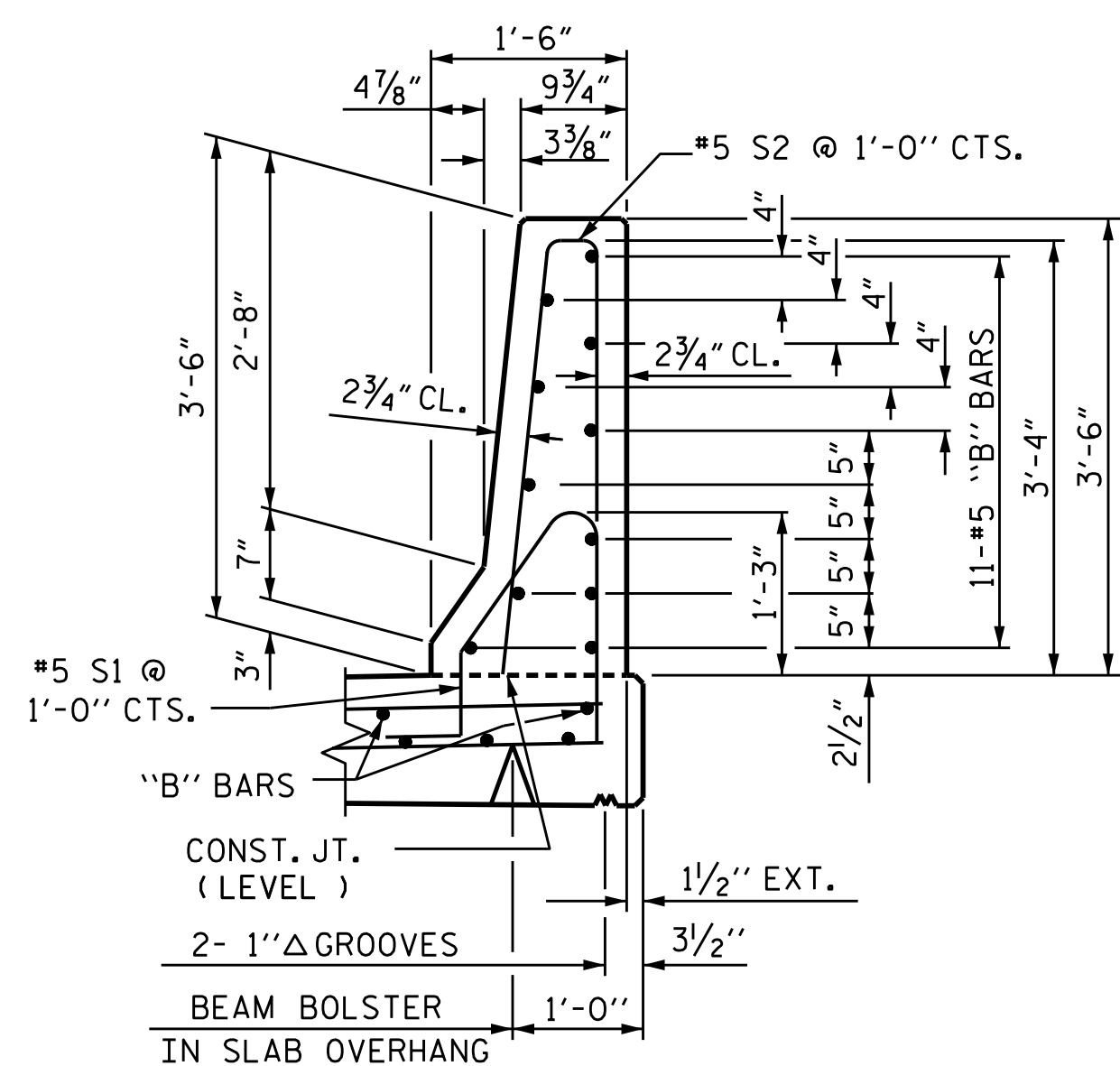
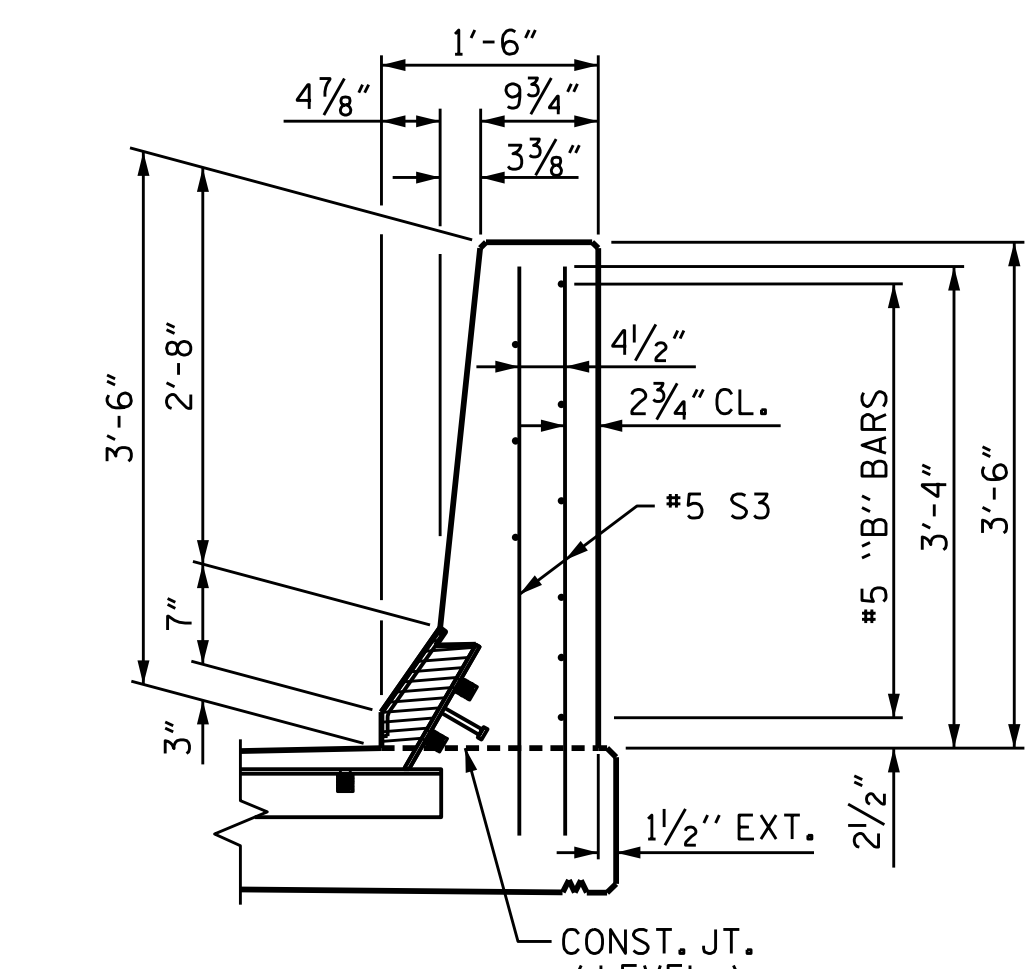


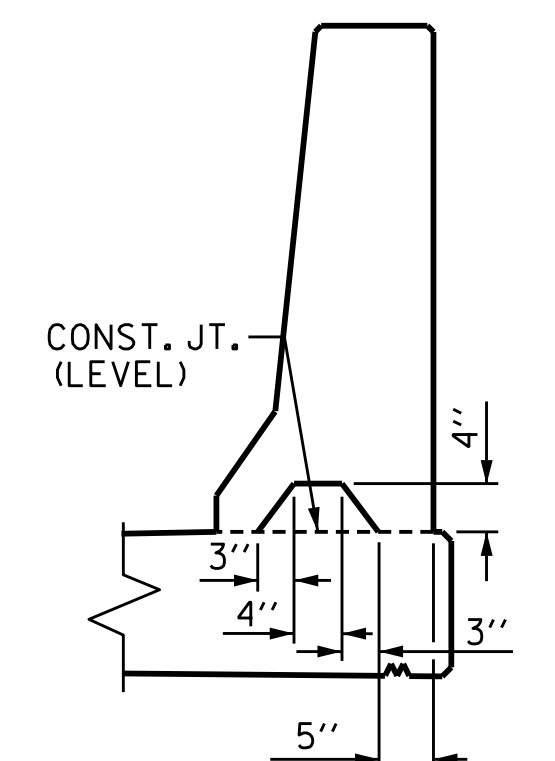
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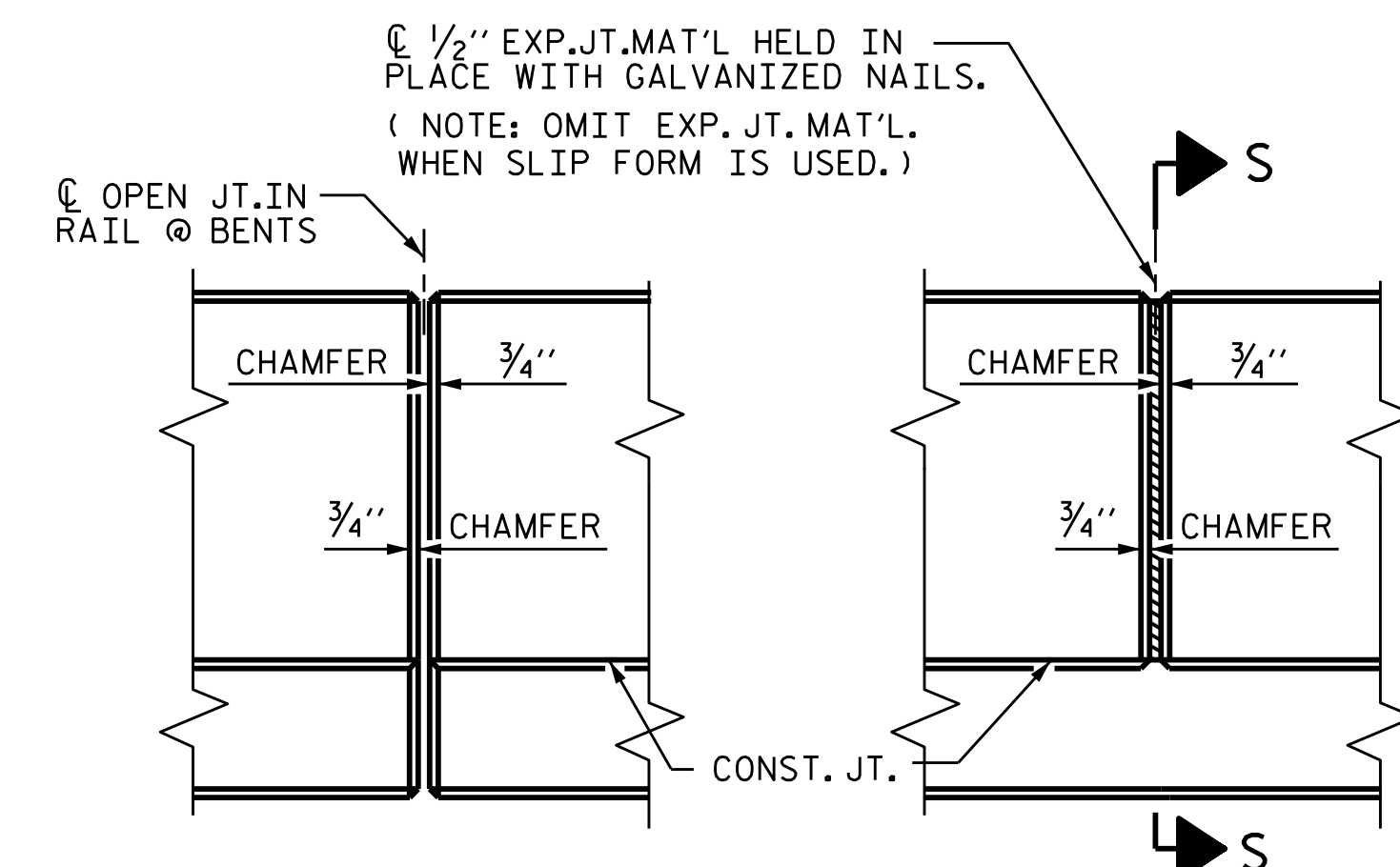
SECTION THRU RAIL



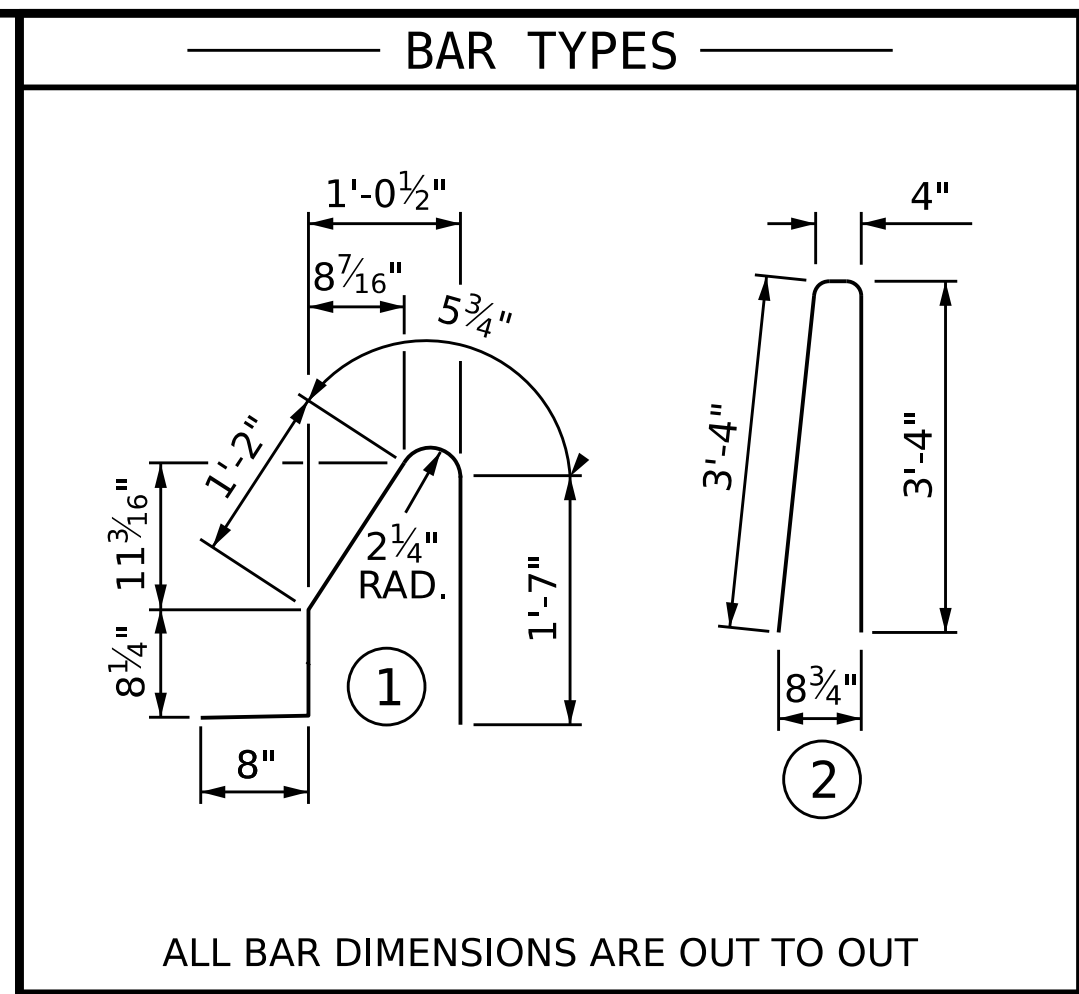
END VIEW @ EXP. JOINTS



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



**ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS**



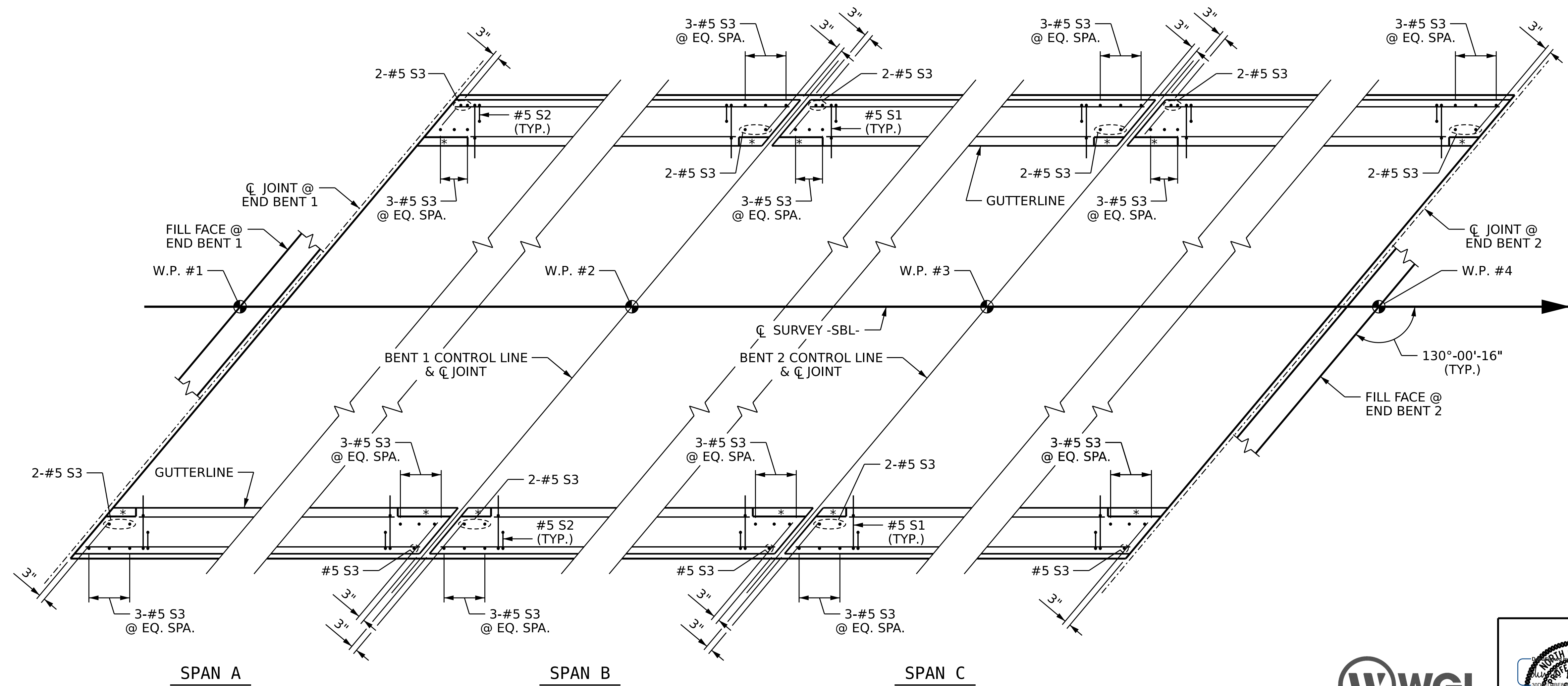
ALL BAR DIMENSIONS ARE OUT TO OUT

**BILL OF MATERIAL
FOR CONCRETE BARRIER RAIL**

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	176	#5	STR	12'-2"	2233
* B2	88	#5	STR	14'-4"	1316
* B3	66	#5	STR	24'-7"	1692
* S1	404	#5	1	4'-7"	1931
* S2	404	#5	2	7'-0"	2950
* S3	57	#5	STR	4'-0"	238

EPOXY COATED REINFORCING STEEL	10360 LB
CLASS AA CONCRETE BREAKDOWN	57.1 CY
CONCRETE BARRIER RAIL	
SUPERSTRUCTURE	420.56 LF
** APPROACH SLAB	42.52 LF
TOTAL	463.08 LF

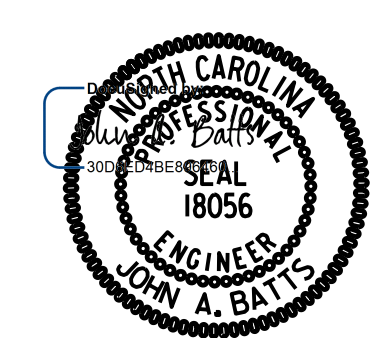
* INDICATES EPOXY COATED REINFORCING STEEL
** FOR EPOXY COATED REINFORCING STEEL AND CLASS AA CONCRETE IN THE BARRIER RAIL ON THE APPROACH SLABS, SEE "BRIDGE APPROACH SLAB - BARRIER RAILS DETAIL" SHEET.



END OF RAIL DETAILS

* FOR BLOCK OUT DETAIL SEE "EXPANSION JOINT SEAL DETAILS FOR BARRIER RAIL" SHEET.

DRAWN BY : T. BANKOVICH DATE : 12-22
 CHECKED BY : J.A. BATTS DATE : 12-22
 DESIGN ENGINEER OF RECORD : J.A. BATTS DATE : 12-22



PROJECT NO. B-5783
DAVIDSON COUNTY
 STATION: 21+53.61 -SBL-

SHEET 2 OF 2

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

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

TOTAL SHEETS: 40

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NOTES

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

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

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

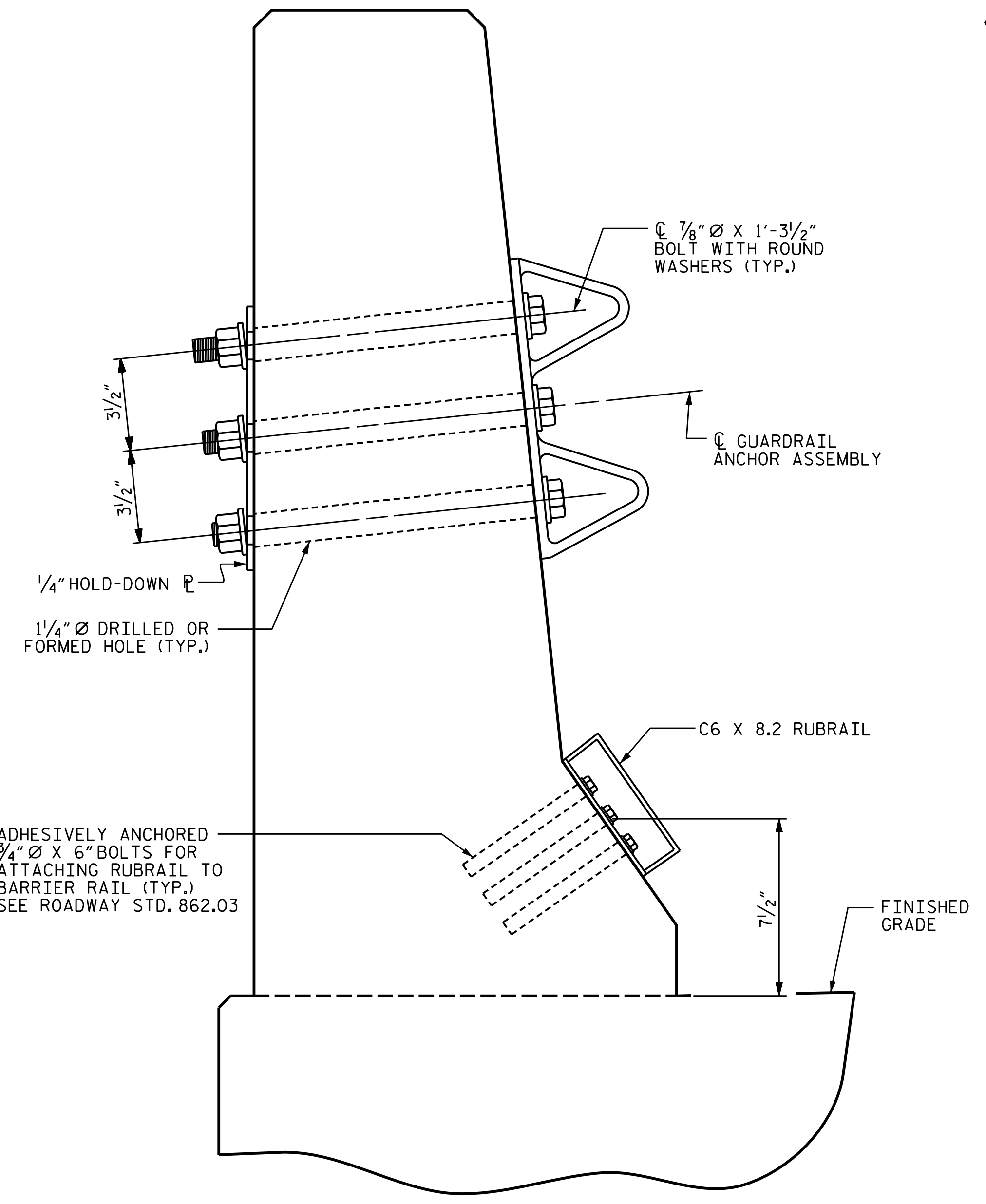
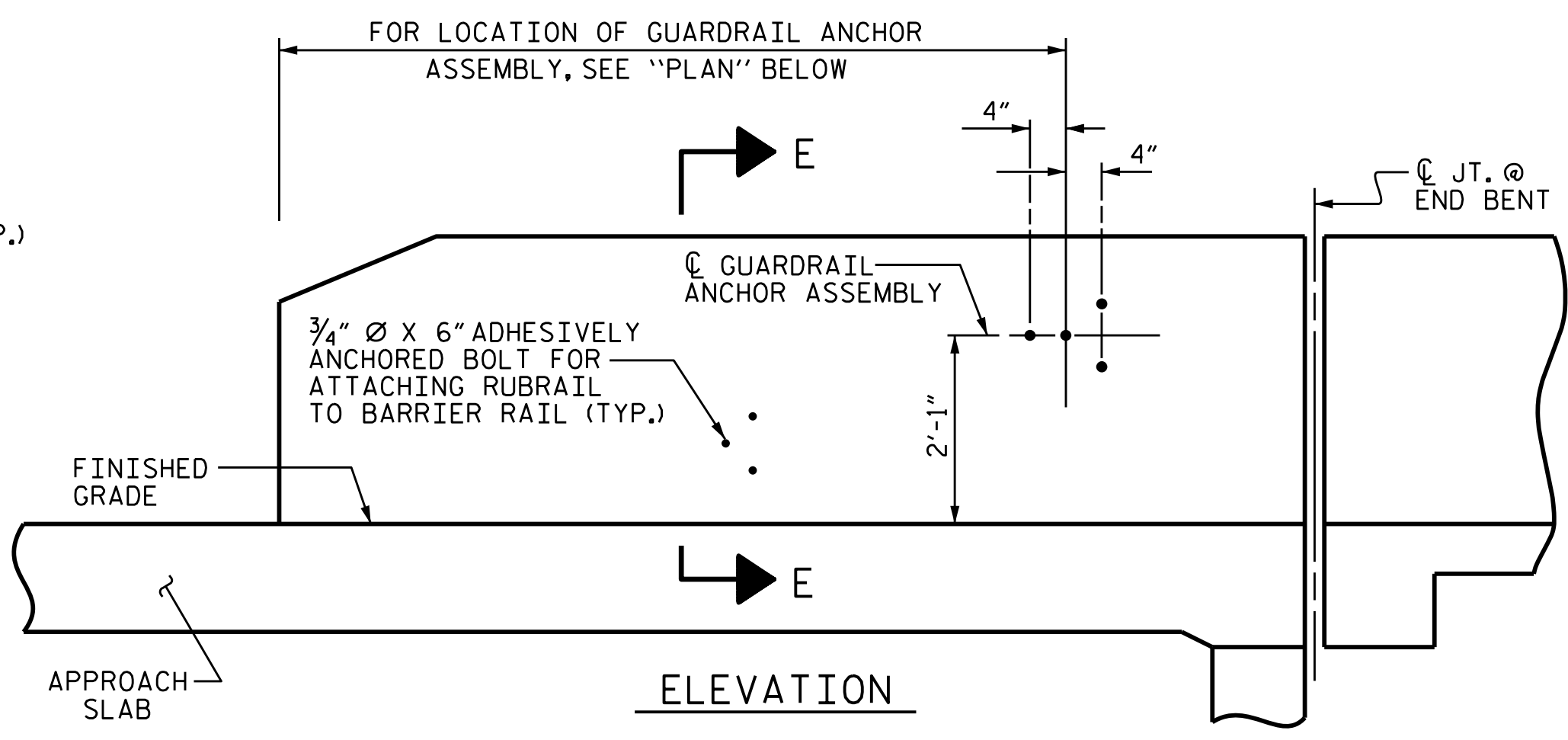
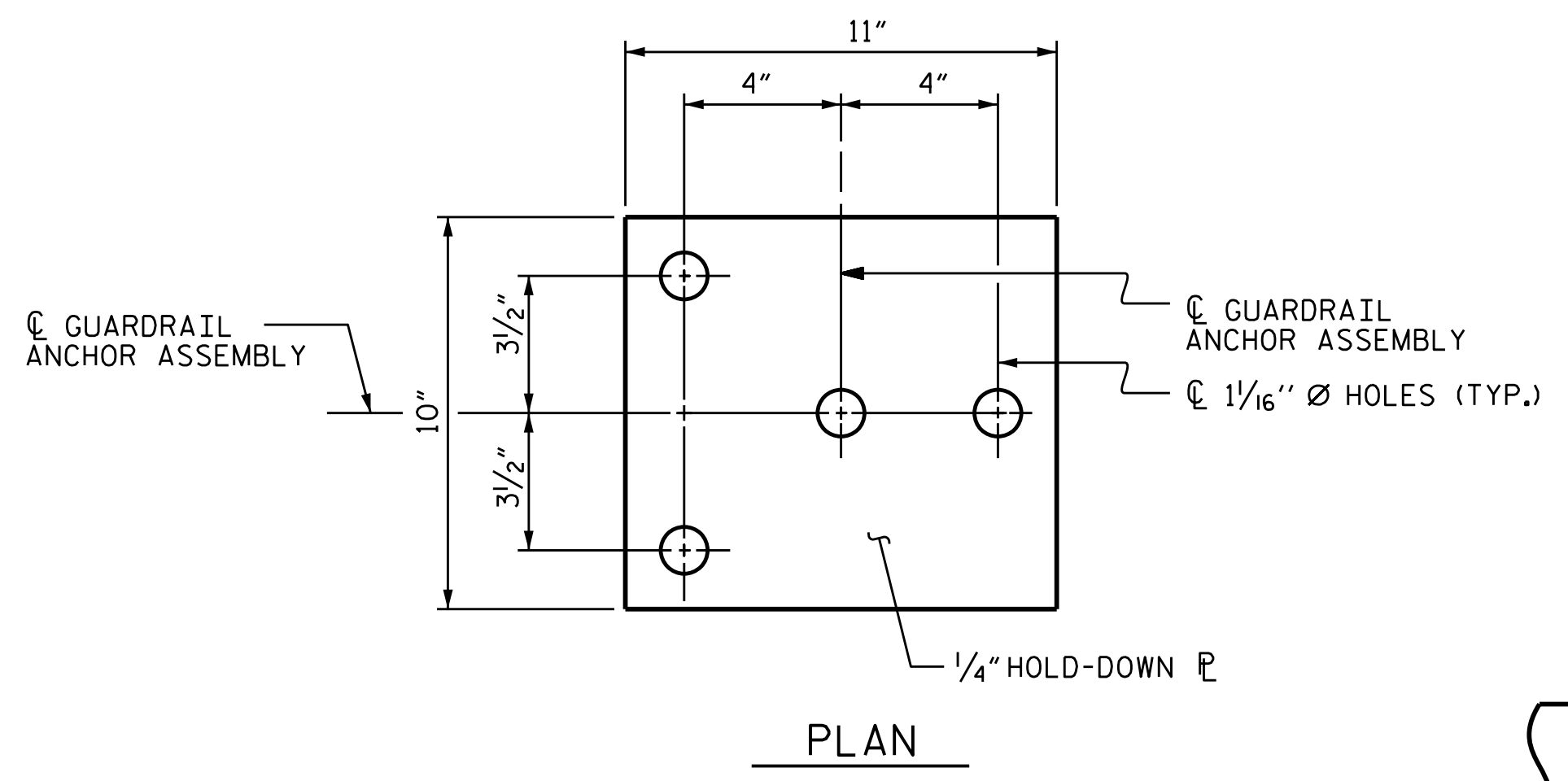
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

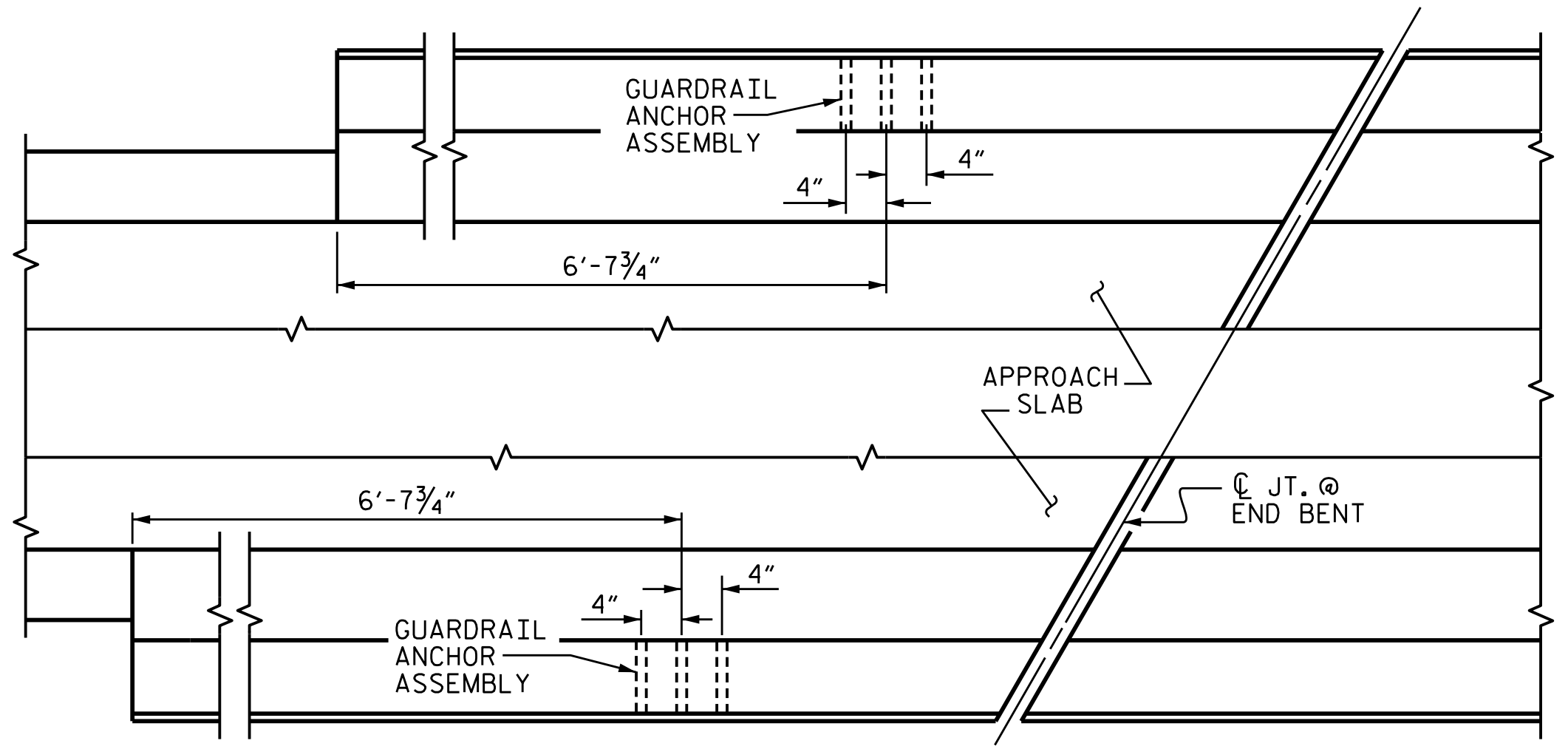
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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

