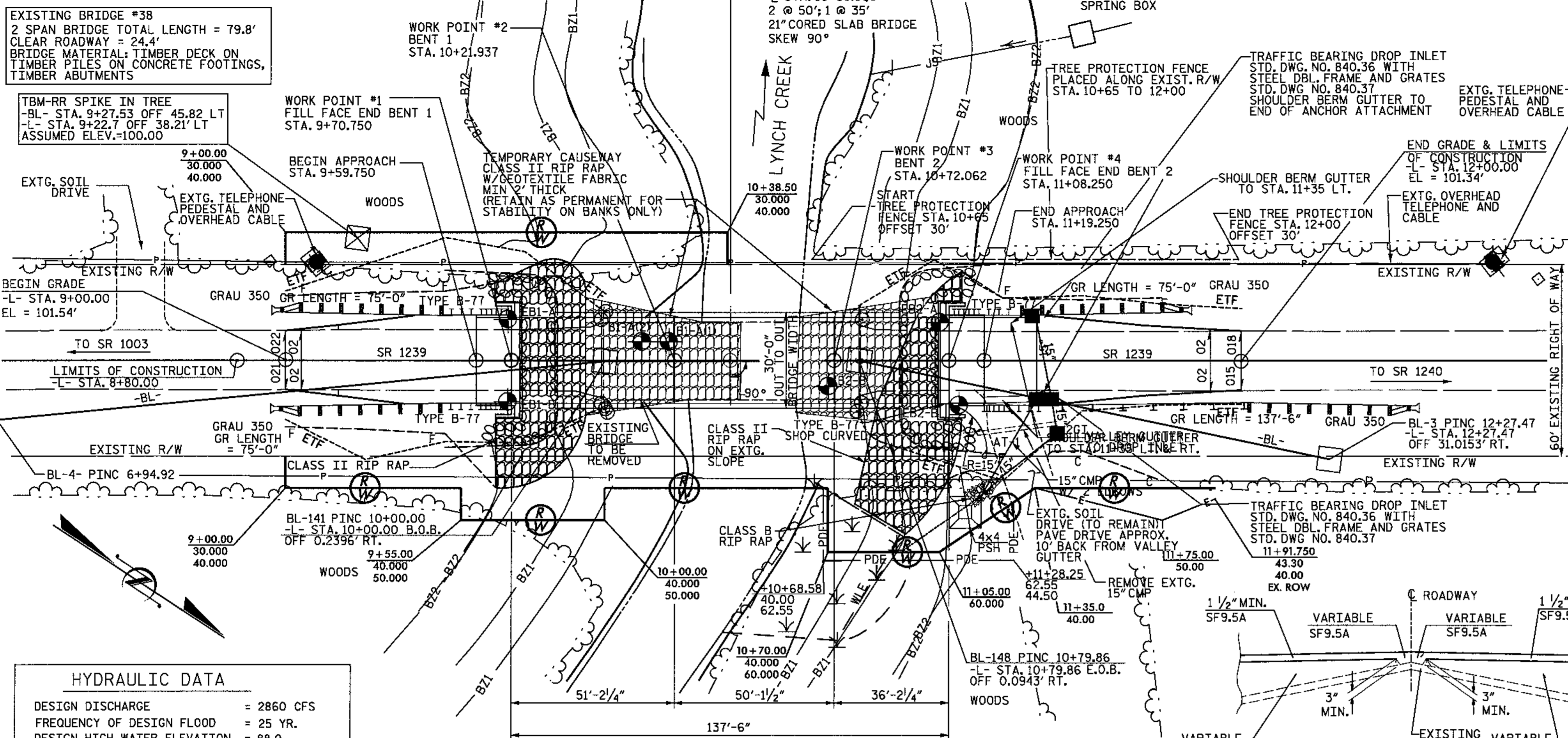


MA05012B

#38 FRANKLIN



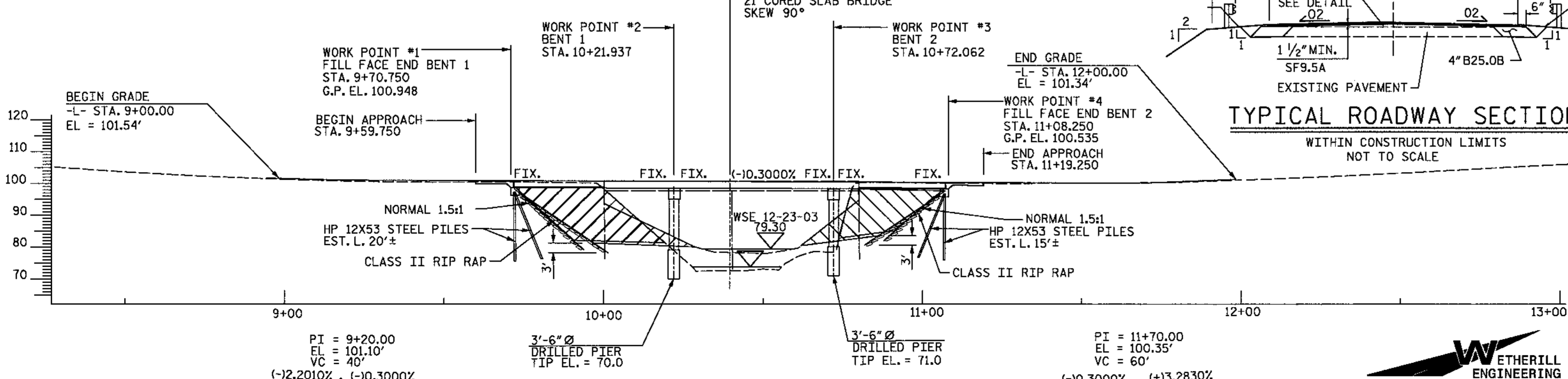
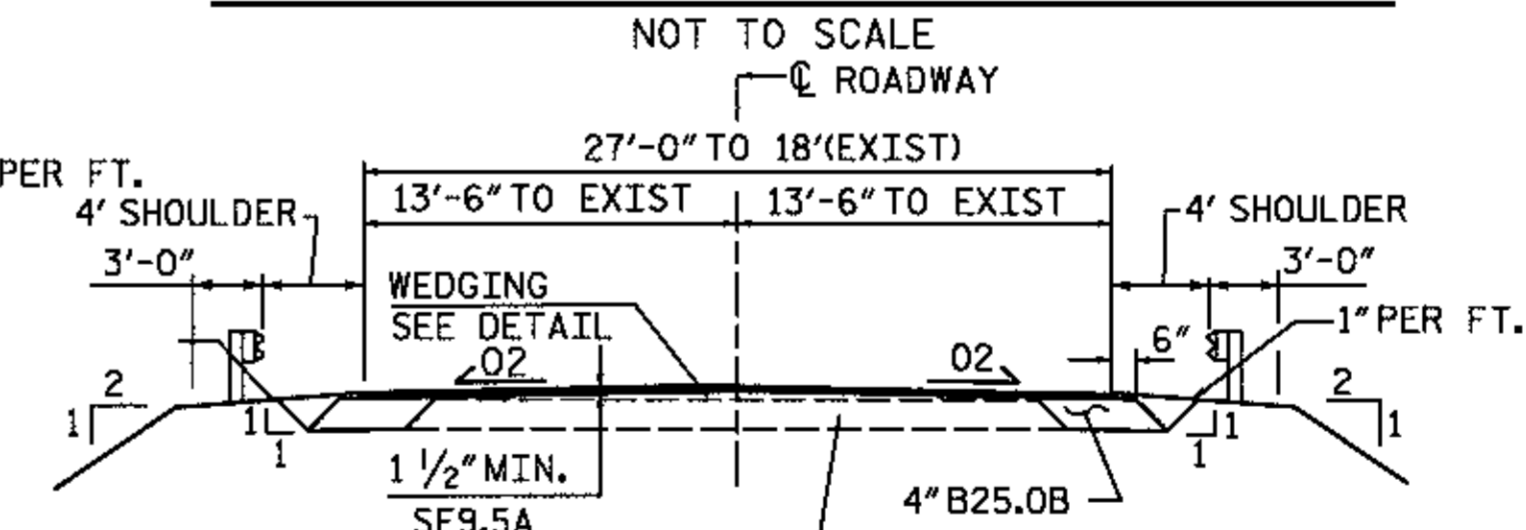
HYDRAULIC DATA

DESIGN DISCHARGE = 2860 CFS
FREQUENCY OF DESIGN FLOOD = 25 YR.
DESIGN HIGH WATER ELEVATION = 88.0
DRAINAGE AREA = 16.1 SQ. MI.
BASIC DISCHARGE (Q100) = 4230 CFS
BASIC HIGH WATER ELEVATION = 90.1

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 6230 CFS
FREQUENCY OF OVERTOPPING FLOOD = 500 YR. +
OVERTOPPING FLOOD ELEVATION = 99.36

DETAIL SHOWING METHOD OF WEDGING



- NOTES**
- PILES AT END BENTS 1 AND 2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 45 TONS EACH.
 - WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.
 - FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
 - DRILLED PIERS HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 480 KIPS EACH AT THE TIP OF THE PIER.
 - DRILLED PIERS HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 25 TSF. THE TIP BEARING CAPACITY SHALL BE VERIFIED.
 - DRILLED PIERS AT BENT 1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 70.0 FEET AND SATISFY THE REQUIRED TIP BEARING CAPACITY WITH A MINIMUM PENETRATION OF 7 FEET INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISIONS. DRILLED PIERS AT BENT 2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 71.0 FEET AND SATISFY THE REQUIRED TIP BEARING CAPACITY WITH A MINIMUM PENETRATION OF 6.5 FEET INTO ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISIONS.
 - THE SCOUR CRITICAL ELEVATION (SCE) FOR BENT 1 IS 75.0 FEET. THE SCOUR CRITICAL ELEVATION (SCE) FOR BENT 2 IS 75.7 FEET. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF STRUCTURE.
 - CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. SEE SPECIAL PROVISION FOR CROSSHOLE SONIC LOGGING.
 - SLURRY CONSTRUCTION SHALL NOT BE USED FOR THIS PROJECT.
 - SID INSPECTIONS ARE NOT REQUIRED TO DETERMINE THE BOTTOM CLEANLINESS OF THE DRILLED PIERS.
 - THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF EACH CLASS OF RIP RAP WHICH HAS BEEN INCORPORATED INTO THE COMPLETED AND ACCEPTED WORK. THE RIP RAP WILL BE MEASURED BY BEING WEIGHED IN TRUCKS CERTIFIED WEIGHING DEVICES. THE QUANTITY OF RIP RAP WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON.
PLAIN RIP RAP CLASS II (2'-0" THICK) W/ FILTER FABRIC
END BENT NO. 1 = 410 TONS
END BENT NO. 2 = 350 TONS
TOTAL = 760 TONS
 - THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH FHWA'S TECHNICAL ADVISORY T5140.20 (SCOUR AT BRIDGES).
 - THE EXISTING BRIDGE SHALL BE REMOVED BY SAWING AND/OR NON SHATTERING METHODS SUCH THAT DEBRIS WILL NOT FALL INTO THE WATER.
 - ADT 1780 FOR YEAR 2010.
- ⊙ DENOTES GEO-TECH BORING HOLE LOCATIONS.



WBS NO. 37048
FRANKLIN COUNTY
STATION: 10+39.500 -L-
REPLACES BRIDGE NO. 38

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE #38 ON SR 1239
OVER LYNCH CREEK

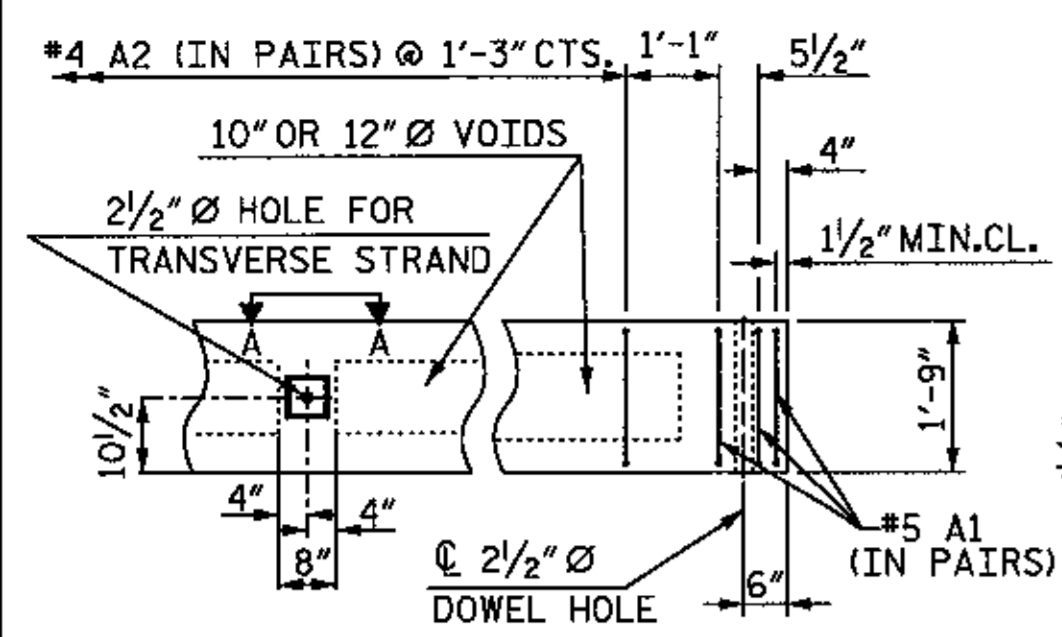
559 Jones Franklin Rd, Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

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

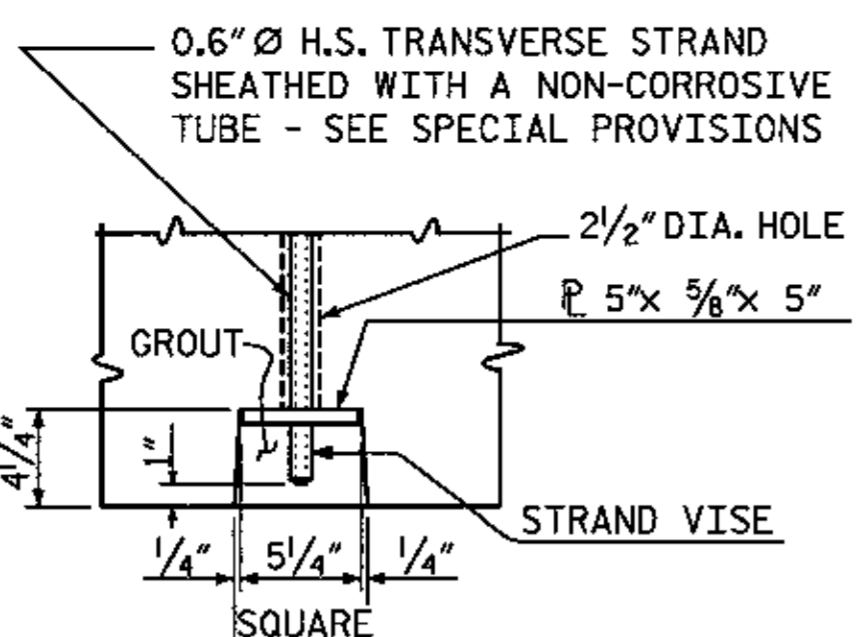
TOTAL SHEETS 20

WETHERILL ENGINEERING
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

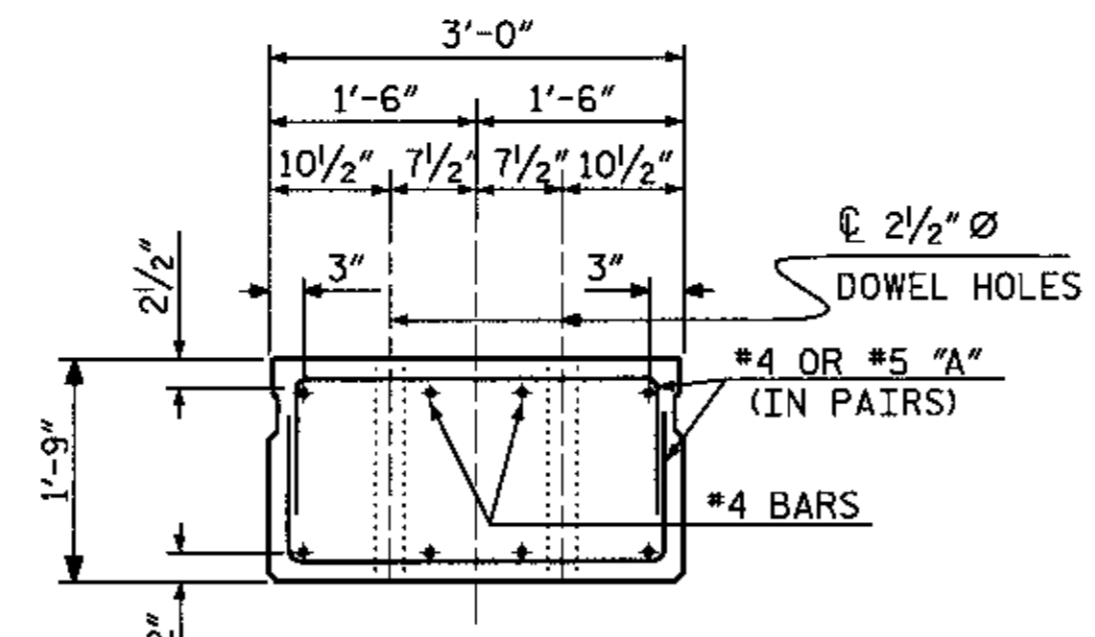
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CHECKED BY: J.A. DILWORTH DATE: 8/09



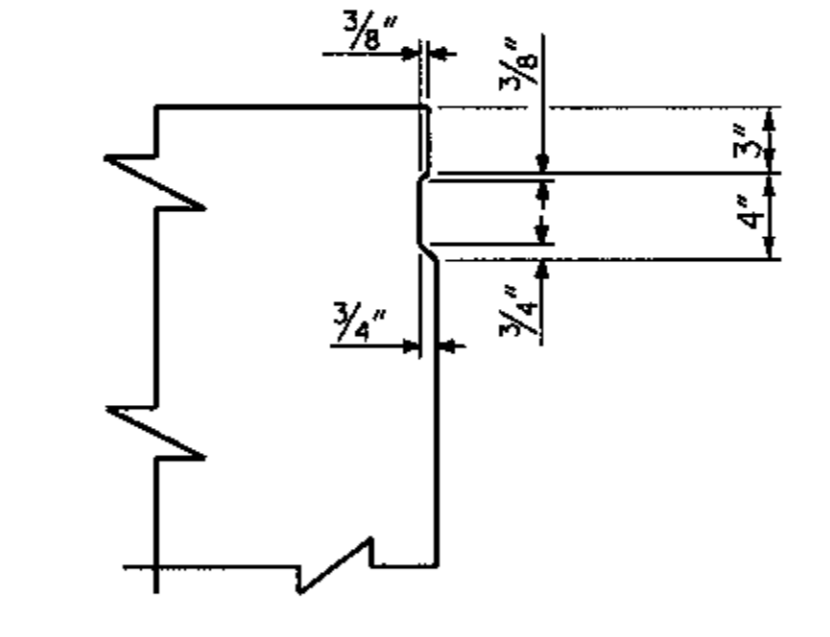
SLAB ELEVATION



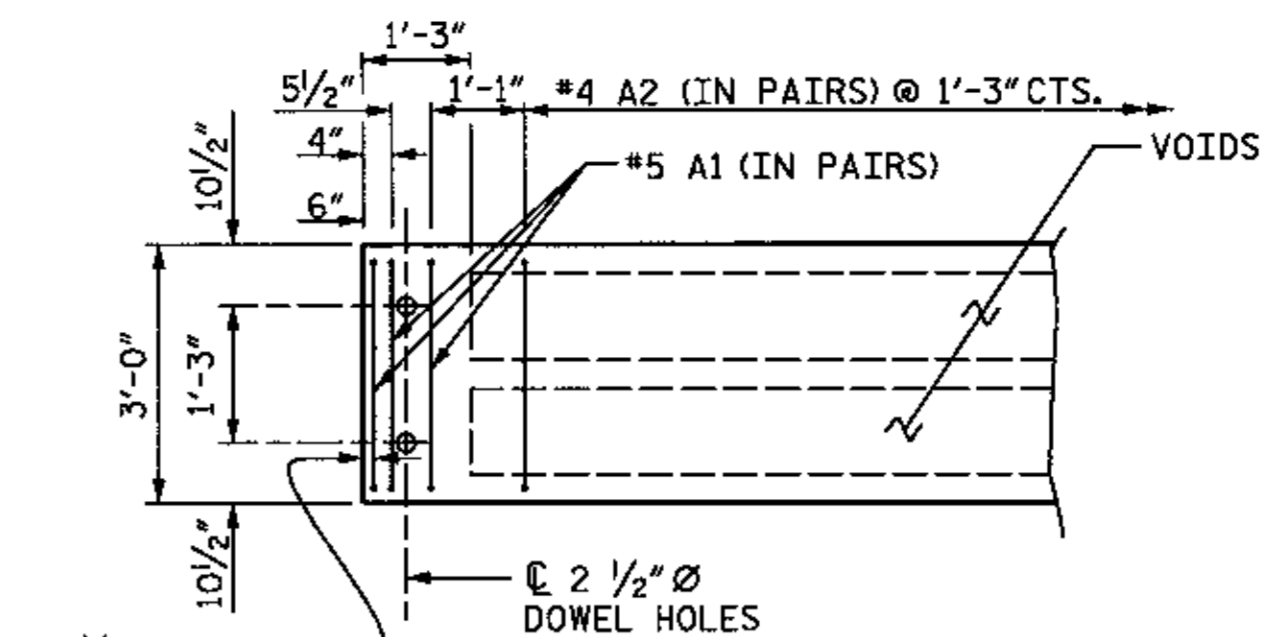
SECTION A-A



SLAB END ELEVATION



SHEAR KEY DETAIL



PART PLAN - SLAB SECTION

GENERAL NOTES:
 ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT THE BEAMS HAVE BEEN DESIGNED FOR HS 25.
 CONCRETE:
 f'c = 5000 psi MINIMUM 35' SPAN COMPRESSIVE STRENGTH @ 28 DAYS
 f'c = 4000 psi MINIMUM 35' SPAN COMPRESSIVE STRENGTH @ TRANSFER OF STRESSING FORCE
 f'c = 6000 psi MINIMUM 50' SPAN COMPRESSIVE STRENGTH @ 28 DAYS
 f'c = 4800 psi MINIMUM 50' SPAN COMPRESSIVE STRENGTH @ TRANSFER OF STRESSING FORCE

ALL PRESTRESS STRANDS SHALL MEET THE REQUIREMENTS OF ASTM A416.
 ALL PRESTRESS STRANDS SHALL BE 7 WIRE, LOW RELAXATION, HIGH STRENGTH CABLES IN ACCORDANCE WITH THE SPECIFICATIONS.

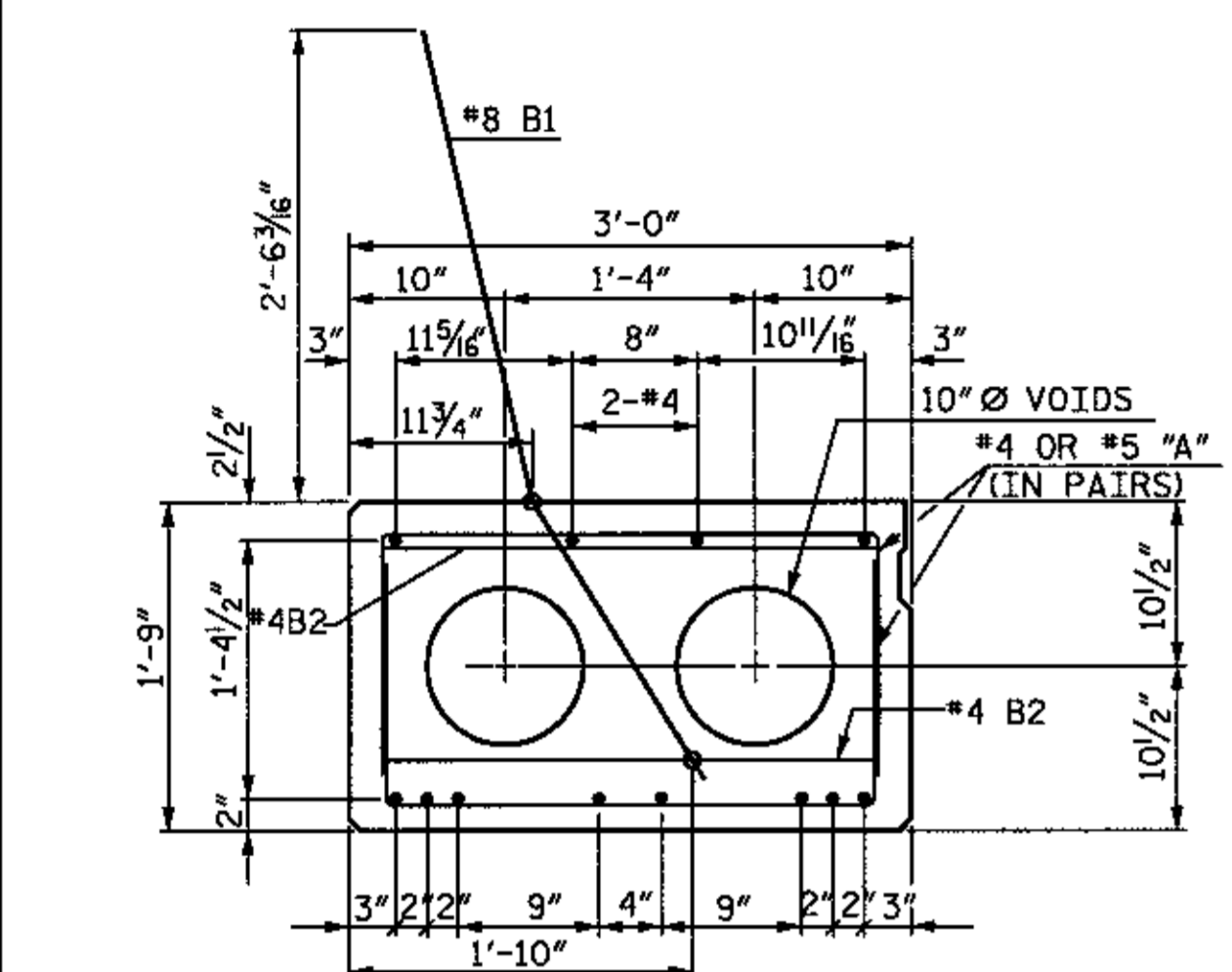
SIZE TYPE AREA ULTIMATE STR. 0.6\"/>

APPLIED FORCE 43,950* PER CABLE
 STRUCTURAL STEEL ITEMS SHALL BE OF A GRADE CONFORMING TO EITHER ASTM A36 OR A373, EXCEPT HIGH STRENGTH BOLTS. HIGH STRENGTH BOLTS SHALL BE ASTM A325. ALL STRUCTURAL STEEL SHALL BE GALVANIZED AS PER THE SPECIFICATIONS.

ALL MATERIAL AND WORKMANSHIP SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OF THE NC DEPARTMENT OF TRANSPORTATION DATED JULY 2006 AND WITH THE SPECIAL PROVISIONS.

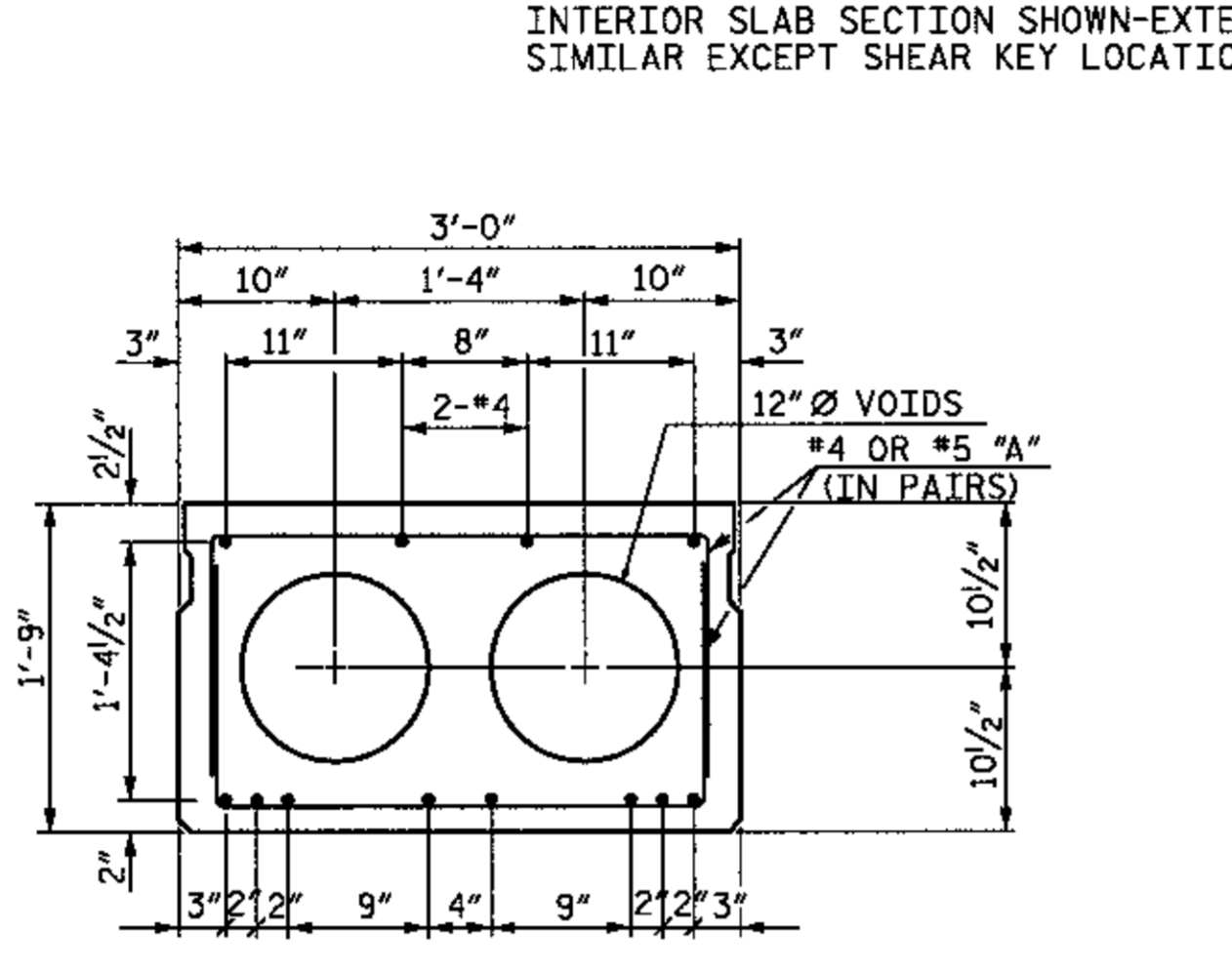
A POSITIVE HOLD DOWN SYSTEM MUST BE EMPLOYED TO PREVENT VOIDS FROM RISING.

