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PROJECT: B-5936

CONTRACT: C203875

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

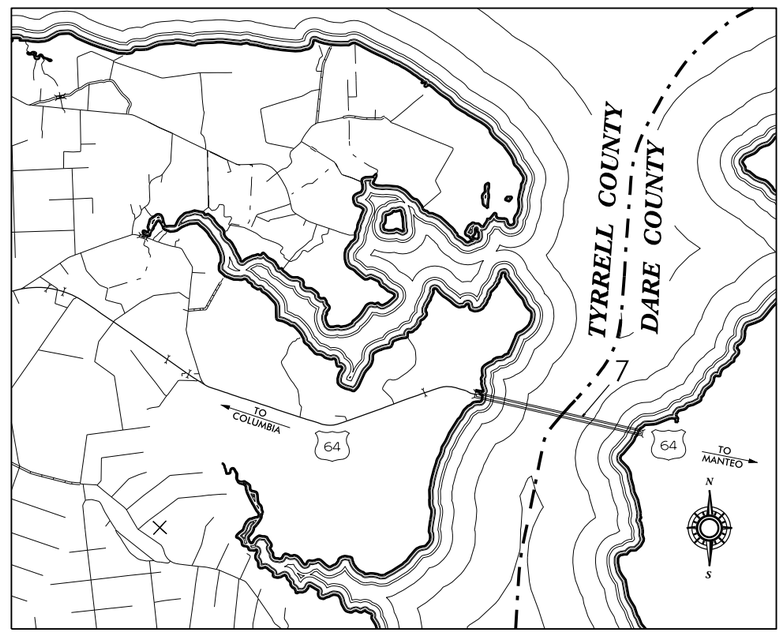
# TYRRELL AND DARE COUNTIES

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| N.C. | B-5936 | 1 | |

| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION |
|---|---|---|
| 46478.1.1 | — | P.E. |
| 46478.3.1 | — | CONSTR. |

**LOCATION:** TYRRELL AND DARE COUNTIES:
BRIDGE #7 OVER ALLIGATOR RIVER ON US 64

**TYPE OF WORK:** BRIDGE PRESERVATION WITH EPOXY DECK OVERLAY, JOINT REPLACEMENT, CONCRETE SUPERSTRUCTURE & SUBSTRUCTURE REPAIR, CLEANING AND PAINTING EXISTING BEARINGS, PILE JACKETING REPAIR, PIVOT PIER PILE REPAIR AND MECHANICAL AND ELECTRICAL REHABILITATION OF SWING SPAN.




VICINITY MAP – TYRRELL & DARE CO.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

**DESIGN DATA**

BRIDGE
#7 ADT 2011 = 3600

**PROJECT LENGTH**

BRIDGE
#7 = 2.828 MILE

Prepared in the Office of:
**DEPARTMENT OF TRANSPORTATION**
**DIVISION OF HIGHWAYS**
STRUCTURES MANAGEMENT UNIT – PRESERVATION & REPAIR GROUP
1000 BIRCH RIDGE DR. RALEIGH, N.C. 27610

MACK BAILEY, PE
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:
NOVEMBER 15, 2016

DocuSigned by:
AD50B1D97749...
NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL
10/12/2016

TIMOTHY M. SHERRILL, PE
PROJECT DESIGN ENGINEER

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| N.C. | B-5936 | 1A | |

| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION |
|---|---|---|
| 46478.1.1 | — | P.E. |
| 46478.3.1 | — | CONSTR. |

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

# *TYRRELL COUNTY*

***LOCATION:*** ***TYRRELL COUNTY:***
***BRIDGE #7 OVER ALLIGATOR RIVER ON US 64***

***TYPE OF WORK:*** ***BRIDGE PRESERVATION WITH EPOXY DECK OVERLAY, JOINT REPLACEMENT, CONCRETE SUPERSTRUCTURE & SUBSTRUCTURE REPAIR, PILE JACKETING REPAIR, PIVOT PIER PILE REPAIR AND MECHANICAL AND ELECTRICAL REHABILITATION OF SWING SPAN.***

## *INDEX OF SHEETS*


| | |
|---|---|
| *1* | *TITLE SHEET* |
| *1A* | *INDEX OF SHEETS* |
| *S–1* | *TOTAL BILL OF MATERIALS* |
| *S–2 THRU S–392* | *STRUCTURAL PLANS – TYRRELL #7* |
| *SN* | *STANDARD NOTES* |
| *SA–1 THRU SA–3* | *PIVOT PIER PILE REPAIR PLANS* |
| *G–1 THRU M–23* | *MECHANICAL AND ELECTRICAL PLANS* |
| *TMP–1 THRU TMP–6* | *TRANSPORTATION MANAGEMENT PLANS* |
| *PMP–1 THRU PMP–2* | *PAVEMENT MARKING PLANS* |

## ✳ TOTAL BILL OF MATERIAL

| BRIDGE | MOBILIZATION | INCIDENTAL MILLING | ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B | ASPHALT BINDER FOR PLANT MIX | △ REINFORCING STEEL | SHOTCRETE REPAIRS | EPOXY RESIN INJECTION | BRIDGE JOINT REMOVAL | PILE JACKETS | REJACKETS | SILICONE JOINT SEALANT | CONCRETE DECK REPAIR FOR EPOXY OVERLAY | EPOXY OVERLAY SYSTEM-MECHANICALLY DISTRIBUTED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LUMP SUM | SQ.YDS. | TONS | TONS | LBS. | CU. FT. | LIN. FT. | LIN. FT. | LIN. FT. | LIN. FT. | LIN. FT. | SQ. FT. | SQ. FT. |
| TYRRELL #7 | LUMP SUM | 267 | 22.5 | 1.5 | 10 | 1,363.5 | 98.1 | 9,429 | 7,013.5 | 438 | 9,489 | 473 | 387,507 |

✳ EXCLUDES BILL OF MATERIAL FOR PIVOT PIER PILE REPAIRS AND FOR MECHANICAL AND ELECTRICAL PLANS, SEE SHT'S SA-1 THRU SA-3 AND SHT'S G-1 THRU M-23.

△ REINFORCING STEEL QUANTITY IS NOT ANTICIPATED, A TOKEN PAY ITEM IS INDICATED FOR PRICING PURPOSES, IN CASE UNANTICIPATED REPAIRS ARE ENCOUNTERED.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Robbie Weisz 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TOTAL BILL OF MATERIAL

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-1 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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DRAWN BY : S. T. SANDOR DATE : 06/2016
CHECKED BY : R. N. WEISZ DATE : 06/2016

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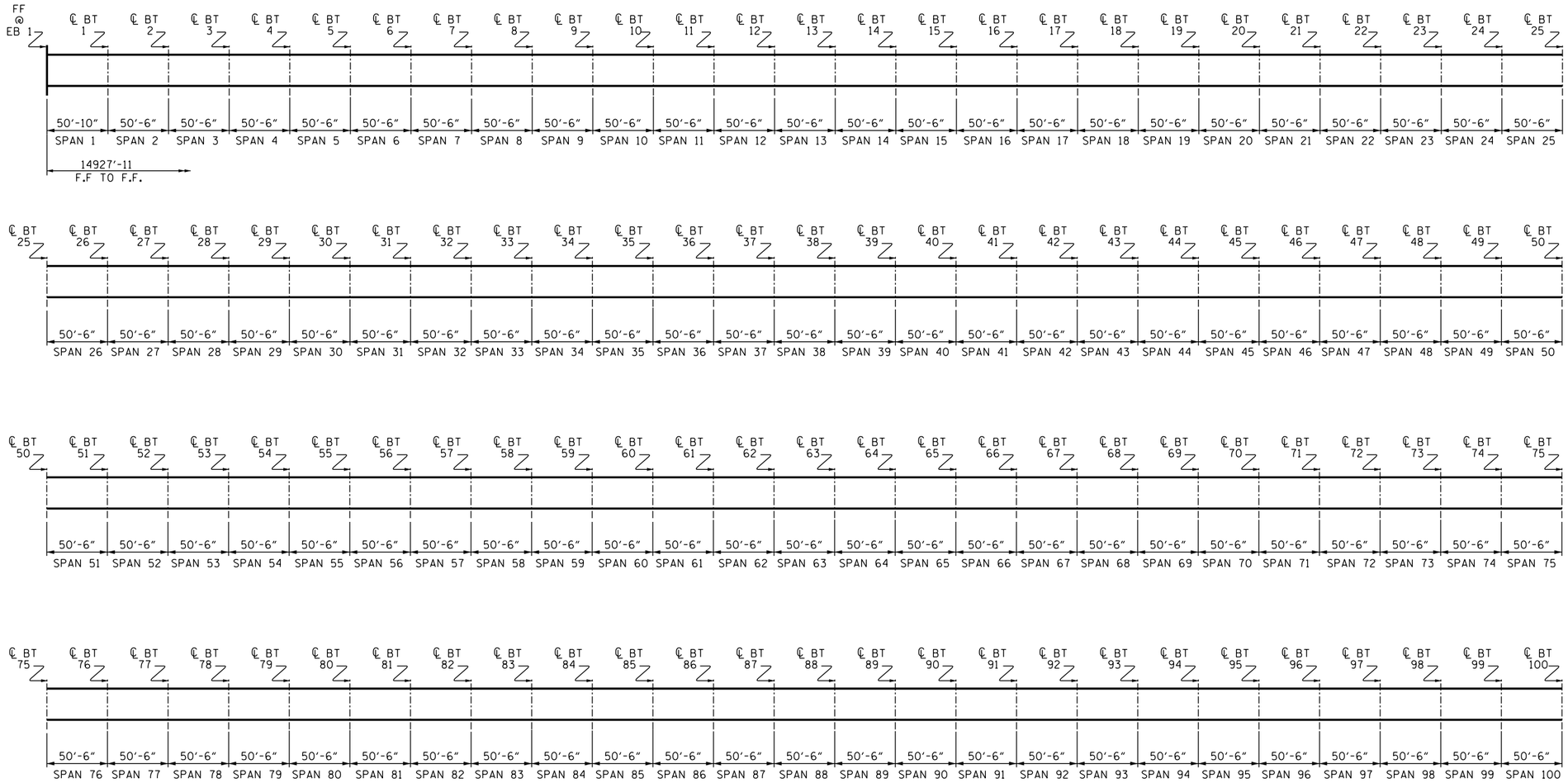


## SCOPE OF WORK:

REMOVE AND REPAIR UNSOUND CONCRETE ON BRIDGE DECK.
REMOVE EXISTING BRIDGE DECK JOINT MATERIAL.
INSTALL NEW SILICONE JOINT SEALS.
PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SHOTBLAST METHOD.
OVERLAY PREPARED BRIDGE DECK WITH EPOXY OVERLAY SYSTEM.
EPOXY INJECTION OF CONCRETE CRACKS.
PERFORM SHOTCRETE REPAIRS.
REPAIR PILES WITH NEW PILE JACKETS OR REJACKET PILES.
REPAIR PIVOT PIER PILES.
MECHANICAL AND ELECTRICAL REHABILITATION.
MILL AND PAVE ASPHALT APPROACHES.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# GENERAL DRAWING BRIDGE #7 ON US64 OVER THE ALLIGATOR RIVER

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
Robbie Weisz 10/2016
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SHEET NO. S-2
TOTAL SHEETS 394

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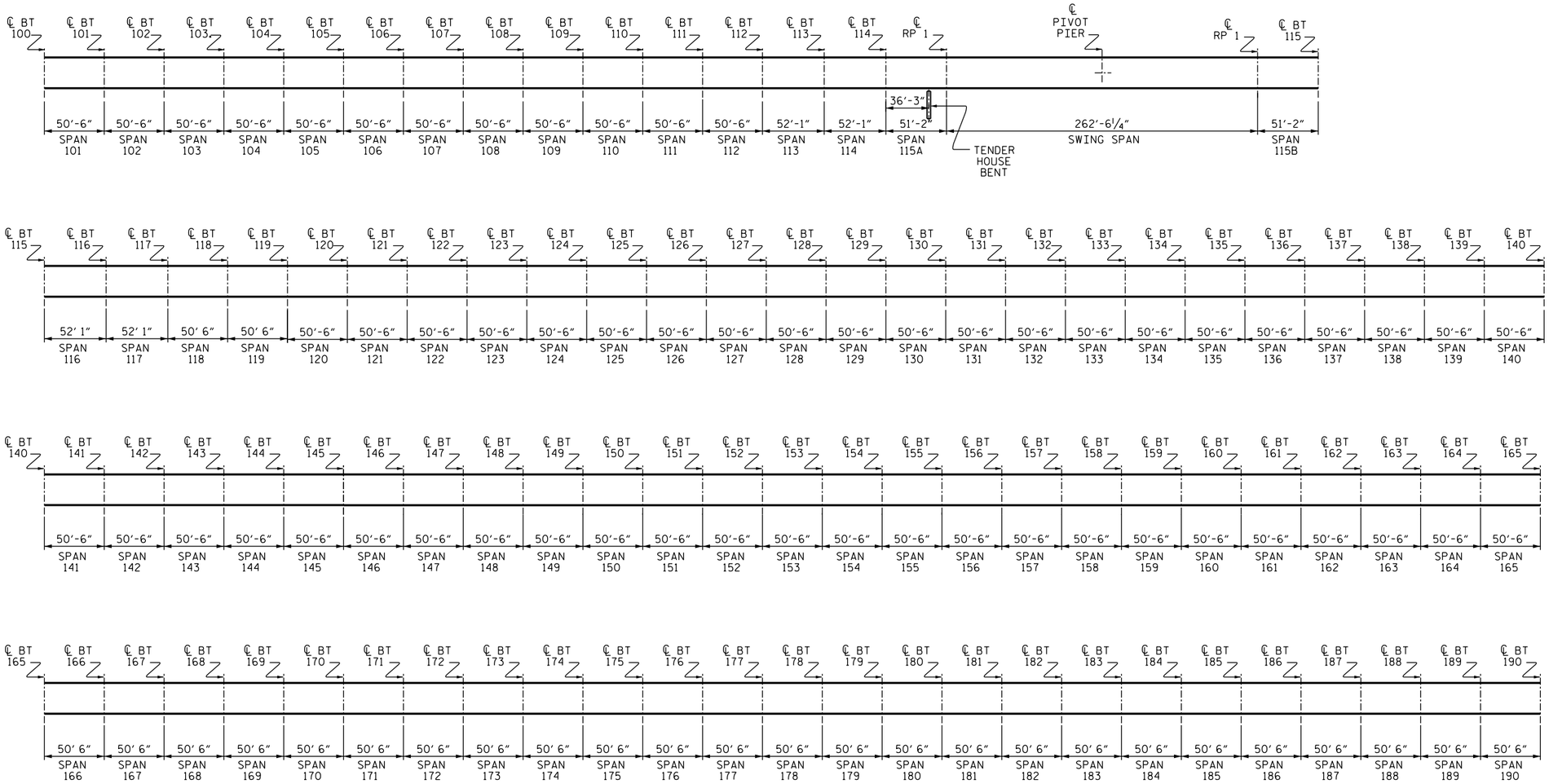


**PROJECT NO.** B-5936

TYRRELL **COUNTY**

**BRIDGE NO.** 7

SHEET 2 OF 3

STATE OF NORTH CAROLINA
**DEPARTMENT OF TRANSPORTATION**
RALEIGH

# GENERAL DRAWING BRIDGE #7 ON US64 OVER THE ALLIGATOR RIVER

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
Robbie Weisz 8/10/2016
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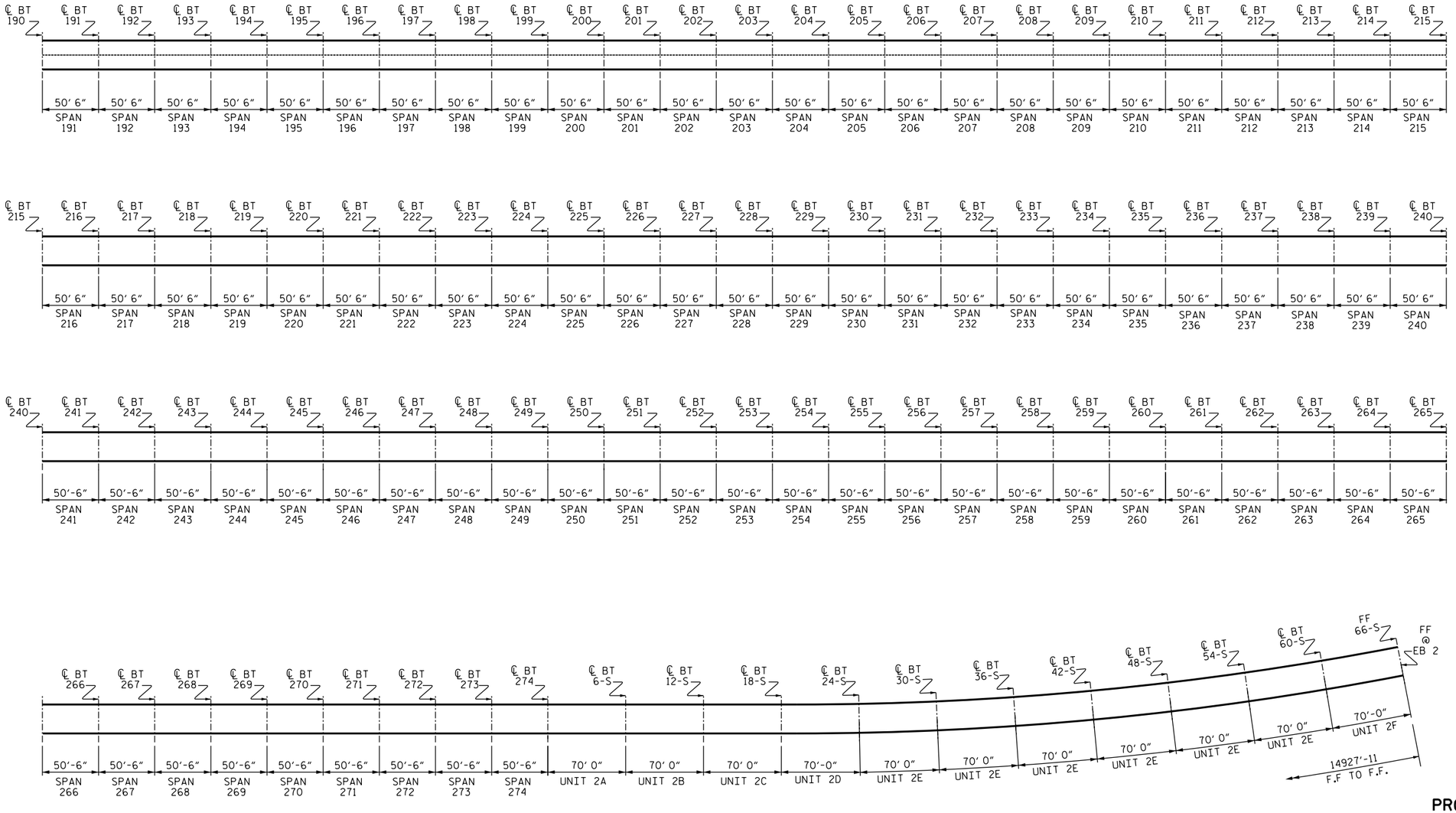





**PROJECT NO.** B-5936

TYRRELL **COUNTY**

**BRIDGE NO.** 7

SHEET 3 OF 3

STATE OF NORTH CAROLINA
**DEPARTMENT OF TRANSPORTATION**
RALEIGH

# GENERAL DRAWING BRIDGE #7 ON US64 OVER THE ALLIGATOR RIVER

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
Robbie Weisz 8/10/2016
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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-4 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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## 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

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

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

ROADWAY MILLING IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL MILL AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF BRIDGE.

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

FOR OVERLAY OF BRIDGE WITH EPOXY OVERLAY SYSTEM- MECHANICALLY DISTRIBUTED, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR PILE JACKETS, SEE SPECIAL PROVISIONS.

FOR REJACKETS, 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 REMOVAL, 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.

FOR SECURING VESSELS, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF WATER TRAFFIC, SEE SPECIAL PROVISIONS.

FOR WORK IN, OVER, OR ADJACENT TO NAVIGABLE WATERS, SEE SPECIAL PROVISIONS.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
Robbie Weisz 8/10/2016
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE #7 ON US64
OVER THE ALLIGATOR
RIVER

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-5 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : S. T. SANDOR DATE : 06/2016
CHECKED BY : R. N. WEISZ DATE : 06/2016

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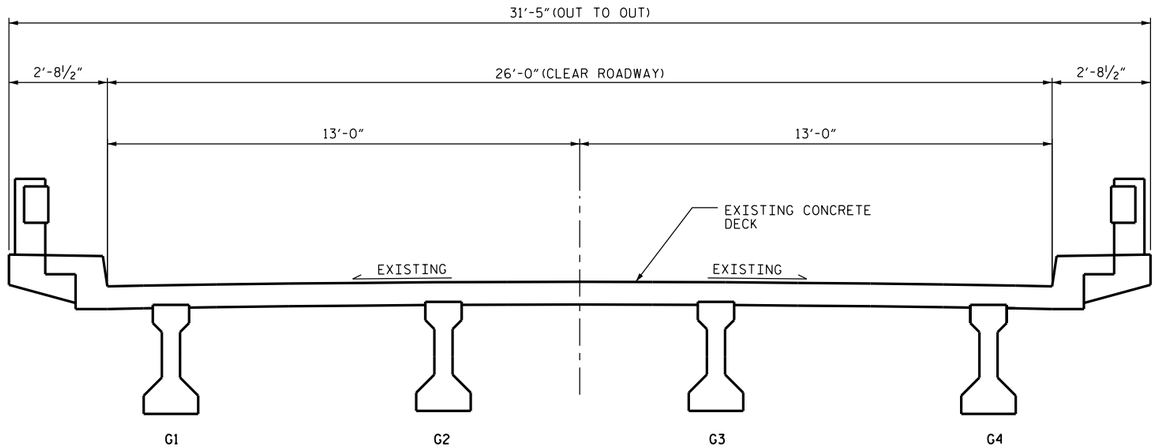
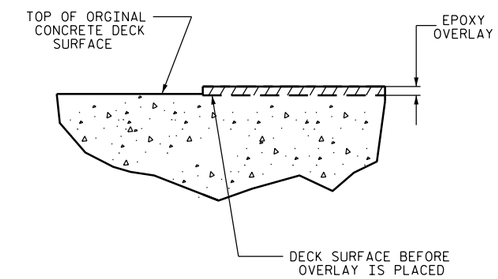
NOTE:
SEE TRAFFIC MANAGEMENT PLANS FOR TRAFFIC STAGING AND WORK ZONE DIMENSIONS.

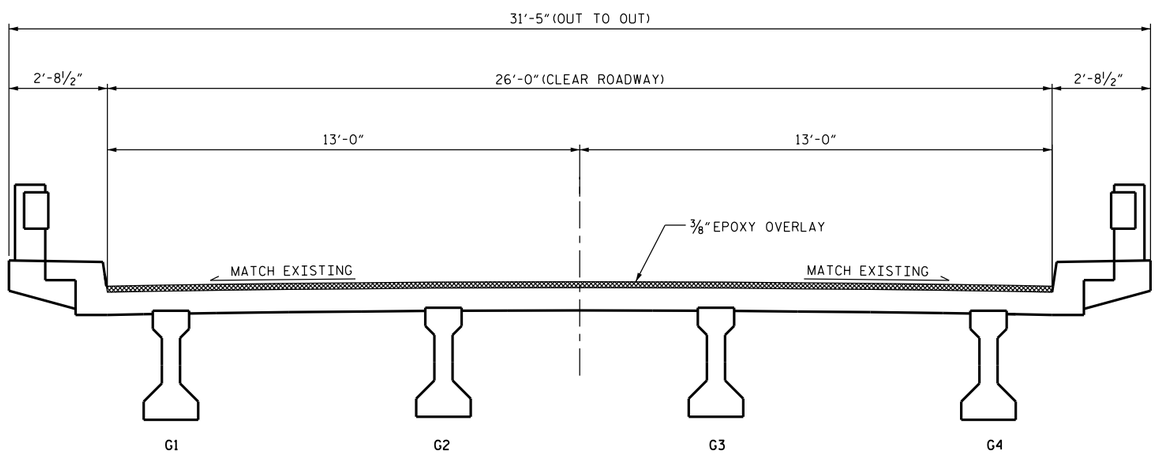



## TYPICAL SECTION

(EXISTING) (LOOKING EAST)
(BENTS WITH MORE GIRDERS FOLLOW SIMILAR PATTERN)




## DETAIL FOR EPOXY OVERLAY




## TYPICAL SECTION

(PROPOSED) (LOOKING EAST)
(BENTS WITH MORE GIRDERS FOLLOW SIMILAR PATTERN)

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# TYPICAL SECTION & OVERLAY DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
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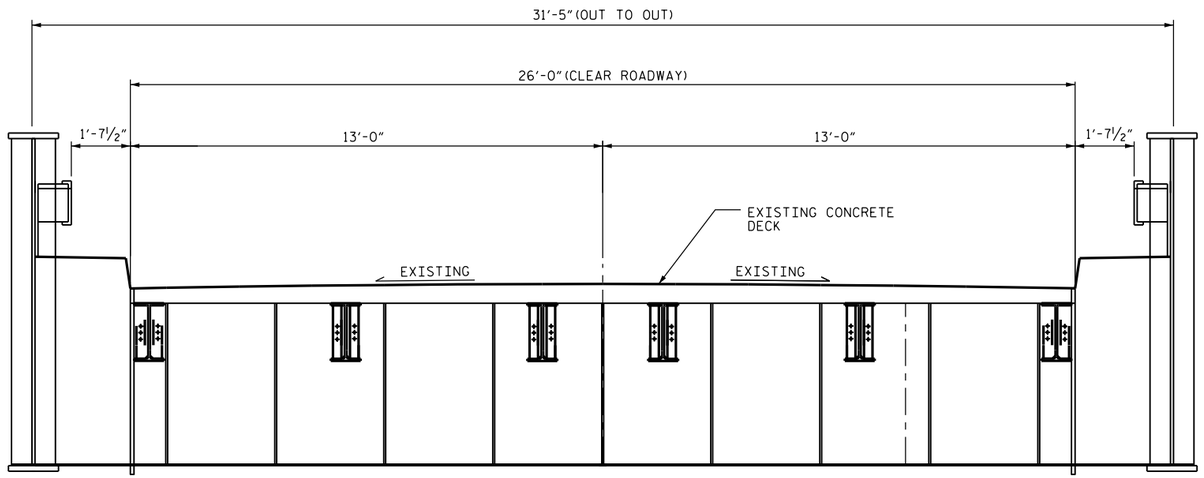
NOTE:
SEE TRAFFIC MANAGEMENT PLANS FOR TRAFFIC STAGING AND WORK ZONE DIMENSIONS.

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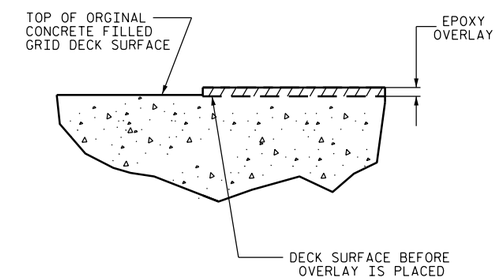
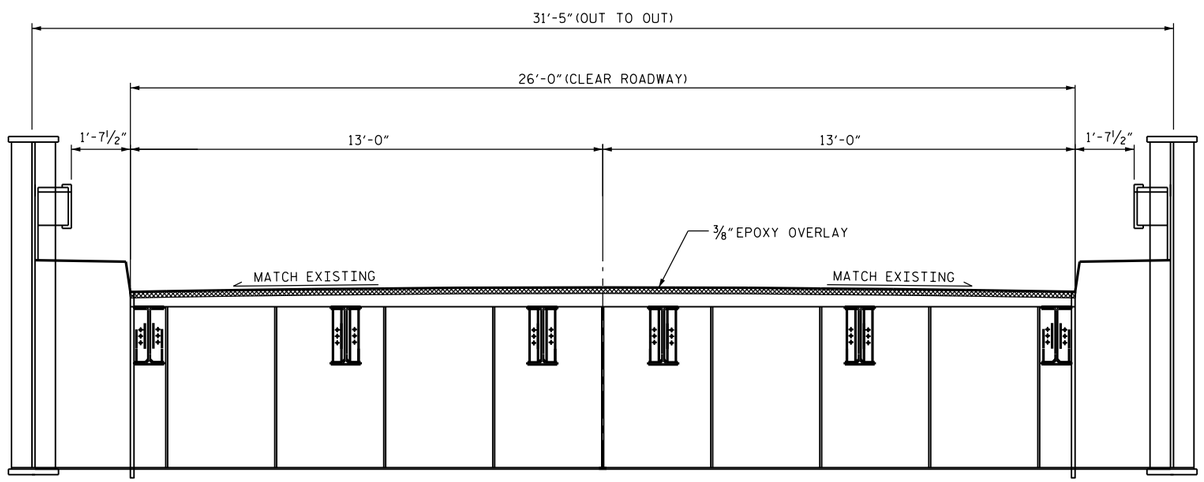



## DETAIL FOR EPOXY OVERLAY




## TYPICAL SECTION

(PROPOSED) (LOOKING EAST)

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# TYPICAL SECTION & OVERLAY DETAILS (SWING SPAN)

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

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Robbie Weisz 10/2016
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| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-7 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

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pbryant

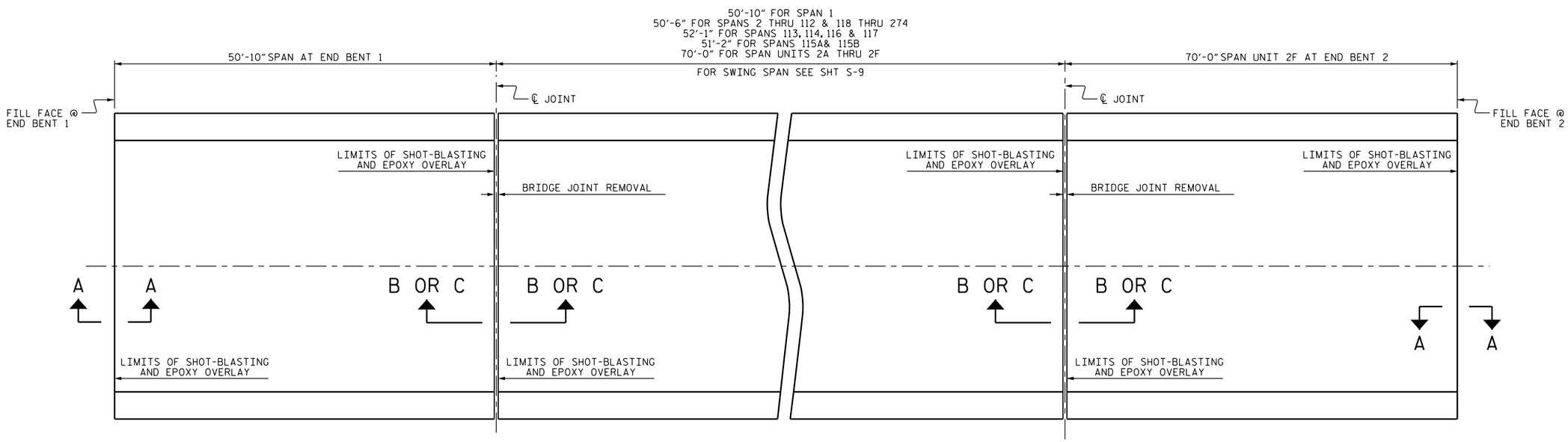
| SUMMARY OF QUANTITIES | | |
|---|---|---|
| | ESTIMATE | ACTUAL |
| EPOXY OVERLAY SYSTEM-MECHANICALLY DISTRIBUTED | 380684 SF | |

NOTES:

FOR SECTION A-A, B-B, AND C-C SEE SHEET S-10 & S-11.

UNSOUND CONCRETE AND EXISTING ELASTOMERIC HEADERS SHALL BE REMOVED PRIOR TO EPOXY OVERLAY PLACEMENT, SEE SHT S-11.

FOR CONCRETE DECK REPAIRS PRIOR TO EPOXY OVERLAY PLACEMENT, SEE SHT'S S-12 THRU S-15.




PLAN

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SURFACE PREPARATION AND EPOXY OVERLAY

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant 8/10/2016
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| REVISIONS | | | | | | SHEET NO. |
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| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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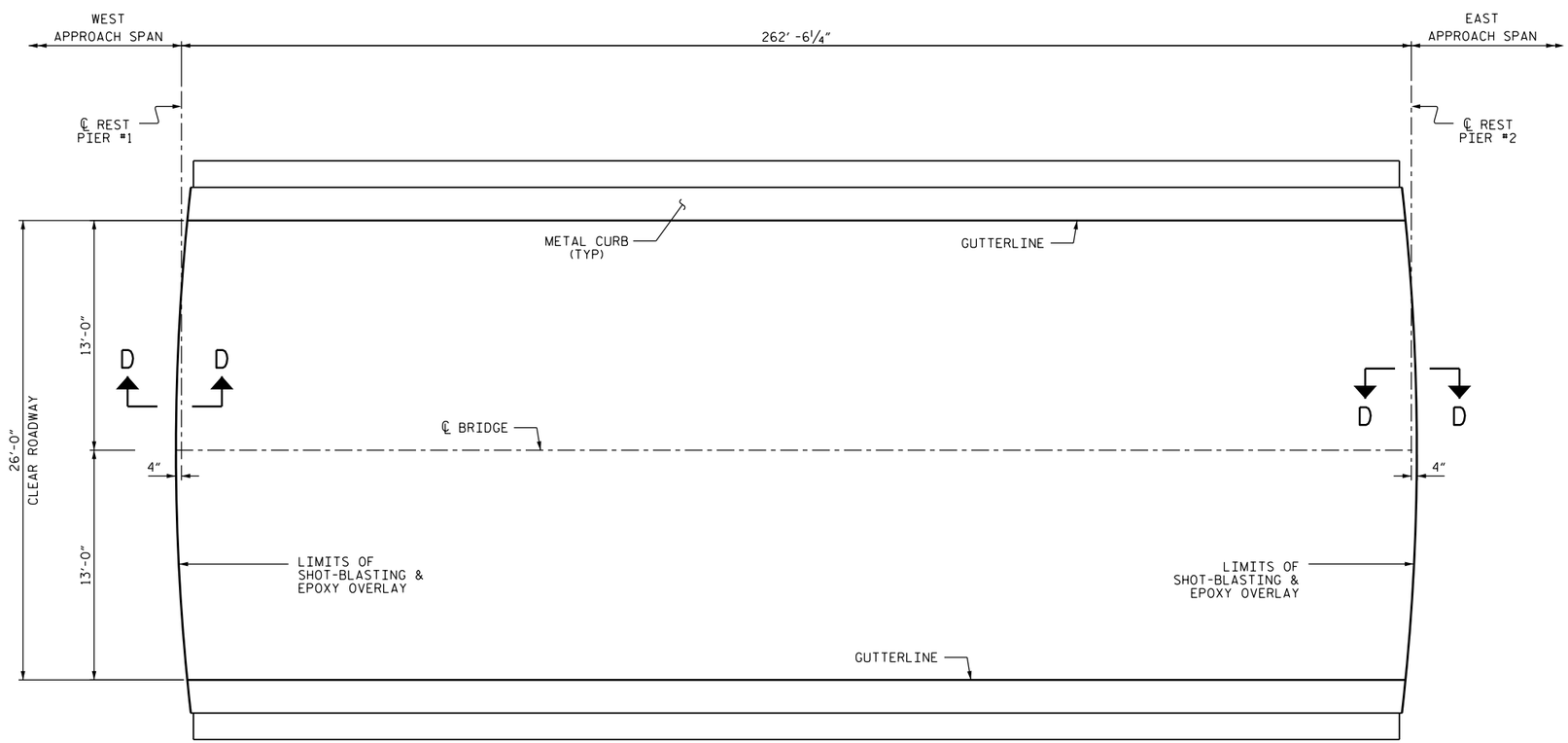
| SUMMARY OF QUANTITIES | | |
|---|---|---|
| | ESTIMATE | ACTUAL |
| EPOXY OVERLAY SYSTEM- MECHANICALLY DISTRIBUTED | 6823 SF | |

NOTES:
FOR SECTION D-D, SEE SHEET S-11.




PLAN OF SWING SPAN

PROJECT NO. B-5936
TYRRELL COUNTY
STATION: 7

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

# SURFACE PREPARATION AND EPOXY OVERLAY

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant 8/10/2016
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SHEET NO. S-9
TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 06-2016
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## NOTES:

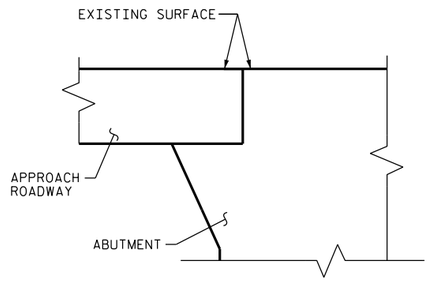
FOR SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR SECTIONS C-C AND D-D SEE "JOINT DETAILS" SHEET NO. 2 OF 2.

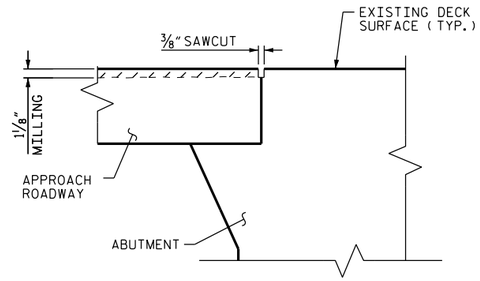
FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS.

FOR EPOXY OVERLAY SYSTEM- MECHANICALLY DISTRIBUTED, SEE SPECIAL PROVISIONS.

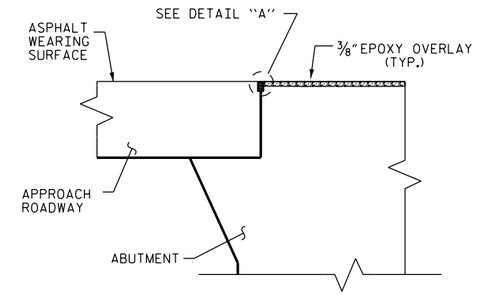
FOR BRIDGE JOINT REMOVAL, SEE SPECIAL PROVISIONS.




EXISTING

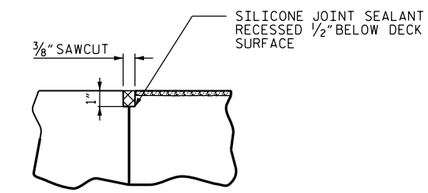



MINIMUM EXISTING JOINT DEMOLITION

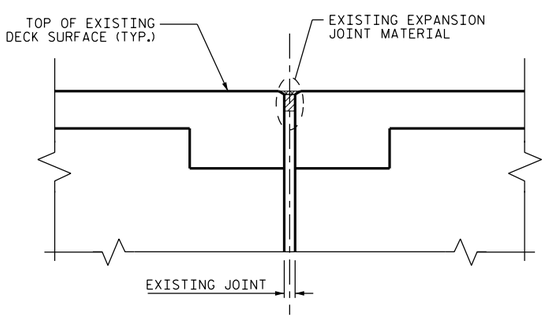



PROPOSED JOINT

SECTION A-A




DETAIL "A"

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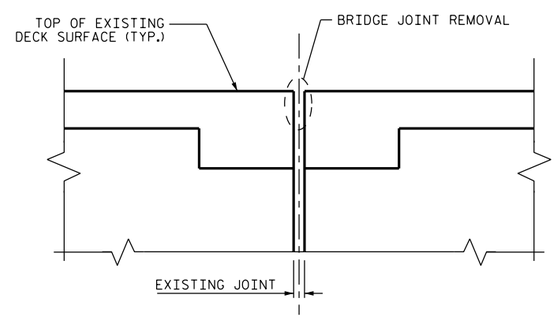
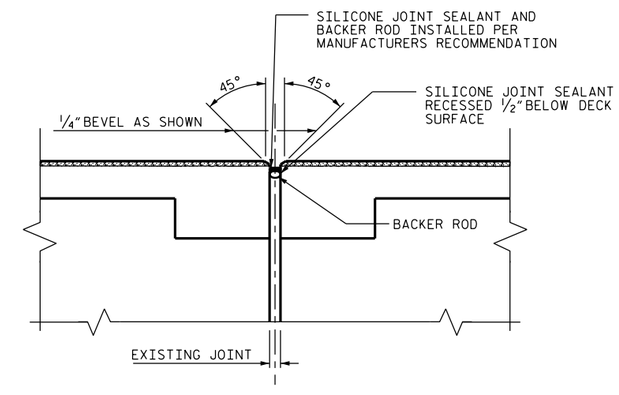



MINIMUM EXISTING JOINT DEMOLITION




PROPOSED JOINT

SECTION B-B

**PROJECT NO.** B-5936

TYRRELL **COUNTY**

**BRIDGE NO.** 7

SHEET 1 OF 2

STATE OF NORTH CAROLINA
**DEPARTMENT OF TRANSPORTATION**
RALEIGH

SUPERSTRUCTURE

JOINT DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

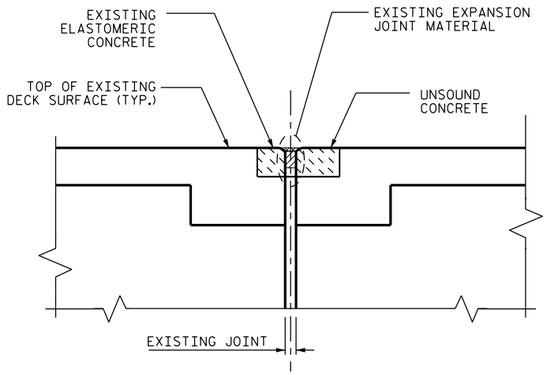
DocuSigned by:
Robbie Weisz 8/10/2016
CEA153463B6D43D...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-10 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : S. T. SANDOR DATE : 05/2016
CHECKED BY : R. N. WEISZ DATE : 05/2016

28-JUL-2016 09:32
R:\Structures\FINAL DGNS\401_017_B5936_SMU_S10-S11_JT.DGN
ssandor

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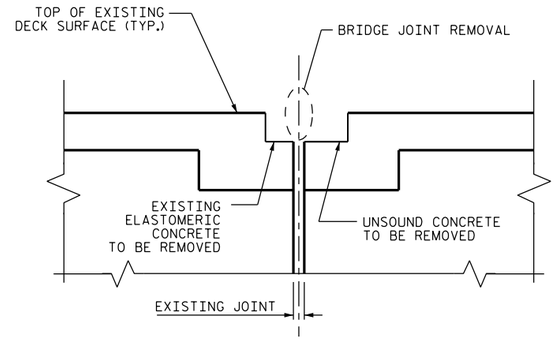


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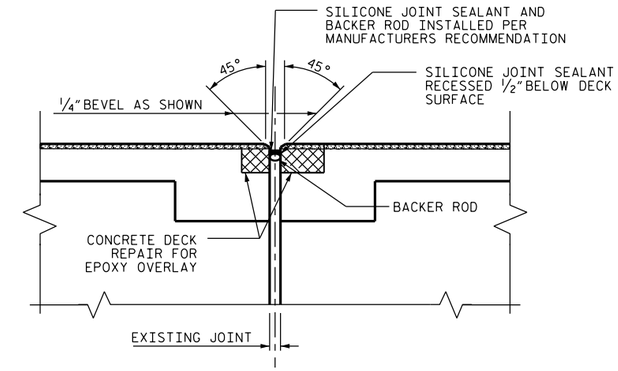
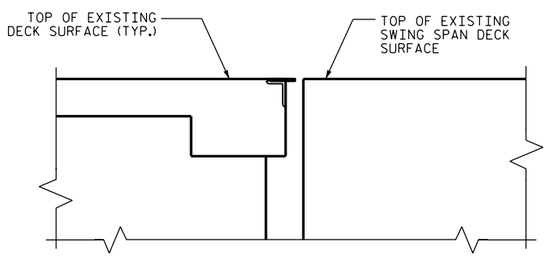



PROPOSED JOINT

## SECTION C-C

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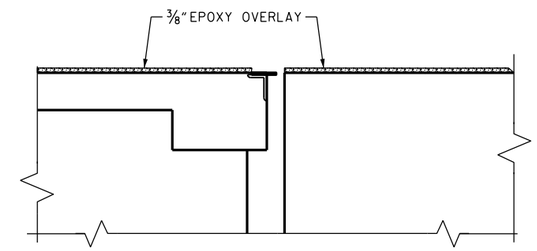
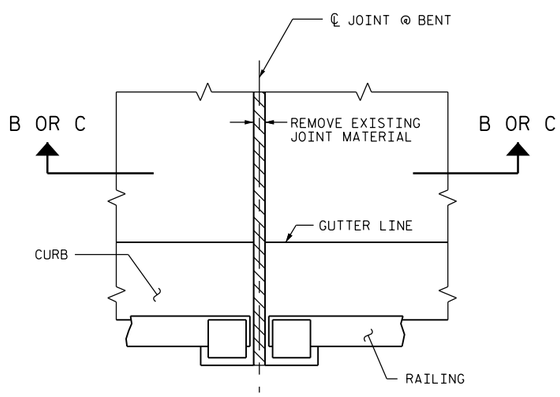



PROPOSED

## SECTION D-D

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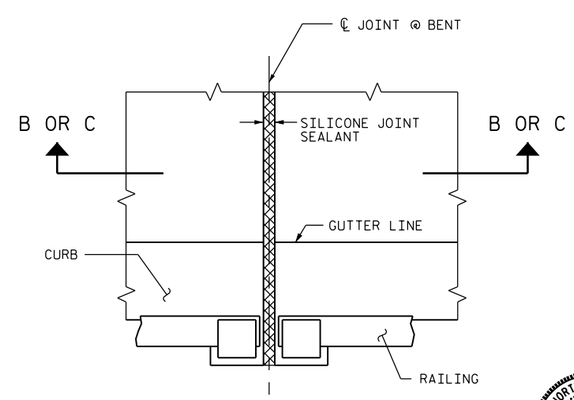


PROPOSED SILICONE JOINT

## JOINT SEAL DETAILS AT BENT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
JOINT DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by: Robbie Weisz 8/10/2016
CEA153463B6D43D...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-11 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : S. T. SANDOR DATE : 05/2016
CHECKED BY : R. N. WEISZ DATE : 05/2016

15-JUL-2016 09:13
R:\Structures\401_017_B5936_SMU_S10_S-11_JT.DGN
ssandor

| DECK REPAIRS | | | | |
|---|---|---|---|---|
| SPAN | LOCATION (SEE NOTES) | | REPAIR SIZE | |
| | LENGTH ALONG SPAN | DISTANCE FROM RT GTR LINE | EST. SF | ACTUAL SF |
| 1 | 9′ | 13′ | 0.1 | |
| 1 | 10′ | 13′ | 0.1 | |
| 1 | 12′ | 5′ | 0.2 | |
| 1 | 25′ | 9′ | 0.1 | |
| 1 | 26′ | 8′ | 0.1 | |
| 1 | 27′ | 7′ | 0.1 | |
| 1 | 30′ | 11′ | 0.1 | |
| 1 | 40′ | 20′ | 0.1 | |
| 1 | EB1 | 15′ | 10.0 | |
| 1 | EB1 | 24′ | 20 | |
| 2 | 14′ | 15′ | 0.2 | |
| 2 | 38′ | 7′ | 0.1 | |
| 5 | 50′ | 11′ | 0.1 | |
| 7 | BT 7 JT | 18′ | 0.6 | |
| 7 | BT 7 JT | 3′ | 3.3 | |
| 8 | BT 8 JT | 24′ | 5.2 | |
| 8 | BT 8 JT | 9′ | 2.4 | |
| 11 | 42′ | 11′ | 0.6 | |
| 11 | BT 11 JT | 4′ | 1.2 | |
| 12 | BT 12 JT | 7′ | 6.3 | |
| 13 | 0.3′ | 16′ | 0.5 | |
| 13 | 1′ | 6′ | 0.8 | |
| 13 | 6′ | 21′ | 6.9 | |
| 14 | 6′ | 21′ | 6.9 | |
| 14 | BT 14 JT | 14′ | 1.5 | |
| 14 | BT 14 JT | 18′ | 1.9 | |
| 14 | BT 14 JT | 25′ | 1.0 | |
| 14 | BT 14 JT | 8′ | 1.0 | |
| 15 | BT 15 JT | 15′ | 2.4 | |
| 16 | BT 16 JT | 9′ | 2.4 | |
| 17 | 6′ FROM BT 18 | 17′ | 1.4 | |
| 17 | BT 17 JT | 2′ | 7.5 | |
| 17 | BT 17 JT | 24′ | 0.5 | |
| 20 | BT 19 JT | 0′ | 2.4 | |
| 20 | BT 20 JT | 8′ | 1.2 | |
| 22 | BT 22 JT | 2′ | 2.4 | |
| 24 | BT 24 JT | 2′ | 1.2 | |
| 24 | BT 24 JT | 21′ | 32.2 | |
| 24 | BT 24 JT | 9′ | 1.2 | |
| 28 | BT 27 JT | 12′ | 1.0 | |
| 29 | BT 28 JT | 12′ | 1.0 | |
| 30 | BT 29 JT | 12′ | 1.0 | |
| 31 | BT 31 JT | 18′ | 2.0 | |
| 33 | 8′ FROM BT 33 | 18′ | 10.0 | |
| 33 | BT 32 JT | 10′ | 2.0 | |

| DECK REPAIRS | | | | |
|---|---|---|---|---|
| SPAN | LOCATION (SEE NOTES) | | REPAIR SIZE | |
| | LENGTH ALONG SPAN | DISTANCE FROM RT GTR LINE | EST. SF | ACTUAL SF |
| 34 | BT 33 JT | 18′ | 5.0 | |
| 36 | BT 35 JT | 14′ | 3.0 | |
| 36 | BT 36 JT | 10′ | 1.0 | |
| 39 | BT 39 JT | 6′ | 1.0 | |
| 43 | BT 43 JT | 16′ | 1.0 | |
| 45 | BT 45 JT | 14′ | 1.0 | |
| 46 | BT 46 JT | 14′ | 2.0 | |
| 48 | BT 47 JT | 12′ | 2.0 | |
| 49 | BT 49 JT | 16′ | 2.0 | |
| 50 | BT 50 JT | 18′ | 1.0 | |
| 52 | BT 52 JT | 16′ | 1.5 | |
| 54 | BT 53 JT | 14′ | 2.0 | |
| 54 | BT 54 JT | 21′ | 1.0 | |
| 57 | BT 56 JT | 12′ | 1.0 | |
| 58 | BT 58 JT | 14′ | 2.0 | |
| 60 | BT 60 JT | 4′ | 2.0 | |
| 60 | BT 60 JT | 14′ | 1.0 | |
| 61 | BT 60 JT | 16′ | 1.0 | |
| 62 | BT 61 JT | 12′ | 2.0 | |
| 66 | BT 66 JT | 12′ | 1.0 | |
| 76 | BT 75 JT | 16′ | 2.0 | |
| 88 | BT 88 JT | 4′ | 1.0 | |
| 89 | BT 89 JT | 10′ | 1.0 | |
| 90 | 25′ FROM BT 89 | 14′ | 1.0 | |
| 92 | 18′ FROM BT 92 | 18′ | 1.0 | |
| 92 | 30′ FROM BT 92 | 14′ | 1.0 | |
| 93 | BT 93 JT | 9′ | 1.0 | |
| 93 | BT 93 JT | 18′ | 1.0 | |
| 103 | BT 103 JT | 14′ | 1.0 | |
| 107 | 4′ FROM BT 106 | 5′ | 1.0 | |
| 109 | BT 109 JT | 4′ | 1.0 | |
| 110 | BT 110 JT | 20′ | 1.0 | |
| 111 | BT 111 JT | 20′ | 1.0 | |
| 112 | BT 111 JT | 20′ | 3.5 | |
| 112 | BT 112 JT | 2′ | 0.7 | |
| 113 | 24′ FROM BT 112 | 21′ | 1.0 | |
| 115 | 18′ FROM BT 114 | 18′ | 4.0 | |
| 115 | 20′ FROM JT 115 | 21′ | 0.6 | |
| 115 | 3′ FROM BT 115 | 24′ | 3.0 | |
| 115 | 45′ FROM JT 115 | 14′ | 0.8 | |
| 115 | BT 114 JT | 11′ | 1.0 | |
| 118 | BT 118 JT | 12′ | 1.2 | |
| 118 | BT 118 JT | 14′ | 0.8 | |
| 119 | 22′ FROM JT 119 | 7′ | 0.1 | |
| 119 | BT 119 JT | 15′ | 1.0 | |
| 119 | BT 119 JT | 3′ | 1.8 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES | |
|---|---|---|
| | ESTIMATE | ACTUAL |
| SPAN NO. | SF | SF |
| 1 - 119 | 210 | |

NOTES:
LENGTH ALONG SPAN IS THE DISTANCE FROM PREVIOUS JOINT. DISTANCE FROM RT GTR LINE IS THE OFFSET DISTANCE FROM RT GUTTER LINE LOOKING UP STATION.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TOP OF DECK
REPAIR TABLES

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
Robbie Weisz 8/10/2016
CEA153463B6D43D...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-12 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P.D. BRYANT DATE : 6/2016
CHECKED BY : R. REISZ DATE : 6/2006

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| DECK REPAIRS | | | | |
|---|---|---|---|---|
| SPAN | LOCATION (SEE NOTES) | | REPAIR SIZE | |
| | LENGTH ALONG SPAN | DISTANCE FROM RT GTR LINE | EST. SF | ACTUAL SF |
| 120 | 18' FROM JT 120 | 47' | 0.3 | |
| 120 | BT 120 JT | 14' | 1.0 | |
| 120 | BT 120 JT | 14' | 1.5 | |
| 121 | 12' FROM JT 121 | 6' | 0.2 | |
| 121 | 47' FROM JT 122 | 20' | 0.1 | |
| 121 | BT 121 JT | 14' | 0.8 | |
| 121 | BT 121 JT | 7' | 8.2 | |
| 122 | 6' FROM JT 122 | 11' | 10.0 | |
| 122 | BT 122 JT | 10' | 2.4 | |
| 123 | BT 123 JT | 14' | 2.8 | |
| 123 | BT 123 JT | 2' | 3.2 | |
| 124 | 8' FROM JT 124 | 16' | 0.2 | |
| 124 | BT 124 JT | 17' | 0.8 | |
| 124 | BT 124 JT | 7' | 5.8 | |
| 125 | BT 125 JT | 10' | 2.8 | |
| 125 | BT 125 JT | 16' | 1.0 | |
| 127 | BT 127 JT | 12' | 5.8 | |
| 127 | BT 127 JT | 13' | 2.6 | |
| 127 | BT 127 JT | 4' | 1.0 | |
| 128 | BT 128 JT | 1' | 1.0 | |
| 129 | BT 129 JT | 2' | 2.8 | |
| 130 | 47' FROM JT 130 | 22' | 5.8 | |
| 130 | 47' FROM JT 130 | 5' | 1.4 | |
| 130 | 50' FROM JT 130 | 6' | 6.1 | |
| 130 | BT 130 JT | 14' | 2.6 | |
| 130 | BT 130 JT | 14' | 2.0 | |
| 131 | BT 131 JT | 13' | 1.2 | |
| 131 | BT 131 JT | 6' | 1.1 | |
| 132 | 18' FROM JT 132 | 13' | 0.1 | |
| 132 | BT 132 JT | 15' | 1.7 | |
| 132 | BT 132 JT | 6' | 0.9 | |
| 132 | BT 132 JT | 9' | 1.9 | |
| 133 | 26' FROM JT 133 | 17' | 0.2 | |
| 134 | BT 134 JT | 15' | 2.1 | |
| 134 | BT 134 JT | 6' | 1.0 | |
| 135 | 6' FROM JT 135 | 10' | 0.1 | |
| 136 | BT 136 JT | 14' | 2.6 | |
| 136 | BT 136 JT | 7' | 2.9 | |
| 136 | BT 136 JT | 8' | 2.0 | |
| 137 | BT 137 JT | 9' | 2.4 | |
| 138 | 20' FROM JT 138 | 2' | 0.1 | |
| 138 | BT 138 JT | 9' | 2.2 | |
| 138 | BT 139 JT | 18' | 0.1 | |
| 139 | BT 139 JT | 10' | 1.8 | |
| 139 | BT 139 JT | 10' | 2.4 | |

| DECK REPAIRS | | | | |
|---|---|---|---|---|
| SPAN | LOCATION (SEE NOTES) | | REPAIR SIZE | |
| | LENGTH ALONG SPAN | DISTANCE FROM RT GTR LINE | EST. SF | ACTUAL SF |
| 140 | 42' FROM JT 140 | 12' | 0.3 | |
| 141 | 19' FROM JT 141 | 15' | 0.1 | |
| 141 | 40' FROM JT 141 | 16' | 0.1 | |
| 141 | 47' FROM JT 141 | 16' | 0.1 | |
| 142 | BT 142 JT | 14' | 1.5 | |
| 142 | BT 142 JT | 2' | 1.2 | |
| 143 | 17' FROM JT 143 | 13' | 0.2 | |
| 143 | 23' FROM JT 143 | 12' | 0.1 | |
| 143 | 33' FROM JT 143 | 15' | 0.2 | |
| 143 | BT 143 JT | 12' | 1.5 | |
| 143 | BT 143 JT | 8' | 1.0 | |
| 144 | BT 144 JT | 15' | 1.2 | |
| 145 | 4' FROM JT 145 | 15' | 0.2 | |
| 145 | 13' FROM JT 145 | 16' | 0.1 | |
| 145 | BT 145 JT | 15' | 1.5 | |
| 145 | BT 145 JT | 8' | 2.0 | |
| 146 | BT 146 JT | 12' | 1.8 | |
| 146 | BT 146 JT | 18' | 2.1 | |
| 148 | BT 148 JT | 13' | 1.0 | |
| 149 | 22' FROM JT 149 | 10' | 0.2 | |
| 149 | 22' FROM JT 149 | 10' | 0.3 | |
| 150 | BT 150 JT | 12' | 2.1 | |
| 150 | BT 150 JT | 12' | 2.4 | |
| 151 | BT 151 JT | 13' | 2.1 | |
| 151 | BT 151 JT | 15' | 1.0 | |
| 151 | BT 151 JT | 5' | 0.8 | |
| 153 | 35' FROM JT 153 | 13' | 0.2 | |
| 153 | BT 153 JT | 5' | 1.2 | |
| 153 | BT 153 JT | 7' | 1.5 | |
| 153 | BT 153 JT | 8' | 1.2 | |
| 155 | 28' FROM JT 155 | 16' | 0.1 | |
| 156 | BT 156 JT | 14' | 3.3 | |
| 157 | 9' FROM JT 157 | 9' | 0.1 | |
| 157 | 15' FROM JT 157 | 16' | 0.2 | |
| 157 | BT 157 JT | 9' | 1.8 | |
| 157 | BT 157 JT | 9' | 3.3 | |
| 158 | 42' FROM JT 158 | 13' | 0.1 | |
| 158 | BT 158 JT | 9' | 1.5 | |
| 159 | 5' FROM JT 159 | 10' | 0.1 | |
| 159 | BT 159 JT | 13' | 1.0 | |
| 159 | BT 159 JT | 13' | 1.2 | |
| 159 | BT 159 JT | 8' | 1.2 | |
| 160 | 15' FROM JT 160 | 13' | 0.2 | |
| 160 | 23' FROM JT 160 | 8' | 0.1 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES | |
|---|---|---|
| | ESTIMATE | ACTUAL |
| SPAN NO. | SF | SF |
| 120 - 160 | 143 | |

NOTES:

LENGTH ALONG SPAN IS THE DISTANCE FROM PREVIOUS JOINT. DISTANCE FROM RT GTR LINE IS THE OFFSET DISTANCE FROM RT GUTTER LINE LOOKING UP STATION.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# TOP OF DECK REPAIR TABLES

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by: Robbie Weisz 8/10/2016
CEA153463B6D43D...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-13 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P.D. BRYANT DATE : 6/2016
CHECKED BY : R. REISZ DATE : 6/2006

15-JUL-2016 13:39
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ssandor

| DECK REPAIRS | | | | |
|---|---|---|---|---|
| SPAN | LOCATION (SEE NOTES) | | REPAIR SIZE | |
| | LENGTH ALONG SPAN | DISTANCE FROM RT GTR LINE | EST. SF | ACTUAL SF |
| 161 | BT 161 JT | 12′ | 4.1 | |
| 161 | BT 161 JT | 8′ | 1.5 | |
| 162 | BT 162 | 9′ | 1.1 | |
| 163 | 8′ FROM JT 163 | 13′ | 0.1 | |
| 163 | 23′ FROM JT 163 | 16′ | 0.1 | |
| 164 | 13′ FROM JT 164 | 11′ | 0.4 | |
| 164 | 26′ FROM JT 164 | 8′ | 0.1 | |
| 164 | 31′ FROM JT 164 | 16′ | 0.2 | |
| 164 | 43′ FROM JT 164 | 8′ | 0.4 | |
| 164 | 52′ FROM JT 164 | 3′ | 0.1 | |
| 164 | BT 164 JT | 17′ | 2.1 | |
| 164 | BT 164 JT | 3′ | 1.0 | |
| 165 | BT 165 JT | 13′ | 1.7 | |
| 165 | BT 165 JT | 13′ | 2.0 | |
| 166 | 23′ FROM JT 166 | 16′ | 0.1 | |
| 166 | 29′ FROM JT 166 | 11′ | 0.1 | |
| 166 | 44′ FROM JT 166 | 3′ | 0.1 | |
| 166 | BT 166 JT | 12′ | 1.7 | |
| 167 | 19′ FROM JT 167 | 17′ | 0.1 | |
| 167 | 33′ FROM JT 168 | 3′ | 0.1 | |
| 168 | BT 168 JT | 14′ | 1.5 | |
| 168 | BT 168 JT | 14′ | 1.7 | |
| 169 | 5′ FROM JT 169 | 3′ | 0.1 | |
| 169 | 12′ FROM JT 169 | 19′ | 0.4 | |
| 169 | BT 169 JT | 4′ | 1.9 | |
| 170 | 36′ FROM JT 171 | 18′ | 0.2 | |
| 171 | 33′ FROM JT 171 | 5′ | 0.2 | |
| 171 | BT 171 JT | 8′ | 1.5 | |
| 172 | BT 172 JT | 12′ | 7.2 | |
| 173 | BT 173 JT | 10′ | 2.9 | |
| 173 | BT 173 JT | 12′ | 1.5 | |
| 173 | BT JT 173 | 12′ | 0.1 | |
| 174 | 5′ FROM JT 174 | 13′ | 0.1 | |
| 174 | BT 174 JT | 13′ | 4.5 | |
| 175 | 18′ FROM JT 175 | 9′ | 0.1 | |
| 175 | 27′ FROM JT 175 | 18′ | 0.2 | |
| 175 | 33′ FROM JT 175 | 6′ | 0.1 | |
| 175 | BT 175 JT | 11′ | 0.1 | |
| 175 | BT 175 JT | 17′ | 0.2 | |
| 175 | BT 175 JT | 6′ | 0.2 | |
| 175 | BT JT 175 | 10′ | 0.1 | |
| 177 | 35′ FROM JT 177 | 16′ | 0.2 | |
| 178 | 9′ FROM JT 177 | 15′ | 0.1 | |
| 178 | 31′ FROM JT 178 | 13′ | 0.1 | |
| 178 | 40′ FROM JT 178 | 7′ | 0.1 | |

| DECK REPAIRS | | | | |
|---|---|---|---|---|
| SPAN | LOCATION (SEE NOTES) | | REPAIR SIZE | |
| | LENGTH ALONG SPAN | DISTANCE FROM RT GTR LINE | EST. SF | ACTUAL SF |
| 178 | BT 178 JT | 12′ | 0.5 | |
| 178 | BT 178 JT | 8′ | 1.2 | |
| 178 | BT 179 JT | 15′ | 0.1 | |
| 179 | 9′ FROM JT 179 | 9′ | 0.1 | |
| 180 | 4′ FROM JT 180 | 5′ | 0.1 | |
| 180 | 0.5′ FROM JT 180 | 10′ | 0.1 | |
| 180 | 10′ FROM JT 180 | 18′ | 0.2 | |
| 180 | 15′ FROM JT 180 | 11′ | 0.1 | |
| 180 | 27′ FROM JT 180 | 13′ | 0.2 | |
| 181 | 3′ FROM JT 181 | 7′ | 0.4 | |
| 181 | 27′ FROM JT 181 | 8′ | 0.2 | |
| 181 | BT 181 JT | 9′ | 2.1 | |
| 182 | 5′ FROM JT 182 | 8′ | 0.2 | |
| 182 | 11′ FROM JT 182 | 11′ | 0.1 | |
| 182 | 20′ FROM JT 182 | 7′ | 0.2 | |
| 183 | 9′ FROM JT 183 | 10′ | 0.1 | |
| 184 | 12′ FROM JT 184 | 9′ | 0.1 | |
| 185 | 48′ FROM JT 185 | 14′ | 0.1 | |
| 186 | BT 186 JT | 14′ | 1.0 | |
| 186 | BT 186 JT | 3′ | 1.1 | |
| 187 | 18′ FROM JT 187 | 9′ | 0.1 | |
| 187 | 50′ FROM JT 187 | 6′ | 0.1 | |
| 187 | BT 187 JT | 10′ | 6.3 | |
| 188 | BT 188 JT | 14′ | 1.2 | |
| 189 | 23′ FROM JT 189 | 16′ | 0.2 | |
| 190 | BT 189 JT | 1.5′ | 0.2 | |
| 190 | BT 189 JT | 11′ | 0.1 | |
| 190 | BT 190 JT | 14′ | 1.9 | |
| 191 | BT 191 JT | 13′ | 0.1 | |
| 191 | BT 191 JT | 6′ | 4.0 | |
| 192 | BT 191 JT | 6′ | 0.1 | |
| 192 | BT 192 JT | 13′ | 3.8 | |
| 193 | 18′ FROM JT 193 | 2′ | 0.1 | |
| 193 | BT 193 JT | 14′ | 4.8 | |
| 194 | BT 194 JT | 6′ | 0.1 | |
| 196 | 30′ | 10′ | 0.1 | |
| 196 | 33′ | 18′ | 0.1 | |
| 196 | 50′ | 10′ | 0.1 | |
| 197 | BT 197 JT | 12′ | 2.9 | |
| 201 | 36′ FROM 201 | 16′ | 0.1 | |
| 201 | BT 201 JT | 8′ | 1.5 | |
| 201 | BT 201 JT | 14′ | 1.5 | |
| 203 | 31′ | 16′ | 0.2 | |
| 203 | BT 203 JT | 12′ | 1.0 | |
| 205 | BT 205 JT | 8′ | 2.1 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES | |
|---|---|---|
| | ESTIMATE | ACTUAL |
| SPAN NO. | SF | SF |
| 161 - 205 | 84 | |

NOTES:

LENGTH ALONG SPAN IS THE DISTANCE FROM PREVIOUS JOINT. DISTANCE FROM RT GTR LINE IS THE OFFSET DISTANCE FROM RT GUTTER LINE LOOKING UP STATION.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# TOP OF DECK REPAIR TABLES

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by: Robbie Weisz 8/10/2016
CEA153463B6D43D...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-14 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P.D. BRYANT DATE : 6/2016
CHECKED BY : R. REISZ DATE : 6/2006

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| DECK REPAIRS | | | | |
|---|---|---|---|---|
| SPAN | LOCATION (SEE NOTES) | | REPAIR SIZE | |
| | LENGTH ALONG SPAN | DISTANCE FROM RT GTR LINE | EST. SF | ACTUAL SF |
| 206 | BT 206 JT | 2′ | 1.0 | |
| 206 | BT 206 JT | 15′ | 1.9 | |
| 208 | BT 208 JT | 8′ | 1.5 | |
| 212 | 15′ FROM 212 | 5′ | 0.1 | |
| 217 | 21′ | 20′ | 0.1 | |
| 219 | BT 219 JT | 11′ | 1.5 | |
| 222 | BT 222 JT | 14′ | 0.1 | |
| 223 | BT 223 JT | 6′ | 1.5 | |
| 223 | BT 223 JT | 8′ | 1.5 | |
| 226 | BT 226 JT | 3′ | 2.1 | |
| 226 | BT 226 JT | 6′ | 0.1 | |
| 227 | BT 227 JT | 15′ | 2.2 | |
| 228 | BT 228 JT | 21′ | 1.2 | |
| 229 | BT 229 JT | 15′ | 1.2 | |
| 230 | 48′ FROM 230 | 7′ | 0.1 | |
| 230 | BT 230 JT | 13′ | 1.9 | |
| 232 | BT 232 JT | 12′ | 1.2 | |
| 236 | BT 236 JT | 6′ | 1.2 | |
| 241 | 21′ | 5′ | 0.1 | |
| 243 | BT 243 JT | 9′ | 1.0 | |
| 247 | BT 247 JT | 11′ | 1.5 | |
| 247 | BT 247 JT | 5′ | 2.6 | |
| 251 | BT 251 JT | 15′ | 1.9 | |
| 257 | BT 257 JT | 11′ | 1.3 | |
| 262 | BT 261 JT | 6′ | 0.7 | |
| 263 | BT 262 JT | 15′ | 1.5 | |
| 265 | 15′ | 19′ | 1.5 | |
| 268 | BT 268 JT | 16′ | 1.6 | |
| 269 | 18′ | 14′ | 0.2 | |
| 270 | BT 269 JT | 14′ | 1.3 | |
| 271 | 31′ | 3′ | 0.2 | |

| DECK REPAIRS | | | | |
|---|---|---|---|---|
| SPAN | LOCATION (SEE NOTES) | | REPAIR SIZE | |
| | LENGTH ALONG SPAN | DISTANCE FROM RT GTR LINE | EST. SF | ACTUAL SF |

| SUMMARY OF QUANTITIES | | |
|---|---|---|
| | QUANTITIES | |
| | ESTIMATE | ACTUAL |
| SPAN NO. | SF | SF |
| 206 - 274 | 36 | |

NOTES:

LENGTH ALONG SPAN IS THE DISTANCE FROM PREVIOUS JOINT. DISTANCE FROM RT GTR LINE IS THE OFFSET DISTANCE FROM RT GUTTER LINE LOOKING UP STATION.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# TOP OF DECK REPAIR TABLES

