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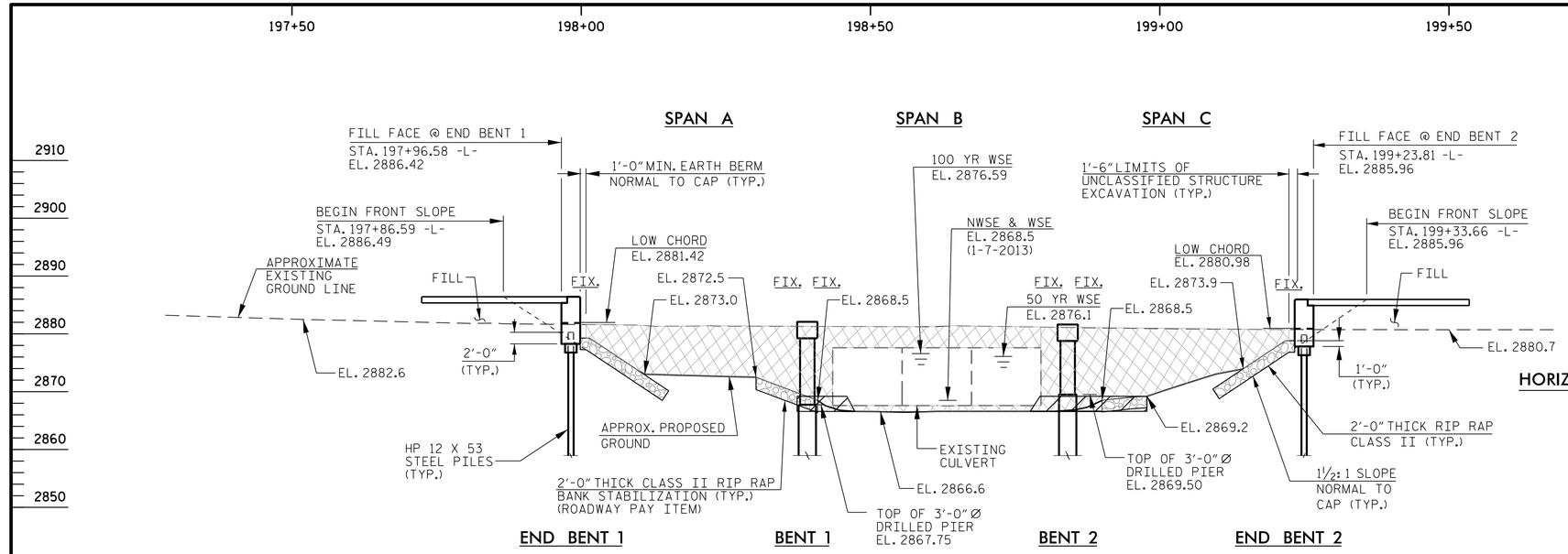
F.A. PROJECT NO. STP-0221(40)

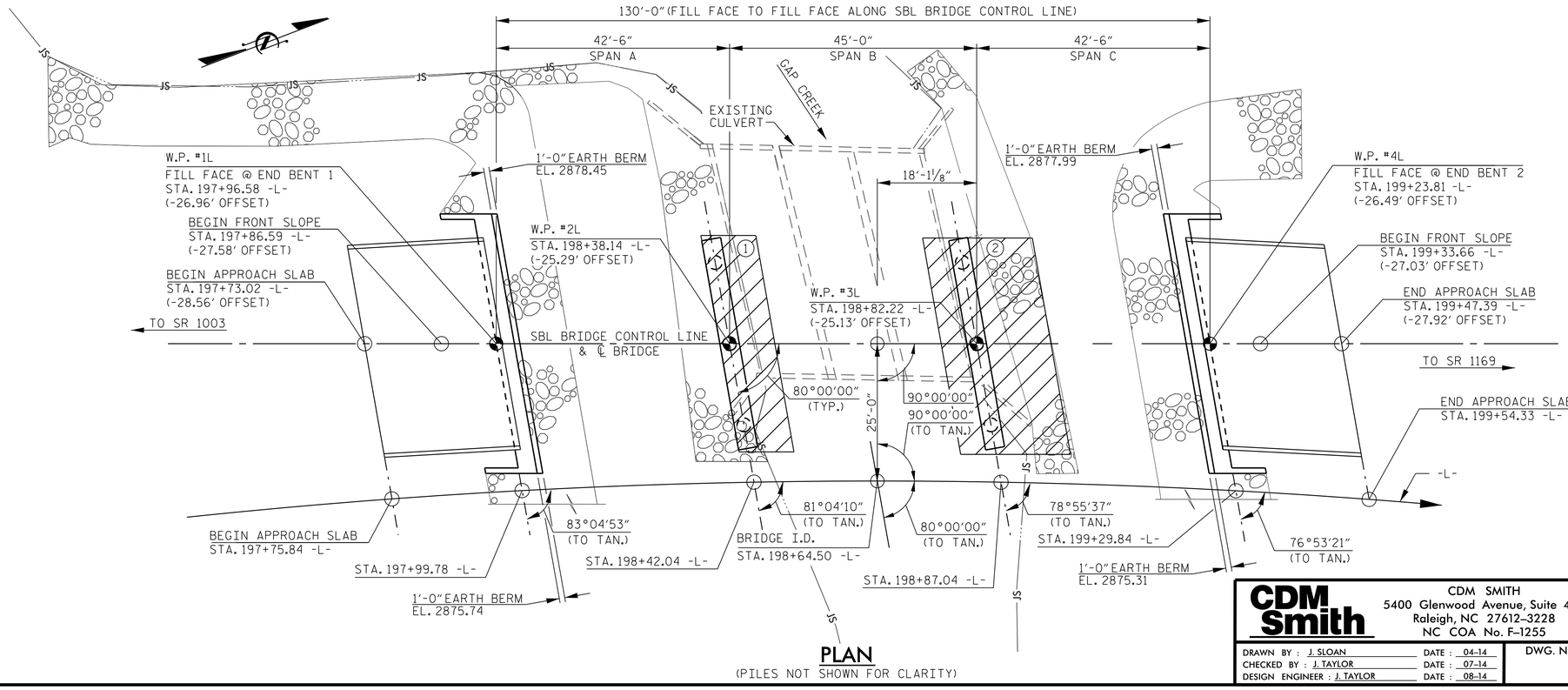


SECTION ALONG -SBL- BRIDGE CONTROL LINE & ℄ BRIDGE

(SECTION AT END BENTS AND BENTS ARE AT RIGHT ANGLES TO BENTS)

UNCLASSIFIED STRUCTURE EXCAVATION

TEMPORARY ROCK CAUSEWAY



PLAN

(PILES NOT SHOWN FOR CLARITY)

HORIZONTAL CURVE DATA -L-

PI STA. 195+10.72
△= 57° 44' 33.0" (RT)
D = 4° 45' 38.7"
L = 1,212.88'
T = 663.58'
R = 1,203.50'

GRADE DATA -L-

(-) 1.4200% (-) 0.3400%

PI = 195+00.00
EL = 2,885.81'
VC = 200.00'

HYDRAULIC DATA

DESIGN DISCHARGE	= 2400 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 2,876.1 FT.
DRAINAGE AREA	= 9.5 SQ. MI.
BASE DISCHARGE (Q100)	= 2,900 CFS
BASE HIGH WATER ELEVATION	= 2,876.59 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= >3,900 CFS
FREQUENCY OF OVERTOPPING FLOOD	= >500 YEARS
OVERTOPPING FLOOD ELEVATION	= 2,884.0 FT.
OVERTOPPING ROAD	= 200+00 -L-

TEMPORARY ROCK CAUSEWAY AREAS

① 10' X 40'
② 20' X 40'

BOTH TEMPORARY ROCK CAUSEWAY AREAS SHALL REMAIN IN PLACE UNTIL THE INTERIOR BENT SHAFTS, COLUMNS, AND CAPS ARE CONSTRUCTED.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 1 OF 4 BRIDGE NO. 538

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER GAP CREEK ON US 221 BETWEEN SR 1003 AND SR 1169

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-1
1			3			TOTAL SHEETS
2			4			34

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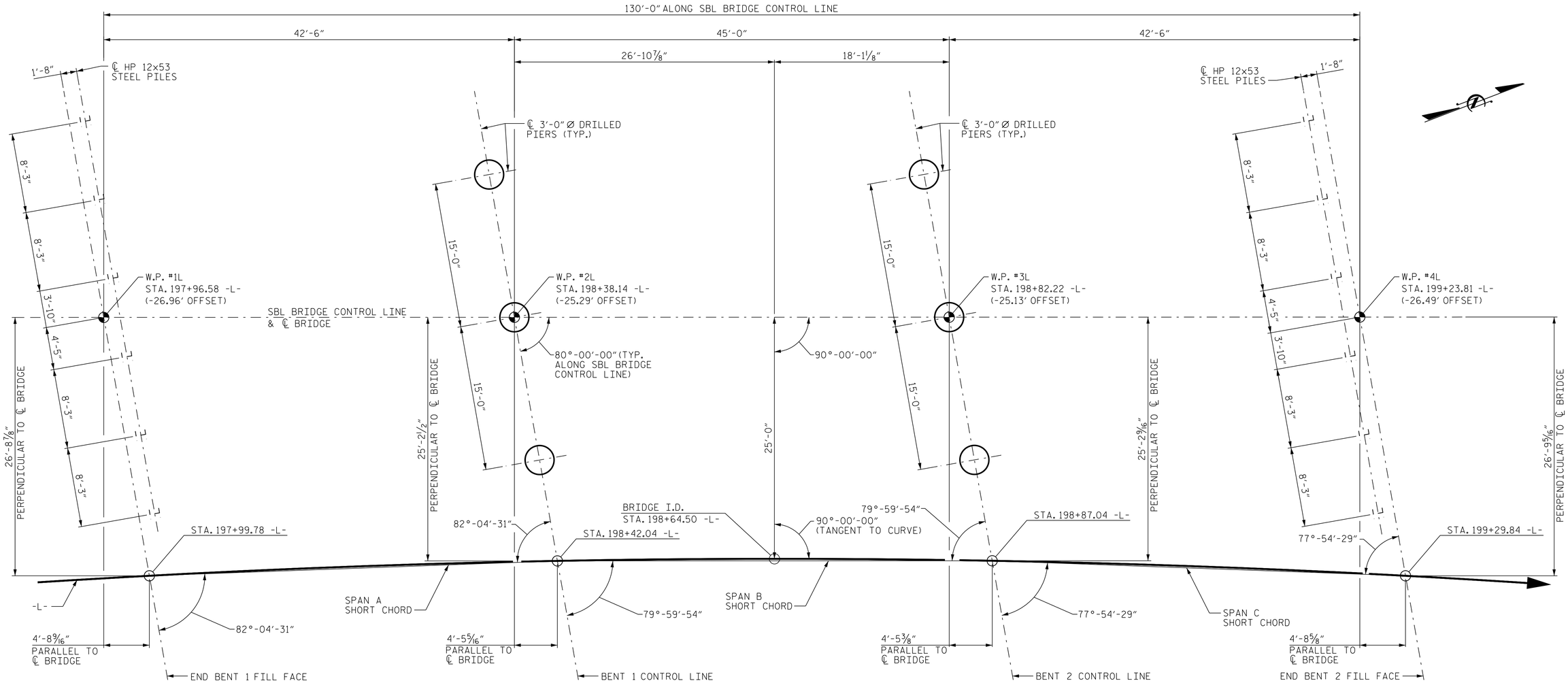

FOUNDATION LAYOUT

NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

INSTALL DRILLED PIERS AT BENT NO. 1 TO A TIP ELEVATION NO HIGHER THAN 2852.0 FT AND WITH THE REQUIRED TIP RESISTANCE.

DRILLED PIERS AT BENT NO. 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 243.5 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 30.0 TSF.

PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO. 1. IF REQUIRED, DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 2860.0 FT WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT STEEL CASING.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 IS ELEVATION 2859.0 FT. THE SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

INSTALL DRILLED PIERS AT BENT NO. 2 TO A TIP ELEVATION NO HIGHER THAN 2852.0 FT AND WITH THE REQUIRED TIP RESISTANCE.

DRILLED PIERS AT BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 244 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 30.0 TSF.

PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO. 2. IF REQUIRED, DO NOT EXTEND CASING BELOW ELEVATION 2862 FT WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT STEEL CASING.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 2 IS ELEVATION 2859 FT. THE SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SID INSPECTIONS ARE REQUIRED FOR DRILLED PIERS AT BENTS NOS. 1 AND 2. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.

DRIVE PILES AT END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER GAP CREEK ON US 221 BETWEEN SR 1003 AND SR 1169

(SBL)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-2
1			3			TOTAL SHEETS
2			4			34

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

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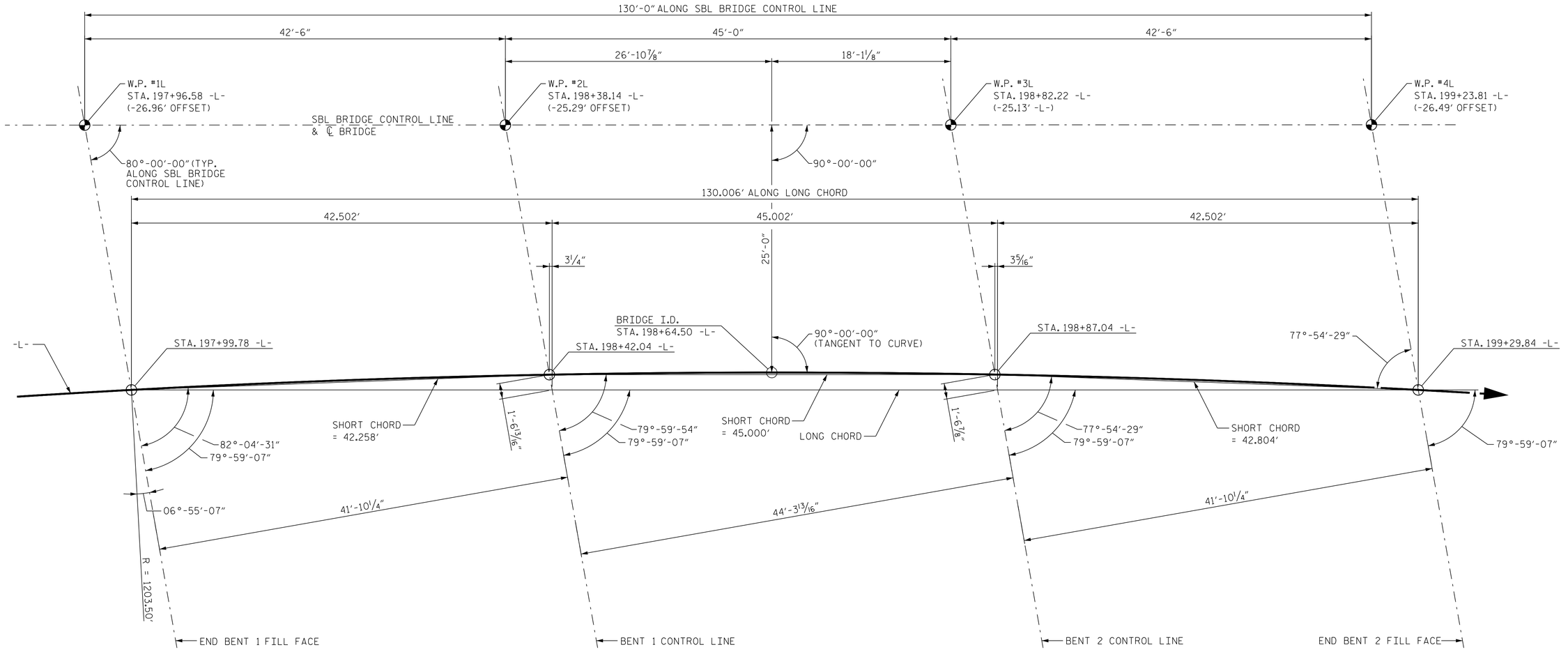

LONG CHORD LAYOUT

NOTES

ALL END BENTS AND BENTS ARE PARALLEL.

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER GAP CREEK ON US 221 BETWEEN SR 1003 AND SR 1169

(SBL)

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REVISIONS						SHEET No.
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1			3			TOTAL SHEETS
2			4			34

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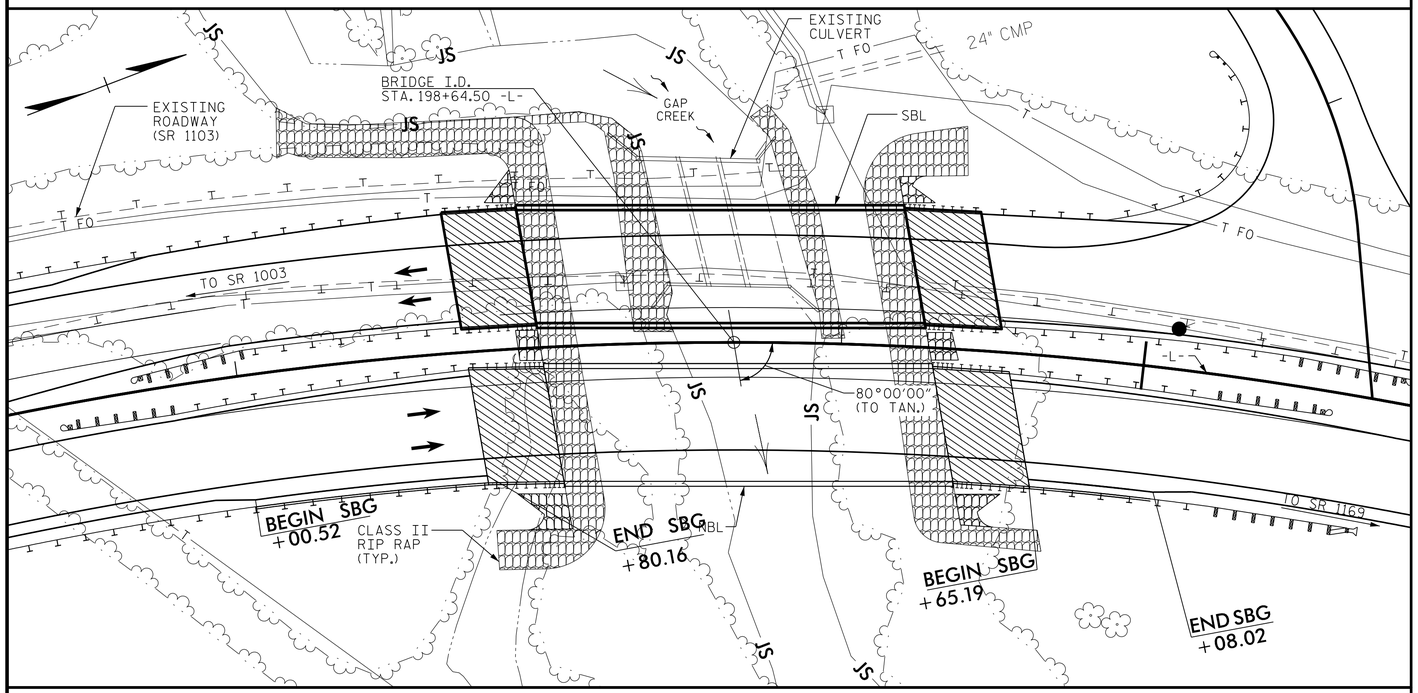
BM#8: RR SPIKE IN 30" WHITE PINE, STA 189+80.00 -L-, 191' LT EL.2881.14



LOCATION SKETCH

GENERAL 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.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES".

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

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THE EXISTING 44 FOOT LONG 3 BARREL REINFORCED CONCRETE BOX CULVERT AND WINGWALLS SHALL BE REMOVED.

REMOVAL OF THE EXISTING CULVERT SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE CULVERT AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE EXISTING CULVERT 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 CULVERT SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 45 FT. LEFT AND 25 FT. RIGHT 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.

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 198+64.50 -L-.

THE EXISTING PAVEMENT WITHIN THE AREA OF THE END BENT PILES SHALL BE REMOVED AND THE ROADBED SCARIFIED TO A MINIMUM DEPTH OF 2'-0".

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

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

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

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.

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.

FOR PLACING LOAD ON STRUCTURE MEMBERS, SEE SPECIAL PROVISIONS.

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMP. ACCESS	REMOVAL OF EXISTING STRUCTURE	3'-0" Ø DRILLED PIERS IN SOIL	3'-0" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	PDA TESTING	SID INSPECTIONS	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	36" PRESTRESSED CONCRETE GIRDERS		HP 12 X 53 STEEL PILES		CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS
	LUMP SUM	LUMP SUM	LIN.FT.	LIN.FT.	LIN.FT.	EACH	EACH	EACH	LUMP SUM	SQ.FT.	SQ.FT.	CU.YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN.FT.	NO.	LIN.FT.	LIN.FT.	TONS	SQ. YD.	LUMP SUM
SUPERSTRUCTURE	--	--	--	--	--	--	--	--	--	5,265	5,990	--	LUMP SUM	--	--	12	505.13	--	--	256.6	--	--	LUMP SUM
END BENT NO.1	--	--	--	--	--	--	--	--	--	--	--	26.8	--	4,924	--	--	--	6	117	--	219	243	--
BENT NO.1	LUMP SUM	--	15.3	32.0	23.3	--	--	--	--	--	--	21.5	--	8,055	1,415	--	--	--	--	--	--	--	--
BENT NO.2	LUMP SUM	--	13.5	39.0	22.5	--	--	--	--	--	--	20.5	--	8,035	1,400	--	--	--	--	--	--	--	--
END BENT NO.2	--	--	--	--	--	--	--	--	--	--	--	26.8	--	4,924	--	--	--	6	117	--	129	143	--
TOTAL	LUMP SUM	LUMP SUM	28.8	71.0	45.8	1	1	1	LUMP SUM	5,265	5,990	95.6	LUMP SUM	25,938	2,815	12	505.13	12	234	256.6	348	386	LUMP SUM

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 4 OF 4

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE OVER GAP CREEK ON US 221 BETWEEN SR 1003 AND SR 1169

(SBL)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-4
1			3			TOTAL SHEETS
2			4			34

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LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL		VEHICLE	WEIGHT (W) (TONS)	⟨#⟩ CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W × RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT						
							LIVE-LOAD FACTORS (γ_{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 (γ_{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⟩	1.11	--	1.75	0.94	1.28	A	I	21.55	1.09	1.11	B	I	35.75	0.80	0.91	1.24	B	I	22.50	
		HL-93 (OPERATING)	N/A		1.66	--	1.35	0.94	1.66	A	I	21.55	1.09	1.87	B	I	35.75	N/A	-	-	-	-	22.50	
		HS-20 (INVENTORY)	36.000	⟨2⟩	1.52	54.72	1.75	0.94	1.59	A	I	21.55	1.09	1.56	B	I	31.33	0.80	0.91	1.52	B	I	22.50	
		HS-20 (OPERATING)	36.000		2.06	74.16	1.35	0.94	2.06	A	I	21.55	1.09	2.18	B	I	35.75	N/A	-	-	-	-	22.50	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		2.94	39.69	1.40	0.94	3.71	A	I	21.55	1.09	4.49	B	I	35.75	0.80	0.91	2.94	B	I	22.50	
		SNGARBS2	20.000		2.39	47.80	1.40	0.94	3.07	A	I	21.55	1.09	3.35	B	I	35.75	0.80	0.91	2.39	B	I	22.50	
		SNAGRIS2	22.000		2.36	51.92	1.40	0.94	3.00	A	I	17.45	1.09	3.18	B	I	35.75	0.80	0.91	2.36	B	I	22.50	
		SNCOTTS3	27.250		1.47	40.06	1.40	0.94	1.85	A	I	21.55	1.09	2.22	B	I	35.75	0.80	0.91	1.47	B	I	22.50	
		SNAGGRS4	34.925		1.30	45.40	1.40	0.94	1.66	A	I	21.55	1.09	1.96	B	I	35.75	0.80	0.91	1.30	B	I	22.50	
		SNS5A	35.550		1.27	45.15	1.40	0.94	1.62	A	I	21.55	1.09	2.06	B	I	35.75	0.80	0.91	1.27	B	I	22.50	
		SNS6A	39.950		1.20	47.94	1.40	0.94	1.54	A	I	21.55	1.09	1.92	B	I	35.75	0.80	0.91	1.20	B	I	22.50	
		SNS7B	42.000	⟨3⟩	1.14	47.88	1.40	0.94	1.47	A	I	21.55	1.09	1.96	B	I	35.75	0.80	0.91	1.14	B	I	22.50	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.47	48.51	1.40	0.94	1.89	A	I	21.55	1.09	2.27	B	I	35.75	0.80	0.91	1.47	B	I	22.50	
		TNT4A	33.075		1.49	49.28	1.40	0.94	1.92	A	I	21.55	1.09	2.13	B	I	35.75	0.80	0.91	1.49	B	I	22.50	
		TNT6A	41.600		1.25	52.00	1.40	0.94	1.62	A	I	21.55	1.09	2.11	B	I	35.75	0.80	0.91	1.25	B	I	22.50	
		TNT7A	42.000		1.27	53.34	1.40	0.94	1.66	A	I	21.55	1.09	1.91	B	I	35.75	0.80	0.91	1.27	B	I	22.50	
		TNT7B	42.000		1.33	55.86	1.40	0.94	1.71	A	I	21.55	1.09	1.87	B	I	35.75	0.80	0.91	1.33	B	I	22.50	
		TNAGRIT4	43.000		1.26	54.18	1.40	0.94	1.65	A	I	21.55	1.09	1.78	B	I	35.75	0.80	0.91	1.26	B	I	22.50	
		TNAGT5A	45.000		1.18	53.10	1.40	0.94	1.53	A	I	21.55	1.09	1.85	B	I	35.75	0.80	0.91	1.18	B	I	22.50	
		TNAGT5B	45.000		1.15	51.75	1.40	0.94	1.49	A	I	21.55	1.09	1.59	B	I	31.33	0.80	0.91	1.15	B	I	22.50	

LOAD FACTORS:

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

NOTES:

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

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1.
2.
3.
4.

