

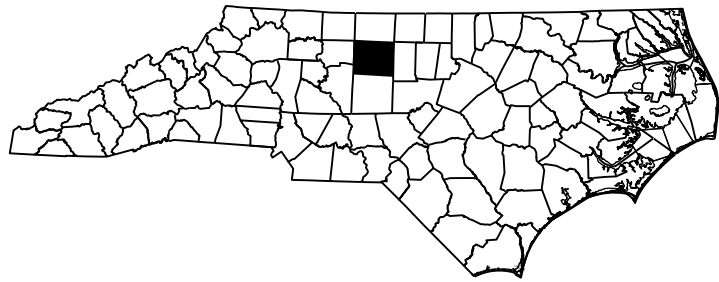
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PROJECT: I-5789

CONTRACT NO.:

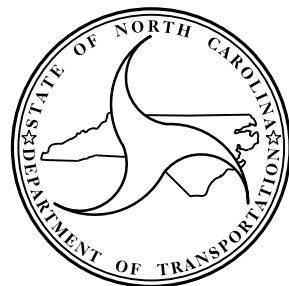
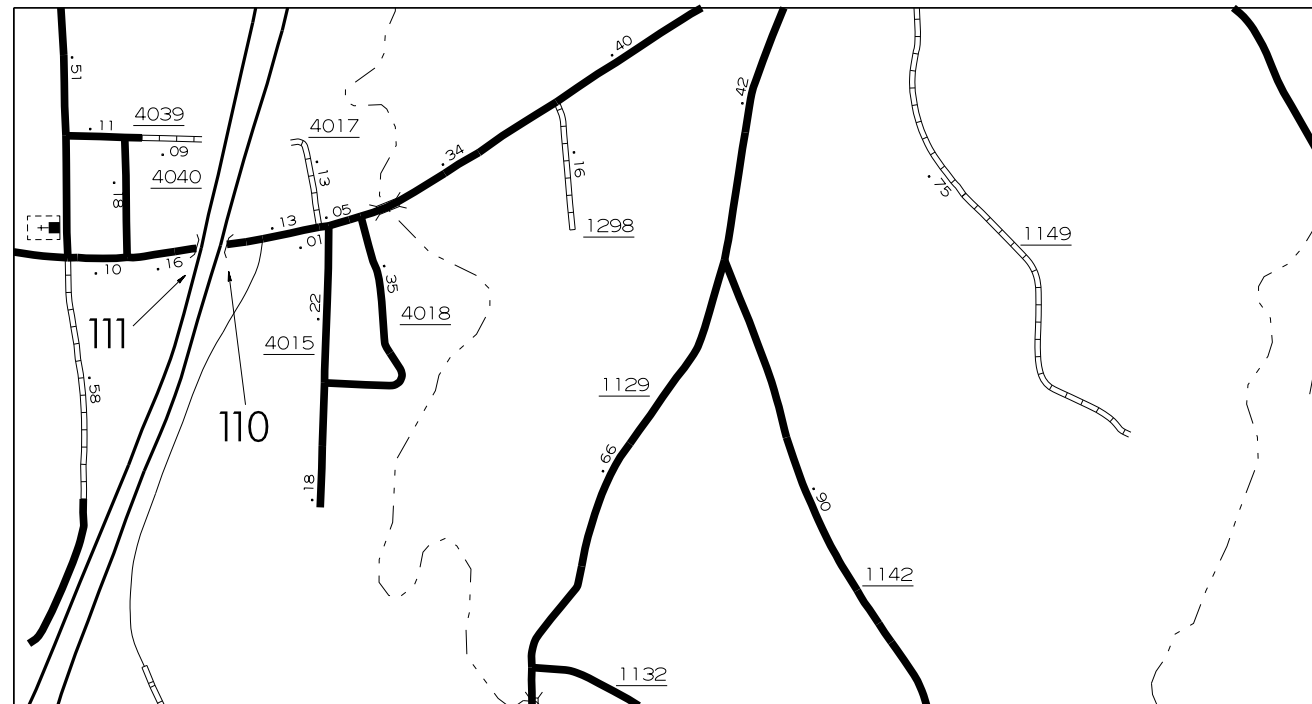
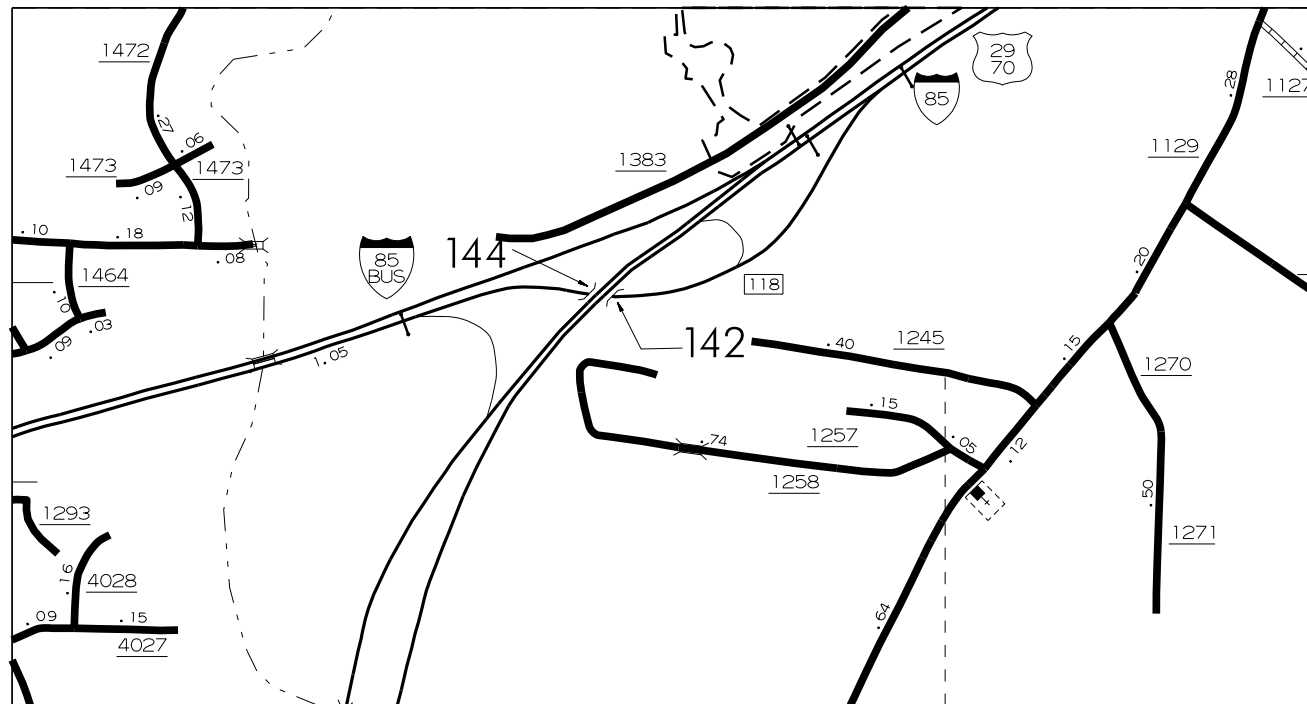


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
GUILFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5789	1	37
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
53029.1.1	NHPIM-0085(3)117	PE	
53029.3.1	NHPIM-0085(3)117	CONST	

**LOCATION: BRIDGE #110 ON I-85 NBL OVER SR 1113.
BRIDGE #111 ON I-85 SBL OVER SR 1113.
BRIDGE #142 ON I-85 NBL OVER US 29 /US-70 /I-85 BUSINESS LOOP.
BRIDGE #144 ON I-85 SBL OVER US 29 /US-70 /I-85 BUSINESS LOOP.**

TYPE OF WORK: BRIDGE PRESERVATION - DECK REPAIR, EPOXY OVERLAY, JOINT DEMOLITION, PAINTING STRUCTURAL STEEL, JOINT SEALS AND SUBSTRUCTURE REPAIR.



DESIGN DATA

#110 ADT 2013 = 26,500
#111 ADT 2013 = 26,500
#142 ADT 2013 = 26,500
#144 ADT 2013 = 26,500

PROJECT LENGTH

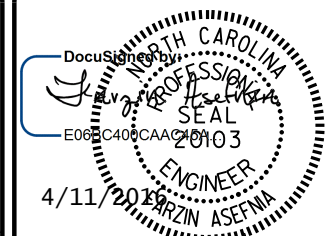
BRIDGE #110 = 0.03 MILE
BRIDGE #111 = 0.03 MILE
BRIDGE #142 = 0.04 MILE
BRIDGE #144 = 0.04 MILE

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

E. E. MURRAY, P.E.
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

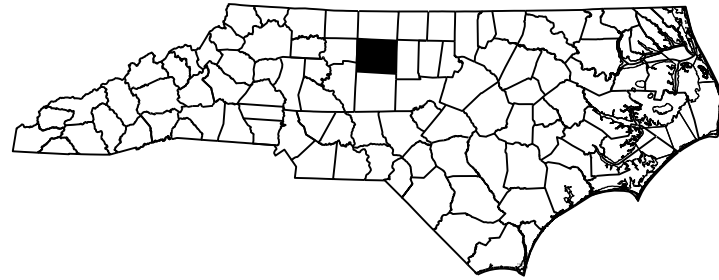
LETTING DATE:
JUNE 21, 2016



FARZIN ASEFNIA, P.E.
PROJECT DESIGN ENGINEER

PROJECT: I-5789

CONTRACT NO.:



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

**LOCATION: BRIDGE #110 ON I-85 NBL OVER SR 1113.
BRIDGE #111 ON I-85 SBL OVER SR 1113.
BRIDGE #142 ON I-85 NBL OVER US 29 /US-70 /I-85 BUSINESS LOOP.
BRIDGE #144 ON I-85 SBL OVER US 29 /US-70 /I-85 BUSINESS LOOP.**

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STRUCTURAL STEEL, JOINT SEALS AND SUBSTRUCTURE REPAIR.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5789	1A	37
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
53029.1.1	NHPIM-0085(3)117	PE	
53029.3.1	NHPIM-0085(3)117	CONST	

INDEX OF SHEETS

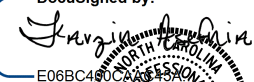

<i>1</i>	<i>TITLE SHEET</i>
<i>1A</i>	<i>INDEX OF SHEETS</i>
<i>S-1 - S-34</i>	<i>STRUCTURAL PLANS</i>
<i>SN</i>	<i>STANDARD NOTES</i>

TOTAL BILL OF MATERIAL

BRIDGE	CONCRETE REPAIRS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	CLEANING AND PAINTING OF EXISTING WEATHERING STEEL BRIDGE NO....	PAINTING CONTAINMENT FOR BRIDGE NO....	POLLUTION CONTROL	EPOXY OVERLAY SYSTEM MECHANICALLY DISTRIBUTED	BRIDGE JOINT DEMOLITION	* CONCRETE DECK REPAIR FOR EPOXY OVERLAY	ELASTOMERIC CONCRETE	EPOXY COATING	FOAM JOINT SEALS
	CU. FT.	CU. FT.	LIN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	SQ. FT.	CU. FT.	SQ. FT.	LUMP SUM
GUILFORD #110	—	—	—	LUMP SUM	LUMP SUM	LUMP SUM	12188	115	10	31	—	LUMP SUM
GUILFORD #111	—	—	—	LUMP SUM	LUMP SUM	LUMP SUM	12103	115	10	31	—	LUMP SUM
GUILFORD #142	3	3	7	LUMP SUM	LUMP SUM	LUMP SUM	16176	216	10	54	1084	LUMP SUM
GUILFORD #144	6	1	52	LUMP SUM	LUMP SUM	LUMP SUM	16711	226	10	57	1153	LUMP SUM
TOTAL	9	4	59	LUMP SUM	LUMP SUM	LUMP SUM	57178	672	40	173	2237	LUMP SUM

* CONCRETE DECK REPAIR FOR EPOXY OVERLAY IS NOT ANTICIPATED.
 TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES, IN CASE
 UNANTICIPATED SURFACE PREPARATION AREAS ARE ENCOUNTERED.

PROJECT NO. I-5789
GUILFORD COUNTY
BRIDGE NO. 110, 111, 142 & 144

DocuSigned by:

 E06BC490C...


5/4/2016

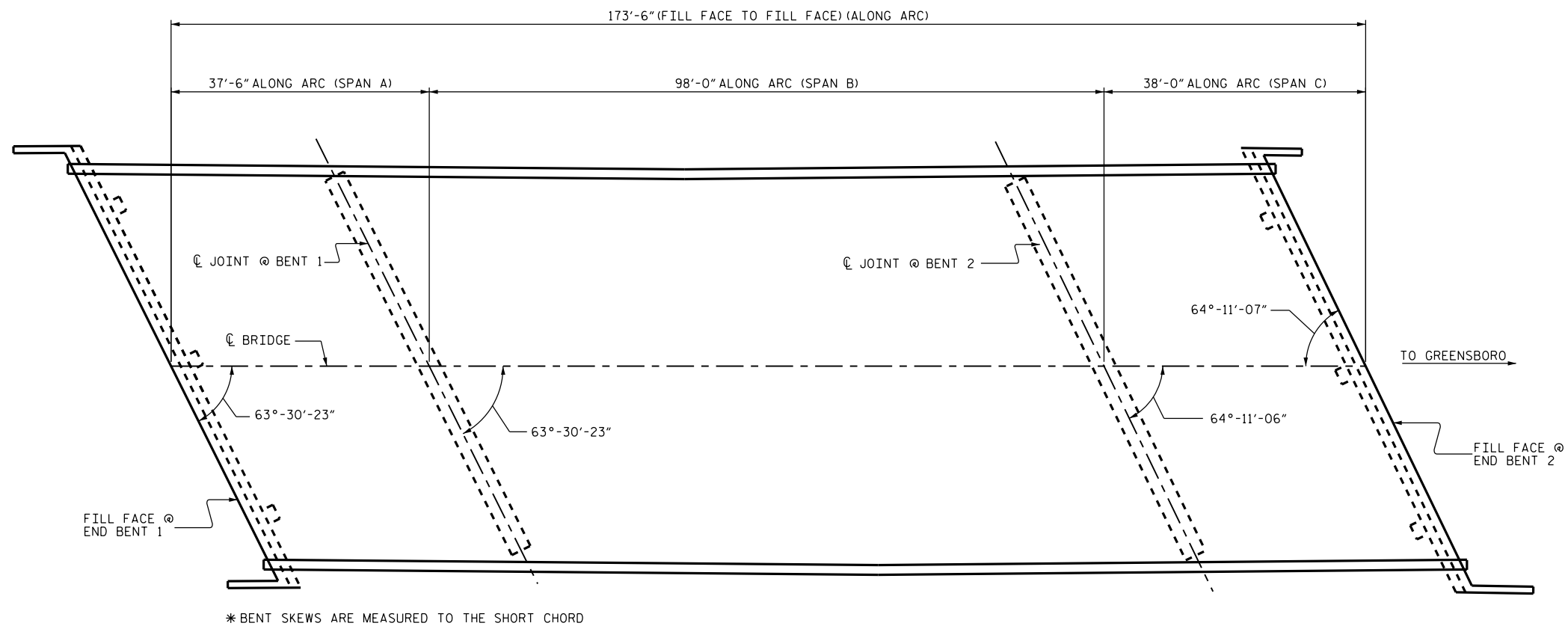
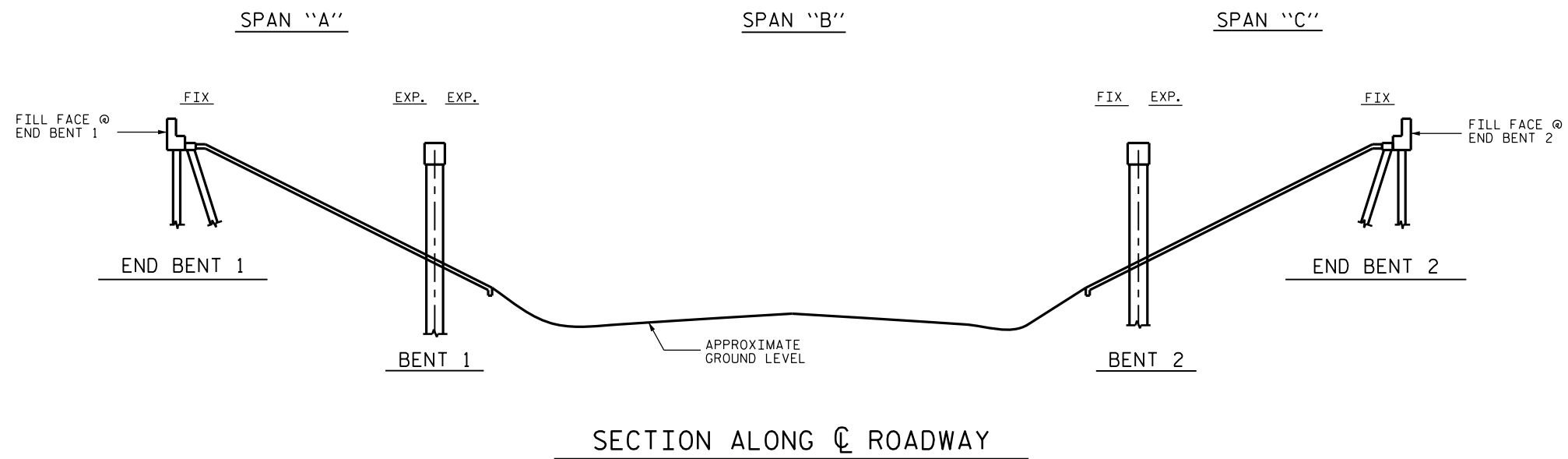
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TOTAL BILL OF MATERIAL

DRAWN BY : S. T. SANDOR DATE : 02/2018
 CHECKED BY : W. M. CLARKE DATE : 02/2018

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			37
2			4			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PLAN

SCOPE OF WORK:

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SHOTBLAST METHOD.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- CLEAN AND PAINT EXISTING GIRDER ENDS.

DRAWN BY : J.R. HOWELL DATE : 02/2016
 CHECKED BY : W.M. CLARKE DATE : 02/2016

DocuSigned by:
 W. Matthew
 1EB20097EAAF437...

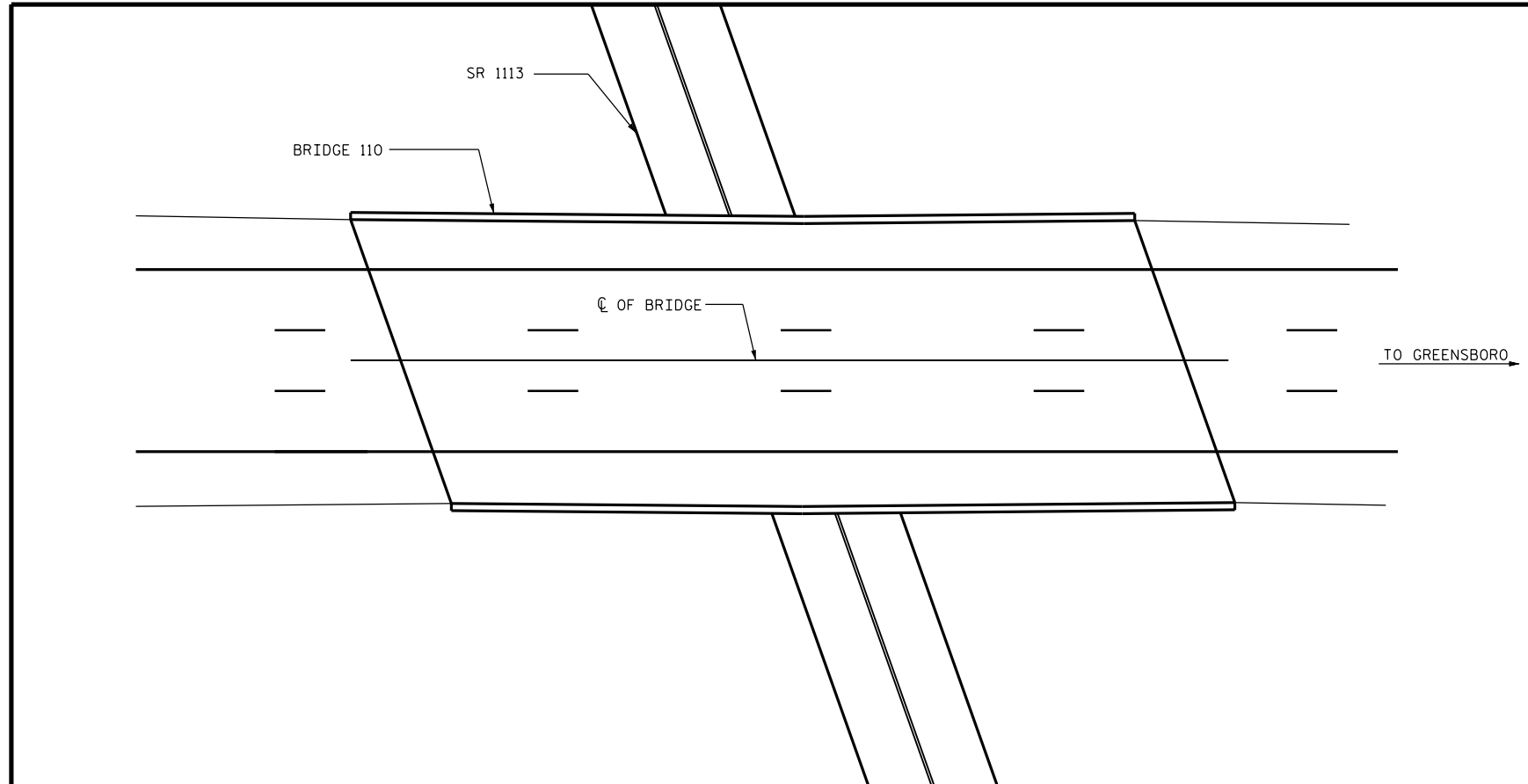


3/31/2016

PROJECT NO. I-5789
 GUILFORD COUNTY
 BRIDGE NO. 110

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING BRIDGE #110 ON I-85 NB OVER SR 1113					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					TOTAL SHEETS 37



LOCATION SKETCH

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

GENERAL NOTES

- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF DECK.
- EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.
- FOR OVERLAY OF BRIDGE WITH EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR POURABLE JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- 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.
- LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG CENTERLINE OR EDGE OF TRAVEL LANES.
- FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5789
 GUILFORD COUNTY
 BRIDGE NO. 110