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
Robbie Weisz 8/10/2016
CEA153463B6D43D...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. S-15

TOTAL SHEETS 394

DRAWN BY : P.D. BRYANT DATE : 6/2016
CHECKED BY : R. REISZ DATE : 6/2006

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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 1 | DECK | 20' FROM END BENT 1 | 5' X 20' | BOTTOM OF DECK | 1 |
| 1 | DECK | 27' FROM END BENT 1 | 2.7' X 2.7' | BOTTOM OF DECK | 2 |
| 1 | DECK | 32.5' FROM END BENT 1 | 3' X 2.8' | BOTTOM OF DECK | 2 |
| 1 | DECK | 11' FROM END BENT 1 | 1.2' X 0.6' | BOTTOM OF DECK | 2 |
| 1 | DECK | 9' FROM END BENT 1 | 1' X 0.5' | BOTTOM OF DECK | 2 |
| 1 | DECK | 8' FROM END BENT 1 | 8' X 4' | BOTTOM OF DECK | 2 |
| 1 | DECK | 11' FROM BENT 1 | 2' X 0.6' | BOTTOM OF DECK | 3 |
| 1 | DECK | 15' FROM BENT 1 | 1' X 1.5' | BOTTOM OF DECK | 3 |
| 1 | END DIA. | @ BENT 1 | 5.5' X 0.7' | DIAPHRAGM | 3 |
| 1 | END DIA. | @ BENT 1 | 2.2' X 0.3' | DIAPHRAGM | 2 |
| 1 | END DIA. | @ BENT 1 | 5' X 1' | DIAPHRAGM | 1 |
| 1 | G-1 | @ BENT 1 | 1' X 0.8' | BOTTOM FLANGE & WEB | 1 |
| 1 | G-1 | 2' FROM BENT 1 | 1.7' X 1.7' | WEB | 1 |
| 1 | G-1 | 5' FROM BENT 1 | 2' X 1.2' | WEB | 1 |
| 1 | G-1 | @ BENT 1 | 0.6' X 0.5' | BOTTOM FLANGE & WEB | LT EXT |
| 1 | G-1 | 8' FROM BENT 1 | 2' X 1.3' | WEB | 1 |
| 1 | G-1 | 5' FROM END BENT 1 | 1.8' X 1.3' | WEB | LT EXT |
| 1 | G-1 | 13' FROM BENT 1 | 1.3' X 1.6' | WEB | 1 |
| 1 | G-1 | 17' FROM BENT 1 | 1.5' X 0.5' | WEB | 1 |
| 1 | G-1 | 1' FROM INTER. DIA. | 1.3' X 1.3' | WEB | 1 |
| 1 | G-1 | 3.5' FROM INTER. DIA. | 1.3' X 0.7' | WEB | 1 |
| 1 | G-1 | 3.5' FROM INTER. DIA. | 0.8' X 0.8' | WEB | 1 |
| 1 | G-1 | 9' FROM INTER. DIA. | 1.4' X 0.9' | WEB | 1 |
| 1 | G-1 | @ END BENT 1 | 7' X 0.8' | BOTTOM FLANGE | 1 |
| 1 | G-1 | 9' FROM INTER. DIA. | 3' X 1.2' | WEB | 1 |
| 1 | G-2 | @ BENT 1 | 0.6' X 0.5' | BOTTOM FLANGE | 2 |
| 1 | G-2 | @ BENT 1 | 2.5' X 0.8' | BOTTOM FLANGE | 1 |
| 1 | G-2 | 2' FROM BENT 1 | 6.5' X 1.2' | WEB | 1 |
| 1 | G-2 | 17' FROM BENT 1 | 1' X 0.6' | WEB | 1 |
| 1 | G-2 | @ END BENT 1 | 2.5' X 0.8' | BOTTOM FLANGE | 1 |
| 1 | G-2 | 10' FROM END BENT 1 | 2.7' X 1.2' | WEB | 1 |
| 1 | G-2 | @ BENT 1 | 1.8' X 1.2' | WEB | 2 |
| 1 | G-2 | 7' FROM INTER. DIA. | 1.5' X 1.2' | WEB | 2 |
| 1 | G-2 | 11' FROM INTER. DIA. | 1.2' X 0.7' | WEB | 2 |
| 1 | G-2 | 11' FROM END BENT 1 | 0.7' X 0.4' | WEB | 2 |
| 1 | G-2 | 2' FROM END BENT 1 | 0.9' X 0.7' | WEB | 2 |
| 1 | G-3 | @ BENT 1 | 0.8' X 1.3' | BOTTOM FLANGE & WEB | 3 |
| 1 | G-3 | @ BENT 1 | 0.8' X 0.8' | WEB | 2 |
| 1 | G-3 | 2' FROM BENT 1 | 7.5' X 1.5' | WEB | 3 |
| 1 | G-3 | 2' FROM BENT 1 | 0.8' X 1.2' | WEB | 2 |
| 1 | G-3 | 2' FROM INTER. DIA. | 1.2' X 1.2' | WEB | 2 |
| 1 | G-3 | 7' FROM INTER. DIA. | 1.2' X 0.9' | WEB | 2 |
| 1 | G-3 | 10' FROM INTER. DIA. | 1' X 1' | WEB | 3 |
| 1 | G-3 | 2' FROM INTER. DIA. | 0.3' X 0.8' | BOTTOM FLANGE | 3 |
| 1 | G-3 | 6' FROM INTER. DIA. | 1.5' X 1' | WEB | 3 |
| 1 | G-3 | 8' FROM INTER. DIA. | 1.5' X 1.2' | WEB | 3 |
| 1 | G-3 | 13' FROM END BENT 1 | 0.4' X 0.6' | BOTTOM FLANGE | 3 |
| 1 | G-3 | 6.5' FROM END BENT 1 | 6.5' X 0.5' | BOTTOM FLANGE | 3 |
| 1 | G-3 | 9' FROM END BENT 1 | 1' X 1.2' | WEB | 2 |
| 1 | G-4 | @ BENT 1 | 0.8' X 0.7' | BOTTOM FLANGE | RT EXT |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 1 | G-4 | @ BENT 1 | 0.4' X 0.7' | BOTTOM FLANGE | 3 |
| 1 | G-4 | 2' FROM BENT 1 | 3' X 0.8' | WEB | 2 |
| 1 | G-4 | 8' FROM BENT 1 | 1.2' X 0.9' | WEB | 3 |
| 1 | G-4 | @ BENT 1 | 1.5' X 1.2' | WEB | 3 |
| 1 | G-4 | @ BENT 1 | 2' X 0.7' | WEB | RT EXT |
| 1 | G-4 | @ END BENT 1 | 1' X 0.6' | WEB | RT EXT |
| 1 | G-4 | 10' FROM END BENT 1 | 2.5' X 1' | WEB | RT EXT |
| 1 | G-4 | @ END BENT 1 | 10' X 1' | BOTTOM FLANGE | RT EXT |
| 1 | G-4 | 3.5' FROM INTER. DIA. | 0.4' X 1.2' | WEB | 3 |
| 1 | G-4 | 11' FROM END BENT 1 | 0.9' X 0.6' | BOTTOM FLANGE | 3 |
| 1 | G-4 | 23' FROM BENT 1 | 0.6' X 0.8' | BOTTOM FLANGE | 3 |
| 1 | G-4 | 3' FROM END BENT 1 | 1.3' X 1.2' | WEB | 3 |
| 1 | G-4 | 8' FROM END BENT 1 | 1.2' X 1' | WEB | RT EXT |
| 1 | G-4 | 9' FROM END BENT 1 | 1.8' X 1.2' | WEB | 3 |
| 2 | END DIA. | @ BENT 1 | 2.2' X 0.6' | DIAPHRAGM | 3 |
| 2 | G-1 | @ BENT 2 | 2.2' X 1' | BOTTOM FLANGE | 2 |
| 2 | G-1 | @ BENT 2 | 1.5' X 1.2' | WEB | 1 |
| 2 | G-1 | @ BENT 2 | 0.9' X 1' | BOTTOM FLANGE | 1 |
| 2 | G-1 | @ BENT 2 | 0.4' X 1.3' | BOTTOM FLANGE & WEB | 1 |
| 2 | G-1 | @ BENT 1 | 3.7' X 1.3' | BOTTOM FLANGE | LT EXT |
| 2 | G-1 | 10' FROM BENT 2 | 3' X 0.4' | BOTTOM FLANGE | 1 |
| 2 | G-1 | 2' FROM BENT 1 | 0.3' X 1.2' | WEB | 1 |
| 2 | G-1 | 2' FROM BENT 2 | 0.6' X 1.2' | WEB | 1 |
| 2 | G-2 | @ BENT 2 | 0.9' X 1.3' | BOTTOM FLANGE & WEB | 2 |
| 2 | G-2 | @ BENT 2 | 1' X 1.8' | BOTTOM FLANGE & WEB | 2 |
| 2 | G-2 | 2' FROM INTER. DIA. | 0.8' X 0.7' | WEB | 2 |
| 2 | G-2 | @ BENT 2 | 2' X 2' | WEB | 2 |
| 2 | G-2 | @ BENT 2 | 2' X 2' | BOTTOM FLANGE | 1 |
| 2 | G-2 | @ BENT 2 | 10.5' X 1.2' | WEB | 2 |
| 2 | G-2 | @ BENT 2 | 1.3' X 0.7' | BOTTOM FLANGE | 1 |
| 2 | G-2 | @ BENT 2 | 0.8' X 1.2' | WEB | 1 |
| 2 | G-2 | 10.5' FROM BENT 2 | 1.2' X 1.2' | WEB | 1 |
| 2 | G-2 | 7' FROM BENT 2 | 0.6' X 0.6' | BOTTOM FLANGE | 2 |
| 2 | G-3 | @ BENT 2 | 1.1' X 1' | BOTTOM FLANGE | 3 |
| 2 | G-3 | @ BENT 2 | 2' X 2' | WEB | 3 |
| 2 | G-3 | @ BENT 1 | 2' X 2' | WEB | 2 |
| 2 | G-3 | @ BENT 2 | 1.8' X 2' | BOTTOM FLANGE | 2 |
| 2 | G-3 | 3' FROM INTER. DIA. | 1.5' X 1.2' | WEB | 2 |
| 2 | G-3 | @ BENT 2 | 1.6' X 1' | BOTTOM FLANGE | 2 |
| 2 | G-3 | @ BENT 2 | 1.1' X 1.3' | WEB | 2 |
| 2 | G-3 | 13' FROM BENT 1 | 13' X 3' | WEB | 3 |
| 2 | G-4 | @ BENT 1 | 1.5' X 1' | WEB | RT EXT |
| 2 | G-4 | @ BENT 2 | 0.8' X 1.2' | WEB | RT EXT |
| 2 | G-4 | @ BENT 2 | 1' X 0.6' | WEB | 3 |
| 2 | G-4 | @ BENT 1 | 50' X 2' | WEB | 3 |
| 2 | G-4 | @ BENT 2 | 1.1' X 1.5' | BOTTOM FLANGE | 3 |
| 2 | G-4 | @ BENT 2 | 3' X 2' | WEB | 3 |
| 2 | G-4 | 2' FROM BENT 1 | 0.8' X 1.5' | WEB | RT EXT |
| 2 | G-4 | 6' FROM END BENT 1 | 0.5' X 1' | BOTTOM FLANGE | RT EXT |
| 2 | G-4 | 8' FROM BENT 1 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 2 | INTER. DIA. | 25' FROM BENT 1 | 0.2' X 1.1' | DIAPHRAGM | 3 |
| 2 | INTER. DIA. | 25' FROM BENT 1 | 1' X 0.4' | DIAPHRAGM | 2 |

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | ESTIMATE VOLUME CF | ACTUAL AREA SF | ACTUAL DEPTH FT | ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 1 | GIRDERS | 153.94 | 64.14 | | | |
| | DIAPHRAGMS | 9.51 | 3.96 | | | |
| | DECK | 143.97 | 59.99 | | | |
| SPAN 2 | GIRDERS | 209.74 | 87.39 | | | |
| | DIAPHRAGMS | 1.94 | 0.81 | | | |
| | DECK | 0.00 | 0.00 | | | |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 1 OF 22

DocuSigned by:
Timothy M. Sherrill
AD50B1D977494CC...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

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

SHEET NO. S-16
TOTAL SHEETS 394

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 3 | DECK | 2' FROM BENT 2 | 3.2' X 3.3' | BOTTOM OF DECK | 1 |
| 3 | DECK | 3' FROM BENT 2 | 2' X 2' | BOTTOM OF DECK | 1 |
| 3 | DECK | 5' FROM BENT 2 | 2' X 0.8' | BOTTOM OF DECK | 1 |
| 3 | DECK | 8' FROM BENT 2 | 2' X 2' | BOTTOM OF DECK | 1 |
| 3 | DECK | 4' FROM BENT 2 | 1.2' X 0.8' | BOTTOM OF DECK | 3 |
| 3 | END DIA. | @ BENT 2 | 1.5' X 1' | DIAPHRAGM | 1 |
| 3 | END DIA. | @ BENT 2 | 0.8' X 1.2' | DIAPHRAGM | 1 |
| 3 | END DIA. | @ BENT 2 | 0.7' X 1.5' | DIAPHRAGM | 1 |
| 3 | END DIA. | @ BENT 2 | 4' X 0.6' | DIAPHRAGM | 3 |
| 3 | G-1 | @ BENT 2 | 1.3' X 1' | WEB | LT EXT |
| 3 | G-1 | @ BENT 2 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 3 | G-1 | @ BENT 2 | 1' X 0.2' | BOTTOM FLANGE & WEB | 1 |
| 3 | G-1 | 10' FROM BENT 2 | 3.2' X 0.4' | BOTTOM FLANGE | LT EXT |
| 3 | G-2 | @ BENT 2 | 0.9' X 2' | BOTTOM FLANGE & WEB | 1 |
| 3 | G-2 | @ BENT 3 | 5' X 0.5' | BOTTOM FLANGE | 1 |
| 3 | G-2 | @ BENT 3 | 2' X 2' | WEB | 1 |
| 3 | G-2 | @ BENT 3 | 1' X 1.3' | BOTTOM FLANGE & WEB | 2 |
| 3 | G-2 | @ BENT 2 | 11.5' X 1.2' | WEB | 2 |
| 3 | G-2 | @ BENT 2 | 5' X 0.5' | BOTTOM FLANGE | 2 |
| 3 | G-2 | 4' FROM INTER. DIA. | 3.5' X 0.5' | BOTTOM FLANGE | 2 |
| 3 | G-2 | 4' FROM BENT 3 | 2' X 1' | WEB | 2 |
| 3 | G-3 | @ BENT 3 | 1.2' X 1.3' | BOTTOM FLANGE & WEB | 2 |
| 3 | G-3 | @ BENT 2 | 2.2' X 1' | BOTTOM FLANGE | 3 |
| 3 | G-3 | @ BENT 2 | 0.8' X 0.6' | BOTTOM FLANGE | 3 |
| 3 | G-3 | @ BENT 2 | 0.8' X 0.6' | BOTTOM FLANGE | 3 |
| 3 | G-3 | 2' FROM BENT 2 | 8.3' X 1.2' | WEB | 2 |
| 3 | G-3 | 2' FROM BENT 3 | 0.9' X 1.2' | WEB | 2 |
| 3 | G-3 | 2.5' FROM BENT 2 | 3.7' X 1.2' | WEB | 3 |
| 3 | G-3 | 5' FROM BENT 2 | 4' X 0.8' | BOTTOM FLANGE | 2 |
| 3 | G-3 | 9' FROM BENT 3 | 4.5' X 0.5' | BOTTOM FLANGE | 2 |
| 3 | G-4 | @ INTER. DIA. | 4.5' X 0.8' | BOTTOM FLANGE | 3 |
| 3 | G-4 | @ BENT 2 | 1.7' X 1' | BOTTOM FLANGE | RT EXT |
| 3 | G-4 | @ BENT 2 | 4' X 1.2' | WEB | RT EXT |
| 3 | G-4 | @ BENT 3 | 0.5' X 0.7' | BOTTOM FLANGE | RT EXT |
| 3 | G-4 | @ BENT 2 | 14' X 1.2' | WEB | 3 |
| 3 | G-4 | @ BENT 2 | 17' X 1' | BOTTOM FLANGE | 3 |
| 3 | G-4 | 2' FROM INTER. DIA. | 6' X 0.8' | BOTTOM FLANGE | 3 |
| 3 | G-4 | 5' FROM BENT 3 | 1.2' X 0.8' | WEB | 3 |
| 4 | G-1 | 2' FROM BENT 3 | 5' X 1.3' | WEB | 1 |
| 4 | G-2 | @ BENT 4 | 8' X 0.8' | BOTTOM FLANGE | 1 |
| 4 | G-2 | @ BENT 4 | 0.8' X 10' | BOTTOM FLANGE | 1 |
| 4 | G-2 | @ BENT 3 | 3' X 0.8' | BOTTOM FLANGE | 1 |
| 4 | G-2 | @ BENT 3 | 1.8' X 1.3' | WEB | 2 |
| 4 | G-2 | 2' FROM BENT 3 | 3.5' X 1.3' | WEB | 1 |
| 4 | G-3 | @ BENT 3 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 4 | G-3 | @ BENT 3 | 3.5' X 2.1' | WEB | 2 |
| 4 | G-3 | @ BENT 3 | 1.8' X 1.2' | WEB | 2 |
| 4 | G-3 | 2' FROM BENT 4 | 6.3' X 1.3' | WEB | 2 |
| 4 | G-4 | @ BENT 4 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 4 | G-4 | 2' FROM BENT 3 | 6' X 1.3' | WEB | 3 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 4 | G-4 | 4' FROM BENT 3 | 0.9' X 1.8' | WEB | 3 |
| 5 | G-1 | @ BENT 4 | 3' X 1.3' | BOTTOM FLANGE & WEB | 1 |
| 5 | G-1 | @ BENT 4 | 3' X 1.3' | BOTTOM FLANGE & WEB | 1 |
| 5 | G-1 | @ BENT 4 | 4.7' X 2.2' | WEB | 1 |
| 5 | G-2 | @ BENT 5 | 1.1' X 1' | BOTTOM FLANGE | 1 |
| 5 | G-2 | 2' FROM BENT 5 | 0.8' X 1.2' | WEB | 1 |
| 5 | G-2 | 6' FROM BENT 5 | 1.4' X 1.3' | WEB | 2 |
| 5 | G-3 | @ BENT 4 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 5 | G-3 | @ BENT 4 | 1.2' X 0.7' | BOTTOM FLANGE | 3 |
| 5 | G-3 | 13' FROM BENT 5 | 5.3' X 0.5' | BOTTOM FLANGE | 2 |
| 5 | G-3 | 17' FROM BENT 4 | 4.7' X 0.4' | BOTTOM FLANGE | 3 |
| 5 | G-3 | 2' FROM BENT 4 | 6' X 1.3' | WEB | 2 |
| 5 | G-3 | 4' FROM BENT 5 | 6.7' X 1.3' | WEB | 2 |
| 5 | G-4 | @ BENT 4 | 1.2' X 0.7' | WEB | 3 |
| 6 | END DIA. | @ BENT 5 | 0.8' X 1.2' | DIAPHRAGM | 3 |
| 6 | G-1 | @ BENT 5 | 1.2' X 0.7' | BOTTOM FLANGE | 1 |
| 6 | G-2 | 2' FROM BENT 5 | 1' X 0.7' | WEB | 1 |
| 6 | G-3 | 1.5' FROM BENT 5 | 5.8' X 1.2' | WEB | 3 |
| 6 | G-3 | 4' FROM BENT 6 | 3.3' X 1.2' | WEB | 2 |
| 6 | G-4 | @ BENT 5 | 0.6' X 0.6' | BOTTOM FLANGE | RT EXT |
| 6 | G-4 | @ BENT 6 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 6 | G-4 | 3' FROM BENT 5 | 3.3' X 1.2' | WEB | 3 |
| 7 | G-3 | @ BENT 6 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 8 | G-1 | @ BENT 7 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 8 | G-2 | @ BENT 7 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 8 | G-4 | @ BENT 7 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 9 | G-2 | @ BENT 8 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 9 | G-2 | 3' FROM BENT 9 | 1.3' X 5.5' | WEB | 1 |
| 10 | G-1 | @ BENT 10 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 10 | G-3 | 3' FROM BENT 9 | 1.3' X 5' | WEB | 2 |
| 10 | G-3 | @ BENT 10 | 0.8' X 3.5' | BOTTOM FLANGE | 3 |
| 11 | G-1 | @ BENT 11 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 11 | G-2 | @ BENT 10 | 1' X 0.6' | BOTTOM FLANGE | 2 |
| 11 | G-2 | @ BENT 11 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 11 | G-2 | @ BENT 11 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 11 | G-3 | @ BENT 11 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 12 | G-2 | @ BENT 11 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 12 | G-2 | @ BENT 12 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 13 | G-2 | @ BENT 12 | 0.3' X 1.5' | BOTTOM FLANGE | 1 |
| 13 | G-2 | @ BENT 13 | 0.5' X 0.3' | BOTTOM FLANGE | 2 |
| 13 | G-3 | @ BENT 13 | 0.5' X 0.7' | BOTTOM FLANGE | 3 |
| 13 | G-3 | @ BENT 13 | 0.5' X 0.7' | BOTTOM FLANGE | 2 |
| 13 | G-4 | @ BENT 12 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 14 | G-1 | @ BENT 13 | 1.5' X 0.6' | BOTTOM FLANGE & WEB | LT EXT |
| 14 | G-2 | 10' FROM BENT 13 | 0.3' X 0.6' | BOTTOM FLANGE | 1 |
| 14 | G-2 | @ BENT 14 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 14 | G-3 | 2' FROM BENT 13 | 1.8' X 0.7' | WEB | 2 |
| 14 | G-3 | 9' FROM BENT 13 | 2.7' X 0.6' | BOTTOM FLANGE | 2 |
| 14 | G-3 | @ BENT 14 | 1.8' X 0.7' | BOTTOM FLANGE | 2 |
| 14 | G-3 | @ BENT 14 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 14 | G-3 | @ BENT 14 | 0.3' X 1.5' | BOTTOM FLANGE | 2 |

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 3 | GIRDERS | 108.69 | 45.29 | | | |
| | DIAPHRAGMS | 5.91 | 2.46 | | | |
| | DECK | 21.12 | 8.80 | | | |
| SPAN 4 | GIRDERS | 58.75 | 24.48 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 5 | GIRDERS | 45.16 | 18.82 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 6 | GIRDERS | 17.42 | 7.26 | | | |
| | DIAPHRAGMS | 0.96 | 0.40 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 7 | GIRDERS | 0.60 | 0.25 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 8 | GIRDERS | 1.80 | 0.75 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 9 | GIRDERS | 7.75 | 3.23 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 10 | GIRDERS | 9.90 | 4.13 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 11 | GIRDERS | 2.30 | 0.96 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 12 | GIRDERS | 1.20 | 0.50 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 13 | GIRDERS | 1.90 | 0.79 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 14 | GIRDERS | 6.51 | 2.71 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 2 OF 22

DocuSigned by:
AD50B1D977494CC...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

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

SHEET NO. S-17
TOTAL SHEETS 394

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:01
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 15 | G-1 | @ BENT 15 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 15 | G-2 | @ BENT 14 | 0.8' X 0.6' | BOTTOM FLANGE | 2 |
| 15 | G-2 | @ BENT 14 | 0.8' X 0.6' | BOTTOM FLANGE & WEB | 1 |
| 15 | G-2 | @ BENT 15 | 0.8' X 0.5' | WEB | 1 |
| 15 | G-2 | 4' FROM INTER. DIA. | 3' X 0.6' | BOTTOM FLANGE | 1 |
| 15 | G-3 | @ BENT 14 | 0.7' X 1.5' | BOTTOM FLANGE | 2 |
| 15 | G-3 | @ BENT 15 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 15 | G-3 | @ BENT 15 | 0.5' X 0.6' | BOTTOM FLANGE | 2 |
| 15 | G-3 | @ BENT 15 | 0.3' X 1.5' | BOTTOM FLANGE | 2 |
| 16 | G-1 | @ BENT 15 | 1.5' X 0.5' | BOTTOM FLANGE | LT EXT |
| 16 | G-1 | @ BENT 15 | 0.8' X 0.4' | WEB | RT EXT |
| 16 | G-2 | @ BENT 15 | 0.8' X 0.5' | BOTTOM FLANGE | 1 |
| 16 | G-2 | 2' FROM BENT 15 | 0.8' X 0.3' | WEB | 1 |
| 16 | G-3 | @ BENT 15 | 0.5' X 0.6' | BOTTOM FLANGE | 3 |
| 16 | G-4 | @ BENT 16 | 1' X 0.5' | BOTTOM FLANGE | RT EXT |
| 17 | G-1 | @ BENT 16 | 0.7' X 0.6' | BOTTOM FLANGE | 1 |
| 17 | G-2 | @ BENT 16 | 0.4' X 1.5' | BOTTOM FLANGE | 1 |
| 17 | G-2 | @ BENT 17 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 17 | G-2 | @ BENT 17 | 0.7' X 0.6' | BOTTOM FLANGE | 1 |
| 17 | G-3 | @ BENT 16 | 5.7' X 0.8' | BOTTOM FLANGE | 2 |
| 17 | G-3 | @ BENT 16 | 0.8' X 0.8' | WEB | 2 |
| 17 | G-3 | @ BENT 17 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 17 | G-4 | 2' FROM BENT 16 | 1.5' X 0.5' | BOTTOM FLANGE | RT EXT |
| 17 | G-4 | @ BENT 16 | 0.3' X 1.7' | BOTTOM FLANGE | 3 |
| 17 | G-4 | 3.5' FROM INTER. DIA. | 0.3' X 0.6' | BOTTOM FLANGE | 3 |
| 18 | G-1 | @ BENT 17 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 18 | G-1 | @ BENT 18 | 1' X 1.5' | BOTTOM FLANGE | LT EXT |
| 18 | G-2 | @ BENT 18 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 19 | G-1 | @ BENT 18 | 0.1' X 0.6' | BOTTOM FLANGE | LT EXT |
| 19 | G-4 | @ BENT 19 | 0.8' X 0.6' | BOTTOM FLANGE | 3 |
| 20 | G-1 | @ BENT 20 | 1.5' X 1.5' | BOTTOM FLANGE & WEB | 1 |
| 20 | G-2 | @ BENT 16 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 20 | G-2 | @ BENT 16 | 2.5' X 0.7' | BOTTOM FLANGE | 3 |
| 20 | G-2 | @ BENT 20 | 1.3' X 0.8' | BOTTOM FLANGE | 2 |
| 20 | G-2 | @ BENT 20 | 1' X 0.3' | BOTTOM FLANGE | 1 |
| 20 | G-2 | 3.5' FROM INTER. DIA. | 0.3' X 0.3' | WEB | 2 |
| 20 | G-3 | @ BENT 16 | 1.3' X 0.6' | BOTTOM FLANGE | 2 |
| 20 | G-3 | @ BENT 20 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 20 | G-3 | @ BENT 20 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 20 | G-3 | @ BENT 20 | 1' X 1.5' | BOTTOM FLANGE | 2 |
| 20 | G-4 | @ BENT 20 | 2.7' X 0.8' | BOTTOM FLANGE | RT EXT |
| 20 | G-4 | @ BENT 20 | 1' X 0.7' | BOTTOM FLANGE | 3 |
| 21 | G-1 | @ BENT 20 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 21 | G-1 | @ BENT 20 | 2.3' X 0.8' | BOTTOM FLANGE | LT EXT |
| 21 | G-2 | @ BENT 20 | 0.5' X 1.5' | BOTTOM FLANGE | 1 |
| 21 | G-2 | @ BENT 20 | 3' X 9' | BOTTOM FLANGE | 1 |
| 21 | G-2 | @ BENT 21 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 21 | G-3 | @ BENT 20 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 21 | G-3 | @ BENT 20 | 2.5' X 1' | BOTTOM FLANGE | 2 |
| 21 | G-4 | @ BENT 20 | 1.5' X 0.6' | BOTTOM FLANGE | 3 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 21 | G-4 | @ BENT 21 | 2.5' X 0.6' | BOTTOM FLANGE | RT EXT |
| 21 | G-4 | @ BENT 21 | 0.6' X 0.6' | BOTTOM FLANGE | 3 |
| 22 | G-1 | @ BENT 21 | 2.5' X 0.8' | BOTTOM FLANGE | 1 |
| 22 | G-2 | @ BENT 21 | 0.8' X 0.6' | BOTTOM FLANGE | 2 |
| 22 | G-2 | @ BENT 21 | 4' X 0.5' | BOTTOM FLANGE | 2 |
| 22 | G-2 | @ BENT 21 | 0.7' X 0.6' | BOTTOM FLANGE | 1 |
| 22 | G-2 | @ BENT 22 | 0.6' X 1.5' | BOTTOM FLANGE | 1 |
| 22 | G-2 | @ BENT 22 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 23 | G-1 | @ BENT 22 | 1' x 0.6' | BOTTOM FLANGE | 1 |
| 23 | G-2 | @ BENT 23 | 0.7' X 0.6' | BOTTOM FLANGE | 1 |
| 23 | G-3 | @ BENT 23 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 23 | G-4 | @ BENT 23 | 0.5' X 0.6' | BOTTOM FLANGE | RT EXT |
| 23 | G-4 | @ BENT 23 | 6' X 0.6' | BOTTOM FLANGE | 3 |
| 24 | G-1 | @ BENT 23 | 0.7' X 0.5' | BOTTOM FLANGE | 1 |
| 24 | G-1 | @ BENT 24 | 1' X 0.6' | BOTTOM FLANGE | LT EXT |
| 24 | G-2 | @ BENT 23 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 24 | G-2 | @ BENT 24 | 0.8' X 0.6' | BOTTOM FLANGE | 2 |
| 24 | G-3 | @ BENT 23 | 2.3' X 0.8' | BOTTOM FLANGE | 2 |
| 24 | G-3 | @ BENT 24 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 24 | G-4 | @ BENT 23 | 0.5' X 0.6' | BOTTOM FLANGE | 3 |
| 25 | G-2 | 1' FROM INTER. DIA. | 0.5' X 0.3' | WEB | 2 |
| 25 | G-2 | @ BENT 24 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 25 | G-2 | @ BENT 25 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 25 | G-3 | 2' FROM INTER. DIA. | 5' X 0.6' | BOTTOM FLANGE | 2 |
| 25 | G-3 | @ BENT 25 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 25 | G-4 | 1' FROM INTER. DIA. | 3' X 0.6' | BOTTOM FLANGE | 3 |
| 25 | G-4 | @ BENT 24 | 0.5' X 0.5' | BOTTOM FLANGE | 3 |
| 25 | G-4 | @ BENT 25 | 0.5' X 0.6' | BOTTOM FLANGE | 3 |
| 26 | G-1 | @ BENT 25 | 1.5' X 1.5' | BOTTOM FLANGE & WEB | LT EXT |
| 26 | G-1 | 4.5' FROM INTER. DIA. | 2' X 0.5' | BOTTOM FLANGE | 1 |
| 26 | G-2 | @ BENT 25 | 1.3' X .7' | BOTTOM FLANGE | 2 |
| 26 | G-2 | @ BENT 25 | 1.3' X 1.5' | BOTTOM FLANGE & WEB | 1 |
| 26 | G-3 | @ BENT 26 | 1' X 0.6' | BOTTOM FLANGE | 2 |
| 26 | G-4 | @ BENT 26 | 4.5' X 0.8' | BOTTOM FLANGE | 3 |
| 27 | G-1 | 2.5' FROM INTER. DIA. | 2' X 0.5' | BOTTOM FLANGE | 1 |
| 27 | G-1 | @ BENT 26 | 1' X 0.8' | BOTTOM FLANGE | LT EXT |
| 27 | G-2 | 1.5' FROM INTER. DIA. | 1.8' X 0.3' | WEB | 1 |
| 27 | G-3 | @ BENT 26 | 4.5' X 1' | BOTTOM FLANGE | 2 |
| 27 | G-3 | @ BENT 27 | 9' X 0.6' | BOTTOM FLANGE | 2 |
| 27 | G-3 | @ BENT 27 | 1' X 1' | BOTTOM FLANGE | 3 |
| 27 | G-4 | @ BENT 26 | 4.5' X 1' | BOTTOM FLANGE | 3 |
| 27 | G-4 | @ BENT 27 | 3' X 0.5' | BOTTOM FLANGE | RT EXT |
| 28 | G-1 | @ BENT 27 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 28 | G-1 | @ BENT 27 | 3.5' X 0.6' | BOTTOM FLANGE | LT EXT |
| 28 | G-1 | @ BENT 28 | 0.6' X 0.6' | BOTTOM FLANGE | 1 |
| 28 | G-2 | @ BENT 28 | 4' X 0.8' | BOTTOM FLANGE | 1 |
| 28 | G-3 | @ BENT 27 | 5' X 0.6' | BOTTOM FLANGE | 2 |
| 28 | G-4 | @ BENT 28 | 1' X 0.6' | BOTTOM FLANGE | 3 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 15 | GIRDERS | 6.16 | 2.57 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 16 | GIRDERS | 2.51 | 1.05 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 17 | GIRDERS | 8.82 | 3.72 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 18 | GIRDERS | 2.58 | 1.08 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 19 | GIRDERS | 0.54 | 0.23 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 20 | GIRDERS | 12.01 | 5.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 21 | GIRDERS | 36.89 | 15.37 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 22 | GIRDERS | 6.28 | 2.62 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 23 | GIRDERS | 5.34 | 2.23 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 24 | GIRDERS | 4.40 | 1.83 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 25 | GIRDERS | 6.69 | 2.79 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 26 | GIRDERS | 10.31 | 4.30 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 27 | GIRDERS | 19.24 | 8.02 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 28 | GIRDERS | 9.56 | 3.98 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 3 OF 22

DocuSigned by:
Timothy M. Sherrill
AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-18 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:01
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 29 | G-1 | @ BENT 28 | 0.6' X 0.7' | BOTTOM FLANGE | LT EXT |
| 29 | G-2 | @ BENT 28 | 3.5' X 0.8' | BOTTOM FLANGE | 2 |
| 29 | G-3 | @ BENT 28 | 0.5' X 0.5' | BOTTOM FLANGE | 3 |
| 29 | G-3 | @ BENT 28 | 1.5' X 1.3' | BOTTOM FLANGE | 2 |
| 29 | G-3 | 4' FROM INTER. DIA. | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 29 | G-4 | @ BENT 28 | 3.5' X 1' | BOTTOM FLANGE | 3 |
| 29 | G-4 | @ BENT 29 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 29 | G-4 | 6.5' FROM INTER. DIA. | 3' X 0.7' | BOTTOM FLANGE | 3 |
| 30 | G-1 | @ BENT 29 | 5' X 1.5' | BOTTOM FLANGE | 1 |
| 30 | G-1 | @ BENT 30 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 30 | G-2 | @ BENT 29 | 3' X 0.7' | BOTTOM FLANGE | 1 |
| 30 | G-2 | @ BENT 30 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 30 | G-3 | @ BENT 29 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 30 | G-3 | @ BENT 30 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 30 | G-3 | @ BENT 30 | 1' X 0.6' | BOTTOM FLANGE | 2 |
| 30 | G-3 | 4' FROM INTER. DIA. | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 30 | G-4 | @ BENT 29 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 30 | G-4 | @ BENT 30 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 31 | G-1 | @ BENT 30 | 0.5' X 0.6' | BOTTOM FLANGE | RT EXT |
| 31 | G-1 | @ BENT 31 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 31 | G-3 | 4' FROM INTER. DIA. | 2.7' X 0.7' | BOTTOM FLANGE | 2 |
| 32 | G-1 | @ BENT 32 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 32 | G-2 | @ BENT 32 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 32 | G-2 | @ BENT 32 | 0.8' X 0.6' | BOTTOM FLANGE | 2 |
| 32 | G-3 | 1' FROM INTER. DIA. | 2.5' X 0.6' | BOTTOM FLANGE | 2 |
| 32 | G-3 | @ BENT 31 | 5.5' X 0.8' | BOTTOM FLANGE | 2 |
| 32 | G-3 | @ BENT 32 | 0.8' X 0.6' | BOTTOM FLANGE | 2 |
| 32 | G-4 | @ BENT 31 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 33 | G-1 | @ BENT 32 | 2.5' X 0.5' | BOTTOM FLANGE | 1 |
| 33 | G-1 | @ BENT 33 | 5' X 1' | BOTTOM FLANGE | LT EXT |
| 33 | G-2 | @ BENT 32 | 3.7' X 0.8' | BOTTOM FLANGE | 1 |
| 33 | G-2 | @ BENT 32 | 1' X 0.6' | BOTTOM FLANGE | 2 |
| 33 | G-2 | @ BENT 33 | 0.3' X 0.6' | BOTTOM FLANGE | 1 |
| 33 | G-3 | @ BENT 32 | 7.0' X 0.4' | BOTTOM FLANGE | 2 |
| 33 | G-4 | @ BENT 32 | 0.9' X 0.9' | BOTTOM FLANGE | 3 |
| 33 | G-4 | @ BENT 33 | 0.5' X 0.7' | BOTTOM FLANGE | 3 |
| 34 | G-2 | @ BENT 33 | 0.4' X 1.5' | BOTTOM FLANGE | 1 |
| 34 | G-2 | @ BENT 34 | 2.3' X 1' | BOTTOM FLANGE | 1 |
| 34 | G-2 | @ BENT 34 | 0.6' X 0.6' | BOTTOM FLANGE | 2 |
| 34 | G-3 | @ BENT 33 | 2.2' X 1.5' | BOTTOM FLANGE | 2 |
| 34 | G-3 | @ BENT 34 | 1.5' X 0.6' | BOTTOM FLANGE | 2 |
| 35 | G-2 | @ BENT 34 | 3.5' X 0.8' | BOTTOM FLANGE | 1 |
| 35 | G-3 | @ BENT 34 | 0.8' X 0.7' | BOTTOM FLANGE | 2 |
| 35 | G-3 | @ BENT 35 | 0.5' X 0.6' | BOTTOM FLANGE | 2 |
| 36 | END DIA. | @ BENT 36 | 3.5' X 1' | DIAPHRAGM | 3 |
| 36 | G-1 | @ BENT 35 | 1' X 1.5' | BOTTOM FLANGE | LT EXT |
| 36 | G-1 | @ BENT 35 | 0.6' X 0.6' | BOTTOM FLANGE | 1 |
| 36 | G-1 | @ BENT 36 | 1' X 0.4' | BOTTOM FLANGE & WEB | LT EXT |
| 36 | G-2 | @ BENT 35 | 0.5' X 0.1' | BOTTOM FLANGE | 1 |
| 36 | G-2 | @ BENT 35 | 0.9' X 0.6' | BOTTOM FLANGE | 1 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 36 | G-3 | @ BENT 35 | 5' X 0.6' | BOTTOM FLANGE | 3 |
| 36 | G-3 | @ BENT 35 | 3' X 1.3' | BOTTOM FLANGE | 2 |
| 36 | G-3 | @ BENT 35 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 36 | G-3 | 7' FROM INTER. DIA. | 3.8' X 0.5' | BOTTOM FLANGE | 2 |
| 36 | G-4 | @ BENT 35 | 1' X 0.4' | BOTTOM FLANGE | 3 |
| 36 | G-4 | @ BENT 35 | 1.5' X 0.8' | BOTTOM FLANGE | 3 |
| 37 | G-1 | @ BENT 36 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 37 | G-1 | @ BENT 37 | 2.8' X 0.6' | BOTTOM FLANGE | 1 |
| 37 | G-2 | @ BENT 37 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 37 | G-3 | @ BENT 36 | 5' X 0.5' | BOTTOM FLANGE | 2 |
| 37 | G-3 | @ BENT 36 | 0.6' X 0.6' | BOTTOM FLANGE | 3 |
| 37 | G-3 | 14.5' FROM BENT 37 | 3' X 0.6' | BOTTOM FLANGE | 2 |
| 37 | G-3 | @ BENT 37 | 1.4' X 0.7' | BOTTOM FLANGE | 2 |
| 37 | G-4 | @ BENT 36 | 2.8' X 0.7' | BOTTOM FLANGE | 3 |
| 37 | G-4 | 14.5' FROM BENT 37 | 2.8' X 0.6' | BOTTOM FLANGE | RT EXT |
| 38 | G-1 | @ BENT 37 | 0.8' X 0.5' | BOTTOM FLANGE | 1 |
| 38 | G-2 | @ BENT 37 | 0.8' X 0.4' | BOTTOM FLANGE | 2 |
| 38 | G-2 | @ BENT 38 | 5.5' X 1.4' | BOTTOM FLANGE | 1 |
| 38 | G-3 | 3' FROM BENT 37 | 2' X 0.5' | BOTTOM FLANGE | 2 |
| 38 | G-3 | @ BENT 37 | 3' X 0.5' | BOTTOM FLANGE | 2 |
| 38 | G-3 | @ BENT 37 | 0.6' X 0.3' | BOTTOM FLANGE & WEB | 2 |
| 38 | G-3 | @ BENT 37 | 1.8' X 0.6' | BOTTOM FLANGE | 3 |
| 38 | G-4 | 25' FROM BENT 37 | 2.2' X 0.4' | BOTTOM FLANGE | 3 |
| 38 | G-4 | 13.5' FROM BENT 38 | 6' X 0.5' | BOTTOM FLANGE | 3 |
| 38 | G-4 | @ BENT 37 | 0.8' X 0.6' | BOTTOM FLANGE | 3 |
| 38 | G-4 | @ BENT 37 | 2.2' X 1.7' | BOTTOM FLANGE & WEB | 3 |
| 38 | G-4 | @ BENT 37 | 0.6' X 0.3' | BOTTOM FLANGE | RT EXT |
| 39 | G-1 | @ BENT 39 | 0.3' X 0.5' | BOTTOM FLANGE | LT EXT |
| 39 | G-2 | @ BENT 39 | 1.3' X 1.2' | BOTTOM FLANGE | 2 |
| 39 | G-4 | 27.5' FROM BENT 38 | 6.4' X 0.6' | BOTTOM FLANGE | 3 |
| 40 | G-2 | @ BENT 40 | 0.8' X 0.3' | BOTTOM FLANGE | 1 |
| 40 | G-3 | @ BENT 40 | 1' X 0.7' | BOTTOM FLANGE | 3 |
| 40 | G-3 | @ BENT 40 | 0.9' X 0.7' | BOTTOM FLANGE | 2 |
| 40 | G-4 | @ BENT 40 | 1.9' X 1.3' | BOTTOM FLANGE | 3 |
| 41 | G-2 | @ BENT 40 | 1.8' X 0.3' | BOTTOM FLANGE | 1 |
| 41 | G-3 | 30' FROM BENT 40 | 4' X 0.5' | BOTTOM FLANGE | 2 |
| 41 | G-4 | 29' FROM BENT 40 | 2.6' X 0.4' | BOTTOM FLANGE | 3 |
| 41 | G-4 | @ BENT 40 | 0.9' X 0.5' | BOTTOM FLANGE | 3 |
| 41 | G-4 | @ BENT 41 | 0.7' X 0.7' | BOTTOM FLANGE | RT EXT |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 29 | GIRDERS | 12.21 | 5.05 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 30 | GIRDERS | 13.51 | 5.63 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 31 | GIRDERS | 2.79 | 1.16 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 32 | GIRDERS | 22.12 | 9.22 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 33 | GIRDERS | 13.95 | 5.81 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 34 | GIRDERS | 7.46 | 3.11 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 35 | GIRDERS | 3.66 | 1.53 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 36 | GIRDERS | 13.96 | 5.82 | | | |
| | DIAPHRAGMS | 3.50 | 1.46 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 37 | GIRDERS | 11.92 | 4.97 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 38 | GIRDERS | 20.45 | 8.53 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 39 | GIRDERS | 5.55 | 2.31 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 40 | GIRDERS | 4.04 | 1.68 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 41 | GIRDERS | 4.52 | 1.88 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 42 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 4 OF 22

DocuSigned by:
Timothy M. Sherrill
AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

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

SHEET NO. S-19

TOTAL SHEETS 394

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:02
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 43 | G-1 | @ BENT 42 | 2.9' X 0.8' | BOTTOM FLANGE | LT EXT |
| 43 | G-2 | @ BENT 42 | 4.7' X 0.5' | BOTTOM FLANGE | 1 |
| 43 | G-3 | @ BENT 42 | 1.3' X 0.8' | BOTTOM FLANGE | 2 |
| 43 | G-3 | @ BENT 42 | 1.4' X 0.8' | BOTTOM FLANGE | 3 |
| 43 | G-4 | @ BENT 43 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 43 | G-4 | @ BENT 42 | 0.5' X 0.7' | BOTTOM FLANGE | 3 |
| 43 | G-4 | @ BENT 42 | 0.6' X 0.6' | BOTTOM FLANGE | RT EXT |
| 44 | G-1 | @ BENT 43 | 0.8' X 0.5' | BOTTOM FLANGE | 1 |
| 44 | G-1 | @ BENT 44 | 1' X 0.5' | BOTTOM FLANGE | 1 |
| 44 | G-2 | @ BENT 43 | 0.8' X 0.2' | BOTTOM FLANGE | 1 |
| 44 | G-2 | @ BENT 44 | 1' X 0.8' | BOTTOM FLANGE | 2 |
| 44 | G-3 | @ BENT 43 | 1.5' X 0.8' | BOTTOM FLANGE | 2 |
| 45 | G-1 | @ BENT 45 | 0.7' X 0.8' | BOTTOM FLANGE | LT EXT |
| 45 | G-2 | 6' FROM BENT 45 | 3.5' X 0.6' | BOTTOM FLANGE | 1 |
| 45 | G-2 | @ BENT 45 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 45 | G-2 | 8' FROM INTER. DIA. | 3' X 0.3' | BOTTOM FLANGE | 2 |
| 45 | G-3 | @ BENT 44 | 1.5' X 0.7' | BOTTOM FLANGE | 3 |
| 46 | G-2 | @ BENT 45 | 0.7' X 0.5' | BOTTOM FLANGE | 1 |
| 46 | G-3 | @ BENT 45 | 2.7' X 0.3' | BOTTOM FLANGE | 2 |
| 46 | G-3 | @ BENT 46 | 0.7' X 0.5' | BOTTOM FLANGE | 2 |
| 46 | G-4 | 3' FROM BENT 45 | 3.3' X 0.5' | BOTTOM FLANGE | 3 |
| 46 | G-4 | 3' FROM BENT 46 | 3.2' X 0.4' | BOTTOM FLANGE | 3 |
| 46 | G-4 | @ BENT 45 | 2.4' X 1.5' | BOTTOM FLANGE | 3 |
| 47 | G-2 | 2' FROM BENT 47 | 2.7' X 0.5' | BOTTOM FLANGE | 1 |
| 47 | G-2 | @ BENT 47 | 0.5' X 0.7' | BOTTOM FLANGE | 1 |
| 47 | G-3 | @ BENT 47 | 2.1' X 0.6' | BOTTOM FLANGE | 2 |
| 47 | G-3 | @ BENT 47 | 1.8' X 0.4' | BOTTOM FLANGE | 3 |
| 47 | G-4 | @ BENT 47 | 3.1' X 0.5' | BOTTOM FLANGE | 3 |
| 47 | G-4 | 5.5' FROM INTER. DIA. | 3.5' X 0.6' | BOTTOM FLANGE | 3 |
| 48 | G-1 | @ BENT 48 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 48 | G-2 | @ BENT 48 | 0.9' X 0.8' | BOTTOM FLANGE | 1 |
| 48 | G-4 | @ BENT 47 | 1.3' X 0.5' | BOTTOM FLANGE | RT EXT |
| 49 | G-2 | @ BENT 48 | 1.3' X 0.8' | BOTTOM FLANGE | 1 |
| 49 | G-3 | @ BENT 48 | 2.3' X 0.8' | BOTTOM FLANGE | 2 |
| 49 | G-3 | @ BENT 49 | 0.6' X 0.6' | BOTTOM FLANGE | 2 |
| 49 | G-3 | @ BENT 49 | 0.4' X 0.6' | BOTTOM FLANGE | 3 |
| 49 | G-4 | @ BENT 48 | 1.2' X 1.2' | BOTTOM FLANGE | 3 |
| 50 | G-1 | @ BENT 50 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 50 | G-3 | @ BENT 49 | 0.5' X 1.3' | BOTTOM FLANGE | 3 |
| 51 | G-2 | @ BENT 51 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 51 | G-2 | @ BENT 51 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 51 | G-3 | @ BENT 50 | 1.6' X 0.4' | BOTTOM FLANGE | 2 |
| 51 | G-4 | @ BENT 50 | 3.3' X 0.8' | BOTTOM FLANGE | 3 |
| 51 | G-4 | @ BENT 51 | 0.6' X 1.3' | BOTTOM FLANGE | 3 |
| 52 | END DIA. | @ BENT 51 | 2.5' X 0.8' | DIAPHRAGM | 2 |
| 52 | G-1 | @ BENT 52 | 0.5' X 1.3' | BOTTOM FLANGE & WEB | 1 |
| 52 | G-2 | @ BENT 51 | 2.3' X 0.7' | BOTTOM FLANGE | 1 |
| 52 | G-2 | @ BENT 52 | 0.9' X 0.8' | BOTTOM FLANGE | 1 |
| 52 | G-4 | @ BENT 51 | 1' X 0.5' | BOTTOM FLANGE | 3 |
| 52 | G-4 | @ BENT 52 | 1' X 0.8' | BOTTOM FLANGE | 3 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 53 | G-2 | 2.5' FROM INTER. DIA. | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 53 | G-3 | @ BENT 52 | 0.3' X 0.5' | BOTTOM FLANGE | 3 |
| 53 | G-4 | @ BENT 53 | 0.3' X 0.6' | BOTTOM FLANGE | 3 |
| 54 | G-3 | 3' FROM INTER. DIA. | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 54 | G-3 | @ BENT 53 | 1.3' X 0.3' | BOTTOM FLANGE | 2 |
| 54 | G-4 | 3.5' FROM INTER. DIA. | 0.3' X 0.3' | BOTTOM FLANGE | 3 |
| 55 | G-2 | 3' FROM INTER. DIA. | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 55 | G-2 | @ BENT 55 | 0.3' X 0.6' | BOTTOM FLANGE | 2 |
| 55 | G-3 | @ BENT 54 | 0.7' X 0.3' | BOTTOM FLANGE | 3 |
| 55 | G-3 | @ BENT 55 | 1' X 0.6' | BOTTOM FLANGE | 3 |
| 55 | G-3 | @ BENT 55 | 1.5' X 1' | BOTTOM FLANGE | 2 |
| 55 | G-4 | @ BENT 54 | 0.5' X 0.6' | BOTTOM FLANGE | 3 |
| 55 | G-4 | @ BENT 55 | 1.5' X 0.5' | BOTTOM FLANGE | RT EXT |
| 56 | G-1 | @ BENT 56 | 1' X 0.7' | BOTTOM FLANGE | 1 |
| 56 | G-2 | 2.5' FROM BENT 56 | 0.3' X 0.3' | BOTTOM FLANGE | 1 |
| 56 | G-2 | @ BENT 55 | 1' X 1' | BOTTOM FLANGE | 1 |
| 56 | G-2 | @ BENT 56 | 1.3' X 0.7' | BOTTOM FLANGE | 2 |
| 56 | G-3 | @ BENT 56 | 1' X 1.5' | BOTTOM FLANGE | 2 |
| 56 | G-4 | @ BENT 55 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 56 | G-4 | @ BENT 56 | 2.3' X 0.8' | BOTTOM FLANGE | 3 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | ESTIMATE VOLUME CF | ACTUAL AREA SF | ACTUAL DEPTH FT | ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 43 | GIRDERS | 8.34 | 3.48 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 44 | GIRDERS | 3.06 | 1.28 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 45 | GIRDERS | 5.10 | 2.13 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 46 | GIRDERS | 8.04 | 3.35 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 47 | GIRDERS | 7.33 | 3.05 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 48 | GIRDERS | 2.01 | 0.84 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 49 | GIRDERS | 4.92 | 2.05 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 50 | GIRDERS | 0.90 | 0.38 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 51 | GIRDERS | 5.04 | 2.10 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 52 | GIRDERS | 4.28 | 1.78 | | | |
| | DIAPHRAGMS | 2.00 | 0.83 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 53 | GIRDERS | 0.63 | 0.26 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 54 | GIRDERS | 0.97 | 0.40 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 55 | GIRDERS | 3.79 | 1.58 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 56 | GIRDERS | 6.46 | 2.69 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

SHEET 5 OF 22

DocuSigned by:
AD50B1D977494CC...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

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

SHEET NO. S-20
TOTAL SHEETS 394

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:03
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 57 | G-1 | 4' FROM BENT 56 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 57 | G-1 | @ BENT 57 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 57 | G-1 | @ BENT 57 | 0.7' X 0.8' | BOTTOM FLANGE | LT EXT |
| 57 | G-2 | @ BENT 56 | 2.3' X 0.5' | BOTTOM FLANGE | 2 |
| 57 | G-2 | @ BENT 56 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 57 | G-3 | @ BENT 56 | 0.2' X 0.8' | BOTTOM FLANGE | 2 |
| 57 | G-3 | @ BENT 57 | 2.5' X 0.7' | BOTTOM FLANGE | 3 |
| 57 | G-4 | @ BENT 56 | 0.2' X 0.8' | BOTTOM FLANGE | 3 |
| 58 | G-1 | 15' FROM INTER. DIA. | 4' X 0.6' | BOTTOM FLANGE | RT EXT |
| 58 | G-1 | @ BENT 58 | 2' X 0.6' | BOTTOM FLANGE | 1 |
| 58 | G-2 | 15' FROM BENT 57 | 0.5' X 0.5' | BOTTOM FLANGE & WEB | 1 |
| 58 | G-3 | @ BENT 57 | 3' X 0.8' | BOTTOM FLANGE | 2 |
| 58 | G-4 | @ BENT 57 | 3' X 0.5' | BOTTOM FLANGE | 3 |
| 58 | G-4 | @ BENT 58 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 59 | G-1 | @ BENT 59 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 59 | G-2 | 3' FROM INTER. DIA. | 0.3' X 0.3' | BOTTOM FLANGE | 2 |
| 59 | G-2 | @ BENT 59 | 1.5' X 1' | BOTTOM FLANGE | 1 |
| 59 | G-3 | @ BENT 59 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 59 | G-3 | @ BENT 59 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 59 | G-4 | 2.5' FROM INTER. DIA. | 1' X 1' | BOTTOM FLANGE | 3 |
| 59 | G-4 | @ BENT 58 | 0.5' X 0.8' | BOTTOM FLANGE | 3 |
| 59 | G-4 | @ BENT 59 | 2' X 0.8' | BOTTOM FLANGE | 3 |
| 60 | END DIA. | @ BENT 59 | 4' X 1' | DIAPHRAGM | 2 |
| 60 | G-1 | @ BENT 60 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 60 | G-2 | @ BENT 59 | 0.5' X 1.5' | BOTTOM FLANGE & WEB | 1 |
| 60 | G-2 | @ BENT 59 | 5' X 0.6' | BOTTOM FLANGE | 1 |
| 60 | G-2 | @ BENT 60 | 1' X 0.8' | BOTTOM FLANGE | 2 |
| 60 | G-2 | @ BENT 60 | 3.5' X 0.6' | BOTTOM FLANGE | 1 |
| 60 | G-3 | @ BENT 59 | 1.3' X 0.5' | BOTTOM FLANGE | 2 |
| 60 | G-3 | @ BENT 60 | 0.6' X 0.6' | BOTTOM FLANGE | 3 |
| 60 | G-3 | @ BENT 60 | 1' X 1' | BOTTOM FLANGE | 2 |
| 60 | G-4 | @ BENT 59 | 3.5' X 0.6' | BOTTOM FLANGE | 3 |
| 60 | G-4 | @ BENT 60 | 8' X 1.3' | BOTTOM FLANGE | RT EXT |
| 60 | G-4 | @ BENT 60 | 3' X 1' | BOTTOM FLANGE | 3 |
| 60 | G-4 | 5' FROM INTER. DIA. | 2' X 0.5' | BOTTOM FLANGE | 3 |
| 61 | G-1 | @ BENT 60 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 61 | G-2 | @ BENT 60 | 0.5' X 1.5' | BOTTOM FLANGE | 1 |
| 61 | G-2 | @ BENT 60 | 1' X 0.3' | BOTTOM FLANGE | 1 |
| 61 | G-3 | 2.5' FROM INTER. DIA. | 0.5' X 1.2' | WEB | 3 |
| 61 | G-3 | @ BENT 60 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 61 | G-3 | @ BENT 61 | 0.5' X 0.6' | BOTTOM FLANGE | 2 |
| 61 | G-4 | 15' FROM INTER. DIA. | 3.5' X 0.6' | BOTTOM FLANGE | 3 |
| 61 | G-4 | @ BENT 60 | 1.3' X 0.8' | BOTTOM FLANGE | 3 |
| 62 | G-1 | @ BENT 61 | 0.3' X 0.7' | BOTTOM FLANGE | LT EXT |
| 62 | G-1 | @ BENT 62 | 1.3' X 0.6' | BOTTOM FLANGE | 1 |
| 62 | G-1 | @ BENT 62 | 1.5' X 0.8' | BOTTOM FLANGE | LT EXT |
| 62 | G-2 | @ BENT 61 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 62 | G-2 | @ BENT 62 | 1' X 0.8' | BOTTOM FLANGE | 2 |
| 62 | G-3 | @ BENT 62 | 0.8' X 0.7' | BOTTOM FLANGE | 2 |
| 62 | G-4 | @ BENT 61 | 3' X 0.6' | BOTTOM FLANGE | 3 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 62 | G-4 | @ BENT 62 | 1.5' X 1' | BOTTOM FLANGE | 3 |
| 63 | G-3 | 5' FROM INTER. DIA. | 0.5' X 0.5' | BOTTOM FLANGE & WEB | 2 |
| 64 | G-1 | @ BENT 63 | 0.6' X 0.6' | BOTTOM FLANGE | RT EXT |
| 64 | G-2 | @ BENT 64 | 0.6' X 0.7' | BOTTOM FLANGE | 2 |
| 64 | G-4 | @ BENT 63 | 0.5' X 0.7' | WEB | LT EXT |
| 65 | G-1 | @ BENT 65 | 0.7' X 0.6' | BOTTOM FLANGE | 1 |
| 65 | G-2 | @ BENT 65 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 65 | G-2 | @ BENT 65 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 65 | G-3 | @ BENT 64 | 0.5' X 0.3' | BOTTOM FLANGE | 2 |
| 65 | G-4 | @ BENT 64 | 0.5' X 0.3' | BOTTOM FLANGE | 3 |
| 66 | G-1 | @ BENT 66 | 0.8' X 0.5' | BOTTOM FLANGE | 1 |
| 66 | G-1 | 5' FROM INTER. DIA. | 3.5' X 0.7' | BOTTOM FLANGE | RT EXT |
| 66 | G-1 | @ BENT 66 | 0.7' X 2' | BOTTOM FLANGE | RT EXT |
| 66 | G-3 | @ BENT 65 | 2.7' X 0.8' | BOTTOM FLANGE | 2 |
| 66 | G-4 | @ BENT 65 | 2' X 0.6' | BOTTOM FLANGE | 3 |
| 67 | G-2 | 5' FROM INTER. DIA. | 3.5' X 0.6' | BOTTOM FLANGE | 1 |
| 67 | G-3 | @ BENT 66 | 2' X 0.6' | BOTTOM FLANGE | 3 |
| 67 | G-3 | @ BENT 67 | 0.5' X 0.8' | BOTTOM FLANGE | 3 |
| 67 | G-4 | @ BENT 66 | 0.5' X 0.6' | BOTTOM FLANGE | 3 |
| 67 | G-4 | @ BENT 67 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 68 | G-1 | @ BENT 67 | 1' X 1' | BOTTOM FLANGE | RT EXT |
| 68 | G-1 | @ BENT 68 | 0.7' X 0.7' | BOTTOM FLANGE | RT EXT |
| 68 | G-1 | @ BENT 68 | 1.5' X 0.8' | BOTTOM FLANGE | 1 |
| 68 | G-2 | @ BENT 68 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 68 | G-2 | @ BENT 68 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 68 | G-4 | @ BENT 67 | 0.3' X 0.6' | BOTTOM FLANGE | 3 |
| 69 | END DIA. | @ BENT 69 | 3' X 0.6' | DIAPHRAGM | 3 |
| 69 | G-1 | @ BENT 69 | 0.7' X 0.6' | BOTTOM FLANGE | 1 |
| 69 | G-1 | @ BENT 69 | 0.7' X 0.7' | BOTTOM FLANGE | RT EXT |
| 69 | G-3 | @ BENT 69 | 1.3' X 0.8' | BOTTOM FLANGE | 3 |
| 70 | G-1 | @ BENT 69 | 0.4' X 0.7' | BOTTOM FLANGE | 1 |
| 70 | G-1 | @ BENT 70 | 1' X 1.5' | BOTTOM FLANGE & WEB | RT EXT |
| 70 | G-1 | @ BENT 70 | 0.8' X 1.5' | BOTTOM FLANGE & WEB | 1 |
| 70 | G-1 | @ BENT 70 | 0.3' X 0.6' | BOTTOM FLANGE | 1 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | ESTIMATE VOLUME CF | ACTUAL AREA SF | ACTUAL DEPTH FT | ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 57 | GIRDERS | 5.01 | 2.09 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 58 | GIRDERS | 8.55 | 3.56 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 59 | GIRDERS | 5.82 | 2.43 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 60 | GIRDERS | 25.65 | 10.69 | | | |
| | DIAPHRAGMS | 4.00 | 1.67 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 61 | GIRDERS | 6.69 | 2.79 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 62 | GIRDERS | 7.34 | 3.06 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 63 | GIRDERS | 0.25 | 0.10 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 64 | GIRDERS | 1.13 | 0.47 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 65 | GIRDERS | 1.94 | 0.81 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 66 | GIRDERS | 27.05 | 11.27 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 67 | GIRDERS | 4.64 | 1.93 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 68 | GIRDERS | 4.31 | 1.80 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 69 | GIRDERS | 1.95 | 0.81 | | | |
| | DIAPHRAGMS | 1.80 | 0.75 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 70 | GIRDERS | 3.16 | 1.32 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 6 OF 22

DocuSigned by:

AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-21 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:03
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 71 | G-2 | @ BENT 71 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 71 | G-2 | @ BENT 71 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 72 | G-1 | @ BENT 72 | 0.6' X 0.8' | BOTTOM FLANGE | 1 |
| 72 | G-1 | @ BENT 72 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 72 | G-2 | @ BENT 72 | 0.5' X 0.6' | BOTTOM FLANGE | RT EXT |
| 72 | G-2 | @ BENT 72 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 72 | G-2 | @ BENT 72 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 72 | G-4 | @ BENT 72 | 0.5' X 1.5' | BOTTOM FLANGE & WEB | LT EXT |
| 73 | G-1 | @ BENT 72 | 2.5' X 0.6' | BOTTOM FLANGE | 1 |
| 73 | G-2 | @ BENT 72 | 0.5' X 0.8' | BOTTOM FLANGE | 2 |
| 73 | G-2 | @ BENT 72 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 73 | G-2 | @ BENT 72 | 0.8' X 0.8' | BOTTOM FLANGE | RT EXT |
| 73 | G-2 | @ BENT 73 | 2' X 0.6' | BOTTOM FLANGE | 2 |
| 73 | G-2 | @ BENT 73 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 73 | G-3 | @ BENT 73 | 0.3' X 1' | BOTTOM FLANGE | 3 |
| 74 | G-1 | @ BENT 74 | 0.7' X 0.6' | BOTTOM FLANGE | 1 |
| 74 | G-2 | @ BENT 73 | 0.5' X 1.5' | BOTTOM FLANGE | 2 |
| 74 | G-2 | @ BENT 73 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 74 | G-2 | @ BENT 73 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 74 | G-2 | @ BENT 74 | 0.5' X 0.8' | BOTTOM FLANGE | 2 |
| 74 | G-2 | @ BENT 74 | 1' X 0.8' | BOTTOM FLANGE | 2 |
| 75 | G-1 | @ BENT 75 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 75 | G-1 | @ BENT 75 | 0.5' X 0.8' | BOTTOM FLANGE | 1 |
| 75 | G-1 | 5' FROM INTER. DIA. | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 75 | G-2 | @ BENT 74 | 1' X 0.8' | BOTTOM FLANGE | 2 |
| 75 | G-2 | @ BENT 74 | 0.8' X 1.5' | BOTTOM FLANGE | 1 |
| 75 | G-2 | @ BENT 74 | 1.5' X 1.5' | BOTTOM FLANGE | 1 |
| 75 | G-2 | @ BENT 75 | 0.5' X 0.7' | BOTTOM FLANGE | 3 |
| 75 | G-3 | @ BENT 75 | 0.5' X 1.5' | BOTTOM FLANGE | RT EXT |
| 76 | G-1 | 7' FROM INTER. DIA. | 2.5' X 0.3' | BOTTOM FLANGE | RT EXT |
| 76 | G-2 | @ BENT 75 | 1.5" X 0.8' | BOTTOM FLANGE | 1 |
| 76 | G-2 | @ BENT 75 | 1' X 0.8' | BOTTOM FLANGE | RT EXT |
| 76 | G-3 | @ BENT 75 | 1.5" X 0.8' | BOTTOM FLANGE | 2 |
| 76 | G-4 | @ BENT 76 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 76 | G-4 | @ BENT 76 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 77 | DECK | 4.5' FROM INTER. DIA. | 0.7' X 0.7' | BOTTOM OF DECK | 1 |
| 77 | G-1 | @ BENT 76 | 1.2' X 0.8' | BOTTOM FLANGE | LT EXT |
| 77 | G-1 | @ BENT 77 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 77 | G-1 | 5' FROM INTER. DIA. | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 77 | G-2 | @ BENT 77 | 0.7' X 0.5' | BOTTOM FLANGE | 1 |
| 77 | G-2 | @ BENT 77 | 0.8' X 0.6' | BOTTOM FLANGE | 2 |
| 77 | G-3 | @ BENT 76 | 1' X 0.6' | BOTTOM FLANGE | RT EXT |
| 77 | G-3 | @ BENT 76 | 5.5' X 0.6' | BOTTOM FLANGE | 3 |
| 78 | G-1 | @ BENT 78 | 3.8' X 0.9' | BOTTOM FLANGE | 1 |
| 78 | G-2 | @ BENT 78 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 78 | G-3 | @ BENT 78 | 0.9' X 0.6' | BOTTOM FLANGE | 2 |
| 79 | G-1 | @ BENT 78 | 0.6' X 0.8' | BOTTOM FLANGE | 1 |
| 79 | G-1 | @ BENT 78 | 1.3' X 0.6' | BOTTOM FLANGE | 1 |
| 79 | G-2 | @ BENT 78 | 0.6' X 0.7' | BOTTOM FLANGE | 2 |
| 79 | G-2 | @ BENT 79 | 1.5' X 0.2' | BOTTOM FLANGE | 1 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 79 | G-2 | @ BENT 79 | 1.2' X 1' | BOTTOM FLANGE | 2 |
| 79 | G-2 | @ BENT 79 | 0.7' X 0.5' | BOTTOM FLANGE | 2 |
| 79 | G-3 | 33' FROM BENT 78 | 3.3' X 0.8' | BOTTOM FLANGE | 2 |
| 79 | G-4 | @ BENT 78 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 80 | G-1 | @ BENT 80 | 0.3' X 0.6' | BOTTOM FLANGE | 1 |
| 80 | G-1 | @ BENT 80 | 0.8' X 0.5' | BOTTOM FLANGE | 2 |
| 80 | G-1 | @ BENT 80 | 1.0' X 0.8' | BOTTOM FLANGE | 1 |
| 80 | G-1 | @ BENT 80 | 1.5' X 1.3' | BOTTOM FLANGE | 2 |
| 80 | G-2 | 31' FROM BENT 79 | 3.4' X 0.5' | BOTTOM FLANGE | 1 |
| 80 | G-2 | 25' FROM BENT 79 | 10.5' X 0.5' | BOTTOM FLANGE | 2 |
| 80 | G-2 | @ BENT 80 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 80 | G-3 | 26' FROM BENT 79 | 2.4' X 0.4' | BOTTOM FLANGE | 3 |
| 81 | G-1 | @ BENT 80 | 1.8' X 0.8' | BOTTOM FLANGE | 1 |
| 81 | G-2 | @ BENT 80 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 81 | G-1 | @ BENT 81 | 0.3' X 0.8' | BOTTOM FLANGE | 1 |
| 81 | G-2 | @ BENT 81 | 0.6' X 0.8' | BOTTOM FLANGE | 2 |
| 81 | G-1 | @ BENT 80 | 2.2' X 0.9' | BOTTOM FLANGE | LT EXT |
| 81 | G-3 | @ BENT 80 | 1.2' X 0.9' | BOTTOM FLANGE | 2 |
| 81 | G-4 | @ BENT 80 | 0.4' X 0.8' | BOTTOM FLANGE | 3 |
| 81 | G-3 | @ BENT 81 | 0.3' X 0.4' | BOTTOM FLANGE | 3 |
| 81 | G-4 | 29' FROM BENT 80 | 4.4' X 0.5' | BOTTOM FLANGE | 3 |
| 82 | G-2 | @ BENT 81 | 1.6' X 1' | BOTTOM FLANGE | 1 |
| 83 | END DIA. | @ BENT 83 | 1.7' X 0.8' | DIAPHRAGM | 3 |
| 83 | G-3 | @ BENT 82 | 2.1' X 0.9' | BOTTOM FLANGE | 1 |
| 83 | G-1 | @ BENT 82 | 0.3' X 1.3' | BOTTOM FLANGE & WEB | 1 |
| 83 | G-3 | @ BENT 83 | 0.8' X 0.7' | BOTTOM FLANGE | 3 |
| 83 | G-4 | @ BENT 83 | 0.4' X 0.8' | WEB | RT EXT |
| 84 | G-1 | @ BENT 83 | 0.3' X 0.8' | BOTTOM FLANGE | 1 |
| 84 | G-2 | @ BENT 83 | 3' X 0.7' | BOTTOM FLANGE | 1 |
| 84 | G-3 | @ BENT 83 | 1.8' X 0.4' | BOTTOM FLANGE | 2 |
| 84 | G-3 | @ BENT 83 | 0.6' X 0.5' | BOTTOM FLANGE | 3 |
| 84 | G-3 | 1' FROM BENT 83 | 0.7' X 0.5' | BOTTOM FLANGE | 3 |
| 84 | G-3 | @ BENT 84 | 1.8' X 0.6' | BOTTOM FLANGE | 3 |
| 84 | G-4 | @ BENT 84 | 0.4' X 0.8' | BOTTOM FLANGE | 3 |
| 84 | G-4 | 8 ' FROM BENT 84 | 3.2' X 0.5' | BOTTOM FLANGE | 3 |
| 84 | G-1 | @ BENT 84 | 0.6' X 0.6' | BOTTOM FLANGE | 3 |
| 84 | G-4 | @ BENT 84 | 0.3' X 1.3' | BOTTOM FLANGE | RT EXT |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 71 | GIRDERS | 0.98 | 0.41 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 72 | GIRDERS | 3.77 | 1.57 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 73 | GIRDERS | 5.33 | 2.22 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 74 | GIRDERS | 2.97 | 1.24 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 75 | GIRDERS | 6.49 | 2.70 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 76 | GIRDERS | 5.39 | 2.25 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 77 | GIRDERS | 6.19 | 2.58 | | | |
| | DIAPHRAGMS | 0.49 | 0.20 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 78 | GIRDERS | 4.44 | 1.85 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 79 | GIRDERS | 7.19 | 3.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 80 | GIRDERS | 11.66 | 4.86 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 81 | GIRDERS | 8.87 | 3.70 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 82 | GIRDERS | 1.60 | 0.67 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 83 | GIRDERS | 3.16 | 1.32 | | | |
| | DIAPHRAGMS | 1.36 | 0.57 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 84 | GIRDERS | 7.46 | 3.11 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 7 OF 22