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURE SHALL BE CHAMFERED 3/4\"/>



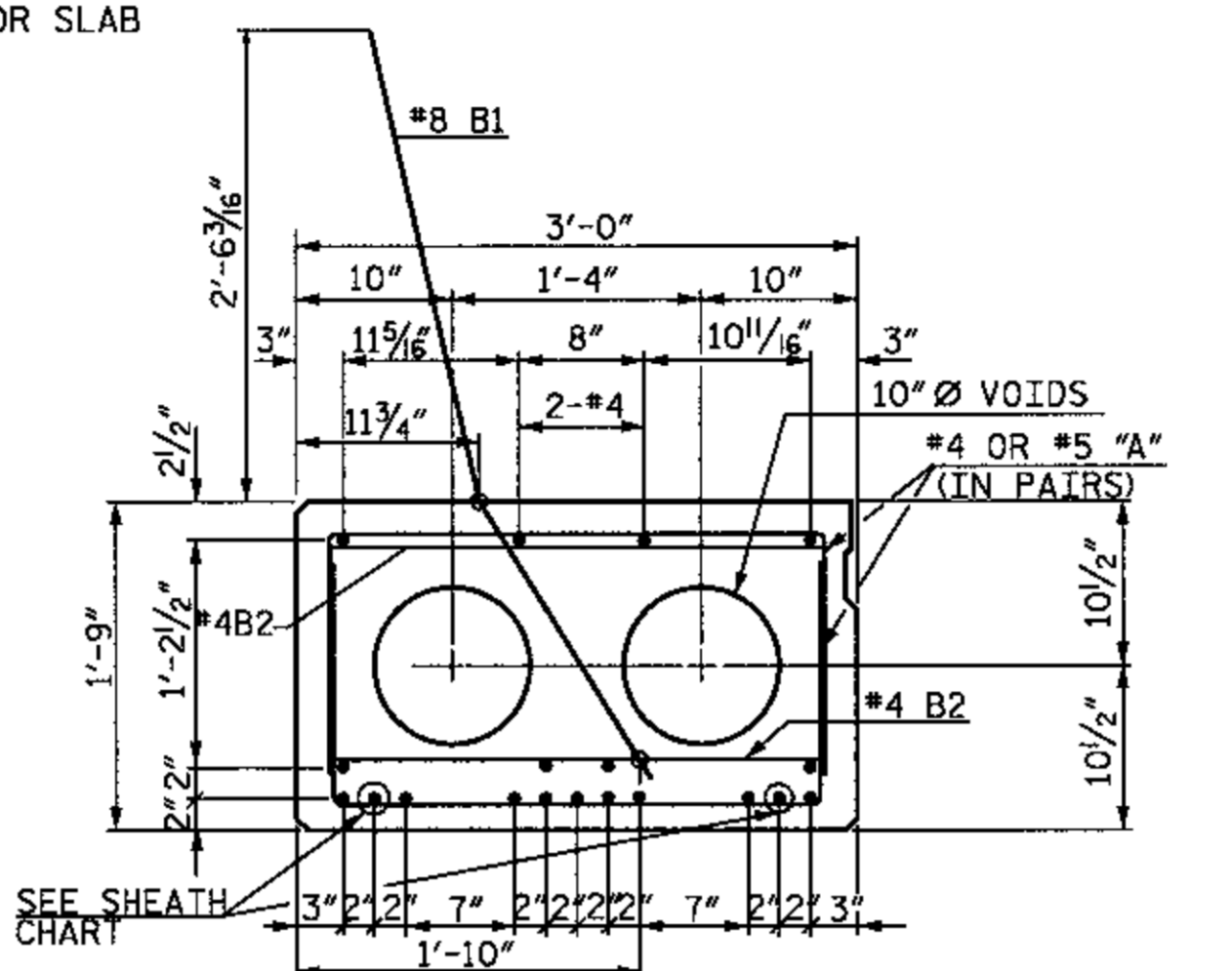
35' SPAN

10 - 0.6\"/>



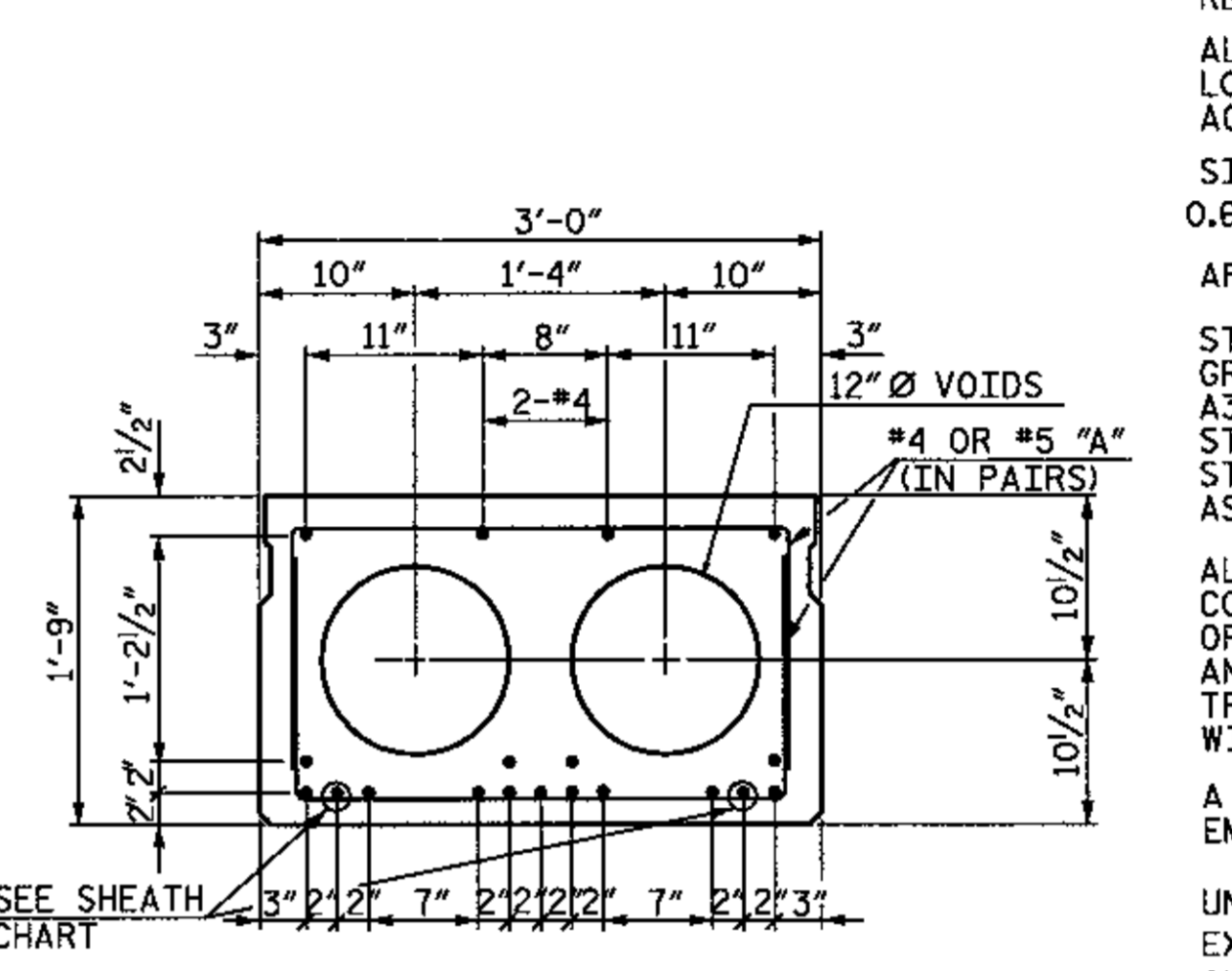
35' SPAN

10 - 0.6\"/>



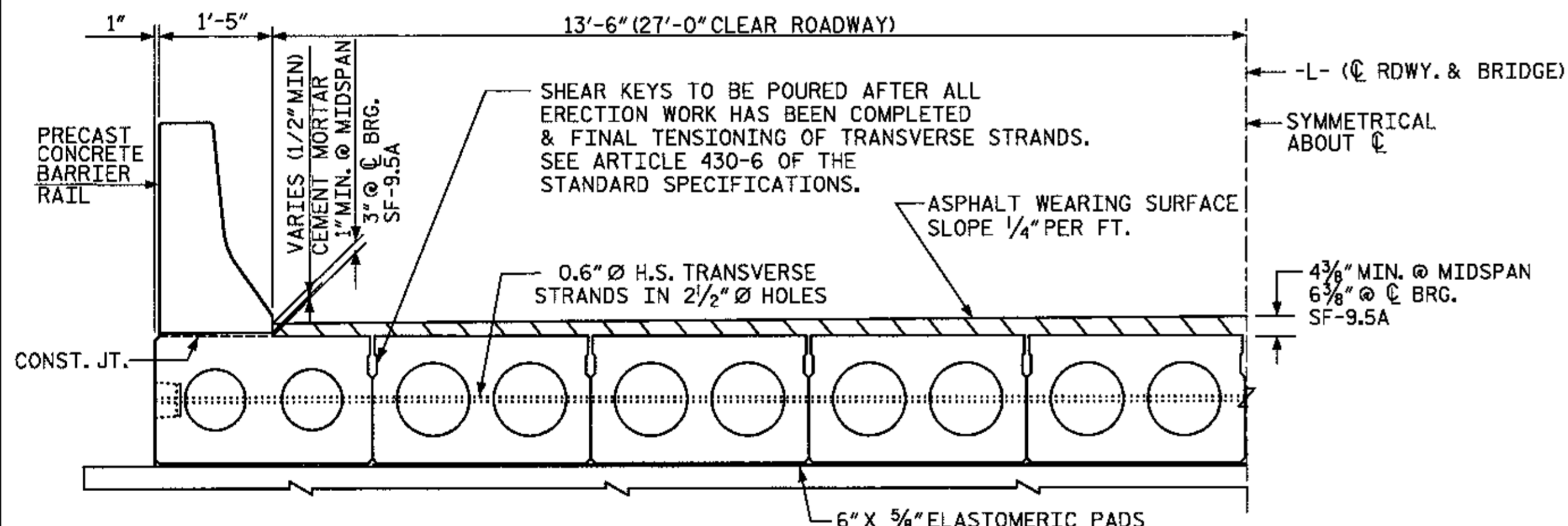
50' SPAN

17 - 0.6\"/>

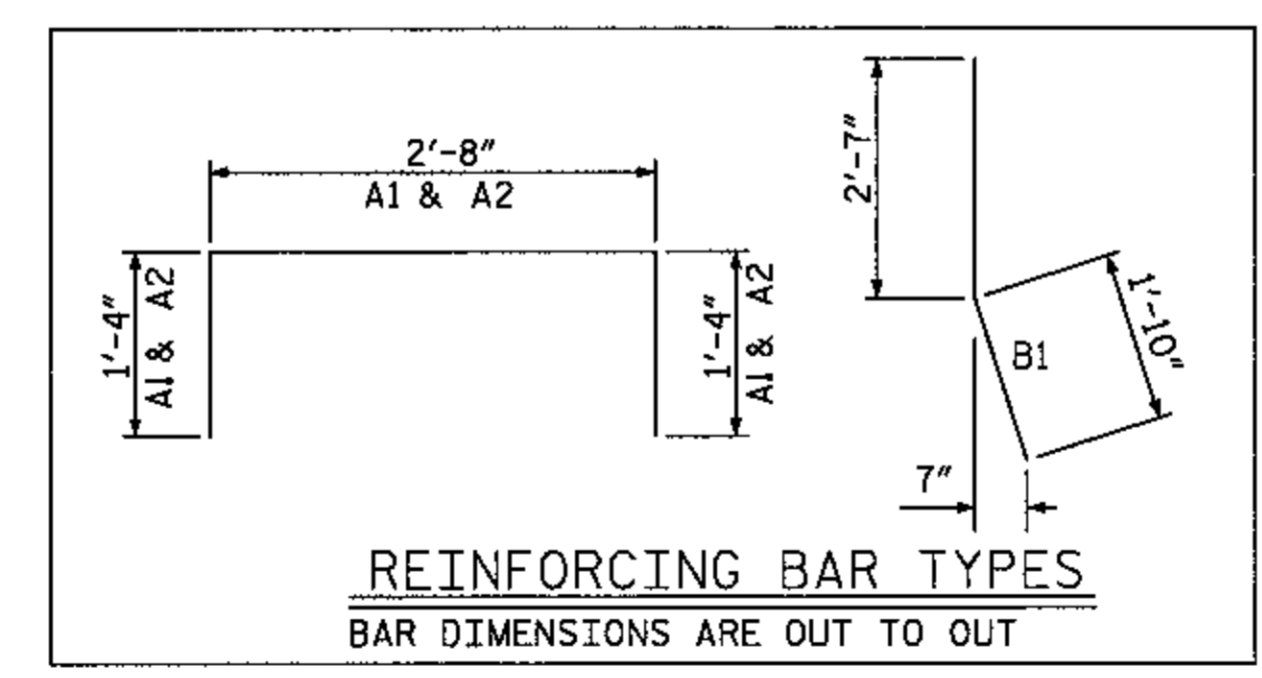


50' SPAN

17 - 0.6\"/>



TYPICAL HALF SECTION

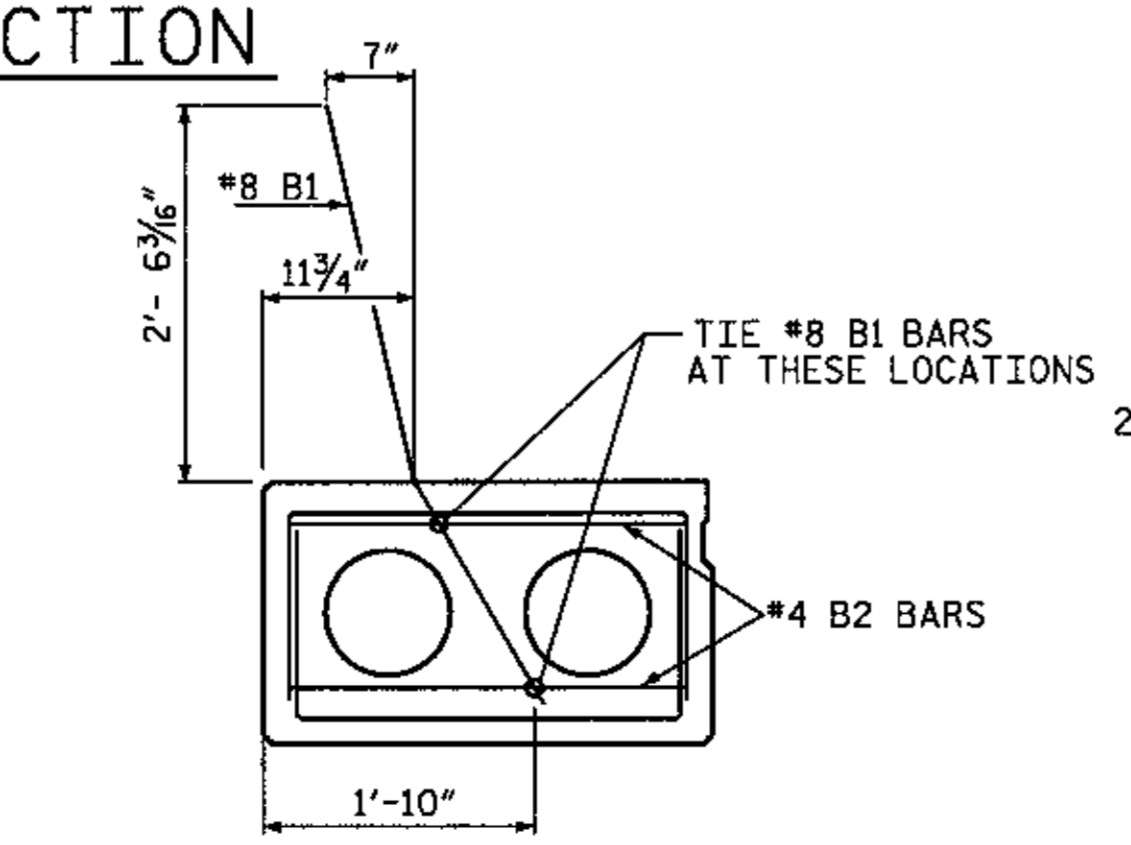


REINFORCING BAR TYPES

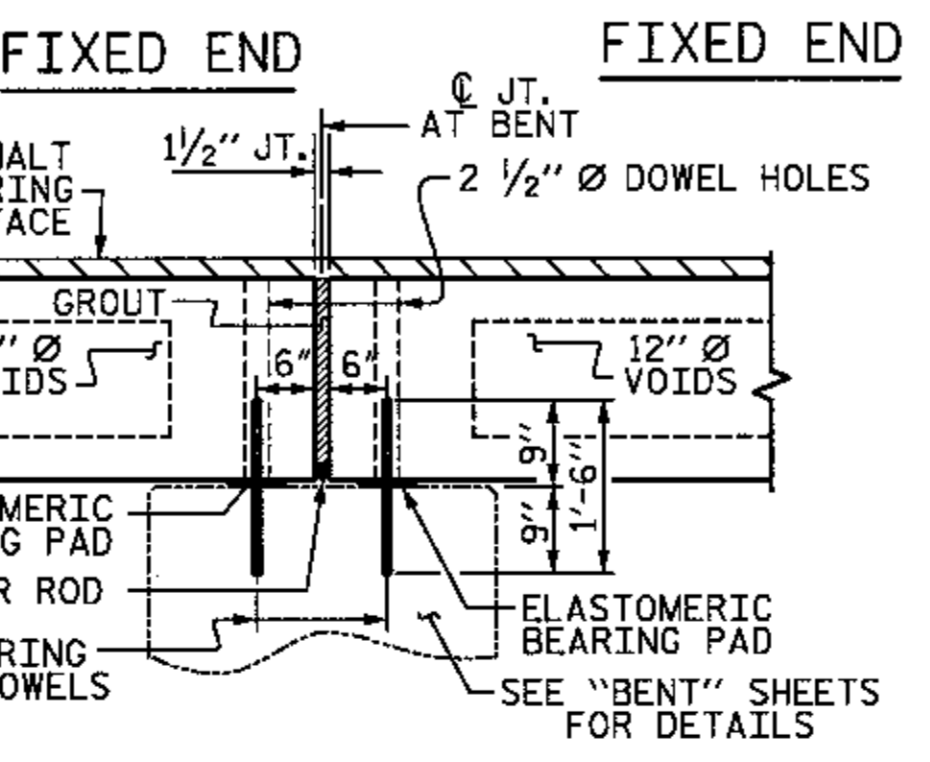
BAR DIMENSIONS ARE OUT TO OUT

SHEATH CHART		
SPAN LENGTH	NUMBER OF SHEATHED STRANDS PER EXTERIOR SLAB SECTIONS	NUMBER OF SHEATHED STRANDS PER INTERIOR SLAB SECTIONS
35'	0	0
50'	2	2

○ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4 FEET FROM END OF SLAB.

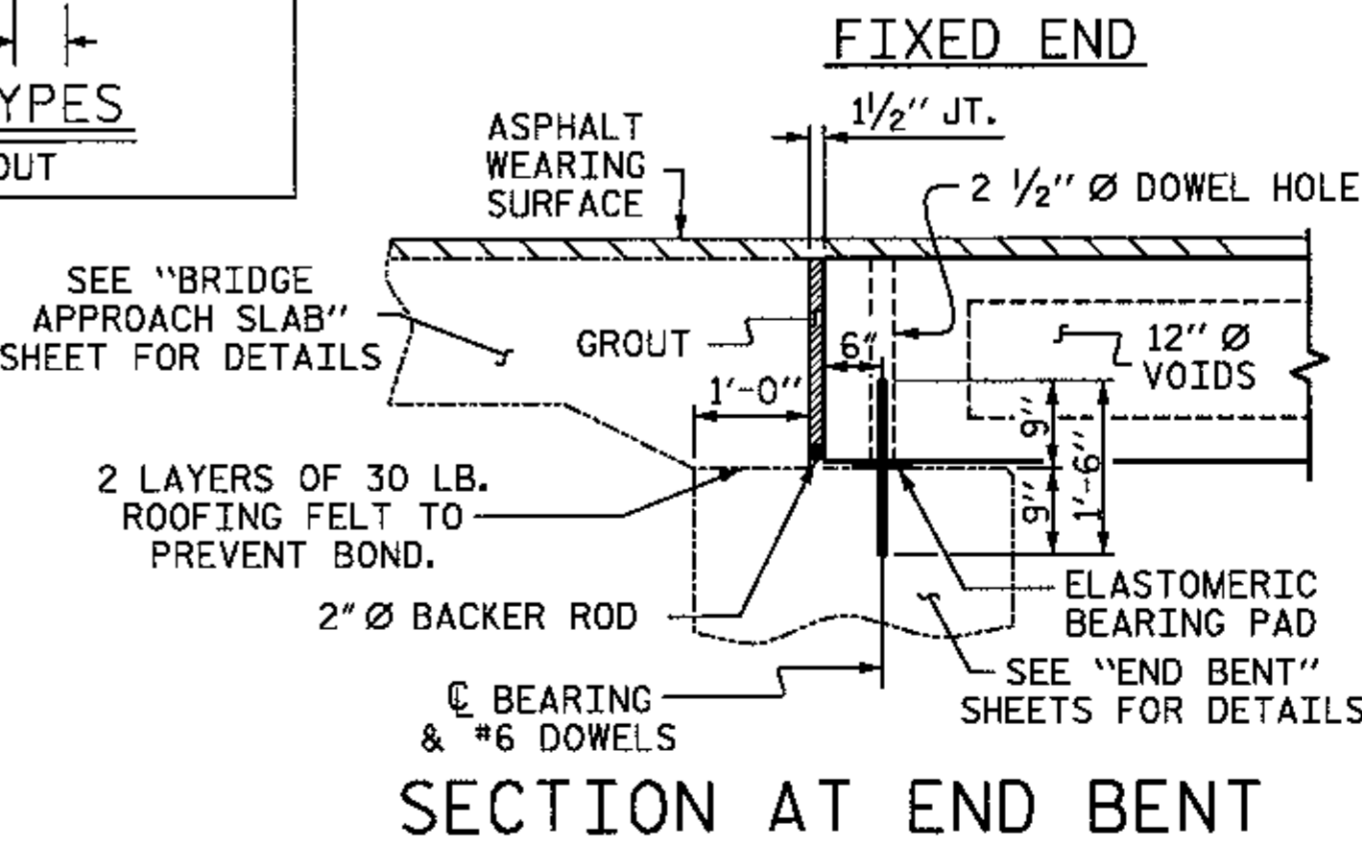


TIE LOCATION FOR #8 B1



SECTION AT BENT

NOTE: C. OF DOWELS SHALL MATCH C. OF DOWEL HOLES IN CORED SLAB UNITS.



SECTION AT END BENT

NOTE: C. OF DOWELS SHALL MATCH C. OF DOWEL HOLES IN CORED SLAB UNITS.



WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD PRESTRESSED
 CORED SLAB
 35' & 50' SPANS
 27' CLEAR ROADWAY, 90° SKEW

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

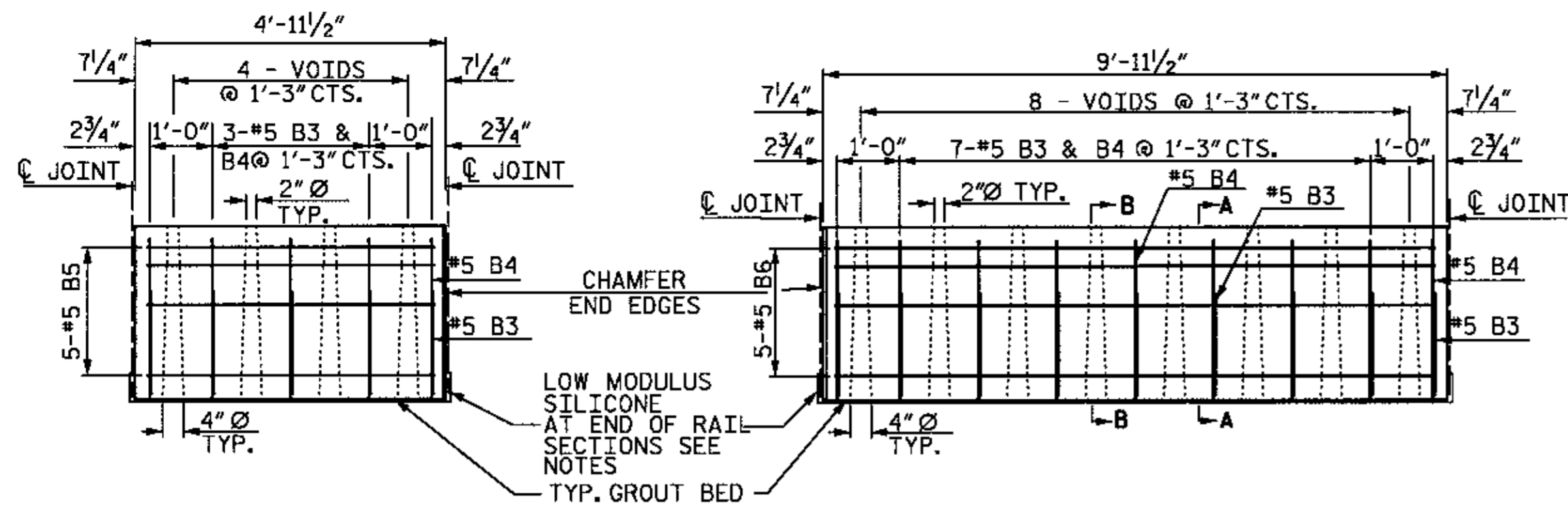
ETHERILL ENGINEERING
 559 Jones Franklin Rd. Suite 164
 Raleigh, N.C. 27606
 Bus: 919 851 8077
 Fax: 919 851 8107
 LICENSE NO. F-0377

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

NOTE: NOT TO SCALE

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DRAWN BY: J.C. PENDERGRAFT DATE: 8/09
 CHECKED BY: J.A. DILWORTH DATE: 8/09

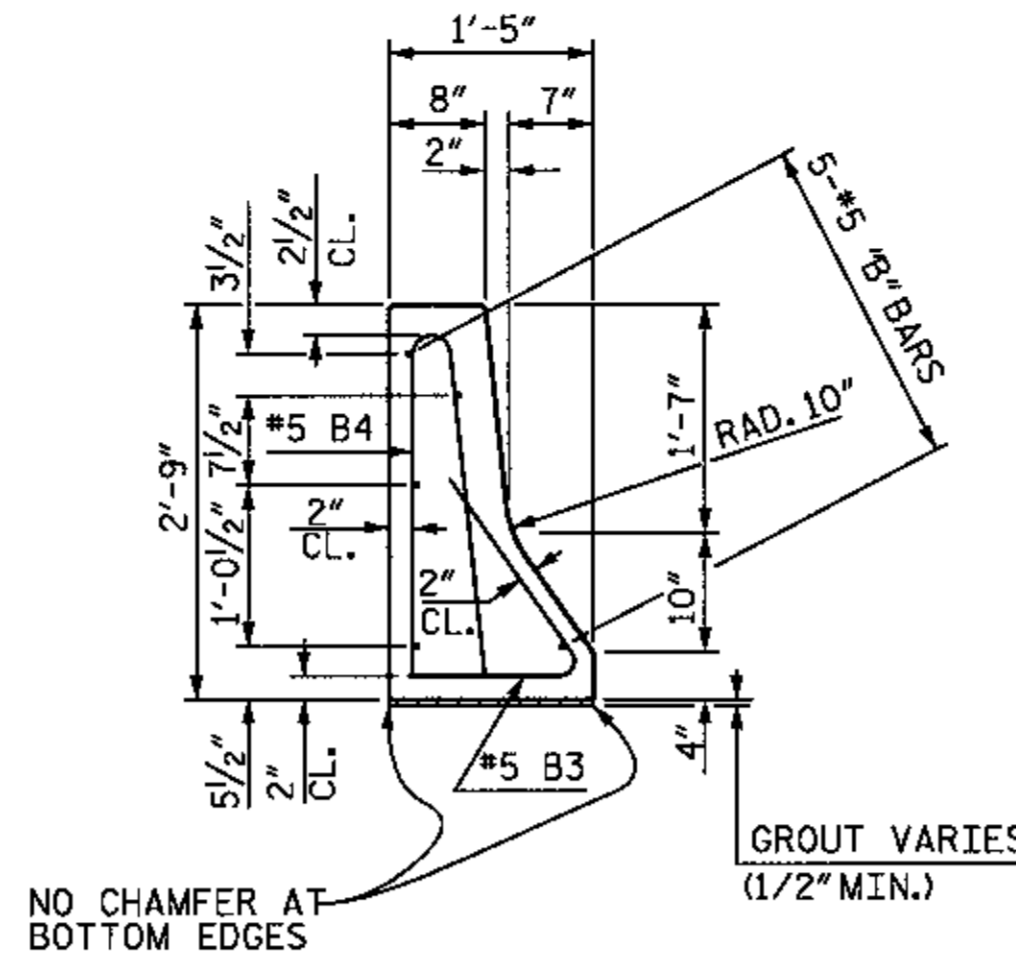


TYPICAL 5'-0" PRECAST UNIT

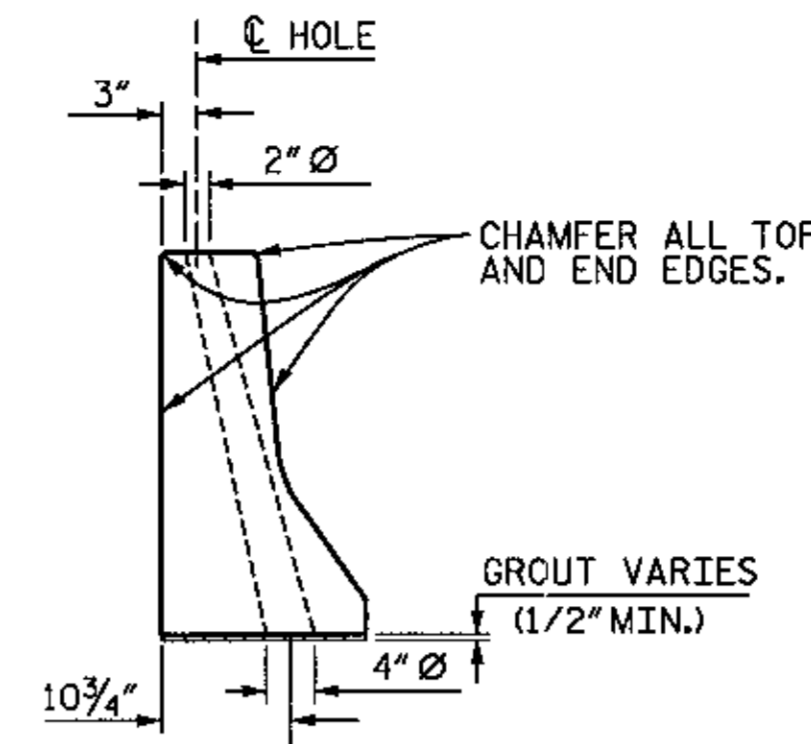
BILL OF MATERIAL					
FOR ONE 5'-0" RAIL SECTION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	5	#5	1	2'-8"	14
B4	5	#5	2	4'-11"	26
B5	5	#5	STR	4'-7"	24
REINFORCING STEEL LBS. = 64					
CLASS AA CONCRETE CU. YDS. = 0.5					

TYPICAL 10'-0" PRECAST UNIT

BILL OF MATERIAL					
FOR ONE 10'-0" RAIL SECTION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	9	#5	1	2'-8"	25
B4	9	#5	2	4'-11"	46
B6	5	#5	STR	9'-7"	50
REINFORCING STEEL LBS. = 121					
CLASS AA CONCRETE CU. YDS. = 1.0					



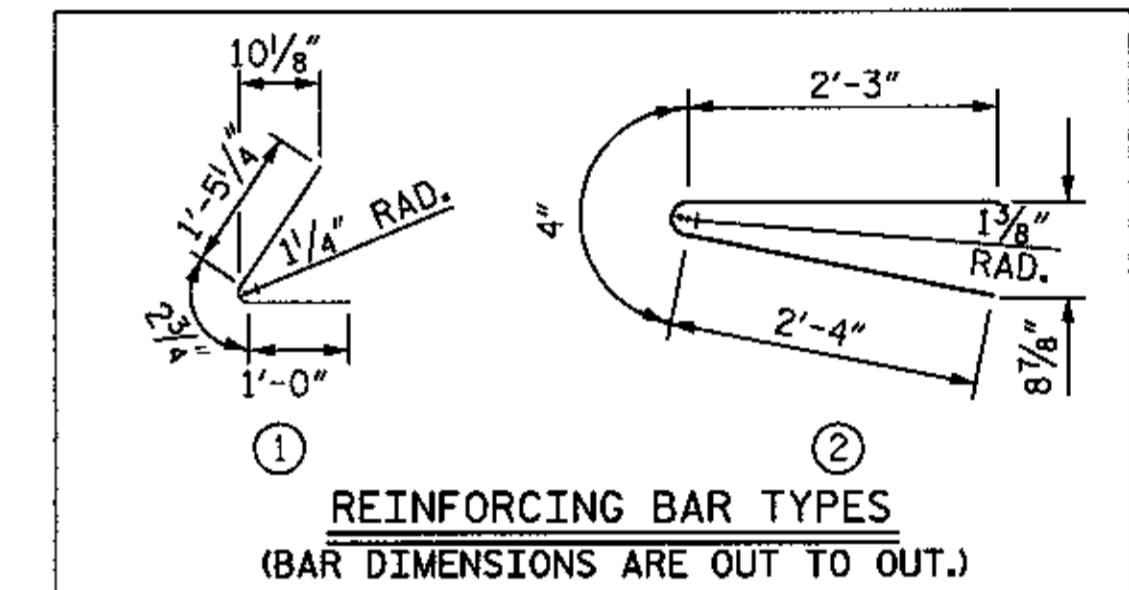
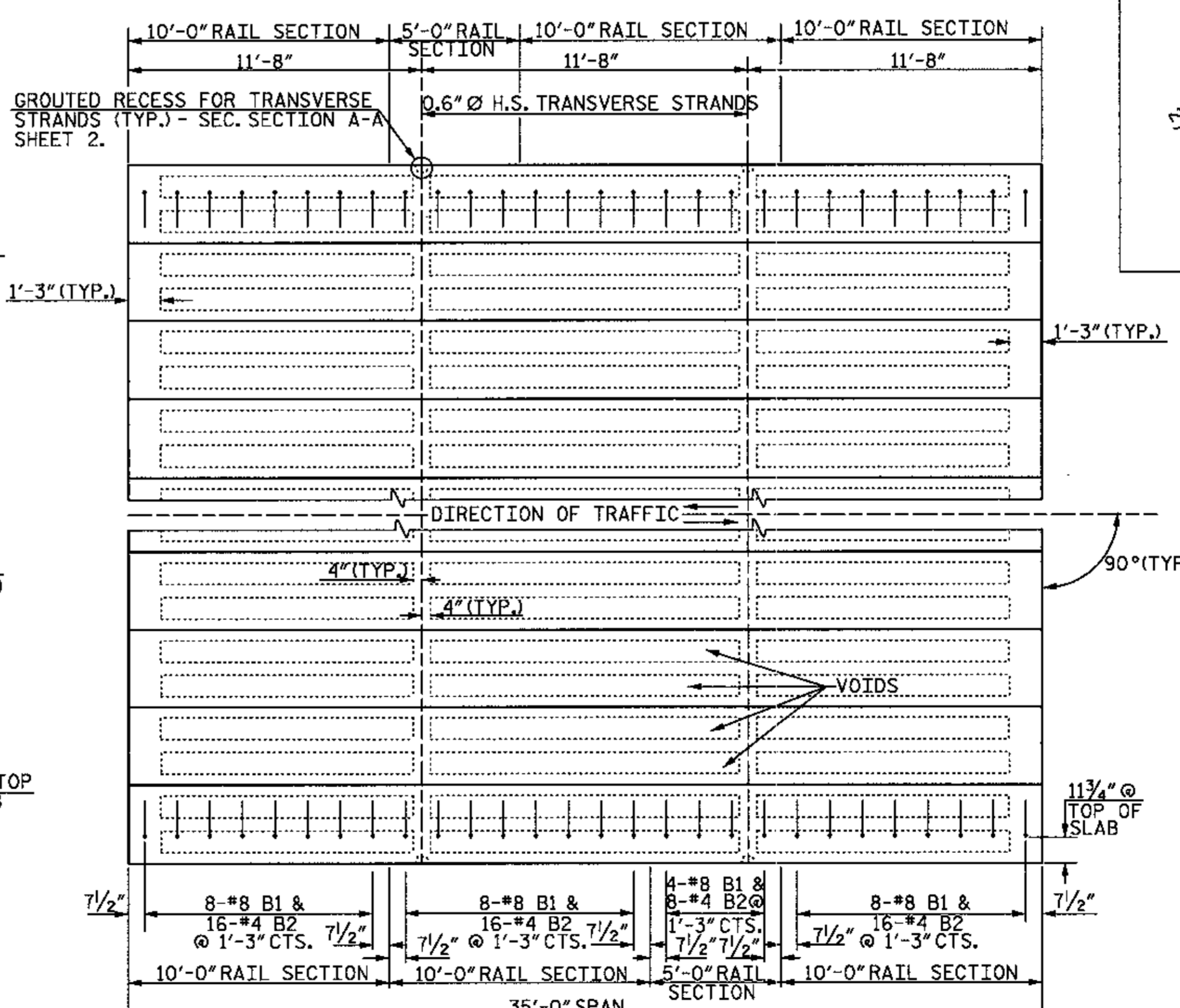
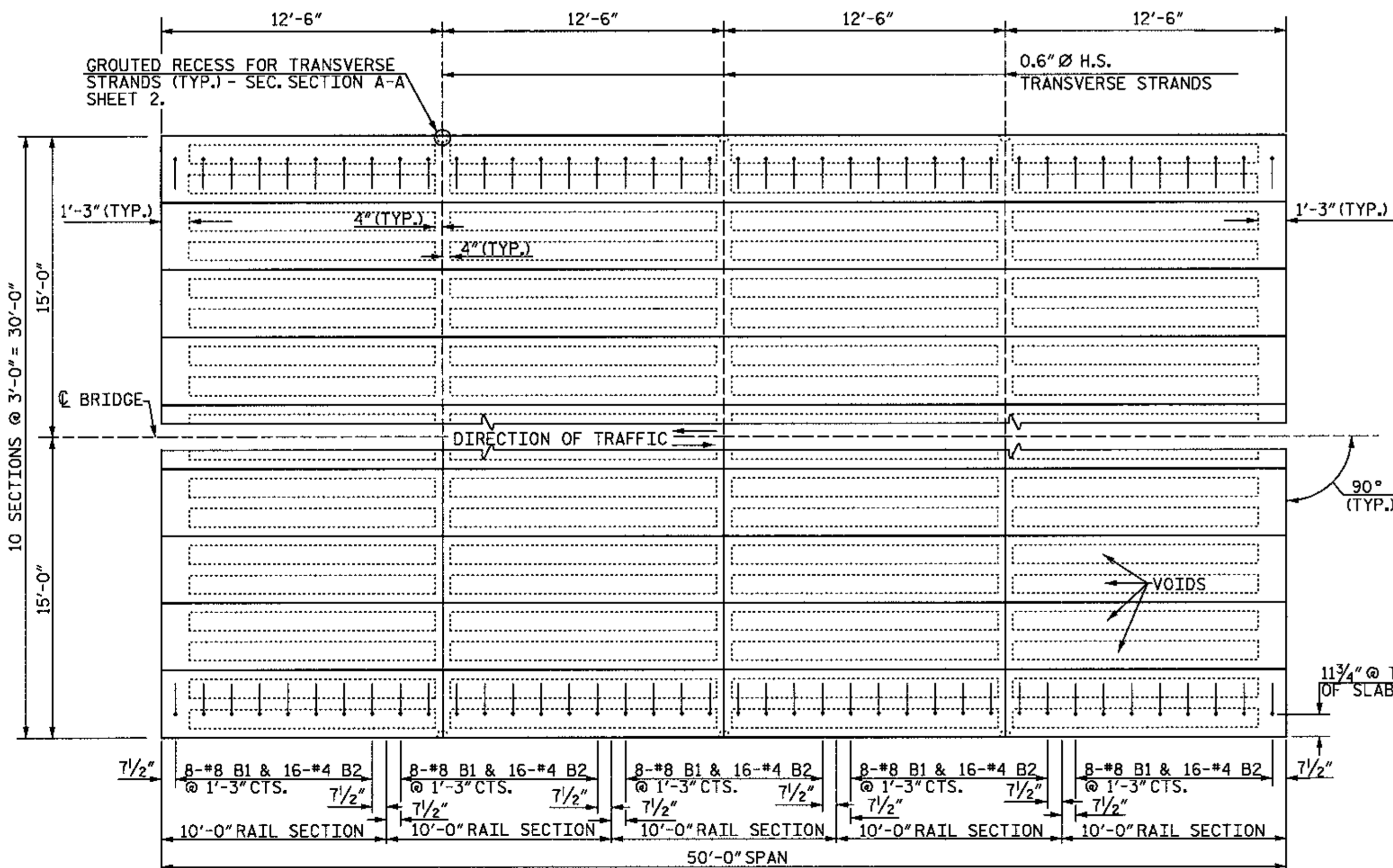
SECTION A-A



SECTION B-B

NOTES:

EACH PRECAST RAIL UNIT SHALL BE CAST WITH CLASS AA CONCRETE.
 RAIL TO BE FLUSH WITH CORED SLAB UNITS AT EACH END OF SPAN.
 GROUT SHALL BE 5" ABOVE GUTTER LINE BETWEEN RAIL SECTIONS.
 EACH PRECAST RAIL UNIT SHALL BE SUPPLIED WITH LIFTING DEVICE(S). NO CABLES ARE TO BE WRAPPED AROUND THE RAIL UNITS FOR LIFTING.
 THE JOINT SEALER SHALL BE LOW MODULUS SILICONE SEALANT. SEE SECTION 1028-4 OF THE STANDARD SPECIFICATIONS.
 THE 2 1/2" Ø DOWEL HOLES AT EACH END OF THE SLAB SECTIONS SHALL BE FILLED WITH GROUT, SEE STANDARD SPECIFICATIONS.
 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 1/2" 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 SHOWN OTHERWISE ON PLANS.



WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38

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



NOTE: NOT TO SCALE

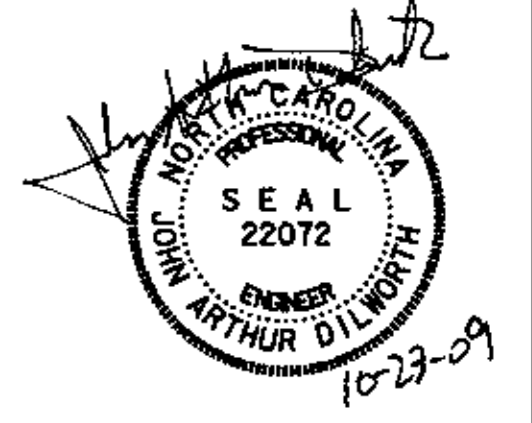
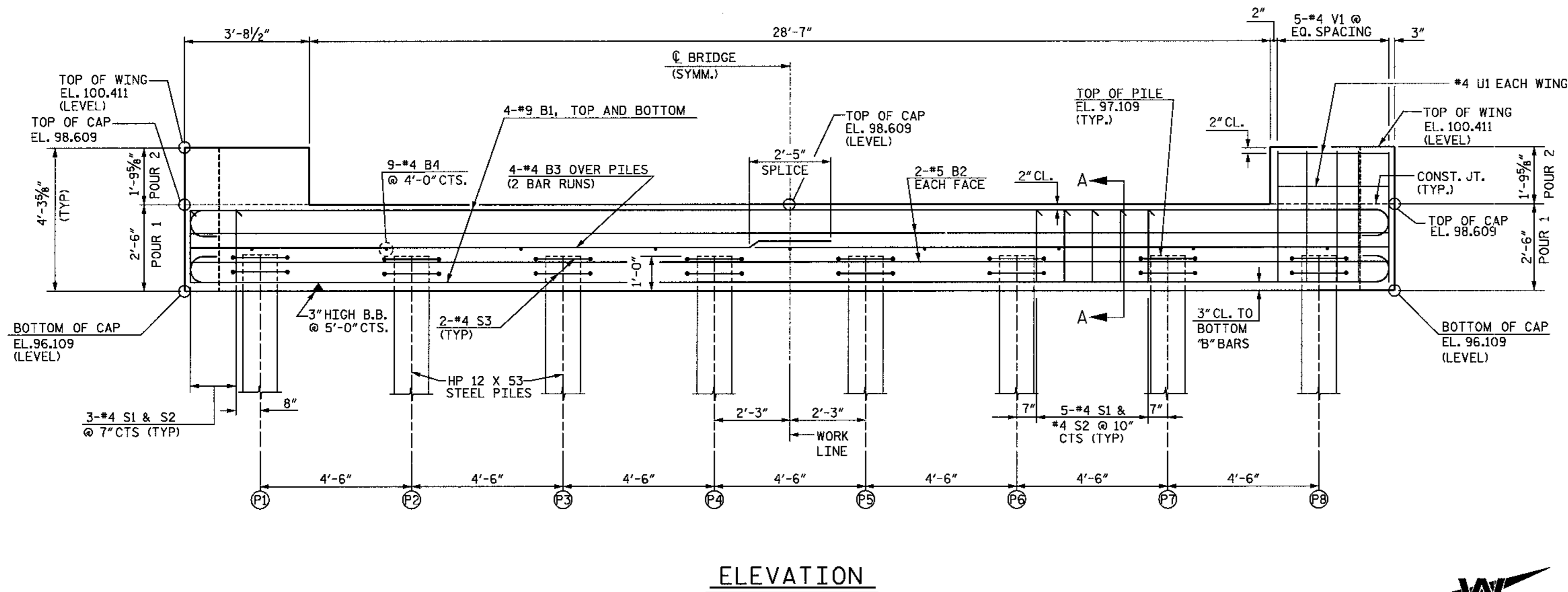
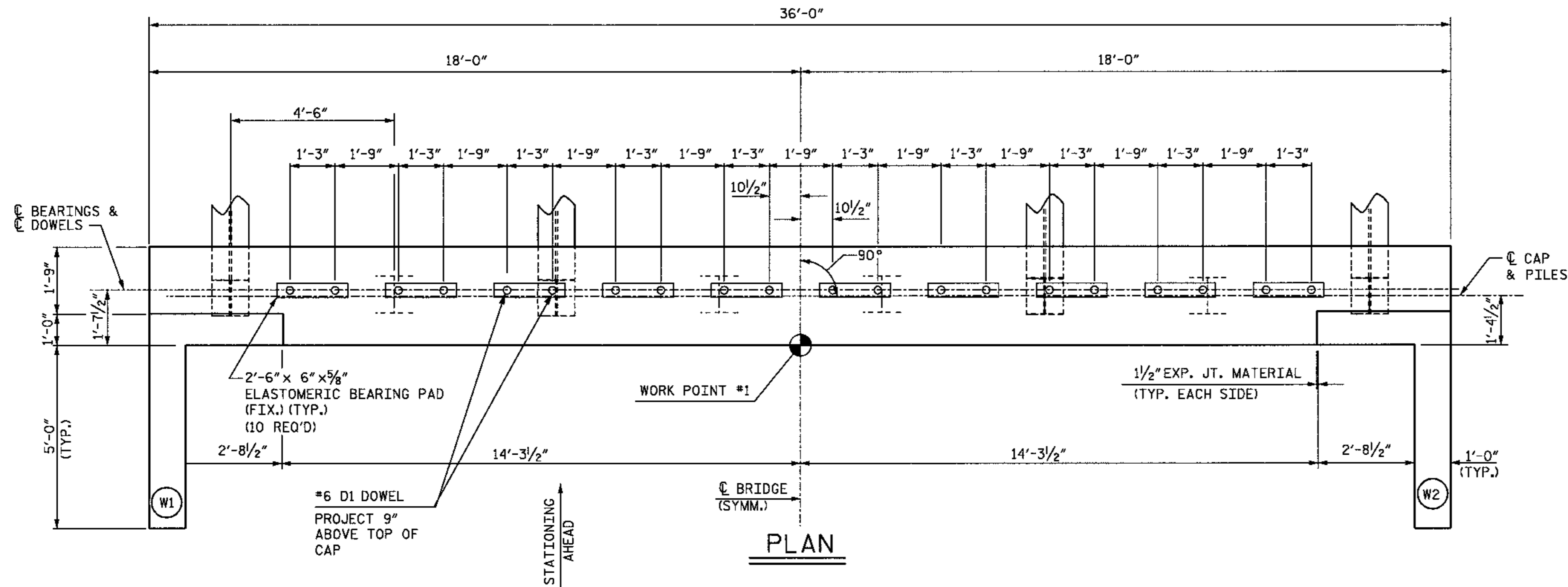
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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DRAWN BY: J.C. PENDERGRAFT DATE: 8/09
 CHECKED BY: J.A. DILWORTH DATE: 8/09

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 FOR SECTION A-A, SEE SHEET 2 OF 3.
 FOR MISC. DETAILS, SEE SHEET 2 OF 3.



WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38
 SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1					
SHEET NO. 4					
TOTAL SHEETS 20					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

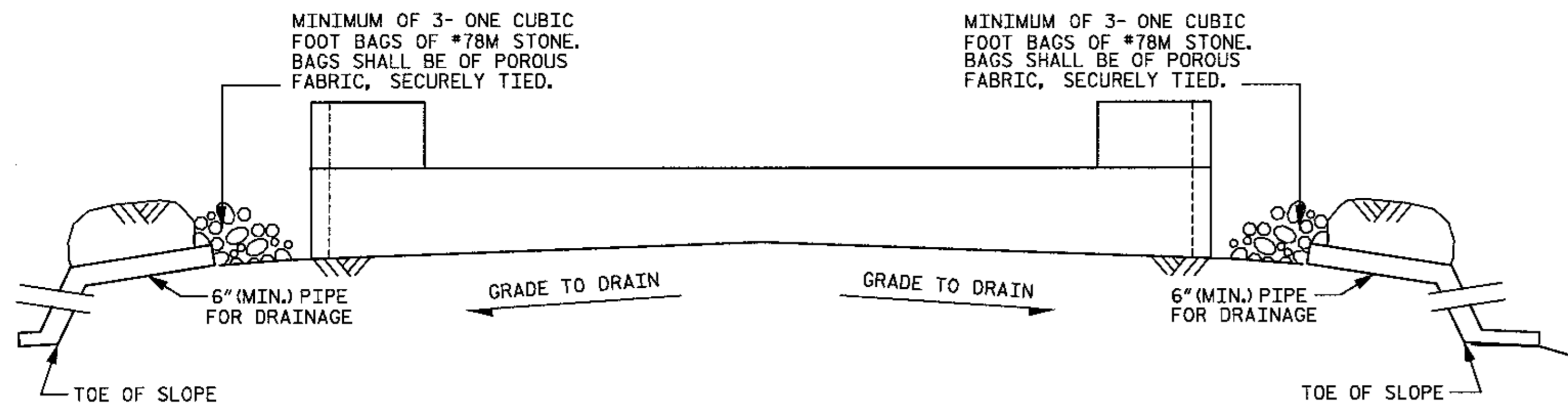
WV ETHERILL ENGINEERING
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NOTE: NOT TO SCALE

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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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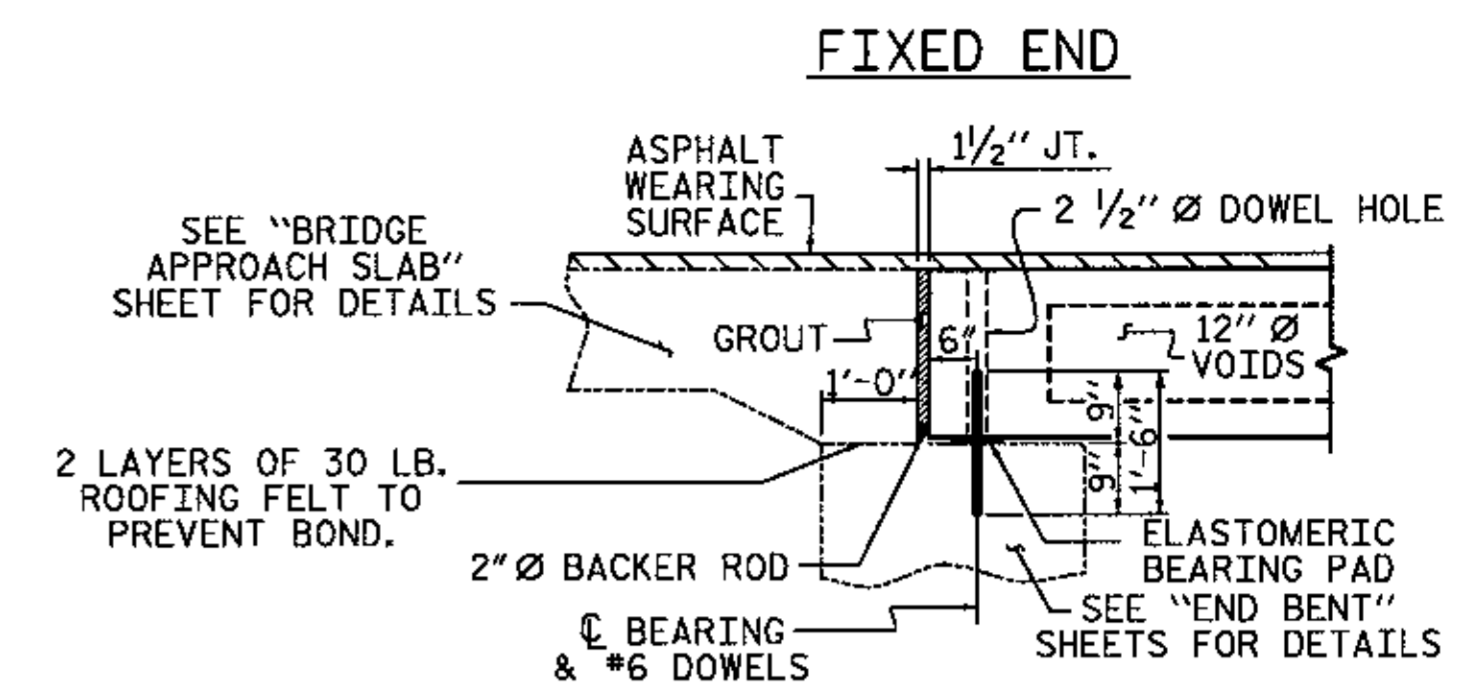
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 CHECKED BY: J.A. DILWORTH DATE: 8/09



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.

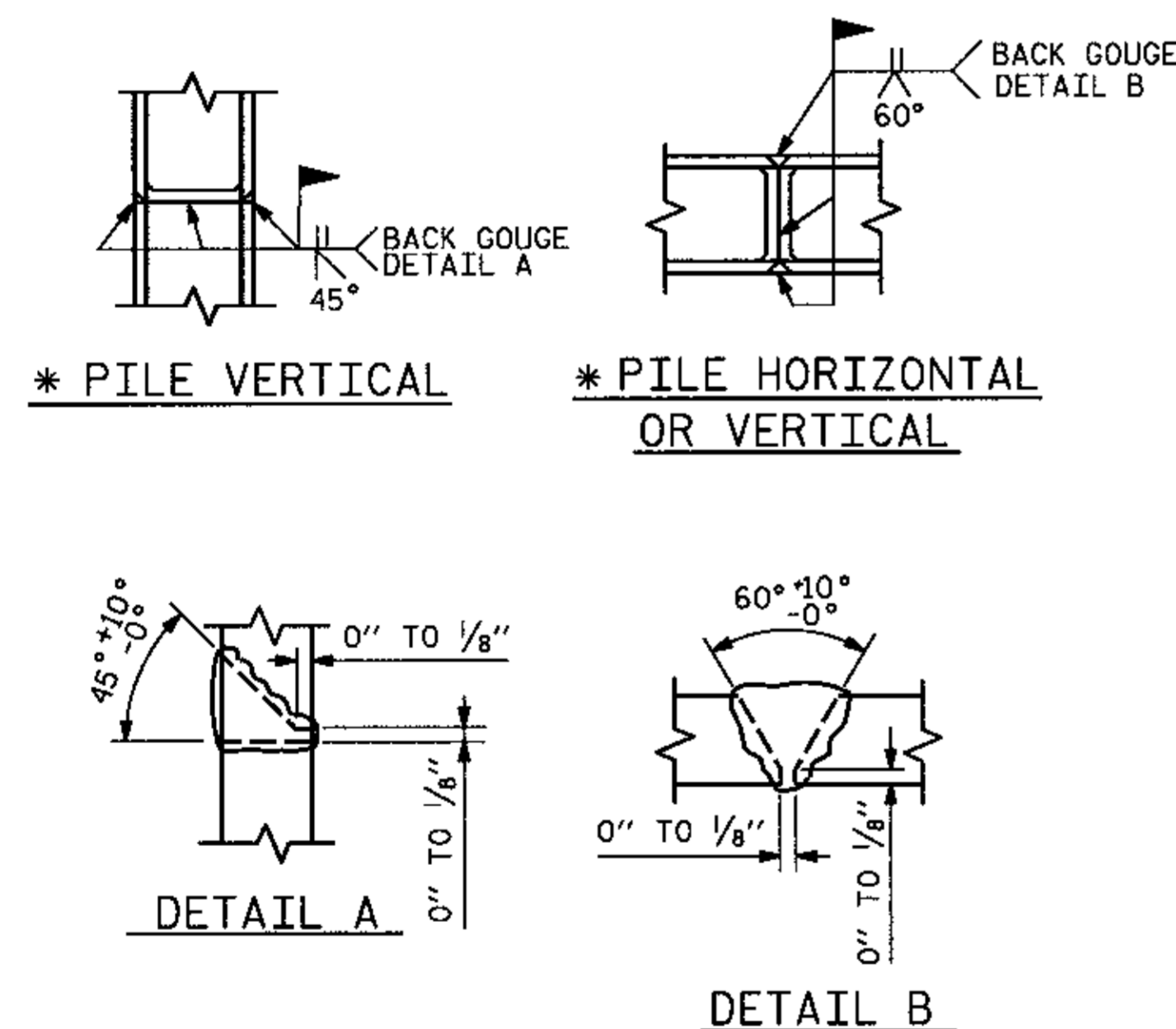
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.



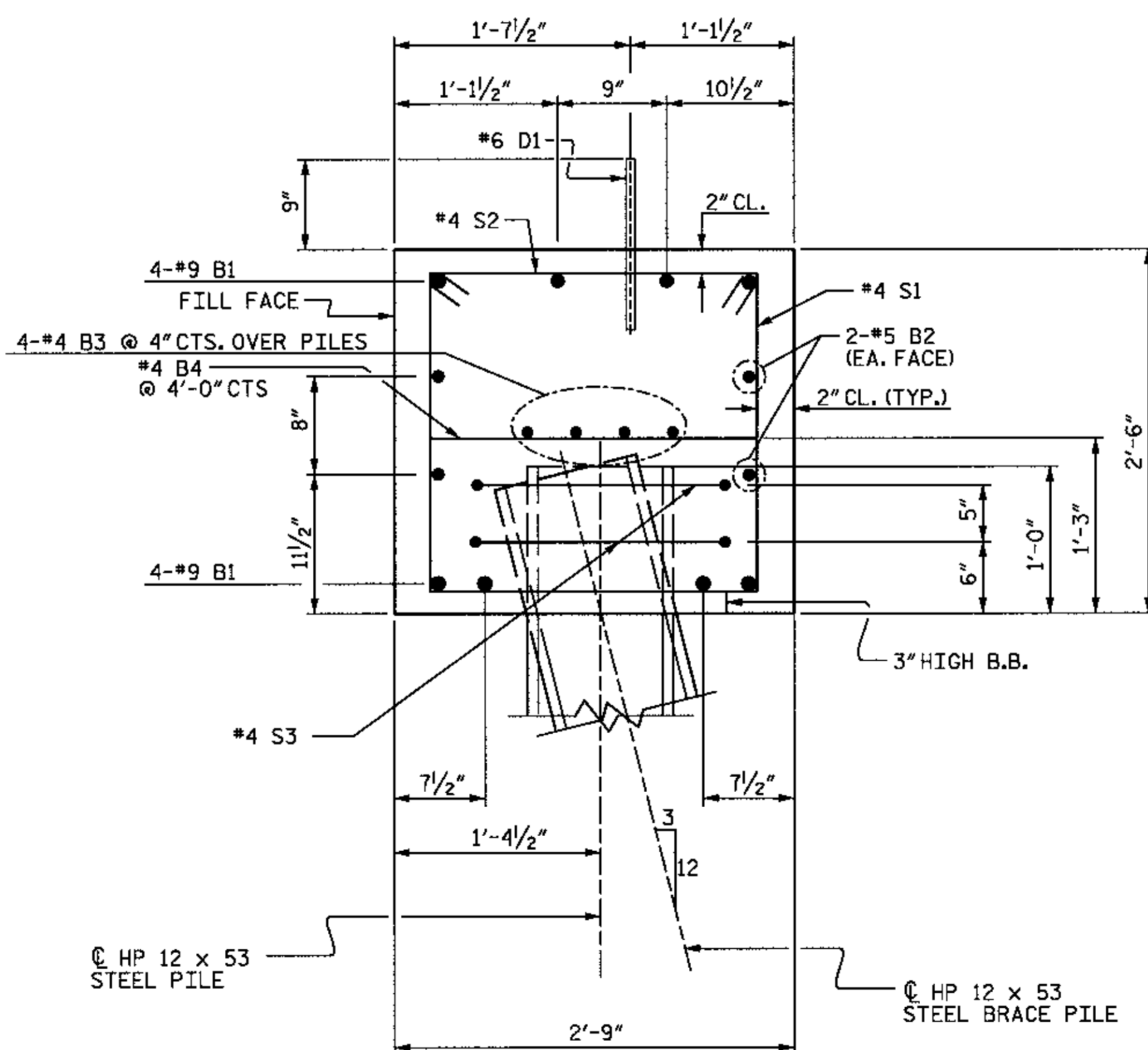
SECTION AT END BENT

NOTE:
 C OF DOWELS SHALL MATCH C OF DOWEL HOLES IN CORED SLAB UNITS.

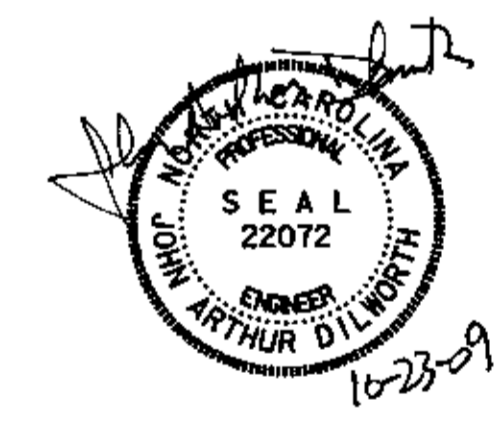
TEMPORARY DRAINAGE AT END BENT



* POSITION OF PILE DURING WELDING.
PILE SPLICE DETAILS



SECTION A-A



WBS NO. 37048
FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38
 SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1					
SHEET NO. 5					
TOTAL SHEETS 20					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		

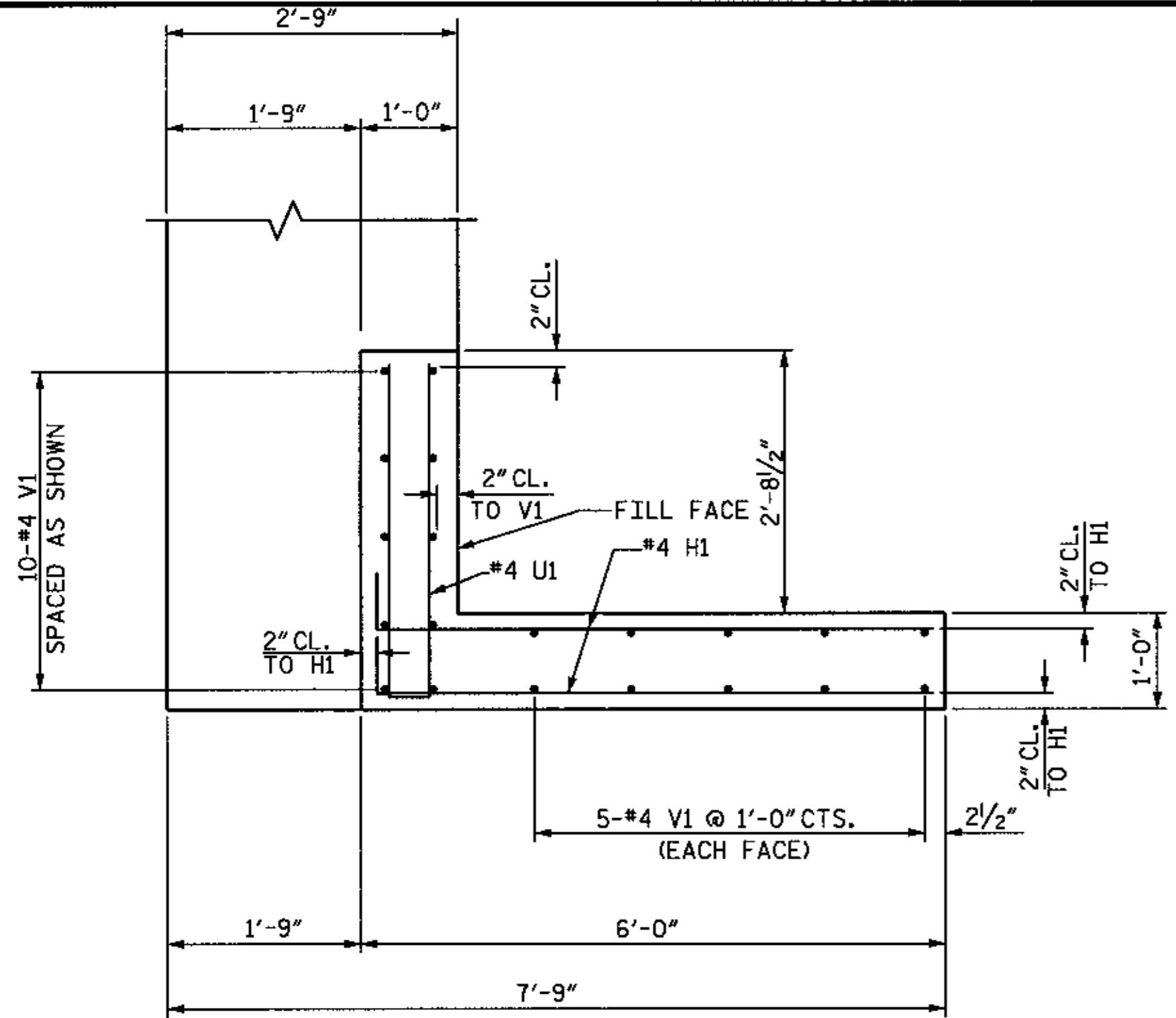
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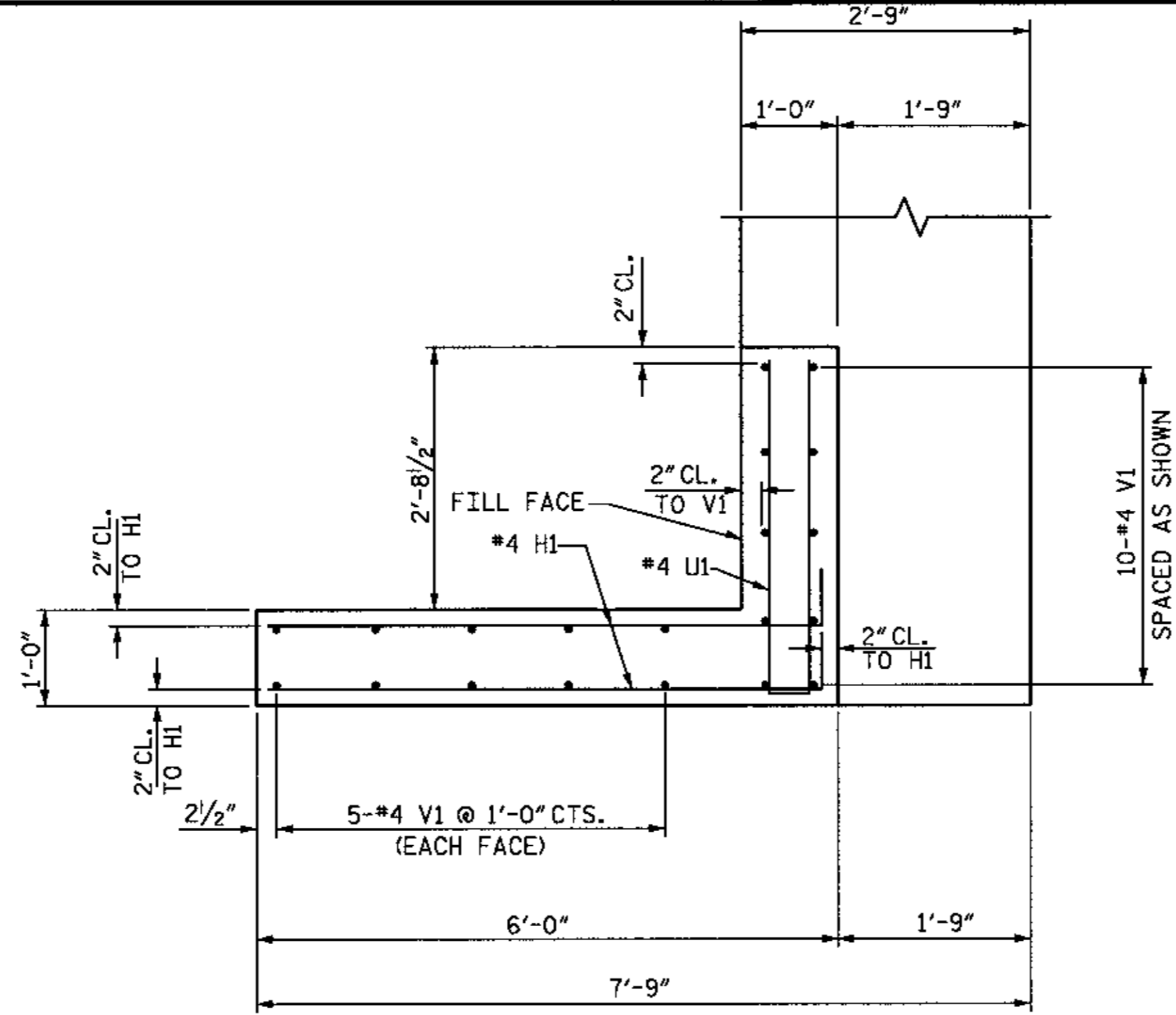
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
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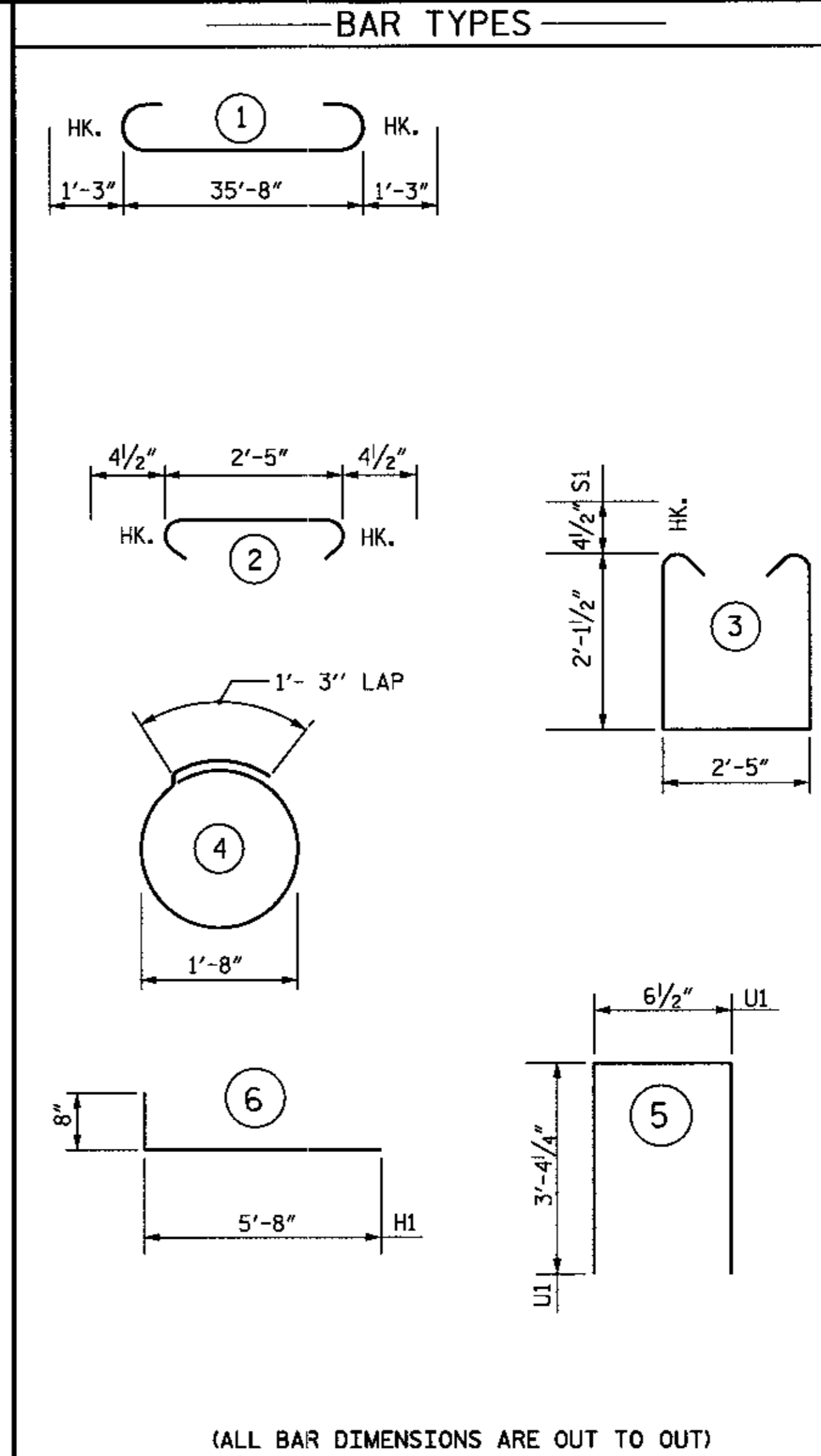
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 CHECKED BY: J.A. DILWORTH DATE: 8/09



PLAN OF WING (W1)