SHEET 2 OF 2

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...
 3/31/2016

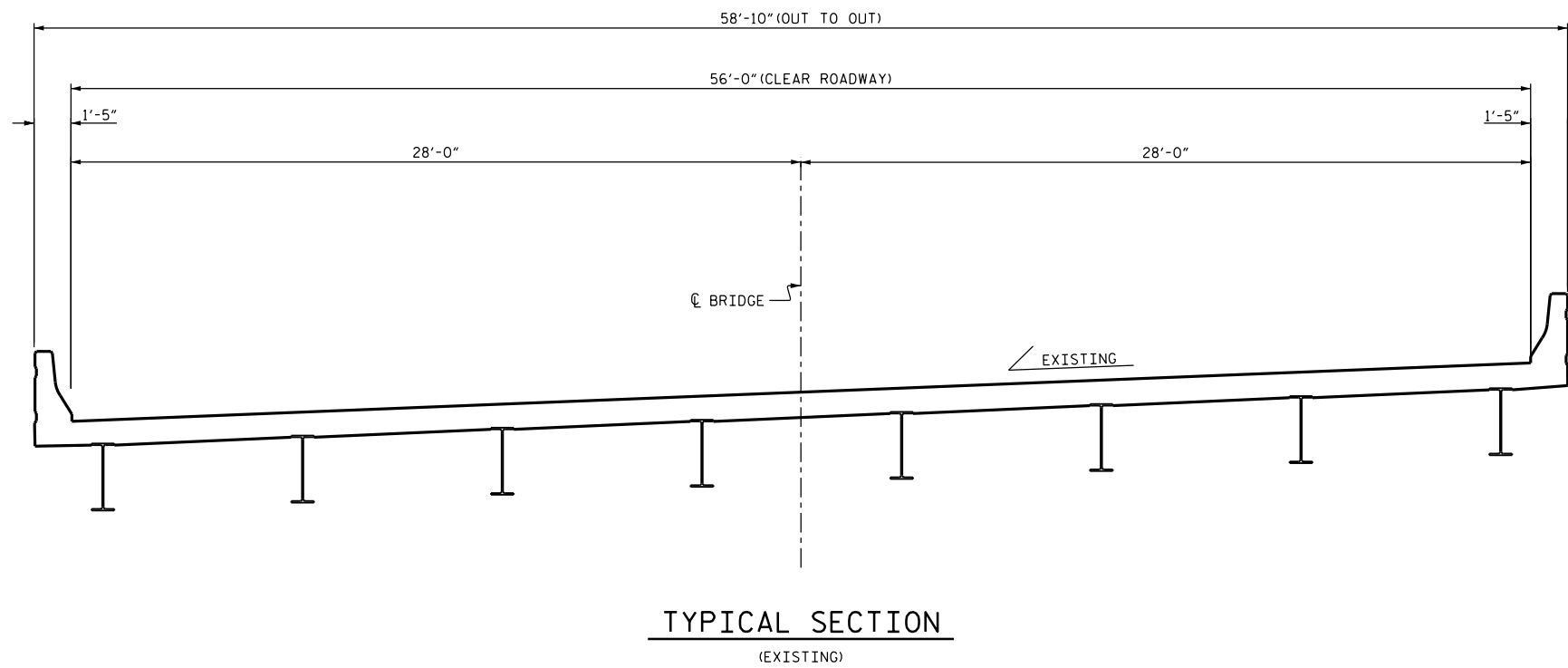


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE #110 ON
 I-85 NB OVER SR 1113

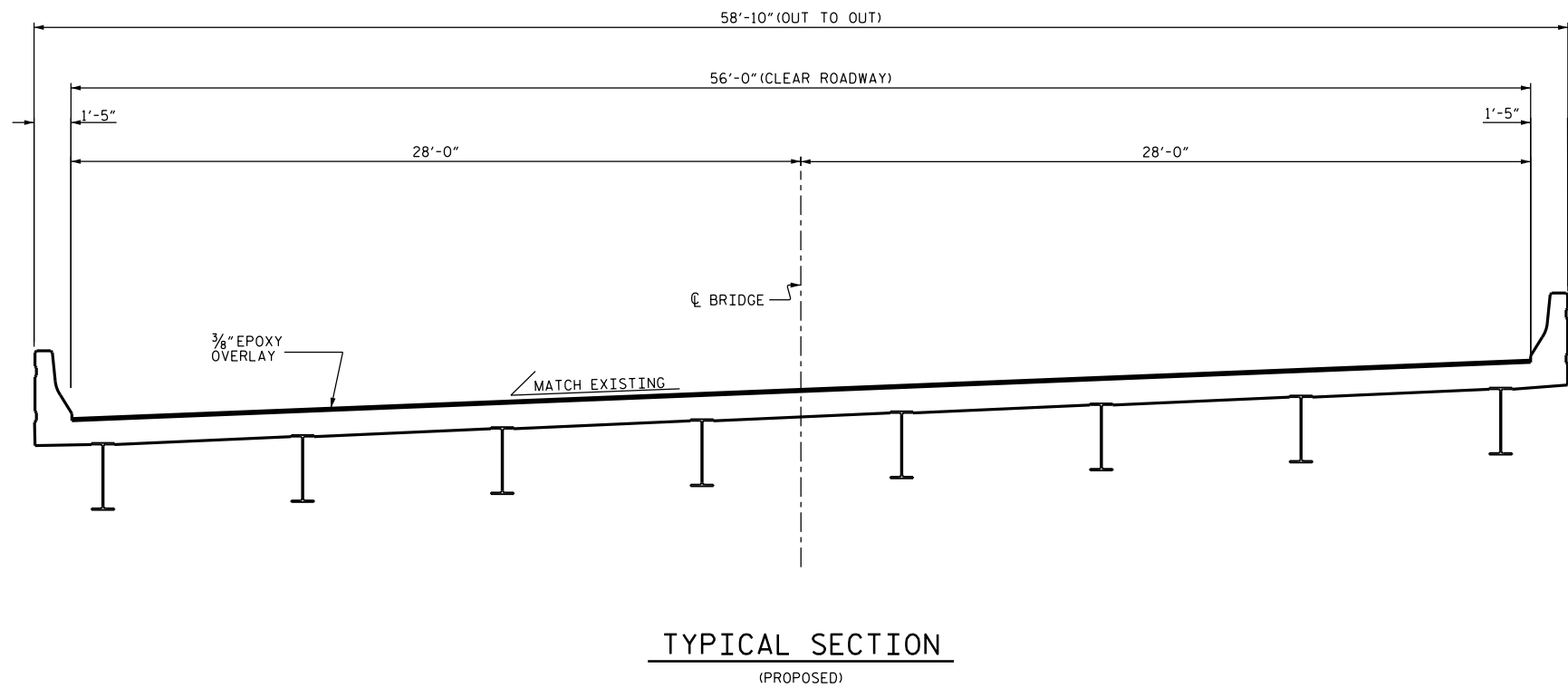
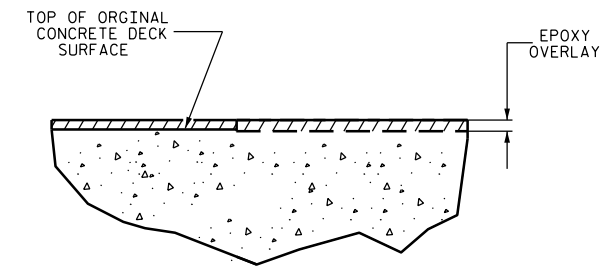
DRAWN BY : J.R. HOWELL DATE : 02/2016
 CHECKED BY : W.M. CLARKE DATE : 02/2016

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

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



NOTE:
SEE TRAFFIC MANAGEMENT PLANS FOR STAGING OF EPOXY OVERLAY.
ALL DIMENSIONS GIVEN ARE MEASURED RADIALLY UNLESS OTHERWISE NOTED.



PROJECT NO. I-5789
GUILFORD COUNTY
BRIDGE NO. 110

DocuSigned by:
W. Matthew Clarke
1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
TYPICAL SECTION & EPOXY OVERLAY DETAIL						S-4
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	37
1			3			
2			4			

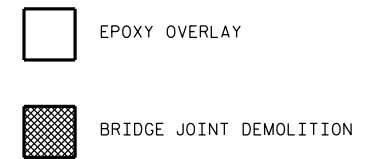
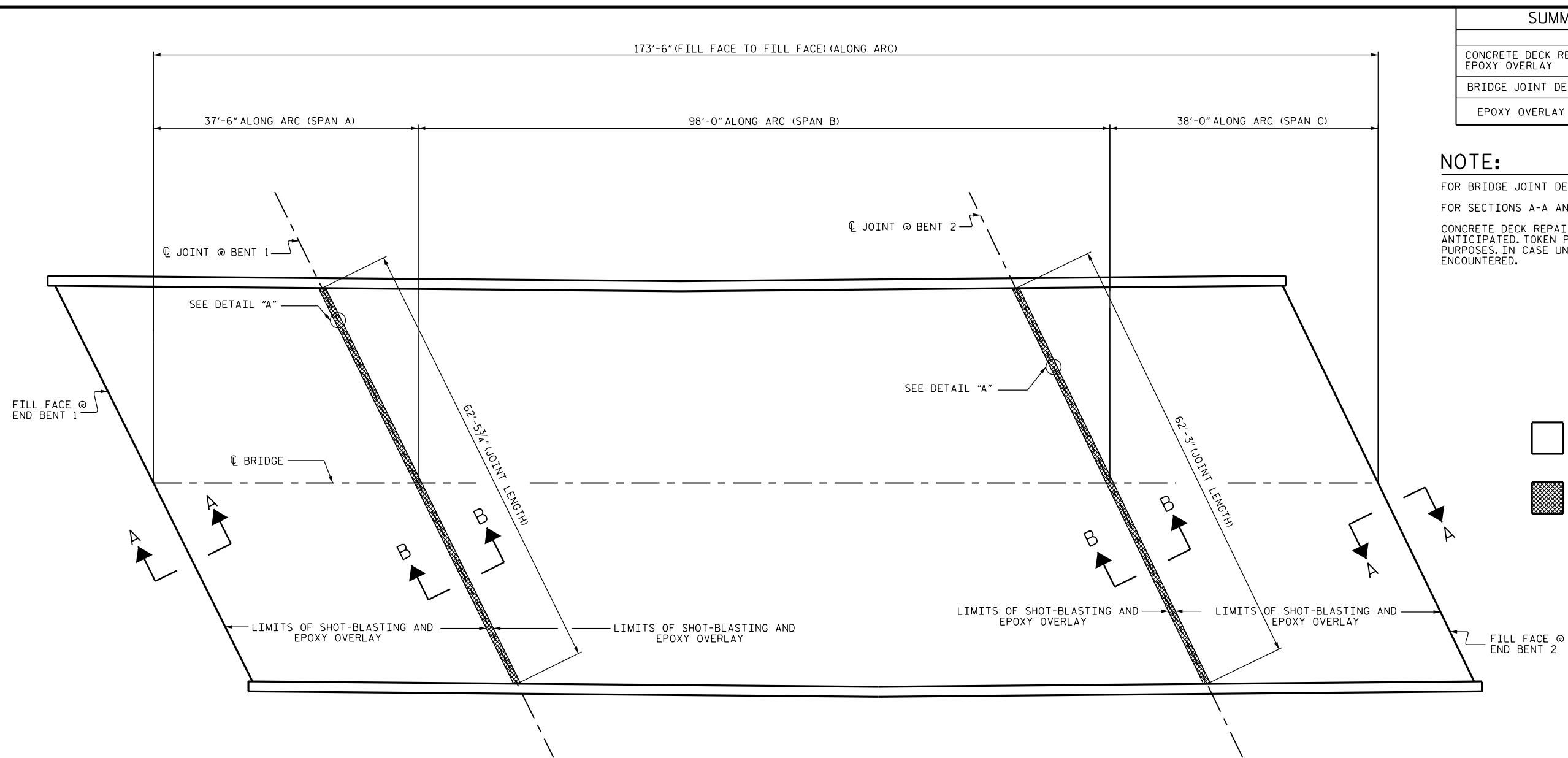
DRAWN BY : J.R. HOWELL DATE : 02/2016
CHECKED BY : W.M. CLARKE DATE : 02/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	10 SQ. FT.	
BRIDGE JOINT DEMOLITION	115 SQ. FT.	
EPOXY OVERLAY SYSTEM	9620 SQ. FT.	

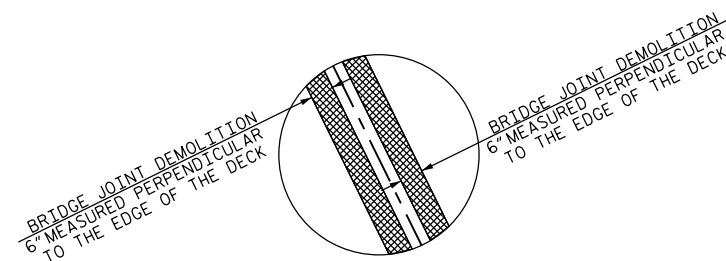
NOTE:

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.
 FOR SECTIONS A-A AND B-B, SEE "JOINT DETAILS" SHEET.
 CONCRETE DECK REPAIR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES. IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN

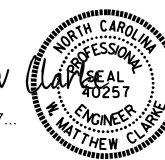
(SEE SHEET S-6 FOR SECTION A-A AND B-B)



DETAIL "A"

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 110

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 AND
 EPOXY OVERLAY**

DRAWN BY : J.R. HOWELL DATE : 02/2016
 CHECKED BY : W.M. CLARKE DATE : 02/2016

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

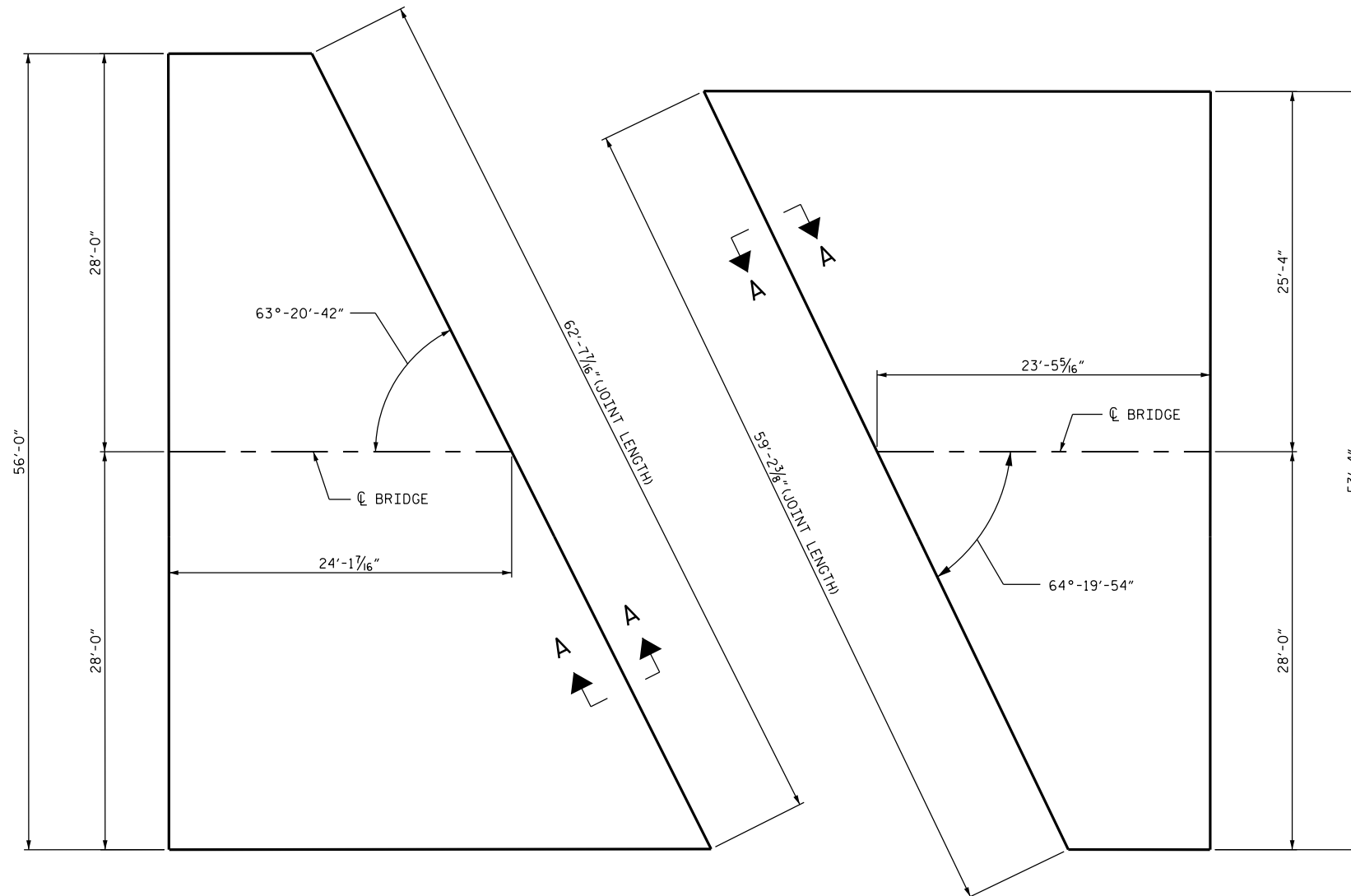
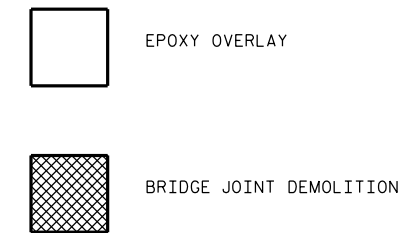
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-5
2			4			37

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0 SQ. FT.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.	
EPOXY OVERLAY SYSTEM	2568 SQ. FT.	

NOTE:

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



PLAN OF APPROACH SLAB AT END BENT 1

PLAN OF APPROACH SLAB AT END BENT 2

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 110

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

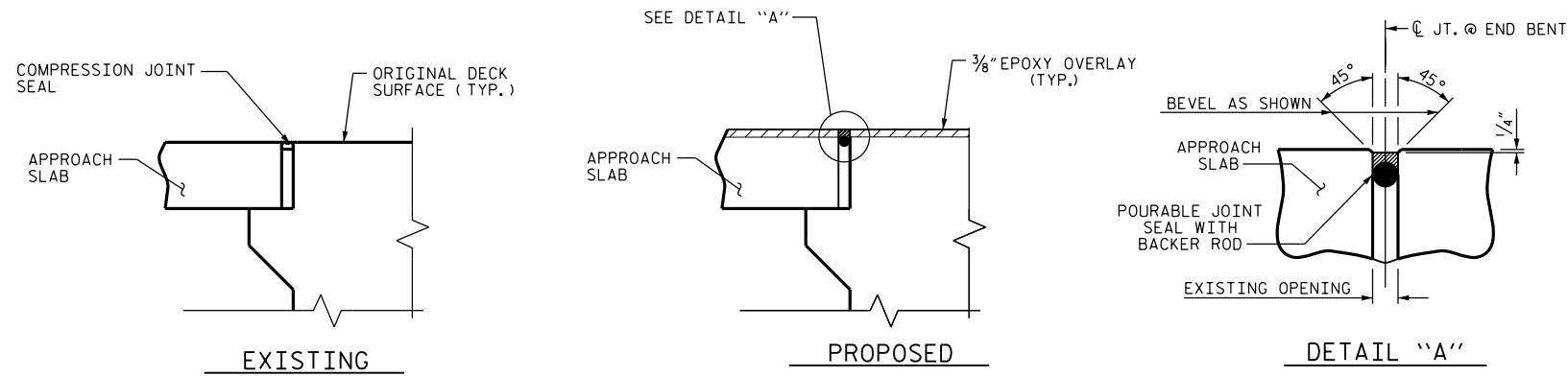
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

APPROACH SLAB AT
 END BENT #1 & #2

DRAWN BY : J.R. HOWELL DATE : 02/2016
 CHECKED BY : W.M. CLARKE DATE : 02/2016

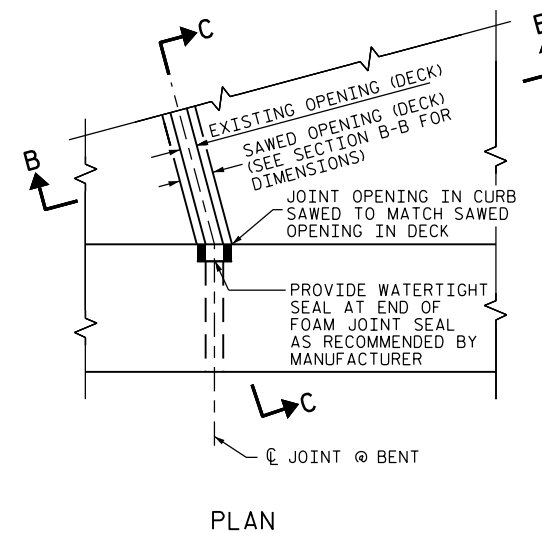
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2			4			

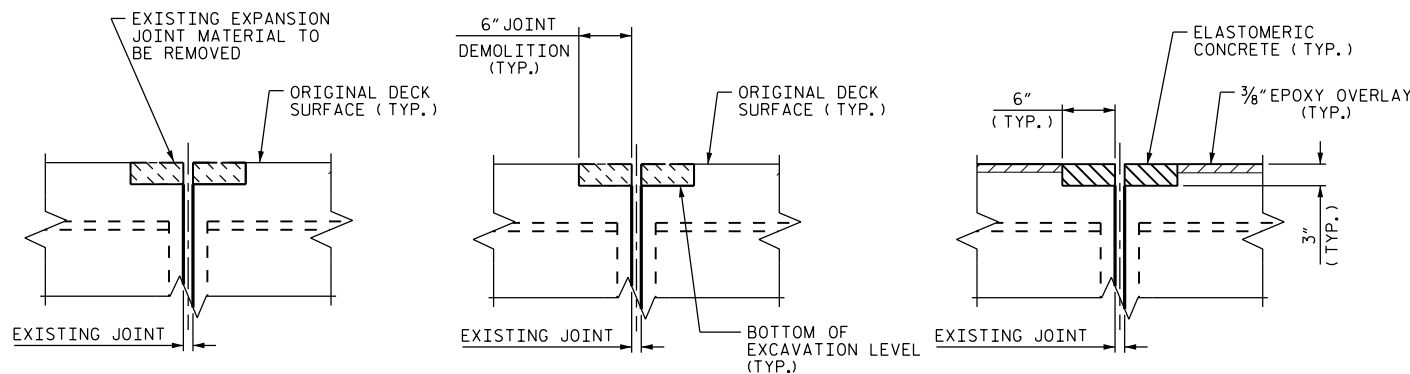


SECTION A-A

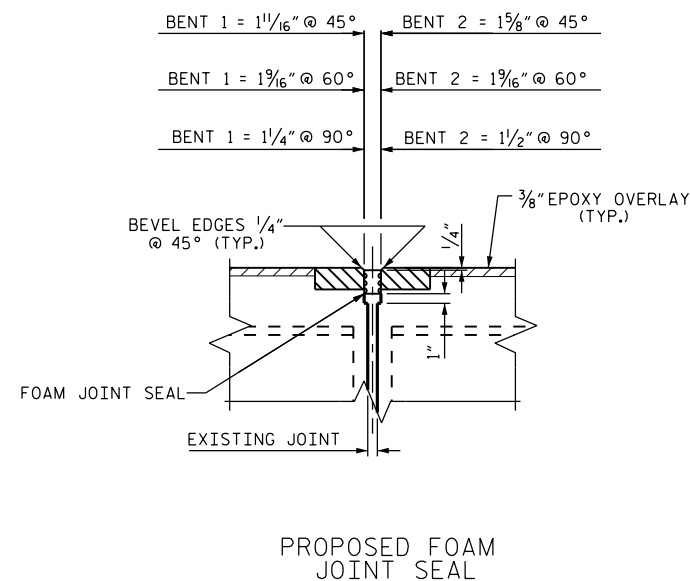
NOTES:
 FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2".
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.
 FOR POURABLE JOINT SEALS, SEE SPECIAL PROVISIONS.



