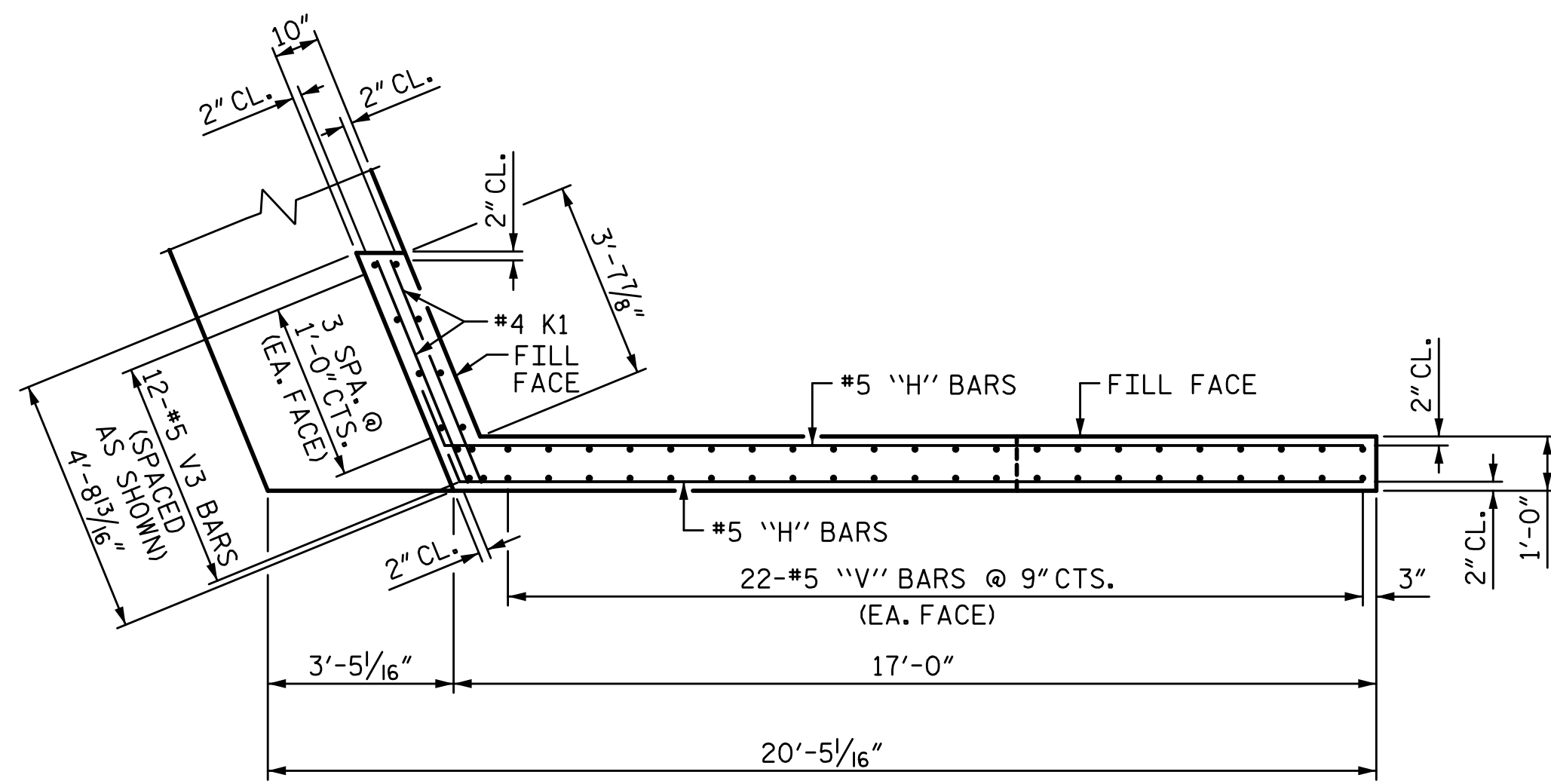


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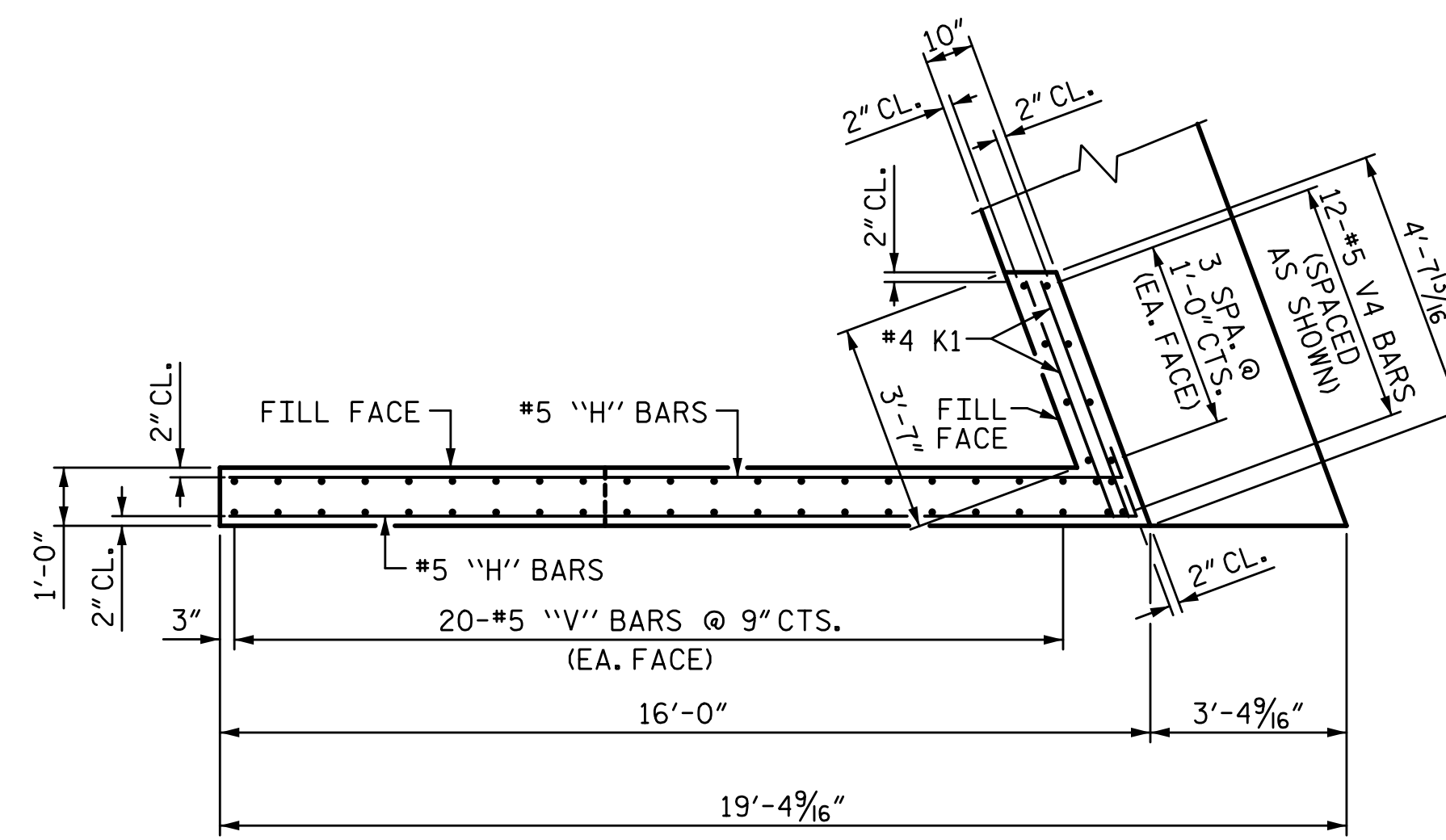
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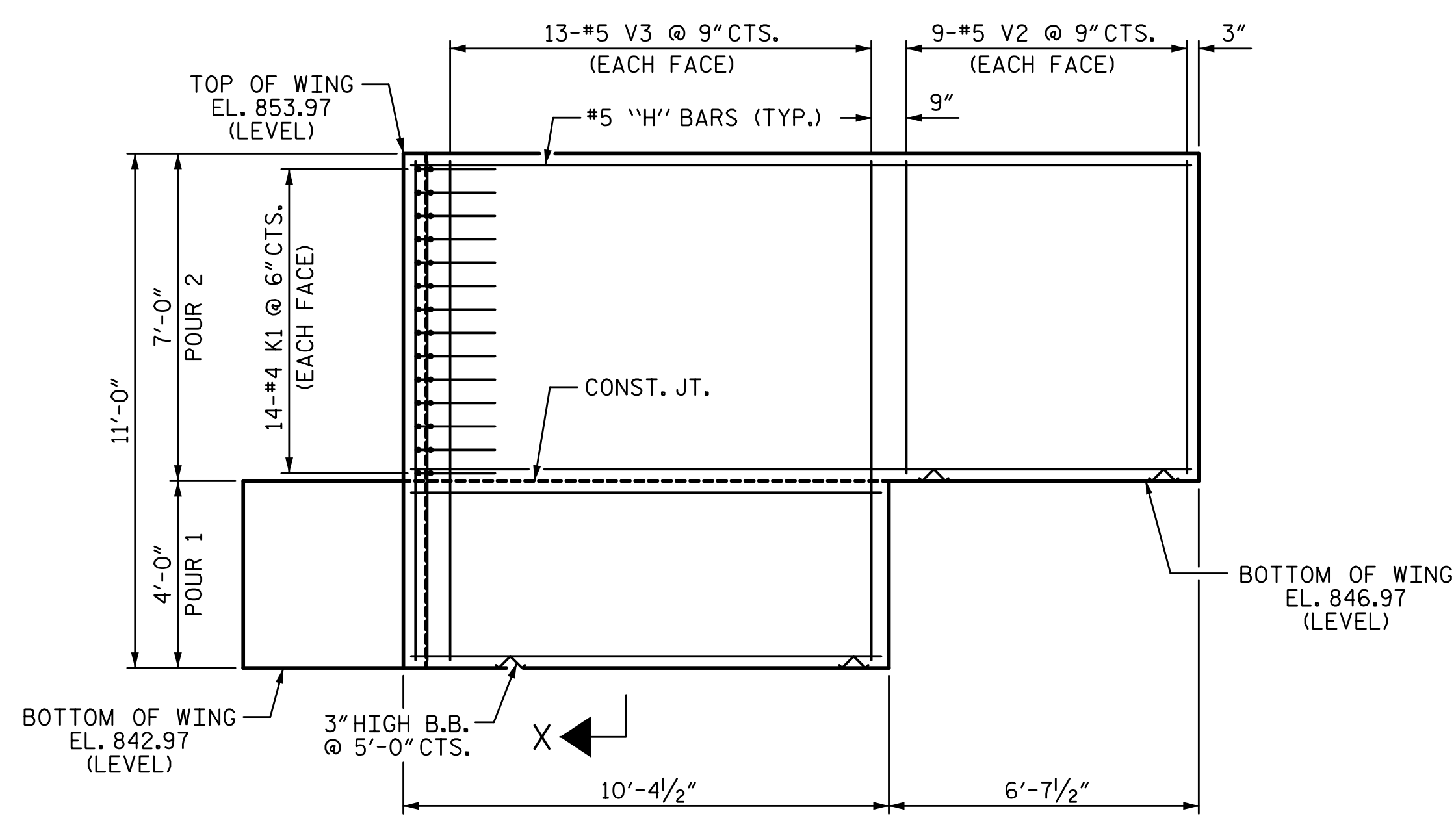
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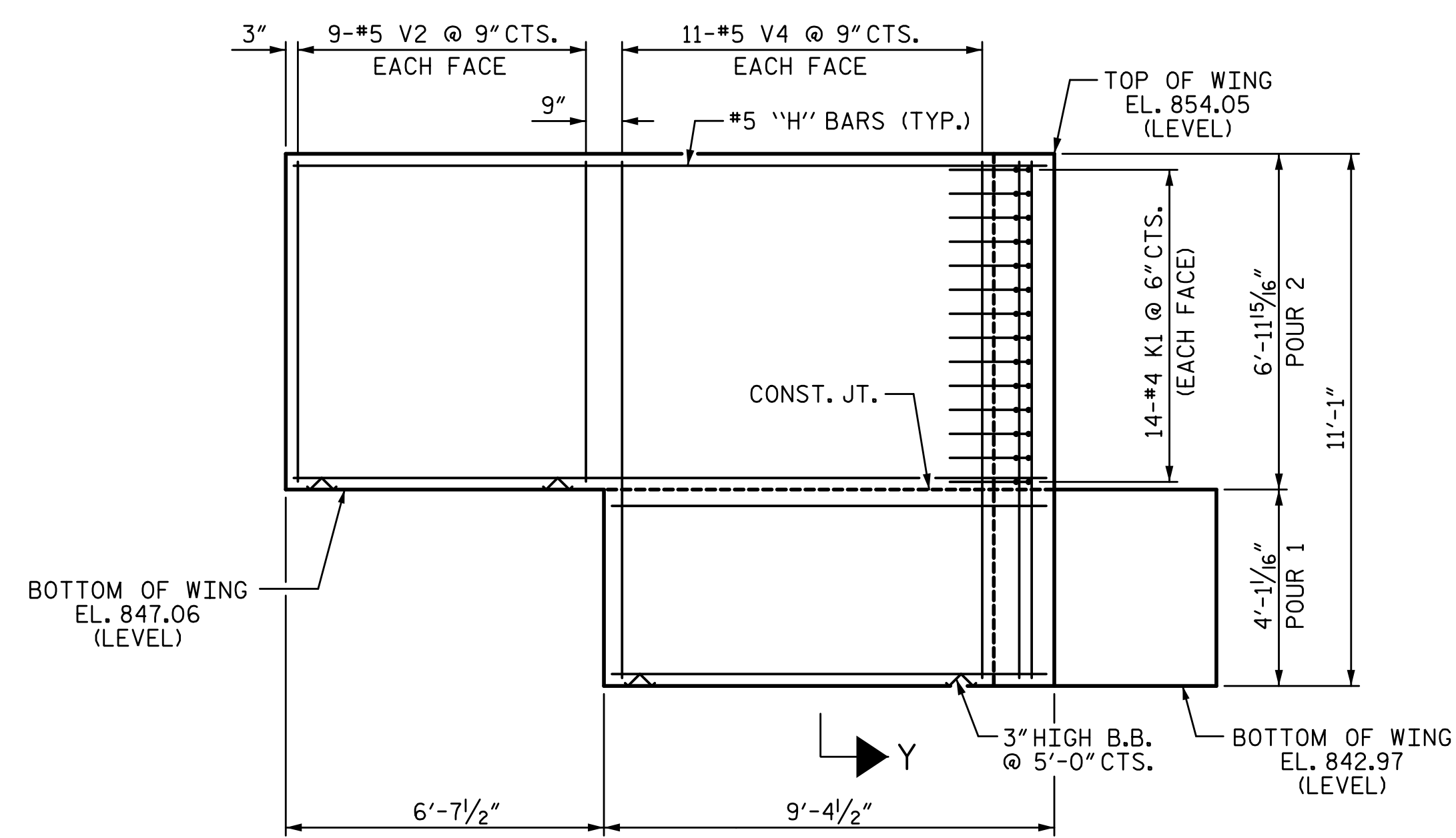
PLAN OF WING (W1)



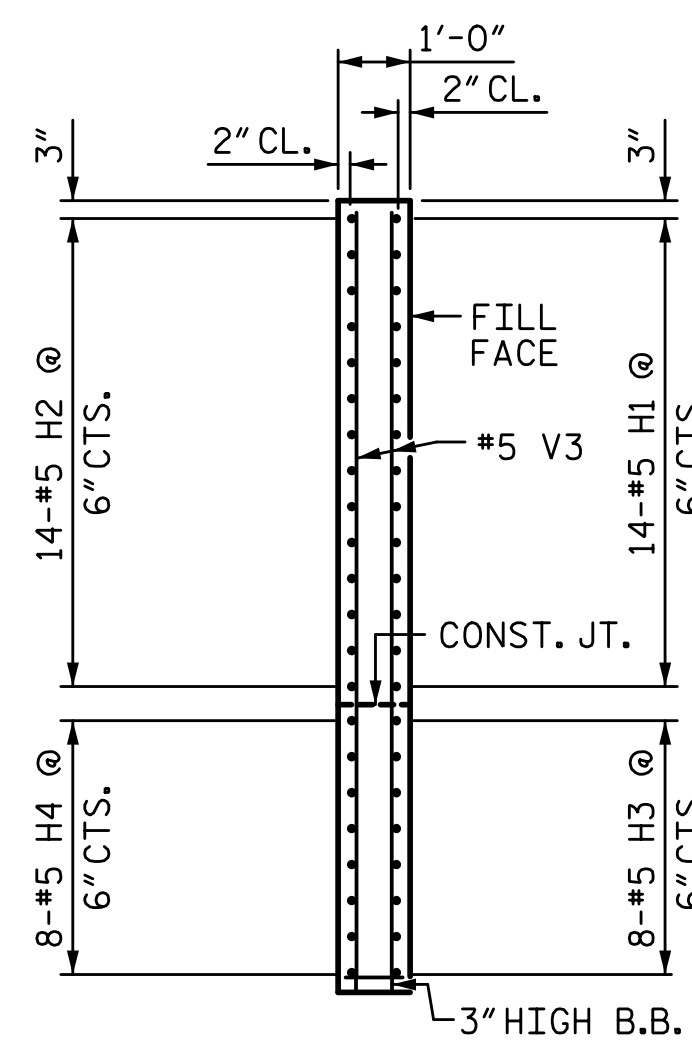
PLAN OF WING (W2)



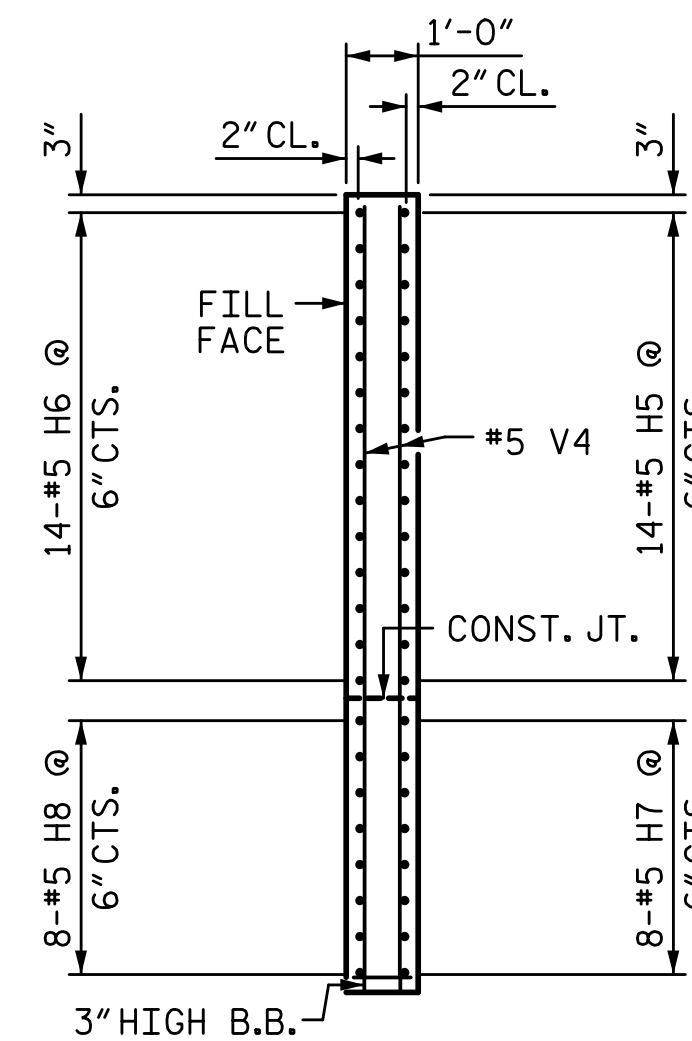
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

DRAWN BY: S.D. COOPER DATE: 3-17  
 CHECKED BY: T.J. BEACH DATE: 3-17  
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 3-17

PLANS PREPARED BY:

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PROJECT NO. U-2525C  
GUILFORD COUNTY  
 STATION: 25+52.71 -Y7-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE

END BENT 1

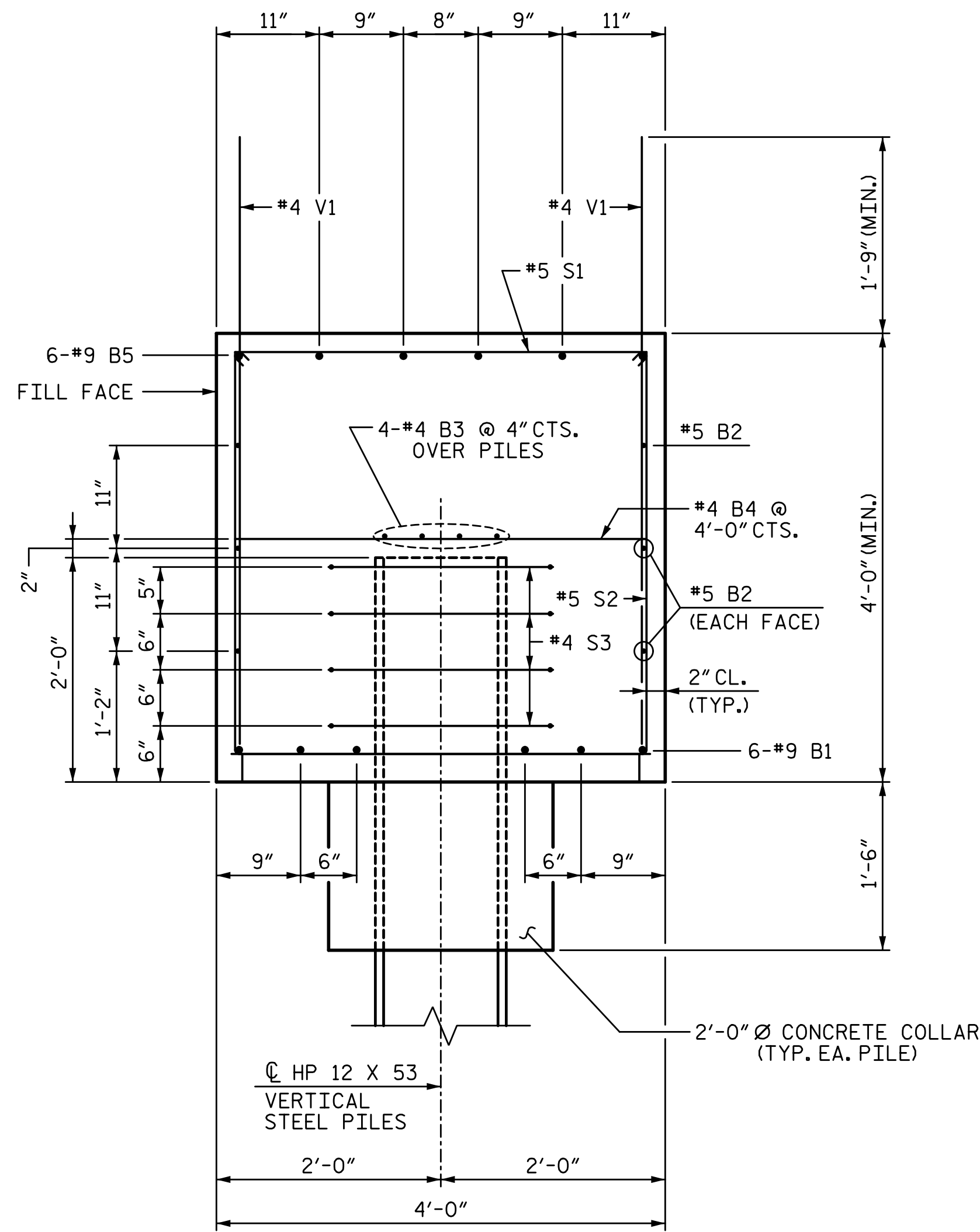
REVISIONS

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

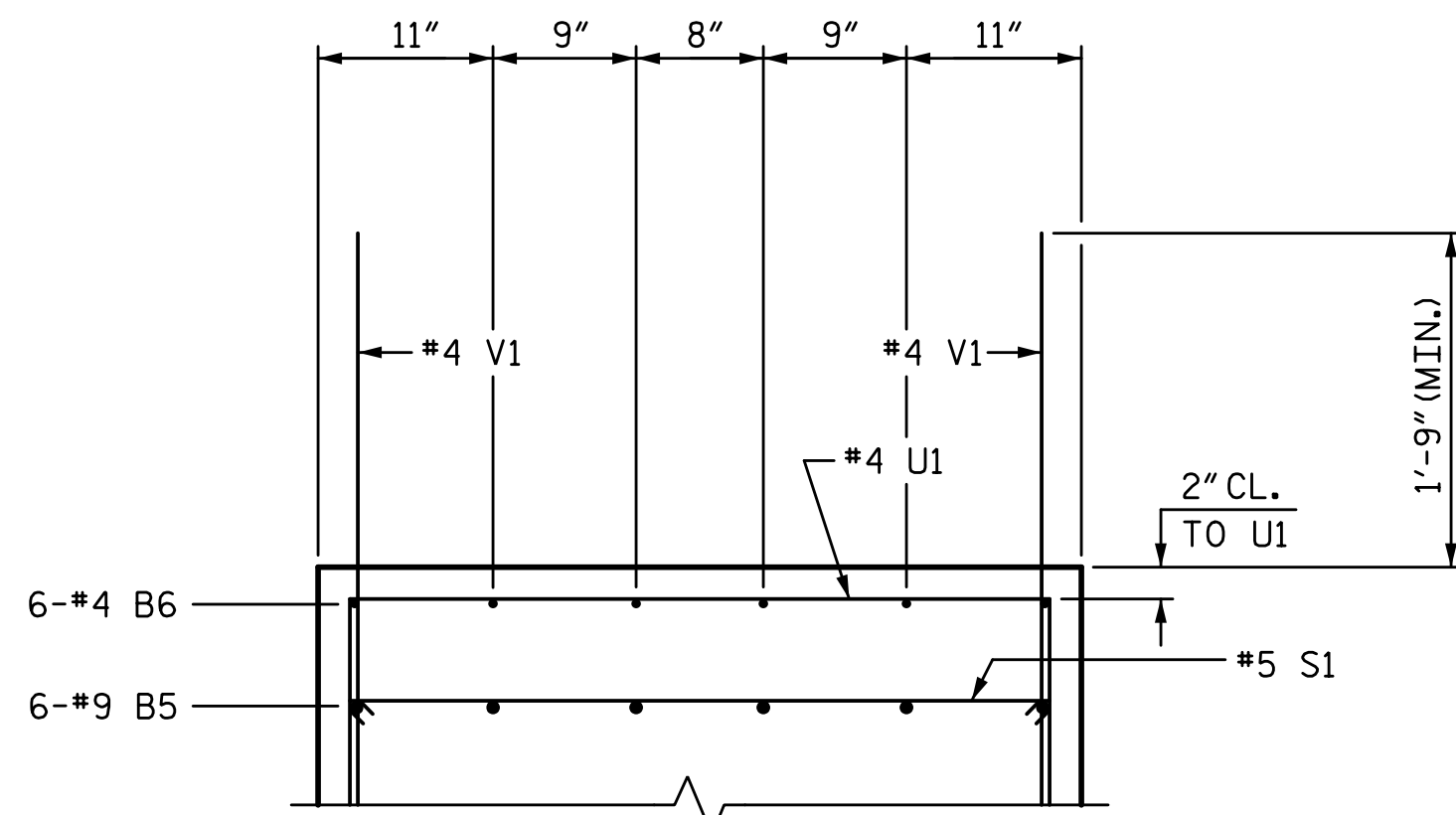
SHEET NO.  
 S10-25  
 TOTAL SHEETS  
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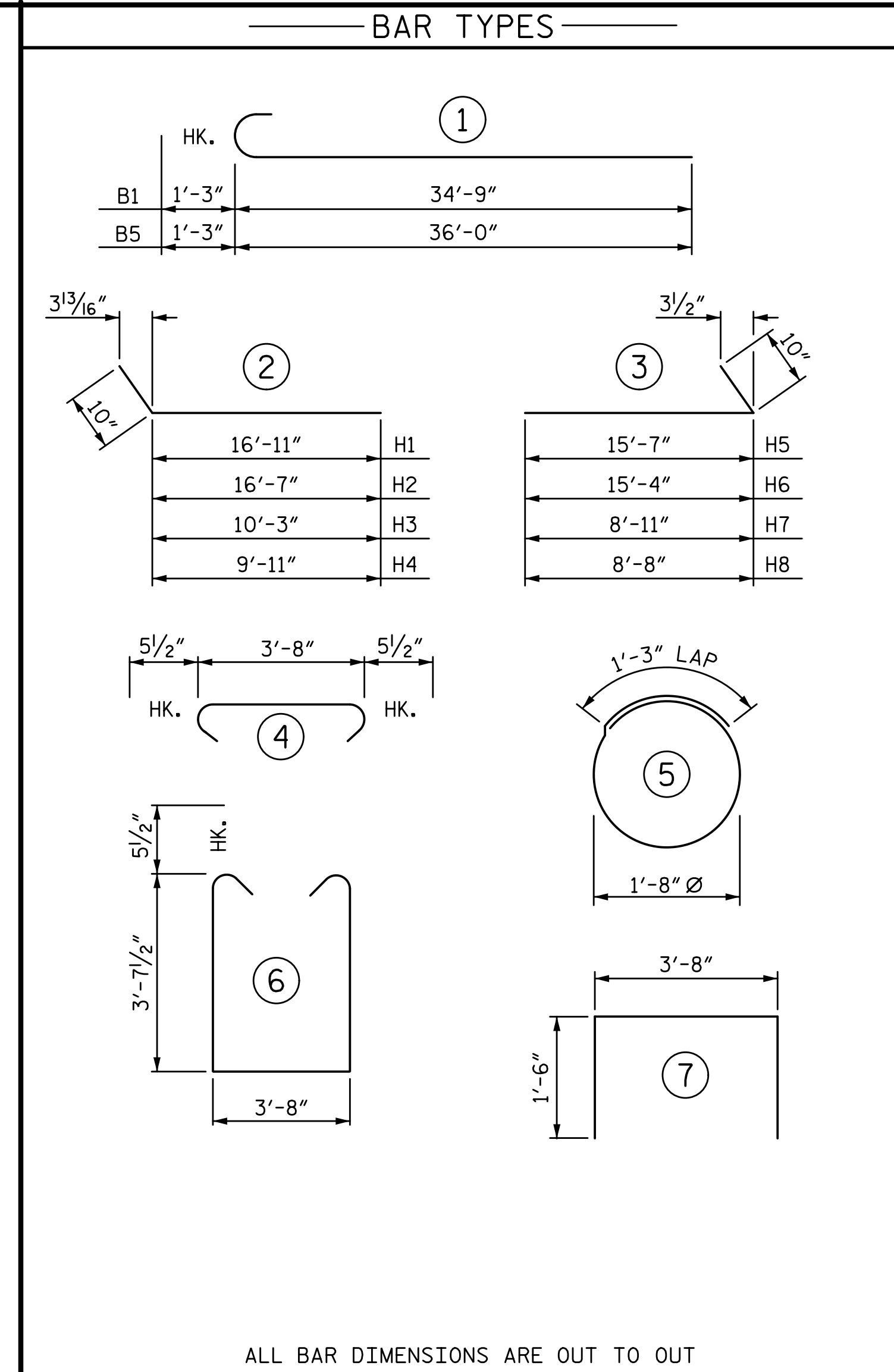
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SECTION A-A



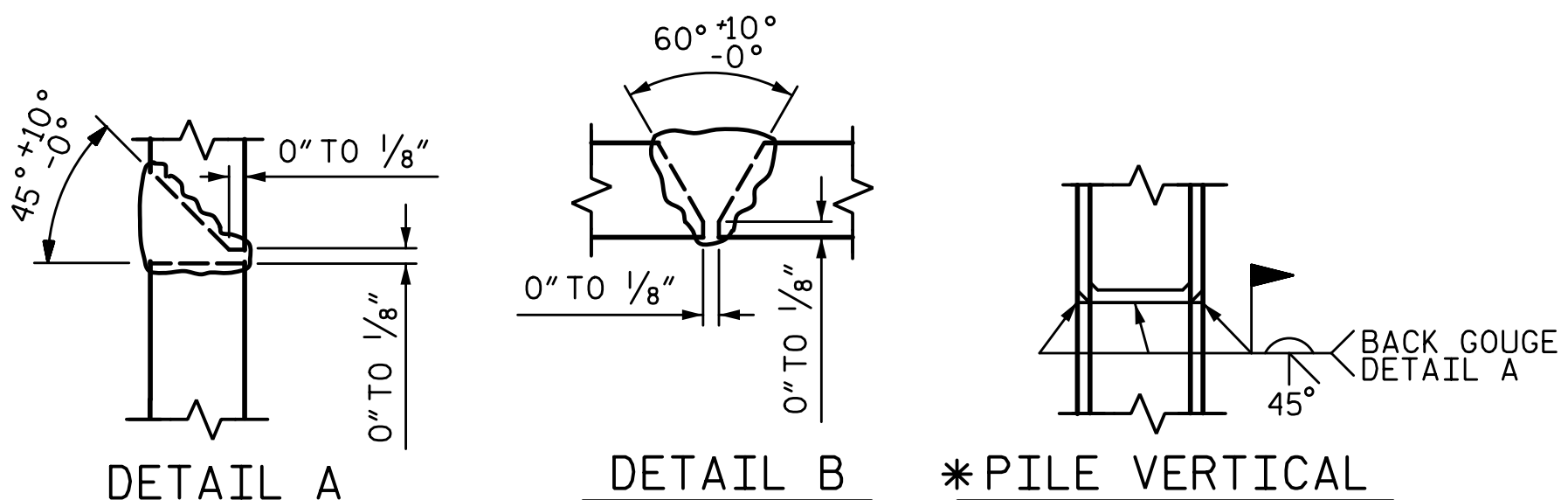
PARTIAL SECTION B-B



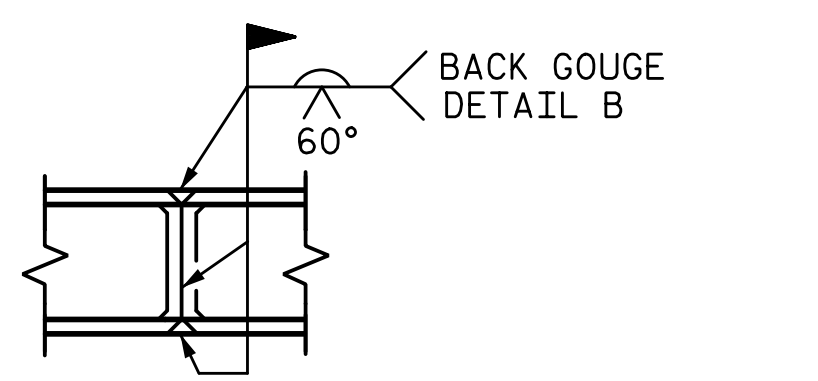
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	36'-0"	1469
B2	12	#5	STR	33'-2"	415
B3	12	#4	STR	22'-9"	182
B4	16	#4	STR	3'-8"	39
B5	12	#9	1	37'-3"	1520
B6	6	#4	STR	13'-2"	53
H1	14	#5	2	17'-9"	259
H2	14	#5	2	17'-5"	254
H3	8	#5	2	11'-1"	92
H4	8	#5	2	10'-9"	90
H5	14	#5	3	16'-5"	240
H6	14	#5	3	16'-2"	236
H7	8	#5	3	9'-9"	81
H8	8	#5	3	9'-6"	79
K1	56	#4	STR	4'-3"	159
S1	102	#5	4	4'-7"	488
S2	102	#5	6	11'-10"	1259
S3	44	#4	5	6'-6"	191
U1	14	#4	7	6'-8"	62
V1	78	#4	STR	5'-11"	308
V2	36	#5	STR	6'-7"	247
V3	38	#5	STR	10'-8"	423
V4	34	#5	STR	10'-7"	375
TOTAL REINFORCING STEEL					8521 LB
CLASS A CONCRETE					
POUR 1 (CAP, COLLARS, & LOWER WINGS) 44.2 CY					
POUR 2 (UPPER WINGS) 10.1 CY					
TOTAL CLASS A CONCRETE					54.3 CY
HP 12 X 53 STEEL PILES NO. 11					715 LF
PILE DRIVING EQUIPMENT SETUP HP 12 X 53 STEEL PILES					11 EA.



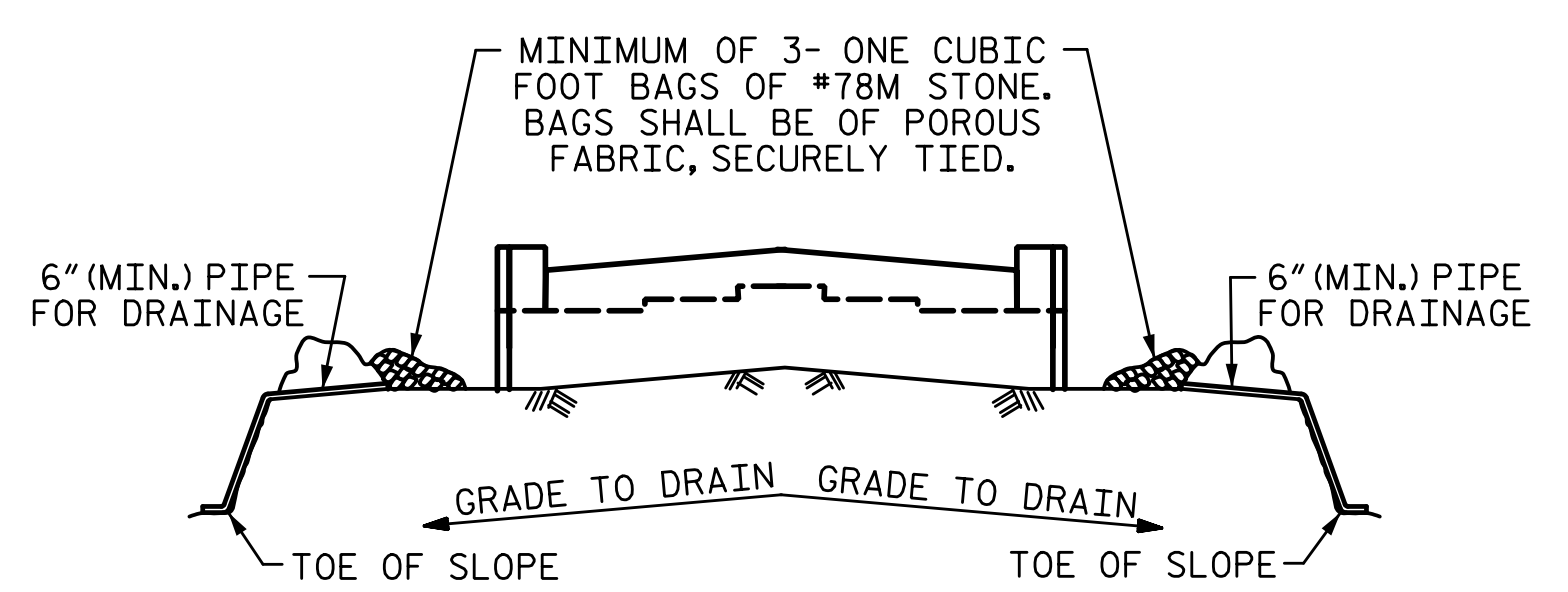
\*PILE VERTICAL



\*PILE HORIZONTAL OR VERTICAL

PILE SPLICE DETAILS

\* POSITION OF PILE DURING WELDING



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

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

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

TEMPORARY DRAINAGE AT END BENT

PROJECT NO. U-2525C  
GUILFORD COUNTY  
 STATION: 25+52.71 -Y7-

SHEET 3 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. S10-26					TOTAL SHEETS 36

PLANS PREPARED BY:

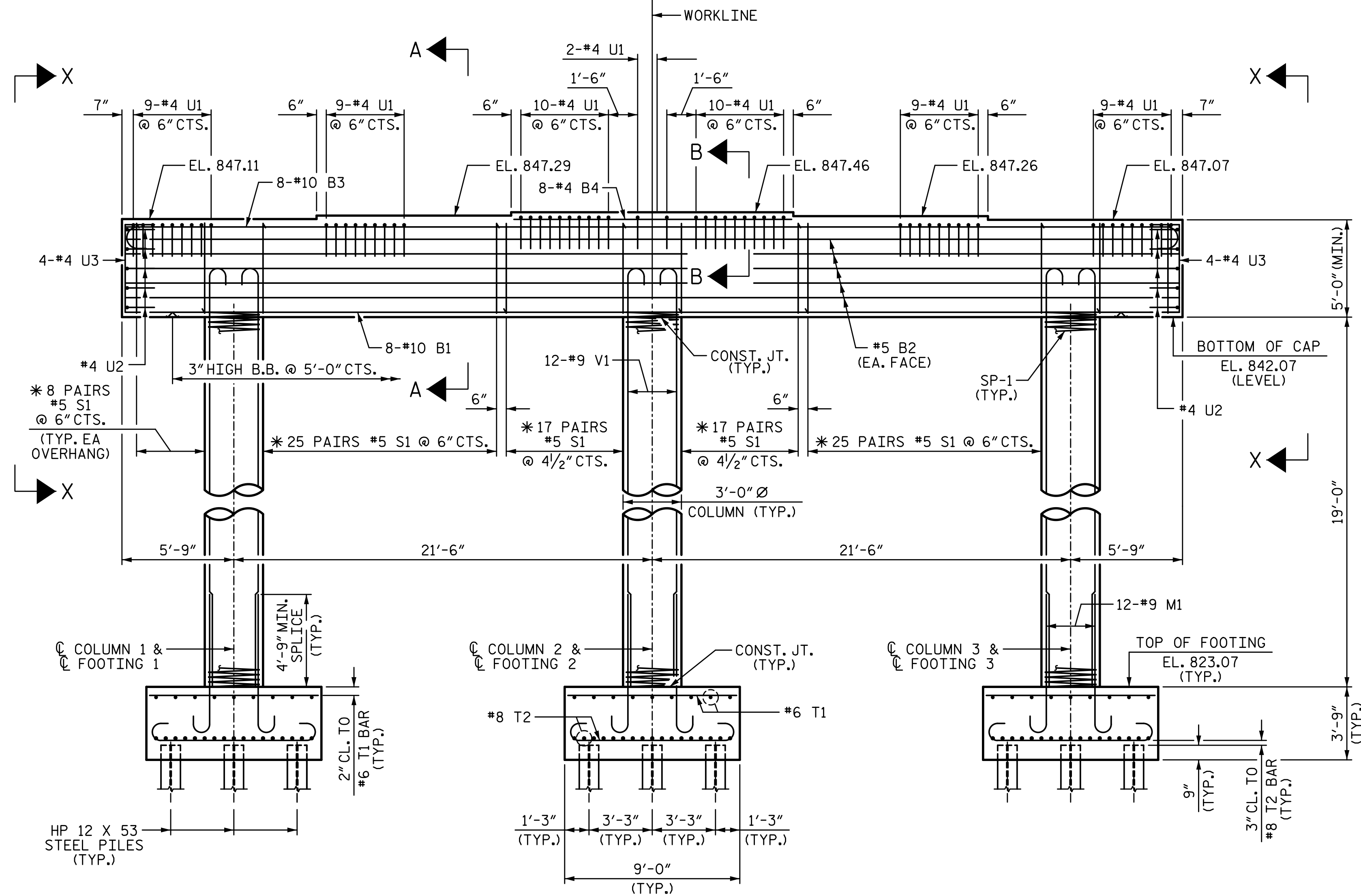
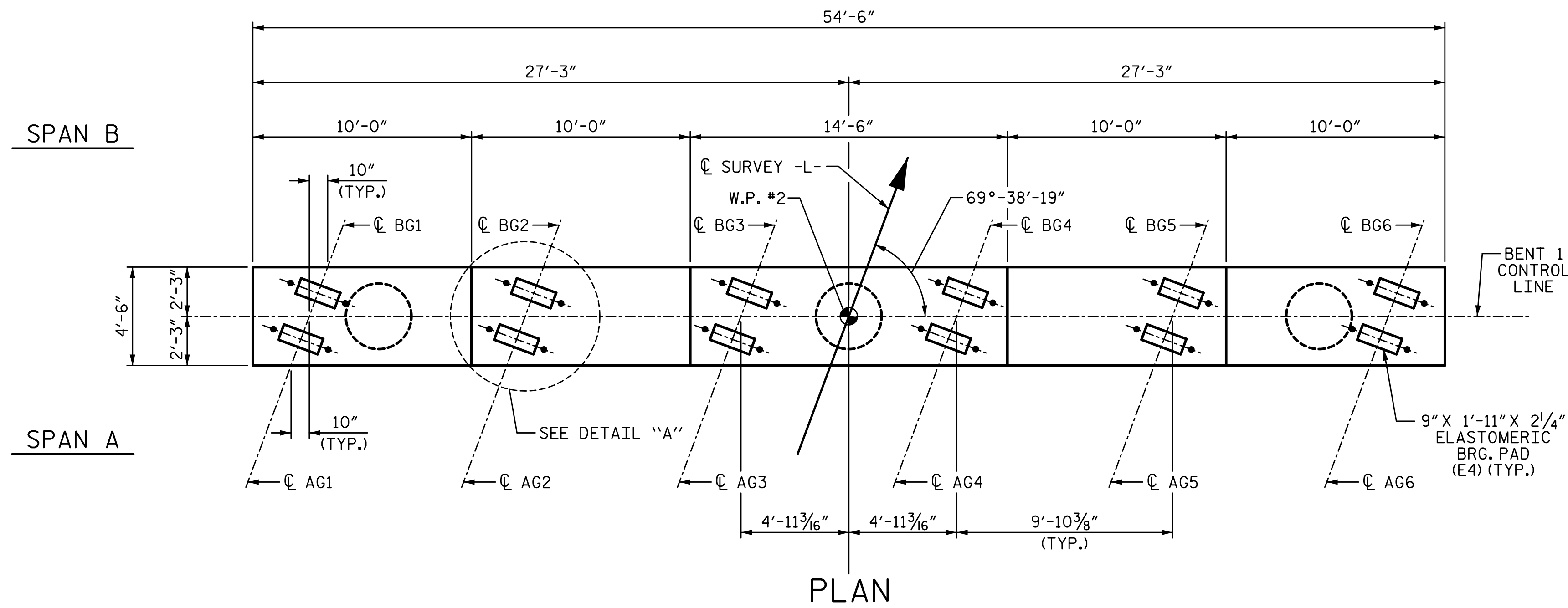
**SE & A**  
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**PROFESSIONAL SEAL**  
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 THEO J. BEACH  
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DRAWN BY: S.D. COOPER	DATE: 3-17
CHECKED BY: T.J. BEACH	DATE: 3-17
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 3-17

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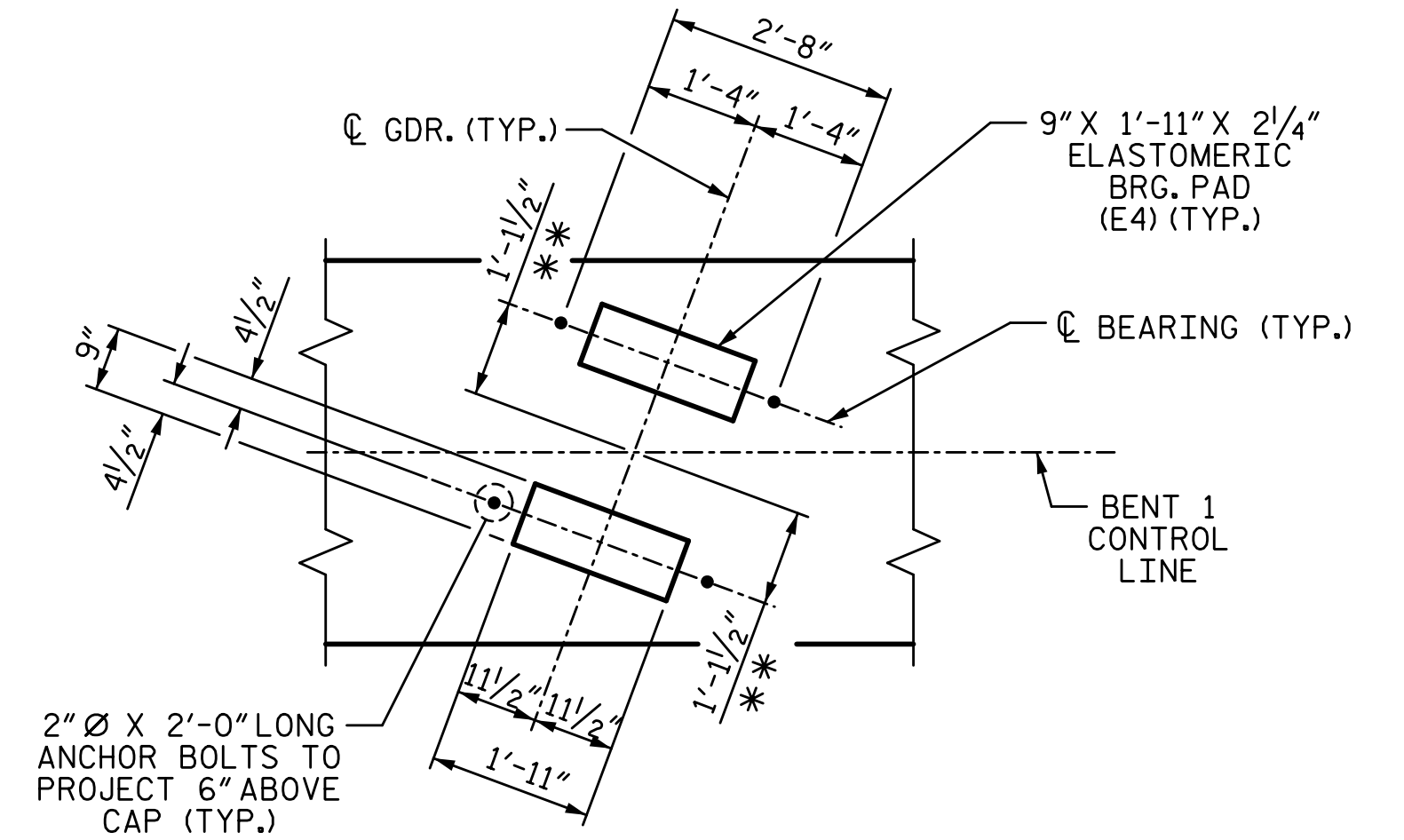


**ELEVATION**

DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND FOOTING

**NOTES:**

- \* INVERT ALTERNATE PAIRS OF STIRRUPS AS SHOWN.
- 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.
- FOR PILE SPLICE DETAILS, SEE "END BENT 1" SHEET 3 OF 3.
- SEE GENERAL DRAWING "FOUNDATION LAYOUT" FOR ADDITIONAL NOTES FOR DRIVING PILES.