DocuSigned by:

AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-22 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:03
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 85 | G-1 | @ BENT 84 | 0.5' X 0.8' | BOTTOM FLANGE | 1 |
| 85 | G-2 | @ BENT 84 | 2.7' X 0.6' | BOTTOM FLANGE | 1 |
| 85 | G-2 | @ BENT 85 | 0.8' X 1.1' | BOTTOM FLANGE | 2 |
| 85 | G-1 | @ BENT 85 | 0.4' X 0.7' | BOTTOM FLANGE | 1 |
| 85 | G-4 | 6' FROM BENT 85 | 2.5' X 0.5' | BOTTOM FLANGE | 3 |
| 86 | G-2 | @ BENT 85 | 0.6' X 0.8' | BOTTOM FLANGE | 2 |
| 86 | G-1 | @ BENT 86 | 1.3' X 1.1' | BOTTOM FLANGE & WEB | 1 |
| 87 | G-2 | @ BENT 87 | 0.7' X 0.5' | BOTTOM FLANGE | 1 |
| 87 | G-3 | @ BENT 86 | 0.5' X 0.5' | BOTTOM FLANGE | 3 |
| 87 | G-2 | @ BENT 86 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 87 | G-3 | @ BENT 87 | 1.2' X 1.4' | WEB | 3 |
| 87 | G-3 | @ BENT 87 | 0.7' X 0.4' | BOTTOM FLANGE | 2 |
| 87 | G-3 | @ BENT 87 | 0.7' X 0.3' | BOTTOM FLANGE | 2 |
| 88 | G-1 | @ BENT 88 | 2.7' X 0.9' | BOTTOM FLANGE | 2 |
| 88 | G-1 | @ BENT 87 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 88 | END DIA. | @ BENT 88 | 6.4' X 0.8' | DIAPHRAGM | 2 |
| 89 | G-1 | @ BENT 88 | 1' X 0.7' | BOTTOM FLANGE | 1 |
| 89 | G-2 | @ BENT 88 | 1.3' X 0.4' | BOTTOM FLANGE | 1 |
| 89 | G-3 | @ BENT 88 | 2.1' X 0.7' | BOTTOM FLANGE | 1 |
| 89 | G-2 | @ BENT 89 | 0.6' X 0.8' | BOTTOM FLANGE | 2 |
| 89 | G-3 | @ BENT 88 | 0.8' X 0.6' | BOTTOM FLANGE | 2 |
| 89 | G-4 | @ BENT 89 | 0.6' X 0.5' | BOTTOM FLANGE | 3 |
| 89 | G-2 | @ BENT 89 | 0.5' X 0.8' | BOTTOM FLANGE | 3 |
| 90 | END DIA. | @ BENT 89 | 3.2' X 0.5' | DIAPHRAGM | 2 |
| 90 | G-2 | @ BENT 89 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 90 | G-1 | @ BENT 89 | 0.7' X 1.1' | BOTTOM FLANGE | 1 |
| 90 | G-2 | @ BENT 89 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 90 | G-2 | @ BENT 90 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 91 | END DIA. | @ BENT 91 | 6.4' X 0.4' | DIAPHRAGM | 3 |
| 91 | END DIA. | @ BENT 91 | 4.3' X 0.4' | DIAPHRAGM | 2 |
| 91 | G-4 | 12' FROM BENT 90 | 2.7' X 0.3' | BOTTOM FLANGE | 3 |
| 92 | G-1 | @ BENT 92 | 0.4' X 0.4' | BOTTOM FLANGE | LT EXT |
| 92 | G-1 | @ BENT 92 | 0.7' X 0.6' | BOTTOM FLANGE | 1 |
| 92 | G-2 | @ BENT 91 | 2.8' X 0.5' | BOTTOM FLANGE | 1 |
| 92 | G-1 | @ BENT 92 | 2' X 0.6' | BOTTOM FLANGE | LT EXT |
| 92 | G-2 | @ BENT 92 | 0.8' X 0.7' | BOTTOM FLANGE | 2 |
| 92 | G-3 | @ BENT 92 | 0.9' X 0.8' | BOTTOM FLANGE | 1 |
| 93 | G-1 | @ BENT 92 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 93 | G-1 | @ BENT 93 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 93 | G-2 | @ BENT 93 | 0.3' X 0.2' | WEB | 2 |
| 93 | G-2 | @ BENT 93 | 0.5' X 1.3' | WEB | 2 |
| 94 | END DIA. | @ BENT 94 | 2.2' X 0.7' | DIAPHRAGM | 2 |
| 94 | G-3 | @ BENT 93 | 1.1' X 0.8' | BOTTOM FLANGE | 2 |
| 94 | G-3 | @ BENT 93 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 94 | G-3 | @ BENT 94 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 95 | G-2 | @ BENT 95 | 0.6' X 0.7' | BOTTOM FLANGE | 1 |
| 95 | G-1 | @ BENT 95 | 0.8' X 0.7' | BOTTOM FLANGE | 1 |
| 95 | G-4 | @ BENT 95 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 96 | G-1 | @ BENT 95 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 96 | G-2 | @ BENT 96 | 0.8' X 0.5' | BOTTOM FLANGE | 1 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 96 | G-3 | @ BENT 96 | 0.9' X 0.7' | BOTTOM FLANGE | 2 |
| 96 | G-2 | @ BENT 96 | 0.7' X 0.8' | BOTTOM FLANGE | 2 |
| 97 | G-3 | 30' FROM BENT 96 | 1.7' X 0.4' | BOTTOM FLANGE | 2 |
| 97 | G-2 | @ BENT 96 | 0.8' X 0.6' | BOTTOM FLANGE | 2 |
| 97 | G-2 | @ BENT 97 | 1.3' X 1.2' | BOTTOM FLANGE | 1 |
| 97 | G-3 | @ BENT 97 | 0.6' X 0.7' | BOTTOM FLANGE | 2 |
| 97 | G-3 | 33' FROM BENT 96 | 2.3' X 0.5' | BOTTOM FLANGE | 2 |
| 97 | G-3 | @ BENT 97 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 98 | G-3 | @ BENT 97 | 0.6' X 0.6' | BOTTOM FLANGE | 3 |
| 98 | G-2 | @ BENT 98 | 1.1' X 0.8' | BOTTOM FLANGE | 1 |
| 98 | G-2 | @ BENT 97 | 0.6' X 1.5' | BOTTOM FLANGE | 2 |
| 98 | G-4 | @ BENT 97 | 0.4' X 0.8' | BOTTOM FLANGE | 3 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 85 | GIRDERS | 4.36 | 1.82 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 86 | GIRDERS | 1.91 | 0.80 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 87 | GIRDERS | 3.26 | 1.36 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 88 | GIRDERS | 2.92 | 1.22 | | | |
| | DIAPHRAGMS | 5.12 | 2.13 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 89 | GIRDERS | 4.35 | 1.81 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 90 | GIRDERS | 2.35 | 0.98 | | | |
| | DIAPHRAGMS | 1.60 | 0.67 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 91 | GIRDERS | 0.81 | 0.34 | | | |
| | DIAPHRAGMS | 4.28 | 1.78 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 92 | GIRDERS | 4.46 | 1.86 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 93 | GIRDERS | 1.59 | 0.66 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 94 | GIRDERS | 1.93 | 0.80 | | | |
| | DIAPHRAGMS | 1.54 | 0.64 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 95 | GIRDERS | 1.40 | 0.58 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 96 | GIRDERS | 2.08 | 0.87 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 97 | GIRDERS | 4.93 | 2.05 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 98 | GIRDERS | 2.46 | 1.03 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 8 OF 22

DocuSigned by:

AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-23 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:04
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 99 | G-2 | @ BENT 98 | 0.9' X 0.8' | BOTTOM FLANGE | 1 |
| 99 | G-1 | @ BENT 98 | 0.5' X 0.7' | BOTTOM FLANGE | 1 |
| 100 | G-3 | @ BENT 100 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 100 | G-1 | @ BENT 100 | 0.6' X 0.8' | BOTTOM FLANGE | 1 |
| 100 | G-4 | @ BENT 100 | 0.7' X 0.8' | BOTTOM FLANGE | 3 |
| 101 | G-2 | @ BENT 101 | 0.6' X 0.6' | BOTTOM FLANGE | 2 |
| 101 | G-3 | @ BENT 101 | 0.8' X 0.9' | BOTTOM FLANGE | 2 |
| 101 | G-3 | @ BENT 100 | 0.8' X 1' | BOTTOM FLANGE | 2 |
| 101 | G-3 | @ BENT 100 | 0.4' X 0.5' | BOTTOM FLANGE | 3 |
| 101 | G-2 | @ BENT 100 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 101 | G-4 | @ BENT 101 | 0.8' X 0.7' | BOTTOM FLANGE | 3 |
| 102 | G-1 | @ BENT 102 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 102 | G-2 | @ BENT 102 | 0.5' X 0.7' | BOTTOM FLANGE | 1 |
| 102 | G-3 | @ BENT 101 | 0.5' X 1' | BOTTOM FLANGE | 2 |
| 102 | G-3 | @ BENT 102 | 1' X 1.4' | BOTTOM FLANGE | 2 |
| 103 | G-1 | @ BENT 103 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 103 | G-2 | @ BENT 102 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 103 | G-3 | @ BENT 102 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 103 | G-3 | 12' FROM BENT 102 | 3' X 0.5' | BOTTOM FLANGE | 2 |
| 104 | G-2 | @ BENT 104 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 104 | G-3 | @ BENT 103 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 105 | G-2 | @ BENT 104 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 105 | G-2 | @ BENT 105 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 105 | G-4 | @ BENT 105 | 0.5' X 0.5' | BOTTOM FLANGE | 3 |
| 106 | G-2 | @ BENT 105 | 2' X 0.5' | BOTTOM FLANGE | 1 |
| 106 | G-2 | @ BENT 106 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 106 | G-3 | @ BENT 106 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 107 | END DIA. | @ BENT 106 | 1' X 0.5' | DIAPHRAGM | 3 |
| 107 | END DIA. | @ BENT 107 | 3' X 0.7' | DIAPHRAGM | 2 |
| 107 | G-1 | @ BENT 106 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 107 | G-2 | @ BENT 107 | 1.2' X 1.2' | BOTTOM FLANGE & WEB | 1 |
| 107 | G-2 | @ BENT 107 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 107 | G-3 | @ BENT 107 | 0.7' X 1' | BOTTOM FLANGE | 2 |
| 107 | G-4 | 30' FROM BENT 106 | 0.5' X 0.5' | BOTTOM FLANGE | 3 |
| 107 | G-4 | @ BENT 107 | 0.7' X 1' | BOTTOM FLANGE | 3 |
| 108 | G-2 | @ BENT 107 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 108 | G-2 | @ BENT 108 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 109 | G-1 | @ BENT 108 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 109 | G-2 | @ BENT 109 | 0.6' X 0.2' | BOTTOM FLANGE | 1 |
| 109 | G-2 | @ BENT 109 | 0.5 X 0.3' | BOTTOM FLANGE | 3 |
| 109 | G-2 | 2' FROM BENT 108 | 0.4' X 0.5' | BOTTOM FLANGE | 2 |
| 109 | G-2 | @ BENT 108 | 0.3' X 0.6' | BOTTOM FLANGE | 2 |
| 109 | G-3 | @ BENT 109 | 0.8' X 0.7' | BOTTOM FLANGE | RT EXT |
| 109 | G-3 | @ BENT 108 | 0.4' X 1.3' | BOTTOM FLANGE | 3 |
| 109 | G-3 | @ BENT 108 | 0.7' X 0.8' | BOTTOM FLANGE | 3 |
| 109 | G-4 | @ BENT 108 | 0.3' X 0.8' | BOTTOM FLANGE | LT EXT |
| 110 | END DIA. | @ BENT 109 | 1.7' X 0.8' | DIAPHRAGM | 2 |
| 110 | END DIA. | @ BENT 109 | 2.3' X 0.6' | DIAPHRAGM | 2 |
| 110 | G-1 | @ BENT 109 | 0.3' X 0.7' | WEB | 1 |
| 110 | G-1 | @ BENT 109 | 1' X 0.8' | BOTTOM FLANGE | 1 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 110 | G-1 | @ BENT 109 | 0.4' X 0.4' | BOTTOM FLANGE | 1 |
| 110 | G-2 | @ BENT 110 | 0.6' X 0.5' | BOTTOM FLANGE | 1 |
| 110 | G-2 | @ BENT 110 | 0.6' X 0.7' | BOTTOM FLANGE | RT EXT |
| 110 | G-3 | @ BENT 109 | 1' X 1.3' | BOTTOM FLANGE & WEB | 2 |
| 110 | G-3 | @ BENT 109 | 2.1' X 0.8' | BOTTOM FLANGE | 3 |
| 110 | G-4 | @ BENT 109 | 0.5' X 1.3' | BOTTOM FLANGE & WEB | LT EXT |
| 111 | END DIA. | @ BENT 110 | 2.5' X 0.5' | DIAPHRAGM | 2 |
| 111 | END DIA. | @ BENT 110 | 3' X 1' | DIAPHRAGM | 3 |
| 111 | END DIA. | @ BENT 110 | 0.8' X 1.3' | DIAPHRAGM | RT EXT |
| 111 | G-1 | @ BENT 110 | 0.6' X 0.7 | BOTTOM FLANGE | 1 |
| 111 | G-3 | @ BENT 110 | 0.5' X 1.4' | BOTTOM FLANGE & WEB | 2 |
| 111 | G-3 | @ BENT 110 | 0.6' X 1.5' | BOTTOM FLANGE | 2 |
| 111 | G-3 | @ BENT 110 | 0.6' X 1.4' | BOTTOM FLANGE & WEB | 3 |
| 111 | G-4 | @ BENT 110 | 0.9' X 0.8' | BOTTOM FLANGE & WEB | LT EXT |
| 111 | G-4 | @ BENT 110 | 0.4' X 1.4' | BOTTOM FLANGE & WEB | 3 |
| 111 | G-4 | @ BENT 110 | 0.4' X 0.3' | BOTTOM FLANGE | RT EXT |
| 112 | DECK | 2' FROM BENT 112 | 0.5' X 0.7' | BOTTOM OF DECK | 3 |
| 112 | END DIA. | @ BENT 111 | 2' X 0.6' | DIAPHRAGM | 1 |
| 112 | END DIA. | @ BENT 111 | 3' X 1' | DIAPHRAGM | 2 |
| 112 | END DIA. | @ BENT 111 | 1.5' X 0.8' | DIAPHRAGM | 3 |
| 112 | END DIA. | @ BENT 111 | 1.3' X 1.5' | DIAPHRAGM | RT EXT |
| 112 | END DIA. | @ BENT 112 | 1.7' X 0.5' | DIAPHRAGM | 1 |
| 112 | END DIA. | @ BENT 112 | 0.8' X 0.3' | DIAPHRAGM | 3 |
| 112 | END DIA. | @ BENT 112 | 1.4' X 1.3' | DIAPHRAGM | RT EXT |
| 112 | END DIA. | @ BENT 111 | 1.5' X 1.3' | DIAPHRAGM | LT EXT |
| 112 | G-1 | @ BENT 111 | 0.3' X 0.8' | BOTTOM FLANGE | LT EXT |
| 112 | G-1 | @ BENT 111 | 0.8' X 0.7' | BOTTOM FLANGE | 1 |
| 112 | G-2 | @ BENT 111 | 1.2' X 0.8' | BOTTOM FLANGE | 1 |
| 112 | G-2 | @ BENT 111 | 0.8' X 1.5' | BOTTOM FLANGE | 2 |
| 112 | G-2 | @ BENT 111 | 0.6' X 0.6' | BOTTOM FLANGE | 2 |
| 112 | G-2 | @ BENT 111 | 0.6' X 1.4' | BOTTOM FLANGE | 2 |
| 112 | G-2 | 2' FROM BENT 111 | 0.6' X 0.6' | WEB | 3 |
| 112 | G-3 | @ BENT 111 | 0.4' X 1.4' | BOTTOM FLANGE & WEB | 3 |
| 112 | G-3 | @ BENT 112 | 0.4' X 0.8' | BOTTOM FLANGE | 2 |
| 112 | G-3 | @ BENT 112 | 0.8' X 0.6' | BOTTOM FLANGE | 3 |
| 112 | G-4 | @ BENT 111 | 0.5' X 0.7' | BOTTOM FLANGE | 3 |
| 112 | G-4 | @ BENT 112 | 0.4' X 0.7' | BOTTOM FLANGE | LT EXT |
| 112 | G-4 | @ BENT 112 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | ESTIMATE VOLUME CF | ACTUAL AREA SF | ACTUAL DEPTH FT | ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 99 | GIRDERS | 1.07 | 0.45 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 100 | GIRDERS | 1.46 | 0.61 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 101 | GIRDERS | 3.28 | 1.37 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 102 | GIRDERS | 2.74 | 1.14 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 103 | GIRDERS | 2.73 | 1.14 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 104 | GIRDERS | 0.50 | 0.21 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 105 | GIRDERS | 0.75 | 0.31 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 106 | GIRDERS | 1.50 | 0.63 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 107 | GIRDERS | 3.59 | 1.50 | | | |
| | DIAPHRAGMS | 2.60 | 1.08 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 108 | GIRDERS | 0.50 | 0.21 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 109 | GIRDERS | 2.78 | 1.16 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 110 | GIRDERS | 5.52 | 2.30 | | | |
| | DIAPHRAGMS | 2.74 | 1.14 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 111 | GIRDERS | 4.26 | 1.78 | | | |
| | DIAPHRAGMS | 5.29 | 2.20 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 112 | GIRDERS | 6.93 | 2.89 | | | |
| | DIAPHRAGMS | 12.21 | 5.09 | | | |
| | DECK | 0.35 | 0.15 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 9 OF 22

DocuSigned by:
AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-24 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:04
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malee7

SHOTCRETE

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 113 | END DIA. | @ BENT 113 | 1.3' X 1.4' | DIAPHRAGM | LT EXT |
| 113 | END DIA. | @ BENT 113 | 1.4' X 2.2' | DIAPHRAGM | 1 |
| 113 | END DIA. | @ BENT 113 | 1.4' X 1.7' | DIAPHRAGM | 1 |
| 113 | END DIA. | @ BENT 113 | 1' X 1.5' | DIAPHRAGM | 2 |
| 113 | END DIA. | @ BENT 113 | 1.3' X 2' | DIAPHRAGM | RT EXT |
| 113 | END DIA. | @ BENT 113 | 1.2' X 2' | DIAPHRAGM | 3 |
| 113 | END DIA. | @ BENT 113 | 1.2' X 1.2' | DIAPHRAGM | 3 |
| 113 | END DIA. | @ BENT 113 | 0.8' X 0.8' | DIAPHRAGM | RT EXT |
| 113 | END DIA. | @ BENT 112 | 3' X 1' | DIAPHRAGM | 1 |
| 113 | END DIA. | @ BENT 112 | 3' X 1' | DIAPHRAGM | 2 |
| 113 | END DIA. | @ BENT 112 | 0.8' X 1.5' | DIAPHRAGM | 3 |
| 113 | G-1 | @ BENT 113 | 0.8' X 0.7' | BOTTOM FLANGE | 1 |
| 113 | G-1 | @ BENT 112 | 0.6' X 0.5' | BOTTOM FLANGE & WEB | 1 |
| 113 | G-2 | @ BENT 112 | 0.7' X 0.5' | BOTTOM FLANGE | 2 |
| 113 | G-3 | @ BENT 112 | 0.7' X 0.7' | BOTTOM FLANGE & WEB | 3 |
| 113 | G-4 | @ BENT 112 | 0.8' X 0.7' | BOTTOM FLANGE & WEB | 3 |
| 114 | END DIA. | @ BENT 114 | 1.2' X 0.7' | DIAPHRAGM | 1 |
| 114 | END DIA. | @ BENT 113 | 0.8' X 1' | DIAPHRAGM | LT EXT |
| 114 | END DIA. | @ BENT 113 | 1' X 3.1' | DIAPHRAGM | 1 |
| 114 | END DIA. | @ BENT 113 | 1.7' X 1.5' | DIAPHRAGM | 1 |
| 114 | END DIA. | @ BENT 113 | 1.4' X 1.4' | DIAPHRAGM | 2 |
| 114 | END DIA. | @ BENT 113 | 1.3' X 2' | DIAPHRAGM | 2 |
| 114 | END DIA. | @ BENT 113 | 1.3' X 2' | DIAPHRAGM | 3 |
| 114 | END DIA. | @ BENT 113 | 1.7' X 1.8' | DIAPHRAGM | 2 |
| 114 | END DIA. | @ BENT 113 | 0.5' X 0.7' | DIAPHRAGM | RT EXT |
| 114 | G-2 | @ BENT 113 | 1.4' X 0.3' | BOTTOM FLANGE | 2 |
| 114 | G-4 | @ BENT 114 | 1.8' X 0.9' | BOTTOM FLANGE | LT EXT |
| 115A | END DIA. | @ REST PIER 1 | 1.5' X 1.1' | DIAPHRAGM | 1 |
| 115A | END DIA. | @ BENT 114 | 1.5' X 1.1' | DIAPHRAGM | LT EXT |
| 115A | END DIA. | @ BENT 114 | 0.5' X 0.5' | DIAPHRAGM | 1 |
| 115A | END DIA. | @ BENT 114 | 2.8' X 0.5' | DIAPHRAGM | 1 |
| 115A | END DIA. | @ BENT 114 | 2.5' X 0.5' | DIAPHRAGM | 2 |
| 115A | END DIA. | @ BENT 114 | 0.8' X 0.4' | DIAPHRAGM | 2 |
| 115A | END DIA. | @ BENT 114 | 3' X 1' | DIAPHRAGM | 3 |
| 115A | G-1 | @ REST PIER 2 | 1.7' X 0.7' | BOTTOM FLANGE | 1 |
| 115A | G-1 | @ BENT 115 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 115A | G-2 | @ REST PIER 2 | 1.3' X .7' | BOTTOM FLANGE | 2 |
| 115A | G-2 | @ REST PIER 2 | 1.7' X 0.7' | BOTTOM FLANGE | 3 |
| 115A | G-2 | @ REST PIER 1 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 115A | G-2 | @ BENT 114 | 0.7' X 0.7' | WEB | 1 |
| 115A | G-3 | @ REST PIER 2 | 2.4' X 1.3' | BOTTOM FLANGE | 2 |
| 115A | G-3 | 2' FROM BENT 114 | 0.3' X 0.3' | WEB | 3 |
| 115A | G-4 | @ REST PIER 1 | 0.3' X 0.3' | WEB | 3 |
| 115A | G-4 | 16' FROM BENT 115 | 4' X 0.3' | BOTTOM FLANGE | 3 |
| 115A | G-4 | 8' FROM BENT 115 | 3' X 0.3' | BOTTOM FLANGE | 3 |
| 115B | END DIA. | @ REST PIER 2 | 1' X 4' | DIAPHRAGM | 2 |
| 115B | G-2 | @ REST PIER 1 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 115B | G-2 | @ REST PIER 1 | 1.4' X 0.8' | BOTTOM FLANGE | 3 |
| 115B | G-3 | @ REST PIER 1 | 1.4' X 0.8' | BOTTOM FLANGE | 3 |
| 116 | DECK | 12' FROM BENT 115 | 2' X 0.7' | BOTTOM OF DECK | RT EXT |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 116 | END DIA. | @ BENT 116 | 2' X 0.7' | DIAPHRAGM | LT EXT |
| 117 | DECK | @ BENT 116 | 1' X 2' | BOTTOM OF DECK | RT EXT |
| 117 | END DIA. | @ BENT 116 | 1.5' X 1.5' | DIAPHRAGM | 2 |
| 117 | END DIA. | @ BENT 116 | 1.5' X 1' | DIAPHRAGM | 2 |
| 117 | G-1 | @ BENT 117 | 0.7' X 1' | BOTTOM FLANGE | 1 |
| 117 | G-1 | @ BENT 117 | 0.7' X 1' | BOTTOM FLANGE | 2 |
| 117 | G-2 | @ BENT 117 | 0.7' X 1' | BOTTOM FLANGE | 3 |
| 118 | G-1 | @ BENT 118 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 118 | G-1 | @ BENT 118 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 118 | G-1 | @ BENT 118 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 118 | G-3 | 3' FROM BENT 117 | 0.7' X 0.7' | WEB | 2 |
| 119 | END DIA. | @ BENT 119 | 1' X 3' | DIAPHRAGM | 3 |
| 119 | G-1 | @ BENT 119 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 119 | G-2 | @ BENT 119 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 119 | G-2 | @ BENT 119 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 119 | G-3 | @ BENT 119 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 120 | END DIA. | @ BENT 119 | 2' X 0.5' | DIAPHRAGM | 3 |
| 120 | END DIA. | @ BENT 119 | 4' X 0.7' | DIAPHRAGM | 2 |
| 120 | G-1 | @ BENT 119 | 0.5' X 0.5' | BOTTOM FLANGE | LT EXT |
| 120 | G-2 | @ BENT 119 | 1' X 0.7' | BOTTOM FLANGE | 3 |
| 120 | G-2 | @ BENT 120 | 0.5' X 1' | BOTTOM FLANGE | 2 |
| 120 | G-4 | 12' FROM BENT 119 | 4' X 0.5' | BOTTOM FLANGE | 3 |
| 120 | G-4 | @ BENT 119 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 121 | END DIA. | @ BENT 121 | 1' X 0.8' | DIAPHRAGM | 3 |
| 121 | G-1 | @ BENT 121 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 121 | G-2 | @ BENT 121 | 1.5' X 0.5' | BOTTOM FLANGE | 1 |
| 121 | G-3 | @ BENT 120 | 2.5' X 0.5' | BOTTOM FLANGE | 2 |
| 121 | G-3 | @ BENT 121 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 121 | G-4 | @ BENT 121 | 0.5' X 0.6' | BOTTOM FLANGE | 3 |
| 122 | END DIA. | @ BENT 121 | 2.5' X 0.5' | DIAPHRAGM | 1 |
| 122 | END DIA. | @ BENT 122 | 4' X 0.3' | DIAPHRAGM | 1 |
| 122 | END DIA. | @ BENT 122 | 2.5' X 1' | DIAPHRAGM | 2 |
| 122 | G-1 | @ BENT 121 | 1' X 1' | BOTTOM FLANGE | LT EXT |
| 123 | END DIA. | @ BENT 122 | 1' X 4' | DIAPHRAGM | 1 |
| 123 | END DIA. | @ BENT 123 | 1.5' X 0.8' | DIAPHRAGM | 3 |
| 123 | G-2 | 3' FROM BENT 123 | 0.5' X 0.5' | WEB | 1 |
| 123 | G-3 | 3' FROM BENT 123 | 0.5' X 0.5' | WEB | 2 |
| 123 | G-3 | @ BENT 123 | 0.5' X 0.5' | BOTTOM FLANGE | 3 |
| 124 | G-2 | @ BENT 124 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 124 | G-2 | @ BENT 124 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 124 | G-3 | @ BENT 123 | 0.5' X 0.5' | BOTTOM FLANGE | 3 |
| 125 | DECK | 20' FROM BENT 124 | 1' X 1' | BOTTOM OF DECK | RT EXT |
| 125 | G-2 | @ BENT 124 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 125 | G-4 | @ BENT 125 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 113 | GIRDERS | 2.26 | 0.94 | | | |
| | DIAPHRAGMS | 23.06 | 9.61 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 114 | GIRDERS | 2.04 | 0.85 | | | |
| | DIAPHRAGMS | 16.16 | 6.73 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 115A | GIRDERS | 10.23 | 4.26 | | | |
| | DIAPHRAGMS | 9.52 | 3.97 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 115B | GIRDERS | 2.88 | 1.20 | | | |
| | DIAPHRAGMS | 4.00 | 1.67 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 116 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 1.40 | 0.58 | | | |
| | DECK | 1.40 | 0.58 | | | |
| SPAN 117 | GIRDERS | 2.10 | 0.88 | | | |
| | DIAPHRAGMS | 3.75 | 1.56 | | | |
| | DECK | 2.00 | 0.83 | | | |
| SPAN 118 | GIRDERS | 1.24 | 0.52 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 119 | GIRDERS | 1.48 | 0.62 | | | |
| | DIAPHRAGMS | 3.00 | 1.25 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 120 | GIRDERS | 3.94 | 1.64 | | | |
| | DIAPHRAGMS | 3.80 | 1.58 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 121 | GIRDERS | 3.28 | 1.37 | | | |
| | DIAPHRAGMS | 0.80 | 0.33 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 122 | GIRDERS | 1.00 | 0.42 | | | |
| | DIAPHRAGMS | 4.95 | 2.06 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 123 | GIRDERS | 0.75 | 0.31 | | | |
| | DIAPHRAGMS | 5.20 | 2.17 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 124 | GIRDERS | 1.23 | 0.51 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 125 | GIRDERS | 0.98 | 0.41 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 10 OF 22

DocuSigned by:
AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

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

SHEET NO. S-25

TOTAL SHEETS 394

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:05
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 126 | G-1 | @ BENT 125 | 0.7' X 0.7' | BOTTOM FLANGE | RT EXT |
| 127 | G-1 | @ BENT 126 | 0.7' X 1' | BOTTOM FLANGE | |
| 127 | G-2 | 3' FROM BENT 127 | 0.3' X 0.3' | WEB | 1 |
| 127 | G-2 | @ BENT 126 | 0.7' X 1.5' | BOTTOM FLANGE | 1 |
| 127 | G-3 | @ BENT 126 | 0.7' X 0.8' | BOTTOM FLANGE | 2 |
| 127 | G-4 | @ BENT 126 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 127 | G-4 | @ BENT 127 | 0.8' X 1' | BOTTOM FLANGE | 3 |
| 127 | G-4 | @ BENT 127 | 1' X 1' | BOTTOM FLANGE | 2 |
| 127 | G-4 | @ BENT 127 | 0.7' X 1.5' | BOTTOM FLANGE | 3 |
| 127 | G-4 | @ BENT 127 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 127 | G-4 | @ BENT 127 | 2.5' X 0.6' | BOTTOM FLANGE | 2 |
| 127 | G-4 | @ BENT 127 | 1.5' X 0.6' | BOTTOM FLANGE | 1 |
| 127 | G-4 | @ BENT 127 | 1.5' X 0.6' | BOTTOM FLANGE | 1 |
| 127 | G-4 | @ BENT 127 | 0.6' X 1.5' | BOTTOM FLANGE | RT EXT |
| 127 | G-4 | @ BENT 127 | 1' X 1' | BOTTOM FLANGE | |
| 128 | END DIA. | @ BENT 128 | 1.5' X 0.7' | DIAPHRAGM | RT EXT |
| 128 | G-1 | @ BENT 128 | 0.5' X 0.3' | WEB | |
| 128 | G-2 | @ BENT 128 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 128 | G-2 | @ BENT 128 | 0.7' X 1' | BOTTOM FLANGE | 1 |
| 128 | G-3 | 3' FROM BENT 128 | 0.5' X 0.5' | WEB | 2 |
| 128 | G-3 | @ BENT 128 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 128 | G-4 | @ BENT 128 | 1.5' X 0.8' | BOTTOM FLANGE | 3 |
| 129 | G-2 | @ BENT 129 | 1' X 1' | BOTTOM FLANGE & WEB | 1 |
| 129 | G-3 | @ BENT 128 | 0.7' X 0.8' | BOTTOM FLANGE | 3 |
| 129 | G-3 | @ BENT 129 | 1' X 1.5' | BOTTOM FLANGE | 2 |
| 129 | G-4 | @ BENT 128 | 0.7' X 0.6' | BOTTOM FLANGE | LT EXT |
| 129 | G-4 | @ BENT 129 | 0.5' X 0.8' | BOTTOM FLANGE | |
| 130 | END DIA. | @ BENT 129 | 0.7' X 1.5' | DIAPHRAGM | 1 |
| 130 | END DIA. | @ BENT 130 | 3.5' X 0.5' | DIAPHRAGM | 2 |
| 130 | END DIA. | @ BENT 130 | 1' X 0.8' | DIAPHRAGM | 1 |
| 130 | END DIA. | @ BENT 131 | 4' X 1' | DIAPHRAGM | 1 |
| 130 | G-1 | @ BENT 131 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 130 | G-2 | @ BENT 129 | 0.6' X 1' | BOTTOM FLANGE | 2 |
| 130 | G-2 | @ BENT 129 | 1' X 1.5' | BOTTOM FLANGE | 1 |
| 130 | G-2 | @ BENT 131 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 130 | G-2 | @ BENT 131 | 0.5' X 0.6' | BOTTOM FLANGE | 2 |
| 130 | G-3 | @ BENT 129 | 0.3' X 3' | BOTTOM FLANGE | 2 |
| 130 | G-3 | @ BENT 131 | 0.6' X 0.8' | BOTTOM FLANGE | 2 |
| 130 | G-3 | @ BENT 131 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 130 | G-4 | @ BENT 129 | 0.3' X 1' | BOTTOM FLANGE | 3 |
| 130 | G-4 | @ BENT 130 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 132 | G-1 | @ BENT 132 | 1.5' X 0.8' | BOTTOM FLANGE | 1 |
| 132 | G-3 | @ BENT 131 | 0.5' X 0.8' | BOTTOM FLANGE | 3 |
| 133 | END DIA. | @ BENT 132 | 2.5' X 0.7' | DIAPHRAGM | 2 |
| 133 | G-1 | 5' FROM BENT 132 | 4' X 0.5' | BOTTOM FLANGE | 1 |
| 133 | G-2 | @ BENT 132 | 0.7' X 0.8' | BOTTOM FLANGE | 1 |
| 133 | G-3 | 3' FROM BENT 133 | 0.5' X 0.5' | WEB | RT EXT |
| 134 | END DIA. | @ BENT 133 | 1' X 0.7' | DIAPHRAGM | |
| 134 | END DIA. | @ BENT 133 | 1' X 1.5' | DIAPHRAGM | 2 |
| 134 | END DIA. | @ BENT 133 | 0.5' X 2' | DIAPHRAGM | 2 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 134 | END DIA. | @ BENT 134 | 2' X 0.7' | DIAPHRAGM | 1 |
| 134 | G-1 | @ BENT 133 | 0.5' X 0.7' | BOTTOM FLANGE | LT EXT |
| 134 | G-3 | 2.5' FROM BENT 134 | 0.5' X 0.5' | WEB | 2 |
| 134 | G-3 | 3' FROM BENT 134 | 0.5' X 0.5' | WEB | 3 |
| 134 | G-3 | @ BENT 134 | 0.8' X 0.7' | BOTTOM FLANGE | 3 |
| 135 | END DIA. | @ BENT 135 | 3' X 0.7' | DIAPHRAGM | 3 |
| 135 | G-2 | @ BENT 135 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 135 | G-3 | @ BENT 135 | 0.7' X 0.8' | BOTTOM FLANGE | 2 |
| 136 | G-1 | 3' FROM BENT 135 | 1' X 0.5' | WEB | 1 |
| 136 | G-1 | @ BENT 135 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 136 | G-2 | @ BENT 135 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 136 | G-3 | 1' FROM BENT 136 | 1' X 4' | BOTTOM FLANGE | 2 |
| 136 | G-3 | @ BENT 136 | 1' X 1.5' | BOTTOM FLANGE | 2 |
| 136 | G-4 | 3' FROM BENT 136 | 0.5' X 0.5' | WEB | 3 |
| 136 | G-4 | @ BENT 136 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 137 | G-1 | @ BENT 136 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 137 | G-2 | @ BENT 136 | 1' X 0.7' | BOTTOM FLANGE | 1 |
| 137 | G-4 | @ BENT 137 | 0.5' X 0.6' | BOTTOM FLANGE | 3 |
| 138 | END DIA. | @ BENT 138 | 0.5' X 1.5' | DIAPHRAGM | 1 |
| 138 | END DIA. | @ BENT 138 | 2.5' X 1' | DIAPHRAGM | 2 |
| 138 | END DIA. | @ BENT 138 | 0.5' X 1.5' | DIAPHRAGM | 2 |
| 138 | G-1 | @ BENT 137 | 0.3' X 0.7' | BOTTOM FLANGE | 1 |
| 138 | G-1 | @ BENT 138 | 1' X 0.7' | BOTTOM FLANGE | 1 |
| 138 | G-3 | @ BENT 137 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 138 | G-3 | @ BENT 138 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 139 | G-1 | @ BENT 139 | 0.5' X 0.6' | BOTTOM FLANGE | LT EXT |
| 139 | G-2 | @ BENT 139 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 139 | G-2 | @ BENT 139 | 1.3' X 1.2' | BOTTOM FLANGE | 2 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | ESTIMATE VOLUME CF | ACTUAL AREA SF | ACTUAL DEPTH FT | ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 126 | GIRDERS | 0.49 | 0.20 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 127 | GIRDERS | 11.89 | 4.95 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 128 | GIRDERS | 3.21 | 1.34 | | | |
| | DIAPHRAGMS | 1.05 | 0.44 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 129 | GIRDERS | 3.88 | 1.62 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 130 | GIRDERS | 7.12 | 2.97 | | | |
| | DIAPHRAGMS | 7.60 | 3.17 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 131 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 132 | GIRDERS | 1.60 | 0.67 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 133 | GIRDERS | 2.81 | 1.17 | | | |
| | DIAPHRAGMS | 1.75 | 0.73 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 134 | GIRDERS | 1.41 | 0.59 | | | |
| | DIAPHRAGMS | 4.60 | 1.92 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 135 | GIRDERS | 1.36 | 0.57 | | | |
| | DIAPHRAGMS | 2.10 | 0.88 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 136 | GIRDERS | 8.33 | 3.47 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 137 | GIRDERS | 1.64 | 0.68 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 138 | GIRDERS | 1.89 | 0.79 | | | |
| | DIAPHRAGMS | 4.00 | 1.67 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 139 | GIRDERS | 2.16 | 0.90 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 11 OF 22

DocuSigned by:
AD50B1D977494CC...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

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

SHEET NO. S-26
TOTAL SHEETS 394

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:06
R:\Structures\Tyrrell 7 Girders, Dia, Deck Table.dgn
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 140 | END DIA. | @ BENT 139 | 2.5' X 0.8' | DIAPHRAGM | 2 |
| 140 | G-2 | 5' FROM BENT 139 | 2.7' X 0.5' | BOTTOM FLANGE | 2 |
| 140 | G-2 | 3' FROM BENT 140 | 0.5' X 0.5' | WEB | 1 |
| 141 | END DIA. | @ BENT 140 | 5' X 0.7' | DIAPHRAGM | 2 |
| 141 | END DIA. | @ BENT 140 | 2.5' X 0.5' | DIAPHRAGM | 1 |
| 141 | END DIA. | @ BENT 140 | 1.5' X 1' | DIAPHRAGM | 3 |
| 141 | END DIA. | @ BENT 141 | 1.5' X 0.5' | DIAPHRAGM | 2 |
| 141 | END DIA. | @ BENT 141 | 2' X 2.5' | DIAPHRAGM | 2 |
| 141 | G-4 | @ BENT 140 | 0.3' X 0.7' | BOTTOM FLANGE | RT EXT |
| 141 | G-4 | @ BENT 141 | 0.3' X 0.7' | BOTTOM FLANGE | RT EXT |
| 141 | G-4 | @ BENT 141 | 1.2' X 1' | BOTTOM FLANGE | 3 |
| 142 | END DIA. | @ BENT 141 | 3' X 0.3' | DIAPHRAGM | 1 |
| 142 | END DIA. | @ BENT 141 | 4' X 0.7' | DIAPHRAGM | 3 |
| 142 | END DIA. | @ BENT 142 | 0.5' X 0.7' | DIAPHRAGM | 2 |
| 142 | G-1 | 6' FROM BENT 142 | 0.8' X 0.5' | BOTTOM FLANGE | LT EXT |
| 142 | G-1 | @ BENT 141 | 0.8' X 0.8' | BOTTOM FLANGE | LT EXT |
| 142 | G-2 | @ BENT 141 | 3' X 0.3' | BOTTOM FLANGE | 1 |
| 143 | G-1 | @ BENT 142 | 1' X 0.8' | BOTTOM FLANGE | LT EXT |
| 143 | G-3 | @ BENT 142 | 1' X 0.8' | BOTTOM FLANGE | 2 |
| 143 | G-3 | @ BENT 142 | 0.5' X 2' | WEB | 3 |
| 144 | END DIA. | @ BENT 143 | 2.5' X 0.7' | DIAPHRAGM | 2 |
| 144 | END DIA. | @ BENT 143 | 1' X 0.5' | DIAPHRAGM | 2 |
| 144 | G-1 | @ BENT 143 | 1' X 0.4' | BOTTOM FLANGE | 1 |
| 144 | G-2 | @ BENT 144 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 144 | G-3 | @ BENT 144 | 0.7' X 0.6' | BOTTOM FLANGE | 3 |
| 144 | G-3 | @ BENT 144 | 1' X 0.7' | BOTTOM FLANGE | 2 |
| 144 | G-4 | 4' FROM BENT 144 | 4' X 0.5' | BOTTOM FLANGE | 3 |
| 145 | END DIA. | @ BENT 144 | 0.5' X 0.5' | DIAPHRAGM | 3 |
| 145 | END DIA. | @ BENT 145 | 1' X 0.7' | DIAPHRAGM | 1 |
| 145 | END DIA. | @ BENT 145 | 0.5' X 0.7' | DIAPHRAGM | 3 |
| 145 | G-1 | 2.5' FROM BENT 144 | 0.3' X 0.3' | BOTTOM FLANGE | 1 |
| 145 | G-3 | @ BENT 144 | 0.7' X 0.6' | BOTTOM FLANGE | 2 |
| 145 | G-3 | @ BENT 145 | 0.5' X 0.8' | BOTTOM FLANGE | 2 |
| 145 | G-4 | @ BENT 145 | 0.5' X 0.7' | BOTTOM FLANGE | 3 |
| 146 | END DIA. | @ BENT 145 | 2' X 1.5' | DIAPHRAGM | 3 |
| 146 | G-2 | 5' FROM BENT 145 | 1.5' X 0.6' | BOTTOM FLANGE | 2 |
| 146 | G-3 | 11' FROM BENT 145 | 0.5' X 0.6' | BOTTOM FLANGE | 3 |
| 146 | G-3 | 13' FROM BENT 145 | 1.5' X 0.6' | BOTTOM FLANGE | 3 |
| 146 | G-3 | @ BENT 145 | 0.3' X 0.3' | WEB | 2 |
| 146 | G-3 | @ BENT 146 | 2.5' X 0.6' | BOTTOM FLANGE | 2 |
| 146 | G-4 | 11' FROM BENT 145 | 1' X 0.8' | BOTTOM FLANGE | RT EXT |
| 146 | G-4 | @ BENT 145 | 0.5' X 0.8' | BOTTOM FLANGE | 3 |
| 146 | G-4 | @ BENT 146 | 1.5' X 0.8' | BOTTOM FLANGE | 3 |
| 148 | END DIA. | @ BENT 147 | 1.5' X 0.7' | DIAPHRAGM | 2 |
| 148 | END DIA. | @ BENT 148 | 3.5' X 0.8' | DIAPHRAGM | 2 |
| 148 | G-3 | @ BENT 147 | 0.9' X 0.8' | BOTTOM FLANGE | 3 |
| 149 | END DIA. | @ BENT 147 | 2' X 0.5' | DIAPHRAGM | 3 |
| 149 | END DIA. | @ BENT 149 | 2' X 0.5' | DIAPHRAGM | 2 |
| 149 | G-1 | @ BENT 147 | 0.5' X 0.5' | WEB | LT EXT |
| 150 | END DIA. | @ BENT 147 | 2.5' X 0.7' | DIAPHRAGM | 2 |

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 150 | END DIA. | @ BENT 147 | 2' X 0.7' | DIAPHRAGM | 1 |
| 150 | END DIA. | @ BENT 147 | 3' X 0.7' | DIAPHRAGM | 2 |
| 150 | G-4 | @ BENT 150 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 151 | END DIA. | @ BENT 147 | 2' X 0.5 | DIAPHRAGM | 2 |
| 151 | G-1 | @ BENT 147 | 0.6' X 0.6' | BOTTOM FLANGE | LT EXT |
| 151 | G-1 | @ BENT 147 | 0.7' X 0.8' | BOTTOM FLANGE | 1 |
| 151 | G-4 | @ BENT 147 | 3' X 0.5 | BOTTOM FLANGE | 3 |
| 152 | END DIA. | @ BENT 147 | 2' X 0.7' | DIAPHRAGM | 2 |
| 152 | END DIA. | @ BENT 151 | 1' X 1' | DIAPHRAGM | 2 |
| 152 | G-2 | @ BENT 152 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 152 | G-3 | @ BENT 147 | 0.5' X 0.7' | BOTTOM FLANGE | 3 |
| 153 | END DIA. | @ BENT 152 | 3.5' X 0.5' | DIAPHRAGM | 2 |
| 153 | END DIA. | @ BENT 152 | 3.5' X 0.5' | DIAPHRAGM | 1 |
| 153 | END DIA. | @ BENT 152 | 1' X 1' | DIAPHRAGM | LT EXT |
| 153 | END DIA. | @ BENT 153 | 2.5' X 0.8' | DIAPHRAGM | 2 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | ESTIMATE VOLUME CF | ACTUAL AREA SF | ACTUAL DEPTH FT | ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 140 | GIRDERS | 1.60 | 0.67 | | | |
| | DIAPHRAGMS | 2.00 | 0.83 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 141 | GIRDERS | 1.62 | 0.68 | | | |
| | DIAPHRAGMS | 12.00 | 5.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 142 | GIRDERS | 1.94 | 0.81 | | | |
| | DIAPHRAGMS | 4.05 | 1.69 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 143 | GIRDERS | 2.60 | 1.08 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 144 | GIRDERS | 4.01 | 1.67 | | | |
| | DIAPHRAGMS | 2.25 | 0.94 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 145 | GIRDERS | 1.26 | 0.53 | | | |
| | DIAPHRAGMS | 1.30 | 0.54 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 146 | GIRDERS | 6.09 | 2.54 | | | |
| | DIAPHRAGMS | 3.00 | 1.25 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 147 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 148 | GIRDERS | 0.72 | 0.30 | | | |
| | DIAPHRAGMS | 3.85 | 1.60 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 149 | GIRDERS | 0.25 | 0.10 | | | |
| | DIAPHRAGMS | 2.00 | 0.83 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 150 | GIRDERS | 0.49 | 0.20 | | | |
| | DIAPHRAGMS | 5.25 | 2.19 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 151 | GIRDERS | 2.42 | 1.01 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 152 | GIRDERS | 1.15 | 0.58 | | | |
| | DIAPHRAGMS | 2.40 | 1.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 153 | GIRDERS | 6.50 | 2.71 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 12 OF 22

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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-27 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:06
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 154 | END DIA. | @ BENT 153 | 5' X 0.5' | DIAPHRAGM | 2 |
| 154 | END DIA. | @ BENT 153 | 3' X 0.3' | DIAPHRAGM | 3 |
| 154 | G-4 | @ BENT 154 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 155 | END DIA. | @ BENT 154 | 2.5' X 0.3' | DIAPHRAGM | 2 |
| 155 | END DIA. | @ BENT 154 | 6' X 0.3' | DIAPHRAGM | 3 |
| 155 | END DIA. | @ BENT 155 | 5' X 1' | DIAPHRAGM | 1 |
| 155 | END DIA. | @ BENT 155 | 3' X 1' | DIAPHRAGM | 2 |
| 155 | END DIA. | @ BENT 155 | 4.5' X 2.7' | DIAPHRAGM | 1 |
| 155 | G-2 | @ BENT 155 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 155 | G-3 | @ BENT 155 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 156 | END DIA. | @ BENT 156 | 2' X 1.5' | DIAPHRAGM | 1 |
| 156 | G-2 | @ BENT 155 | 0.8' X 1' | BOTTOM FLANGE | 1 |
| 157 | END DIA. | @ BENT 156 | 6.5' X 0.7' | DIAPHRAGM | 2 |
| 157 | END DIA. | @ BENT 156 | 4' X 5' | DIAPHRAGM | 3 |
| 157 | G-2 | @ BENT 157 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 157 | G-3 | 1' FROM BENT 157 | 3' X 0.5' | BOTTOM FLANGE | 2 |
| 157 | G-4 | @ BENT 158 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 158 | END DIA. | @ BENT 158 | 4.5' X 0.7' | DIAPHRAGM | 1 |
| 159 | END DIA. | @ BENT 158 | 1' X 1.5' | DIAPHRAGM | 1 |
| 159 | END DIA. | @ BENT 158 | 6.5' X 1.5' | DIAPHRAGM | 2 |
| 159 | END DIA. | @ BENT 158 | 0.7' X 0.7' | DIAPHRAGM | 3 |
| 159 | END DIA. | @ BENT 159 | 1' X 1.5' | DIAPHRAGM | 2 |
| 161 | END DIA. | @ BENT 160 | 1' X 0.5' | DIAPHRAGM | 2 |
| 161 | END DIA. | @ BENT 160 | 2' X 0.7' | DIAPHRAGM | 1 |
| 161 | END DIA. | @ BENT 161 | 1.5' X 0.3' | DIAPHRAGM | 2 |
| 161 | END DIA. | @ BENT 161 | 1.5' X 0.7' | DIAPHRAGM | 3 |
| 161 | G-3 | 3' FROM BENT 160 | 0.5' X 0.5' | WEB | 2 |
| 162 | END DIA. | @ BENT 161 | 5' X 0.5' | DIAPHRAGM | 2 |
| 162 | END DIA. | @ BENT 162 | 1' X 1' | DIAPHRAGM | 1 |
| 162 | G-1 | @ BENT 162 | 0.8' X 1' | BOTTOM FLANGE | 1 |
| 162 | G-3 | @ BENT 161 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 163 | END DIA. | @ BENT 162 | 2' X 0.5' | DIAPHRAGM | 2 |
| 163 | END DIA. | @ BENT 163 | 5.5' X 0.5' | DIAPHRAGM | 3 |
| 163 | G-2 | @ BENT 162 | 0.8' X 1' | BOTTOM FLANGE | 1 |
| 164 | G-2 | @ BENT 163 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 164 | G-2 | @ BENT 164 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 164 | G-3 | @ BENT 163 | 1' X 0.8' | BOTTOM FLANGE | 2 |
| 166 | G-2 | @ BENT 166 | 0.5' X 0.5' | BOTTOM FLANGE | LT EXT |
| 166 | G-3 | @ BENT 166 | 0.7' X 0.8' | BOTTOM FLANGE | 3 |
| 167 | END DIA. | @ BENT 166 | 0.3' X 0.8' | DIAPHRAGM | 1 |
| 167 | END DIA. | @ BENT 166 | 5' X 0.7' | DIAPHRAGM | 2 |
| 167 | END DIA. | @ BENT 167 | 1' X 6' | DIAPHRAGM | 1 |
| 167 | END DIA. | @ BENT 167 | 1' X 1' | DIAPHRAGM | RT EXT |
| 167 | G-3 | @ BENT 166 | 1' X 0.7' | BOTTOM FLANGE | 3 |
| 167 | G-3 | @ BENT 167 | 0.8' X 4' | BOTTOM FLANGE | 2 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 154 | GIRDERS | 0.49 | 0.20 | | | |
| | DIAPHRAGMS | 3.40 | 1.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 155 | GIRDERS | 0.98 | 0.41 | | | |
| | DIAPHRAGMS | 22.70 | 9.46 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 156 | GIRDERS | 0.80 | 0.33 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 157 | GIRDERS | 2.48 | 1.03 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 158 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 3.15 | 1.31 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 159 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 13.24 | 5.52 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 160 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 161 | GIRDERS | 0.25 | 0.10 | | | |
| | DIAPHRAGMS | 3.40 | 1.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 162 | GIRDERS | 1.05 | 0.44 | | | |
| | DIAPHRAGMS | 3.50 | 1.46 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 163 | GIRDERS | 0.80 | 0.33 | | | |
| | DIAPHRAGMS | 3.75 | 1.56 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 164 | GIRDERS | 1.54 | 0.64 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 165 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 166 | GIRDERS | 0.81 | 0.34 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 167 | GIRDERS | 3.90 | 1.63 | | | |
| | DIAPHRAGMS | 10.74 | 4.48 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 13 OF 22

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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-28 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 168 | G-1 | @ BENT 168 | 0.6' X 0.6' | BOTTOM FLANGE | 1 |
| 168 | G-1 | @ BENT 168 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 168 | G-3 | @ BENT 168 | 0.6' X 0.7' | BOTTOM FLANGE | 3 |
| 168 | G-3 | 8' FROM INTER. DIA. | 3' X 0.5' | BOTTOM FLANGE | RT EXT |
| 168 | G-4 | @ BENT 167 | 0.5' X 0.8' | BOTTOM FLANGE | 3 |
| 168 | G-4 | 3.5' FROM INTER. DIA. | 0.5' X 0.5' | WEB | 3 |
| 169 | END DIA. | @ BENT 168 | 1.5' X 0.7' | DIAPHRAGM | 3 |
| 169 | G-1 | @ BENT 169 | 1' X 0.6' | BOTTOM FLANGE | 1 |
| 169 | G-1 | @ BENT 169 | 1' X 0.6' | BOTTOM FLANGE | 2 |
| 170 | G-1 | 1.5' FROM INTER. DIA. | 2.5' X 0.5' | BOTTOM FLANGE | 1 |
| 170 | G-1 | @ BENT 170 | 0.7' X 0.8' | BOTTOM FLANGE | 2 |
| 170 | G-2 | @ BENT 169 | 1.5' X 0.7' | BOTTOM FLANGE | 2 |
| 170 | G-2 | @ BENT 169 | 0.5' X 0.8' | BOTTOM FLANGE | 1 |
| 170 | G-3 | @ BENT 170 | 1.5' X 1.5' | BOTTOM FLANGE & WEB | 3 |
| 170 | G-4 | @ BENT 170 | 1.5' X 1.5' | BOTTOM FLANGE & WEB | RT EXT |
| 171 | G-3 | @ BENT 171 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 172 | END DIA. | @ BENT 171 | 0.3' X 0.7' | DIAPHRAGM | 3 |
| 172 | END DIA. | @ BENT 172 | 2' X 1' | DIAPHRAGM | 2 |
| 172 | END DIA. | @ BENT 172 | 2.5' X 0.3' | DIAPHRAGM | 2 |
| 172 | END DIA. | @ BENT 172 | 1.3' X 1.3' | DIAPHRAGM | RT EXT |
| 172 | G-1 | @ BENT 171 | 1.5' X 0.8' | BOTTOM FLANGE | 1 |
| 172 | G-4 | @ BENT 173 | 1' X 0.7' | BOTTOM FLANGE | 3 |
| 173 | END DIA. | @ BENT 174 | 3.5' X 1.5' | DIAPHRAGM | 2 |
| 173 | G-1 | @ BENT 174 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 173 | G-2 | 3' FROM INTER. DIA. | 0.3' X 0.3' | WEB | 1 |
| 174 | END DIA. | @ BENT 174 | 1.5' X 0.5' | DIAPHRAGM | 2 |
| 174 | END DIA. | @ BENT 174 | 1' X 1' | DIAPHRAGM | 1 |
| 174 | END DIA. | @ BENT 175 | 3' X 0.5' | DIAPHRAGM | 2 |
| 174 | G-3 | @ BENT 175 | 1' X 0.7' | BOTTOM FLANGE | 3 |
| 174 | G-3 | @ BENT 175 | 0.3' X 0.8' | BOTTOM FLANGE | LT EXT |
| 175 | G-2 | @ BENT 176 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 175 | G-3 | @ BENT 175 | 1.5' X 0.8' | BOTTOM FLANGE | 2 |
| 175 | G-3 | 3' FROM INTER. DIA. | 1.5' X 0.5' | BOTTOM FLANGE | 2 |
| 176 | END DIA. | @ BENT 176 | 2' X 0.5' | DIAPHRAGM | 2 |
| 176 | G-3 | @ BENT 177 | 1' X 0.7' | BOTTOM FLANGE | 3 |
| 177 | G-2 | @ BENT 177 | 1.2' X 0.8' | BOTTOM FLANGE | 1 |
| 178 | G-1 | @ BENT 178 | 0.5 X 0.5' | BOTTOM FLANGE | 2 |
| 178 | G-3 | 3' FROM INTER. DIA. | 0.5' X 0.5' | WEB | 2 |
| 179 | END DIA. | @ BENT 180 | 4' X 1.5' | DIAPHRAGM | 2 |
| 179 | END DIA. | @ BENT 180 | 2' X 1' | DIAPHRAGM | 2 |
| 179 | END DIA. | @ BENT 180 | 2' X 1' | DIAPHRAGM | 1 |
| 179 | END DIA. | @ BENT 180 | 2' X 1' | DIAPHRAGM | 1 |
| 179 | G-1 | 6' FROM INTER. DIA. | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 179 | G-2 | @ BENT 180 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 179 | G-2 | 3' FROM INTER. DIA. | 0.5' X 0.5' | WEB | 2 |
| 180 | G-3 | 3.5' FROM INTER. DIA. | 0.4' X 0.4' | WEB | 3 |
| 181 | END DIA. | @ BENT 181 | 1' X 1.5' | DIAPHRAGM | LT EXT |
| 181 | G-3 | @ BENT 181 | 0.3' X 0.6' | BOTTOM FLANGE | LT EXT |
| 181 | G-3 | 3.5' FROM INTER. DIA. | 0.4' X 0.4' | WEB | 3 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 168 | GIRDERS | 3.42 | 1.43 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 169 | GIRDERS | 1.20 | 0.50 | | | |
| | DIAPHRAGMS | 1.05 | 0.44 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 170 | GIRDERS | 7.76 | 3.23 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 171 | GIRDERS | 0.80 | 0.33 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 172 | GIRDERS | 1.90 | 0.79 | | | |
| | DIAPHRAGMS | 4.65 | 1.94 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 173 | GIRDERS | 0.39 | 0.16 | | | |
| | DIAPHRAGMS | 5.25 | 2.19 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 174 | GIRDERS | 0.94 | 0.39 | | | |
| | DIAPHRAGMS | 3.25 | 1.35 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 175 | GIRDERS | 2.75 | 1.15 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 176 | GIRDERS | 0.70 | 0.29 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 177 | GIRDERS | 0.96 | 0.40 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 178 | GIRDERS | 0.50 | 0.21 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 179 | GIRDERS | 1.30 | 0.54 | | | |
| | DIAPHRAGMS | 12.00 | 5.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 180 | GIRDERS | 0.16 | 0.07 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 181 | GIRDERS | 0.34 | 0.14 | | | |
| | DIAPHRAGMS | 1.50 | 0.63 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 14 OF 22

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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-29 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

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malee7

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 182 | END DIA. | @ BENT 182 | 1' X 1' | DIAPHRAGM | 3 |
| 182 | G-4 | @ BENT 182 | 1' X 1.5' | BOTTOM FLANGE | 3 |
| 184 | END DIA. | @ BENT 185 | 1' X 1' | DIAPHRAGM | RT EXT |
| 184 | G-3 | @ BENT 184 | 1' X 0.8' | BOTTOM FLANGE | 3 |
| 184 | G-4 | @ BENT 184 | 1.5' X 0.8' | BOTTOM FLANGE | LT EXT |
| 185 | END DIA. | @ BENT 185 | 1' X 1' | DIAPHRAGM | 1 |
| 185 | G-2 | 2.5' FROM INTER. DIA. | 0.5' X 0.5' | WEB | 2 |
| 185 | G-2 | 3' FROM INTER. DIA. | 0.4' X 0.4' | WEB | 2 |
| 186 | END DIA. | @ BENT 187 | 0.5' X 1' | DIAPHRAGM | 1 |
| 186 | G-4 | 2.5' FROM INTER. DIA. | 0.5' X 0.5' | WEB | 3 |
| 187 | END DIA. | @ BENT 180 | 0.5' X 1.5' | DIAPHRAGM | 1 |
| 187 | END DIA. | @ BENT 187 | 2' X 1' | DIAPHRAGM | 2 |
| 187 | G-3 | 3' FROM INTER. DIA. | 0.5' X 0.5' | WEB | 2 |
| 188 | END DIA. | @ BENT 188 | 3' X 1' | DIAPHRAGM | 1 |
| 188 | END DIA. | @ BENT 188 | 1.5' X 1.5' | DIAPHRAGM | 3 |
| 188 | END DIA. | @ BENT 189 | 1' X 1' | DIAPHRAGM | 3 |
| 188 | G-1 | 2.5' FROM INTER. DIA. | 0.4' X 0.4' | WEB | 3 |
| 188 | G-3 | 3' FROM INTER. DIA. | 0.5' X 0.5' | WEB | 3 |
| 189 | G-1 | @ BENT 190 | 0.3' X 0.7' | BOTTOM FLANGE | RT EXT |
| 191 | END DIA. | @ BENT 190 | 6.5' X 0.7' | DIAPHRAGM | 2 |
| 191 | G-2 | @ BENT 191 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 191 | G-2 | @ BENT 191 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 191 | G-3 | @ BENT 190 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 192 | END DIA. | @ BENT 191 | 2' X 4' | DIAPHRAGM | 2 |
| 192 | G-1 | 3' FROM BENT 191 | 0.7' X 0.7' | WEB | 1 |
| 192 | G-1 | 4' FROM BENT 191 | 0.5' X 0.5' | WEB | 1 |
| 193 | END DIA. | @ BENT 192 | 1' X 1' | DIAPHRAGM | 1 |
| 193 | G-2 | @ BENT 193 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 193 | G-2 | 4' FROM BENT 192 | 0.7' X 0.7' | WEB | 2 |
| 194 | G-2 | @ BENT 194 | 0.7' X 0.7' | BOTTOM FLANGE | LT EXT |
| 195 | END DIA. | @ BENT 195 | 2.5' X 0.3' | DIAPHRAGM | 2 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 182 | GIRDERS | 1.50 | 0.63 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 183 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 184 | GIRDERS | 2.00 | 0.83 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 185 | GIRDERS | 0.41 | 0.17 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 186 | GIRDERS | 0.25 | 0.10 | | | |
| | DIAPHRAGMS | 0.50 | 0.21 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 187 | GIRDERS | 0.25 | 0.10 | | | |
| | DIAPHRAGMS | 2.75 | 1.15 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 188 | GIRDERS | 0.41 | 0.17 | | | |
| | DIAPHRAGMS | 6.25 | 2.60 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 189 | GIRDERS | 0.21 | 0.09 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 190 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 191 | GIRDERS | 1.38 | 0.58 | | | |
| | DIAPHRAGMS | 4.55 | 1.90 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 192 | GIRDERS | 0.74 | 0.31 | | | |
| | DIAPHRAGMS | 8.00 | 3.33 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 193 | GIRDERS | 1.13 | 0.47 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 194 | GIRDERS | 0.49 | 0.20 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 195 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.75 | 0.31 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 15 OF 22

DocuSigned by:

AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-30 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:08
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 196 | END DIA. | @ BENT 196 | 2.5' X 0.5' | DIAPHRAGM | 1 |
| 196 | G-1 | @ BENT 195 | 0.5' X 0.5' | BOTTOM FLANGE | LT EXT |
| 196 | G-1 | @ BENT 196 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 196 | G-4 | @ BENT 196 | 1.5' X 0.7' | BOTTOM FLANGE | 3 |
| 196 | G-4 | @ BENT 196 | 0.7' X 0.7' | BOTTOM FLANGE | LT EXT |
| 197 | END DIA. | @ BENT 197 | 2' X 0.3' | DIAPHRAGM | 2 |
| 197 | G-1 | @ BENT 197 | 1' X 0.5' | BOTTOM FLANGE | 1 |
| 197 | G-1 | @ BENT 197 | 1' X 0.5' | BOTTOM FLANGE | 1 |
| 197 | G-2 | @ BENT 196 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 197 | G-2 | @ BENT 197 | 0.5' X 0.5' | BOTTOM FLANGE | 3 |
| 197 | G-3 | @ BENT 197 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 197 | G-4 | @ BENT 197 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 198 | G-2 | 5' FROM BENT 197 | 2.5' X 0.5' | BOTTOM FLANGE | 2 |
| 199 | END DIA. | @ BENT 198 | 2' X 0.5' | DIAPHRAGM | 2 |
| 199 | END DIA. | @ BENT 199 | 1.5' X 0.5' | DIAPHRAGM | 1 |
| 199 | G-3 | @ BENT 199 | 1.5' X 1' | BOTTOM FLANGE | LT EXT |
| 199 | G-3 | 8' FROM BENT 198 | 2.5' X 0.3' | BOTTOM FLANGE | 2 |
| 200 | G-2 | @ BENT 200 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 201 | G-1 | @ BENT 201 | 1' X 0.7' | BOTTOM FLANGE | 1 |
| 201 | G-2 | 8' FROM BENT 198 | 0.7' X 0.7' | WEB | 1 |
| 201 | G-2 | 8' FROM BENT 198 | 1' X 1' | WEB | 1 |
| 202 | G-2 | @ BENT 202 | 0.7' X 0.8' | BOTTOM FLANGE | 2 |
| 203 | END DIA. | @ BENT 203 | 6.5' X 0.8' | DIAPHRAGM | 2 |
| 203 | G-2 | @ BENT 203 | 0.5' X 0.5' | BOTTOM FLANGE | 2 |
| 203 | G-2 | 3' FROM BENT 203 | 0.7' X 0.7' | WEB | 2 |
| 204 | END DIA. | @ BENT 204 | 1' X 1.5' | DIAPHRAGM | 1 |
| 204 | G-2 | 4' FROM BENT 204 | 0.8' x 0.8' | WEB | 1 |
| 205 | END DIA. | @ BENT 204 | 1.5' X 1' | DIAPHRAGM | 3 |
| 205 | END DIA. | @ BENT 205 | 3' X 1' | DIAPHRAGM | 2 |
| 206 | END DIA. | @ BENT 205 | 1.5' X 0.7' | DIAPHRAGM | RT EXT |
| 206 | END DIA. | @ BENT 205 | 6.5' X 0.7' | DIAPHRAGM | 2 |
| 206 | G-1 | @ BENT 205 | 0.8' X 0.8' | BOTTOM FLANGE | LT EXT |
| 206 | G-1 | @ BENT 205 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 206 | G-1 | @ BENT 206 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 206 | G-2 | @ BENT 205 | 1' X 0.8' | BOTTOM FLANGE | 2 |
| 206 | G-2 | 20' FROM BENT 206 | 3' X 0.3' | BOTTOM FLANGE | 1 |
| 206 | G-2 | @ BENT 206 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 206 | G-4 | 4' FROM BENT 205 | 1.5' X 0.3' | BOTTOM FLANGE | 1 |
| 207 | END DIA. | @ BENT 206 | 2.5' X 0.5' | DIAPHRAGM | 3 |
| 207 | G-1 | @ BENT 206 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 207 | G-1 | 4' FROM BENT 206 | 1' X 1' | WEB | 1 |
| 207 | G-1 | 4' FROM BENT 207 | 0.8' X 0.8' | WEB | 1 |
| 207 | G-2 | @ BENT 207 | 1' X 0.7' | BOTTOM FLANGE | 2 |
| 208 | G-2 | @ BENT 208 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 209 | END DIA. | @ BENT 208 | 3.5' X 1' | DIAPHRAGM | 2 |
| 209 | END DIA. | @ BENT 208 | 2' X 0.5' | DIAPHRAGM | 1 |
| 209 | G-2 | 4' FROM BENT 208 | 0.5' X 0.5' | WEB | 2 |
| 209 | G-2 | 10' FROM BENT 208 | 4' X 0.3' | BOTTOM FLANGE | 3 |
| 209 | G-2 | 3' FROM BENT 209 | 0.5' X 0.5' | WEB | 1 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 196 | GIRDERS | 2.28 | 0.95 | | | |
| | DIAPHRAGMS | 1.25 | 0.52 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 197 | GIRDERS | 2.24 | 0.93 | | | |
| | DIAPHRAGMS | 0.60 | 0.25 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 198 | GIRDERS | 1.25 | 0.52 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 199 | GIRDERS | 2.25 | 0.94 | | | |
| | DIAPHRAGMS | 1.75 | 0.73 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 200 | GIRDERS | 0.25 | 0.10 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 201 | GIRDERS | 2.19 | 0.91 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 202 | GIRDERS | 0.56 | 0.23 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 203 | GIRDERS | 0.74 | 0.31 | | | |
| | DIAPHRAGMS | 5.20 | 2.17 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 204 | GIRDERS | 0.64 | 0.27 | | | |
| | DIAPHRAGMS | 1.50 | 0.63 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 205 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 4.50 | 1.88 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 206 | GIRDERS | 4.56 | 1.90 | | | |
| | DIAPHRAGMS | 5.60 | 2.33 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 207 | GIRDERS | 2.83 | 1.18 | | | |
| | DIAPHRAGMS | 1.25 | 0.52 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 208 | GIRDERS | 0.64 | 0.27 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 209 | GIRDERS | 1.70 | 0.71 | | | |
| | DIAPHRAGMS | 4.50 | 1.88 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 16 OF 22

