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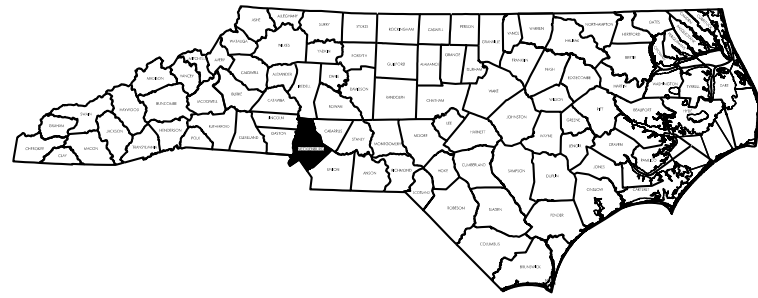
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25-JAN-2018 16:13 Z:\PROJECTS\Engineering\Projects\635600\16 2016-2017 On-Call Bridges\Overlays\Plans\Final\Plans DGN\01_I-5770_SMU_TSH.dgn

CONTRACT: C204116 TIP PROJECT: I-5770

STRUCTURES



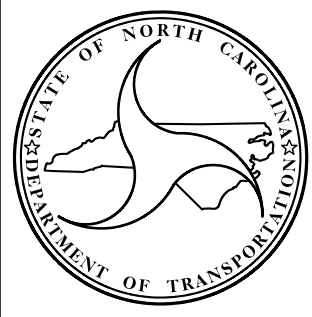
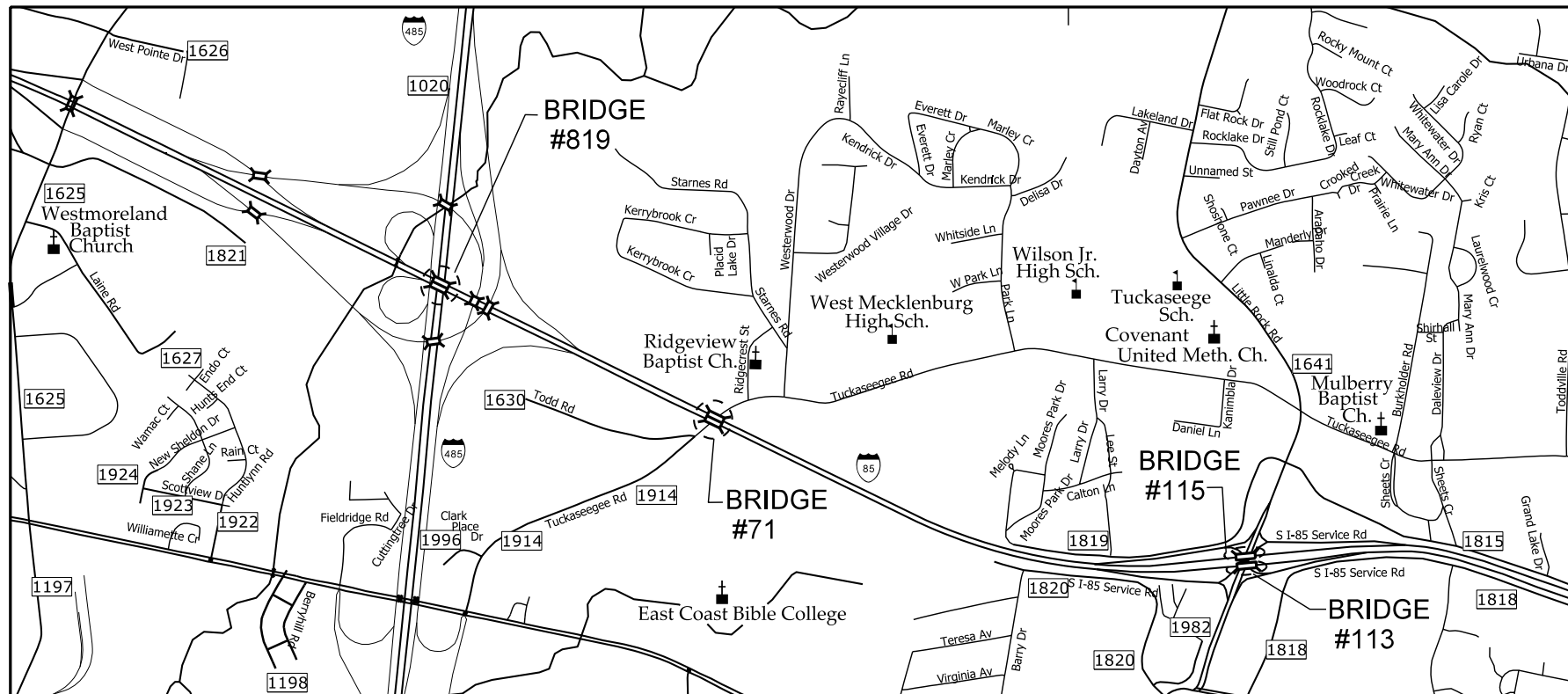
**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

MECKLENBURG COUNTY

| | | | |
|-------------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | I-5770 | S-1 | 37 |
| STATE PROJECT NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 53012.1.1 | NHPIM-0085(037) | PE | |
| 53012.2.1 | NHPIM-0085(037) | R /W | |
| 53012.3.1 | NHPIM-0085(037) | CONSTR. | |
| | | | |
| | | | |

LOCATION: MECKLENBURG COUNTY:
 BRIDGE #71 ON I-85 OVER SR 1914 (TUCKASEEGEE RD.)
 BRIDGE #113 ON I-85 NBL OVER LITTLE ROCK RD.
 BRIDGE #115 ON I-85 SBL OVER LITTLE ROCK RD.
 BRIDGE #819 ON I-85 OVER I-485

TYPE OF WORK: SCARIFICATION, HYDRO-DEMOLITION, BRIDGE DECK CLOSURE POUR REPAIR, JOINT DEMOLITION, JOINT REPLACEMENT, EXPANSION JOINT SEAL REPAIR, POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY.



DESIGN DATA

| | |
|---------------|----------|
| #71 ADT 2016 | =114,000 |
| #113 ADT 2016 | =114,000 |
| #115 ADT 2016 | =114,000 |
| #819 ADT 2016 | =140,000 |

PROJECT LENGTH

| | |
|---------------------|------------|
| PROJECT LENGTH #071 | = 0.031 MI |
| PROJECT LENGTH #113 | = 0.070 MI |
| PROJECT LENGTH #115 | = 0.070 MI |
| PROJECT LENGTH #819 | = 0.068 MI |

Prepared for:
STRUCTURES MANAGEMENT UNIT
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE:
 MARCH 20, 2018

E.E. MURRAY, PE
 PROJECT ENGINEER

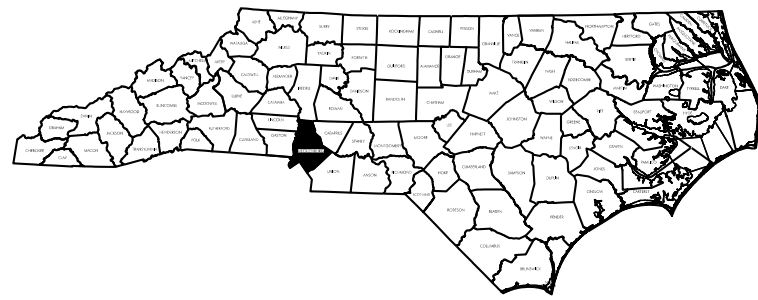
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31-JAN-2018 07:38
 Z:\PROJECTS\Engineering\Projects\635600.16 2016-2017 On-Call Bridges\635629.16 Task 29 Meck Decks\OverLay Plans\Final Plans DGN\01.I-5770.SMU.TSH.dgn
 em1murray AT C-037614

TIP PROJECT: I-5770

CONTRACT: C204116



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

LOCATION: MECKLENBURG COUNTY:
 BRIDGE #71 ON I-85 OVER SR 1914 (TUCKASEEGEE RD.)
 BRIDGE #113 ON I-85 NBL OVER LITTLE ROCK RD.
 BRIDGE #115 ON I-85 SBL OVER LITTLE ROCK RD.
 BRIDGE #819 ON I-85 OVER I-485

| | | | |
|-------------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | I-5770 | S-2 | 37 |
| STATE PROJECT NO. | F.A.PROJ.NO. | DESCRIPTION | |
| 53012.1.1 | NHPIM-0085(037) | PE | |
| 53012.2.1 | NHPIM-0085(037) | R /W | |
| 53012.3.1 | NHPIM-0085(037) | CONSTR. | |
| | | | |
| | | | |

INDEX OF SHEETS

| STRUCTURE NO. | DESCRIPTION | SHEET NUMBER |
|---------------|--|--------------|
| | TITLE SHEET | S-1 |
| | INDEX OF SHEETS & SUMMARY OF QUANTITIES | S-2 |
| 71 | BRIDGE ON I-85 OVER SR 1914 (TUCKASEEGEE RD.) | S-3 TO S-14 |
| 113 & 115 | BRIDGE #113 ON I-85 NBL AND BRIDGE #115 ON I-85 SBL OVER LITTLE ROCK RD. | S-15 TO S-29 |
| 819 | BRIDGE ON I-85 OVER I-485 | S-30 TO S-37 |
| | STANDARD NOTES | SN |

TOTAL BILL OF MATERIAL

| BRIDGE NO. | GROOVING BRIDGE FLOORS | REINFORCING STEEL | EPOXY COATED REINFORCING STEEL | ADDITIONAL REINFORCING STEEL | CLASS II SURFACE PREPARATION | CLASS III SURFACE PREPARATION | VOLUMETRIC MIXER | FOAM JOINT SEALS | EXPANSION JOINT SEAL REPAIR | STRIP SEAL EXPANSION JOINT | POLYESTER POLYMER CONCRETE MATERIALS | PARTIAL REMOVAL OF EXISTING STRUCTURE | CONCRETE FOR DECK REPAIR | BRIDGE JOINT DEMOLITION | CONCRETE DECK REPAIR FOR PPC OVERLAY | PLACING & FINISHING PPC OVERLAY | SCARIFYING BRIDGE DECK | SHOTBLASTING BRIDGE DECK |
|------------|------------------------|-------------------|--------------------------------|------------------------------|------------------------------|-------------------------------|------------------|------------------|-----------------------------|----------------------------|--------------------------------------|---------------------------------------|--------------------------|-------------------------|--------------------------------------|---------------------------------|------------------------|--------------------------|
| | SQ. FT. | LBS. | LBS. | LBS. | SQ.YDS. | SQ.YDS. | LUMP SUM | LF | LF | LUMP SUM | CU. YDS. | LUMP SUM | CU. FT. | SQ. FT. | SQ. YDS. | SQ. YDS. | SQ. YDS. | SQ. YDS. |
| 71 | 21,254 | 1,348 | 665 | - | *1.0 | 82.3 | LUMP SUM | 311 | - | - | 77.0 | - | 632.3 | - | *1.0 | 2,508.2 | 2,508.2 | 2,508.2 |
| 113 | 22,830 | - | 2384 | 600 | *1.0 | - | LUMP SUM | 163 | 81 | LUMP SUM | 82.1 | LUMP SUM | 405.0 | - | *1.0 | 2,690.0 | 2,690.0 | 2,690.0 |
| 115 | 25,209 | - | 2384 | 600 | *1.0 | - | LUMP SUM | 163 | 81 | LUMP SUM | 90.6 | LUMP SUM | 405.0 | - | *1.0 | 2,966.0 | 2,966.0 | 2,966.0 |
| 819 | 51,248 | - | - | - | *1.0 | - | - | 82 | 248 | - | 183.0 | - | 0.0 | 73.8 | *1.0 | 5,974.8 | 5,974.8 | 5,974.8 |
| TOTAL | 120,541 | 1,348 | 5433 | 1200 | *4.0 | 82.3 | LUMP SUM | 719 | 410 | LUMP SUM | 432.7 | LUMP SUM | 1442.3 | 73.8 | *4.0 | 14,139.0 | 14,139.0 | 14,139.0 |

* CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY ARE NOT ANTICIPATED.
 TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED CLASS II SURFACE
 PREPARATION AREAS ARE ENCOUNTERED.
 HAS BEEN DETERMINED.

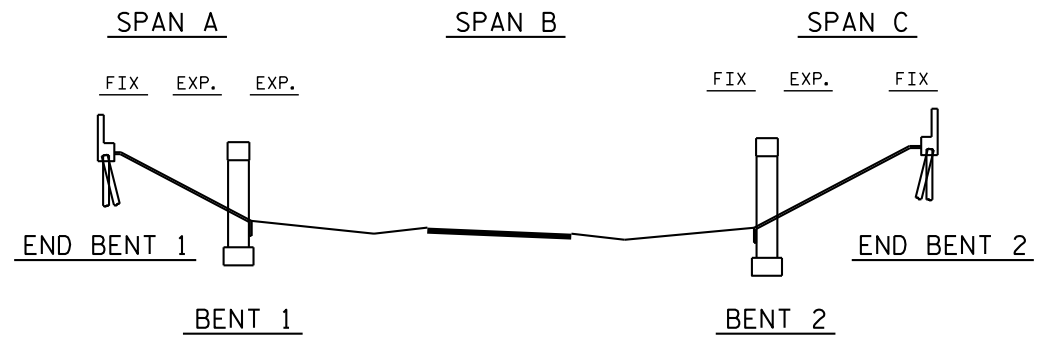


Documented by
Emily E. Murray
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 1/31/2018

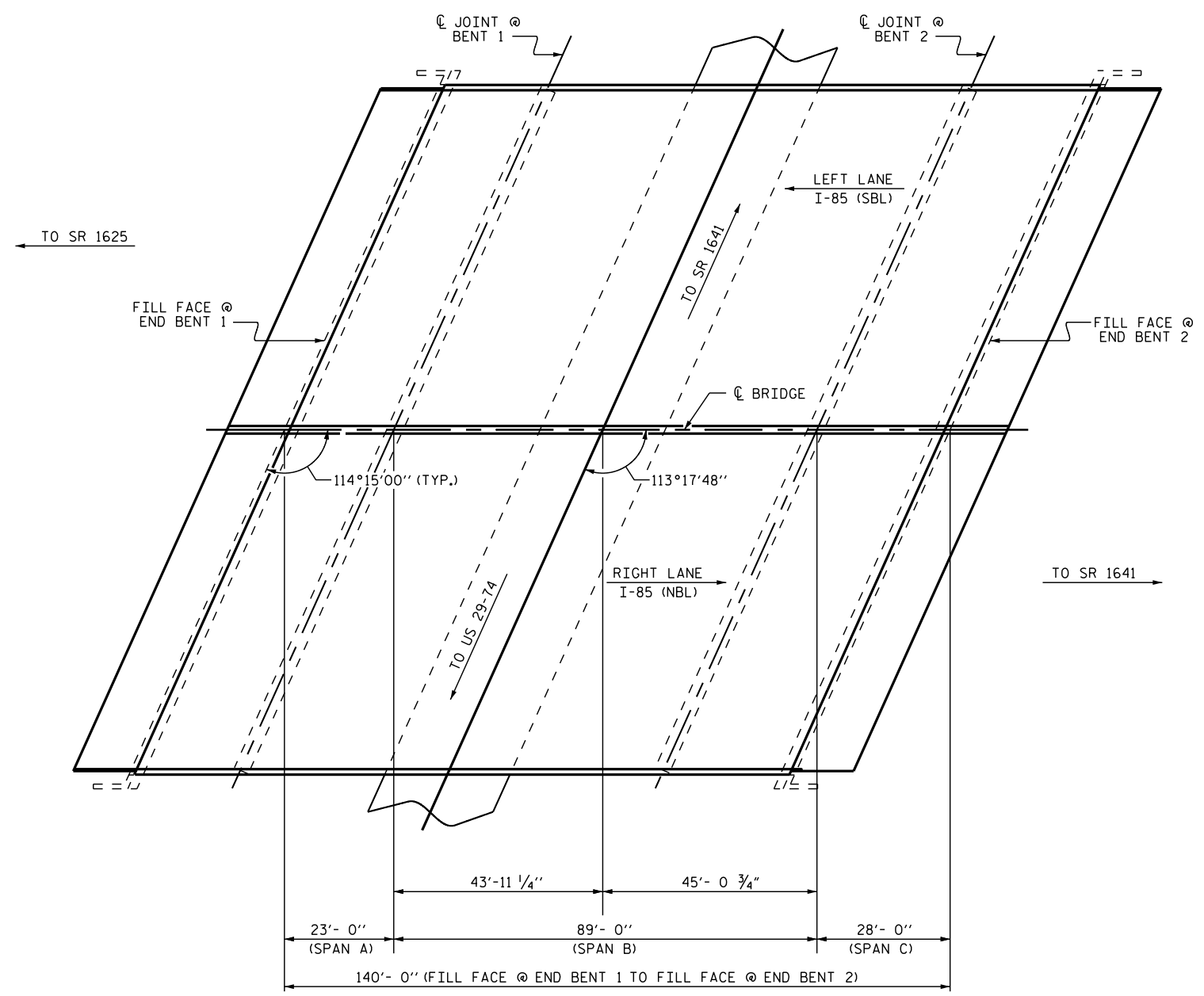
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DRAWN BY : E.E.MURRAY DATE : 12/17
 CHECKED BY : D.A.GLADDEN DATE : 12/17



SECTION ALONG \varnothing BRIDGE



PLAN

(PILES, COLUMNS AND FOOTINGS, ARE NOT SHOWN FOR CLARITY)

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND ROUTINE INSPECTION REPORT DATED 7/12/2016
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

REMOVE CONCRETE DECK BETWEEN BEAMS 4 AND 5 BY HYDRO-DEMOLITION AND RECONSTRUCT CLOSURE POUR.
PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING METHODS.
PERFORM DECK REPAIRS IN PREPARED AREA.
OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.
GROOVE POLYESTER POLYMER CONCRETE.

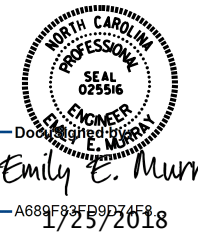


I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER _____ DATE _____

PROJECT NO. I-5770
MECKLENBURG COUNTY
BRIDGE NO. 590071

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE OVER TUCKASEEGEE RD., SR 1914, ON I-85 BETWEEN SR 1625 AND SR 1641

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| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS |
| 1 | | | 3 | | | 5-3 |
| 2 | | | 4 | | | 37 |

DRAWN BY : D. A. GLADDEN DATE : 11/17
CHECKED BY : D. R. SMITH DATE : 11/17



City of Charlotte, Mecklenburg County, North Carolina
Mecklenburg County

LOCATION SKETCH

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.

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.

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 SHALL BE SEALED PRIOR TO BEGINNING REPAIRS OF BRIDGE DECK.

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

THE CLOSURE POUR REPAIR IN SOUTHBOUND LANE SHALL BE COMPLETED IN ACCORDANCE WITH THE PLANS AND SPECIAL PROVISIONS PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY. UPON COMPLETION OF CLOSURE POUR REPAIR, OBSERVE A MINIMUM 30 DAY WAITING PERIOD BEFORE BEGINNING SURFACE PREPARATION FOR THE PPC OVERLAY.

EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER. IF NECESSARY, LOCATIONS OTHER THAN THE CLOSURE POUR REPAIR MAY BE REPAIRED WITH PPC.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK.

THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE OVERLAY SURFACE PREPARATION 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 BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

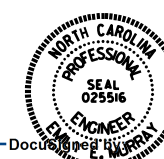
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5770
MECKLENBURG COUNTY
BRIDGE NO. 590071

SHEET 2 OF 2



Emily E. Murray
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1/25/2018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

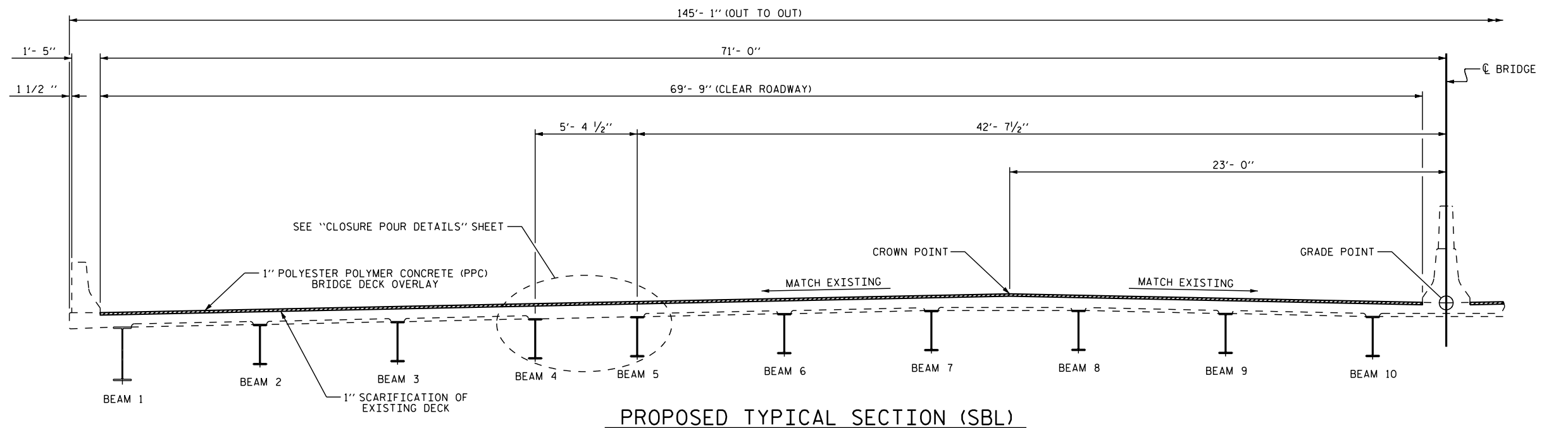
FOR BRIDGE OVER TUCKASEEGEE RD., SR 1914, ON I-85 BETWEEN SR 1625 AND SR 1641

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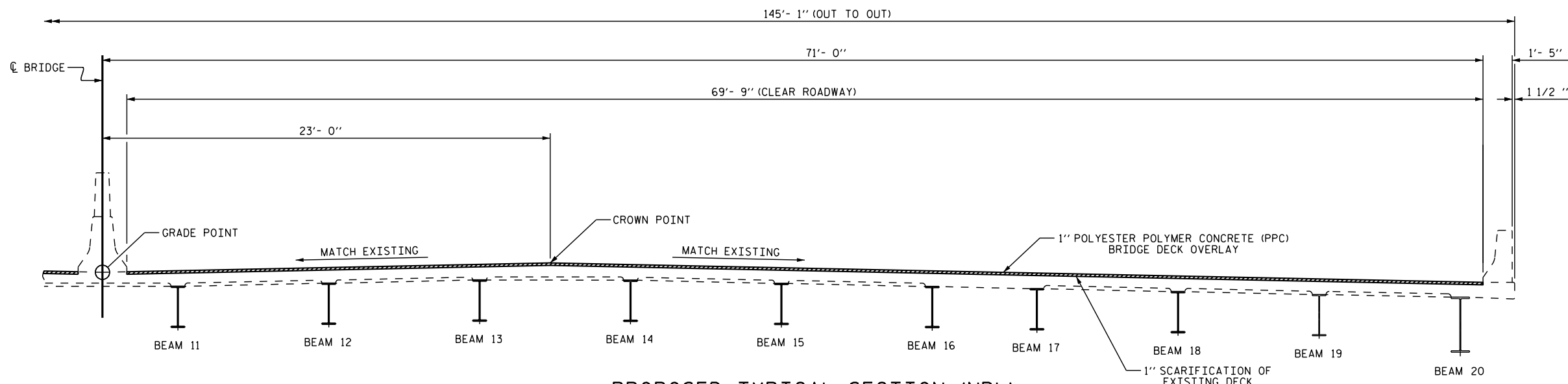
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| REVISIONS | | | | | | SHEET NO. |
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| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 37 |

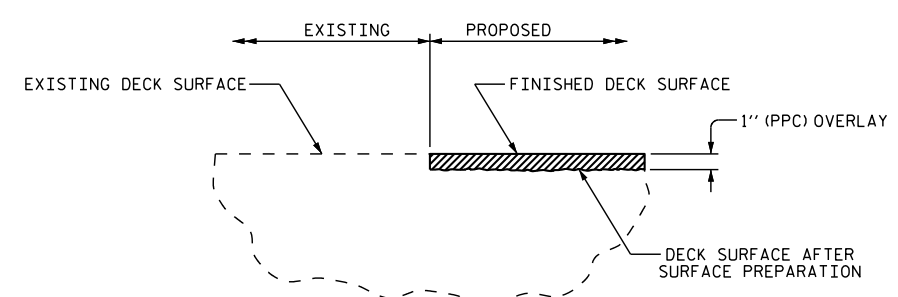
DRAWN BY : D. A. GLADDEN DATE : 11/17
CHECKED BY : D. R. SMITH DATE : 11/17



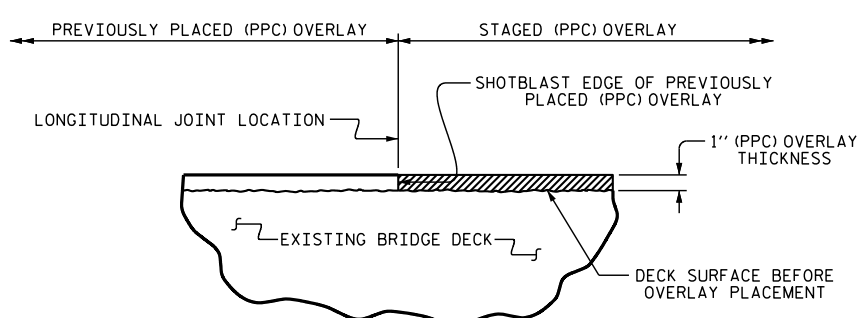
PROPOSED TYPICAL SECTION (SBL)



PROPOSED TYPICAL SECTION (NBL)



DETAIL OF POLYESTER POLYMER CONCRETE OVERLAY

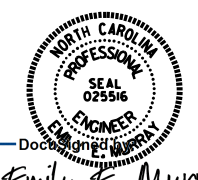


STAGED POLYESTER POLYMER CONCRETE OVERLAY JOINT
(AS NEEDED)

NOTE
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYESTER POLYMER CONCRETE PLACEMENT.

