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.

09/08/99

CONTRACT: DJ00293 TIP PROJECT: I-5827

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

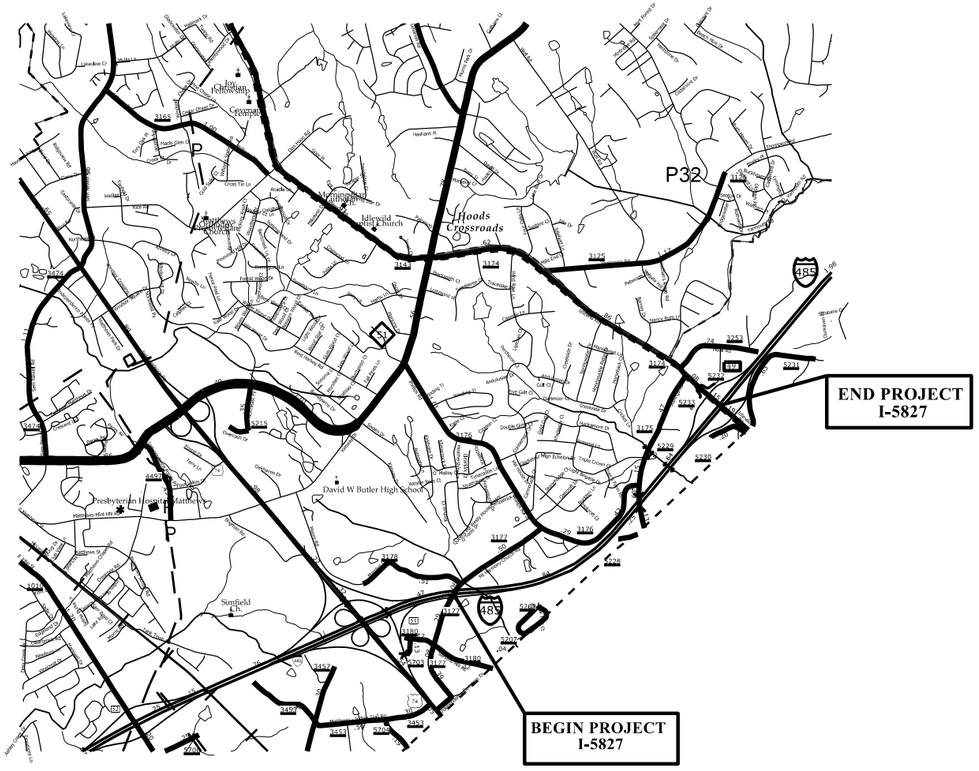
MECKLENBURG COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5827	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50470.3.1	TBD	

LOCATION: ***I–485 PAVEMENT REHABILITATION FROM US–74 TO IDLEWILD RD. FROM MM 48.6 TO MM 50.4.***

TYPE OF WORK: ***RESURFACE AND OVERLAY WITH ULTRA THIN BONDED WEARING COURSE, PAVEMENT MARKINGS, AND SNOWPLOWABLE PAVEMENT MARKERS.***



GRAPHIC SCALES

PLANS

PROFILE (HORIZONTAL)

PROFILE (VERTICAL)

DESIGN DATA

ADT 2016	=	85,000
ADT	=	
K	=	%
D	=	%
T	=	% *
V	=	70 MPH
* TTST	=	DUAL

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT I–5827 = 1.76 MILES

TOTAL LENGTH OF STATE PROJECT I–5827 = 1.76 MILES

PREPARED FOR
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISON TEN

SEPI ENGINEERING & CONSTRUCTION
1025 Waste Avenue
Raleigh, NC 27605
Tel:919-789-9977
Fax:919-789-9591
License: C-2197

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
SEPTEMBER 19, 2018

DAVID J. TUCKER
PROJECT ENGINEER

DAVID J. TUCKER
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

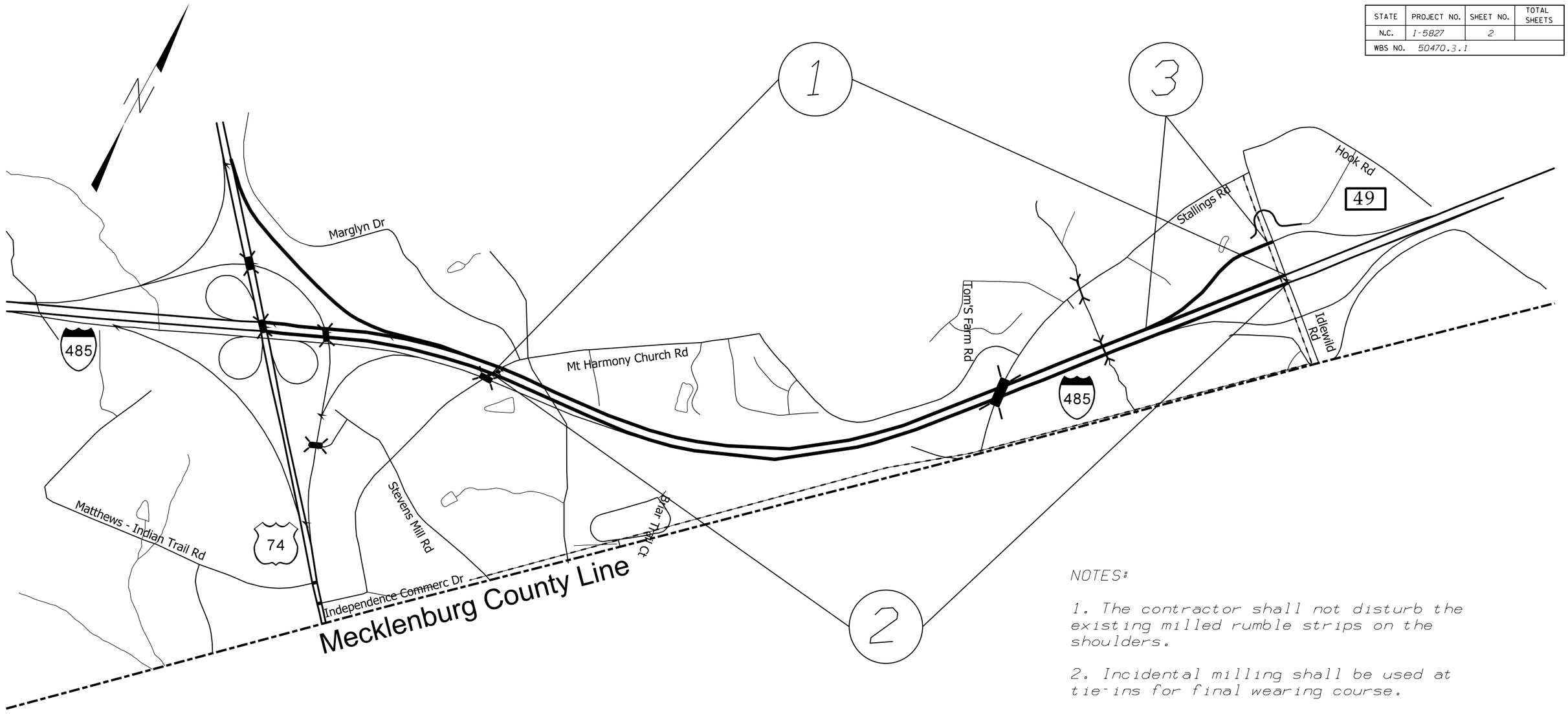
ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

7/25/2018
\\DeskTop\I-5827\I-5827_tsh.dgn
USER:tNeal

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5827	2	
WBS NO.	50470.3.1		



MAP	DESCRIPTION
#1 I-485 INNER LOOP	FROM IDLEWILD ROAD TO BRIDGE OVER MT. HARMONY CHURCH ROAD.
#2 I-485 OUTER LOOP	FROM BRIDGE OVER MT. HARMONY CHURCH ROAD TO IDLEWILD ROAD.
#3 ON RAMP	FROM IDLEWILD ROAD TO I-485 INNER LOOP.

NOTES:

1. The contractor shall not disturb the existing milled rumble strips on the shoulders.

2. Incidental milling shall be used at tie-ins for final wearing course.

3. Use a combination of milling and paving techniques within 75' of bridges to mitigate settlement dips in pavement.

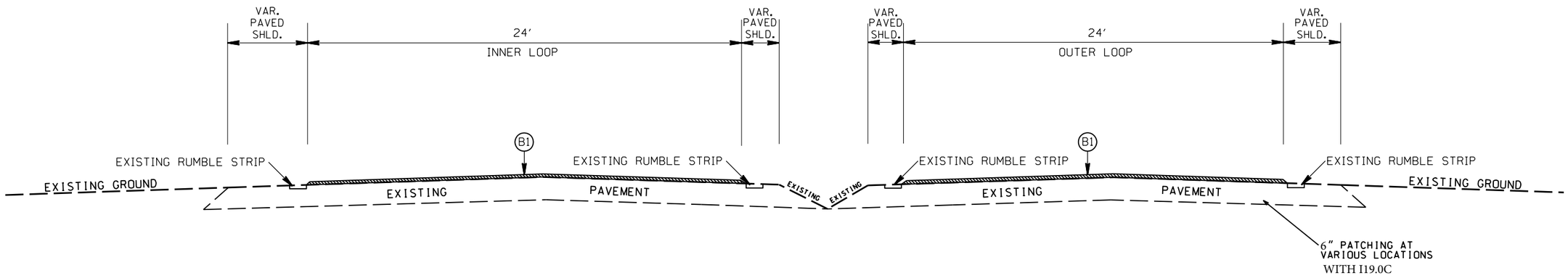
4. Contact Mike Campbell with NCDOT Interstate Maintenance Unit (704-847-0378) for timed-distance pavement marking placement direction.

INTERSTATE I-485
PAVEMENT REHABILITATION

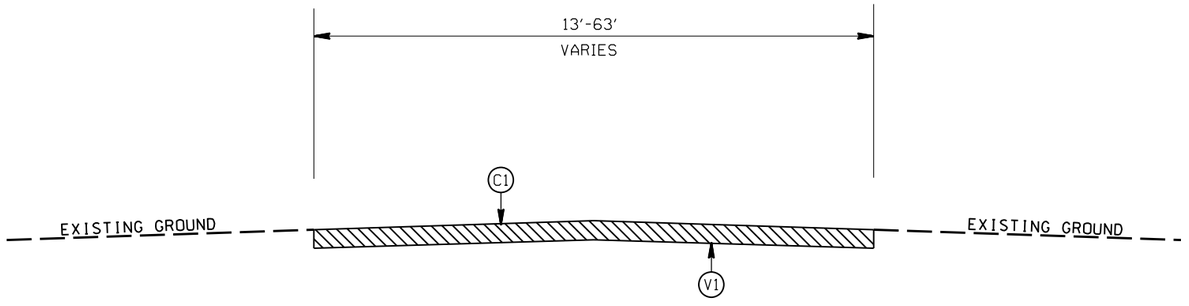
		REVISIONS	
SCALE	-NA-		
DATE	5/18		
DWG. BY	TJN		
DESIGN BY	DJT		
APPROVED			

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5827	3	
WBS NO.	50470.3.1		

PAVEMENT SCHEDULE	
B1	PROP. APPROX. 5/8" ULTRA-THIN BONDED WEARING COURSE AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
V1	MILLING 1.5" DEPTH

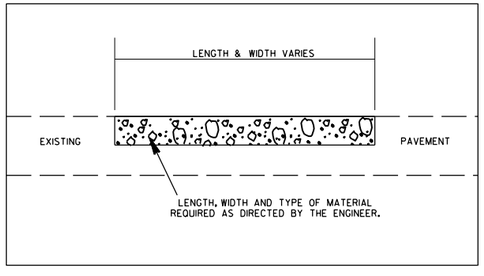


I-485 MAINLINE TYPICAL SECTION



RAMP TYPICAL SECTION

PATCHING DETAIL

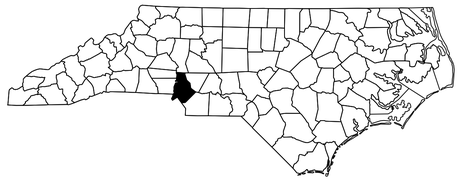


INTERSTATE I-485
PAVEMENT REHABILITATION

		REVISIONS	
SCALE	-NA-		
DATE	5/18		
DWG. BY	TJN		
DESIGN BY	DJT		
APPROVED			

PROJECT: I-5827

CONTRACT NO: DJ00293



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

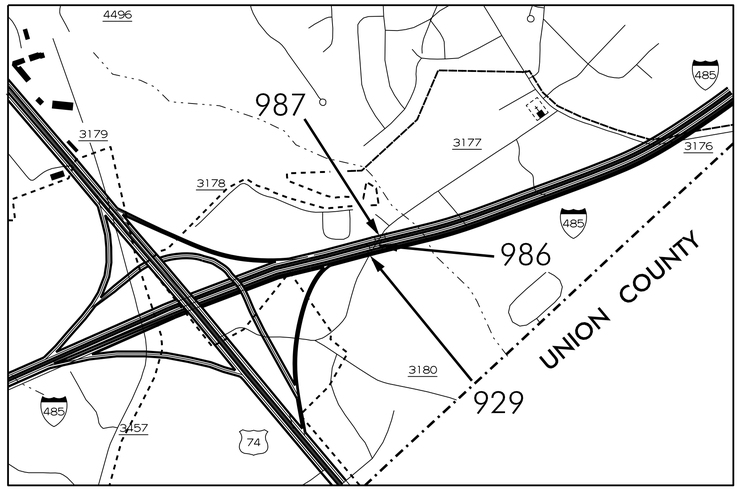
MECKLENBURG COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5827		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50470.1.FS1		P.E.
50470.3.FS1	—	CONST.

LOCATION: ***BRIDGE #929 ON I–485 NBL COLLECTOR OVER SR 3177 (MT. HARMONY CHURCH RD.)***
BRIDGE #986 ON I–485 NBL (OUTER) OVER SR 3177 (MT. HARMONY CHURCH RD.)
BRIDGE #987 ON I–485 SBL (INNER) OVER SR 3177 (MT. HARMONY CHURCH RD.)