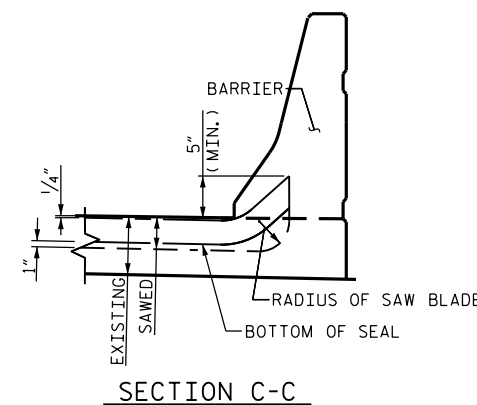
PLAN



SECTION B-B



PROPOSED FOAM JOINT SEAL



SECTION C-C

JOINT SEAL DETAILS AT BENT

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED

REMOVAL OF CONCRETE AT THE EXISTING JOINT SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT AND LEVEL, TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF ELASTOMERIC OR REPAIR CONCRETE.

ELASTOMERIC CONCRETE (CU. FT.)	
BENT 1	15.6
BENT 2	15.6
TOTAL	31.2

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 110

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...
 3/31/2016

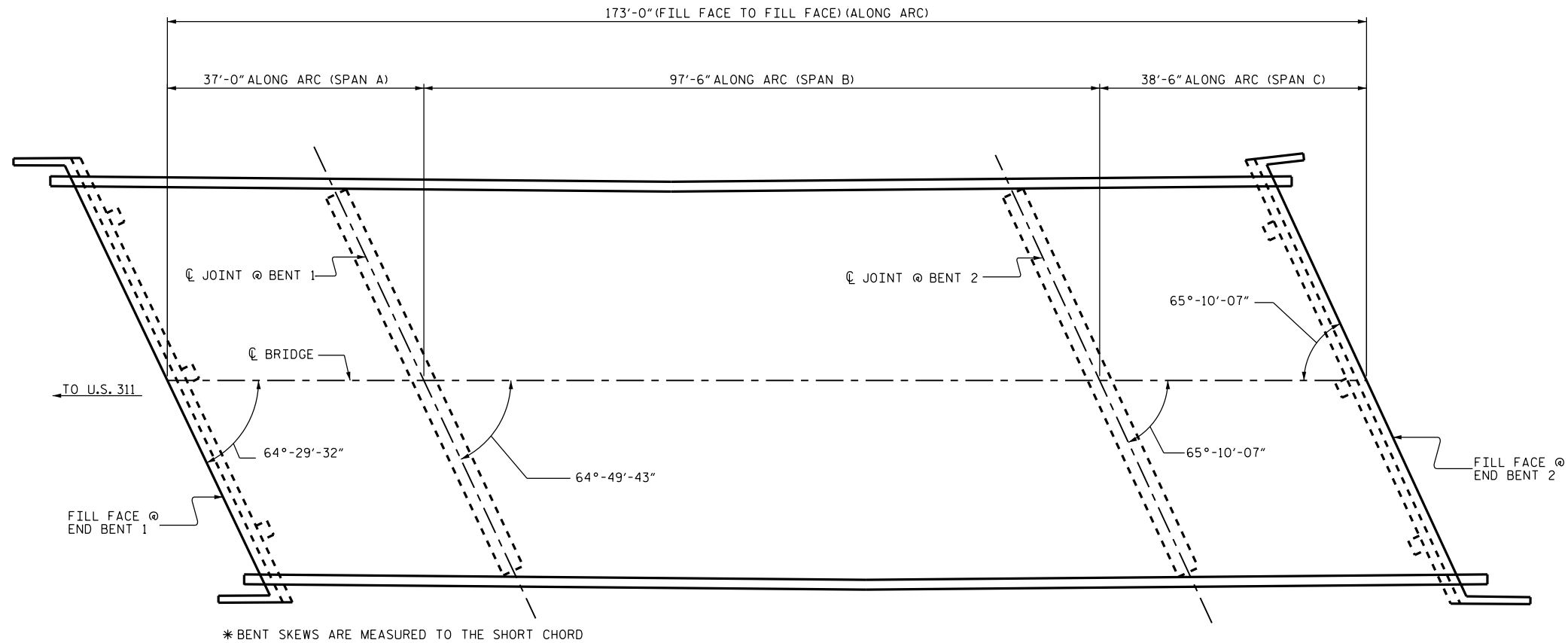
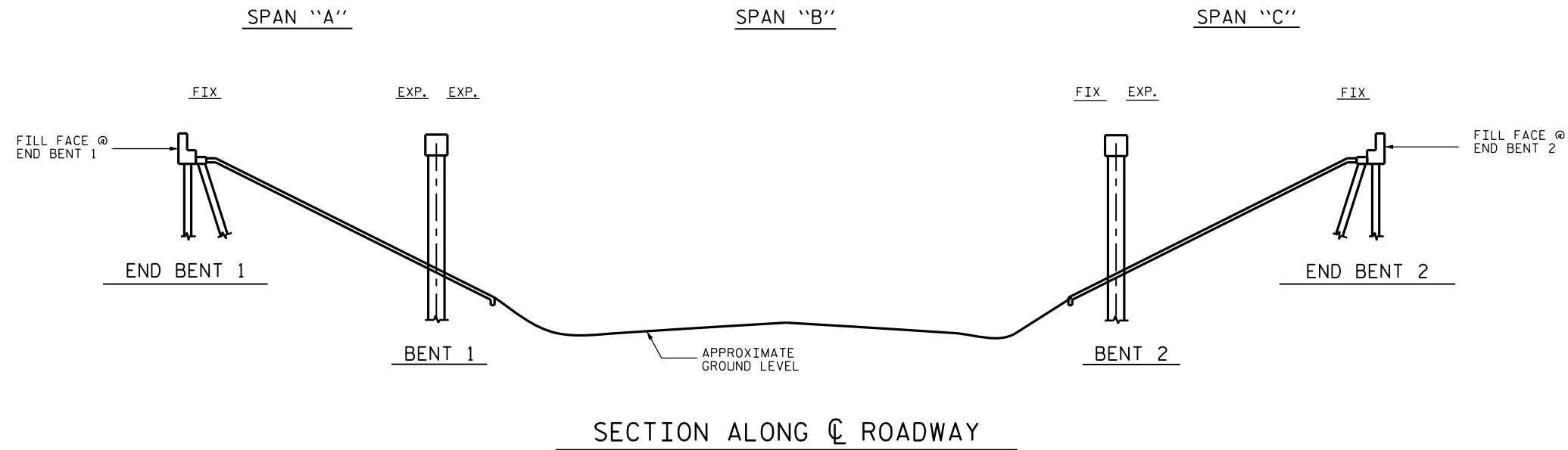


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT DETAILS

DRAWN BY: J.R. HOWELL DATE: 02/2016
 CHECKED BY: W.M. CLARKE DATE: 02/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-7
2			4			TOTAL SHEETS 37



PLAN

SCOPE OF WORK:

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SHOTBLAST METHOD.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- CLEAN AND PAINT EXISTING GIRDER ENDS.

DRAWN BY: J.R. HOWELL DATE: 02/2016
 CHECKED BY: W.M. CLARKE DATE: 02/2016

DocuSigned by:
 W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

PROJECT NO. I-5789
 GUILFORD COUNTY
 BRIDGE NO. 111

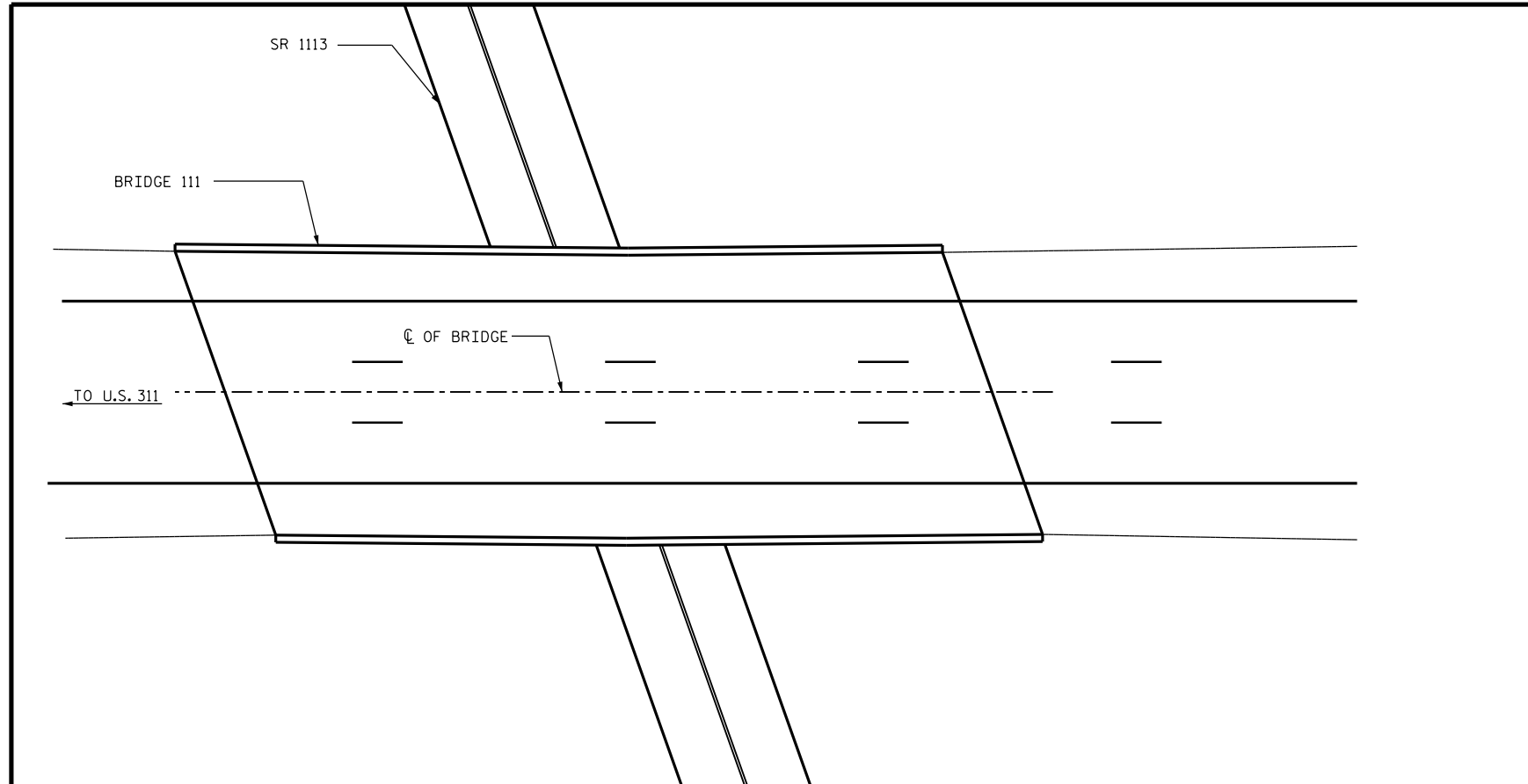
SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE #111 ON
 I-85 SB OVER SR 1113

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

DOCUMENT NOT CONSIDERED
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LOCATION SKETCH

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- FOR OVERLAY OF BRIDGE WITH EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR POURABLE JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
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- FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 111

SHEET 2 OF 2

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...



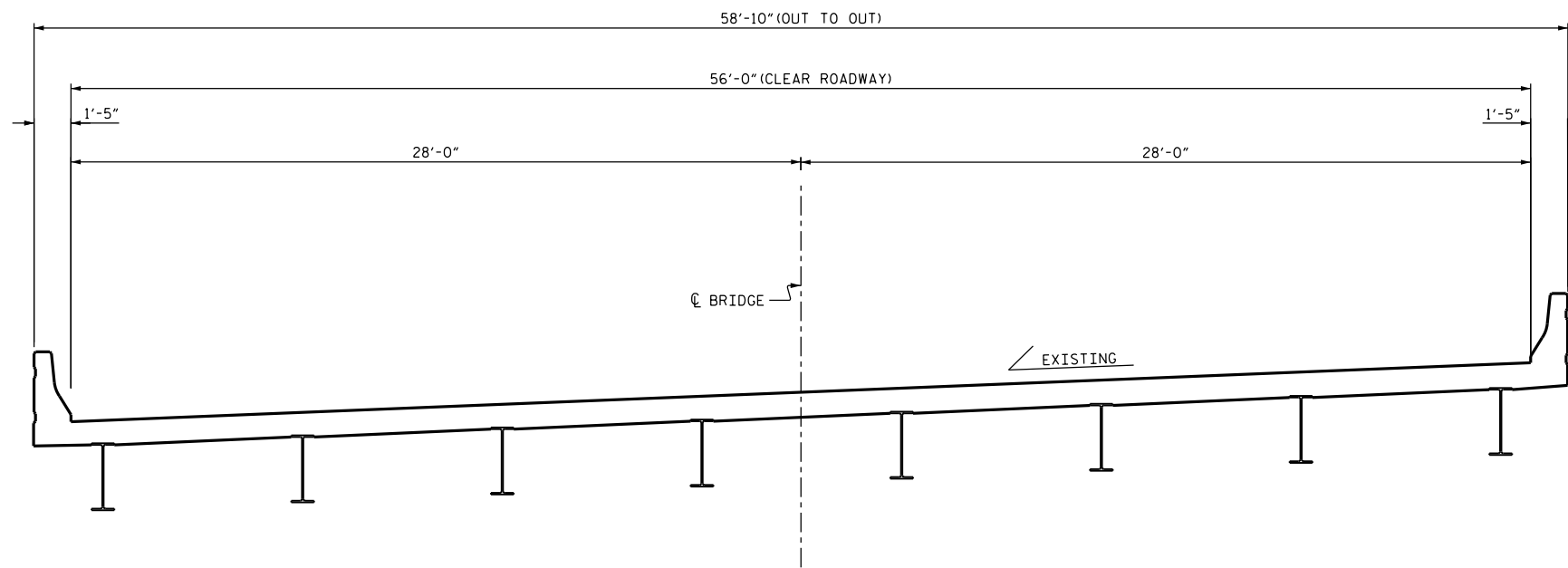
3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
BRIDGE #111 ON
I-85 SB OVER SR 1113

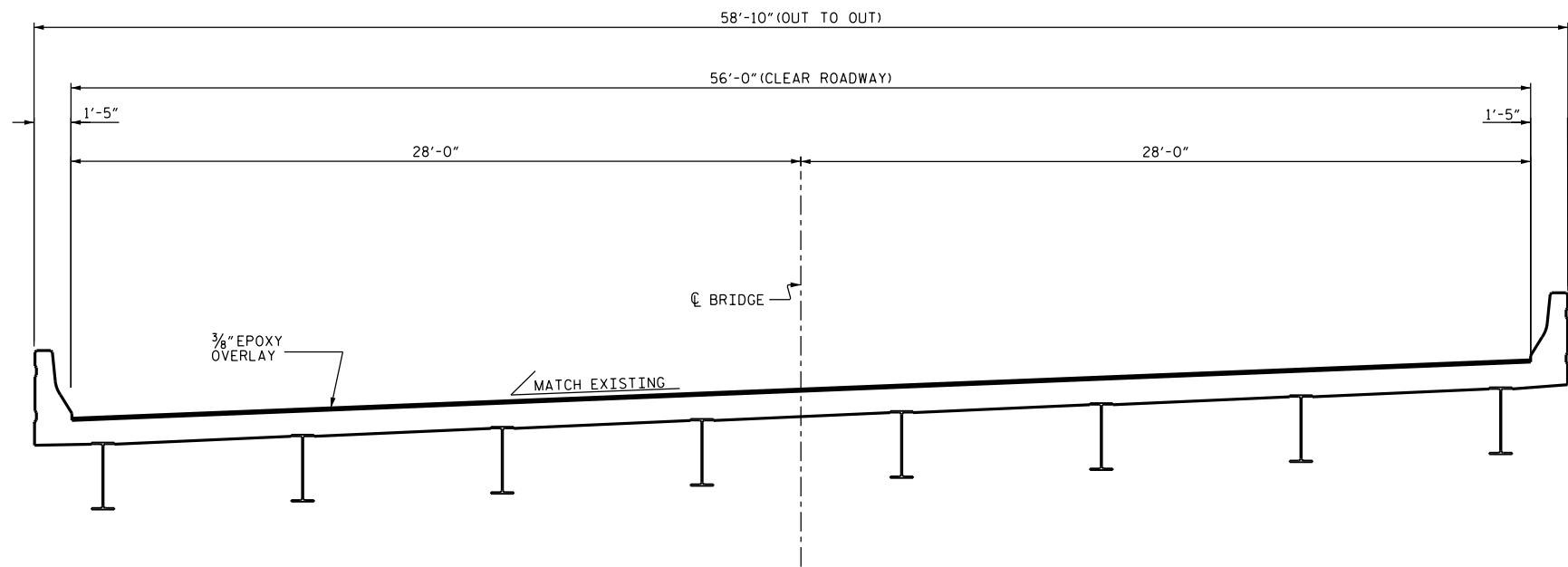
DRAWN BY : J.R. HOWELL DATE : 02/2016
 CHECKED BY : W.M. CLARKE DATE : 02/2016

DOCUMENT NOT CONSIDERED
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			37
2			4			

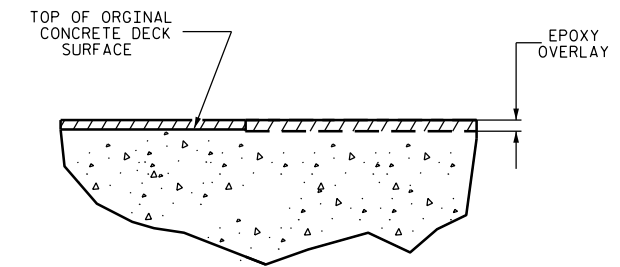


TYPICAL SECTION
(EXISTING)



TYPICAL SECTION
(PROPOSED)

NOTE:
SEE TRAFFIC MANAGEMENT PLANS FOR STAGING OF EPOXY OVERLAY.
ALL DIMENSIONS GIVEN ARE MEASURED RADIALLY UNLESS OTHERWISE NOTED.