PROJECT NO. I-5770
MECKLENBURG COUNTY
BRIDGE NO. 590071

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
TYPICAL SECTION AND PPC OVERLAY DETAIL



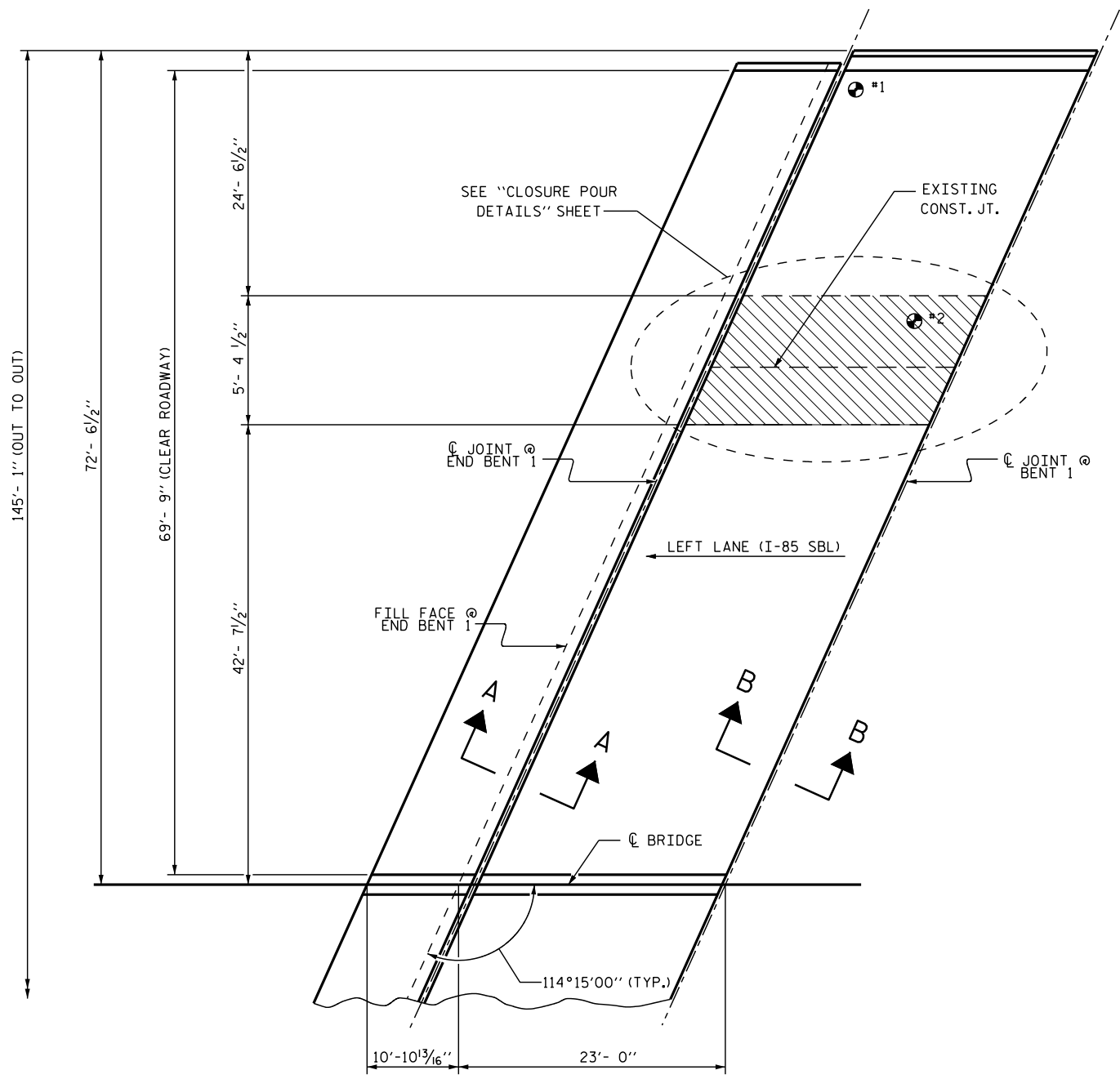
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| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 37 |

DRAWN BY: D. A. GLADDEN DATE: 11/17
CHECKED BY: D. R. SMITH DATE: 11/17



PLAN OF SPAN A

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION A-A AND B-B, SEE "JOINT DETAILS" SHEET.

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

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

| AS-BUILT REPAIR QUANTITY TABLE | | |
|--------------------------------------|----------|--------|
| TOP OF DECK REPAIRS | | |
| APPROACH SLAB @ END BENT 1 | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 93.4 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 93.4 SY | |
| PPC MATERIALS | 2.9 CY | |
| PLACING AND FINISHING PPC OVERLAY | 93.4 SY | |
| GROOVING BRIDGE FLOORS | 774 SF | |
| SPAN A | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 169.4 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 169.4 SY | |
| PPC MATERIALS | 5.2 CY | |
| PLACING AND FINISHING PPC OVERLAY | 169.4 SY | |
| GROOVING BRIDGE FLOORS | 1,422 SF | |

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE "CLOSURE POUR DETAILS" FOR CLASS III SURFACE PREPARATION ANTICIPATED IN THE AREA OF THE PROPOSED CLOSURE POUR. SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.

APPROXIMATE CLASS III AREA
 TEST LOCATION

| TEST LOCATION | CONCRETE COVER (INCH) | CONCRETE STRENGTH (PSI) |
|---------------|-----------------------|-------------------------|
| #1 | 2 5/8" | 5,650 |
| #2 | 2 3/4" | 6,030 |

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 11/05/2017.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN A
 LEFT LANE (SBL)

Emily C. Murray
 1/25/2018

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| 1 | | | 3 | | | TOTAL SHEETS |
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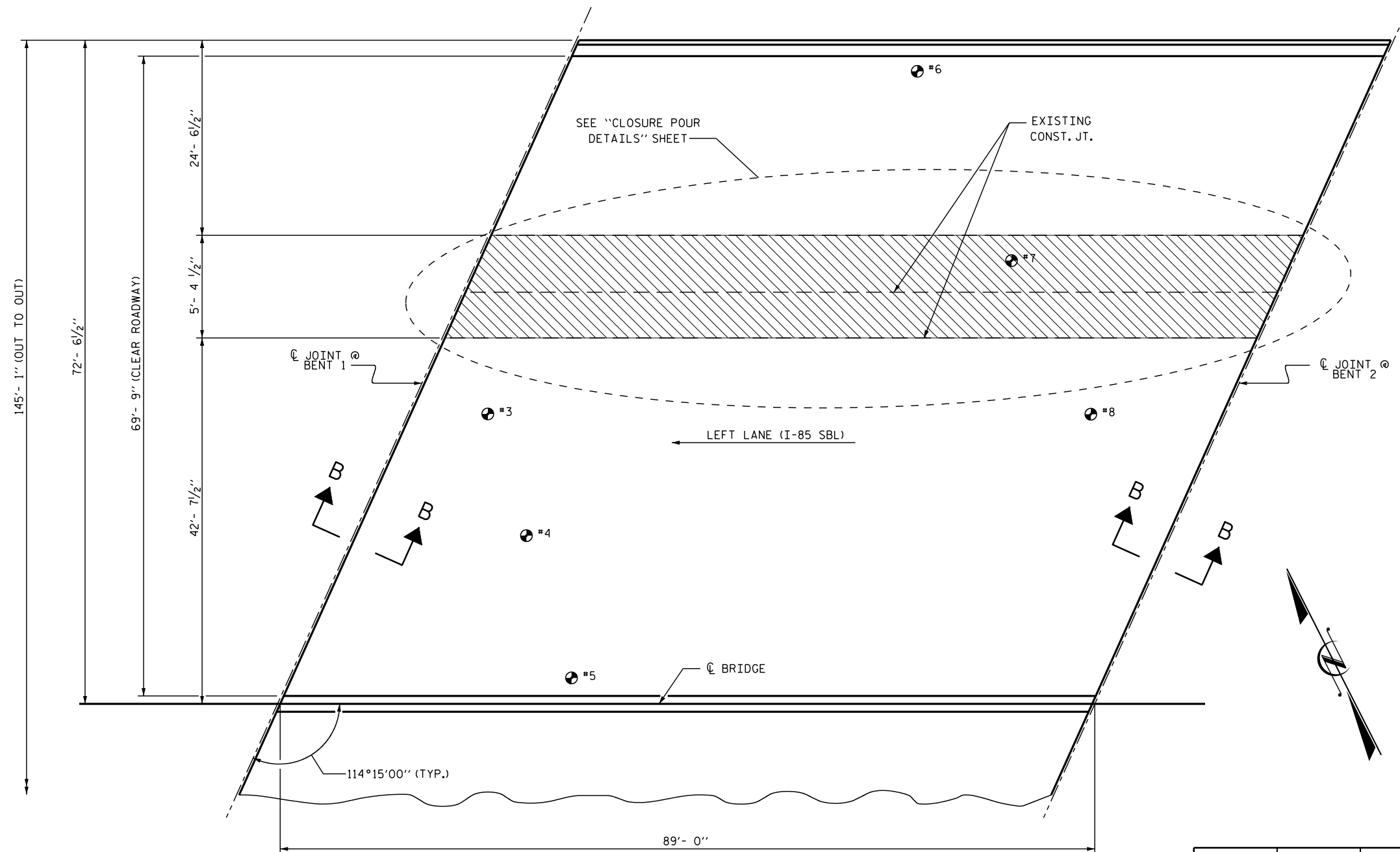
DRAWN BY : D. A. GLADDEN DATE : 11/17
 CHECKED BY : D. R. SMITH DATE : 11/17

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 689.8 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 689.8 SY | |
| PPC MATERIALS | 21.1 CY | |
| PLACING AND FINISHING PPC OVERLAY | 689.8 SY | |
| GROOVING BRIDGE FLOORS | 5,902 SF | |

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE "CLOSURE POUR DETAILS" SHEET FOR CLASS III SURFACE PREPARATION ANTICIPATED IN THE AREA OF THE PROPOSED CLOSURE POUR. SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.



APPROXIMATE CLASS III AREA
 TEST LOCATION

PLAN OF SPAN B

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION B-B, SEE "JOINT DETAILS" SHEET.

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

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

| TEST LOCATION | CONCRETE COVER (INCH) | CONCRETE STRENGTH (PSI) |
|---------------|-----------------------|-------------------------|
| #3 | 2 1/2" | 5,860 |
| #4 | 2 5/8" | 4,720 |
| #5 | 2 1/4" | 5,210 |
| #6 | 2 5/8" | 5,050 |
| #7 | 2 7/8" | 6,460 |
| #8 | 2 5/8" | 6,290 |

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 11/05/2017.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN B
 LEFT LANE (SBL)

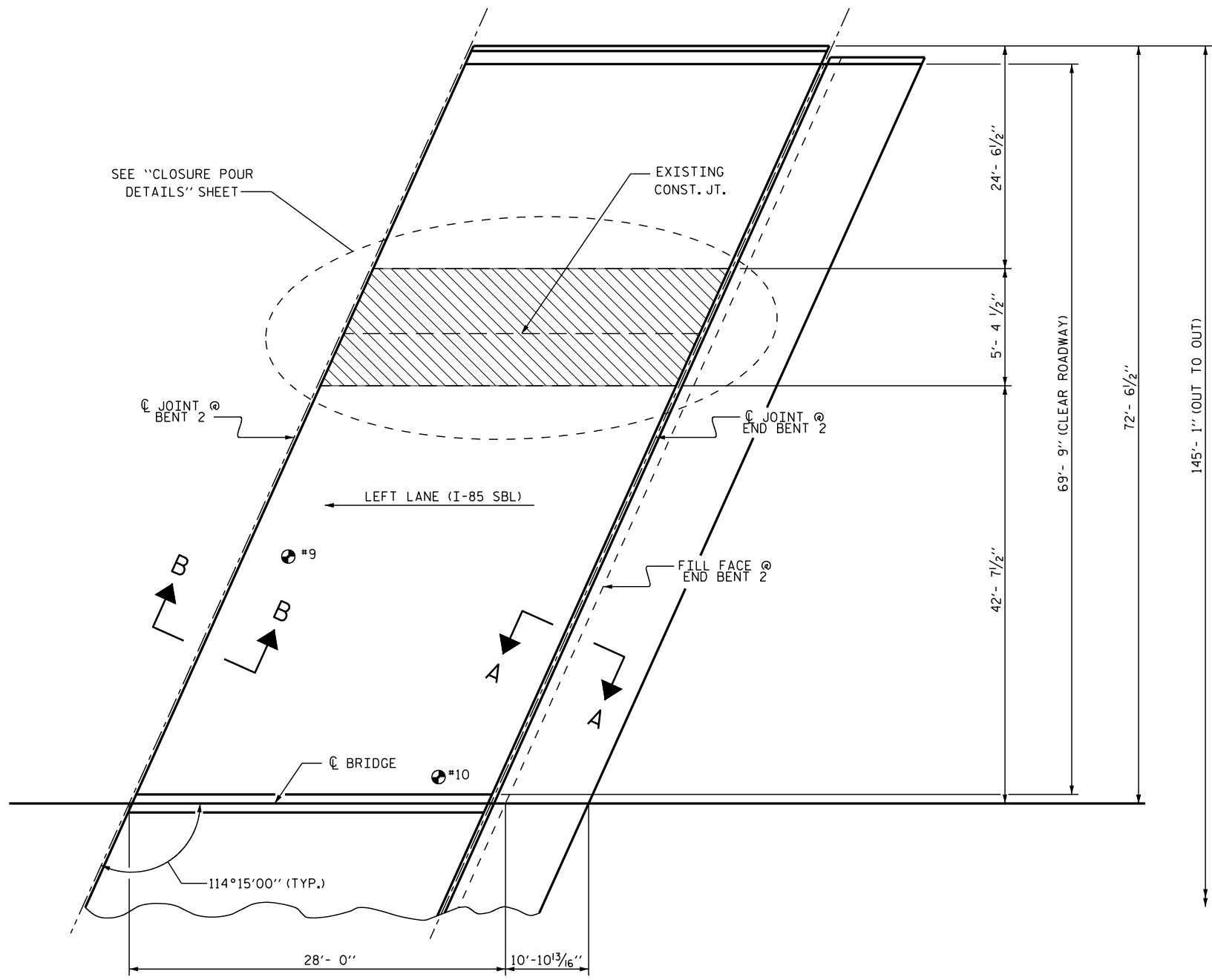
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 NC License No. F-0765

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| NO. | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS |
| 1 | | | 3 | | | 5-7 |
| 2 | | | 4 | | | 37 |

DRAWN BY : D. A. GLADDEN DATE : 11/17
 CHECKED BY : D. R. SMITH DATE : 11/17



PLAN OF SPAN C

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION A-A AND B-B, SEE "JOINT DETAILS" SHEET.

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

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

| AS-BUILT REPAIR QUANTITY TABLE | | |
|--------------------------------------|----------|--------|
| TOP OF DECK REPAIRS | | |
| APPROACH SLAB @ END BENT 2 | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 93.4 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 93.4 SY | |
| PPC MATERIALS | 2.9 CY | |
| PLACING AND FINISHING PPC OVERLAY | 93.4 SY | |
| GROOVING BRIDGE FLOORS | 774 SF | |
| SPAN C | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 208.1 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 208.1 SY | |
| PPC MATERIALS | 6.4 CY | |
| PLACING AND FINISHING PPC OVERLAY | 208.1 SY | |
| GROOVING BRIDGE FLOORS | 1,755 SF | |

QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE "CLOSURE POUR DETAILS" FOR CLASS III SURFACE PREPARATION ANTICIPATED IN THE AREA OF THE PROPOSED CLOSURE POUR. SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.

- APPROXIMATE CLASS III AREA
- TEST LOCATION

| TEST LOCATION | CONCRETE COVER (INCH) | CONCRETE STRENGTH (PSI) |
|---------------|-----------------------|-------------------------|
| #9 | 2 5/8" | 5,840 |
| #10 | 2 5/8" | 5,220 |

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 11/05/2017.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN C
 LEFT LANE (SBL)

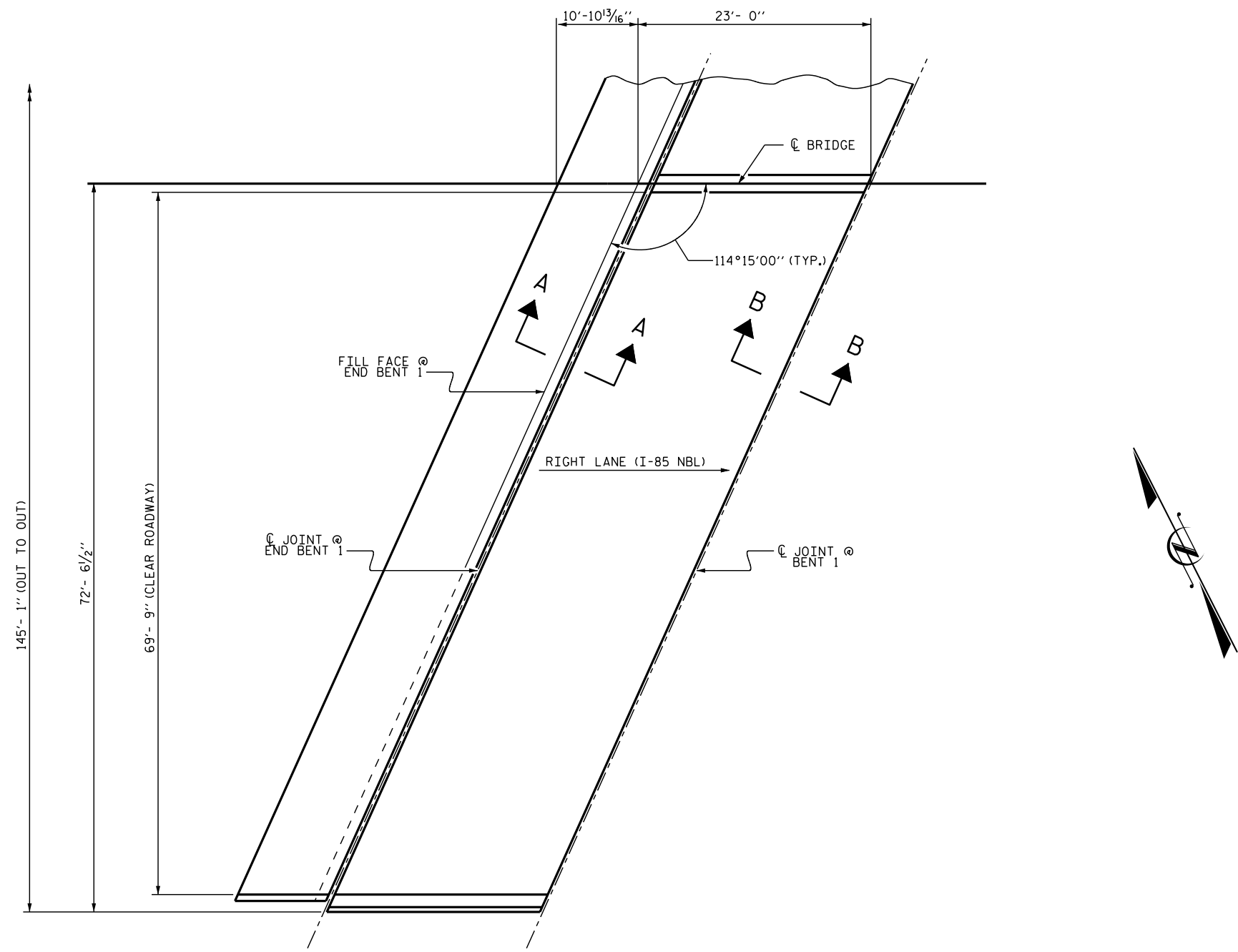
Emily E. Murray
 1/25/2018

VOLKERT
 5540 Centerview Drive, Suite 305
 Raleigh, NC 27606
 Tel. 919-854-0344 Fax. 919-854-0355
 NC License No. F-0765

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| NO. | BY: | DATE: | NO. | BY: | DATE: | S-8 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 37 |

DRAWN BY : D. A. GLADDEN DATE : 11/17
 CHECKED BY : D. R. SMITH DATE : 11/17



PLAN OF SPAN A

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION A-A AND B-B, SEE "JOINT DETAILS" SHEET.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

AS-BUILT REPAIR QUANTITY TABLE

| TOP OF DECK REPAIRS | | |
|--------------------------------------|----------|--------|
| APPROACH SLAB @ END BENT 1 | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 93.4 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 93.4 SY | |
| PPC MATERIALS | 2.9 CY | |
| PLACING AND FINISHING PPC OVERLAY | 93.4 SY | |
| GROOVING BRIDGE FLOORS | 774 SF | |

| SPAN A | | |
|--------------------------------------|----------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 169.4 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 169.4 SY | |
| PPC MATERIALS | 5.2 CY | |
| PLACING AND FINISHING PPC OVERLAY | 169.4 SY | |
| GROOVING BRIDGE FLOORS | 1,422 SF | |

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



PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN A
 RIGHT LANE (NBL)



DocuSign
 Emily E. Murray
 A689F83FD9D74F8
 1/25/2018

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 Raleigh, NC 27606
 Tel. 919-854-0344 Fax. 919-854-0355
 NC License No. F-0765

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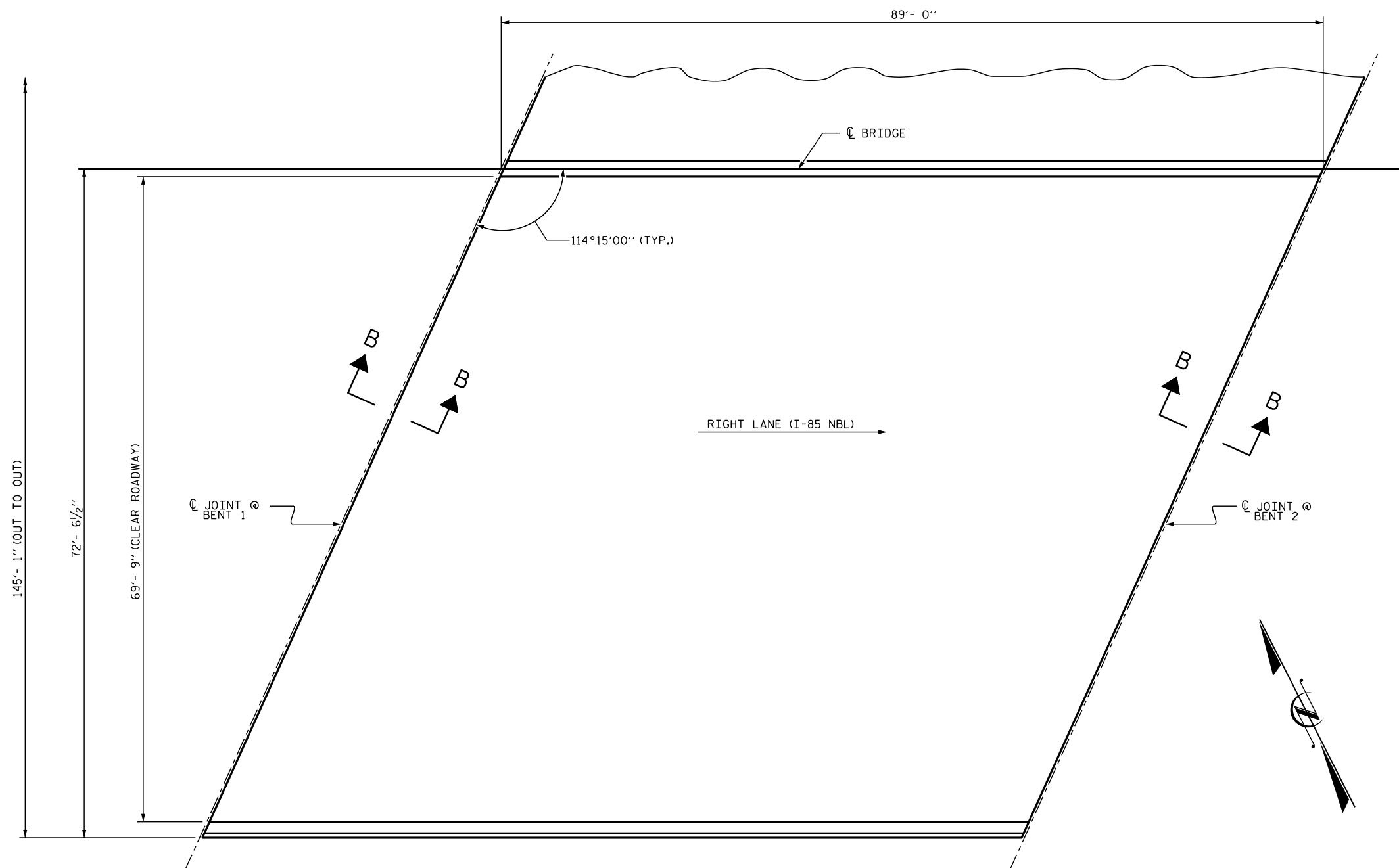
DRAWN BY : D. A. GLADDEN DATE : 11/17
 CHECKED BY : D. R. SMITH DATE : 11/17

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 689.8 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 689.8 SY | |
| PPC MATERIALS | 21.1 CY | |
| PLACING AND FINISHING PPC OVERLAY | 689.8 SY | |
| GROOVING BRIDGE FLOORS | 5,902 SF | |

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



PLAN OF SPAN B

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION B-B, SEE "JOINT DETAILS" SHEET.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN B
 RIGHT LANE (NBL)



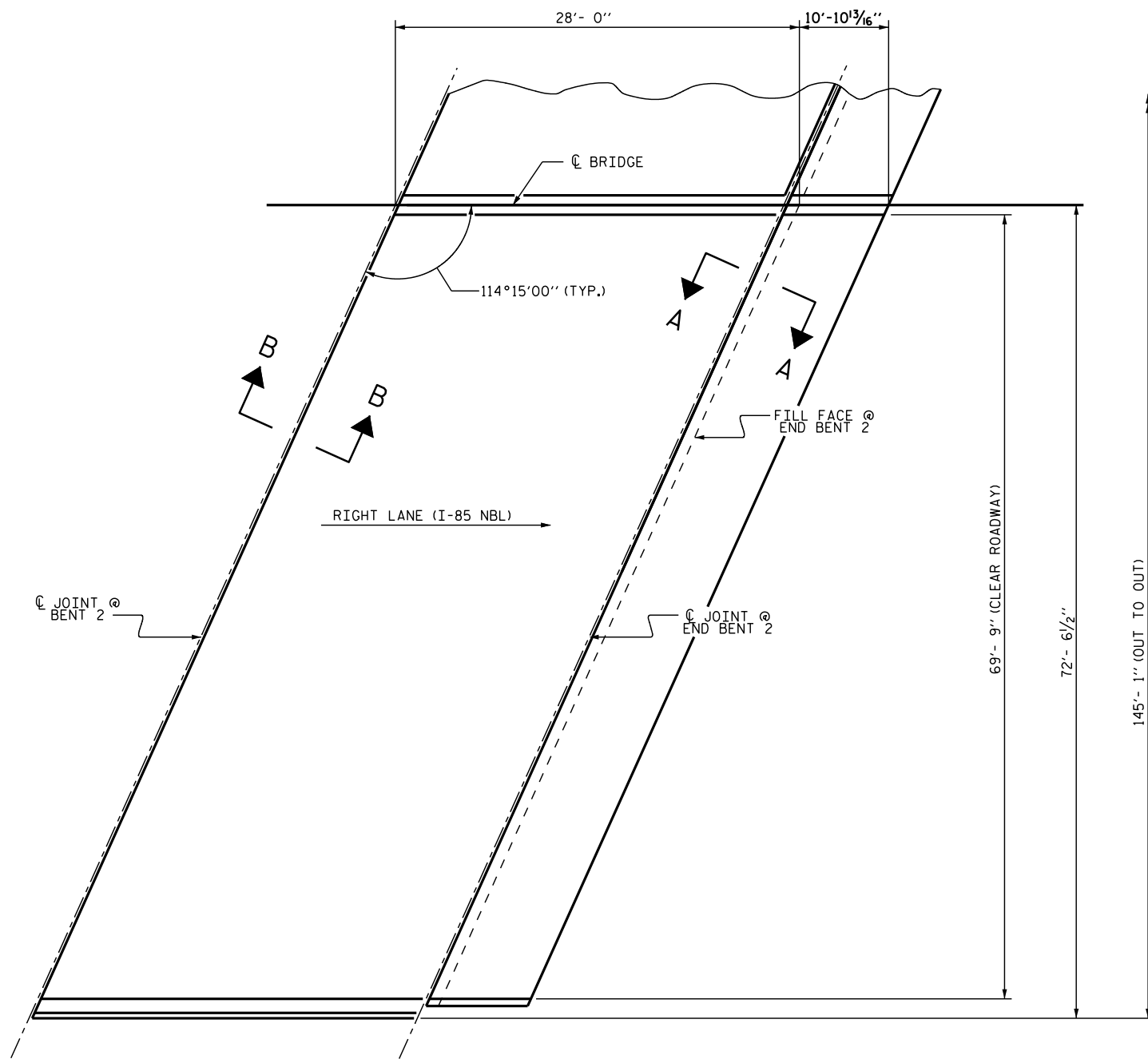
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 Emily E. Murray