DocuSigned by:

AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-31 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:09
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 210 | END DIA. | @ BENT 210 | 1.5' X 0.5' | DIAPHRAGM | 3 |
| 211 | DECK | @ BENT 210 | 1' X 1.5' | BOTTOM OF DECK | 2 |
| 211 | END DIA. | @ BENT 210 | 1' X 3' | DIAPHRAGM | 2 |
| 211 | G-4 | @ BENT 211 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 212 | END DIA. | @ BENT 211 | 3' X 0.5' | DIAPHRAGM | 1 |
| 212 | END DIA. | @ BENT 212 | 1' X 1' | DIAPHRAGM | LT EXT |
| 212 | G-2 | 5' FROM BENT 211 | 4' X 0.3' | BOTTOM FLANGE | 1 |
| 212 | G-3 | 4' FROM BENT 211 | 0.5' X 0.5' | WEB | 2 |
| 213 | END DIA. | @ BENT 213 | 4' X 0.5' | DIAPHRAGM | 1 |
| 213 | G-4 | @ BENT 213 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 214 | END DIA. | @ BENT 213 | 2' X 0.5' | DIAPHRAGM | 2 |
| 214 | G-2 | @ BENT 213 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 214 | G-2 | 1' FROM BENT 213 | 1.5' X 4' | BOTTOM FLANGE | 1 |
| 214 | G-3 | 3' FROM BENT 213 | 0.5' X 0.5' | WEB | 3 |
| 214 | G-3 | 4' FROM BENT 214 | 0.8' X 0.8' | WEB | 2 |
| 215 | DECK | 2' FROM BENT 214 | 1' X 1' | BOTTOM OF DECK | 3 |
| 215 | G-4 | 3' FROM BENT 214 | 0.6' X 0.6' | WEB | 3 |
| 216 | END DIA. | @ BENT 216 | 4.5' X 0.6' | DIAPHRAGM | 2 |
| 216 | G-4 | @ BENT 215 | 0.6' X 0.6' | BOTTOM FLANGE | RT EXT |
| 217 | END DIA. | @ BENT 216 | 6.5' X 0.6' | DIAPHRAGM | 2 |
| 217 | END DIA. | @ BENT 217 | 4' X 0.3' | DIAPHRAGM | 2 |
| 218 | END DIA. | @ BENT 218 | 6.5' X 0.5' | DIAPHRAGM | 2 |
| 218 | END DIA. | @ BENT 218 | 1' X 0.3' | DIAPHRAGM | RT EXT |
| 218 | G-1 | 1' FROM BENT 217 | 1' X 4' | BOTTOM FLANGE | 1 |
| 218 | G-2 | @ BENT 217 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 219 | END DIA. | @ BENT 219 | 1' X 0.5' | DIAPHRAGM | 3 |
| 220 | END DIA. | @ BENT 220 | 15' X 0.3' | DIAPHRAGM | 3 |
| 220 | END DIA. | @ BENT 220 | 1' X 4' | DIAPHRAGM | 2 |
| 220 | G-3 | @ BENT 220 | 0.6' X 0.6' | BOTTOM FLANGE | 3 |
| 220 | G-4 | @ BENT 219 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 221 | END DIA. | @ BENT 220 | 1' X 2' | DIAPHRAGM | 2 |
| 221 | END DIA. | @ BENT 221 | 0.5' X 0.5' | DIAPHRAGM | 2 |
| 221 | G-2 | 3' FROM BENT 220 | 4' X 0.5' | BOTTOM FLANGE | 1 |
| 221 | G-2 | 3' FROM BENT 221 | 0.6' X 0.6' | WEB | 1 |
| 221 | G-3 | 20' FROM BENT 221 | 3' X 0.5' | BOTTOM FLANGE | 3 |
| 221 | G-3 | @ BENT 221 | 0.6' X 0.6' | WEB | 2 |
| 222 | END DIA. | @ BENT 221 | 2.5' X 0.5' | DIAPHRAGM | 1 |
| 222 | G-2 | @ BENT 221 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 222 | G-3 | @ BENT 222 | 1' X 0.7' | BOTTOM FLANGE | 2 |
| 222 | G-3 | 2' FROM BENT 222 | 1' X 1' | WEB | 2 |
| 223 | END DIA. | @ BENT 222 | 3' X 0.5' | DIAPHRAGM | 1 |
| 223 | G-2 | @ BENT 222 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 223 | G-2 | 4' FROM BENT 222 | 0.5' X 0.5' | WEB | 2 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 210 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.75 | 0.31 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 211 | GIRDERS | 0.49 | 0.20 | | | |
| | DIAPHRAGMS | 3.00 | 1.25 | | | |
| | DECK | 1.50 | 0.63 | | | |
| SPAN 212 | GIRDERS | 1.45 | 0.60 | | | |
| | DIAPHRAGMS | 2.50 | 1.04 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 213 | GIRDERS | 0.64 | 0.27 | | | |
| | DIAPHRAGMS | 2.00 | 0.83 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 214 | GIRDERS | 7.53 | 3.14 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 215 | GIRDERS | 0.36 | 0.15 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 1.00 | 0.42 | | | |
| SPAN 216 | GIRDERS | 0.36 | 0.15 | | | |
| | DIAPHRAGMS | 2.70 | 1.13 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 217 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 5.10 | 2.13 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 218 | GIRDERS | 4.64 | 1.93 | | | |
| | DIAPHRAGMS | 3.55 | 1.48 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 219 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.50 | 0.21 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 220 | GIRDERS | 1.00 | 0.42 | | | |
| | DIAPHRAGMS | 8.50 | 3.54 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 221 | GIRDERS | 4.22 | 1.76 | | | |
| | DIAPHRAGMS | 2.25 | 0.94 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 222 | GIRDERS | 2.34 | 0.98 | | | |
| | DIAPHRAGMS | 1.25 | 0.52 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 223 | GIRDERS | 0.50 | 0.21 | | | |
| | DIAPHRAGMS | 1.50 | 0.63 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 17 OF 22

DocuSigned by:
Timothy M. Sherrill
AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-32 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:09
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malee7

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 224 | END DIA. | @ BENT 223 | 1.5' X 2' | DIAPHRAGM | 2 |
| 224 | END DIA. | @ BENT 224 | 0.5' X 0.5' | DIAPHRAGM | 3 |
| 224 | END DIA. | @ BENT 224 | 0.4' X 0.5' | DIAPHRAGM | 1 |
| 224 | END DIA. | @ BENT 224 | 0.5' X 0.5' | DIAPHRAGM | 2 |
| 224 | G-2 | 3' FROM BENT 223 | 0.5' X 0.5' | WEB | 2 |
| 225 | DECK | 8' FROM BENT 224 | 1' X 1' | BOTTOM OF DECK | 3 |
| 225 | END DIA. | @ BENT 224 | 1.5' X 0.3' | DIAPHRAGM | 3 |
| 225 | G-1 | @ BENT 225 | 0.7' X 0.7' | WEB | LT EXT |
| 225 | G-3 | @ BENT 225 | 0.7' X 0.7' | BOTTOM FLANGE | 3 |
| 226 | END DIA. | @ BENT 225 | 1' X 0.5' | DIAPHRAGM | 1 |
| 226 | G-1 | @ BENT 225 | 0.5' X 0.5' | BOTTOM FLANGE | LT EXT |
| 226 | G-3 | @ BENT 225 | 2.5' X 0.3' | BOTTOM FLANGE | 2 |
| 227 | END DIA. | @ BENT 226 | 2.5' X 0.7' | DIAPHRAGM | 3 |
| 227 | END DIA. | @ BENT 227 | 1' X 0.3' | DIAPHRAGM | 1 |
| 227 | G-4 | @ BENT 227 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 228 | DECK | 14' FROM BENT 227 | 1.5' X 1' | BOTTOM OF DECK | RT EXT |
| 228 | DECK | 16' FROM BENT 227 | 1.5' X 1' | BOTTOM OF DECK | RT EXT |
| 228 | END DIA. | @ BENT 228 | 4' X 0.5' | DIAPHRAGM | 2 |
| 228 | END DIA. | @ BENT 228 | 1' X 1' | DIAPHRAGM | RT EXT |
| 228 | G-2 | @ BENT 227 | 0.5' X 0.5' | BOTTOM FLANGE | 1 |
| 228 | G-4 | 25' FROM BENT 228 | 3' X 0.5' | BOTTOM FLANGE | 3 |
| 229 | END DIA. | @ BENT 228 | 1.5' X 0.8' | DIAPHRAGM | 3 |
| 229 | END DIA. | @ BENT 229 | 1.5' X 1' | DIAPHRAGM | 3 |
| 229 | G-3 | @ BENT 229 | 0.5' X 0.7' | WEB | 2 |
| 230 | DECK | 14' FROM BENT 229 | 2' X 5' | BOTTOM OF DECK | LT EXT |
| 230 | DECK | 20' FROM BENT 229 | 1' X 3' | BOTTOM OF DECK | LT EXT |
| 230 | DECK | 14' FROM BENT 229 | 4' X 2' | BOTTOM OF DECK | RT EXT |
| 230 | DECK | 25' FROM BENT 229 | 4' X 2' | BOTTOM OF DECK | RT EXT |
| 230 | DECK | @ BENT 230 | 2' X 1' | BOTTOM OF DECK | LT EXT |
| 230 | END DIA. | @ BENT 230 | 1' X 0.5' | DIAPHRAGM | 3 |
| 230 | G-3 | @ BENT 229 | 0.7' X 0.7' | BOTTOM FLANGE | 2 |
| 231 | G-3 | @ BENT 230 | 0.4' x 1.5' | BOTTOM FLANGE | 2 |
| 231 | G-3 | 3' FROM BENT 230 | 0.5' x 0.4' | WEB | 3 |
| 231 | G-3 | 3' FROM BENT 231 | 0.4' x 0.4' | WEB | 2 |
| 232 | G-2 | 3' FROM BENT 232 | 0.3' x 0.3' | WEB | 1 |
| 233 | G-1 | @ BENT 232 | 0.8' x 0.8' | END OF GIRDER | LT EXT |
| 233 | G-2 | 4' FROM BENT 232 | 0.3' x 0.5' | BOTTOM FLANGE | LT EXT |
| 233 | G-4 | @ BENT 232 | 0.7' x 0.7' | END OF GIRDER | 3 |
| 233 | G-4 | 12' FROM BENT 232 | 2' x 0.7' | BOTTOM FLANGE | 3 |
| 234 | G-2 | 2' FROM BENT 233 | 0.3' x 0.5' | WEB | 2 |
| 234 | G-2 | 3' FROM BENT 234 | 0.4 x 0.4' | WEB | 1 |
| 235 | END DIA. | @ BENT 235 | 3' x 1.5' | DIAPHRAGM | 3 |
| 235 | G-2 | @ BENT 235 | 0.8' x 0.8' | END OF GIRDER | RT EXT |
| 236 | G-3 | @ BENT 236 | 0.5' x 0.7' | END OF GIRDER | 3 |
| 236 | G-3 | 3' FROM BENT 235 | 2' x 0.7' | BOTTOM FLANGE | 3 |
| 236 | G-3 | 10' FROM BENT 236 | 0.3' x 0.5' | WEB | 2 |
| 236 | G-3 | 6' FROM BENT 236 | 0.5' x 1.5' | BOTTOM FLANGE | 2 |
| 237 | G-2 | @ BENT 236 | 1' x 1' | END OF GIRDER | 1 |
| 237 | G-2 | @ BENT 236 | 0.3' x 0.3' | WEB | RT EXT |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 224 | GIRDERS | 0.25 | 0.10 | | | |
| | DIAPHRAGMS | 3.70 | 1.54 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 225 | GIRDERS | 0.98 | 0.41 | | | |
| | DIAPHRAGMS | 0.45 | 0.19 | | | |
| | DECK | 1.00 | 0.42 | | | |
| SPAN 226 | GIRDERS | 1.00 | 0.42 | | | |
| | DIAPHRAGMS | 0.50 | 0.21 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 227 | GIRDERS | 0.64 | 0.27 | | | |
| | DIAPHRAGMS | 2.05 | 0.85 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 228 | GIRDERS | 1.75 | 0.73 | | | |
| | DIAPHRAGMS | 3.00 | 1.25 | | | |
| | DECK | 3.00 | 1.25 | | | |
| SPAN 229 | GIRDERS | 0.35 | 0.15 | | | |
| | DIAPHRAGMS | 2.70 | 1.13 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 230 | GIRDERS | 0.49 | 0.20 | | | |
| | DIAPHRAGMS | 0.50 | 0.21 | | | |
| | DECK | 31.00 | 12.92 | | | |
| SPAN 231 | GIRDERS | 0.96 | 0.40 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 232 | GIRDERS | 0.09 | 0.04 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 233 | GIRDERS | 2.68 | 1.12 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 234 | GIRDERS | 0.31 | 0.13 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 235 | GIRDERS | 0.64 | 0.27 | | | |
| | DIAPHRAGMS | 4.50 | 1.88 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 236 | GIRDERS | 2.65 | 1.10 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 237 | GIRDERS | 1.09 | 0.45 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 18 OF 22

DocuSigned by:

AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-33 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:10
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 238 | G-2 | @ BENT 238 | 1' x 1' | END OF GIRDER | 1 |
| 238 | G-2 | 0.5' FROM BENT 238 | 0.5' x 1.5' | BOTTOM FLANGE | 1 |
| 238 | G-3 | @ BENT 237 | 0.7' x 0.7' | END OF GIRDER | 2 |
| 238 | G-3 | @ BENT 238 | 1' x 0.8' | END OF GIRDER | 3 |
| 238 | G-4 | @ BENT 237 | 0.7' x 0.8' | END OF GIRDER | LT EXT |
| 238 | G-4 | @ BENT 237 | 0.7' x 0.7' | END OF GIRDER | 3 |
| 238 | G-4 | 4' FROM BENT 238 | 0.4' x 0.4' | WEB | 3 |
| 239 | END DIA. | @ BENT 238 | 1.5' X 2' | DIAPHRAGM | LT EXT |
| 239 | G-1 | 4' FROM BENT 239 | 0.5' X 0.5' | WEB | 2 |
| 240 | END DIA. | @ BENT 240 | 2' X 1.5' | DIAPHRAGM | 2 |
| 240 | G-2 | 1' FROM BENT 239 | 1' X 0.5' | BOTTOM FLANGE | 1 |
| 241 | G-2 | @ BENT 240 | 3' X 1' | BOTTOM FLANGE | 1 |
| 241 | G-2 | @ BENT 240 | 1' X 1' | END OF GIRDER | 2 |
| 241 | G-3 | @ BENT 241 | 1' X 0.5' | END OF GIRDER | 3 |
| 244 | G-3 | @ BENT 244 | 1' X 1' | END OF GIRDER | 2 |
| 245 | G-1 | @ BENT 244 | 0.5' X 1' | END OF GIRDER | 2 |
| 245 | G-2 | 1.5' FROM BENT 244 | 0.4' X 0.4' | WEB | 2 |
| 245 | G-2 | 5' FROM BENT 244 | 0.4' X 0.4' | WEB | 3 |
| 245 | G-3 | @ BENT 244 | 2' X 1' | END OF GIRDER | 2 |
| 245 | G-3 | @ BENT 244 | 0.5' X 1' | END OF GIRDER | 3 |
| 245 | G-3 | @ BENT 244 | 0.5' X 1.5' | BOTTOM FLANGE | 2 |
| 245 | G-4 | @ BENT 244 | 1' X 2' | END OF GIRDER | 3 |
| 246 | G-1 | @ BENT 246 | 1' X 1.5' | END OF GIRDER | 1 |
| 246 | G-2 | @ INTER. DIA. | 4' X 1.5' | BOTTOM FLANGE | 1 |
| 247 | G-1 | 0.5' FROM BENT 246 | 4' X 1' | BOTTOM FLANGE | 1 |
| 247 | G-2 | @ BENT 246 | 2' X 1' | BOTTOM FLANGE | 1 |
| 247 | G-2 | 3' FROM BENT 246 | 0.4' X 0.4' | WEB | 2 |
| 248 | END DIA. | @ BENT 248 | 3' X 1' | DIAPHRAGM | 2 |
| 248 | G-2 | 2' FROM BENT 247 | 0.4' X 0.4' | TOP FLANGE | 2 |
| 249 | G-1 | @ BENT 249 | 1' X 1' | END OF GIRDER | 1 |
| 249 | G-2 | @ BENT 248 | 1' X 1' | BOTTOM FLANGE | 1 |
| 250 | G-1 | @ BENT 250 | 1' X 1' | BOTTOM FLANGE | LT EXT |
| 251 | G-2 | 5' FROM BENT 251 | 0.4' X 1.3' | BOTTOM FLANGE | 1 |
| 251 | G-3 | 4' FROM BENT 250 | 0.3' X 0.3' | BOTTOM FLANGE | 2 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 238 | GIRDERS | 4.25 | 1.77 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 239 | GIRDERS | 0.25 | 0.10 | | | |
| | DIAPHRAGMS | 3.00 | 1.25 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 240 | GIRDERS | 0.50 | 0.21 | | | |
| | DIAPHRAGMS | 3.00 | 1.25 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 241 | GIRDERS | 4.50 | 1.88 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 242 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 243 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 244 | GIRDERS | 1.00 | 0.42 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 245 | GIRDERS | 6.07 | 2.53 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 246 | GIRDERS | 7.50 | 3.13 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 247 | GIRDERS | 6.16 | 2.57 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 248 | GIRDERS | 0.16 | 0.07 | | | |
| | DIAPHRAGMS | 3.00 | 1.25 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 249 | GIRDERS | 2.00 | 0.83 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 250 | GIRDERS | 1.00 | 0.42 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 251 | GIRDERS | 0.61 | 0.25 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 19 OF 22

DocuSigned by:

AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-34 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:11
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## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 252 | END DIA. | @ BENT 252 | 1' X 1' | DIAPHRAGM | 3 |
| 252 | G-1 | @ BENT 251 | 1.5' X 1.5' | END OF GIRDER | LT EXT |
| 252 | G-1 | @ BENT 252 | 1' X 1' | END OF GIRDER | LT EXT |
| 252 | G-1 | 4' FROM BENT 251 | 0.4' X 0.4' | WEB | 1 |
| 252 | G-2 | @ BENT 251 | 1' X 1.5' | BOTTOM FLANGE | RT EXT |
| 252 | G-3 | @ BENT 251 | 1.5' X 1' | BOTTOM FLANGE | 2 |
| 253 | G-1 | @ BENT 253 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 255 | G-1 | @ BENT 254 | 2' X 0.8' | BOTTOM FLANGE | 1 |
| 255 | G-2 | @ BENT 255 | 0.7' X 0.8' | BOTTOM FLANGE | 2 |
| 255 | G-3 | @ BENT 254 | 0.9' X 0.3' | BOTTOM FLANGE | 2 |
| 255 | G-4 | @ BENT 255 | 0.6' X 0.7' | WEB | |
| 255 | G-4 | 3' FROM BENT 256 | 0.4' X 0.4' | WEB | 3 |
| 257 | G-1 | @ BENT 257 | 0.5' X 0.6' | BOTTOM FLANGE | 1 |
| 257 | G-3 | @ BENT 257 | 0.5' X 0.8' | BOTTOM FLANGE | LT EXT |
| 257 | G-4 | @ BENT 256 | 1.7' X 0.3' | BOTTOM FLANGE | 3 |
| 257 | G-4 | 3' FROM BENT 256 | 1.3' X 0.3' | BOTTOM FLANGE | 3 |
| 258 | G-2 | @ BENT 258 | 0.3' X 1.3' | BOTTOM FLANGE & WEB | 1 |
| 258 | G-3 | 1' FROM BENT 258 | 0.5' X 0.4' | WEB | 3 |
| 258 | G-4 | @ BENT 258 | 0.6' X 0.6' | BOTTOM FLANGE | 3 |
| 259 | G-1 | @ BENT 259 | 0.4' X 0.7' | BOTTOM FLANGE | |
| 259 | G-3 | @ BENT 259 | 0.5' X 0.7' | BOTTOM FLANGE | 2 |
| 259 | G-3 | @ BENT 259 | 1.3' X 1' | BOTTOM FLANGE | 3 |
| 259 | G-4 | @ BENT 259 | 0.6' X 0.7' | BOTTOM FLANGE | 3 |
| 260 | G-1 | @ BENT 259 | 0.5' X 0.7' | BOTTOM FLANGE | 1 |
| 260 | G-1 | @ BENT 260 | 0.6' X 0.6' | BOTTOM FLANGE | 1 |
| 260 | G-2 | @ BENT 260 | 1' X 0.8' | BOTTOM FLANGE | 1 |
| 261 | G-3 | @ BENT 261 | 0.6' X 0.7' | BOTTOM FLANGE | 3 |
| 261 | G-4 | @ BENT 261 | 0.8' X 0.8' | BOTTOM FLANGE | 3 |
| 264 | G-2 | @ BENT 264 | 0.4' X 0.6' | BOTTOM FLANGE | 1 |
| 264 | G-4 | @ BENT 264 | 1.1' X 0.3' | BOTTOM FLANGE | 3 |
| 265 | G-1 | @ BENT 265 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 265 | G-2 | @ BENT 265 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 265 | G-2 | @ BENT 265 | 1.2' X 0.8' | BOTTOM FLANGE | 2 |
| 265 | G-3 | @ BENT 264 | 1' X 1.5' | BOTTOM FLANGE | 2 |
| 265 | G-3 | @ BENT 265 | 0.3' X 0.5' | BOTTOM FLANGE | 2 |
| 265 | G-3 | @ BENT 265 | 0.8' X 1.5' | BOTTOM FLANGE | 2 |
| 265 | G-3 | @ BENT 265 | 0.6' X 0.6' | BOTTOM FLANGE | 3 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 252 | GIRDERS | 6.41 | 2.67 | | | |
| | DIAPHRAGMS | 1.00 | 0.42 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 253 | GIRDERS | 0.80 | 0.33 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 254 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 255 | GIRDERS | 3.01 | 1.25 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 256 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 257 | GIRDERS | 1.60 | 0.67 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 258 | GIRDERS | 0.95 | 0.40 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 259 | GIRDERS | 2.35 | 0.98 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 260 | GIRDERS | 1.51 | 0.63 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 261 | GIRDERS | 1.06 | 0.44 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 262 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 263 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 264 | GIRDERS | 0.57 | 0.24 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 265 | GIRDERS | 5.30 | 2.21 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 20 OF 22

DocuSigned by:

AD50B1D977494CC...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

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

SHEET NO. S-35

TOTAL SHEETS 394

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:11
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malee7

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR SIZE | LOCATION | BAY |
|---|---|---|---|---|---|
| 266 | G-1 | @ BENT 265 | 0.6' X 0.8' | BOTTOM FLANGE | 1 |
| 266 | G-2 | @ BENT 265 | 0.6' X 0.6' | BOTTOM FLANGE | 1 |
| 266 | G-2 | @ BENT 266 | 0.6' X 0.8' | BOTTOM FLANGE | 2 |
| 266 | G-3 | @ BENT 265 | 0.8' X 0.7' | BOTTOM FLANGE | 3 |
| 266 | G-3 | @ BENT 266 | 0.8' X 0.3' | BOTTOM FLANGE | 2 |
| 267 | G-2 | @ BENT 266 | 0.8' X 0.8' | BOTTOM FLANGE | 2 |
| 268 | G-2 | @ BENT 267 | 1.8' X 0.3' | BOTTOM FLANGE | 2 |
| 268 | G-3 | 26' FROM BENT 267 | 4.3' X 0.4' | BOTTOM FLANGE | 2 |
| 268 | G-3 | 26' FROM BENT 267 | 2.5' X 0.5' | BOTTOM FLANGE | 3 |
| 269 | G-1 | @ BENT 268 | 0.4' X 0.7' | BOTTOM FLANGE | LT EXT |
| 269 | G-2 | @ BENT 269 | 0.4' X 0.7' | BOTTOM FLANGE | 2 |
| 269 | G-3 | @ BENT 269 | 3.6' X 0.8' | BOTTOM FLANGE | 3 |
| 271 | DECK | @ BENT 270 | 2' X 1.7' | BOTTOM OF DECK | 3 |
| 271 | G-1 | @ BENT 271 | 1.5' X 1.3' | BOTTOM FLANGE & WEB | LT EXT |
| 271 | G-1 | @ BENT 271 | 0.7' X 0.7' | WEB | 1 |
| 271 | G-2 | @ BENT 270 | 0.7' X 0.7' | BOTTOM FLANGE | 1 |
| 272 | END DIA. | @ BENT 272 | 1.3' X 1.5' | DIAPHRAGM | LT EXT |
| 272 | G-1 | @ BENT 271 | 0.8' X 0.6' | BOTTOM FLANGE | LT EXT |
| 272 | G-1 | @ BENT 272 | 0.8' X 0.6' | BOTTOM FLANGE | 1 |
| 272 | G-1 | @ BENT 272 | 0.7' X 0.7' | WEB | 1 |
| 272 | G-3 | @ BENT 271 | 0.8' X 0.7' | BOTTOM FLANGE | 2 |
| 272 | G-4 | @ BENT 272 | 1.2' X 0.8' | BOTTOM FLANGE | 3 |
| 273 | G-1 | @ BENT 272 | 0.7' X 0.6' | BOTTOM FLANGE | LT EXT |
| 273 | G-1 | @ BENT 272 | 0.3' X 0.7' | WEB | LT EXT |
| 273 | G-1 | @ BENT 272 | 0.8' X 0.8' | BOTTOM FLANGE | 1 |
| 273 | G-1 | 2' FROM BENT 272 | 1.2' X 1.2' | WEB | 1 |
| 273 | G-2 | 1' FROM BENT 272 | 1.1' X 1' | WEB | 2 |
| 273 | G-2 | 2' FROM BENT 273 | 1' X 0.8' | WEB | 2 |
| 273 | G-3 | @ BENT 273 | 1.1' X 1.4' | WEB | 2 |
| 273 | G-4 | @ BENT 273 | 0.5' X 0.7' | WEB | 3 |
| 274 | DECK | 10' FROM BENT 273 | 1.8' X 0.8' | BOTTOM OF DECK | 1 |
| 274 | G-1 | @ BENT 273 | 0.8' X 0.8' | WEB | LT EXT |
| 274 | G-1 | @ BENT 274 | 2.2' X 1.2' | BOTTOM FLANGE | LT EXT |
| 274 | G-1 | @ BENT 274 | 2' X 0.3' | BOTTOM FLANGE | 1 |
| 274 | G-2 | 2' FROM BENT 273 | 2.2' X 1.2' | WEB | 1 |
| 274 | G-3 | @ BENT 274 | 6' X 1' | BOTTOM FLANGE | 2 |
| 274 | G-3 | @ BENT 274 | 1.9' X 1' | BOTTOM FLANGE | 2 |
| 274 | G-3 | @ BENT 274 | 1.8' X 1' | BOTTOM FLANGE | 2 |
| 274 | G-4 | @ BENT 274 | 2' X 0.8' | BOTTOM FLANGE | 3 |
| 274 | G-4 | @ BENT 274 | 1' X 0.8' | BOTTOM FLANGE | RT EXT |
| 274 | G-4 | 4' FROM BENT 273 | 0.3' X 1.2' | WEB | 3 |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | SHOTCRETE | QUANTITIES ESTIMATE AREA SF | QUANTITIES ESTIMATE VOLUME CF | QUANTITIES ACTUAL AREA SF | QUANTITIES ACTUAL DEPTH FT | QUANTITIES ACTUAL VOLUME CF |
|---|---|---|---|---|---|---|
| SPAN 266 | GIRDERS | 2.12 | 0.88 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 267 | GIRDERS | 0.64 | 0.27 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 268 | GIRDERS | 3.51 | 1.46 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 269 | GIRDERS | 3.44 | 1.43 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 270 | GIRDERS | 0.00 | 0.00 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 271 | GIRDERS | 2.93 | 1.22 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 3.40 | 1.42 | | | |
| SPAN 272 | GIRDERS | 2.97 | 1.24 | | | |
| | DIAPHRAGMS | 1.95 | 0.81 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 273 | GIRDERS | 6.50 | 2.71 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 0.00 | 0.00 | | | |
| SPAN 274 | GIRDERS | 18.98 | 7.91 | | | |
| | DIAPHRAGMS | 0.00 | 0.00 | | | |
| | DECK | 1.44 | 0.60 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 21 OF 22

DocuSigned by:

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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

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

SHEET NO. S-36

TOTAL SHEETS 394

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

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malee7

## GIRDER, DIAPHRAGM, & DECK REPAIR TABLES

| SPAN | MEMBER | LENGTH FROM BENT (FT) | REPAIR AREA | LOCATION | BAY |
|---|---|---|---|---|---|
| 08 S | DECK | 6' FROM BENT 8-S | 1.7' X 1.3 | BOTTOM OF DECK | - |
| 10 S | DECK | 6' FROM BENT 10-S | 2.5' X 1.7' | BOTTOM OF DECK | - |
| 13 S | DECK | 6' FROM BENT 13-S | 2' X 1.4' | BOTTOM OF DECK | - |
| 15 S | DECK | 6' FROM BENT 15-S | 4' X 2' | BOTTOM OF DECK | - |
| 18 S | DECK | @ BENT 18-S | 1' X 1.5' | BOTTOM OF DECK | - |
| 18 S | DECK | @ BENT 18-S | 1.4' X 1.4' | BOTTOM OF DECK | - |
| 19 S | DECK | @ BENT 18-S | 1' X 4' | BOTTOM OF DECK | - |
| 19 S | DECK | @ BENT 19-S | 24' X 3.5' | BOTTOM OF DECK | - |
| 19 S | DECK | 6' FROM BENT 19-S | 1.7' X 1.2' | BOTTOM OF DECK | - |

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.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| | | QUANTITIES | | | | |
|---|---|---|---|---|---|---|
| | | ESTIMATE | | ACTUAL | | |
| | SHOTCRETE | AREA SF | VOLUME CF | AREA SF | DEPTH FT | VOLUME CF |
| SPAN 1S-7S | DECK | 0.00 | 0.00 | | | |
| SPAN 8S | DECK | 2.21 | 0.92 | | | |
| SPAN 9S | DECK | 0.00 | 0.00 | | | |
| SPAN 10S | DECK | 4.25 | 1.77 | | | |
| SPAN 11S-12S | DECK | 0.00 | 0.00 | | | |
| SPAN 13S | DECK | 2.80 | 1.17 | | | |
| SPAN 14S | DECK | 0.00 | 0.00 | | | |
| SPAN 15S | DECK | 8.00 | 3.33 | | | |
| SPAN 16S-17S | DECK | 0.00 | 0.00 | | | |
| SPAN 18S | DECK | 3.46 | 1.44 | | | |
| SPAN 19S | DECK | 90.04 | 37.52 | | | |
| SPAN 20S-60S | DECK | 0.00 | 0.00 | | | |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 22 OF 22

DocuSigned by:

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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 18565 ENGINEER TIMOTHY M. SHERRILL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GIRDER, DIAPHRAGM & UNDERDECK REPAIRS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-37 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : M.A.LEE DATE : 6/2016
CHECKED BY : T.SHERRILL DATE : 6/2016
DESIGN ENGINEER OF RECORD: T.SHERRILL DATE : 6/2016

24-JUN-2016 09:13
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

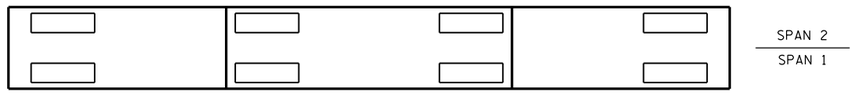
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

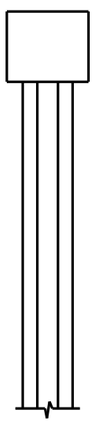
## REPAIR QUANTITY TABLE

| REPAIRS BENT 1 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 37.8 | 15.9 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

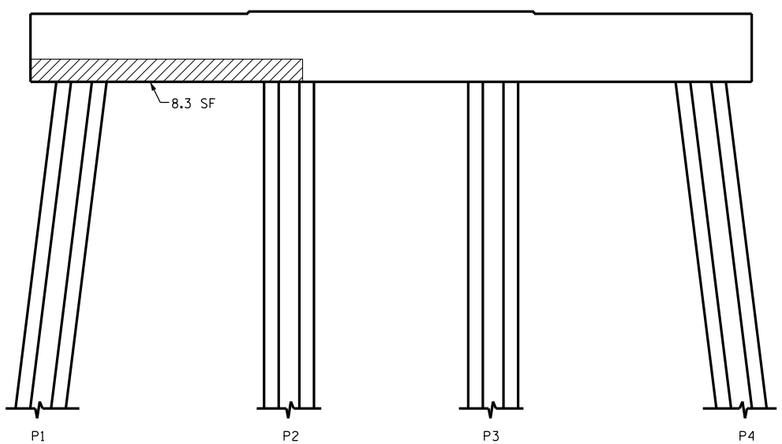
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



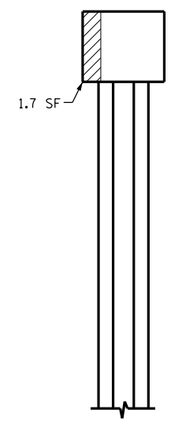

PLAN
TOP OF CAP



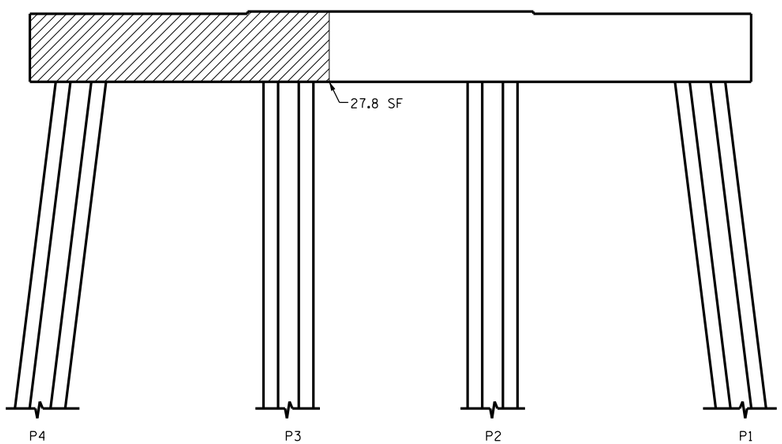
END VIEW
NORTH SIDE



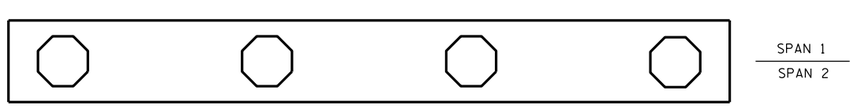

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-38 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

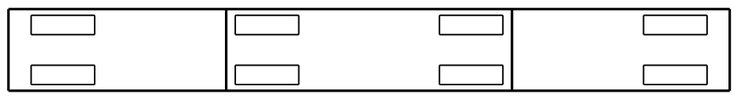
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

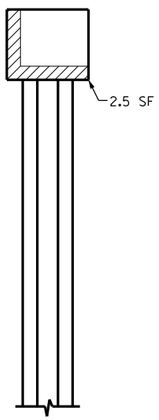
## REPAIR QUANTITY TABLE

| REPAIRS BENT 2 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 136.7 | 57.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

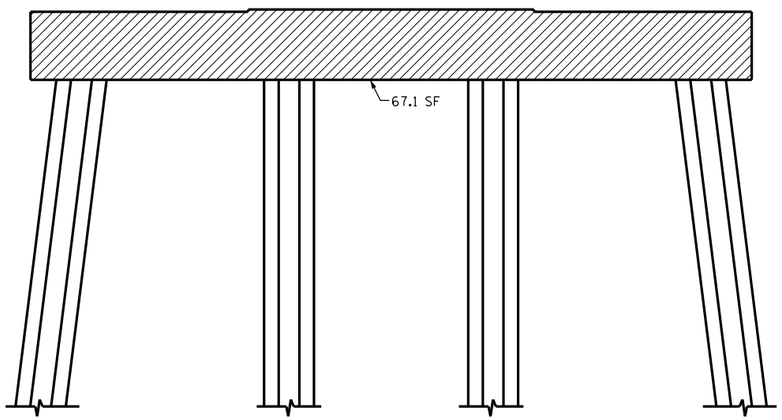
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



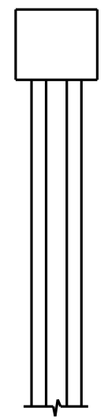

PLAN
TOP OF CAP



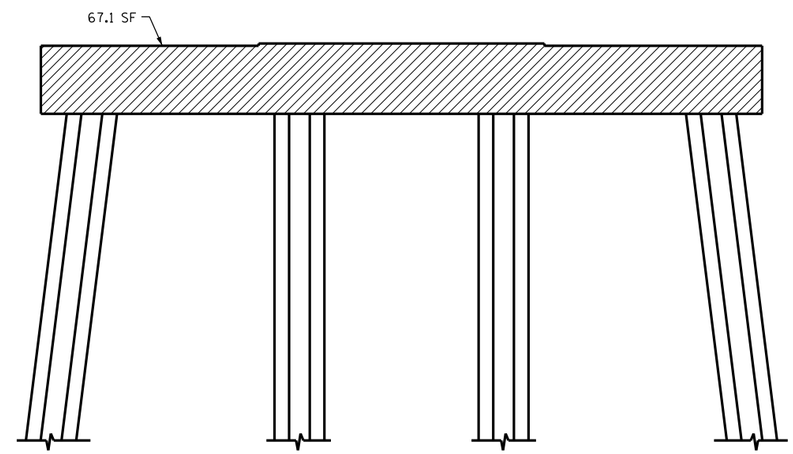

END VIEW
NORTH SIDE



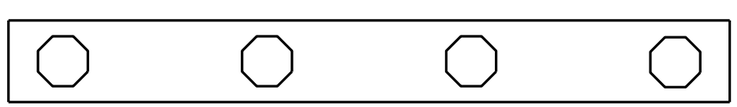

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP
(LOOKING DOWN)

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2

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| REVISIONS | | | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-39 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

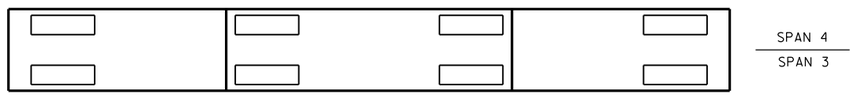
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

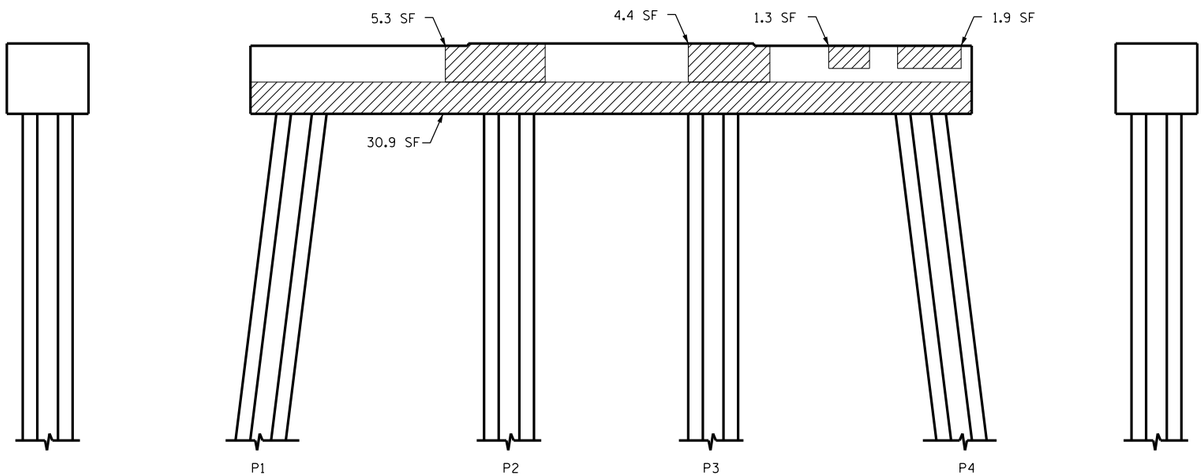
## REPAIR QUANTITY TABLE

| REPAIRS BENT 3 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 53.7 | 22.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



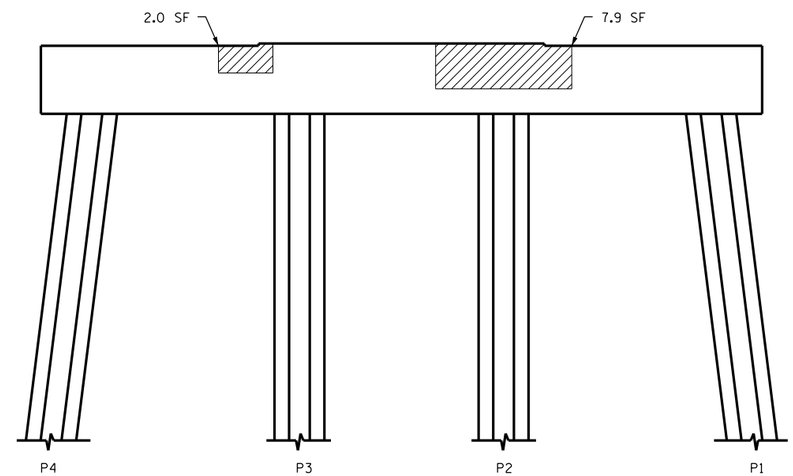

PLAN
TOP OF CAP



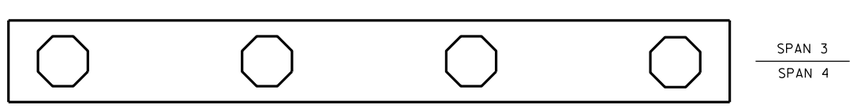

END VIEW
NORTH SIDE

ELEVATION
WEST SIDE

END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-40 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

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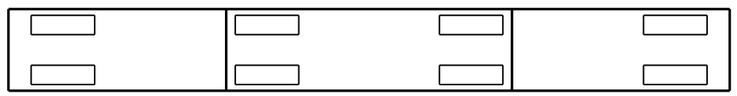
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

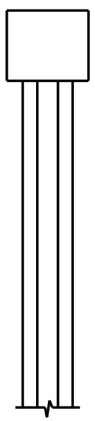
## REPAIR QUANTITY TABLE

| REPAIRS BENT 4 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.2 | 0.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

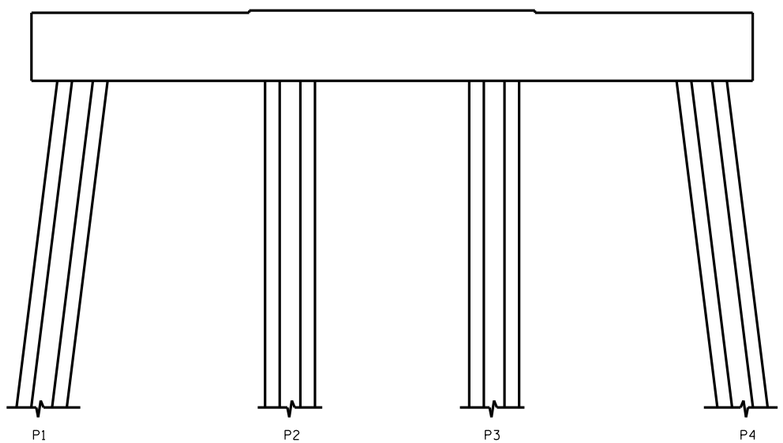
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



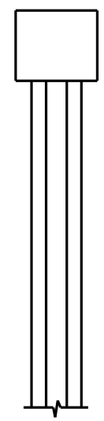

PLAN
TOP OF CAP



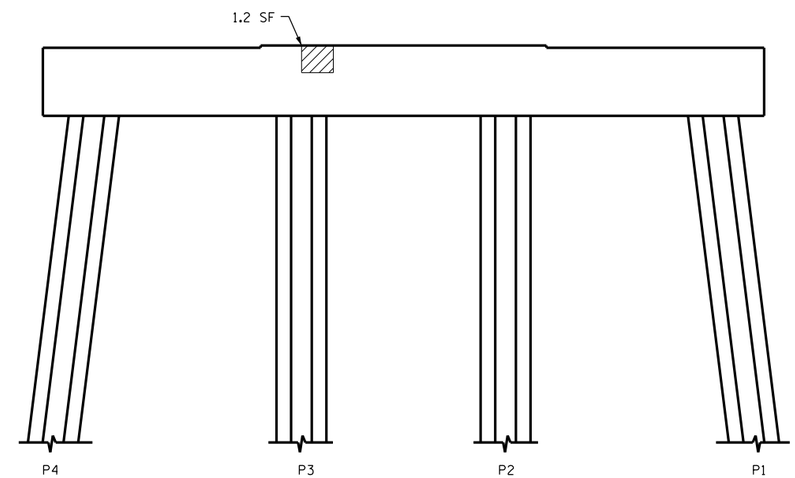
END VIEW
NORTH SIDE



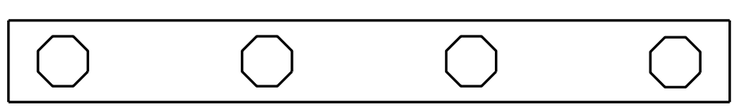

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-41 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

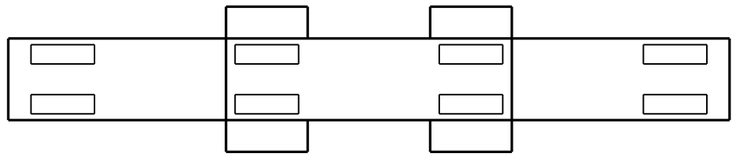
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

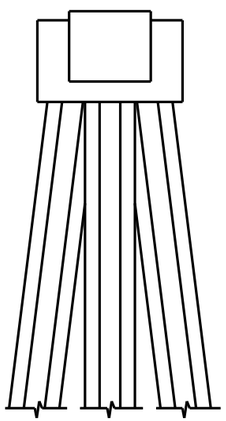
## REPAIR QUANTITY TABLE

| REPAIRS BENT 5 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

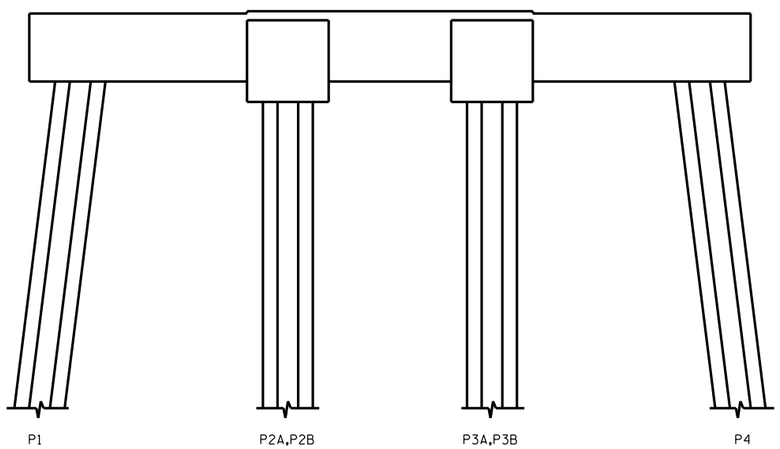
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



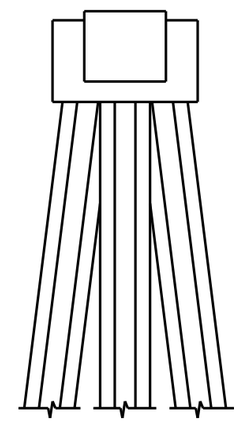

PLAN
TOP OF CAP



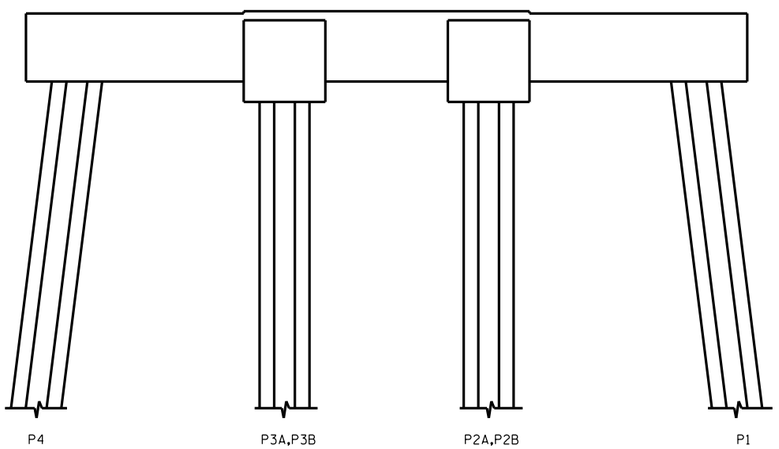
END VIEW
NORTH SIDE



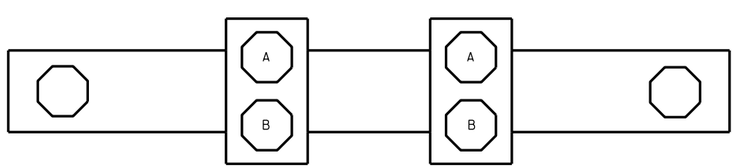

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 5

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-42 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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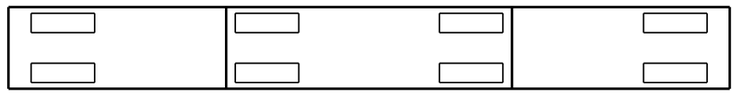
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

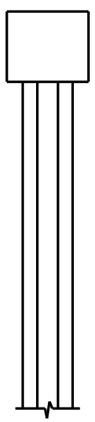
| REPAIRS BENT 6 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

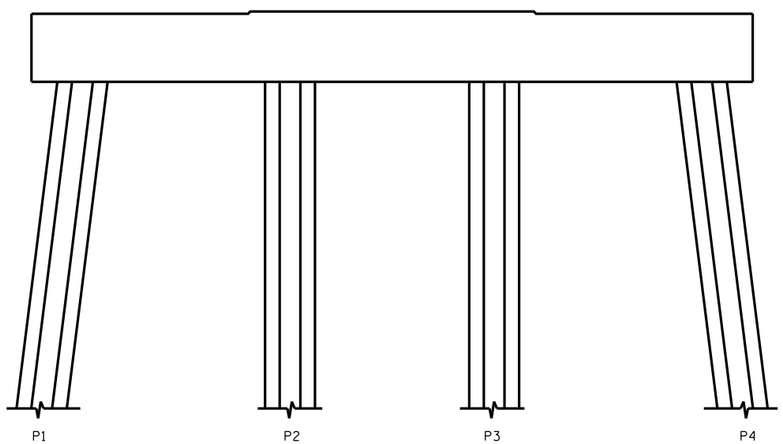


SPAN 7
SPAN 6

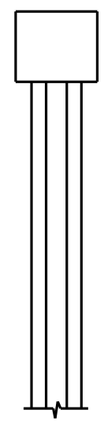
PLAN
TOP OF CAP



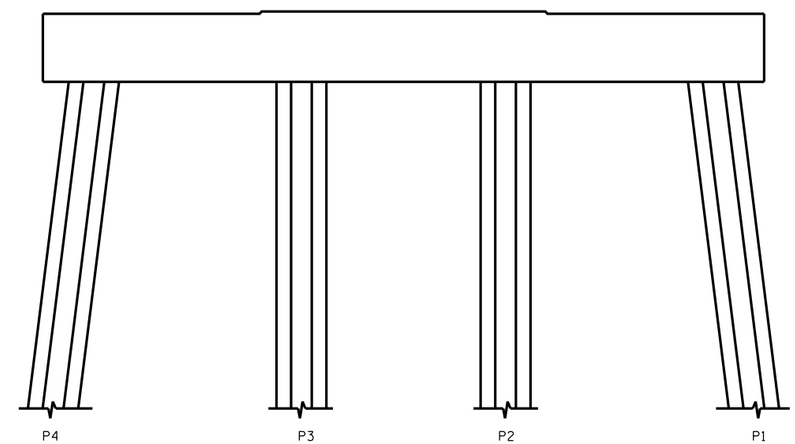
END VIEW
NORTH SIDE



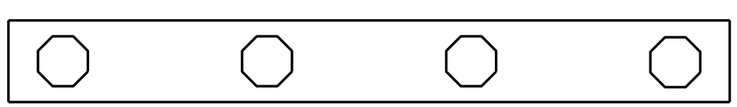

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 6
SPAN 7

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 6

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

SHEET NO. S-43
TOTAL SHEETS 394

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## NOTES:

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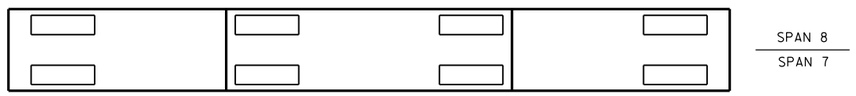
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

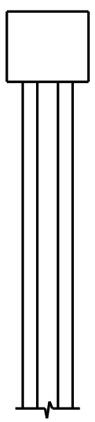
## REPAIR QUANTITY TABLE

| REPAIRS BENT 7 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

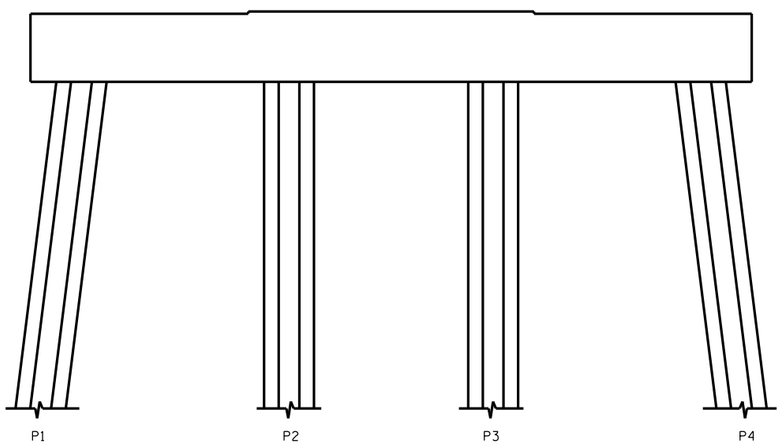
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



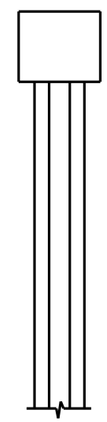

PLAN
TOP OF CAP



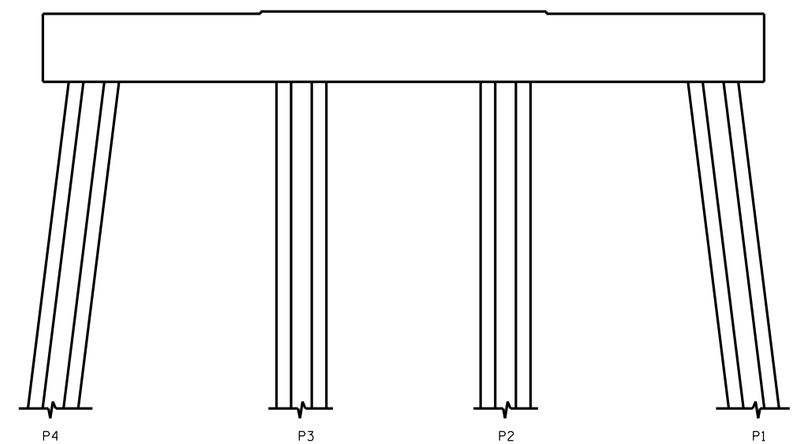
END VIEW
NORTH SIDE



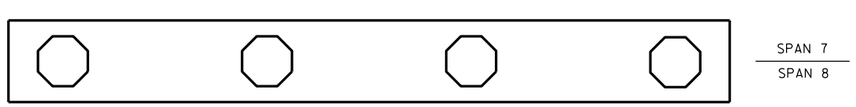

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 7

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-44 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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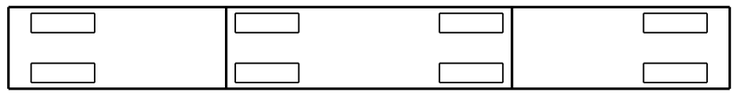
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 8 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.




PLAN
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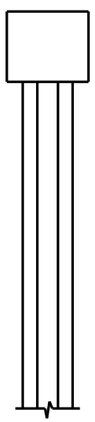
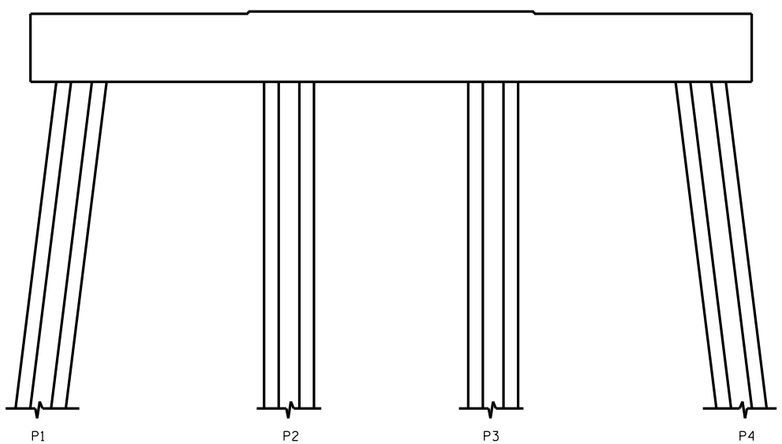
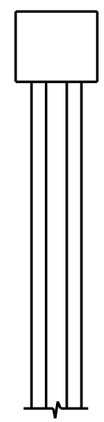


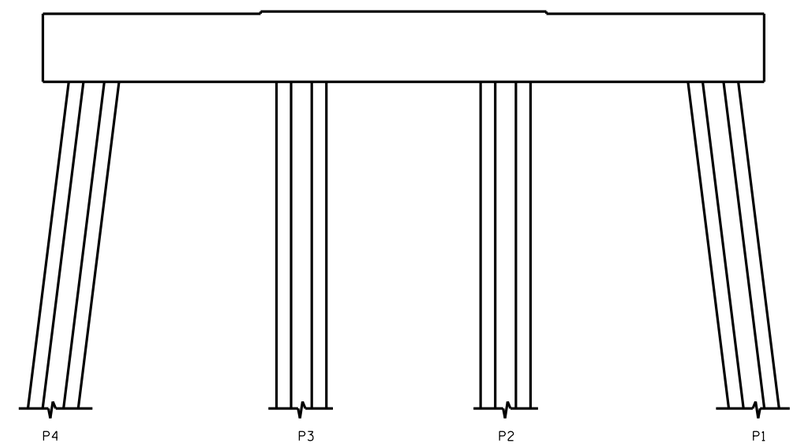
END VIEW
NORTH SIDE



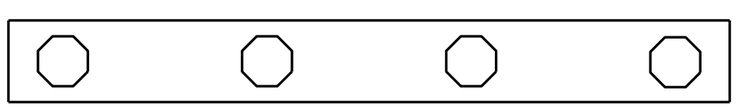

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 8

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

SHEET NO. S-45
TOTAL SHEETS 394

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## NOTES:

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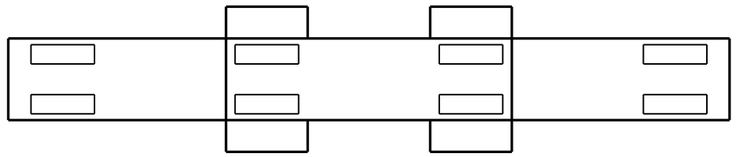
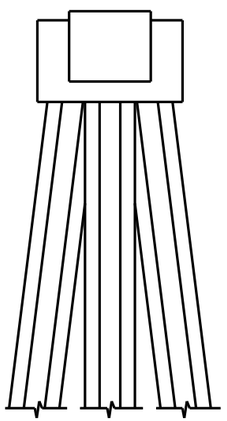
## REPAIR QUANTITY TABLE

| REPAIRS BENT 9 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.1 | 2.1 | | |
| CAP (HORIZONTAL, CORNER) | 2.9 | 1.2 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 2.0 | | |

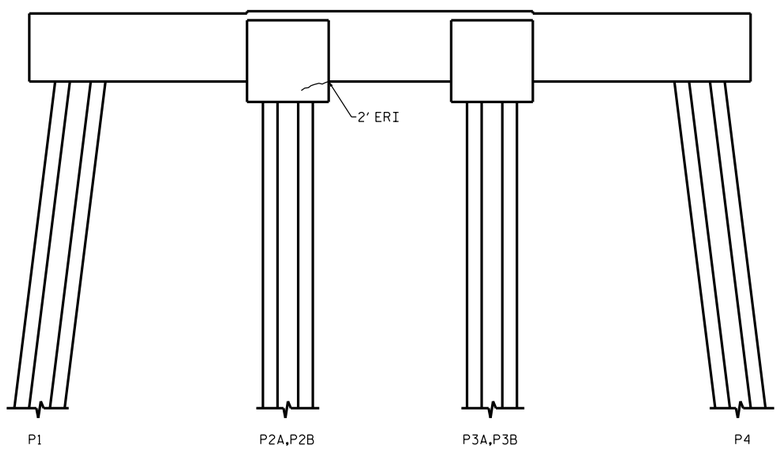
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



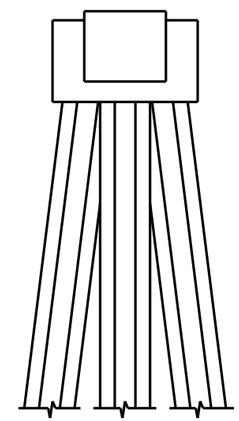

PLAN
TOP OF CAP



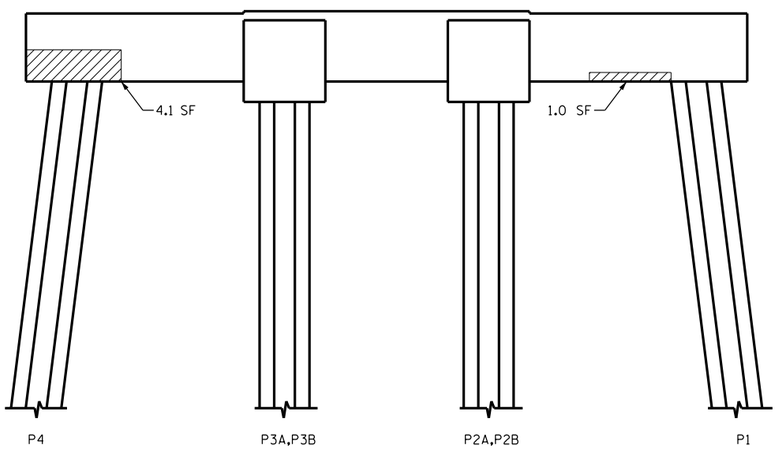
END VIEW
NORTH SIDE



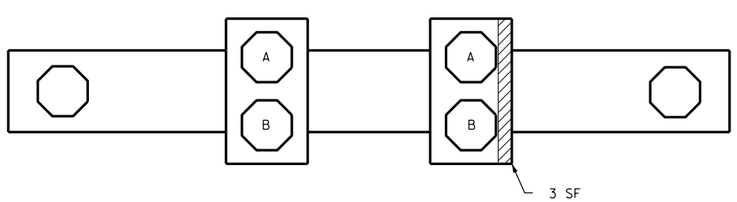

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 9

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-46 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
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20-JUN-2016 13:59
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

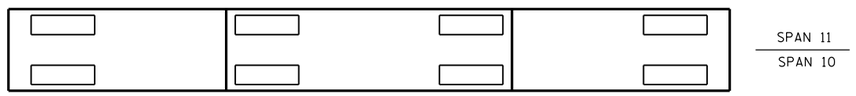
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 10 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 21.5 | 9.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 1.0 | | |

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.




