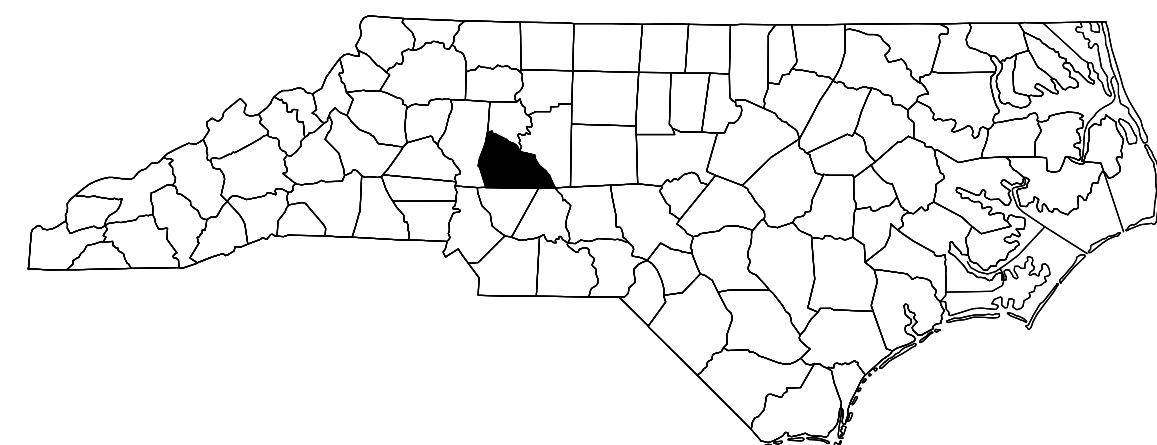


PROJECT: B-4626

CONTRACT NO: C204446



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

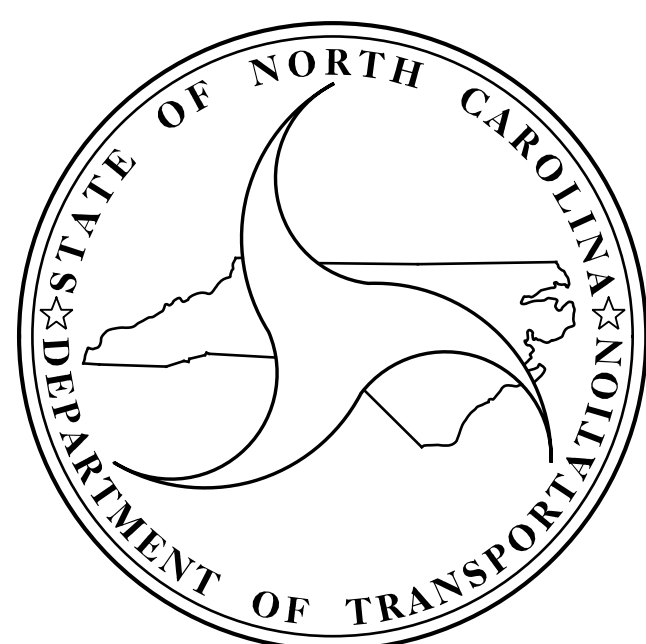
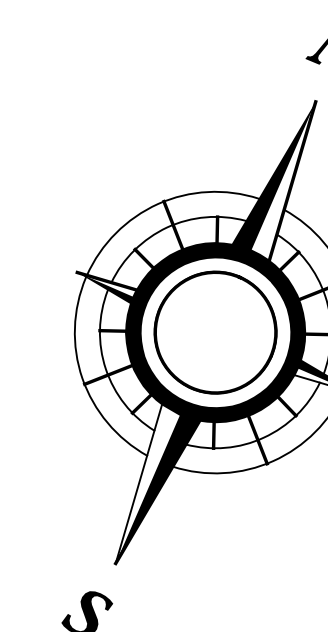
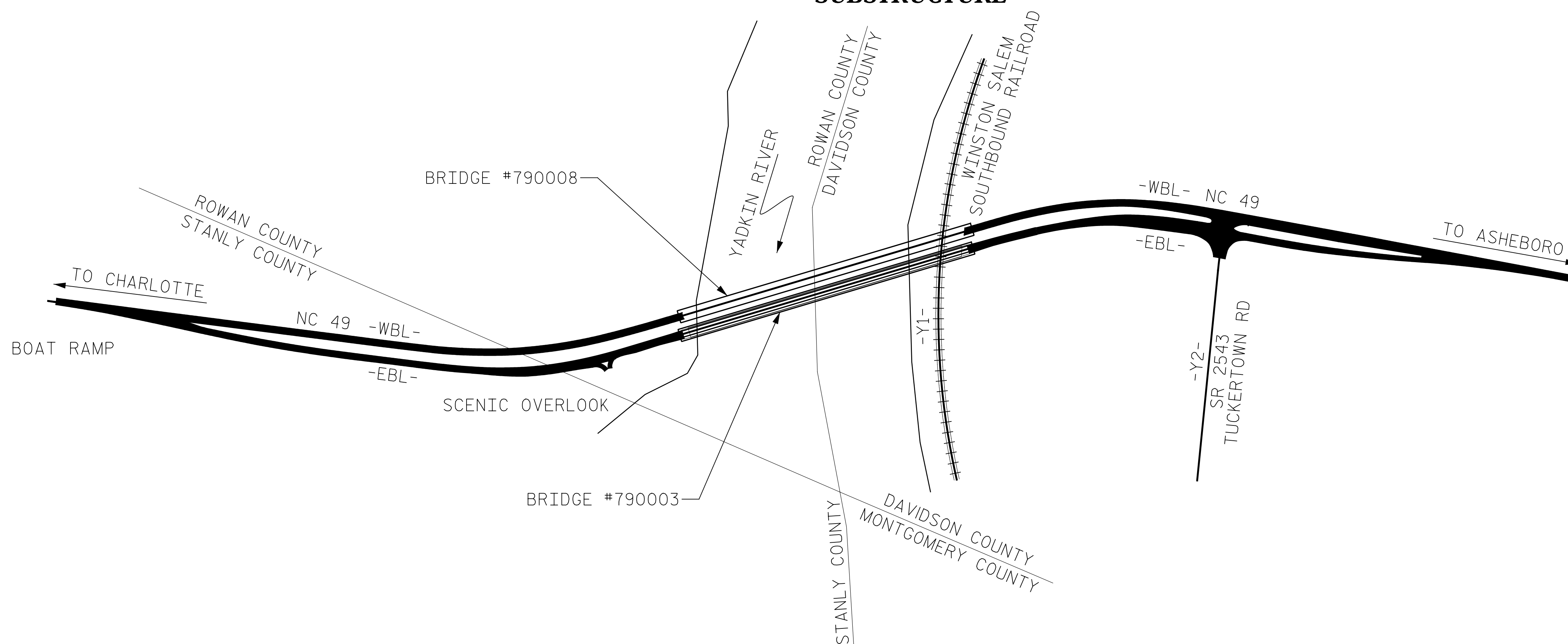
STANLY, ROWAN, AND DAVIDSON COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4626	1	125
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38443.1.FS2	BRNHP-0049(33)	P.E.	
38443.2.3	BRNHP-0049(33)	R.W./UTIL.	
38443.3.3		CONST.	

LOCATION: ROWAN COUNTY:

BRIDGE #790003 ON NC 49 NBL OVER YADKIN RIVER
BRIDGE #790008 ON NC 49 SBL OVER YADKIN RIVER

TYPE OF WORK: BRIDGE REHABILITATION & BRIDGE PRESERVATION - POLYMER CONCRETE OVERLAY, JOINT REPLACEMENTS, BEARING RETROFIT, EPOXY COATING ENDS OF PRESTRESSED CONCRETE GIRDERS AND BENT CAPS, CLEANING OF BRIDGE DECK DRAINAGE SYSTEM & SUPERSTRUCTURE AND PARTIAL SUBSTRUCTURE REPLACEMENT, SHOTCRETE REPAIRS TO SUBSTRUCTURE



DESIGN DATA

ROWAN COUNTY
#790003 ADT 2013 = 3250
#790008 ADT 2015 = 3500

PROJECT LENGTH

ROWAN COUNTY
#790003 = 0.209 MILE
#790008 = 0.209 MILE

PLANS PREPARED BY:

 **Gannett Fleming**
Excellence Delivered **As Promised**

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

2018 STANDARD SPECIFICATIONS

LETTING DATE:
OCTOBER 19, 2021

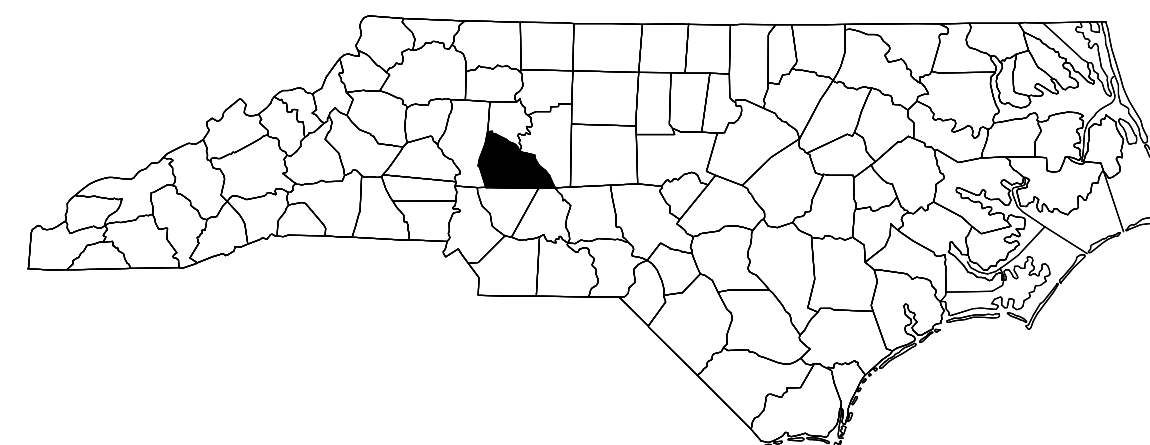


DocuSigned by:
 9/15/2021

RICK NELSON
PROJECT DESIGN ENGINEER

PROJECT: B-4626

CONTRACT NO: C204446



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STANLY, ROWAN, AND DAVIDSON COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4626	1A	125
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38443.1.FS2	BRNHP-0049(33)	P.E.	
38443.2.3	BRNHP-0049(33)	R.W./UTIL.	
38443.3.3		CONST.	

LOCATION: ROWAN COUNTY:

BRIDGE #790003 ON NC 49 NBL OVER YADKIN RIVER
BRIDGE #790008 ON NC 49 SBL OVER YADKIN RIVER

TYPE OF WORK: BRIDGE REHABILITATION & - POLYMER CONCRETE OVERLAY, JOINT REPLACEMENTS, BEARING BRIDGE PRESERVATION RETROFIT, EPOXY COATING ENDS OF PRESTRESSED CONCRETE GIRDERS AND BENT CAPS, CLEANING OF BRIDGE DECK DRAINAGE SYSTEM & SUPERSTRUCTURE AND PARTIAL SUBSTRUCTURE REPLACEMENT, SHOTCRETE REPAIRS TO SUBSTRUCTURE

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION
1 1A	TITLE SHEET INDEX OF DRAWINGS		
BRIDGE NO. 790003:		BRIDGE NO. 790008:	
S1-1 TO S1-8 S1-9 S1-10 TO S1-13 S1-14 TO S1-16 S1-17 TO S1-22 S1-23 TO S1-26 S1-27 TO S1-33 S1-34 TO S1-35 S1-36 TO S1-44 S1-45 TO S1-49 S1-50 S1-51 TO S1-53 S1-54 S1-55 S1-56 S1-57 TO S1-59 S1-60 TO S1-61 S1-62 TO S1-64 S1-65 TO S1-67 S1-68 TO S1-70 S1-71 TO S1-72 S1-73 TO S1-75 S1-76 TO S1-99 S1-100 S1-101 S1-102 TO S1-103	GENERAL DRAWING LRFR SUMMARY FOR STEEL GIRDERS GIRDER ERECTION DETAILS TYPICAL SECTION PLAN OF SPANS FRAMING PLAN STRUCTURAL STEEL DETAILS ELASTOMERIC BEARING DETAILS DEAD LOAD DEFLECTION AND CAMBER ORDINATES CONCRETE BARRIER RAIL GUARDRAIL ANCHORAGE FOR BARRIER RAIL STRIP SEAL EXPANSION JOINT DETAILS POURING SEQUENCE SUPERSTRUCTURE BILL OF MATERIAL CAP DEMOLITION DETAILS END BENT 1 BENT 1 THRU 4 & 9 THRU 11 BENT 5 BENT 6 & 7 BENT 8 BENT 12 END BENT 2 SUBSTRUCTURE REPAIR TYPICAL COLUMN REPAIR DETAILS RIP RAP DETAILS BRIDGE APPROACH SLAB DETAILS	S2-1 TO S2-3 S2-4 S2-5 TO S2-17 S2-18 S2-19 S2-20 S2-21 S2-22 SN	GENERAL DRAWING TYPICAL SECTION & OVERLAY DETAILS SURFACE PREPARATION JOINT DETAILS BEARING AND KEEP LAYOUT DETAILS BEARING REPAIR DETAILS EPOXY COATING AND DECK DRAIN DETAILS JACKING DETAILS STANDARD NOTES

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** HYDRULIC DATA OBTAINED FROM ADJACENT BRIDGE (BRIDGE NO. 790008) PLANS DATED MARCH 1996.

(-)-0.7112% (+)-2.0000%
 PI = 32+10.00
 EL. = 578.31
 VC = 450'

GRADE DATA -EBL- SPAN A SPAN B SPAN C SPAN D SPAN E

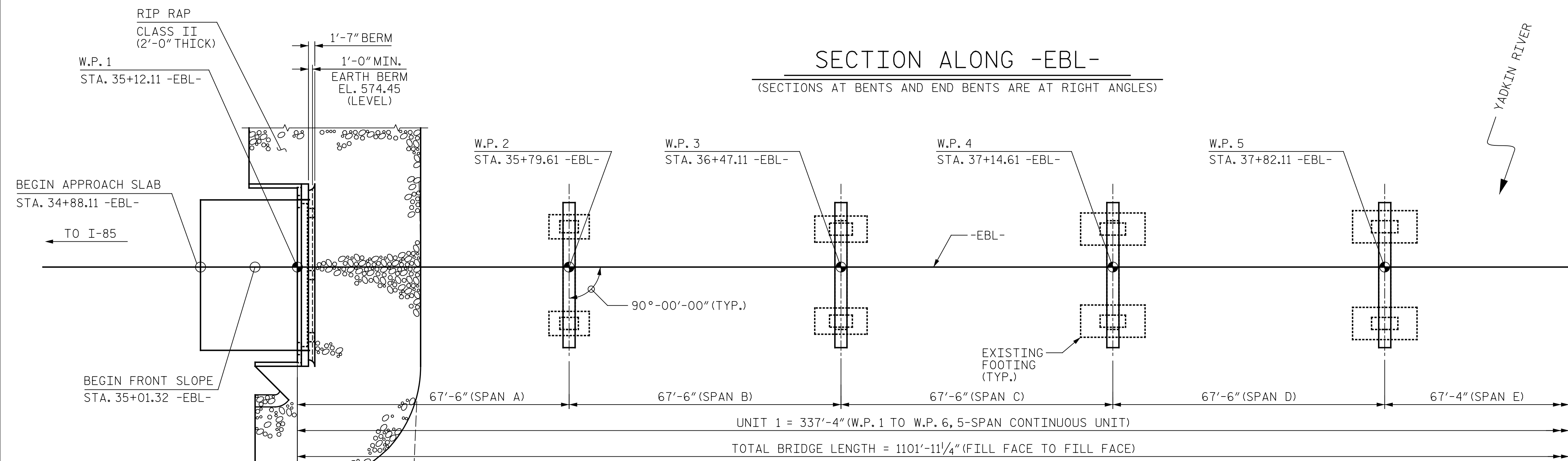
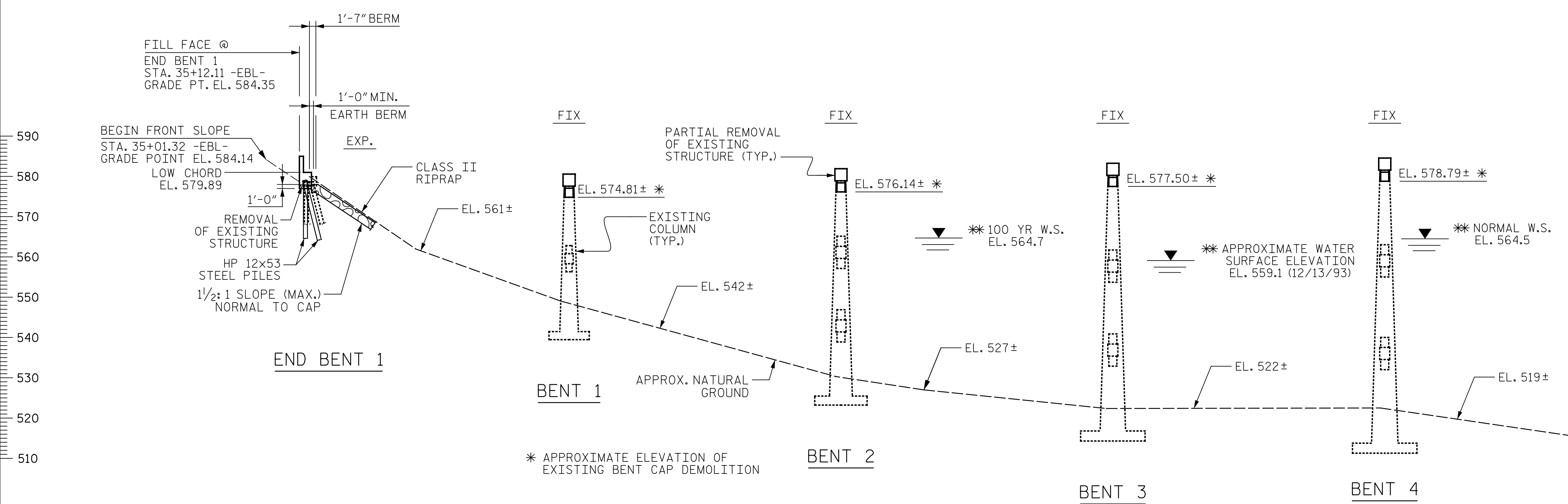
**** HYDRAULIC DATA**

DESIGN DISCHARGE	=	129,271 CFS
FREQUENCY OF DESIGN DISCHARGE	=	50 YEAR
DESIGN HIGH WATER ELEVATION	=	564.7
DRAINAGE AREA	=	4,120 SQ. MI.
BASE DISCHARGE (Q100)	=	150,816 CFS
BASE HIGH WATER ELEVATION	=	564.7

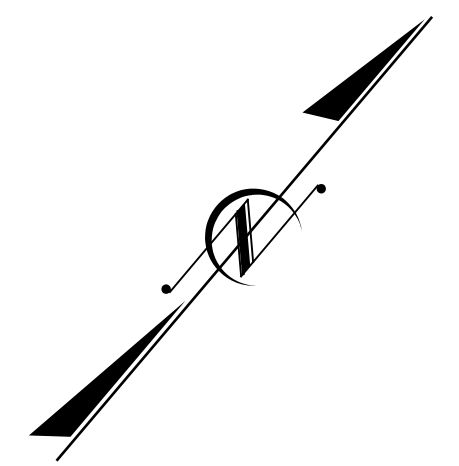
**** OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE	=	N/A
FREQUENCY OF OVERTOPPING FLOOD	=	>500 YR
OVERTOPPING ELEVATION	=	581.4

- SCOPE OF WORK**
- REMOVE EXISTING CONCRETE DECK AND STEEL SUPERSTRUCTURE.
 - REMOVE EXISTING CONCRETE END BENT CAPS AND CUT STEEL PILES ONE FOOT BELOW GROUNDLINE.
 - REMOVE EXISTING CONCRETE BENT CAPS & PORTIONS OF COLUMNS.
 - CONSTRUCT END BENTS AND BENT CAPS.
 - PLACE STEEL BEAM AND PLATE GIRDERS ON ELASTOMERIC BEARINGS.
 - PLACE CONCRETE DECK AND BARRIER RAILS, AND INSTALL STRIP SEAL JOINTS.
 - PLACE APPROACH SLABS.
 - PLACE RIP RAP AT END BENTS.
 - REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE EXISTING BENT COLUMNS FOR SHOTCRETE REPAIRS AND EPOXY RESIN INJECTION.



NOTES:
 GENERAL DRAWING INFORMATION IS TAKEN FROM THE FIELD AND LOCATION SURVEYS, THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 12/22/2016.
 BRIDGE ORIENTATION CONFORMS TO THE EXISTING PLANS AND THE FIELD AND LOCATION SURVEYS.



I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. B-4626
 STANLY, ROWAN
 AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-
 MILE POST #44.80 WIDENING AND REHABILITATION OF BRIDGE NO. 790003
 SHEET 1 OF 8



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER YADKIN RIVER AND WINSTON-SALEM SOUTHBOUND RR ON NC 8/49 BETWEEN SR 1578 AND SR 2543

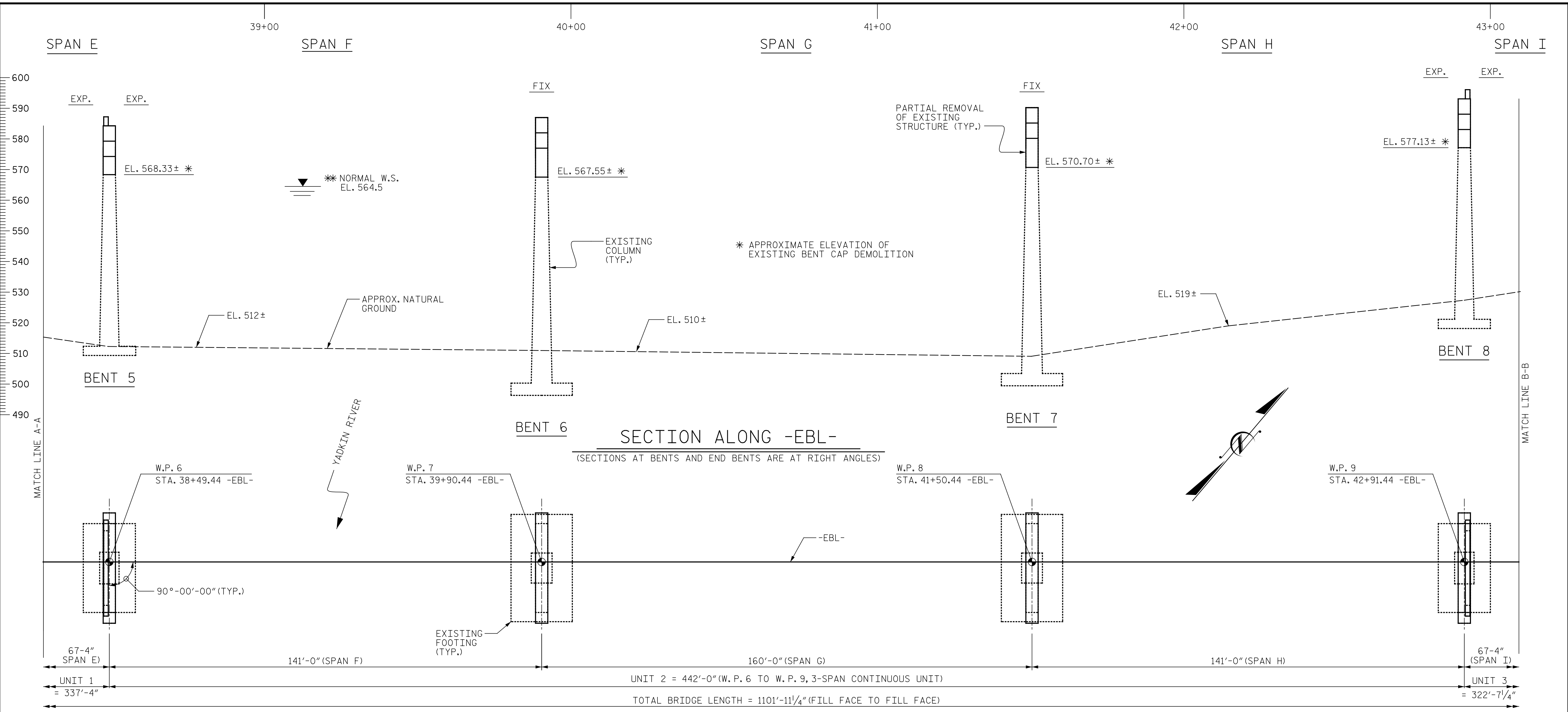
DRAWN BY : T. HARTLEY/J. MYA DATE : 06/2020
 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue Suite 900 Raleigh, NC 27603 (919) 420-7660 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-1
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2			4			125

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PARTIAL PLAN

(PILES NOT SHOWN IN PLAN VIEW)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER YADKIN
 RIVER AND WINSTON-SALEM
 SOUTHBOUND RR ON NC 8/49
 BETWEEN SR 1578 AND SR 2543



DocuSigned by:
 Eric B. Nelson
 9/2/2021

DRAWN BY : T. HARTLEY/J. MYA DATE : 06/2020
 CHECKED BY : J. YANNACCONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

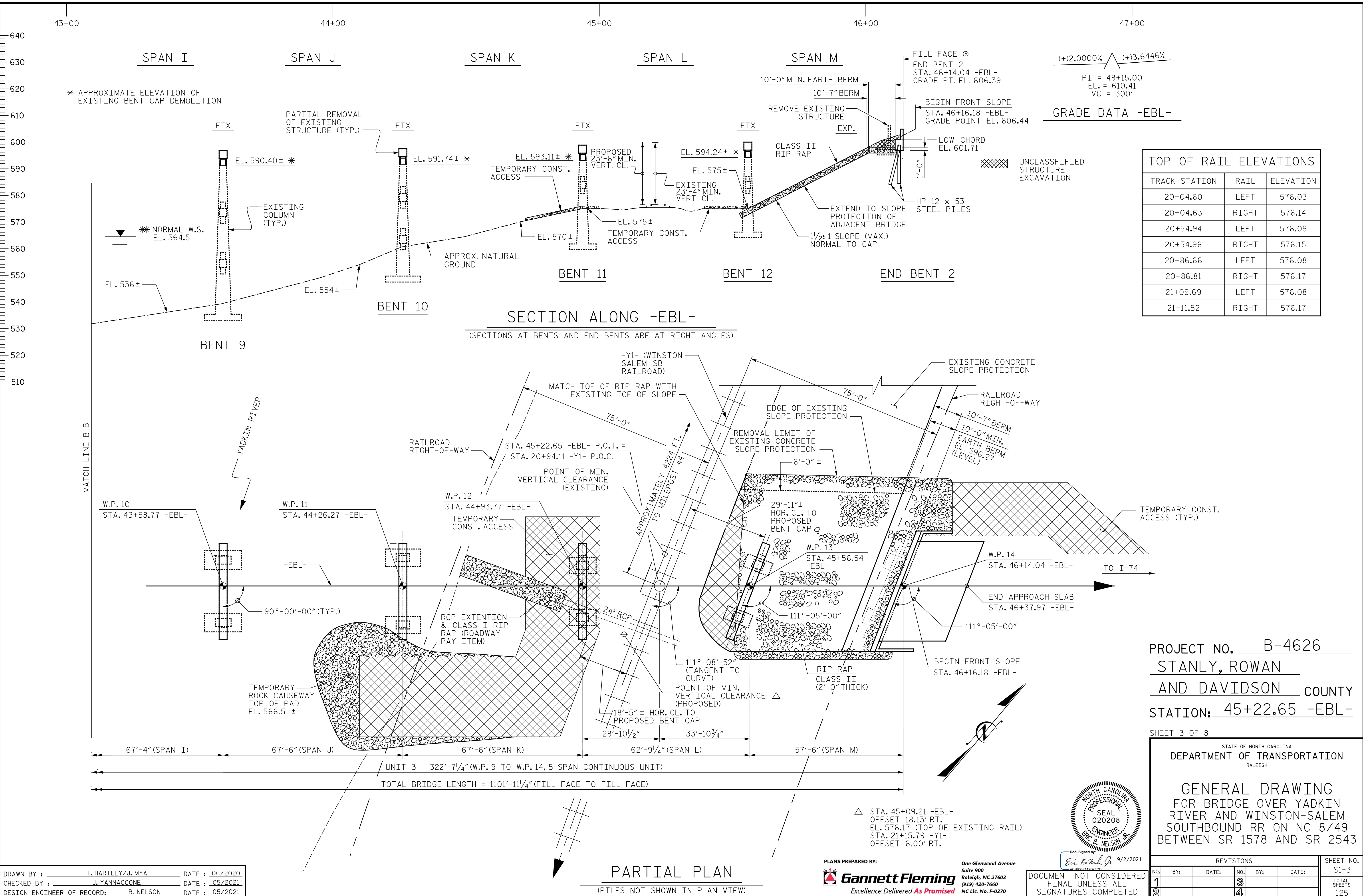
PLANS PREPARED BY:
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 Excellence Delivered As Promised

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 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-2
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2			4			125

DOCUMENT NOT CONSIDERED
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(+2.0000% (+3.6446%
 PI = 48+15.00
 EL. = 610.41
 VC = 300'
 GRADE DATA -EBL-

TOP OF RAIL ELEVATIONS		
TRACK STATION	RAIL	ELEVATION
20+04.60	LEFT	576.03
20+04.63	RIGHT	576.14
20+54.94	LEFT	576.09
20+54.96	RIGHT	576.15
20+86.66	LEFT	576.08
20+86.81	RIGHT	576.17
21+09.69	LEFT	576.08
21+11.52	RIGHT	576.17

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-
 SHEET 3 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER YADKIN
 RIVER AND WINSTON-SALEM
 SOUTHBOUND RR ON NC 8/49
 BETWEEN SR 1578 AND SR 2543

REVISIONS

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

SHEET NO. S1-3
 TOTAL SHEETS 125

DRAWN BY : T. HARTLEY/J. MYA DATE : 06/2020
 CHECKED BY : J. YANNACCONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

PARTIAL PLAN
 (PILES NOT SHOWN IN PLAN VIEW)

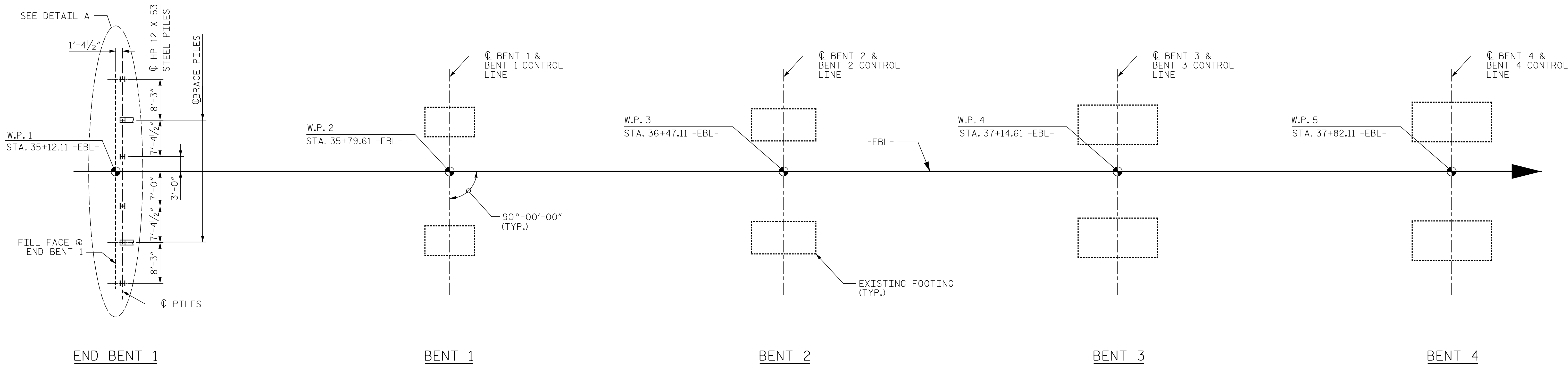
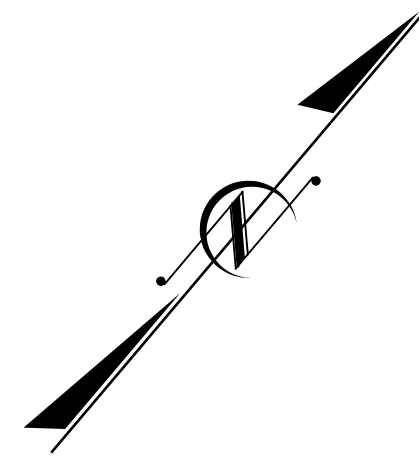
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 NC Lic. No. F-0270



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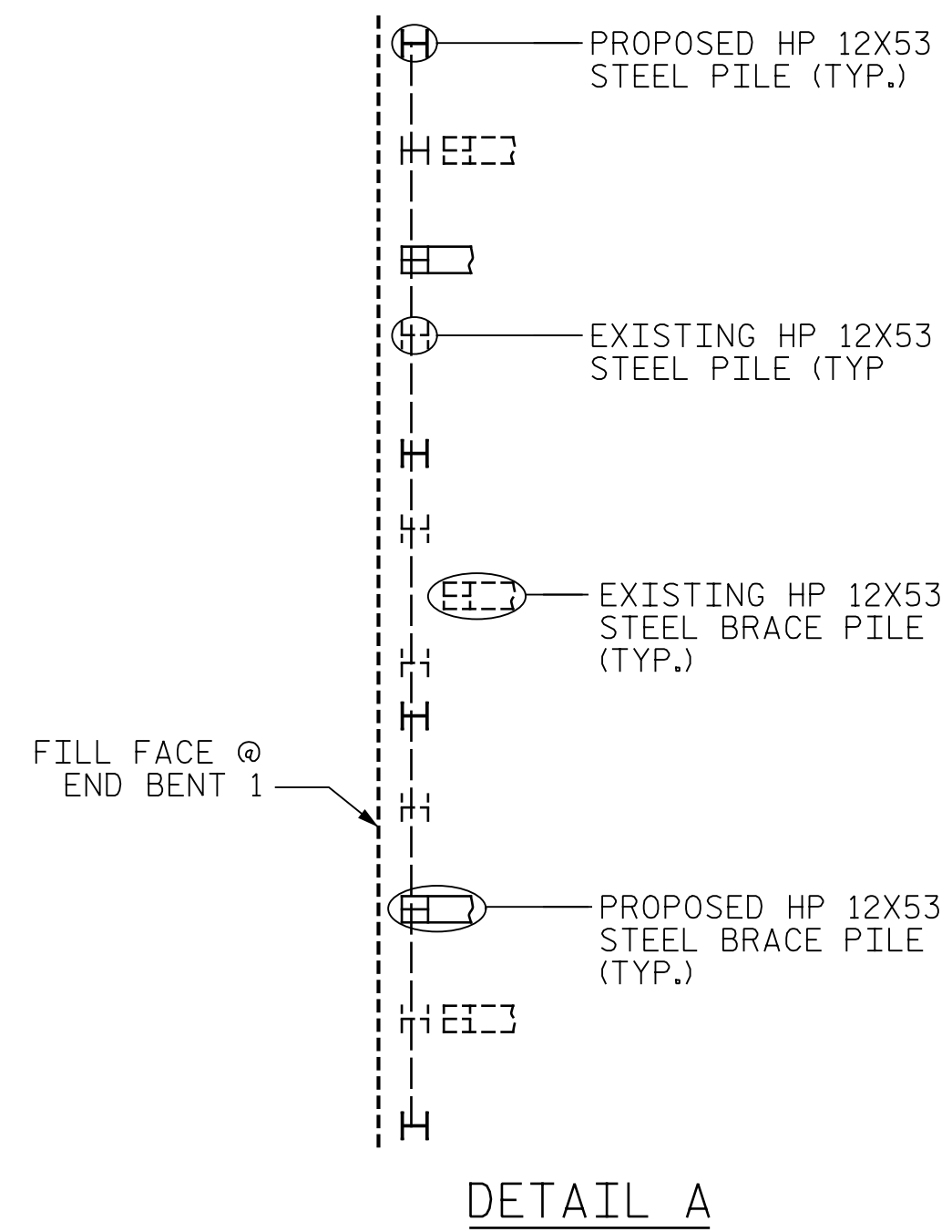


FOUNDATION LAYOUT PLAN

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.
 HP 12 X 53 BRACE STEEL PILES AT END BENT ARE BATTERED 3 TO 12.

NOTES:

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES OF END BENT NO. 1 ARE DESIGNED FOR A FACTORED AXIAL RESISTANCE OF 93 TONS PER PILE.
 DRIVE PILES AT END BENT NO. 1 TO A REQUIRED RESISTANCE OF 155 TONS PER PILE.
- PILES AT END BENT NO. 2 ARE DESIGNED FOR A FACTORED AXIAL RESISTANCE OF 93 TONS PER PILE.
 DRIVE PILES AT END BENT NO. 2 TO A REQUIRED RESISTANCE OF 155 TONS PER PILE.
- STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT NO. 2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

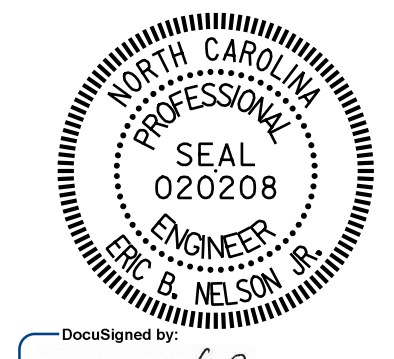


PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 4 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOUNDATION LAYOUT



DocuSigned by:
 Eric B. Nelson 9/2/2021

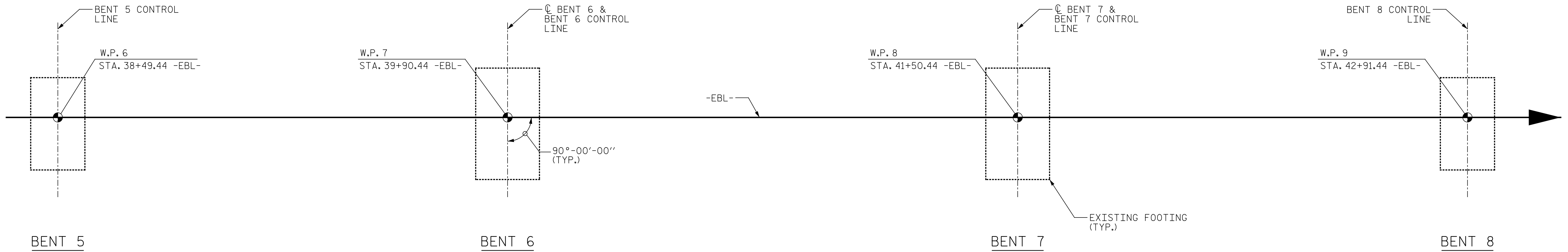
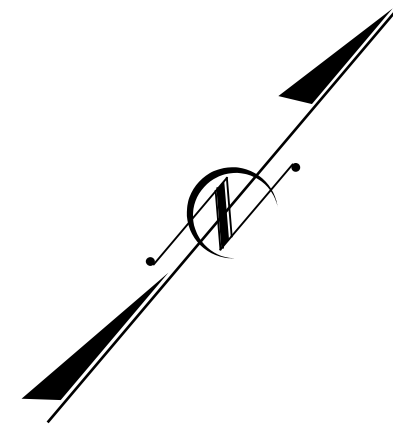
PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

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2			4			125

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANNACCONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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FOUNDATION LAYOUT PLAN

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 5 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOUNDATION LAYOUT



DocuSigned by:
Eric B. Nelson 9/2/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered *As Promised*

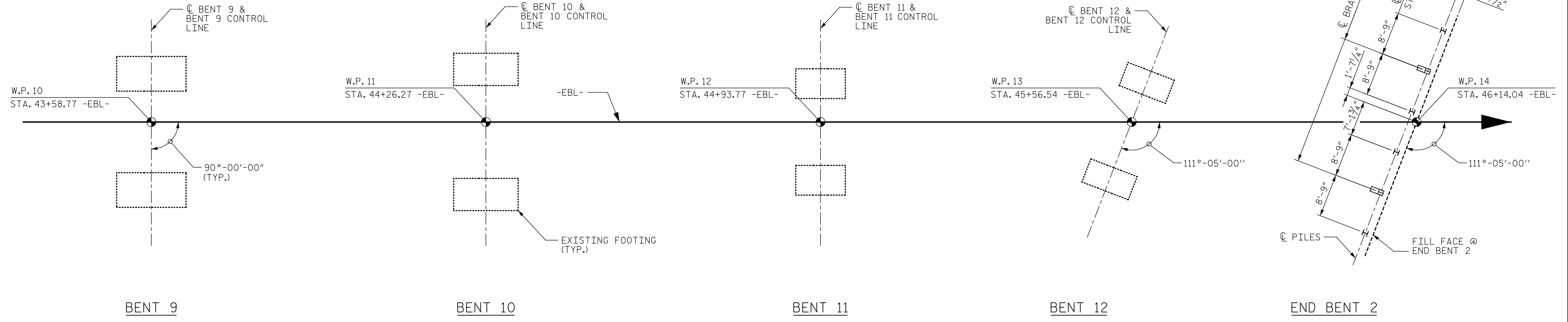
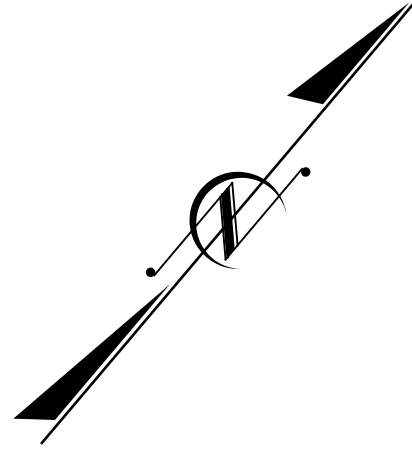
One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

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 SIGNATURES COMPLETED

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANNACCONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

REVISIONS						SHEET NO.
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FOUNDATION LAYOUT PLAN

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.
 HP 12 X 53 BRACE STEEL PILES AT END BENT ARE BATTERED 3 TO 12.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 6 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
FOUNDATION LAYOUT



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 FINAL UNLESS ALL
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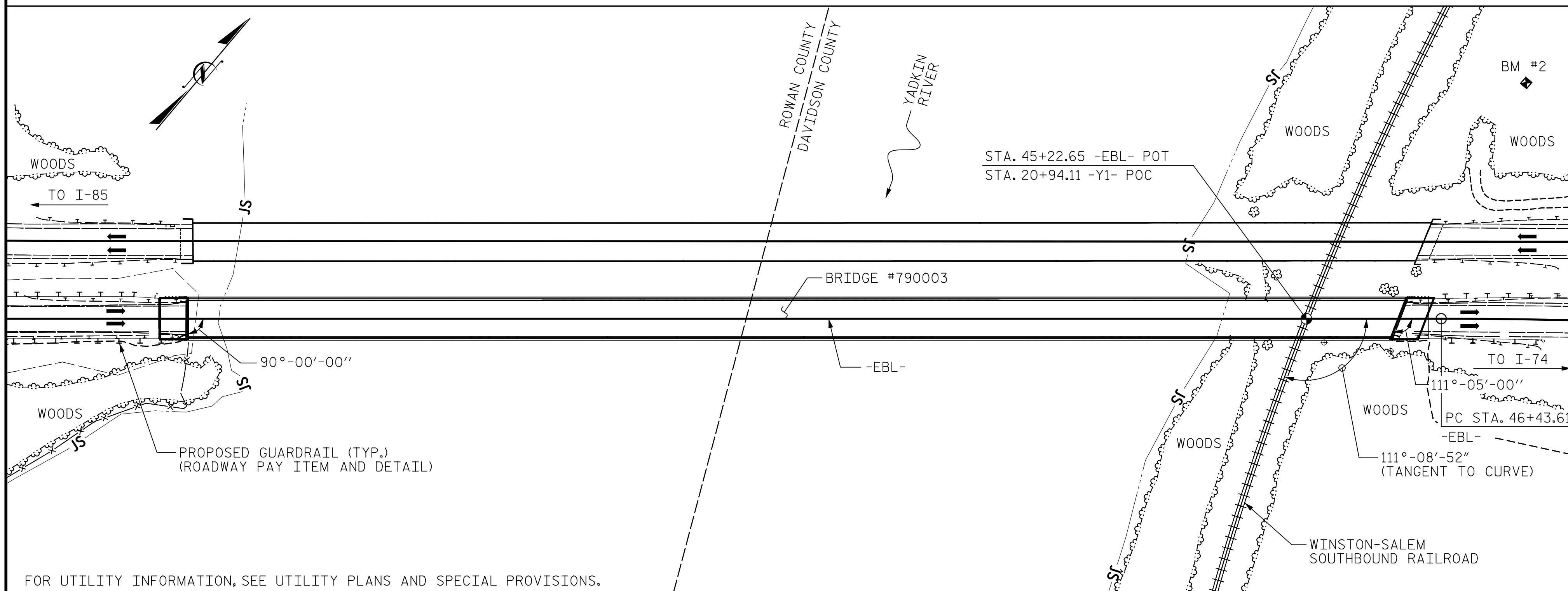
PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

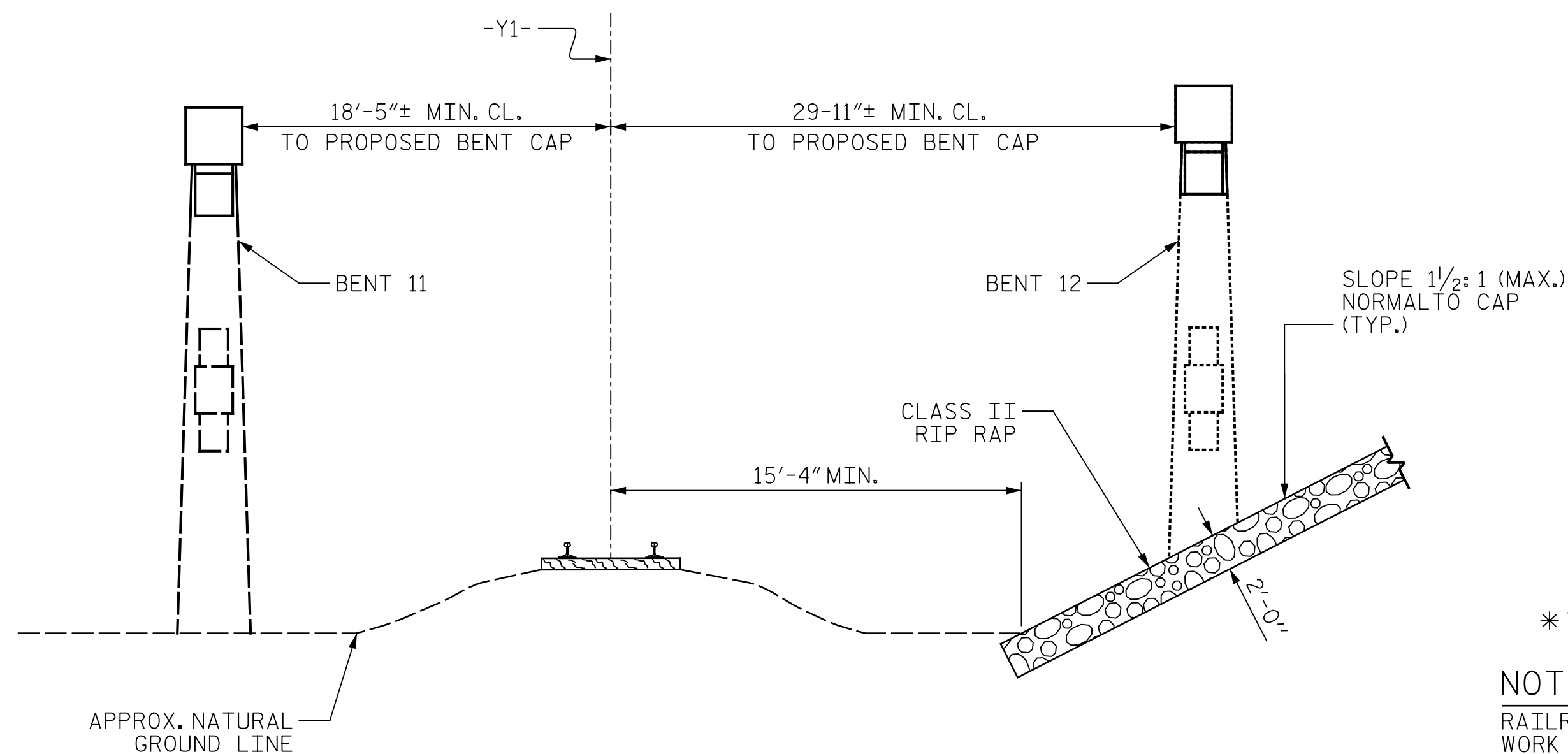
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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-6
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B.M. #2 - RR SPIKE IN BASE OF 24" OAK -EBL- STA. 47+15.97, 211.55' LT. EL. 607.83



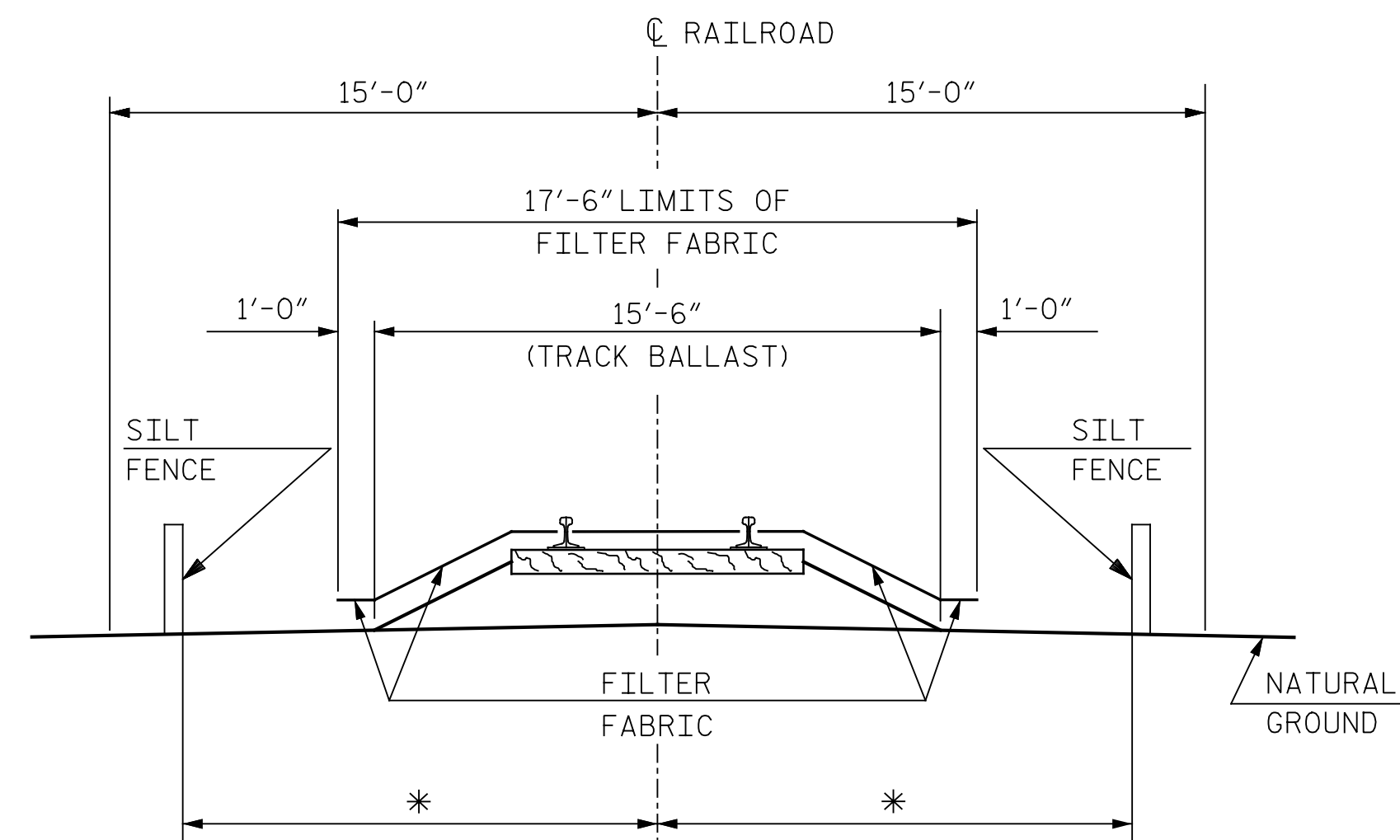
LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.



MINIMUM CLEARANCE - RAILROAD

(LOOKING BACK STATION ALONG RAILROAD)



RAILROAD EROSION CONTROL DETAIL

* TO BE DETERMINED BY THE RESIDENT ENGINEER IN CONSULTATION WITH THE RAILROAD ENGINEER.

NOTES:

RAILROAD EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO PERFORMING ANY WORK IN THE RAILROAD RIGHT-OF-WAY.

ADDITIONAL EROSION CONTROL MEASURES FOR PROTECTION OF RAILROAD DITCHES MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.

NO SEPARATE PAYMENT WILL BE MADE FOR RAILROAD EROSION CONTROL MEASURES.

LIMITS OF SILT FENCE AND FILTER FABRIC PARALLEL TO RAILROAD SHALL EXTEND A MINIMUM OF 25'-0" OUTSIDE EDGE OF SUPERSTRUCTURE OR TOE OF SLOPE OF CONSTRUCTION. A GREATER LENGTH OF SILT FENCE OR FILTER FABRIC MAY BE REQUIRED IF SO DIRECTED BY THE ENGINEER.

FILTER FABRIC TO BE NAILED TO TIMBER RAIL TIES WITH PRIME SOURCE "GRIP CAP" OR EQUIVALENT. FILTER FABRIC ON SHOULDER TO BE SECURED AS DIRECTED BY THE ENGINEER AND RAILROAD.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 7 OF 8

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER YADKIN
 RIVER AND WINSTON-SALEM
 SOUTHBOUND RR ON NC 8/49
 BETWEEN SR 1578 AND SR 2543



DocuSigned by:
 Eric B. Nelson
 9/2/2021
 NC20002119274CD

DRAWN BY : J. MYA DATE : 06/2020
 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:

 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-7
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2			4			125

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 10/11/2021 8:56:10 AM pdf_color_gfclt_FS.plt Rowan.pen.tbl

TOTAL BILL OF MATERIAL

	PIPE PLUGS	24" ENCASEMENT PIPE	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMP ACCESS	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	APPROX. 1,169,400 LBS. STRUCTURAL STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	HP 12x53 STEEL PILES	STEEL PILE POINTS	CONCRETE BARRIER RAIL	RAP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	STRIP SEAL EXPANSION JOINTS
	CU. YDS.	LIN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LUMP SUM	EA.	LIN. FT.	EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	CU. FT.	LIN. FT.	LUMP SUM
SUPERSTRUCTURE	-	-	-	-	-	-	43,161	37,960	-	-	-	-	-	-	-	2,238.34	-	-	-	-	-	-
END BENT 1	0.1	34.0	-	-	-	-	-	-	35.1	-	4,702	-	-	330.0	-	-	290	325	-	-	-	-
BENT 1	-	-	-	-	-	-	-	-	18.8	-	3,891	-	-	-	-	-	-	-	-	2.0	-	-
BENT 2	-	-	-	-	-	-	-	-	18.8	-	3,891	-	-	-	-	-	-	-	-	3.3	-	-
BENT 3	-	-	-	-	-	-	-	-	18.8	-	3,891	-	-	-	-	-	-	-	-	10.5	3.0	-
BENT 4	-	-	-	-	-	-	-	-	18.8	-	3,891	-	-	-	-	-	-	-	-	8.3	2.0	-
BENT 5	-	-	-	-	-	-	-	-	55.9	-	8,590	-	-	-	-	-	-	-	-	3.7	-	-
BENT 6	-	-	-	-	-	-	-	-	53.7	-	11,345	-	-	-	-	-	-	-	-	-	-	-
BENT 7	-	-	-	-	-	-	-	-	53.7	-	11,345	-	-	-	-	-	-	-	-	-	-	-
BENT 8	-	-	-	-	-	-	-	-	56.1	-	8,590	-	-	-	-	-	-	-	-	3.2	-	-
BENT 9	-	-	-	-	-	-	-	-	18.8	-	3,891	-	-	-	-	-	-	-	-	13.6	2.0	-
BENT 10	-	-	-	-	-	-	-	-	18.8	-	3,891	-	-	-	-	-	-	-	-	10.7	-	-
BENT 11	-	-	-	-	-	-	-	-	18.8	-	3,891	-	-	-	-	-	-	-	-	19.7	-	-
BENT 12	-	-	-	-	-	-	-	-	20.4	-	4,202	-	-	-	-	-	-	-	-	44.1	-	-
END BENT 2	0.1	35.0	-	-	-	-	-	-	37.9	-	4,385	-	-	90.0	6	-	450	500	-	-	-	-
TOTAL	0.2	69.0	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	43,161	37,960	444.4	LUMP SUM	80,396	LUMP SUM	12	420.0	6	2,238.34	740	825	LUMP SUM	119.1	7.0	LUMP SUM

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

THE RAILROAD TRACK TOP OF RAIL ELEVATIONS ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE TOP OF RAIL ELEVATIONS AND REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 45+22.65 -EBL-.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 5 OR SYSTEM 6 OF THE STRUCTURAL STEEL SHOP COATINGS PROGRAM AND SECTION 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PARTIAL REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY PART OF THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE, THE DAMAGED AREA SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

ANY DAMAGE TO EXISTING REINFORCING STEEL THAT IS TO REMAIN IN PLACE DURING THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND PERFORMED AT NO ADDITIONAL COST TO THE DEPARTMENT.

ALL PAVEMENT MARKING WILL BE IN ACCORDANCE WITH THE TRANSPORTATION MANAGEMENT PLANS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR WORK IN, OVER OR ADJACENT TO NAVIGABLE WATERS, SEE SPECIAL PROVISIONS.

FOR NAVIGATIONAL SAFETY PLAN, SEE SPECIAL PROVISIONS.

FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR STRIP SEALS, SEE SPECIAL PROVISIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 45+22.65 -EBL-".

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 8 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BILL OF MATERIAL
AND GENERAL NOTES



DocuSigned by:
Eric B. Nelson
10/11/2021
AC280802116074CDD

PLANS PREPARED BY:
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 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered As Promised
 One Glenwood Avenue
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-8
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANNACCONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR STEEL GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								SERVICE II LIMIT STATE								COMMENT NUMBER		
						MOMENT				SHEAR				MOMENT										
						LIVE-LOAD FACTORS (LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.00	-	1.75	0.750	1.00	D	EL	67.50	1.00	1.21	F	I	14.00	1.30	0.891	1.19	F	EL	42.00		
	HL-93 (OPERATING)	N/A		1.29	-	1.35	0.750	1.29	I	EL	66.38	1.00	1.57	F	I	14.00	1.00	0.891	1.55	F	EL	42.00		
	HS-20 (INVENTORY)	36.00	②	1.00	36.000	1.75	0.750	1.00	I	I	66.38	1.00	1.00	M	I	66.38	1.30	0.731	1.33	F	I	42.00		
	HS-20 (OPERATING)	36.00		1.67	60.125	1.35	0.750	1.67	I	I	66.38	1.00	1.67	M	I	66.38	1.00	0.731	2.21	F	I	42.00		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.39	59.270	1.40	0.891	5.59	F	EL	42.00	1.00	5.34	F	I	14.00	1.30	0.891	4.39	F	EL	42.00	
		SNGARBS2	20.000		3.10	62.000	1.40	0.891	3.95	F	EL	42.00	1.00	3.73	F	I	14.00	1.30	0.891	3.10	F	EL	42.00	
		SNAGRIS2	22.000		2.87	63.140	1.40	0.891	3.65	F	EL	42.00	1.00	3.44	F	I	14.00	1.30	0.891	2.87	F	EL	42.00	
		SNCOTTS3	27.250		2.19	59.680	1.40	0.891	2.79	F	EL	42.00	1.00	2.66	F	I	14.00	1.30	0.891	2.19	F	EL	42.00	
		SNAGGRS4	34.925		1.78	62.170	1.40	0.891	2.26	F	EL	42.00	1.00	2.16	F	I	14.00	1.30	0.891	1.78	F	EL	42.00	
		SNS5A	35.550		1.75	62.210	1.40	0.891	2.23	F	EL	42.00	1.00	2.17	F	I	14.00	1.30	0.891	1.75	F	EL	42.00	
		SNS6A	39.950		1.58	63.120	1.40	0.891	2.02	F	EL	42.00	1.00	1.96	F	I	14.00	1.30	0.891	1.58	F	EL	42.00	
		SNS7B	42.000		1.51	63.420	1.40	0.891	1.92	F	EL	42.00	1.00	1.90	F	I	14.00	1.30	0.891	1.51	F	EL	42.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.96	64.680	1.40	0.750	2.46	D	EL	67.50	1.00	2.35	F	I	14.00	1.30	0.891	1.96	F	EL	42.00	
		TNT4A	33.075		1.92	63.500	1.40	0.891	2.44	F	EL	42.00	1.00	2.31	F	I	14.00	1.30	0.891	1.92	F	EL	42.00	
		TNT6A	41.600		1.56	64.900	1.40	0.891	1.99	F	EL	42.00	1.00	1.99	F	I	14.00	1.30	0.891	1.56	F	EL	42.00	
		TNT7A	42.000		1.56	65.520	1.40	0.891	1.98	F	EL	42.00	1.00	1.95	F	I	14.00	1.30	0.891	1.56	F	EL	42.00	
		TNT7B	42.000		1.55	65.100	1.40	0.891	1.98	F	EL	42.00	1.00	1.87	F	I	14.00	1.30	0.891	1.55	F	EL	42.00	
TNAGRIT4	43.000		1.51	64.930	1.40	0.891	1.92	F	EL	42.00	1.00	1.82	F	I	14.00	1.30	0.891	1.51	F	EL	42.00			
TNAGT5A	45.000		1.45	65.250	1.40	0.891	1.85	F	EL	42.00	1.00	1.78	F	I	14.00	1.30	0.891	1.45	F	EL	42.00			
TNAGT5B	45.000		③	1.43	64.350	1.40	0.891	1.82	F	EL	42.00	1.00	1.73	F	I	14.00	1.30	0.891	1.43	F	EL	42.00		
FATIGUE	HL-93 (INVENTORY)	$\gamma_{LL}=0.75$																						

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{OW}
	STRENGTH I	1.25	1.50
	SERVICE II	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE II LIMIT STATES.

ALLOWABLE STRESS FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

THE BRIDGE CAN ACCOMMODATE A WATER LINE UP TO 12 INCHES IN DIAMETER. HOWEVER, THE LOAD RATINGS REPORTED ON THIS SHEET DO NOT INCLUDE ANY EXTRA LOAD DUE TO A WATER LINE.

COMMENTS:

- THE DESIGN RATING OF THIS BRIDGE UTILIZED LINE GIRDER ANALYSIS.
- FATIGUE RATING IS NOT REQUIRED OR REPORTED SINCE GIRDER DESIGN DOES NOT INCLUDE FATIGUE-PRONE DETAILS.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93) **

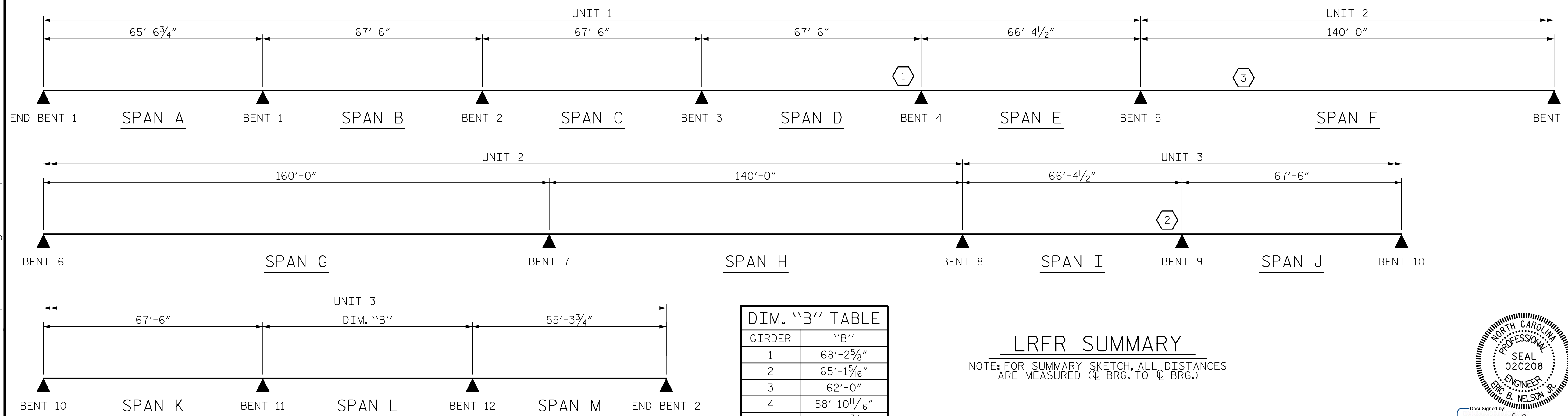
② DESIGN LOAD RATING (HS-20) **

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

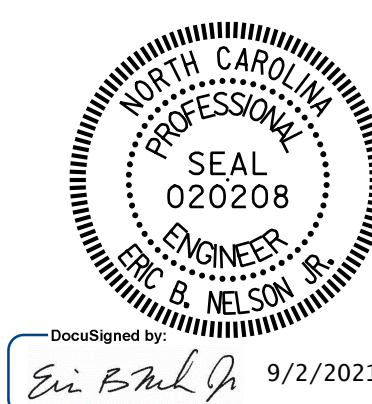
GIRDER LOCATION

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



PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

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



DRAWN BY: T. FORD DATE: 04/2021
 CHECKED BY: R. FISHER DATE: 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE: 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

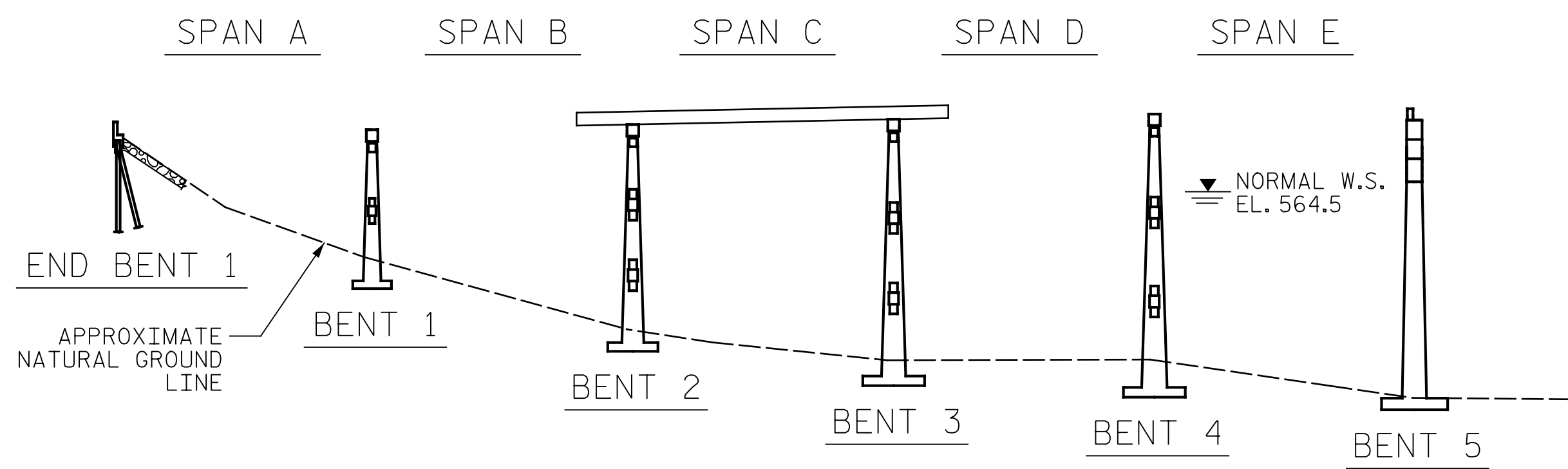
One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

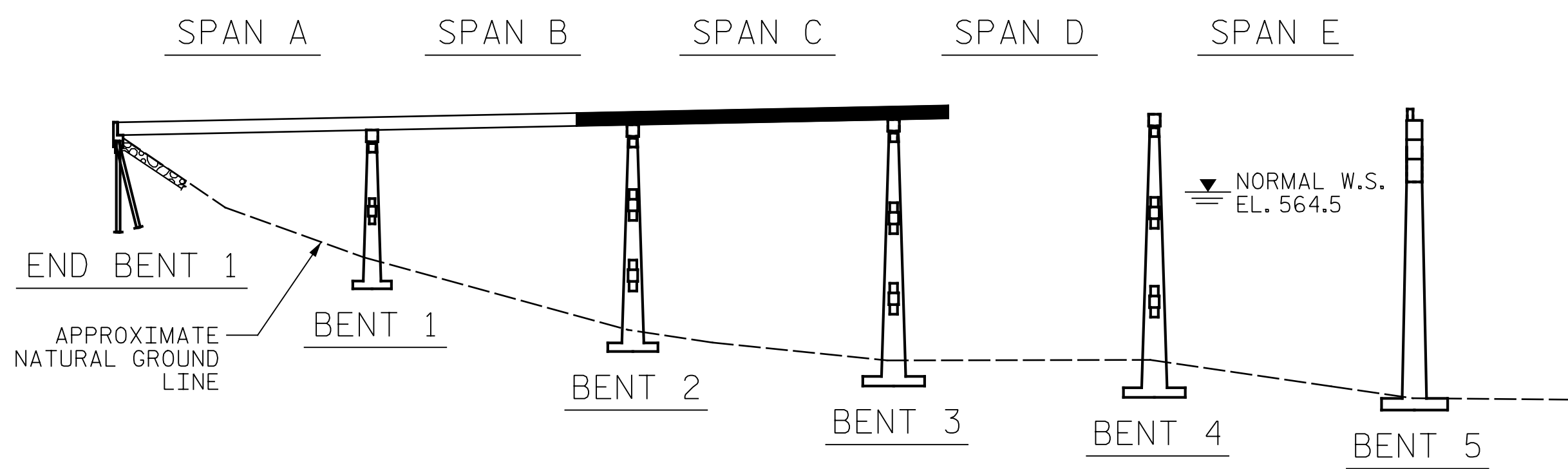
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-9
1			3			TOTAL SHEETS
2			4			125

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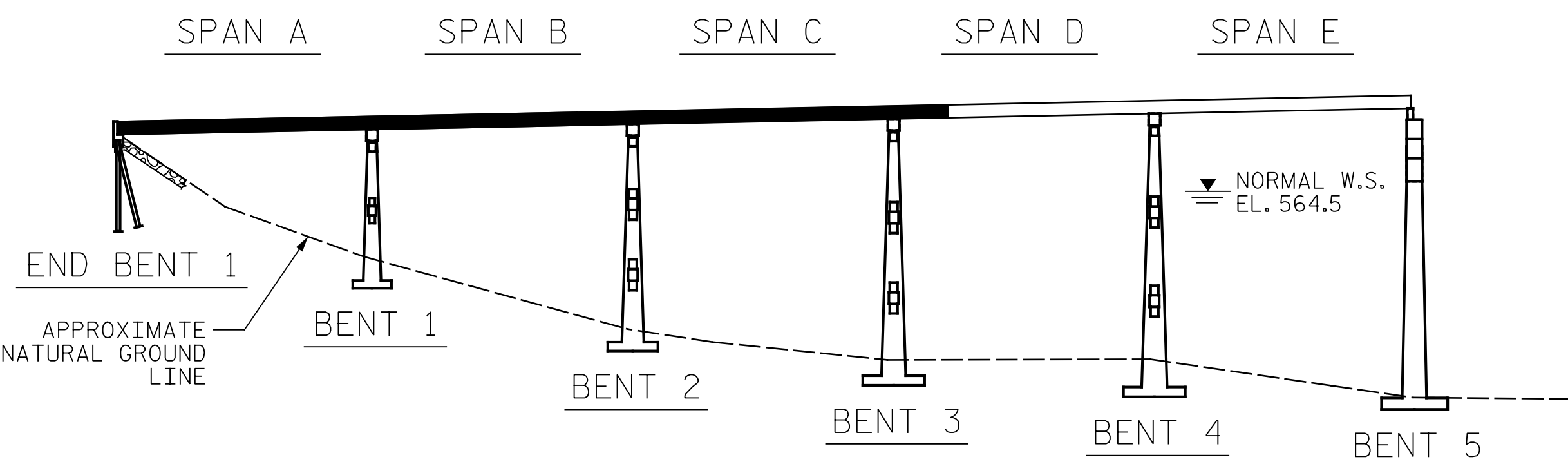
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UNIT 1 - STEP 1 GIRDER ERECTION



UNIT 1 - STEP 2 GIRDER ERECTION



UNIT 1 - STEP 3 GIRDER ERECTION

ERECTION NOTES

ERECT A MINIMUM OF TWO GIRDERS WITH ALL DIAPHRAGM/CROSSFRAMES BETWEEN GIRDERS IN PLACE AND THE BOLTS TIGHTENED PRIOR TO RELEASING THE GIRDERS.

ERECT EACH SUBSEQUENT GIRDER WITH DIAPHRAGMS/CROSSFRAMES CONNECTING TO THE ADJACENT PREVIOUSLY ERECTED GIRDER AND TIGHTEN ALL BOLTS BEFORE RELEASING.

THE STRUCTURAL STEEL SHALL REMAIN SUPPORTED DURING ERECTION IN ITS CAMBERED POSITION. TEMPORARY SUPPORTS (TEMPORARY BENTS OR PIER BRACKETS) AS SHOWN SHALL BE USED.

TEMPORARY BENTS SHALL REMAIN IN PLACE UNTIL ALL DIAPHRAGMS/CROSSFRAMES ARE IN PLACE AND ALL HIGH STRENGTH BOLTS ARE TIGHTENED.

TEMPORARY BENTS SHALL PROVIDE BEARING AT CONNECTOR PLATE LOCATIONS, WHEN CONNECTOR PLATES ARE USED AS TEMPORARY BEARING STIFFENERS, DIAPHRAGMS MUST BE ATTACHED.

THE CONTRACTOR'S ERECTION PLANS SHALL INCLUDE A METHOD OF TEMPORARY BENT REMOVAL THAT WILL UNIFORMLY TRANSFER THE STRUCTURAL WEIGHT TO THE DIAPHRAGMS/CROSSFRAMES AND THE GIRDERS WILL REMAIN IN THE CAMBERED POSITIONS.

PLANS FOR TEMPORARY BENT ERECTION AND REMOVAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING THE TEMPORARY BENTS. THE DESIGN SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA. THE CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WORKING DRAWINGS AND CALCULATIONS FOR APPROVAL BY THE ENGINEER.

DURING GIRDER ERECTION PROCEDURE, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY LATERAL BRACING AND OTHER MEANS OF SUPPORT, AS REQUIRED TO ENSURE STABILITY OF THE GIRDER, AVOID UPLIFT OF THE GIRDERS AND TEMPORARY SUPPORTS TO ENSURE PLUMBNESS OF THE GIRDERS IN THE FINAL POSITION.

NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR PROVIDING THE TEMPORARY SUPPORTS, TEMPORARY LATERAL BRACING OR OTHER MEANS OF SUPPORT. THE COST FOR ALL MATERIALS, EQUIPMENT, TOOLS, DESIGN, LABOR AND ANY INCIDENTALS NECESSARY TO PROVIDE THE TEMPORARY SUPPORTS SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM BID PRICE FOR STRUCTURAL STEEL.

THE CONTRACTOR IS ADVISED THAT THE EXISTING GROUND UNDER THE PROPOSED BRIDGE MAY HAVE STEEP SLOPES AND/OR HEAVY VEGETATION.

THE CONTRACTOR MAY SUBMIT AN ALTERNATE ERECTION METHOD TO THE ENGINEER FOR REVIEW AND APPROVAL.

FOR TEMPORARY BENTS, SEE SPECIAL PROVISIONS.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GIRDER ERECTION
 DETAILS
 UNIT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-10
1			3			TOTAL SHEETS
2			4			125



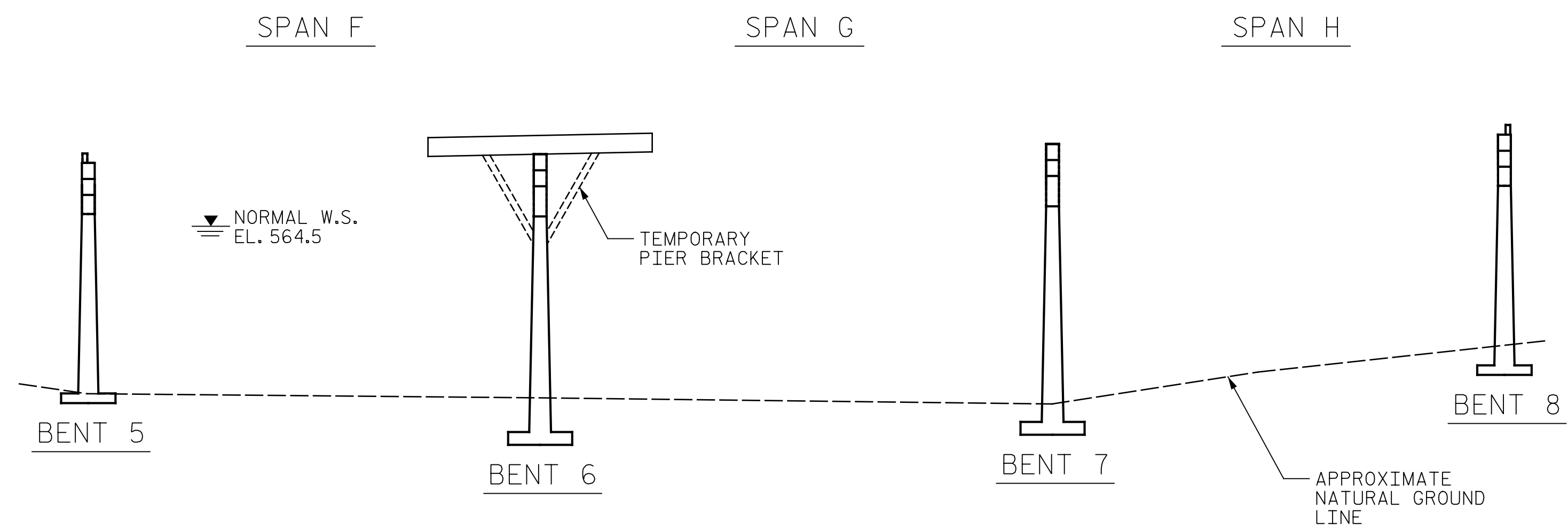
DocuSigned by:
 Eric B. Nelson
 9/2/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

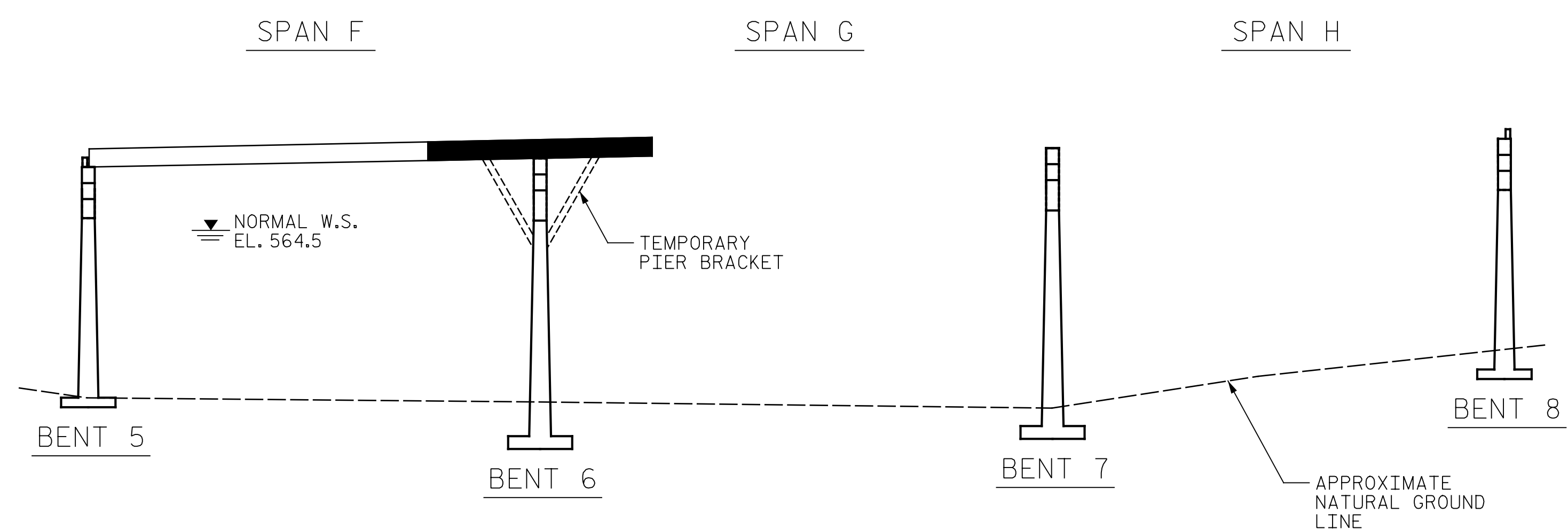
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

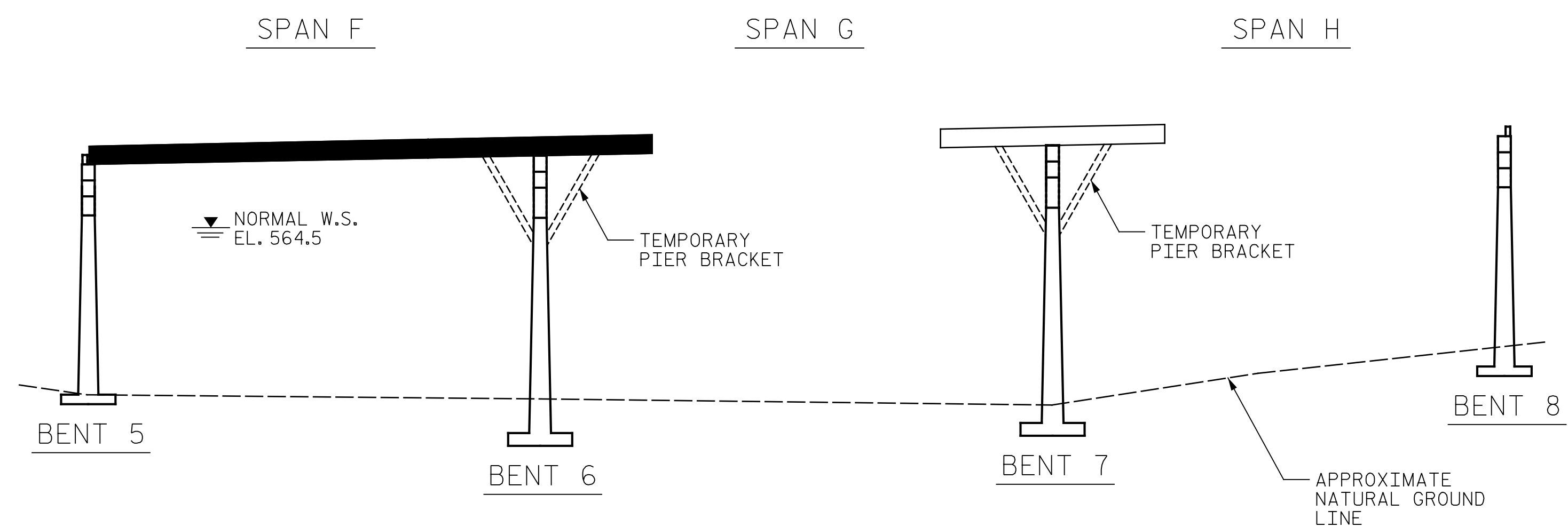
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UNIT 2 - STEP 1 GIRDER ERECTION



UNIT 2 - STEP 2 GIRDER ERECTION



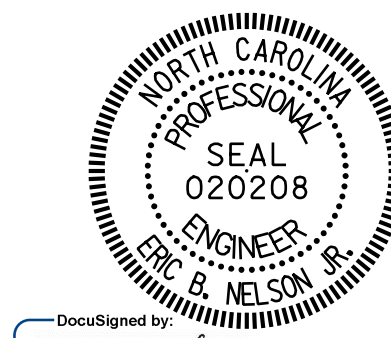
UNIT 2 - STEP 3 GIRDER ERECTION

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GIRDER ERECTION
 DETAILS
 UNIT 2



DocuSigned by:
 Eric B. Nelson
 9/2/2021
 NC28002119274C0

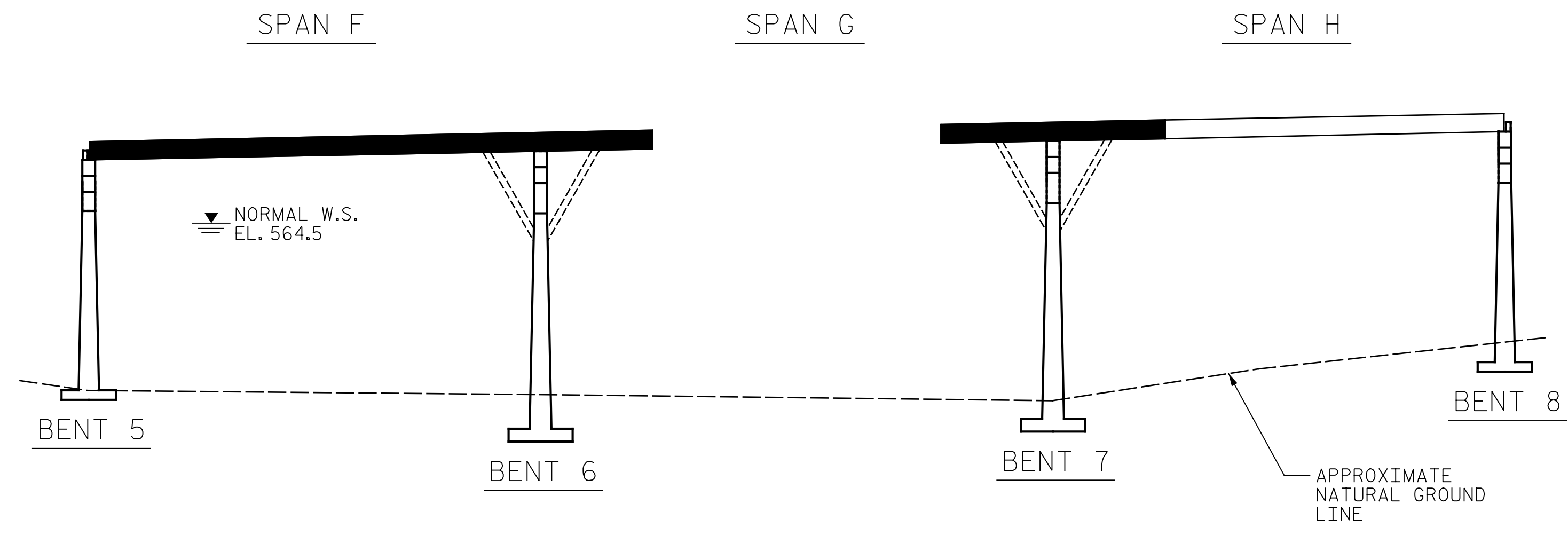
DRAWN BY : T. FORD DATE : 04/2021
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 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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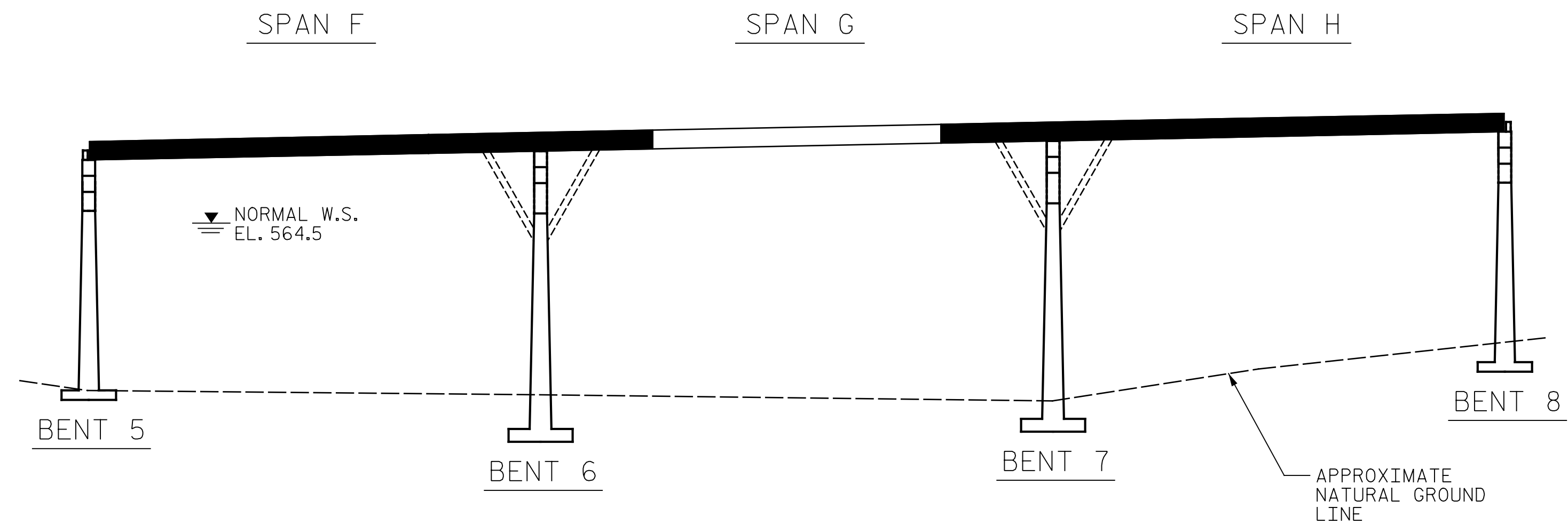
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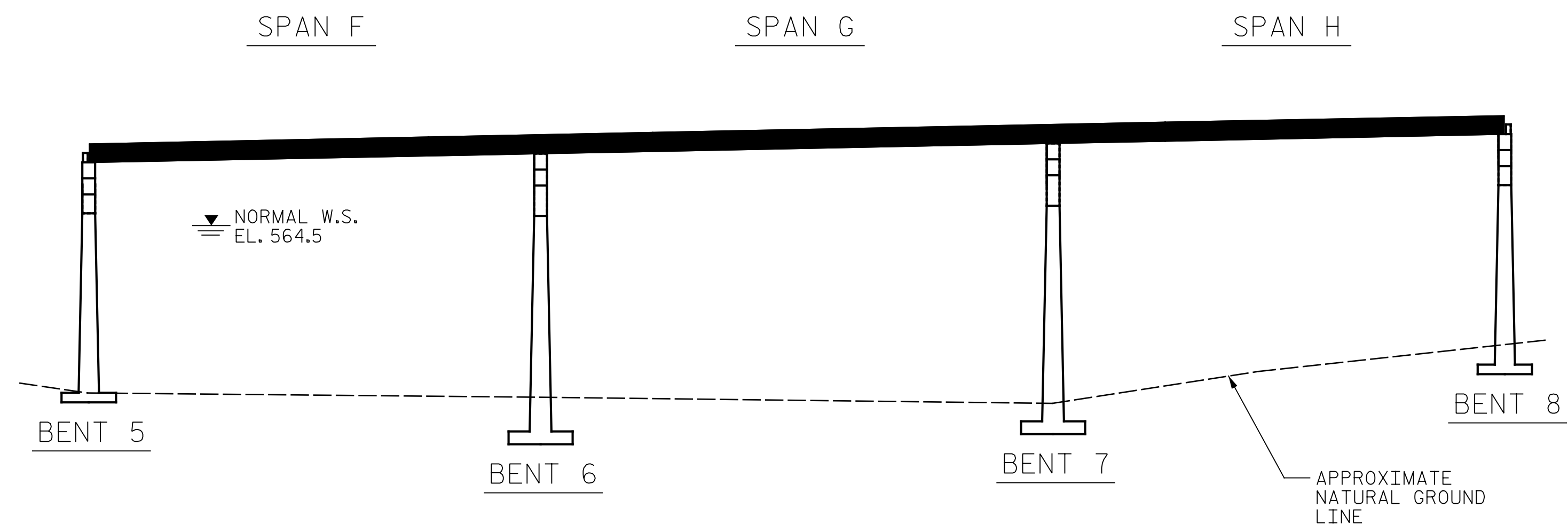
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UNIT 2 - STEP 4 GIRDER ERECTION



UNIT 2 - STEP 5 GIRDER ERECTION



UNIT 2 - STEP 6 GIRDER ERECTION

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
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GIRDER ERECTION
 DETAILS
 UNIT 2



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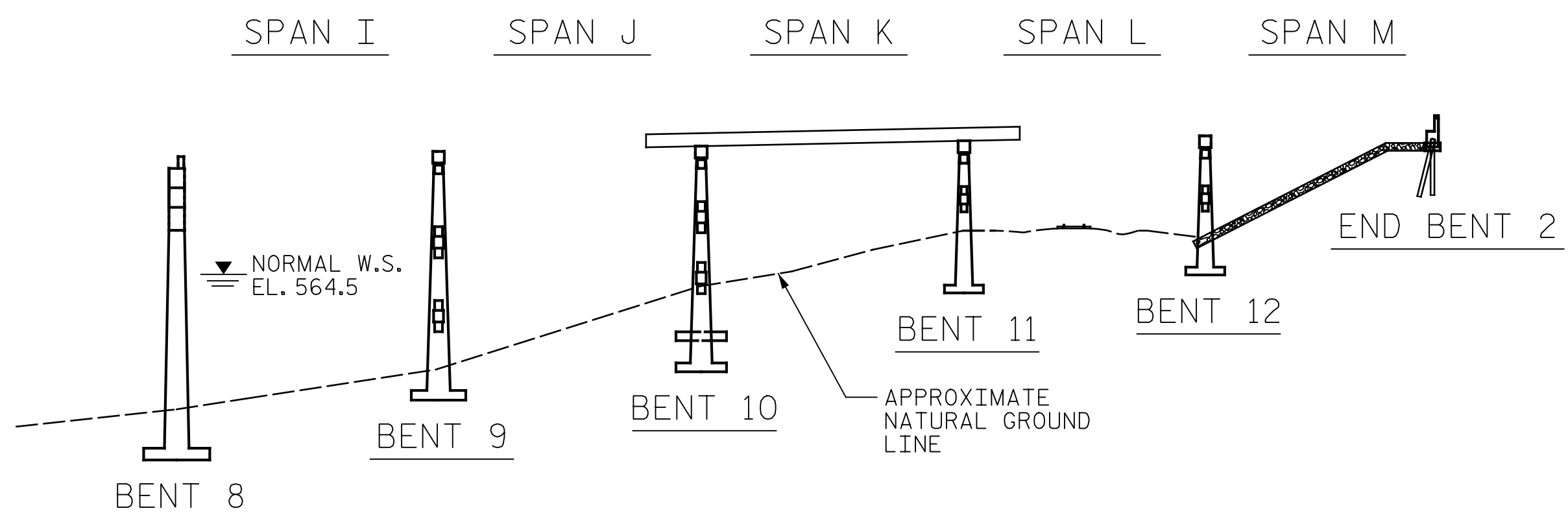
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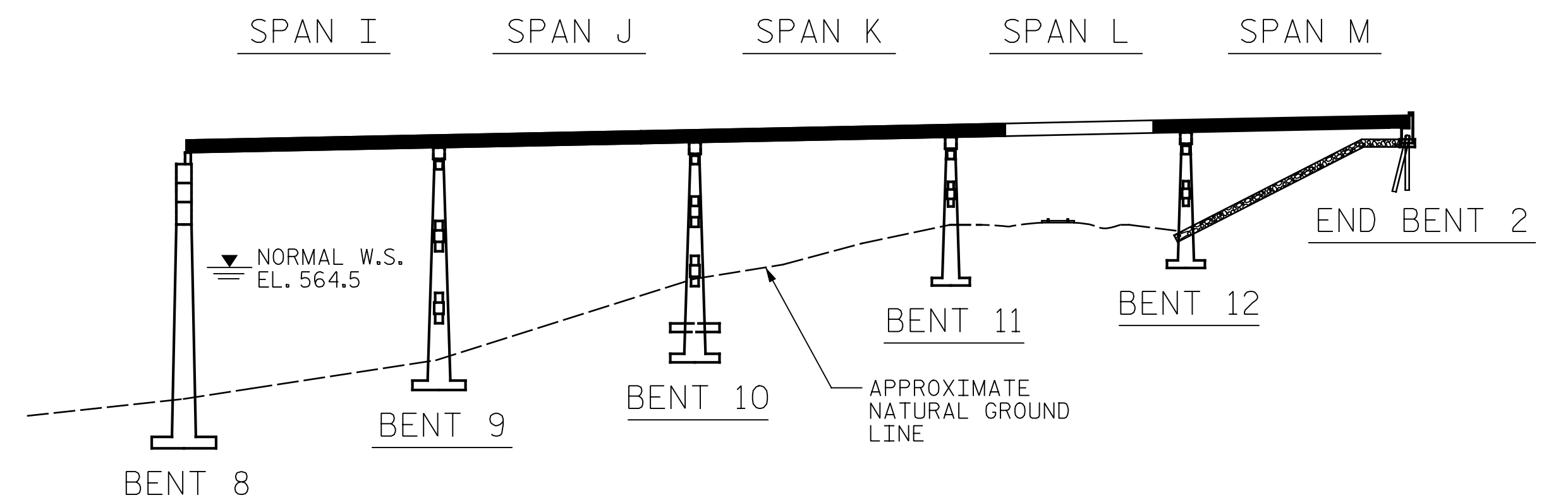
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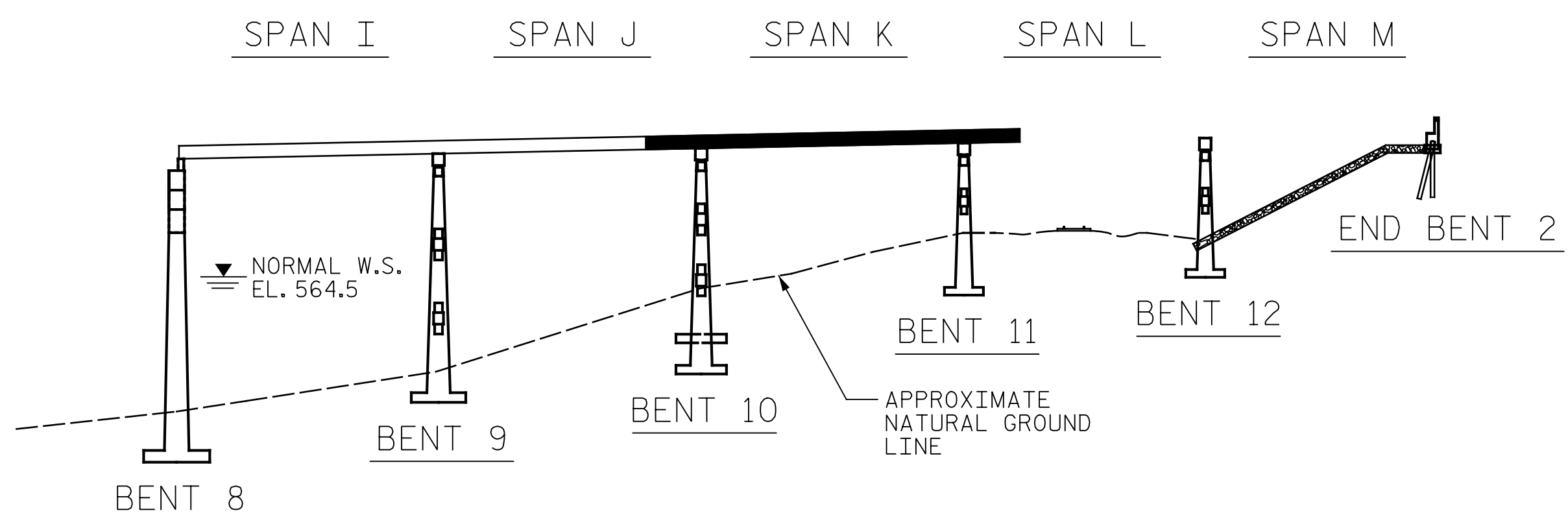
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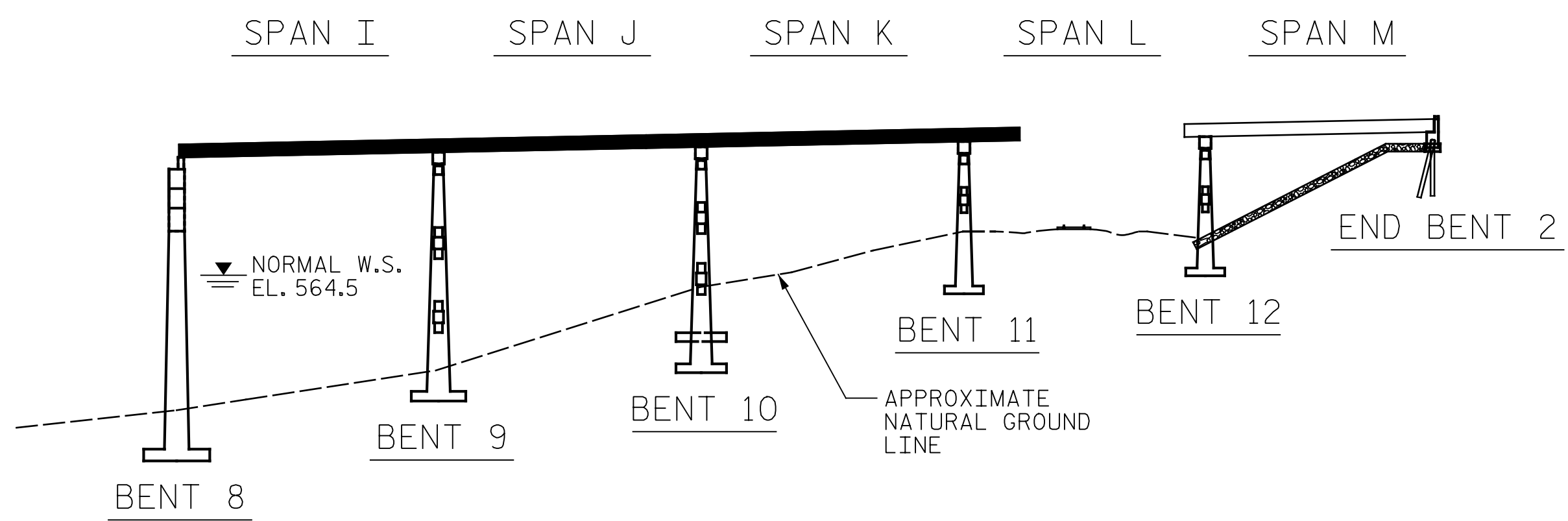
UNIT 3 - STEP 1 GIRDER ERECTION



UNIT 3 - STEP 4 GIRDER ERECTION



UNIT 3 - STEP 2 GIRDER ERECTION



UNIT 3 - STEP 3 GIRDER ERECTION

PROJECT NO. B-4626
STANLY, ROWAN
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SHEET 4 OF 4

STATE OF NORTH CAROLINA
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 DETAILS
 UNIT 3



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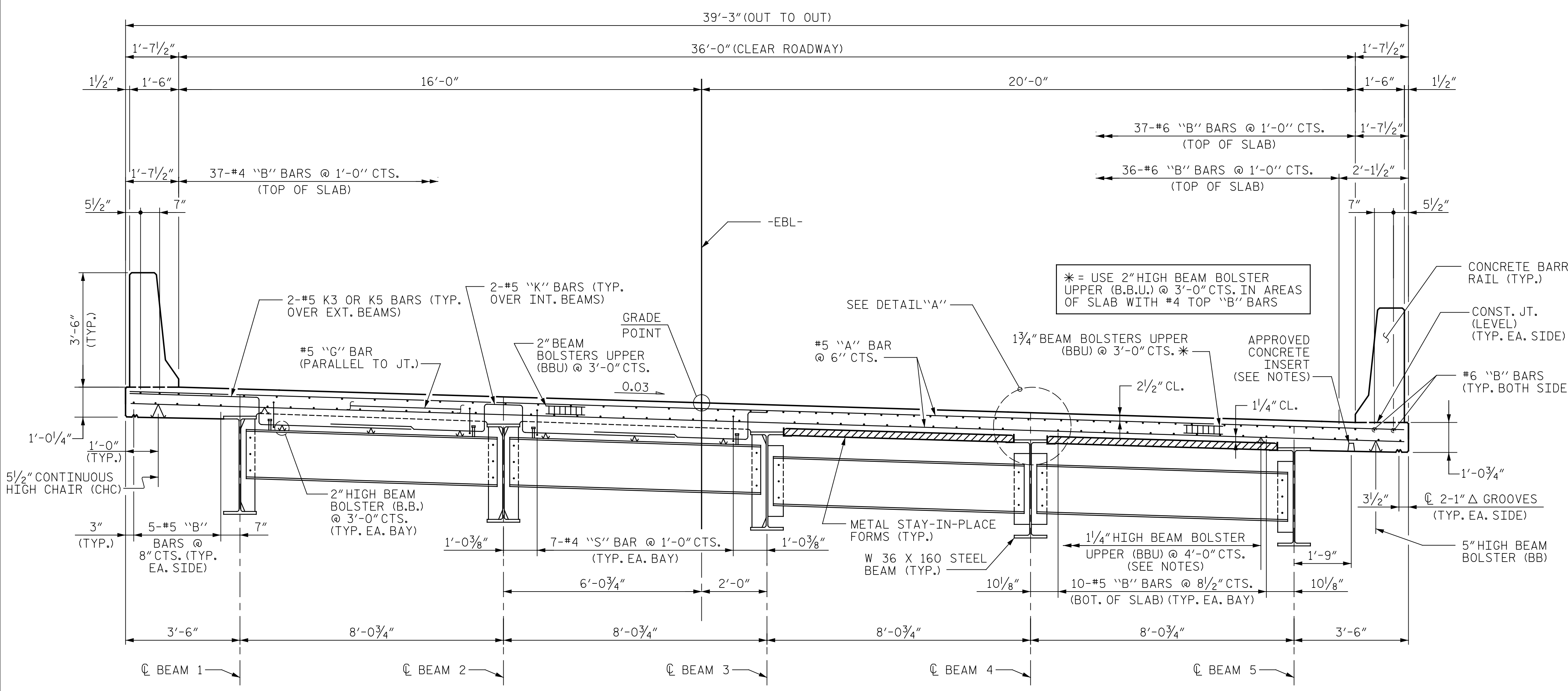
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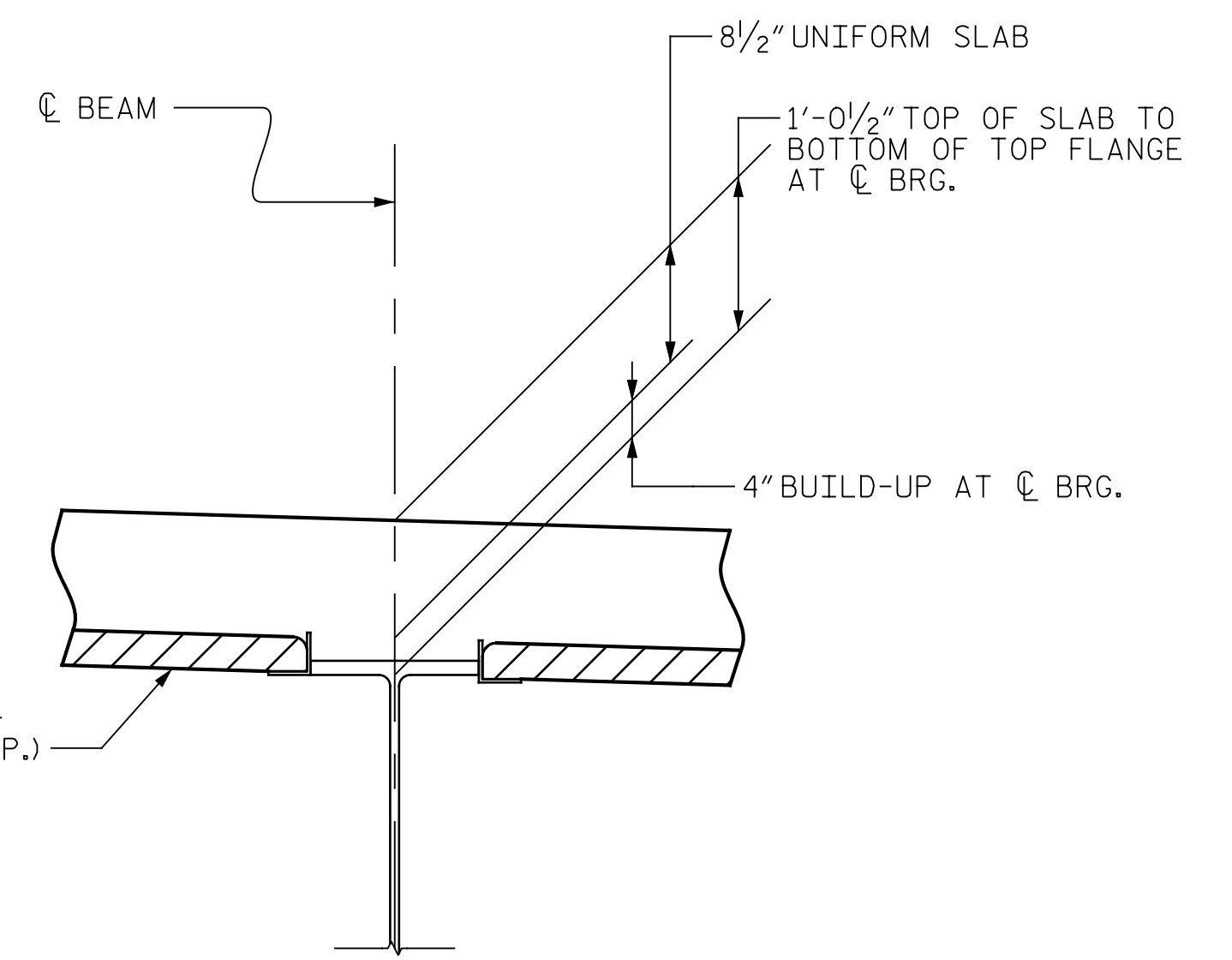
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HALF SECTION AT END DIAPHRAGM
(TYP. @ END BENTS, BENTS 5 & 8)

HALF SECTION AT INTERMEDIATE & BENT DIAPHRAGM
(TYP. @ BENTS 1, 2, 3, 4, 9, 10, 11, & 12 AND IN SPANS)

TYPICAL SECTION



DETAIL "A"

- NOTES:**
- PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.
 - METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO BEAM OR GIRDER FLANGES IN THE ZONES REQUIRING CHARPY V-NOTCH TEST. SEE STRUCTURAL STEEL DETAIL SHEETS.
 - PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.
 - STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.
 - #5 "G" BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.
 - THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND BEAM/GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS.
 - THE TYPE OF CONCRETE INSERT IS SUBJECT TO THE APPROVAL OF THE ENGINEER. PAYMENT FOR CONCRETE INSERTS IS INCLUDED IN THE CONTRACT UNIT PRICE BID FOR REINFORCED CONCRETE DECK SLAB.