**DETAIL "A"**

(TYP. EA. GIRDER)  
 (\*\* MEASURED ALONG G GIRDER)

PROJECT NO. U-2525C  
GUILFORD COUNTY  
 STATION: 25+52.71 -Y7-

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE

**BENT 1**

PLANS PREPARED BY:  
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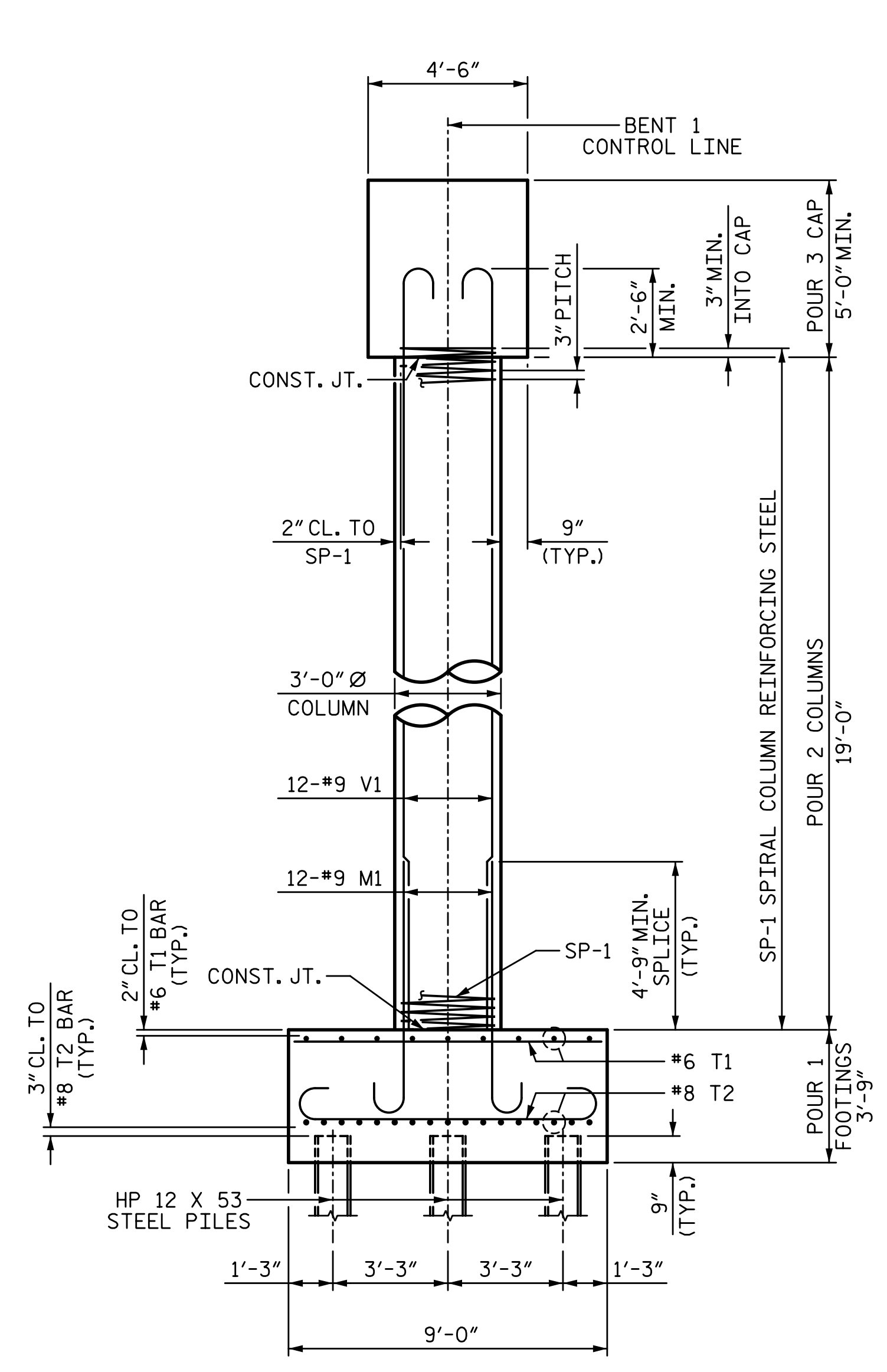


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S10-27
1			3			TOTAL SHEETS
2			4			36

DRAWN BY: S.D. COOPER DATE: 3-17  
 CHECKED BY: T.J. BEACH DATE: 3-17  
 DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 3-17

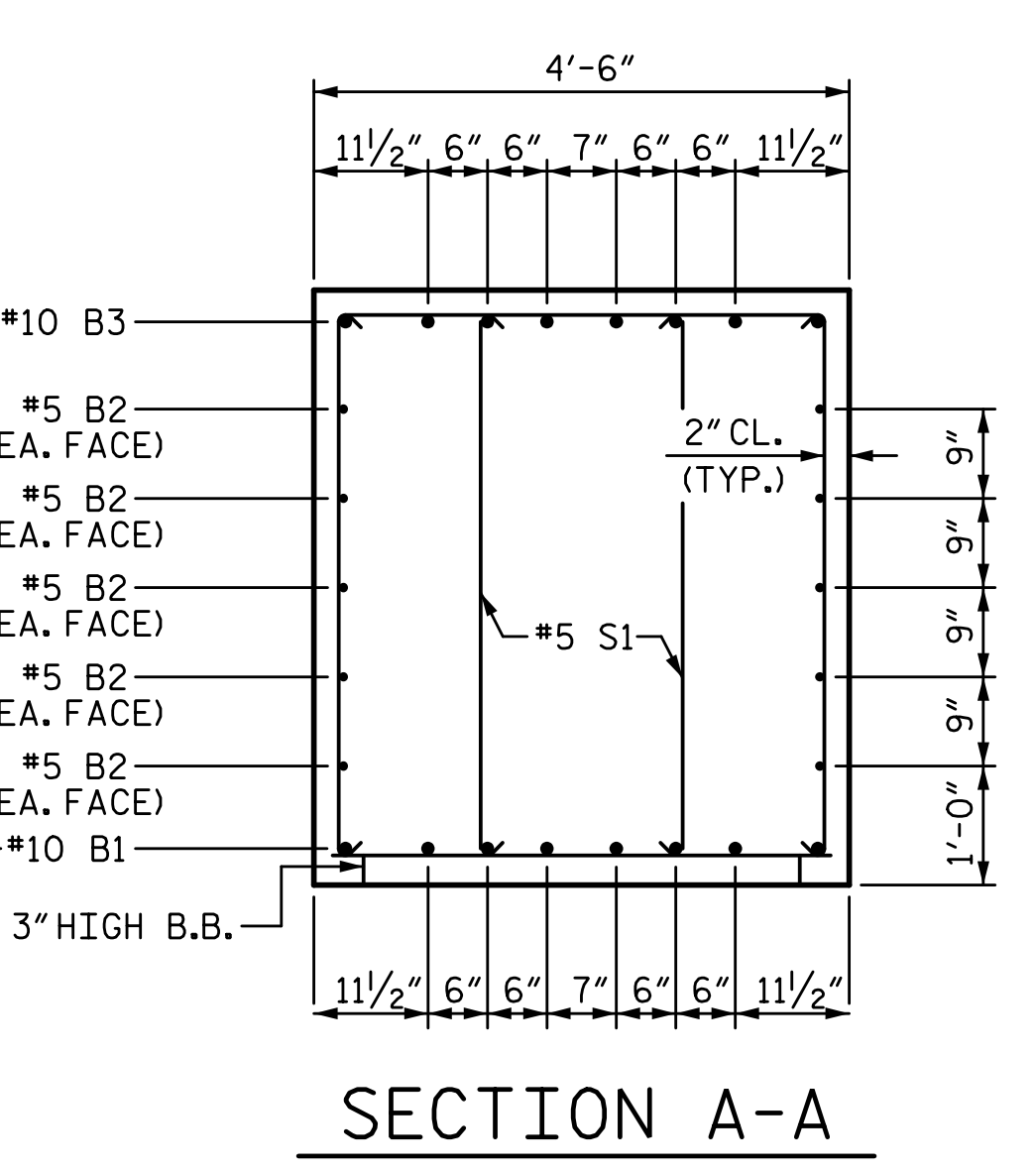
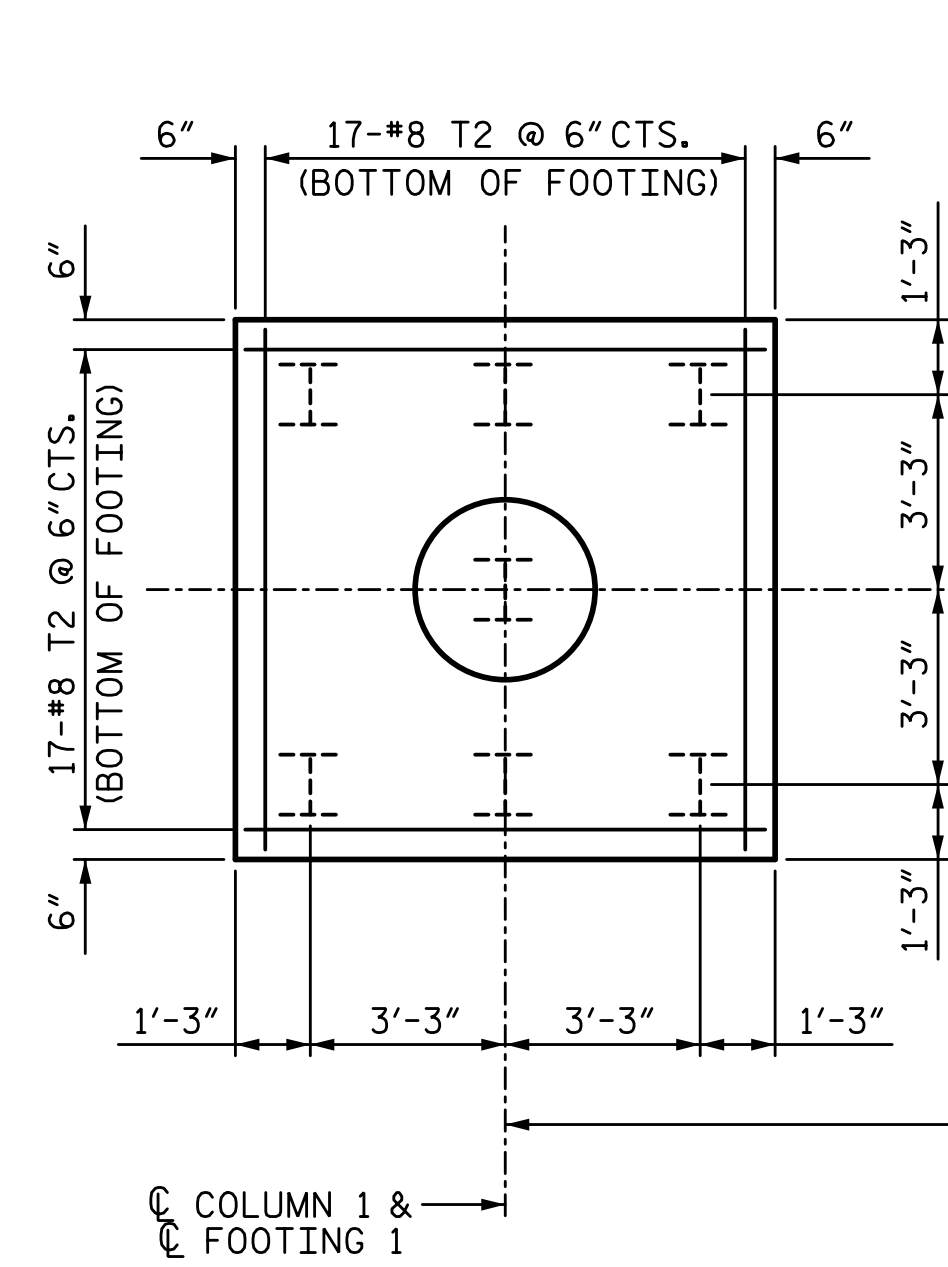
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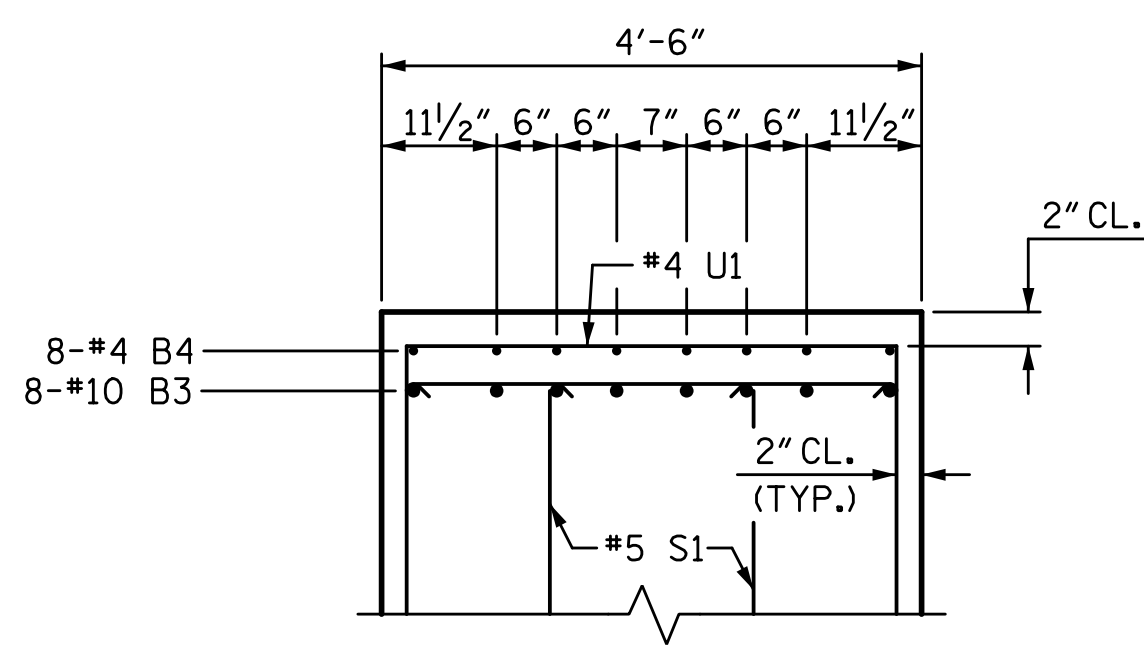


**END ELEVATION**

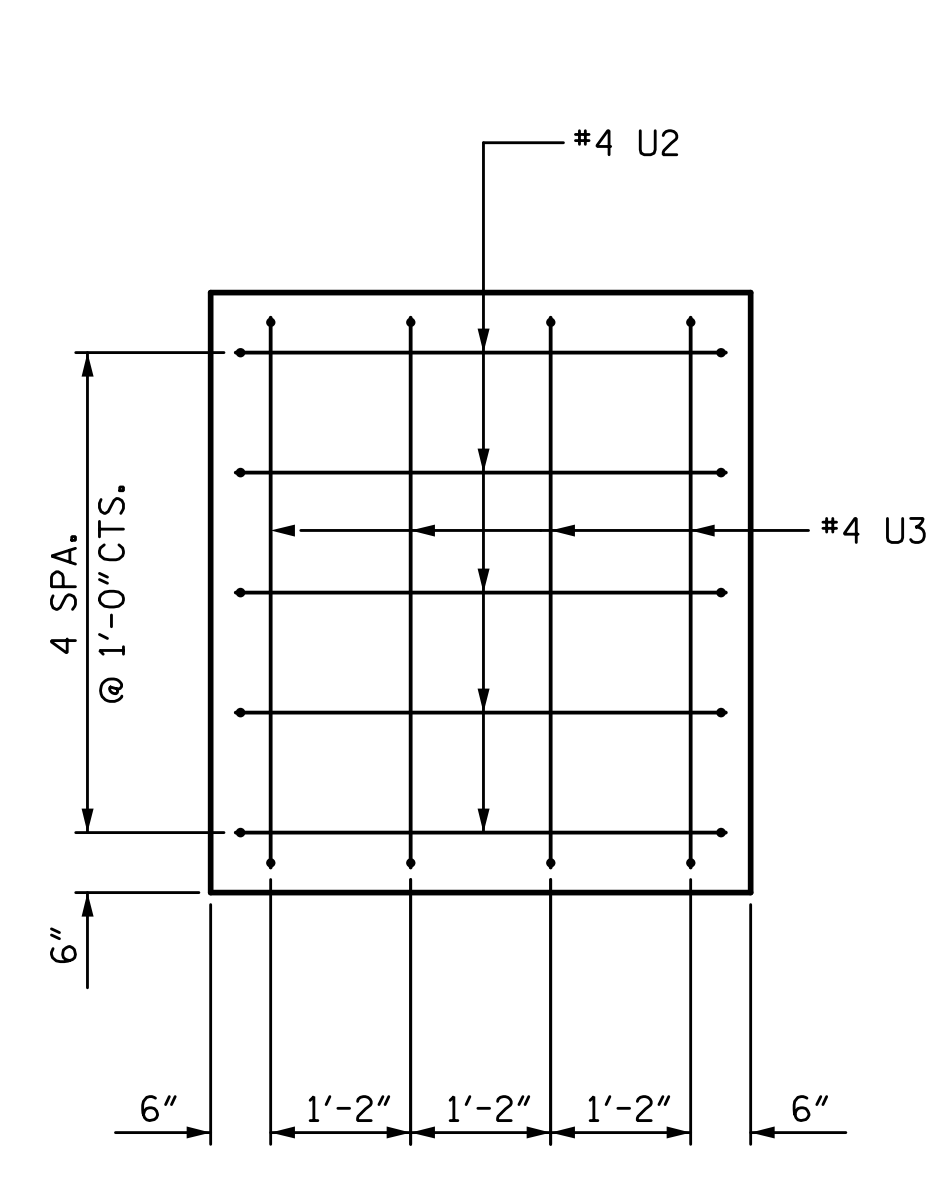
DETAILS, DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND FOOTING



