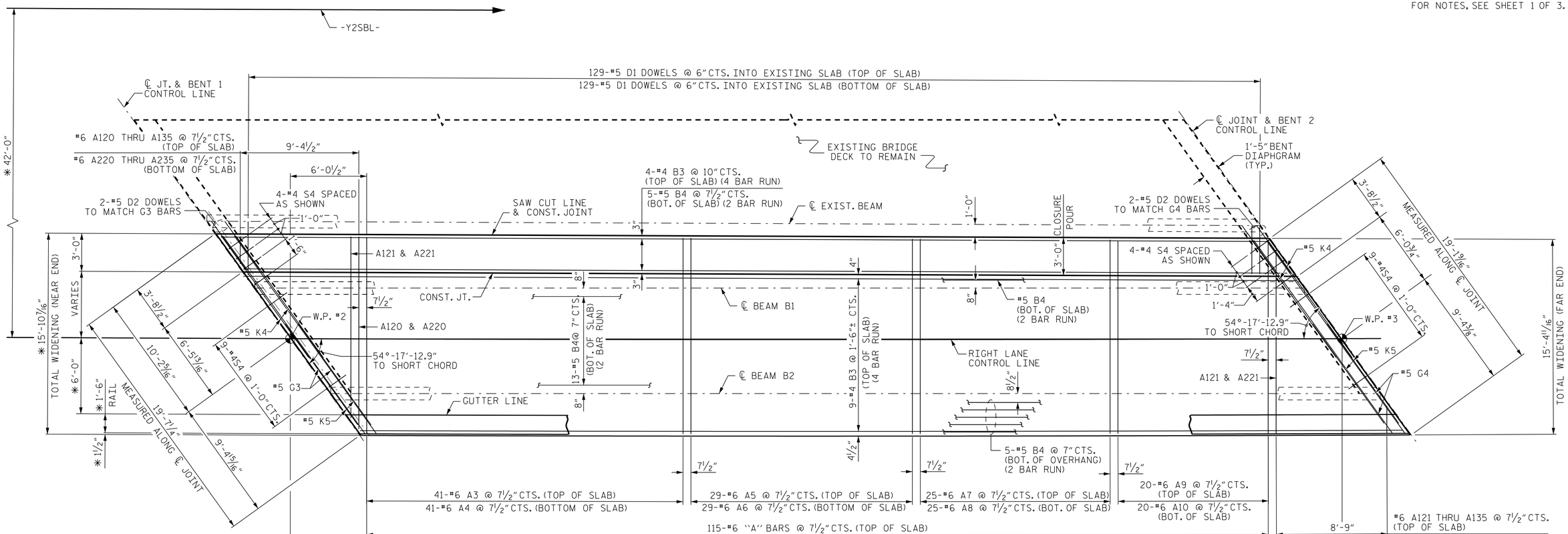
This electronic collection of documents is provided for the convenience of the user and is Not a Certified Document –

The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.
This file or an individual page shall not be considered a certified document.

FOR NOTES, SEE SHEET 1 OF 3.

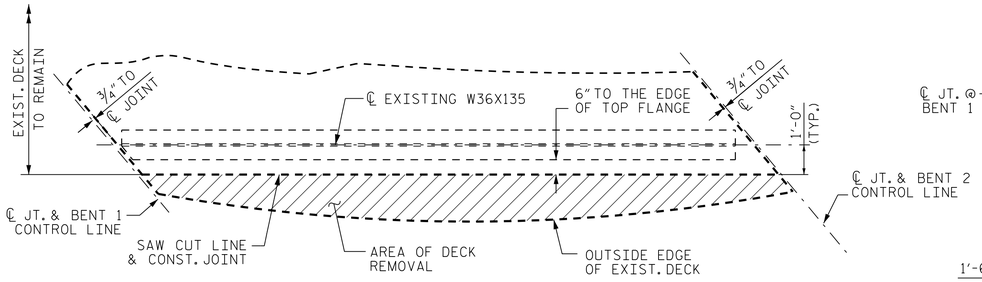


✳ RADIAL DIMENSION

#4 B3 MIN. SPLICE LENGTH = 1'-11"
#5 B4 MIN. SPLICE LENGTH = 2'-0"

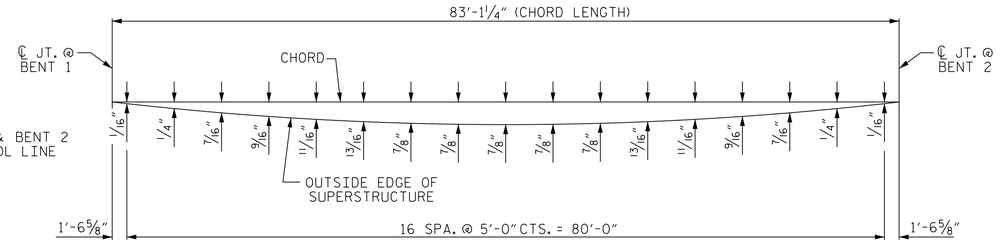
SPAN B

✳ DIMENSION BASED ON THE BEST AVAILABLE INFORMATION FOR THE EXISTING BRIDGE. FIELD ADJUSTMENT MAY BE REQUIRED AS APPROVED BY THE ENGINEER.



LAYOUT OF RIGHT EDGE EXISTING DECK

SPAN B



ARC OFFSETS - RIGHT EDGE

SPAN B

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG
Ting Fang
7/7/2022

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN B

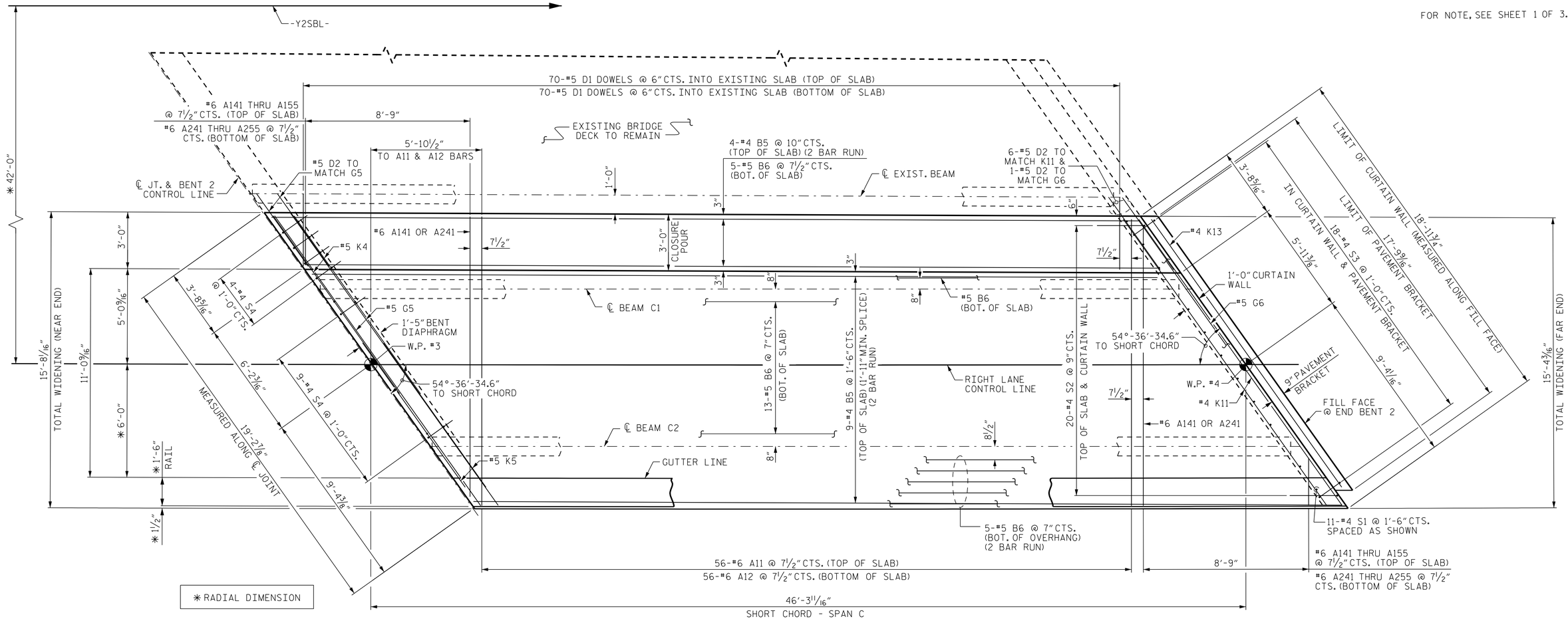
RIGHT LANE (SBL)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-12
1			3			TOTAL SHEETS
2			4			32

SITE 6SBL

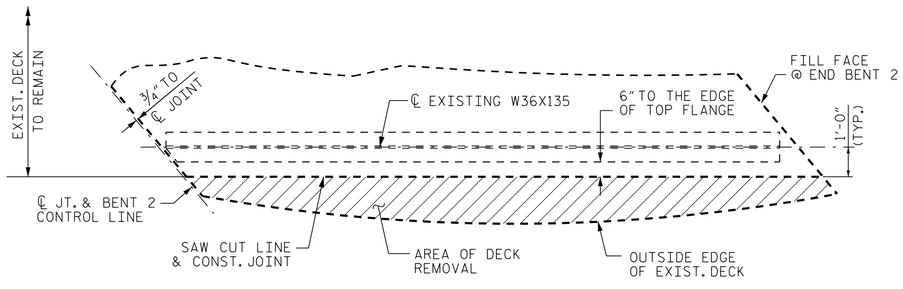
FILE: SFILES
DATE: SDATES
STAKES

FOR NOTE, SEE SHEET 1 OF 3.



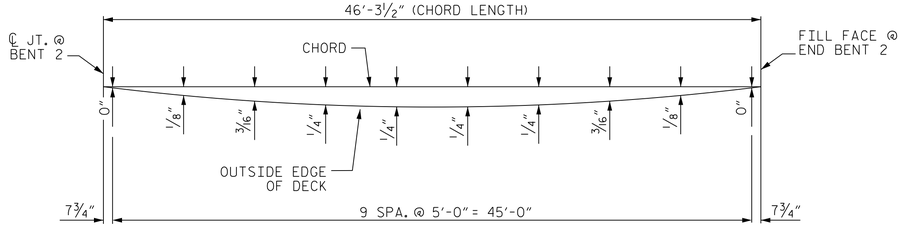
SPAN C

∗ DIMENSION BASED ON THE BEST AVAILABLE INFORMATION FOR THE EXISTING BRIDGE. FIELD ADJUSTMENT MAY BE REQUIRED AS APPROVED BY THE ENGINEER.



LAYOUT OF RIGHT EDGE EXISTING DECK

SPAN C



ARC OFFSETS - RIGHT EDGE

SPAN C

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 29+89.90 -Y2SBL-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN C

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

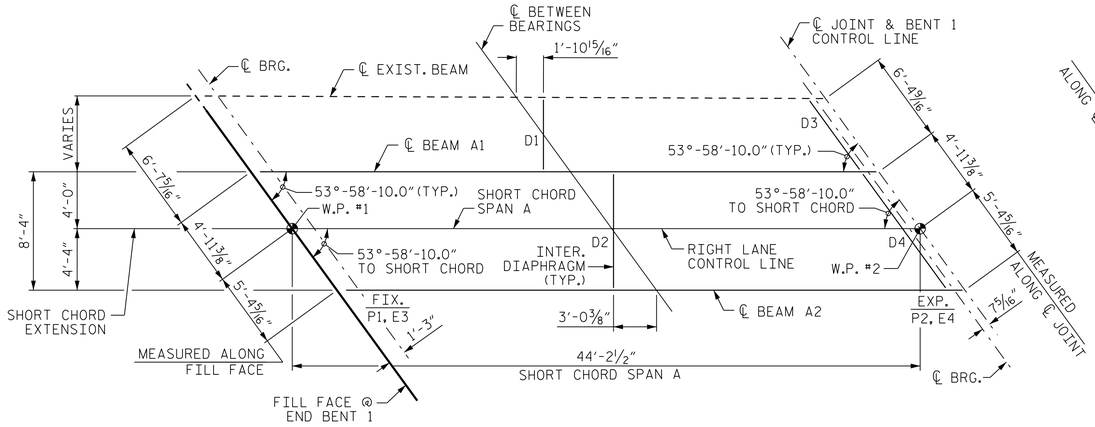
DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
7/2/2022

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-13
1			3			TOTAL SHEETS
2			4			32

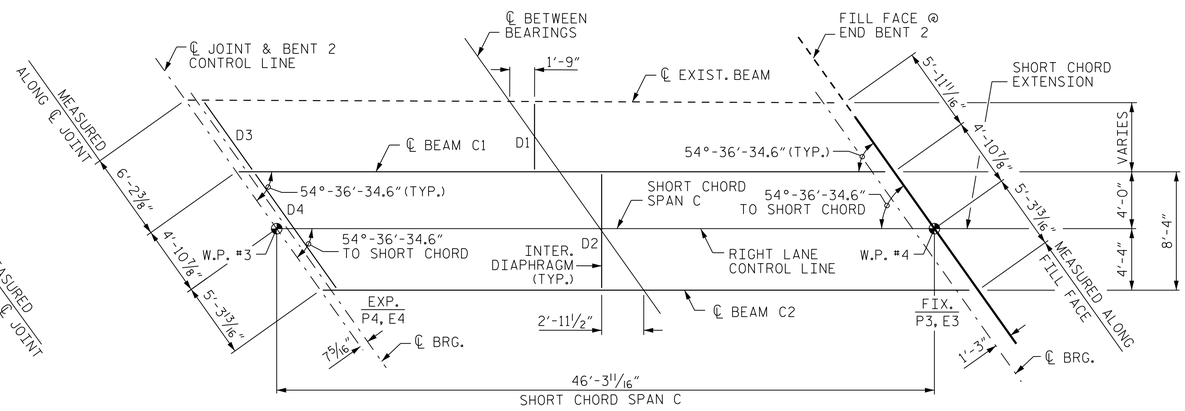
SITE 6SBL

FILE: SPLICES
DATE: STAKES



SPAN A

FILL FACE AND BENT 1 CONTROL LINE ARE PARALLEL.
PROPOSED BEAMS A1 & A2 ARE PARALLEL TO SHORT CHORD SPAN A.
INTERMEDIATE DIAPHRAGMS D1 & D2 ARE PERPENDICULAR TO ℄ BEAMS A1 & A2.



SPAN C

BENT 2 CONTROL LINE AND FILL FACE ARE PARALLEL.
PROPOSED BEAM C1 & C2 ARE PARALLEL TO SHORT CHORD SPAN C.
INTERMEDIATE DIAPHRAGMS D1 & D2 ARE PERPENDICULAR TO ℄ BEAMS C1 & C2.

FRAMING PLAN

DEAD LOAD DEFLECTION TABLE

SPAN A - BEAM 1

TWENTIETH POINTS	℄ BRG.	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	℄ BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0
DEFLECTION DUE TO WEIGHT OF SLAB ✳	0	0.003	0.006	0.009	0.012	0.015	0.017	0.018	0.019	0.020	0.020	0.020	0.019	0.018	0.017	0.015	0.012	0.009	0.006	0.003	0
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.001	0
TOTAL DEAD LOAD DEFLECTION	0	0.005	0.010	0.015	0.018	0.023	0.025	0.027	0.028	0.031	0.031	0.031	0.028	0.027	0.025	0.023	0.018	0.015	0.010	0.005	0
VERTICAL CURVE ORDINATE	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
ORDINATE DUE TO SUPERELEVATION	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
REQUIRED CAMBER	0	1/16"	1/8"	3/16"	3/16"	1/4"	5/16"	5/16"	3/8"	3/8"	3/8"	3/8"	3/8"	5/16"	5/16"	1/4"	3/16"	3/16"	1/8"	1/16"	0

SPAN A - BEAM 2

TWENTIETH POINTS	℄ BRG.	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	℄ BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0
DEFLECTION DUE TO WEIGHT OF SLAB ✳	0	0.005	0.009	0.013	0.016	0.019	0.022	0.024	0.026	0.027	0.028	0.027	0.026	0.024	0.022	0.019	0.016	0.013	0.009	0.005	0
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.003	0.004	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.001	0
TOTAL DEAD LOAD DEFLECTION	0	0.007	0.014	0.020	0.024	0.026	0.033	0.036	0.038	0.041	0.042	0.041	0.038	0.036	0.033	0.026	0.024	0.020	0.014	0.007	0
VERTICAL CURVE ORDINATE	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
ORDINATE DUE TO SUPERELEVATION	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
REQUIRED CAMBER	0	1/16"	1/8"	1/4"	5/16"	5/16"	3/8"	7/16"	7/16"	1/2"	1/2"	1/2"	7/16"	7/16"	3/8"	5/16"	5/16"	1/4"	1/8"	1/16"	0

SPAN C - BEAM 1

TWENTIETH POINTS	℄ BRG.	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	℄ BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0
DEFLECTION DUE TO WEIGHT OF SLAB ✳	0	0.003	0.006	0.009	0.012	0.015	0.017	0.018	0.019	0.020	0.020	0.020	0.019	0.018	0.017	0.015	0.012	0.009	0.006	0.003	0
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.001	0
TOTAL DEAD LOAD DEFLECTION	0	0.005	0.010	0.015	0.018	0.023	0.026	0.027	0.028	0.031	0.031	0.031	0.028	0.027	0.026	0.023	0.018	0.015	0.010	0.005	0
VERTICAL CURVE ORDINATE	0	-0.001	-0.001	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.003	-0.003	-0.003	-0.002	-0.002	-0.002	-0.002	-0.001	-0.001	-0.001	-0.001	0
ORDINATE DUE TO SUPERELEVATION	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
REQUIRED CAMBER	0	1/16"	1/8"	3/16"	3/16"	1/4"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	1/4"	3/16"	3/16"	1/8"	1/16"	0

SPAN C - BEAM 2

TWENTIETH POINTS	℄ BRG.	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	℄ BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.001	0
DEFLECTION DUE TO WEIGHT OF SLAB ✳	0	0.005	0.009	0.013	0.016	0.019	0.022	0.024	0.026	0.027	0.028	0.027	0.026	0.024	0.022	0.019	0.016	0.013	0.009	0.005	0
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.001	0.003	0.004	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.001	0
TOTAL DEAD LOAD DEFLECTION	0	0.007	0.014	0.020	0.024	0.029	0.033	0.036	0.038	0.041	0.042	0.041	0.038	0.036	0.033	0.029	0.024	0.020	0.014	0.007	0
VERTICAL CURVE ORDINATE	0	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004	-0.004	-0.003	-0.002	-0.002	-0.002	-0.002	-0.001	-0.001	0
ORDINATE DUE TO SUPERELEVATION	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
REQUIRED CAMBER	0	1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	3/8"	7/16"	7/16"	7/16"	7/16"	7/16"	3/8"	3/8"	5/16"	1/4"	3/16"	1/8"	1/16"	0

✳ INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

FRAMING PLAN AND DEAD LOAD DEFLECTIONS

SPANS A & C
RIGHT LANE (SBL)

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

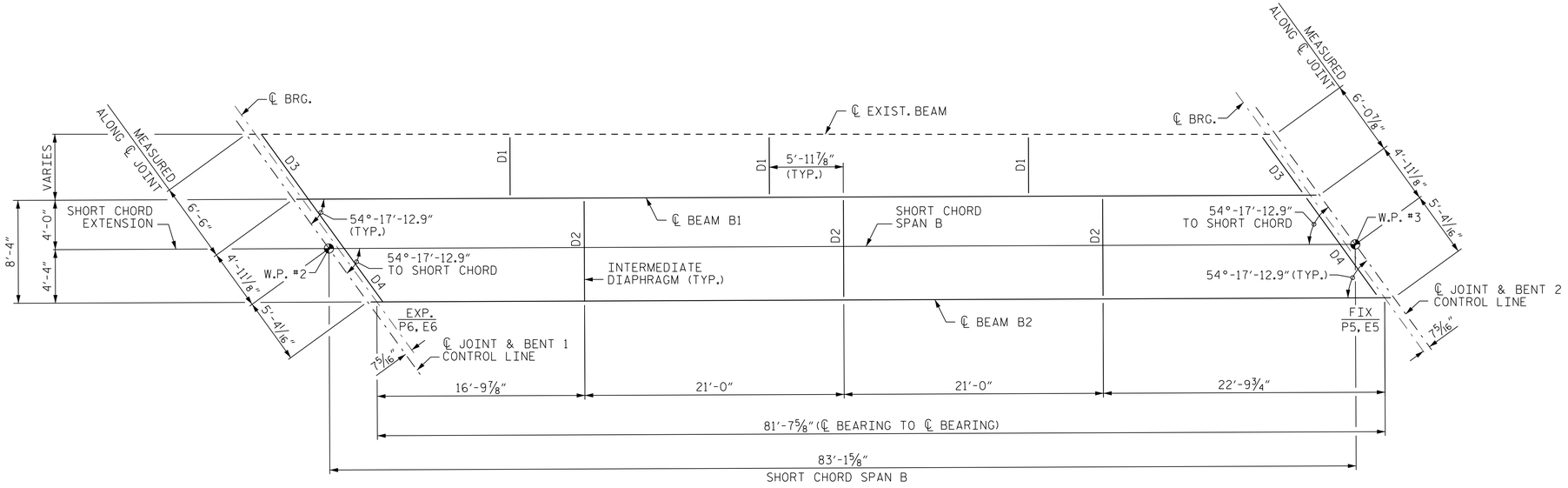
DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG
Ting Fang
60EA3C0AEA60462...
7/16/2022

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-14
1			3			TOTAL SHEETS
2			4			32

SITE 6SBL

FILE: SFILES
DATE: SDATES
STAKES



SPAN B

ALL BENT CONTROL LINES ARE PARALLEL.
PROPOSED BEAM B1 & B2 ARE PARALLEL TO SHORT CHORD SPAN B.
INTERMEDIATE DIAPHRAGMS D1 & D2 ARE PERPENDICULAR TO ℄ BEAMS B1 & B2.

FRAMING PLAN

DEAD LOAD DEFLECTION TABLE																						
	SPAN B - BEAM 1																					
TWENTIETH POINTS	℄ BRG.	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	℄ BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.008	0.016	0.023	0.030	0.036	0.041	0.045	0.048	0.049	0.050	0.049	0.048	0.045	0.041	0.036	0.030	0.023	0.016	0.008	0
DEFLECTION DUE TO WEIGHT OF SLAB *	0	0.031	0.062	0.089	0.115	0.136	0.157	0.170	0.183	0.188	0.192	0.188	0.183	0.170	0.157	0.136	0.115	0.089	0.062	0.031	0
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.008	0.015	0.022	0.029	0.034	0.039	0.043	0.046	0.047	0.048	0.047	0.046	0.043	0.039	0.034	0.029	0.022	0.015	0.008	0
TOTAL DEAD LOAD DEFLECTION	0	0.047	0.093	0.134	0.174	0.206	0.237	0.257	0.277	0.284	0.290	0.284	0.277	0.257	0.237	0.206	0.174	0.134	0.093	0.047	0
VERTICAL CURVE ORDINATE	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
ORDINATE DUE TO SUPERELEVATION	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
REQUIRED CAMBER	0	9/16"	1 1/8"	1 5/8"	2 1/16"	2 7/16"	2 7/8"	3 1/16"	3 5/16"	3 3/8"	3 1/2"	3 3/8"	3 5/16"	3 1/16"	2 7/8"	2 7/16"	2 1/16"	1 5/8"	1 1/8"	9/16"	0
	SPAN B - BEAM 2																					
TWENTIETH POINTS	℄ BRG.	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	℄ BRG.
DEFLECTION DUE TO WEIGHT OF GIRDER	0	0.008	0.016	0.023	0.030	0.036	0.041	0.045	0.048	0.049	0.050	0.049	0.048	0.045	0.041	0.036	0.030	0.023	0.016	0.008	0
DEFLECTION DUE TO WEIGHT OF SLAB *	0	0.036	0.072	0.103	0.134	0.159	0.183	0.198	0.213	0.219	0.224	0.219	0.213	0.198	0.183	0.159	0.134	0.103	0.072	0.036	0
DEFLECTION DUE TO WEIGHT OF RAIL	0	0.011	0.022	0.032	0.041	0.049	0.056	0.061	0.065	0.067	0.068	0.067	0.065	0.061	0.056	0.049	0.041	0.032	0.022	0.011	0
TOTAL DEAD LOAD DEFLECTION	0	0.055	0.110	0.158	0.205	0.243	0.280	0.303	0.326	0.334	0.342	0.334	0.326	0.303	0.280	0.243	0.205	0.158	0.110	0.055	0
VERTICAL CURVE ORDINATE	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
ORDINATE DUE TO SUPERELEVATION	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
REQUIRED CAMBER	0	11/16"	1 5/16"	1 7/8"	2 7/16"	2 15/16"	3 3/8"	3 5/8"	3 15/16"	4"	4 1/8"	4"	3 15/16"	3 5/8"	3 3/8"	2 15/16"	2 7/16"	1 7/8"	1 5/16"	11/16"	0

*INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 2 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
7/16/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

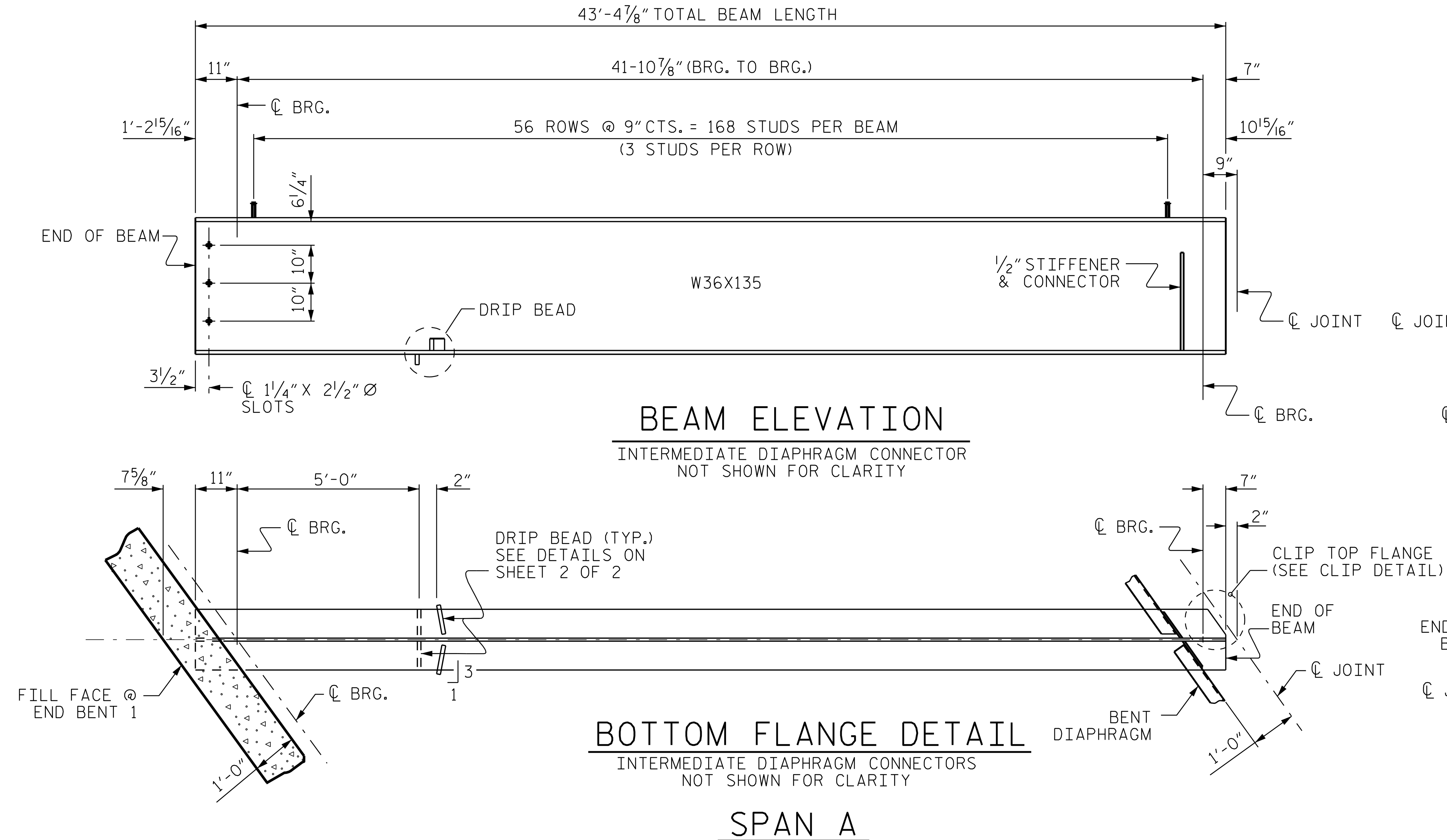
FRAMING PLAN AND DEAD LOAD DEFLECTIONS

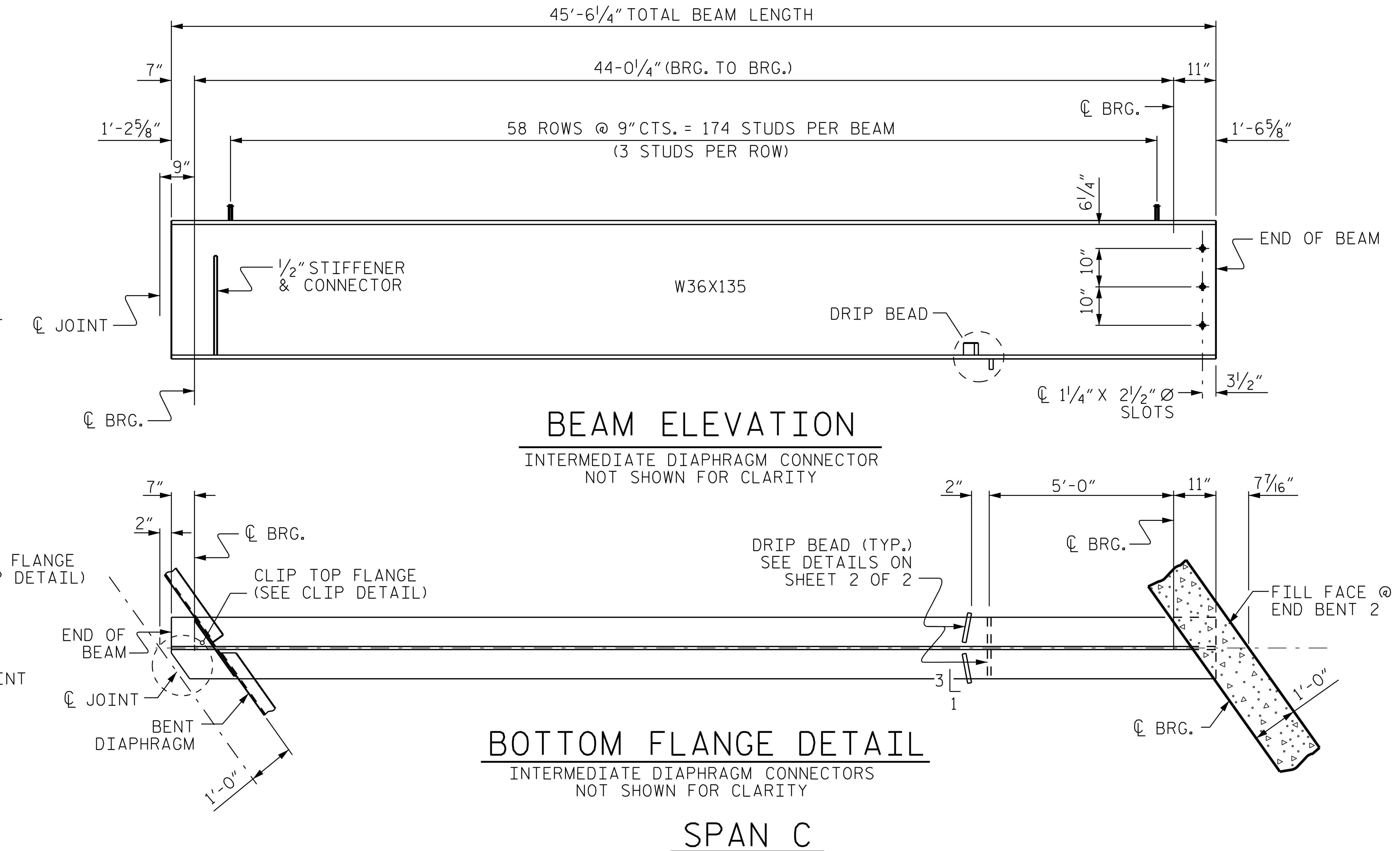
SPAN B
RIGHT LANE (SBL)

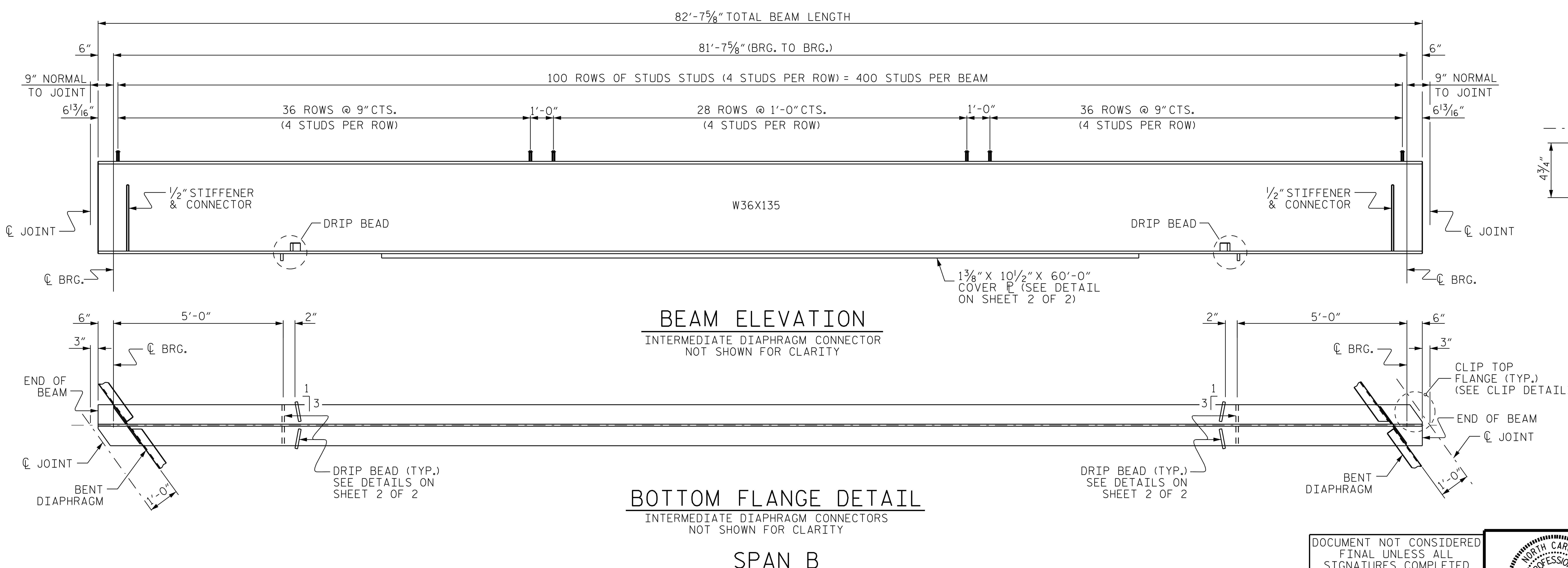
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-15
1			3			TOTAL SHEETS
2			4			32

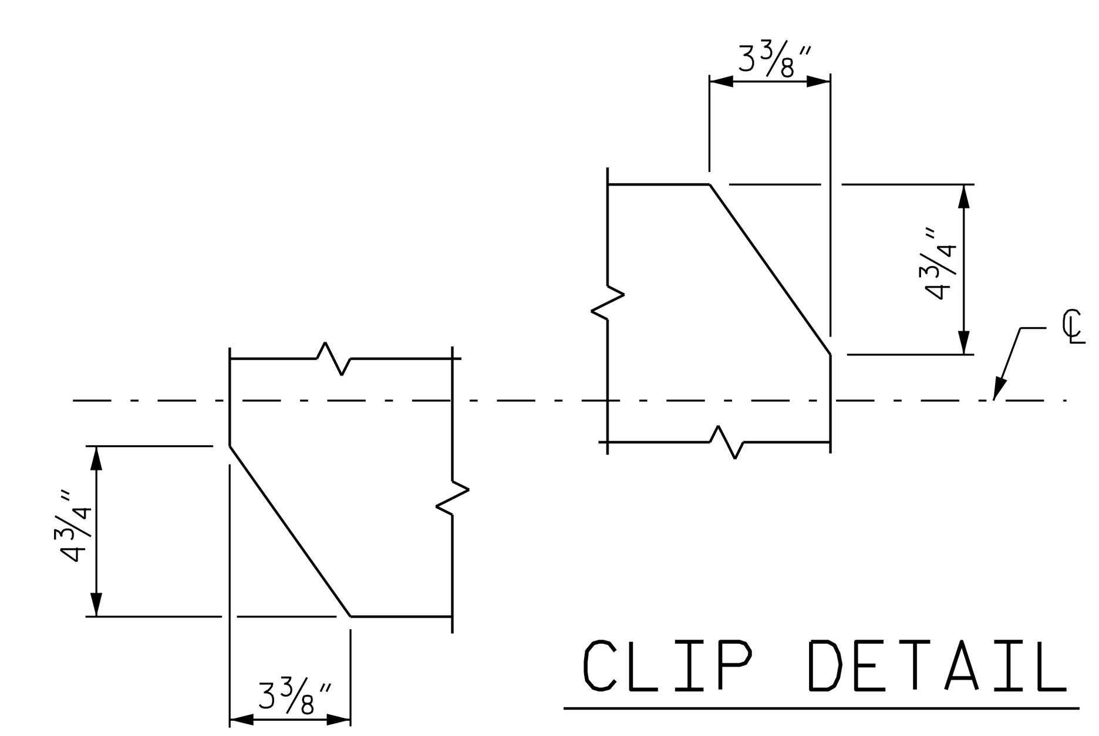
SITE 6SBL

FILE: SFILES STIMES
DATE: SDATES









PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 29+89.90 -Y2SBL-

SHEET 1 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY :	VDK	DATE : 9/19	DWG. No.
CHECKED BY :	THF	DATE : 10/19	
DESIGN ENGINEER :	VDK	DATE : 11/19	

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
7/2/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

STRUCTURAL STEEL DETAILS

SPANS A, B & C

RIGHT LANE (SBL)