PROJECT NO. B-4626
STANLY, ROWAN
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SHEET 1 OF 3

STATE OF NORTH CAROLINA
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SUPERSTRUCTURE
TYPICAL SECTION
UNITS 1 & 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-14
1			3			TOTAL SHEETS
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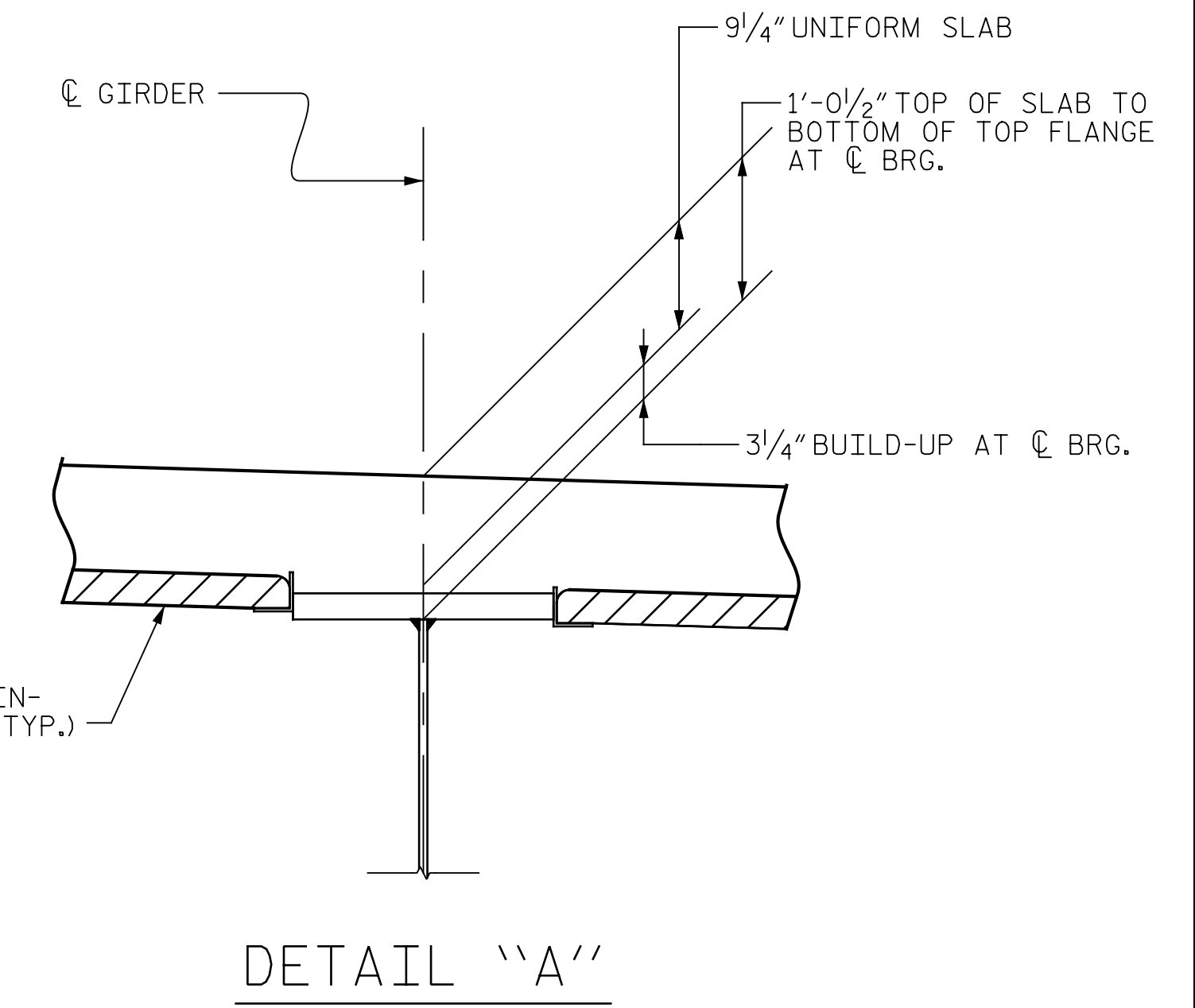
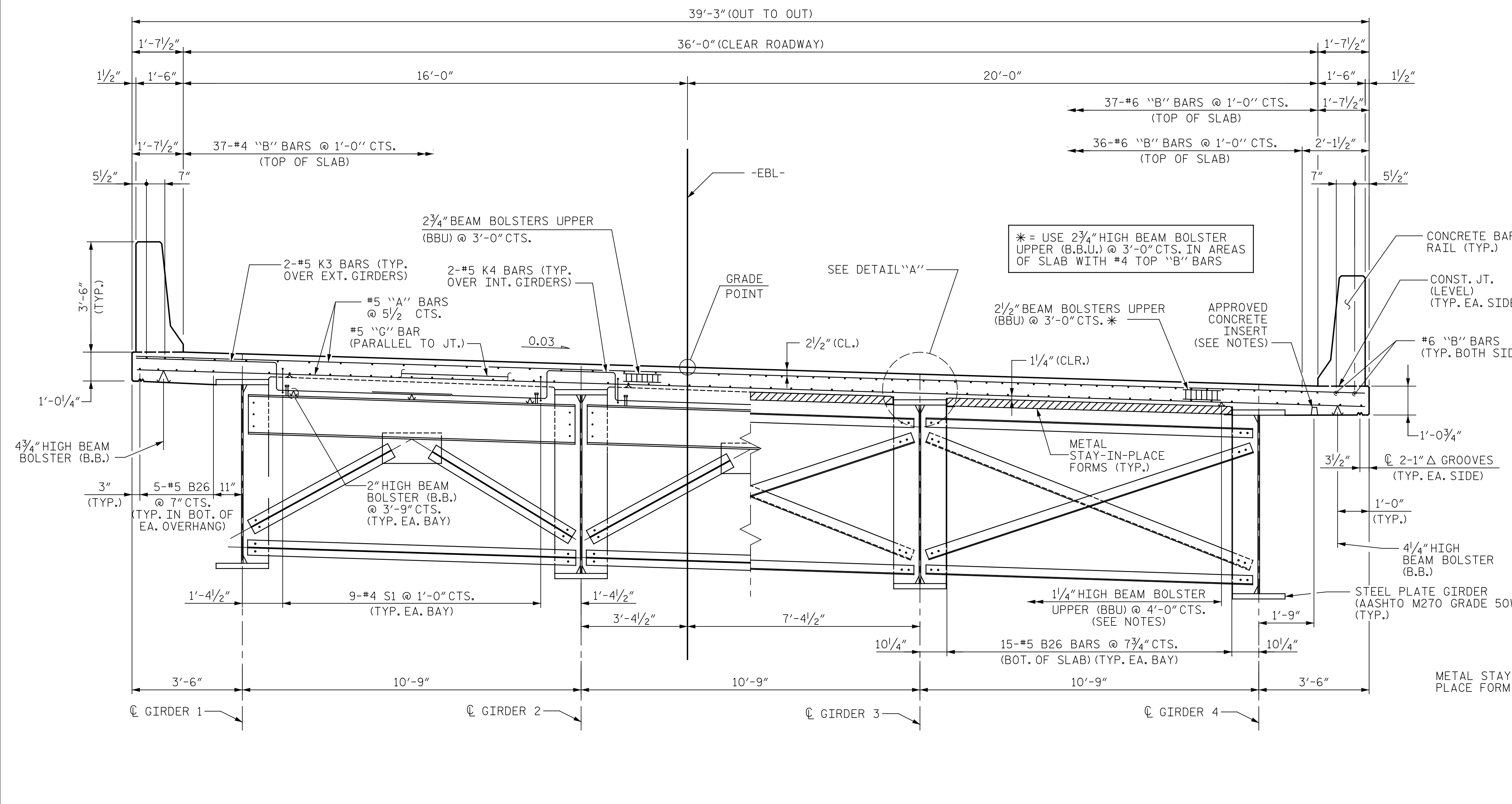
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HALF SECTION AT END DIAPHRAGM
(TYP. @ BENTS 5 & 8)

HALF SECTION AT INTERMEDIATE & BENT DIAPHRAGM
(TYP. @ BENTS 6 & 7, AND IN SPANS)

TYPICAL SECTION

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

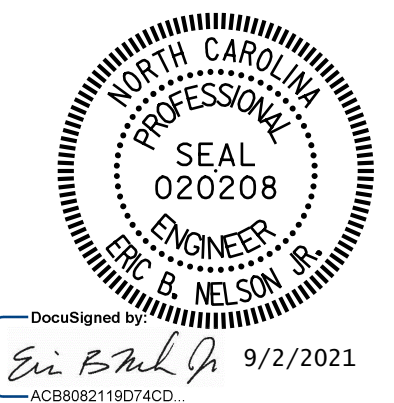
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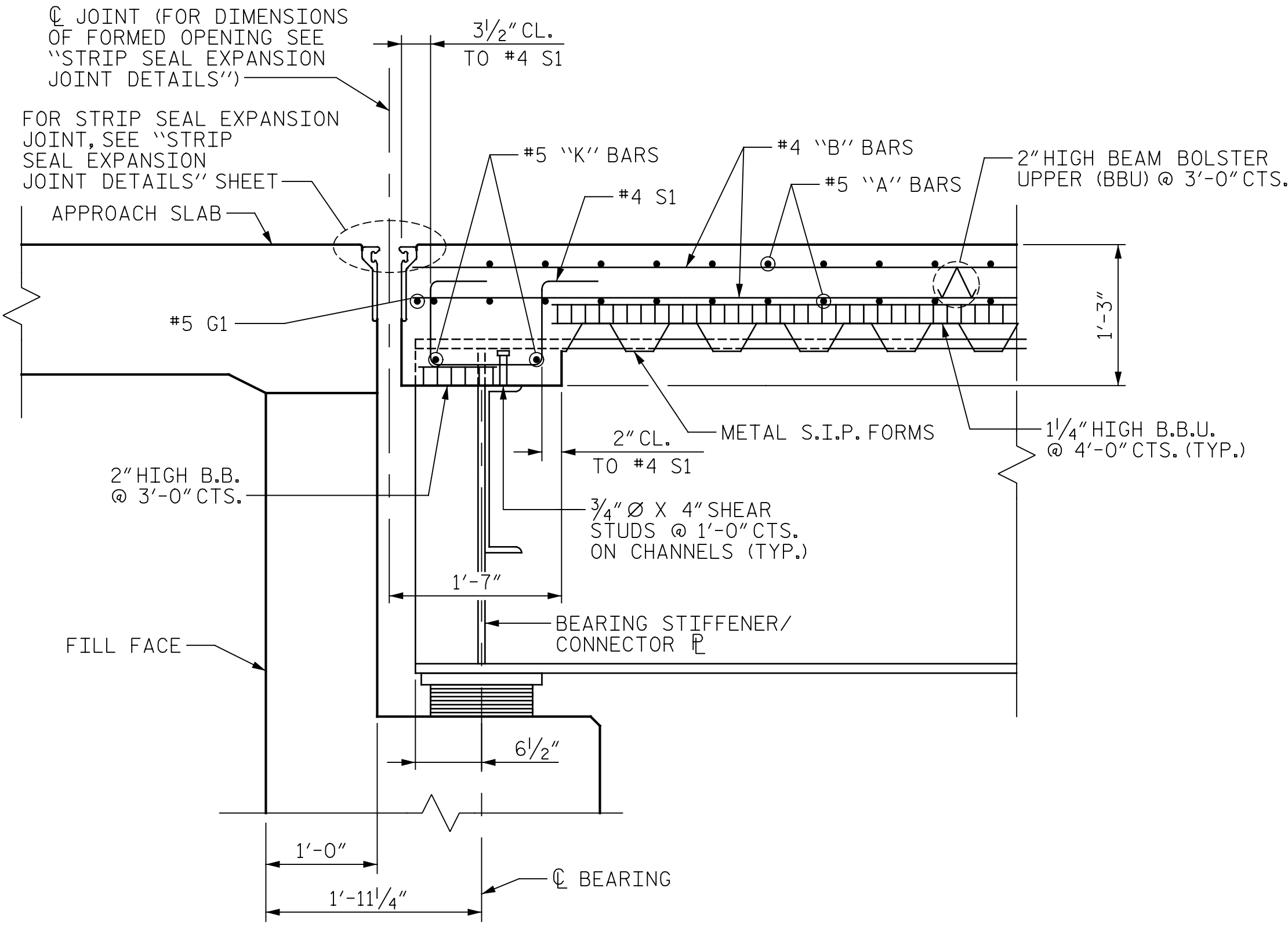
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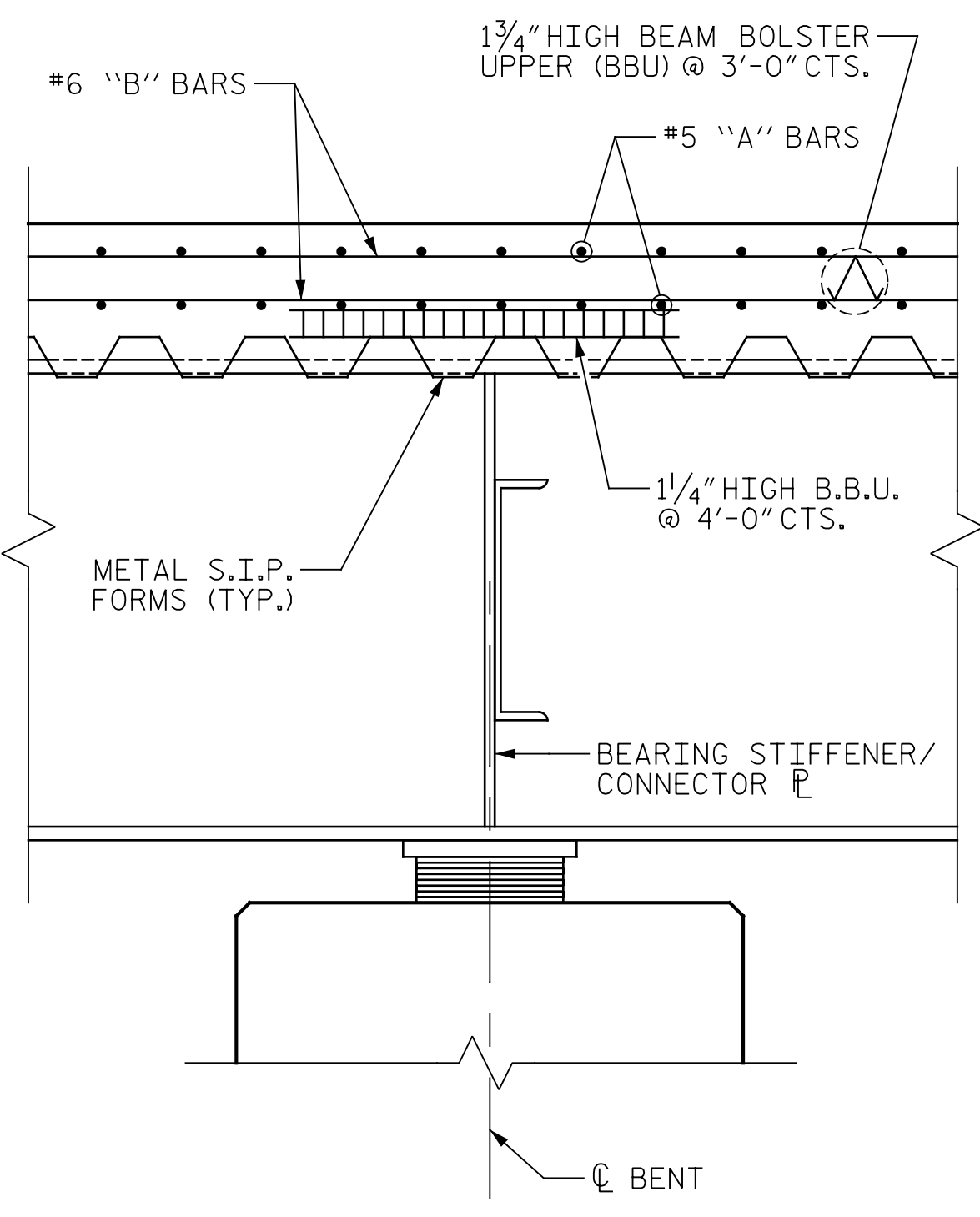
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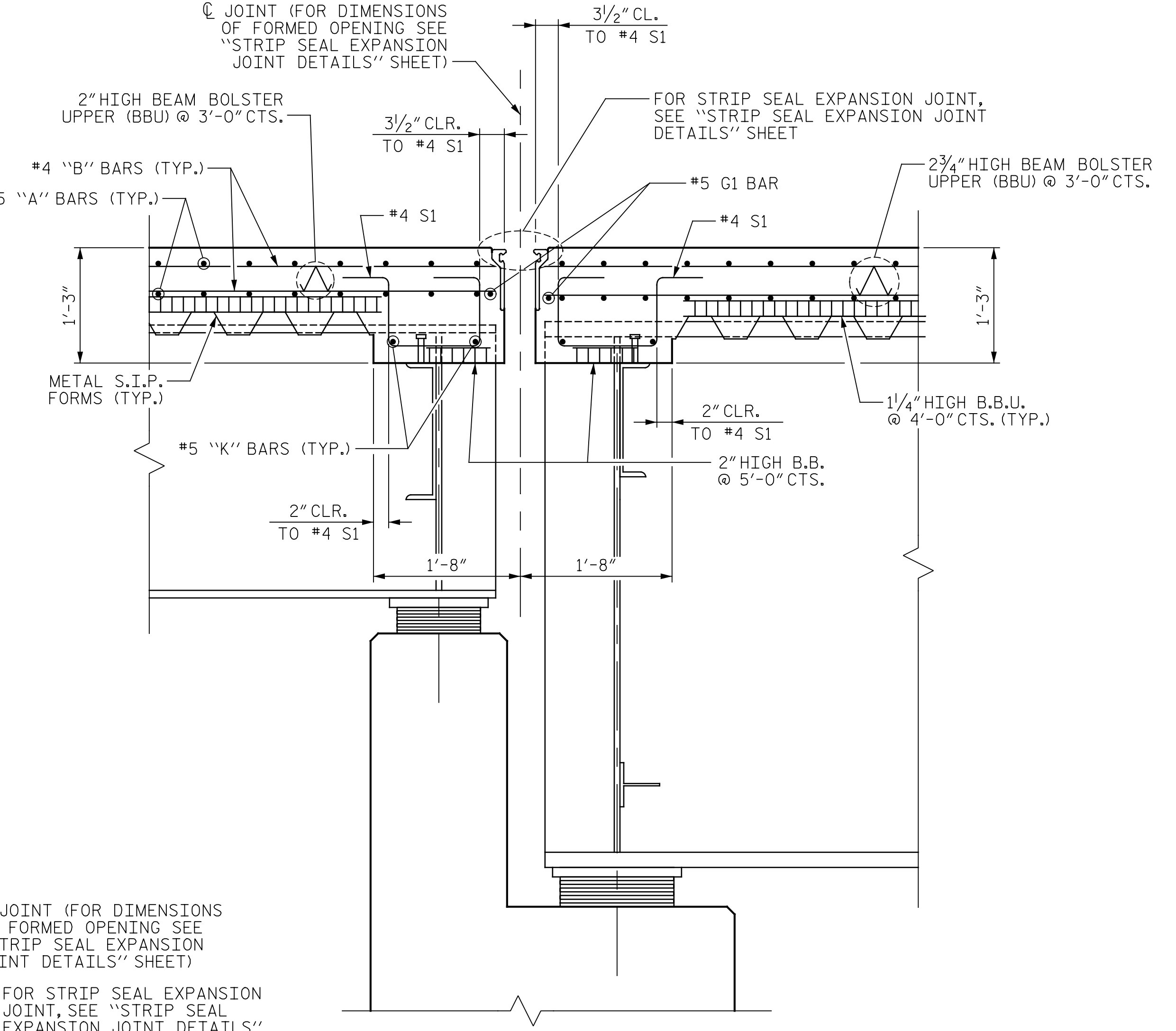
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(SEE "PLAN OF SPANS" SHEETS FOR LOCATION OF SECTION)



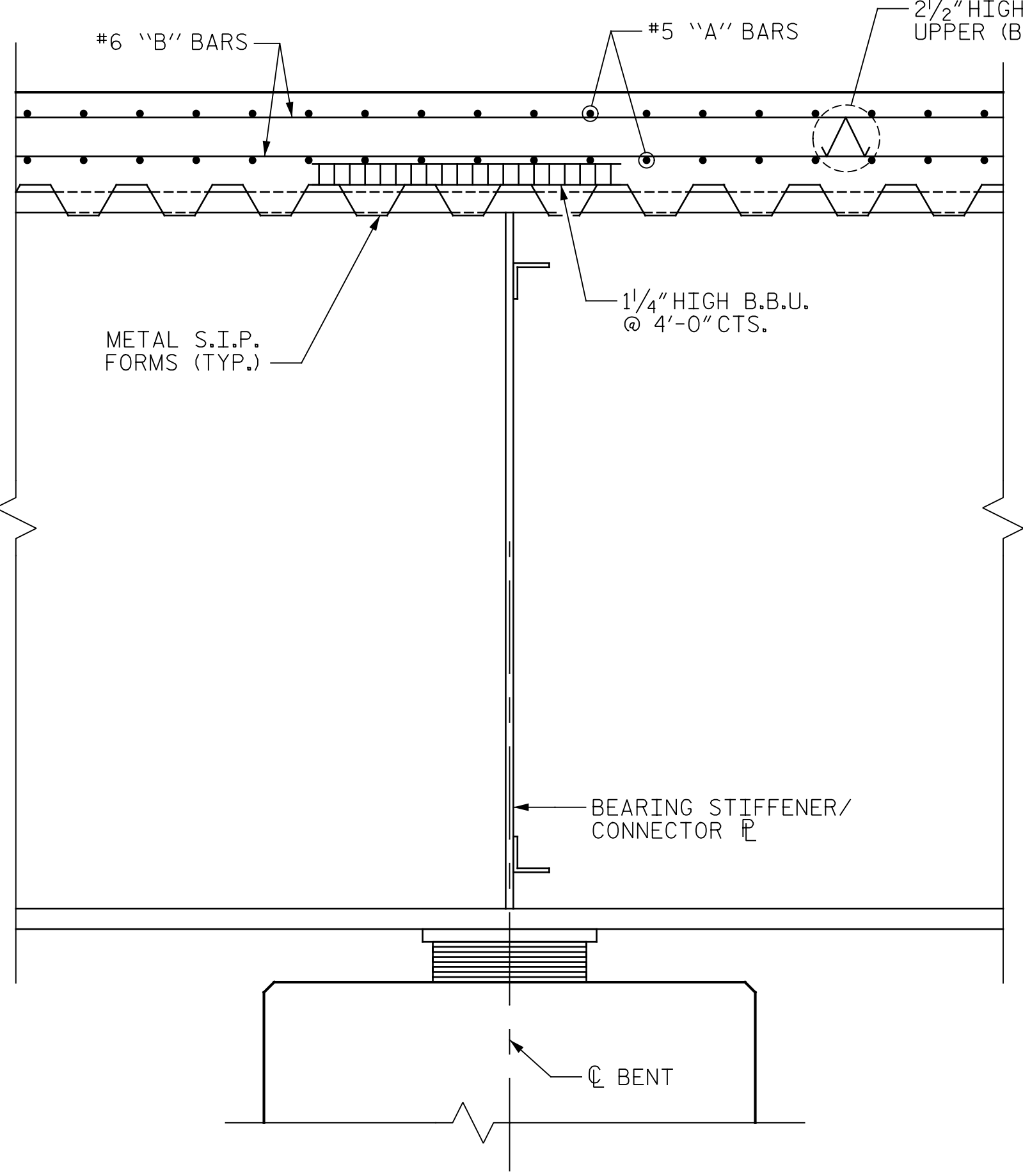
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(SEE "PLAN OF SPANS" SHEETS FOR LOCATION OF SECTION)



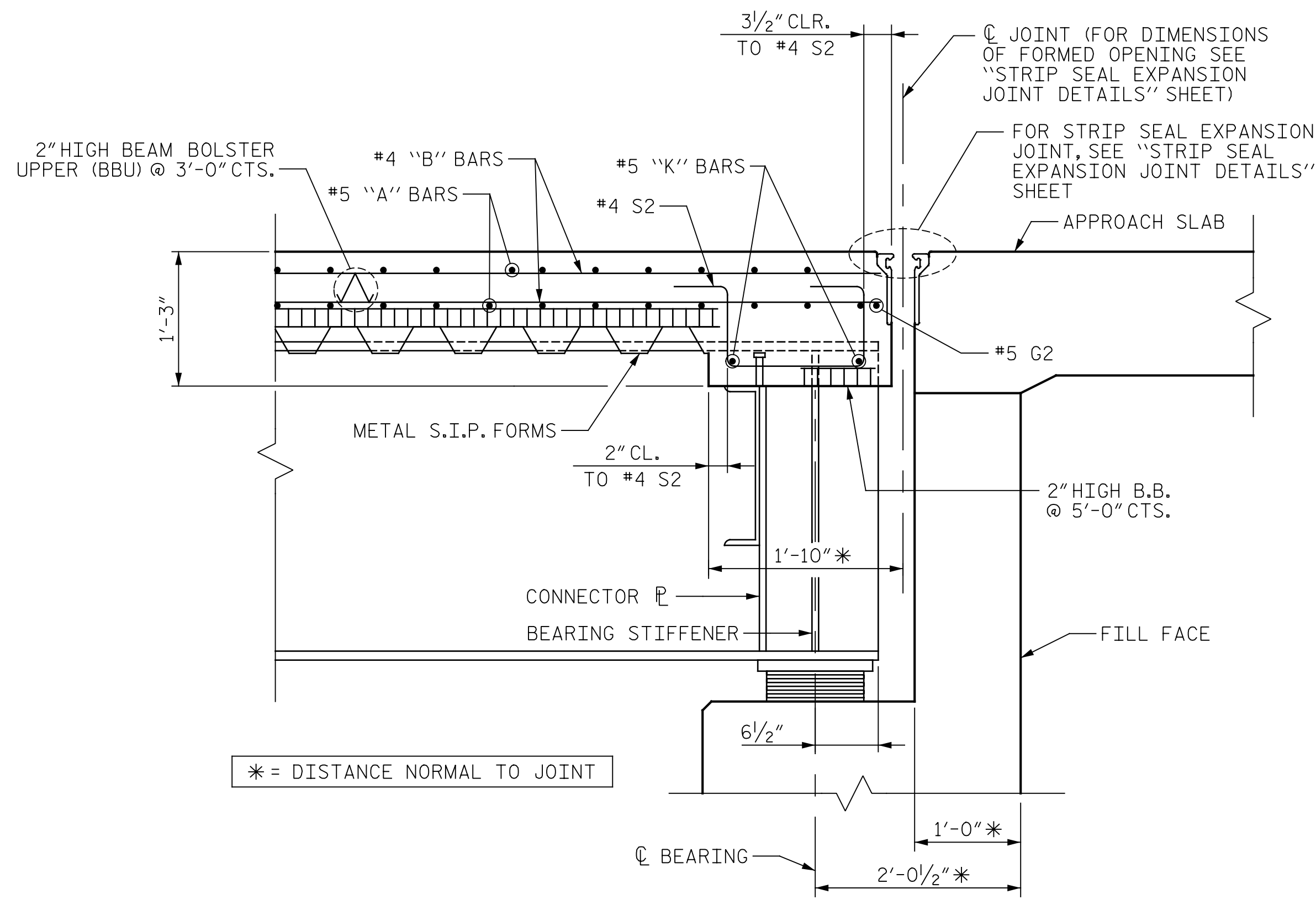
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(SEE "PLAN OF SPANS" SHEETS FOR LOCATION OF SECTION)



SECTION D-D

(SEE "PLAN OF SPANS" SHEETS FOR LOCATION OF SECTION)



SECTION E-E

(SEE "PLAN OF SPANS" SHEETS FOR LOCATION OF SECTION)

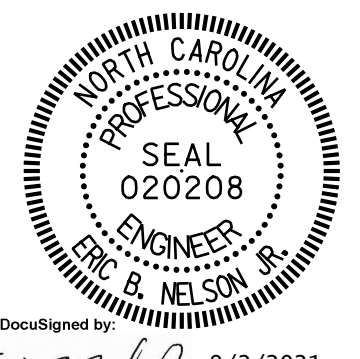
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PROJECT NO. B-4626
STANLY, ROWAN
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 STATION: 45+22.65 -EBL-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
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**SUPERSTRUCTURE
 TYPICAL SECTION
 DETAILS**



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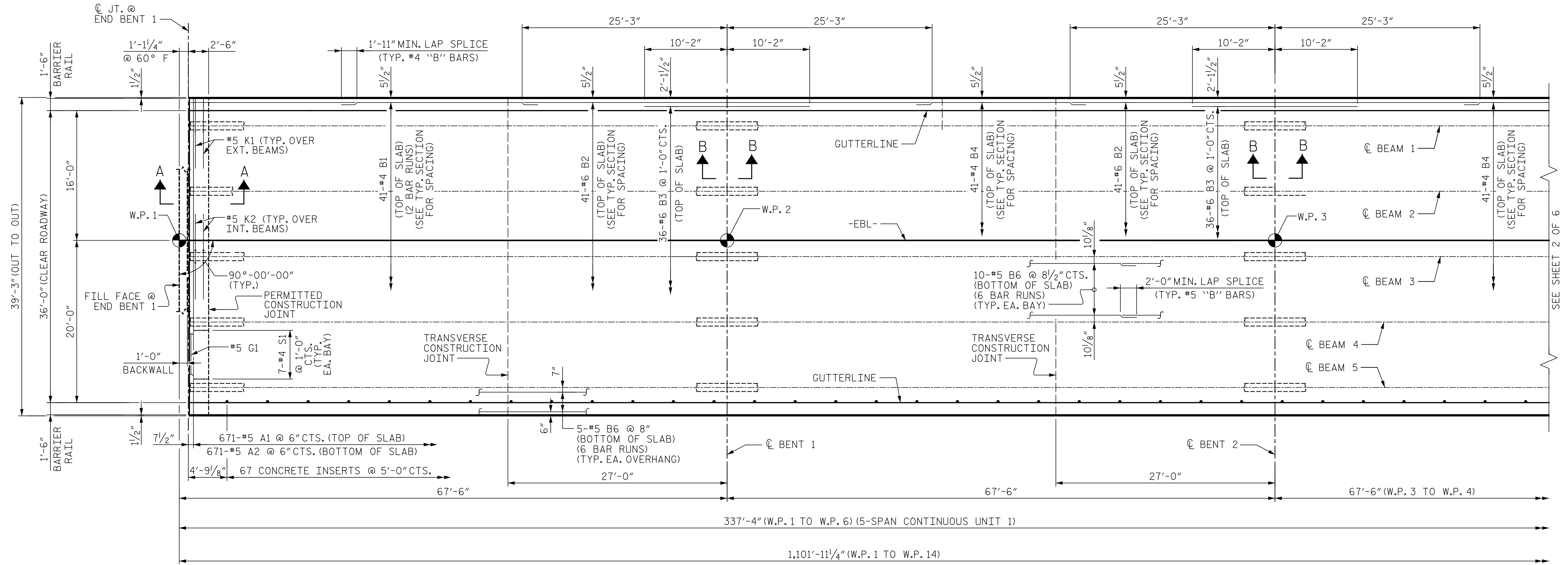
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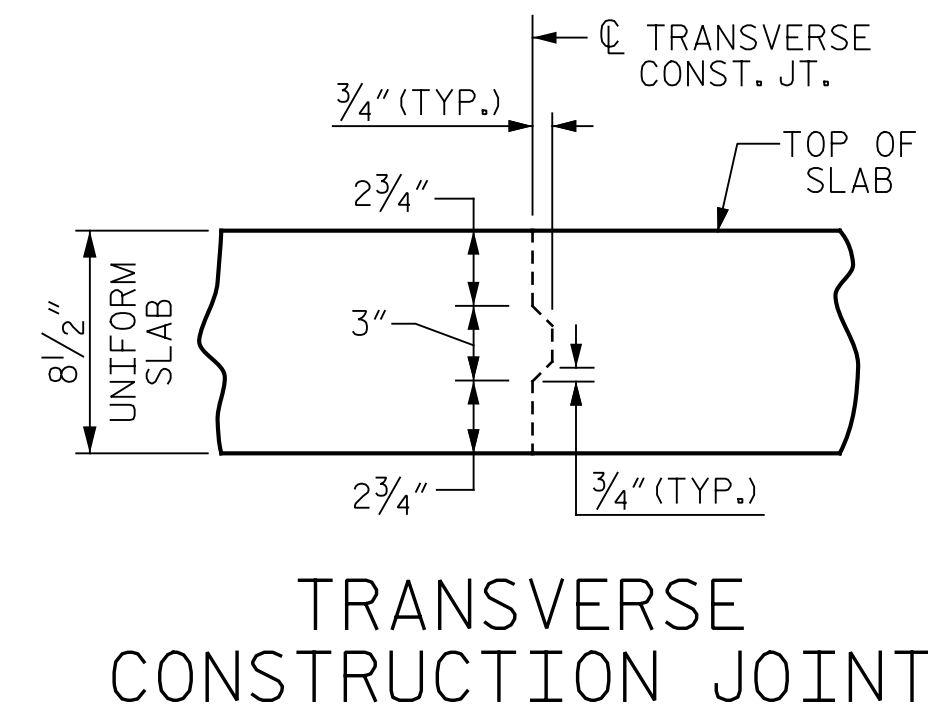
SPAN B

SPAN C

PLAN OF SPANS - UNIT 1

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 6

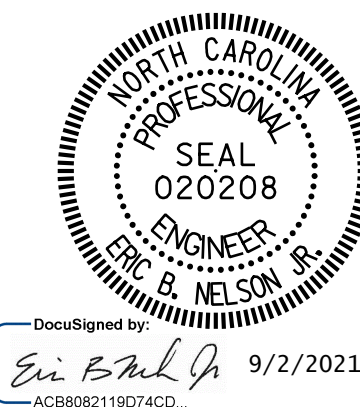


TRANSVERSE
 CONSTRUCTION JOINT

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

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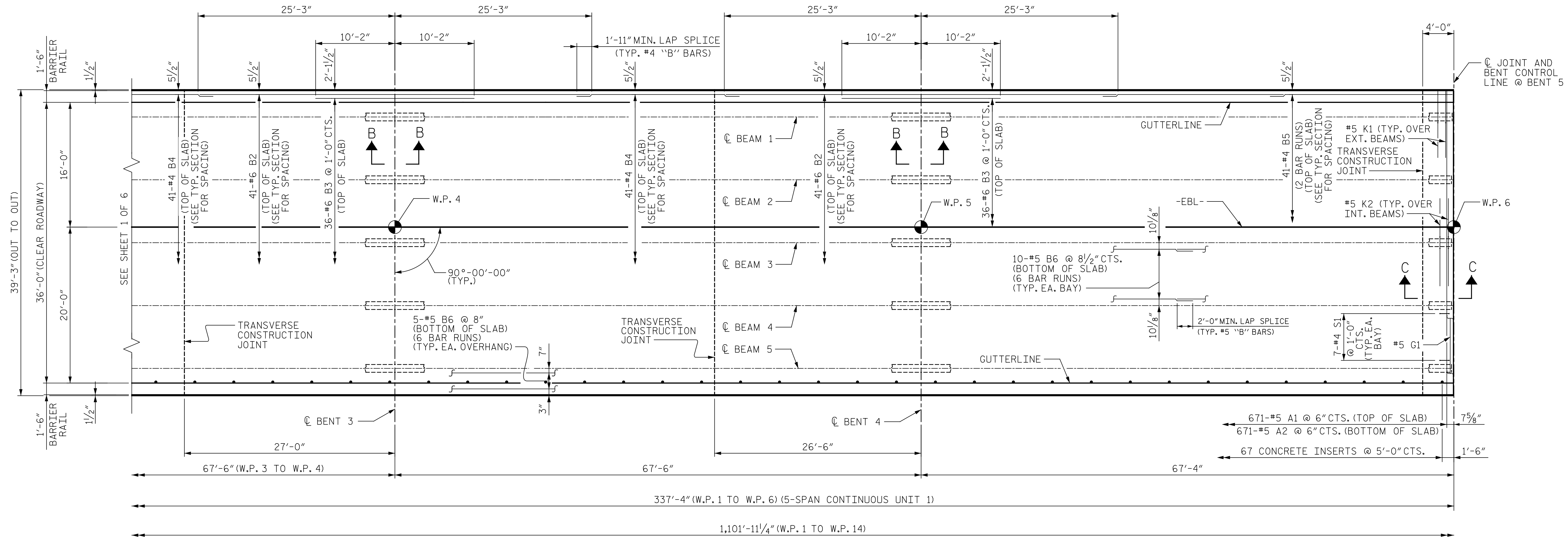


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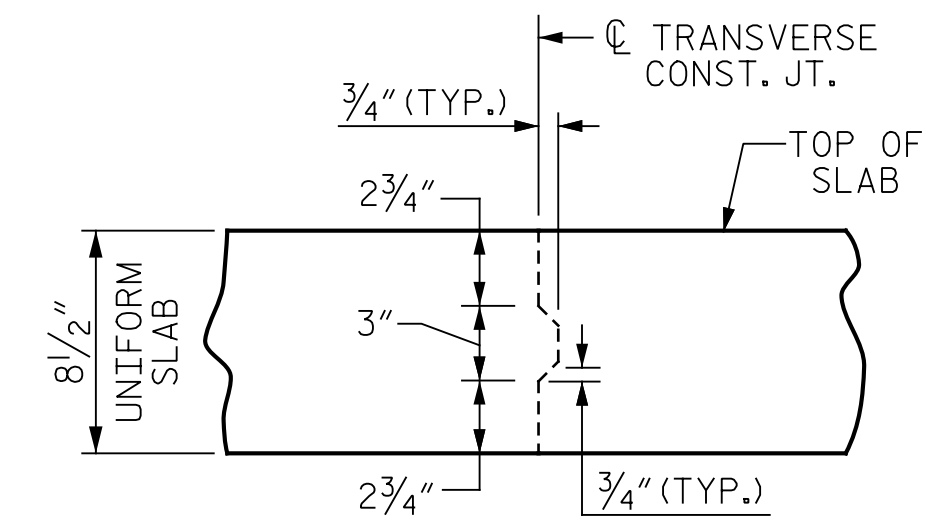


SPAN C

SPAN D

SPAN E

PLAN OF SPANS - UNIT 1



TRANSVERSE CONSTRUCTION JOINT

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

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 6

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SUPERSTRUCTURE
 PLAN OF SPANS
 UNIT 1



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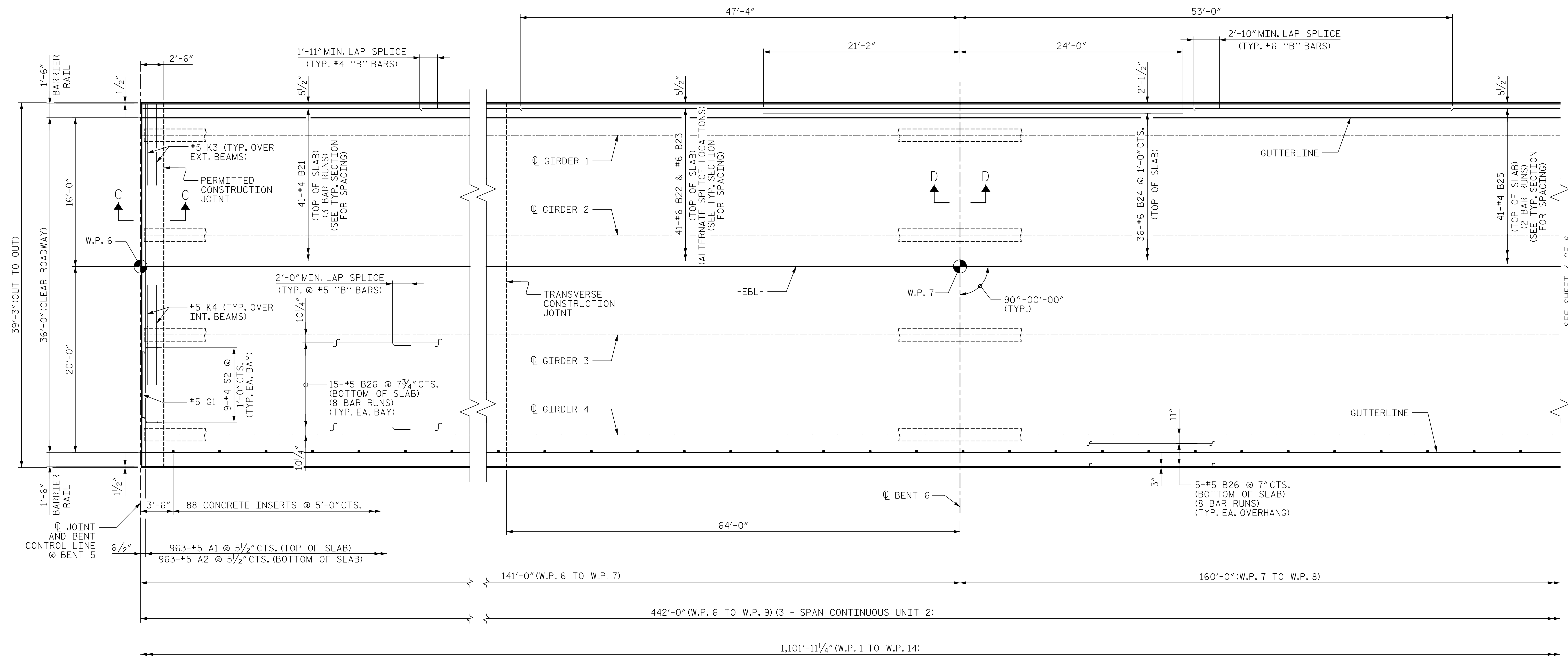
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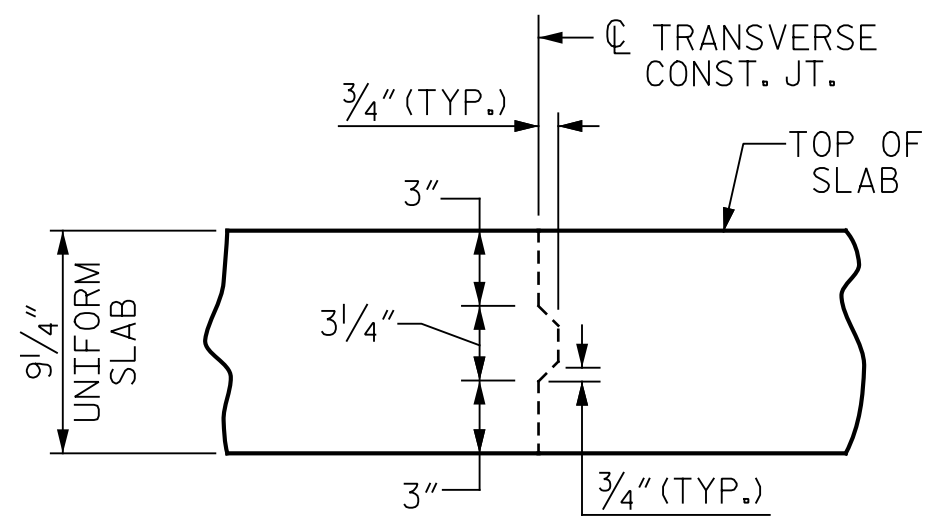
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SPAN G

PLAN OF SPANS - UNIT 2

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 3 OF 6



TRANSVERSE CONSTRUCTION JOINT

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

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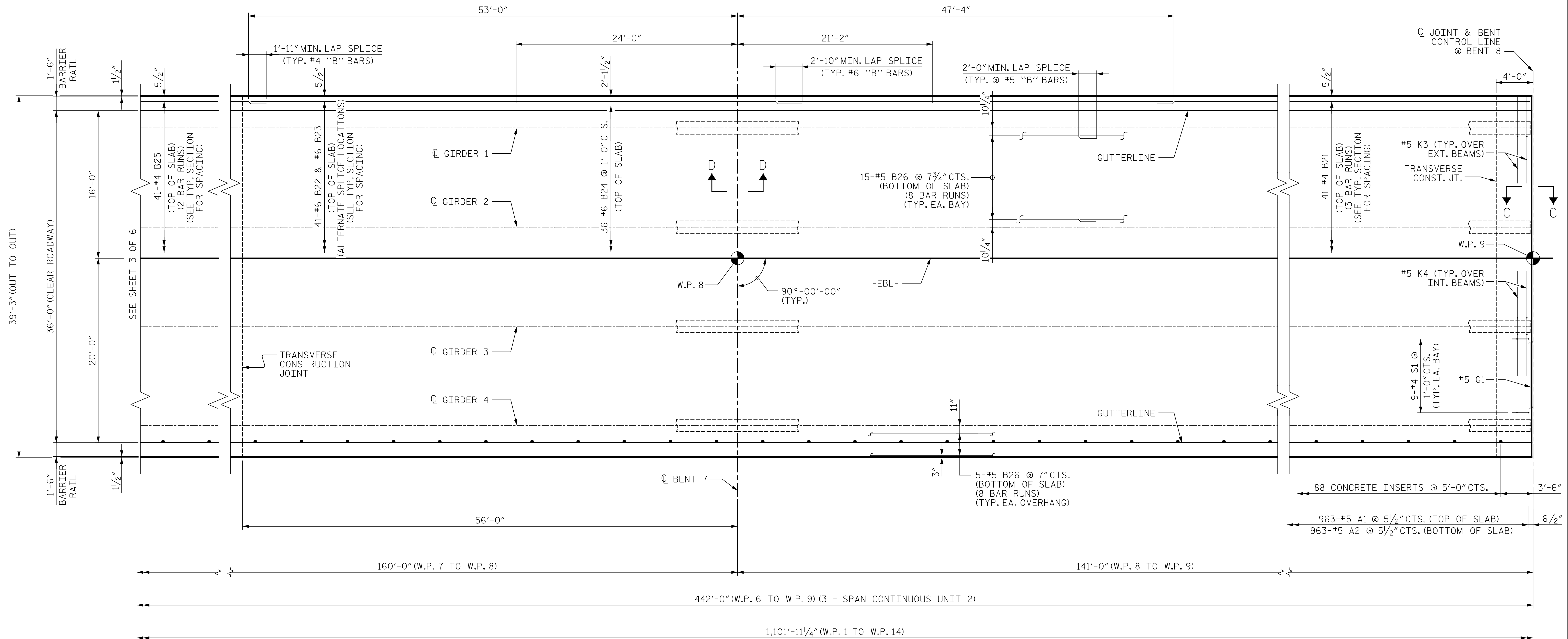
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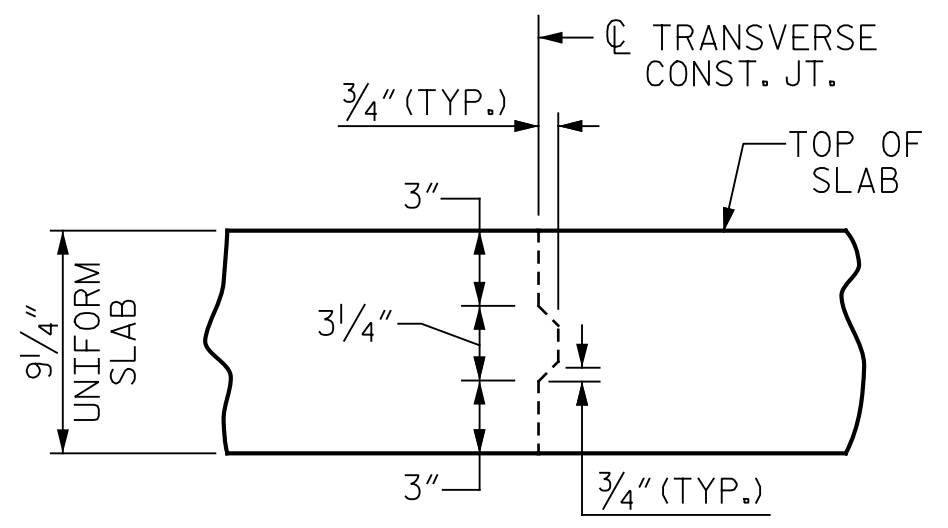
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SPAN G

SPAN H

PLAN OF SPANS - UNIT 2



TRANSVERSE CONSTRUCTION JOINT

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

PROJECT NO. B-4626
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SHEET 4 OF 6

STATE OF NORTH CAROLINA
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SUPERSTRUCTURE
 PLAN OF SPAN
 UNIT 2



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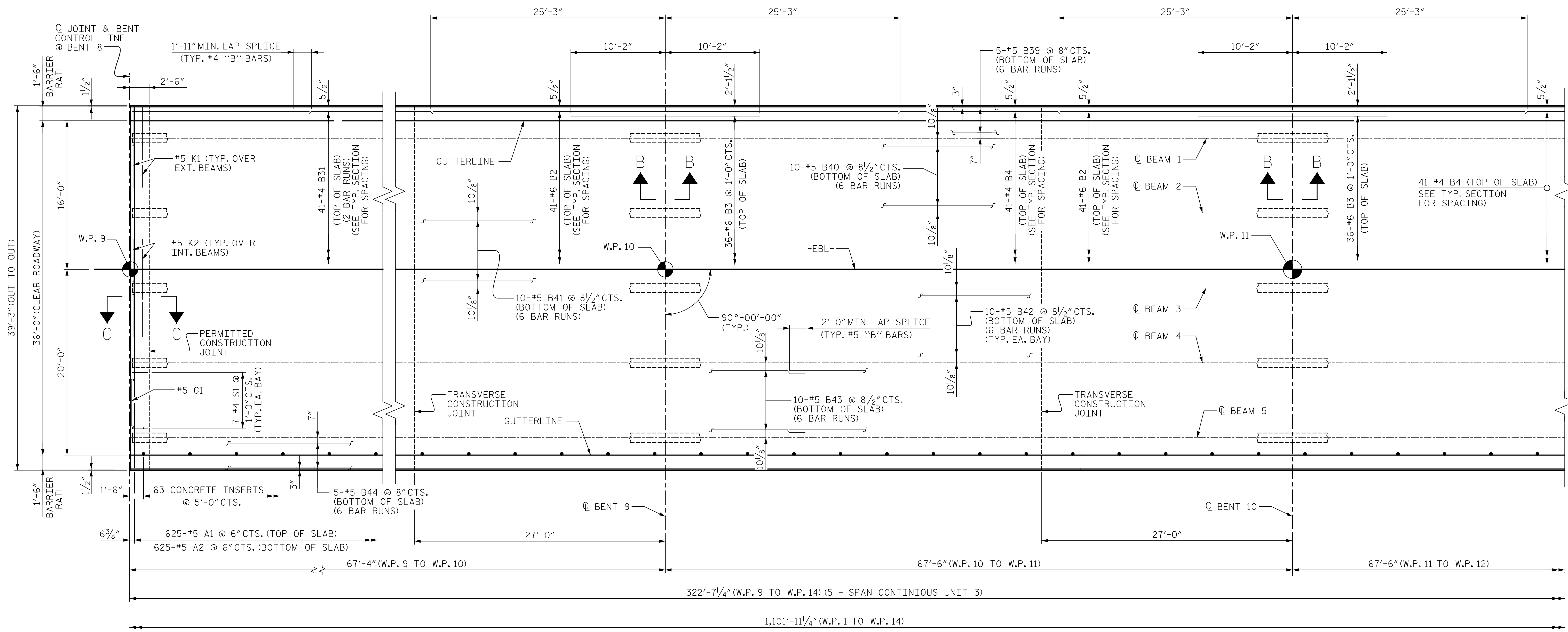
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 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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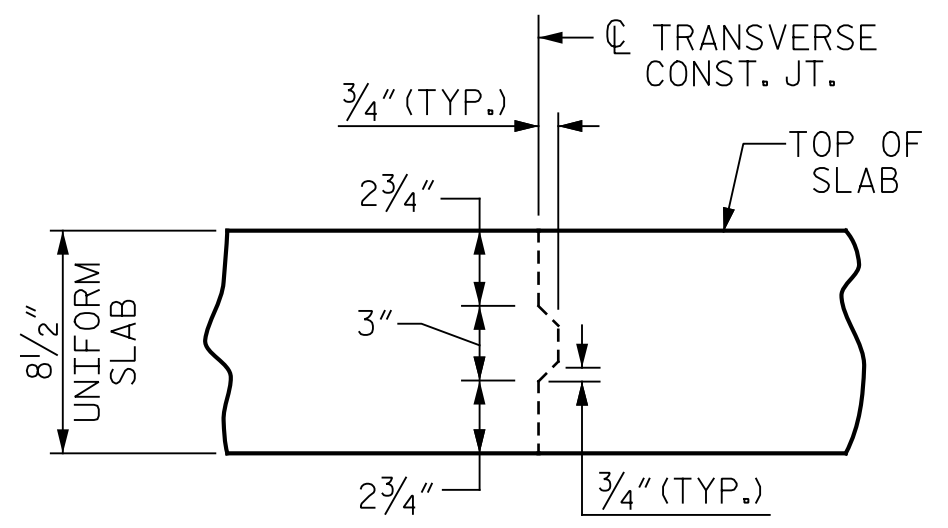


SPAN I SPAN J SPAN K

PLAN OF SPANS - UNIT 3

PROJECT NO. B-4626
 STANLY, ROWAN
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 STATION: 45+22.65 -EBL-

SHEET 5 OF 6



TRANSVERSE CONSTRUCTION JOINT

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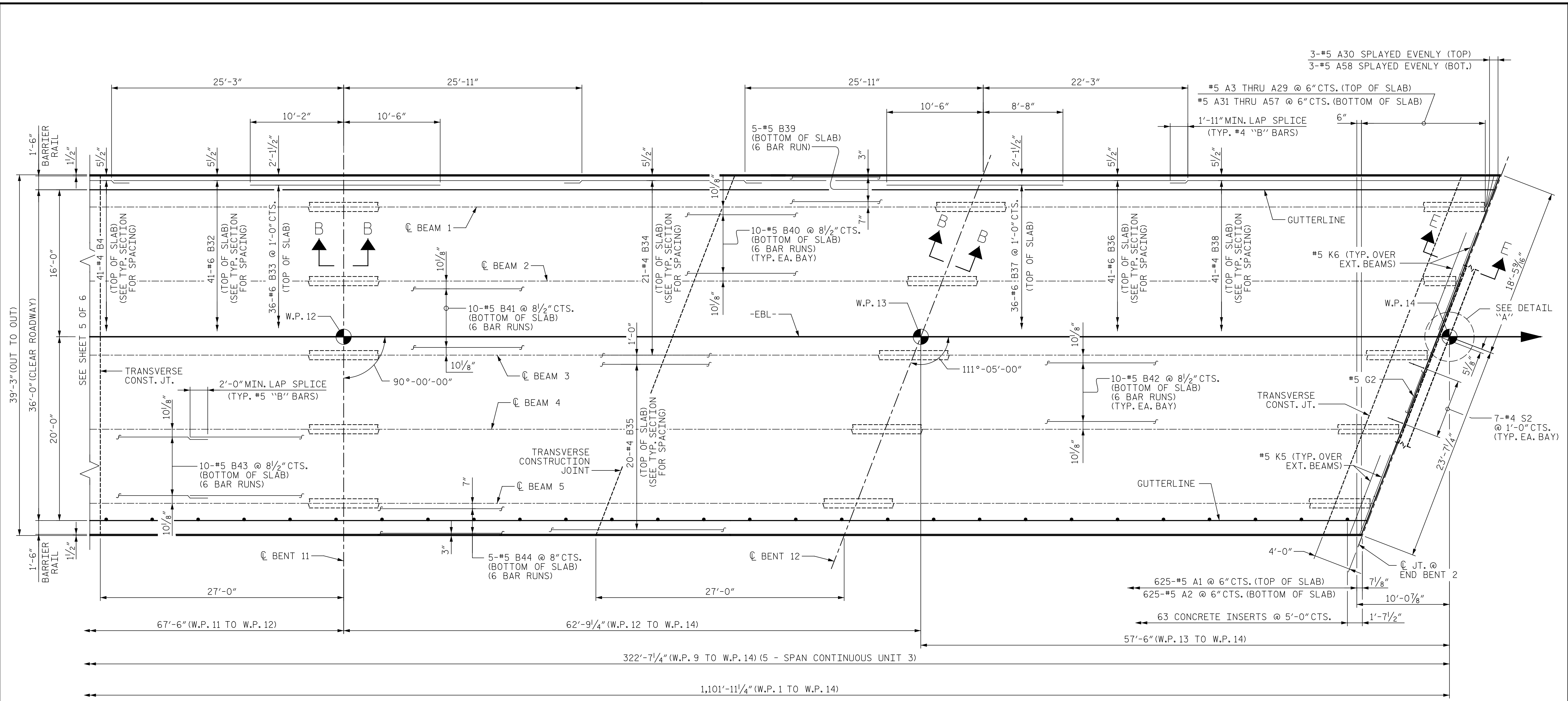


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SUPERSTRUCTURE PLAN OF SPAN UNIT 3					
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SHEET NO.	S1-21
TOTAL SHEETS	125

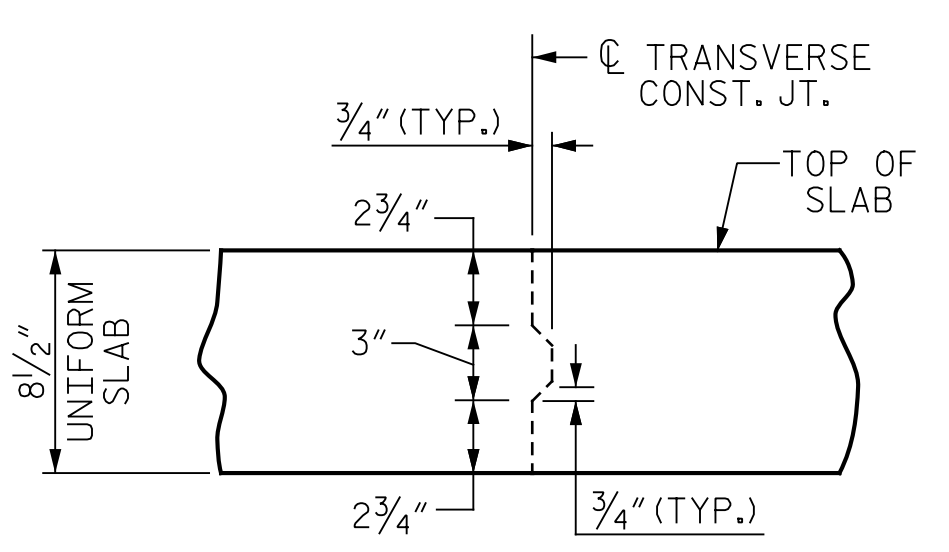
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SPAN K

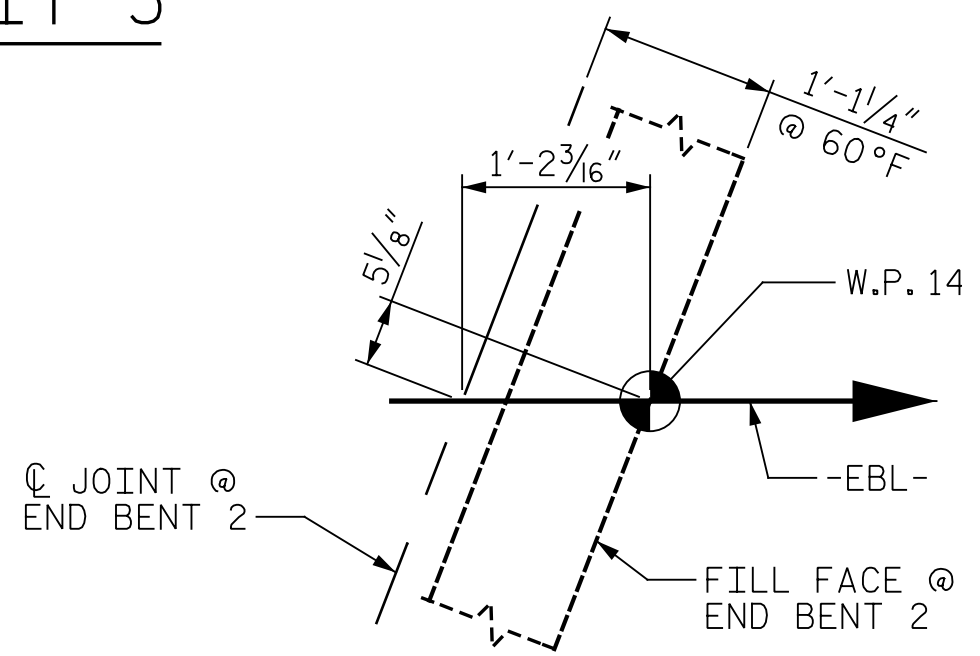
SPAN L

PLAN OF SPANS - UNIT 3



TRANSVERSE CONSTRUCTION JOINT

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



DETAIL "A"

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN
 UNIT 3



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 Eric B. Nelson
 9/2/2021 10:21:42 AM

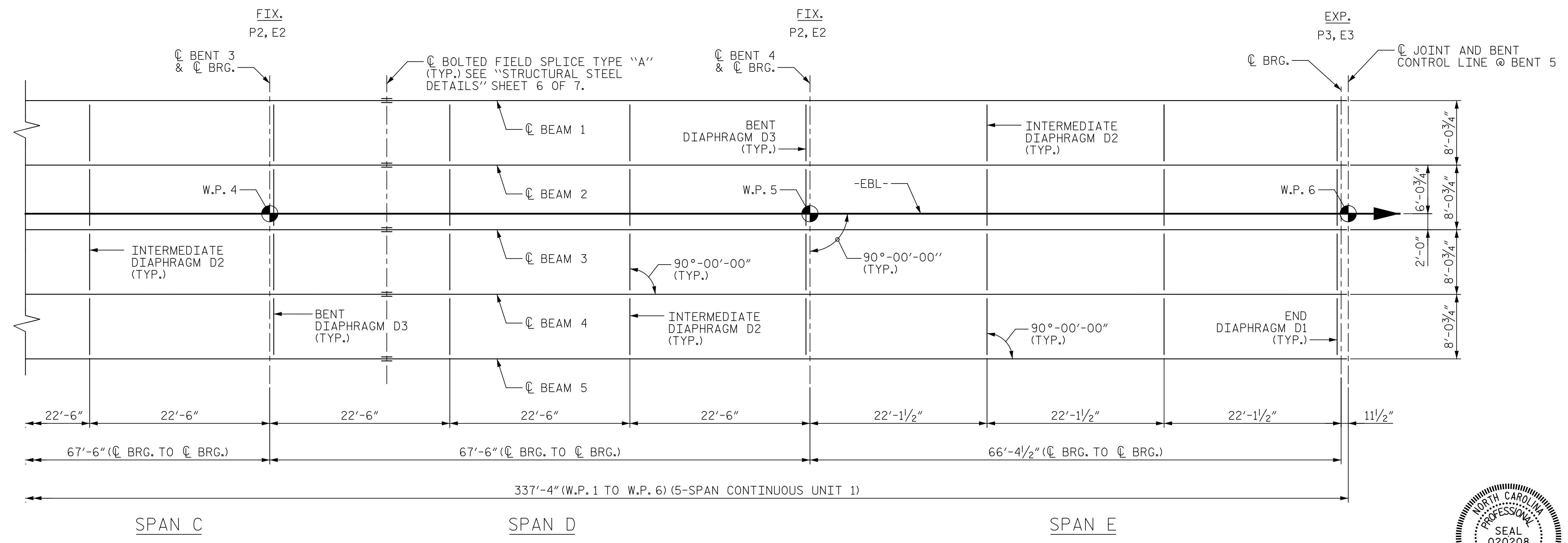
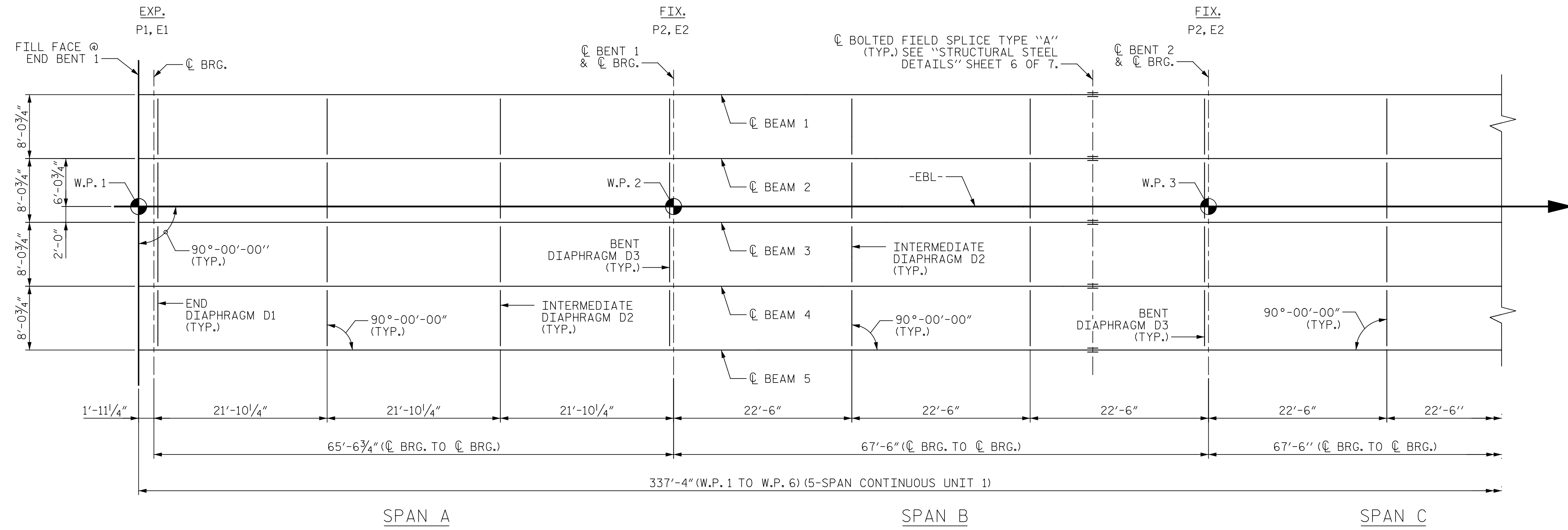
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1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
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 (919) 420-7660
 NC Lic. No. F-0270

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PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-
 SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUPERSTRUCTURE
 FRAMING PLAN
 UNIT 1**



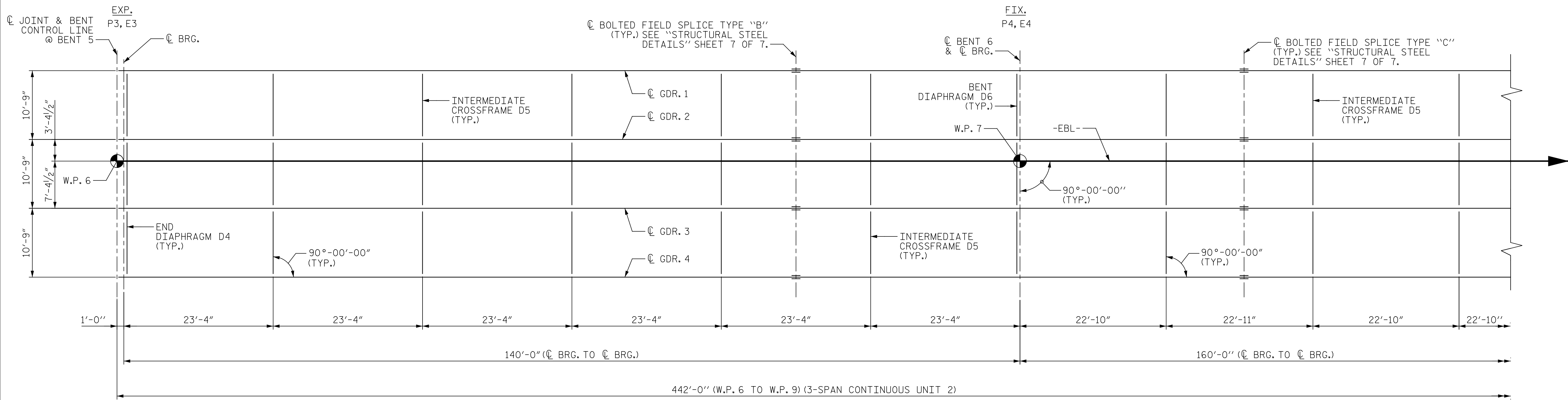
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 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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SPAN F

SPAN G

FRAMING PLAN

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 FRAMING PLAN
 UNIT 2



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 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

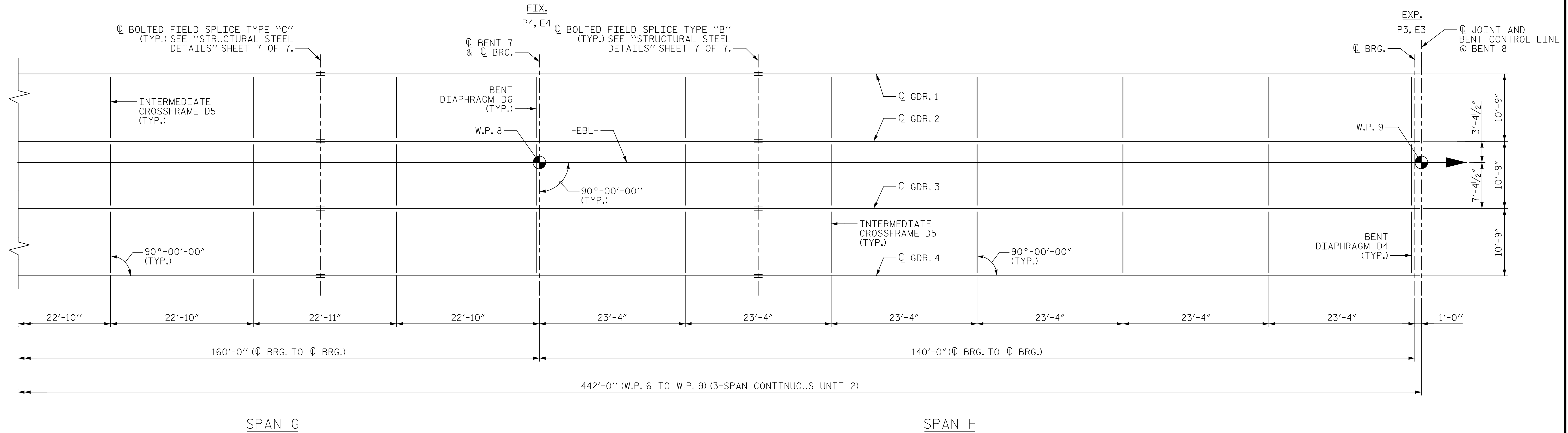
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FRAMING PLAN

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 FRAMING PLAN
 UNIT 2



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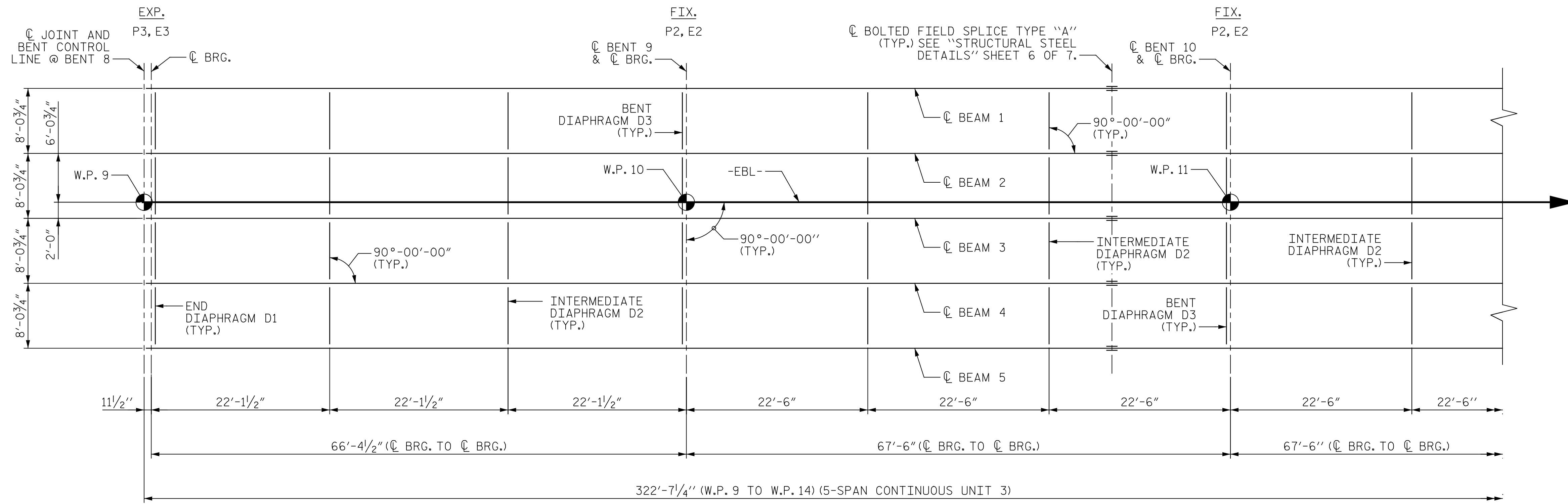
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 9/2/2021
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 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

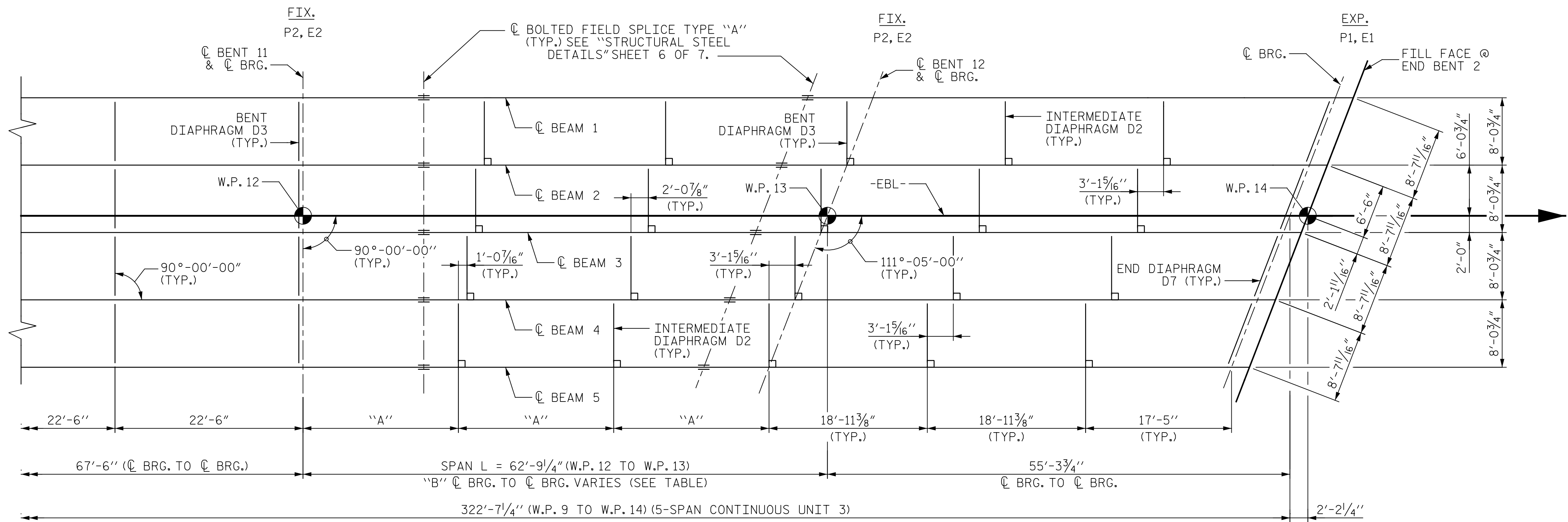
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FRAMING PLAN

VARIABLE TABLE		
BEAM	"A"	"B"
1	-	68'-2 5/8"
2	21'-8 7/16"	65'-1 5/16"
3	20'-8"	62'-0"
4	19'-7 9/16"	58'-10 1/16"
5	18'-7 1/8"	55'-9 3/8"



FRAMING PLAN

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 FRAMING PLAN
 UNIT 3



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 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

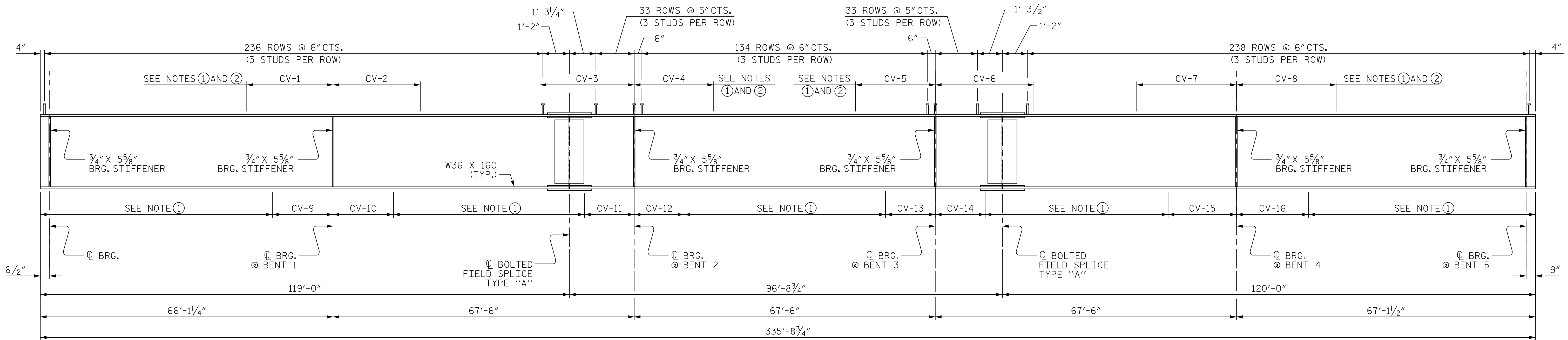
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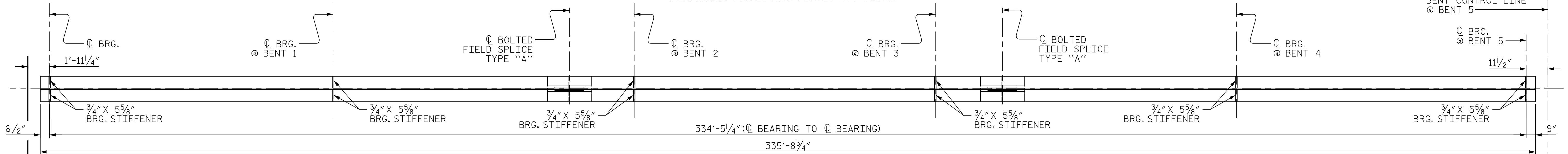
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2			4			125

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ROLLED BEAM ELEVATION

(DIAPHRAGM CONNECTION PLATES NOT SHOWN)



PLAN OF BOTTOM FLANGE

NOTES:

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 5 OR SYSTEM 6 OF THE STRUCTURAL STEEL SHOP COATINGS PROGRAM AND SECTION 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE 3/4" DIA. HIGH STRENGTH BOLTS FOR UNITS 1 & 3 AND 1/8" DIA. HIGH STRENGTH BOLTS FOR UNIT 2 UNLESS OTHERWISE NOTED.

STIFFENERS ARE NOT REQUIRED ON THE OUTSIDE OF EXTERIOR BEAMS.

BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

FOR ROLLED BEAMS, A CHARPY V-NOTCH TEST IS REQUIRED ON ALL BEAM SECTIONS, COVER PLATES AND SPLICE PLATES AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.

WORK POINT LOCATIONS ARE BASED ON THE BEST SURVEY INFORMATION AVAILABLE. CONTRACTOR SHALL FIELD VERIFY WORK POINT STATIONS BEFORE PREPARING SHOP DRAWINGS FOR THE STRUCTURAL STEEL. IF RESULTS FROM THE FIELD SURVEY DIFFER FROM DIMENSIONS SHOWN ON THE PLANS, CONTACT THE ENGINEER.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE & RETAINER TAB SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 15 FEET OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

END OF BEAMS AND GIRDERS SHALL BE PLUMB.

BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE.

AT THE CONTRACTOR'S OPTION, THE DIAPHRAGM WITH THE WELDED GUSSET PLATES MAY BE USED IN LIEU OF THE DIAPHRAGM WITH BOLTED ANGLES AT NO ADDITIONAL COST TO THE DEPARTMENT.

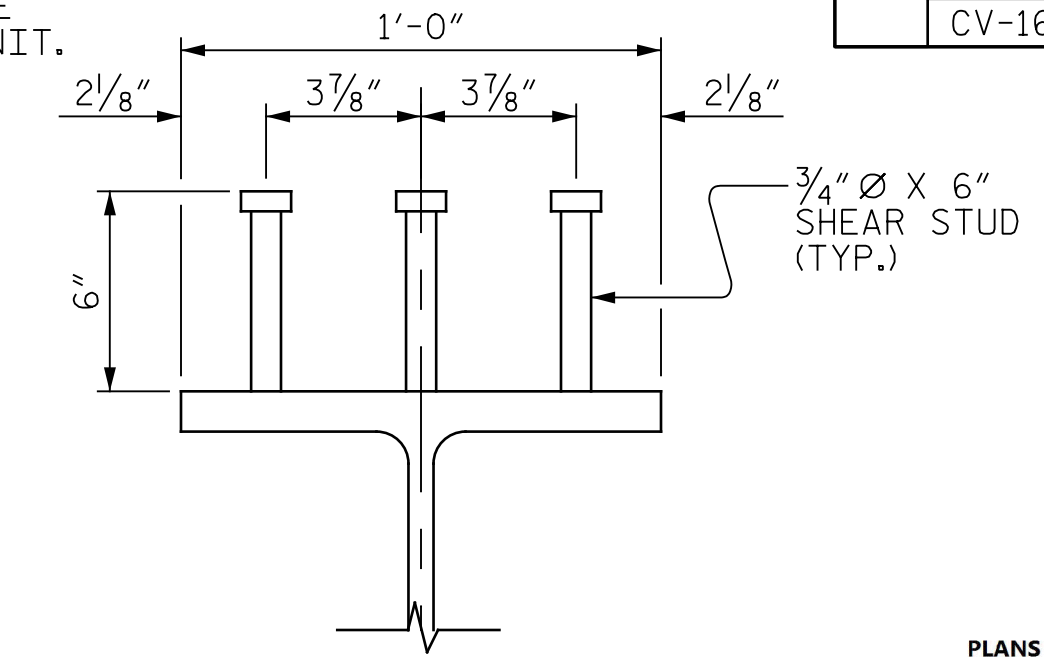
STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

CHARPY V-NOTCH DIMENSIONS						
		GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5
TOP FLANGE	CV-1	15'-0"	15'-6"	15'-6"	15'-6"	15'-0"
	CV-2	19'-6"	19'-6"	19'-6"	19'-6"	19'-6"
	CV-3	16'-6"	16'-0"	16'-0"	16'-0"	16'-6"
	CV-4	14'-0"	14'-0"	14'-0"	14'-0"	14'-0"
	CV-5	14'-0"	14'-0"	14'-0"	14'-0"	14'-0"
	CV-6	16'-6"	16'-0"	16'-0"	16'-0"	16'-6"
	CV-7	19'-6"	19'-6"	19'-6"	19'-6"	19'-6"
	CV-8	15'-6"	15'-6"	15'-6"	15'-6"	15'-6"
BOTTOM FLANGE	CV-9	9'-0"	9'-6"	9'-6"	9'-6"	9'-0"
	CV-10	10'-0"	11'-0"	11'-0"	11'-0"	10'-0"
	CV-11	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"
	CV-12	8'-0"	8'-6"	8'-6"	8'-6"	8'-0"
	CV-13	8'-0"	8'-0"	8'-0"	8'-0"	8'-0"
	CV-14	8'-0"	8'-6"	8'-6"	8'-6"	8'-0"
	CV-15	10'-6"	11'-0"	11'-0"	11'-0"	10'-6"
	CV-16	9'-6"	9'-6"	9'-6"	9'-6"	9'-6"

CHARPY V-NOTCH NOTES:

- ① CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM OF FLANGE PLATES WHICH FALL WITHIN THESE LIMITS. ALL WEB PLATES AND ALL SPLICE PLATES, IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TEST, SEE ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.
- ② NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-



SHEAR STUD DETAILS



DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Suite 900
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 Excellence Delivered As Promised NC Lic. No. F-0270

DocuSigned by:
 Eric B. Nelson
 9/2/2021
 SEAL 020208
 ENGINEER
 ERIC B. NELSON, P.E.

SHEET 1 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS
 UNIT 1**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-27
1			3			TOTAL SHEETS
2			4			125

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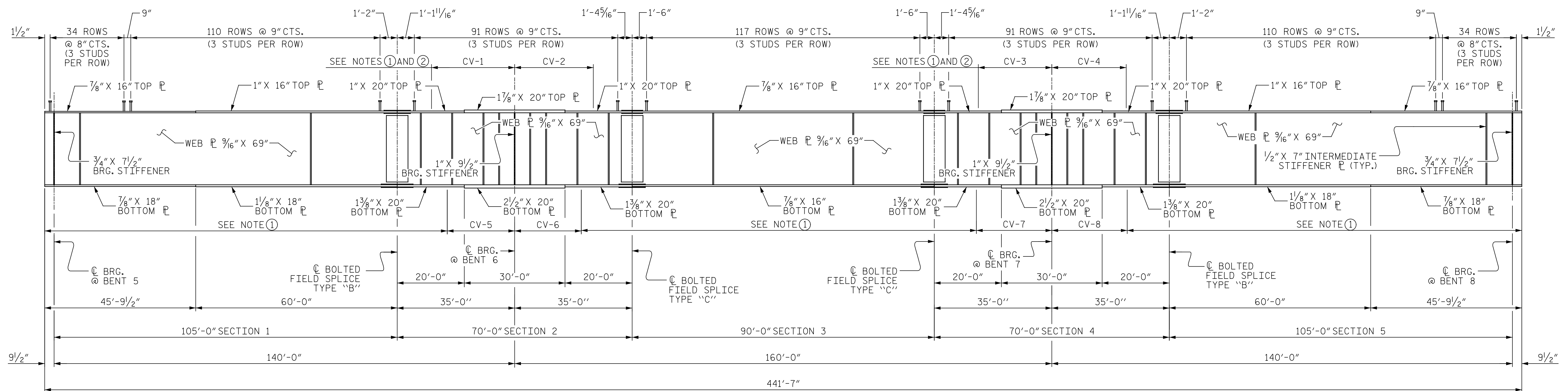
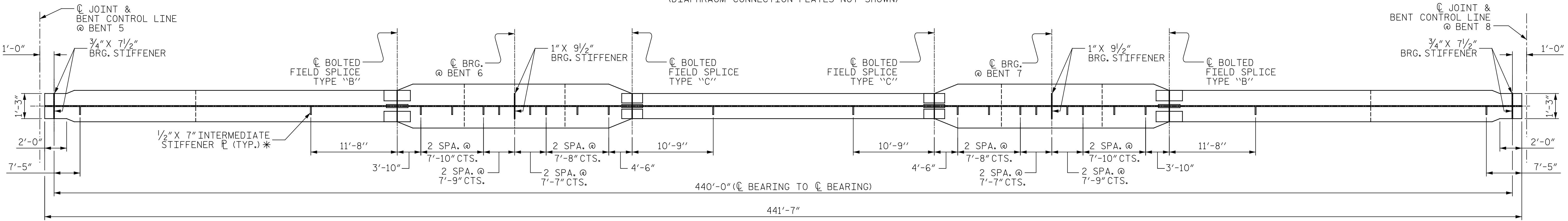
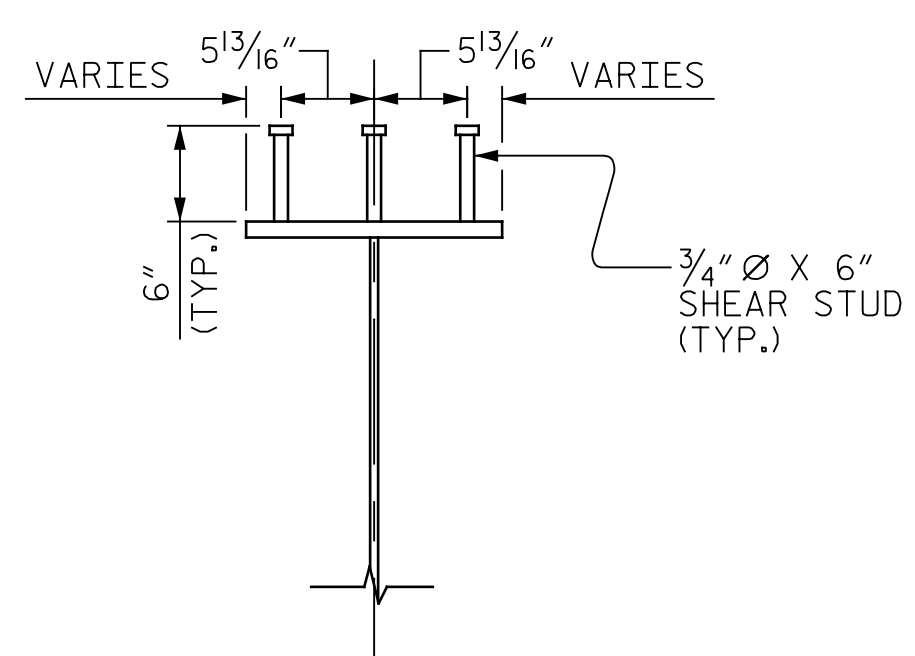


PLATE GIRDER ELEVATION
(DIAPHRAGM CONNECTION PLATES NOT SHOWN)



PLAN OF BOTTOM FLANGE

* = PLACE ALL INTERMEDIATE WEB STIFFENERS ON THE INSIDE FACE OF THE WEB ON EXTERIOR GIRDERS.



SHEAR STUD DETAILS

CHARPY V-NOTCH DIMENSIONS					
		GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4
TOP FLANGE	CV-1	40'-6"	40'-0"	40'-0"	40'-6"
	CV-2	47'-0"	46'-6"	46'-6"	47'-0"
	CV-3	47'-0"	46'-6"	46'-6"	47'-0"
	CV-4	40'-6"	40'-0"	40'-0"	40'-6"
BOTTOM FLANGE	CV-5	26'-6"	28'-0"	28'-0"	26'-6"
	CV-6	31'-0"	32'-6"	32'-6"	31'-0"
	CV-7	31'-0"	32'-6"	32'-6"	31'-0"
	CV-8	26'-6"	28'-0"	28'-0"	26'-6"

CHARPY V-NOTCH NOTES:

- ① CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM OF FLANGE PLATES WHICH FALL WITHIN THESE LIMITS. ALL WEB PLATES AND ALL SPLICE PLATES, IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TEST, SEE ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.
- ② NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS
 UNIT 2**



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 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

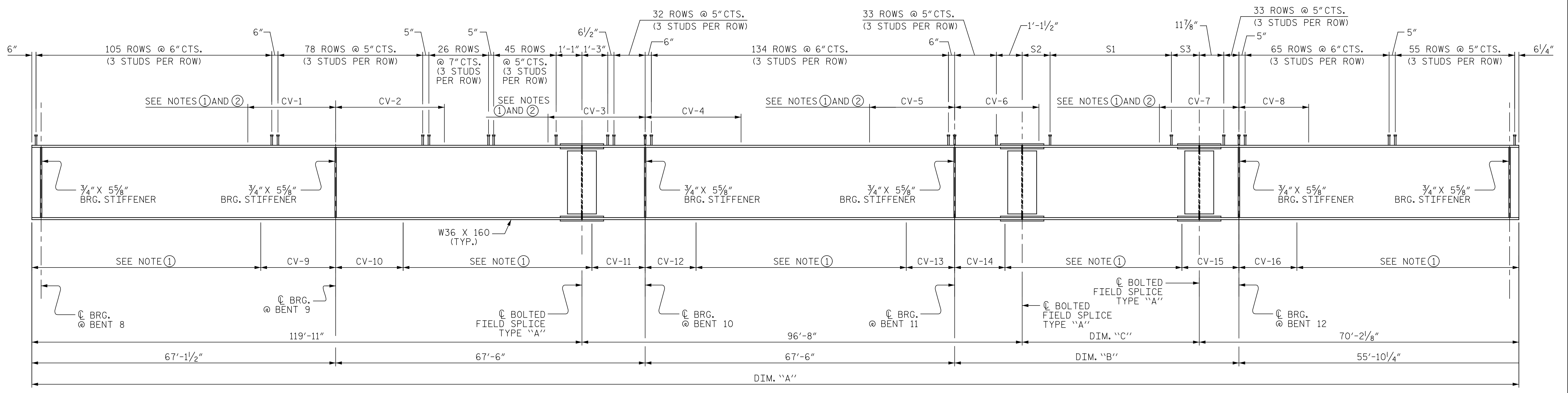
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 (919) 420-7660
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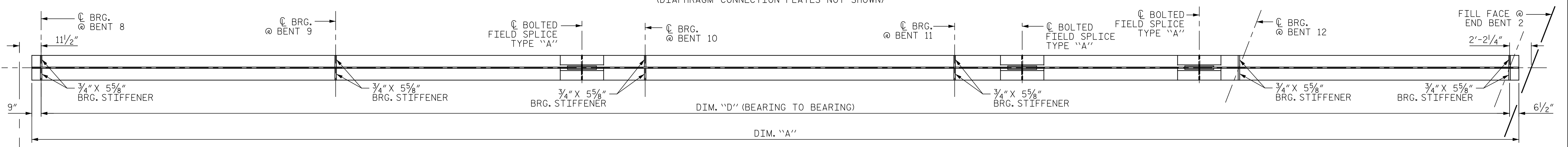
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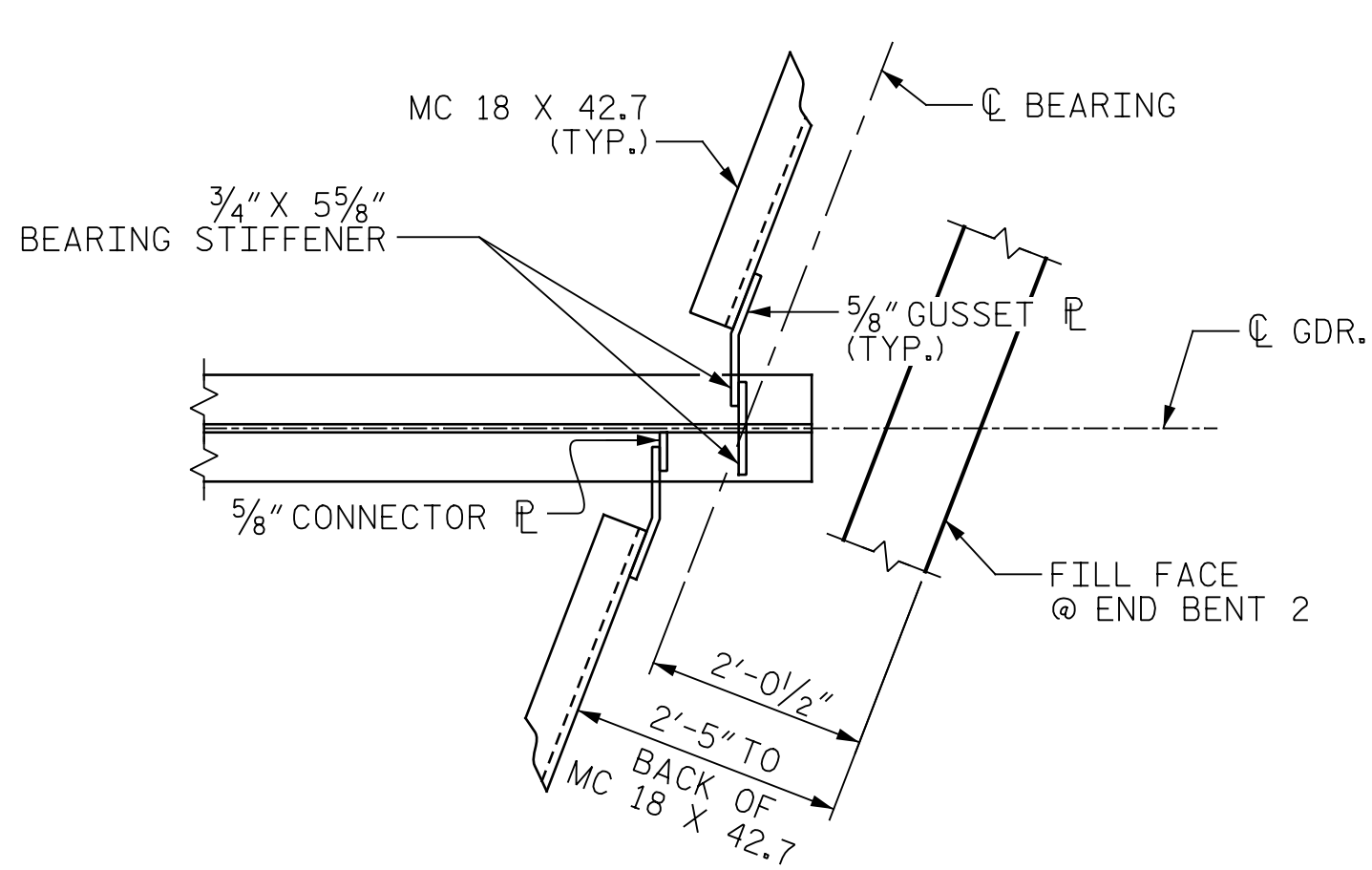
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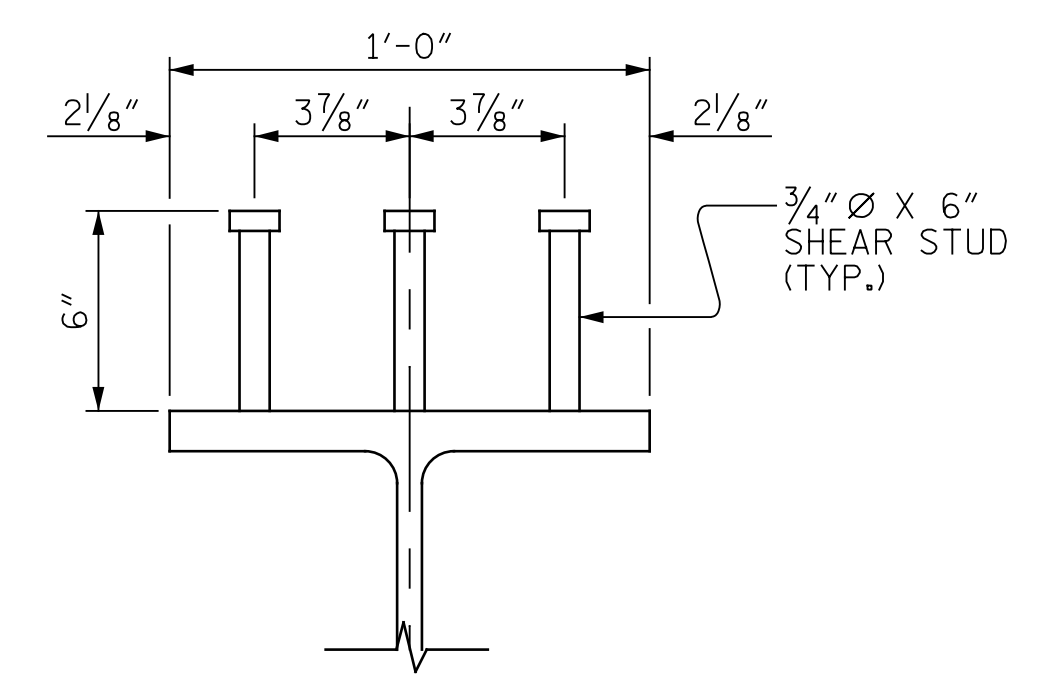
ROLLED BEAM ELEVATION
(DIAPHRAGM CONNECTION PLATES NOT SHOWN)



PLAN OF BOTTOM FLANGE



END DIAPHRAGM CONNECTION DETAIL



SHEAR STUD DETAILS

CHARPY V-NOTCH DIMENSIONS						
		GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5
TOP FLANGE	CV-1	15'-6"	15'-6"	15'-6"	15'-6"	15'-6"
	CV-2	19'-6"	19'-6"	19'-6"	19'-6"	19'-6"
	CV-3	16'-0"	16'-0"	16'-0"	16'-0"	16'-6"
	CV-4	14'-0"	14'-6"	14'-0"	14'-0"	14'-0"
	CV-5	16'-0"	15'-6"	13'-6"	13'-0"	13'-0"
	CV-6	16'-6"	16'-0"	15'-6"	17'-0"	17'-0"
	CV-7	16'-0"	15'-6"	15'-0"	17'-0"	16'-6"
BOTTOM FLANGE	CV-8	16'-0"	13'-6"	13'-6"	13'-0"	13'-6"
	CV-9	9'-6"	9'-6"	9'-6"	9'-6"	9'-0"
	CV-10	10'-6"	11'-0"	11'-0"	11'-0"	10'-6"
	CV-11	8'-0"	8'-6"	9'-0"	9'-0"	8'-6"
	CV-12	8'-0"	8'-6"	8'-6"	8'-6"	8'-0"
	CV-13	8'-6"	8'-6"	8'-6"	8'-0"	7'-0"
	CV-14	8'-6"	9'-0"	8'-6"	8'-6"	8'-0"
	CV-15	9'-0"	9'-0"	9'-0"	8'-6"	8'-0"
	CV-16	8'-0"	8'-0"	8'-0"	7'-6"	7'-0"

BEAM DIMENSIONS				
	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"
BEAM 1	326'-2 5/16"	68'-2 5/8"	39'-5 3/16"	324'-10 3/16"
BEAM 2	323'-1 1/16"	65'-1 5/16"	36'-3 5/16"	321'-9 9/16"
BEAM 3	319'-11 3/4"	62'-0"	33'-2 5/8"	318'-8 1/4"
BEAM 4	316'-10 7/16"	58'-10 1/16"	30'-1 5/16"	315'-6 15/16"
BEAM 5	313'-9 1/8"	55'-9 3/8"	27'-0"	312'-5 5/8"

SHEAR STUD ARRANGEMENT			
	S1	S2	S3
BEAM 1	91 ROWS @ 5" CTS.	11 9/16"	11 5/8"
BEAM 2	83 ROWS @ 5" CTS.	1'-0 15/16"	1'-1"
BEAM 3	76 ROWS @ 5" CTS.	11 13/16"	11 13/16"
BEAM 4	68 ROWS @ 5" CTS.	1'-1 1/8"	1'-1 3/16"
BEAM 5	61 ROWS @ 5" CTS.	1'-0"	1'-0"

CHARPY V-NOTCH NOTES:

- ① CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM OF FLANGE PLATES WHICH FALL WITHIN THESE LIMITS. ALL WEB PLATES AND ALL SPLICE PLATES. IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TEST, SEE ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.
- ② NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 3 OF 7



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS
 UNIT 3**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-29
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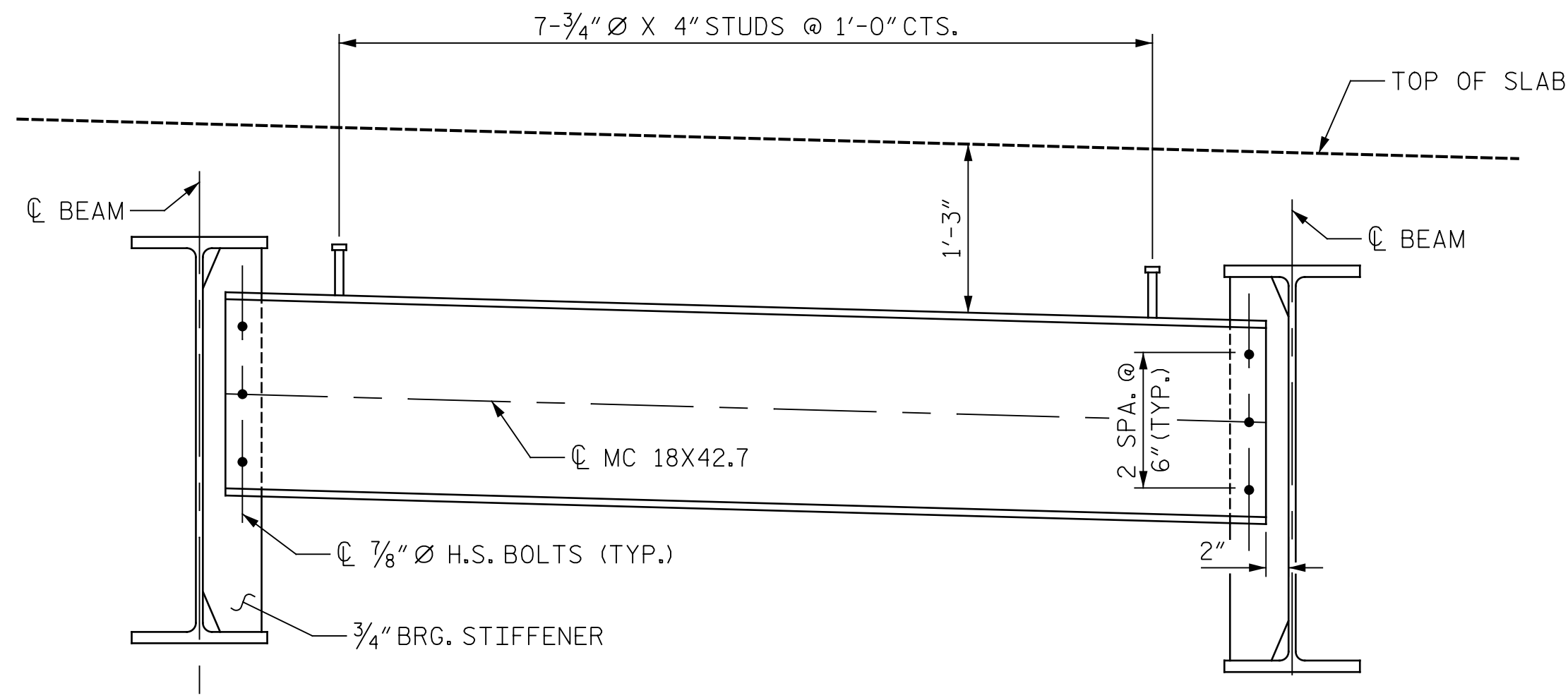
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 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

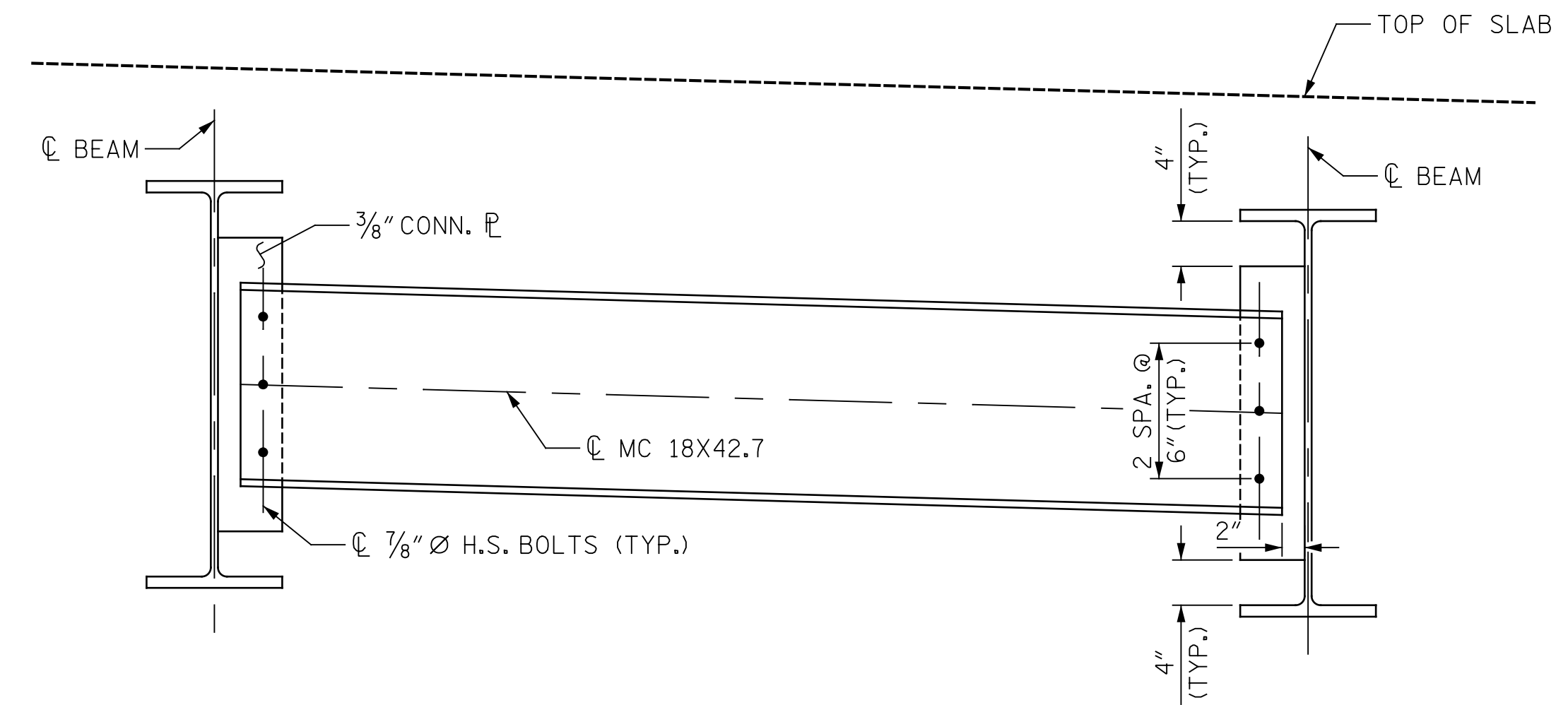
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One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

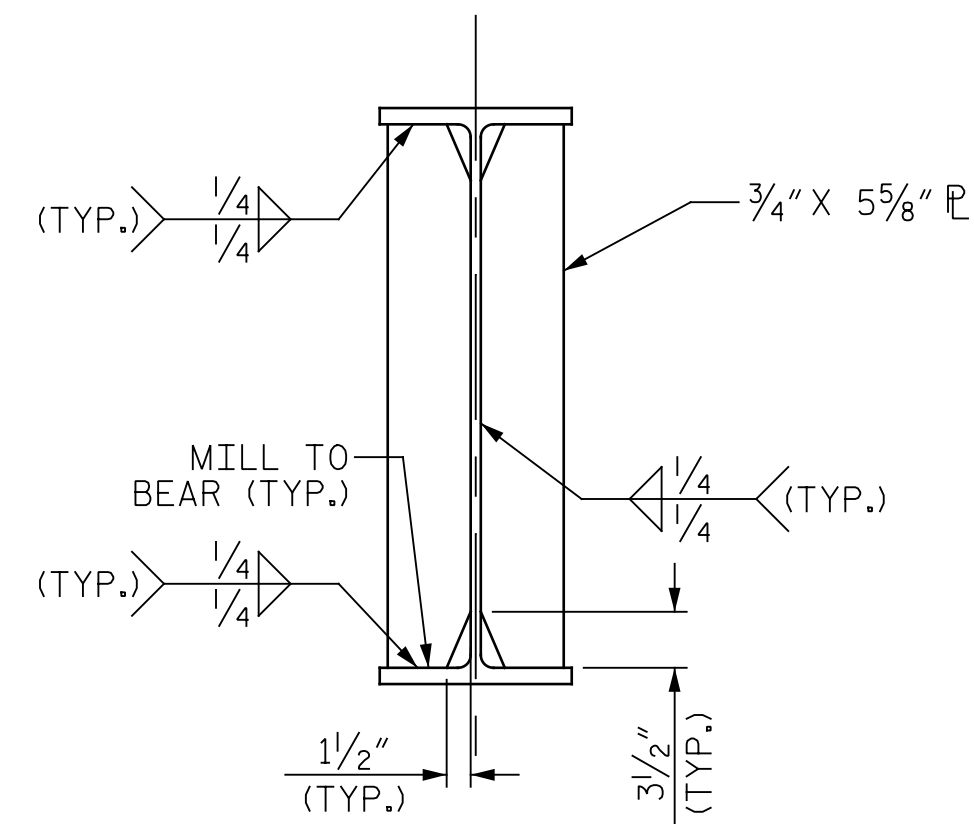
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END DIAPHRAGM (D1)

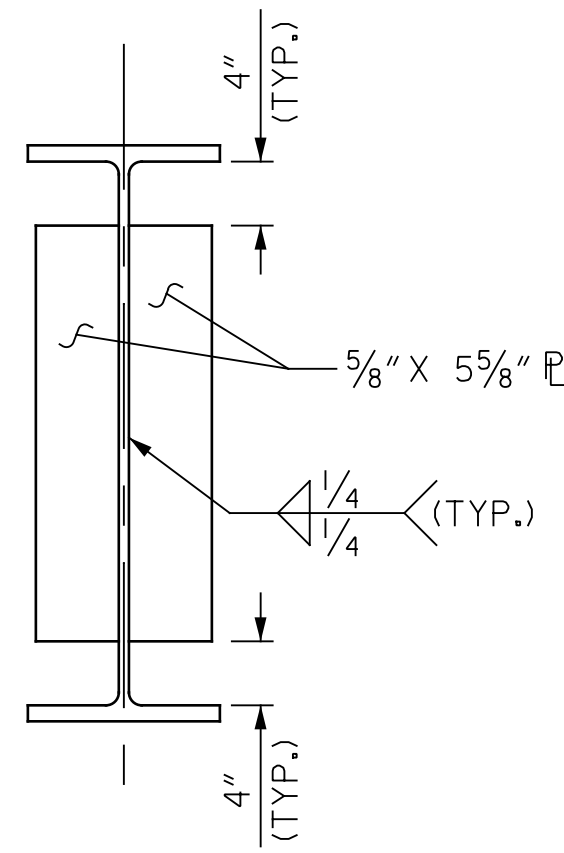


INTERMEDIATE DIAPHRAGM (D2) & BENT DIAPHRAGM (D3)



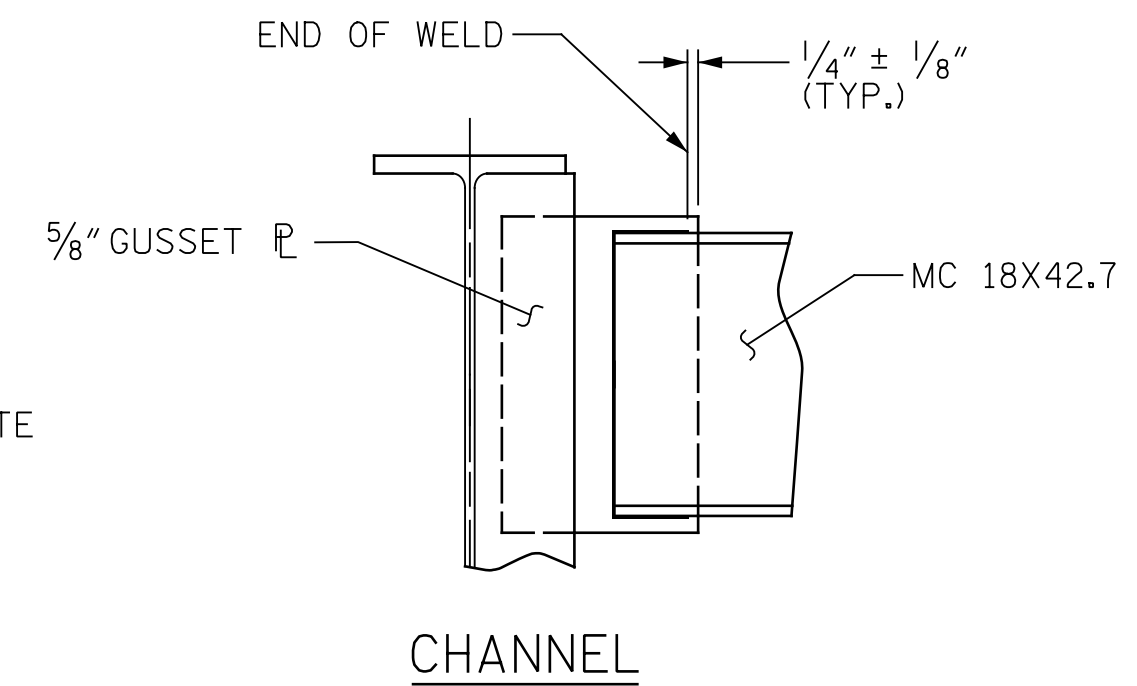
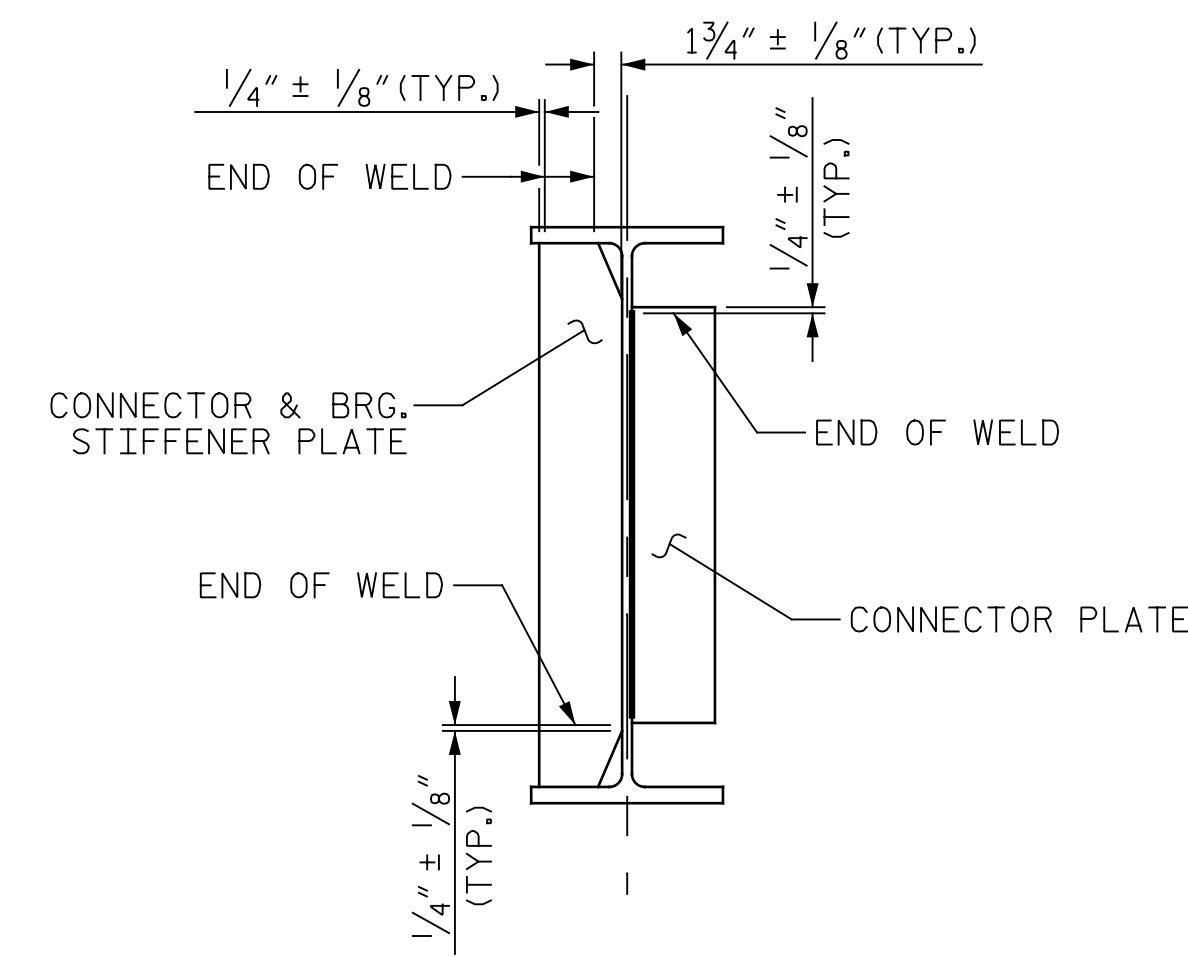
BEARING STIFFENER DETAIL & BENT DIAPHRAGM CONNECTOR PLATE

(INTERIOR BEAM SHOWN)

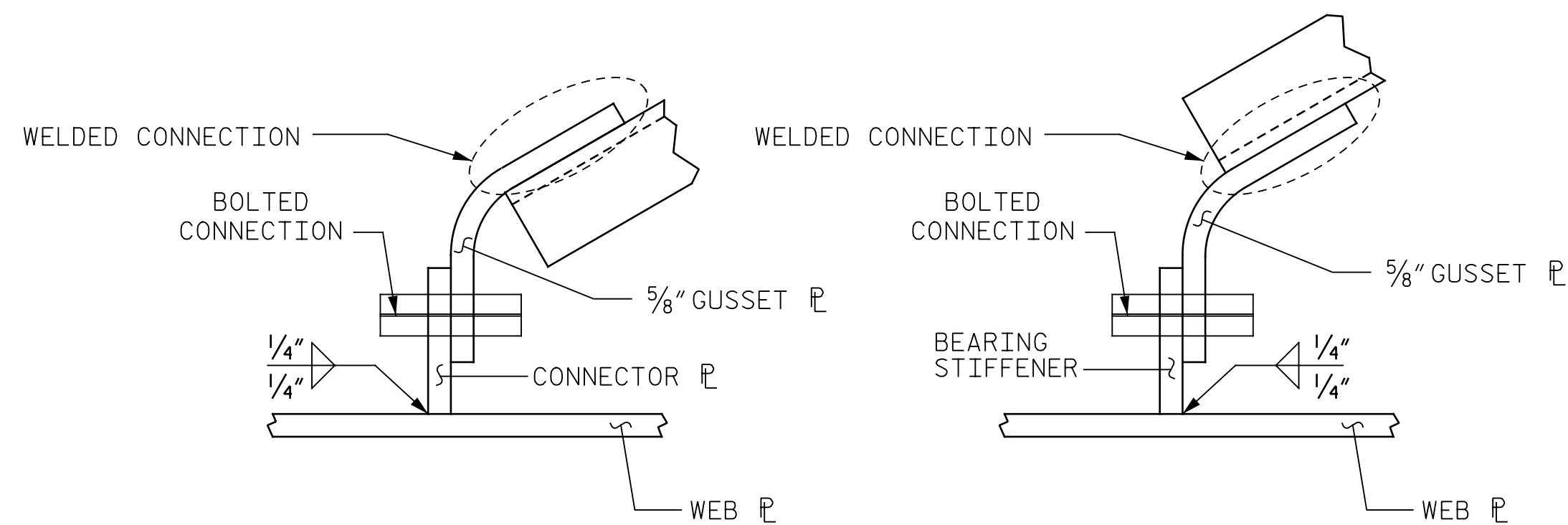


INTERMEDIATE DIAPHRAGM CONNECTOR PLATE DETAIL

(INTERIOR BEAM SHOWN)



WELD TERMINATION DETAILS



GUSSET PLATE DETAIL

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS**



DocuSigned by:
Eric B. Nelson 9/2/2021

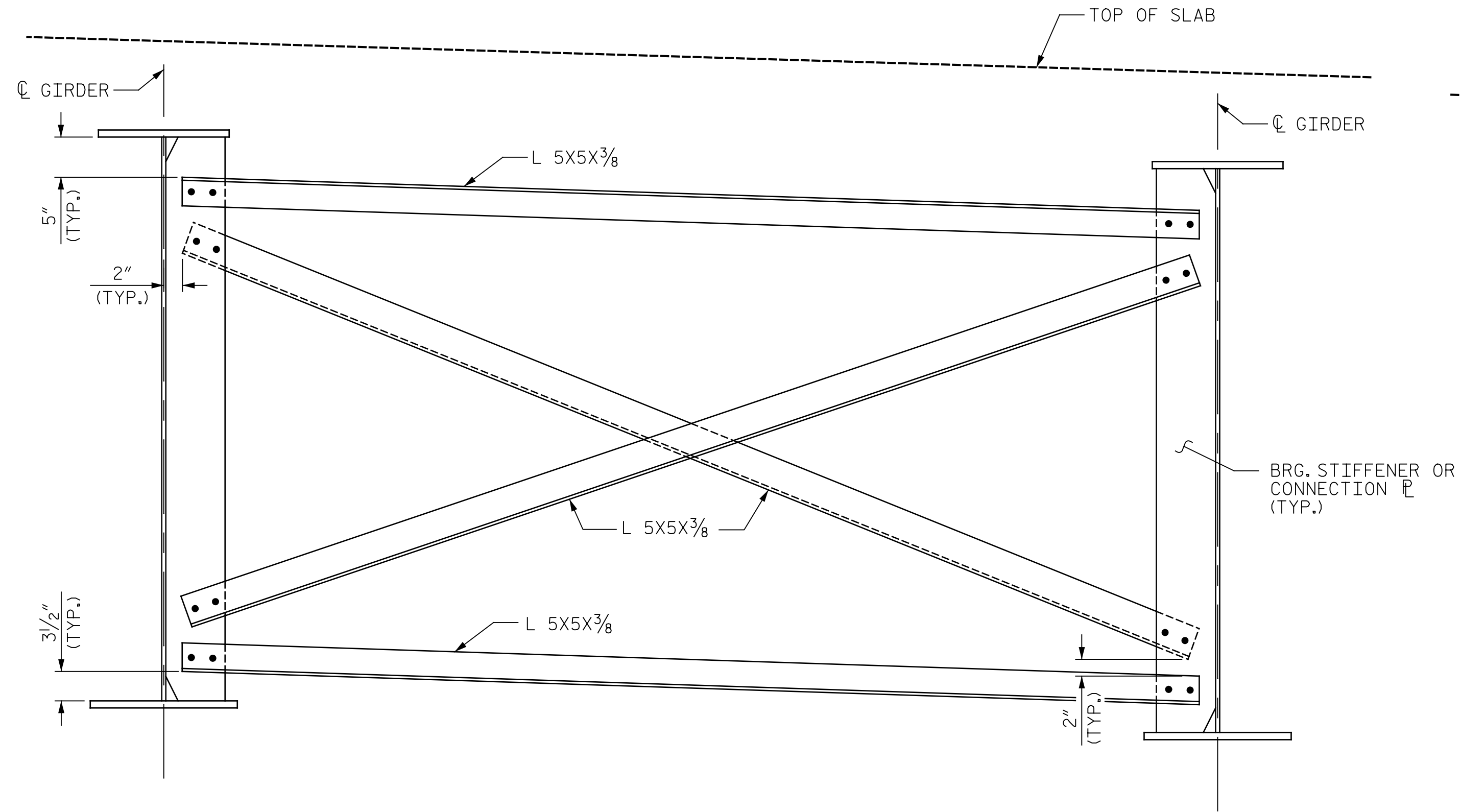
DRAWN BY : I. FORD DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
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 Excellence Delivered As Promised
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 Suite 900
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 (919) 420-7660
 NC Lic. No. F-0270