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

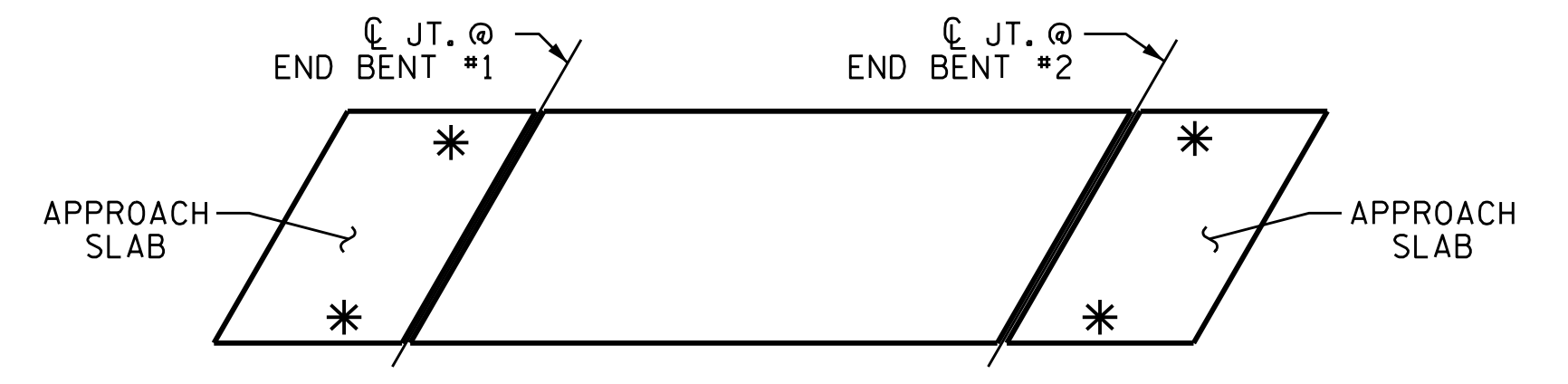


**SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS**



LOCATION OF ANCHORS FOR GUARDRAIL

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

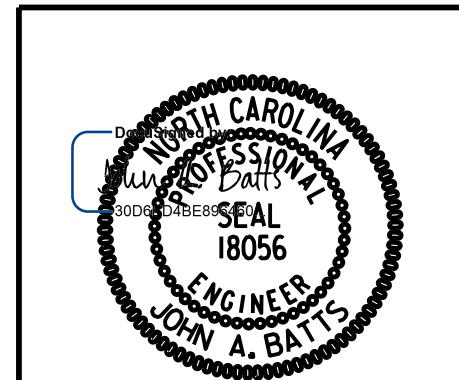


SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-5783
DAVIDSON COUNTY
 STATION: 21+53.61 -SBL-

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

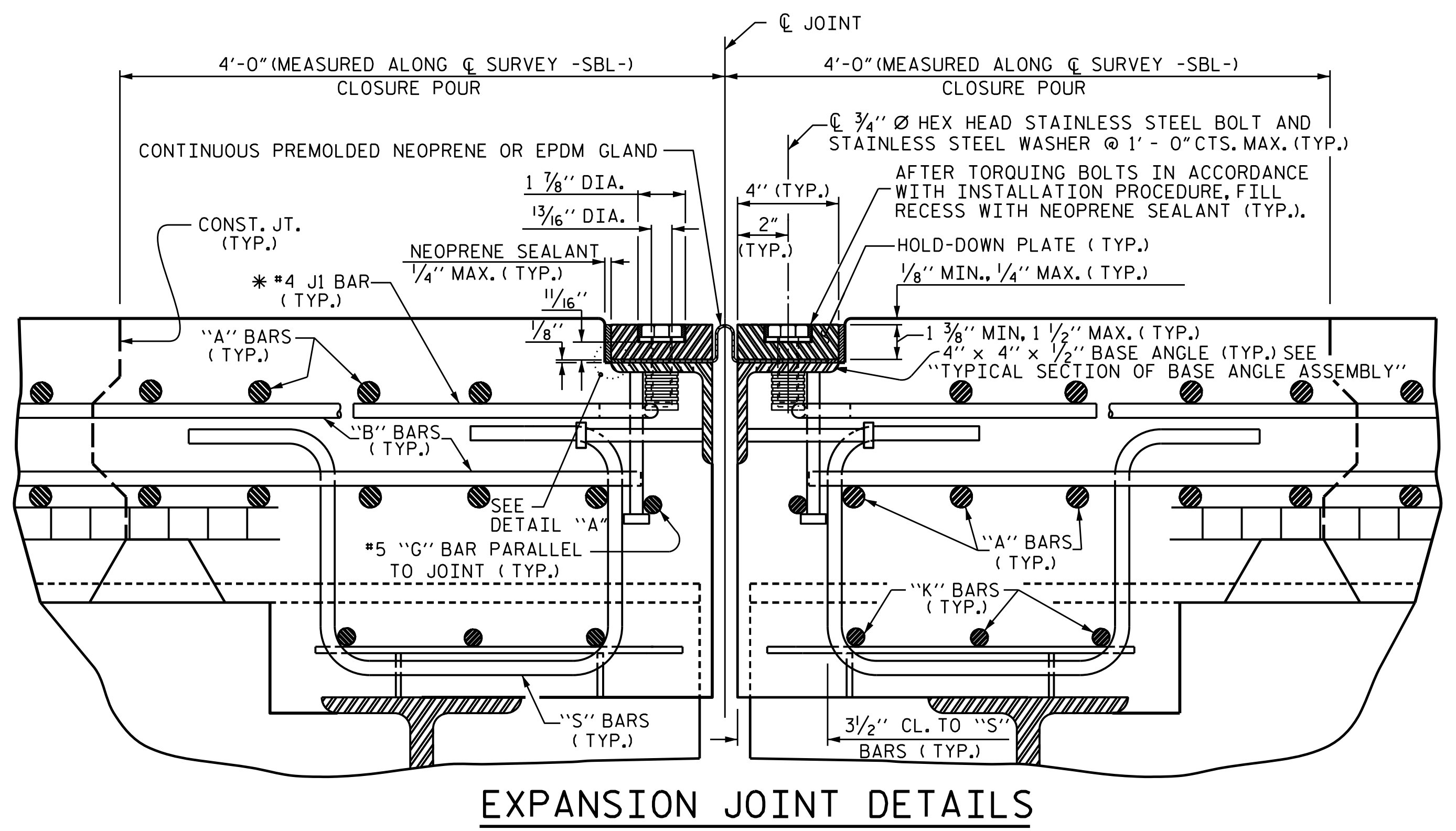


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 CHECKED BY : J.A. BATTS DATE : 12-22
 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE : 12-22

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2			4			40

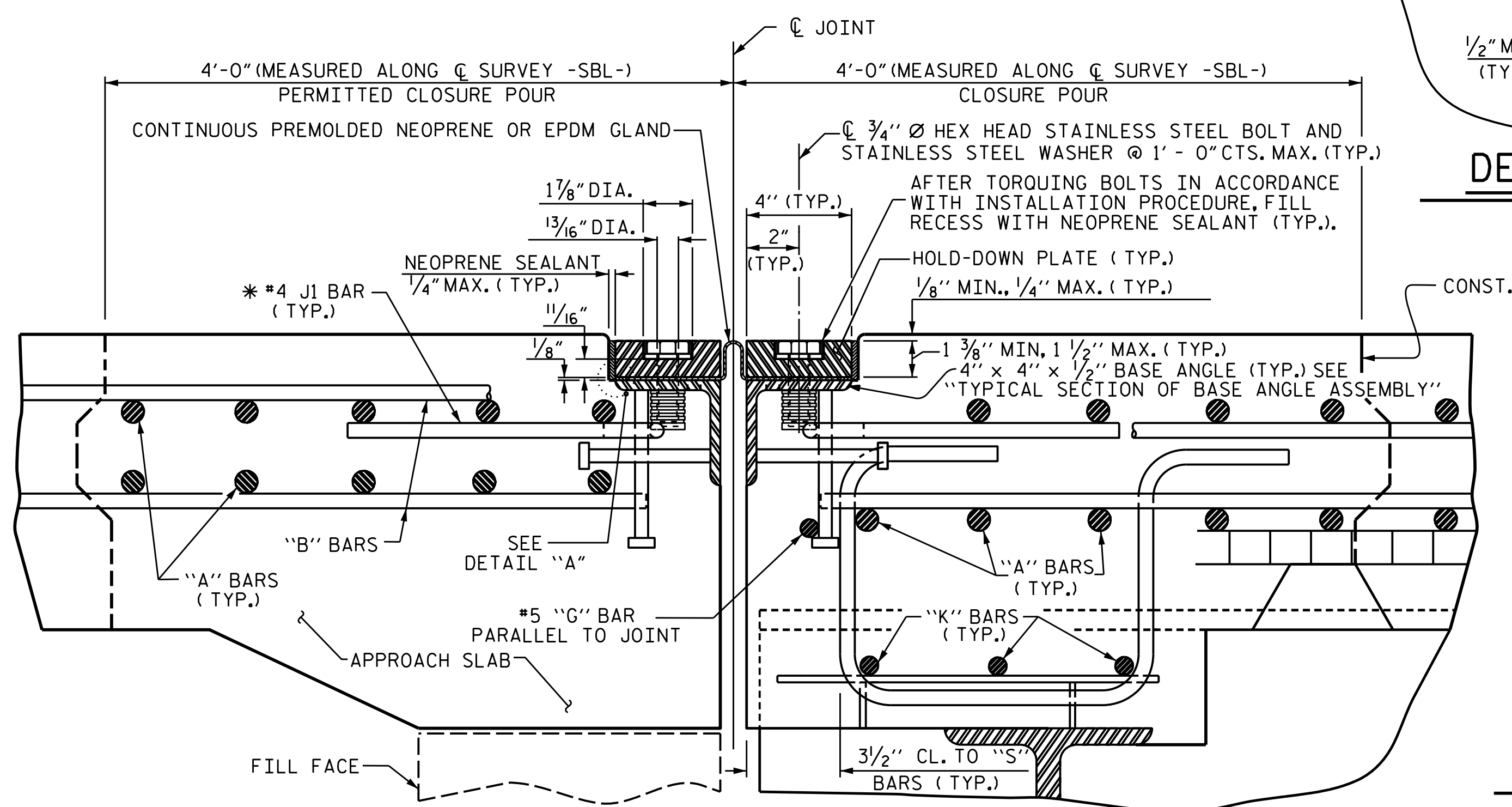
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EXPANSION JOINT DETAILS
SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE

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



EXPANSION JOINT DETAILS
SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE

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

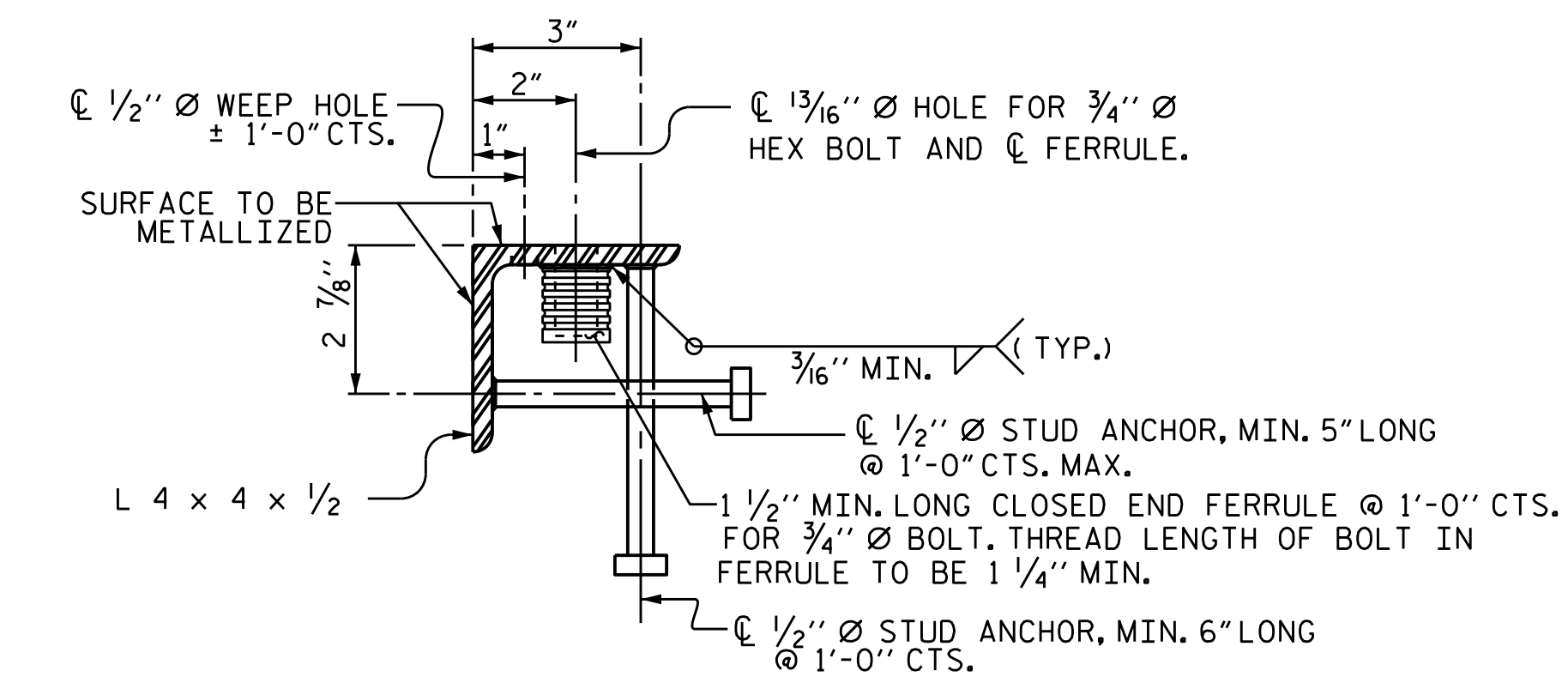
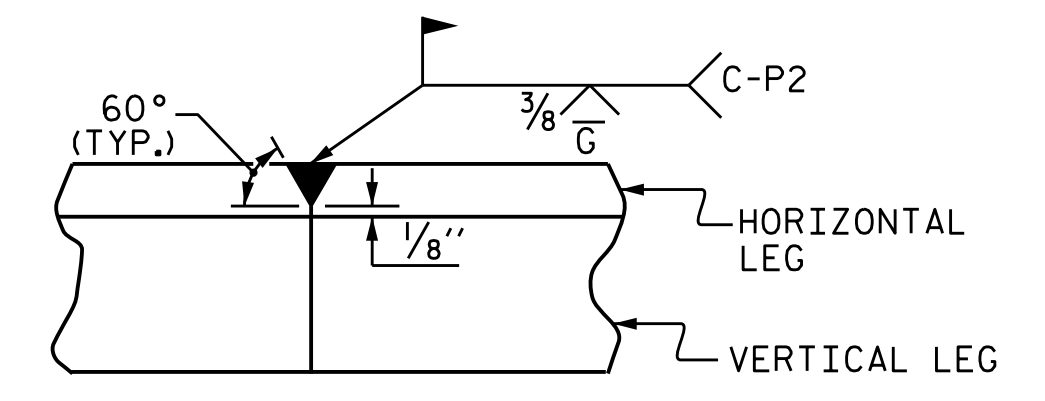
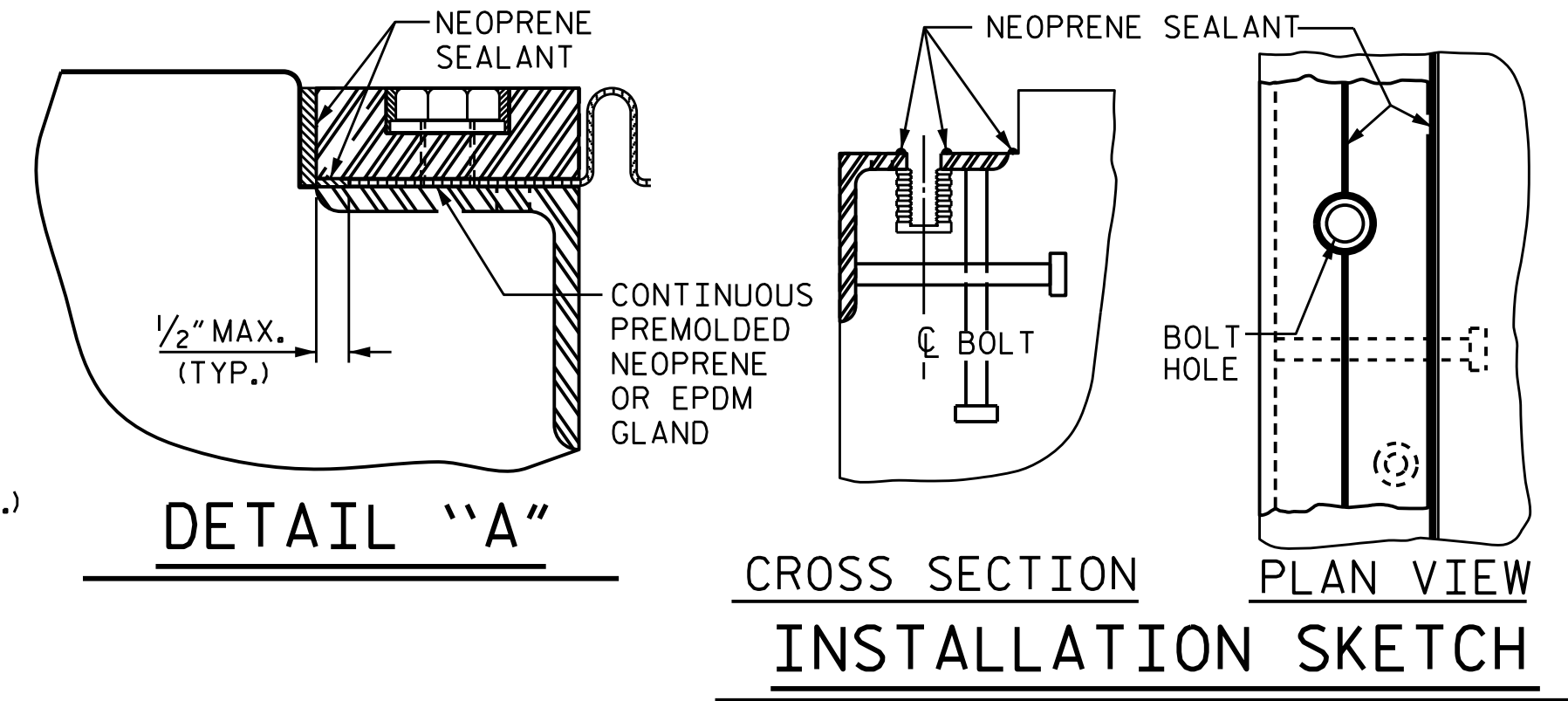
DRAWN BY : T. BANKOVICH DATE : 12-22
CHECKED BY : J.A. BATTS DATE : 12-22
DESIGN ENGINEER OF RECORD : J.A. BATTS DATE : 12-22

INSTALLATION PROCEDURE

1. A TEMPLATE OR OTHER SUITABLE DEVICE SHALL BE USED TO FORM THE TOP OF THE EXPANSION JOINT SEAL BLOCKOUT TO THE PROPER DEPTH AND WIDTH. THE TEMPLATE SHALL BE 4/8" TO 4/4" WIDE AND OF SUCH THICKNESS AS TO PROVIDE FOR CORRECT FINAL ELEVATION OF TOP OF HOLD-DOWN PLATES. THE TEMPLATE SHALL BE ATTACHED TO THE BASE ANGLE ASSEMBLY WITH THE 3/4" Ø HEX HEAD BOLTS PROVIDED FOR THE HOLD-DOWN PLATES. A 1" Ø HOLE SHALL BE PROVIDED IN THE TEMPLATE CENTERED OVER EACH WEEP HOLE IN THE 4" X 4" X 1/2" BASE ANGLE. OTHER METHODS OF INSURING DRAINAGE THROUGH WEEP HOLES MAY BE EMPLOYED SUBJECT TO ENGINEER'S APPROVAL.
2. AFTER THE CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE THE TEMPLATE, THOROUGHLY CLEAN THE BOLT HOLES AND THE ANGLE PLATE. REMOVE ANY EXCESS CONCRETE THAT COMES OUT OF THE WEEP HOLES. ANY DAMAGED STEEL SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
3. LAY THE GLAND ON THE BASE ANGLE AND FIELD MARK THE GLAND FOR THE BOLT HOLES. HOLES IN THE GLAND SHALL BE PUNCHED 1/8" IN DIAMETER WITH A HAND PUNCH.
4. IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE BUT DO NOT TIGHTEN. THE ENGINEER SHALL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.
5. AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND GLAND. APPLY NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.
6. AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES, THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE, AND THE LIFTING HOLES IN THE HOLD-DOWN PLATE, AND COMPLETELY FILL THE RECESSES AND LIFTING HOLES WITH NEOPRENE SEALANT.

GENERAL NOTES

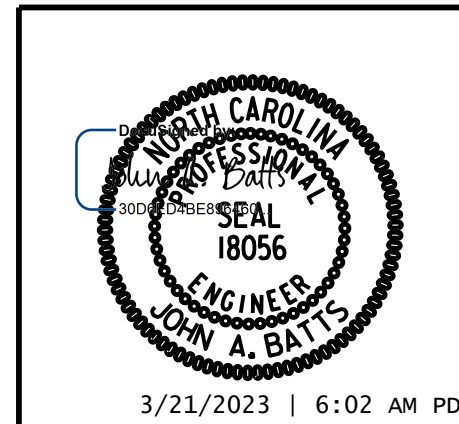
1. FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
2. ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 GRADE 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MINIMUM.
3. A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
4. CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.
5. SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
6. UPON COMPLETION OF SHOP FABRICATION, THE HOLD-DOWN PLATE AND BASE ANGLE ASSEMBLY, AS SHOWN IN THE "TYPICAL SECTION OF BASE ANGLE ASSEMBLY", SHALL BE METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
7. THE COVER PLATES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
8. BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. AT CROWN BREAKS, THE ENDS OF THE BASE ANGLE ASSEMBLY SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80° AND GREATER THAN 100°. FINISHED WELD SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
9. FIELD SPLICES OF HOLD-DOWN PLATES SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. HOLD-DOWN PLATES SHALL NOT EXCEED 20' LENGTHS UNLESS APPROVED BY THE ENGINEER.
10. NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
11. THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.
12. THE FABRICATOR SHALL PROVIDE 1/2" Ø THREADED HOLES IN THE HOLD-DOWN PLATES TO ASSIST IN LIFTING AND PLACING. THE HOLES SHALL BE 3/4" DEEP AT 6'-0" MAXIMUM SPACING AND A MINIMUM OF TWO HOLES PER PLATE.



TYPICAL SECTION OF BASE ANGLE ASSEMBLY

LOCATION	SKEW ANGLE	MOVEMENT AND SETTING AT JOINT			
		TOTAL MOVEMENT (ALONG C RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1	130°-00'-16"	0"	1"	1"	1"
BENT 1	130°-00'-16"	5/16"	1 1/16"	1 1/8"	1 1/16"
BENT 2	130°-00'-16"	1 1/16"	1 1/16"	1 1/2"	1 3/16"
END BENT 2	130°-00'-16"	0"	1"	1"	1"

WVGI
5640 Dilard Drive, Suite 200
Cary, NC 27518
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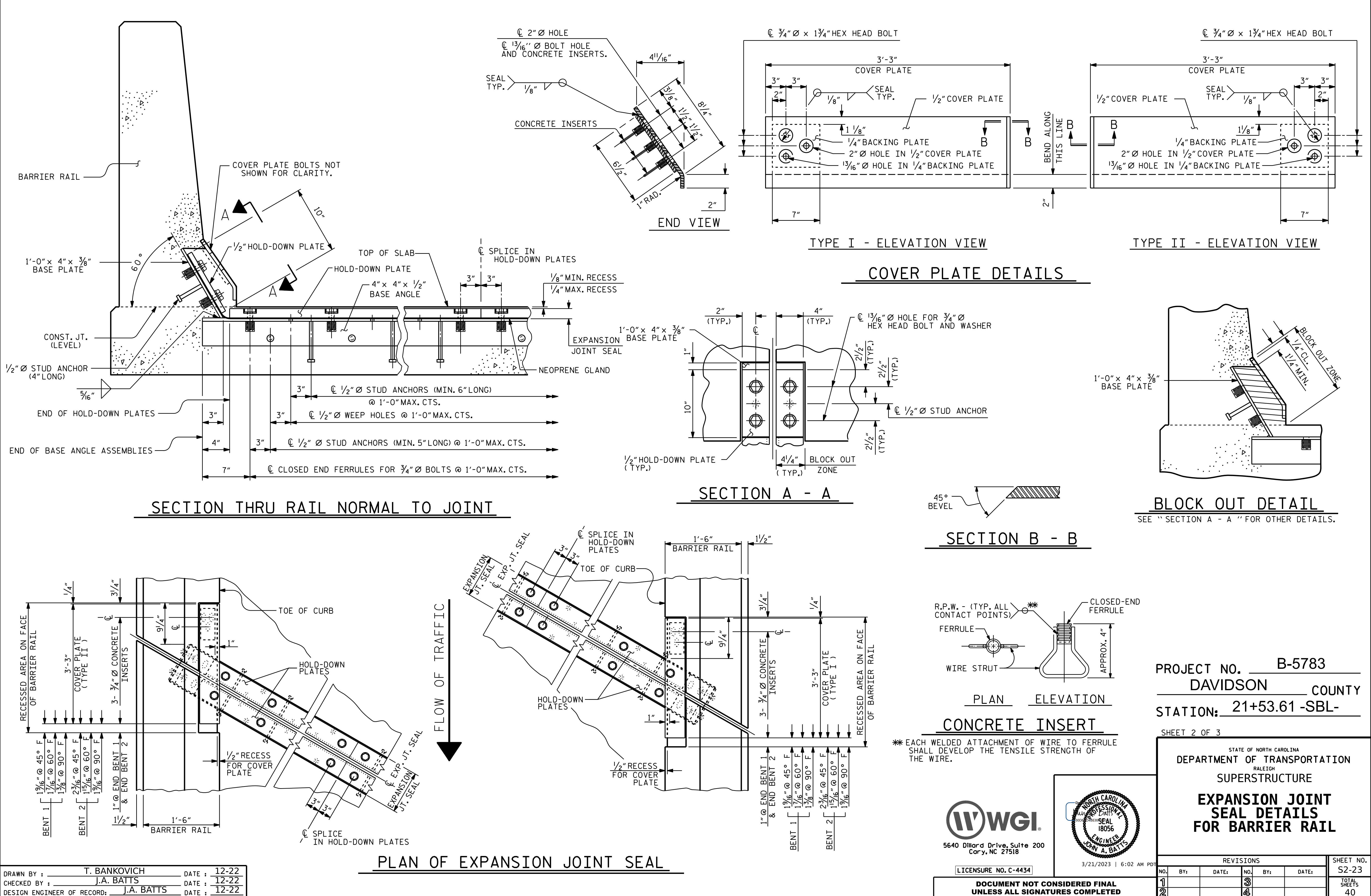
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DAVIDSON COUNTY
STATION: 21+53.61 -SBL-

SHEET 1 OF 3

REVISIONS						SHEET NO. S2-22
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2			4			

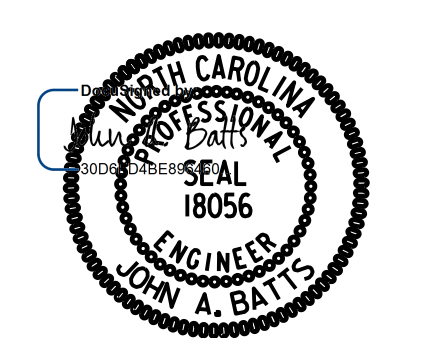
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PLAN OF EXPANSION JOINT SEAL



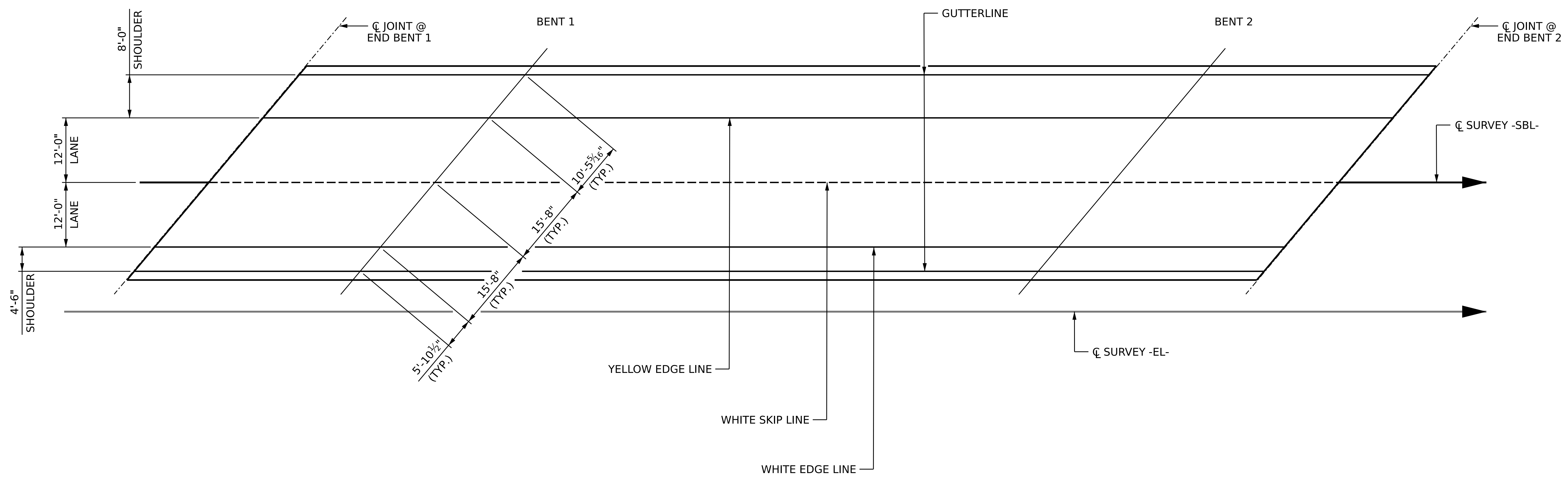
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DAVIDSON COUNTY
 STATION: 21+53.61 -SBL-

SHEET 2 OF 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-23
1			3			TOTAL SHEETS
2			4			40

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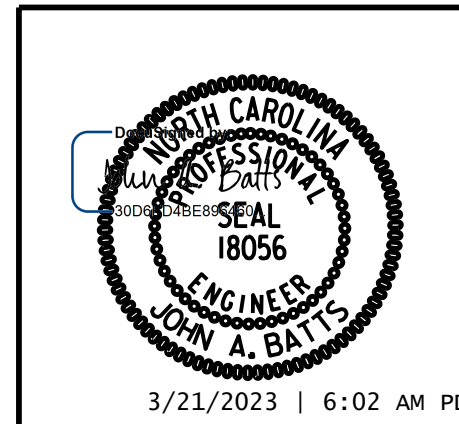


PAVEMENT MARKING SKETCH

PROJECT NO. B-5783
DAVIDSON COUNTY
 STATION: 21+53.61 -SBL-

SHEET 3 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
**EXPANSION JOINT SEAL
 DETAILS FOR
 BARRIER RAIL**

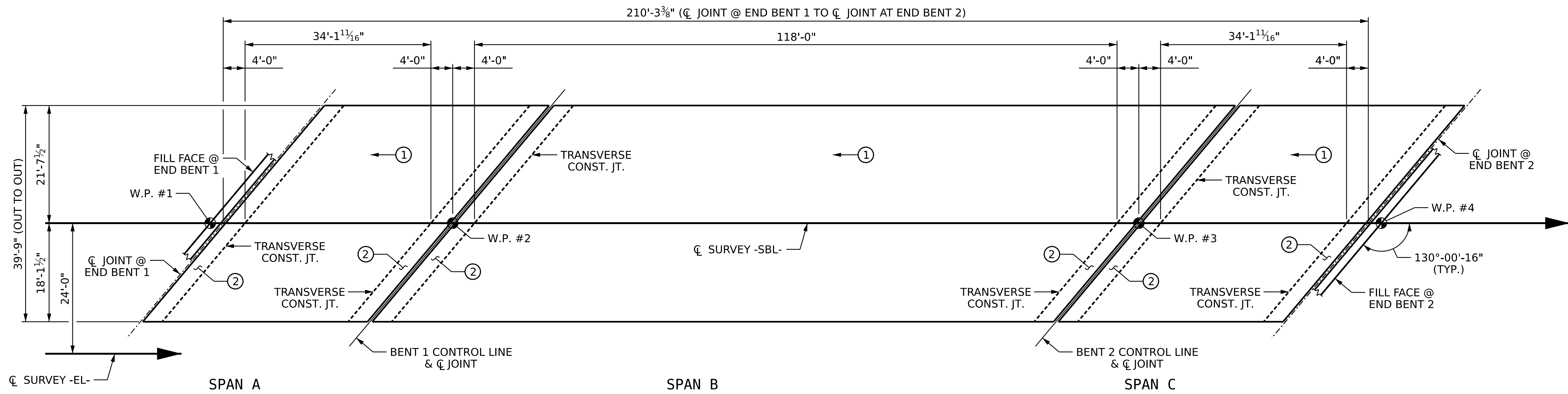
DRAWN BY : S.D. COOPER DATE : 12-22
 CHECKED BY : J.A. BATTS DATE : 12-22
 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE : 12-22



REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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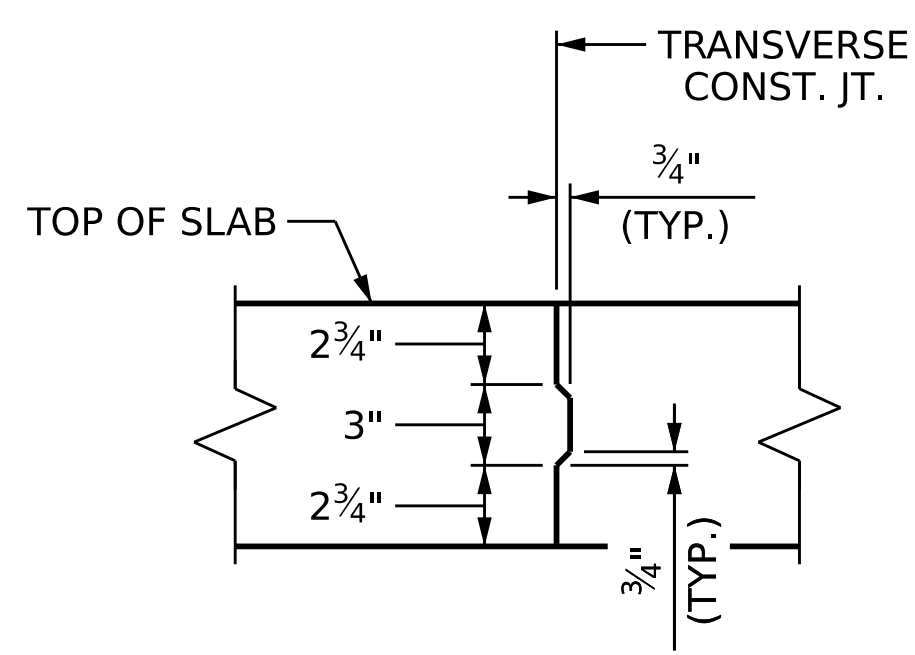
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POUR SEQUENCE AND LAYOUT FOR COMPUTING REINFORCED CONCRETE DECK SLAB AREA

(SQ. FT. 8,359)

← (#) INDICATES POUR NUMBER AND DIRECTION



TRANSVERSE CONSTRUCTION JOINT DETAIL

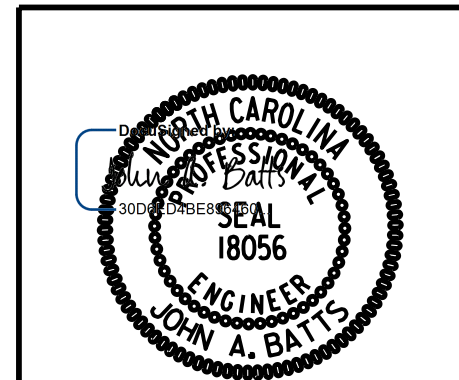
NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT.

