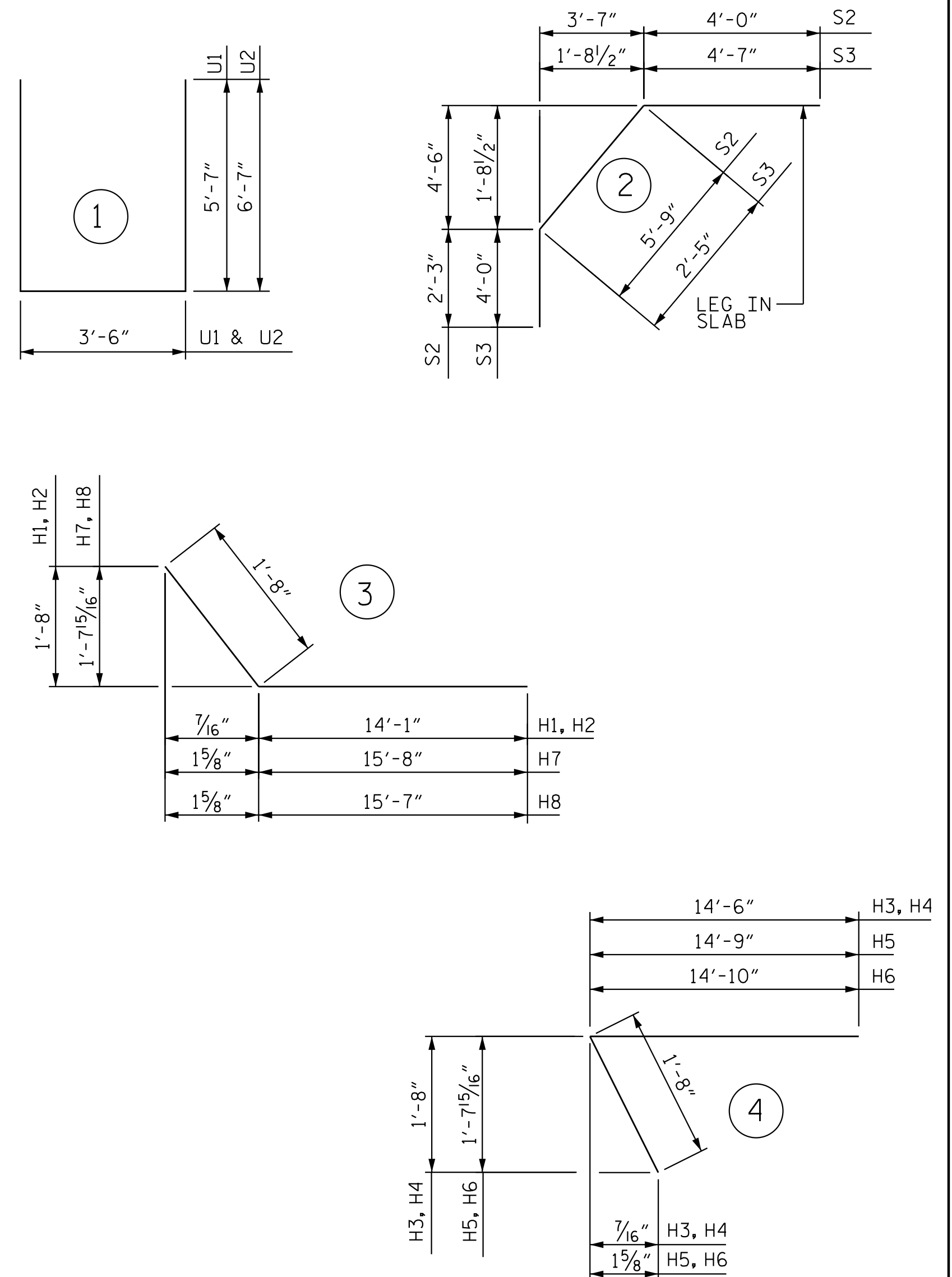
DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE: 04/22/25

REINFORCING BAR SCHEDULE

SPAN & DIAPHRAGM REINFORCEMENT						CUT BAR REINFORCEMENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	407	#5	STR	42'-10"	18,183	*A101	2	#5	STR	35'-6"	74
A2	407	#5	STR	42'-10"	18,183	*A102	2	#5	STR	25'-10"	54
						*A103	2	#5	STR	16'-2"	34
*B1	132	#5	STR	25'-9"	3,545	*A104	2	#5	STR	6'-6"	14
B2	150	#5	STR	22'-0"	3,442						
*B3	41	#5	STR	41'-4"	1,768	A201	2	#5	STR	35'-6"	74
B4	41	#5	STR	51'-7"	2,206	A202	2	#5	STR	25'-10"	54
*B5	62	#5	STR	34'-11"	2,258	A203	2	#5	STR	16'-2"	34
*B6	104	#5	STR	21'-3"	2,305	A204	2	#5	STR	6'-6"	14
B7	52	#5	STR	23'-8"	1,284						
B8	100	#5	STR	36'-6"	3,807						
*B9	62	#5	STR	44'-1"	2,851						
B10	100	#5	STR	38'-11"	4,059						
H1	14	#6	3	15'-9"	331						
H2	10	#4	3	15'-9"	105						
H3	16	#6	4	16'-2"	389						
H4	9	#4	4	16'-2"	97						
H5	17	#6	4	16'-5"	419						
H6	10	#4	4	16'-6"	110						
H7	14	#7	3	17'-4"	496						
H8	9	#4	3	17'-3"	104						
K1	24	#4	STR	25'-3"	405						
K2	6	#4	STR	8'-0"	32						
K3	6	#4	STR	9'-5"	38						
K4	30	#4	STR	11'-0"	220						
K5	2	#4	STR	5'-2"	7						
K6	10	#4	STR	5'-3"	35						
K7	10	#4	STR	6'-9"	45						
K8	2	#4	STR	6'-0"	8						
K9	2	#4	STR	3'-10"	5						
K10	2	#4	STR	4'-7"	6						
K11	16	#4	STR	2'-10"	30						
*S2	82	#4	2	12'-0"	657						
*S3	64	#4	2	11'-0"	470						
U1	58	#4	1	14'-8"	568						
U2	12	#4	1	16'-8"	134						
V2	26	#5	STR	6'-11"	188						
V3	26	#5	STR	6'-8"	181						
V4	28	#5	STR	7'-0"	204						
V5	28	#5	STR	6'-9"	197						

REINFORCING STEEL	36,227 LBS
* EPOXY COATED REINFORCING STEEL	33,497 LBS

—BAR TYPES—



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. R-3300A
NEW HANOVER COUNTY
 STATION: 225+92.26 -L1-



DocuSigned by:
Joseph T. Kelvington 5/13/2025

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SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

BILL OF MATERIAL

REVISIONS

SHEET NO.

S02-26

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

TOTAL
SHEETS
38

+

+

5/3/2025 2:43:13 PM jhogenbush
U:\Structures\B2 - Y33 -\Drawing\Final\R3300A_SMU\E01-640B02.dgn

TOP OF PILE ELEVATIONS	
PILE	ELEVATION
P1	62.06
P2	61.68
P3	61.31
P4	60.93
P5	60.55
P6	60.17
P7	59.80
P8	59.42

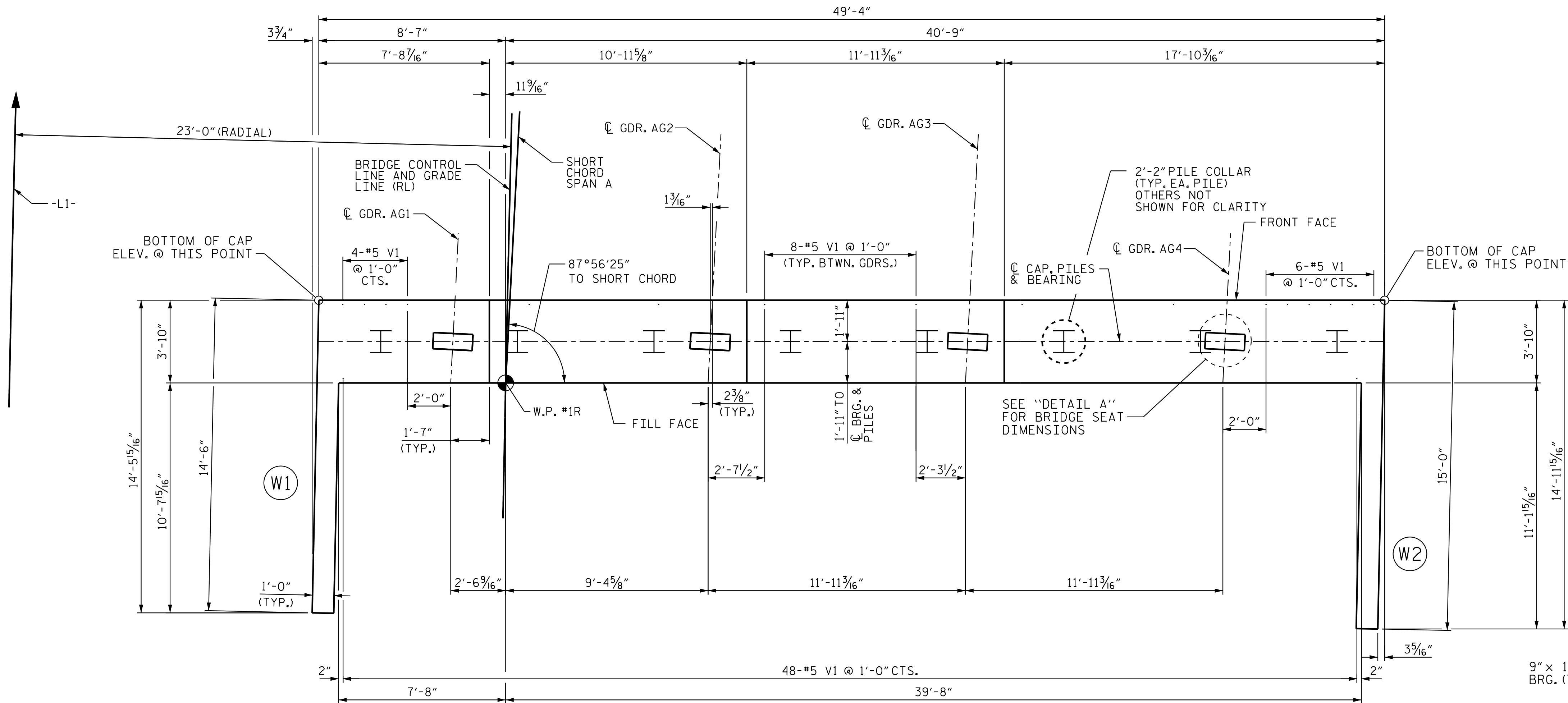
Ⓐ 8-#5 S1 & 8-#5 S2 @ 8" CTS. (TYP. EA. BAY)

SPLICE LENGTH	
#4 B2	2'-5"



DRAWN BY : G. A. TURNER DATE : 08/10/18
CHECKED BY : A. E. COOK DATE : 02/27/19

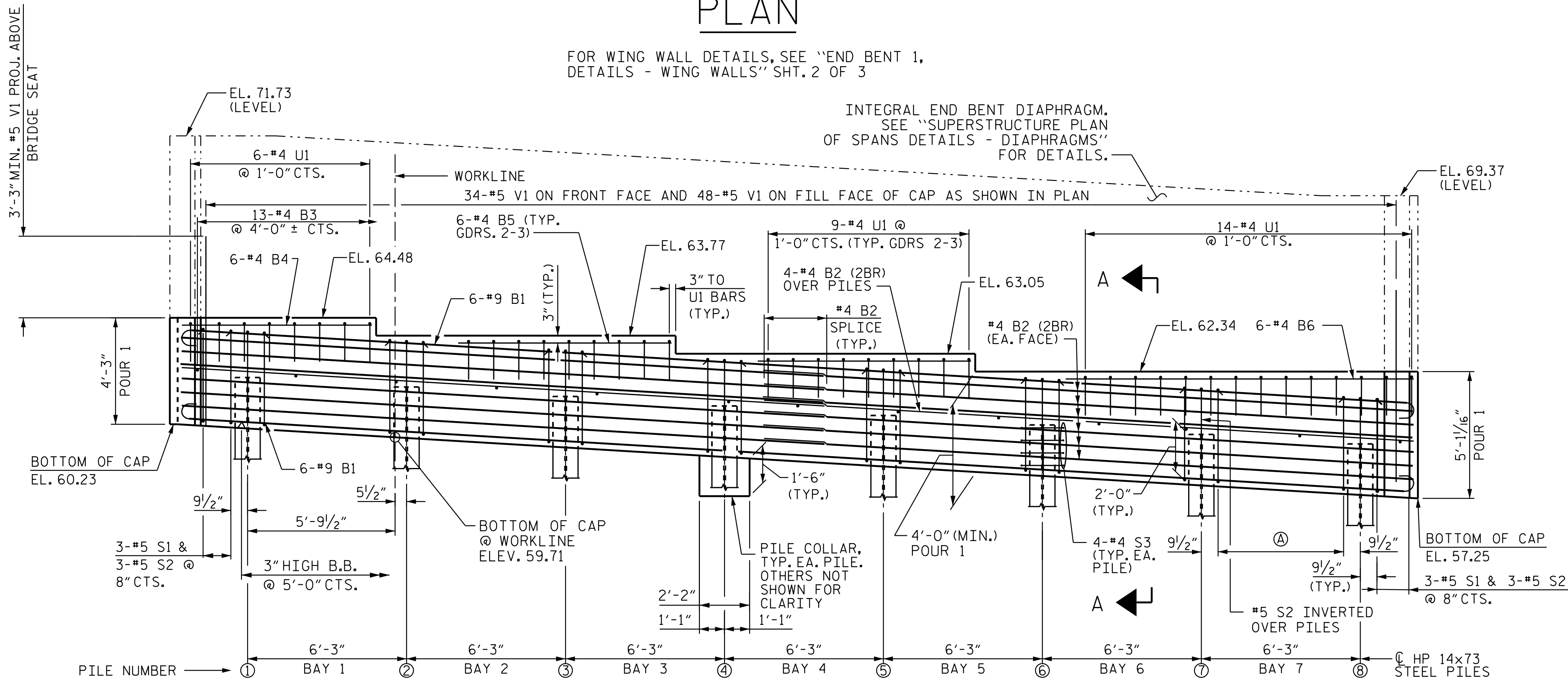
DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25



PLAN

FOR WING WALL DETAILS, SEE "END BENT 1, DETAILS - WING WALLS" SHT. 2 OF 3

INTEGRAL END BENT DIAPHRAGM. SEE "SUPERSTRUCTURE PLAN OF SPANS DETAILS - DIAPHRAGMS" FOR DETAILS.



ELEVATION

NOTES

(2BR) DENOTES 2 BAR RUN

(EF) DENOTES EACH FACE

SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

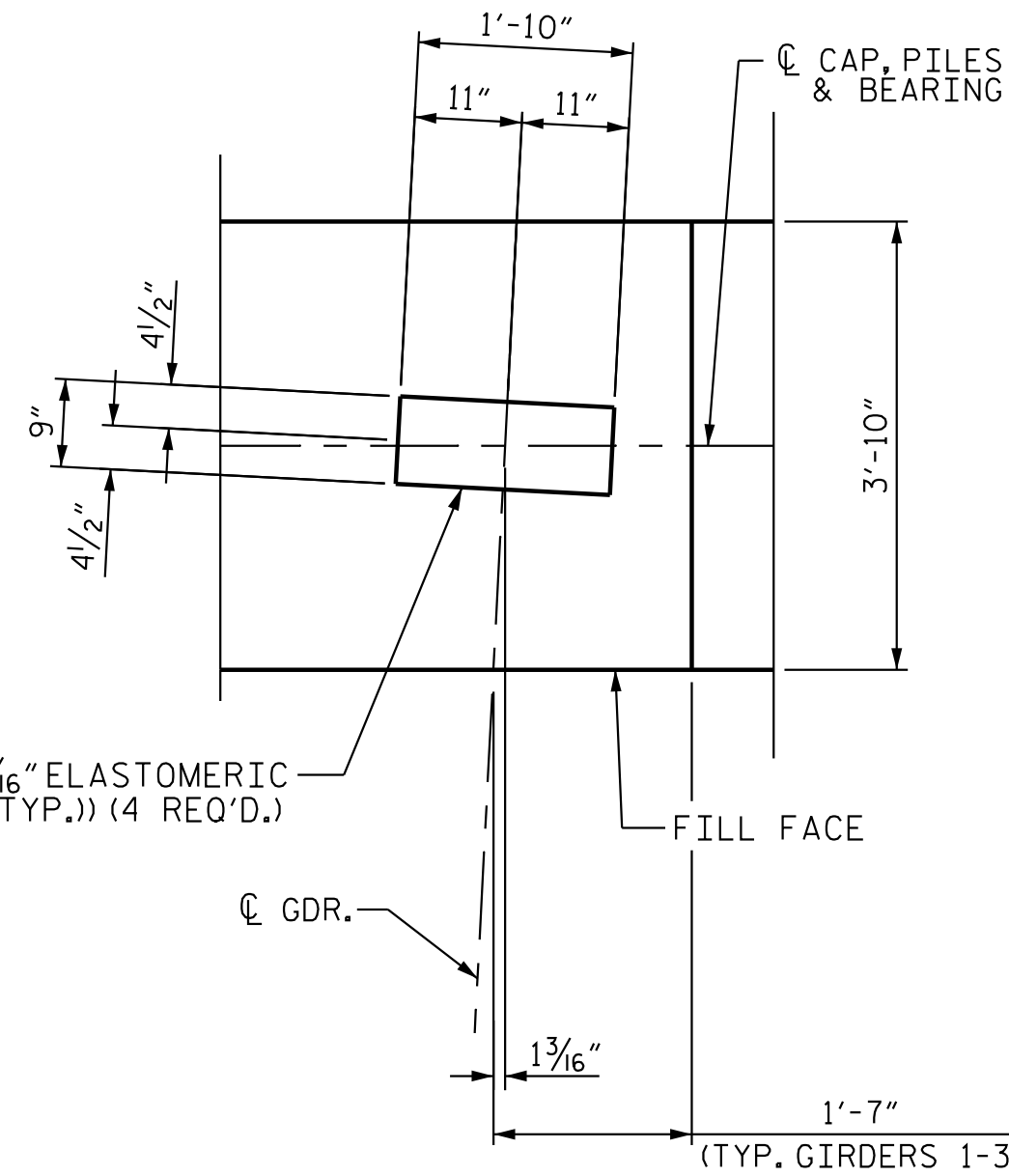
INSTALL THE 6" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE ROADWAY PLANS FOR ADDITIONAL DETAILS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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

SEE THE SUPERSTRUCTURE SHEETS FOR UPPER PART OF INTEGRAL END BENT DETAIL.

THE UPPER PART OF INTEGRAL PORTION AND WINGS SHALL BE POURED WITH THE SUPERSTRUCTURE. SEE SUPERSTRUCTURE PLAN OF SPANS.

THE TOP SURFACE OF POUR #1 OF THE END BENT CAP AND WINGS, EXCLUDING THE BEARING AREA, SHALL BE RAKED TO A DEPTH OF 1/4".