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| 2 | | | 4 | | | 37 |

DRAWN BY : D. A. GLADDEN DATE : 11/17
 CHECKED BY : D. R. SMITH DATE : 11/17



AS-BUILT REPAIR QUANTITY TABLE

| TOP OF DECK REPAIRS | | |
|--------------------------------------|----------|--------|
| APPROACH SLAB @ END BENT 2 | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 93.4 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 93.4 SY | |
| PPC MATERIALS | 2.9 CY | |
| PLACING AND FINISHING PPC OVERLAY | 93.4 SY | |
| GROOVING BRIDGE FLOORS | 774 SF | |

| SPAN C | | |
|--------------------------------------|----------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 208.1 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 208.1 SY | |
| PPC MATERIALS | 6.4 CY | |
| PLACING AND FINISHING PPC OVERLAY | 208.1 SY | |
| GROOVING BRIDGE FLOORS | 1,755 SF | |

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

PLAN OF SPAN C

NOTES

- 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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.
- FOR SECTION A-A AND B-B, SEE "JOINT DETAILS" SHEET.
- 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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071

SHEET 3 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

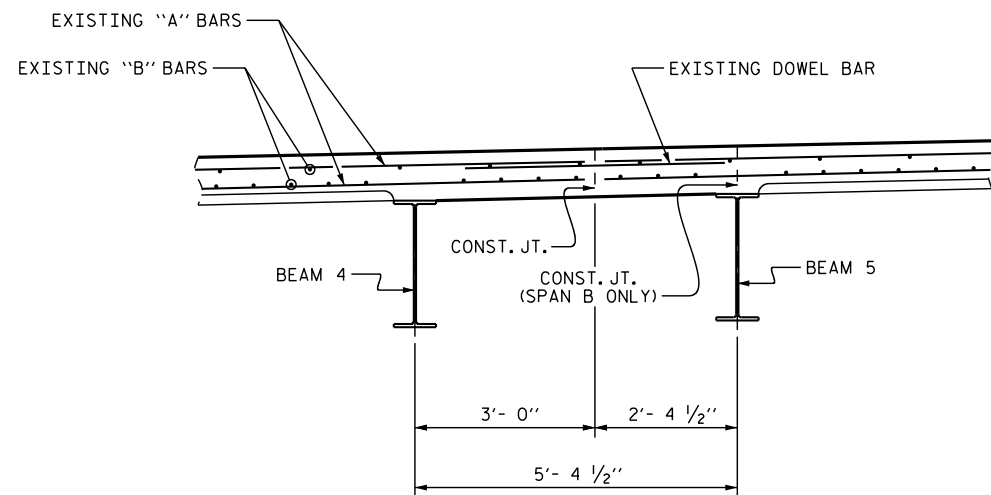
**PLAN OF SPAN C
 RIGHT LANE (NBL)**

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 5540 Centerview Drive, Suite 305
 Raleigh, NC 27606
 Tel. 919-854-0344 Fax. 919-854-0355
 NC License No. F-0765

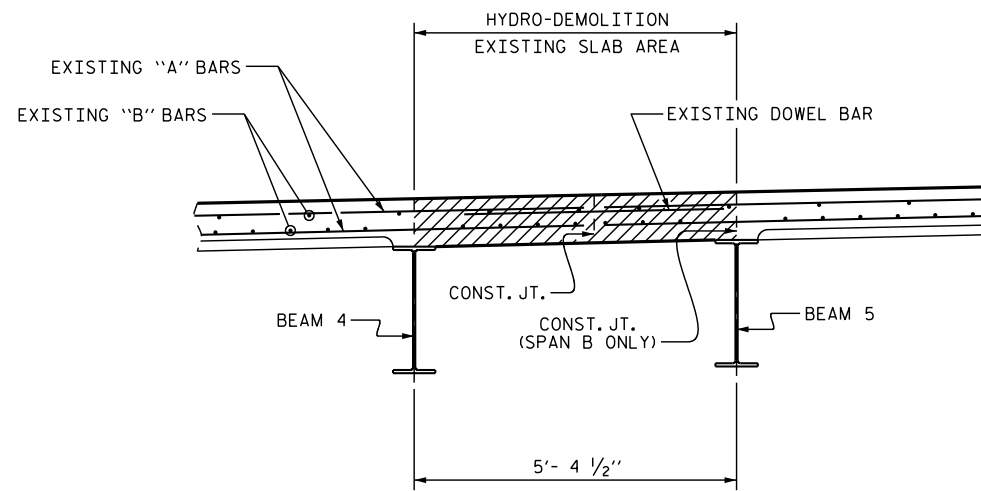
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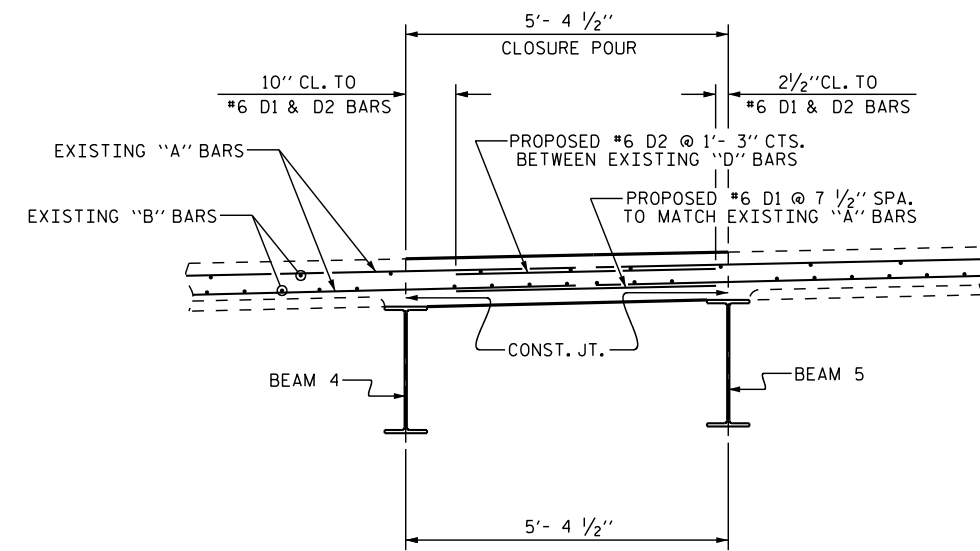
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EXISTING SLAB SECTION



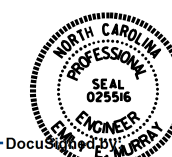
HYDRO-DEMOLITION AREA
(CLASS III SURFACE PREPARATION)



PROPOSED CLOSURE POUR

| | SPAN A | | | | | | SPAN B | | | | | | SPAN C | | | | | | TOTAL |
|--------------------------------|--------|-----|------|------|--------|----------|--------|-----|------|------|--------|----------|--------|-----|------|------|--------|----------|-----------|
| | BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT | BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT | BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT | |
| REINFORCING STEEL | D1 | 31 | #6 | STR | 4'- 4" | 202 LBS | D1 | 137 | #6 | STR | 4'- 4" | 892 LBS | D1 | 39 | #6 | STR | 4'- 4" | 254 LBS | 1,348 LBS |
| EPOXY COATED REINFORCING STEEL | D2 | 15 | #6 | STR | 4'- 4" | 98 LBS | D2 | 68 | #6 | STR | 4'- 4" | 443 LBS | D2 | 19 | #6 | STR | 4'- 4" | 124 LBS | 665 LBS |
| CLASS III SURFACE PREPARATION | | | | | | 13.1 SY | | | | | | 53.2 SY | | | | | | 16.0 SY | 82.3 SY |
| CONCRETE FOR DECK REPAIR | | | | | | 100.4 CF | | | | | | 408.6 CF | | | | | | 123.3 CF | 632.3 CF |

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071



Emily E. Murray
 1/25/2018

| | | | | | |
|--|-----|-------|-----|-----|-----------------------|
| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
| CLOSURE POUR DETAILS | | | | | |
| REVISIONS | | | | | |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |
| SHEET NO. S-12 | | | | | TOTAL SHEETS 37 |

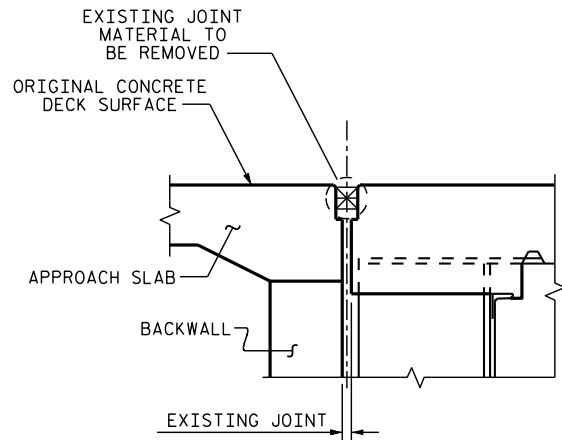
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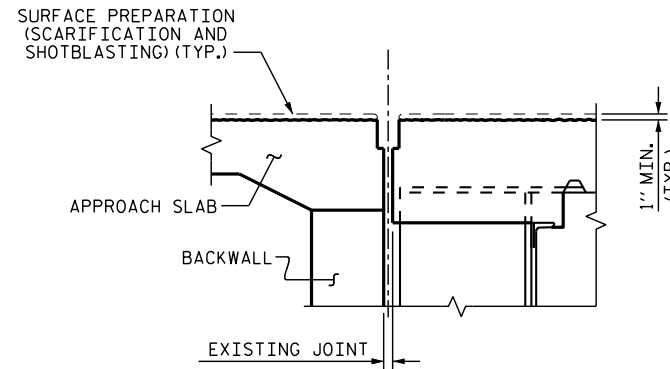
DRAWN BY : D. A. GLADDEN DATE : 11/17
 CHECKED BY : D. R. SMITH DATE : 11/17

NOTES

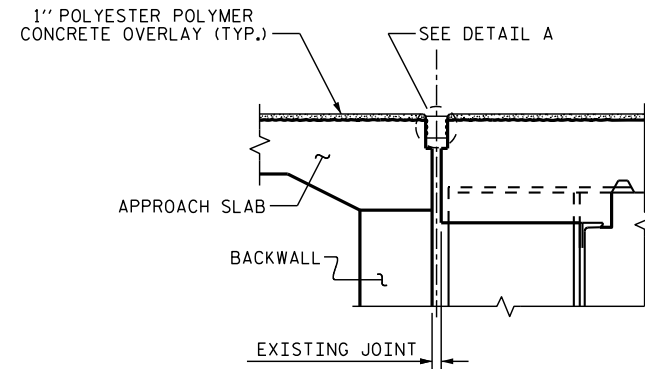
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2 1/2" AT END BENTS AND 3" AT BENTS.
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS FOR THE SEALS IN LIEU OF SAWING THE JOINTS.
 FOR LOCATION OF SECTION A-A AND SECTION B-B, SEE PLAN OF SPAN SHEETS.
 THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.



EXISTING JOINT

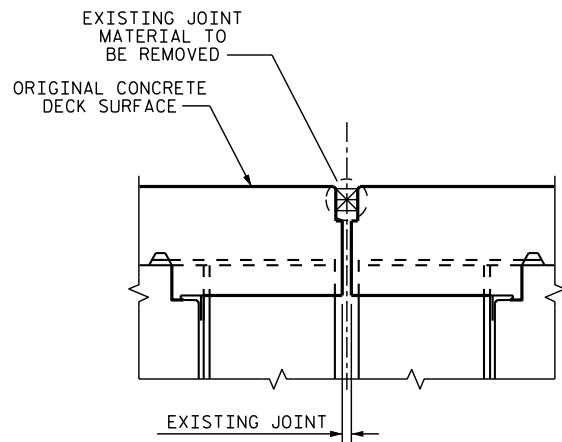


PROPOSED JOINT PRESAWED

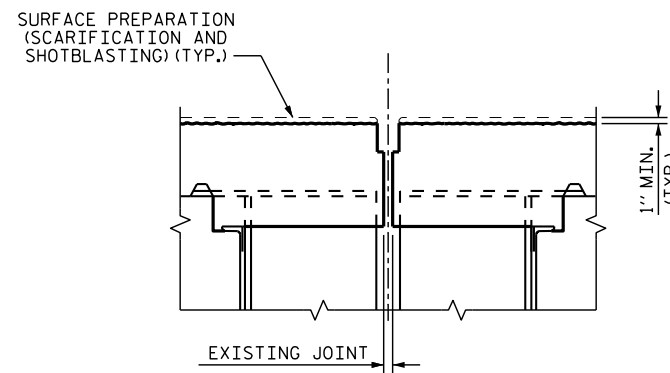


PROPOSED FOAM JOINT SEAL

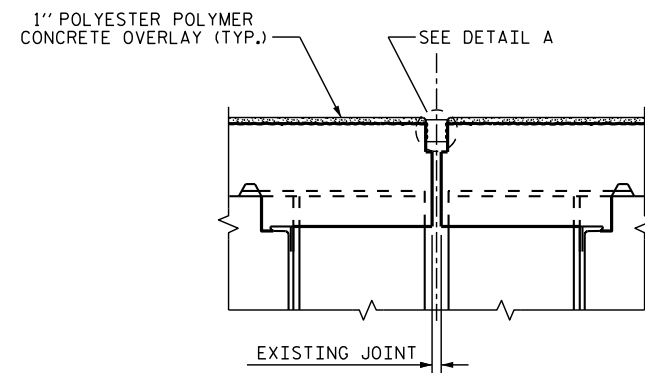
JOINT INSTALLATION SEQUENCE AT END BENTS (SECTION A-A)



EXISTING JOINT

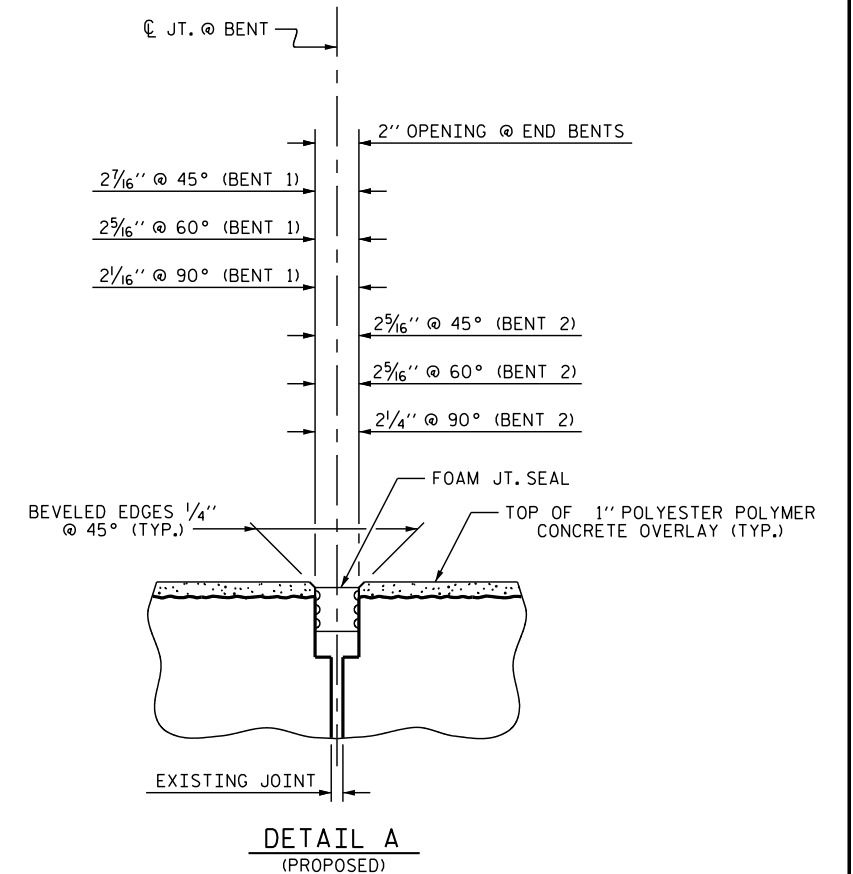


PROPOSED JOINT PRESAWED



PROPOSED FOAM JOINT SEAL

JOINT INSTALLATION SEQUENCE AT BENTS (SECTION B-B)

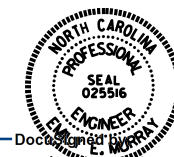


PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS



Doc No. A689F83FD9D74F8...
 1/25/2018
 Emily E. Murray

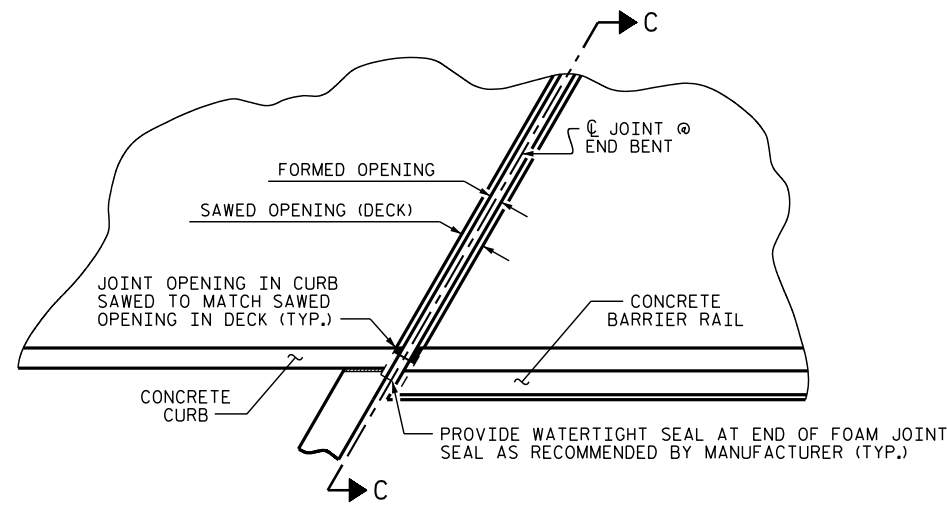
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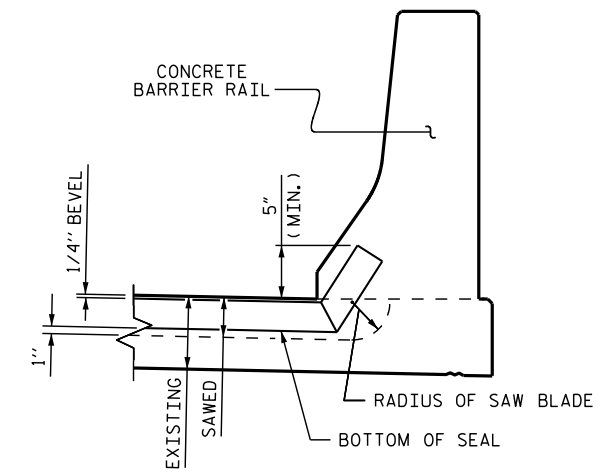
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| NO. | BY: | DATE: | NO. | BY: | DATE: | S-13 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 37 |

DRAWN BY : D. A. GLADDEN DATE : 12/17
 CHECKED BY : D. R. SMITH DATE : 12/17



PLAN



SECTION C-C

JOINT SEAL DETAILS AT END BENT 2 (NBL)

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590071

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR
 DETAILS

Professional Engineer
 Emily E. Murray
 A689F83FD9D74F8...
 1/25/2018

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| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 37 |

DRAWN BY : D. A. GLADDEN DATE : 12/17
 CHECKED BY : D. R. SMITH DATE : 12/17

NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLAN AND THE ROUTINE INSPECTION REPORT DATED 5/24/2017

BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

REMOVE EXISTING MODULAR EXPANSION JOINT AND INSTALL STRIP SEAL EXPANSION JOINT AT BENT 2.

PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING METHODS.

PERFORM DECK REPAIRS IN PREPARED AREAS.

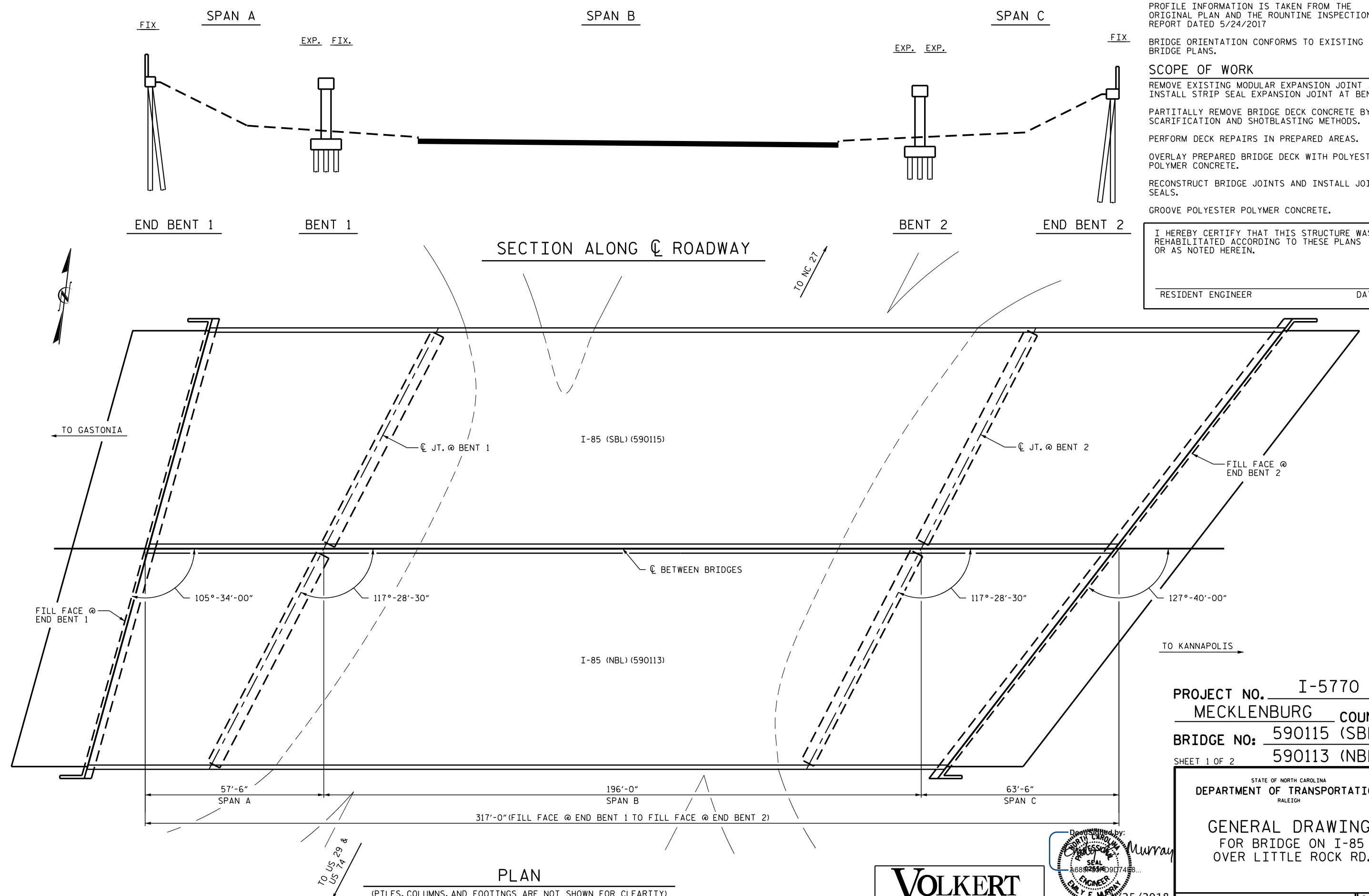
OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.

RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.

GROOVE POLYESTER POLYMER CONCRETE.

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

RESIDENT ENGINEER _____ DATE _____



SECTION ALONG $\text{\textcircled{C}}$ ROADWAY

PLAN

(PILES, COLUMNS, AND FOOTINGS ARE NOT SHOWN FOR CLARITY)

DRAWN BY : P.N.HOLDER DATE : 11/17
 CHECKED BY : D.R.SMITH DATE : 11/17

10-JAN-2018 11:19
 *****SDGN*****
 patrick.holder AT C-017531

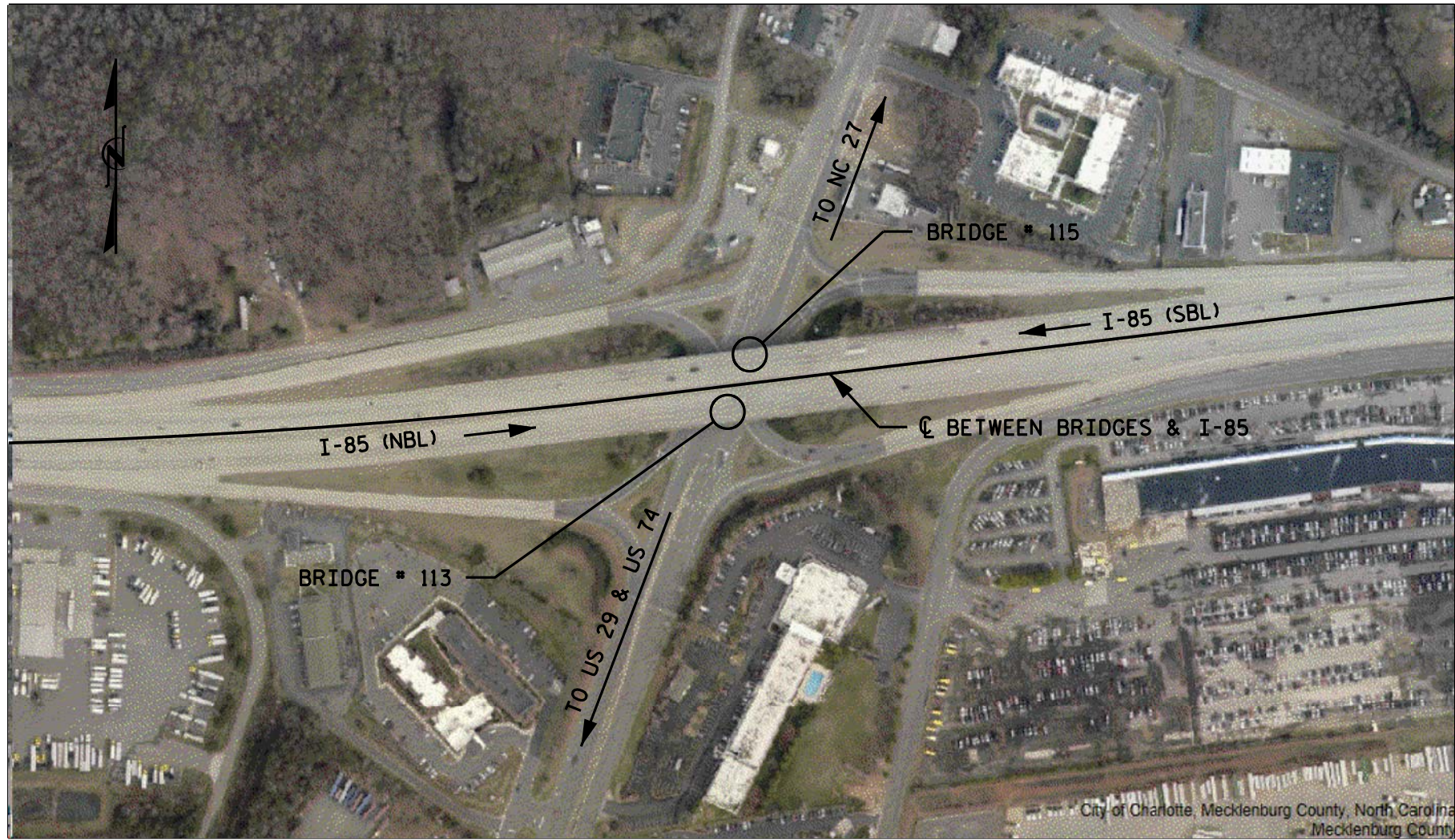
VOLKERT
 5540 Centerview Drive, Suite 305
 Raleigh, NC 27606
 Tel. 919-854-0344 Fax. 919-854-0355
 NC License No. F-0765

Designed by: *Murray*
 SEAL
 ENGINEER
 DAVID E. MURRAY
 1/25/2018

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PROJECT NO. I-5770
 MECKLENBURG COUNTY
 BRIDGE NO: 590115 (SBL)
590113 (NBL)
 SHEET 1 OF 2

| | | | | | |
|--|-----|-------|-----|-----|--------------------|
| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
| GENERAL DRAWING FOR BRIDGE ON I-85 OVER LITTLE ROCK RD. | | | | | |
| REVISIONS | | | | | SHEET NO. |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |
| | | | | | TOTAL SHEETS 37 |
| | | | | | S-15 |



LOCATION SKETCH

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.