REVISIONS

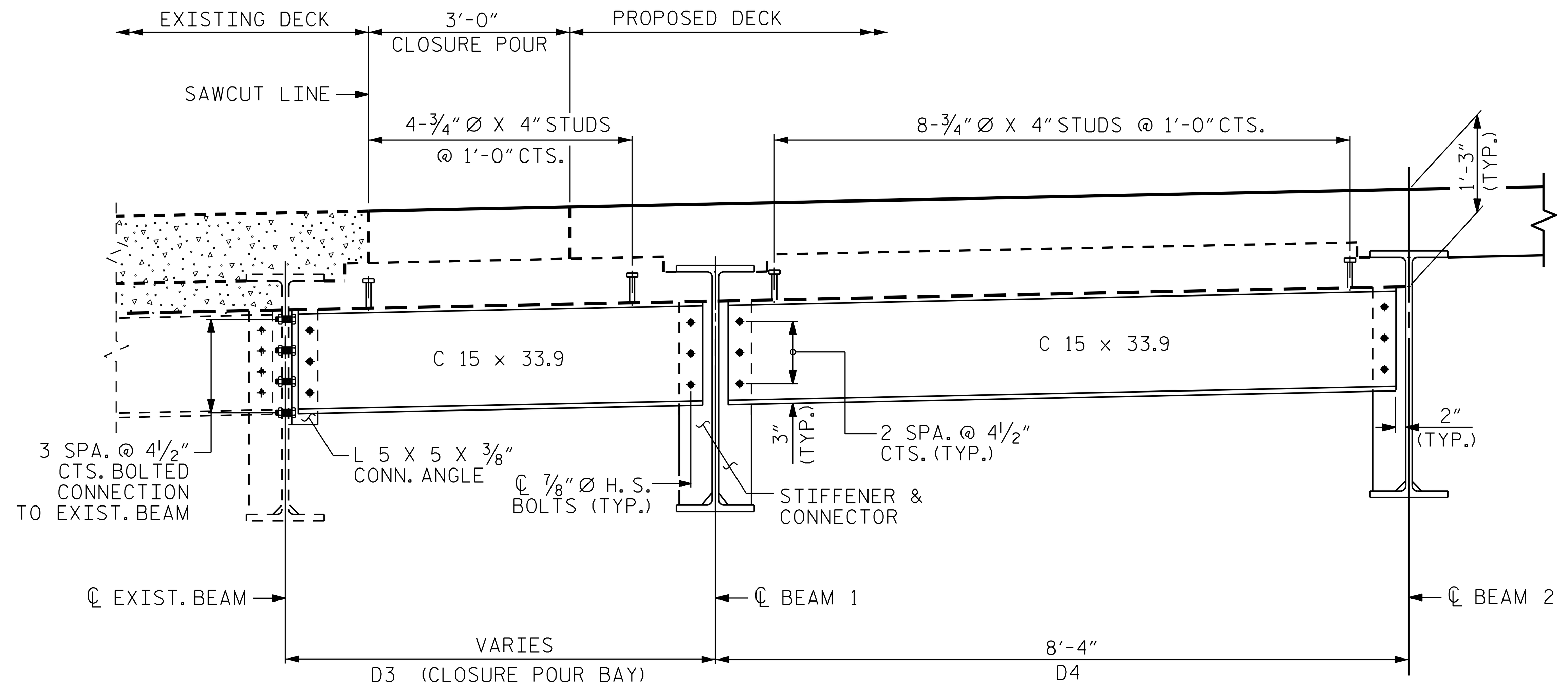
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S07-16

TOTAL SHEETS 32

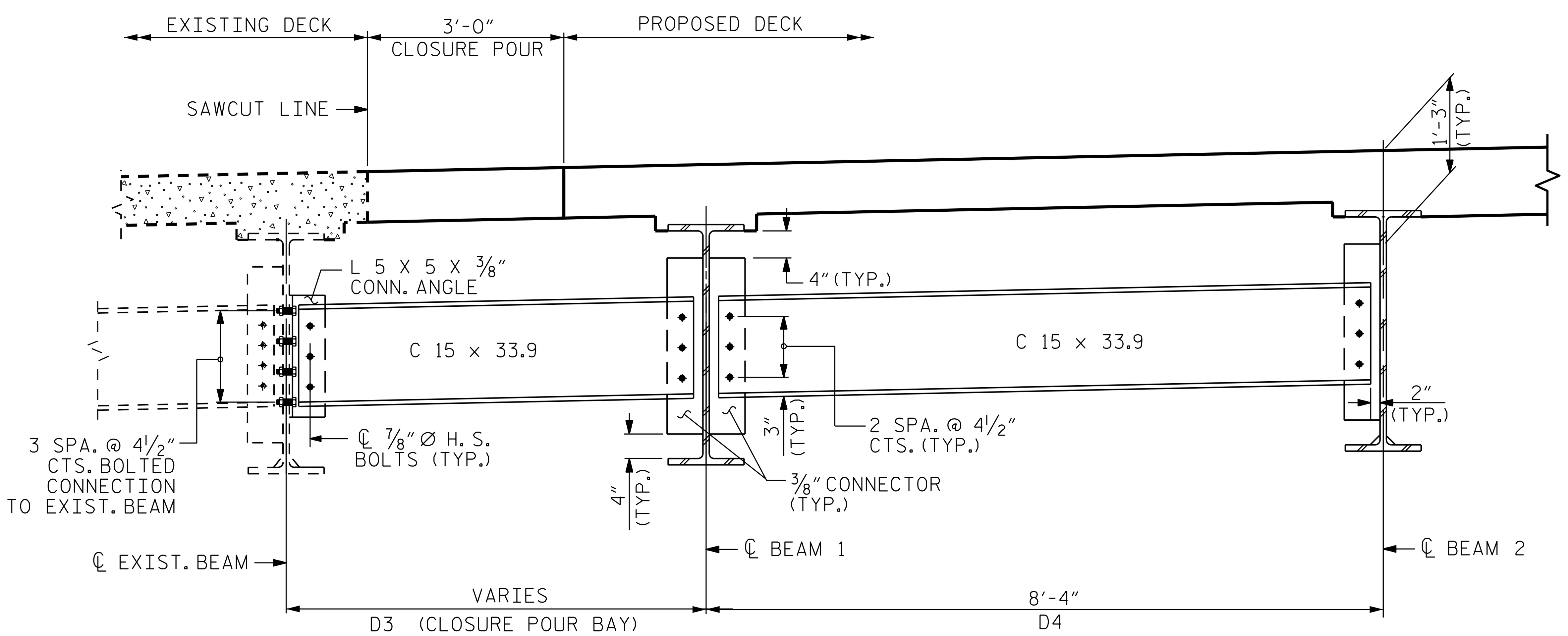
SITE 6SBL

FILE: $FILES DATE: $DATES $TIMES



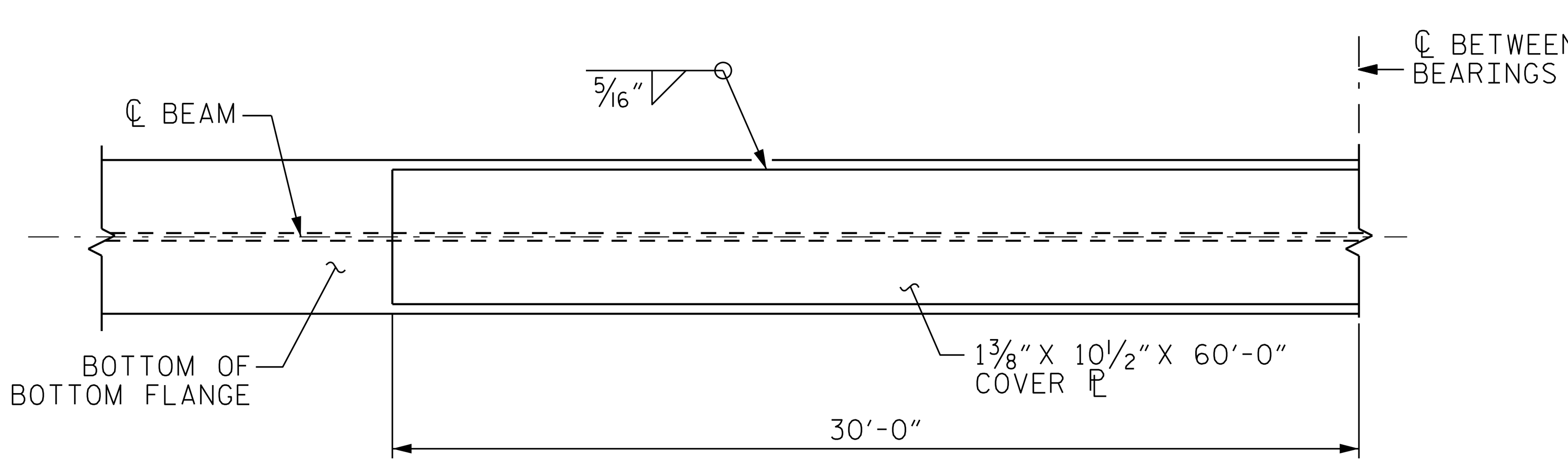
TYPICAL BENT DIAPHRAGM

BOLT HOLES FOR BENT DIAPHRAGM IN THE CLOSURE POUR BAY SHALL BE FIELD DRILLED

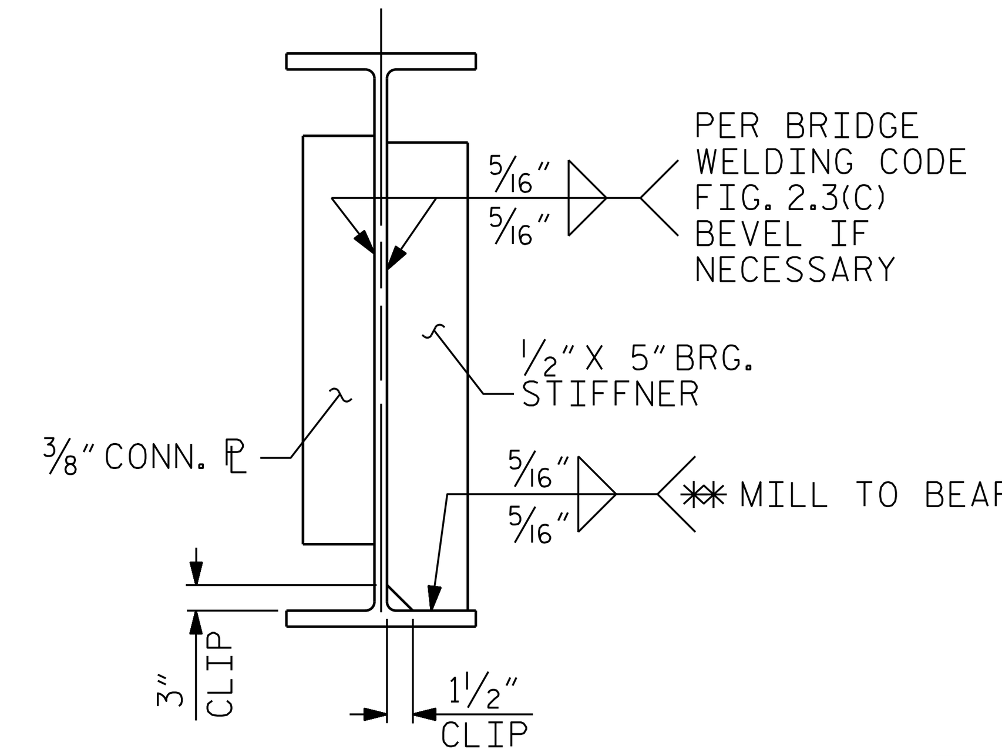


TYPICAL INTERMEDIATE DIAPHRAGM

BOLT HOLES FOR INTERMEDIATE DIAPHRAGM IN THE CLOSURE POUR BAY SHALL BE FIELD DRILLED

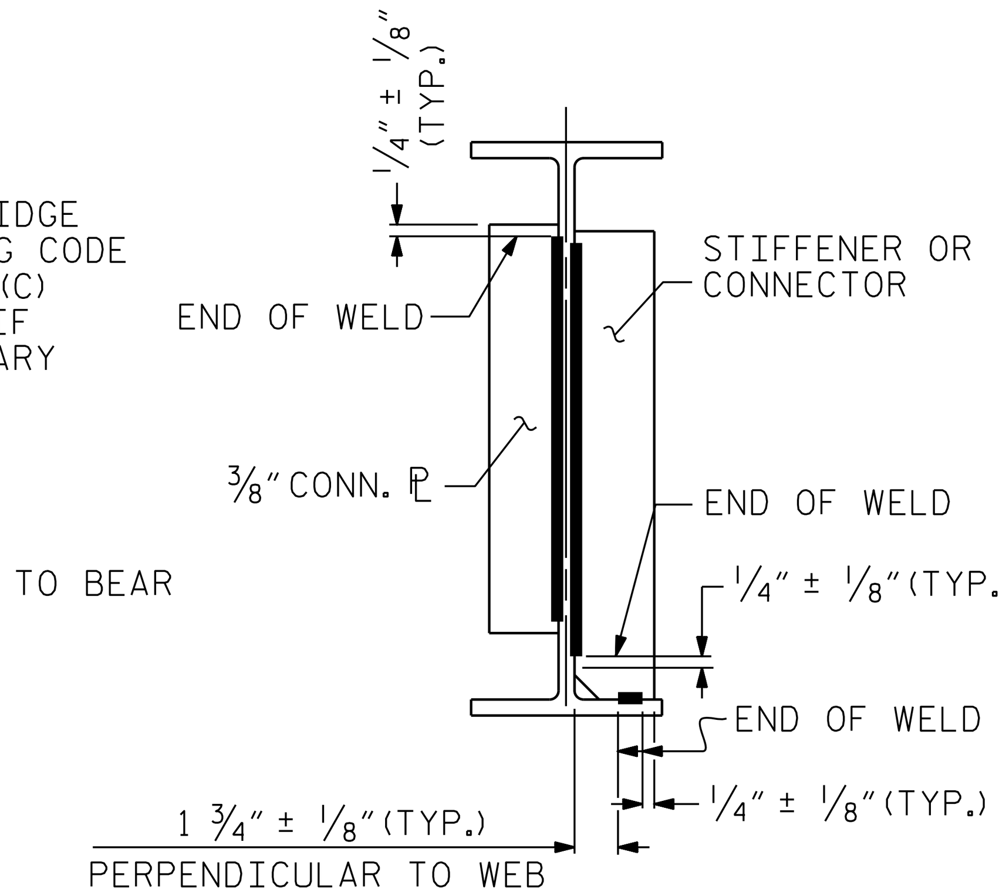


COVER ℄ DETAIL



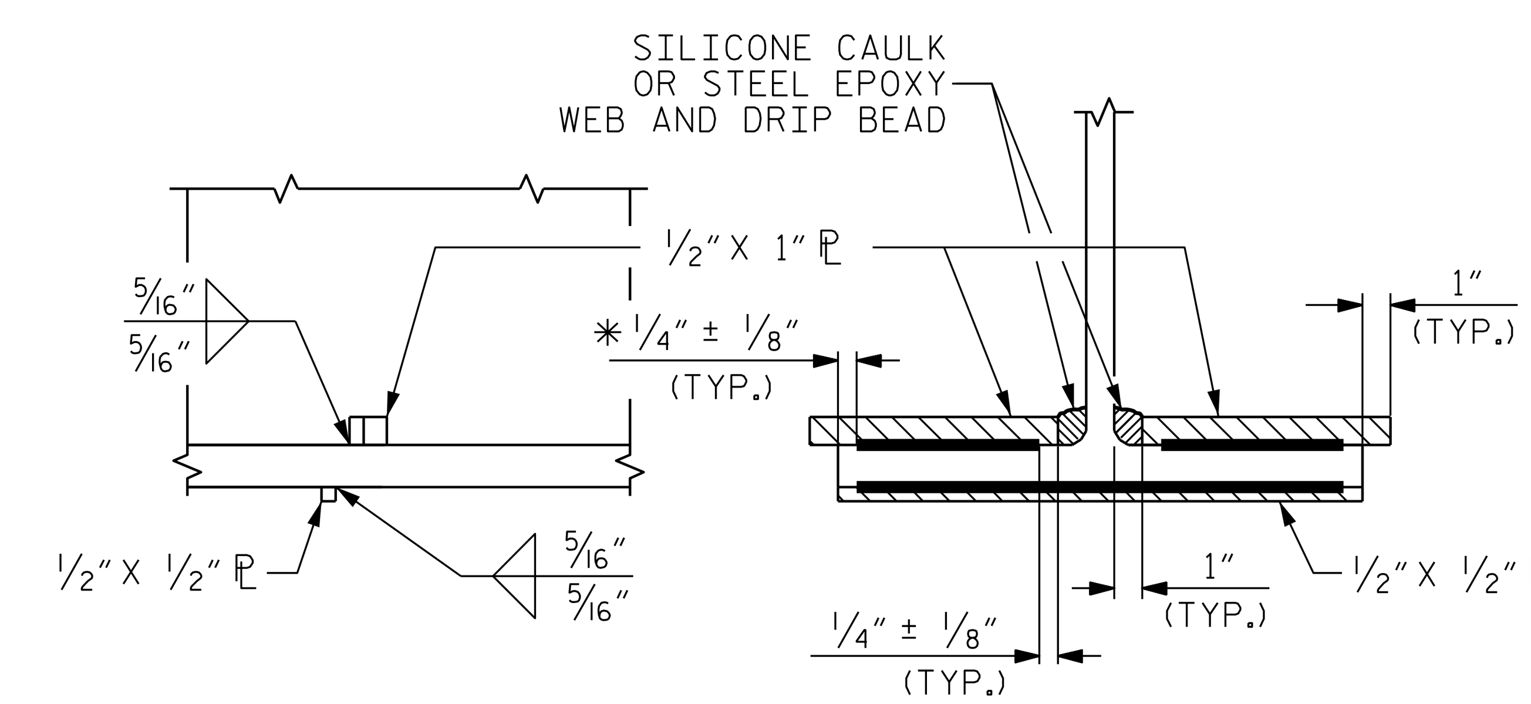
STIFFENER & CONNECTOR DETAIL

✱✱ WELD TO BOTTOM FLANGE IS ONLY REQUIRED WHEN BEARING STIFFENER IS ALSO CONNECTOR PLATE



TYPICAL STIFFENER OR CONNECTOR CONNECTIONS

WELD TERMINATION DETAILS

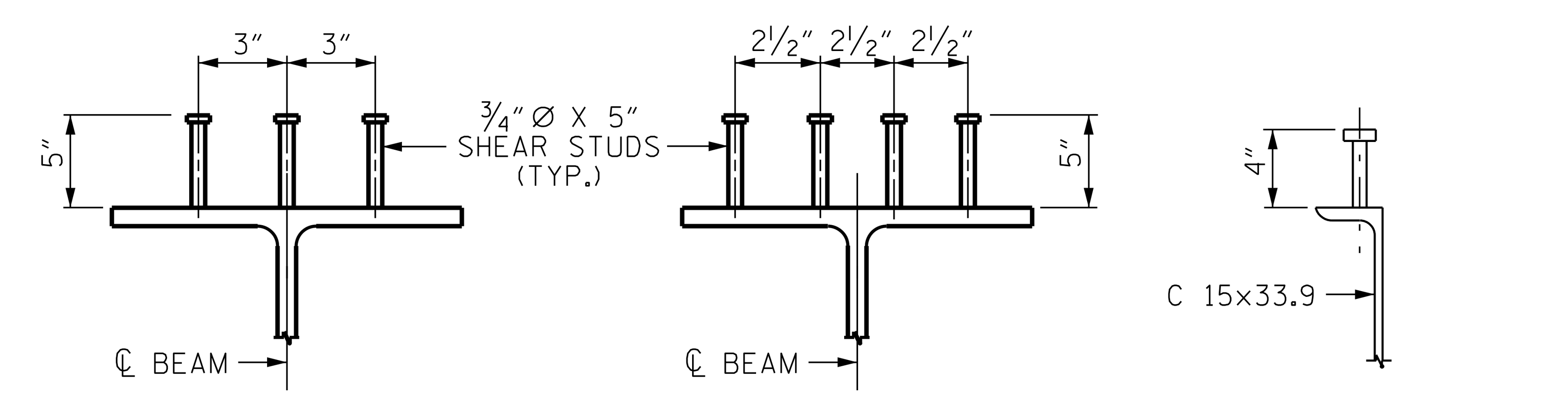


SIDE VIEW

SECTION

DRIP BEAD DETAILS

✱ TO WELD TERMINATION



SPANS A & C

SPAN B

BENT DIAPHRAGM

SHEAR STUD DETAILS

NOTES

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

ALL FIELD CONNECTIONS TO BE ⅞"DIA. HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

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

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

STIFFENER AND CONNECTOR PLATES ARE NOT REQUIRED ON THE END BENT END OF SPAN A AND SPAN C BEAMS OR ON THE OUTSIDE OF EXTERIOR BEAMS.

END STIFFENER AND CONNECTOR PLATES ARE TO BE PLACED ALONG THE SKEW AND SHALL BE PLUMB.

FABRICATORS SHALL DETAIL DIAPHRAGM MEMBERS AND CONNECTIONS FOR FULL DEAD LOAD FIT UP. BEAMS SHALL BE PLUMB AFTER THE FULL AMOUNT OF DEAD LOAD IS APPLIED.

BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE TO AVOID INTERFERENCE WITH THE ANCHOR BOLT.

END OF BEAMS SHALL BE PLUMB.

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

WHERE DIAPHRAGMS ARE TO BE BOLTED TO EXISTING STEEL BEAMS, DO NOT REMOVE PAINT FROM THE CONTACT SURFACE.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 29+89.90 -Y2SBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

STRUCTURAL STEEL DETAILS

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CDM Smith

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

DRAWN BY :	VDK	DATE : 9/19	DWG. No.
CHECKED BY :	THF	DATE : 10/19	
DESIGN ENGINEER :	VDK	DATE : 11/19	

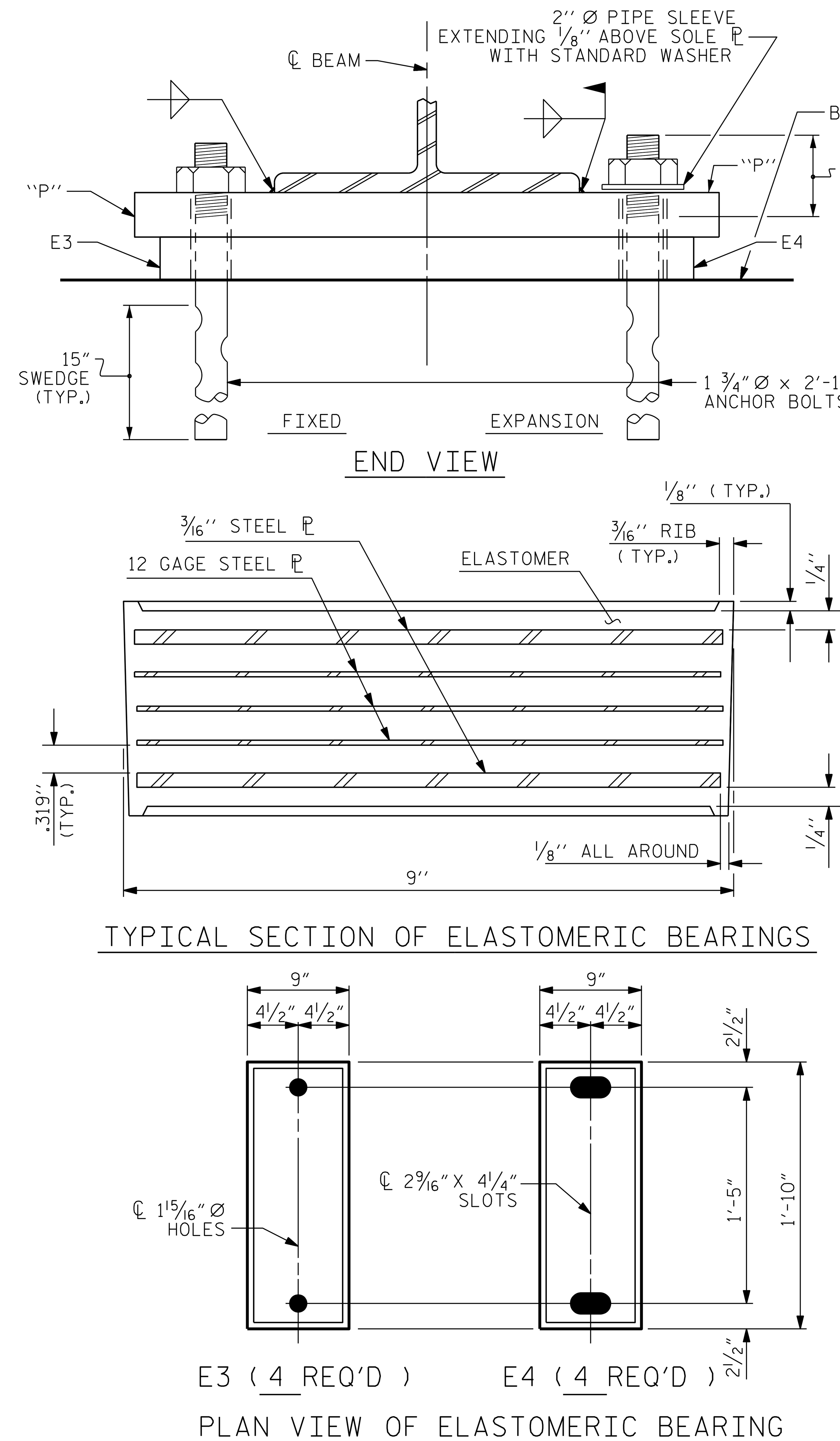
NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG

Ting Fang
7/16/2022

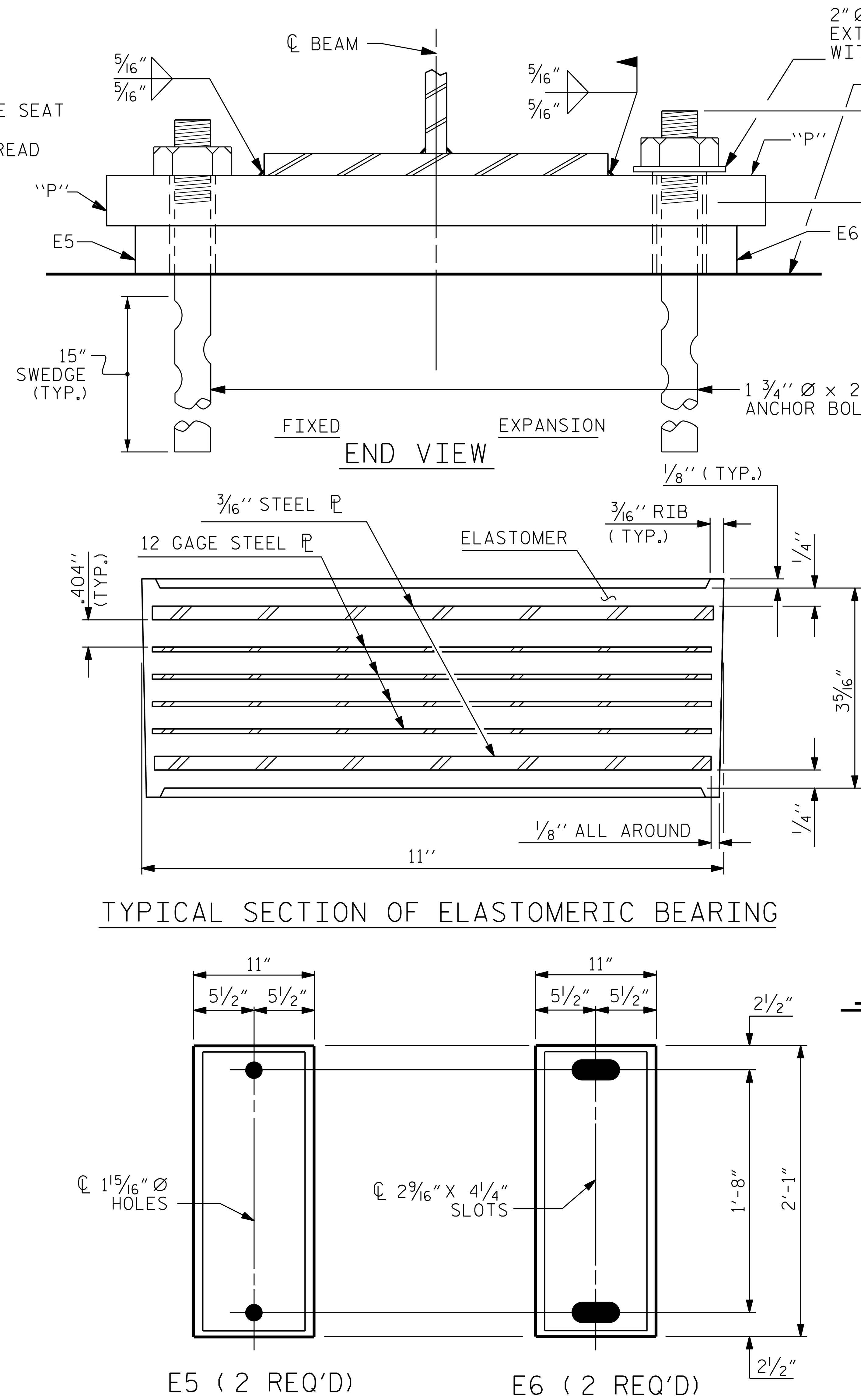
REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S07-17
1			3					TOTAL SHEETS
2			4					32

SITE 6SBL

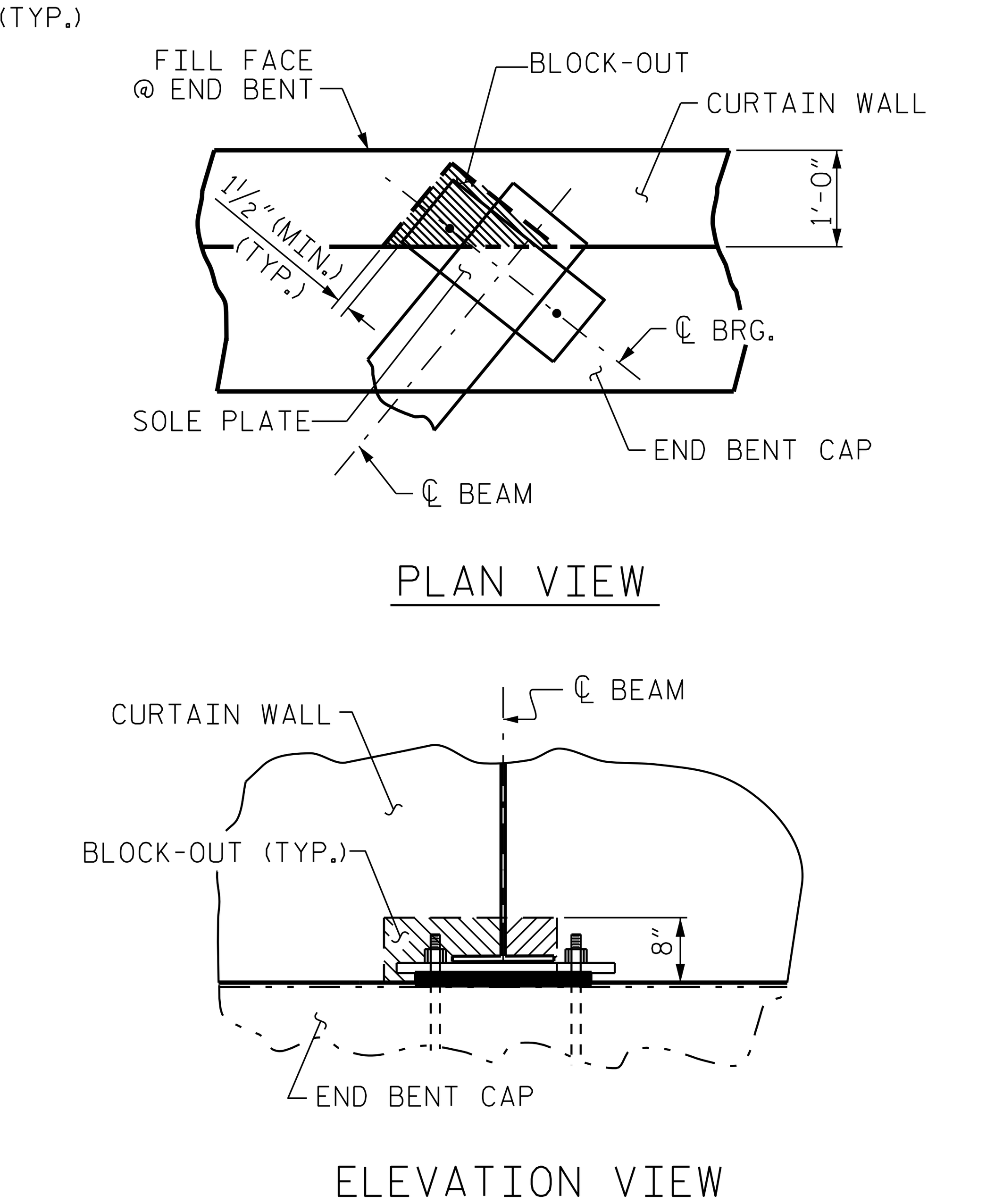
FILE: $FILES
DATE: $DATES
$TIMES



TYPE II

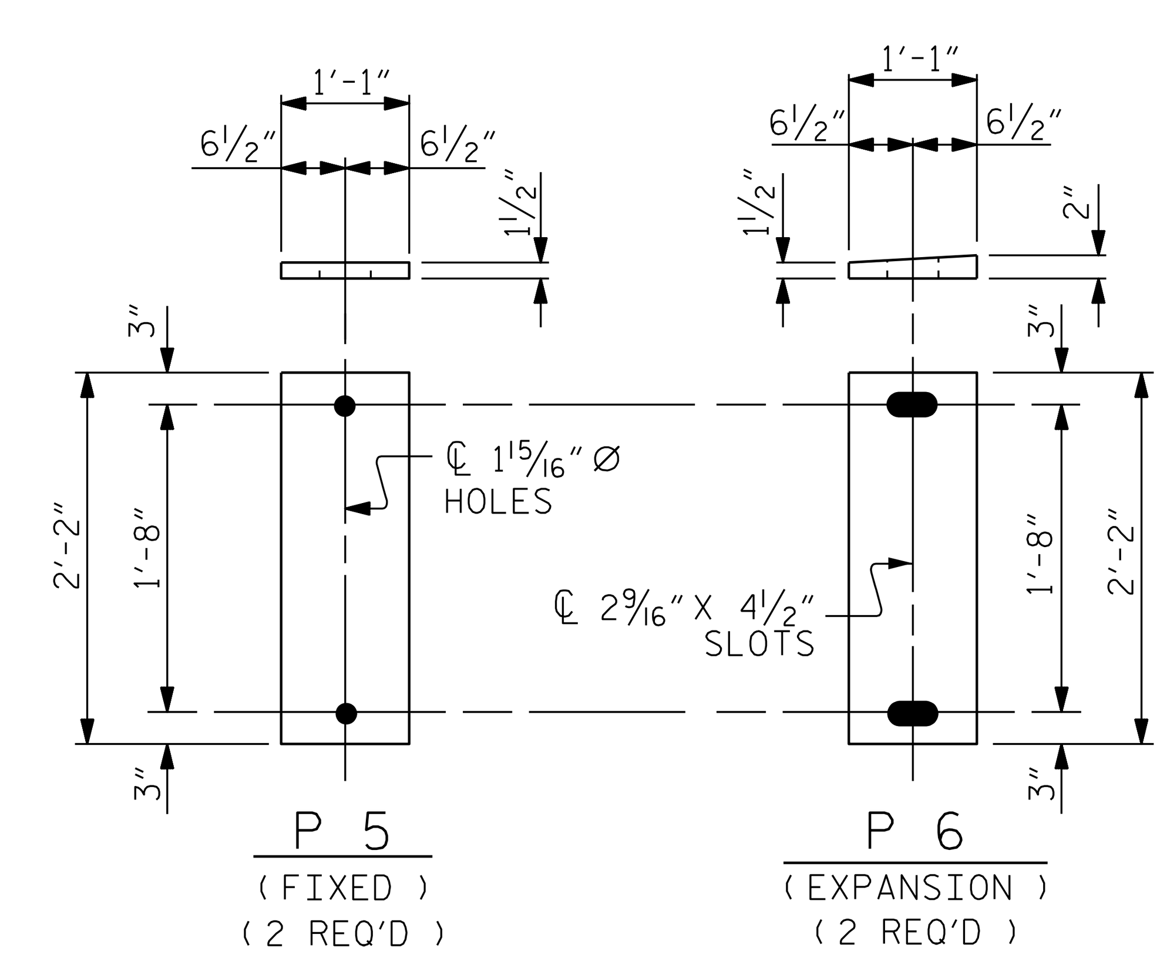


TYPE IV



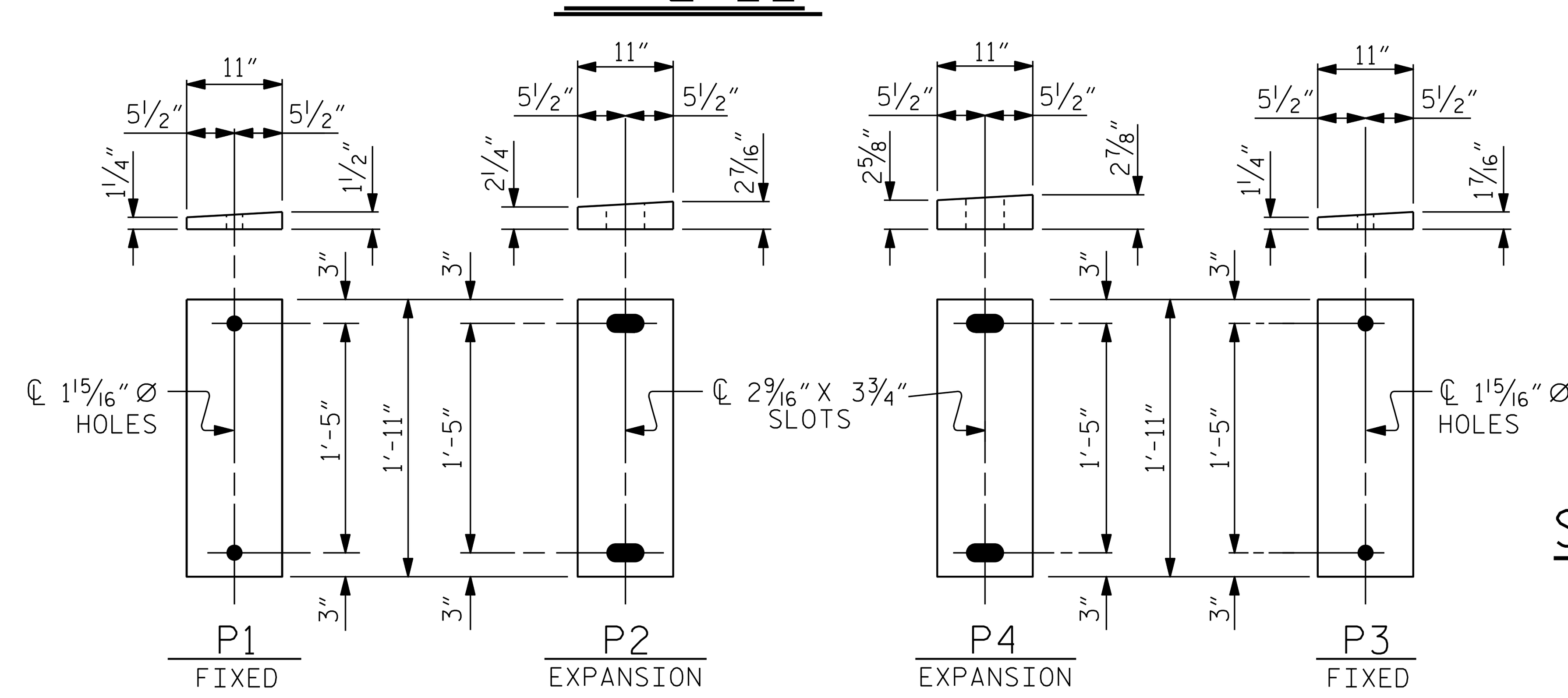
CURTAIN WALL BLOCK-OUT DETAILS

END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION



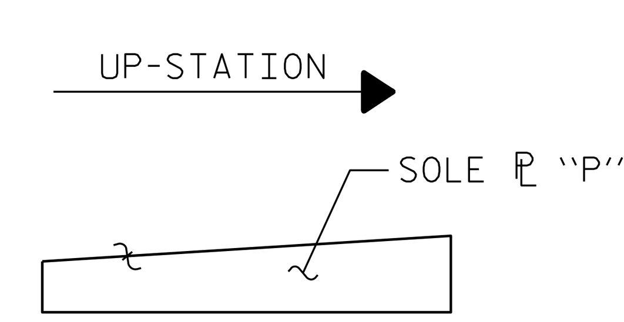
SOLE PLATE DETAILS "P"

IN SPAN B



SOLE PLATE DETAILS "P"

IN SPANS A & C



SOLE ℙ PLACEMENT DETAIL

NOTES

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

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

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

FOR PAINTED STRUCTURAL STEEL (EXCLUDING AASHTO M270 GRADE 50W), SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

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

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

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

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

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

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

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 29+89.90 -Y2SBL-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

ELASTOMERIC BEARING DETAILS

RIGHT LANE (SBL)

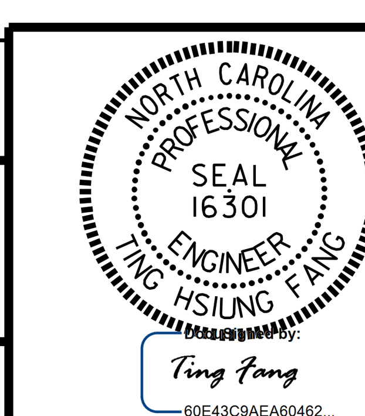
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CDM Smith

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

DRAWN BY :	VDK	DATE :	9/19
CHECKED BY :	THF	DATE :	10/19
DESIGN ENGINEER :	VDK	DATE :	11/19

DWG. No.