⟨#⟩ CONTROLLING LOAD RATING

⟨1⟩ DESIGN LOAD RATING (HL-93)

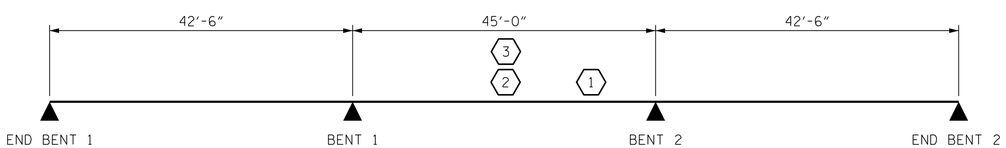
⟨2⟩ DESIGN LOAD RATING (HS-20)

⟨3⟩ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

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

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-5
1			3			TOTAL SHEETS
2			4			34

STD. NO. LRFR1

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 06-15

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

ASSEMBLED BY : B. WADSWORTH DATE : 06-15
CHECKED BY : J. TAYLOR DATE : 06-15
DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08
REV. 11/12/08RR MAA/GM
REV. 10/1/11 MAA/GM

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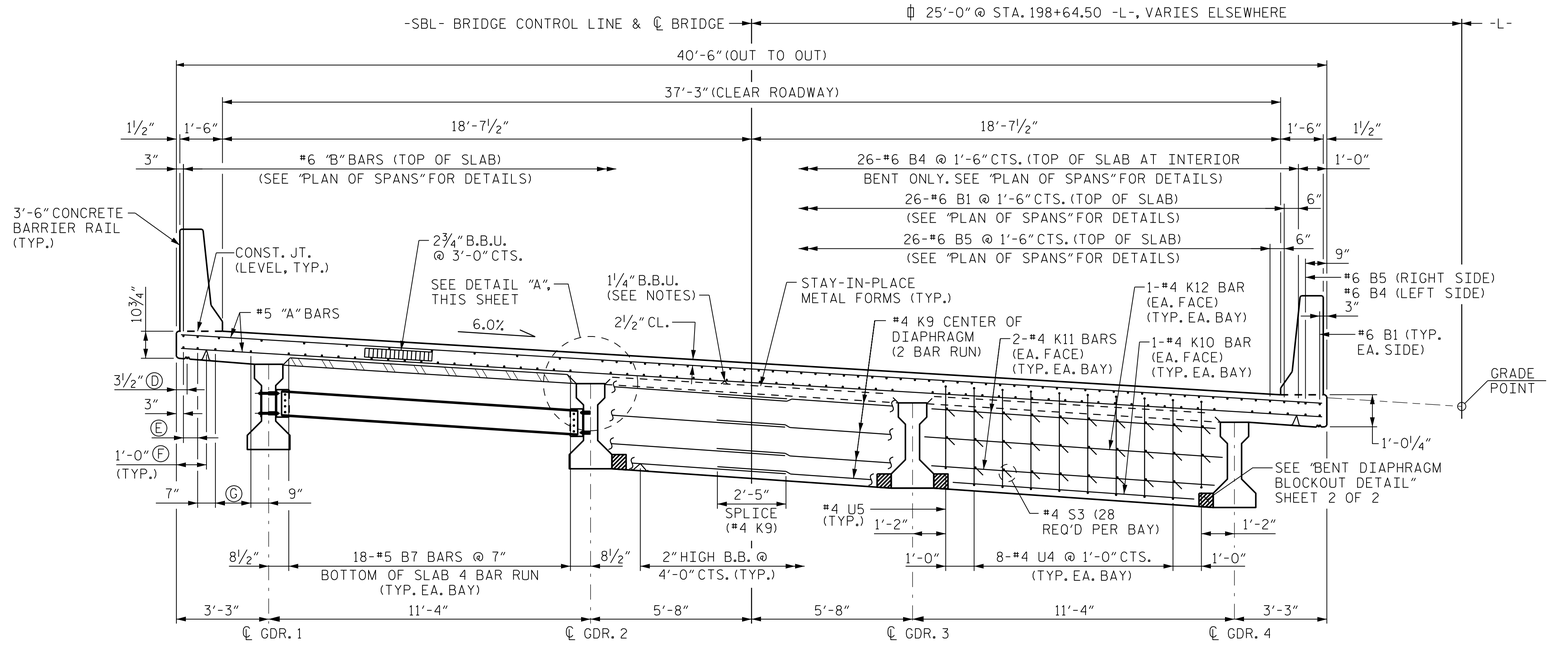
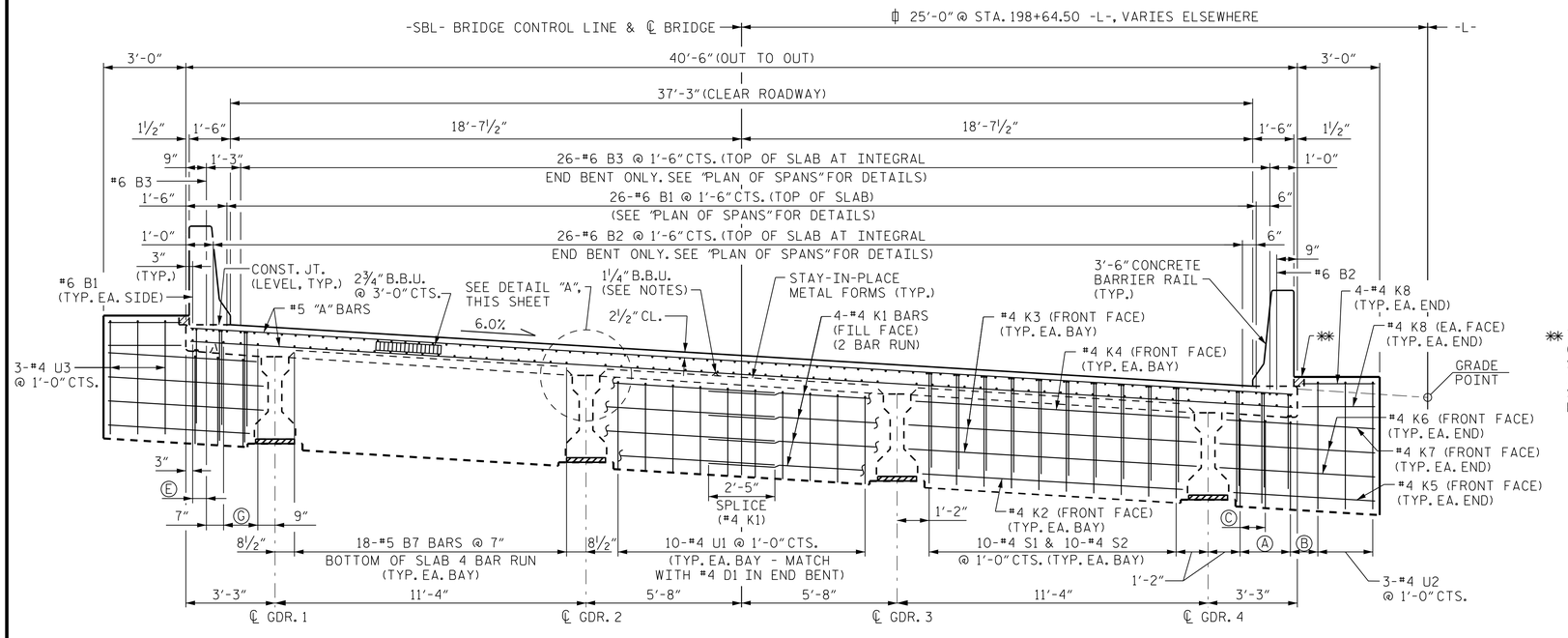


AT INTERMEDIATE DIAPHRAGM AT BENT DIAPHRAGM

TYPICAL SECTION



TYPICAL SECTION AT INTEGRAL END BENT

✱✱ THE CONCRETE IN THE HATCHED AREA OF THE INTEGRAL END BENT DIAPHRAGM SHALL BE POURED AFTER THE BARRIER IS CAST IF SLIP FORMING IS USED. SEE SHEET "PLAN OF SPAN DETAILS" FOR BLOCKOUT GEOMETRY. (TYP. EA. SIDE)

SHEET LEGEND

⌀ RADIAL DIMENSION

Ⓐ 3-#4 U1 & 3-#4 S1 @ 11" CTS. (TYP. EA. SIDE)

Ⓑ 11" (TYP. EA. SIDE)

Ⓒ 2-#4 S2 @ 11" CTS. (TYP. EA. SIDE)

Ⓓ ℄ 2-1" Δ DRIP GROOVES (TYP. EA. OVERHANG)

Ⓔ 2-#5 B8 @ 6" CTS. BOTTOM OF SLAB 4 BAR RUN (TYP. EA. OVERHANG)

Ⓕ 3¾" B.B.U. (LEFT OVERHANG)
3" B.B.U. (RIGHT OVERHANG)

Ⓖ 3-#5 B7 @ 7" CTS. BOTTOM OF SLAB 4 BAR RUN (TYP. EA. OVERHANG)

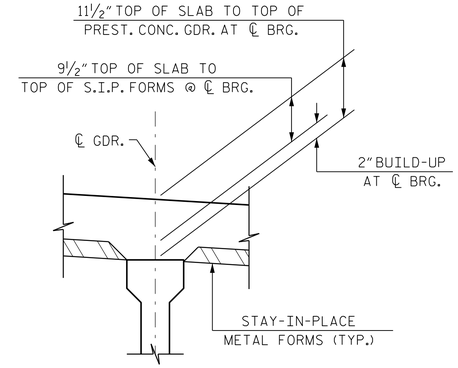
NOTES

PROVIDE 1¼" 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 (CHCM) AT 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2½" ABOVE THE TOP OF THE REMOVABLE FORM.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

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.

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



DETAIL "A"

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION

(SBL)

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CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-6
1			3			TOTAL SHEETS
2			4			34

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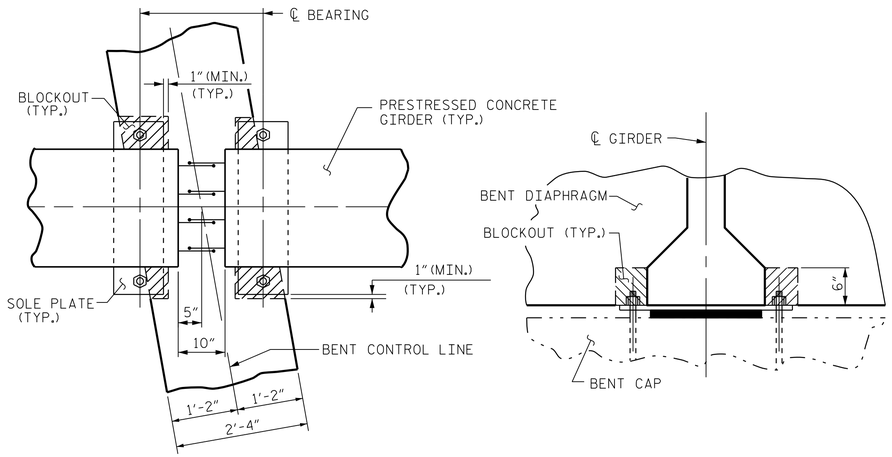
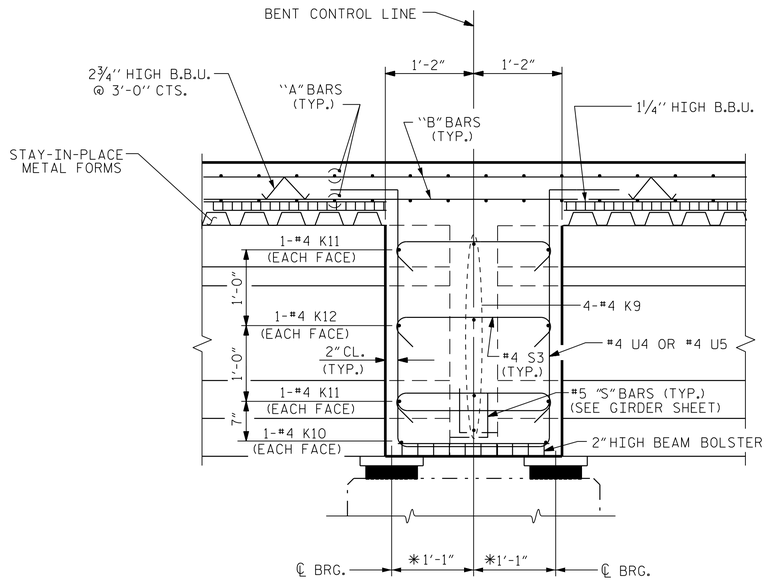


PLAN SECTION

BENT DIAPHRAGM BLOCK-OUT DETAIL

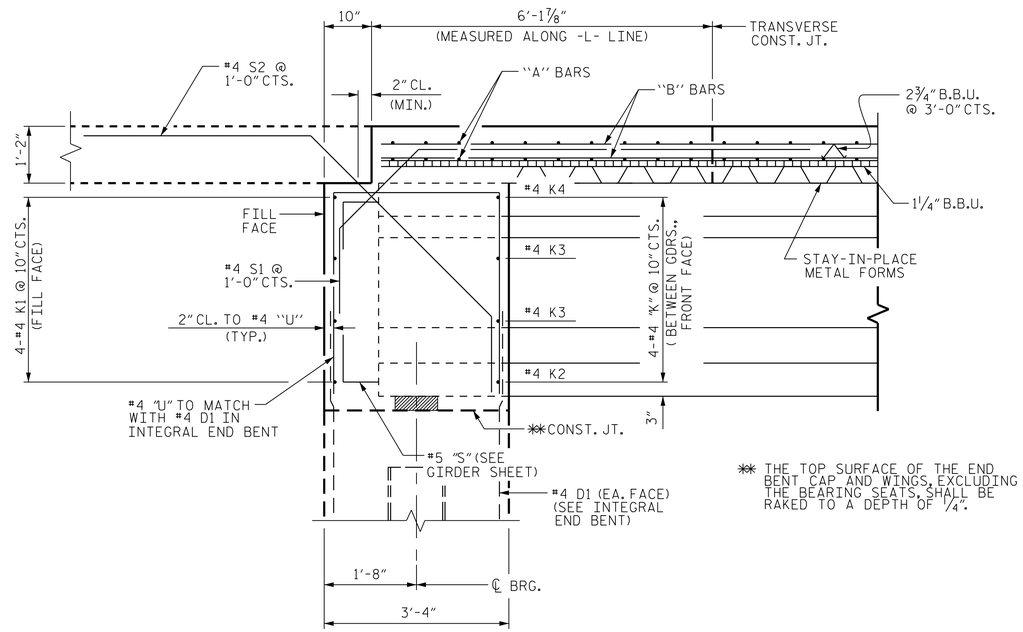
PRESTRESSED GIRDERS WITH CONTINUOUS DECK SLAB



SECTION B-B

(AT BENTS 1 & 2)

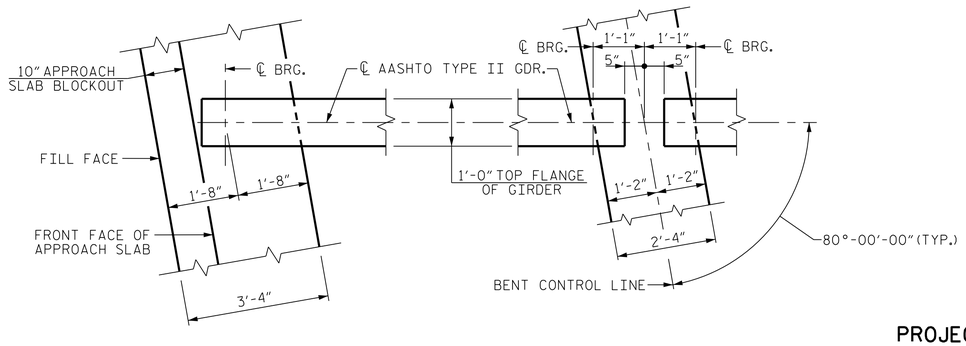
*MEASURED ALONG ℄ GIRDER



SECTION A-A

(AT INTEGRAL END BENTS)

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



INTEGRAL END BENT FIXED BENT

PLAN OF DIAPHRAGMS

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION DETAILS

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DESIGN ENGINEER : J. TAYLOR DATE : 08-14

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NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-7
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2			4			34

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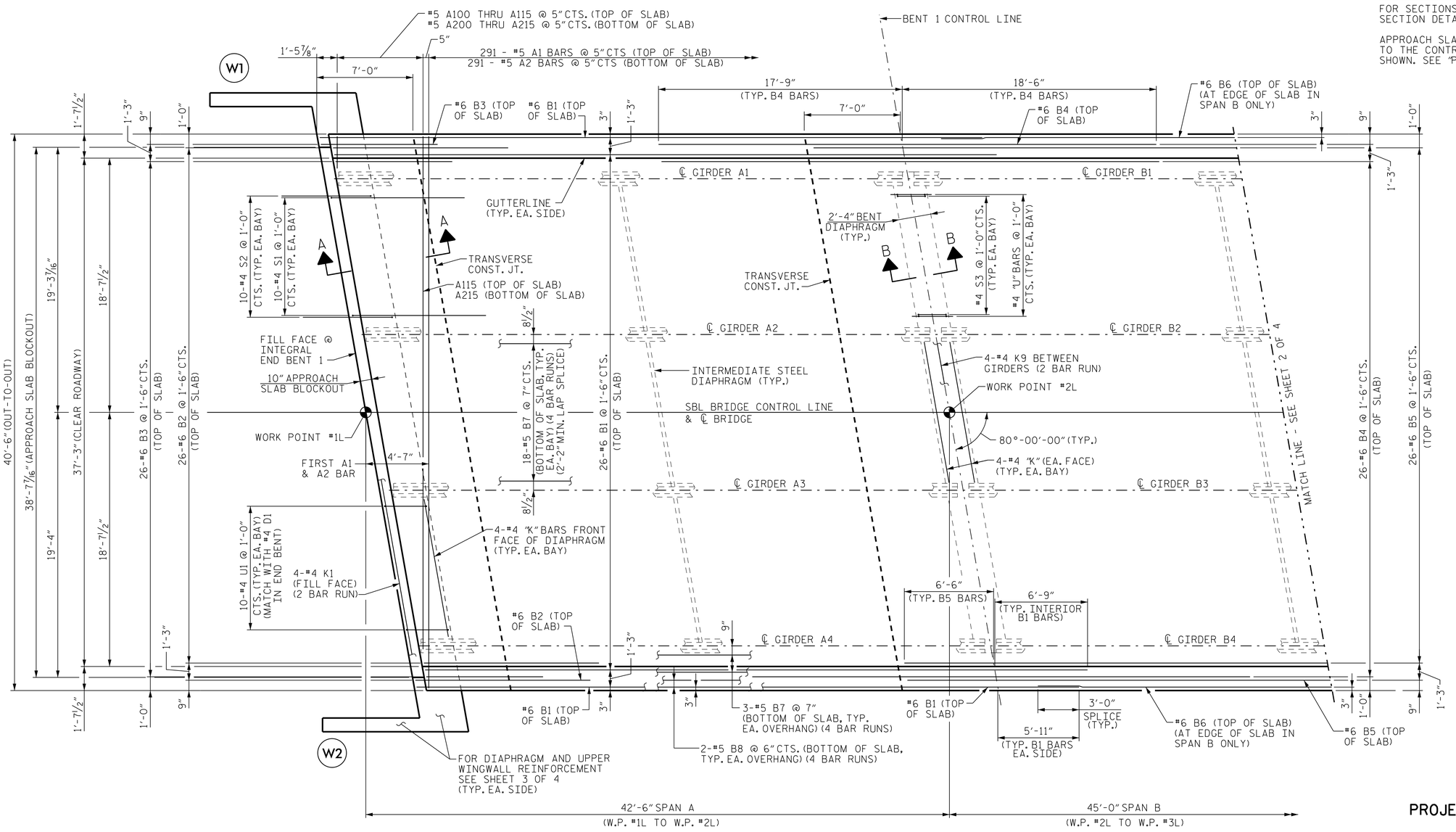
NOTES

FOR SECTIONS A-A & B-B, SEE SHEET "TYPICAL SECTION DETAILS."

APPROACH SLAB BLOCKOUT WIDTH VARIES NORMAL TO THE CONTROL LINE. MAXIMUM OFFSET WIDTHS SHOWN. SEE "PLAN OF SPAN DETAILS" SHEETS.



PLAN OF SPANS A & B

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS A & B

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REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-8
1			3			TOTAL SHEETS
2			4			34

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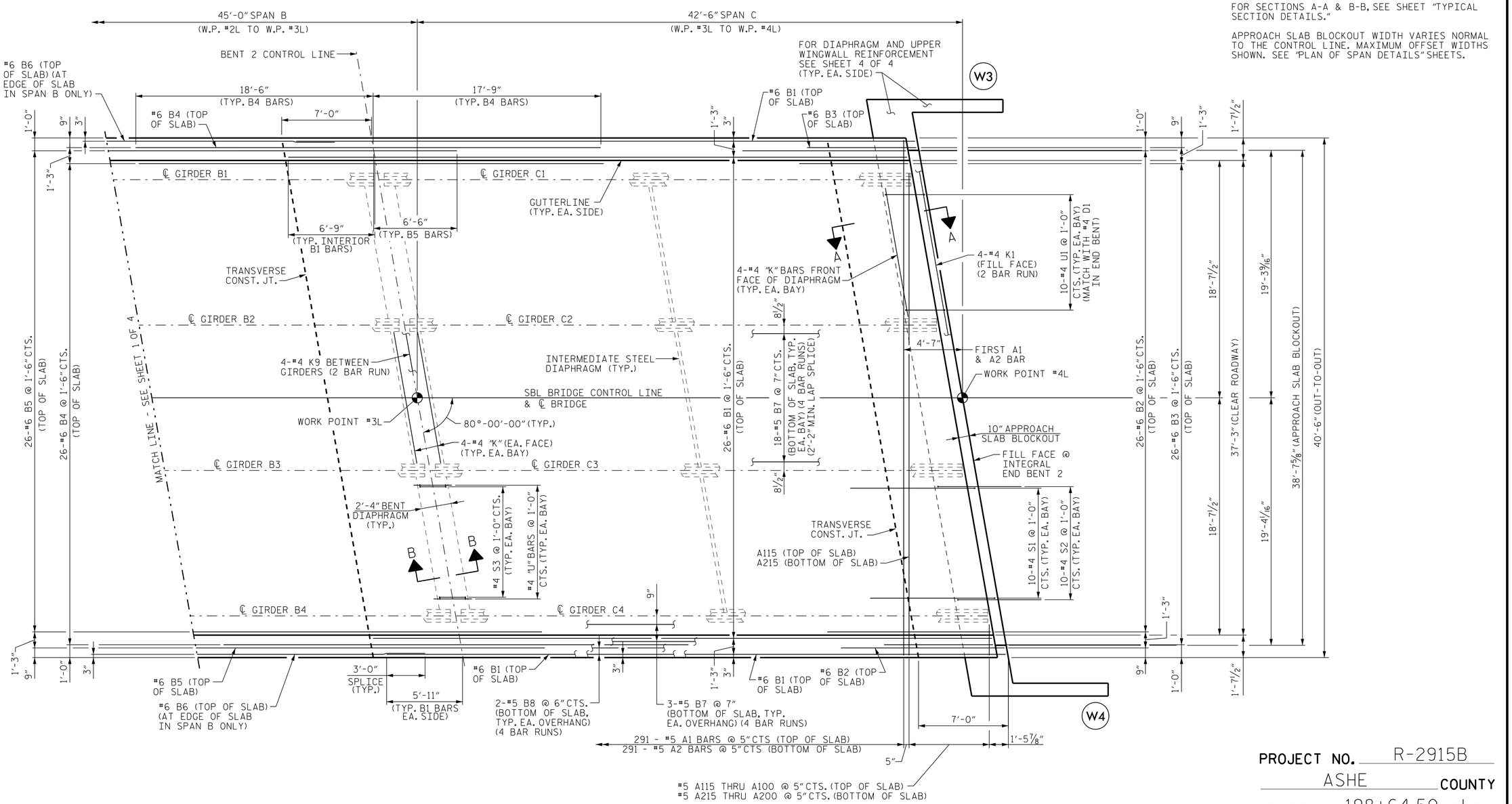
NOTES

FOR SECTIONS A-A & B-B, SEE SHEET "TYPICAL SECTION DETAILS."

APPROACH SLAB BLOCKOUT WIDTH VARIES NORMAL TO THE CONTROL LINE. MAXIMUM OFFSET WIDTHS SHOWN. SEE "PLAN OF SPAN DETAILS" SHEETS.