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.

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 SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS.

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

EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER. IF NECESSARY, SUCH LOCATIONS MAY BE REPAIRED WITH PPC.

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

FOR FOAM JOINT SEAL, SEE SPECIAL PROVISIONS.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR STRIP SEAL EXPANSION JOINT, SEE SPECIAL PROVISIONS.

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

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR ADDITIONAL REINFORCING STEEL, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5770

MECKLENBURG COUNTY

BRIDGE NO. 590115 (SBL)

590113 (NBL)

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-85
OVER LITTLE ROCK RD.

DocuSigned by:
Emily F. Murray
A6898537
SEAL
EMILY E. MURRAY
ENGINEER
1/25/2018

VOLKERT

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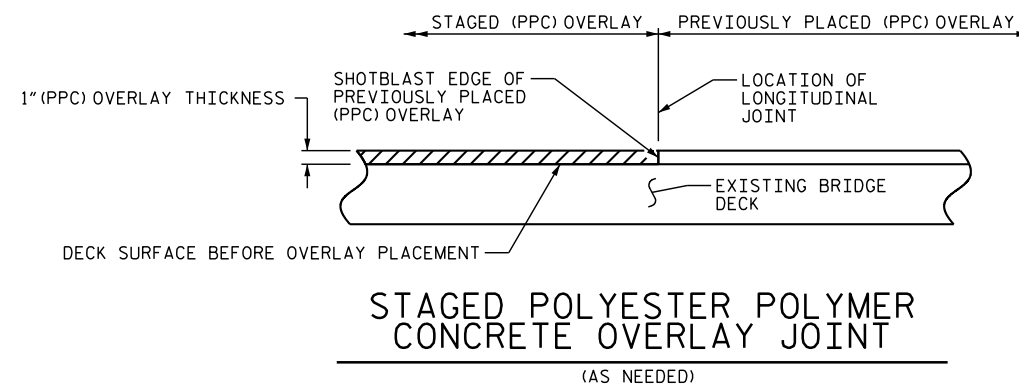
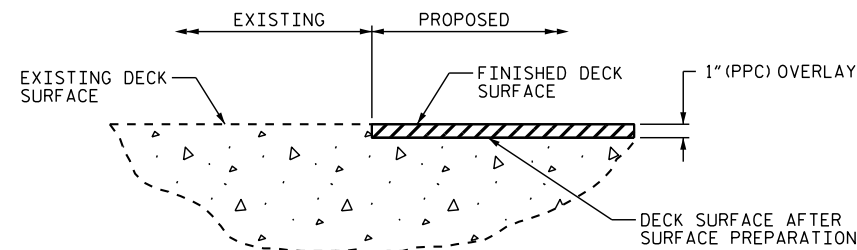
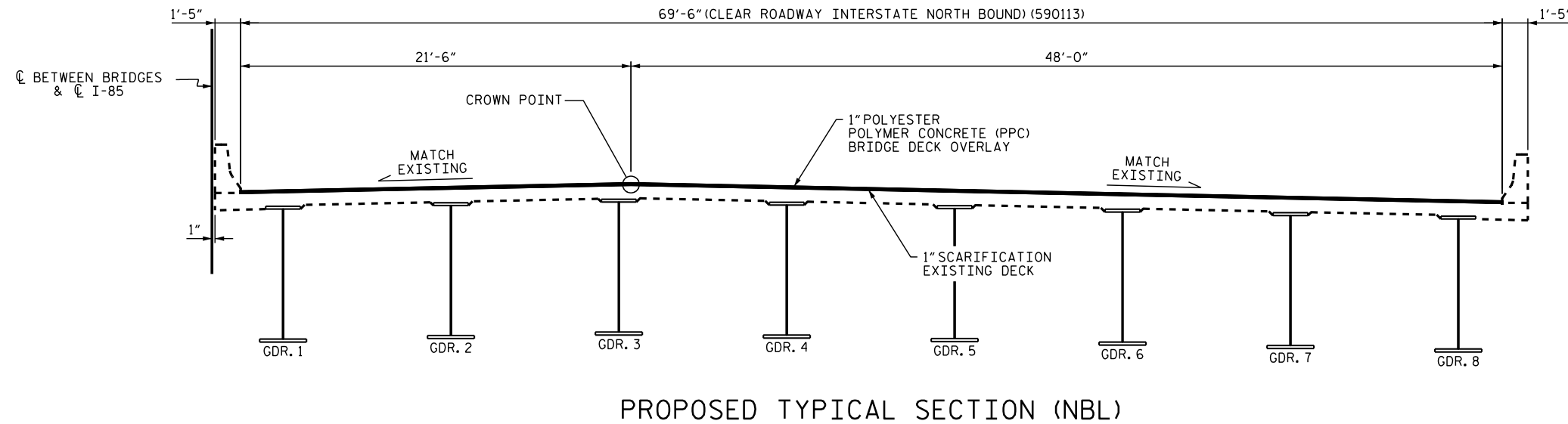
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| 2 | | | 4 | | | TOTAL SHEETS 37 |

DRAWN BY : P.N.HOLDER DATE : 11/17
CHECKED BY : D.R.SMITH DATE : 11/17

NOTES

SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OR OVERLAY SURFACE PREPARATION AND POLYESTER POLYMER CONCRETE PLACEMENT.



PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO: 590113 (NBL)

DocuSigned by:
Emily E. Murray
 A689783400574
 SEAL
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 EMILY E. MURRAY
 1/25/2018

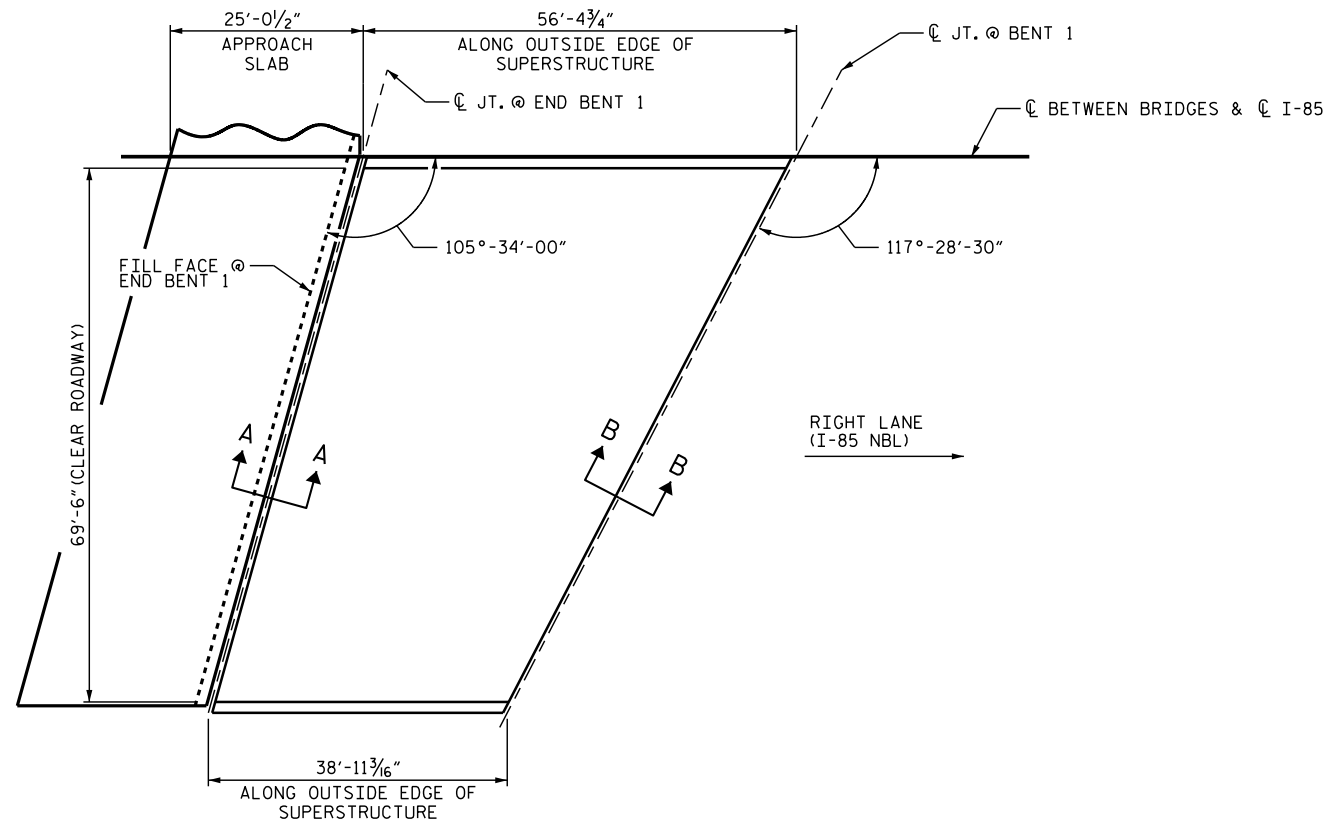
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**TYPICAL SECTION
 AND
 PPC OVERLAY
 DETAILS**

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| 2 | | | 4 | | | |

DRAWN BY : P.N.HOLDER DATE : 11/17
 CHECKED BY : D.R.SMITH DATE : 11/17



PLAN OF SPAN A

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

FOR SECTION A-A, SEE "FOAM JOINT REPAIR DETAIL" SHEET.

FOR SECTION B-B, SEE "EXPANSION JOINT REPAIR DETAIL" SHEET.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

DRAWN BY : P.N.HOLDER DATE : 11/17
 CHECKED BY : D.R.SMITH DATE : 11/17

21-JAN-2018 14:56
 *****SDGN*****
 patrick.holder AT C-017531

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

APPROACH SLAB @ END BENT 1

| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 199 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 199 SY | |
| PPC MATERIALS | 6.1 CY | |
| PLACING AND FINISHING PPC OVERLAY | 199 SY | |
| GROOVING BRIDGE FLOORS | 1640 SF | |

SPAN A

| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 368 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 368 SY | |
| PPC MATERIALS | 11.2 CY | |
| PLACING AND FINISHING PPC OVERLAY | 368 SY | |
| GROOVING BRIDGE FLOORS | 3118 SF | |

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

PROJECT NO. I-5770
 MECKLENBURG COUNTY
 BRIDGE NO: 590113

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN A
 RIGHT LANE (NBL)

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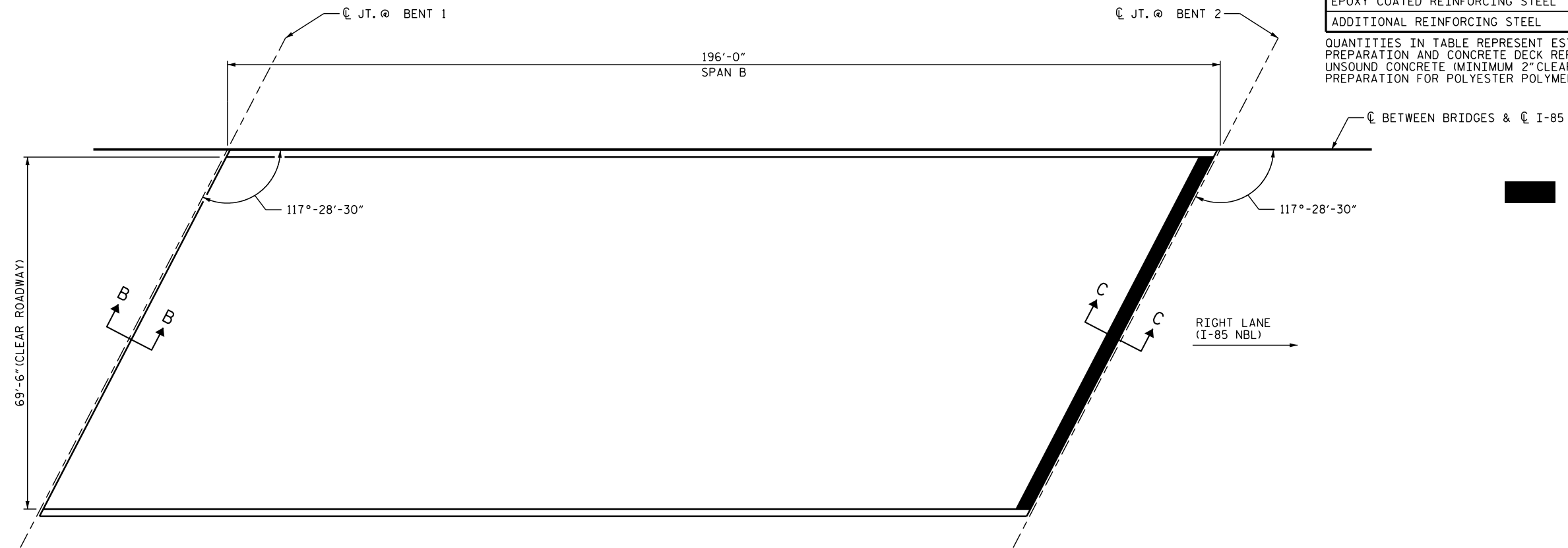
AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

SPAN B

| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 1514 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 1514 SY | |
| PPC MATERIALS | 46.2 CY | |
| PLACING AND FINISHING PPC OVERLAY | 1514 SY | |
| GROOVING BRIDGE FLOORS | 12959 SF | |
| CONCRETE FOR DECK REPAIR | 202.5 CF | |
| EPOXY COATED REINFORCING STEEL | 1192 LBS | |
| ADDITIONAL REINFORCING STEEL | 300 LBS | |

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



■ PARTIAL REMOVAL OF EXISTING STRUCTURE

PLAN OF SPAN B

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

FOR SECTION B-B, SEE "EXPANSION JOINT REPAIR DETAIL" SHEET.

FOR SECTION C-C, SEE "STRIP SEAL EXPANSION JOINT REPAIR DETAILS" SHEETS.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

FOR STRIP SEAL EXPANSION JOINT, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR ADDITIONAL REINFORCING STEEL, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5770
 MECKLENBURG COUNTY
 BRIDGE NO: 590113

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN B
 RIGHT LANE (NBL)

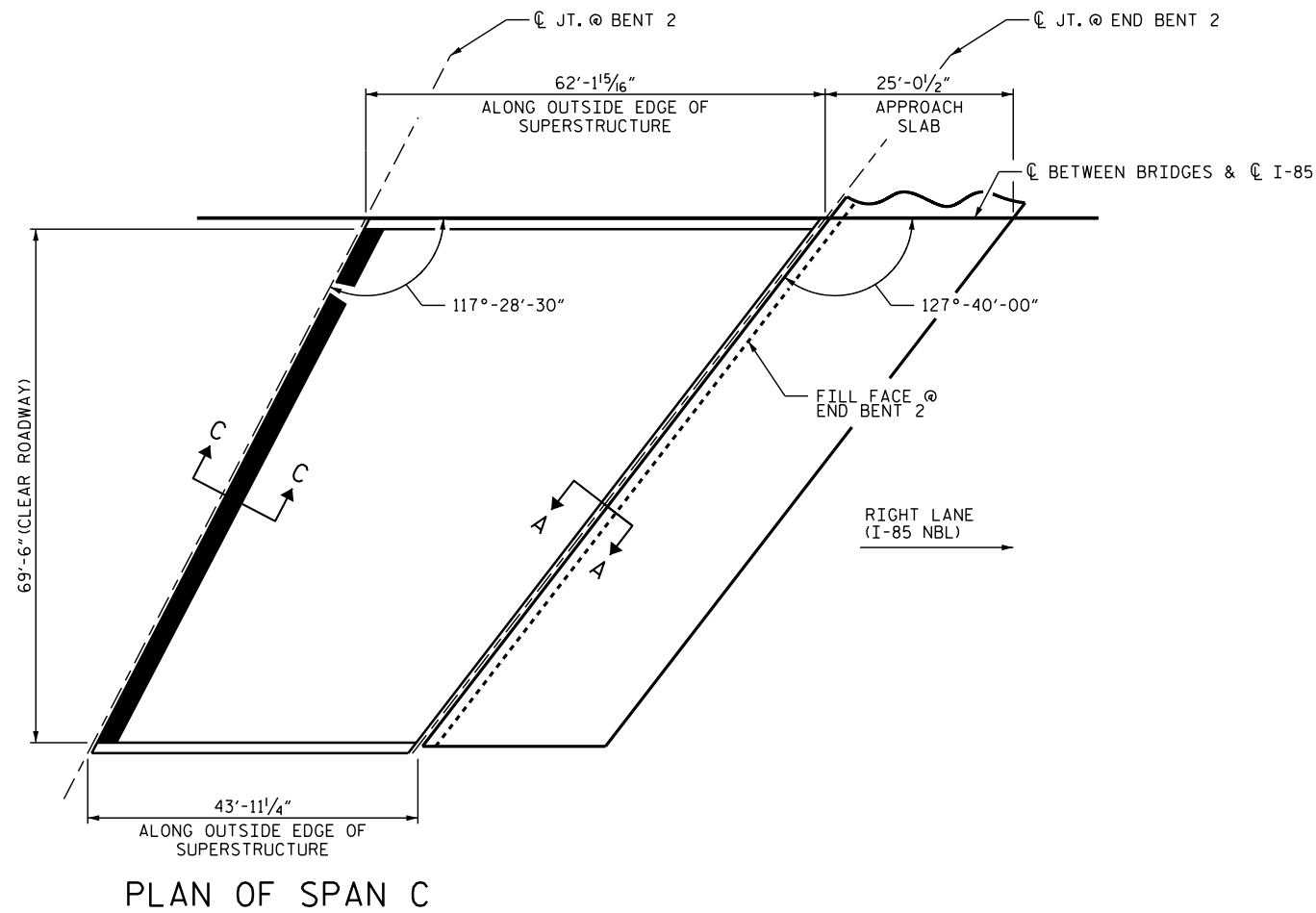
DocuSigned by:
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DRAWN BY : P.N.HOLDER DATE : 11/17
 CHECKED BY : D.R.SMITH DATE : 11/17



AS-BUILT REPAIR QUANTITY TABLE

| TOP OF DECK REPAIRS | | |
|--------------------------------------|----------|--------|
| APPROACH SLAB @ END BENT 2 | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 199 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 199 SY | |
| PPC MATERIALS | 6.1 CY | |
| PLACING AND FINISHING PPC OVERLAY | 199 SY | |
| GROOVING BRIDGE FLOORS | 1640 SF | |
| SPAN C | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 410 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 410 SY | |
| PPC MATERIALS | 12.5 CY | |
| PLACING AND FINISHING PPC OVERLAY | 410 SY | |
| GROOVING BRIDGE FLOORS | 3473 SF | |
| CONCRETE FOR DECK REPAIR | 202.5 CF | |
| EPOXY COATED REINFORCING STEEL | 1192 LBS | |
| ADDITIONAL REINFORCING STEEL | 300 LBS | |

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

PARTIAL REMOVAL OF EXISTING STRUCTURE

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

FOR SECTION A-A, SEE "FOAM JOINT REPAIR DETAIL" SHEET.

FOR SECTION C-C, SEE "STRIP SEAL EXPANSION JOINT REPAIR DETAILS" SHEETS.

FOR FOAM JOINT, SEE SPECIAL PROVISIONS.

FOR STRIP SEAL EXPANSION JOINT, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR ADDITIONAL REINFORCING STEEL, SEE SPECIAL PROVISIONS.

DRAWN BY : P.N.HOLDER DATE : 11/17
 CHECKED BY : D.R.SMITH DATE : 11/17

23-JAN-2018 09:08
 *****DCN*****
 emily.murray AT C-037614

PROJECT NO. I-5770
 MECKLENBURG COUNTY
 BRIDGE NO: 590113

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN C
 RIGHT LANE (NBL)

DocuSigned by:

 EMILY E. MURRAY
 PROFESSIONAL ENGINEER
 6899 3499D 488
 SEAL
 02556
 ENGINEER
 1/25/2018

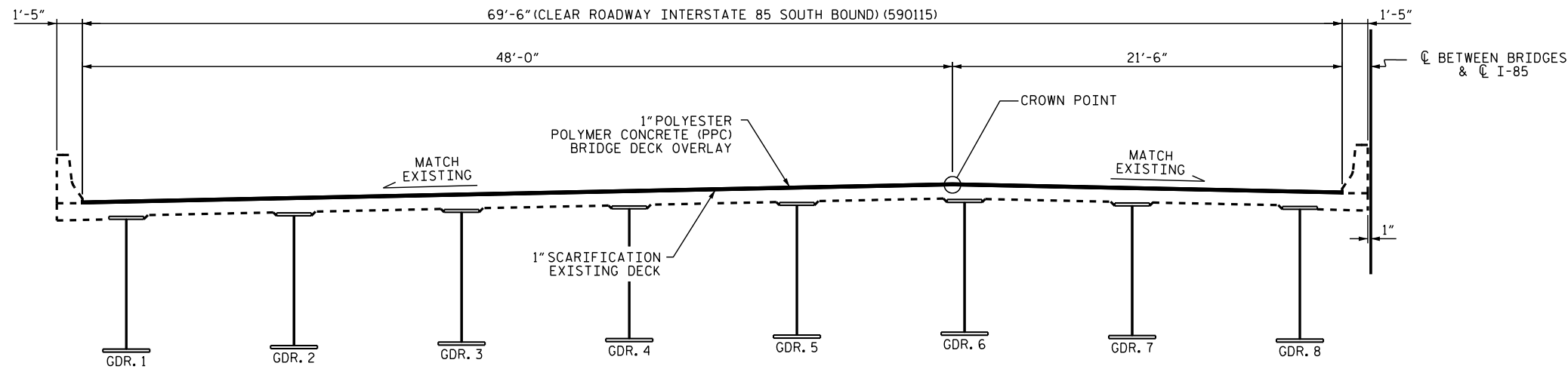
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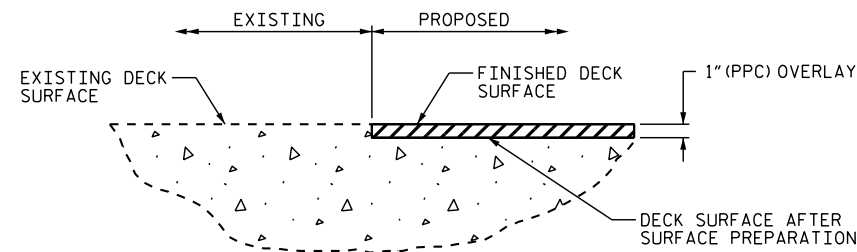
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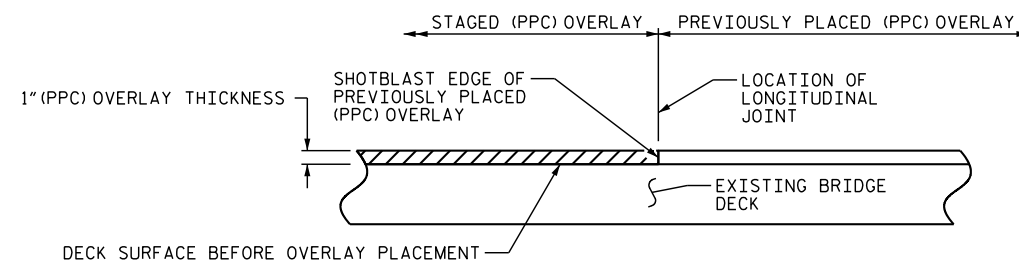
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OR OVERLAY SURFACE PREPARATION AND POLYESTER POLYMER CONCRETE PLACEMENT.



PROPOSED TYPICAL SECTION (SBL)



DETAIL FOR POLYESTER POLYMER CONCRETE OVERLAY



STAGED POLYESTER POLYMER CONCRETE OVERLAY JOINT

(AS NEEDED)

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO: 590115 (SBL)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**TYPICAL SECTION
 AND
 PPC OVERLAY
 DETAILS**

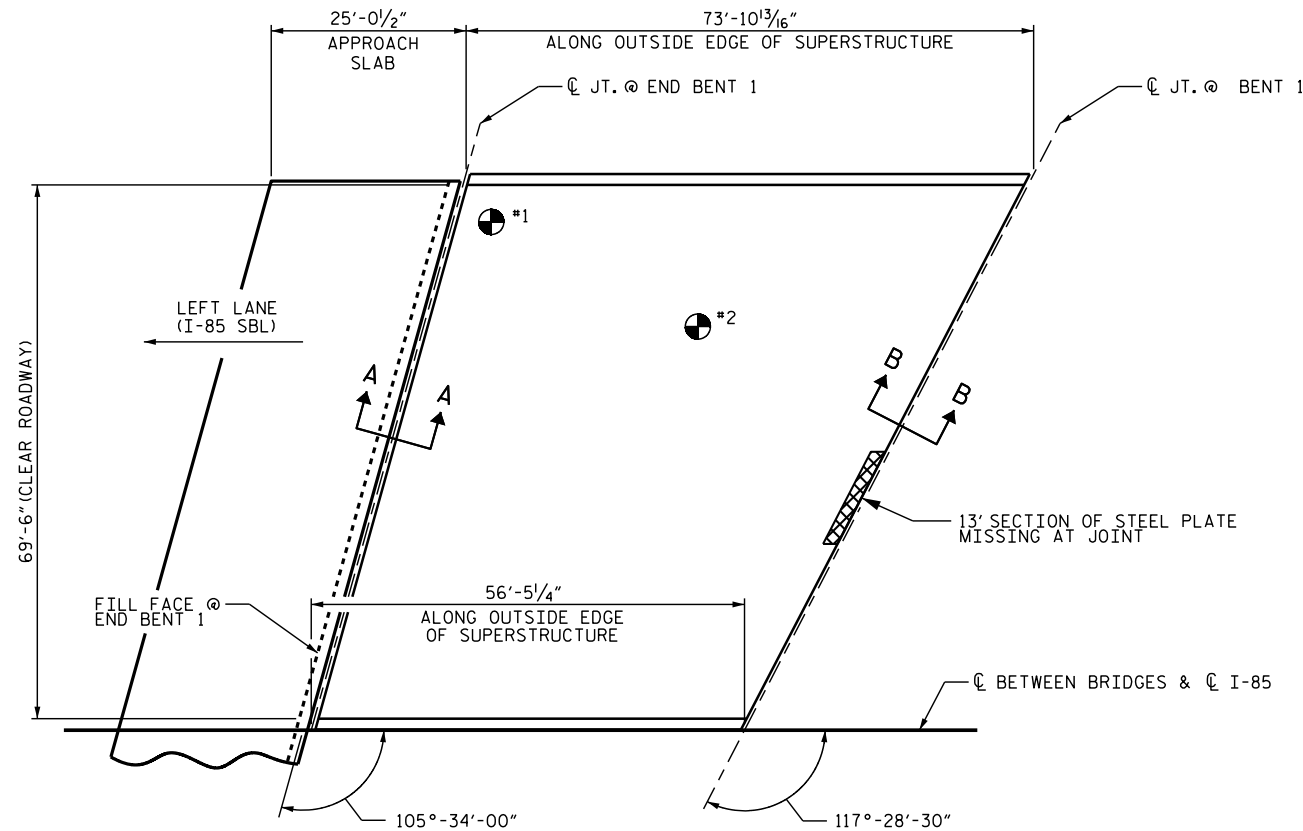
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 EMILY E. MURRAY
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| 2 | | | 4 | | | |

DRAWN BY : P.N.HOLDER DATE : 11/17
 CHECKED BY : D.R.SMITH DATE : 11/17



PLAN OF SPAN A

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

FOR SECTION A-A, SEE "FOAM JOINT REPAIR DETAILS" SHEET.