Ting Fang
7/16/2022

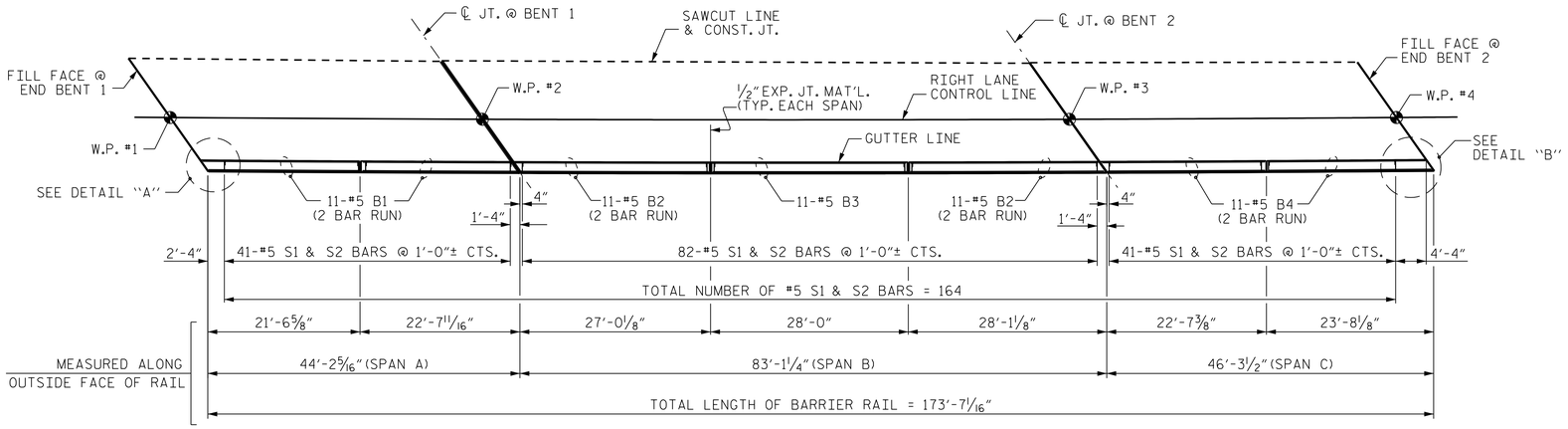
REVISIONS							
NO.	BY:	DATE:		NO.	BY:	DATE:	
1				3			
2				4			

SHEET NO. S07-18

TOTAL SHEETS 32

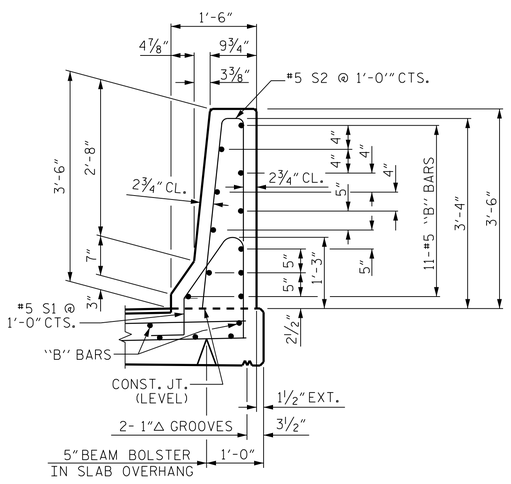
SITE 6SBL

FILE: $FILES
DATE: $DATE
$TIMES

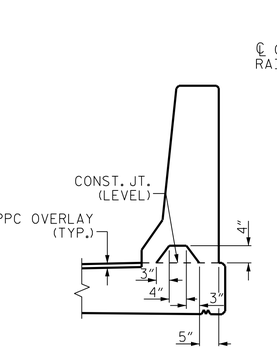


PLAN OF BARRIER RAIL

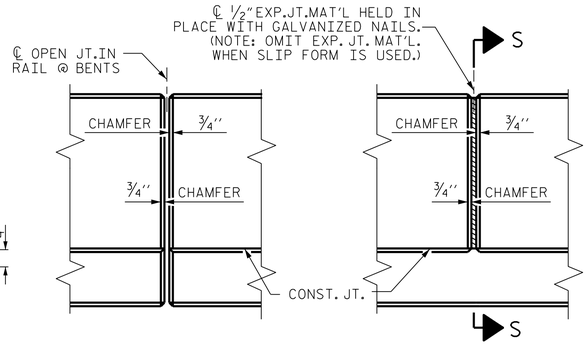
ALL DIMENSIONS ARE MEASURED ALONG OUTSIDE FACE OF RAIL



SECTION THRU RAIL

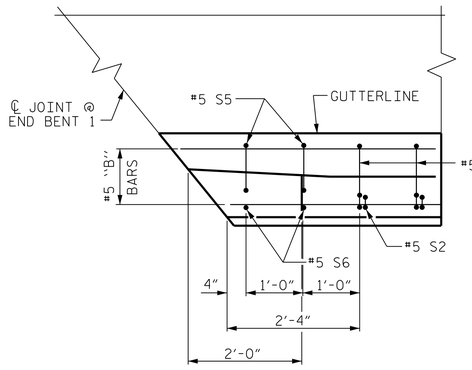


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

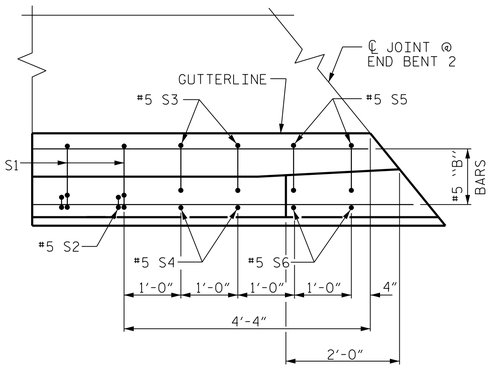


ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

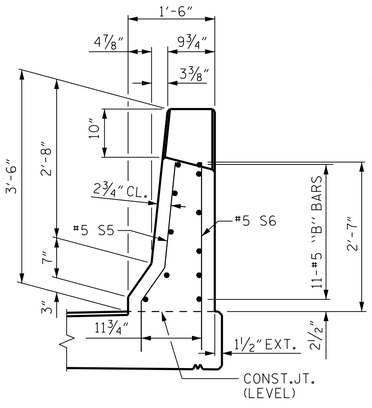


DETAIL "A"

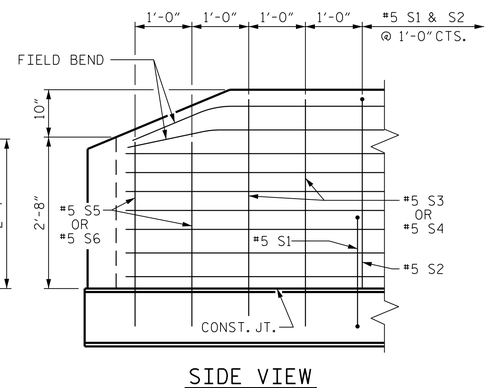


DETAIL "B"

PLAN



END VIEW



SIDE VIEW

END OF RAIL DETAILS

FOR ADHESIVE ANCHORING AT SAWED JOINTS

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.

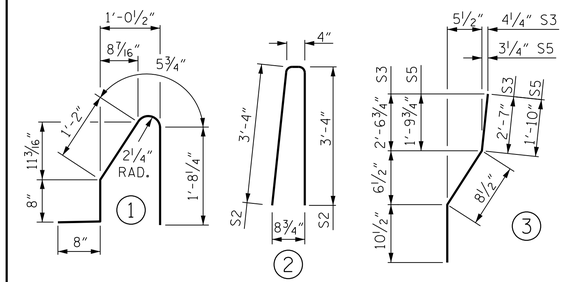
WHEN FOAM JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3, S4, S5 AND S6 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3, S4, S5 AND S6 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

GROOVED CONTRACTION JOINTS, ½" 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.

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	12'-9"	585
✳ B2	44	#5	STR	15'-5"	708
✳ B3	11	#5	STR	27'-7"	316
✳ B4	44	#5	STR	13'-4"	612
✳ S1	164	#5	1	4'-8"	798
✳ S2	164	#5	2	7'-0"	1197
✳ S3	2	#5	3	4'-2"	9
✳ S4	2	#5	STR	4'-0"	8
✳ S5	4	#5	3	3'-5"	14
✳ S6	4	#5	STR	3'-3"	14

✳ EPOXY COATED REINFORCING STEEL	4,216
CLASS AA CONCRETE	23.6 CU. YDS.
CONCRETE BARRIER RAIL	173.59 LIN. FT.

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19
DWG. No.

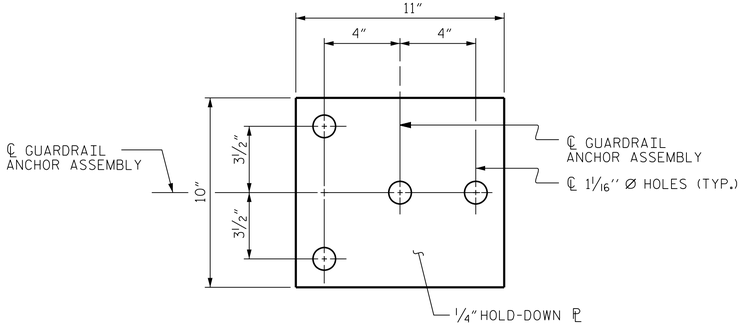
NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG
Ting Fang
1DE423C0AEA60462...
7/2/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
CONCRETE BARRIER RAIL
RIGHT LANE (SBL)

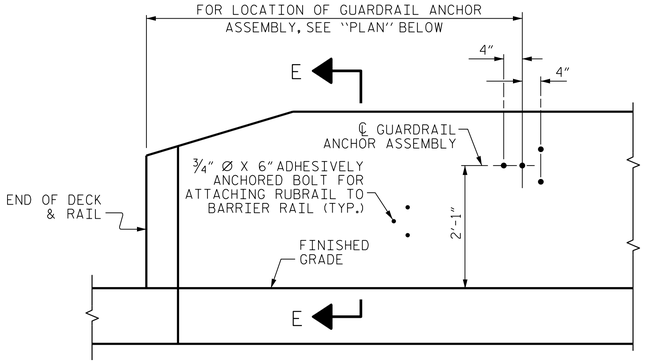
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-19
1			3			TOTAL SHEETS
2			4			32

STD. NO. CBR1 (SHT 2) SITE 6SBL

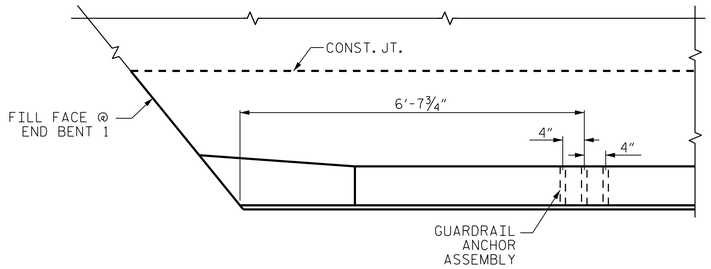
FILE: SFILES
DATE: SDATES
SEAMLESS



PLAN



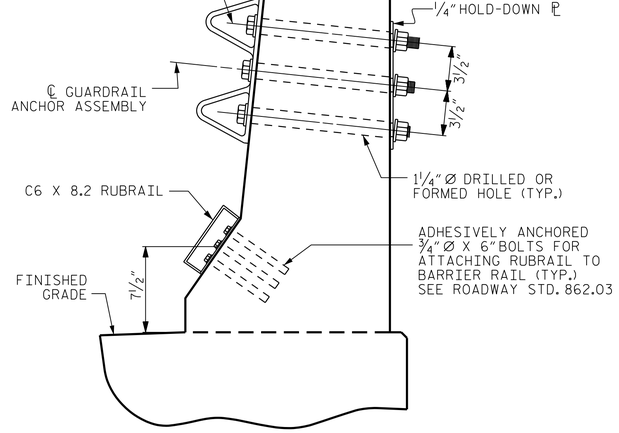
ELEVATION



PLAN

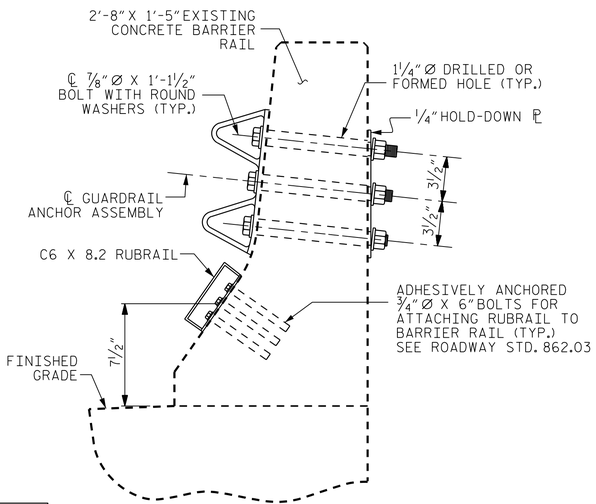
LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.



SECTION E-E

RIGHT SIDE PROPOSED BARRIER RAIL



SECTION E-E

LEFT SIDE EXISTING BARRIER RAIL

GUARDRAIL ANCHOR ASSEMBLY DETAILS

CONTRACTOR SHALL FIELD VERIFY THE EXISTING LEFT SIDE BARRIER RAIL PRIOR TO INSTALLATION OF GUARDRAIL ANCHOR ASSEMBLY.

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼" HOLD-DOWN PLATE AND 4 - ⅞" 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 ⅞" 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 ¼" 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 ¾" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ¾" 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 FOR EXISTING BRIDGE AND RIGHT SIDE WIDENING (3 REQ'D)

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 29+89.90 -Y2SBL-

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CDM Smith

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19
DRAWN BY : DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
7/16/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

GUARDRAIL ANCHORAGE FOR BARRIER RAIL

RIGHT LANE (SBL)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-20
1			3			TOTAL SHEETS
2			4			32

SITE 6SBL

STD. NO. GRA2

FILE: STILES
DATE: STATES
STIMES

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

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPETS, AND BARRIER RAILS		APPROACH SLABS		PARAPETS AND BARRIER RAILS
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1′-11″	1′-7″	1′-11″	1′-7″	2′-6″
#5	2′-5″	2′-0″	2′-5″	2′-0″	3′-1″
#6	2′-10″	2′-5″	3′-7″	2′-5″	3′-8″
#7	4′-2″	2′-9″			
#8	4′-9″	3′-2″			

SUPERSTRUCTURE BILL OF MATERIAL

POUR	CLASS AA CONCRETE (CU. YD.) SPAN A	SPAN B	SPAN C	TOTAL
DECK	18.18	29.98	18.79	66.95
CLOSURE POUR	3.67	5.93	3.85	13.45
TOTAL	21.85	35.90	22.65	80.40
TOTAL CLASS AA CONCRETE (CU. YD.)				80.40

	REINFORCING STEEL (LBS) SPAN A	SPAN B	SPAN C	TOTAL
RIGHT WIDENING INCLUDES CLOSURE POUR	3,091	5,331	3,166	11,588
	EPOXY COATED REINFORCING STEEL (LBS)			
	SPAN A	SPAN B	SPAN C	TOTAL
	2,618	4,904	2,699	10,221

POUR IN SPANS A AND C INCLUDES CURTAIN WALL AND PAVEMENT BRACKET. QUANTITIES FOR BARRIER RAIL IN EACH SPAN ARE NOT INCLUDED.

BILL OF MATERIAL

SPAN A

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	53	#6	STR	15′-6″	1234
A2	53	#6	STR	15′-6″	1234
✳ A101	2	#6	STR	14′-8″	44
✳ A102	2	#6	STR	13′-10″	42
✳ A103	2	#6	STR	13′-0″	39
✳ A104	2	#6	STR	12′-2″	37
✳ A105	2	#6	STR	11′-4″	34
✳ A106	2	#6	STR	10′-5″	31
✳ A107	2	#6	STR	9′-7″	29
✳ A108	2	#6	STR	8′-9″	26
✳ A109	2	#6	STR	7′-10″	24
✳ A110	2	#6	STR	7′-0″	21
✳ A111	2	#6	STR	6′-2″	19
✳ A112	2	#6	STR	5′-4″	16
✳ A113	2	#6	STR	4′-5″	13
✳ A114	2	#6	STR	3′-7″	11
✳ A115	2	#6	STR	2′-9″	8
✳ A116	2	#6	STR	1′-10″	6
A201	2	#6	STR	14′-8″	44
A202	2	#6	STR	13′-10″	42
A203	2	#6	STR	13′-0″	39
A204	2	#6	STR	12′-2″	37
A205	2	#6	STR	11′-4″	34
A206	2	#6	STR	10′-5″	31
A207	2	#6	STR	9′-7″	29
A208	2	#6	STR	8′-9″	26
A209	2	#6	STR	7′-10″	24
A210	2	#6	STR	7′-0″	21
A211	2	#6	STR	6′-2″	19
A212	2	#6	STR	5′-4″	16
A213	2	#6	STR	4′-5″	13
A214	2	#6	STR	3′-7″	11
A215	2	#6	STR	2′-9″	8
A216	2	#6	STR	1′-10″	6
✳ B1	26	#4	STR	22′-11″	398
B2	24	#5	STR	43′-9″	1095
✳ D1	132	#5	STR	3′-10″	528
D2	9	#5	STR	4′-3″	40
✳ G1	1	#5	STR	19′-3″	20
✳ G2	2	#5	STR	19′-0″	40
K1	6	#4	STR	19′-4″	77
K2	1	#6	STR	19′-4″	29
K3	1	#4	STR	18′-2″	12
K4	2	#5	5	10′-4″	22
K5	2	#5	4	7′-8″	16
S1	11	#4	STR	3′-6″	26
S2	21	#4	2	5′-11″	83
S3	17	#4	1	2′-2″	26
S4	13	#4	3	3′-9″	33

REINFORCING STEEL LBS. = 3,091
✳ EPOXY COATED REINFORCING STEEL LBS. = 2,618
✳✳ CLASS AA CONCRETE C.Y. = 21.85

SPAN B

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳ A3	41	#6	STR	15′-6″	955
A4	41	#6	STR	15′-6″	955
✳ A5	29	#6	STR	15′-5″	672
A6	29	#6	STR	15′-5″	672
✳ A7	25	#6	STR	15′-4″	576
A8	25	#6	STR	15′-4″	576
✳ A9	20	#6	STR	15′-3″	458
A10	20	#6	STR	15′-3″	458
✳ A120	1	#6	STR	15′-3″	23
✳ A121	2	#6	STR	14′-4″	43
✳ A122	2	#6	STR	13′-5″	40
✳ A123	2	#6	STR	12′-7″	38
✳ A124	2	#6	STR	11′-9″	35
✳ A125	2	#6	STR	10′-10″	33
✳ A126	2	#6	STR	10′-0″	30
✳ A127	2	#6	STR	9′-1″	27
✳ A128	2	#6	STR	8′-3″	25
✳ A129	2	#6	STR	7′-4″	22
✳ A130	2	#6	STR	6′-6″	20
✳ A131	2	#6	STR	5′-8″	17
✳ A132	2	#6	STR	4′-9″	14
✳ A133	2	#6	STR	3′-11″	12
✳ A134	2	#6	STR	3′-0″	9
✳ A135	2	#6	STR	2′-2″	7
A220	1	#6	STR	15′-3″	23
A221	2	#6	STR	14′-4″	43
A222	2	#6	STR	13′-5″	40
A223	2	#6	STR	12′-7″	38
A224	2	#6	STR	11′-9″	35
A225	2	#6	STR	10′-10″	33
A226	2	#6	STR	10′-0″	30
A227	2	#6	STR	9′-1″	27
A228	2	#6	STR	8′-3″	25
A229	2	#6	STR	7′-4″	22
A230	2	#6	STR	6′-6″	20
A231	2	#6	STR	5′-8″	17
A232	2	#6	STR	4′-9″	14
A233	2	#6	STR	3′-11″	12
A234	2	#6	STR	3′-0″	9
A235	2	#6	STR	2′-2″	7
✳ B3	52	#4	STR	22′-2″	770
B4	48	#5	STR	42′-4″	2119
✳ D1	258	#5	STR	3′-10″	1032
D2	4	#5	STR	4′-3″	18
✳ G3	2	#5	STR	19′-2″	40
✳ G4	2	#5	STR	3′-10″	8
K4	4	#5	5	10′-4″	43
K5	4	#5	4	7′-8″	32
S4	26	#4	3	3′-9″	65

REINFORCING STEEL LBS. = 5,331
✳ EPOXY COATED REINFORCING STEEL LBS. = 4,904
✳✳ CLASS AA CONCRETE C.Y. = 35.90

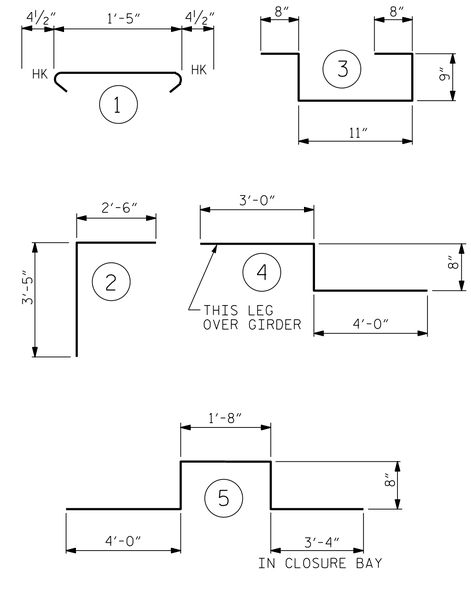
SPAN C

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳ A11	56	#6	STR	15′-2″	1276
A12	56	#6	STR	15′-2″	1276
✳ A141	2	#6	STR	14′-10″	45
✳ A142	2	#6	STR	13′-11″	42
✳ A143	2	#6	STR	13′-1″	39
✳ A144	2	#6	STR	12′-2″	37
✳ A145	2	#6	STR	11′-4″	34
✳ A146	2	#6	STR	10′-5″	31
✳ A147	2	#6	STR	9′-7″	29
✳ A148	2	#6	STR	8′-8″	26
✳ A149	2	#6	STR	7′-9″	23
✳ A150	2	#6	STR	6′-10″	21
✳ A151	2	#6	STR	6′-0″	18
✳ A152	2	#6	STR	5′-2″	16
✳ A153	2	#6	STR	4′-3″	13
✳ A154	2	#6	STR	3′-5″	10
✳ A155	2	#6	STR	2′-6″	8
A241	2	#6	STR	14′-10″	45
A242	2	#6	STR	13′-11″	42
A243	2	#6	STR	13′-1″	39
A244	2	#6	STR	12′-2″	37
A245	2	#6	STR	11′-4″	34
A246	2	#6	STR	10′-5″	31
A247	2	#6	STR	9′-7″	29
A248	2	#6	STR	8′-8″	26
A249	2	#6	STR	7′-9″	23
A250	2	#6	STR	6′-10″	21
A251	2	#6	STR	6′-0″	18
A252	2	#6	STR	5′-2″	16
A253	2	#6	STR	4′-3″	13
A254	2	#6	STR	3′-5″	10
A255	2	#6	STR	2′-6″	8
✳ B5	26	#4	STR	23′-11″	415
B6	24	#5	STR	45′-10″	1147
✳ D1	140	#5	STR	3′-10″	560
D2	9	#5	STR	4′-3″	40
✳ G5	2	#5	STR	18′-8″	39
✳ G6	1	#5	STR	18′-5″	19
K11	6	#4	STR	18′-7″	74
K12	1	#6	STR	18′-7″	28
K13	1	#4	STR	17′-4″	12
K4	2	#5	5	10′-4″	22
K5	2	#5	4	7′-8″	16
S1	11	#4	STR	3′-6″	26
S2	20	#4	2	5′-11″	79
S3	18	#4	1	2′-2″	26
S4	13	#4	3	3′-9″	33

REINFORCING STEEL LBS. = 3,168
✳ EPOXY COATED REINFORCING STEEL LBS. = 2,699
✳✳ CLASS AA CONCRETE C.Y. = 22.65

✳✳ QUANTITIES FOR BARRIER RAIL IN EACH SPAN ARE NOT INCLUDED.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

SUPERSTRUCTURE BILL OF MATERIAL

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

DWG. No.

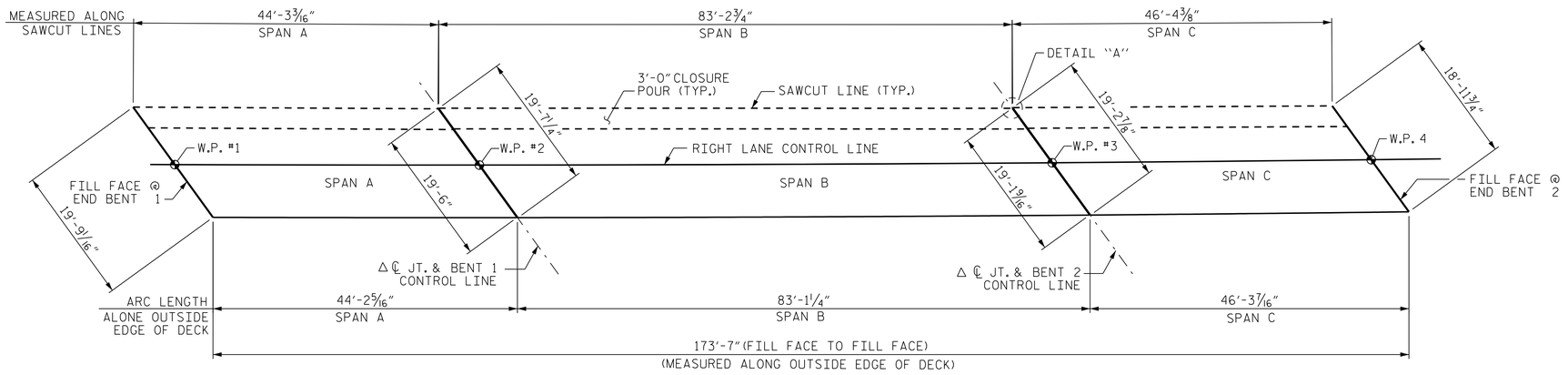
NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG
Ting Fang
7/2/2022

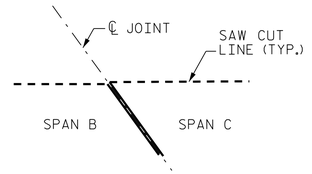
REVISIONS NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S07-21
TOTAL SHEETS 32

SITE 6SBL

FILE: SFILES
DATE: SDATES
STAKES





DETAIL ''A''

JT. @ BENT 2 SHOWN.
JT. @ BENT 1 SIMILAR.

LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK

(DECK WIDENING AREA = 2,717 SQ. FT.)

JOINT LENGTH TABLE
(MEASURED ALONG ℄ OF JT. OR FILL FACE)

	NEAR	FAR
SPAN A	19′-9 9/16″	Δ 19′-6″
SPAN B	Δ 19′-7 1/4″	Δ 19′-1 9/16″
SPAN C	Δ 19′-2 7/8″	18′-11 3/4″

ΔTHE DISCREPANCY BETWEEN JOINT LENGTHS AT BENTS 1 & 2 IS DUE TO SAW CUT LINE PARALLEL TO CHORDED ℄ EXIST. EXTERIOR BEAM IN EACH SPAN. SEE DETAIL ''A''.

DECK & JOINT REHABILITATION BILL OF MATERIAL

		POLYESTER POLYMER CONC. MATERIALS	BRIDGE JOINT DEMOLITION	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK	PLACING AND FINISHING OF PC OVERLAY
STAGE III		CU. YDS.	SQ. FT.	SQ. YDS.	SQ. YDS.	SQ. YDS.
	BRIDGE DECKS	4.37	26	171	171	472
	APPROACH SLABS	1.33		54	54	143
	TOTAL (III)(a)	5.69	26	225	225	615
STAGE IV		CU. YDS.	SQ. FT.	SQ. YDS.	SQ. YDS.	SQ. YDS.
	BRIDGE DECKS	5.17	72	559	559	559
	APPROACH SLABS	1.38		149	149	149
	TOTAL (IV)(b)	6.55	72	708	708	708
*	PPC IN JOINT (c)	0.60				
	TOTAL (a)+(b)+(c)	12.84	98	933	933	1,323

*FOR POLYESTER POLYMER CONCRETE MATERIALS IN JOINT HEADER REPAIRS, SEE SHEET S07-07.

GROOVING BRIDGE FLOORS

STAGE III		
APPROACH SLABS	1,101	SQ.FT.
BRIDGE DECK	3,959	SQ.FT.
TOTAL	5,060	SQ.FT.
STAGE IV		
APPROACH SLABS	1,296	SQ.FT.
BRIDGE DECK	4,733	SQ.FT.
TOTAL	6,029	SQ.FT.
TOTAL		
APPROACH SLABS	2,397	SQ.FT.
BRIDGE DECK	8,692	SQ.FT.
TOTAL	11,089	SQ.FT.

JOINT QUANTITIES

	POURABLE SILICONE JOINT SEALANT	FOAM JOINT SEALS FOR PRESERVATION
JOINT AT	LIN. FT.	LIN. FT.
END BENT 1	69.45	
BENT 1		68.97
BENT 2		68.37
END BENT 2	68.09	
TOTAL	137.54	137.34

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 2 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-I HSIUNG FANG
Ting Fang
7/16/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

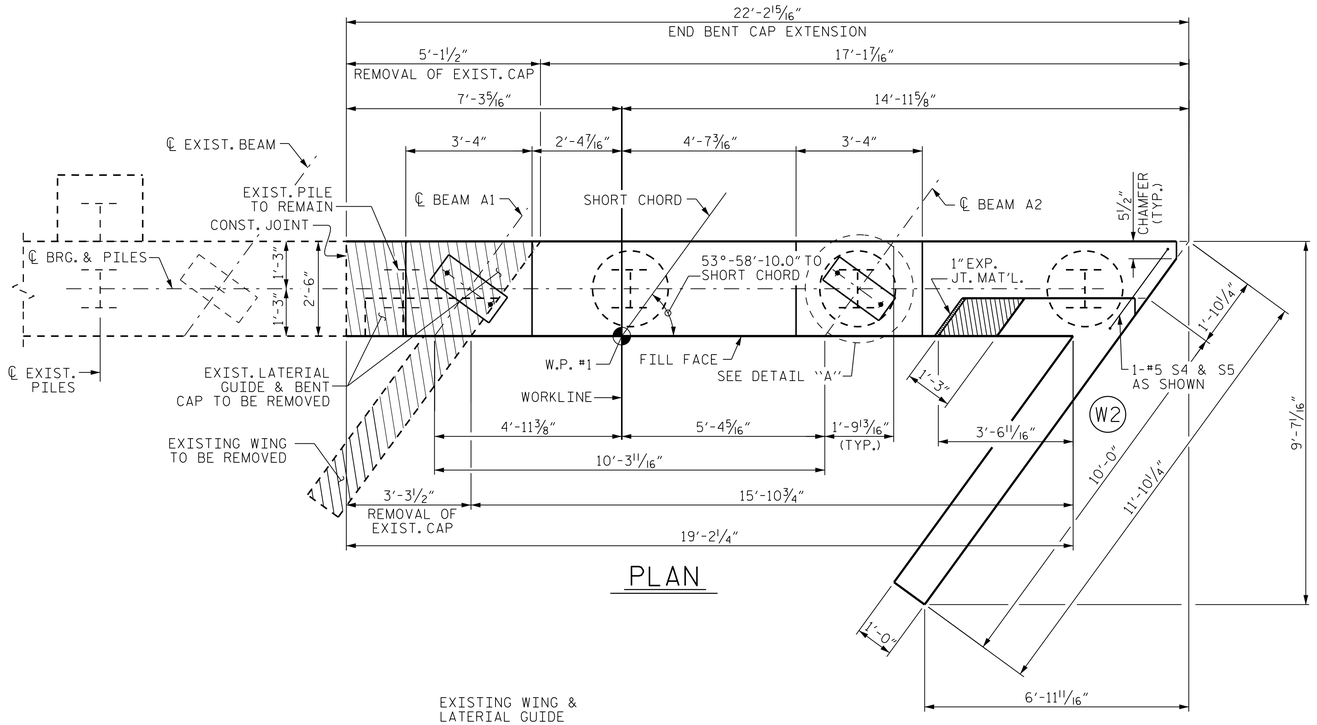
SUPERSTRUCTURE BILL OF MATERIAL

RIGHT LANE (SBL)

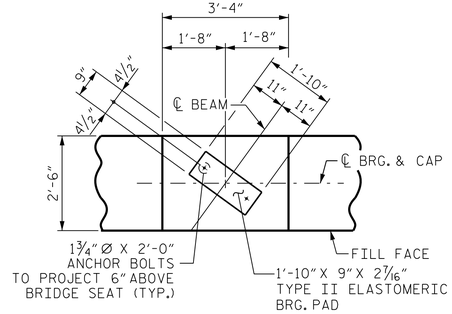
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-22
1			3			TOTAL SHEETS
2			4			32

FILE: SFILES
DATE: SDATES
STIMES

SITE 6SBL

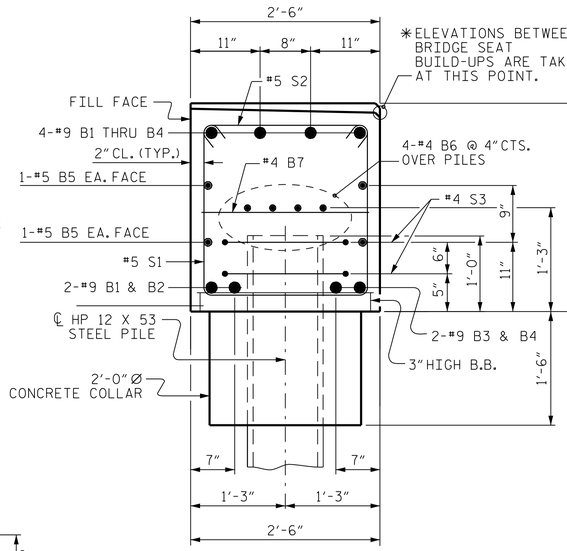


PLAN

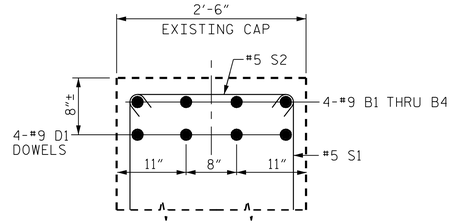


DETAIL ″A″

TYP. FOR BEAMS A1 & A2

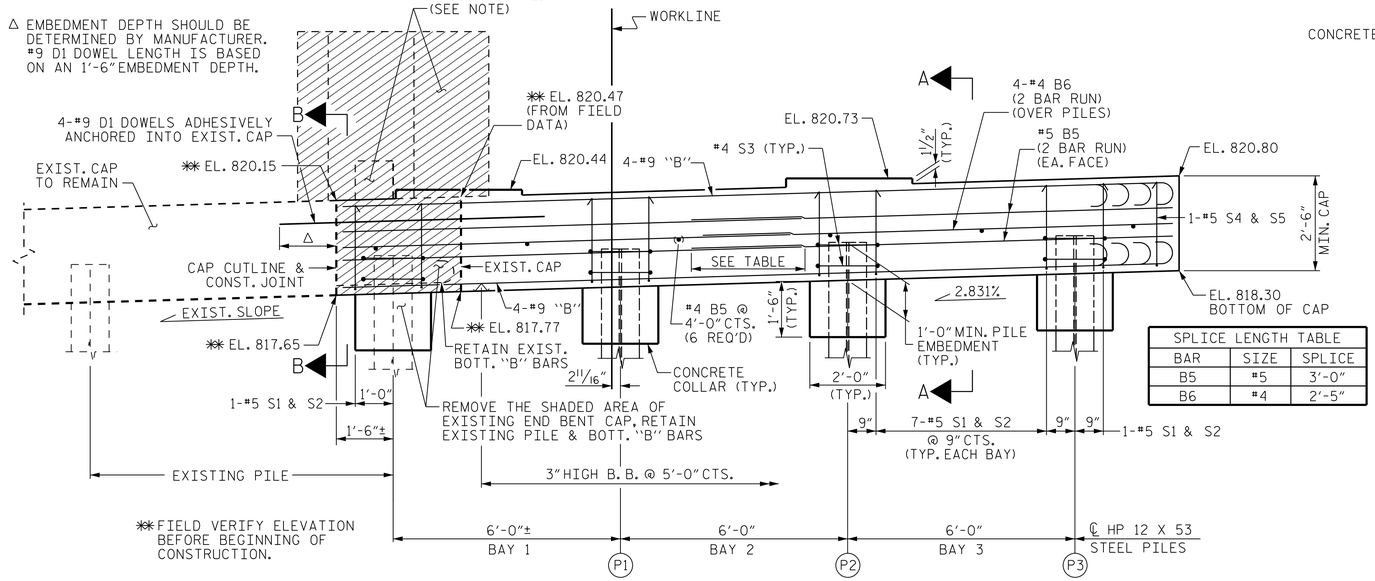


SECTION A-A



PARTIAL SECTION B-B

SHOWING #9 D1 DOWEL LOCATION



ELEVATION

PROPOSED WING (W2) NOT SHOWN FOR CLARITY.

SPLICE LENGTH TABLE		
BAR	SIZE	SPLICE
B5	#5	3′-0″
B6	#4	2′-5″

TOP OF PILE ELEVATIONS	
P1	818.89
P2	819.06
P3	819.23

NOTES

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

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

THE CONTRACTOR MAY, BUT IS NOT REQUIRED TO COAT THE TOP SURFACE AREA COVERED BY THE CURTAIN WALL.

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

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

EXISTING EXTERIOR BRIDGE SEAT ELEVATION SHALL BE VERIFIED BY THE ENGINEER PRIOR TO FABRICATION OF THE SOLE PLATES. IF THE EXISTING BRIDGE SEAT ELEVATION IS MORE THAN 1/4″ HIGHER OR LOWER THAN THE ELEVATION DETAILED IN THE PLANS, INCORPORATE THAT DIFFERENCE INTO THE SOLE PLATE HEIGHT AND ANCHOR BOLT LENGTH.

EXISTING RIGHT WING, LATERAL GUIDE AND THE SHADED AREA OF END BENT CAP SHALL BE REMOVED IN ACCORDANCE WITH PLAN DETAILS. THE CONTRACTOR IS REQUIRED TO RETAIN EXISTING BOTTOM ″B″ BARS OF END BENT CAP. THE EXISTING STEEL PILE SHALL BE REMAINED AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS. THE REMOVAL SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ″REMOVAL OF EXISTING STRUCTURE AT STA. 29+89.90 -Y2SBL-″.