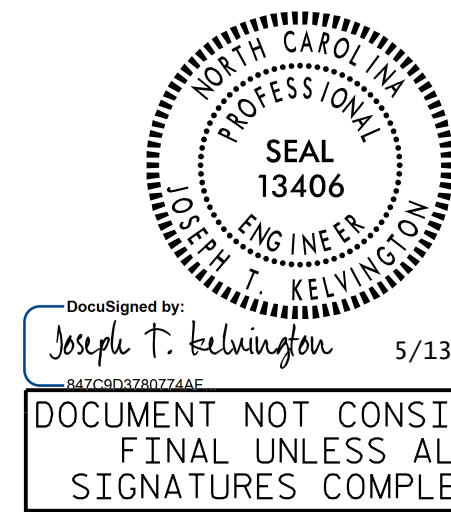


DETAIL A

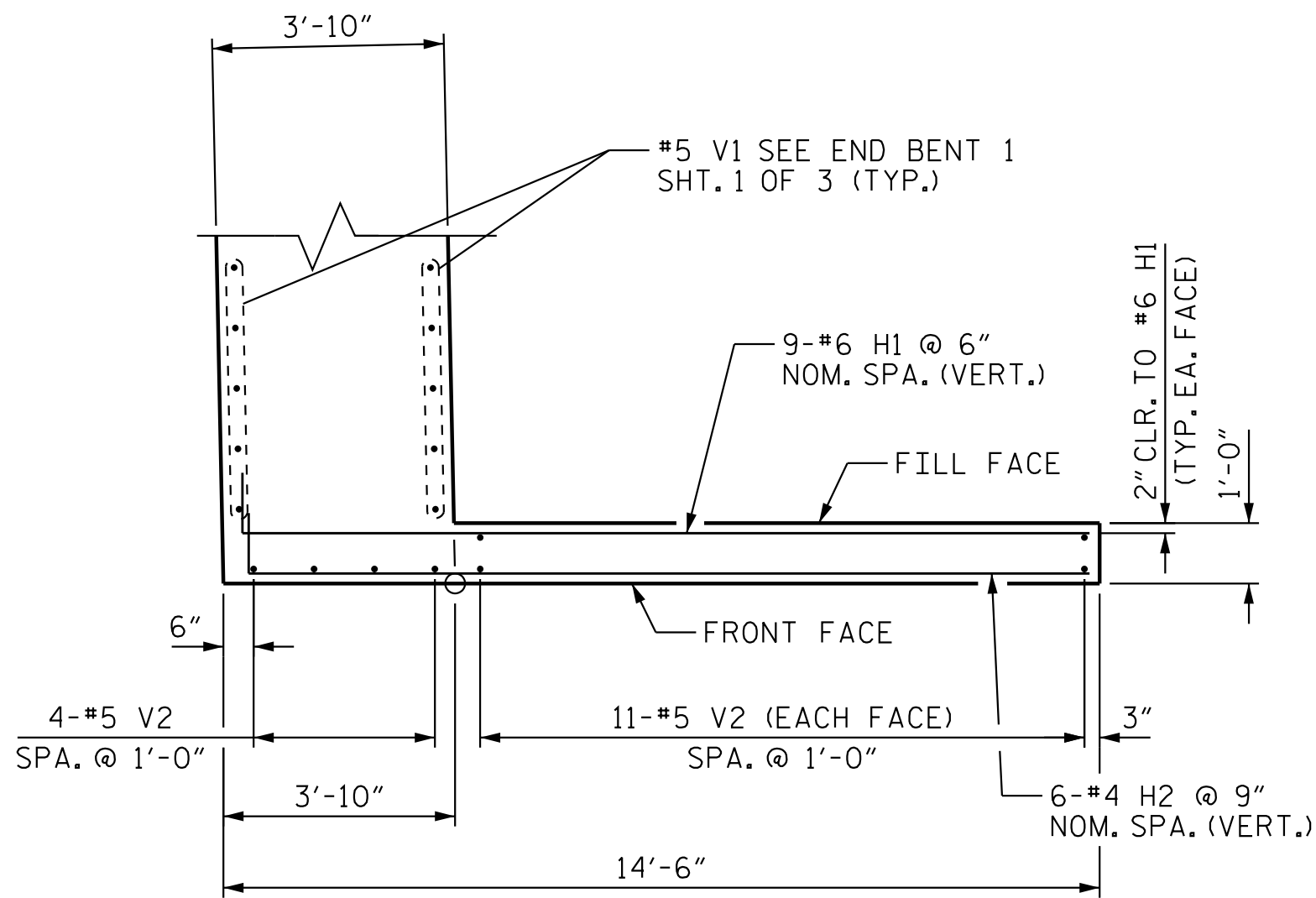
DIMENSIONS TYPICAL FOR EACH BEARING

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

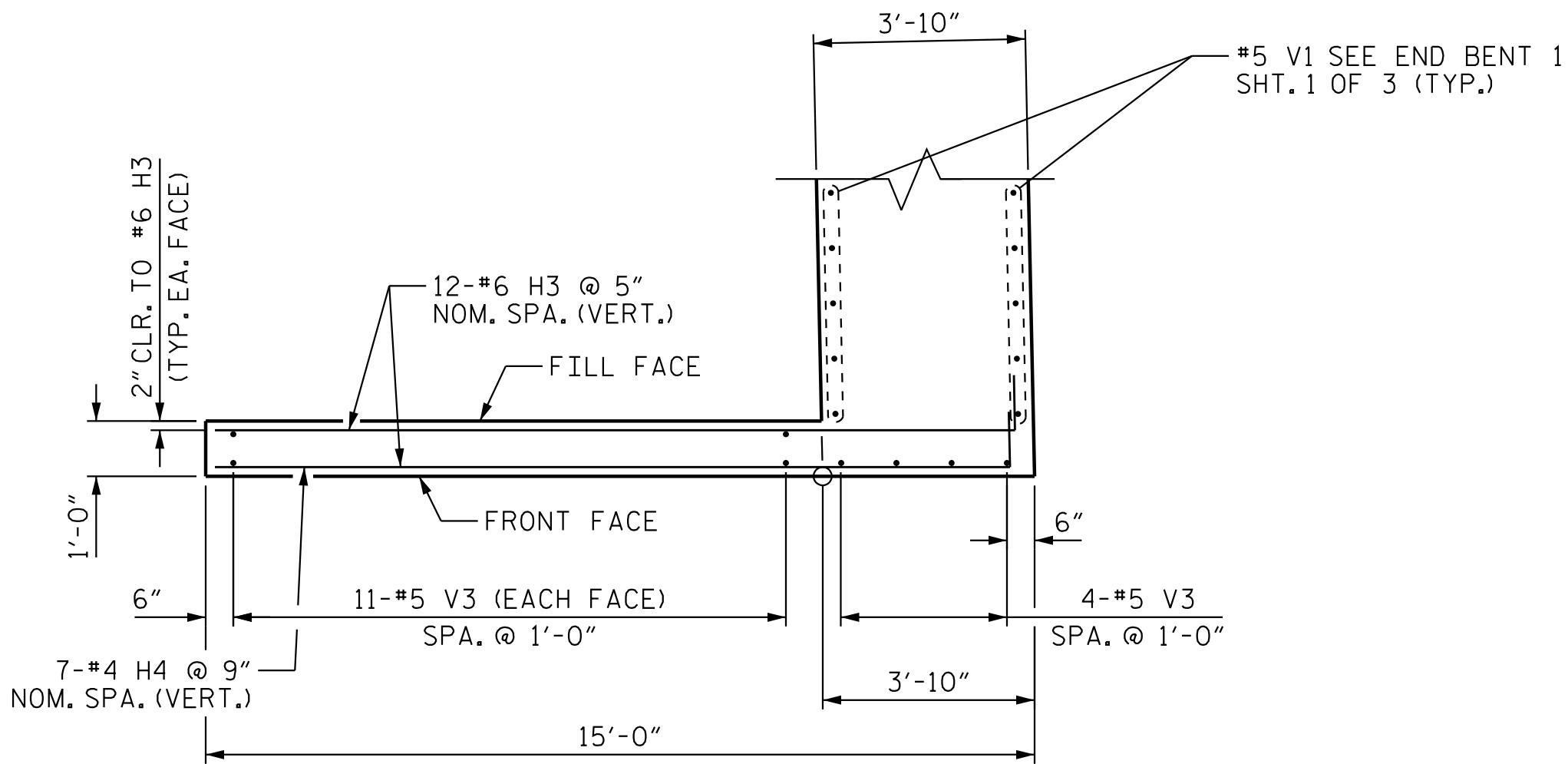
SHEET 1 OF 3



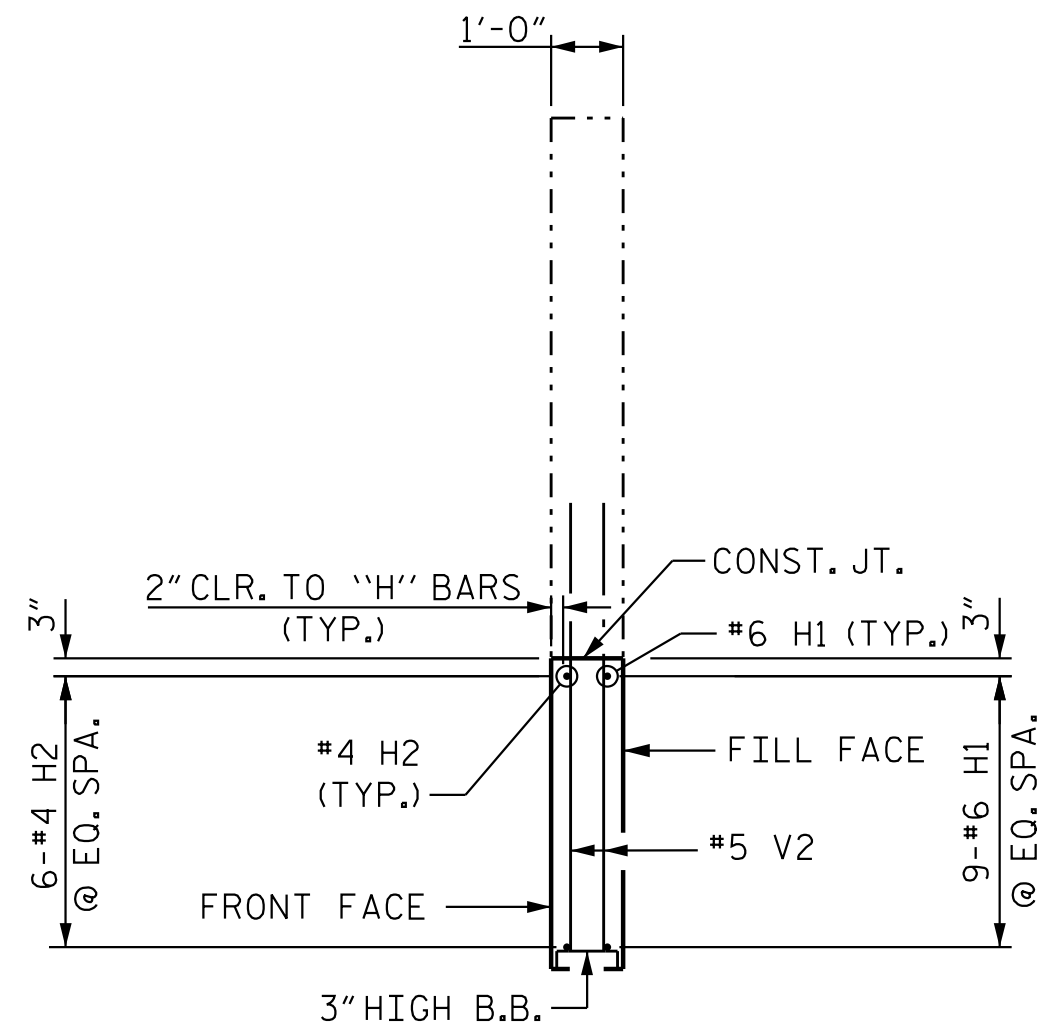
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUBSTRUCTURE					
END BENT 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S02-27					TOTAL SHEETS 38



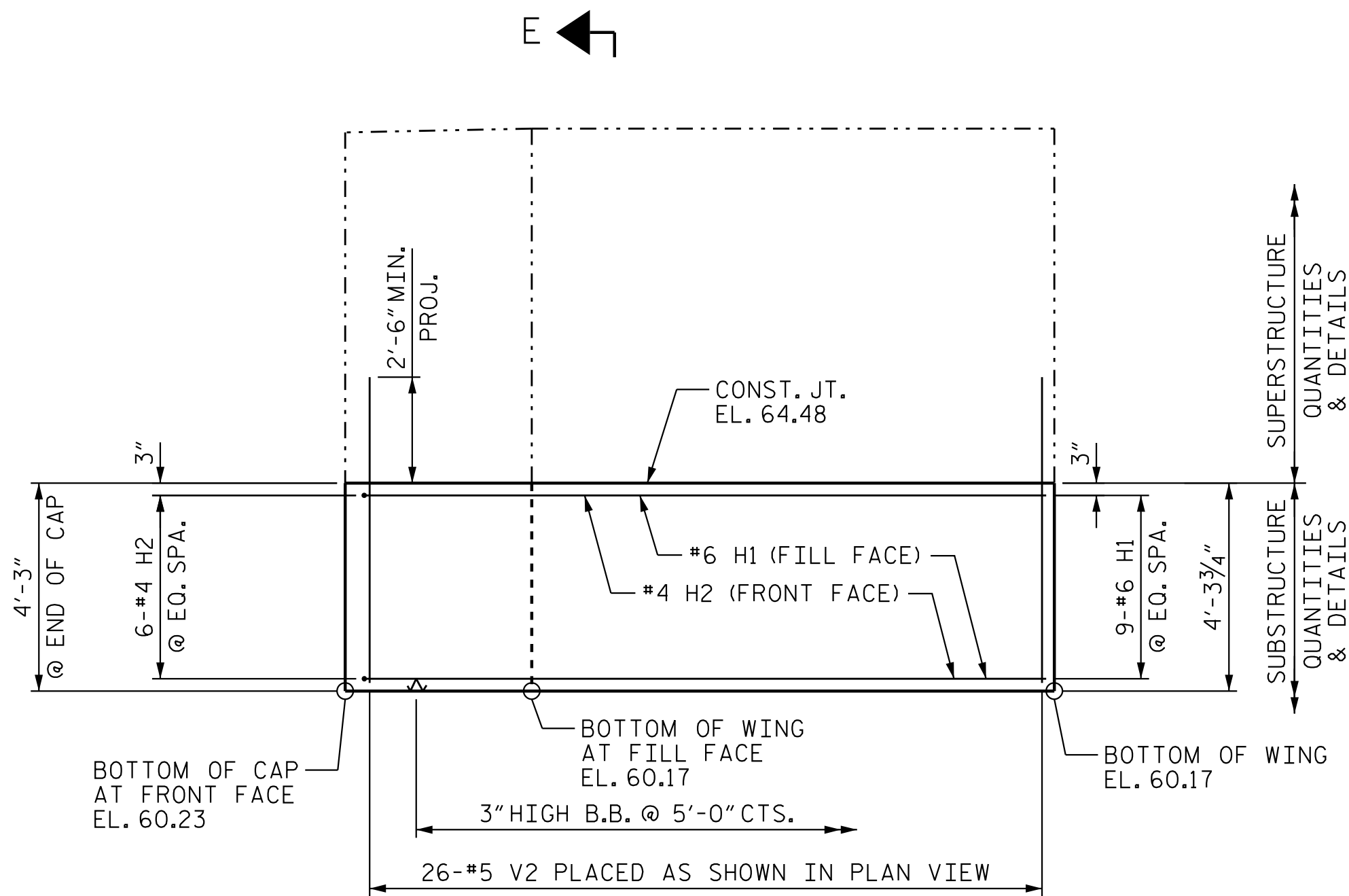
PLAN OF LEFT WING (W1)



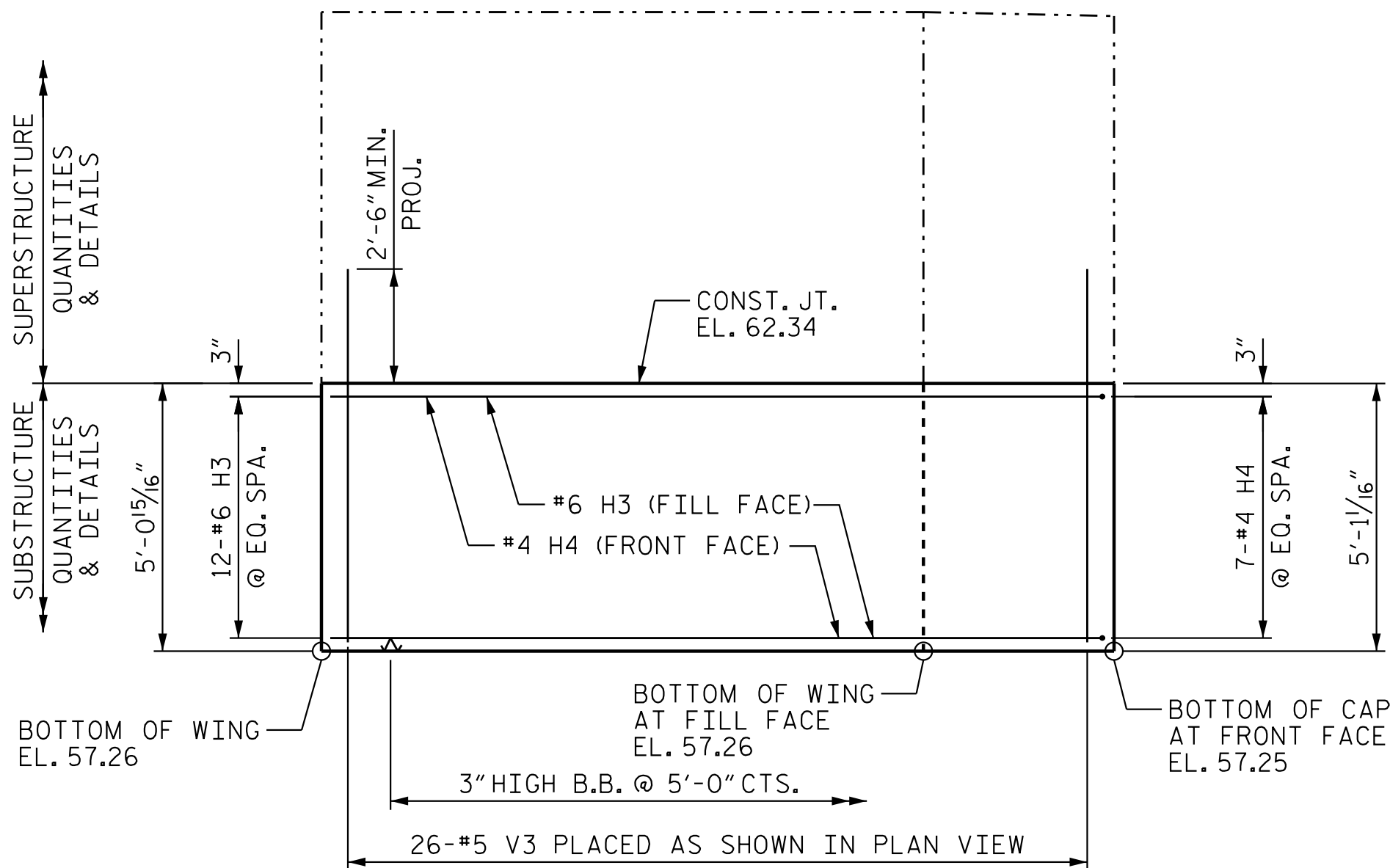
PLAN OF RIGHT WING (W2)



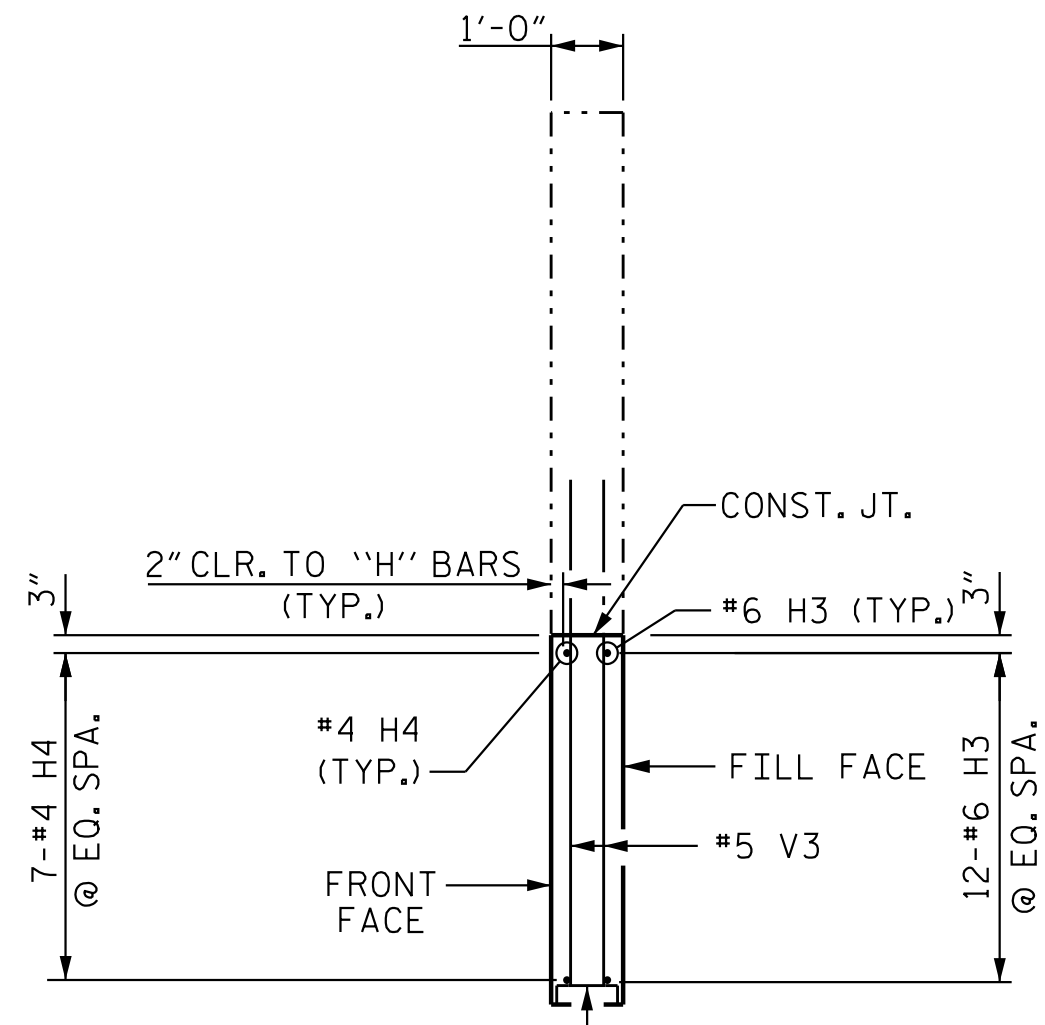
SECTION E-E



ELEVATION OF LEFT WING (W1)



ELEVATION OF RIGHT WING (W2)



SECTION F-F

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S02-28
SUBSTRUCTURE						
END BENT 1 DETAILS WING WALLS						TOTAL SHEETS 38
REVISIONS						
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DRAWN BY : G. A. TURNER DATE : 03/07/19
CHECKED BY : A. E. COOK DATE : 03/08/19

DESIGN ENGINEER OF RECORD : J. T. KELVINGTON DATE : 04/22/25

NOTE:

TOP SURFACE OF END BENT CAP BETWEEN EDGE OF DECK SLAB
AND END OF CAP SHALL BE SLOPED TRANSVERSELY FROM FRONT
FACE TO FILL FACE AT A RATE OF 1/4" / FT.

(EF) DENOTES EACH FACE



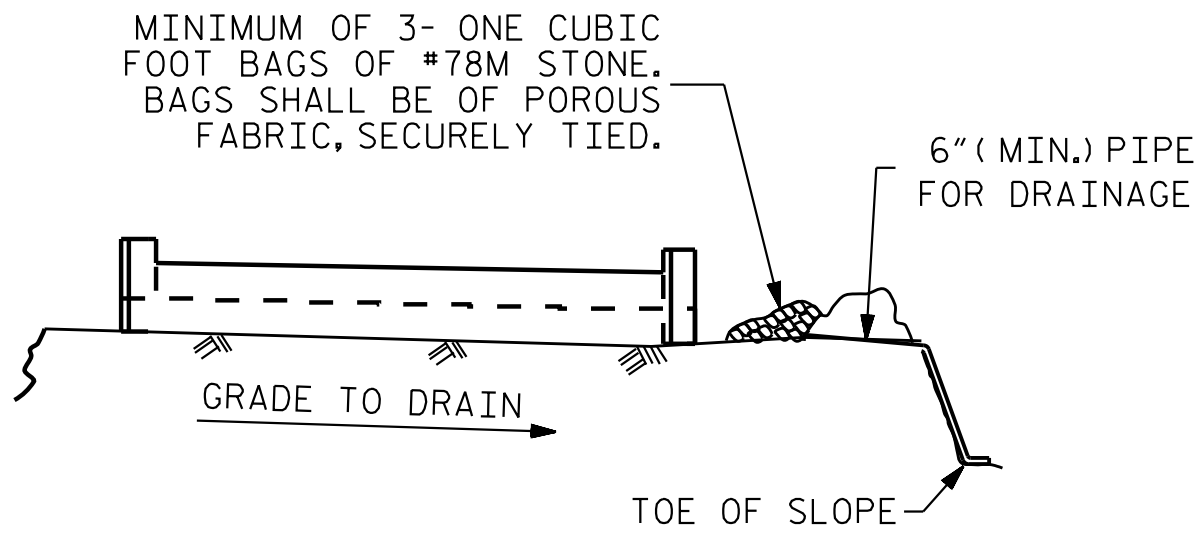
Designed by: Joseph T. Kelvington 5/15/2025