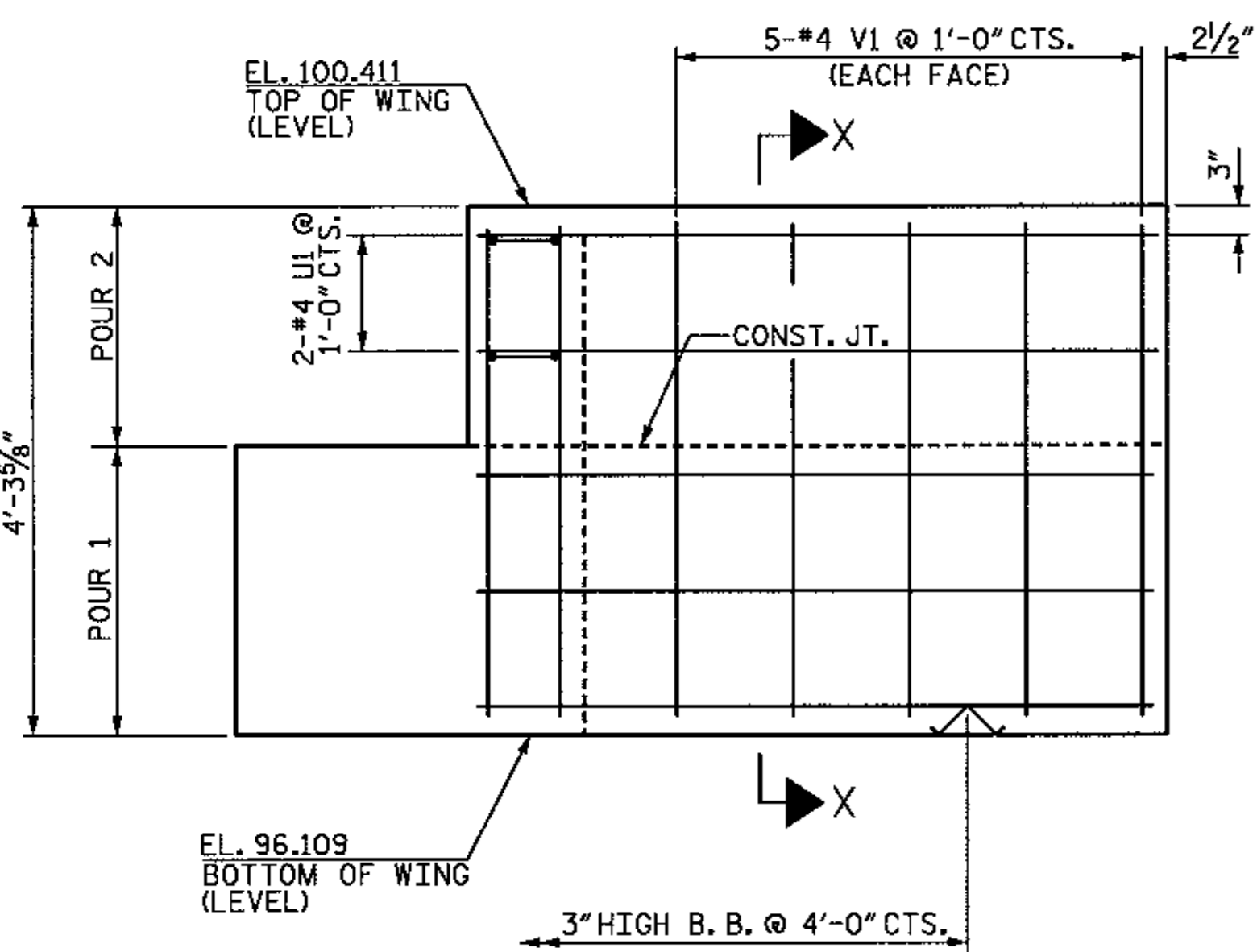


PLAN OF WING (W2)

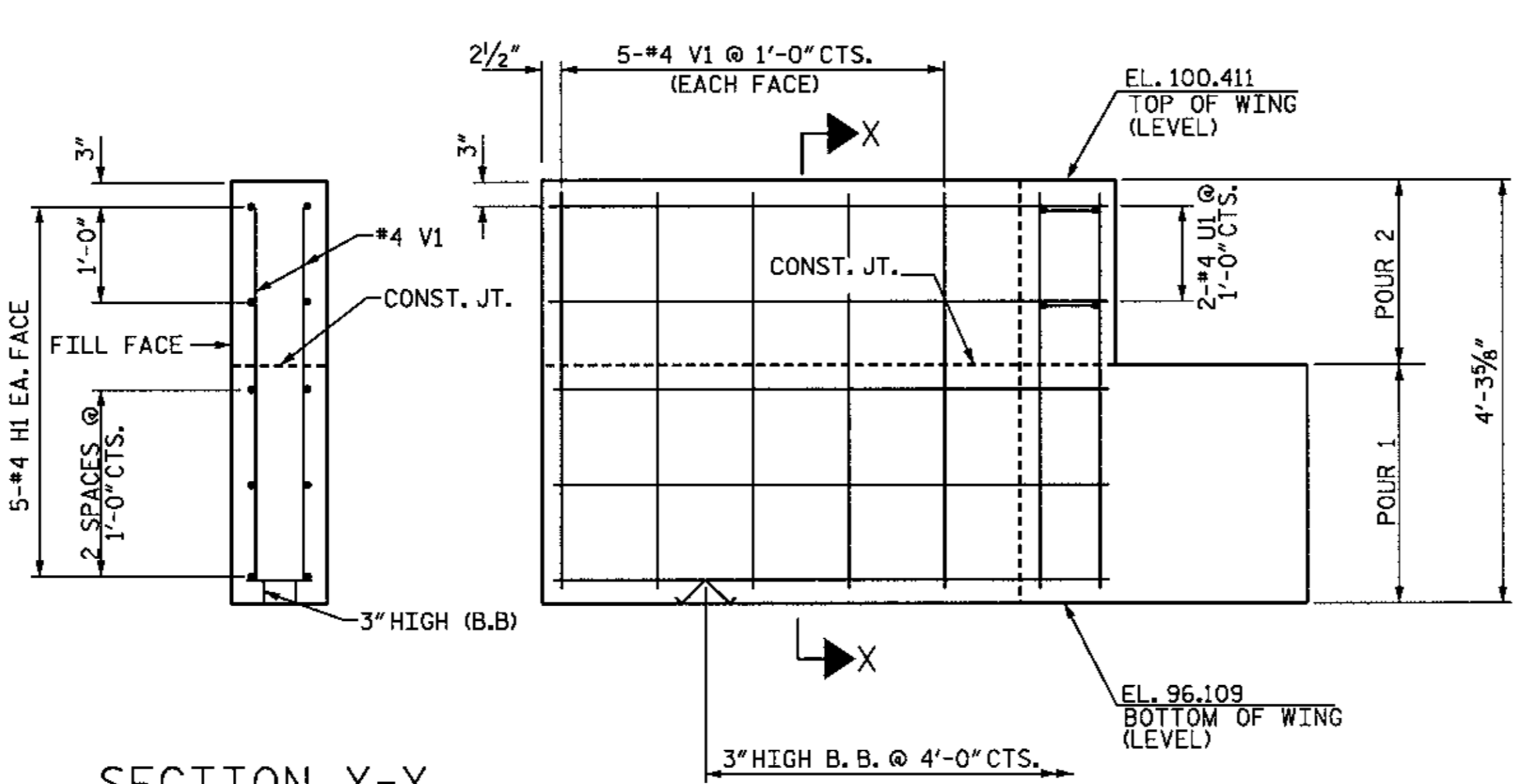


(ALL BAR DIMENSIONS ARE OUT TO OUT)

BILL OF MATERIAL					
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	38'-2"	1038
B2	4	#5	STR	35'-8"	149
B3	8	#4	STR	19'-1"	102
B4	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	20	#4	6	6'-4"	85
S1	41	#4	3	7'-5"	203
S2	41	#4	2	3'-2"	87
S3	16	#4	4	6'-6"	69
U1	4	#4	5	7'-3"	19
V1	40	#4	STR	3'-10"	102
REINFORCING STEEL					= 1914 LBS
CLASS A CONCRETE					
POUR 1 CAP & LOWER PART OF WINGS				C.Y.	10.1
POUR 2 UPPER PART OF WINGS				C.Y.	1.2
TOTAL					C.Y. 11.3
HP 12 X 53 STEEL PILES NO. 8 (LIN. FT.)					170'



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

SECTION X-X



WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38
 SHEET 3 OF 3

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

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NOTE: NOT TO SCALE

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	DATE	TOTAL SHEETS
1			3		6
2			4		20

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DRAWN BY: J.C. PENDERGRAFT DATE: 8/09
 CHECKED BY: J.A. DILWORTH DATE: 8/09

NOTES

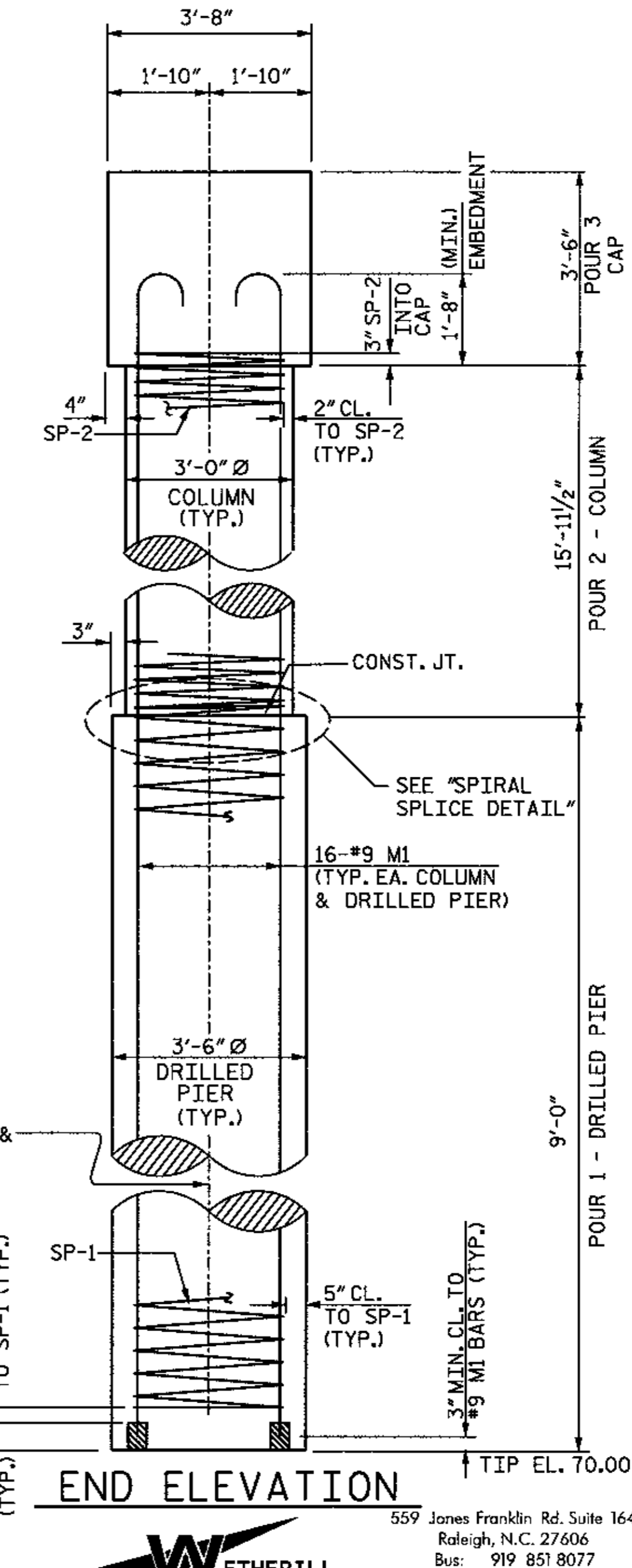
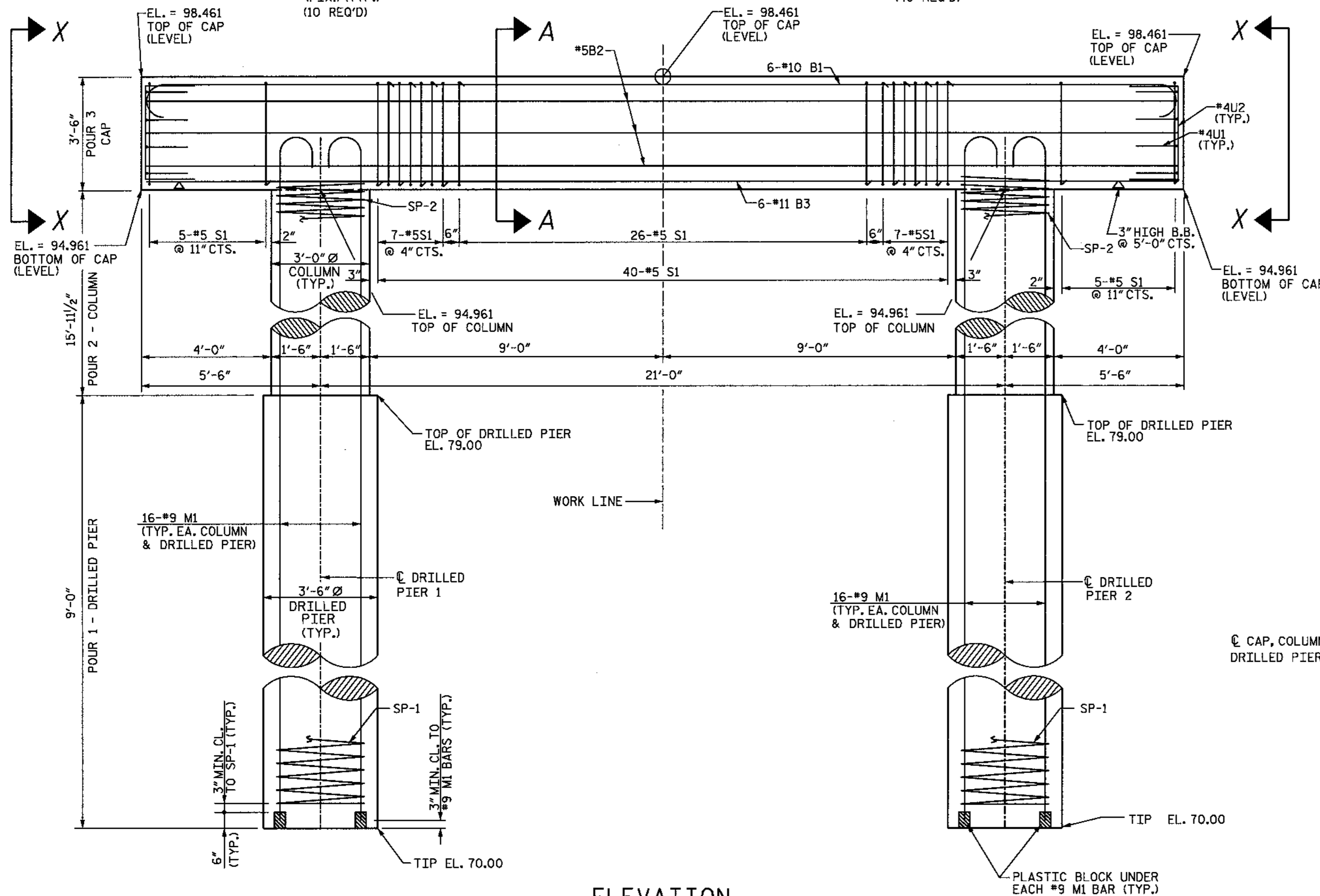
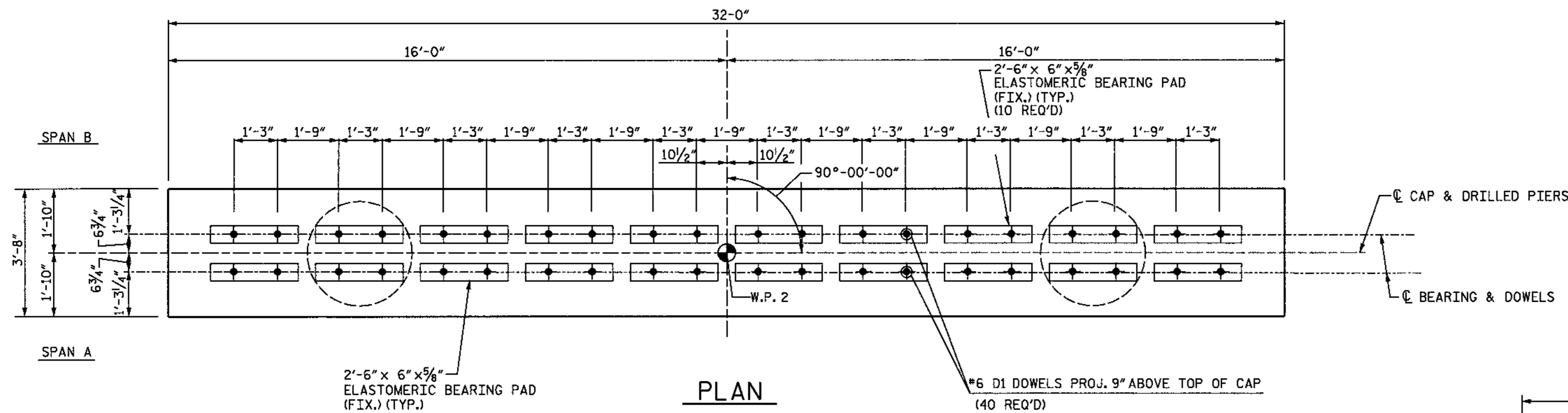
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEM FOR "PLACEMENT OF SUBSTRUCTURE".

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS. INVERT ALTERNATE STIRRUPS.

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



ELEVATION
REINFORCING STEEL AND DIMENSIONS TYPICAL FOR ALL DRILLED PIERS

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LICENSE NO. F-0377



WBS NO. 37048
FRANKLIN COUNTY
STATION: 10+39.500 -L-
REPLACES BRIDGE NO. 38
SHEET 1 OF 2

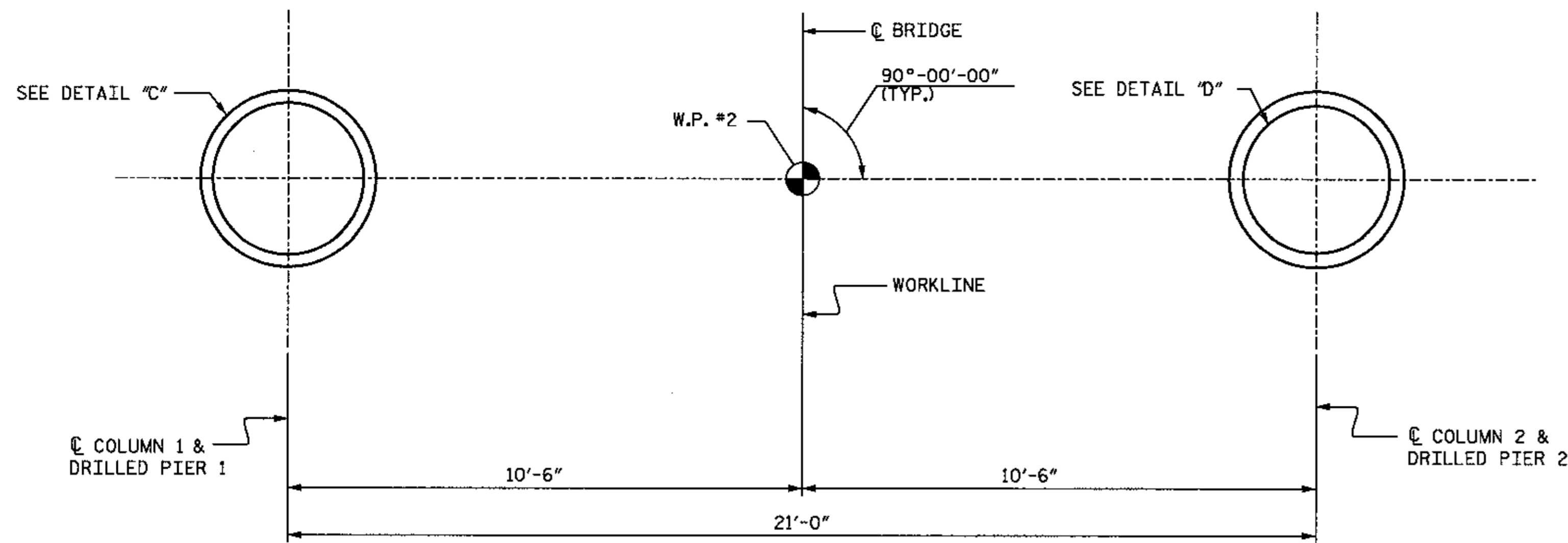
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1					
SHEET NO. 7					
TOTAL SHEETS 20					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

NOTE: NOT TO SCALE

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

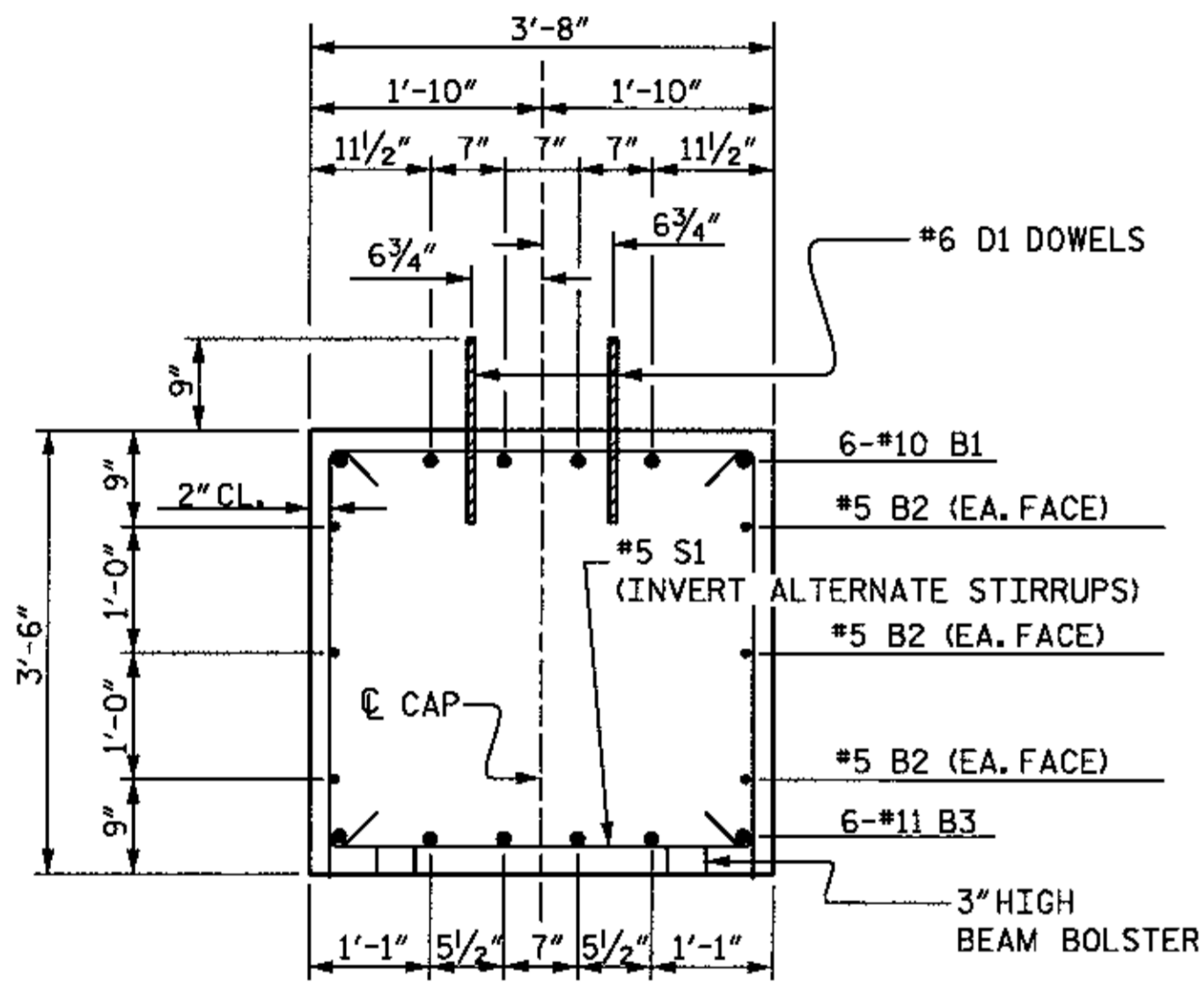
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DRAWN BY: J.C. PENDERGRAFT DATE: 8/09
CHECKED BY: J.A. DILLWORTH DATE: 8/09

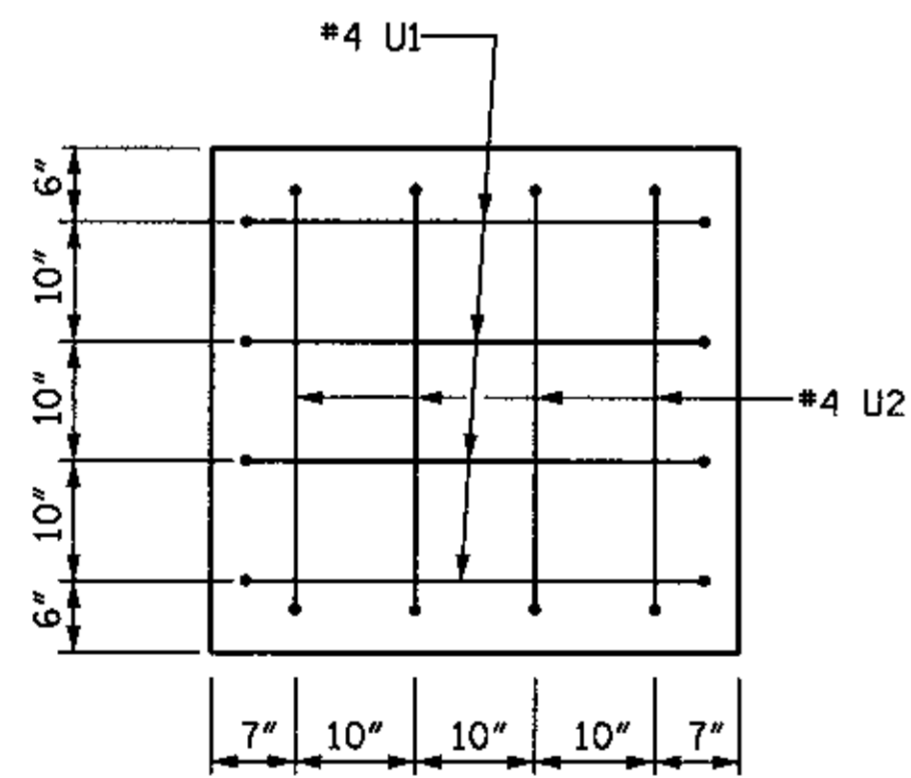


PLAN OF COLUMNS & DRILLED PIERS

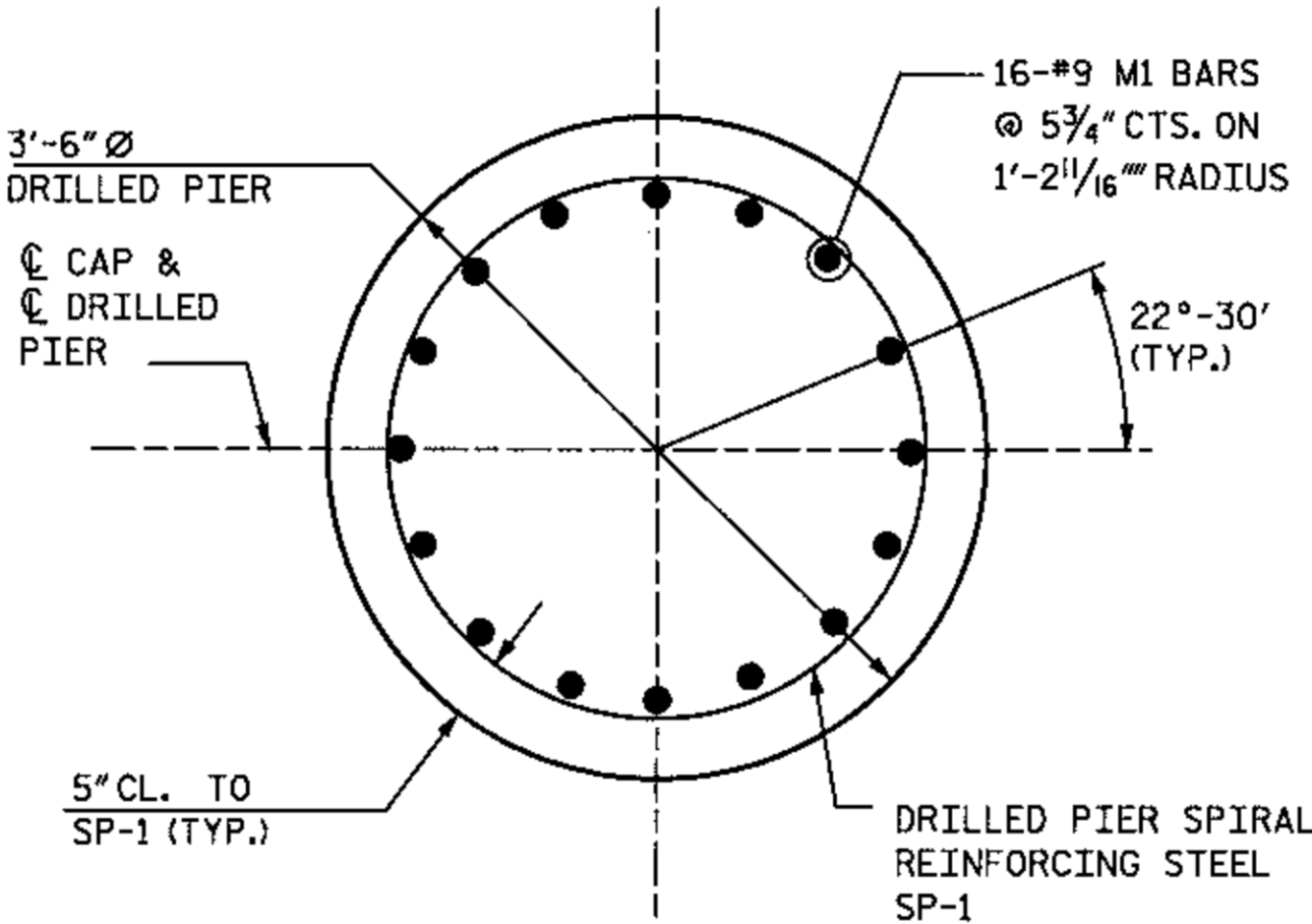
REINFORCING STEEL AND DIMENSIONS ARE TYPICAL FOR ALL COLUMNS & DRILLED PIERS



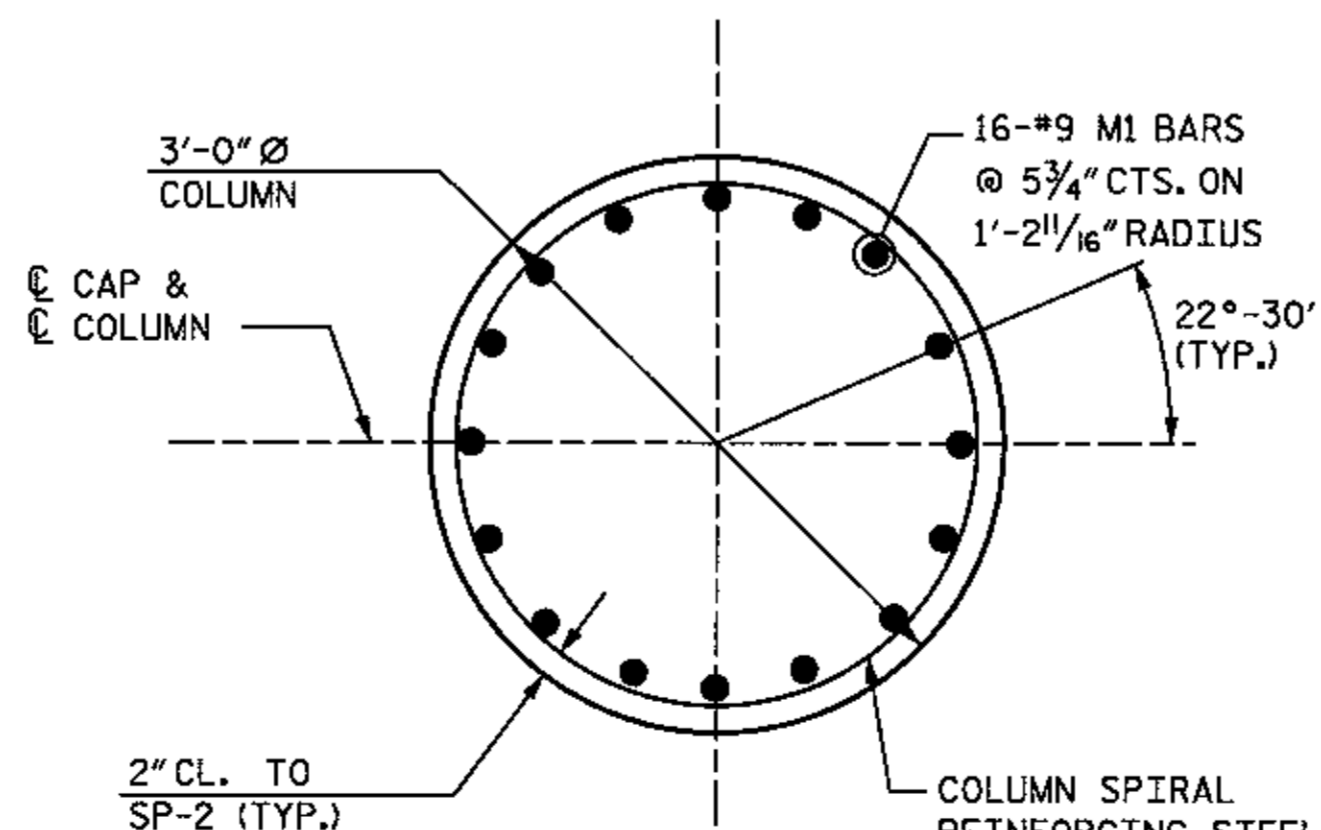
SECTION A-A



END VIEW X-X

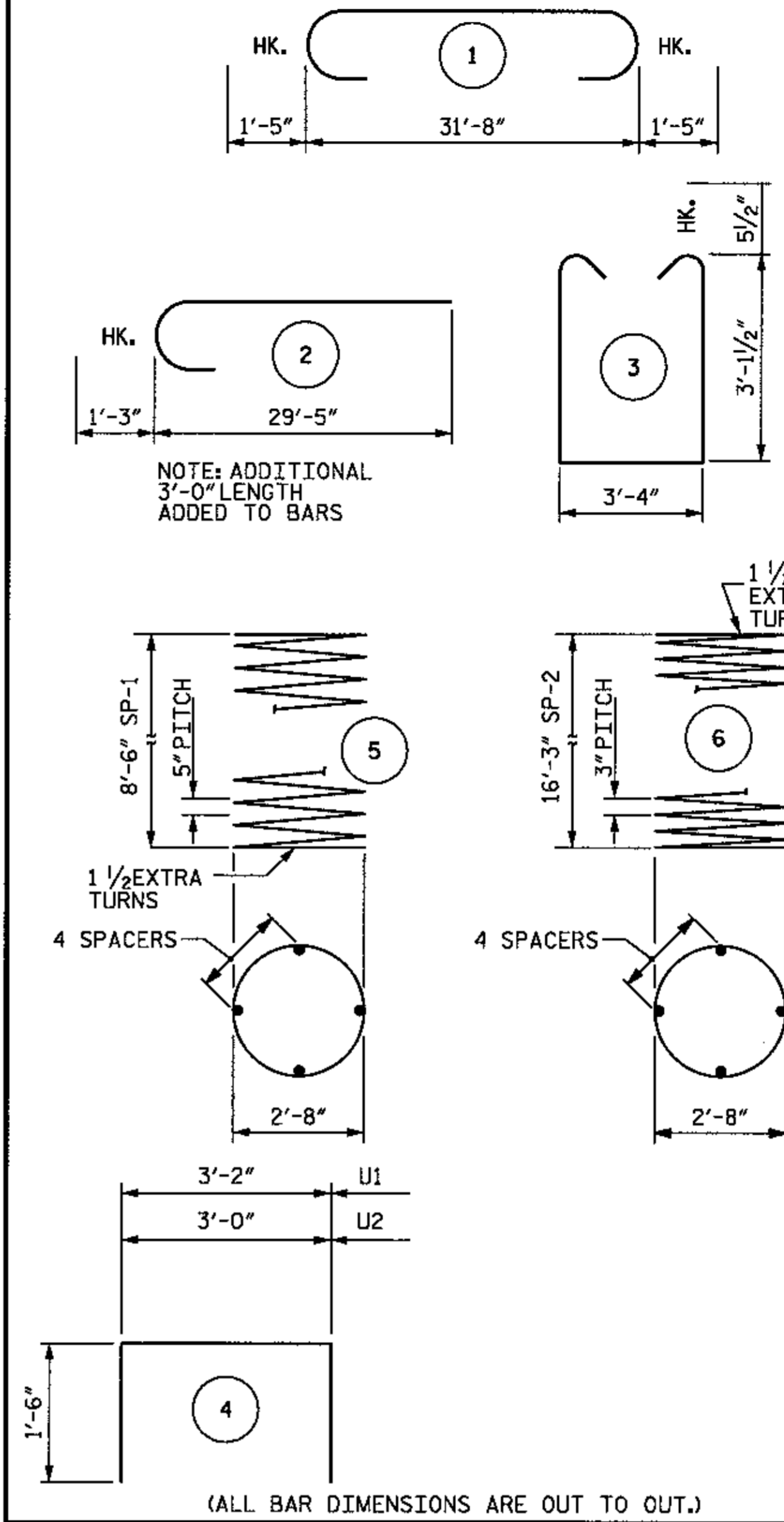


DETAIL "C"