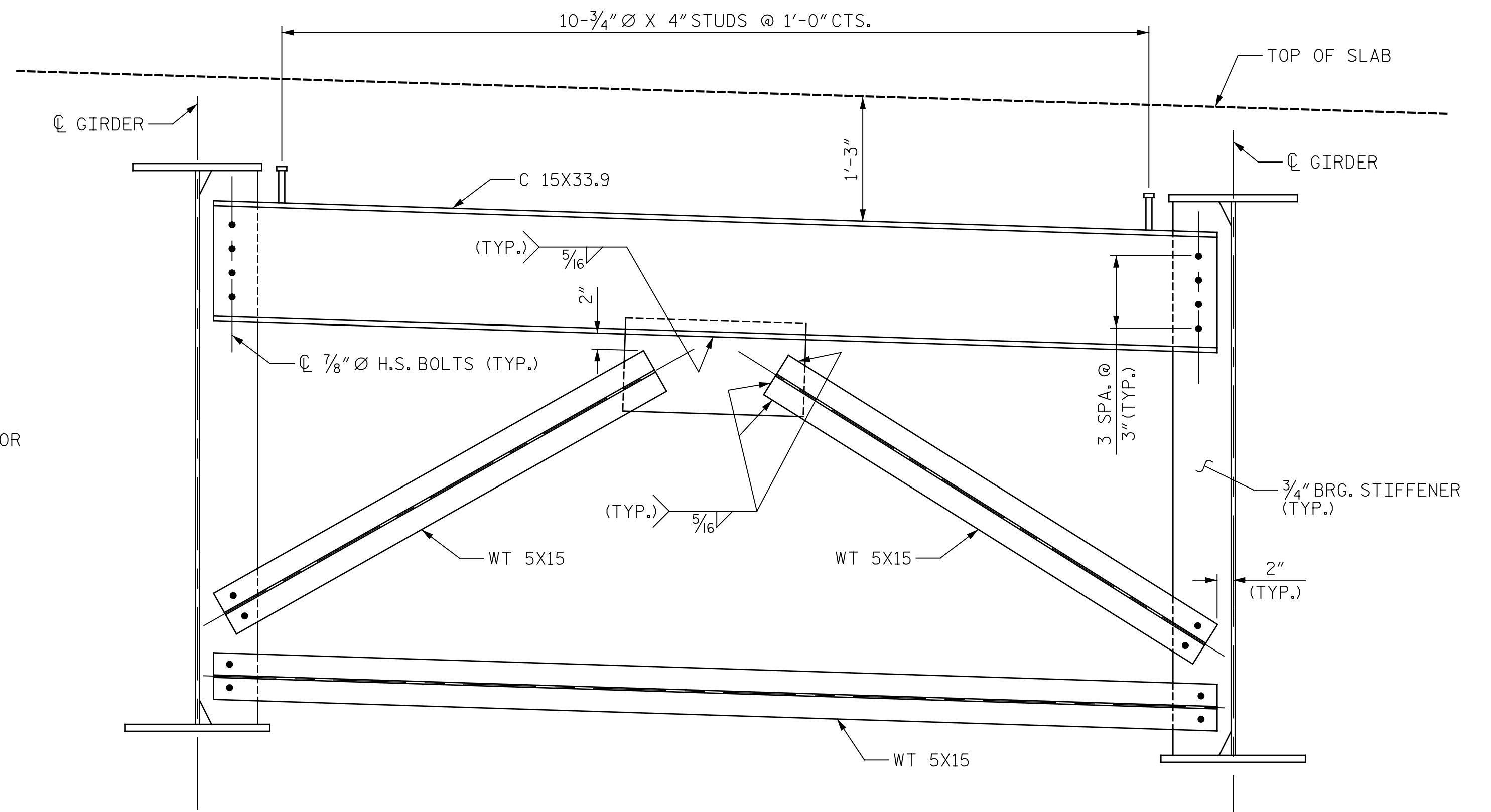
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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-30
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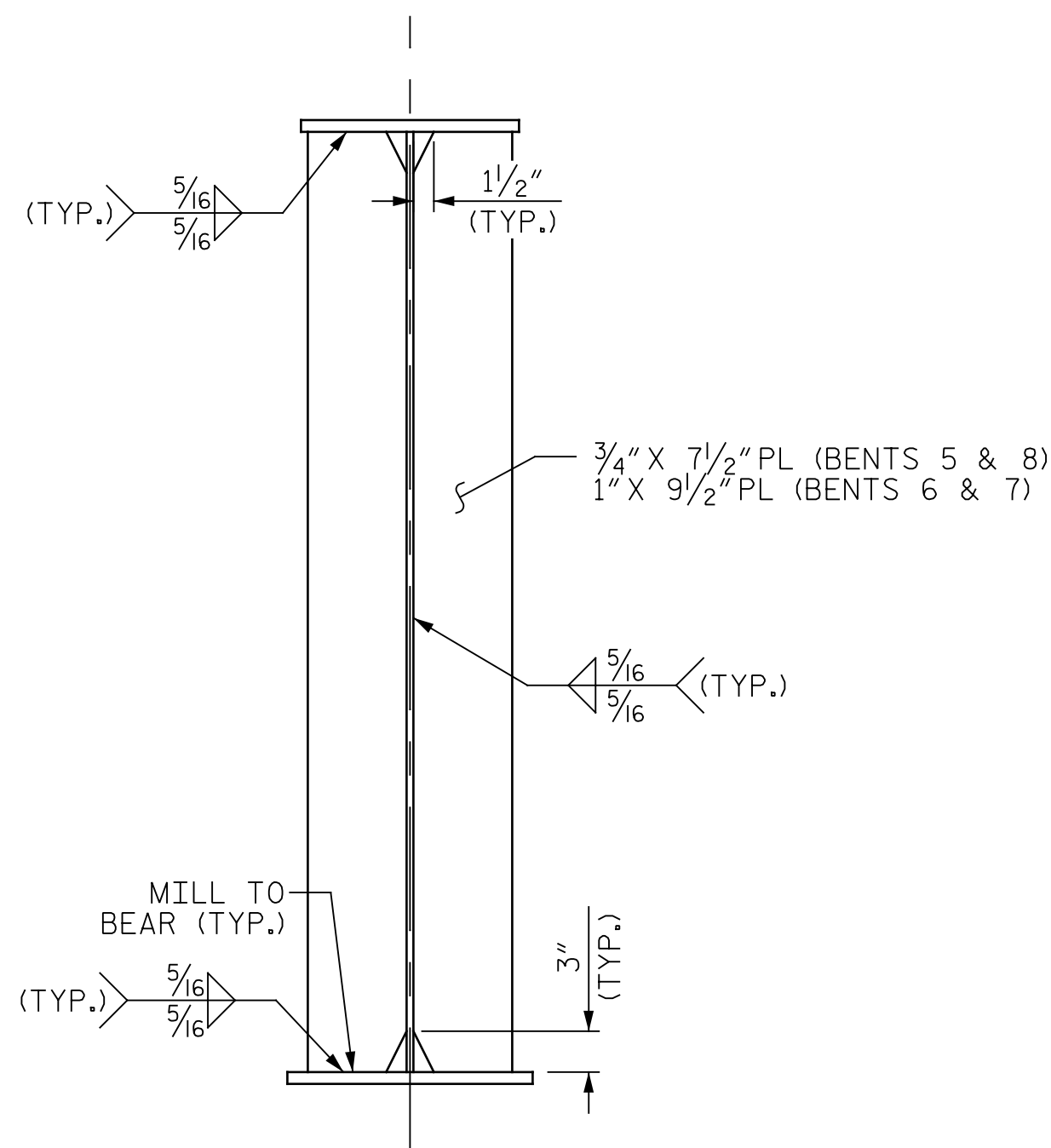
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INTERMEDIATE CROSS FRAME (D5) & BENT DIAPHRAGM (D6)

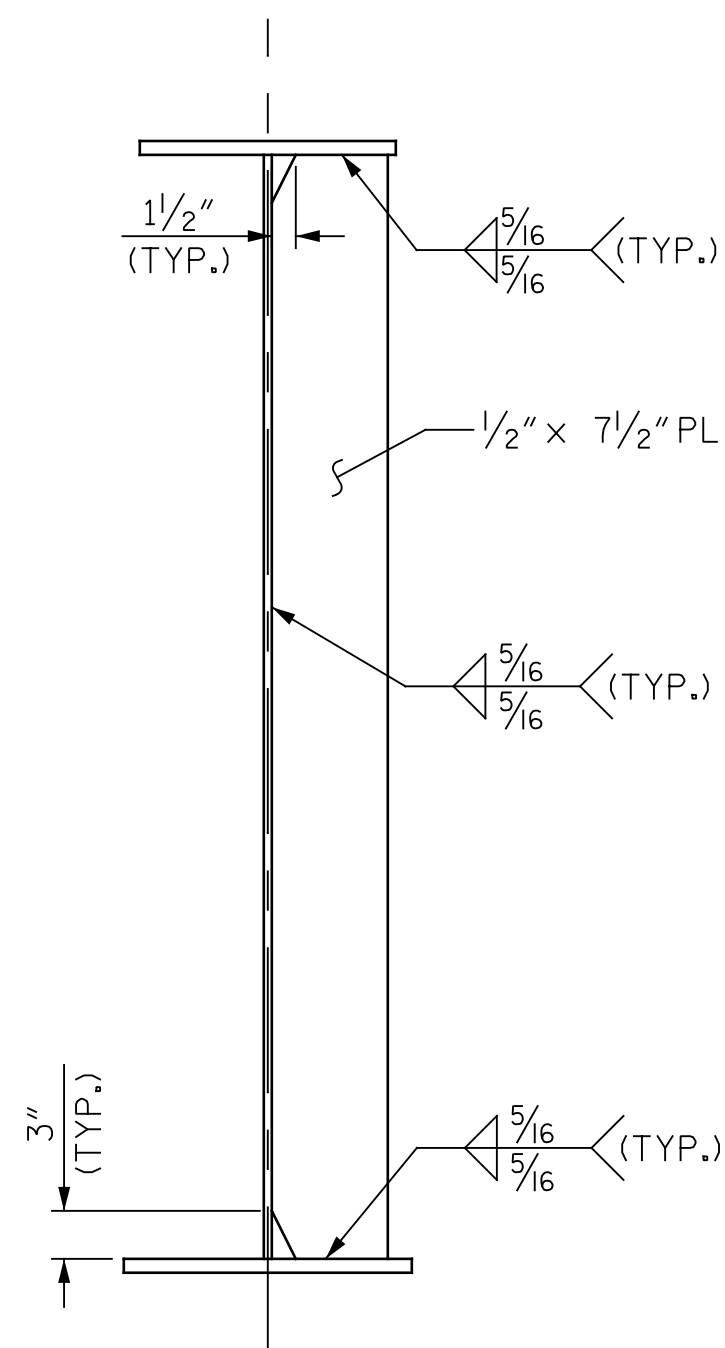


END DIAPHRAGM @ BENT 5 & 8 (D4)

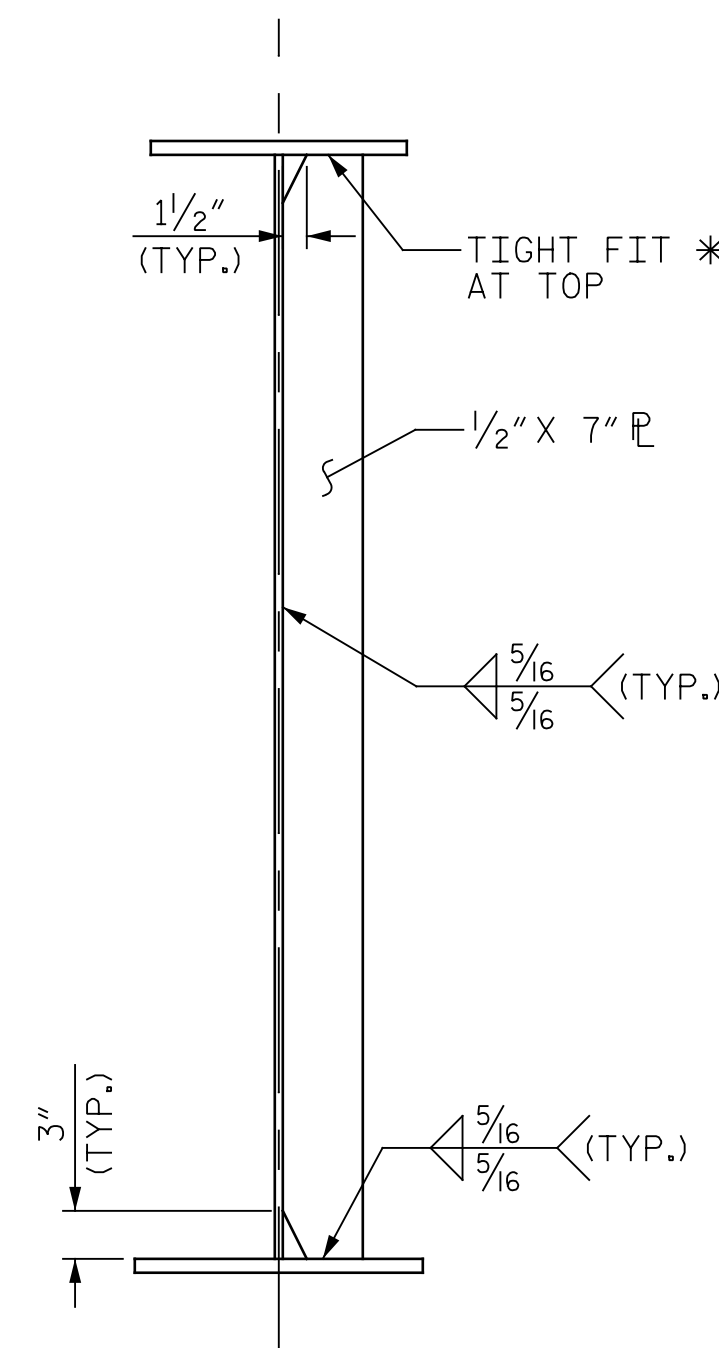


BEARING STIFFENER DETAIL & BENT DIAPHRAGM CONNECTOR PLATE

(INTERIOR BEAM SHOWN)



INTERMEDIATE CROSS FRAME CONNECTOR PLATE DETAIL



TRANSVERSE STIFFENER DETAIL

(TOP FLANGE IN TENSION)

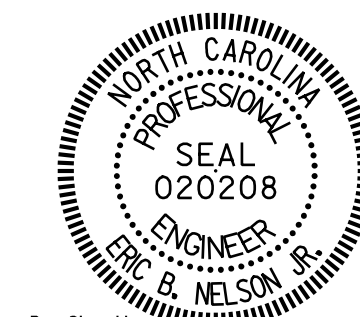
* IF TRANSVERSE STIFFENERS ARE USED FOR CONNECTOR PLATES, WELD TOP AND BOTTOM OF STIFFENERS TO FLANGES. INCREASE STIFFENER WIDTH AS REQUIRED WHEN USED AS A CONNECTOR PLATE. INCREASE STIFFENER THICKNESS AS REQUIRED TO MAINTAIN WIDTH TO THICKNESS RATIO NO LARGER THAN 14.0.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 5 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS



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 Eric B. Nelson 9/2/2021
 ACB892119274C0

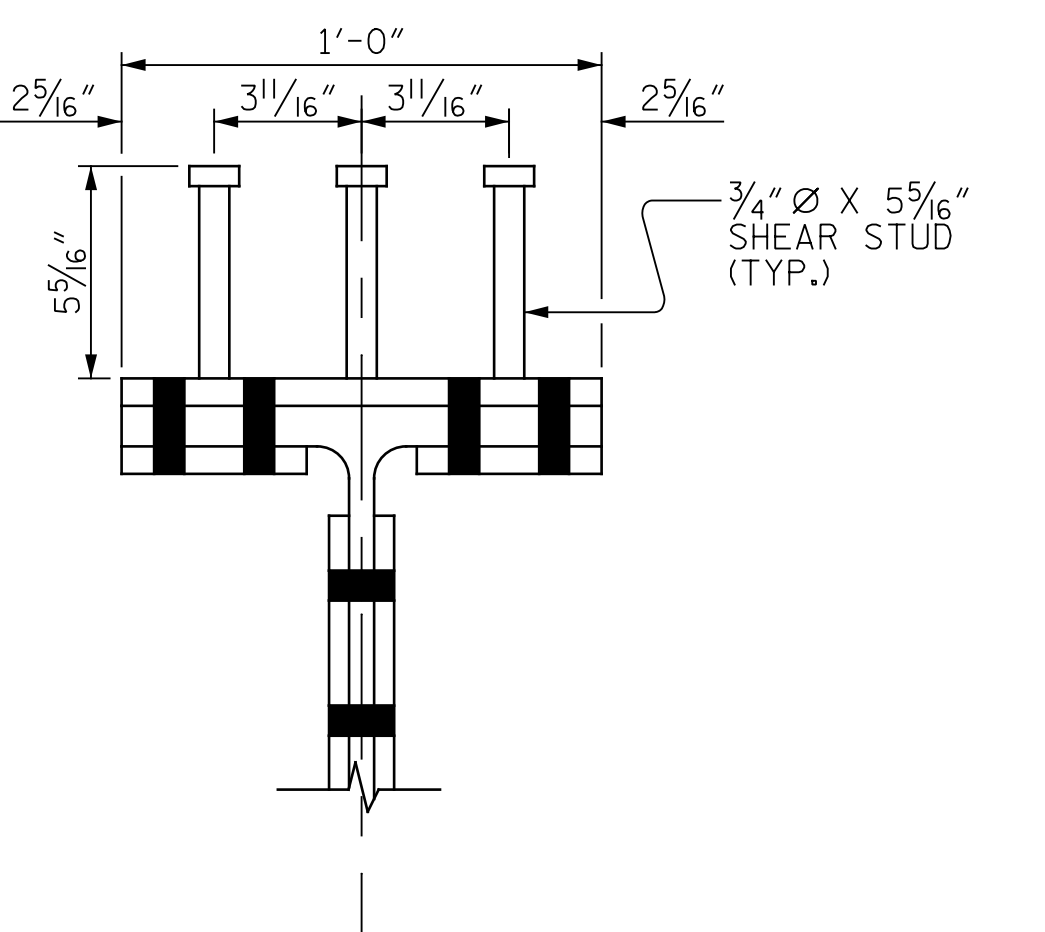
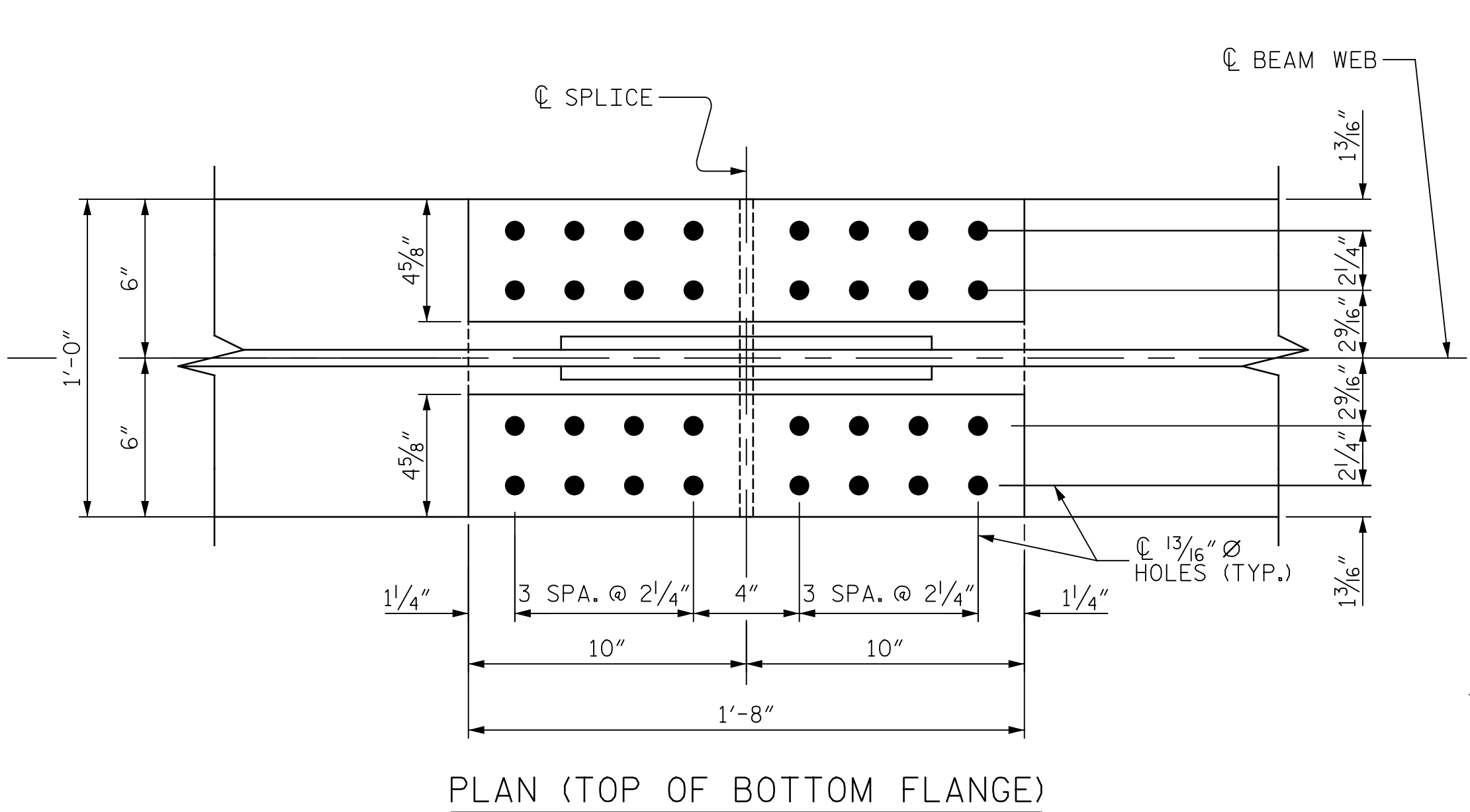
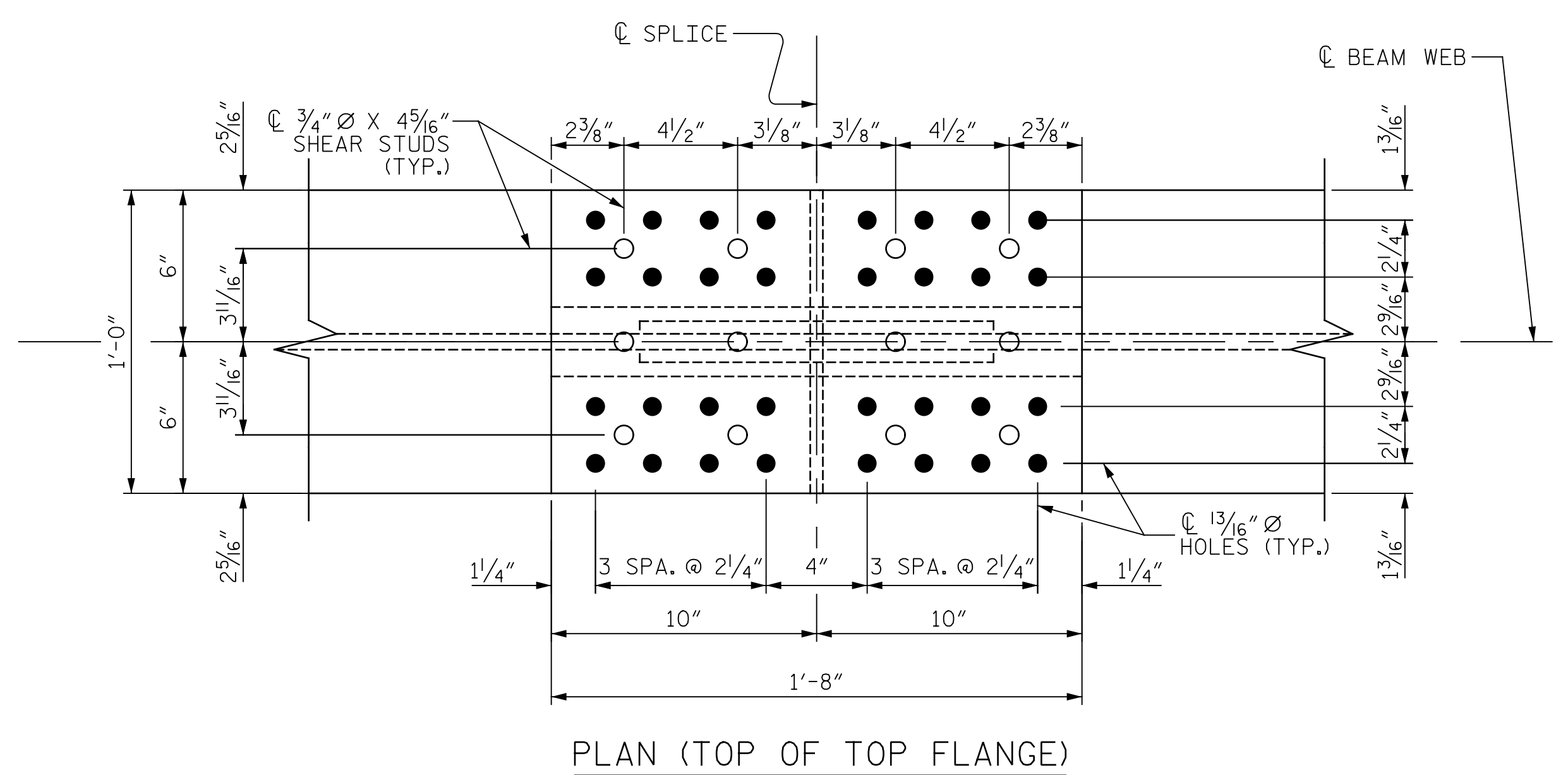
DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
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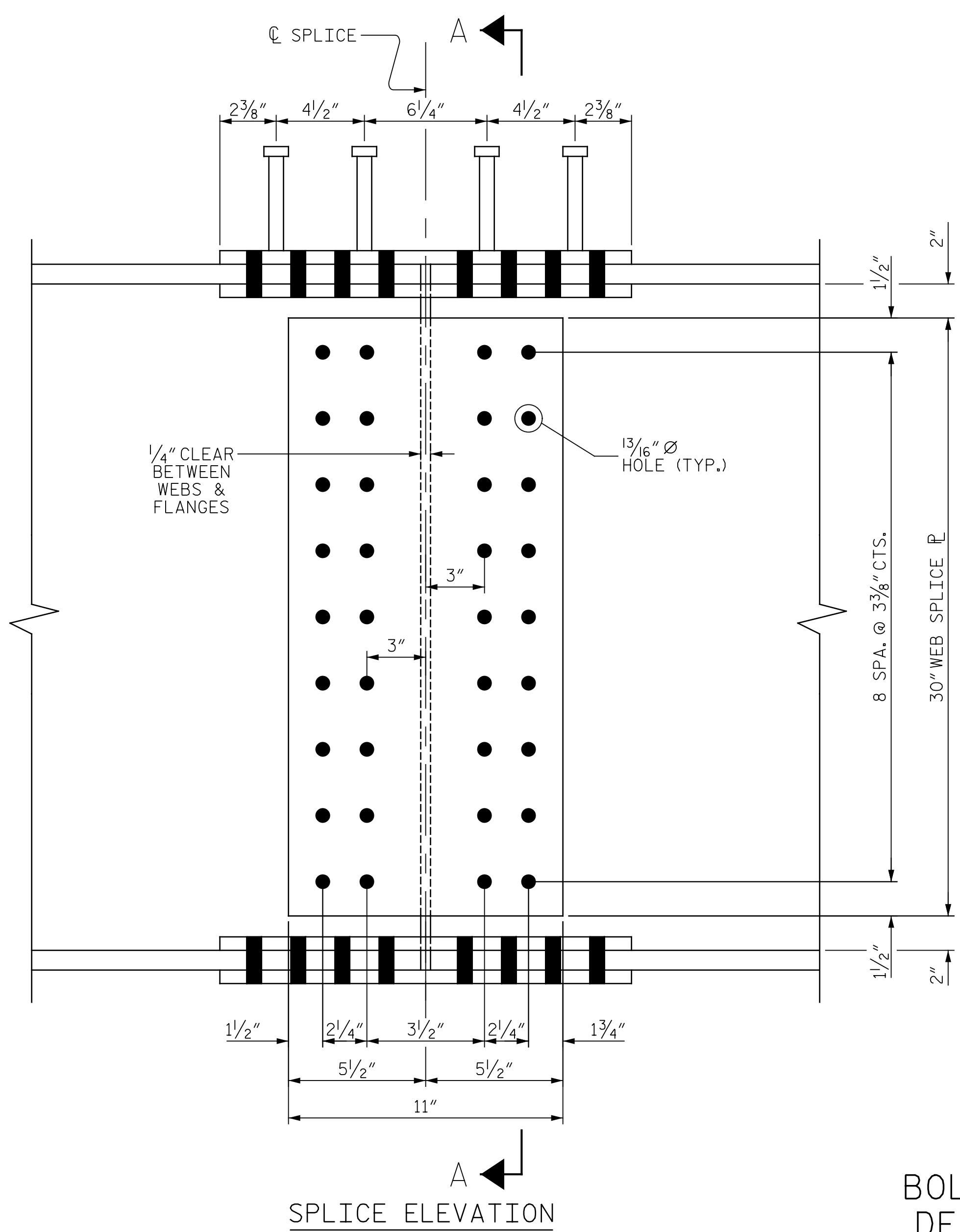
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2			4			125

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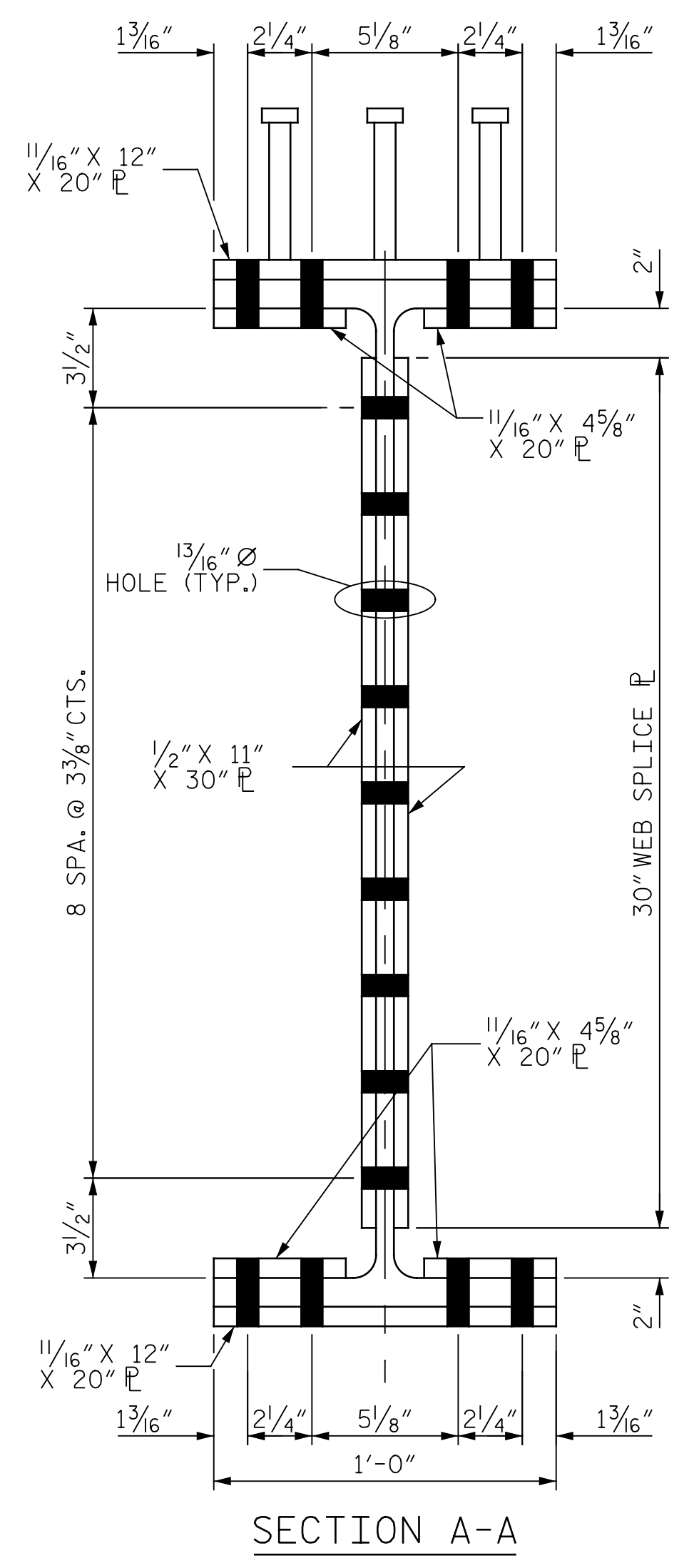


SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

(SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY)



BOLTED FIELD SPLICE DETAILS - TYPE "A"



SECTION A-A

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 6 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS



DocuSigned by:
 Eric B. Nelson
 9/2/2021
 142880211927420

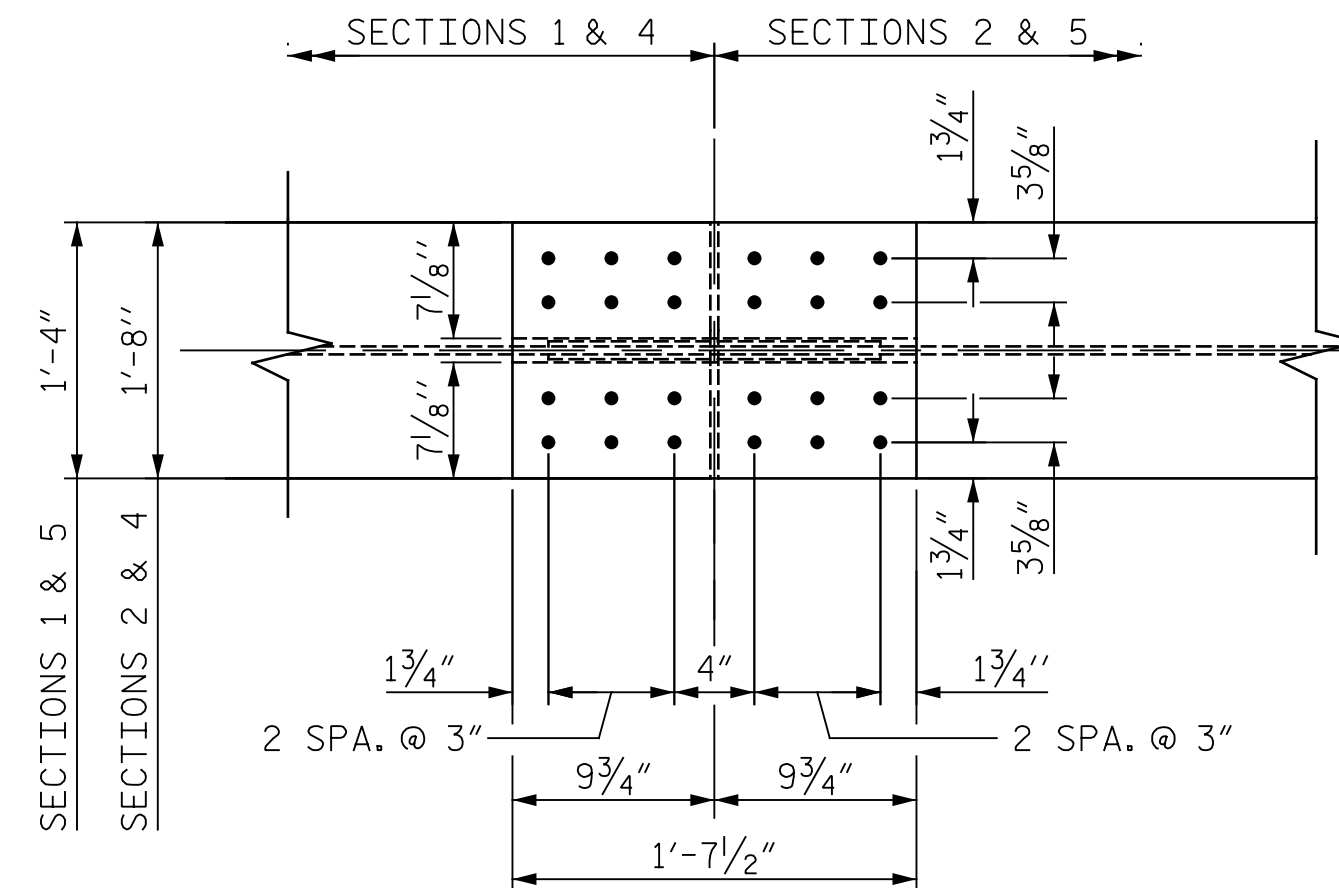
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 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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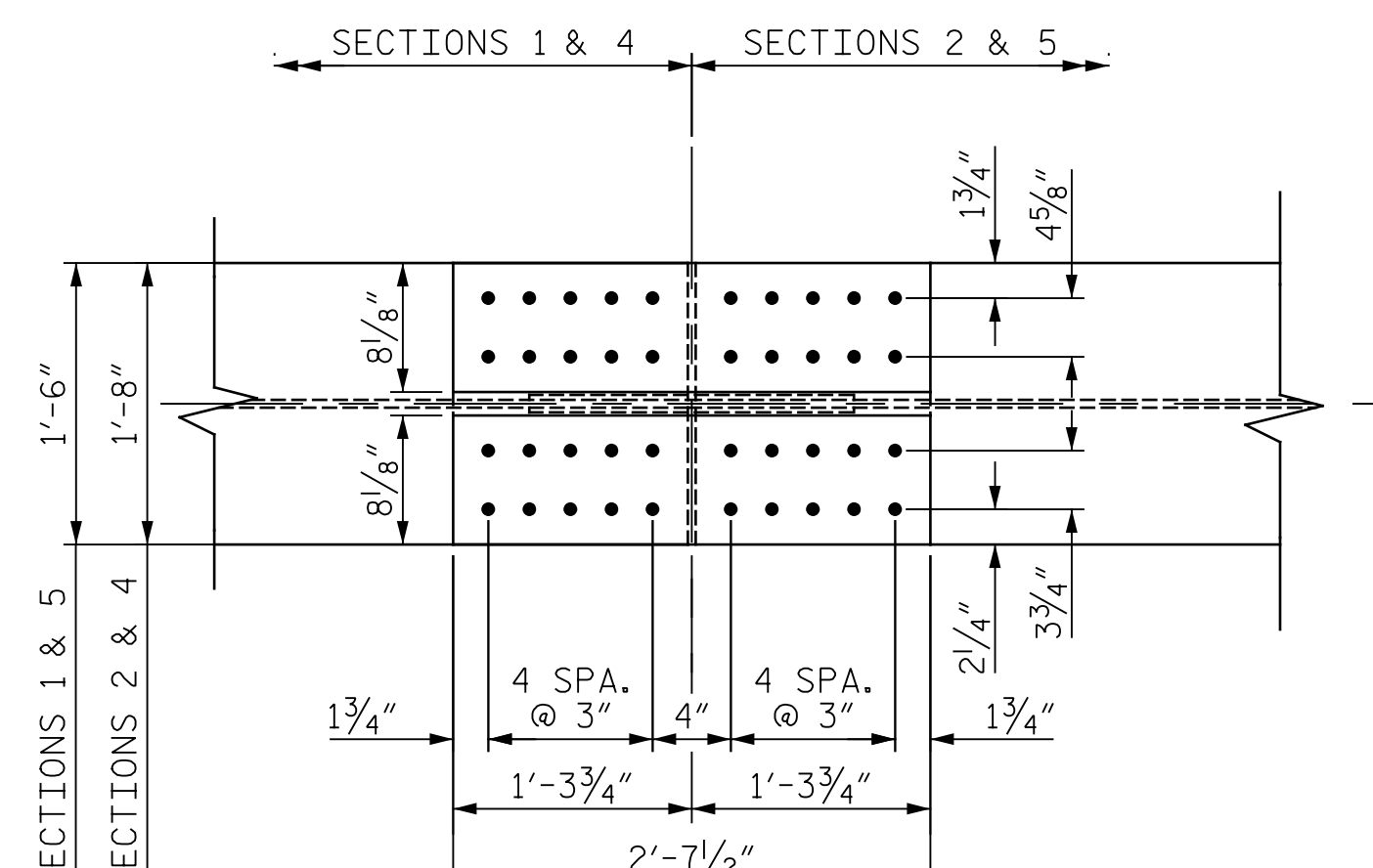
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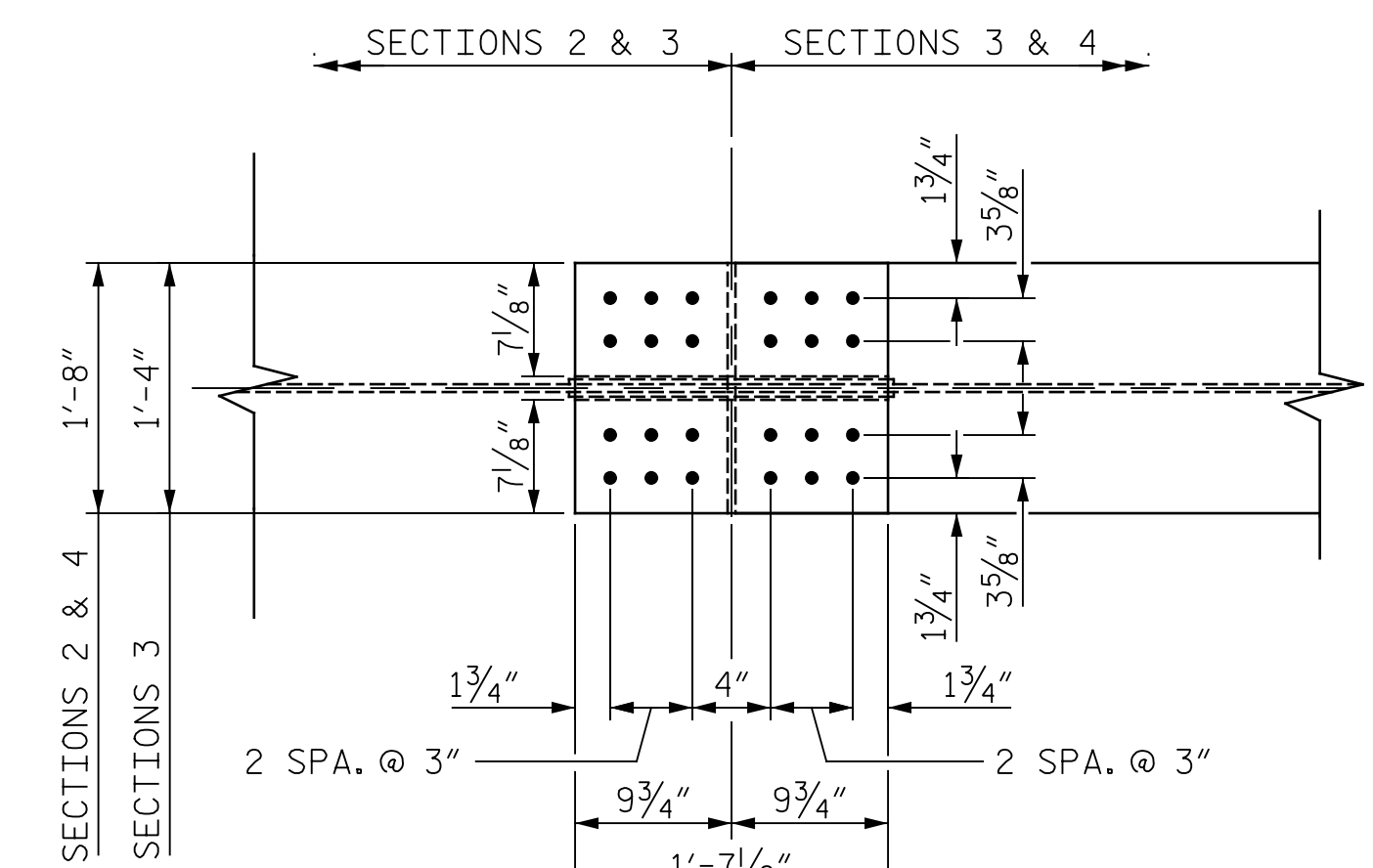
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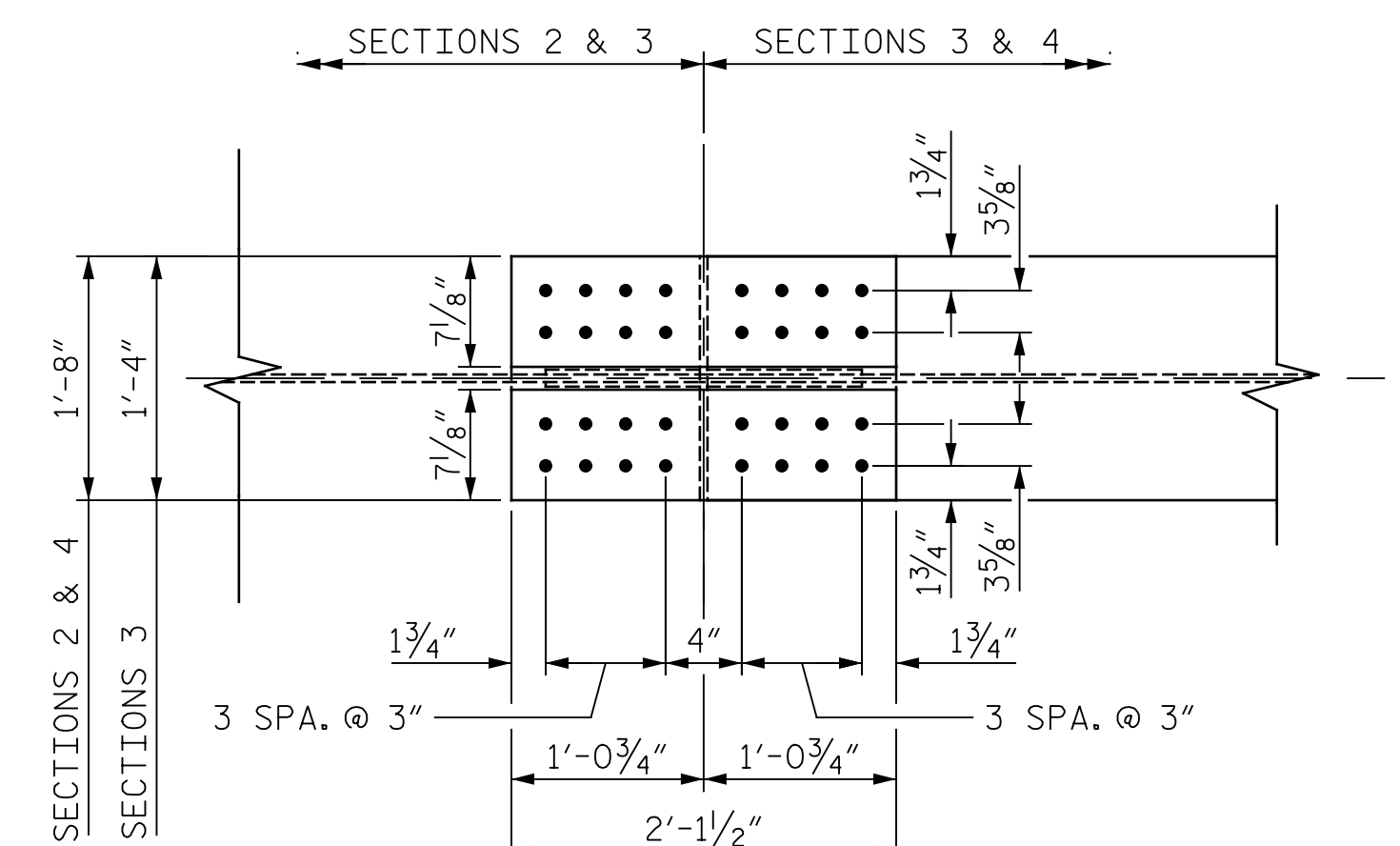
PLAN (TOP OF TOP FLANGE)



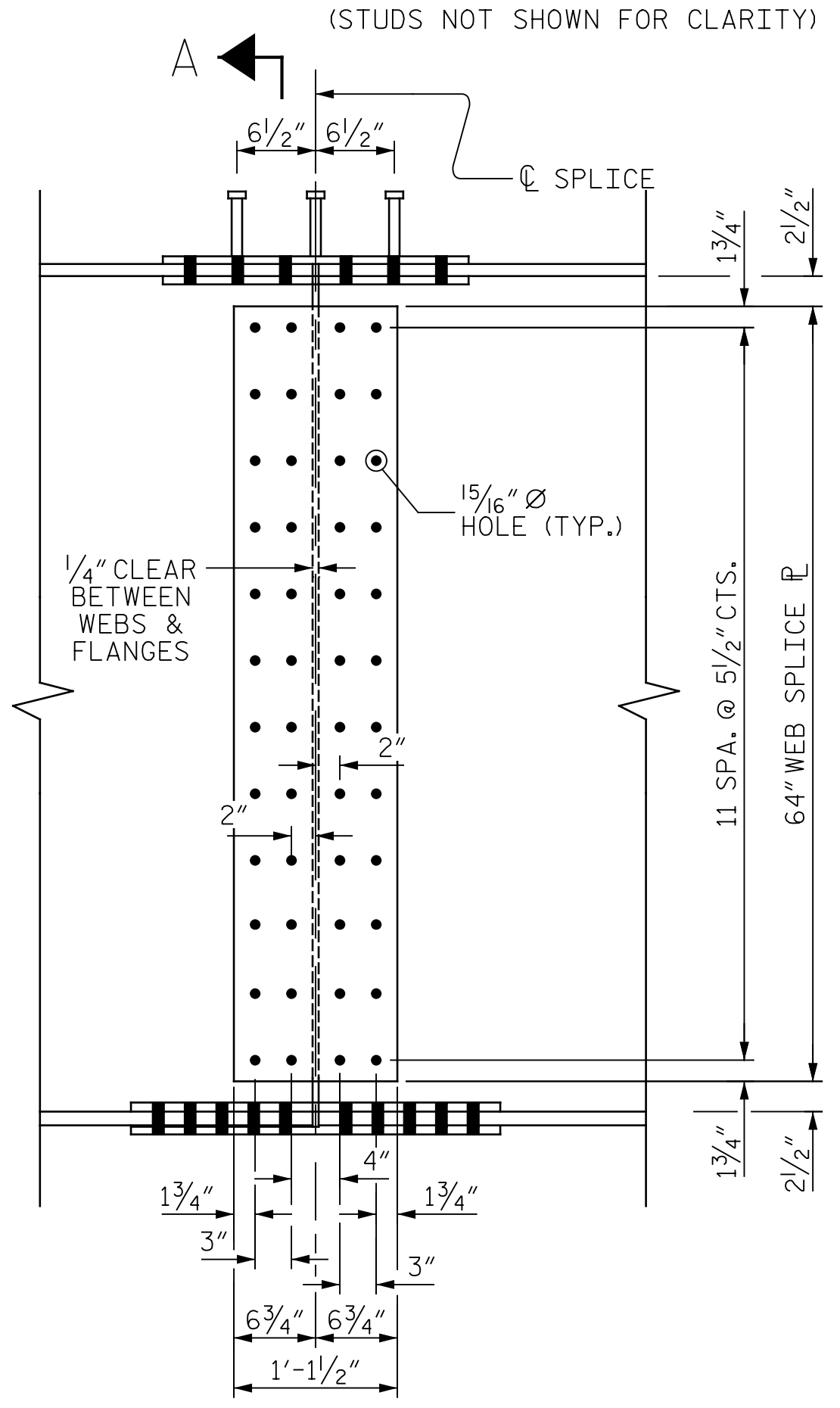
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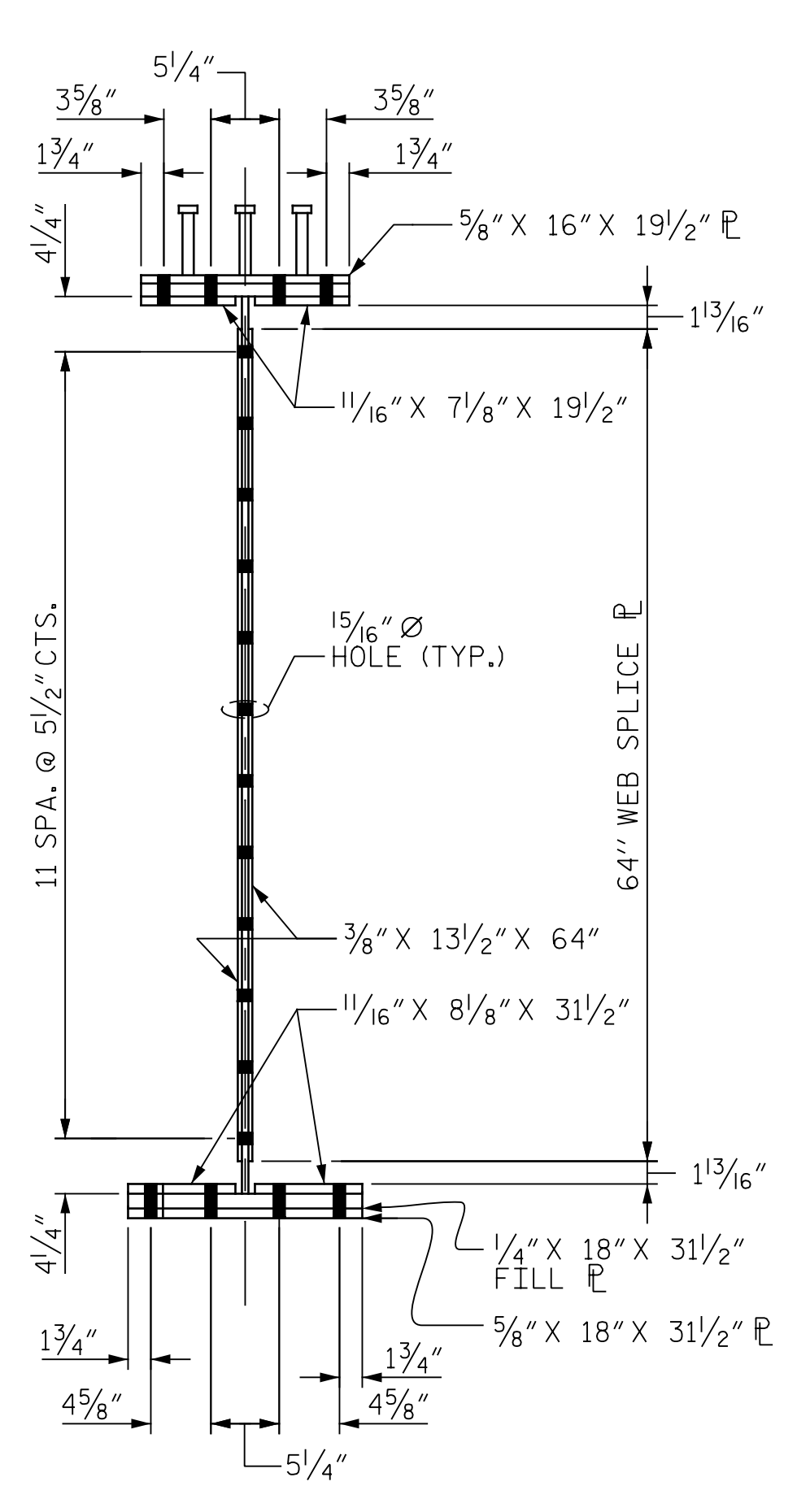
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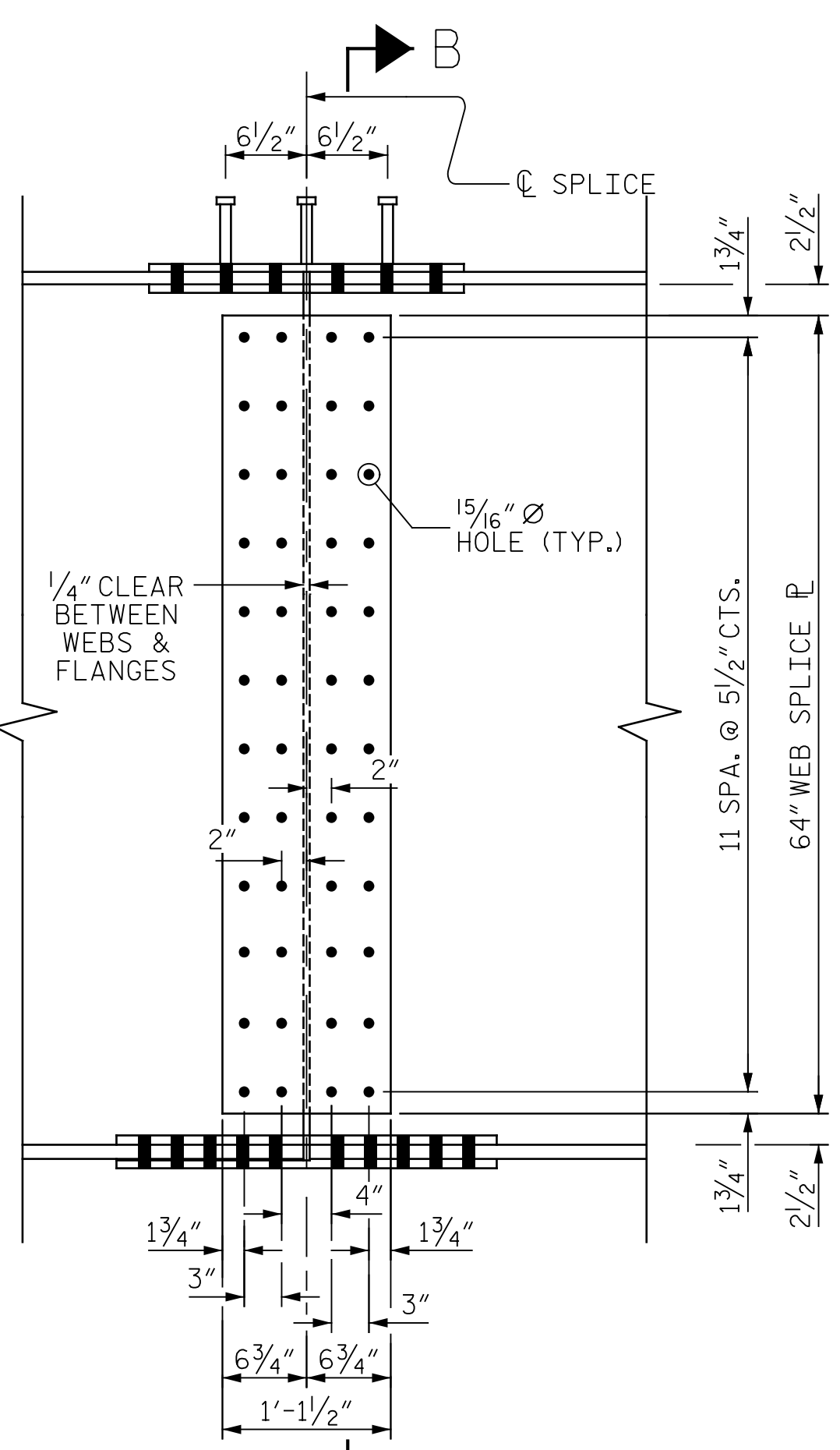
PLAN (TOP OF BOTTOM FLANGE)



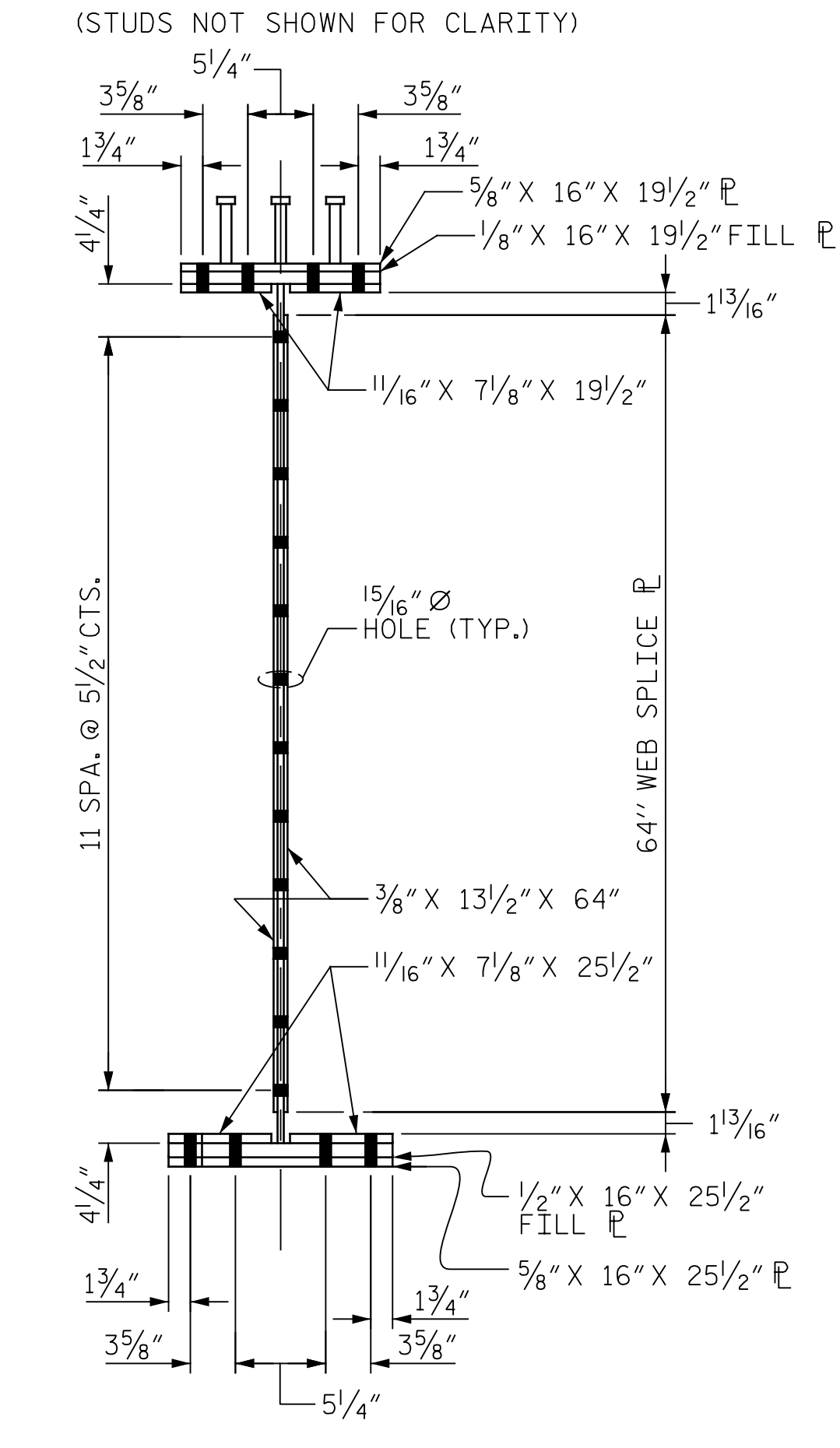
SPlice Elevation



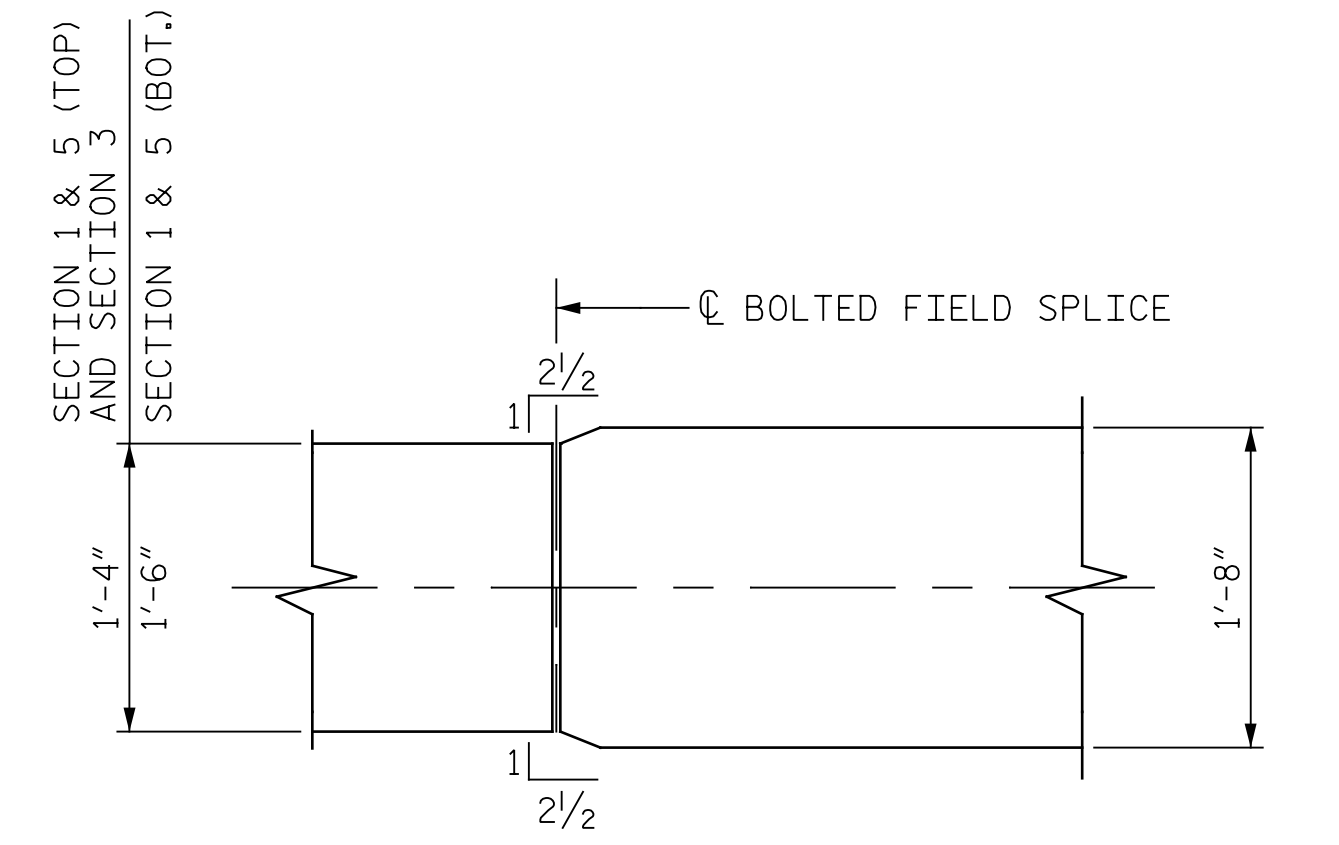
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SPlice Elevation



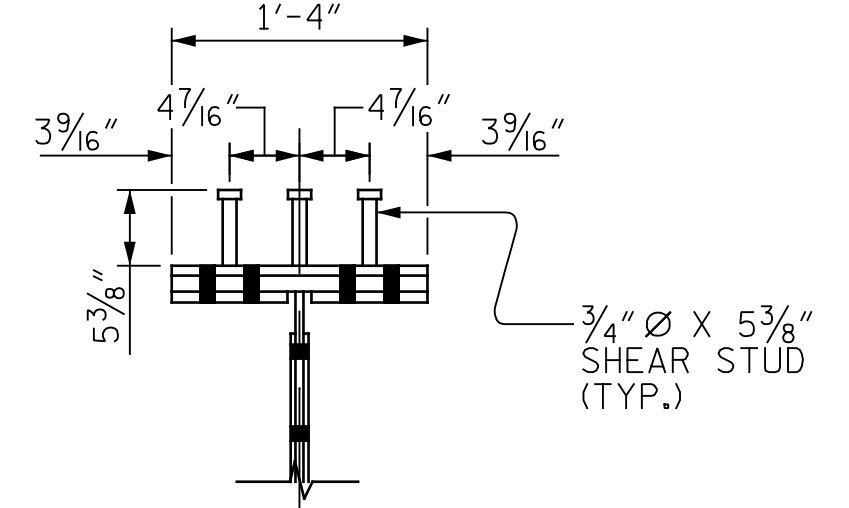
SECTION B-B



BOTTOM FLANGE CLIP DETAIL

BOLTED FIELD SPLICE DETAILS - TYPE "B"

BOLTED FIELD SPLICE DETAILS - TYPE "C"



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE

(SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 7 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS**

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

SHEET NO. S1-33
 TOTAL SHEETS 125



PLANS PREPARED BY:
Gannett Fleming
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 NC Lic. No. F-0270

DocuSigned by:
 Eric B. Nelson
 9/2/2021

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DRAWN BY: I. FORD DATE: 04/2021
 CHECKED BY: R. FISHER DATE: 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE: 05/2021

NOTES

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

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

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

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURE, WHICH MAYBE REQUIRED BY THE ENGINEER, TO RESET ELASTOMERIC BEARINGS DUE TO GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ELASTOMERIC BEARING SLOTS CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F.

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

THE CLOSURE PLATE, GROUT PIPE AND STANDARD PIPE FOR THE EXPANSION ASSEMBLY NEED NOT BE GALVANIZED.

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE II	180 k
TYPE IV	310 k

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
ELASTOMERIC BEARING
DETAILS
 (STEEL SUPERSTRUCTURE)



REVISIONS

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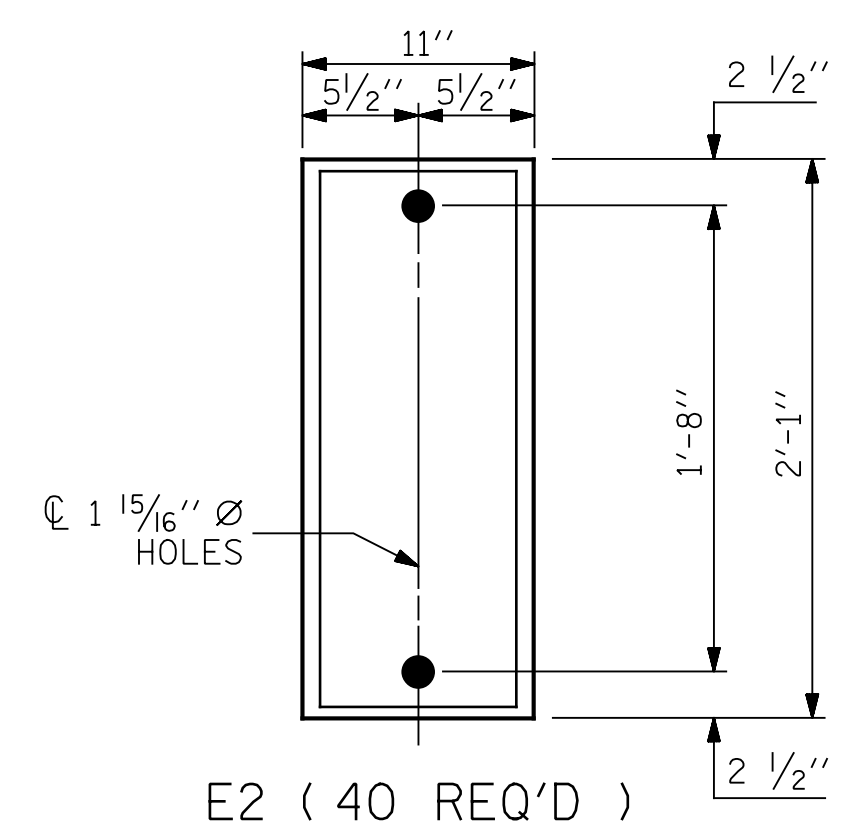
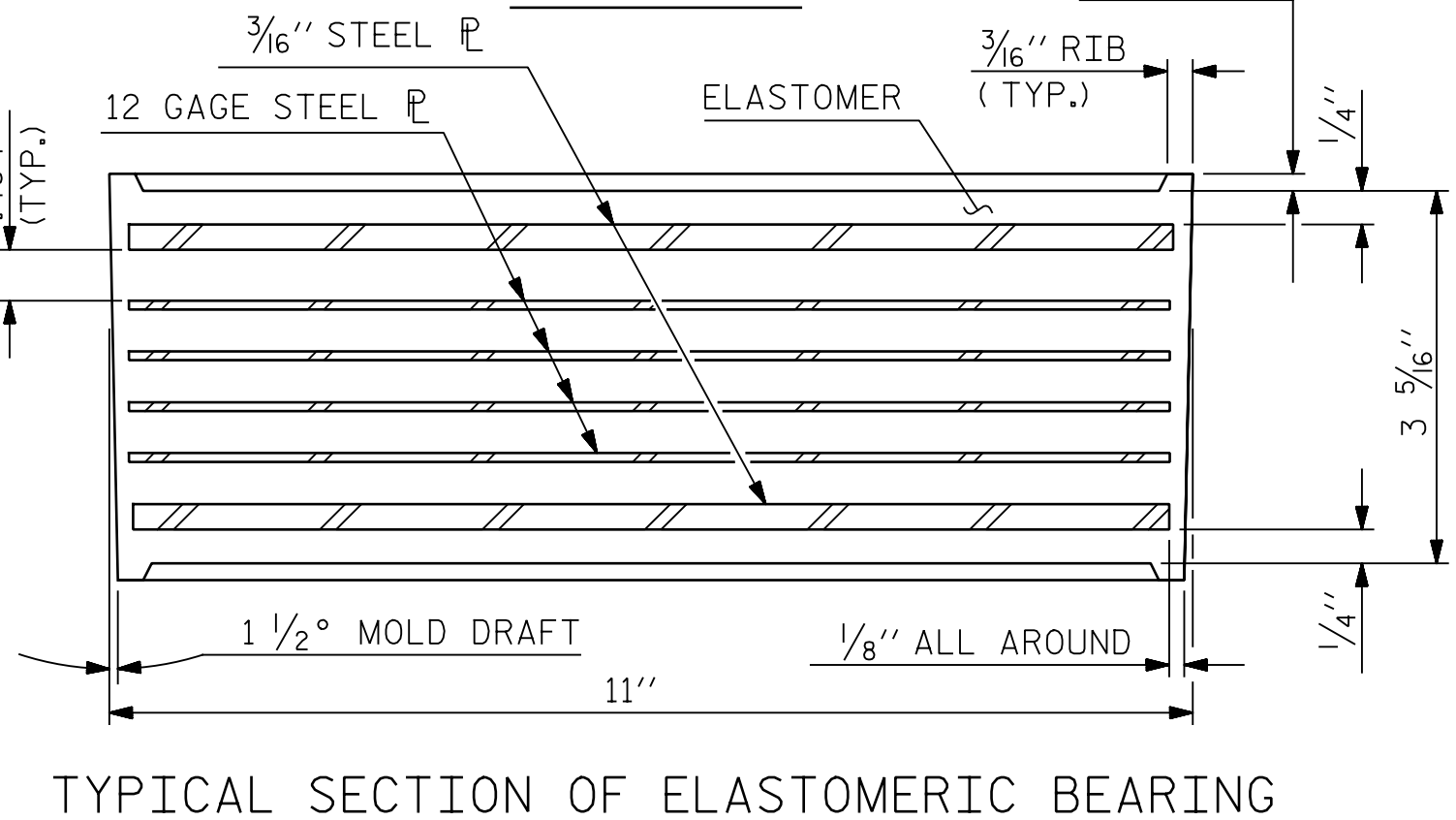
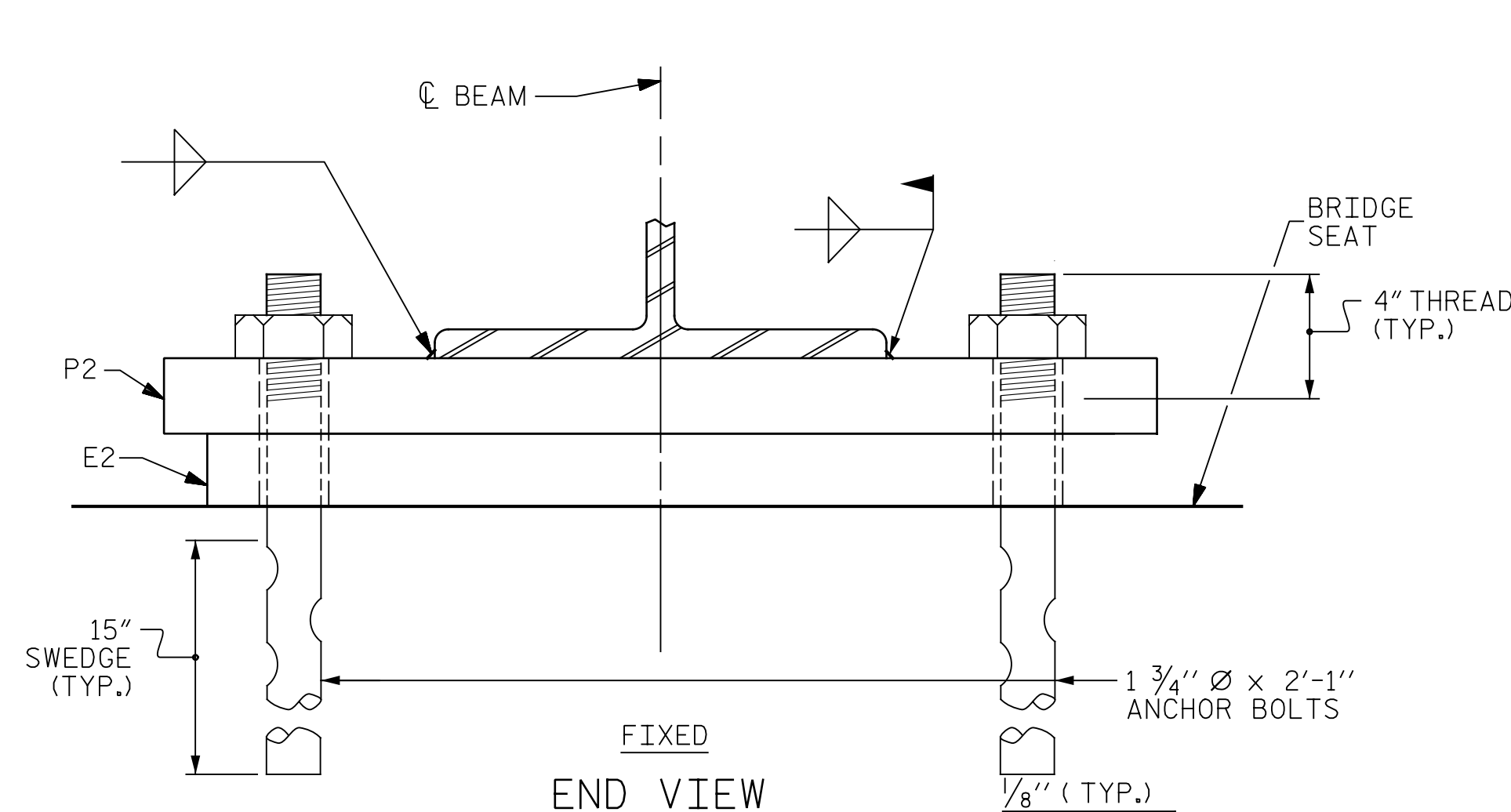
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SHEET NO. S1-34

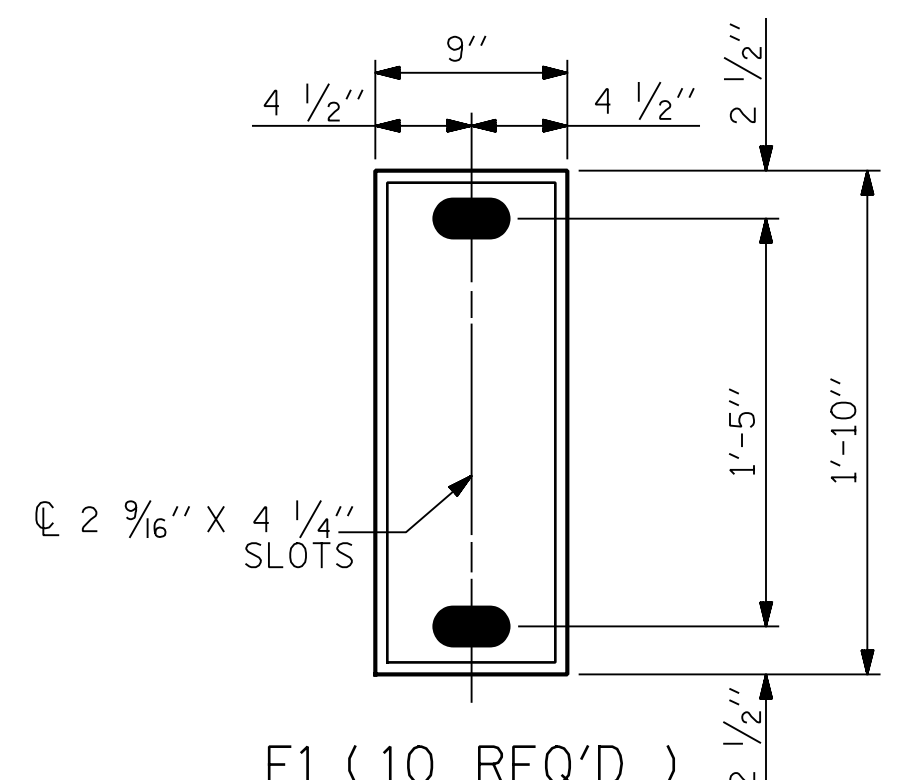
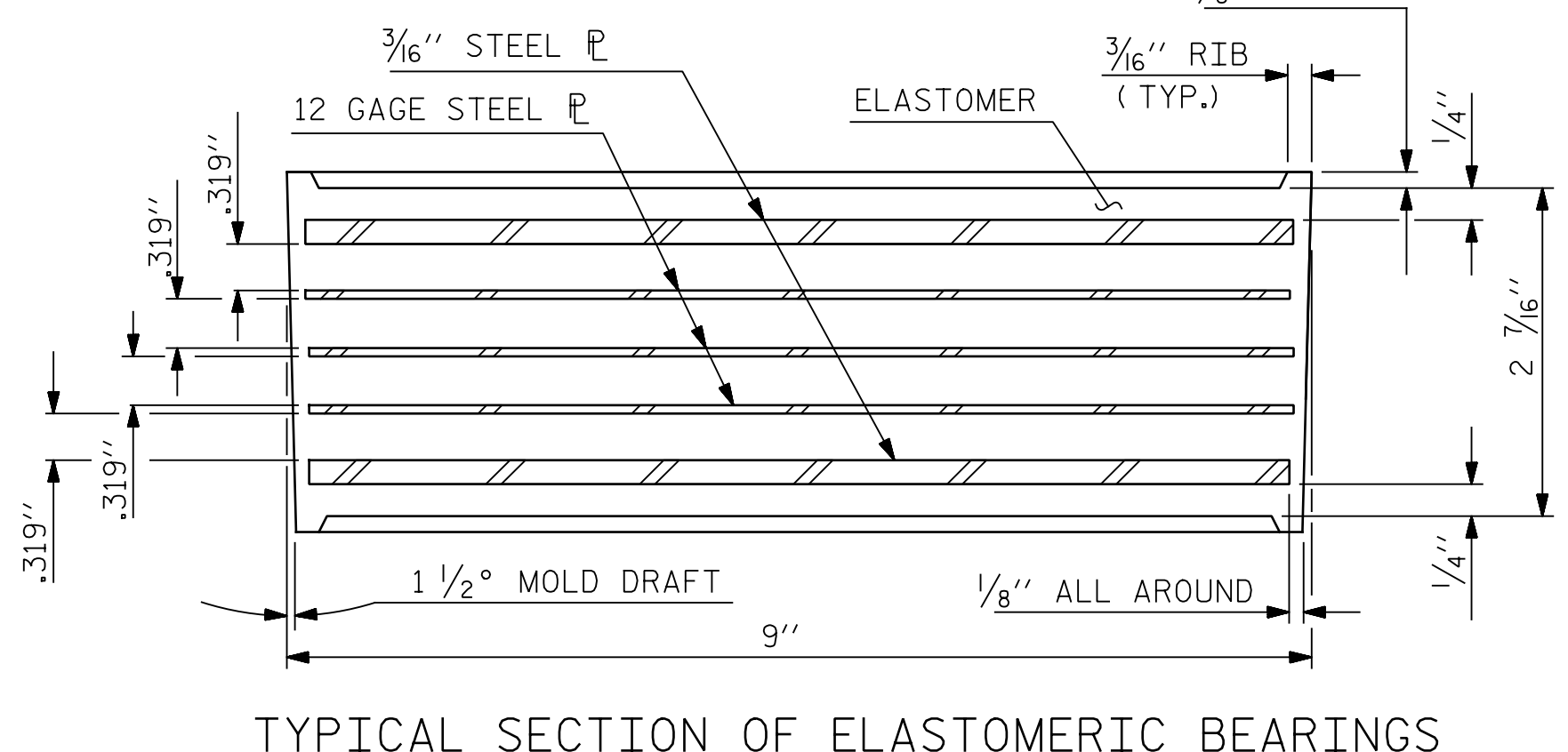
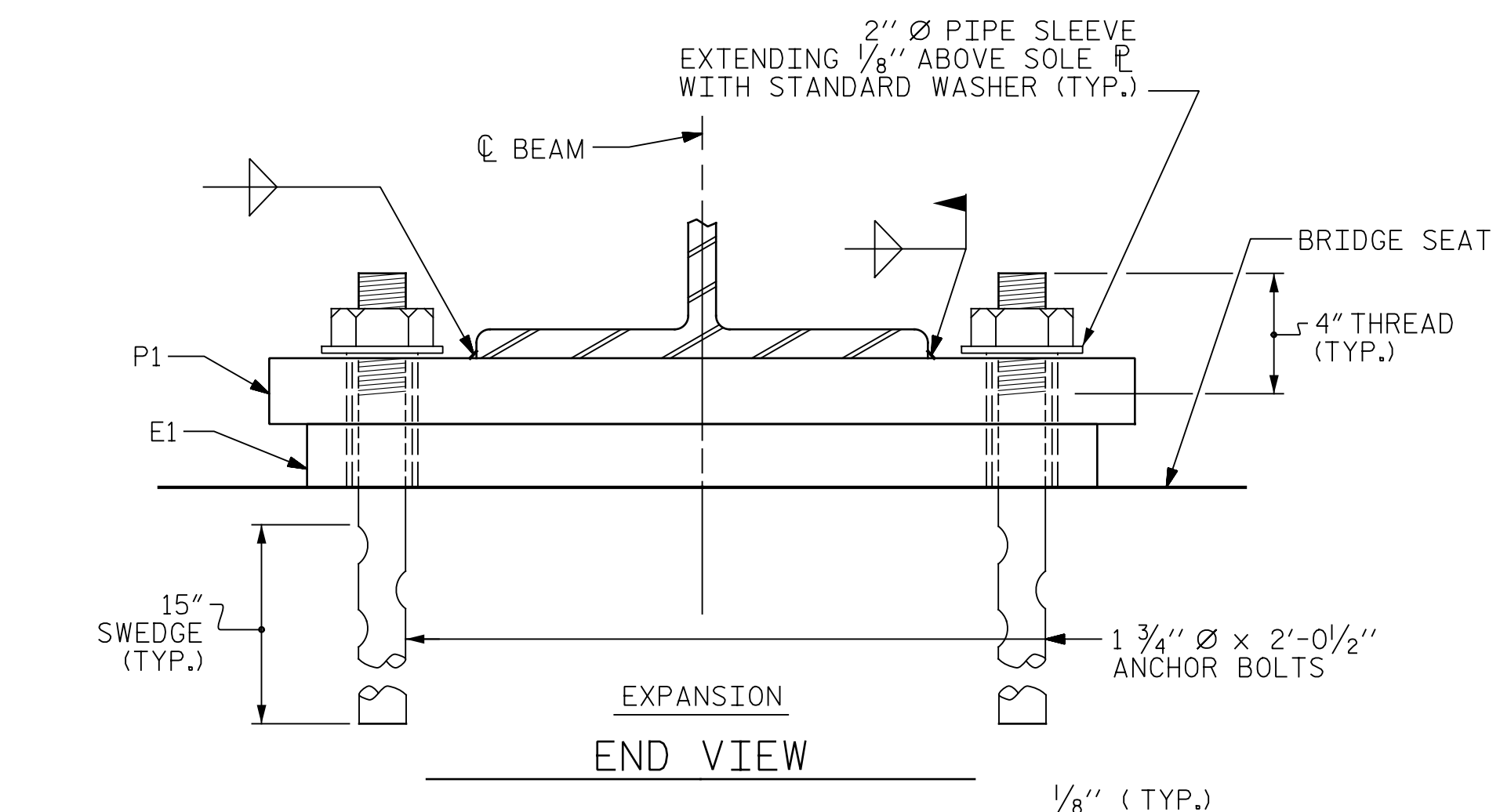
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TOTAL SHEETS 125

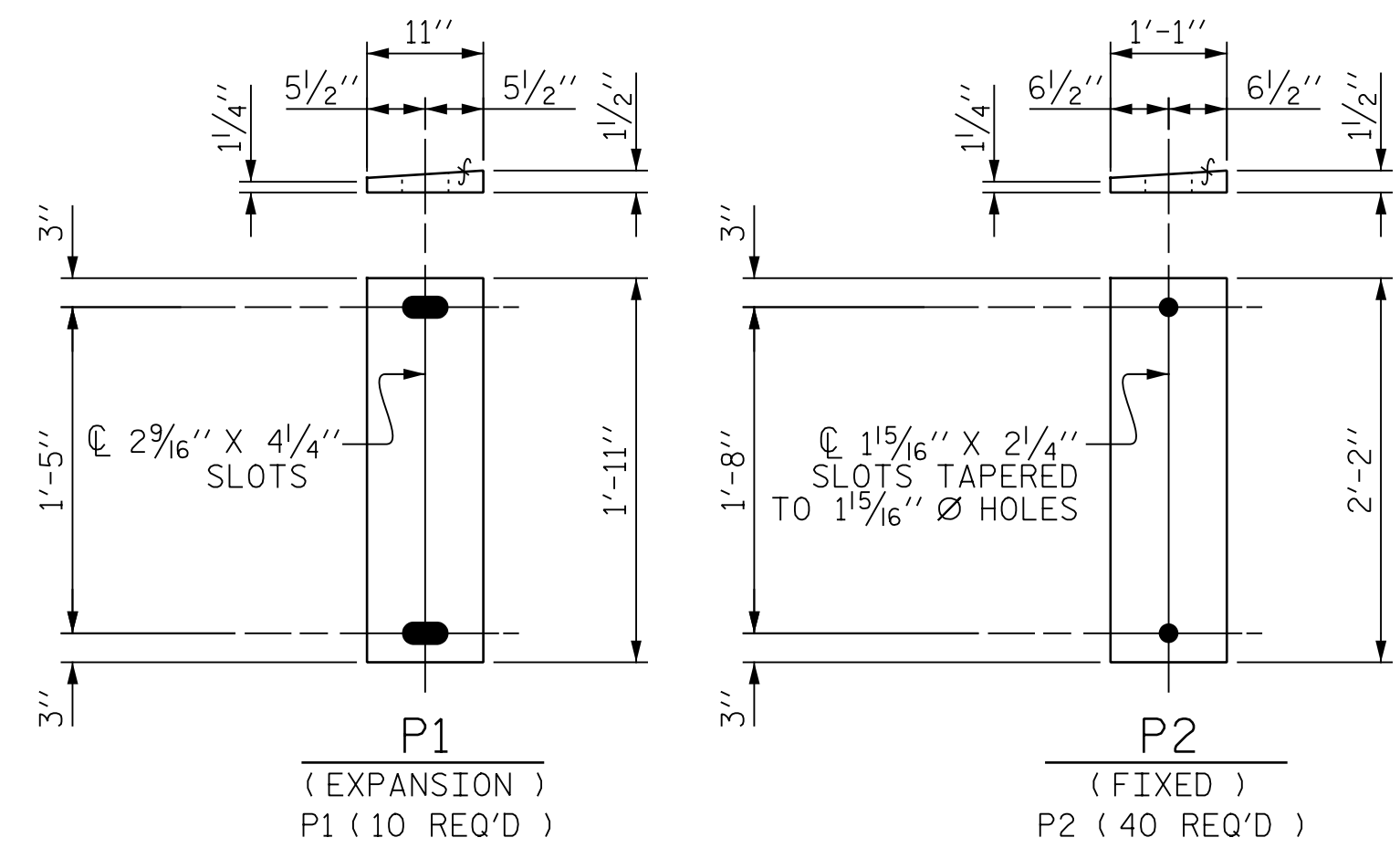
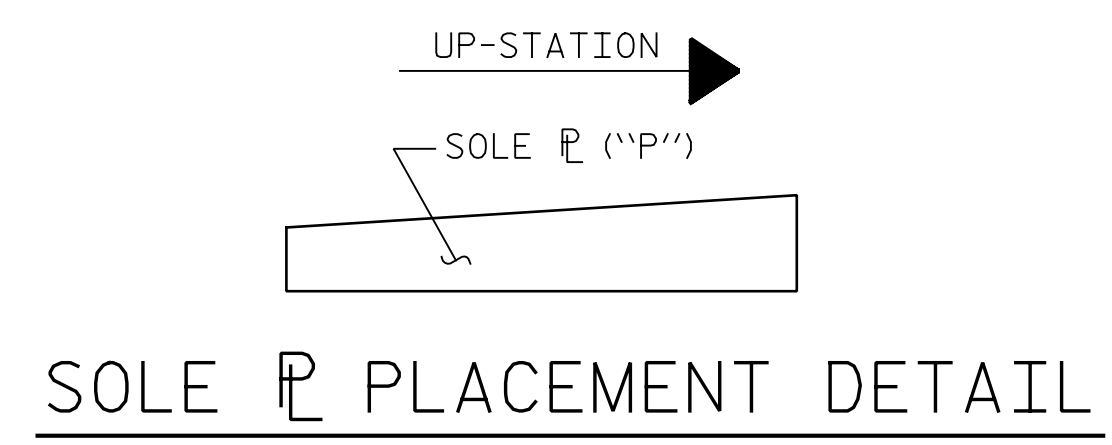
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PLAN VIEW OF ELASTOMERIC BEARING
TYPE IV



PLAN VIEW OF ELASTOMERIC BEARING
TYPE II



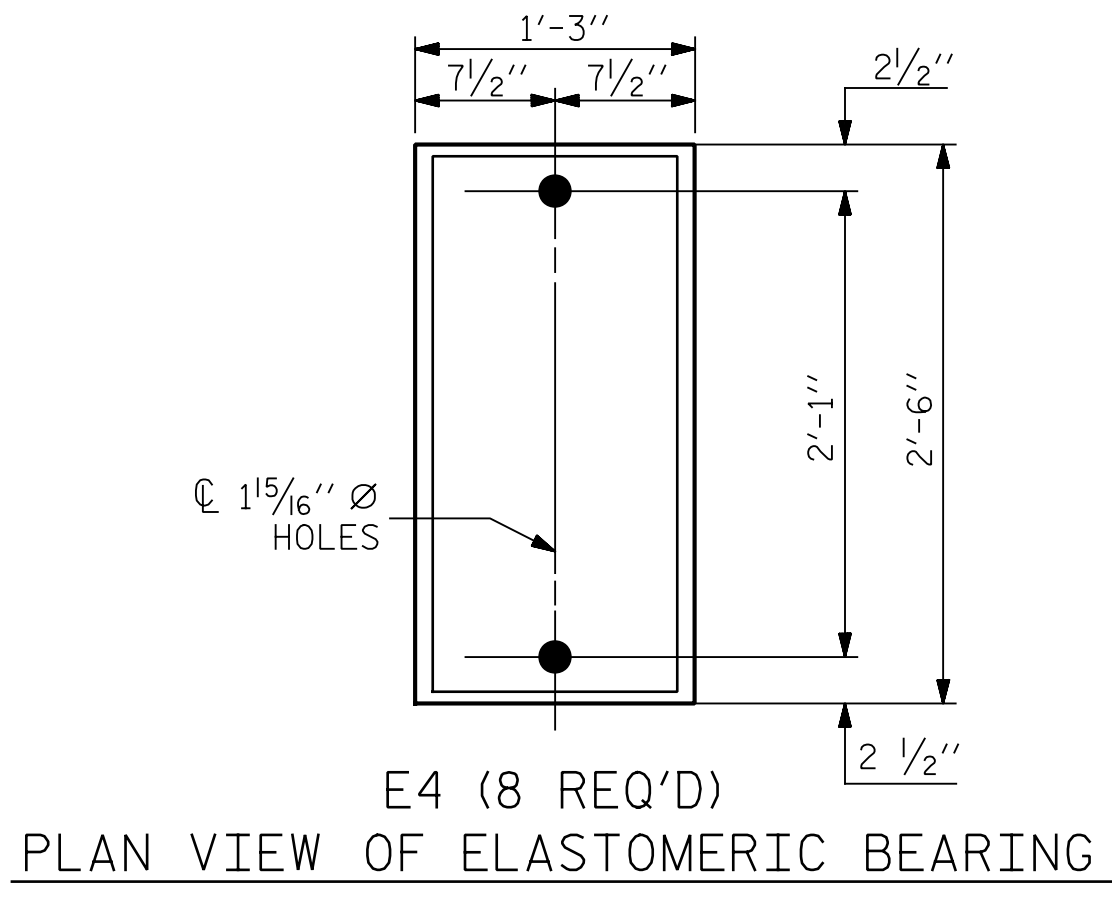
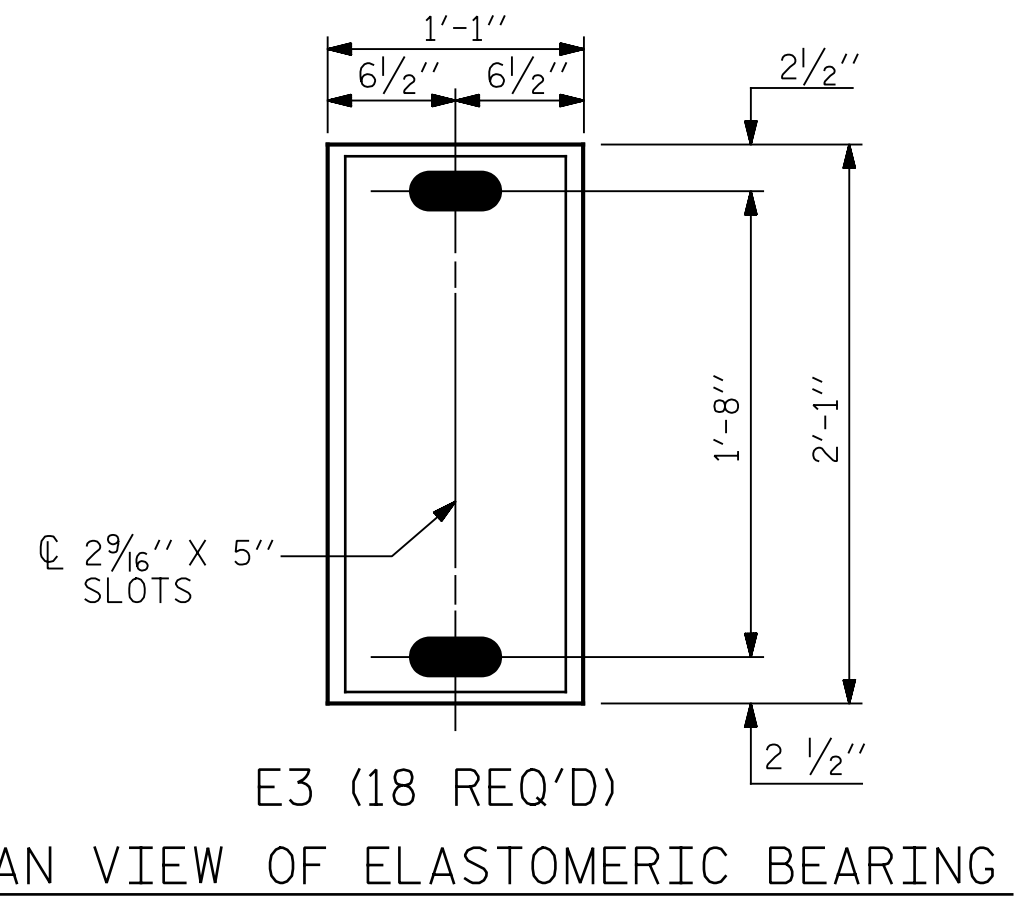
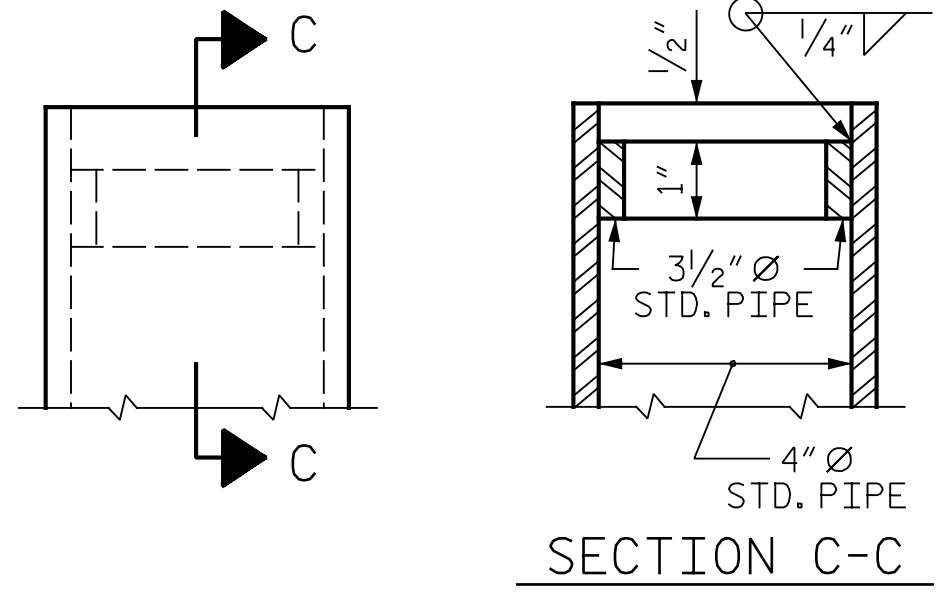
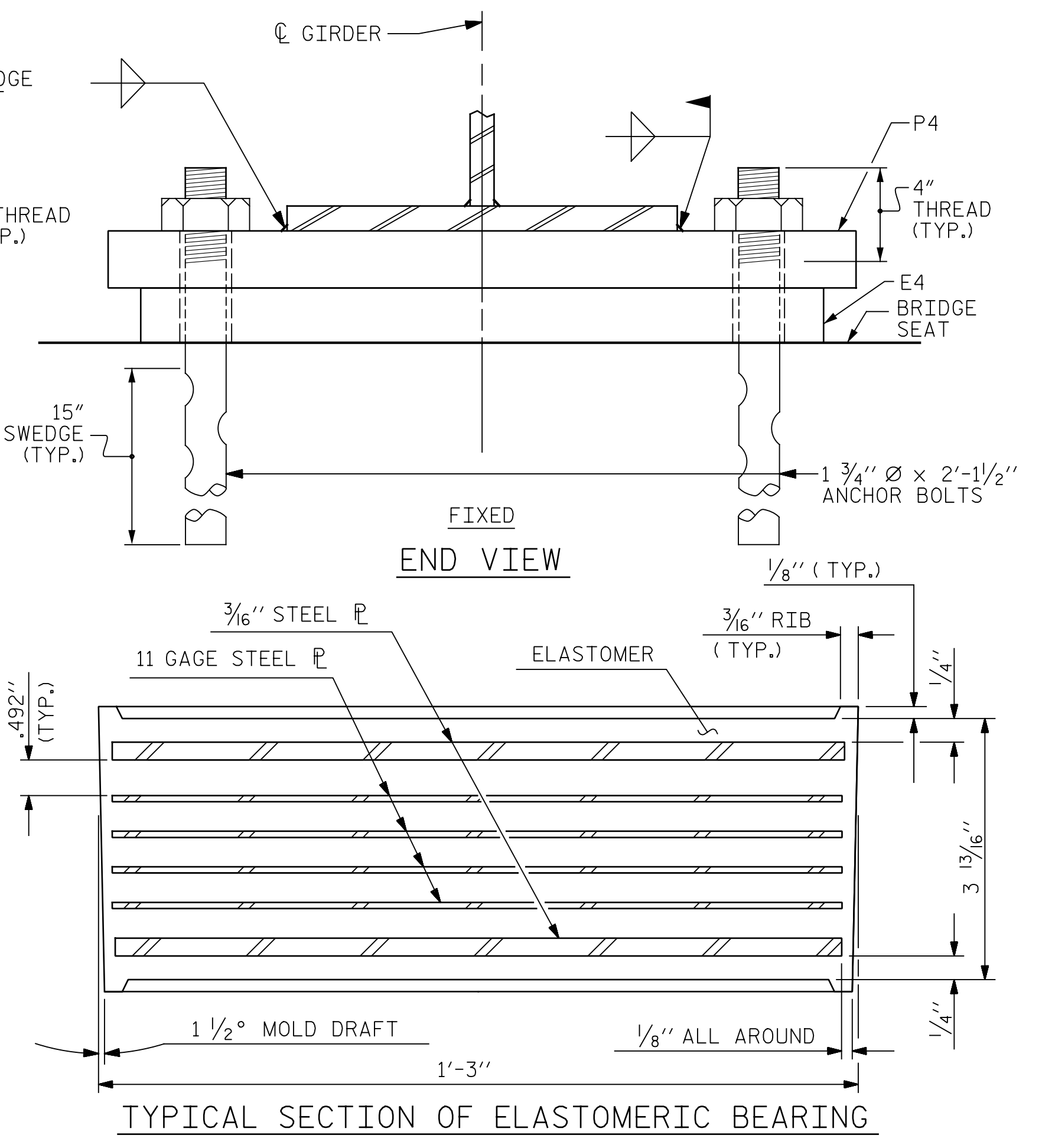
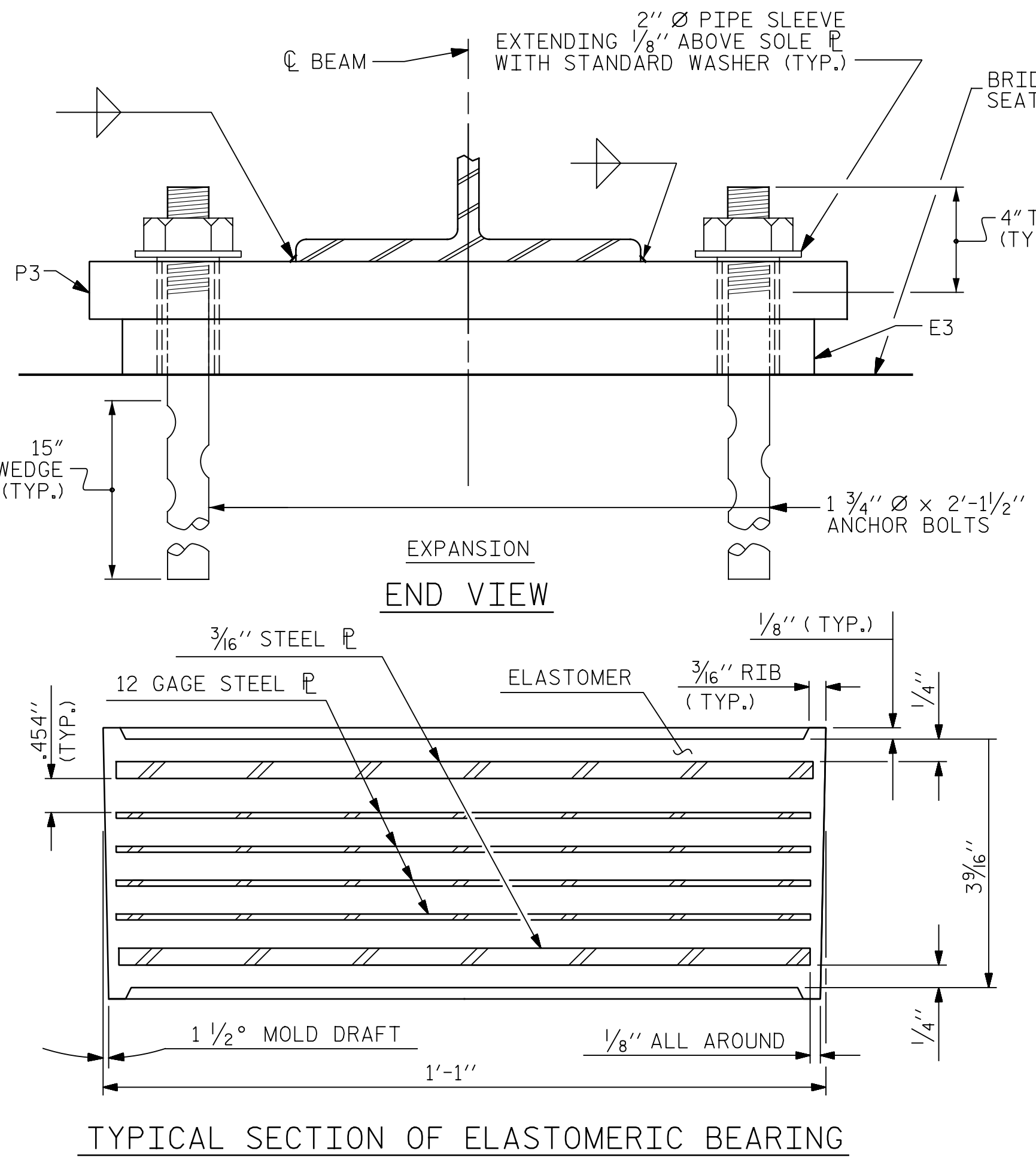
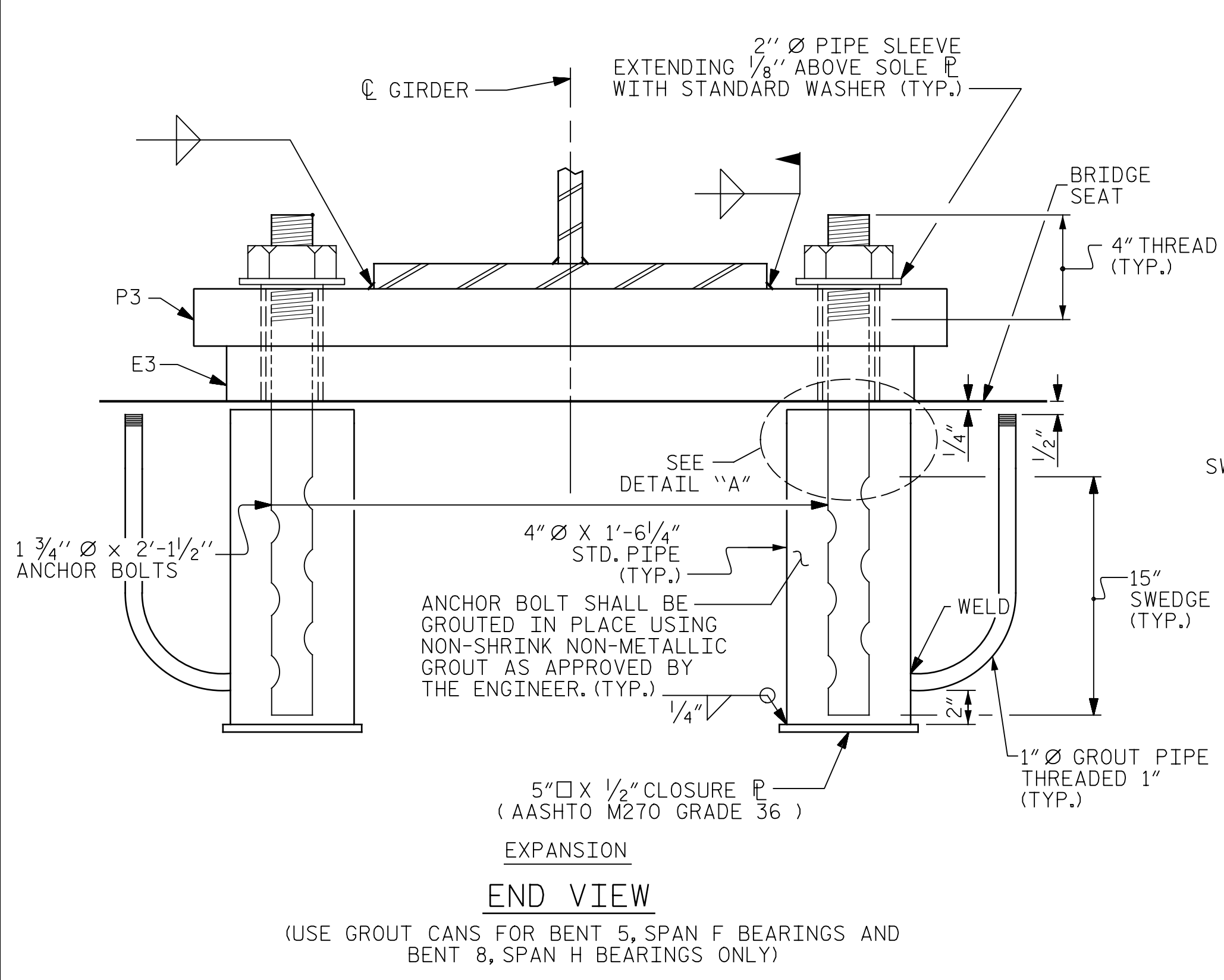
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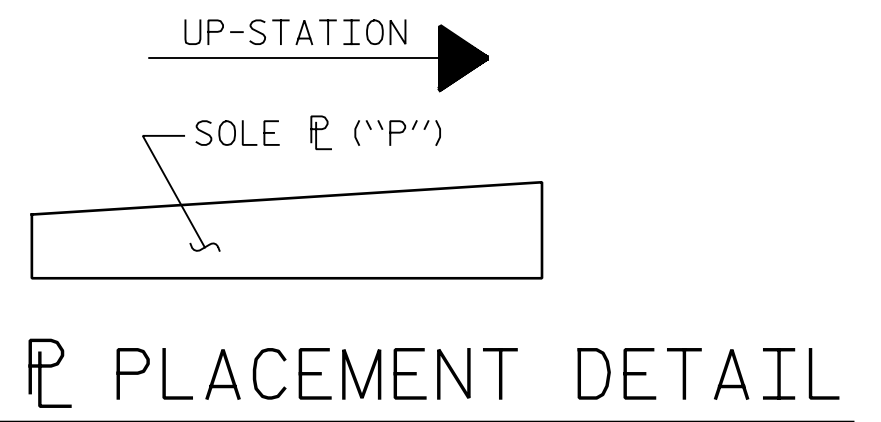
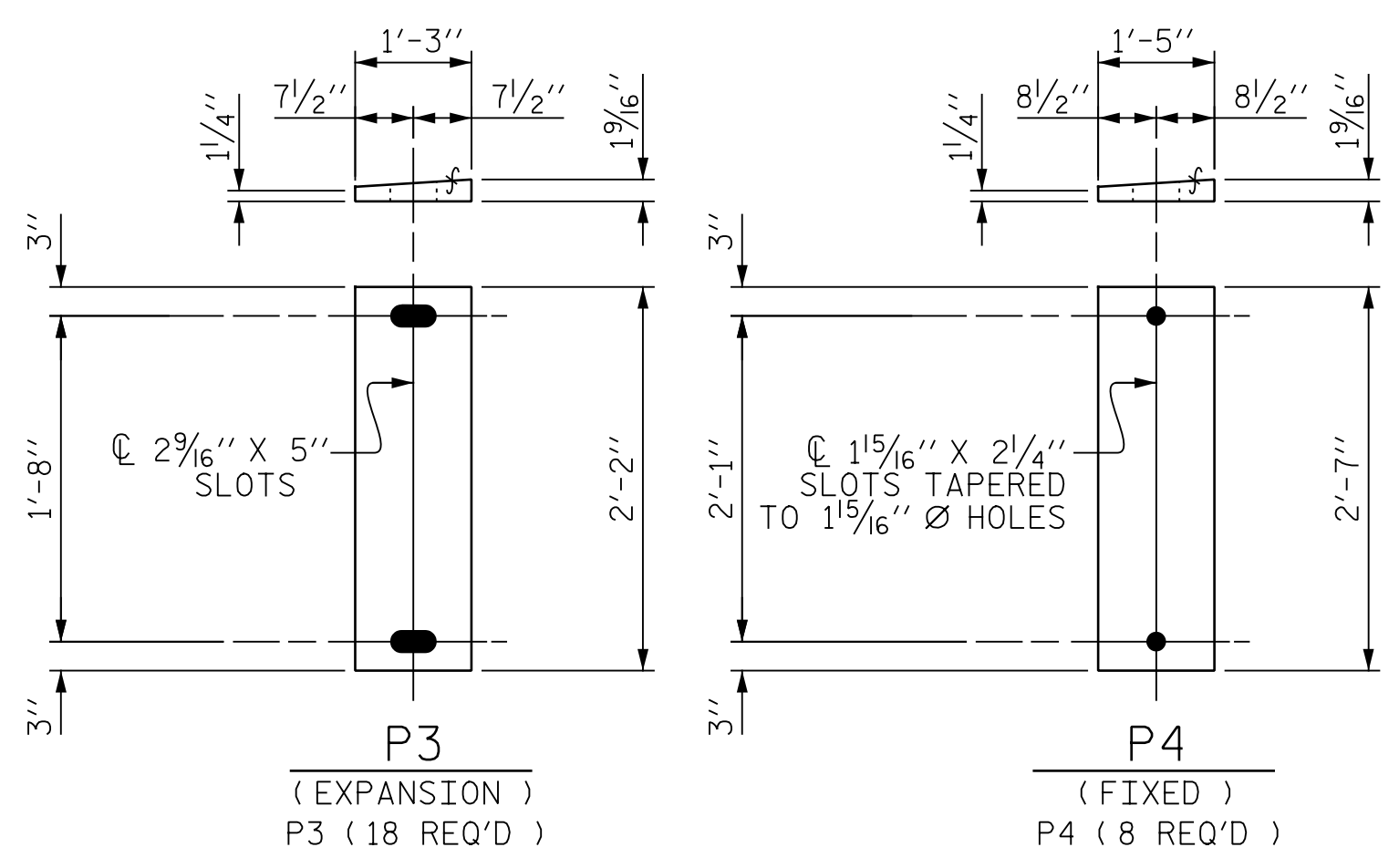
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 CHECKED BY : R.FISHER DATE : 04/2021

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CHECKED BY : ARB 11/87	REV. 6/13	AAC/MAA
	REV. 12/17	MAA/THC

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MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE V	335 k
TYPE VI	616 k



NOTES

1. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURE, (FOR BENT 5, SPAN F BEARINGS AND BENT 8, SPAN H BEARINGS ONLY) WHICH MAY BE REQUIRED BY THE ENGINEER, TO RESET ELASTOMERIC BEARINGS DUE TO GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ELASTOMERIC BEARING SLOTS CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F.