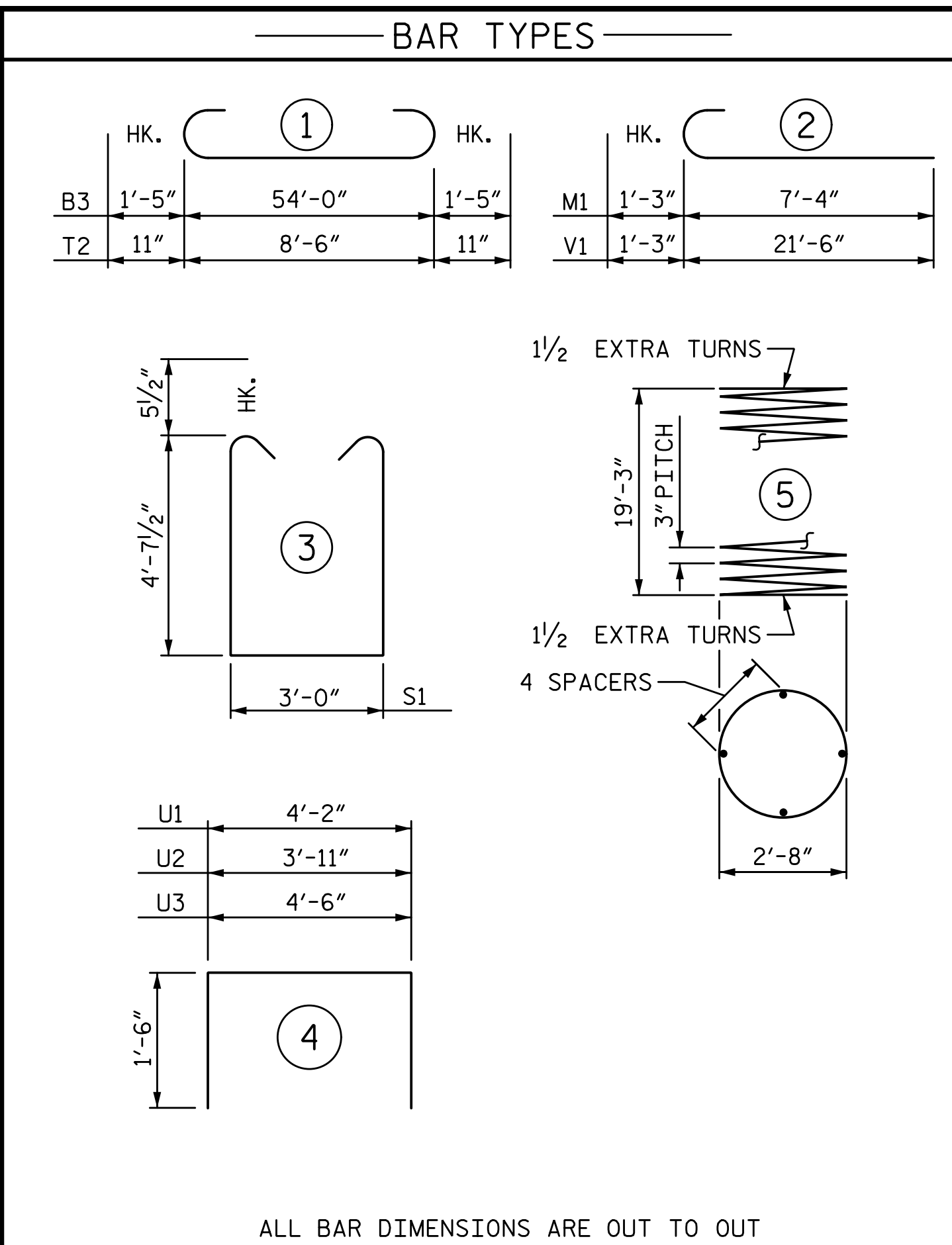
**SECTION A-A**



**PARTIAL SECTION B-B**



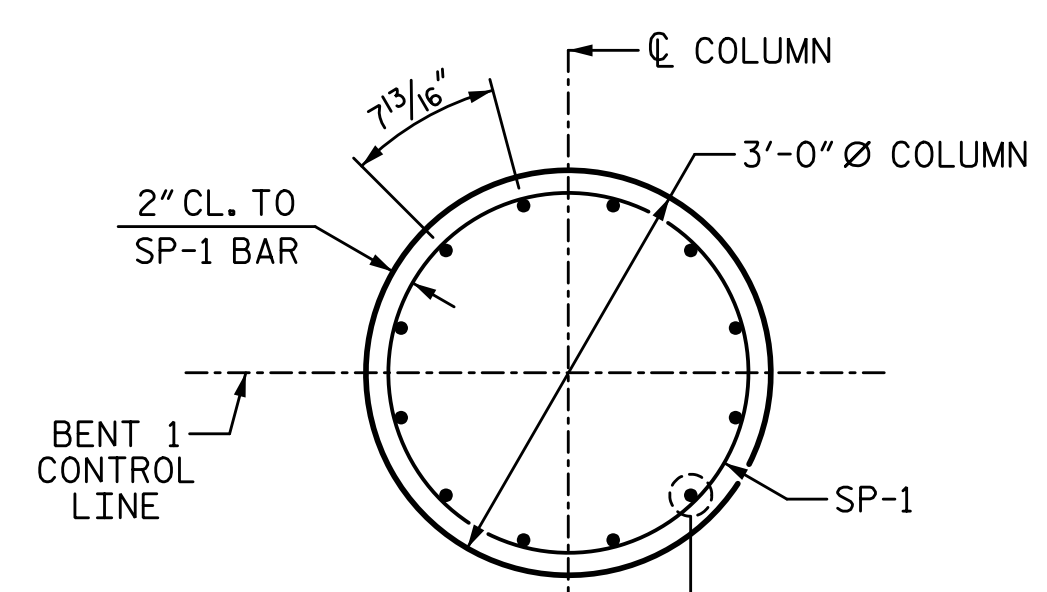
**VIEW X-X**



ALL BAR DIMENSIONS ARE OUT TO OUT

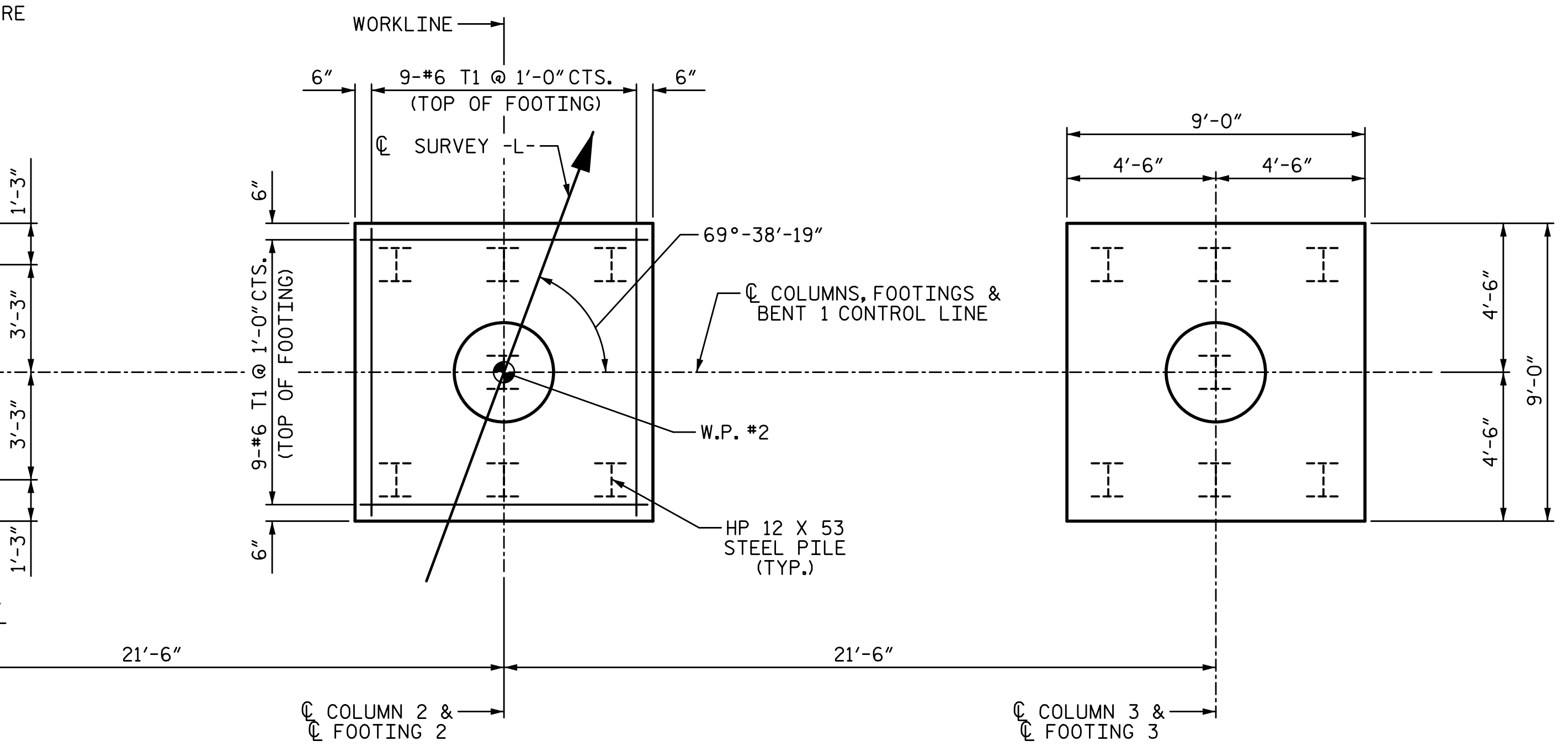
\* THE "SP-1" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

BILL OF MATERIAL					
BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#10	STR	54'-2"	1865
B2	10	#5	STR	54'-2"	565
B3	8	#10	1	56'-10"	1956
B4	8	#4	STR	14'-2"	76
M1	36	#9	2	8'-7"	1051
S1	200	#5	3	13'-2"	2747
T1	54	#6	STR	8'-6"	689
T2	102	#8	1	10'-4"	2814
U1	58	#4	4	7'-2"	278
U2	10	#4	4	6'-11"	46
U3	8	#4	4	7'-6"	40
V1	36	#9	2	22'-9"	2785
SP-1	3	*	5	660'-1"	1323
REINFORCING STEEL					14912 LB
SPIRAL COL. REINF. STEEL					1323 LB
CLASS A CONCRETE BREAKDOWN					
POUR 1 (FOOTINGS)					33.8 CY
POUR 2 (COLUMNS)					15.0 CY
POUR 3 (CAP)					47.2 CY
TOTAL					96.0 CY
HP 12 X 53 STEEL PILES NO. = 21					945 LF
PILE DRIVING EQUIPMENT SETUP HP 12 X 53 STEEL PILES					21 EA.



**PLAN OF COLUMN**

DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN



**PLAN OF FOOTINGS**

PILE PLACEMENT, DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH FOOTING

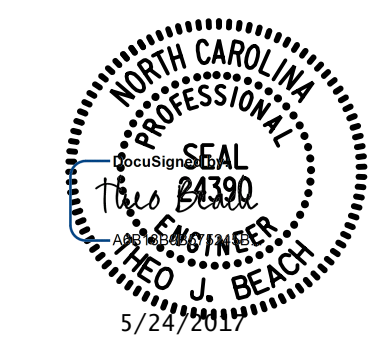
PROJECT NO. U-2525C  
 GUILFORD COUNTY  
 STATION: 25+52.71 -Y7-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE

**BENT 1**

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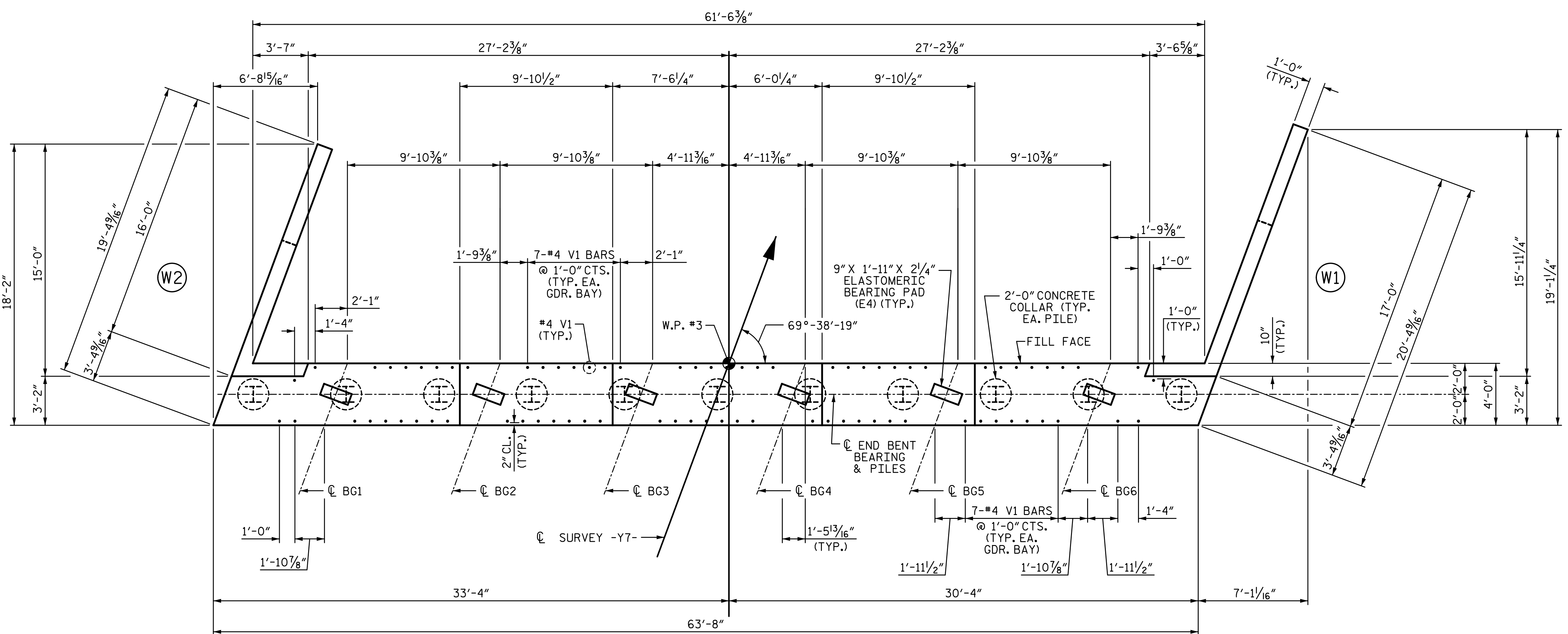
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NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		

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SHEET NO.  
 S10-28  
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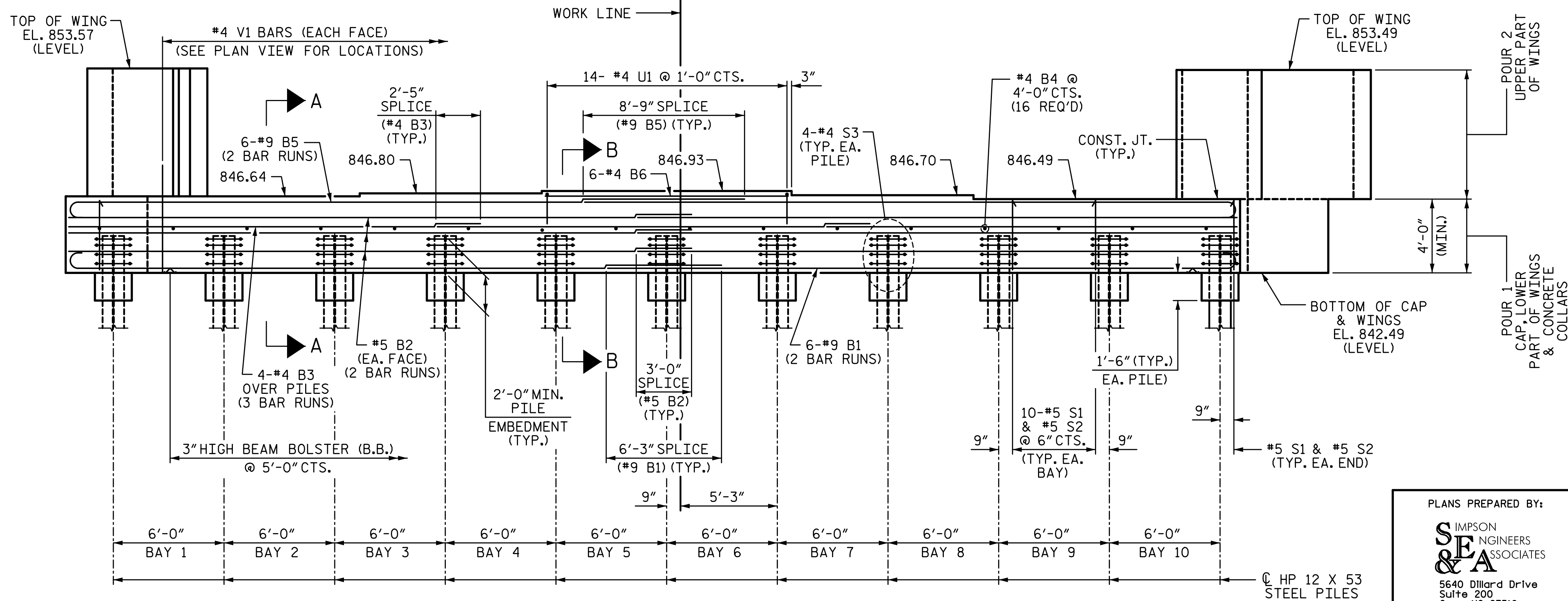
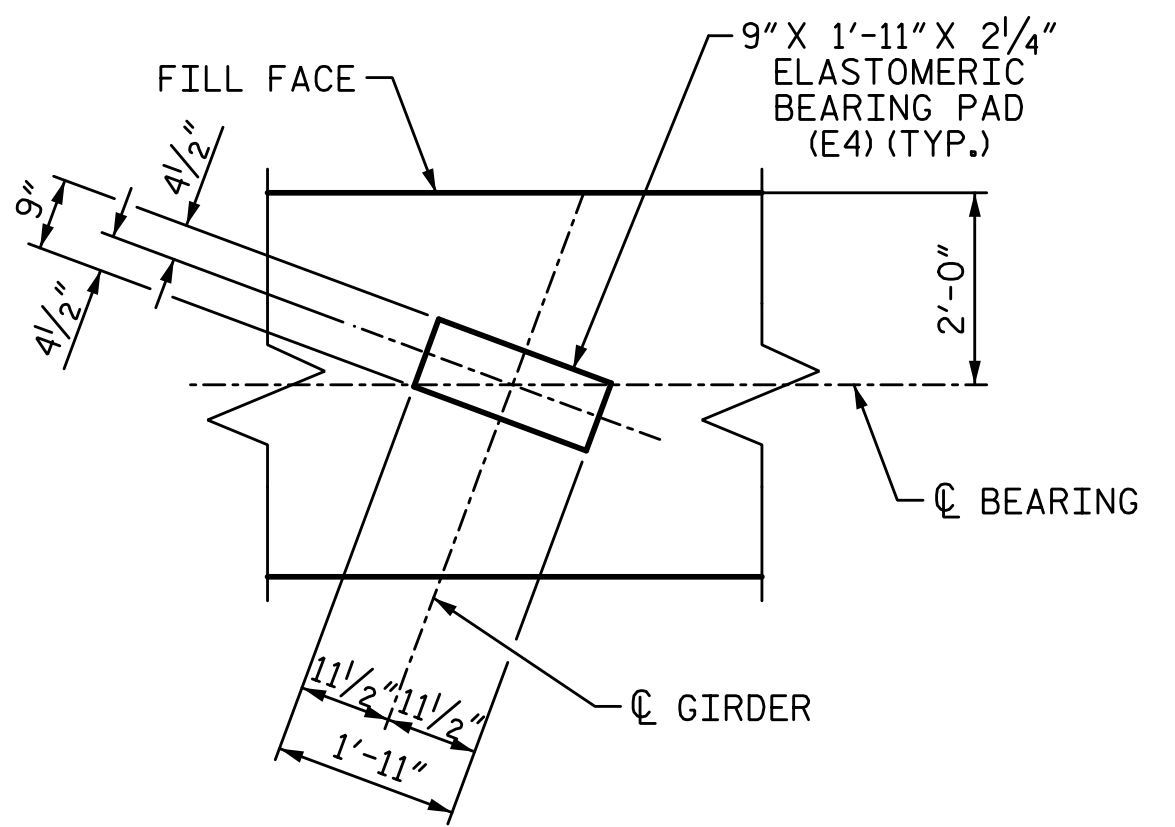
**NOTES:**

#4 V1 BARS MAY BE SHIFTED SLIGHTLY TO AVOID STIRRUPS IN CAP.

FOR SECTION A-A & B-B, SEE SHEET 3 OF 3.

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

INSTALL THE 4" DIAMETER DRAIN PIPE THROUGH THE WINGWALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE ROADWAY PLANS. REINFORCING STEEL IN THE WINGWALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



PROJECT NO. U-2525C

GUILFORD COUNTY

STATION: 25+52.71 -Y7-

SHEET 1 OF 3

PLANS PREPARED BY:

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
SUBSTRUCTURE

**END BENT 2**

DRAWN BY: S.D. COOPER DATE: 3-17

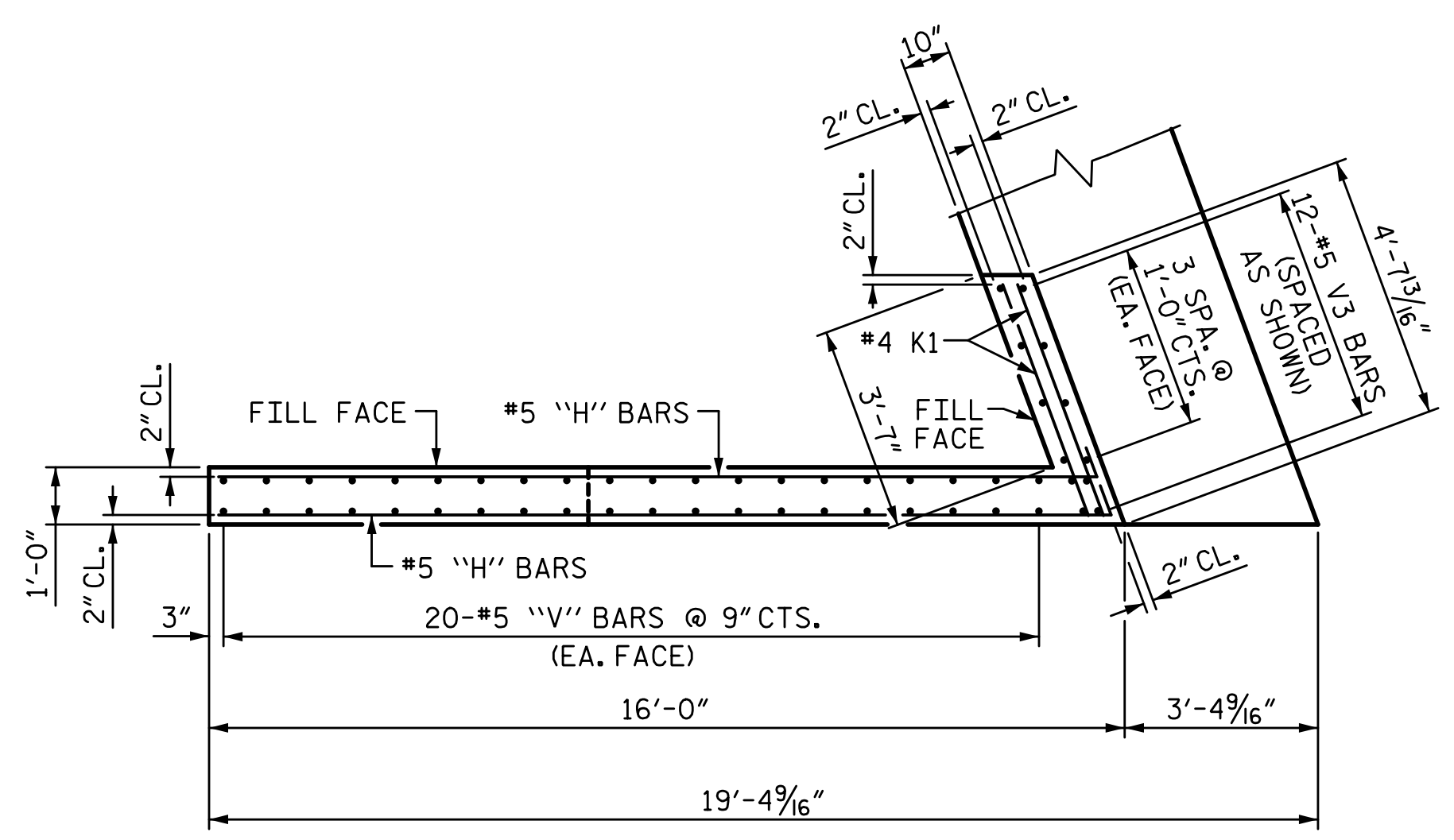
CHECKED BY: T.J. BEACH DATE: 3-17

DESIGN ENGINEER OF RECORD: T.J. BEACH DATE: 3-17

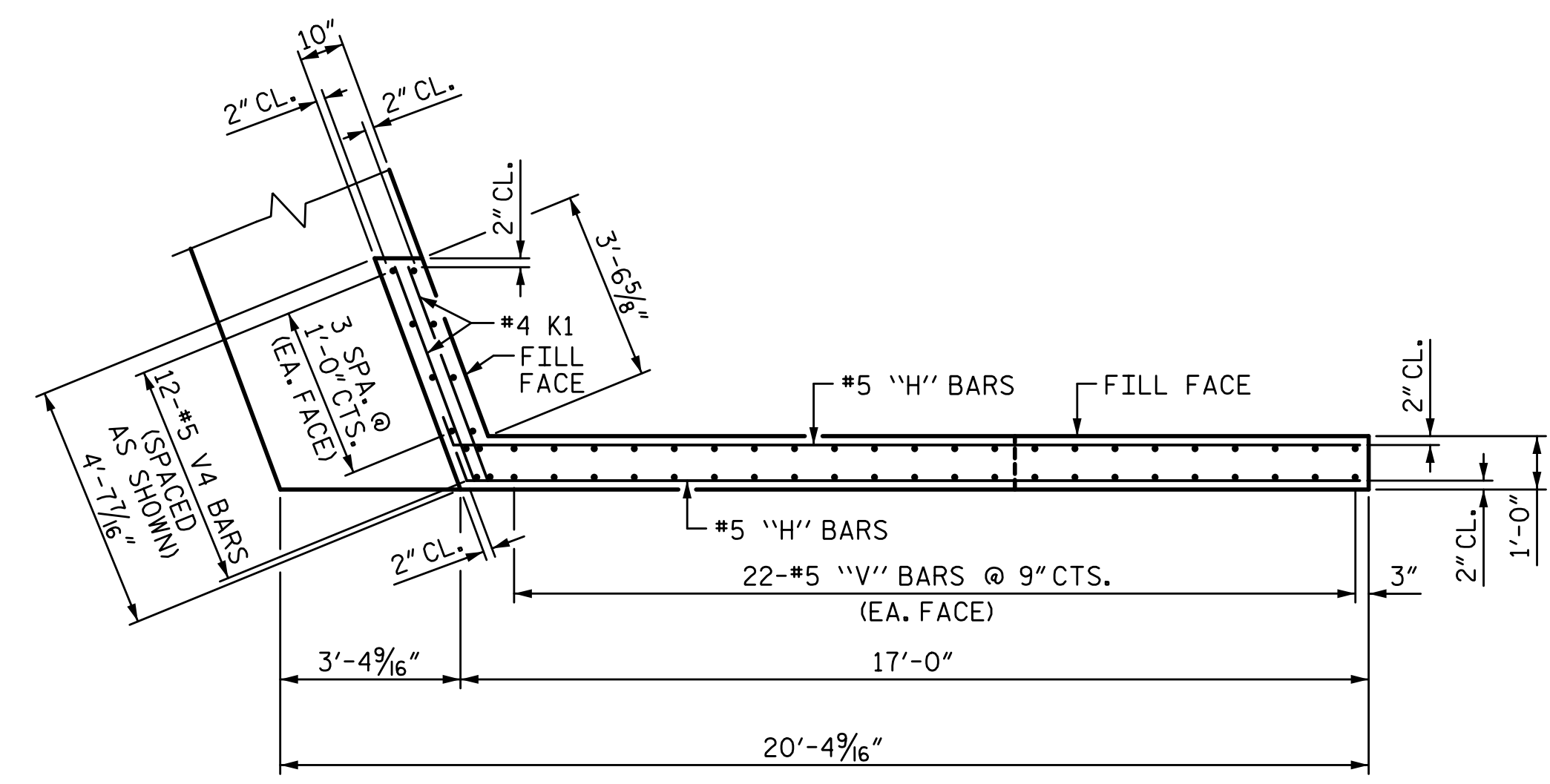
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NO.	BY:	DATE:	NO.	BY:	DATE:	
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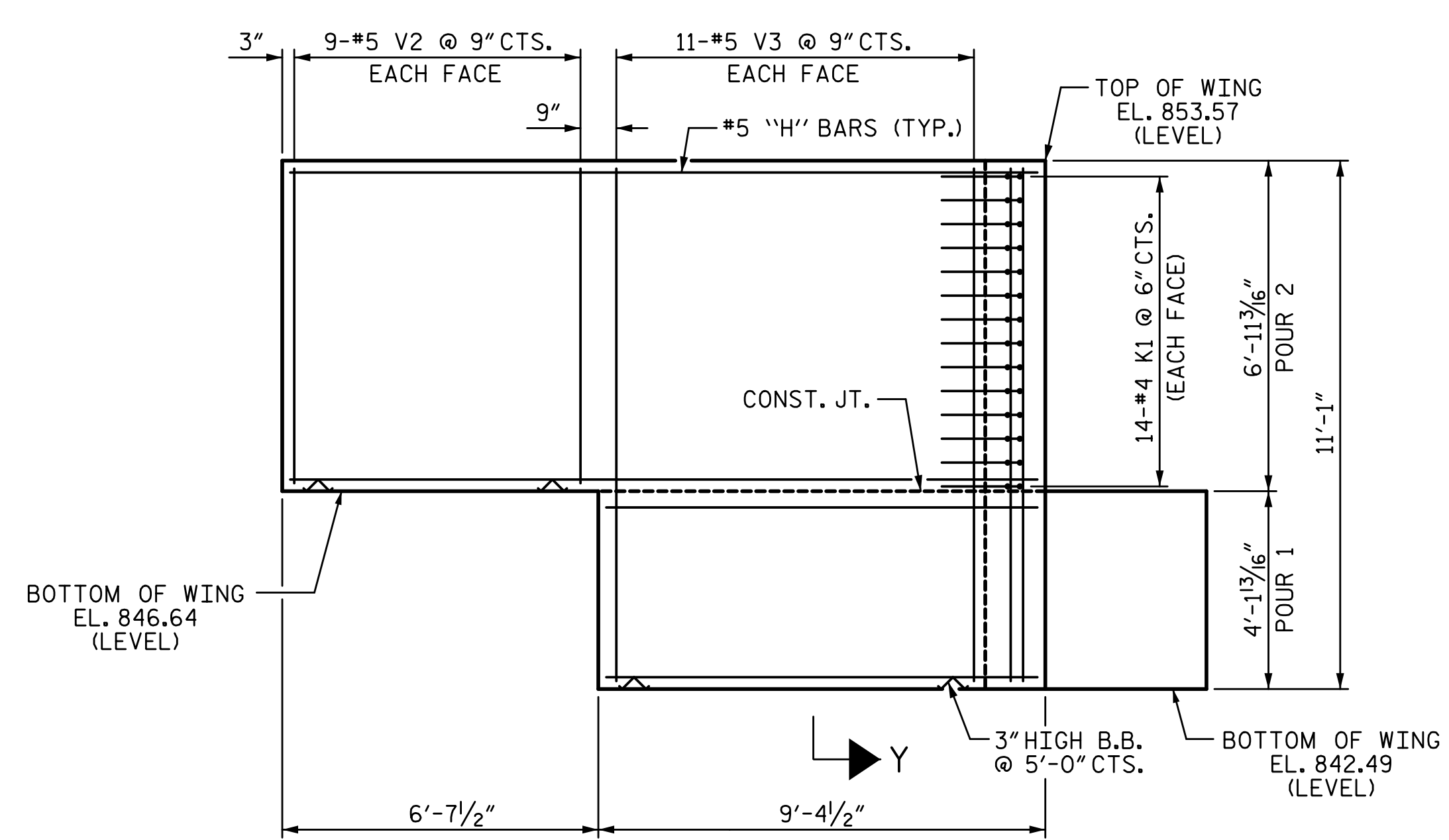
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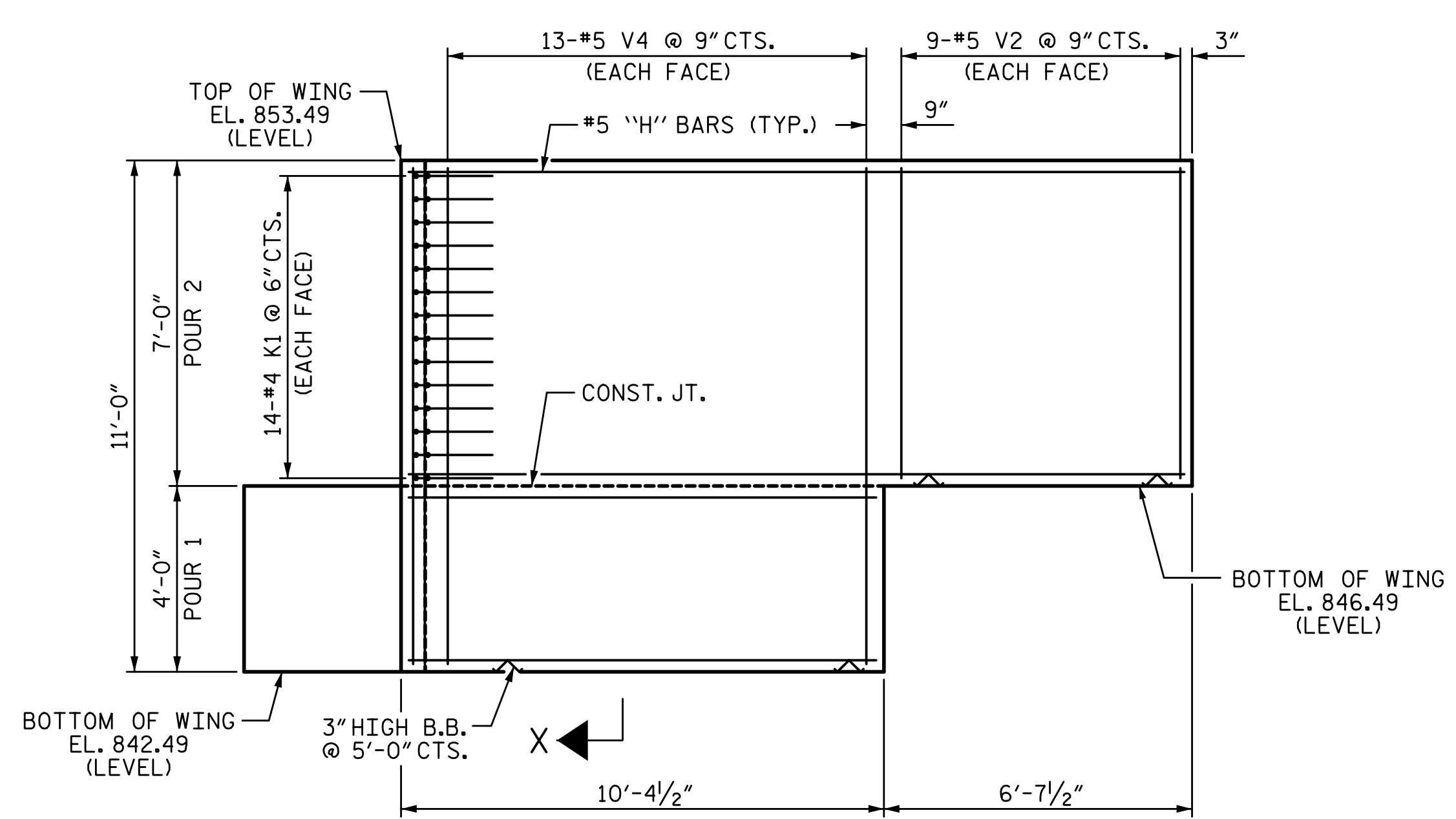
PLAN OF WING (W2)



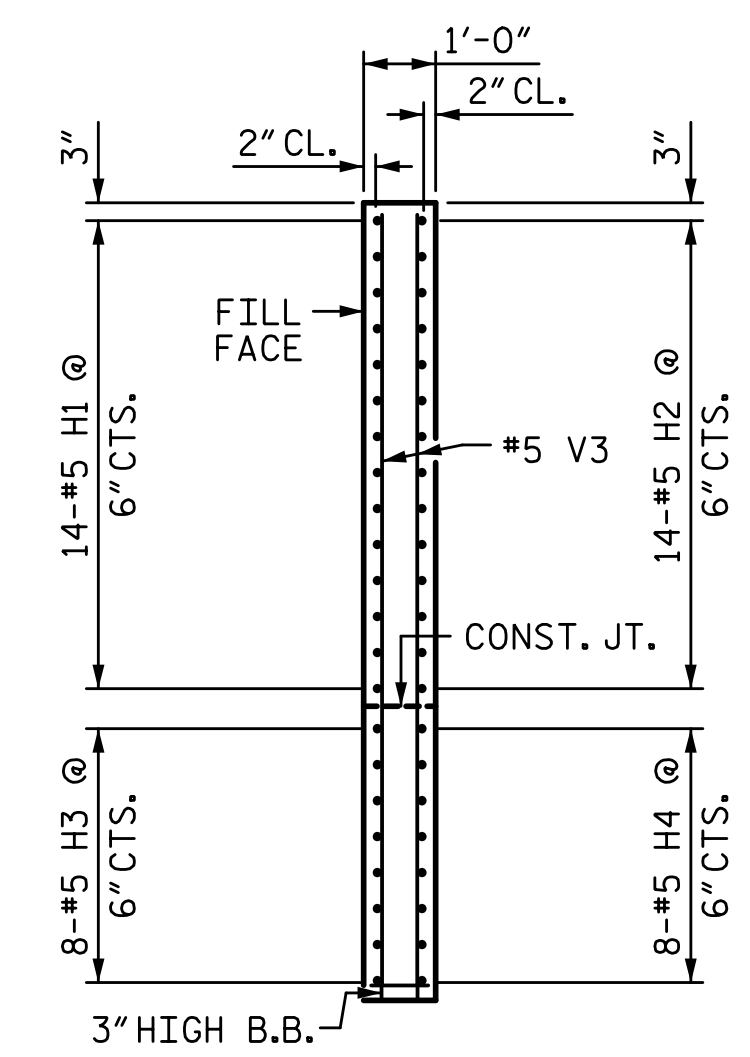
PLAN OF WING (W1)



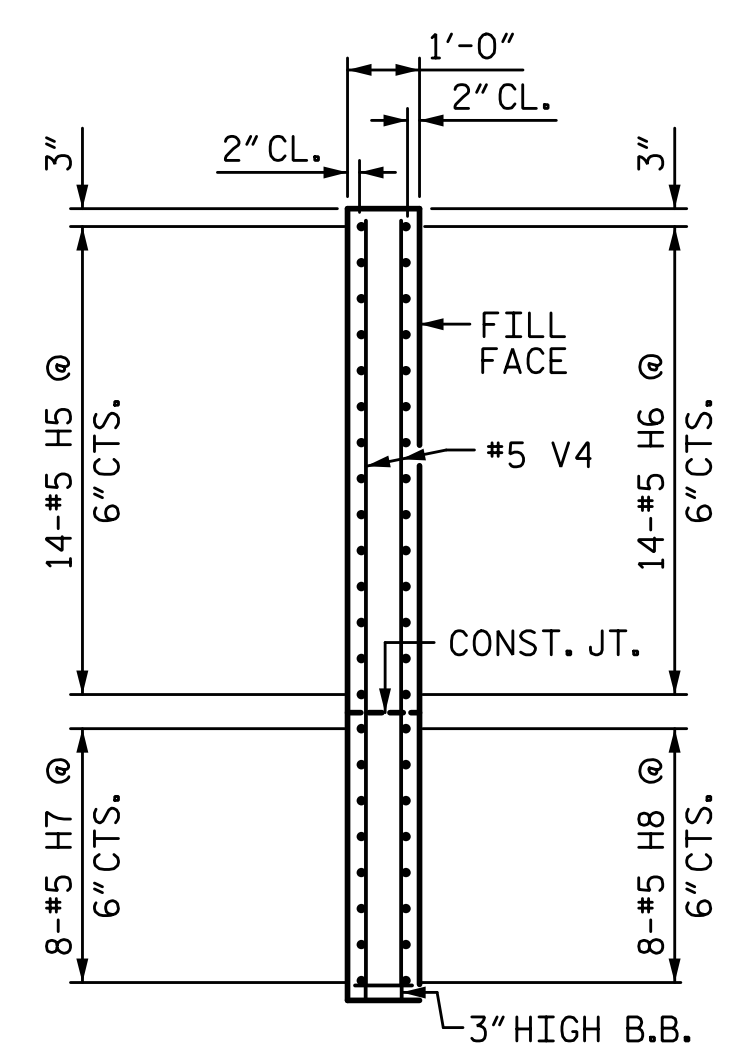
ELEVATION OF WING (W2)



ELEVATION OF WING (W1)



SECTION Y-Y



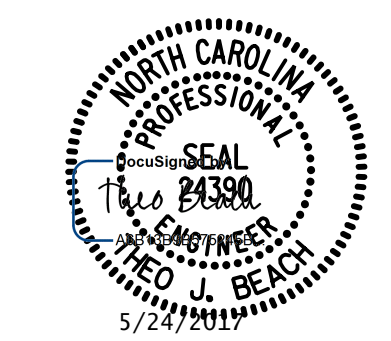
SECTION X-X

PROJECT NO. U-2525C  
GUILFORD COUNTY  
 STATION: 25+52.71 -Y7-

SHEET 2 OF 3

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

PLANS PREPARED BY:  
**S&E** IMPSON ENGINEERS & ASSOCIATES  
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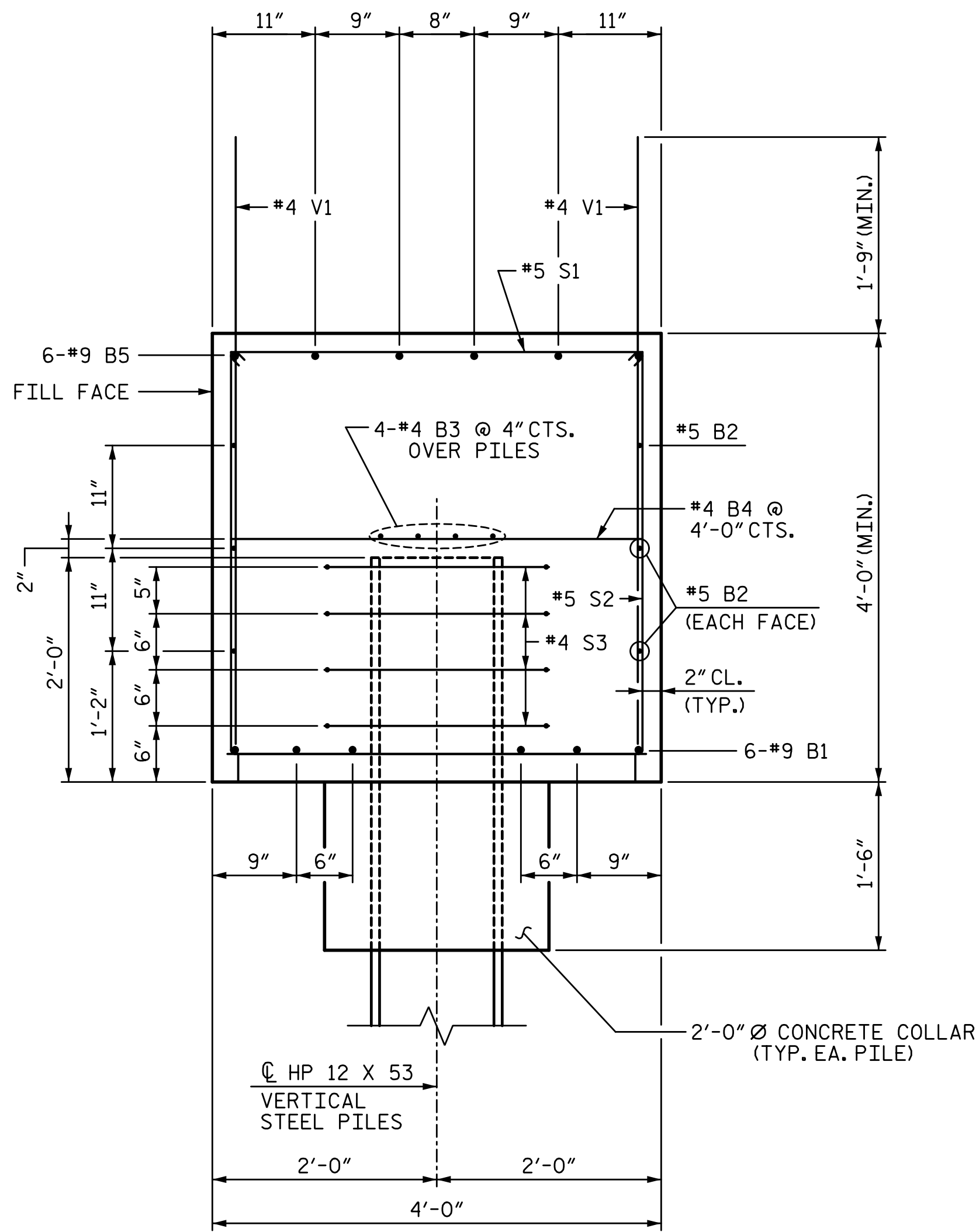
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TOTAL SHEETS: 36

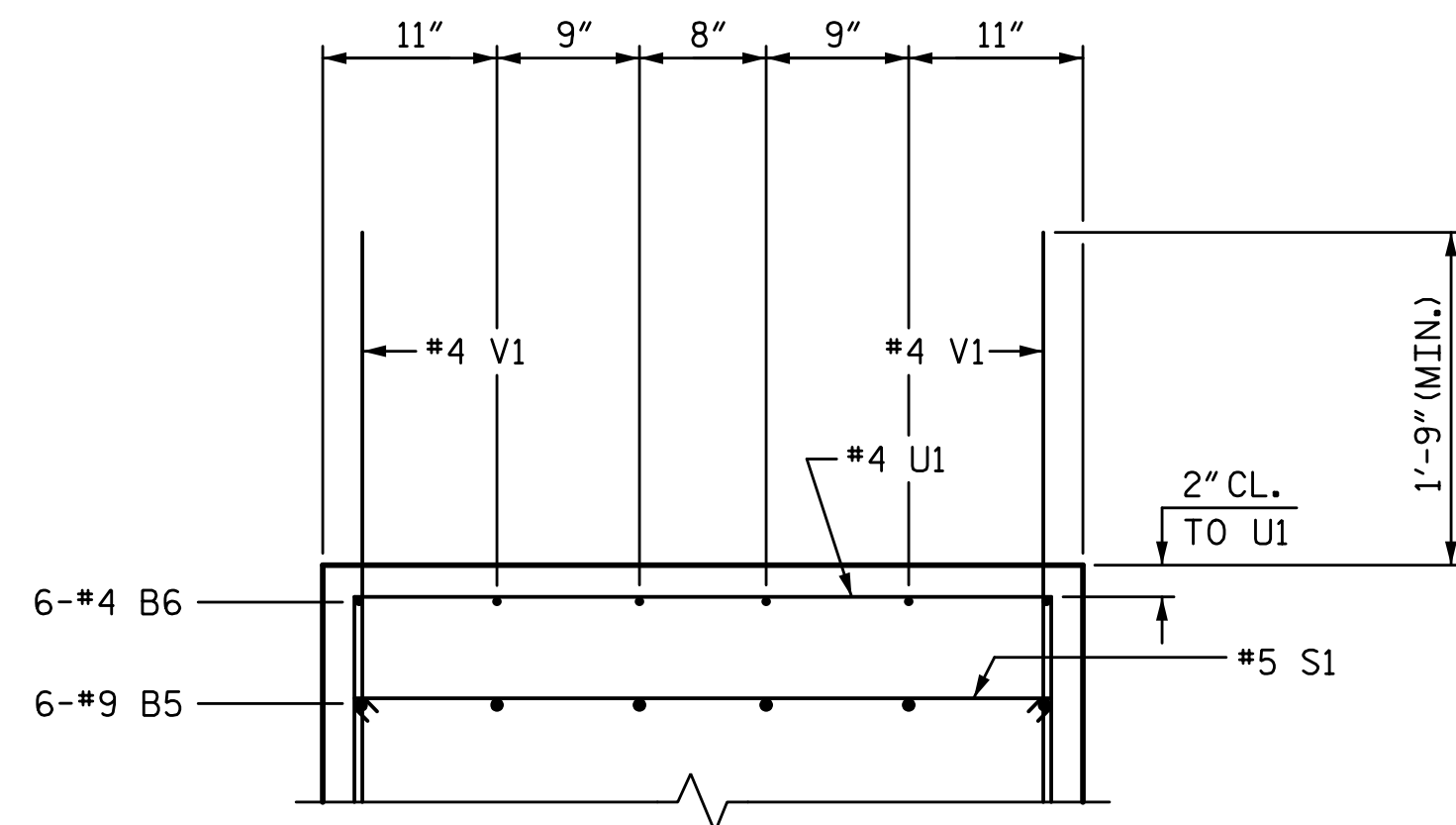
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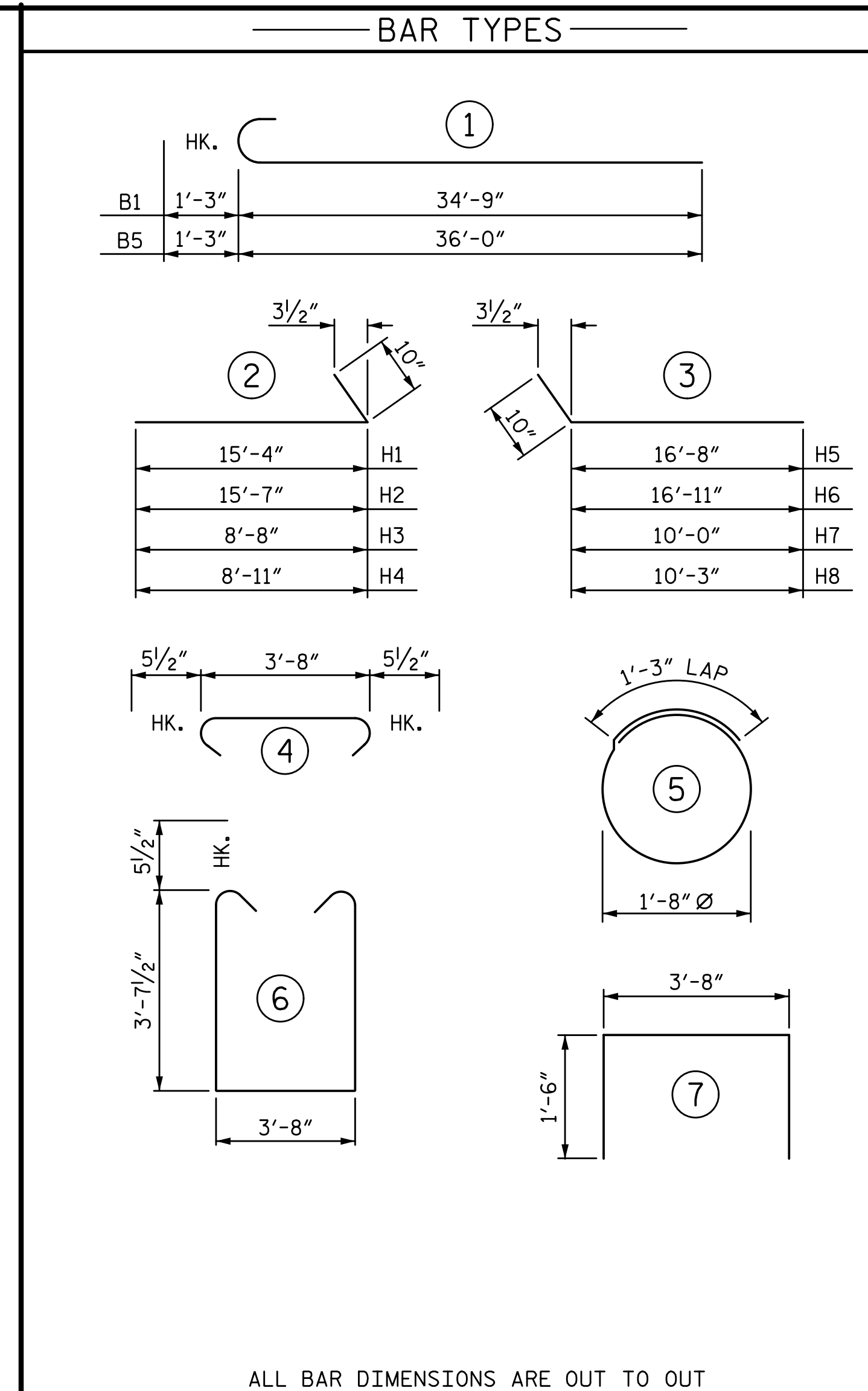
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SECTION A-A