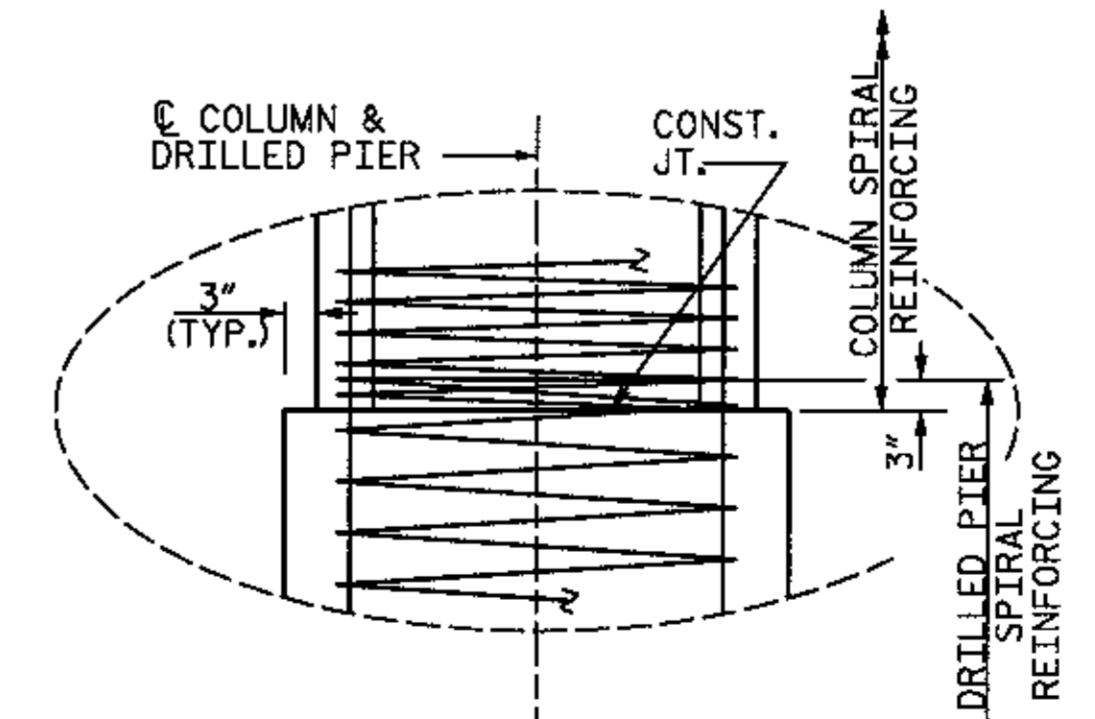


DETAIL "D"

BAR TYPES



(ALL BAR DIMENSIONS ARE OUT TO OUT.)
 * THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.
 ** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

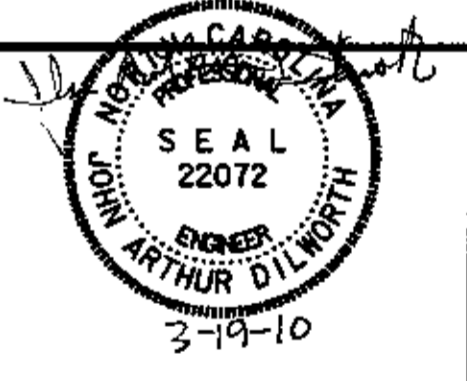


SPIRAL SPLICE DETAIL

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 Raleigh, N.C. 27606
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 Fax: 919 851 8107
 LICENSE NO. F-0377

BILL OF MATERIAL

BENT 1					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	1	34'-6"	891
B2	6	#5	STR	31'-8"	198
B3	6	#11	STR	31'-8"	1009
D1	40	#6	STR	1'-6"	90
M1	32	#9	2	30'-8"	3337
S1	50	#5	3	10'-6"	548
U1	8	#4	4	6'-2"	33
U2	8	#4	4	6'-0"	32
REINFORCING STEEL					6138 LBS.
SP-1	2	*	5	187'-0"	390
SP-2	2	**	6	548'-8"	733
SPIRAL COLUMN REINFORCING STEEL					1123 LBS.
CLASS A CONCRETE BREAKDOWN					
POUR 2 (COLUMN)					8.4 C.Y.
POUR 3 (CAP)					15.2 C.Y.
TOTAL CLASS A CONCRETE					23.6 C.Y.
3'-6" Ø DRILLED PIERS					
DRILLED PIER CONCRETE					
POUR 1 (DRILLED PIERS)					6.4 C.Y.
3'-6" Ø DRILLED PIERS IN SOIL :					4.0 LIN. FT.
3'-6" Ø DRILLED PIERS NOT IN SOIL :					14.0 LIN. FT.



WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 1

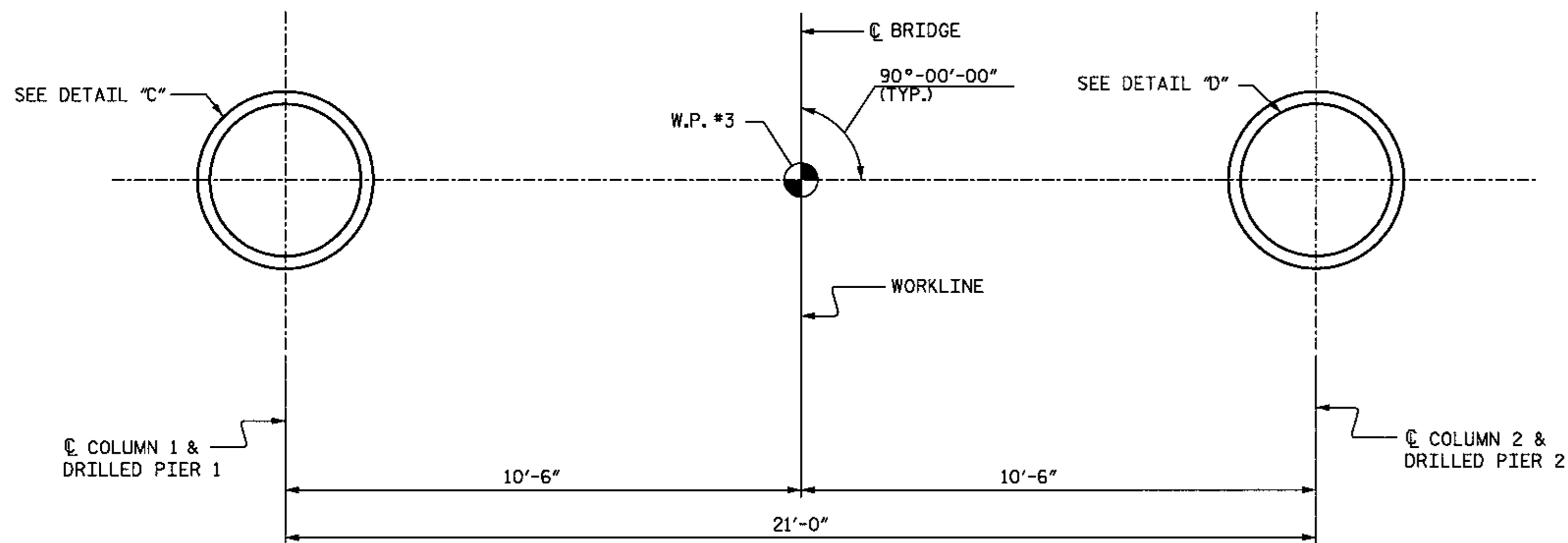
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NO.	BY	DATE	NO.	BY	DATE	8
1			3			TOTAL SHEETS 20
2			4			

NOTE: NOT TO SCALE

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

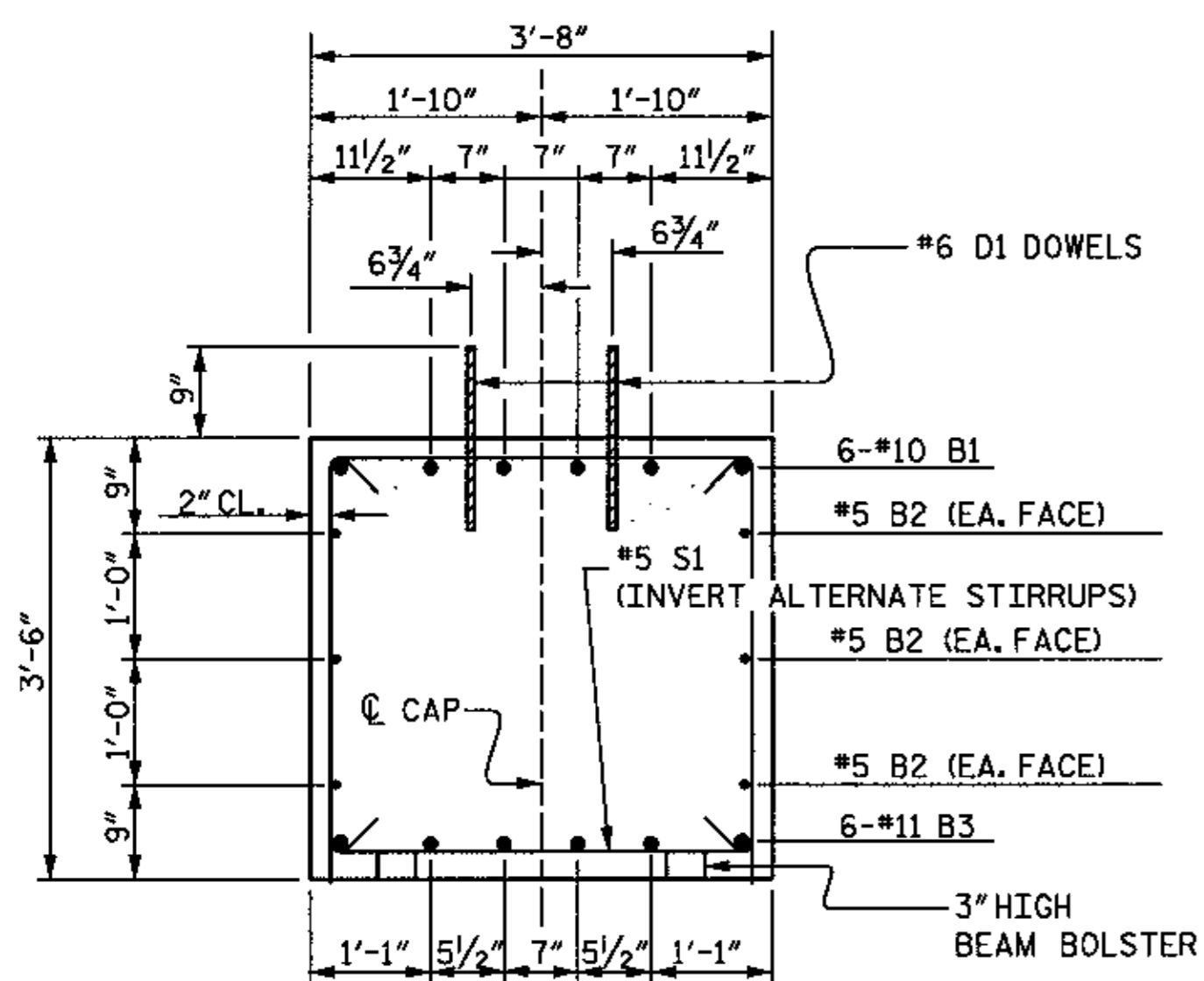
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DRAWN BY: J.C. PENDERGRAFT DATE: 8/09
 CHECKED BY: J.A. DILWORTH DATE: 8/09

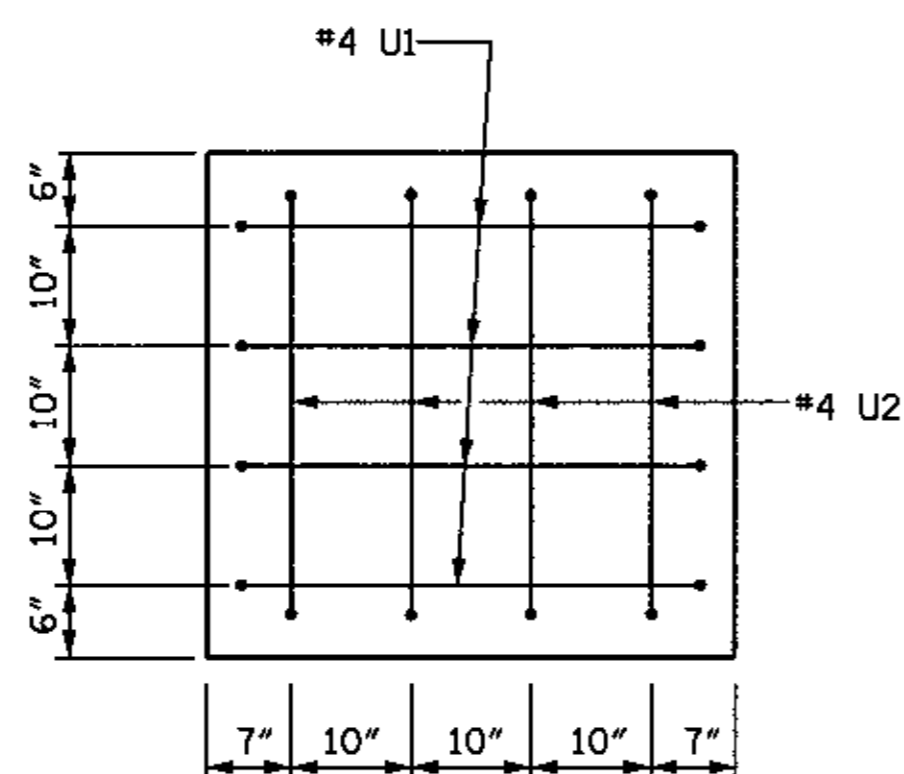


PLAN OF COLUMNS & DRILLED PIERS

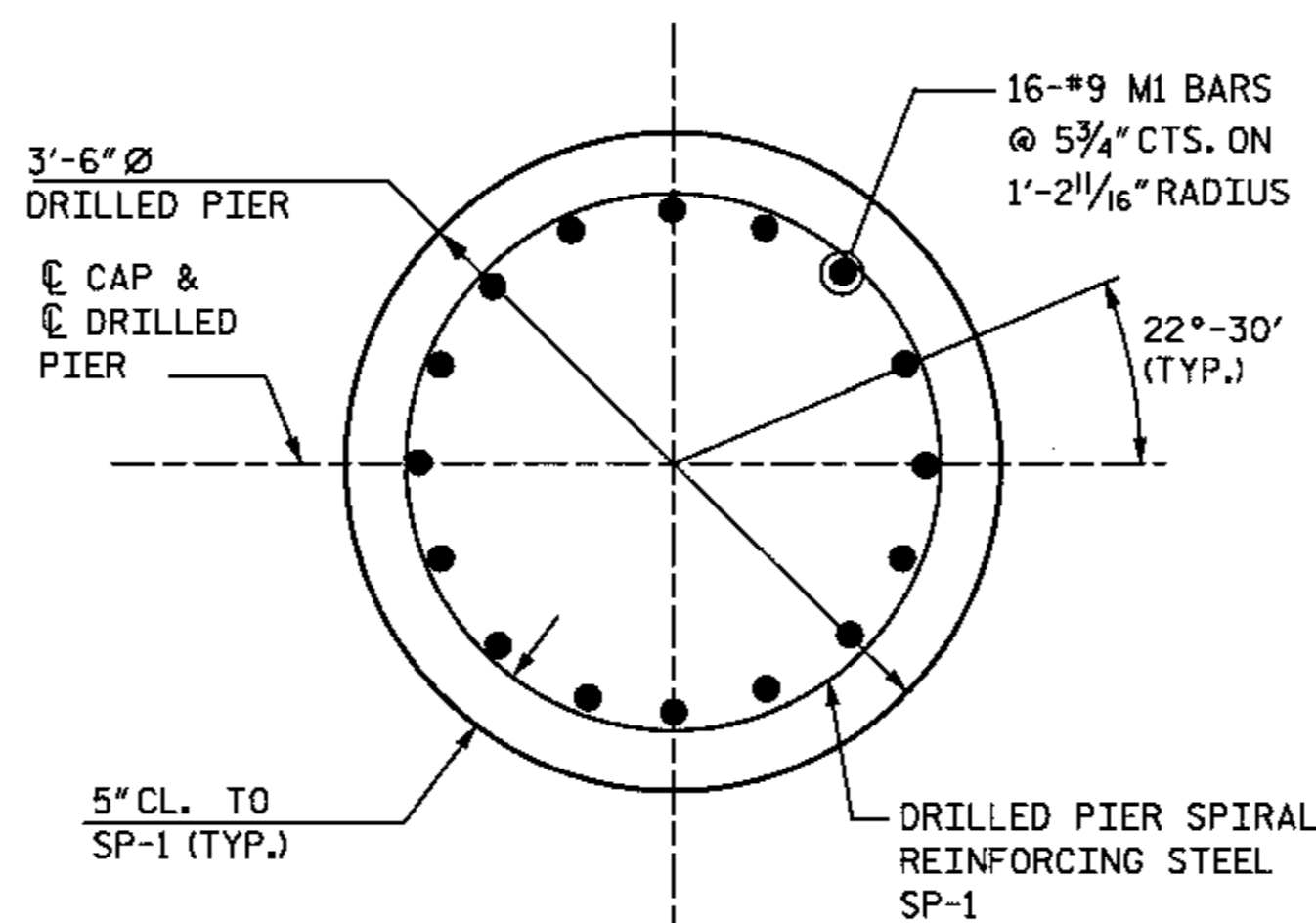
REINFORCING STEEL AND DIMENSIONS ARE TYPICAL FOR ALL COLUMNS & DRILLED PIERS



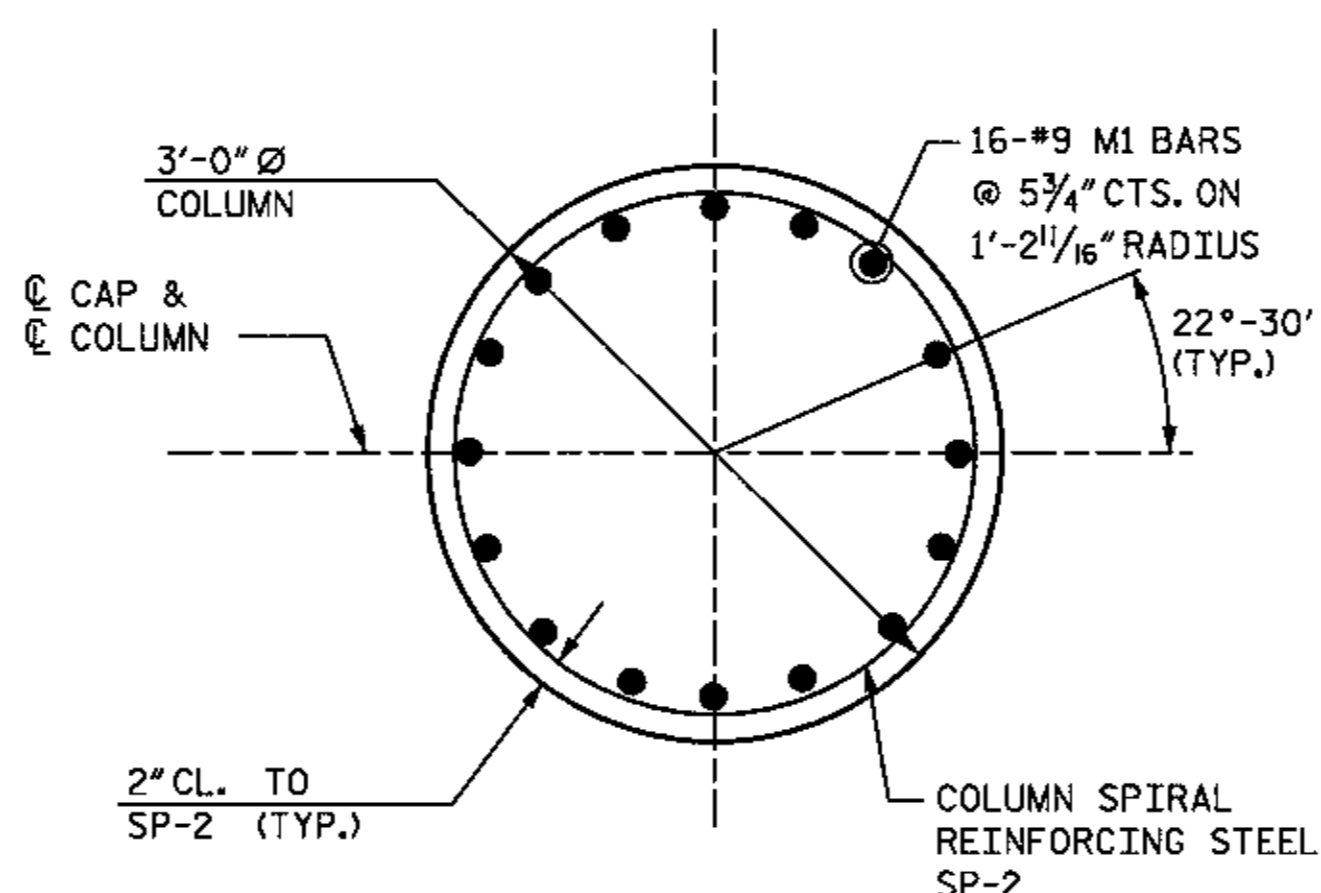
SECTION A-A



END VIEW X-X

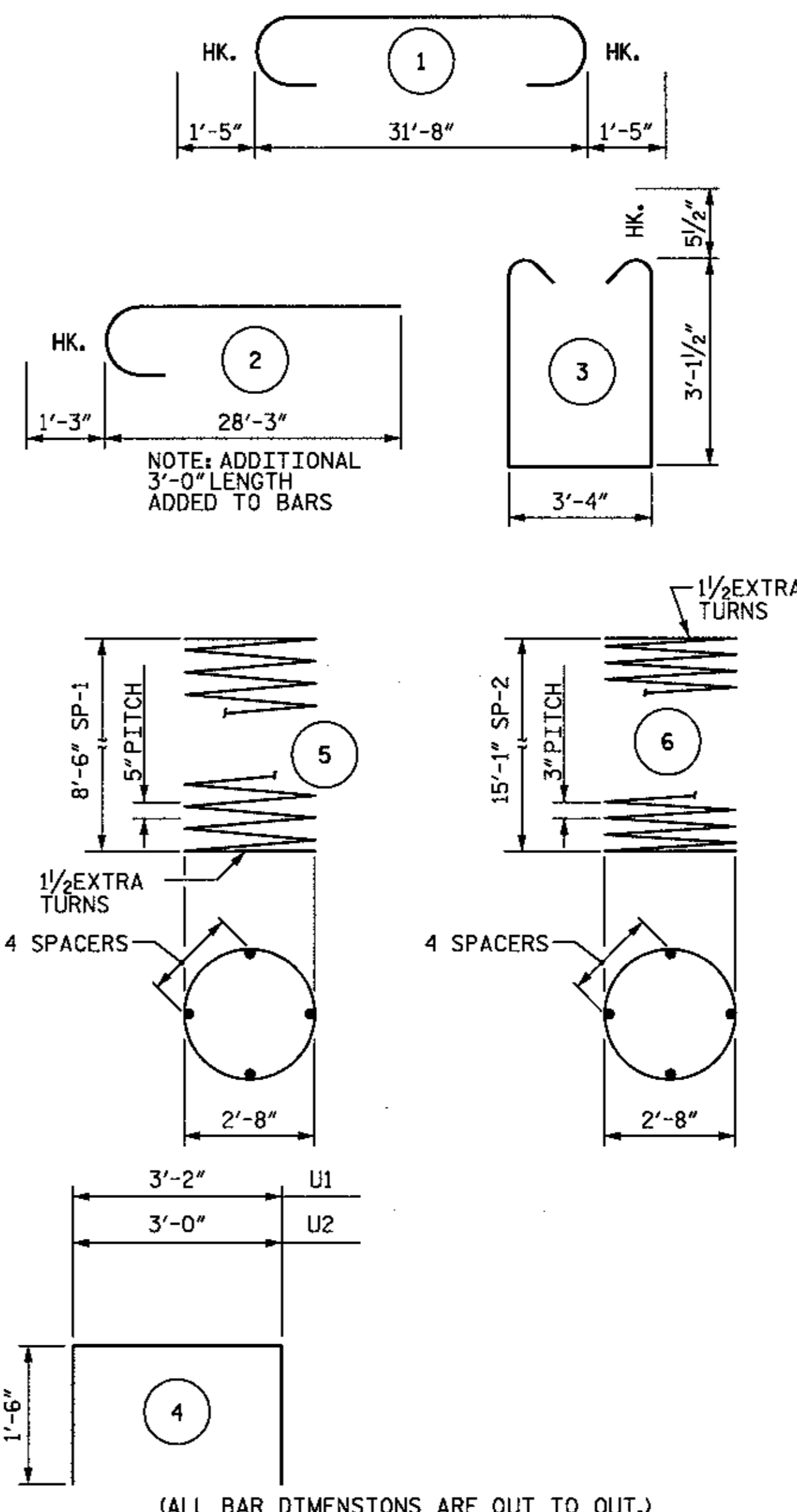


DETAIL "C"



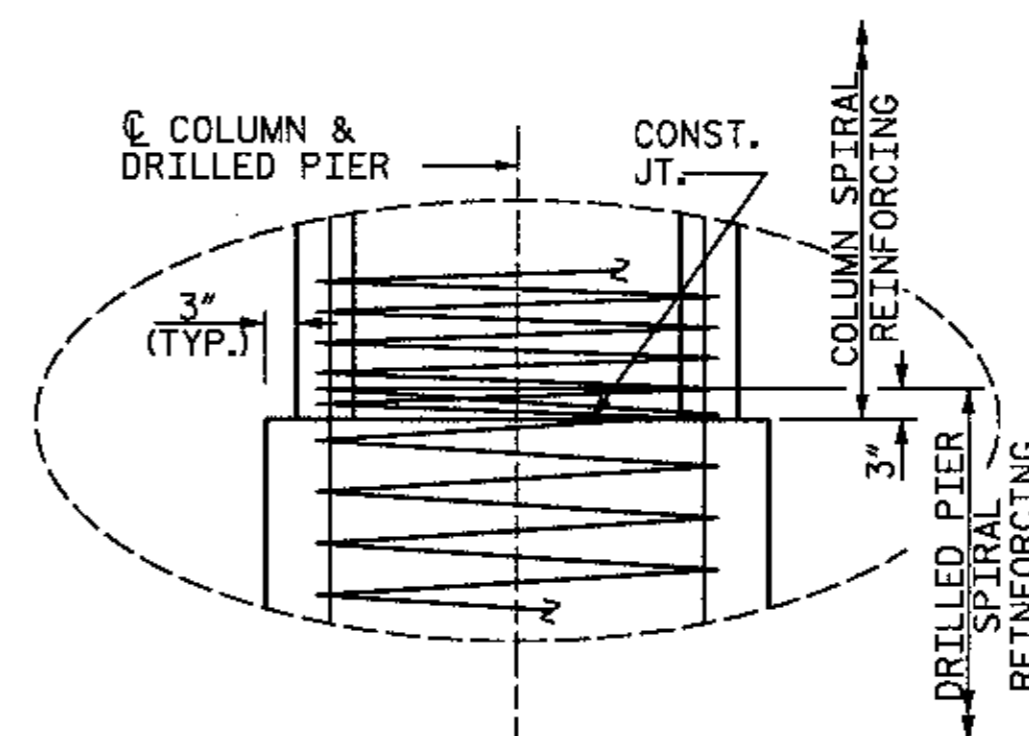
DETAIL "D"

BAR TYPES



(ALL BAR DIMENSIONS ARE OUT TO OUT.)

* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.
 ** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.



SPIRAL SPLICE DETAIL



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BILL OF MATERIAL

BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	1	34'-6"	891
B2	6	#5	STR	31'-8"	198
B3	6	#11	STR	31'-8"	1009

D1	40	#6	STR	1'-6"	90
----	----	----	-----	-------	----

M1	32	#9	2	29'-6"	3210
----	----	----	---	--------	------

S1	50	#5	3	10'-6"	548
----	----	----	---	--------	-----

U1	8	#4	4	6'-2"	33
----	---	----	---	-------	----

U2	8	#4	4	6'-0"	32
----	---	----	---	-------	----

REINFORCING STEEL 6011 LBS.

SP-1	2	*	5	187'-0"	390
------	---	---	---	---------	-----

SP-2	2	**	6	510'-2"	682
------	---	----	---	---------	-----

SPIRAL COLUMN REINFORCING STEEL 1072 LBS.

CLASS A CONCRETE BREAKDOWN

POUR 2 (COLUMN)	7.8 C.Y.
-----------------	----------

POUR 3 (CAP)	15.2 C.Y.
--------------	-----------

TOTAL CLASS A CONCRETE 23.0 C.Y.

3'-6" Ø DRILLED PIERS

DRILLED PIER CONCRETE

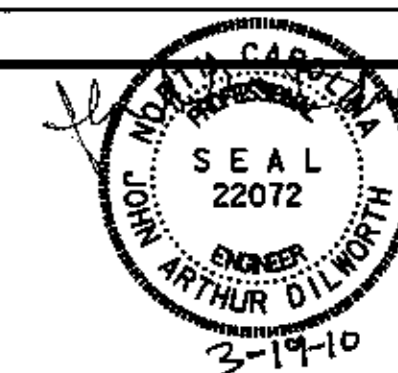
POUR 1 (DRILLED PIERS)	6.4 C.Y.
------------------------	----------

3'-6" Ø DRILLED PIERS IN SOIL :

4.50 LIN. FT.

3'-6" Ø DRILLED PIERS NOT IN SOIL :

13.50 LIN. FT.



WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38
 SHEET 2 OF 2

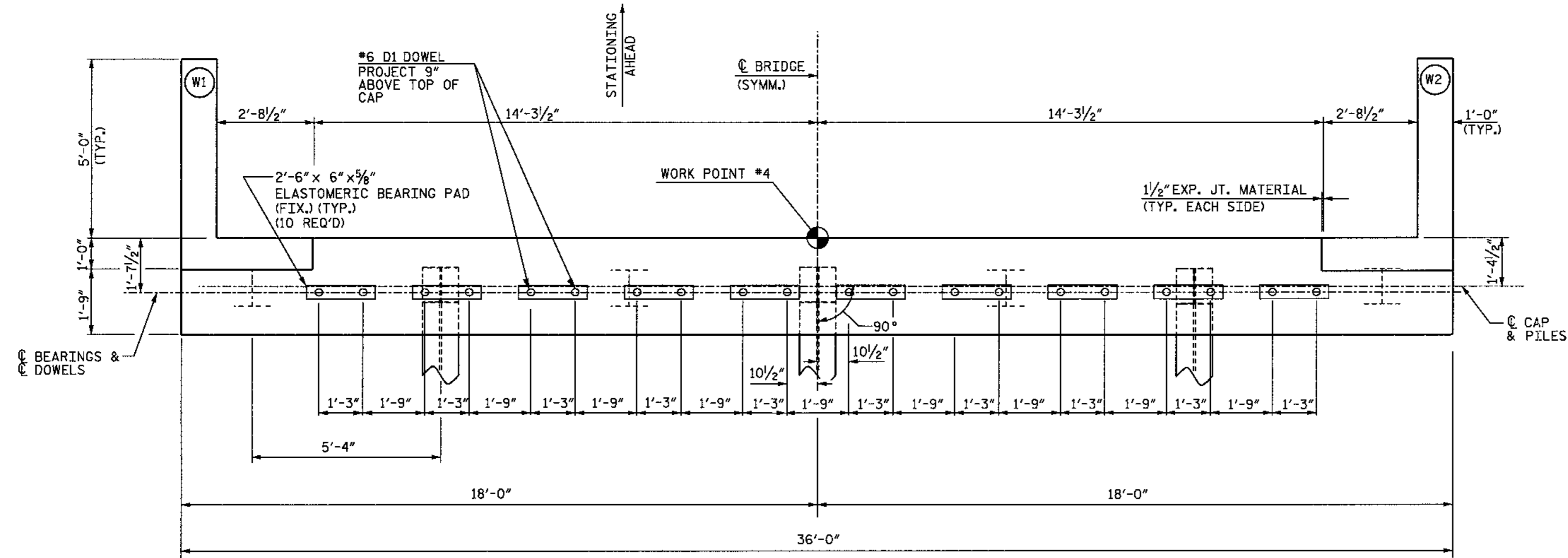
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 2**

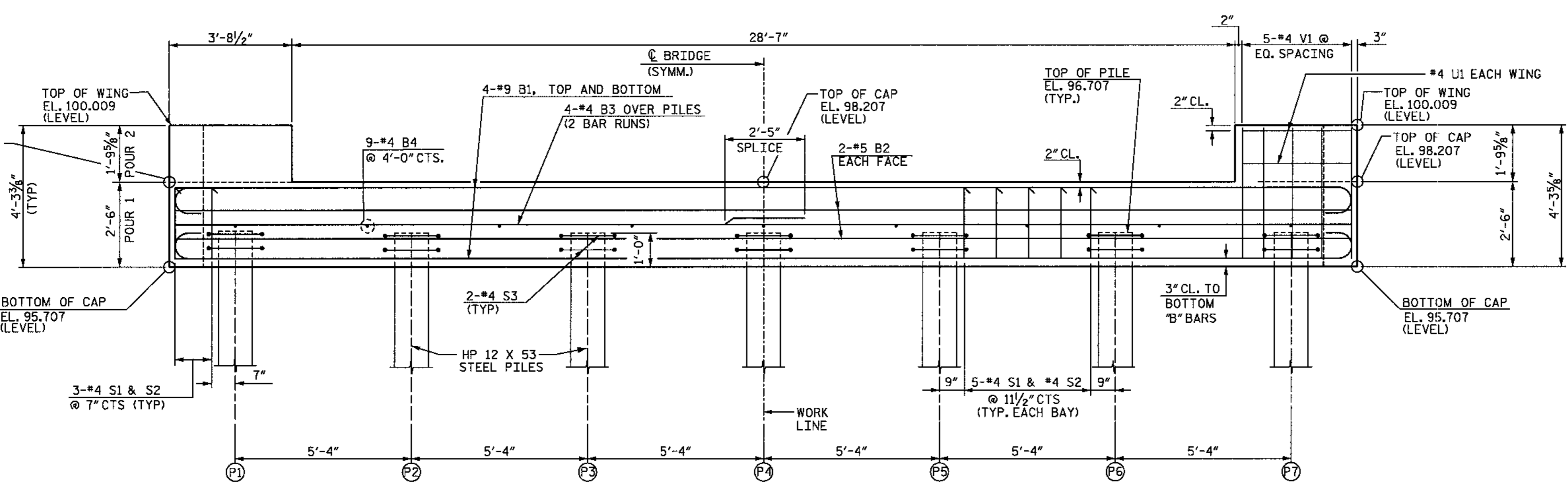
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	10
1			3			TOTAL SHEETS 20
2			4			

NOTE: NOT TO SCALE

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION



PLAN



ELEVATION

NOTES:
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 FOR SECTION A-A, SEE END BENT 1, SHEET 2 OF 3.
 FOR MISC. DETAILS, SEE END BENT 1, SHEET 2 OF 3.



WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38
 SHEET 1 OF 2

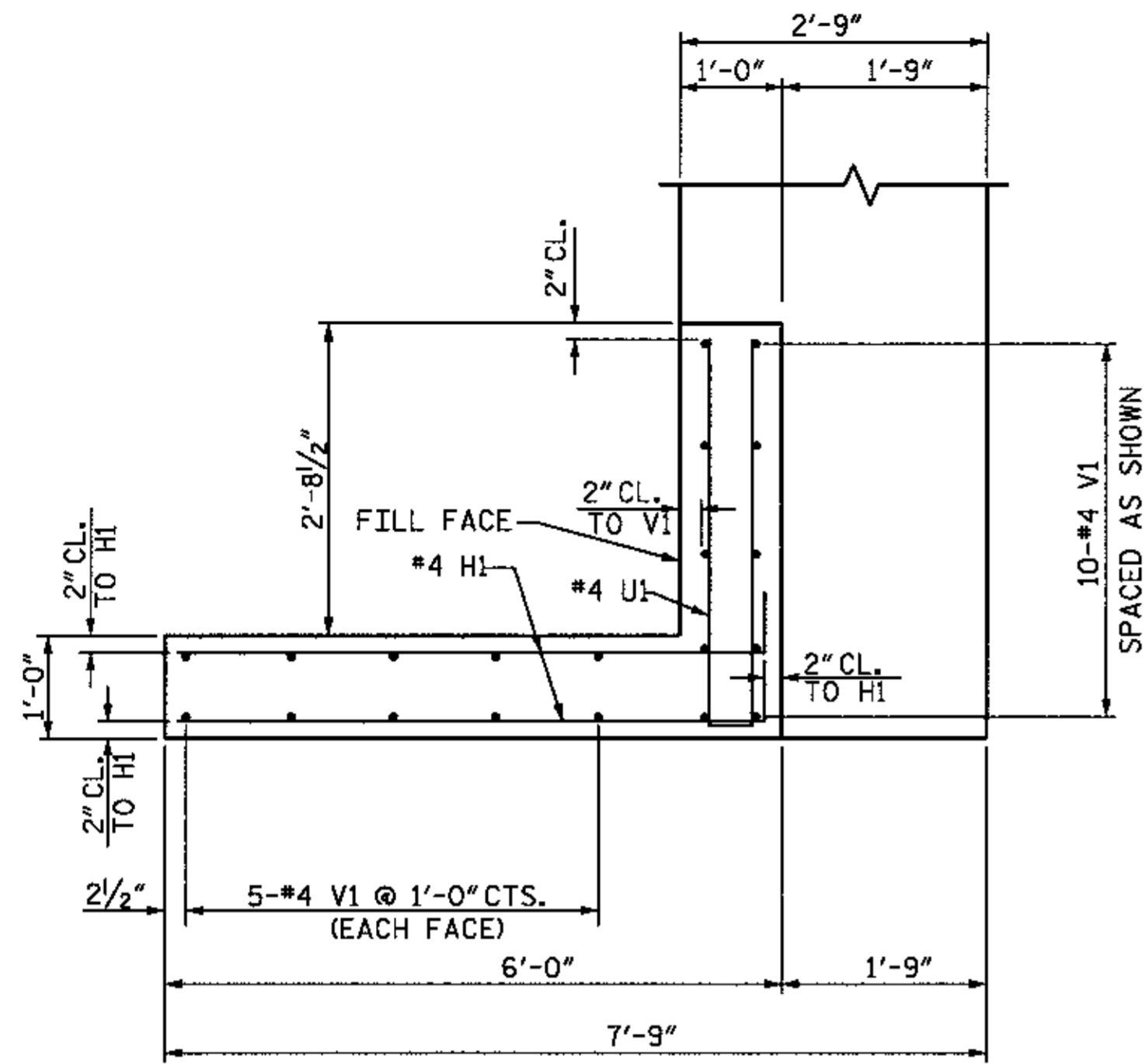
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. 11
SUBSTRUCTURE END BENT 2						
REVISIONS						TOTAL SHEETS 20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

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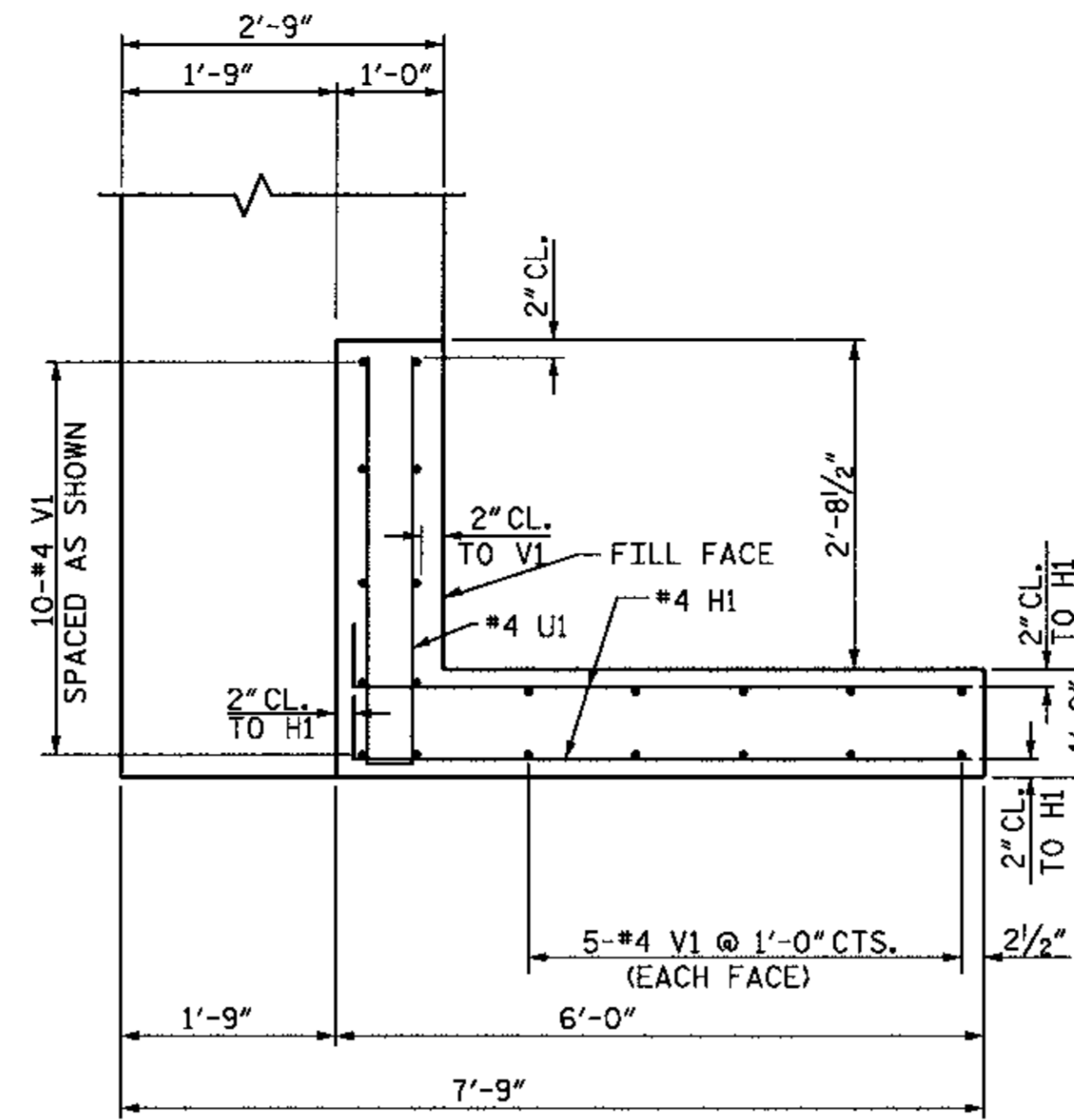
NOTE: NOT TO SCALE TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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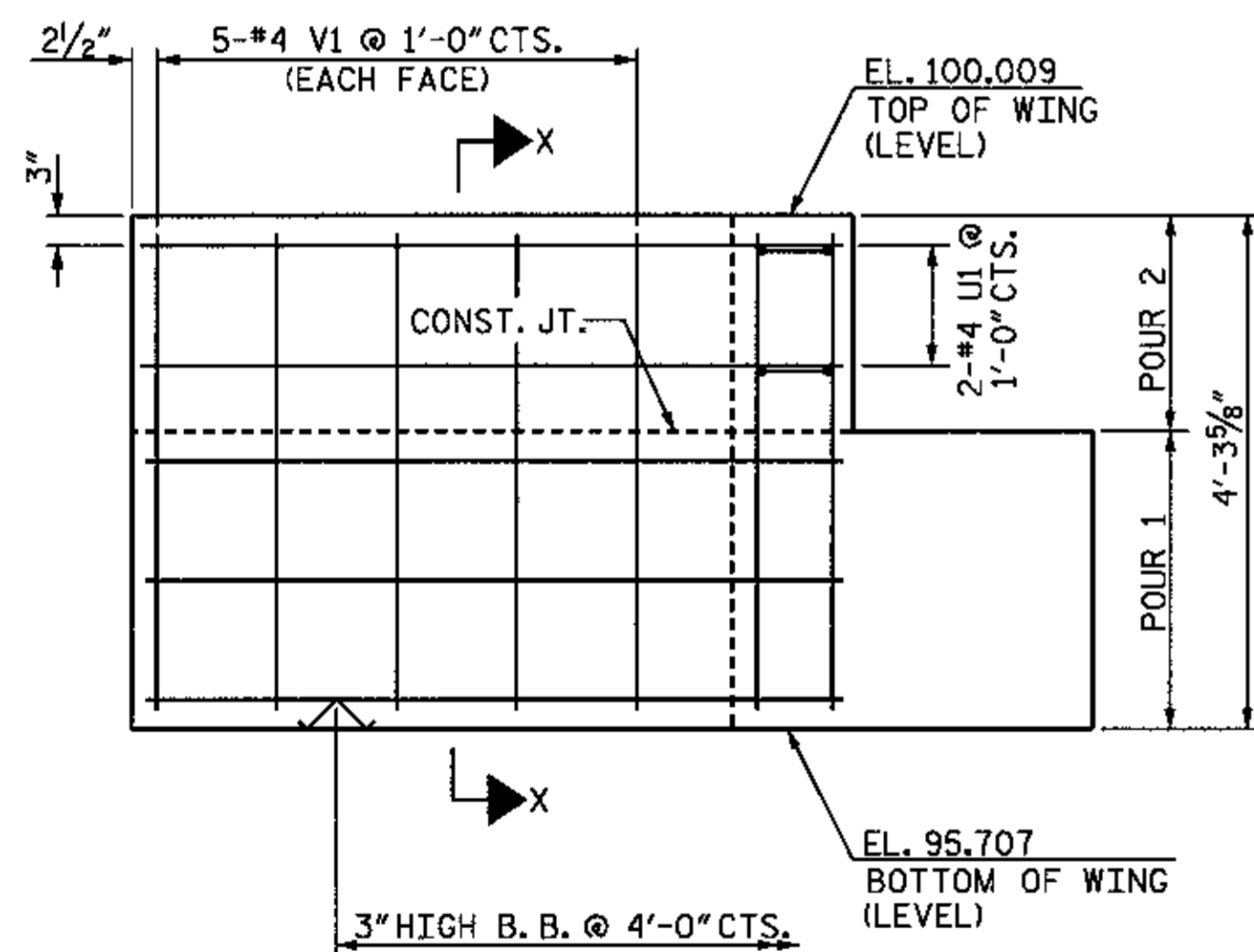
DRAWN BY: J.C. PENDERGRAFT DATE: 8/09
 CHECKED BY: J.A. DILWORTH DATE: 8/09



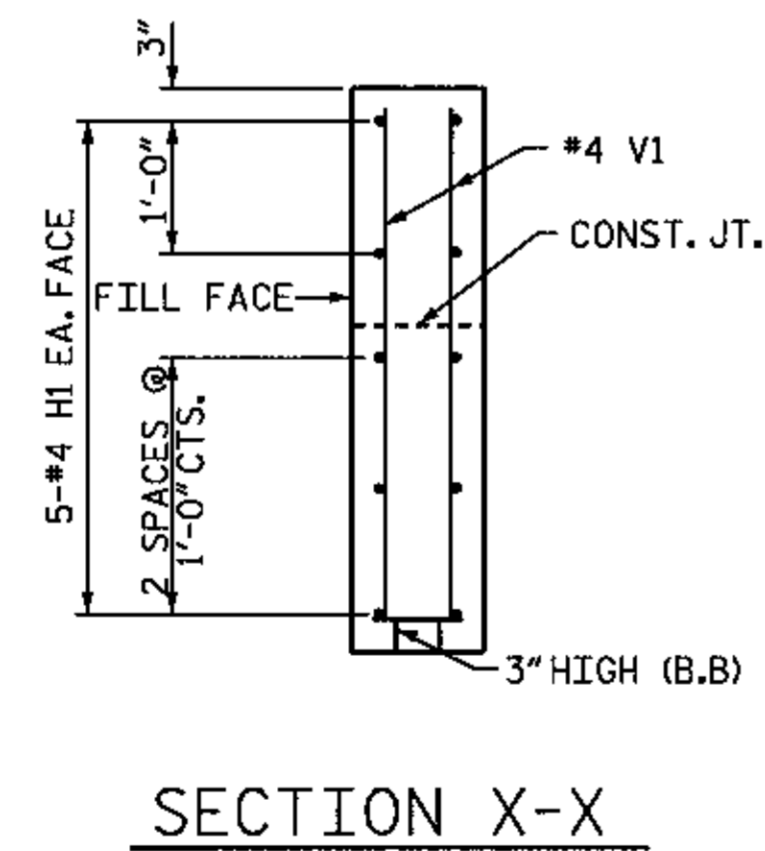
PLAN OF WING (W1)



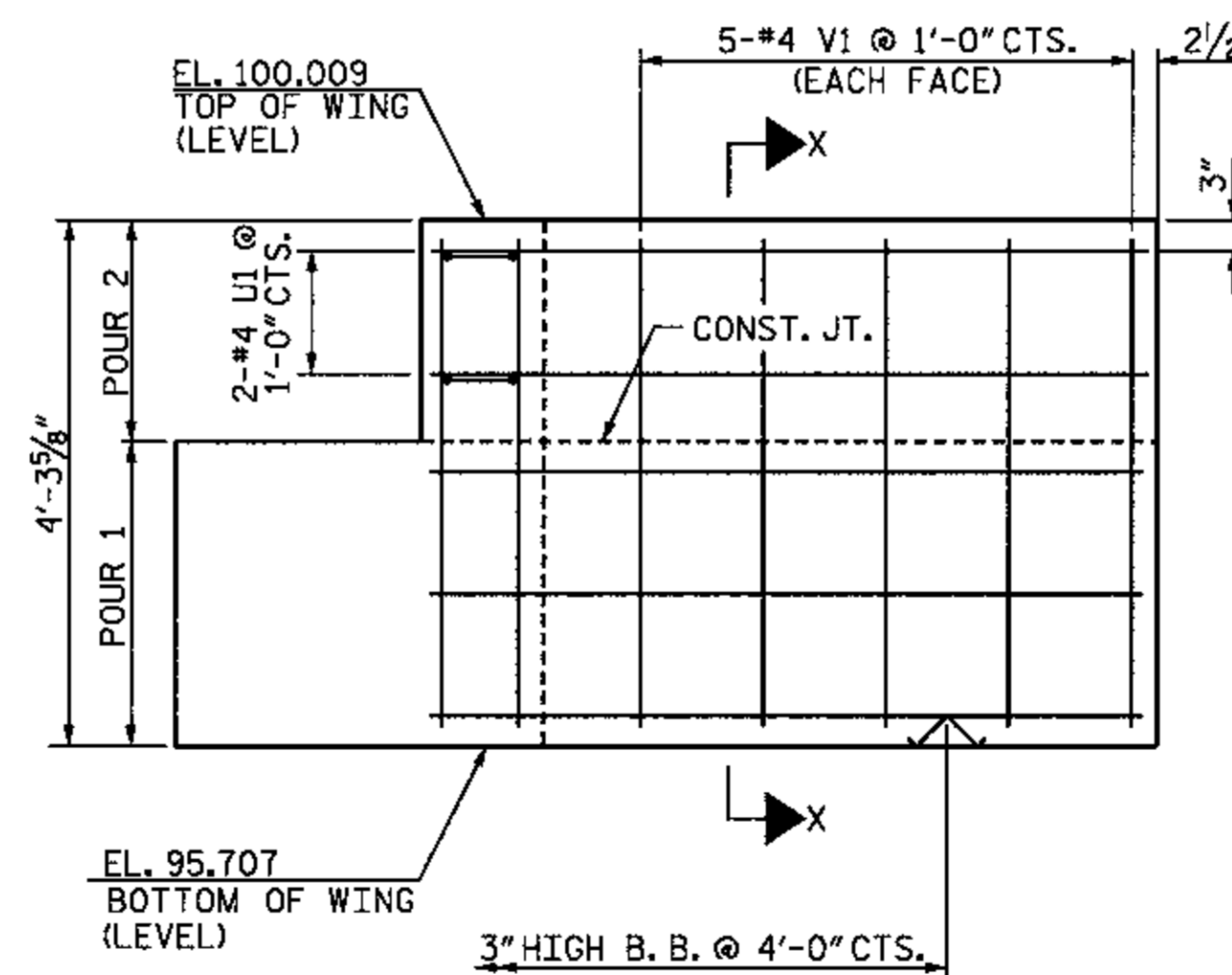
PLAN OF WING (W2)



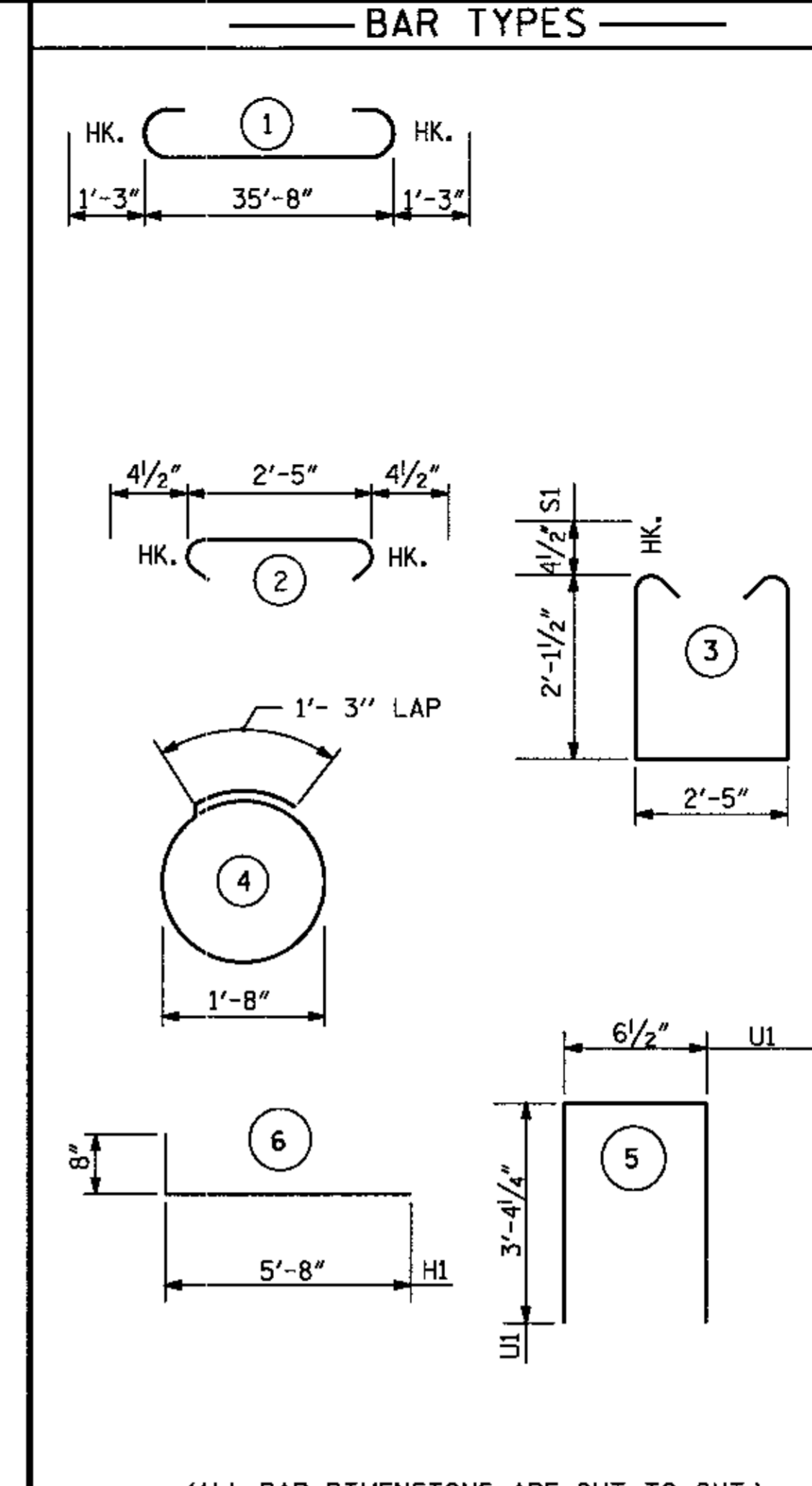
ELEVATION OF WING (W1)



SECTION X-X



ELEVATION OF WING (W2)



(ALL BAR DIMENSIONS ARE OUT TO OUT.)

BILL OF MATERIAL					
END BENT 2					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	8	#9	1	38'-2"	1038
B2	4	#5	STR	35'-8"	149
B3	8	#4	STR	19'-1"	102
B4	9	#4	STR	2'-5"	15
D1	20	#6	STR	1'-6"	45
H1	20	#4	6	6'-4"	85
S1	36	#4	3	7'-5"	178
S2	36	#4	2	3'-2"	76
S3	14	#4	4	6'-6"	61
U1	4	#4	5	7'-3"	19
V1	40	#4	STR	3'-10"	102
REINFORCING STEEL				=	1870 LBS
CLASS A CONCRETE					
POUR 1 CAP & LOWER PART OF WINGS				C.Y.	10.1
POUR 2 UPPER PART OF WINGS				C.Y.	1.2
TOTAL				C.Y.	11.3
HP 12 X 53 STEEL PILES NO. 7 (LIN. FT.)					111'



WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38
 SHEET 2 OF 2

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

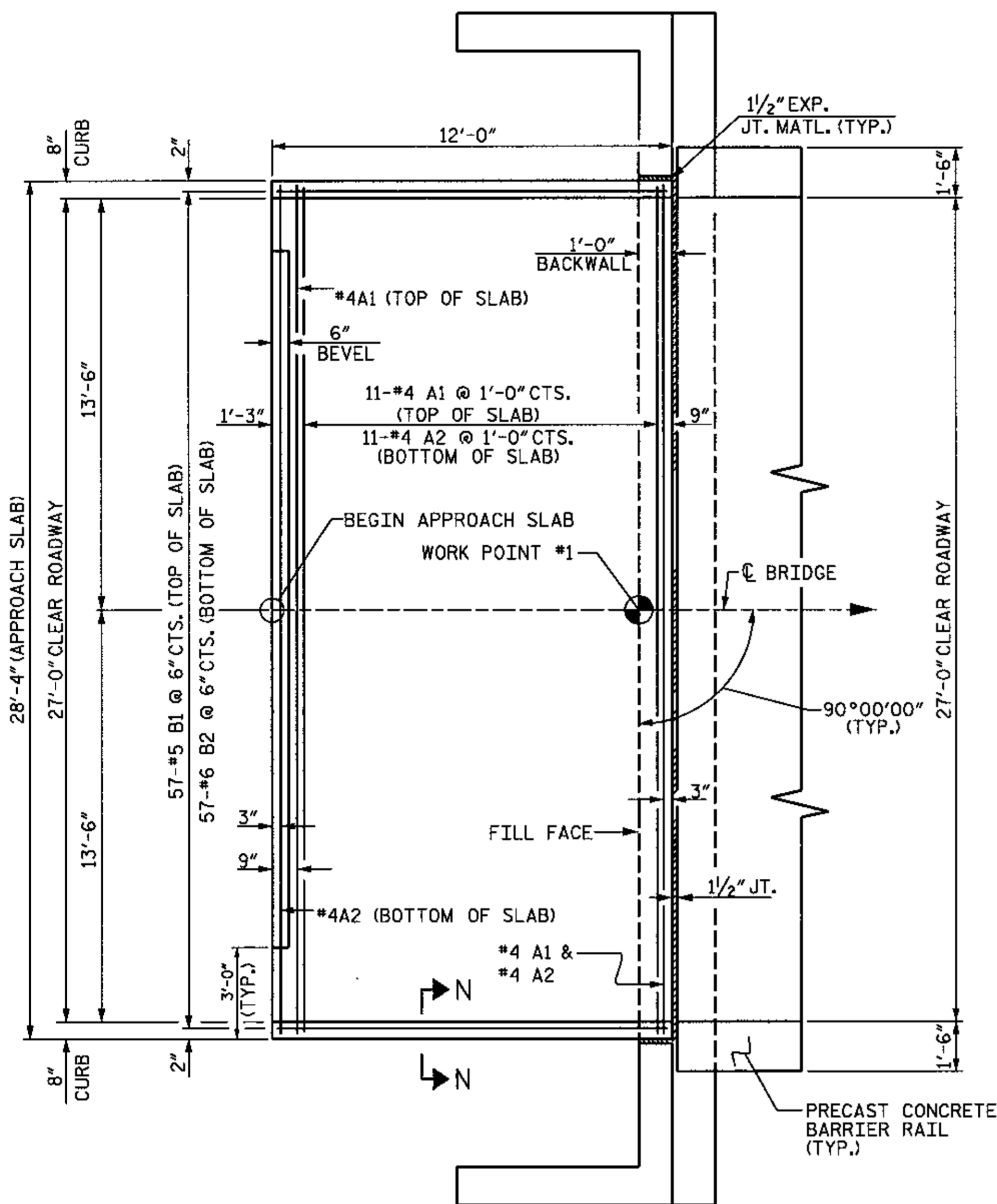
ETHERILL ENGINEERING
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 Raleigh, N.C. 27606
 Bus: 919 851 8077
 Fax: 919 851 8107
 LICENSE NO. F-0377

NOTE: NOT TO SCALE TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

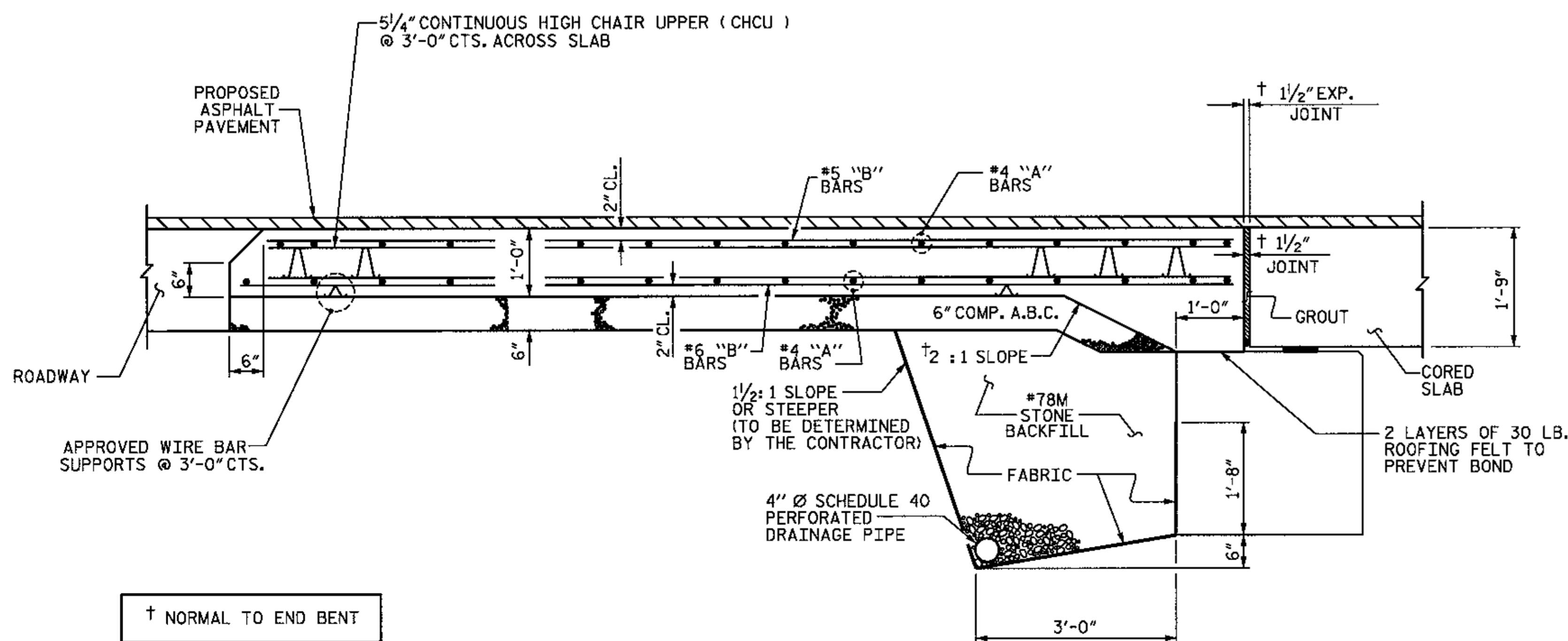
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 CHECKED BY: J.A. DILWORTH DATE: 8/09

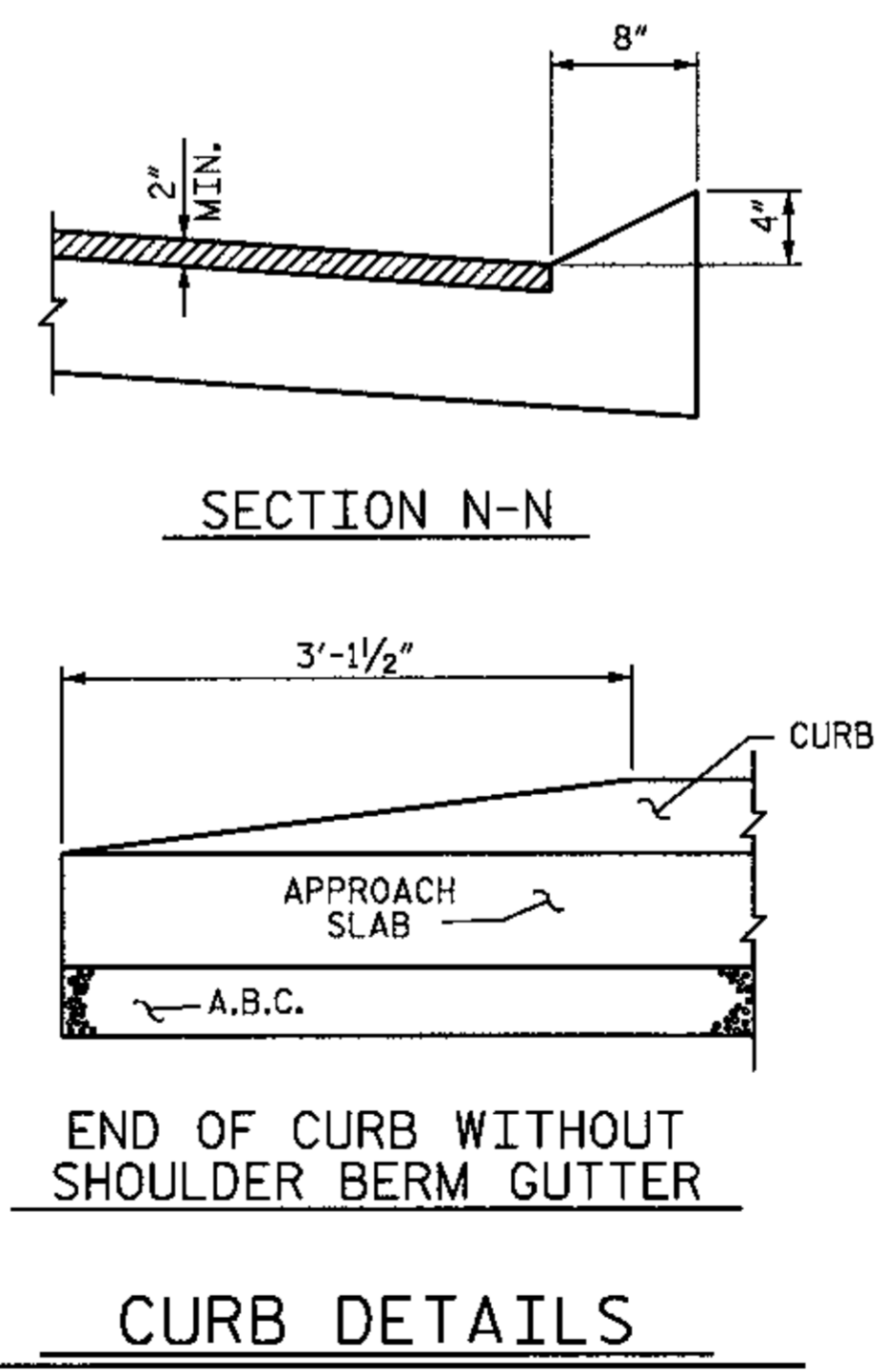
SHEET NO. 12
 TOTAL SHEETS 20



PLAN OF APPROACH SLAB @ END BENT 1
(END BENT 2 SIMILAR)



SECTION THRU SLAB



CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL INCLUDING FABRIC, 4"Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY STANDARDS 422.10.

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

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

*78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

*78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4"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 WITH 4" OF INTERMEDIATE OR SURFACE COURSE ASPHALT.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

FOR JOINT DETAILS, SEE SHEET NO. 2.

THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

WORK SHOWN ON THIS DRAWING WILL BE PAID UNDER THE LUMP SUM PRICE FOR APPROACH SLABS.

TEMPORARY DRAINAGE AND TEMPORARY BERM AND SLOPE DRAINS WILL BE PAID FOR UNDER THE LUMP SUM PRICE FOR APPROACH SLABS, SEE ROADWAY STANDARD 1622.01.