PROJECT NO. B-5783
DAVIDSON COUNTY
 STATION: 21+53.61 -SBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
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 SUPERSTRUCTURE

BILL OF MATERIAL



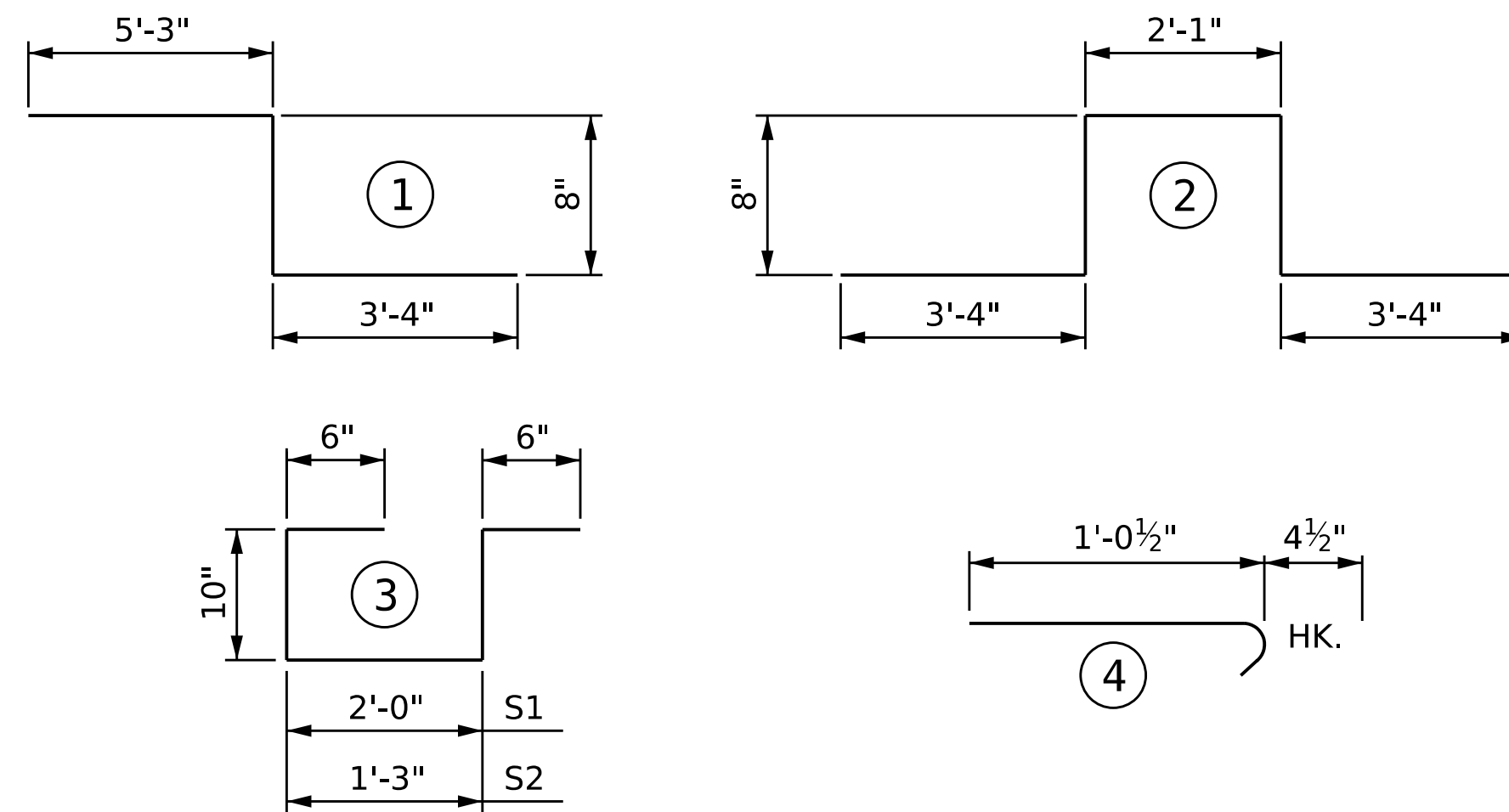
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-25
1			3			TOTAL SHEETS
2			4			40

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BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

SPANS A, B & C

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	213	#5	STR	39'-5"	8757	A210	12	#5	STR	27'-8"	346
A2	219	#5	STR	39'-5"	9003	A211	12	#5	STR	26'-5"	331
* A3	18	#6	STR	20'-7"	556	A212	12	#5	STR	25'-3"	316
A4	18	#6	STR	16'-0"	433	A213	12	#5	STR	24'-1"	301
						A214	12	#5	STR	22'-10"	286
* A101	12	#5	STR	38'-4"	480	A215	12	#5	STR	21'-8"	271
* A102	12	#5	STR	37'-2"	465	A216	12	#5	STR	20'-6"	257
* A103	12	#5	STR	36'-0"	451	A217	12	#5	STR	19'-3"	241
* A104	12	#5	STR	34'-9"	435	A218	12	#5	STR	18'-1"	226
* A105	12	#5	STR	33'-7"	420	A219	12	#5	STR	16'-11"	212
* A106	12	#5	STR	32'-5"	406	A220	12	#5	STR	15'-9"	197
* A107	12	#5	STR	31'-2"	390	A221	12	#5	STR	14'-6"	181
* A108	12	#5	STR	30'-0"	375	A222	12	#5	STR	13'-4"	167
* A109	12	#5	STR	28'-10"	361	A223	12	#5	STR	12'-2"	152
* A110	12	#5	STR	27'-8"	346	A224	12	#5	STR	10'-11"	137
* A111	12	#5	STR	26'-5"	331	A225	12	#5	STR	9'-9"	122
* A112	12	#5	STR	25'-3"	316	A226	12	#5	STR	8'-7"	107
* A113	12	#5	STR	24'-1"	301	A227	12	#5	STR	7'-4"	92
* A114	12	#5	STR	22'-10"	286	A228	12	#5	STR	6'-2"	77
* A115	12	#5	STR	21'-8"	271	A229	12	#5	STR	5'-0"	63
* A116	12	#5	STR	20'-6"	257	A230	12	#5	STR	3'-10"	48
* A117	12	#5	STR	19'-3"	241	A231	12	#5	STR	2'-7"	32
* A118	12	#5	STR	18'-1"	226						
* A119	12	#5	STR	16'-11"	212	B1	108	#5	STR	41'-7"	4684
* A120	12	#5	STR	15'-9"	197	B2	162	#5	STR	43'-2"	7294
* A121	12	#5	STR	14'-6"	181	* B3	120	#4	STR	21'-10"	1750
* A122	12	#5	STR	13'-4"	167	* B4	120	#4	STR	32'-10"	2632
* A123	12	#5	STR	12'-2"	152						
* A124	12	#5	STR	10'-11"	137	* G1	6	#5	STR	51'-6"	322
* A125	12	#5	STR	9'-9"	122						
* A126	12	#5	STR	8'-7"	107	* J1	312	#4	4	1'-5"	295
* A127	12	#5	STR	7'-4"	92						
* A128	12	#5	STR	6'-2"	77	* K1	36	#5	1	9'-3"	347
* A129	12	#5	STR	5'-0"	63	* K2	72	#5	STR	10'-3"	770
* A130	12	#5	STR	3'-10"	48	* K3	54	#5	2	10'-1"	568
* A131	12	#5	STR	2'-7"	32						
						* S1	56	#4	3	4'-8"	175
A201	12	#5	STR	38'-4"	480	* S2	112	#4	3	3'-11"	293
A202	12	#5	STR	37'-2"	465						
A203	12	#5	STR	36'-0"	451						
A204	12	#5	STR	34'-9"	435						
A205	12	#5	STR	33'-7"	420						
A206	12	#5	STR	32'-5"	406						
A207	12	#5	STR	31'-2"	390						
A208	12	#5	STR	30'-0"	375						
A209	12	#5	STR	28'-10"	361						

BAR SIZE	SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS				
	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"	--	--	--

GROOVING BRIDGE FLOORS	
APPROACH SLABS	1,570 SQ. FT.
BRIDGE DECK	6,895 SQ. FT.
TOTAL	8,465 SQ. FT.

SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	CY	LB	LB
POUR 1	223.6	--	--
POUR 2	43.1	--	--
TOTAL **	266.7	29,359	24,410

** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

PROJECT NO. B-5783
DAVIDSON COUNTY
STATION: 21+53.61 -SBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

BILL OF MATERIAL

REVISIONS

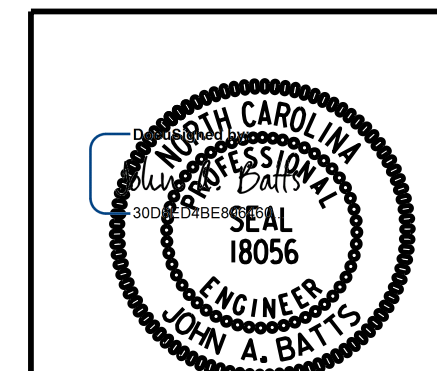
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SHEET NO.
S2-26
TOTAL SHEETS
40



5640 Dilard Drive, Suite 200
Cary, NC 27518

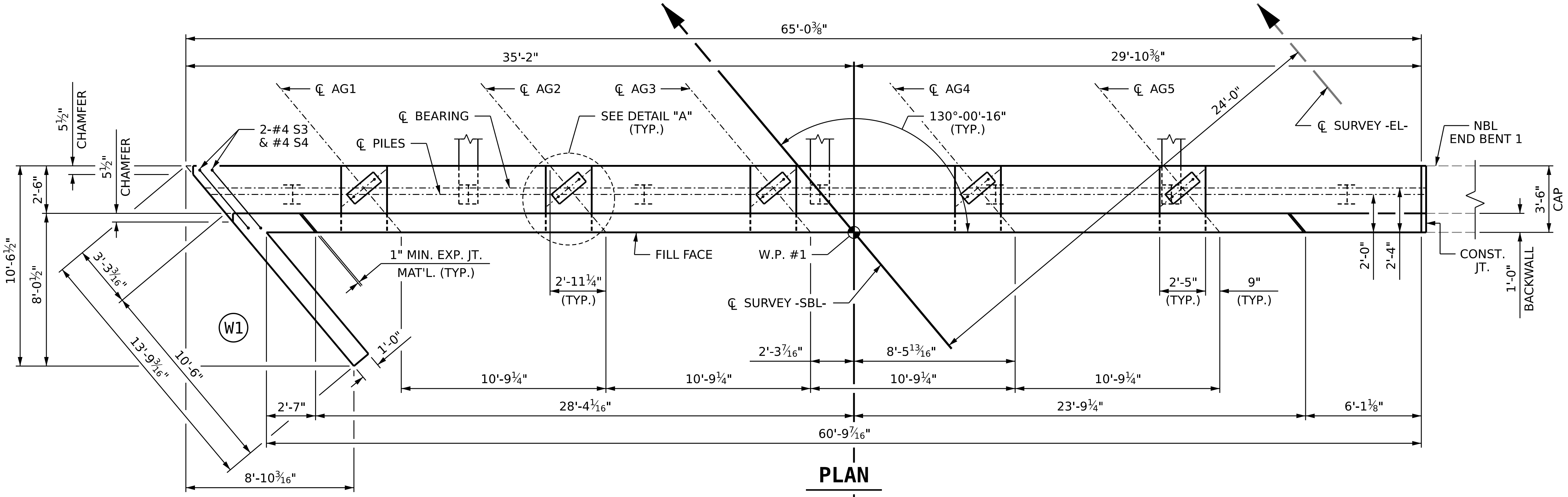
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3/21/2023 | 6:02 AM PD

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PLAN

NOTES:

STIRRUPS AND "U" BARS IN 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 EXPECT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE 2%.

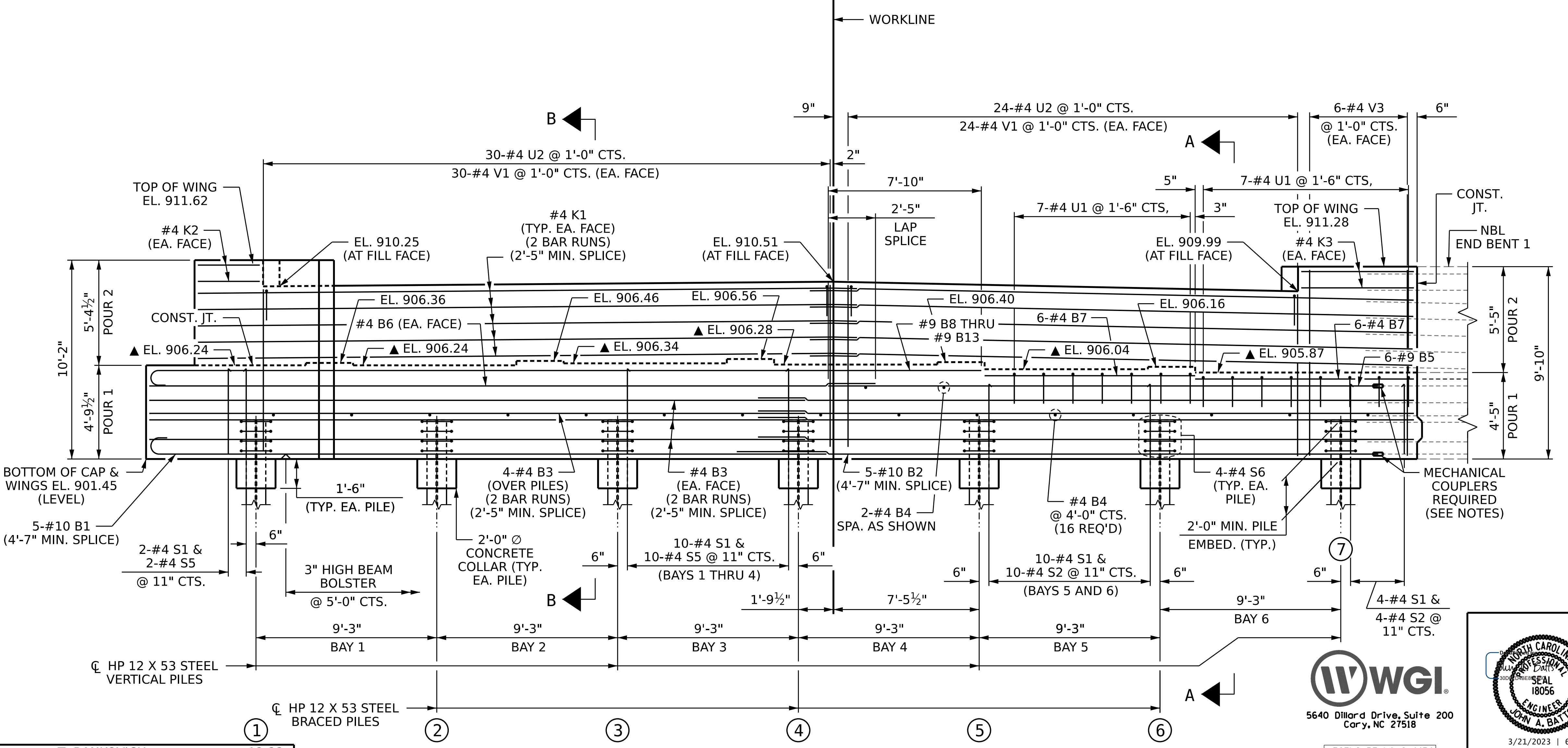
SEE GENERAL DRAWING "FOUNDATION LAYOUT" FOR ADDITIONAL NOTES FOR DRIVING PILES.

▲ FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTION A-A AND SECTION B-B ON SHEET 3 OF 3.

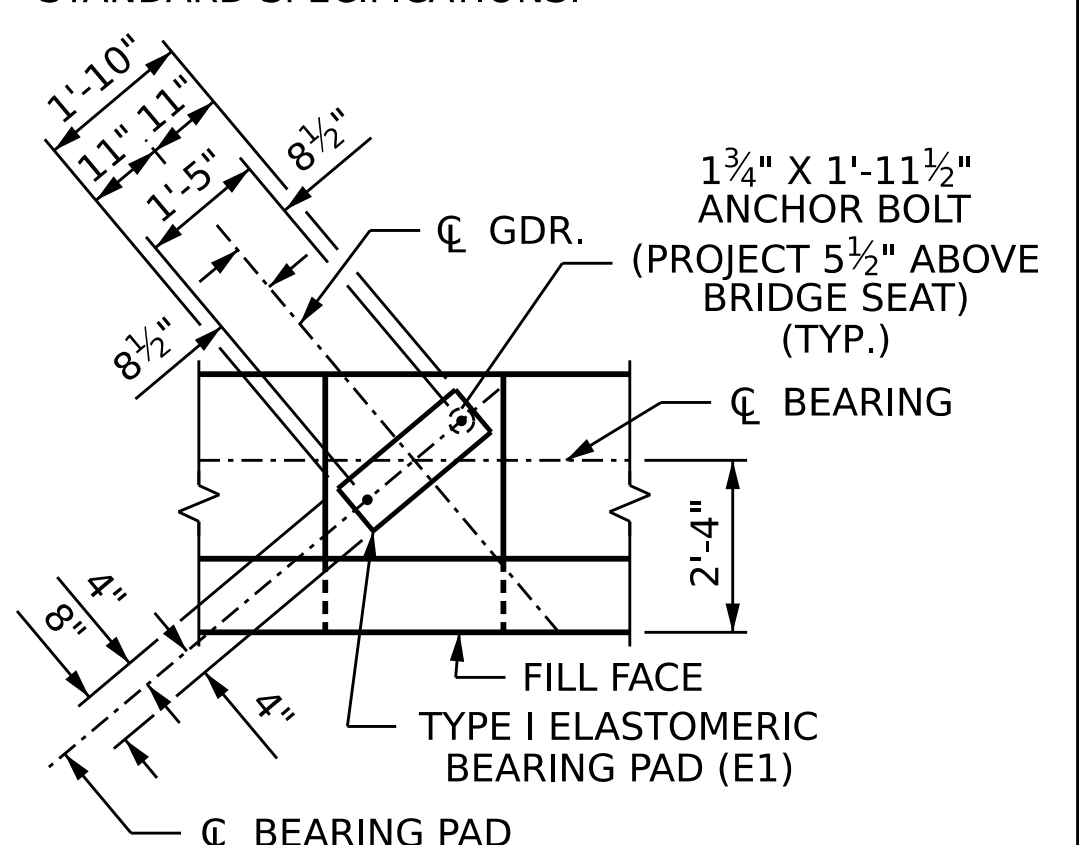
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LENGTHS OF THE #9 AND THE #10 "B" BARS AT THE CONSTRUCTION JOINT MAY NEED TO BE ADJUSTED DUE TO THE TYPE OF MECHANICAL BUTT SPLICE CHOSEN BY THE CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY ADJUSTMENTS.

MECHANICAL COUPLERS SHALL BE USED TO JOIN THE #9 AND #10 "B" BARS FROM SBL END BENT 1 WITH THE #9 AND #10 "B" BARS IN NBL END BENT 1. THE LOCATIONS OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 1 FOOT AND SBL END BENT 1 BARS SHALL BE CUT ACCORDINGLY TO ALLOW A MINIMUM OF 1'-0" AND A MAXIMUM OF 2'-0" EXTENSION INTO NBL END BENT 1.

FOR MECHANICAL COUPLERS, SEE MECHANICAL BUTT SPLICE FOR REINFORCING STEEL IN STANDARD SPECIFICATIONS.



ELEVATION



DETAIL "A"

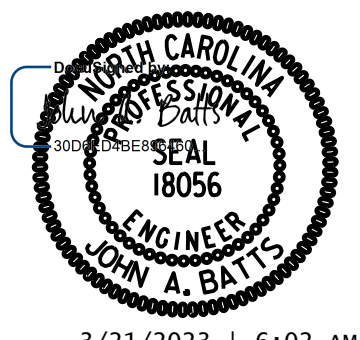
(TYP. EA. GIRDER)

PROJECT NO. **B-5783**

DAVIDSON COUNTY

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SHEET 1 OF 3



STATE OF NORTH CAROLINA
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RALEIGH
SUBSTRUCTURE

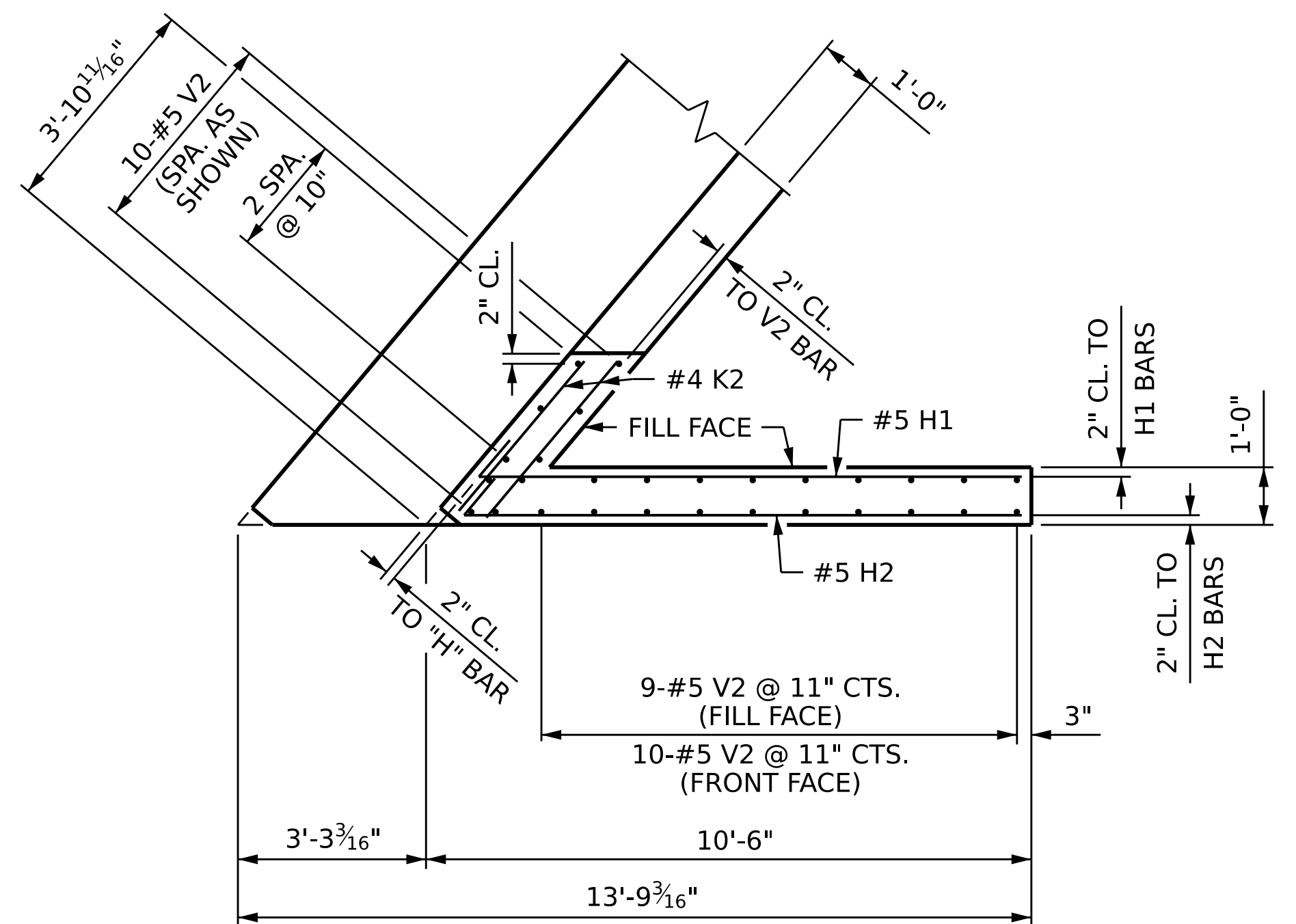
END BENT 1

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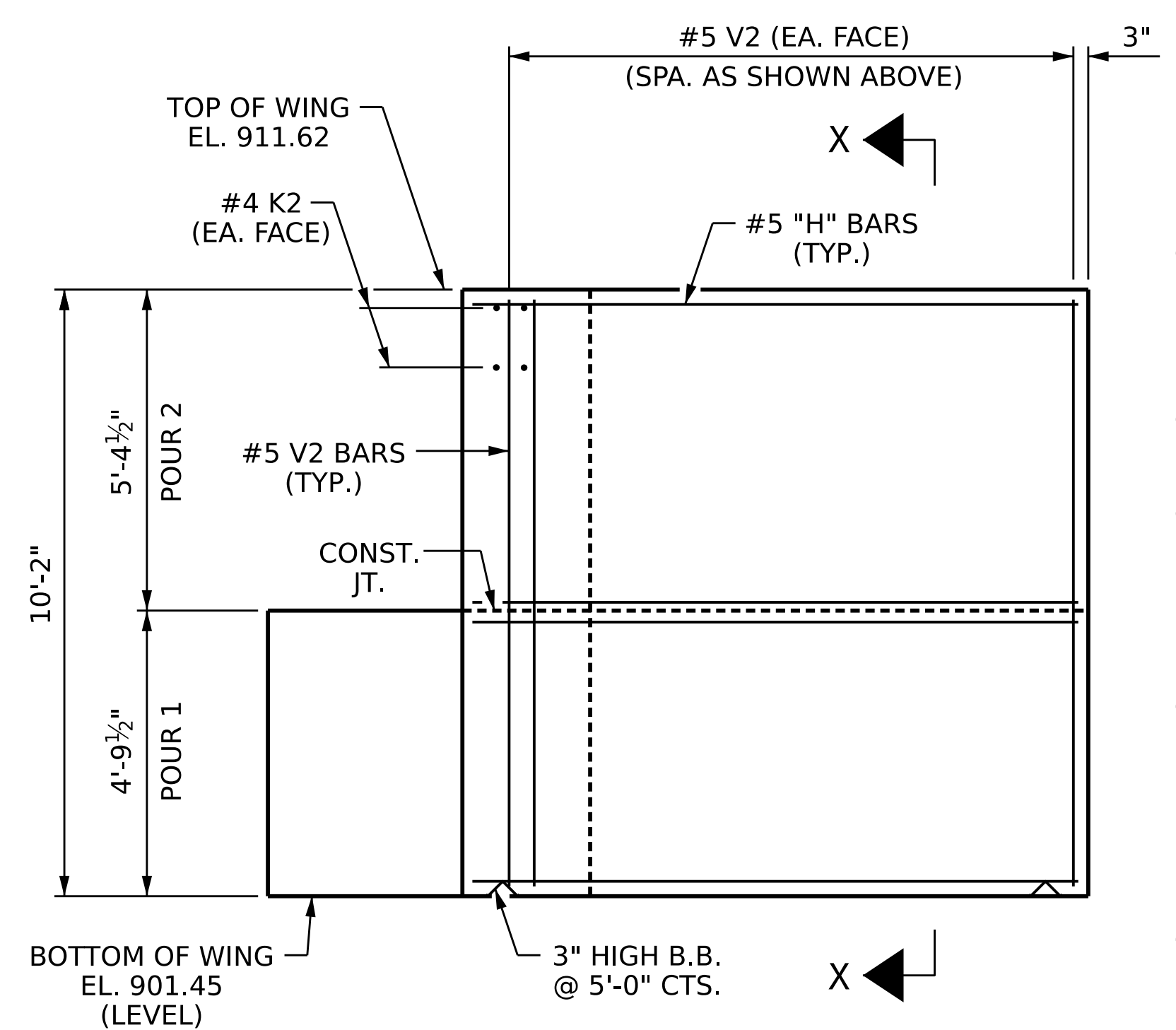
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NO.	BY:	DATE:	TOTAL SHEETS
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2			
3			
4			

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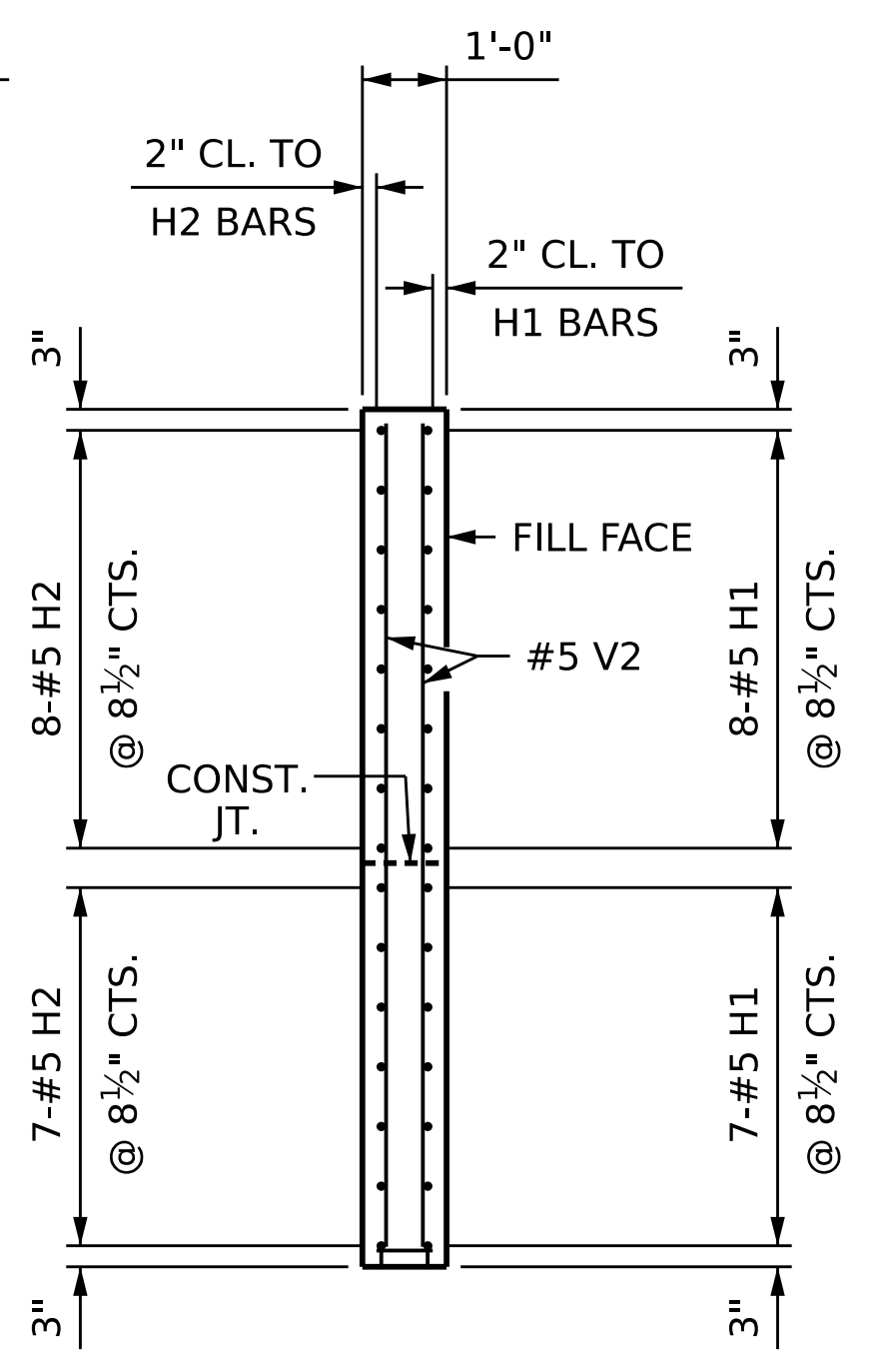
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PLAN OF WING (W1)



ELEVATION OF WING (W1)



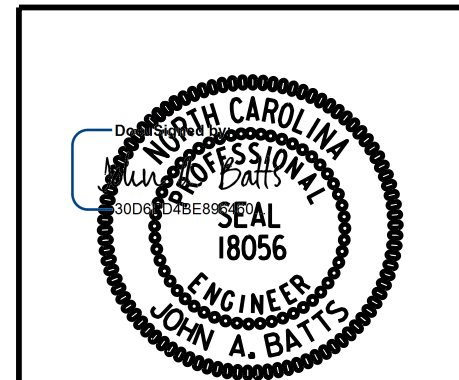
SECTION X-X

PROJECT NO. B-5783
DAVIDSON COUNTY
 STATION: 21+53.61 -SBL-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT 1



W WGI
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 Cary, NC 27518

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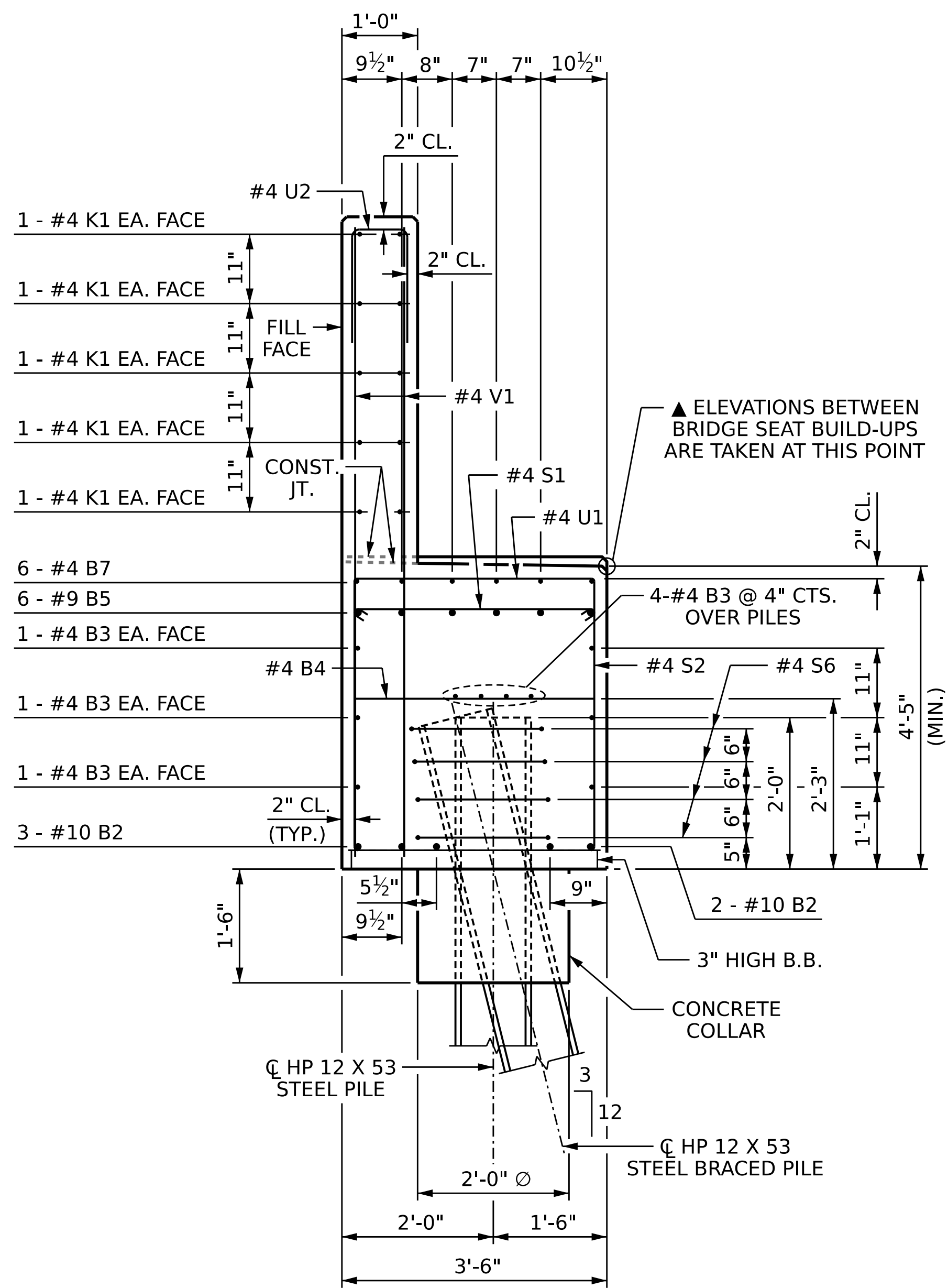
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CHECKED BY :	J.A. BATTS	DATE :	12-22
DESIGN ENGINEER OF RECORD:	J.A. BATTS	DATE :	12-22

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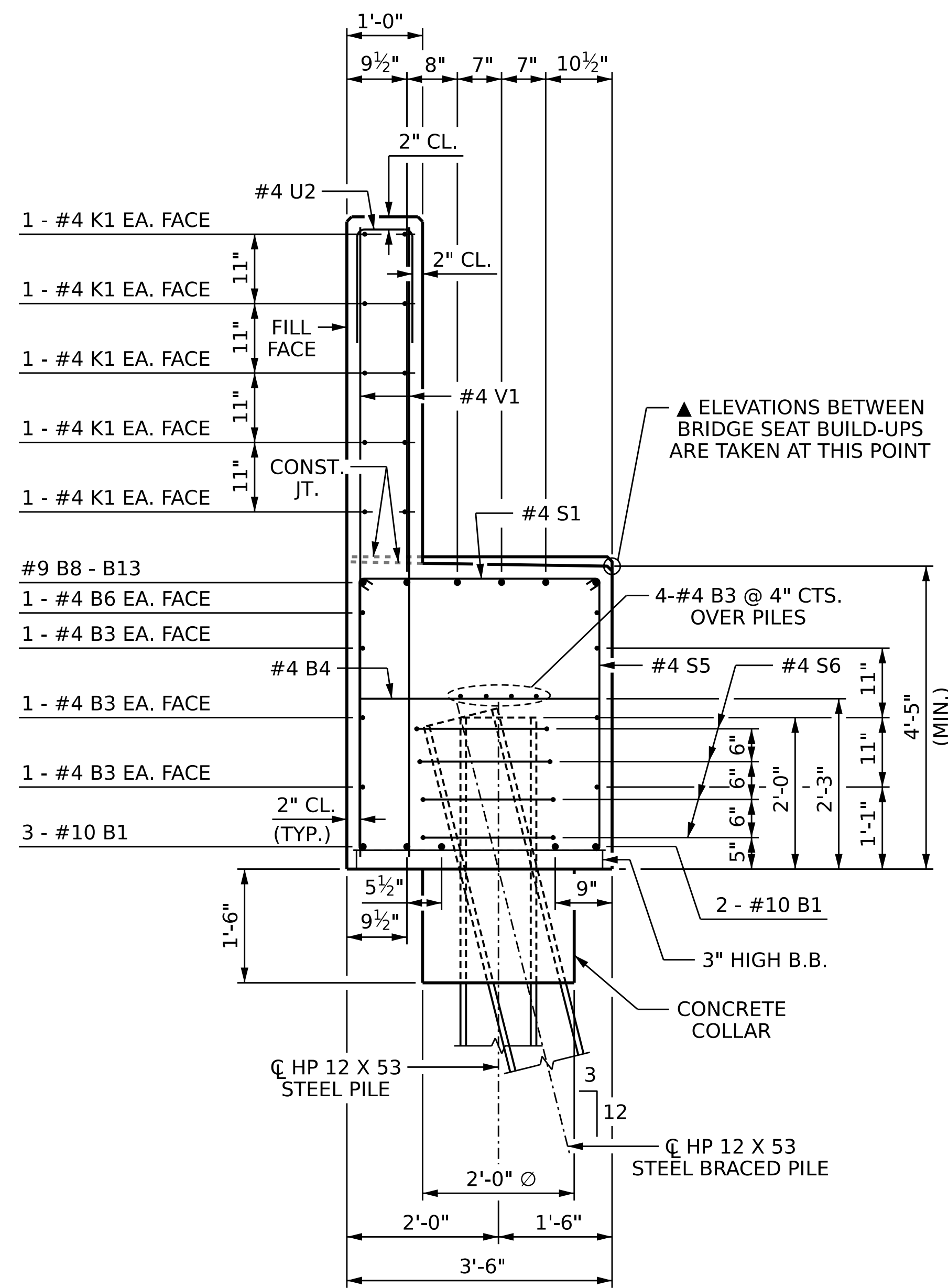
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SHEET NO.	S2-28