PLAN OF SPANS B & C

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS B & C

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DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
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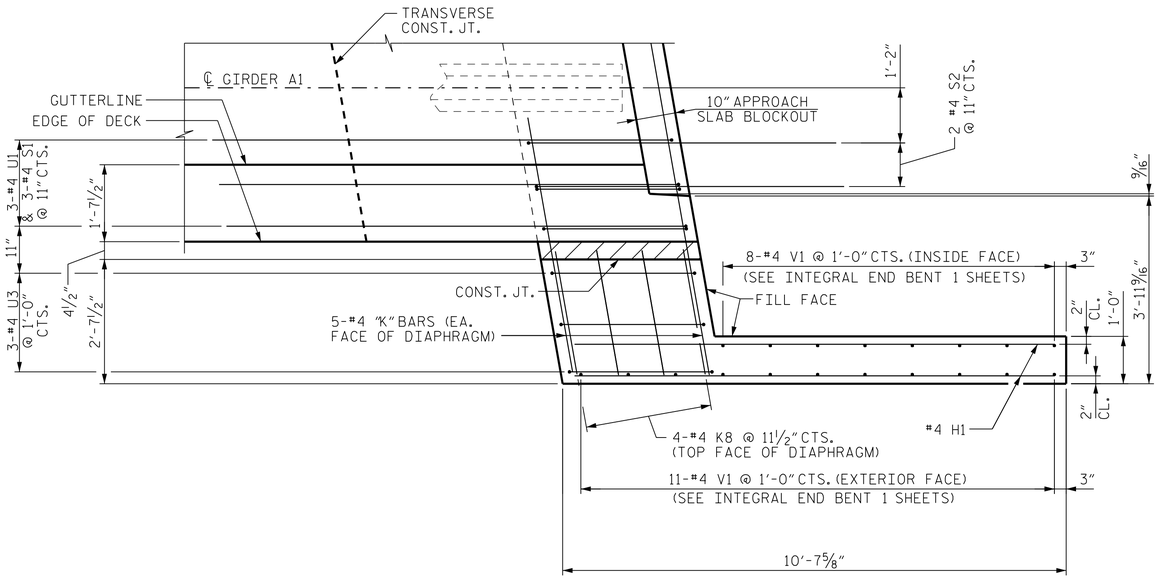
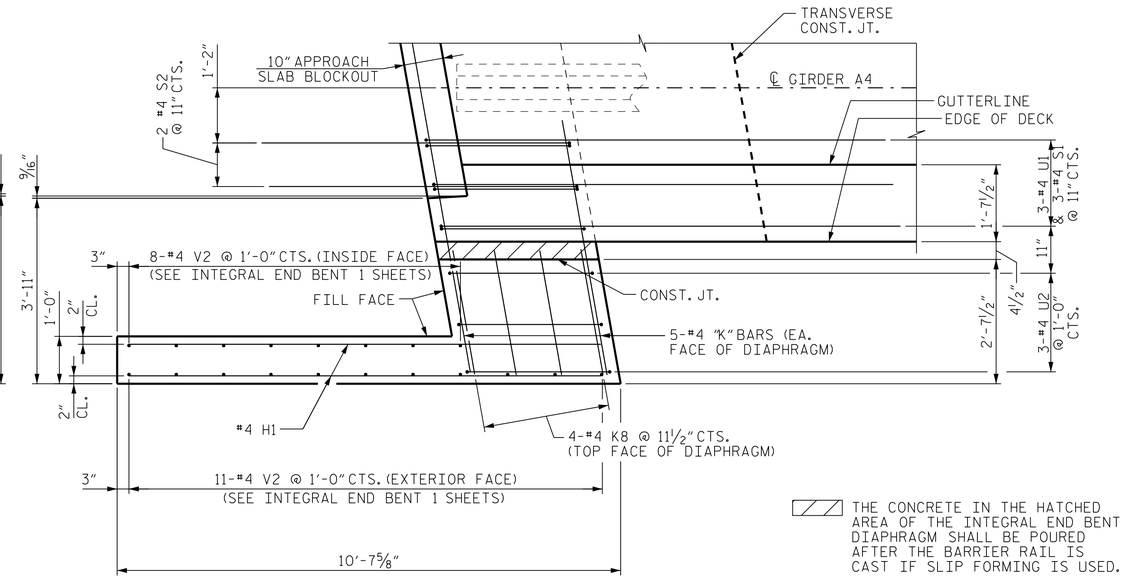


PLAN OF WING (W1)

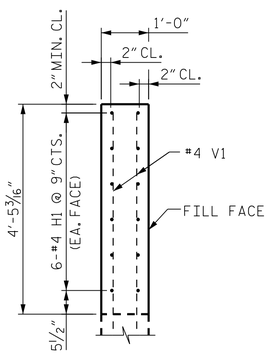
DECK "A" BARS AND "B" BARS NOT SHOWN FOR CLARITY



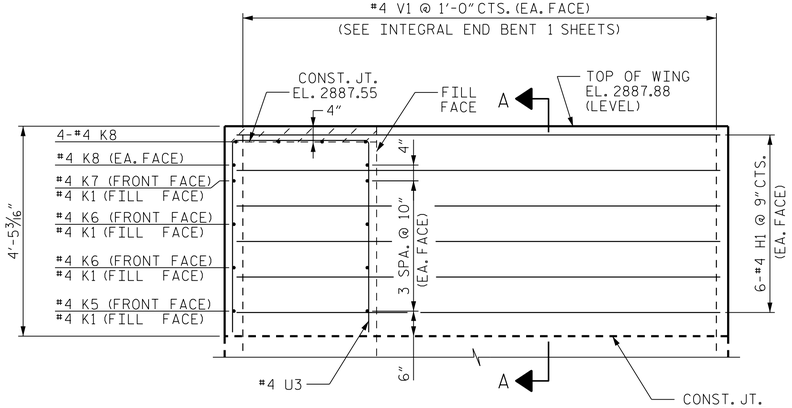
THE CONCRETE IN THE HATCHED AREA OF THE INTEGRAL END BENT DIAPHRAGM SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

PLAN OF WING (W2)

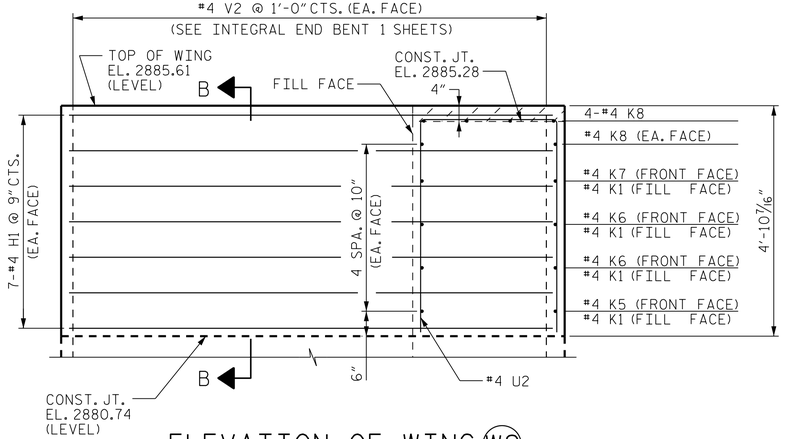
DECK "A" BARS AND "B" BARS NOT SHOWN FOR CLARITY



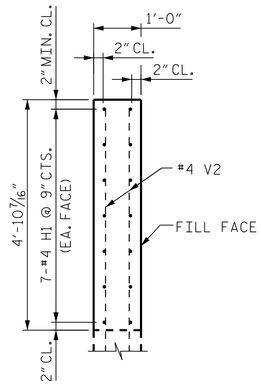
SECTION A-A



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION B-B

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN DETAILS

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DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

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REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-10
1			3			TOTAL SHEETS
2			4			34

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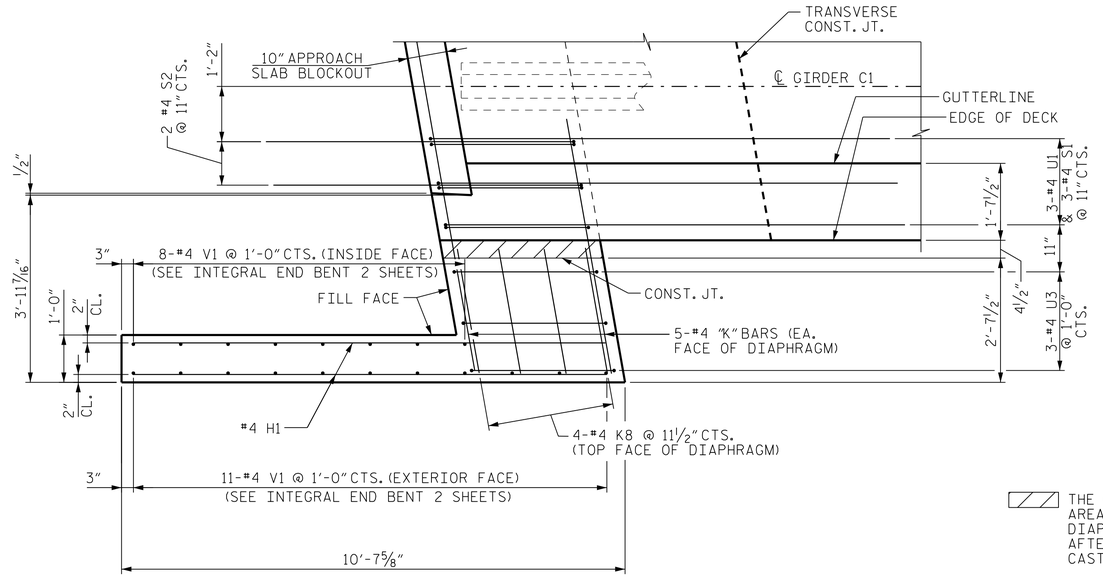
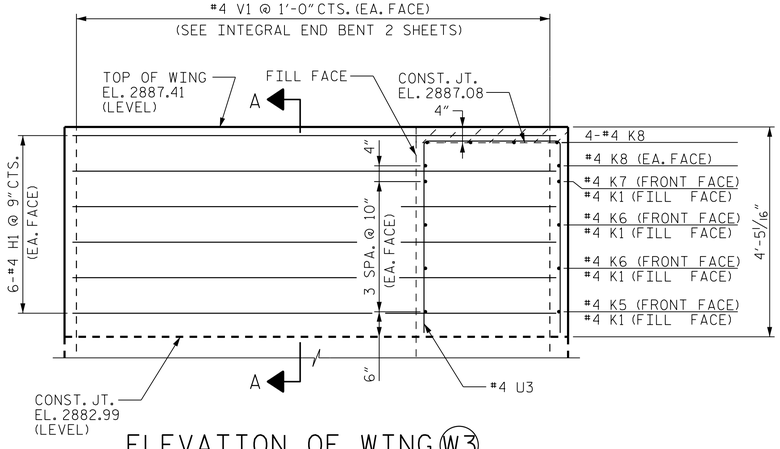
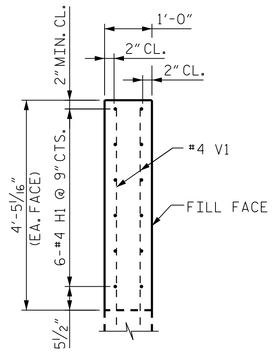


PLAN OF WING W3

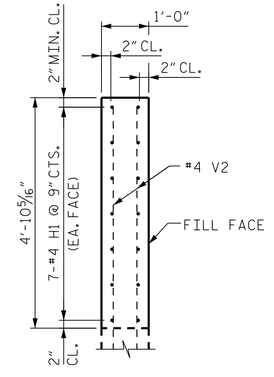
DECK "A" BARS AND "B" BARS NOT SHOWN FOR CLARITY



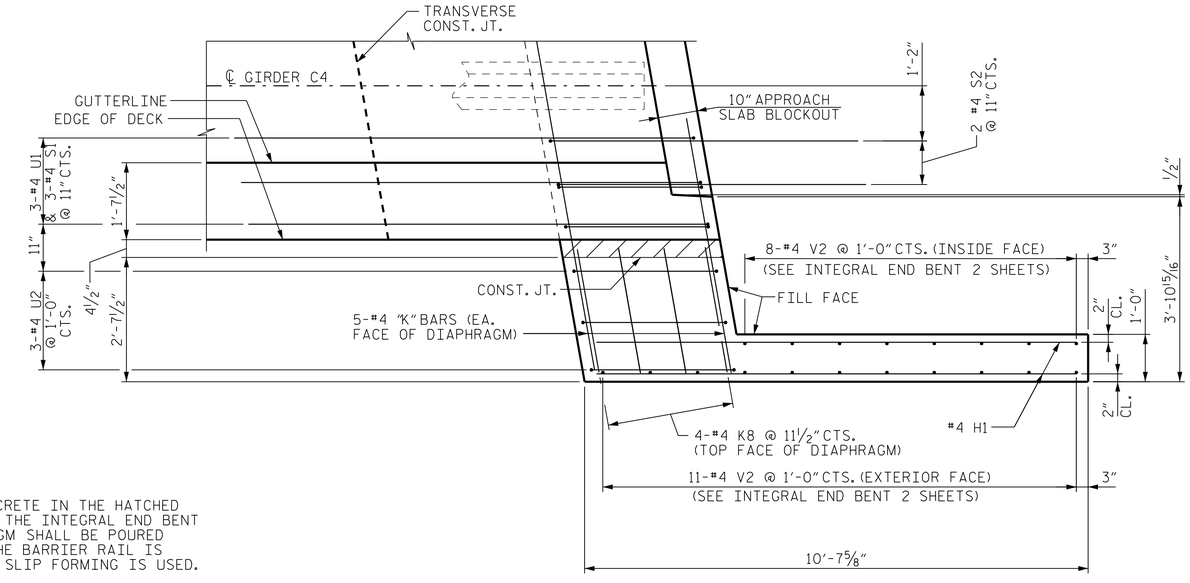
ELEVATION OF WING W3



SECTION A-A



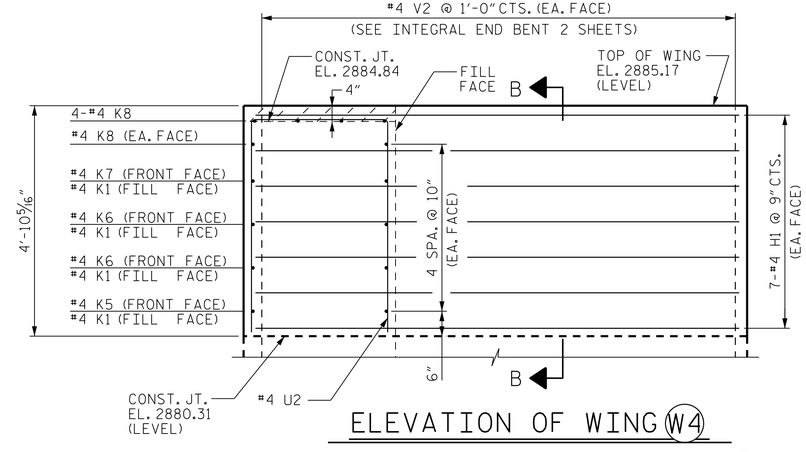
SECTION B-B



THE CONCRETE IN THE HATCHED AREA OF THE INTEGRAL END BENT DIAPHRAGM SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

PLAN OF WING W4

DECK "A" BARS AND "B" BARS NOT SHOWN FOR CLARITY



ELEVATION OF WING W4

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN DETAILS

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REVISIONS						SHEET No.
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1			3			TOTAL SHEETS
2			4			34

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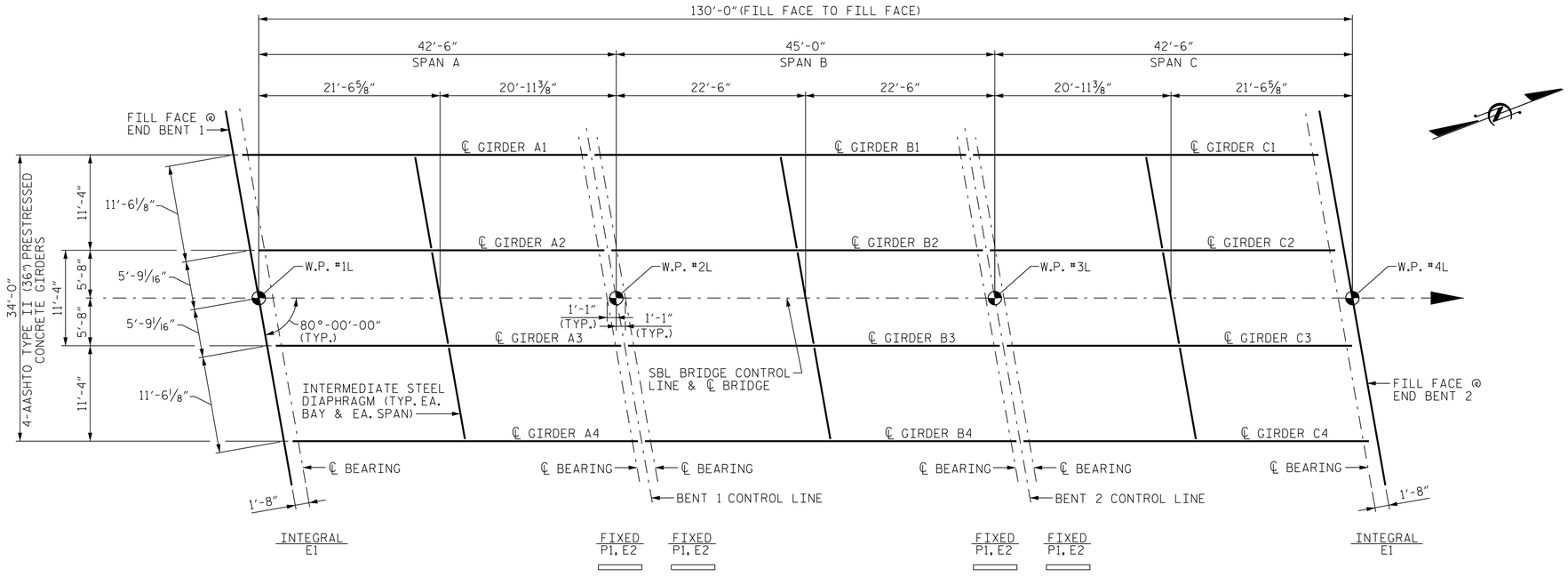
NOTES

FOR INTERMEDIATE STEEL DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE II PRESTRESSED CONCRETE GIRDERS" SHEET.

FOR ELASTOMERIC BEARINGS AND SOLE PLATES, SEE "ELASTOMERIC BEARING DETAILS" SHEET.



FRAMING PLAN

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

FRAMING PLAN

(SBL)

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REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-12
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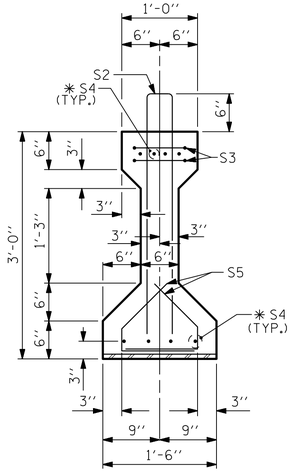
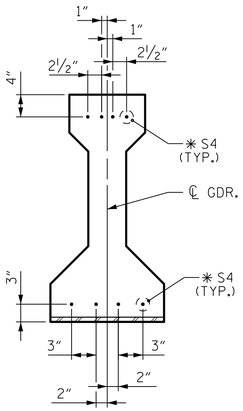
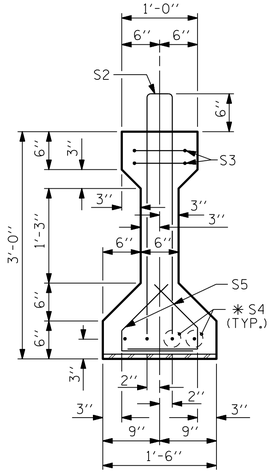


SECTION A-A

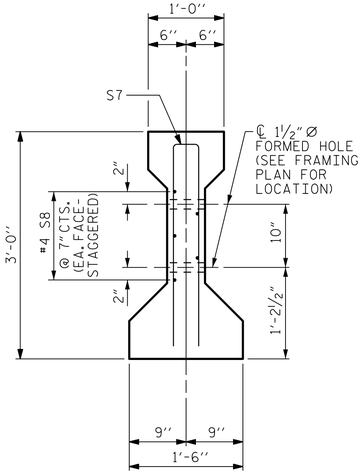
FOR S4 BARS, SEE DETAIL "A"



DETAIL "A"

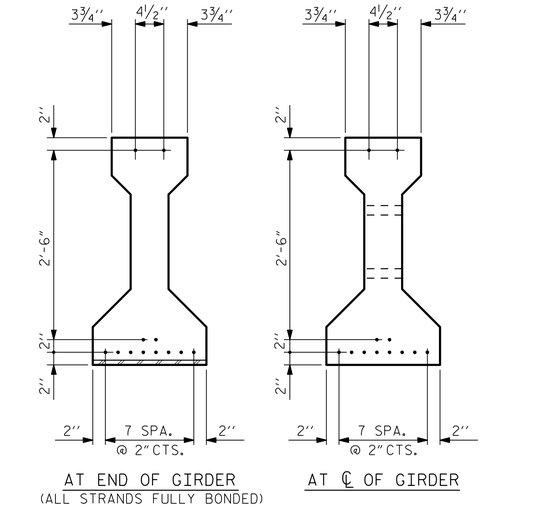


SECTION B-B

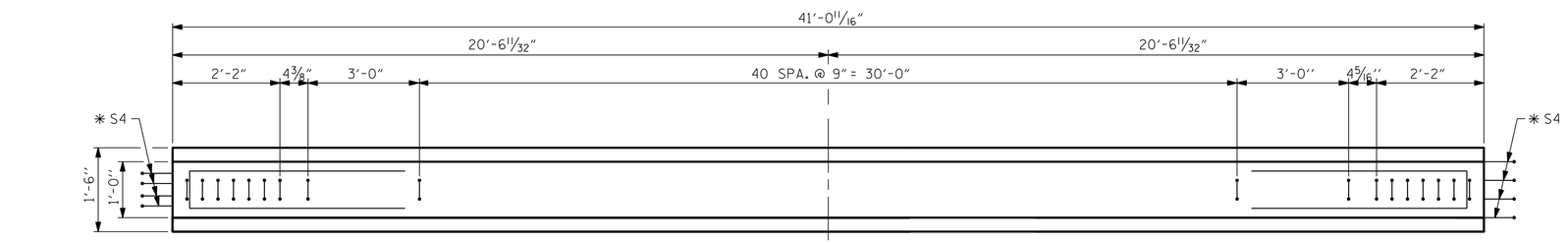


SECTION C-C

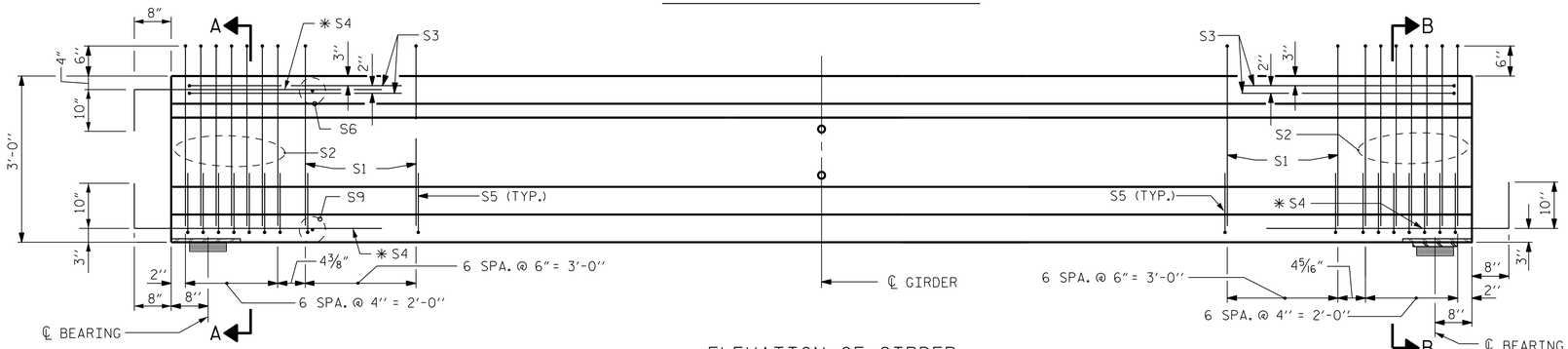
(S1 BARS NOT SHOWN)



0.6'' Ø LOW RELAXATION STRAND LAYOUT

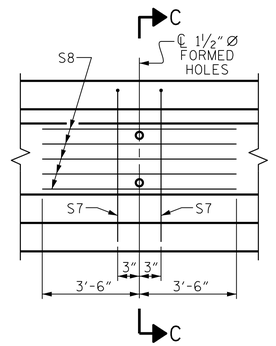


PLAN OF GIRDER



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)
(SPAN A SHOWN. SPAN C SIMILAR BY ROTATION.)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. A1 THRU A4 AND C1 THRU C4

0.6'' Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

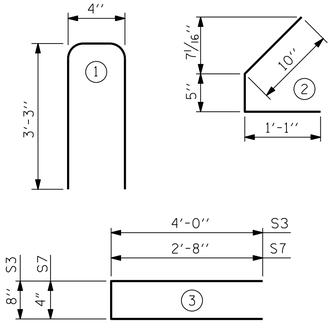
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	53	#4	1	6'-10''	242
S2	14	#5	1	6'-10''	100
S3	4	#4	3	8'-8''	23
• S4	12	#5	STR	3'-8''	46
S5	134	#4	2	2'-4''	209
S6	1	#4	STR	0'-8''	1
S7	2	#5	3	5'-8''	12
S8	5	#4	STR	7'-0''	23
S9	1	#4	STR	1'-2''	1

✱NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	8,000 PSI CONCRETE C.Y.	0.6'' Ø L. R. STRANDS No.
SPAN A	657	3.9	12
SPAN C	657	3.9	12

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
(SPAN A) 4	41'-0 11/16"	164'-2¾"
(SPAN C) 4	41'-0 11/16"	164'-2¾"

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
AASHTO TYPE II PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD (SPANS A & C) (SBL)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-13
1			3			TOTAL SHEETS
2			4			34

STD. NO. PCG4

ASSEMBLED BY :	B. WADSWORTH DATE : 06-15
CHECKED BY :	J. TAYLOR DATE : 06-15
DRAWN BY : ELR 8/91	REV. 10/17/00R RWW/LES
CHECKED BY : GRP 8/91	REV. 5/1/06R TLA/GM
	REV. 10/1/11 MAA/GM