PARTIAL SECTION B-B

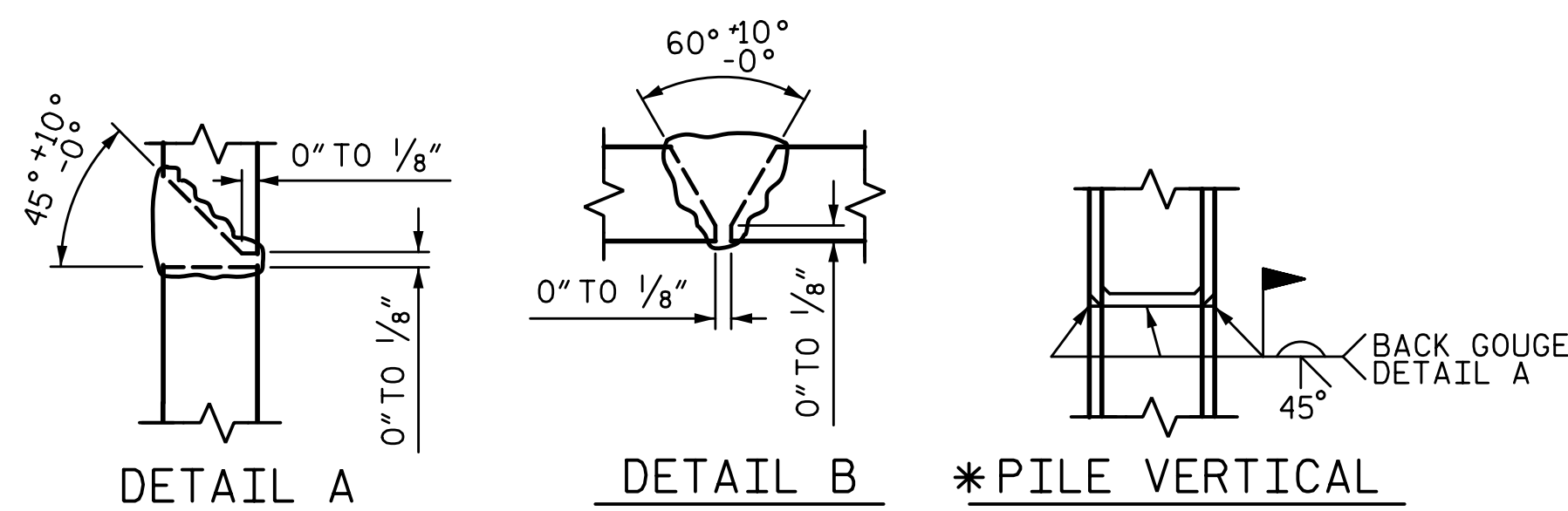


ALL BAR DIMENSIONS ARE OUT TO OUT

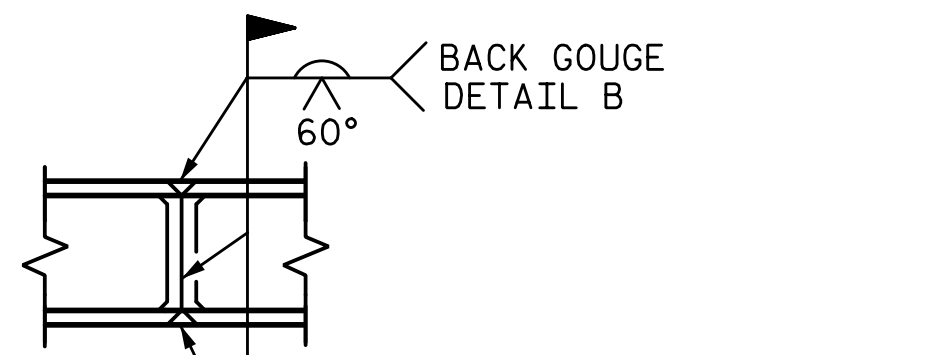
BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	36'-0"	1469
B2	12	#5	STR	33'-2"	415
B3	12	#4	STR	22'-9"	182
B4	16	#4	STR	3'-8"	39
B5	12	#9	1	37'-3"	1520
B6	6	#4	STR	13'-2"	53
H1	14	#5	2	16'-2"	236
H2	14	#5	2	16'-5"	240
H3	8	#5	2	9'-6"	79
H4	8	#5	2	9'-9"	81
H5	14	#5	3	17'-6"	256
H6	14	#5	3	17'-9"	259
H7	8	#5	3	10'-10"	90
H8	8	#5	3	11'-1"	92
K1	56	#4	STR	4'-3"	159
S1	102	#5	4	4'-7"	488
S2	102	#5	6	11'-10"	1259
S3	44	#4	5	6'-6"	191
U1	14	#4	7	6'-8"	62
V1	78	#4	STR	5'-11"	308
V2	36	#5	STR	6'-7"	247
V3	34	#5	STR	10'-8"	378
V4	38	#5	STR	10'-7"	419
TOTAL REINFORCING STEEL				8522 LB	
CLASS A CONCRETE					
POUR 1 (CAP, COLLARS, & LOWER WINGS)				44.3 CY	
POUR 2 (UPPER WINGS)				10.1 CY	
TOTAL CLASS A CONCRETE				54.4 CY	
HP 12 X 53 STEEL PILES NO. 11				825 LF	
PILE DRIVING EQUIPMENT SETUP HP 12 X 53 STEEL PILES				11 EA.	



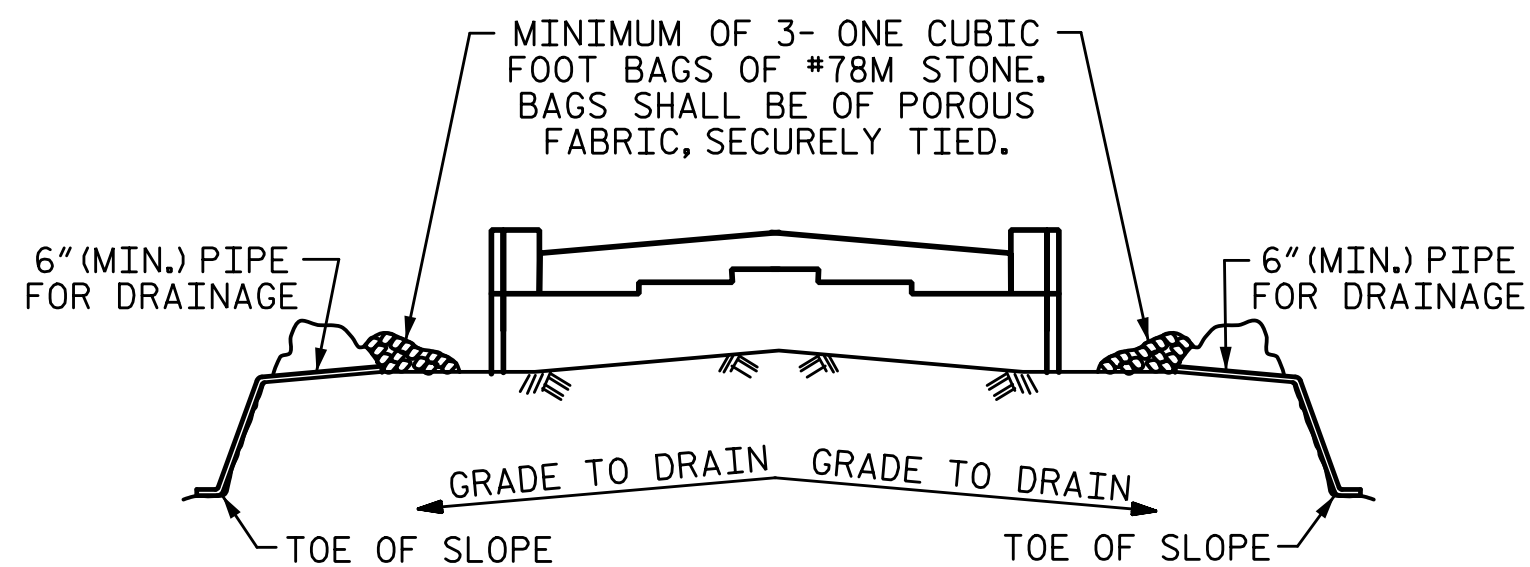
\*PILE VERTICAL



\*PILE HORIZONTAL OR VERTICAL

PILE SPLICE DETAILS

\* POSITION OF PILE DURING WELDING



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.

TEMPORARY DRAINAGE AT END BENT

DRAWN BY: S.D. COOPER	DATE: 3-17
CHECKED BY: T.J. BEACH	DATE: 3-17
DESIGN ENGINEER OF RECORD: T.J. BEACH	DATE: 3-17

PLANS PREPARED BY:  
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STATION: 25+52.71 -Y7-

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
SUBSTRUCTURE

END BENT 2

REVISIONS

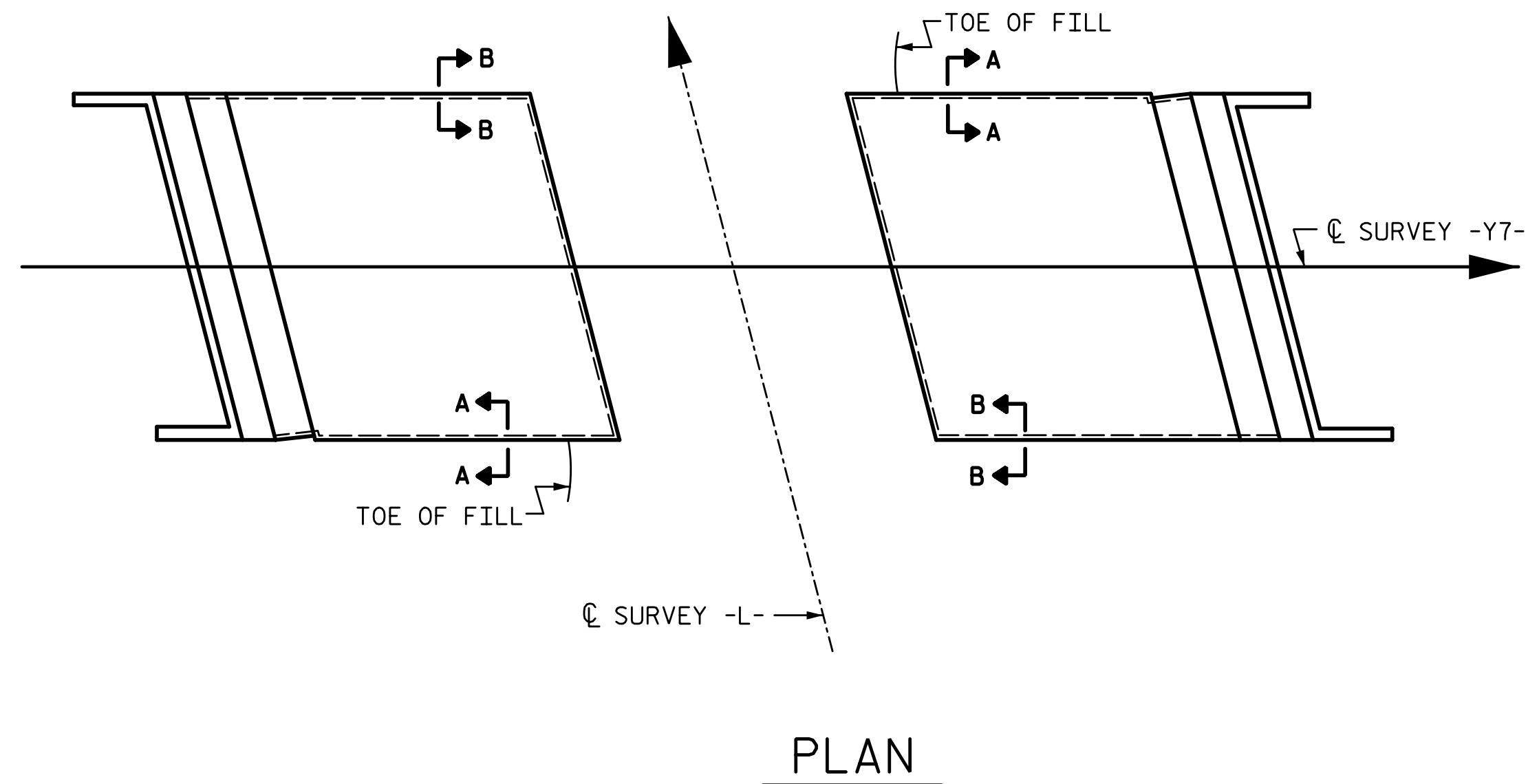
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SHEET NO.  
S10-31  
TOTAL SHEETS  
36

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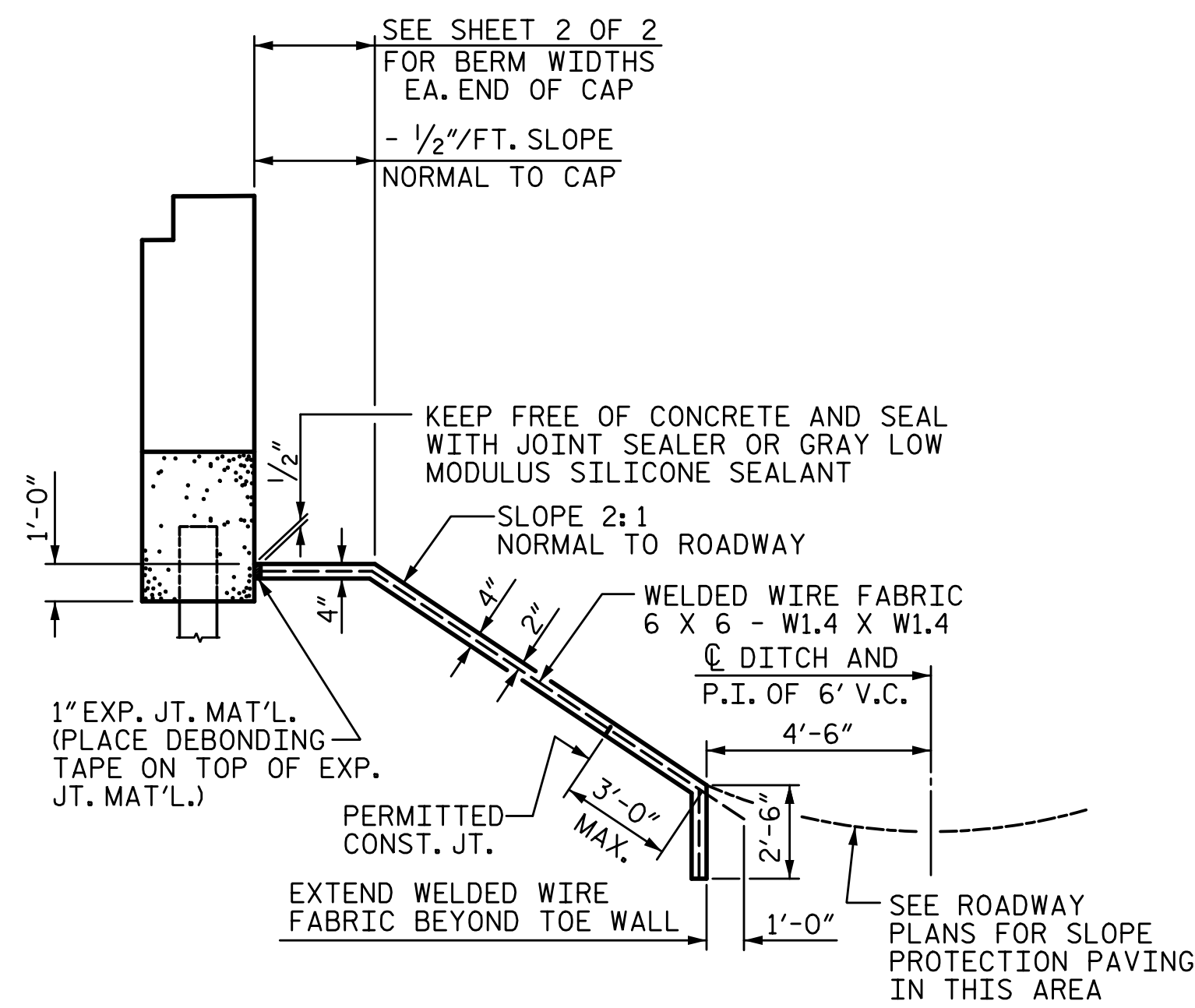
**NOTES:**

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.

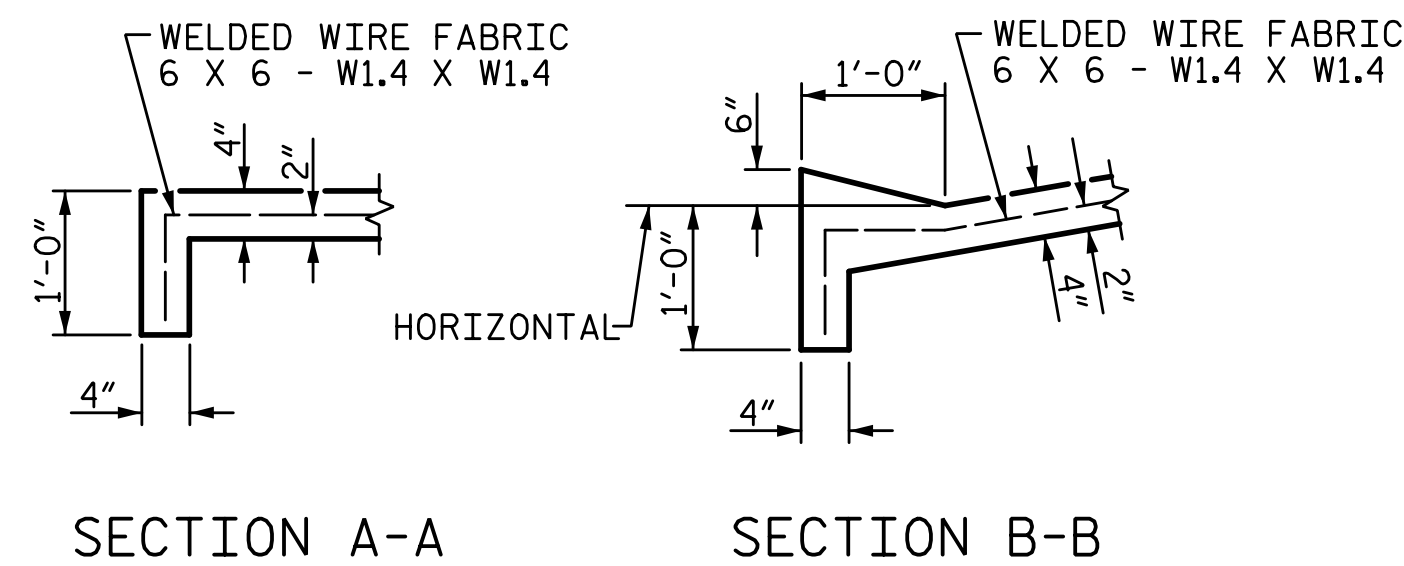
SLOPE PROTECTION SHALL CONSIST OF 4"POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60"WIDE. SLOPE PROTECTION SHALL 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. 522+73.40 -L-	4" INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	295	530
END BENT 2	210	380

\* QUANTITY SHOWN IS BASED ON 5' POURS.