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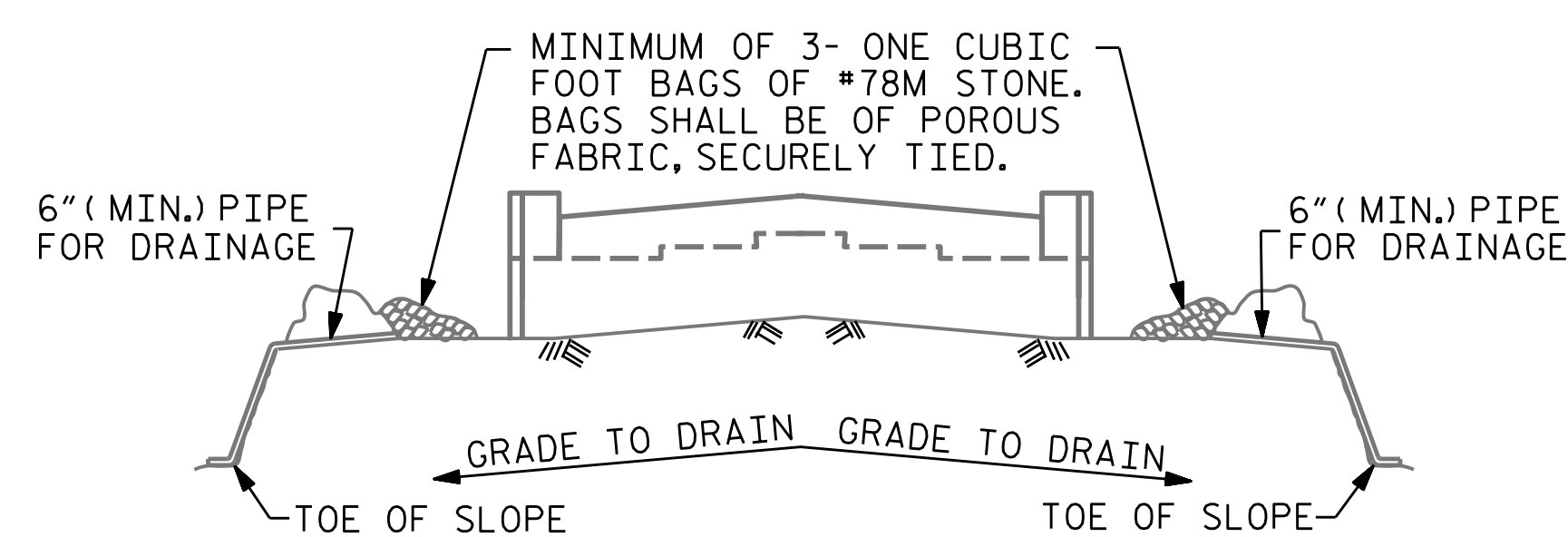
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SECTION A-A



SECTION B-B



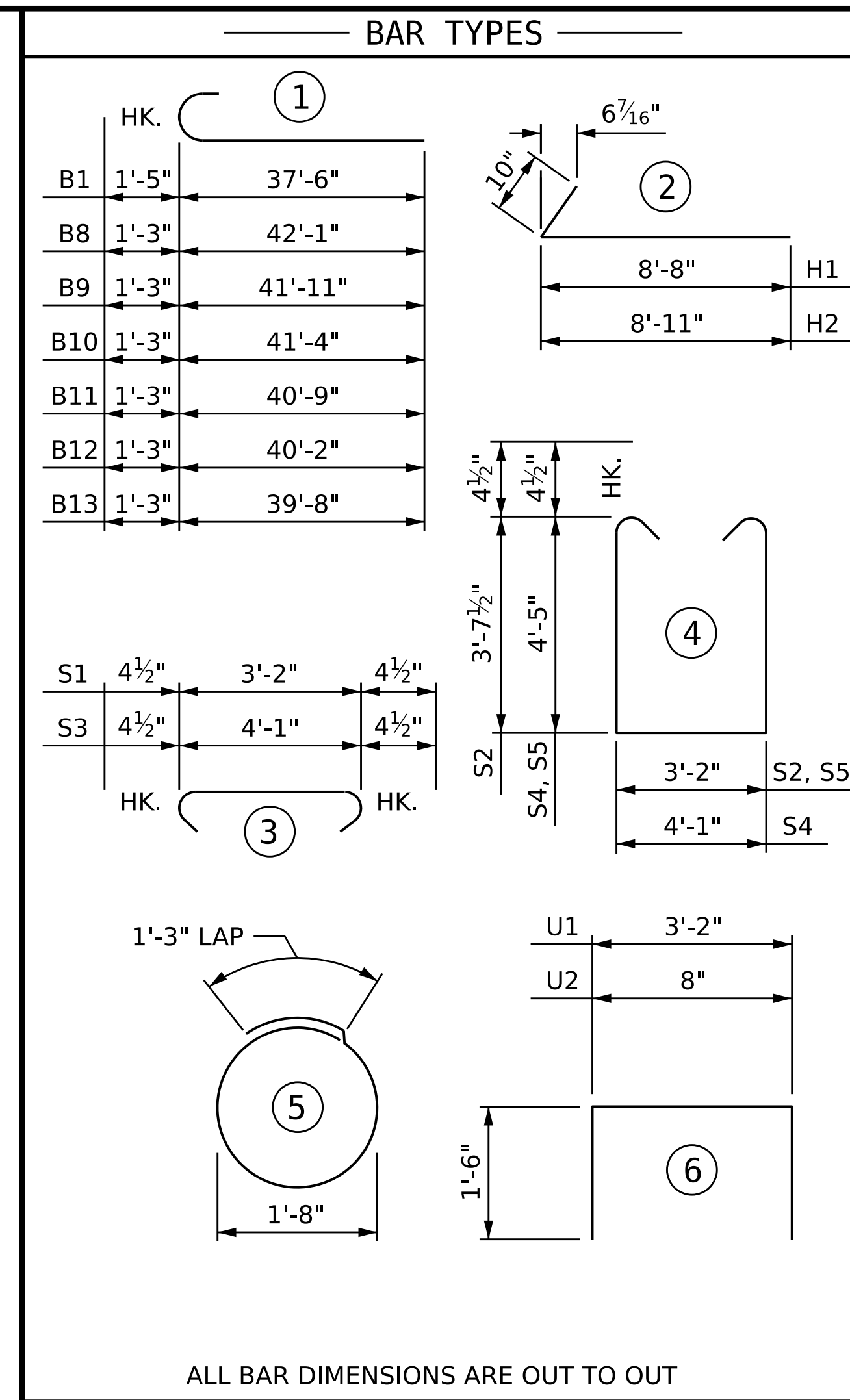
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

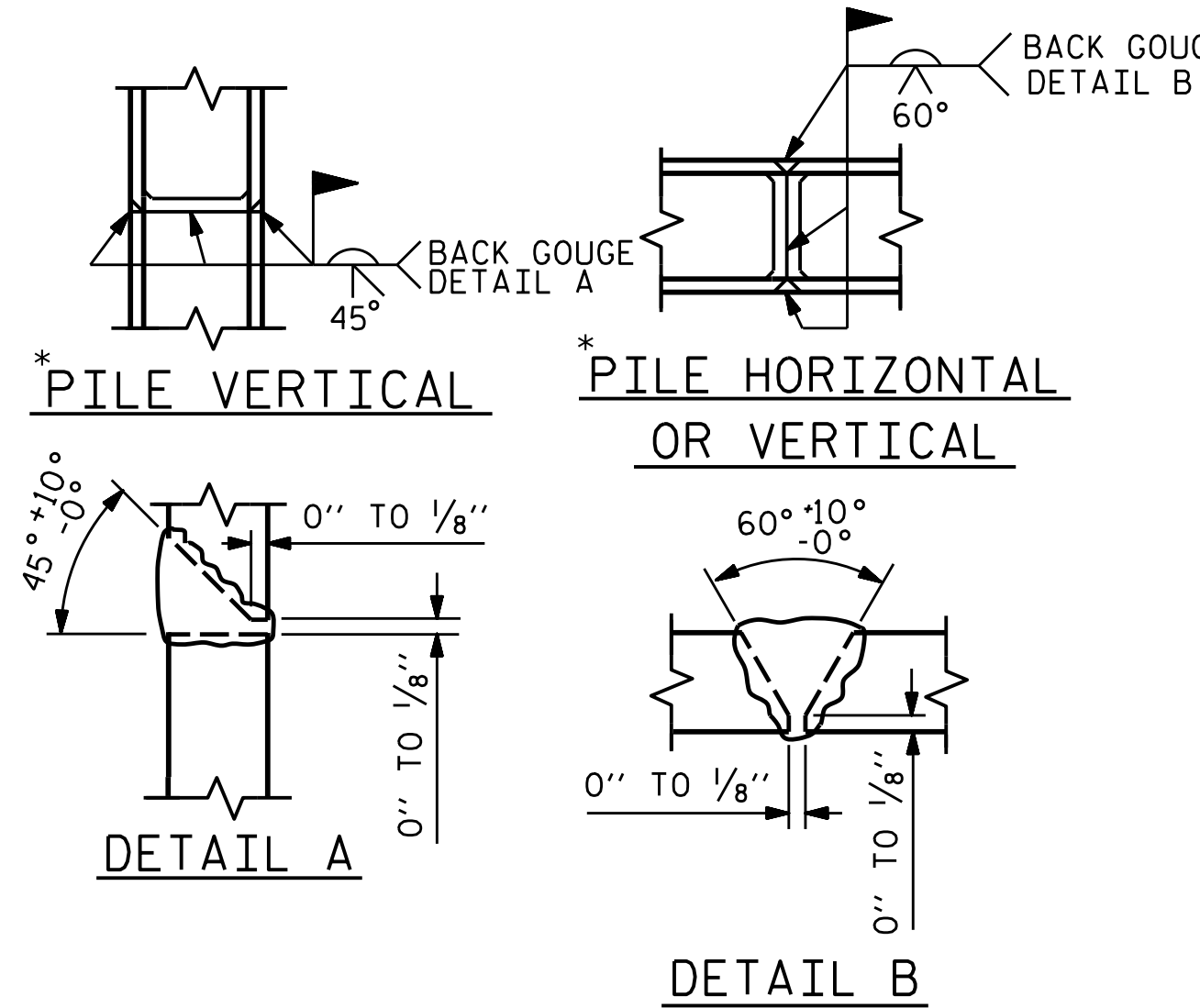
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

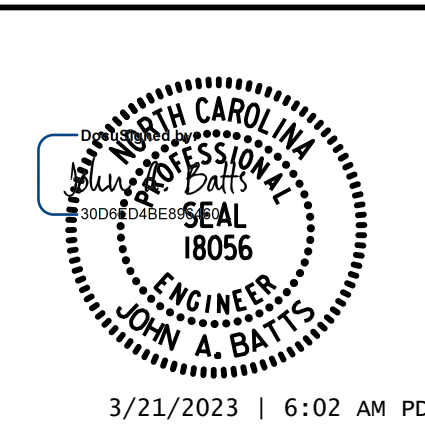
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 DESIGN ENGINEER OF RECORD : J.A. BATTS DATE : 12-22



ALL BAR DIMENSIONS ARE OUT TO OUT



PILE SPLICE DETAILS



BILL OF MATERIAL					
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#10	1	38'-11"	837
B2	5	#10	STR	31'-2"	671
B3	20	#4	STR	33'-6"	448
B4	18	#4	STR	3'-2"	38
B5	6	#9	STR	29'-2"	595
B6	2	#4	STR	37'-4"	50
B7	12	#4	STR	10'-9"	86
B8	1	#9	1	43'-4"	147
B9	1	#9	1	43'-2"	147
B10	1	#9	1	42'-7"	145
B11	1	#9	1	42'-0"	143
B12	1	#9	1	41'-5"	141
B13	1	#9	1	40'-11"	139
H1	15	#5	2	9'-6"	149
H2	15	#5	2	9'-9"	153
K1	20	#4	STR	32'-6"	434
K2	4	#4	STR	3'-2"	8
K3	4	#4	STR	6'-0"	16
S1	66	#4	3	3'-11"	173
S2	24	#4	4	11'-2"	179
S3	2	#4	3	4'-10"	6
S4	2	#4	4	13'-8"	18
S5	42	#4	4	12'-9"	358
S6	28	#4	5	6'-6"	122
U1	14	#4	6	6'-2"	58
U2	54	#4	6	3'-8"	132
V1	108	#4	STR	8'-2"	589
V2	29	#5	STR	9'-10"	297
V3	12	#4	STR	9'-6"	76
TOTAL REINFORCING STEEL					6355 LB
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP & LOWER WING)					41.0 CY
POUR 2 (BACKWALL & UPPER WING)					11.0 CY
TOTAL CLASS A CONCRETE					52.0 CY

PROJECT NO. B-5783
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SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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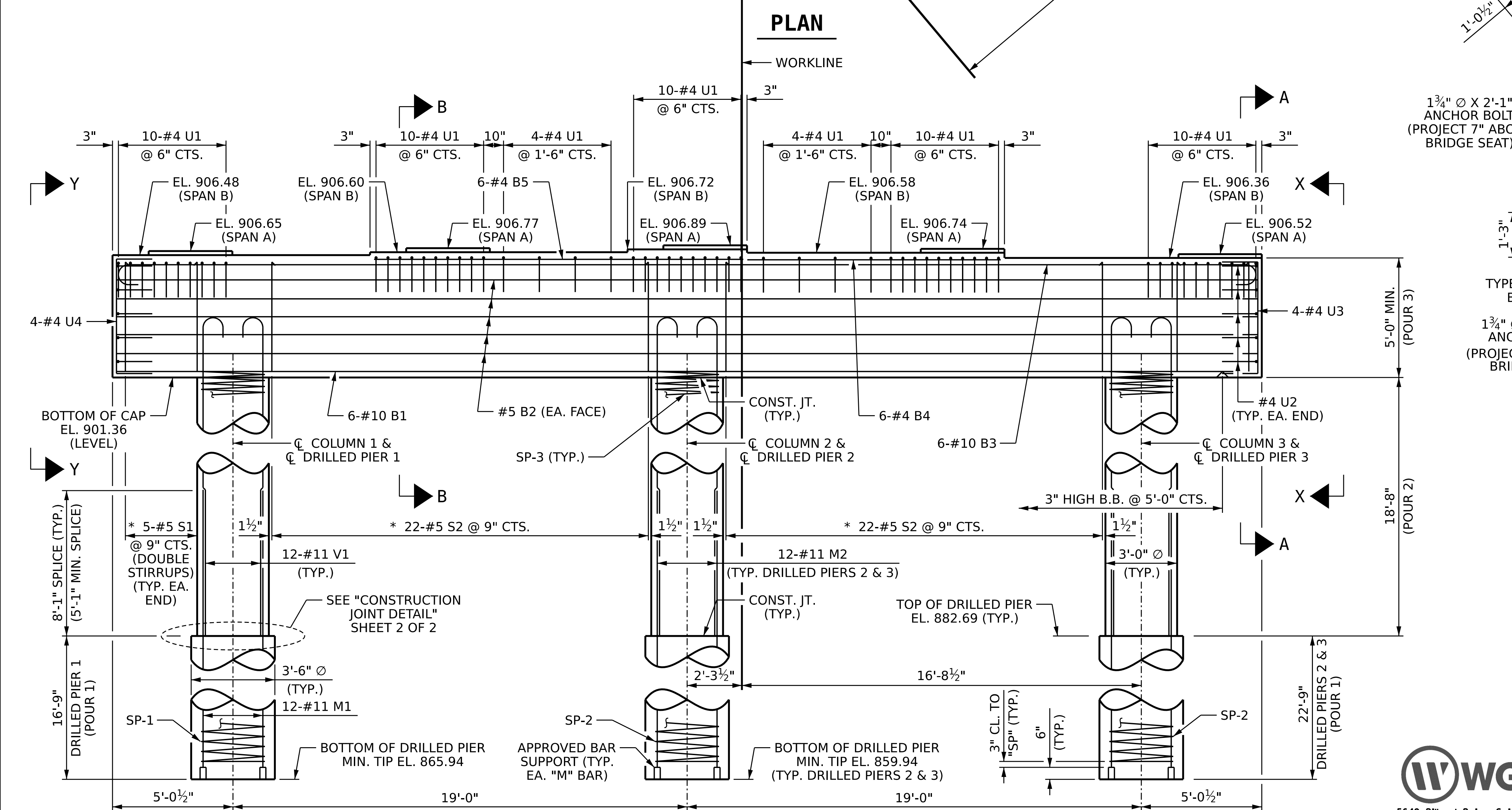
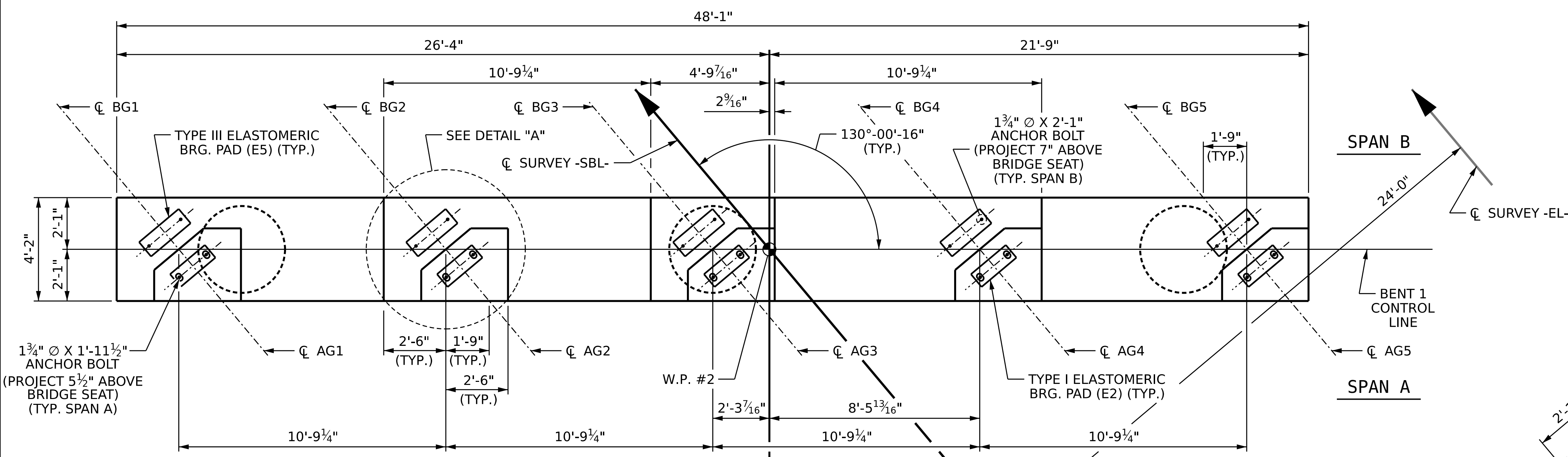
END BENT 1

REVISIONS					
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SHEET NO. **S2-29**
 TOTAL SHEETS 40

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NOTES:

STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

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

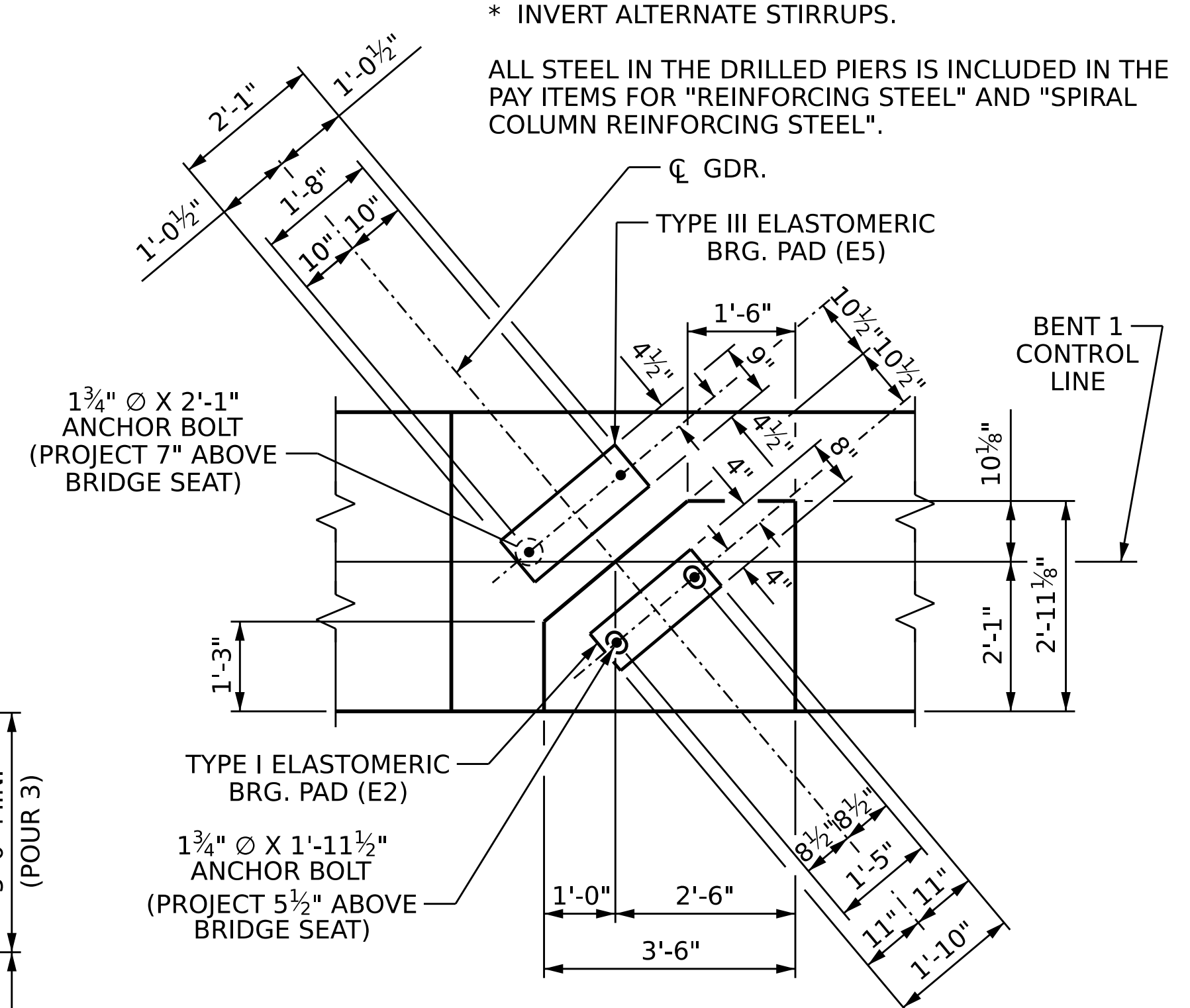
THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON THE APPROXIMATE GROUND LINE ELEVATION. THE TOP OF DRILLED PIER SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN THE DRILLED PIER 1 FOOT BELOW THE GROUND LINE ELEVATION.

* INVERT ALTERNATE STIRRUPS.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL".

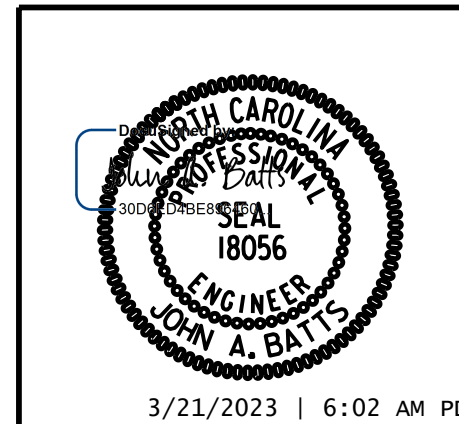


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DAVIDSON COUNTY
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SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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BENT 1



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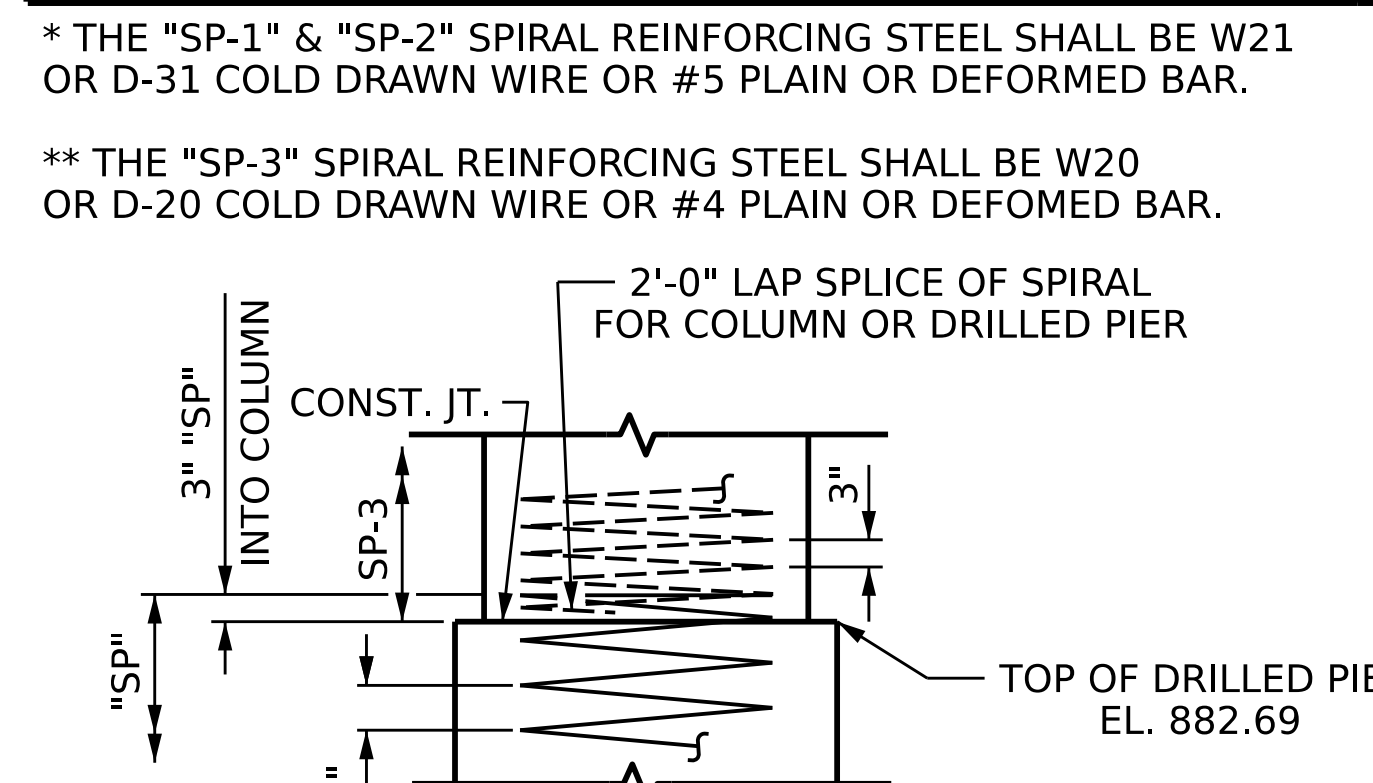
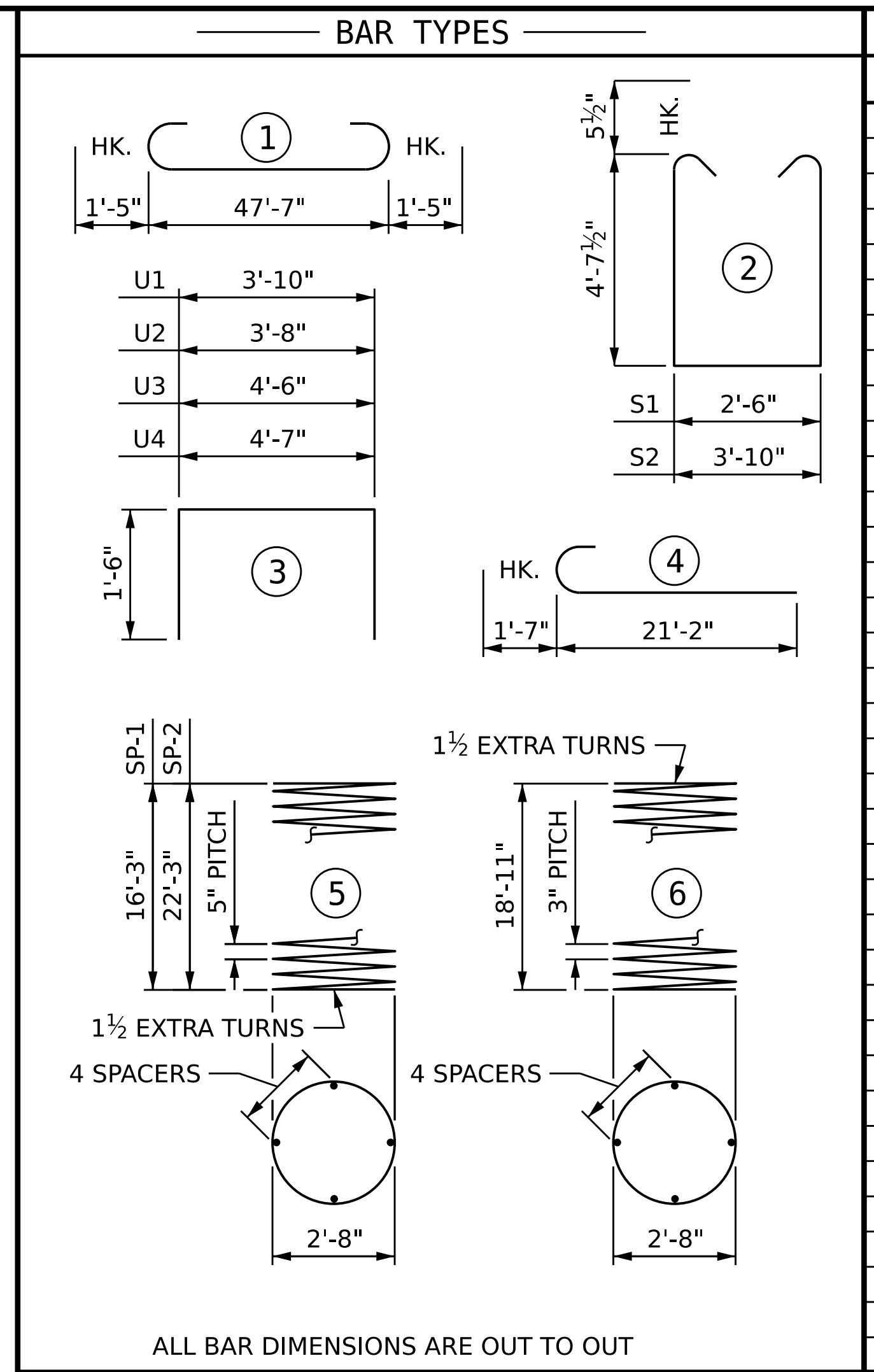
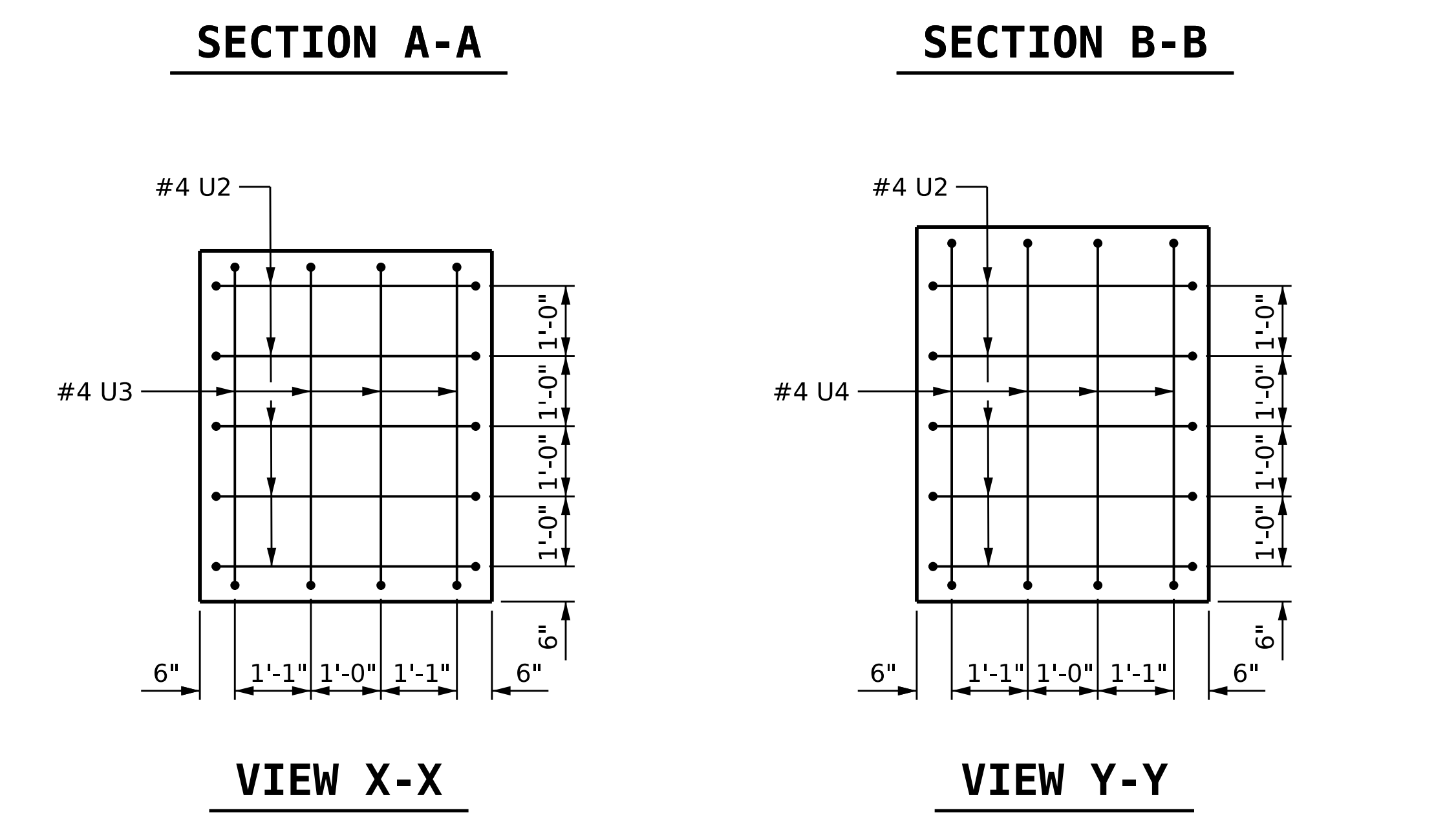
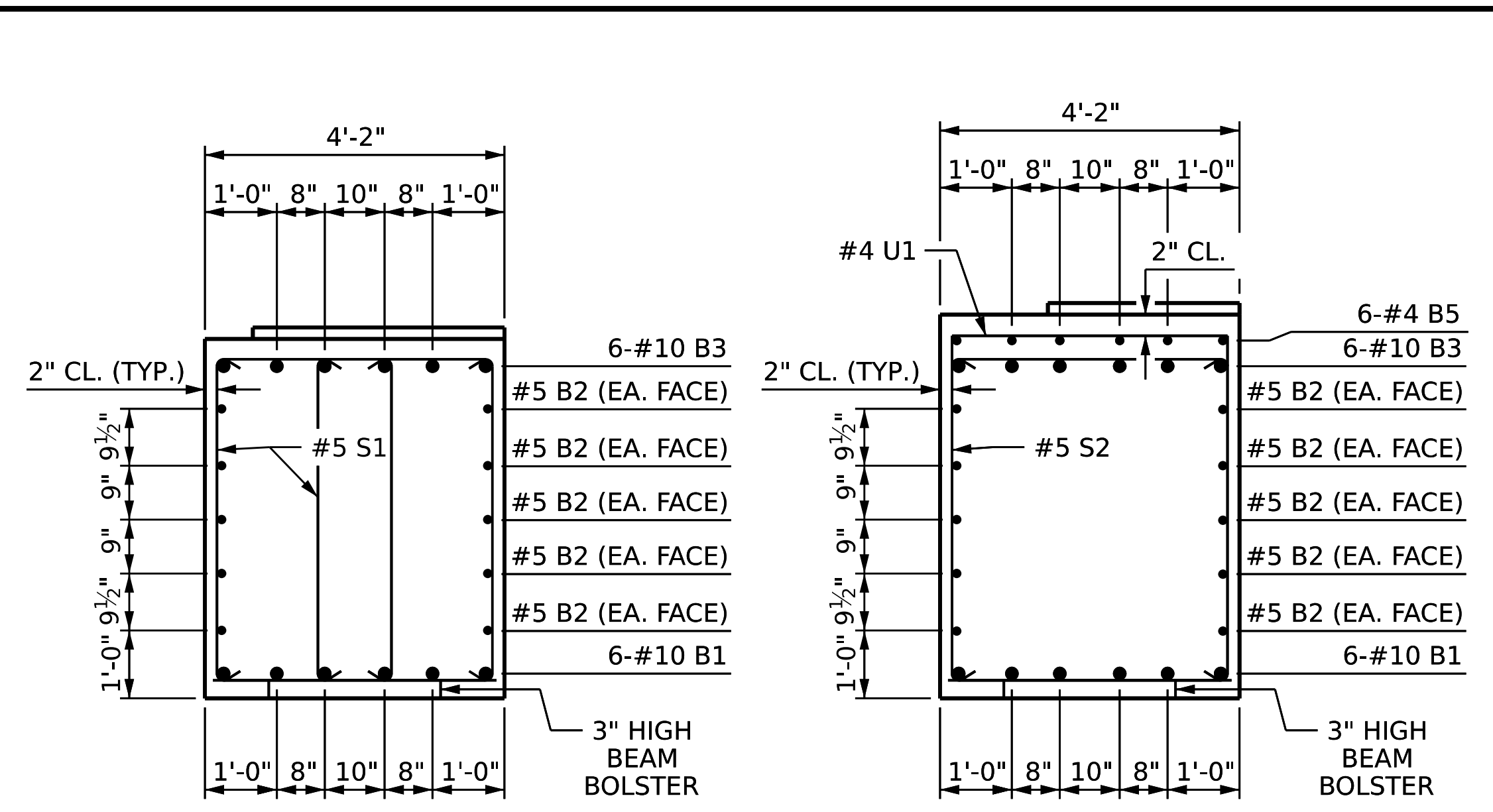
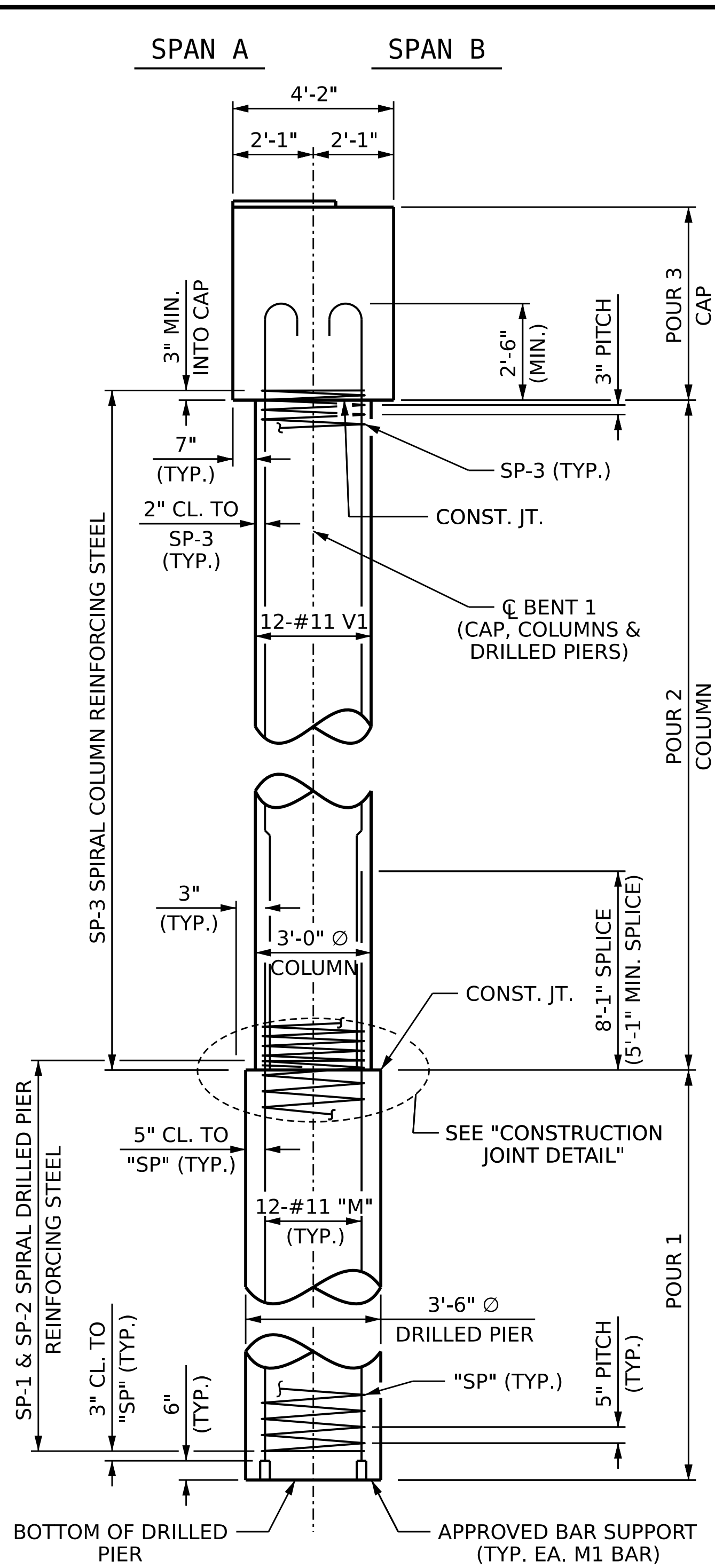
(DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED)