TYPE OF WORK: ***BRIDGE PRESERVATION – POLYESTER POLYMER CONCRETE OVERLAY, FOAM JOINT REPLACEMENT AND REPAIR/EPOXY COAT BEAM ENDS***



DESIGN DATA

BRIDGE #929 – ADT 2015 – 10,080
BRIDGE #986 – ADT 2015 – 31,500
BRIDGE #987 – ADT 2015 – 31,500

PROJECT LENGTH

BRIDGE #929 – .03 MILE
BRIDGE #986 – .04 MILE
BRIDGE #987 – .05 MILE

Prepared In the Office of:
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

2018 STANDARD SPECIFICATIONS

LETTING DATE :

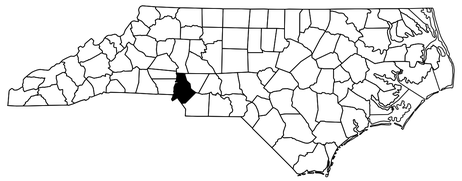
SEPTEMBER 19, 2018

A. KEITH PASCHAL, PE
PROJECT ENGINEER

N. A. PIERCE, PE
PROJECT DESIGN ENGINEER

PROJECT: I–5827

CONTRACT NO: DJ00293



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

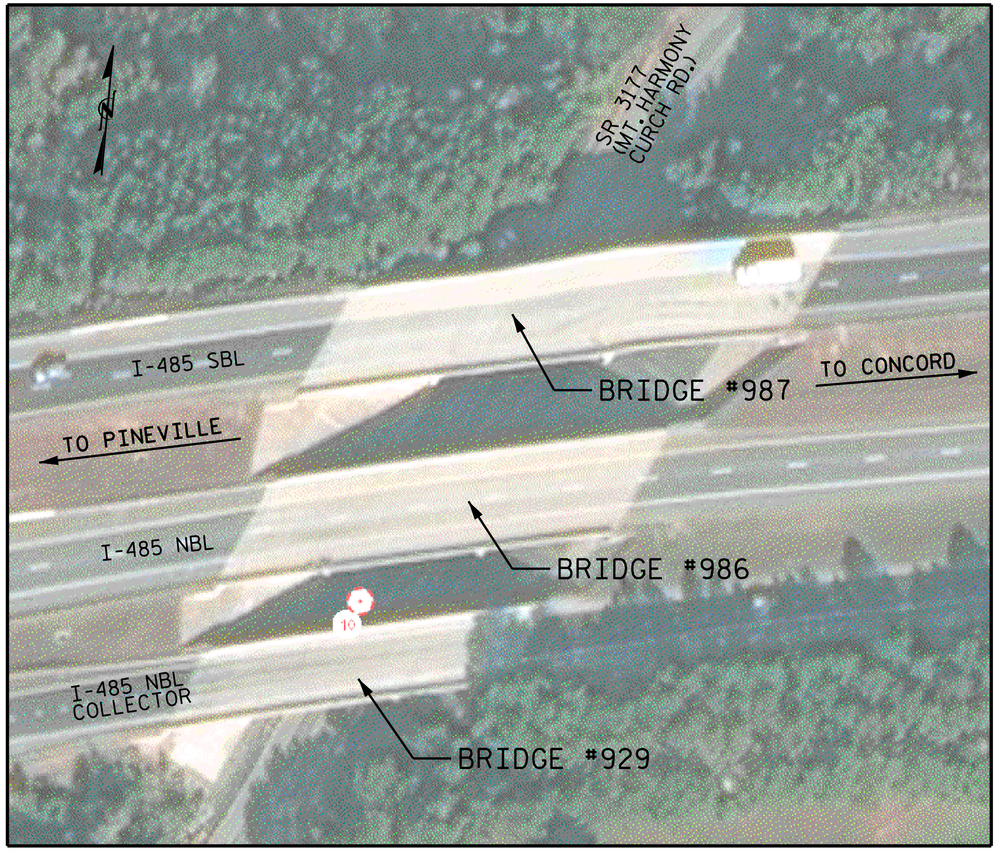
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5827		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50470.1.FS1		P.E.
50470.3.FS1	—	CONST.

LOCATION: *BRIDGE #929 ON I–485 NBL COLLECTOR OVER SR 3177 (MT. HARMONY CHURCH RD.)*
BRIDGE #986 ON I–485 NBL (OUTER) OVER SR 3177 (MT. HARMONY CHURCH RD.)
BRIDGE #987 ON I–485 SBL (INNER) OVER SR 3177 (MT. HARMONY CHURCH RD.)

TYPE OF WORK: *BRIDGE PRESERVATION – POLYESTER POLYMER CONCRETE OVERLAY, FOAM JOINT REPLACEMENT AND REPAIR/EPOXY COAT BEAM ENDS*

INDEX OF SHEETS



LOCATION SKETCH

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

NOTES

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 OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THAT 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 SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

FOR GIRDER REPAIR, SEE SPECIAL PROVISIONS.

FOR POLYESTER POLYMER CONCRETE OVERLAY, SEE SPECIAL PROVISIONS.

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

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

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

FOR PCG EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEAL, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

BRIDGE NO.	GROOVING BRIDGE FLOOR	CLASS II SURFACE PREPARATION	FOAM JOINT SEALS	POLYESTER POLYMER CONCRETE (PPC) MATERIALS	REPAIRS TO PRESTRESSED CONCRETE GIRDERS	PCG EPOXY COATING	CONCRETE DECK REPAIR FOR PPC OVERLAY	PLACING & FINISHING PPC OVERLAY	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK
	SQ. FT.	SQ. YDS.	LUMP SUM	CU. YDS.	CU. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.
#929	6650	✱1.0		34.2	3.5	155.4	✱1.0	807	807	807
#986	10296	0.06		51.0	4.4	186.6	0.06	1236	1236	1236
#987	12262	✱1.0		59.6	13.4	217.6	✱1.0	1472	1472	1472
TOTALS	29208	2.06	LUMP SUM	144.8	21.3	559.6	2.06	3515	3515	3515

✱ CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES IN THE EVENT UNANTICIPATED CLASS II AREAS ARE ENCOUNTERED.

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 929, 986 & 987

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE #929, #986 & #987
ON I-485
OVER SR 3177
(MT. HARMONY CHURCH RD.)

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

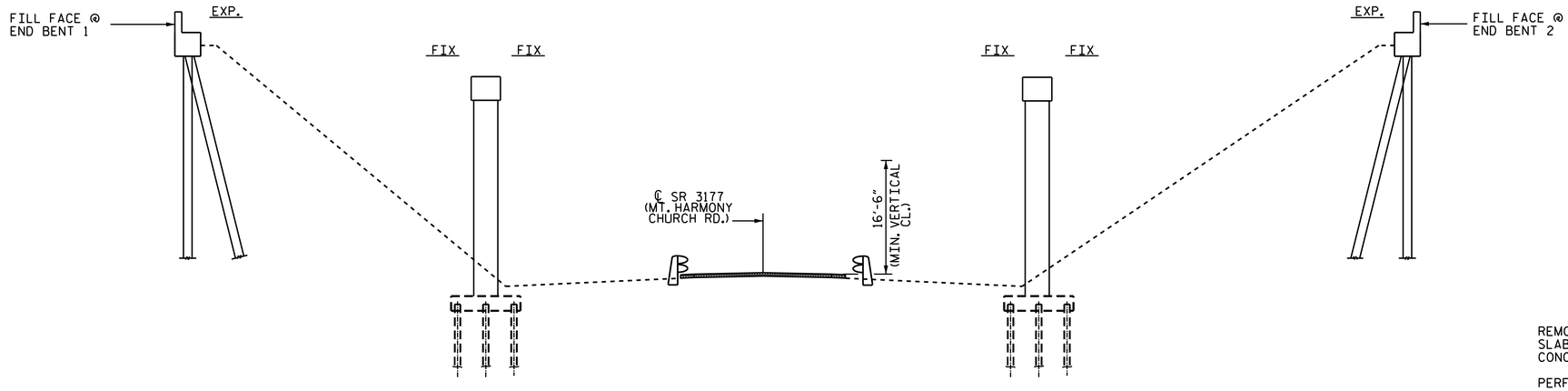
DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E.K. POPE DATE : 7/2018

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\401_001_I5827_SMU_GD_001 _590929.DGN

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 02/08/17.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



ELEVATION
(SECTION ALONG ℄ ROADWAY)

SCOPE OF WORK

REMOVE ASPHALT WEARING SURFACE ON APPROACH SLABS AND PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLAST METHODS.

PERFORM ANY REQUIRED CLASS II DECK REPAIRS.

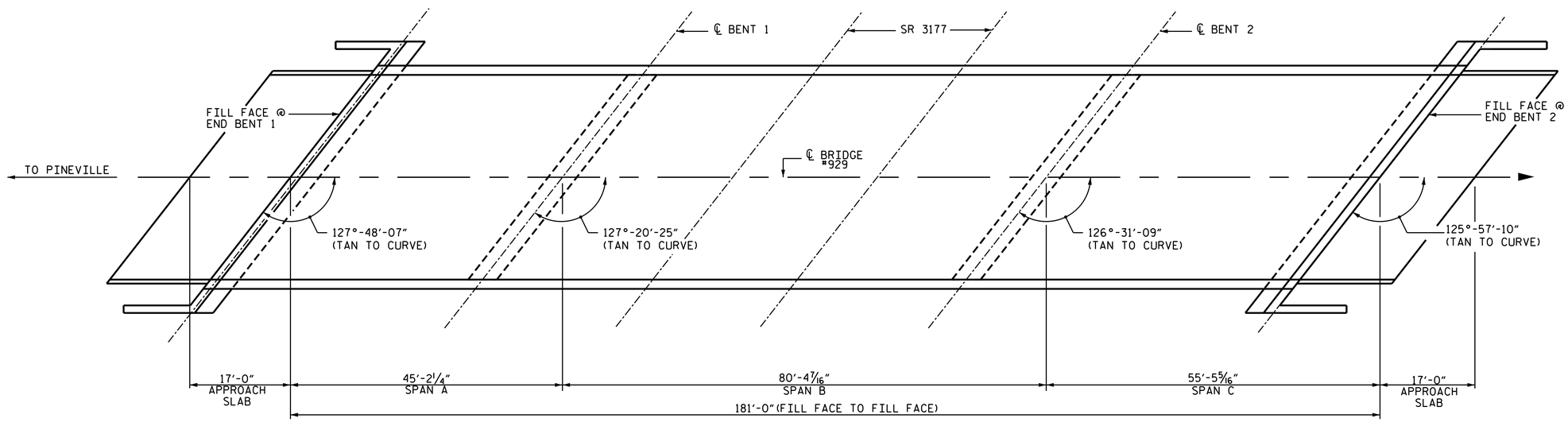
APPLY POLYESTER POLYMER CONCRETE OVERLAY.

INSTALL FORM JOINT SEALS AT END BENTS.

GROVE PPC BRIDGE DECK.

REPAIR UNSOUND CONCRETE IN PRESTRESSED CONCRETE GIRDER ENDS.

REMOVE DEBRIS FROM TOP OF END BENT CAPS, AND APPLY EPOXY COATING TO PRESTRESSED CONCRETE GIRDER ENDS.



PLAN

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 929

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

RESIDENT ENGINEER DATE

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

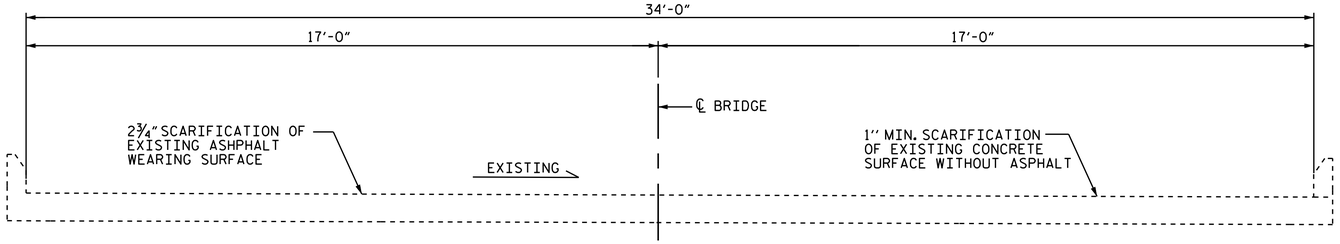
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE #929 ON I-485 NBL COLLECTOR OVER SR 3177 (MT. HARMONY CHURCH RD.)