THE #9 D1 DOWELS PLACED INTO THE EXISTING CAP SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. LEVEL 1 FIELD TESTING IS REQUIRED, THE YIELD LOAD OF #9 D1 DOWELS IS 60.0 KIPS AND THE YIELD LOAD OF 1 3/4″ Ø ANCHOR BOLTS IS 144.3 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE ARTICLE 420-13 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 29+89.90 -Y2SBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

END BENT 1

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
7/16/2022

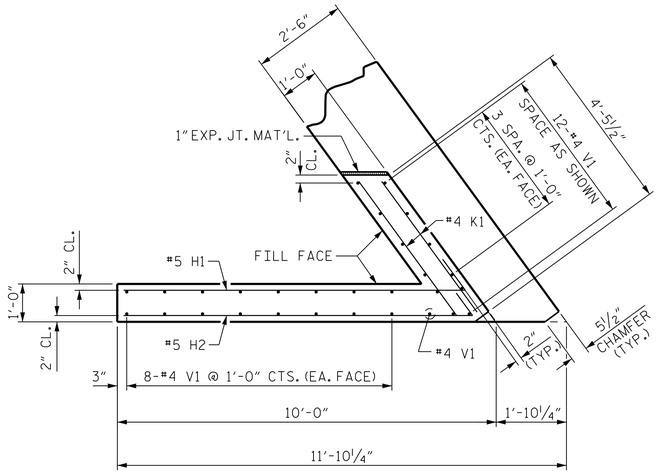
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S07-23

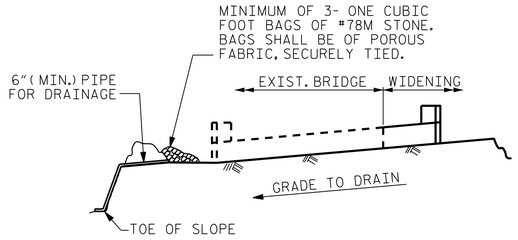
TOTAL SHEETS 32

SITE 6SBL

FILE: STILES
DATE: STIMES



PLAN OF WING - (W2)



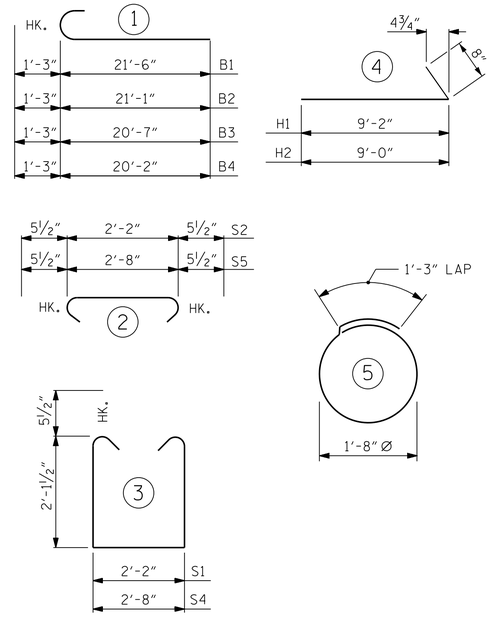
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#9	1	22'-9"	155
B2	2	#9	1	22'-4"	152
B3	2	#9	1	21'-10"	148
B4	2	#9	1	21'-5"	146
B5	8	#5	STR	12'-2"	102
B6	8	#4	STR	12'-1"	65
B7	6	#4	STR	2'-2"	9
D1	4	#9	STR	7'-0"	95
H1	10	#5	4	9'-10"	103
H2	10	#5	4	9'-8"	101
K1	12	#4	STR	4'-1"	33
S1	23	#5	3	7'-4"	176
S2	23	#5	2	3'-1"	74
S3	8	#4	5	6'-6"	35
S4	1	#5	3	7'-10"	8
S5	1	#5	2	3'-7"	4
V1	29	#4	STR	6'-8"	129

REINFORCING STEEL 1532 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 6.6 C.Y.

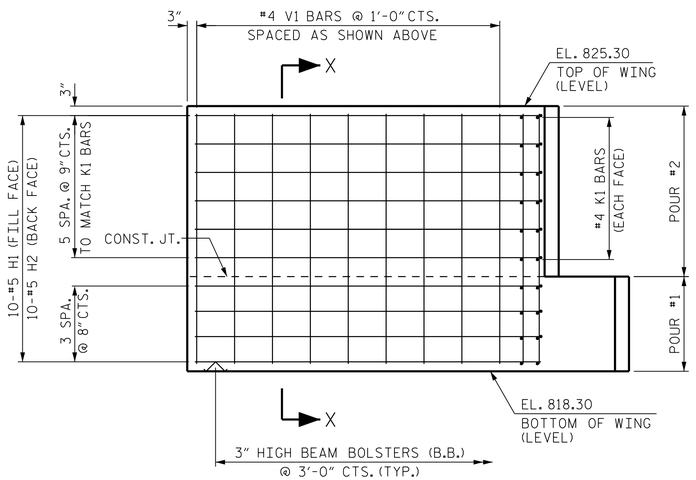
POUR #2 UPPER PART OF WINGS 3.4 C.Y.

TOTAL CLASS A CONCRETE 10.0 C.Y.

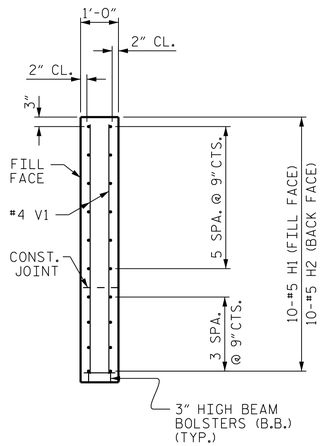
HP 12 X 53 STEEL PILES
NO: 3 LIN. FT.= 180

PILE DRIVING EQUIP. SETUP FOR HP 12 X 53 STEEL PILES EA. 3

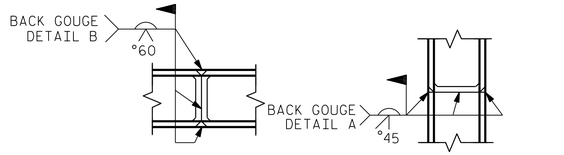
FOUNDATION EXCAVATION LUMP SUM



ELEVATION OF WING - (W2)

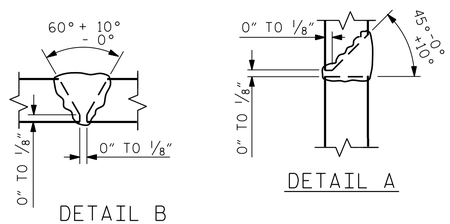


SECTION X-X



△ PILE HORIZONTAL OR VERTICAL

△ PILE VERTICAL



DETAIL B

DETAIL A

△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1 DETAILS

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

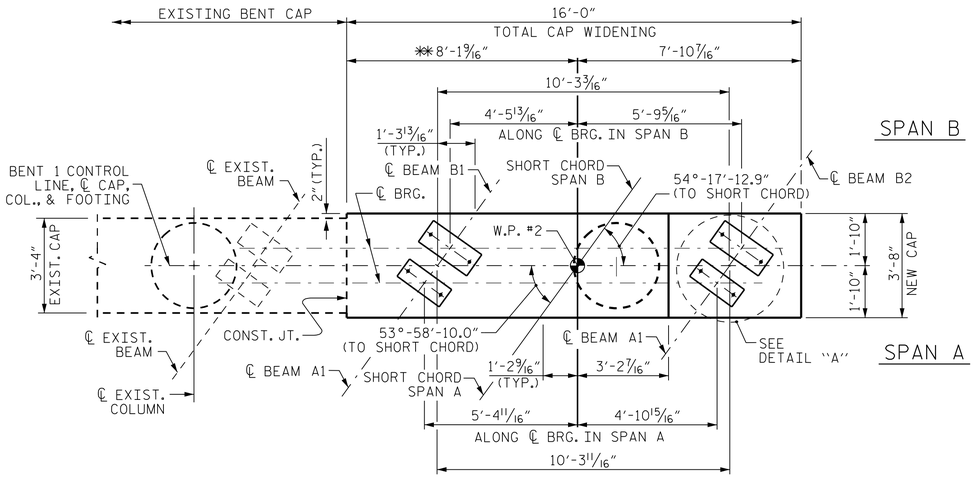
DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
60E43C9AEA60462...
7/2/2022

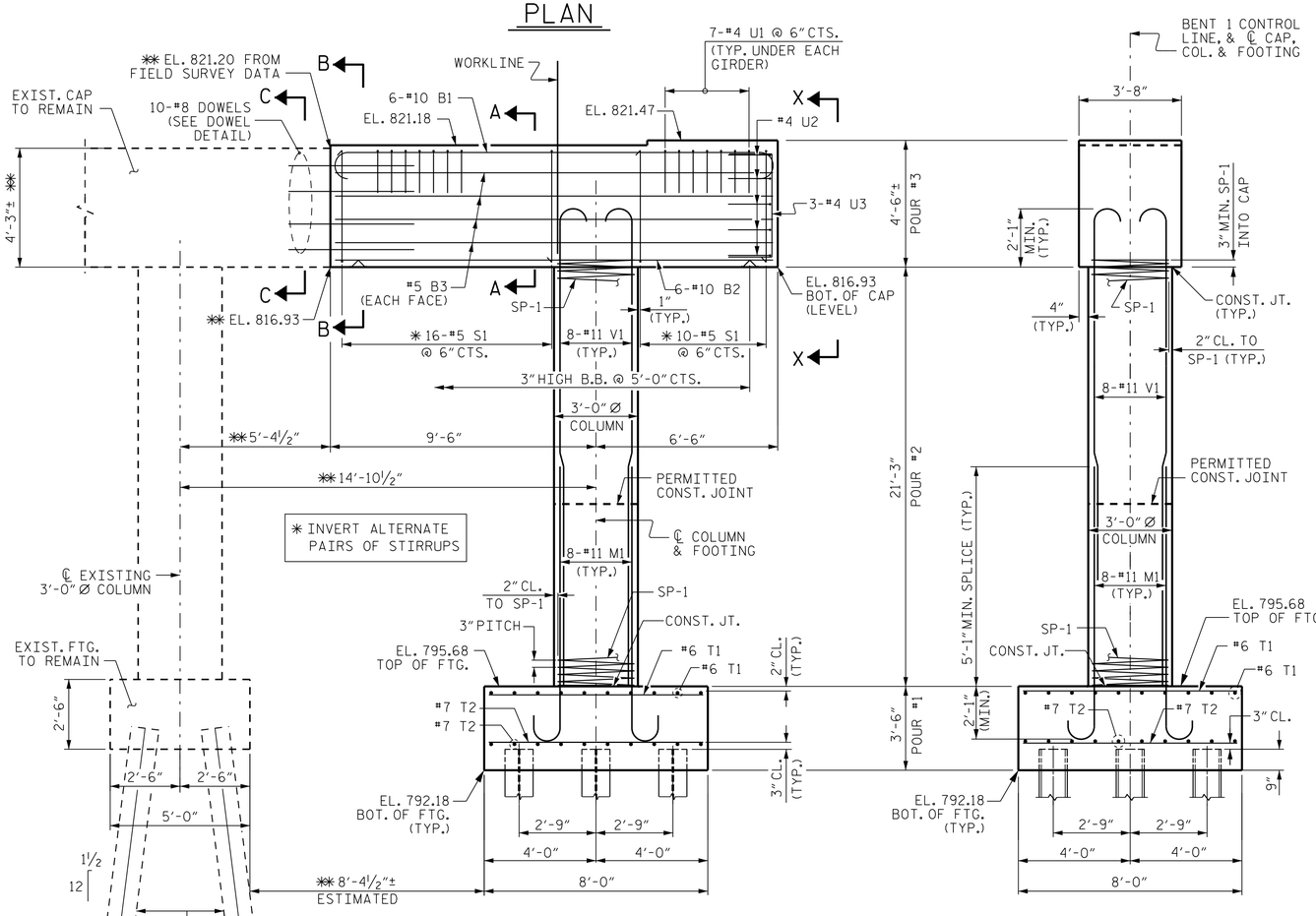
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-24
1			3			TOTAL SHEETS
2			4			32

SITE 6SBL

FILE: SPILES STIMES
DATE: SDATES



PLAN



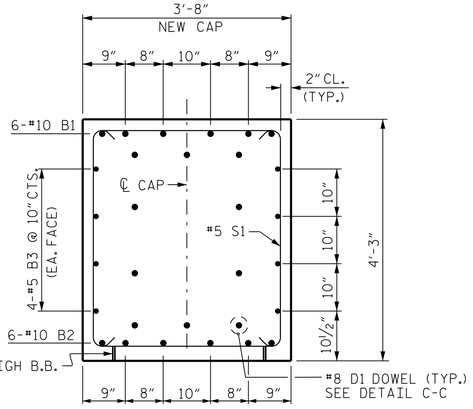
EXIST. HP12X53 BRACE PILE ASSUMED 27' LONG EMBEDDED 9" INTO EXIST. FOOTING. OTHER EXIST. PILES NOT SHOWN FOR CLARITY.

ELEVATION

REINFORCING STEEL AND DIMENSIONS ARE TYPICAL FOR EACH COLUMN AND FOOTING

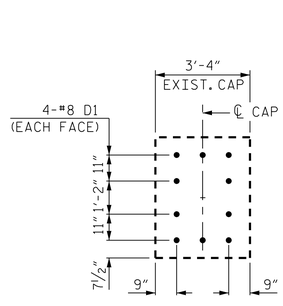
✱✱ FIELD VERIFY BEFORE BEGINNING CONSTRUCTION. DIMENSIONS & ELEVATIONS ARE FROM EXISTING PLANS OR FIELD SURVEY DATA.

END ELEVATION



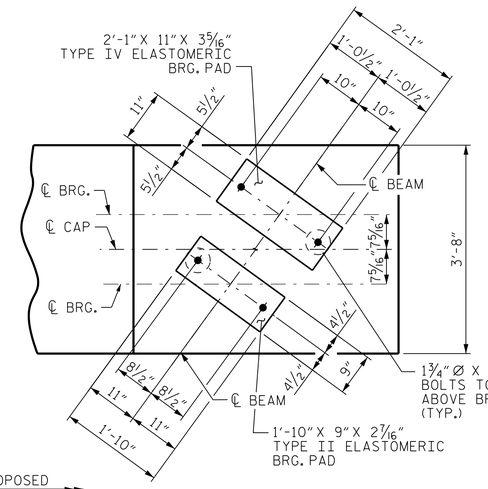
SECTION B-B

DOWELS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO AVOID INTERFERENCE WITH REINFORCING STEEL IN EXISTING CAP. #4 U1 BAR NOT SHOWN FOR CLARITY.



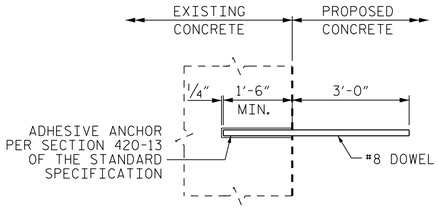
SECTION C-C

SHOWING DOWEL LOCATIONS INTO EXISTING CAP.



DETAIL "A"

(TYP. EACH BEAM)



DOWEL DETAIL

ANCHOR THE #8 DOWEL WITH EPOXY ADHESIVE IN ACCORDANCE WITH ADHESIVE MANUFACTURER'S RECOMMENDATIONS. DETAILS OF THE ANCHORING SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.

NOTES:

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

HOOKS ON V1 BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

THE CONTRACTOR SHALL ALIGN THE V1 & M1 BARS AS SHOWN IN THE PLAN OF COLUMNS. HOOKS ON V1 BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE #11 M1 BARS ARE DETAILED WITH ONE FOOT OF EXTRA LENGTH.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

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

THE #8 D1 DOWELS IN EXISTING CAP SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. LEVEL 1 FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE DOWELS IS 47.40 KIPS. OVERALL DOWEL LENGTH SHALL PROVIDE FOR REQUIRED DEVELOPMENT LENGTH OF SPECIFIED DOWEL INTO NEW CAP. EMBEDMENT LENGTH TO BE VERIFIED BY THE MANUFACTURER OF THE ADHESIVE ANCHORING SYSTEM. SEE SECTION 420-13 OF THE STANDARD SPECIFICATIONS FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 1

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

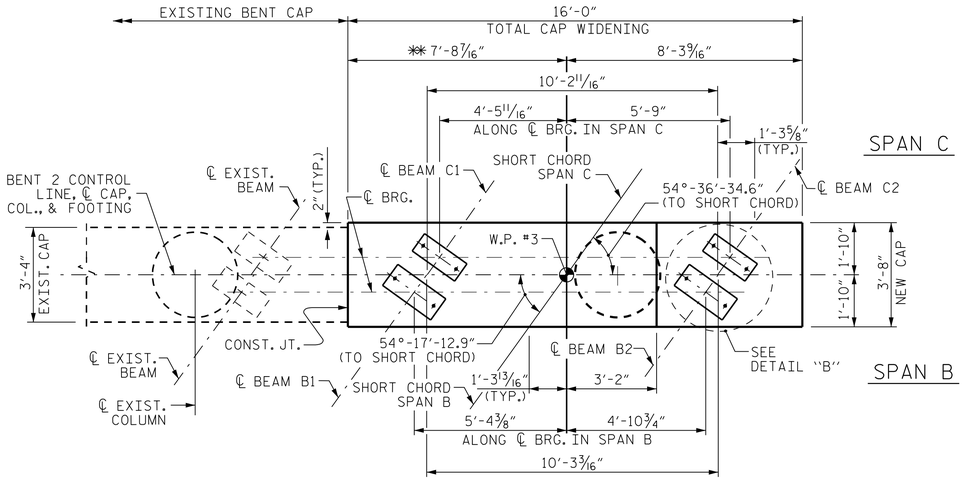
DWG. No.

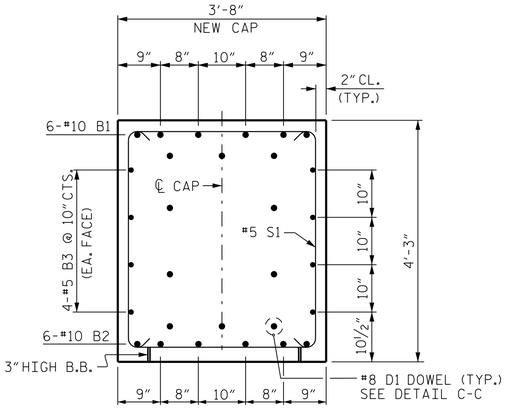
NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-YI HSIUNG FANG
Ting Fang
7/16/2022

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-25
1			3			TOTAL SHEETS
2			4			32

SITE 6SBL

FILE: SFILES
DATE: STIMES





NOTES:

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

HOOKS ON V2 BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

THE CONTRACTOR SHALL ALIGN THE V2 & M1 BARS AS SHOWN IN THE PLAN OF COLUMNS. HOOKS ON V2 BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE #11 M1 BARS ARE DETAILED WITH ONE FOOT OF EXTRA LENGTH.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

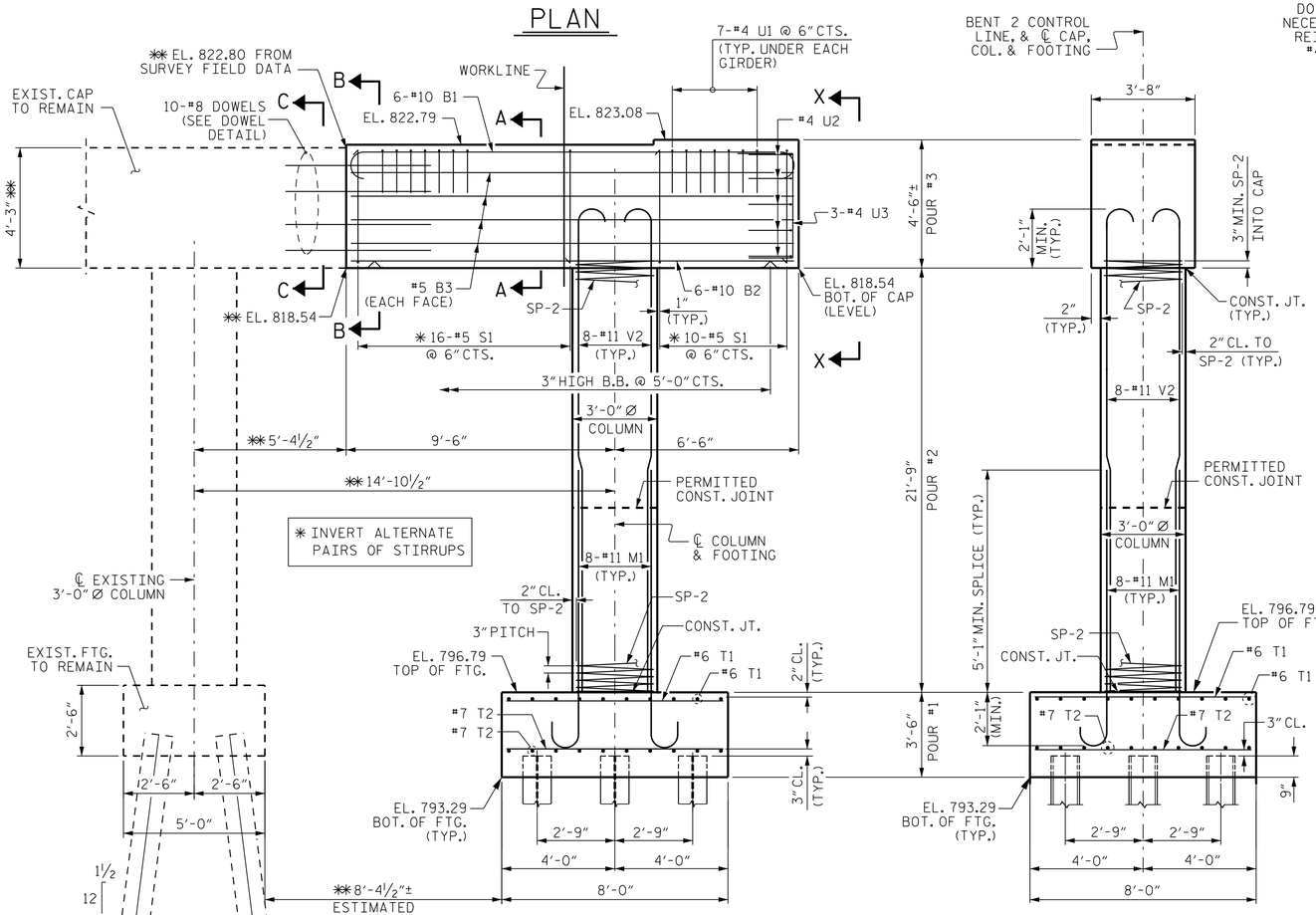
THE TOP SURFACE AREAS OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

THE #8 DOWEL IN EXISTING CAP SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. LEVEL 1 FIELD TESTING IS REQUIRED AND THE YIELD LOAD OF THE DOWELS IS 47.40 KIPS. OVERALL DOWEL LENGTH SHALL PROVIDE FOR REQUIRED DEVELOPMENT LENGTH OF SPECIFIED DOWEL INTO NEW CAP. EMBEDMENT LENGTH TO BE VERIFIED BY THE MANUFACTURER OF THE ADHESIVE ANCHORING SYSTEM. SEE SECTION 420-13 OF THE STANDARD SPECIFICATIONS FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.

SECTION B-B

DOWELS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO AVOID INTERFERENCE WITH REINFORCING STEEL IN EXISTING CAP. #4 U1 BAR NOT SHOWN FOR CLARITY.

PLAN

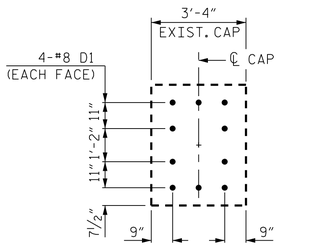


ELEVATION

REINFORCING STEEL AND DIMENSIONS ARE TYPICAL FOR EACH COLUMN AND FOOTING

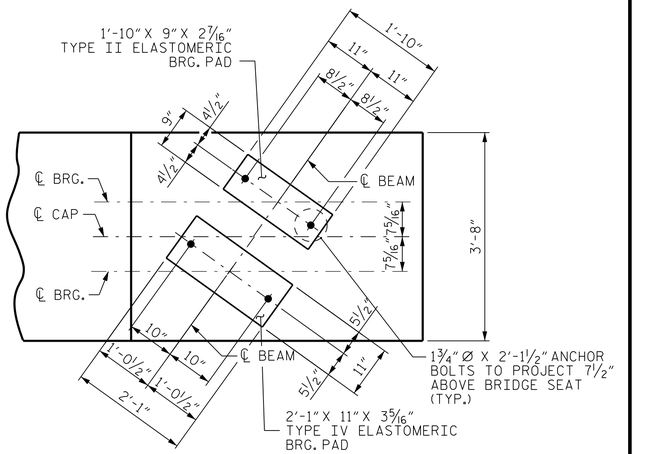
** FIELD VERIFY BEFORE BEGINNING CONSTRUCTION. DIMENSIONS & ELEVATIONS ARE FROM EXISTING PLANS OR FIELD SURVEY DATA.

END ELEVATION



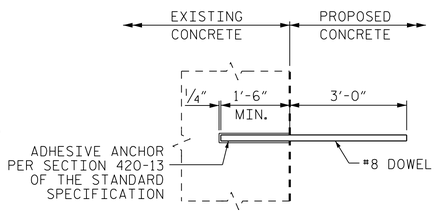
SECTION C-C

SHOWING DOWEL LOCATIONS INTO EXISTING CAP.



DETAIL "B"

(TYP. EACH BEAM)



DOWEL DETAIL

ANCHOR THE #8 DOWEL WITH EPOXY ADHESIVE IN ACCORDANCE WITH ADHESIVE MANUFACTURER'S RECOMMENDATIONS. DETAILS OF THE ANCHORING SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 29+89.90 -Y2SBL-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT 2

RIGHT LANE (SBL)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-26
1			3			TOTAL SHEETS
2			4			32

SITE 6SBL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

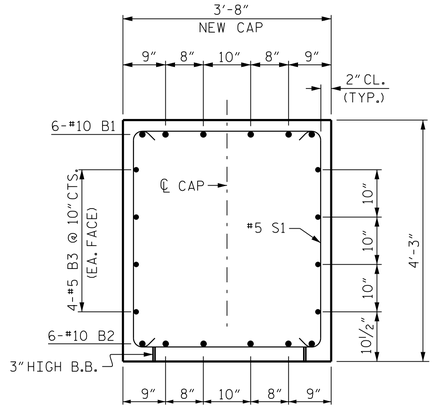
CDM Smith
CDM SMITH
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612-3228
NC COA No. F-1255

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

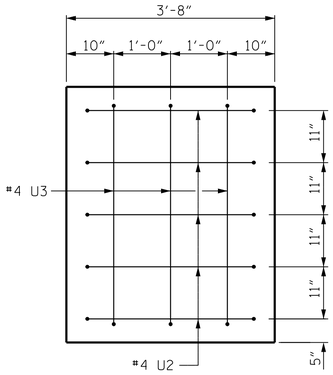
DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
7/16/2022

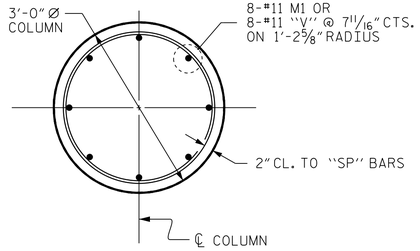
FILE: SPILES
DATE: STATES
STIWES



SECTION A-A

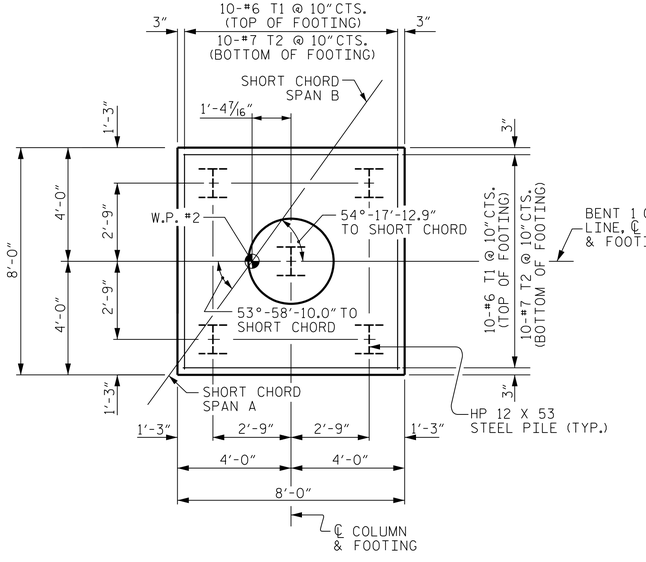


VIEW X-X

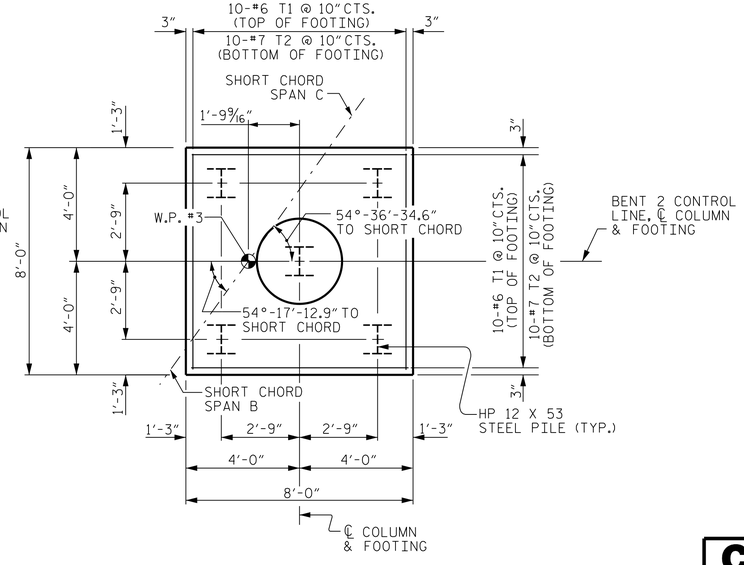


COLUMN DETAILS

TYP. AT EACH BENT

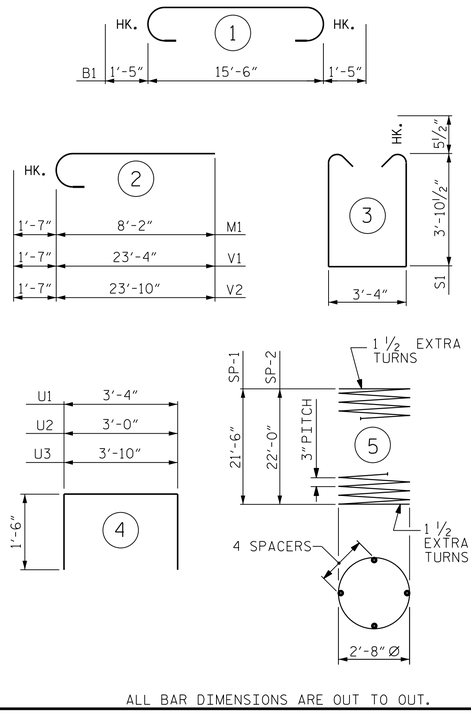


PLAN OF FOOTING AT BENT 1



PLAN OF FOOTING AT BENT 2

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	1	18'-4"	473
B2	6	#10	STR	15'-8"	404
B3	8	#5	STR	15'-8"	131
D1	10	#8	STR	4'-6"	120
M1	8	#11	2	9'-9"	414
S1	26	#5	3	12'-0"	325
T1	20	#6	STR	7'-8"	230
T2	20	#7	STR	7'-8"	313
U1	14	#4	4	6'-4"	59
U2	5	#4	4	6'-0"	20
U3	3	#4	4	6'-10"	14
V1	8	#11	2	24'-11"	1059
REINFORCING STEEL =					3,564 LBS
SP-1	1	**	5	746'-0"	498

SPIRAL COLUMN REINFORCING STEEL = 498 LBS

CLASS A CONCRETE:

POUR #1 (FOOTING) =	8.3 C.Y.
POUR #2 (COLUMN) =	5.6 C.Y.
POUR #3 (CAP) =	9.4 C.Y.
TOTAL CLASS A CONCRETE	23.3 C.Y.

HP 12 X 53 STEEL PILES
No. 5 LIN. FT. 175

PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES EA. 5

FOUNDATION EXCAVATION LUMP SUM

BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	1	18'-4"	473
B2	6	#10	STR	15'-8"	404
B3	6	#5	STR	15'-8"	131
D1	10	#8	STR	4'-6"	120
M1	8	#11	2	9'-9"	414
S1	26	#5	3	12'-0"	325
T1	20	#6	STR	7'-8"	230
T2	20	#7	STR	7'-8"	313
U1	14	#4	4	6'-4"	59
U2	5	#4	4	6'-0"	20
U3	3	#4	4	6'-10"	14
V2	8	#11	2	25'-5"	1080
REINFORCING STEEL =					3,586 LBS
SP-2	1	**	5	762'-9"	509

SPIRAL COLUMN REINFORCING STEEL = 509 LBS

CLASS A CONCRETE:

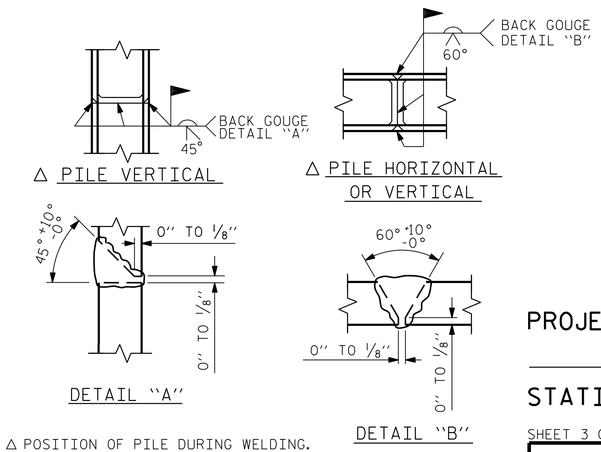
POUR #1 (FOOTING) =	8.3 C.Y.
POUR #2 (COLUMN) =	5.7 C.Y.
POUR #3 (CAP) =	9.4 C.Y.
TOTAL CLASS A CONCRETE	23.4 C.Y.

HP 12 X 53 STEEL PILES
No. 5 LIN. FT. 175

PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES EA. 5

FOUNDATION EXCAVATION LUMP SUM

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



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENTS 1 & 2 DETAILS

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

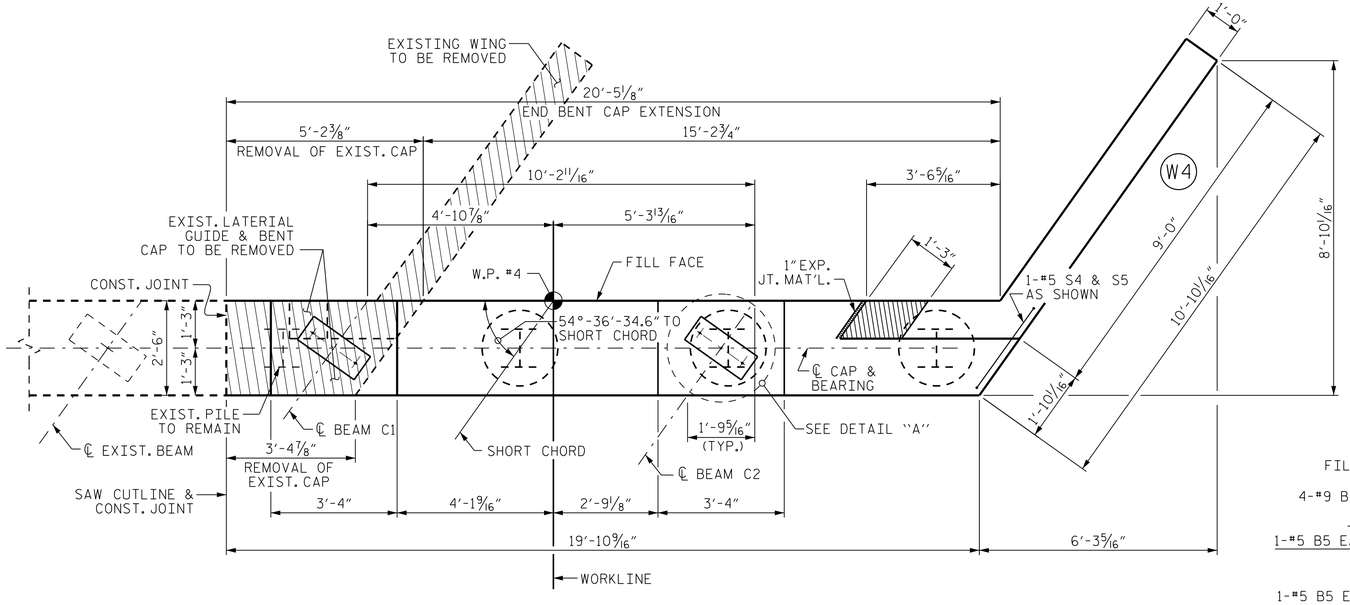
DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
60E43C9AEA60462...
7/2/2022

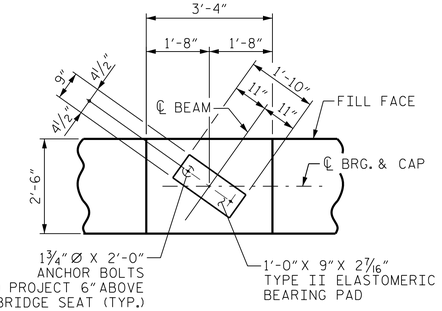
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-27
1			3			TOTAL SHEETS
2			4			32

SITE 6SBL

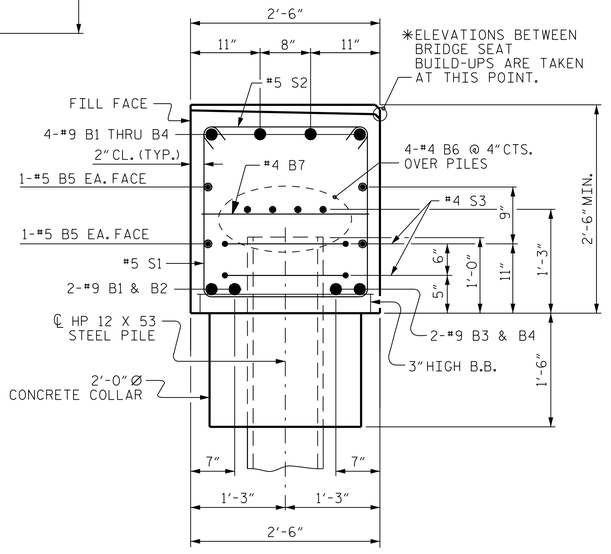
FILE: SFILES STIMES
DATE: SDATES



PLAN



DETAIL "A"
TYP. FOR BEAMS C1 & C2



SECTION A-A

NOTES

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

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

THE CONTRACTOR MAY, BUT IS NOT REQUIRED TO COAT THE TOP SURFACE AREA COVERED BY THE CURTAIN WALL.