REVISIONS				SHEET NO.	
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2			4		

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TOTAL SHEETS: 40

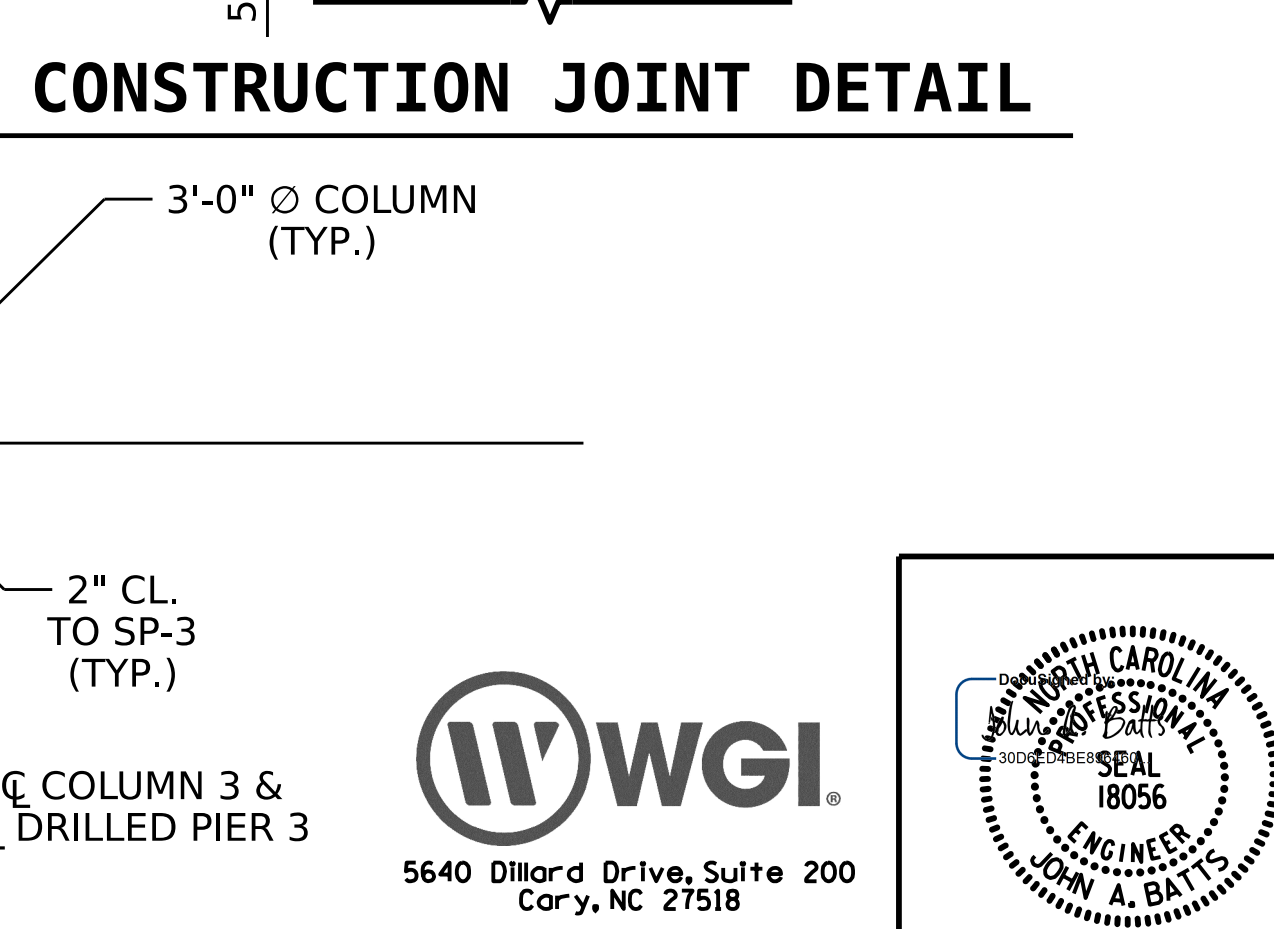
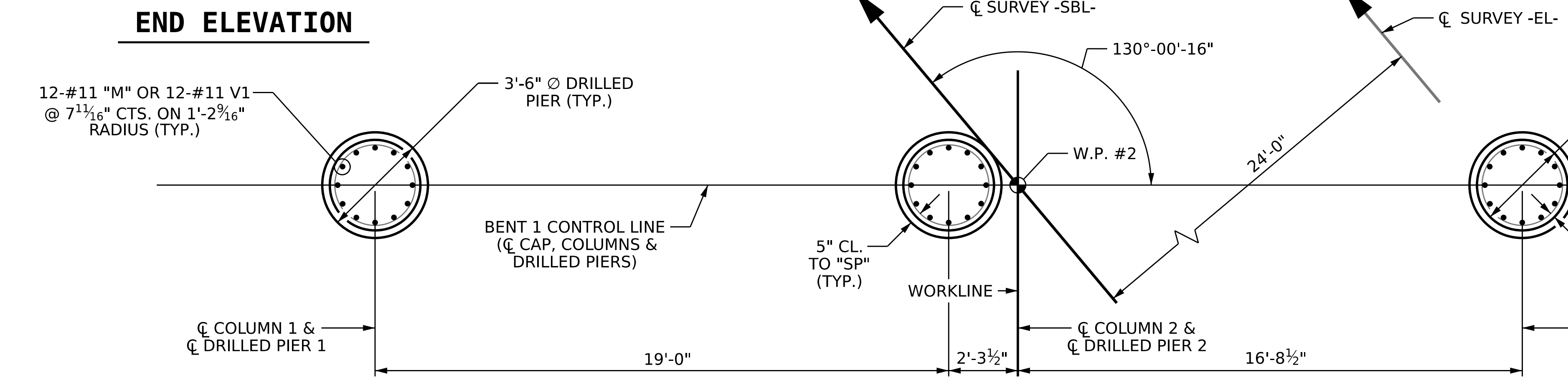
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BILL OF MATERIAL					
BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	STR	47'-9"	1233
B2	10	#5	STR	47'-9"	498
B3	6	#10	1	50'-5"	1302
B4	6	#4	STR	10'-7"	42
B5	6	#4	STR	15'-5"	62
M1	12	#11	STR	24'-4"	1551
M2	24	#11	STR	30'-4"	3868
S1	20	#5	2	12'-8"	264
S2	44	#5	2	14'-0"	642
U1	58	#4	3	6'-10"	265
U2	10	#4	3	6'-8"	45
U3	4	#4	3	7'-6"	20
U4	4	#4	3	7'-7"	20
V1	36	#11	4	22'-9"	4351
SP-1	1	*	5	337'-3"	352
SP-2	2	*	5	452'-5"	944
SP-3	3	**	6	643'-7"	1290
REINFORCING STEEL					14163 LB
SPIRAL COL. REINF. STEEL					2586 LB
CLASS "A" CONCRETE BREAKDOWN					
POUR 2 (COLUMNS)					14.7 CY
POUR 3 (CAP)					38.6 CY
TOTAL					53.3 CY
DRILLED PIERS:					
DRILLED PIER CONCRETE					
POUR 1 (DRILLED PIERS)					22.2 CY

* THE "SP-1" & "SP-2" SPIRAL REINFORCING STEEL SHALL BE W21 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

** THE "SP-3" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.



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SHEET 2 OF 2

STATE OF NORTH CAROLINA
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RALEIGH
SUBSTRUCTURE

BENT 1

REVISIONS

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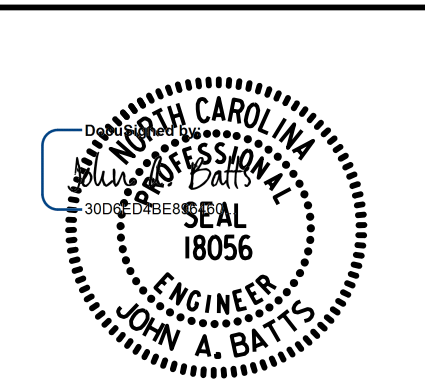
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TOTAL SHEETS 40

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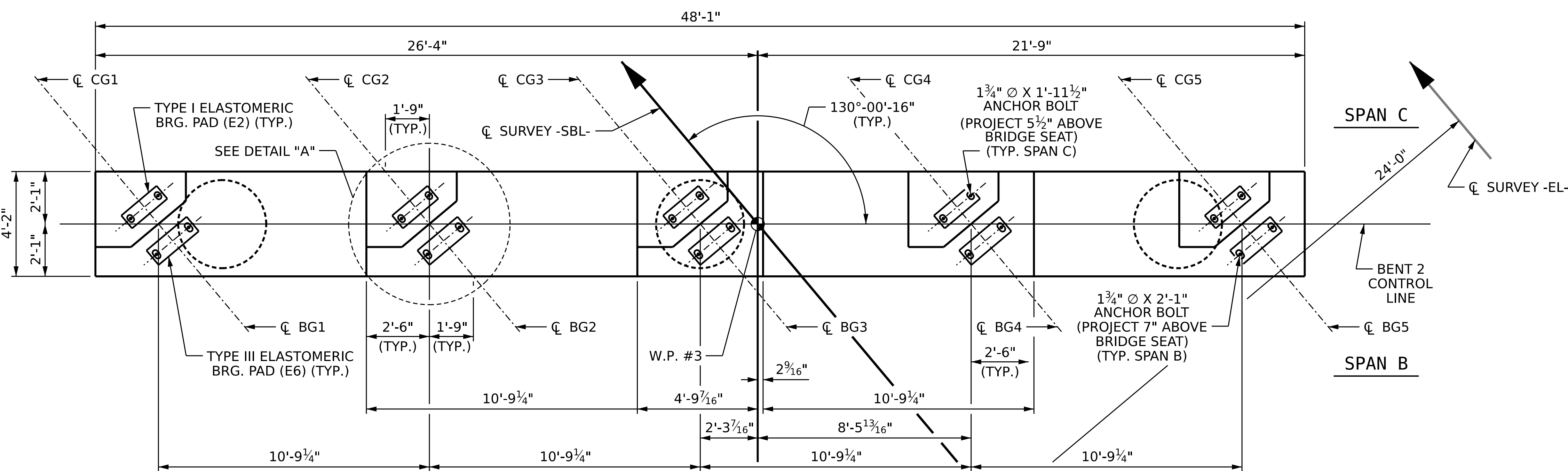


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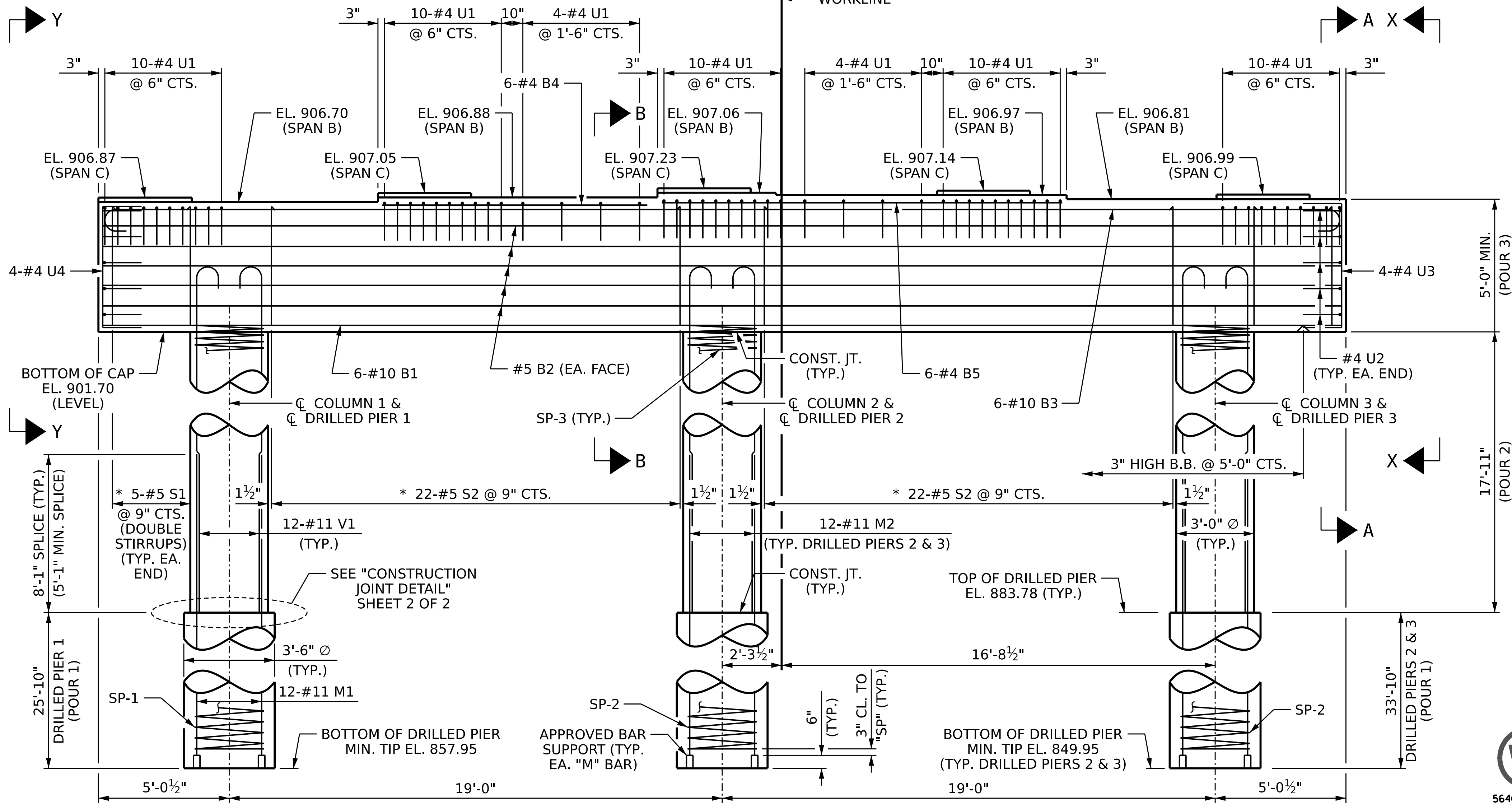
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PLAN

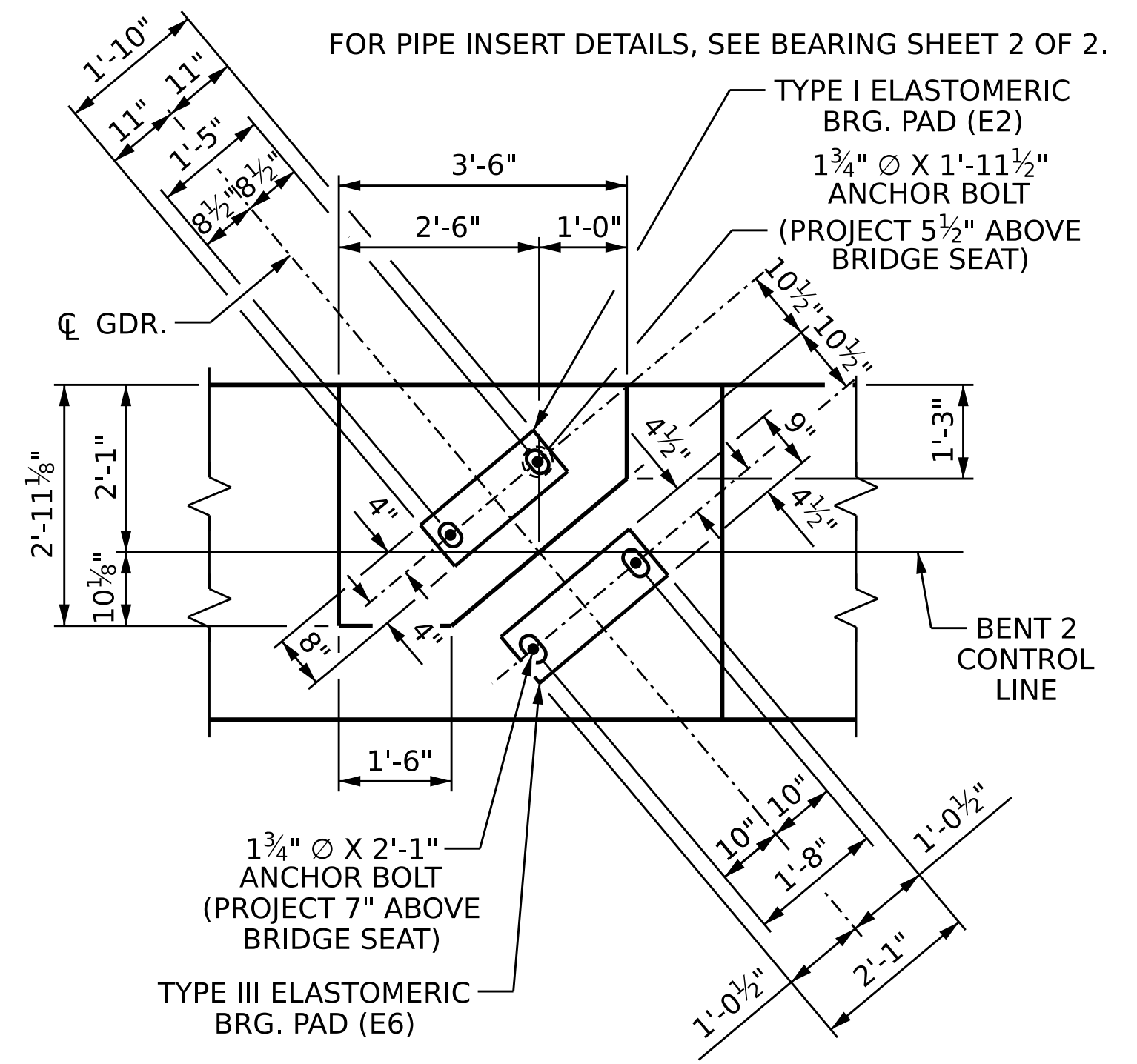


ELEVATION

(DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED)

NOTES:

- STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.
- THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON THE APPROXIMATE GROUND LINE ELEVATION. THE TOP OF DRILLED PIER SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN THE DRILLED PIER 1 FOOT BELOW THE GROUND LINE ELEVATION.
- * INVERT ALTERNATE STIRRUPS.
- ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL".
- FOR PIPE INSERT DETAILS, SEE BEARING SHEET 2 OF 2.



DETAIL "A"

(TYP. EA. GIRDER)

PROJECT NO. B-5783
DAVIDSON COUNTY
 STATION: 21+53.61 -SBL-

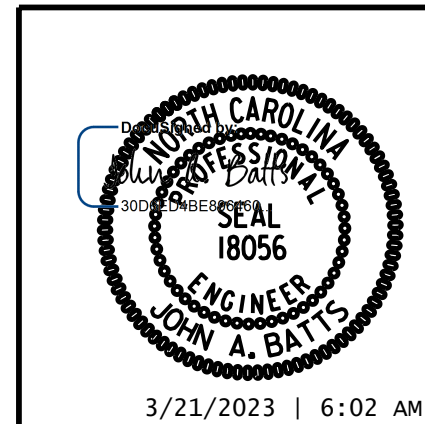
SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

BENT 2

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

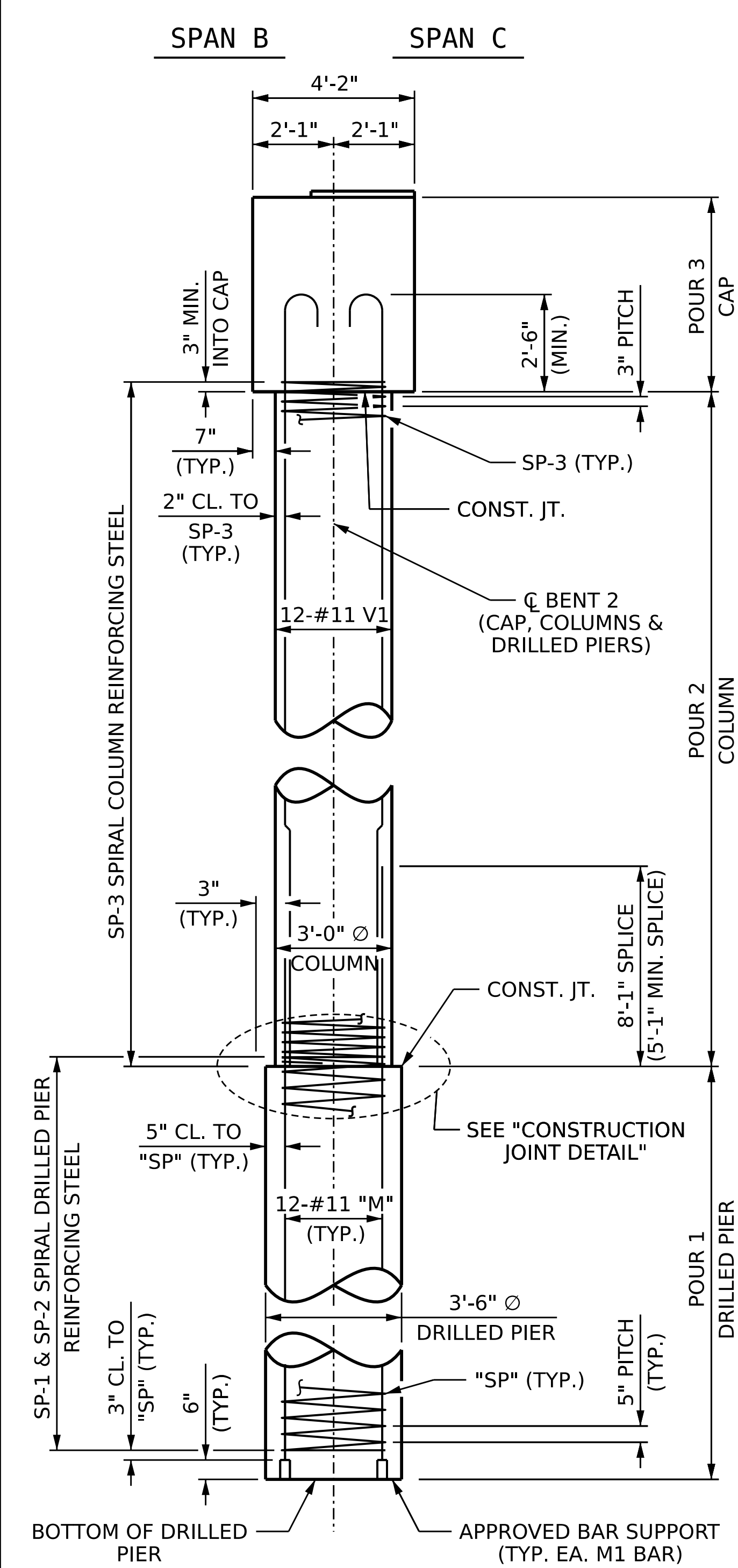
SHEET NO. S2-32
 TOTAL SHEETS 40



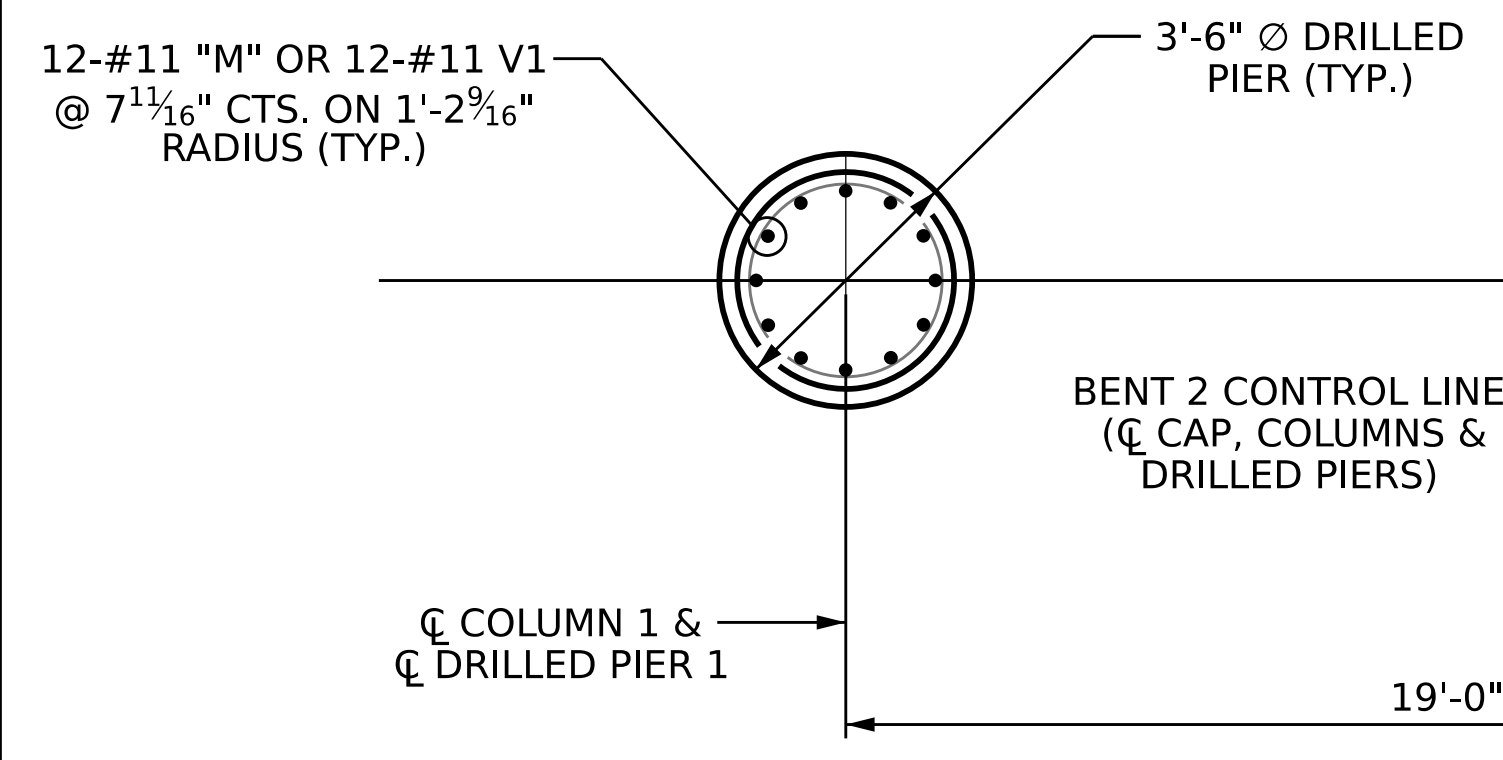
DRAWN BY: T. BANKOVICH DATE: 12-22
 CHECKED BY: J.A. BATTS DATE: 12-22
 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE: 12-22

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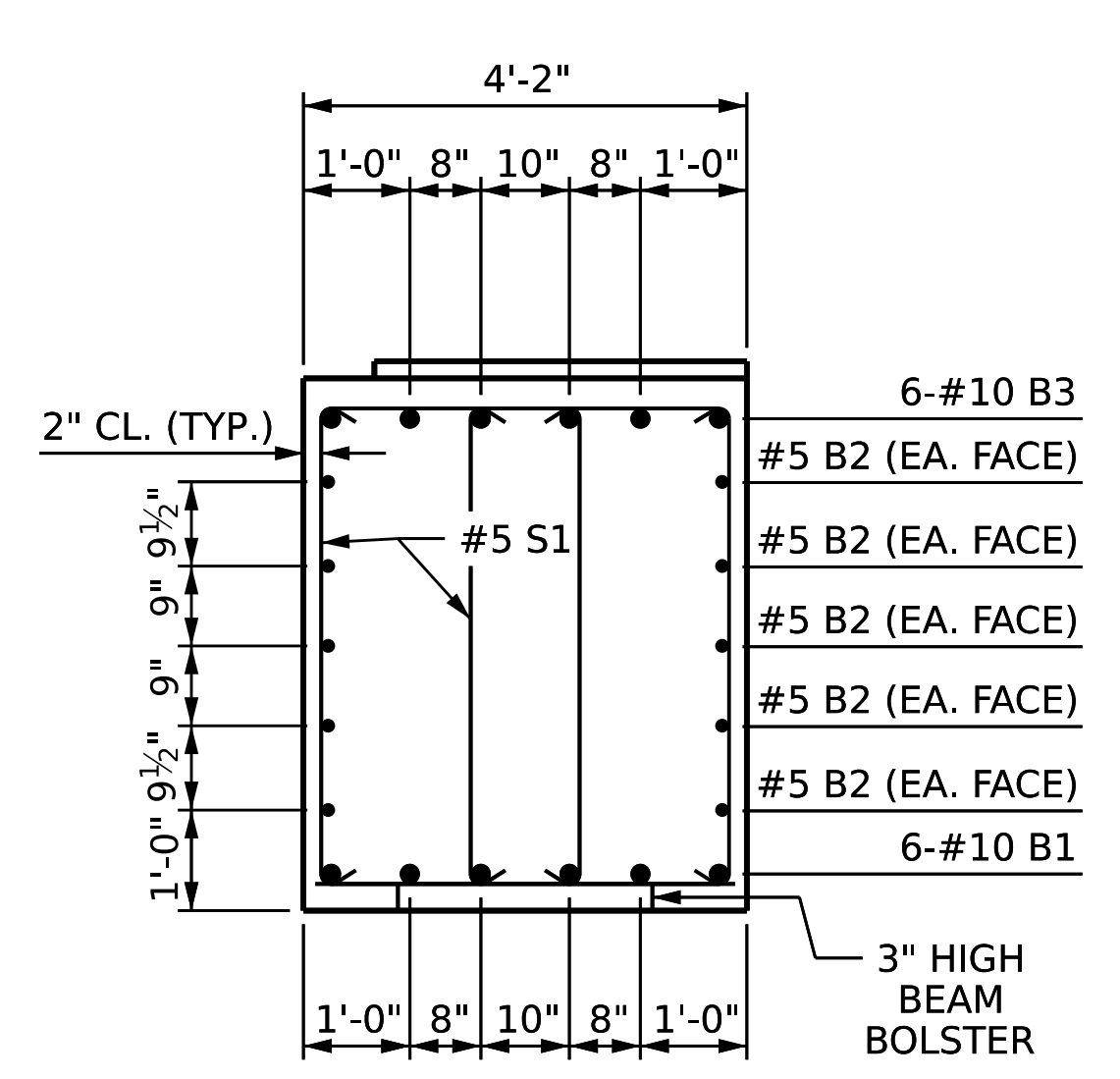
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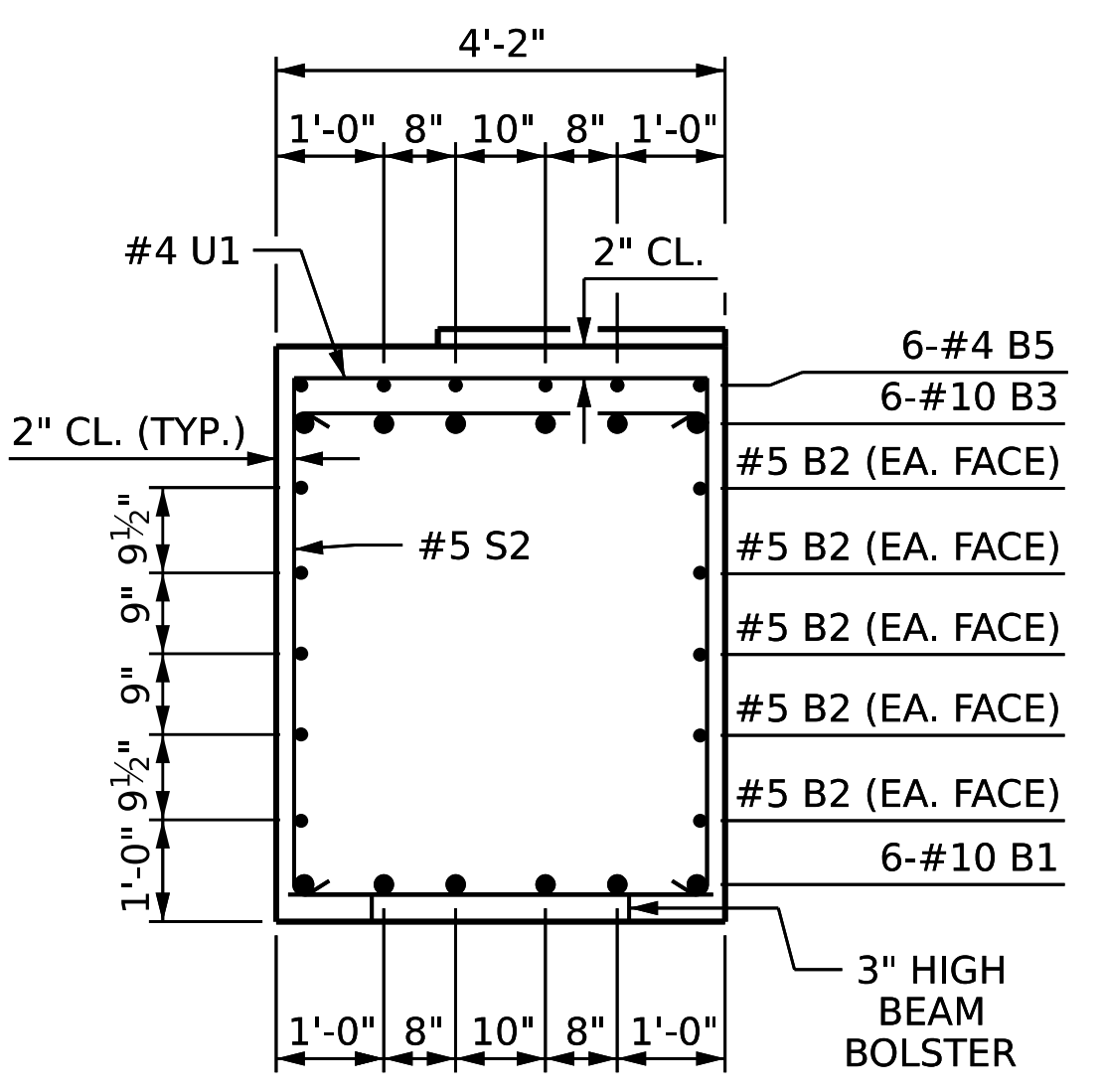
END ELEVATION