PLAN
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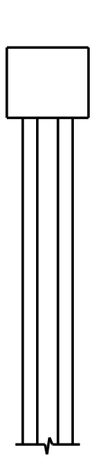
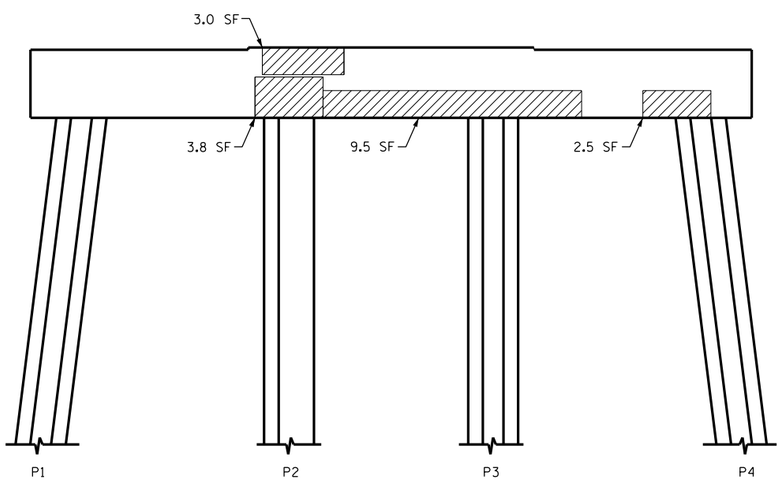
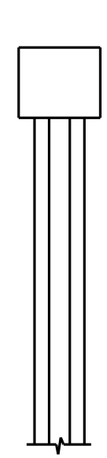


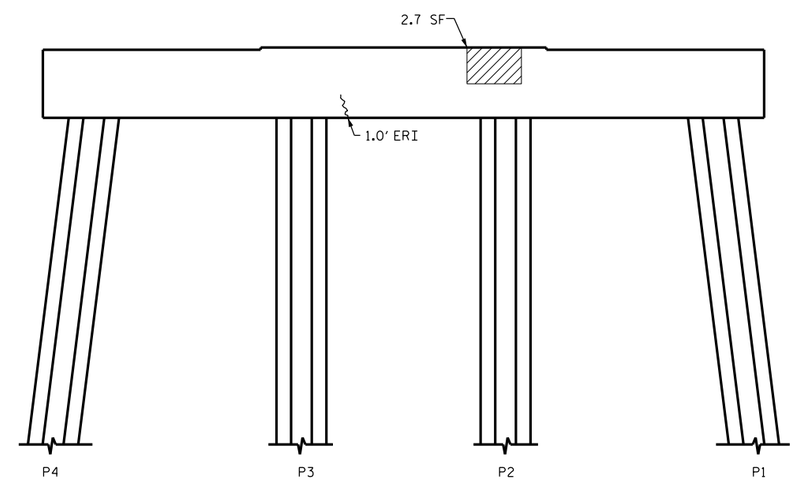
END VIEW
NORTH SIDE



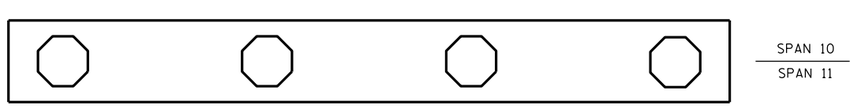

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 10

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-47 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

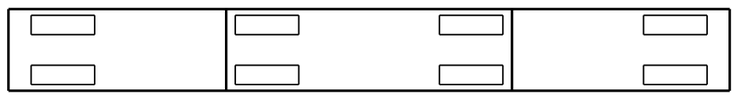
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

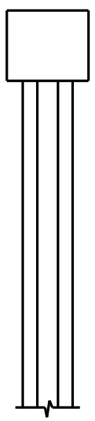
## REPAIR QUANTITY TABLE

| REPAIRS BENT 11 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 14.1 | 5.9 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

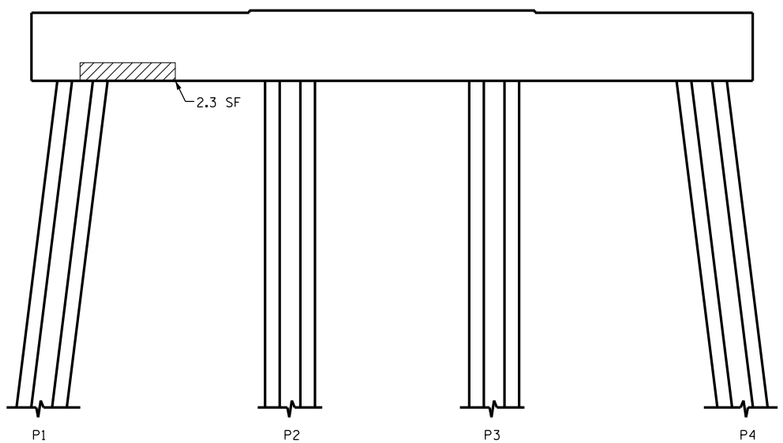
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



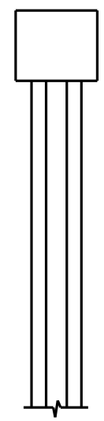

PLAN
TOP OF CAP



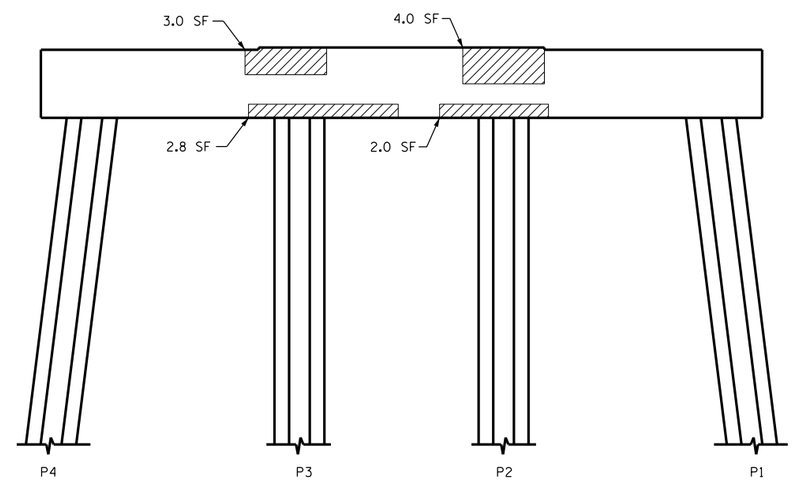
END VIEW
NORTH SIDE



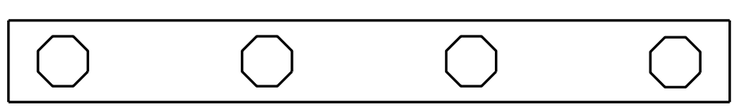

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 11

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-48 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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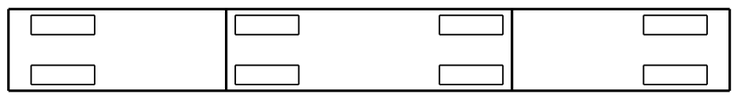
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 12 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.3 | 1.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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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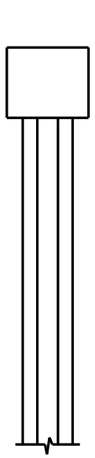
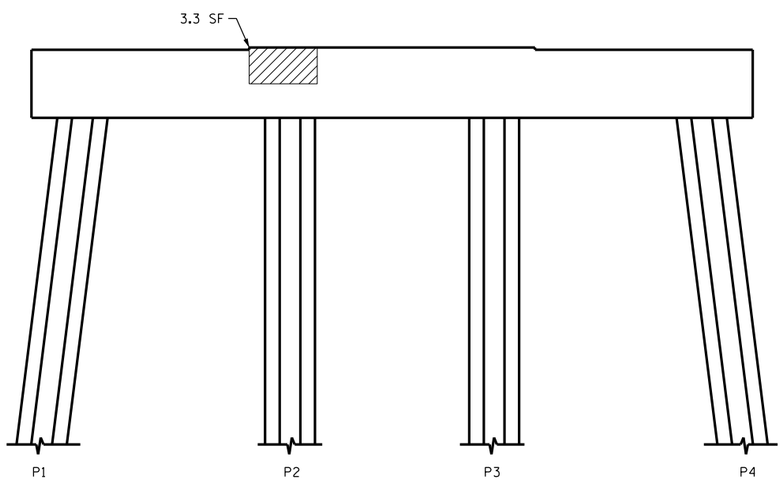
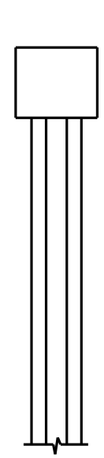


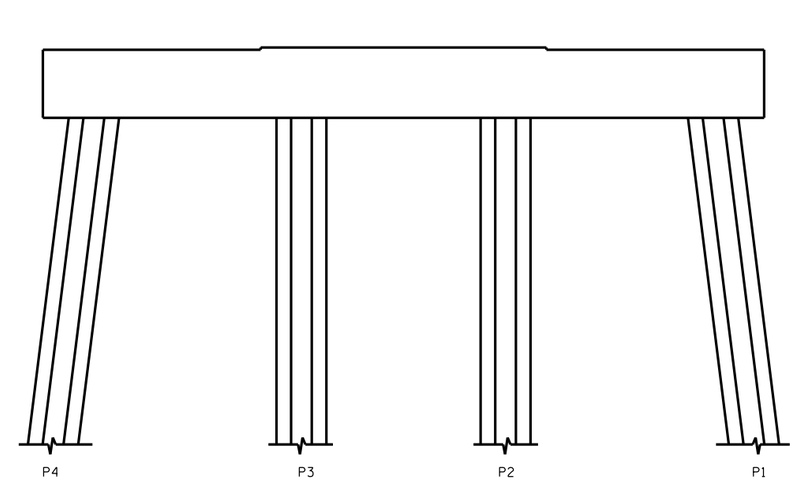
END VIEW
NORTH SIDE



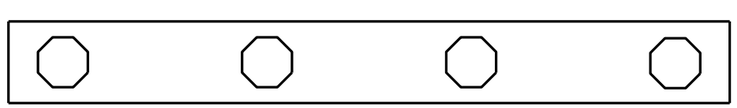

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 12

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-49 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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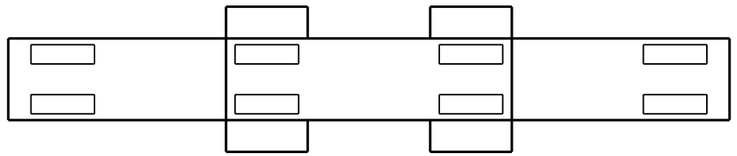
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

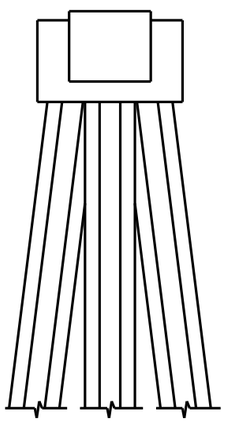
## REPAIR QUANTITY TABLE

| REPAIRS BENT 13 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.0 | 0.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

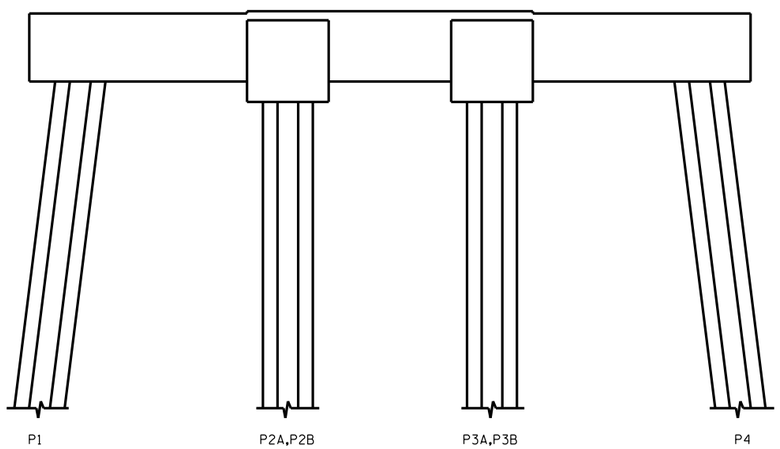
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



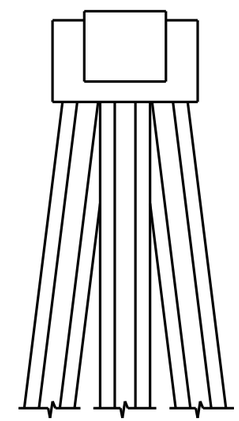

PLAN
TOP OF CAP



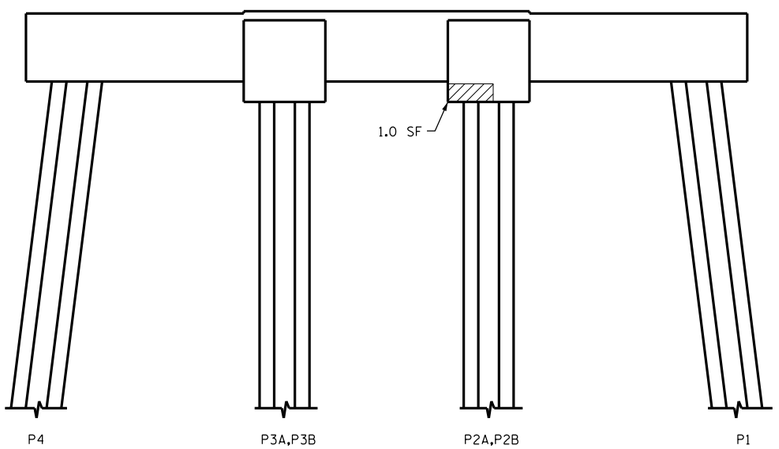
END VIEW
NORTH SIDE



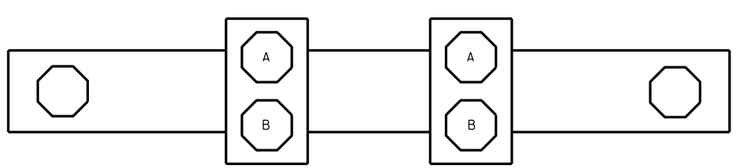

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 13

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-50 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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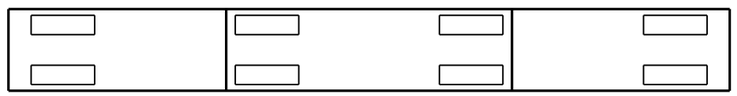
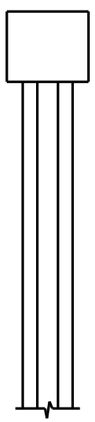
## REPAIR QUANTITY TABLE

| REPAIRS BENT 14 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

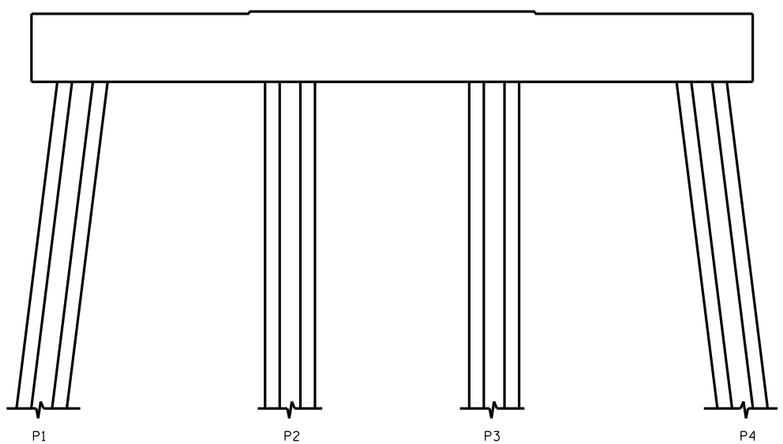
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



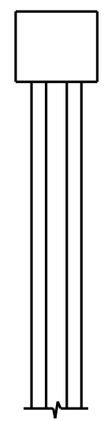

PLAN
TOP OF CAP



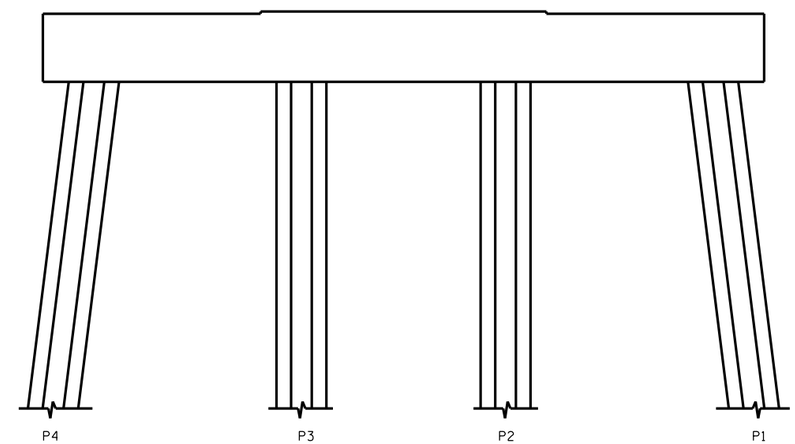
END VIEW
NORTH SIDE



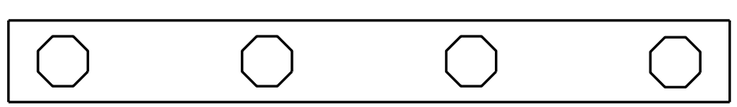

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 14

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-51 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

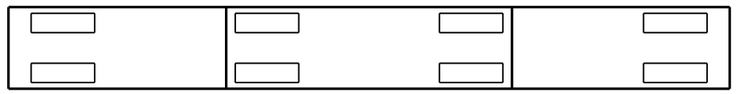
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

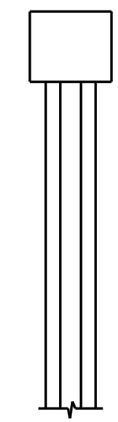
| REPAIRS BENT 15 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.0 | 0.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

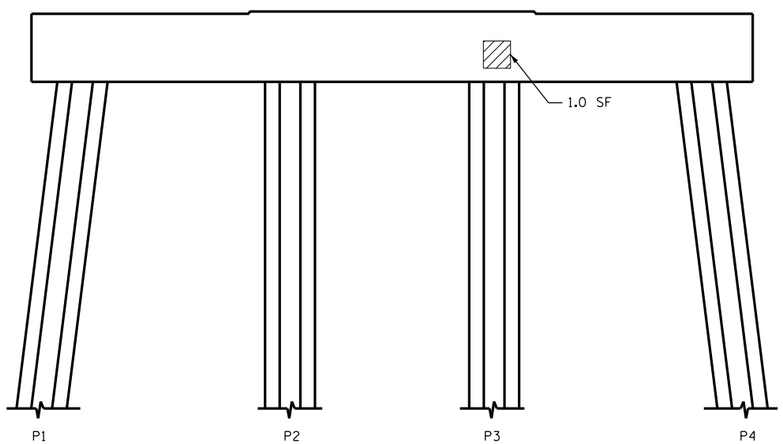


SPAN 16
SPAN 15

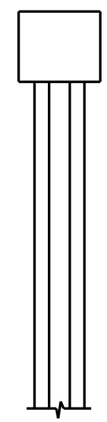
PLAN
TOP OF CAP



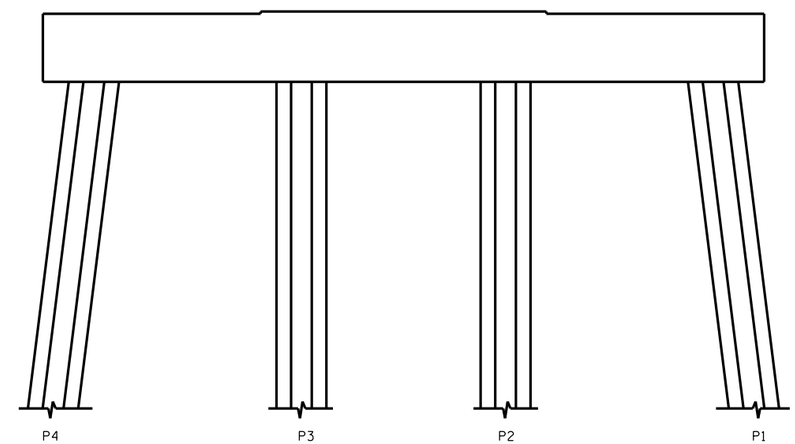
END VIEW
NORTH SIDE



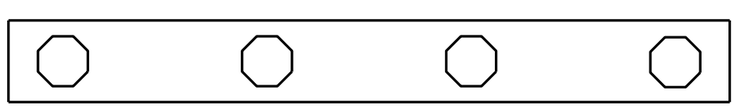

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 15
SPAN 16

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 15

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | |
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SHEET NO. S-52
TOTAL SHEETS 394

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

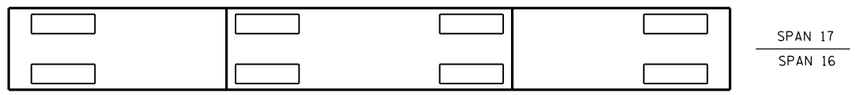
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

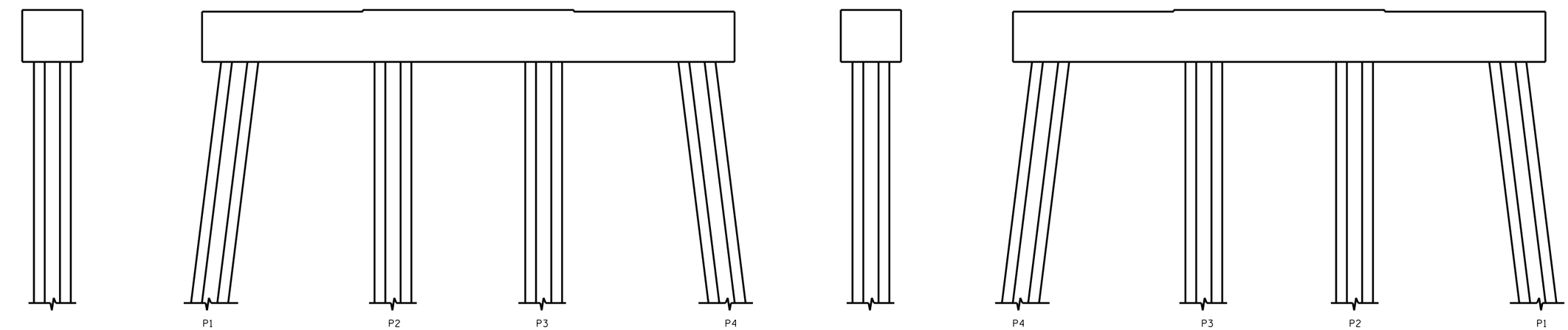
## REPAIR QUANTITY TABLE

| REPAIRS BENT 16 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.




PLAN
TOP OF CAP

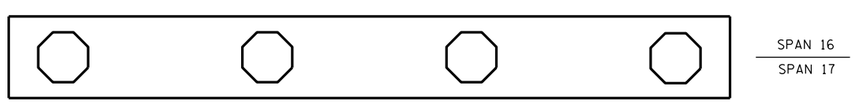



END VIEW
NORTH SIDE

ELEVATION
WEST SIDE

END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 16

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-53 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 14:05
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## 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.

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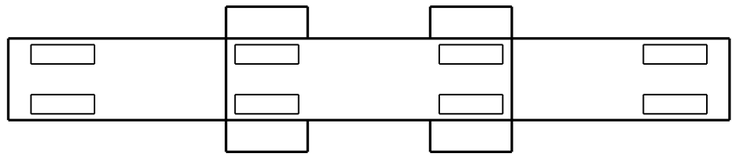
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

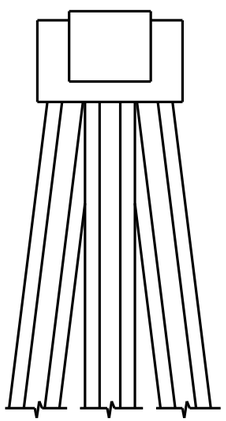
| REPAIRS BENT 17 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

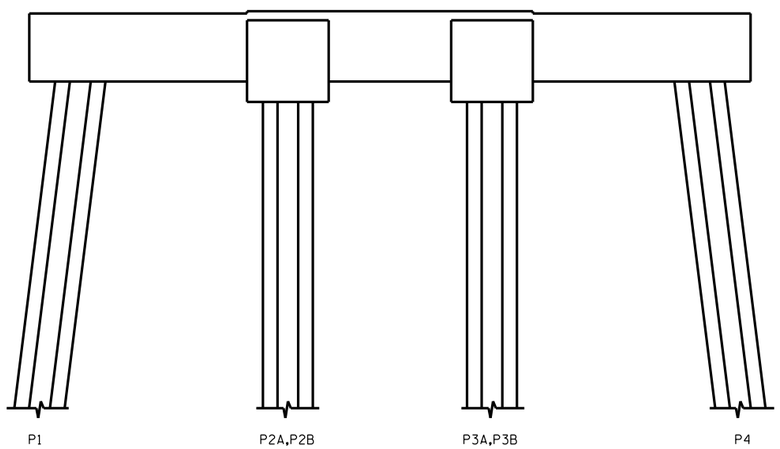


SPAN 18
SPAN 17

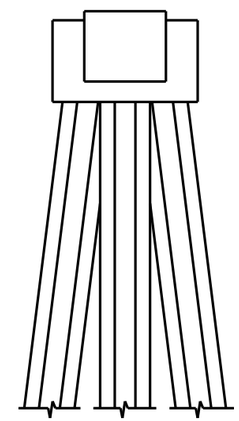
PLAN
TOP OF CAP



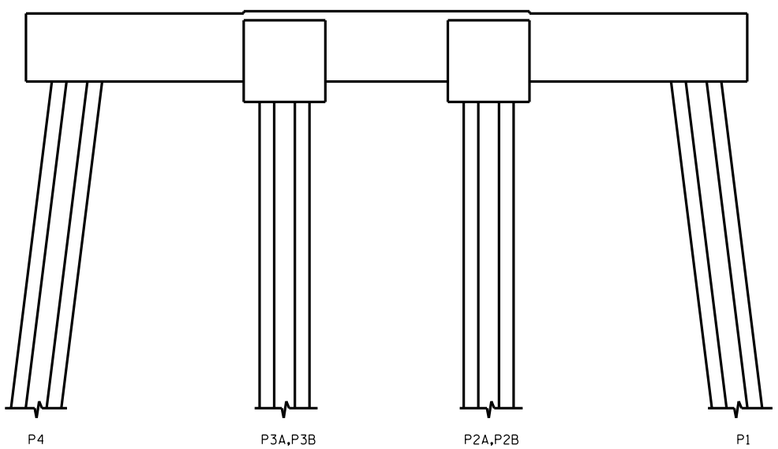
END VIEW
NORTH SIDE



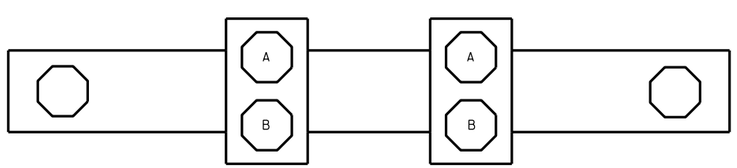

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 17
SPAN 18

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 17

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-54 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

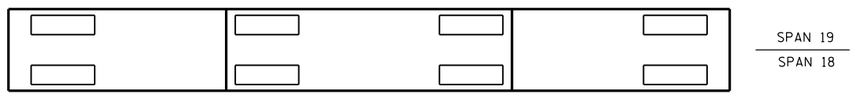
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

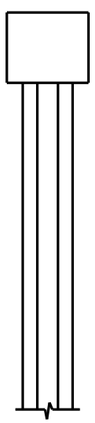
## REPAIR QUANTITY TABLE

| REPAIRS BENT 18 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.0 | 0.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

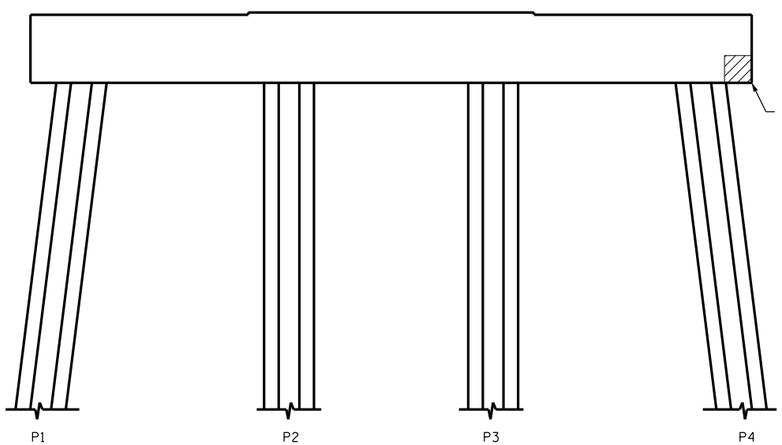
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



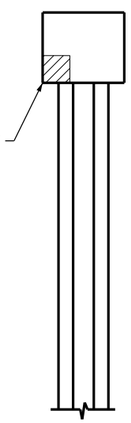

PLAN
TOP OF CAP



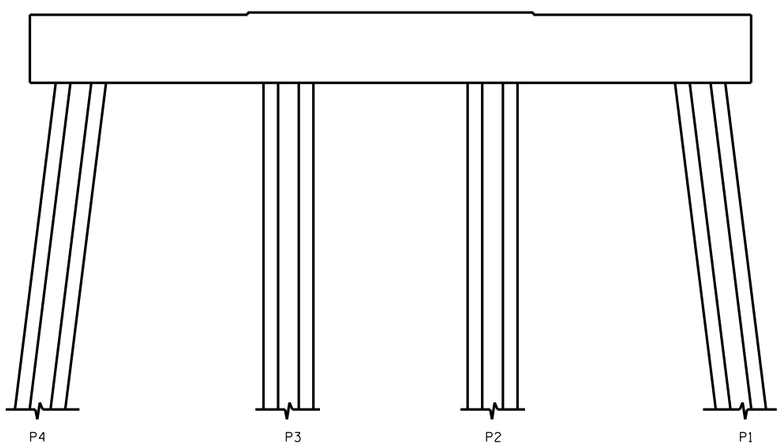
END VIEW
NORTH SIDE



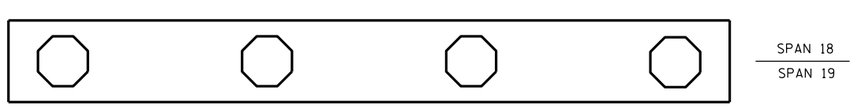

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 18

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-55 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

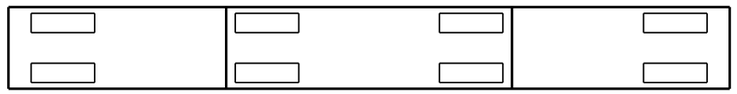
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

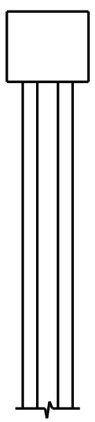
## REPAIR QUANTITY TABLE

| REPAIRS BENT 19 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.6 | 1.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

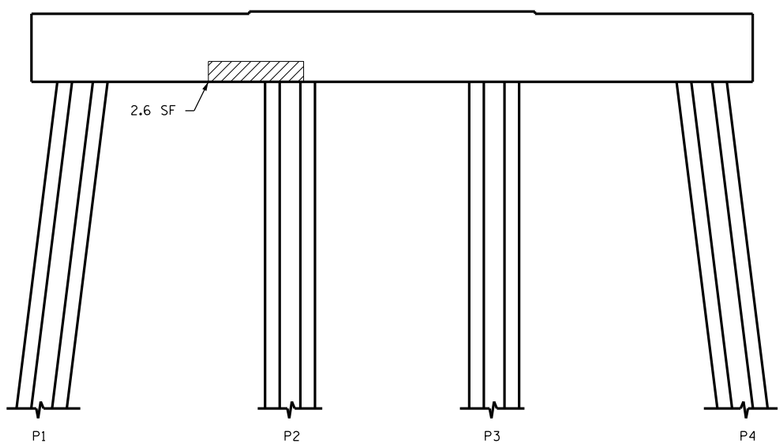
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



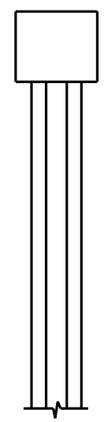

PLAN
TOP OF CAP



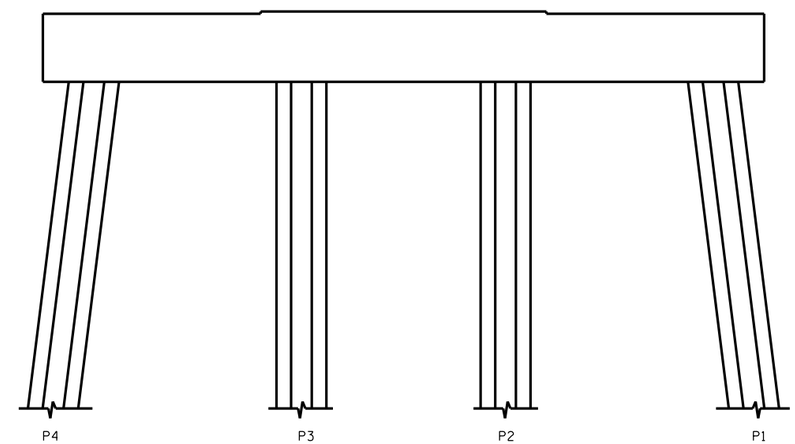
END VIEW
NORTH SIDE



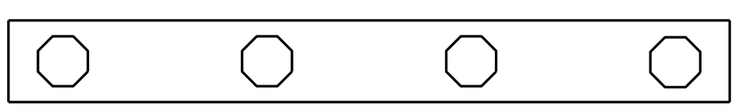

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 19

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-56 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

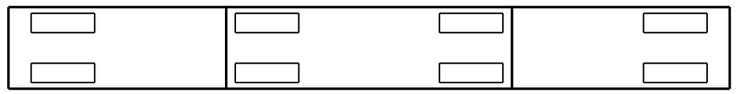
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

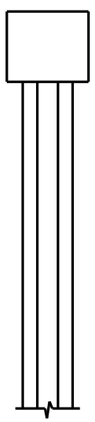
| REPAIRS BENT 20 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

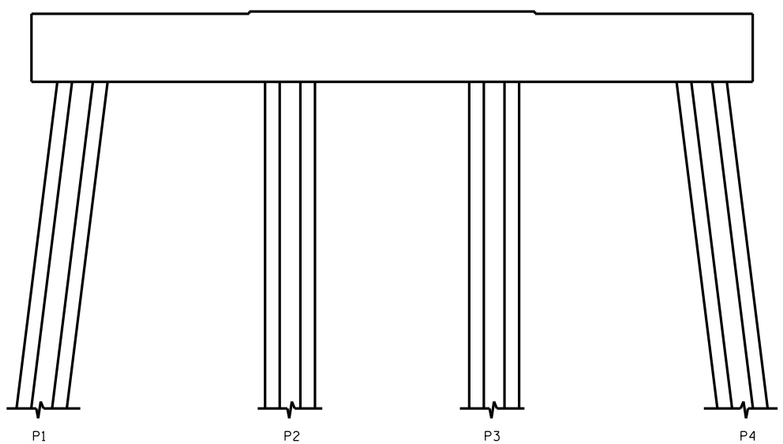


SPAN 21
SPAN 20

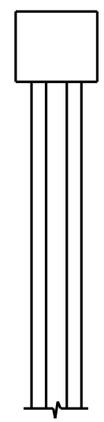
PLAN
TOP OF CAP



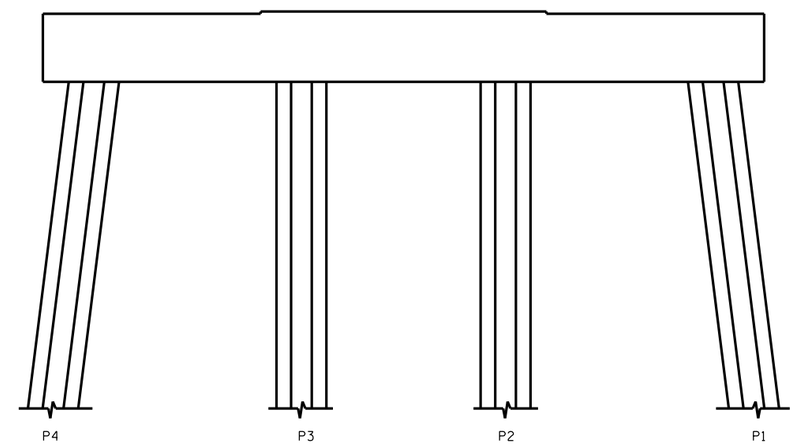
END VIEW
NORTH SIDE



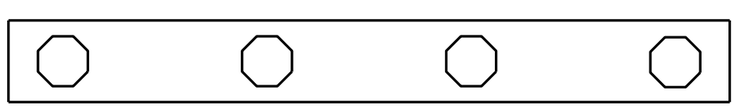

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 20
SPAN 21

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 20

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-57 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

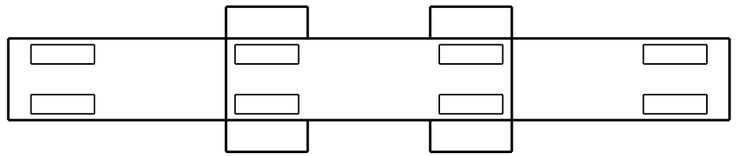
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

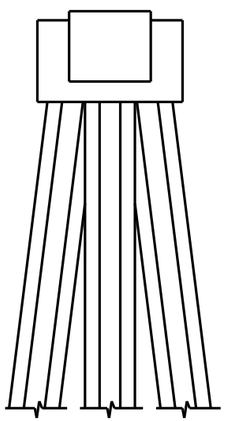
## REPAIR QUANTITY TABLE

| REPAIRS BENT 21 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

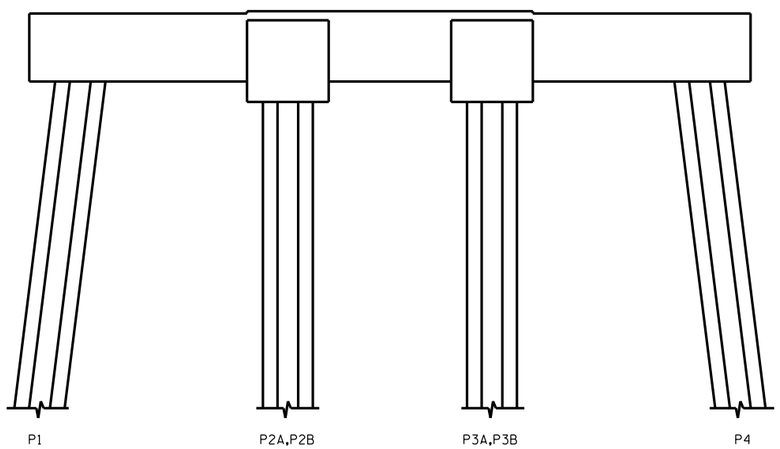
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



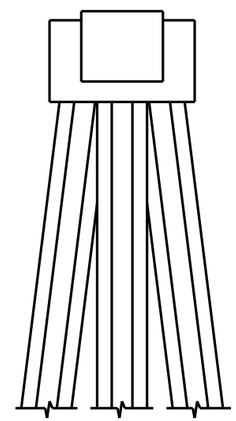

PLAN
TOP OF CAP



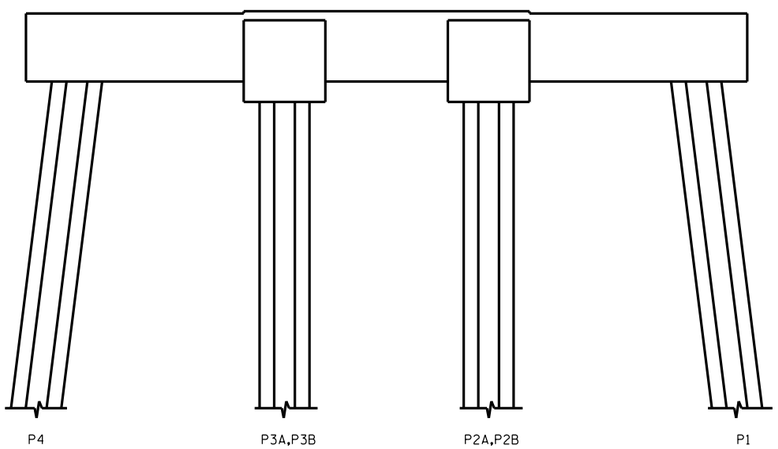
END VIEW
NORTH SIDE



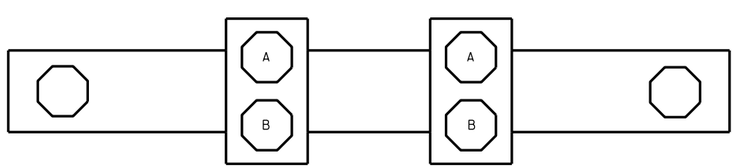

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant 6/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 21

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-58 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

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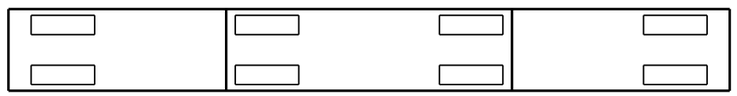
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

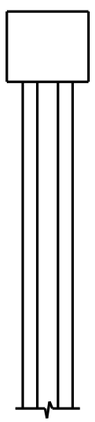
## REPAIR QUANTITY TABLE

| REPAIRS BENT 22 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

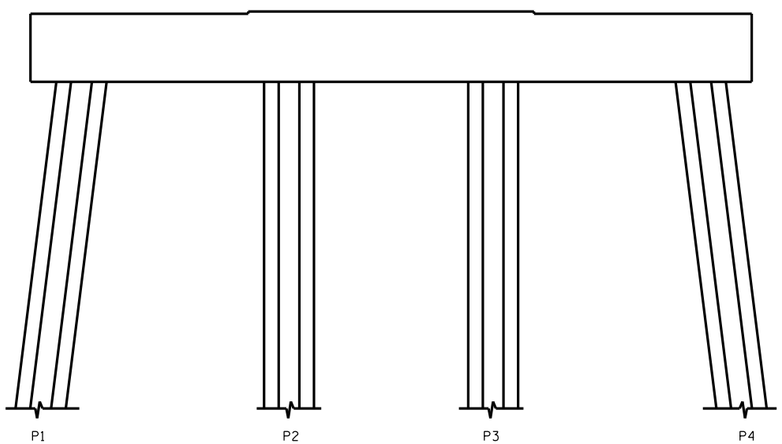
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



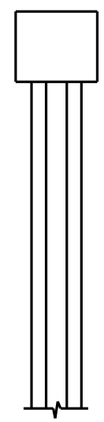

PLAN
TOP OF CAP



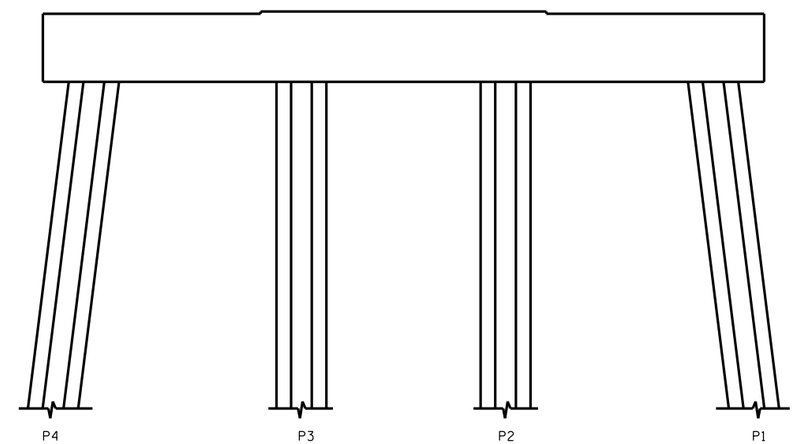
END VIEW
NORTH SIDE



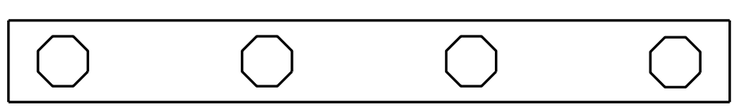

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 22

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-59 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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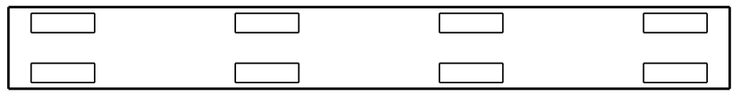
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

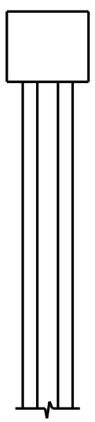
| REPAIRS BENT 23 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

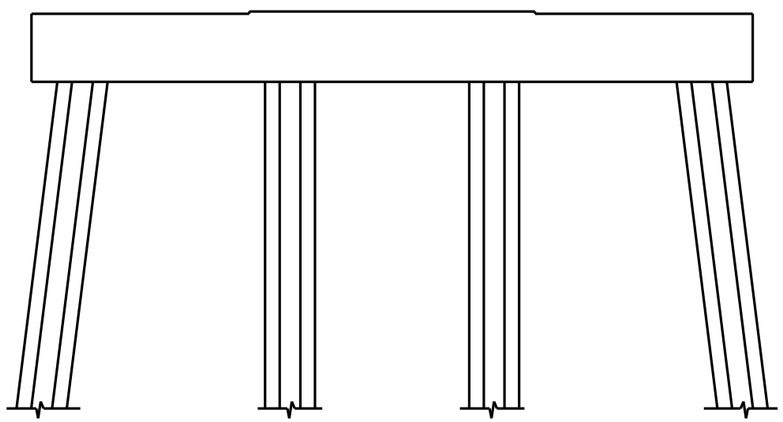


SPAN 24
SPAN 23

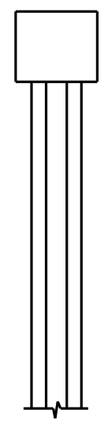
PLAN
TOP OF CAP



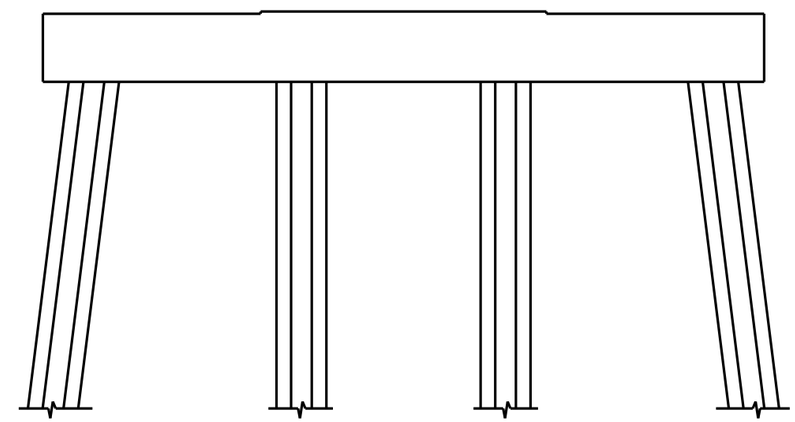
END VIEW
NORTH SIDE



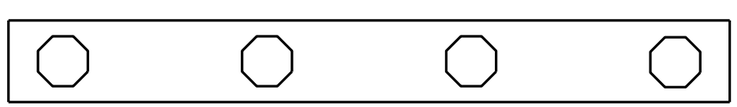

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 23
SPAN 24

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 23

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| 1 | | | 3 | | | | | TOTAL SHEETS |
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## NOTES:

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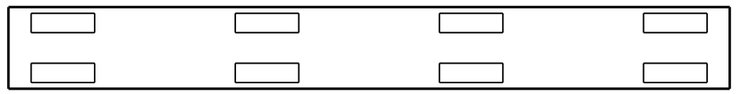
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

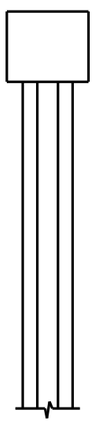
| REPAIRS BENT 24 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.5 | 1.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

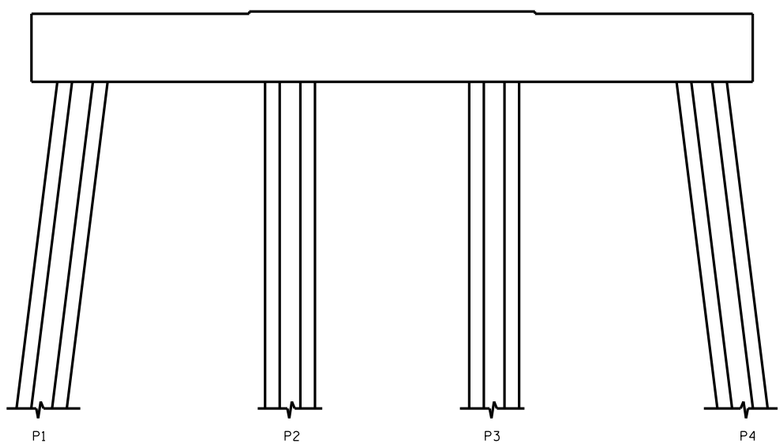


SPAN 25
SPAN 24

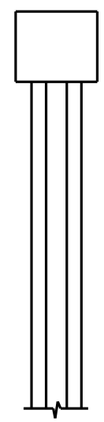
PLAN
TOP OF CAP



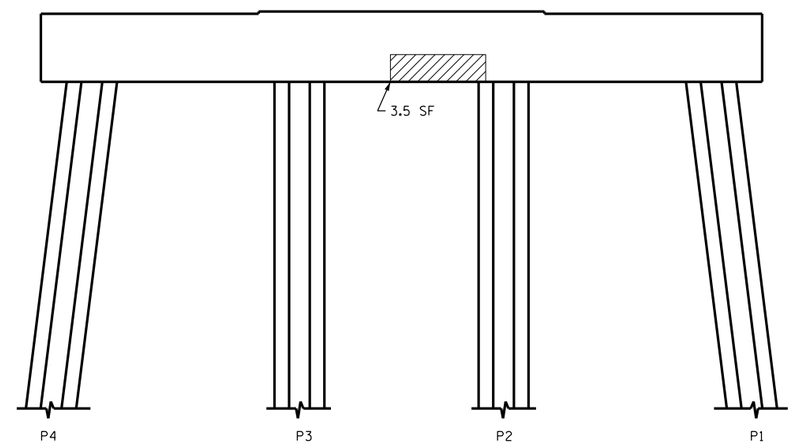
END VIEW
NORTH SIDE



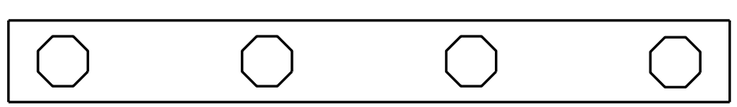

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 24
SPAN 25

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 24

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-61 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 14:13
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

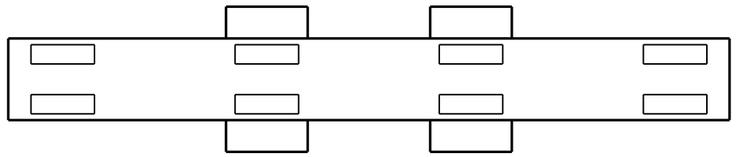
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

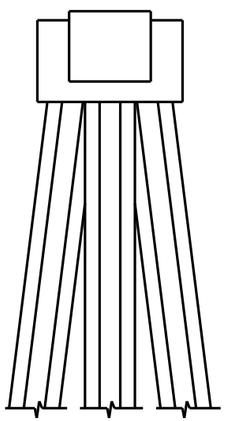
| REPAIRS BENT 25 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.3 | 0.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

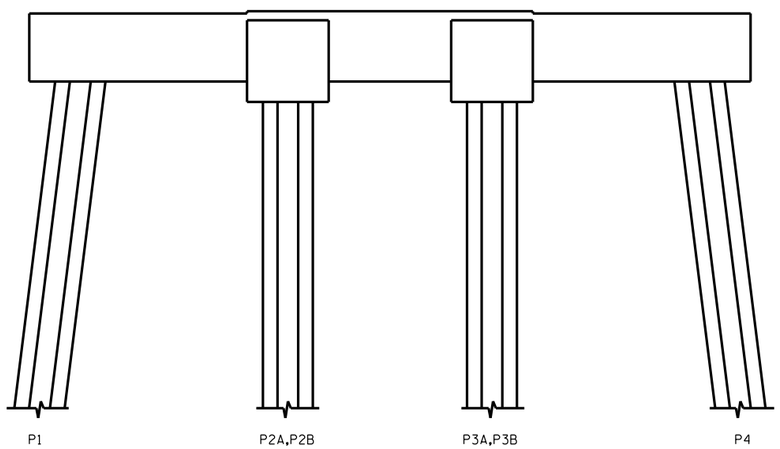


SPAN 26
SPAN 25

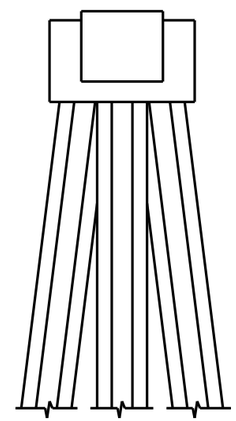
PLAN
TOP OF CAP



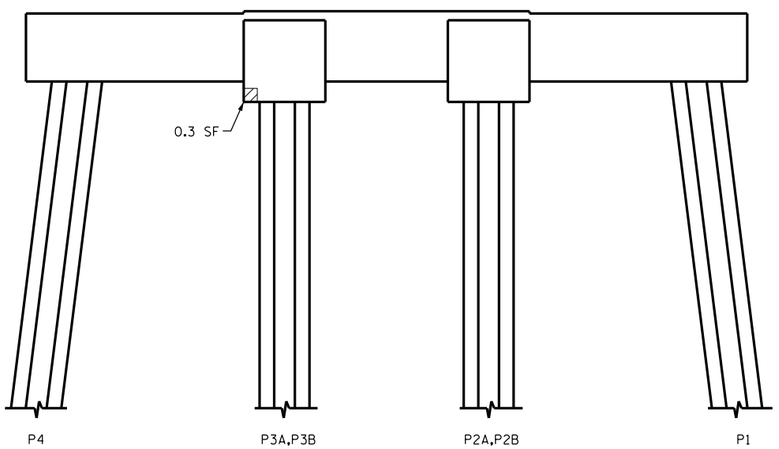
END VIEW
NORTH SIDE



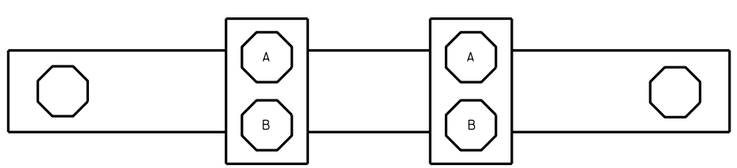

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 25
SPAN 26

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 6/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 25

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-62 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

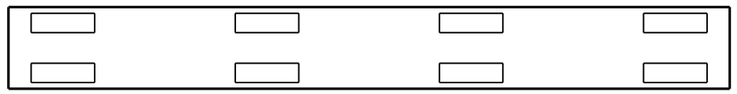
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

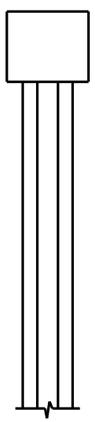
| REPAIRS BENT 26 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

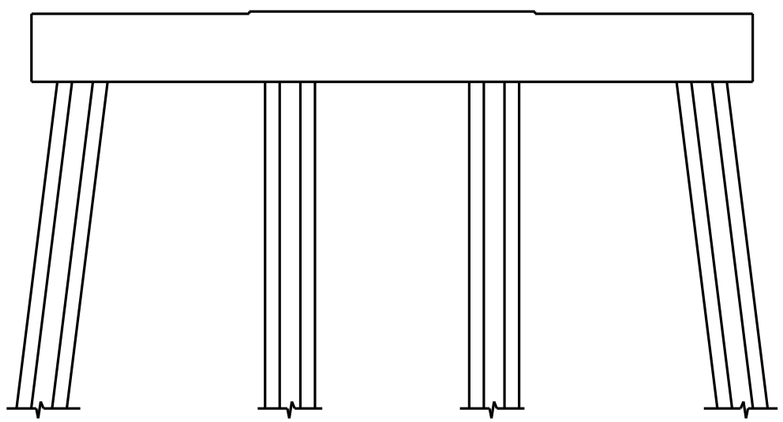


SPAN 27
SPAN 26

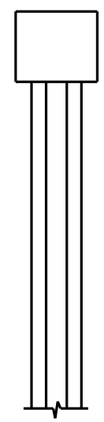
PLAN
TOP OF CAP



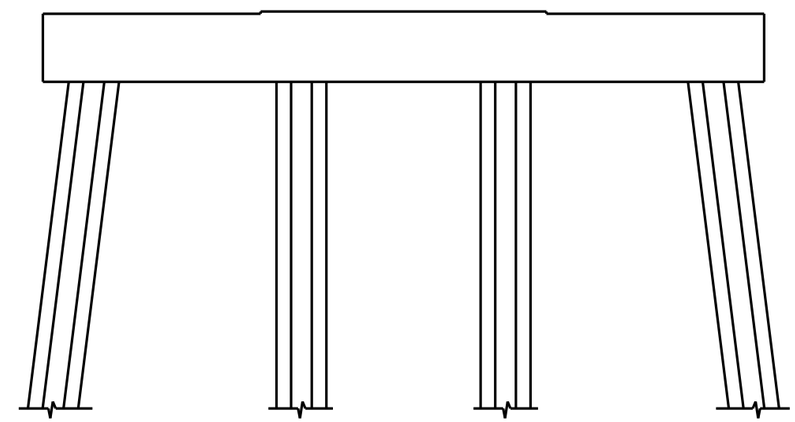
END VIEW
NORTH SIDE



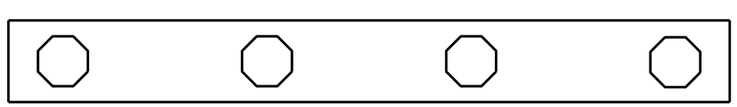

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 26
SPAN 27

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 26

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-63 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

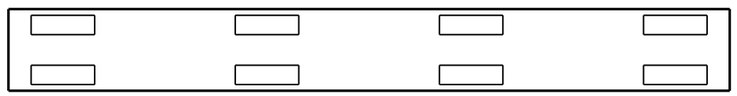
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

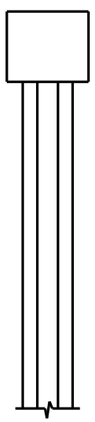
| REPAIRS BENT 27 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

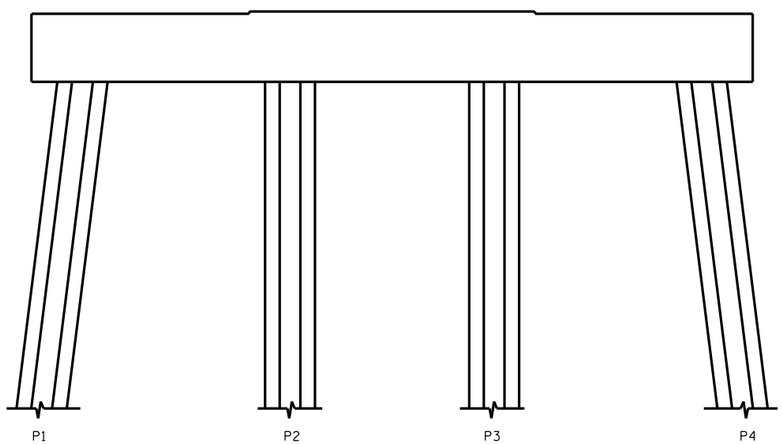


SPAN 28
SPAN 27

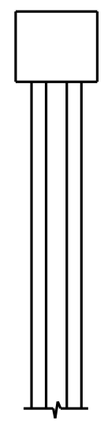
PLAN
TOP OF CAP



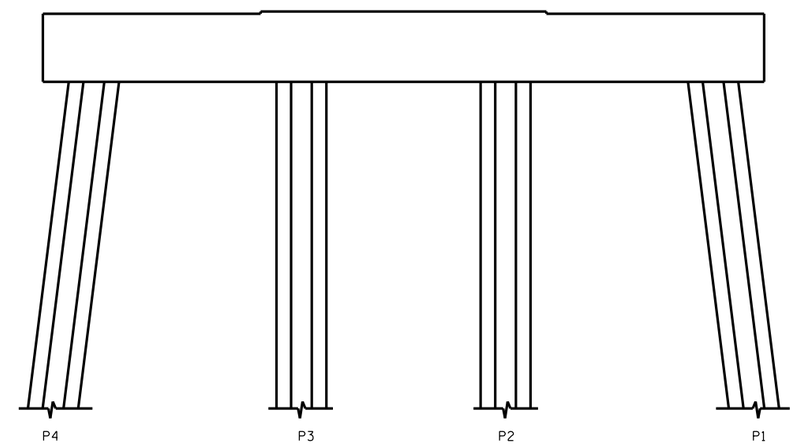
END VIEW
NORTH SIDE



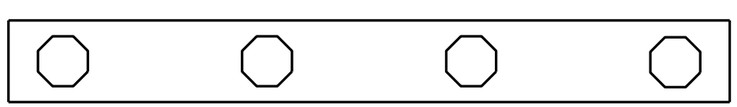

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 27
SPAN 28

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 27

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| 1 | | | 3 | | | | TOTAL SHEETS |
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## NOTES:

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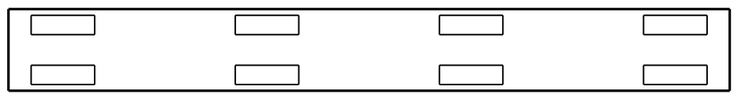
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

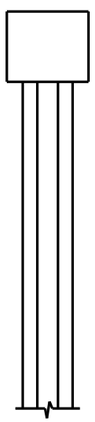
## REPAIR QUANTITY TABLE

| REPAIRS BENT 28 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.7 | 0.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

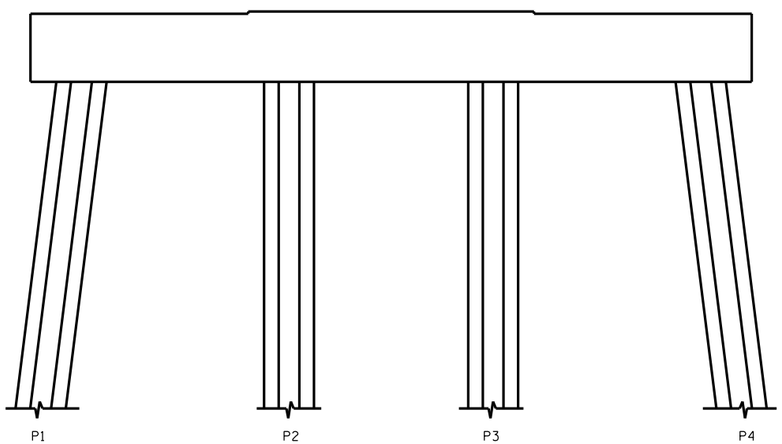
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



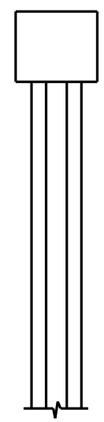

PLAN
TOP OF CAP



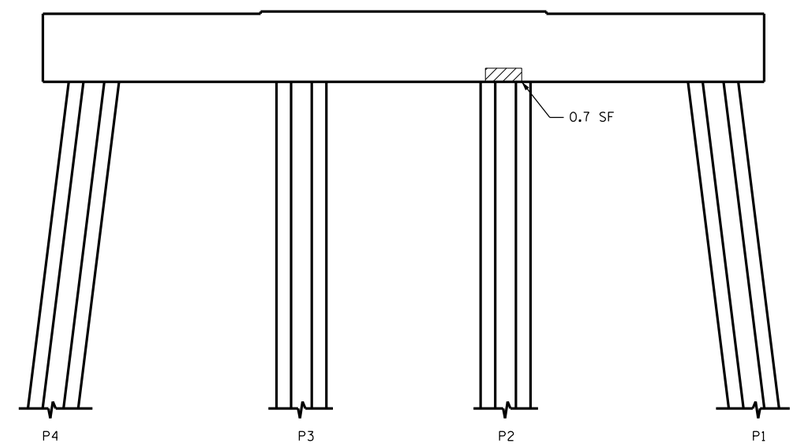
END VIEW
NORTH SIDE



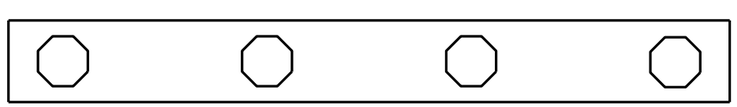

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 28

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| REVISIONS | | | | | | | | SHEET NO. |
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| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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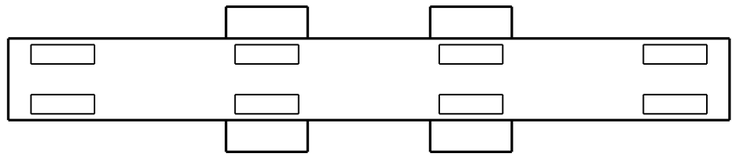
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

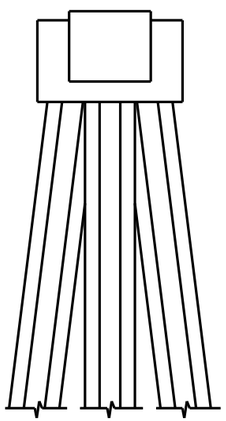
| REPAIRS BENT 29 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 1.5 | 0.6 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

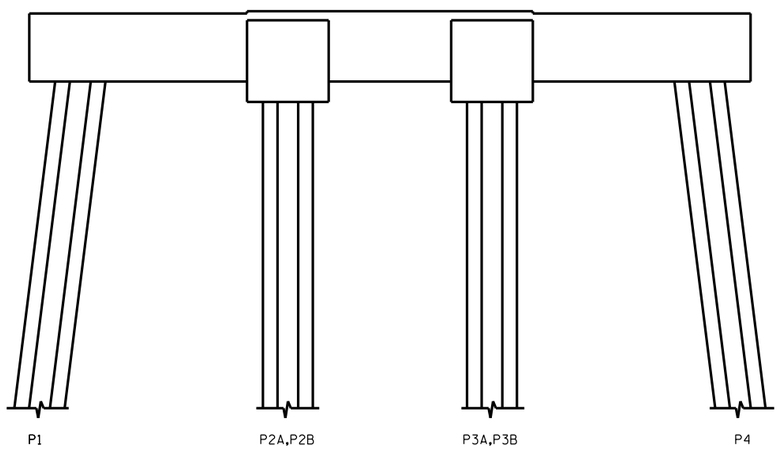


SPAN 30
SPAN 29

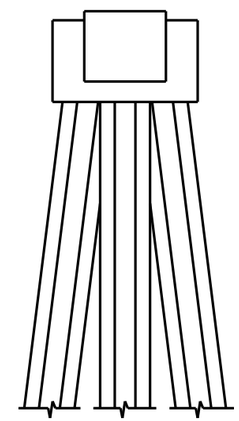
PLAN
TOP OF CAP



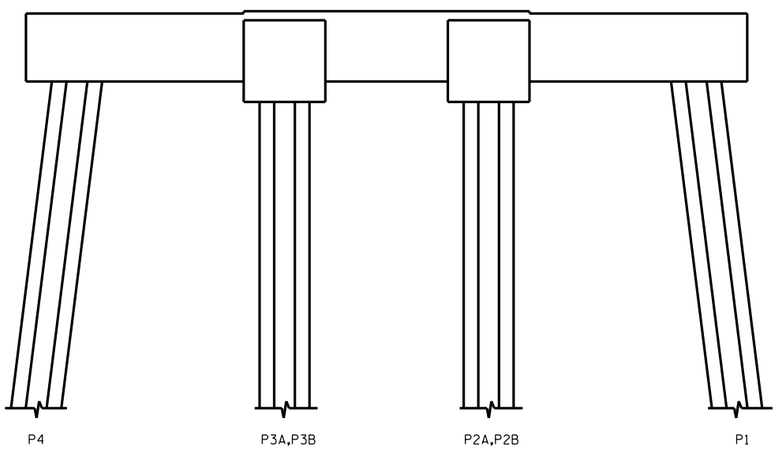
END VIEW
NORTH SIDE



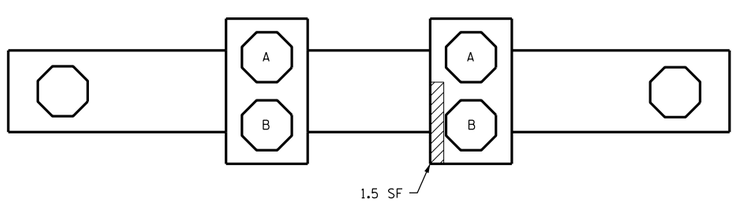

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 29
SPAN 30

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 29

| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-66 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

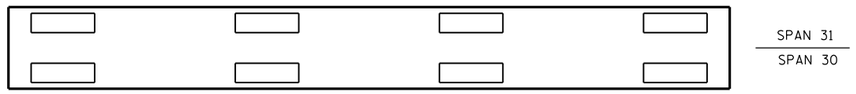
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

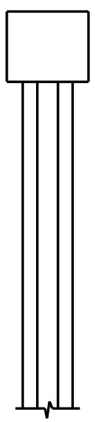
## REPAIR QUANTITY TABLE

| REPAIRS BENT 30 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.0 | 1.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

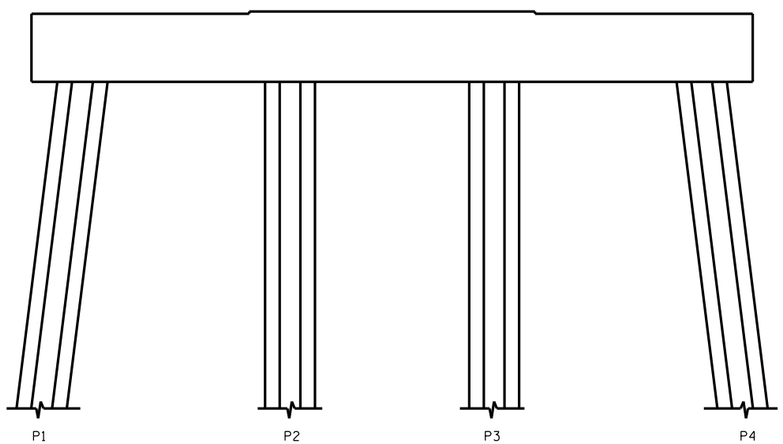
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



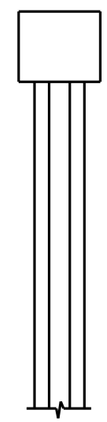

PLAN
TOP OF CAP



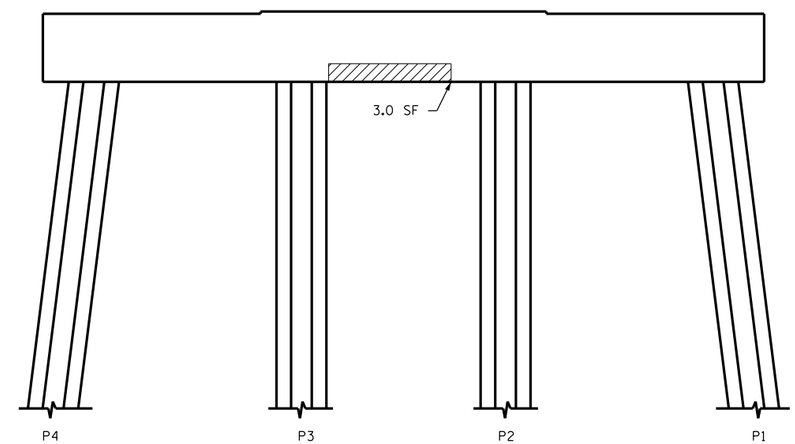
END VIEW
NORTH SIDE



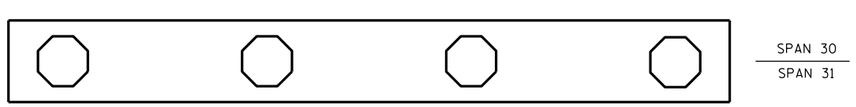

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 30

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-67 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 14:19
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## NOTES:

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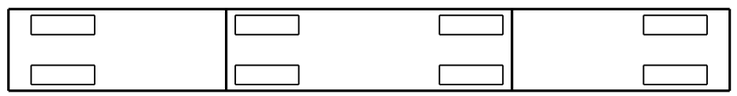
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

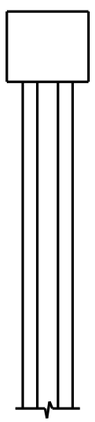
## REPAIR QUANTITY TABLE

| REPAIRS BENT 31 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

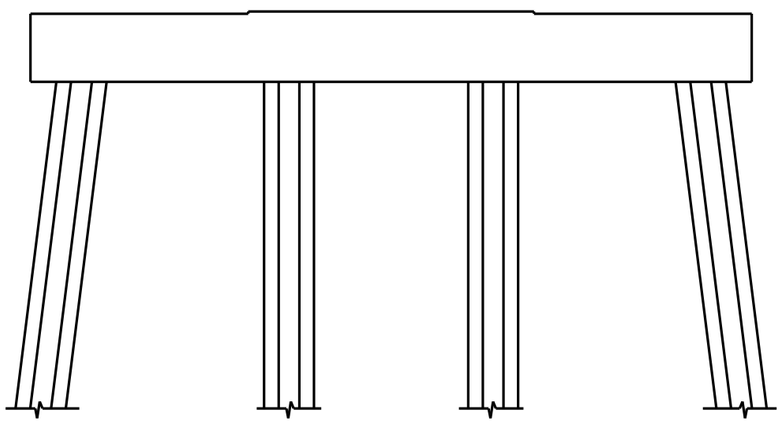
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



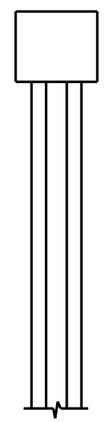

PLAN
TOP OF CAP



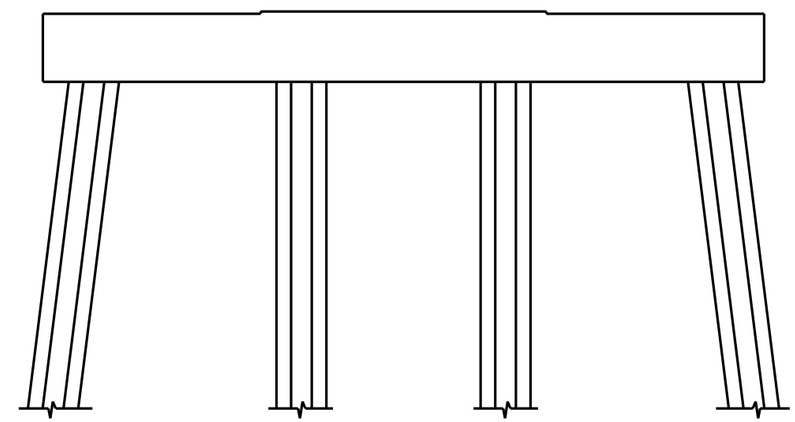
END VIEW
NORTH SIDE



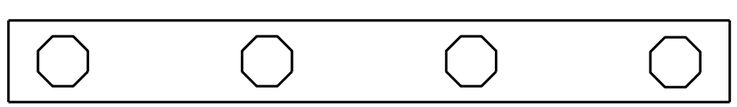

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 31

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-68 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 14:20
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## NOTES:

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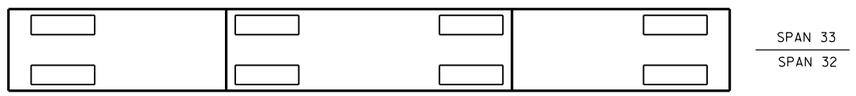
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