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SIGNATURES COMPLETED

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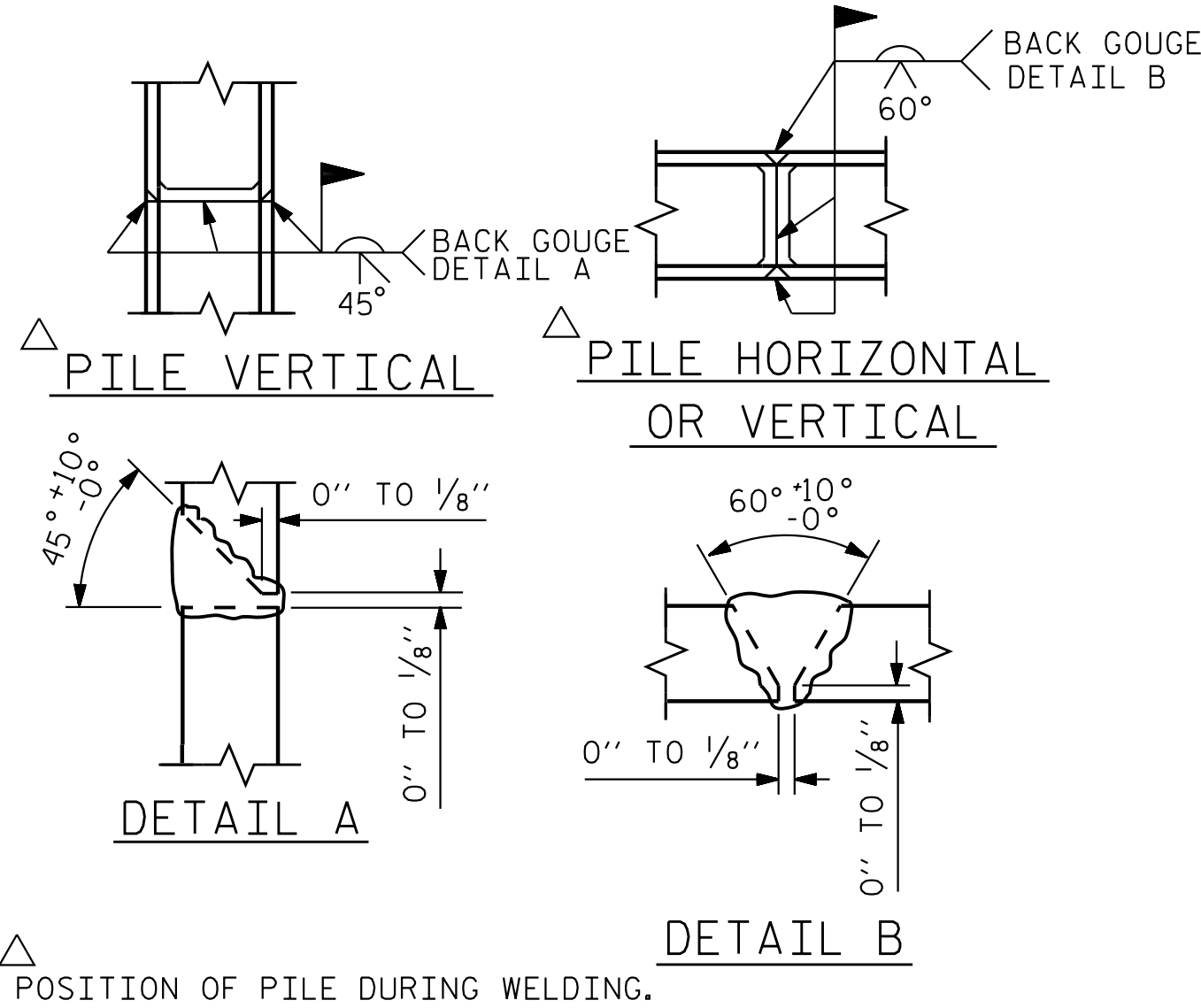


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

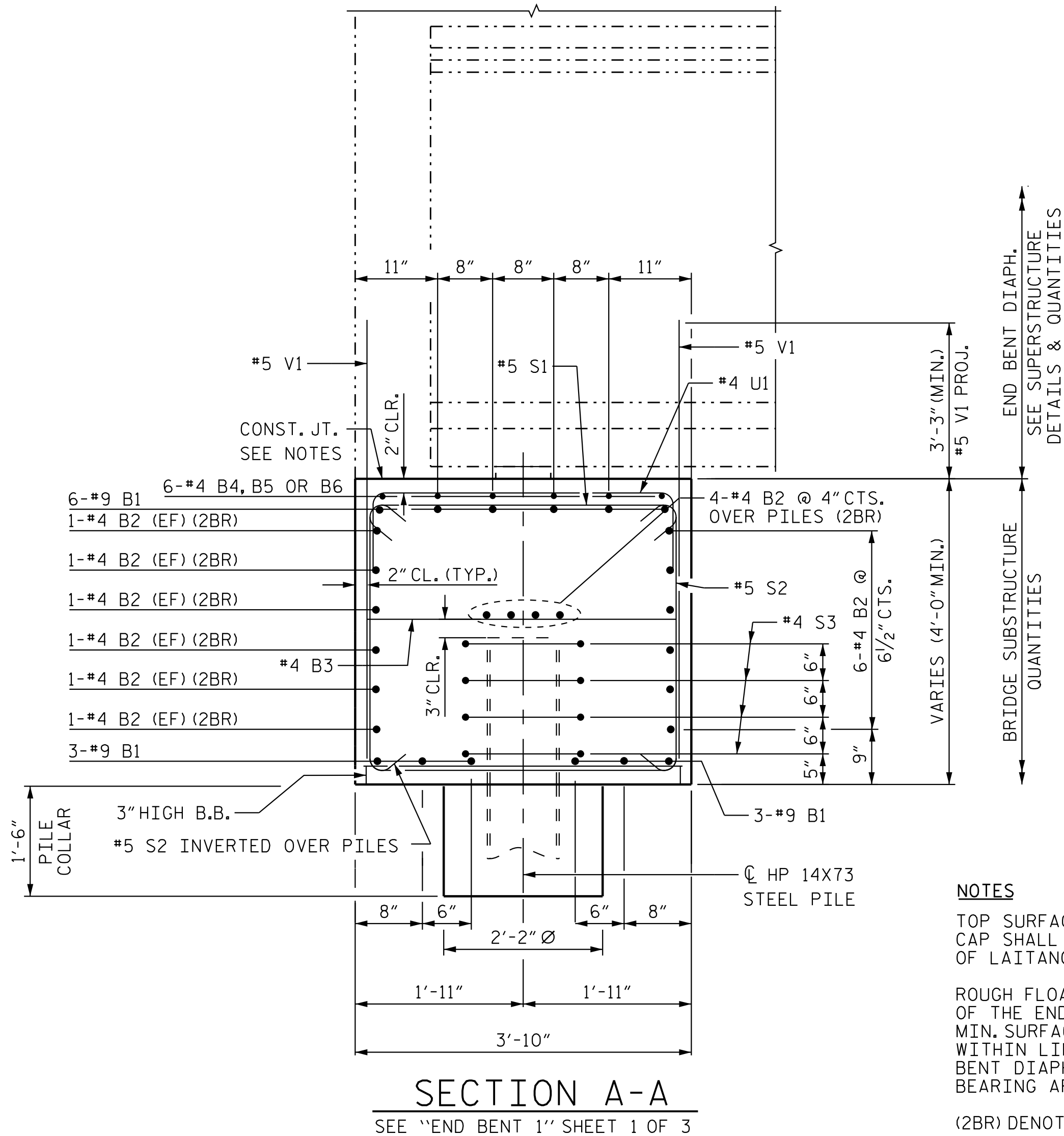
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



PILE SPLICE DETAILS



NOTES

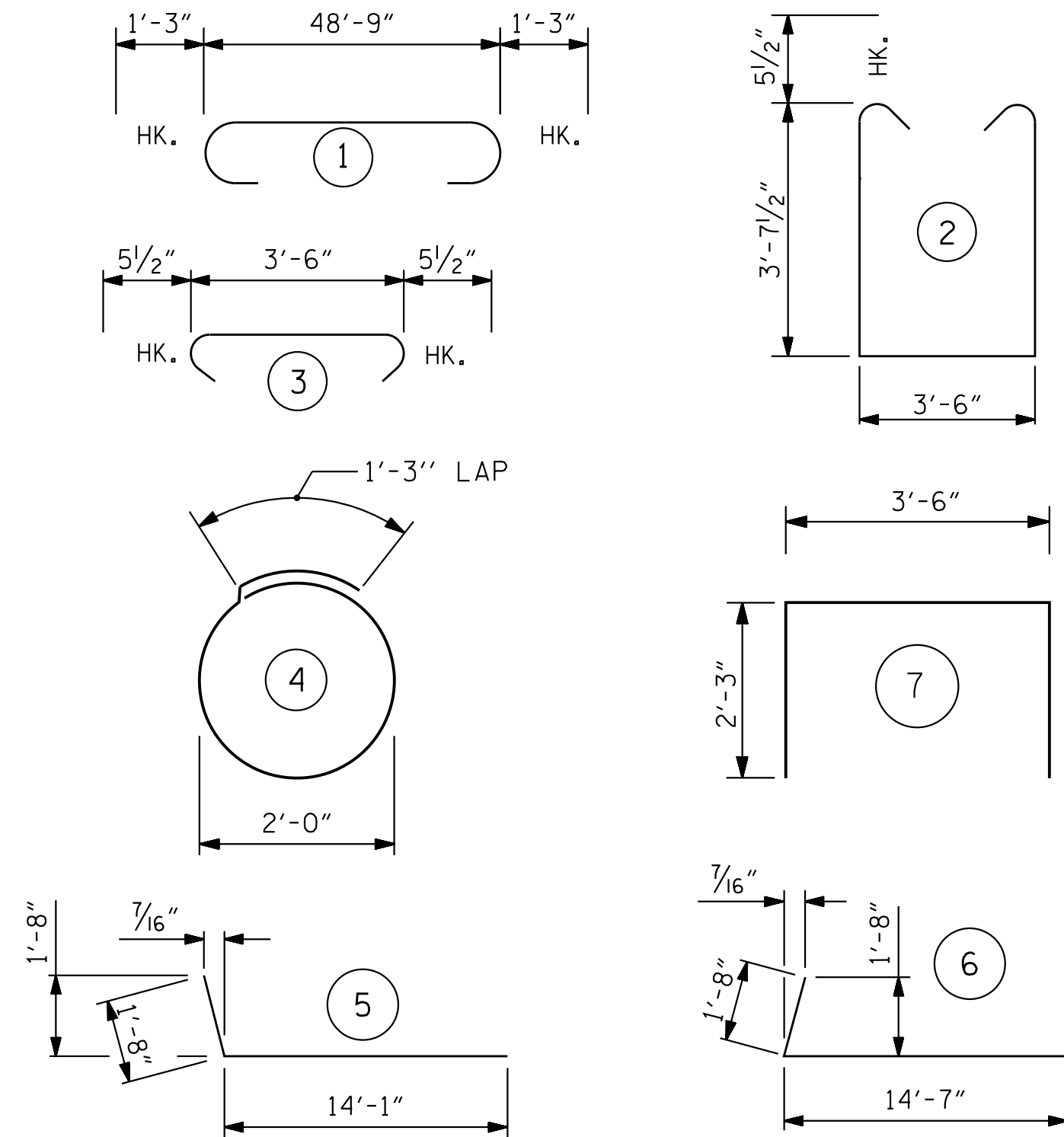
TOP SURFACE AREAS OF THE END BENT CAP SHALL BE KEPT CLEAN AND FREE OF LAITANCE.

ROUGH FLOAT AND ROUGHEN THE TOP OF THE END BENT CAP TO PROVIDE MIN. SURFACE AMPLITUDE OF 1/4", WITHIN LIMITS OF INTEGRAL END BENT DIAPHRAGM EXCEPT UNDER BEARING AREAS.

(2BR) DENOTES 2 BAR RUN.

(EF) DENOTES EACH FACE.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	51'-3"	2,091
B2	32	#4	STR	25'-5"	543
B3	13	#4	STR	3'-6"	30
B4	6	#4	STR	7'-2"	29
B5	12	#4	STR	9'-0"	72
B6	6	#4	STR	14'-11"	60

H1	9	#6	5	15'-9"	213
H2	6	#4	5	15'-9"	63
H3	12	#6	6	16'-3"	293
H4	7	#4	6	16'-3"	76

S1	70	#5	2	11'-8"	852
S2	62	#5	3	4'-5"	286
S3	32	#4	4	7'-7"	162

U1	38	#4	7	8'-0"	203
----	----	----	---	-------	-----

V1	82	#5	STR	7'-9"	663
V2	26	#5	STR	6'-8"	181
V3	26	#5	STR	7'-6"	203

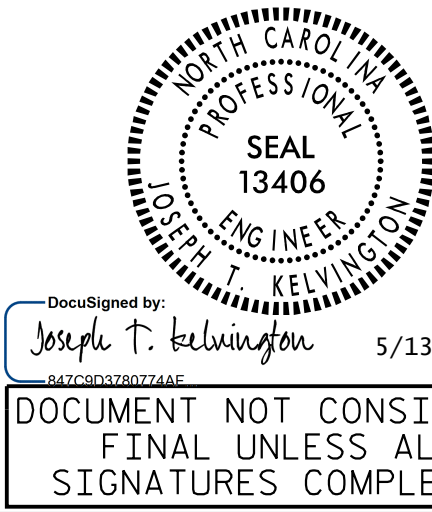
REINFORCING STEEL				LBS.	6,020
-------------------	--	--	--	------	-------

CLASS A CONCRETE BREAKDOWN:					
POUR #1: CAP, COLLARS, ETC.				C.Y.	36.4

CLASS A CONCRETE TOTAL				C.Y.	36.4
------------------------	--	--	--	------	------

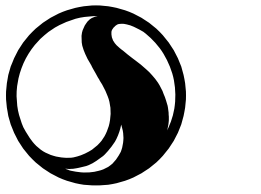
PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 3 OF 3



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CHECKED BY : A. E. COOK DATE : 02/27/19

DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25

NOTES:

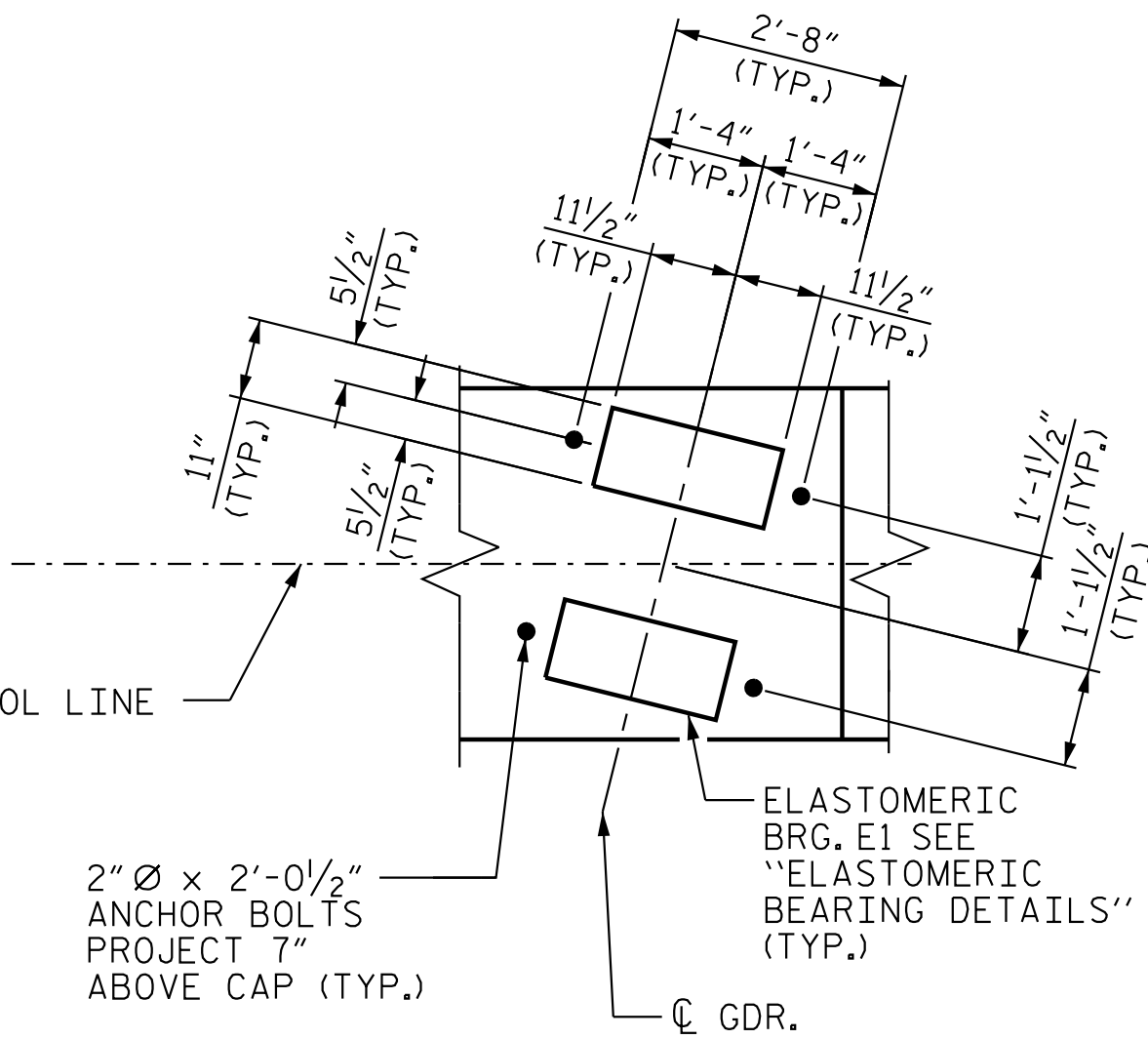
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINF. STEEL.

FOR VIEW A-A, VIEW B-B, AND SECTION C-C, SEE BENT 1 SHEET 3 OF 3.

FOR SECTION D-D, SEE BENT 1 SHEET 2 OF 3.

① 2-#4 U1 @ 1'-0" CTS. (TYP. GDRS 2-4)



DETAIL "A"

DIMENSIONS TYPICAL FOR EACH BEARING

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 1 OF 3

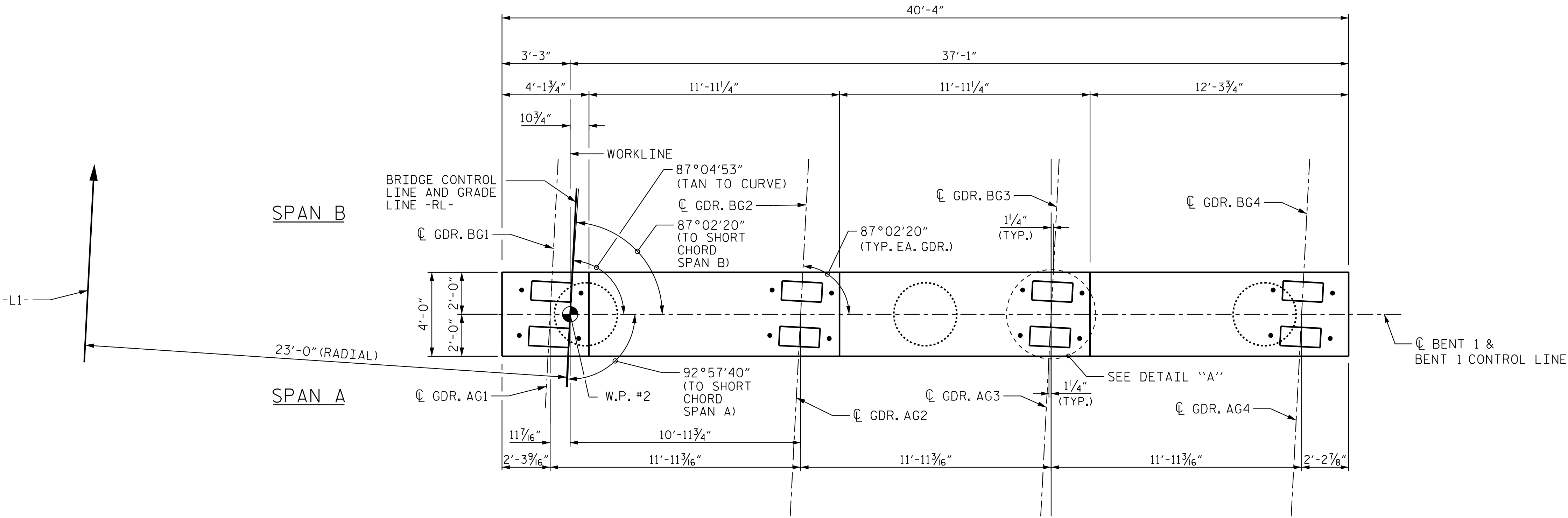
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 1

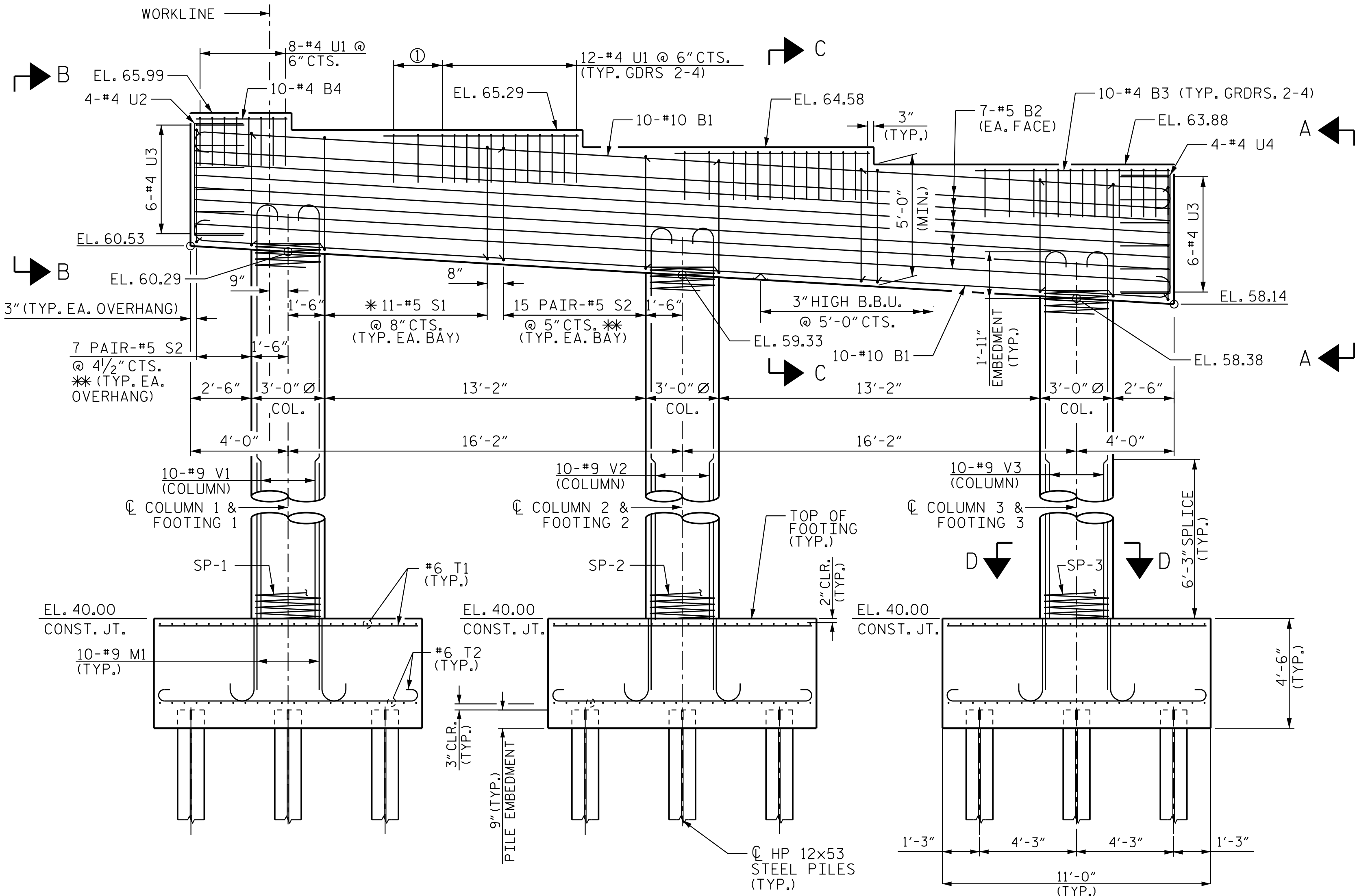


REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		

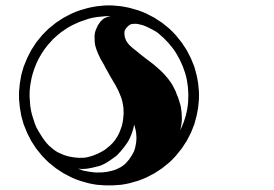
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PLAN