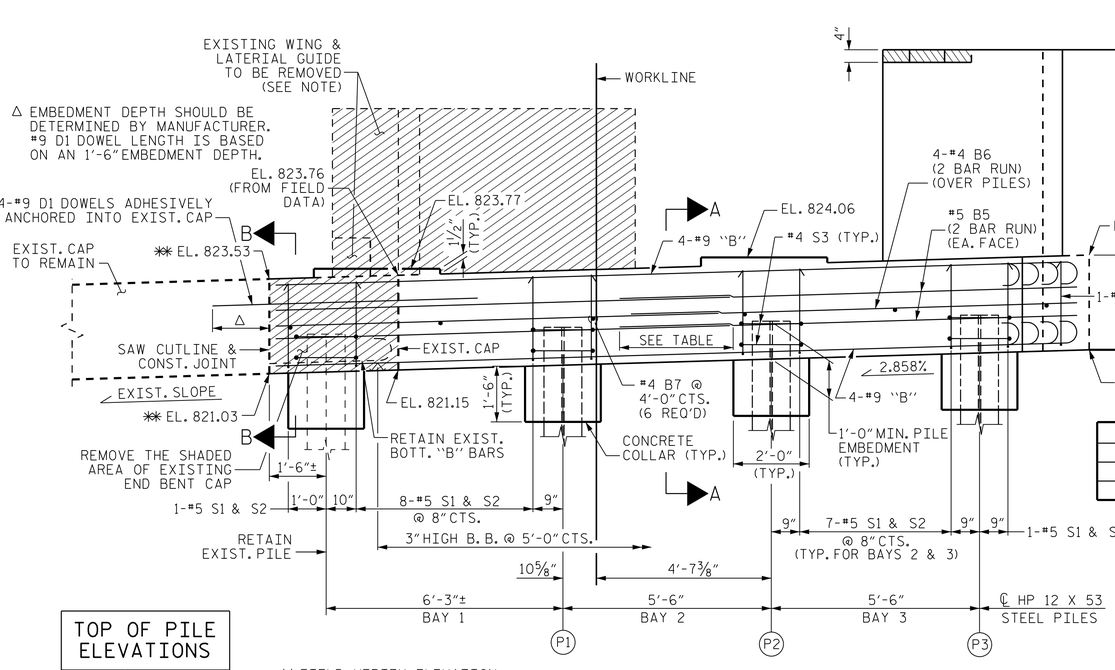
THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

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

EXISTING EXTERIOR BRIDGE SEAT ELEVATION SHALL BE VERIFIED BY THE ENGINEER PRIOR TO FABRICATION OF THE SOLE PLATES. IF THE EXISTING BRIDGE SEAT ELEVATION IS MORE THAN ¼" HIGHER OR LOWER THAN THE ELEVATION DETAILED IN THE PLANS, INCORPORATE THAT DIFFERENCE INTO THE SOLE PLATE HEIGHT AND ANCHOR BOLT LENGTH.

EXISTING RIGHT WING, LATERAL GUIDE AND THE SHADED AREA OF END BENT CAP SHALL BE REMOVED IN ACCORDANCE WITH PLAN DETAILS. THE CONTRACTOR IS REQUIRED TO RETAIN EXISTING BOTTOM "B" BARS OF END BENT CAP. THE EXISTING STEEL PILE SHALL BE REMAINED AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS. THE REMOVAL SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "REMOVAL OF EXISTING STRUCTURE AT STA. 29+89.90 -Y2SBL-".

THE #9 D1 DOWELS PLACED INTO THE EXISTING CAP SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. LEVEL 1 FIELD TESTING IS REQUIRED, THE YIELD LOAD OF #9 D1 DOWELS IS 60.0 KIPS AND THE YIELD LOAD OF 1¾"Ø ANCHOR BOLTS IS 144.3 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE ARTICLE 420-13 OF THE STANDARD SPECIFICATIONS.

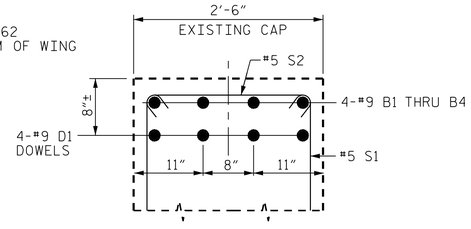


SPLICE LENGTH TABLE		
BAR	SIZE	SPLICE
B5	#5	3'-0"
B6	#4	2'-5"

TOP OF PILE ELEVATIONS	
P1	821.24
P2	821.40
P3	821.61

✱✱ FIELD VERIFY ELEVATION BEFORE BEGINNING OF CONSTRUCTION.

ELEVATION



PARTIAL SECTION B-B
SHOWING #9 D1 DOWEL LOCATION

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 1 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG
Ting Fang
7/16/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

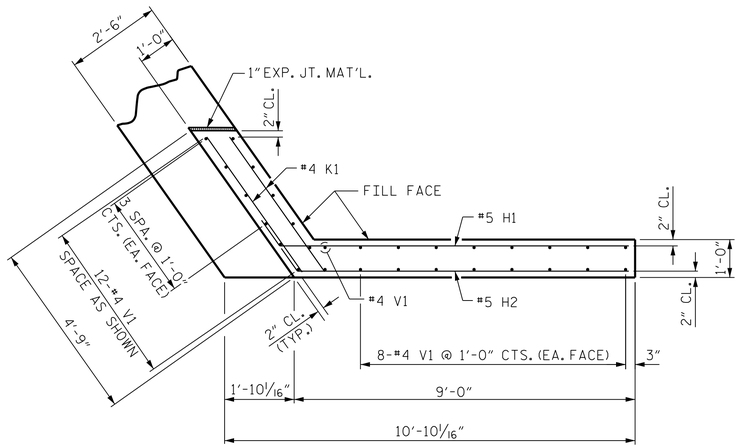
END BENT 2

RIGHT LANE (SBL)

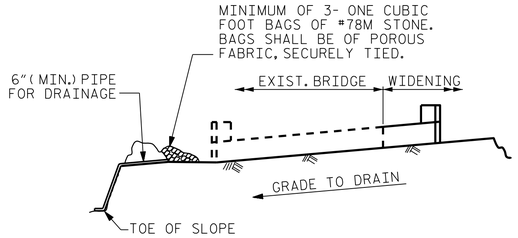
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-28
1			3			TOTAL SHEETS
2			4			32

SITE 6SBL

FILE: SFILES STAKES
DATE: SDATES



PLAN OF WING - (W4)



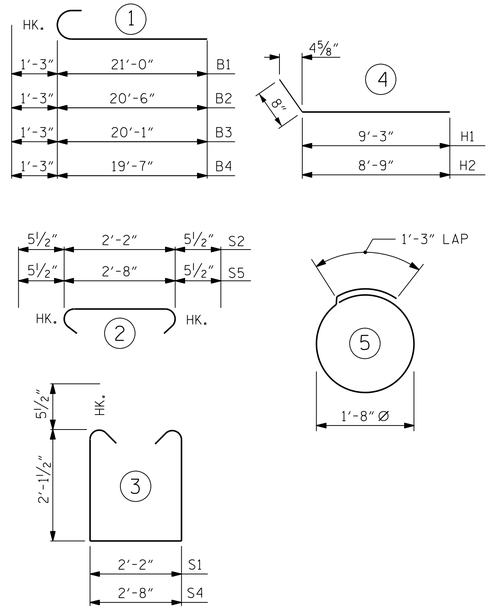
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#9	1	22'-3"	151
B2	2	#9	1	21'-9"	148
B3	2	#9	1	21'-4"	145
B4	2	#9	1	20'-1"	142
B5	8	#5	STR	12'-1"	101
B6	8	#4	STR	11'-8"	62
B7	6	#4	STR	2'-2"	9
D1	4	#9	STR	7'-0"	95
H1	10	#5	4	9'-11"	103
H2	10	#5	4	9'-5"	98
K1	12	#4	STR	4'-4"	35
S1	24	#5	3	7'-4"	184
S2	24	#5	2	3'-1"	77
S3	8	#4	5	6'-6"	35
S4	1	#5	3	7'-10"	8
S5	1	#5	2	3'-7"	4
V1	29	#4	STR	6'-8"	129

REINFORCING STEEL 1526 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 6.3 C.Y.

POUR #2 UPPER PART OF WINGS 3.2 C.Y.

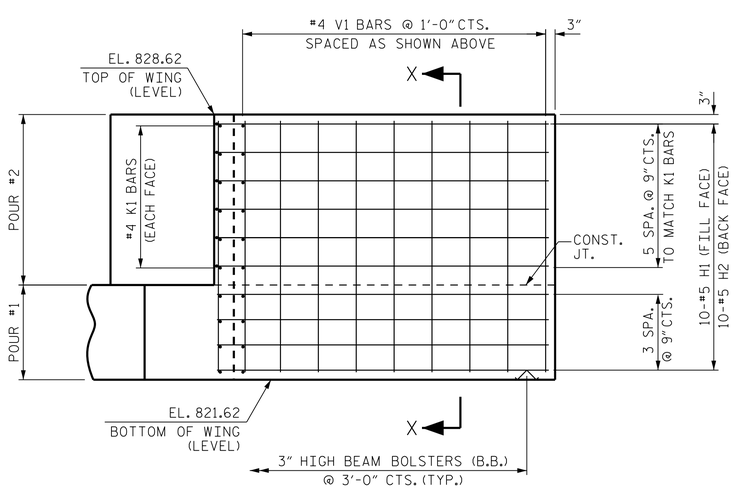
TOTAL CLASS A CONCRETE 9.5 C.Y.

HP 12 X 53 STEEL PILES

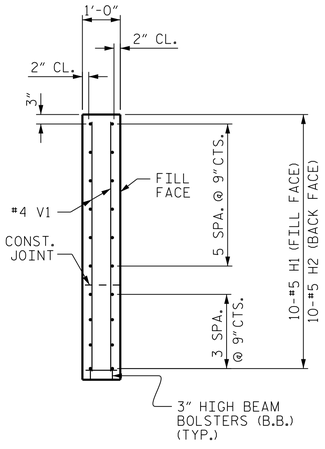
NO: 3 LIN. FT.= 165

PILE DRIVING EQUIP. SETUP FOR HP 12 X 53 STEEL PILES EA. 3

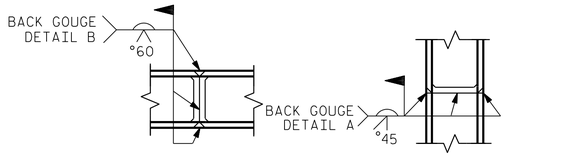
FOUNDATION EXCAVATION LUMP SUM



ELEVATION OF WING - (W4)

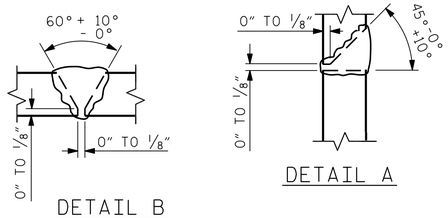


SECTION X-X



△ PILE HORIZONTAL OR VERTICAL

△ PILE VERTICAL



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. U-2579AA

FORSYTH COUNTY

STATION: 29+89.90 -Y2SBL-

SHEET 2 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG
Ting Fang
7/2/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2 DETAILS

RIGHT LANE (SBL)

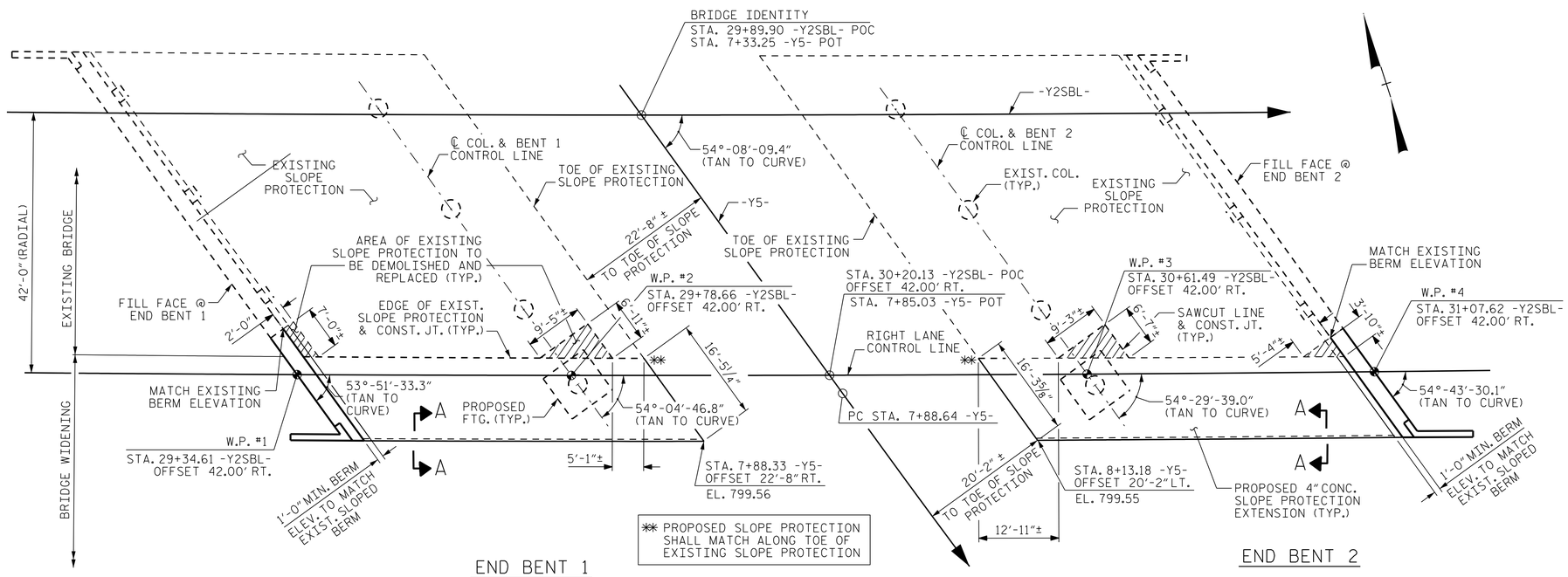
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-29
1			3			TOTAL SHEETS
2			4			32

FILE: SFILES STAKES
DATE: SDATES

SITE 6SBL

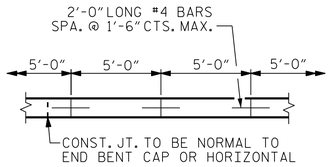
BRIDGE AT STA. 29+89.90 -Y2SBL-	4 INCH SLOPE PROTECTION	✳ WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	100	200
END BENT 2	111	223

✳ QUANTITY SHOWN IS BASED ON 5' POURS.



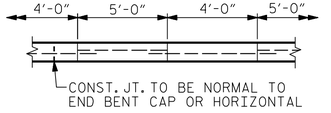
✳✳ PROPOSED SLOPE PROTECTION SHALL MATCH ALONG TOE OF EXISTING SLOPE PROTECTION

PLAN



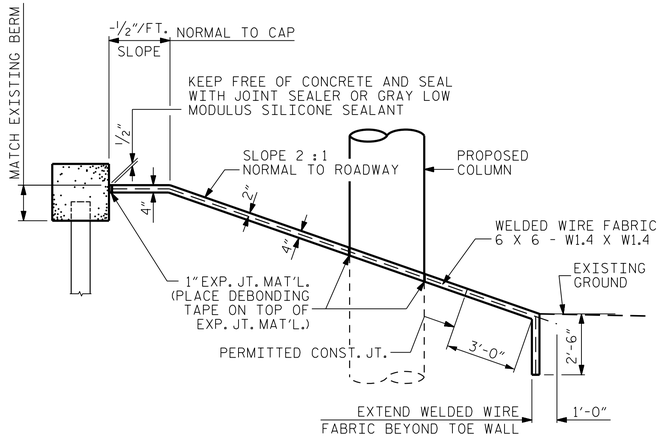
STRIP WIDTHS MAY VARY IN CURVED PORTION.

POURING DETAIL

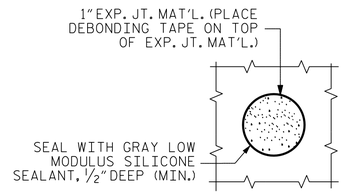


POUR A 4'-0" STRIP FIRST. STRIP WIDTHS MAY VARY IN CURVED PORTION.

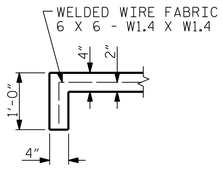
OPTIONAL POURING DETAIL



SECTION ALONG RIGHT LANE CONTROL LINE



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



SECTION A-A

GENERAL NOTES

SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

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

EXISTING SLOPE PROTECTION SHALL BE CUT ALONG EXISTING JOINT LINE.

EXISTING SLOPE PROTECTION TO REMAIN AND ANY THAT WAS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED.

MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY :	VDK	DATE :	9/19
CHECKED BY :	THF	DATE :	10/19
DESIGN ENGINEER :	VDK	DATE :	11/19

DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-YI HSIUNG FANG
Ting Fang
7/2/2022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

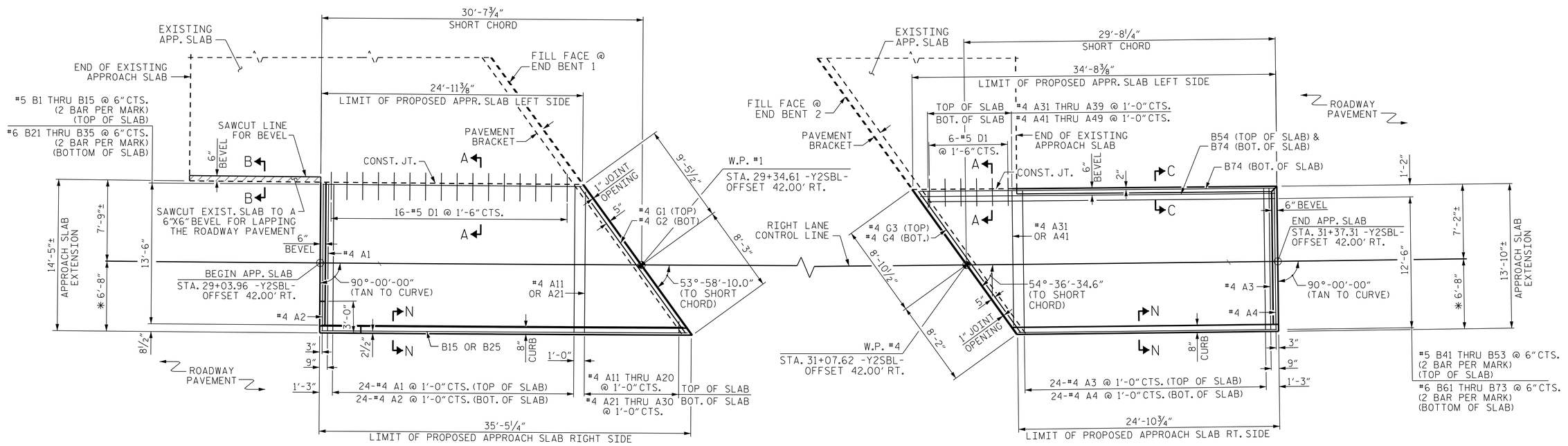
SLOPE PROTECTION DETAILS

RIGHT LANE (SBL)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-30
1			3			TOTAL SHEETS
2			4			32

FILE: SFILES
DATE: SDATES
STIMES

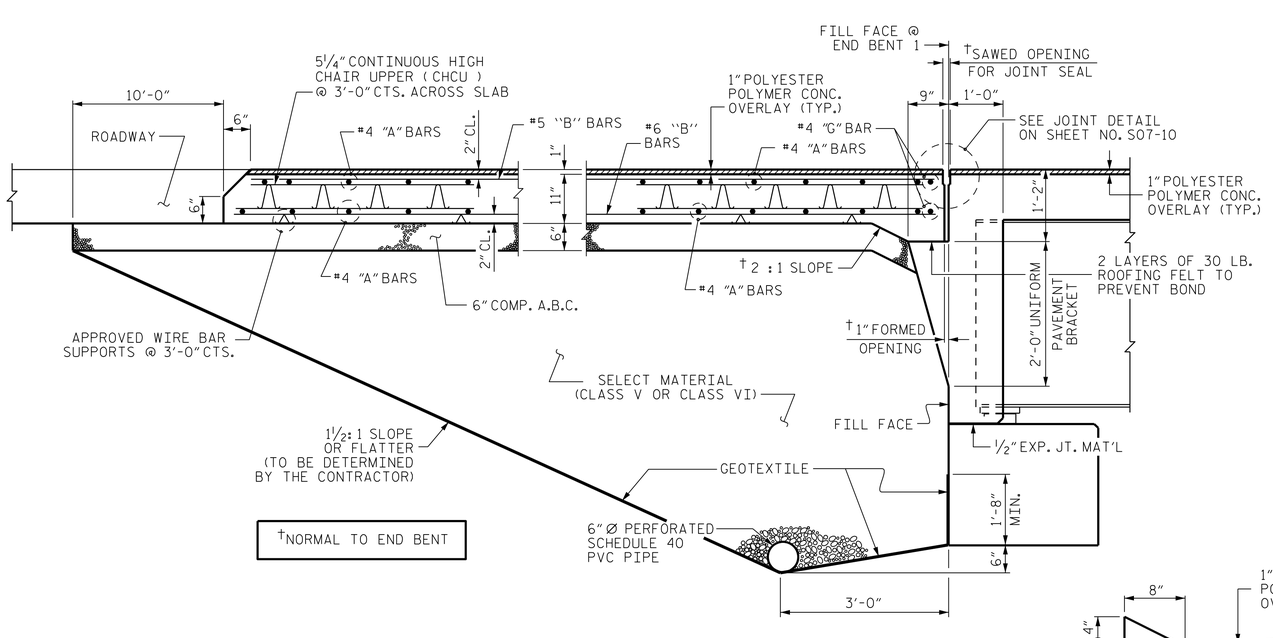
SITE 6SBL



AT END BENT 1

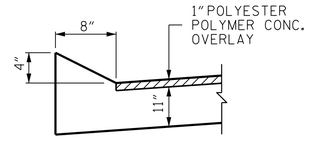
PLAN

AT END BENT 2

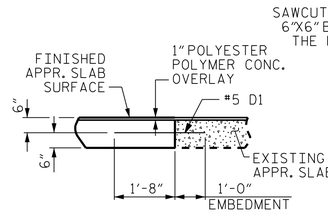


SECTION THRU SLAB

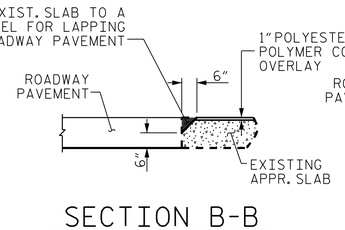
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE 6"Ø PVC PIPE AS PART OF THE REINFORCED BRIDGE APPROACH FILL SHALL SLOPE DOWN FROM RIGHT TO LEFT.



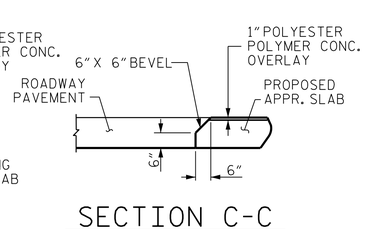
SECTION N-N



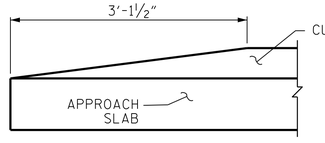
SECTION A-A



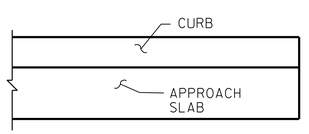
SECTION B-B



SECTION C-C



END OF CURB WITHOUT SHOULDER BERM GUTTER
AT END BENT 1



END OF CURB WITH SHOULDER BERM GUTTER
AT END BENT 2

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

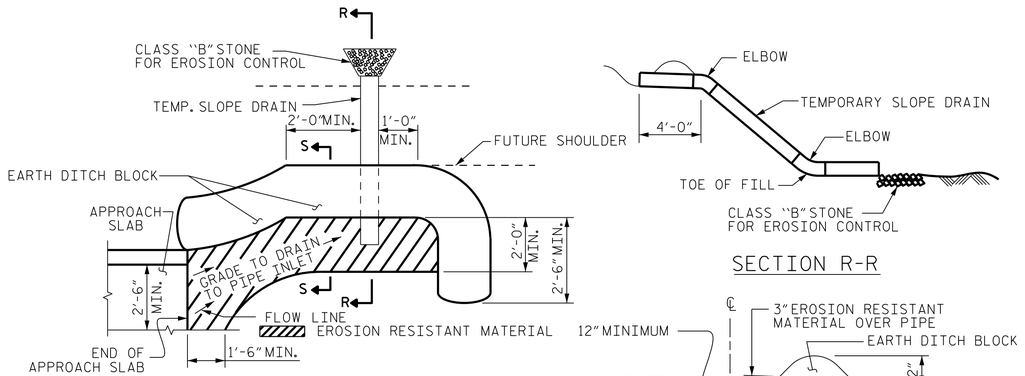
DWG. No.

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG
Ting Fang
7/7/2022

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-31
1			3			TOTAL SHEETS
2			4			32

FILE: SFILES STYLES
DATE: $DATES

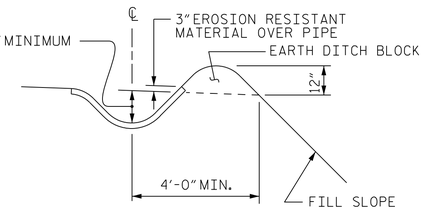
SITE 6SBL



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

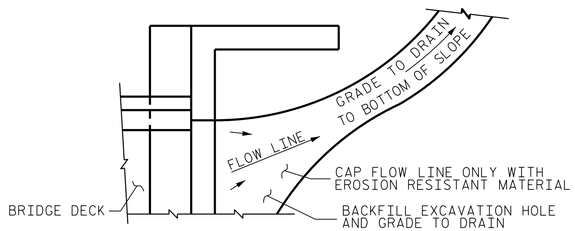
SECTION R-R



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



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

BILL OF MATERIAL

APPROACH SLAB AT END BENT 1						APPROACH SLAB AT END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	25	#4	STR	14'-0"	234	✳ A3	25	#6	STR	13'-0"	217
A2	25	#4	STR	14'-0"	234	A4	25	#6	STR	13'-6"	225
✳ A11	1	#4	STR	13'-5"	9	✳ A31	1	#4	STR	12'-11"	9
✳ A12	1	#4	STR	12'-1"	8	✳ A32	1	#4	STR	11'-6"	8
✳ A13	1	#4	STR	10'-8"	7	✳ A33	1	#4	STR	10'-1"	7
✳ A14	1	#4	STR	9'-4"	6	✳ A34	1	#4	STR	8'-8"	6
✳ A15	1	#4	STR	8'-0"	5	✳ A35	1	#4	STR	7'-3"	5
✳ A16	1	#4	STR	6'-8"	4	✳ A36	1	#4	STR	5'-10"	4
✳ A17	1	#4	STR	5'-3"	4	✳ A37	1	#4	STR	4'-5"	3
✳ A18	1	#4	STR	4'-11"	3	✳ A38	1	#4	STR	3'-0"	2
✳ A19	1	#4	STR	2'-6"	2	✳ A39	1	#4	STR	1'-7"	1
✳ A20	1	#4	STR	1'-2"	1						
						A41	1	#4	STR	12'-11"	9
A21	1	#4	STR	13'-5"	9	A42	1	#4	STR	11'-6"	8
A22	1	#4	STR	12'-1"	8	A43	1	#4	STR	10'-1"	7
A23	1	#4	STR	10'-8"	7	A44	1	#4	STR	8'-8"	6
A24	1	#4	STR	9'-4"	6	A45	1	#4	STR	7'-3"	5
A25	1	#4	STR	8'-0"	5	A46	1	#4	STR	5'-10"	4
A26	1	#4	STR	6'-8"	4	A47	1	#4	STR	4'-5"	3
A27	1	#4	STR	5'-3"	4	A48	1	#4	STR	3'-0"	2
A28	1	#4	STR	4'-11"	3	A49	1	#4	STR	1'-7"	1
A29	1	#4	STR	2'-6"	2						
A30	1	#4	STR	1'-2"	1	✳ B41	2	#5	STR	24'-2"	50
						✳ B42	2	#5	STR	24'-10"	52
✳ B1	2	#5	STR	24'-2"	50	✳ B43	2	#5	STR	25'-6"	53
✳ B2	2	#5	STR	24'-11"	52	✳ B44	2	#5	STR	26'-3"	55
✳ B3	2	#5	STR	25'-8"	54	✳ B45	2	#5	STR	26'-11"	56
✳ B4	2	#5	STR	26'-5"	55	✳ B46	2	#5	STR	27'-8"	58
✳ B5	2	#5	STR	27'-2"	57	✳ B47	2	#5	STR	28'-4"	59
✳ B6	2	#5	STR	27'-11"	58	✳ B48	2	#5	STR	29'-1"	61
✳ B7	2	#5	STR	28'-8"	60	✳ B49	2	#5	STR	29'-9"	62
✳ B8	2	#5	STR	29'-4"	61	✳ B50	2	#5	STR	30'-6"	64
✳ B9	2	#5	STR	30'-1"	63	✳ B51	2	#5	STR	31'-2"	65
✳ B10	2	#5	STR	30'-9"	64	✳ B52	2	#5	STR	31'-11"	67
✳ B11	2	#5	STR	31'-6"	66	✳ B53	2	#5	STR	32'-7"	68
✳ B12	2	#5	STR	32'-2"	67	✳ B54	1	#5	STR	33'-4"	35
✳ B13	2	#5	STR	32'-11"	69						
✳ B14	2	#5	STR	33'-8"	70	B61	2	#6	STR	24'-8"	74
✳ B15	1	#5	STR	34'-5"	36	B62	2	#6	STR	25'-4"	76
						B63	2	#6	STR	26'-0"	78
B21	2	#6	STR	24'-8"	74	B64	2	#6	STR	26'-9"	80
B22	2	#6	STR	25'-5"	76	B65	2	#6	STR	27'-5"	82
B23	2	#6	STR	26'-2"	79	B66	2	#6	STR	28'-2"	85
B24	2	#6	STR	26'-11"	81	B67	2	#6	STR	28'-10"	87
B25	2	#6	STR	27'-8"	83	B68	2	#6	STR	29'-7"	89
B26	2	#6	STR	28'-5"	85	B69	2	#6	STR	30'-3"	91
B27	2	#6	STR	29'-2"	88	B70	2	#6	STR	31'-0"	93
B28	2	#6	STR	29'-10"	90	B71	2	#6	STR	31'-8"	95
B29	2	#6	STR	30'-7"	92	B72	2	#6	STR	32'-5"	97
B30	2	#6	STR	31'-3"	94	B73	2	#6	STR	33'-1"	99
B31	2	#6	STR	32'-0"	96	B74	2	#6	STR	33'-10"	102
B32	2	#6	STR	32'-8"	98						
B33	2	#6	STR	33'-5"	100	✳ D1	6	#5	STR	2'-8"	17
B34	2	#6	STR	34'-2"	103						
B35	1	#6	STR	34'-11"	52	✳ G3	1	#4	STR	16'-7"	11
						✳ G4	1	#4	STR	16'-7"	11
✳ D1	16	#5	STR	2'-8"	45						
✳ G1	1	#4	STR	17'-3"	12						
✳ G2	1	#4	STR	17'-3"	12						
REINFORCING STEEL LBS. = 1,630						REINFORCING STEEL LBS. = 1,525					
✳ EPOXY COATED REINFORCING STEEL LBS. = 1,175						✳ EPOXY COATED REINFORCING STEEL LBS. = 1,076					
CLASS AA CONCRETE C.Y. = 14.95						CLASS AA CONCRETE C.Y. = 14.07					

QUANTITIES FOR PLACING AND FINISHING OF POLYMER CONCRETE OVERLAY IS SHOWN ON THE SUPERSTRUCTURE BILL OF MATERIAL.

NOTES

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

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

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

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

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

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE RIGHT SIDE BARRIE RAIL.

FOR JOINT DETAIL, SEE SUPERSTRUCTURE TYPICAL SECTION DETAILS.

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

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

THE 6" COMP. A.B.C. SHALL EXTEND 10 FEET BEYOND THE END OF THE APPROACH SLAB AND 1'-0" OUTSIDE OF EACH EDGE OF THE SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL EXTEND 1'-0" BEYOND THE END OF THE APPROACH SLAB AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL EXTEND 1'-0" BEYOND THE END OF THE APPROACH SLAB AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

DURING THE CONSTRUCTION OF APPROACH SLAB EXTENSION, THE RIGHT EDGE OF EXISTING APPROACH SLABS SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

INSTALL #5 D1 DOWELS IN EXISTING APPROACH SLABS USING AN ADHESIVE ANCHORING SYSTEM. DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP MAT OF REINFORCING STEEL. NO FIELD TESTING OF THE ADHESIVE ANCHORING SYSTEM IS REQUIRED.

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

PROJECT NO. U-2579AA
FORSYTH COUNTY
STATION: 29+89.90 -Y2SBL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

RIGHT LANE (SBL)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : VDK DATE : 9/19
CHECKED BY : THF DATE : 10/19
DESIGN ENGINEER : VDK DATE : 11/19

DWG. No.

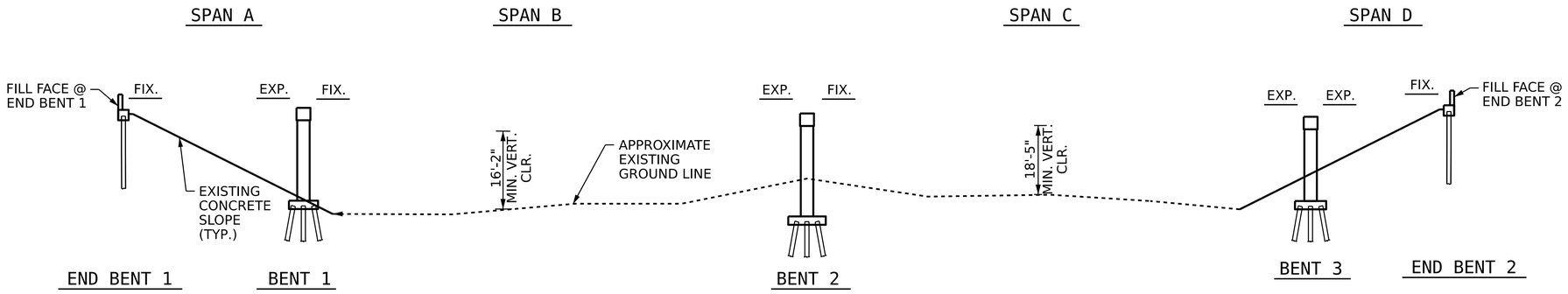
NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSILING FANG
Ting Fang
65E4C3DAEA60462...
7/16/2022

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S07-32
1			3			TOTAL SHEETS
2			4			32

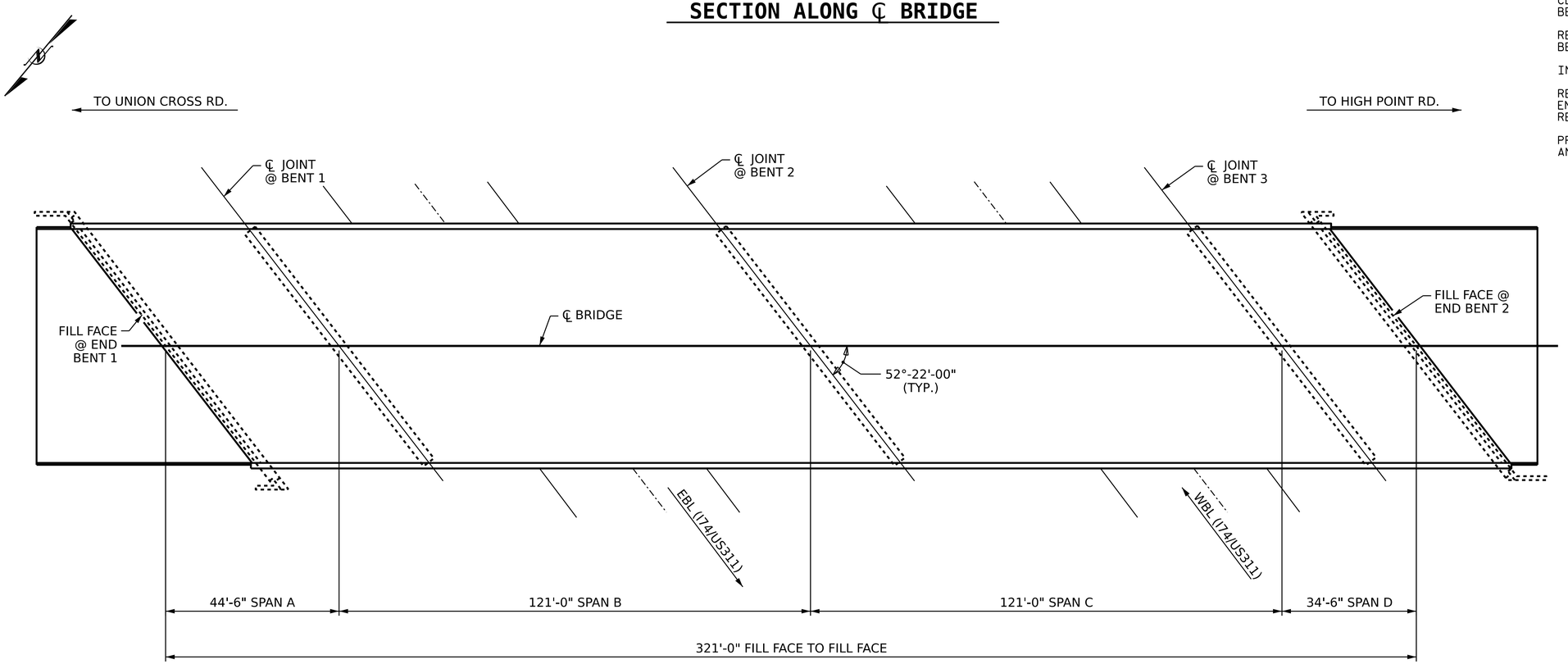
SITE 6SBL

FILE: STATES
DATE: STATES
STIMES

F. A. PROJECT NO.: 0074226



SECTION ALONG ℄ BRIDGE



PLAN

NOTES

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 10/04/2021.

BRIDGE ORIENTATION CONFORMS TO THE EXISTING BRIDGE PLANS/ROUTINE INSPECTION.

SCOPE OF WORK

PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING METHODS.

OVERLAY PREPARED TOP OF BRIDGE DECK WITH POLYMER CONCRETE (PC).

REMOVE EXISTING JOINT MATERIAL AND INSTALL POURABLE SILICONE JOINTS.

REMOVE EXISTING JOINT MATERIAL AND INSTALL FOAM JOINTS.

GROOVE PC BRIDGE DECK.

CLEAN AND PAINT EXISTING STEEL BEARINGS WITH HRCSA.

CLEAN, REPAIR AND PAINT EXISTING STRUCTURAL STEEL BEAMS.

REMOVE DEBRIS FROM TOP OF EXISTING END BENT AND BENT CAPS AND APPLY EPOXY COATING.

INJECT CONCRETE CRACKS WITH EPOXY RESIN.

REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND CONCRETE REPAIRS.

PROPERLY PREPARE SPALLED AREAS IN EXISTING END BENT AND BENTS AND PERFORM SHOTCRETE AND CONCRETE REPAIRS.

I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER DATE

06/29/2022
NORTH CAROLINA PROFESSIONAL SEAL 35647 ENGINEER ADAM L. COLE
Docusigned by: 02EE938FAB674C5...

06/29/2022
NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI
Docusigned by: Krishna P. Sedai EA6F7941506F4B7...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 05/2021

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_001_U2579AA_SMU_GD_S01_330394.dgn
ksedal

PROJECT NO. U2579AA
FORSYTH COUNTY
BRIDGE NO. 330394

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING FOR BRIDGE ON SR2698 (RIDGEWOOD RD.) OVER I74/US311

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-01
1			3			TOTAL SHEETS
2			4			26

LOCATION SKETCH

BRIDGE COORDINATES

LATITUDE: 36°-03'-20.43"
LONGITUDE: 80°-09'49.58"

NOTES:

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING BRIDGES, ROADWAYS,UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

REPAIR LOCATIONS AND ESTIMATES OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS.

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON THE DIFFERENCES BETWEEN WHAT IS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLANS.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECK. THE CONTRACTOR SHALL TAKE CARE THAT ANY CONSTRUCTION DEBRIS THAT COLLECTS IN THE DRAINS IS CONTAINED. DRAINS IN SHOULDERS OF ADJACENT TRAVEL LANE(S) SHALL BE KEPT FREE AND CLEAR OF DEBRIS.