2. AFTER CENTERING THE ELASTOMERIC BEARINGS SLOTS AND ANCHOR BOLTS, THE ANCHOR BOLTS SHALL BE GROUTED,

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
ELASTOMERIC BEARING
DETAILS
 (STEEL SUPERSTRUCTURE)

ASSEMBLED BY : J. MYA	DATE : 04/2021
CHECKED BY : R. FISHER	DATE : 04/2021
DRAWN BY : EEM 10/95	REV. 10/1/11 MAA/GM
CHECKED BY : PEK 10/95	REV. 6/13 AAC/MAA
	REV. 12/17 MAA/THC

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

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 NC Lic. No. F-0270



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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-35
1			3			TOTAL SHEETS
2			4			125

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 9/2/2021 4:00:43 PM pdf_color_gf\it_FS.plt Rowan.pen.tbl

UNIT 1 (SPAN "A")											
GIRDERS 1 & 5											
10TH POINTS	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.004	-0.007	-0.009	-0.011	-0.010	-0.009	-0.007	-0.004	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.023	-0.043	-0.057	-0.064	-0.063	-0.055	-0.042	-0.026	-0.010	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.005	-0.009	-0.012	-0.013	-0.013	-0.012	-0.009	-0.005	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.032	-0.059	-0.078	-0.088	-0.086	-0.076	-0.058	-0.035	-0.014	0.000
REQUIRED CAMBER	0"	3/8"	1 1/16"	1 5/16"	1 1/16"	1 1/16"	1 5/16"	1 1/16"	7/16"	3/16"	0"

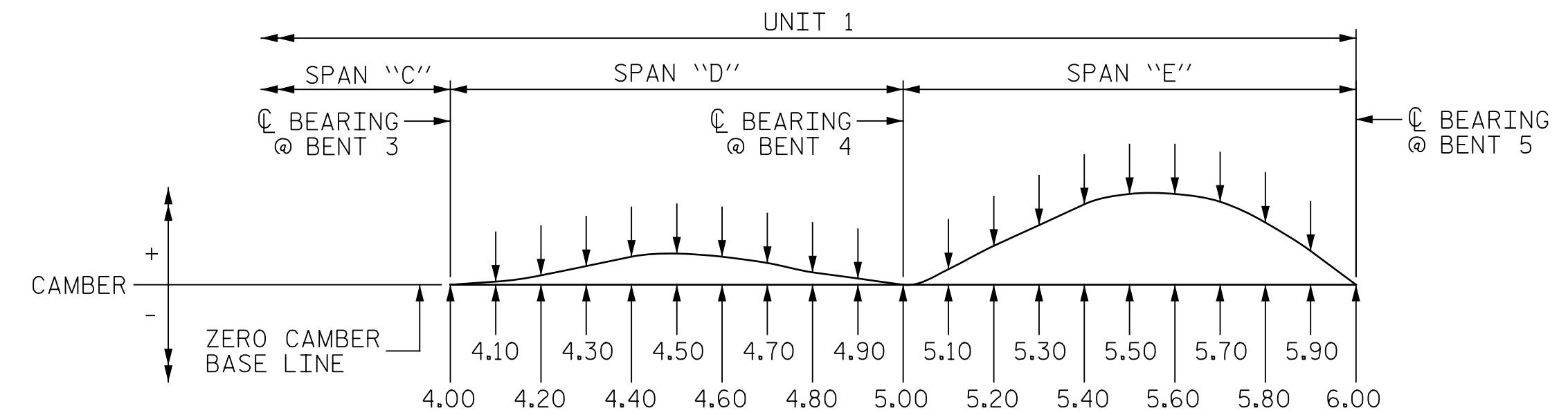
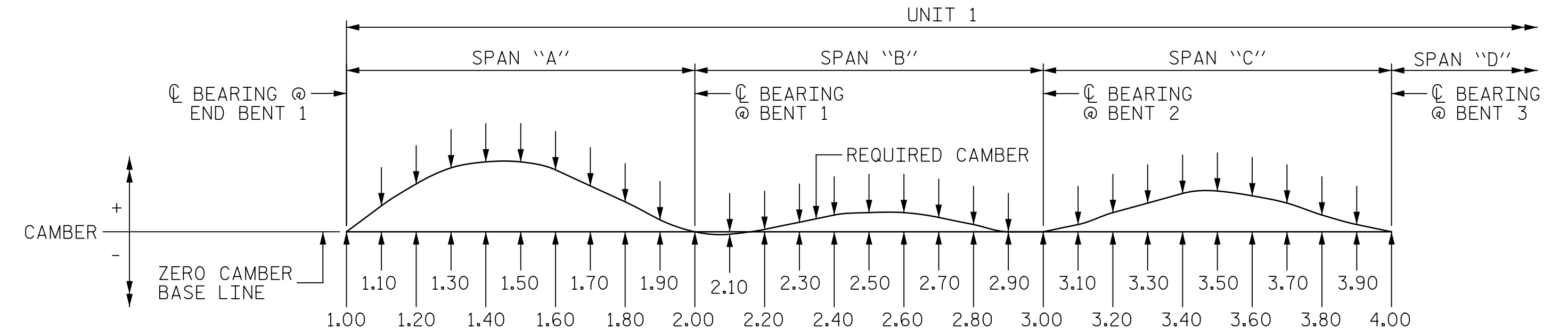
UNIT 1 (SPAN "B")											
GIRDERS 1 & 5											
10TH POINTS	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.001	-0.004	-0.011	-0.016	-0.019	-0.018	-0.014	-0.007	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.004	-0.003	-0.002	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.001	-0.006	-0.015	-0.022	-0.026	-0.025	-0.019	-0.010	-0.002	0.000
REQUIRED CAMBER	0"	0"	1/16"	3/16"	1/4"	5/16"	5/16"	1/4"	1/8"	0"	0"

UNIT 1 (SPAN "C")											
GIRDERS 1 & 5											
10TH POINTS	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.003	-0.004	-0.005	-0.006	-0.005	-0.004	-0.003	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.006	-0.015	-0.025	-0.032	-0.035	-0.032	-0.025	-0.015	-0.006	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.003	-0.005	-0.007	-0.007	-0.007	-0.005	-0.003	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.008	-0.021	-0.034	-0.044	-0.048	-0.044	-0.034	-0.021	-0.008	0.000
REQUIRED CAMBER	0"	1/8"	1/4"	7/16"	1/2"	3/16"	1/2"	7/16"	1/4"	1/8"	0"

UNIT 1 (SPAN "D")											
GIRDERS 1 & 5											
10TH POINTS	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.001	-0.007	-0.013	-0.018	-0.018	-0.015	-0.010	-0.003	0.002	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.003	-0.002	-0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.001	-0.010	-0.018	-0.025	-0.025	-0.021	-0.014	-0.005	0.002	0.000
REQUIRED CAMBER	0"	0"	1/8"	3/16"	5/16"	5/16"	1/4"	3/16"	1/16"	0"	0"

UNIT 1 (SPAN "E")											
GIRDERS 1 & 5											
10TH POINTS	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.002	-0.005	-0.007	-0.010	-0.011	-0.011	-0.010	-0.008	-0.004	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.011	-0.028	-0.045	-0.059	-0.067	-0.068	-0.060	-0.046	-0.025	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.002	-0.006	-0.009	-0.012	-0.014	-0.014	-0.013	-0.010	-0.005	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.015	-0.039	-0.061	-0.081	-0.092	-0.093	-0.083	-0.064	-0.034	0.000
REQUIRED CAMBER	0"	3/16"	7/16"	3/4"	1"	1 1/8"	1 1/8"	1"	3/4"	7/16"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 9



DocuSigned by:
 Eric B. Nelson
 9/2/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
DEAD LOAD DEFLECTION AND CAMBER ORDINATES UNIT 1 GIRDERS 1 & 5					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

SHEET NO.
S1-36
 TOTAL SHEETS
125

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 9/2/2021 4:00:49 PM pdf_color_gfcolt_FS.plt Rowan.pen.tbl

UNIT 1 (SPAN "A")											
GIRDERS 2, 3, & 4											
10TH POINTS	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.004	-0.007	-0.009	-0.011	-0.010	-0.009	-0.007	-0.004	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.023	-0.043	-0.057	-0.064	-0.063	-0.055	-0.042	-0.026	-0.010	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.005	-0.009	-0.012	-0.013	-0.013	-0.011	-0.009	-0.005	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.032	-0.059	-0.078	-0.088	-0.086	-0.075	-0.058	-0.035	-0.014	0.000
REQUIRED CAMBER	0"	3/8"	1 1/16"	1 5/16"	1 1/16"	1 1/16"	7/8"	1 1/16"	7/16"	3/16"	0"

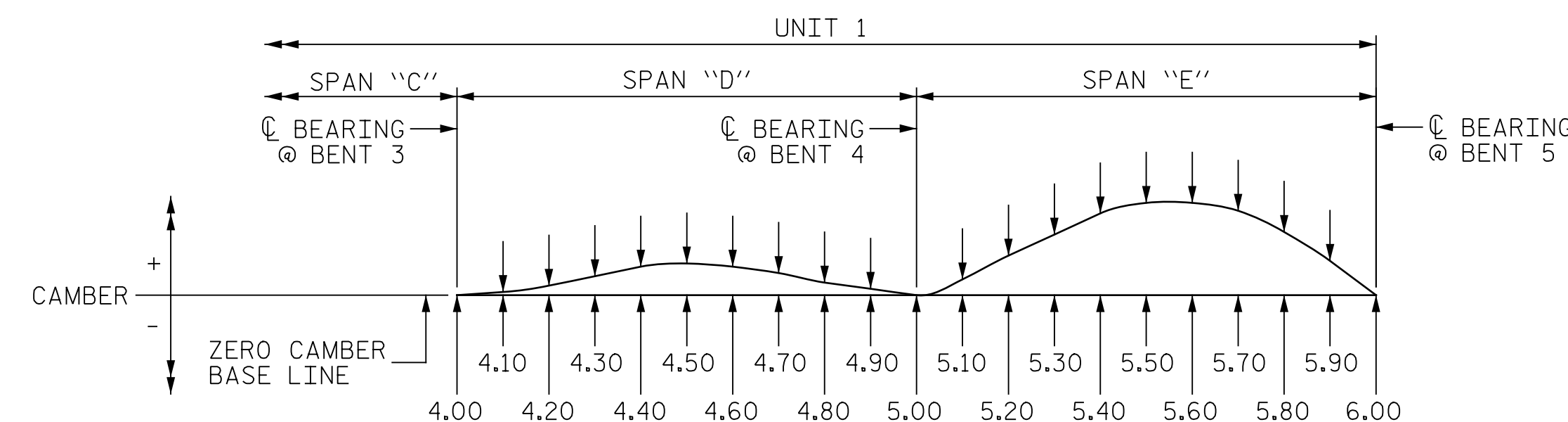
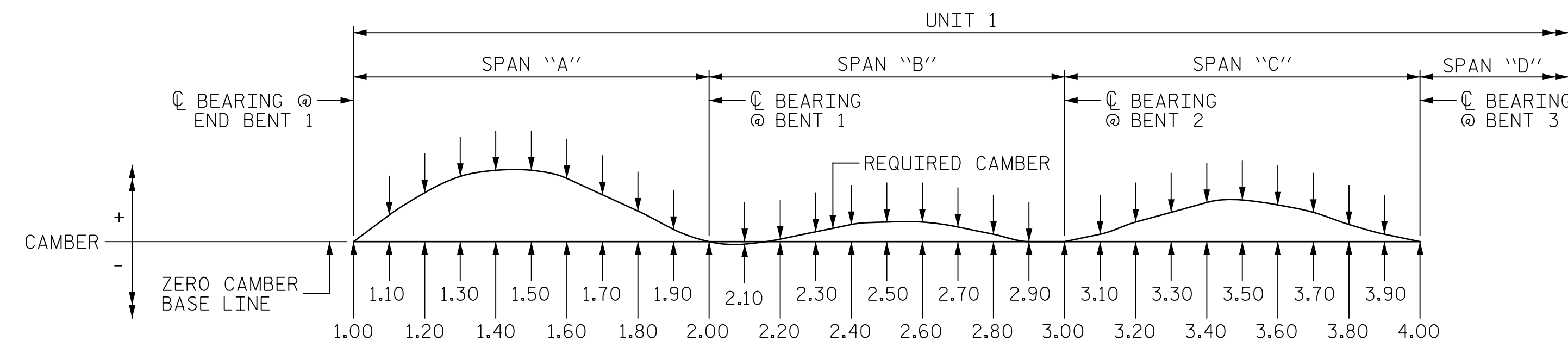
UNIT 1 (SPAN "B")											
GIRDERS 2, 3, & 4											
10TH POINTS	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.001	-0.004	-0.011	-0.016	-0.019	-0.018	-0.014	-0.007	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.004	-0.003	-0.002	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.001	-0.006	-0.015	-0.022	-0.026	-0.025	-0.019	-0.010	-0.002	0.000
REQUIRED CAMBER	0"	0"	1/16"	3/16"	1/4"	5/16"	5/16"	1/4"	1/8"	0"	0"

UNIT 1 (SPAN "C")											
GIRDERS 2, 3, & 4											
10TH POINTS	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.003	-0.004	-0.005	-0.006	-0.005	-0.004	-0.003	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.006	-0.015	-0.025	-0.032	-0.035	-0.032	-0.025	-0.015	-0.006	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.003	-0.005	-0.007	-0.007	-0.007	-0.005	-0.003	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.008	-0.021	-0.034	-0.044	-0.048	-0.044	-0.034	-0.021	-0.008	0.000
REQUIRED CAMBER	0"	1/8"	1/4"	7/16"	1/2"	3/16"	1/2"	7/16"	1/4"	1/8"	0"

UNIT 1 (SPAN "D")											
GIRDERS 2, 3, & 4											
10TH POINTS	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.001	-0.007	-0.013	-0.018	-0.018	-0.015	-0.010	-0.003	0.002	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.003	-0.002	-0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.001	-0.010	-0.018	-0.025	-0.025	-0.021	-0.014	-0.005	0.002	0.000
REQUIRED CAMBER	0"	0"	1/8"	3/16"	5/16"	5/16"	1/4"	3/16"	1/16"	0"	0"

UNIT 1 (SPAN "E")											
GIRDERS 2, 3, & 4											
10TH POINTS	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.002	-0.005	-0.007	-0.010	-0.011	-0.011	-0.010	-0.008	-0.004	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.011	-0.028	-0.045	-0.059	-0.067	-0.068	-0.060	-0.046	-0.025	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.002	-0.006	-0.009	-0.012	-0.014	-0.014	-0.012	-0.009	-0.005	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.015	-0.039	-0.061	-0.081	-0.092	-0.093	-0.082	-0.063	-0.034	0.000
REQUIRED CAMBER	0"	3/16"	7/16"	3/4"	1"	1 1/8"	1 1/8"	1"	3/4"	7/16"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 9



DocuSigned by:
 Eric B. Nelson 9/2/2021
 1628032119274CD

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**DEAD LOAD DEFLECTION
 AND CAMBER ORDINATES
 UNIT 1
 GIRDERS 2, 3, & 4**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-37
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

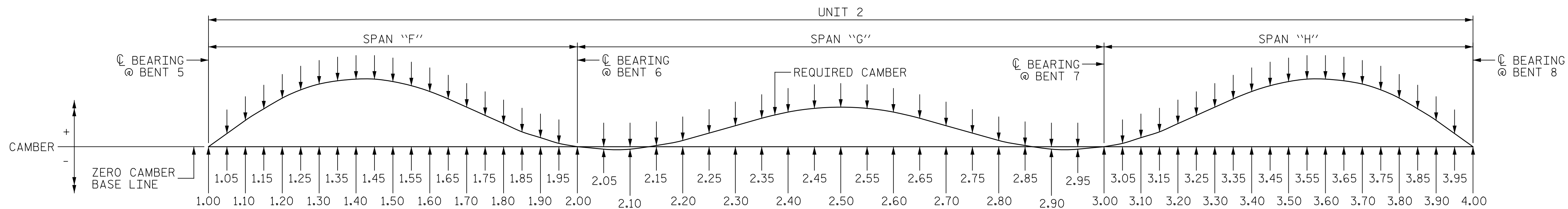
p:\gfn\p-w\ben\ben\p-w\01\Documents\Projects\63639\Task 010 B-4626\Discipline\Struct\Drawn\Rowan 3\Archives\Delete\401_079_B4626_SMU_DL03_790003_038 9/2/2021 4:00:55 PM pdf_color_gfclt_FS.plt Rowan.pen.tbl

UNIT 2 (SPAN "F")																					
GIRDERS 1 & 4																					
20TH POINTS	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.010	-0.020	-0.029	-0.037	-0.043	-0.047	-0.050	-0.051	-0.051	-0.049	-0.046	-0.041	-0.036	-0.029	-0.023	-0.017	-0.011	-0.006	-0.003	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.045	-0.087	-0.126	-0.160	-0.188	-0.208	-0.220	-0.226	-0.224	-0.216	-0.202	-0.183	-0.159	-0.132	-0.104	-0.077	-0.051	-0.030	-0.012	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.011	-0.021	-0.031	-0.039	-0.046	-0.051	-0.054	-0.055	-0.055	-0.053	-0.050	-0.045	-0.039	-0.033	-0.026	-0.019	-0.013	-0.007	-0.003	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.066	-0.128	-0.186	-0.236	-0.277	-0.306	-0.324	-0.332	-0.330	-0.318	-0.298	-0.269	-0.234	-0.194	-0.153	-0.113	-0.075	-0.043	-0.018	0.000
REQUIRED CAMBER	0"	13/16"	19/16"	2 1/4"	2 3/16"	3 5/16"	3 11/16"	3 7/8"	4"	3 5/16"	3 13/16"	3 3/8"	3 1/4"	2 13/16"	2 5/16"	1 13/16"	1 3/8"	7/8"	1/2"	3/16"	0"

UNIT 2 (SPAN "G")																					
GIRDERS 1 & 4																					
20TH POINTS	2.00	2.05	2.10	2.15	2.20	2.25	2.30	2.35	2.40	2.45	2.50	2.55	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.001	0.001	-0.001	-0.004	-0.008	-0.012	-0.016	-0.019	-0.021	-0.021	-0.021	-0.019	-0.016	-0.012	-0.008	-0.004	-0.001	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.007	0.001	-0.010	-0.024	-0.040	-0.054	-0.066	-0.073	-0.076	-0.073	-0.066	-0.054	-0.040	-0.024	-0.010	0.001	0.007	0.007	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.001	0.001	-0.001	-0.005	-0.009	-0.013	-0.017	-0.020	-0.022	-0.023	-0.022	-0.020	-0.017	-0.013	-0.009	-0.005	-0.001	0.001	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.009	0.009	-0.001	-0.019	-0.041	-0.065	-0.087	-0.105	-0.116	-0.120	-0.116	-0.105	-0.087	-0.065	-0.041	-0.019	-0.001	0.009	0.009	0.000
REQUIRED CAMBER	0"	-1/8"	-1/8"	0"	1/4"	1/2"	3/4"	1 1/16"	1 1/4"	1 3/8"	1 1/16"	1 3/8"	1 1/4"	1 1/16"	3/4"	1/2"	1/4"	0"	-1/8"	-1/8"	0"

UNIT 2 (SPAN "H")																					
GIRDERS 1 & 4																					
20TH POINTS	3.00	3.05	3.10	3.15	3.20	3.25	3.30	3.35	3.40	3.45	3.50	3.55	3.60	3.65	3.70	3.75	3.80	3.85	3.90	3.95	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.003	-0.006	-0.011	-0.017	-0.023	-0.029	-0.036	-0.041	-0.046	-0.049	-0.051	-0.051	-0.050	-0.047	-0.043	-0.037	-0.029	-0.020	-0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.012	-0.030	-0.051	-0.077	-0.104	-0.132	-0.159	-0.183	-0.202	-0.216	-0.224	-0.226	-0.220	-0.208	-0.188	-0.160	-0.126	-0.087	-0.045	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.003	-0.007	-0.013	-0.019	-0.026	-0.033	-0.039	-0.045	-0.050	-0.053	-0.055	-0.055	-0.054	-0.051	-0.046	-0.039	-0.031	-0.021	-0.011	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.018	-0.043	-0.075	-0.113	-0.153	-0.194	-0.234	-0.269	-0.298	-0.318	-0.330	-0.332	-0.324	-0.306	-0.277	-0.236	-0.186	-0.128	-0.066	0.000
REQUIRED CAMBER	0"	3/16"	1/2"	7/8"	1 3/8"	1 13/16"	2 5/16"	2 13/16"	3 1/4"	3 9/16"	3 13/16"	3 5/16"	4"	3 7/8"	3 11/16"	3 5/16"	2 13/16"	2 1/4"	1 9/16"	1 3/16"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

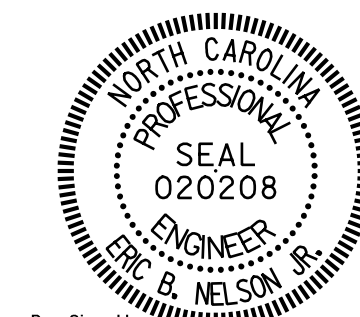
- VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.
- DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).
- REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).
- DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 3 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DEAD LOAD DEFLECTION
 AND CAMBER ORDINATES
 UNIT 2
 GIRDERS 1 & 4



DocuSigned by:
 Eric B. Nelson 9/2/2021
 162863211927420

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-38
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

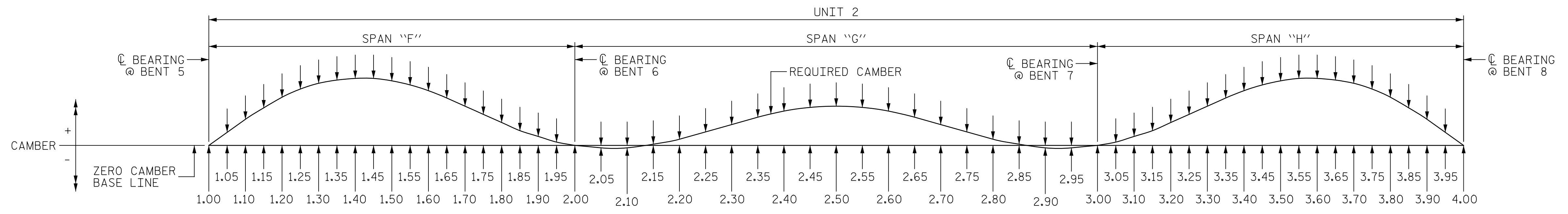
p:\gfn\pw.bentley.com\gfn\p\01\Documents\Projects\63639\Task 010 B-4626\Discipline\Struct\G\Rowan 3\Archives\Delete\401_081.B4626_SMU_DL04_790003_039
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UNIT 2 (SPAN "F")																					
GIRDERS 2 & 3																					
20TH POINTS	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.010	-0.020	-0.029	-0.037	-0.043	-0.047	-0.050	-0.051	-0.051	-0.049	-0.046	-0.041	-0.036	-0.029	-0.023	-0.017	-0.011	-0.006	-0.003	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.045	-0.087	-0.126	-0.160	-0.188	-0.208	-0.220	-0.226	-0.224	-0.216	-0.202	-0.183	-0.159	-0.132	-0.104	-0.077	-0.051	-0.030	-0.012	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.010	-0.020	-0.029	-0.037	-0.043	-0.048	-0.051	-0.052	-0.052	-0.050	-0.047	-0.043	-0.037	-0.031	-0.025	-0.018	-0.012	-0.007	-0.003	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.065	-0.127	-0.184	-0.234	-0.274	-0.303	-0.321	-0.329	-0.327	-0.315	-0.295	-0.267	-0.232	-0.192	-0.152	-0.112	-0.074	-0.043	-0.018	0.000
REQUIRED CAMBER	0"	3/4"	1/2"	2 3/16"	2 13/16"	3 5/16"	3 5/8"	3 7/8"	3 15/16"	3 15/16"	3 3/4"	3 3/16"	3 3/16"	2 13/16"	2 5/16"	1 13/16"	1 3/8"	7/8"	1/2"	3/16"	0"

UNIT 2 (SPAN "G")																					
GIRDERS 2 & 3																					
20TH POINTS	2.00	2.05	2.10	2.15	2.20	2.25	2.30	2.35	2.40	2.45	2.50	2.55	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.001	0.001	-0.001	-0.004	-0.008	-0.012	-0.016	-0.019	-0.021	-0.021	-0.021	-0.019	-0.016	-0.012	-0.008	-0.004	-0.001	0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.007	0.001	-0.010	-0.024	-0.040	-0.054	-0.066	-0.073	-0.076	-0.073	-0.066	-0.054	-0.040	-0.024	-0.010	0.001	0.007	0.007	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.001	0.001	-0.001	-0.005	-0.008	-0.013	-0.016	-0.019	-0.021	-0.022	-0.021	-0.019	-0.016	-0.013	-0.008	-0.005	-0.001	0.001	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.009	0.009	-0.001	-0.019	-0.040	-0.065	-0.086	-0.104	-0.115	-0.119	-0.115	-0.104	-0.086	-0.065	-0.040	-0.019	-0.001	0.009	0.009	0.000
REQUIRED CAMBER	0"	-1/8"	-1/8"	0"	1/4"	1/2"	3/4"	1 1/16"	1 1/4"	1 3/8"	1 1/16"	1 3/8"	1 1/4"	1 1/16"	3/4"	1/2"	1/4"	0"	-1/8"	-1/8"	0"

UNIT 2 (SPAN "H")																					
GIRDERS 2 & 3																					
20TH POINTS	3.00	3.05	3.10	3.15	3.20	3.25	3.30	3.35	3.40	3.45	3.50	3.55	3.60	3.65	3.70	3.75	3.80	3.85	3.90	3.95	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.003	-0.006	-0.011	-0.017	-0.023	-0.029	-0.036	-0.041	-0.046	-0.049	-0.051	-0.051	-0.050	-0.047	-0.043	-0.037	-0.029	-0.020	-0.010	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.012	-0.030	-0.051	-0.077	-0.104	-0.132	-0.159	-0.183	-0.202	-0.216	-0.224	-0.226	-0.220	-0.208	-0.188	-0.160	-0.126	-0.087	-0.045	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.003	-0.007	-0.012	-0.018	-0.025	-0.031	-0.037	-0.043	-0.047	-0.050	-0.052	-0.052	-0.051	-0.048	-0.043	-0.037	-0.029	-0.020	-0.010	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.018	-0.043	-0.074	-0.112	-0.152	-0.192	-0.232	-0.267	-0.295	-0.315	-0.327	-0.329	-0.321	-0.303	-0.274	-0.234	-0.184	-0.127	-0.065	0.000
REQUIRED CAMBER	0"	3/16"	1/2"	7/8"	1 3/8"	1 13/16"	2 5/16"	2 13/16"	3 3/16"	3 9/16"	3 3/4"	3 15/16"	3 15/16"	3 7/8"	3 5/8"	3 5/16"	2 13/16"	2 3/16"	1 1/2"	3/4"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 4 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DEAD LOAD DEFLECTION
 AND CAMBER ORDINATES
 UNIT 2
 GIRDERS 2 & 3

REVISIONS

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

SHEET NO. S1-39
 TOTAL SHEETS 125



DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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UNIT 3 (SPAN "I")											
GIRDER 1											
10TH POINTS	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.004	-0.008	-0.010	-0.011	-0.011	-0.010	-0.007	-0.005	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.024	-0.045	-0.060	-0.068	-0.067	-0.059	-0.045	-0.027	-0.011	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.005	-0.010	-0.013	-0.014	-0.014	-0.012	-0.009	-0.006	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.033	-0.063	-0.083	-0.093	-0.092	-0.081	-0.061	-0.038	-0.015	0.000
REQUIRED CAMBER	0"	3/8"	3/4"	1"	1 1/8"	1 1/8"	1"	3/4"	7/16"	3/16"	0"

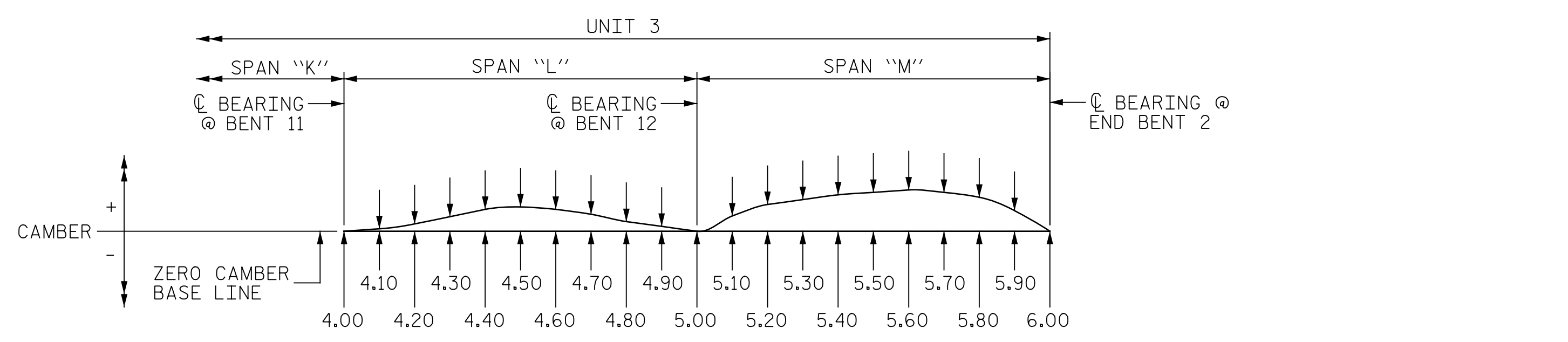
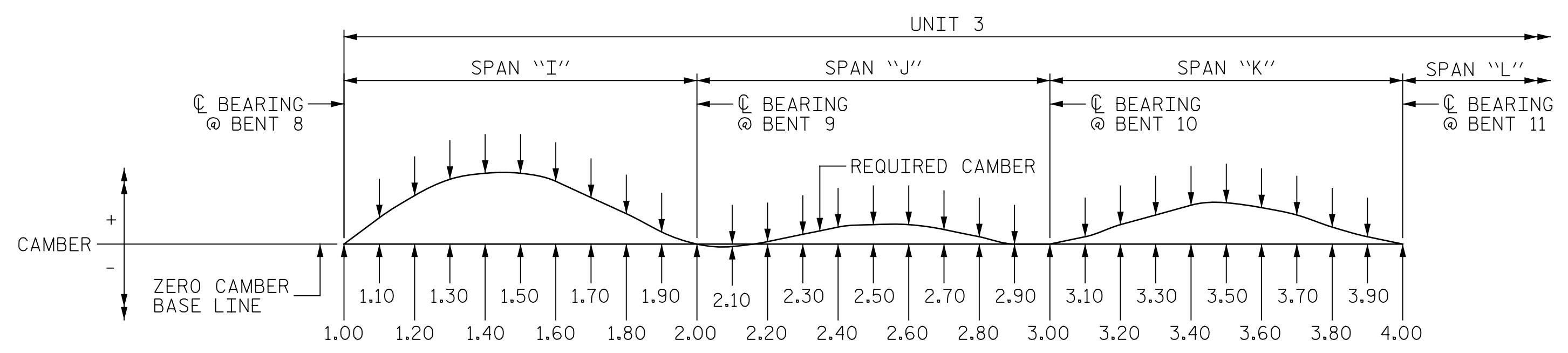
UNIT 3 (SPAN "J")											
GIRDER 1											
10TH POINTS	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.002	-0.003	-0.010	-0.016	-0.019	-0.018	-0.014	-0.008	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.004	-0.003	-0.002	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.002	-0.005	-0.014	-0.022	-0.026	-0.025	-0.019	-0.011	-0.002	0.000
REQUIRED CAMBER	0"	0"	1/16"	3/16"	1/4"	5/16"	5/16"	1/4"	1/8"	0"	0"

UNIT 3 (SPAN "K")											
GIRDER 1											
10TH POINTS	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.002	-0.004	-0.005	-0.005	-0.005	-0.004	-0.002	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.005	-0.014	-0.023	-0.030	-0.032	-0.029	-0.022	-0.013	-0.004	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.003	-0.005	-0.006	-0.007	-0.006	-0.005	-0.003	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.007	-0.019	-0.032	-0.041	-0.044	-0.040	-0.031	-0.018	-0.006	0.000
REQUIRED CAMBER	0"	1/16"	1/4"	3/8"	1/2"	1/2"	1/2"	3/8"	3/16"	1/16"	0"

UNIT 3 (SPAN "L")											
GIRDER 1											
10TH POINTS	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.002	-0.004	-0.005	-0.005	-0.005	-0.004	-0.002	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.004	-0.012	-0.021	-0.028	-0.031	-0.028	-0.022	-0.013	-0.004	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.003	-0.005	-0.006	-0.006	-0.006	-0.005	-0.003	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.006	-0.017	-0.030	-0.039	-0.042	-0.039	-0.031	-0.018	-0.006	0.000
REQUIRED CAMBER	0"	1/16"	3/16"	3/8"	1/2"	1/2"	1/16"	3/8"	3/16"	1/16"	0"

UNIT 3 (SPAN "M")											
GIRDER 1											
10TH POINTS	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.003	-0.004	-0.004	-0.005	-0.004	-0.003	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.009	-0.016	-0.022	-0.026	-0.027	-0.025	-0.019	-0.010	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.002	-0.003	-0.005	-0.006	-0.006	-0.005	-0.004	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.004	-0.012	-0.022	-0.031	-0.036	-0.038	-0.034	-0.026	-0.014	0.000
REQUIRED CAMBER	0"	1/16"	1/8"	1/4"	3/8"	1/2"	1/16"	1/16"	5/16"	3/16"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.
 DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).
 REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).
 DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 5 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**DEAD LOAD DEFLECTION
 AND CAMBER ORDINATES
 UNIT 3
 GIRDER 1**



DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DocuSigned by:
 Eric B. Nelson
 9/2/2021

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-40
1			3			TOTAL SHEETS
2			4			125

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UNIT 3 (SPAN "I")											
GIRDER 2											
10TH POINTS	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.004	-0.008	-0.010	-0.011	-0.011	-0.010	-0.007	-0.005	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.021	-0.040	-0.053	-0.059	-0.059	-0.051	-0.039	-0.024	-0.010	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.005	-0.009	-0.012	-0.014	-0.014	-0.012	-0.009	-0.006	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.030	-0.057	-0.075	-0.084	-0.084	-0.073	-0.055	-0.035	-0.014	0.000
REQUIRED CAMBER	0"	3/8"	11/16"	7/8"	1"	1"	7/8"	11/16"	7/16"	3/16"	0"

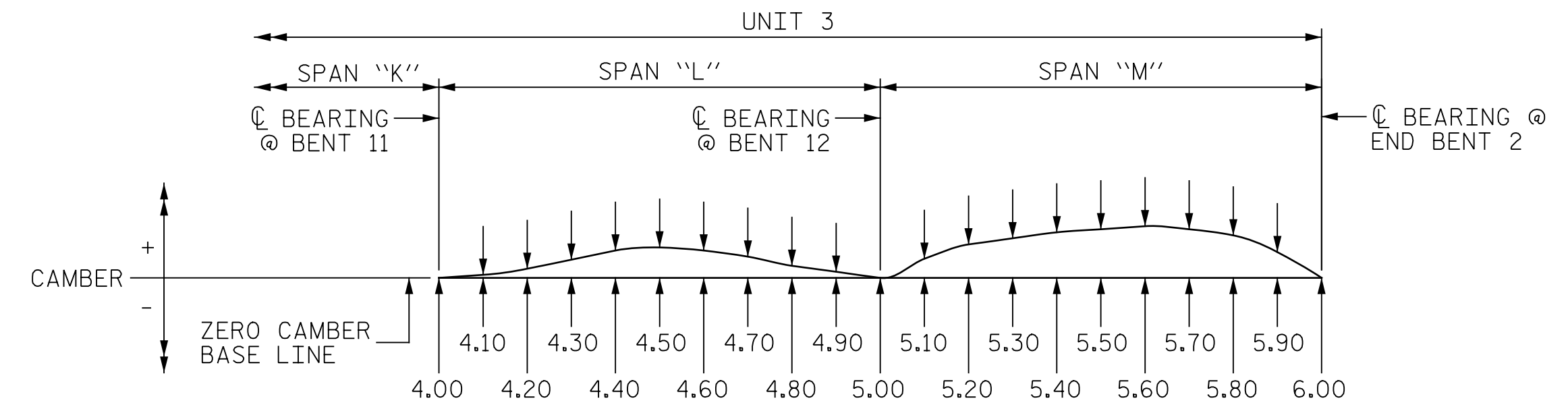
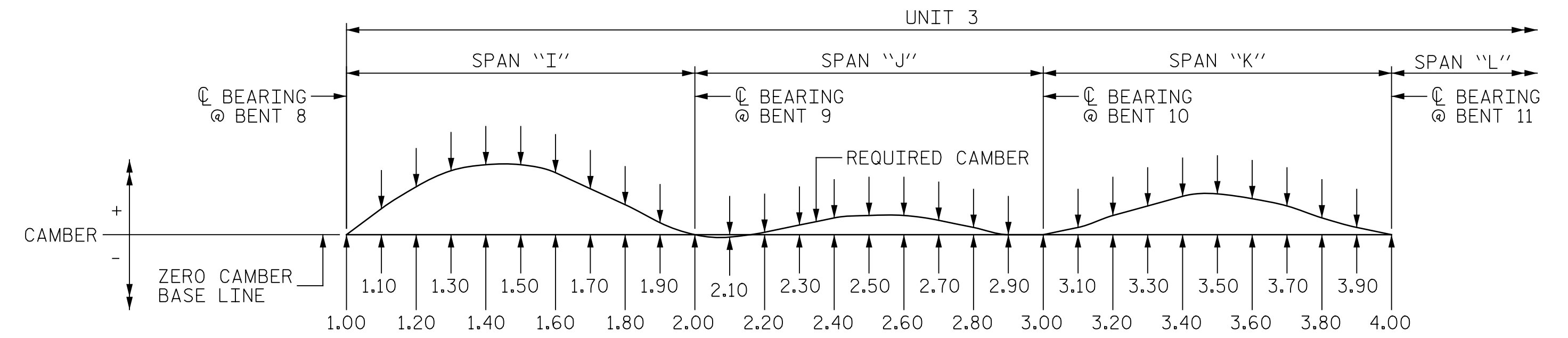
UNIT 3 (SPAN "J")											
GIRDER 2											
10TH POINTS	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.002	-0.002	-0.008	-0.013	-0.015	-0.014	-0.011	-0.006	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.004	-0.003	-0.002	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.002	-0.004	-0.012	-0.019	-0.022	-0.021	-0.016	-0.009	-0.001	0.000
REQUIRED CAMBER	0"	0"	1/16"	1/8"	1/4"	1/4"	1/4"	3/16"	1/8"	0"	0"

UNIT 3 (SPAN "K")											
GIRDER 2											
10TH POINTS	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.003	-0.004	-0.005	-0.006	-0.005	-0.004	-0.002	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.006	-0.016	-0.025	-0.032	-0.034	-0.031	-0.024	-0.014	-0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.003	-0.005	-0.007	-0.006	-0.006	-0.005	-0.003	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.008	-0.022	-0.034	-0.044	-0.047	-0.042	-0.033	-0.019	-0.007	0.000
REQUIRED CAMBER	0"	1/8"	1/4"	3/16"	1/2"	3/16"	1/2"	3/8"	1/4"	1/16"	0"

UNIT 3 (SPAN "L")											
GIRDER 2											
10TH POINTS	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.003	-0.003	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.003	-0.011	-0.019	-0.025	-0.027	-0.025	-0.018	-0.010	-0.003	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.003	-0.002	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.003	-0.014	-0.024	-0.032	-0.035	-0.032	-0.024	-0.013	-0.003	0.000
REQUIRED CAMBER	0"	1/16"	3/16"	5/16"	3/8"	7/16"	3/8"	5/16"	1/8"	1/16"	0"

UNIT 3 (SPAN "M")											
GIRDER 2											
10TH POINTS	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.002	-0.003	-0.004	-0.005	-0.005	-0.004	-0.003	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.005	-0.013	-0.023	-0.031	-0.037	-0.037	-0.034	-0.026	-0.014	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.002	-0.004	-0.005	-0.006	-0.006	-0.005	-0.004	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.007	-0.017	-0.030	-0.040	-0.048	-0.048	-0.043	-0.033	-0.018	0.000
REQUIRED CAMBER	0"	1/16"	3/16"	3/8"	1/2"	9/16"	9/16"	1/2"	3/8"	3/16"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.

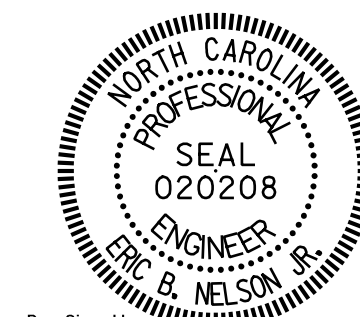
DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 6 OF 9



DocuSigned by:
 Eric B. Nelson
 9/2/2021

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DEAD LOAD DEFLECTION
 AND CAMBER ORDINATES
 UNIT 3
 GIRDER 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-41
1			3			TOTAL SHEETS
2			4			125

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
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 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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UNIT 3 (SPAN "I")											
GIRDER 3											
10TH POINTS	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.004	-0.008	-0.010	-0.011	-0.011	-0.010	-0.007	-0.005	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.018	-0.034	-0.045	-0.051	-0.050	-0.044	-0.034	-0.021	-0.009	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.005	-0.009	-0.012	-0.014	-0.014	-0.012	-0.009	-0.006	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.027	-0.051	-0.067	-0.076	-0.075	-0.066	-0.050	-0.032	-0.013	0.000
REQUIRED CAMBER	0"	5/16"	5/8"	13/16"	15/16"	7/8"	13/16"	5/8"	3/8"	1/8"	0"

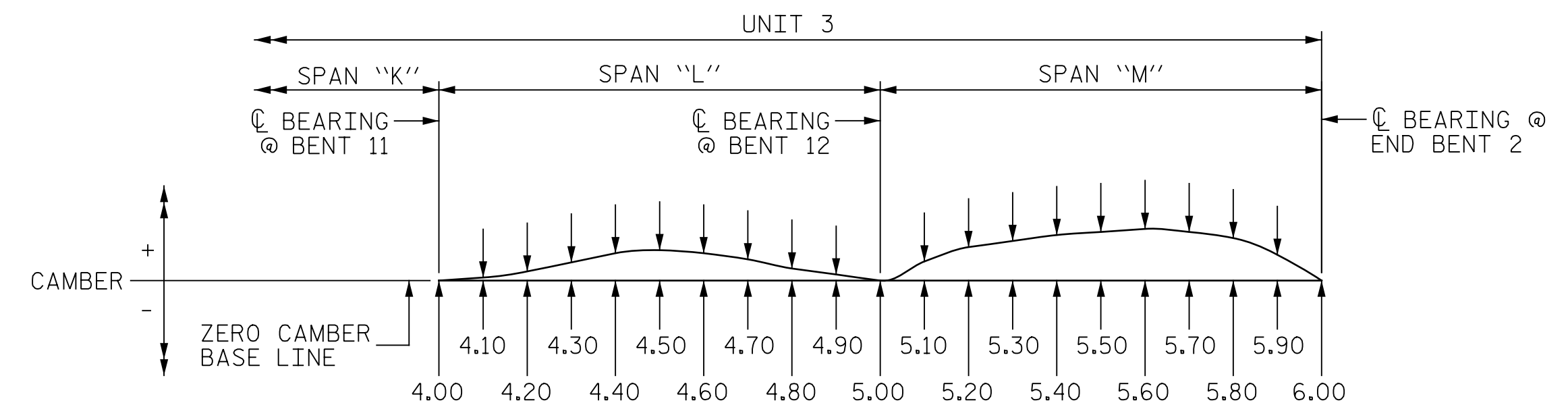
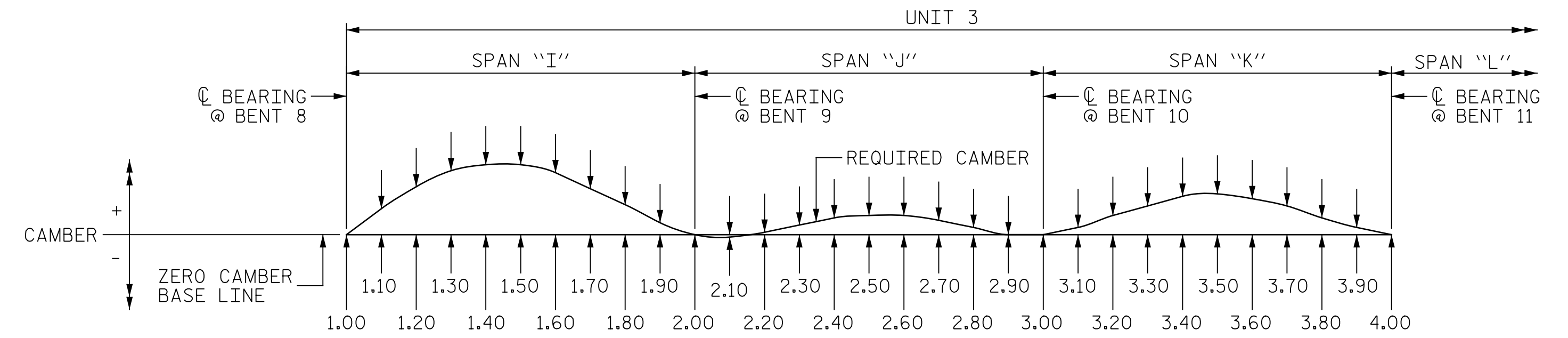
UNIT 3 (SPAN "J")											
GIRDER 3											
10TH POINTS	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.000	-0.002	-0.003	-0.003	-0.003	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.002	-0.001	-0.005	-0.009	-0.011	-0.010	-0.007	-0.003	0.000	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.004	-0.003	-0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.002	-0.002	-0.009	-0.015	-0.018	-0.017	-0.012	-0.005	0.000	0.000
REQUIRED CAMBER	0"	0"	0"	1/8"	3/16"	3/16"	3/16"	1/8"	1/16"	0"	0"

UNIT 3 (SPAN "K")											
GIRDER 3											
10TH POINTS	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.003	-0.004	-0.006	-0.006	-0.006	-0.004	-0.003	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.007	-0.017	-0.027	-0.034	-0.033	-0.033	-0.025	-0.015	-0.005	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.003	-0.005	-0.007	-0.007	-0.006	-0.003	-0.003	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.009	-0.023	-0.036	-0.047	-0.049	-0.046	-0.035	-0.021	-0.007	0.000
REQUIRED CAMBER	0"	1/8"	1/4"	7/16"	9/16"	9/16"	9/16"	7/16"	1/4"	1/16"	0"

UNIT 3 (SPAN "L")											
GIRDER 3											
10TH POINTS	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.002	-0.009	-0.017	-0.022	-0.024	-0.021	-0.015	-0.007	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.002	-0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.002	-0.011	-0.021	-0.027	-0.029	-0.026	-0.019	-0.009	-0.001	0.000
REQUIRED CAMBER	0"	0"	1/8"	1/4"	5/16"	3/8"	5/16"	1/4"	1/8"	0"	0"

UNIT 3 (SPAN "M")											
GIRDER 3											
10TH POINTS	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.002	-0.003	-0.004	-0.005	-0.005	-0.005	-0.004	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.007	-0.018	-0.030	-0.041	-0.047	-0.047	-0.043	-0.032	-0.017	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.003	-0.004	-0.006	-0.006	-0.006	-0.006	-0.004	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.009	-0.023	-0.037	-0.051	-0.058	-0.058	-0.054	-0.040	-0.021	0.000
REQUIRED CAMBER	0"	1/8"	1/4"	7/16"	5/8"	11/16"	11/16"	5/8"	1/2"	1/4"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 7 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DEAD LOAD DEFLECTION
 AND CAMBER ORDINATES
 UNIT 3
 GIRDER 3



DocuSigned by:
 Eric B. Nelson
 9/2/2021

PLANS PREPARED BY:
 Gannett Fleming
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 Excellence Delivered As Promised NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS

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

SHEET NO.
 S1-42
 TOTAL SHEETS
 125

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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 9/2/2021 4:01:31 PM pdf_color_gf\it_FS.plt Rowan.pen.tbl

UNIT 3 (SPAN "I")											
GIRDER 4											
10TH POINTS	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.004	-0.008	-0.010	-0.011	-0.011	-0.010	-0.007	-0.005	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.015	-0.028	-0.038	-0.043	-0.042	-0.037	-0.029	-0.018	-0.007	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.005	-0.009	-0.012	-0.014	-0.014	-0.012	-0.009	-0.006	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.024	-0.045	-0.060	-0.068	-0.067	-0.059	-0.045	-0.029	-0.011	0.000
REQUIRED CAMBER	0"	5/16"	9/16"	3/4"	13/16"	13/16"	11/16"	9/16"	3/8"	1/8"	0"

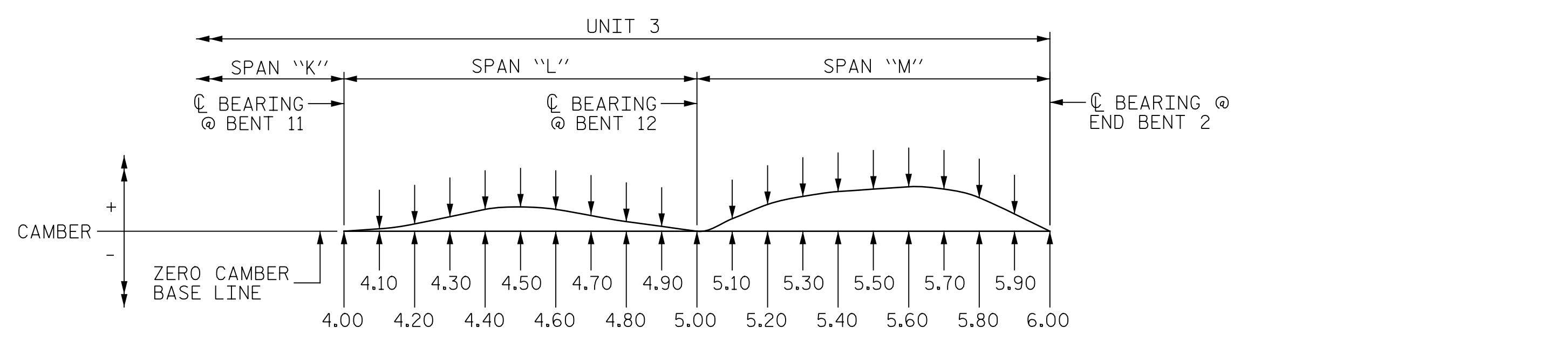
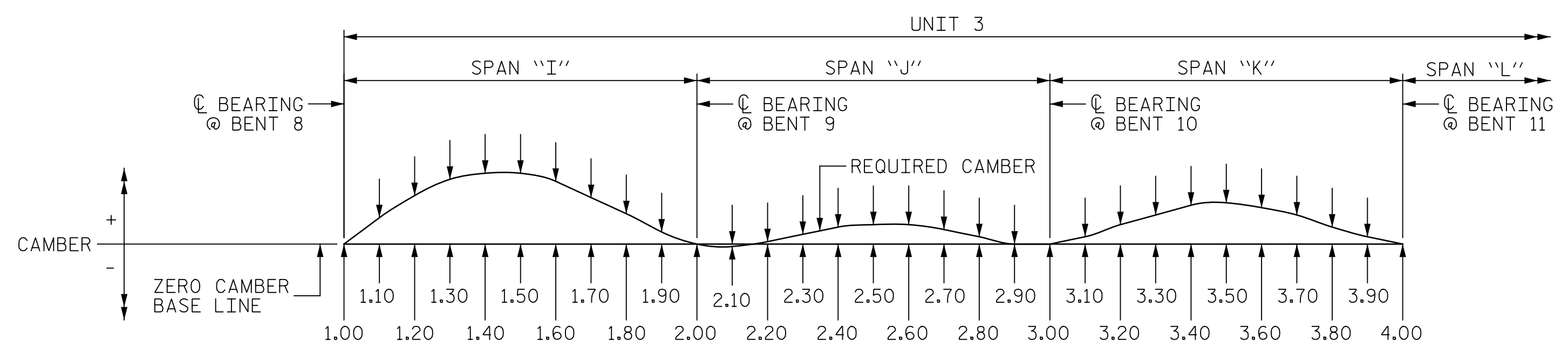
UNIT 3 (SPAN "J")											
GIRDER 4											
10TH POINTS	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.000	-0.002	-0.002	-0.003	-0.003	-0.002	-0.001	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.002	0.000	-0.003	-0.006	-0.007	-0.006	-0.004	-0.001	0.001	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.003	-0.003	-0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.002	-0.001	-0.007	-0.011	-0.014	-0.012	-0.009	-0.003	0.001	0.000
REQUIRED CAMBER	0"	0"	0"	1/16"	1/8"	3/16"	1/8"	1/8"	1/16"	0"	0"

UNIT 3 (SPAN "K")											
GIRDER 4											
10TH POINTS	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.003	-0.005	-0.006	-0.006	-0.006	-0.005	-0.003	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.008	-0.018	-0.029	-0.036	-0.038	-0.035	-0.027	-0.016	-0.006	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.004	-0.006	-0.007	-0.008	-0.007	-0.006	-0.004	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.010	-0.025	-0.040	-0.049	-0.052	-0.048	-0.038	-0.023	-0.009	0.000
REQUIRED CAMBER	0"	1/8"	5/16"	1/2"	9/16"	5/8"	9/16"	7/16"	1/4"	1/8"	0"

UNIT 3 (SPAN "L")											
GIRDER 4											
10TH POINTS	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.001	-0.007	-0.014	-0.019	-0.020	-0.018	-0.012	-0.005	0.000	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	-0.001	-0.001	-0.002	-0.001	-0.001	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.001	-0.007	-0.016	-0.021	-0.023	-0.020	-0.014	-0.005	0.000	0.000
REQUIRED CAMBER	0"	0"	1/16"	3/16"	1/4"	1/4"	1/4"	3/16"	1/16"	0"	0"

UNIT 3 (SPAN "M")											
GIRDER 4											
10TH POINTS	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.002	-0.004	-0.005	-0.005	-0.005	-0.005	-0.004	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.009	-0.023	-0.038	-0.050	-0.057	-0.058	-0.052	-0.039	-0.021	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.001	-0.003	-0.005	-0.006	-0.007	-0.007	-0.006	-0.005	-0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.011	-0.028	-0.047	-0.061	-0.069	-0.070	-0.063	-0.048	-0.025	0.000
REQUIRED CAMBER	0"	1/8"	5/16"	9/16"	3/4"	13/16"	13/16"	3/4"	9/16"	5/16"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.
 DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).
 REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).
 DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 8 OF 9



DocuSigned by:
 Eric B. Nelson 9/2/2021
 NC02020818074CD

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
DEAD LOAD DEFLECTION AND CAMBER ORDINATES UNIT 3 GIRDER 4					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

SHEET NO.
S1-43
 TOTAL SHEETS
125

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UNIT 3 (SPAN "I")											
GIRDER 5											
10TH POINTS	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.002	-0.004	-0.005	-0.006	-0.006	-0.005	-0.004	-0.003	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.012	-0.023	-0.030	-0.034	-0.034	-0.030	-0.023	-0.015	-0.006	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.003	-0.005	-0.006	-0.007	-0.007	-0.006	-0.005	-0.003	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.017	-0.032	-0.041	-0.047	-0.047	-0.041	-0.032	-0.021	-0.008	0.000
REQUIRED CAMBER	0"	3/16"	3/8"	1/2"	9/16"	9/16"	1/2"	3/8"	1/4"	1/8"	0"

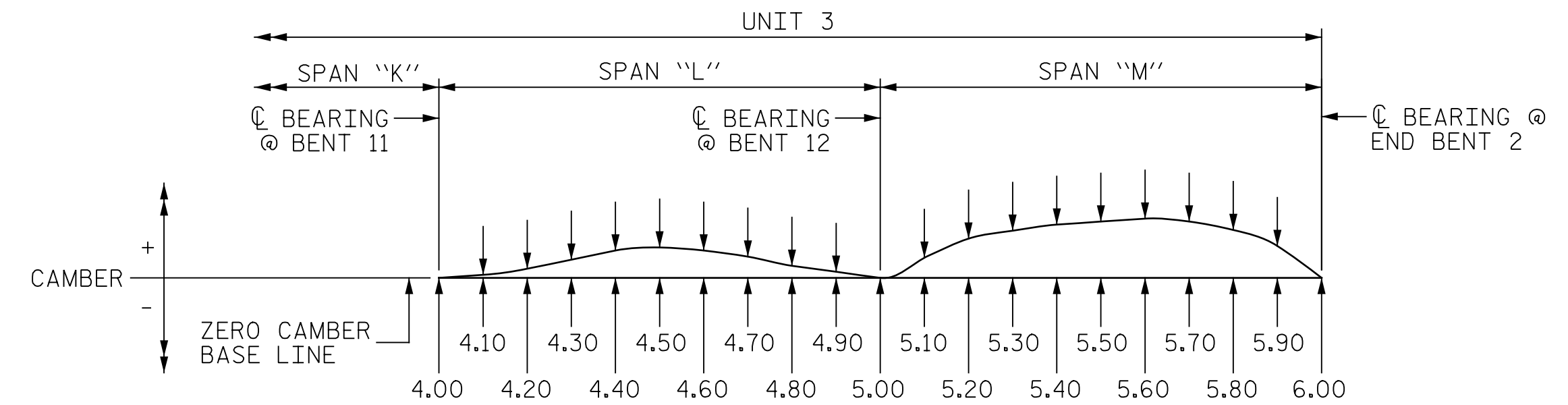
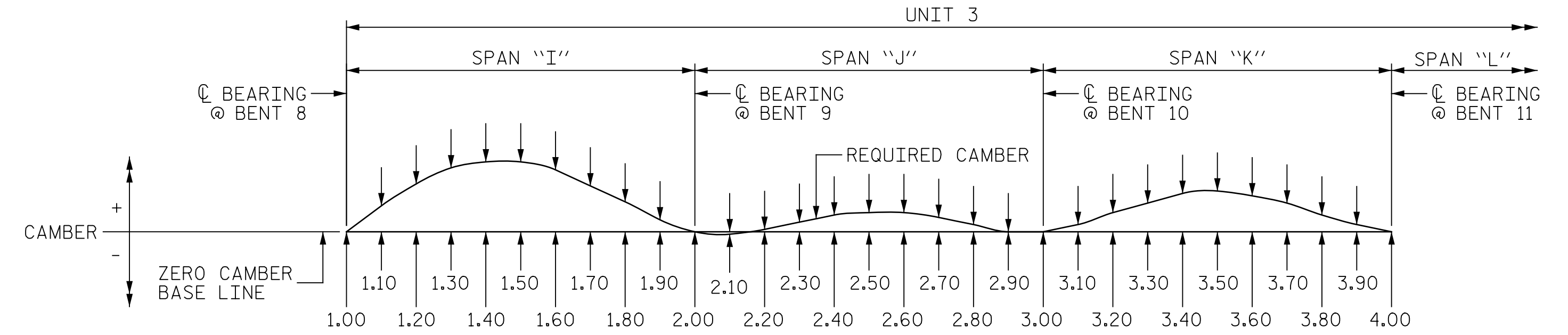
UNIT 3 (SPAN "J")											
GIRDER 5											
10TH POINTS	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.002	0.001	0.000	-0.002	-0.003	-0.002	0.000	0.002	0.002	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.002	0.001	0.000	-0.002	-0.004	-0.002	0.000	0.002	0.003	0.000
REQUIRED CAMBER	0"	0"	0"	0"	0"	1/16"	0"	0"	0"	-1/16"	0"

UNIT 3 (SPAN "K")											
GIRDER 5											
10TH POINTS	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.001	-0.003	-0.005	-0.006	-0.007	-0.006	-0.005	-0.003	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.009	-0.020	-0.031	-0.038	-0.040	-0.036	-0.029	-0.018	-0.007	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.002	-0.004	-0.006	-0.008	-0.008	-0.008	-0.006	-0.004	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.012	-0.027	-0.042	-0.052	-0.055	-0.050	-0.040	-0.025	-0.009	0.000
REQUIRED CAMBER	0"	1/8"	5/16"	1/2"	5/8"	11/16"	5/8"	1/2"	5/16"	1/8"	0"

UNIT 3 (SPAN "L")											
GIRDER 5											
10TH POINTS	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.002	-0.001	0.000	0.000	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.001	-0.006	-0.012	-0.016	-0.017	-0.014	-0.009	-0.002	0.002	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	0.000	-0.001	-0.003	-0.003	-0.004	-0.003	-0.002	-0.001	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.001	-0.008	-0.017	-0.022	-0.024	-0.019	-0.012	-0.003	0.002	0.000
REQUIRED CAMBER	0"	0"	1/8"	3/16"	1/4"	5/16"	1/4"	1/8"	1/16"	0"	0"

UNIT 3 (SPAN "M")											
GIRDER 5											
10TH POINTS	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	-0.002	-0.005	-0.008	-0.010	-0.011	-0.011	-0.010	-0.008	-0.004	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	-0.011	-0.028	-0.045	-0.059	-0.067	-0.068	-0.060	-0.045	-0.025	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	0.000	-0.002	-0.006	-0.009	-0.012	-0.014	-0.014	-0.013	-0.010	-0.005	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	-0.015	-0.039	-0.062	-0.081	-0.092	-0.093	-0.083	-0.063	-0.034	0.000
REQUIRED CAMBER	0"	3/16"	7/16"	3/4"	1"	1 1/8"	1 1/8"	1"	3/4"	1/16"	0"

* = INCLUDES SLAB, BUILDUPS, & S.I.P. FORMS



NOTES

VALUES GIVEN ARE AT TENTH POINTS BETWEEN CENTERLINE OF BEARINGS.

DEFLECTIONS AND ORDINATES ARE IN FEET (DECIMAL FORM).

REQUIRED CAMBER VALUES ARE IN INCHES (FRACTION FORM).

DOWNWARD DEFLECTION IF INDICATED WITH A "-" SIGN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 9 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DEAD LOAD DEFLECTION
 AND CAMBER ORDINATES
 UNIT 3
 GIRDER 5



DocuSigned by:
 Eric B. Nelson 9/2/2021

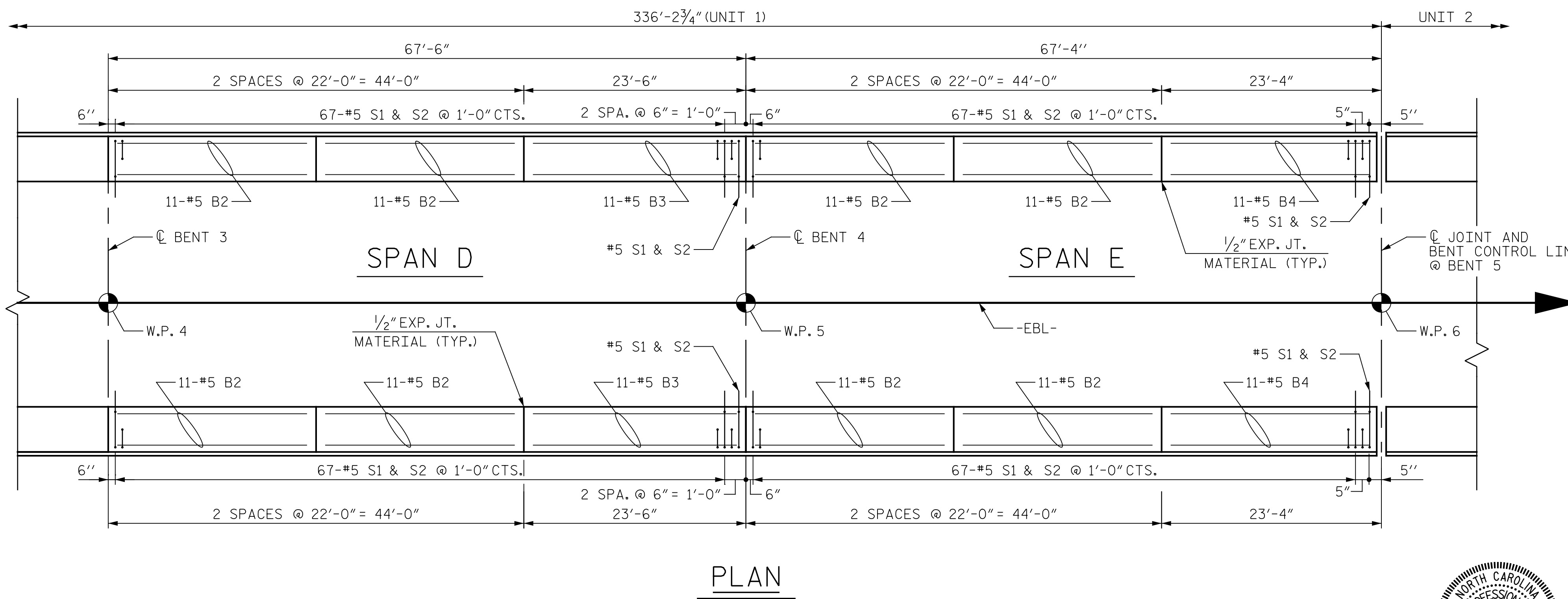
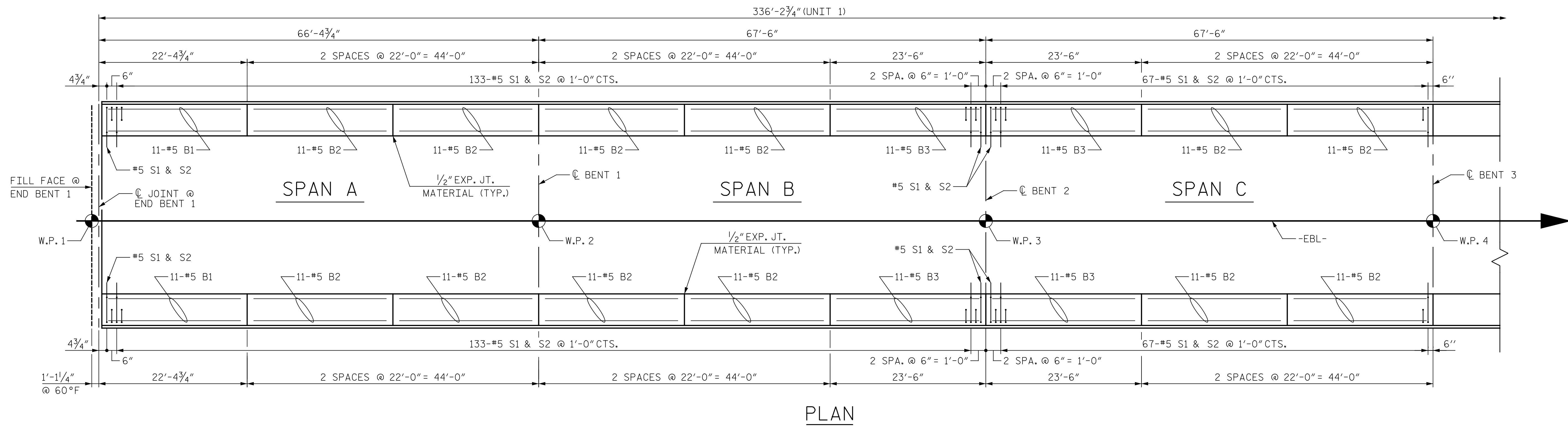
DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : J. FARNHAM DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-44
1			3			TOTAL SHEETS
2			4			125

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PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 5
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONCRETE BARRIER RAIL
 UNIT 1

DRAWN BY : T. HARTLEY DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:

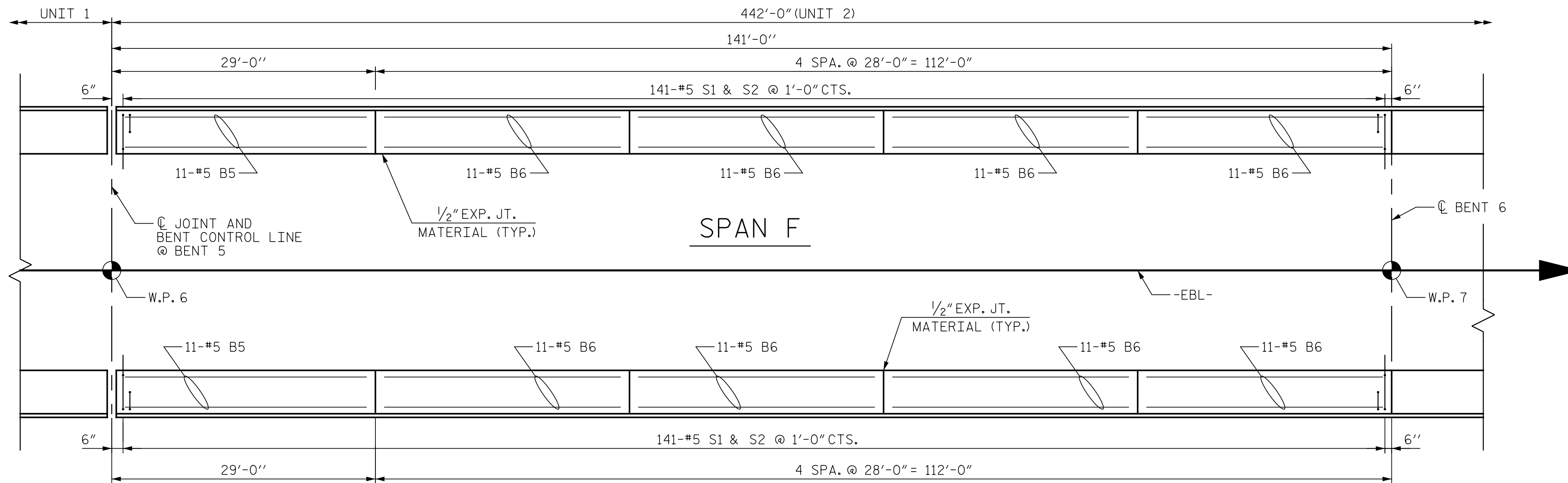
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
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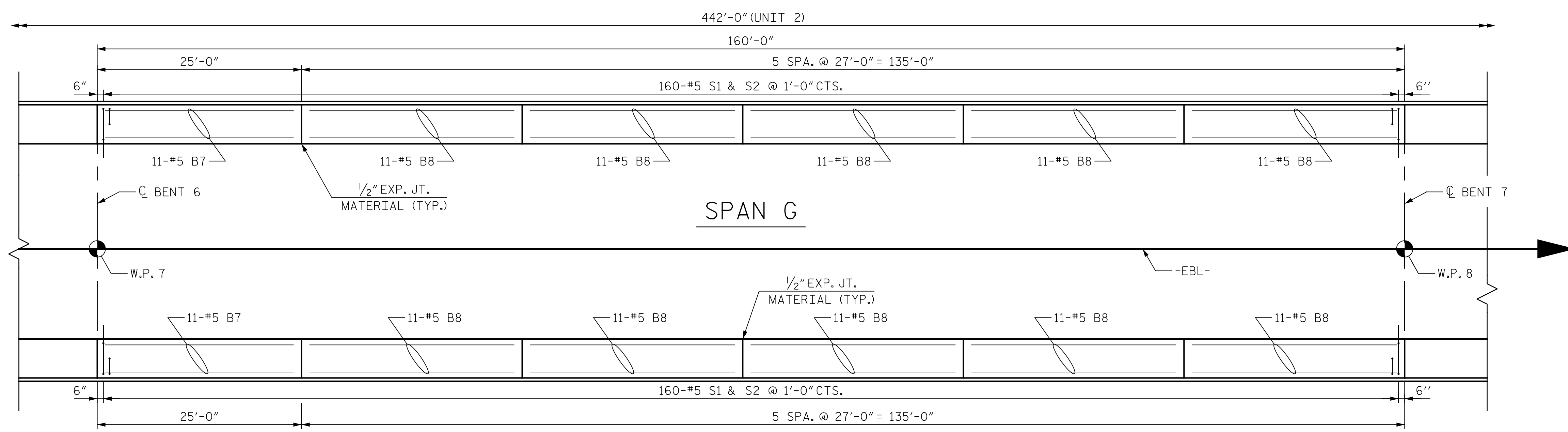
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PLAN



PLAN

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE BARRIER
 RAIL
 UNIT 2



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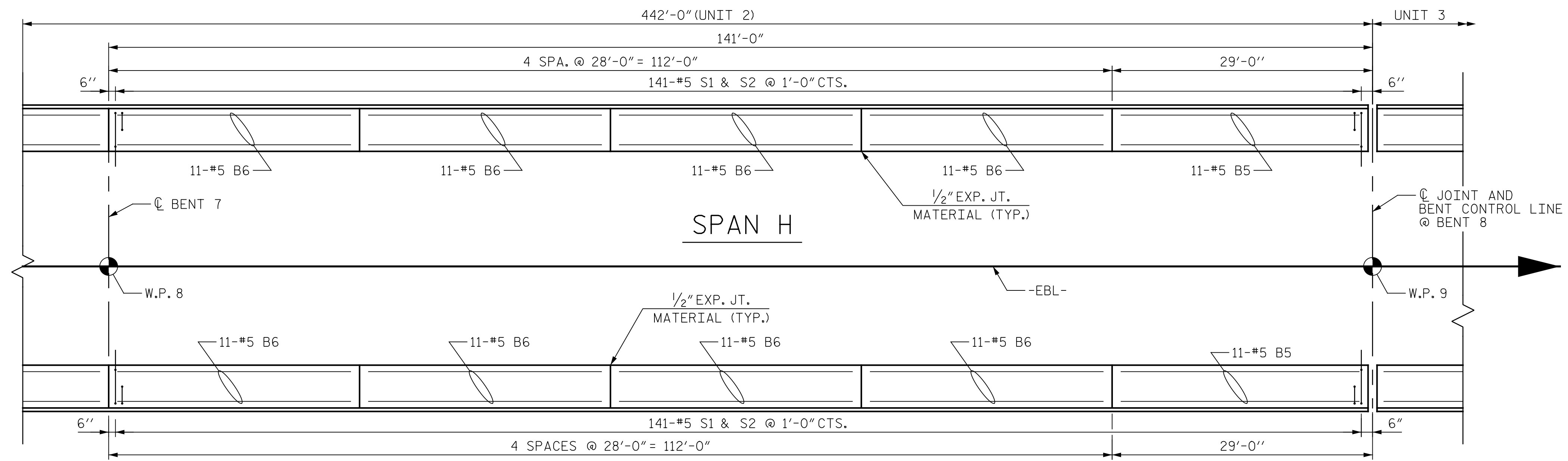
DRAWN BY : T. HARTLEY DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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PLAN

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 3 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE BARRIER RAIL
UNIT 2

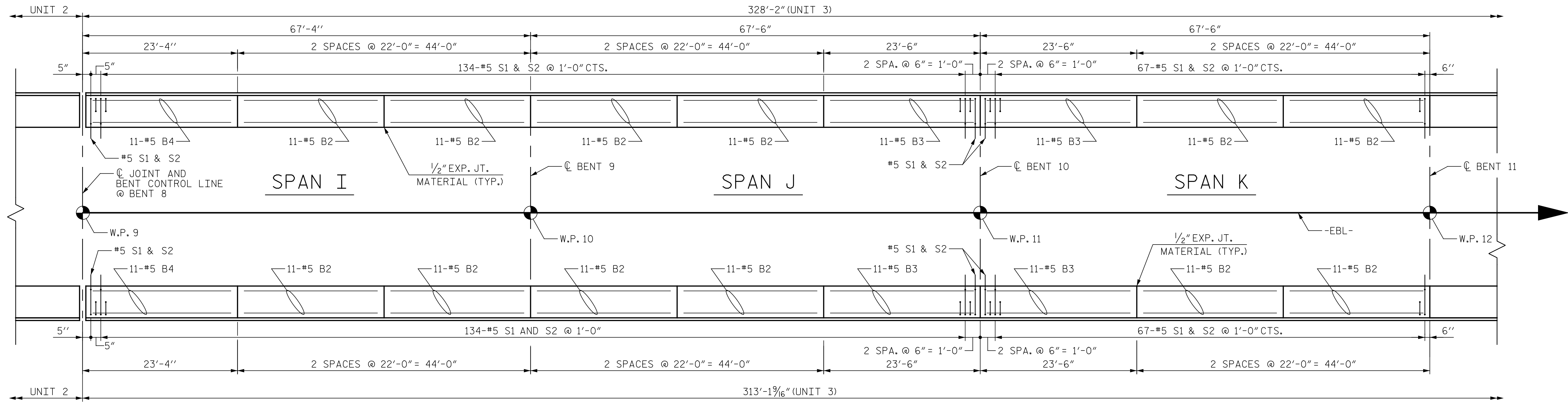
DRAWN BY : T. HARTLEY DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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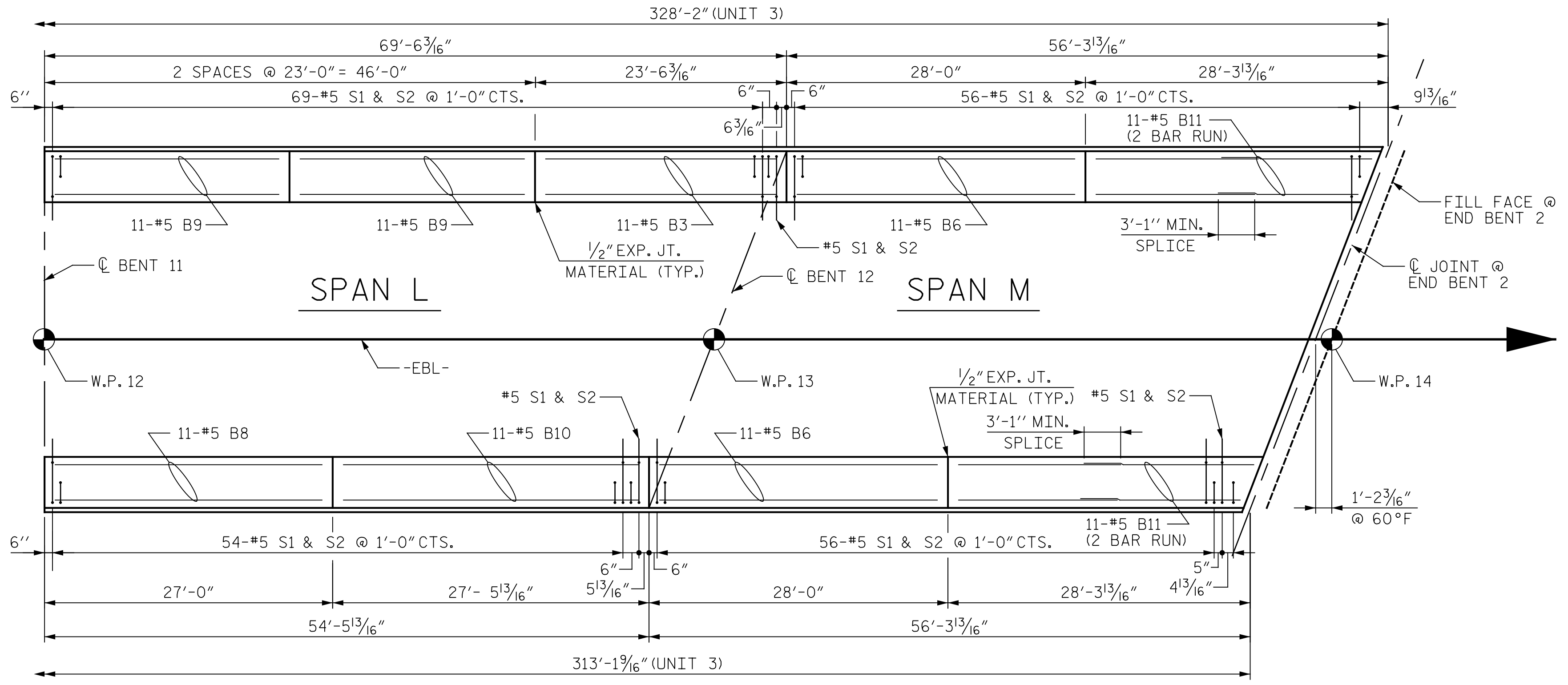
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PLAN



PLAN

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE BARRIER RAIL
UNIT 3



DRAWN BY : T. HARTLEY DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
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 (919) 420-7660
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DocuSigned by:
 Eric B. Nelson
 9/2/2021

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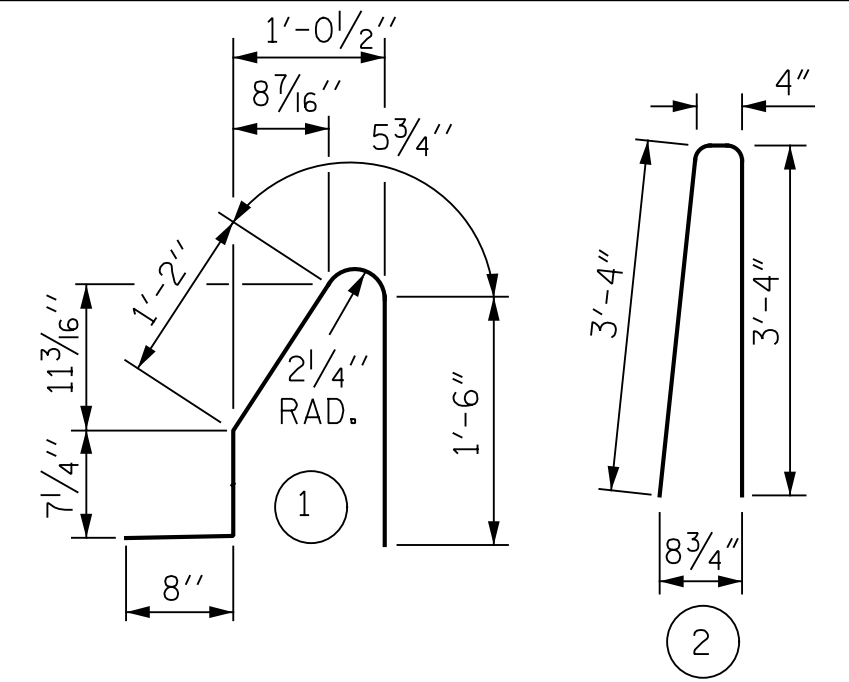
NOTES

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

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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

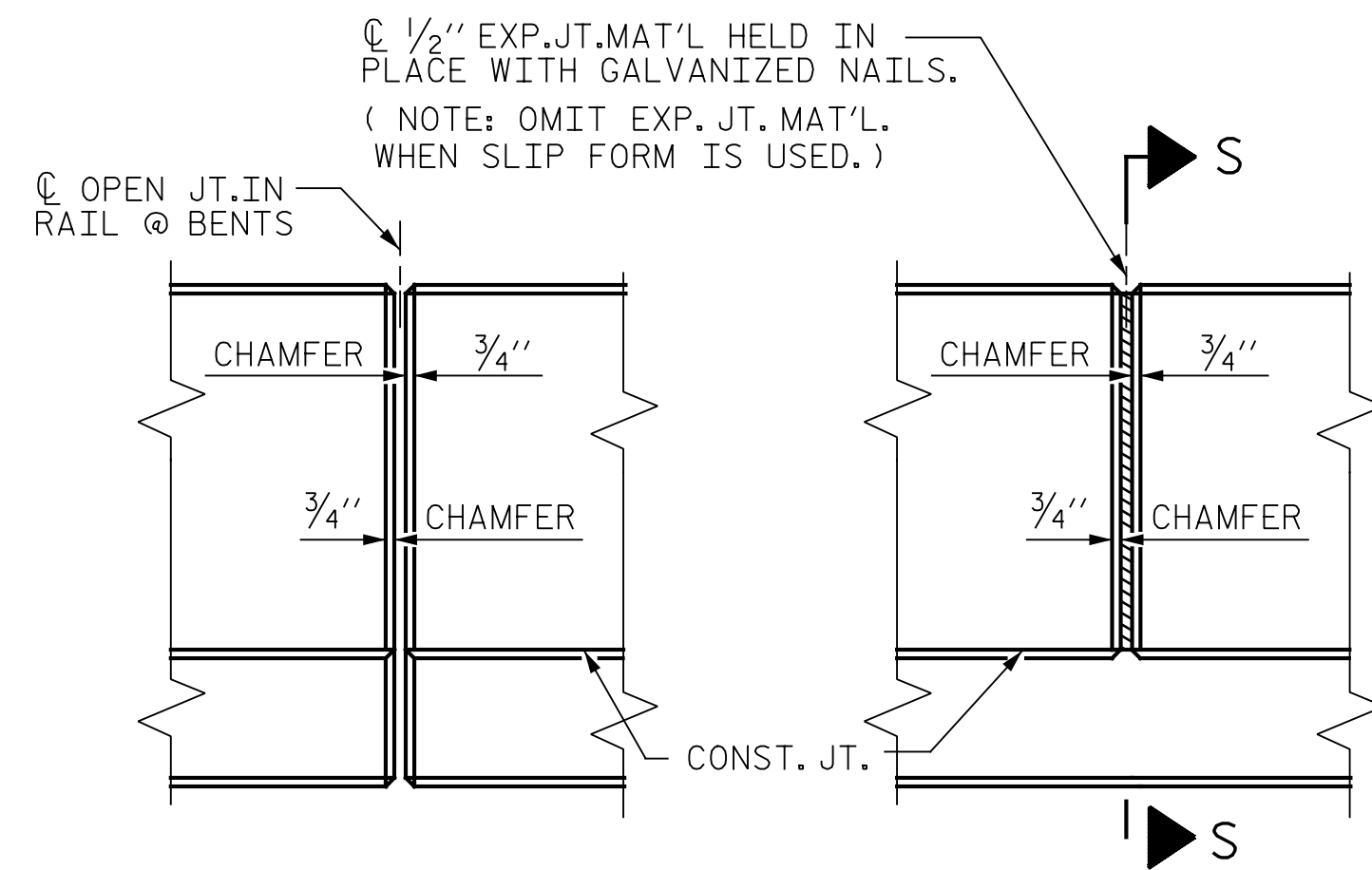
PLAN DIMENSIONS ARE MEASURED ALONG OUTSIDE FACE OF BARRIER RAIL.



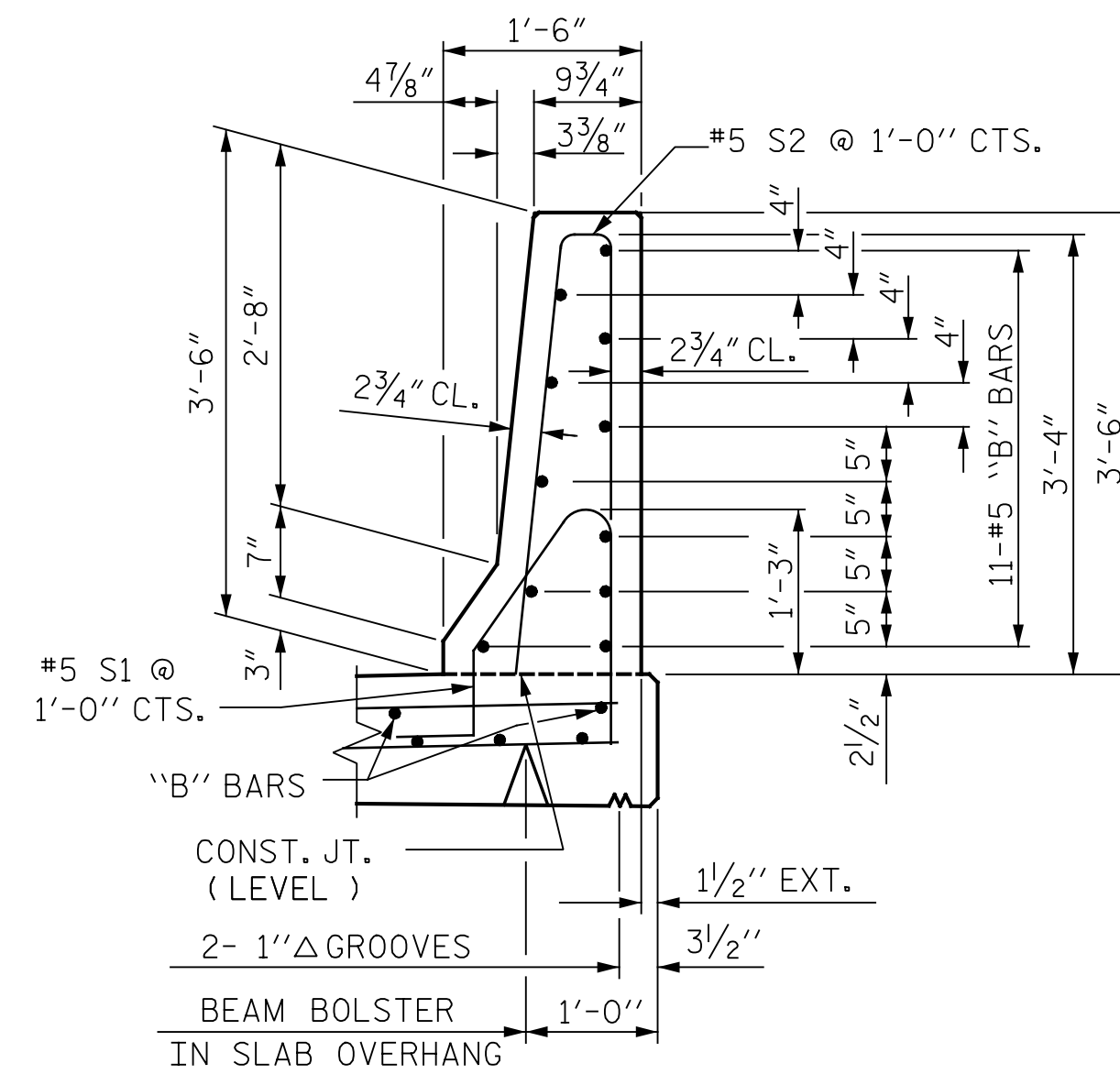
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

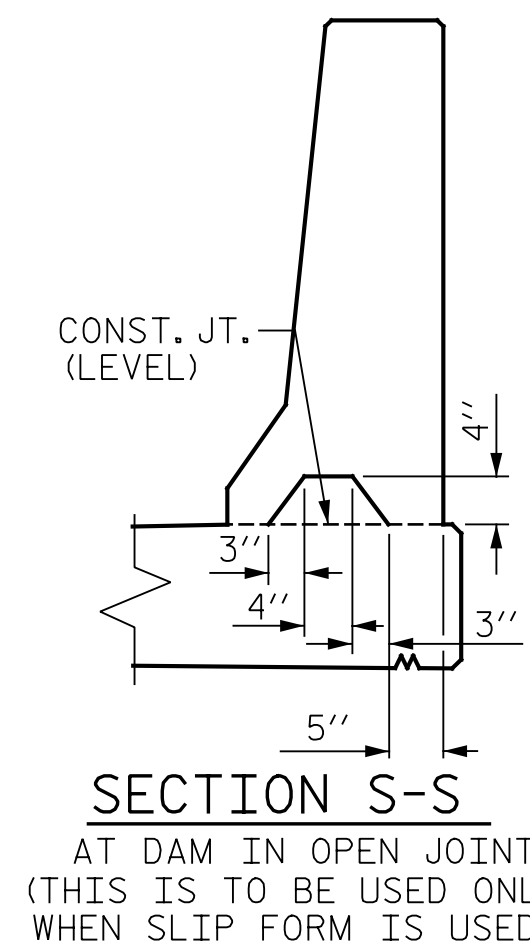
FOR CONCRETE BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	22	#5	STR.	21'-11"	503
* B2	352	#5	STR.	21'-7"	7,924
* B3	121	#5	STR.	23'-1"	2,913
* B4	44	#5	STR.	22'-10"	1,048
* B5	44	#5	STR.	28'-6"	1,308
* B6	198	#5	STR.	27'-7"	5,696
* B7	22	#5	STR.	24'-7"	564
* B8	121	#5	STR.	26'-7"	3,355
* B9	22	#5	STR.	22'-7"	518
* B10	11	#5	STR.	27'-1"	311
* B11	44	#5	STR.	15'-9"	723
* S1	2,208	#5	1	4'-5"	10,171
* S2	2,208	#5	2	7'-0"	16,121
* EPOXY COATED REINFORCING STEEL					51,155 LBS.
CLASS AA CONCRETE					298.5 CU. YDS.
CONCRETE BARRIER RAIL					2,197.76 LIN. FT.



**ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS**



SECTION THRU RAIL



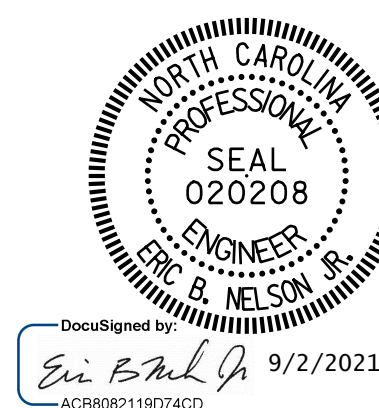
**SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)**

PROJECT NO. B-4626
STANLY, ROWAN
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 STATION: 45+22.65 -EBL-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**STANDARD
CONCRETE
BARRIER RAIL**



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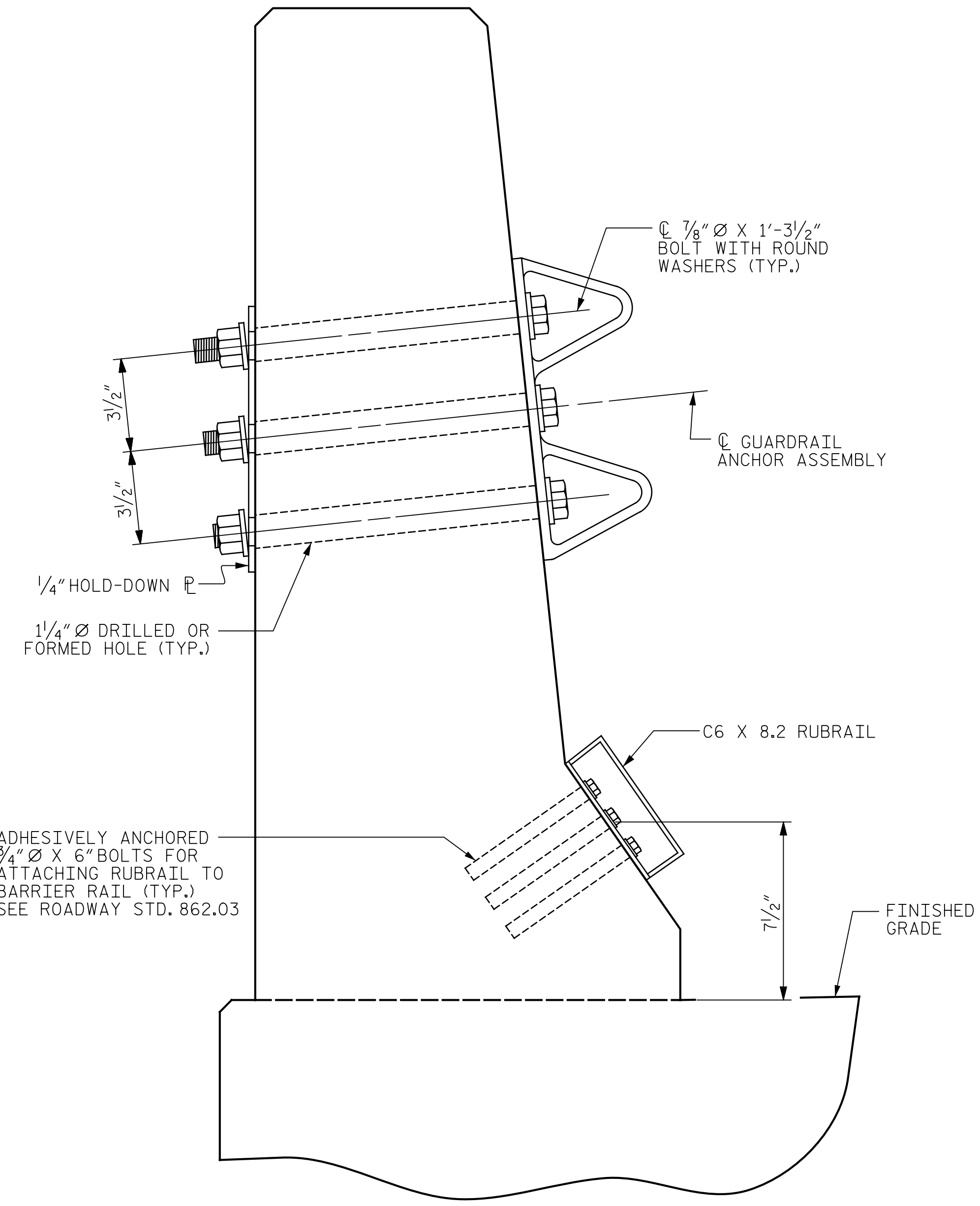
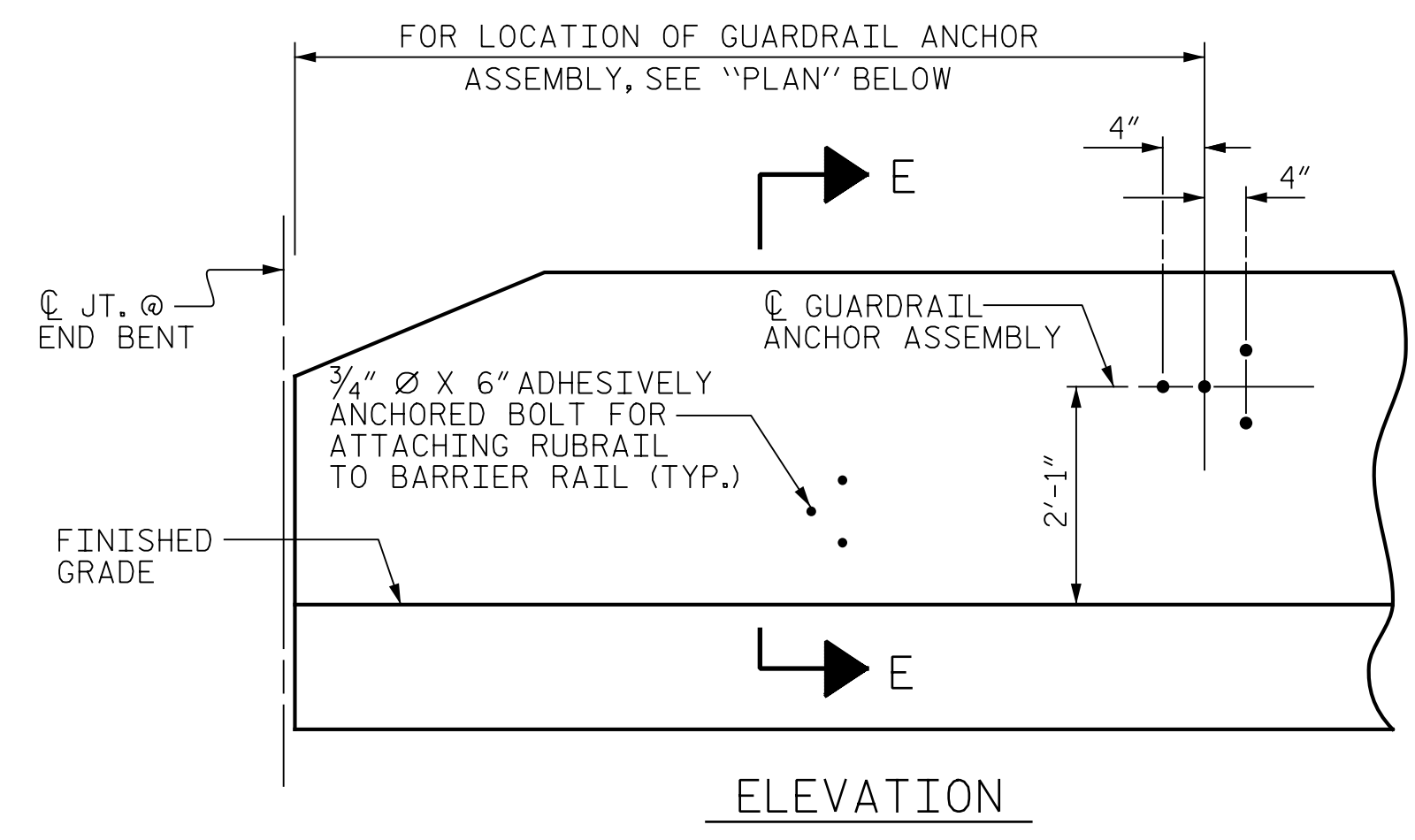
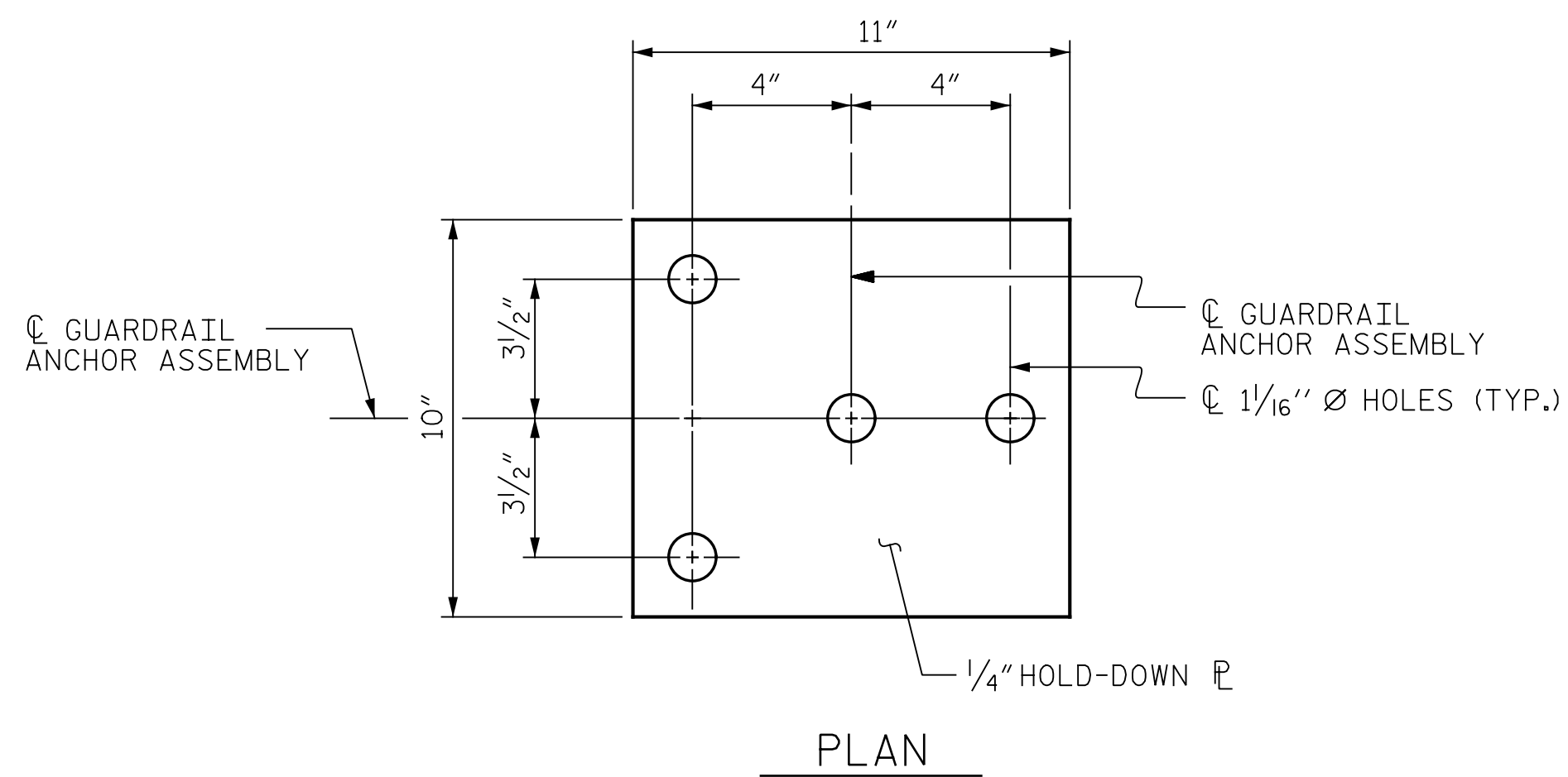
PLANS PREPARED BY:
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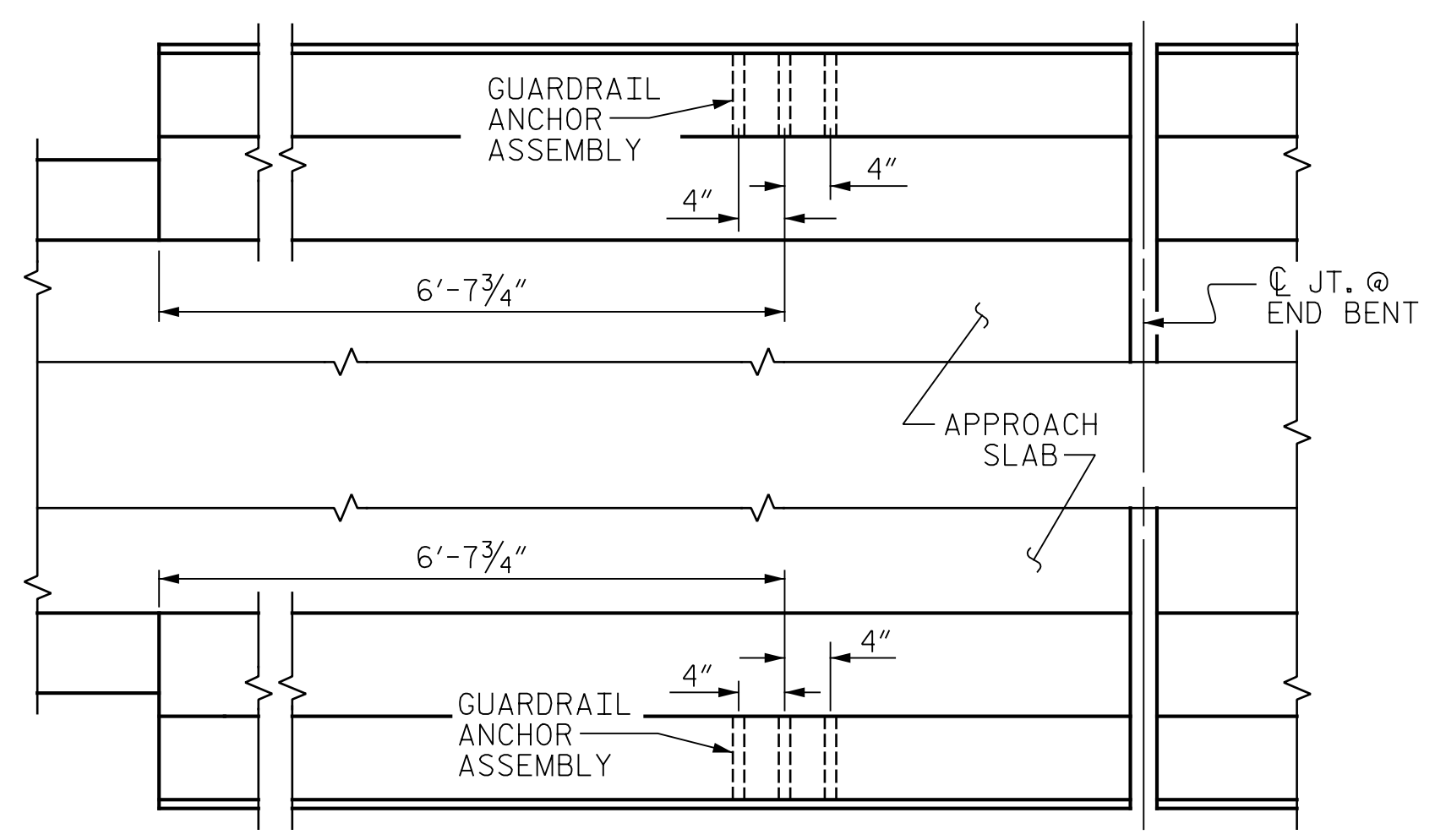
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CHECKED BY : R. FISHER	DATE : 04/2021
DRAWN BY : ARB 5/87	REV. 7/12 MAA/GM
CHECKED BY : SJD 9/87	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

STD. NO. CBR1

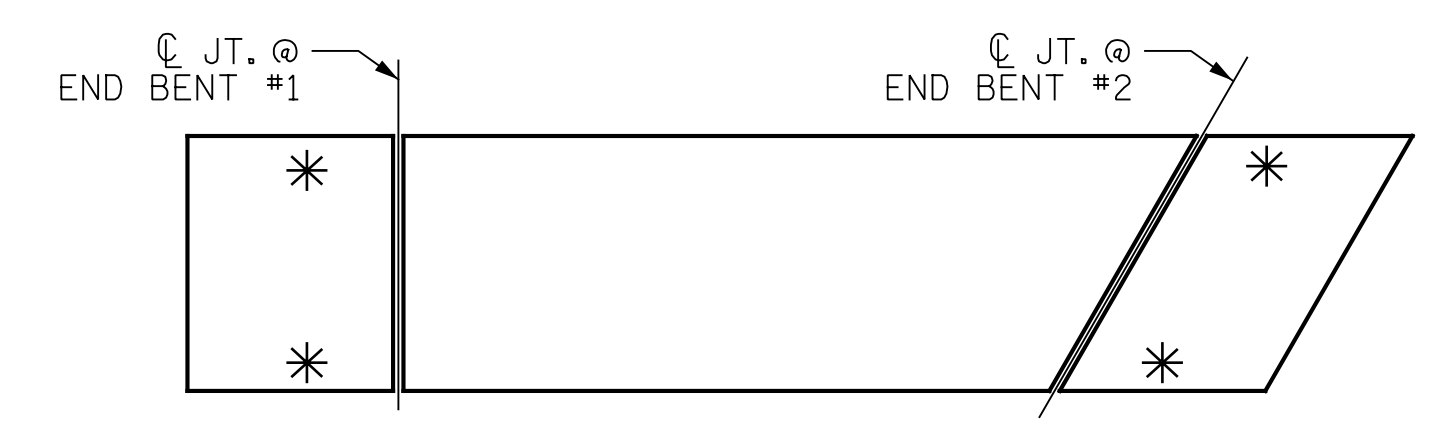
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SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



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



SKETCH SHOWING POINTS OF ATTACHMENTS
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

NOTES

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

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

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

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

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

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

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

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

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-



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

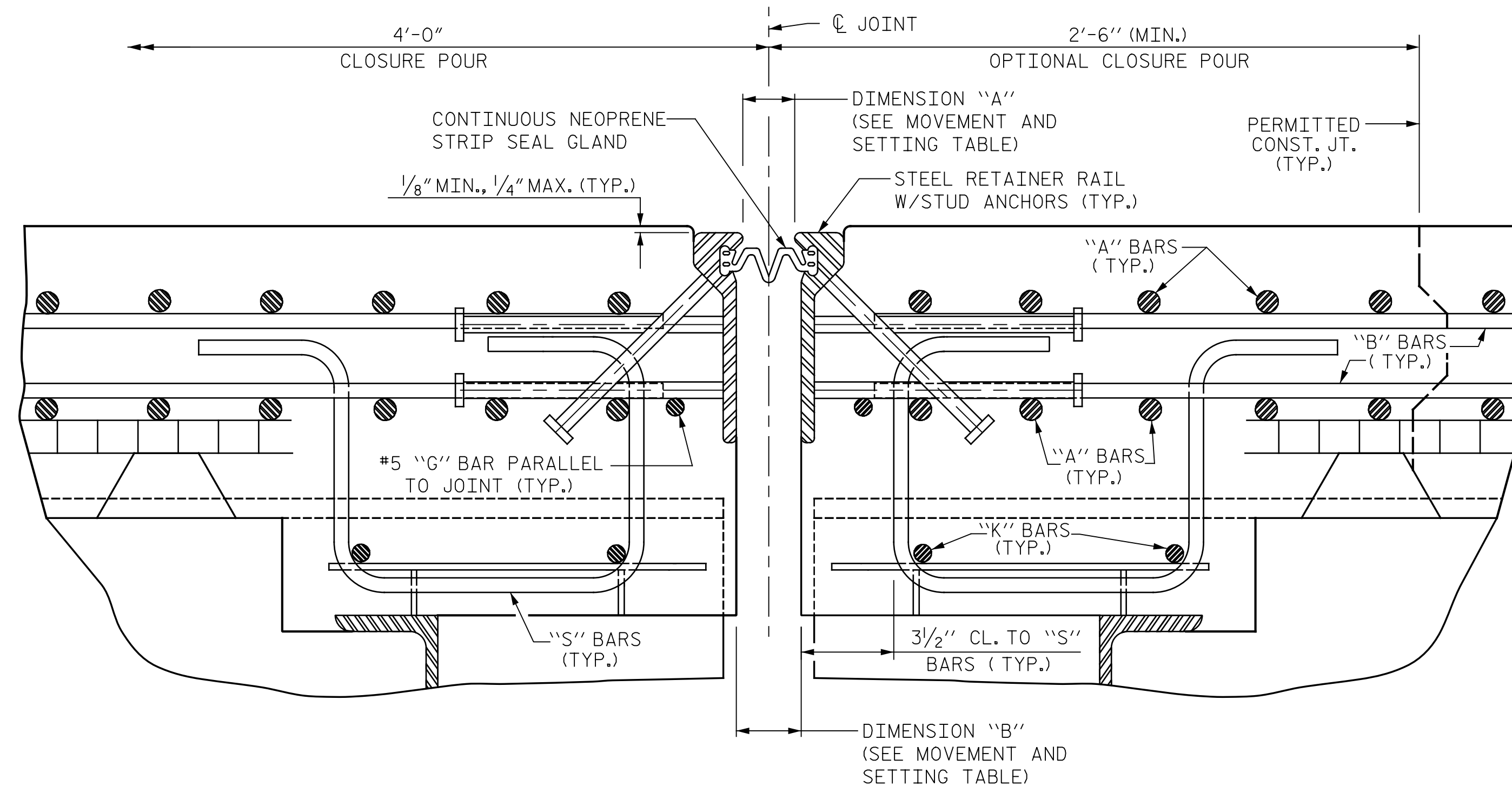
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CHECKED BY : GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

PLANS PREPARED BY:
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DocuSigned by:
 Eric B. Nelson
 9/2/2021
 SEAL 020208
 ENGINEER
 ERIC B. NELSON, JR.

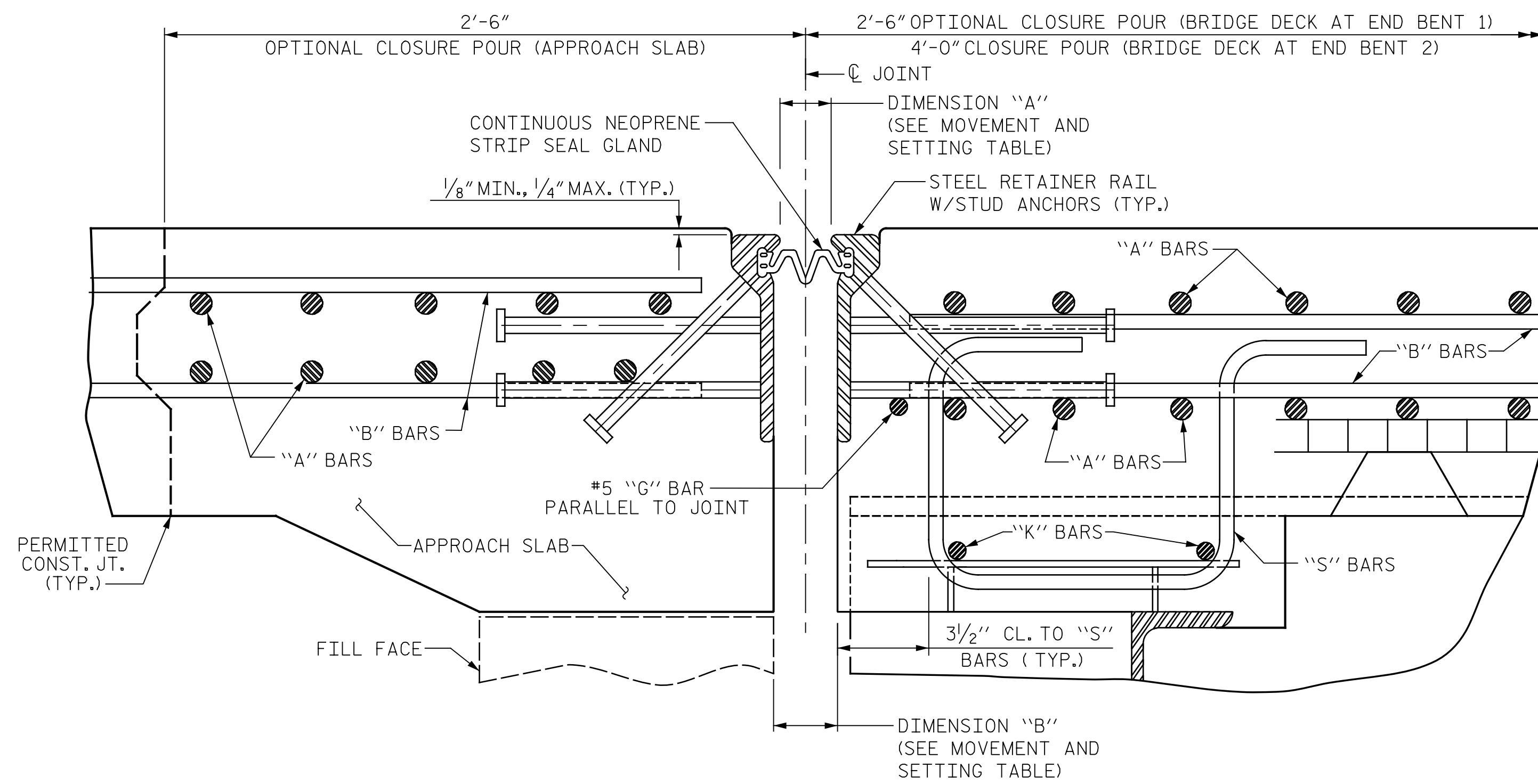
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STRIP SEAL EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE



STRIP SEAL EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE

LOCATION	SKEW ANGLE	TOTAL MOVEMENT (ALONG CL RDWY)	MOVEMENT AND SETTING AT JOINT					
			DIMENSION "A"			DIMENSION "B"		
			PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1	90°-00'-00"	1 5/16"	2 3/16"	2"	1 9/16"	2 11/16"	2 1/2"	2 1/16"
BENT 5	90°-00'-00"	3 3/16"	3 1/4"	2 3/4"	1 11/16"	3 3/4"	3 1/4"	2 3/16"
BENT 8	90°-00'-00"	3 3/8"	3 3/16"	2 11/16"	1 11/16"	3 11/16"	3 3/16"	2 3/16"
END BENT 2	111°-05'-00"	1 3/16"	2 3/16"	2"	1 11/16"	2 11/16"	2 1/2"	2 3/16"

JOINT INSTALLATION PROCEDURE:

- INSTALL THE STRIP SEAL EXPANSION JOINT AS RECOMMENDED BY THE MANUFACTURER.
- A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING INSTALLATION OF THE JOINT.
- PLACE STEEL RETAINER RAILS IN JOINT OPENING. PROPERLY ALIGN THE RAILS BOTH HORIZONTALLY AND VERTICALLY. DO NOT WELD SUPPORT SYSTEM TO THE METALLIZED SURFACES OF THE STEEL RETAINER RAILS.
- CONFLICTING REINFORCING STEEL MAY BE SHIFTED SLIGHTLY WHEN NECESSARY.
- DECK SLAB CONCRETE PLACEMENT OPERATIONS SHALL COMMENCE PER THE POURING SEQUENCE AFTER FINAL JOINT ALIGNMENT IS SET.
- PROTECT THE STEEL RETAINER RAILS FROM BEING FOULED BY CONCRETE SPILLOVER DURING THE DECK POUR.
- LOOSEN THE STEEL RETAINER RAIL SUPPORT SYSTEM TO ALLOW MOVEMENT WHILE CONCRETE CURES.
- RE-LEVEL AND RE-ALIGN STEEL RETAINER RAIL AS REQUIRED ON OPPOSITE SIDE OF JOINT.
- PLACE APPROACH/DECK SLAB CONCRETE.
- ONCE THE CONCRETE HAS HARDENED SUFFICIENTLY ON BOTH SIDES OF JOINT, STEEL RETAINER RAILS SHALL BE CLEANED THOROUGHLY AND SEAL CHANNELS SHALL BE INSPECTED TO ASCERTAIN THE ABSENCE OF CONCRETE AND DEBRIS.
- COAT THE STRIP SEAL LUGS WITH LUBRICANT-ADHESIVE AND INSTALL THE NEOPRENE STRIP SEAL GLAND AS RECOMMENDED BY THE STRIP SEAL EXPANSION JOINT MANUFACTURER.

GENERAL NOTES

FOR STRIP SEAL EXPANSION JOINTS, SEE SPECIAL PROVISIONS.

STEEL RETAINER RAILS AND COVER PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR GRADE 50 STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MIN.

ONLY STEEL RETAINER RAILS OF ONE-PIECE CONSTRUCTION ARE PERMITTED. STEEL RETAINER RAILS CONSISTING OF TWO OR MORE COMPONENTS WELDED TOGETHER TO OBTAIN THEIR FINAL CROSS-SECTIONAL SHAPE ARE NOT PERMITTED.

STUD ANCHORS SHALL BE SHOP WELDED AND SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.

SURFACES COMING IN CONTACT WITH STRIP SEAL GLAND SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.

UPON COMPLETION OF SHOP FABRICATION, THE STEEL RETAINER RAILS SHALL BE METALLIZED AS SHOWN IN THE "METALLIZING DETAIL". SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

INSTALLED STEEL RETAINER RAILS SHALL FOLLOW THE ROADWAY SLOPE.

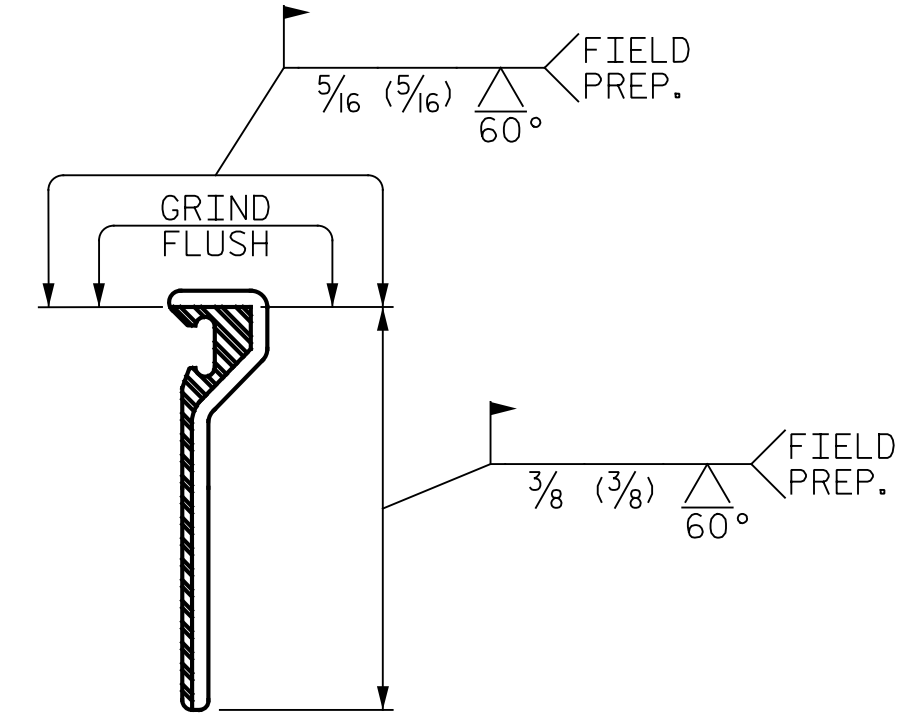
FIELD SPLICES OF THE RETAINER RAILS SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. FINISHED WELDS SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).

NEOPRENE STRIP SEAL GLAND SHALL BE CONTINUOUS THROUGHOUT THE JOINT AND SHALL BE COMPATIBLE WITH THE STEEL RETAINER RAILS. FIELD SPLICING THE GLAND IS NOT PERMITTED.

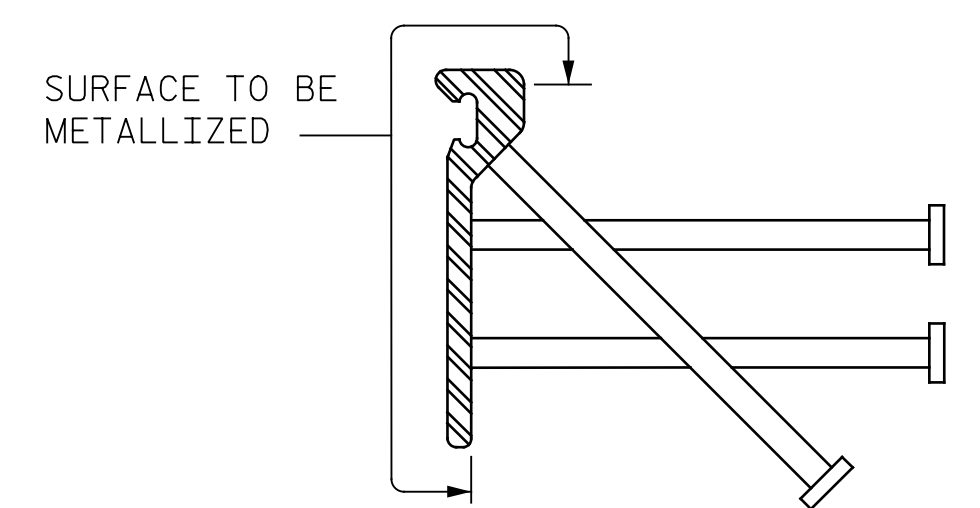
NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.

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

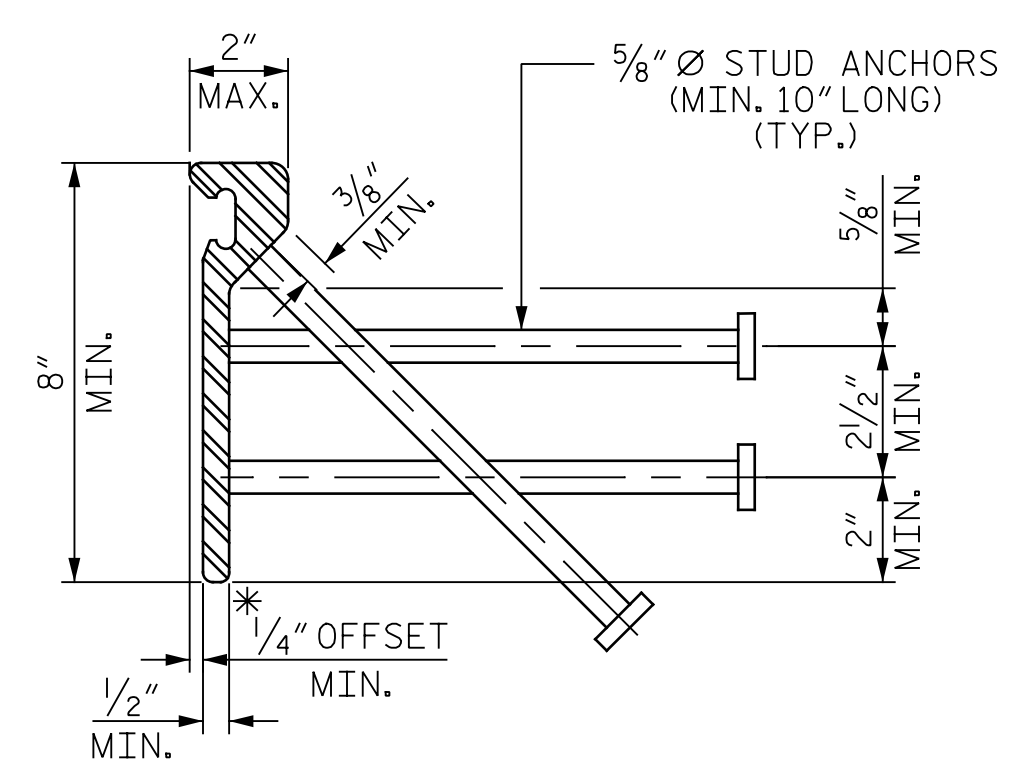
THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



STEEL RETAINER RAIL (FIELD SPLICE DETAIL)



METALLIZING DETAIL



TYPICAL SECTION STEEL RETAINER RAIL

* DIMENSION "B" BASED ON STEEL RETAINER RAIL TOP OFFSET TO FACE OF RAIL OF 1/4" MINIMUM. IF ACTUAL OFFSET IS GREATER ADJUST DIMENSION "B" AS REQUIRED.