FOR SECTION B-B, SEE "EXPANSION JOINT REPAIR DETAILS" SHEET.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

DRAWN BY : P.N.HOLDER DATE : 11/17
 CHECKED BY : D.R.SMITH DATE : 11/17

21-JAN-2018 15:18
 *****SDGN*****
 patrick.holder AT C-017531

AS-BUILT REPAIR QUANTITY TABLE

| TOP OF DECK REPAIRS | | |
|--------------------------------------|----------|--------|
| APPROACH SLAB @ END BENT 1 | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 199 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 199 SY | |
| PPC MATERIALS | 6.1 CY | |
| PLACING AND FINISHING PPC OVERLAY | 199 SY | |
| GROOVING BRIDGE FLOORS | 1640 SF | |
| SPAN A | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 503 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 503 SY | |
| PPC MATERIALS | 15.4 CY | |
| PLACING AND FINISHING PPC OVERLAY | 503 SY | |
| GROOVING BRIDGE FLOORS | 4282 SF | |

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

| TEST LOCATION | CONCRETE COVER (INCH) | CONCRETE STRENGTH (PSI) |
|---------------|-----------------------|-------------------------|
| #1 | 2 1/2" | 6660 |
| #2 | 2 3/8" | 5560 |

INFORMATION IN CHART IS TAKEN FROM THE DECK EVALUATION DATED 11/5/2017

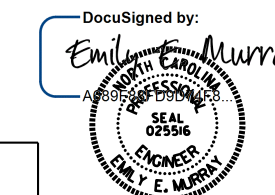
TEST LOCATION

PROJECT NO. I-5770
 MECKLENBURG COUNTY
 BRIDGE NO: 590115

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN A
 LEFT LANE (SBL)



1/25/2018

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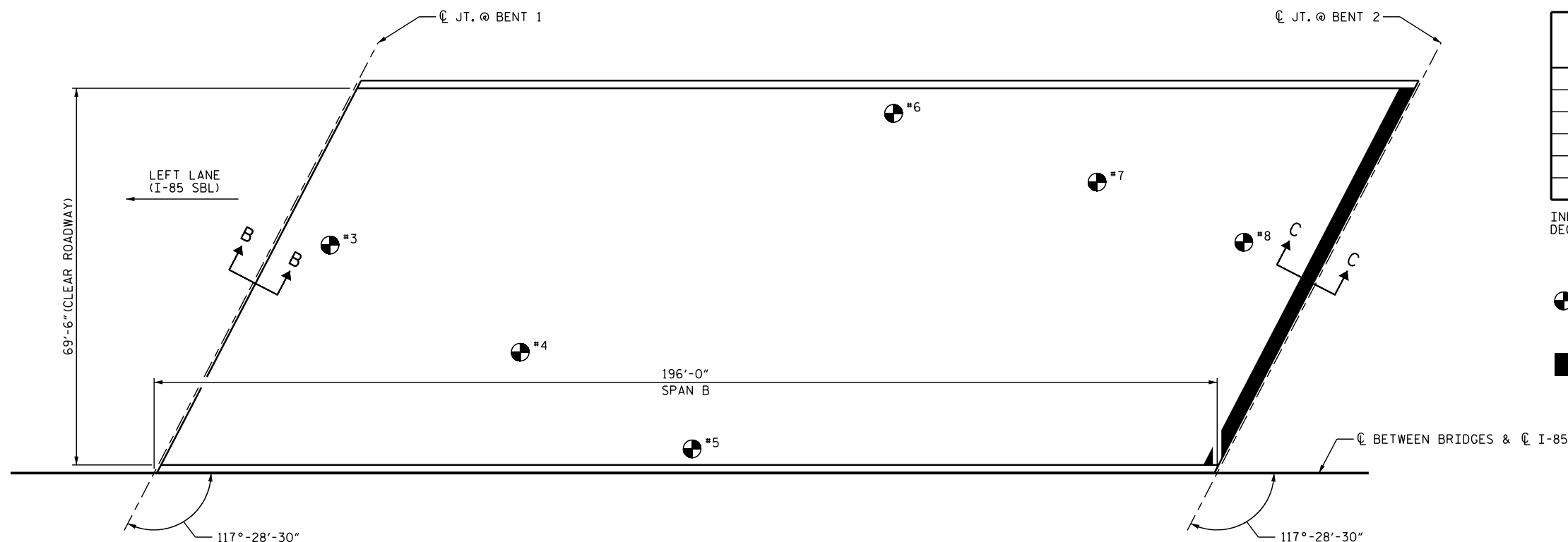
AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

SPAN B

| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 1514 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 1514 SY | |
| PPC MATERIALS | 46.2 CY | |
| PLACING AND FINISHING PPC OVERLAY | 1514 SY | |
| GROOVING BRIDGE FLOORS | 12959 SF | |
| CONCRETE FOR DECK REPAIR | 202.5 CF | |
| EPOXY COATED REINFORCING STEEL | 1192 LBS | |
| ADDITIONAL REINFORCING STEEL | 300 LBS | |

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



| TEST LOCATION | CONCRETE COVER (INCH) | CONCRETE STRENGTH (PSI) |
|---------------|-----------------------|-------------------------|
| #3 | 2 1/2" | 6930 |
| #4 | 2 1/2" | 4980 |
| #5 | 2 1/2" | 4960 |
| #6 | 2 3/4" | 5210 |
| #7 | 2 3/8" | 6010 |
| #8 | 2 1/8" | 5220 |

INFORMATION IN CHART IS TAKEN FROM THE DECK EVALUATION DATED 11/5/2017

⊕ TEST LOCATION

■ PARTIAL REMOVAL OF EXISTING STRUCTURE

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

FOR SECTION B-B, SEE "EXPANSION JOINT REPAIR DETAILS" SHEET.

FOR SECTION C-C, SEE "STRIP SEAL EXPANSION JOINT REPAIR DETAILS" SHEETS.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

FOR STRIP SEAL EXPANSION JOINT, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR ADDITIONAL REINFORCING STEEL, SEE SPECIAL PROVISIONS.

PLAN OF SPAN B

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO: 590115

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN B
 LEFT LANE (SBL)

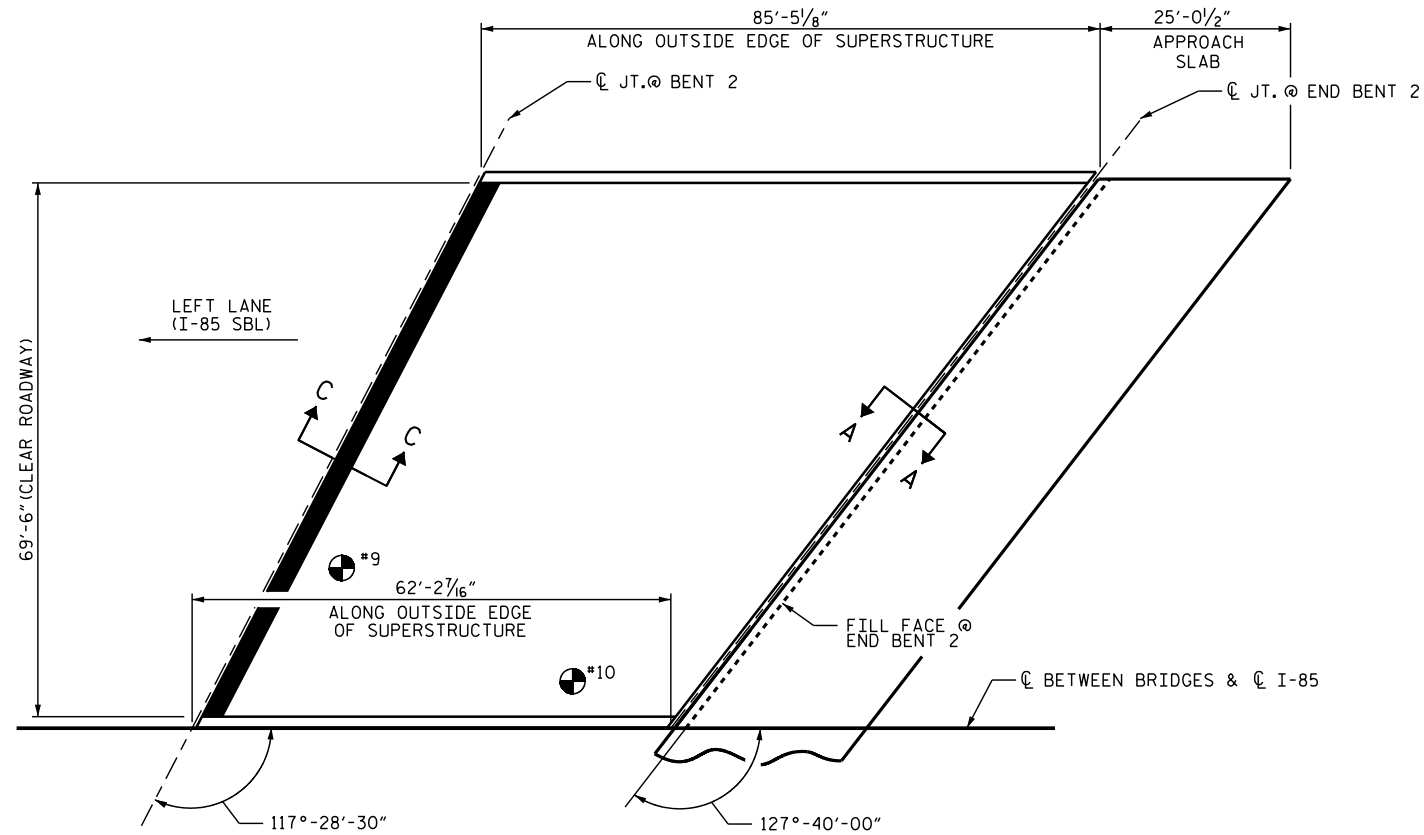
DocuSigned by:
 Emily C. Murray
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| 2 | | | 4 | | | 37 |

DRAWN BY : P.N.HOLDER DATE : 11/17
 CHECKED BY : D.R.SMITH DATE : 11/17



PLAN OF SPAN C

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

FOR SECTION A-A, SEE "FOAM JOINT REPAIR DETAILS" SHEET.

FOR SECTION C-C, SEE "STRIP SEAL EXPANSION JOINT REPAIR DETAILS" SHEETS.

FOR FOAM JOINT, SEE SPECIAL PROVISIONS.

FOR STRIP SEAL EXPANSION JOINT, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR ADDITIONAL REINFORCING STEEL, SEE SPECIAL PROVISIONS.

DRAWN BY : P.N.HOLDER DATE : 11/17
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23-JAN-2018 09:12
 *****DCN*****
 emily.murray AT C-037614

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

APPROACH SLAB @ END BENT 2

| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 199 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 199 SY | |
| PPC MATERIALS | 6.1 CY | |
| PLACING AND FINISHING PPC OVERLAY | 199 SY | |
| GROOVING BRIDGE FLOORS | 1640 SF | |

SPAN C

| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 551 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 551 SY | |
| PPC MATERIALS | 16.8 CY | |
| PLACING AND FINISHING PPC OVERLAY | 551 SY | |
| GROOVING BRIDGE FLOORS | 4688 SF | |
| CONCRETE FOR DECK REPAIR | 202.5 CF | |
| EPOXY COATED REINFORCING STEEL | 1192 LBS | |
| ADDITIONAL REINFORCING STEEL | 300 LBS | |

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

| TEST LOCATION | CONCRETE COVER (INCH) | CONCRETE STRENGTH (PSI) |
|---------------|-----------------------|-------------------------|
| #9 | 2 5/8" | 5740 |
| #10 | 2 1/2" | 5050 |

INFORMATION IN CHART IS TAKEN FROM THE DECK EVALUATION DATED 11/5/2017

TEST LOCATION

PARTIAL REMOVAL OF EXISTING STRUCTURE

PROJECT NO. I-5770
 MECKLENBURG COUNTY
 BRIDGE NO: 590115

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

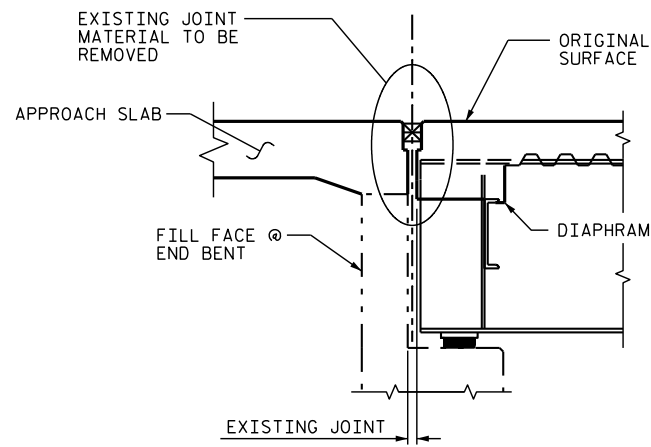
PLAN OF SPAN C
 LEFT LANE (SBL)

DocuSigned by:
 Emily E. Murray
 PROFESSIONAL SEAL
 EMILY E. MURRAY
 ENGINEER
 025516
 1/25/2018

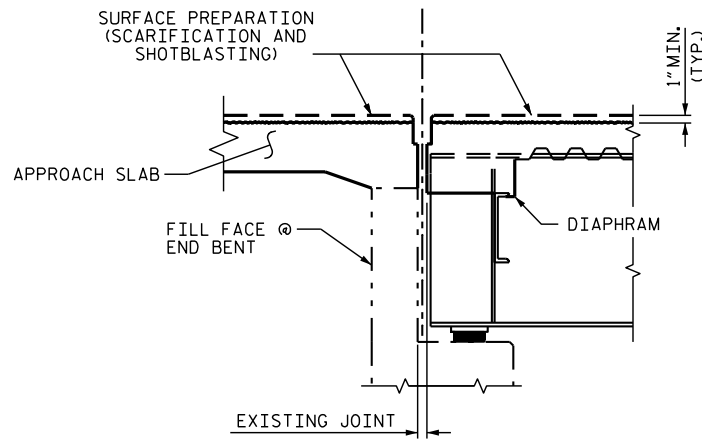
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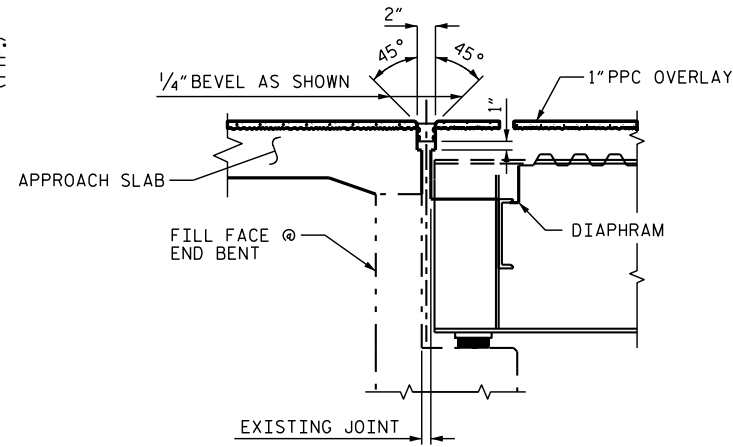
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EXISTING JOINT

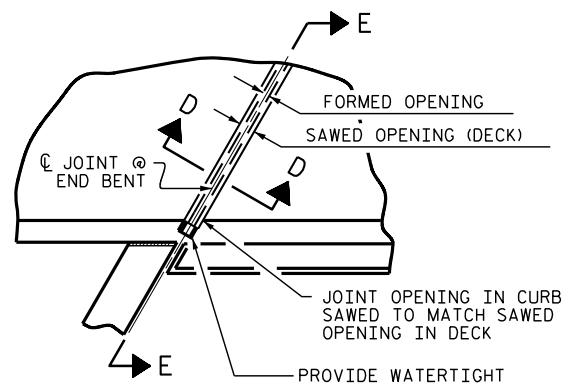


PROPOSED JOINT PRE-SAWED

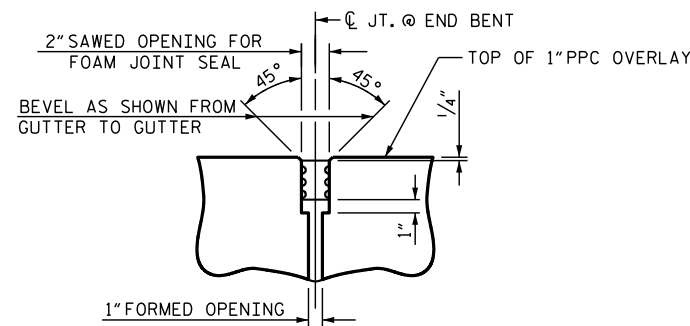


PROPOSED FOAM JOINT SEAL

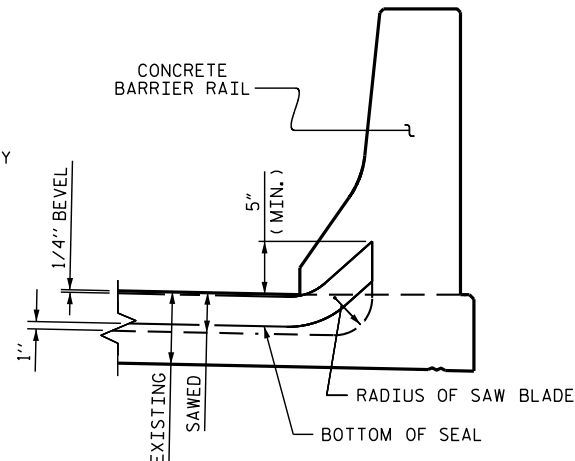
SECTION A-A



PLAN



SECTION D-D
FOAM JOINT SEAL
(FIXED)



SECTION E-E

JOINT SEAL DETAILS AT END BENT

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

NOTES

- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
- NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2 1/2" AT END BENTS.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS FOR THE JOINT SEALS IN LIEU OF SAWING THE JOINTS.
- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.
- FOR LOCATION OF SECTION A-A, SEE PLAN OF SPAN SHEETS.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO: 590115 (SBL)
590113 (NBL)

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 ENGINEER
 EMILY E. MURRAY

1/25/2018

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 FOAM JOINT REPAIR
 DETAIL AT
 END BENT 1 &
 END BENT 2

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DRAWN BY : P.N.HOLDER DATE : 12/17
 CHECKED BY : D.R.SMITH DATE : 12/17

REPAIR INSTALLATION PROCEDURE

LOOSEN THE EXISTING BOLTS AND HOLD DOWN PLATES TO REMOVE AND REPLACE THE EXISTING GLAND. REMOVE THE EXISTING NEOPRENE SEALANT AND CLEAN THE EXISTING BASE ANGLE OF OIL, GREASE AND OTHER LATENTS.

LAY THE NEW GLAND ON THE BASE ANGLE AND FIELD MARK THE NEW GLAND FOR THE BOLT HOLES. HOLES IN THE NEW GLAND SHALL BE PUNCHED $\frac{1}{8}$ " IN DIAMETER WITH A HAND PUNCH.

IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE NEW GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEW NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE, BUT DO NOT TIGHTEN. THE ENGINEER WILL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.

AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND NEW GLAND. APPLY NEW NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE NEW GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.

AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES AND THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE. COMPLETELY FILL THESE RECESSES WITH NEW NEOPRENE SEALANT.

GENERAL NOTES

ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F539 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

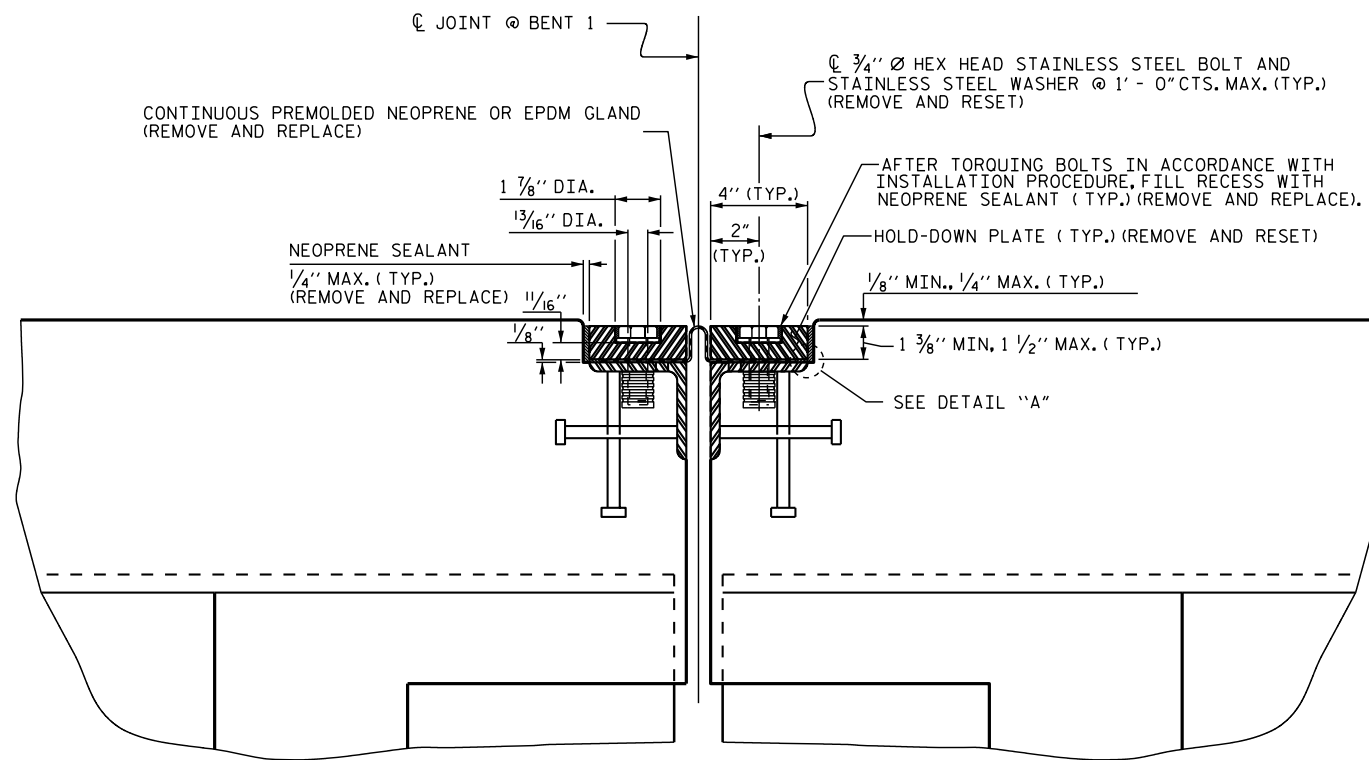
A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°.

THE FINISHED EXPANSION SEAL DEVICE SHALL BE A MINIMUM $\frac{1}{8}$ " AND A MAXIMUM OF $\frac{1}{4}$ " BELOW THE TOP OF SLAB.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

NO SEPARATE PAYMENT WILL BE MADE FOR REMOVING AND REINSTALLING BARRIER RAIL COVER PLATES. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE PAY ITEM "EXPANSION JOINT SEAL REPAIR".

FOR LOCATION OF SECTION B-B, SEE PLAN OF SPAN SHEETS.

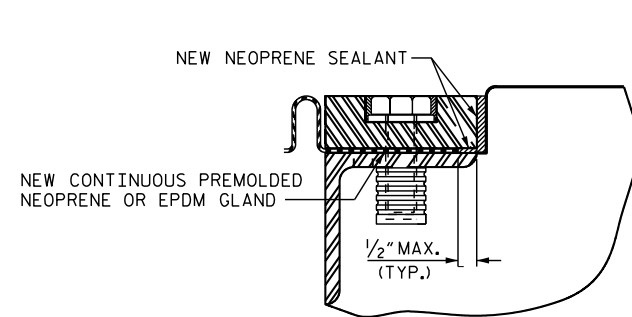


EXPANSION JOINT DETAILS (SECTION B-B)

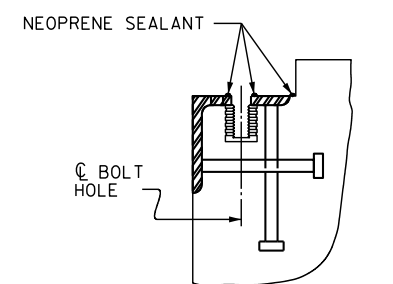
SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE

| MOVEMENT AND SETTING AT JOINT | | | | | |
|-------------------------------|------------|-------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| LOCATION | SKEW ANGLE | TOTAL MOVEMENT (ALONG C RDWY) | PERPENDICULAR JOINT OPENING AT 30° F | PERPENDICULAR JOINT OPENING AT 60° F | PERPENDICULAR JOINT OPENING AT 90° F |
| BENT 1 | 117°28'30" | $\frac{7}{8}$ " | $\frac{1}{16}$ " | $\frac{3}{16}$ " | $\frac{1}{16}$ " |

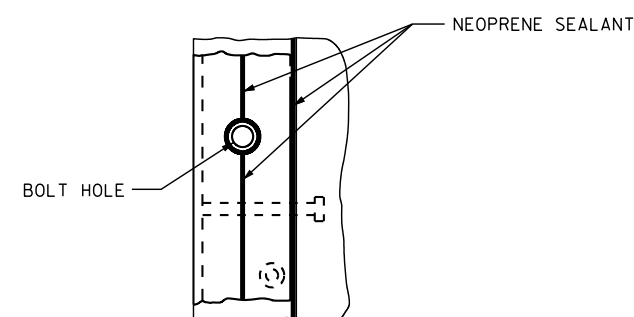
JOINT OPENINGS AND MOVEMENTS TAKEN FROM ORIGINAL PLANS.