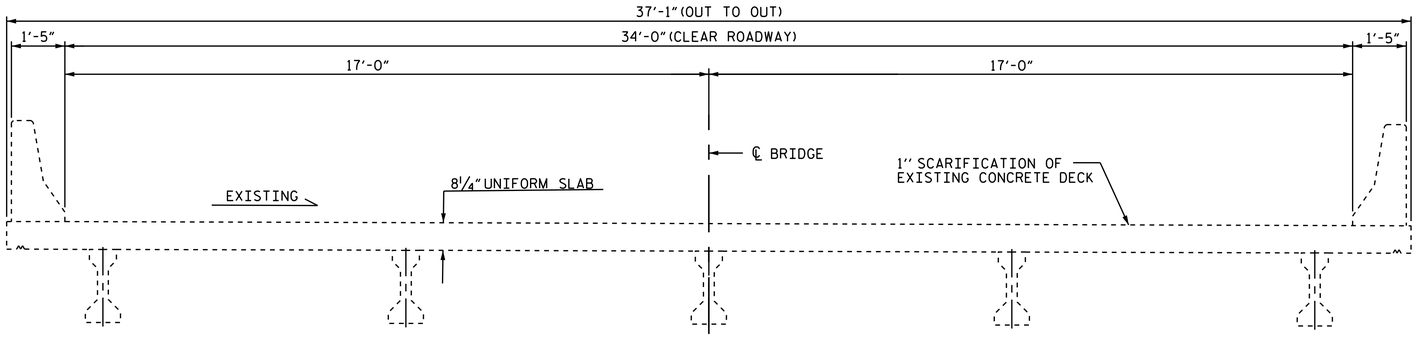
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/24/2018

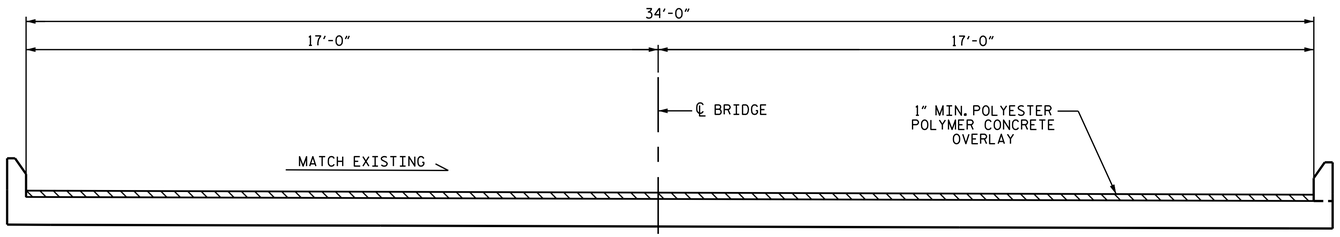
19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\401_003_I5827_SMU_GD_002_590929.DGN
napierce



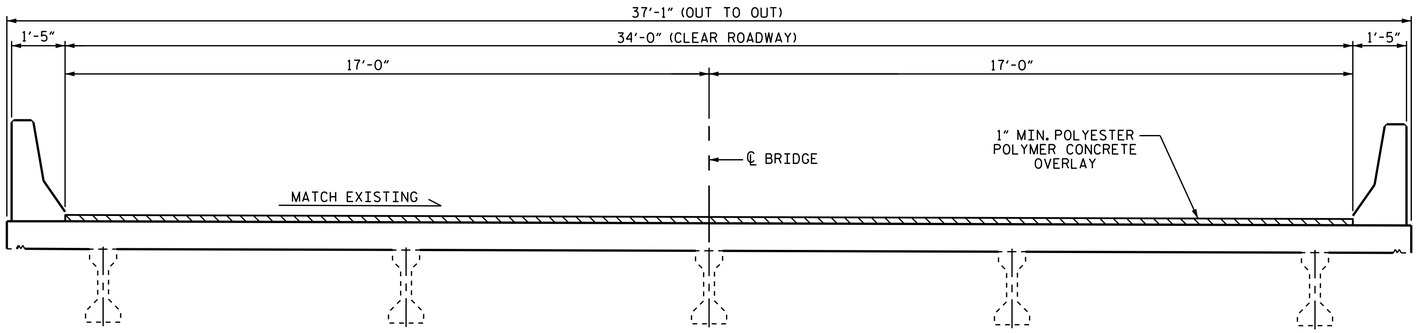
EXISTING APPROACH SLAB



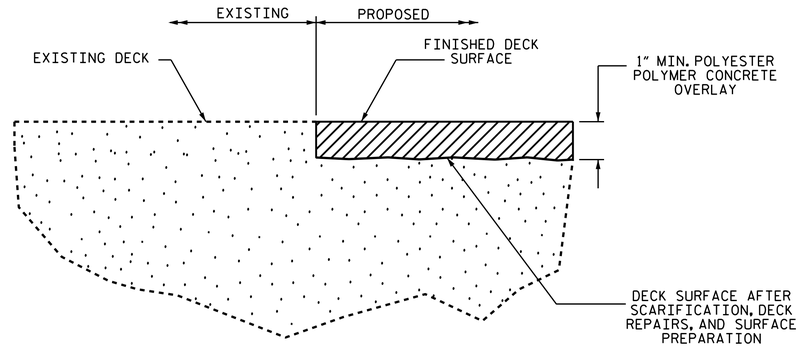
EXISTING TYPICAL SECTION



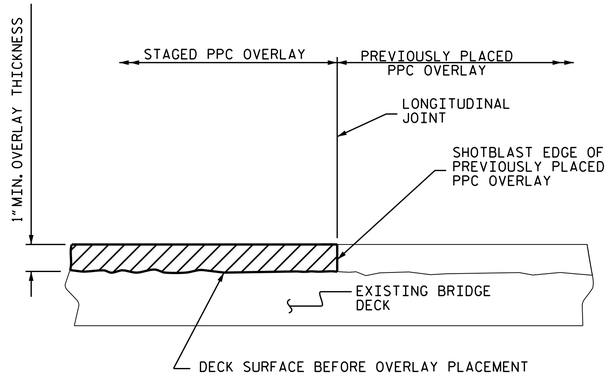
PROPOSED APPROACH SLAB



PROPOSED TYPICAL SECTION



DETAIL FOR POLYESTER POLYMER CONCRETE OVERLAY



STAGED PPC OVERLAY JOINT
(AS NEEDED)

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 929

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTIONS & PPC OVERLAY DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : M. POOLE DATE : 01/2018
CHECKED BY : E. K. POPE DATE : 07/2018

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\Final Plans\401_007_I5827_SMU_TSI_003_590929.dgn
naplerce

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	807 SQ. YDS.	
CLASS II SURFACE PREPARATION	✱1.0 SQ. YDS.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	✱1.0 SQ. YDS.	
SHOTBLASTING BRIDGE DECK	807 SQ. YDS.	
PPC MATERIALS	34.2 CU. YDS.	
PLACING AND FINISHING PPC OVERLAY	807 SQ. YDS.	
GROOVING BRIDGE FLOORS	6650 SQ. FT.	

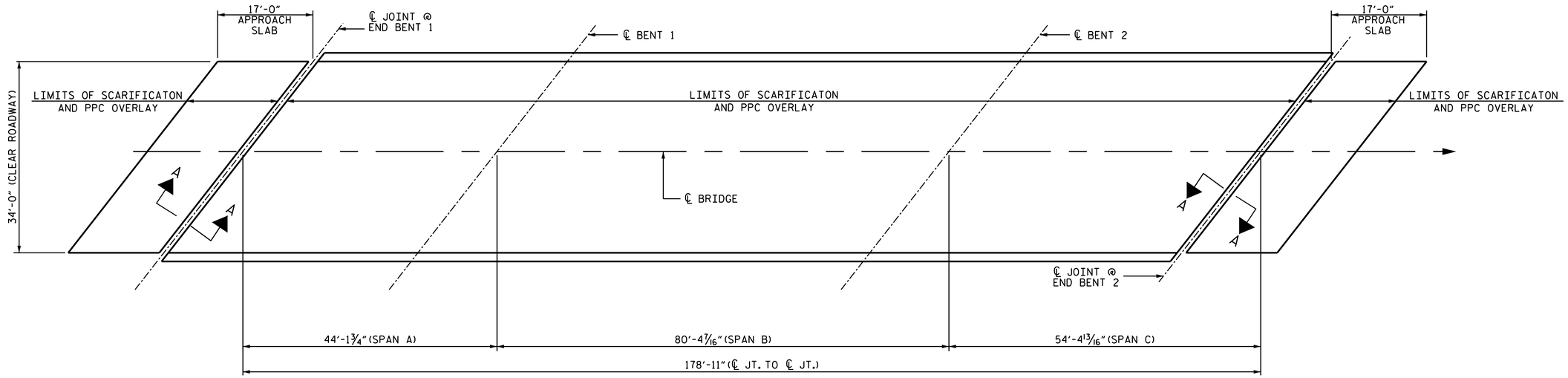
TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.

NOTES

REPAIR LOCATIONS AND ESTIMATED 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.

FOR SECTIONS A-A, SEE "JOINT DETAILS" SHEETS.

✱ CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES IN THE EVENT UNANTICIPATED CLASS II AREAS ARE ENCOUNTERED.



PLAN

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 929

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\401_009_I5827_SMU_SP_004_590929.DGN
napierce

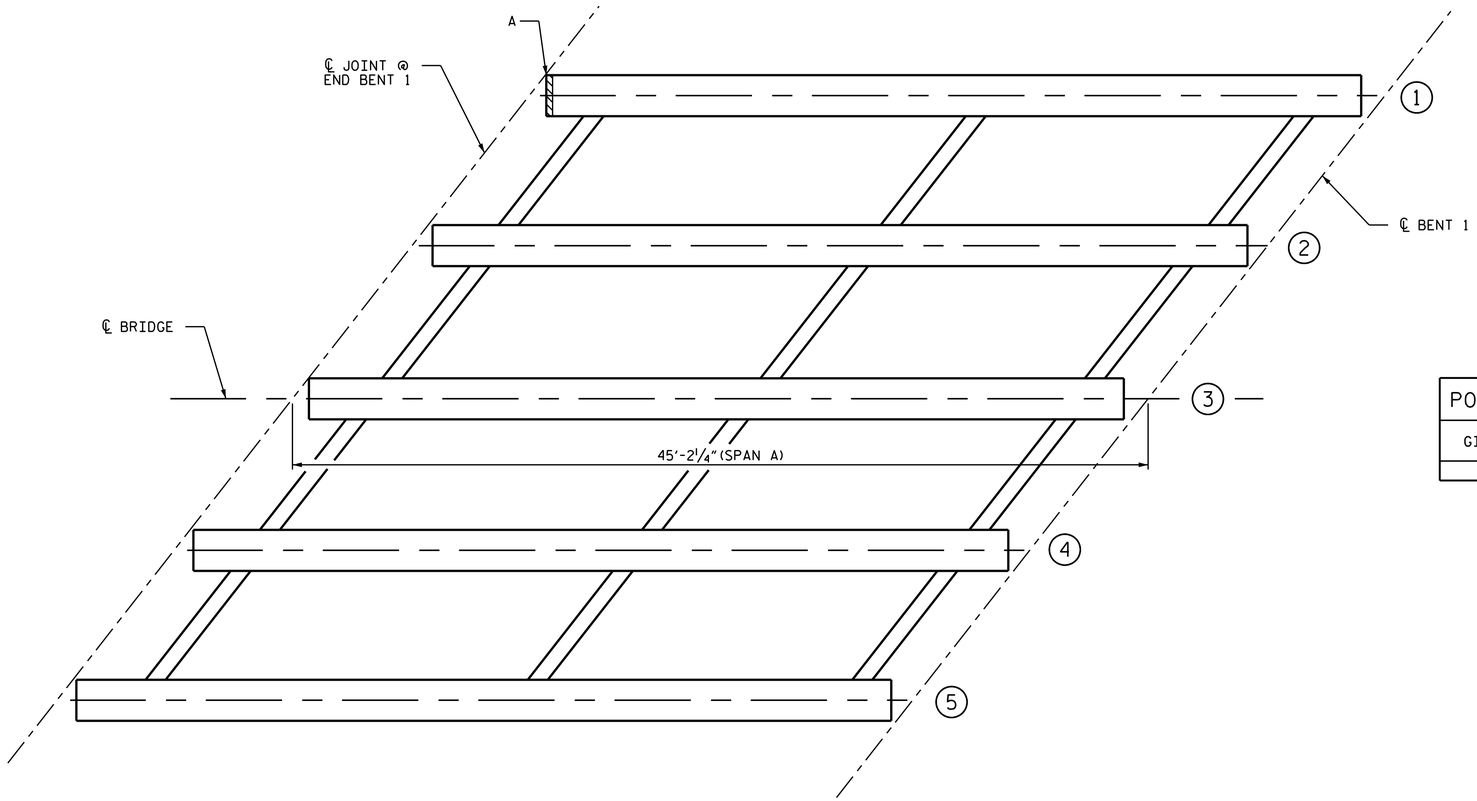
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

POTENTIAL GIRDER REPAIR LOCATIONS			
GIRDER	LOCATION	REPAIR SIZE (LXW)	LABEL
1	BM. FL.	2'-0" X 2'-0"	A

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 929

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN A

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			21

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\401_011_I5827_SMU_SSR1_005_590929.dgn
naplerce

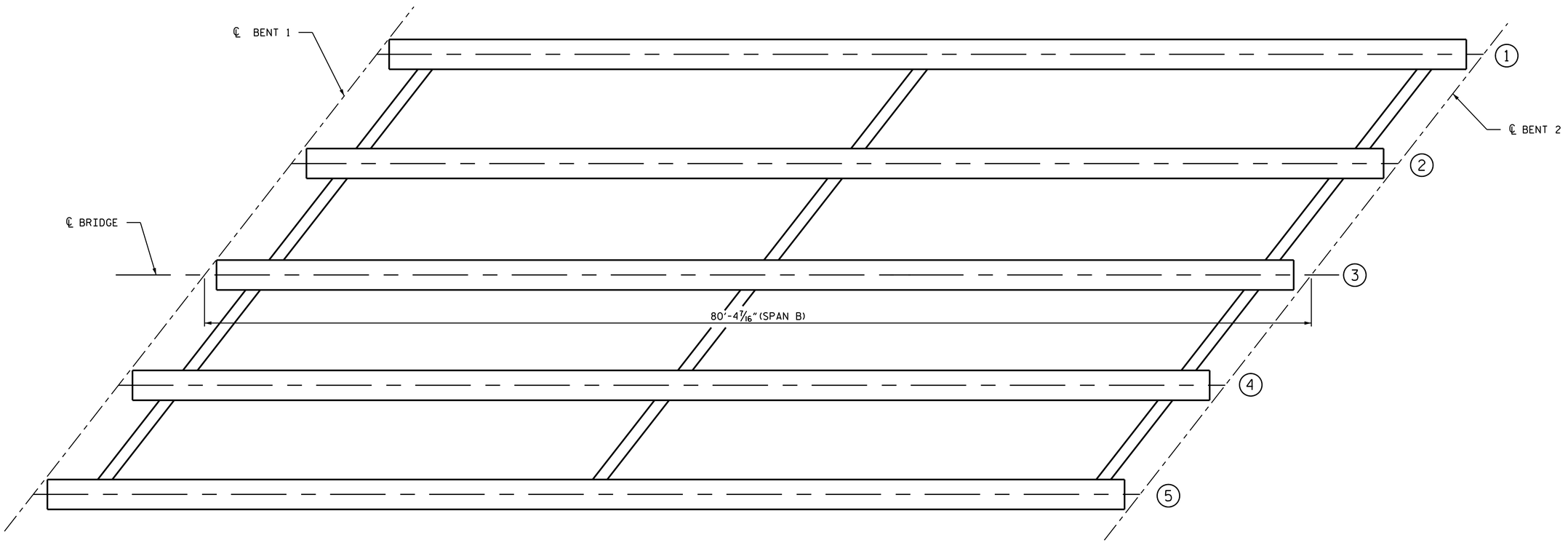
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 929