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

WORK ON THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR'S PLAN USE PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES TO CATCH THE MATERIAL. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL A COMPLETE SEQUENCE OF TASKS FOR EACH OPERATION AFFECTING THE BRIDGE SURFACE AND/OR TRAFFIC.

FOR STEEL BEARING KEEPER ANGLE ASSEMBLY, SEE SPECIAL PROVISIONS.

FOR STEEL BEARING RETAINER ANGLE ASSEMBLY, SEE SPECIAL PROVISIONS.

AT LOCATIONS INDICATED ON THE PLANS OR AS DETERMINED BY THE ENGINEER, EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED AFTER SCARIFICATION, BUT PRIOR TO SHOTBLASTING AND APPLICATION OF POLYMER CONCRETE (PC) OVERLAY, UNLESS OTHERWISE PERMITTED, REPAIRS SHALL BE COMPLETED WITH POLYMER CONCRETE.

FOR CONCRETE DECK REPAIR FOR PC OVERLAY, PC MATERIALS, AND PLACING AND FINISHING PC OVERLAY, SEE POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

THE ELEVATION SHOWN ON THE PLAN AT THE POINT OF MINIMUM VERTICAL CLEARANCE IS FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER, ANY PLAN REVISION NECESSRY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN DETAIL BY MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE MIGHT BE NECESSARY.

FOR SCARIFYING BRIDGE DECK, SHOTBLASTING BRIDGE DECK AND CLASS II SURFACE PREPARATION AND CLASS III SURFACE PREPARATION, SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISIONS.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIR, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR BEAM REPAIR PLATING, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SEPCIAL PROVISIONS.

TOTAL BILL OF MATERIALS

BRIDGE NO. 330394	GROOVING BRIDGE FLOORS	POLLUTION CONTROL	CLASS II SURFACE PREPARATION	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	CLEANING & PAINTING EXISTING WEATHERING STEEL	PAINTING CONTAINMENT FOR BRIDGE NO. 330394	FOAM JOINT SEALS FOR PRESERVATION	POURABLE SILICONE JOINT SEALANT	EPOXY POLYMER CONCRETE MATERIALS (ALTERNATE)	POLYESTER POLYMER CONCRETE MATERIALS	BEAM PLATING REPAIR	CONCRETE MEDIAN REPLACEMENT	EPOXY COATING	CONCRETE DECK REPAIR FOR POLYMER CONCRETE OVERLAY	PLACING & FINISHING PC OVERLAY	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK	CLEANING & PAINTING EXISTING BEARINGS WITH HRCSA	STEEL BEARING KEEPER ANGLE ASSEMBLY	STEEL BEARING RETAINER ANGLE ASSEMBLY
	SQ. FT.	LUMP SUM	SQ. YDS.	CU. FT.	LIN. FT.	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	CU. YDS.	CU. YDS.	LBS.	SQ. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	EA.	EA.	EA.
TOTAL	19,947.5	LUMP SUM	43.1	111.7	100.8	LUMP SUM	LUMP SUM	231.6	154.4	90.1	90.1	11.8	955.5	1542.1	43.1	2416.5	2416.5	2416.5	32	1.0	1.0

SAMPLE BAR REPLACEMENT	
# 3	6'-2"
# 4	7'-4"
# 5	8'-6"
# 6	9'-8"
# 7	10'-10"
# 8	12'-0"
# 9	13'-2"
# 10	14'-6"
# 11	15'-10"

SAMPLE BAR REPLACEMENT

NOTES CONTINUED:

FOR PAINTING CONTAINMENT, POLLUTION CONTROL, AND PAINTING EXISTING WEATHERING STEEL STRUCTURE, SEE PAINTING EXISTING WEATHERING STEEL STRUCTURE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT, POLLUTION CONTROL, AND CLEANING & PAINTING EXISTING BEARINGS WITH HRCSA, SEE CLEANING & PAINTING EXISTING BEARING WITH HPCSA SPECIAL PROVISION.

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 SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

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

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT ITEMS SHOWN WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT THESE ITEMS, OR OTHER WORK WILL BE NECESSARY TO COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS PER ARTICLE 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXRTA WORK IS ENCOUNTERED.

UNANTICIPIATED ITEMS:

ITEM NO.	DESCRIPTION	UNIT
1	CLASS III SURAFCE PREPARATION	SQ. YDS.
2	CONCRETE REPAIRS	CU. FT.

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA9F794150BF4B7...

PROJECT NO. U-2579AA
FORSYTH COUNTY
BRIDGE NO. 330394

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

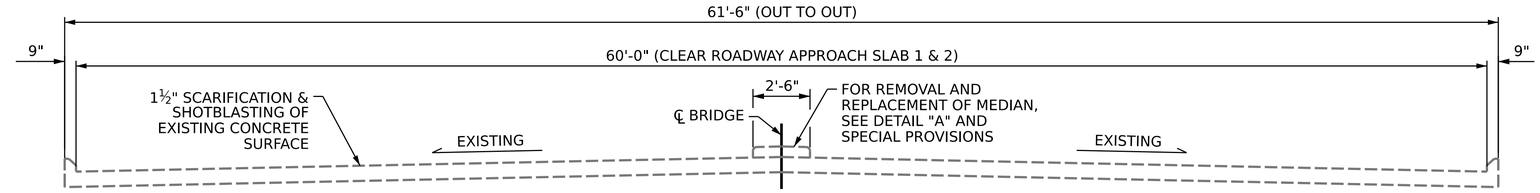
GENERAL DRAWING FOR BRIDGE ON SR2698 (RIDGEWOOD RD.) OVER I-74/US 311

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-02
1			3			TOTAL SHEETS
2			4			26

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

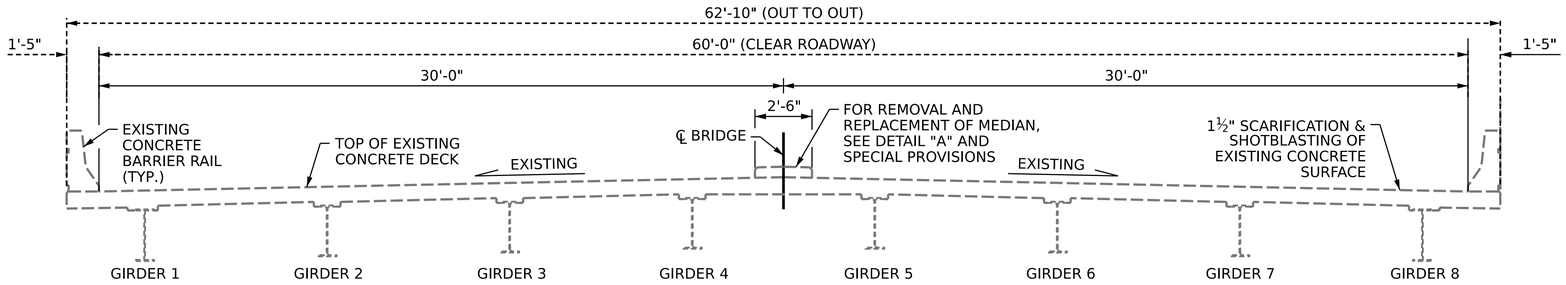
DRAWN BY : E. BAYISSA DATE : 08/2021
CHECKED BY : A. SORSENGINH DATE : 11/2021

6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_003_U2579AA_SMU_ LS_S02_330394.dgn
ksedal



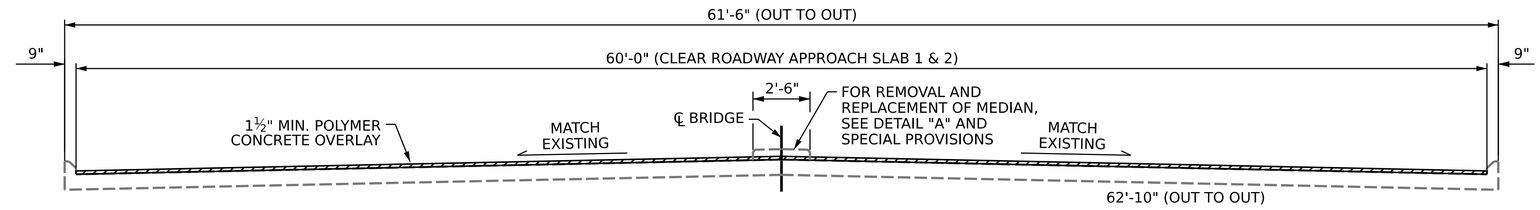
TYPICAL SECTION - APPROACH SLAB

(EXISTING)



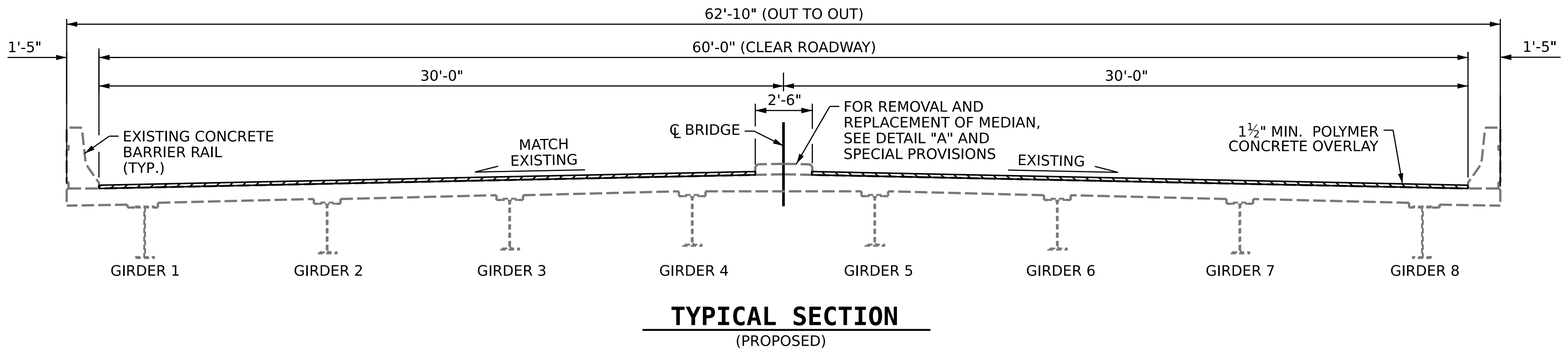
TYPICAL SECTION

(EXISTING)



TYPICAL SECTION - APPROACH SLAB

(PROPOSED)

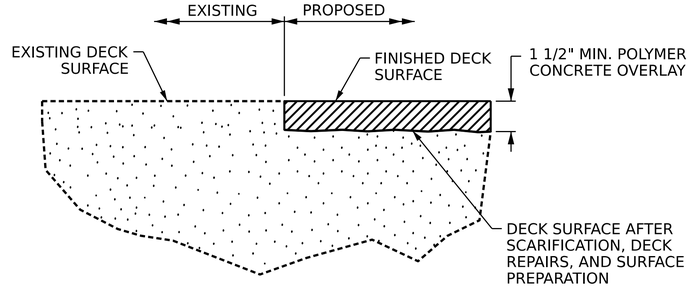


TYPICAL SECTION

(PROPOSED)

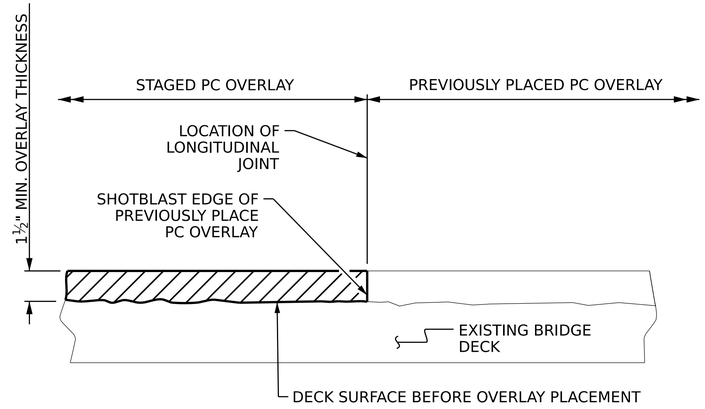
NOTE:

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTH, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF POLYMER CONCRETE (PC) OVERLAY SYSTEM AND SURFACE PREPARATION.

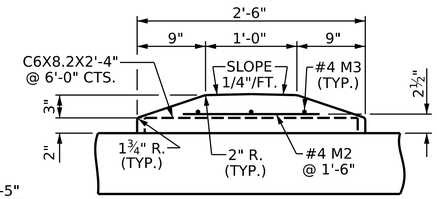


DETAIL FOR POLYMER CONCRETE OVERLAY

FINSIHED SURFACE ELEVATION SHALL MATCH EXISTING CONCRETE SURFACE ELEVATION. ACTUAL THICKNESS OF PC OVERLAY MAY VARY.



STAGED PC OVERLAY JOINT



DETAIL "A"

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai EA6F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION AND PC OVERLAY DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-03
1			3			TOTAL SHEETS
2			4			26

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 05/2021

6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_005_U2579AA_SMU_TS_S03_330394.dgn
ksedal

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS	APPROACH SLAB 1		SPAN A	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	231.0 SQ. YDS.		269.2 SQ. YDS.	
SHOTBLASTING OF BRIDGE DECK	231.0 SQ. YDS.		269.2 SQ. YDS.	
CLASS II SURFACE PREPARATION	4.2 SQ. YDS.		8.4 SQ. YDS.	
CLASS III SURFACE PREPARATION	0.0 SQ. YDS.		0.0 SQ. YDS.	
CONCRETE DECK REPAIR FOR PC OVERLAY	4.2 SQ. YDS.		8.4 SQ. YDS.	
POLYMER CONCRETE MATERIALS	8.0 CU. YDS.		13.1 CU. YDS.	
PLACING & FINISHING PC OVERLAY	231.0 SQ. YDS.		269.2 SQ. YDS.	
GROOVING BRIDGE FLOORS	1722.5 SQ. FT.		2156.3 SQ. FT.	
EPOXY RESIN INJECTION	0.0 LN. FT.		0.0 LN. FT.	

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
CONCRETE BARRIER RAIL	2.7	0.9	0.0	0.0

NOTE:

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF THE BRIDGE DECK.

TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK , SHOTBLASTING BRIDGE DECK AND CLASS II SURFACE PREPARATION, SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

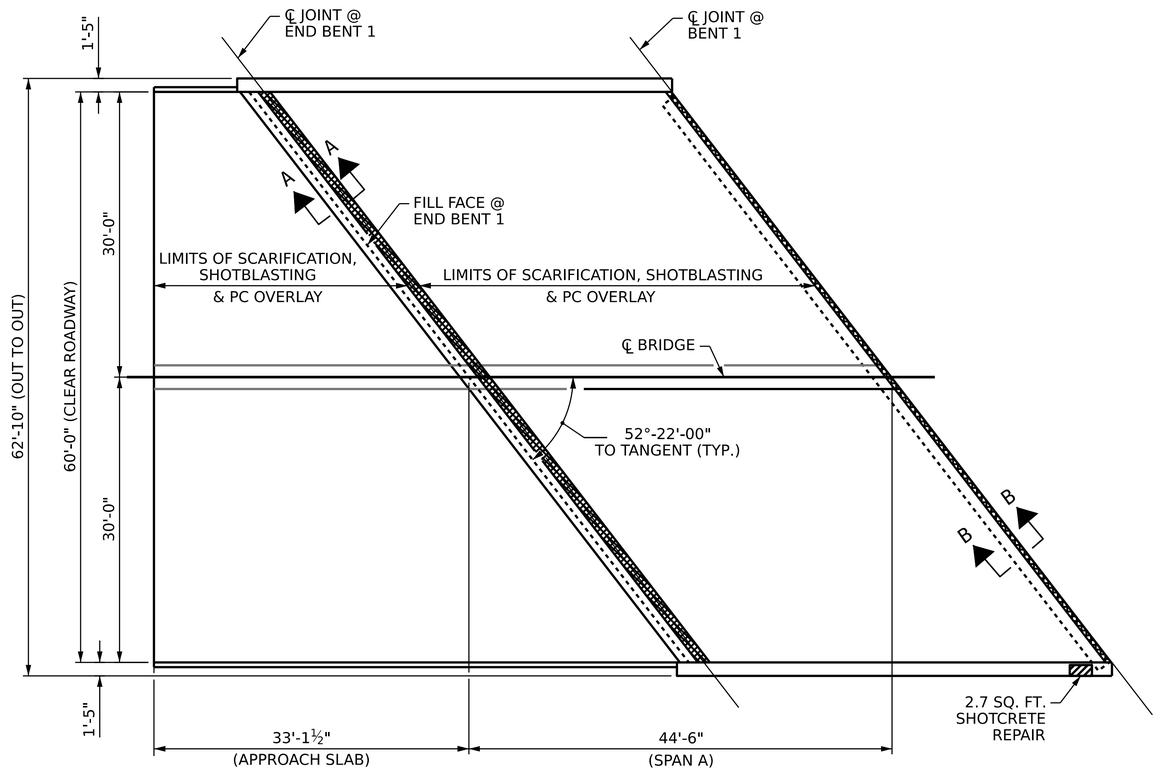
FOR CONCRETE DECK REPAIR FOR PC OVERLAY, PC MATERIALS AND PLACING AND FINISHING PC OVERLAY, SEE POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISIONS.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

FOR SECTIONS A-A AND B-B, SEE JOINT DETAILS SHEET.

SHOTCRETE REPAIR AREA

CLASS II SURFACE PREPARATION



PLAN

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 1 OF 4

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA6F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK SURFACE REPAIR

APPROACH SLAB & SPAN A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-04
1			3			TOTAL SHEETS
2			4			26

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021

CHECKED BY : E. BAYISSA DATE : 05/2021

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_007_U2579AA_SMU_DSR_S04_330394.dgn
ksedal

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS	SPAN B	
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	764.3 SQ. YDS.	
SHOTBLASTING OF BRIDGE DECK	764.3 SQ. YDS.	
CLASS II SURFACE PREPARATION	9.5 SQ. YDS.	
CLASS III SURFACE PREPARATION	0.0 SQ. YDS.	
CONCRETE DECK REPAIR FOR PC OVERLAY	9.5 SQ. YDS.	
POLYMER CONCRETE MATERIAL	26.5 CU. YDS.	
PLACING & FINISHING PC OVERLAY	764.3 SQ. YDS.	
GROOVING BRIDGE FLOOR	6155.6 SQ. FT.	
EPOXY RESIN INJECTION	0.0 LN. FT.	

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
CONCRETE BARRIER RAIL	1.3	0.4	0.0	0.0

NOTE:

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF THE BRIDGE DECK.

TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK , SHOTBLASTING BRIDGE DECK AND CLASS II SURFACE PREPARATION, SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

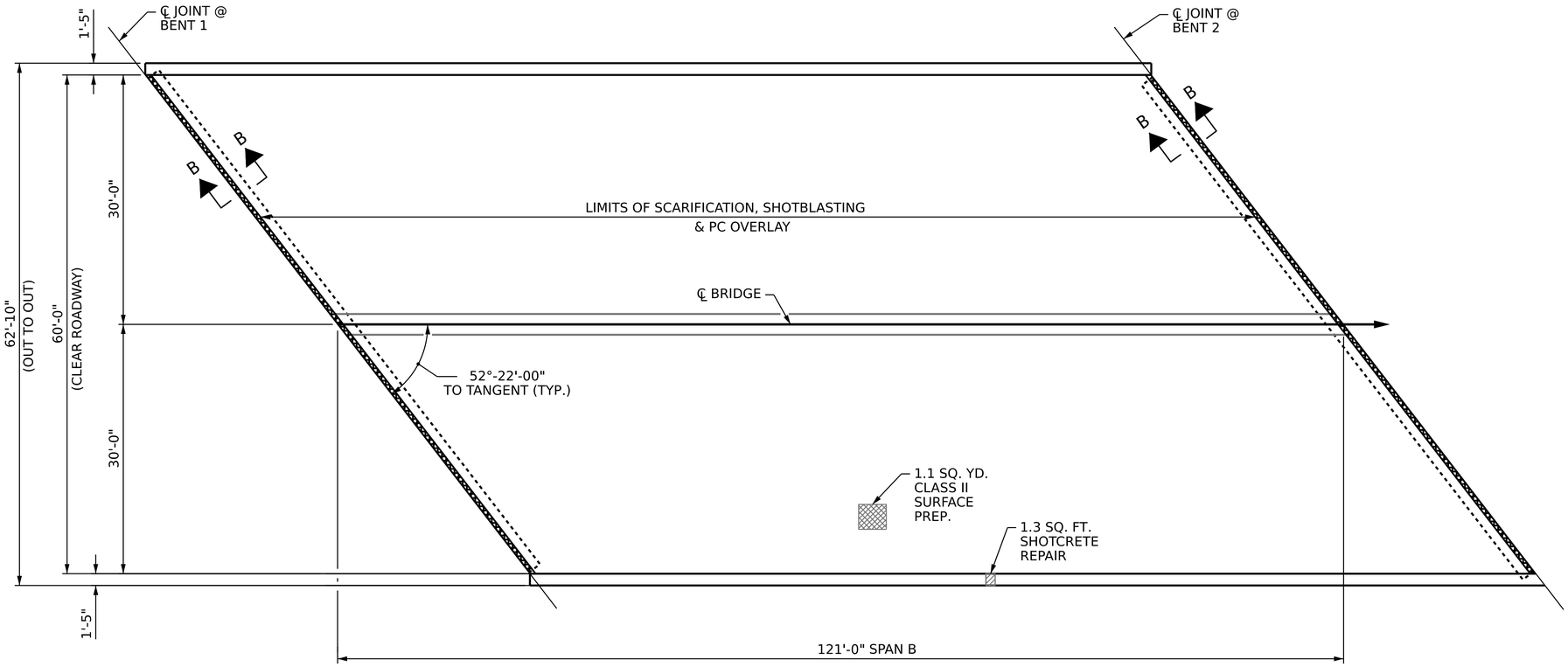
FOR CONCRETE DECK REPAIR FOR PC OVERLAY, PC MATERIALS AND PLACING AND FINISHING PC OVERLAY, SEE POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISIONS.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

FOR SECTION B-B, SEE JOINT DETAILS SHEET.

SHOTCRETE REPAIR AREA

CLASS II SURFACE PREPARATION



PLAN

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 2 OF 4

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA6F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK SURFACE REPAIR

SPAN B

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-05
1			3			TOTAL SHEETS
2			4			26

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021

CHECKED BY : E. BAYISSA DATE : 05/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_009_U2579AA_SMU_DSR_S05_330394.dgn
ksedai

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS	SPAN C	
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	764.3 SQ. YDS.	
SHOTBLASTING OF BRIDGE DECK	764.3 SQ. YDS.	
CLASS II SURFACE PREPARATION	8.4 SQ. YDS.	
CLASS III SURFACE PREPARATION	0.0 SQ. YDS.	
CONCRETE DECK REPAIR FOR PC OVERLAY	8.4 SQ. YDS.	
POLYMER CONCRETE MATERIAL	26.5 CU. YDS.	
PLACING & FINISHING PC OVERLAY	764.3 SQ. YDS.	
GROOVING BRIDGE FLOOR	6155.6 SQ. FT.	
EPOXY RESIN INJECTION	0.0 LN. FT.	

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
CONCRETE BARRIER RAIL	3.4	1.1	0.0	0.0

NOTE:

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF THE BRIDGE DECK.

TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK , SHOTBLASTING BRIDGE DECK AND CLASS II SURFACE PREPARATION, SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

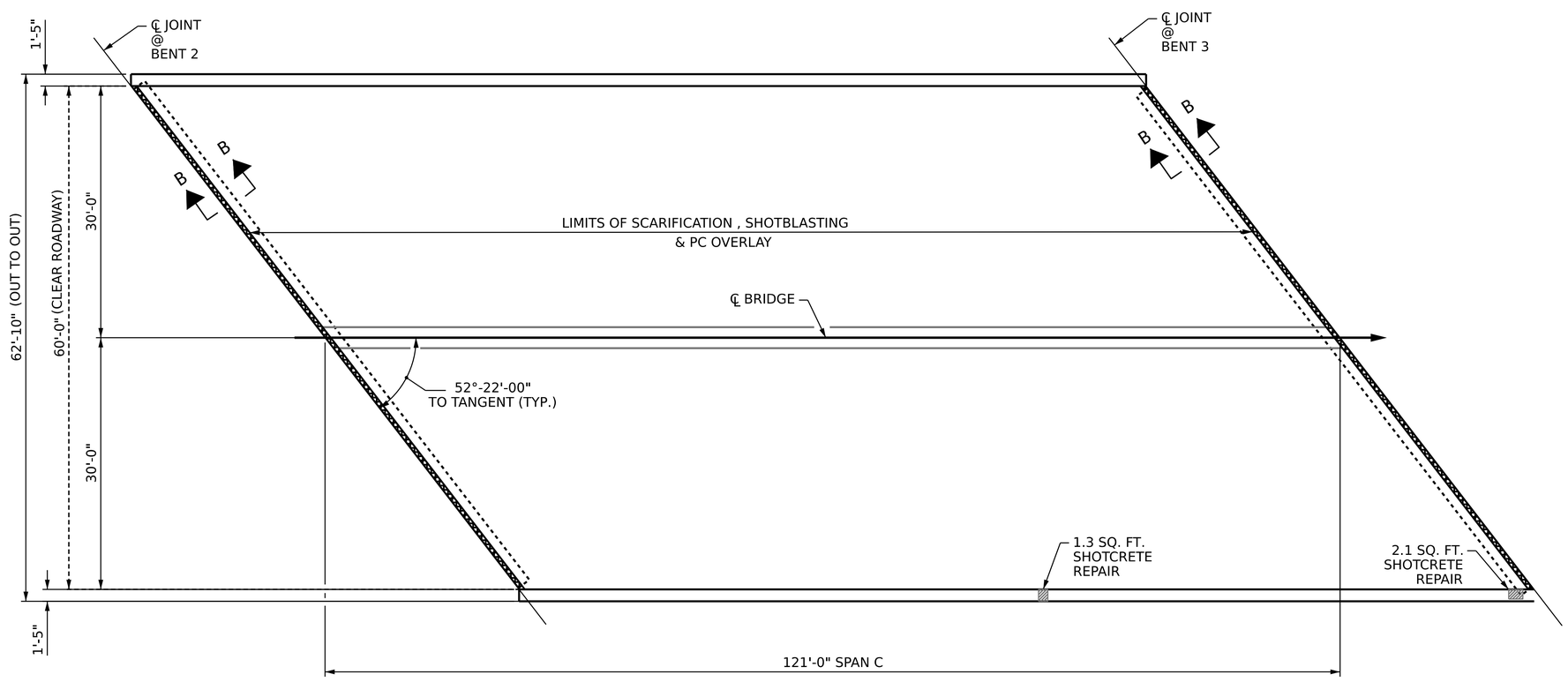
FOR CONCRETE DECK REPAIR FOR PC OVERLAY, PC MATERIALS AND PLACING AND FINISHING PC OVERLAY, SEE POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISIONS.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

FOR SECTION B-B, SEE JOINT DETAILS SHEET.

SHOTCRETE REPAIR AREA

CLASS II SURFACE PREPARATION



PLAN

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 05/2021

6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_011_U2579AA_SMU_DSR_S06_330394.dgn
ksedal

06/29/2022
NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI
Docusigned by: Krishna P. Sedai
EA8F794150BF4B7...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. U-2579AA
FORSYTH COUNTY
BRIDGE NO. 330394

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK SURFACE REPAIR

SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-06
1			3			TOTAL SHEETS
2			4			26

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS	SPAN D		APPROACH SLAB 2	
	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	205.3 SQ. YDS.		182.4 SQ. YDS.	
SHOTBLASTING OF BRIDGE DECK	205.3 SQ. YDS.		182.4 SQ. YDS.	
CLASS II SURFACE PREPARATION	8.4 SQ. YDS.		4.2 SQ. YDS.	
CLASS III SURFACE PREPARATION	0.0 SQ. YDS.		0.0 SQ. YDS.	
CONCRETE DECK REPAIR FOR PC OVERLAY	8.4 SQ. YDS.		4.2 SQ. YDS.	
POLYMER CONCRETE MATERIAL	7.1 CU. YDS.		8.9 SQ. YDS.	
PLACING & FINISHING PC OVERLAY	205.3 SQ. YDS.		182.4 SQ. YDS.	
GROOVING BRIDGE FLOOR	1952.6 SQ. FT.		1804.9 SQ. FT.	
EPOXY RESIN INJECTION	0.0 LN. FT.		0.0 LN. FT.	

SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
CONCRETE BARRIER RAIL	0.0	0.0	0.0	0.0

NOTE:

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF THE BRIDGE DECK.

TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK , SHOTBLASTING BRIDGE DECK AND CLASS II SURFACE PREPARATION, SEE OVERLAY SURFACE PREPARATION FOR POLYMER CONCRETE SPECIAL PROVISION.

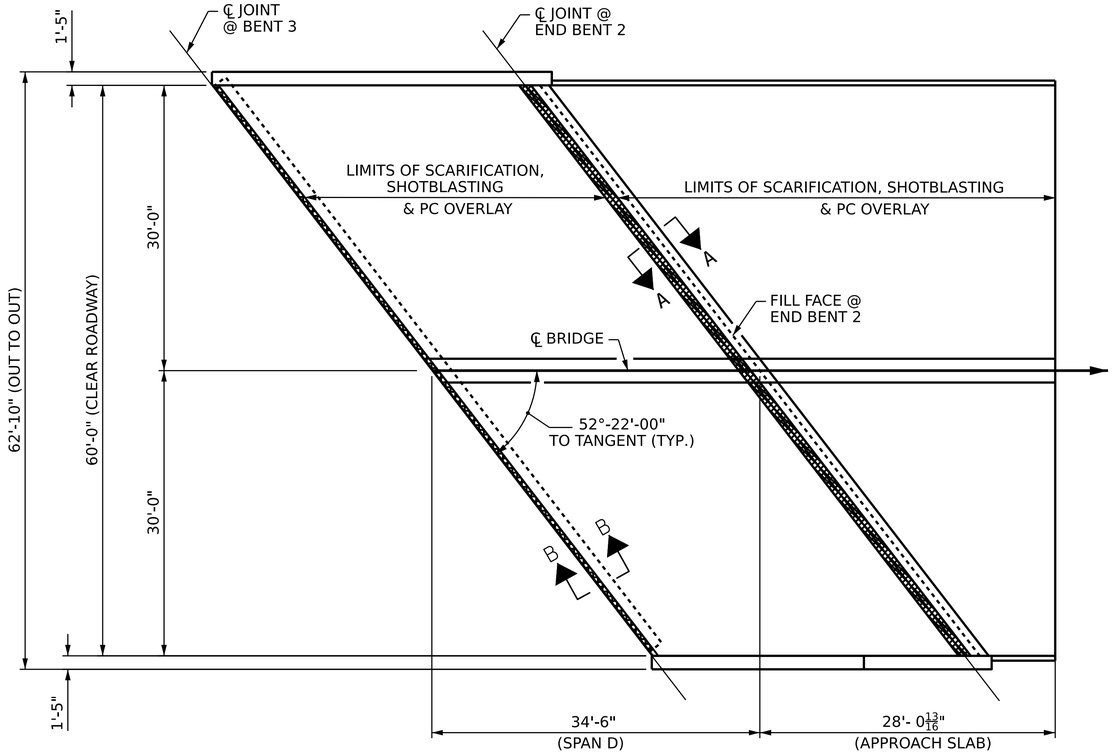
FOR CONCRETE DECK REPAIR FOR PC OVERLAY, PC MATERIALS AND PLACING AND FINISHING PC OVERLAY, SEE POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISIONS.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

FOR SECTIONS A-A AND B-B, SEE JOINT DETAIL SHEET.

SHOTCRETE REPAIR AREA

CLASS II SURFACE PREPARATION



PLAN

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK SURFACE REPAIR APPROACH SLAB & SPAN D

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

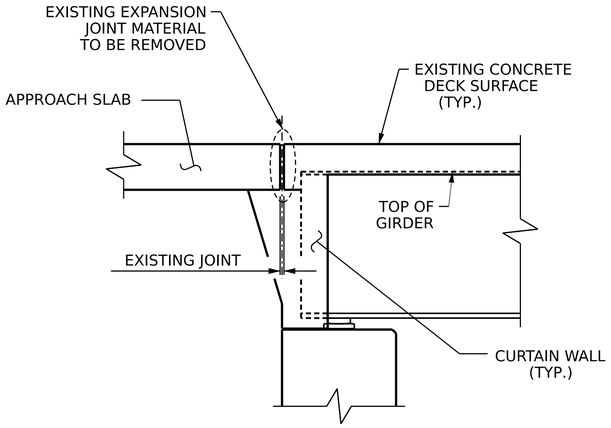
Docusigned by: Krishna P. Sedai
EA8F794150BF4B7...

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 05/2021

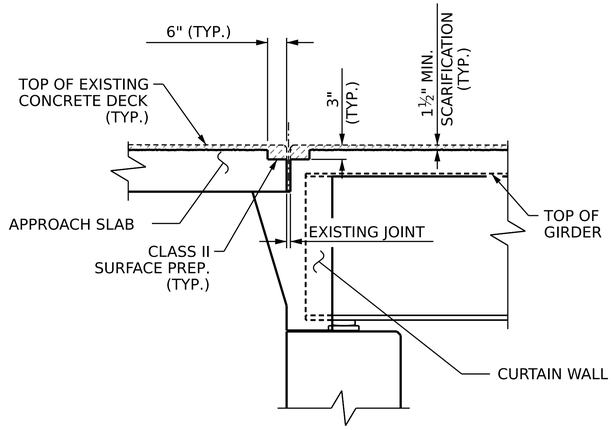
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-07
1			3			TOTAL SHEETS
2			4			26

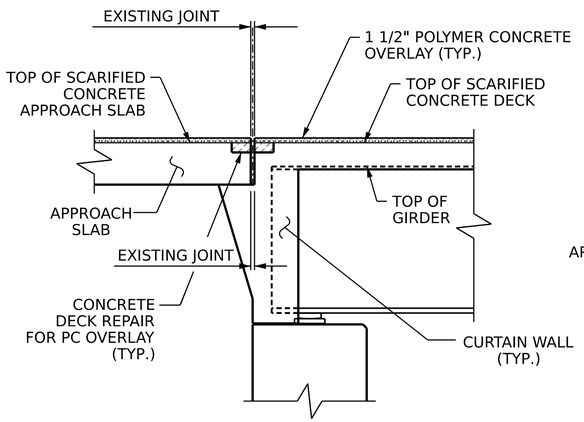
6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_013_U2579AA_SMU_DSR_S07_330394.dgn
ksedai



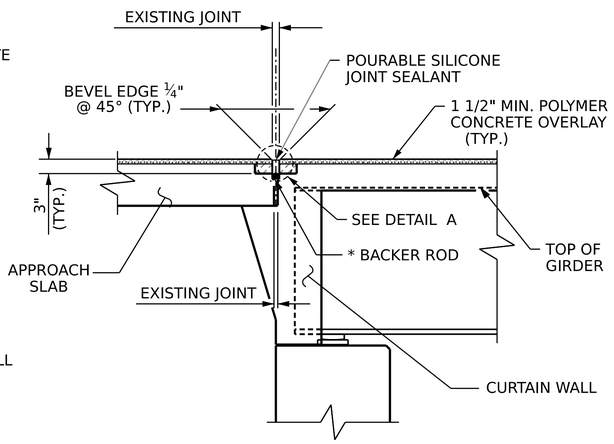
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION & SCARIFICATION



PROPOSED JOINT WITH PRE-SAWED DIMENSION

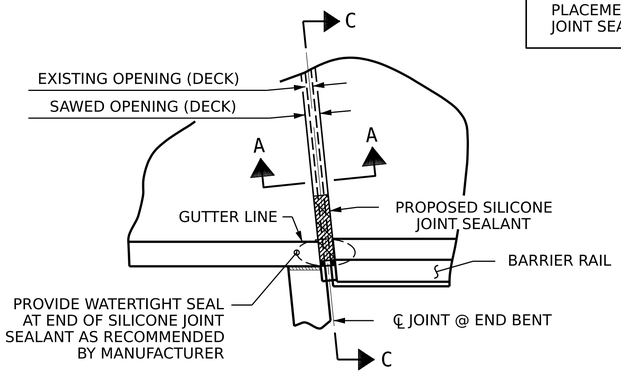


PROPOSED POURABLE SILICONE JOINT SEALANT

* CONTRACTOR TO FIELD VERIFY WIDTH OF EXISTING JOINT AT APPROACH SLABS FOR INSTALLATION OF THE PROPER SIZE BACKER ROD.

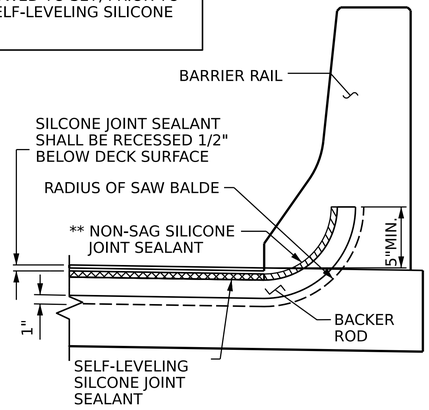
JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A



PLAN
AT END BENT

* * NOW-SAG SILCONE JOINT SEALANT TO BE PLACED AND ALLOWED TO SET, PRIOR TO PLACEMENT OF SELF-LEVELING SILICONE JOINT SEALANT.



SECTION C-C

JOINT SEAL DETAILS AT END BENTS

JOINT REPAIR QUANTITY TABLE

	ESTIMATED LN.FT.	ACTUAL LN.FT.
POURABLE SILICONE JOINT SEALANT		
END BENT 1	77.2	
END BENT 2	77.2	
TOTAL	154.4	

NOTES

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN DETAIL BY MORE THAN ¼", NOTIFY ENGINEER. REVISION TO THE JOINT SEAL SIZE MIGHT BE NECESSARY.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REHAB OPERATIONS NOT TO DROP ANY MATERIAL BELOW THE BRIDGE WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

DURING THE JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

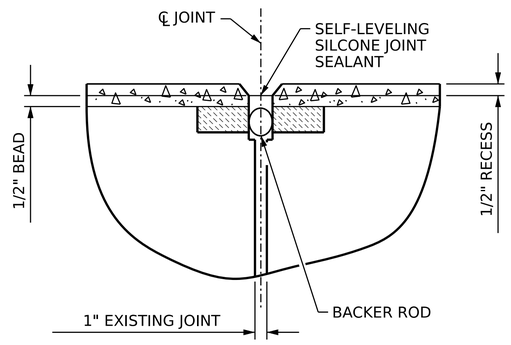
A MANUFACTURER'S CERTIFIED TRAINED REPRESENTATIVE SHALL BE PRESENT DURING THE INSTALLATION OF THE FIRST JOINT OF THE PROJECT, OR UNTIL THE ENGINEER IS SATISFIED WITH THE INSTALLATION PROCESS.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONALBY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE BACKER ROD FOR THE EXISTING JOINT SIZE AND ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

THE INSTALLED POURABLE SILICONE JOINT SEALANT SHALL BE WATERTIGHT.

POURABLE SILICONE JOINT SEALANT SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.