DETAIL "A"



CROSS SECTION



PLAN VIEW

INSTALLATION SKETCH

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590115 (SBL)
590113 (NBL)

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD

EXPANSION JOINT
 SEAL REPAIR
 DETAIL AT BENT 1

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1/25/2018

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ASSEMBLED BY : P.N.HOLDER DATE : 12/17
 CHECKED BY : D.R.SMITH DATE : 12/17

NOTES

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

THE ENGINEER WILL REVIEW EXISTING DECK CONDITIONS. THE CONTRACTOR SHALL REMOVE UNSOUND CONCRETE IN THE DECK, OR AS DIRECTED BY THE ENGINEER.

REMOVE BRIDGE DECK CONCRETE TO THE EXTENT NECESSARY TO REMOVE EXISTING JOINT. INTRODUCE A PARTIAL DEPTH SAWCUT NOT TO EXCEED 1" IN DEPTH, FOLLOWED BY CONCRETE REMOVAL WITHOUT DAMAGE TO EXISTING REINFORCING STEEL AND EXISTING GIRDERS.

RETAIN BRIDGE DECK REINFORCING STEEL. STRAIGHTEN, REPAIR, OR REPLACE REINFORCING STEEL AS NECESSARY. IF "A" BARS ARE DAMAGED, THEY SHALL BE REPLACED AND ADHESIVELY ANCHORED INTO EXISTING DECK.

REMOVE EXISTING MODULAR EXPANSION JOINT IN ENTIRETY.

PROPOSED B1 AND S1 BARS SHALL BE SPACED SO AS TO MATCH SPACING OF EXISTING "B" BARS.

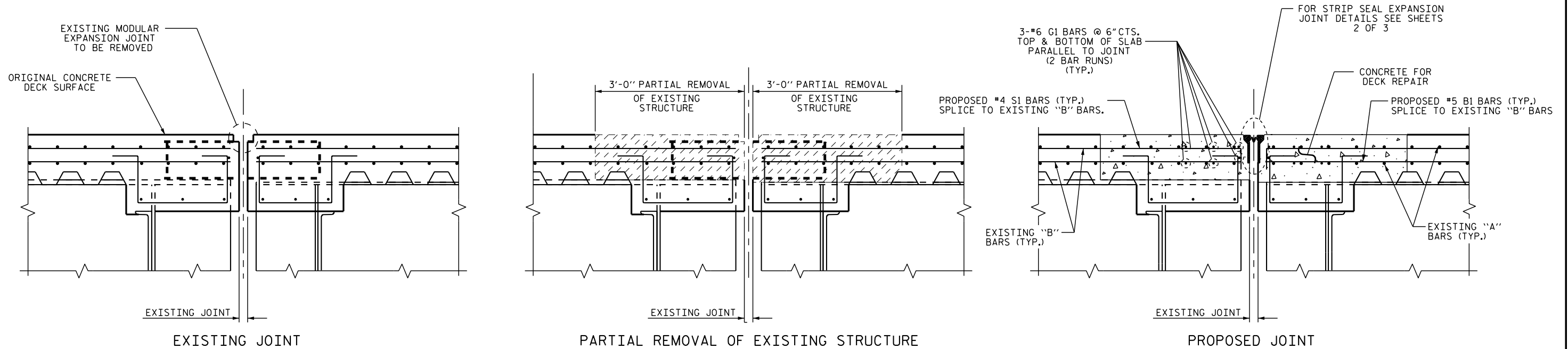
FOR STRIP SEAL EXPANSION JOINT, SEE "STRIP SEAL EXPANSION JOINT DETAILS AT BENT 2" SHEET 2 OF 3.

FOR STRIP SEAL EXPANSION JOINTS, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

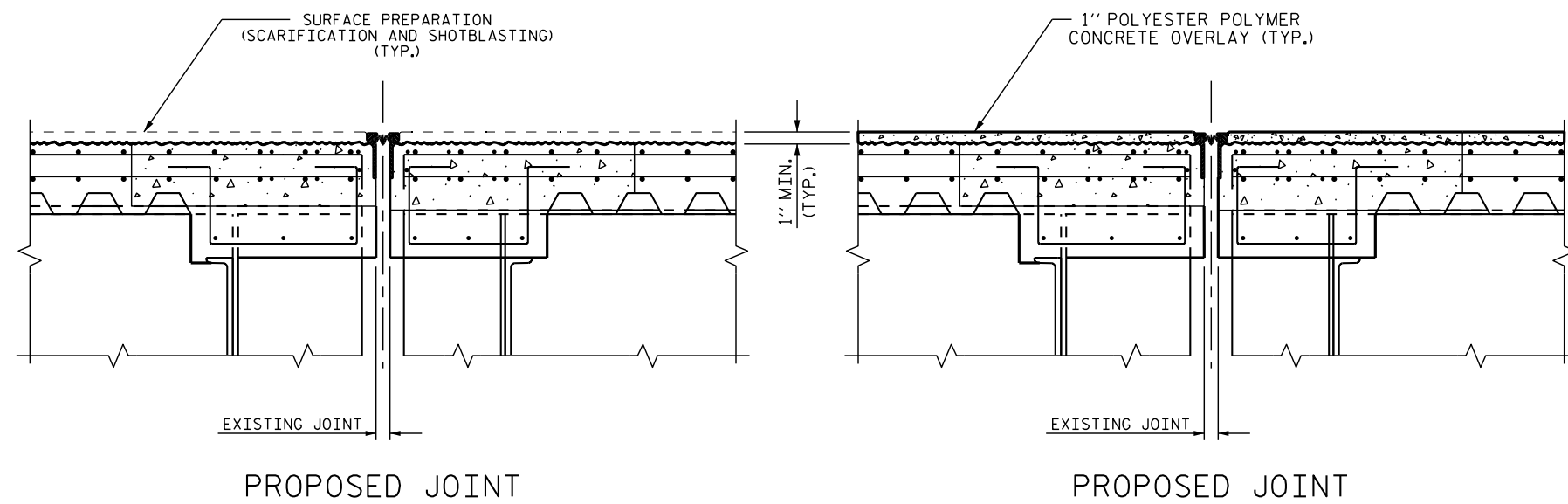
FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR ADDITIONAL REINFORCING STEEL, SEE SPECIAL PROVISIONS.



NOTE: G1 BARS ARE PROVIDED FOR ADEQUATE REINFORCEMENT AFTER REMOVAL OF EXISTING JOINT HARDWARE. NUMBER OF BARS AND/OR SPACING MAY BE ADJUSTED FOR FIELD CONDITIONS AT THE APPROVAL OF THE ENGINEER.

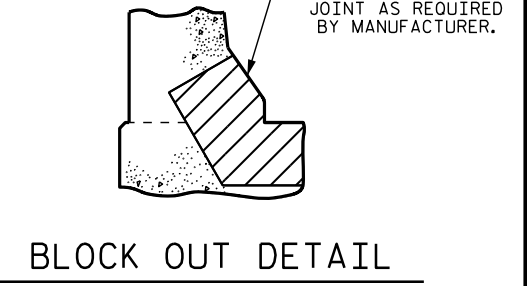
JOINT DEMOLITION IN BARRIER RAIL FOR INSTALLATION OF STRIP SEAL EXPANSION JOINT AS REQUIRED BY MANUFACTURER.



| BILL OF MATERIAL FOR ONE SPAN | | | | | |
|------------------------------------|--------|------|------|---------|----------|
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
| *B1 | 101 | #5 | STR | 3'-0" | 316 |
| *S1 | 49 | #4 | 1 | 3'-8" | 120 |
| *G1 | 12 | #6 | STR | 41'-11" | 756 |
| * EPOXY COATED REINFORCING STEEL = | | | | | 1192 LBS |
| CLASS AA CONCRETE = | | | | | 7.5 CY |
| BAR TYPES | | | | | |
| | | | | | |

NOTE: G1 BARS ARE PROVIDED FOR ADEQUATE REINFORCEMENT AFTER REMOVAL OF EXISTING JOINT HARDWARE. NUMBER OF BARS AND/OR SPACING MAY BE ADJUSTED FOR FIELD CONDITIONS AT THE APPROVAL OF THE ENGINEER.

DocuSigned by
 Emily E. Murray
 A689F88FD7025516
 ENGINEER
 EMILY E. MURRAY



PROJECT NO. I-5770
 MECKLENBURG COUNTY
 STATION: 590115 (SBL)
590113 (NBL)
 SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
STRIP SEAL EXPANSION JOINT DETAILS AT BENT 2

DRAWN BY : P.N.HOLDER DATE : 01/18
 CHECKED BY : E.E.MURRAY DATE : 01/18

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JOINT INSTALLATION PROCEDURE:

1. INSTALL THE STRIP SEAL EXPANSION JOINT AS RECOMMENDED BY THE STRIP SEAL EXPANSION JOINT MANUFACTURER.
2. A MANUFACTURER'S REPRESENTATIVE IS TO BE PRESENT DURING INSTALLATION OF THE JOINT.
3. PLACE STEEL RETAINER RAILS IN JOINT OPENING. PROPERLY ALIGN THE RAILS BOTH HORIZONTALLY AND VERTICALLY.
4. SHIFT SLIGHTLY, AS NECESSARY, CONFLICTING REINFORCING STEEL.
5. CARE MUST BE TAKEN DURING THE CONCRETE POUR TO PROTECT THE STEEL RETAINER RAILS FROM BEING FOULED BY CONCRETE SPILLOVER.
6. ONCE THE CONCRETE HAS HARDENED SUFFICIENTLY ON BOTH SIDES OF JOINT, STEEL RETAINER RAILS SHALL BE CLEANED THOROUGHLY AND SEAL CHANNELS SHALL BE INSPECTED TO ASCERTAIN THE ABSENCE OF CONCRETE AND DEBRIS.
7. COAT THE STRIP SEAL LUGS WITH LUBRICANT-ADHESIVE AND INSTALL THE NEOPRENE STRIP SEAL GLAND AS RECOMMENDED BY THE STRIP SEAL EXPANSION JOINT MANUFACTURER.

GENERAL NOTES

FOR STRIP SEAL INSTALLATION SEQUENCE, SEE "STRIP SEAL EXPANSION JOINT DETAILS AT BENT 2" SHEET 1 OF 3.

FOR PROPOSED B1, S1, AND G1 BARS, SEE "STRIP SEAL EXPANSION JOINT DETAILS AT BENT 2" SHEET 1 OF 3.

FOR STRIP SEALS, SEE SPECIAL PROVISIONS.

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

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

NEOPRENE STRIP SEAL GLAND SHALL BE CONTINUOUS THROUGHOUT THE JOINT AND SHALL BE COMPATIBLE WITH THE STEEL RETAINER RAILS.

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

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

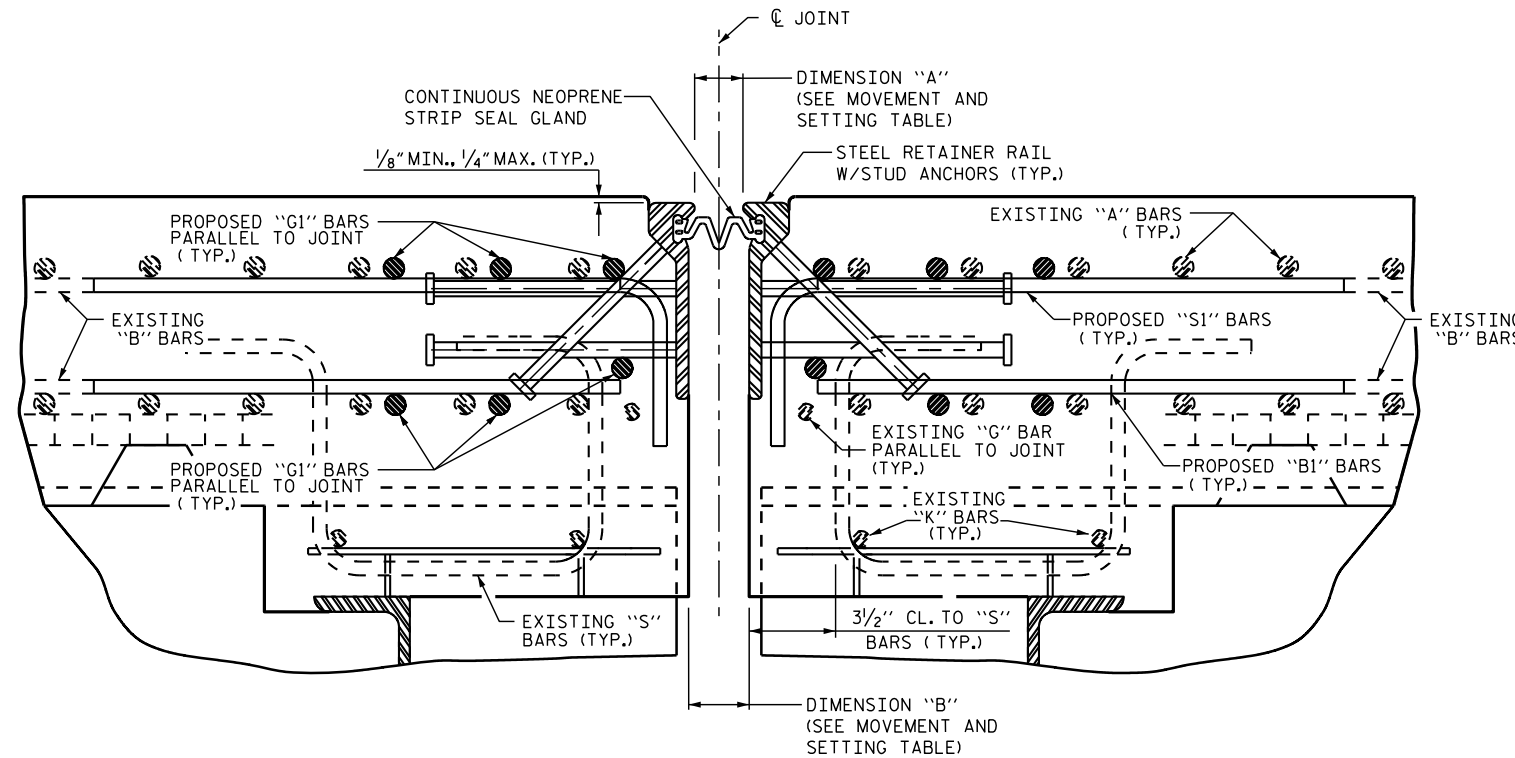
UPON COMPLETION OF SHOP FABRICATION, THE STEEL RETAINER RAILS SHALL BE METALLIZED AS SHOWN IN THE "METALLIZING DETAIL". SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

INSTALLED STEEL RETAINER RAILS SHALL FOLLOW THE ROADWAY SLOPE.

FIELD SPLICES OF THE RETAINER RAILS SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPlice LOCATIONS FOR APPROVAL.

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

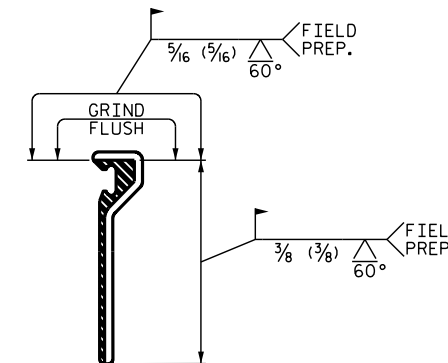
THE YIELD LOAD OF THE 3/4" Ø ADHESIVE ANCHOR BOLT FOR COVER PLATE IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.



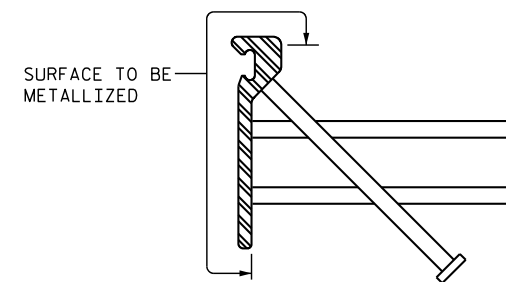
STRIP SEAL EXPANSION JOINT DETAIL

SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE
 THE INSTALLED STRIP SEAL EXPANSION JOINT SEALS SHALL BE WATERTIGHT.

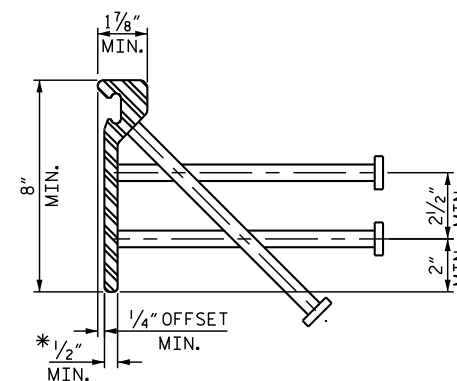
G1 BARS ARE PROVIDED FOR ADEQUATE REINFORCEMENT AFTER REMOVAL OF EXISTING JOINT HARDWARE. NUMBER OF BARS AND/OR SPACING MAY BE ADJUSTED FOR FIELD CONDITIONS AT THE APPROVAL OF THE ENGINEER.



STEEL RETAINER RAIL (FIELD SPLICE DETAIL)



METALLIZING DETAIL



TYPICAL SECTION STEEL RETAINER RAIL

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

| MOVEMENT AND SETTING TABLE | | | | | | | | |
|----------------------------|--------------|-------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| LOCATION | SKEW ANGLE | TOTAL MOVEMENT (ALONG C RDWY) | DIMENSION "A" | | | DIMENSION "B" | | |
| | | | PERPENDICULAR JOINT OPENING AT 45° F | PERPENDICULAR JOINT OPENING AT 60° F | PERPENDICULAR JOINT OPENING AT 90° F | PERPENDICULAR JOINT OPENING AT 45° F | PERPENDICULAR JOINT OPENING AT 60° F | PERPENDICULAR JOINT OPENING AT 90° F |
| BENT 2 | 117°-28'-30" | 2" | 2 1/4" | 2" | 1 1/2" | 2 3/4" | 2 1/2" | 2" |

ASSEMBLED BY : P.N.HOLDER DATE : 01/18
 CHECKED BY : E.E.MURRAY DATE : 01/18
 DRAWN BY : MAA 6/17
 CHECKED BY : BNB 6/17

21-JAN-2018 15:47
 *****DGN*****
 patrick.holder AT C-017531

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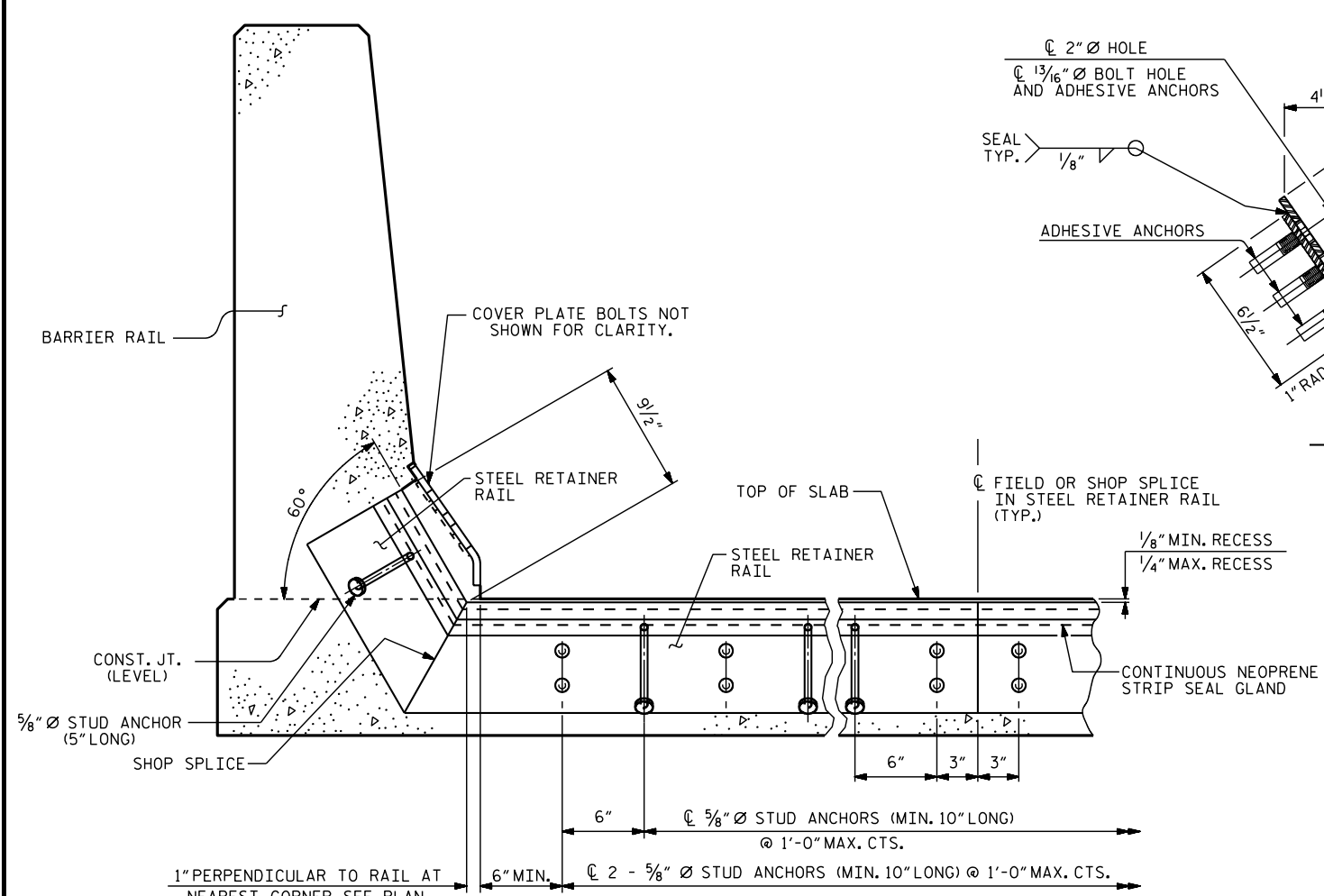
PROJECT NO. I-5770
 MECKLEBURG COUNTY
 STATION: 590115 (SBL)
 590113 (NBL)

SHEET 2 OF 3

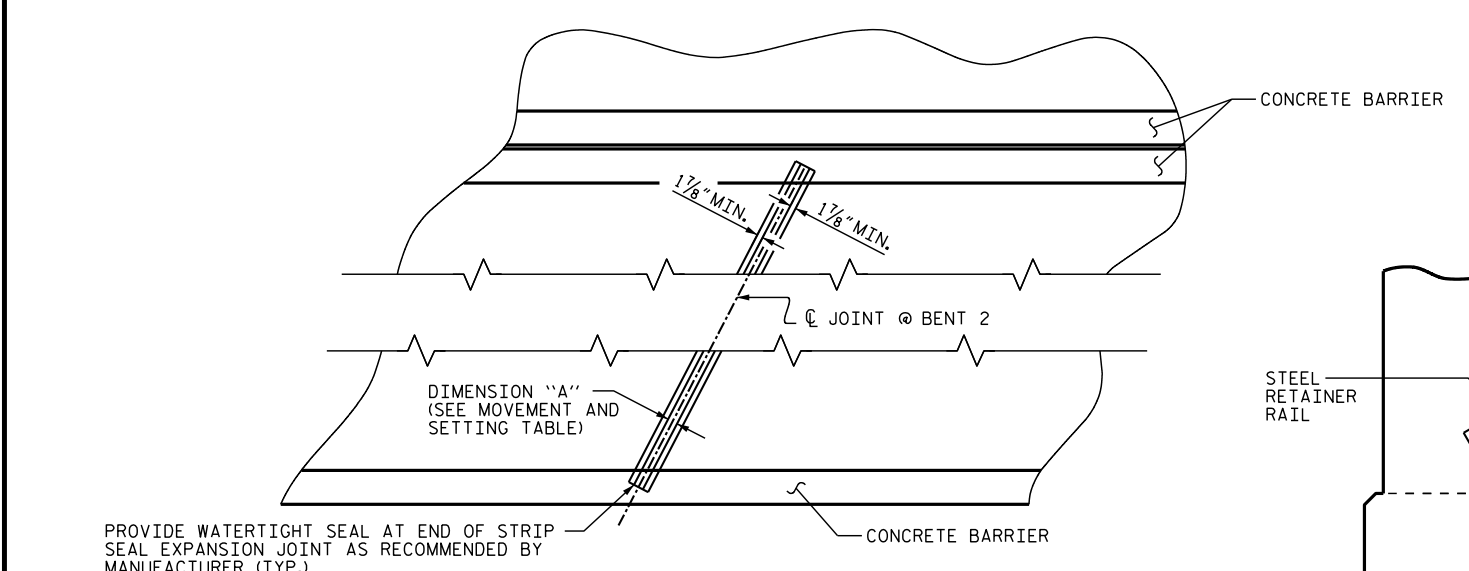
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STRIP SEAL EXPANSION JOINT DETAILS AT BENT 2

| REVISIONS | | | | | | SHEET NO. |
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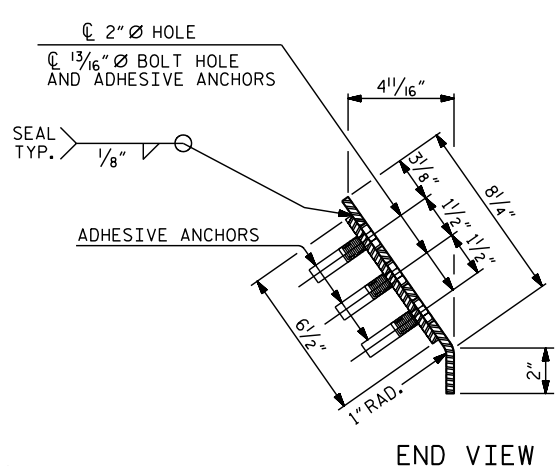
SECTION THRU RAIL NORMAL TO JOINT



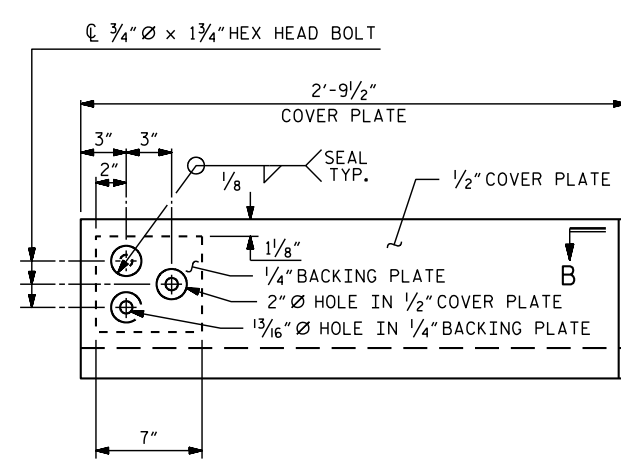
PLAN OF STRIP SEAL EXPANSION JOINT AT BENT 2 (NBL)

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|----------------|------------|--------|-------|
| ASSEMBLED BY : | P.N.HOLDER | DATE : | 01/18 |
| CHECKED BY : | E.E.MURRAY | DATE : | 01/18 |
| DRAWN BY : | MAA | 6/17 | |
| CHECKED BY : | BNB | 6/17 | |