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 037479 NICHOLAS A. PIERCE
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN B

DRAWN BY : M. POOLE	DATE : 1/2018
CHECKED BY : E. K. POPE	DATE : 4/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			21

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\401_013_I5827_SMU_ SSR2_006_590929.dgn
naplerce

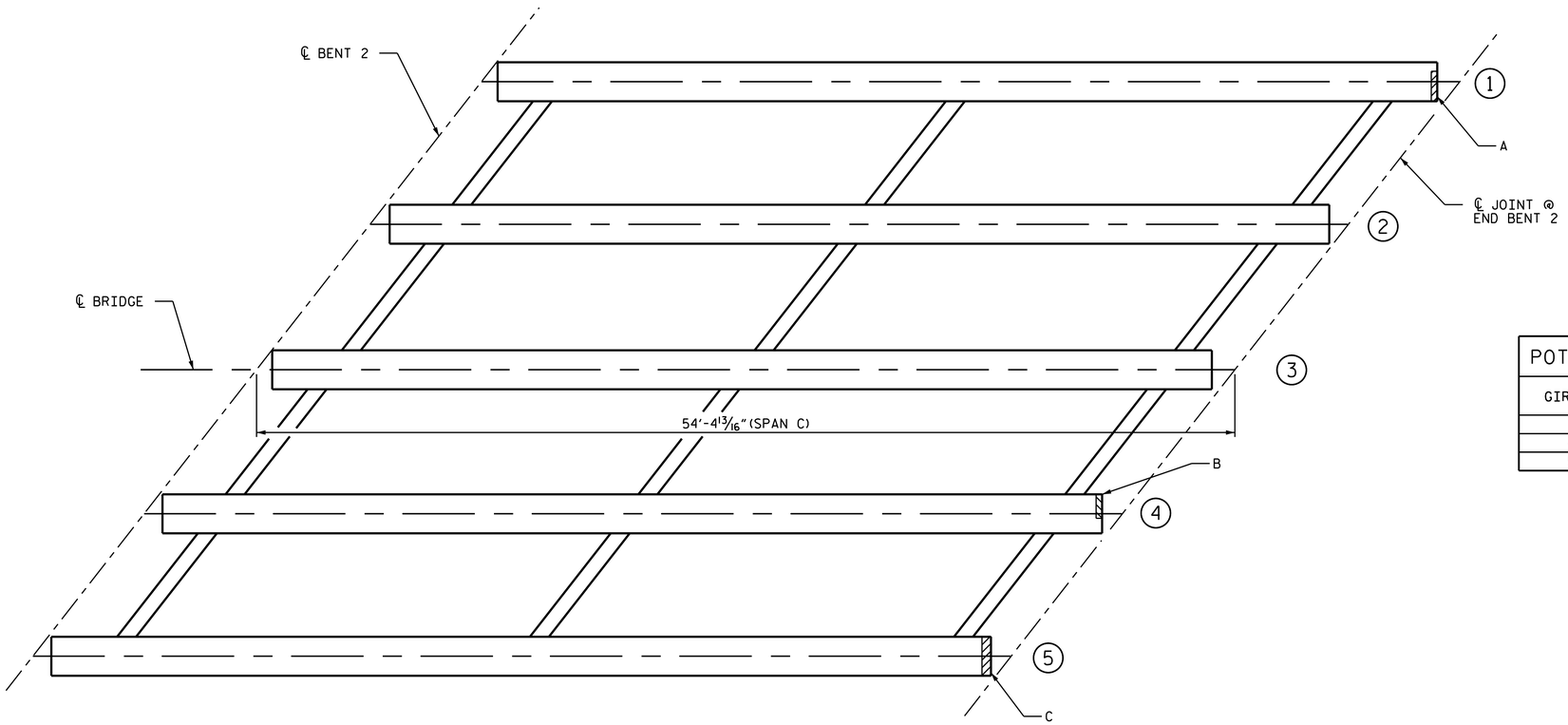
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

POTENTIAL GIRDER REPAIR LOCATIONS

GIRDER	LOCATION	REPAIR SIZE (LXW)	LABEL
1	BEAM END	1'-6" X 1'-0"	A
4	BEAM END	1'-10" X 1'-2"	B
5	BEAM END	2'-0" X 4"	C

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 929

SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

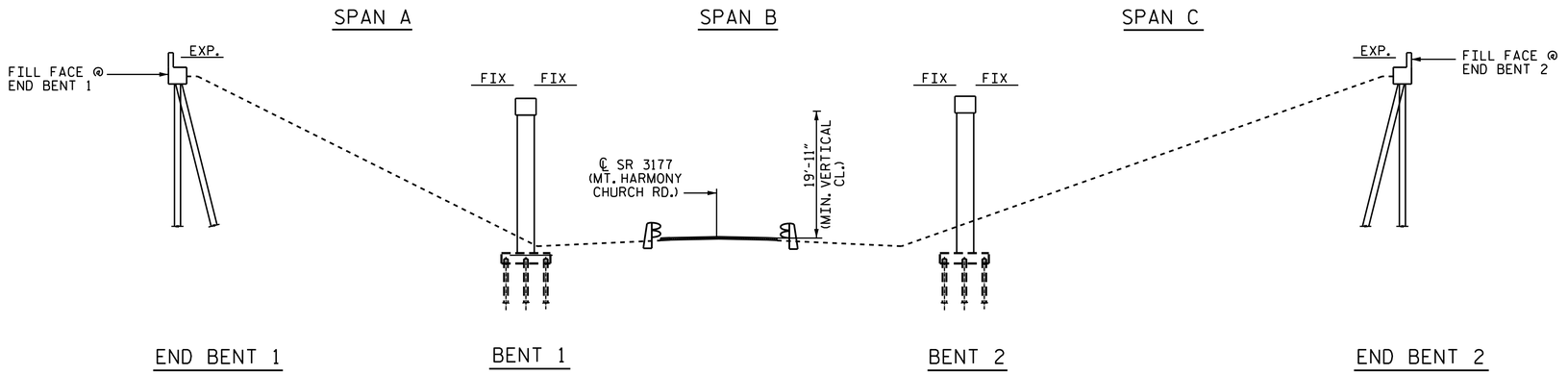
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\Final Plans\401_015_I5827_SMU_ SSR3_007_590929.dgn
naplerce

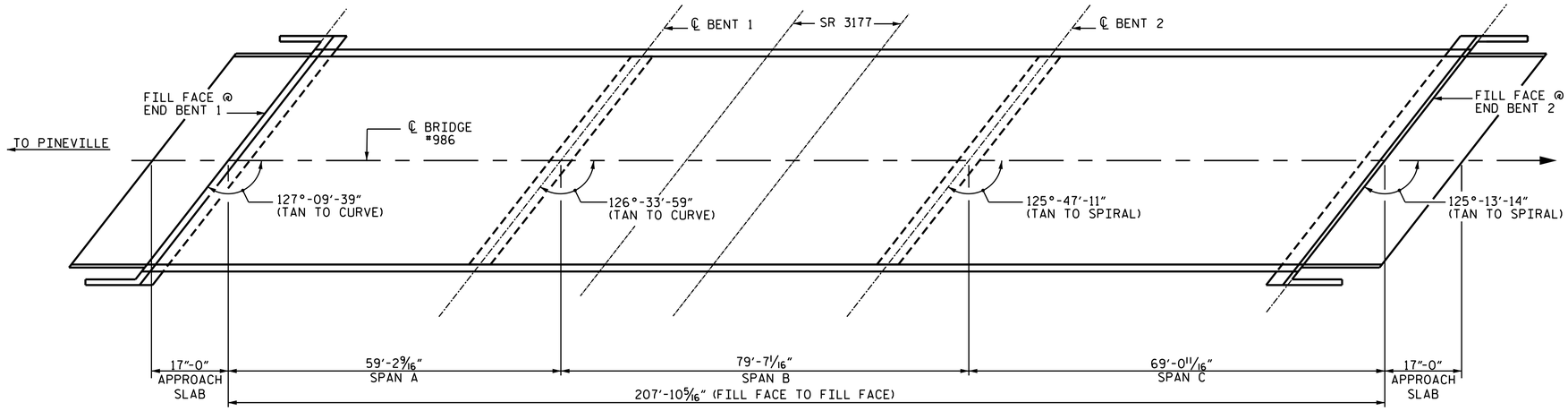
NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 02/08/17.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



ELEVATION
(SECTION ALONG ℄ ROADWAY)



PLAN

SCOPE OF WORK

REMOVE ASPHALT WEARING SURFACE ON APPROACH SLABS AND PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLAST METHODS.

PERFORM ANY REQUIRED CLASS II DECK REPAIRS.

APPLY POLYESTER POLYMER CONCRETE OVERLAY.

INSTALL FORM JOINT SEALS AT END BENTS.

GROVE PPC BRIDGE DECK.

REPAIR UNSOUND CONCRETE IN PRESTRESSED CONCRETE GIRDER ENDS.

REMOVE DEBRIS FROM TOP OF END BENT CAPS, AND APPLY EPOXY COATING TO PRESTRESSED CONCRETE GIRDER ENDS.

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

RESIDENT ENGINEER DATE

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 986

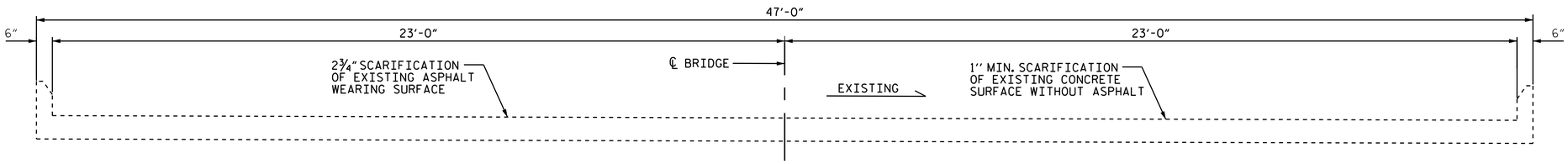
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE #986 ON I-485 NBL (OUTER)
OVER SR 3177
(MT. HARMONY CHURCH RD.)

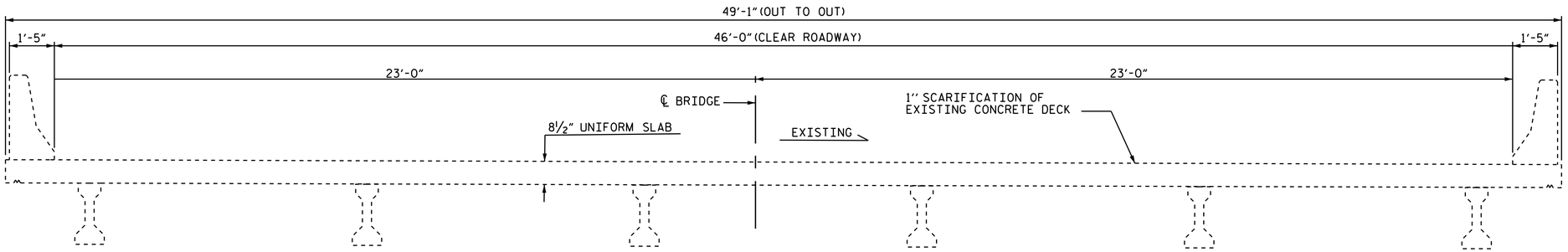
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

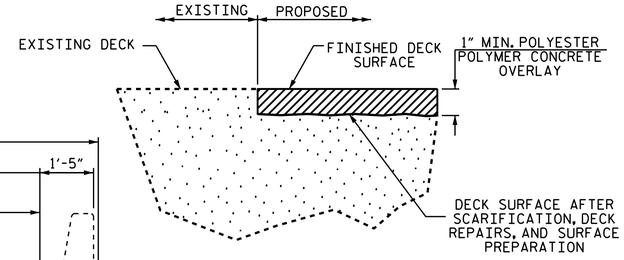
19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\402_001_I5827_SMU_GD_008_590986.DGN
naplerce



EXISTING APPROACAH SLAB

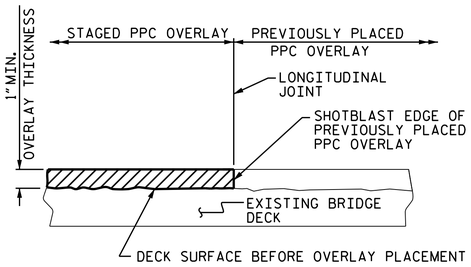


EXISTING TYPICAL SECTION

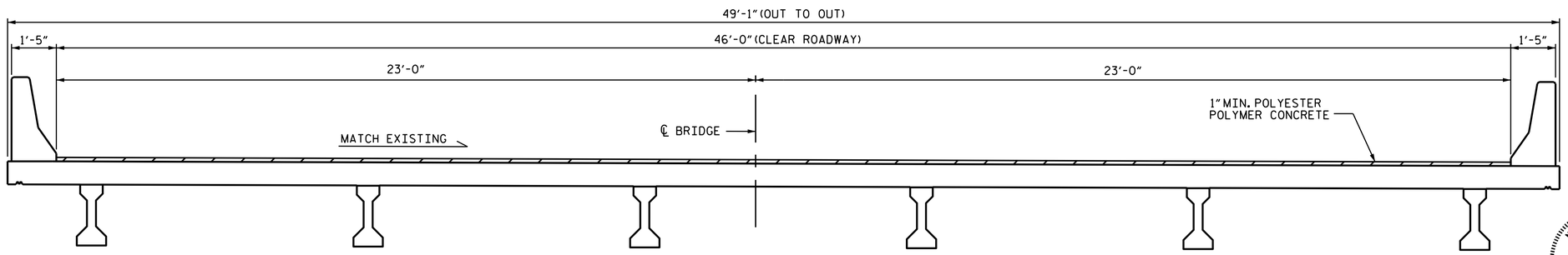


DETAIL FOR POLYESTER POLYMER CONCRETE OVERLAY

PROPOSED APPROACAH SLAB



STAGED PPC OVERLAY JOINT
(AS NEEDED)