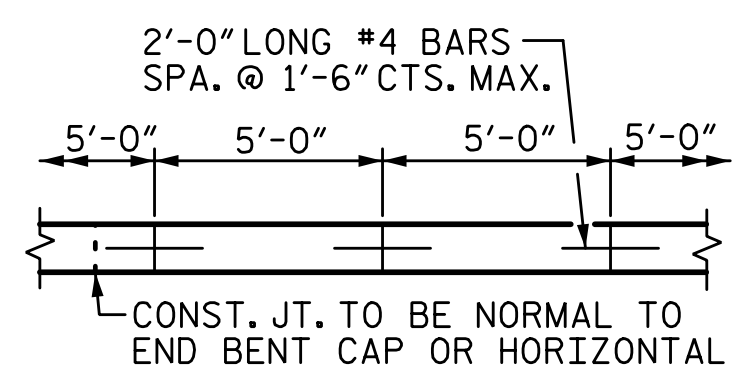


SECTION ALONG C -Y7-



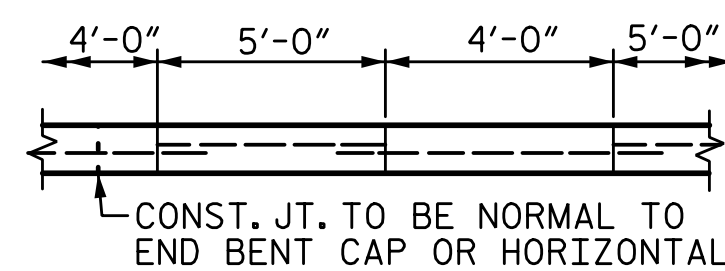
SECTION A-A

SECTION B-B



CONST. JT. TO BE NORMAL TO END BENT CAP OR HORIZONTAL

POURING DETAIL



CONST. JT. TO BE NORMAL TO END BENT CAP OR HORIZONTAL

OPTIONAL POURING DETAIL

PROJECT NO. U-2525C  
GUILFORD COUNTY  
 STATION: 25+52.71 -Y7-

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SLOPE PROTECTION  
 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			TOTAL SHEETS
2			4			36

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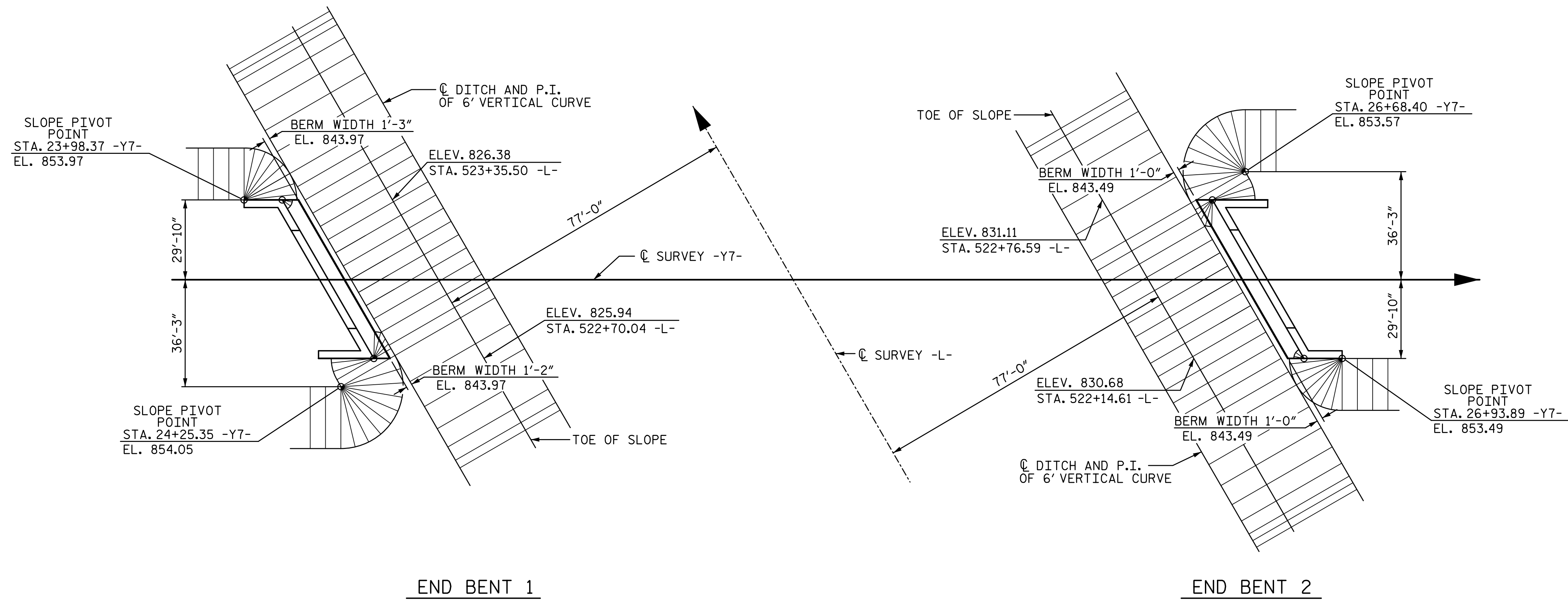
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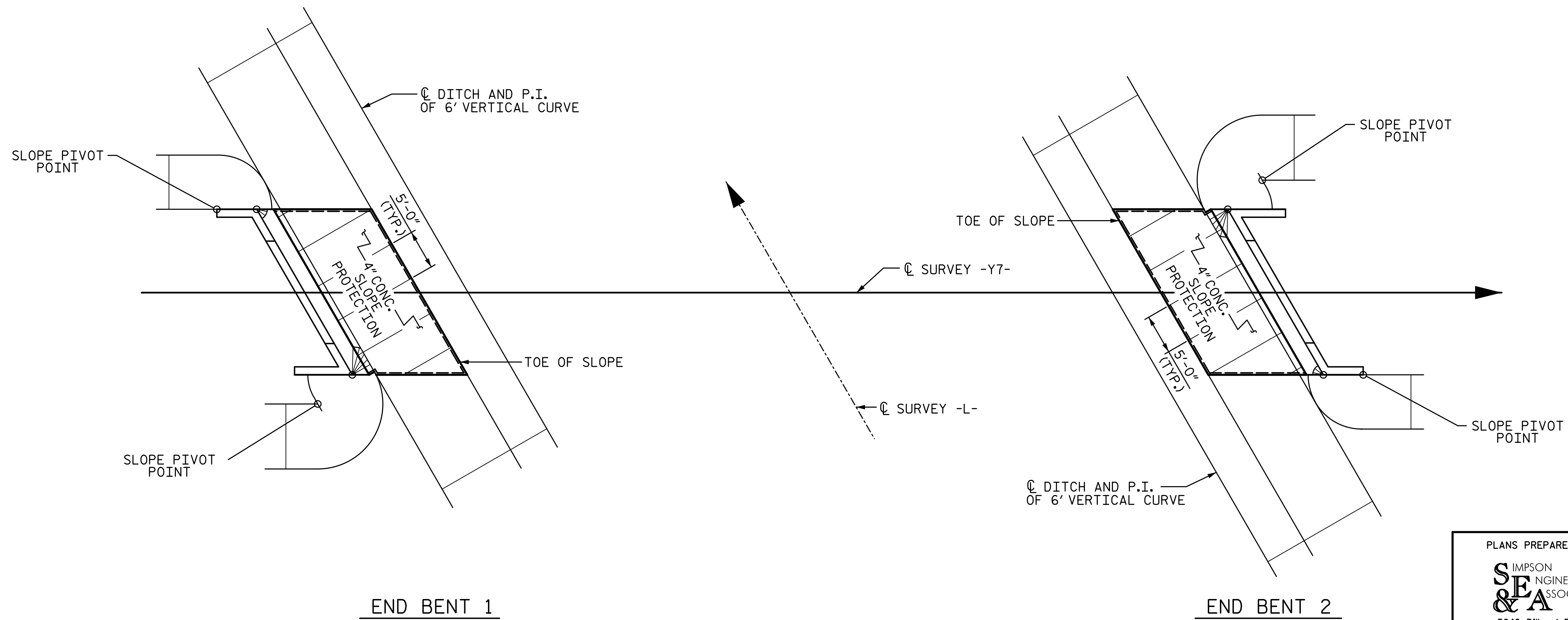
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PLAN - GRADING



PLAN - CONCRETE PLACEMENT

PROJECT NO. U-2525C  
GUILFORD COUNTY  
 STATION: 25+52.71 -Y7-

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SLOPE PROTECTION  
 DETAILS

PLANS PREPARED BY:

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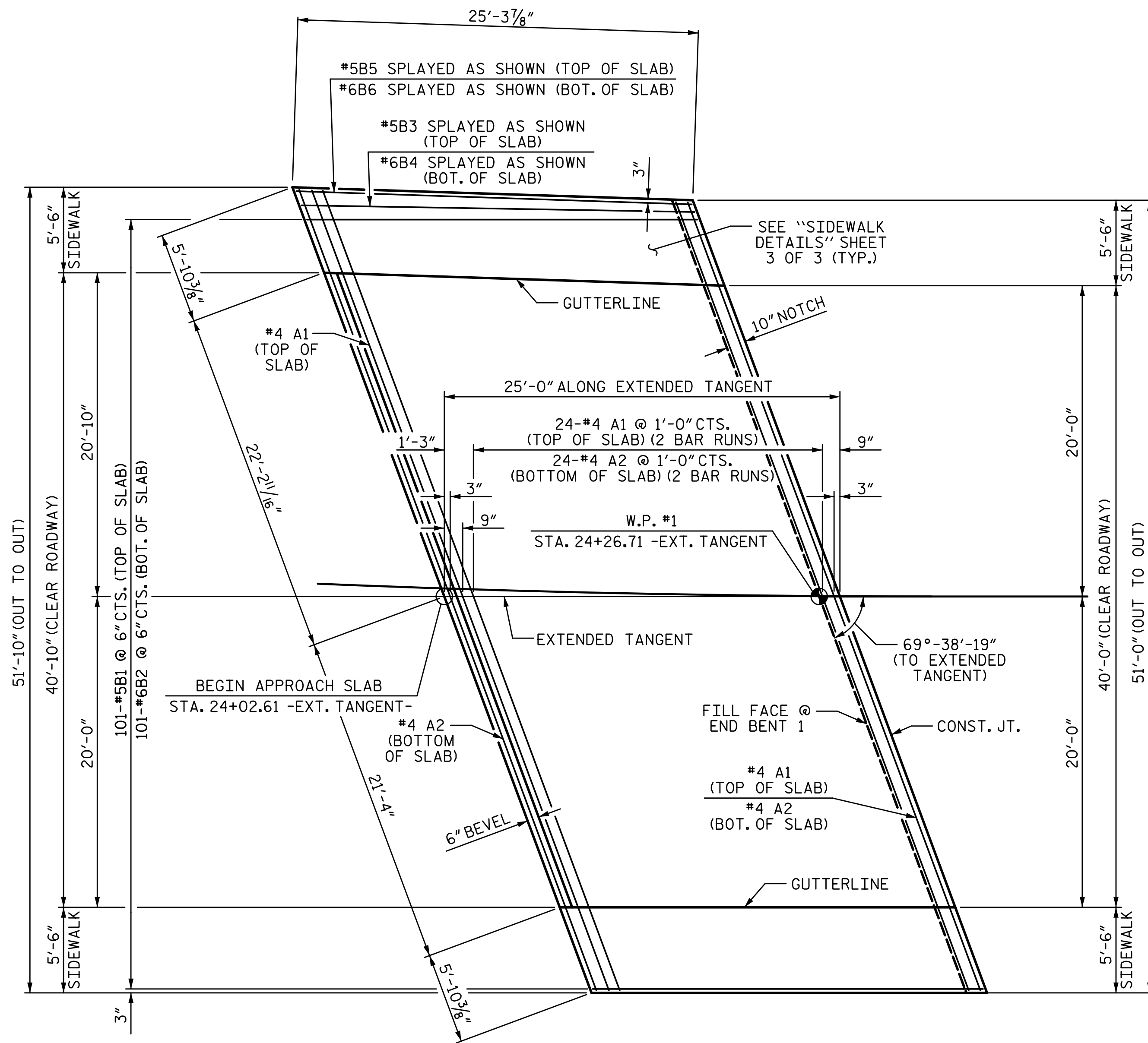
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SHEET NO.  
 S10-33  
 TOTAL SHEETS  
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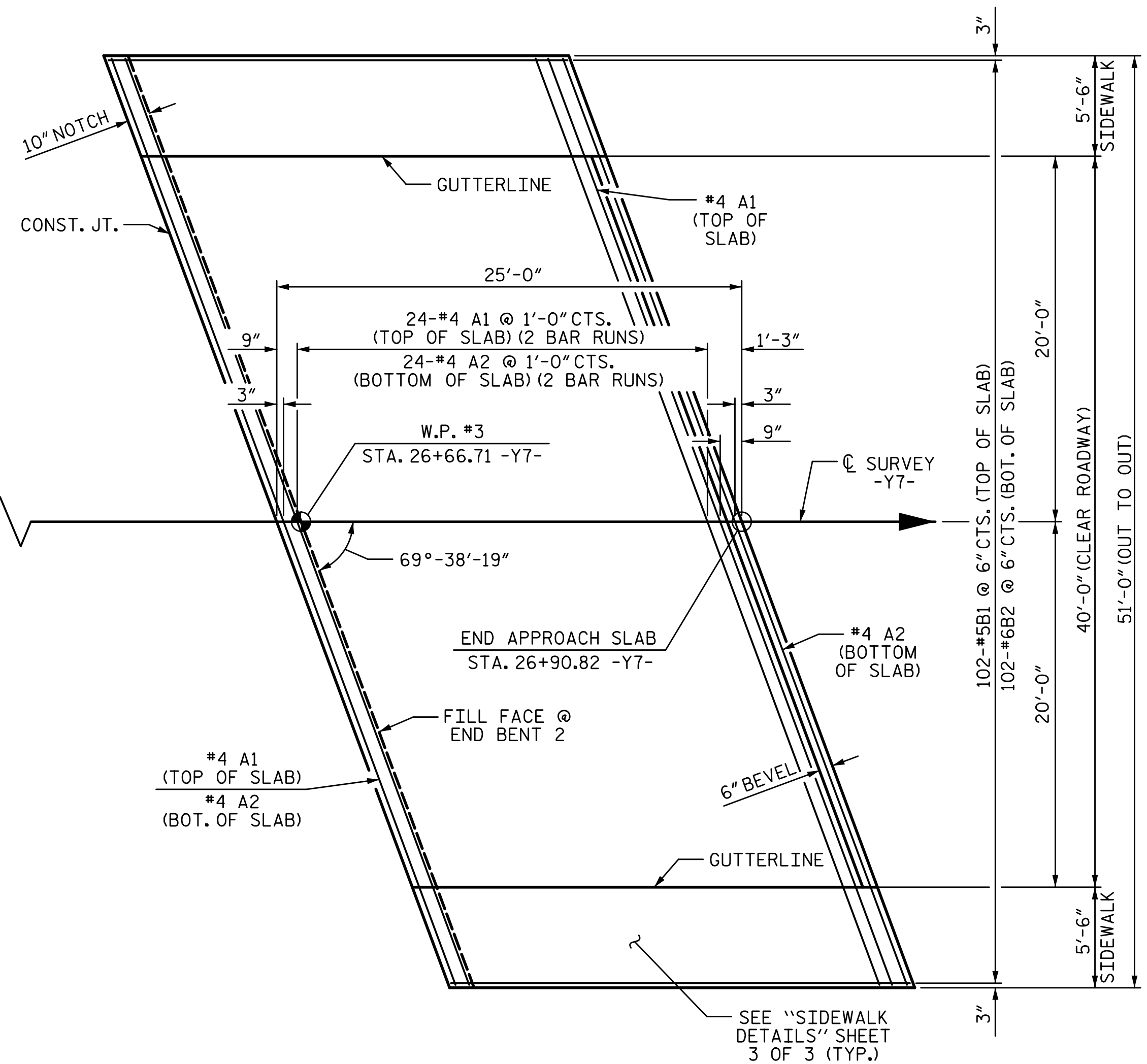
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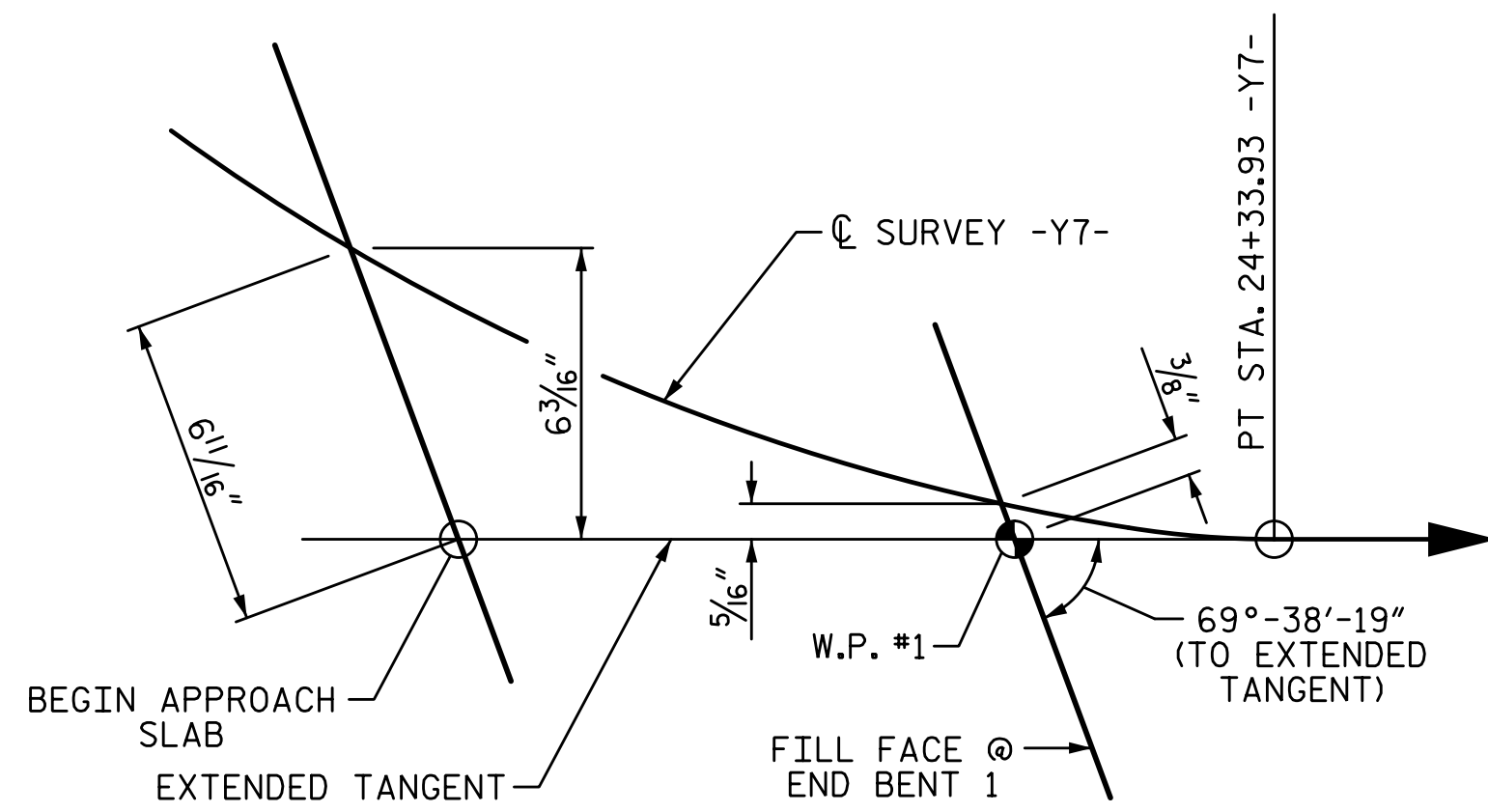
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PLAN @ END BENT 1



PLAN @ END BENT 2



EXTENDED TANGENT DETAIL

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GUILFORD COUNTY  
 STATION: 25+52.71 -Y7-

SHEET 1 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BRIDGE APPROACH SLAB  
 FOR INTEGRAL  
 END BENT

PLANS PREPARED BY:

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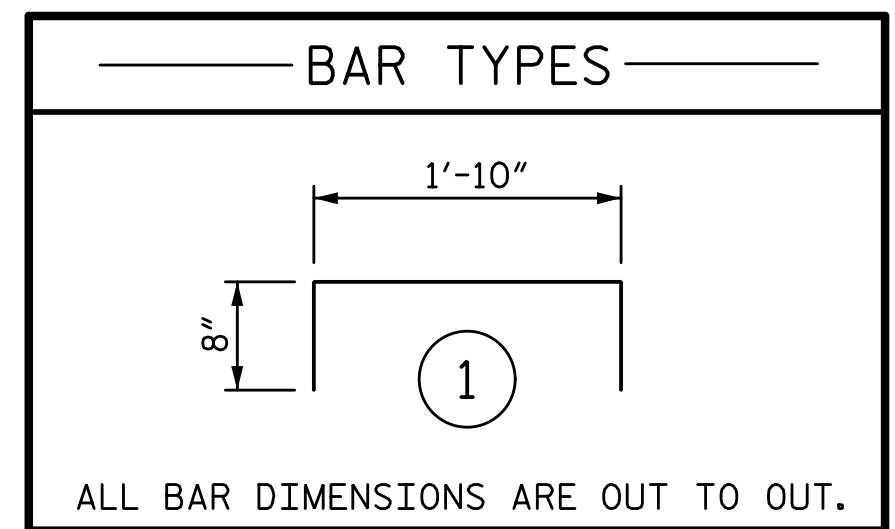
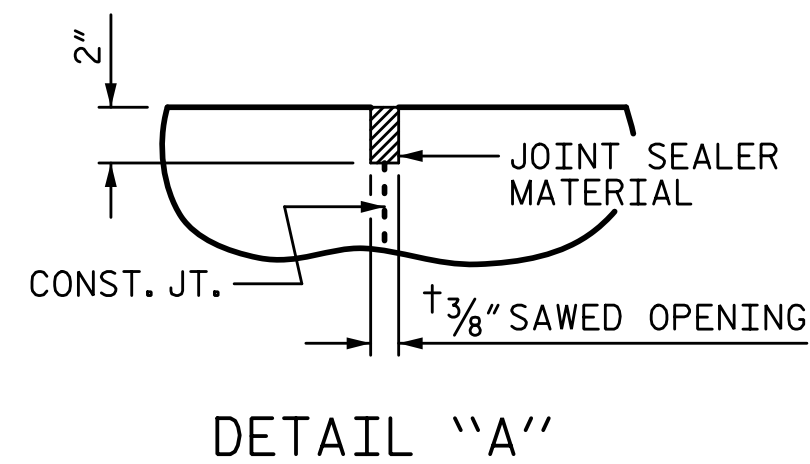
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SHEET NO.	S10-34
TOTAL SHEETS	36

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SPLICE CHART		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

**NOTES:**

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

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

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

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

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

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

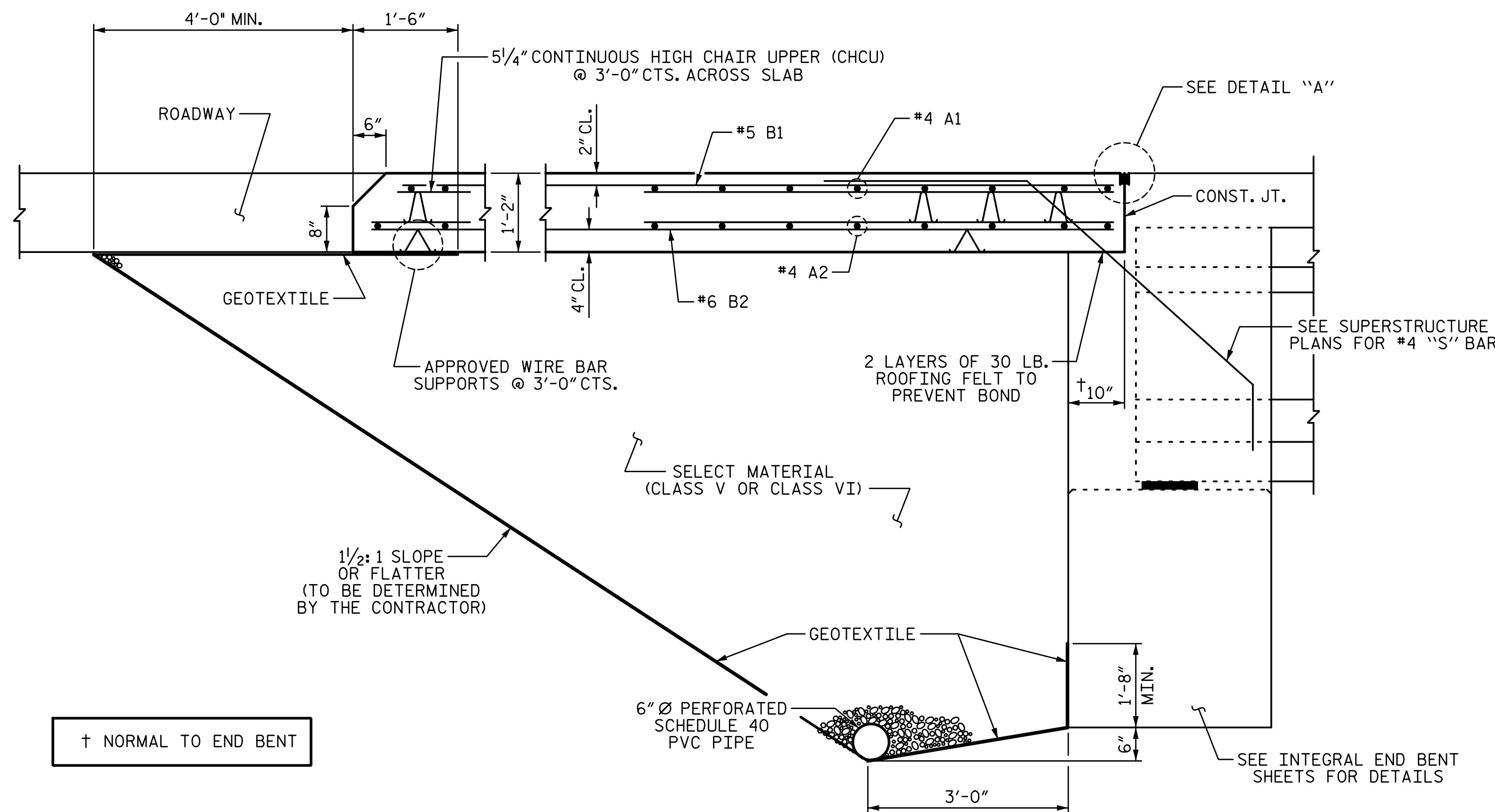
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

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

AT THE CONTRACTORS OPTION, "TYPE A - ALTERNATE APPROACH FILL" IN LIEU OF "TYPE I - STANDARD APPROACH FILL" MAY BE CONSTRUCTED AT NO ADDITIONAL COST TO THE DEPARTMENT. SEE SHEET 2 OF 2 FOR DETAILS AND NOTES.