PROJECT NO. B-4626
STANLY, ROWAN
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 STATION: 45+22.65 -EBL-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 STRIP SEAL EXPANSION
 JOINT DETAILS



DocuSigned by: Eric B. Nelson 9/2/2021

PLANS PREPARED BY:
Gannett Fleming
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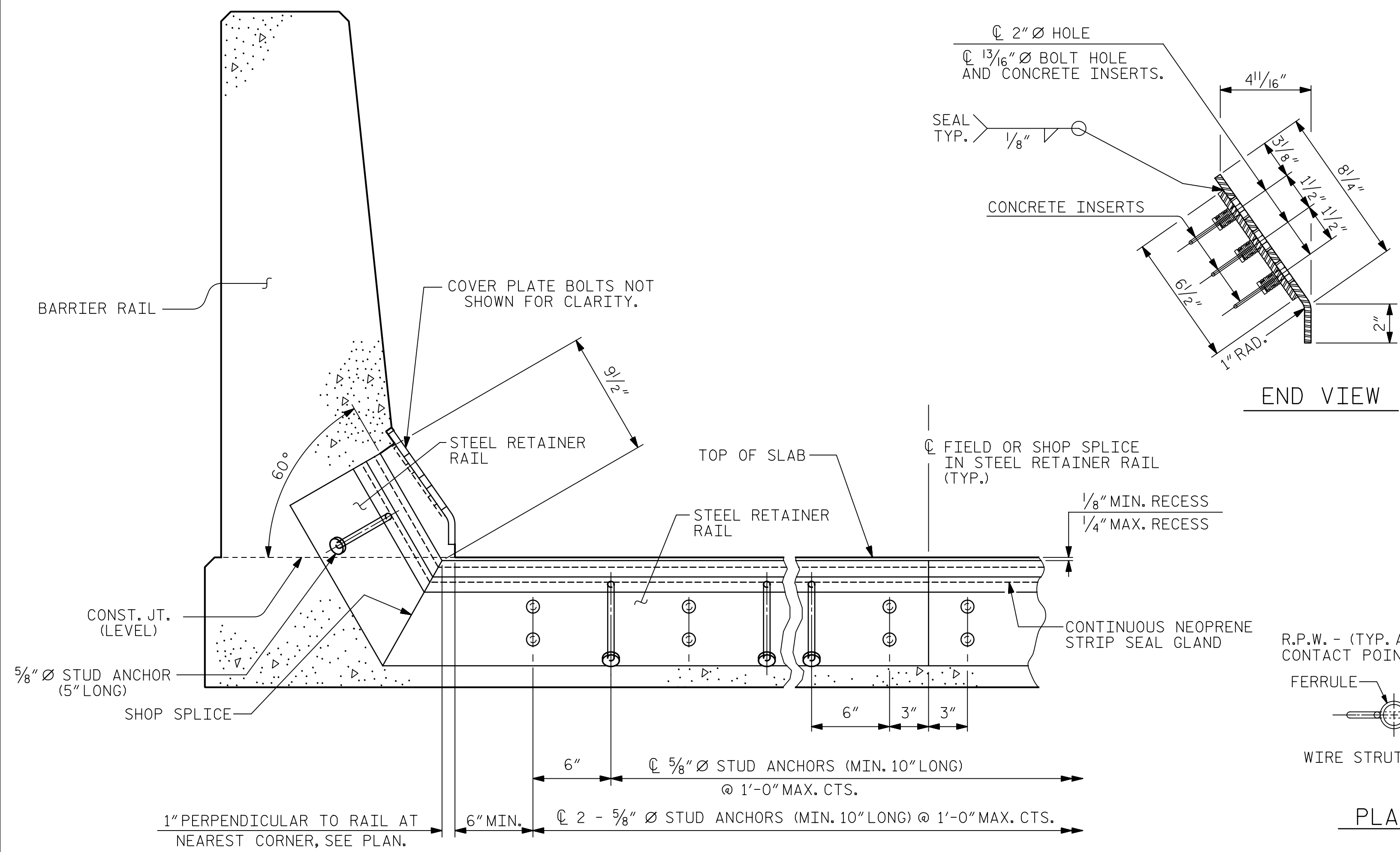
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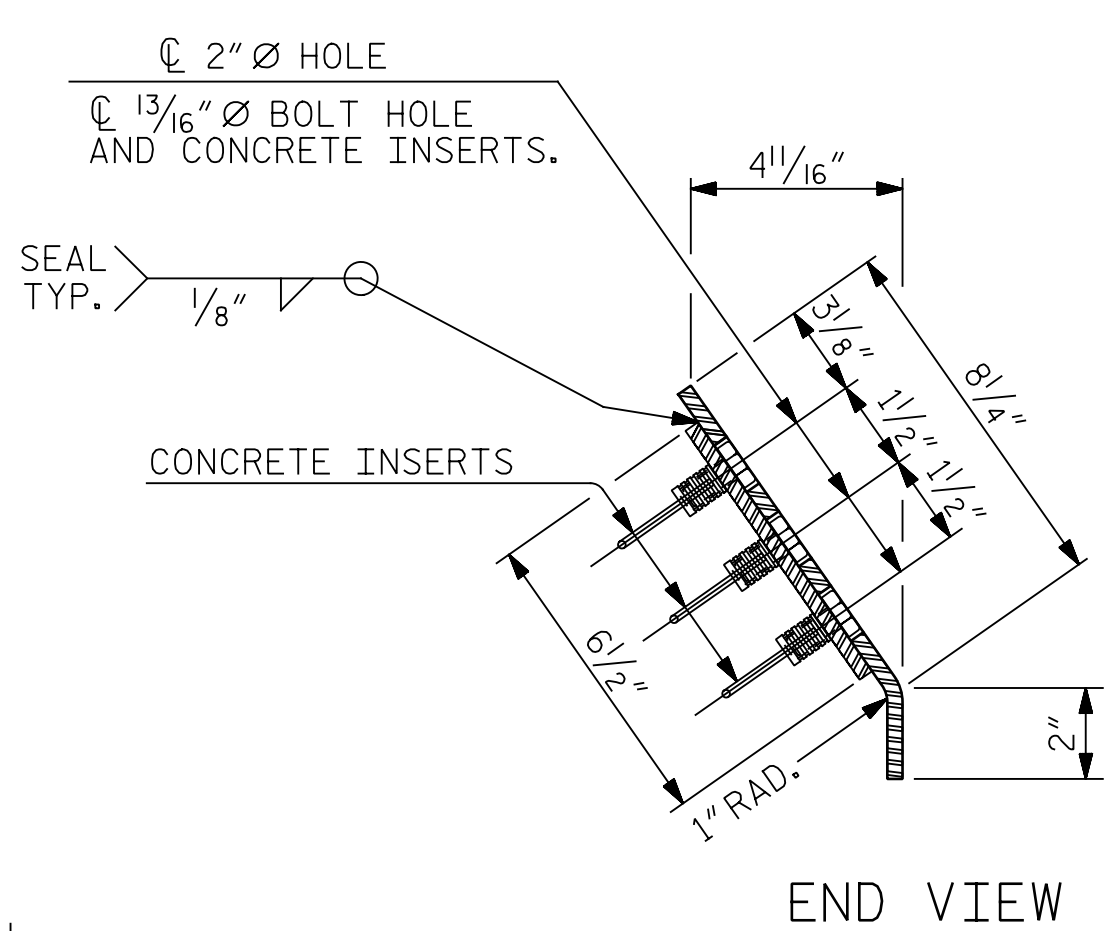
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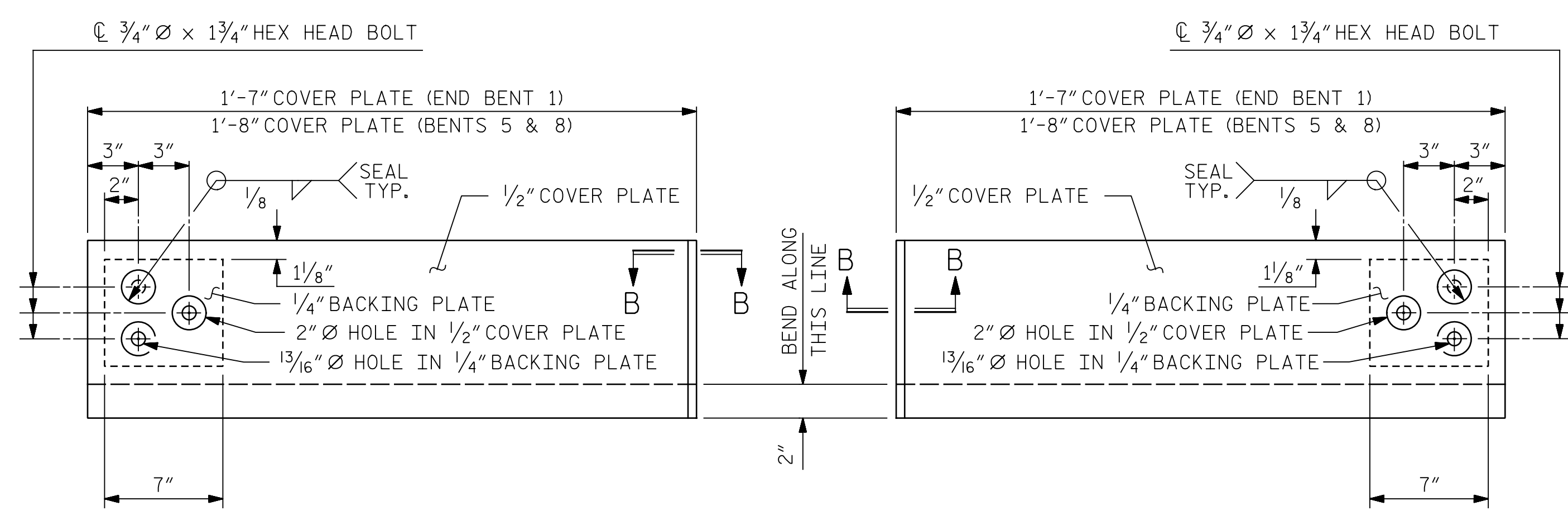
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SECTION THRU RAIL NORMAL TO JOINT



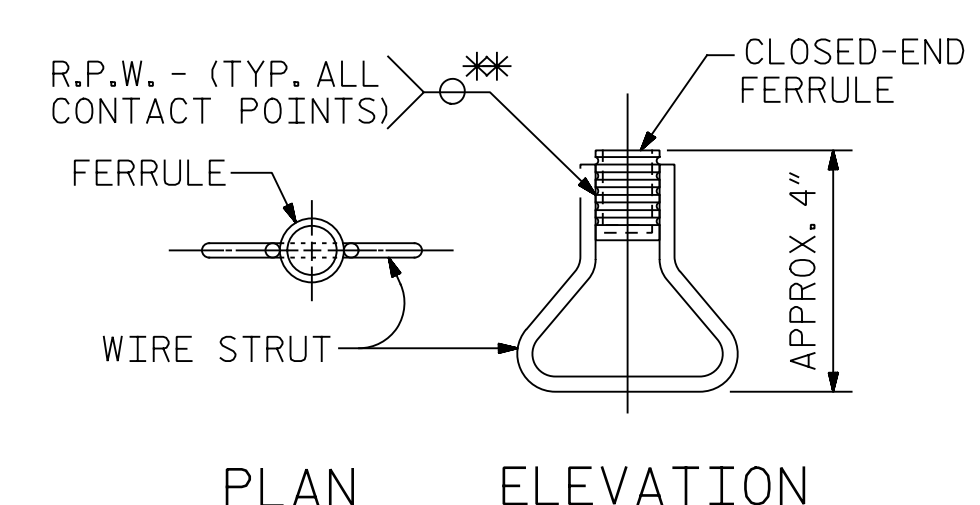
END VIEW



TYPE I - ELEVATION VIEW

TYPE II - ELEVATION VIEW

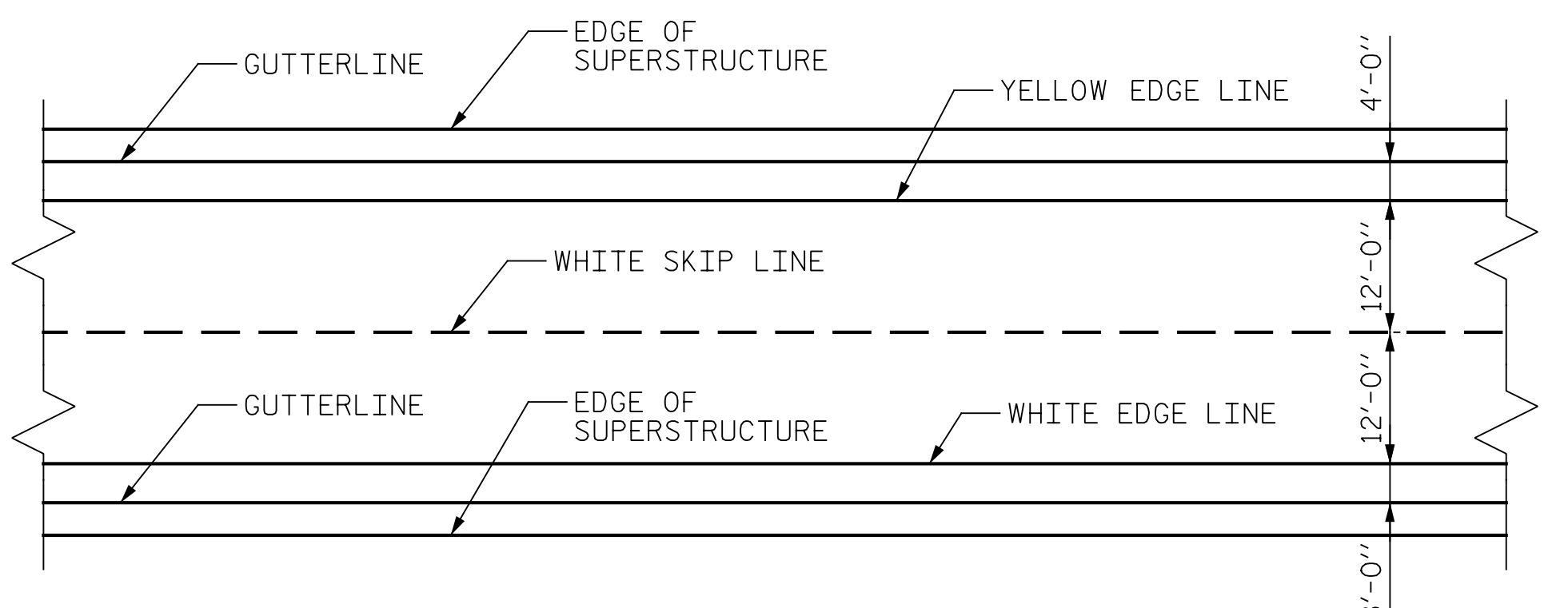
COVER PLATE DETAILS



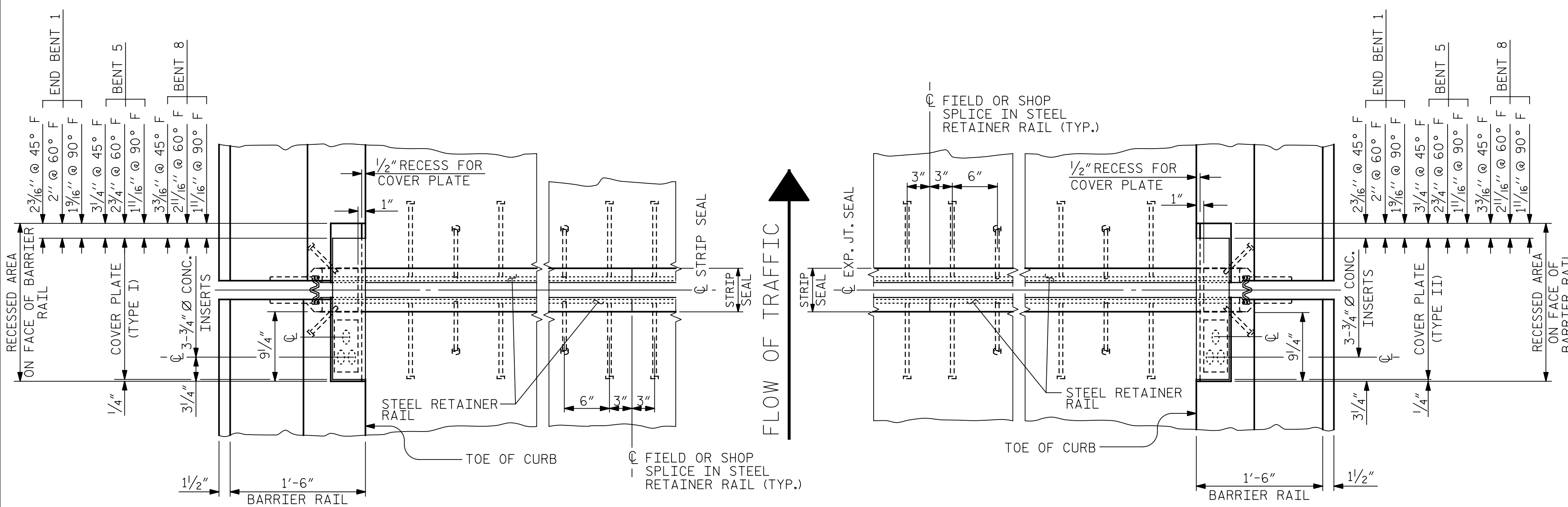
PLAN ELEVATION

CONCRETE INSERT

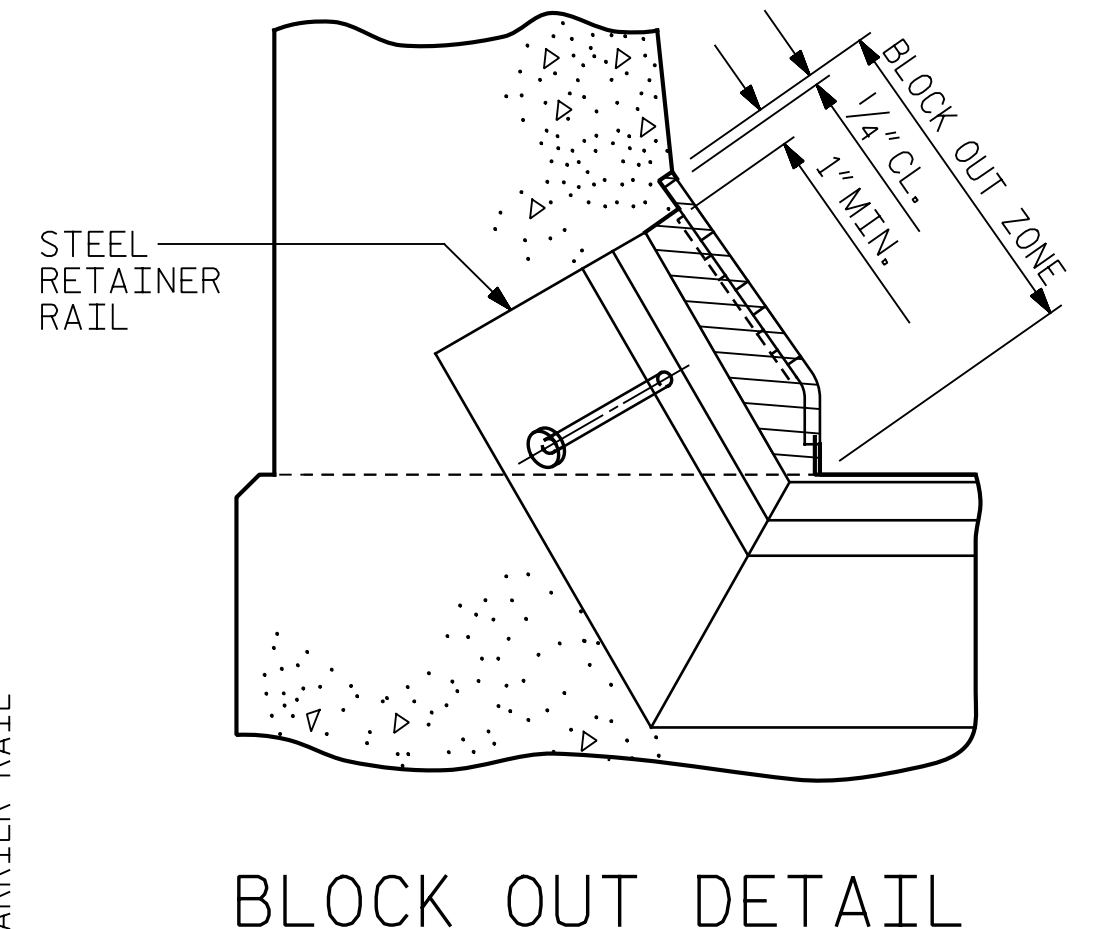
* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



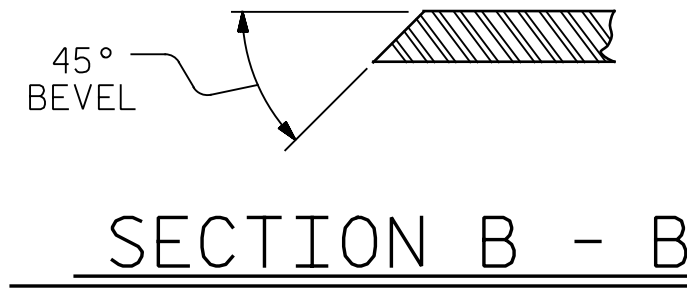
PAVEMENT MARKING ALIGNMENT



PLAN OF STRIP SEAL EXPANSION JOINT



BLOCK OUT DETAIL



SECTION B - B

PROJECT NO. B-4626
STANLY, ROWAN
 AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-
 SHEET 2 OF 3

ASSEMBLED BY : T. HARTLEY DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 04/2021
 DRAWN BY : MAA 6/20
 CHECKED BY : BNB 6/20

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

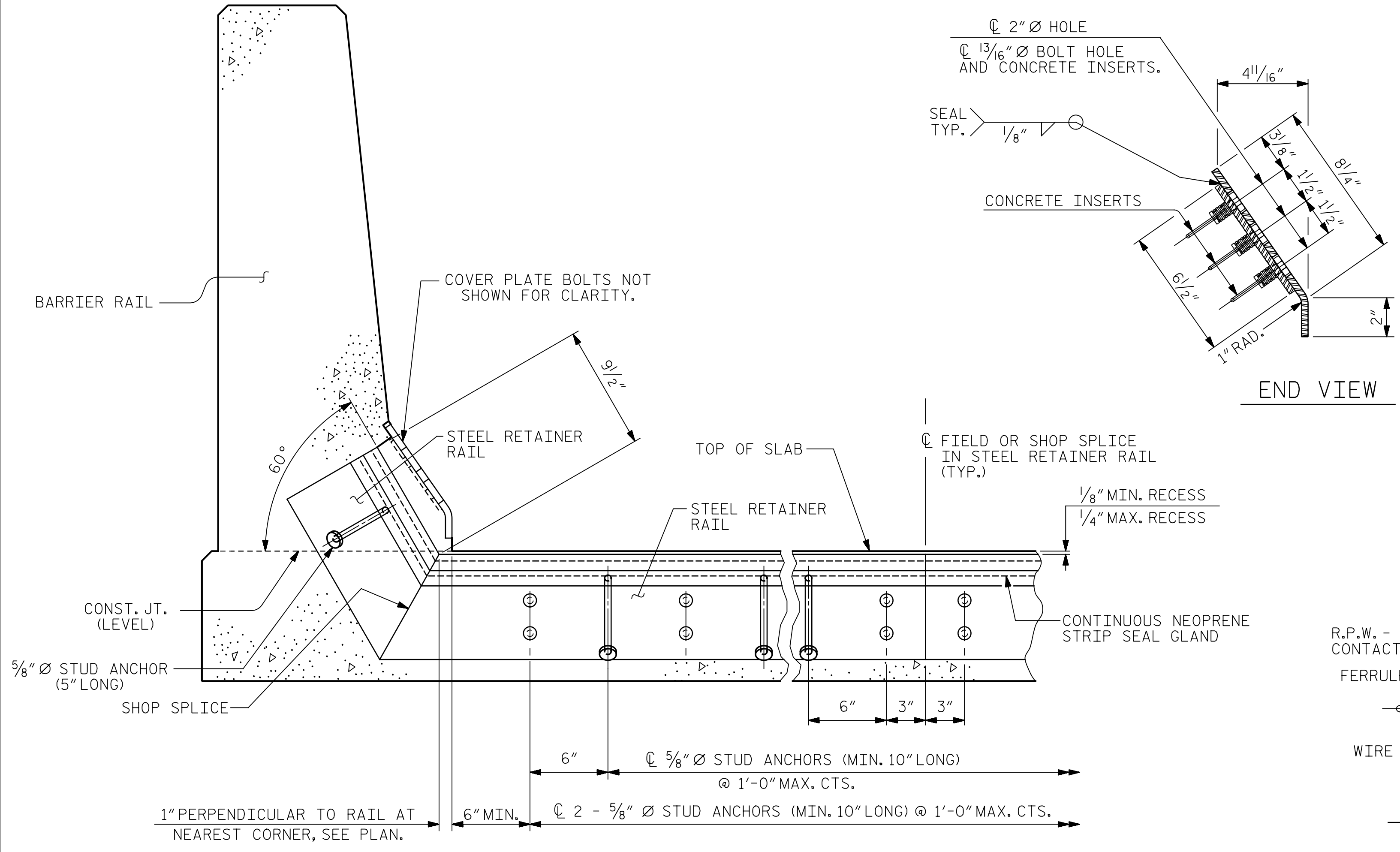


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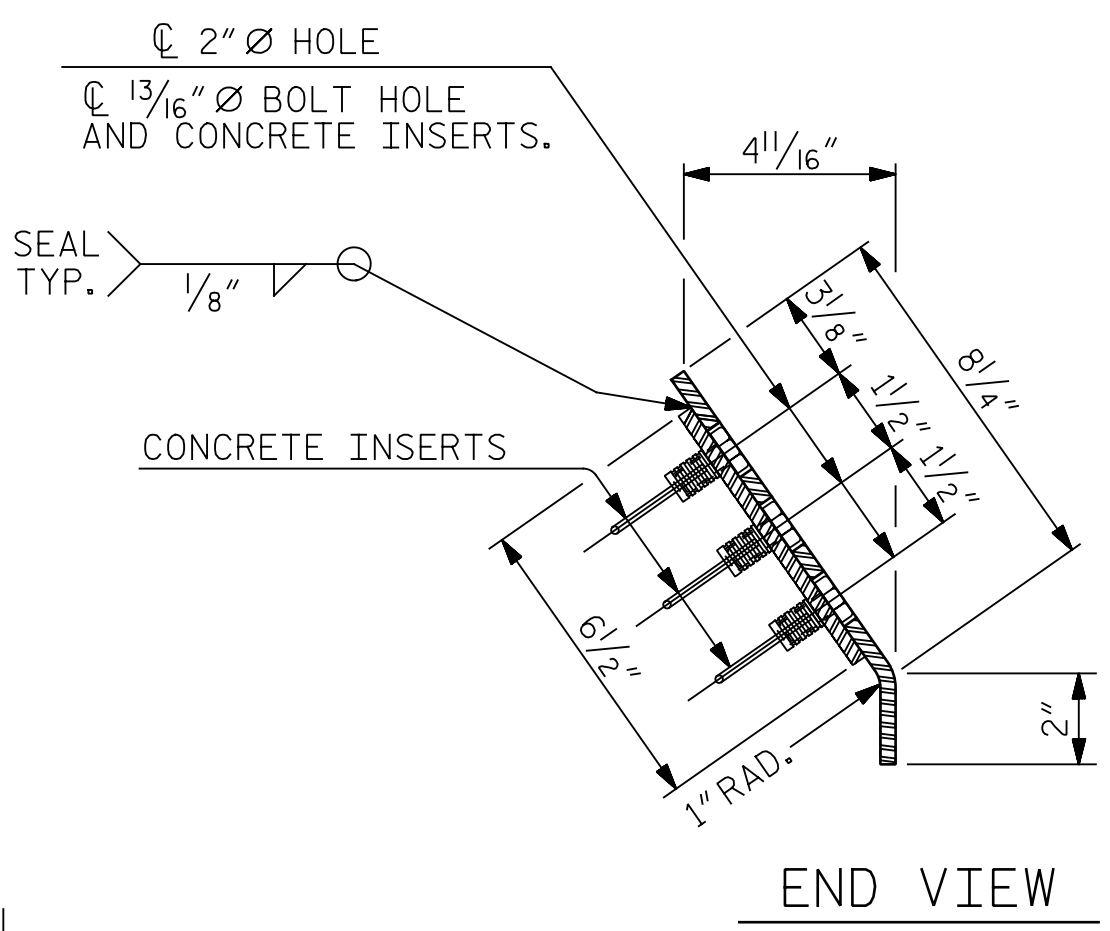
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD STRIP SEAL EXPANSION JOINT DETAILS FOR BARRIER RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S1-52
 TOTAL SHEETS 125
 STD. NO. SSEJ2 SHT 1B

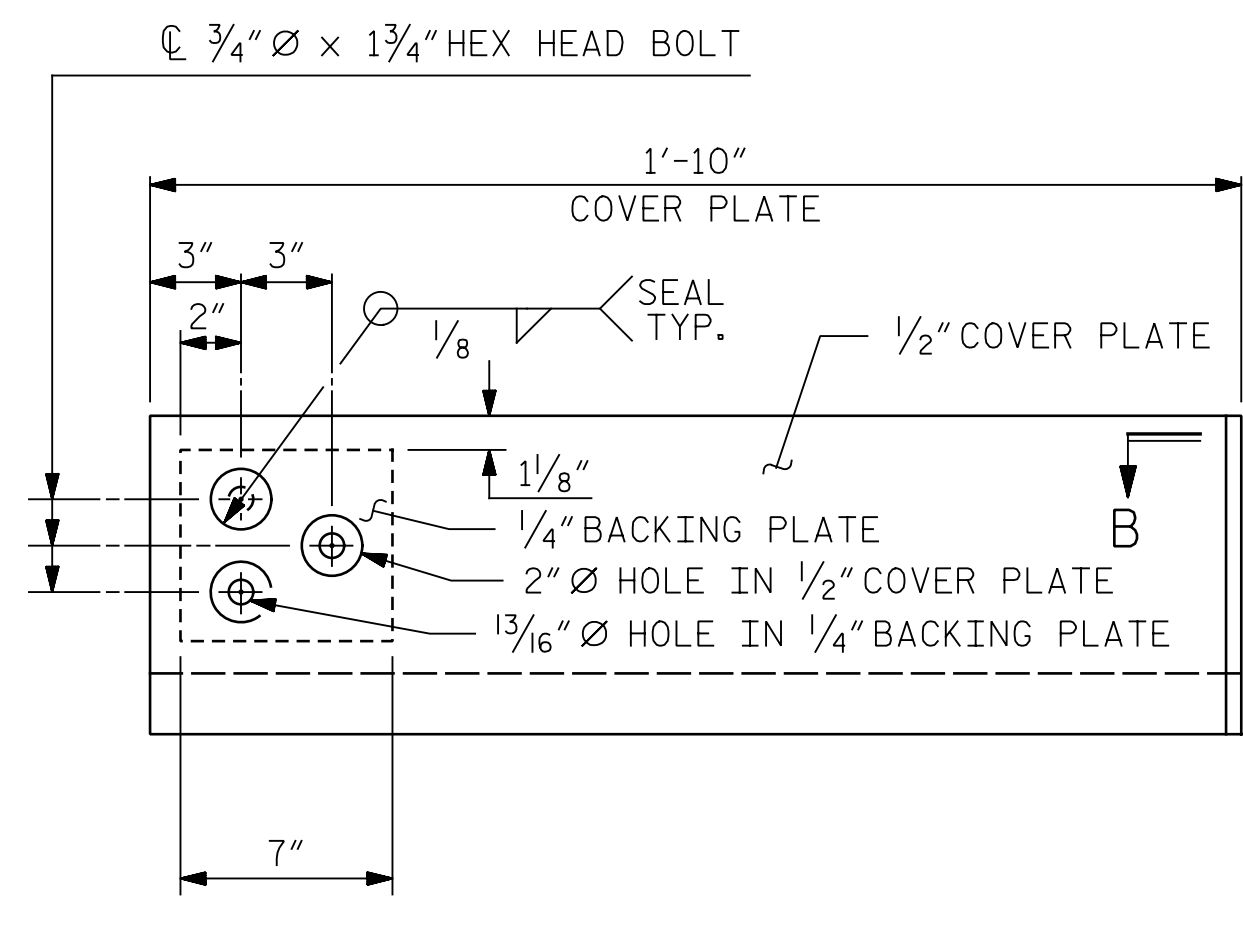
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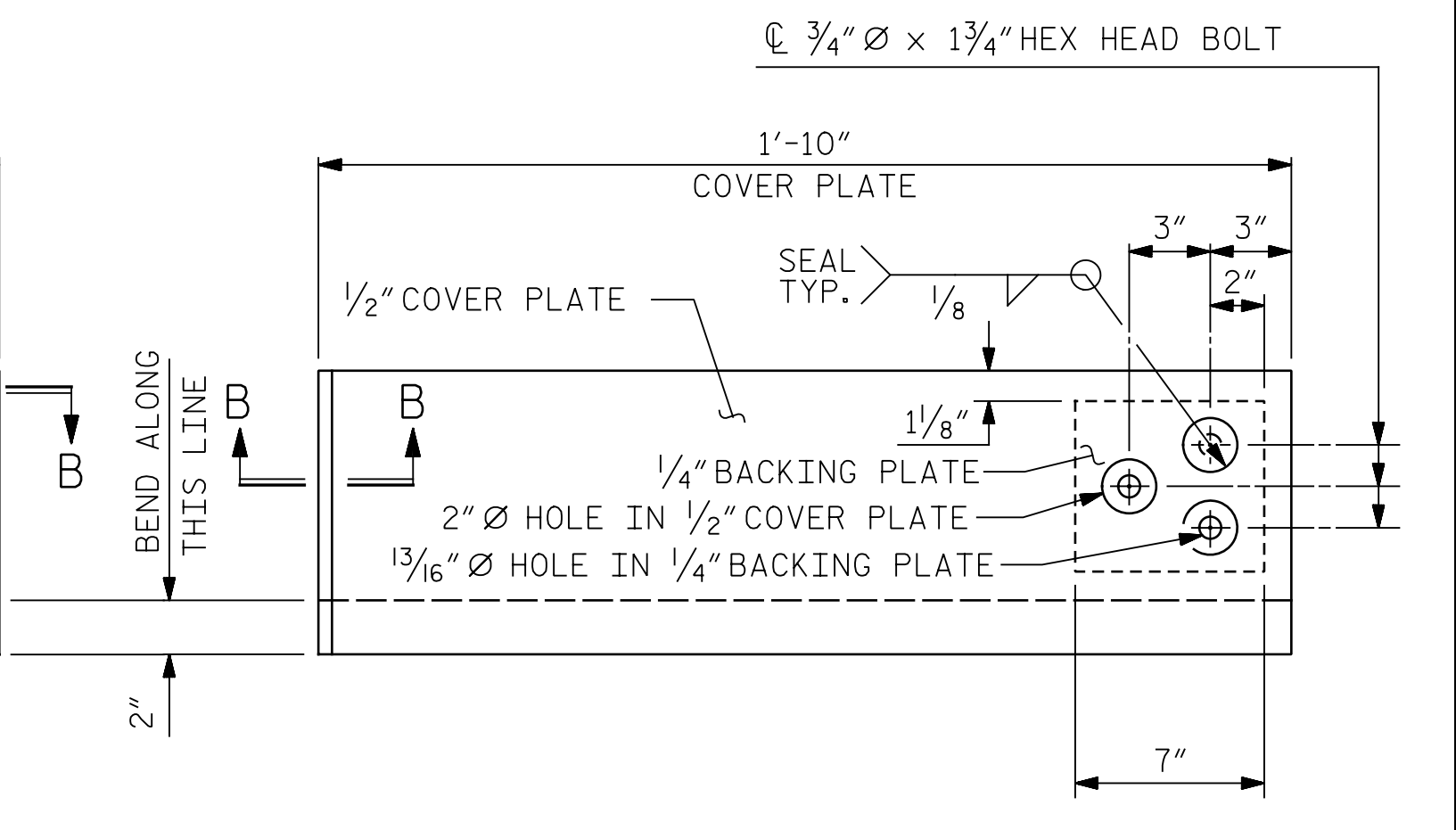
SECTION THRU RAIL NORMAL TO JOINT



END VIEW

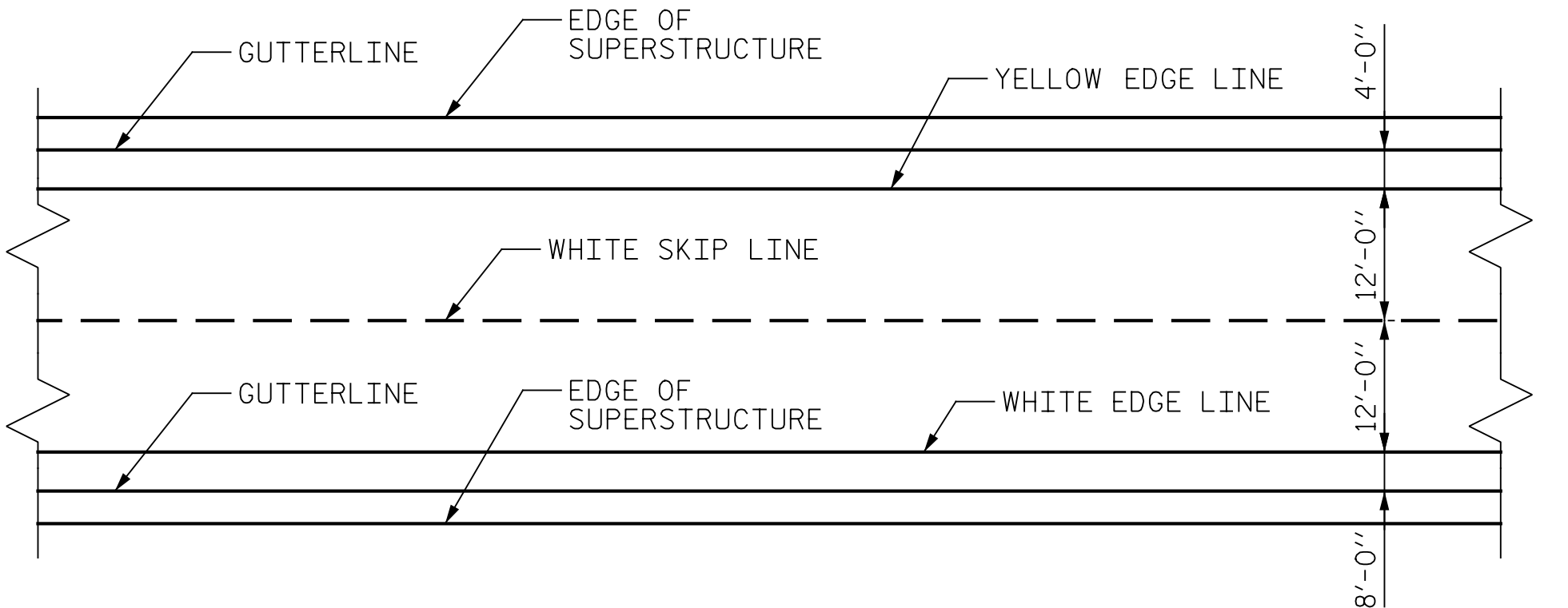


TYPE I - ELEVATION VIEW

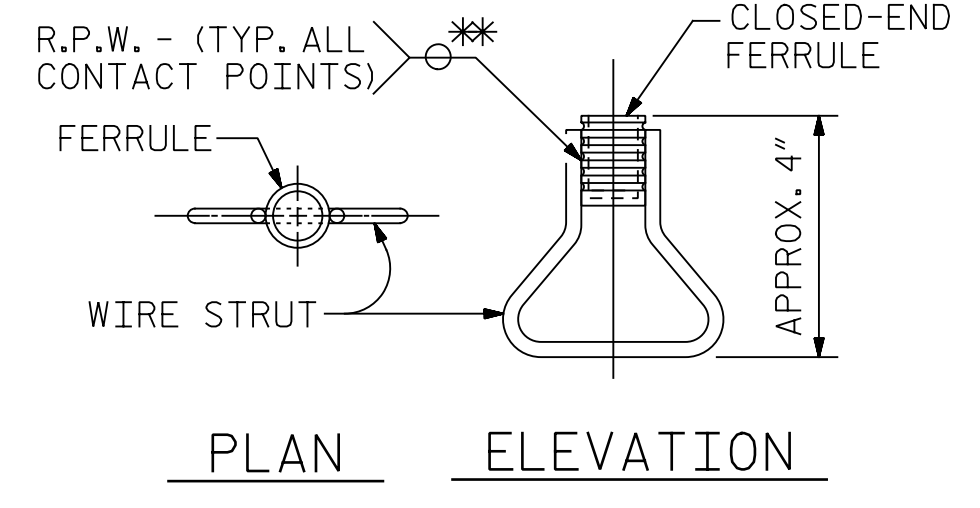


TYPE II - ELEVATION VIEW

COVER PLATE DETAILS

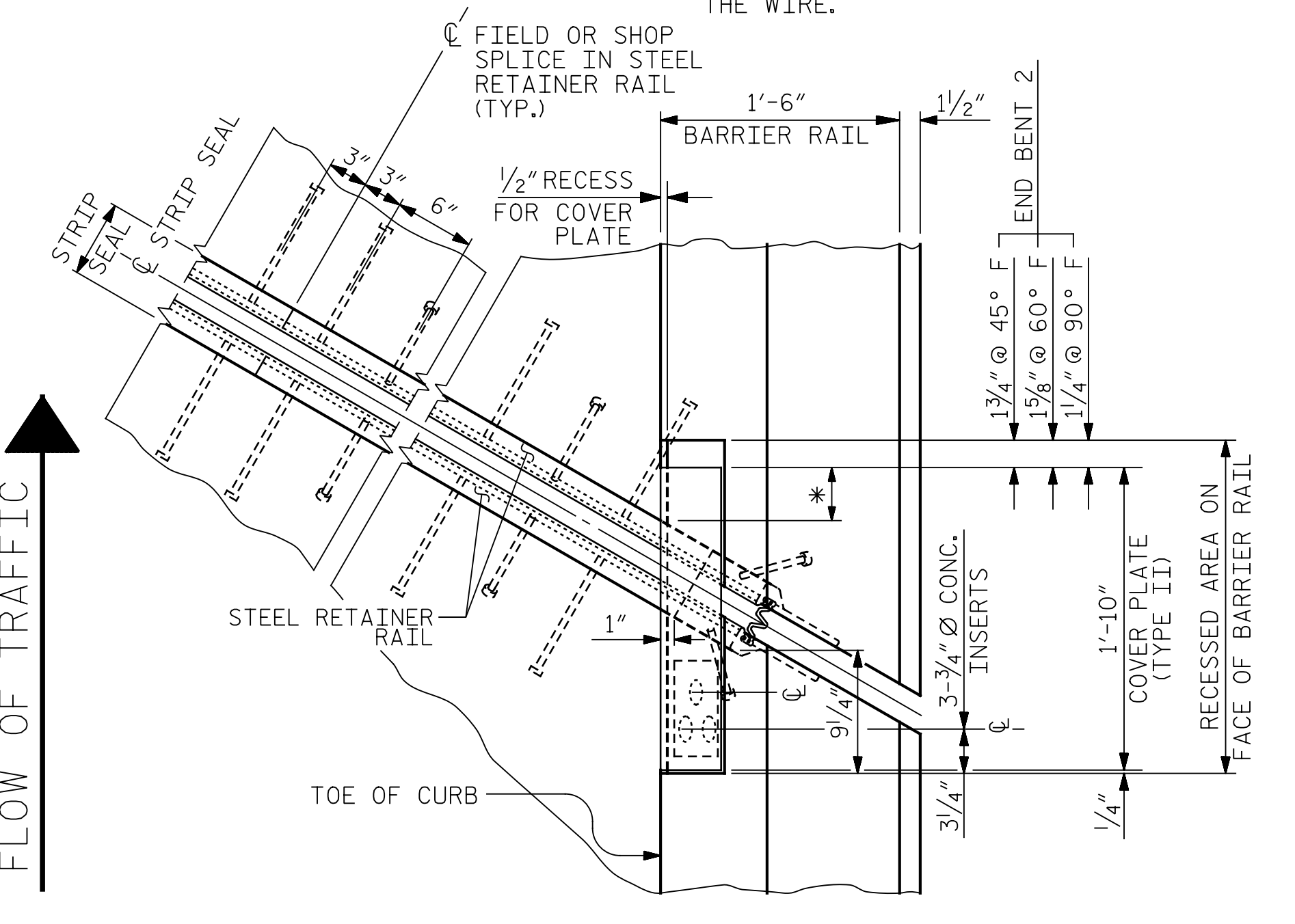


PAVEMENT MARKING ALIGNMENT

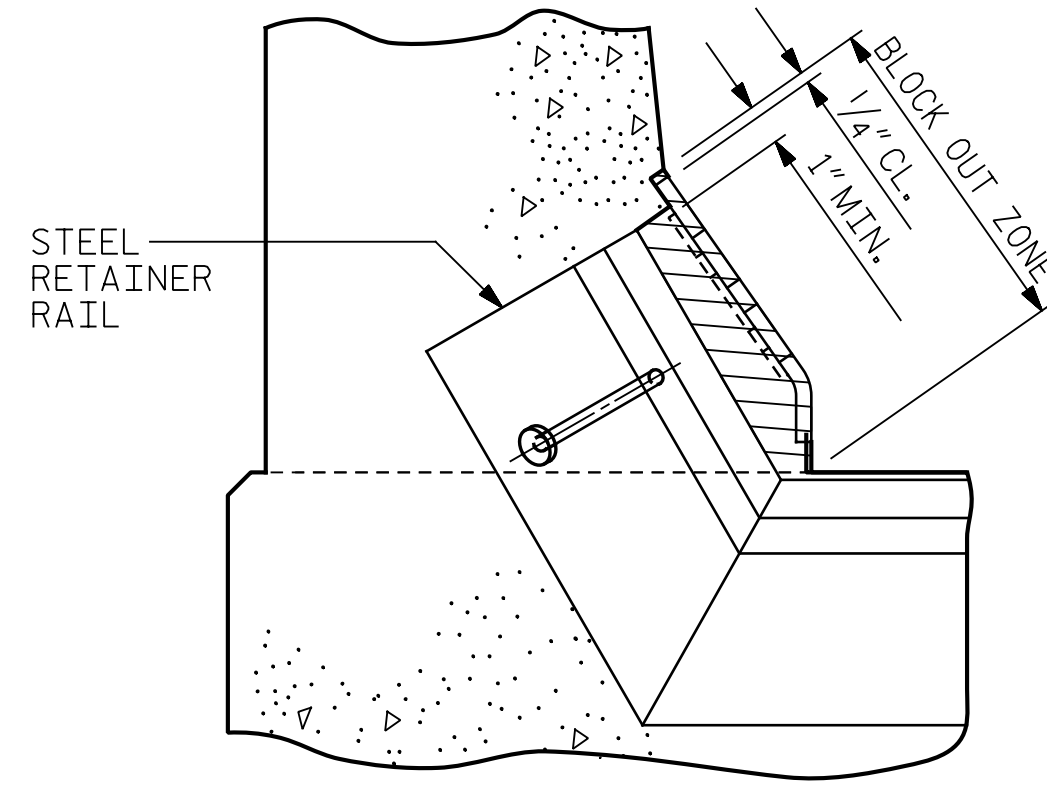


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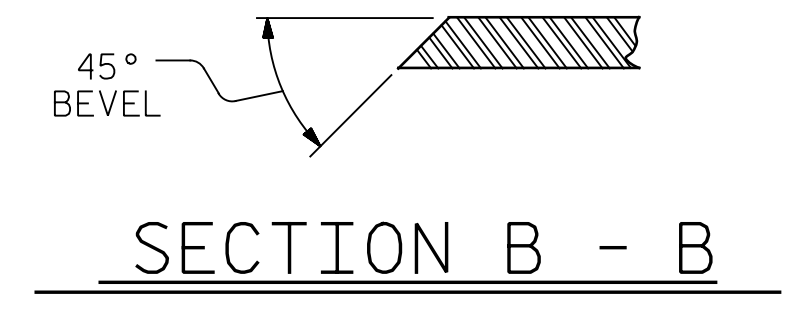
* EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



PLAN OF STRIP SEAL EXPANSION JOINT



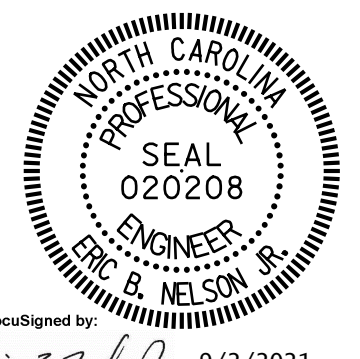
BLOCK OUT DETAIL



SECTION B - B

PROJECT NO. B-4626
 STANLY, ROWAN
 AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 STRIP SEAL EXPANSION
 JOINT DETAILS
 FOR BARRIER RAIL



ASSEMBLED BY :	T. HARTLEY	DATE :	08/2021
CHECKED BY :	R. FISHER	DATE :	08/2021
DRAWN BY :	MAA 6/20	REV. -/-	--/--
CHECKED BY :	BNB 6/20		

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

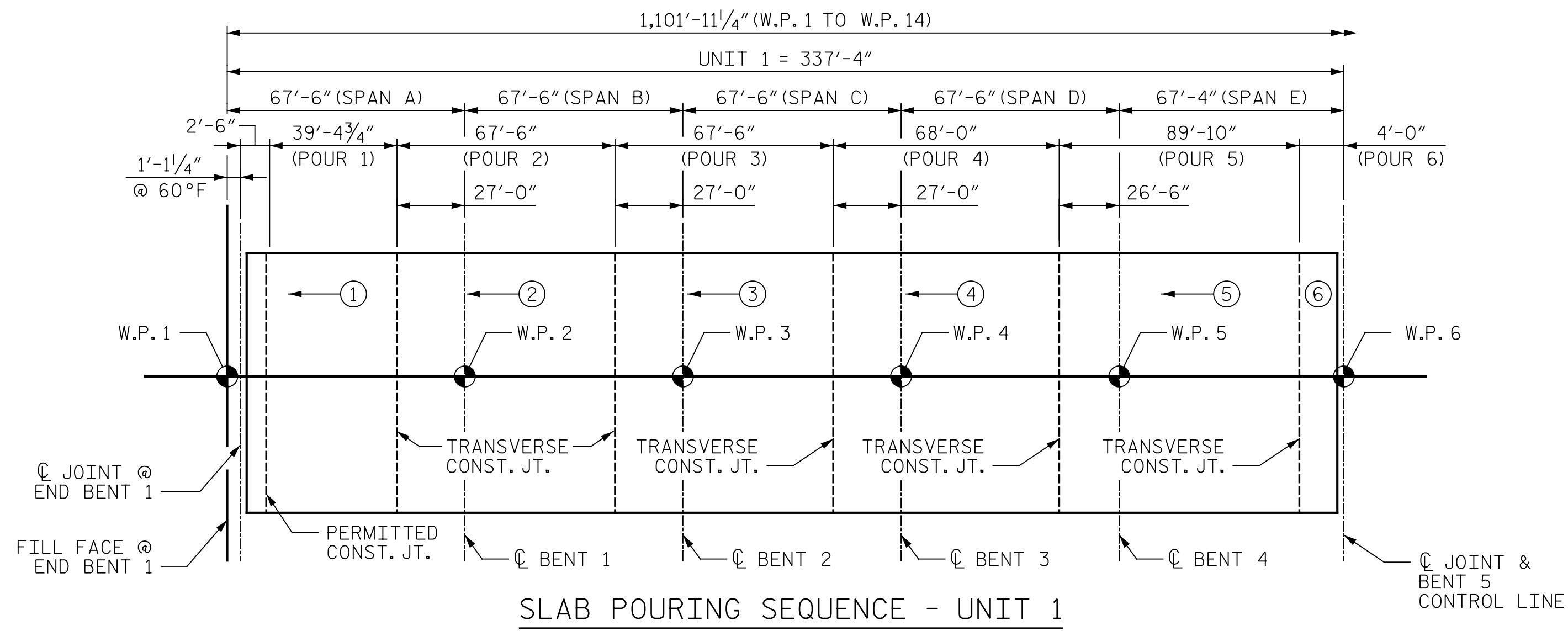
One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

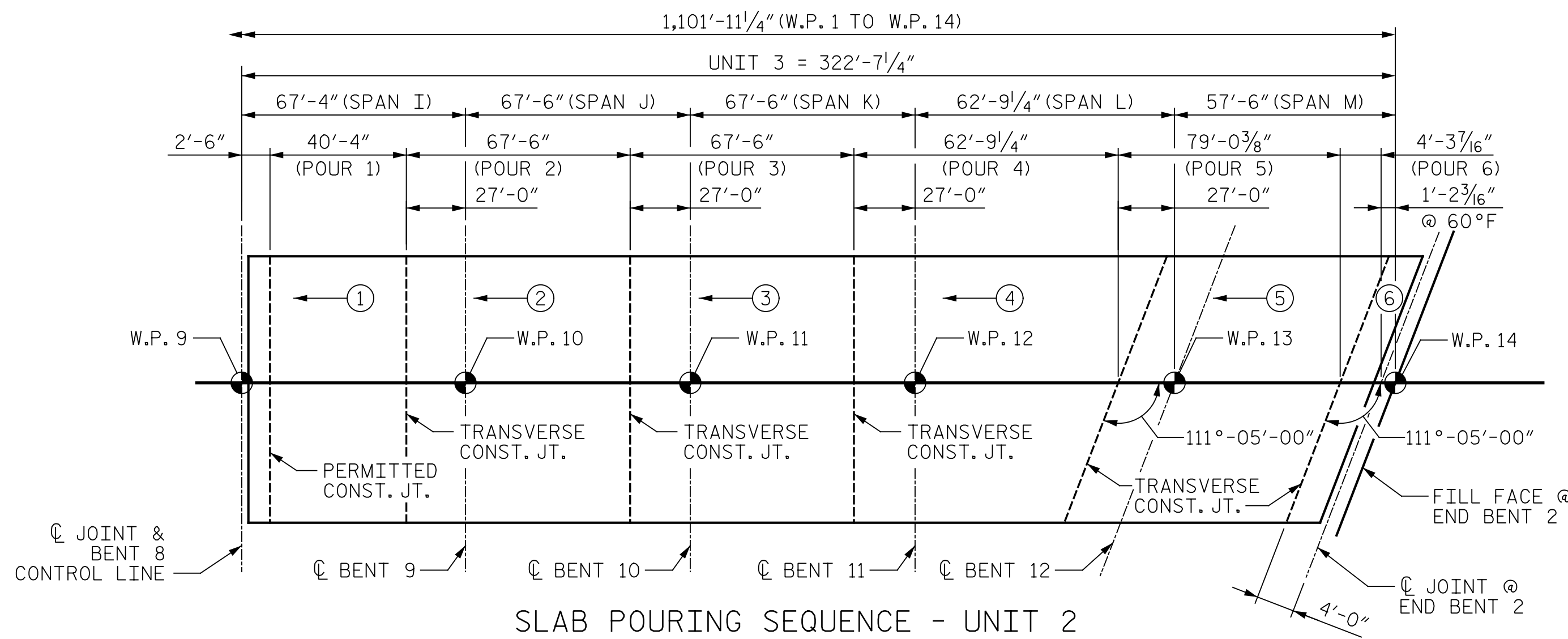
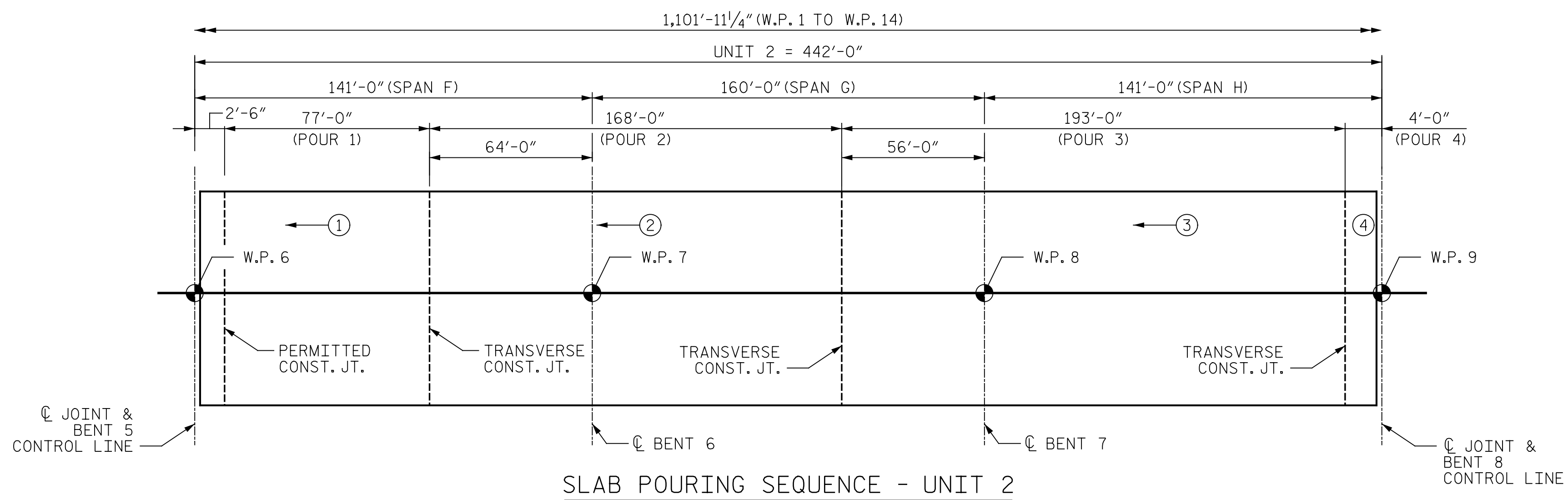
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 125

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CONCRETE BREAKDOWN			
POUR	UNIT 1	UNIT 2	UNIT 3
1	45.9 C.Y.	95.1 C.Y.	47.0 C.Y.
2	78.6 C.Y.	207.4 C.Y.	78.6 C.Y.
3	78.6 C.Y.	238.2 C.Y.	78.6 C.Y.
4	79.2 C.Y.	4.9 C.Y.	73.1 C.Y.
5	104.7 C.Y.	--	92.1 C.Y.
6	4.7 C.Y.	--	5.0 C.Y.
TOTAL	391.7 C.Y.	545.6 C.Y.	374.4 C.Y.



PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SLAB
 POURING SEQUENCE

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DocuSigned by:
 Eric B. Nelson
 9/2/2021

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-54
1			3			TOTAL SHEETS
2			4			125

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GROOVING BRIDGE FLOORS	
APPROACH SLABS	1,628 SQ.FT.
BRIDGE DECK	36,332 SQ.FT.
TOTAL	37,960 SQ.FT.

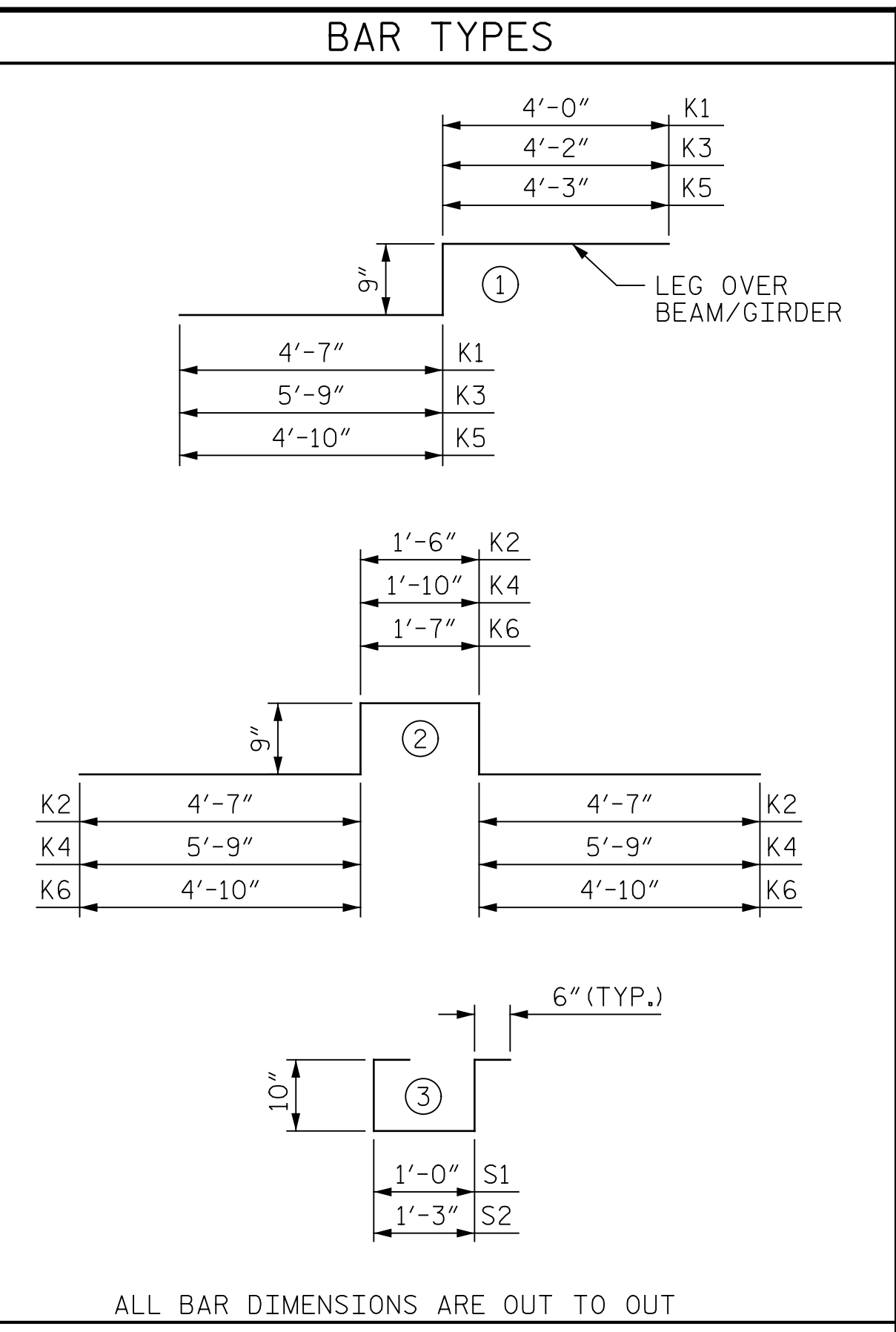
SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS "AA" CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	CU. YARDS	LBS.	LBS.
UNIT 1	391.6	45,280	48,750
UNIT 2	545.6	65,246	64,182
UNIT 3	374.5	43,242	47,010
TOTAL **	1311.7	153,768	159,942

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS					
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"	-	-	-
#8	4'-9"	3'-2"	-	-	-

BILL OF MATERIAL DECK & DIAPHRAGM - UNIT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	671	#5	STR.	38'-11"	27,236
A2	671	#5	STR.	38'-11"	27,236
*B1	82	#4	STR.	22'-4"	1,223
*B2	164	#6	STR.	50'-6"	12,440
*B3	144	#6	STR.	20'-4"	4,398
*B4	123	#4	STR.	20'-11"	1,719
*B5	82	#4	STR.	22'-10"	1,251
B6	300	#5	STR.	57'-8"	18,044
*G1	2	#5	STR.	38'-11"	81
*K1	8	#5	1	9'-4"	78
*K2	12	#5	2	12'-2"	152
*S1	56	#4	3	3'-8"	137
REINFORCING STEEL	45,280 LBS.				
*EPOXY COATED REINF. STEEL	48,715 LBS.				

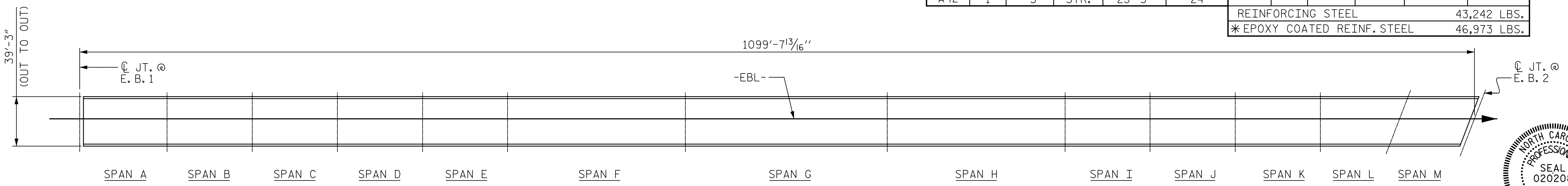
BILL OF MATERIAL DECK & DIAPHRAGM - UNIT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	963	#5	STR.	38'-11"	39,088
A2	963	#5	STR.	38'-11"	39,088
*B21	246	#4	STR.	33'-1"	5,437
*B22	82	#6	STR.	60'-0"	7,390
*B23	82	#6	STR.	43'-2"	5,317
*B24	72	#6	STR.	45'-2"	4,885
*B25	82	#4	STR.	29'-11"	1,639
B26	440	#5	STR.	57'-0"	26,158
*G1	2	#5	STR.	38'-11"	81
*K3	8	#5	1	10'-8"	89
*K4	8	#5	2	14'-10"	124
*S1	54	#4	3	3'-8"	132
REINFORCING STEEL	65,246 LBS.				
*EPOXY COATED REINF. STEEL	64,182 LBS.				

BILL OF MATERIAL DECK & DIAPHRAGM - UNIT 3											
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	625	#5	STR.	38'-11"	25,369	A43	1	#5	STR.	22'-1"	23
A2	625	#5	STR.	38'-11"	25,369	A44	1	#5	STR.	20'-10"	22
*A3	1	#5	STR.	37'-8"	39	A45	1	#5	STR.	19'-6"	20
*A4	1	#5	STR.	36'-4"	38	A46	1	#5	STR.	18'-2"	19
*A5	1	#5	STR.	35'-1"	37	A47	1	#5	STR.	16'-11"	18
*A6	1	#5	STR.	33'-9"	35	A48	1	#5	STR.	15'-7"	16
*A7	1	#5	STR.	32'-6"	34	A49	1	#5	STR.	14'-4"	15
*A8	1	#5	STR.	31'-2"	33	A50	1	#5	STR.	13'-0"	14
*A9	1	#5	STR.	29'-11"	31	A51	1	#5	STR.	11'-9"	12
*A10	1	#5	STR.	28'-7"	30	A52	1	#5	STR.	10'-5"	11
*A11	1	#5	STR.	27'-3"	28	A53	1	#5	STR.	9'-2"	10
*A12	1	#5	STR.	26'-0"	27	A54	1	#5	STR.	7'-10"	8
*A13	1	#5	STR.	24'-8"	26	A55	1	#5	STR.	6'-6"	7
*A14	1	#5	STR.	23'-5"	24	A56	1	#5	STR.	5'-3"	5
*A15	1	#5	STR.	22'-1"	23	A57	1	#5	STR.	3'-11"	4
*A16	1	#5	STR.	20'-10"	22	A58	3	#5	STR.	3'-4"	10
*A17	1	#5	STR.	19'-6"	20	*B2	82	#6	STR.	50'-6"	6,220
*A18	1	#5	STR.	18'-2"	19	*B3	72	#6	STR.	20'-4"	2,199
*A19	1	#5	STR.	16'-11"	18	*B4	82	#4	STR.	20'-11"	1,146
*A20	1	#5	STR.	15'-7"	16	*B31	82	#4	STR.	22'-10"	1,251
*A21	1	#5	STR.	14'-4"	15	*B32	41	#6	STR.	51'-2"	3,151
*A22	1	#5	STR.	13'-0"	14	*B33	36	#6	STR.	20'-8"	1,117
*A23	1	#5	STR.	11'-9"	12	*B34	21	#4	STR.	21'-5"	300
*A24	1	#5	STR.	10'-5"	11	*B35	20	#4	STR.	13'-8"	183
*A25	1	#5	STR.	9'-2"	10	*B36	41	#6	STR.	48'-2"	2,966
*A26	1	#5	STR.	7'-10"	8	*B37	36	#6	STR.	19'-2"	1,036
*A27	1	#5	STR.	6'-6"	7	*B38	41	#4	STR.	35'-8"	977
*A28	1	#5	STR.	5'-3"	5	B39	30	#5	STR.	56'-3"	1,760
*A29	1	#5	STR.	3'-11"	4	B40	60	#5	STR.	56'-0"	3,504
*A30	3	#5	STR.	3'-4"	10	B41	60	#5	STR.	55'-6"	3,473
A31	1	#5	STR.	37'-8"	39	B42	60	#5	STR.	55'-0"	3,442
A32	1	#5	STR.	36'-4"	38	B43	60	#5	STR.	54'-6"	3,411
A33	1	#5	STR.	35'-1"	37	B44	30	#5	STR.	53'-11"	1,687
A34	1	#5	STR.	33'-9"	35	*G1	1	#5	STR.	38'-11"	41
A35	1	#5	STR.	32'-6"	34	*G2	1	#5	STR.	41'-8"	43
A36	1	#5	STR.	31'-2"	33	*K1	4	#5	1	9'-4"	39
A37	1	#5	STR.	29'-11"	31	*K2	6	#5	2	12'-2"	76
A38	1	#5	STR.	28'-7"	30	*K5	4	#5	1	9'-10"	41
A39	1	#5	STR.	27'-3"	28	*K6	6	#5	2	12'-9"	80
A40	1	#5	STR.	26'-0"	27	*S1	28	#4	3	3'-8"	69
A41	1	#5	STR.	24'-8"	26	*S2	28	#4	3	3'-11"	73
A42	1	#5	STR.	23'-5"	24						
REINFORCING STEEL	43,242 LBS.										
*EPOXY COATED REINF. STEEL	46,973 LBS.										



* = EPOXY COATED REINFORCING STEEL
 ** = QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB

(SQ. FT. = 43,161)

DRAWN BY : T. FORD DATE : 04/2021
 CHECKED BY : R. FISHER DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

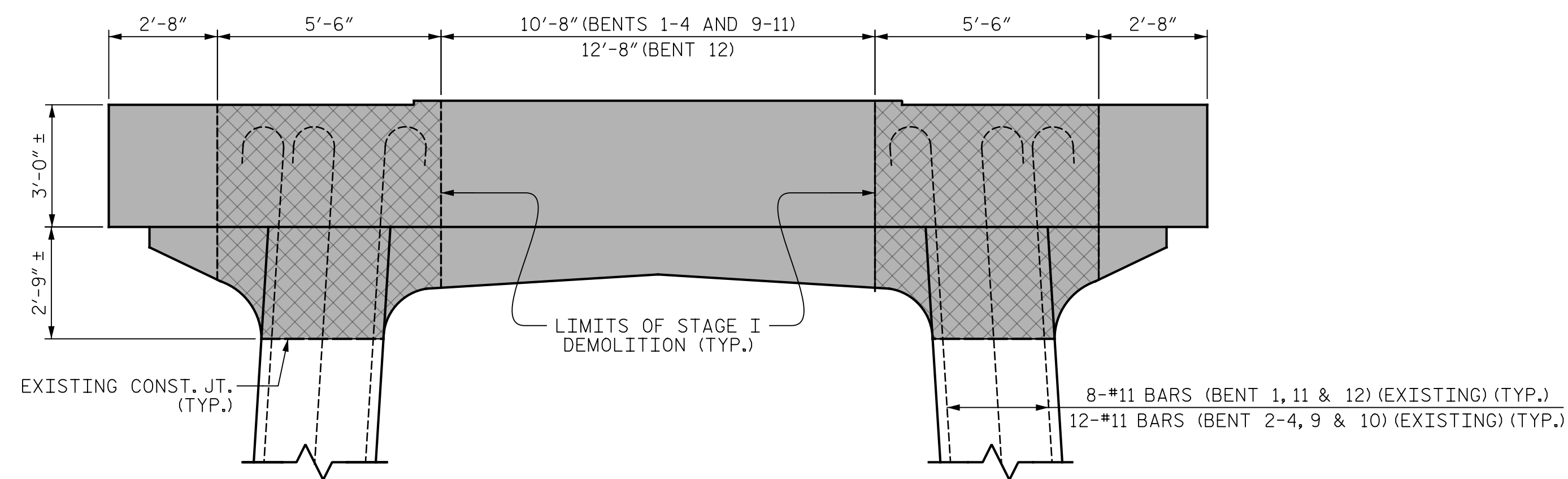
DocuSigned by:
 Seal of Engineer Eric B. Nelson, No. 020208
 9/2/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

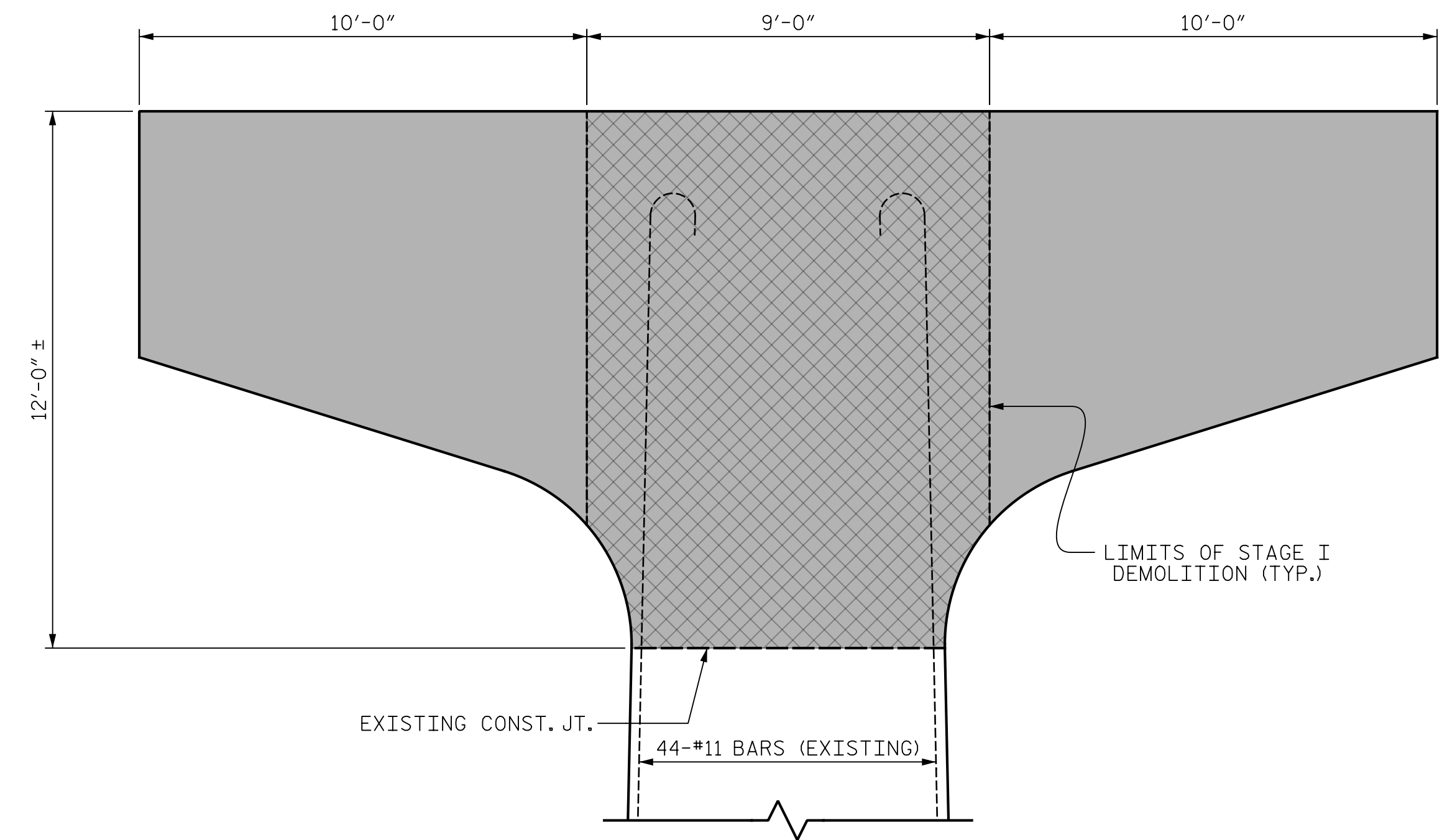
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE BILL OF MATERIAL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S1-55	
TOTAL SHEETS 125	

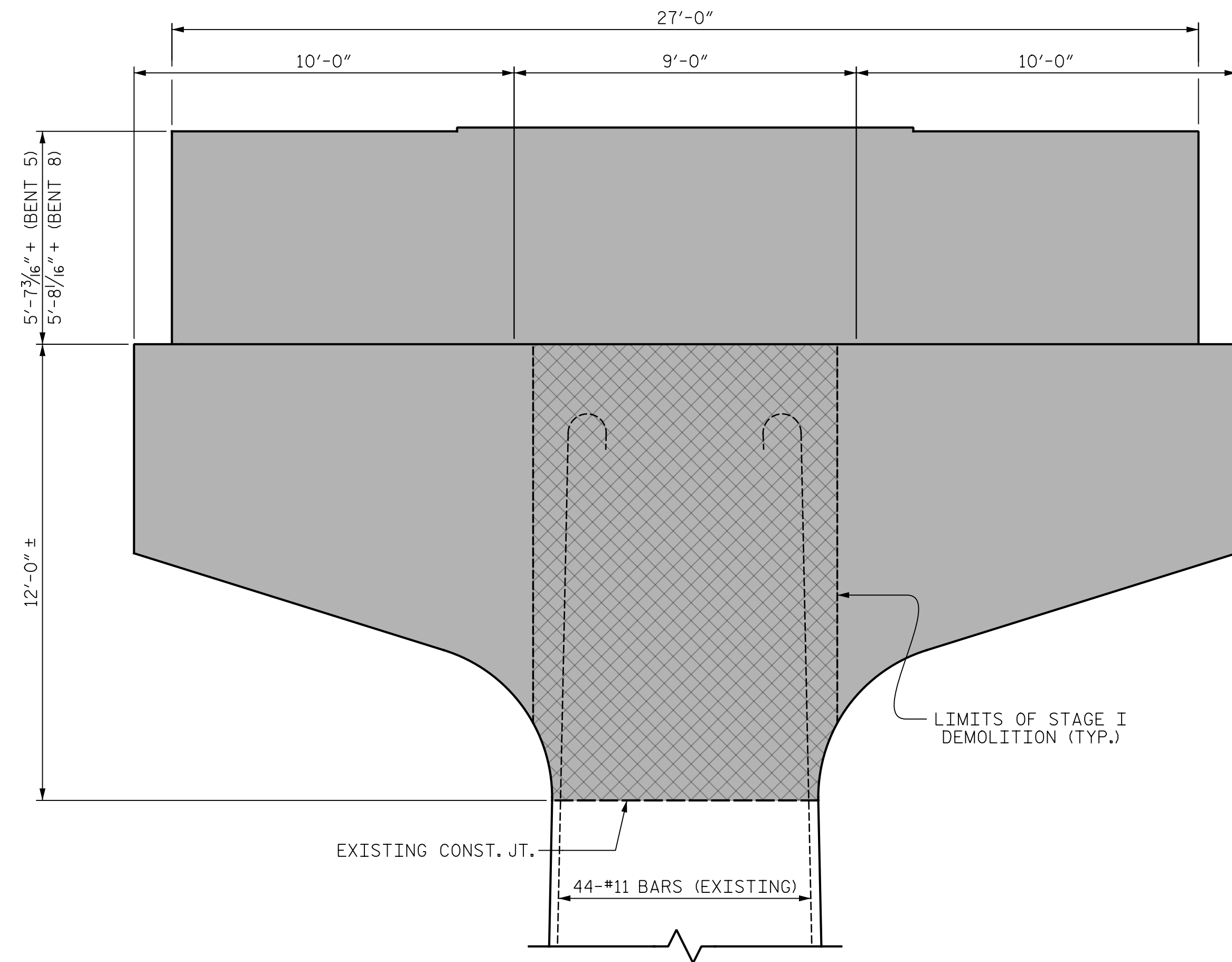
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FOR BENTS 1-4 & 9-12



FOR BENTS 6 & 7



FOR BENTS 5 & 8

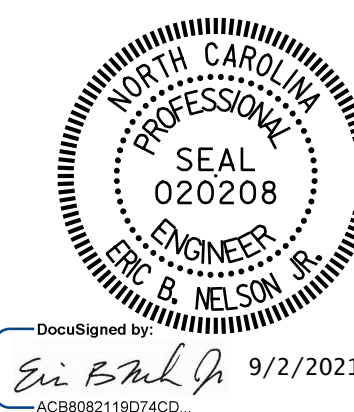
EXISTING CONST. JOINT ELEVATIONS	
BENT	ELEVATION
1	574.81 ±
2	576.14 ±
3	577.50 ±
4	578.79 ±
5	568.33 ±
6	567.55 ±
7	570.70 ±
8	577.13 ±
9	590.40 ±
10	591.74 ±
11	593.11 ±
12	594.24 ±

■ - STAGE I DEMOLITION
 ▨ - STAGE II DEMOLITION

NOTES:

STAGE II DEMOLITION SHALL BE JACK HAMMERED TO RETAIN EXISTING #11 VERTICAL BARS.
 THE CONTRACTOR SHALL PERFORM ALL DEMOLITION WITH CARE SO THAT THE EXISTING #11 VERTICAL BARS, WHICH ARE TO REMAIN IN PLACE, WILL NOT BE DAMAGED.
 THE ORIENTATION OF THE HOOKS IN THE EXISTING #11 BARS AS SHOWN IN THE DETAILS ARE ILLUSTRATIVE ONLY. THE ACTUAL POSITIONS OF THE HOOKS ARE UNKNOWN.
 THE LIMITS OF CAP DEMOLITION SHALL EXTEND TO THE EXISTING CONSTRUCTION JOINT IN THE COLUMN.

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CAP DEMOLITION
 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-56
1	JJF	03-17-21	3			TOTAL SHEETS
2			4			125

DRAWN BY : T. HARTLEY/J.MYA DATE : 03/2021
 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

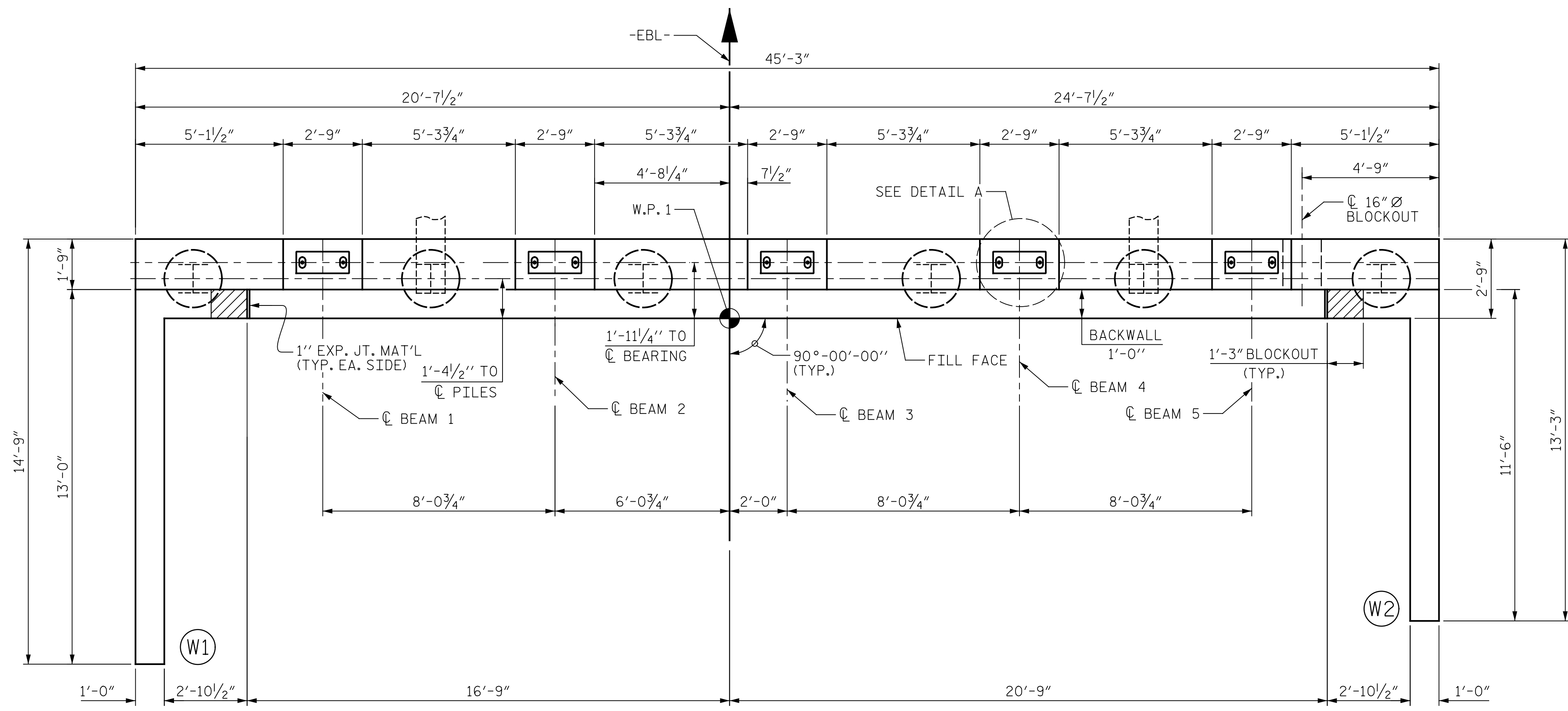
PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

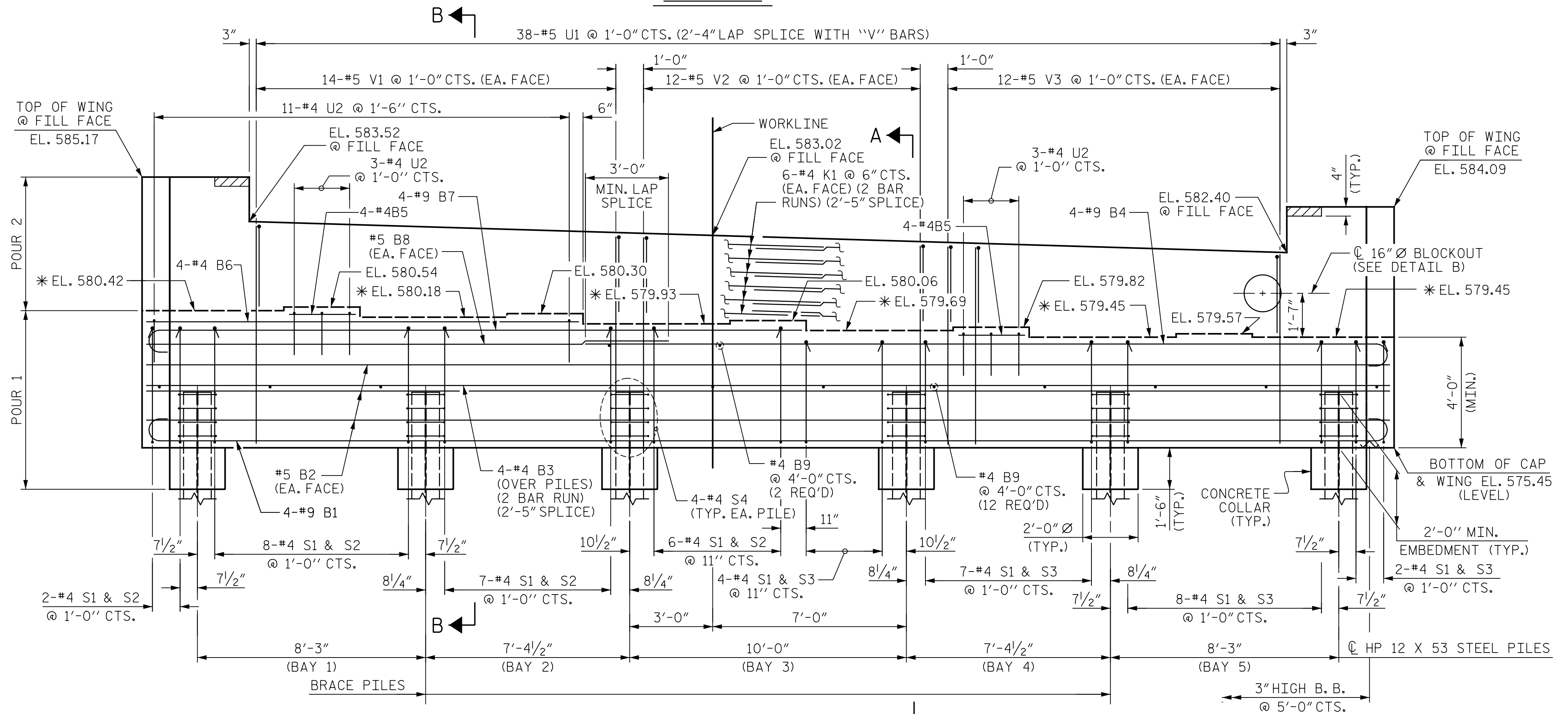
DocuSigned by:
 Eric B. Nelson
 9/2/2021

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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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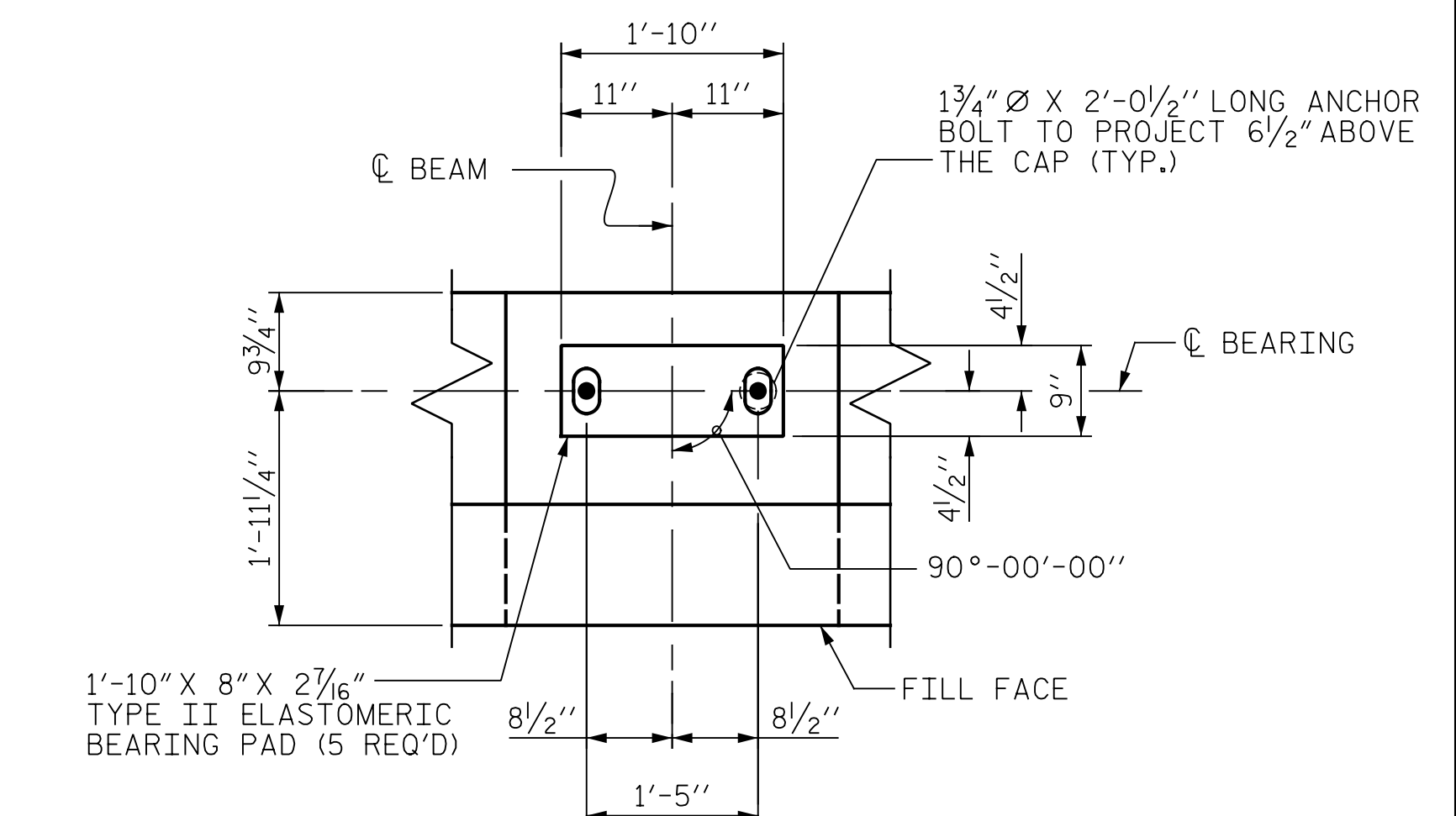
PLAN



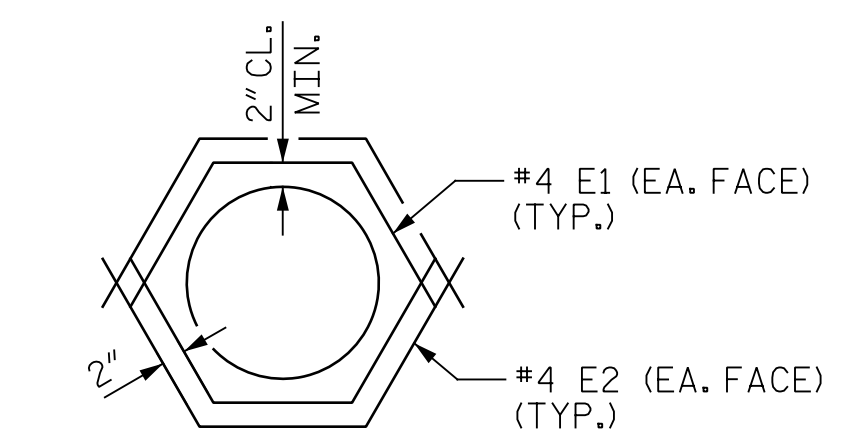
ELEVATION

REINFORCING STEEL NOT SHOWN IN WINGS FOR CLARITY

NOTES:
 STIRRUPS AND U2 BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.
 BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
 THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
 * THE TOP SURFACE OF THE END BENT CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAILS ARE CAST IF SLIP FORMING IS USED.
 FIELD CUT HORIZONTAL AND VERTICAL REBAR IN THE BACKWALL TO MAINTAIN 2" CLEAR COVER WITH BLOCKOUT.
 THE VOID FOR THE 16" Ø BLOCKOUT SHALL BE FILLED WITH CLASS A CONCRETE.



DETAIL A
(TYP. EA. BRG.)



DETAIL B
16" Ø BLOCKOUT

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 1

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANNACCONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

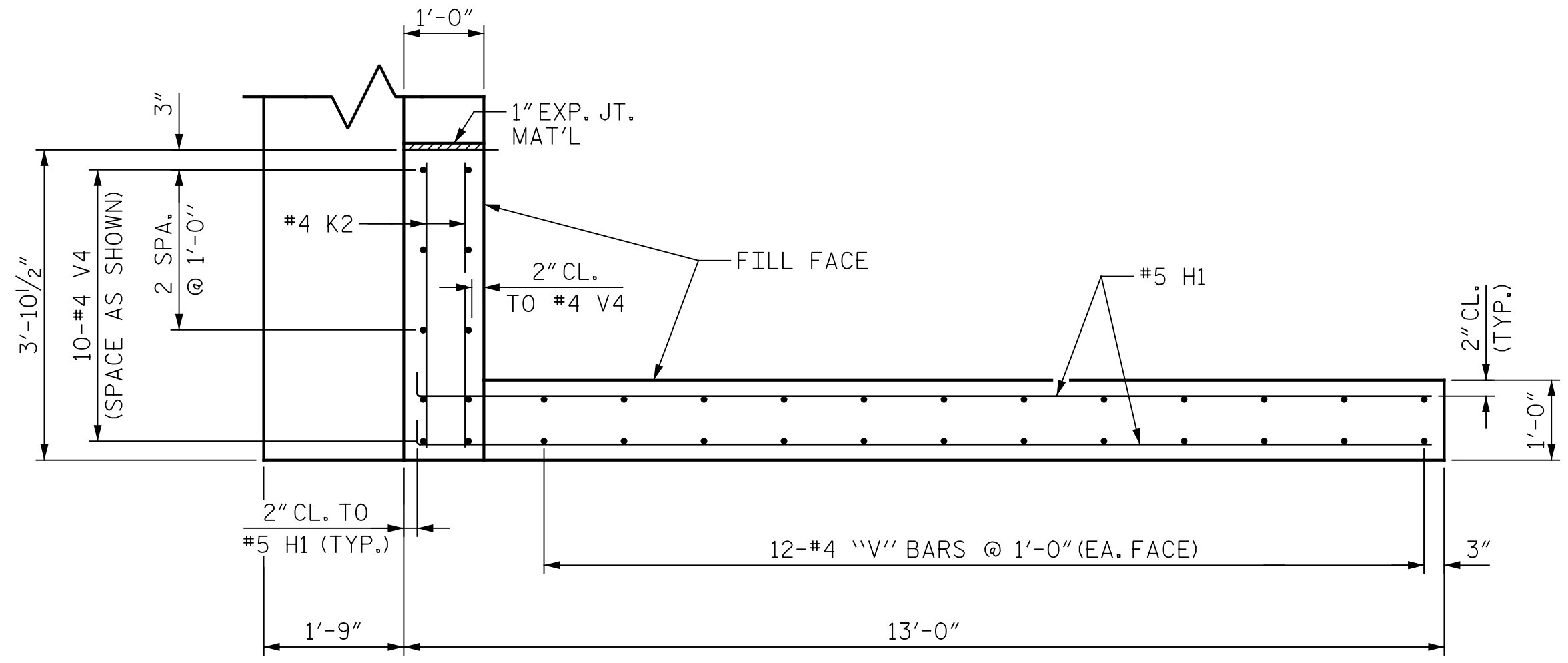
PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
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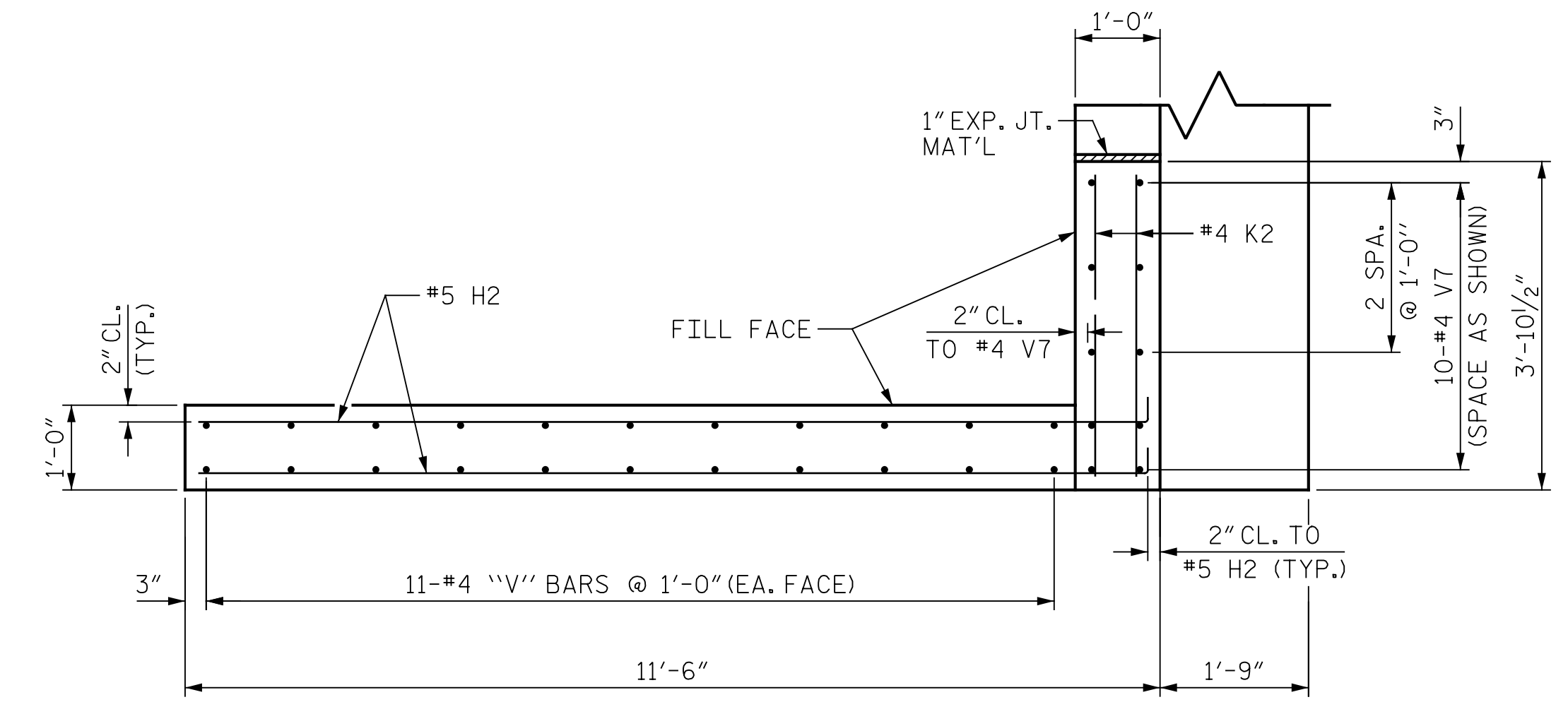
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2			4			125

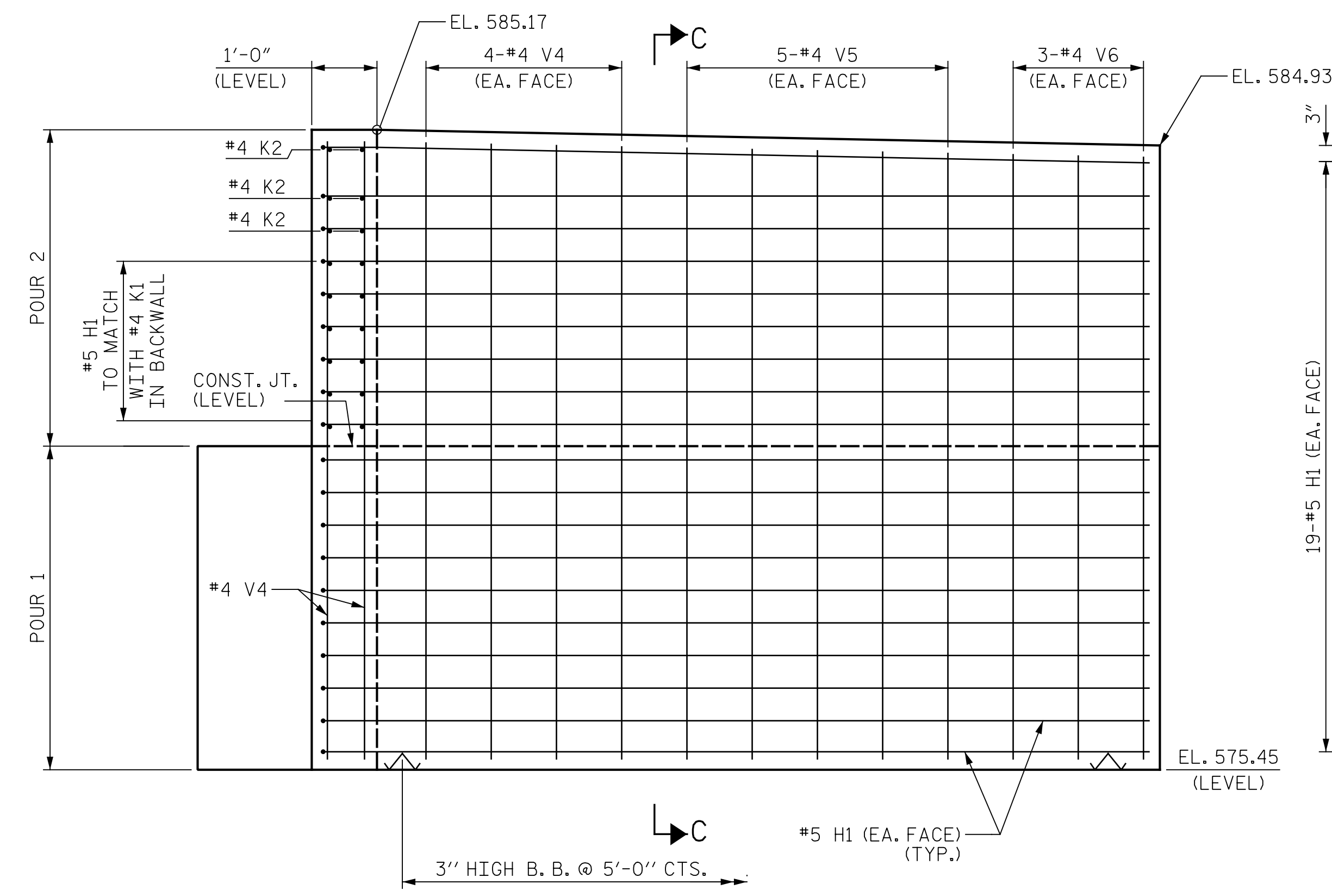
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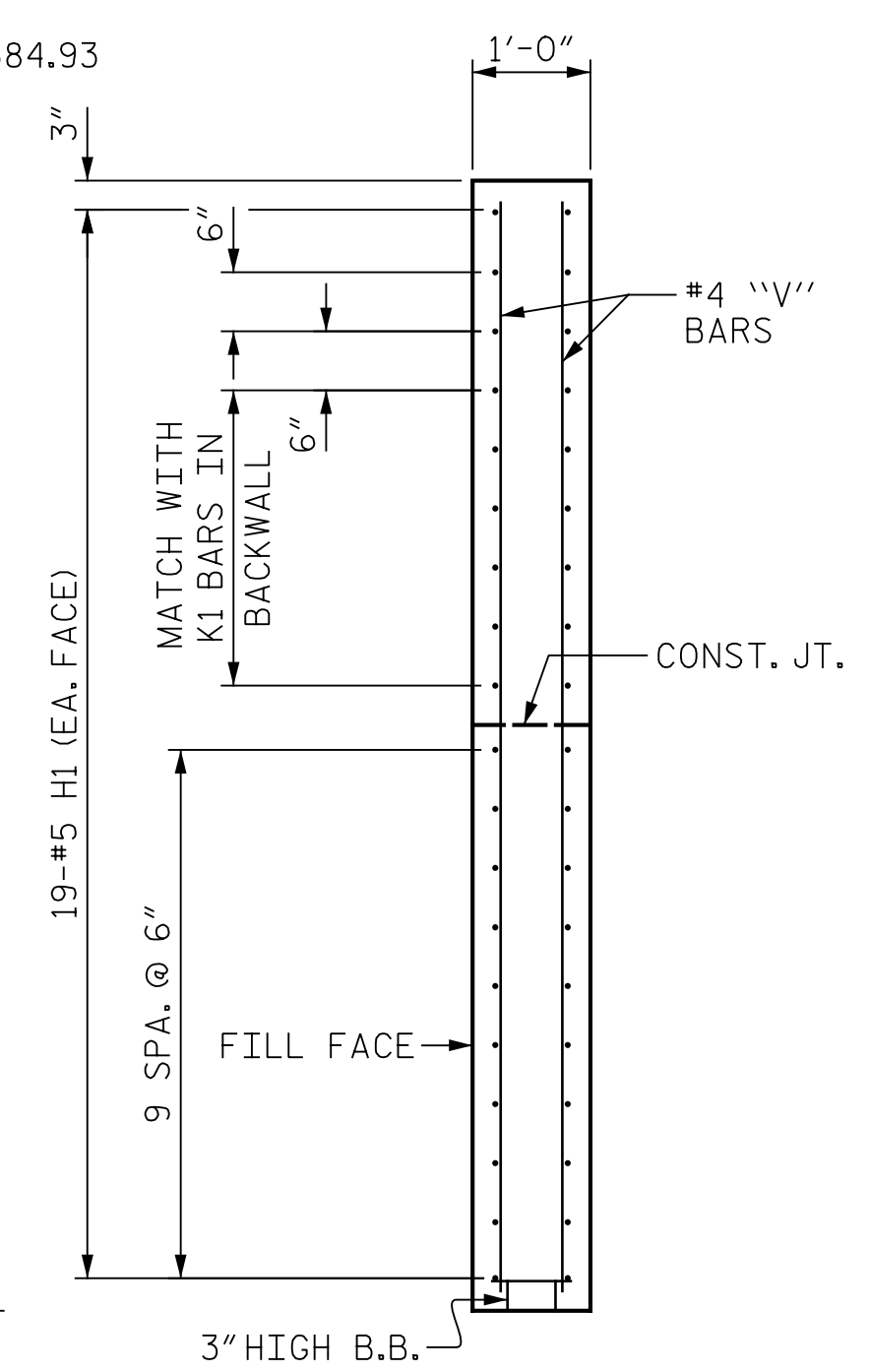
PLAN OF WING (W1)



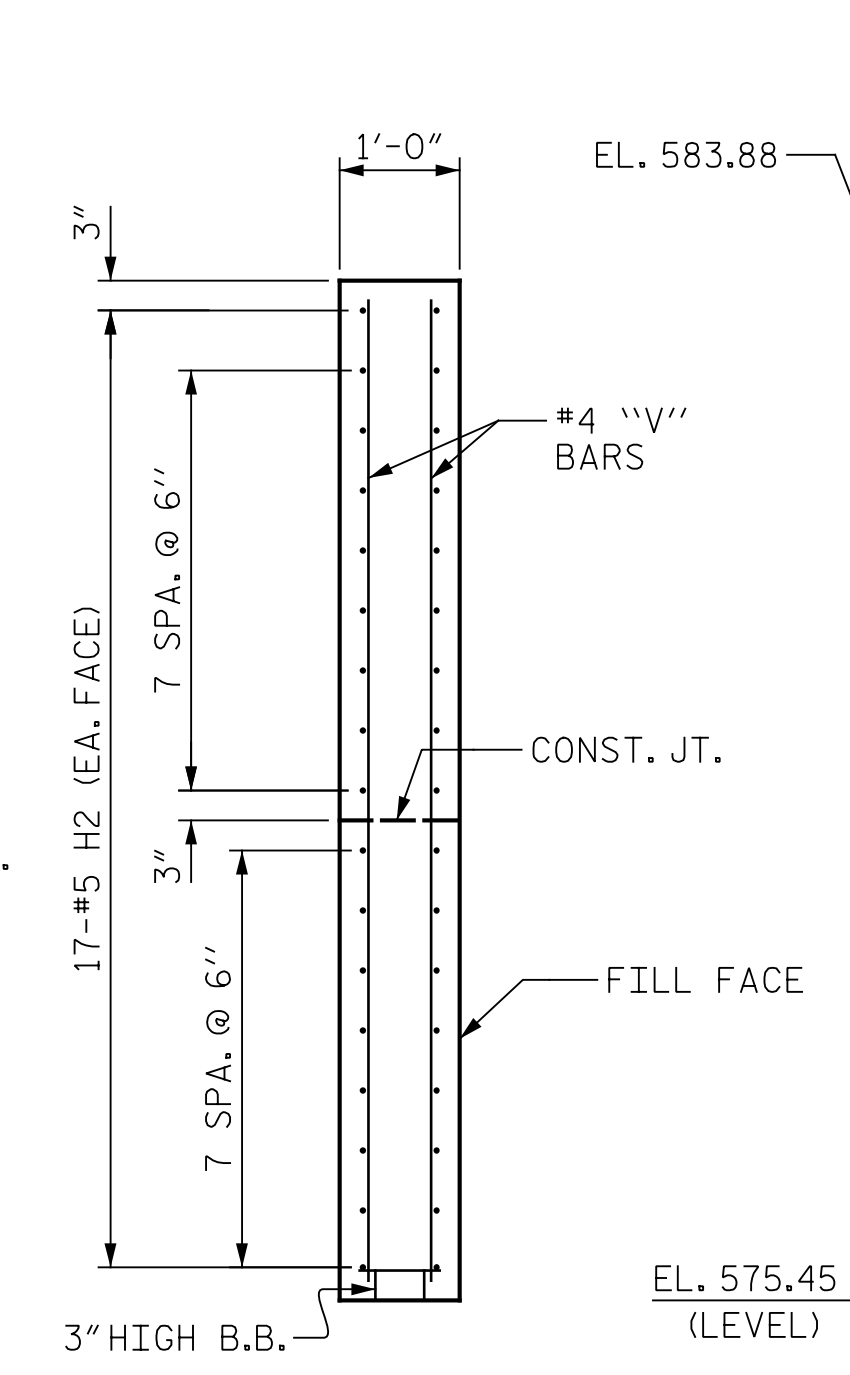
PLAN OF WING (W2)



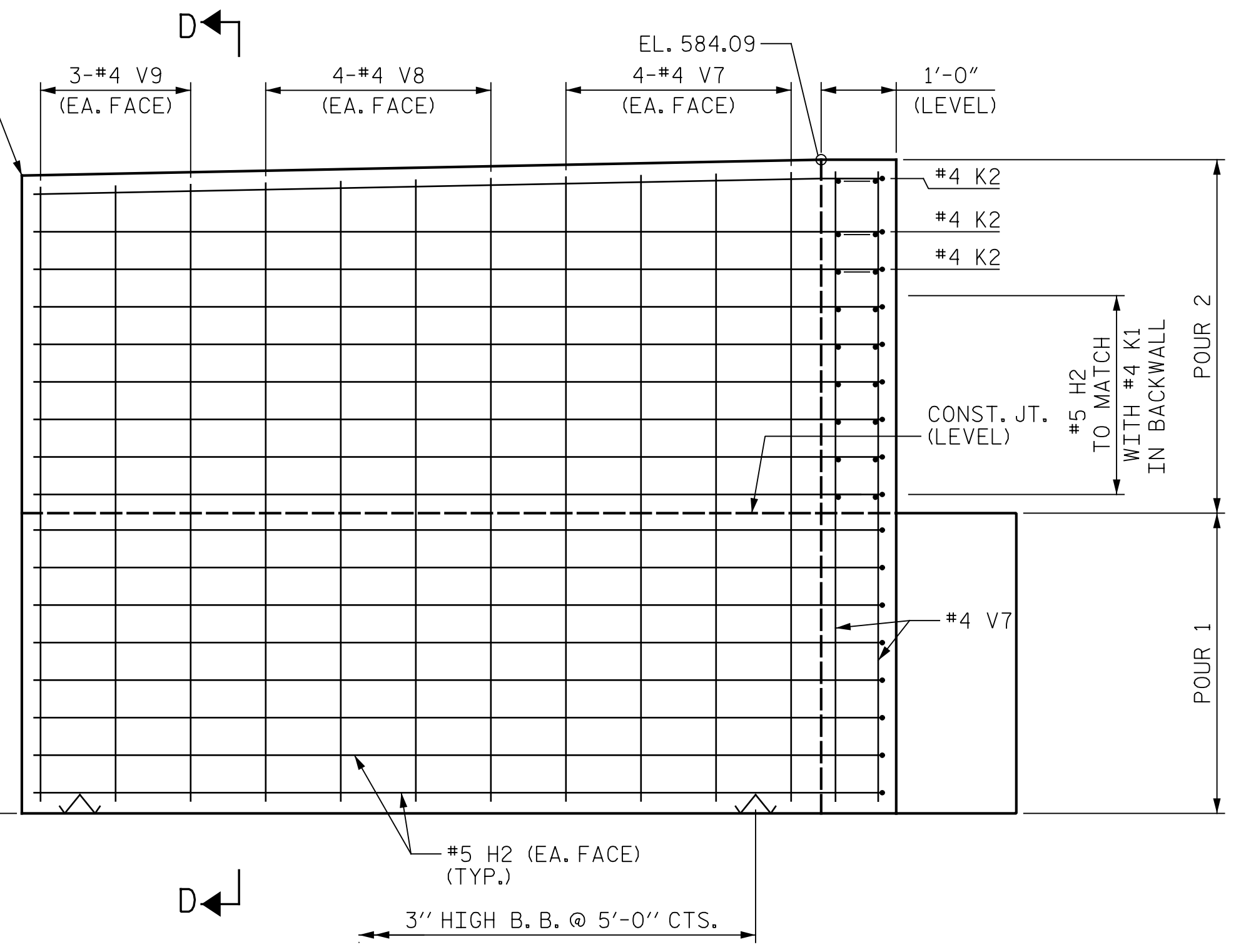
ELEVATION OF WING (W1)



SECTION C-C



SECTION D-D



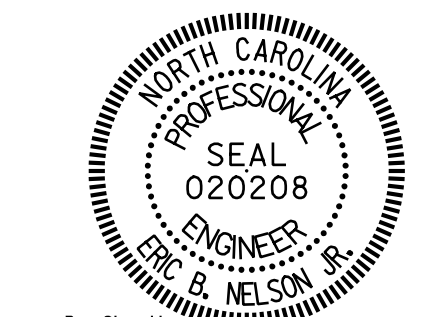
ELEVATION OF WING (W2)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

 SUBSTRUCTURE
 END BENT 1



DocuSigned by:
Eric B. Nelson
9/2/2021

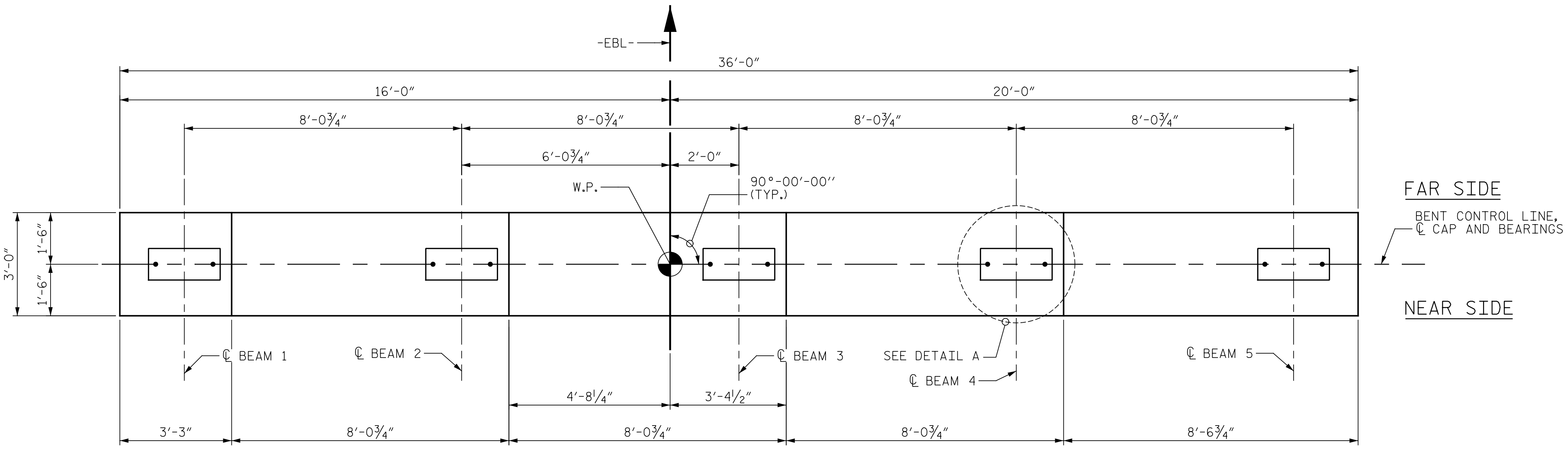
DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

PLANS PREPARED BY:
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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			125

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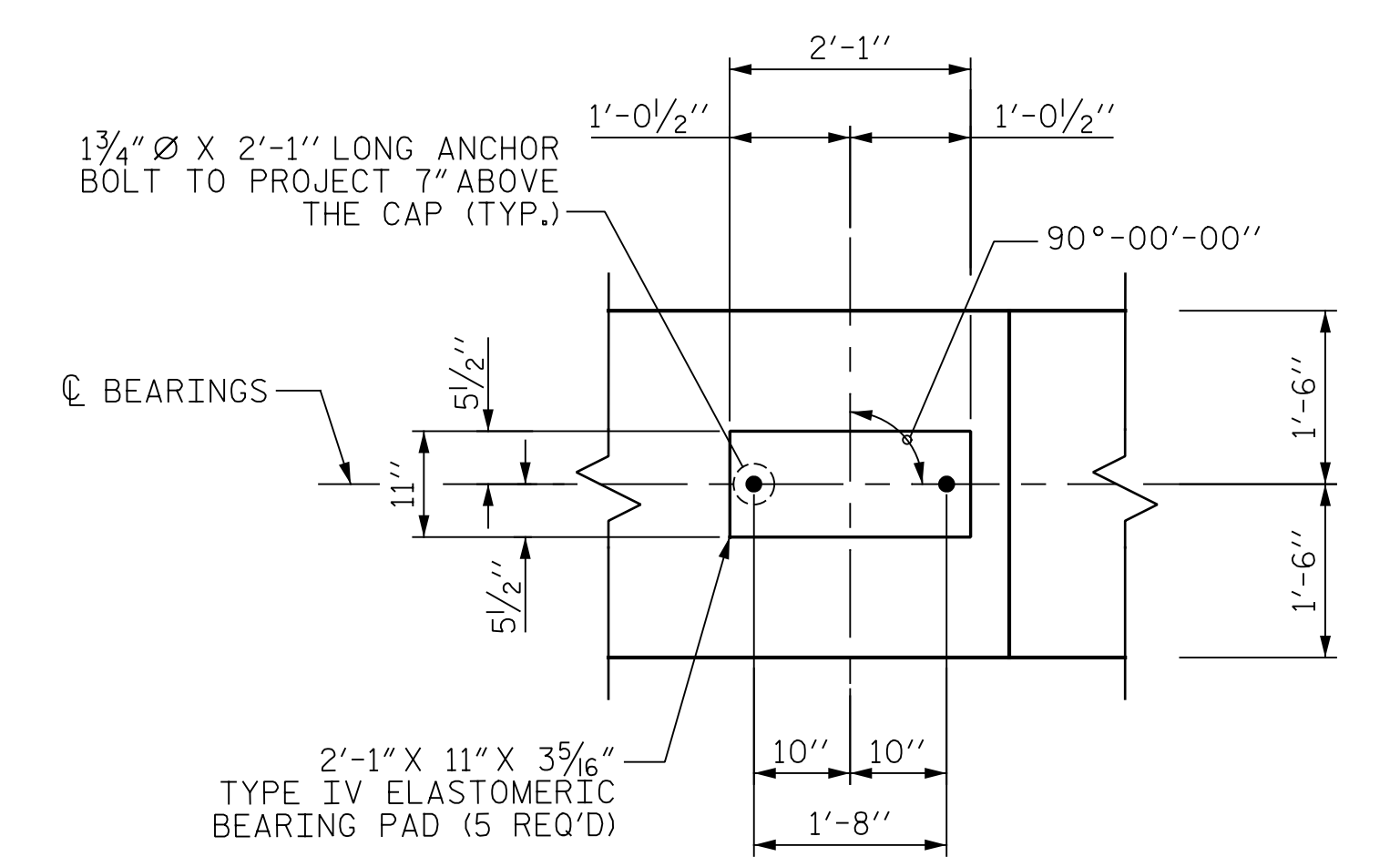


PLAN

BENT 1 SHOWN, BENT 2 THRU 4 & 9 THRU 11 SIMILAR

NOTES:

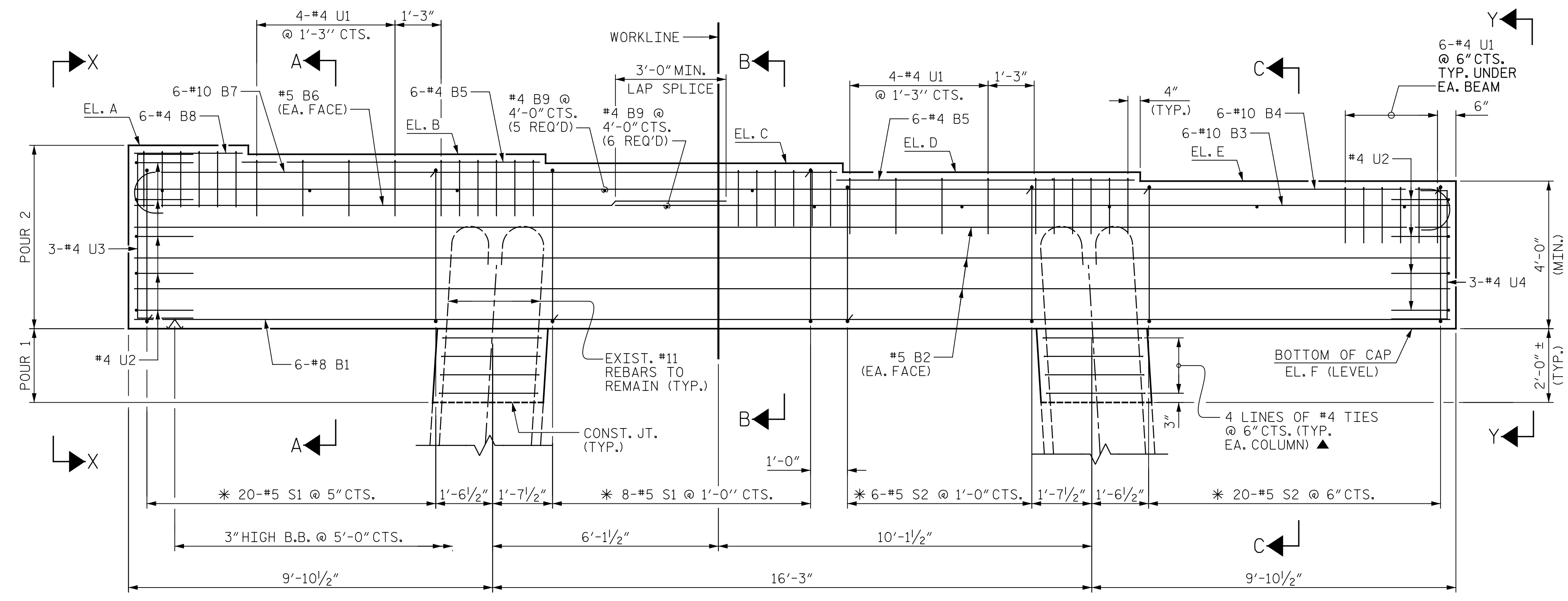
STIRRUPS AND U1 BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.