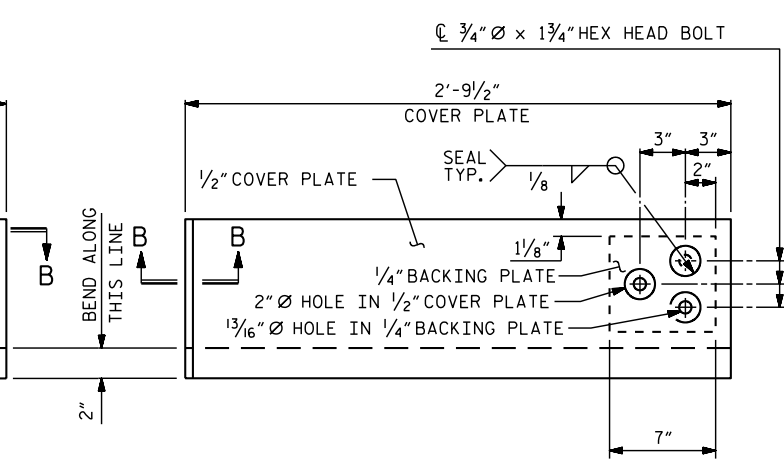
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END VIEW



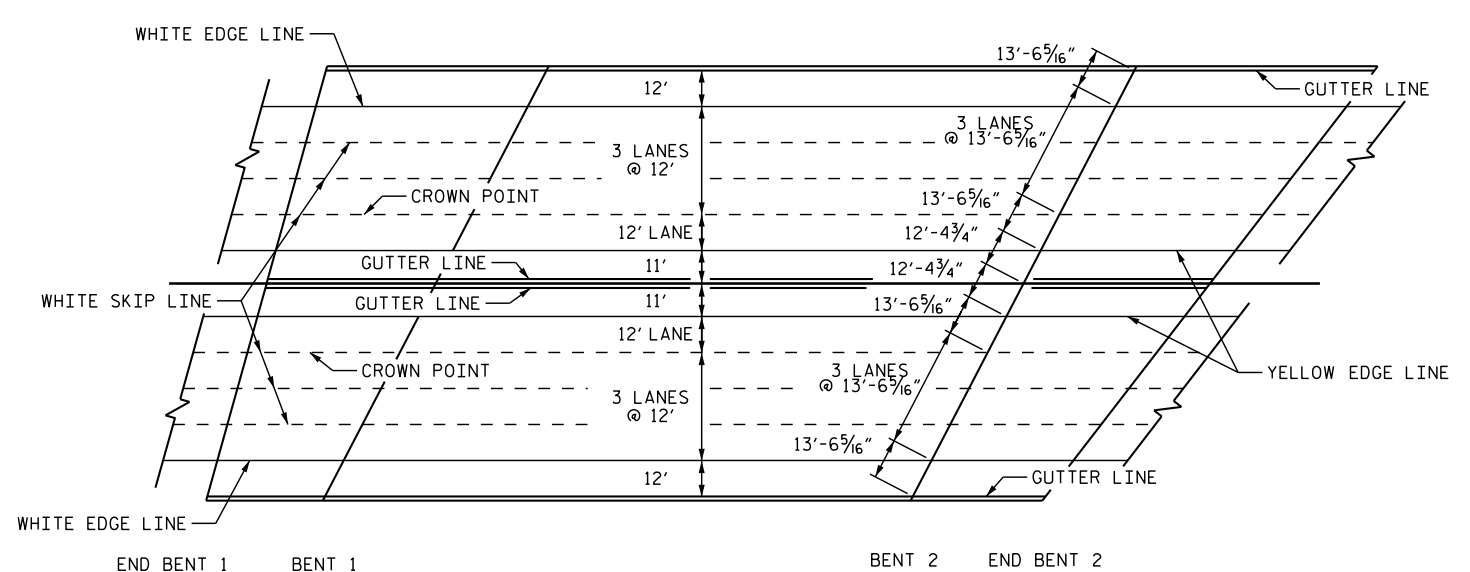
TYPE I - ELEVATION VIEW



TYPE II - ELEVATION VIEW

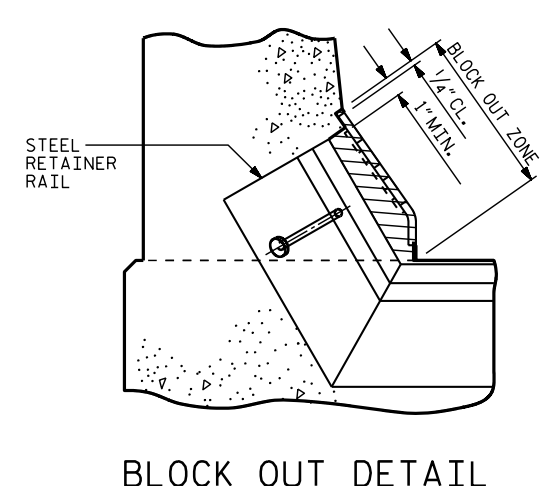
COVER PLATE DETAILS

NOTE: THE EXISTING COVER PLATE SHALL BE REUSED IF POSSIBLE. THE COVER PLATE DETAILS ARE PROVIDED AS A CONTINGENCY.

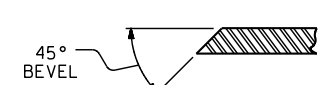


PAVEMENT MARKING ALIGNMENT

BENT 1 AND BENT 2 DIMENSIONS TYPICAL



BLOCK OUT DETAIL



SECTION B - B

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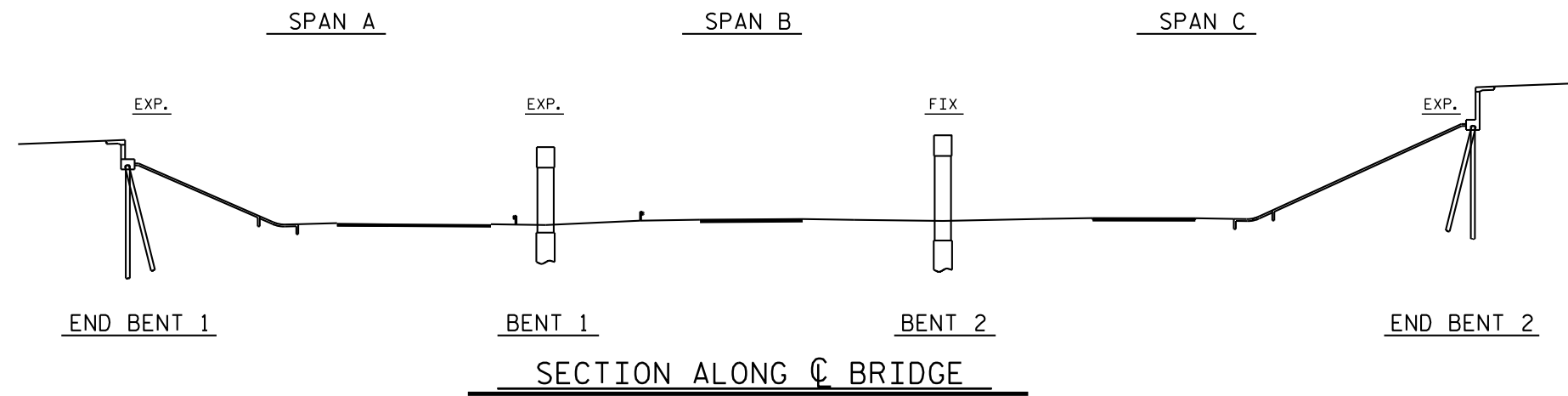
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PROJECT NO. I-5770
MECKLENBURG COUNTY
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590113 (NBL)
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
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 RALEIGH
 STANDARD
 STRIP SEAL EXPANSION
 JOINT DETAILS
 FOR BARRIER RAIL
 AT BENT 2

| REVISIONS | | | | | | SHEET NO. |
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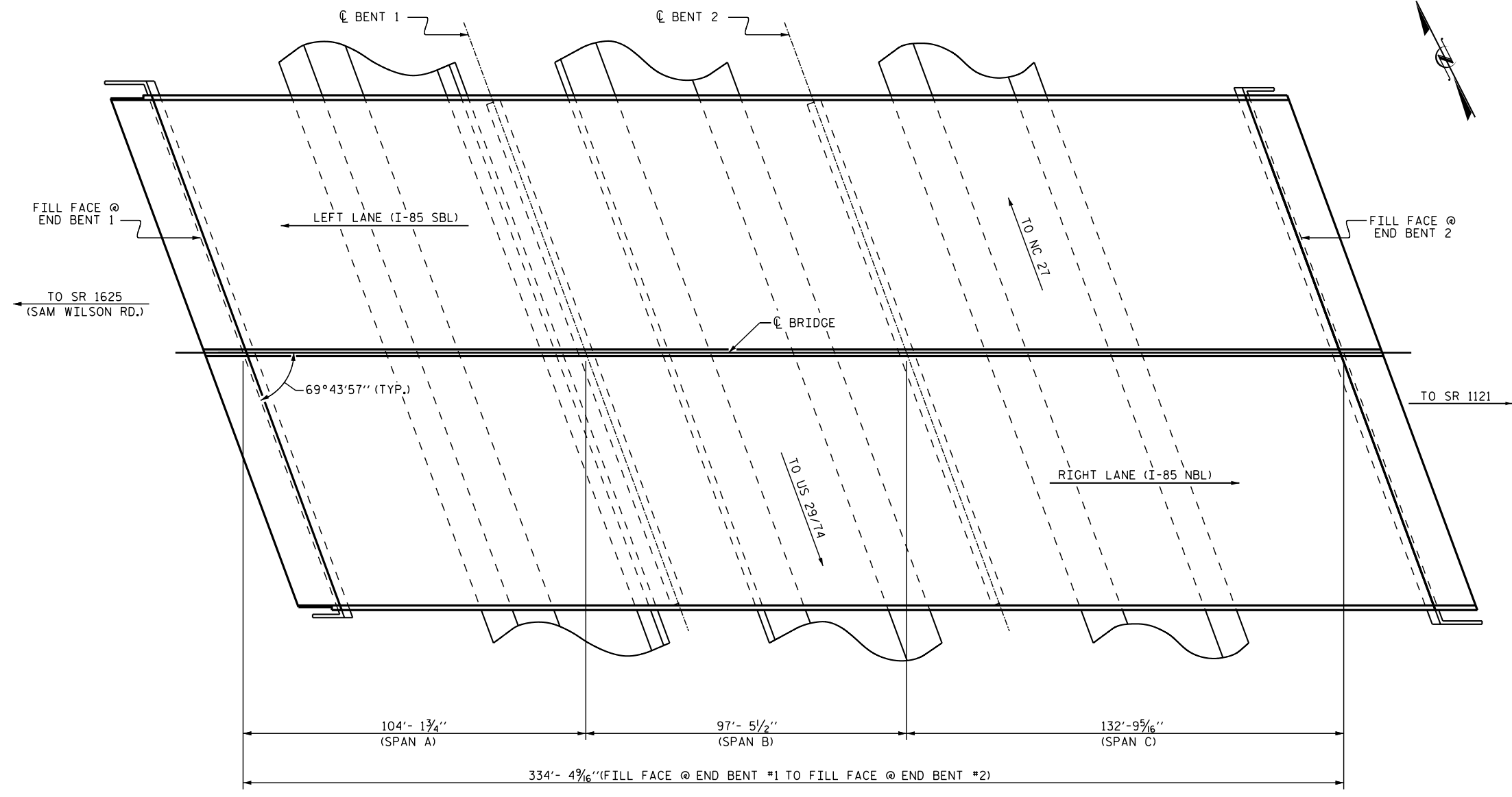


NOTES

PROFILE INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND ROUTINE INSPECTION REPORT DATED 9/20/2017
 BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.
 THE EXISTING BRIDGE JOINTS ARE EXPANSION JOINT SEALS EXCEPT THE JOINT AT END BENT 2 NBL IS A FOAM JOINT WITH ELASTOMERIC HEADERS. THE EXPANSION JOINT SEAL MEMBRANES SHALL BE REPLACED AND THE FOAM JOINT AND HEADERS SHALL BE REMOVED AND REPLACED IN ACCORDANCE WITH THE PLANS.

SCOPE OF WORK

PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOTBLASTING METHODS.
 PERFORM DECK REPAIRS IN PREPARED AREA.
 OVERLAY PREPARED BRIDGE DECK WITH POLYESTER POLYMER CONCRETE.
 RECONSTRUCT BRIDGE JOINTS AND INSTALL JOINT SEALS.
 GROOVE POLYESTER POLYMER CONCRETE.



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

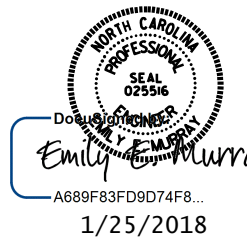
RESIDENT ENGINEER _____ DATE _____

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590819

SHEET 1 OF 2

STATE OF NORTH CAROLINA
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GENERAL DRAWING
 BRIDGE ON I-85 OVER I-485
 BETWEEN SR 1625 (SAM WILSON ROAD) AND SR 1121



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 CHECKED BY : D. R. SMITH DATE : 11/17

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| 2 | | | 4 | | | TOTAL SHEETS 37 |



LOCATION SKETCH

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.

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.

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 SHALL BE SEALED PRIOR TO BEGINNING REPAIRS OF BRIDGE DECK.

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

EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER. IF NECESSARY, SUCH LOCATIONS MAY BE REPAIRED WITH PPC.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

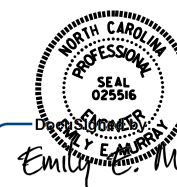
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEAL, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590819

SHEET 2 OF 2



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GENERAL DRAWING
 BRIDGE ON I-85 OVER I-485
 BETWEEN SR 1625 (SAM
 WILSON ROAD) AND SR 1121

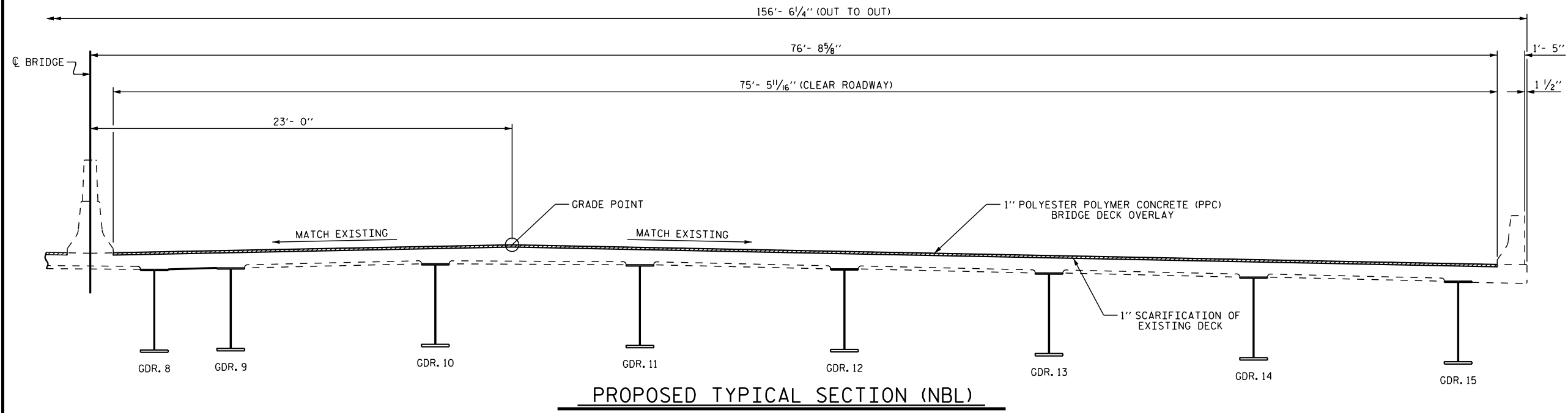
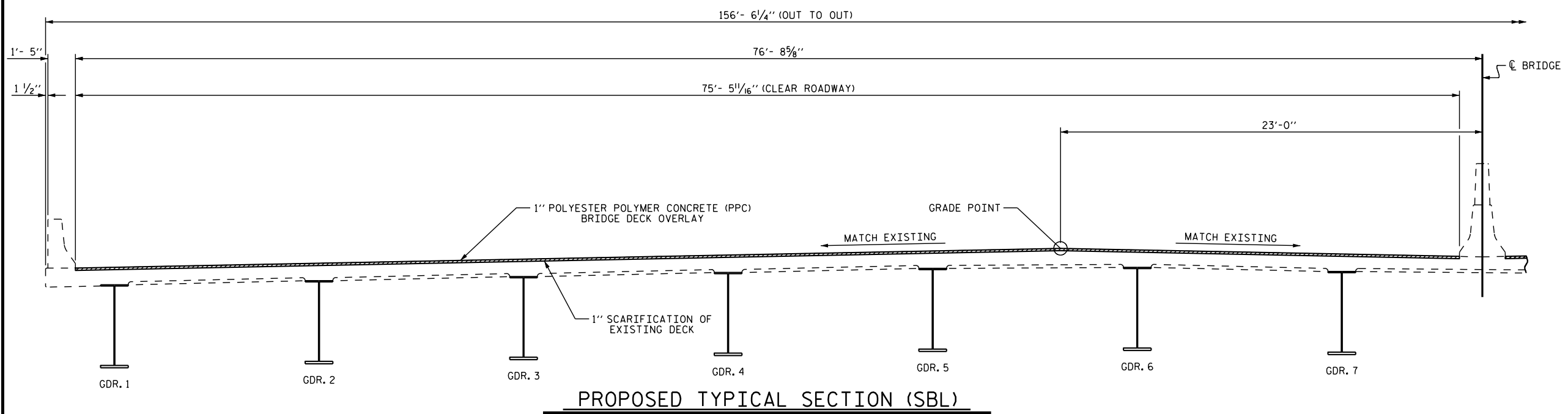
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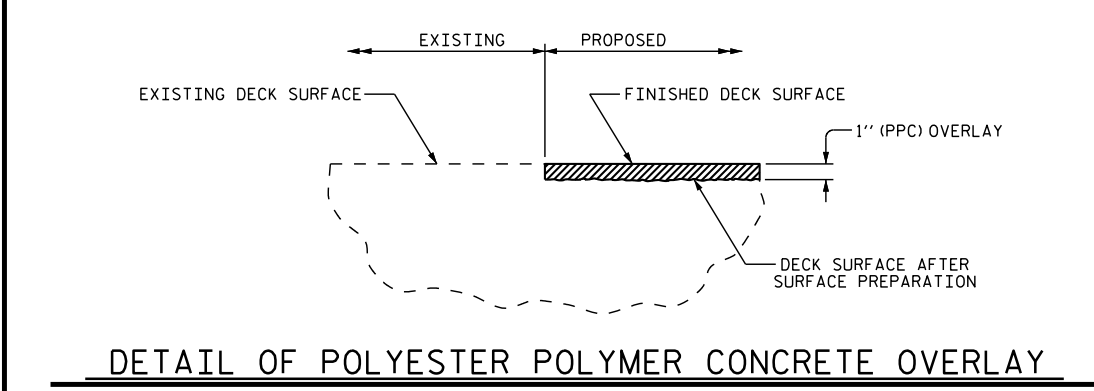
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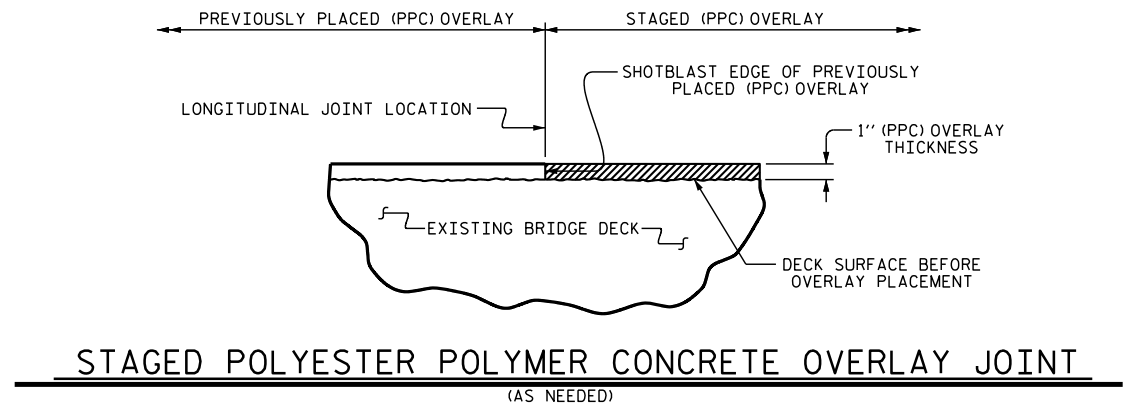
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NOTE
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYESTER POLYMER CONCRETE PLACEMENT.



DETAIL OF POLYESTER POLYMER CONCRETE OVERLAY



STAGED POLYESTER POLYMER CONCRETE OVERLAY JOINT (AS NEEDED)

PROJECT NO. I-5770
MECKLENBURG COUNTY
BRIDGE NO. 590819

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DEPARTMENT OF TRANSPORTATION
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TYPICAL SECTION AND PPC OVERLAY DETAIL

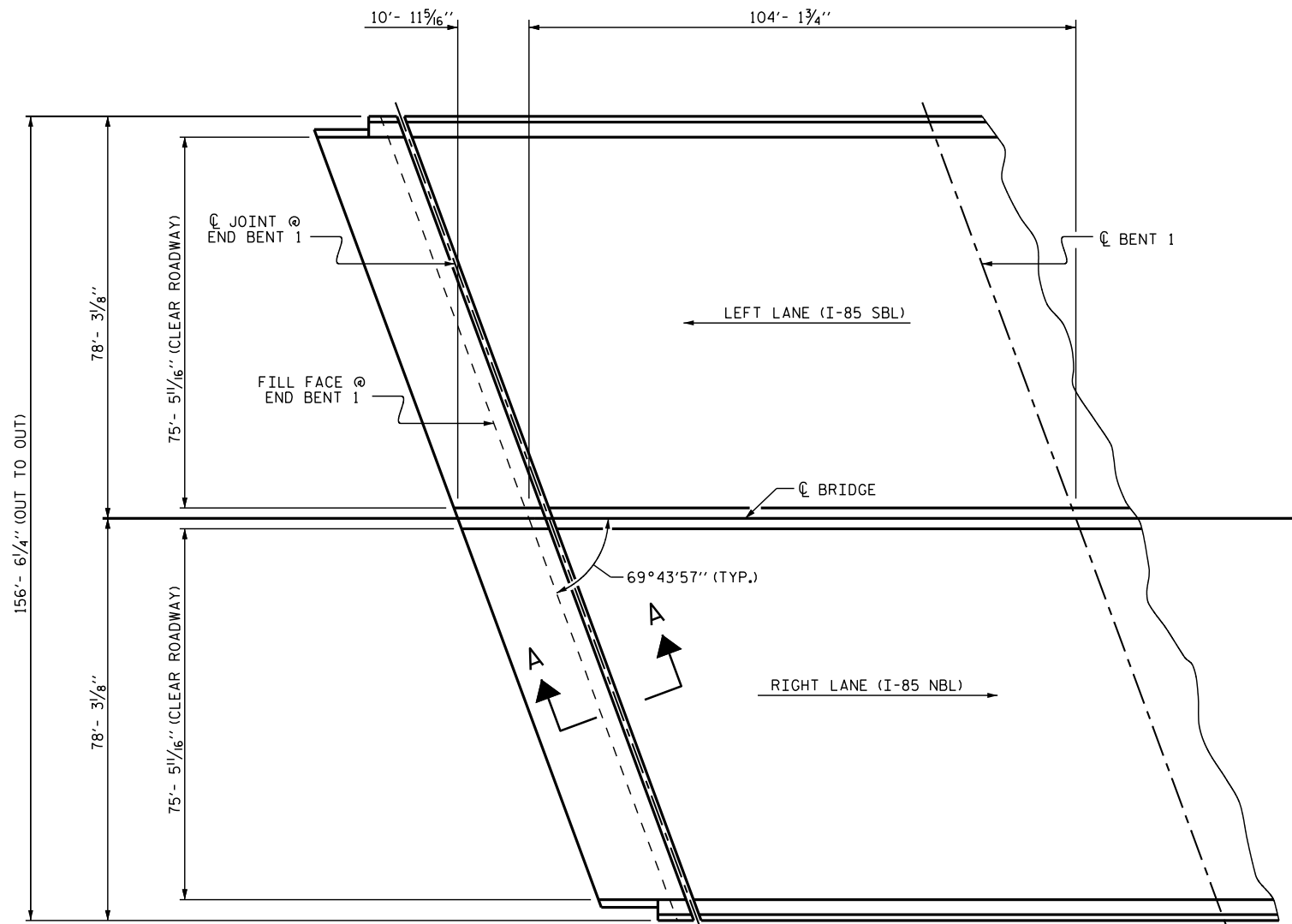
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SEAL 025516
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PLAN OF SPAN A

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION A-A, SEE "JOINT DETAILS" SHEET.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

| AS-BUILT REPAIR QUANTITY TABLE | | |
|--------------------------------------|-----------|--------|
| TOP OF DECK REPAIRS | | |
| APPROACH SLAB @ END BENT 1 | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 202.8 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| BRIDGE JOINT DEMOLITION | 0.0 SF | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 202.8 SY | |
| PPC MATERIALS | 6.2 CY | |
| PLACING AND FINISHING PPC OVERLAY | 202.8 SY | |
| GROOVING BRIDGE FLOORS | 1,640 SF | |
| SPAN A | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 1727.3 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| BRIDGE JOINT DEMOLITION | 0.0 SF | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 1727.3 SY | |
| PPC MATERIALS | 52.8 CY | |
| PLACING AND FINISHING PPC OVERLAY | 1727.3 SY | |
| GROOVING BRIDGE FLOORS | 14,834 SF | |

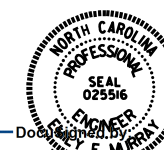
QUANTITIES IN TABLE REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE OVERLAY SURFACE PREPARATION FOR POLYESTER POLYMER CONCRETE SPECIAL PROVISION.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590819

SHEET 1 OF 3

STATE OF NORTH CAROLINA
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PLAN OF SPAN A