PROPOSED TYPICAL SECTION

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 986

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTIONS & PPC OVERLAY DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			21

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\402_003_I5827_SMU_TS_009_590986.DGN
naplerce

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

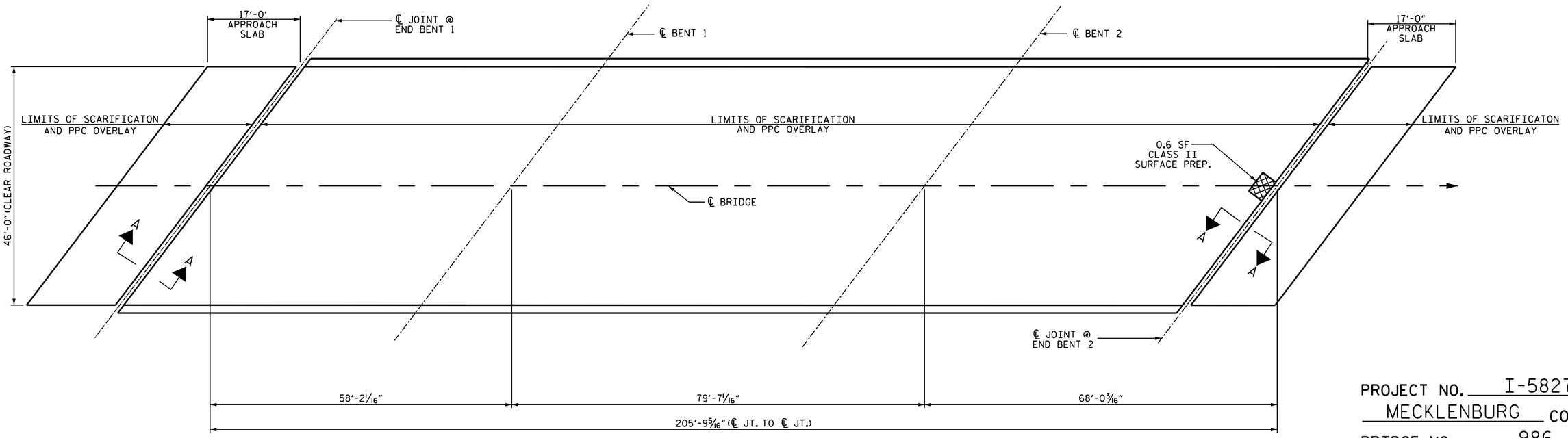
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	1236 SQ. YDS.	
CLASS II SURFACE PREPARATION	0.06 SQ. YDS.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.06 SQ. YDS.	
SHOTBLASTING BRIDGE DECK	1236 SQ. YDS.	
PPC MATERIALS	51.0 CU. YDS.	
PLACING AND FINISHING PPC OVERLAY	1236 SQ. YDS.	
GROOVING BRIDGE FLOORS	10296 SQ. FT.	

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

NOTES:

REPAIR LOCATIONS AND ESTIMATED 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.

FOR SECTIONS A-A, SEE "JOINT DETAILS" SHEETS.



PLAN

CLASS II SURFACE PREPARATION

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 986

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\402_005_I5827_SMU_SP_010_590986.DGN
naplerce

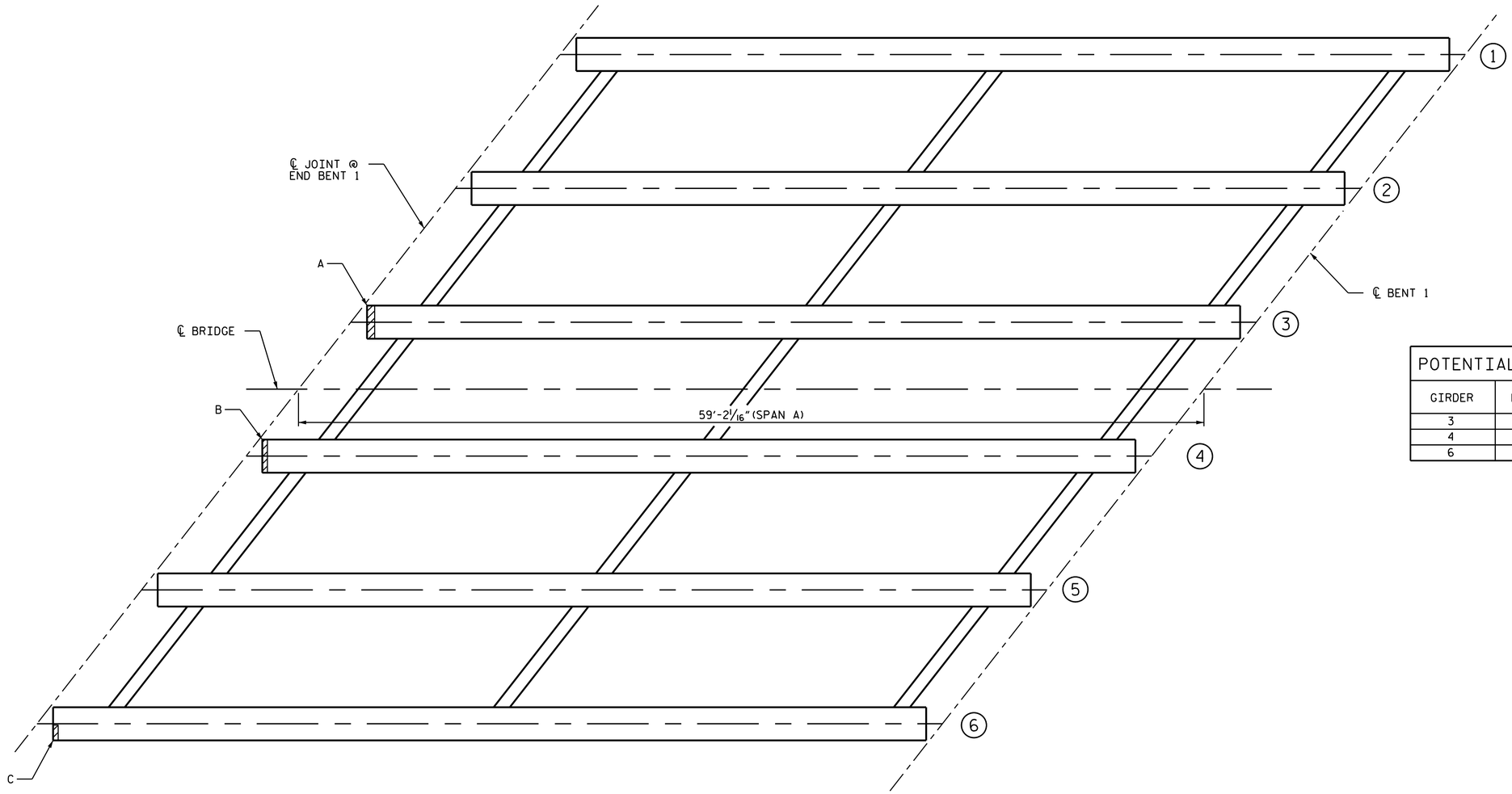
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

POTENTIAL GIRDER REPAIR LOCATIONS			
GIRDER	LOCATION	REPAIR SIZE (LXW)	LABEL
3	BEAM END	2'-0" X 2"	A
4	BEAM END	2'-2" X 3'-4"	B
6	BEAM END	10" X 1'-2"	C

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 986

SHEET 1 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\Final Plans\402_007_I5827_SMU_SSR1_011_590986.dgn
naplerce

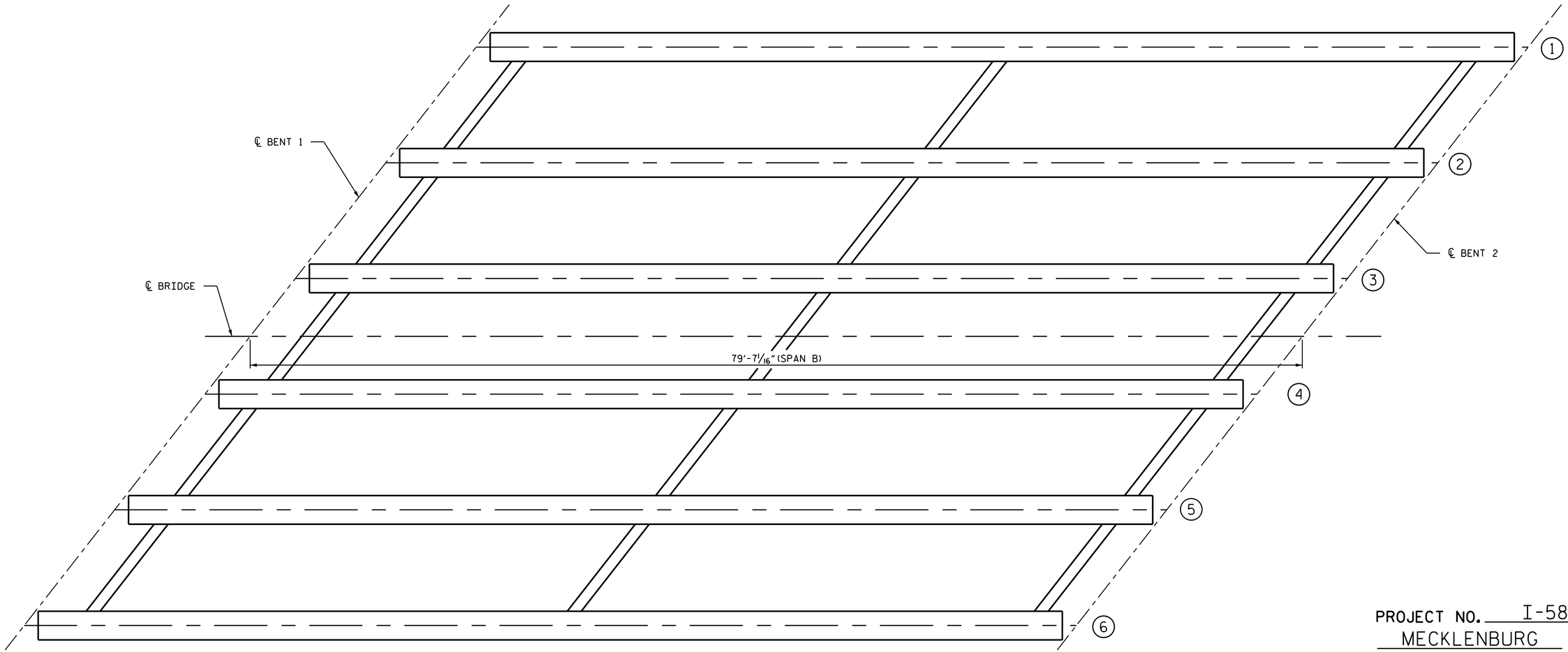
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 986

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN B

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

19-JUL-2018 07:26
B:\TIPProjects-1\I5827\Structures\Final Plans\402_009_I5827_SMU_SSR2_012_590986.dgn
napierce

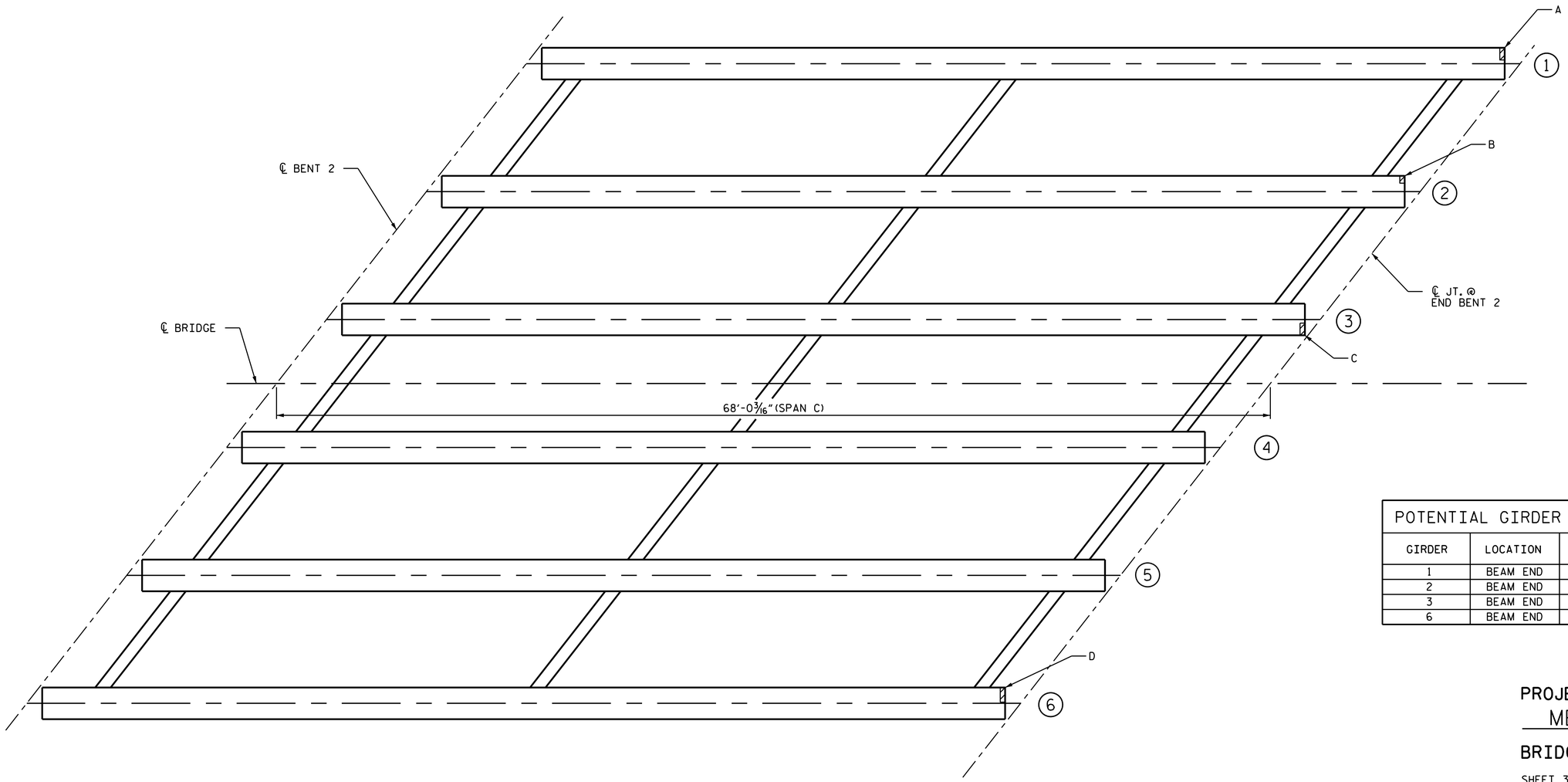
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