DETAIL A

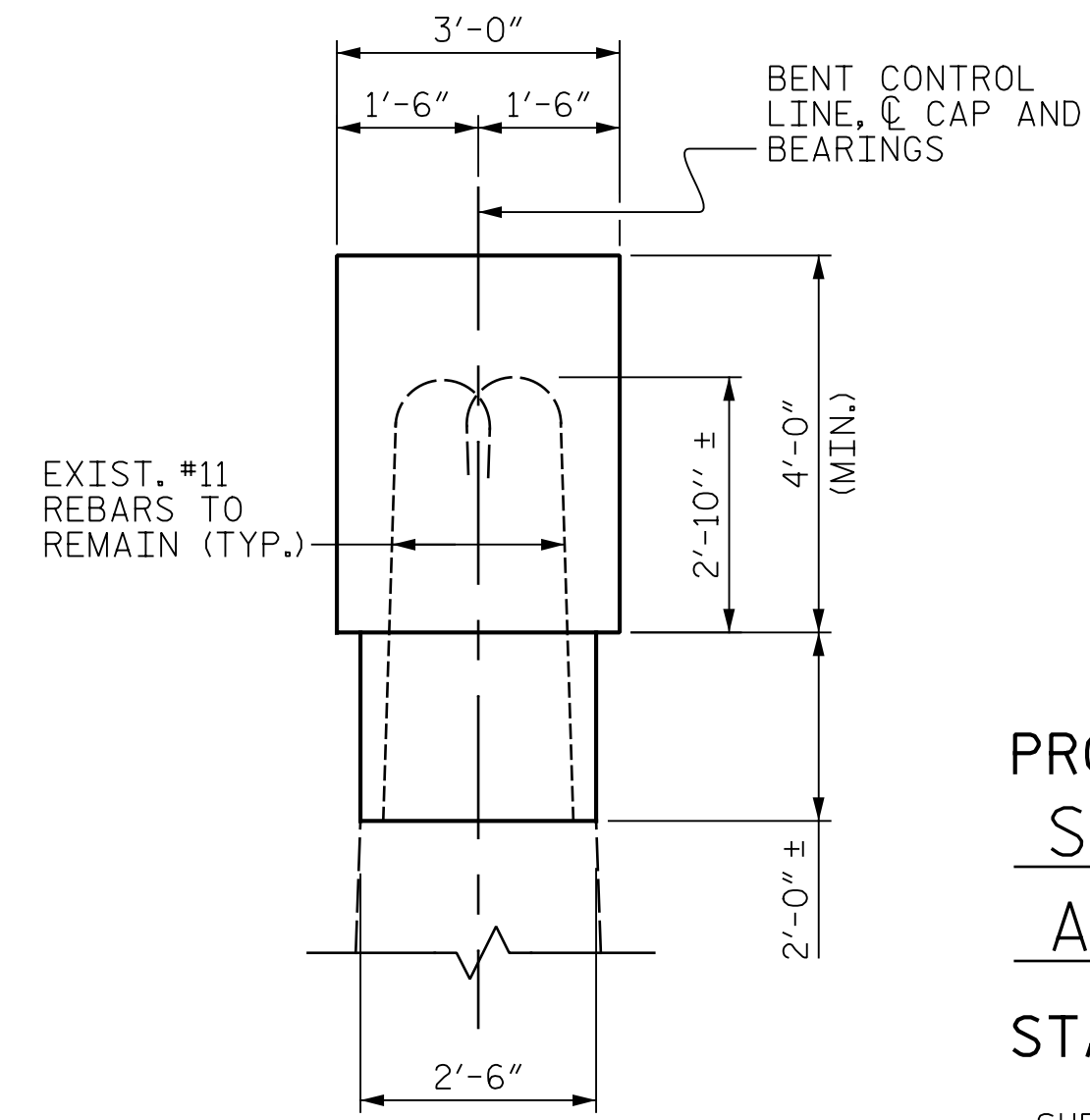
(TYP. EACH BEARING)

BENT NO.	WORK POINT	ELEVATION					
		A	B	C	D	E	F
1	2	581.78	581.54	581.30	581.05	580.81	576.81
2	3	583.13	582.89	582.65	582.40	582.16	578.16
3	4	584.48	584.24	584.00	583.75	583.51	579.51
4	5	585.83	585.59	585.35	585.10	584.86	580.86
9	10	597.36	597.12	596.88	596.64	596.40	592.40
10	11	598.71	598.47	598.23	597.99	597.75	593.75
11	12	600.06	599.82	599.58	599.34	599.10	595.10



ELEVATION

BENT 1 SHOWN, BENT 2 THRU 4 & 9 THRU 11 SIMILAR



END VIEW

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT 1 THRU 4
 & 9 THRU 11



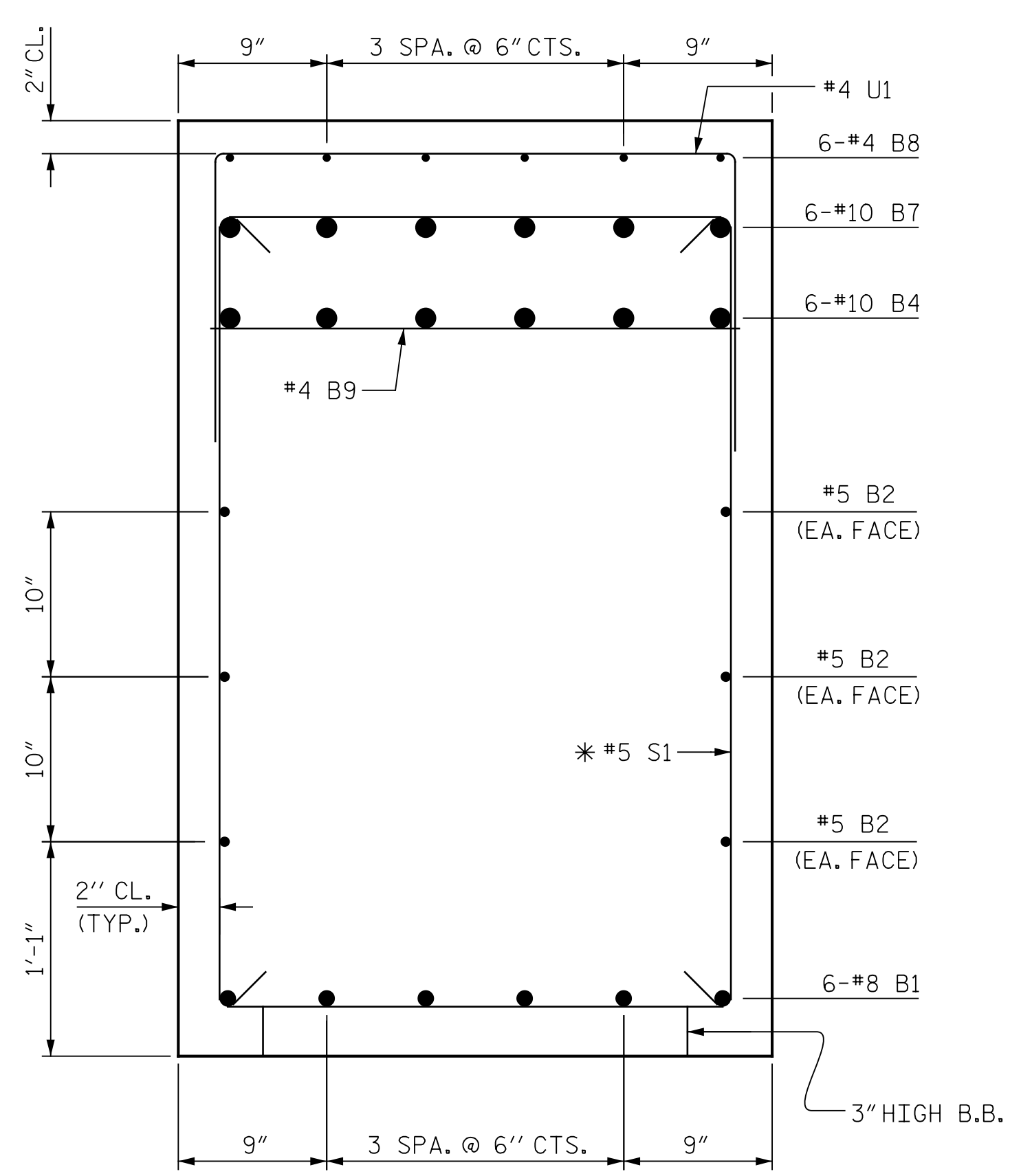
DRAWN BY: J. MYA DATE: 04/2021
 CHECKED BY: J. YANACCONI DATE: 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE: 05/2021

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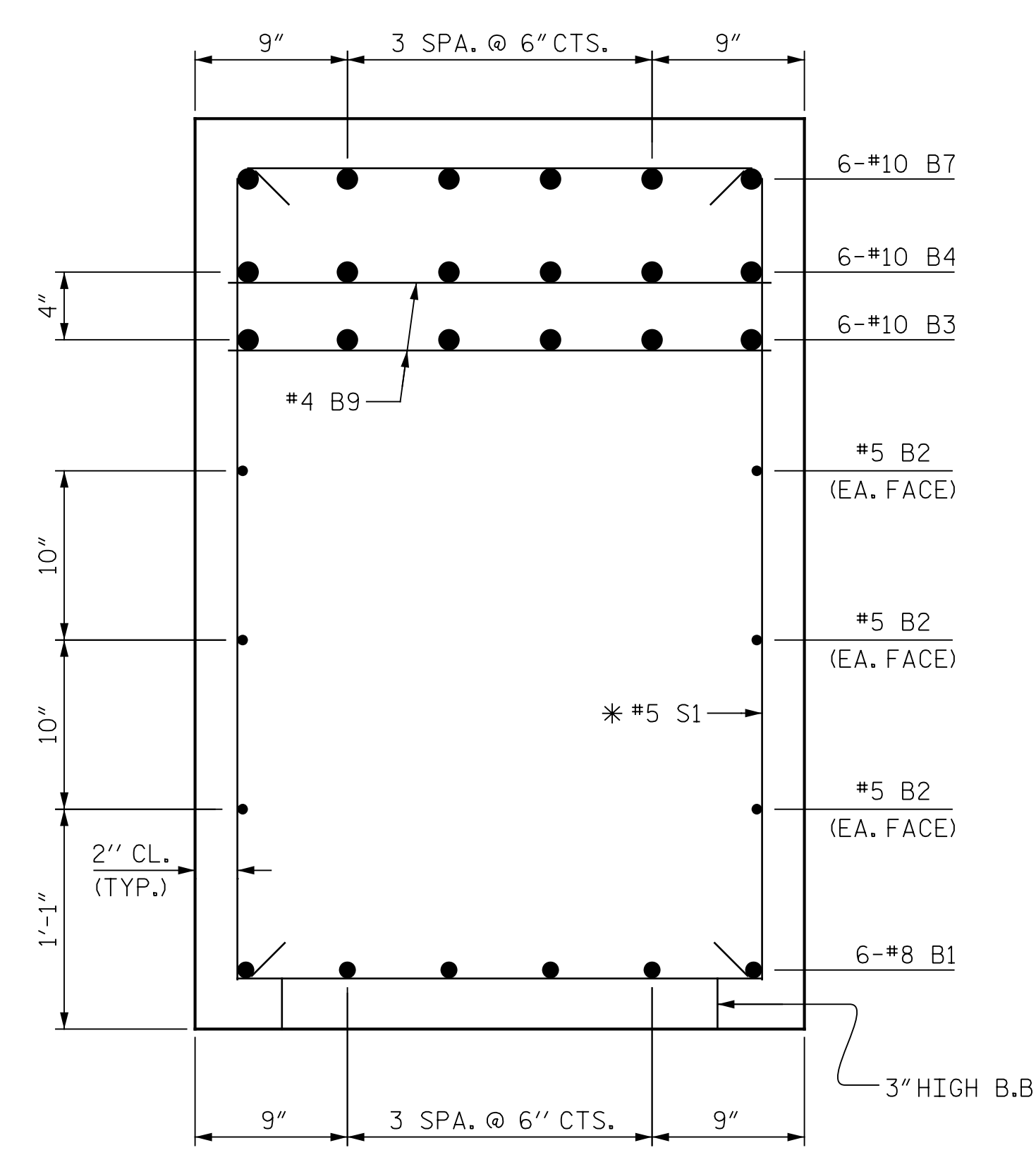
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2			4			125

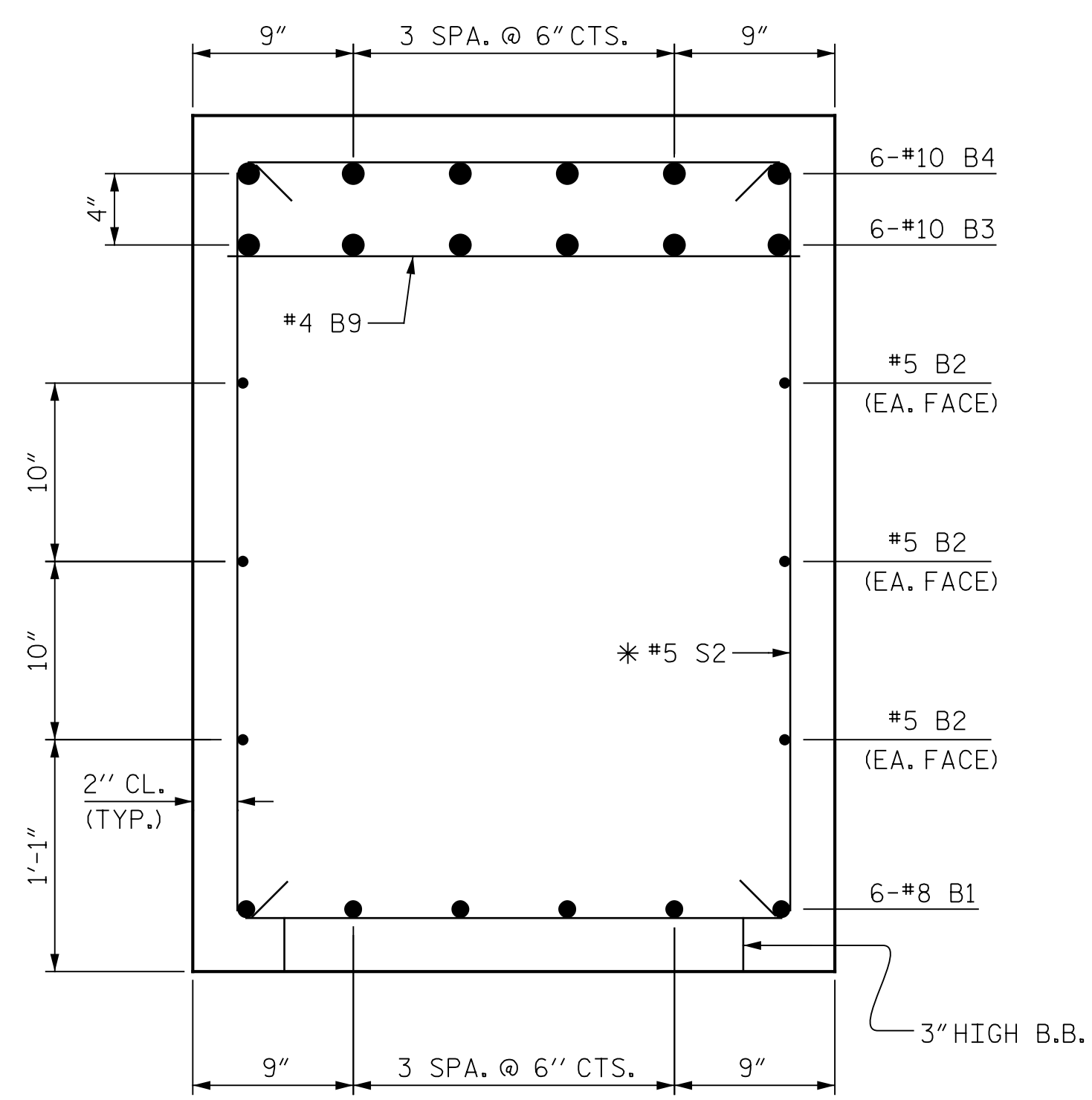
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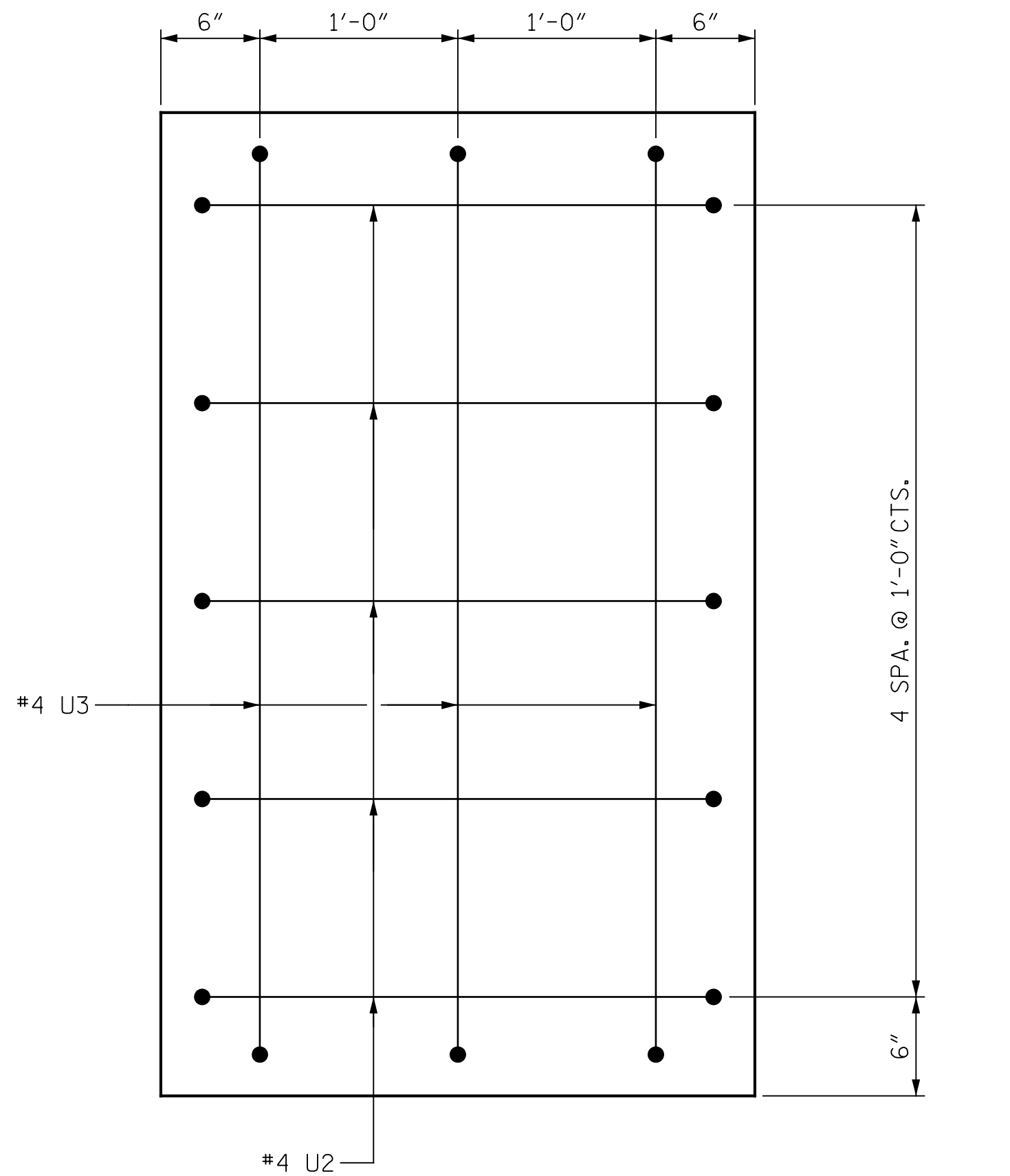
SECTION A-A



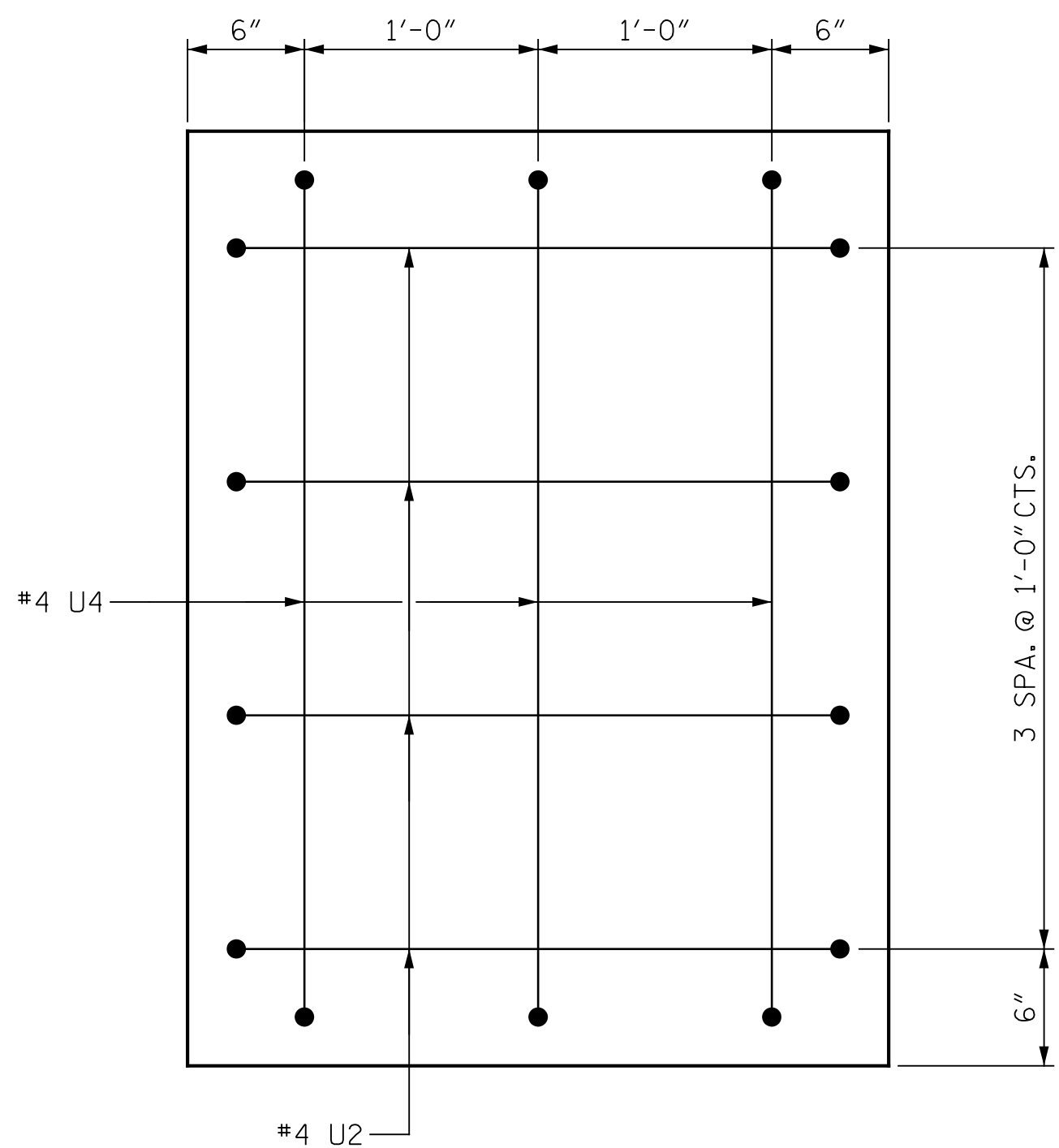
SECTION B-B



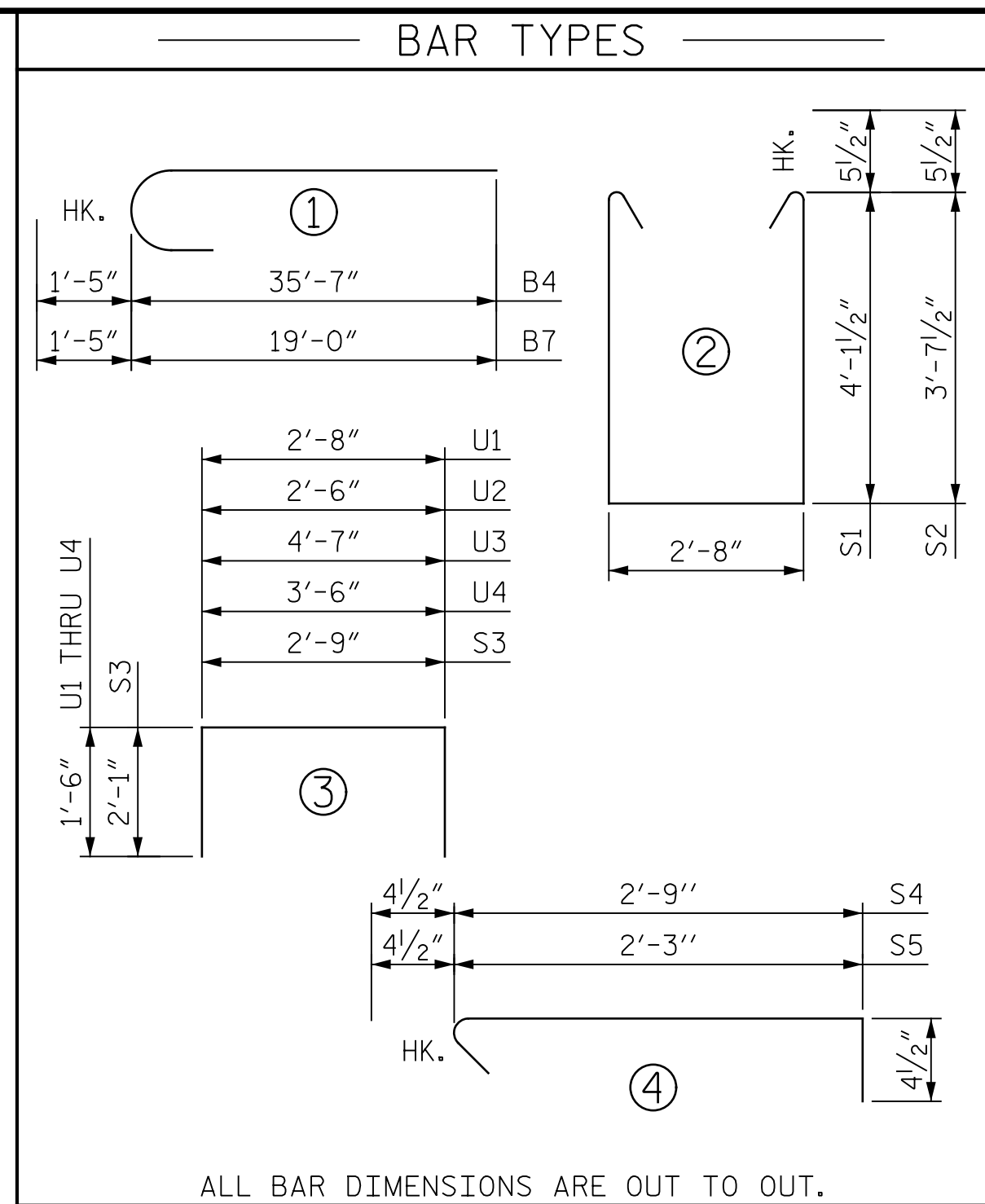
SECTION C-C



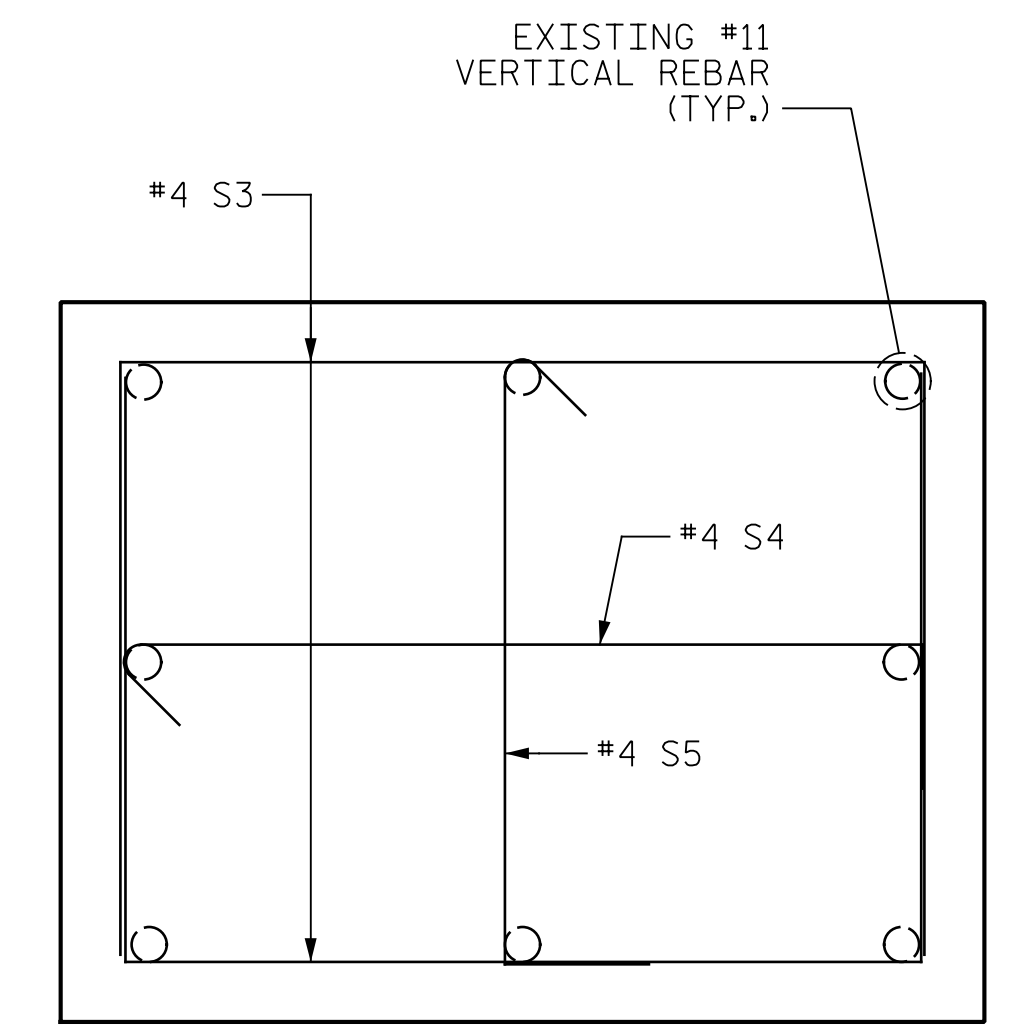
VIEW X-X



VIEW Y-Y



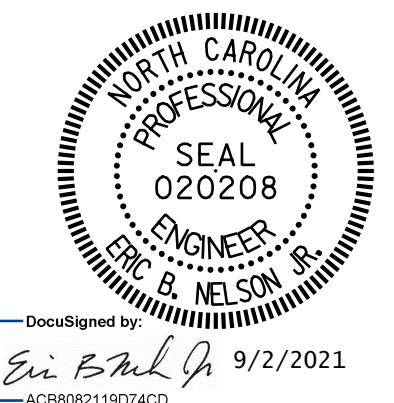
BILL OF MATERIAL (FOR ONE BENT)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#8	STR	35'-8"	571
B2	6	#5	STR	35'-8"	223
B3	6	#10	STR	22'-8"	585
B4	6	#10	1	37'-0"	955
B5	12	#4	STR	8'-1"	65
B6	2	#5	STR	16'-1"	34
B7	6	#10	1	20'-5"	527
B8	6	#4	STR	2'-11"	12
B9	11	#4	STR	2'-8"	20
S1	28	#5	2	11'-10"	346
S2	26	#5	2	10'-10"	294
S3	8	#4	3	6'-11"	37
S4	4	#4	4	3'-6"	9
S5	4	#4	4	3'-0"	8
U1	38	#4	3	5'-8"	144
U2	9	#4	3	5'-6"	33
U3	3	#4	3	7'-5"	15
U4	3	#4	3	6'-6"	13
REINFORCING STEEL					LBS. 3,891
CLASS A CONCRETE					
POUR #1 - COLUMNS					CU. YDS. 1.1
POUR #2 - CAP					CU. YDS. 17.7
TOTAL					CU. YDS. 18.8



TYPICAL COLUMN SECTION

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 1 THRU 4 & 9 THRU 11					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

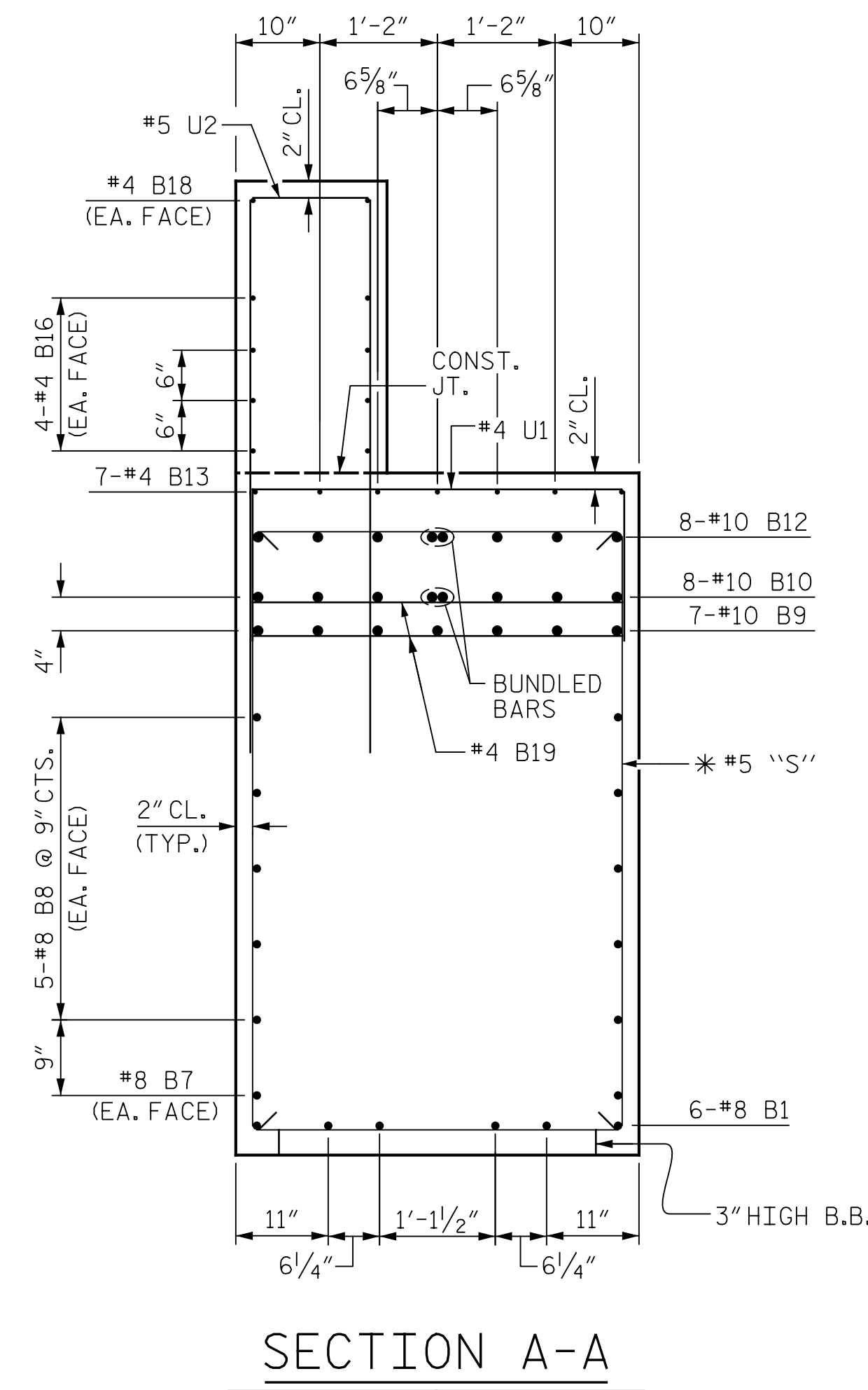
DRAWN BY: J. MYA DATE: 04/2021
 CHECKED BY: J. YANACCONI DATE: 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE: 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
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 (919) 420-7660
 NC Lic. No. F-0270

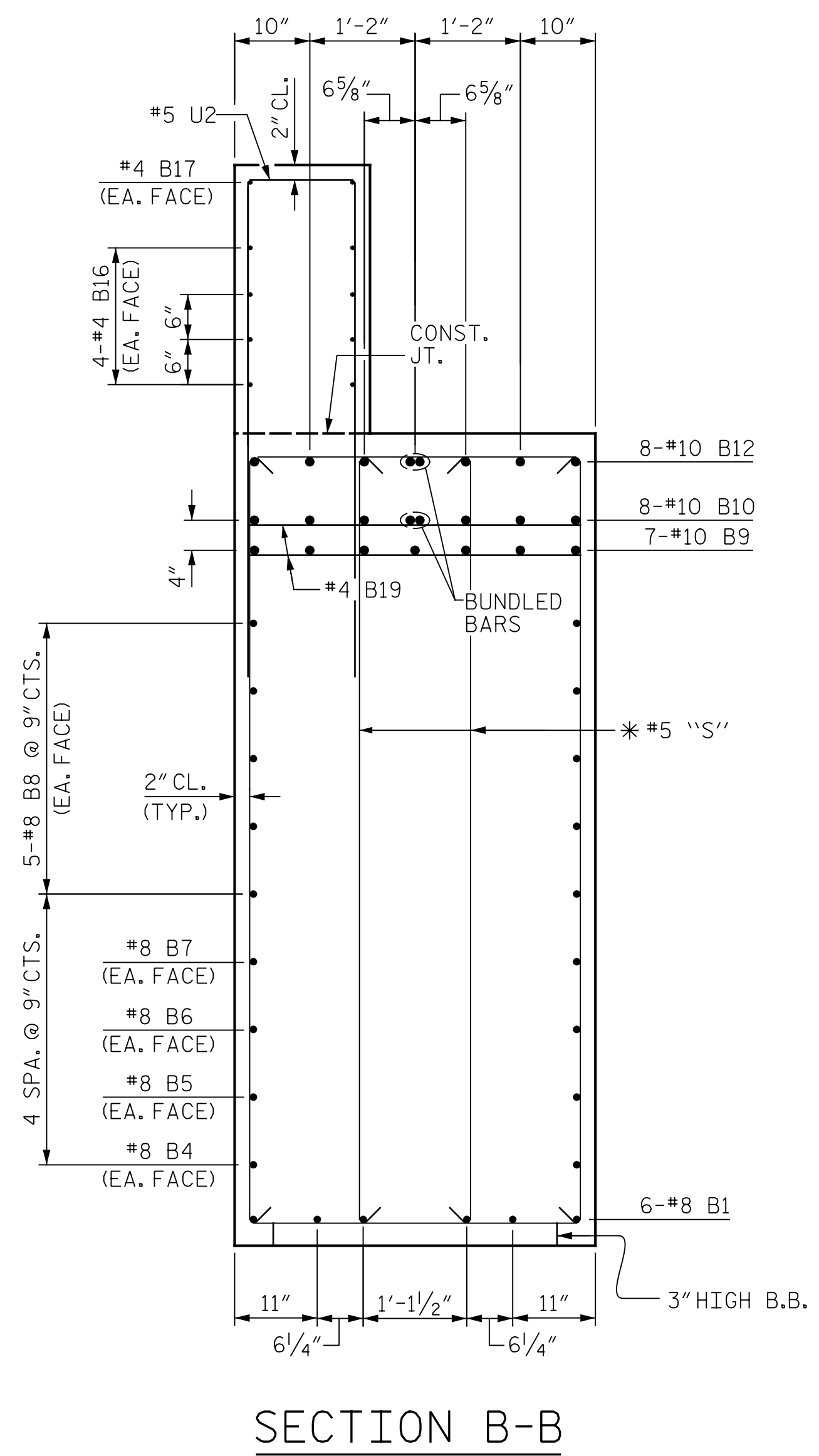
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SHEET NO.
 S1-61
 TOTAL SHEETS
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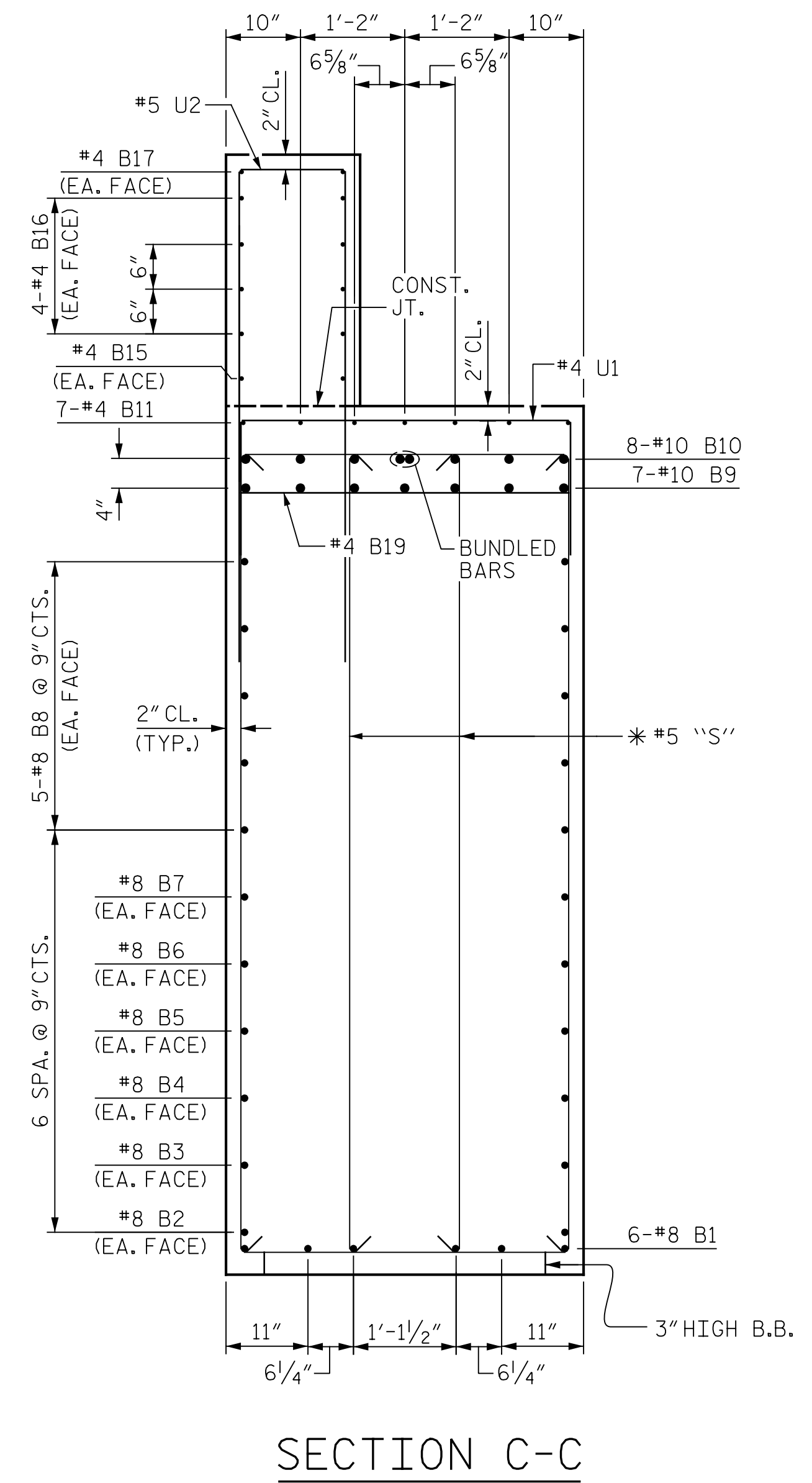
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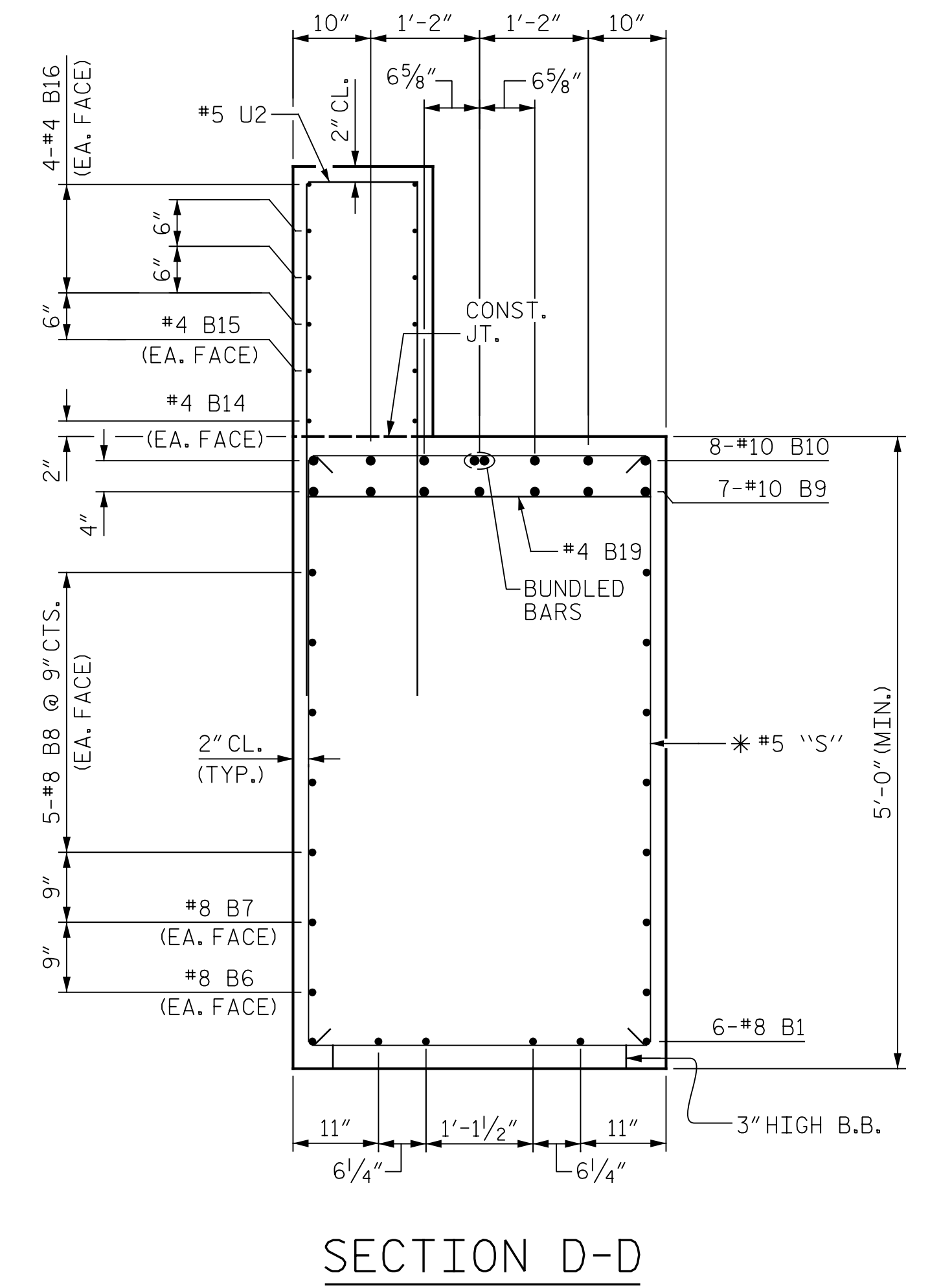
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

* INVERT ALTERNATE STIRRUPS

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 5



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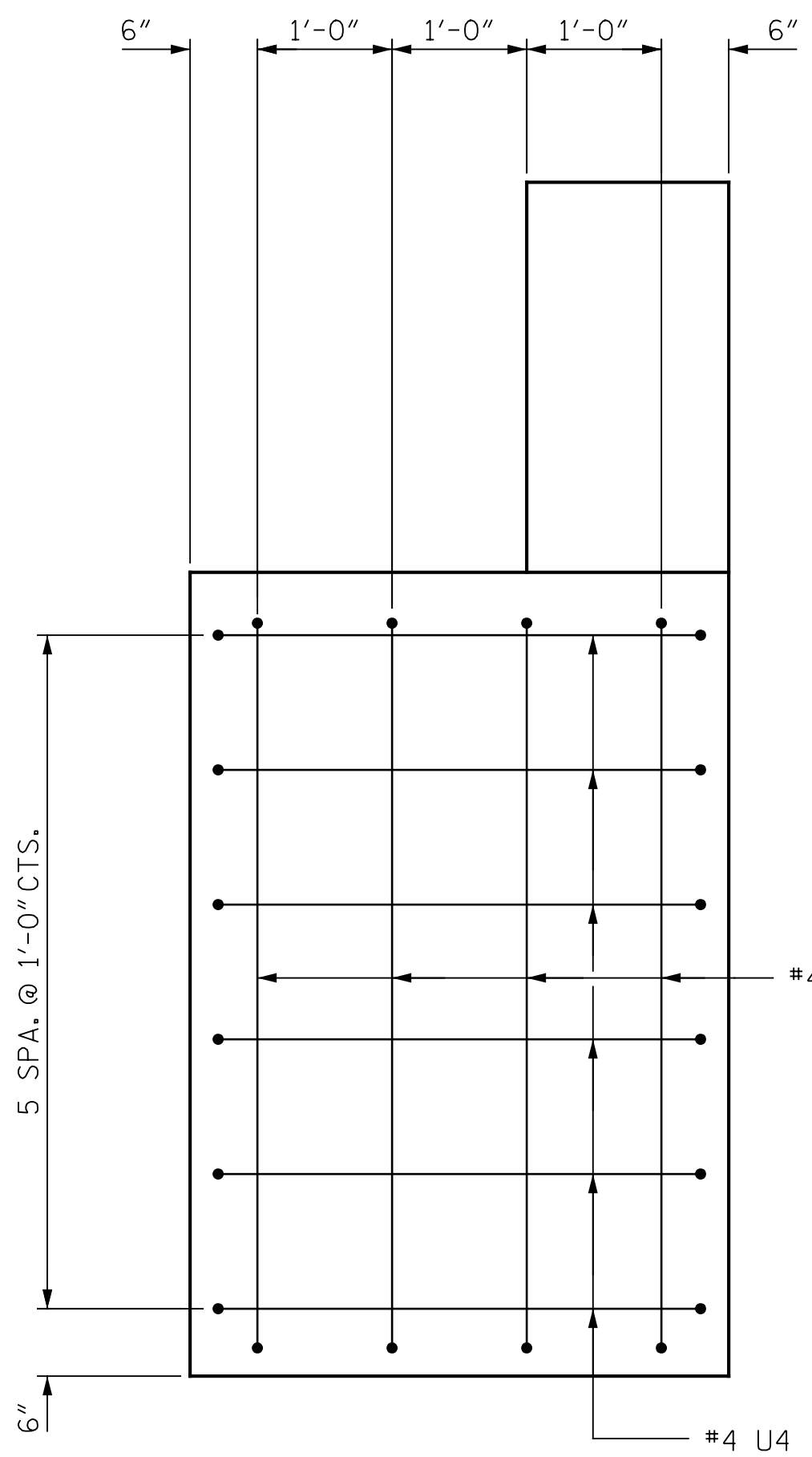
DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANNAACONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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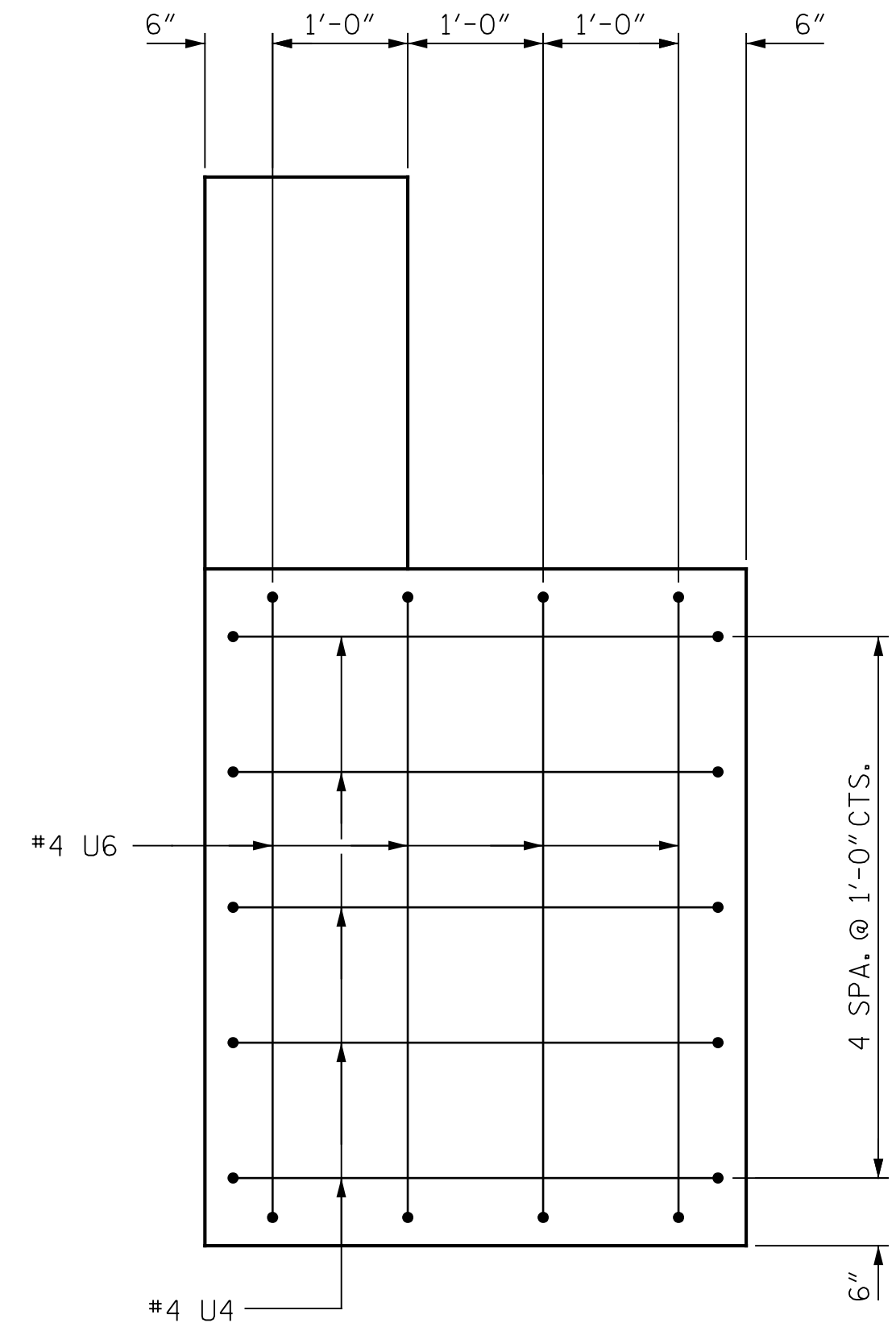
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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-63
1			3			TOTAL SHEETS
2			4			125

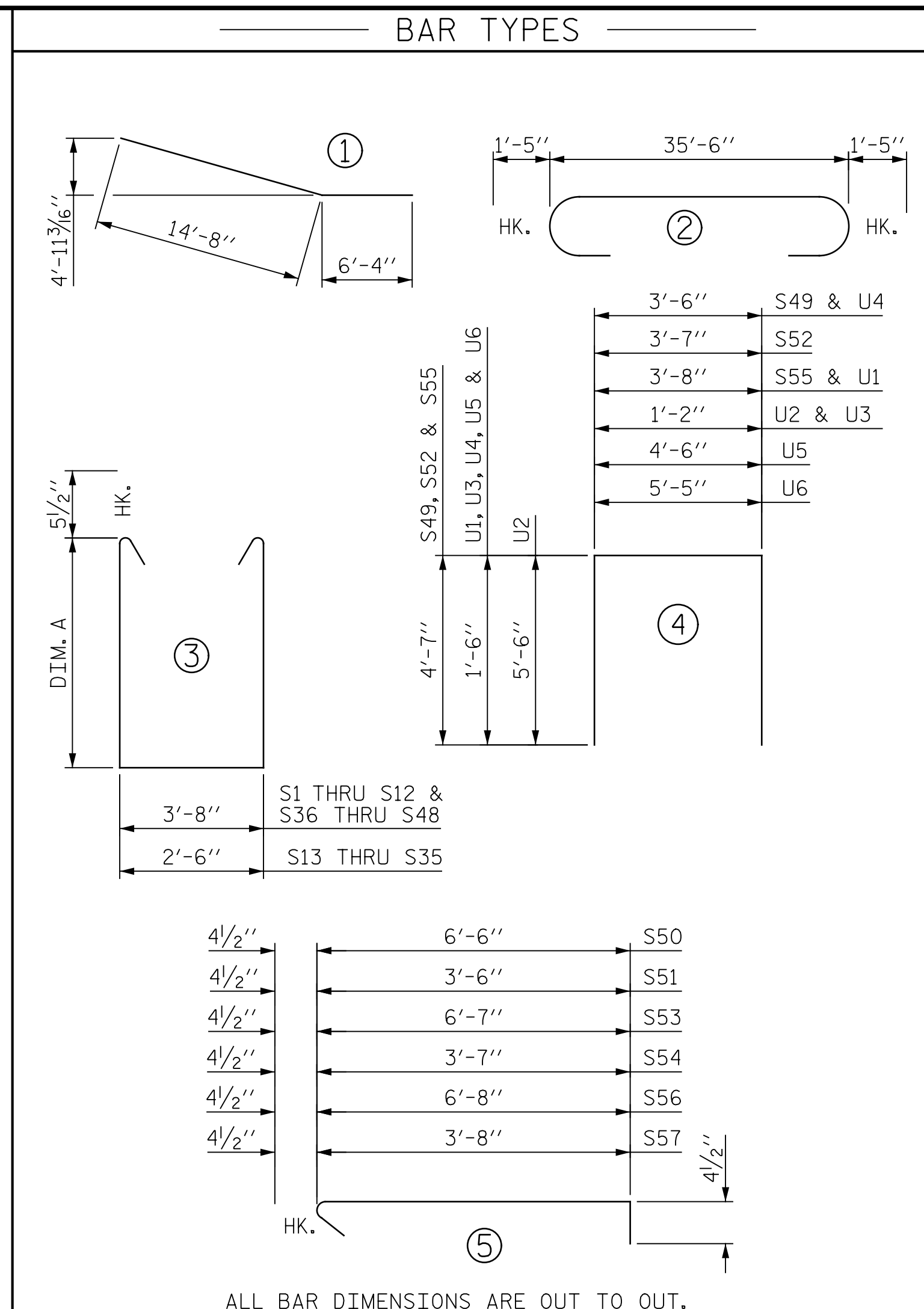
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VIEW X-X



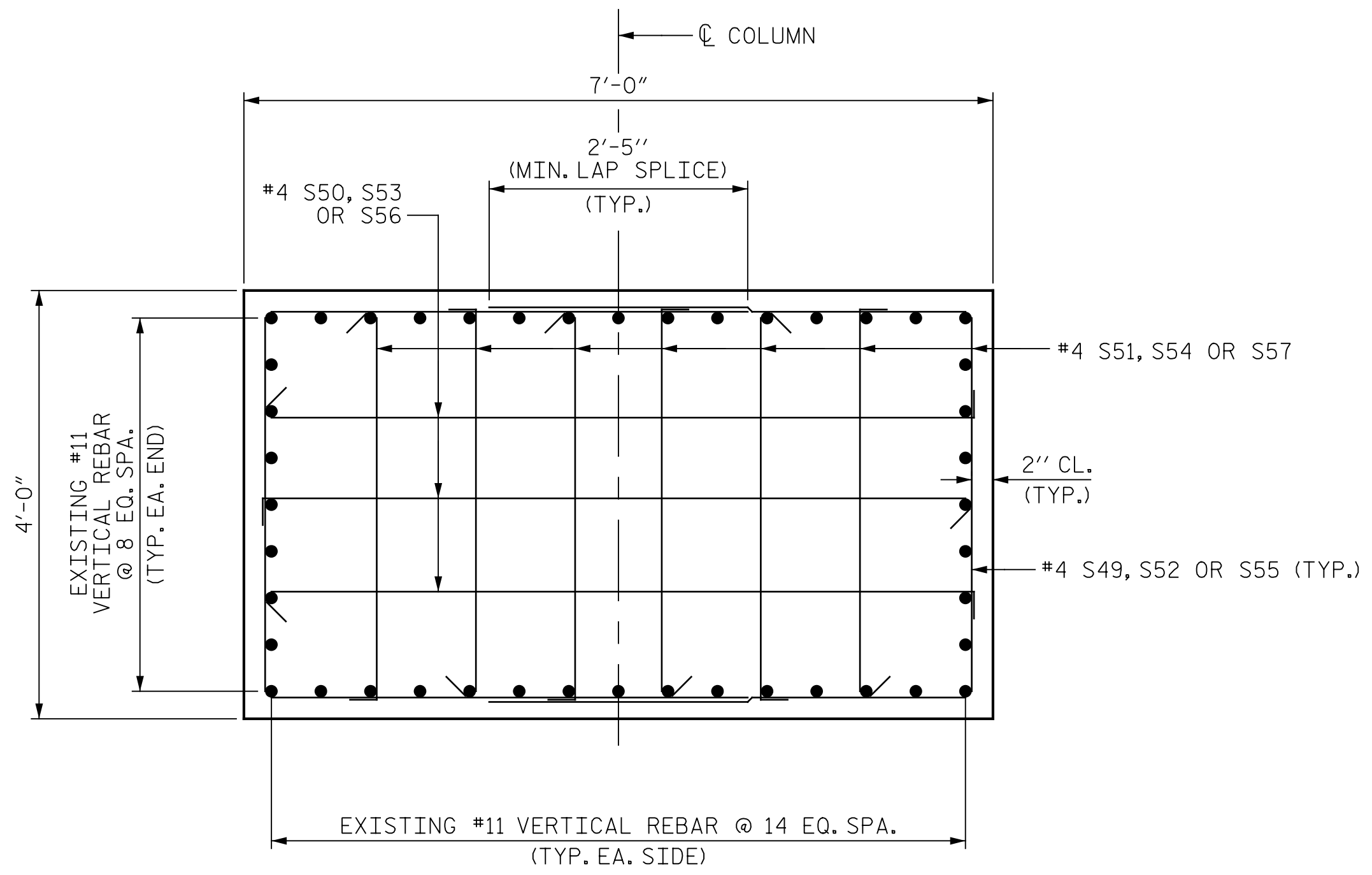
VIEW Y-Y



ALL BAR DIMENSIONS ARE OUT TO OUT.

BAR TYPES										BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	DIM. A	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM. A	LENGTH	WEIGHT		
B1	12	#8	1	-	21'-0"	673	S24	8	#5	3	9'-7 1/2"	22'-8"	189		
B2	2	#8	STR	-	12'-7"	67	S25	2	#5	3	9'-5"	22'-3"	46		
B3	2	#8	STR	-	16'-9"	89	S26	2	#5	3	9'-3"	21'-11"	46		
B4	2	#8	STR	-	21'-0"	112	S27	2	#5	3	9'-1"	21'-7"	45		
B5	2	#8	STR	-	25'-2"	134	S28	2	#5	3	8'-11"	21'-3"	44		
B6	2	#8	STR	-	29'-4"	157	S29	2	#5	3	8'-8 1/2"	20'-10"	43		
B7	2	#8	STR	-	33'-7"	179	S30	2	#5	3	8'-6 1/2"	20'-6"	43		
B8	10	#8	STR	-	35'-8"	952	S31	2	#5	3	8'-4 1/2"	20'-2"	42		
B9	7	#10	STR	-	35'-8"	1074	S32	2	#5	3	8'-2"	19'-9"	41		
B10	8	#10	2	-	38'-4"	1320	S33	2	#5	3	8'-0"	19'-5"	41		
B11	7	#4	STR	-	10'-9"	50	S34	2	#5	3	7'-10"	19'-1"	40		
B12	8	#10	STR	-	13'-8"	470	S35	2	#5	3	7'-8"	18'-9"	39		
B13	7	#4	STR	-	2'-11"	14	S36	1	#5	3	7'-5"	19'-5"	20		
B14	2	#4	STR	-	10'-10"	14	S37	1	#5	3	7'-2"	18'-11"	20		
B15	2	#4	STR	-	21'-7"	29	S38	1	#5	3	6'-11"	18'-5"	19		
B16	8	#4	STR	-	35'-8"	191	S39	1	#5	3	6'-8 1/2"	18'-0"	19		
B17	6	#4	STR	-	8'-1"	32	S40	1	#5	3	6'-5 1/2"	17'-6"	18		
B18	2	#4	STR	-	2'-11"	4	S41	1	#5	3	6'-2 1/2"	17'-0"	18		
B19	13	#4	STR	-	3'-8"	32	S42	1	#5	3	6'-0"	16'-7"	17		
S1	1	#5	3	5'-5"	15'-5"	16	S43	1	#5	3	5'-9"	16'-1"	17		
S2	1	#5	3	5'-8"	15'-11"	17	S44	1	#5	3	5'-6"	15'-7"	16		
S3	1	#5	3	5'-11"	16'-5"	17	S45	1	#5	3	5'-3"	15'-1"	16		
S4	1	#5	3	6'-2"	16'-11"	18	S46	1	#5	3	5'-0 1/2"	14'-8"	15		
S5	1	#5	3	6'-4 1/2"	17'-4"	18	S47	1	#5	3	4'-9 1/2"	14'-2"	15		
S6	1	#5	3	6'-7 1/2"	17'-10"	19	S48	6	#5	3	9'-7 1/2"	23'-10"	149		
S7	1	#5	3	6'-10 1/2"	18'-4"	19	S49	4	#4	4	-	12'-8"	34		
S8	1	#5	3	7'-1"	18'-9"	20	S50	6	#4	5	-	7'-3"	29		
S9	1	#5	3	7'-4"	19'-3"	20	S51	12	#4	5	-	4'-3"	34		
S10	1	#5	3	7'-7"	19'-9"	21	S52	8	#4	4	-	12'-9"	68		
S11	1	#5	3	7'-10"	20'-3"	21	S53	12	#4	5	-	7'-4"	59		
S12	1	#5	3	8'-0 1/2"	20'-8"	22	S54	24	#4	5	-	4'-4"	69		
S13	2	#5	3	8'-3 1/2"	20'-0"	42	S55	8	#4	4	-	12'-10"	69		
S14	2	#5	3	8'-5 1/2"	20'-4"	42	S56	12	#4	5	-	7'-5"	59		
S15	2	#5	3	8'-8"	20'-9"	43	S57	24	#4	5	-	4'-5"	71		
S16	2	#5	3	8'-10"	21'-1"	44	U1	29	#4	4	-	6'-8"	129		
S17	2	#5	3	9'-0"	21'-5"	45	U2	36	#5	4	-	12'-2"	457		
S18	2	#5	3	9'-2"	21'-9"	45	U3	30	#4	4	-	4'-2"	84		
S19	2	#5	3	9'-4 1/2"	22'-2"	46	U4	11	#4	4	-	6'-6"	48		
S20	2	#5	3	9'-6 1/2"	22'-6"	47	U5	4	#4	4	-	7'-6"	20		
S21	2	#5	3	9'-8 1/2"	22'-10"	48	U6	4	#4	4	-	8'-5"	22		
S22	2	#5	3	9'-11"	23'-3"	48									
S23	2	#5	3	10'-1"	23'-7"	49									

REINFORCING STEEL	LBS.	8,590
CLASS A CONCRETE		
POUR #1 - CAP & COLUMN	50.1	CU. YDS.
POUR #2 - CAP STEP	5.8	CU. YDS.
TOTAL	55.9	CU. YDS.



SECTION E-E

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
STATION: 45+22.65 -EBL-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 5



DRAWN BY : J. MYA DATE : 04/2021
CHECKED BY : J. YANACCONI DATE : 05/2021
DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
Excellence Delivered As Promised

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(919) 420-7660
NC Lic. No. F-0270

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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-64
1			3			TOTAL SHEETS
2			4			125

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NOTES:

STIRRUPS AND U1 BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 CUT ALTERNATE EXISTING #11 BARS IN COLUMN AND ATTACH #11 V1 BARS WITH MECHANICAL BUTT SPLICE.

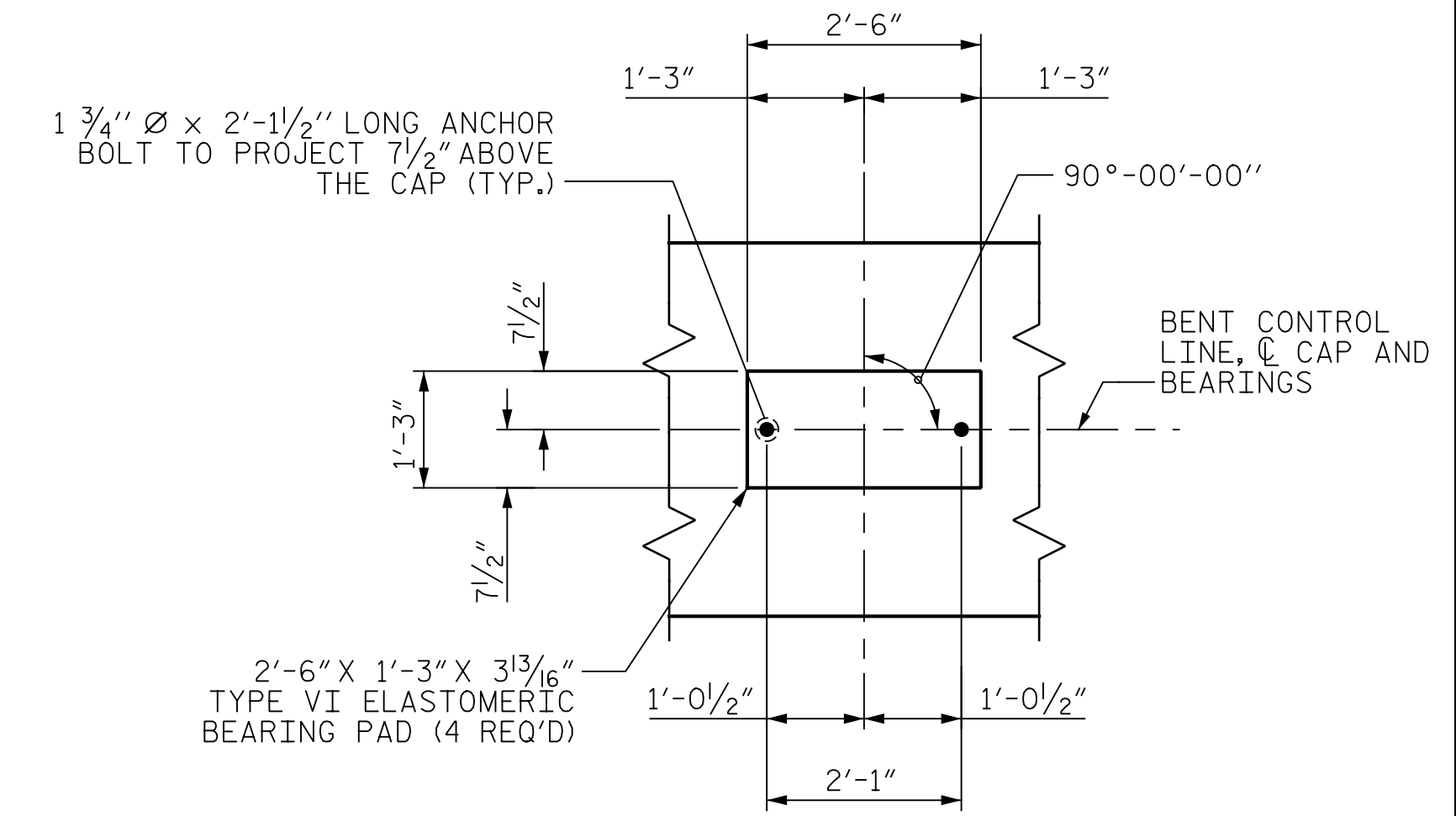
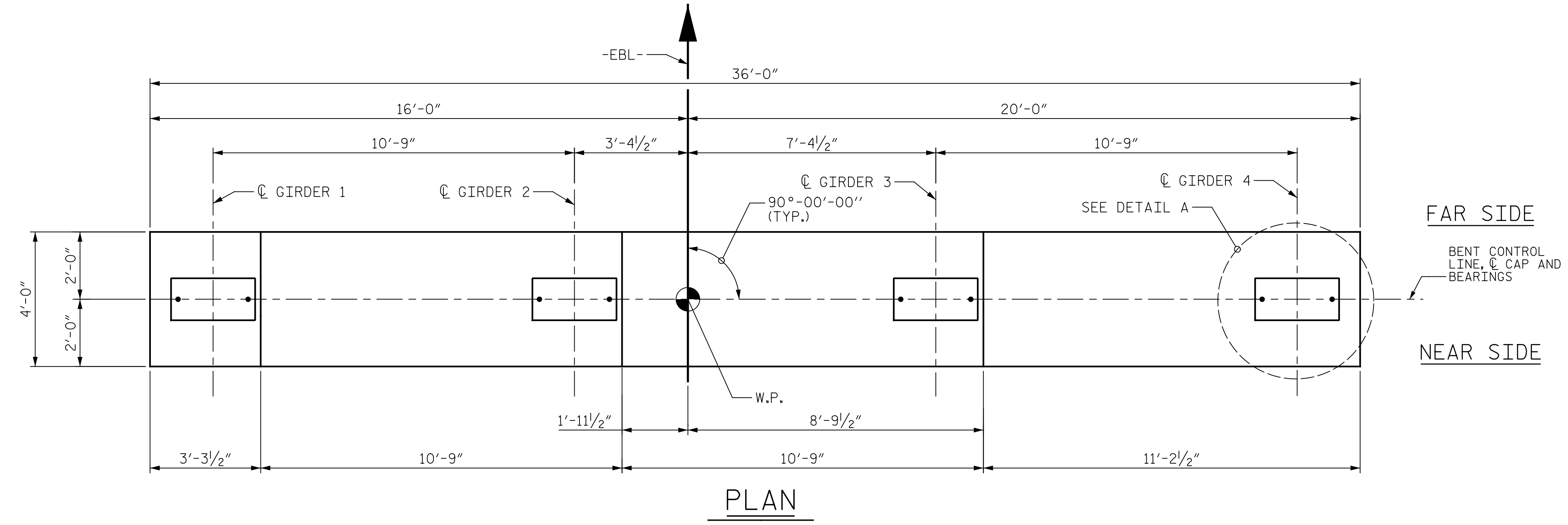
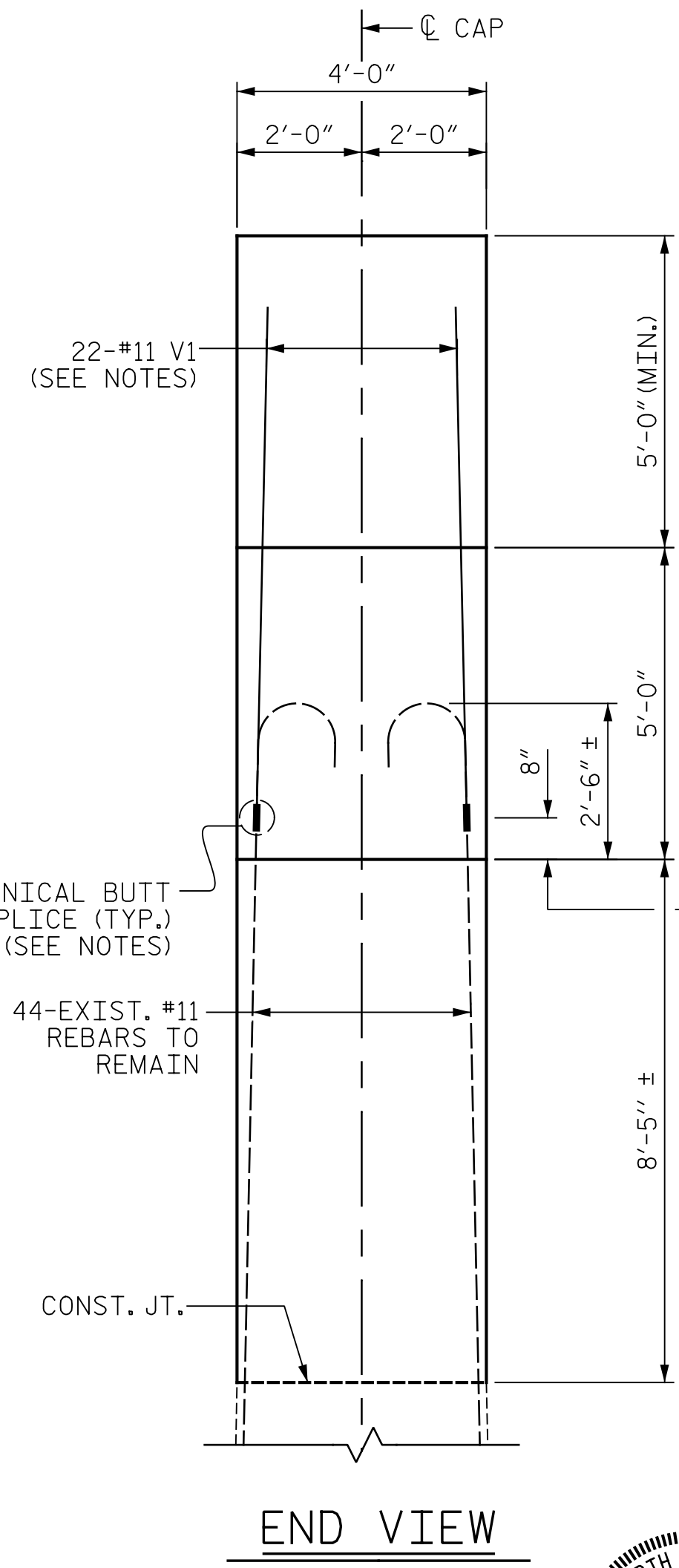
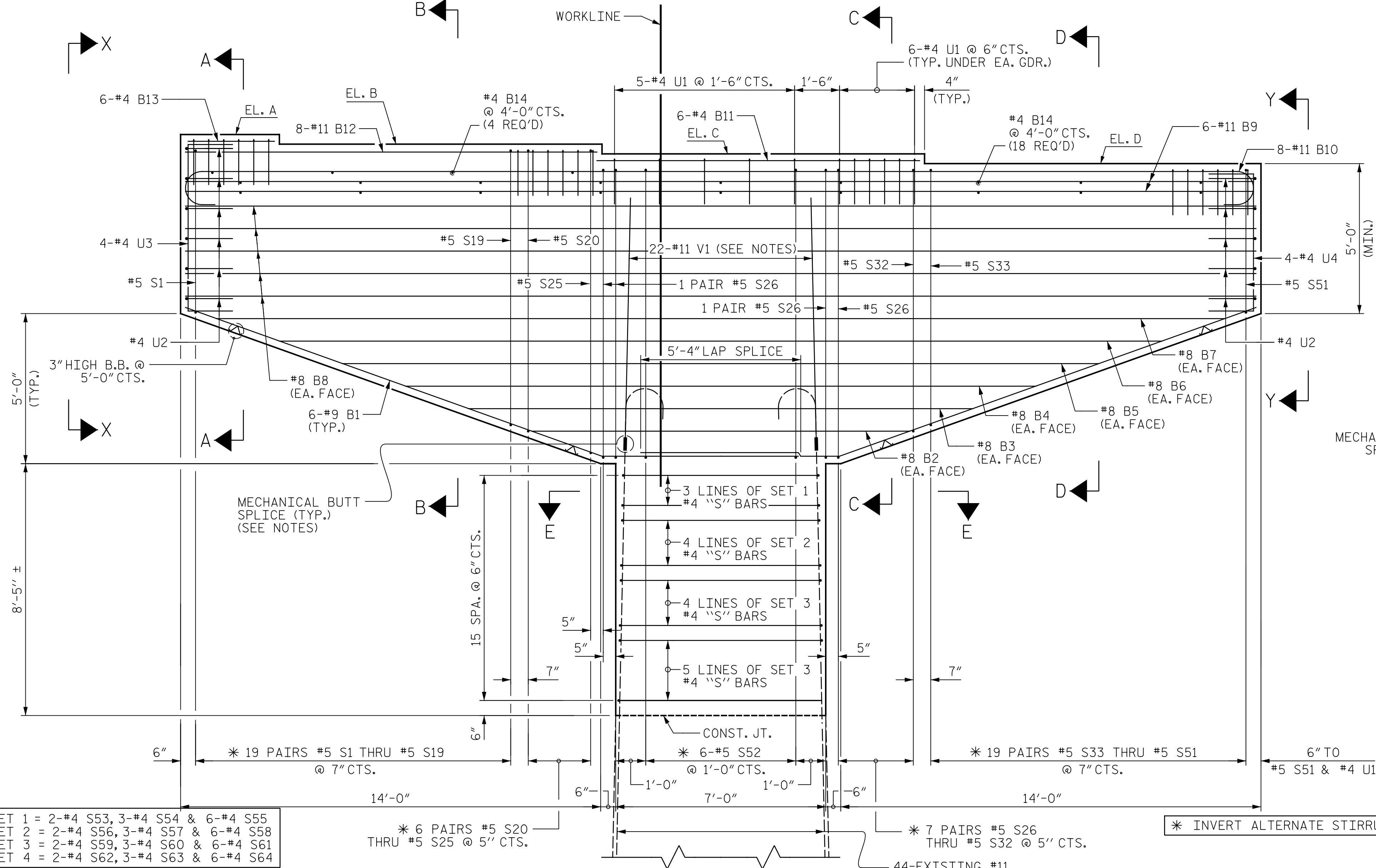


TABLE OF BENT CAP ELEVATIONS

BENT NO.	WORK POINT	A	B	C	D
6	7	586.91	586.58	586.26	585.94
7	8	590.11	589.78	589.46	589.14



- SET 1 = 2-#4 S53, 3-#4 S54 & 6-#4 S55
- SET 2 = 2-#4 S56, 3-#4 S57 & 6-#4 S58
- SET 3 = 2-#4 S59, 3-#4 S60 & 6-#4 S61
- SET 4 = 2-#4 S62, 3-#4 S63 & 6-#4 S64

* 6 PAIRS #5 S20 THRU #5 S25 @ 5" CTS.

* 7 PAIRS #5 S26 THRU #5 S32 @ 5" CTS.

* INVERT ALTERNATE STIRRUPS

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised

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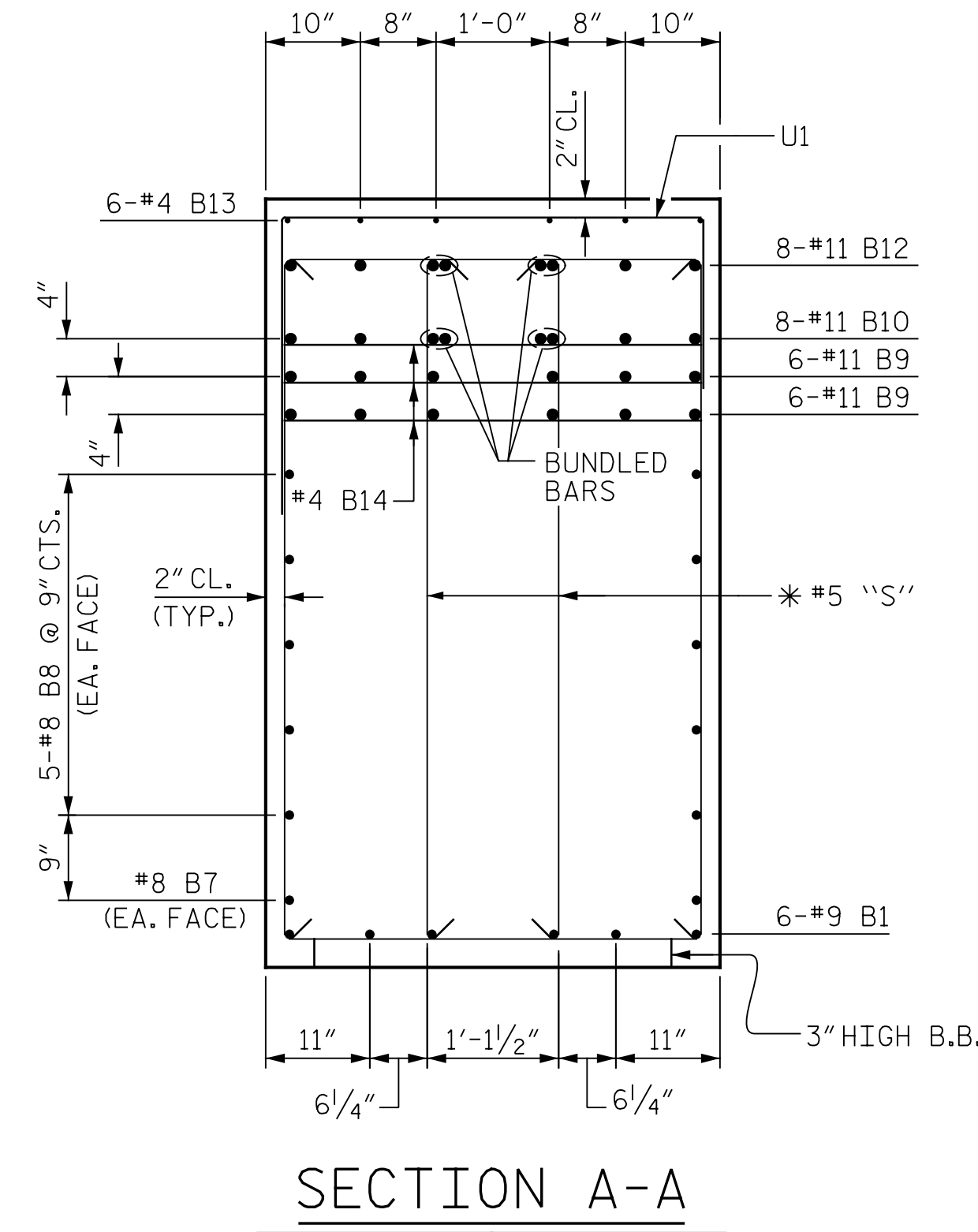
PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 3
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

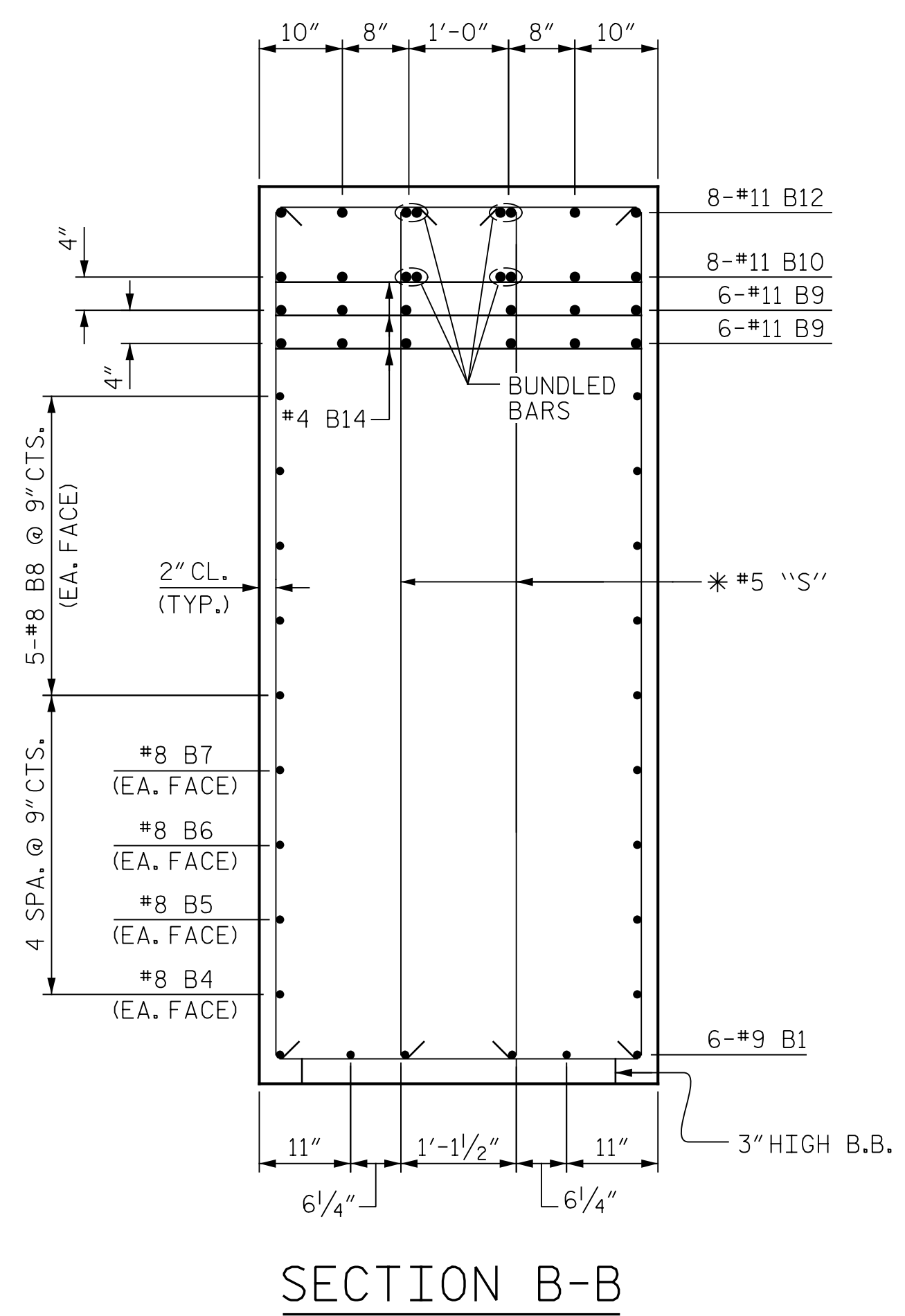
SUBSTRUCTURE BENT 6 AND 7

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-65
1			3			TOTAL SHEETS
2			4			125

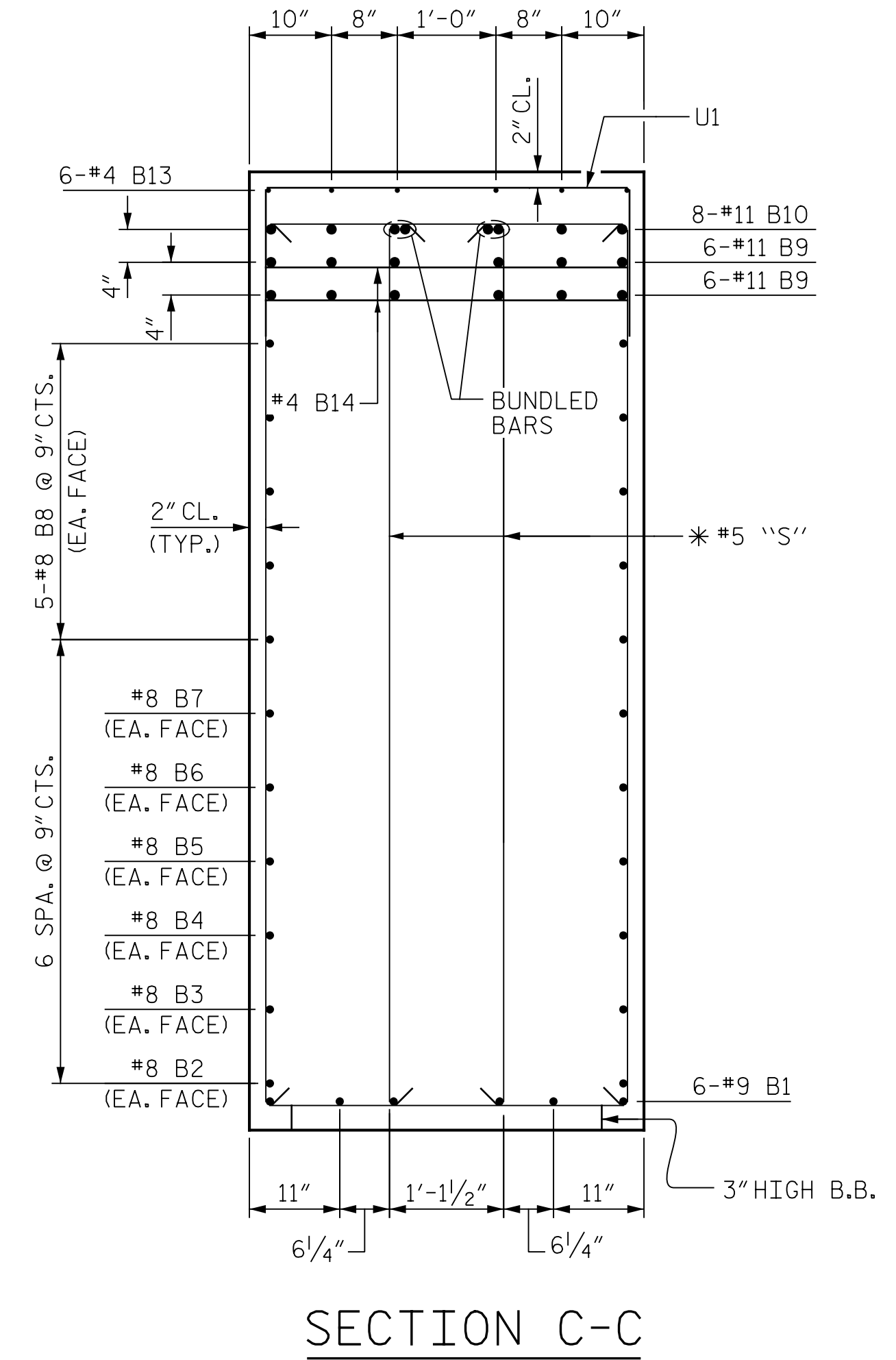
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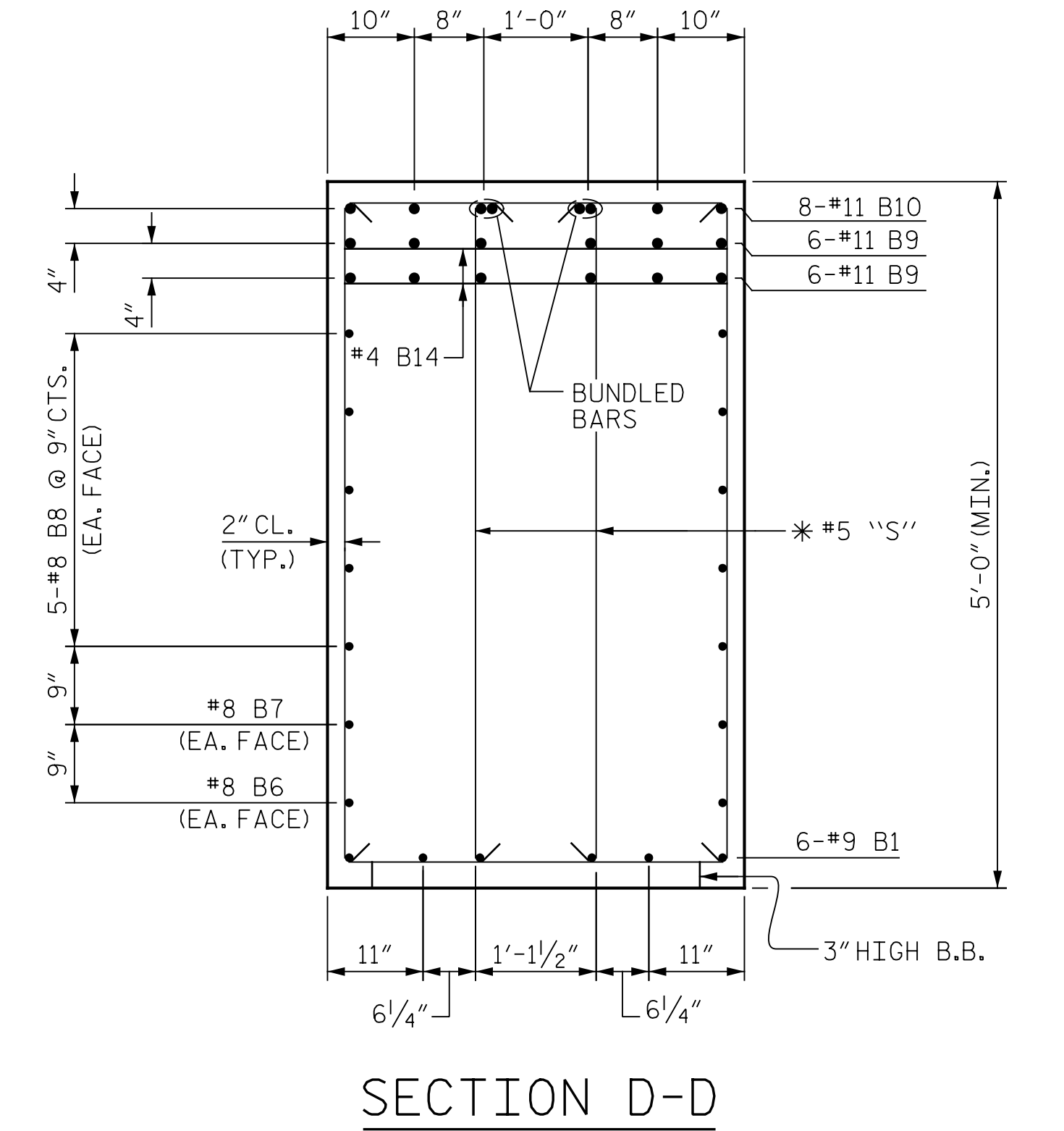
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

* INVERT ALTERNATE STIRRUPS

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 6 AND 7



DocuSigned by:
 Eric B. Nelson
 9/2/2021
 NC09002118074CD

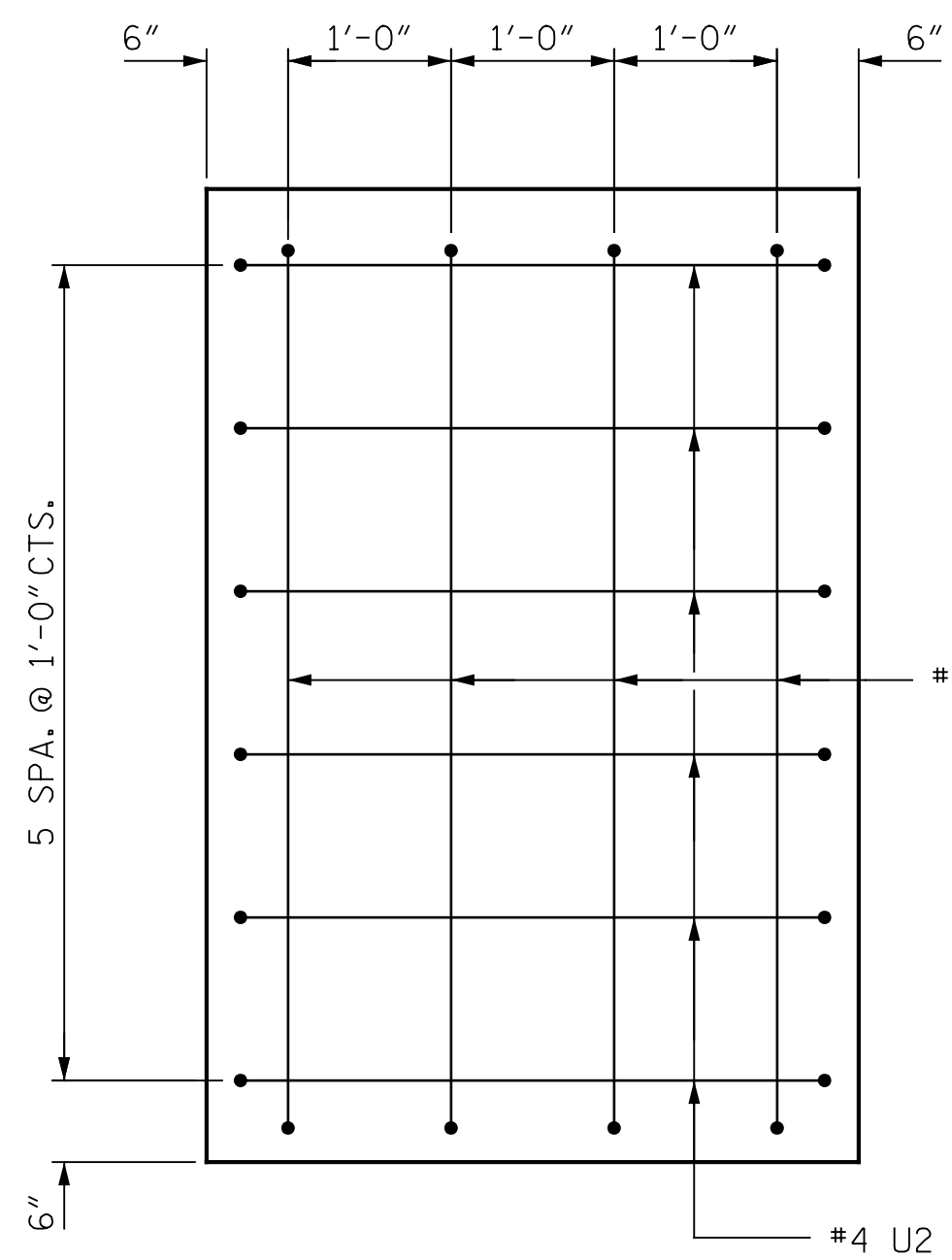
PLANS PREPARED BY:
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 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANNAACONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

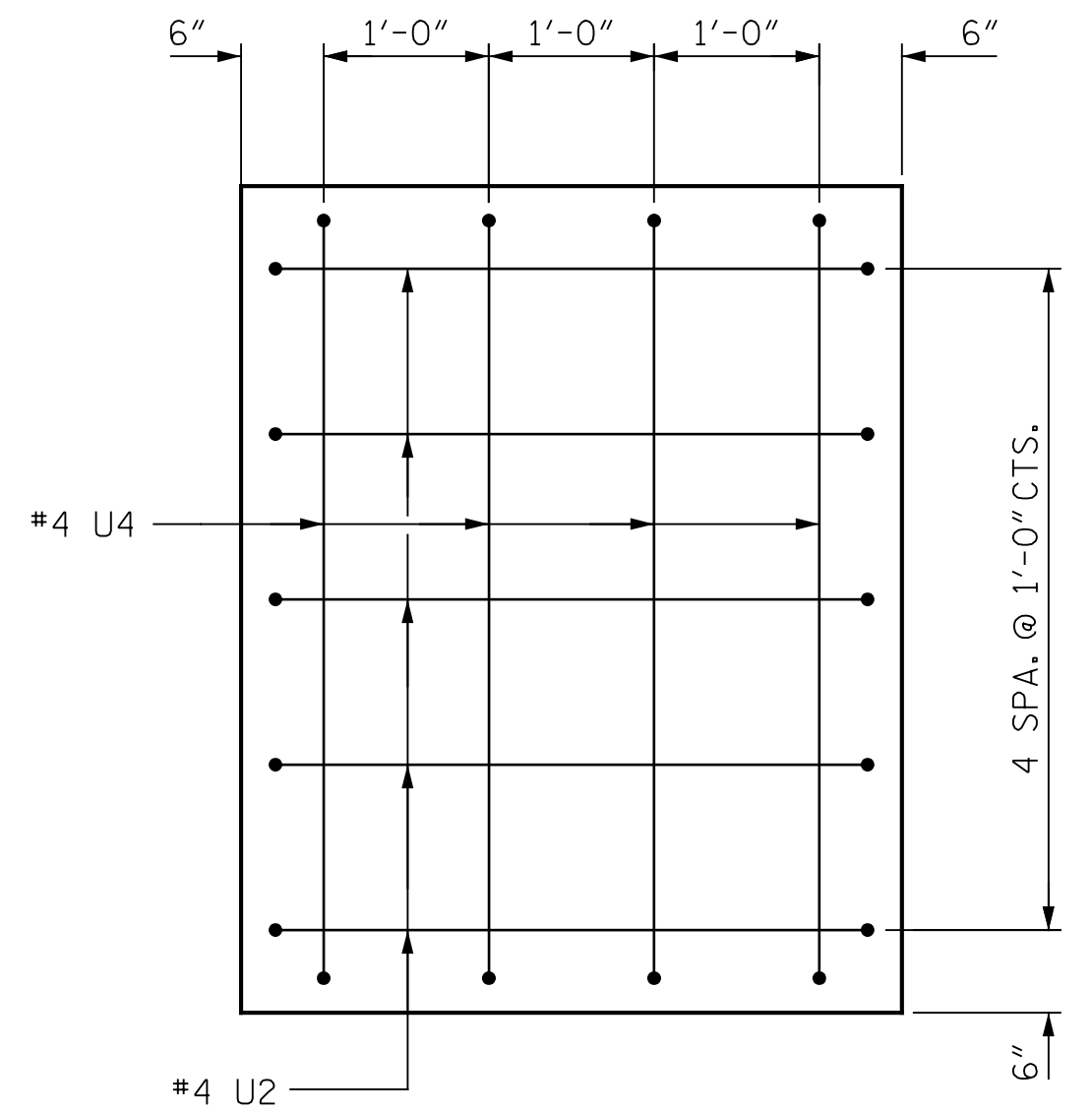
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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-66
1			3			TOTAL SHEETS
2			4			125

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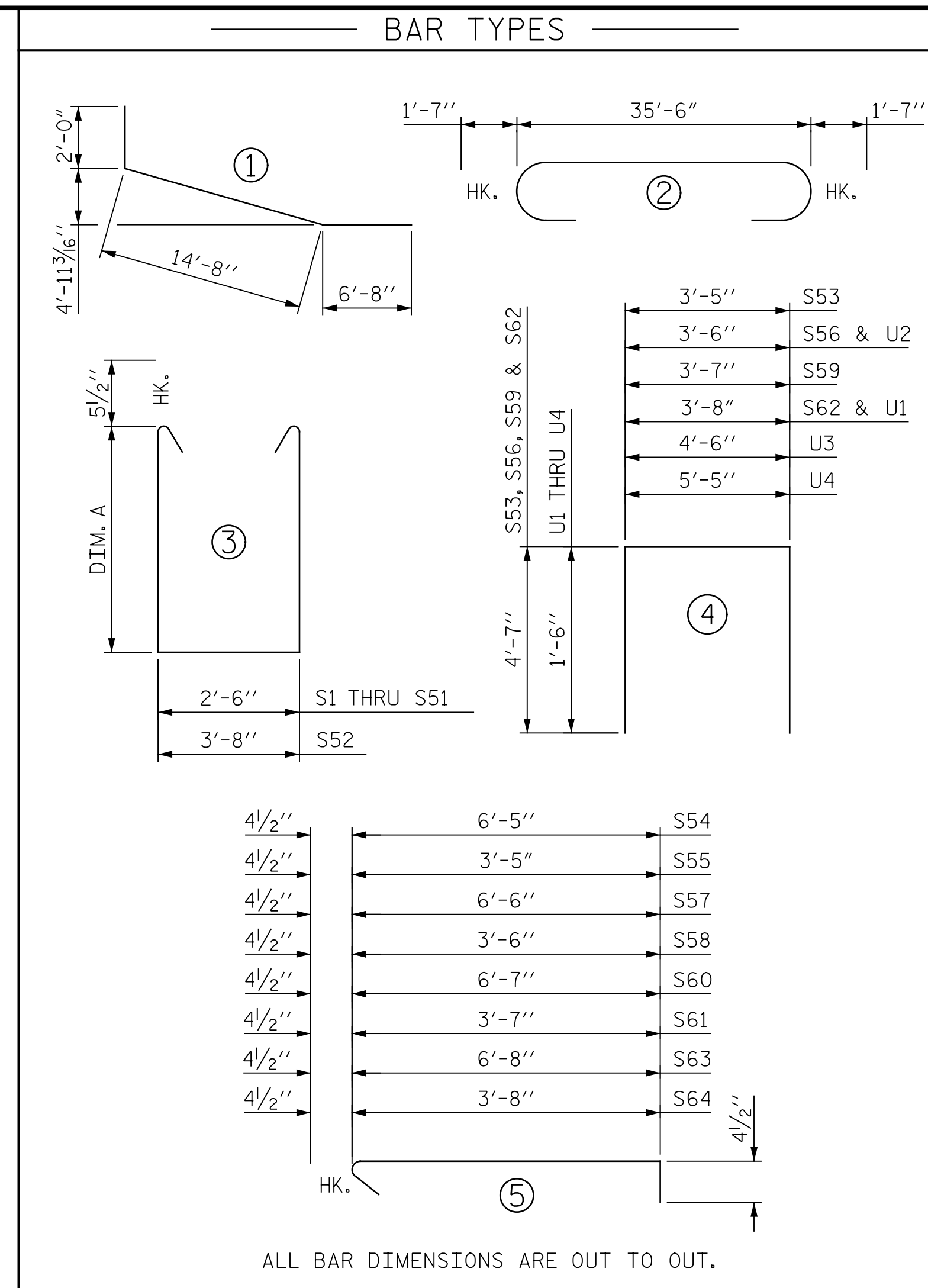
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VIEW X-X



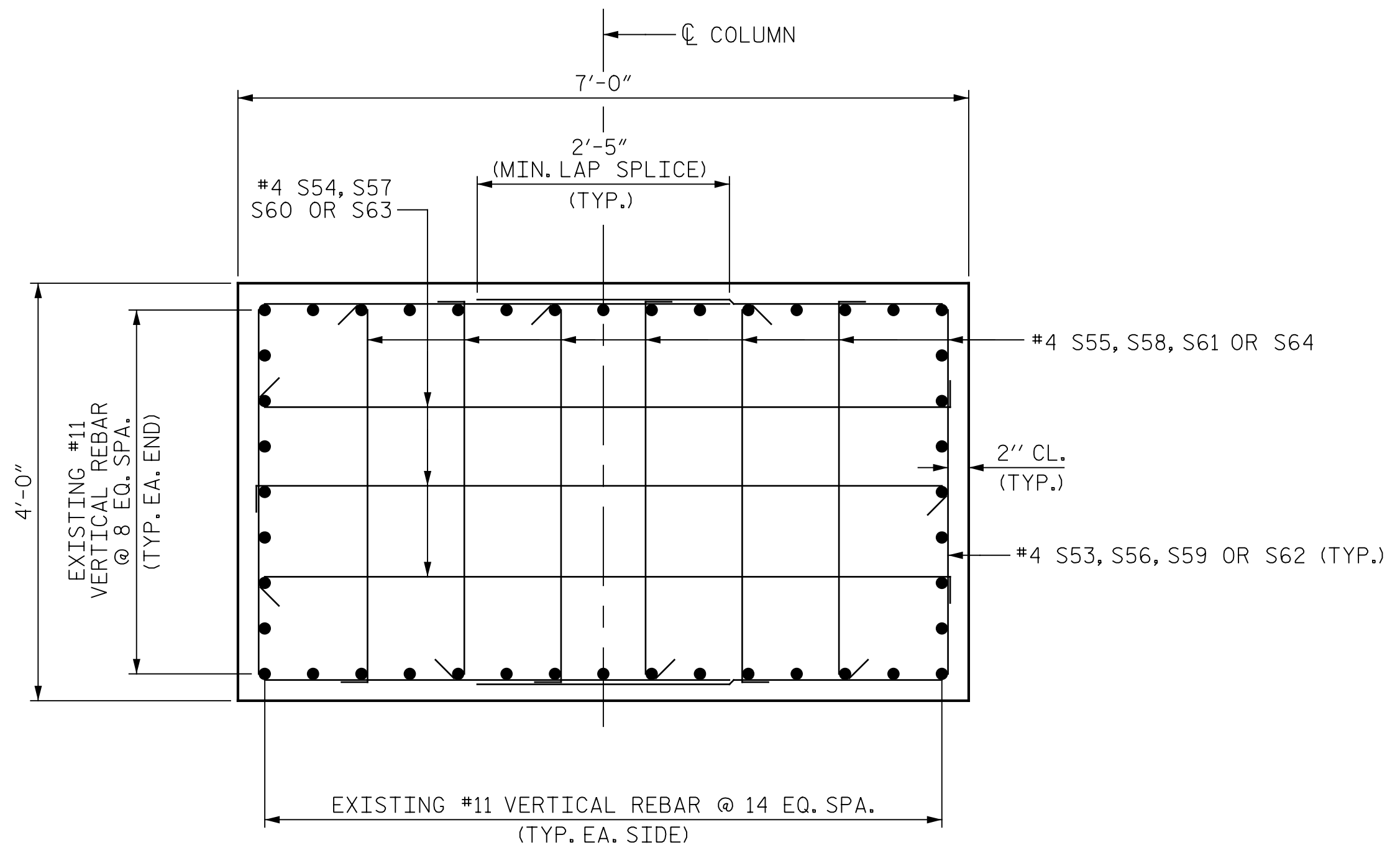
VIEW Y-Y



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL (FOR ONE BENT)													
BAR	NO.	SIZE	TYPE	DIM. A	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM. A	LENGTH	WEIGHT
B1	12	#9	1	-	23'-4"	952	S29	2	#5	3	9'-2 1/2"	21'-10"	46
B2	2	#8	STR	-	12'-7"	67	S30	2	#5	3	9'-0 1/2"	21'-6"	45
B3	2	#8	STR	-	16'-9"	89	S31	2	#5	3	8'-11"	21'-3"	44
B4	2	#8	STR	-	21'-0"	112	S32	2	#5	3	8'-9"	20'-11"	44
B5	2	#8	STR	-	25'-2"	134	S33	2	#5	3	8'-6 1/2"	20'-6"	43
B6	2	#8	STR	-	29'-4"	157	S34	2	#5	3	8'-4"	20'-1"	42
B7	2	#8	STR	-	33'-7"	179	S35	2	#5	3	8'-1 1/2"	19'-8"	41
B8	10	#8	STR	-	35'-8"	952	S36	2	#5	3	7'-11"	19'-3"	40
B9	12	#11	STR	-	35'-8"	2274	S37	2	#5	3	7'-8 1/2"	18'-10"	39
B10	8	#11	2	-	38'-8"	1643	S38	2	#5	3	7'-6"	18'-5"	38
B11	6	#4	STR	-	10'-9"	43	S39	2	#5	3	7'-3 1/2"	18'-0"	38
B12	8	#11	STR	-	13'-8"	581	S40	2	#5	3	7'-1"	17'-7"	37
B13	6	#4	STR	-	2'-11"	12	S41	2	#5	3	6'-10 1/2"	17'-2"	36
B14	22	#4	STR	-	3'-8"	54	S42	2	#5	3	6'-8"	16'-9"	35
							S43	2	#5	3	6'-5 1/2"	16'-4"	34
S1	2	#5	3	5'-5 1/2"	14'-4"	30	S44	2	#5	3	6'-3"	15'-11"	33
S2	2	#5	3	5'-8"	14'-9"	31	S45	2	#5	3	6'-0 1/2"	15'-6"	32
S3	2	#5	3	5'-10 1/2"	15'-2"	32	S46	2	#5	3	5'-10"	15'-1"	31
S4	2	#5	3	6'-1"	15'-7"	33	S47	2	#5	3	5'-7 1/2"	14'-8"	31
S5	2	#5	3	6'-3 1/2"	16'-0"	33	S48	2	#5	3	5'-5"	14'-3"	30
S6	2	#5	3	6'-6"	16'-5"	34	S49	2	#5	3	5'-2 1/2"	13'-10"	29
S7	2	#5	3	6'-8 1/2"	16'-10"	35	S50	2	#5	3	5'-0"	13'-5"	28
S8	2	#5	3	6'-11"	17'-3"	36	S51	2	#5	3	4'-9 1/2"	13'-0"	27
S9	2	#5	3	7'-1 1/2"	17'-8"	37	S52	6	#5	3	9'-7 1/2"	23'-10"	149
S10	2	#5	3	7'-4"	18'-1"	38	S53	6	#4	4	-	12'-7"	50
S11	2	#5	3	7'-6 1/2"	18'-6"	39	S54	9	#4	5	-	7'-2"	43
S12	2	#5	3	7'-9"	18'-11"	39	S55	18	#4	5	-	4'-2"	50
S13	2	#5	3	7'-11 1/2"	19'-4"	40	S56	8	#4	4	-	12'-8"	68
S14	2	#5	3	8'-2"	19'-9"	41	S57	12	#4	5	-	7'-3"	58
S15	2	#5	3	8'-4 1/2"	20'-2"	42	S58	24	#4	5	-	4'-3"	68
S16	2	#5	3	8'-7"	20'-7"	43	S59	8	#4	4	-	12'-9"	68
S17	2	#5	3	8'-9 1/2"	21'-0"	44	S60	12	#4	5	-	7'-4"	59
S18	2	#5	3	9'-0"	21'-5"	45	S61	24	#4	5	-	4'-4"	69
S19	2	#5	3	9'-2 1/2"	21'-10"	46	S62	10	#4	4	-	12'-10"	86
S20	2	#5	3	9'-5"	22'-3"	46	S63	15	#4	5	-	7'-5"	74
S21	2	#5	3	9'-6 1/2"	22'-6"	47	S64	30	#4	5	-	4'-5"	89
S22	2	#5	3	9'-8 1/2"	22'-10"	48							
S23	2	#5	3	9'-10"	23'-1"	48	U1	29	#4	4	-	6'-8"	129
S24	2	#5	3	10'-0"	23'-5"	49	U2	11	#4	4	-	6'-6"	48
S25	2	#5	3	10'-1 1/2"	23'-8"	49	U3	4	#4	4	-	7'-6"	20
S26	8	#5	3	9'-7 1/2"	22'-8"	189	U4	4	#4	4	-	8'-5"	22
S27	2	#5	3	9'-6"	22'-5"	47							
S28	2	#5	3	9'-4"	22'-1"	46							
V1	22	#11	STR	-	7'-9"	906							

REINFORCING STEEL	LBS.	11,435
MECHANICAL BUTT SPLICES	EA.	22
CLASS A CONCRETE		
CAP & COLUMN	53.7	CU. YDS.
TOTAL	53.7	CU. YDS.