BILL OF MATERIAL
FOR ONE APPROACH SLAB
(2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	28'-0"	243
A2	13	#4	STR	28'-0"	243
* B1	57	#5	STR	11'-2"	664
B2	57	#6	STR	11'-8"	999
REINFORCING STEEL				LBS.	1242
* EPOXY COATED REINFORCING STEEL				LBS.	907
CLASS AA CONCRETE				C. Y.	14.1



WBS NO. 37048
FRANKLIN COUNTY
STATION: 10+39.500 -L-
REPLACES BRIDGE NO. 38

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB
(SUB-REGIONAL TIER)

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			20
2			4			

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Fax: 919 851 8107
LICENSE NO. F-0377

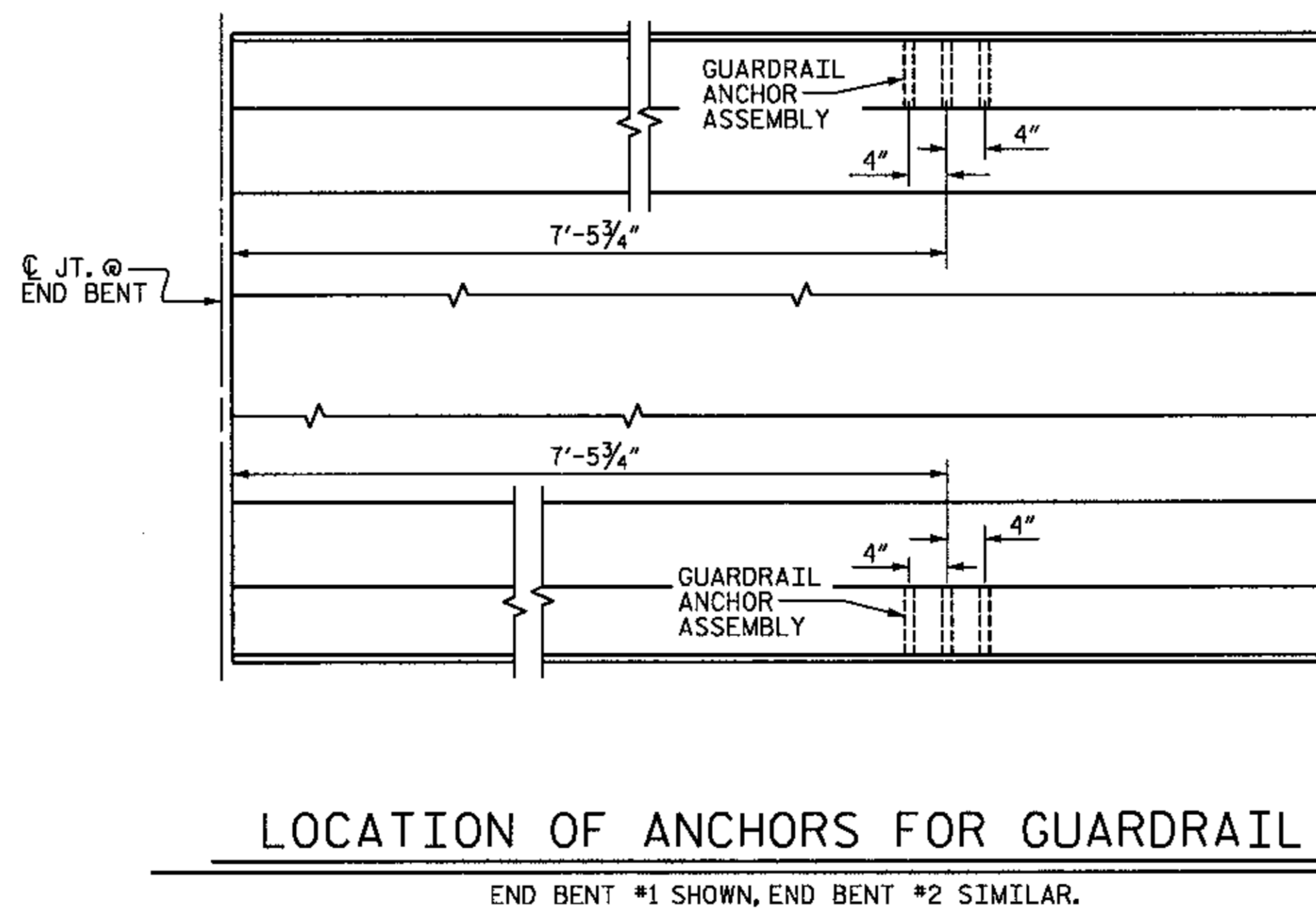
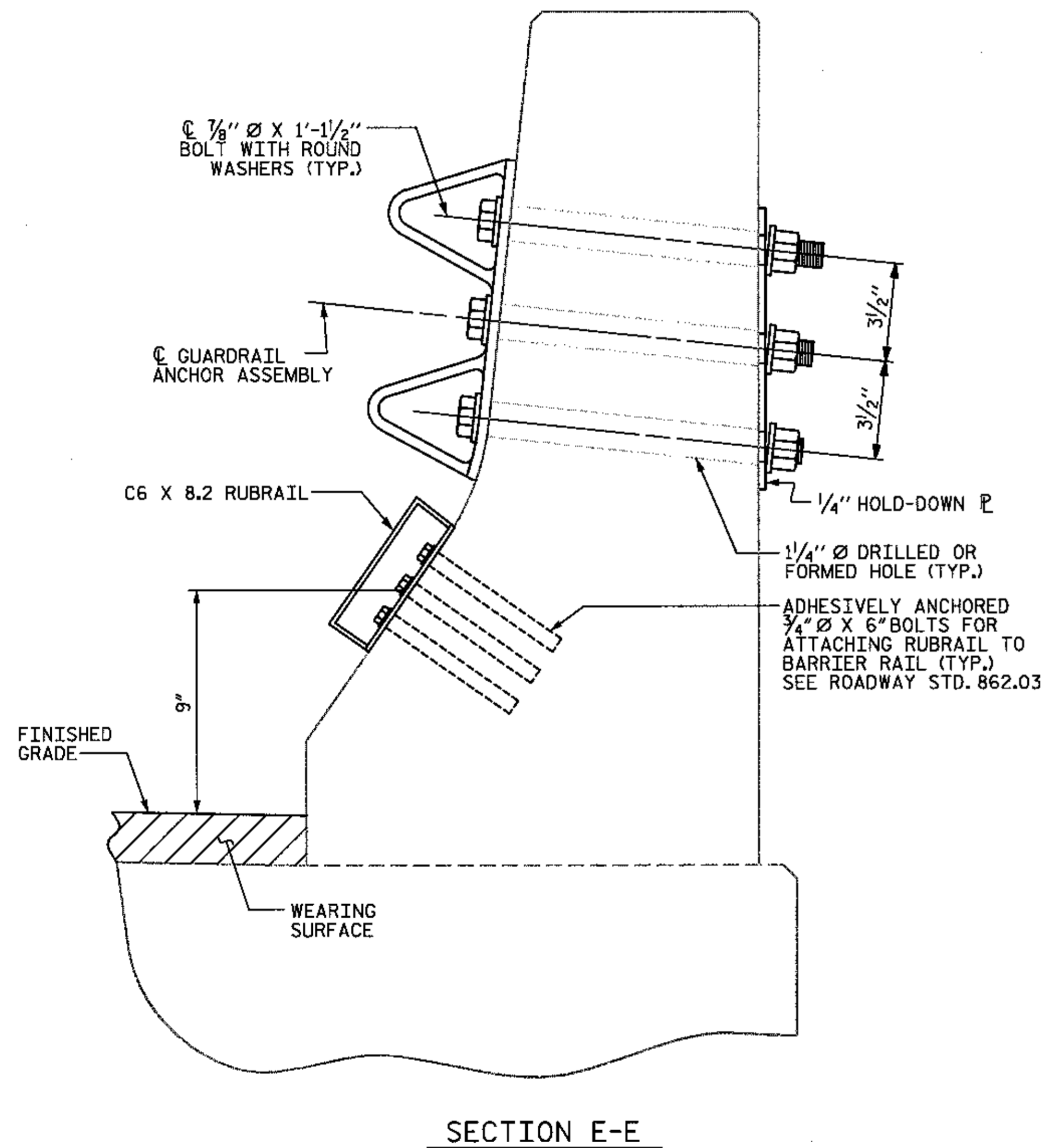
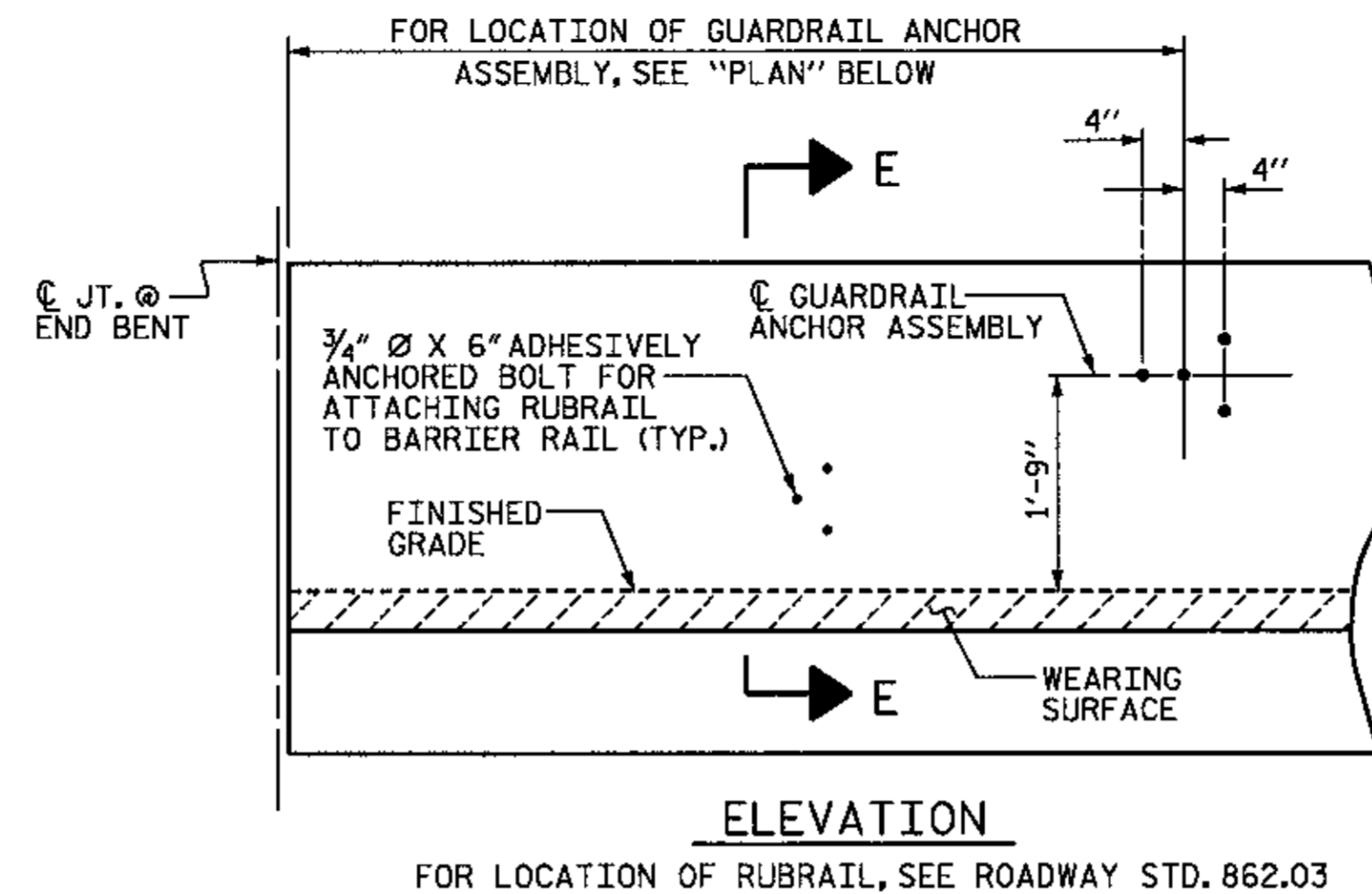
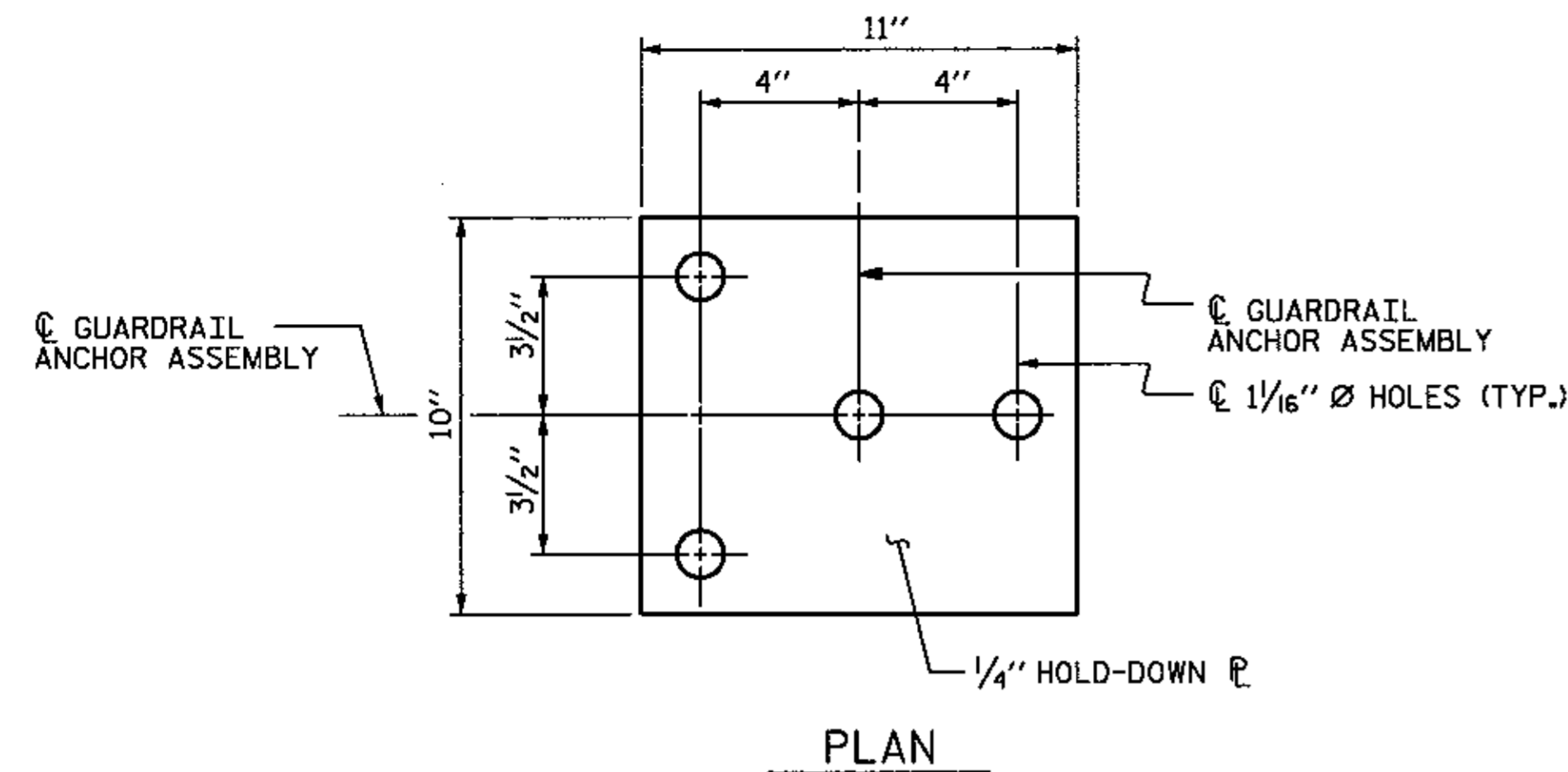


TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

NOTE: NOT TO SCALE

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DRAWN BY: J.C. PENDERGRAFT DATE: 8/09
CHECKED BY: J.A. DILWORTH DATE: 8/09



NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 1/8" 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.

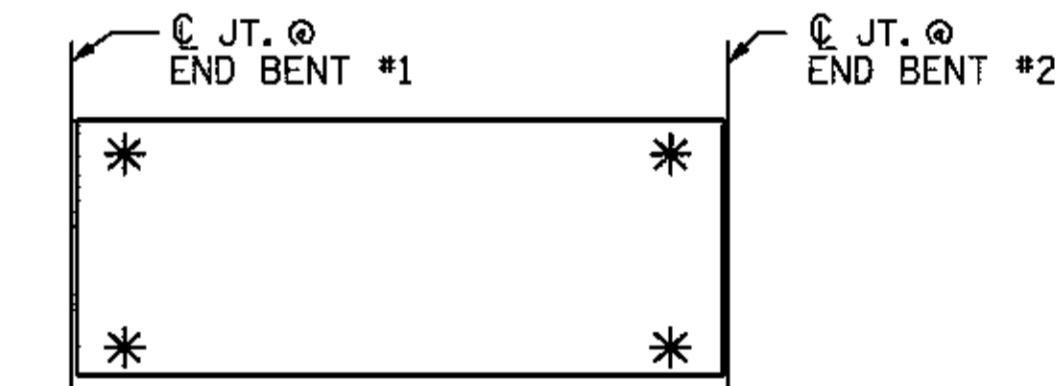
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. 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.

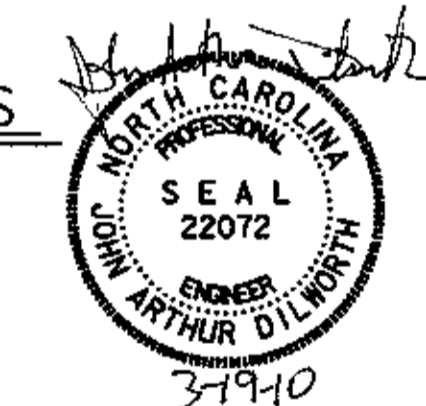
AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE 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 SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS
* DENOTES GUARDRAIL ANCHOR ASSEMBLY



WBS NO. 37048
FRANKLIN COUNTY
STATION: 10+39.500 -L-
REPLACES BRIDGE NO. 38

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

559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

WETHERILL ENGINEERING

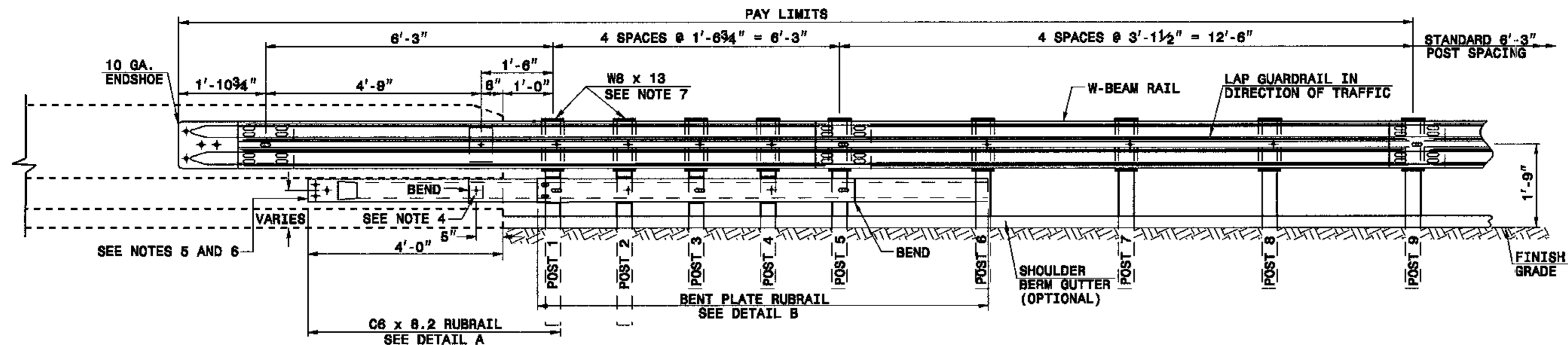
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			20

NOTE: NOT TO SCALE

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DRAWN BY: J.C. PENDERGRAFT DATE: 8/09
CHECKED BY: J.A. DILWORTH DATE: 8/09

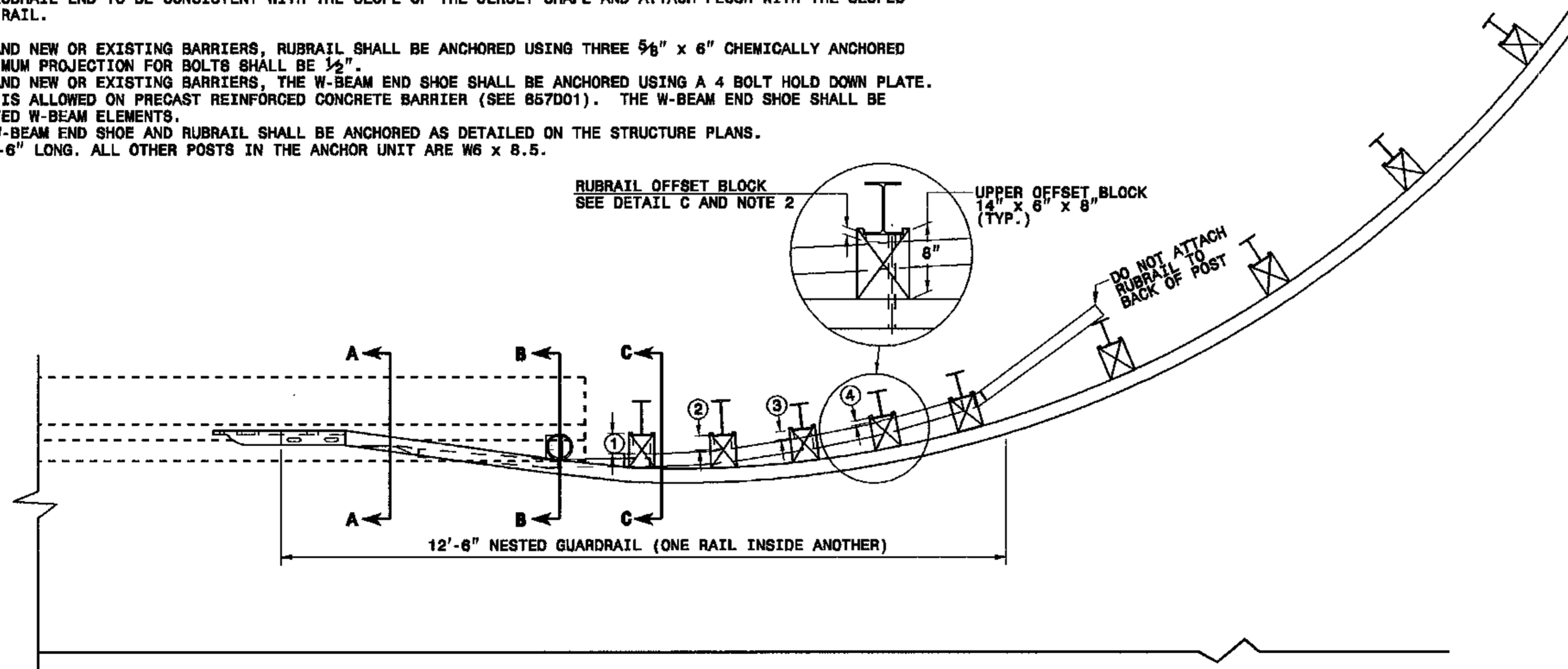


ELEVATION

GENERAL NOTES:

- 1) POSTS 1 THROUGH 5 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS AND/OR RUBRAIL.
- 2) RUBRAIL BLOCKOUTS LOCATED ON POSTS 1 THROUGH 4 ARE OFFSET DRILLED AND SECURED WITH 5/8" BUTTONHEAD BOLTS (SEE CHART FOR BOLT LENGTHS). SECURE BLOCKS ONLY TO POSTS 2 AND 4. SECURE RUBRAIL AND BLOCKOUTS TO POSTS 1 AND 3. RUBRAIL IS SECURED TO POST 5 WITH A 5/8" x 4 1/2" BUTTONHEAD BOLT. RUBRAIL IS FLARED TO BACK OF POST 6 AND NOT SECURED.
- 3) STEEL SPACER TUBE IS A SCHEDULE 40 GALVANIZED PIPE 6" INSIDE DIAMETER x 8" LONG. ATTACH TUBE TO GUARDRAIL ONLY WITH 5/8" x 1 1/4" LONG BUTTONHEAD BOLT AND RECTANGULAR PLATE WASHER.
- 4) SEE DETAIL D FOR SLOPED RUBRAIL BLOCKOUT. BLOCKOUT IS ATTACHED TO RAIL ELEMENT ONLY. USE 3/8" x 3" LAG BOLT WITH FLAT WASHER.
- 5) SHOP FABRICATE THE C6 x 8.2 RUBRAIL END TO BE CONSISTENT WITH THE SLOPE OF THE JERSEY SHAPE AND ATTACH FLUSH WITH THE SLOPED TOE OF THE BARRIER OR BRIDGE RAIL.
- 6) ANCHORAGE:
 - (a) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, RUBRAIL SHALL BE ANCHORED USING THREE 5/8" x 6" CHEMICALLY ANCHORED BOLTS WITH WASHERS. MAXIMUM PROJECTION FOR BOLTS SHALL BE 1/2".
 - (b) AT EXISTING BRIDGE RAIL AND NEW OR EXISTING BARRIERS, THE W-BEAM END SHOE SHALL BE ANCHORED USING A 4 BOLT HOLD DOWN PLATE. A 4 BOLT INSERT ASSEMBLY IS ALLOWED ON PRECAST REINFORCED CONCRETE BARRIER (SEE 857D01). THE W-BEAM END SHOE SHALL BE INSTALLED BEHIND THE NESTED W-BEAM ELEMENTS.
 - (c) AT NEW BRIDGE RAIL, THE W-BEAM END SHOE AND RUBRAIL SHALL BE ANCHORED AS DETAILED ON THE STRUCTURE PLANS.
- 7) POSTS 1 AND 2 ARE W8 x 13, 7'-6" LONG. ALL OTHER POSTS IN THE ANCHOR UNIT ARE W6 x 8.5.

SEE ROADWAY PLANS FOR END TREATMENT



PLAN

GUARDRAIL ANCHOR UNIT TYPE B-77

WBS NO. 37048
 FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GUARDRAIL PLACEMENT
 GUARDRAIL ANCHOR UNIT
 TYPE B-77, SHOP CURVED
 STD. B-77SC, SHT 1

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 Raleigh, N.C. 27606
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 LICENSE NO. F-0377



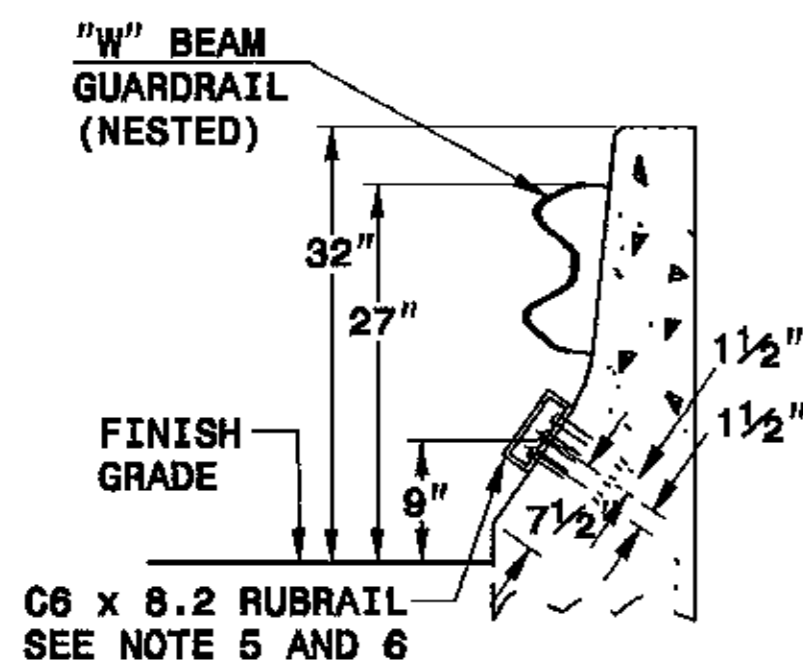
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

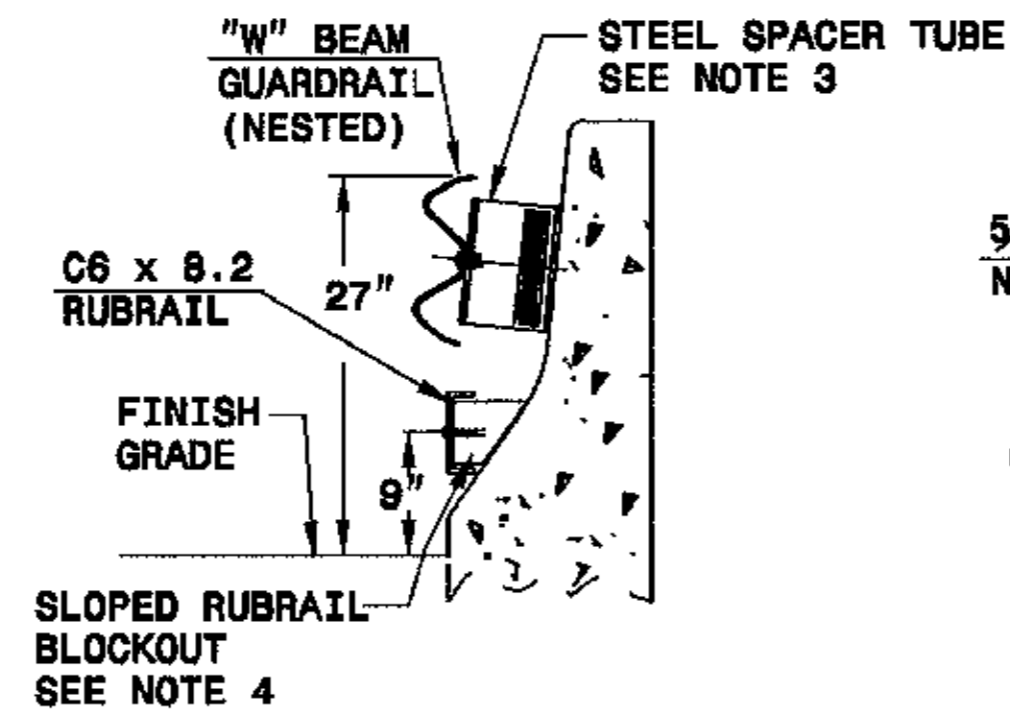
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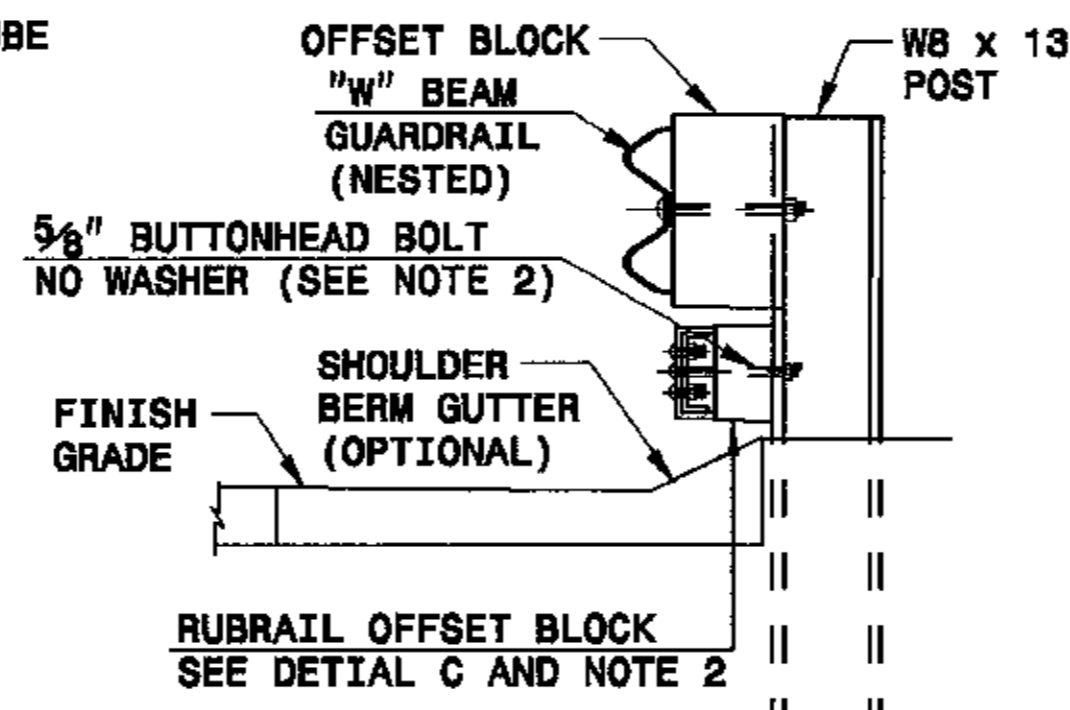
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 CHECKED BY : J.A. DILWORTH DATE : 8/09



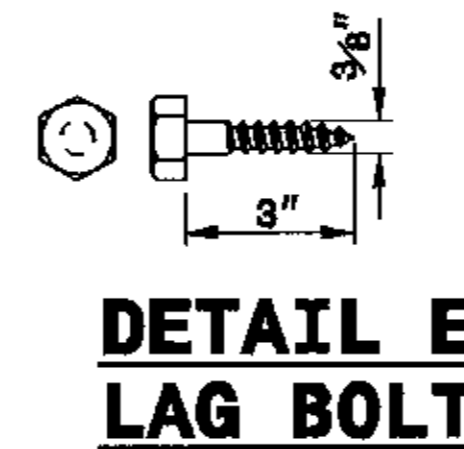
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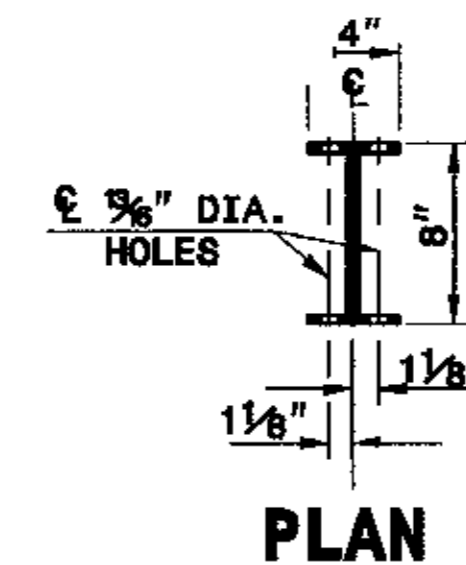
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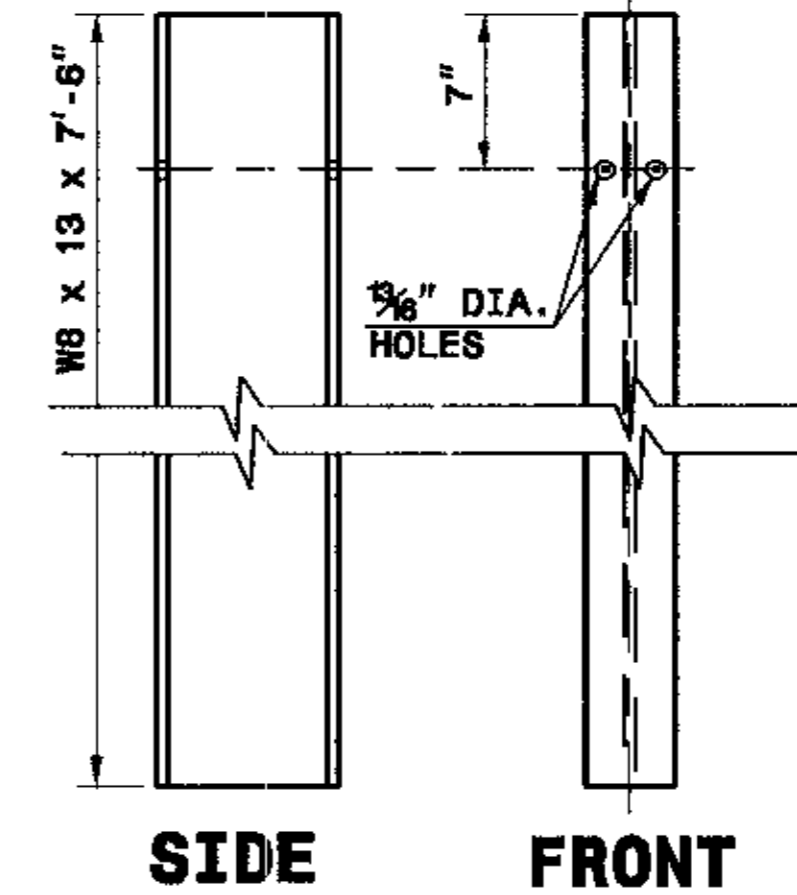
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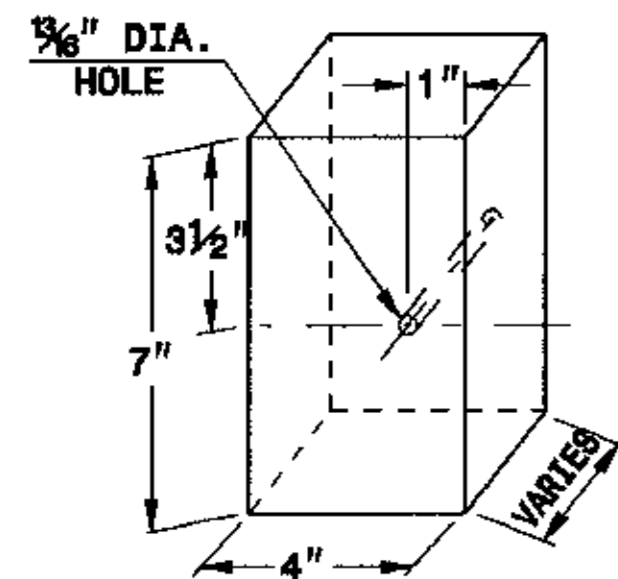
DETAIL E LAG BOLT