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 06-15

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

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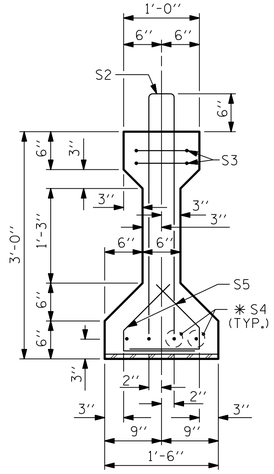
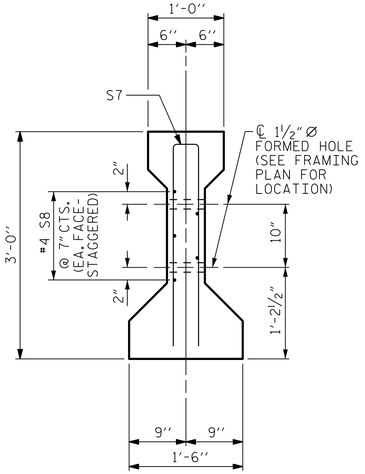
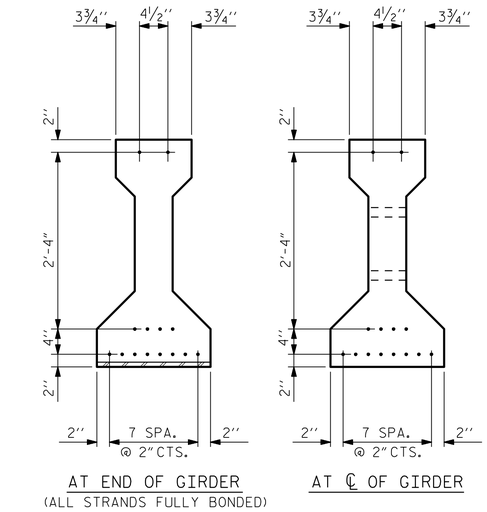


SECTION B-B

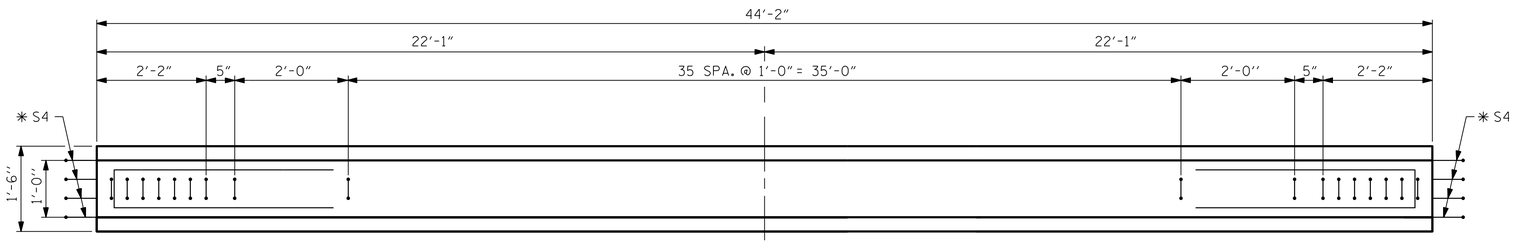


SECTION C-C

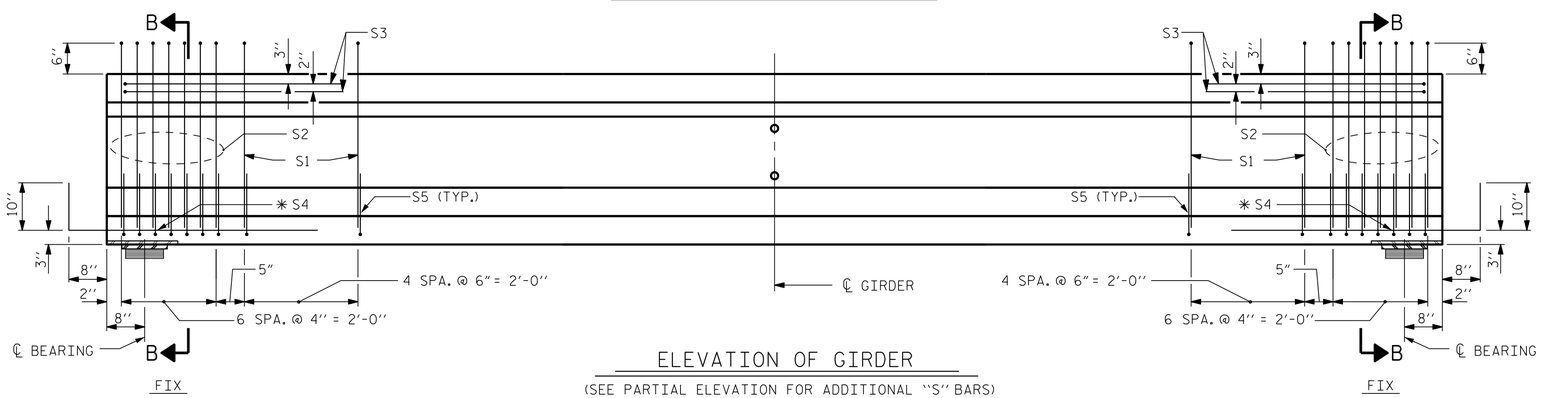
(S1 BARS NOT SHOWN)



0.6'' Ø LOW RELAXATION STRAND LAYOUT



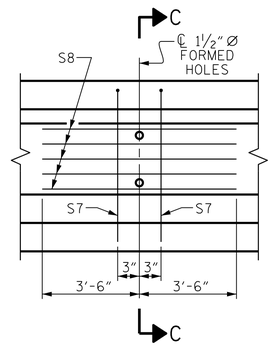
PLAN OF GIRDER



FIX FIX

ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. B1 THRU B4

0.6'' Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

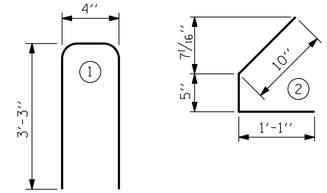
REINFORCING STEEL FOR ONE GIRDER

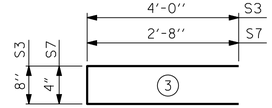
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	44	#4	1	6'-10''	201
S2	14	#5	1	6'-10''	100
S3	4	#4	3	8'-8''	23
* S4	8	#5	STR	3'-8''	31
S5	116	#4	2	2'-4''	181
S7	2	#4	3	5'-8''	8
S8	5	#4	STR	7'-0''	23

* NOTE: S4 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT





QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	6,500 PSI CONCRETE C.Y.	0.6'' Ø L.R. STRANDS No.
SPAN B	567	4.2	14

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	44'-2"	176'-8"

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD AASHTO TYPE II PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD (SPAN B) (SBL)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-14
1			3			TOTAL SHEETS
2			4			34

ASSEMBLED BY :	J. SLOAN	DATE : 04-14
CHECKED BY :	J. TAYLOR	DATE : 07-14

DRAWN BY : ELR 8/91	REV. 10/17/00R RWW/LES
CHECKED BY : GRP 8/91	REV. 5/1/06R TLA/GM
	REV. 10/1/11 MAA/GM

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

STD. NO. PCG4

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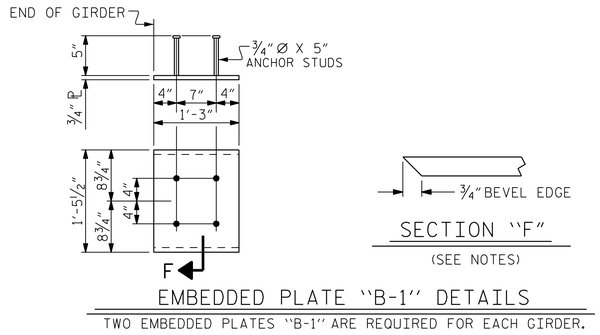

EMBEDDED PLATE "B-1" DETAILS

TWO EMBEDDED PLATES "B-1" ARE REQUIRED FOR EACH GIRDER.

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.

BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

ALL PRESTRESSED STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,400 PSI FOR SPANS A & C GIRDERS AND NOT LESS THAN 5,000 PSI FOR SPAN B GIRDERS.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER SHALL BE RAKED TO A DEPTH OF ¼" EXCEPT IN THE AREA BETWEEN THE STIRRUP AND THE EDGE OF THE GIRDER.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

0.6" Ø LOW RELAXATION	SPANS A & C GIRDERS A1, A4, C1, & C4											SPAN B GIRDERS B1 & B4										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0.000	0.016	0.030	0.041	0.048	0.050	0.048	0.041	0.030	0.016	0.000	0.000	0.024	0.045	0.062	0.072	0.076	0.072	0.062	0.045	0.024	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0.000	-0.006	-0.013	-0.019	-0.022	-0.023	-0.022	-0.019	-0.013	-0.006	0.000	0.000	-0.010	-0.020	-0.028	-0.033	-0.035	-0.033	-0.028	-0.020	-0.010	0.000
FINAL CAMBER ↑	0"	1/8"	3/16"	1/4"	5/16"	5/16"	5/16"	1/4"	3/16"	1/8"	0"	0"	3/16"	5/16"	7/16"	7/16"	1/2"	7/16"	7/16"	5/16"	3/16"	0"

✳ INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

0.6" Ø LOW RELAXATION	SPANS A & C GIRDERS A2, A3, C2, & C3											SPAN B GIRDERS B2 & B3										
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0.000	0.016	0.030	0.041	0.048	0.050	0.048	0.041	0.030	0.016	0.000	0.000	0.024	0.045	0.062	0.072	0.076	0.072	0.062	0.045	0.024	0.000
✳DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0.000	-0.008	-0.016	-0.023	-0.027	-0.028	-0.027	-0.023	-0.016	-0.008	0.000	0.000	-0.012	-0.024	-0.034	-0.040	-0.042	-0.040	-0.034	-0.024	-0.012	0.000
FINAL CAMBER ↑	0"	1/8"	3/16"	3/16"	1/4"	1/4"	1/4"	3/16"	3/16"	1/8"	0"	0"	1/8"	1/4"	5/16"	3/8"	7/16"	3/8"	5/16"	1/4"	1/8"	0"

✳ INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. R-2915B
ASHE COUNTY
STATION: 198+64.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

AASHTO TYPE II
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
DETAILS
(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : B. WADSWORTH DATE : 06-15
CHECKED BY : J. TAYLOR DATE : 06-15
DESIGN ENGINEER : J. TAYLOR DATE : 06-15

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-15
1			3			TOTAL SHEETS
2			4			34

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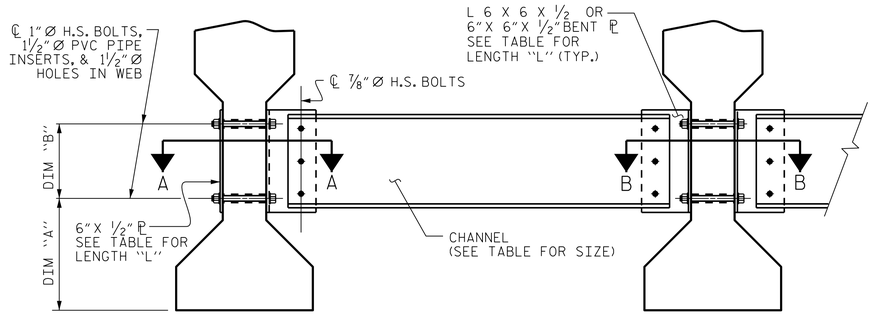
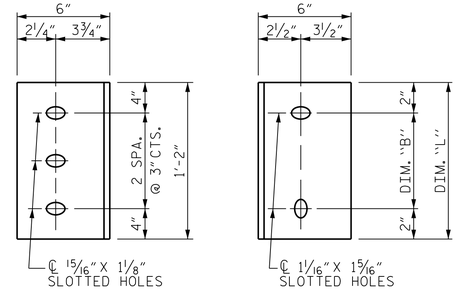


EXTERIOR GIRDER

INTERIOR GIRDER

PART SECTION AT INTERMEDIATE DIAPHRAGM



DIAPHRAGM FACE (TYPE II GDR.)

WEB FACE

CONNECTOR PLATE DETAILS

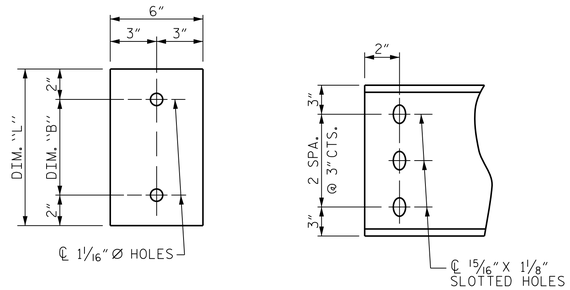
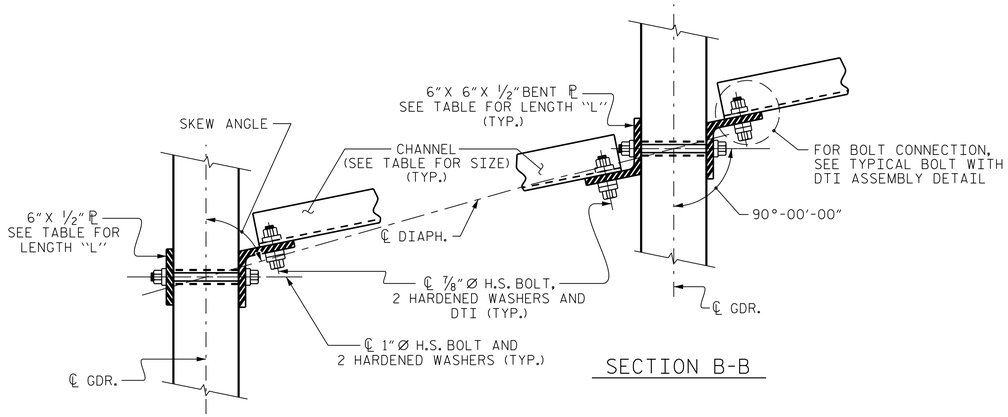


PLATE DETAILS

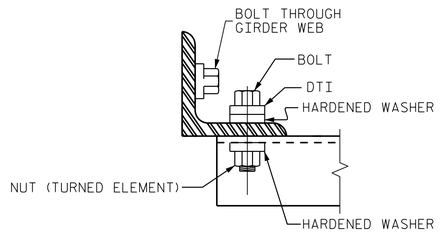
CHANNEL END (TYPE II GDR.)



SECTION A-A

SECTION B-B

CONNECTION DETAILS



BOLT WITH DTI ASSEMBLY DETAIL

STRUCTURAL STEEL NOTES

ALL INTERMEDIATE DIAPHRAGM STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL ¼ TURN.

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

FOR METALLIZATION, APPLY AN 8 MIL THICK 99.99 PERCENT ZINC (W-Zn-1) THERMAL SPRAYED COATING WITH A 0.5 MIL THICK SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST ¼"PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

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

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

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

TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
II	MC 12 x 31	1'-2½"	10"	1'-2"

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE II PRESTRESSED CONCRETE GIRDERS

(SBL)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-16
1			3			TOTAL SHEETS
2			4			34

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

ASSEMBLED BY : J. SLOAN		DATE :	04-14
CHECKED BY : J. TAYLOR		DATE :	07-14
DRAWN BY : TLA	6/05	ADDED 10/21/05	
CHECKED BY : VC	6/05	REV. 5/1/06RRR	KMM/GM
		REV. 10/1/11	MAA/GM

STD. NO. PCG10

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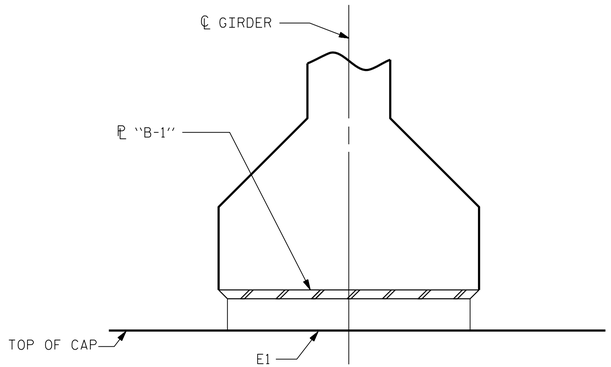
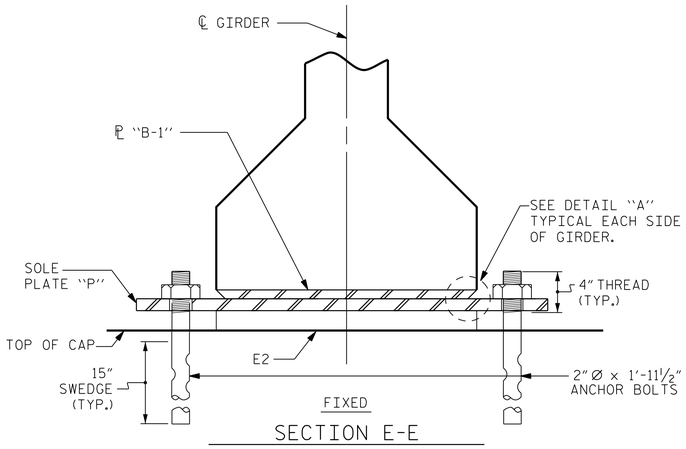


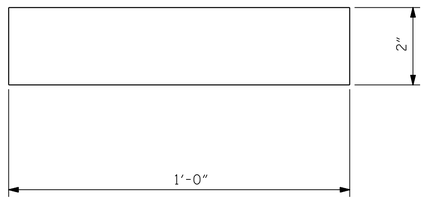
INTEGRAL END BENT

SECTION F-F

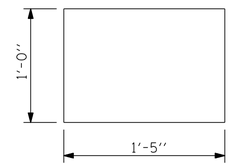


FIXED

SECTION E-E



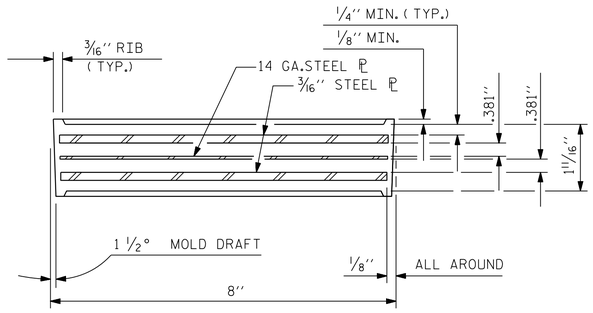
TYPICAL SECTION OF ELASTOMERIC BEARINGS



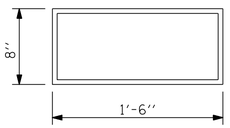
E1 (8 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

PLAIN ELASTOMERIC BEARING PAD



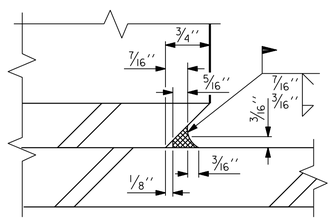
TYPICAL SECTION OF ELASTOMERIC BEARINGS



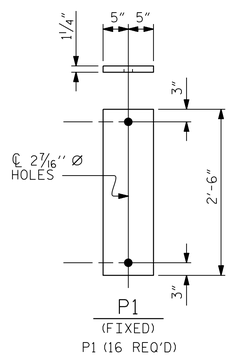
E2 (16 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

TYPE III

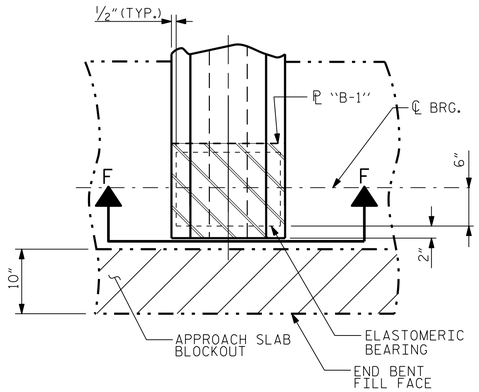


DETAIL "A"



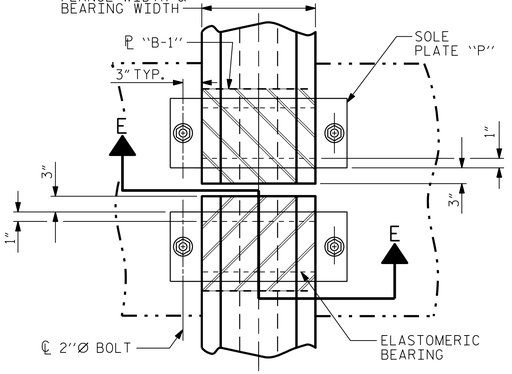
P1 (16 REQ'D)

SOLE PLATE DETAILS ("P")



TYPICAL PLAN AT END BENT

(INTEGRAL)



TYPICAL PLAN AT INTERIOR BENT

(FIXED)

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF ½ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

SOLE PLATE "P", BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE PLAIN ELASTOMERIC BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.11 KSI, IN ACCORDANCE WITH AASHTO M251.

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

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE III	205 k
PLAIN	38 k

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

CDM Smith

CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ELASTOMERIC BEARING DETAILS

PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE

(SBL)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-17
1			3			TOTAL SHEETS
2			4			34

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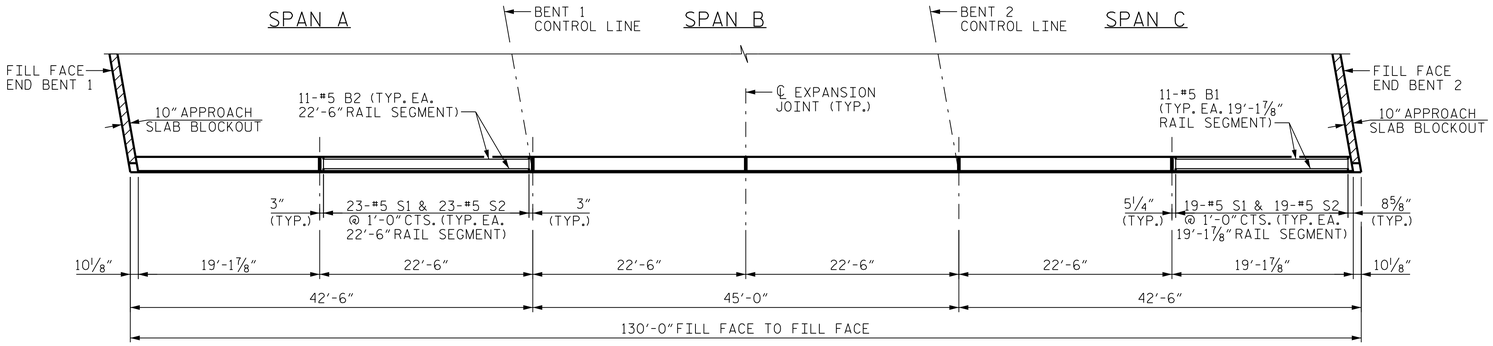


PLAN

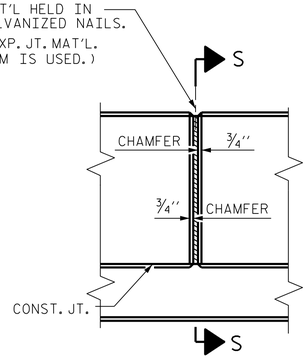
(RIGHT RAIL SHOWN. LEFT RAIL SIMILAR.)

NOTES

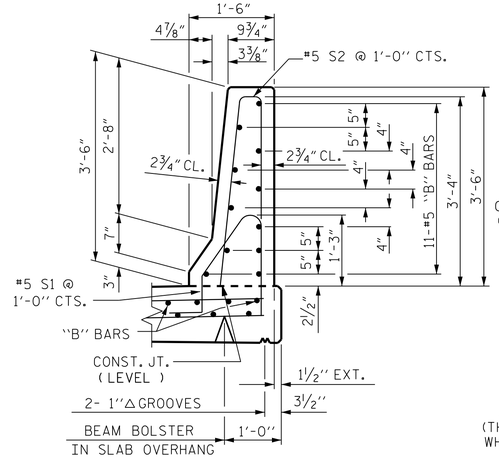
THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

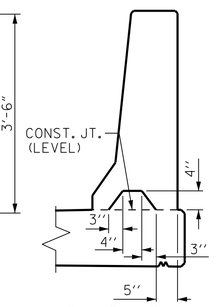
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS 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.



ELEVATION AT EXPANSION JOINTS



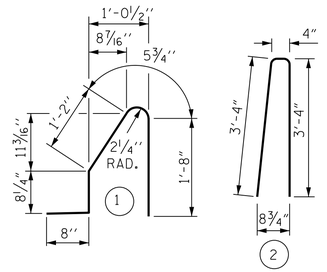
SECTION THRU RAIL



SECTION S-S

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	44	#5	STR	18'-7"	853
* B2	88	#5	STR	22'-1"	2027
* S1	260	#5	1	4'-8"	1266
* S2	260	#5	2	7'-0"	1898

* EPOXY COATED REINFORCING STEEL	6,044 LBS.
CLASS AA CONCRETE	34.9 CU. YD.
CONCRETE BARRIER RAIL	256.6 LIN. FT.