ELEVATION

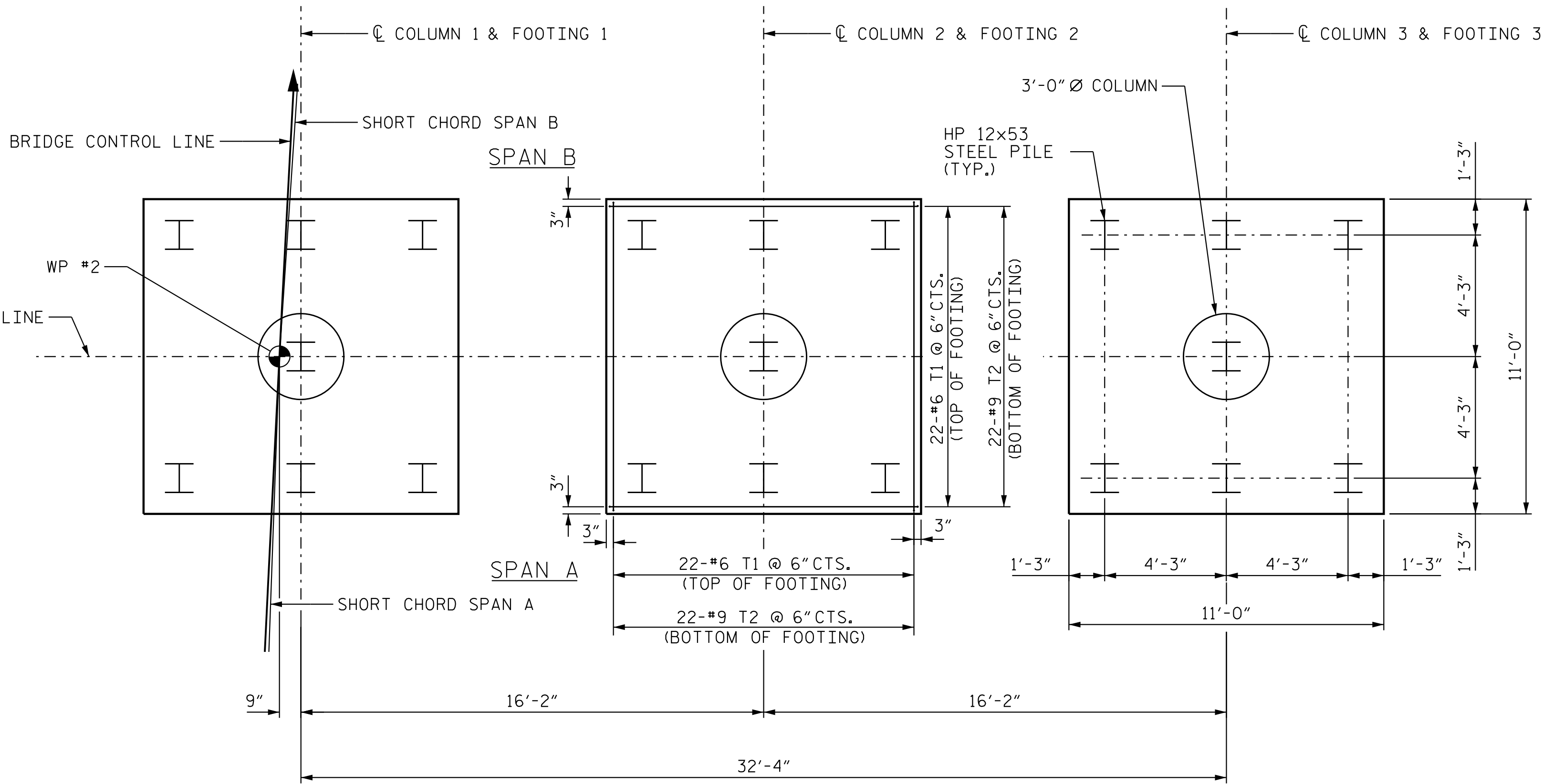


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DRAWN BY : G. A. TURNER DATE : 08/06/18
CHECKED BY : A. E. COOK DATE : 03/05/19

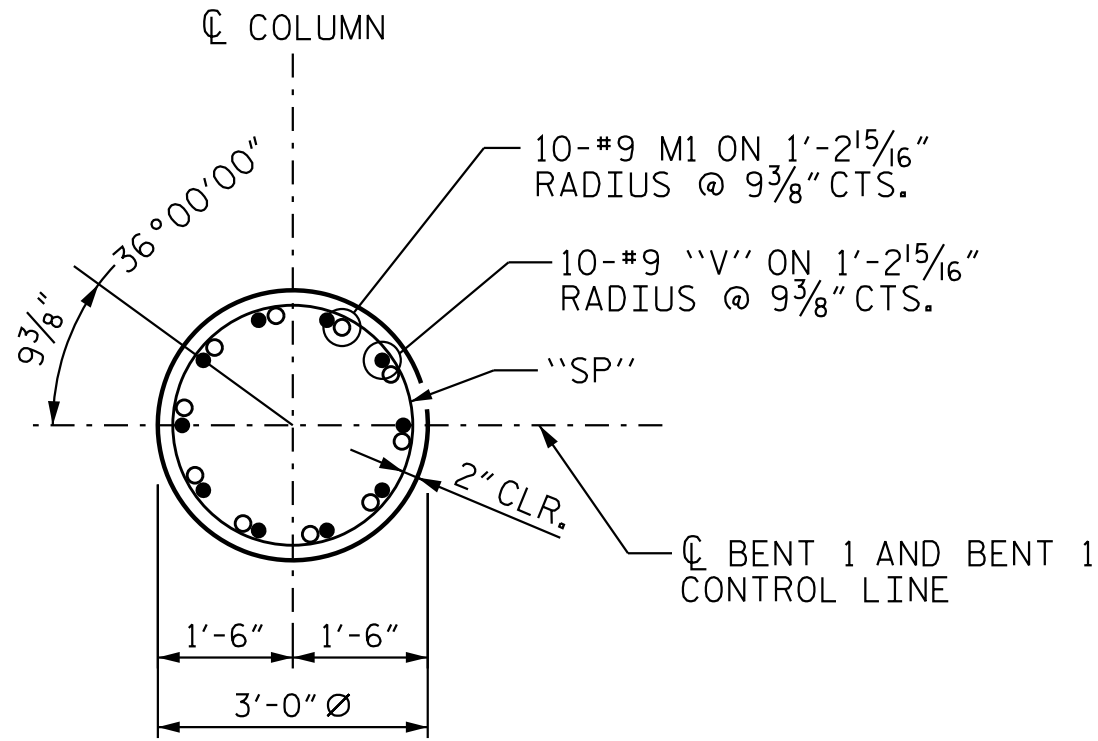
DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25

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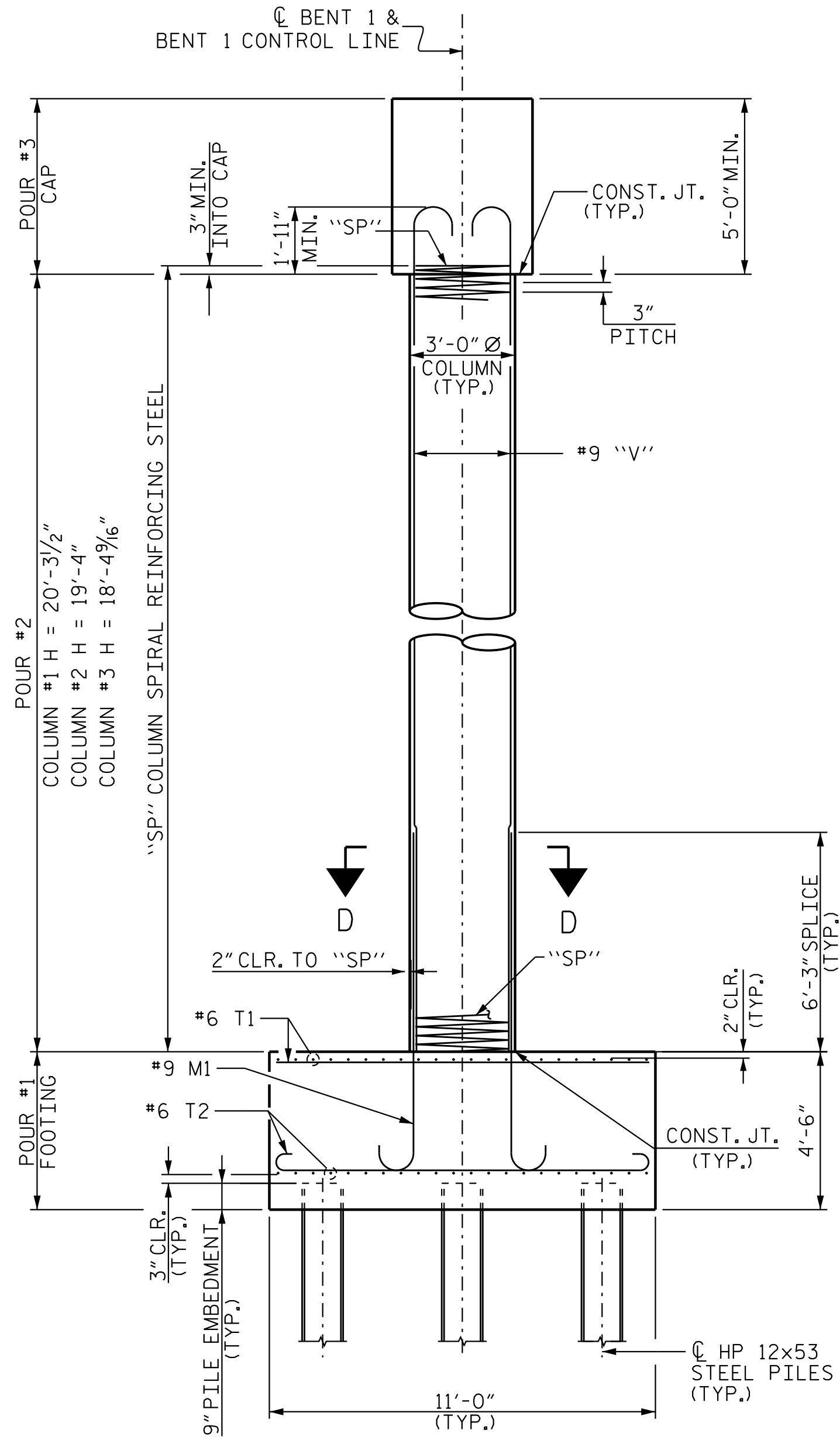


PLAN OF FOOTINGS

ALL DIMENSIONS AND DETAILS SHOWN FOR FOOTINGS ARE TYPICAL FOR EACH FOOTING UNLESS NOTED OTHERWISE.



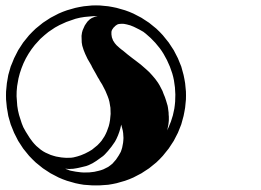
SECTION D-D



END ELEVATION

PROJECT NO. R-3300A
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STATION: 225+92.26 -L1-

SHEET 2 OF 3



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DRAWN BY : G. A. TURNER DATE : 02/28/19
CHECKED BY : A. E. COOK DATE : 02/28/19

DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25

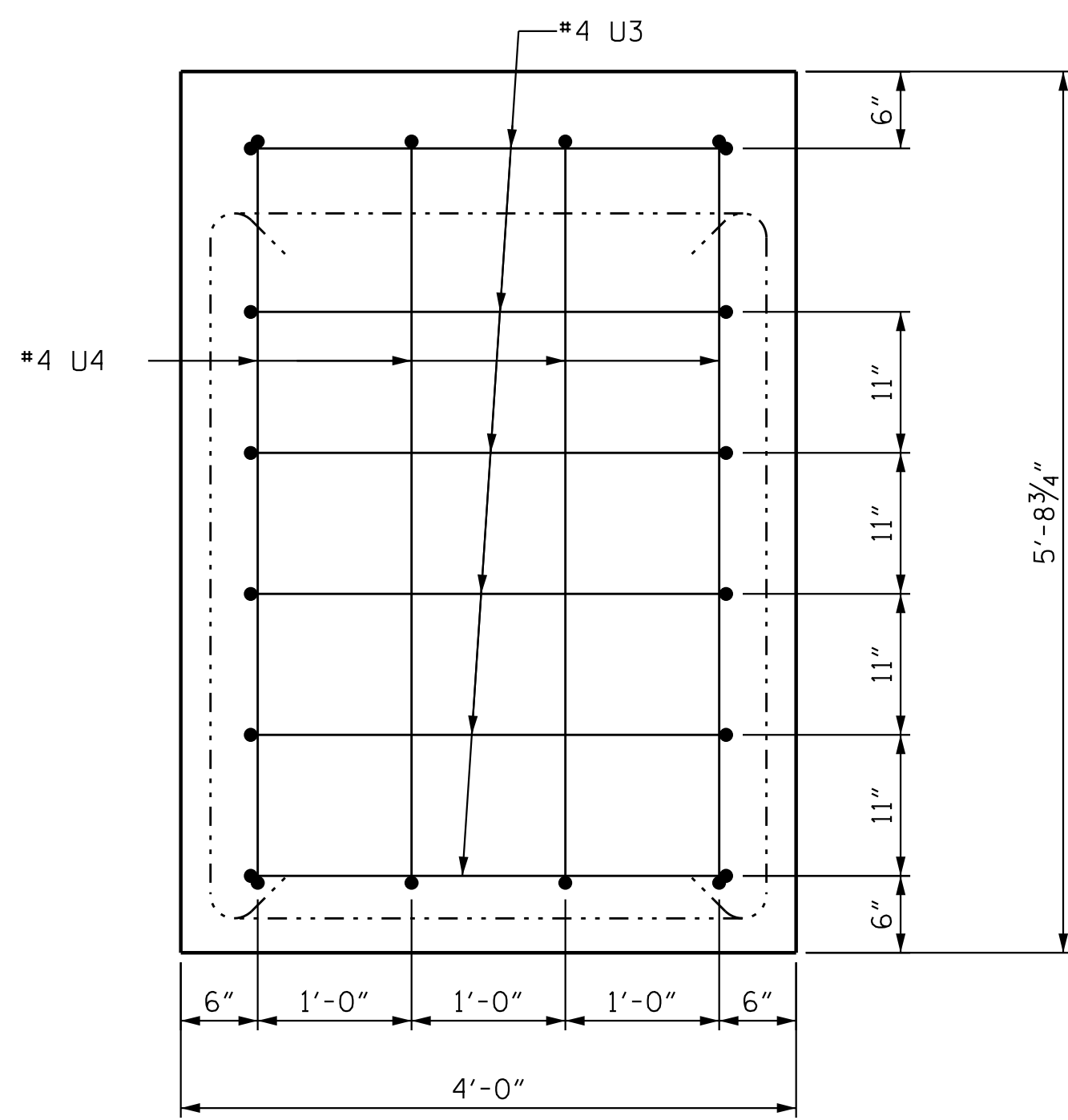


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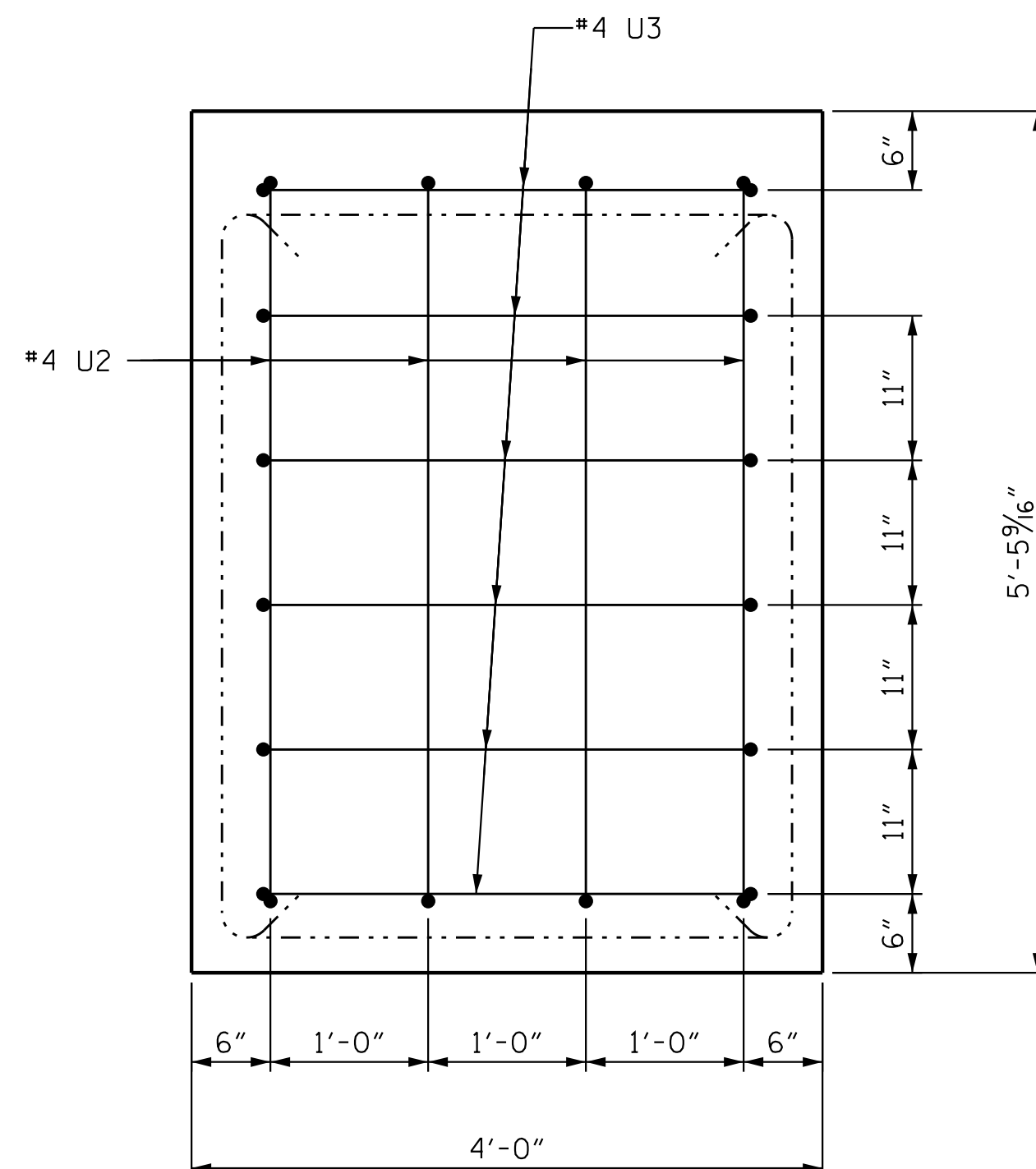
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 1 DETAILS

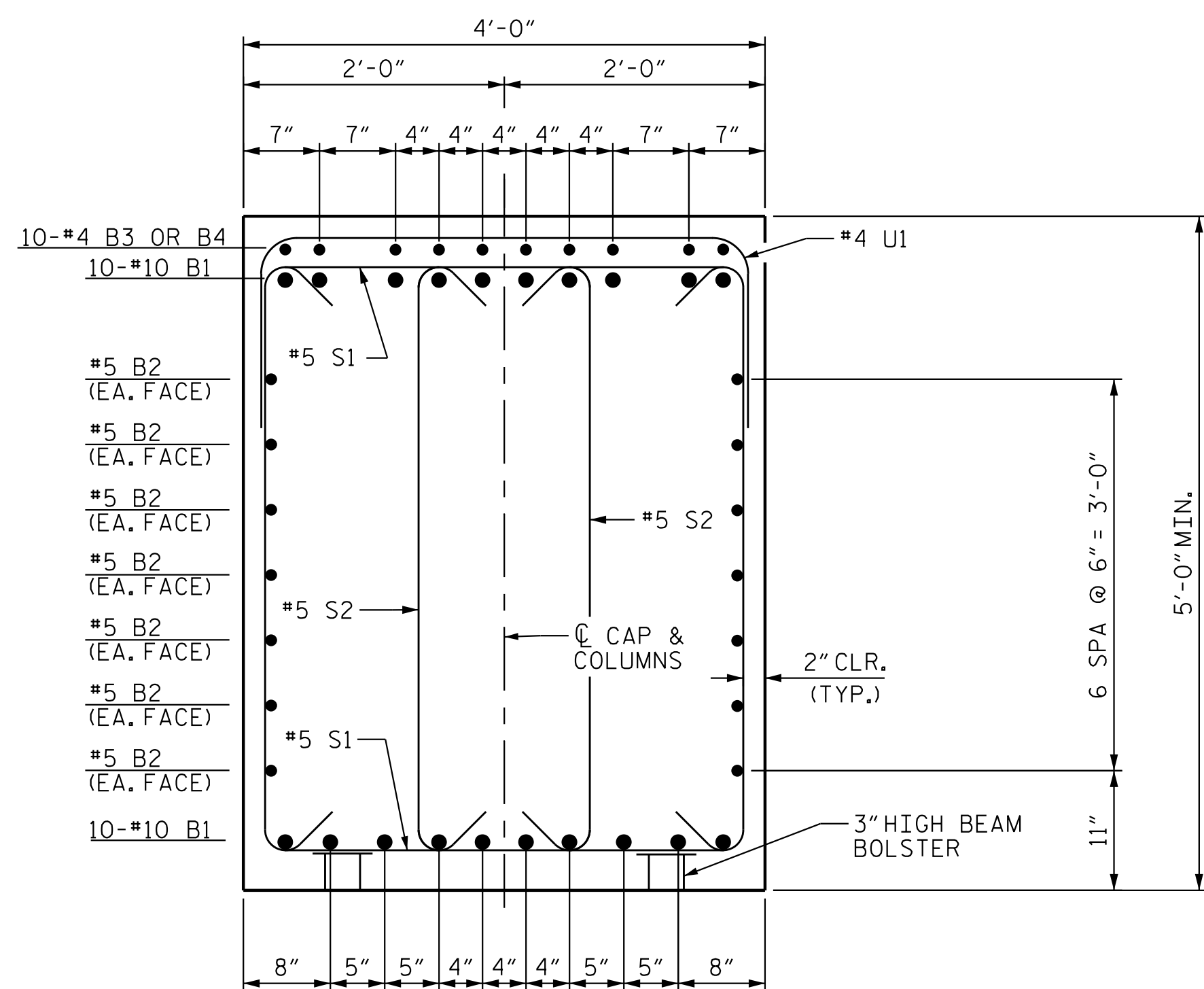
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1			3			TOTAL SHEETS 38
2			4			