SECTION E-E

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 6 AND 7



DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANNAACONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

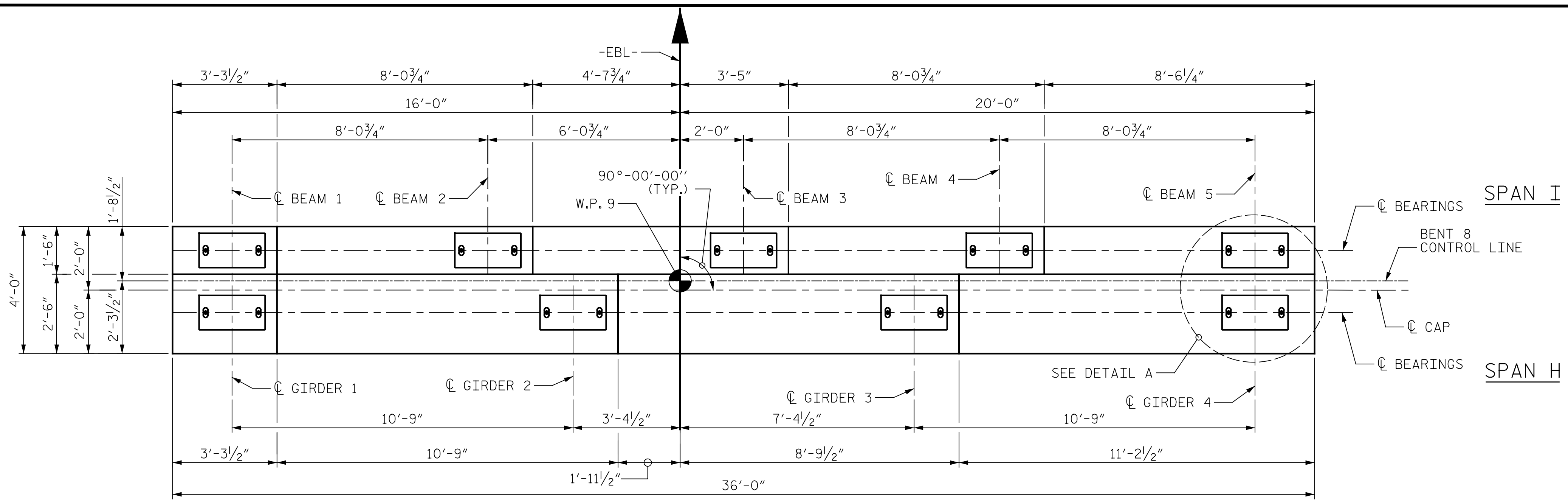
PLANS PREPARED BY:
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 (919) 420-7660
 NC Lic. No. F-0270

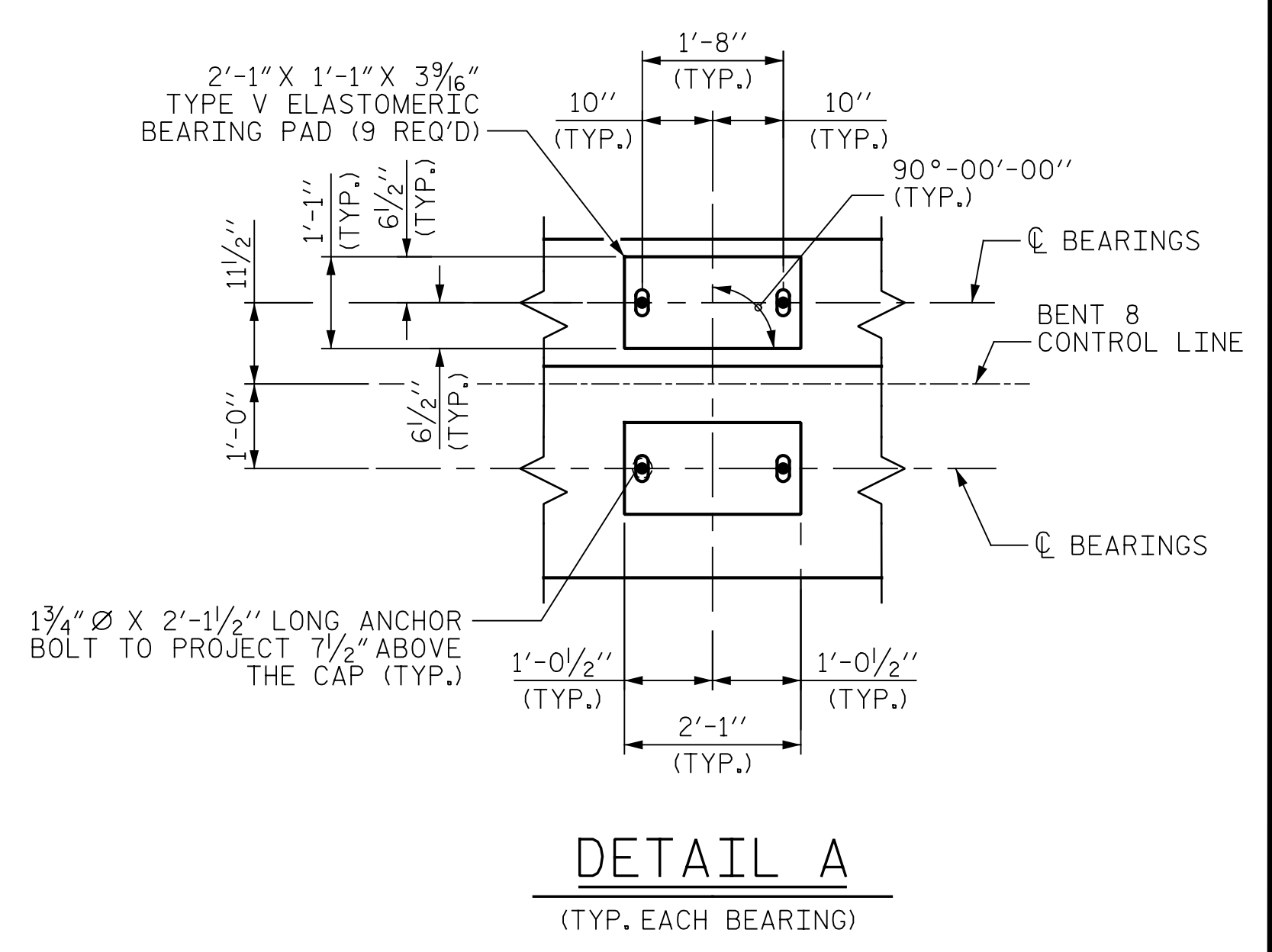
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2			4			125

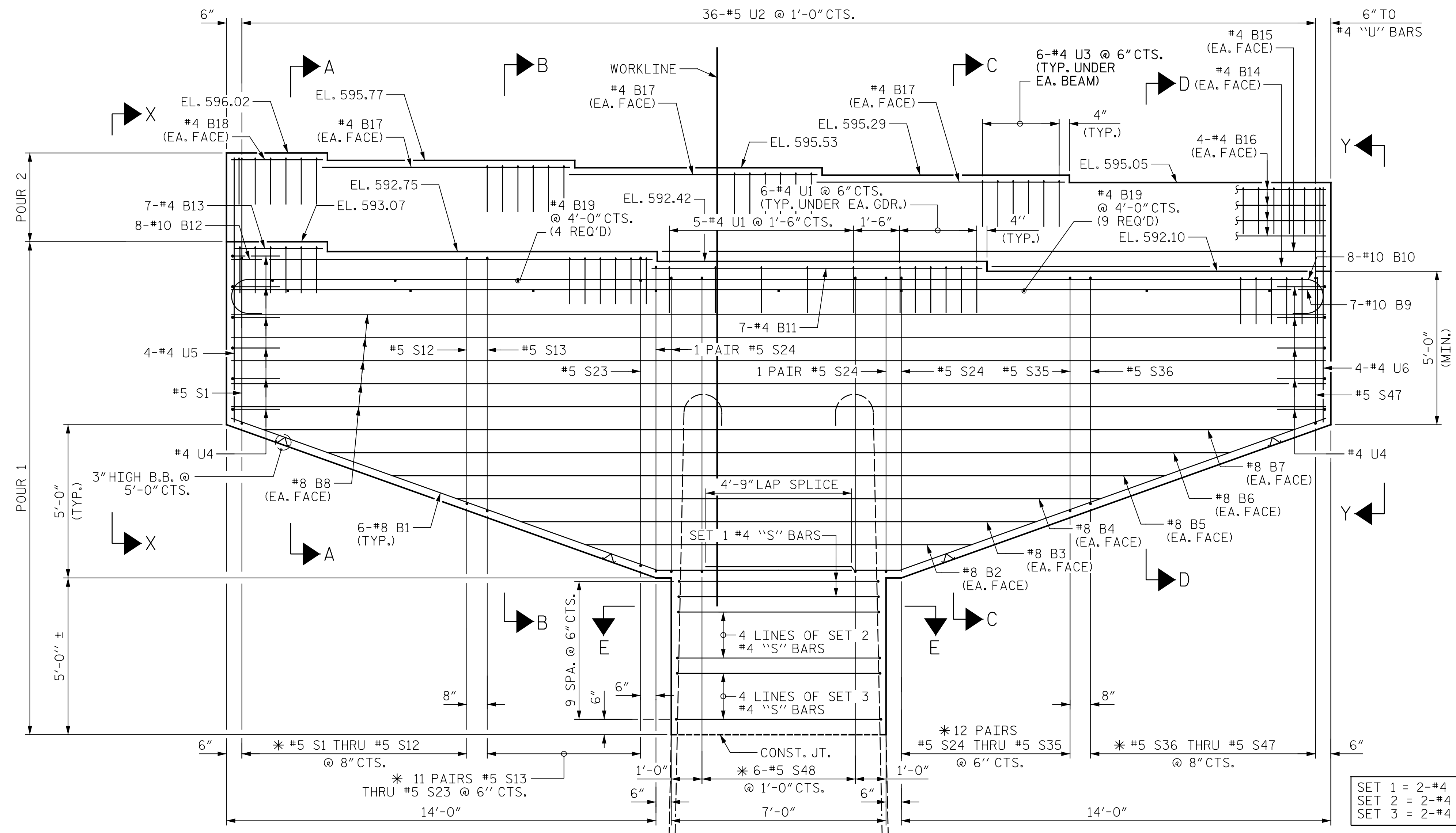
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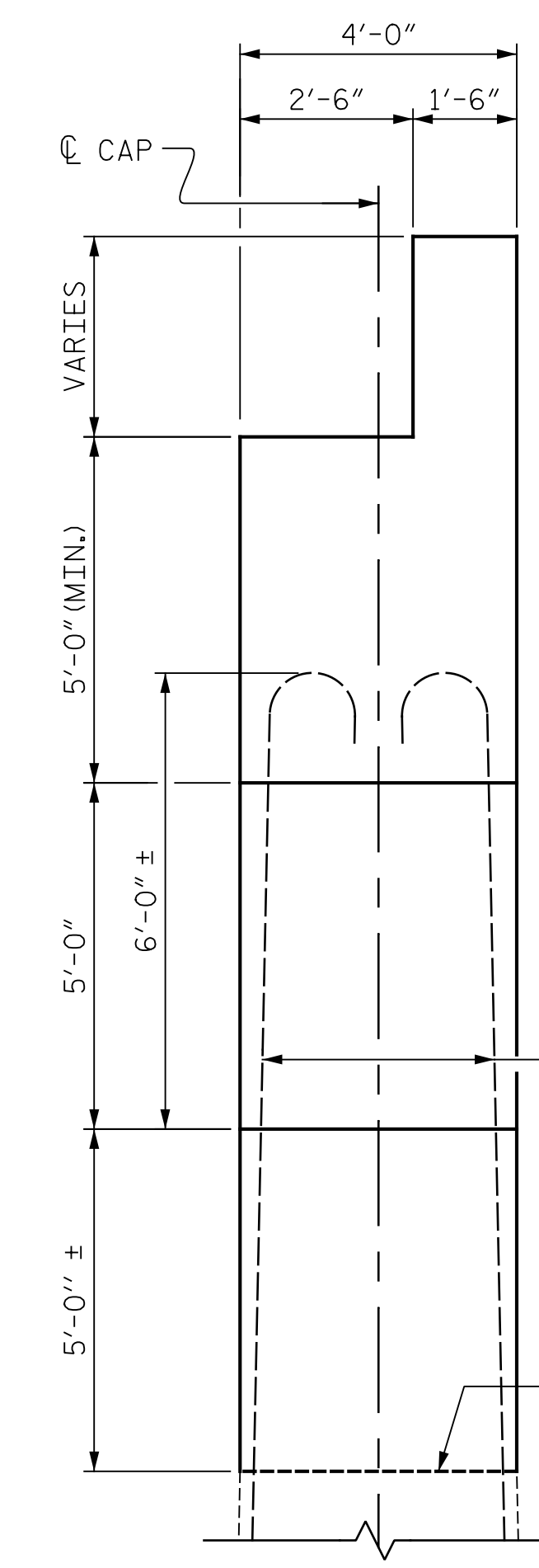
PLAN



DETAIL A
(TYP. EACH BEARING)



ELEVATION



END VIEW

NOTES:

STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE CENTERLINE JOINT IN THE DECK SLAB (CONTROL LINE) IS OFFSET FROM THE CENTERLINE BENT.
 THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

PROJECT NO. B-4626
STANLY, ROWAN
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 STATION: 45+22.65 -EBL-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT 8**



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2			4			

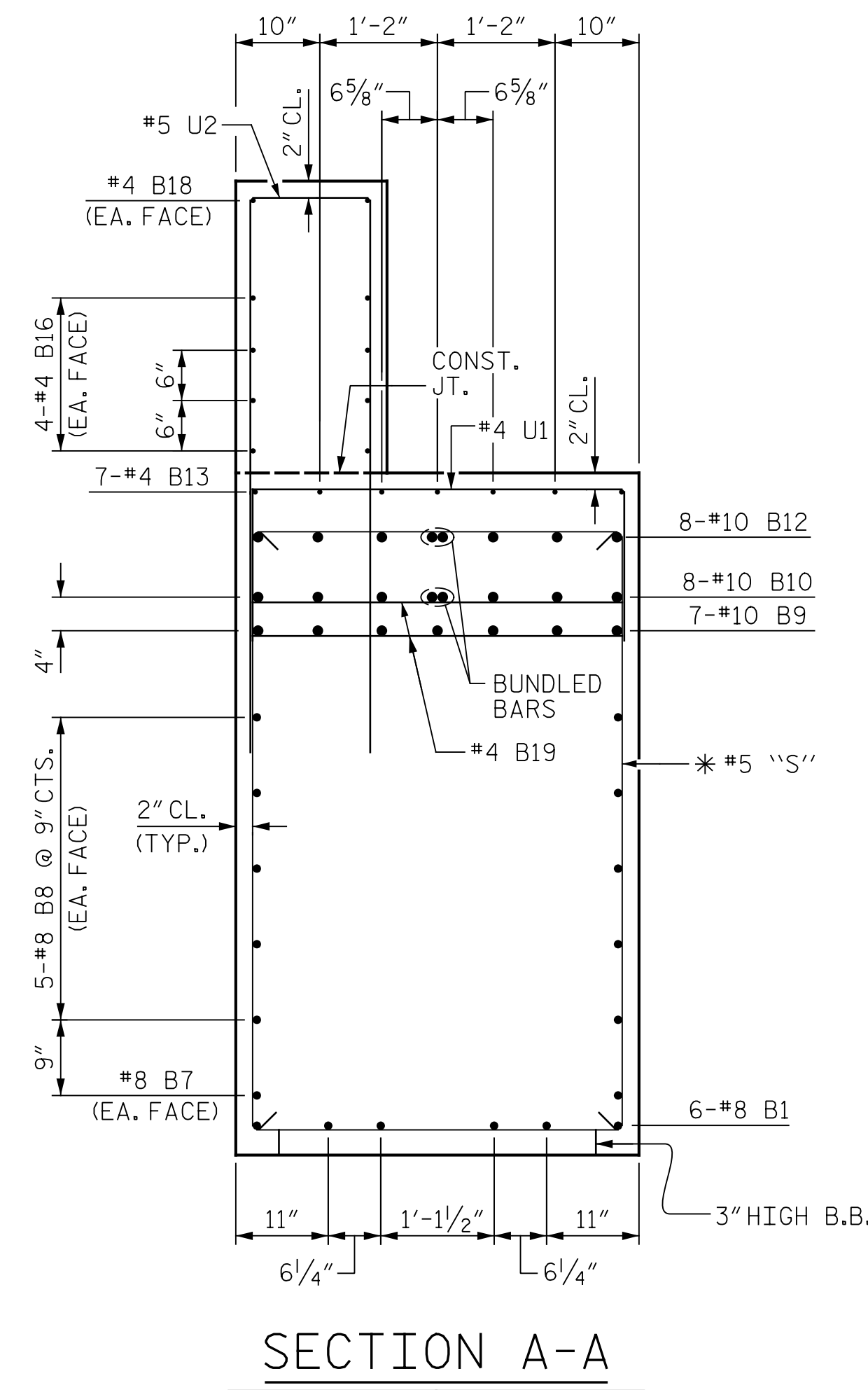
DRAWN BY: J. MYA DATE: 04/2021
 CHECKED BY: J. YANACCONI DATE: 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE: 05/2021

* INVERT ALTERNATE STIRRUPS

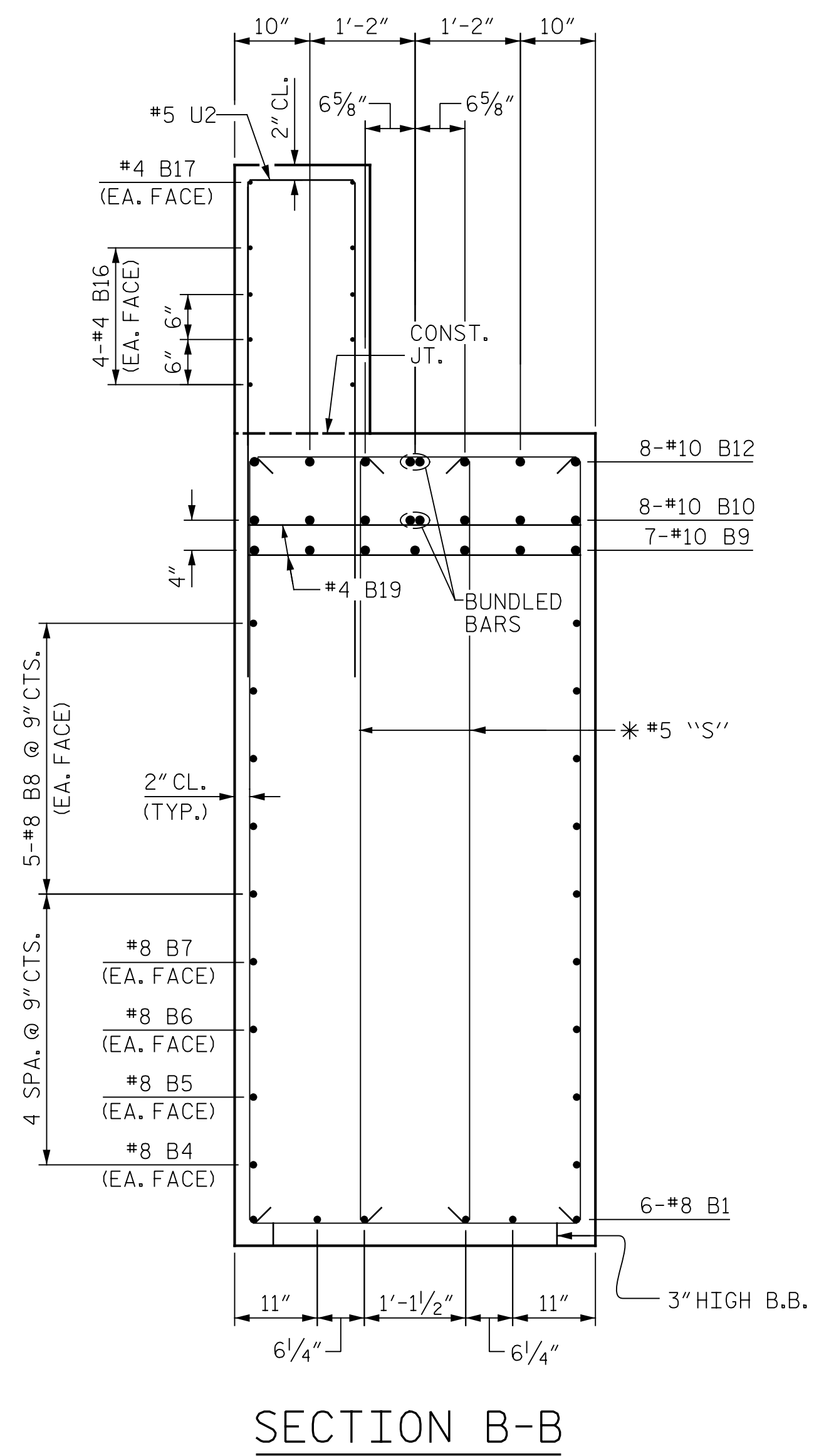
44-EXISTING #11 REBARS TO REMAIN

SET 1 = 2-#4 S49, 3-#4 S50 & 6-#4 S51
 SET 2 = 2-#4 S52, 3-#4 S53 & 6-#4 S54
 SET 3 = 2-#4 S55, 3-#4 S56 & 6-#4 S57

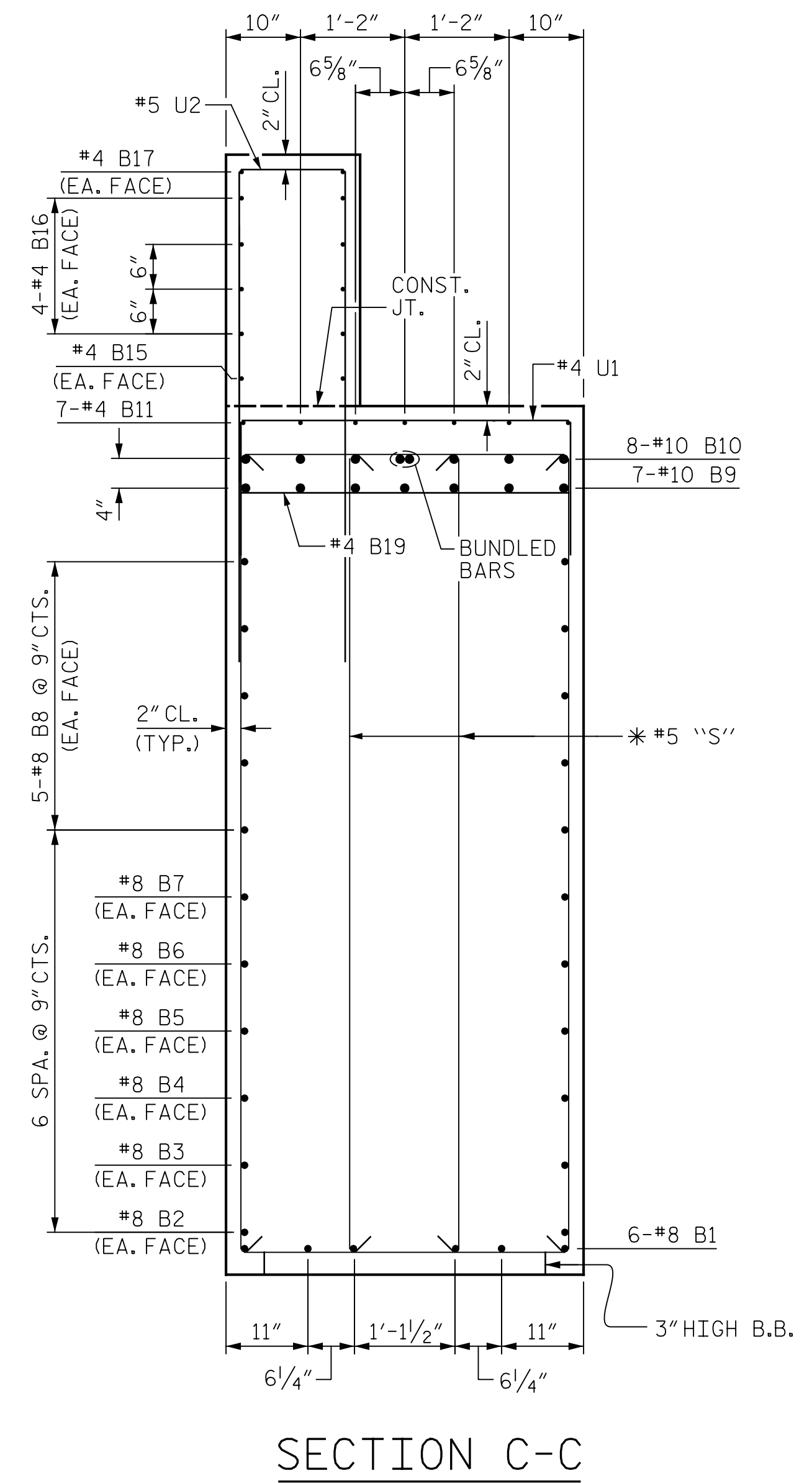
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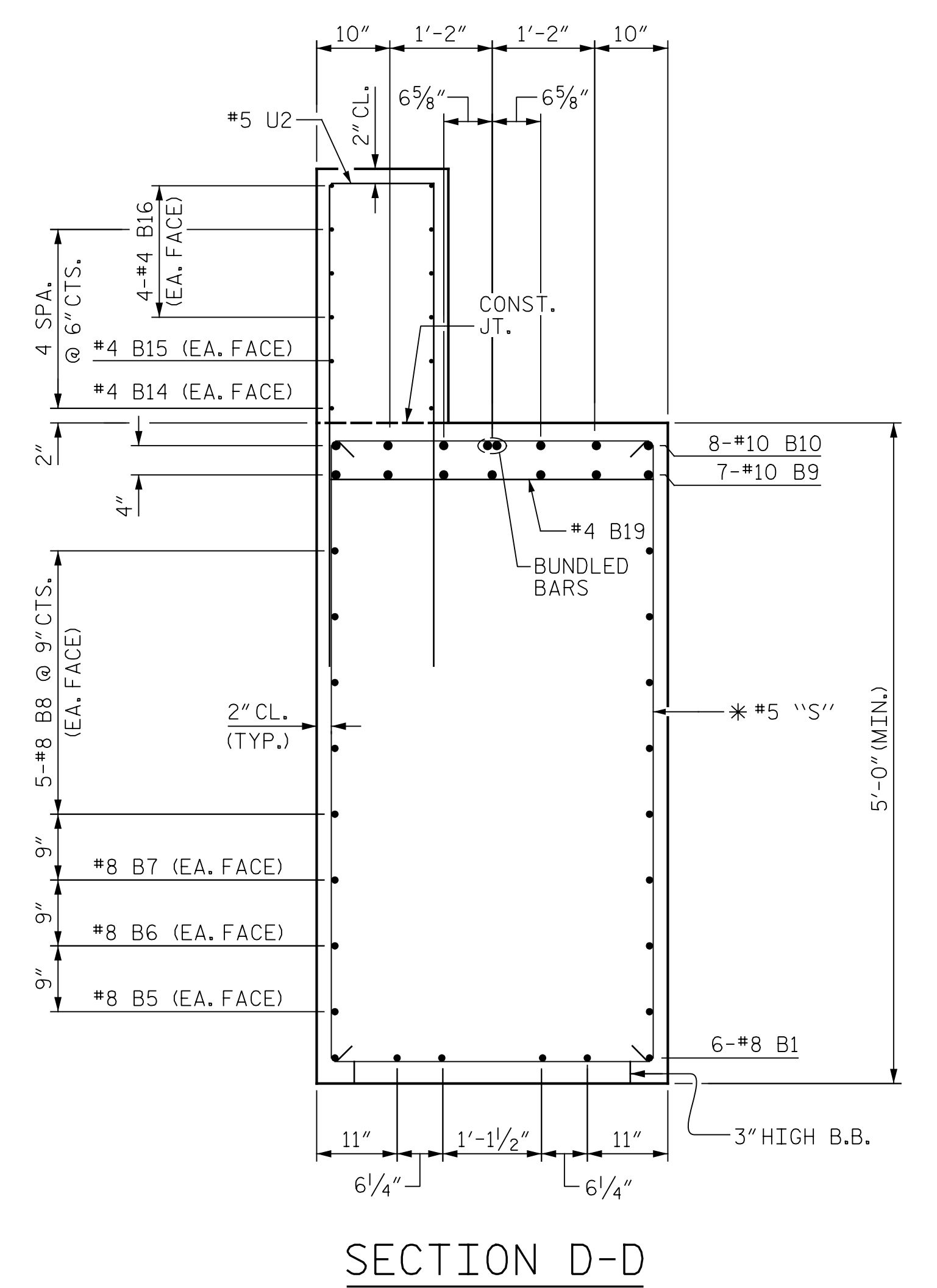
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

* INVERT ALTERNATE STIRRUPS

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 8

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANNAACONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

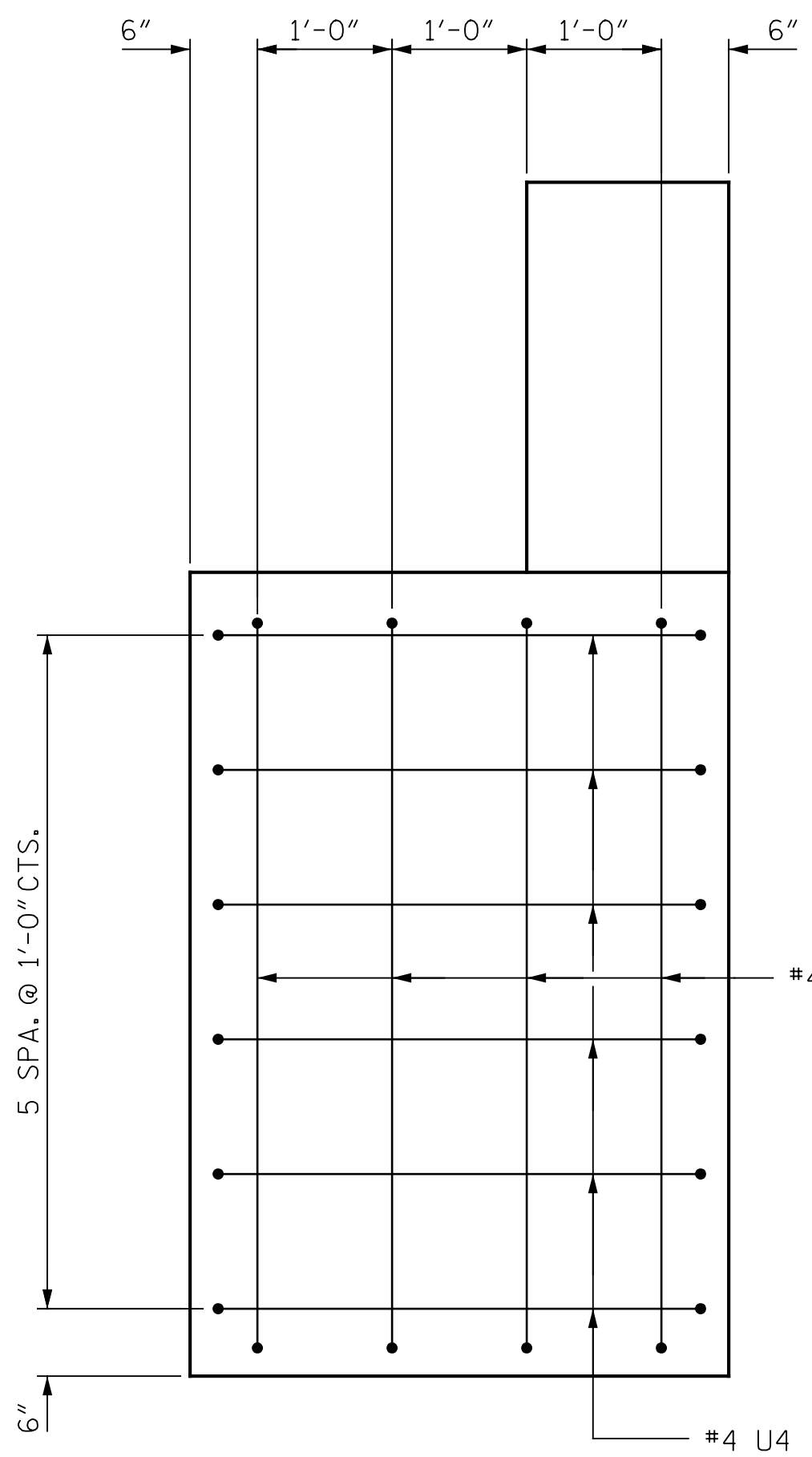
PLANS PREPARED BY:
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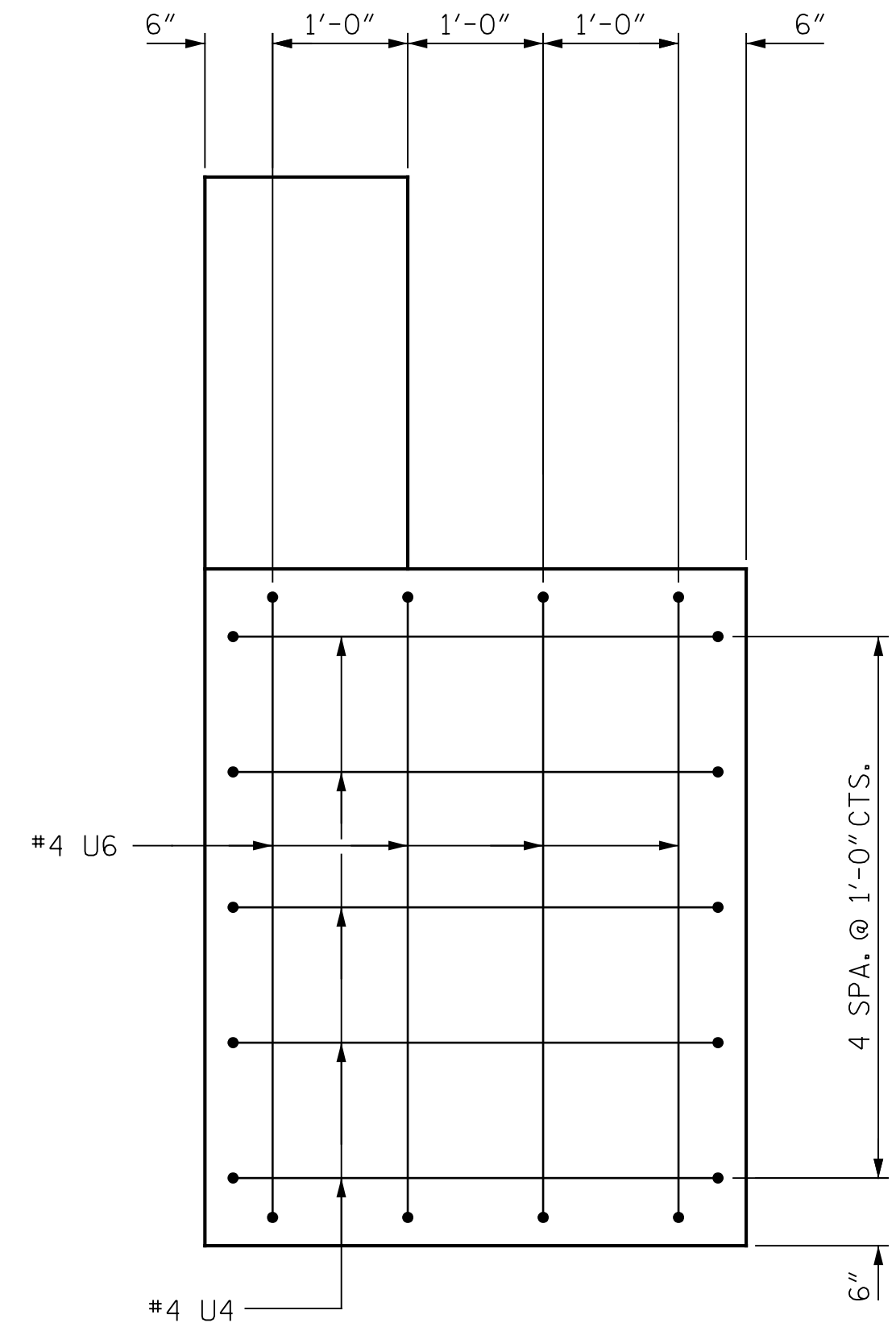
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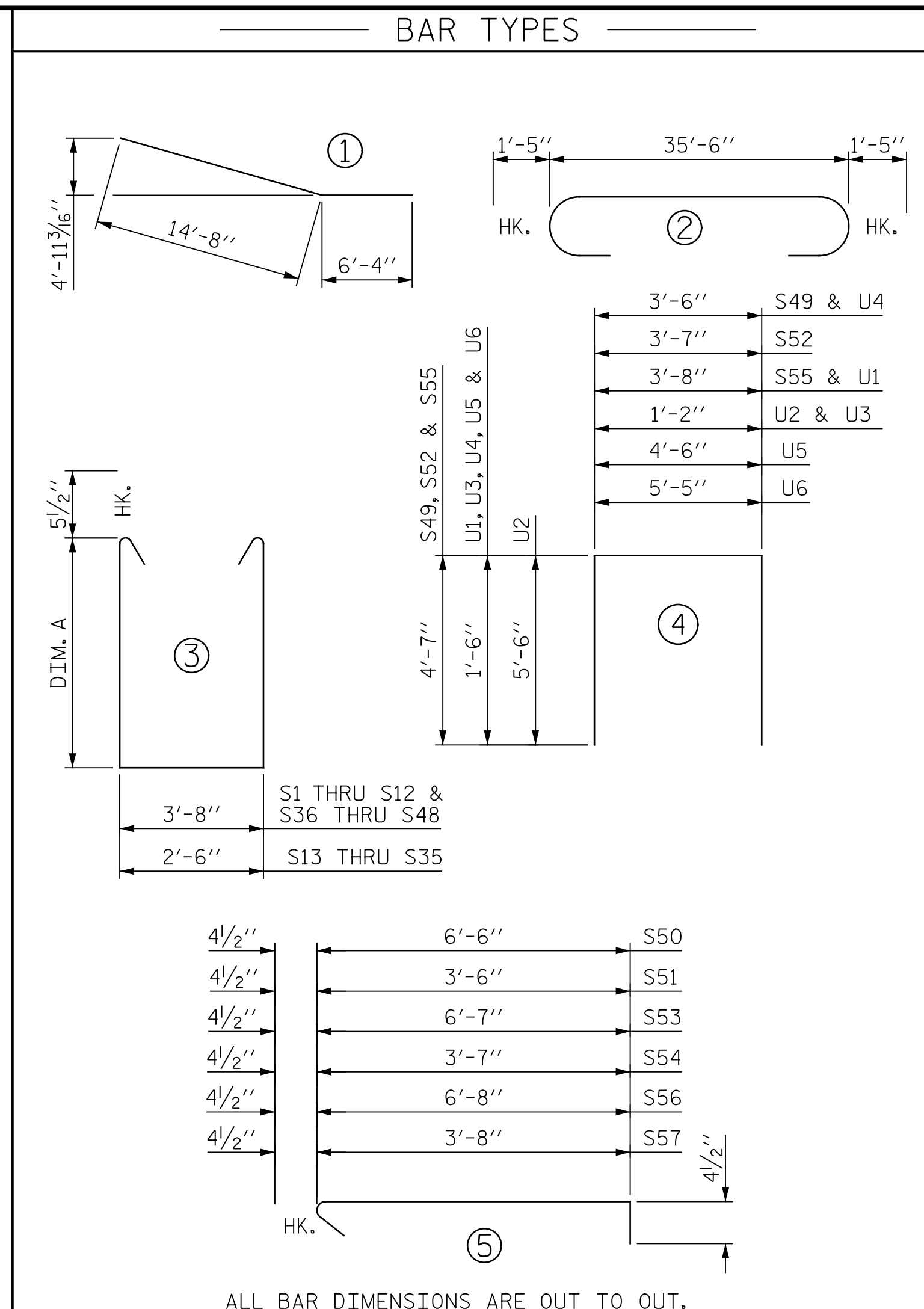
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VIEW X-X



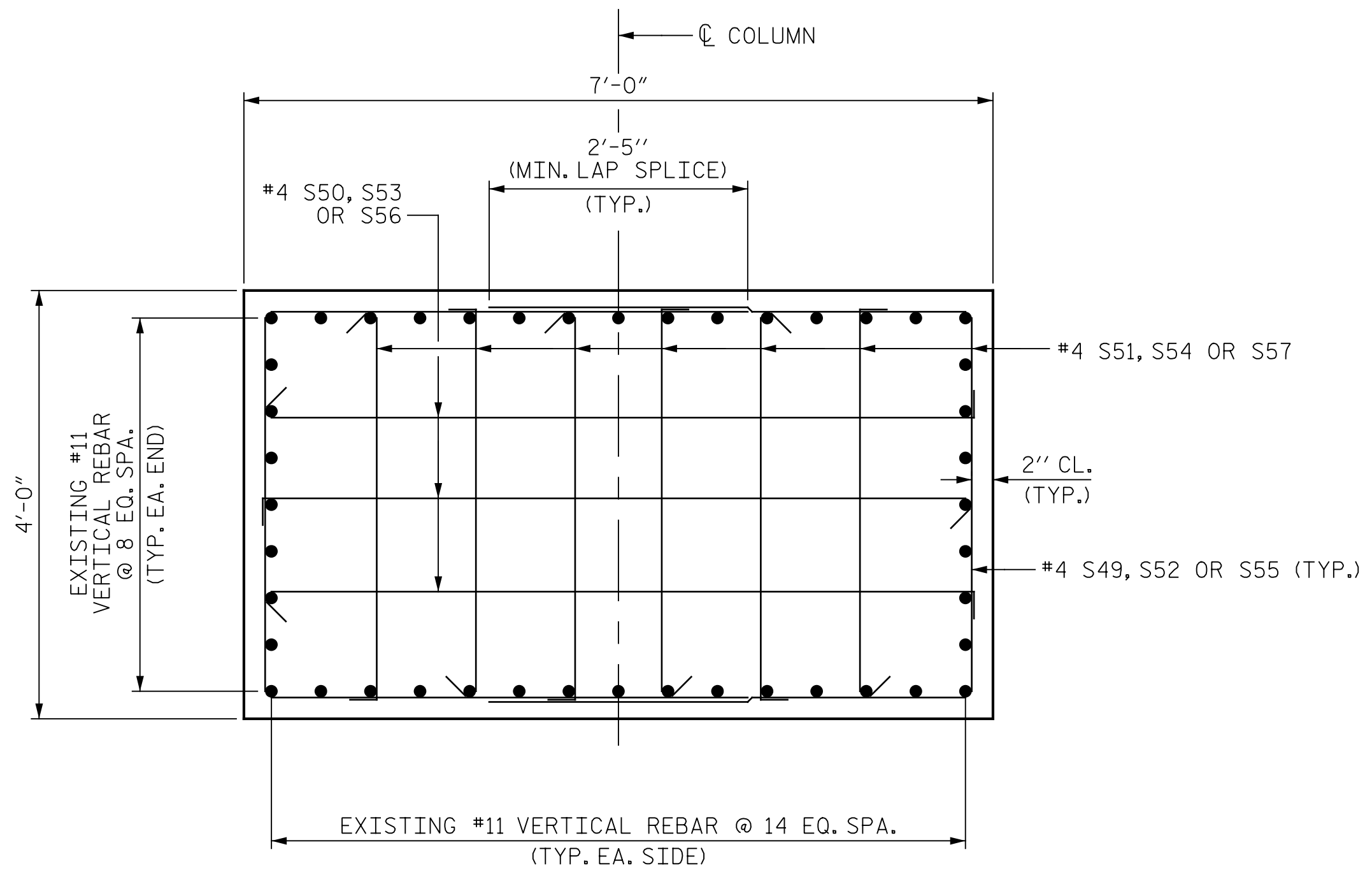
VIEW Y-Y



ALL BAR DIMENSIONS ARE OUT TO OUT.

BAR TYPES										BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	DIM. A	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	DIM. A	LENGTH	WEIGHT		
B1	12	#8	1	-	21'-0"	673	S24	8	#5	3	9'-7 1/2"	22'-8"	189		
B2	2	#8	STR	-	12'-7"	67	S25	2	#5	3	9'-5"	22'-3"	46		
B3	2	#8	STR	-	16'-9"	89	S26	2	#5	3	9'-3"	21'-11"	46		
B4	2	#8	STR	-	21'-0"	112	S27	2	#5	3	9'-1"	21'-7"	45		
B5	2	#8	STR	-	25'-2"	134	S28	2	#5	3	8'-11"	21'-3"	44		
B6	2	#8	STR	-	29'-4"	157	S29	2	#5	3	8'-8 1/2"	20'-10"	43		
B7	2	#8	STR	-	33'-7"	179	S30	2	#5	3	8'-6 1/2"	20'-6"	43		
B8	10	#8	STR	-	35'-8"	952	S31	2	#5	3	8'-4 1/2"	20'-2"	42		
B9	7	#10	STR	-	35'-8"	1074	S32	2	#5	3	8'-2"	19'-9"	41		
B10	8	#10	2	-	38'-4"	1320	S33	2	#5	3	8'-0"	19'-5"	41		
B11	7	#4	STR	-	10'-9"	50	S34	2	#5	3	7'-10"	19'-1"	40		
B12	8	#10	STR	-	13'-8"	470	S35	2	#5	3	7'-8"	18'-9"	39		
B13	7	#4	STR	-	2'-11"	14	S36	1	#5	3	7'-5"	19'-5"	20		
B14	2	#4	STR	-	10'-10"	14	S37	1	#5	3	7'-2"	18'-11"	20		
B15	2	#4	STR	-	21'-7"	29	S38	1	#5	3	6'-11"	18'-5"	19		
B16	8	#4	STR	-	35'-8"	191	S39	1	#5	3	6'-8 1/2"	18'-0"	19		
B17	6	#4	STR	-	8'-1"	32	S40	1	#5	3	6'-5 1/2"	17'-6"	18		
B18	2	#4	STR	-	2'-11"	4	S41	1	#5	3	6'-2 1/2"	17'-0"	18		
B19	13	#4	STR	-	3'-8"	32	S42	1	#5	3	6'-0"	16'-7"	17		
S1	1	#5	3	5'-5"	15'-5"	16	S43	1	#5	3	5'-9"	16'-1"	17		
S2	1	#5	3	5'-8"	15'-11"	17	S44	1	#5	3	5'-6"	15'-7"	16		
S3	1	#5	3	5'-11"	16'-5"	17	S45	1	#5	3	5'-3"	15'-1"	16		
S4	1	#5	3	6'-2"	16'-11"	18	S46	1	#5	3	5'-0 1/2"	14'-8"	15		
S5	1	#5	3	6'-4 1/2"	17'-4"	18	S47	1	#5	3	4'-9 1/2"	14'-2"	15		
S6	1	#5	3	6'-7 1/2"	17'-10"	19	S48	6	#5	3	9'-7 1/2"	23'-10"	149		
S7	1	#5	3	6'-10 1/2"	18'-4"	19	S49	4	#4	4	-	12'-8"	34		
S8	1	#5	3	7'-1"	18'-9"	20	S50	6	#4	5	-	7'-3"	29		
S9	1	#5	3	7'-4"	19'-3"	20	S51	12	#4	5	-	4'-3"	34		
S10	1	#5	3	7'-7"	19'-9"	21	S52	8	#4	4	-	12'-9"	68		
S11	1	#5	3	7'-10"	20'-3"	21	S53	12	#4	5	-	7'-4"	59		
S12	1	#5	3	8'-0 1/2"	20'-8"	22	S54	24	#4	5	-	4'-4"	69		
S13	2	#5	3	8'-3 1/2"	20'-0"	42	S55	8	#4	4	-	12'-10"	69		
S14	2	#5	3	8'-5 1/2"	20'-4"	42	S56	12	#4	5	-	7'-5"	59		
S15	2	#5	3	8'-8"	20'-9"	43	S57	24	#4	5	-	4'-5"	71		
S16	2	#5	3	8'-10"	21'-1"	44	U1	29	#4	4	-	6'-8"	129		
S17	2	#5	3	9'-0"	21'-5"	45	U2	36	#5	4	-	12'-2"	457		
S18	2	#5	3	9'-2"	21'-9"	45	U3	30	#4	4	-	4'-2"	84		
S19	2	#5	3	9'-4 1/2"	22'-2"	46	U4	11	#4	4	-	6'-6"	48		
S20	2	#5	3	9'-6 1/2"	22'-6"	47	U5	4	#4	4	-	7'-6"	20		
S21	2	#5	3	9'-8 1/2"	22'-10"	48	U6	4	#4	4	-	8'-5"	22		
S22	2	#5	3	9'-11"	23'-3"	48									
S23	2	#5	3	10'-1"	23'-7"	49									

REINFORCING STEEL	LBS.	8,590
CLASS A CONCRETE		
POUR #1 - CAP & COLUMN	50.1 CU. YDS.	
POUR #2 - CAP STEP	6.0 CU. YDS.	
TOTAL	56.1 CU. YDS.	



SECTION E-E

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
STATION: 45+22.65 -EBL-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 8

REVISIONS

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

SHEET NO. S1-70
TOTAL SHEETS 125



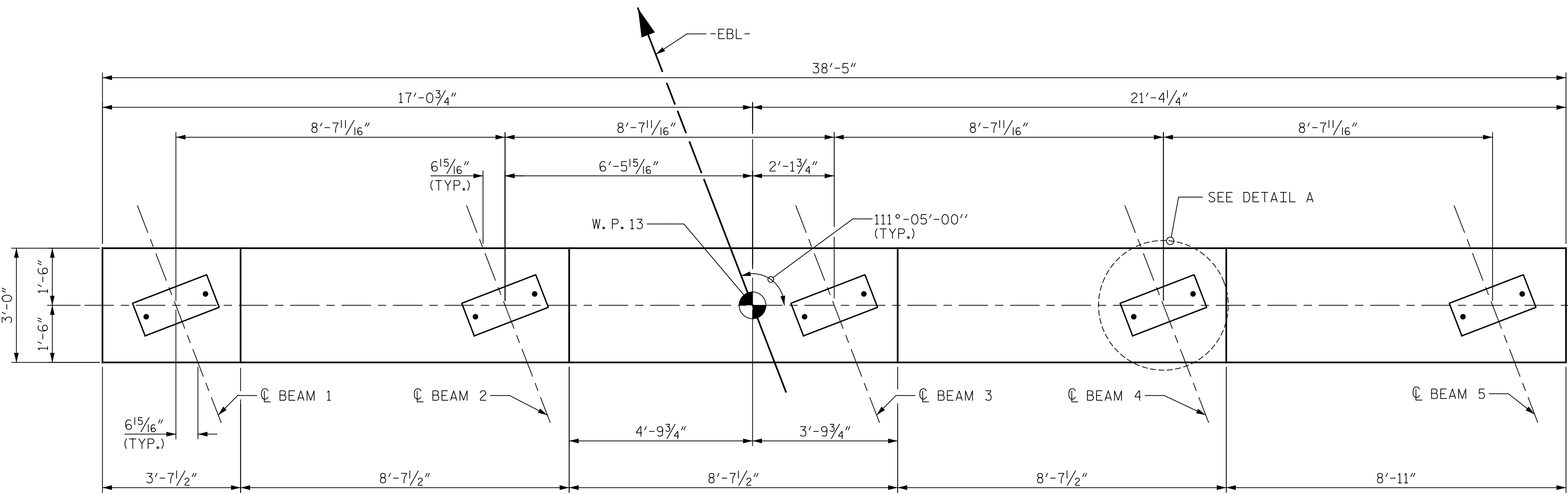
PLANS PREPARED BY:
Gannett Fleming
Excellence Delivered As Promised

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
(919) 420-7660
NC Lic. No. F-0270

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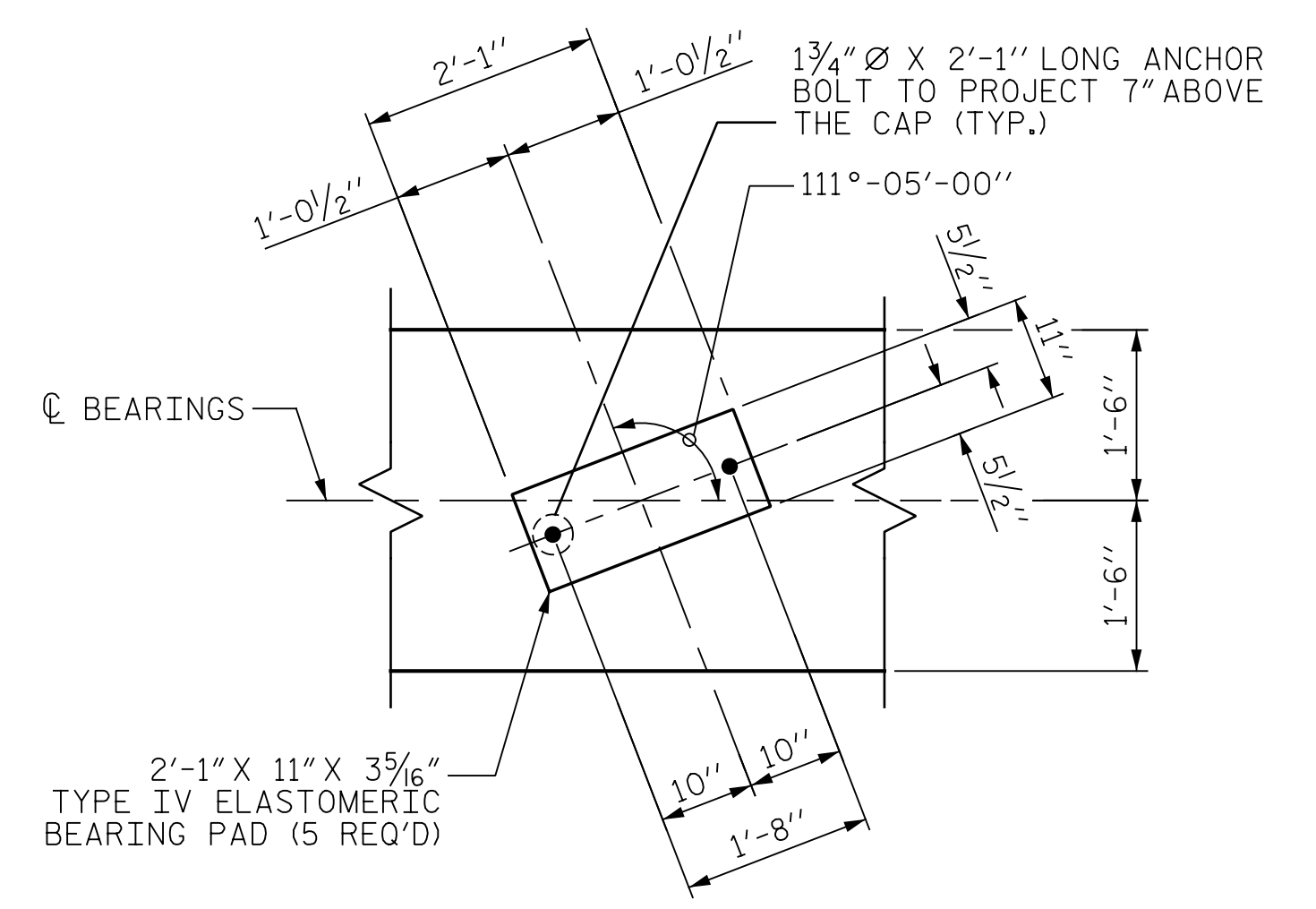
DRAWN BY: J. MYA DATE: 04/2021
CHECKED BY: J. YANACCONI DATE: 05/2021
DESIGN ENGINEER OF RECORD: R. NELSON DATE: 05/2021

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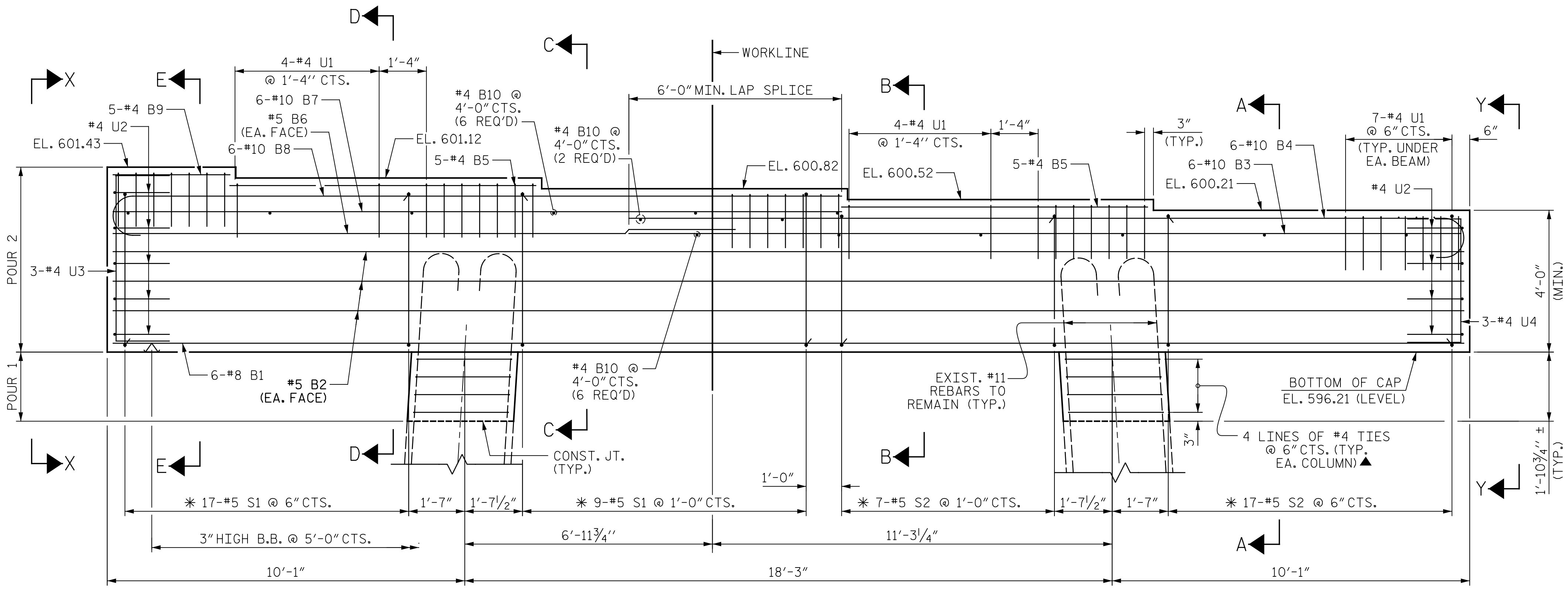


PLAN

NOTES:
 STIRRUPS AND U1 BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.



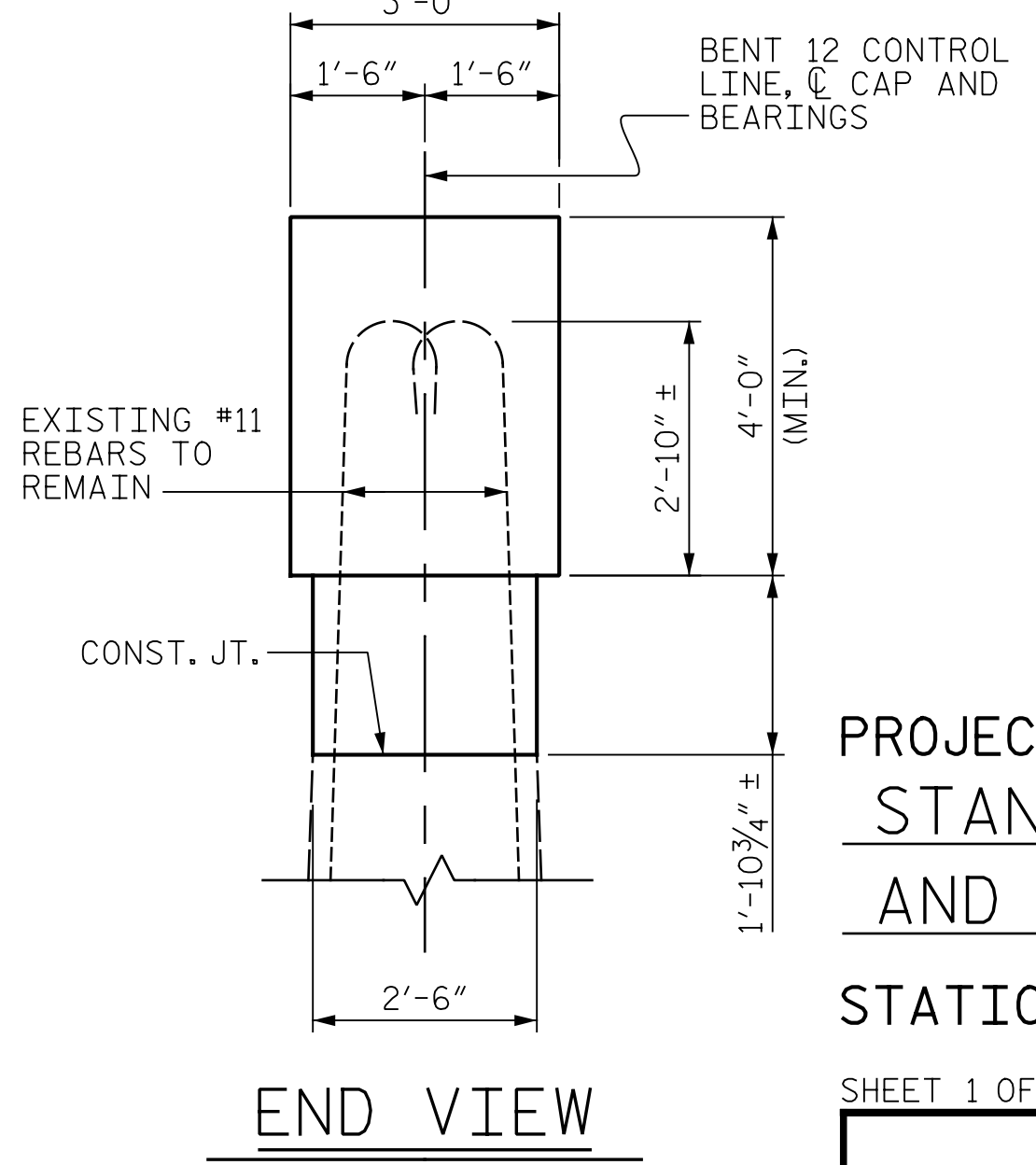
DETAIL A
 (TYP. EACH BEARING)



ELEVATION

* INVERT ALTERNATE STIRRUPS ▲ 1 LINE = 2-#4 S3, 1-#4 S4 & 1-#4 S5

FAR SIDE
 BENT 12 CONTROL LINE, C CAP AND BEARINGS
 NEAR SIDE



END VIEW

PROJECT NO. B-4626
 STANLY, ROWAN
 AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 12



DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

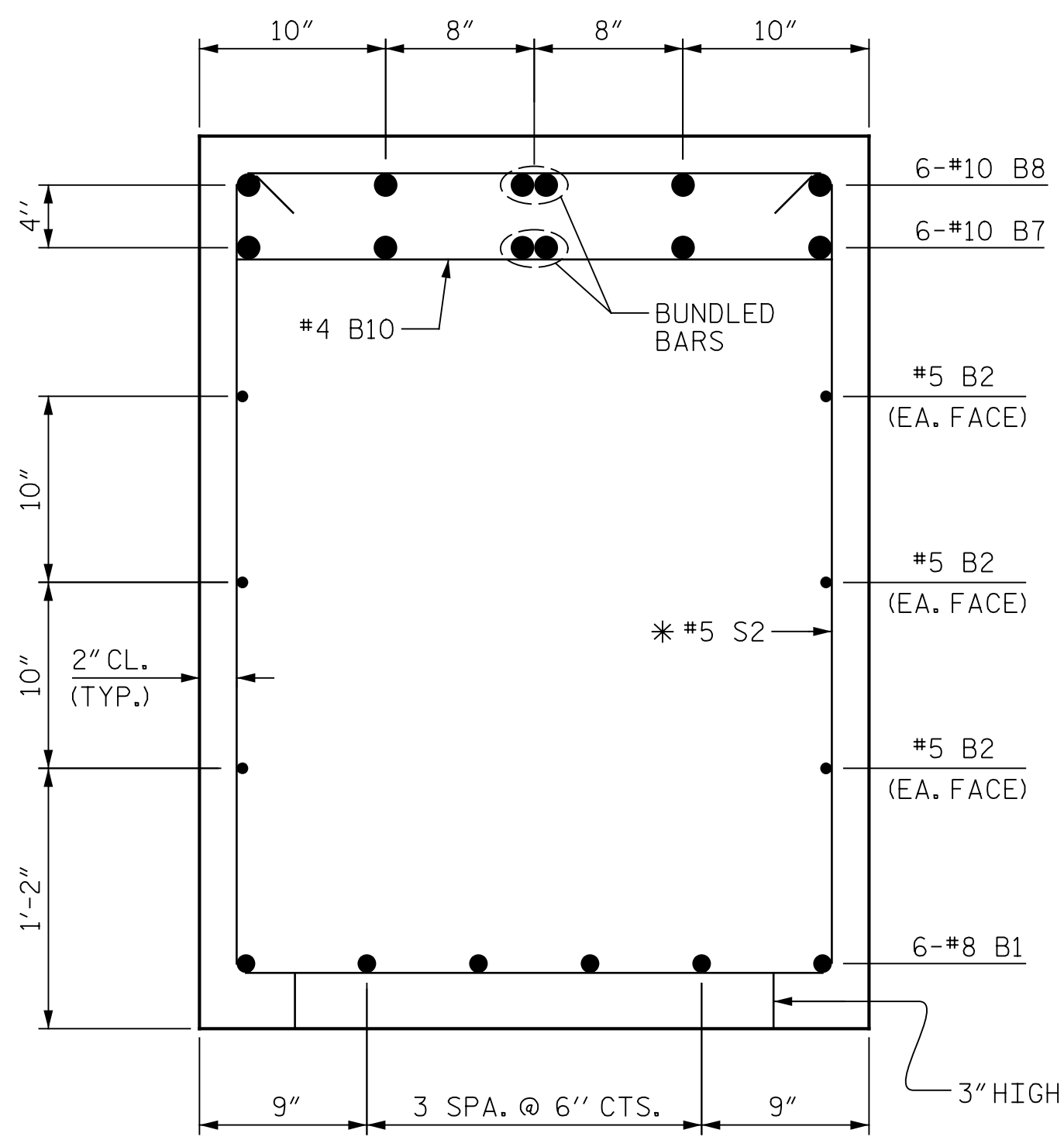
PLANS PREPARED BY:
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 NC Lic. No. F-0270

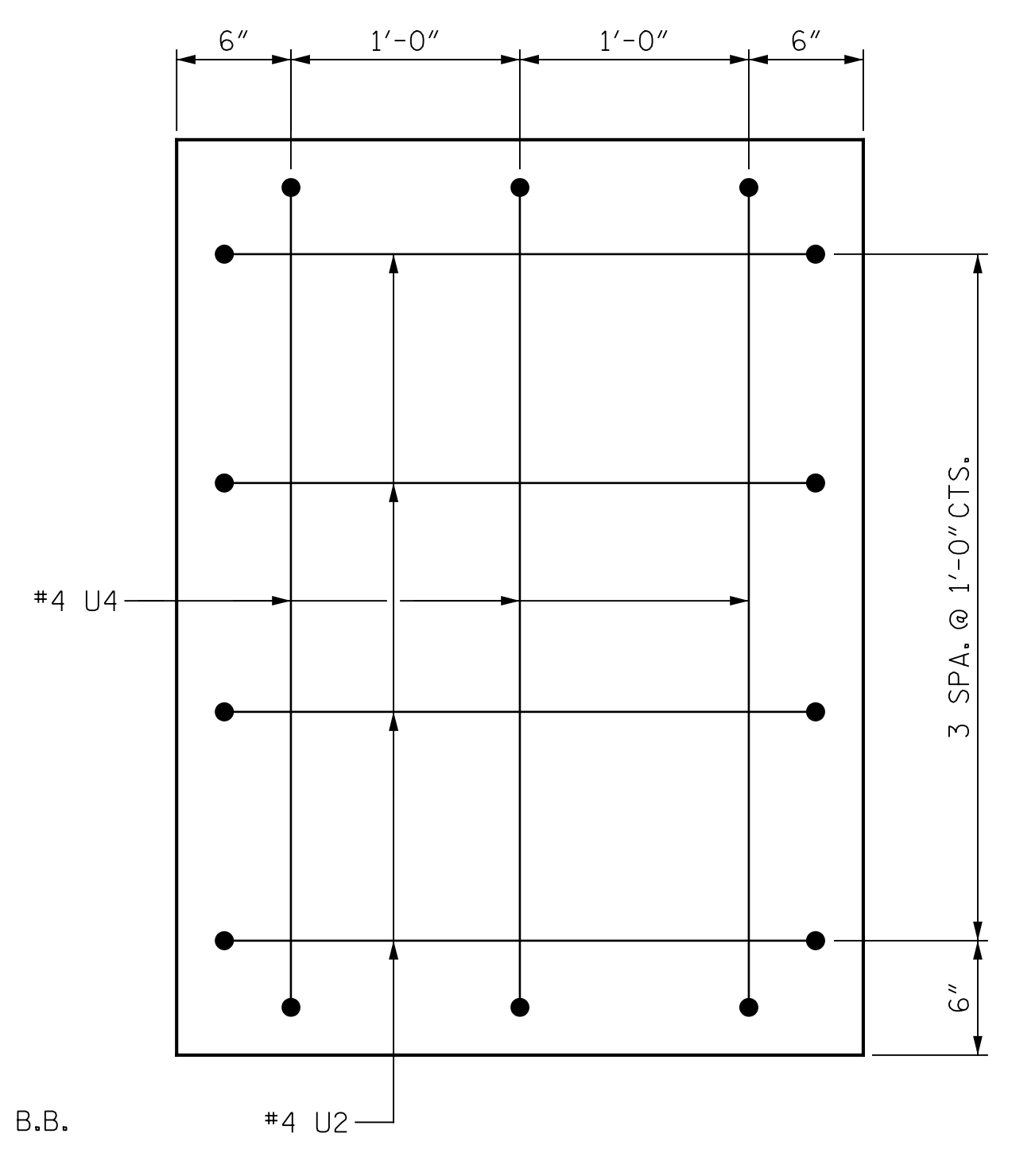
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-71
1			3			TOTAL SHEETS
2			4			125

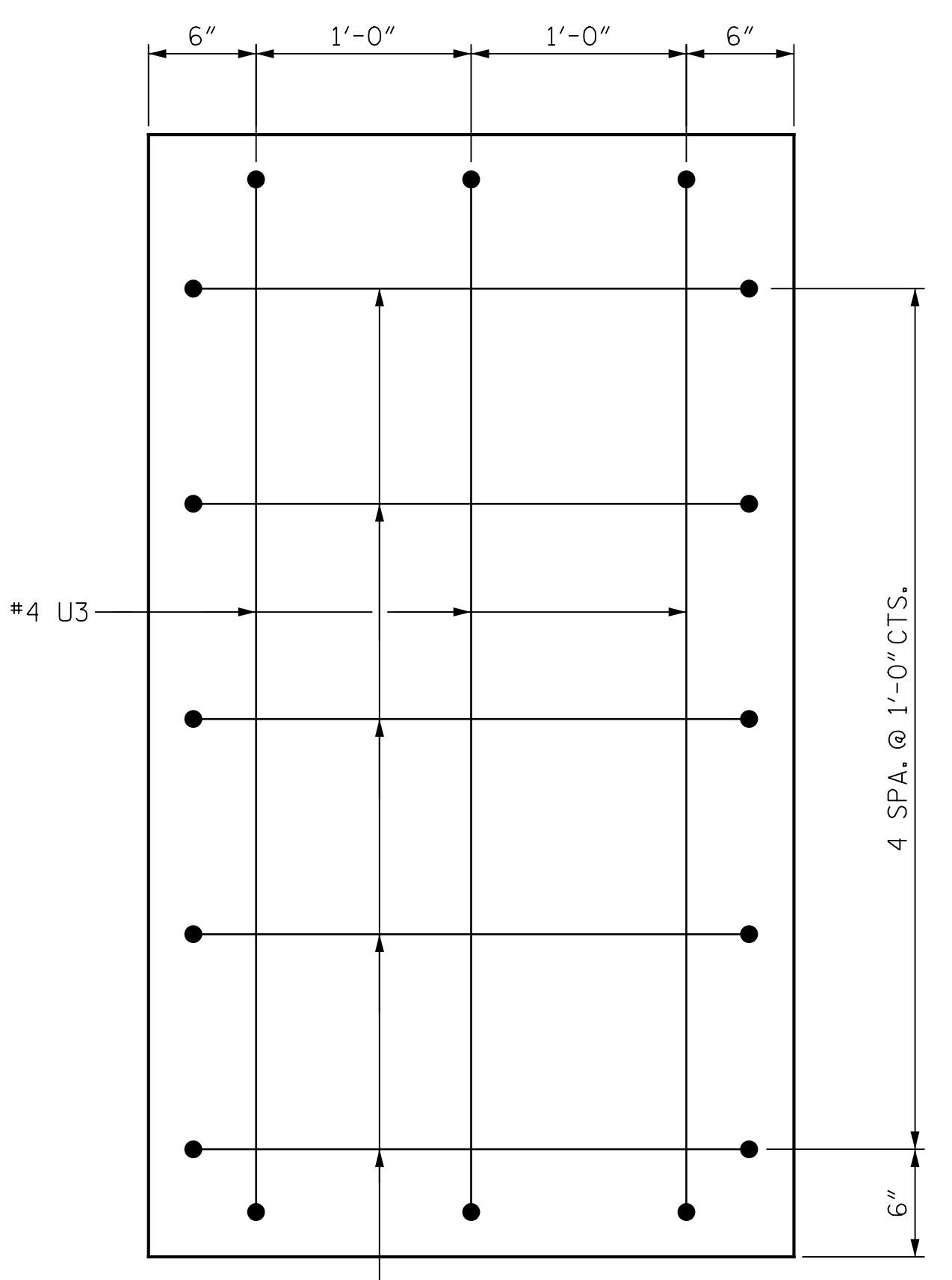
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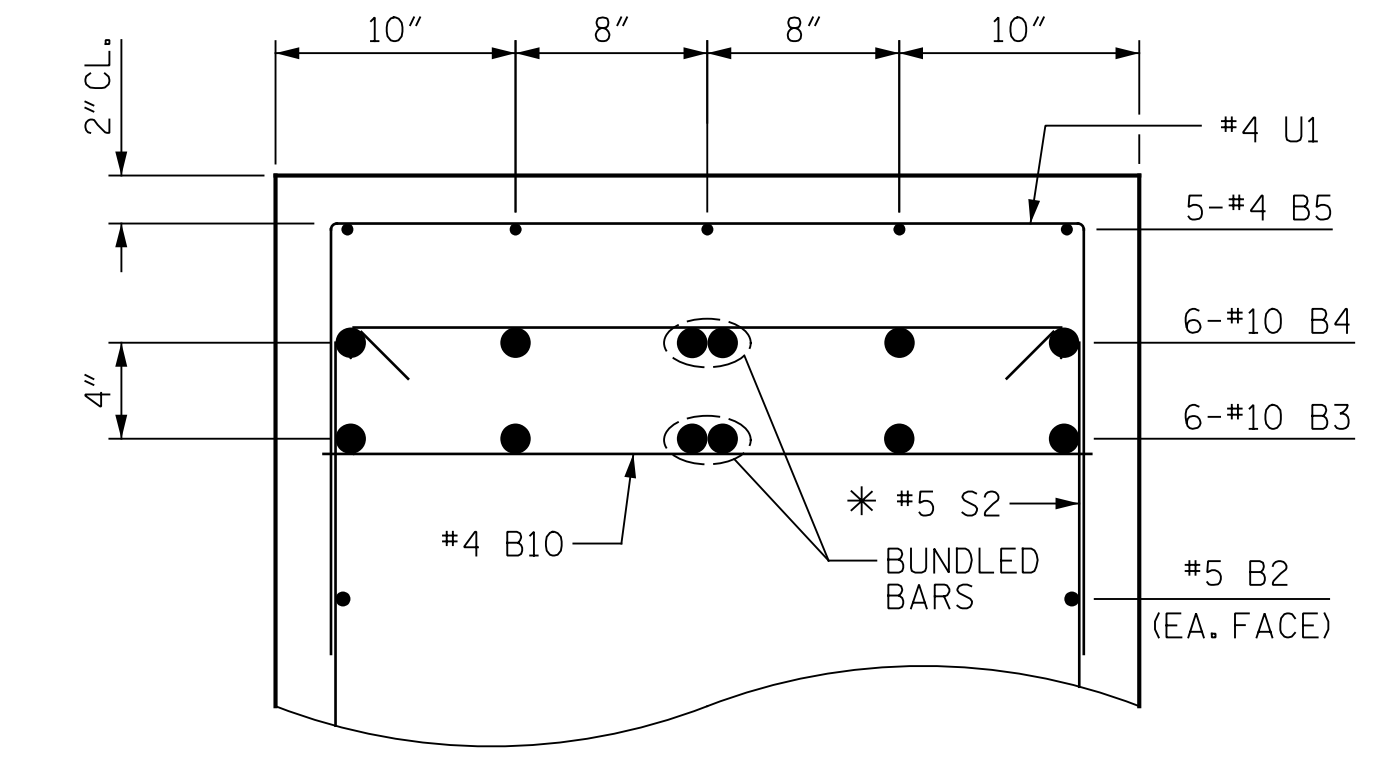
SECTION A-A



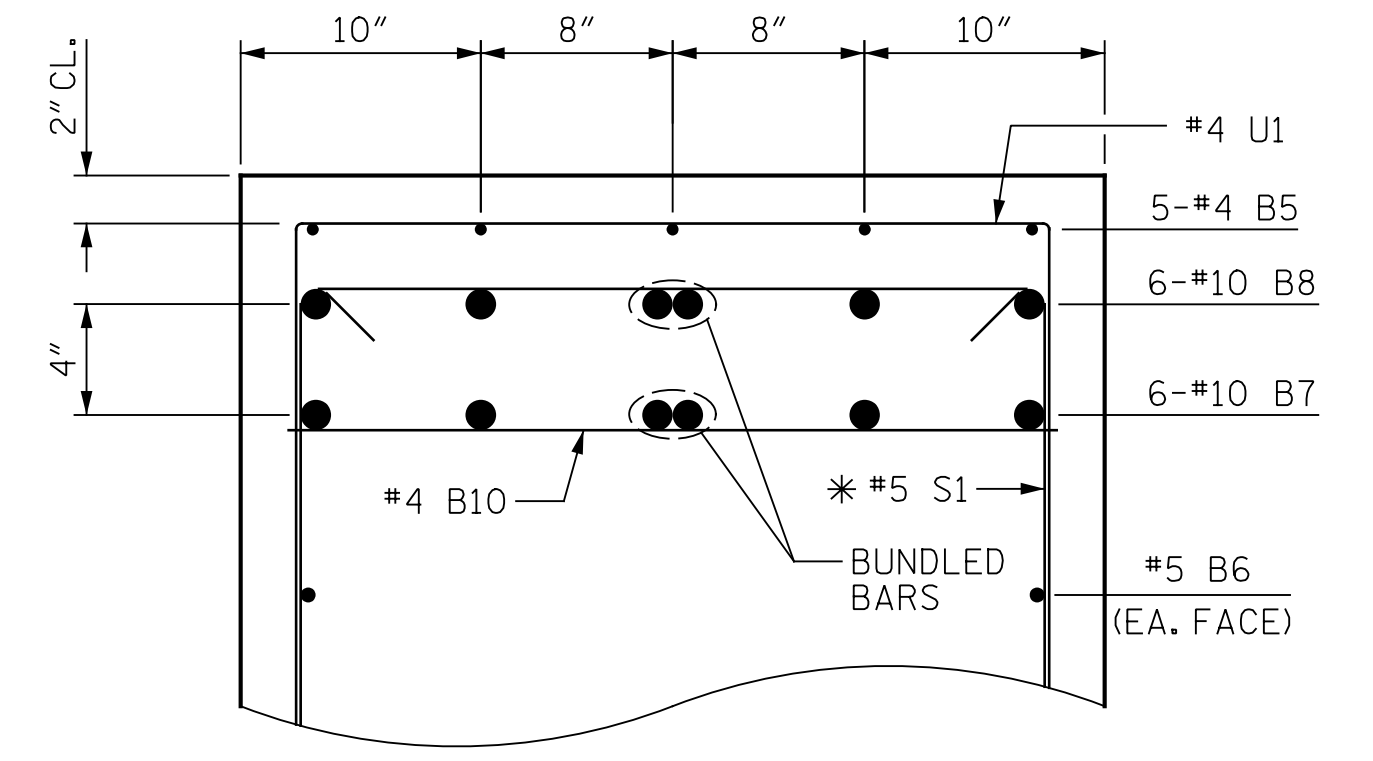
VIEW Y-Y



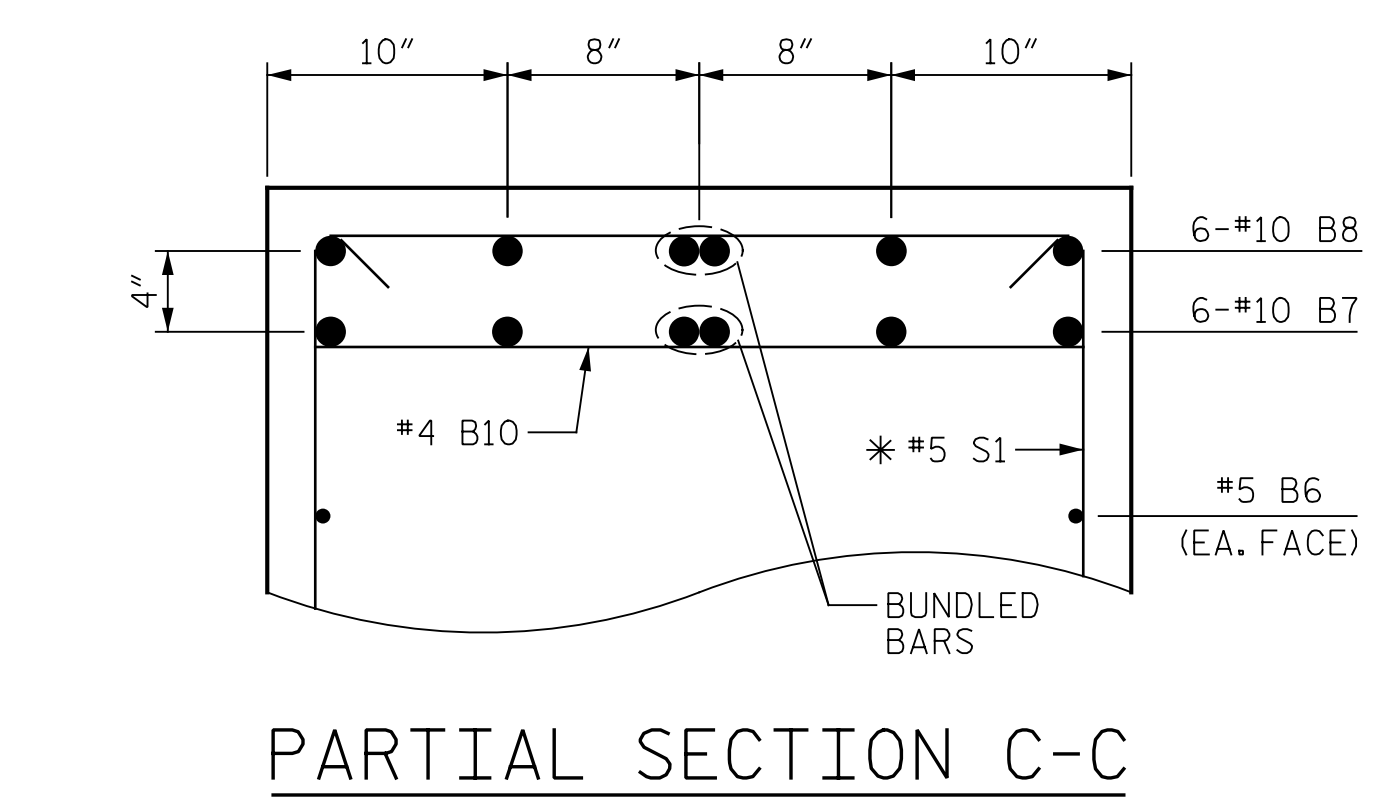
VIEW X-X



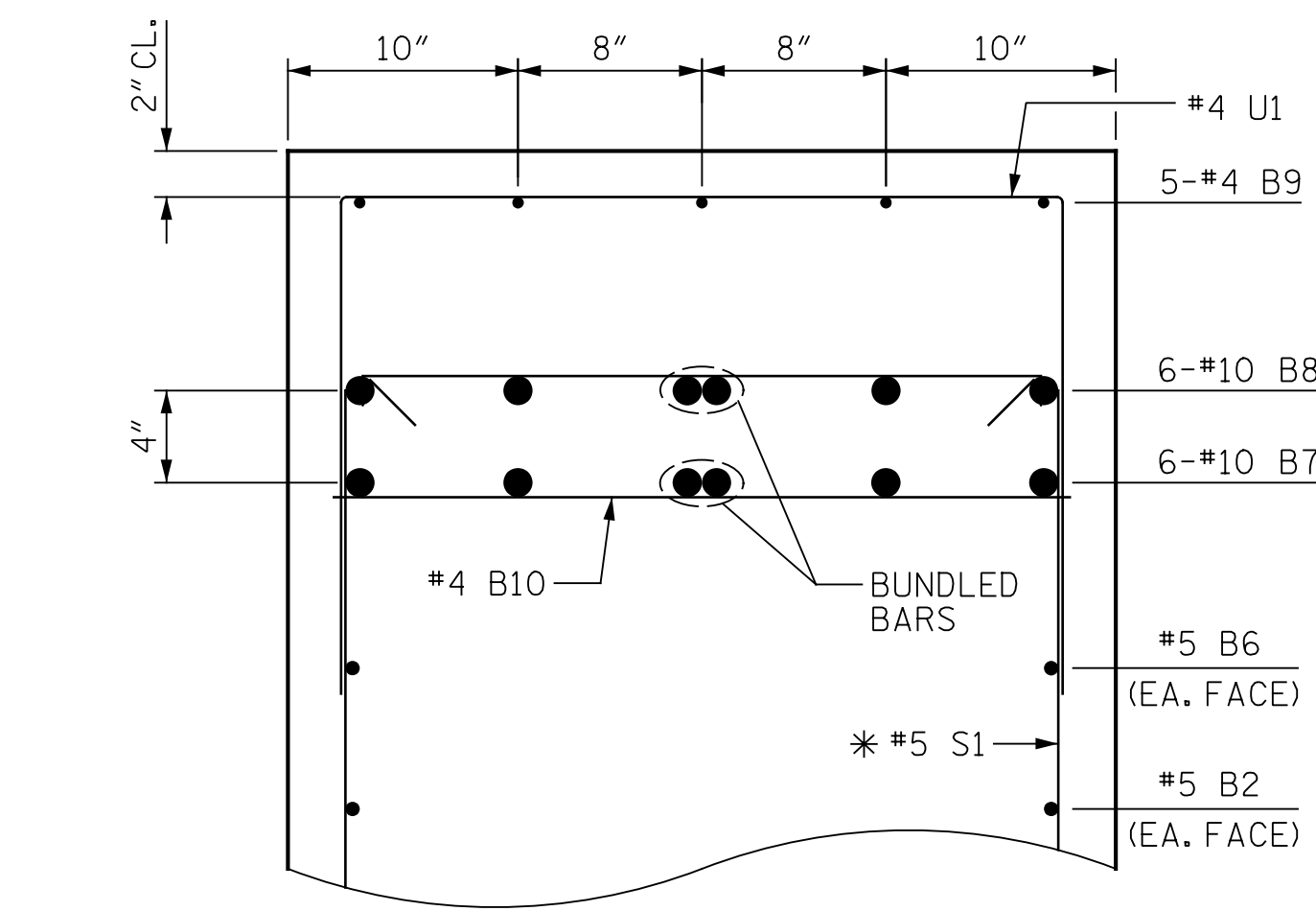
PARTIAL SECTION B-B



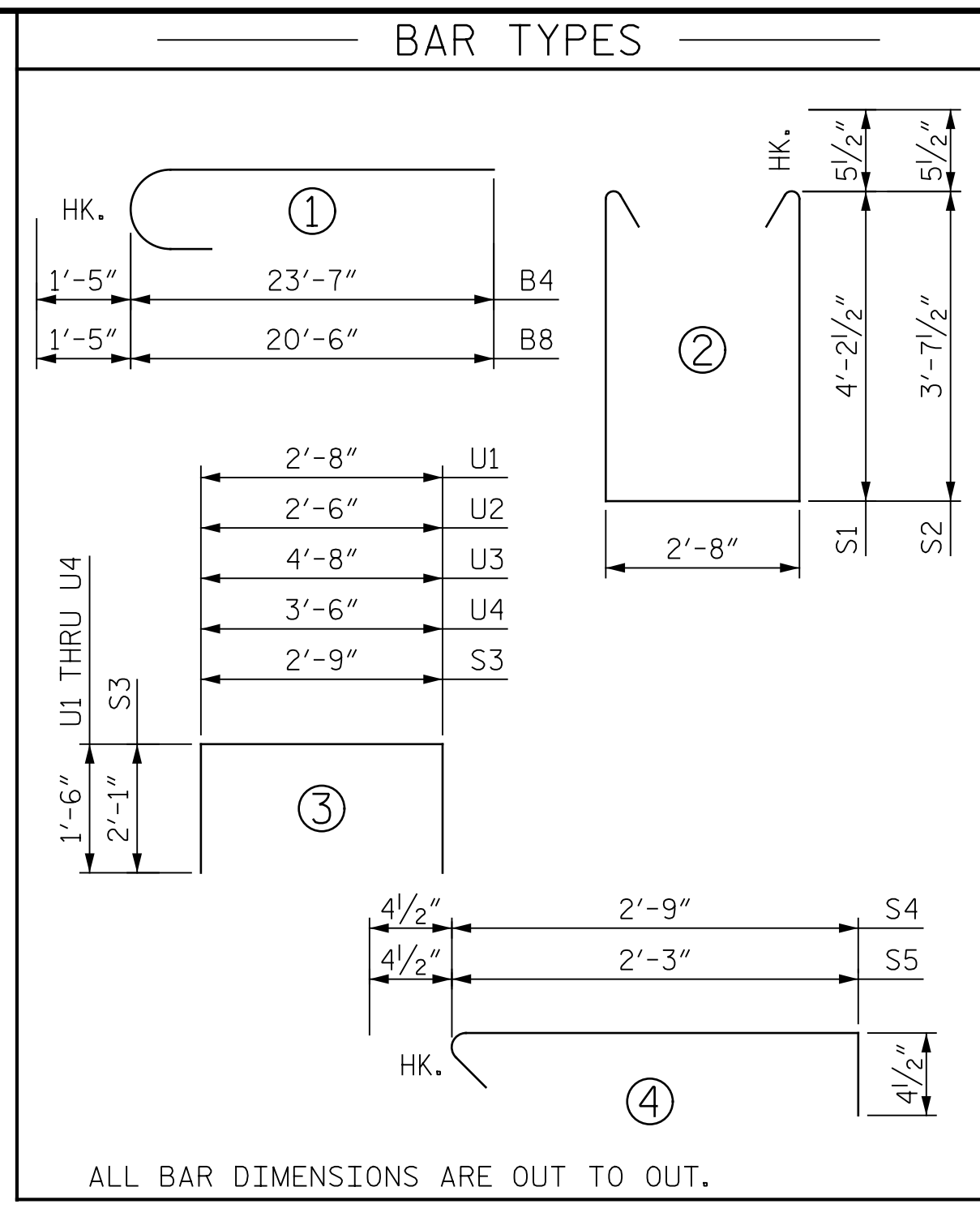
PARTIAL SECTION D-D



PARTIAL SECTION C-C

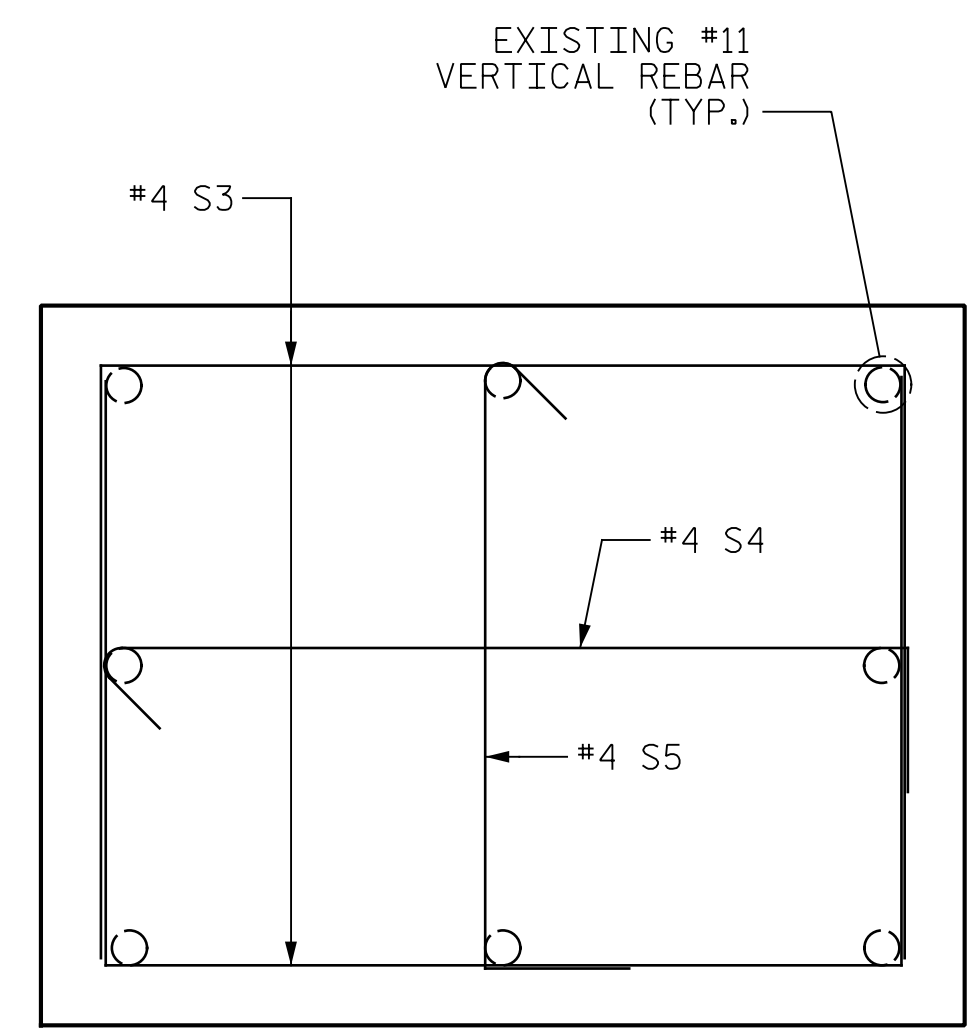


PARTIAL SECTION E-E



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#8	STR	38'-1"	610
B2	6	#5	STR	38'-1"	238
B3	6	#10	STR	23'-7"	609
B4	6	#10	1	25'-0"	645
B5	10	#4	STR	8'-8"	58
B6	2	#5	STR	17'-7"	37
B7	6	#10	STR	20'-6"	529
B8	6	#10	1	21'-11"	566
B9	5	#4	STR	3'-3"	11
B10	14	#4	STR	2'-8"	25
S1	26	#5	2	12'-0"	325
S2	24	#5	2	10'-10"	271
S3	8	#4	3	6'-11"	37
S4	4	#4	4	3'-6"	9
S5	4	#4	4	3'-0"	8
U1	43	#4	3	5'-8"	163
U2	9	#4	3	5'-6"	33
U3	3	#4	3	7'-8"	15
U4	3	#4	3	6'-6"	13
REINFORCING STEEL				LBS.	4,202
CLASS A CONCRETE					
POUR #1 - COLUMNS				CU. YDS.	1.1
POUR #2 - CAP				CU. YDS.	19.3
TOTAL				CU. YDS.	20.4



TYPICAL COLUMN SECTION

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 12



DRAWN BY: J. MYA DATE: 04/2021
 CHECKED BY: J. YANACCONI DATE: 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE: 05/2021

PLANS PREPARED BY:
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 NC Lic. No. F-0270

DocuSigned by:
 Eric B. Nelson
 9/2/2021
 4298002119214CD

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-72
1			3			TOTAL SHEETS
2			4			125

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NOTES:

STIRRUPS AND U2 BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 FOR PILE SPLICE DETAILS, SEE END BENT 1.
 BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

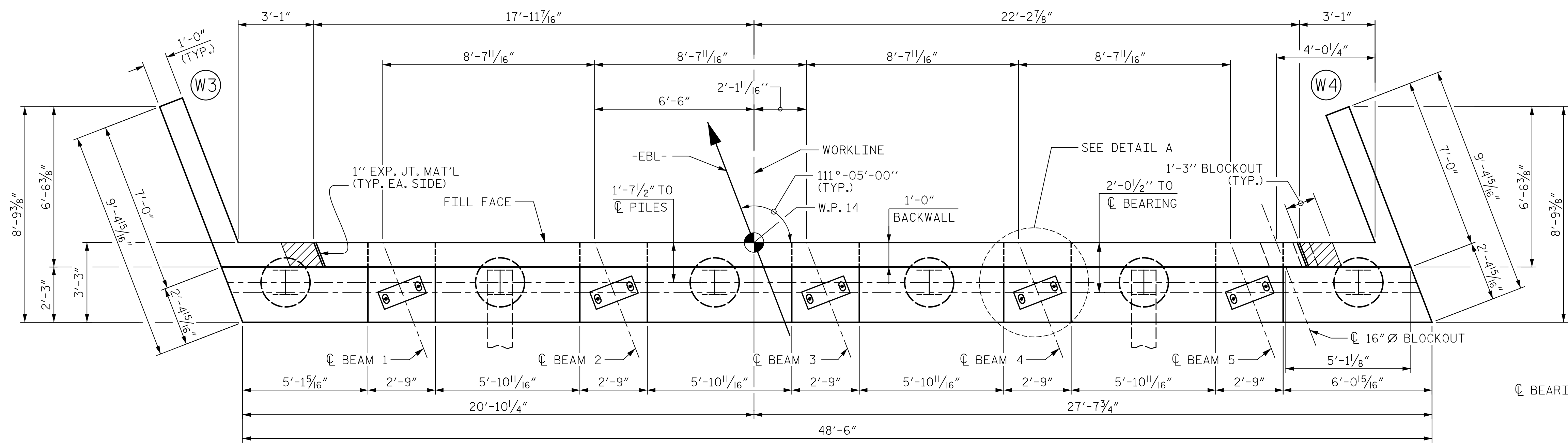
THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

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

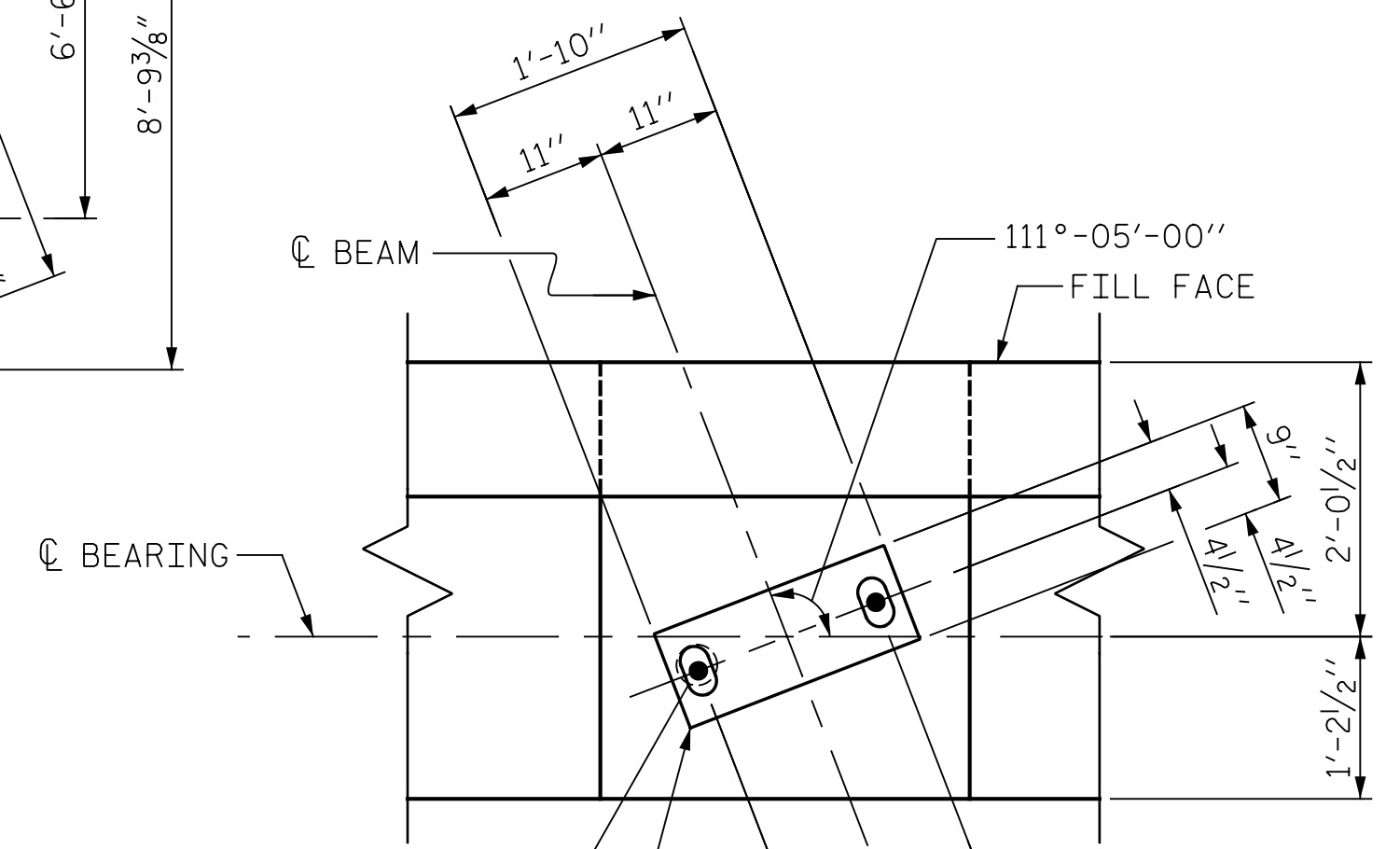
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAILS ARE CAST IF SLIP FORMING IS USED.

FIELD CUT HORIZONTAL AND VERTICAL REBAR IN THE BACKWALL TO MAINTAIN 2" CLEAR COVER WITH BLOCKOUT.

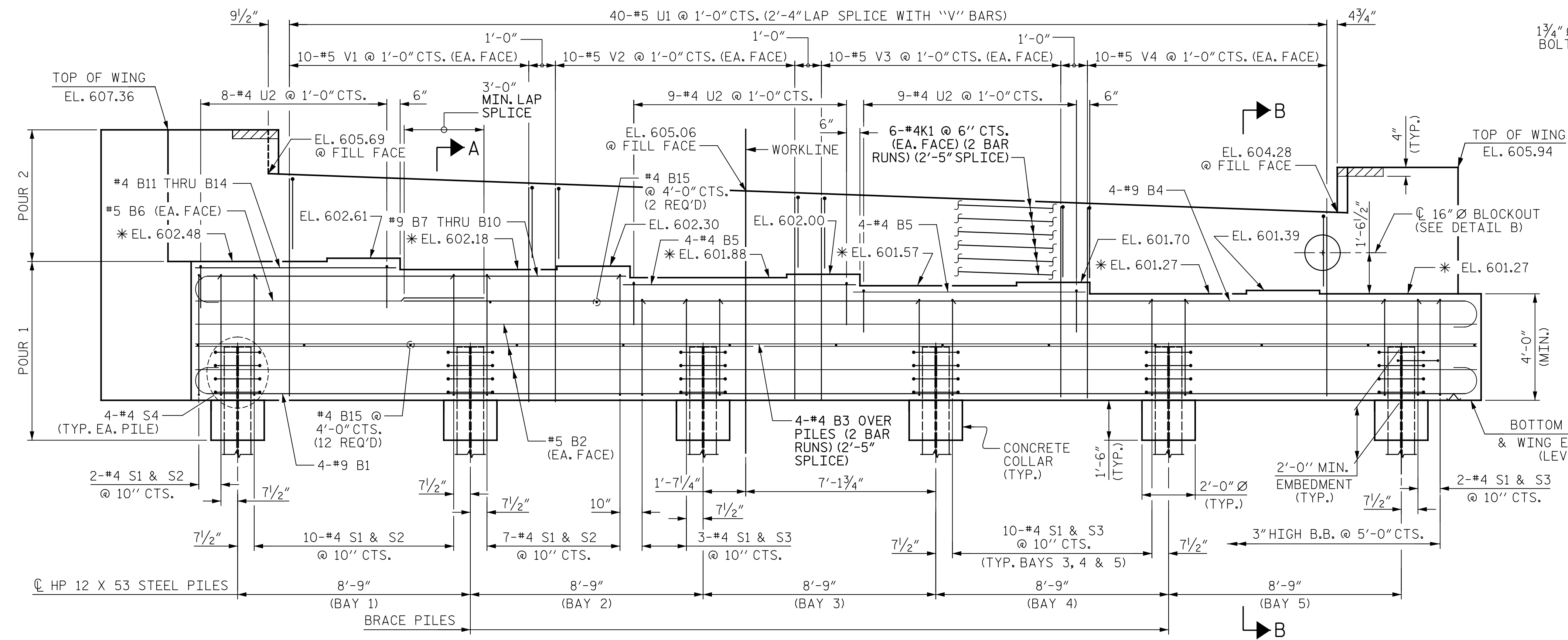
THE VOID FOR THE 16" Ø BLOCKOUT SHALL BE FILLED WITH CLASS A CONCRETE.



PLAN



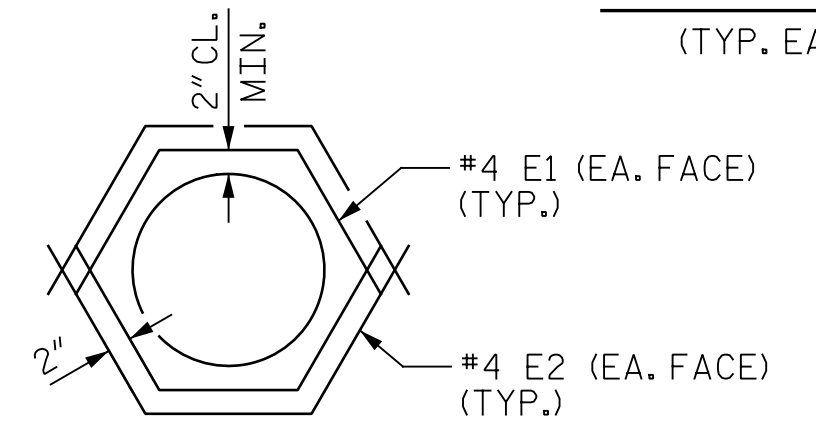
DETAIL A
(TYP. EA. BRG.)



ELEVATION

1 3/4" Ø X 2'-0 1/2" LONG ANCHOR BOLT TO PROJECT 6 1/2" ABOVE THE CAP (TYP.)