BARRIER RAIL DETAILS

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

CONCRETE BARRIER RAIL

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-18
1			3			TOTAL SHEETS
2			4			34

ASSEMBLED BY : J. SLOAN	DATE :	04-14
CHECKED BY : J. TAYLOR	DATE :	07-14
DRAWN BY : ARB 5/87	REV. 10/1/11	MAA/GM
CHECKED BY : SJD 9/87	REV. 7/12	MAA/GM
	REV. 6/13	MAA/GM

STD. NO. CBR1

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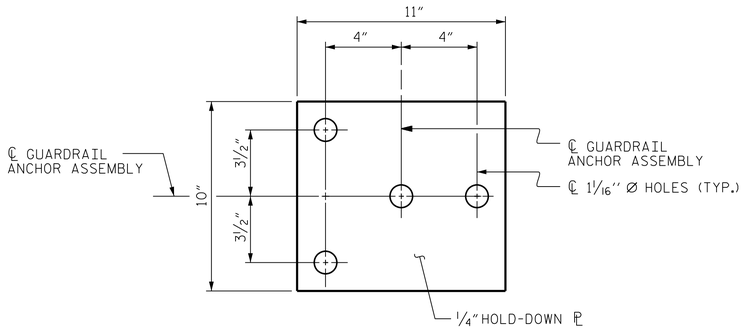
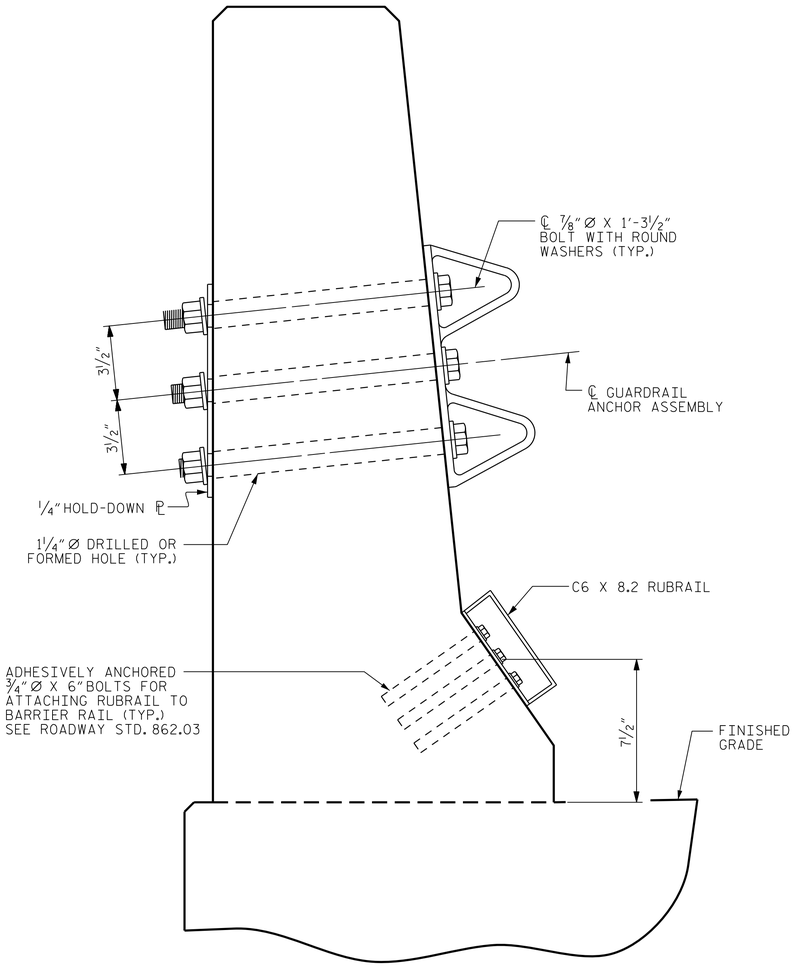
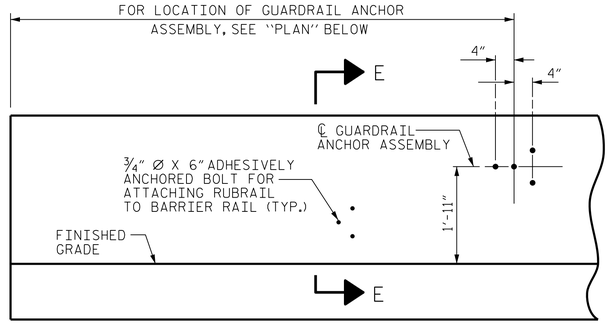


PLAN

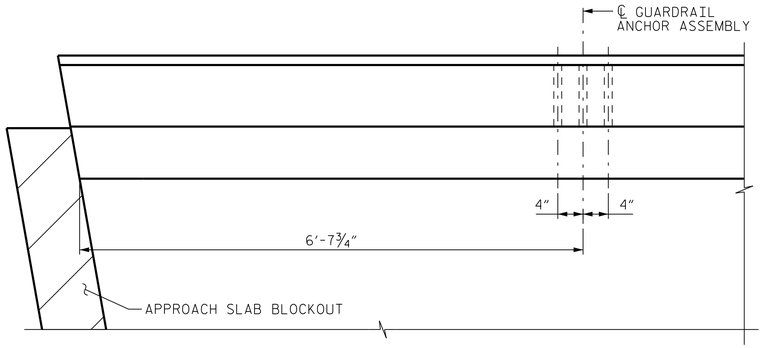


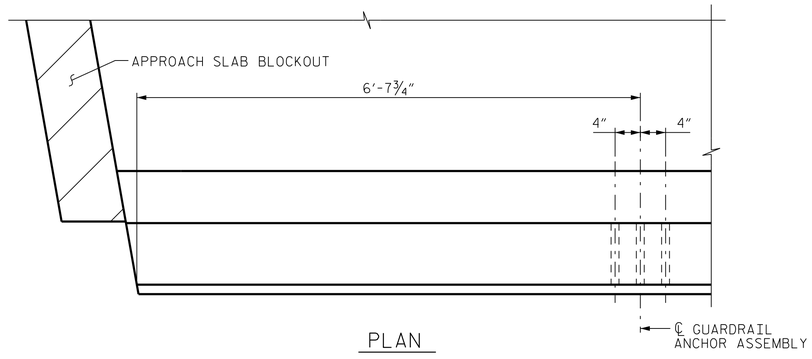
SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



ELEVATION





PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.
(SEE ROADWAY STANDARD 862.03 FOR FURTHER DETAILS.)

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.

SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

GUARDRAIL ANCHORAGE FOR BARRIER RAIL

(SBL)

ASSEMBLED BY : J. SLOAN	DATE : 04-14
CHECKED BY : J. TAYLOR	DATE : 07-14

DRAWN BY : TLA 5/06	REV. 10/1/11	MAA/GM
CHECKED BY : GM 5/06	REV. 7/12	MAA/GM
	REV. 6/13	MAA/GM

CDM Smith
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5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-19
1			3			TOTAL SHEETS
2			4			34

STD. NO. GRA2

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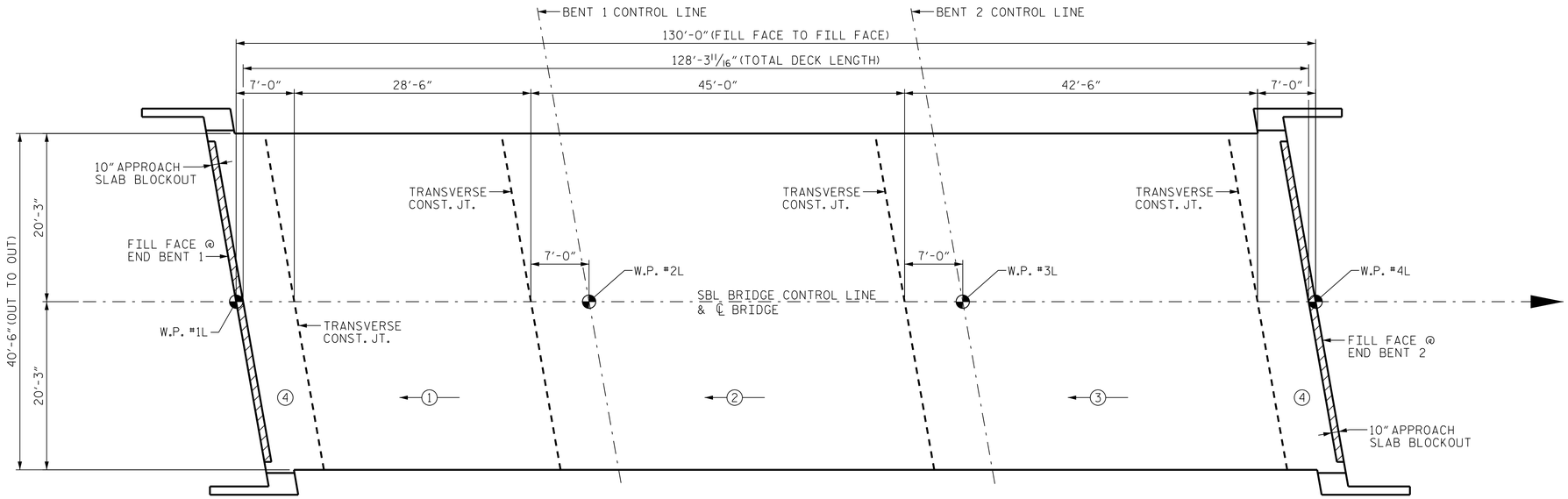


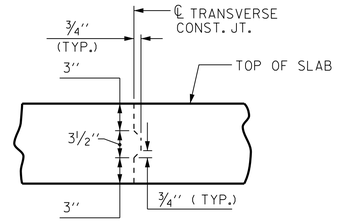
INDICATES POUR NUMBER AND DIRECTION

DECK POUR SEQUENCE

SEE TRANSVERSE CONSTRUCTION JOINT DETAIL

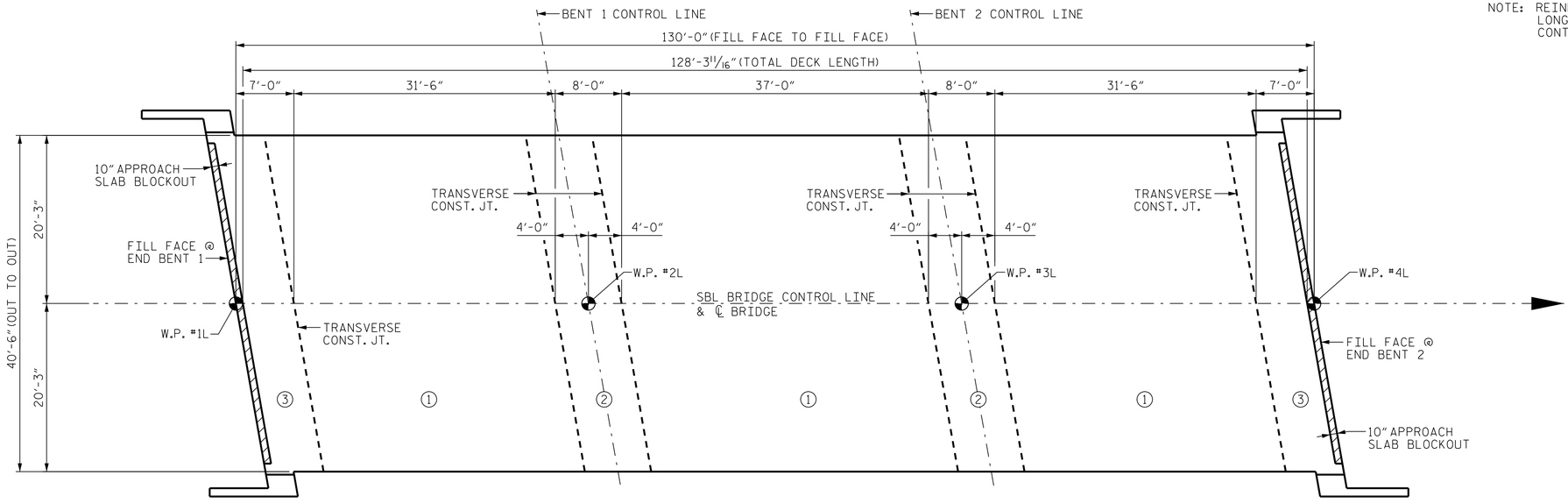
NOTES

THE UPPER PORTION OF THE WINGWALLS SHALL BE POURED WITH THE DECK.



TRANSVERSE CONSTRUCTION JOINT DETAIL

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



OPTIONAL DECK POUR SEQUENCE

POURS (2) AND (3) CANNOT BE STARTED UNTIL ADJACENT (1) POURS REACH A MINIMUM STRENGTH OF 3000 PSI.
SEE TRANSVERSE CONSTRUCTION JOINT DETAIL.

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

DECK POUR SEQUENCE

(SBL)

CDM Smith
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5400 Glenwood Avenue, Suite 400
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NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-20
1			3			TOTAL SHEETS
2			4			34

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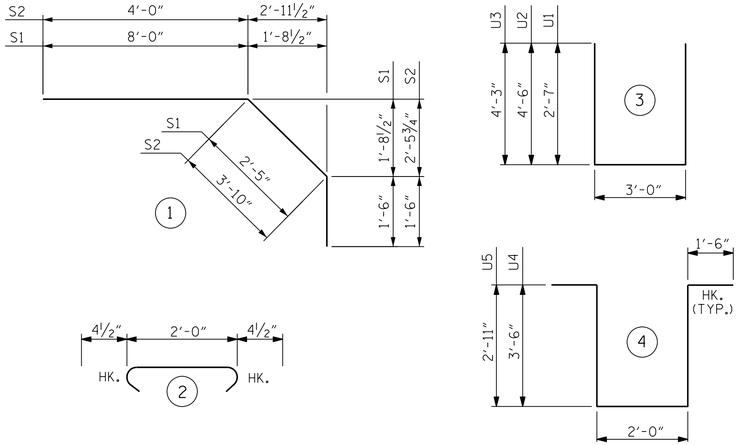
SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0''	1'-9''	2'-0''	1'-9''	2'-9''
#5	2'-6''	2'-2''	2'-6''	2'-2''	3'-5''
#6	3'-0''	2'-7''	3'-10''	2'-7''	4'-4''
#7	5'-3''	3'-6''	———	———	———
#8	6'-10''	4'-7''	———	———	———

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

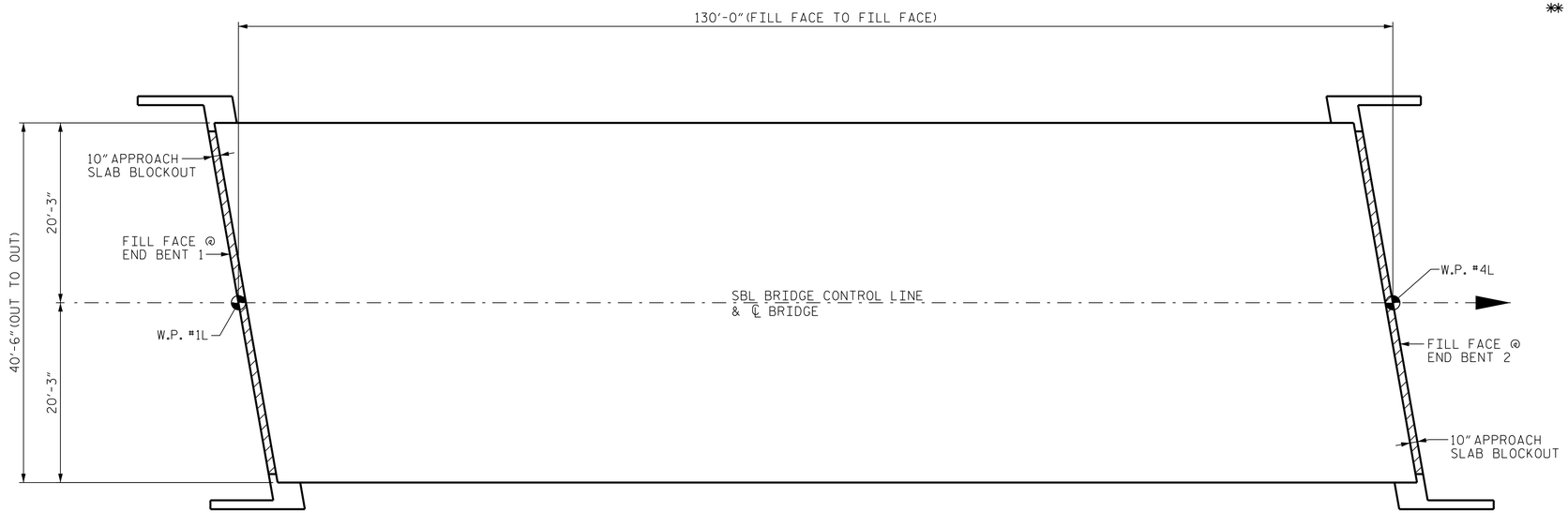
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	291	#5	STR	40'-2''	12191	✱ B1	56	#6	STR	48'-3''	4058
✱ A100	2	#5	STR	2'-4''	5	✱ B2	54	#6	STR	12'-9''	1034
✱ A101	2	#5	STR	4'-8''	10	✱ B3	54	#6	STR	8'-6''	689
✱ A102	2	#5	STR	7'-0''	15	✱ B4	54	#6	STR	36'-3''	2940
✱ A103	2	#5	STR	9'-4''	19	✱ B5	27	#6	STR	58'-0''	2352
✱ A104	2	#5	STR	11'-8''	24	✱ B6	2	#6	STR	39'-2''	118
✱ A105	2	#5	STR	14'-0''	29	B7	240	#5	STR	33'-8''	8427
✱ A106	2	#5	STR	16'-4''	34	B8	16	#5	STR	34'-1''	569
✱ A107	2	#5	STR	18'-8''	39						
✱ A108	2	#5	STR	21'-0''	44	H1	52	#4	STR	10'-1''	350
✱ A109	2	#5	STR	23'-4''	49						
✱ A110	2	#5	STR	25'-8''	54	K1	16	#4	STR	24'-8''	264
✱ A111	2	#5	STR	28'-0''	58	K2	6	#4	STR	9'-8''	39
✱ A112	2	#5	STR	30'-4''	63	K3	12	#4	STR	10'-8''	86
✱ A113	2	#5	STR	32'-8''	68	K4	6	#4	STR	10'-2''	41
✱ A114	2	#5	STR	35'-0''	73	K5	4	#4	STR	5'-3''	14
✱ A115	2	#5	STR	37'-4''	78	K6	8	#4	STR	5'-9''	31
A2	291	#5	STR	40'-2''	12191	K7	4	#4	STR	5'-6''	15
A200	2	#5	STR	2'-4''	5	K8	24	#4	STR	2'-8''	43
A201	2	#5	STR	4'-8''	10	K9	16	#4	STR	18'-7''	199
A202	2	#5	STR	7'-0''	15	K10	12	#4	STR	8'-5''	67
A203	2	#5	STR	9'-4''	19	K11	24	#4	STR	10'-0''	160
A204	2	#5	STR	11'-8''	24	K12	12	#4	STR	10'-6''	84
A205	2	#5	STR	14'-0''	29						
A206	2	#5	STR	16'-4''	34	S1	72	#4	1	11'-11''	573
A207	2	#5	STR	18'-8''	39	S2	68	#4	1	9'-4''	424
A208	2	#5	STR	21'-0''	44	S3	168	#4	2	2'-9''	309
A209	2	#5	STR	23'-4''	49						
A210	2	#5	STR	25'-8''	54	U1	72	#4	3	8'-2''	393
A211	2	#5	STR	28'-0''	58	U2	6	#4	3	12'-0''	48
A212	2	#5	STR	30'-4''	63	U3	6	#4	3	11'-6''	46
A213	2	#5	STR	32'-8''	68	U4	48	#4	4	12'-0''	385
A214	2	#5	STR	35'-0''	73	U5	12	#4	4	10'-10''	87
A215	2	#5	STR	37'-4''	78						

REINFORCING STEEL	= 25,507 LBS.
✱ EPOXY COATED REINF. STEEL	= 24,044 LBS.

SUPERSTRUCTURE BILL OF MATERIAL

ITEM	CLASS AA CONCRETE (CU. YD.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
SPANS A, B, & C		25,507	24,044
POUR #1	35.5		
POUR #2	65.2		
POUR #3	62.1		
POUR #4	63.2		
TOTALS ✱✱	226.0	25,507	24,044

✱✱ DOES NOT INCLUDE BARRIER RAIL



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB (SQ. FT. = 5,265)

GROOVING BRIDGE FLOORS

APPROACH SLABS	1,595 SQ. FT.
BRIDGE DECK	4,395 SQ. FT.
TOTAL	5,990 SQ. FT.

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

(SBL)

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No.	BY:	DATE:	No.	BY:	DATE:	S01-21
1			3			TOTAL SHEETS
2			4			34

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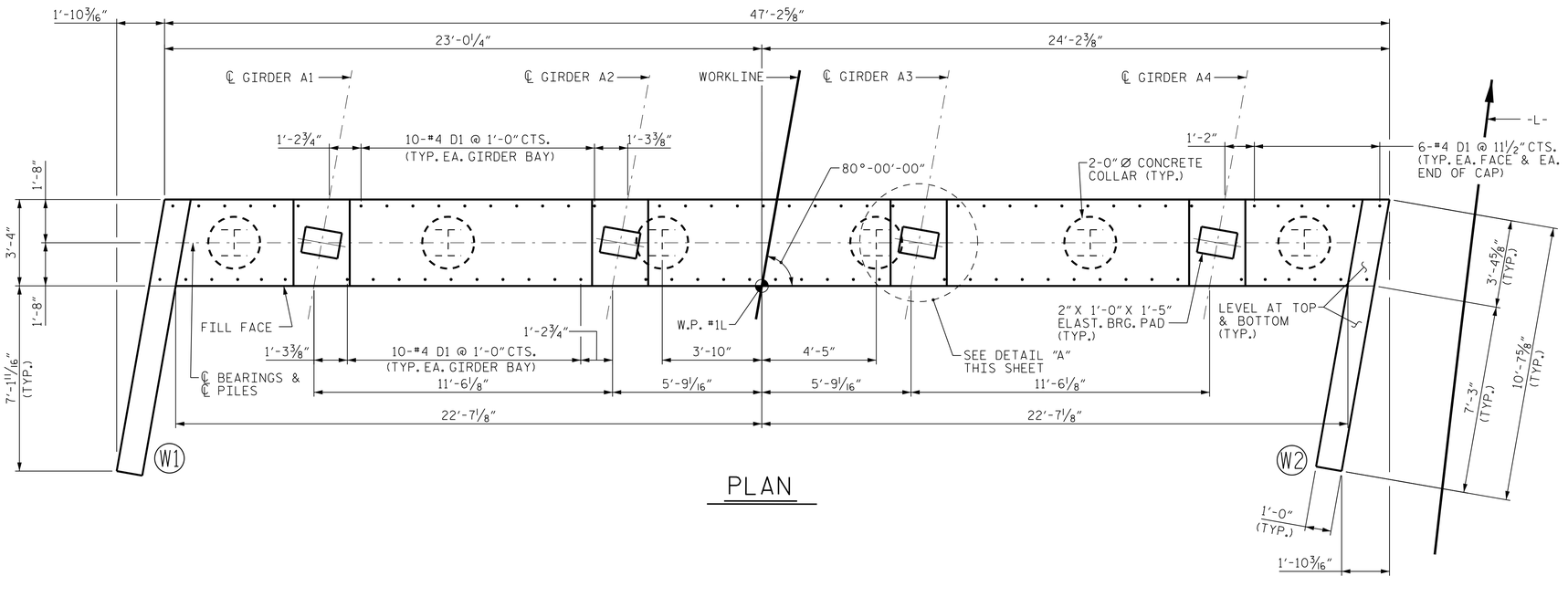
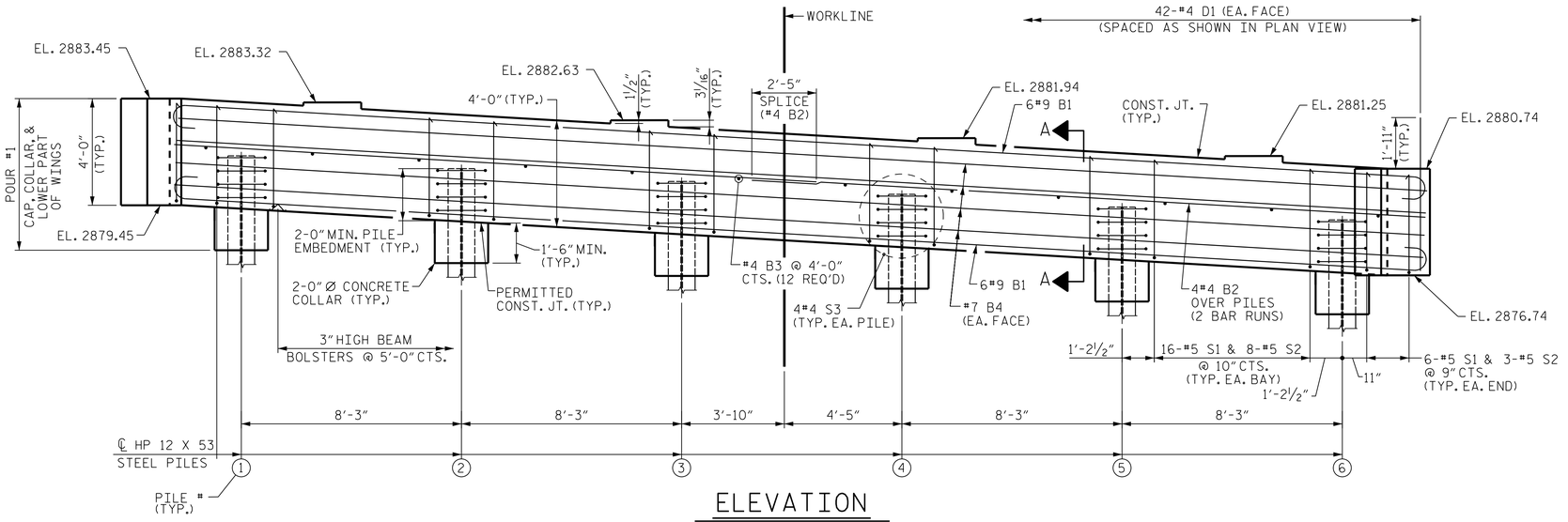


PLAN



ELEVATION

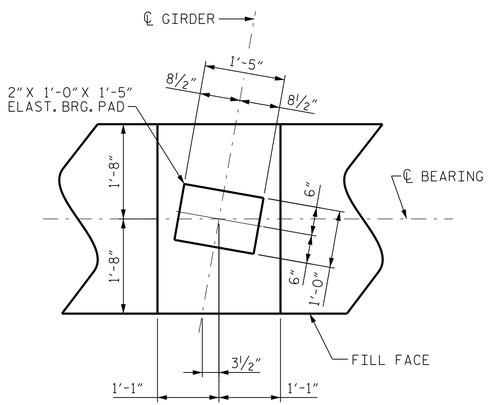
NOTES

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

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

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

PILE	TOP OF PILE ELEVATION	ESTIMATED PILE LENGTH (FT)
1	2881.33	17.0
2	2880.84	18.0
3	2880.34	19.0
4	2879.85	20.0
5	2879.35	21.0
6	2878.86	22.0



DETAIL "A"

(TYP. EACH GIRDER)

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-22
1			3			TOTAL SHEETS
2			4			34