VIEW A-A



VIEW B-B



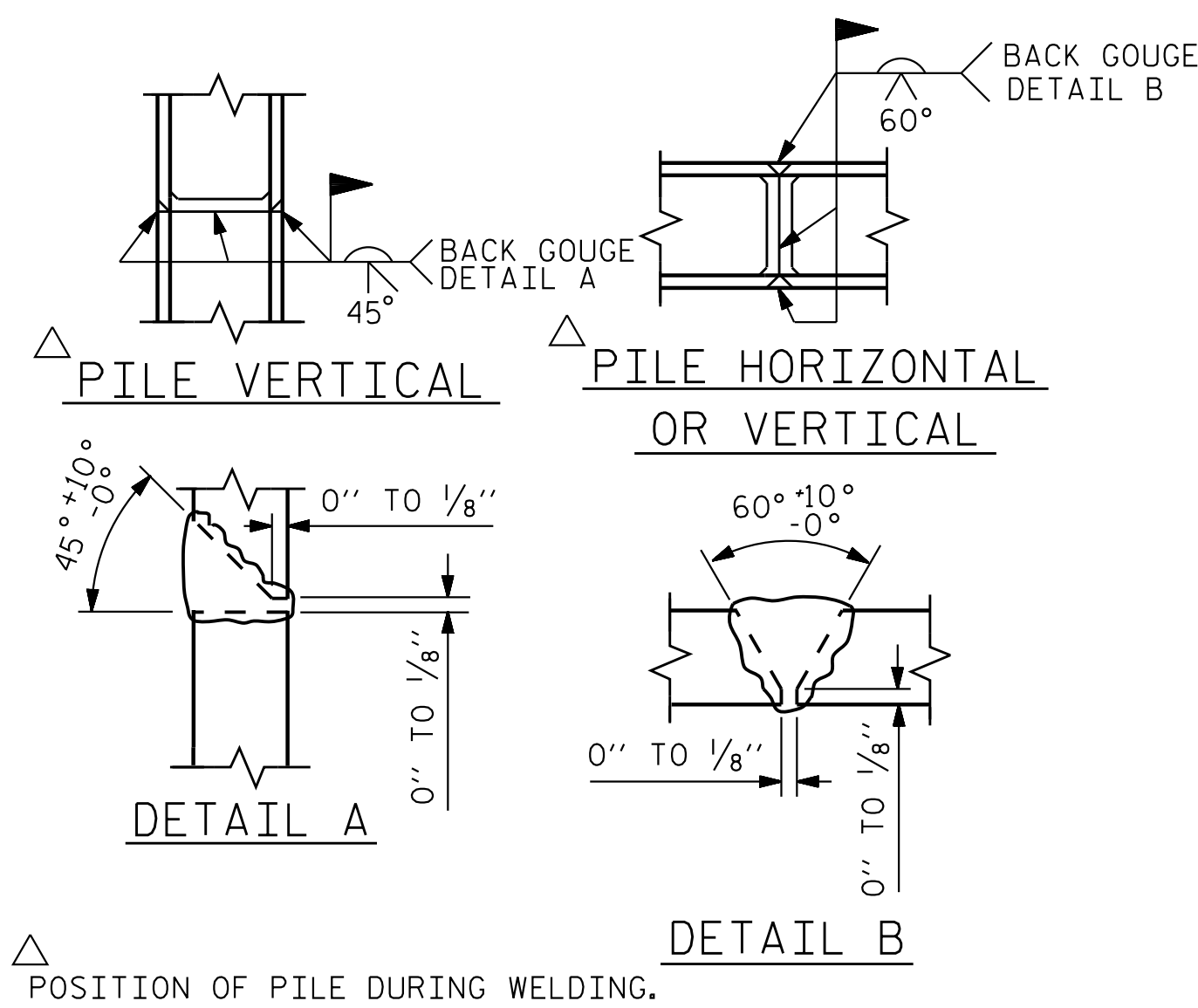
SECTION C-C



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DRAWN BY : G. A. TURNER DATE : 03/05/19
CHECKED BY : A. E. COOK DATE : 03/07/19

DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE : 04/22/25



PILE SPLICE DETAILS

[illegible]

BILL OF MATERIAL						
BENT #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	20	#10	1	42'-9"	3679	
B2	14	#5	STR	40'-0"	584	
B3	30	#4	STR	8'-0"	160	
B4	10	#4	STR	3'-9"	25	
M1	30	#9	2	10'-5"	1063	
S1	22	#5	3	13'-9"	316	
S2	88	#5	3	12'-7"	1155	
T1	132	#6	STR	8'-0"	1586	
T2	132	#6	1	9'-4"	1850	
U1	50	#4	4	7'-8"	256	
U2	4	#4	4	8'-8"	23	
U3	12	#4	4	7'-2"	57	
U4	4	#4	4	8'-11"	24	
V1	10	#9	2	23'-6"	799	
V2	10	#9	2	22'-6"	765	
V3	10	#9	2	21'-7"	734	
REINFORCING STEEL					LBS.	13,076
SP-1	1	**	5	704'-1"	470	
SP-2	1	**	5	671'-1"	448	
SP-3	1	**	5	640'-10"	428	
SPIRAL COLUMN						
REINFORCING STEEL					LBS.	1,346
CLASS A CONCRETE BREAKDOWN						
POUR #1 FOOTINGS				C. Y.	60.5	
POUR #2 COLUMNS				C. Y.	15.2	
POUR #3 CAP				C. Y.	32.2	
TOTAL CLASS A CONC.				C. Y.	107.9	

PROJECT NO. R-3300A
NEW HANOVER COUNTY
 STATION: 225+92.26 -L1-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

BENT 1 DETAILS

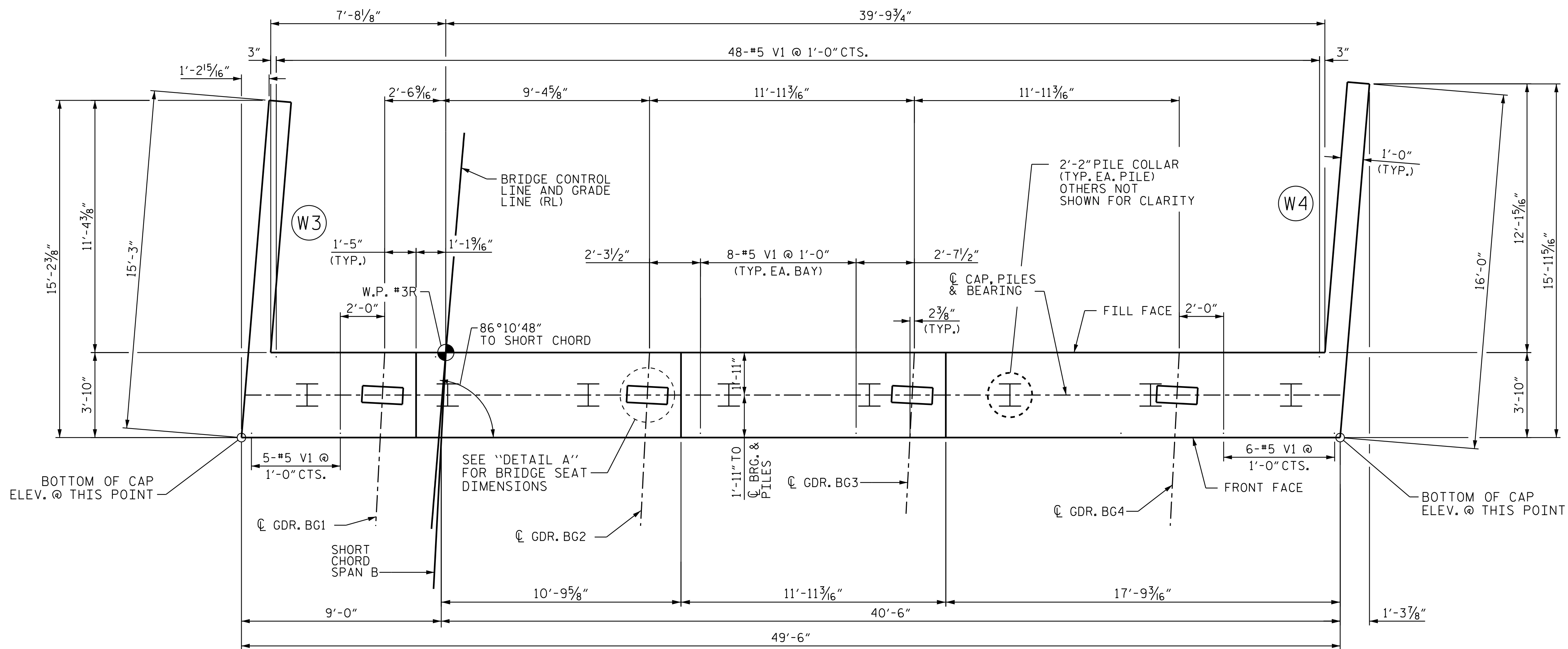
REVISONS						SHEET NO. S02-32
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



DocuSign
Joe Kelvington 4/29/2025

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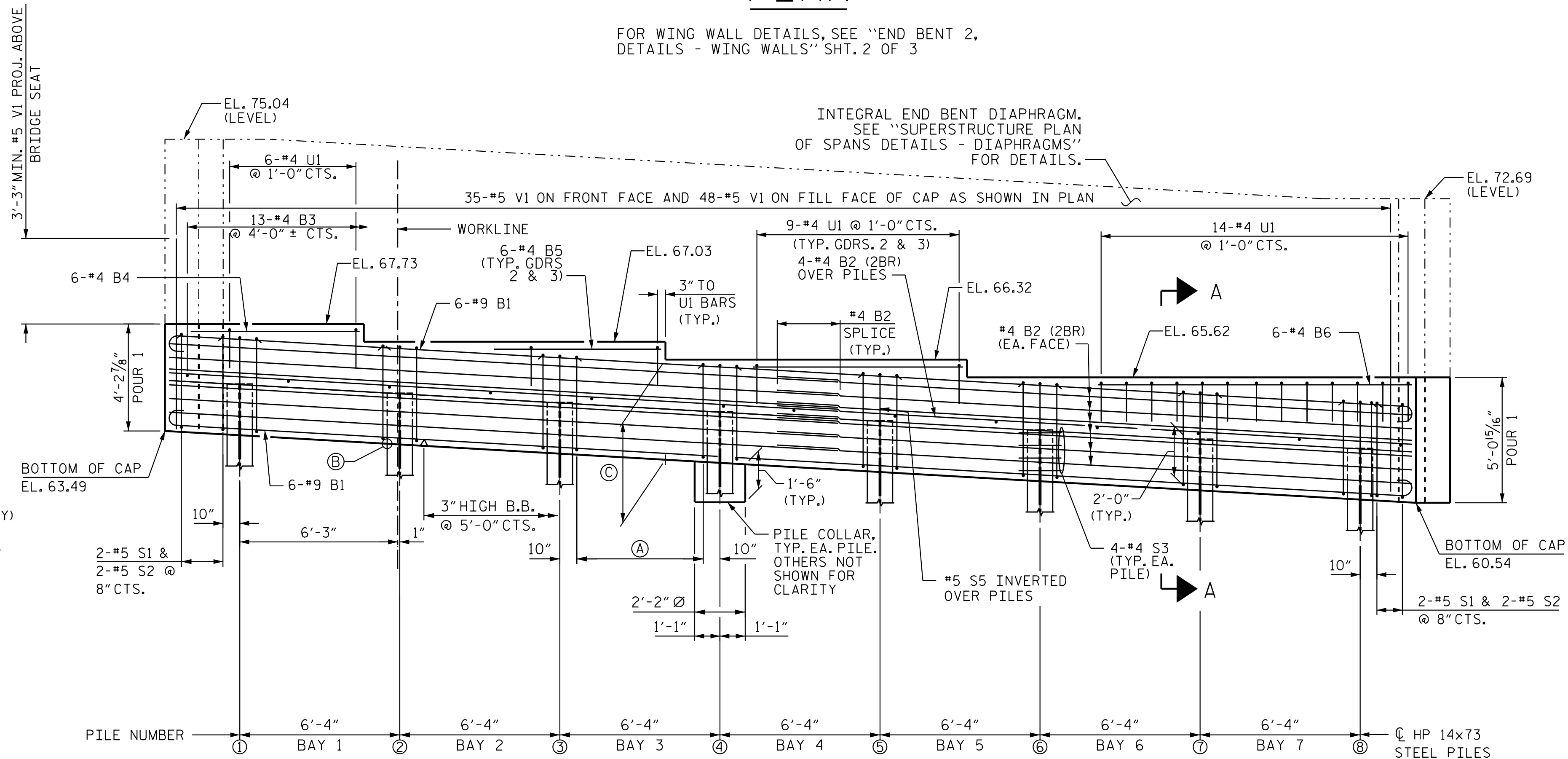
PLAN

FOR WING WALL DETAILS, SEE "END BENT 2, DETAILS - WING WALLS" SHT. 2 OF 3

TOP OF PILE ELEVATIONS	
PILE	ELEVATION
P1	65.32
P2	64.95
P3	64.57
P4	64.20
P5	63.82
P6	63.45
P7	63.08
P8	62.70

- Ⓐ 8-#5 S1 & 8-#5 S2 @ 8" CTS. (TYP. EA. BAY)
Ⓑ BOTTOM OF CAP @ WORKLINE ELEV. 62.95
Ⓒ 4'-0" (MIN.) POUR 1

SPlice LENGTH	
#4 B8	2'-5"



ELEVATION

NOTES

(2BR) DENOTES 2 BAR RUN

SEE "TYPICAL SECTION DETAILS" SHEET 3 OF 3.

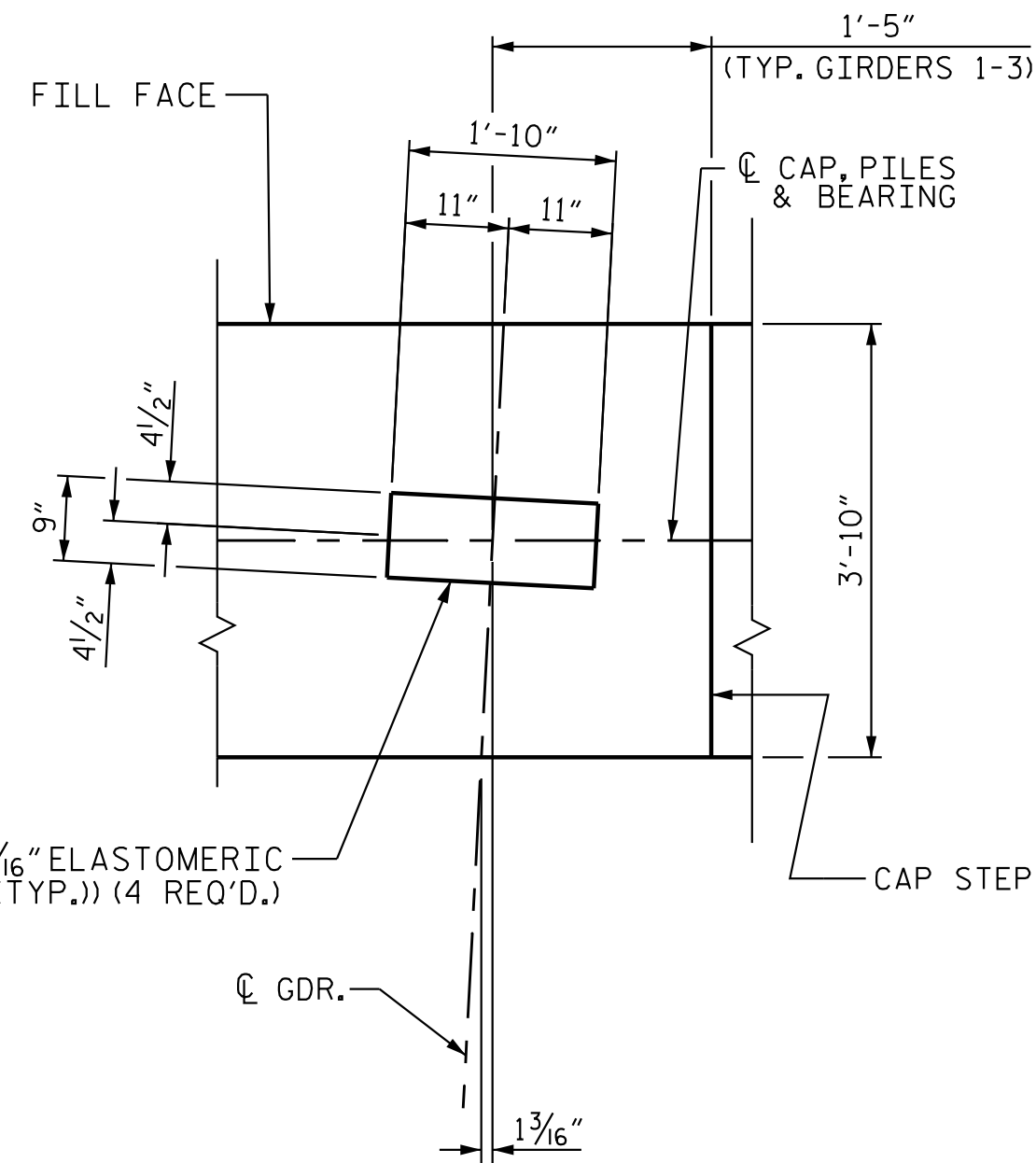
INSTALL THE 6"DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE ROADWAY PLANS FOR ADDITIONAL DETAILS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

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

SEE THE SUPERSTRUCTURE SHEETS FOR UPPER PART OF INTEGRAL END BENT DETAIL.

THE UPPER PART OF INTEGRAL PORTION AND WINGS SHALL BE POURED WITH THE SUPERSTRUCTURE. SEE SUPERSTRUCTURE PLAN OF SPANS.

THE TOP SURFACE OF POUR #1 OF THE END BENT CAP AND WINGS, EXCLUDING THE BEARING AREA, SHALL BE RAKED TO A DEPTH OF 1/4".



DETAIL A

DIMENSIONS TYPICAL FOR EACH BEARING

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

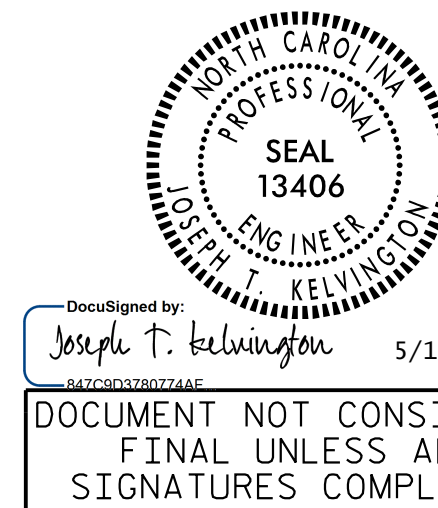
SHEET 1 OF 3



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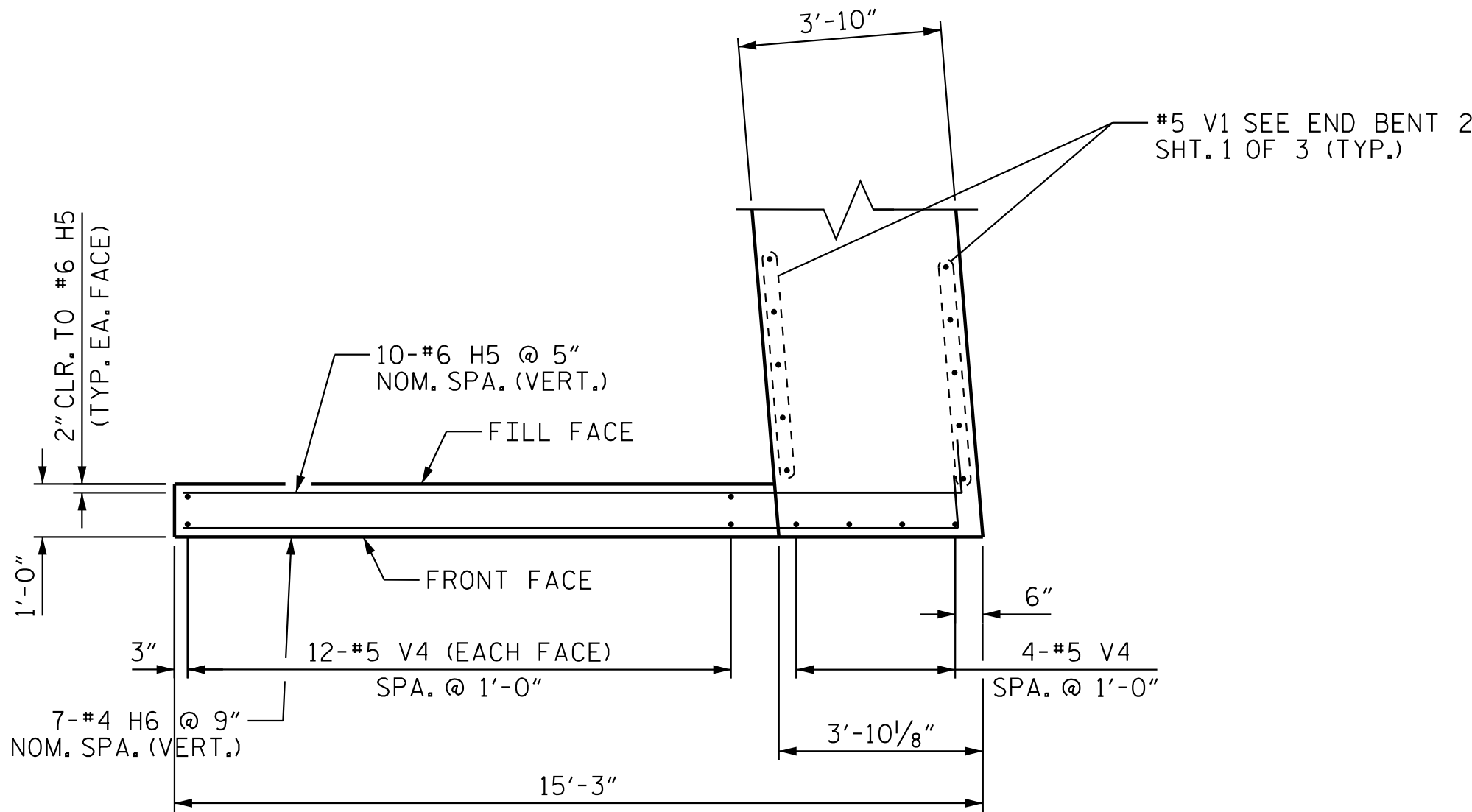
DRAWN BY : G. A. TURNER DATE : 08/10/18
CHECKED BY : A. E. COOK DATE : 02/27/19

DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25

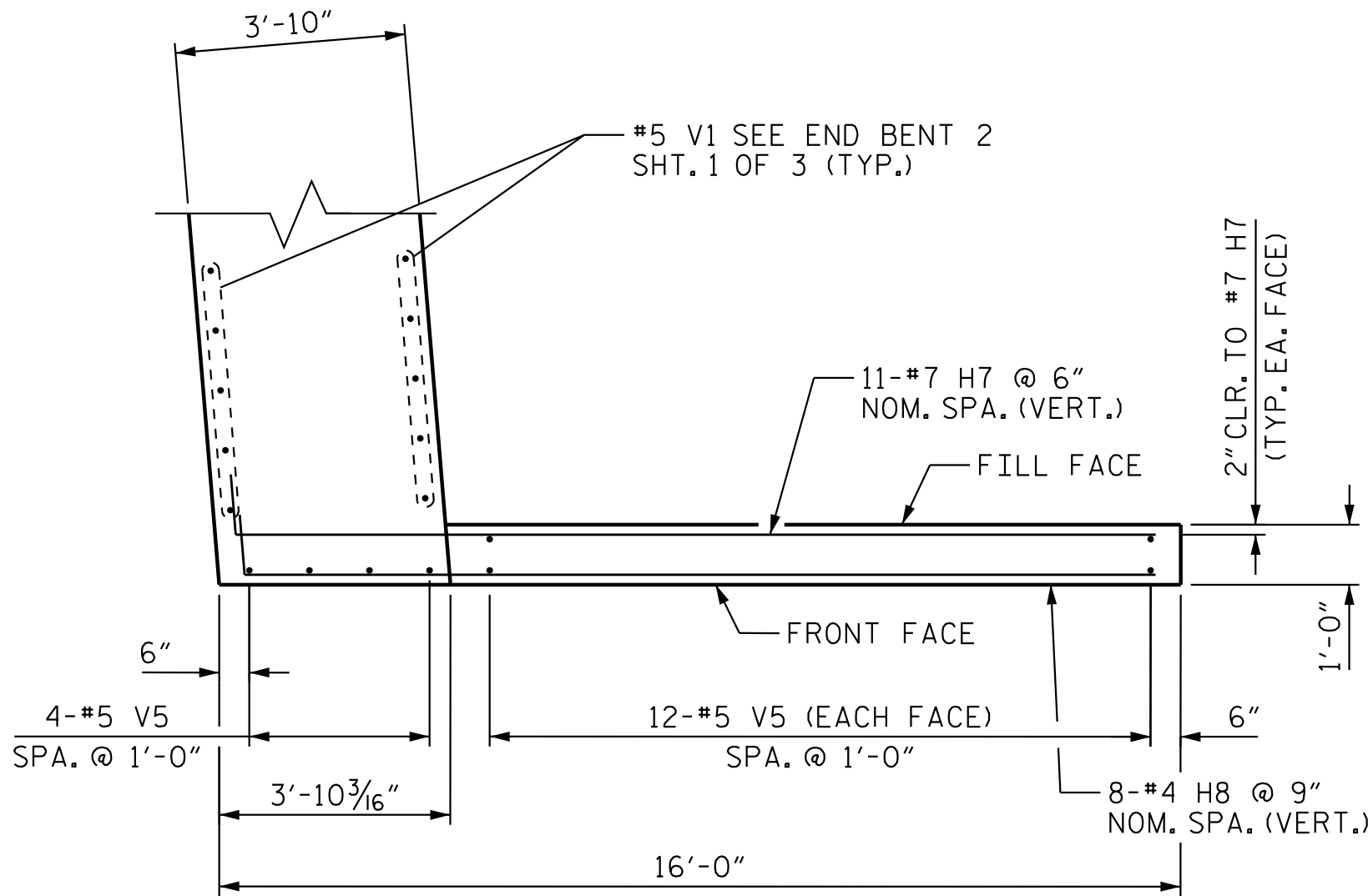


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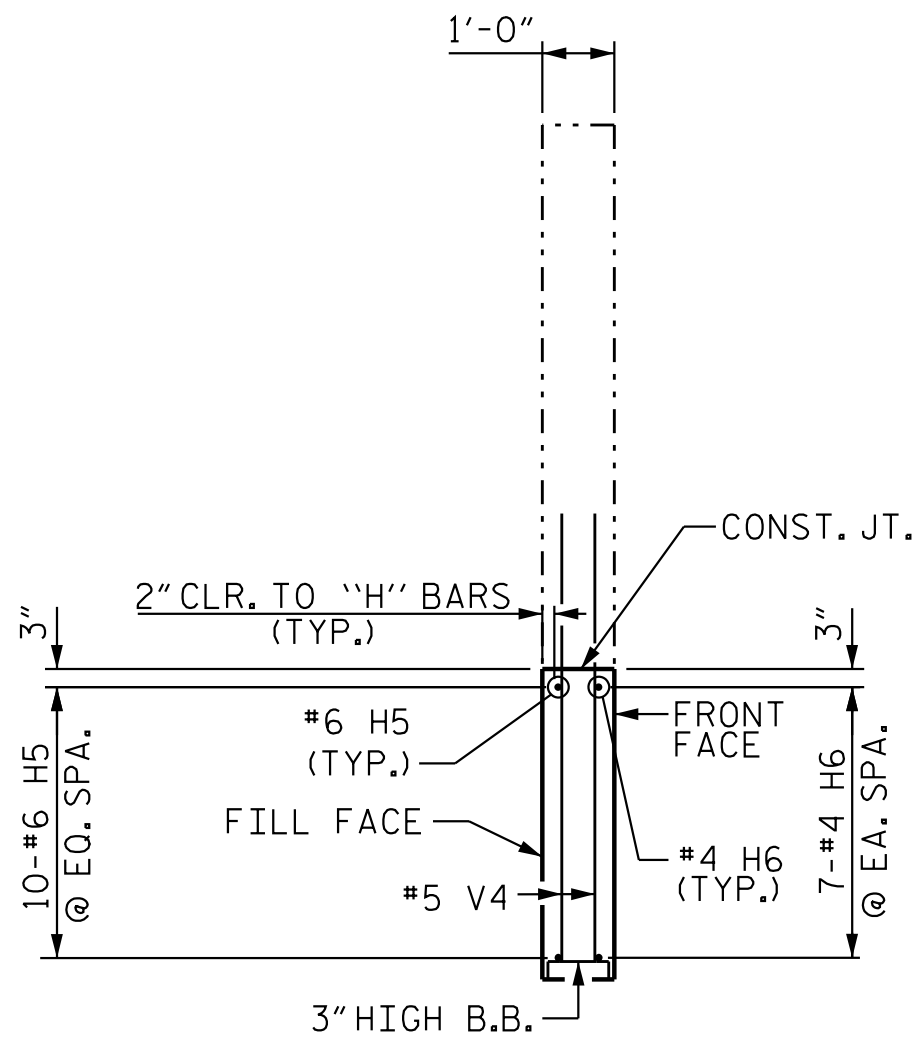
REVISIONS						SHEET NO. S02-33
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



PLAN OF LEFT WING (W3)



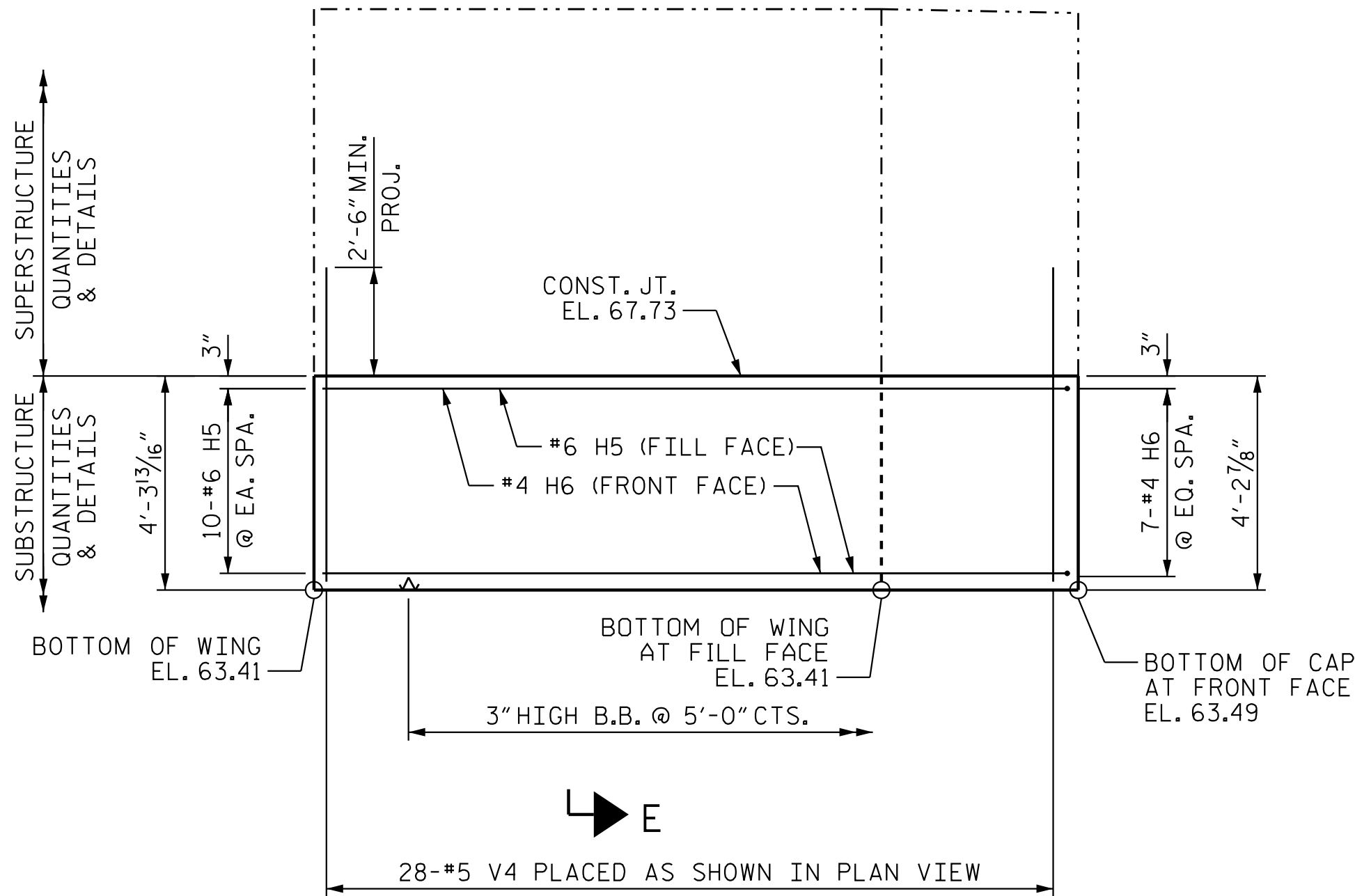
PLAN OF RIGHT WING (W4)



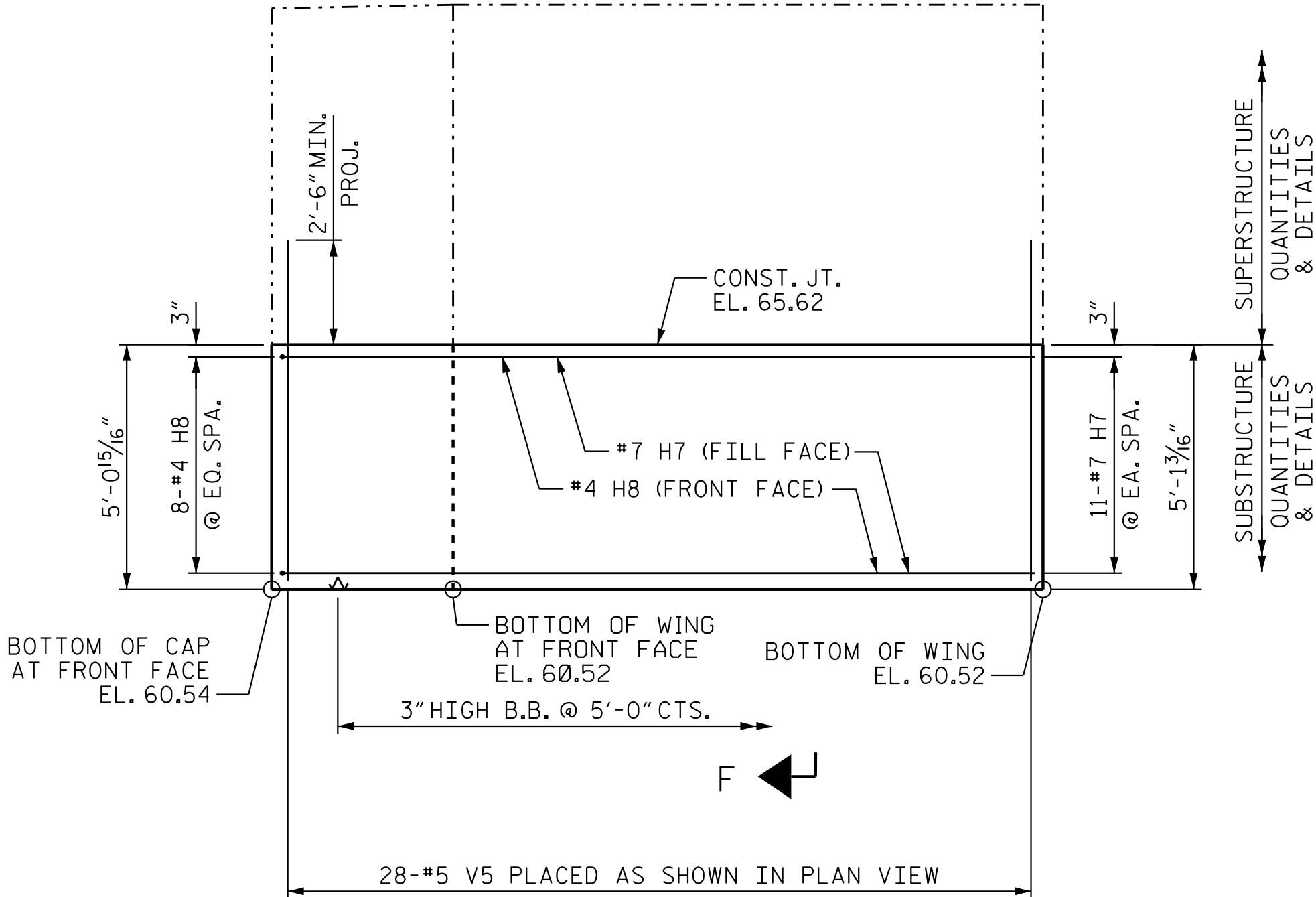
SECTION E-E

E

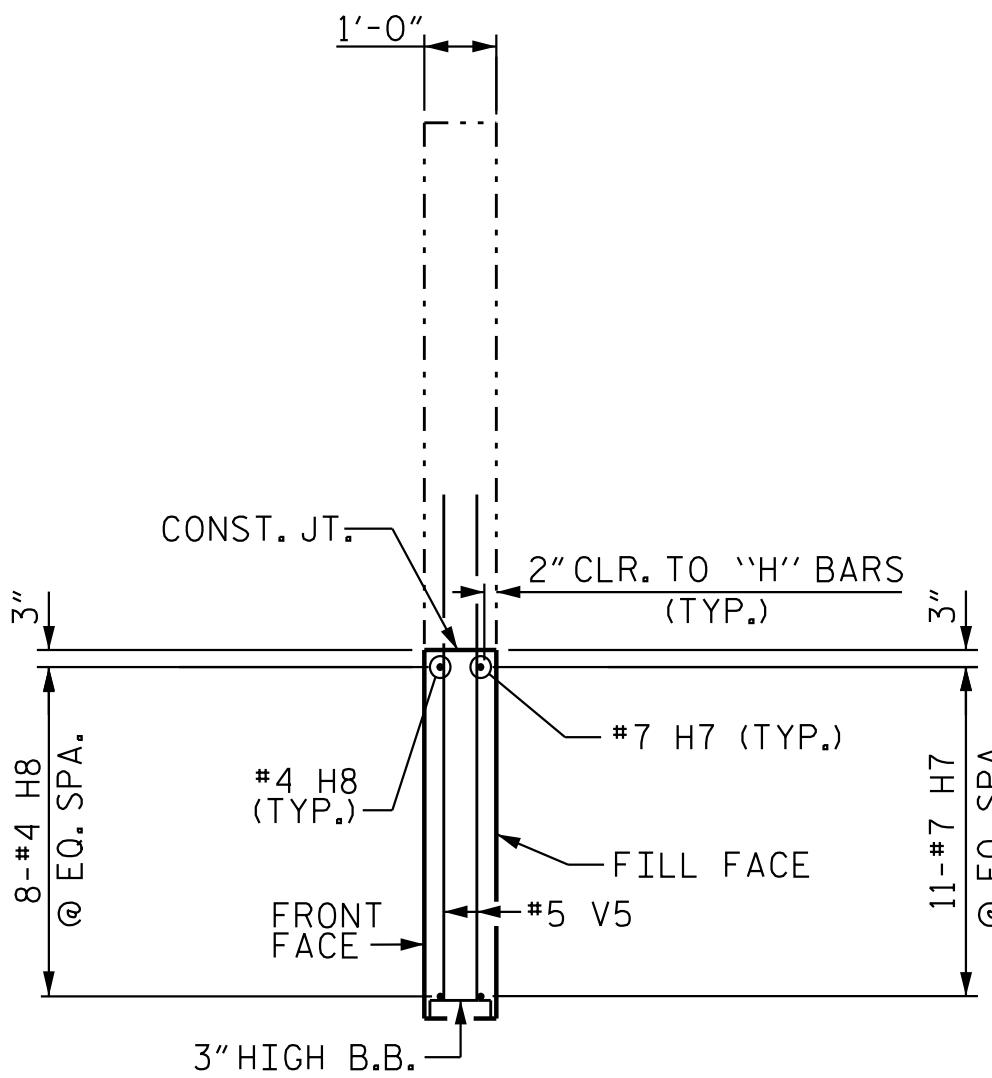
F



ELEVATION OF LEFT WING (W3)



ELEVATION OF RIGHT WING (W4)



SECTION F-F

PROJECT NO. R-3300A
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SHEET 2 OF 3



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DRAWN BY : G. A. TURNER DATE : 08/06/18
CHECKED BY : A. E. COOK DATE : 02/27/19

DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25

NOTE:

TOP SURFACE OF DIAPHRAGM BETWEEN EDGE OF DECK SLAB
AND END OF DIAPHRAGM SHALL BE SLOPED TRANSVERSELY FROM FRONT
FACE TO FILL FACE AT A RATE OF 1/4" / FT.

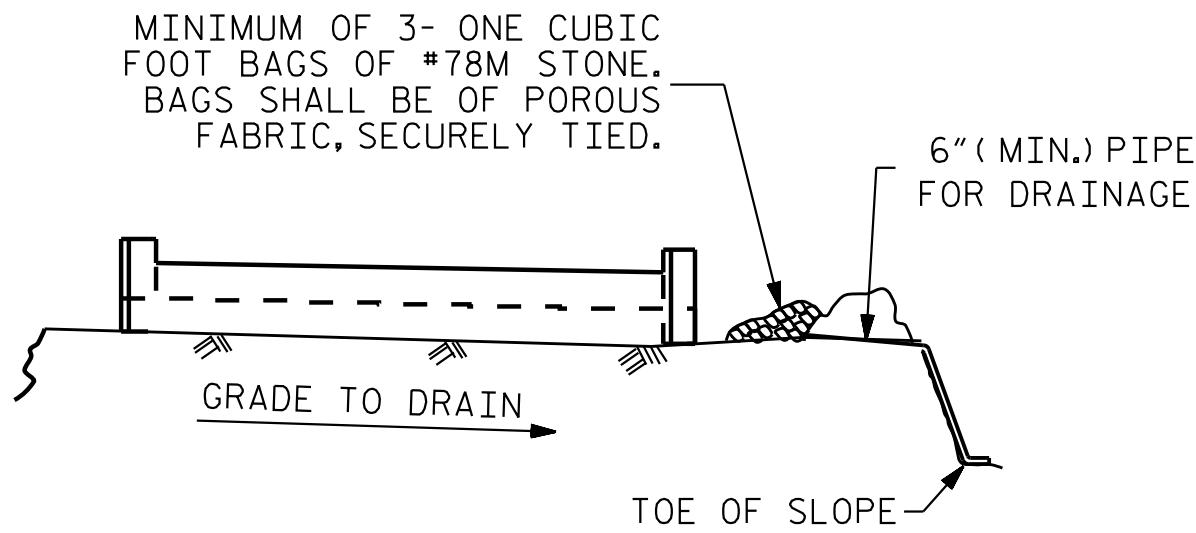
(EF) DENOTES EACH FACE



Designed by: Joseph T. Kelvington 5/15/2025

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUBSTRUCTURE END BENT 2 DETAILS WING WALLS						SHEET NO. S02-34	
REVISIONS						TOTAL SHEETS 38	
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

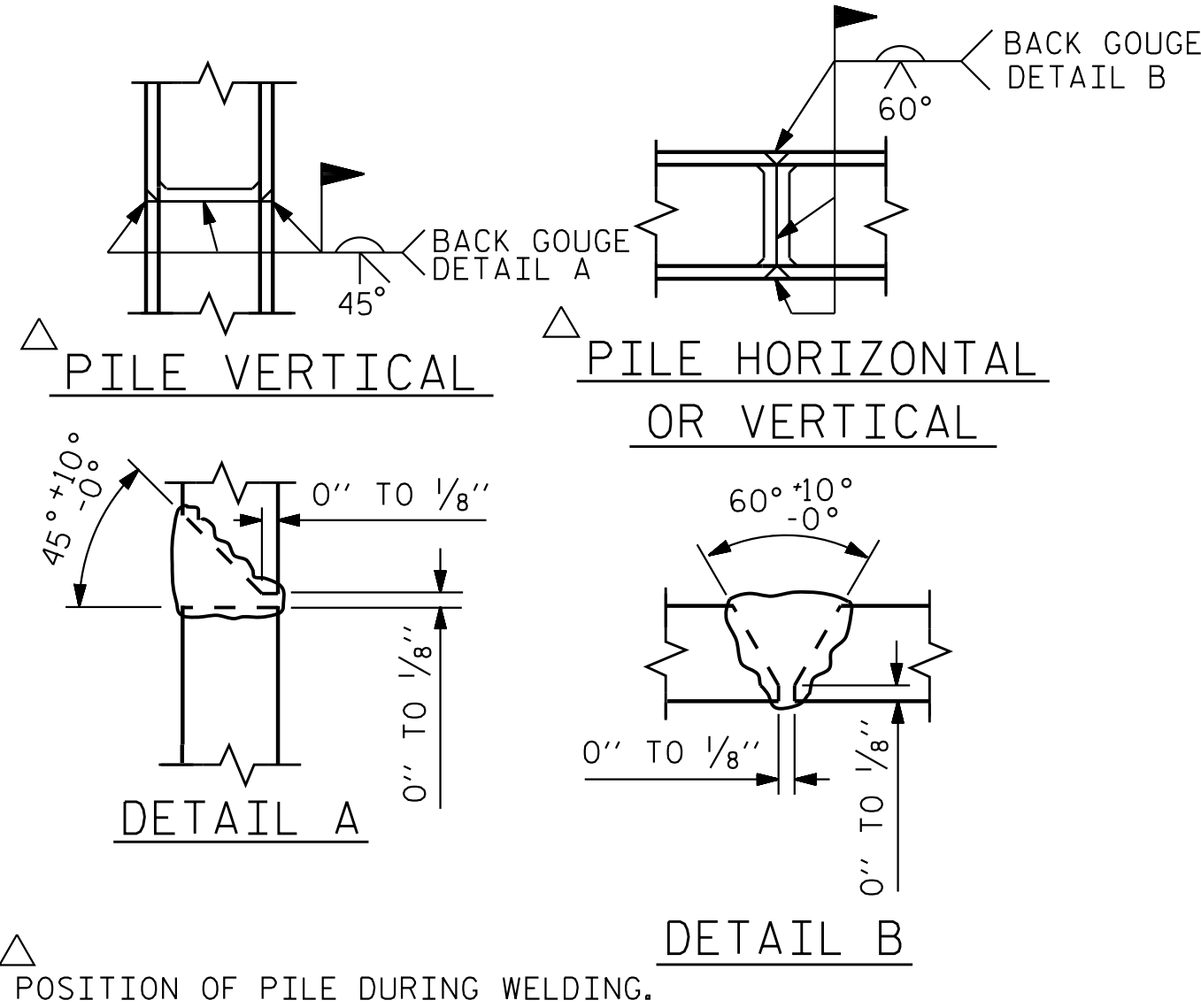


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

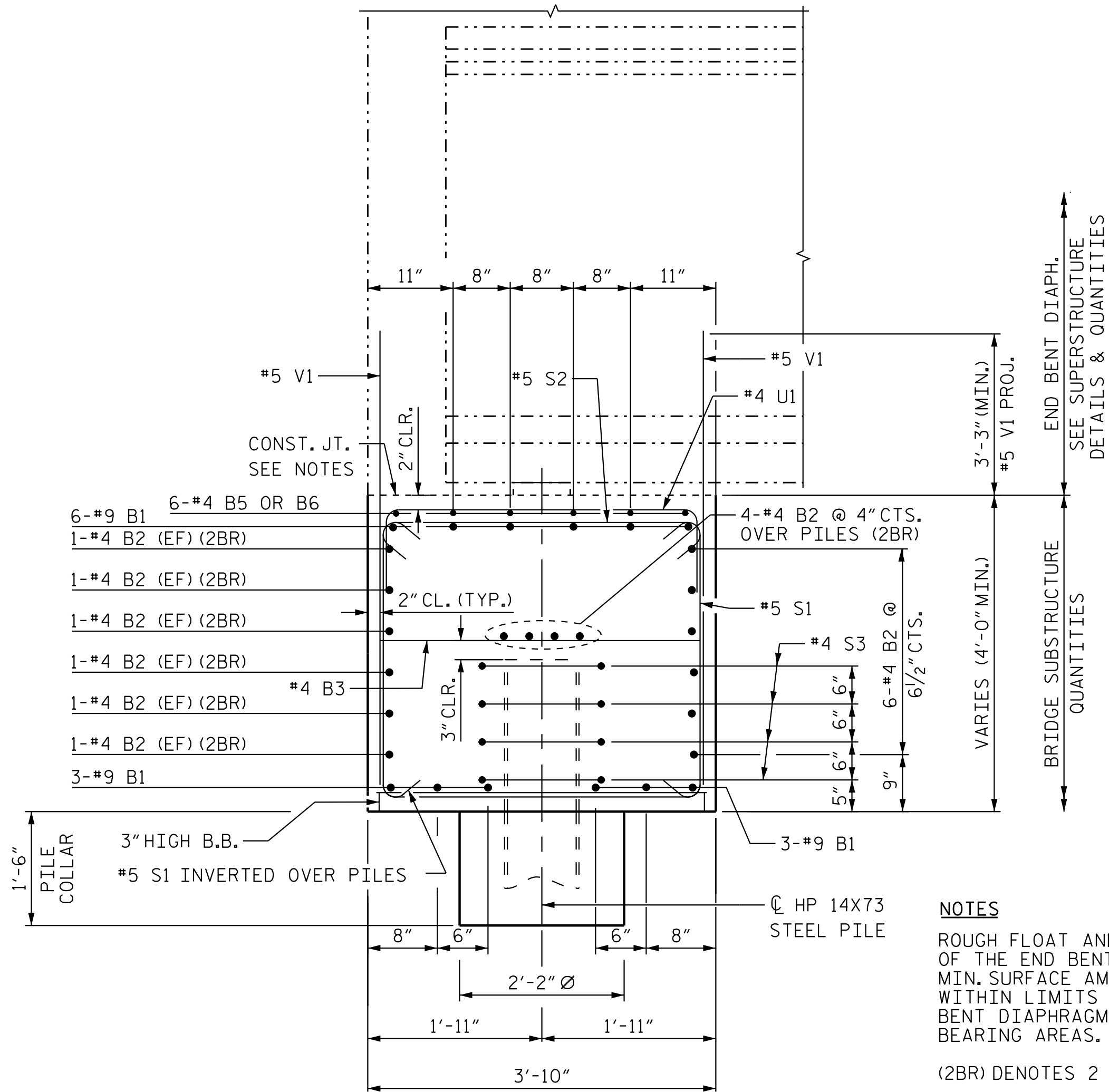
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