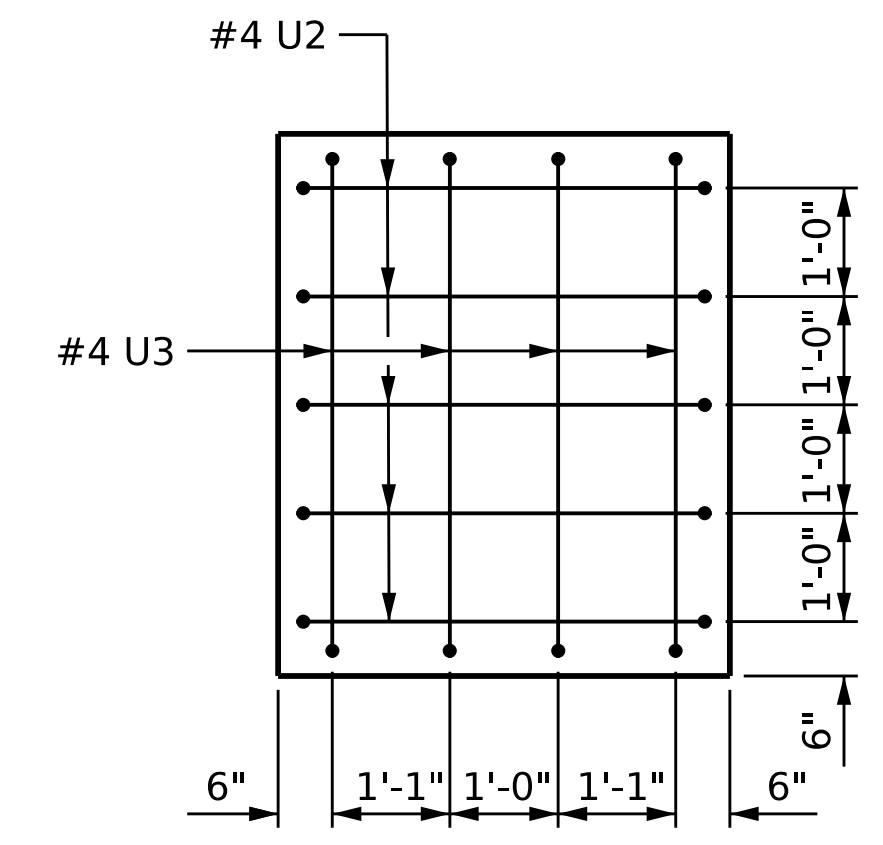
PLAN OF DRILLED PIERS AND COLUMNS



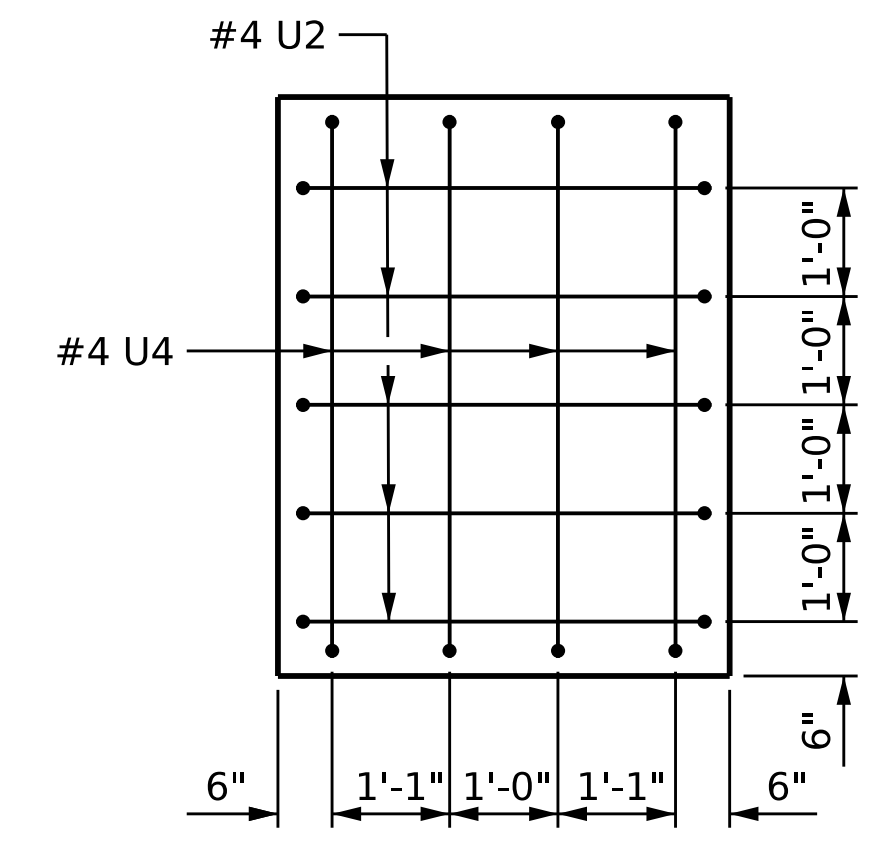
SECTION A-A



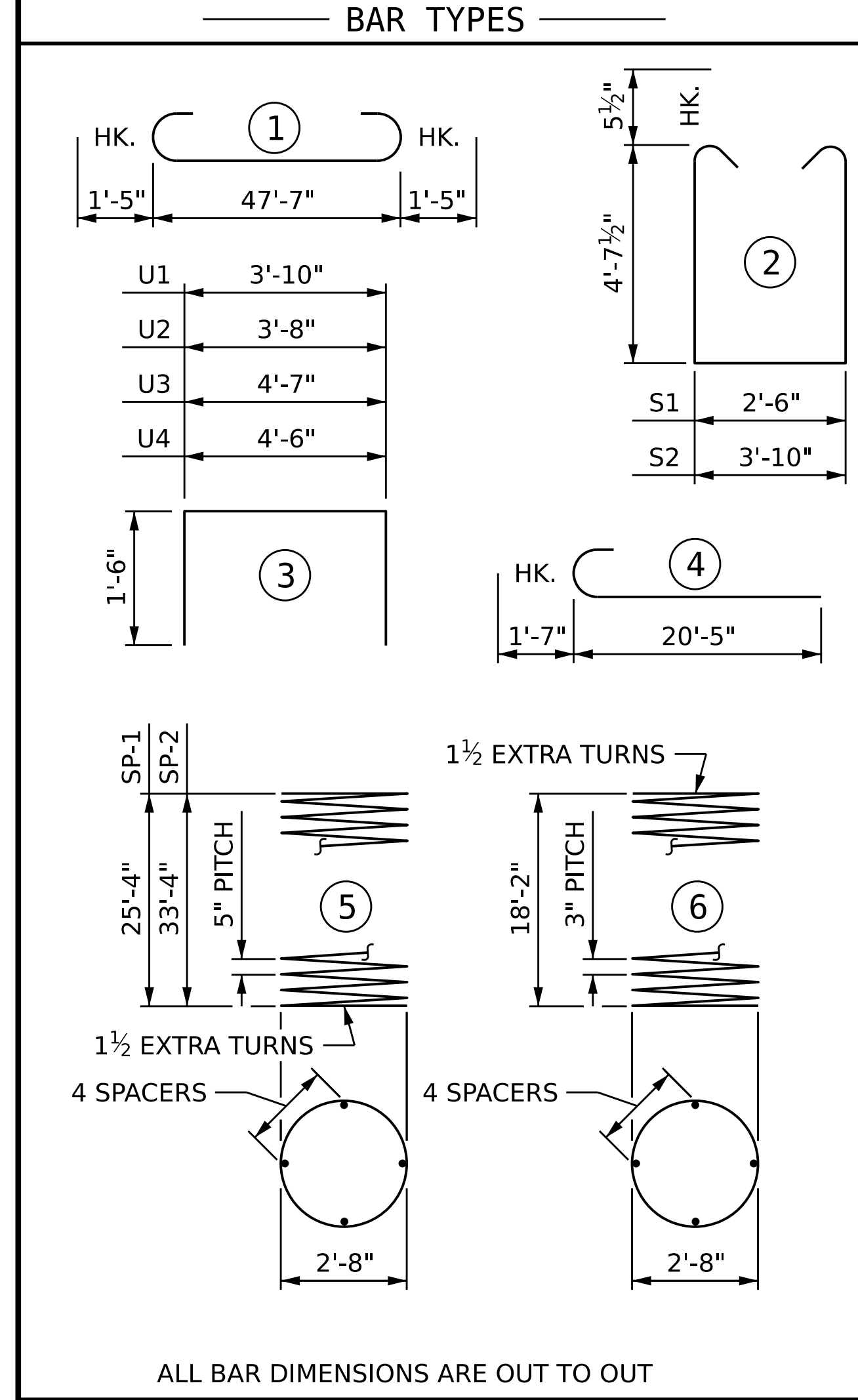
SECTION B-B



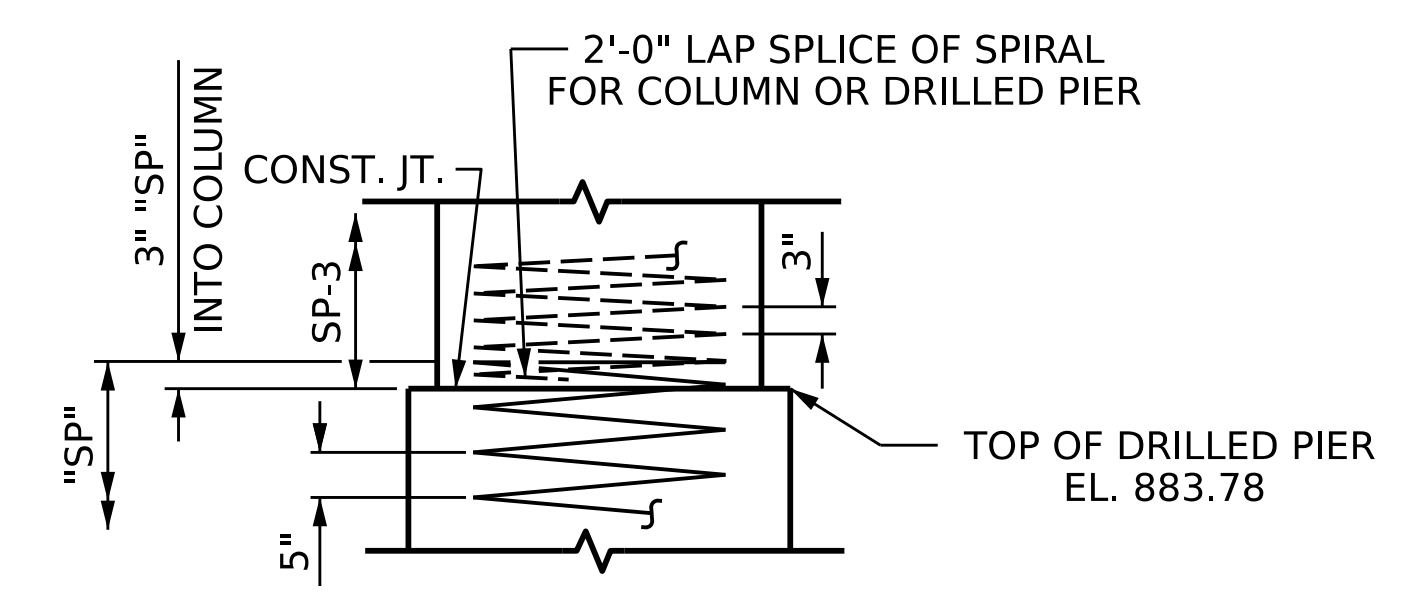
VIEW X-X



VIEW Y-Y



* THE "SP-1" & "SP-2" SPIRAL REINFORCING STEEL SHALL BE W21 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.
 ** THE "SP-3" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

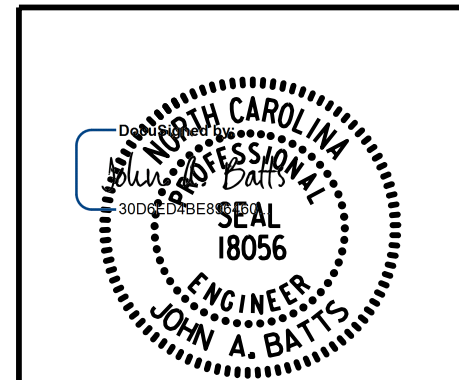


CONSTRUCTION JOINT DETAIL

BILL OF MATERIAL					
BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	STR	47'-9"	1233
B2	10	#5	STR	47'-9"	498
B3	6	#10	1	50'-5"	1302
B4	6	#4	STR	10'-9"	43
B5	6	#4	STR	15'-5"	62
M1	12	#11	STR	33'-5"	2131
M2	24	#11	STR	41'-5"	5281
S1	20	#5	2	12'-8"	264
S2	44	#5	2	14'-0"	642
U1	62	#4	3	6'-10"	283
U2	10	#4	3	6'-8"	45
U3	4	#4	3	7'-7"	20
U4	4	#4	3	7'-6"	20
V1	36	#11	4	22'-0"	4208
SP-1	1	*	5	520'-3"	543
SP-2	2	*	5	677'-2"	1413
SP-3	3	**	6	616'-4"	1235
REINFORCING STEEL					16032 LB
SPIRAL COL. REINF. STEEL					3191 LB
CLASS "A" CONCRETE BREAKDOWN					
POUR 2 (COLUMNS)					14.1 CY
POUR 3 (CAP)					38.6 CY
TOTAL					52.7 CY
DRILLED PIERS:					
DRILLED PIER CONCRETE					
POUR 1 (DRILLED PIERS)					33.3 CY

PROJECT NO. B-5783
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 STATION: 21+53.61 -SBL-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
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BENT 2

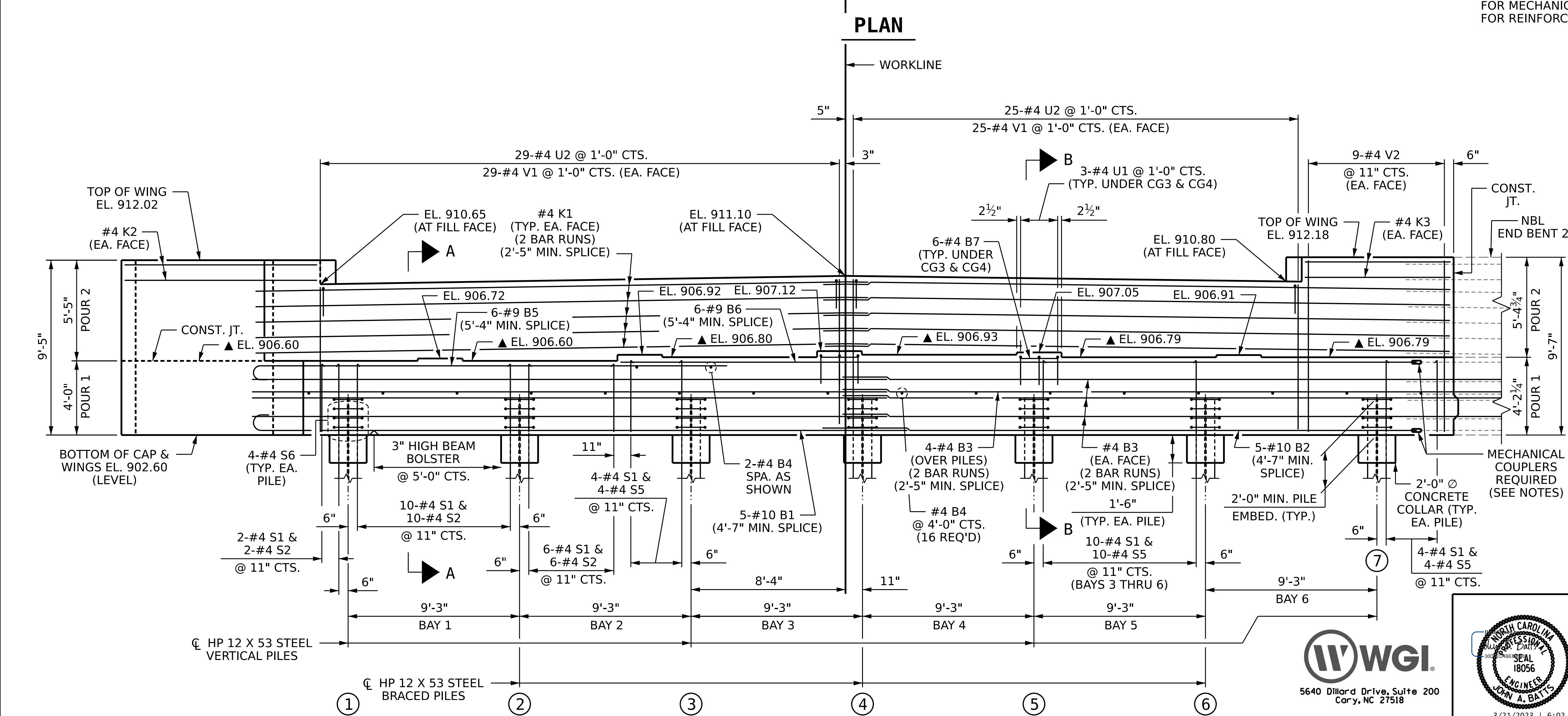
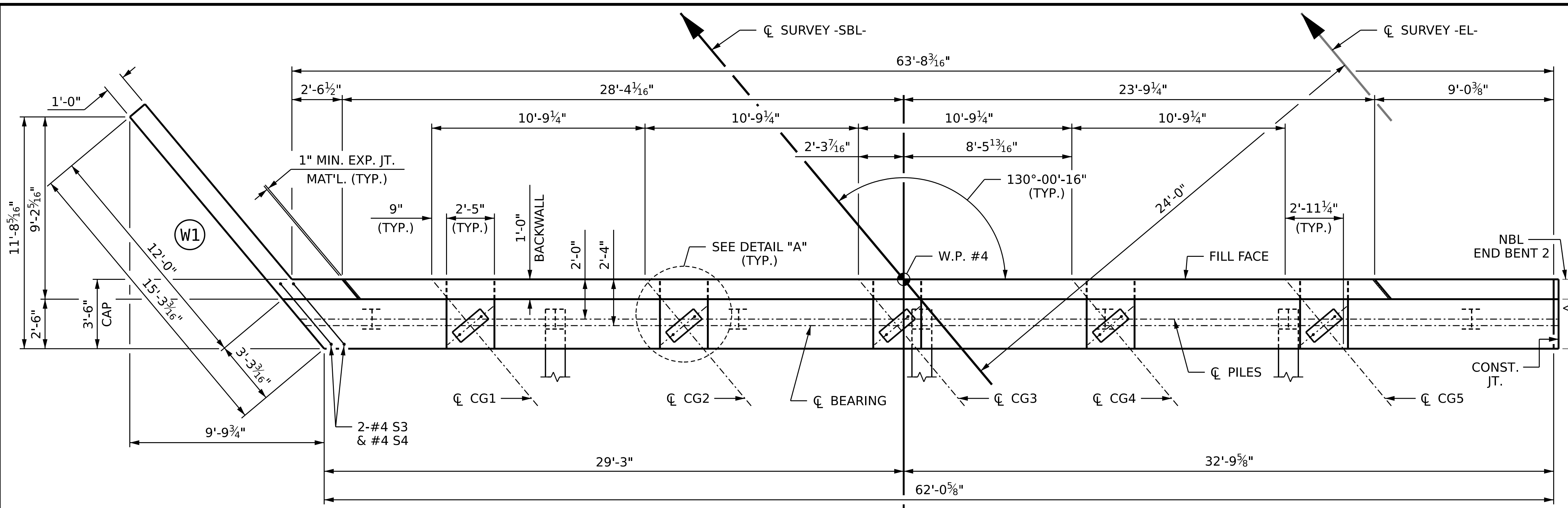


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 CHECKED BY : J.A. BATTS DATE : 12-22
 DESIGN ENGINEER OF RECORD : J.A. BATTS DATE : 12-22

REVISIONS				SHEET NO.	
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1			3		
2			4		

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NOTES:

STIRRUPS AND "U" BARS IN 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 EXPECT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE 2%.

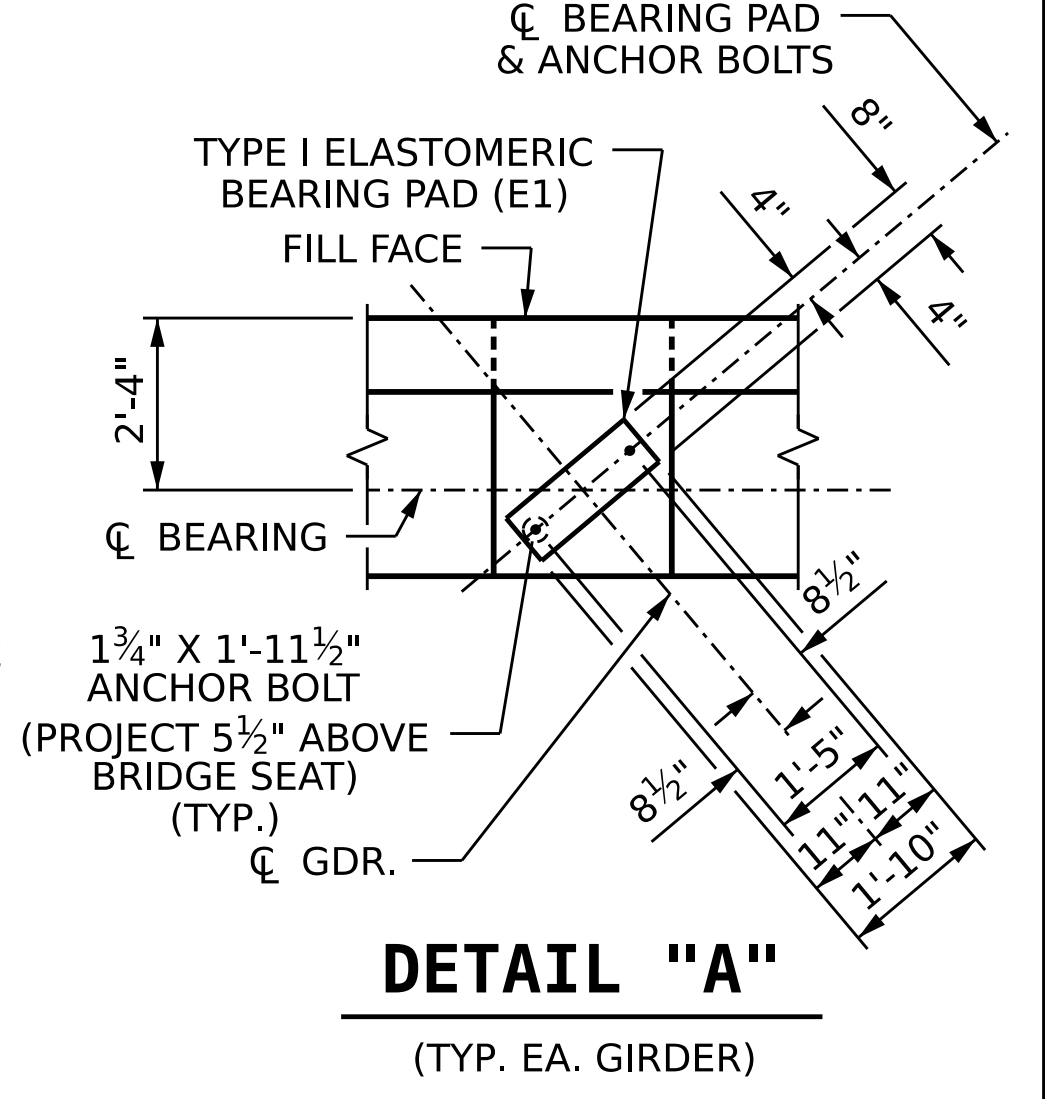
SEE GENERAL DRAWING "FOUNDATION LAYOUT" FOR ADDITIONAL NOTES FOR DRIVING PILES.

▲ FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTION A-A AND SECTION B-B ON SHEET 3 OF 3.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LENGTHS OF THE #9 AND THE #10 "B" BARS AT THE CONSTRUCTION JOINT MAY NEED TO BE ADJUSTED DUE TO THE TYPE OF MECHANICAL BUTT SPLICE CHOSEN BY THE CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY ADJUSTMENTS.

MECHANICAL COUPLERS SHALL BE USED TO JOIN THE #9 AND #10 "B" BARS FROM SBL END BENT 1 WITH THE #9 AND #10 "B" BARS IN NBL END BENT 1. THE LOCATIONS OF THE COUPLERS SHALL BE STAGGERED ON ALTERNATING BARS BY 1 FOOT AND SBL END BENT 1 BARS SHALL BE CUT ACCORDINGLY TO ALLOW A MINIMUM OF 1'-0" AND A MAXIMUM OF 2'-0" EXTENSION INTO NBL END BENT 1.

FOR MECHANICAL COUPLERS, SEE MECHANICAL BUTT SPLICE FOR REINFORCING STEEL IN STANDARD SPECIFICATIONS.



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 STATION: 21+53.61 -SBL-

SHEET 1 OF 3

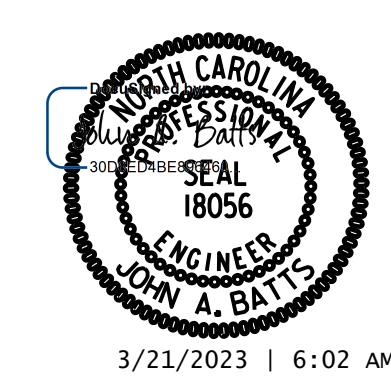
STATE OF NORTH CAROLINA
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END BENT 2

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
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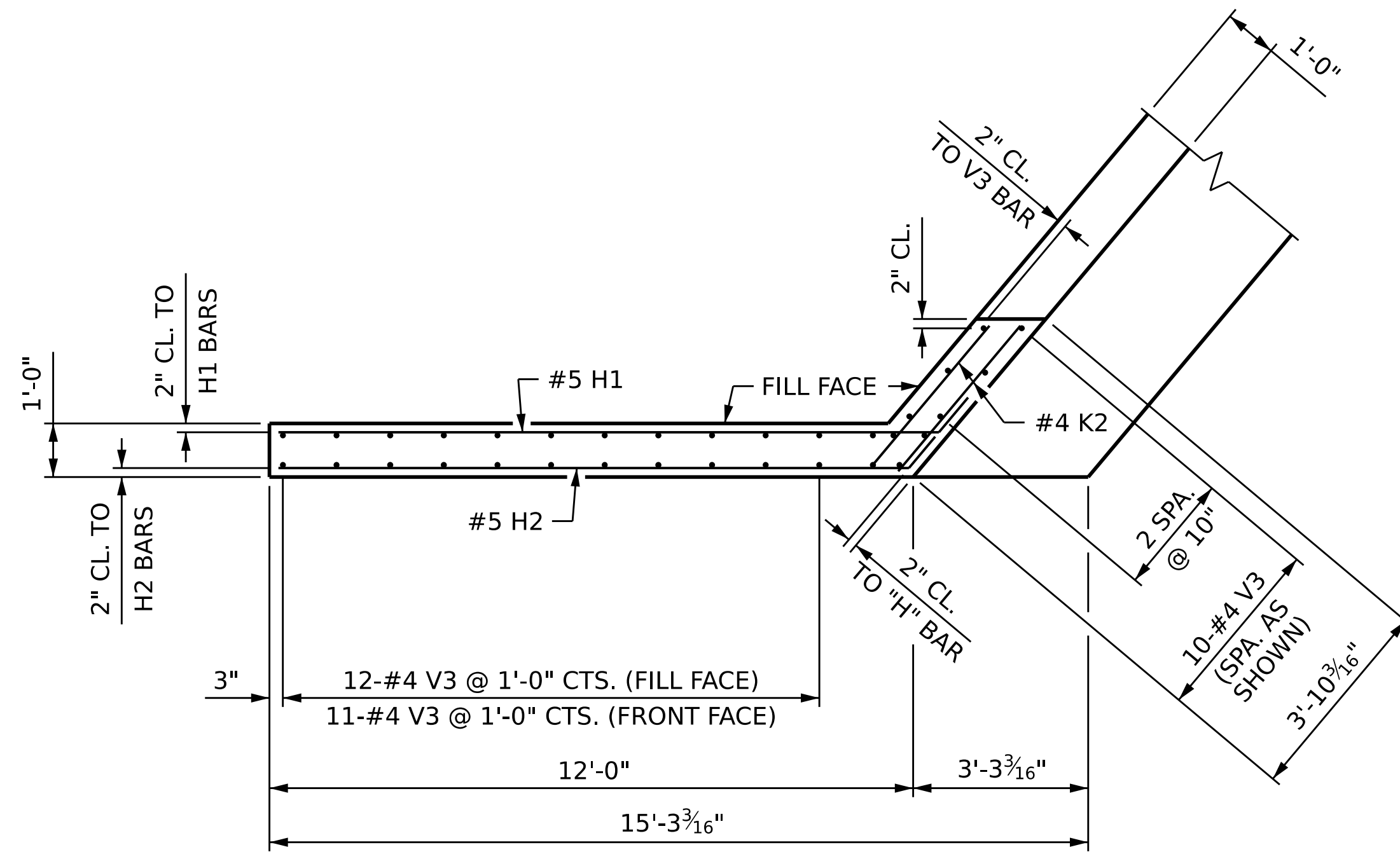
SHEET NO. S2-34
 TOTAL SHEETS 40

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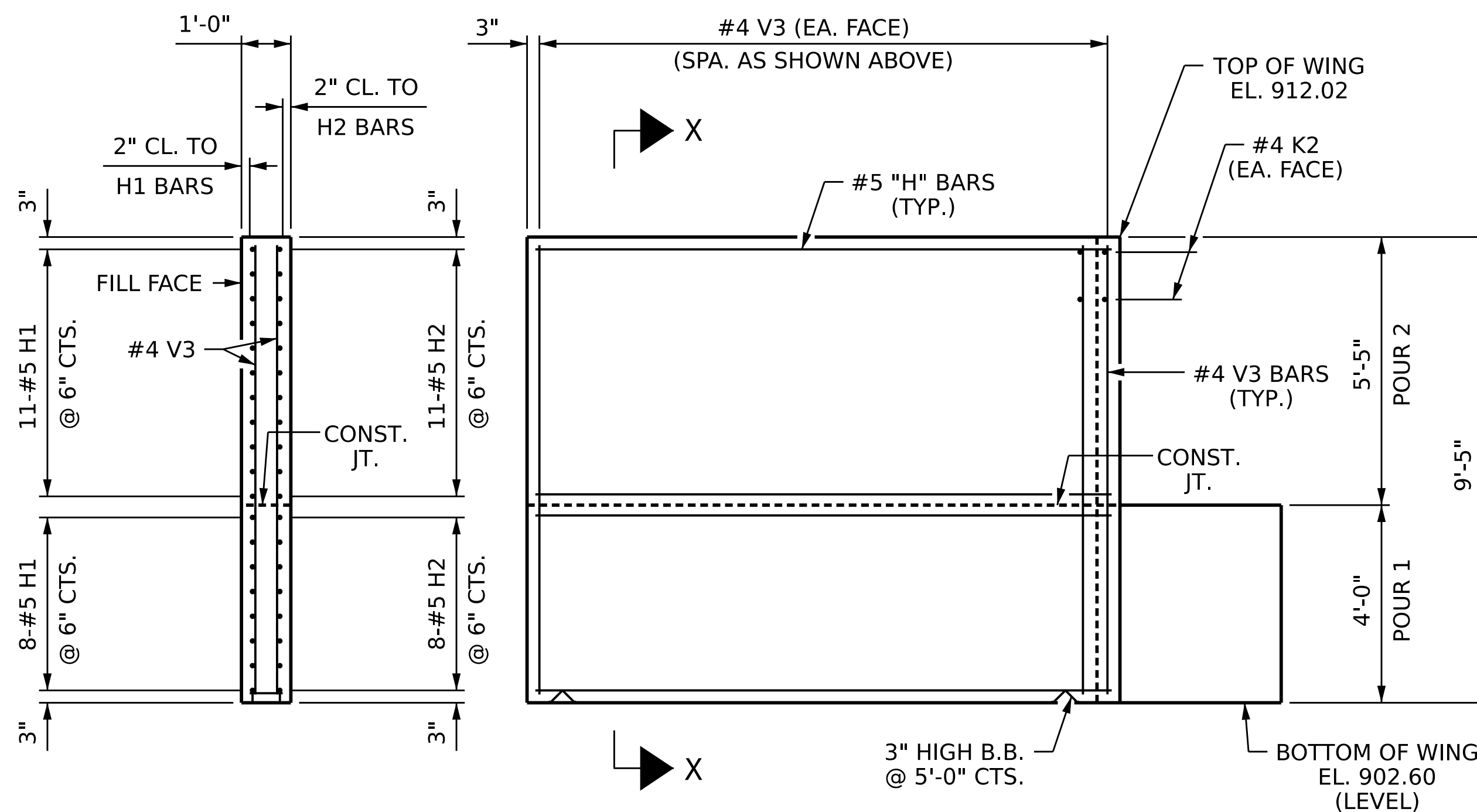


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PLAN OF WING W1



SECTION X-X

ELEVATION OF WING W1

PROJECT NO. B-5783
DAVIDSON COUNTY
 STATION: 21+53.61 -SBL-

SHEET 2 OF 3

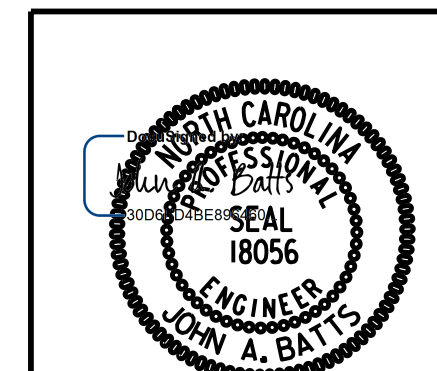
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END BENT 2