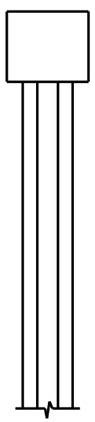
## REPAIR QUANTITY TABLE

| REPAIRS BENT 32 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

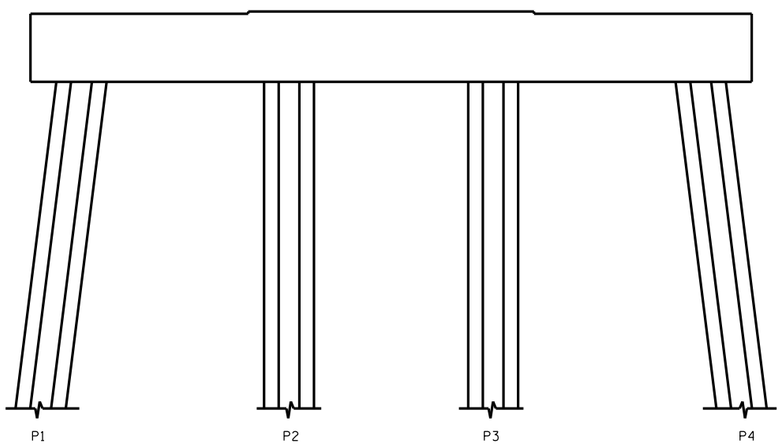
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



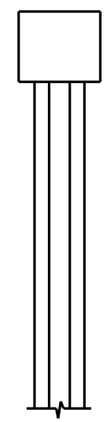

PLAN
TOP OF CAP



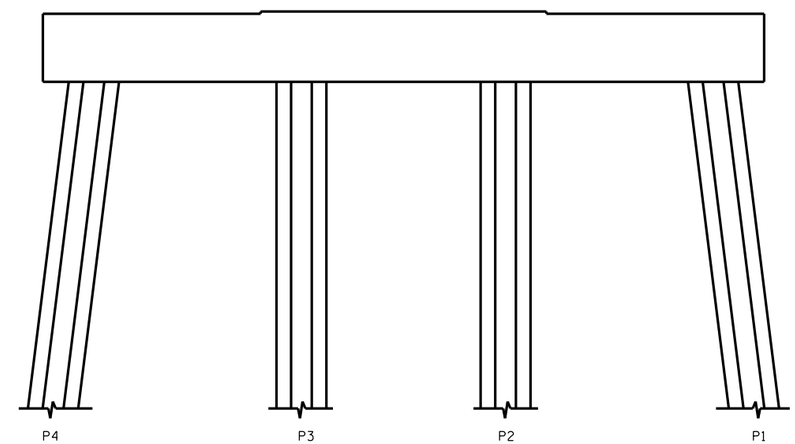
END VIEW
NORTH SIDE



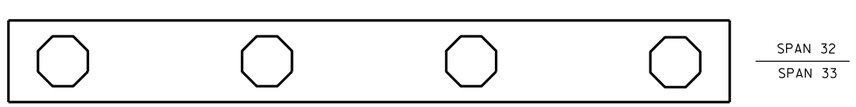

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 32

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| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-69 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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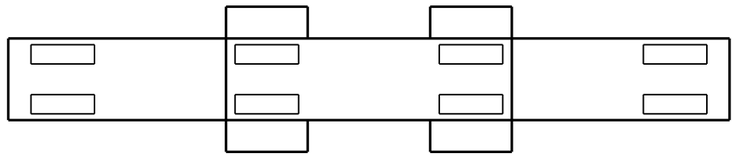
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

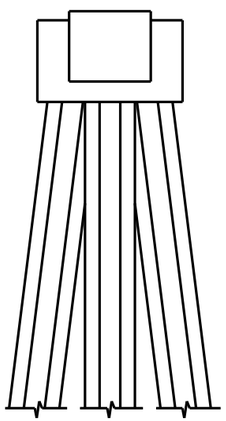
## REPAIR QUANTITY TABLE

| REPAIRS BENT 33 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

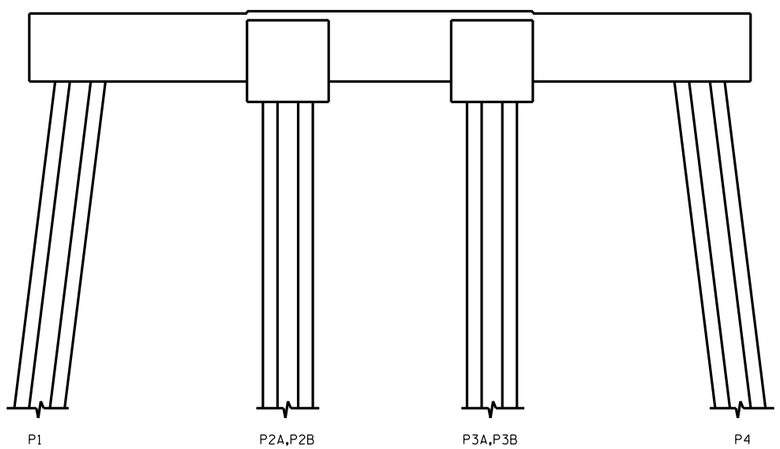
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



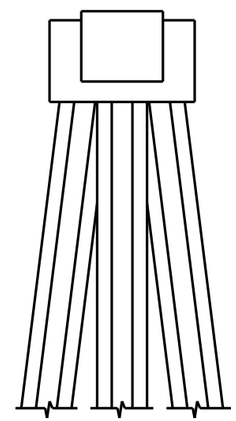

PLAN
TOP OF CAP



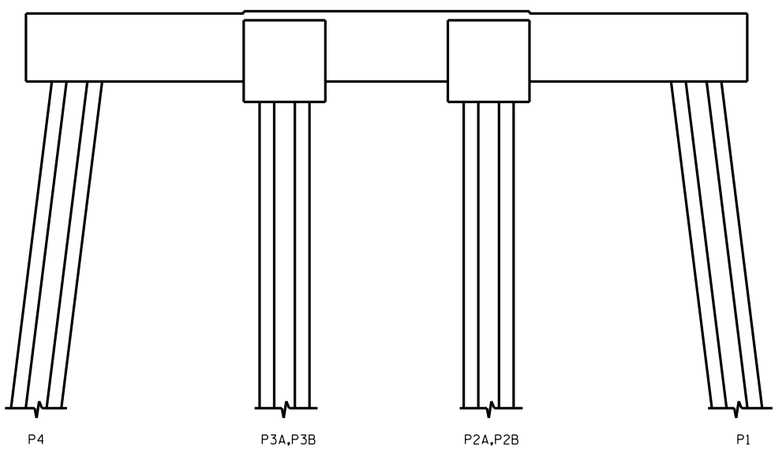
END VIEW
NORTH SIDE



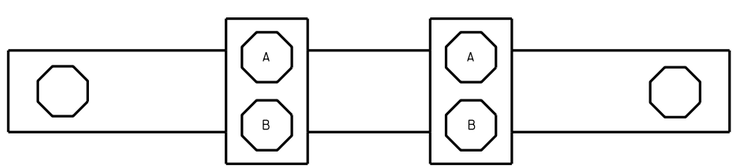

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 4/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 33

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-70 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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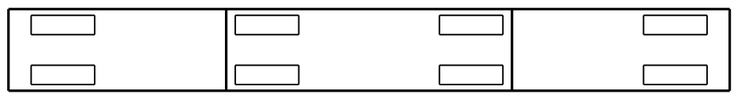
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

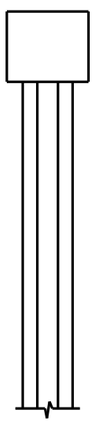
| REPAIRS BENT 34 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

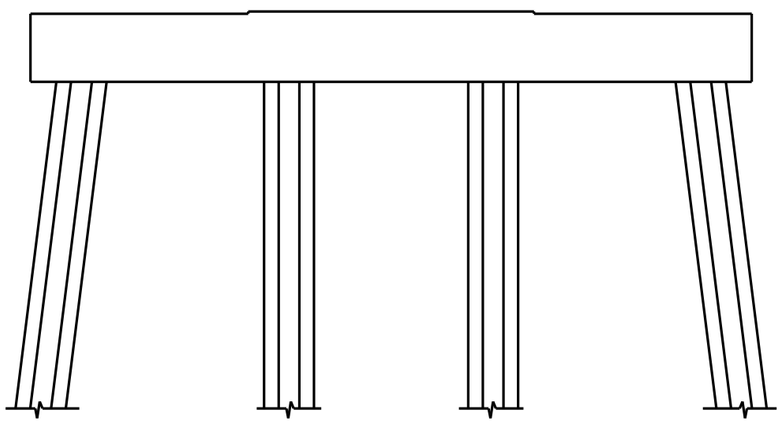


SPAN 35
SPAN 34

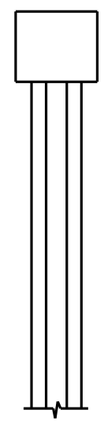
PLAN
TOP OF CAP



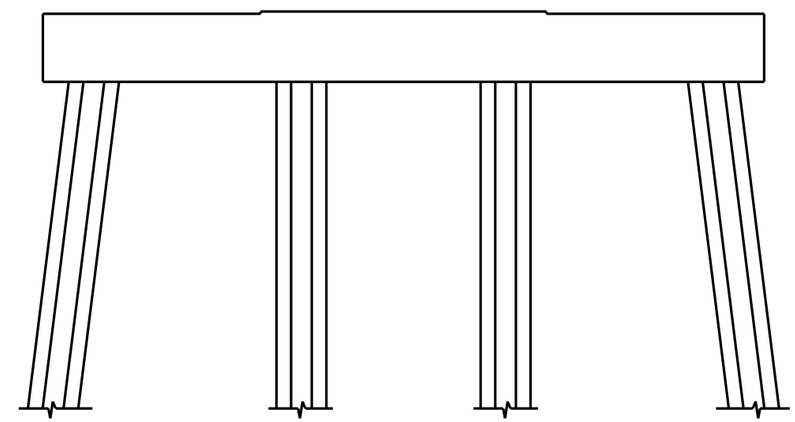
END VIEW
NORTH SIDE



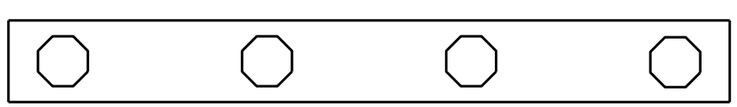

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 35
SPAN 21

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 34

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-71 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

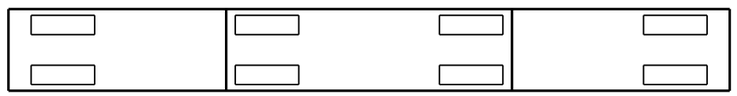
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

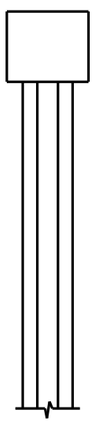
## REPAIR QUANTITY TABLE

| REPAIRS BENT 35 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

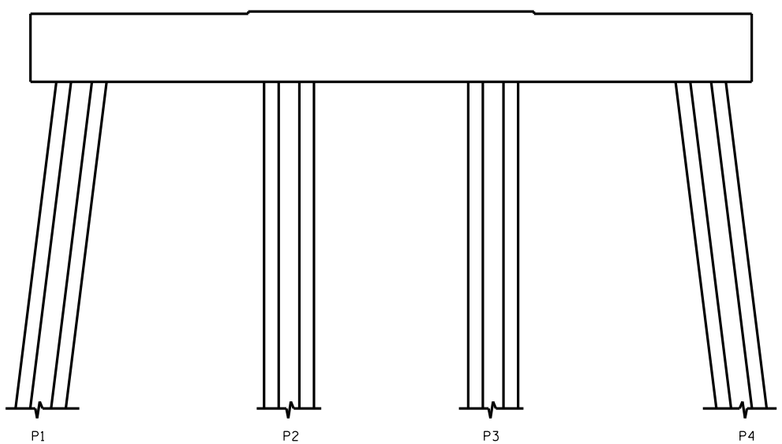
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



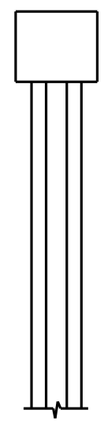

PLAN
TOP OF CAP



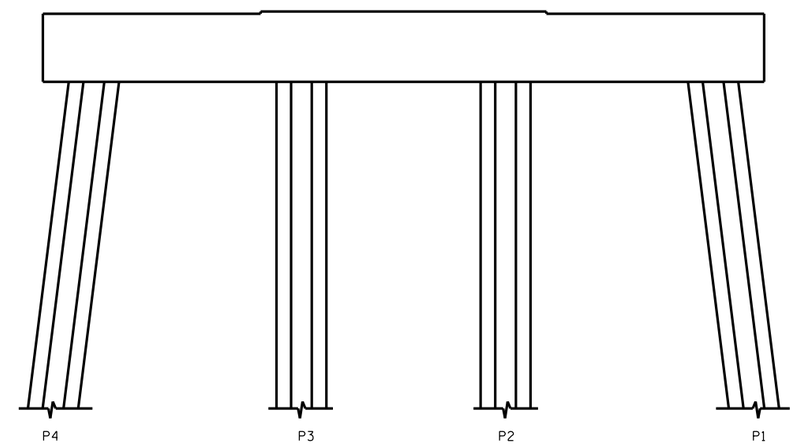
END VIEW
NORTH SIDE



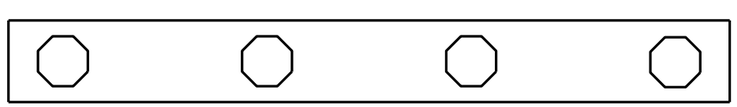

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 35

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-72 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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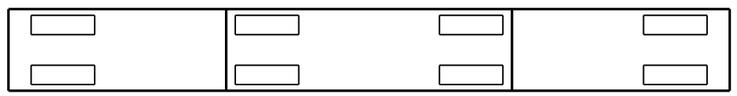
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

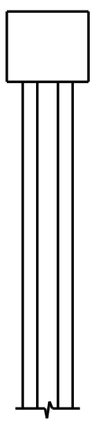
## REPAIR QUANTITY TABLE

| REPAIRS BENT 36 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

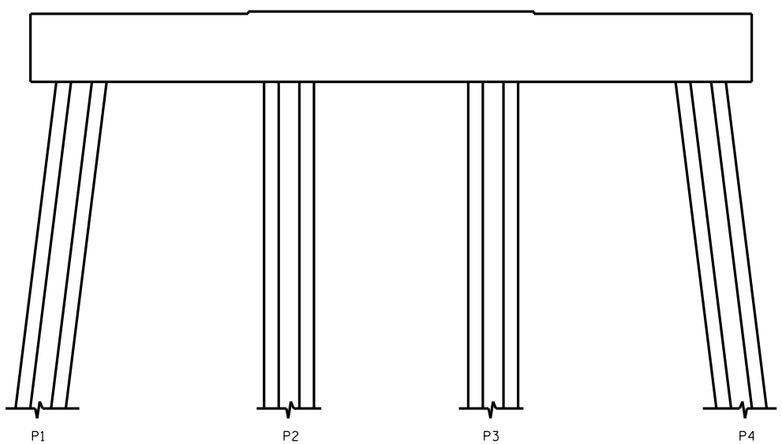
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



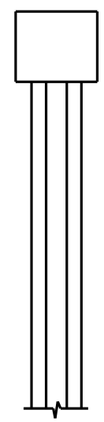

PLAN
TOP OF CAP



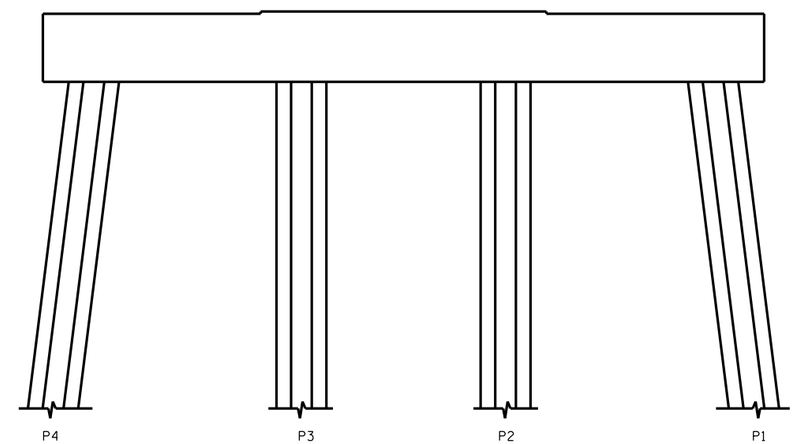
END VIEW
NORTH SIDE



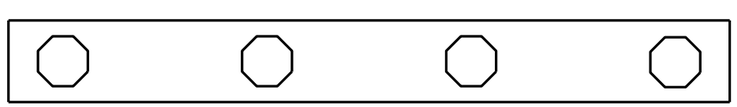

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 36

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-73 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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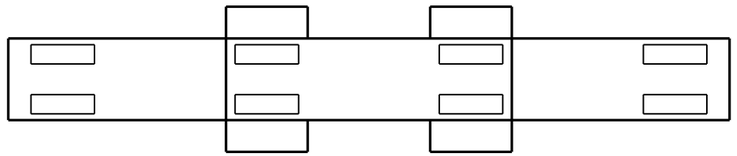
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

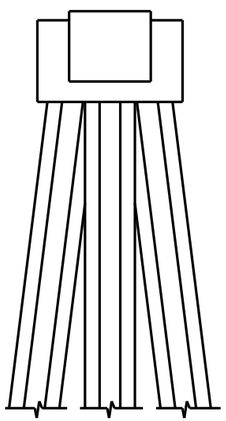
| REPAIRS BENT 37 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

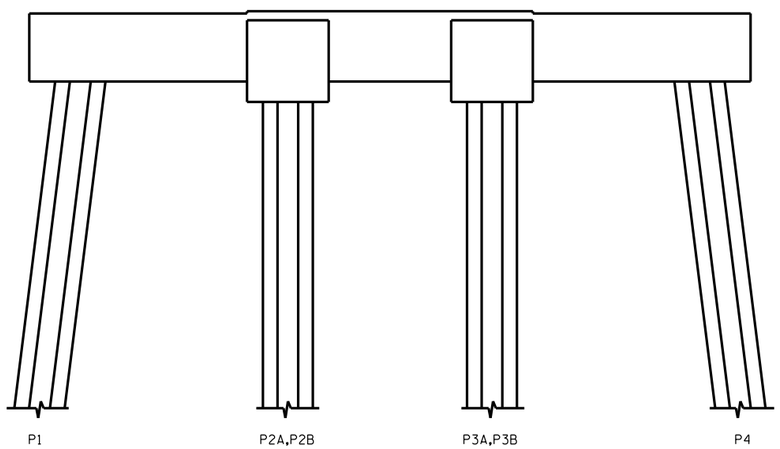


SPAN 38
SPAN 37

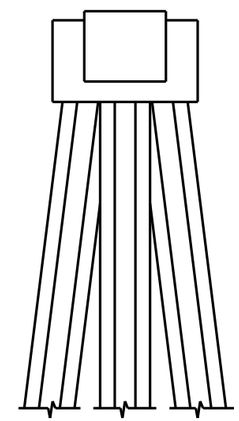
PLAN
TOP OF CAP



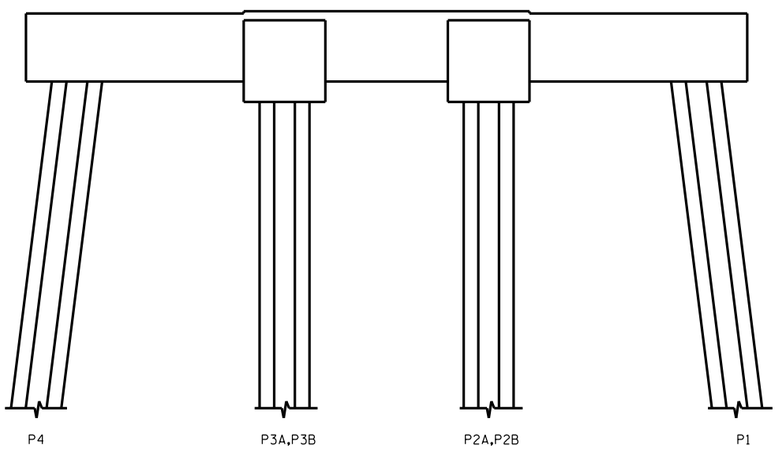
END VIEW
NORTH SIDE



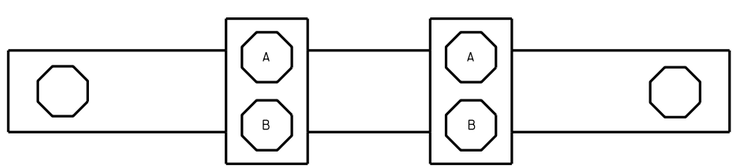

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 37
SPAN 38

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 37

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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-74 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 38 | 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 | | |
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| CAP | | 0.0 | | |

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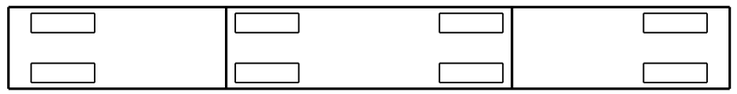
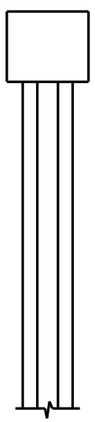
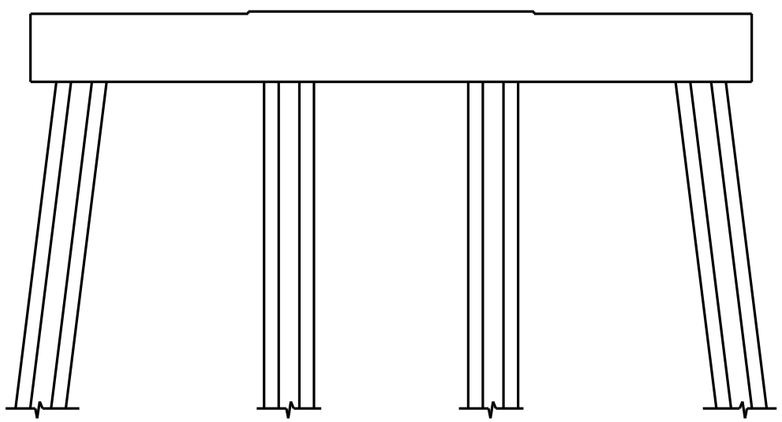


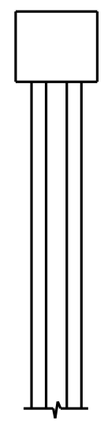

PLAN
TOP OF CAP



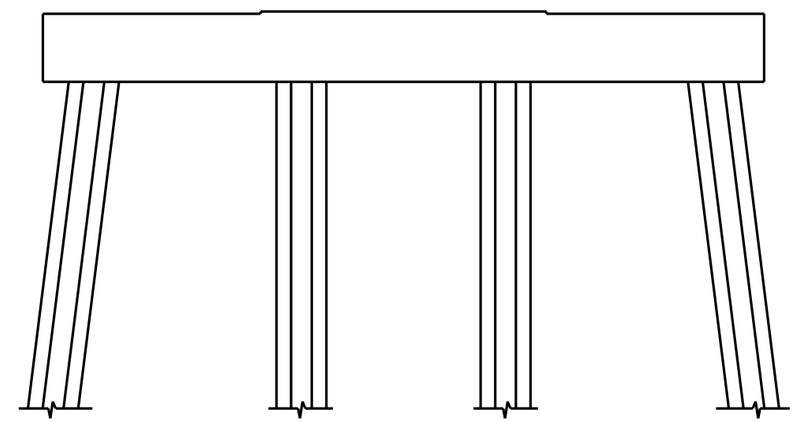
END VIEW
NORTH SIDE



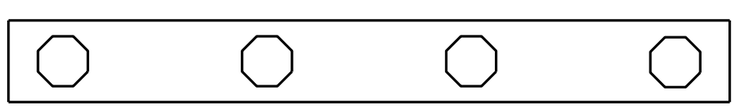

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 38

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-75 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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## REPAIR QUANTITY TABLE

| REPAIRS BENT 39 | 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 | | |
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| CAP | | 0.0 | | |

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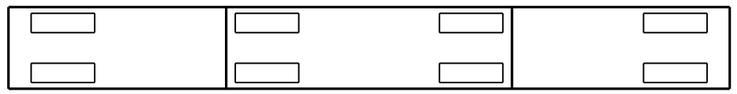
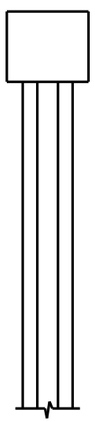
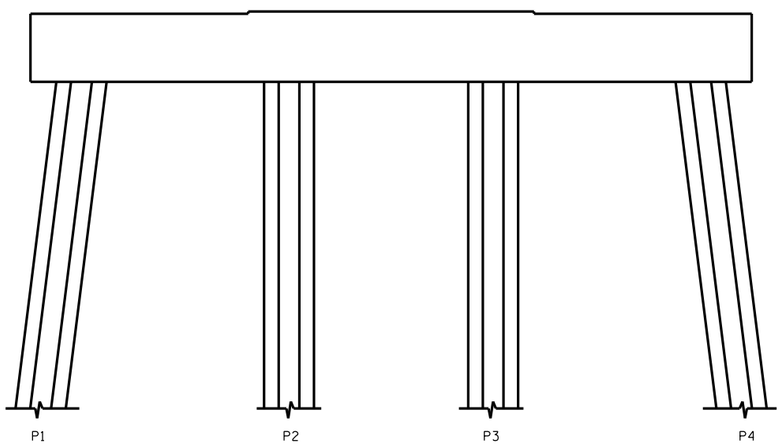


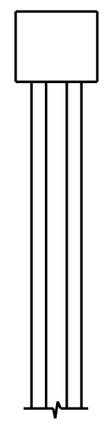

PLAN
TOP OF CAP



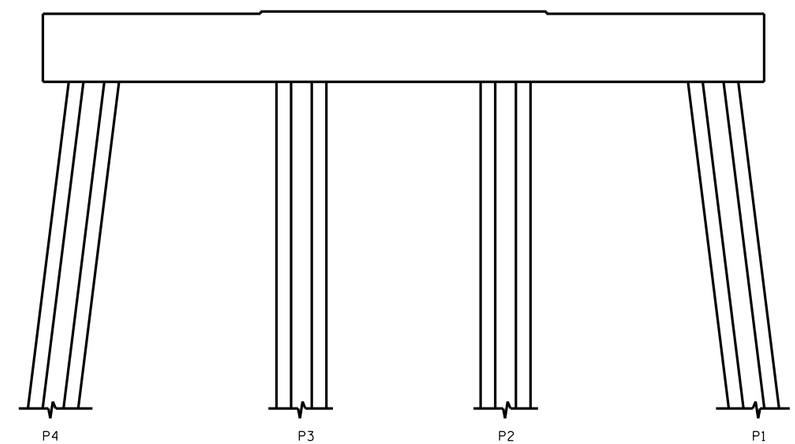
END VIEW
NORTH SIDE



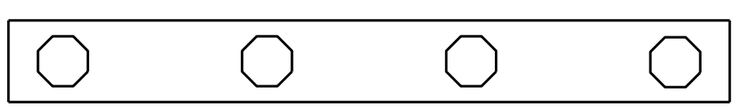

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 39

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-76 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

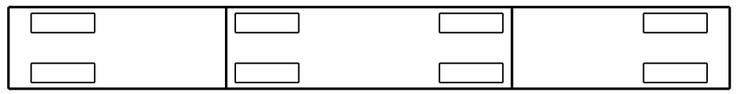
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

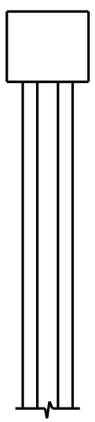
| REPAIRS BENT 40 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

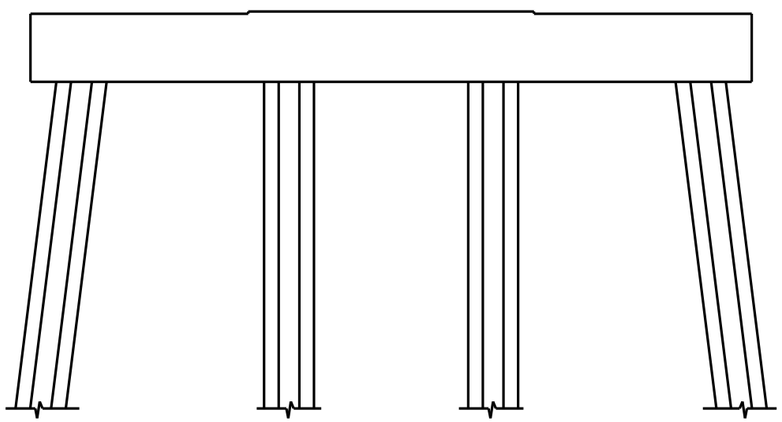


SPAN 41
SPAN 40

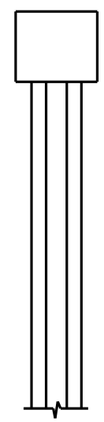
PLAN
TOP OF CAP



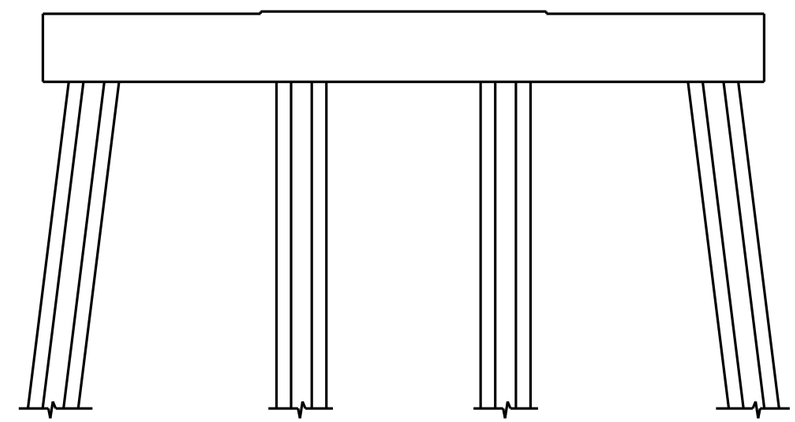
END VIEW
NORTH SIDE



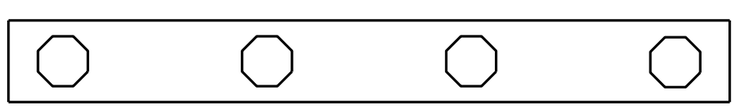

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 40
SPAN 41

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 40

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-77 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

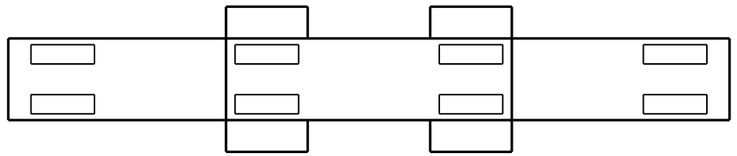
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

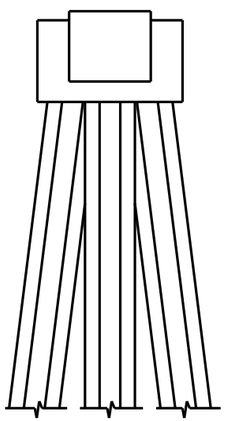
## REPAIR QUANTITY TABLE

| REPAIRS BENT 41 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

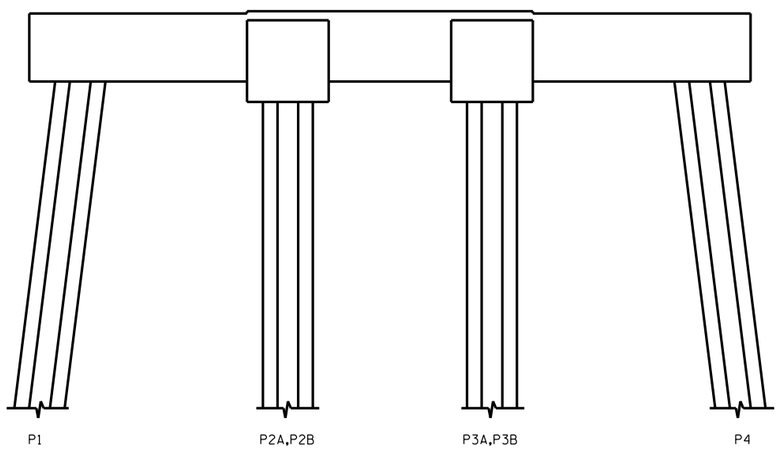
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



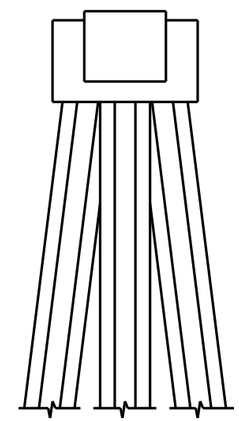

PLAN
TOP OF CAP



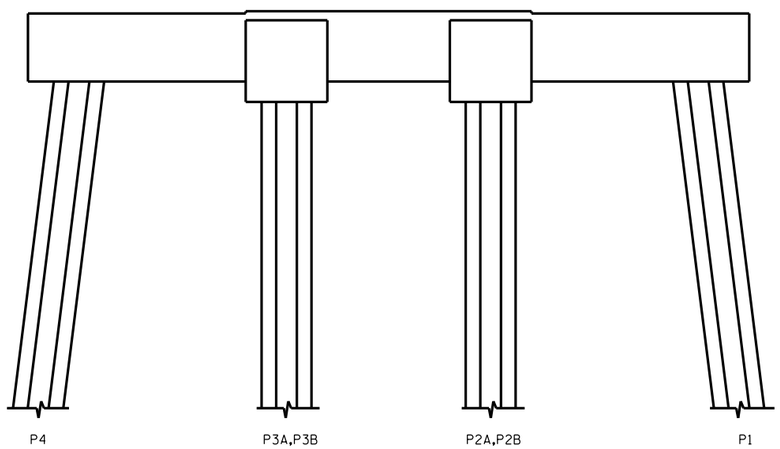
END VIEW
NORTH SIDE



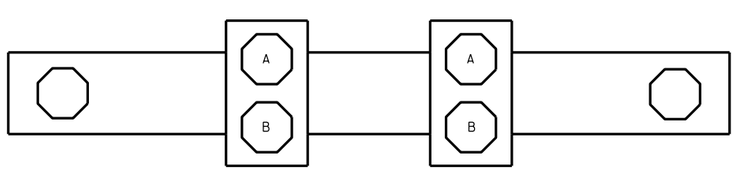

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 41

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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-78 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

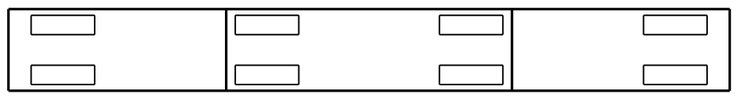
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

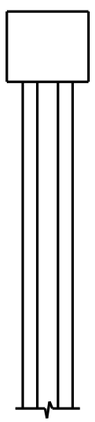
## REPAIR QUANTITY TABLE

| REPAIRS BENT 42 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

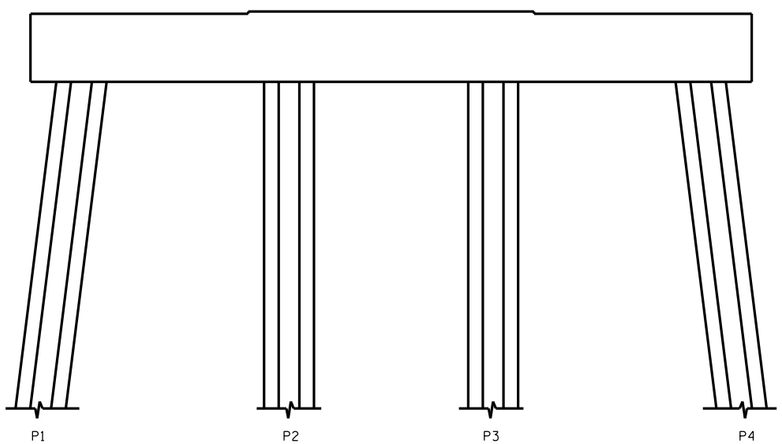
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



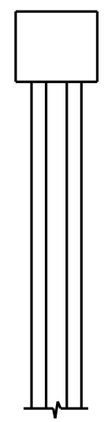

PLAN
TOP OF CAP



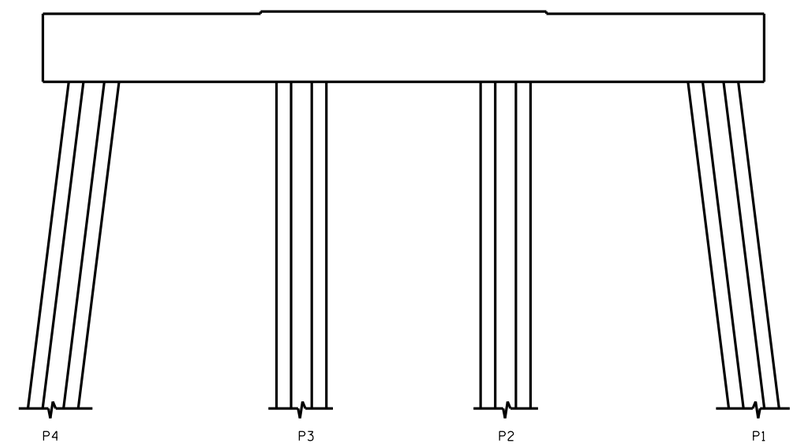
END VIEW
NORTH SIDE



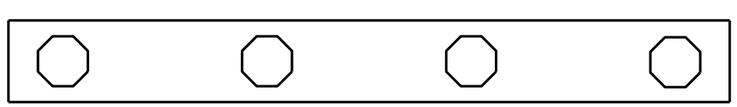

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 42

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-79 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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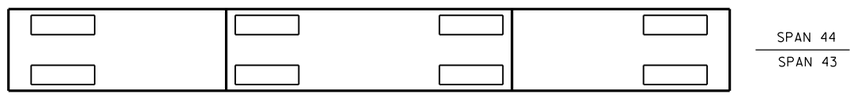
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

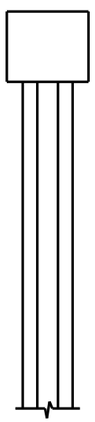
## REPAIR QUANTITY TABLE

| REPAIRS BENT 43 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

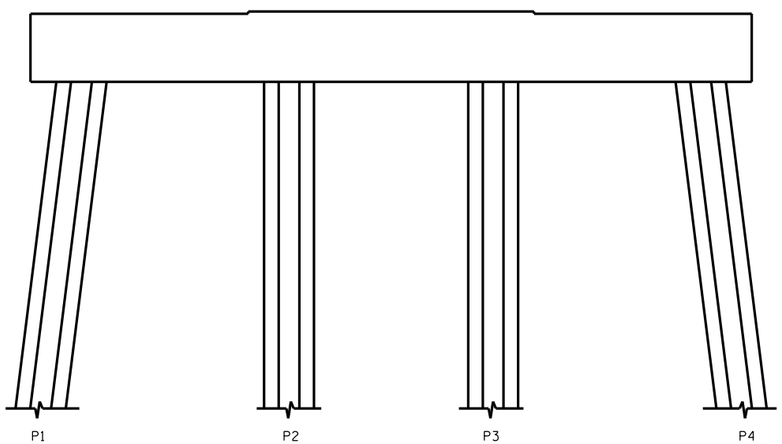
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



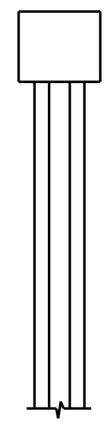

PLAN
TOP OF CAP



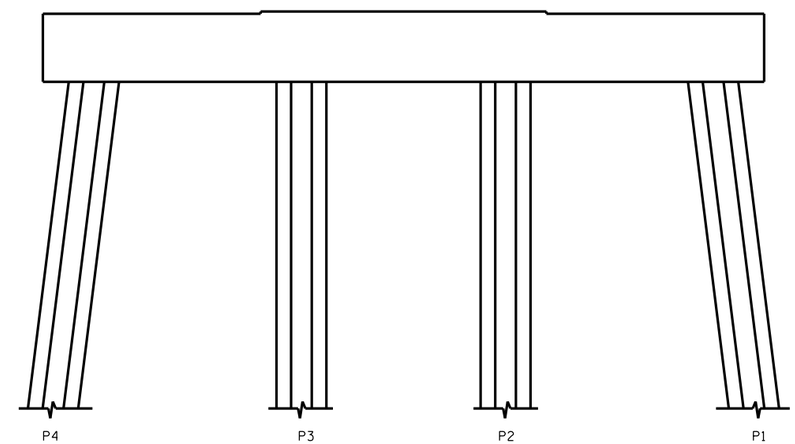
END VIEW
NORTH SIDE



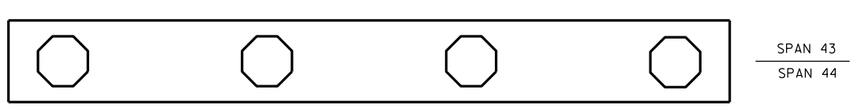

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 43

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-80 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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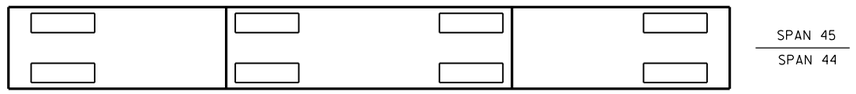
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

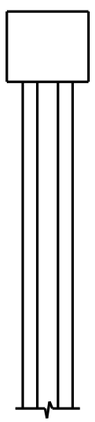
## REPAIR QUANTITY TABLE

| REPAIRS BENT 44 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.1 | 1.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

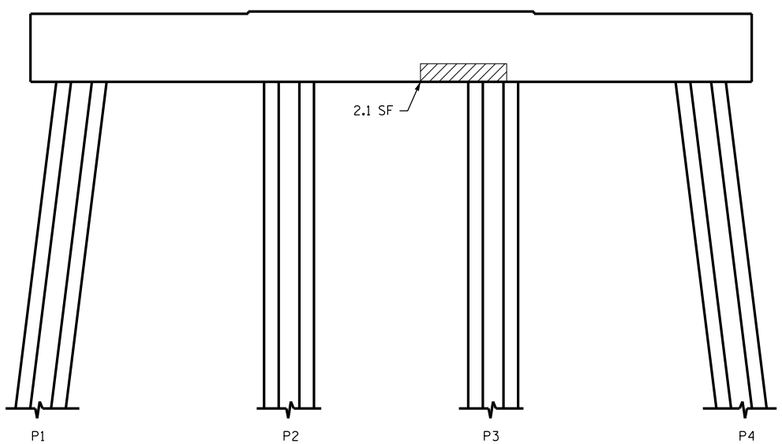
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



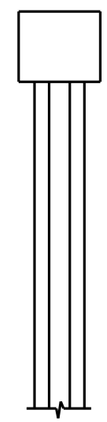

PLAN
TOP OF CAP



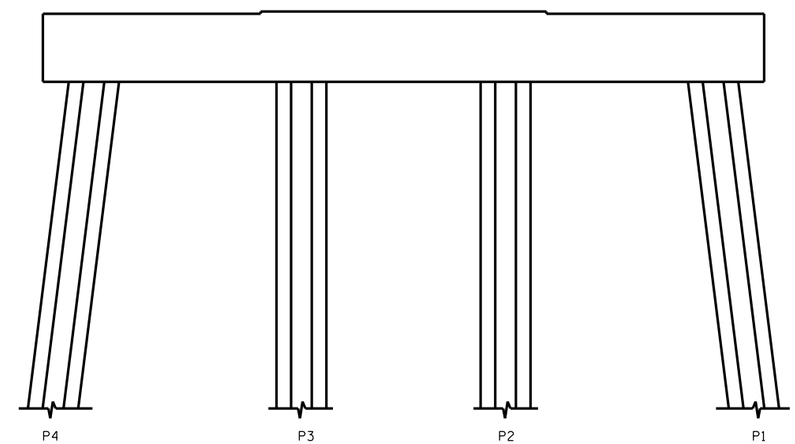
END VIEW
NORTH SIDE



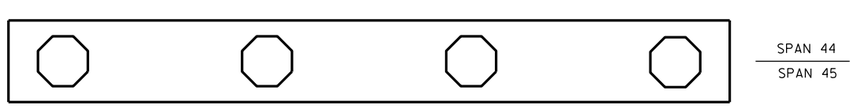

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 6/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 44

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-81 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

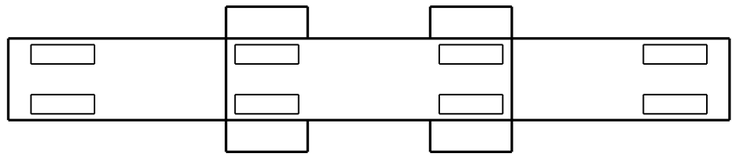
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

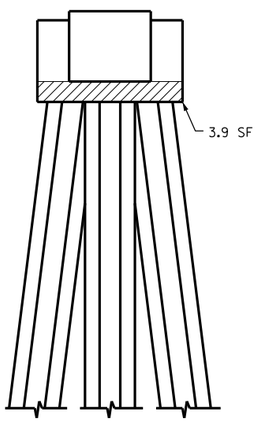
| REPAIRS BENT 45 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 7.7 | 3.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

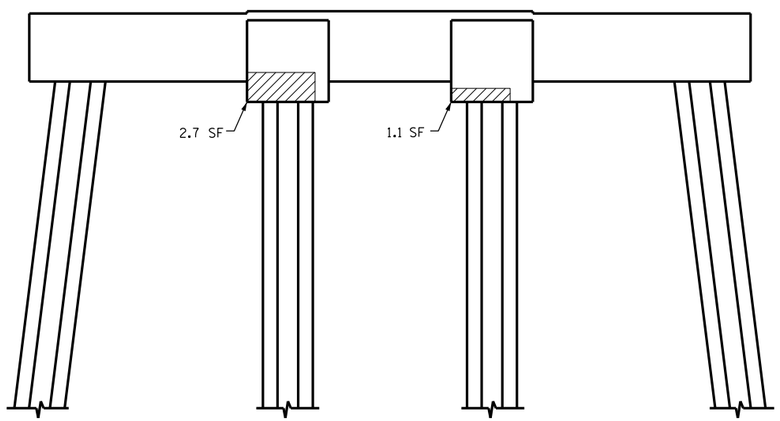


SPAN 46
SPAN 45

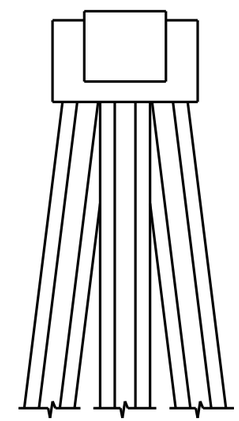
PLAN
TOP OF CAP



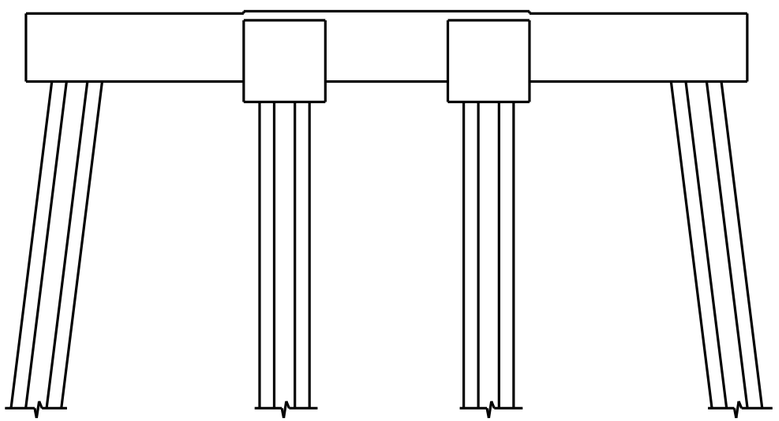

END VIEW
NORTH SIDE



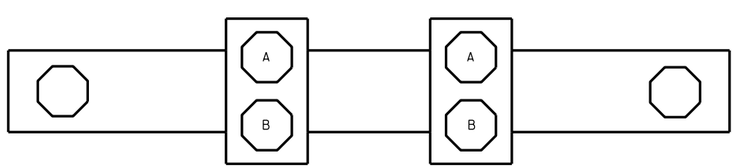

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 45
SPAN 46

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 45

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-82 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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## 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.

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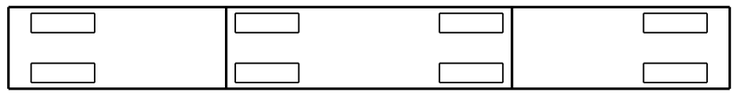
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

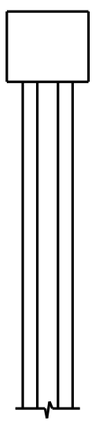
## REPAIR QUANTITY TABLE

| REPAIRS BENT 46 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

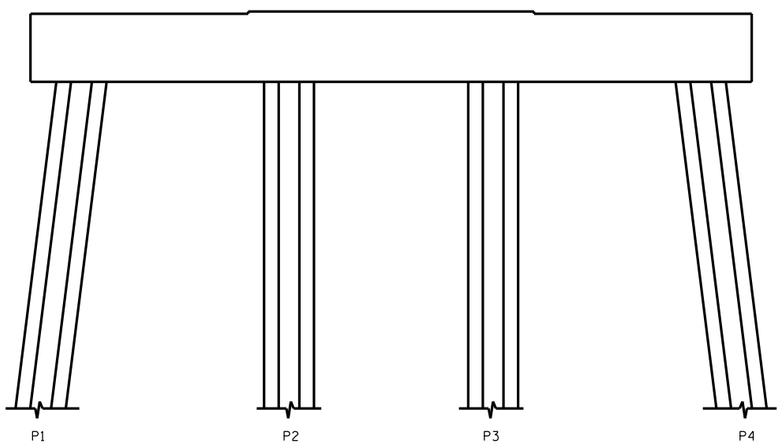
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



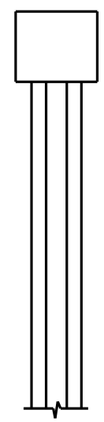

PLAN
TOP OF CAP



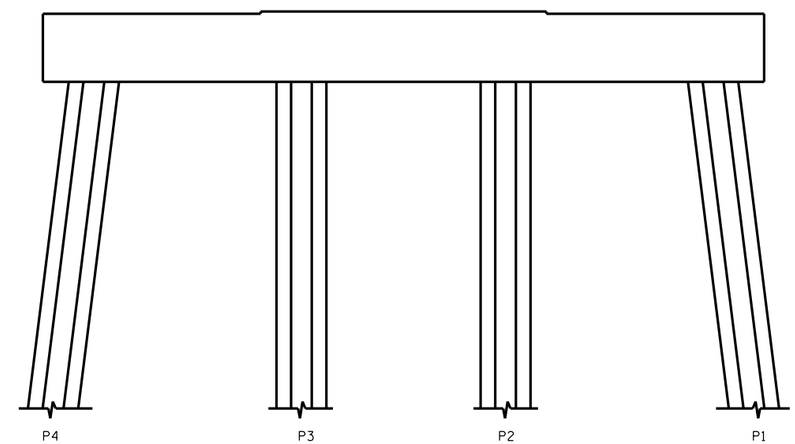
END VIEW
NORTH SIDE



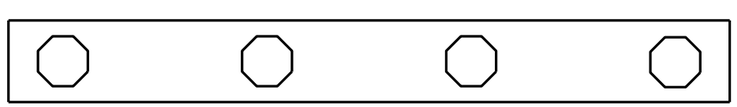

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 46

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-83 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

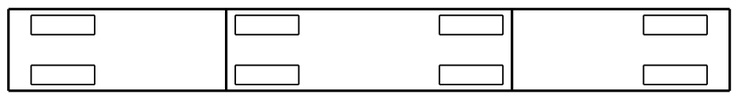
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

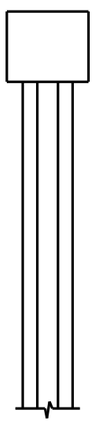
## REPAIR QUANTITY TABLE

| REPAIRS BENT 47 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

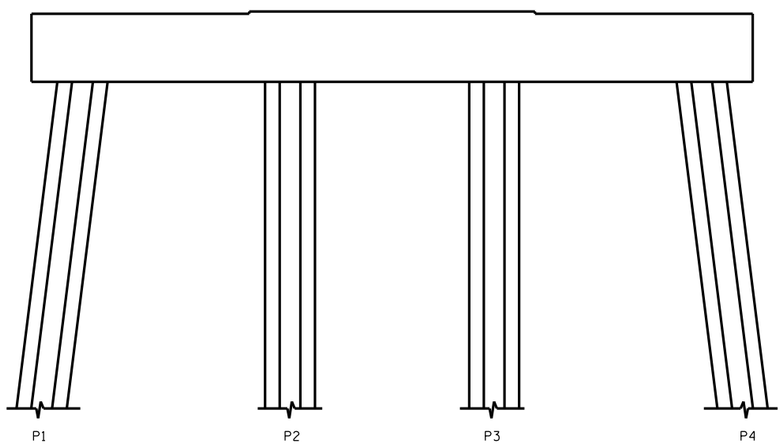
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



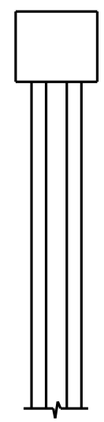

PLAN
TOP OF CAP



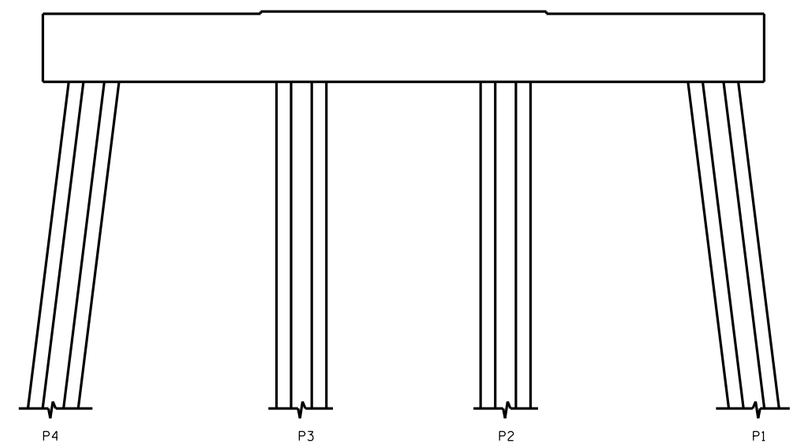
END VIEW
NORTH SIDE



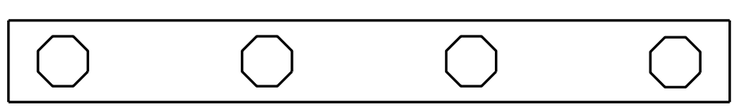

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 47

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-84 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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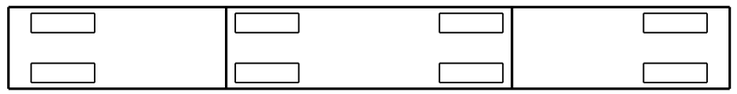
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

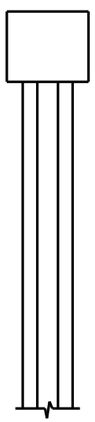
## REPAIR QUANTITY TABLE

| REPAIRS BENT 48 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

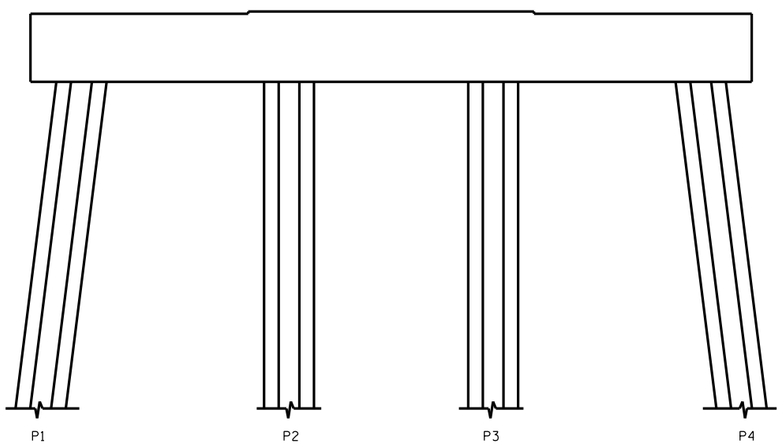
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



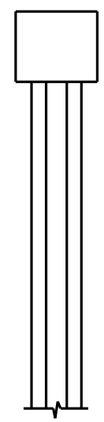

PLAN
TOP OF CAP



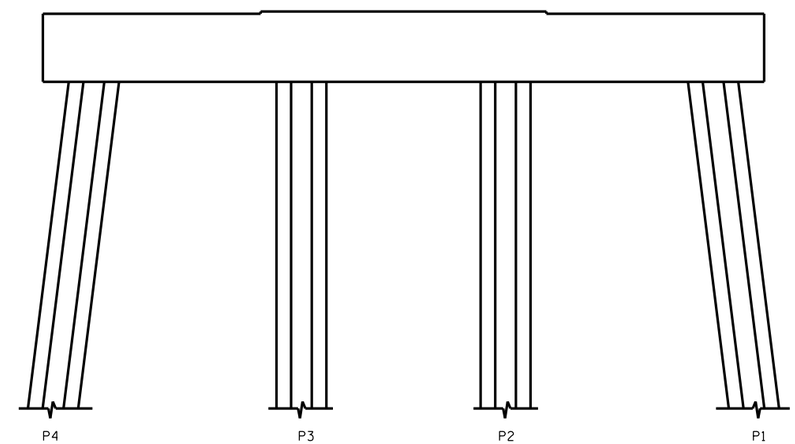
END VIEW
NORTH SIDE



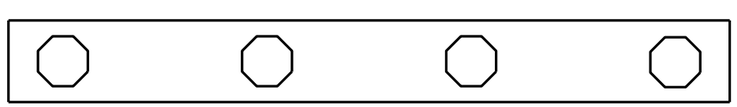

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 48

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-85 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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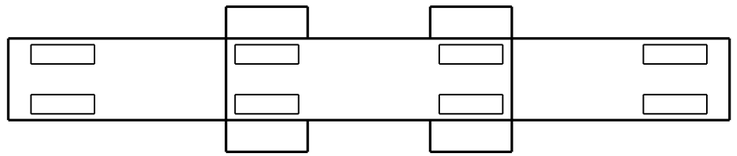
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

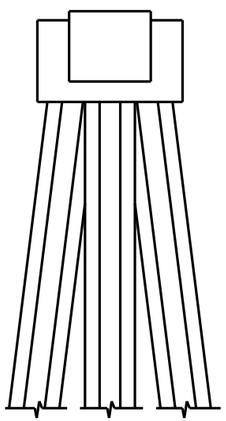
| REPAIRS BENT 49 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

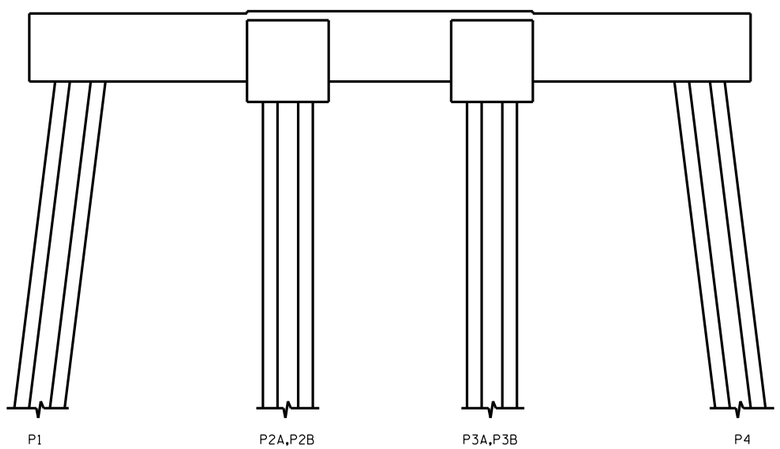


SPAN 50
SPAN 49

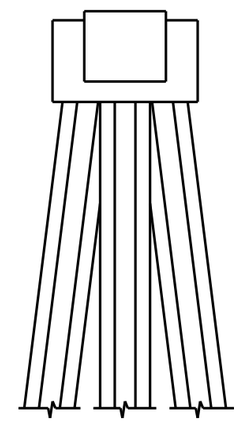
PLAN
TOP OF CAP



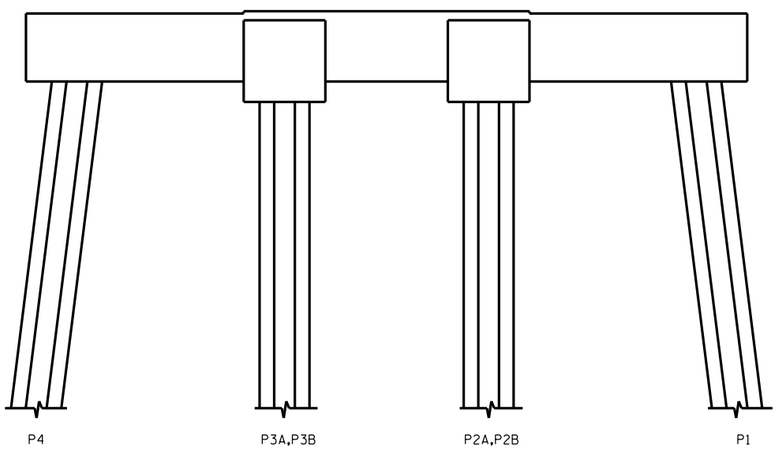
END VIEW
NORTH SIDE



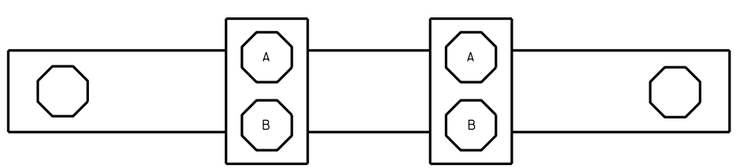

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 49
SPAN 50

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 49

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-86 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

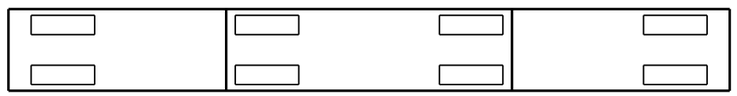
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

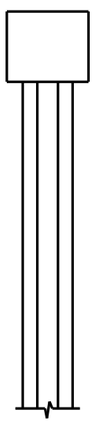
## REPAIR QUANTITY TABLE

| REPAIRS BENT 50 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

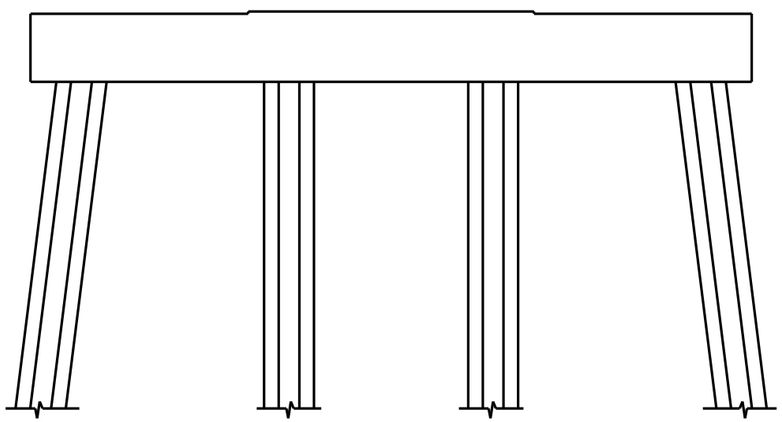
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



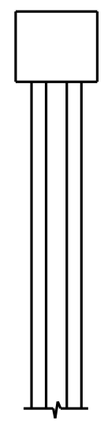

PLAN
TOP OF CAP



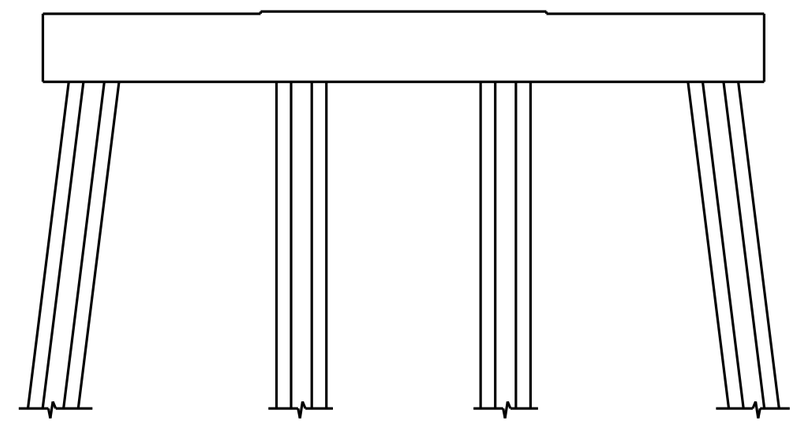
END VIEW
NORTH SIDE



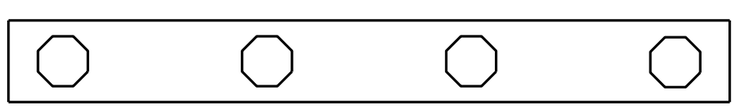

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 50

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-87 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

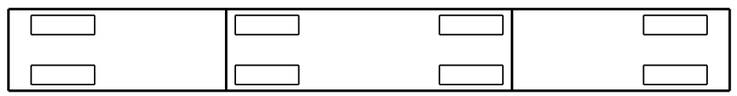
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

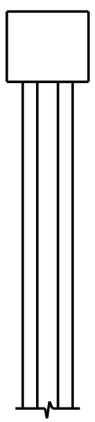
## REPAIR QUANTITY TABLE

| REPAIRS BENT 51 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

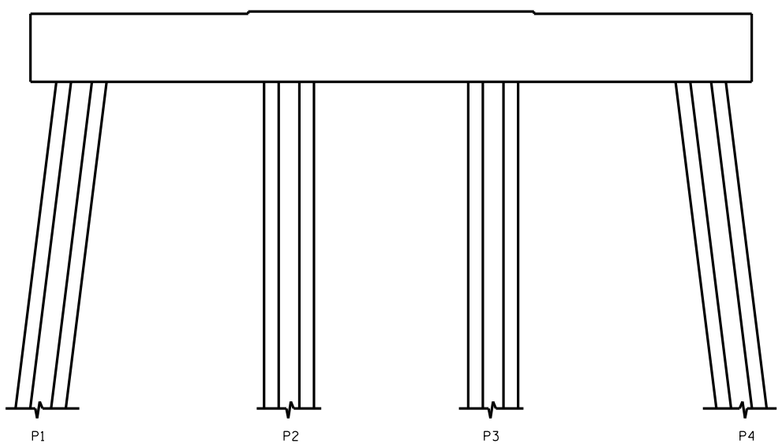
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



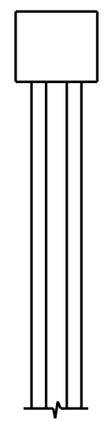

PLAN
TOP OF CAP



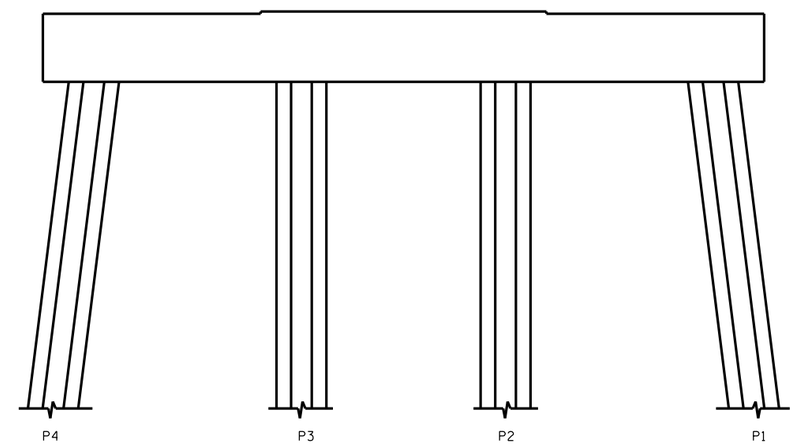
END VIEW
NORTH SIDE



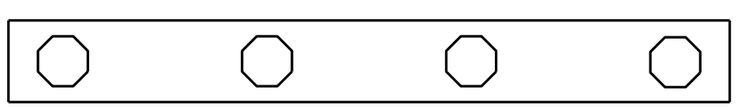

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 51

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-88 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

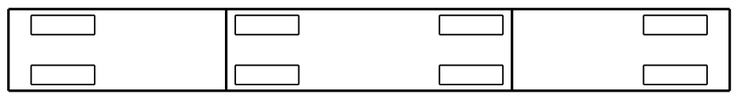
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

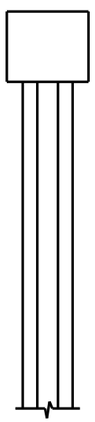
## REPAIR QUANTITY TABLE

| REPAIRS BENT 52 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

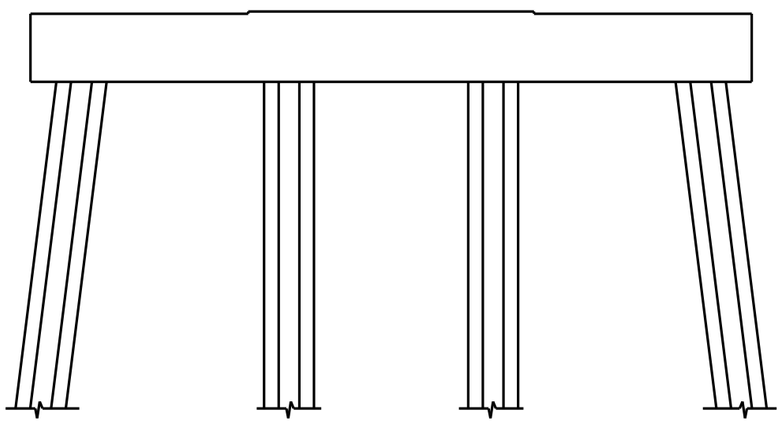
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