PILE SPLICE DETAILS



SECTION A-A
SEE "END BENT 2" SHEET 1 OF 3

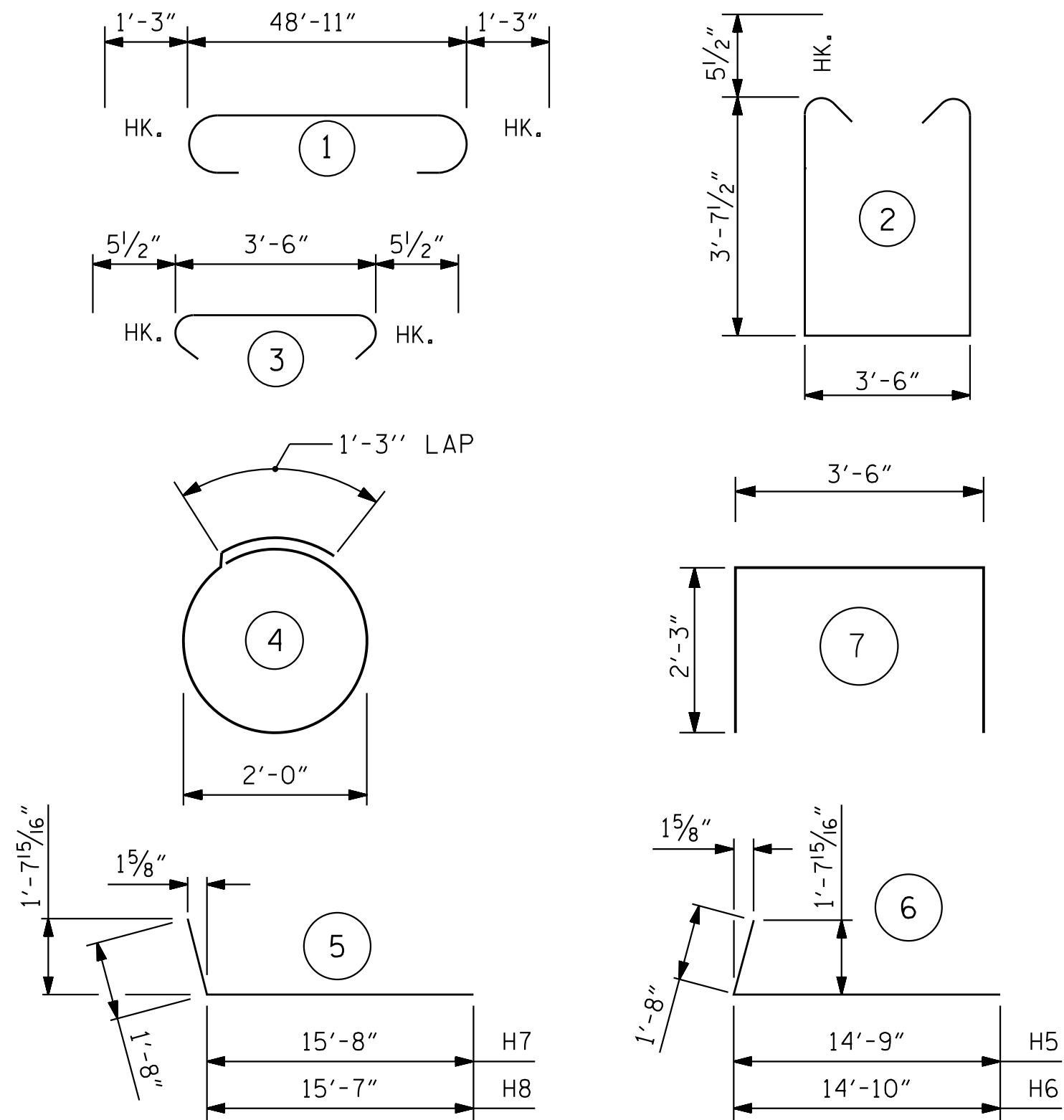
NOTES

ROUGH FLOAT AND ROUGHEN THE TOP OF THE END BENT CAP TO PROVIDE MIN. SURFACE AMPLITUDE OF 1/4\"/>

(2BR) DENOTES 2 BAR RUN.

(EF) DENOTES EACH FACE.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	51'-5"	2,098
B2	32	#4	STR	25'-6"	545
B3	13	#4	STR	3'-6"	30
B4	6	#4	STR	7'-1"	28
B5	12	#4	STR	9'-1"	73
B6	6	#4	STR	15'-0"	60
H5	10	#6	6	16'-5"	247
H6	7	#4	6	16'-6"	77
H7	11	#7	5	17'-4"	390
H8	8	#4	5	17'-3"	92
S1	68	#5	2	11'-8"	827
S2	60	#5	3	4'-5"	276
S3	32	#4	4	7'-7"	162
U1	38	#4	7	8'-0"	203
V1	83	#5	STR	7'-9"	671
V4	28	#5	STR	6'-11"	202
V5	28	#5	STR	7'-6"	219

REINFORCING STEEL LBS. 6,200

CLASS A CONCRETE BREAKDOWN:
POUR #1: CAP, COLLARS, ETC. C.Y. 36.7

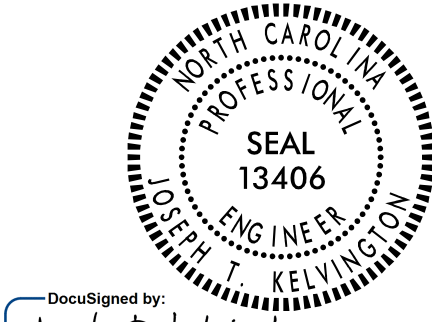
CLASS A CONCRETE TOTAL C.Y. 36.7

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

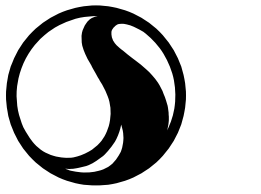
END BENT 2 DETAILS



DocuSigned by:
Joseph T. Kelvington 5/13/2025

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO. S02-35
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



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www.stantec.com
License No. F-0672

DRAWN BY : G. A. TURNER DATE : 08/10/18
CHECKED BY : A. E. COOK DATE : 02/27/19

DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE : 04/22/25

GENERAL NOTES

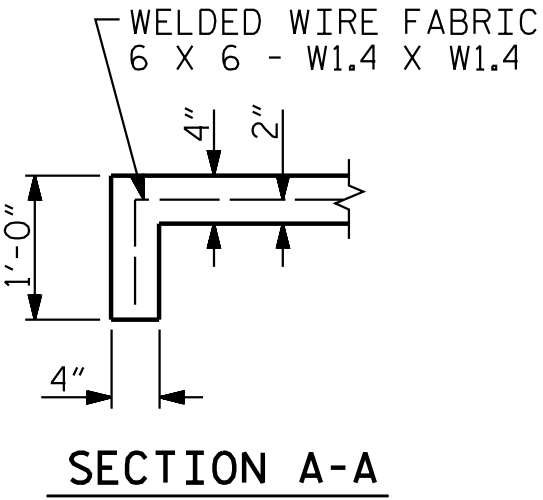
STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS. FOR BERM WIDTH, SEE GENERAL DRAWING. SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS 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.

BRIDGE @ STA. 225+93.44 -L1- STA. 74+09.13 -Y33-	4 INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	441	794
END BENT 2	504	907

* QUANTITY SHOWN IS BASED ON 5' POURS.

NOTE

THE CONTRACTOR SHALL TAKE CARE TO MATCH THE PROPOSED SLOPE PROTECTION WITH ADJACENT STRUCTURE CONSTRUCTION. FOR ADDITIONAL DETAILS, SEE CONSTRUCTION DRAWINGS FOR NCDOT PROJECT U-4751.



PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 1 OF 1

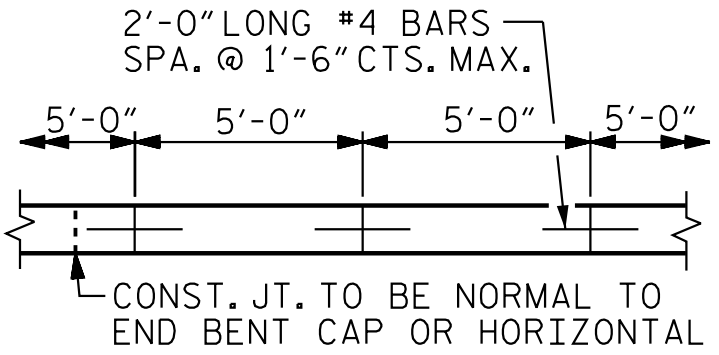
STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

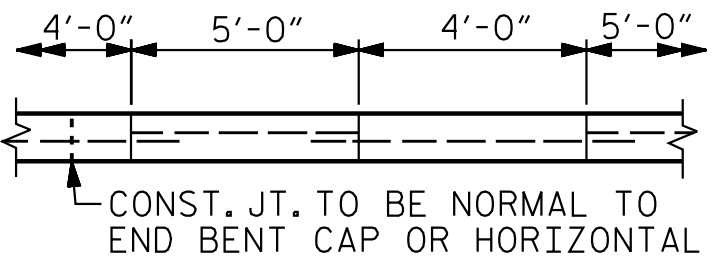
RALEIGH

SLOPE PROTECTION
DETAILS

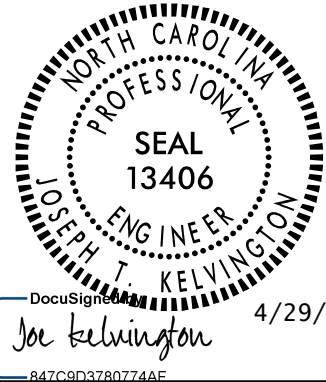
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 38
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2			4			



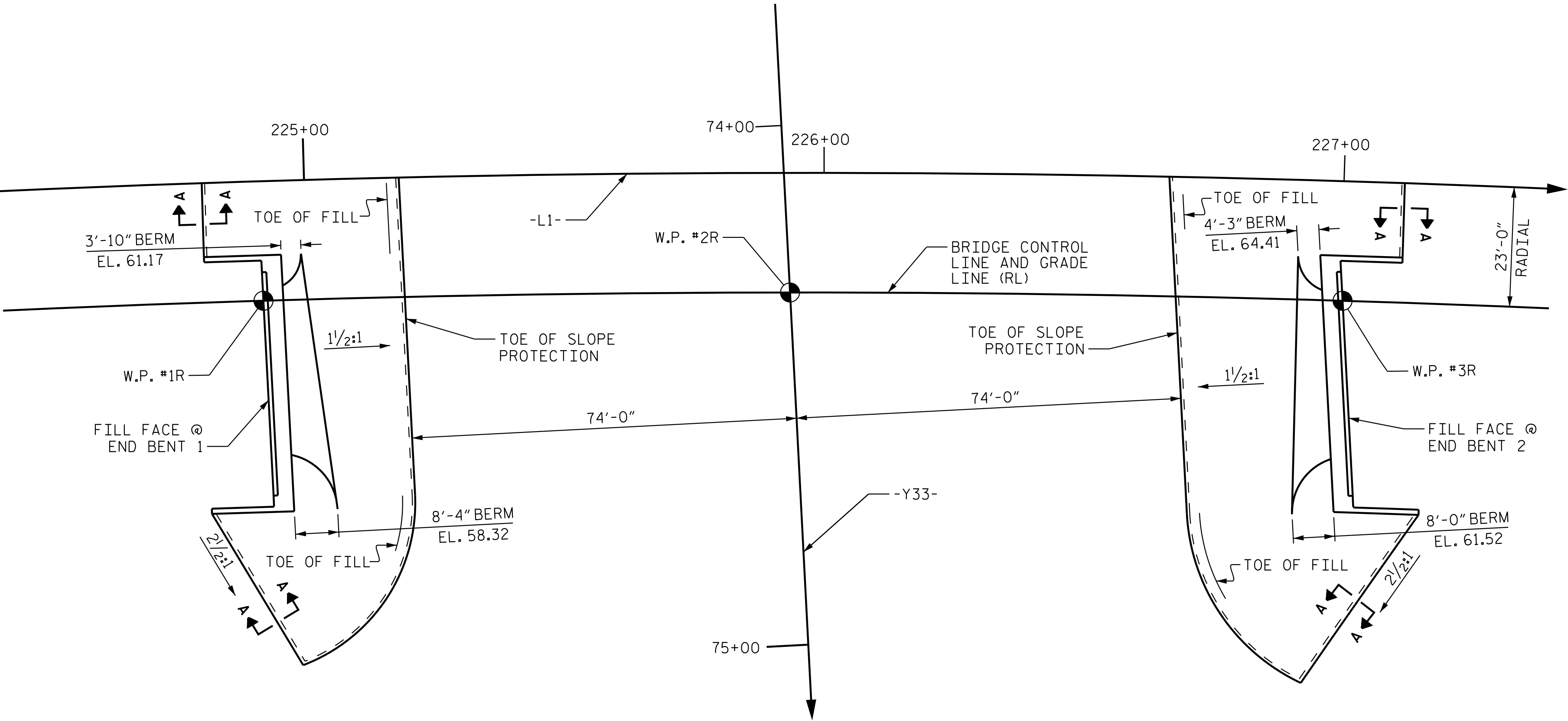
POURING DETAIL



OPTIONAL POURING DETAIL

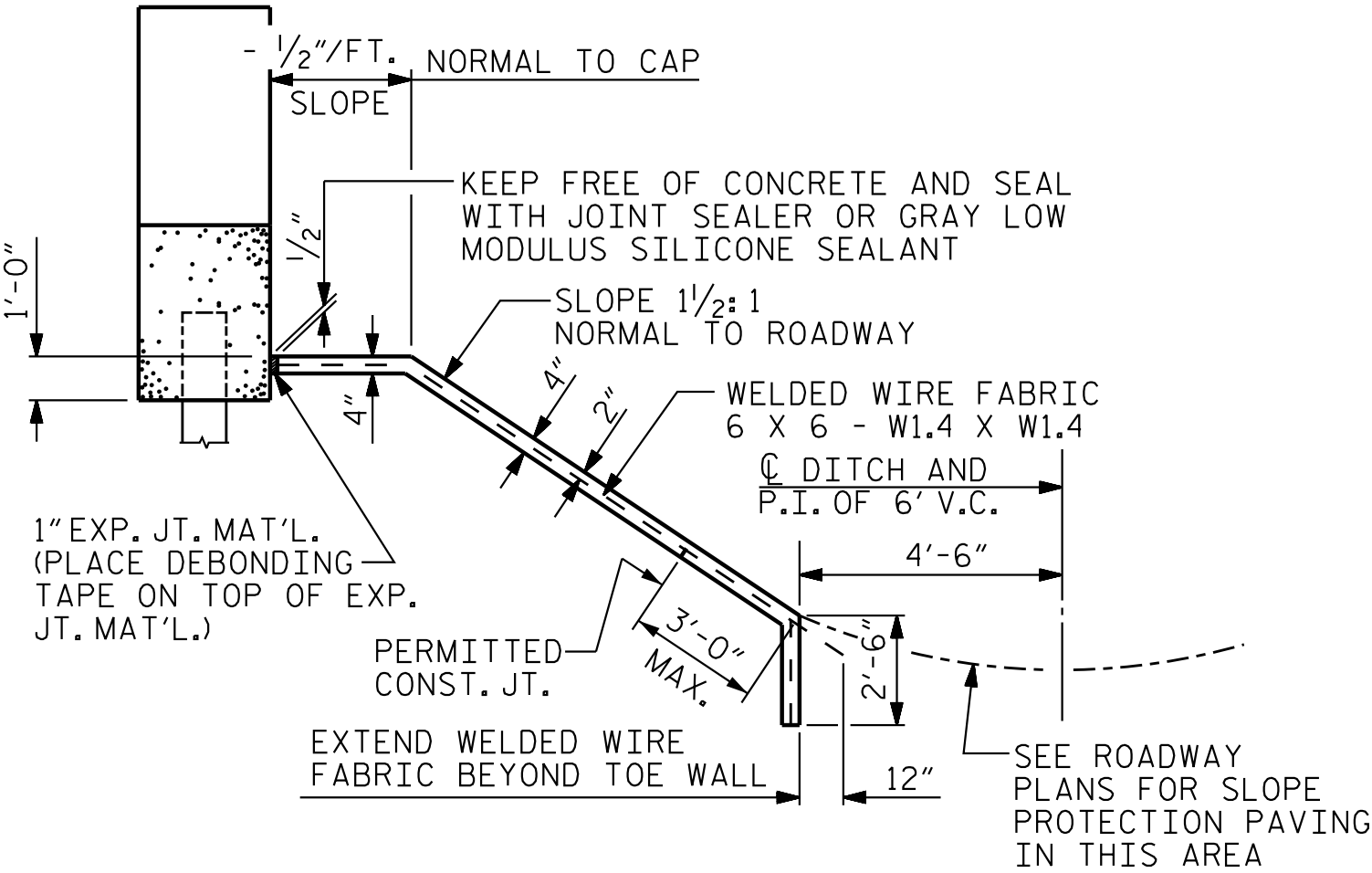


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END BENT 1

END BENT 2



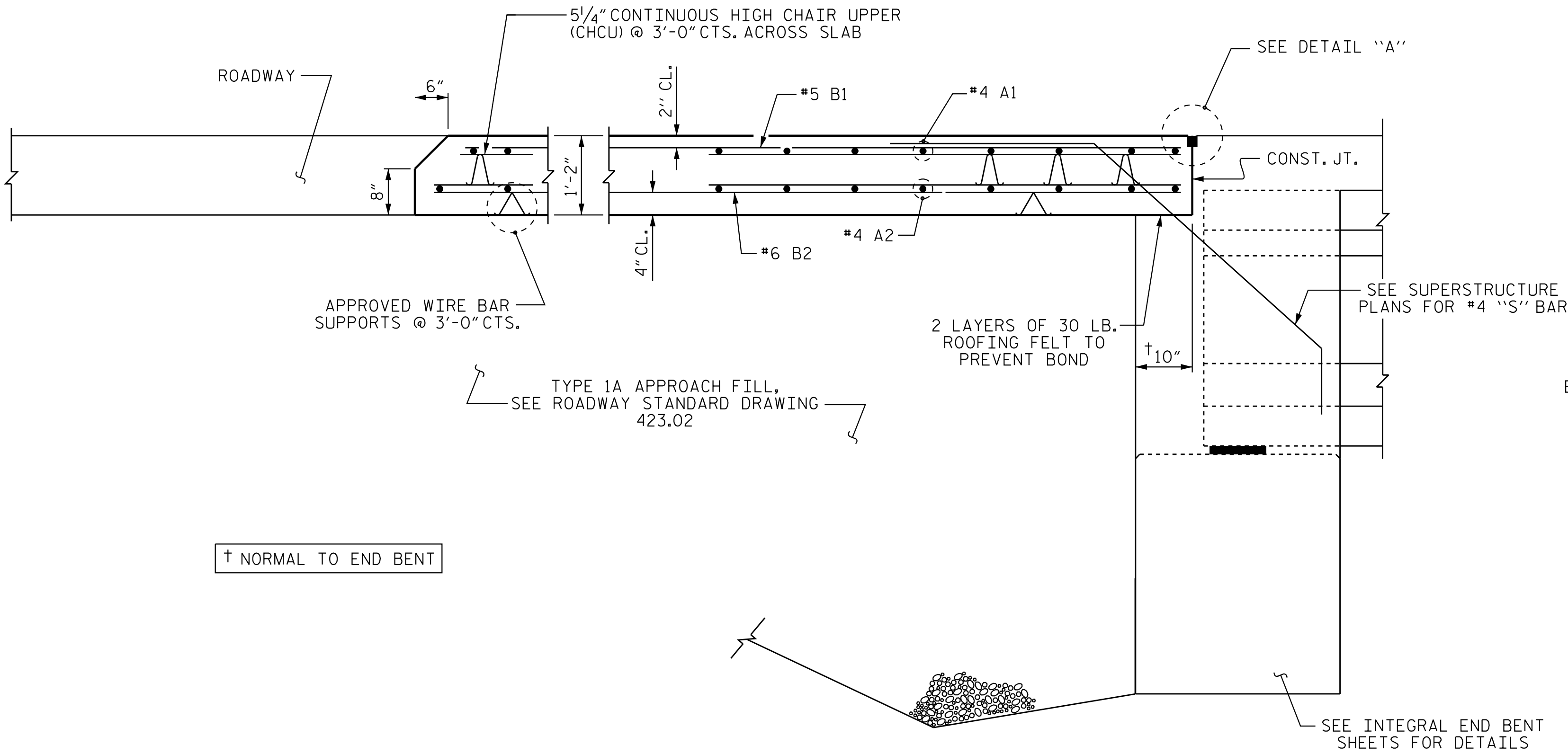
SECTION ALONG -Y33- WHEN FILL CATCHES IN DITCH