DETAIL FOR EPOXY OVERLAY

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 111

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION & EPOXY OVERLAY DETAIL

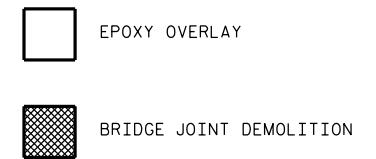
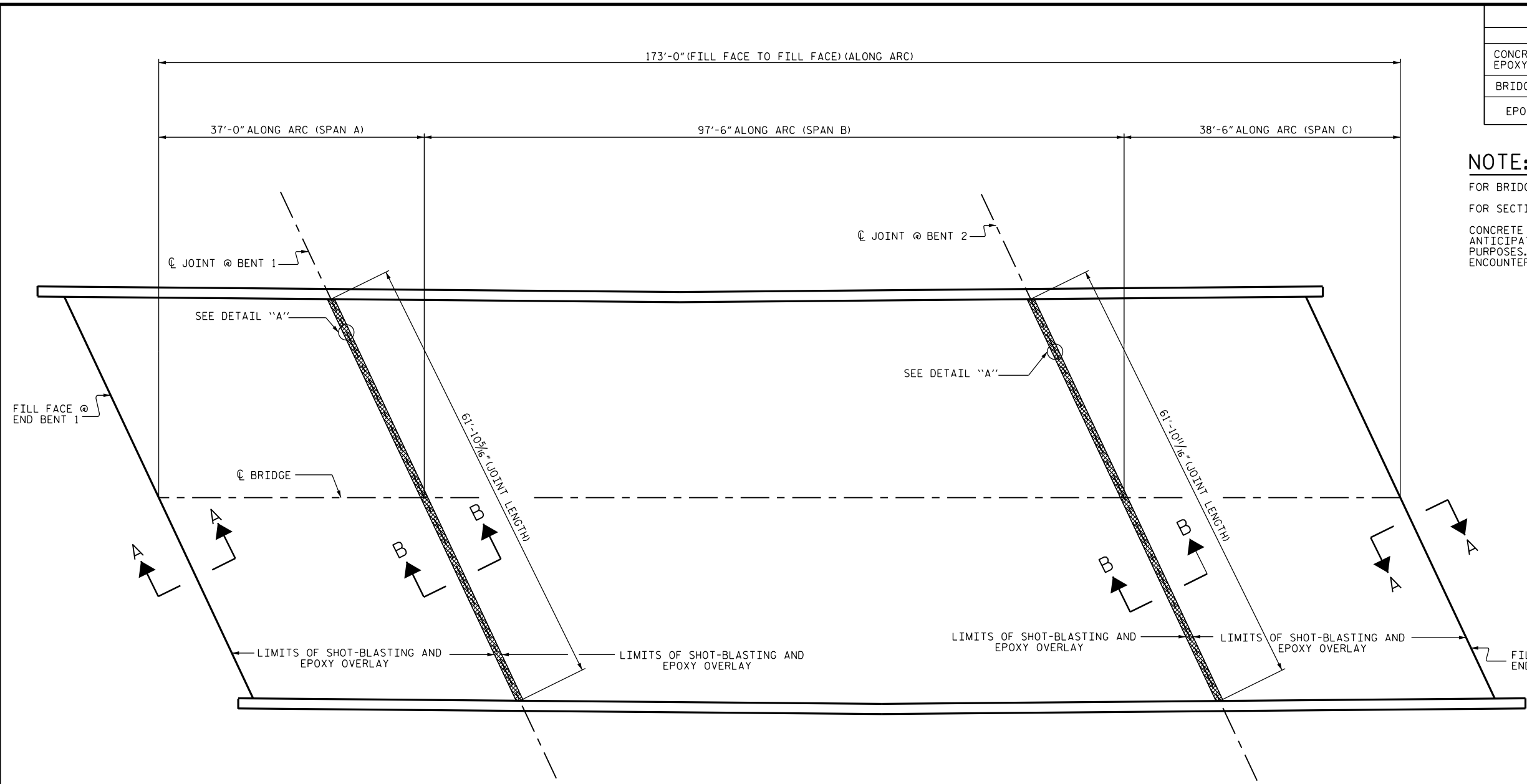
DRAWN BY : J.R. HOWELL DATE : 02/2016
 CHECKED BY : W.M. CLARKE DATE : 02/2016

DOCUMENT NOT CONSIDERED
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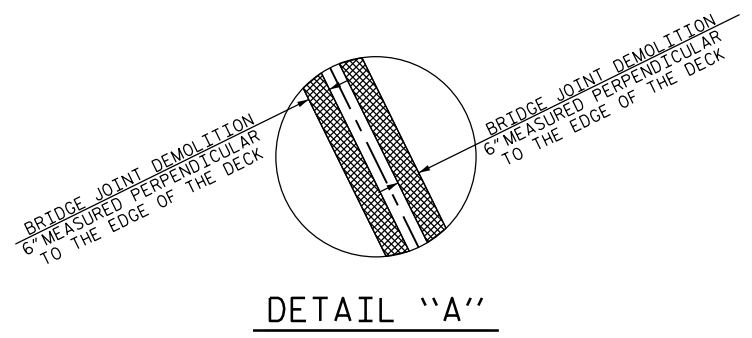
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			37
2			4			

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	10 SQ. FT.	
BRIDGE JOINT DEMOLITION	115 SQ. FT.	
EPOXY OVERLAY SYSTEM	9600 SQ. FT.	

NOTE:
 FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.
 FOR SECTIONS A-A AND B-B, SEE "JOINT DETAILS" SHEET.
 CONCRETE DECK REPAIR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES. IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN
 (SEE SHEET S-6 FOR SECTION A-A AND B-B)



PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 111

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W. Matthew Clarke
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 3/31/2016



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 AND
 EPOXY OVERLAY**

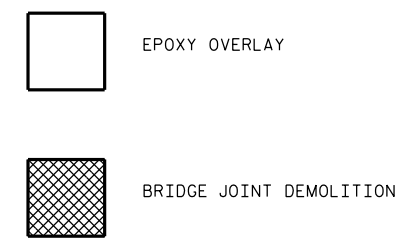
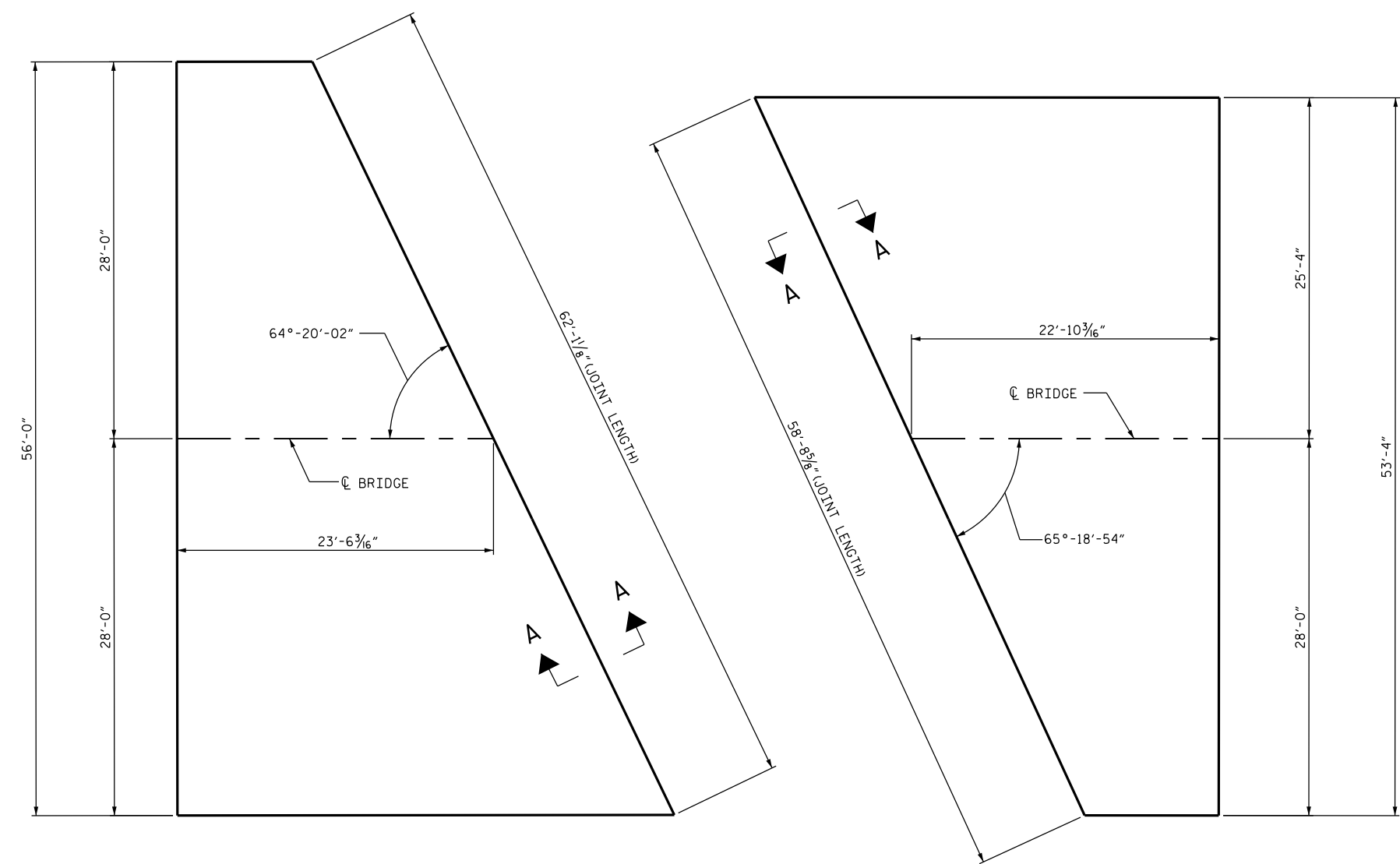
DRAWN BY : J.R. HOWELL DATE : 02/2016
 CHECKED BY : W.M. CLARKE DATE : 02/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-11
2			4			TOTAL SHEETS
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SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0 SQ. FT.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.	
EPOXY OVERLAY SYSTEM	2503 SQ. FT.	

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



PLAN OF APPROACH SLAB AT END BENT 1

PLAN OF APPROACH SLAB AT END BENT 2

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 111

DocuSigned by:
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 1EB20097EAAF437...



3/31/2016

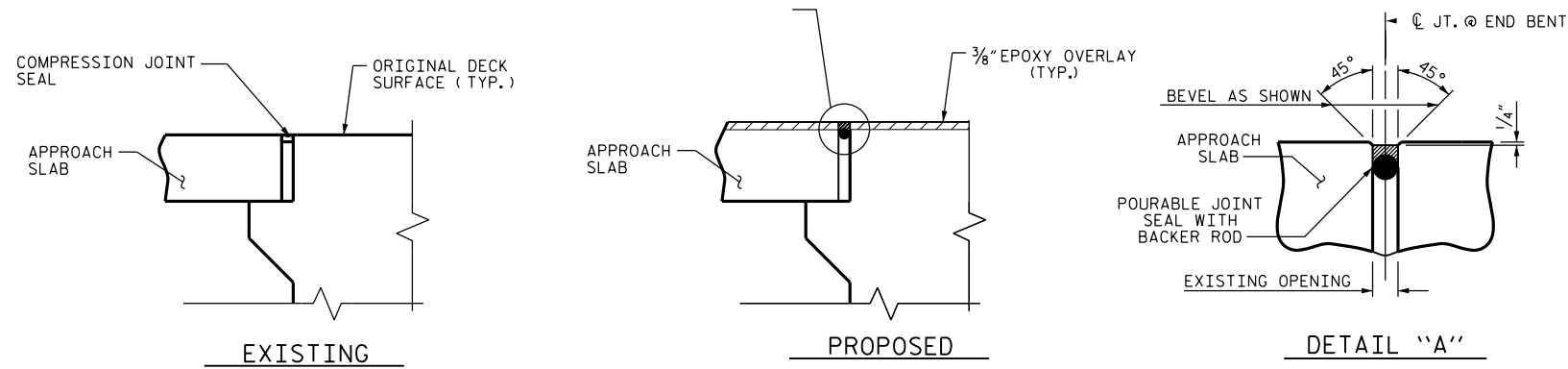
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**APPROACH SLAB AT
 END BENT #1 & #2**

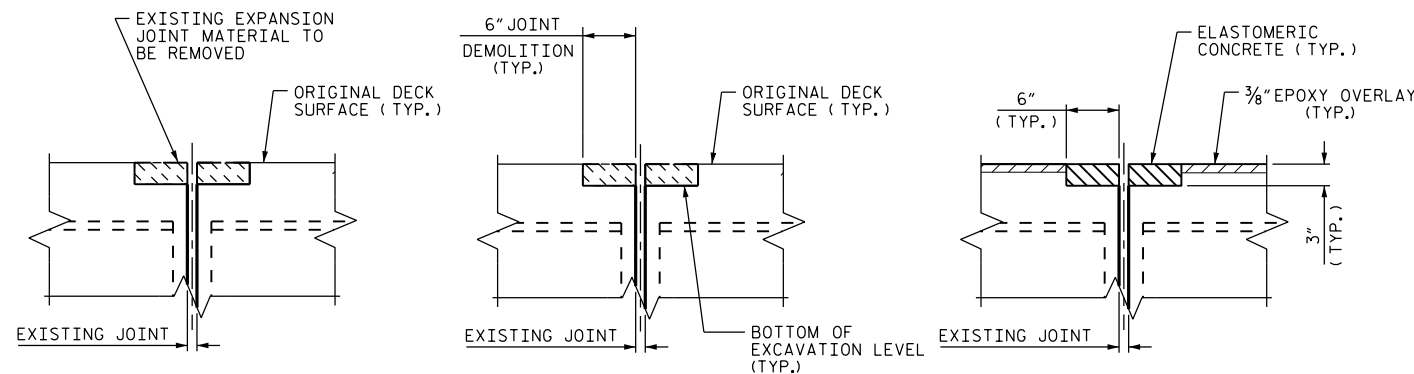
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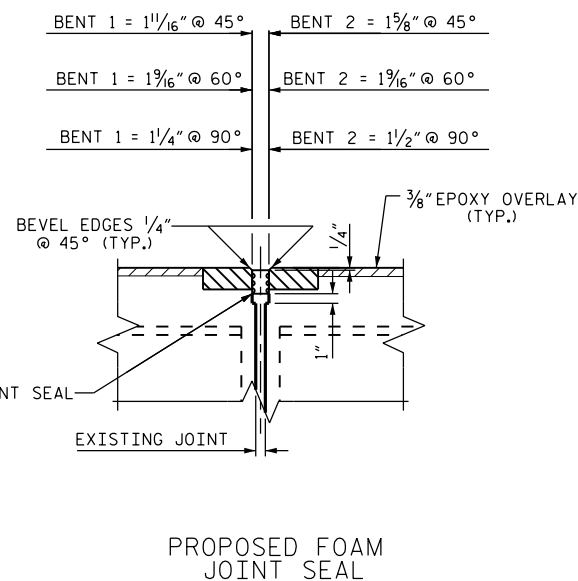
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2			4			TOTAL SHEETS 37



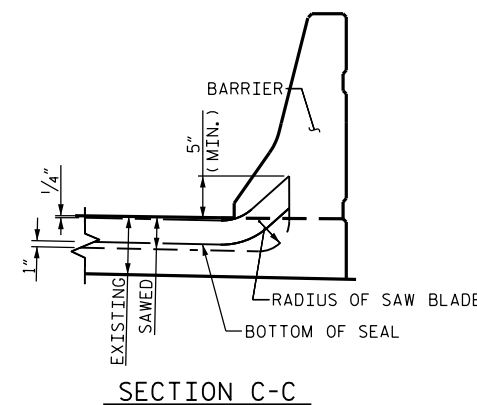
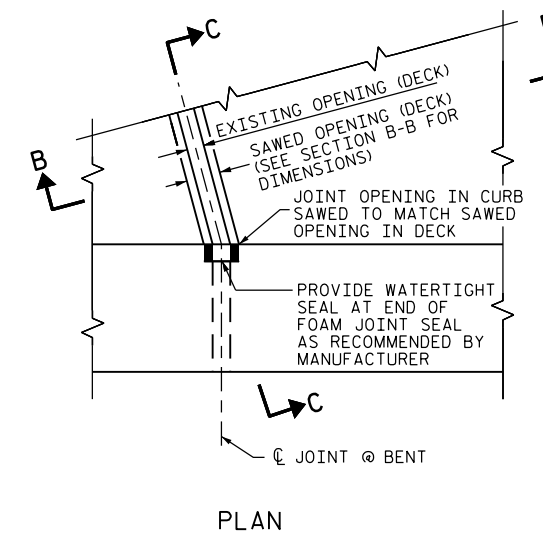
SECTION A-A



SECTION B-B



NOTES:
 FOR FOAM JOINT SEALS SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2".
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.
 FOR POURABLE JOINT SEALS, SEE SPECIAL PROVISIONS.



JOINT SEAL DETAILS AT BENT

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED

REMOVAL OF CONCRETE AT THE EXISTING JOINT SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT AND LEVEL, TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF ELASTOMERIC OR REPAIR CONCRETE.

ELASTOMERIC CONCRETE (CU. FT.)	
BENT 1	15.5
BENT 2	15.5
TOTAL	31.0

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 111

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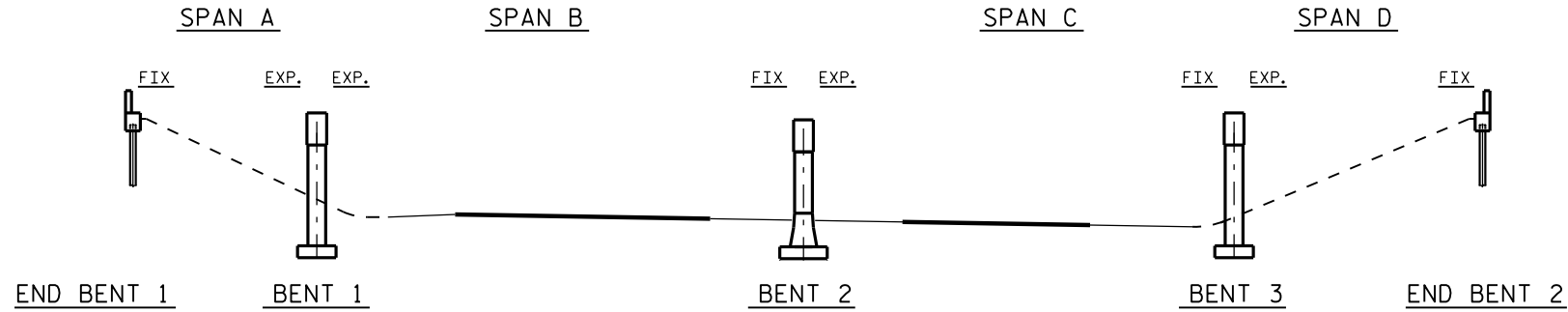
3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT DETAILS

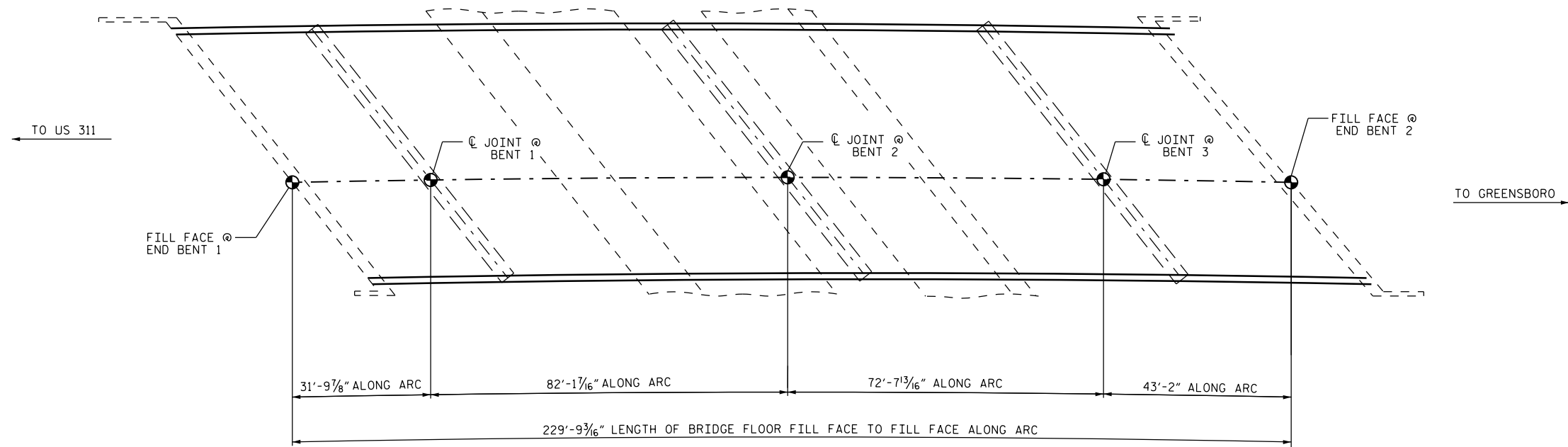
DRAWN BY : J.R. HOWELL DATE : 02/2016
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-13
2			4			TOTAL SHEETS 37



ELEVATION

SECTIONS ALONG CL ROADWAY



PLAN

SCOPE OF WORK:

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SHOTBLAST METHOD.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- CLEAN AND PAINT EXISTING GIRDER ENDS.

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO: 142

SHEET 1 OF 2

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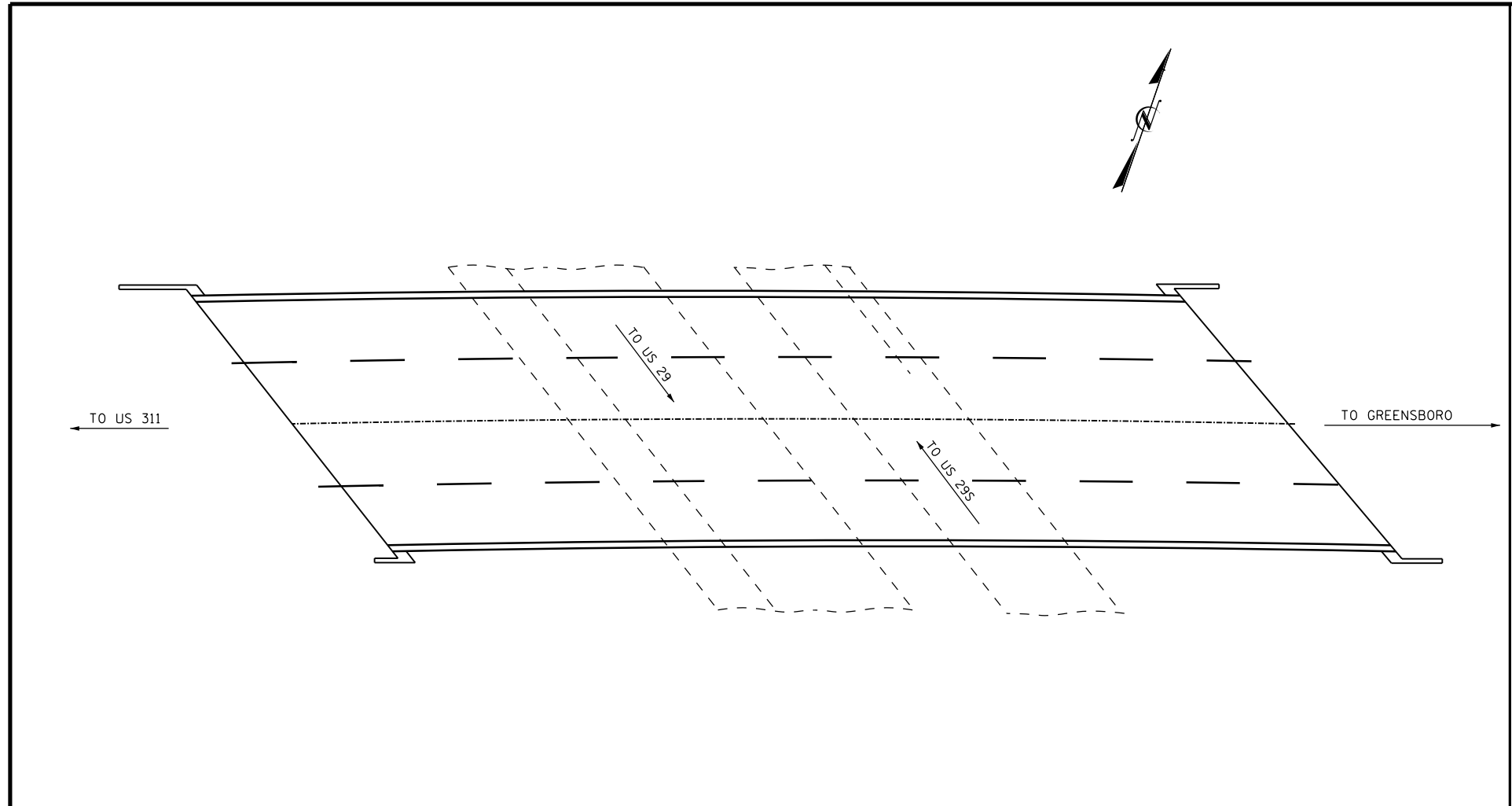
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE OVER # 142
 ON I-85 NB
 BETWEEN SR 1113 AND
 US 29/ US 70

DRAWN BY : S. T. SANDOR DATE : 01/2016
 CHECKED BY : W. M. CLARKE DATE : 02/2016

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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14	
1			3			TOTAL	37
2			4			SHEETS	



NOTES:

- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF DECK.
- EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.
- FOR OVERLAY OF BRIDGE WITH EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR POURABLE JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- 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.
- LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG CENTERLINE OR EDGE OF TRAVEL LANES.
- FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS.