POTENTIAL GIRDER REPAIR LOCATIONS			
GIRDER	LOCATION	REPAIR SIZE (LXW)	LABEL
1	BEAM END	8" x 1'-0"	A
2	BEAM END	4" x 1'-2"	B
3	BEAM END	8" x 3"	C
6	BEAM END	10" x 10"	D

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 986

SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN C

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

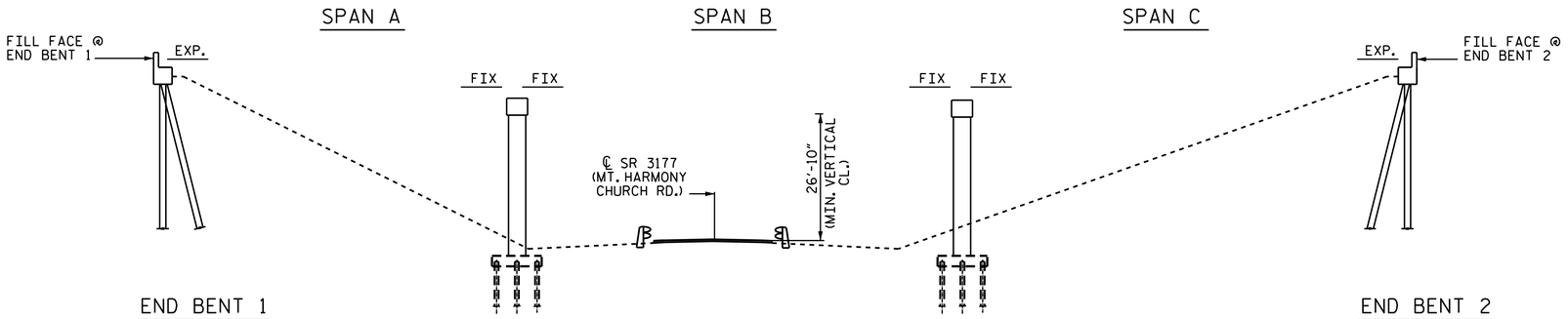
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			21

19-JUL-2018 07:26
B:\TIPProjects-1\I5827\Structures\Final Plans\402_011_I5827_SMU_ SSR3_013_590986.dgn
napierce

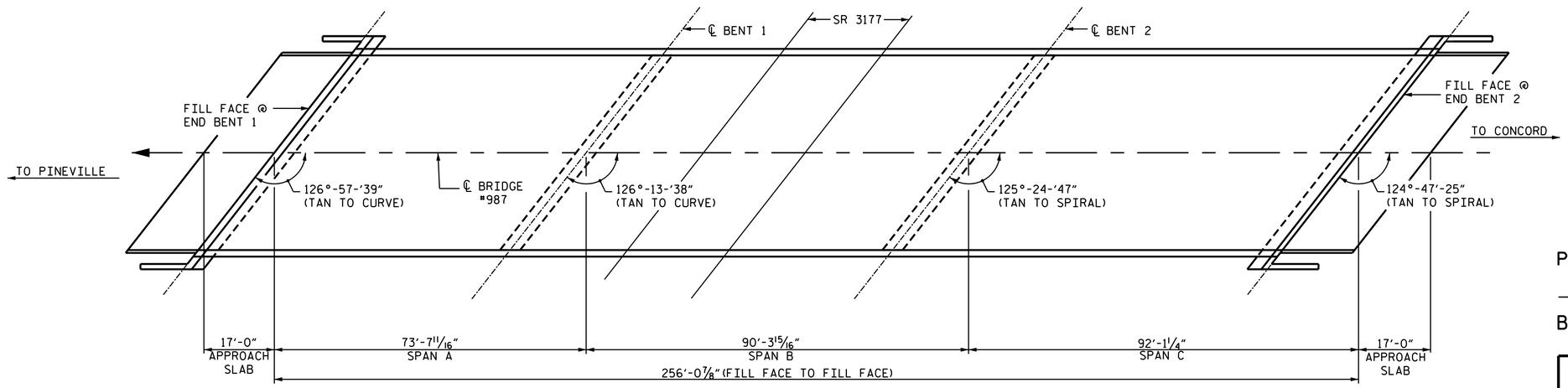
NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 02/08/17.

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



ELEVATION
(SECTION ALONG ℄ ROADWAY)



PLAN

SCOPE OF WORK

REMOVE ASPHALT WEARING SURFACE ON APPROACH SLABS AND PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLAST METHODS.

PERFORM ANY REQUIRED CLASS II DECK REPAIRS.

APPLY POLYESTER POLYMER CONCRETE OVERLAY.

INSTALL FORM JOINT SEALS AT END BENTS.

GROVE PPC BRIDGE DECK.

REPAIR UNSOUND CONCRETE IN PRESTRESSED CONCRETE GIRDER ENDS.

REMOVE DEBRIS FROM TOP OF END BENT CAPS, AND APPLY EPOXY COATING TO PRESTRESSED CONCRETE GIRDER ENDS.

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

RESIDENT ENGINEER DATE

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 987

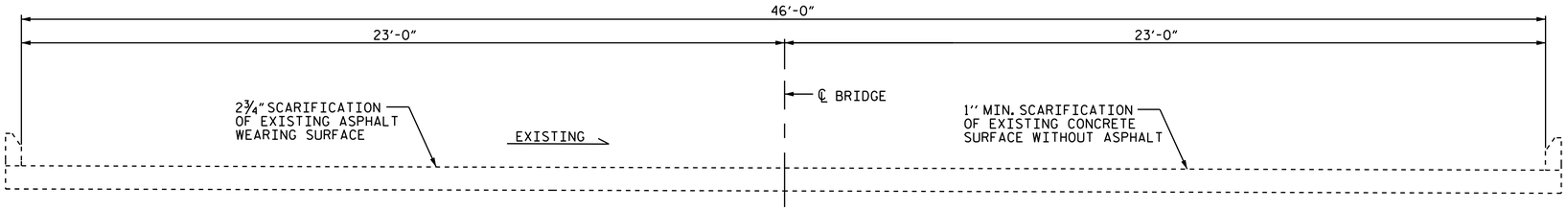
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE #987 ON I-485 NBL (INNER)
OVER SR 3177
(MT. HARMONY CHURCH RD.)

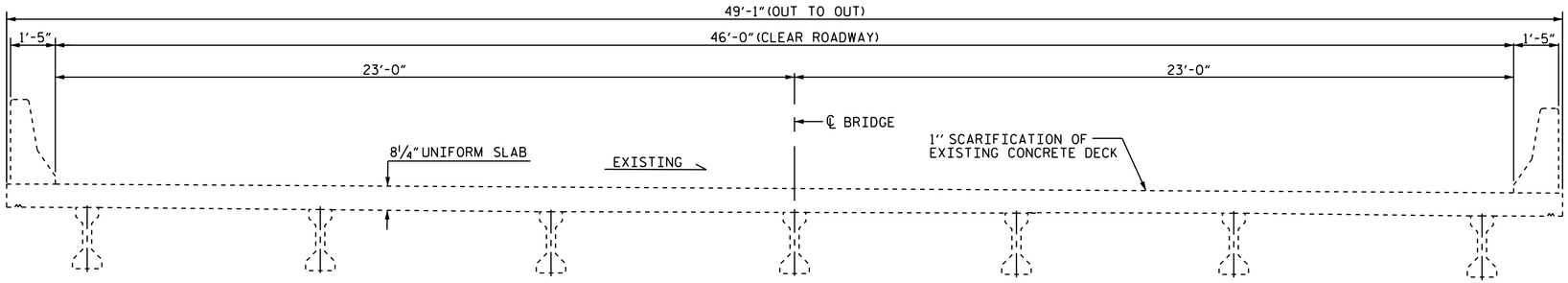
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

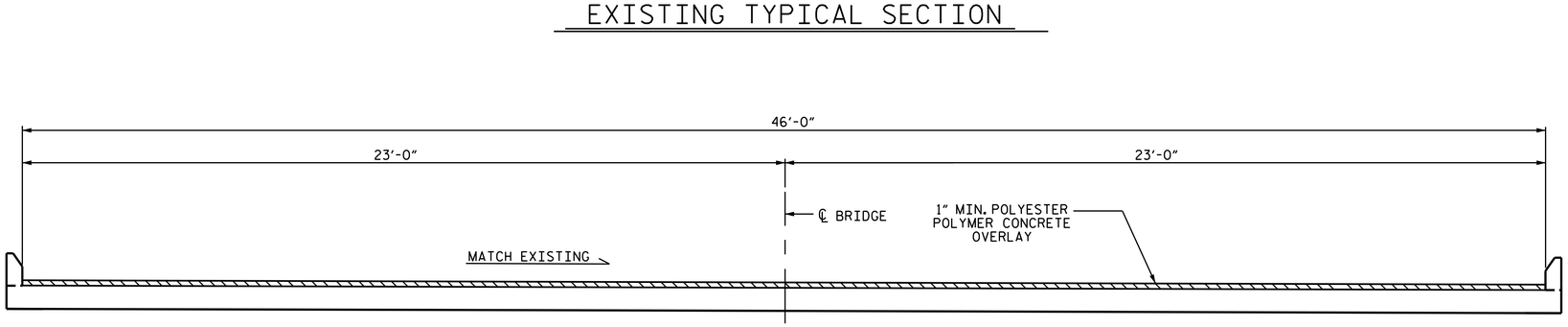
19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\403.001.I5827.SMU.GD.014.590987.DGN
napierce



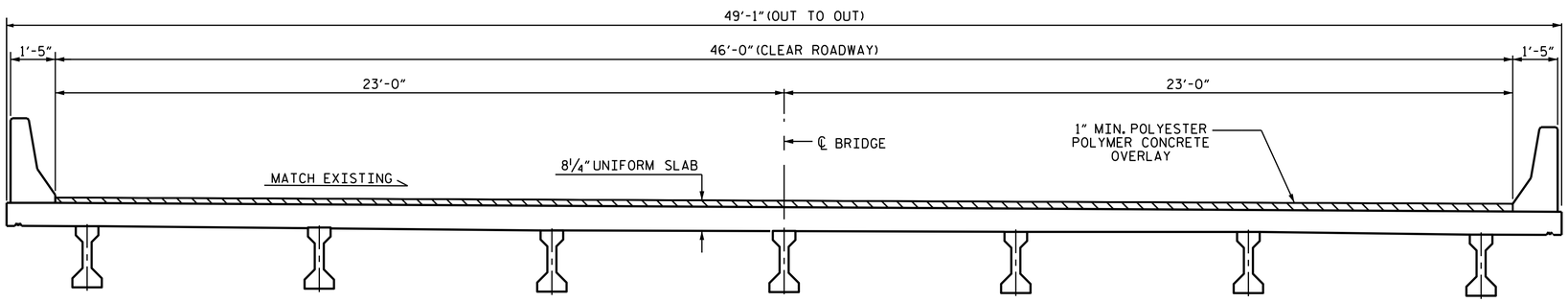
EXISTING APPROACH SLAB



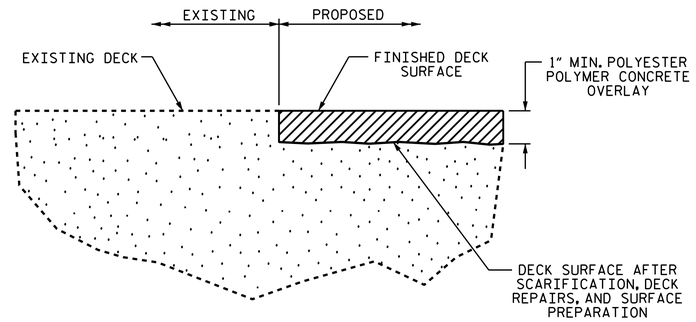
EXISTING TYPICAL SECTION



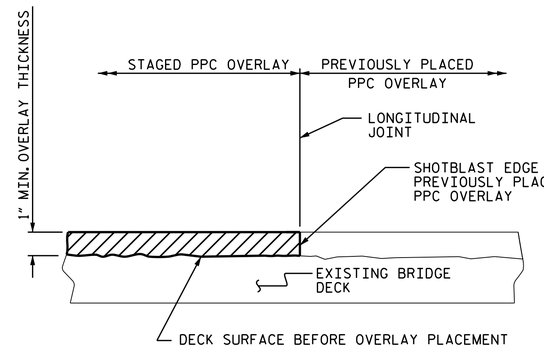
PROPOSED APPROACH SLAB



PROPOSED TYPICAL SECTION



DETAIL FOR POLYESTER POLYMER CONCRETE OVERLAY



STAGED PPC OVERLAY JOINT
(AS NEEDED)

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 987

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 037479 NICHOLAS A. PIERCE ENGINEER
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTIONS & PPC OVERLAY DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. E. POOLE DATE : 4/2018
CHECKED BY : E. K. POPE DATE : 4/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\403_003_I5827_SMU_TS_015_590987.DGN
naplerce

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	1472 SQ. YDS.	
CLASS II SURFACE PREPARATION	✱1.0 SQ. YDS.	
CONCRETE DECK REPAIR FOR PPC OVERLAY	✱1.0 SQ. YDS.	
SHOTBLASTING BRIDGE DECK	1472 SQ. YDS.	
PPC MATERIALS	59.6 CU. YDS.	
PLACING AND FINISHING PPC OVERLAY	1472 SQ. YDS.	
GROOVING BRIDGE FLOORS	12262 SQ. FT.	