BILL OF MATERIAL FOR ONE APPROACH SLAB @ END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	52	4	STR	28'-5"	987
A2	52	4	STR	28'-4"	984
*B1	101	5	STR	24'-2"	2546
B2	101	6	STR	24'-6"	3717
*B3	1	5	STR	24'-8"	26
B4	1	6	STR	24'-8"	37
*B5	1	5	STR	24'-10"	26
B6	1	6	STR	24'-10"	37
*B7	8	4	STR	24'-6"	131
*G1	50	4	STR	5'-3"	175
*U1	16	4	1	3'-2"	34
REINFORCING STEEL					4775 LB
* EPOXY COATED REINFORCING STEEL					3925 LB
CLASS AA CONCRETE					
POUR 1 (SLAB)					55.4 CY
POUR 2 (SIDEWALK)					6.2 CY
TOTAL					61.6 CY

BILL OF MATERIAL FOR ONE APPROACH SLAB @ END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	52	4	STR	28'-0"	973
A2	52	4	STR	27'-10"	967
*B1	102	5	STR	24'-2"	2571
B2	102	6	STR	24'-6"	3753
*B7	8	4	STR	24'-6"	131
*G1	50	4	STR	5'-3"	175
*U1	16	4	1	3'-2"	34
REINFORCING STEEL					4720 LB
* EPOXY COATED REINFORCING STEEL					3884 LB
CLASS AA CONCRETE					
POUR 1 (SLAB)					55.0 CY
POUR 2 (SIDEWALK)					6.2 CY
TOTAL					61.2 CY



**SECTION THRU SLAB**  
(TYPE I - STANDARD APPROACH FILL)

PROJECT NO. U-2525C  
GUILFORD COUNTY  
STATION: 25+52.71 -Y7-

SHEET 2 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BRIDGE APPROACH SLAB FOR INTEGRAL END BENT**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			36
2			4			

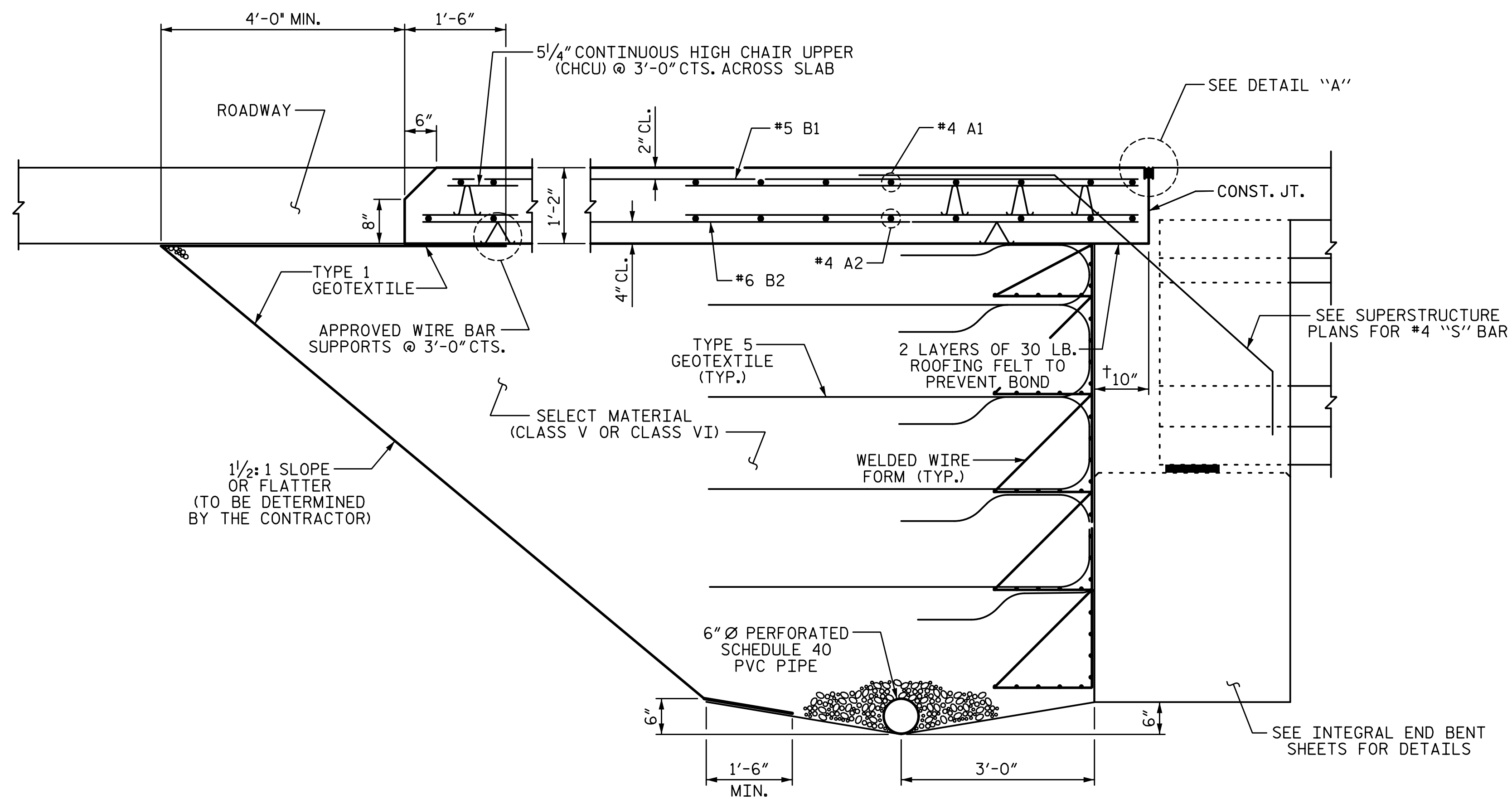
PLANS PREPARED BY:  
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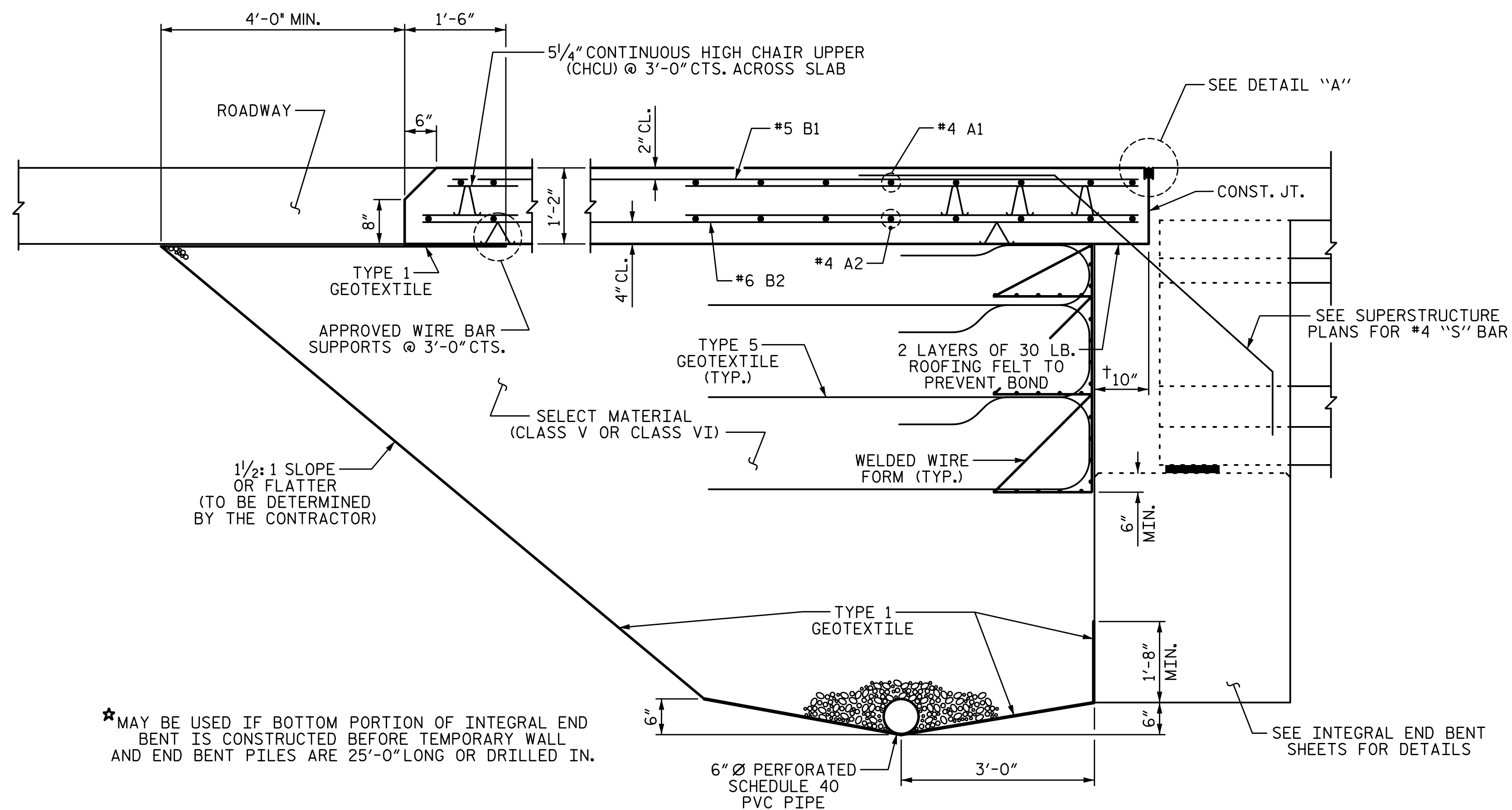
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SECTION THRU SLAB

(TYPE A - ALTERNATE APPROACH FILL)



SECTION THRU SLAB

(TYPE A - ALTERNATE APPROACH FILL)

★ MAY BE USED IF BOTTOM PORTION OF INTEGRAL END BENT IS CONSTRUCTED BEFORE TEMPORARY WALL AND END BENT PILES ARE 25'-0" LONG OR DRILLED IN.

NOTES:

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

FOR TEMPORARY GEOTEXTILE WALL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, WELDED WIRE FORM, AND SELECT MATERIAL, SEE ROADWAY PLANS.

GEOTEXTILE (TYPE 1 OR TYPE 5) SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

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

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

FOR 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.

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

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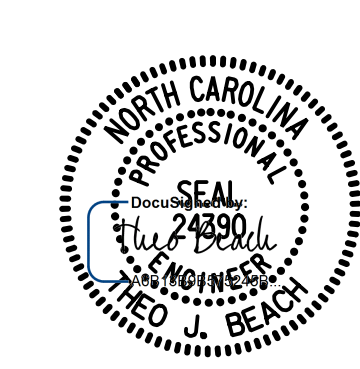
SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BRIDGE APPROACH SLAB  
 FOR INTEGRAL  
 END BENT

PLANS PREPARED BY:

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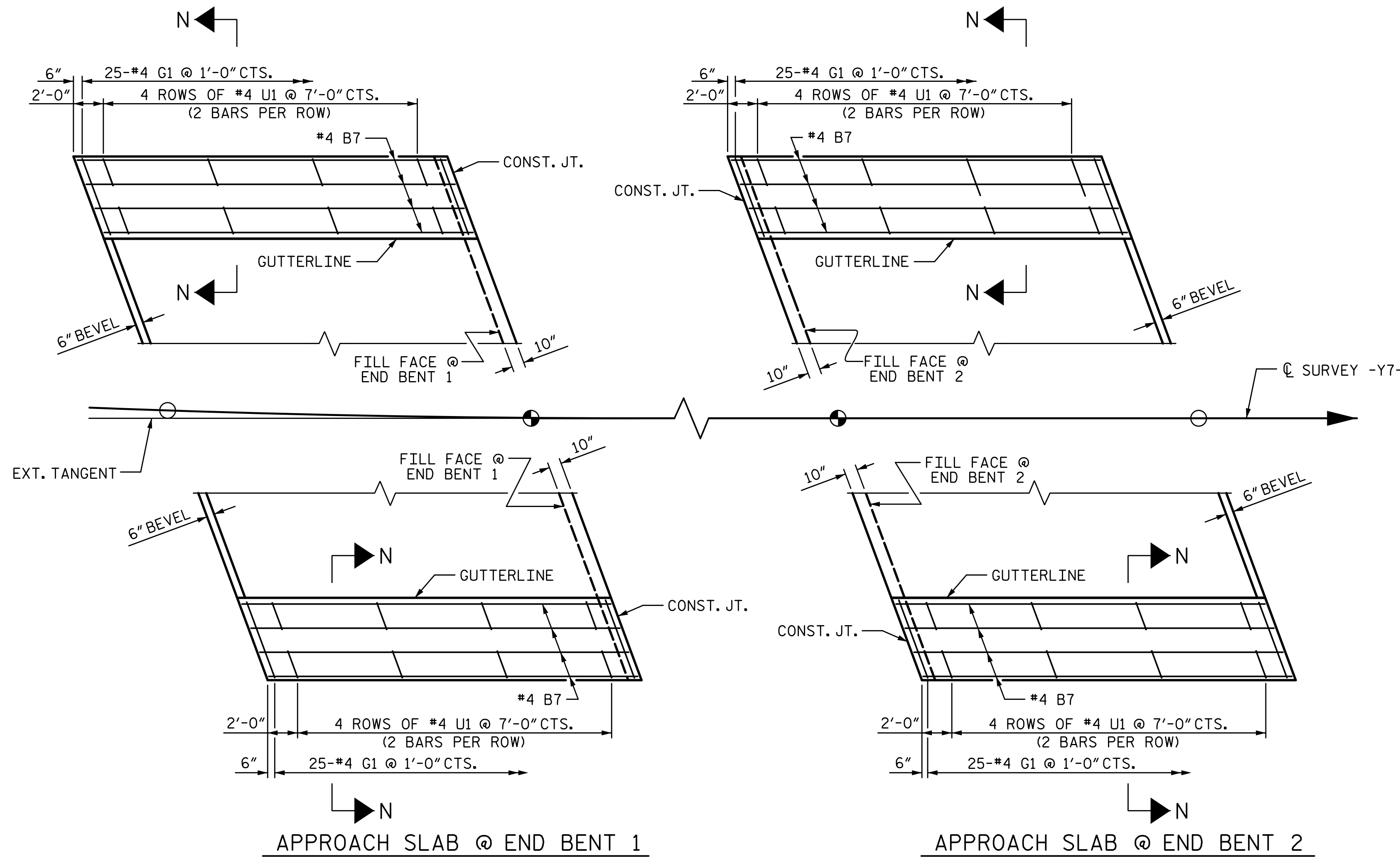
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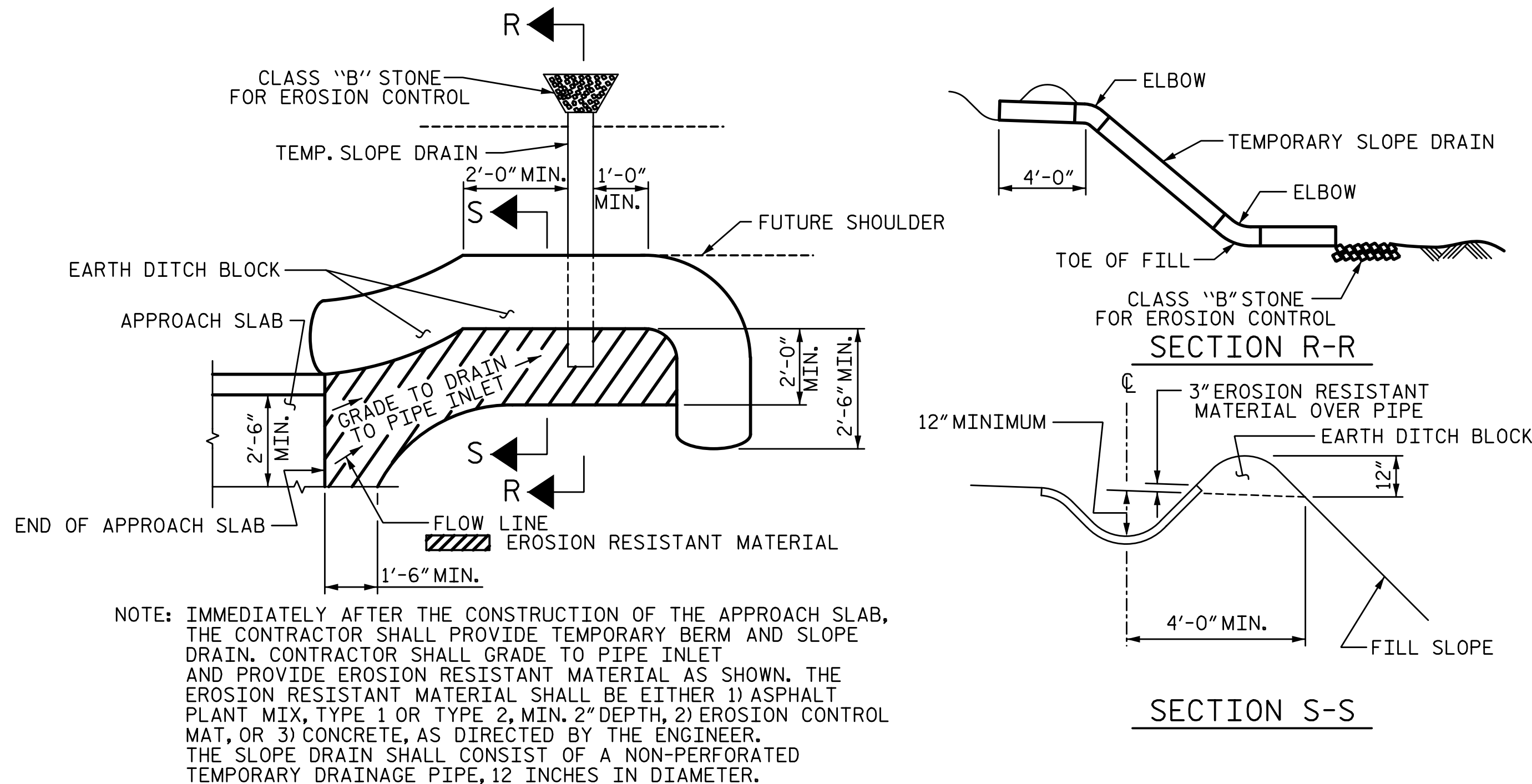
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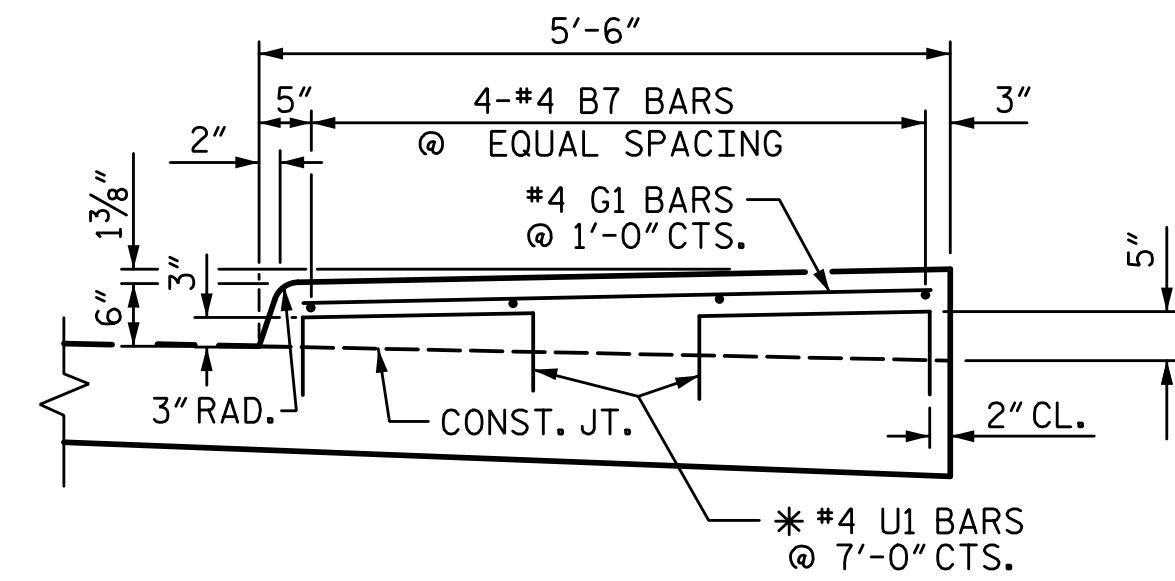
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**PLAN OF SIDEWALKS**



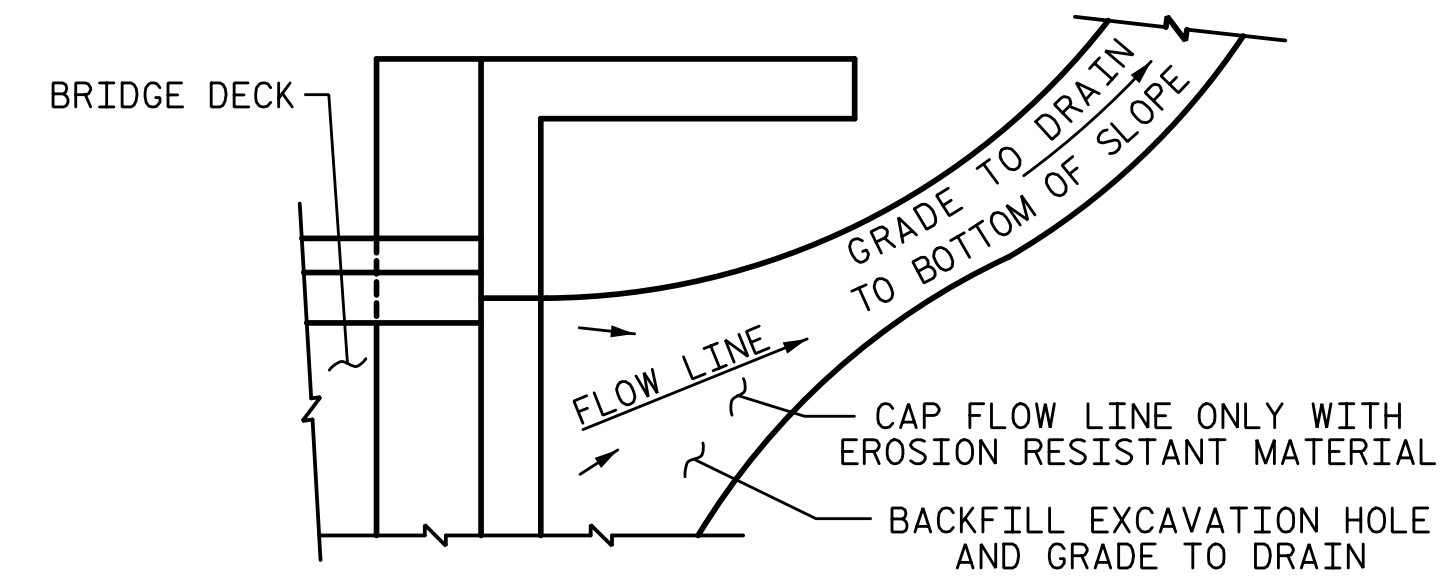
**TEMPORARY BERM AND SLOPE DRAIN DETAILS**  
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



**SECTION N-N  
SIDEWALK DETAILS**

**NOTES:**

- ALL REINFORCING STEEL IN THE SIDEWALK SHALL BE EPOXY COATED.
- GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH THE ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FT. TO 10 FT. BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINT WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FT. IN LENGTH.
- \* U1 BARS MAY BE PUSHED INTO GREEN CONCRETE AFTER THE APPROACH SLAB HAS BEEN SCREEDED OFF.



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

**TEMPORARY DRAINAGE DETAIL**

PROJECT NO. U-2525C  
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SHEET 4 OF 4

STATE OF NORTH CAROLINA  
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RALEIGH

**BRIDGE APPROACH  
SLAB FOR INTEGRAL  
END BENT**

PLANS PREPARED BY:

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TOTAL SHEETS  
36

## 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  $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO  $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A  $\frac{1}{4}$ " 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  $\frac{1}{4}$ " 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  $\frac{7}{8}$ "  $\emptyset$  SHEAR STUDS FOR THE  $\frac{3}{4}$ "  $\emptyset$  STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 -  $\frac{7}{8}$ "  $\emptyset$  STUDS FOR 4 -  $\frac{3}{4}$ "  $\emptyset$  STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF  $\frac{7}{8}$ "  $\emptyset$  STUDS ALONG THE BEAM AS SHOWN FOR  $\frac{3}{4}$ "  $\emptyset$  STUDS BASED ON THE RATIO OF 3 -  $\frac{7}{8}$ "  $\emptyset$  STUDS FOR 4 -  $\frac{3}{4}$ "  $\emptyset$  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  $\frac{5}{16}$ " 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  $\frac{1}{16}$ " 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. FINISHES 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

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