LOCATION SKETCH

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

PROJECT NO. I-5789
 GUILFORD COUNTY
 BRIDGE NO. 142

SHEET 2 OF 2

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3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE # 142
 ON I-85 NB
 BETWEEN SR 1113 AND
 US 29/ US 70

DRAWN BY : S. T. SANDOR DATE : 01/2016
 CHECKED BY : W. M. CLARKE DATE : 02/2016

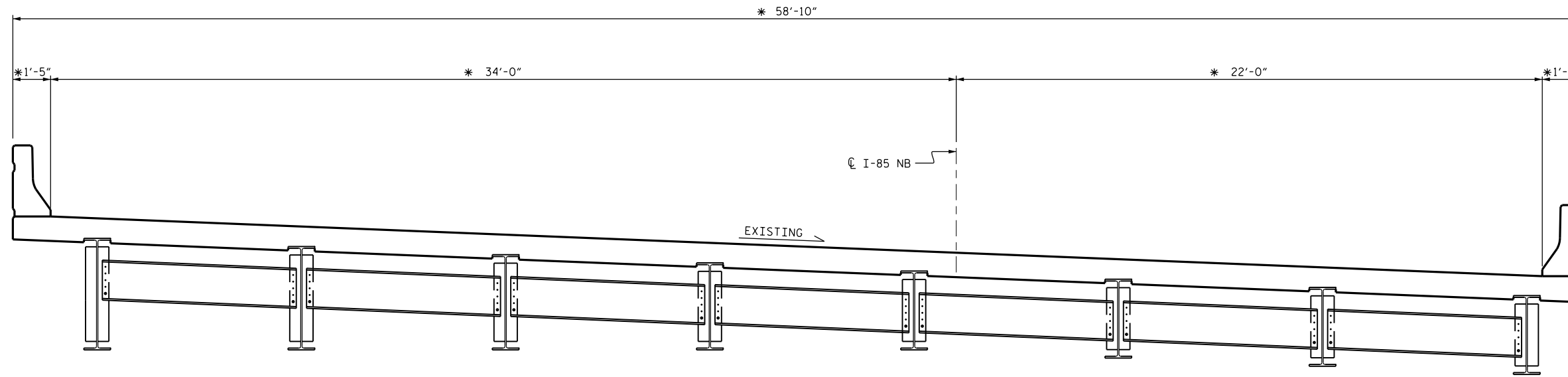
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2			4			TOTAL SHEETS 37

NOTE:

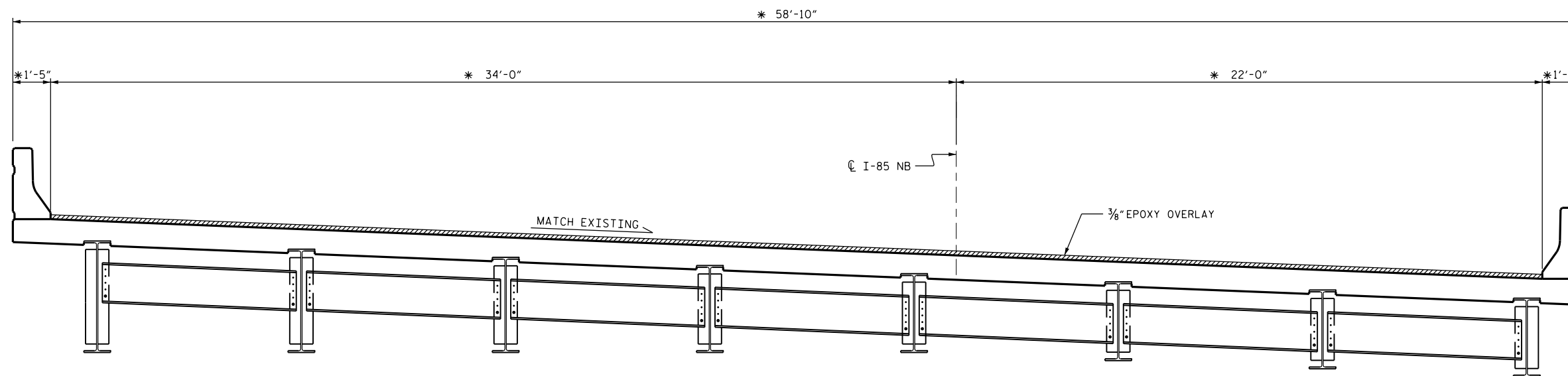
SEE TRAFFIC MANAGEMENT PLANS FOR STAGING OF EPOXY OVERLAY.

ALL DIMENSIONS GIVEN ARE MEASURED RADIALLY UNLESS OTHERWISE NOTED.



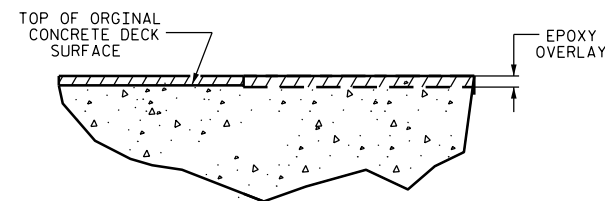
TYPICAL SECTION
(EXISTING)

* RADIAL DIMENSION



TYPICAL SECTION
(PROPOSED)

* RADIAL DIMENSION



DETAIL FOR EPOXY OVERLAY

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 142

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3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
 TYPICAL SECTION &
 EPOXY OVERLAY DETAIL

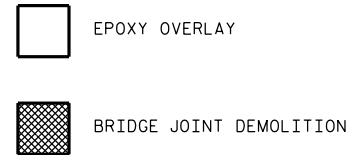
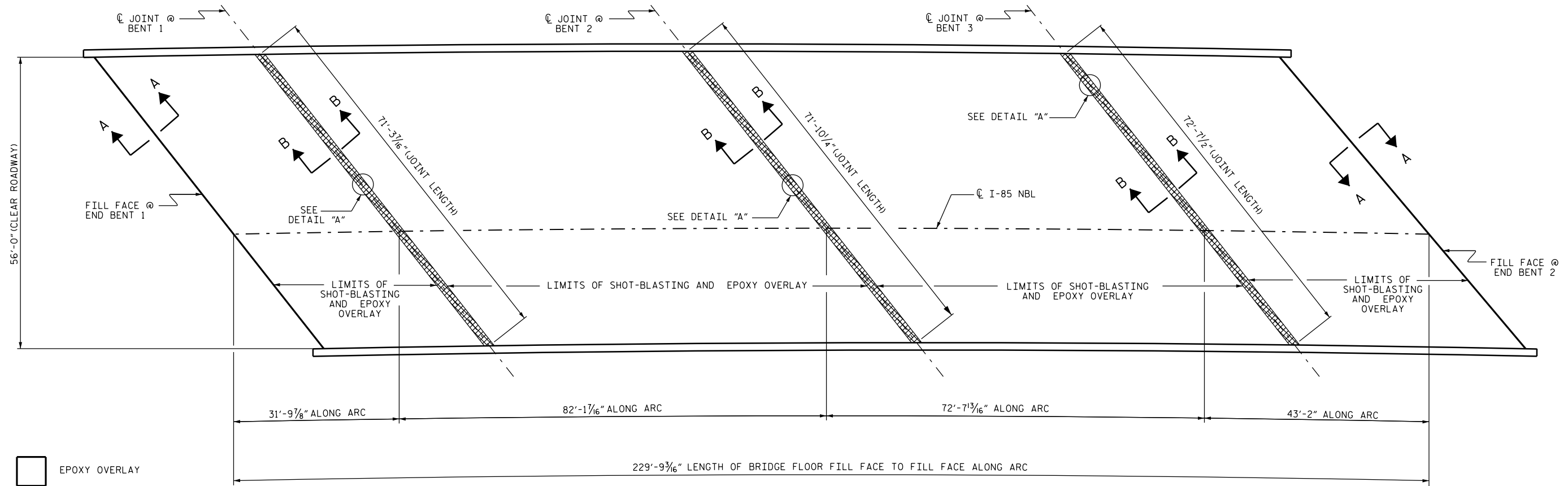
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 CHECKED BY : W. M. CLARKE DATE : 02/2016

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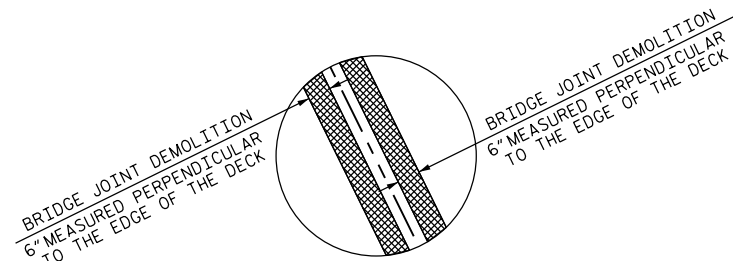
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-16
2			4			TOTAL SHEETS 37

NOTE:

FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.
 FOR SECTIONS A-A AND B-B, SEE "JOINT DETAILS" SHEET.
 CONCRETE DECK REPAIR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES. IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN
 (SEE SHEET S-19 FOR SECTION A-A AND B-B)



DETAIL "A"

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 142

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	10 SQ. FT.	
BRIDGE JOINT DEMOLITION	216 SQ. FT.	
EPOXY OVERLAY SYSTEM	12651 SQ. FT.	

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3/31/2016

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 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION AND EPOXY OVERLAY

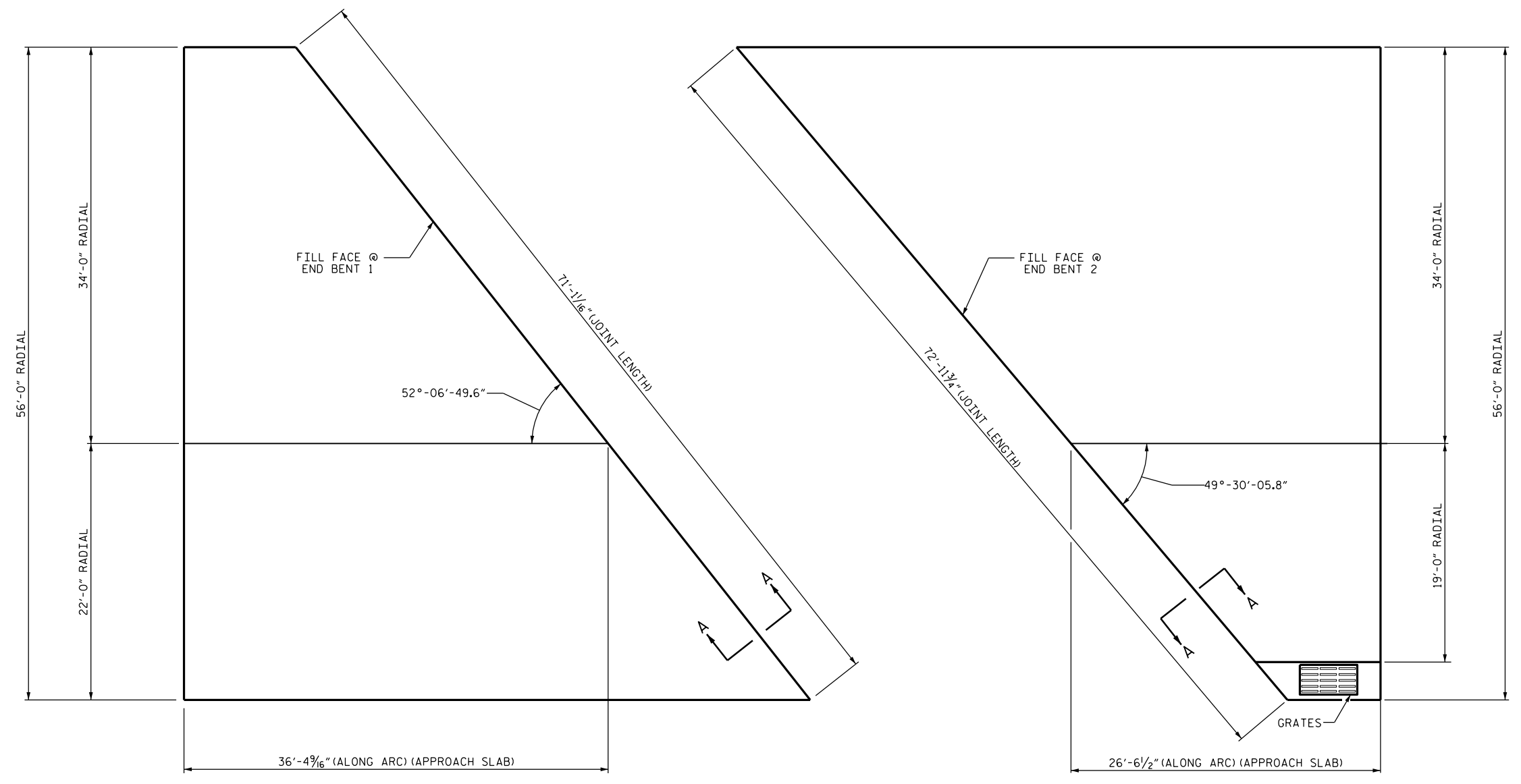
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			37

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DRAWN BY : S. T. SANDOR DATE : 03/2016
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BRIDGE APPROACH SLAB QUANTITIES					
AT END BENT 1			AT END BENT 2		
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0 SQ. FT.		CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0 SQ. FT.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.		BRIDGE JOINT DEMOLITION	0 SQ. FT.	
EPOXY OVERLAY SYSTEM	1775 SQ. FT.		EPOXY OVERLAY SYSTEM	1750 SQ. FT.	

NOTE:
FOR SECTION A-A, SEE "JOINT DETAILS" SHEET, S-19.



PLAN OF APPROACH SLAB AT END BENT 1

PLAN OF APPROACH SLAB AT END BENT 2

PROJECT NO. I-5789
GUILFORD COUNTY
BRIDGE NO. 142

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**APPROACH SLABS AT
END BENTS #1 & #2**

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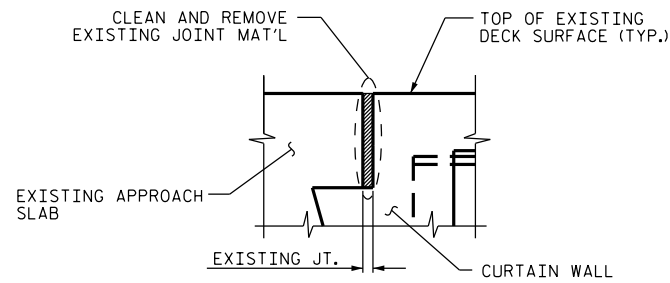
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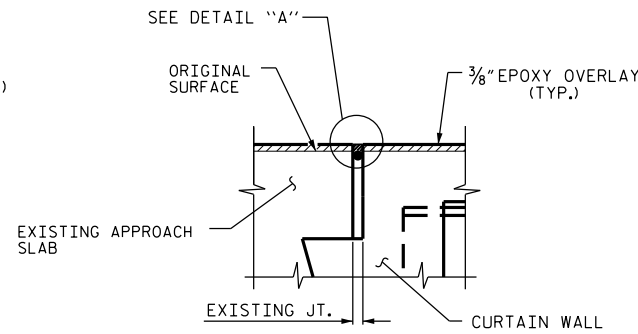
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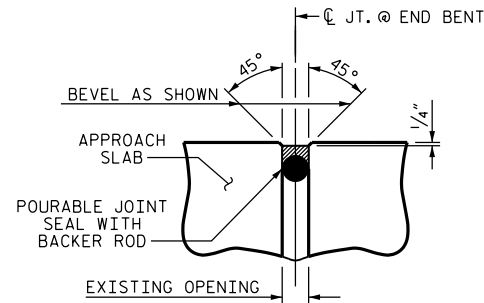
CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 FOR FOAM ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
 RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
 THE WIDTH OF UNCOMPRESSED FOAM JOINT SEAL SHALL BE 2".
 IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE OR IF UNSOUND CONCRETE IS REMOVED TO WITHIN 2" OF THE WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED.



EXISTING JOINT

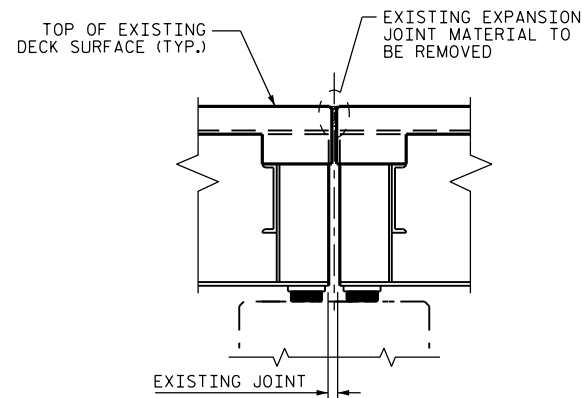


MINIMUM EXISTING JOINT DEMOLITION

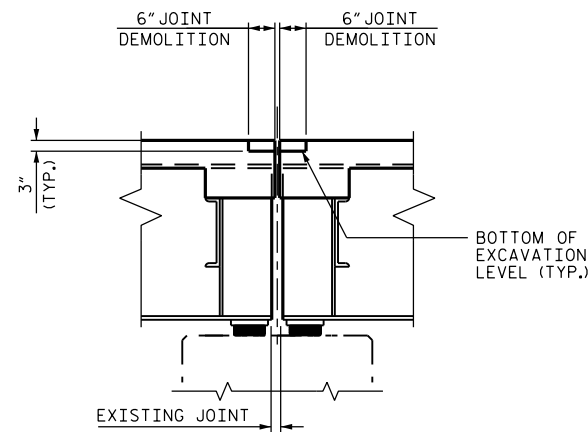


DETAIL "A"

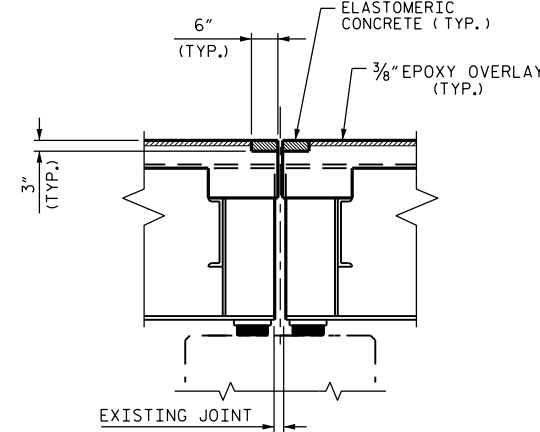
JOINT INSTALLATION SEQUENCE AT END BENTS
SECTION A-A



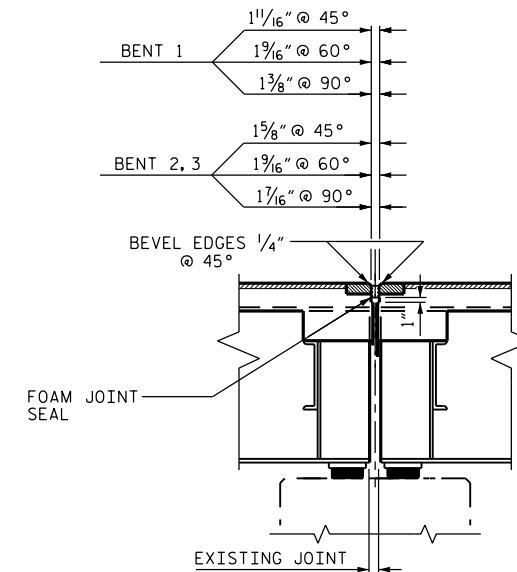
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION

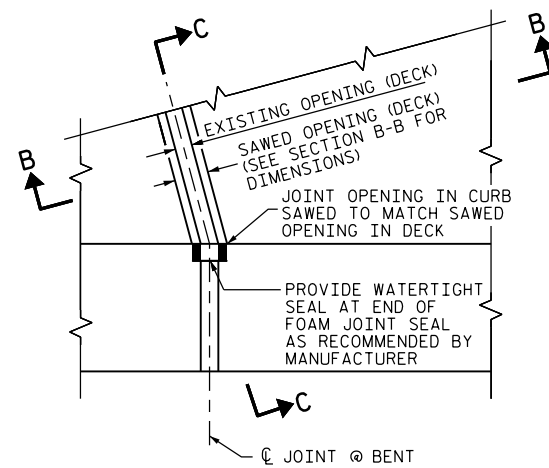


PROPOSED JOINT PRE-SAWED DIMENSIONS

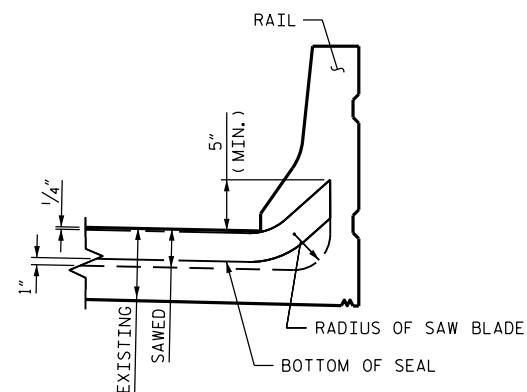


PROPOSED FOAM JOINT SEAL

JOINT INSTALLATION SEQUENCE AT BENTS
SECTION B-B



PLAN



SECTION C-C

ELASTOMERIC CONCRETE (CU. FT.)*	
BENT 1	17.8
BENT 2	18.0
BENT 3	18.1
TOTAL	53.9

* BASED ON THE MINIMUM BLOCKOUT SHOWN

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3/31/2016

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 142

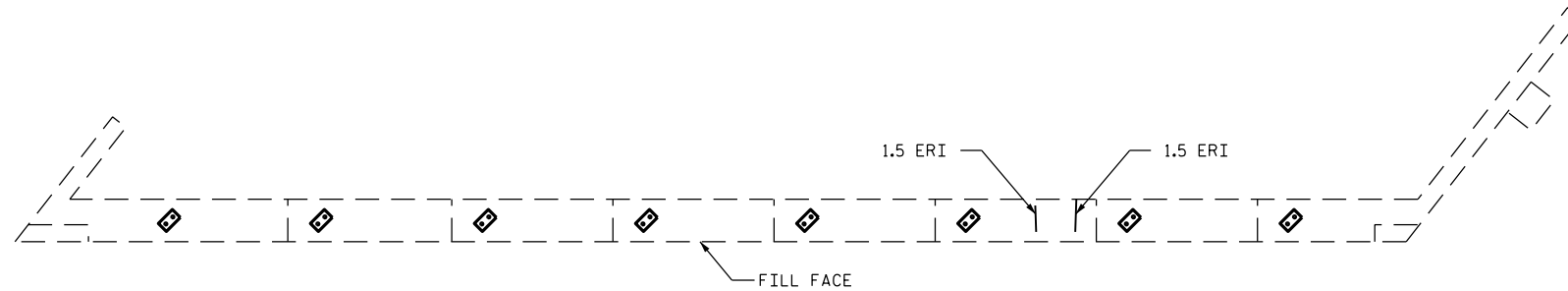
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE JOINT DETAILS

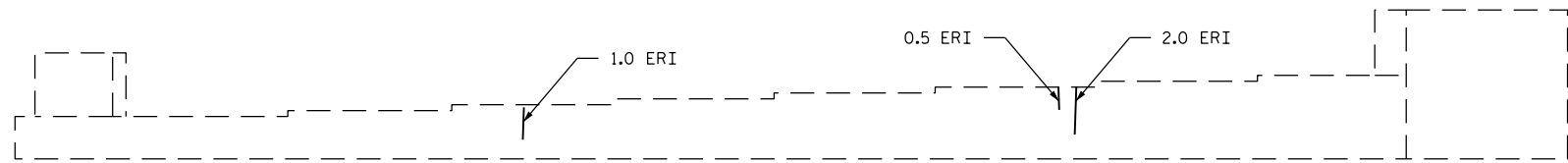
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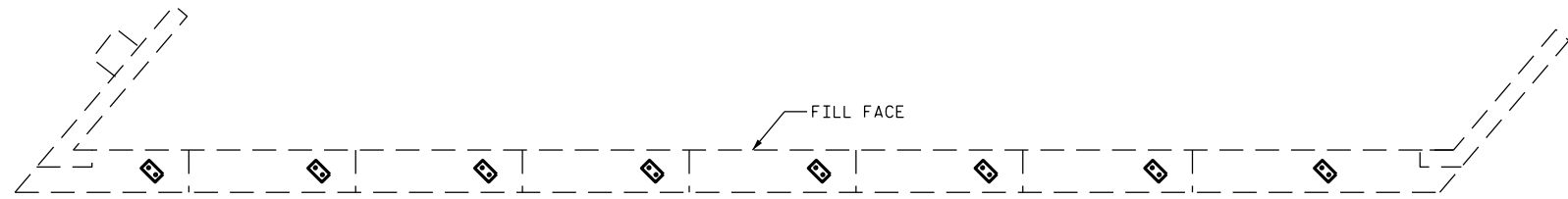
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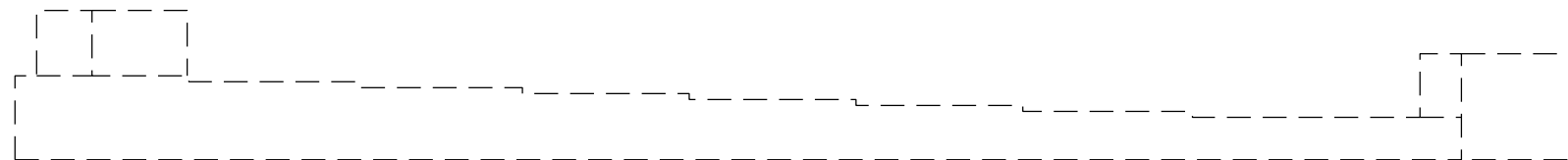
PLAN
END BENT 1




ELEVATION
END BENT 1



PLAN
END BENT 2



ELEVATION
END BENT 2

 SHOTCRETE REPAIRS
 ERI EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE

END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
CONCRETE REPAIR	0.0	0.0		
EPOXY RESIN INJECTION			LN. FT	LN. FT
CAP			6.5	
EPOXY COATING	AREA SF			
CAP	181.0			

END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
CONCRETE REPAIR	0.0	0.0		
EPOXY RESIN INJECTION			LN. FT	LN. FT
CAP			0.0	
EPOXY COATING	AREA SF			
CAP	181.0			

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

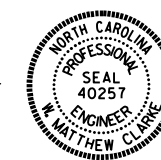
FOR REPAIR DETAILS, SEE TYPICAL CAP AND COLUMN REPAIR DETAILS SHEET.

THE CONTRACTOR SHALL EPOXY COAT THE TOP SURFACE AREA OF THE ORIGINAL CAP ONLY.

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 142

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...

3/31/2016



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 1 & 2

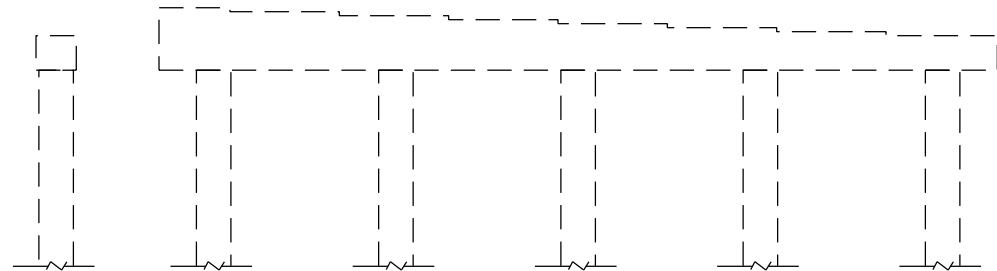
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-20
2			4			TOTAL SHEETS 37

DRAWN BY : H.F. YEUNG / S. T. SANDOR DATE : 01/2016
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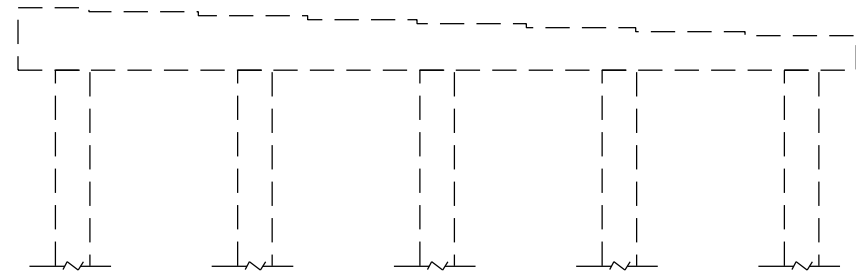
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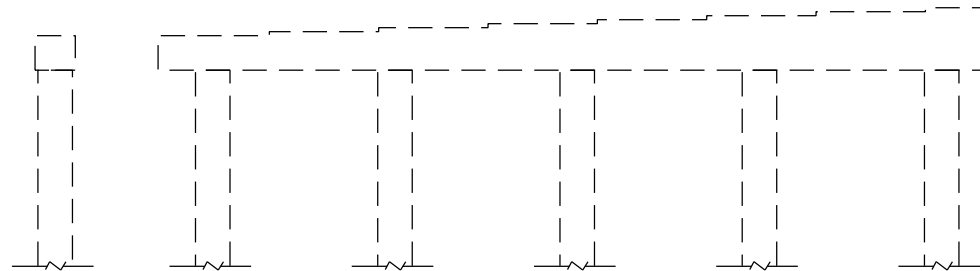
PLAN OF CAP
TOP



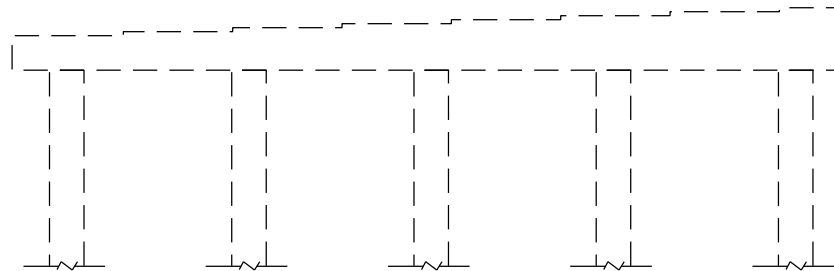
ELEVATION
EAST SIDE



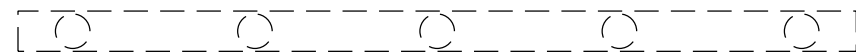
ELEVATION
SOUTH SIDE



ELEVATION
WEST SIDE



ELEVATION
NORTH SIDE



PLAN OF CAP
BOTTOM

REPAIR QUANTITY TABLE				
BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIR	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING	AREA SF			
CAP	239.0			

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL CAP AND COLUMN REPAIR DETAILS SHEET.

THE CONTRACTOR SHALL EPOXY COAT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

NO REPAIR NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE BENT PRIOR TO BEGINNING WORK.

▨ SHOTCRETE REPAIR

ERI EPOXY RESIN INJECTION

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 142

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W. Matthew Clark
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3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-21
2			4			TOTAL SHEETS 37

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REPAIR QUANTITY TABLE

BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	10.5	2.7		
COLUMN (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIR	10.0	2.5		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING	AREA SF			
CAP	239.0			

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

NOTES:

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

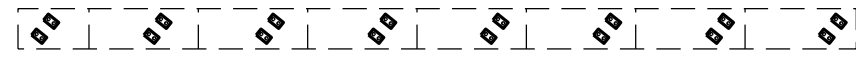
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

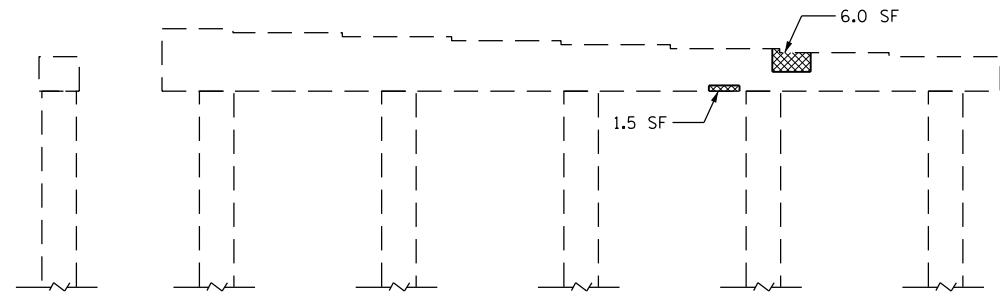
FOR REPAIR DETAILS, SEE TYPICAL CAP AND COLUMN REPAIR DETAILS SHEET.

THE CONTRACTOR SHALL EPOXY COAT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

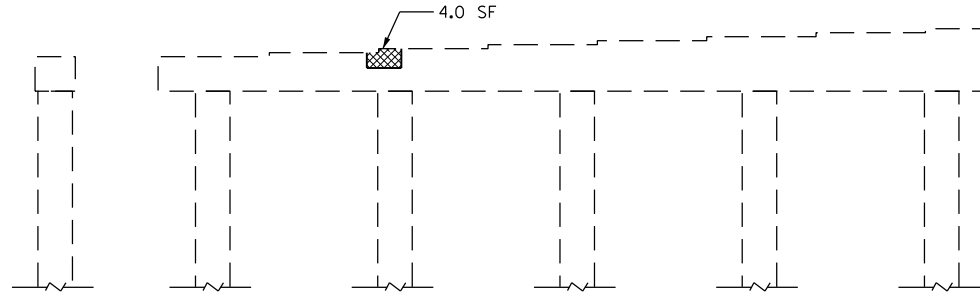
FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.



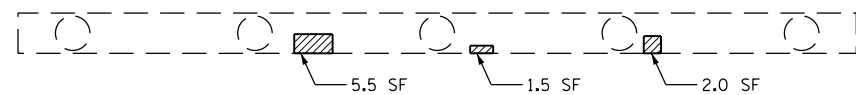
PLAN OF CAP
TOP



ELEVATION
EAST SIDE



ELEVATION
NORTH SIDE



PLAN OF CAP
BOTTOM

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI EPOXY RESIN INJECTION

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 142

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					TOTAL SHEETS 37

DRAWN BY : H.F. YEUNG / S.T. SANDOR DATE : 01/2016
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REPAIR QUANTITY TABLE

BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.5	0.2		
COLUMN (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIR	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING	AREA SF			
CAP	244.0			

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

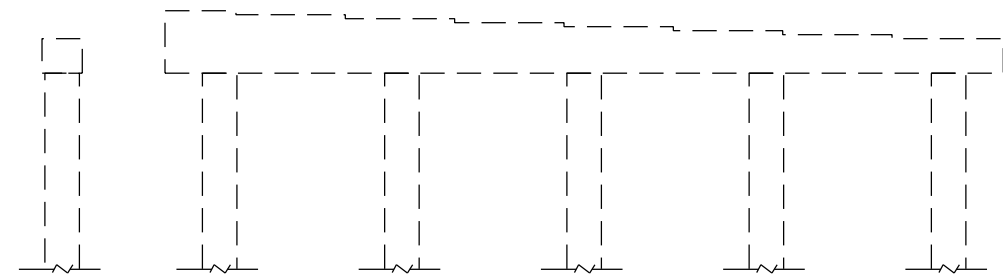
FOR REPAIR DETAILS, SEE TYPICAL CAP AND COLUMN REPAIR DETAILS SHEET.

THE CONTRACTOR SHALL EPOXY COAT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

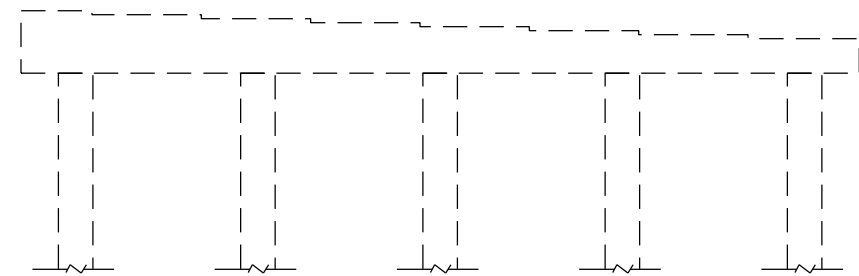
FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.



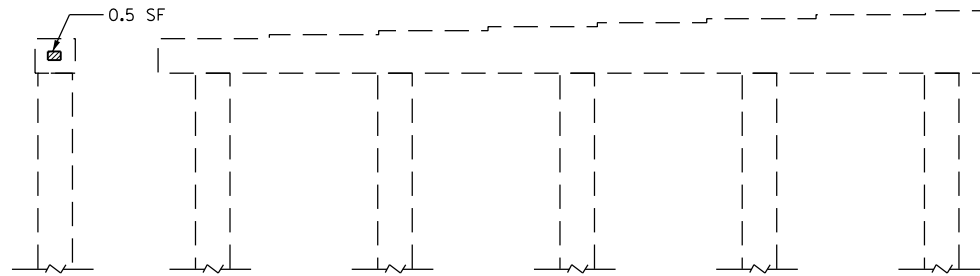
PLAN OF CAP
TOP



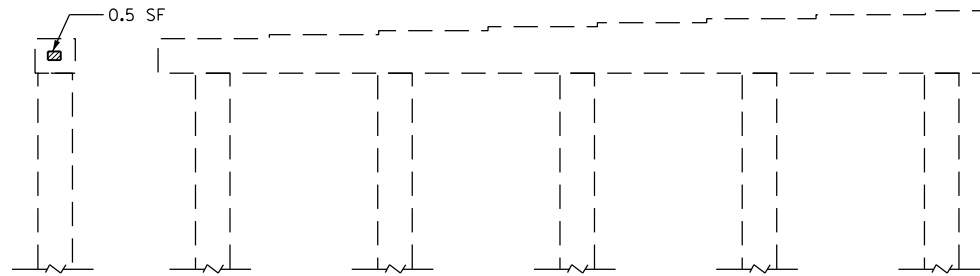
ELEVATION
EAST SIDE



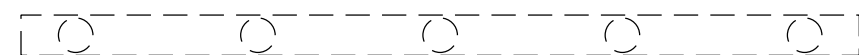
ELEVATION
SOUTH SIDE



ELEVATION
WEST SIDE



ELEVATION
NORTH SIDE



PLAN OF CAP
BOTTOM

SHOTCRETE REPAIR

ERI EPOXY RESIN INJECTION

PROJECT NO. I-5789
GUILFORD COUNTY
BRIDGE NO. 142

DocuSigned by:

W. Matthew Clarke

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3/31/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

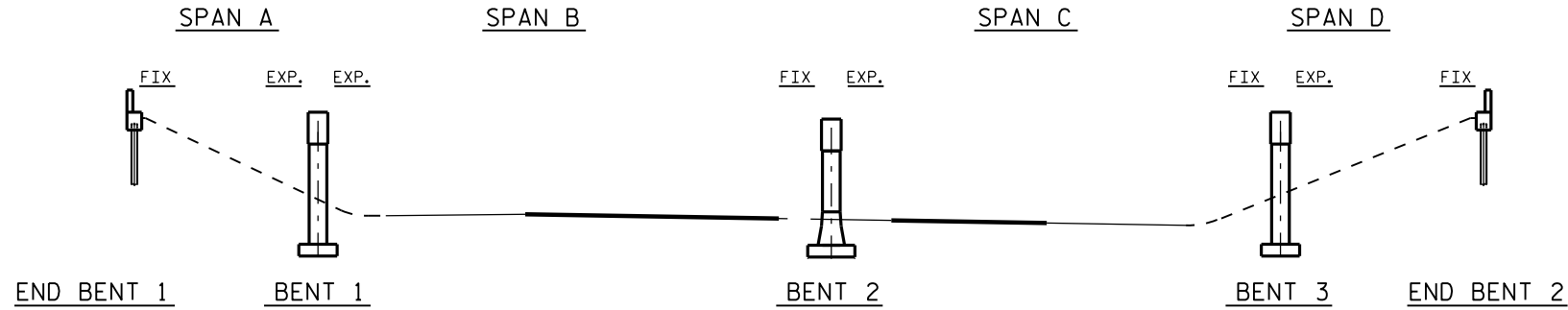
SUBSTRUCTURE BENT 3

DRAWN BY : H.F. YEUNG / S.T. SANDOR DATE : 01/2016
CHECKED BY : W.M. CLARKE DATE : 02/2016

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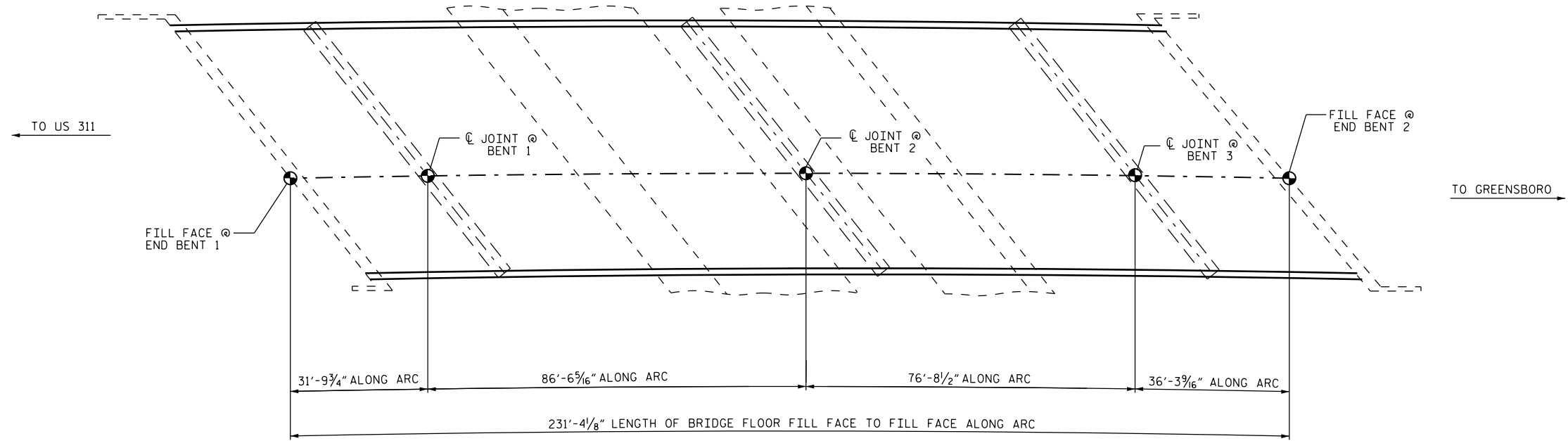
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			37
2			4			



ELEVATION

SECTIONS ALONG CL ROADWAY



PLAN

SCOPE OF WORK:

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SHOTBLAST METHOD.
- OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS.
- CLEAN AND PAINT EXISTING GIRDER ENDS.