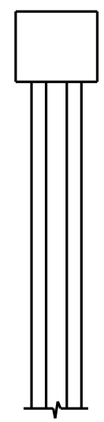

PLAN
TOP OF CAP



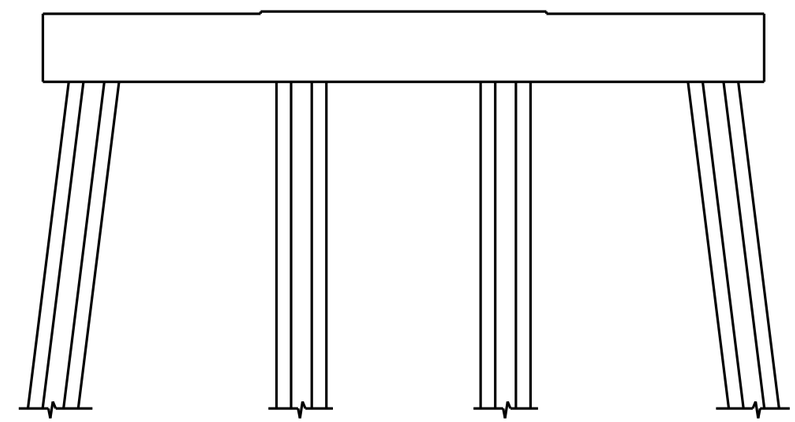
END VIEW
NORTH SIDE



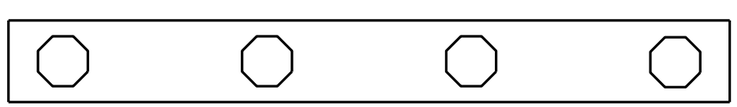

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 52

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-89 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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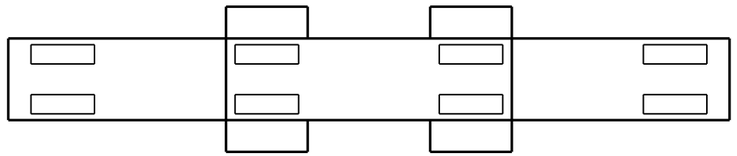
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

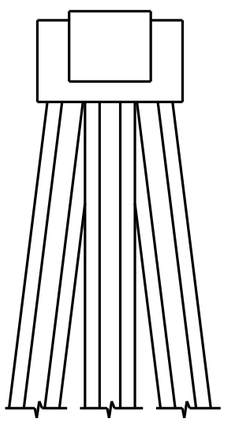
| REPAIRS BENT 53 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

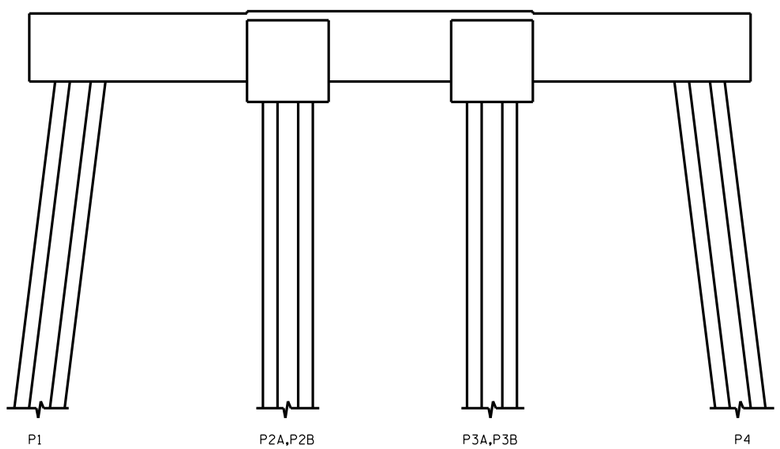


SPAN 54
SPAN 53

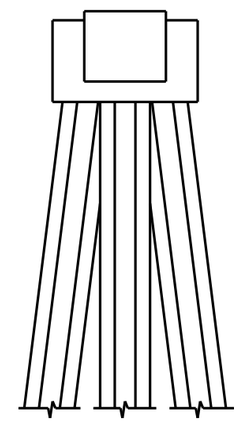
PLAN
TOP OF CAP



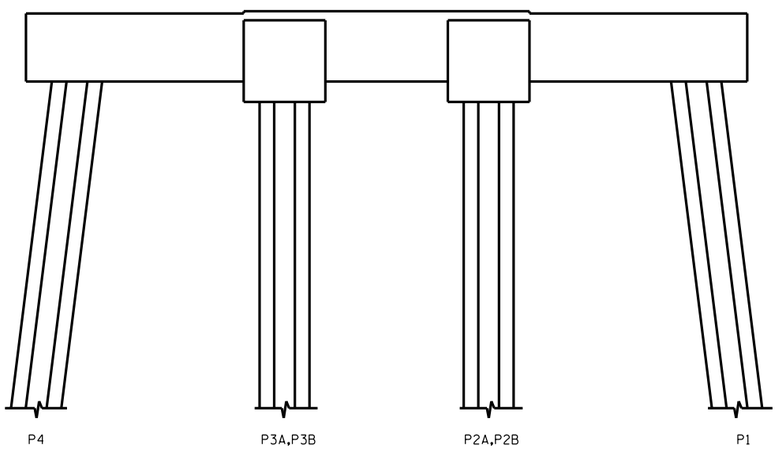
END VIEW
NORTH SIDE



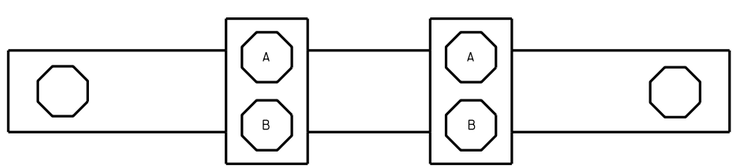

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 53
SPAN 54

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant 6/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 53

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-90 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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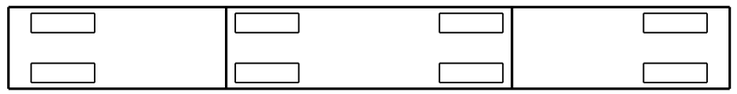
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

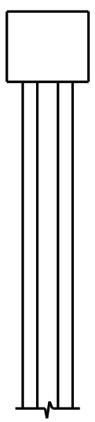
## REPAIR QUANTITY TABLE

| REPAIRS BENT 54 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

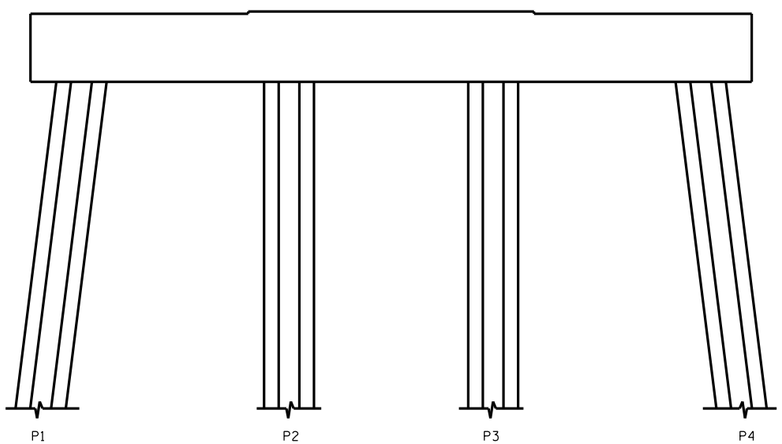
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



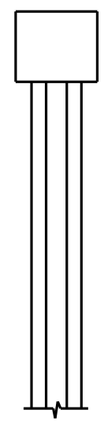

PLAN
TOP OF CAP



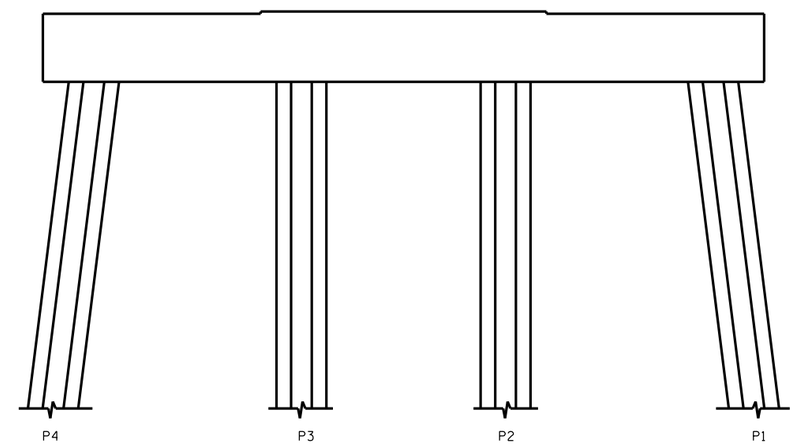
END VIEW
NORTH SIDE



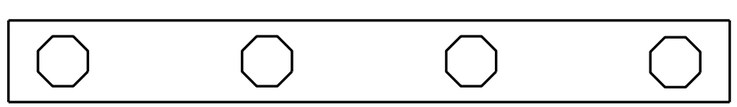

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 54

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-91 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

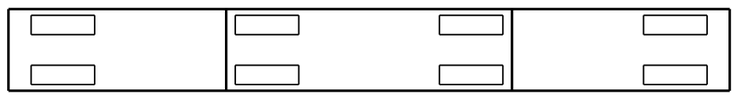
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

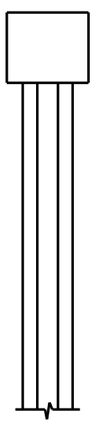
## REPAIR QUANTITY TABLE

| REPAIRS BENT 55 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 4.7 | 1.9 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

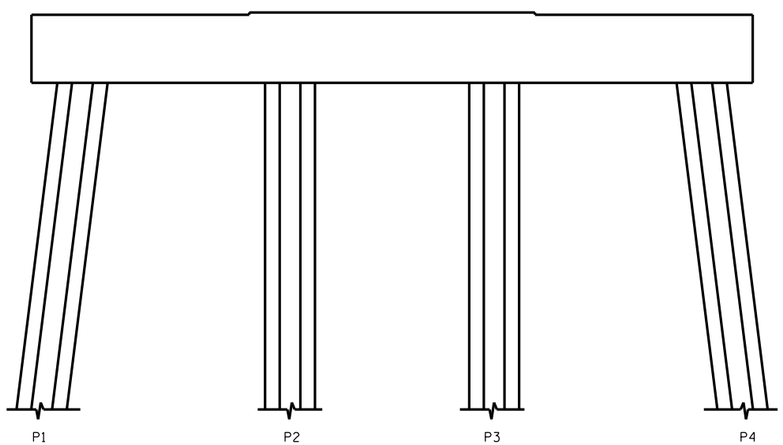
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



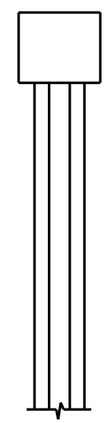

PLAN
TOP OF CAP



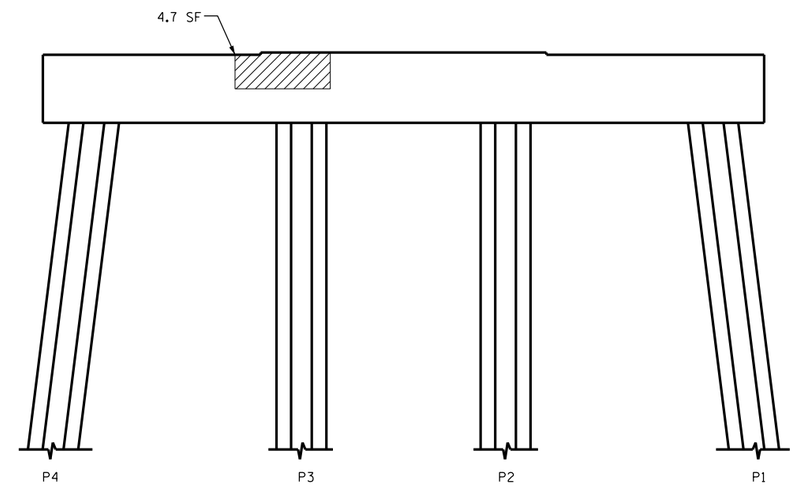
END VIEW
NORTH SIDE



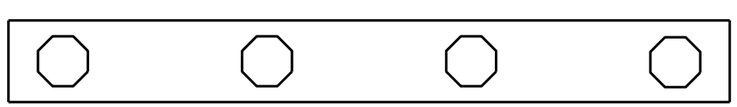

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 55

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| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-92 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

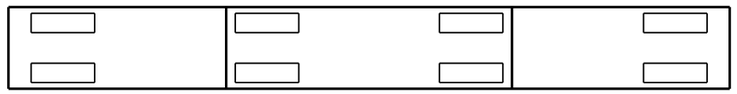
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

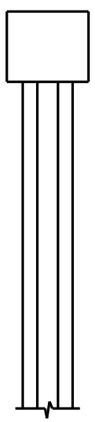
## REPAIR QUANTITY TABLE

| REPAIRS BENT 56 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.7 | 0.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

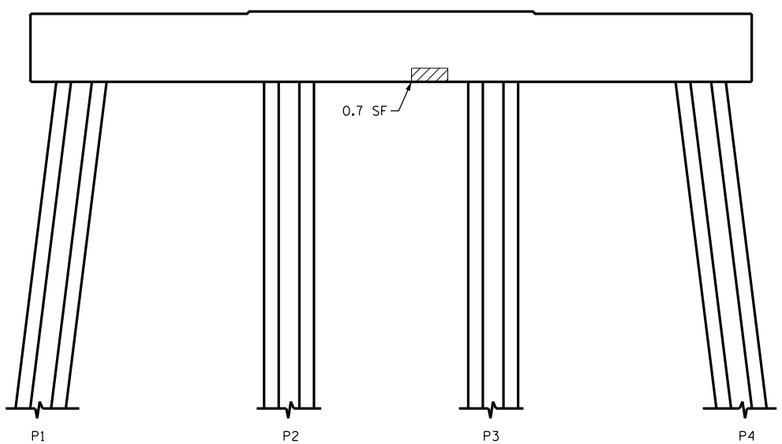
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



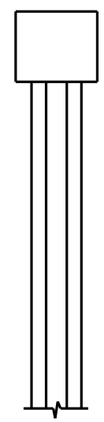

PLAN
TOP OF CAP



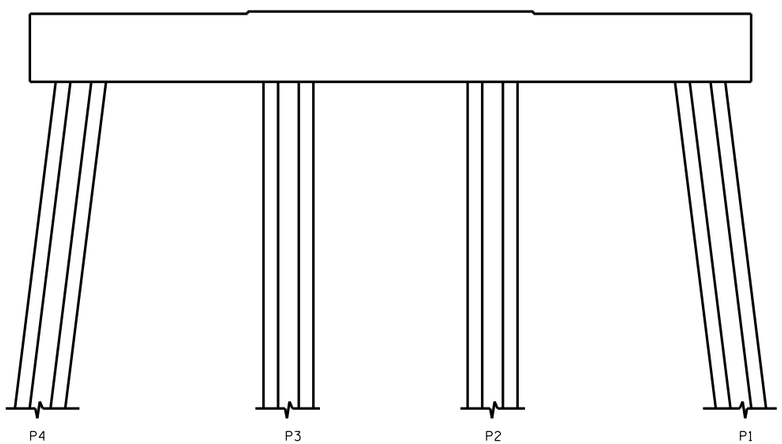
END VIEW
NORTH SIDE



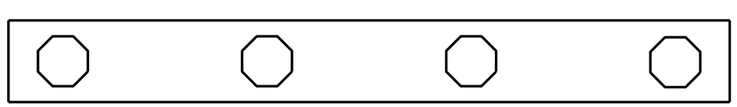

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 56

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-93 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

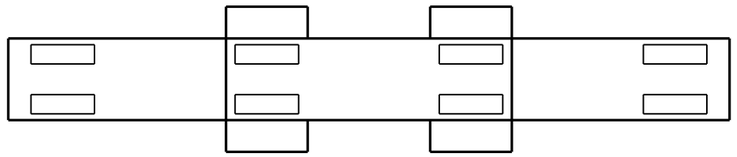
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

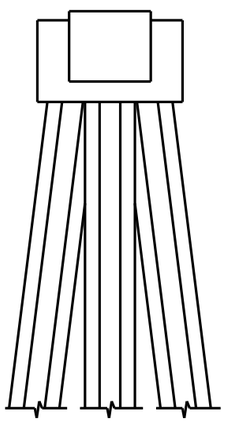
| REPAIRS BENT 57 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.5 | 0.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

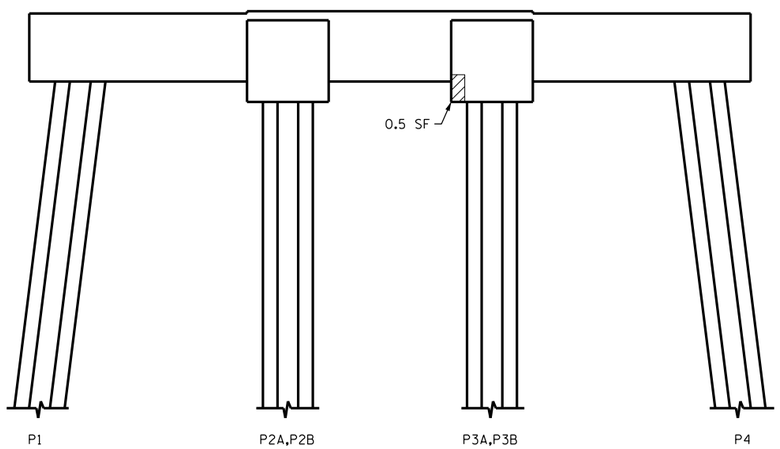


SPAN 58
SPAN 57

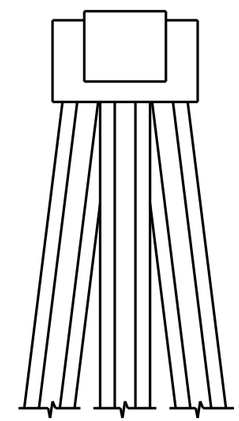
PLAN
TOP OF CAP



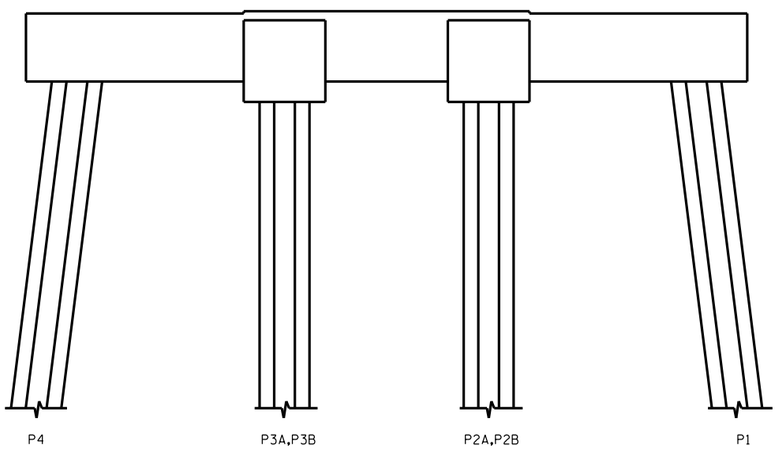
END VIEW
NORTH SIDE



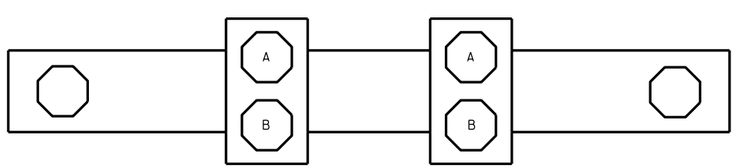

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 57
SPAN 58

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 57

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-94 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

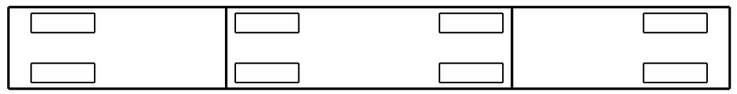
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

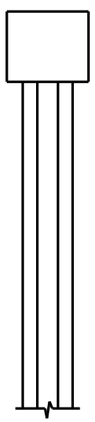
| REPAIRS BENT 58 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

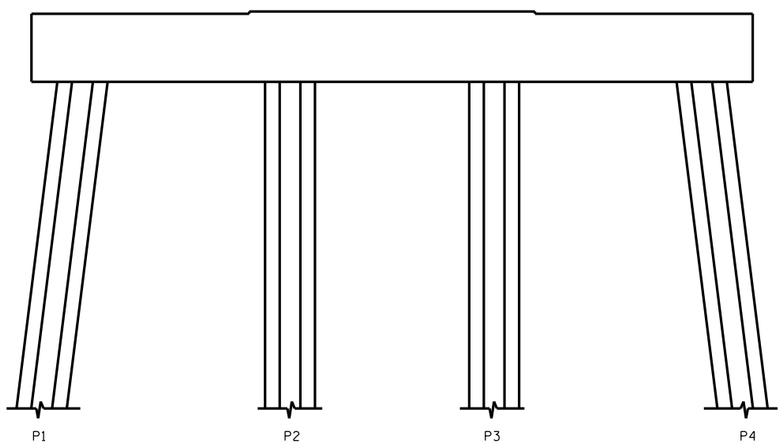


SPAN 59
SPAN 58

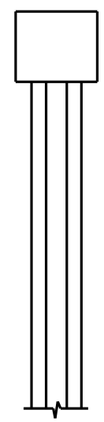
PLAN
TOP OF CAP



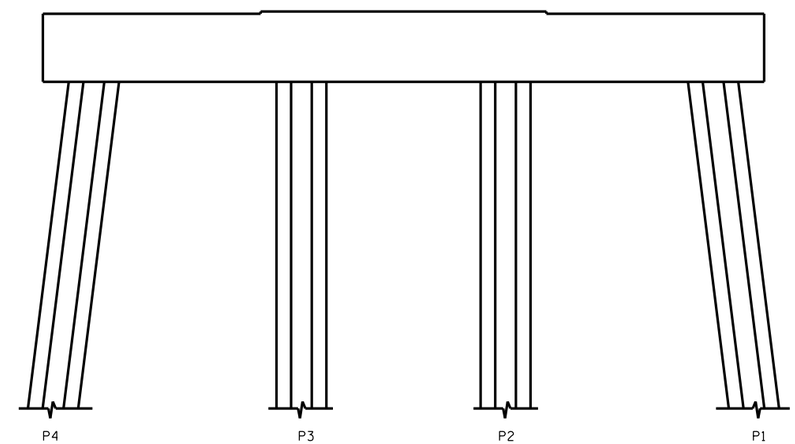
END VIEW
NORTH SIDE



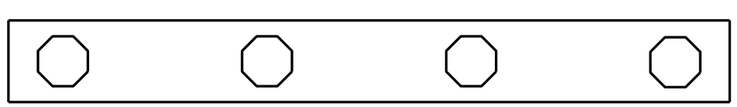

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 58
SPAN 59

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 58

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-95 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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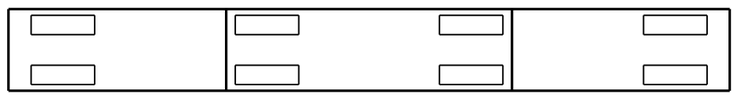
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

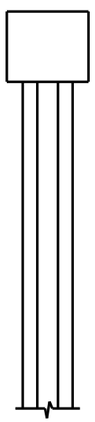
## REPAIR QUANTITY TABLE

| REPAIRS BENT 59 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

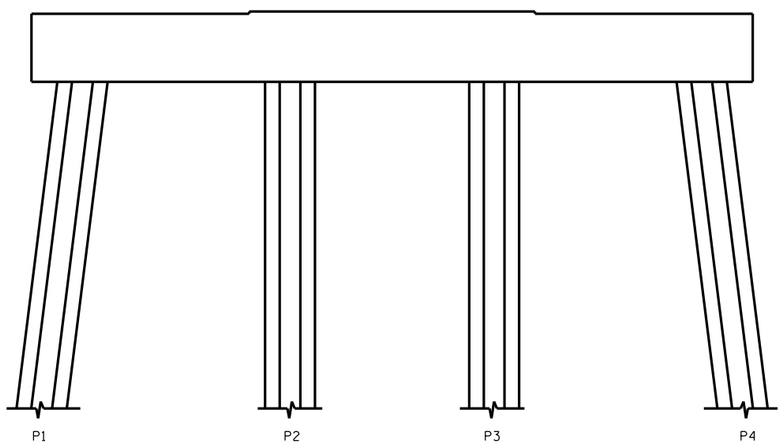
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



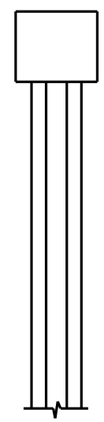

PLAN
TOP OF CAP



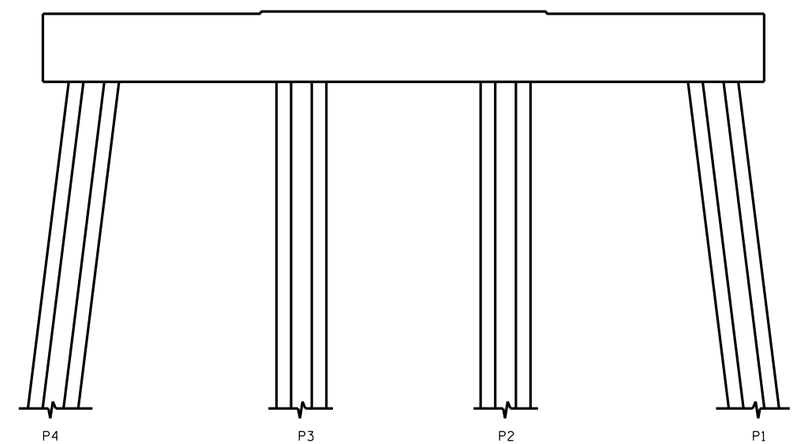
END VIEW
NORTH SIDE



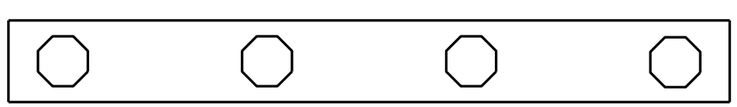

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 59

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-96 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

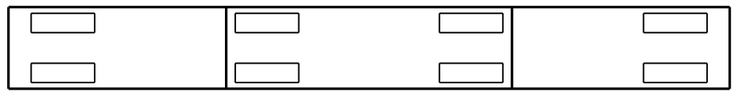
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

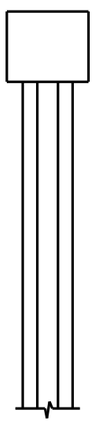
| REPAIRS BENT 60 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

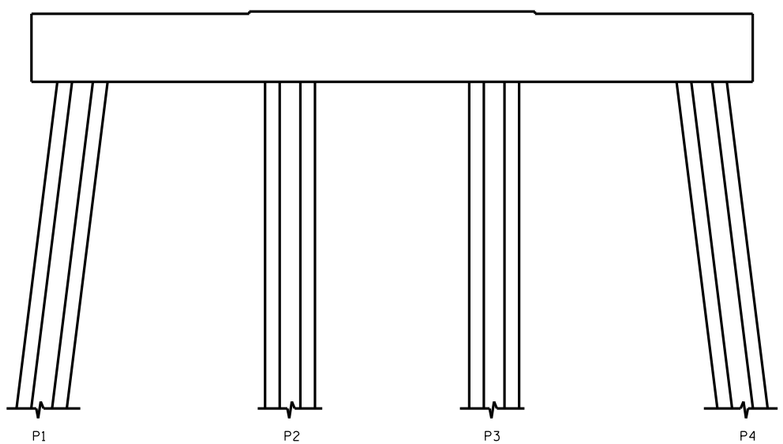


SPAN 61
SPAN 60

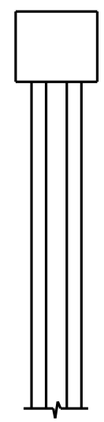
PLAN
TOP OF CAP



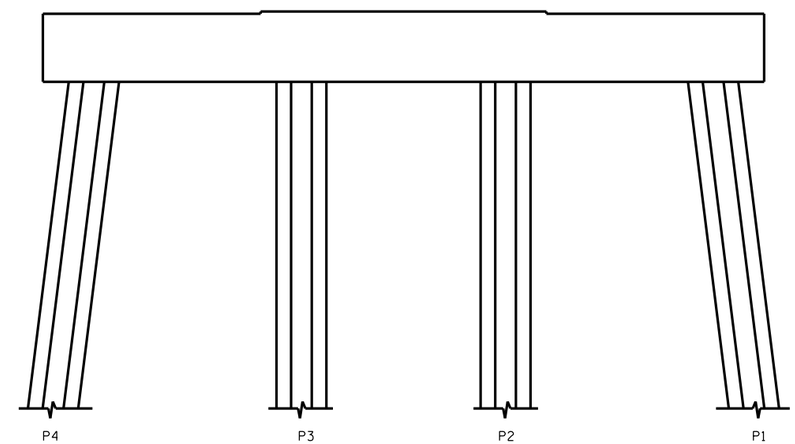
END VIEW
NORTH SIDE



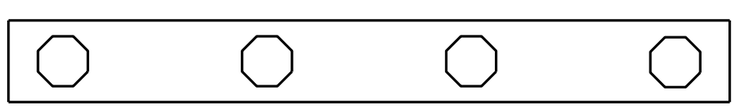

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 60
SPAN 61

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 60

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-97 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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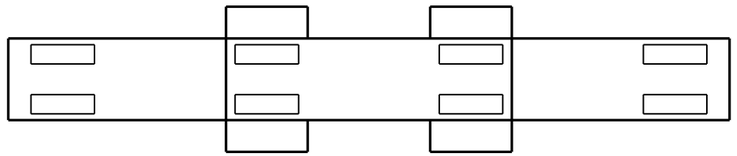
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

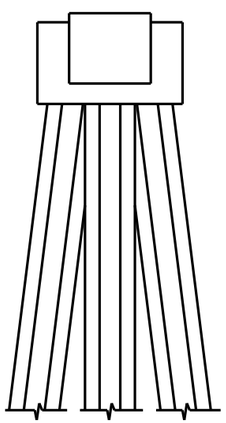
## REPAIR QUANTITY TABLE

| REPAIRS BENT 61 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

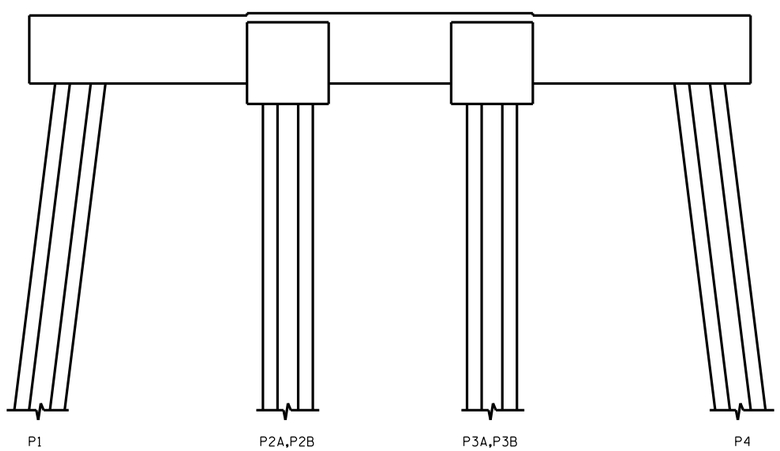
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



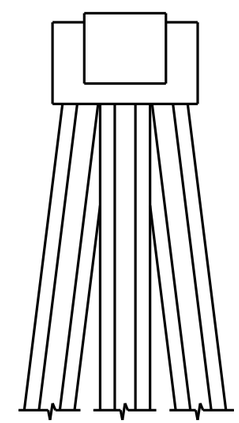

PLAN
TOP OF CAP



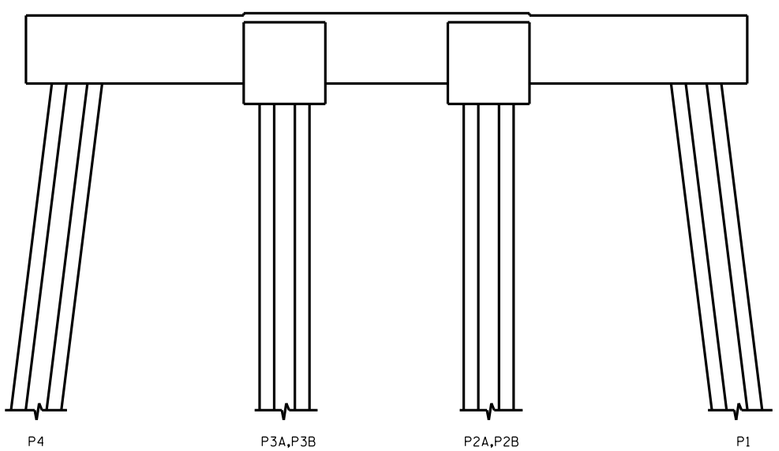
END VIEW
NORTH SIDE



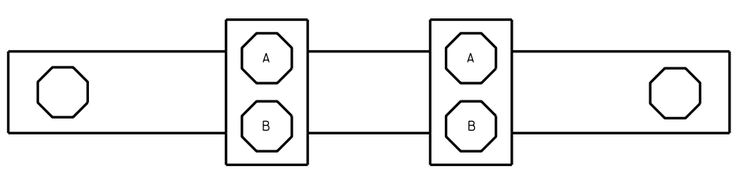

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant 8/10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 61

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-98 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

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## NOTES:

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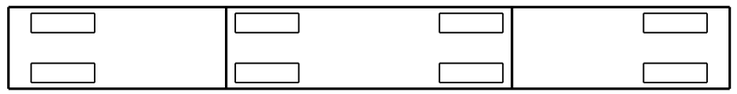
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

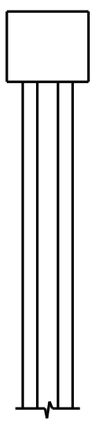
## REPAIR QUANTITY TABLE

| REPAIRS BENT 62 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

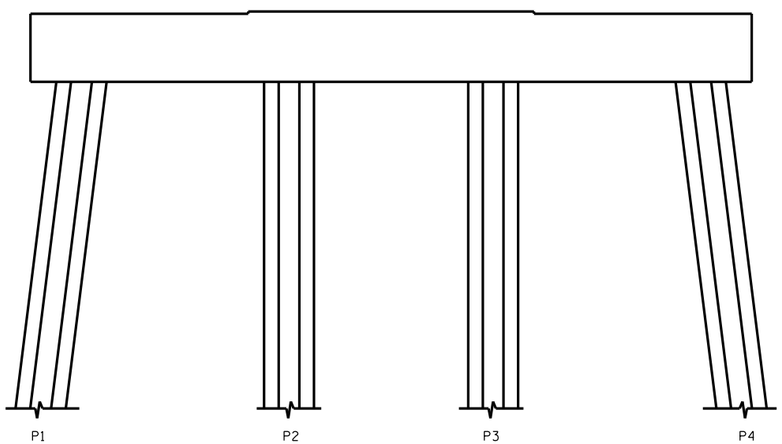
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



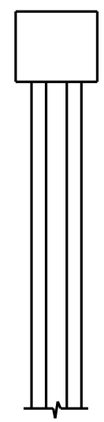

PLAN
TOP OF CAP



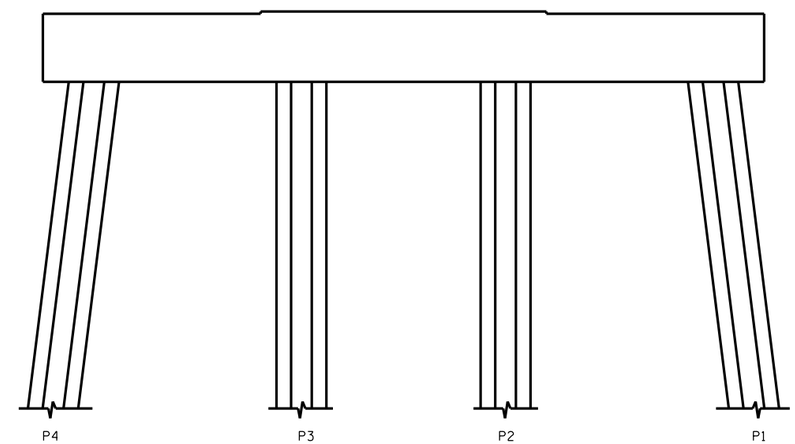
END VIEW
NORTH SIDE



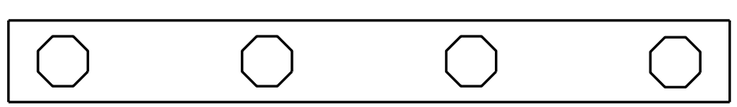

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant 10/2016
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 62

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|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-99 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## REPAIR QUANTITY TABLE

| REPAIRS BENT 63 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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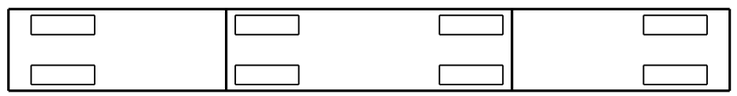
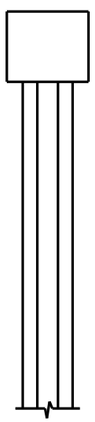
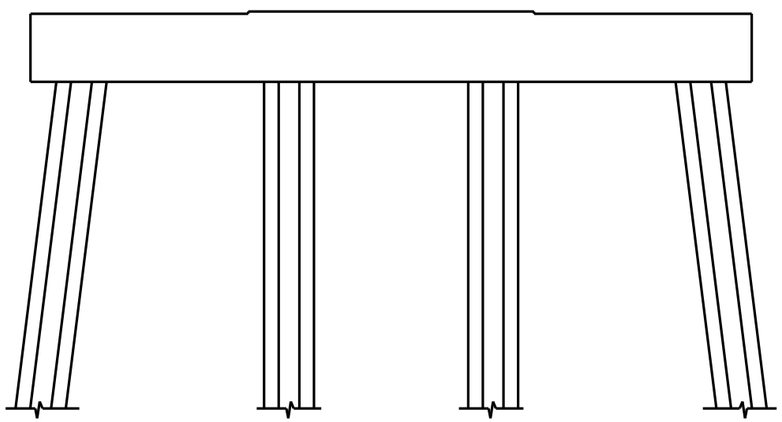


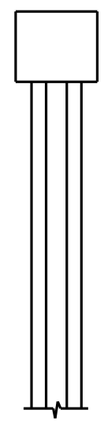

PLAN
TOP OF CAP



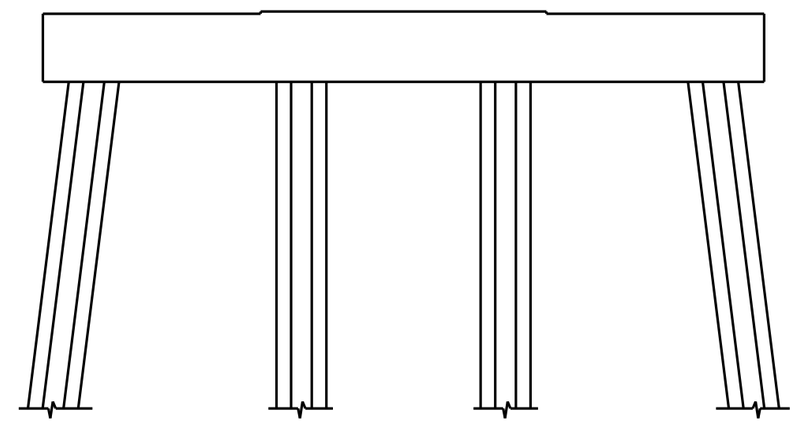
END VIEW
NORTH SIDE



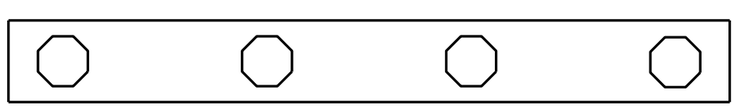

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant 10/2016
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 63

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-100 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 64 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
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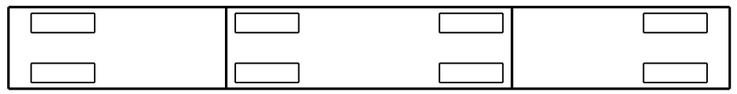
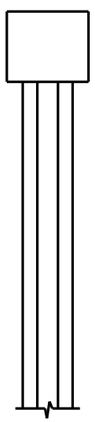
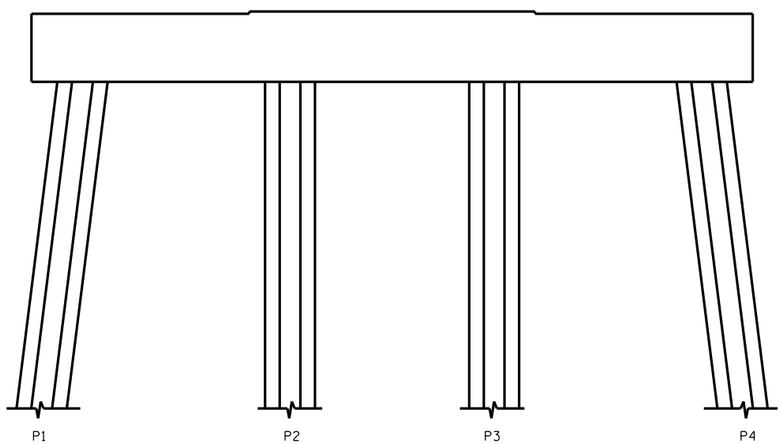


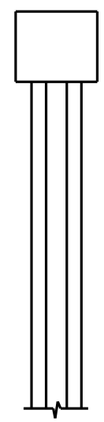

PLAN
TOP OF CAP



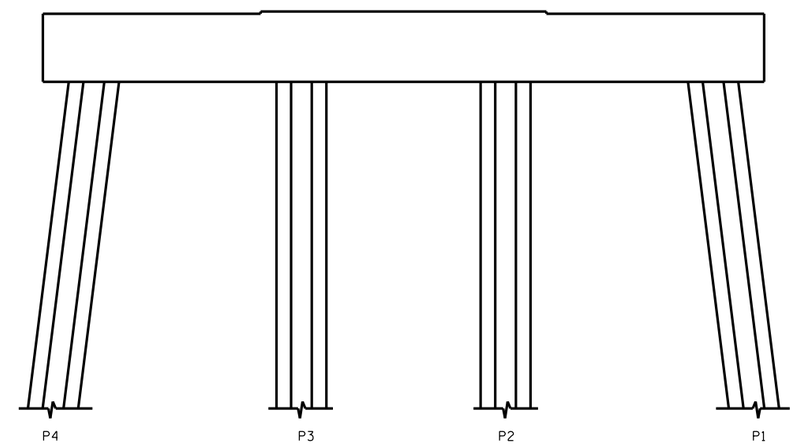
END VIEW
NORTH SIDE



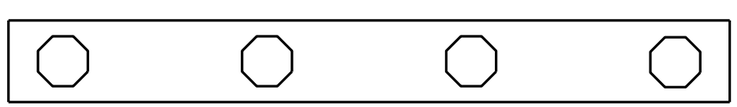

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 64

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-101 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

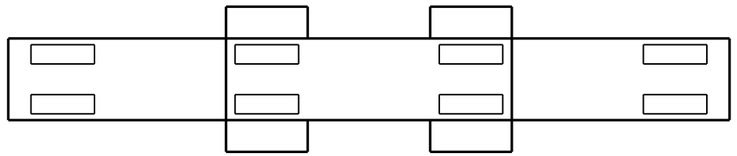
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

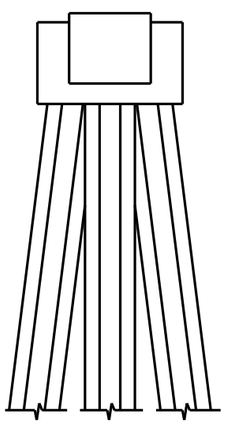
## REPAIR QUANTITY TABLE

| REPAIRS BENT 65 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

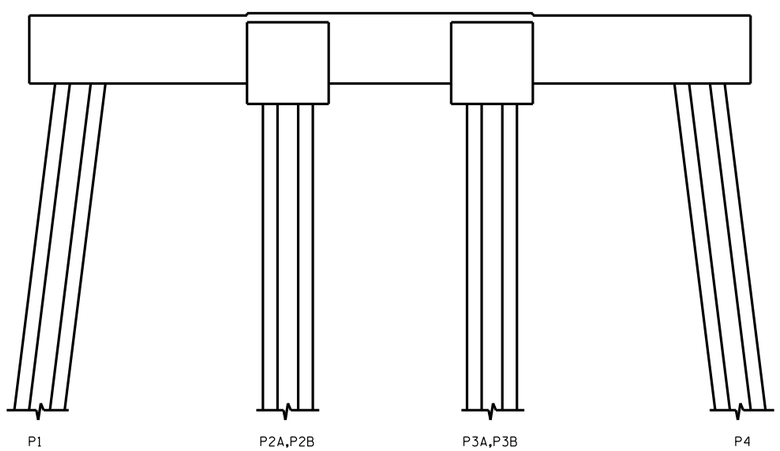
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



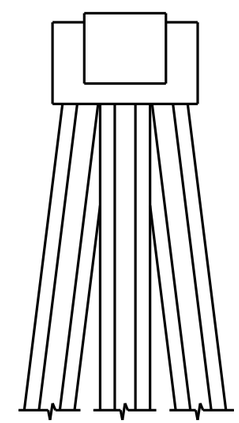

PLAN
TOP OF CAP



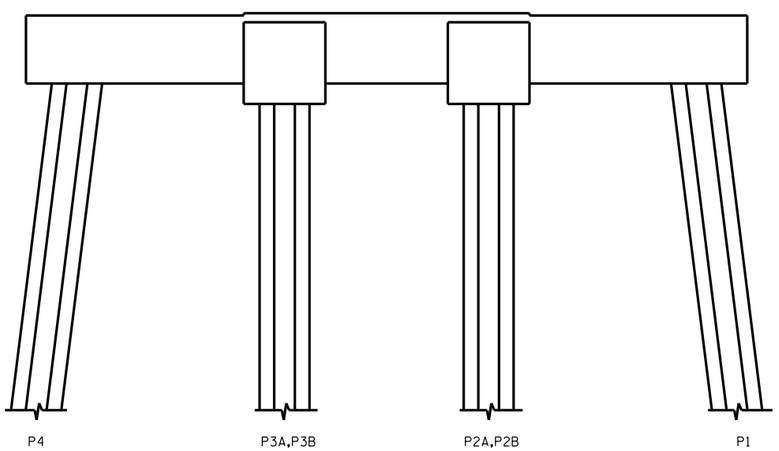
END VIEW
NORTH SIDE



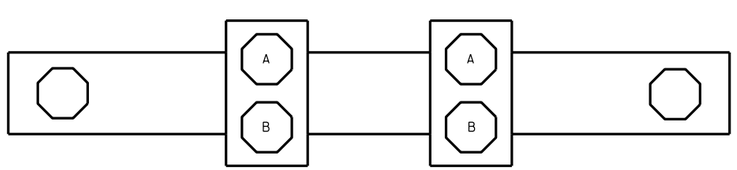

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 65

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-102 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

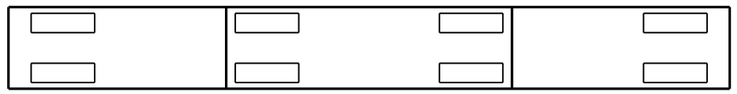
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

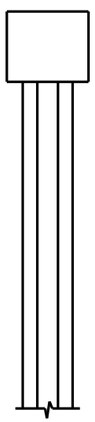
## REPAIR QUANTITY TABLE

| REPAIRS BENT 66 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

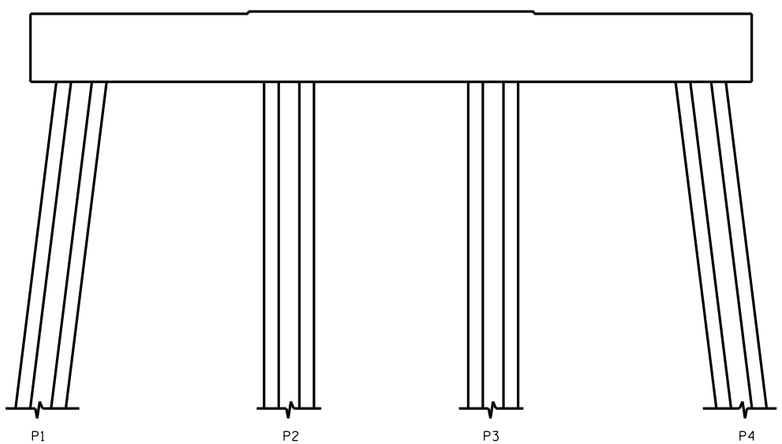
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



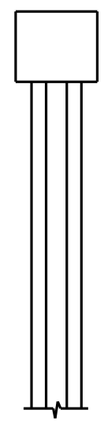

PLAN
TOP OF CAP



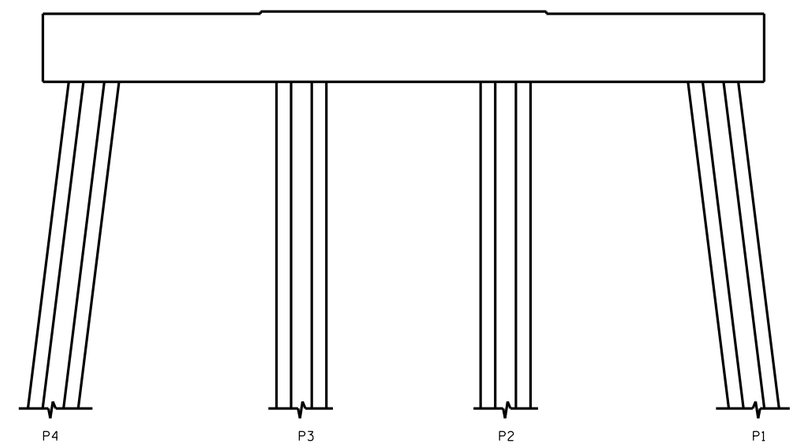
END VIEW
NORTH SIDE



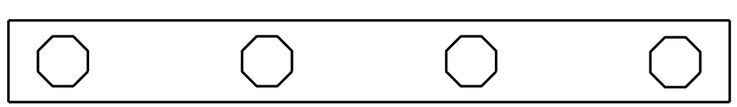

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 66

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-103 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

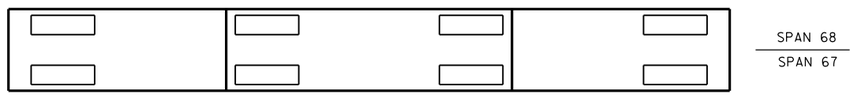
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

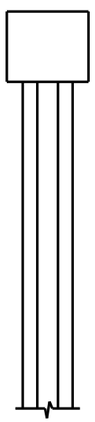
## REPAIR QUANTITY TABLE

| REPAIRS BENT 67 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.3 | 0.6 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

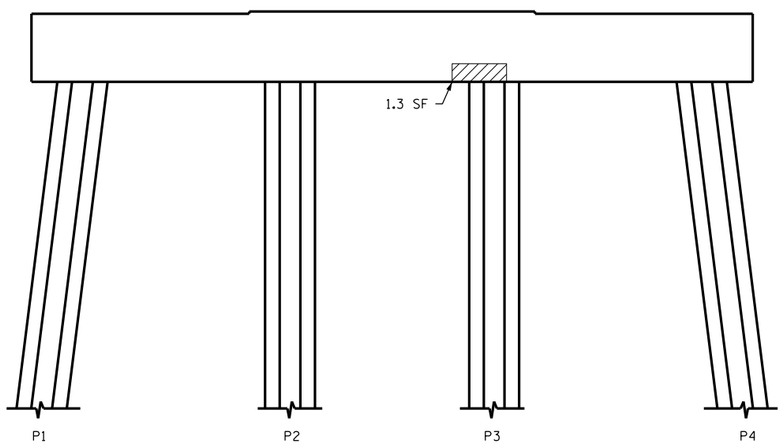
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



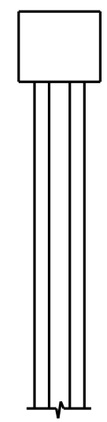

PLAN
TOP OF CAP



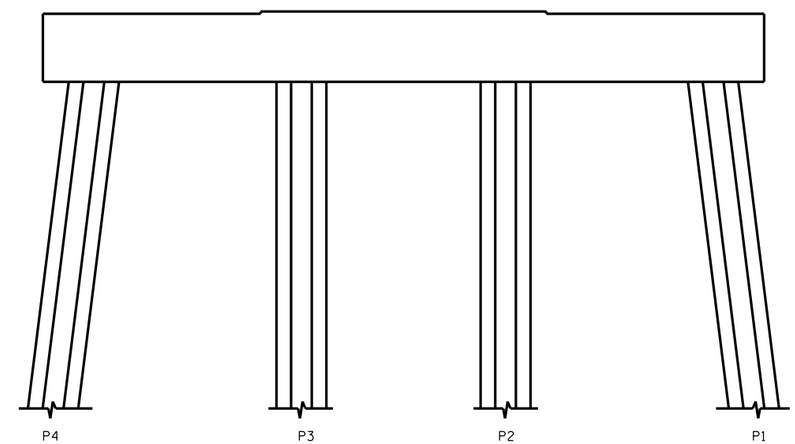
END VIEW
NORTH SIDE



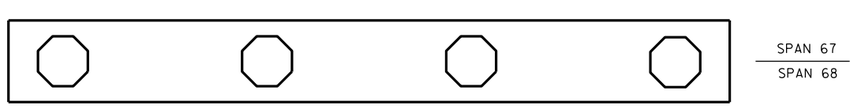

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 67

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-104 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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## NOTES:

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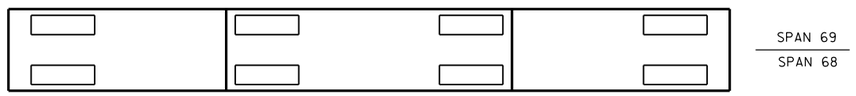
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

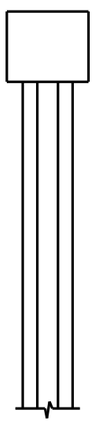
## REPAIR QUANTITY TABLE

| REPAIRS BENT 68 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.7 | 1.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

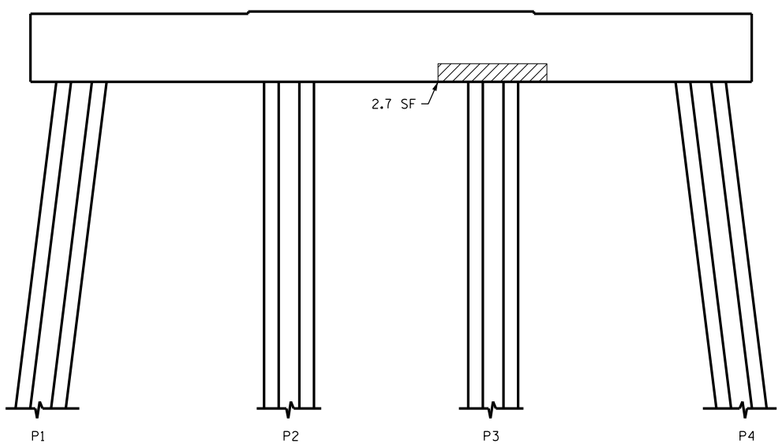
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



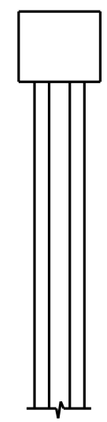

PLAN
TOP OF CAP



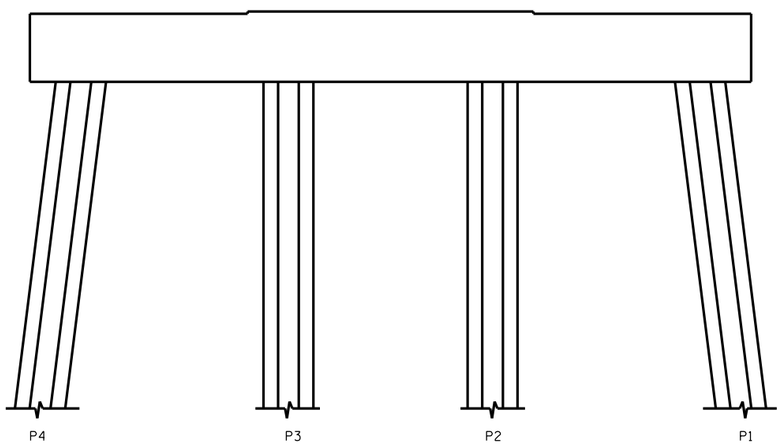
END VIEW
NORTH SIDE



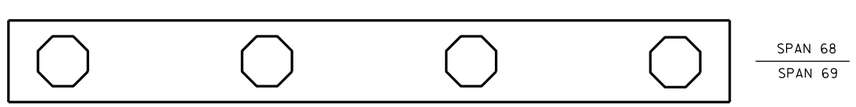

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 68

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-105 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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## NOTES:

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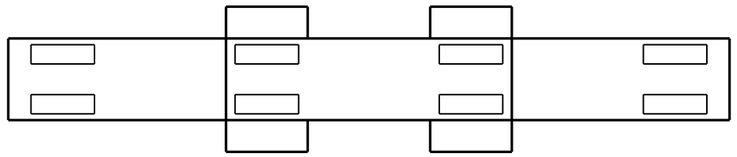
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

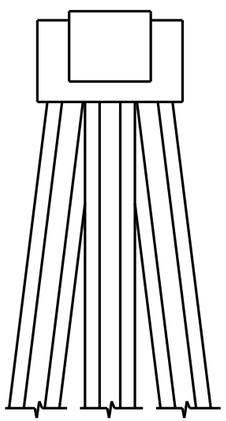
| REPAIRS BENT 69 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

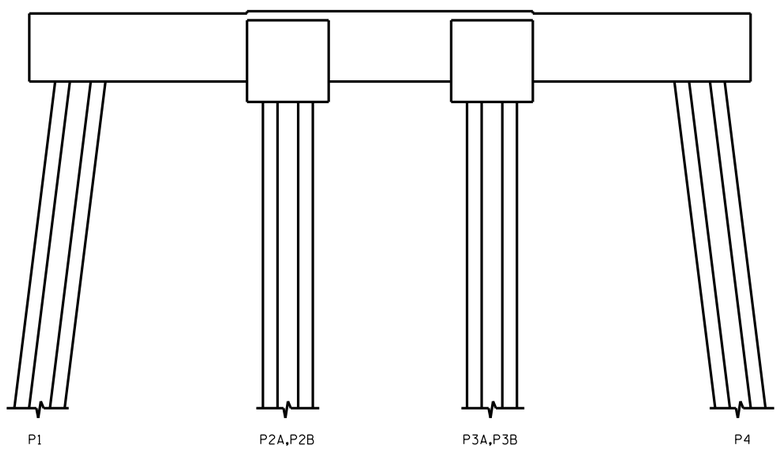


SPAN 70
SPAN 69

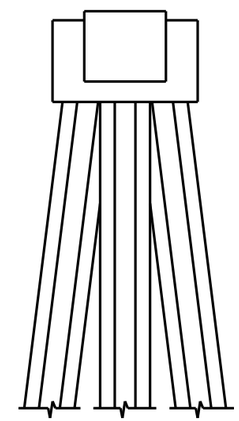
PLAN
TOP OF CAP



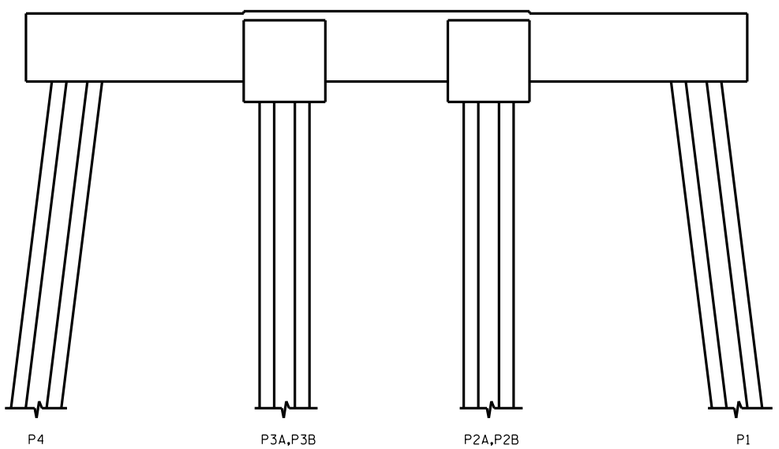
END VIEW
NORTH SIDE



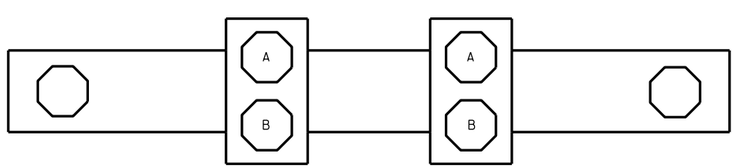

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 69
SPAN 70

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 69

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-106 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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ssandor

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

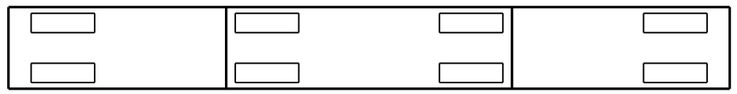
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

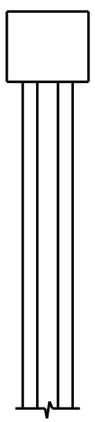
## REPAIR QUANTITY TABLE

| REPAIRS BENT 70 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

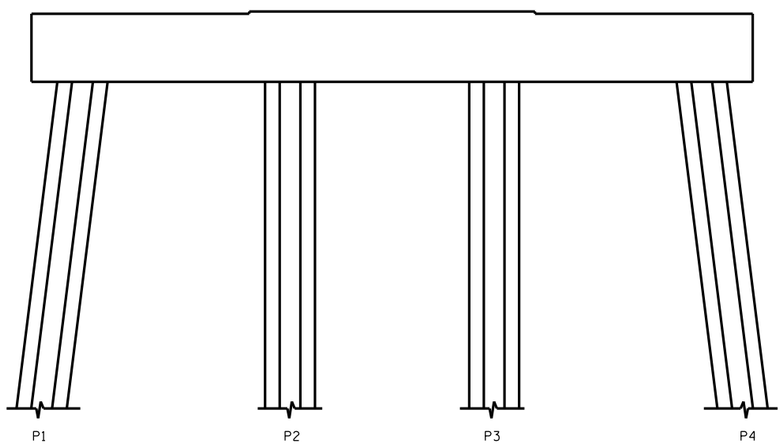
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



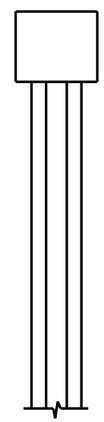

PLAN
TOP OF CAP



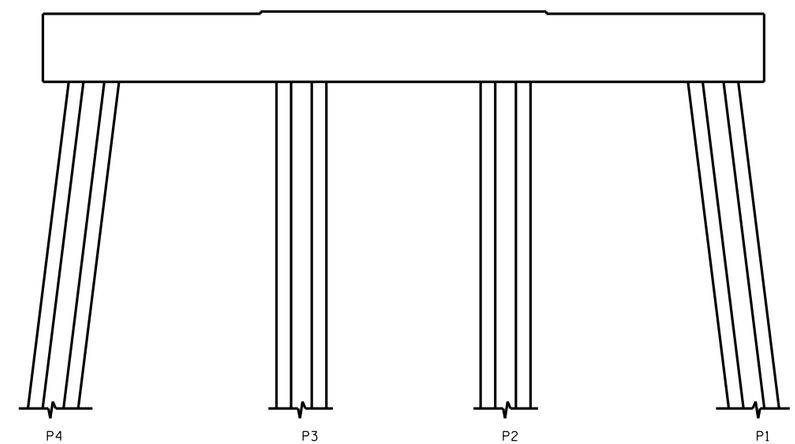
END VIEW
NORTH SIDE



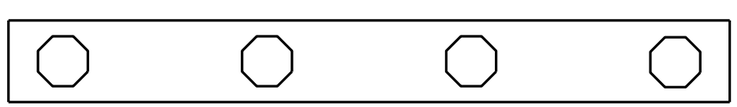

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 70

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-107 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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DRAWN BY : P. D. BRYANT DATE : 4-2016
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## 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.