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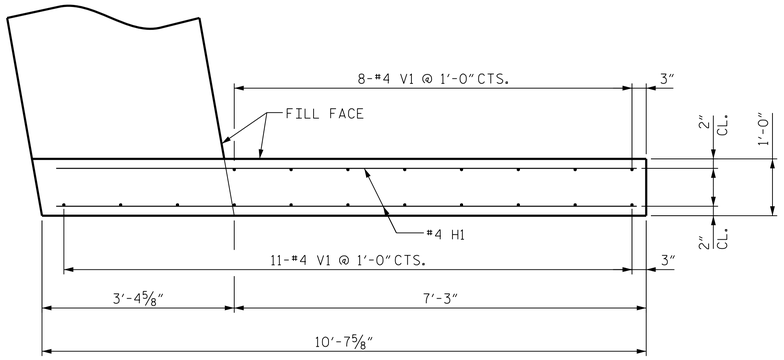
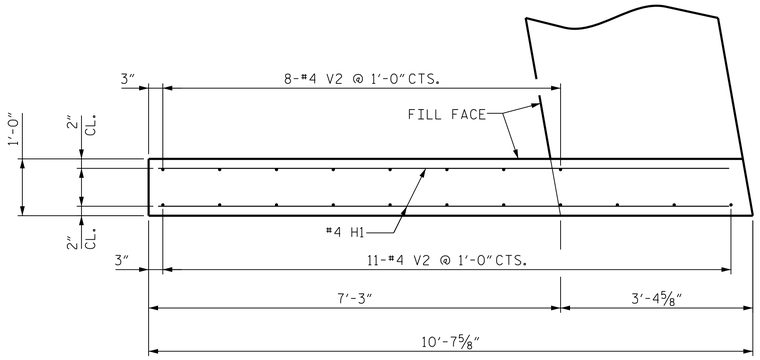
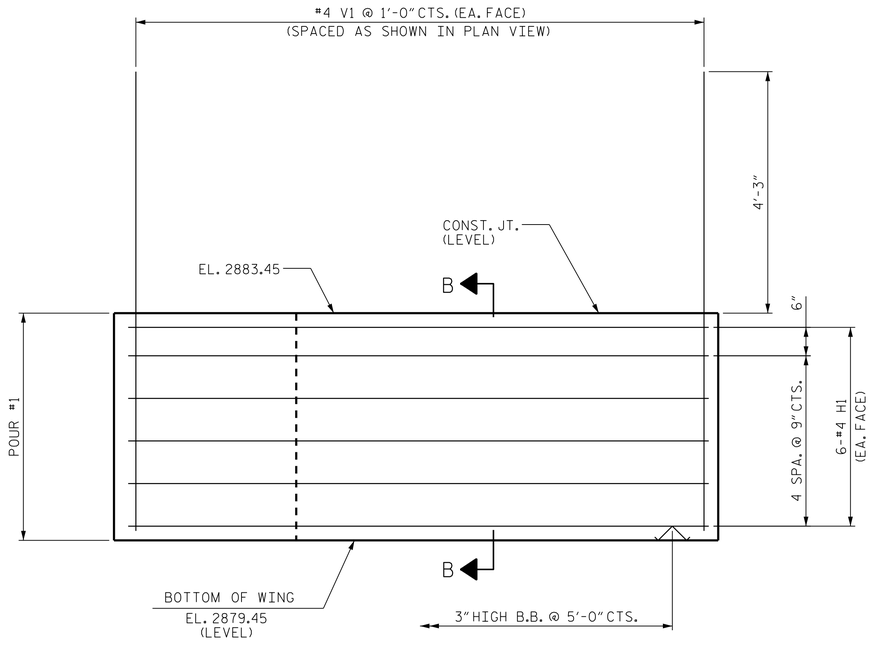


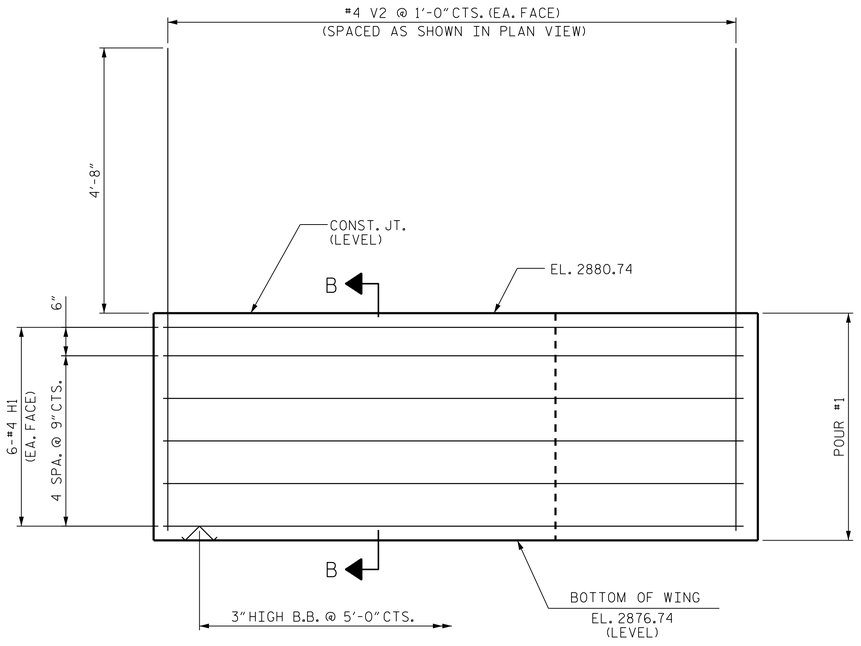
PLAN OF WING (W1)



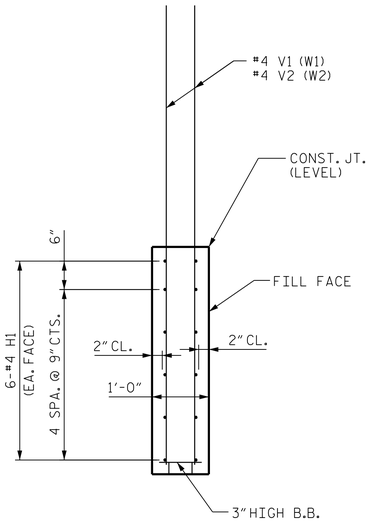
PLAN OF WING (W2)



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION B-B

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-23
1			3			TOTAL SHEETS
2			4			34

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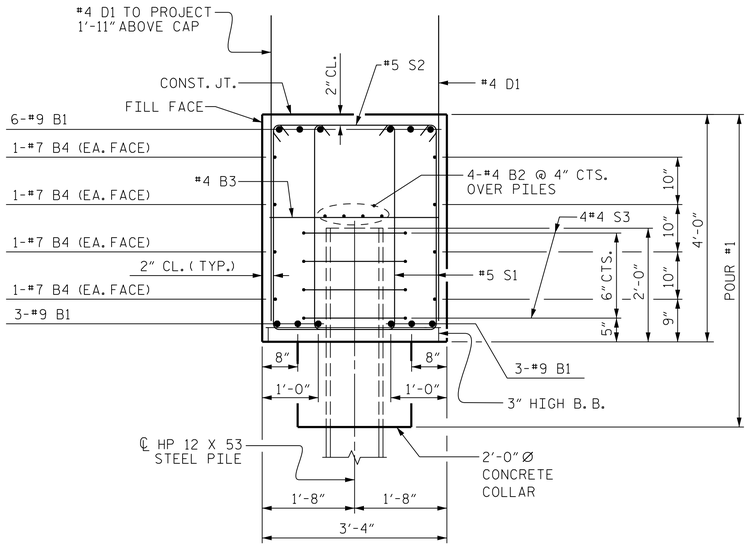
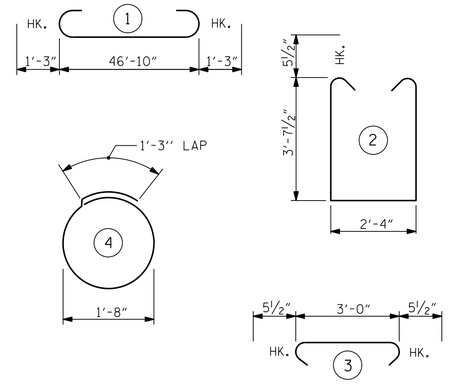


SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	49'-4"	2013
B2	8	#4	STR	24'-8"	132
B3	12	#4	STR	3'-0"	24
B4	8	#7	STR	46'-10"	766
D1	84	#4	STR	5'-8"	318
H1	24	#4	STR	10'-1"	162
S1	92	#5	2	10'-6"	1008
S2	46	#5	3	3'-11"	188
S3	24	#4	4	6'-6"	104
V1	19	#4	STR	8'-0"	102
V2	19	#4	STR	8'-5"	107

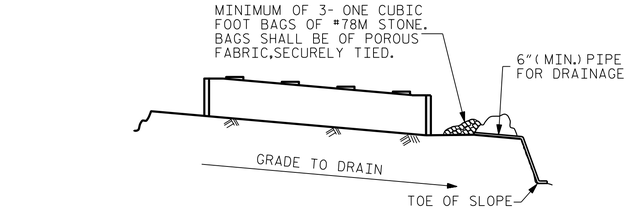
REINFORCING STEEL 4924 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 CAP, COLLARS, & LOWER PART OF WINGS 26.8 CU. YD.

TOTAL CLASS A CONCRETE 26.8 CU. YD.

HP 12 X 53 STEEL PILES
NO. = 6 LIN. FT. = 117



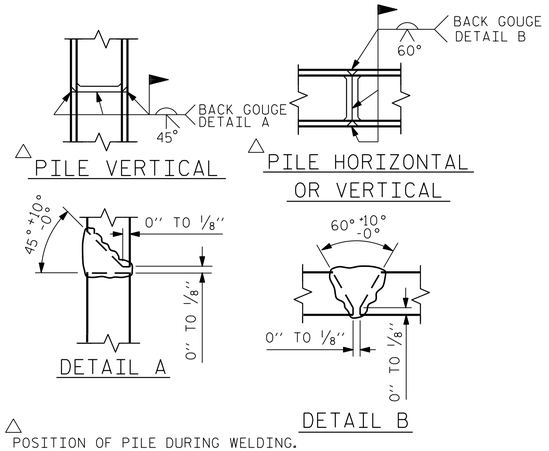
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

LOOKING STATION AHEAD



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-24
1			3			TOTAL SHEETS
2			4			34

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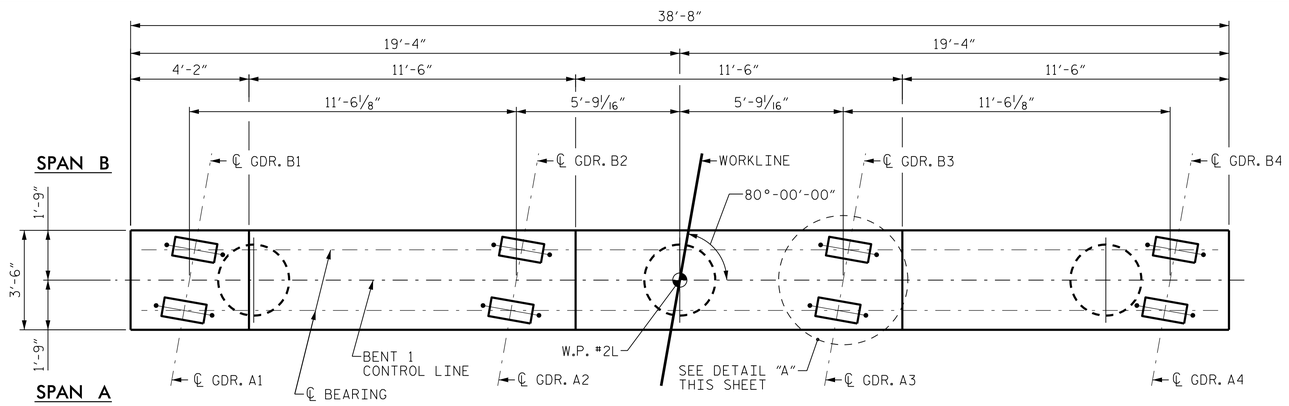
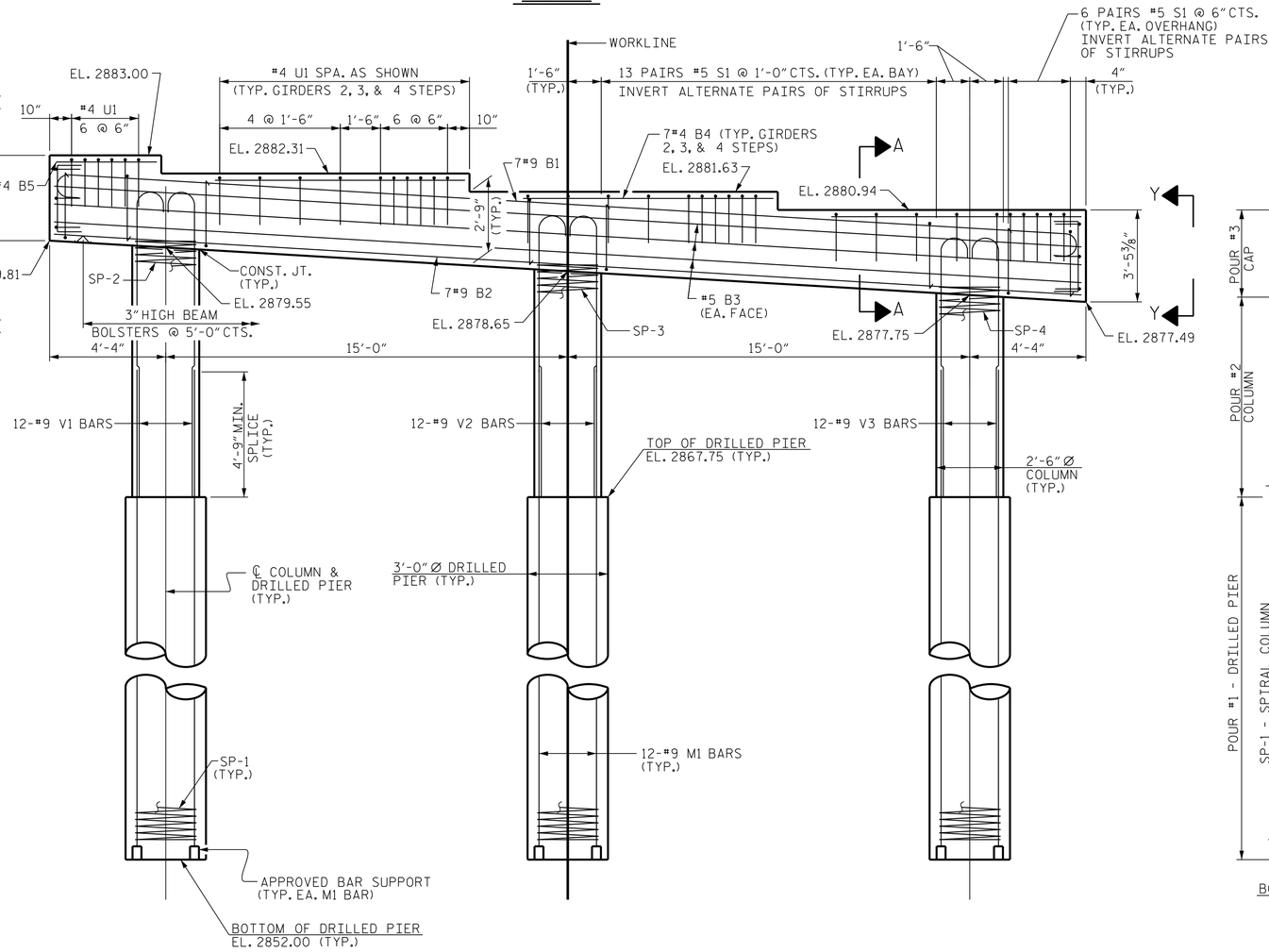
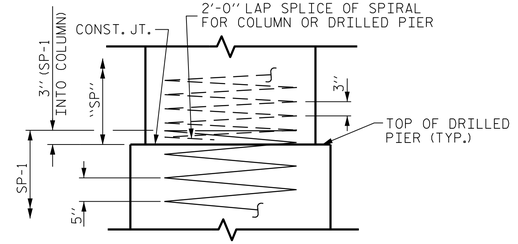


PLAN



ELEVATION



CONSTRUCTION JOINT DETAIL

NOTES

FOR SECTION A-A, VIEW X-X, AND VIEW Y-Y, SEE SHEET 2 OF 2.

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

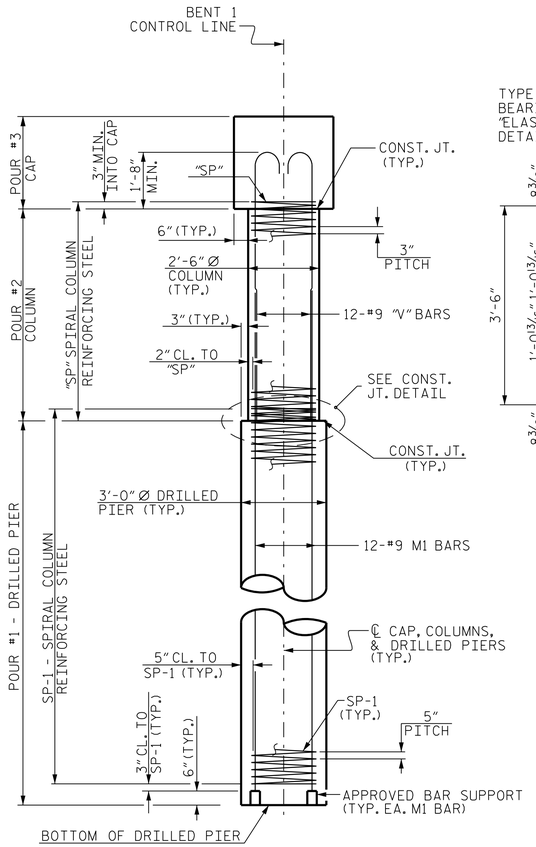
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

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

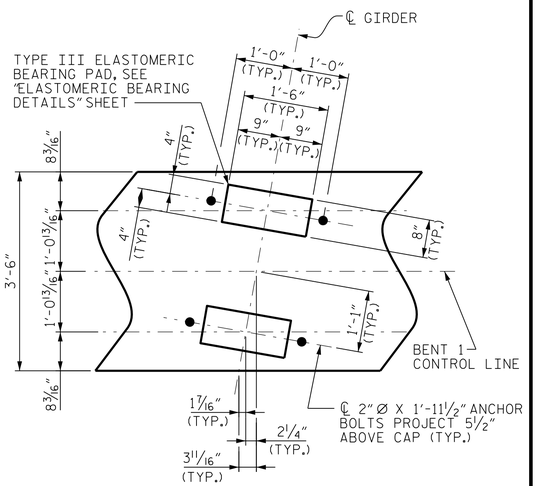
THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FOOT BELOW THE GROUND.

SPLICING OF LONGITUDINAL BARS IN THE DRILLED PIER WILL NOT BE PERMITTED.

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



END ELEVATION



DETAIL "A"

(TYP. EACH GIRDER)

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 1

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-25
1			3			TOTAL SHEETS
2			4			34

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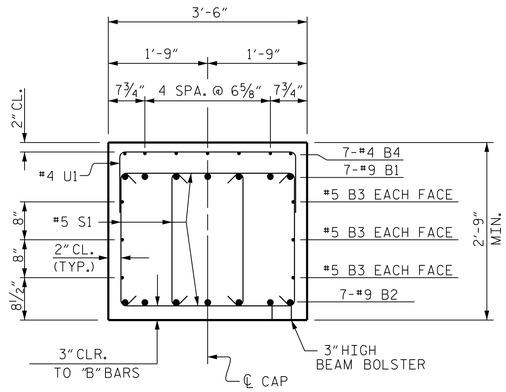
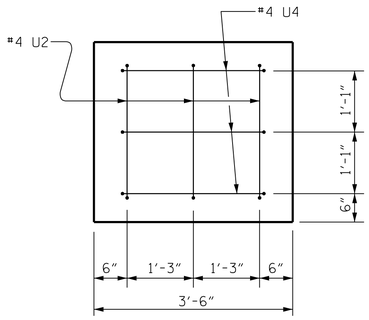
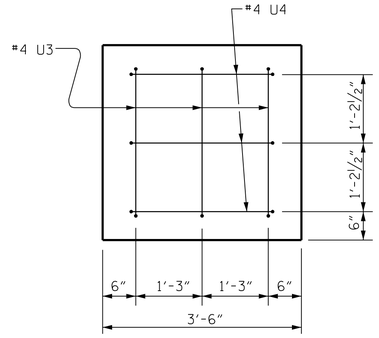


SECTION A-A

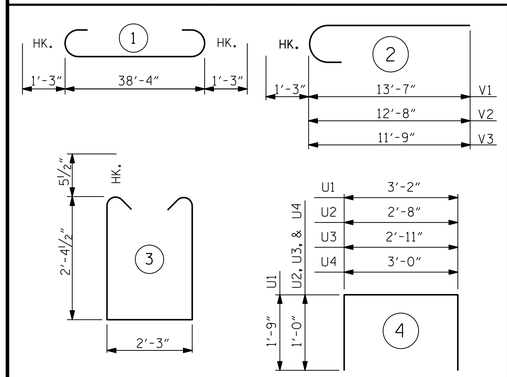


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	7	#9	1	40'-10"	972
B2	7	#9	STR	38'-4"	912
B3	6	#5	STR	38'-4"	240
B4	21	#4	STR	9'-11"	139
B5	7	#4	STR	3'-10"	18
M1	36	#9	STR	23'-0"	2815
S1	128	#5	3	7'-11"	1057
U1	36	#4	4	6'-8"	160
U2	3	#4	4	4'-8"	9
U3	3	#4	4	4'-11"	10
U4	6	#4	4	5'-0"	20
V1	12	#9	2	14'-10"	605
V2	12	#9	2	13'-11"	568
V3	12	#9	2	13'-0"	530

REINFORCING STEEL 8055 LBS

SP-1	3	*	5	253'-8"	794
SP-2	1	**	6	334'-4"	223
SP-3	1	**	6	310'-3"	207
SP-4	1	**	6	286'-3"	191

SPIRAL COLUMN REINFORCING STEEL 1415 LBS.

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

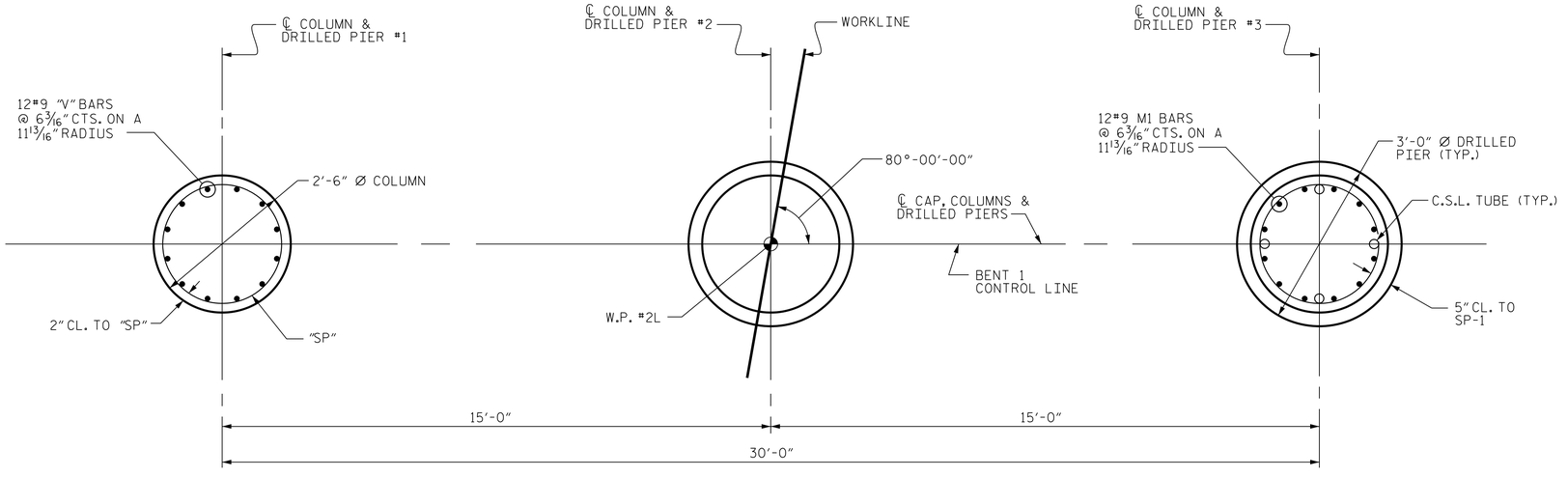
** THE SP-2, SP-3, AND SP-4 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN

POUR #2 (COLUMNS)	5.9 CU. YD.
POUR #3 (CAP)	15.6 CU. YD.
TOTAL CLASS A CONCRETE	21.5 CU. YD.

DRILLED PIERS

POUR #1 (DRILLED PIERS)	12.4 CU. YD.
3'-0" Ø DRILLED PIERS IN SOIL	15.3 LIN. FT.
3'-0" Ø DRILLED PIERS NOT IN SOIL	32.0 LIN. FT.
CSL TUBES	207 LIN. FT.
PERMANENT STEEL CASING	23.3 LIN. FT.