5640 Dillard Drive, Suite 200
 Cary, NC 27518

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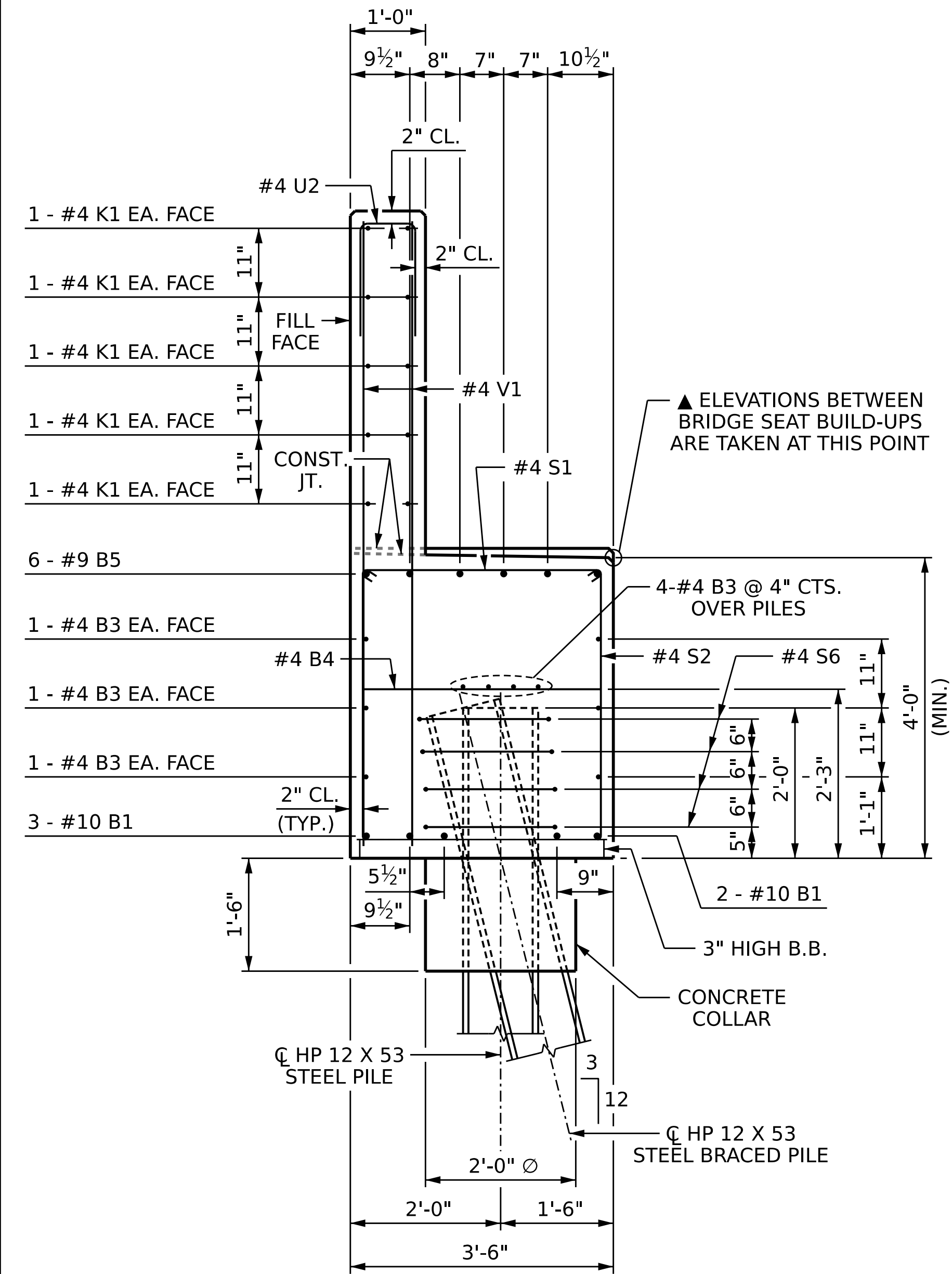
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TOTAL SHEETS	40

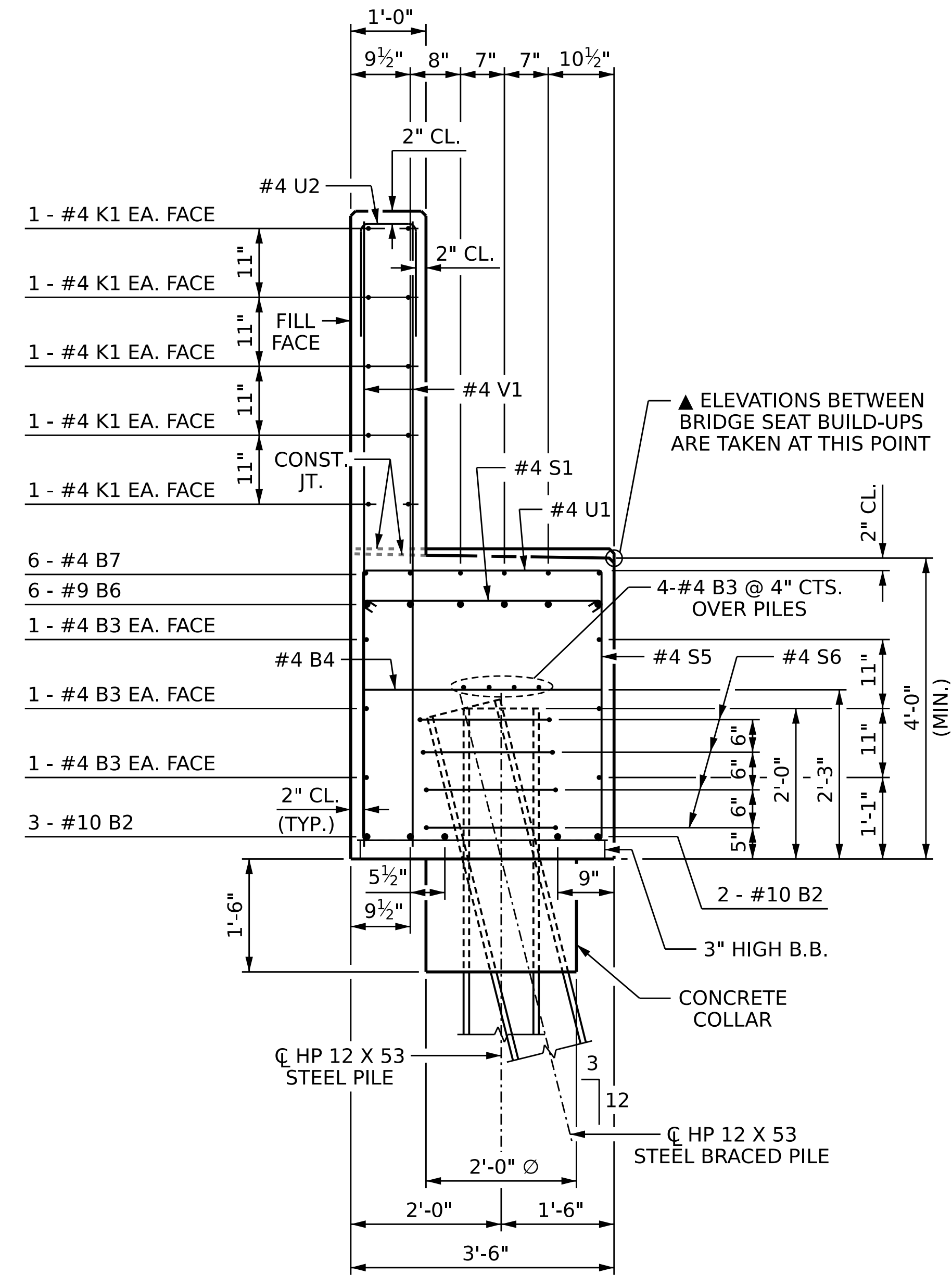
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 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE : 12-22

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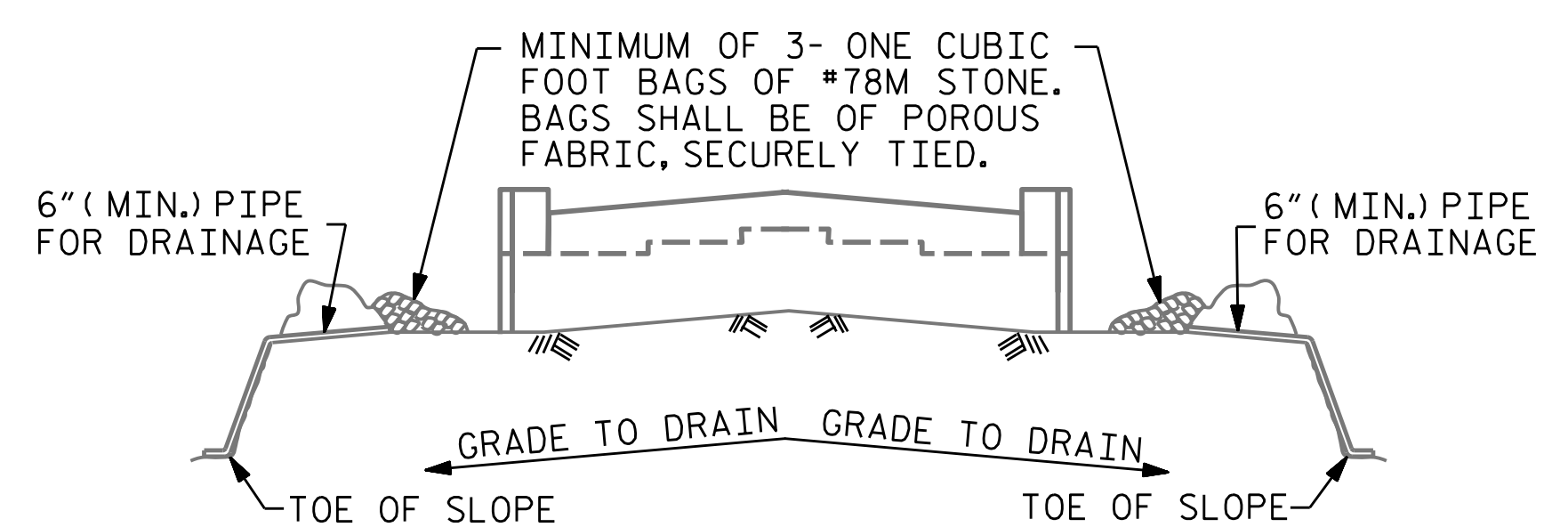
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SECTION A-A



SECTION B-B



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

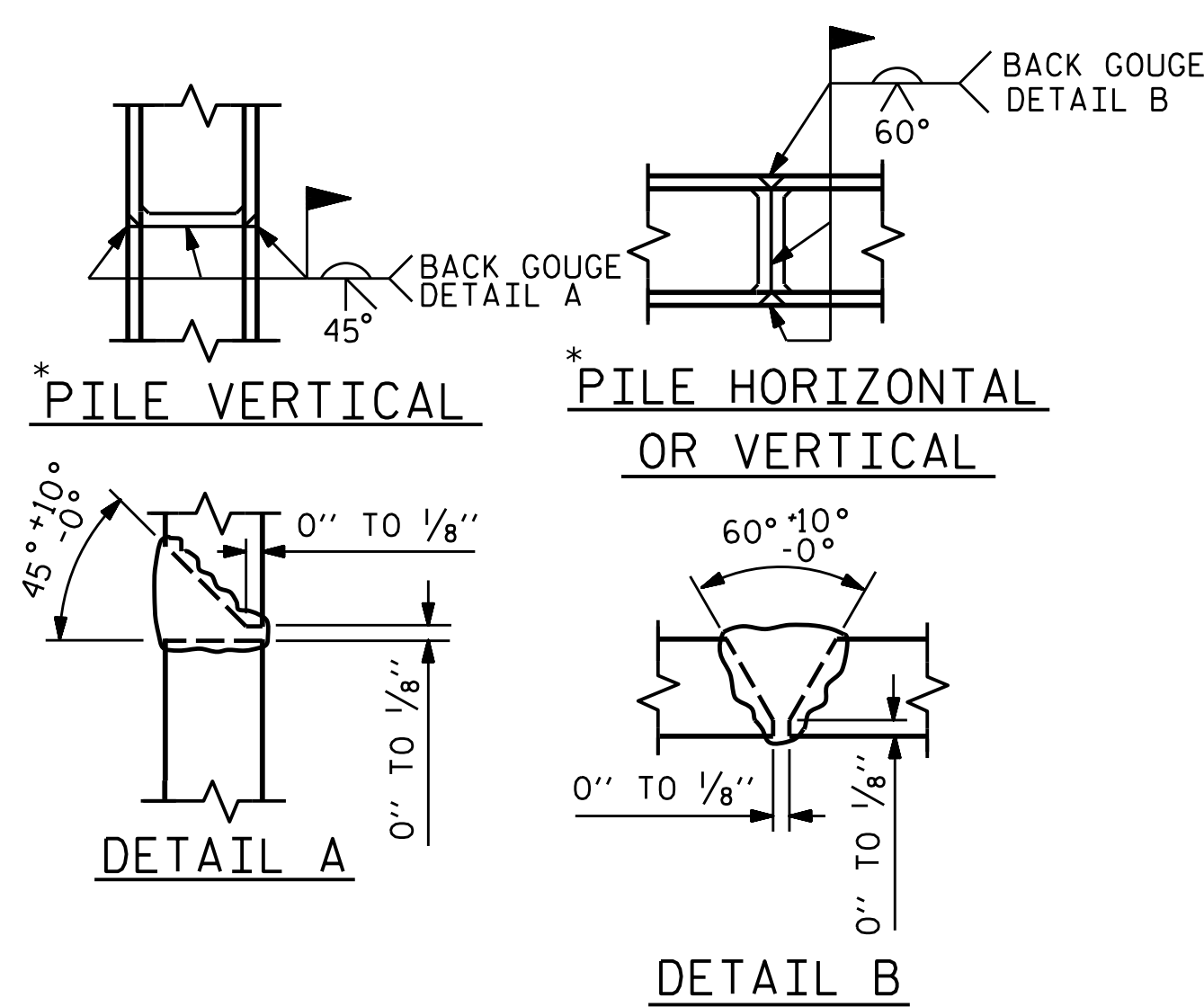
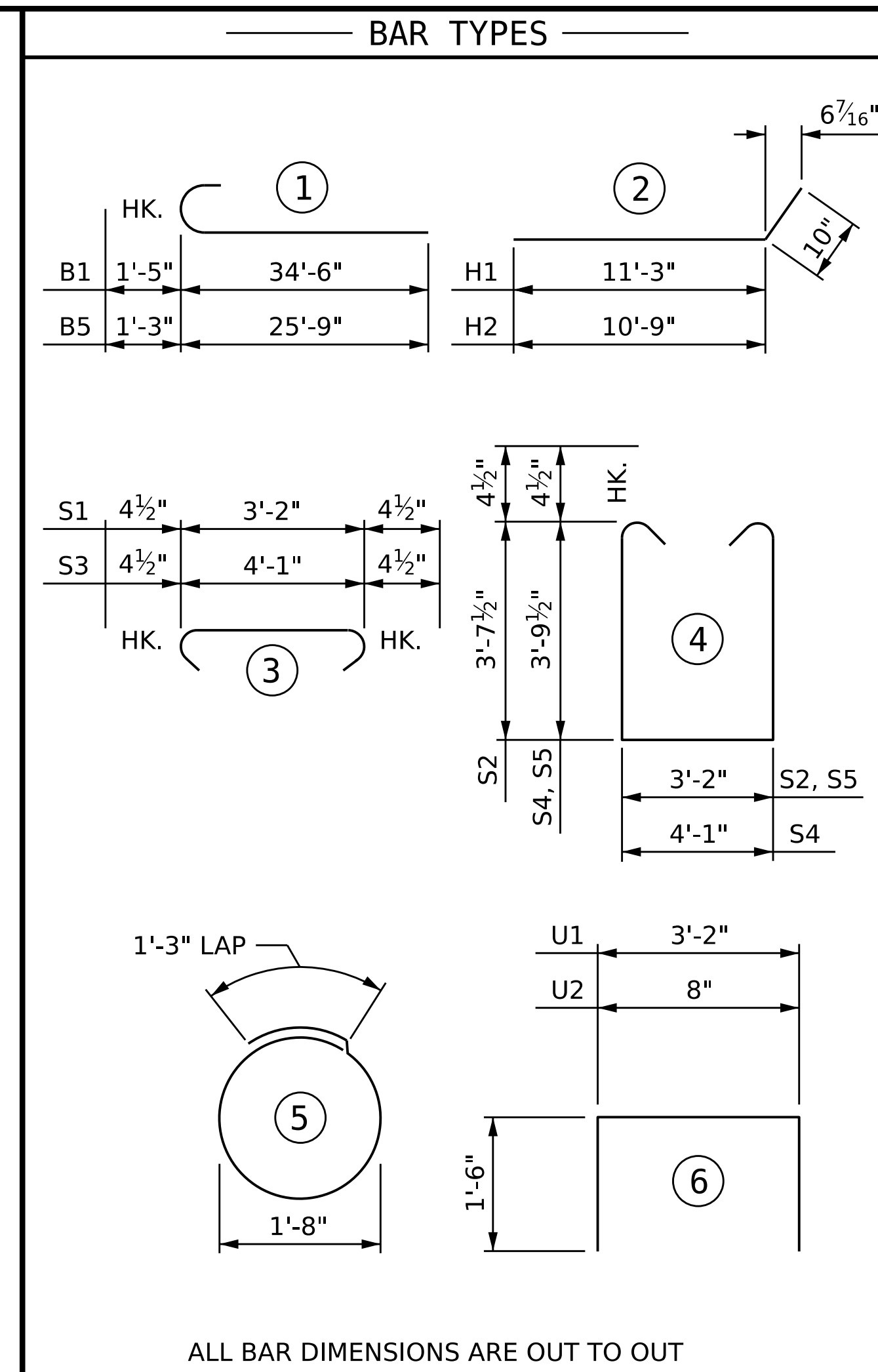
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

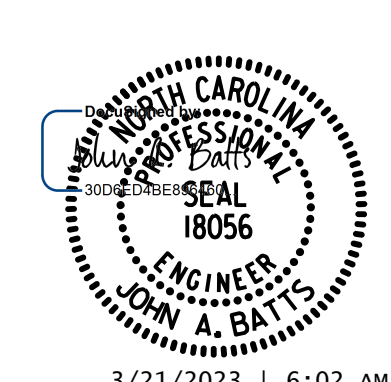
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

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PILE SPLICE DETAILS



BILL OF MATERIAL					
END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#10	1	35'-11"	773
B2	5	#10	STR	34'-2"	735
B3	20	#4	STR	33'-9"	451
B4	18	#4	STR	3'-2"	38
B5	6	#9	1	27'-0"	551
B6	6	#9	STR	44'-0"	898
B7	12	#4	STR	2'-1"	17
H1	19	#5	2	12'-1"	239
H2	19	#5	2	11'-7"	230
K1	20	#4	STR	33'-9"	451
K2	4	#4	STR	3'-4"	9
K3	4	#4	STR	8'-3"	22
S1	66	#4	3	3'-11"	173
S2	18	#4	4	11'-2"	134
S3	2	#4	3	4'-10"	6
S4	2	#4	4	12'-5"	17
S5	48	#4	4	11'-6"	369
S6	28	#4	5	6'-6"	122
U1	6	#4	6	6'-2"	25
U2	54	#4	6	3'-8"	132
V1	108	#4	STR	7'-8"	553
V2	9	#4	STR	9'-2"	55
V3	33	#4	STR	9'-1"	200
TOTAL REINFORCING STEEL					6200 LB
CLASS A CONCRETE BREAKDOWN					
POUR 1 (CAP & LOWER WING)					37.1 CY
POUR 2 (BACKWALL & UPPER WING)					11.5 CY
TOTAL CLASS A CONCRETE					48.6 CY

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SHEET 3 OF 3

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 RALEIGH
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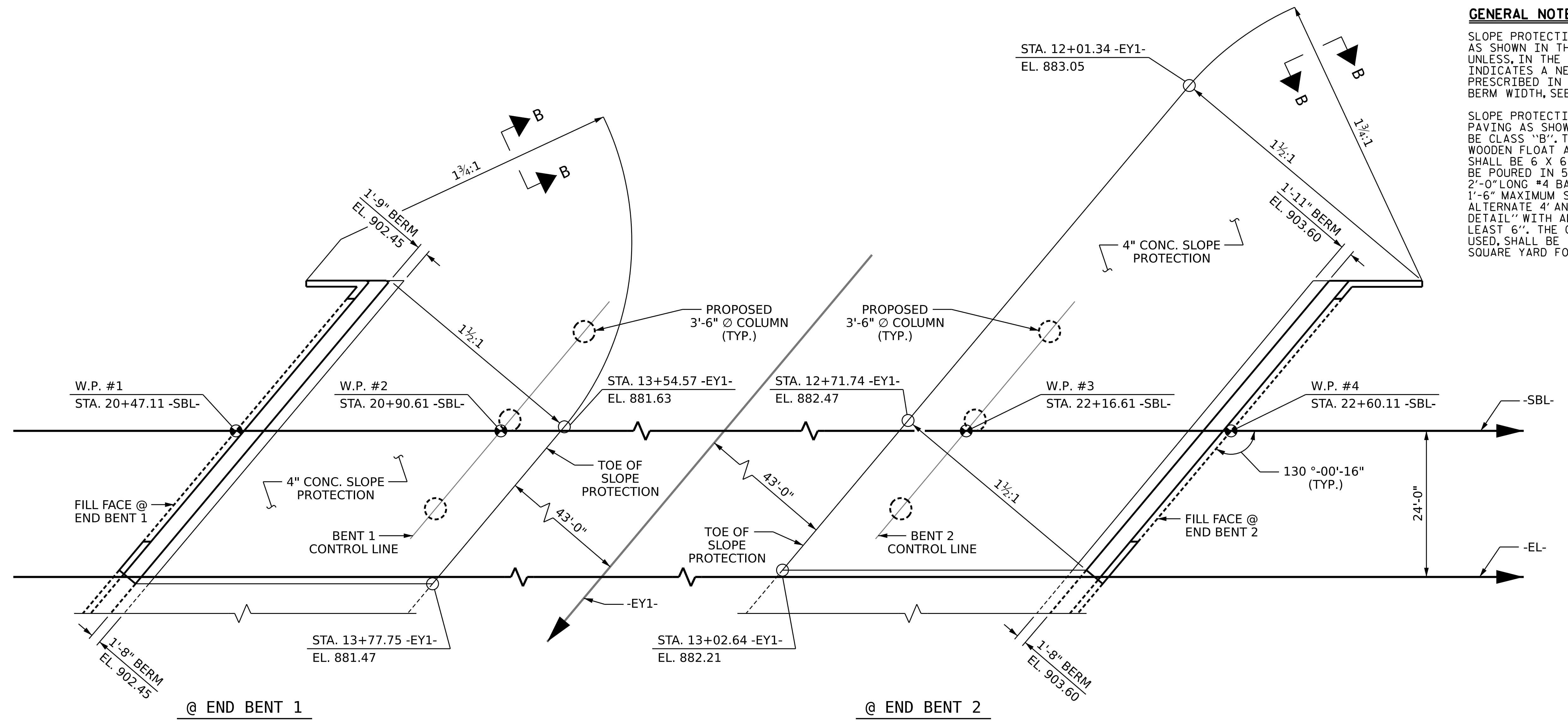
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2			4		

TOTAL SHEETS: 40

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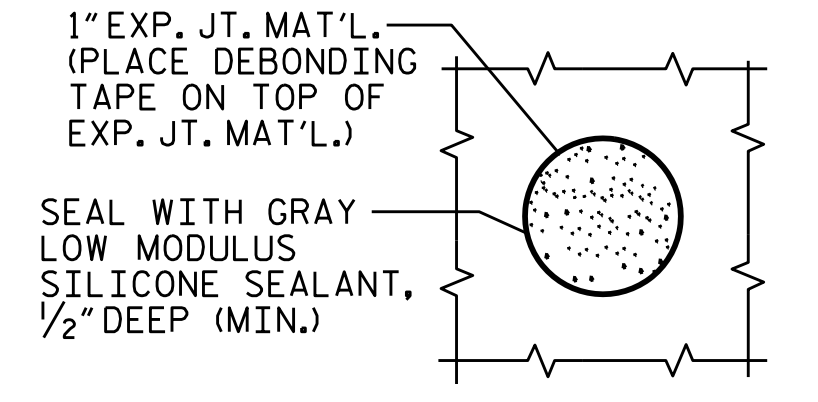


PLAN

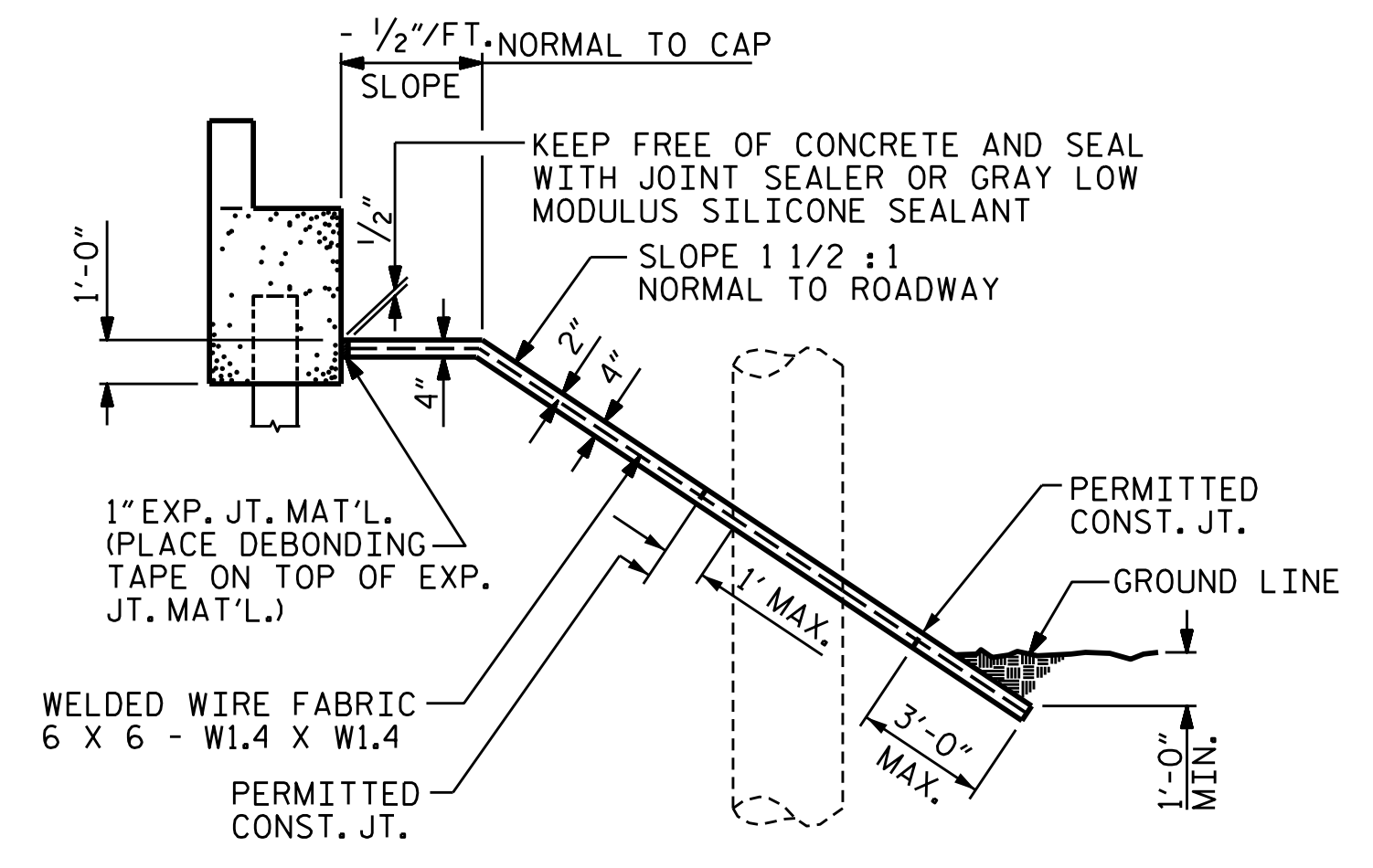
GENERAL NOTES

SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN THE DETAILS. 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.

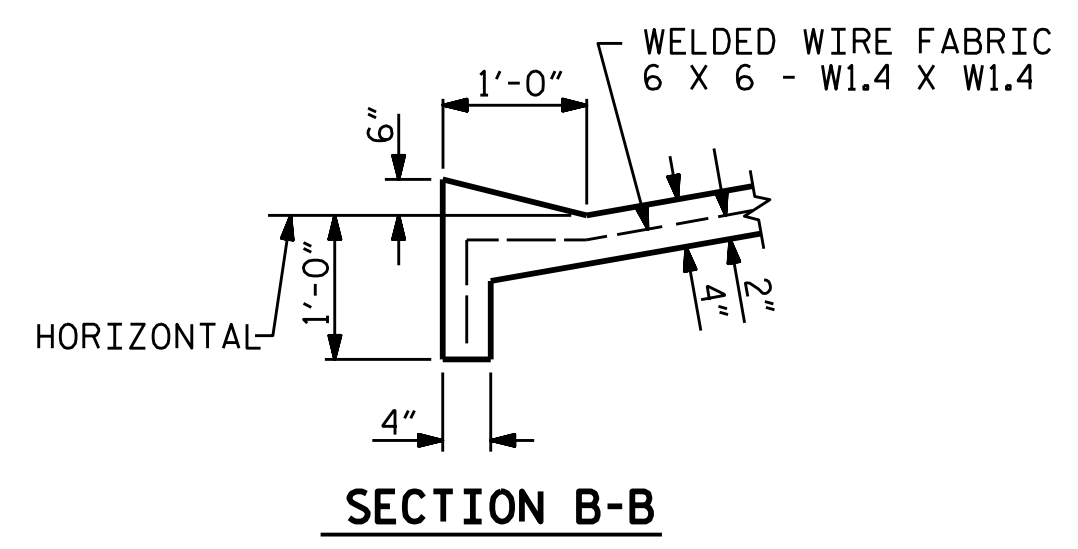
SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL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



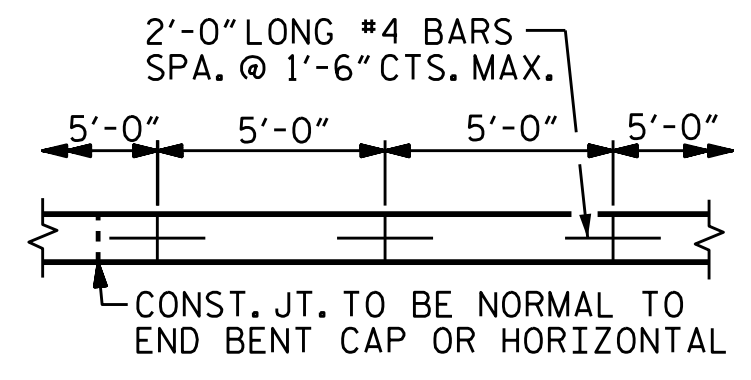
PLAN WHERE CONCRETE SLOPE PROTECTION MUST BE PLACED AROUND A BENT COLUMN



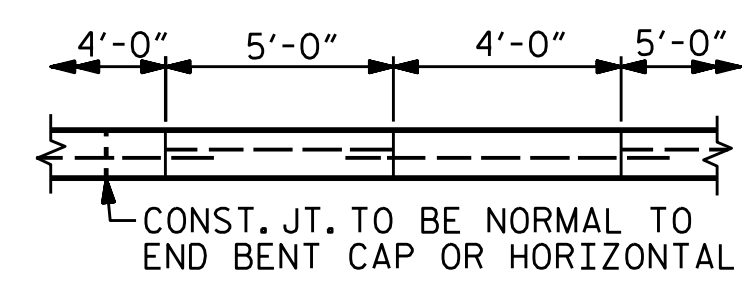
SECTION ALONG C SURVEY WITH SHOULDER PIER



SECTION B-B



POURING DETAIL



OPTIONAL POURING DETAIL

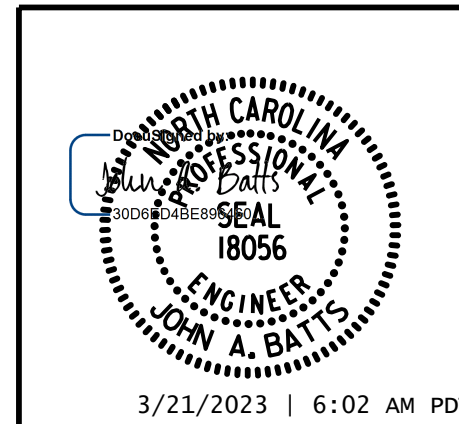
BRIDGE @ STA. 21+53.61 -SBL-	4" INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	440	795
END BENT 2	445	800

* QUANTITY SHOWN IS BASED ON 5' POURS.