1'-10" X 9" X 2 7/16" TYPE II ELASTOMERIC BEARING PAD (5 REQ'D)



DETAIL B
16" Ø BLOCKOUT

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 3



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S1-73 TOTAL SHEETS 125

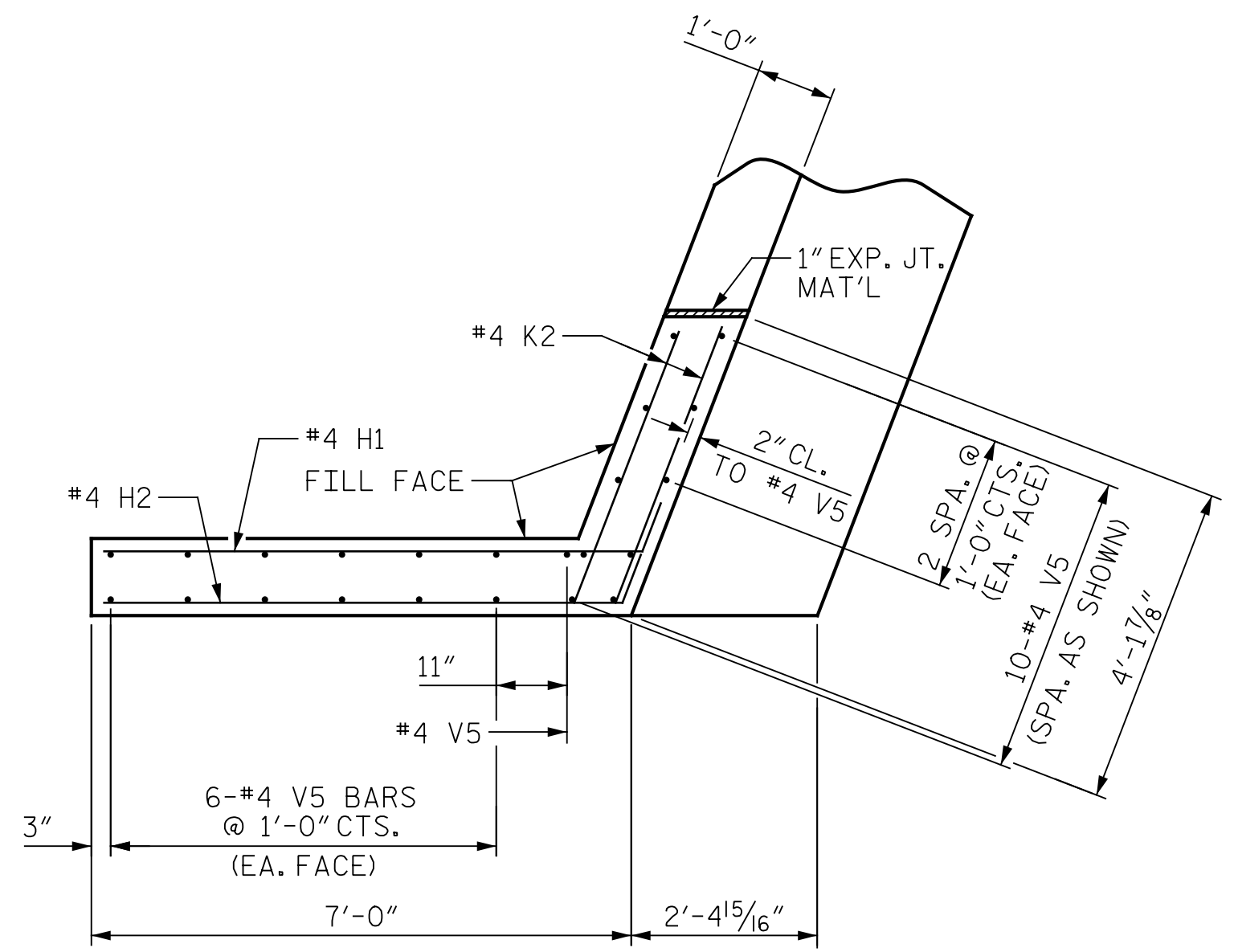
DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

REINFORCING STEEL NOT SHOWN IN WINGS AND BRACE PILE CAP FOR CLARITY

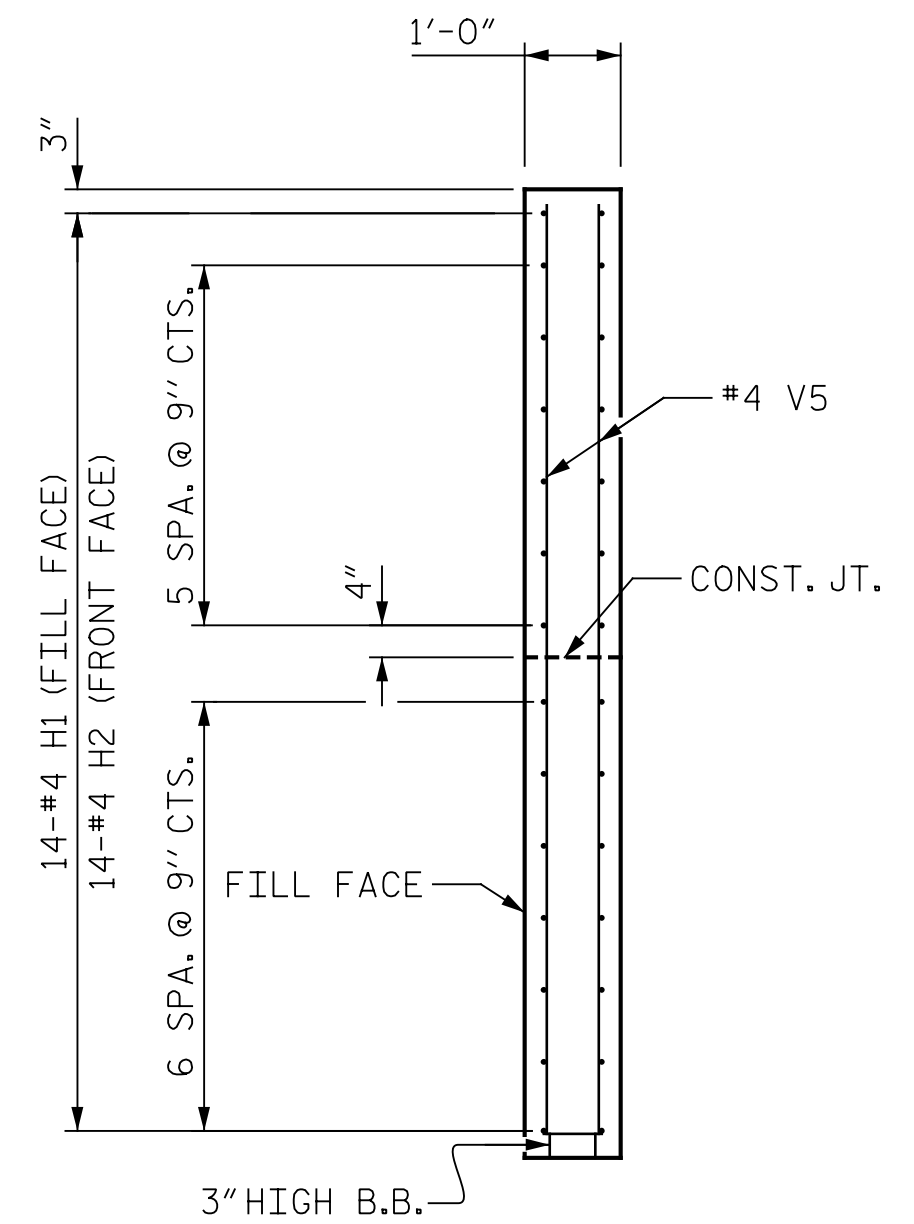
PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

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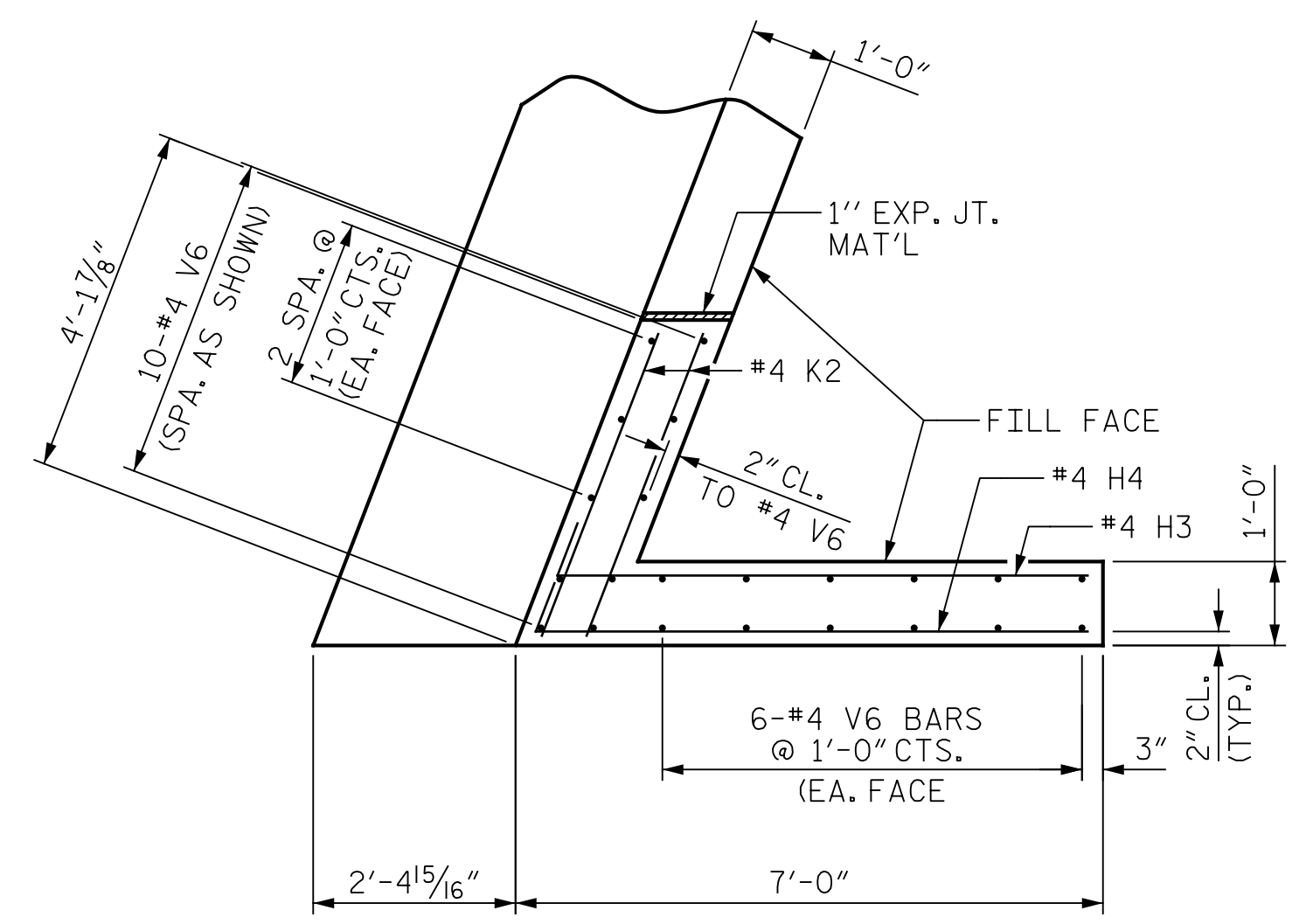
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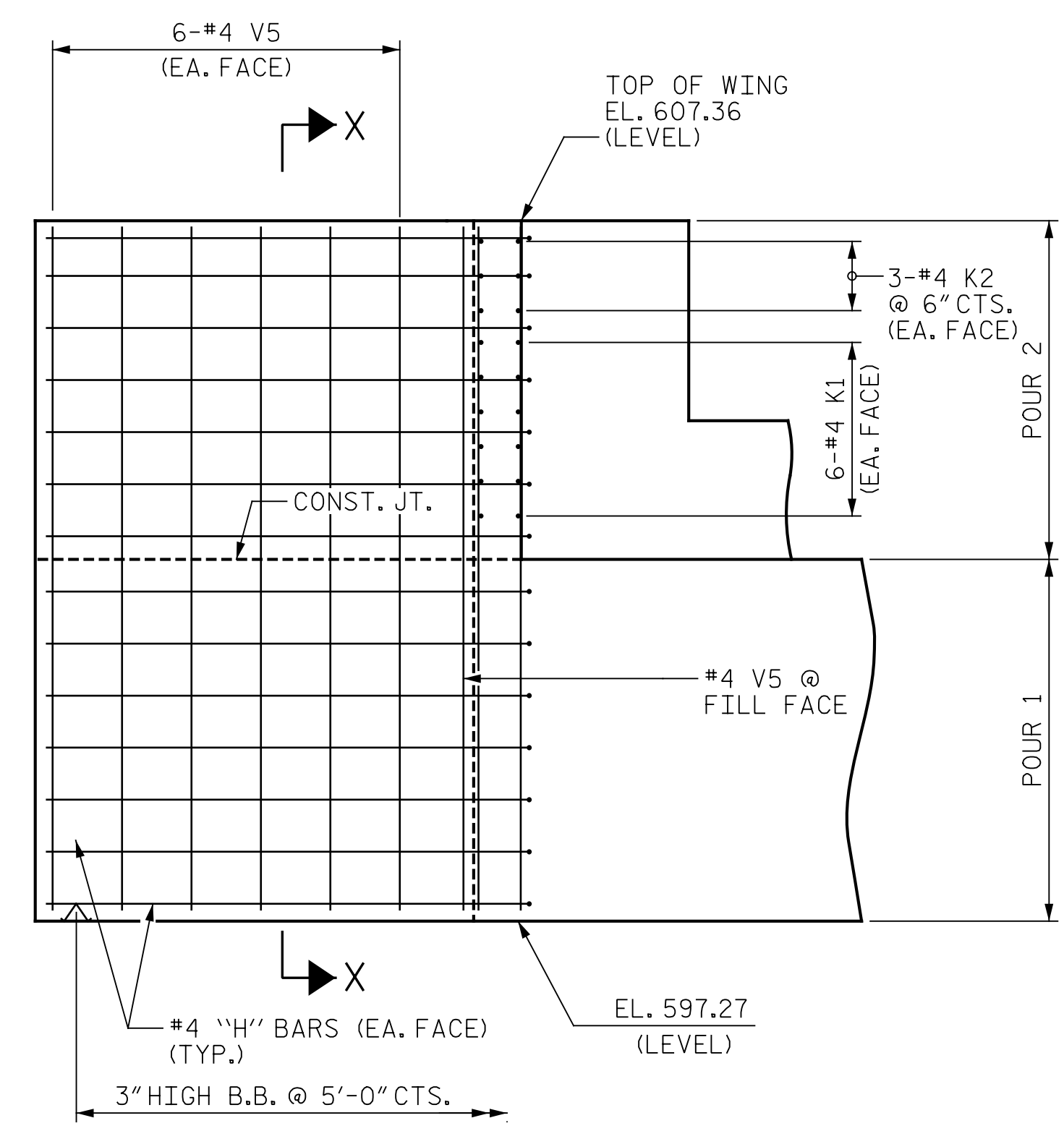
PLAN OF WING (W3)



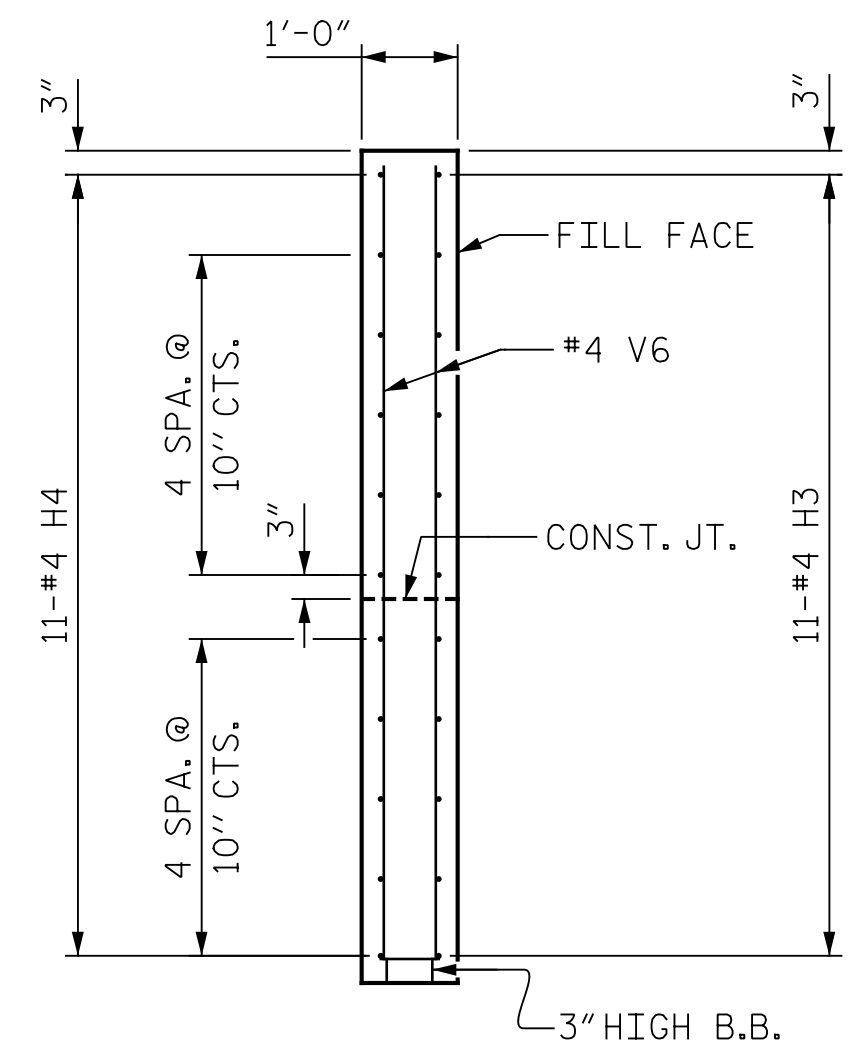
SECTION X-X



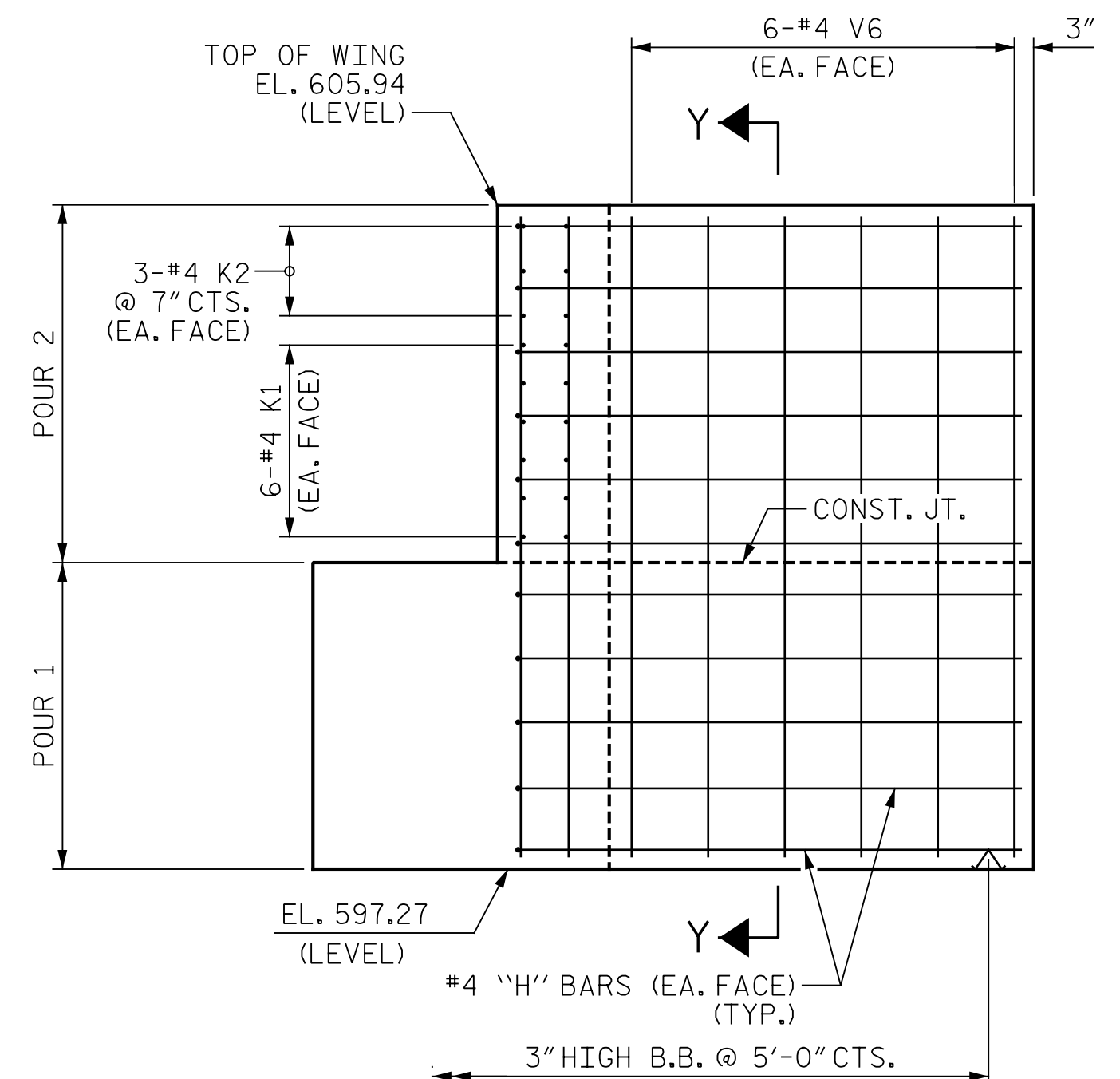
PLAN OF WING (W4)



ELEVATION OF WING (W3)



SECTION Y-Y



ELEVATION OF WING (W4)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
STATION: 45+22.65 -EBL-
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2



DRAWN BY : J. MYA DATE : 04/2021
CHECKED BY : J. YANACCONO DATE : 05/2021
DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

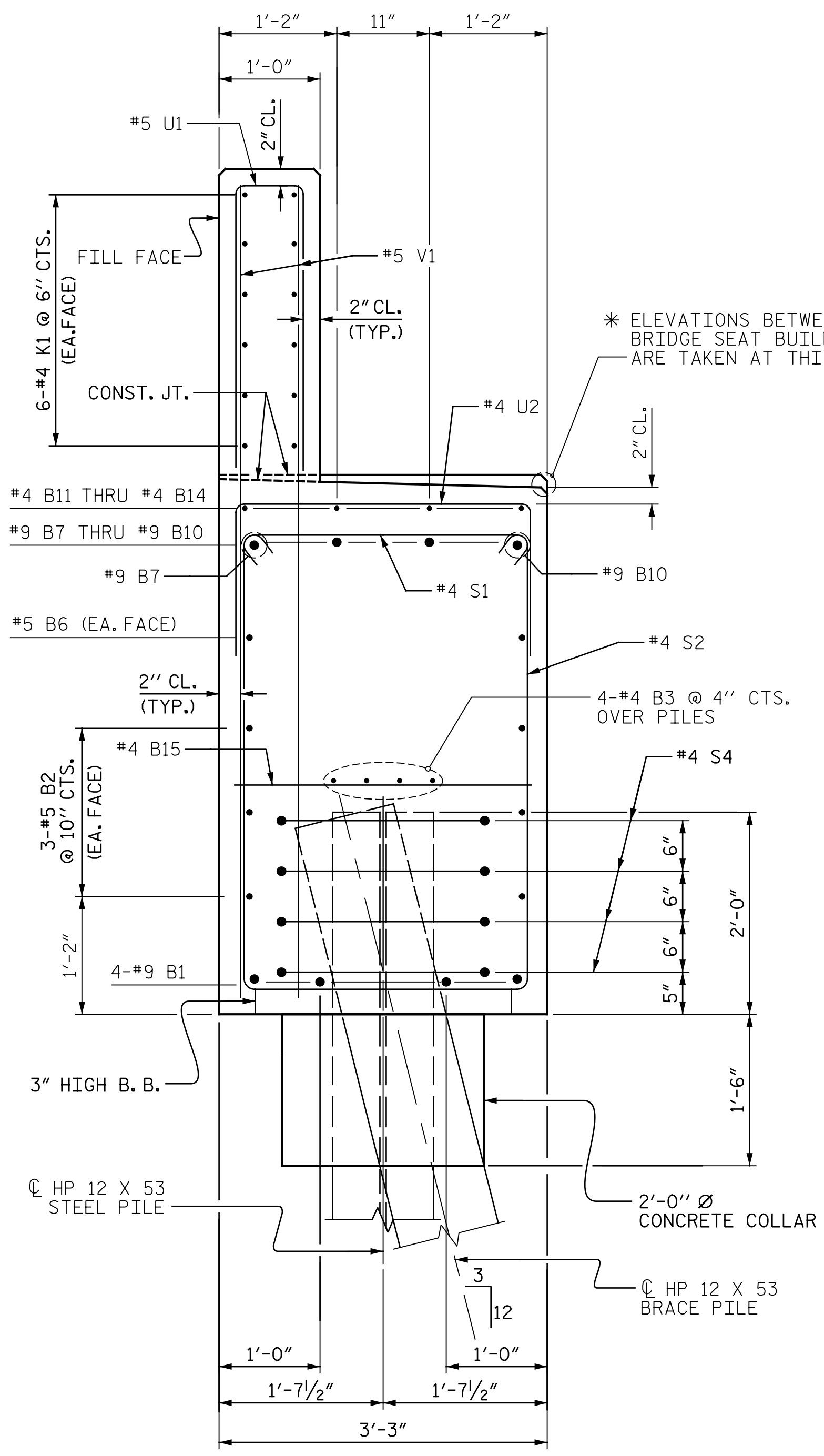
PLANS PREPARED BY:
Gannett Fleming
Raleigh, NC 27603
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Suite 900
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(919) 420-7660
NC Lic. No. F-0270

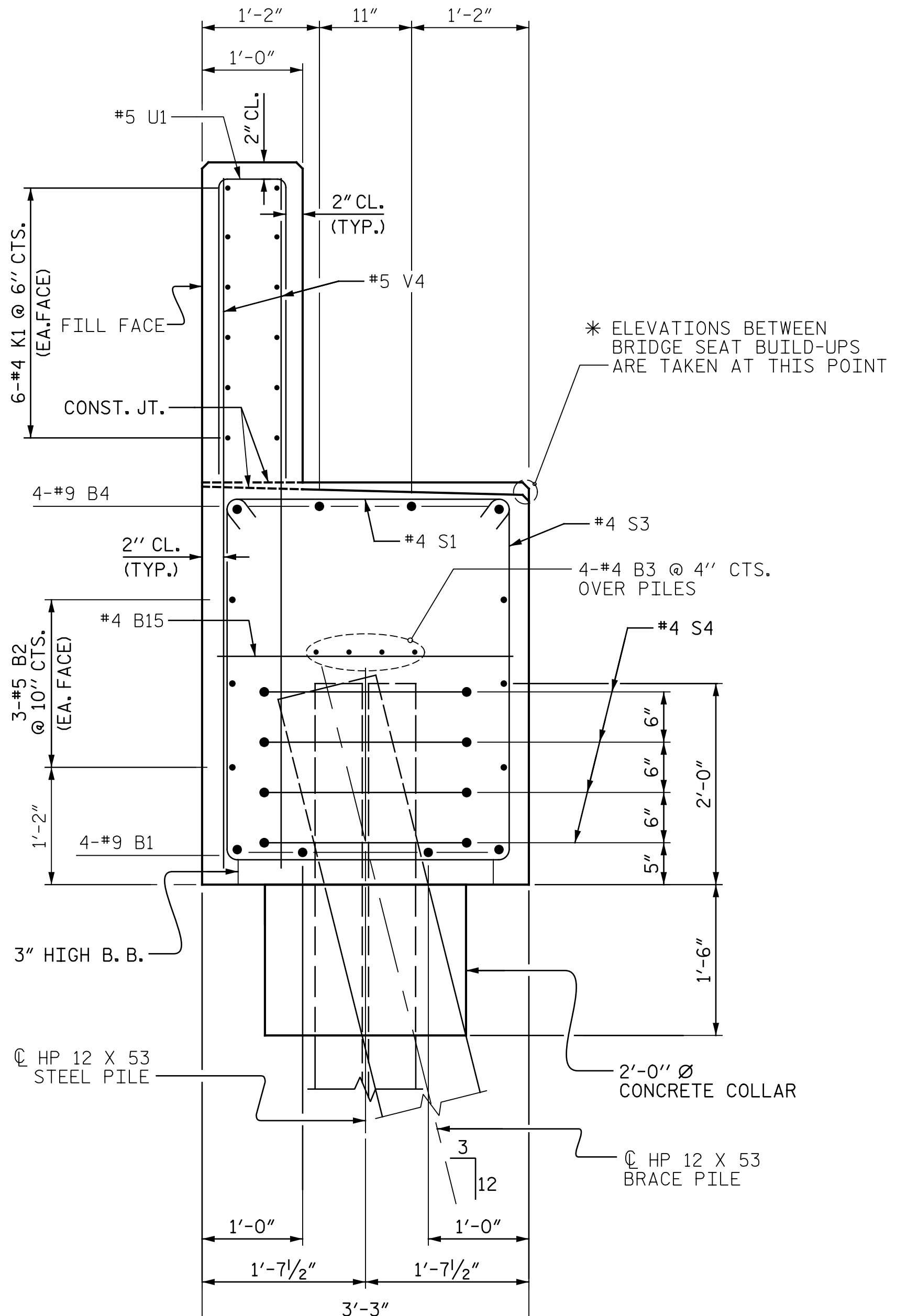
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2			4			125

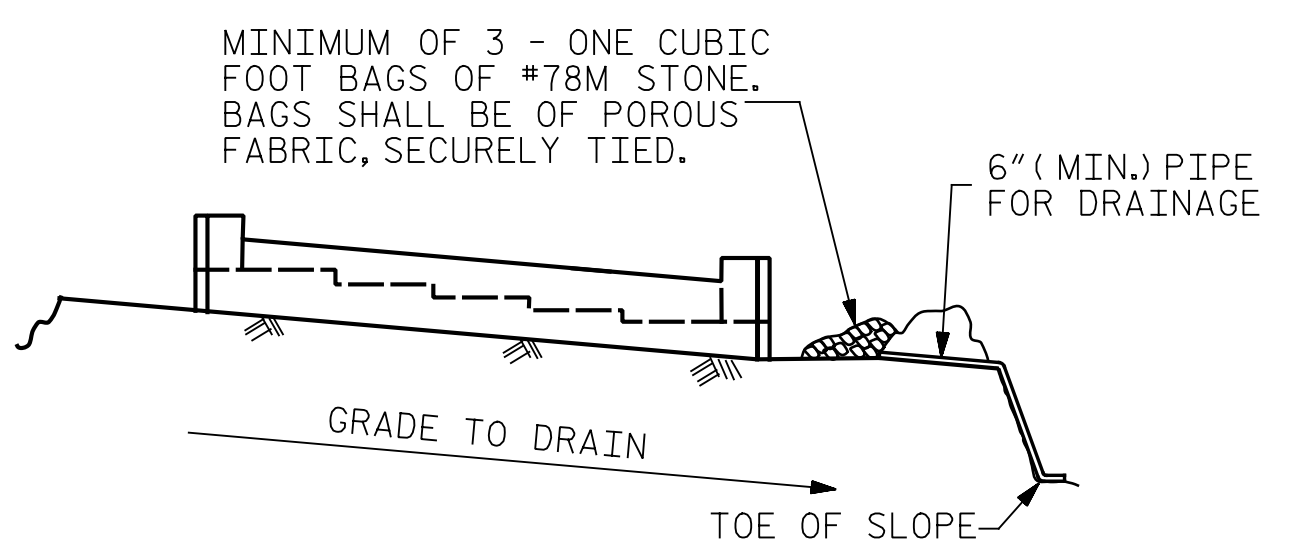
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SECTION A-A



SECTION B-B

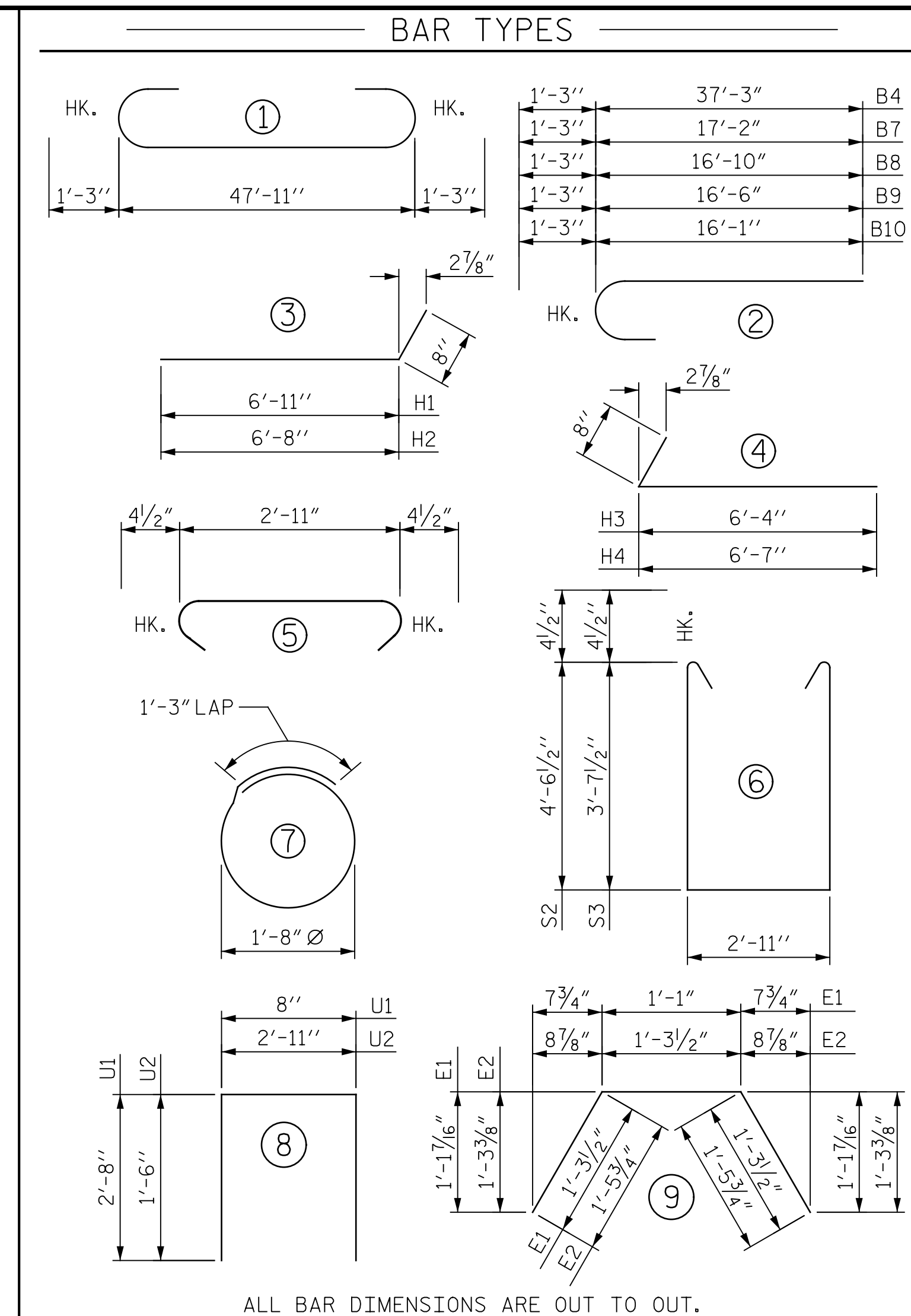


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9		50'-5"	686
B2	6	#5	STR	48'-1"	301
B3	8	#4	STR	25'-4"	135
B4	4	#9	2	38'-6"	524
B5	8	#4	STR	8'-8"	46
B6	2	#5	STR	14'-0"	29
B7	1	#9	2	18'-5"	63
B8	1	#9	2	18'-1"	61
B9	1	#9	2	17'-9"	60
B10	1	#9	2	17'-4"	59
B11	1	#4	STR	8'-8"	6
B12	1	#4	STR	8'-3"	6
B13	1	#4	STR	7'-11"	5
B14	1	#4	STR	7'-7"	5
B15	14	#4	STR	2'-11"	27
E1	4	#4	9	3'-7"	10
E2	4	#4	9	4'-3"	11
H1	14	#4	3	7'-7"	71
H2	14	#4	3	7'-4"	69
H3	11	#4	4	7'-0"	51
H4	11	#4	4	7'-3"	53
K1	12	#4	STR	25'-4"	203
K2	12	#4	STR	3'-9"	30
S1	54	#4	5	3'-8"	132
S2	19	#4	6	12'-9"	162
S3	35	#4	6	10'-11"	255
S4	24	#4	7	6'-6"	104
U1	40	#5	8	6'-0"	250
U2	26	#4	8	5'-11"	103
V1	20	#5	STR	7'-8"	160
V2	20	#5	STR	7'-4"	153
V3	20	#5	STR	7'-0"	146
V4	20	#5	STR	6'-8"	139
V5	23	#4	STR	9'-8"	149
V6	22	#4	STR	8'-3"	121

REINFORCING STEEL LBS. 4,385

CLASS A CONCRETE			
POUR #1	CAP, LOWER WINGS, COLLARS & PILE CAP	CU. YD.	29.7
POUR #2	BACKWALL & UPPER WINGS	CU. YD.	8.2
TOTAL:		CU. YD.	37.9

HP 12 X 53 STEEL PILES		
NO. 6		LIN. FT. = 90.0
STEEL PILE POINTS		
NO. 6		EACH

PROJECT NO. B-4626
 STANLY, ROWAN
 AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 2



PLANS PREPARED BY:
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 NC Lic. No. F-0270

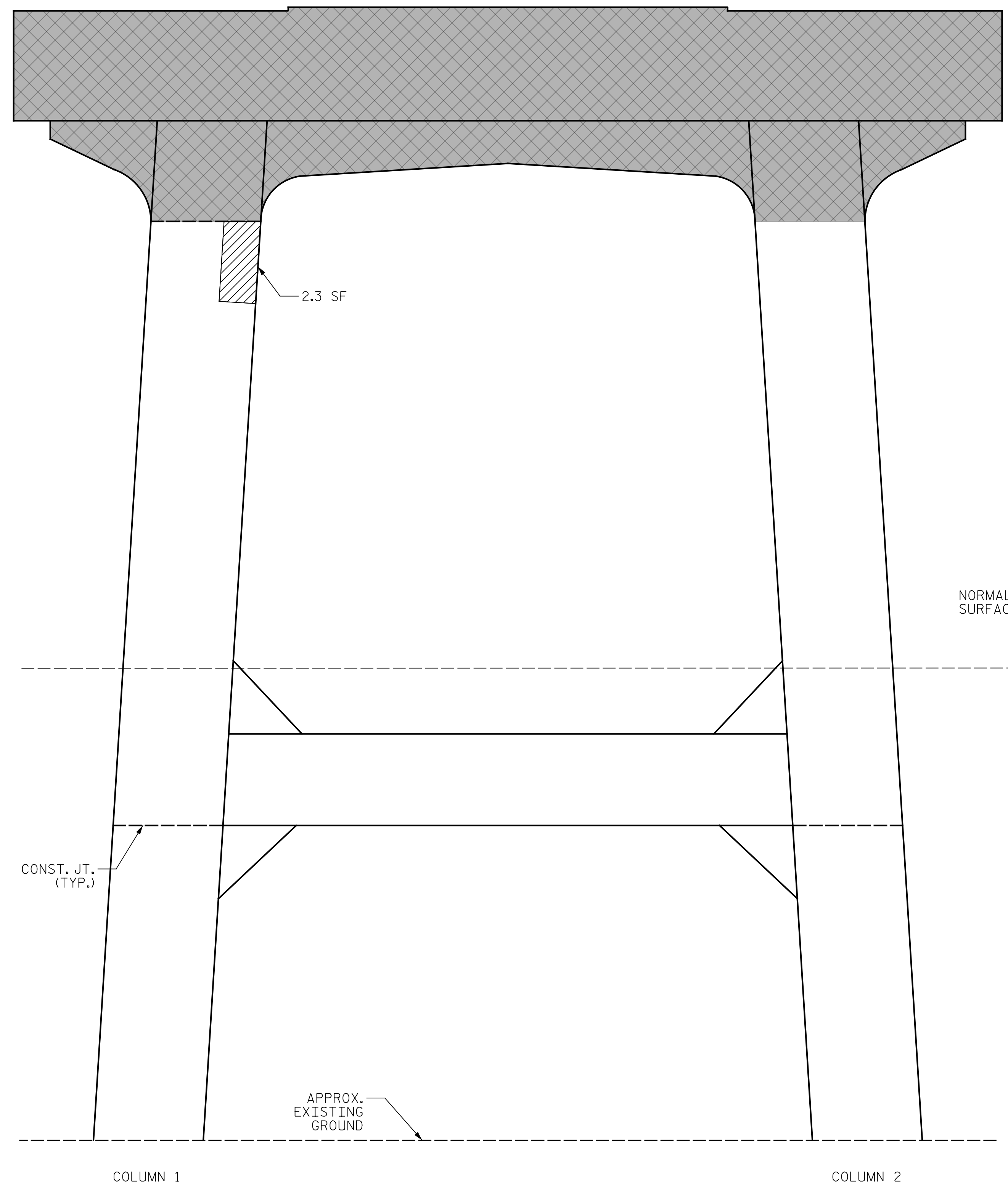
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NO.	BY:	DATE:	NO.	BY:	DATE:
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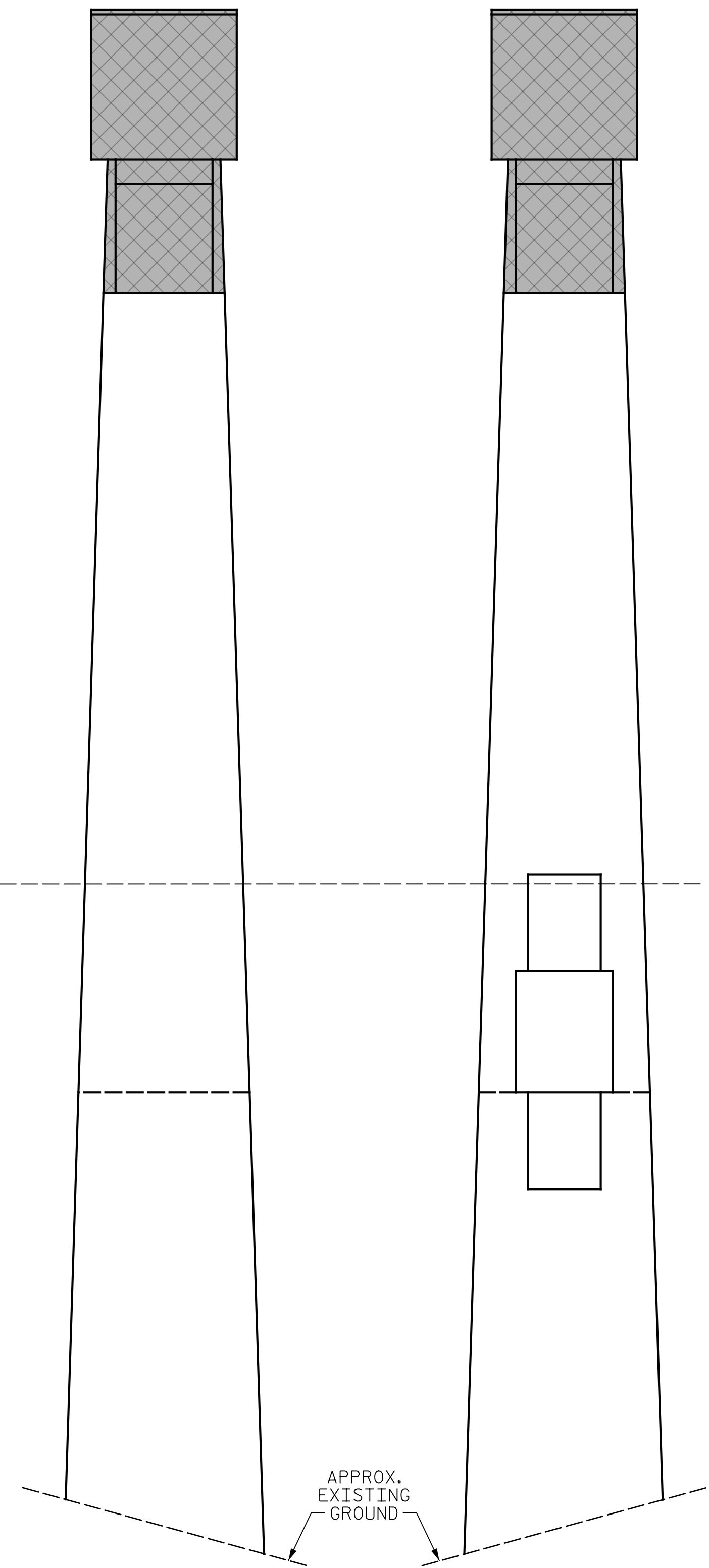
SHEET NO.	
S1-75	TOTAL SHEETS 125

DRAWN BY : J. MYA DATE : 04/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 05/2021

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ELEVATION
(SPAN "A" FACE)



END VIEW
(RIGHT FACE COL. 2)

INTERIOR VIEW
(LEFT FACE COL. 2)

AS-BUILT REPAIR QUANTITY TABLE					
BENT 1 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH IN.	VOLUME CF
COLUMN	5.1	2.0			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
COLUMN	0.0				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
 WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR MINIMUM OF 1' BELOW GROUND LINE.
 FOR PROPOSED BENT CAP REPLACEMENT DETAILS, SEE SUBSTRUCTURE BENT SHEETS.

- SHOTCRETE REPAIR
- EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 1
 SPAN "A" FACE



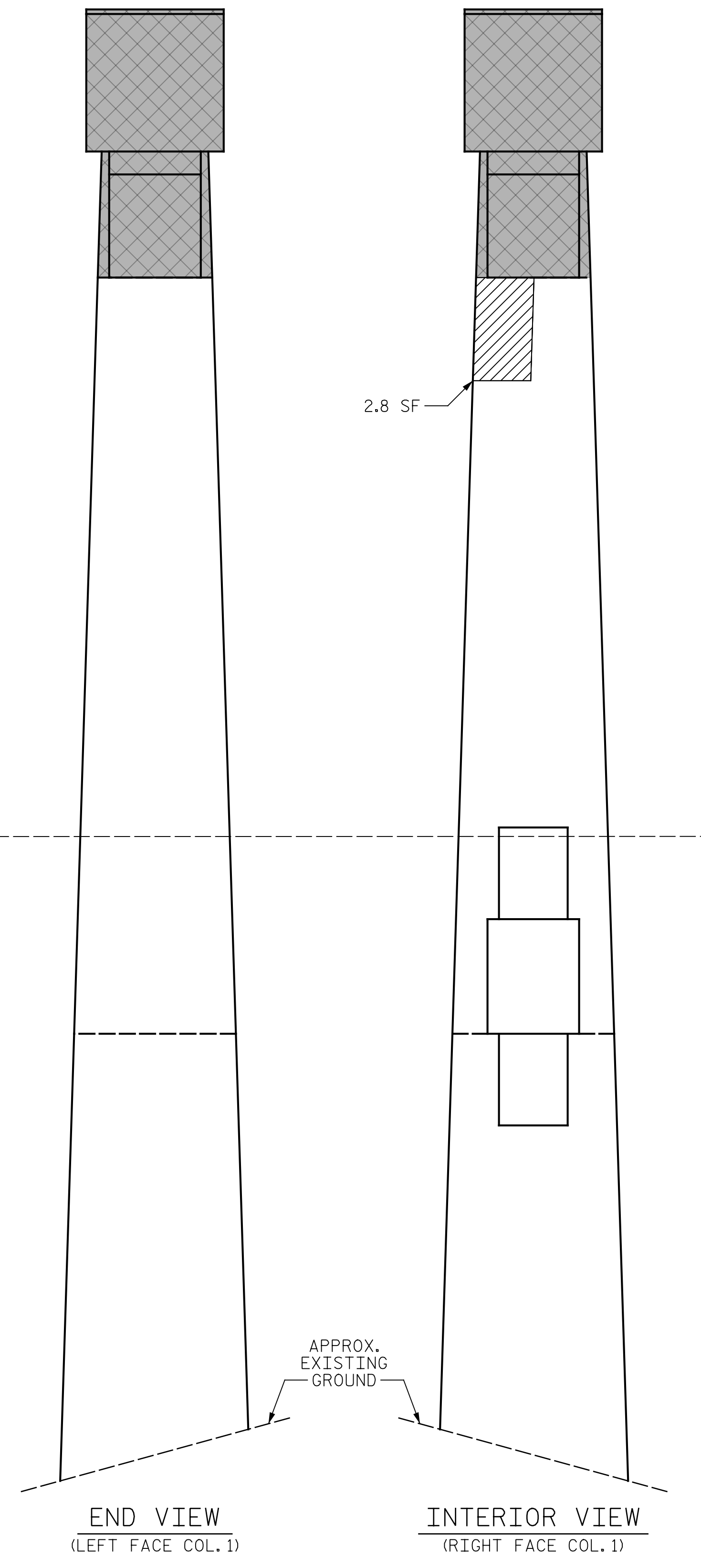
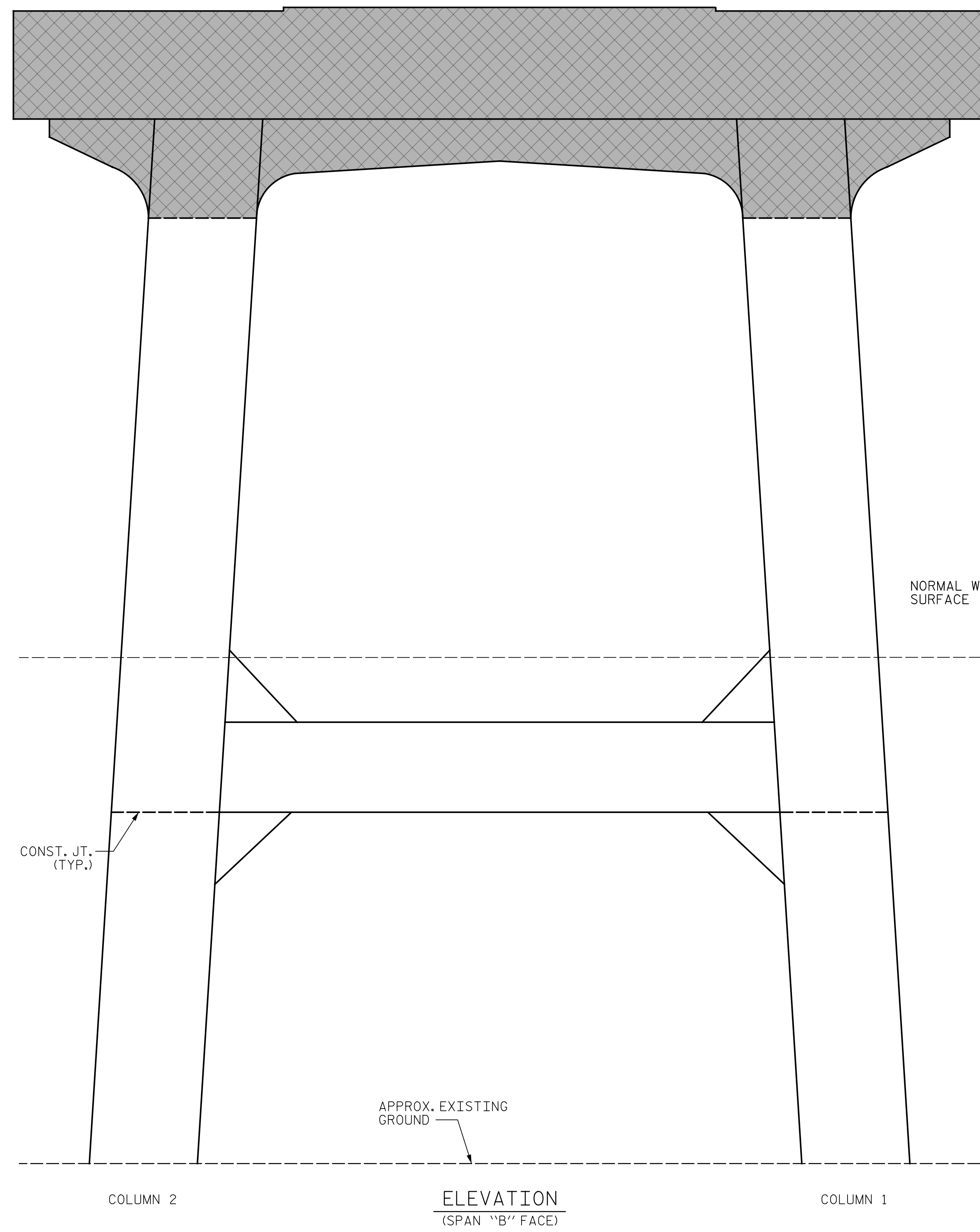
DRAWN BY : T. HARTLEY/J.MYA DATE : 03/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
 Gannett Fleming
 Excellence Delivered As Promised
 One Glenwood Avenue
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 (919) 420-7660
 NC Lic. No. F-0270

REVISIONS						SHEET NO.
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NOTES:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
 WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR A MINIMUM OF 1' BELOW GROUND LINE.
 FOR PROPOSED BENT CAP REPLACEMENT DETAILS, SEE SUBSTRUCTURE BENT SHEETS.

- SHOTCRETE REPAIR
- EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 1
 SPAN "B" FACE



DRAWN BY : T. HARTLEY/J.MYA DATE : 06/2020
 CHECKED BY : J. YANNAACONE DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

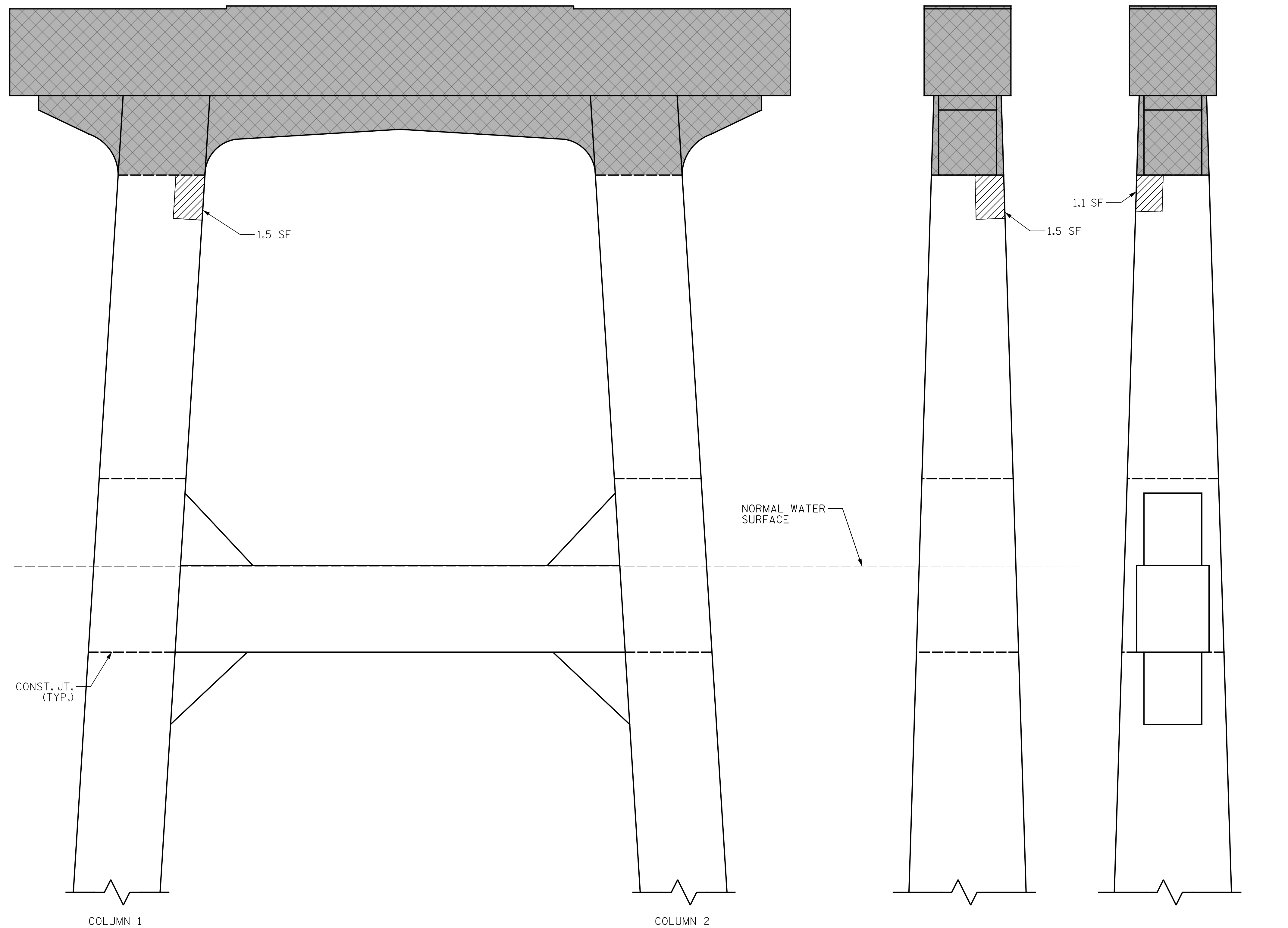
PLANS PREPARED BY:
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2			4			125

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 DocuSigned by: Eric B. Nelson 9/2/2021
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ELEVATION
(SPAN "B" FACE)

END VIEW
(RIGHT FACE COL. 2)

INTERIOR VIEW
(LEFT FACE COL. 2)

AS-BUILT REPAIR QUANTITY TABLE					
BENT 2 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH IN.	VOLUME CF
COLUMN	8.2	3.3			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
COLUMN	0.0				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
 WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR MINIMUM OF 1' BELOW GROUND LINE.
 FOR PROPOSED BENT CAP REPLACEMENT DETAILS, SEE SUBSTRUCTURE BENT SHEETS.

- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 2
 SPAN "B" FACE



DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

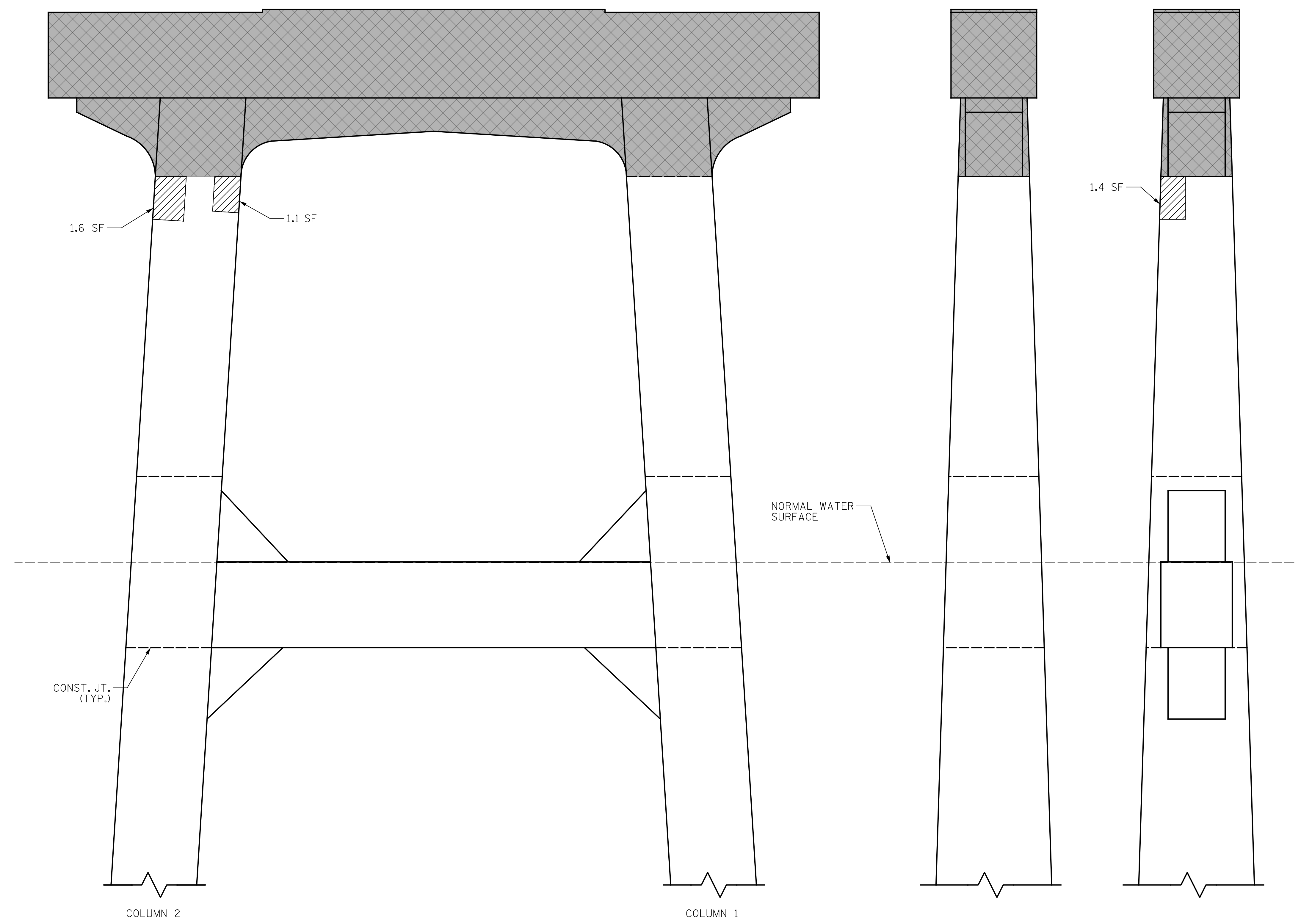
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ELEVATION
(SPAN "C" FACE)

END VIEW
(LEFT FACE COL. 1)

INTERIOR VIEW
(RIGHT FACE COL. 1)

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- SHOTCRETE REPAIR
- EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 2
 SPAN "C" FACE



DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

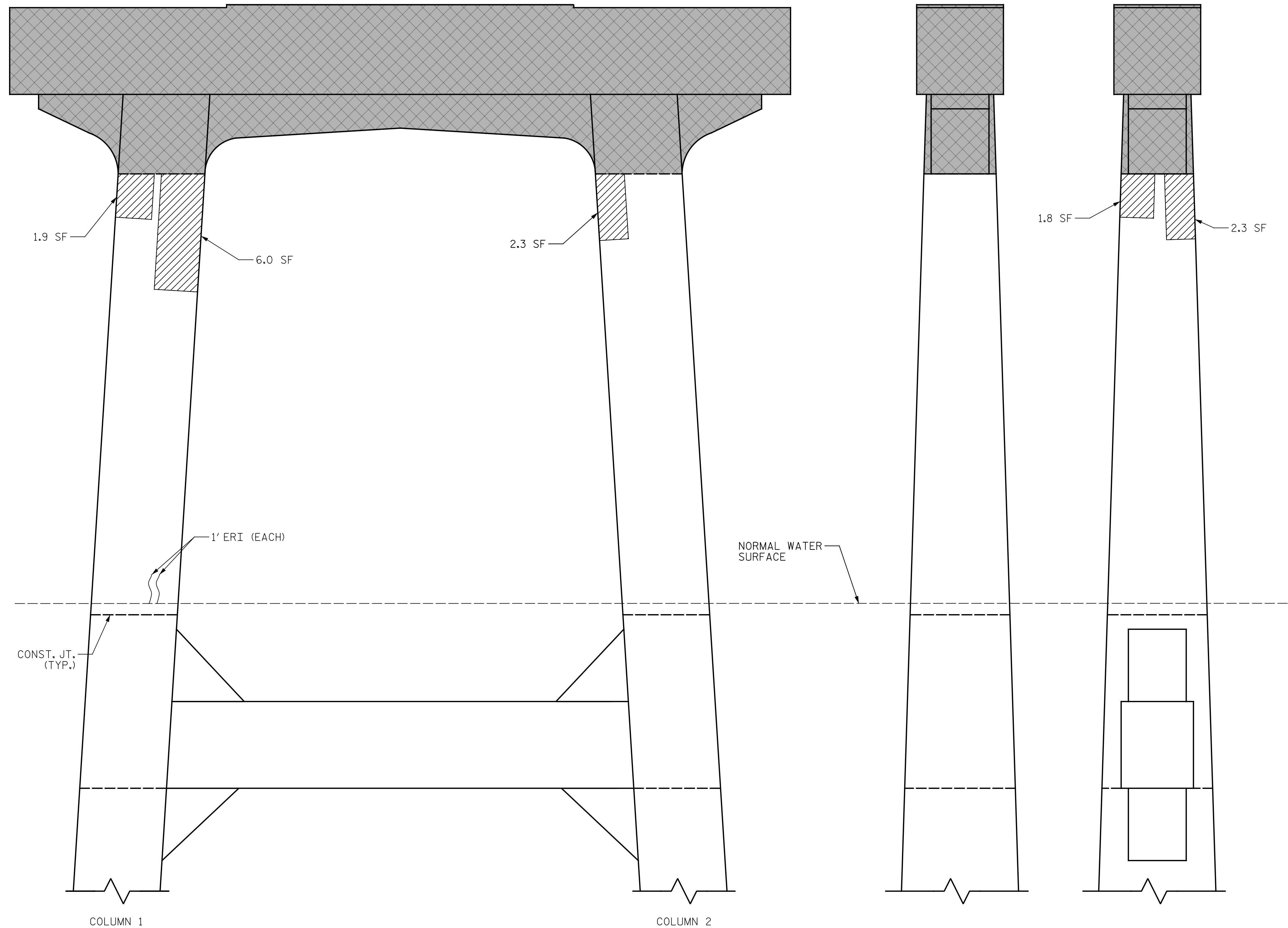
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ELEVATION
(SPAN "C" FACE)

END VIEW
(RIGHT FACE COL. 2)

INTERIOR VIEW
(LEFT FACE COL. 2)

AS-BUILT REPAIR QUANTITY TABLE					
BENT 3 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH IN.	VOLUME CF
COLUMN	26.2	10.5			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
COLUMN	3.0				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 3
 SPAN "C" FACE



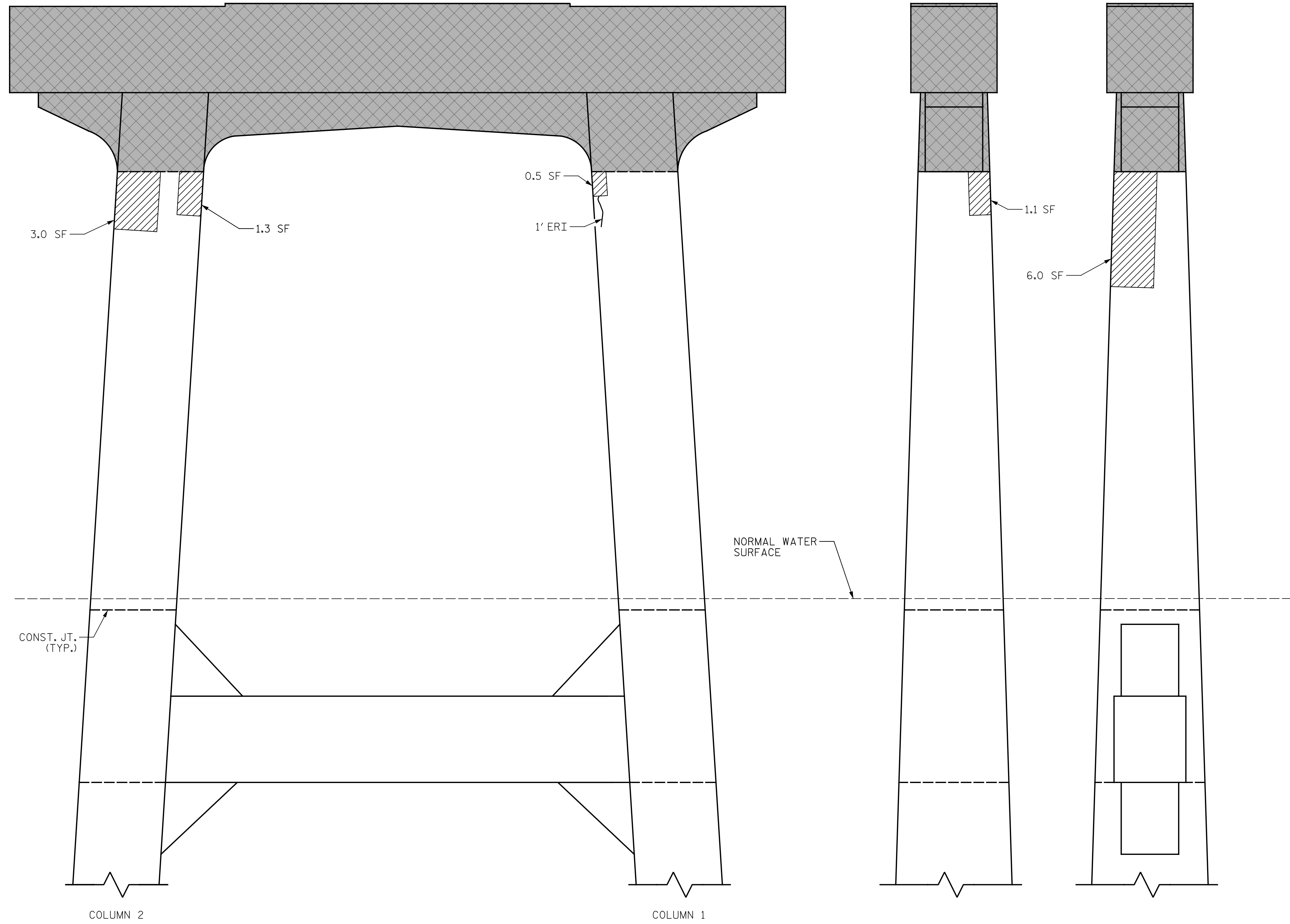
DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

PLANS PREPARED BY:
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- SHOTCRETE REPAIR
- EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

ELEVATION
(SPAN "D" FACE)

END VIEW
(LEFT FACE COL. 1)

INTERIOR VIEW
(RIGHT FACE COL. 1)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 3
 SPAN "D" FACE



DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

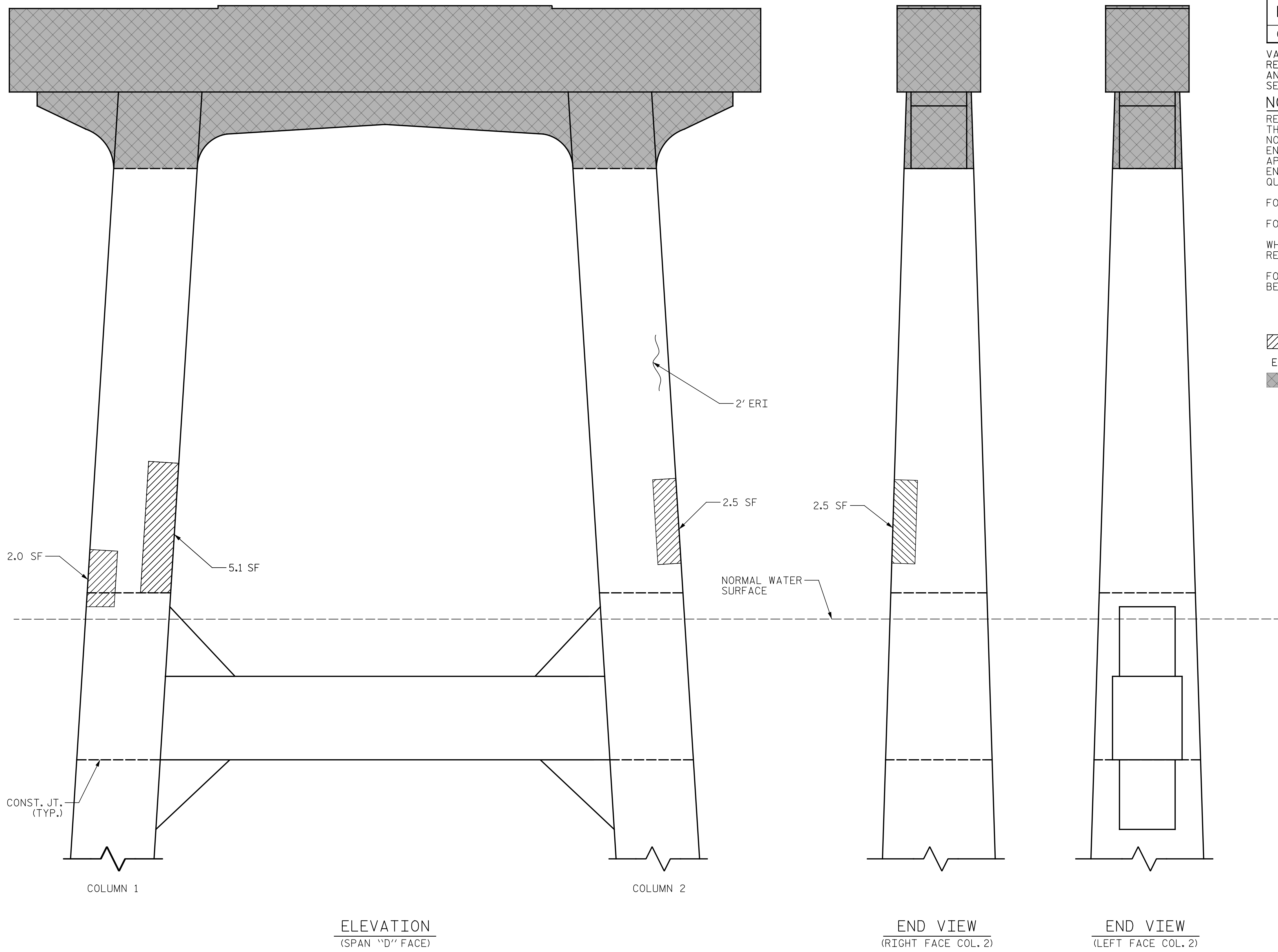
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 Suite 900
 Raleigh, NC 27603
 (919) 420-7660
 NC Lic. No. F-0270

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 Eric B. Nelson
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AS-BUILT REPAIR QUANTITY TABLE					
BENT 4 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH IN.	VOLUME CF
COLUMN	20.8	8.3			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
COLUMN	2.0				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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- SHOTCRETE REPAIR
- EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 4
 SPAN "D" FACE



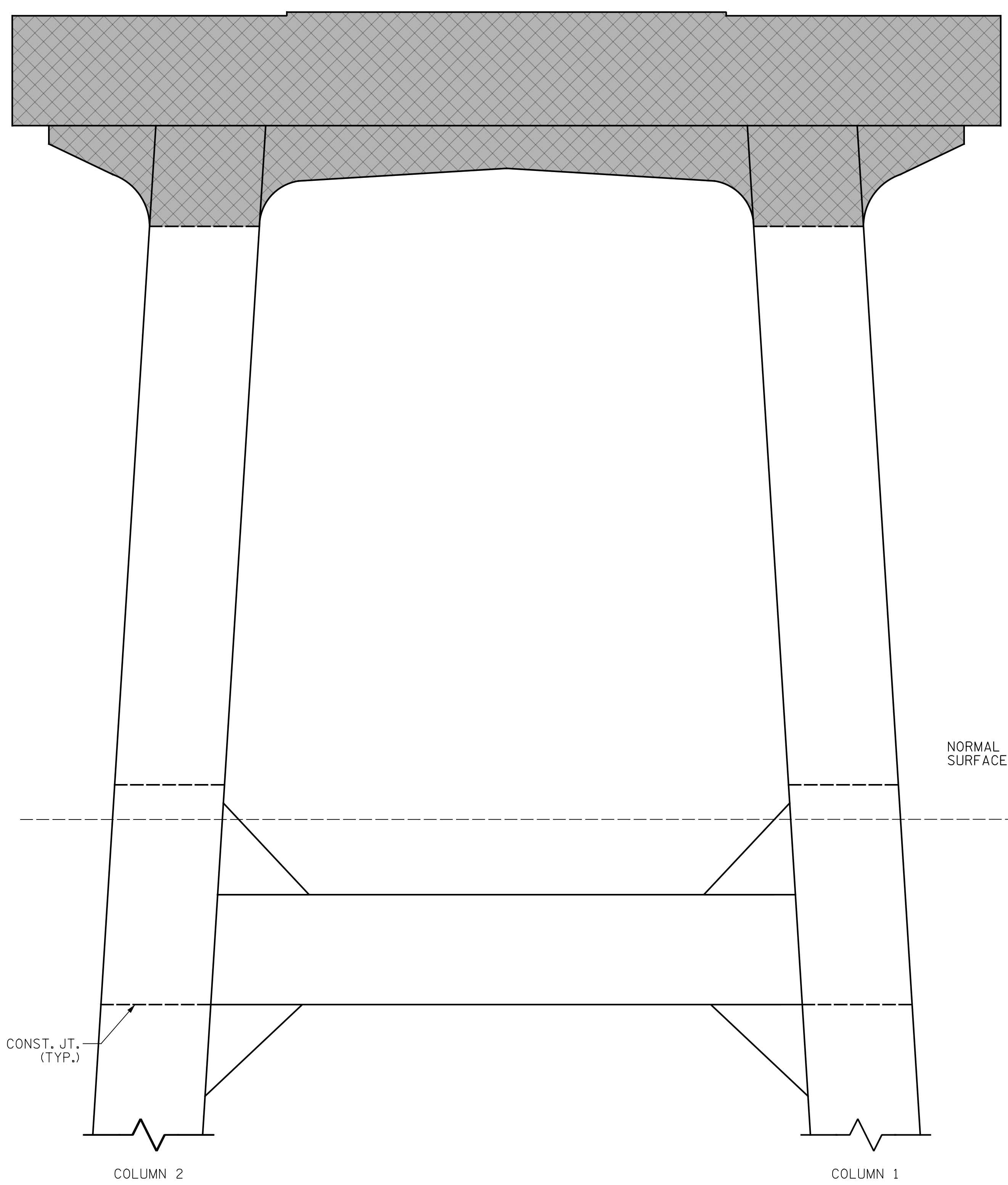
DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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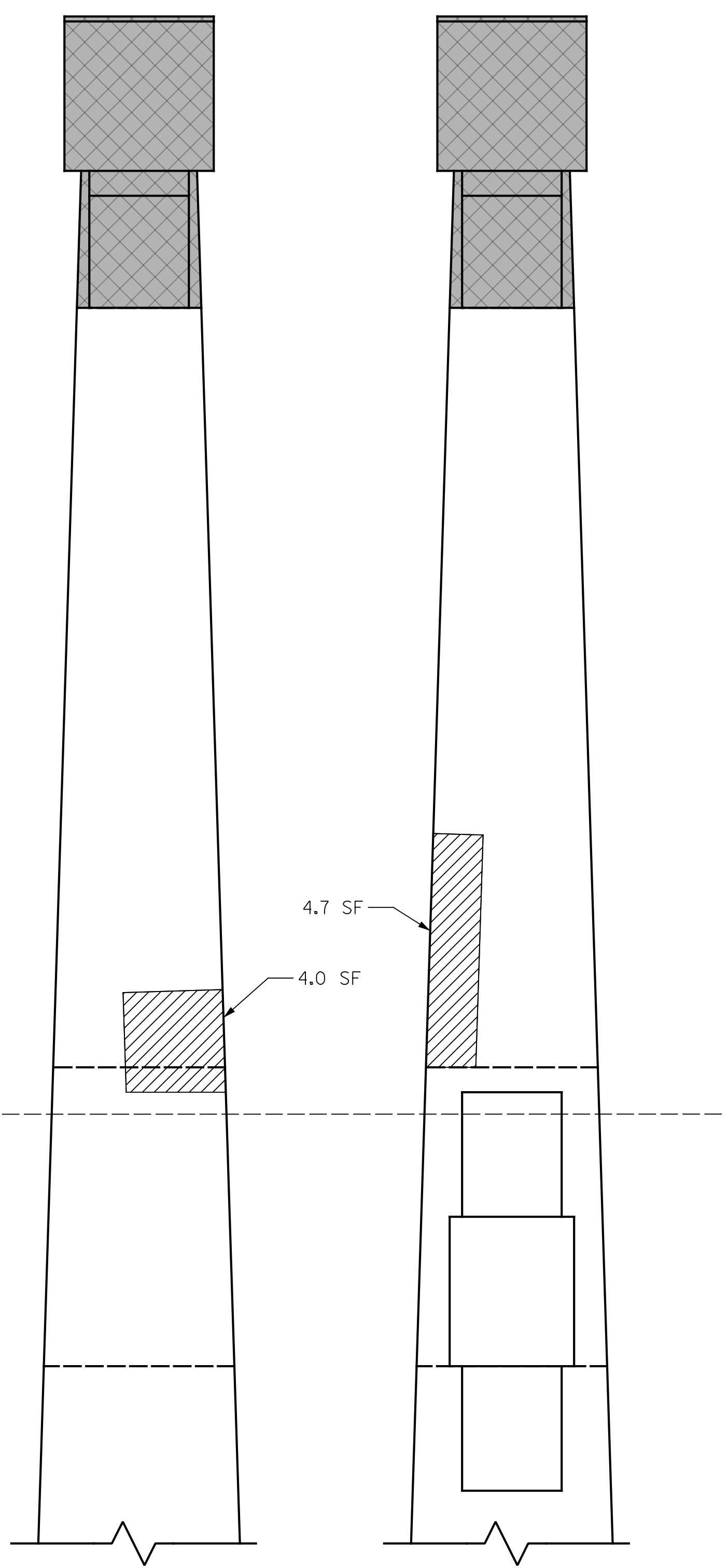
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 Eric B. Nelson
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ELEVATION
(SPAN "E" FACE)



END VIEW
(LEFT FACE COL. 1)

END VIEW
(RIGHT FACE COL. 1)

NOTES:
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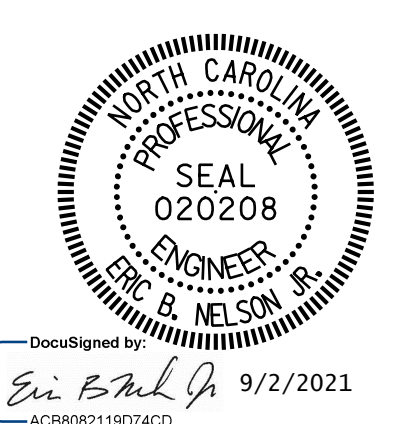
- SHOTCRETE REPAIR
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- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 4
 SPAN "E" FACE



DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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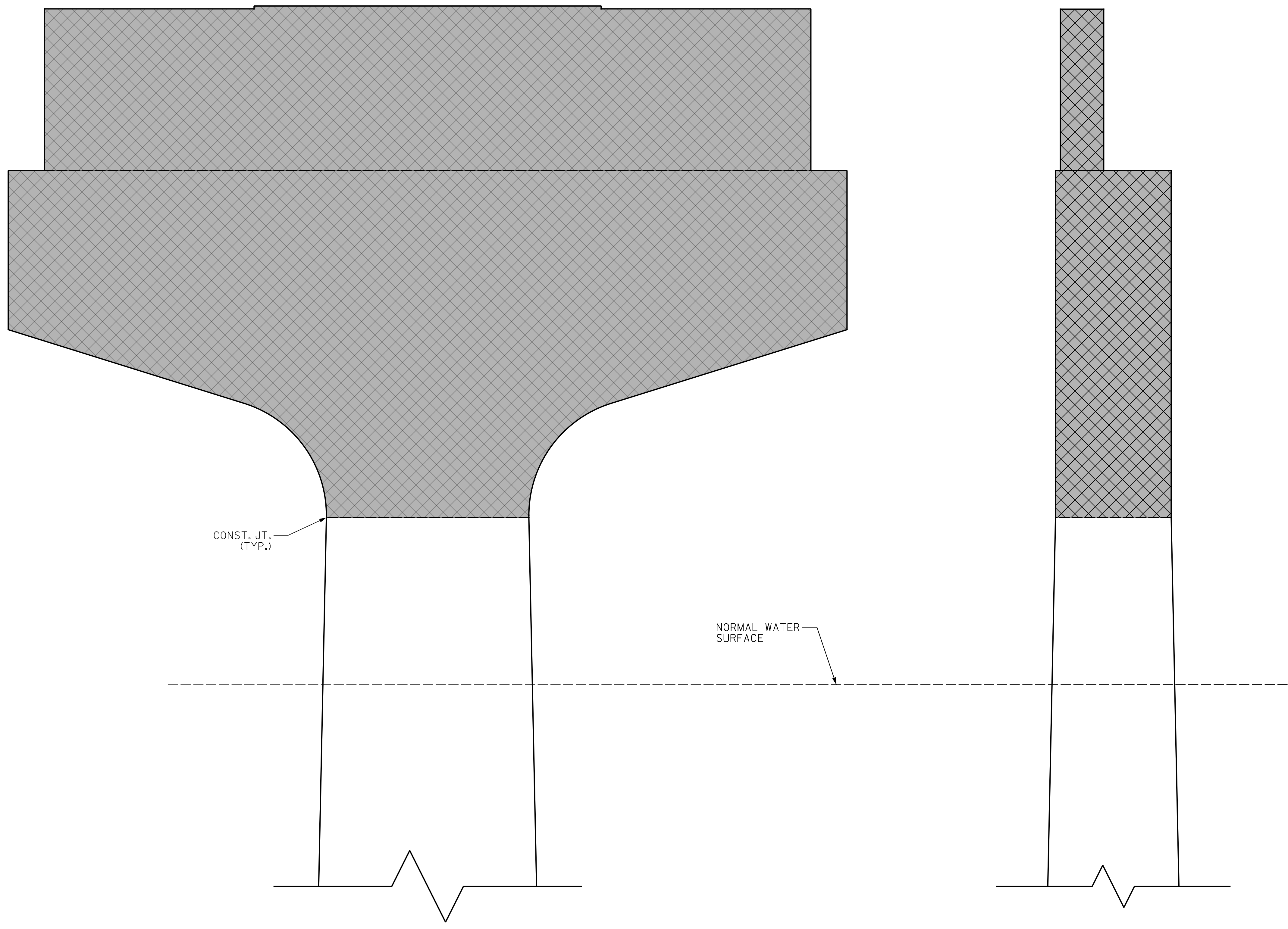
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 NC Lic. No. F-0270

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ELEVATION
(SPAN "E" FACE)

END VIEW
(RIGHT FACE)

AS-BUILT REPAIR QUANTITY TABLE					
BENT 5 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH IN.	VOLUME CF
COLUMN	9.2	3.7			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
COLUMN	0.0				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 5
 SPAN "E" FACE



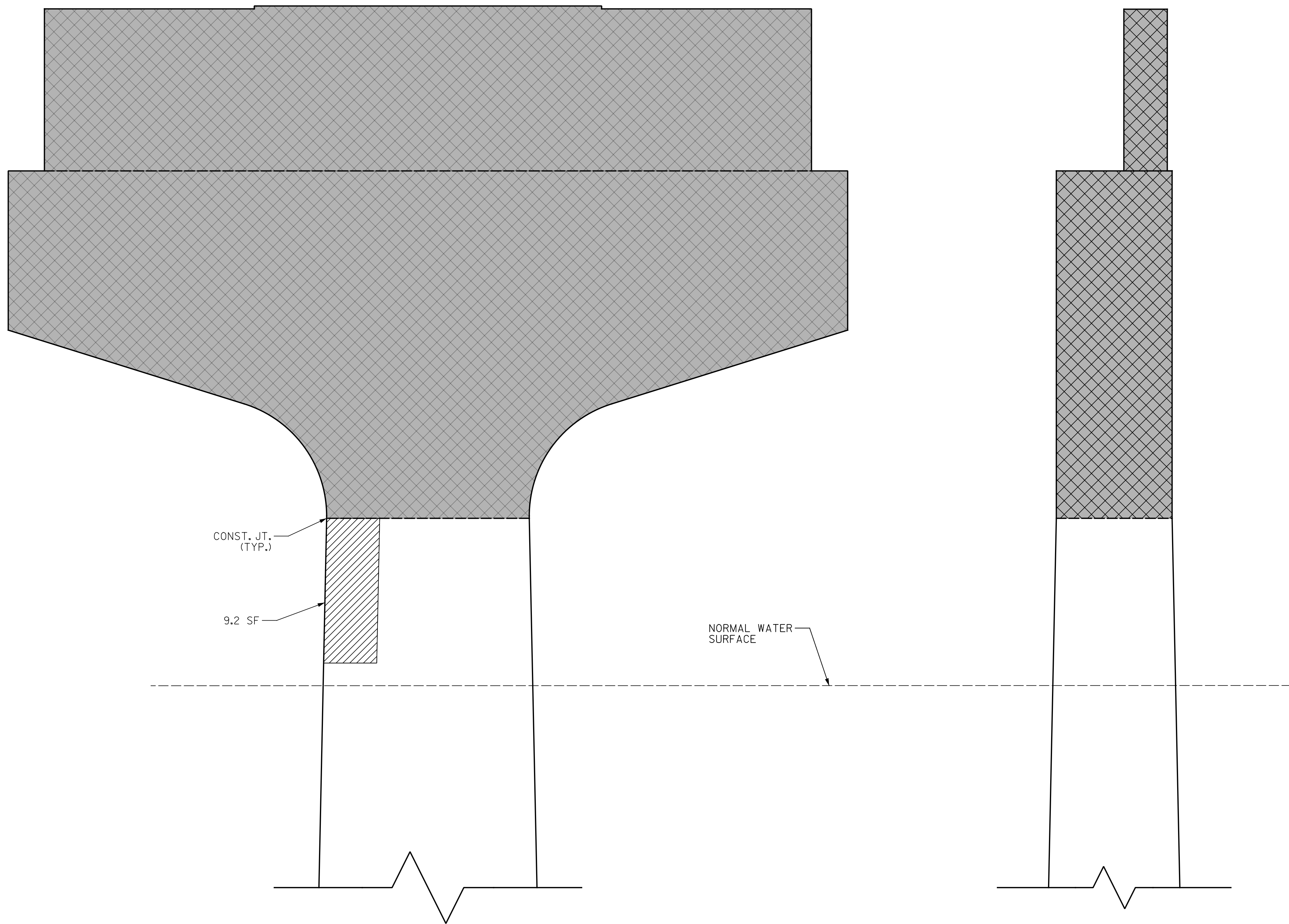
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 Eric B. Nelson
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CONST. JT.
(TYP.)

9.2 SF

NORMAL WATER SURFACE

ELEVATION
(SPAN "F" FACE)

END VIEW
(LEFT FACE)

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 FOR PROPOSED BENT CAP REPLACEMENT DETAILS, SEE SUBSTRUCTURE BENT SHEETS.

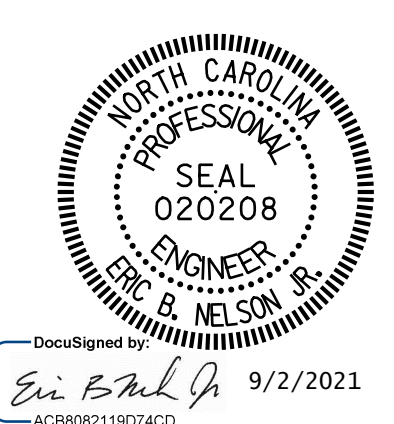
- SHOTCRETE REPAIR
- EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 5
 SPAN "F" FACE



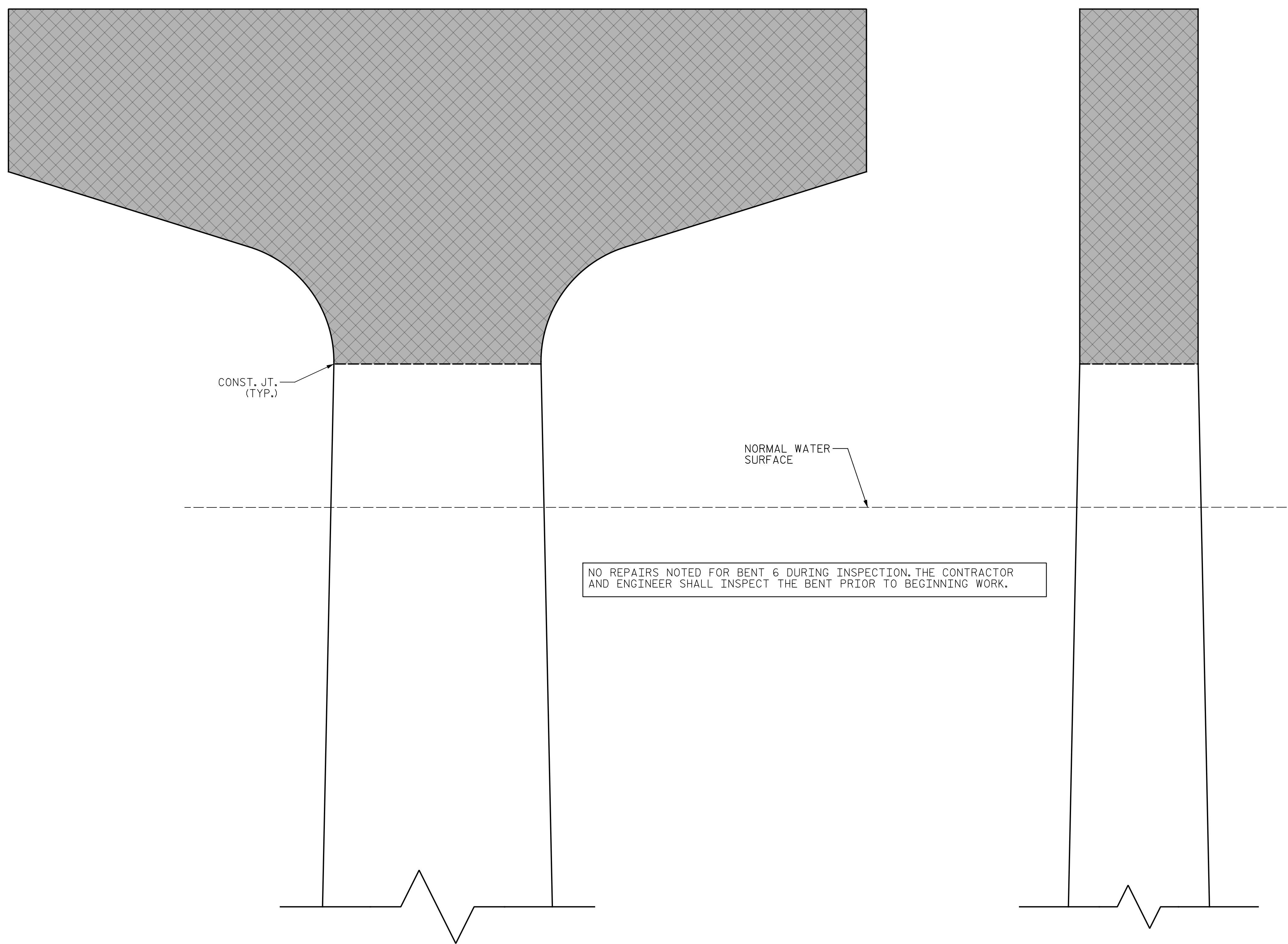
PLANS PREPARED BY:
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 (919) 420-7660
 NC Lic. No. F-0270

DocuSigned by:
 Eric B. Nelson
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DRAWN BY : T. HARTLEY/J.MYA DATE : 03/2021
 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			125

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NOTES:
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 FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
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- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

ELEVATION
(SPAN "G" FACE)

END VIEW
(LEFT FACE)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 6
 SPAN "G" FACE



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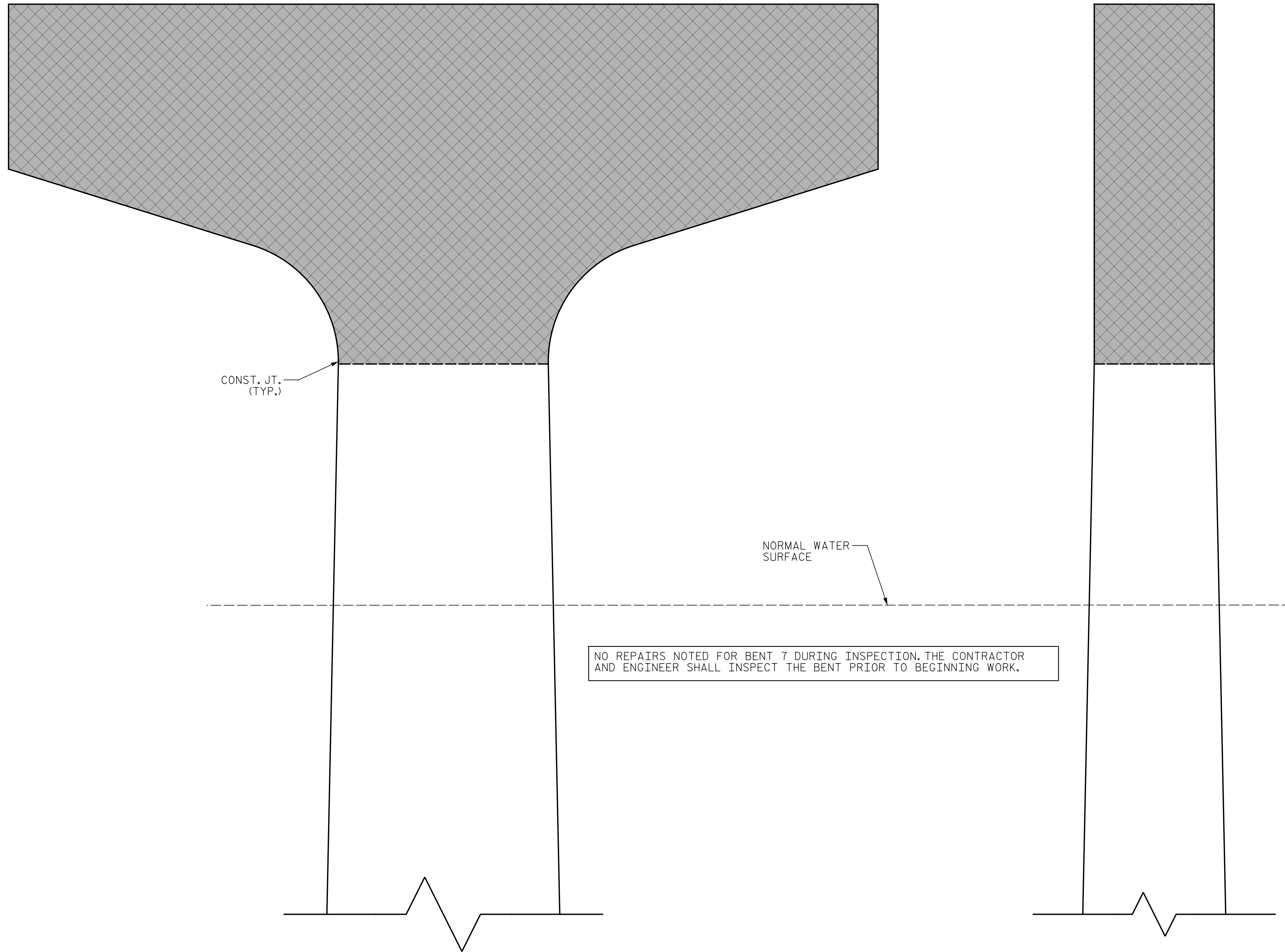
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 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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ELEVATION
(SPAN "G" FACE)

END VIEW
(RIGHT FACE)

AS-BUILT REPAIR QUANTITY TABLE					
BENT 7 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH IN.	VOLUME CF
COLUMN	0.0	0.0			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
COLUMN	0.0				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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- SHOTCRETE REPAIR
- EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 7
 SPAN "G" FACE



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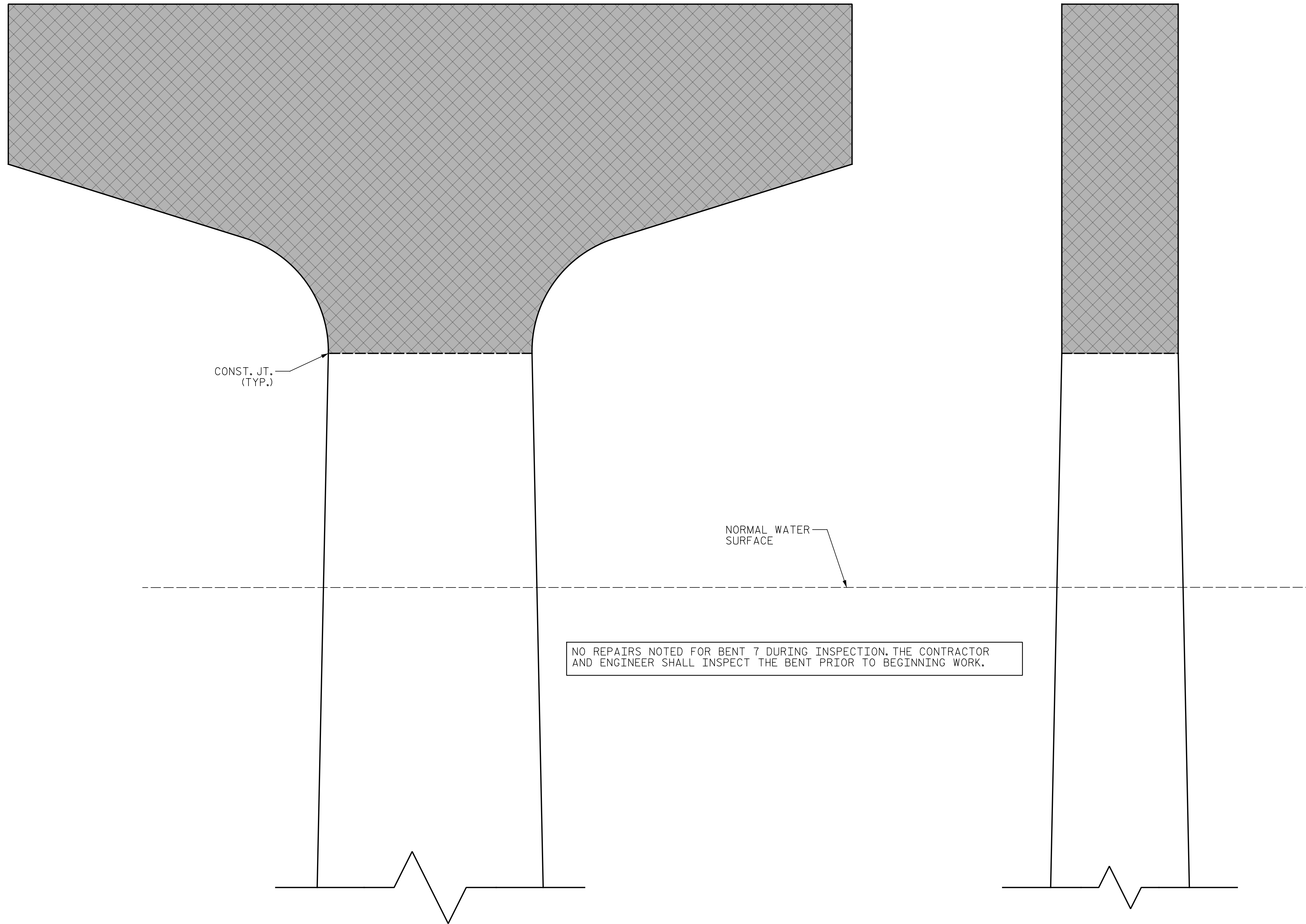
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 CHECKED BY : J. YANACCONO DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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1			3			TOTAL SHEETS
2			4			125

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- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

ELEVATION
(SPAN "H" FACE)

END VIEW
(LEFT FACE)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 7
 SPAN "H" FACE



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 CHECKED BY : J. YANACCONI DATE : 05/2021
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

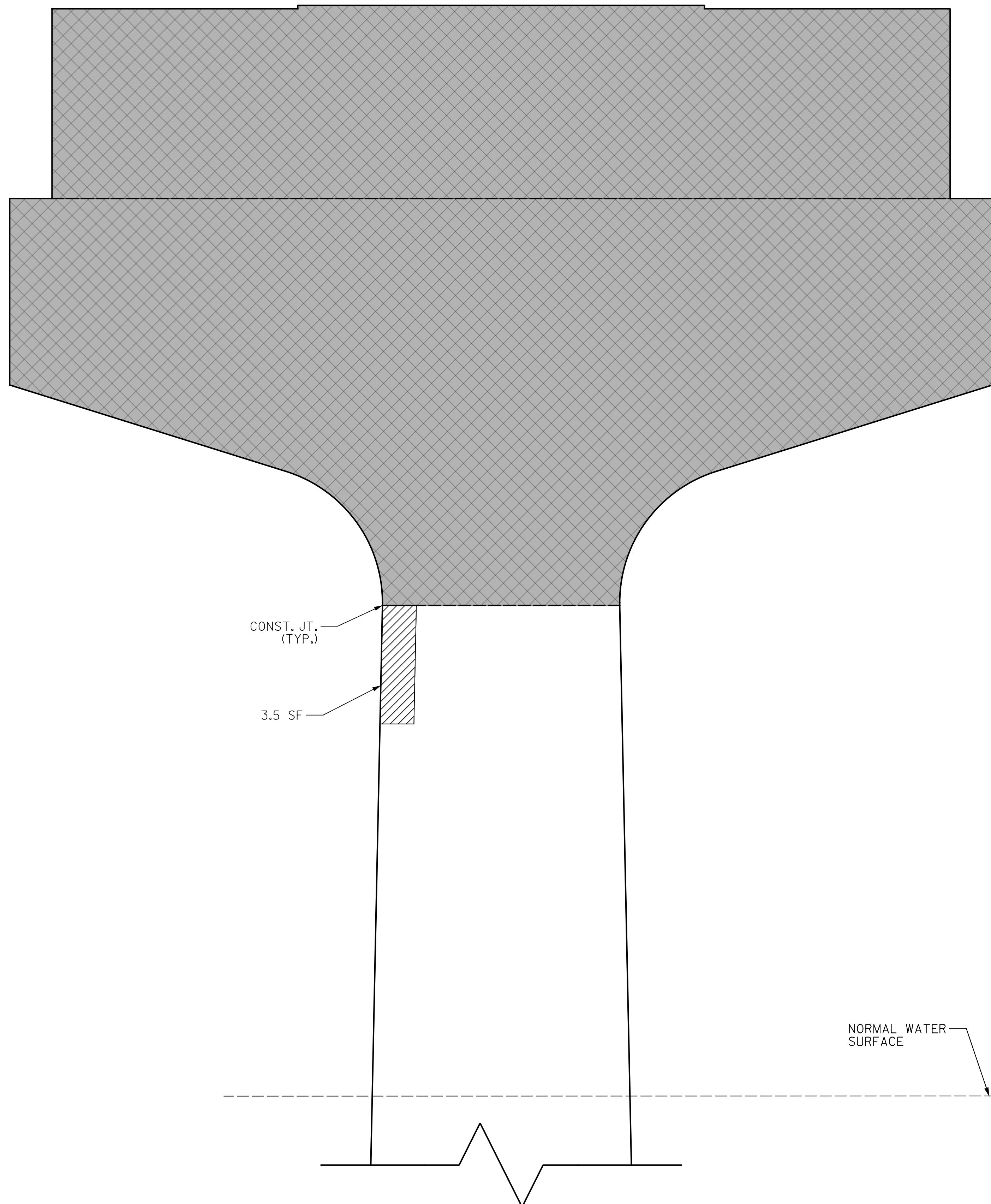
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DocuSigned by:
 Eric B. Nelson
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 NC02020811907400

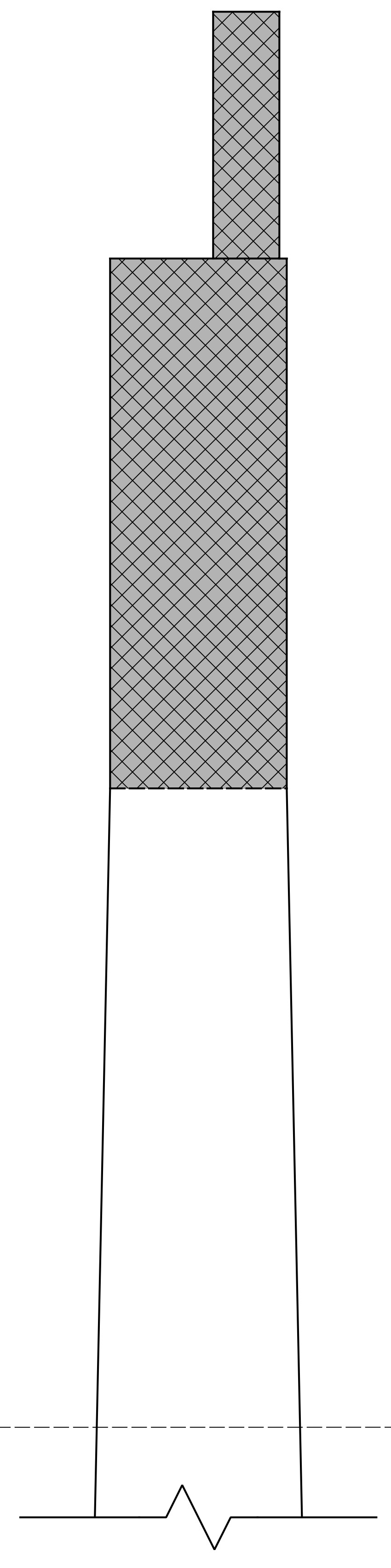
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ELEVATION
(SPAN "H" FACE)



END VIEW
(RIGHT FACE)

AS-BUILT REPAIR QUANTITY TABLE					
BENT 8 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH IN.	VOLUME CF
COLUMN	8.0	3.2			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
COLUMN	0.0				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 8
 SPAN "H" FACE



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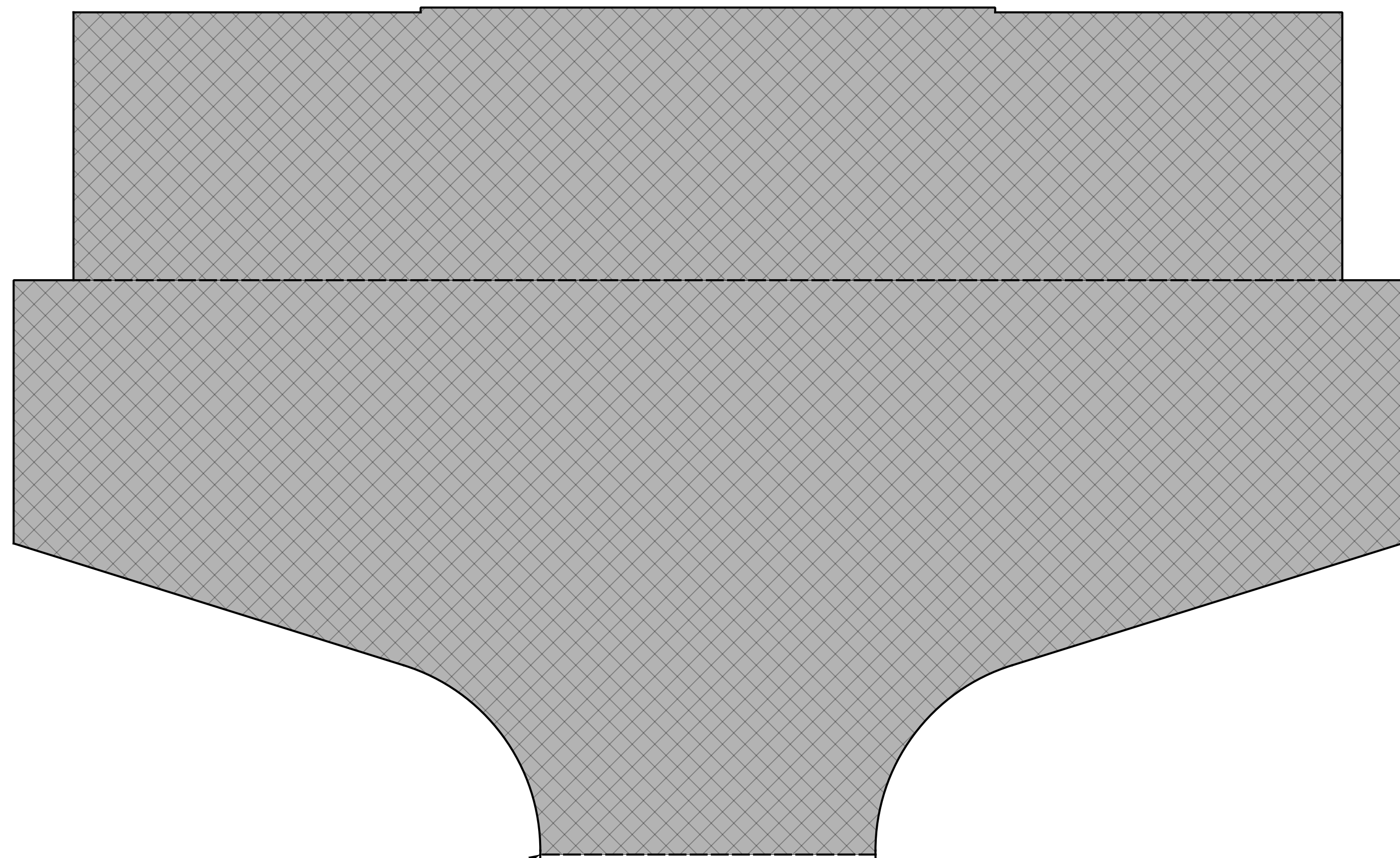
DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
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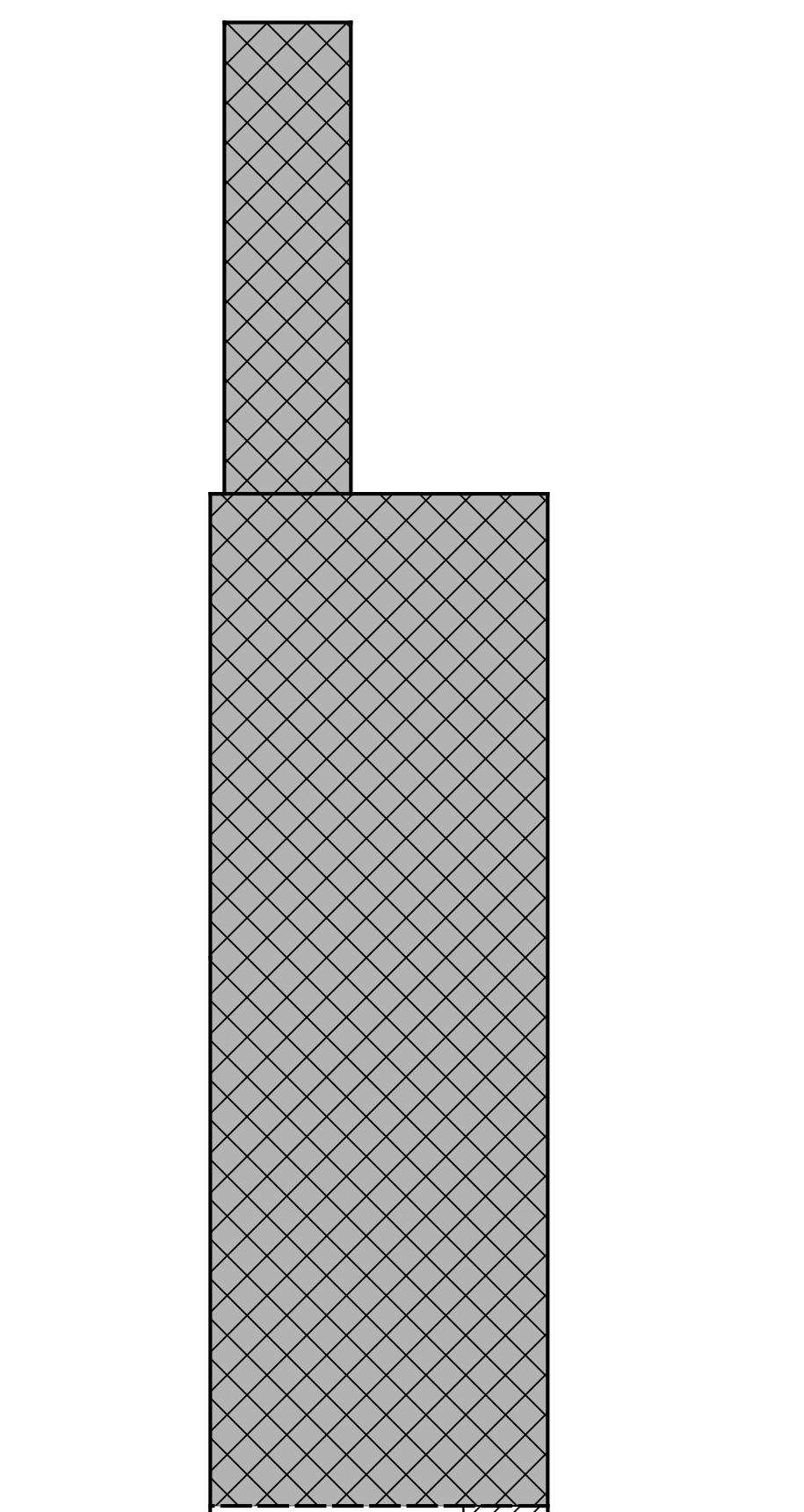
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CONST. JT.
(TYP.)

NORMAL WATER
SURFACE

ELEVATION
(SPAN "I" FACE)



4.5 SF

END VIEW
(LEFT FACE)

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- SHOTCRETE REPAIR
- EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 8
 SPAN "I" FACE



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DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
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 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 05/2021

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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-91
1			3			TOTAL SHEETS
2			4			125

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AS-BUILT REPAIR QUANTITY TABLE

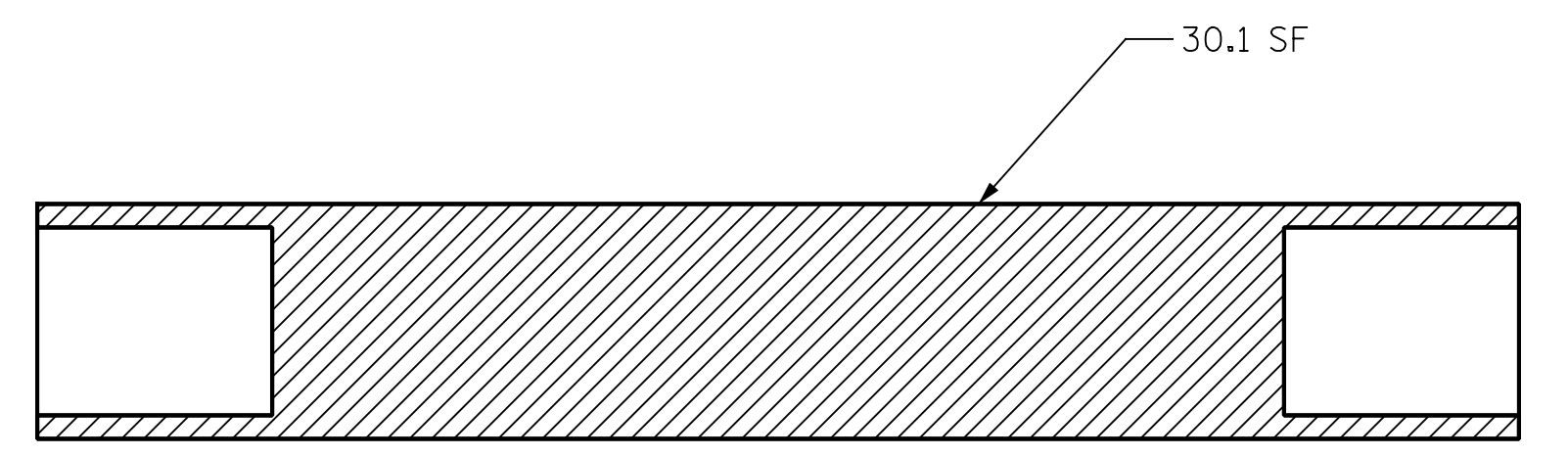
BENT 9 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH IN.	VOLUME CF
COLUMN & STRUT	33.9	13.6			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
COLUMN & STRUT	2.0				

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

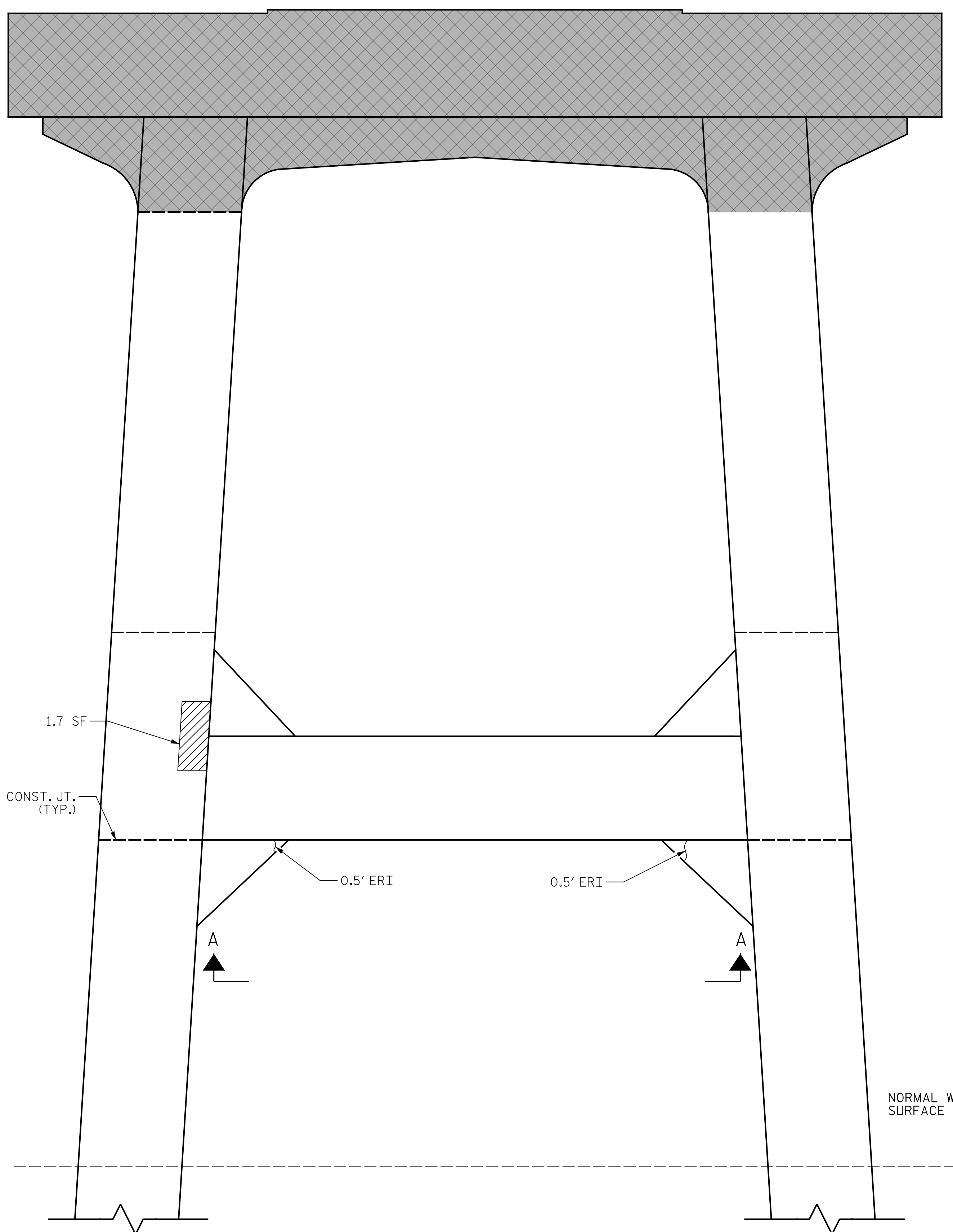
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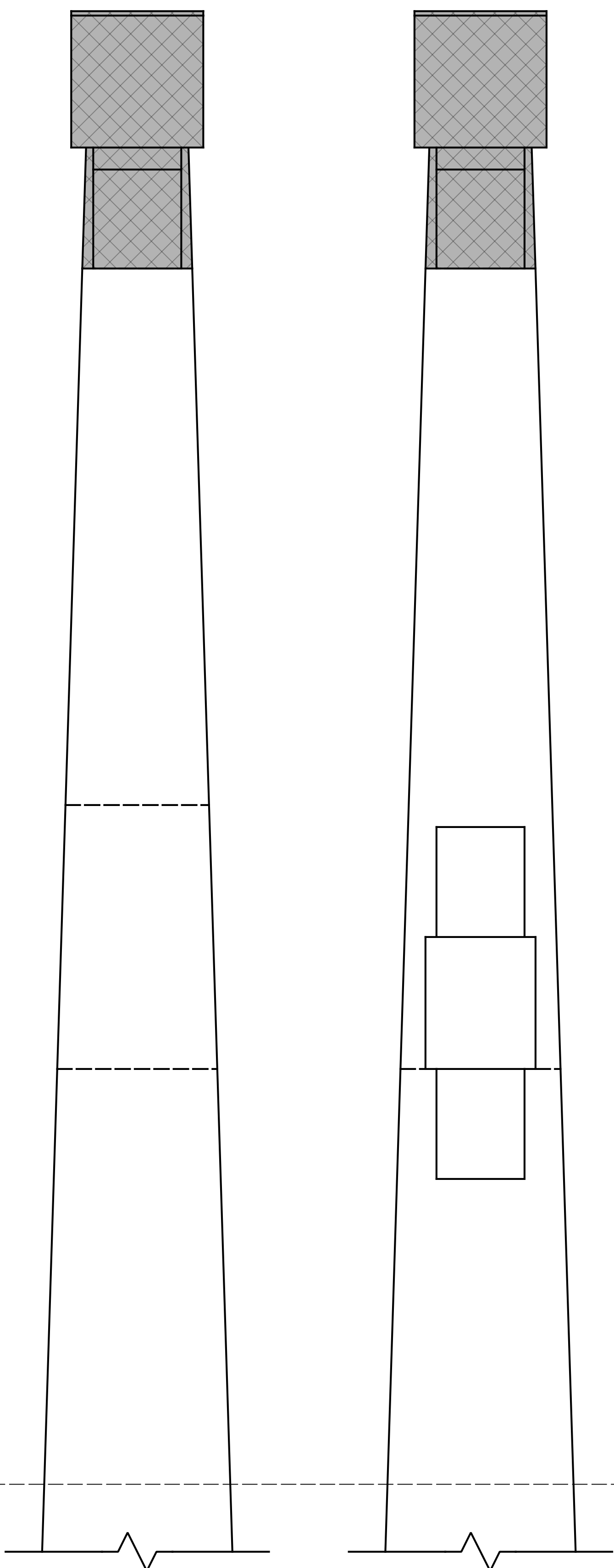
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION
- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)



VIEW A-A



ELEVATION
(SPAN "I" FACE)



END VIEW
(RIGHT FACE COL. 2)

INTERIOR VIEW
(LEFT FACE COL. 2)

PROJECT NO. B-4626
STANLY, ROWAN
AND DAVIDSON COUNTY
 STATION: 45+22.65 -EBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIR
 BENT 9
 SPAN "I" FACE



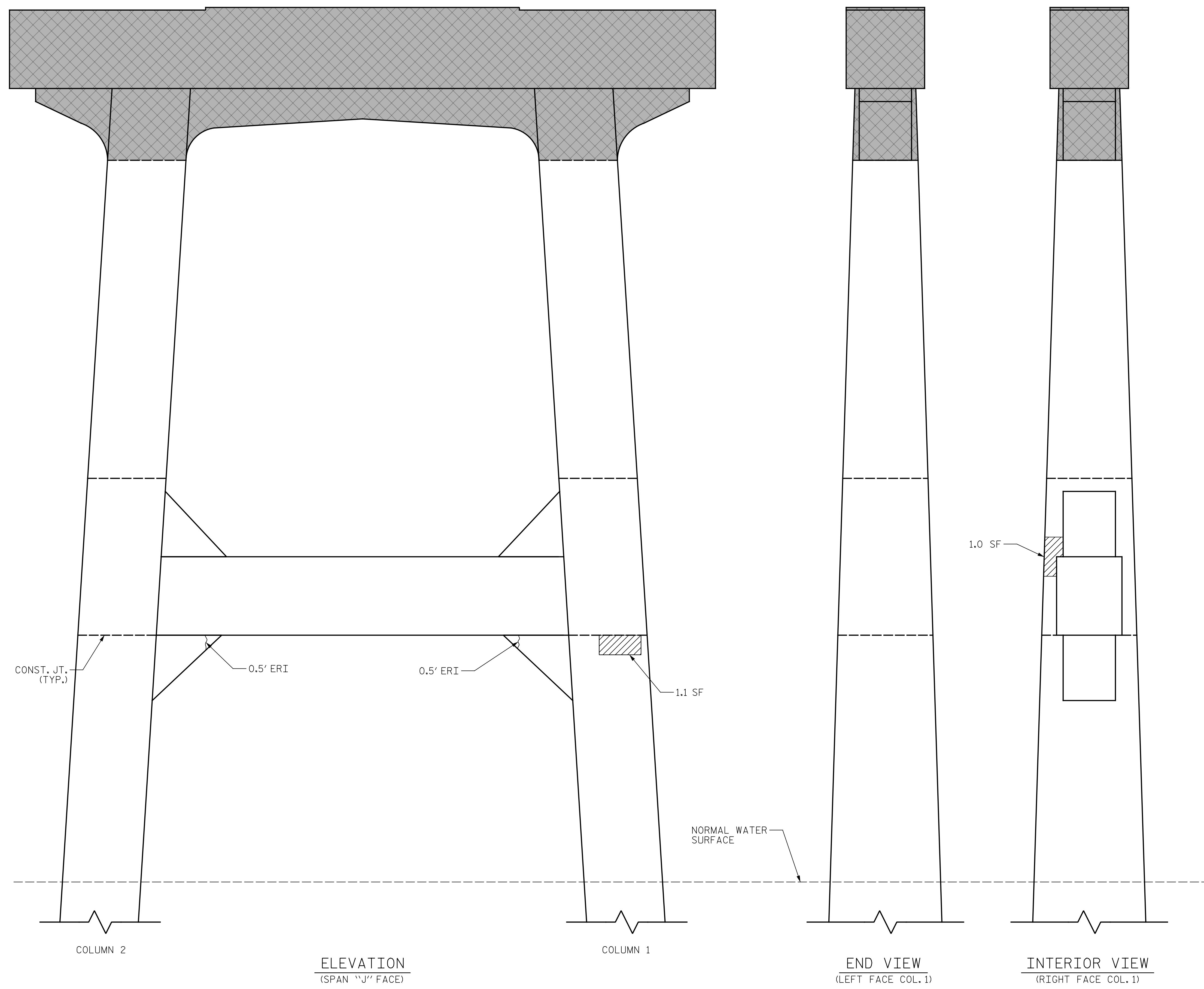
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- DEMOLITION (SEE "CAP DEMOLITION DETAILS" SHEET)

PROJECT NO. B-4626
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SHEET 2 OF 2

STATE OF NORTH CAROLINA
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SUBSTRUCTURE REPAIR
 BENT 9
 SPAN "J" FACE



DRAWN BY : T. HARTLEY/J. MYA DATE : 03/2021
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