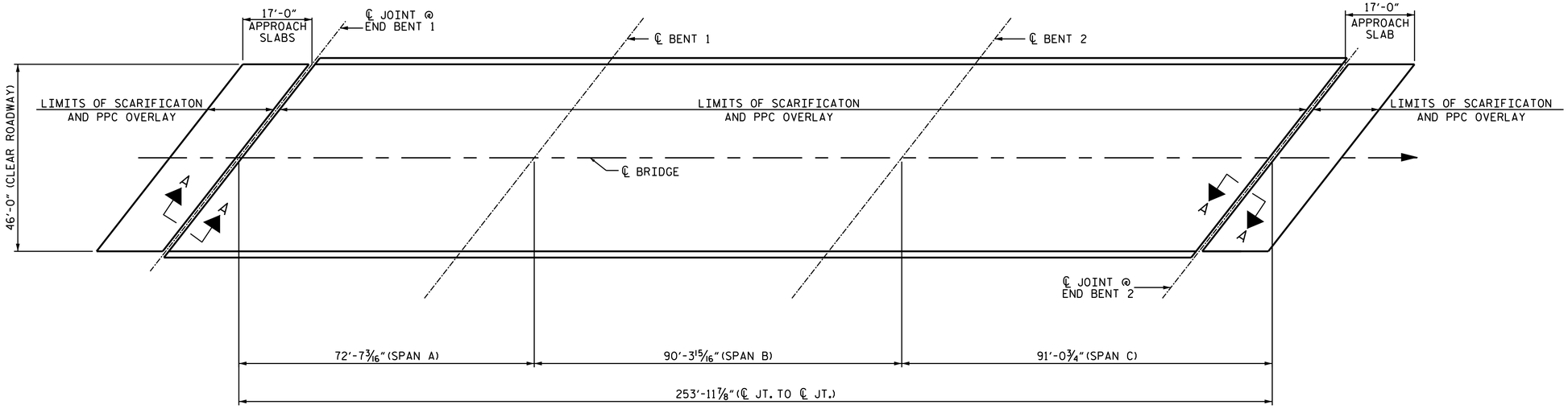
TOP OF DECK REPAIR QUANTITIES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAWCUT). SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.

NOTES:

REPAIR LOCATIONS AND ESTIMATED 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.

FOR SECTIONS A-A, SEE "JOINT DETAILS" SHEETS.

✱ CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED. A TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES IN THE EVENT UNANTICIPATED CLASS II AREAS ARE ENCOUNTERED.



PLAN

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 987

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : M. POOLE DATE : 2/2018
CHECKED BY : E. K. POPE DATE : 4/2018

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\403_005_I5827_SMU_SP_016_590987.DGN
napierce

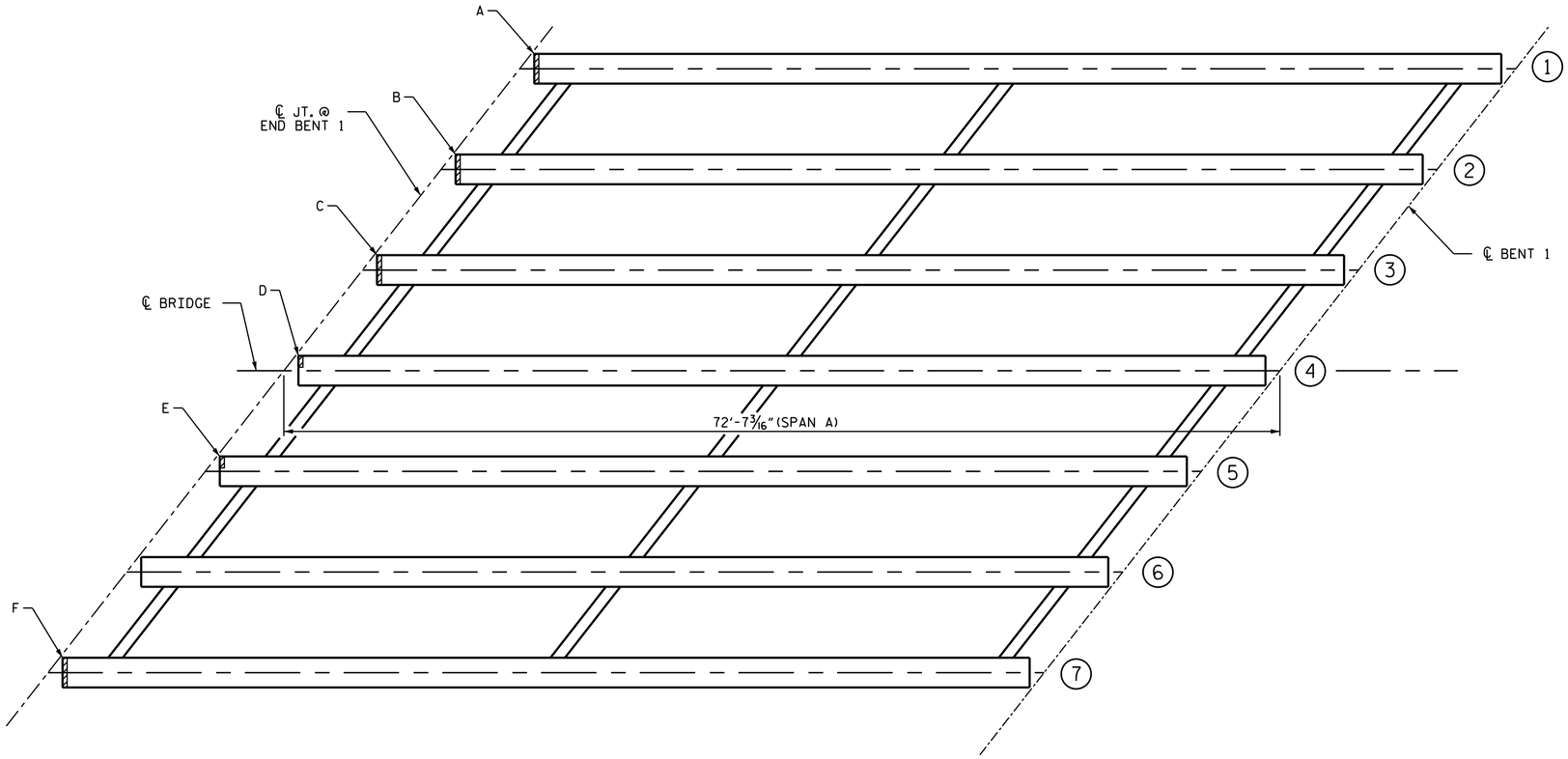
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

GIRDER REPAIR LOCATIONS			
GIRDER	LOCATION	REPAIR SIZE (LXW)	LABEL
1	BEAM END	5.5 SQ. FT.	A
2	BEAM END	5.5 SQ. FT.	B
3	BEAM END	5.5 SQ. FT.	C
4	BEAM END	8" X 1'-4"	D
5	BEAM END	8" X 1'-4"	E
7	BEAM END	5.5 SQ. FT.	F

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 987

SHEET 1 OF 3

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 037479 NICHOLAS A. PIERCE
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN A

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			21

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\Final Plans\403_007_I5827_SMU_ SSR1_017_590987.dgn
napierce

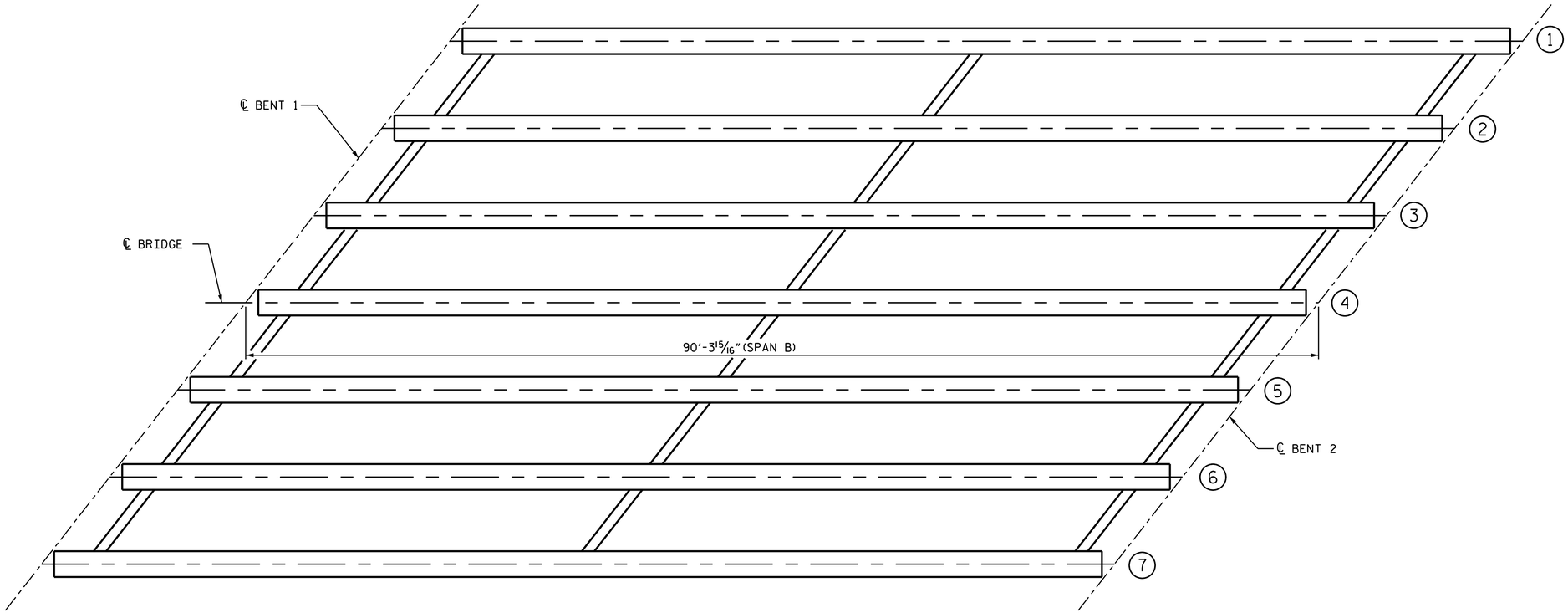
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 987

SHEET 2 F 3

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 037479 NICHOLAS A. PIERCE
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN B

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			21

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

19-JUL-2018 07:26
B:\TIPProjects-1\I5827\Structures\FinalPlans\403_009-I5827_SMU_ SSR2_018_590987.dgn
napierce

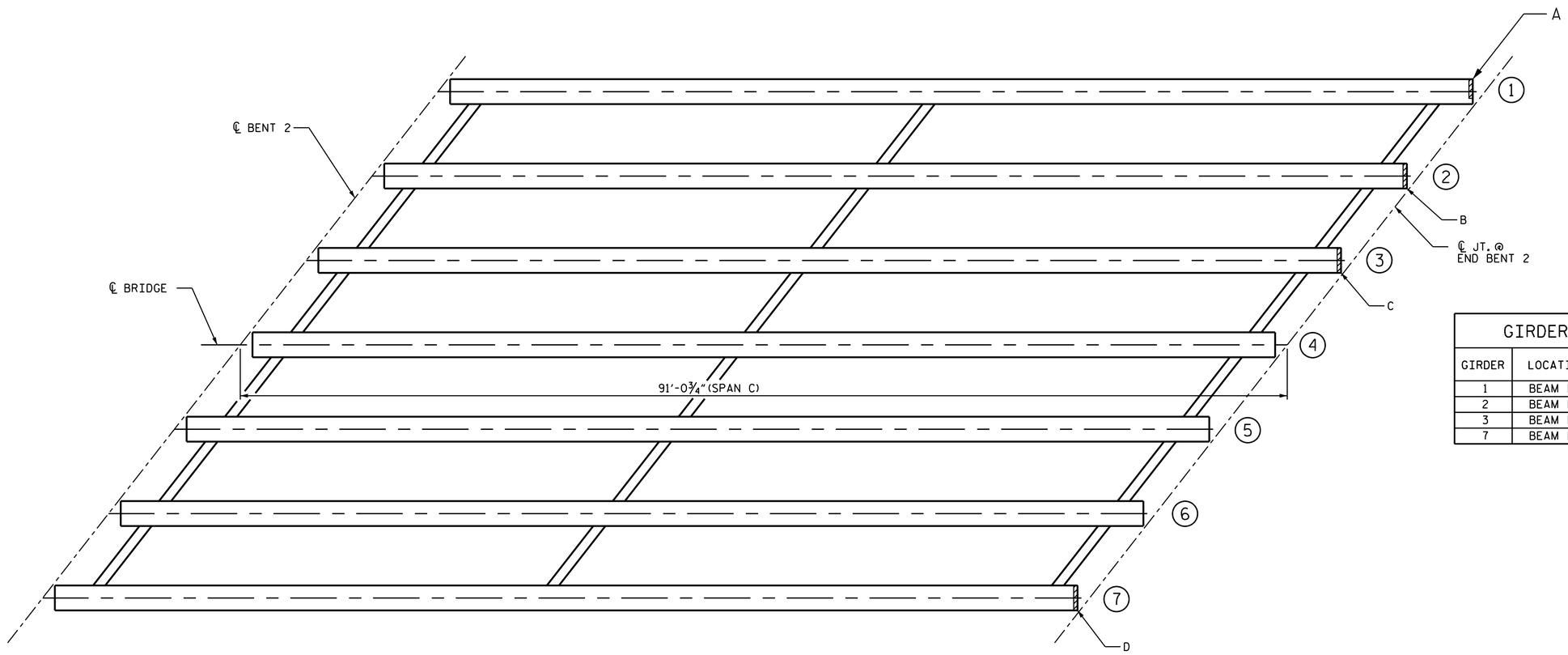
NOTES

FOR PRESTRESSED GIRDER REPAIR AND PCG EPOXY COATING DETAILS, SEE "PRESTRESSED GIRDER REPAIR DETAILS" SHEET S-21.