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 144

SHEET 1 OF 2

DocuSigned by:
W. Matthew Clarke
 SEAL 40257
 ENGINEER
 W. MATTHEW CLARKE

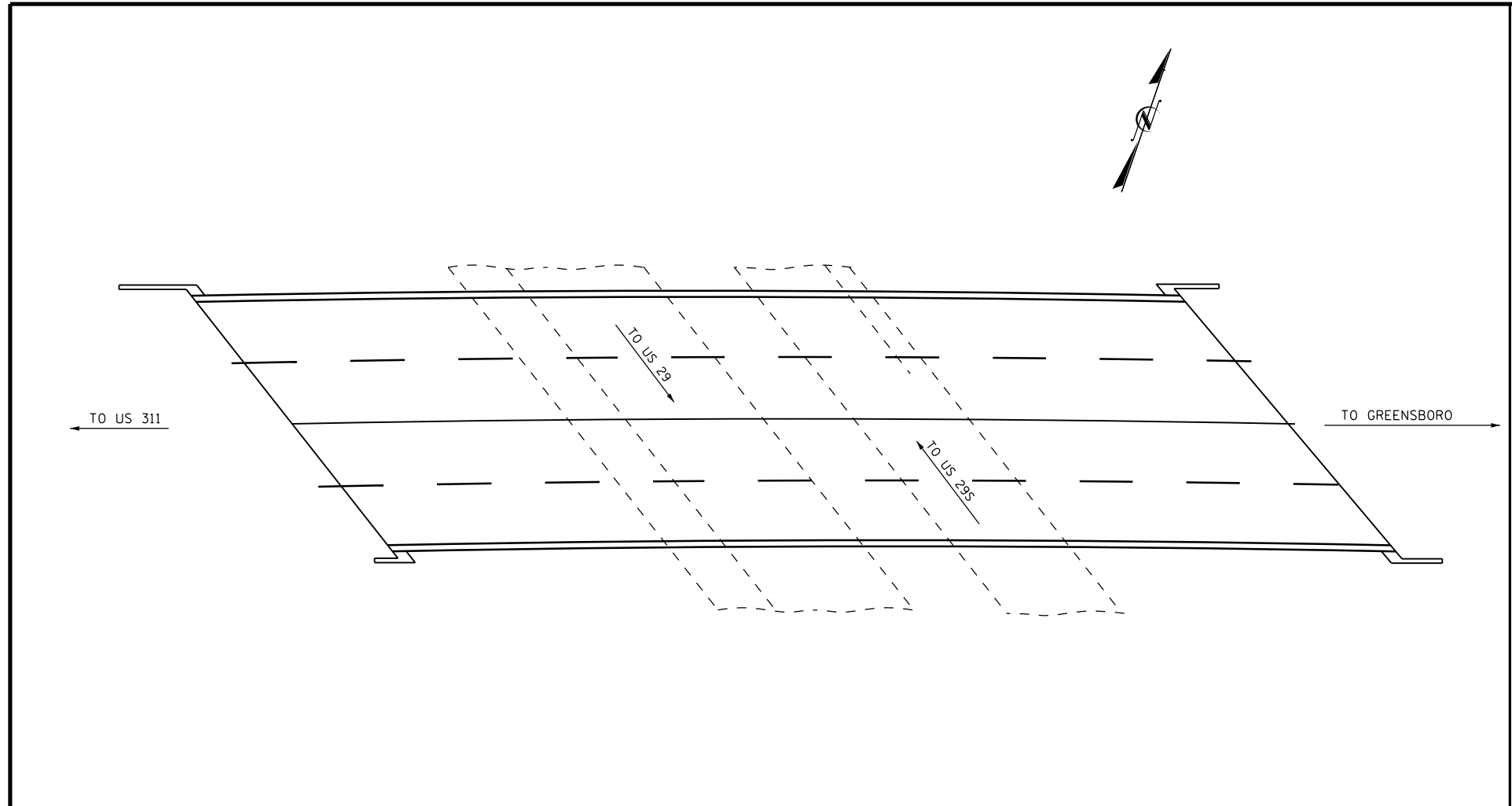
3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE OVER # 144
 ON I-85 SB
 BETWEEN SR 1113 AND
 US 29/ US 70

DRAWN BY : S. T. SANDOR DATE : 01/2016
 CHECKED BY : W. M. CLARKE DATE : 02/2016

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			24
2			4			37



NOTES:

- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF DECK.
- EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.
- FOR OVERLAY OF BRIDGE WITH EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR POURABLE JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- 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.
- LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG CENTERLINE OR EDGE OF TRAVEL LANES.
- FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS.

LOCATION SKETCH

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

PROJECT NO. I-5789
 GUILFORD COUNTY
 BRIDGE NO. 144

SHEET 2 OF 2

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W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE # 144
 ON I-85 SB
 BETWEEN SR 1113 AND
 US 29/ US 70

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 CHECKED BY : W. M. CLARKE DATE : 02/2016

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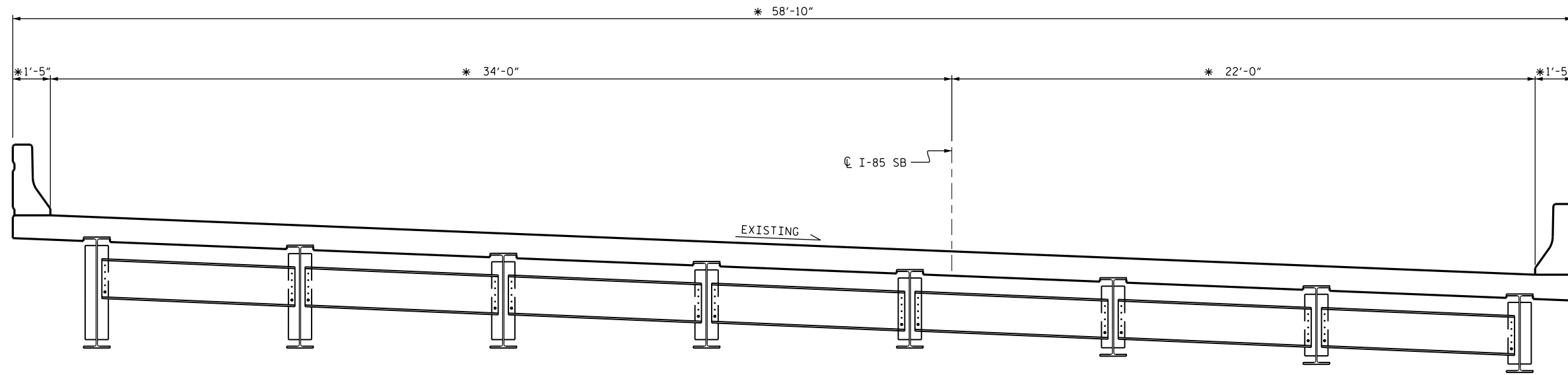
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2			4			37

NOTE:

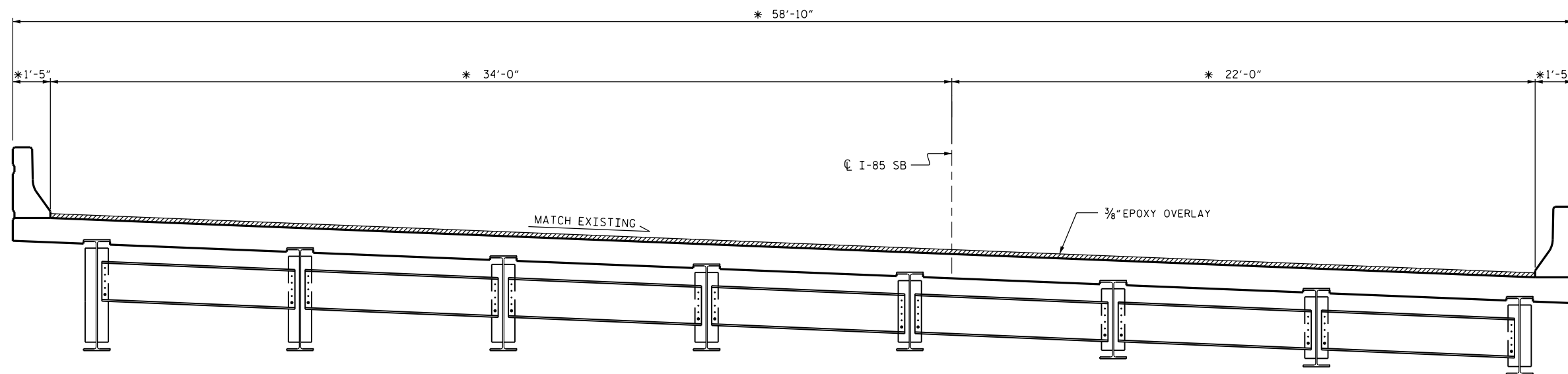
SEE TRAFFIC MANAGEMENT PLANS FOR STAGING OF EPOXY OVERLAY.

ALL DIMENSIONS GIVEN ARE MEASURED RADIALLY UNLESS OTHERWISE NOTED.



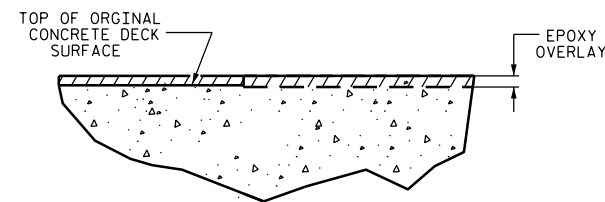
TYPICAL SECTION
(EXISTING)

* RADIAL DIMENSION



TYPICAL SECTION
(PROPOSED)

* RADIAL DIMENSION



DETAIL FOR EPOXY OVERLAY

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 144

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W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
 TYPICAL SECTION &
 EPOXY OVERLAY DETAIL

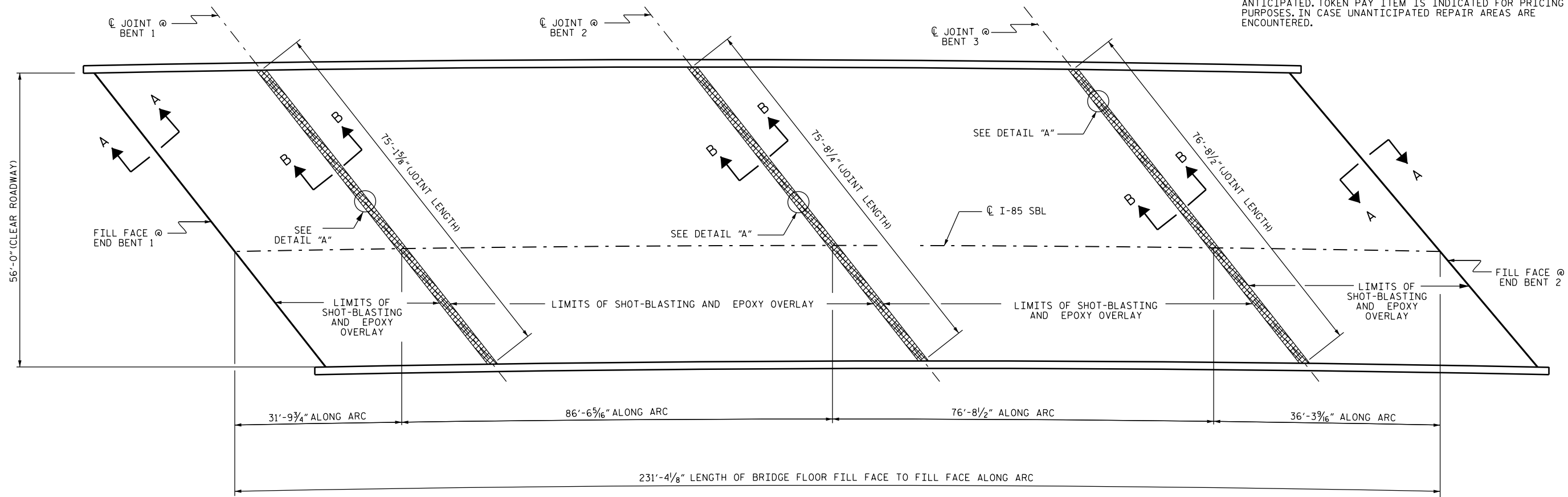
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NOTE:

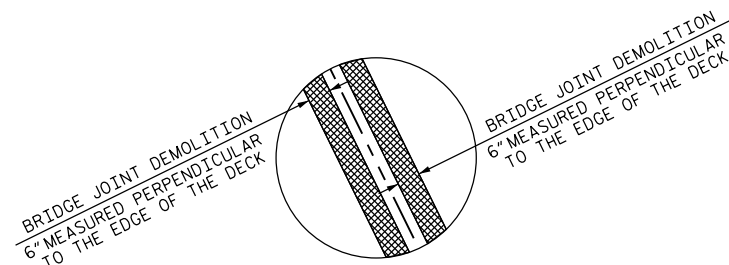
FOR BRIDGE JOINT DEMOLITION, SEE "JOINT DETAILS" SHEET.
 FOR SECTIONS A-A AND B-B, SEE "JOINT DETAILS" SHEET.
 CONCRETE DECK REPAIR EPOXY OVERLAY IS NOT ANTICIPATED. TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES. IN CASE UNANTICIPATED REPAIR AREAS ARE ENCOUNTERED.



PLAN

(SEE SHEET S-29 FOR SECTION A-A AND B-B)

-  EPOXY OVERLAY
-  BRIDGE JOINT DEMOLITION



DETAIL "A"

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	10 SQ. FT.	
BRIDGE JOINT DEMOLITION	226 SQ. FT.	
EPOXY OVERLAY SYSTEM	12924 SQ. FT.	

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 1EB20097EAAF437...



3/31/2016

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 144

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION AND EPOXY OVERLAY


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-27
2			4			37

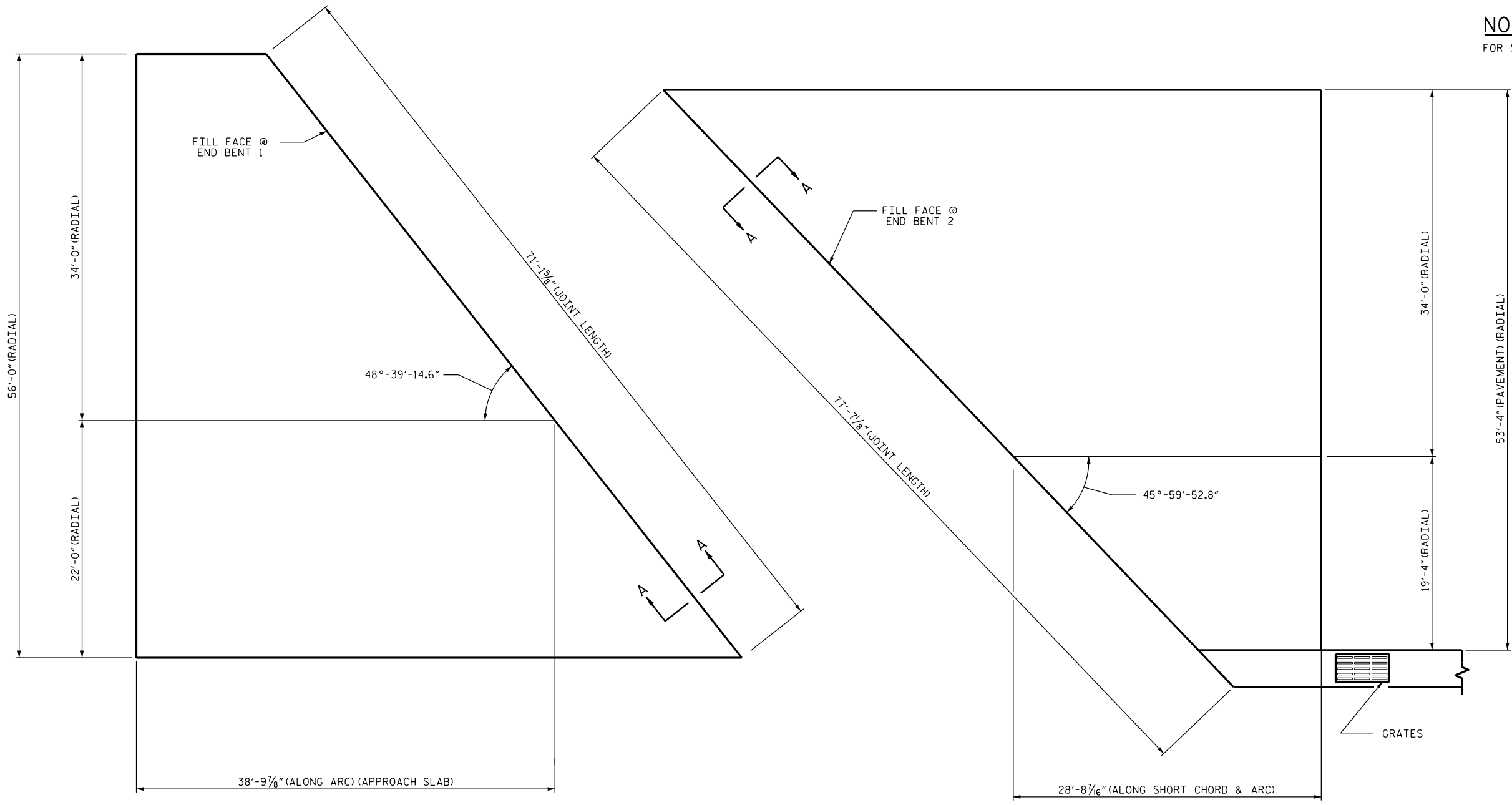
DRAWN BY : S. T. SANDOR DATE : 03/2016
 CHECKED BY : W. M. CLARKE DATE : 03/2016

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BRIDGE APPROACH SLAB QUANTITIES					
AT END BENT 1			AT END BENT 2		
	ESTIMATE	ACTUAL		ESTIMATE	ACTUAL
CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0 SQ. FT.		CONCRETE DECK REPAIR FOR EPOXY OVERLAY	0 SQ. FT.	
BRIDGE JOINT DEMOLITION	0 SQ. FT.		BRIDGE JOINT DEMOLITION	0 SQ. FT.	
EPOXY OVERLAY SYSTEM	1878 SQ. FT.		EPOXY OVERLAY SYSTEM	1909 SQ. FT.	

NOTE:
FOR SECTION A-A, SEE "JOINT DETAILS" SHEET, S-29.

 EPOXY OVERLAY



PLAN OF APPROACH SLAB AT END BENT 1

PLAN OF APPROACH SLAB AT END BENT 2

PROJECT NO. I-5789
GUILFORD COUNTY
BRIDGE NO. 144



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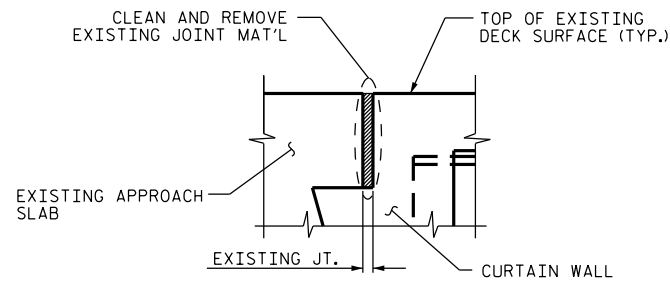
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**APPROACH SLABS AT
END BENTS #1 & #2**

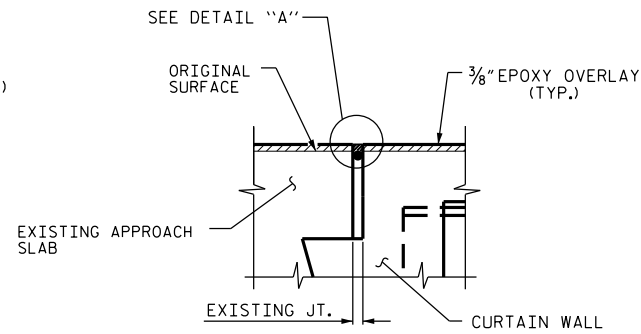
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			37

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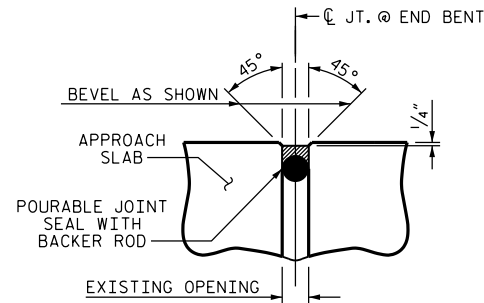
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EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION

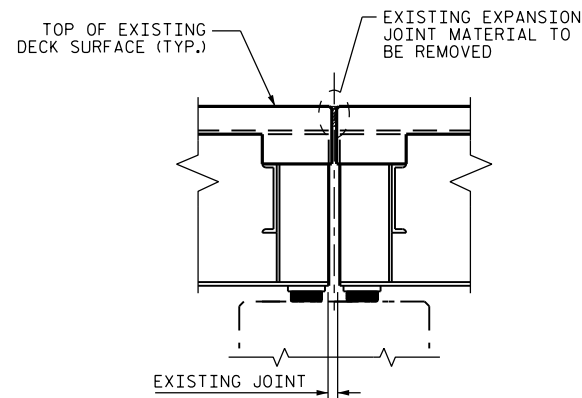


DETAIL "A"

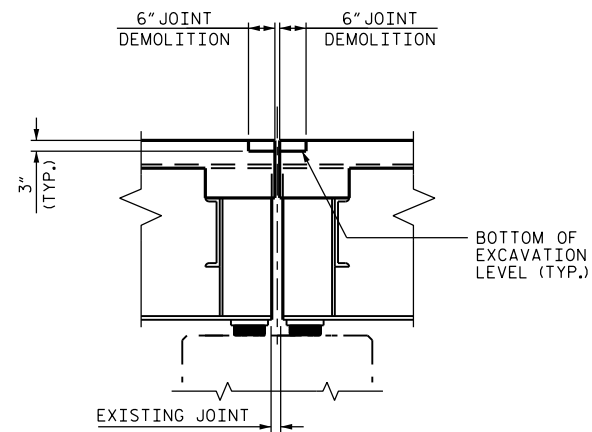
NOTES:

CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL.
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 FOR FOAM ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
 RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
 THE WIDTH OF UNCOMPRESSED FOAM JOINT SEAL SHALL BE 2\"/>