COLUMN REINFORCEMENT

DRILLED PIER REINFORCEMENT

PLAN OF DRILLED PIERS & COLUMNS

(REINFORCING STEEL IS TYPICAL FOR EACH COLUMN & DRILLED PIER)

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 1

(SBL)

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NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-26
1			3			TOTAL SHEETS
2			4			34

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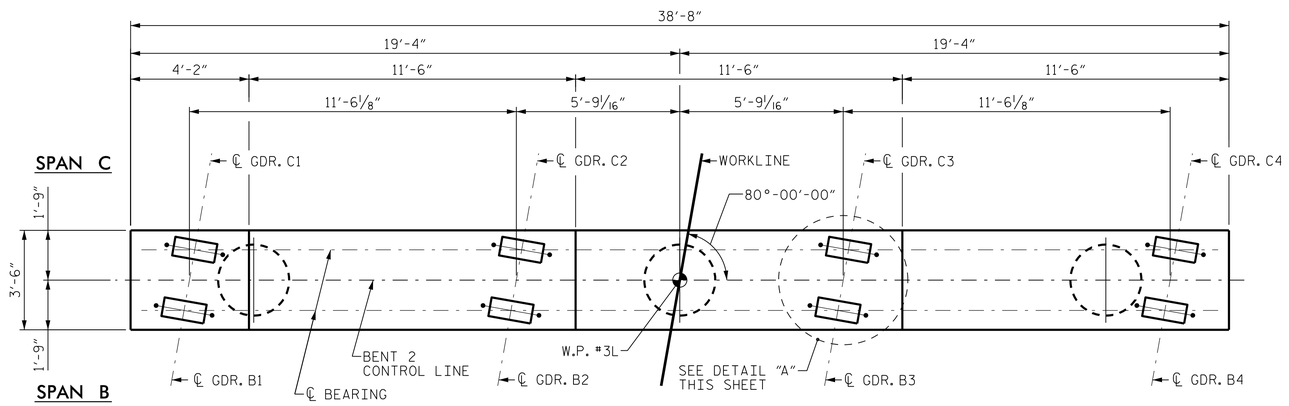
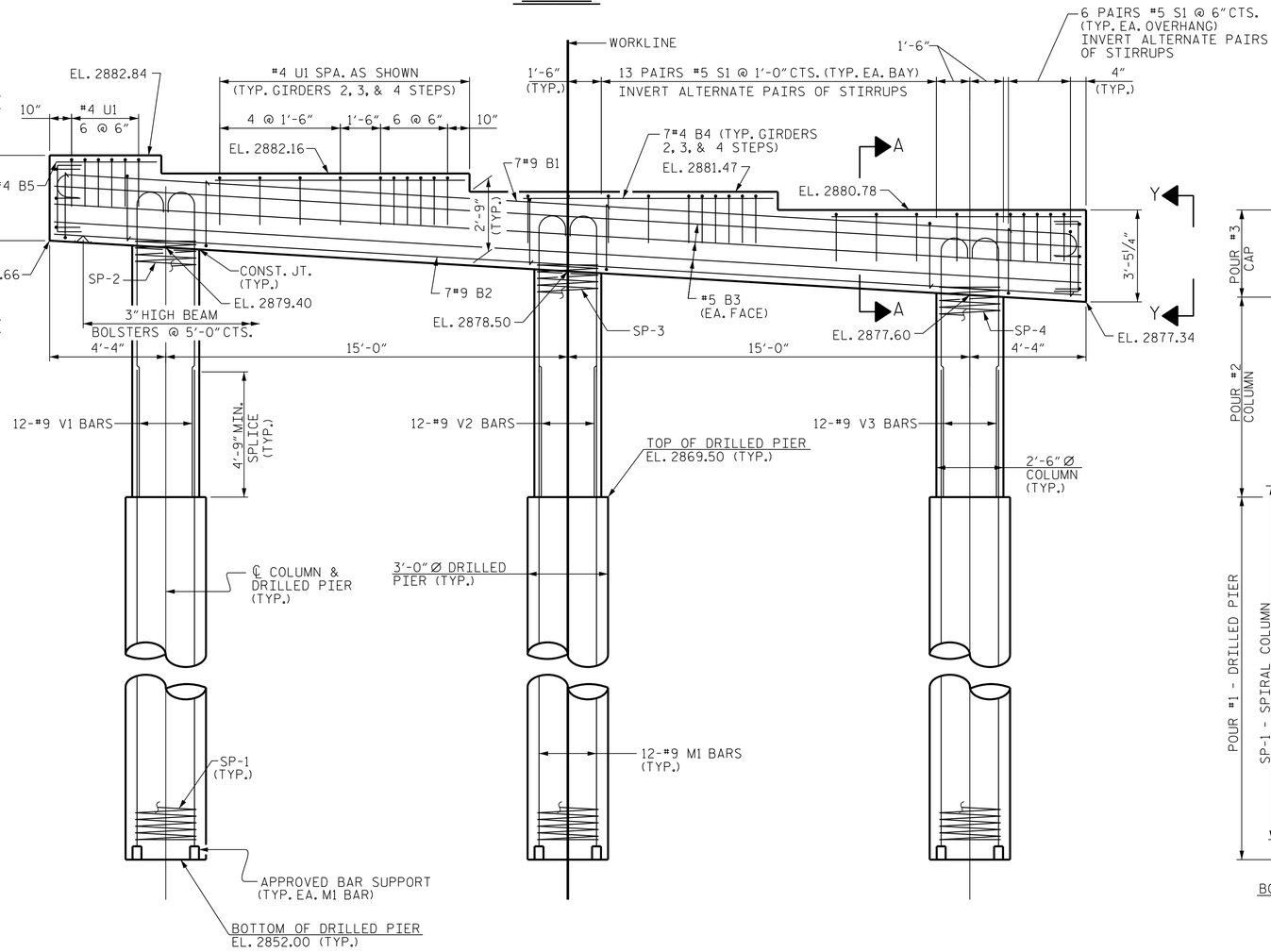
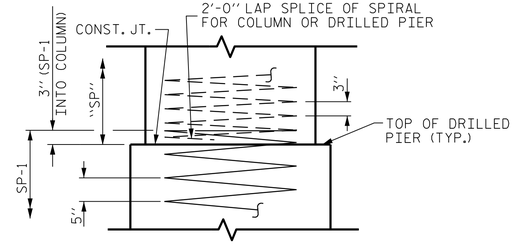


PLAN



ELEVATION



CONSTRUCTION JOINT DETAIL

NOTES

FOR SECTION A-A, VIEW X-X, AND VIEW Y-Y, SEE SHEET 2 OF 2.

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

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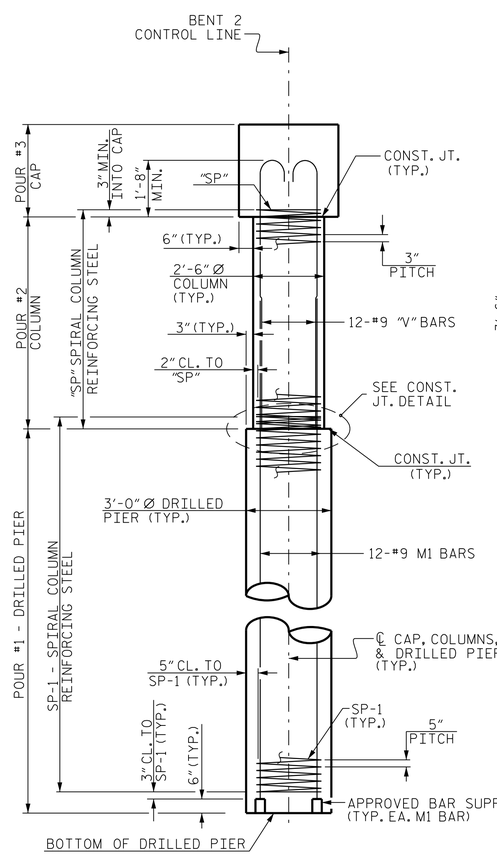
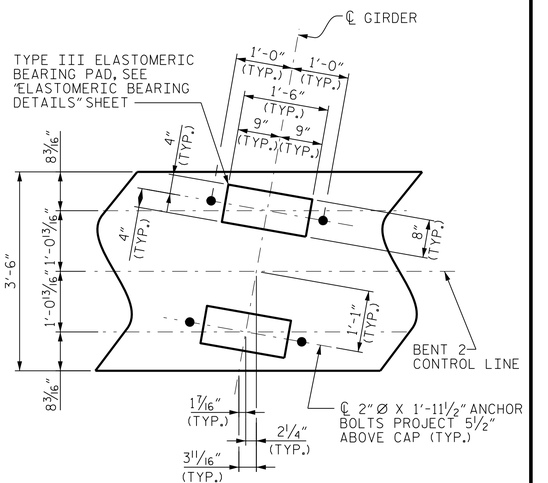


END ELEVATION



DETAIL "A"

(TYP. EACH GIRDER)

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2

(SBL)

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NC COA No. F-1255

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REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-27
1			3			TOTAL SHEETS
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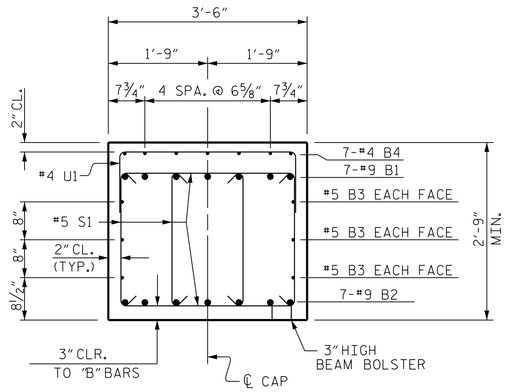
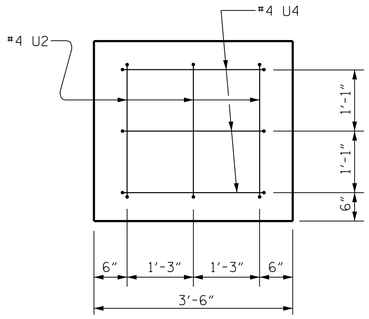
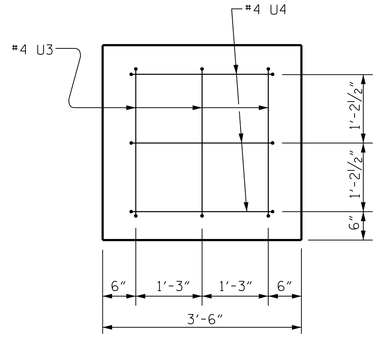


SECTION A-A

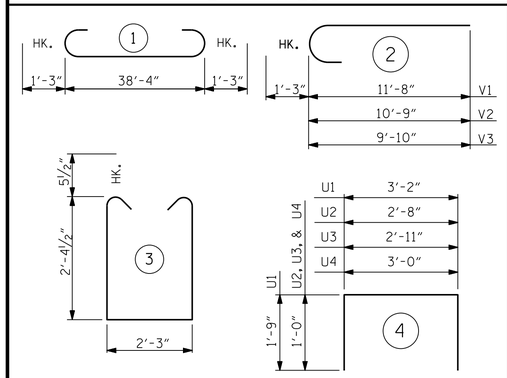


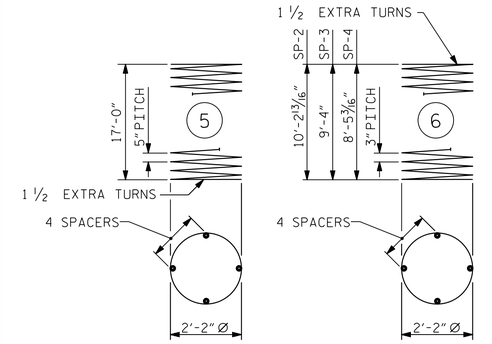
VIEW X-X



VIEW Y-Y

BAR TYPES





ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	7	#9	1	40'-10"	972
B2	7	#9	STR	38'-4"	912
B3	6	#5	STR	38'-4"	240
B4	21	#4	STR	9'-11"	139
B5	7	#4	STR	3'-10"	18
M1	36	#9	STR	24'-9"	3029
S1	128	#5	3	7'-11"	1057
U1	36	#4	4	6'-8"	160
U2	3	#4	4	4'-8"	9
U3	3	#4	4	4'-11"	10
U4	6	#4	4	5'-0"	20
V1	12	#9	2	12'-11"	527
V2	12	#9	2	12'-0"	490
V3	12	#9	2	11'-1"	452

REINFORCING STEEL 8035 LBS

SP-1	3	*	5	281'-7"	881
SP-2	1	**	6	283'-6"	189
SP-3	1	**	6	259'-6"	173
SP-4	1	**	6	235'-5"	157

SPIRAL COLUMN REINFORCING STEEL 1400 LBS

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

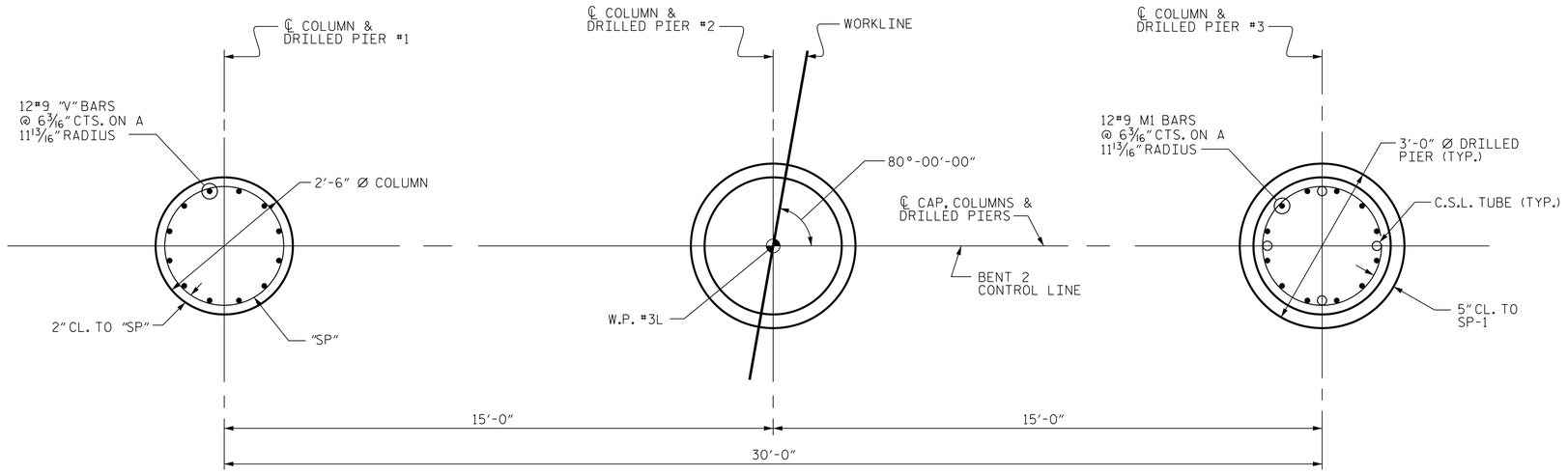
** THE SP-2, SP-3, AND SP-4 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN

POUR #2 (COLUMNS)	4.9 CU. YD.
POUR #3 (CAP)	15.6 CU. YD.
TOTAL CLASS A CONCRETE	20.5 CU. YD.

DRILLED PIERS

POUR #1 (DRILLED PIERS)	13.7 CU. YD.
3'-0" Ø DRILLED PIERS IN SOIL	13.5 LIN. FT.
NOT IN SOIL	39.0 LIN. FT.
CSL TUBES	228 LIN. FT.
PERMANENT STEEL CASING	22.5 LIN. FT.



COLUMN REINFORCEMENT

DRILLED PIER REINFORCEMENT

PLAN OF DRILLED PIERS & COLUMNS

(REINFORCING STEEL IS TYPICAL FOR EACH COLUMN & DRILLED PIER)

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-28
1			3			TOTAL SHEETS
2			4			34

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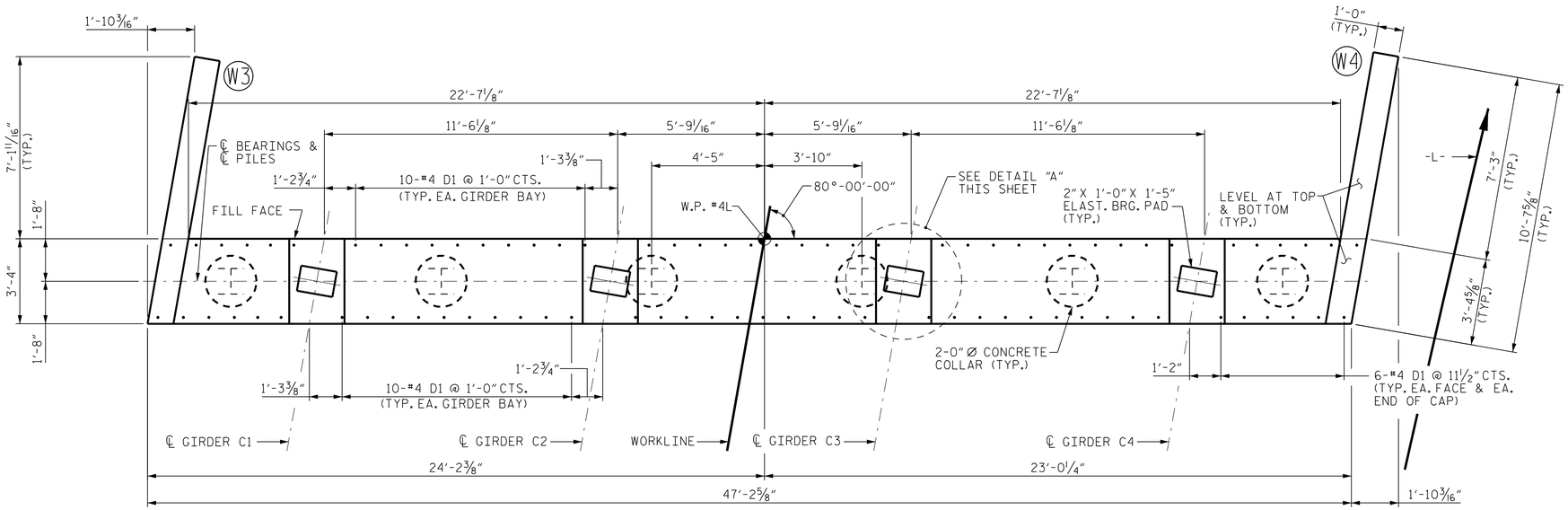
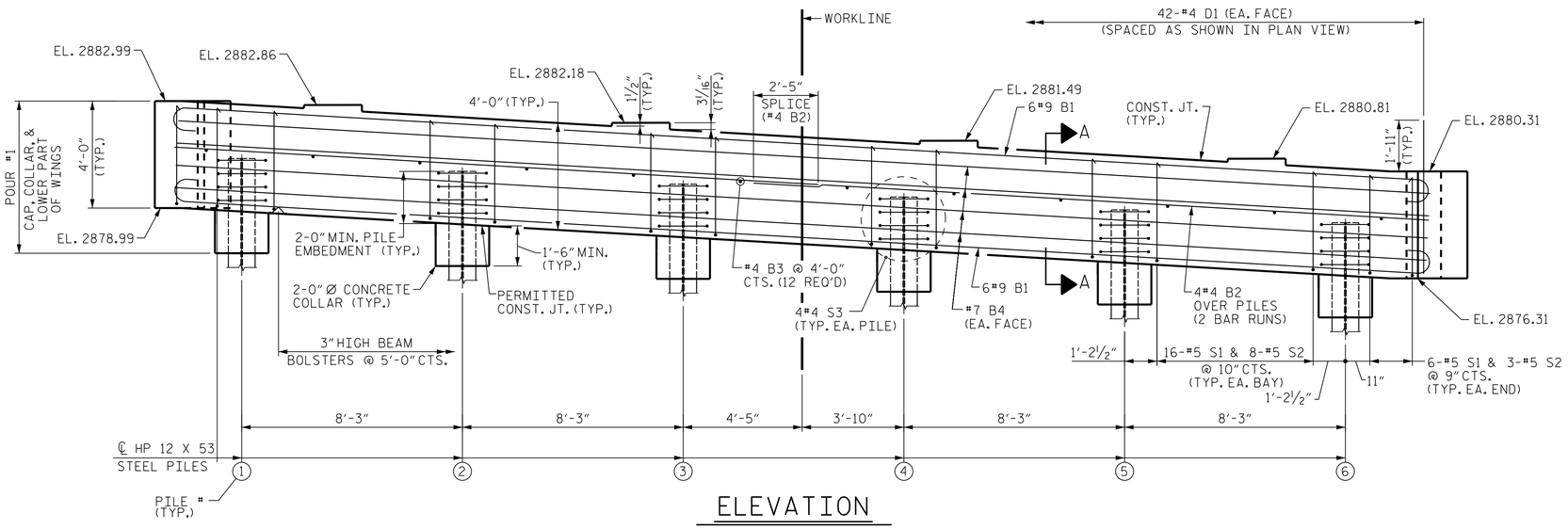


PLAN



ELEVATION

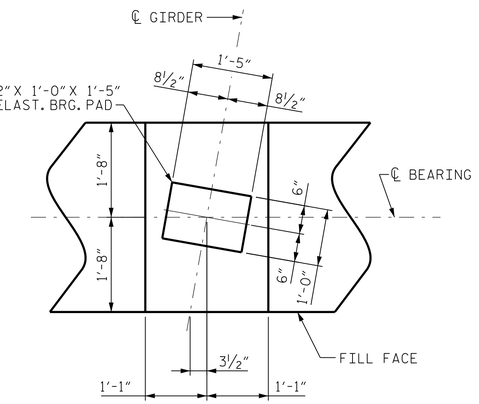
NOTES

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

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

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

PILE	TOP OF PILE ELEVATION	ESTIMATED PILE LENGTH (FT)
1	2880.87	22.0
2	2880.38	21.0
3	2879.89	20.0
4	2879.41	19.0
5	2878.92	18.0
6	2878.43	17.0



DETAIL "A"
(TYP. EACH GIRDER)

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-29
1			3			TOTAL SHEETS
2			4			34

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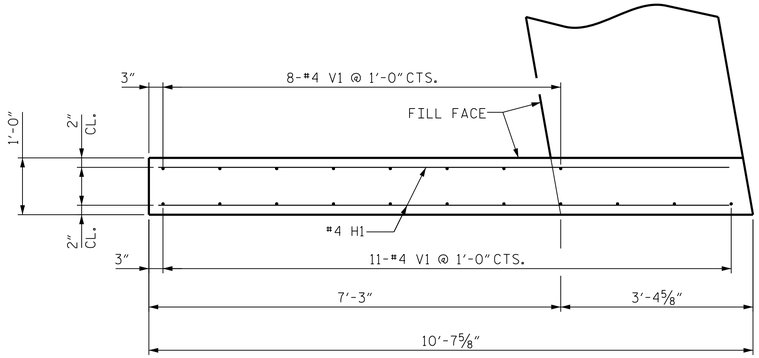
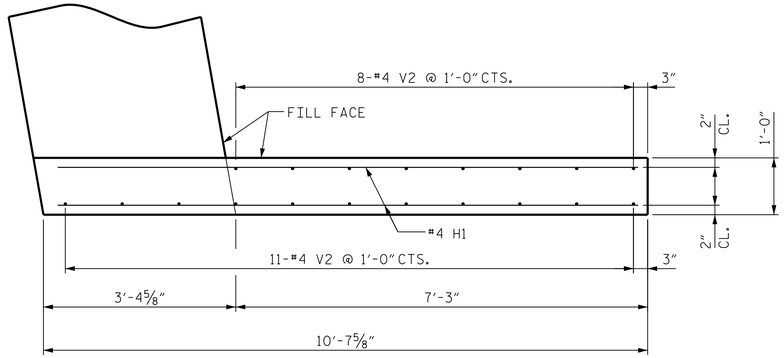
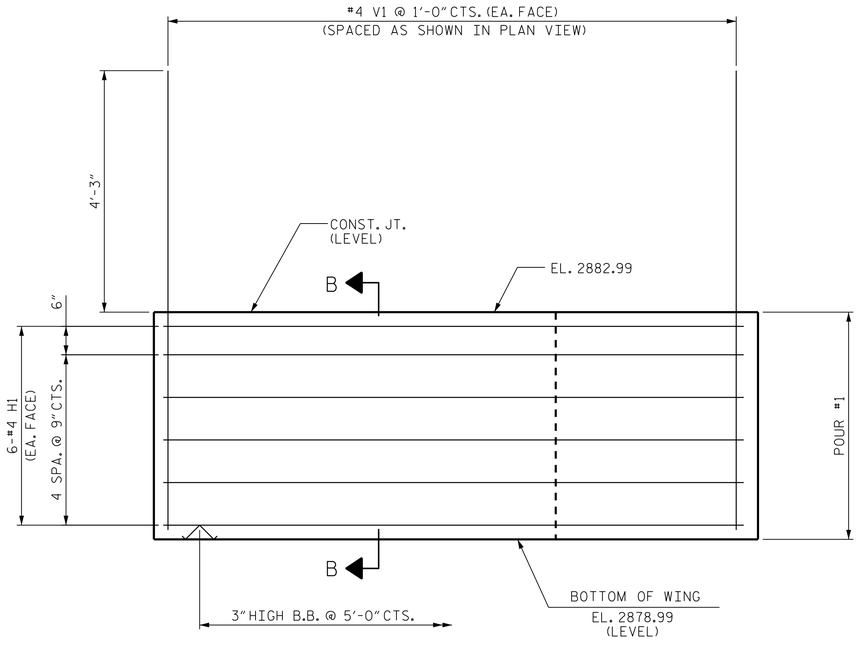


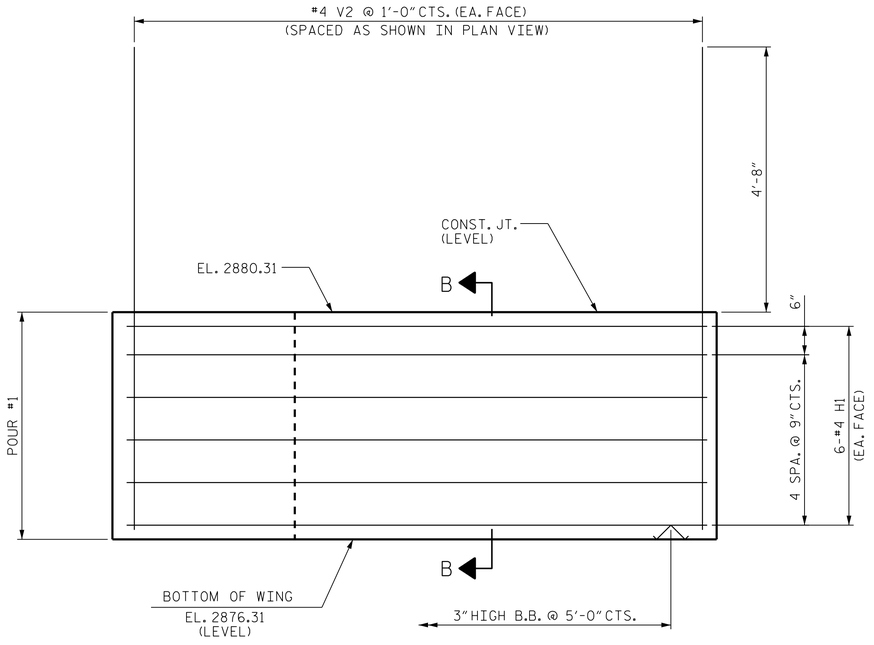
PLAN OF WING (W3)