DETAIL A

PROJECT NO. U-2579AA
FORSYTH COUNTY
BRIDGE NO. 330394

06/29/2022
NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI
Docusigned by: Krishna P. Sedai
EA8F794150BF4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

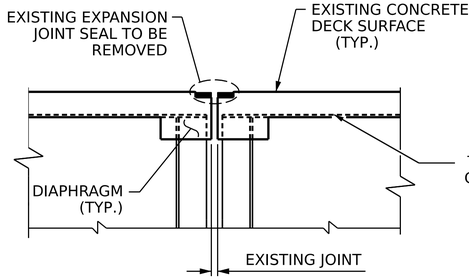
JOINT DETAILS

DRAWN BY : E. BAYISSA DATE : 05/2021
CHECKED BY : A. SORSENGINH DATE : 01/2022

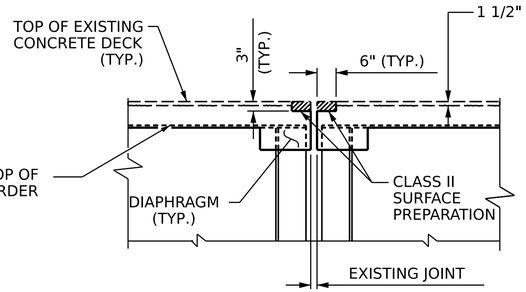
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-08
1			3			TOTAL SHEETS
2			4			26

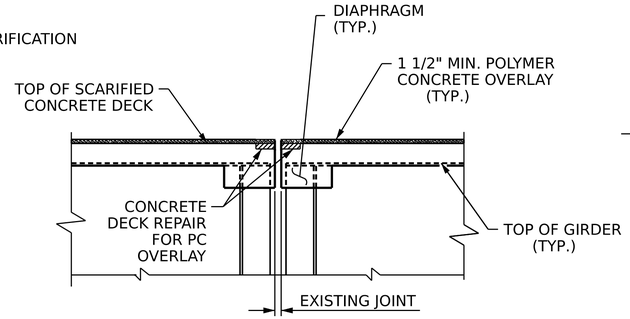
6/29/2022
P:\Structures\Plans\330394\Final Plans\408_015_U2579AA_SMU_JT_S08_330394.dgn
ksedai



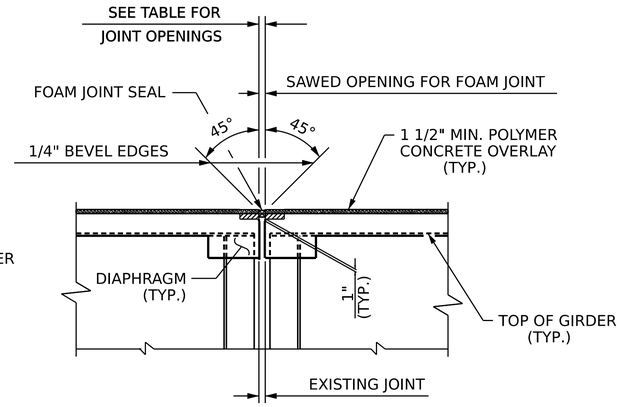
EXISTING JOINT



MINIMUM EXISTING JOINT
DEMOLITION & SCARIFICATION

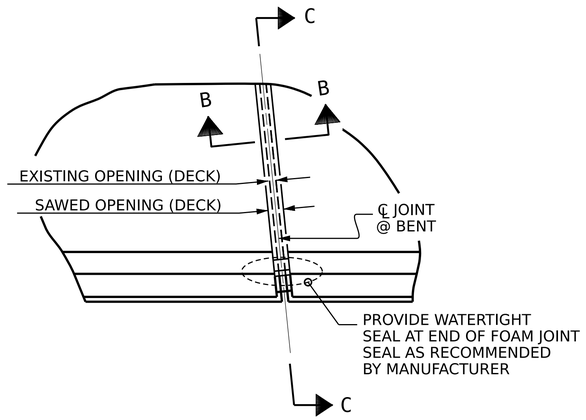


PROPSED JOINT
PRE-SAWED DIMENSIONS



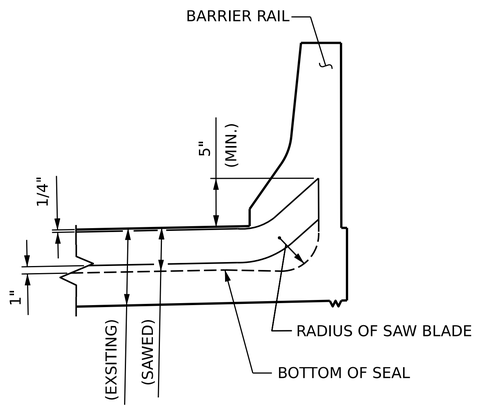
PROPOSED FOAM
JOINT SEAL

JOINT INSTALLATION SEQUENCE AT BENTS



PLAN
@ BENTS

SECTION B-B



SECTION C-C

NOTE

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN DETAIL BY MORE THAT 1/4" NOTIFY ENGINEER. REVISION TO THE JOINT SEAL SIZE MIGHT BE NECESSARY.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REHAB OPERATIONS NOT TO DROP ANY MATERIAL BELOW THE BRIDGE WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT IN LIEU OF SAWING THE JOINT.

DURING THE JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL BASED ON JOINT OPENINGS AT THE BENTS.

A MANUFACTURER'S CERTIFIED TRAINED REPRESENTATIVE SHALL BE PRESENT DURING THE INSTALLATION OF THE FIRST JOINT OF THE PROJECT, OR UNTIL THE ENGINEER IS SATISFIED WITH THE INSTALLATION PROCESS.

THE INSTALLTION OF THE JOINT SEAL SHALL BE WATERTIGHT.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOAM JOINTS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION.

THE FOAM JOINTS SHALL MEET THE MANUFACTURER'S RECOMMENDATIONS FOR THE SIZE OF OPENING ON THE PLANS, AND ACCOMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

JOINT SEAL DETAILS AT BENTS

SAWED JOINT OPENING TABLE

	SAWED JOINT OPENING (PERPENDICULAR TO JOINT)		
LOCATION	AT 45°	AT 60°	AT 90°
BENT 1	1 5/8"	1 9/16"	1 1/2"
BENT 2	1 11/16"	1 9/16"	1 5/16"
BENT 3	1 11/16"	1 9/16"	1 1/4"

JOINT REPAIR QUANTITY TABLE

	ESTIMATED LN.FT.	ACTUAL LN.FT.
FOAM JOINT SEALS FOR PRESERVATION		
BENT 1	77.2	
BENT 2	77.2	
BENT 3	77.2	
TOTAL	231.6	

PROJECT NO. U-2579AA
FORSYTH COUNTY
BRIDGE NO. 330394

06/29/2022
NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI
Krishna P. Sedai
EA8F7941506F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-09
1			3			TOTAL SHEETS
2			4			26

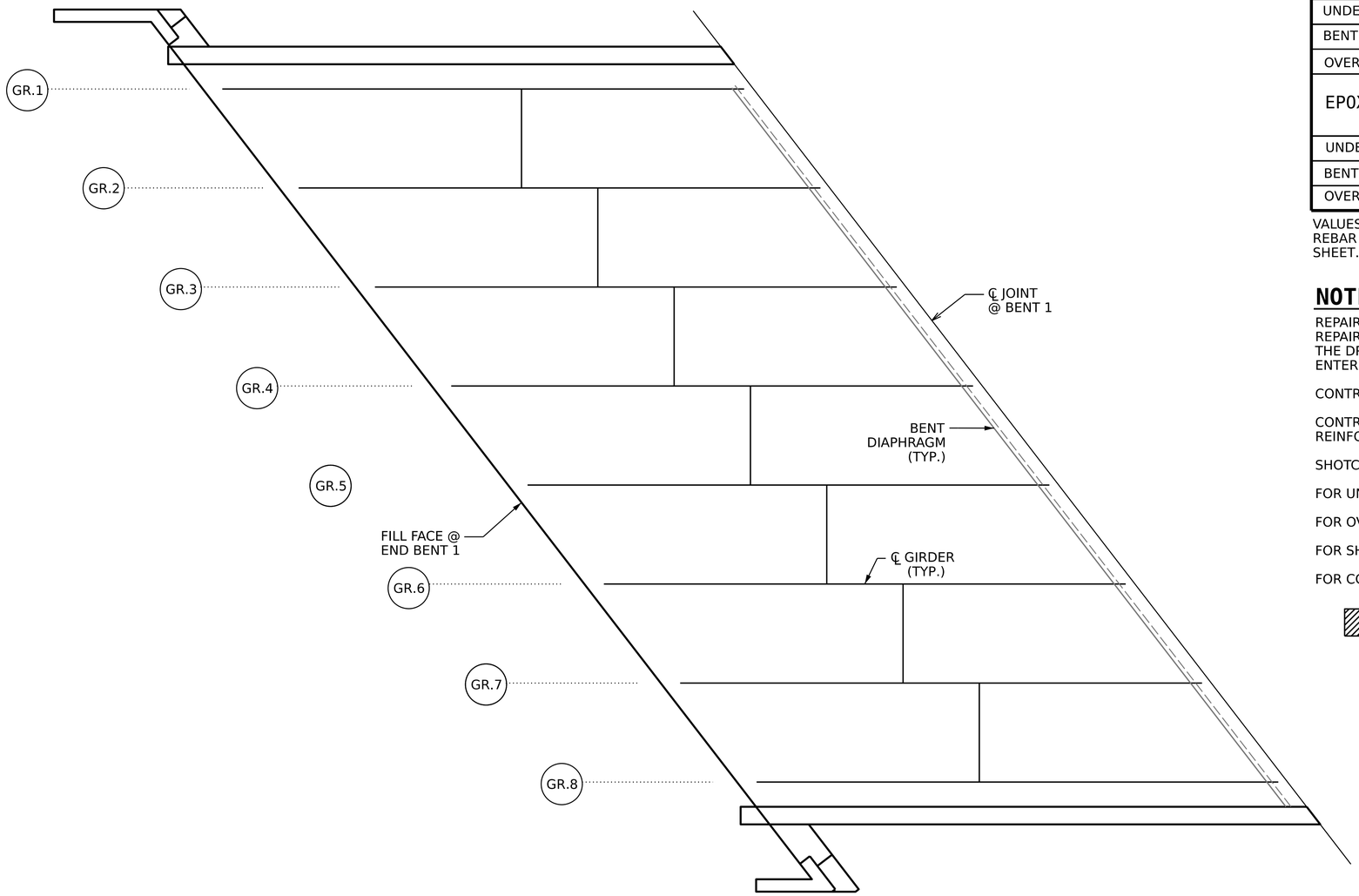
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : E. BAYISSA DATE : 05/2021
CHECKED BY : A. SORSENGINH DATE : 12/2021

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_017_U2579AA_SMU_JT_S09_330394.dgn
ksedai

BEAM REPAIR QUANTITY TABLE

STEEL PLATES		STIFFENER		STEEL DIAPHRAGM		BRIDGE JACKING		STEEL BEARING KEEPER ANGLE ASSEMBLY	
LBS.		LBS.		LBS.		EA.		EA.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL		ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
0.0		0.0		0.0		0.0		0.0	



PLAN

AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS - SPAN A

	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
UNDERSIDE OF DECK	0.0	0.0		
BENT DIAPHRAGM	0.0	0.0		
OVERHANG	0.0	0.0		
CONCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
UNDERSIDE OF DECK	0.0	0.0		
BENT DIAPHRAGM	0.0	0.0		
OVERHANG	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
UNDERSIDE OF DECK		0.0		
BENT DIAPHRAGM		0.0		
OVERHANG		0.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" REBAR AND MIN. 2" CLEARANCE TO SAWCUT. SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

NOTE:

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR UNDERSIDE OF DECK REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

FOR OVERHANG REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

- SHOTCRETE REPAIR
- (1) GIRDER NUMBER
- (P) PLATING REPAIR
- (S) STIFFENER REPAIR
- (D) DIAPHRAGM REPAIR
- (K) STEEL BEARING KEEPER ANGLE ASSEMBLY

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai EA8F7941508F4B7...

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE: 330394

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK UNDERSIDE REPAIR SPAN A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-10
1			3			TOTAL SHEETS
2			4			26

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 05/2021

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_019_U2579AA_SMU_DUR_S10_330394.dgn
ksedai

BEAM REPAIR QUANTITY TABLE

STEEL PLATES		STIFFENER		STEEL DIAPHRAGM		BRIDGE JACKING		STEEL BEARING RETAINER ANGLE ASSEMBLY	
LBS.		LBS.		LBS.		EA.		EA.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
0.0		0.0		0.0		0.0		1.0	

NOTE:

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROPRIATE LOCATIONS AND DESCRIPTION OF REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR UNDERSIDE OF DECK REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

FOR OVERHANG REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

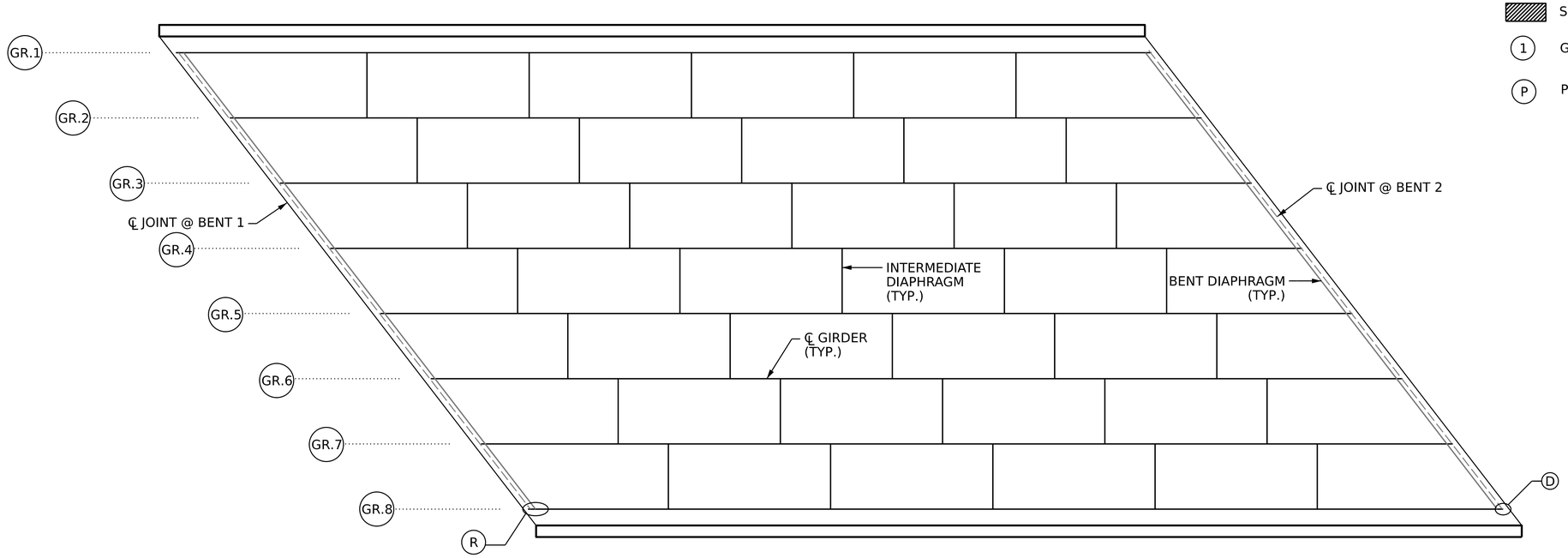
FOR STEEL BEARING RETAINER ANGLE ASSEMBLY, SEE "STEEL BEARING RETAINER ANGLE ASSEMBLY DETAILS" SHEET.

AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS - SPAN B

	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
UNDERSIDE OF DECK	0.0	0.0		
BENT DIAPHRAGM	0.8	0.4		
OVERHANG	0.0	0.0		
CONCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
UNDERSIDE OF DECK	0.0	0.0		
BENT DIAPHRAGM	0.0	0.0		
OVERHANG	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
UNDERSIDE OF DECK		0.0		
BENT DIAPHRAGM		0.0		
OVERHANG		0.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MIN. OF 1" REBAR AND MIN. 2" CLEARANCE TO SAWCUT. SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.



PLAN

- SHOTCRETE REPAIR
- (S) STIFFENER REPAIR
- (1) GIRDER NUMBER
- (D) DIAPHRAGM REPAIR
- (P) PLATING REPAIR
- (R) STEEL BEARING RETAINER ANGLE ASSEMBLY

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 2 OF 4

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai

EA6F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK UNDERSIDE REPAIR
SPAN B

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-11
1			3			TOTAL SHEETS
2			4			26

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 05/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_021_U2579AA_SMU_DUR_S11_330394.dgn
ksedal

BEAM REPAIR QUANTITY TABLE

STEEL PLATES		STIFFENER		STEEL DIAPHRAGM		BRIDGE JACKING		STEEL BEARING KEEPER ANGLE ASSEMBLY	
LBS.		LBS.		LBS.		EA.		EA.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
0.0		0.0		0.0		0.0		0.0	

NOTE:

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR UNDERSIDE OF DECK REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

FOR OVERHANG REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

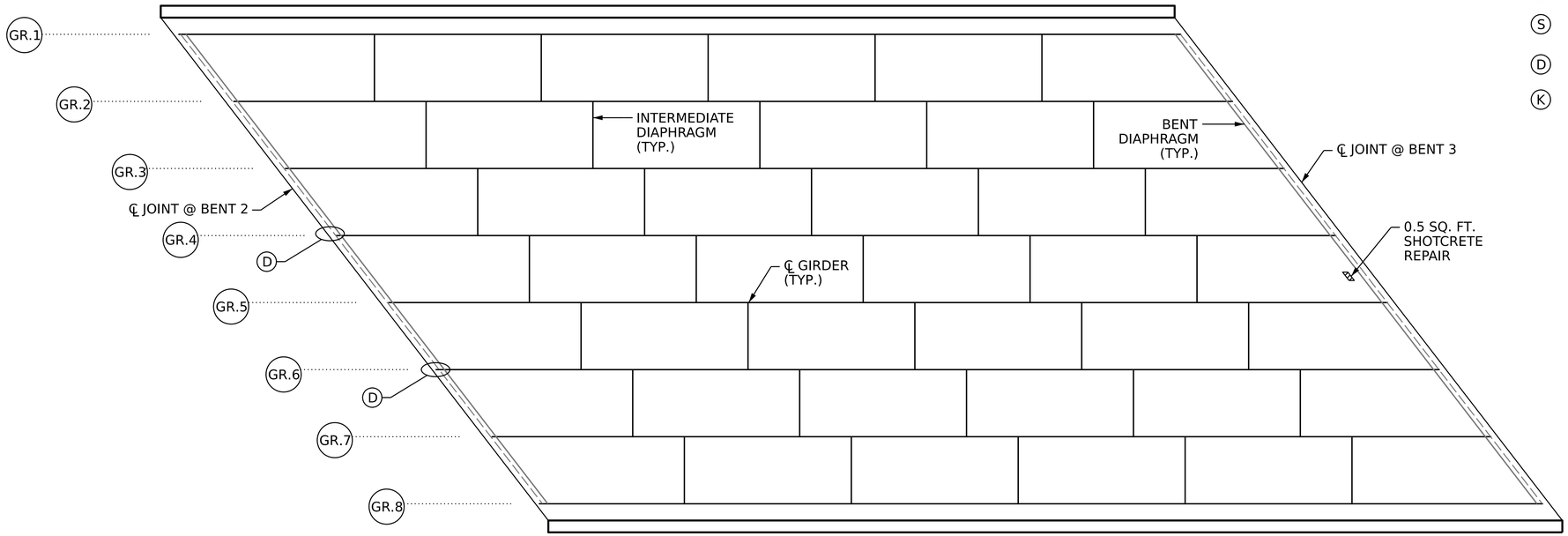
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS - SPAN C

	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
UNDERSIDE OF DECK	0.5	0.3		
BENT DIAPHRAGM	1.8	0.9		
OVERHANG	0.0	0.0		
CONCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
UNDERSIDE OF DECK	0.0	0.0		
BENT DIAPHRAGM	0.0	0.0		
OVERHANG	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
UNDERSIDE OF DECK		0.0		
BENT DIAPHRAGM		0.0		
OVERHANG		0.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.



PLAN

- SHOTCRETE REPAIR
- (1) GIRDER NUMBER
- (P) PLATING REPAIR
- (S) STIFFENER REPAIR
- (D) DIAPHRAGM REPAIR
- (K) STEEL BEARING KEEPER ANGLE ASSEMBLY

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 3 OF 4

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA8F794150BF4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK UNDERSIDE REPAIR
SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-12
1			3			TOTAL SHEETS
2			4			26

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 05/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

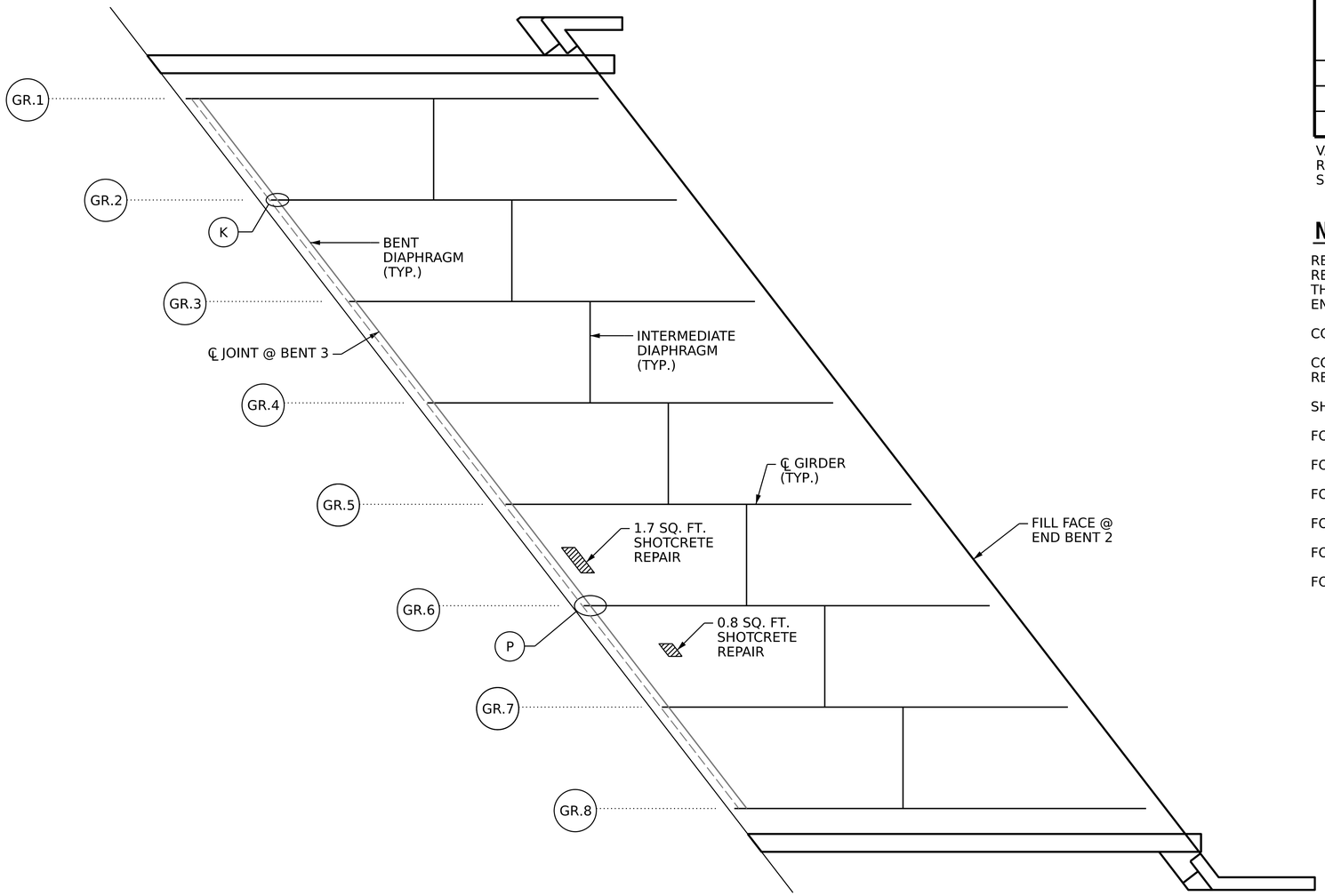
6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_023_U2579AA_SMU_DUR_S12_330394.dgn
ksedal

BEAM REPAIR QUANTITY TABLE

STEEL PLATES		STIFFENER		STEEL DIAPHRAGM		BRIDGE JACKING		STEEL BEARING KEEPER ANGLE ASSEMBLY	
LBS.		LBS.		LBS.		EA.		EA.	
ESTIMATE	ACTUAL	ESTIMATE	ACTUAL		ACTUAL	ESTIMATE	ACTUAL	ESTIMATE	ACTUAL
11.8		0.0		0.0		0.0		1.0	

ANTICIPATED BEAM REPAIR LOCATIONS

SPAN	BEAM	LOCATION	REPAIR TYPE	DIM "A"	DIM "B"	DIM "C"	DIM "D"
D	G6	P1		3"	12"		



PLAN

AS-BUILT REPAIR QUANTITY TABLE

UNDERSIDE OF DECK REPAIRS - SPAN D

	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
UNDERSIDE OF DECK	2.5	1.3		
BENT DIAPHRAGM	0.0	0.0		
OVERHANG	0.0	0.0		
CONCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
UNDERSIDE OF DECK	0.0	0.0		
BENT DIAPHRAGM	0.0	0.0		
OVERHANG	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
UNDERSIDE OF DECK		0.0		
BENT DIAPHRAGM		0.0		
OVERHANG		0.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

NOTE:

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.

CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR UNDERSIDE OF DECK REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

FOR OVERHANG REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

FOR BEAM REPAIR PLATING, SEE "BEAM PLATING REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR STEEL BEARING KEEPER ANGLE ASSEMBLY, SEE "STEEL KEEPER ANGLE ASSEMBLY DETAILS" SHEET.

SHOTCRETE REPAIR

(1) GIRDER NUMBER

(P) PLATING REPAIR

(S) STIFFENER REPAIR

(D) DIAPHRAGM REPAIR

(K) STEEL BEARING KEEPER ANGLE ASSEMBLY

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA8F794150BF4B7...

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK UNDERSIDE REPAIR SPAN D

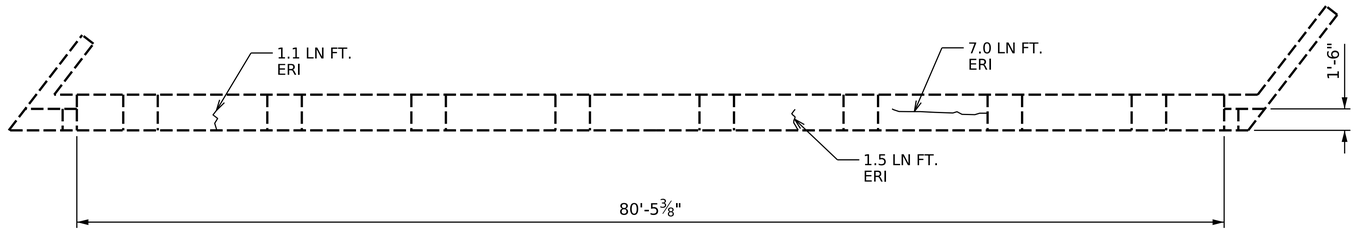
DRAWN BY : S. AGUILAR HERNANDEZ DATE : 03/2021

CHECKED BY : E. BAYISSA DATE : 05/2021

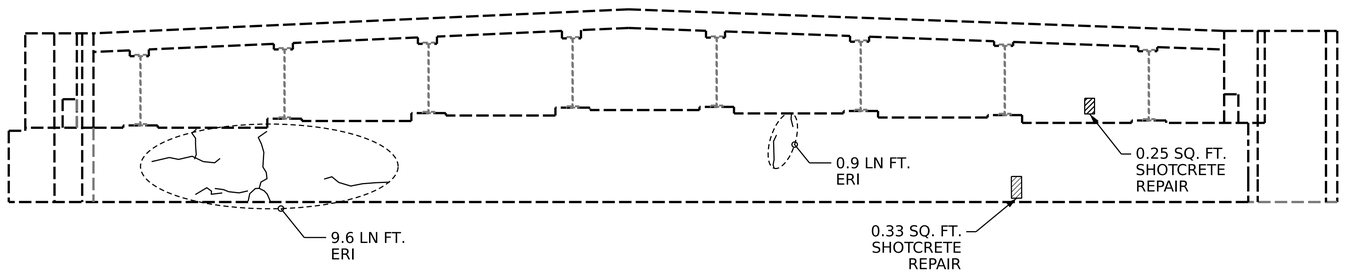
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-13
1			3			TOTAL SHEETS
2			4			26

6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_025_U2579AA_SMU_DUR_S13_330394.dgn
ksedal



PLAN



ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.33	0.2		
CURTAIN WALL	0.25	0.1		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.
CAP		20.1		
CURTAIN WALL		0.0		
EPOXY COATING	AREA SQ. FT.		AREA SQ. FT.	
TOP OF CAP	120.7			
CURTAIN WALL	274.9			

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

NOTES:

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CAP AND COLUMN REPAIRS, SEE ``TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIR, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIR AREA

SHOTCRETE REPAIR AREA

EPOXY RESIN INJECTION (ERI)

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA6F794150BF4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE REPAIR
END BENT 1

DRAWN BY : C. RUIZ DATE : 07/2021

CHECKED BY : E. BAYISSA DATE : 08/2021

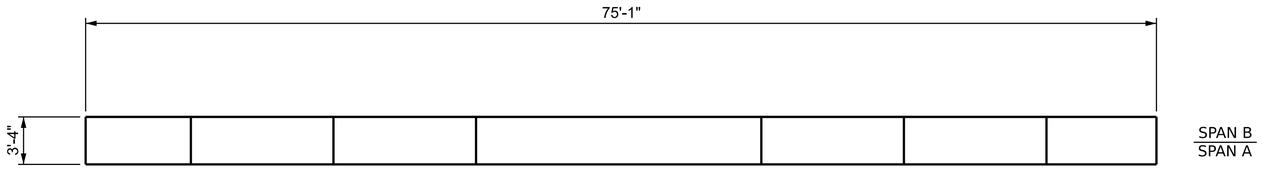
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

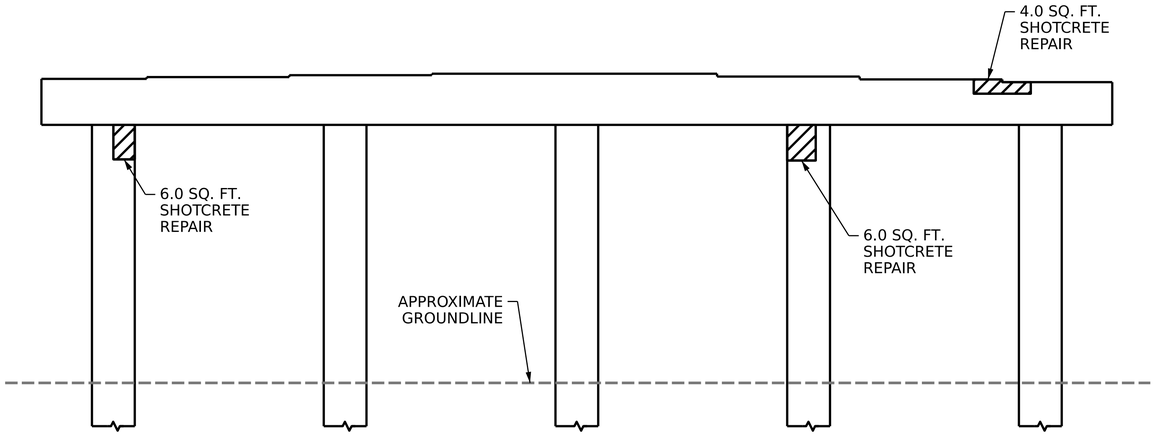
SHEET NO. S8-14

TOTAL SHEETS 26

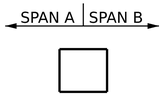
6/29/2022
P:\Structures\Plans\330394\Final Plans\408_027_U2579AA_SMU_EBI_S14_330394.dgn
ksedai



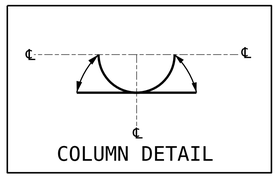
PLAN - TOP OF CAP



ELEVATION



END VIEW



COLUMN DETAIL

AS-BUILT REPAIR QUANTITY TABLE

BENT 1 SPAN A FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	4.0	2.0		
COLUMN	12.0	6.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		AREA SQ. FT.		AREA SQ. FT.
TOP OF BENT CAP		250.3		

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

NOTES:

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASNORY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

SHOTCRETE REPAIR AREA

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 1 OF 2

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai

EA8F794150BF4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

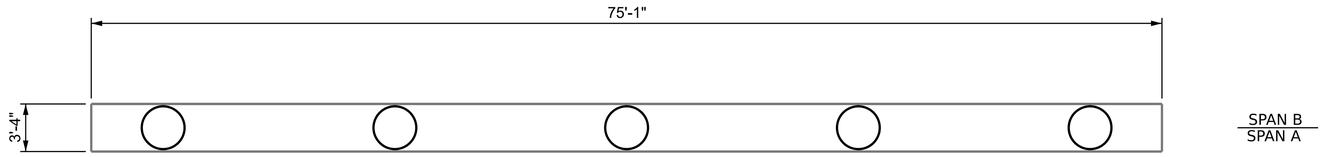
BENT 1 SPAN A FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-15
1			3			TOTAL SHEETS
2			4			26

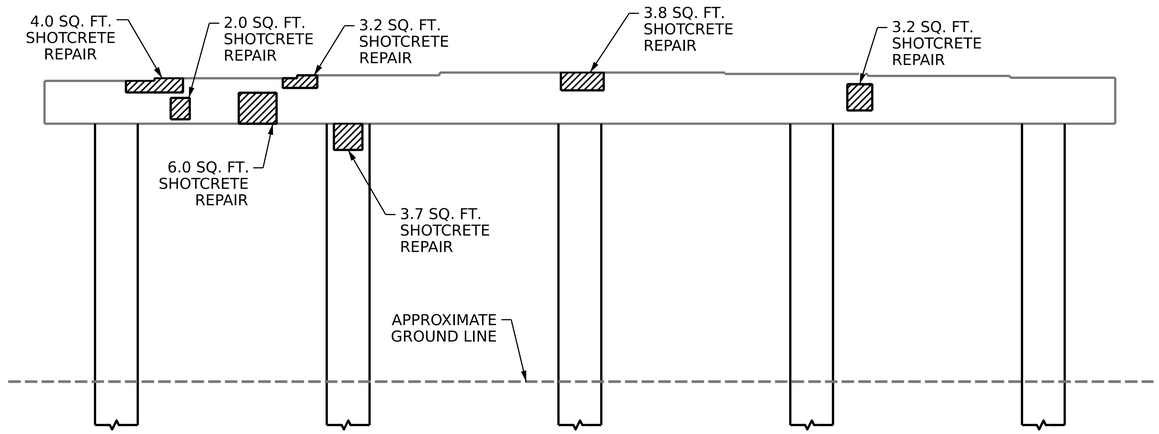
DRAWN BY : K. PUROHIT DATE : 06/2021
CHECKED BY : E. BAYISSA DATE : 07/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

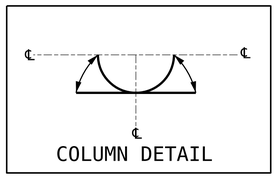
6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_029_U2579AA_SMU_BIA_S15_330394.dgn
ksedai

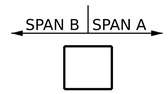


PLAN - BOTTOM OF CAP



ELEVATION





END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 1 SPAN B FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ.FT.	VOLUME CU.FT.	AREA SQ.FT.	VOLUME CU.FT.
CAP	22.2	11.1		
COLUMN	3.7	1.9		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.
CAP		0.0		
COLUMN		0.0		

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

NOTES:

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

SHOTCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 2 OF 2

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai EA8F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

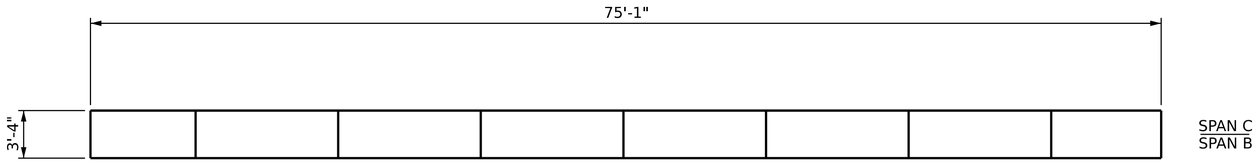
BENT 1 SPAN B FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-16
1			3			TOTAL SHEETS
2			4			26

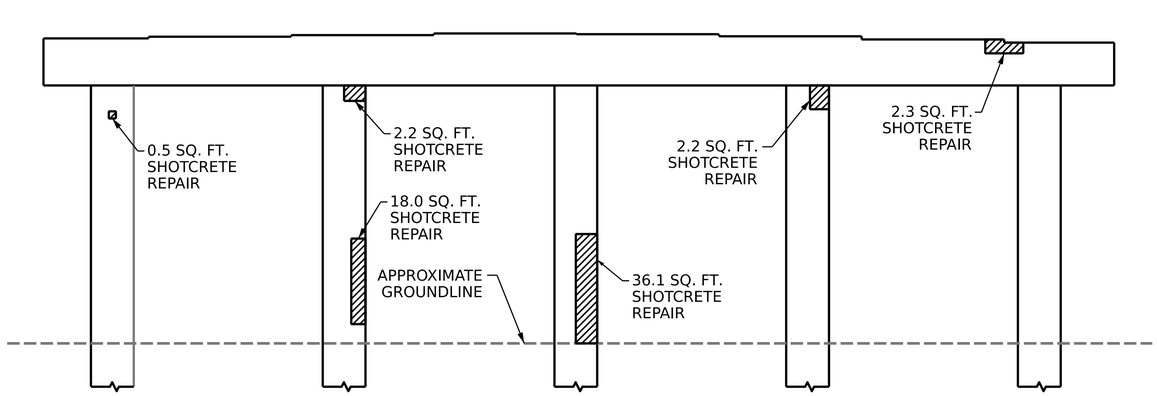
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : K. PUROHIT DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 08/2021

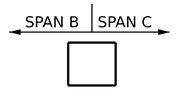
6/29/2022
P:\Structures\Plans\330394\Final Plans\408_031_U2579AA_SMU_BIB_S16_330394.dgn
ksedai



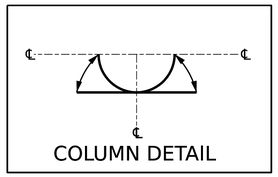
PLAN - TOP OF CAP



ELEVATION



END VIEW



AS-BUILT REPAIR QUANTITY TABLE

BENT 2 SPAN B FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	2.3	1.2		
COLUMN	59.0	29.5		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LIN.FT.		LIN.FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		AREA SQ. FT.		AREA SQ. FT.
TOP OF BENT CAP		250.3		

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

NOTES:

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. U-2579AA
FORSYTH COUNTY
BRIDGE NO. 330394

SHEET 1 OF 2

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai
EA6F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

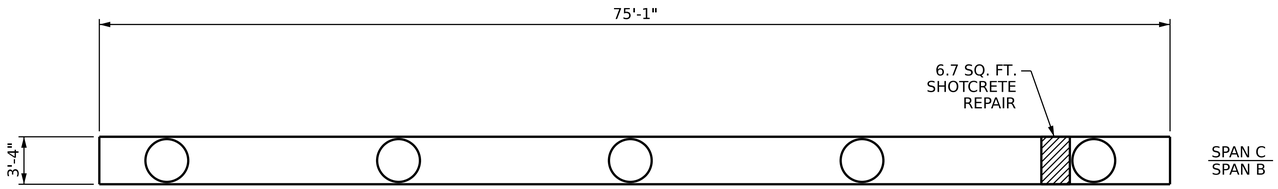
BENT 2 SPAN B FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-17
1			3			TOTAL SHEETS
2			4			26