Doc. prepared by
Emily C. Murray
 ENGINEER

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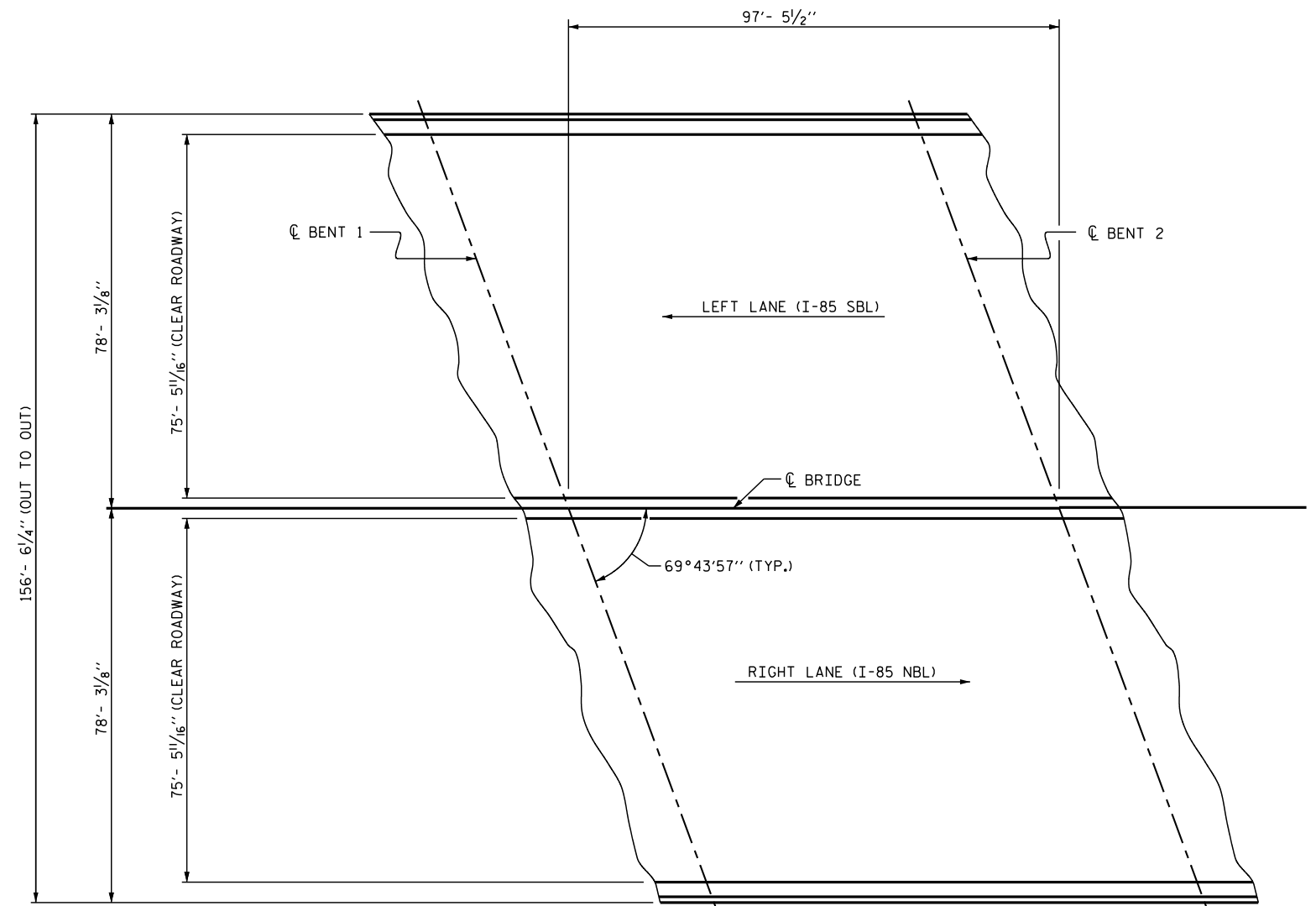
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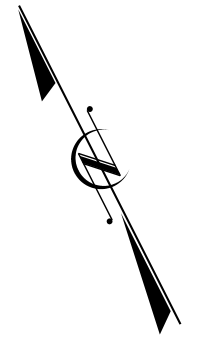
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PLAN OF SPAN B

| AS-BUILT REPAIR QUANTITY TABLE | | |
|--------------------------------------|-----------|--------|
| TOP OF DECK REPAIRS | | |
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 1634.6 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| BRIDGE JOINT DEMOLITION | 0.0 SF | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 1634.6 SY | |
| PPC MATERIALS | 49.9 CY | |
| PLACING AND FINISHING PPC OVERLAY | 1634.6 SY | |
| GROOVING BRIDGE FLOORS | 14,126 SF | |

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



NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590819

SHEET 2 OF 3

STATE OF NORTH CAROLINA
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 RALEIGH

PLAN OF SPAN B



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AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS

APPROACH SLAB @ END BENT 2

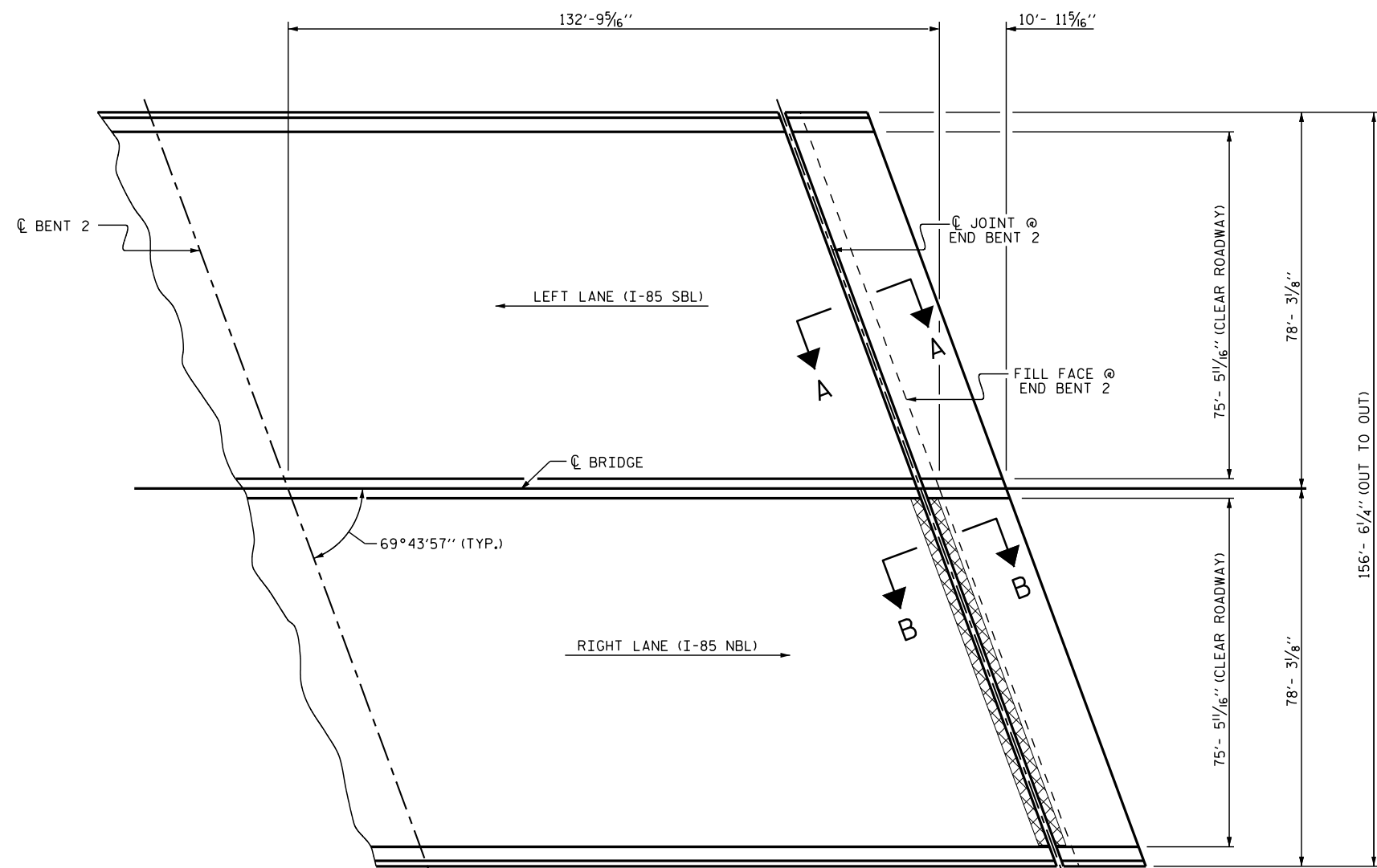
| | ESTIMATE | ACTUAL |
|--------------------------------------|----------|--------|
| SCARIFYING BRIDGE DECK | 202.3 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| BRIDGE JOINT DEMOLITION | 36.9 SF | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 202.3 SY | |
| PPC MATERIALS | 6.4 CY | |
| PLACING AND FINISHING PPC OVERLAY | 202.3 SY | |
| GROOVING BRIDGE FLOORS | 1,659 SF | |

SPAN C

| | ESTIMATE | ACTUAL |
|--------------------------------------|-----------|--------|
| SCARIFYING BRIDGE DECK | 2207.8 SY | |
| CLASS II SURFACE PREPARATION | 0.0 SY | |
| BRIDGE JOINT DEMOLITION | 36.9 SF | |
| CONCRETE DECK REPAIR FOR PPC OVERLAY | 0.0 SY | |
| SHOTBLASTING BRIDGE DECK | 2207.8 SY | |
| PPC MATERIALS | 67.7 CY | |
| PLACING AND FINISHING PPC OVERLAY | 2207.8 SY | |
| GROOVING BRIDGE FLOORS | 18,989 SF | |

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

 BRIDGE JOINT DEMOLITION



PLAN OF SPAN C

NOTES

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 THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION A-A AND B-B, SEE "JOINT DETAILS" SHEET.

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 AND FINISHING PPC OVERLAY, SEE POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY SPECIAL PROVISION.

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590819

SHEET 3 OF 3

STATE OF NORTH CAROLINA
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 RALEIGH

PLAN OF SPAN C



Doc No. 1
 Date: 1/25/2018
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REPAIR INSTALLATION PROCEDURE

LOOSEN THE EXISTING BOLTS AND HOLD DOWN PLATES TO REMOVE AND REPLACE THE EXISTING GLAND. REMOVE THE EXISTING NEOPRENE SEALANT AND CLEAN THE EXISTING BASE ANGLE OF OIL, GREASE AND OTHER LATENTS.

LAY THE NEW GLAND ON THE BASE ANGLE AND FIELD MARK THE NEW GLAND FOR THE BOLT HOLES. HOLES IN THE NEW GLAND SHALL BE PUNCH $\frac{1}{8}$ " IN DIAMETER WITH A HAND PUNCH.

IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE NEW GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEW NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE, BUT DO NOT TIGHTEN. THE ENGINEER WILL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.

AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND NEW GLAND. APPLY NEW NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE NEW GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.

AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES AND THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE. COMPLETELY FILL THESE RECESSES WITH NEW NEOPRENE SEALANT.

GENERAL NOTES

ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F539 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

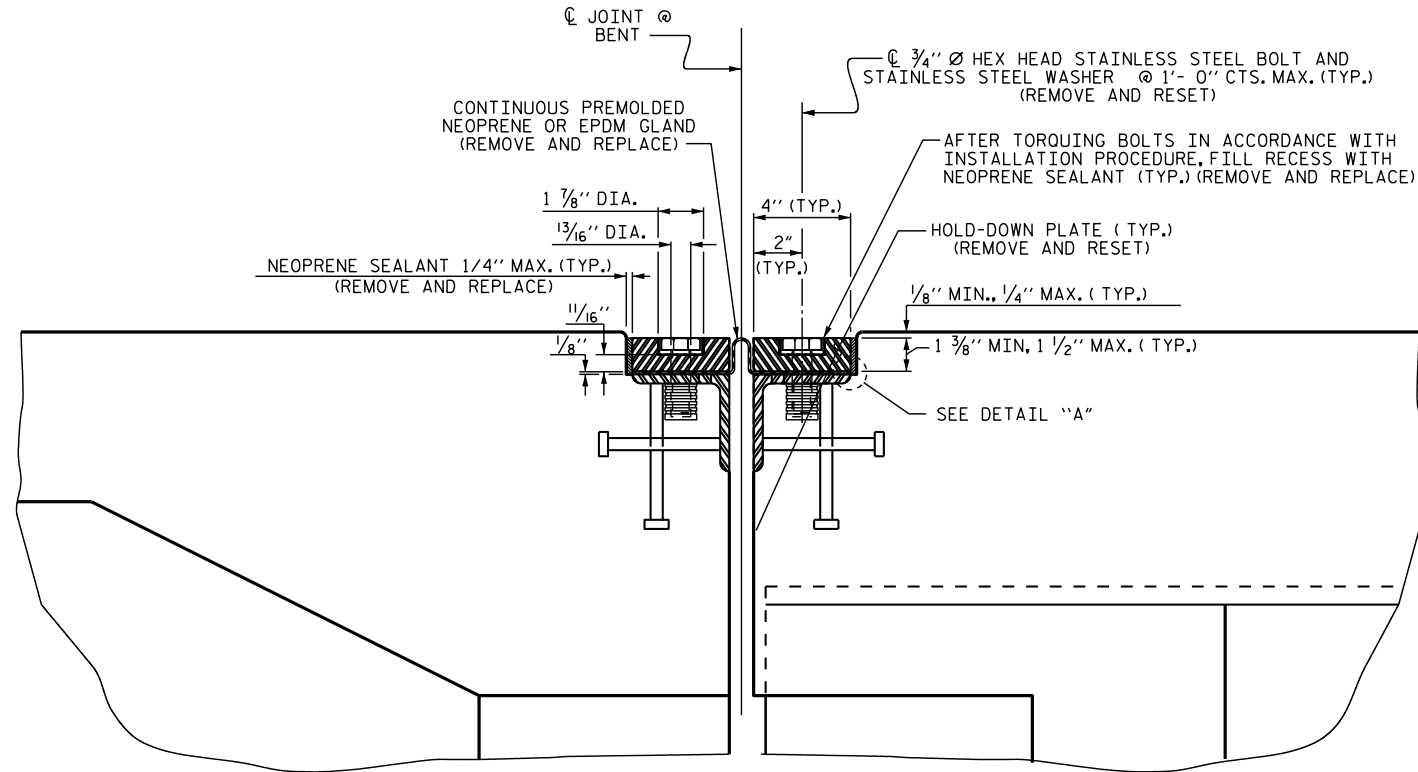
A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°.

THE FINISHED EXPANSION SEAL DEVICE SHALL BE A MINIMUM $\frac{1}{8}$ " AND A MAXIMUM OF $\frac{1}{4}$ " BELOW THE TOP OF SLAB.

FOR EXPANSION JOINT SEAL REPAIR, SEE SPECIAL PROVISIONS.

NO SEPARATE PAYMENT WILL BE MADE FOR REMOVING AND REINSTALLING MEDIAN AND BARRIER RAIL COVER PLATES. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE PAY ITEM "EXPANSION JOINT SEAL REPAIR".

FOR LOCATION OF SECTION A-A, SEE PLAN OF SPAN SHEETS.

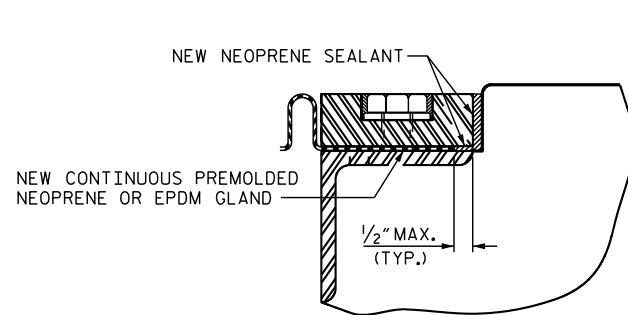


EXPANSION JOINT DETAILS AT END BENT 2 (SBL)

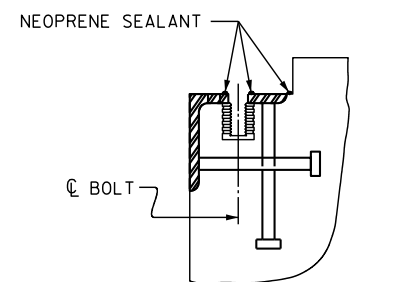
SECTION A-A

| LOCATION | SKEW ANGLE | TOTAL MOVEMENT (ALONG ∇ RDWY) | MOVEMENT AND SETTING AT JOINT | | |
|------------|------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | | | PERPENDICULAR JOINT OPENING AT 30° F | PERPENDICULAR JOINT OPENING AT 60° F | PERPENDICULAR JOINT OPENING AT 90° F |
| END BENT 1 | 69°43'57" | 2 $\frac{5}{16}$ " | 2 $\frac{5}{16}$ " | 2 $\frac{1}{16}$ " | 1 $\frac{9}{16}$ " |
| END BENT 2 | 69°43'57" | 1 $\frac{1}{2}$ " | 2 $\frac{1}{16}$ " | 1 $\frac{1}{16}$ " | 1 $\frac{5}{16}$ " |

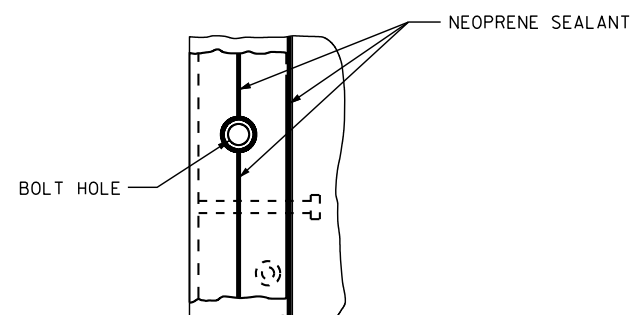
JOINT OPENINGS AND MOVEMENT TAKEN FROM ORIGINAL PLANS.



DETAIL "A"



CROSS SECTION



PLAN VIEW

INSTALLATION SKETCH

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590819



Doc# A689F83FD9D74F8...
 Emily E. Murray

1/25/2018

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD

EXPANSION JOINT
 SEAL REPAIR
 DETAILS

REVISIONS

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

SHEET NO.
S-36

TOTAL SHEETS
37

VOLKERT

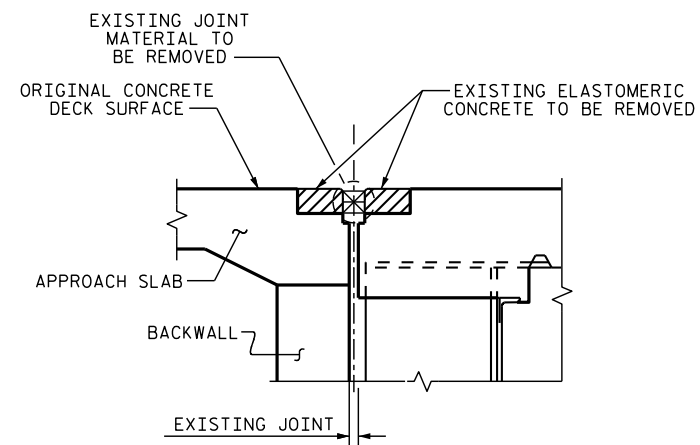
5540 Centerview Drive, Suite 305
 Raleigh, NC 27606
 Tel. 919-854-0344 Fax. 919-854-0355
 NC License No. F-0765

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

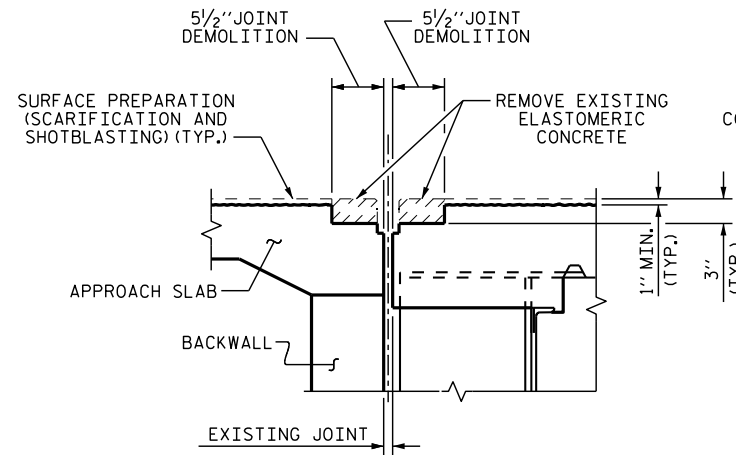
ASSEMBLED BY : D. A. GLADDEN DATE : 11/17
 CHECKED BY : D. R. SMITH DATE : 11/17

NOTES

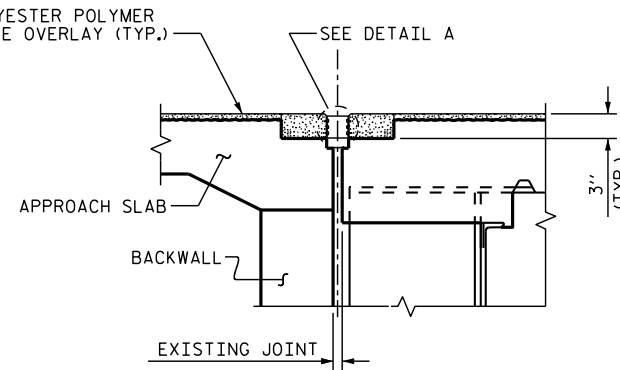
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2" AT END BENT 2 NBL.
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS FOR THE SEALS IN LIEU OF SAWING THE JOINTS.
 FOR LOCATION OF SECTION B-B, SEE PLAN OF SPAN SHEETS.
 THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.
 FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.



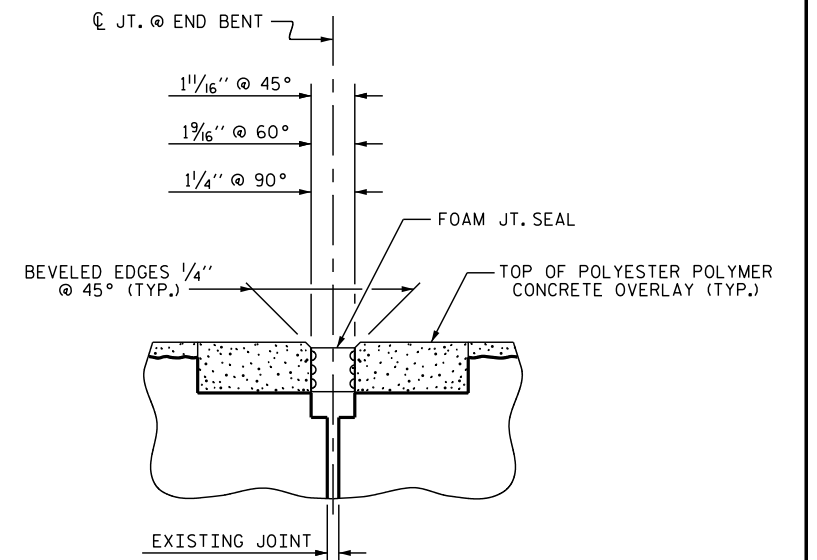
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



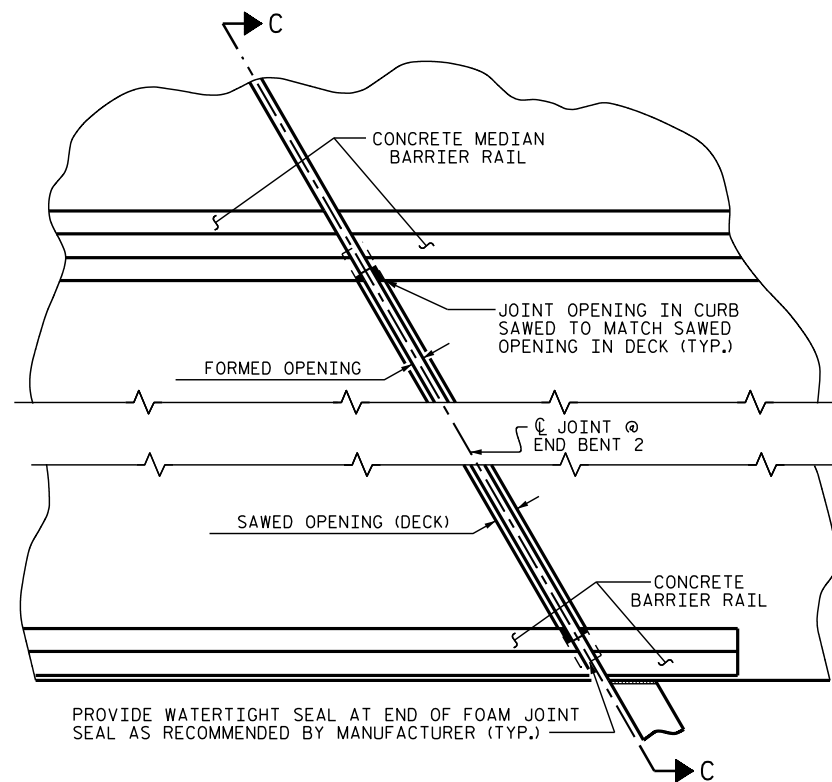
PROPOSED JOINT



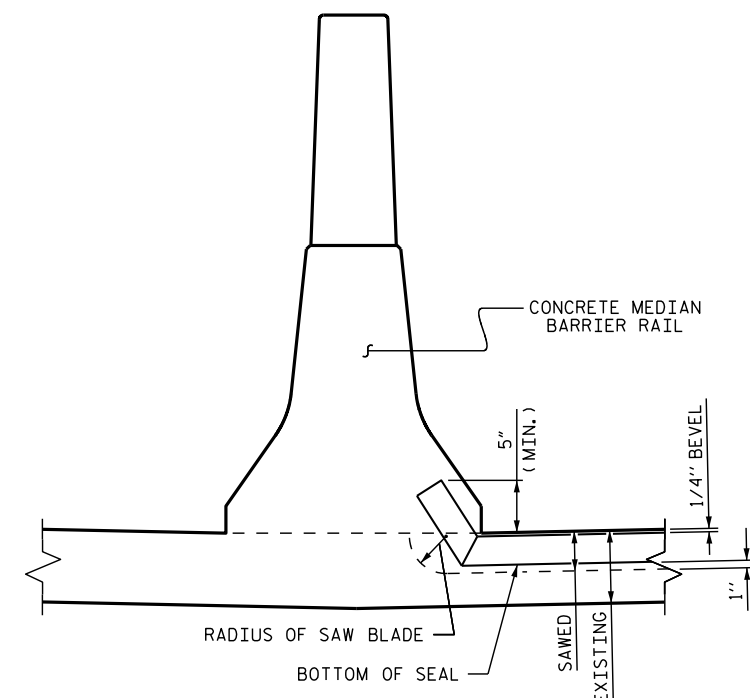
DETAIL A
(PROPOSED)

JOINT INSTALLATION SEQUENCE AT END BENT 2 (NBL)

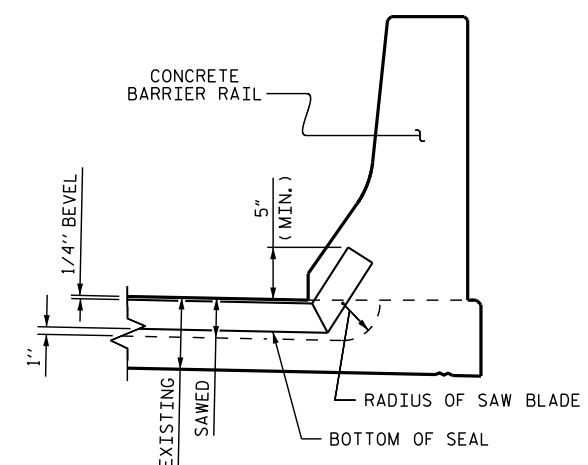
SECTION B-B



PLAN



SECTION B-B



SECTION C-C

PROVIDE WATERTIGHT SEAL AT END OF FOAM JOINT SEAL AS RECOMMENDED BY MANUFACTURER (TYP.)

PROJECT NO. I-5770
MECKLENBURG COUNTY
 BRIDGE NO. 590819

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

Professional Engineer
 Emily C. Murray
 A689F83FD9D74F8...
 1/25/2018

VOLKERT
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 Raleigh, NC 27606
 Tel. 919-854-0344 Fax. 919-854-0355
 NC License No. F-0765

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY: D. A. GLADDEN DATE: 12/17
 CHECKED BY: D. R. SMITH DATE: 12/17

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 $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A $\frac{1}{4}$ " 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 $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset 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 $\frac{5}{16}$ " 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 $\frac{1}{16}$ 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. FINISHES 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