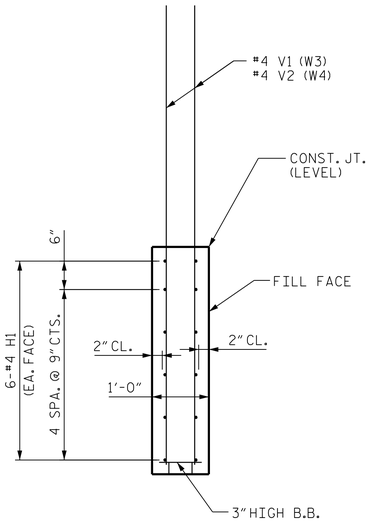
PLAN OF WING (W4)



ELEVATION OF WING (W3)



ELEVATION OF WING (W4)



SECTION B-B

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2

(SBL)

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Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-30
1			3			TOTAL SHEETS
2			4			34

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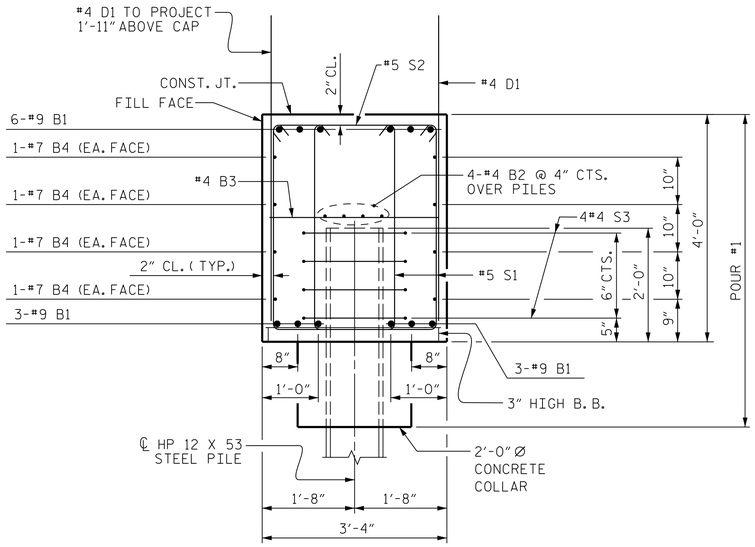
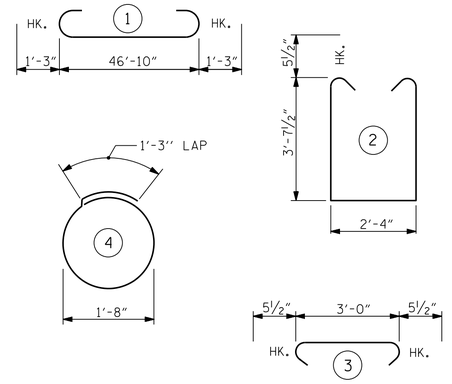


SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	49'-4''	2013
B2	8	#4	STR	24'-8''	132
B3	12	#4	STR	3'-0''	24
B4	8	#7	STR	46'-10''	766
D1	84	#4	STR	5'-8''	318
H1	24	#4	STR	10'-1''	162
S1	92	#5	2	10'-6''	1008
S2	46	#5	3	3'-11''	188
S3	24	#4	4	6'-6''	104
V1	19	#4	STR	8'-0''	102
V2	19	#4	STR	8'-5''	107

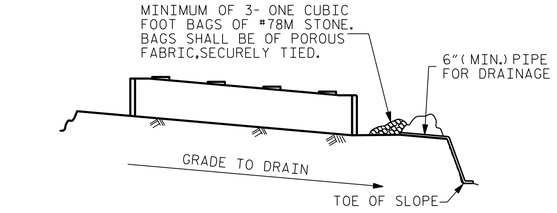
REINFORCING STEEL 4924 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 CAP, COLLARS, & LOWER PART OF WINGS 26.8 CU. YD.

TOTAL CLASS A CONCRETE 26.8 CU. YD.

HP 12 X 53 STEEL PILES
NO. = 6 LIN. FT. = 117



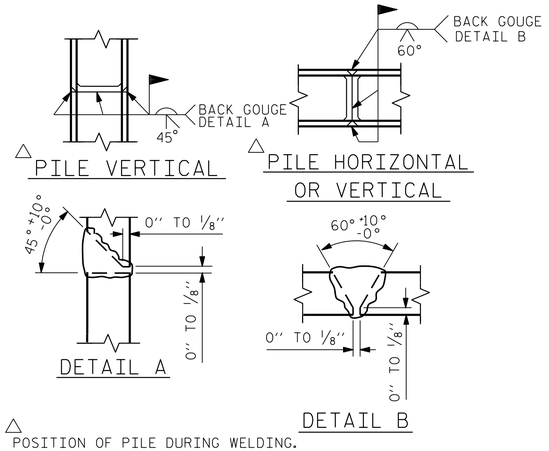
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT

LOOKING STATION AHEAD



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2

(SBL)

CDM Smith
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5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : J. SLOAN DATE : 04-14
CHECKED BY : J. TAYLOR DATE : 07-14
DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-31
1			3			TOTAL SHEETS
2			4			34

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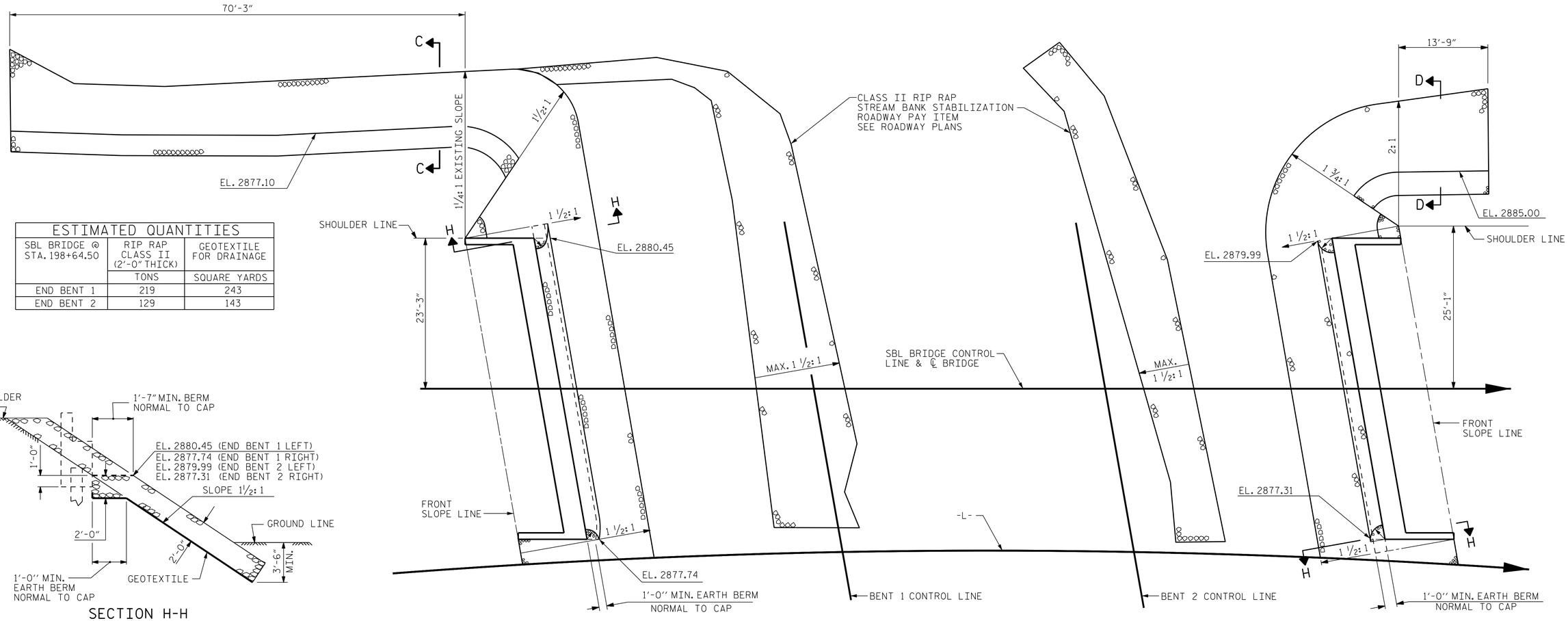


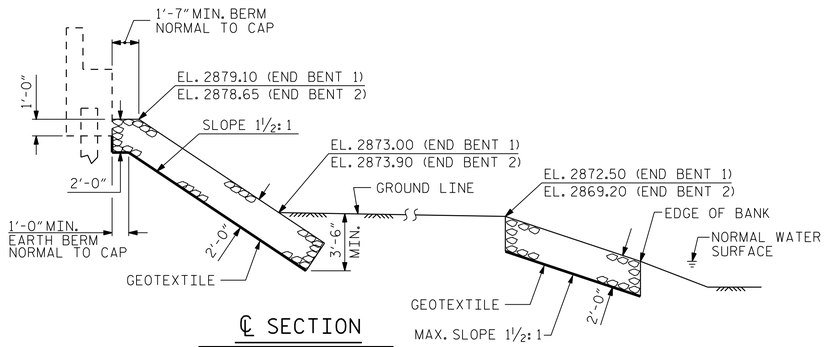
END BENT 1

END BENT 2

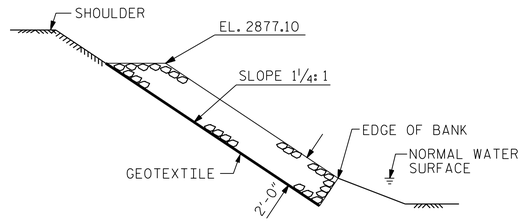
PLAN OF RIP RAP

ESTIMATED QUANTITIES		
SBL BRIDGE @ STA. 198+64.50	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	219	243
END BENT 2	129	143

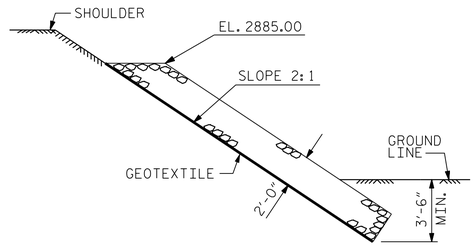
SECTION H-H



℄ SECTION
BERM RIP RAPPED



SECTION C-C



SECTION D-D

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

RIP RAP DETAILS

(SBL)

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-32
1			3			TOTAL SHEETS
2			4			34

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

ASSEMBLED BY : J. SLOAN	DATE : 04-14		
CHECKED BY : J. TAYLOR	DATE : 07-14		
DRAWN BY : REK 1/84	REV. 5/1/06R	TLA/GM	
CHECKED BY : RDU 1/84	REV. 10/1/11	MAA/GM	
	REV. 12/21/11	MAA/GM	

STD. NO. RR1

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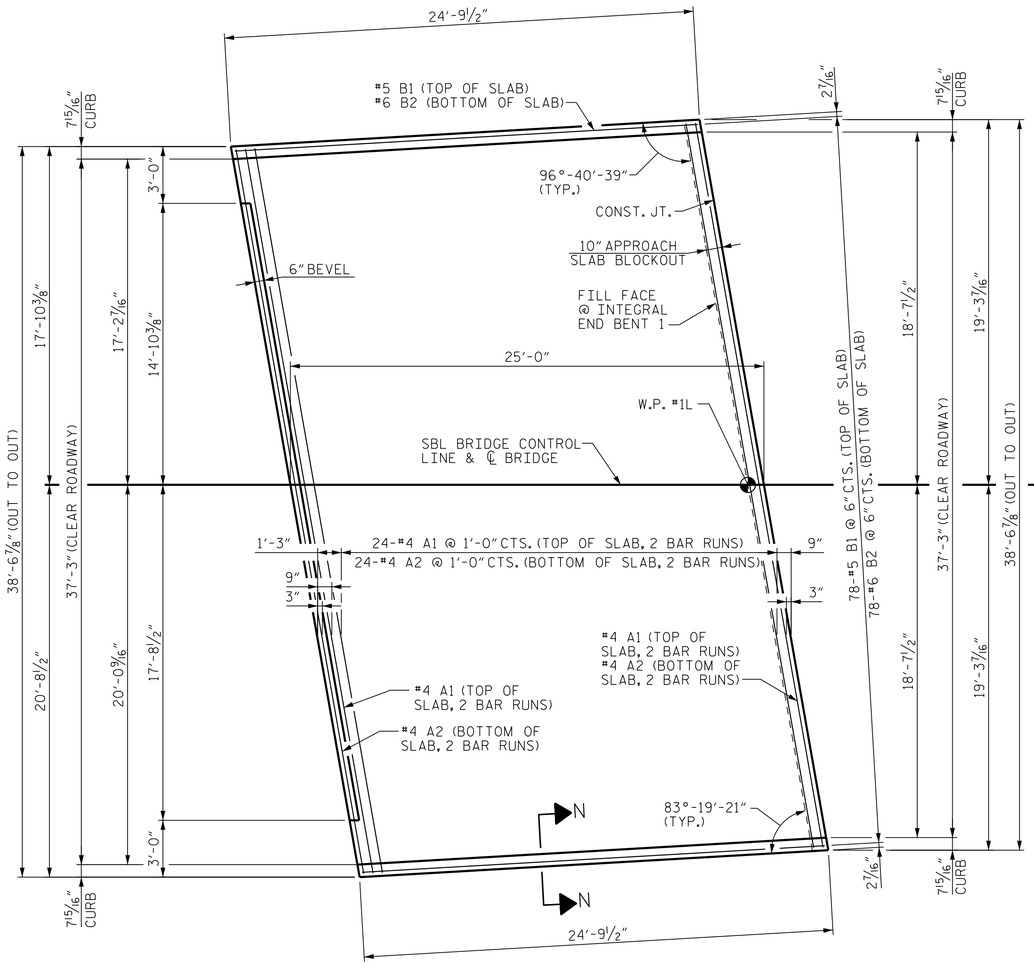
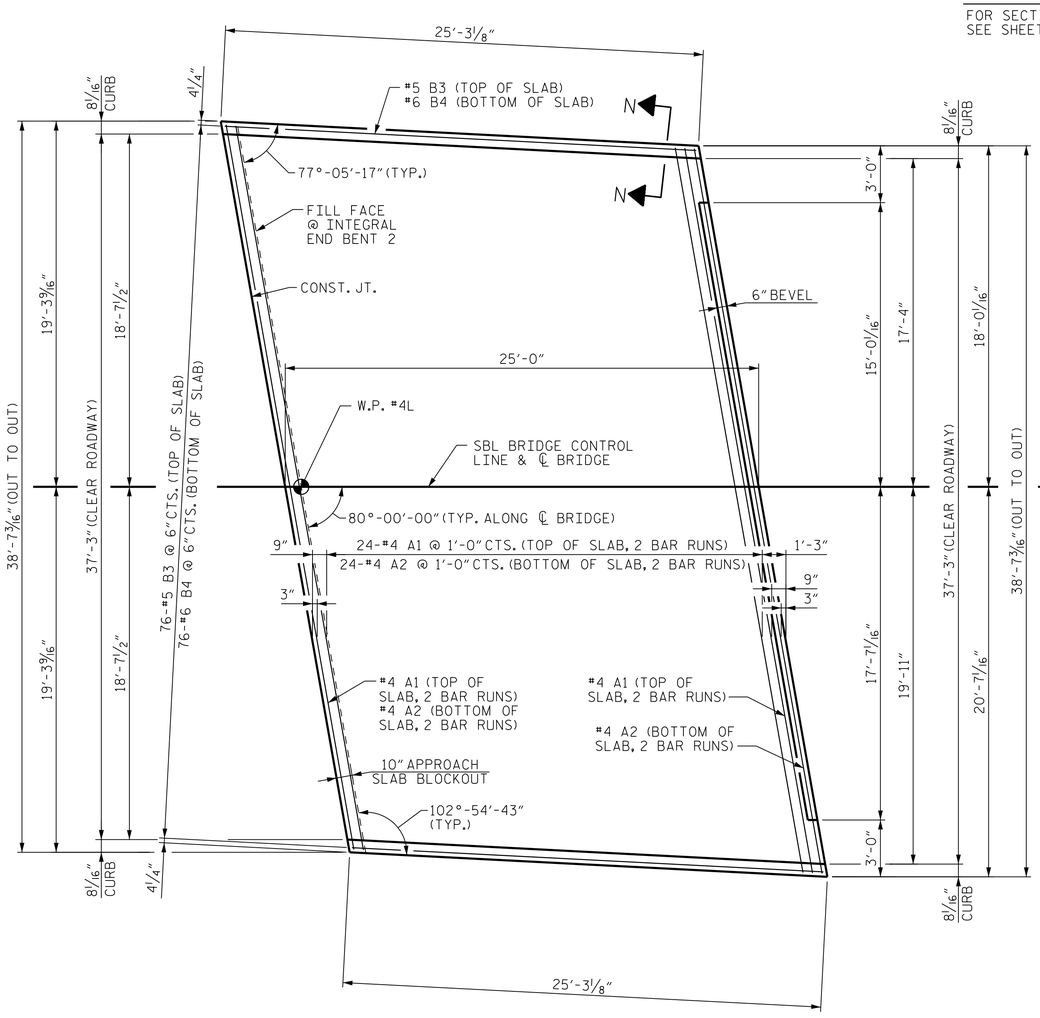
NOTES

FOR SECTION THRU APPROACH SLAB, SEE SHEET 2 OF 2.

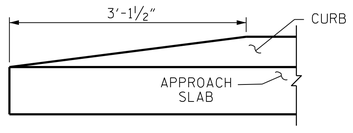


PLAN AT END BENT 1

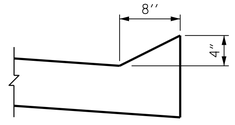


PLAN AT END BENT 2

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



END OF CURB WITHOUT SHOULDER BERM GUTTER



SECTION N-N

PROJECT NO. R-2915B

ASHE **COUNTY**

STATION: 198+64.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB FOR INTEGRAL ABUTMENT

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-33
1			3			TOTAL SHEETS
2			4			34

ASSEMBLED BY : J. SLOAN		DATE : 08-14	
CHECKED BY :		DATE :	
DRAWN BY : TLA 10/05	REV. 10/1/11	MAA/GM	
CHECKED BY : GM 5/06	REV. 12/21/11	MAA/GM	
	REV. 6/13	MAA/GM	

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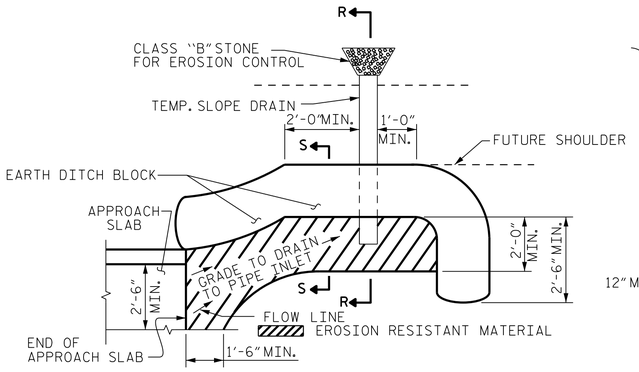
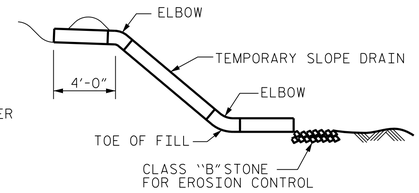
STD. NO. BAS5

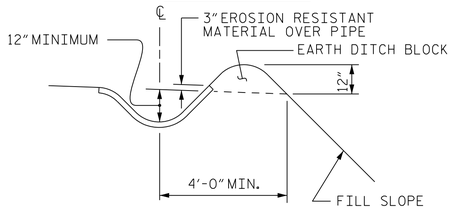


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

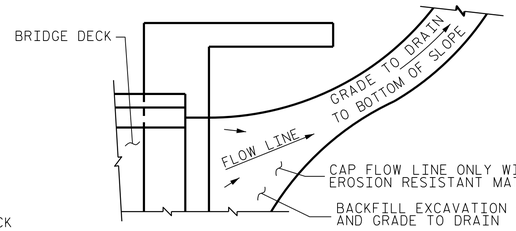
PLAN VIEW



SECTION R-R



SECTION S-S

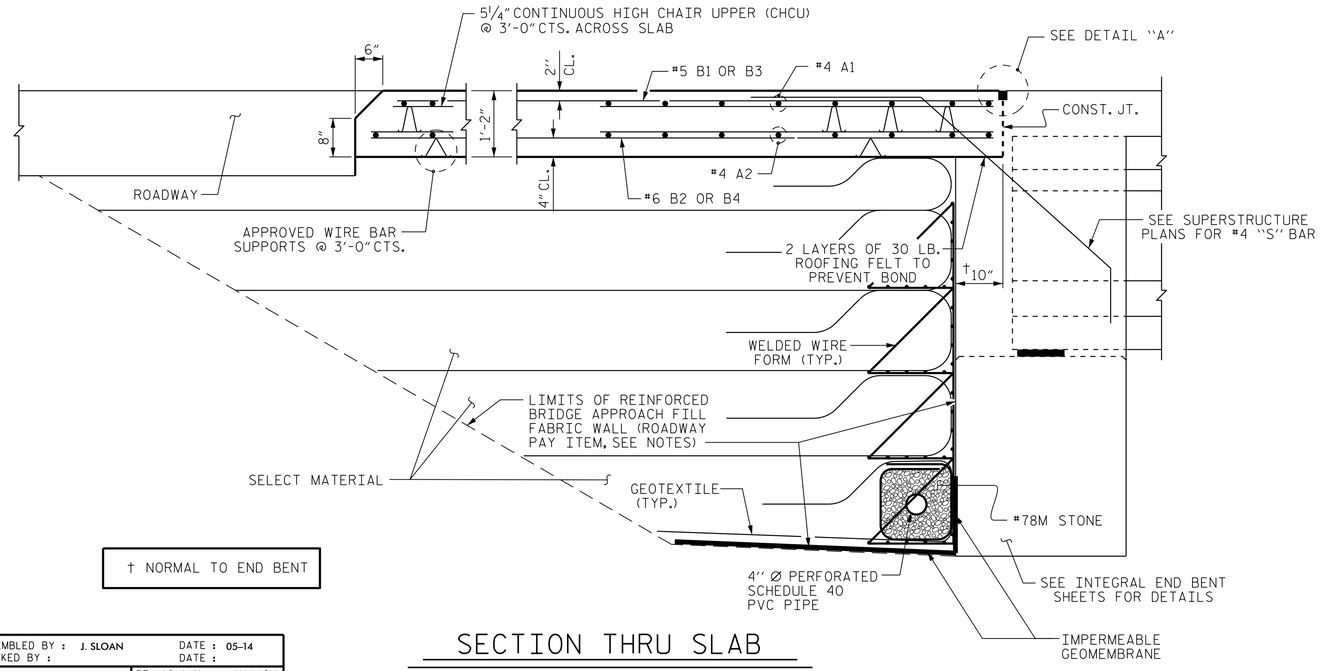


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

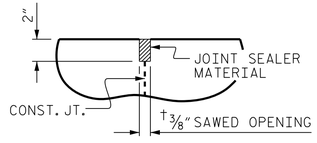
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



† NORMAL TO END BENT

SECTION THRU SLAB



DETAIL "A"

BILL OF MATERIAL

APPROACH SLAB AT END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	52	#4	STR	20'-5"	709
A2	52	#4	STR	20'-4"	706
✳ B1	78	#5	STR	23'-11"	1946
B2	78	#6	STR	24'-5"	2861

REINFORCING STEEL	LBS.	3567
✳ EPOXY COATED REINFORCING STEEL	LBS.	2655
CLASS AA CONCRETE	C. Y.	41.7

BILL OF MATERIAL

APPROACH SLAB AT END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	52	#4	STR	20'-5"	709
A2	52	#4	STR	20'-4"	706
✳ B3	76	#5	STR	24'-5"	1935
B4	76	#6	STR	24'-11"	2844

REINFORCING STEEL	LBS.	3550
✳ EPOXY COATED REINFORCING STEEL	LBS.	2644
CLASS AA CONCRETE	C. Y.	41.7

APPROACH SLABS BILL OF MATERIAL

APPROACH SLAB LOCATION	CLASS AA CONCRETE (CU. YD.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
END BENT 1	41.7	3567	2655
END BENT 2	41.7	3550	2644
TOTALS	83.4	7117	5299

NOTES

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

FOR REINFORCED BRIDGE APPROACH FILL FABRIC WALL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, WELDED WIRE FORM, AND SELECT MATERIAL, SEE ROADWAY PLANS.

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

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

PROJECT NO. R-2915B

ASHE COUNTY

STATION: 198+64.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB DETAILS

(SBL)

CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DESIGN ENGINEER : J. TAYLOR DATE : 08-14

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 33698 ENGINEER JOSHUA B. TAYLOR

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S01-34
1			3			TOTAL SHEETS
2			4			34

ASSEMBLED BY : J. SLOAN		DATE : 05-14	
CHECKED BY :		DATE :	
DRAWN BY : TLA 10/05	REV. 10/1/11		MAA/GM
CHECKED BY : GM 5/06	REV. 12/21/11		MAA/GM
	REV. 6/13		MAA/GM

STD. NO. BAS4 STD. NO. BAS5

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