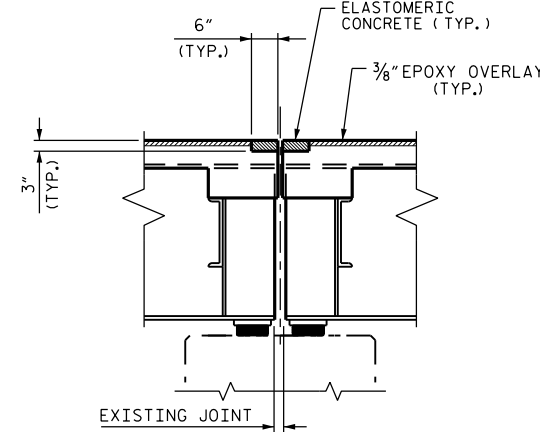
JOINT INSTALLATION SEQUENCE AT END BENTS
SECTION A-A



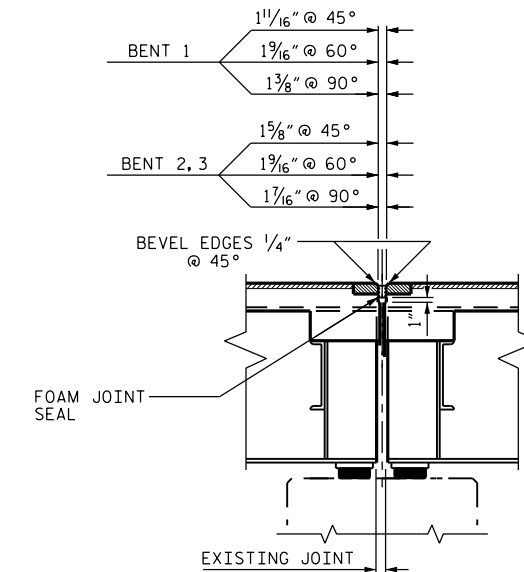
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION

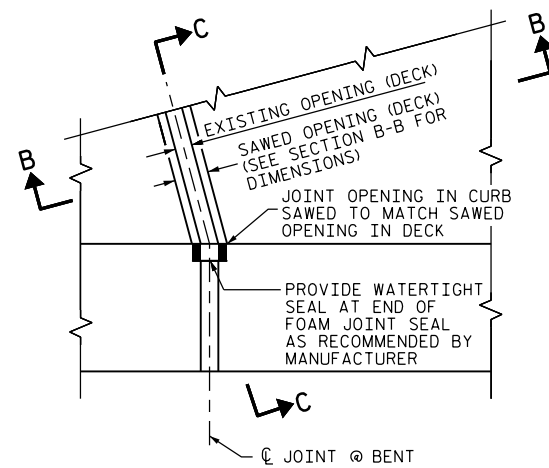


PROPOSED JOINT PRE-SAWED DIMENSIONS

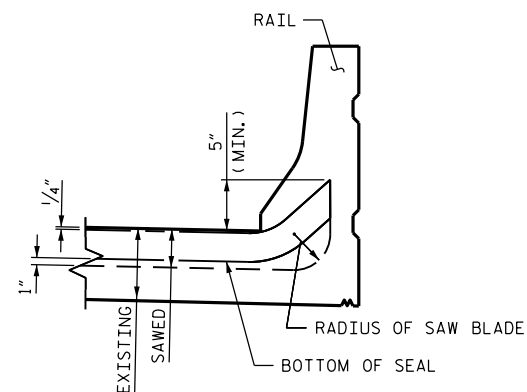


PROPOSED FOAM JOINT SEAL

JOINT INSTALLATION SEQUENCE AT BENTS
SECTION B-B



PLAN



SECTION C-C

ELASTOMERIC CONCRETE (CU. FT.)*	
BENT 1	18.8
BENT 2	18.9
BENT 3	19.2
TOTAL	56.9

* BASED ON THE MINIMUM BLOCKOUT SHOWN

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 GUILFORD COUNTY
 BRIDGE NO. 144

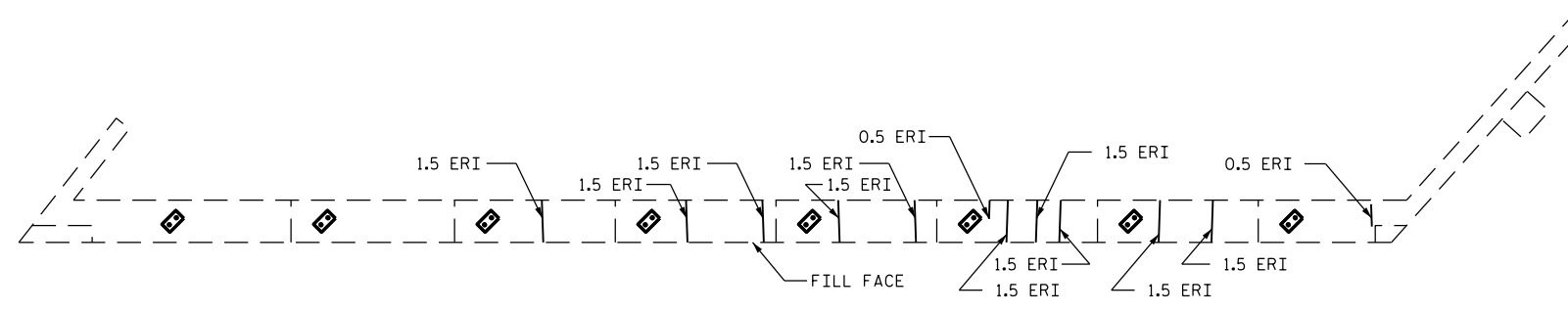
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 JOINT DETAILS**

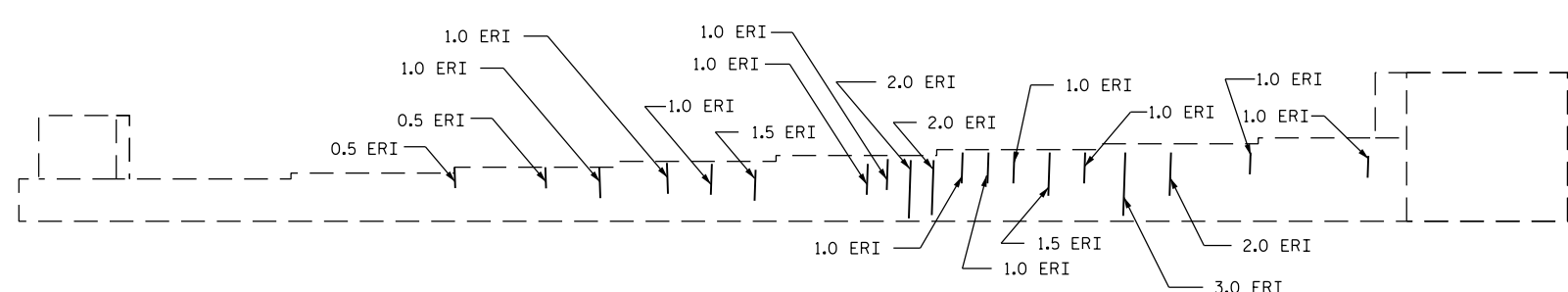
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 CHECKED BY : W. M. CLARKE DATE : 02/2016

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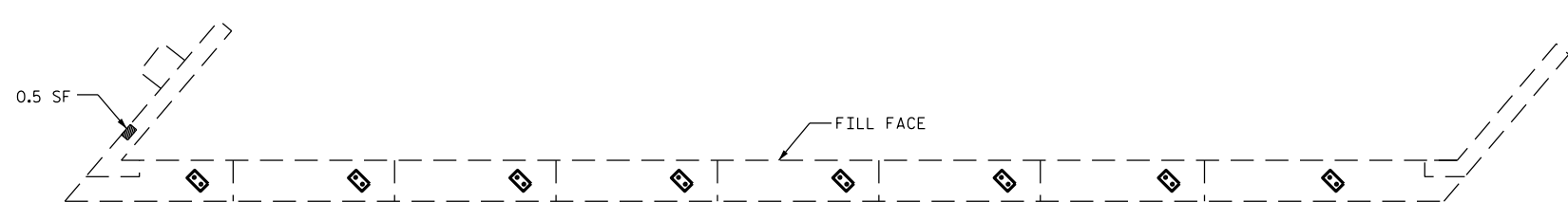
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-29
2			4			TOTAL SHEETS 37



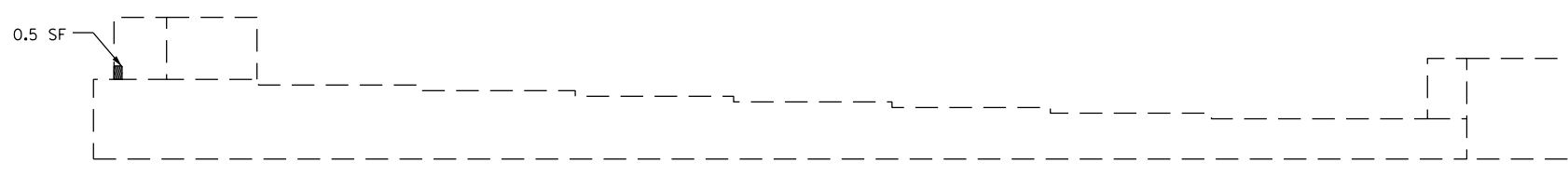
PLAN
END BENT 1




ELEVATION
END BENT 1



PLAN
END BENT 2



ELEVATION
END BENT 2

 SHOTCRETE REPAIRS
 ERI EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE

END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
CONCRETE REPAIR	0.0	0.0		
EPOXY RESIN INJECTION			LN. FT	LN. FT
CAP			40.0	
EPOXY COATING	AREA SF			
CAP	190.0			
END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	
CAP (VERTICAL FACE)	1.0	0.3		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
CONCRETE REPAIR	0.0	0.0		
EPOXY RESIN INJECTION			LN. FT	LN. FT
CAP			0.0	
EPOXY COATING	AREA SF			
CAP	201.0			

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

NOTES:

- REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.
- CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED.
- CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.
- SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.
- FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.
- FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.
- FOR REPAIR DETAILS, SEE TYPICAL CAP AND COLUMN REPAIR DETAILS SHEET.
- THE CONTRACTOR SHALL EPOXY COAT THE TOP SURFACE AREA OF THE ORIGINAL CAP ONLY.

PROJECT NO. I-5789
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 BRIDGE NO. 144

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SUBSTRUCTURE
 END BENT 1 & 2

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1			3			S-30
2			4			TOTAL SHEETS 37

REPAIR QUANTITY TABLE

BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	1.5	0.4		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIR	10.5	2.7		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		1.5		
COLUMN		0.0		
EPOXY COATING	AREA SF			
CAP	252.0			

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

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



FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL CAP AND COLUMN REPAIR DETAILS SHEET.

THE CONTRACTOR SHALL EPOXY COAT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

-  CONCRETE REPAIR
-  SHOTCRETE REPAIR
- ERI EPOXY RESIN INJECTION

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 144

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 1**

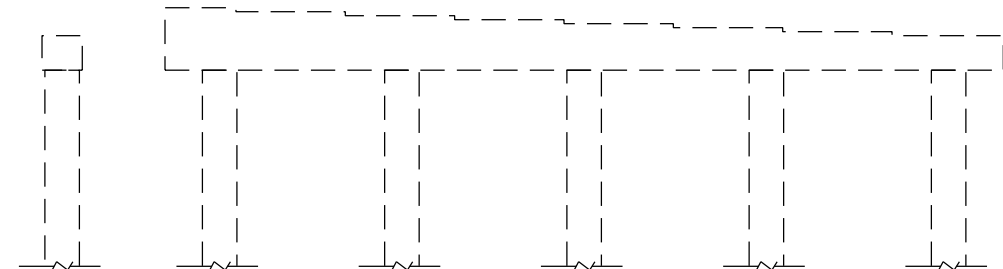
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			37
2			4			

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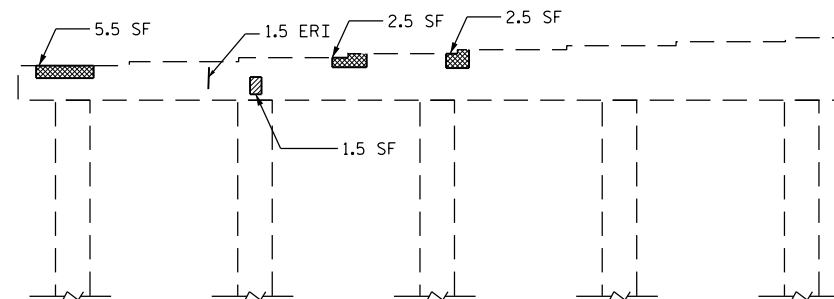
PLAN OF CAP
TOP



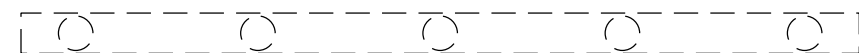
ELEVATION
EAST SIDE

ELEVATION
SOUTH SIDE

ELEVATION
WEST SIDE



ELEVATION
NORTH SIDE



PLAN OF CAP
BOTTOM

REPAIR QUANTITY TABLE

BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	2.0	0.5		
COLUMN (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIR	6.5	1.7		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		5.0		
COLUMN		0.0		
EPOXY COATING	AREA SF			
CAP	252.0			

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

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

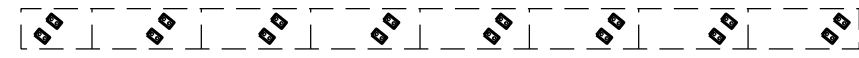
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

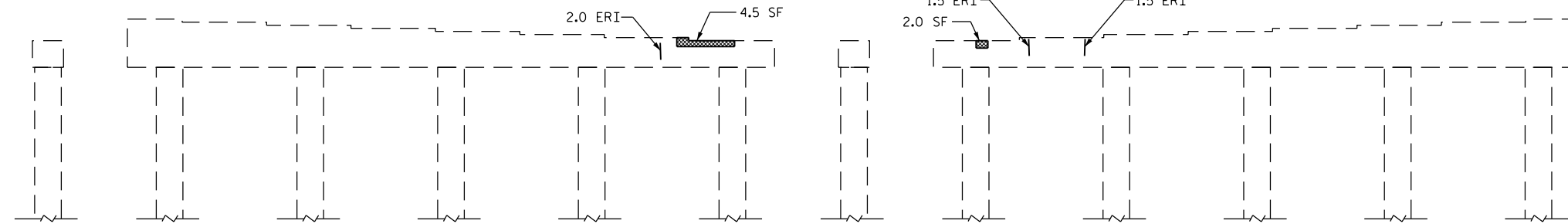
FOR REPAIR DETAILS, SEE TYPICAL CAP AND COLUMN REPAIR DETAILS SHEET.

THE CONTRACTOR SHALL EPOXY COAT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.



PLAN OF CAP
TOP

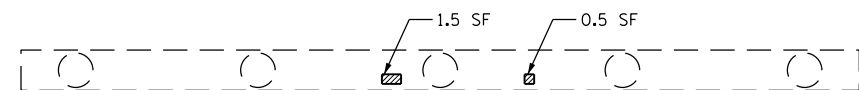


ELEVATION
EAST SIDE

ELEVATION
SOUTH SIDE

ELEVATION
WEST SIDE

ELEVATION
NORTH SIDE



PLAN OF CAP
BOTTOM

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI EPOXY RESIN INJECTION

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 144

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			

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REPAIR QUANTITY TABLE

BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIR	5.0	1.3		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		5.0		
COLUMN		0.0		
EPOXY COATING	AREA SF			
CAP	258.0			

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

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

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

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



FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR REPAIR DETAILS, SEE TYPICAL CAP AND COLUMN REPAIR DETAILS SHEET.

THE CONTRACTOR SHALL EPOXY COAT THE TOP SURFACE OF BENT CAPS AFTER ALL BEARING REPAIRS ARE COMPLETED, AS A FINAL FINISH.

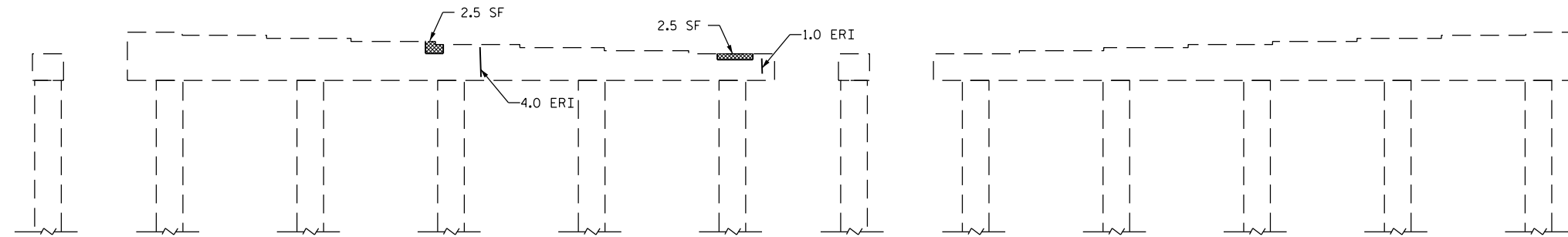
FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

-  CONCRETE REPAIR
-  SHOTCRETE REPAIR
- ERI EPOXY RESIN INJECTION

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 144



PLAN OF CAP
TOP

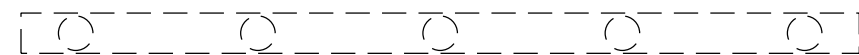


ELEVATION
EAST SIDE

ELEVATION
SOUTH SIDE

ELEVATION
WEST SIDE

ELEVATION
NORTH SIDE



PLAN OF CAP
BOTTOM

DocuSigned by:
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 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE
BENT 3

DRAWN BY : H.F. YEUNG / S.T. SANDOR DATE : 01/2016
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			37
2			4			

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NOTE

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

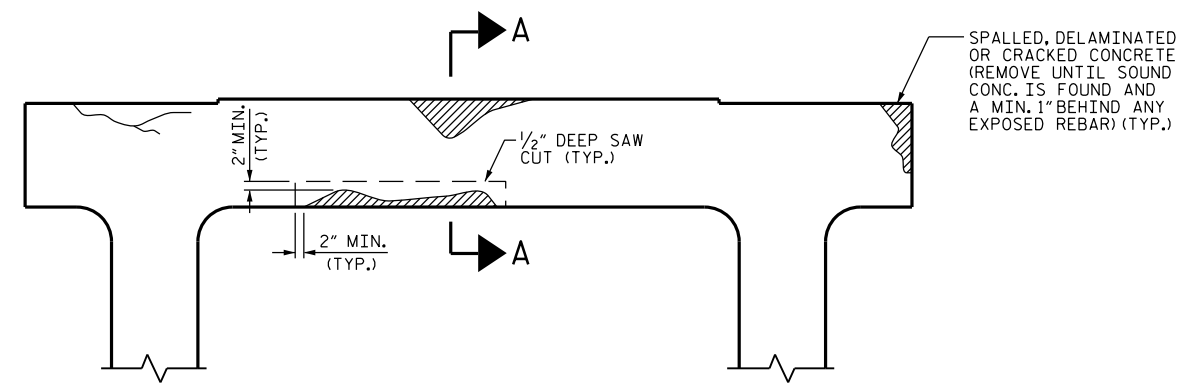
CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

CONTRACTOR SHALL SAW CUT THE REPAIR AREAS SO THAT THE CORNERS ARE SQUARE AS INDICATED ON THE DETAILS.

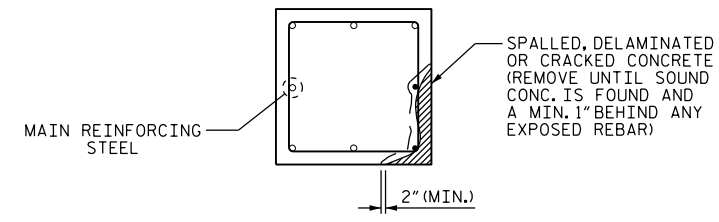
CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

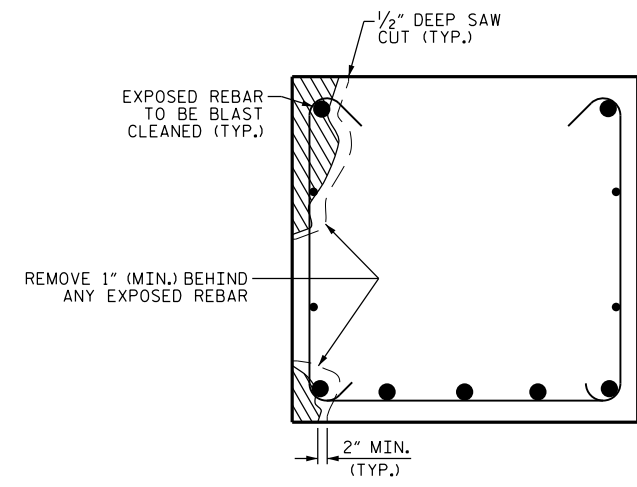
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.



BENT CAP REPAIRS

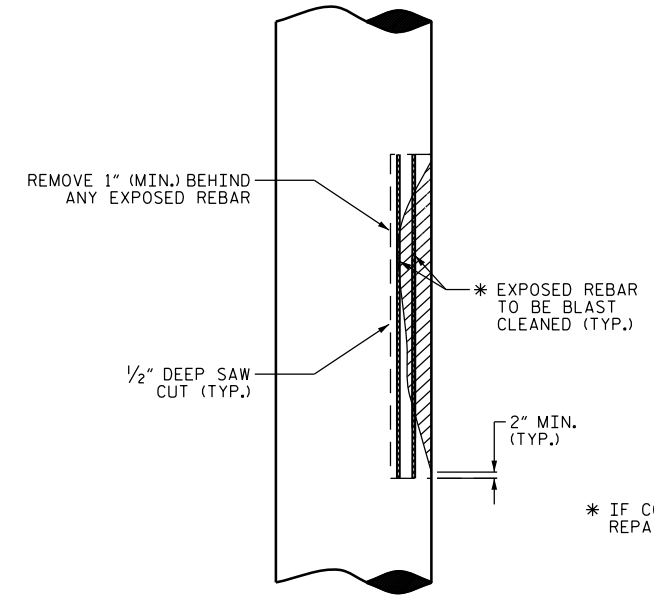


PLAN OF COLUMN



SECTION THRU CAP
(EXAMPLE ONLY, ACTUAL REBAR SIZES & LOCATIONS MAY VARY)

CAP REPAIR



ELEVATION OF CAP

COLUMN REPAIR

PROJECT NO. I-5789
GUILFORD COUNTY
 BRIDGE NO. 142 & 144

DocuSigned by:
W. Matthew Clarke
 1EB20097EAAF437...



3/31/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 TYPICAL CAP AND COLUMN
 REPAIR DETAILS

DRAWN BY : S. T. SANDOR DATE : 02/2016
 CHECKED BY : W. M. CLARKE DATE : 02/2016

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS
2			4			37

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 2012 "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 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 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 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 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

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

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

HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. 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

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