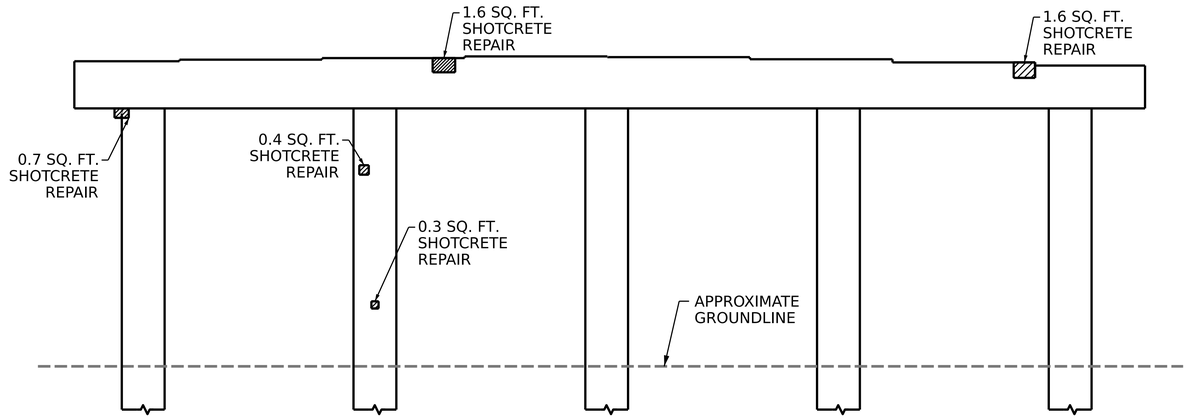
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : K. PUROHIT DATE : 06/2021
CHECKED BY : E. BAYISSA DATE : 07/2021

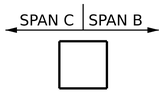
6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_033_U2579AA_SMU_B2B_S17_330394.dgn
ksedal



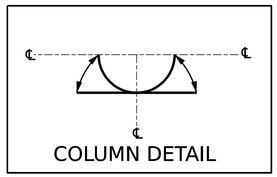
PLAN -BOTTOM OF CAP



ELEVATION



END VIEW



AS-BUILT REPAIR QUANTITY TABLE

BENT 2 SPAN C FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	9.9	5.0		
COLUMN	1.4	0.7		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LIN.FT.		LIN.FT.
CAP		0.0		
COLUMN		0.0		

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

NOTES:

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

SHOTCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 2 OF 2

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai EA8F794150BF4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

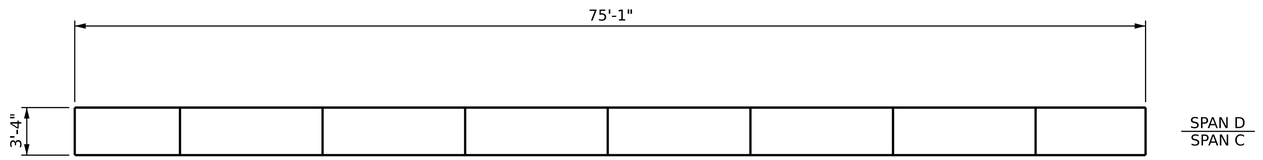
BENT 2
SPAN C FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-18
1			3			TOTAL SHEETS
2			4			26

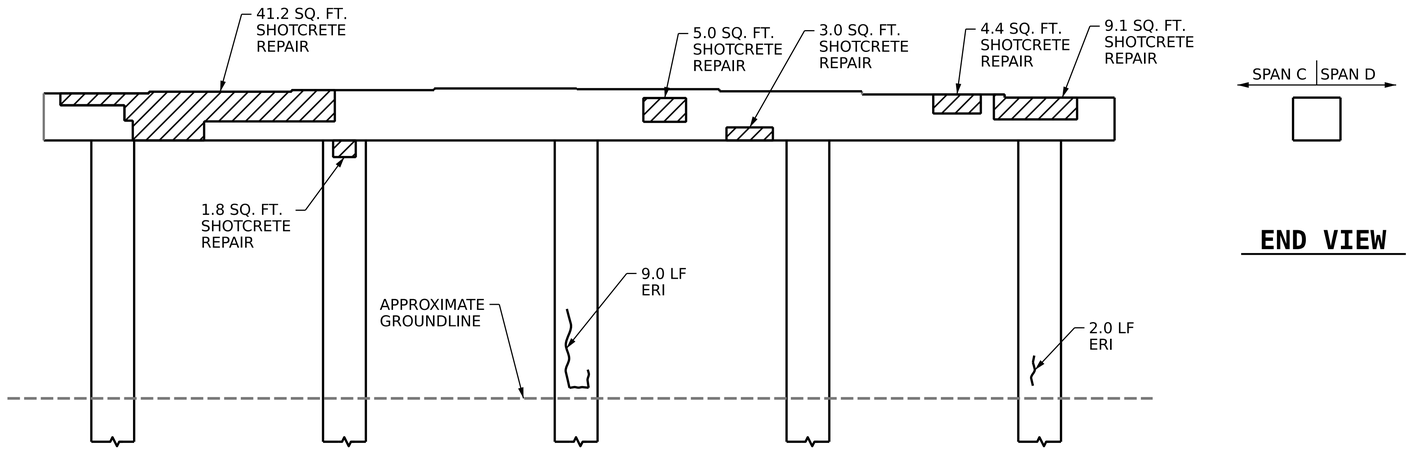
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : K. PUROHIT DATE : 06/2021
CHECKED BY : E. BAYISSA DATE : 08/2021
DESIGN ENGINEER OF RECORD: _____ DATE : _____

6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_035_U2579AA_SMU_B2C_S18_330394.dgn
ksedal

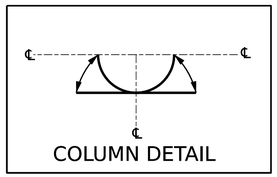


PLAN - TOP OF CAP



ELEVATION

END VIEW



AS-BUILT REPAIR QUANTITY TABLE

BENT 3 SPAN C FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	62.7	31.4		
COLUMN	1.8	0.9		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LIN.FT.		LIN.FT.
CAP		0.0		
COLUMN		11.0		
EPOXY COATING		AREA SQ. FT.		AREA SQ. FT.
TOP OF BENT CAP		250.3		

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

NOTES:

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. U-2579AA
FORSYTH COUNTY
BRIDGE NO. 330394

SHEET 1 OF 2

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by:
Krishna P. Sedai
EA8F794150BF4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

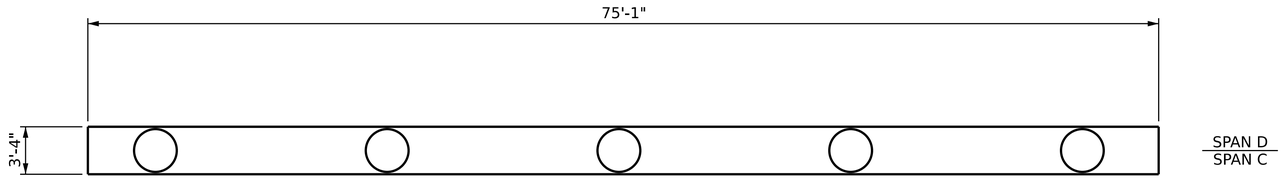
BENT 3
SPAN C FACE

DRAWN BY : K. PUROHIT DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 08/2021

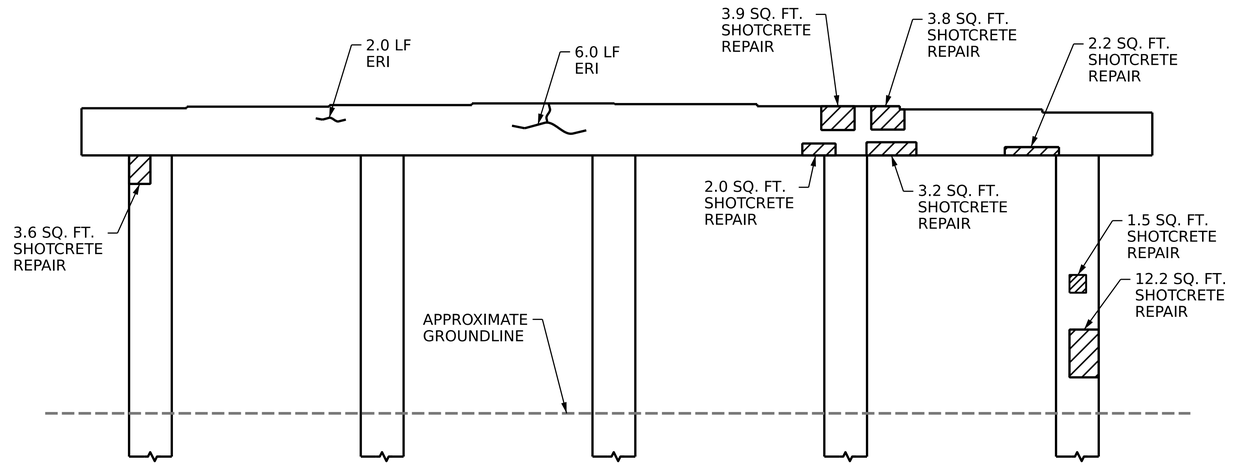
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-19
1			3			TOTAL SHEETS
2			4			26

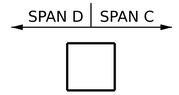
6/29/2022
P:\Structures\Plans\330394\FinalPlans\408_037_U2579AA_SMU_B3C_S19_330394.dgn
ksedal



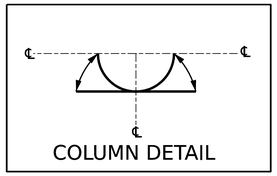
PLAN - BOTTOM OF CAP



ELEVATION



END VIEW



AS-BUILT REPAIR QUANTITY TABLE

BENT 3 SPAN D FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	15.1	7.6		
COLUMN	17.3	8.7		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
COLUMN	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.
CAP		8.0		
COLUMN		0.0		

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

NOTES:

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

SHOTCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

SHEET 2 OF 2

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai

EA6F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

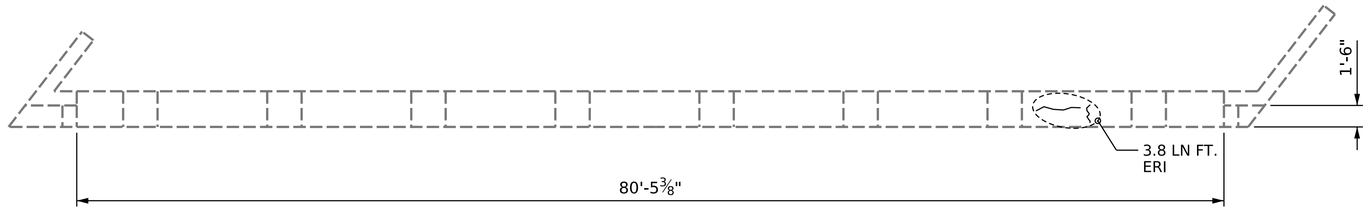
BENT 3 SPAN D FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-20
1			3			TOTAL SHEETS
2			4			26

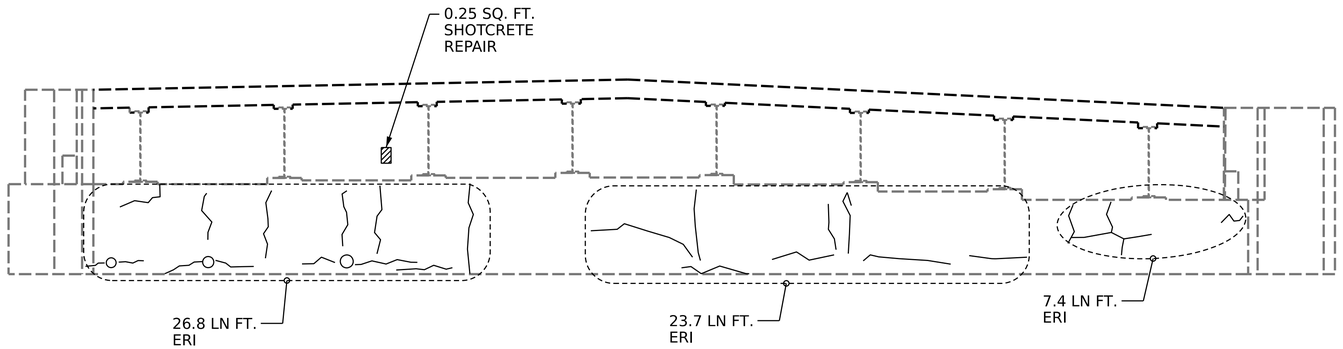
DRAWN BY : K. PUROHIT DATE : 03/2021
CHECKED BY : E. BAYISSA DATE : 08/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_039_U2579AA_SMU_B3D_S20_330394.dgn
ksedai



PLAN



ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
CURTAIN WALL	0.25	0.1		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
CUTAIN WALL	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.
CAP		61.7		
CURTAIN WALL		0.0		
EPOXY COATING	AREA SQ. FT.		AREA SQ. FT.	
TOP OF CAP	120.7			
CURTAIN WALL	274.9			

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

NOTES:

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR CAP AND COLUMN REPAIRS, SEE ``TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIR, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIR AREA

SHOTCRETE REPAIR AREA

EPOXY RESIN INJECTION (ERI)

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA6F794150BF4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

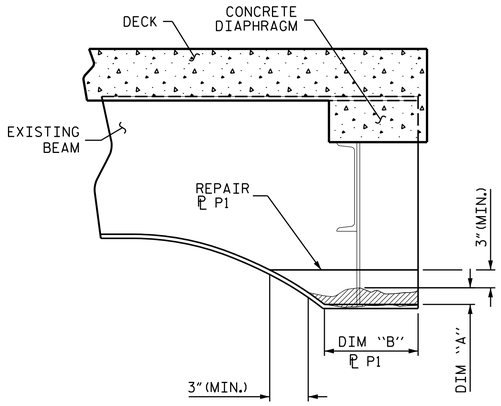
SUBSTRUCTURE REPAIR
END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-21
1			3			TOTAL SHEETS
2			4			26

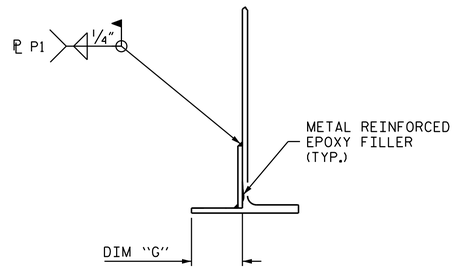
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : CRUIZ DATE : 07/2021
CHECKED BY : E. BAYISSA DATE : 08/2021
DATE :

6/29/2022
PwStructures\Plans\330394\FinalPlans\408_041_U2579AA_SMU_EB2_S21_330394.dgn
ksedal

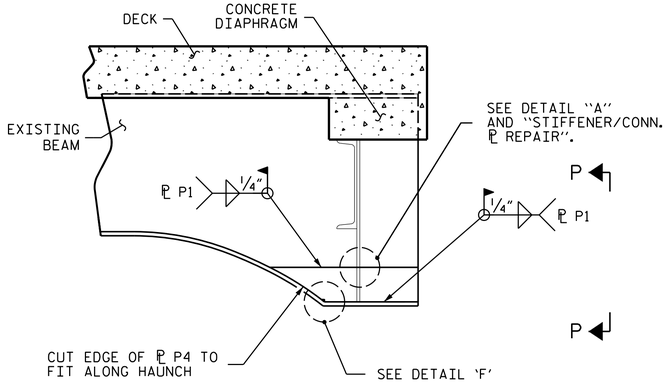


BEAM END SECTION LOSS AND PLATING REPAIR

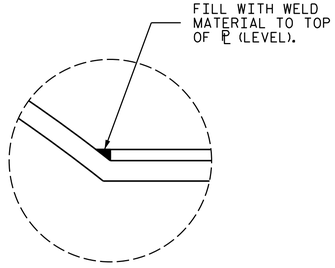


SECTION P-P

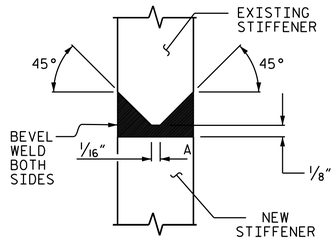
REPAIR PLATES INDICATED ON ONE SIDE OF BEAM. DETAILS SIMILAR FOR PLATES ON BOTH SIDES OF BEAM.



BEAM END PLATING REPAIR



DETAIL 'F'



DETAIL "A"

BEAM PLATING REPAIR NOTES

ALL CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OR INSTALLATION OF ANY COMPONENTS.

REPAIR PLATES SHALL BE NEW, AND SHALL BE THE SAME GRADE OF THE EXISTING STEEL MEMBER OR BETTER.

REPAIR SEQUENCE:

COORDINATE WITH MATERIALS AND TEST UNIT AT LEAST 4 DAYS PRIOR TO ANTICIPATED WORK.

IF NECESSARY, REMOVE EXISTING STIFFENER TO INSTALL WELDED PLATE REPAIR. REPLACE WITH A NEW STIFFENER PLATE OF SIMILAR SIZE.

IF BEAM DETERIORATION EXTENDS INTO THE CONCRETE DIAPHRAGM THEN CHIP AWAY CONCRETE TO DETERMINE THE EXTENT OF THE DAMAGE.

IF PAINTING THE STEEL, CLEAN AND BLAST STEEL AS REQUIRED, PRIOR TO PERFORMING STEEL REPAIRS. OTHERWISE, MECHANICALLY CLEAN RUST, SCALE, AND EXISTING PAINT TO AT LEAST 3" BEYOND REPAIR AREA.

PRIME ENTIRE REPAIR AREA AND REPAIR PLATES WITH AN ORGANIC ZINC PRIMER PRIOR TO WELDING NEW PLATES. REMOVE PRIMER IN WELD AREA.

ONE PLATE SHALL BE PLACED, AS INDICATED ON EACH SIDE OF THE BEAM WEB.

UNLESS OTHERWISE NOTED EACH PLATE SHALL BE APPROXIMATELY ONE-HALF THE ORIGINAL THICKNESS OF THE BEAM WEB.

FULLY WELD ALONG PERIMETER AND SIDES OF THE PLATES AS SHOWN.

ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT APPLICABLE AWS AND NCDOT STANDARD SPECIFICATIONS.

ALL WELDS SHALL BE INSPECTED AND TESTED BY THE NCDOT MATERIALS AND TEST UNIT IN ACCORDANCE WITH THE CURRENT AWS BRIDGE WELDING CODE AND STANDARD SPECIFICATIONS.

IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AFTER REPAIR, GRIND ALL WELDS FLUSH, AND THOROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM THE REPAIR PROCESS.

CLEANING AND PAINTING OF REPAIRED STRUCTURAL STEEL SHALL BE PERFORMED AS PART OF THE OVERALL CLEANING AND PAINTING CONTRACT.

FOR CLEANING AND PAINTING, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISIONS.

AFTER BEAMS ARE REPAIRED AND PAINTED, ANY CONCRETE REMOVED FROM THE BENT DIAPHRAGMS SHALL BE RECAST. ANY REINFORCING STEEL CUT DURING THE REMOVAL PROCESS SHALL BE SPLICED WITH A SIMILAR SIZE BAR WITH AT LEAST A ONE FOOT SPLICE TO THE EXISTING STEEL. NO SEPARATE PAYMENT SHALL BE MADE FOR CONCRETE AND REINFORCING STEEL AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM "BEAM REPAIR". FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

REMOVE ALL TRAFFIC CONTROL DEVICES.

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA8F794150BF4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

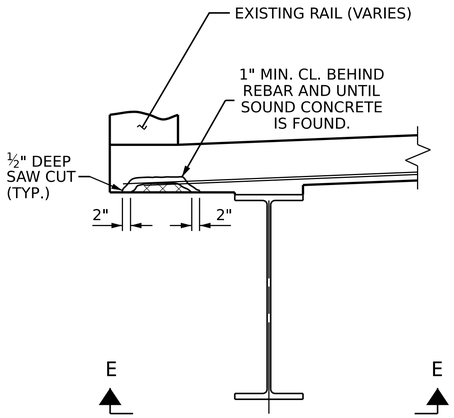
BEAM PLATING REPAIR DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-22
1			3			TOTAL SHEETS
2			4			26

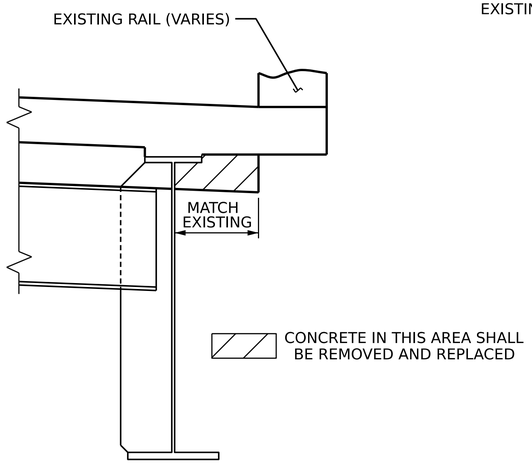
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : CL. BRIGHT DATE : 10/2018
CHECKED BY : T. SHERRILL DATE : 10/2018

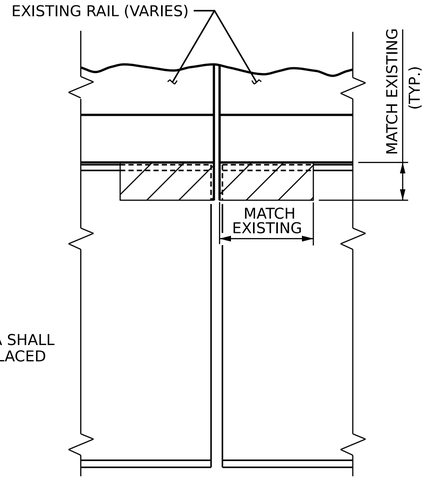
6/29/2022
P:\Structures\Plans\330394\Final Plans\408_043_U2579AA_SMU_SSR_S22_330394.dgn
ksedai



TYPICAL SECTION

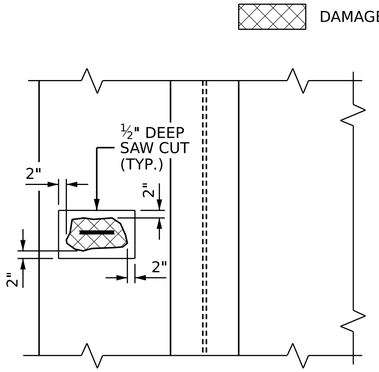


TYPICAL SECTION



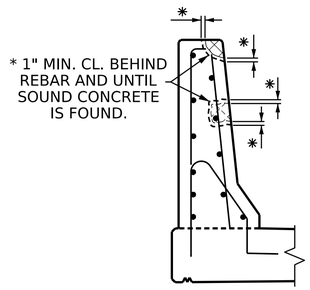
SECTION D-D

OVERHANGE DIAPHRAGM REPLACEMENT DETAILS

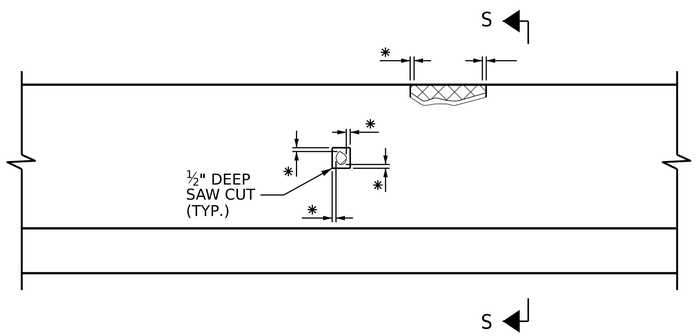


SECTION E-E

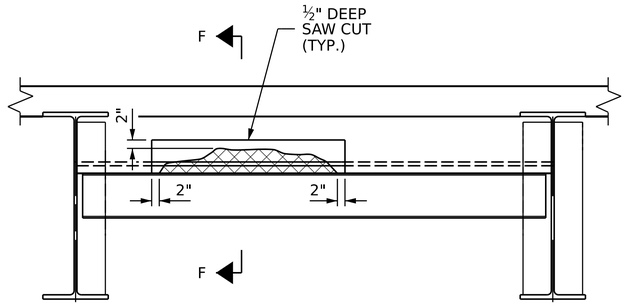
OVERHANGE DETAILS



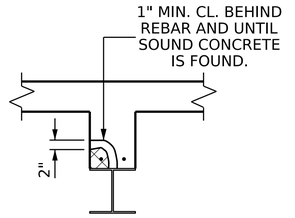
SECTION S-S



BRIDGE RAIL AND CURB REPAIR DETAILS



TYPICAL SECTION



SECTION F-F

INTERIOR DIAPHRAGM REPAIR DETAILS

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA6F7941508F4B7...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

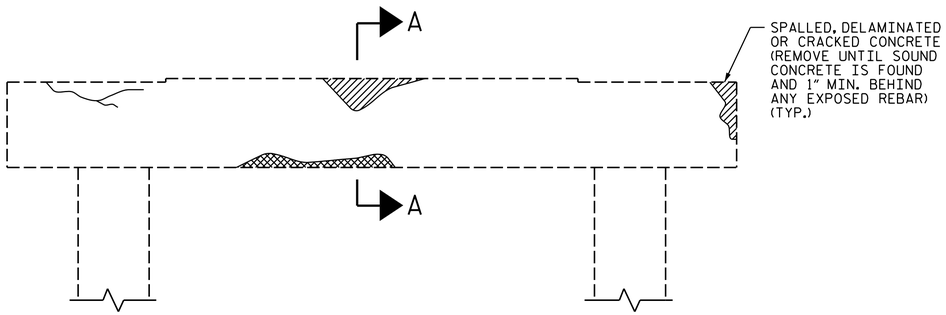
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-23
1			3			TOTAL SHEETS
2			4			26

DRAWN BY : E. BAYISSA DATE : 04/2022

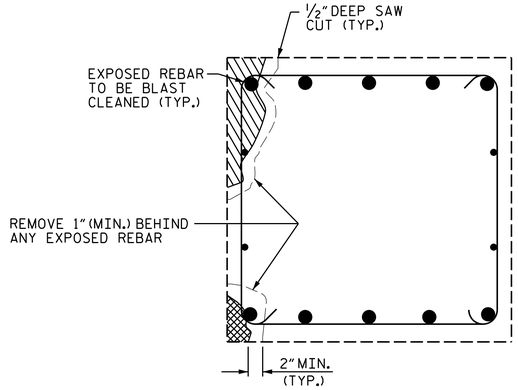
CHECKED BY : A. SORSENGINH DATE : 04/2022

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_045_HI-0002_SMU_ODR_S23_330394.dgn
ksedal

8/26/21

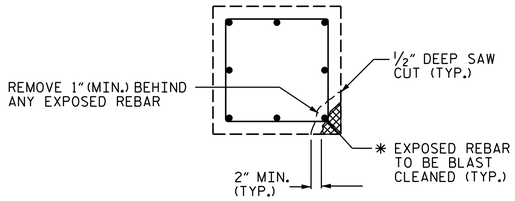


BENT CAP REPAIRS



SECTION A-A

CAP REPAIR



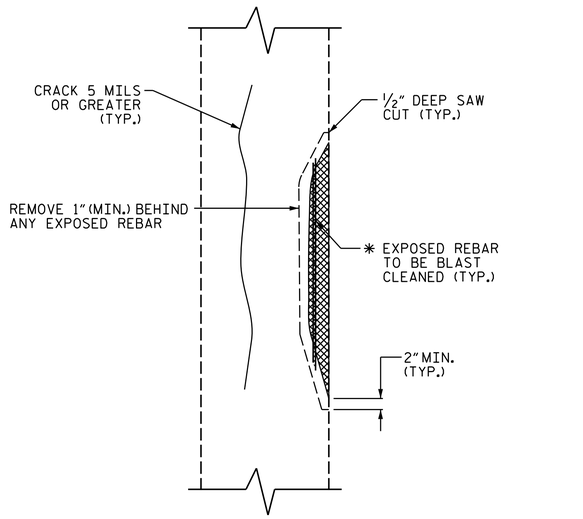
PLAN OF COLUMN

REPAIR KEY

CONCRETE REPAIR AREA (FORM AND POUR)

SHOTCRETE REPAIR AREA

EPOXY RESIN INJECTION (ERI)

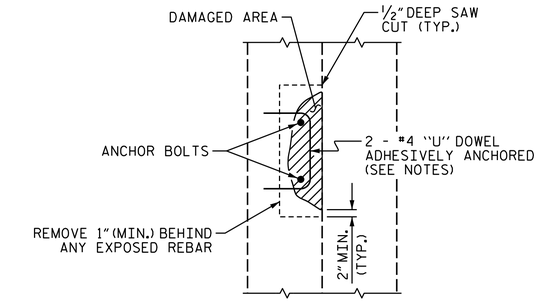


* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.

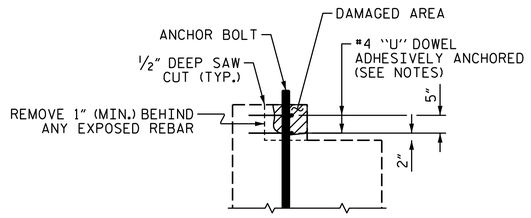
ELEVATION OF COLUMN

COLUMN REPAIR

SPLICE LENGTH TABLE	
BAR SIZE	MIN. SPLICE LENGTH
#4	2'-4"
#5	2'-9"
#6	4'-0"
#7	5'-3"
#8	6'-9"
#9	8'-6"
#10	10'-11"
#11	13'-4"



PLAN



ELEVATION

PEDESTAL WALL REPAIR

NOTES

TYPICAL BENT CAP REPAIRS ARE SHOWN. REPAIR DETAILS SIMILAR FOR END BENT CAPS AND STRUTS.

THE METHOD USED TO DELINEATE THE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL OR REQUIRE HARSH CHEMICALS TO REMOVE.

THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.

REMOVE UNSOUND CONCRETE TO THE EXTENT NECESSARY, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT.

NO MORE THAN ONE-THIRD OF THE CAP OR COLUMN CROSS SECTIONAL AREA SHALL BE REMOVED AT ONE TIME. SHOULD IT BECOME NECESSARY TO REMOVE MORE THAN 30% OF A CAP OR COLUMN CROSS SECTIONAL AREA, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

SIMULTANEOUS REMOVAL OF UNSOUND CONCRETE MAY BE PERMITTED ON MORE THAN ONE FACE OF A CAP AND/OR COLUMN, IF THE AREAS OF REMOVAL ARE NOT ADJACENT TO OR DIRECTLY OPPOSITE ONE ANOTHER. IF REMOVAL EXTENDS MORE THAN 1½" BEHIND THE MAIN REINFORCING BARS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THIS SHEET.

THE #4 "U" DOWELS ARE REQUIRED ONLY AROUND THE ANCHOR BOLTS. THE EXISTING REINFORCING STEEL IN THE PEDESTAL WALL SHALL BE CLEANED, STRAIGHTENED AND REMAIN IN PLACE.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

COAT ALL REPAIR SURFACE AREAS ON THE TOP OF CAPS, INCLUDING CHAMFERS, WITH EPOXY PROTECTIVE COATING, OVERLAPPING THE REPAIR AREA BY A MINIMUM OF 3" ON ALL POSSIBLE SIDES.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION (ERI), SEE SPECIAL PROVISIONS.

PROJ. NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Docusigned by: Krishna P. Sedai EA8F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
TYPICAL CAP AND COLUMN REPAIR DETAILS

ASSEMBLED BY : E. BAYISSA	DATE : 09/2021
CHECKED BY : A. SORSENGINH	DATE : 12/2021
DRAWN BY : NAP 8/18	
CHECKED BY :	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-24
1			3			TOTAL SHEETS
2			4			26

P:\Structures\Plans\330394\FinalPlans\408_047_U2579AA_SMU_TCCR_S24_330394.dgn

8/26/21

NOTES

STRUCTURAL STEEL SHALL BE AASHTO GRADE 36 OR GREATER.

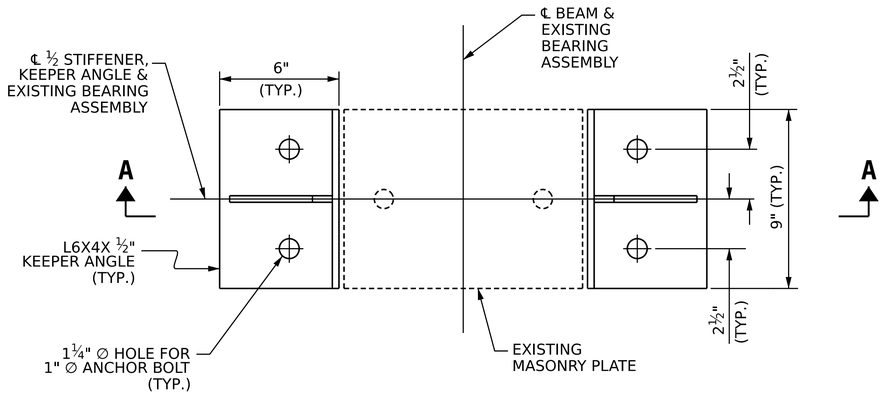
STRUCTURAL STEEL, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO 292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

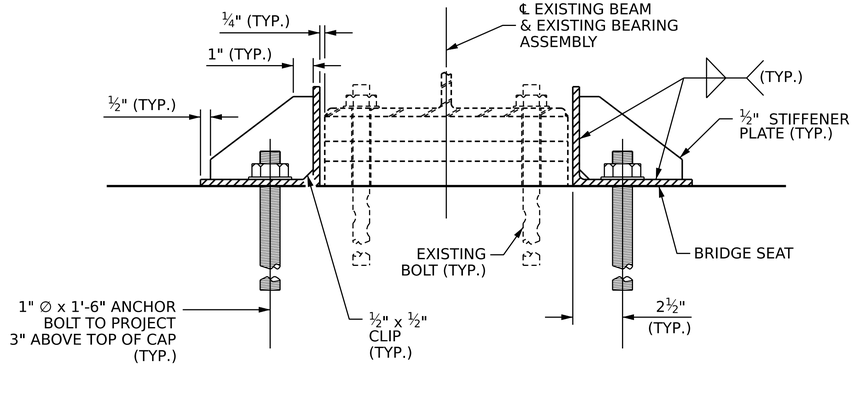
THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS. NO FIELD TESTING IS REQUIRED. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SECTION 420 OR THE STANDARD SPECIFICATIONS.

FOR STEEL KEEPER ANGLE ASSEMBLY, SEE SPECIAL PROVISIONS.

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.



PLAN



SECTION A-A

STEEL KEEPER ANGLE ASSMEBLY DETAILS

BRIDGE NO.	STEEL KEEPER ANGLE ASSEMBLY	
	EACH	
	ESTIMATE	ACTUAL
330394	1	

PROJECT NO. U-2579AA
FORSYTH COUNTY
BRIDGE NO. 330394

06/29/2022
NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI
Krishna P. Sedai
EA6F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

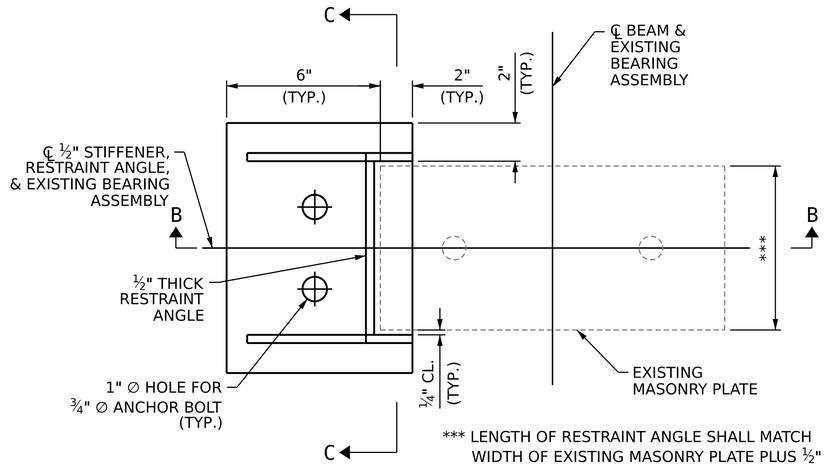
STEEL KEEPER ANGLE ASSEMBLY DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-25
1			3			TOTAL SHEETS
2			4			26

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

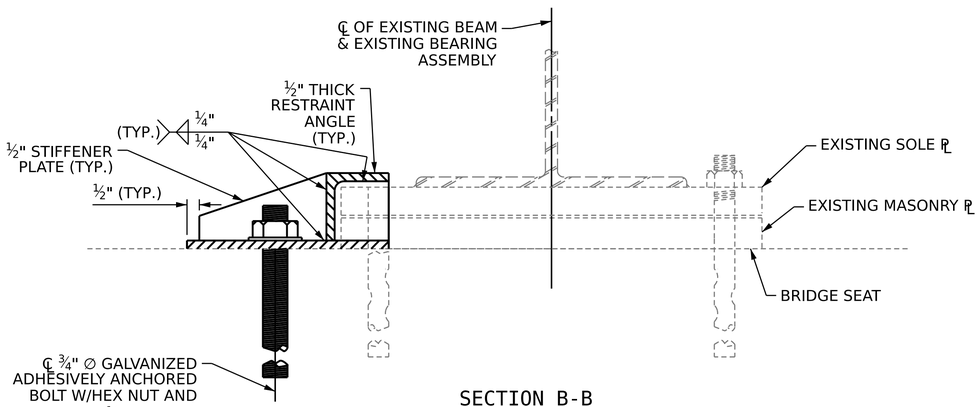
DRAWN BY : E. BAYISSA DATE : 03/2022
CHECKED BY : A. SORSENGINH DATE : 03/2022
DESIGN ENGINEER OF RECORD: _____ DATE : _____

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_049_U2579AA_SMU_SKAA_S25_330394.dgn
ksedal



PLAN

SECTION C-C



SECTION B-B

(LOCATION OF EXISTING ANCHOR BOLTS AS SHOWN IS FOR ILLUSTRATION ONLY)

NOTES

STRUCTURAL STEEL SHALL BE AASHTO GRADE 36 OR GREATER.

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

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

ADHESIVELY ANCHORED ANCHOR BOLTS SHALL HAVE MINIMUM EMBEDMENT OF 12" WITH SUFFICIENT PROJECTION TO PROVIDE FULL NUT ENGAGEMENT ABOVE KEEPER ASSEMBLY. SEE STANDARD SPECIFICATIONS FOR ADHESIVE ANCHOR REQUIREMENTS. NO FIELD TESTING REQUIRED.

THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF PROPOSED ANCHOR BOLTS AND EXISTING CAP REINFORCING STEEL TO ENSURE NO CONFLICTS.

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS SHOWING LOCATIONS OF ANCHOR BOLTS AND EXISTING CAP REINFORCEMENT TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION OF ASSEMBLIES.

FOR STEEL BEARING RETAINER ANGLE ASSEMBLY, SEE SPECIAL PROVISIONS.

STEEL BEARING RETAINER ANGLE ASSEMBLY

(STEEL RESTRAINT ANGLE OPTION TYP. ON BOTH SIDE)

BRIDGE NO.	STEEL BEARING RETAINER ANGLE ASSEMBLY	
	EACH	
	ESTIMATE	ACTUAL
330394	1	

PROJECT NO. U-2579AA

FORSYTH COUNTY

BRIDGE NO. 330394

06/29/2022

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai

EA6F7941508F4B7...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

STEEL BEARING RETAINER ANGLE ASSEMBLY DETAILS

ASSEMBLED BY :	E. BAYISSA	DATE : 03/2022
CHECKED BY :	A. SORSENGINH	DATE : 03/2022
DRAWN BY : NAP 08/18	REV.	-
CHECKED BY : -	REV.	-

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-26
1			3			TOTAL SHEETS
2			4			26

6/29/2022
P:\Structures\Plans\330394\Final Plans\408_051_U2579AA_SMU_SBRAA_S26_330394.dgn
ksedai

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞"Ø SHEAR STUDS FOR THE ¾"Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞"Ø STUDS FOR 4 - ¾"Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞"Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾"Ø STUDS BASED ON THE RATIO OF 3 - ⅞"Ø STUDS FOR 4 - ¾"Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990