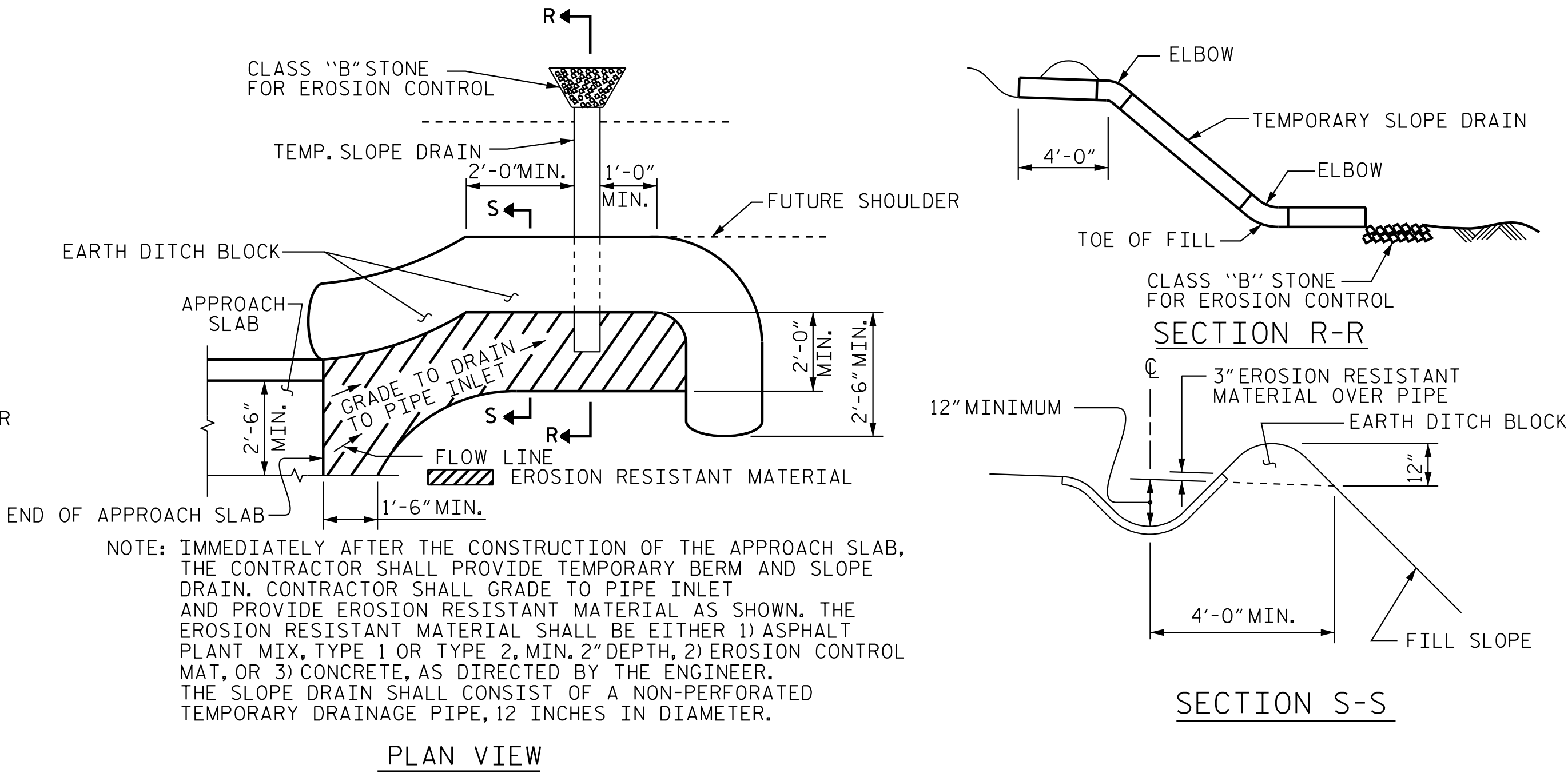
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DRAWN BY : M. R. SMITH DATE : 06/14/18
CHECKED BY : A. E. COOK DATE : 02/27/19

DESIGN
ENGINEER
OF RECORD: J. T. KELVINGTON DATE : 04/22/25



SECTION THRU SLAB



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM CUTTER IS REQUIRED)

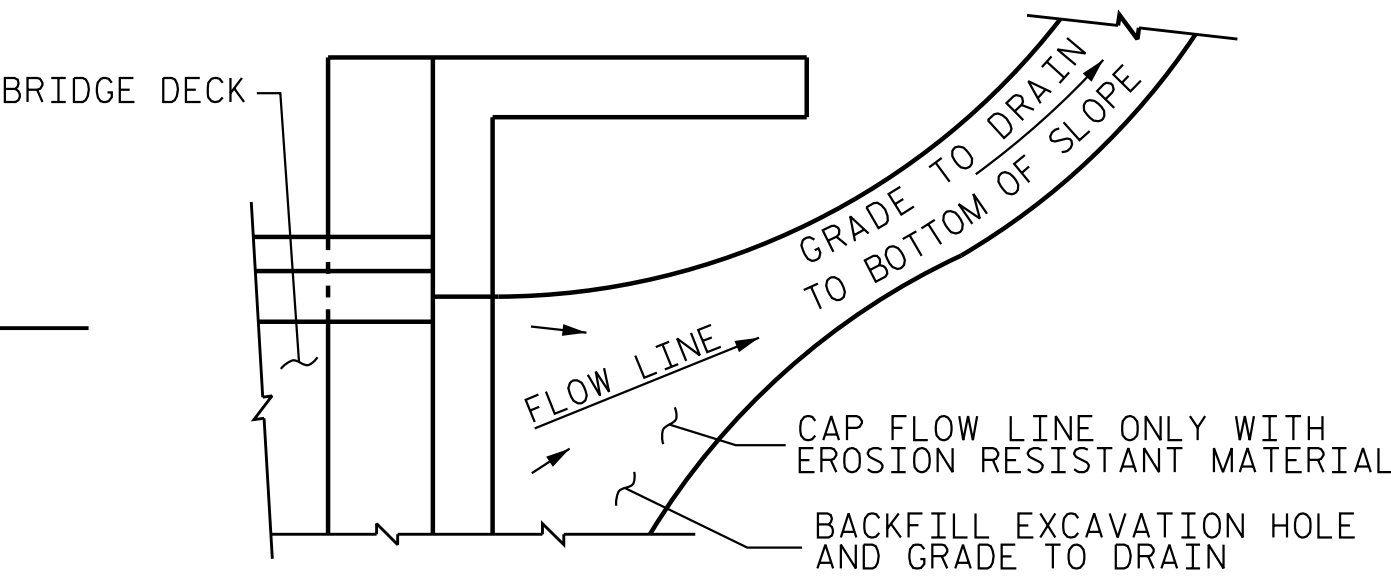
NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

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

AREA BETWEEN 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.

THE JOINT 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 SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.



TEMPORARY DRAINAGE DETAIL

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 225+92.26 -L1-

SHEET 2 OF 2

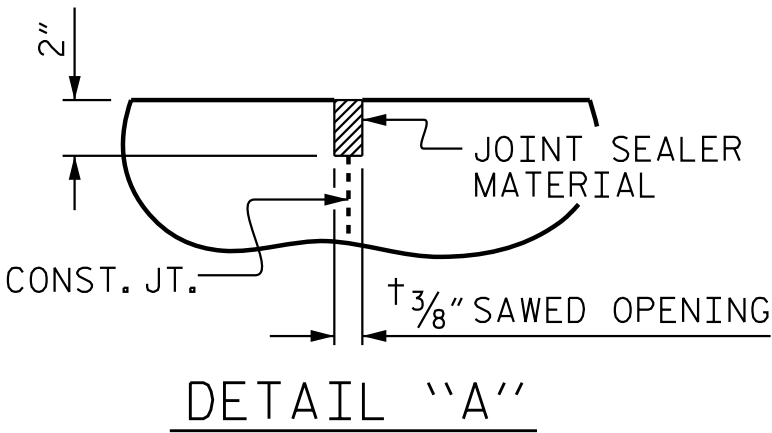


ASSEMBLED BY : G. TURNER DATE : 8/23/18
CHECKED BY : A. COOK DATE : 3/1/19

DRAWN BY : TLA 10/05
CHECKED BY : GM 5/06

REV. 12/21/11 MAA/GM
REV. 6/13 MAA/GM
REV. 12/17 MAA/THC

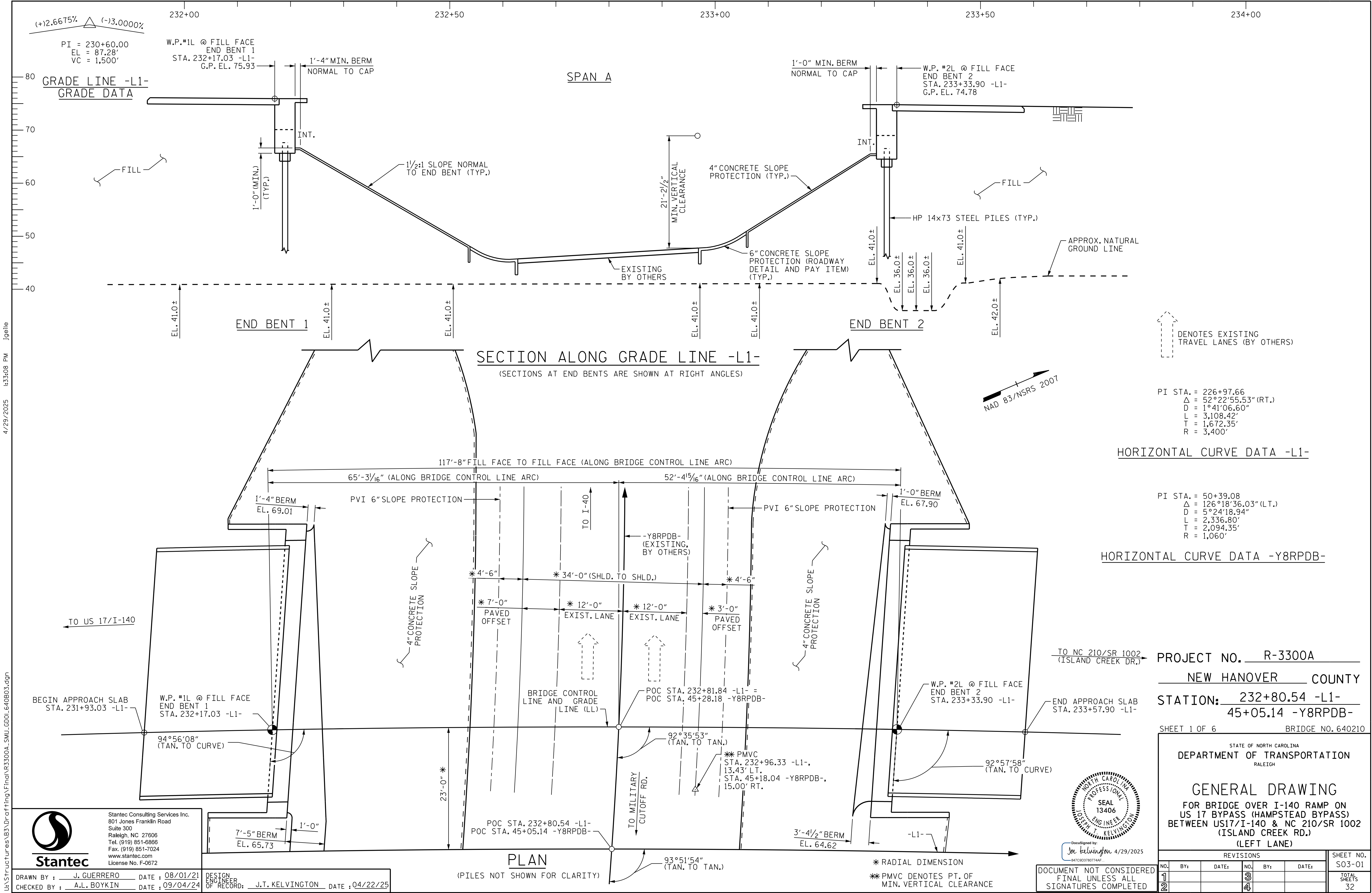
DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 04/22/25



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH
SLAB DETAILS

REVISIONS						SHEET NO. S02-38
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			



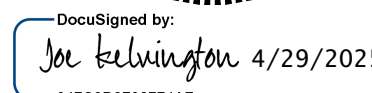


1. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
2. SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS FOR THE SETTLEMENT GAUGES AND SURCHARGE REQUIRED AT END BENTS NO.1 AND 2.
3. OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT TO FINAL GRADE PLUS 5 FT OF SURCHARGE MATERIAL BEFORE BEGINNING END BENT CONSTRUCTION AT END BENTS NO.1 AND 2.FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
4. APPROACH EMBANKMENT CONSTRUCTION MUST BE COMPLETED IN STAGES FOR SHORT TERM SLOPE STABILITY.TOTAL WAITING PERIOD INCLUDING ALL STAGES IS 8 MONTHS.SEE ROADWAY PLANS FOR EMBANKMENT CONSTRUCTION STAGE DETAILS.

SHEET 2 OF 6



DESIGN
ENGINEER
OF RECORD: J.T. KELVINGTON DATE : 04/22/25



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STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER I-140 RAMP ON
 US 17 BYPASS (HAMPSTEAD BYPASS)
 BETWEEN US17/I-140 & NC 210/SR 1002
 (ISLAND CREEK RD.)
 (LEFT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S03-02
1			3			
2			4			
						TOTAL SHEETS
						2

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")	Number of Piles per Line	Factored Resistance per Pile KIPS	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		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
End Bent 1, Piles 1-9	9	250	See Substructure Plans	65			420	5						
End Bent 2, Piles 1-9	9	260	See Substructure Plans	65			420	5						
TOTAL QUANTITY:								10						

$$* RDR = \frac{\text{Factored Resistance} + \text{Factored Drag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Drag Load Resistance} + \text{Nominal Resistance from Scourable Material}$$

**** 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.**

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 KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent 1, Piles 1-9	250			0.6		
End Bent 2, Piles 1-9	260			0.6		

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates EACH	Steel Pile Points		
		Pipe Pile Cutting Shoes EACH	Pipe Pile Conical Points EACH	H-Pile Points EACH
TOTAL QUANTITY:				

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)		
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	DPT Test Pile Length FT	DPT Testing Quantity EACH
End Bent 1	70	1
End Bent 2	70	
TOTAL QUANTITY:		1

Pile Order Lengths for Concrete Piles	
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	Pile Order Length Basis* EST or DPT

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

PROJECT NO. R-3300A

NEW HANOVER COUNTY

STATION: 232+81.84 -L1-

SHEET 3 OF 6

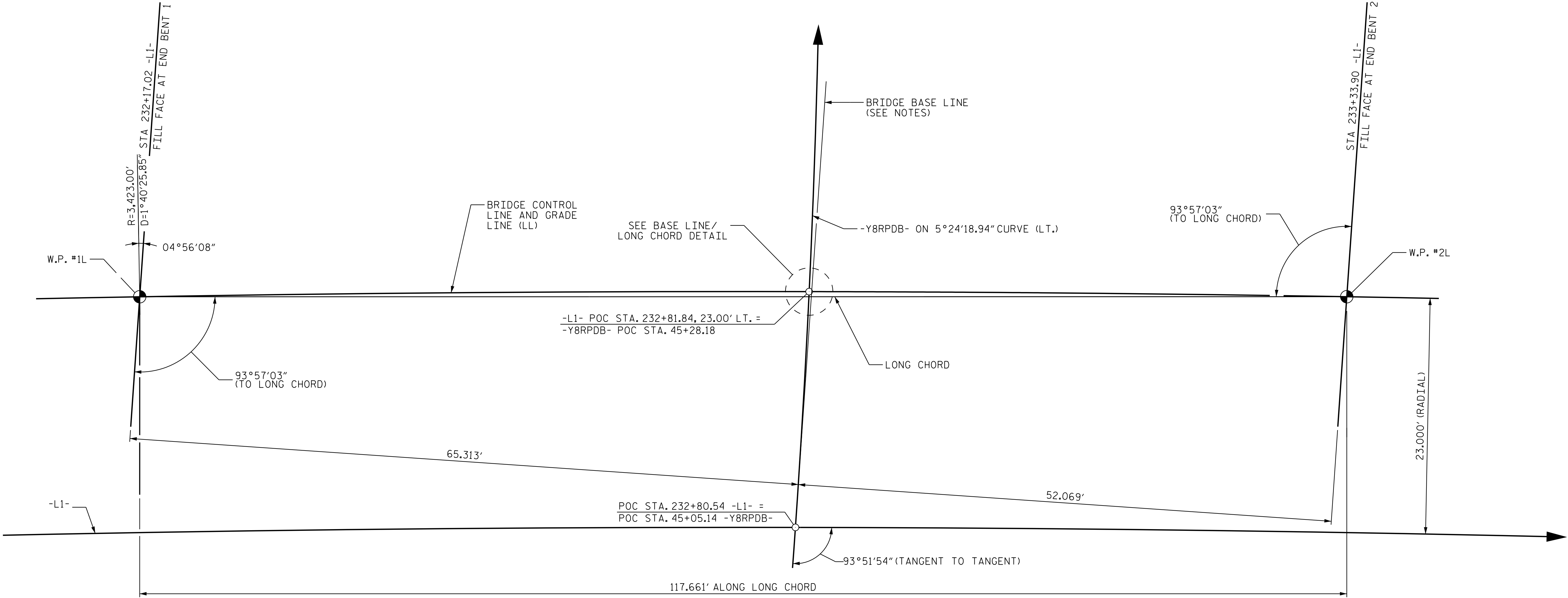
NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Jeremy R. Hamm, #039779) on 03/09/2025.
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 may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

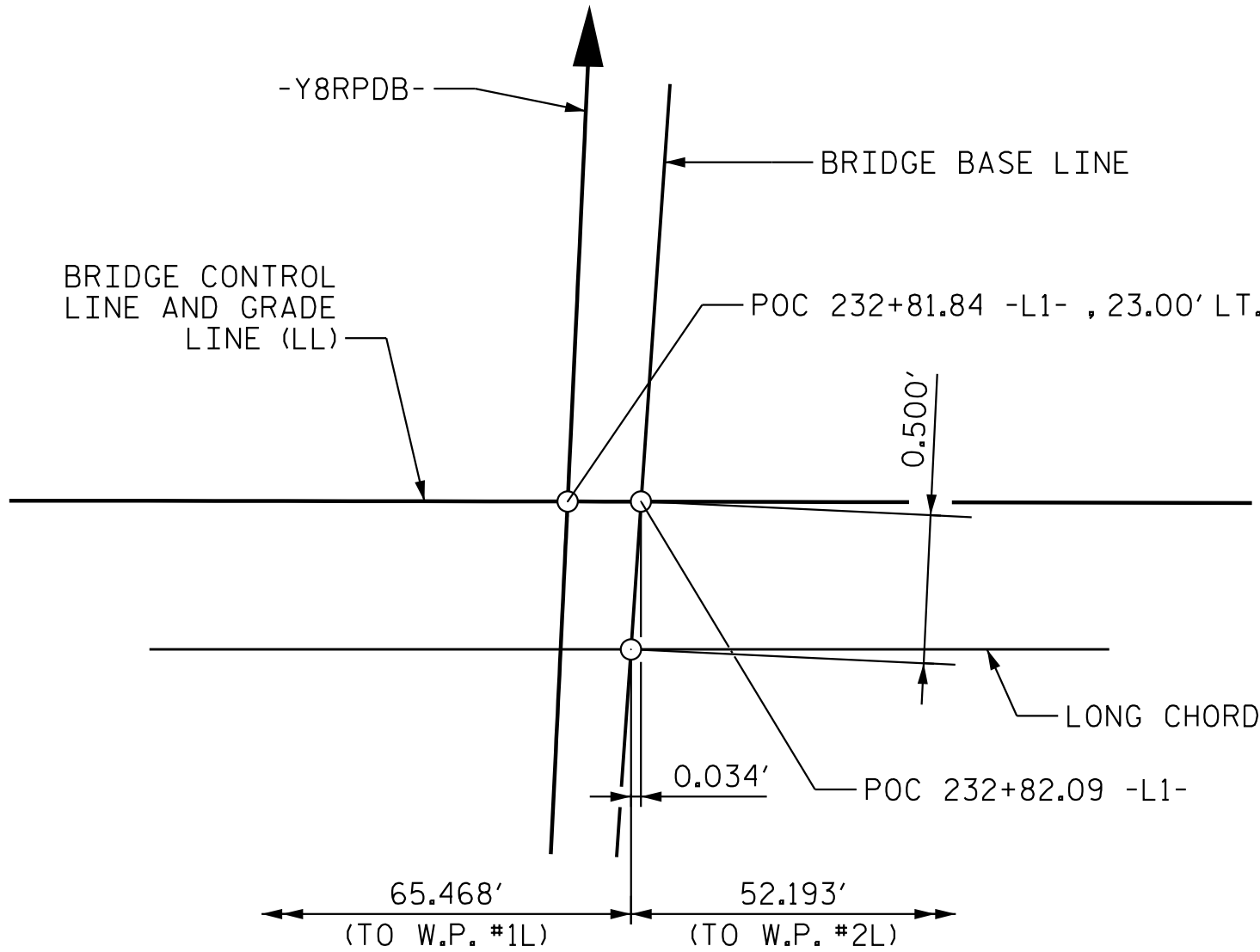
	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH PILE FOUNDATION TABLES																										
Drawn/signed by: <i>Joe Kelvington</i> 4/22/2025 B47C03D307140F...	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6" style="text-align: center;">REVISIONS</th> <th style="text-align: center;">SHEET NO. S03-03</th> </tr> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">BY:</th> <th style="width: 10%;">DATE:</th> <th style="width: 10%;">NO.</th> <th style="width: 10%;">BY:</th> <th style="width: 10%;">DATE:</th> <th rowspan="3" style="text-align: center; vertical-align: middle;">TOTAL SHEETS 32</th> </tr> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td></td> <td></td> <td style="text-align: center;">4</td> <td></td> <td></td> </tr> </table>	REVISIONS						SHEET NO. S03-03	NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32	1			3			2			4		
REVISIONS						SHEET NO. S03-03																					
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4/29/2025 4:33:20 PM jgeille

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LONG CHORD LAYOUT



BASE LINE / LONG CHORD DETAIL

NOTES:
END BENTS ARE PARALLEL TO BRIDGE BASE LINE.
BRIDGE BASE LINE IS TANGENT TO -Y8RPDB- @ POC STA. 45+05.14 = POC STA. 232+80.54 -L1-



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DRAWN BY : J. GUERRERO DATE : 08/01/21
CHECKED BY : A.L. BOYKIN DATE : 09/04/24

DESIGN ENGINEER OF RECORD: J.T. KELVINGTON DATE : 04/22/25

PROJECT NO. R-3300A
NEW HANOVER COUNTY
STATION: 232+80.54 -L1-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER I-140 RAMP ON
US 17 BYPASS (HAMPSTEAD BYPASS)
BETWEEN US17/I-140 & NC 210/SR 1002
(ISLAND CREEK RD.)
(LEFT LANE)



DocuSigned by
Joe Kelvington 4/29/2025
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REVISIONS						SHEET NO.	
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2			4			32	