PLAN



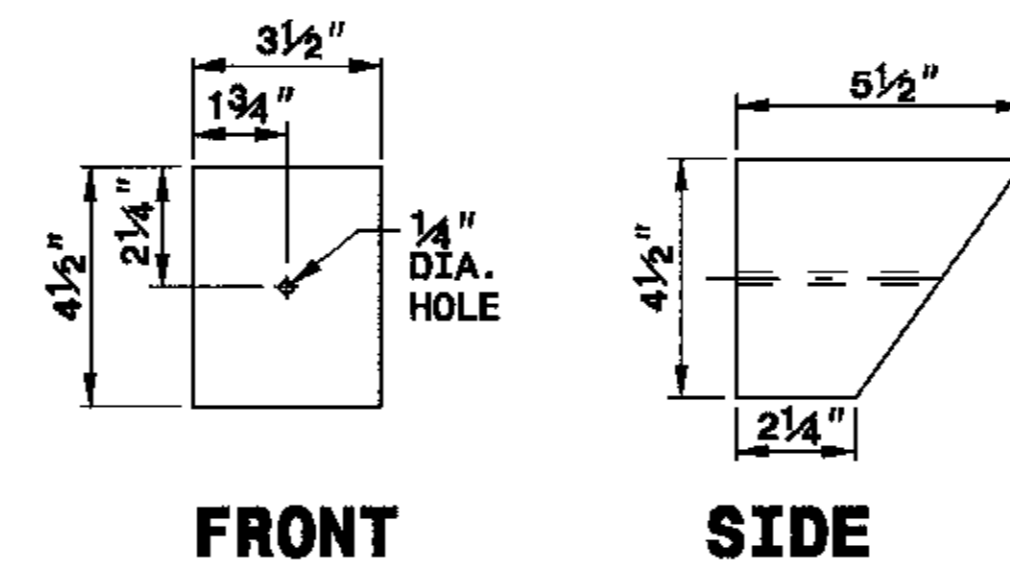
**DETAIL F STEEL POST
"W8 X 13 X 7'-6"**



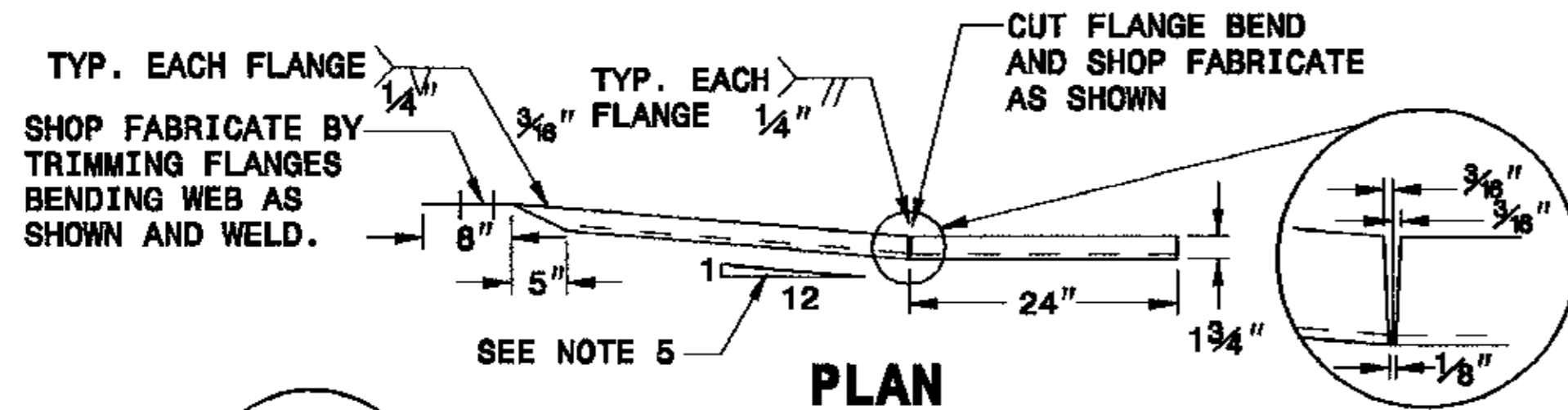
DETAIL C RUBRAIL BLOCKOUT

RUBRAIL BLOCKS 7" HIGH x 4" WIDE		
POST	THICKNESS	BOLT LENGTH
①	4 1/4"	9"
②	3 1/4"	5" *
③	2"	6"
④	1"	3" *

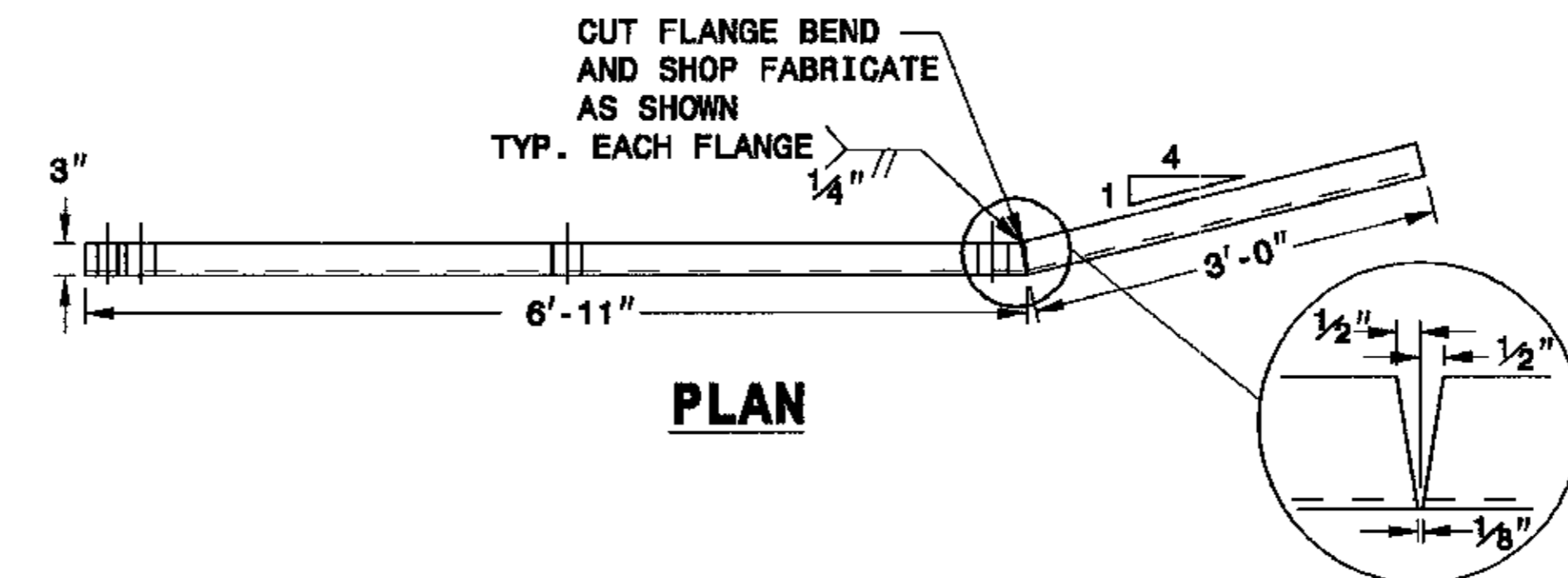
* BOLTS FOR POSTS 2 AND 4 ARE USED TO ATTACH BLOCK TO POST. RUBRAIL NOT ATTACHED TO BLOCK.



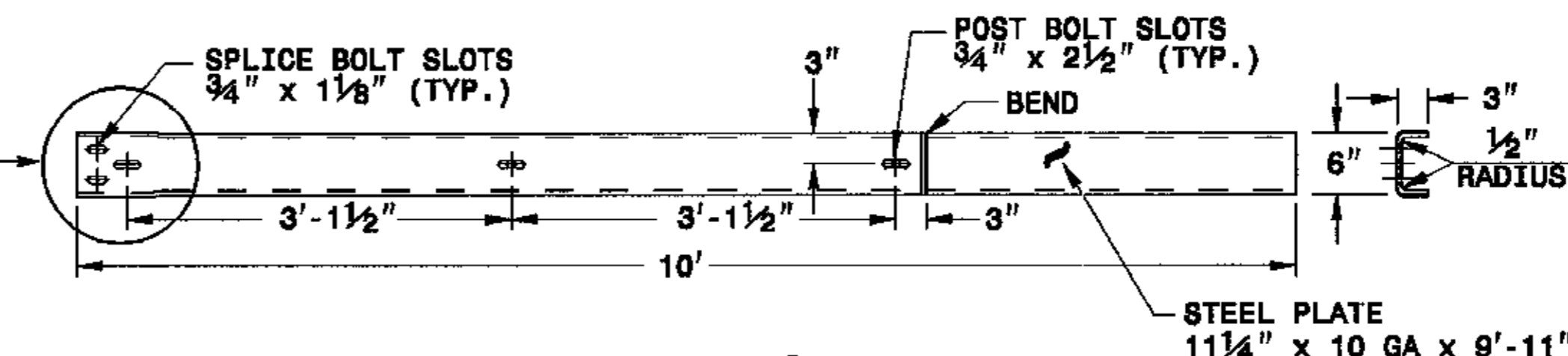
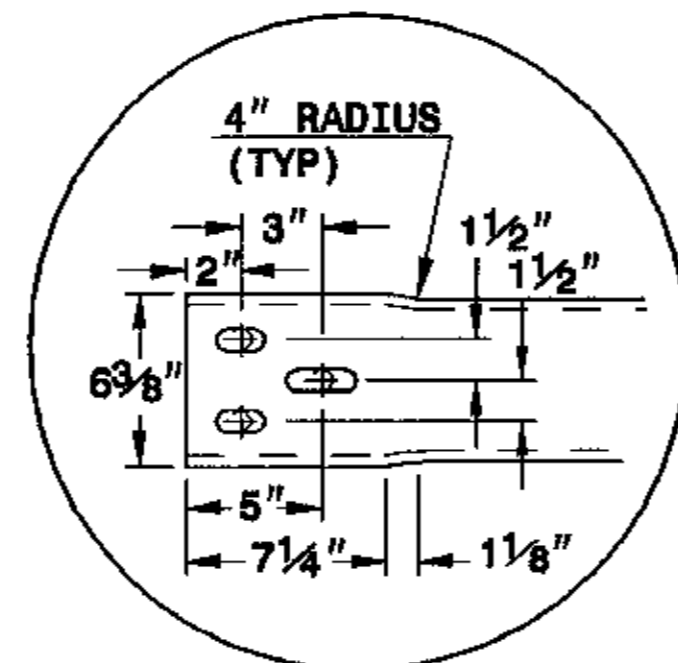
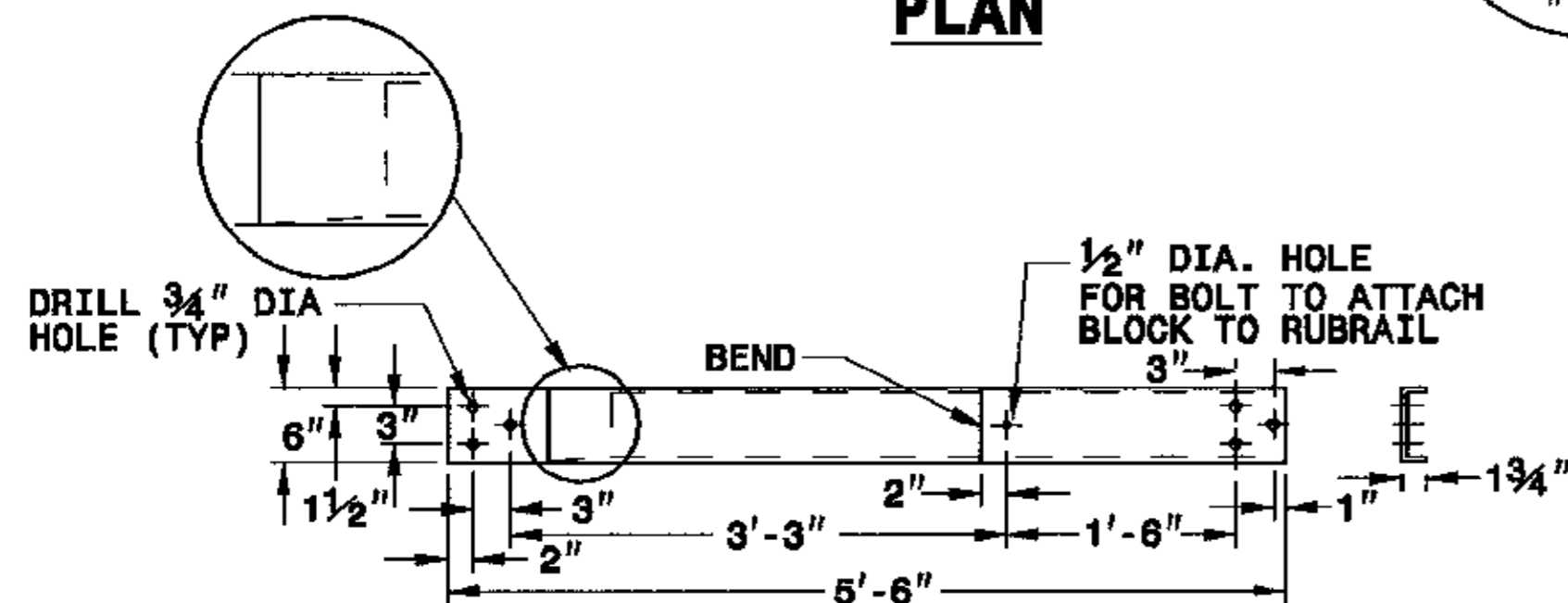
DETAIL D SLOPED RUBRAIL BLOCKOUT



**ELEVATION
DETAIL A
C6 x 8.2 RUBRAIL**



**ELEVATION
DETAIL B
BENT PLATE RUBRAIL**



GUARDRAIL ANCHOR UNIT TYPE B-77

WBS NO. 37048
FRANKLIN COUNTY
 STATION: 10+39.500 -L-
 REPLACES BRIDGE NO. 38

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GUARDRAIL PLACEMENT
 GUARDRAIL ANCHOR UNIT
 TYPE B-77, SHOP CURVED
 STD. B-77SC, SHT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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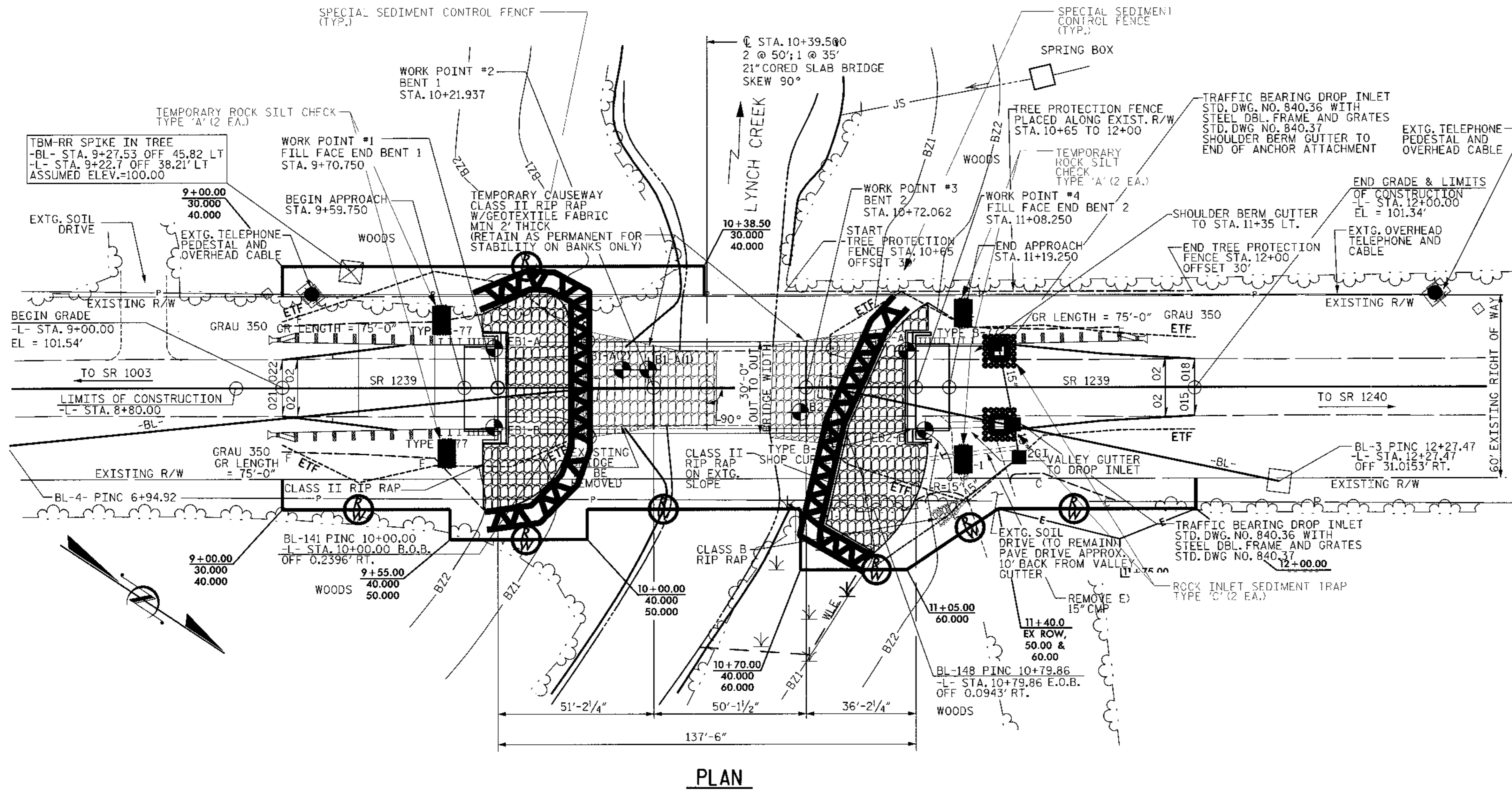
NOTE: NOT TO SCALE

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION



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 LICENSE NO. F-0377

EROSION CONTROL PLAN



CONSTRUCTION SEQUENCE

1. ACCESS AND MOBILIZATION; STABILIZE BARE AREAS IMMEDIATELY WITH TEMPORARY VEGETATION AND/OR GRAVEL AS CONSTRUCTION TAKES PLACE.
2. INSTALL SILT FENCE. SILT FENCE SHALL BE INSTALLED UP TO THE EXISTING BRIDGE ABUTMENTS TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE. SILT FENCE SHALL BE INSTALLED AT THE PERIMETER OF DISTURBED AREAS.
3. PROCEED WITH CONSTRUCTION OF THE NEW BRIDGE. ADDITIONAL GRAVEL STABILIZATION OR SILT FENCE MAY BE REQUIRED BEHIND THE OLD ABUTMENTS WHEN THE OLD BRIDGE IS REMOVED AND BEFORE THE NEW BRIDGE IS INSTALLED.
4. MAINTENANCE INSPECTIONS SHALL BE PERFORMED WEEKLY AND AFTER PERIODS OF RAINFALL. REPAIRS SHALL BE MADE IMMEDIATELY.
5. ONCE THE SITE IS STABILIZED, REMOVE ALL EROSION CONTROL DEVICES.

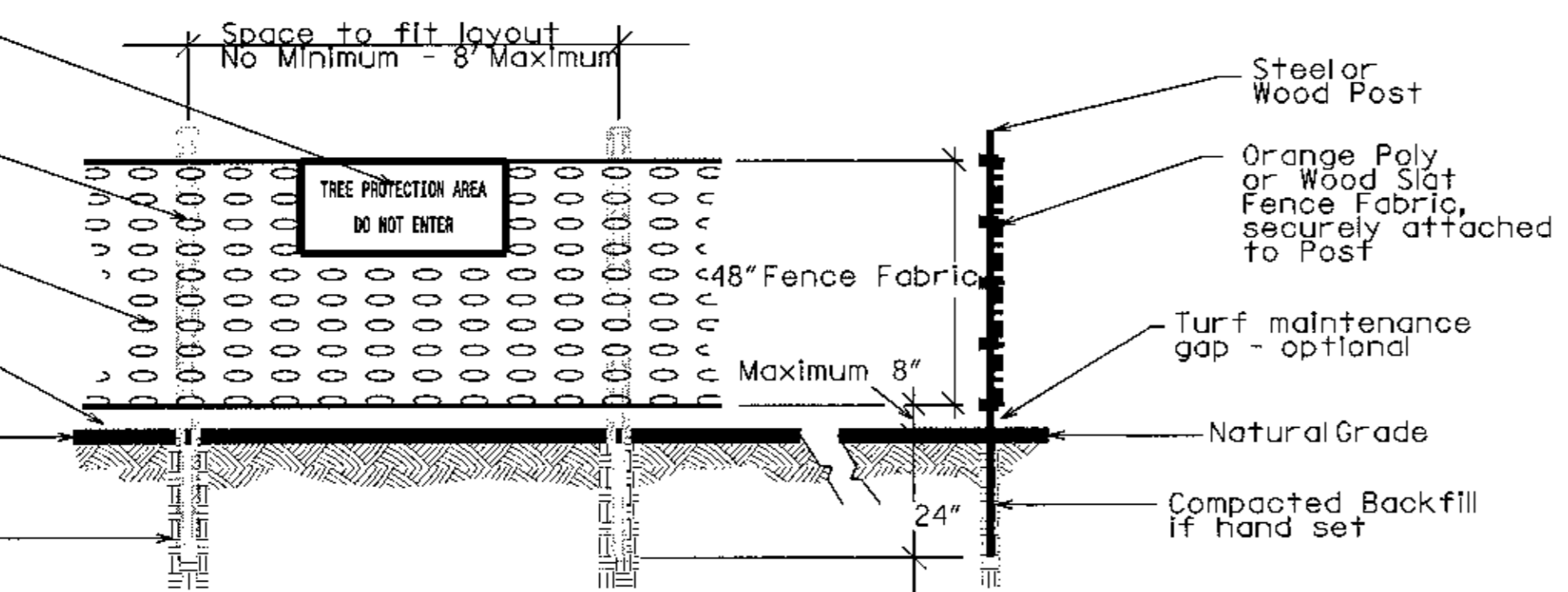
NOTE: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2006 STANDARD SPECIFICATIONS

WBS NO. 37048
FRANKLIN COUNTY
STATION: 10+39.500 -L-
REPLACES BRIDGE NO. 38

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BRIDGE #38 ON SR 1239
OVER LYNCH CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			17
2			4			20



Tree Protection Fence Detail

Note: Use only metalpost where fence must be installed close to tree trunks or major roots.
Not to Scale

Std. #	Description	Quantity	Symbol
1606.01	Special Sediment Control Fence	245 LF	
1632.03	Rock Inlet Sediment Trap Type C	2	
1633.01	Temporary Rock Silt Check Type A	4	
	Tree Protection Fence	135 LF	

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NOTE: NOT TO SCALE TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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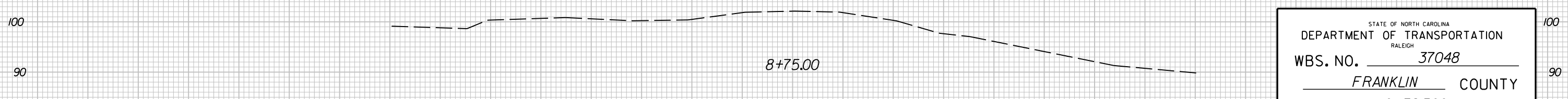
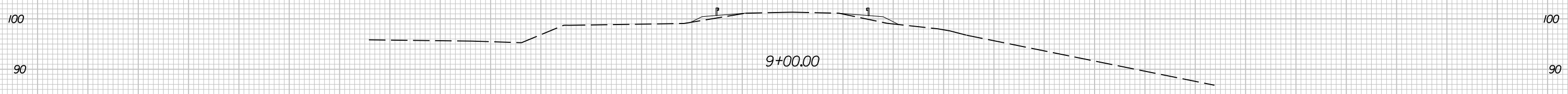
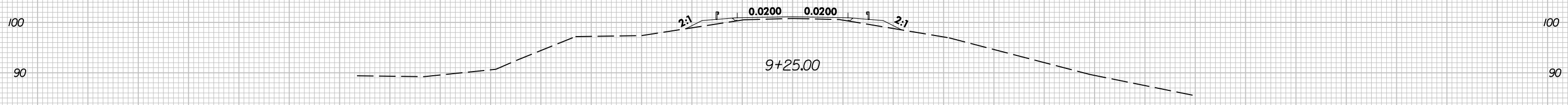
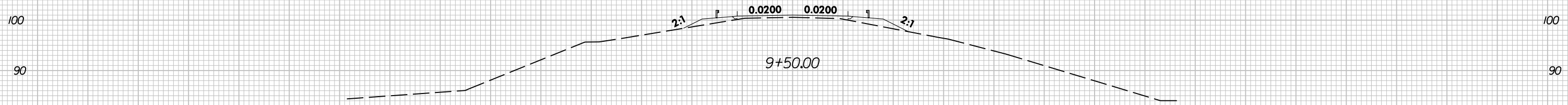
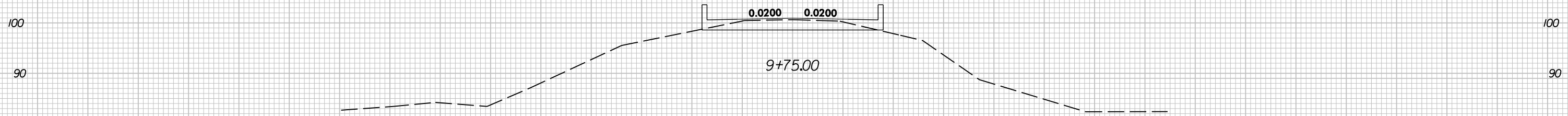
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CHECKED BY: J.A. DILWORTH DATE: 8/09

8/23/99



PROJ. REFERENCE NO. M05012B SHEET NO. X-1

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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

WBS. NO. 37048

FRANKLIN COUNTY

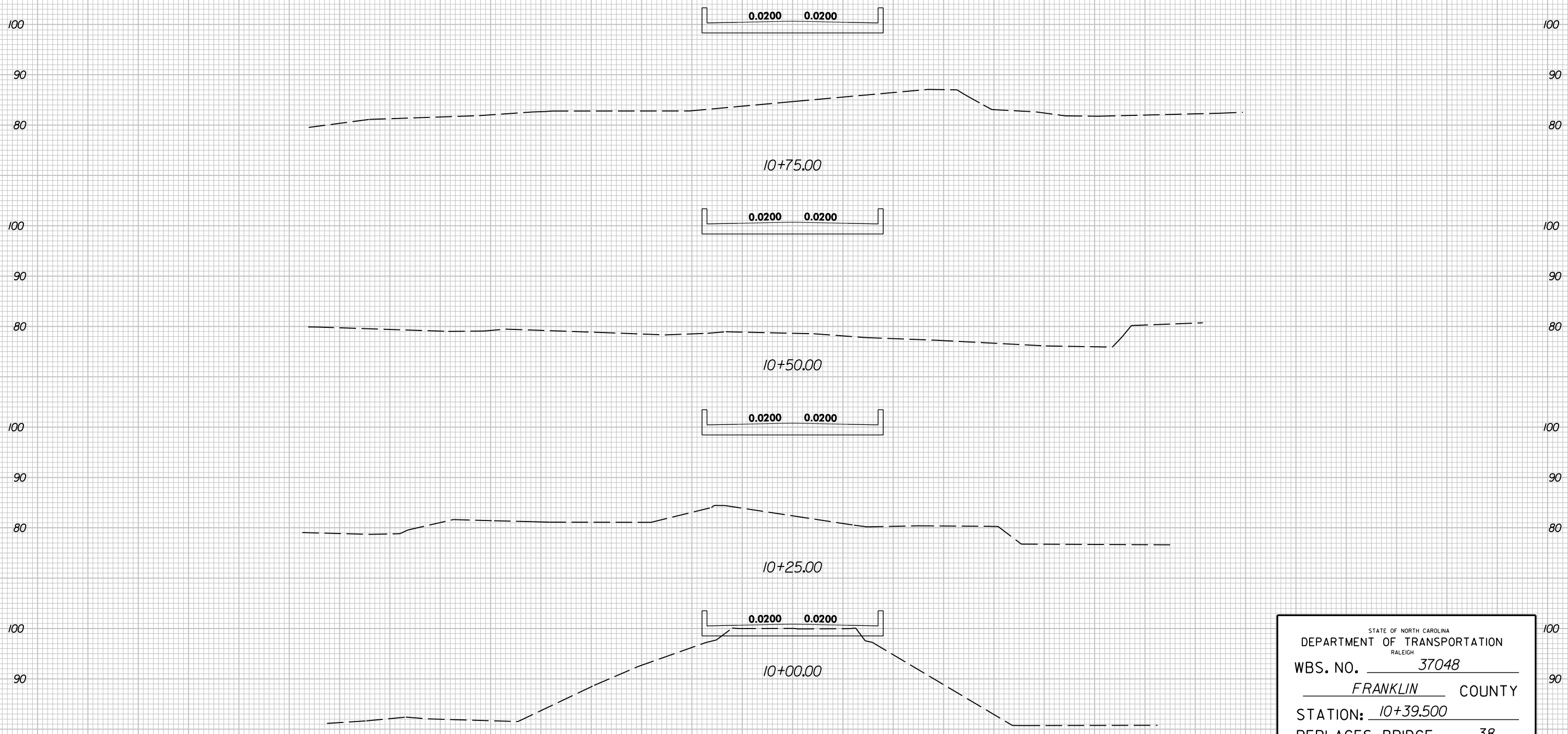
STATION: 10+39.500

REPLACES BRIDGE: 38

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8/23/99

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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

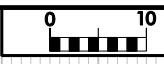
WBS. NO. 37048
FRANKLIN COUNTY
 STATION: 10+39.500
 REPLACES BRIDGE: 38

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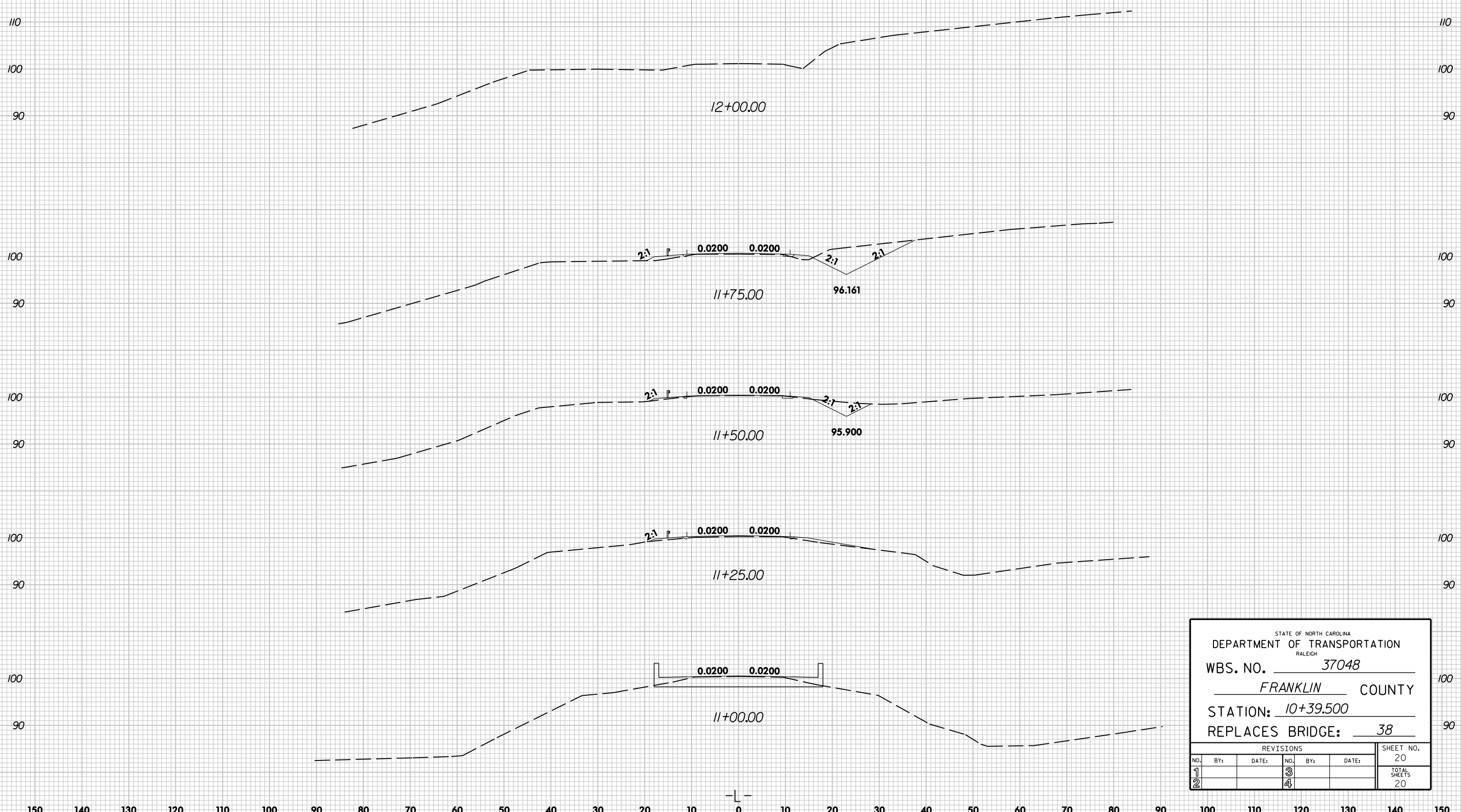
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8/23/99



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

WBS. NO. 37048

FRANKLIN COUNTY

STATION: 10+39.500

REPLACES BRIDGE: 38

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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