PROJECT NO. B-5783
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 STATION: 21+53.61 -SBL-

STATE OF NORTH CAROLINA
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**SLOPE PROTECTION
 DETAILS**

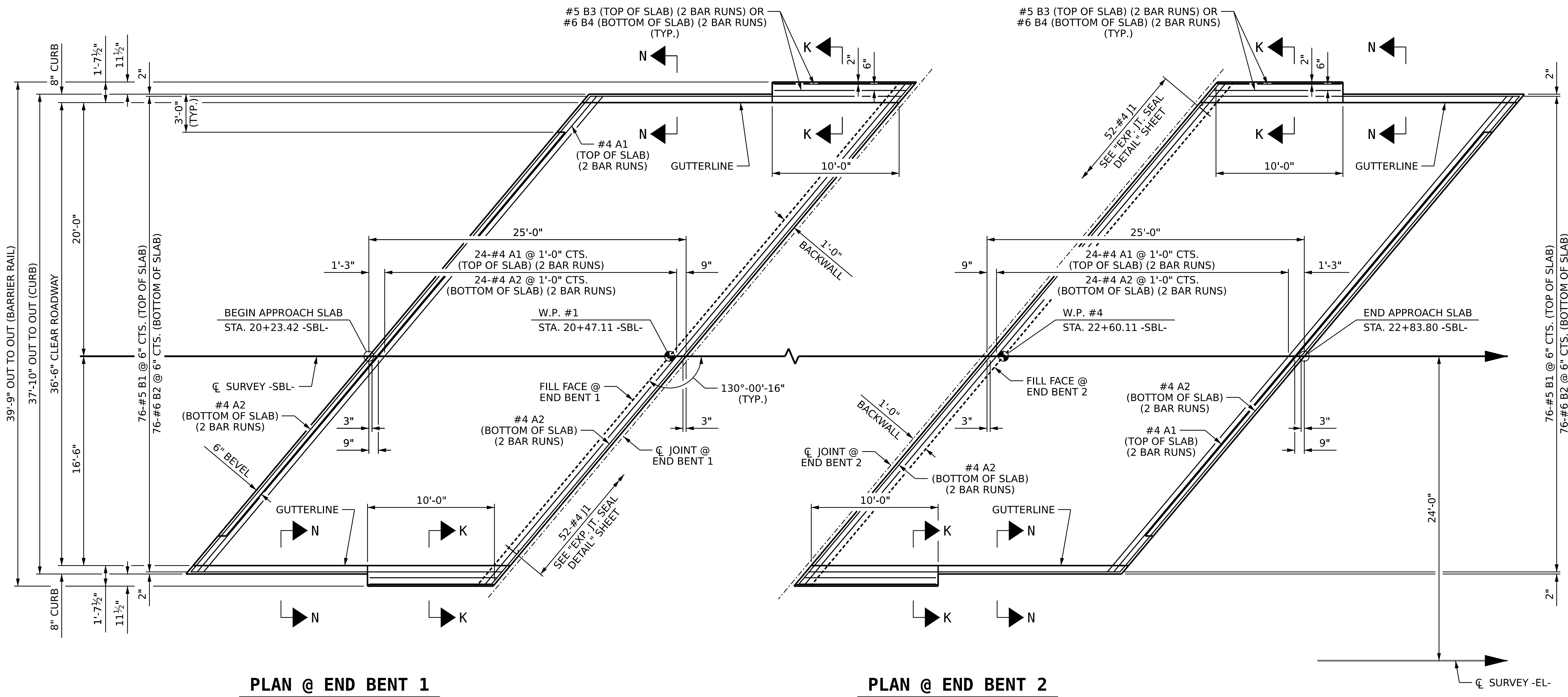


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1			3			TOTAL SHEETS
2			4			40

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 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE : 12-22

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PLAN @ END BENT 1

PLAN @ END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

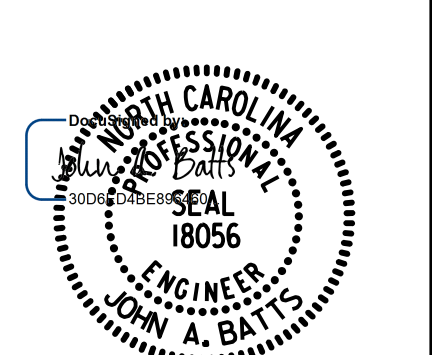
SPlice CHART		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

PROJECT NO. B-5783
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SHEET 1 OF 3

STATE OF NORTH CAROLINA
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BRIDGE APPROACH SLAB



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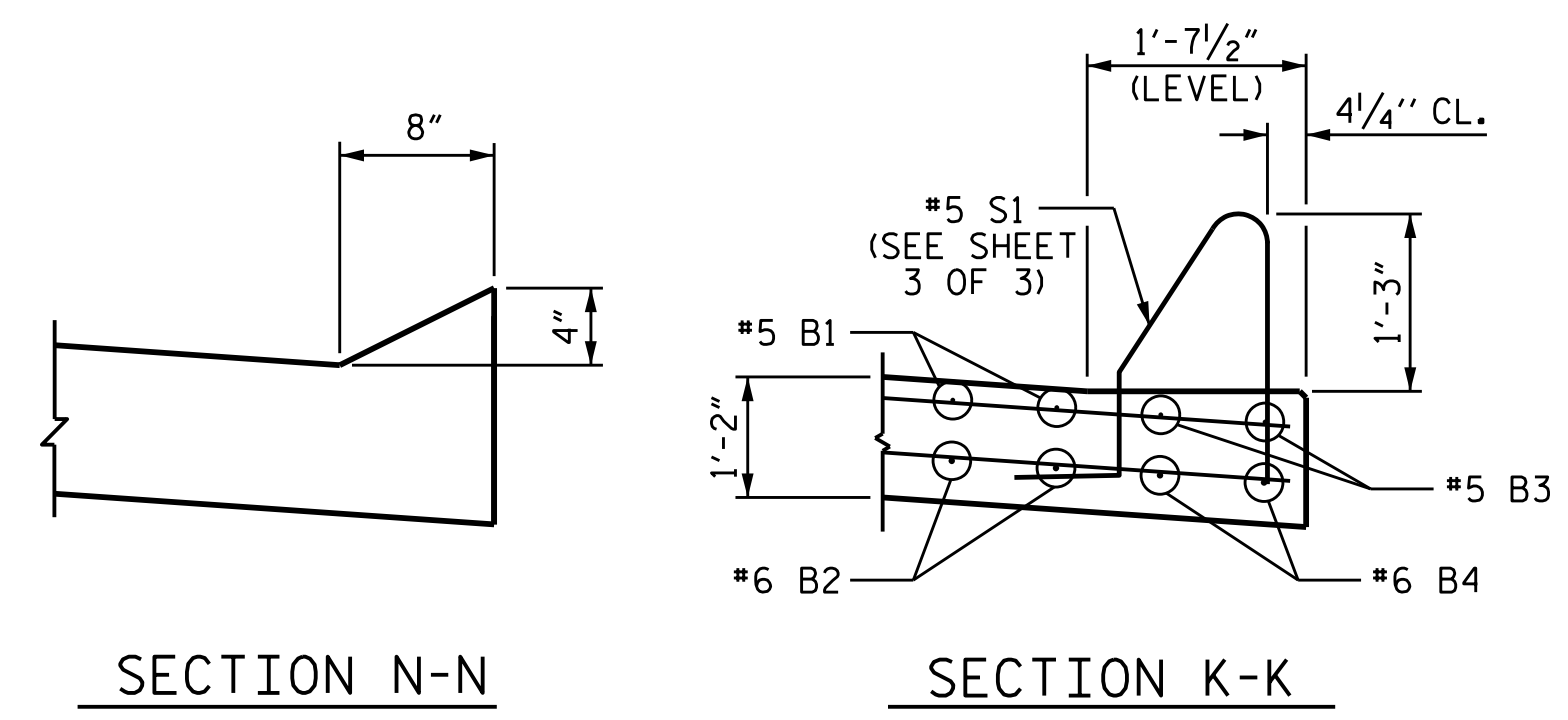
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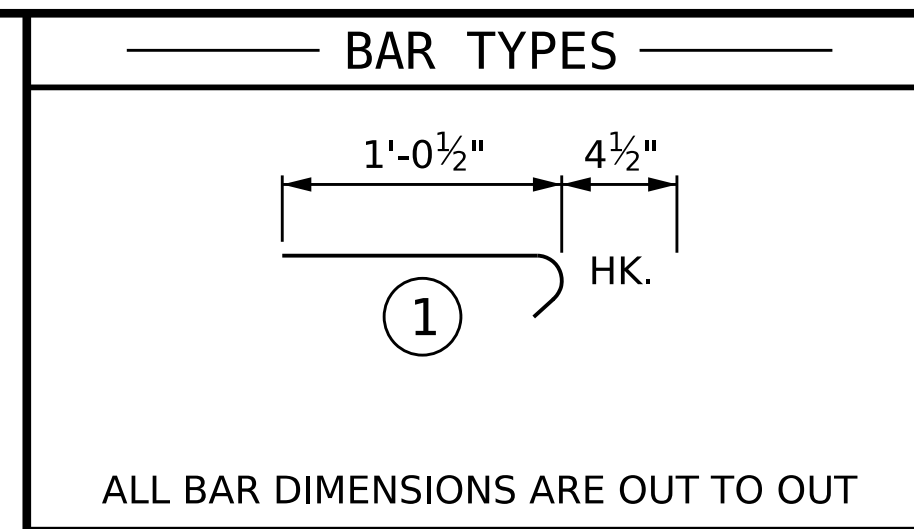
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NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			52-38
2			4			TOTAL SHEETS 40

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CURB DETAILS



BILL OF MATERIAL					
APPROACH SLAB 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	50	#4	STR	26'-9"	893
A2	52	#4	STR	26'-8"	926
* B1	76	#5	STR	24'-1"	1909
B2	76	#6	STR	24'-8"	2816
* B3	8	#5	STR	6'-7"	55
B4	8	#6	STR	6'-7"	79
* J1	52	#4	1	1'-5"	49
REINFORCING STEEL					3821 LB
EPOXY COATED REINFORCING STEEL					2906 LB
CLASS AA CONCRETE					42.0 CY
APPROACH SLAB 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	50	#4	STR	26'-9"	893
A2	52	#4	STR	26'-8"	926
* B1	76	#5	STR	24'-1"	1909
B2	76	#6	STR	24'-8"	2816
* B3	8	#5	STR	6'-7"	55
B4	8	#6	STR	6'-7"	79
* J1	52	#4	1	1'-5"	49
REINFORCING STEEL					3821 LB
EPOXY COATED REINFORCING STEEL					2906 LB
CLASS AA CONCRETE					42.0 CY

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

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

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

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

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

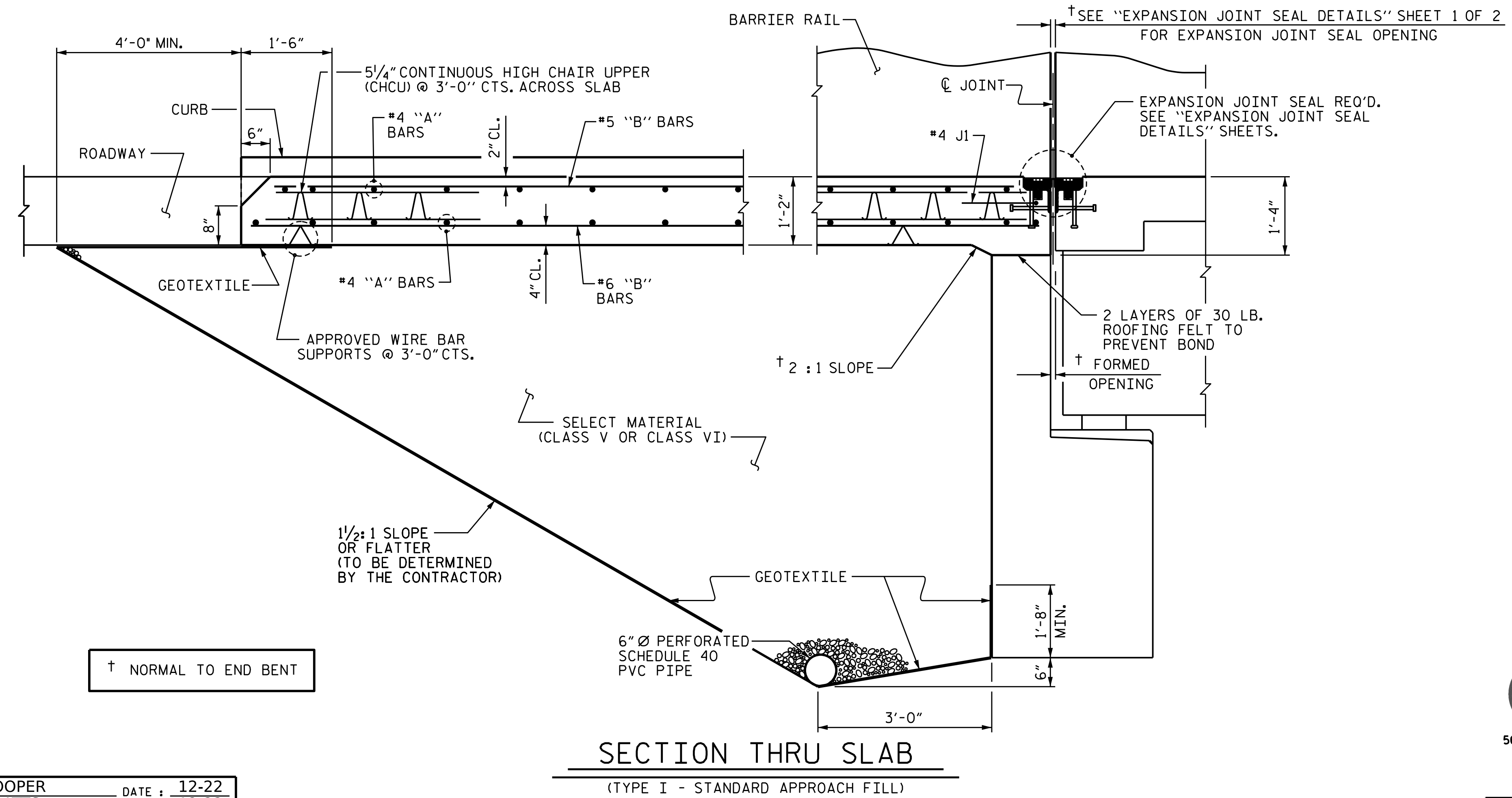
FOR THE 6" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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

FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.

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

OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENTS, END BENTS, AND REINFORCED BRIDGE FILLS, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.



SECTION THRU SLAB
(TYPE I - STANDARD APPROACH FILL)

* INDICATES EPOXY COATED REINFORCING STEEL

QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED, SEE SHEET 3 OF 3

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SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB

W WGI
 5640 Dillard Drive, Suite 200
 Cary, NC 27518

NORTH CAROLINA
 PROFESSIONAL SEAL
 18056
 ENGINEER
 JOHN A. BATTS

3/21/2023 | 6:02 AM PDT

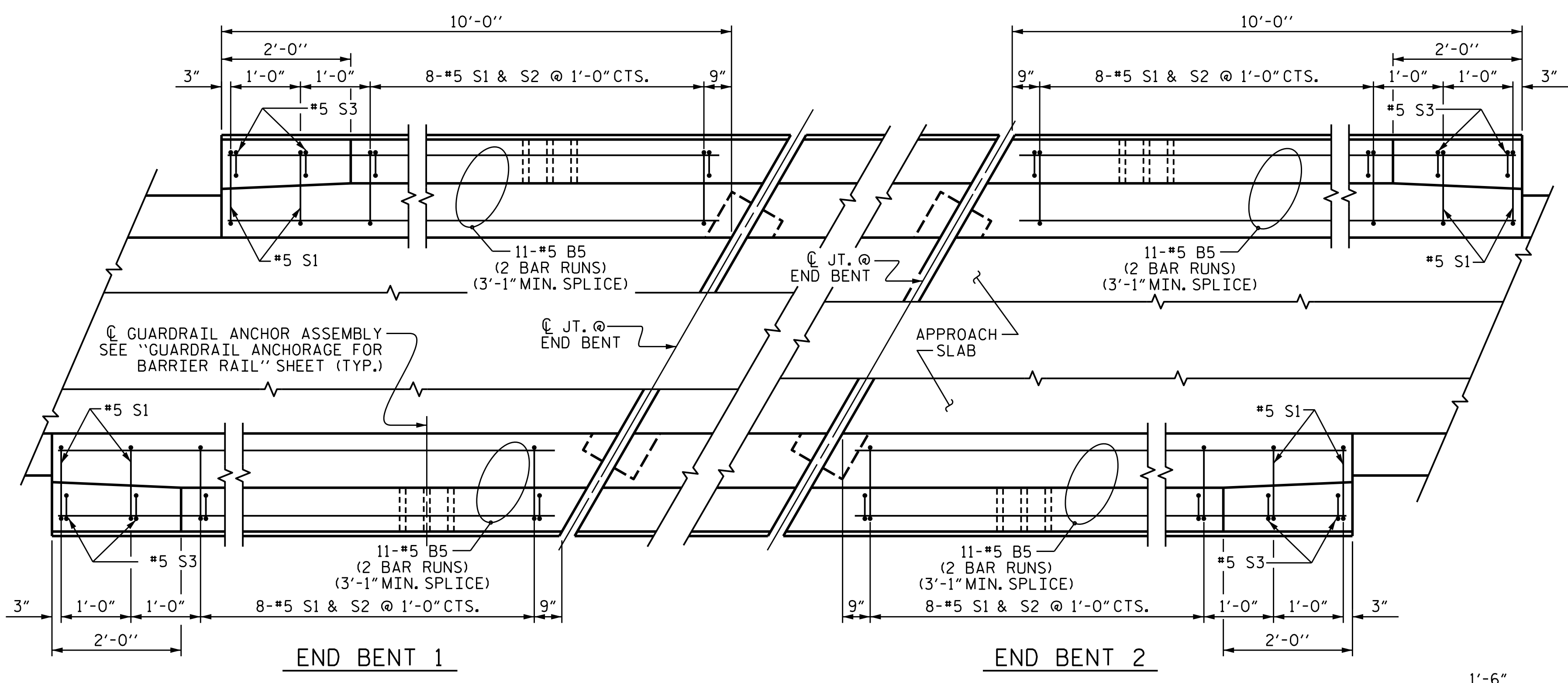
DRAWN BY : S.D. COOPER DATE : 12-22
 CHECKED BY : J.A. BATTS DATE : 12-22
 DESIGN ENGINEER OF RECORD: J.A. BATTS DATE : 12-22

REVISIONS				SHEET NO.	
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1			3		
2			4		

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TOTAL SHEETS
40

3/21/2023 8:16:37 AM P:\Raleigh\Projects\2019\Division 9 (Davenport)\B-5783\Structures\Drawings\NEW\Final\280168_SB\B-5783_SMU_AS_280168.dgn



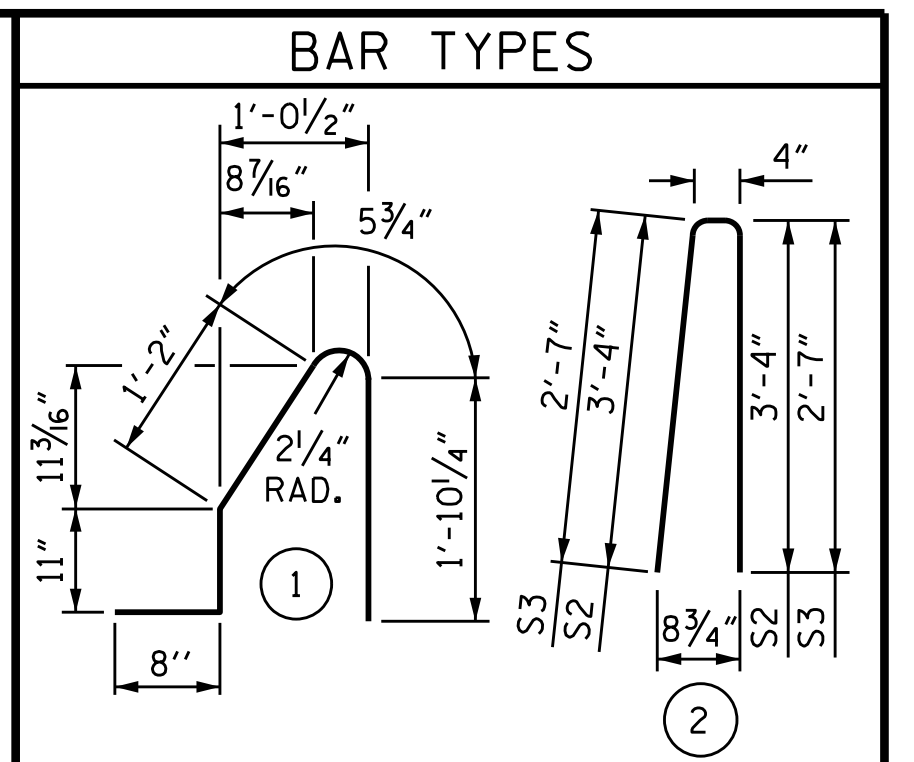
PLAN OF BARRIER RAIL

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.

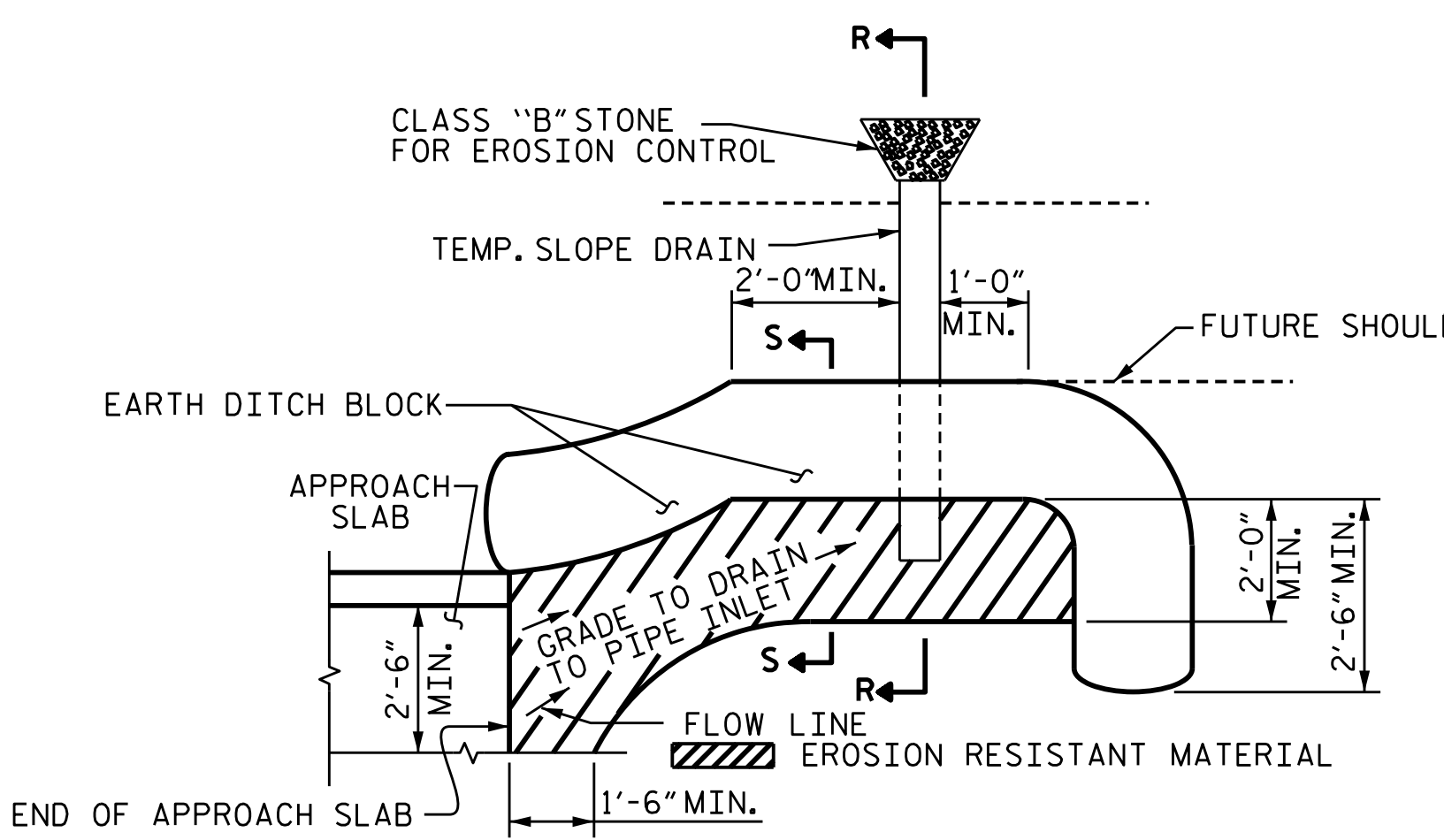
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.



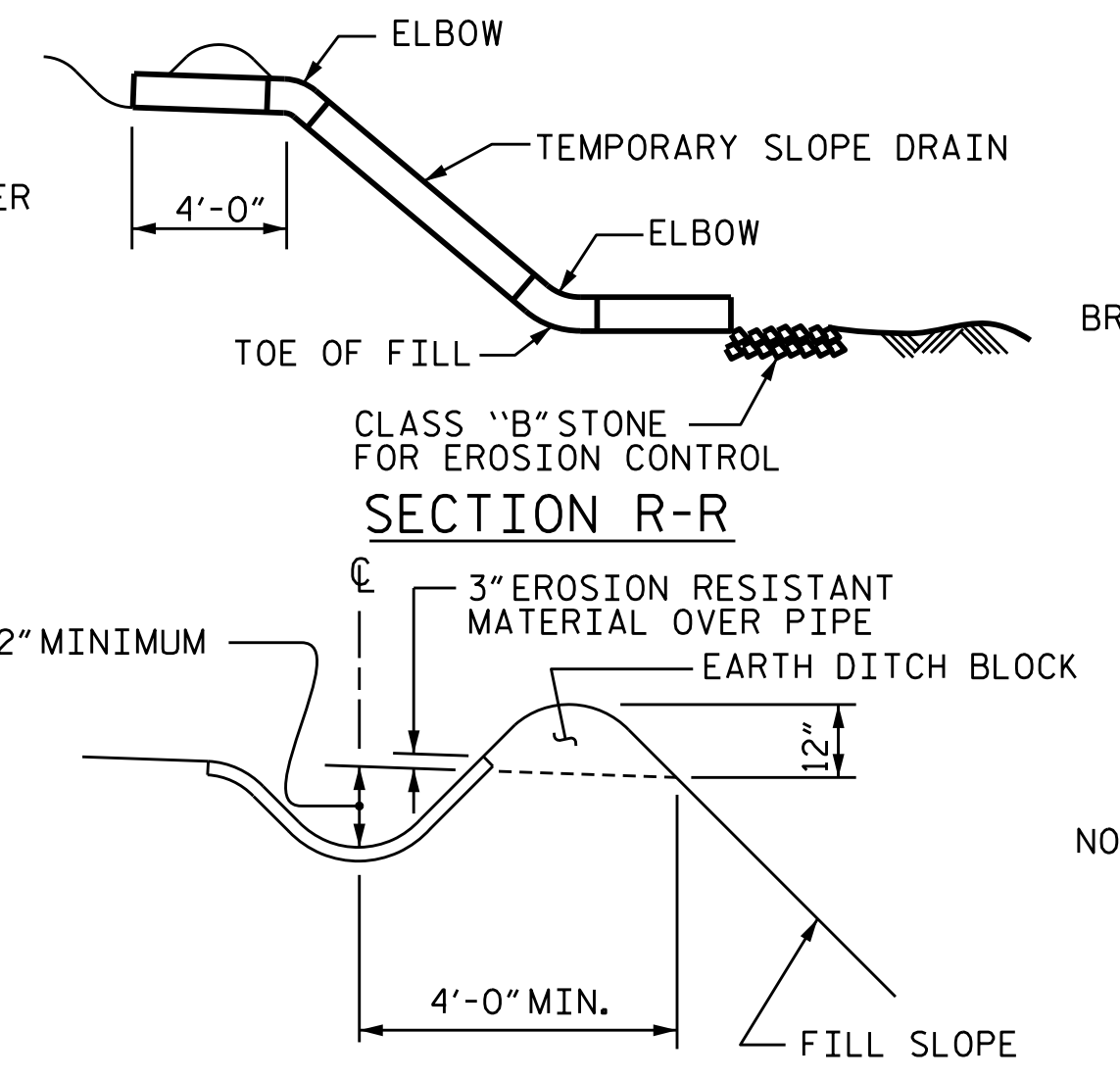
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

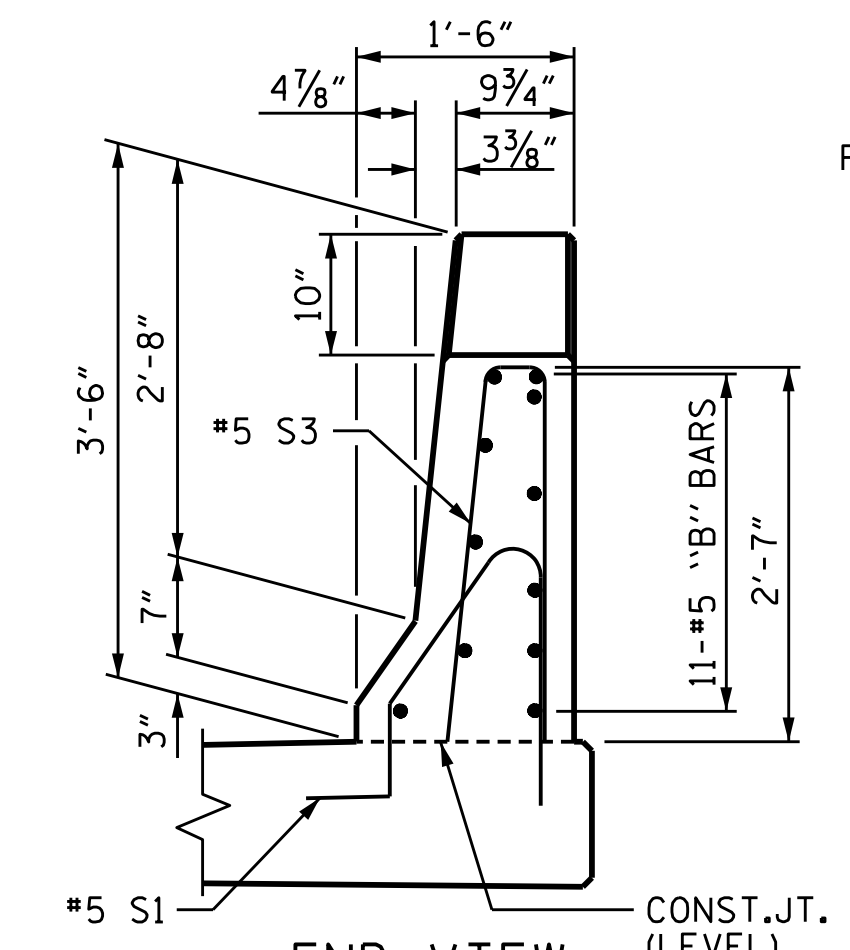
BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B5	88	#5	STR	7'-0"	642
* S1	40	#5	1	5'-1"	212
* S2	32	#5	2	7'-0"	234
* S3	8	#5	2	5'-6"	46
* EPOXY COATED REINFORCING STEEL				1134	LBS.
CLASS AA CONCRETE				5.7	C. Y.
CONCRETE BARRIER RAIL				42.5	LIN. FT.



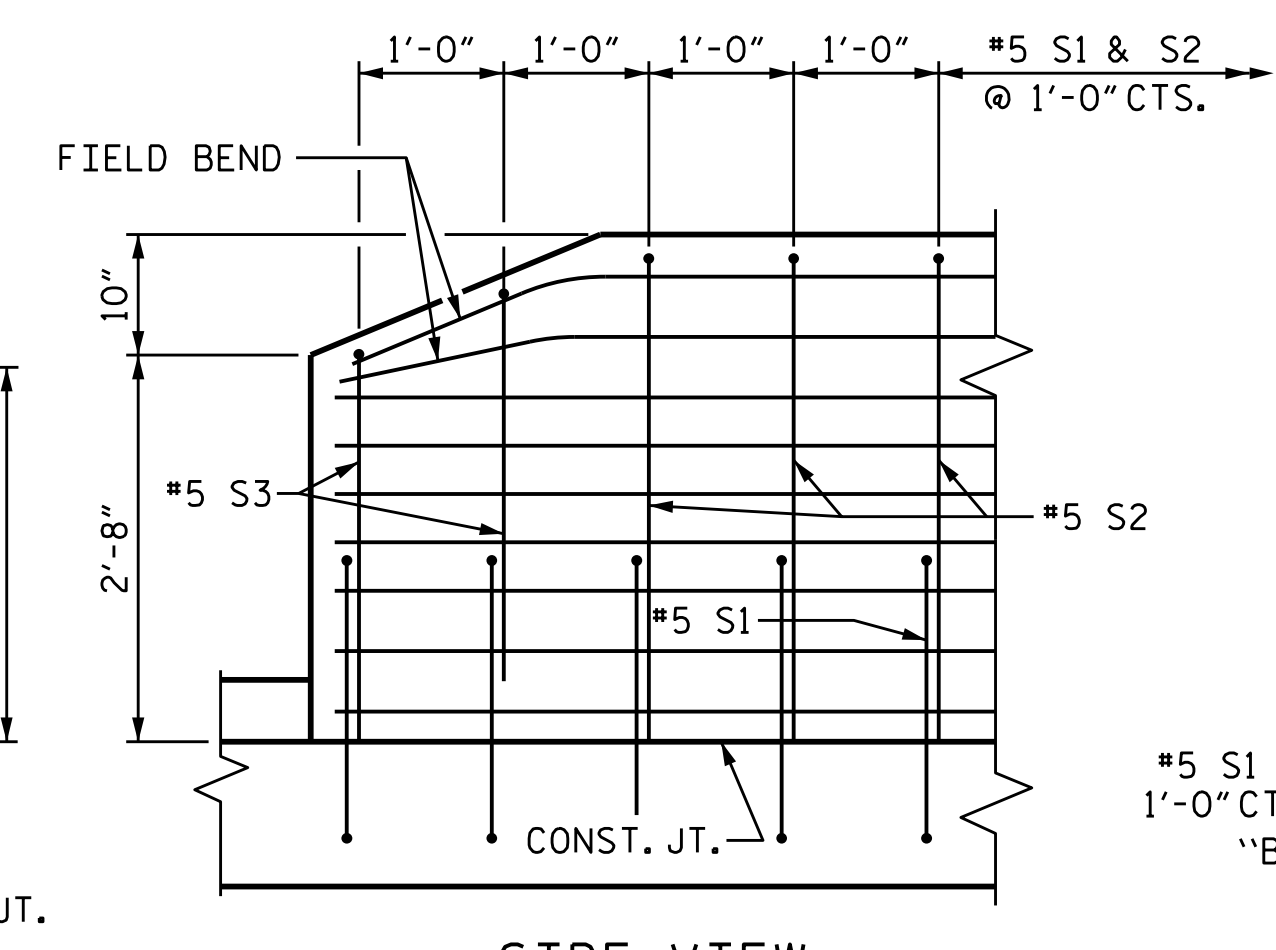
PLAN VIEW



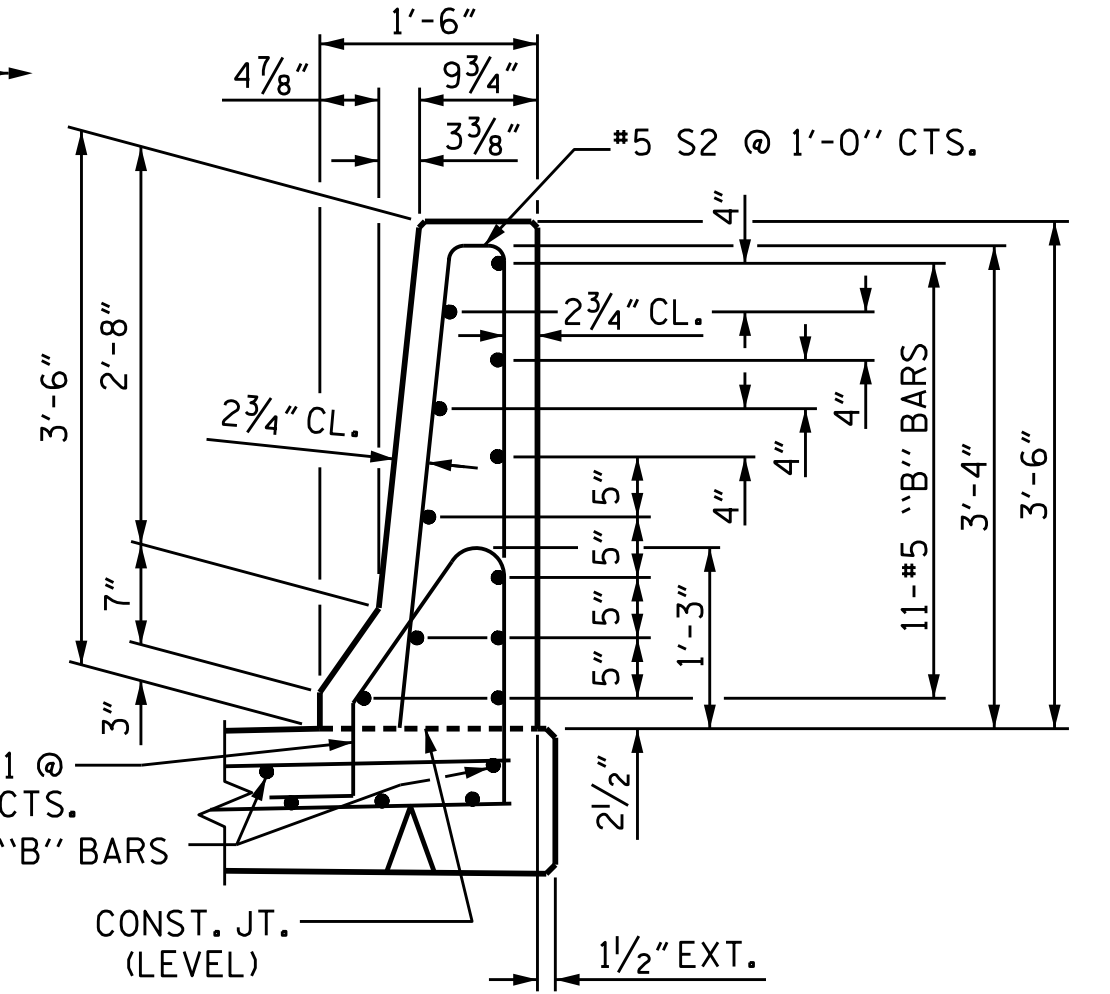
SECTION S-S



END VIEW

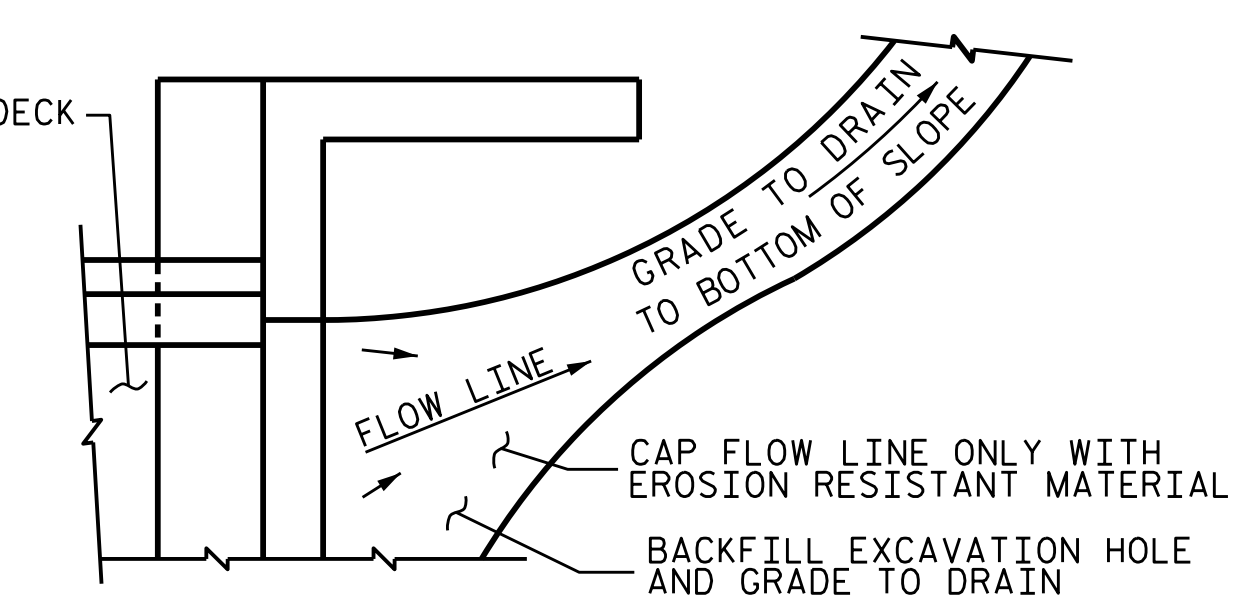


SIDE VIEW



SECTION THRU RAIL

END OF RAIL DETAILS



TEMPORARY DRAINAGE DETAIL

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

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

TEMPORARY BERM AND SLOPE DRAIN DETAILS

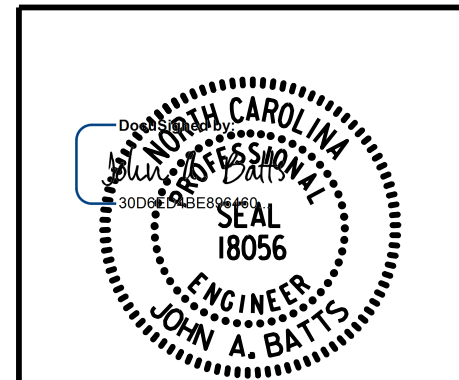
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. B-5783
 DAVIDSON COUNTY
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SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB



DRAWN BY : S.D. COOPER DATE : 12-22
 CHECKED BY : J.A. BATTS DATE : 12-22
 DESIGN ENGINEER OF RECORD : J.A. BATTS DATE : 12-22

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 3/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990