THE LOCATIONS AND DIMENSIONS OF THE AREAS FOR REPAIR ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, SHALL VERIFY THE LOCATION AND EXTENT OF REPAIR AREAS PRIOR TO GIRDER REPAIR.

POTENTIAL REPAIR LOCATION

(1) GIRDER NUMBER



GIRDER REPAIR LOCATIONS

GIRDER	LOCATION	REPAIR SIZE (LXW)	LABEL
1	BEAM END	1'-6" X 8"	A
2	BEAM END	2'-6" X 1'-0"	B
3	BEAM END	5.5 SQ. FT.	C
7	BEAM END	5.5 SQ. FT.	D

PRESTRESSED GIRDER REPAIR LOCATIONS

(OTHER LOCATIONS MAY EXIST, SEE NOTES)

PROJECT NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 987

SHEET 3 F 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR LOCATIONS SPAN C

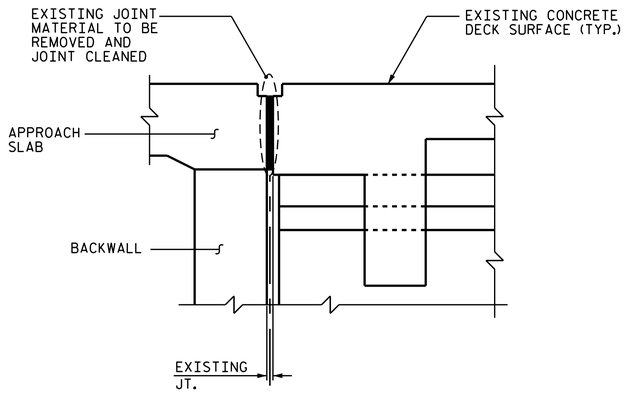
NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

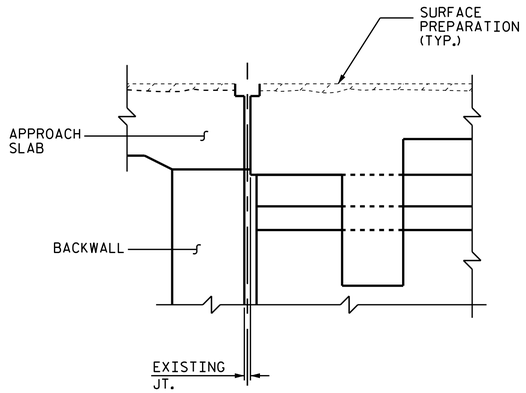
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			21

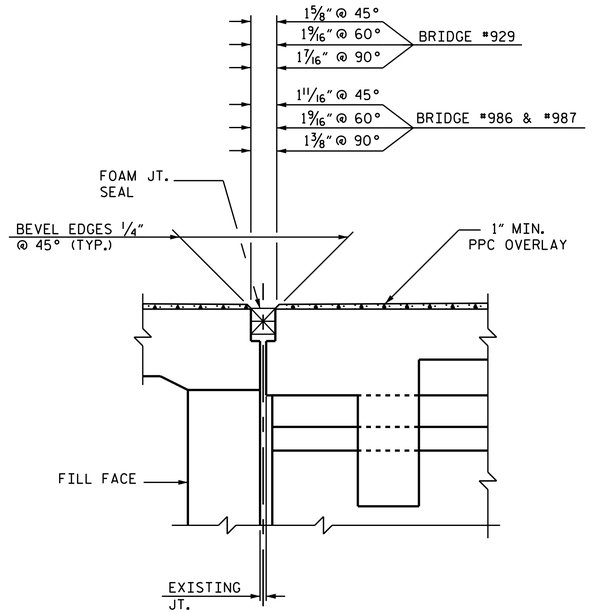
19-JUL-2018 07:26
B:\TIPProjects-1\I5827\Structures\Final Plans\403_011_I5827_SMU_ SSR3_019_590987.dgn
napierce



EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



PROPOSED FOAM JOINT SEAL EXPANSION

NOTES

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

FOR FOAM JOINT SEALS, SEE SPECIALS PROVISIONS.

RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

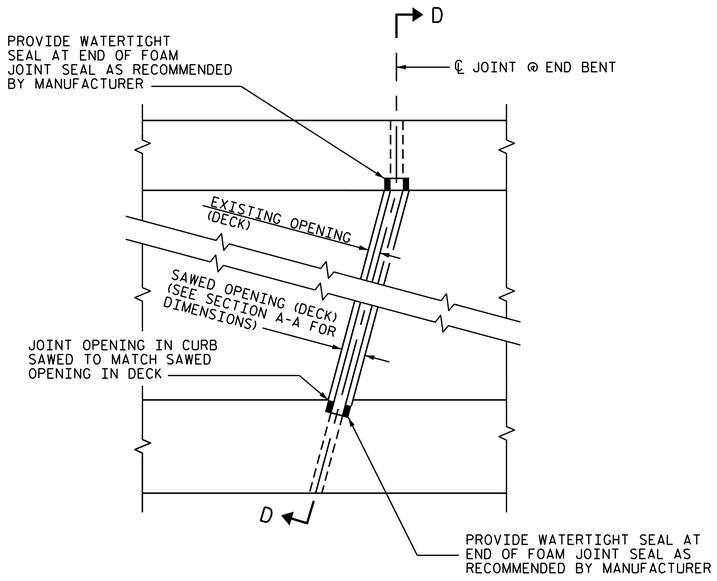
THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2".

THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

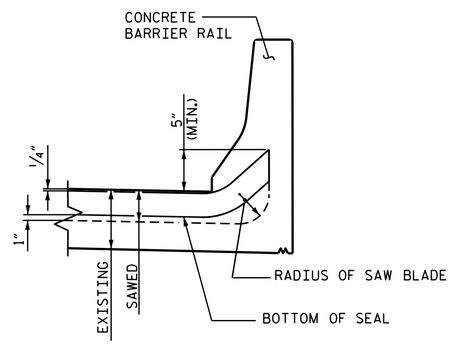
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A



PLAN



SECTION D-D

DRAWN BY : M. POOLE DATE : 1/2018
CHECKED BY : E. K. POPE DATE : 4/2018

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\Final Plans\403_013_I5827_SMU_JD_020_590929.DGN
napierce

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

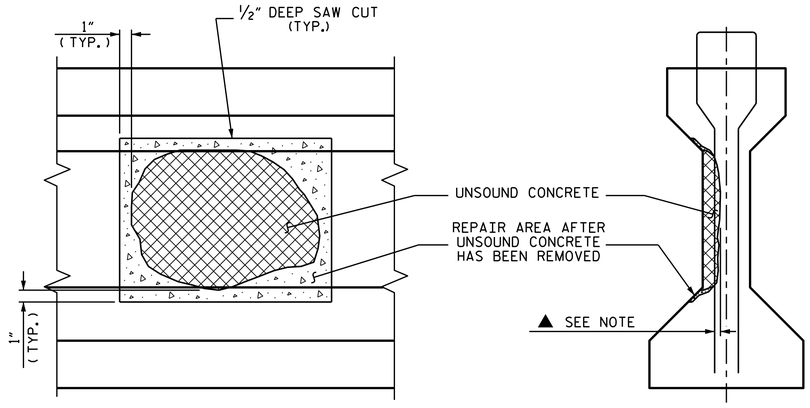
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. I-5827
MECKLENBURG COUNTY
BRIDGE NO. 929, 986 & 987

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

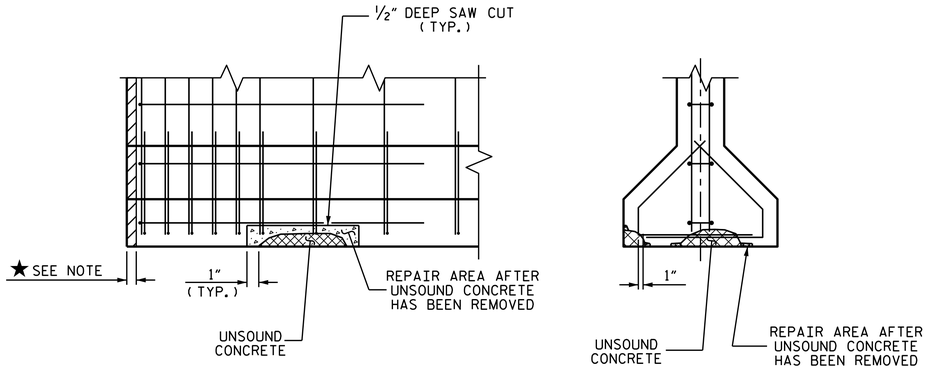
JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			21



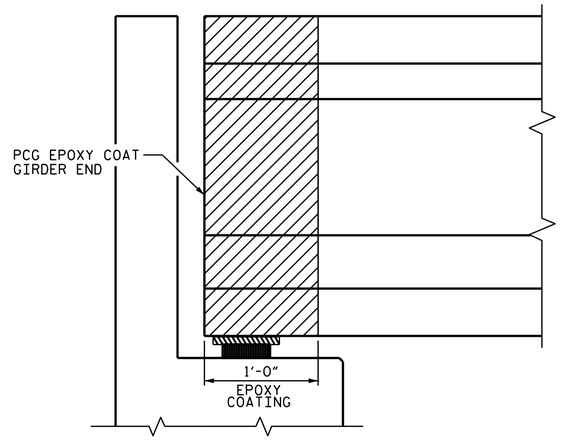
ELEVATION SECTION

GIRDER WEB REPAIR



ELEVATION SECTION

GIRDER FLANGE REPAIR



LIMITS OF PCG EPOXY COATING GIRDER ELEVATION

* GIRDER REPAIR QUANTITIES

REPAIRS TO PRESTRESSED CONCRETE GIRDERS	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
BRIDGE #929				
SPAN A	4.7	1.6		
SPAN C	5.7	1.9		
BRIDGE #986				
SPAN A	10.2	3.4		
SPAN C	3.0	1.0		
BRIDGE #987				
SPAN A	24.5	8.2		
SPAN C	15.5	5.2		
TOTAL	63.6	21.3		

PCG EPOXY COATING

REPAIRS TO PRESTRESSED CONCRETE GIRDERS	QUANTITIES	
	ESTIMATE	ACTUAL
	AREA SQ. FT.	AREA SQ. FT.
BRIDGE #929		
SPAN A	77.7	
SPAN C	77.7	
BRIDGE #986		
SPAN A	93.3	
SPAN C	93.3	
BRIDGE #987		
SPAN A	108.8	
SPAN C	108.8	
TOTAL	559.6	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEARANCE TO SAWCUT.

FOR POTENTIAL GIRDER REPAIR AREAS, SEE "PRESTRESSED GIRDER REPAIR LOCATIONS" SHEETS.

* QUANTITIES IN CHART ARE BASED OFF KNOWN SPALLED/DELAMINATED GIRDER END LOCATIONS WITH POTENTIAL FOR REMOVED UNSOUND CONCRETE TO BE DEEPER THAN 2 INCHES ALONG THE LENGTH OF THE GIRDER, REQUIRING PRESTRESSED GIRDER REPAIRS.

NOTES

FOR REPAIRS TO PRESTRESSED CONCRETE GIRDERS, SEE PECIAL PROVISIONS.\

▲ ALL UNSOUND CONCRETE MUST BE REMOVED, HOWEVER, PRESTRESSED STRANDS SHOULD NOT BE DISTURBED UNLESS ABSOLUTELY NECESSARY. THE CONTRACTOR SHALL USE EXTREME CARE TO NOT DAMAGE STRANDS.

FOR PCG EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

★ ALL UNSOUND CONCRETE MUST BE REMOVED, HOWEVER, ONLY GIRDER ENDS WITH AREAS DEEPER THAN 2 INCHES ALONG THE LENGTH OF THE GIRDER SHALL REQUIRE PRESTRESSED GIRDER REPAIRS.

PROJ. NO. I-5827

MECKLENBURG COUNTY

BRIDGE NO. 929, 986 & 987

NORTH CAROLINA PROFESSIONAL SEAL 037479 ENGINEER NICHOLAS A. PIERCE
7/19/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED GIRDER REPAIR DETAILS

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : M. POOLE DATE : 3/2018
CHECKED BY : E. K. POPE DATE : 4/2018

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\403_015_I5827_SMU_ PGR_021_590929.dgn
naplerce

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

STD. NO. SN

REV. 6-16-95 EEM (/) RGW REV. 5-7-03 RWW (/) JTE REV. 10-1-11 MAA (/) GM
REV. 8-16-99 RWW (/) LES REV. 5-1-06 TLA (/) GM REV. 12-17 MAA (/) THC

19-JUL-2018 07:26
B:\TIPProjects-I\I5827\Structures\FinalPlans\403_017_I5827_SMU_SN_590929.DGN
naplerce