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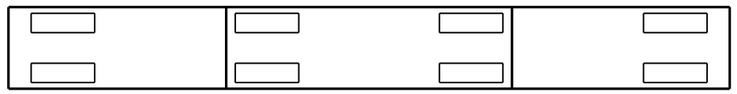
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

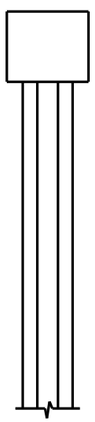
| REPAIRS BENT 71 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

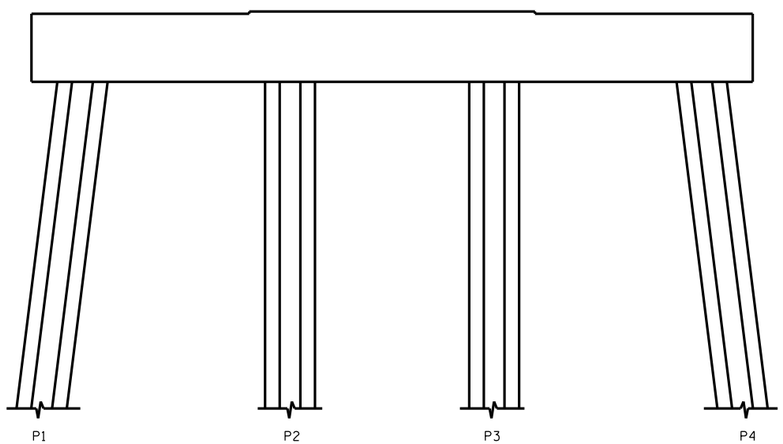


SPAN 72
SPAN 71

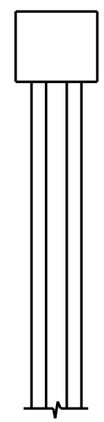
PLAN
TOP OF CAP



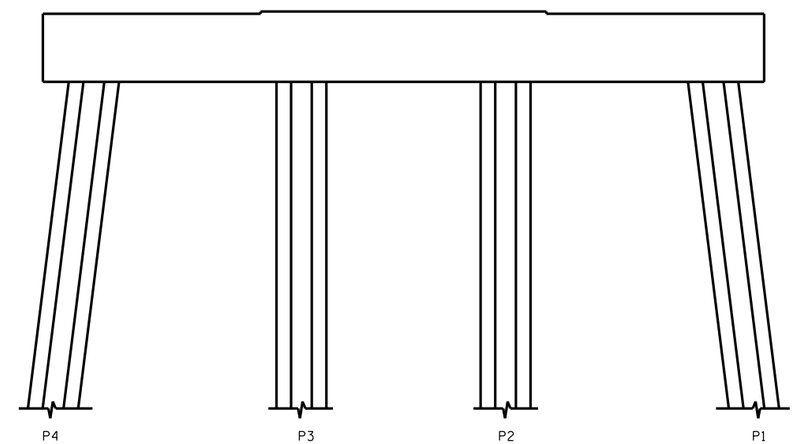
END VIEW
NORTH SIDE



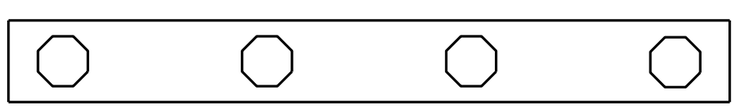

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 71
SPAN 72

PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 71

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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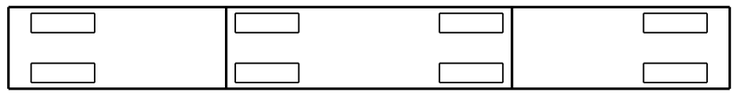
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

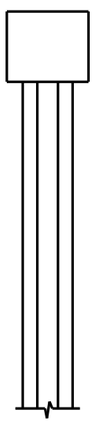
| REPAIRS BENT 72 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

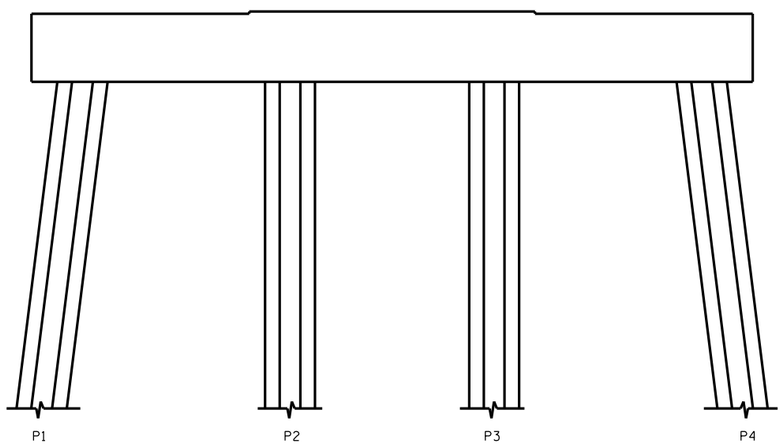


SPAN 73
SPAN 72

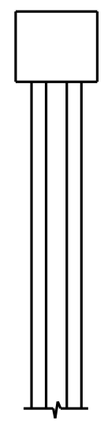
PLAN
TOP OF CAP



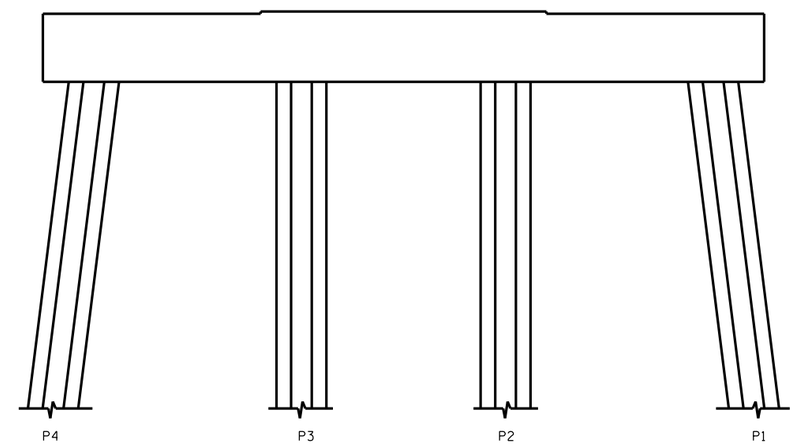
END VIEW
NORTH SIDE



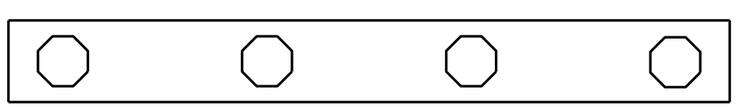

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 72
SPAN 73

PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 72

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-109 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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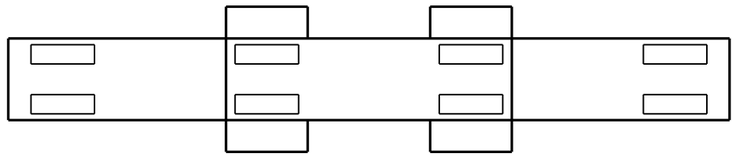
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

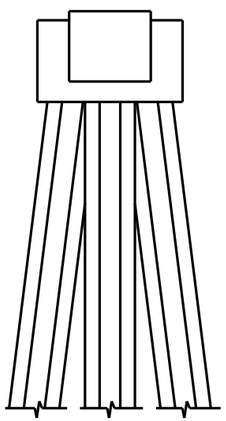
| REPAIRS BENT 73 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

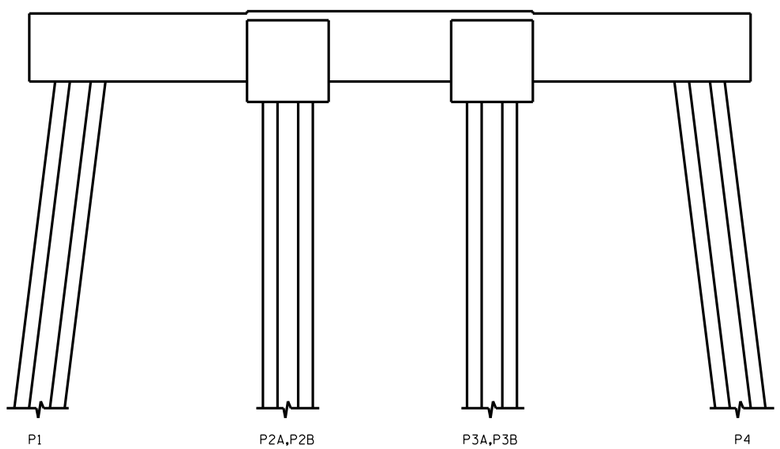


SPAN 74
SPAN 73

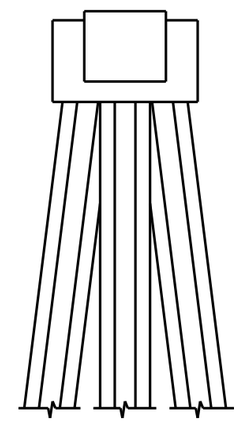
PLAN
TOP OF CAP



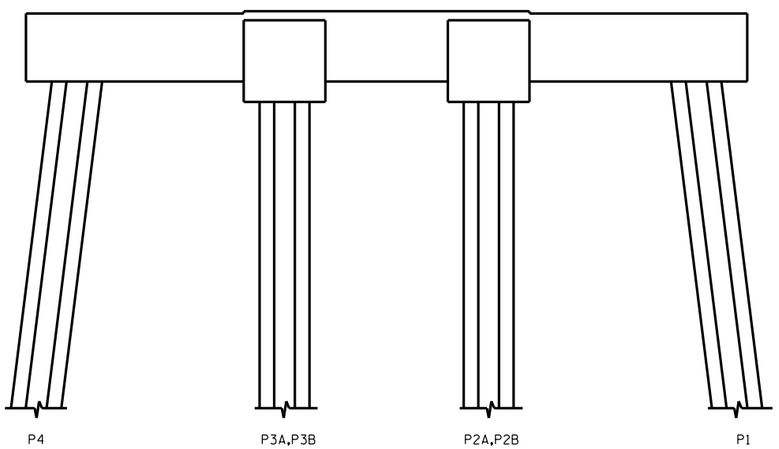
END VIEW
NORTH SIDE



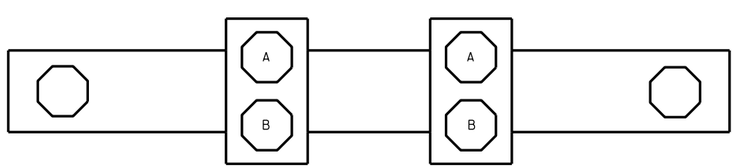

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 73
SPAN 74

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 73

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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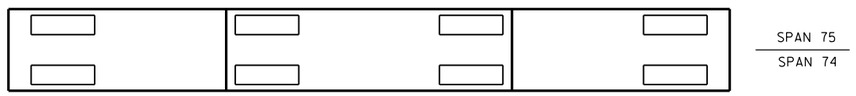
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

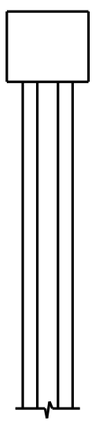
## REPAIR QUANTITY TABLE

| REPAIRS BENT 74 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.0 | 1.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 1.5 | | |

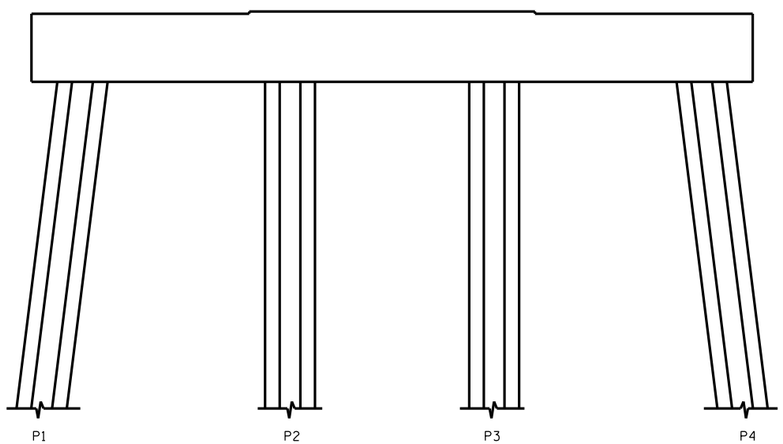
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



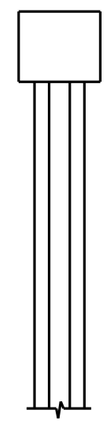

PLAN
TOP OF CAP



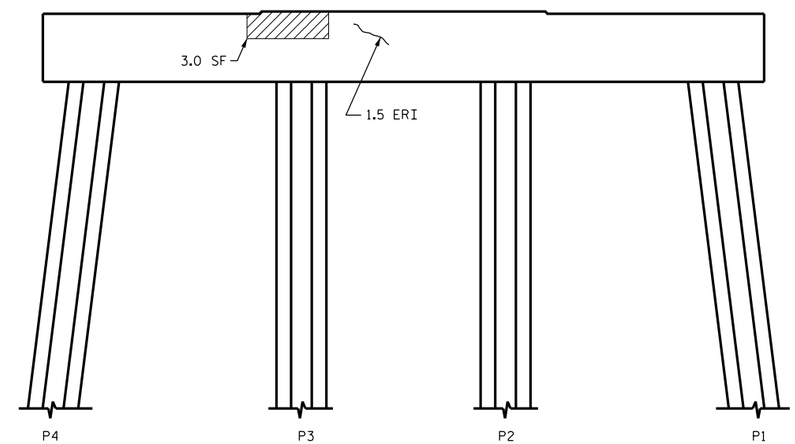
END VIEW
NORTH SIDE



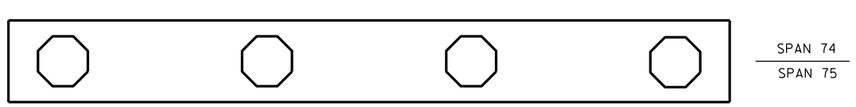

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 74

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| 1 | | | 3 | | | TOTAL SHEETS |
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

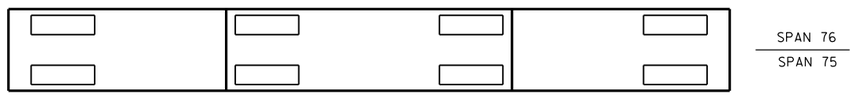
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

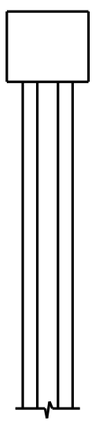
## REPAIR QUANTITY TABLE

| REPAIRS BENT 75 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

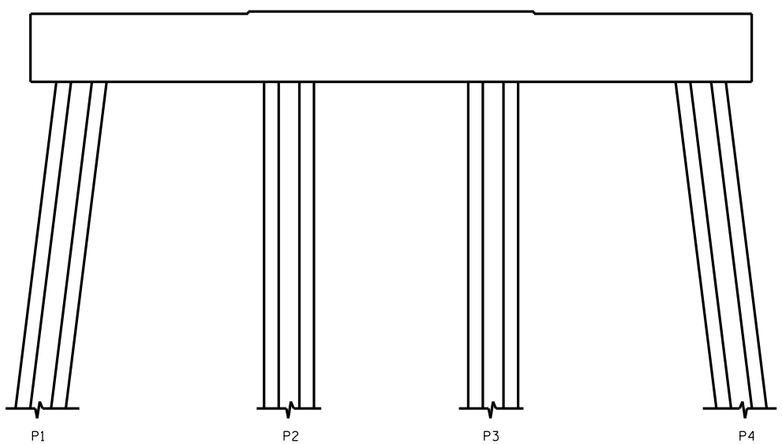
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



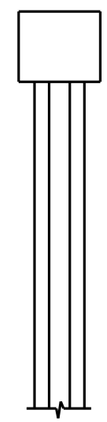

PLAN
TOP OF CAP



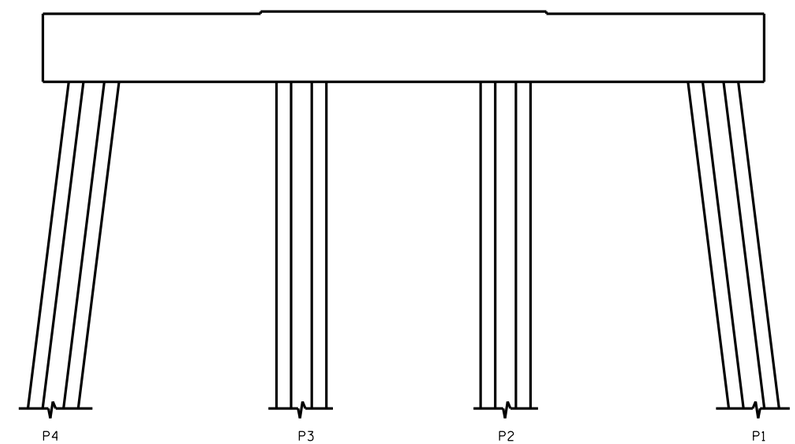
END VIEW
NORTH SIDE



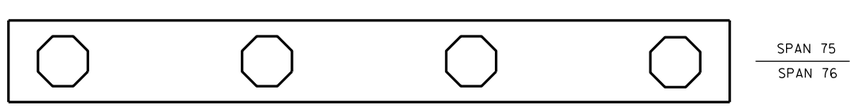

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 75

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-112 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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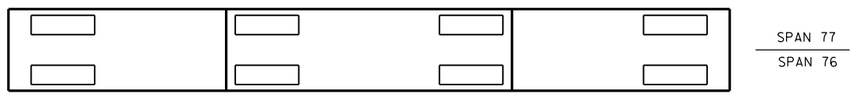
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

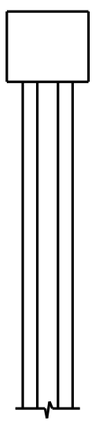
## REPAIR QUANTITY TABLE

| REPAIRS BENT 76 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

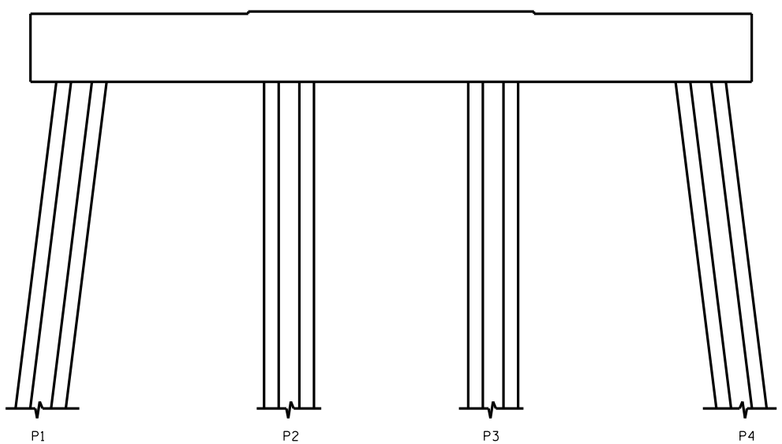
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



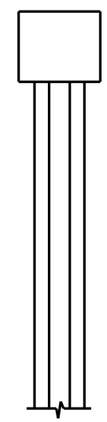

PLAN
TOP OF CAP



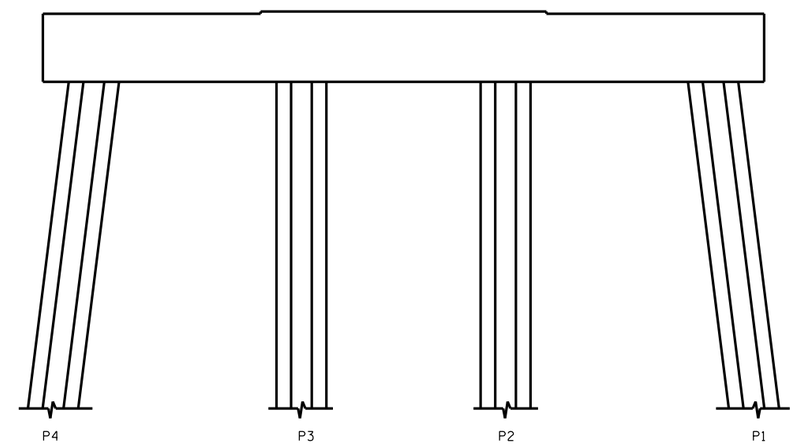
END VIEW
NORTH SIDE



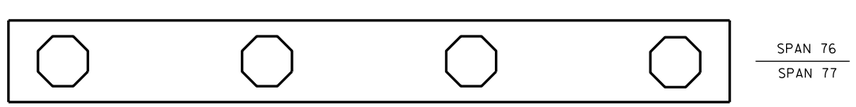

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 76

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-113 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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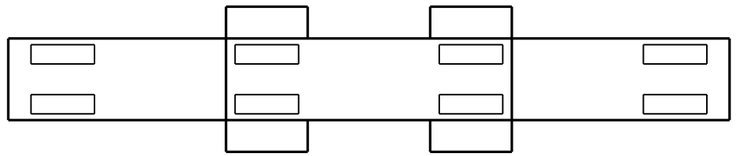
## REPAIR QUANTITY TABLE

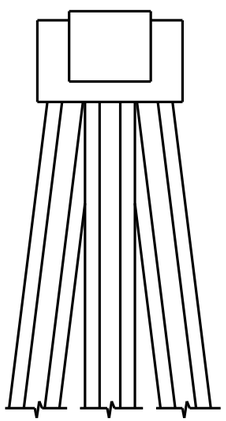
| REPAIRS BENT 77 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

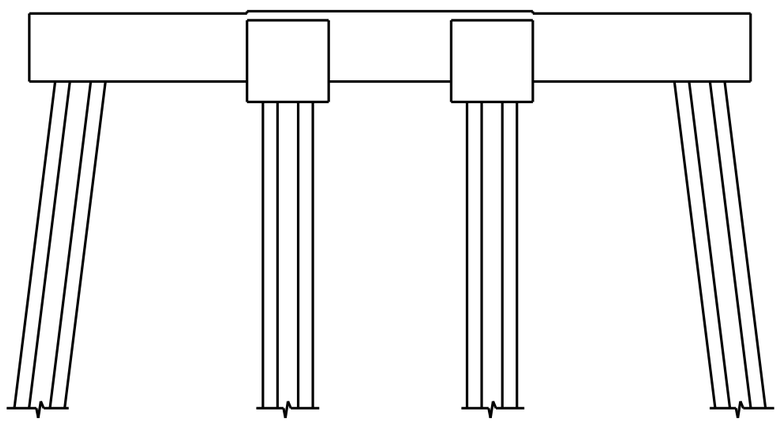


SPAN 78
SPAN 77

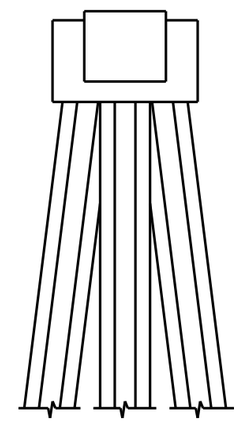
PLAN
TOP OF CAP



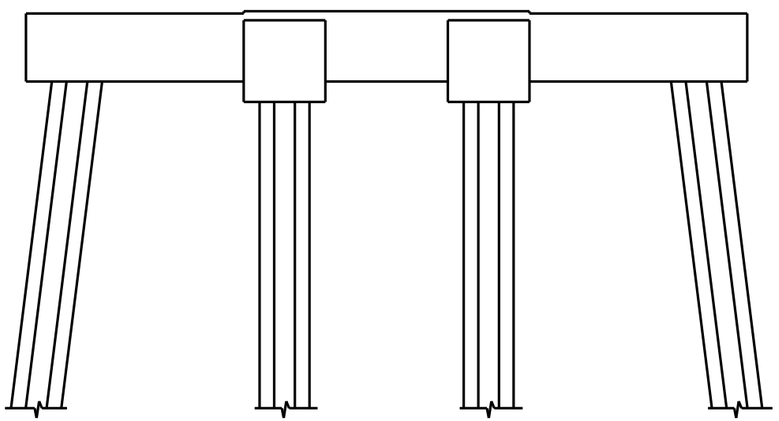
END VIEW
NORTH SIDE



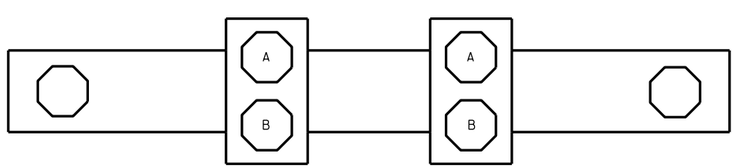

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 77
SPAN 78

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 77

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-114 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
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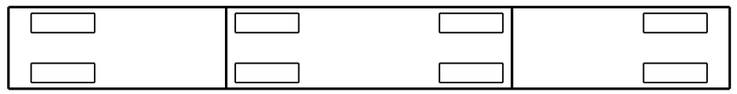
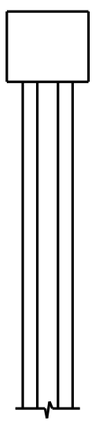
## REPAIR QUANTITY TABLE

| REPAIRS BENT 78 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 3.0 | | |

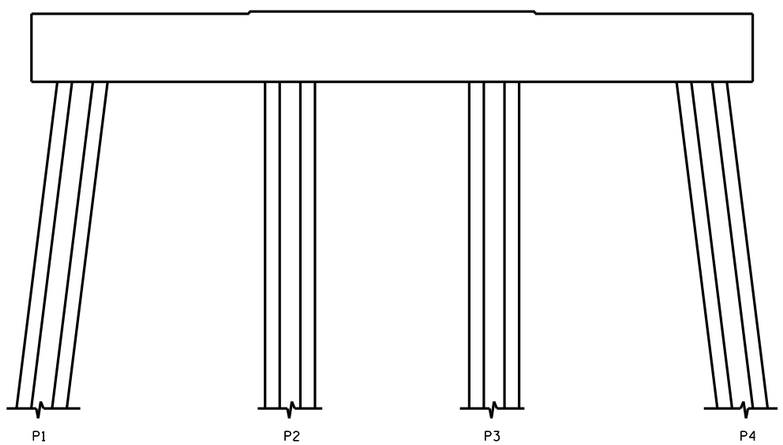
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



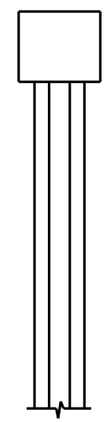

PLAN
TOP OF CAP



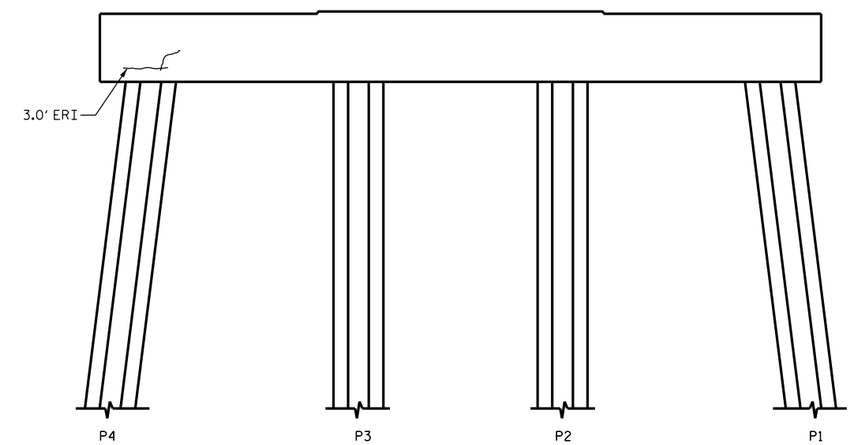
END VIEW
NORTH SIDE



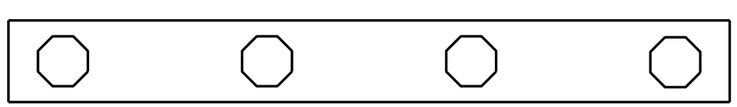

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 78

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-115 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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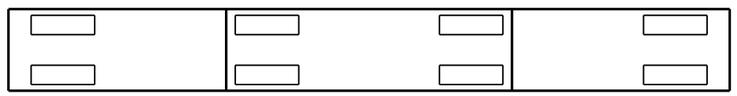
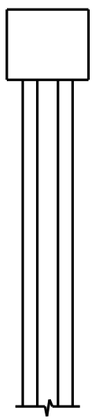
## REPAIR QUANTITY TABLE

| REPAIRS BENT 79 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.3 | 1.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

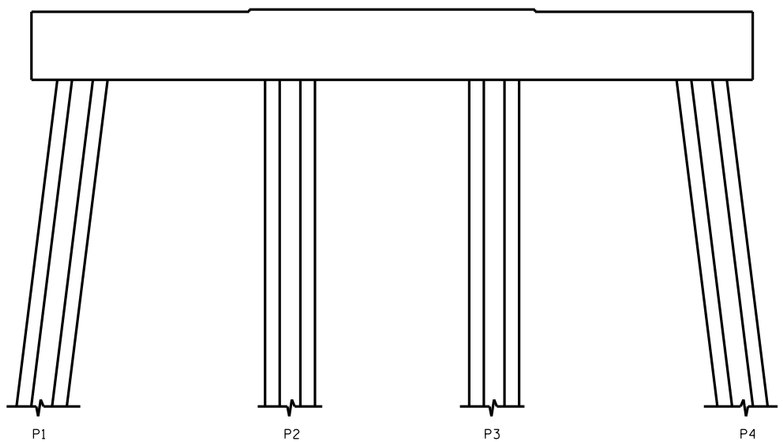
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



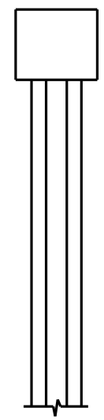

PLAN
TOP OF CAP



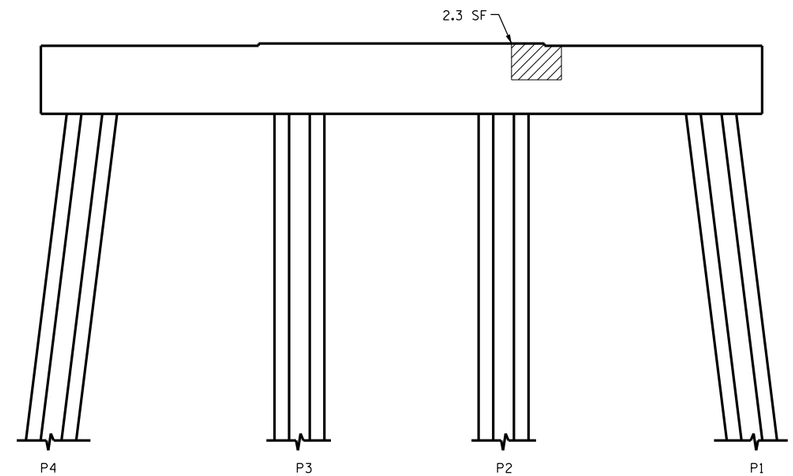
END VIEW
NORTH SIDE



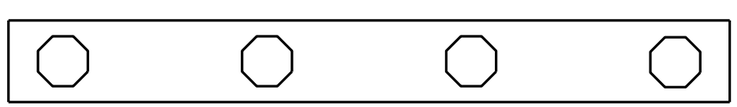

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 79

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-116 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

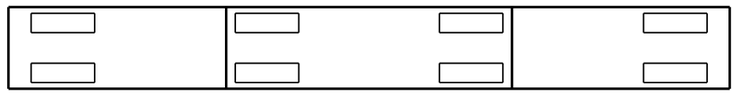
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

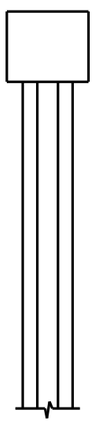
| REPAIRS BENT 80 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

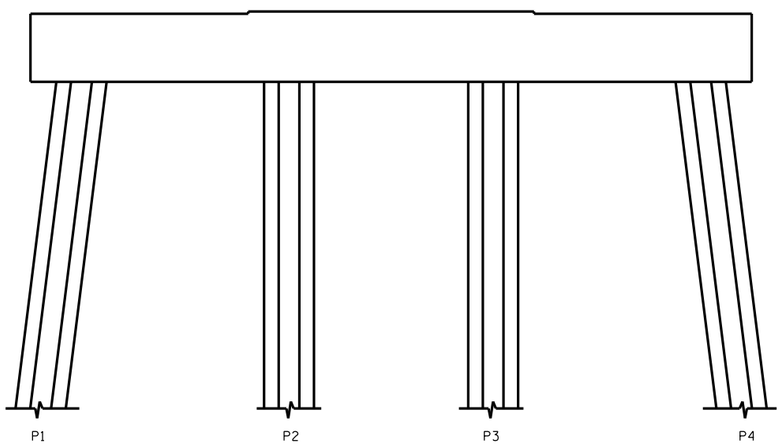


SPAN 81
SPAN 80

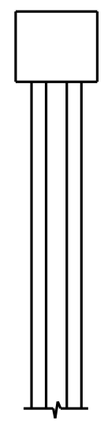
PLAN
TOP OF CAP



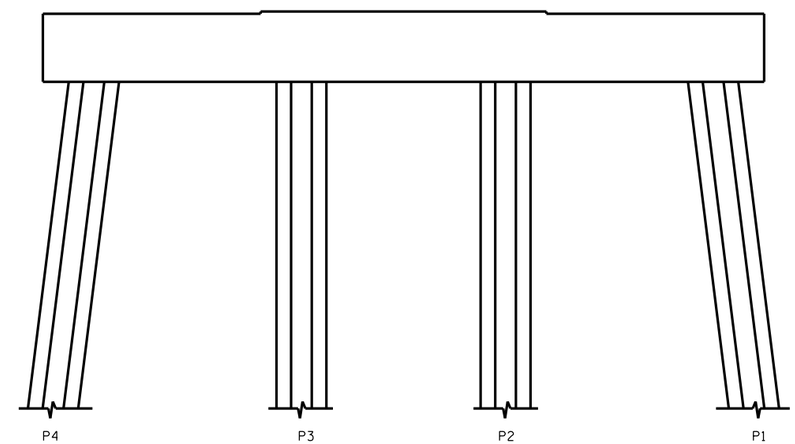
END VIEW
NORTH SIDE



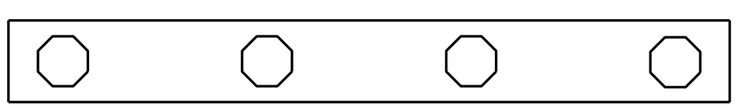

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 80
SPAN 81

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 80

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-117 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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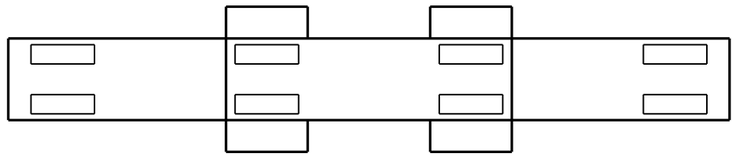
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

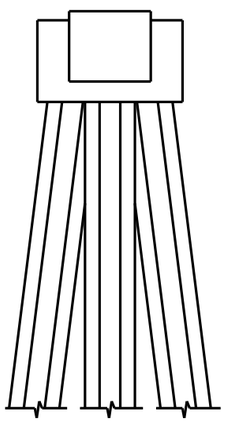
| REPAIRS BENT 81 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

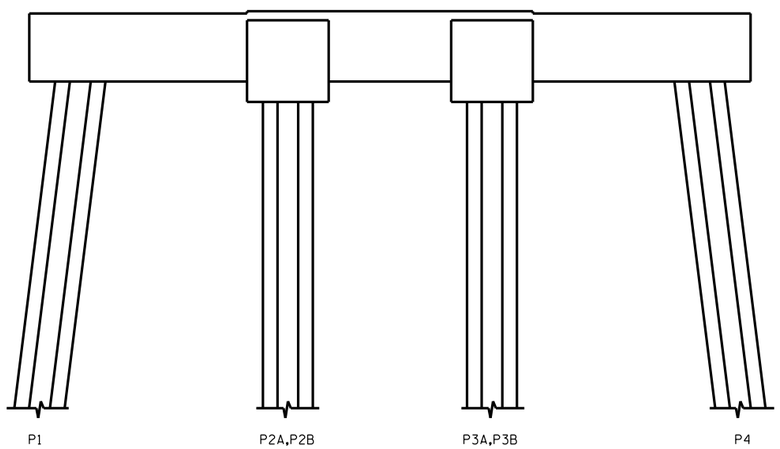


SPAN 82
SPAN 81

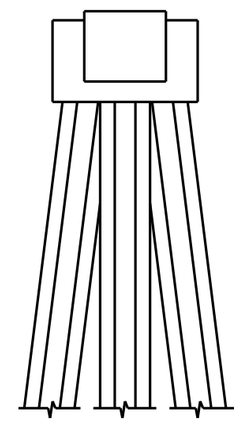
PLAN
TOP OF CAP



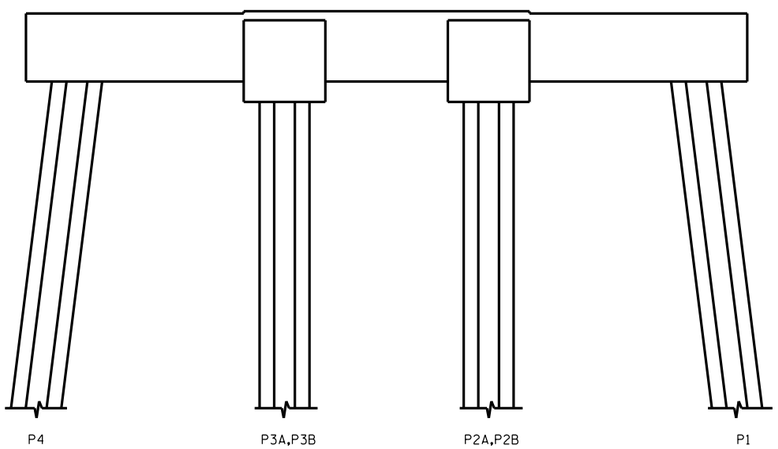
END VIEW
NORTH SIDE



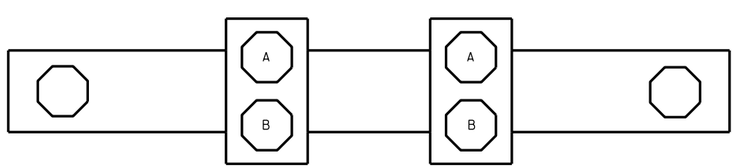

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 81
SPAN 82

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 81

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-118 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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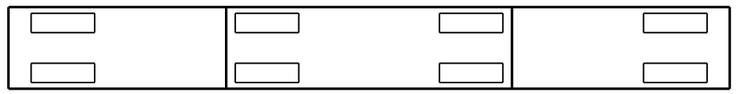
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

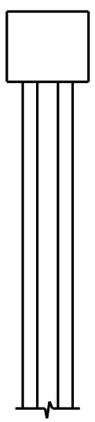
## REPAIR QUANTITY TABLE

| REPAIRS BENT 82 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

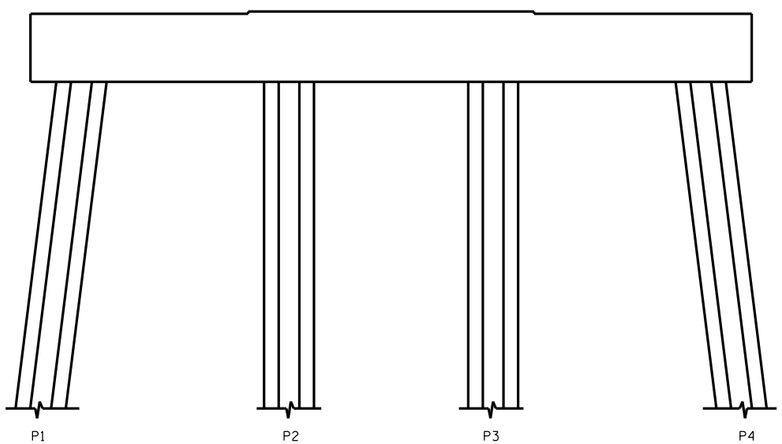
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



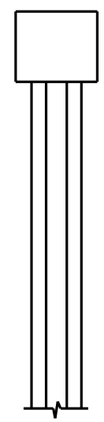

PLAN
TOP OF CAP



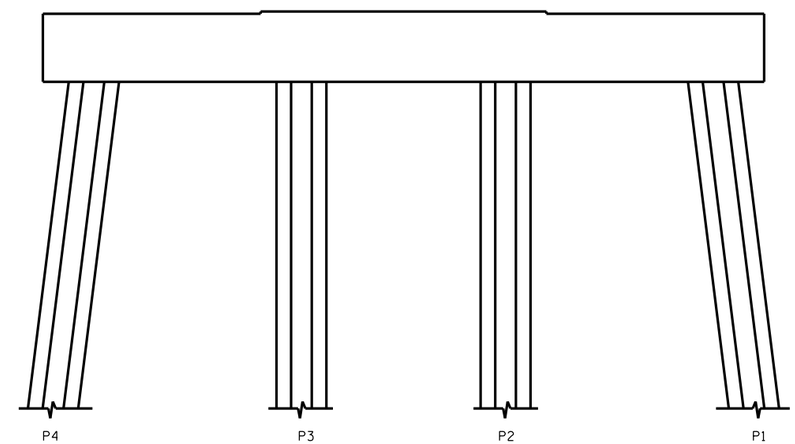
END VIEW
NORTH SIDE



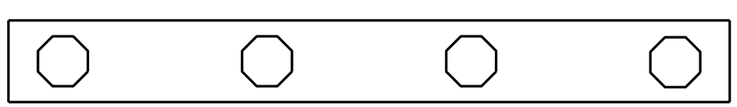

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 82

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-119 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
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## NOTES:

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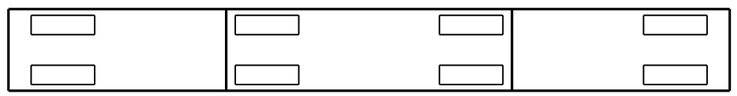
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

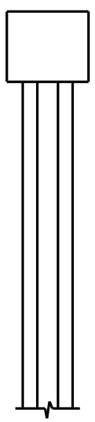
## REPAIR QUANTITY TABLE

| REPAIRS BENT 83 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.2 | 0.9 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

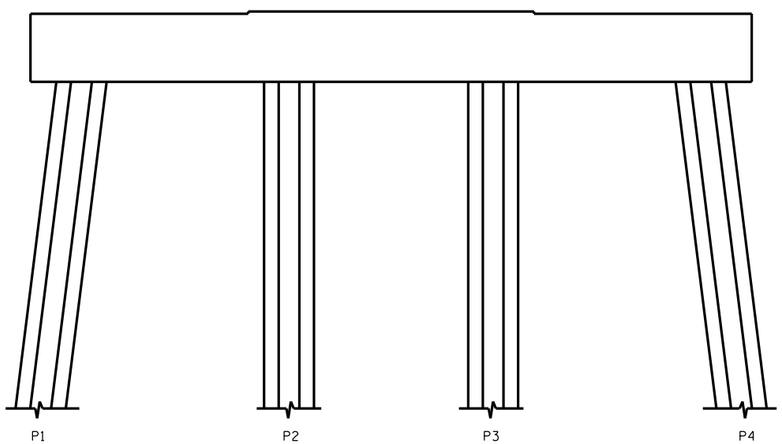
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



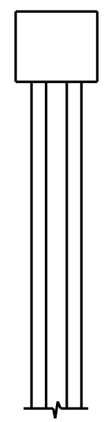

PLAN
TOP OF CAP



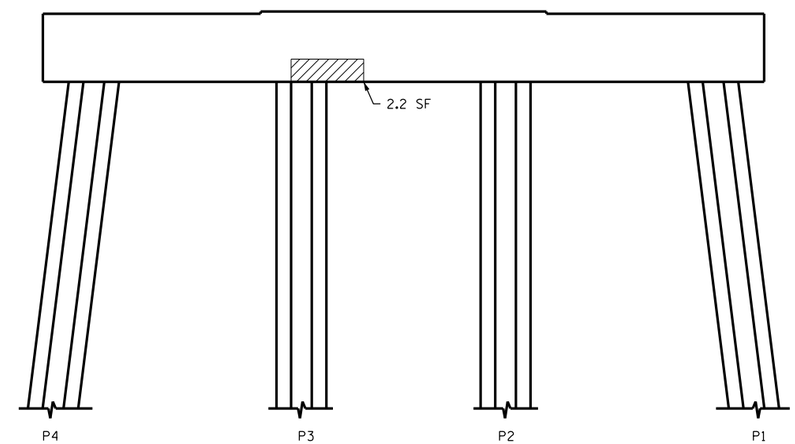
END VIEW
NORTH SIDE



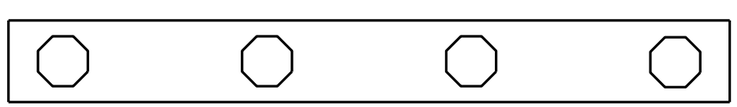

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 83

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-120 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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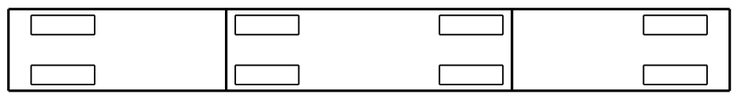
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

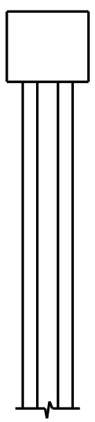
| REPAIRS BENT 84 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

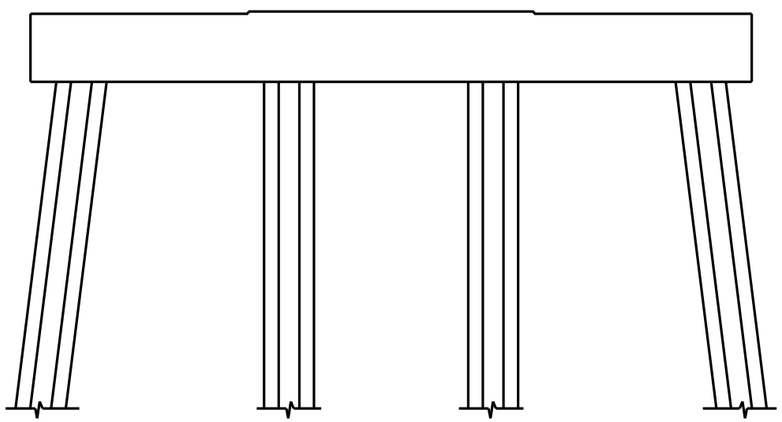


SPAN 85
SPAN 84

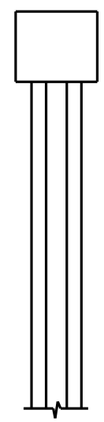
PLAN
TOP OF CAP



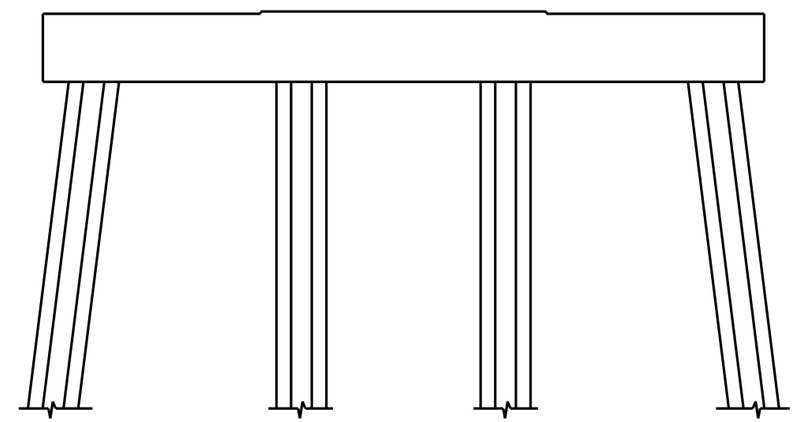
END VIEW
NORTH SIDE



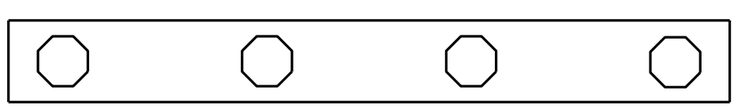

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 84
SPAN 85

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 84

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-121 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:55
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

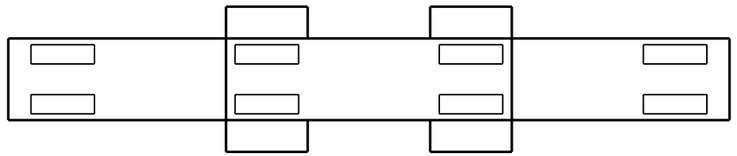
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

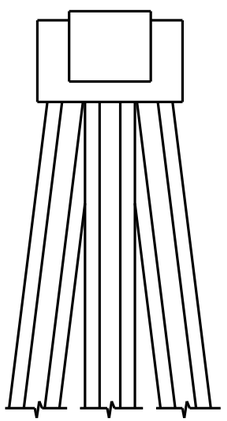
| REPAIRS BENT 85 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

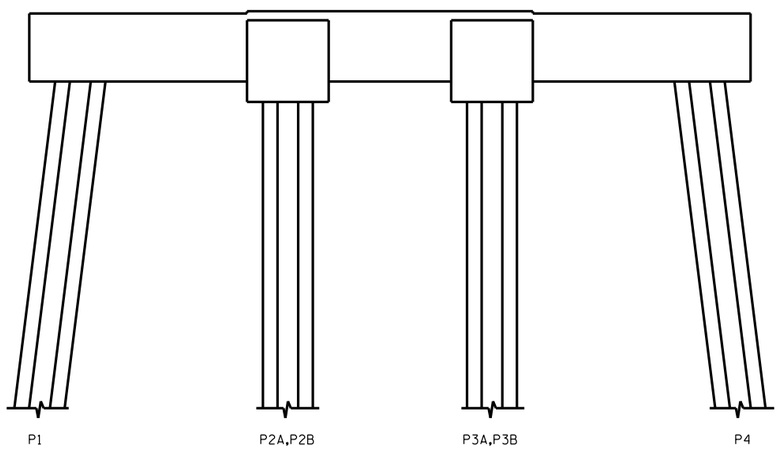


SPAN 86
SPAN 85

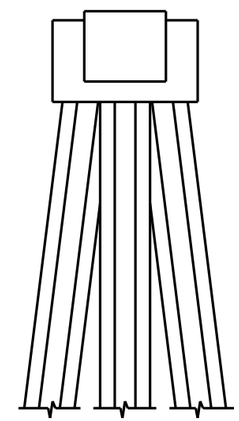
PLAN
TOP OF CAP



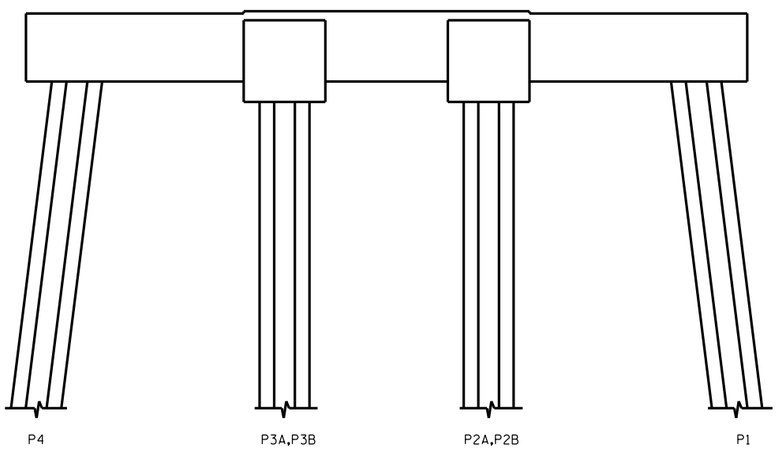
END VIEW
NORTH SIDE



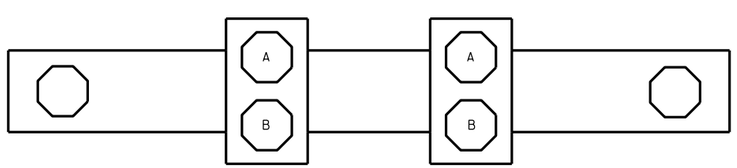

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 85
SPAN 86

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 85

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-122 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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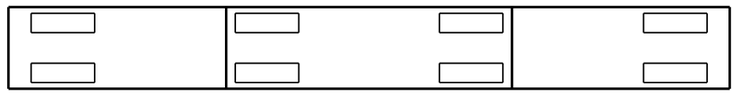
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

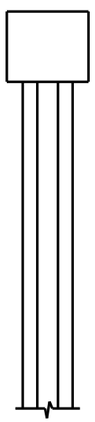
## REPAIR QUANTITY TABLE

| REPAIRS BENT 86 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

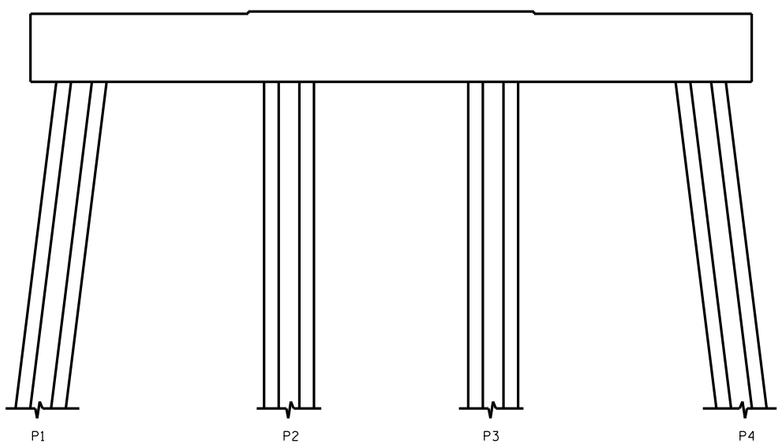
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



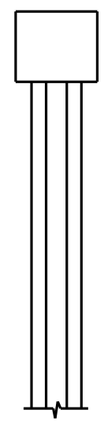

PLAN
TOP OF CAP



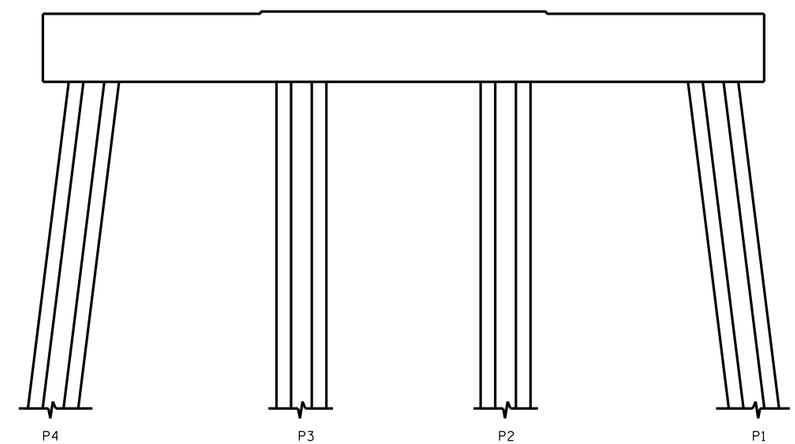
END VIEW
NORTH SIDE



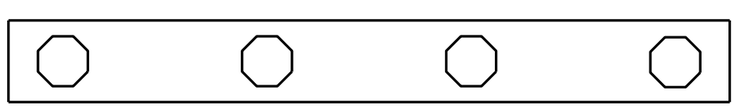

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 86

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-123 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 87 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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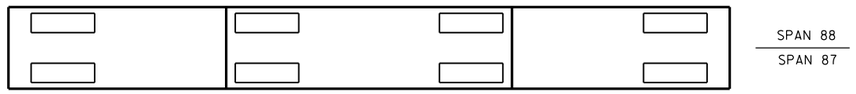
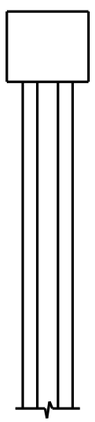
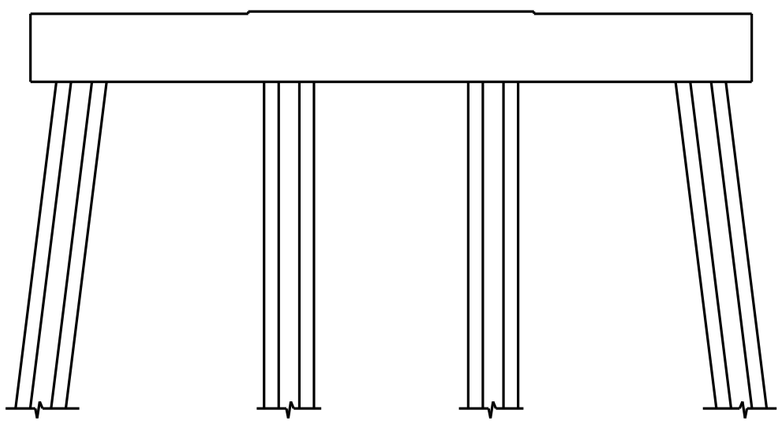


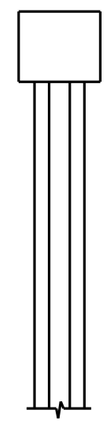

PLAN
TOP OF CAP



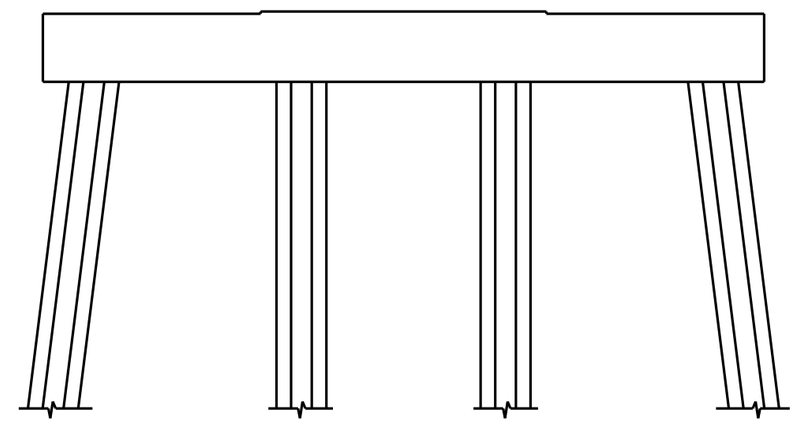
END VIEW
NORTH SIDE



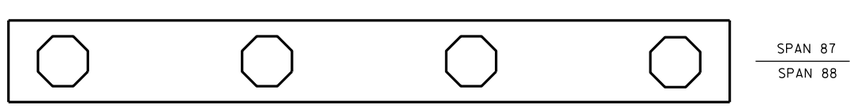

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 87

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-124 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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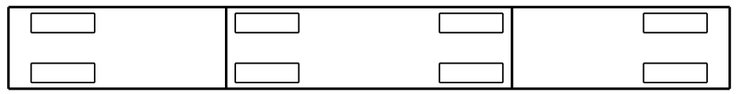
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

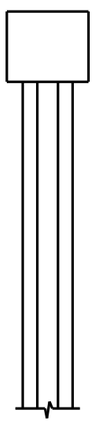
| REPAIRS BENT 88 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

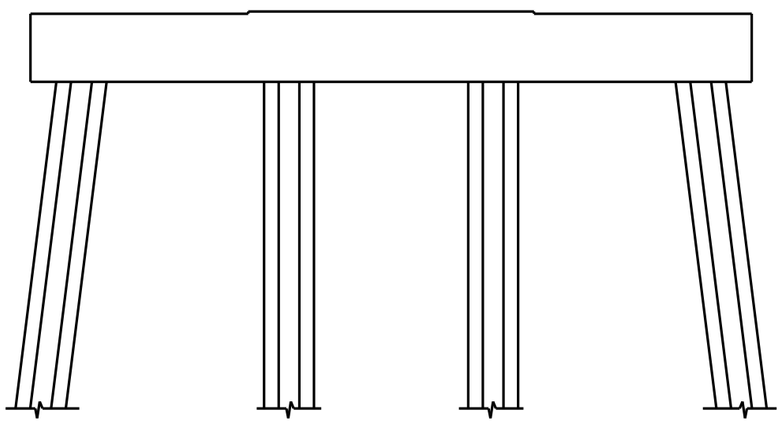


SPAN 89
SPAN 88

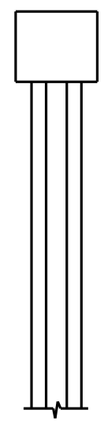
PLAN
TOP OF CAP



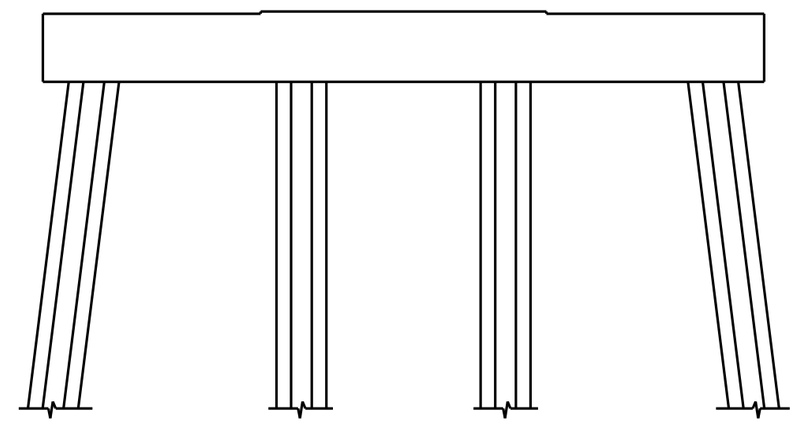
END VIEW
NORTH SIDE



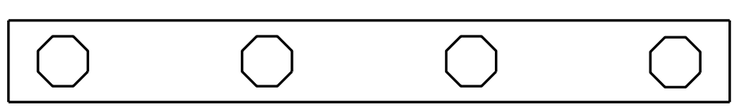

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 88
SPAN 89

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 88

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-125 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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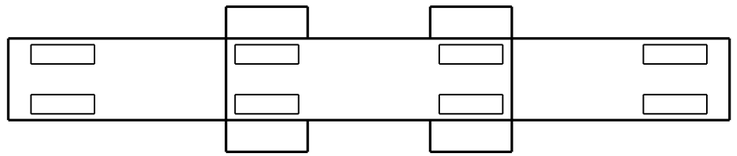
## REPAIR QUANTITY TABLE

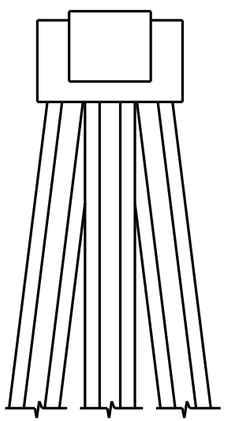
| REPAIRS BENT 89 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

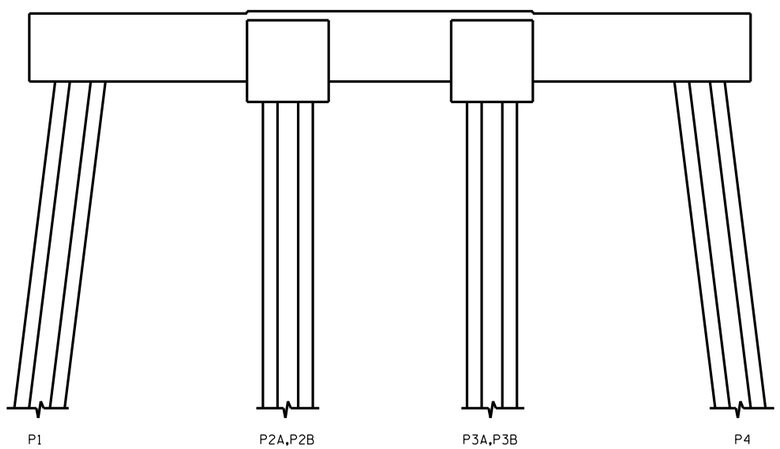


SPAN 90
SPAN 89

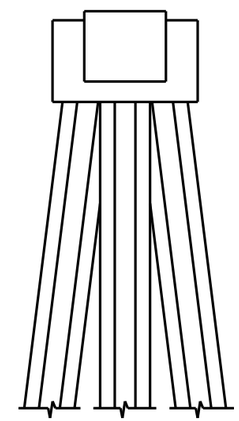
PLAN
TOP OF CAP



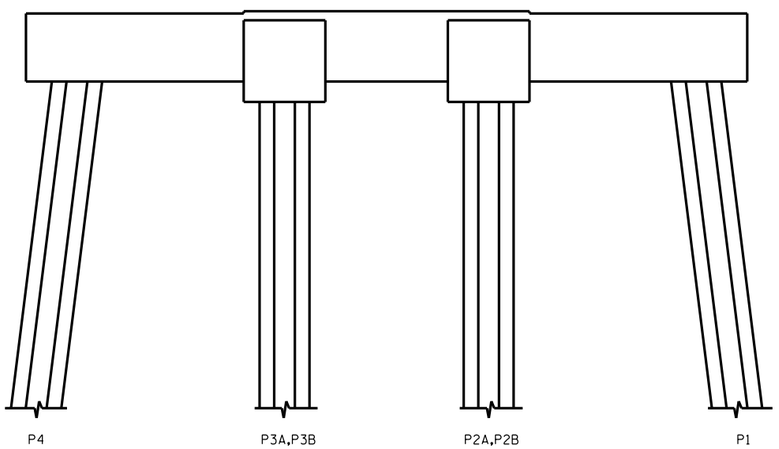
END VIEW
NORTH SIDE



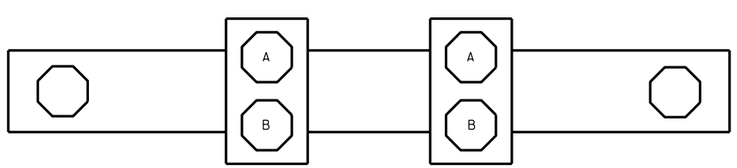

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 90
SPAN 89

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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DocuSigned by:
Paul Bryant
3653D2AF1B77448...

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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 89

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-126 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

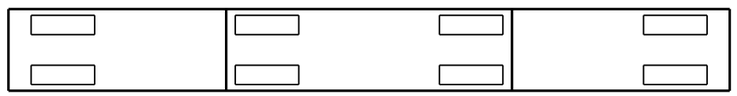
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

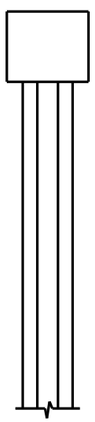
| REPAIRS BENT 90 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

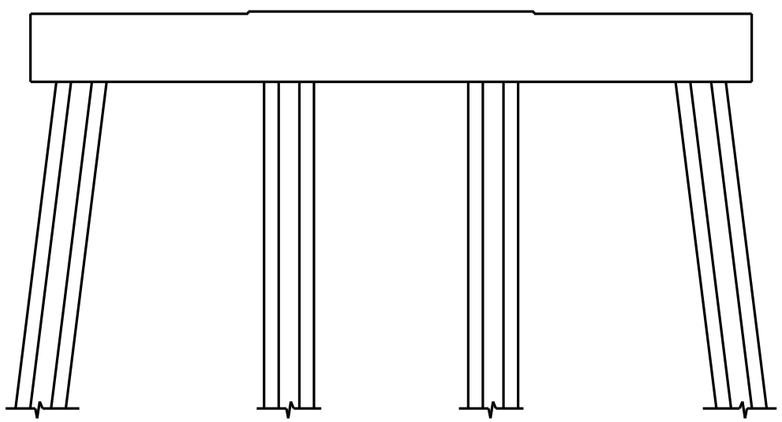


SPAN 91
SPAN 90

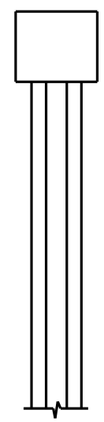
PLAN
TOP OF CAP



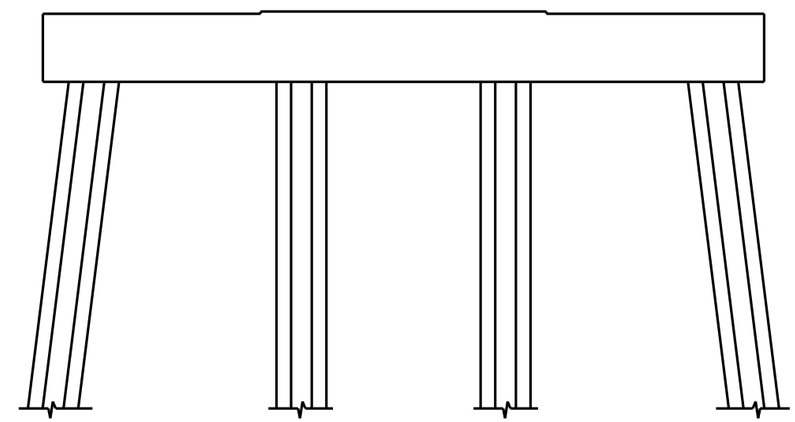
END VIEW
NORTH SIDE



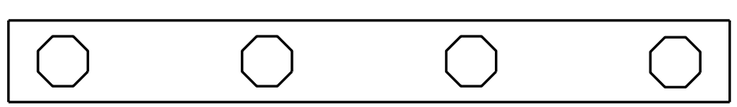

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 90
SPAN 91

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 90

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-127 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

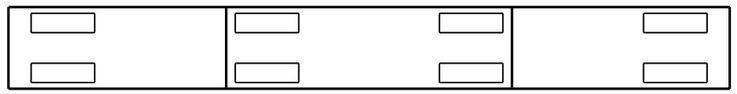
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

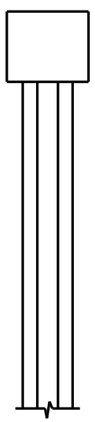
## REPAIR QUANTITY TABLE

| REPAIRS BENT 91 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

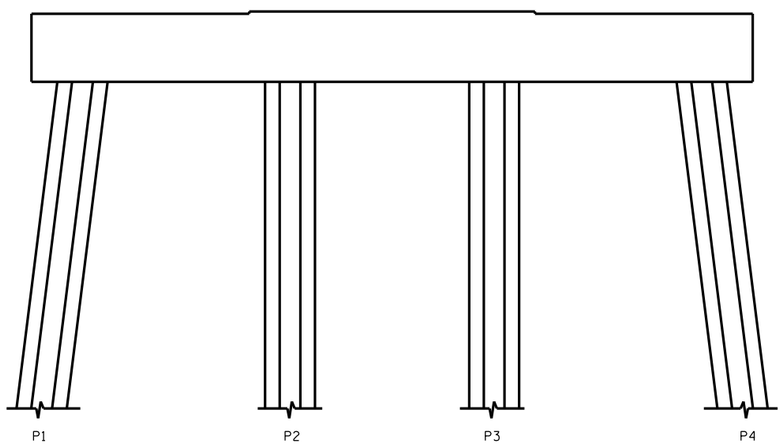
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



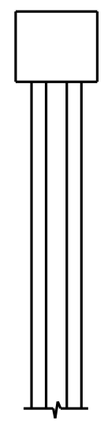

PLAN
TOP OF CAP



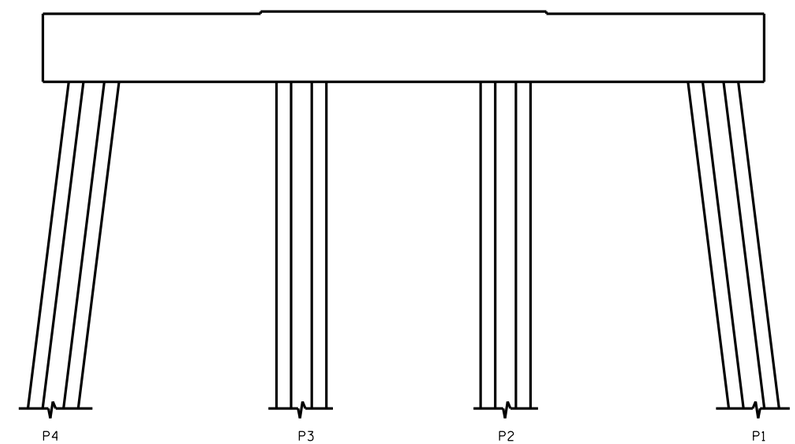
END VIEW
NORTH SIDE



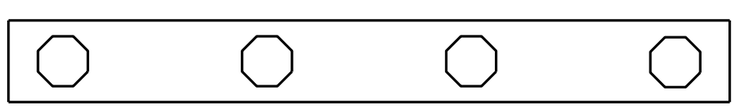

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 91

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-128 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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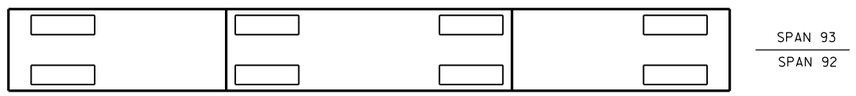
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

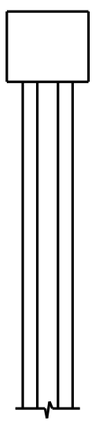
## REPAIR QUANTITY TABLE

| REPAIRS BENT 92 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

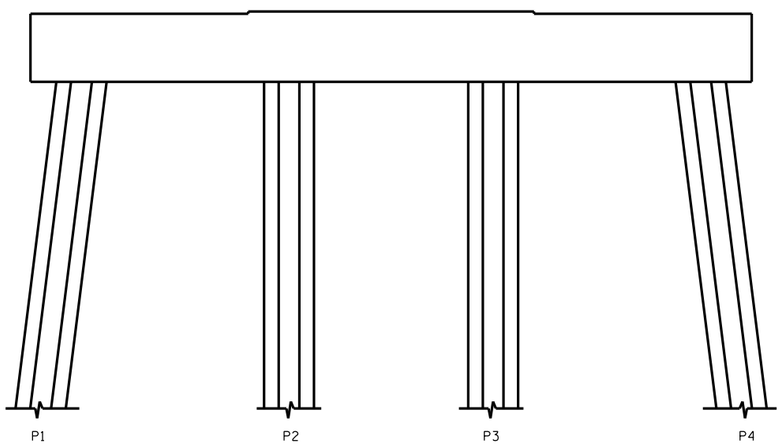
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



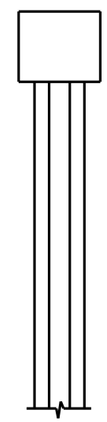

PLAN
TOP OF CAP



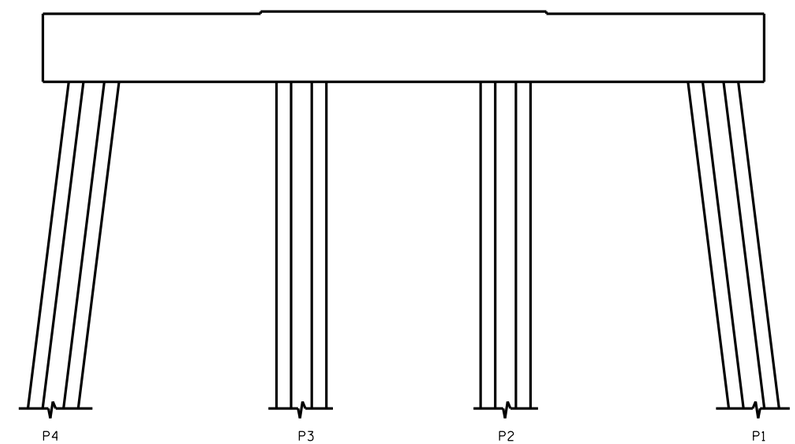
END VIEW
NORTH SIDE



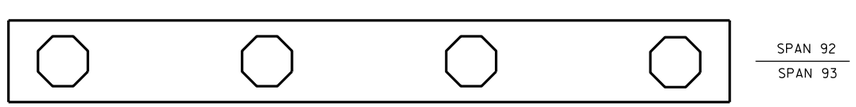

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 92

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-129 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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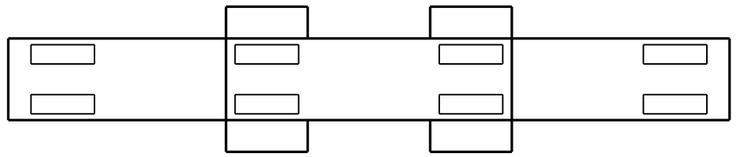
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

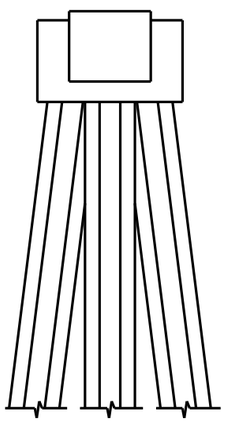
| REPAIRS BENT 93 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

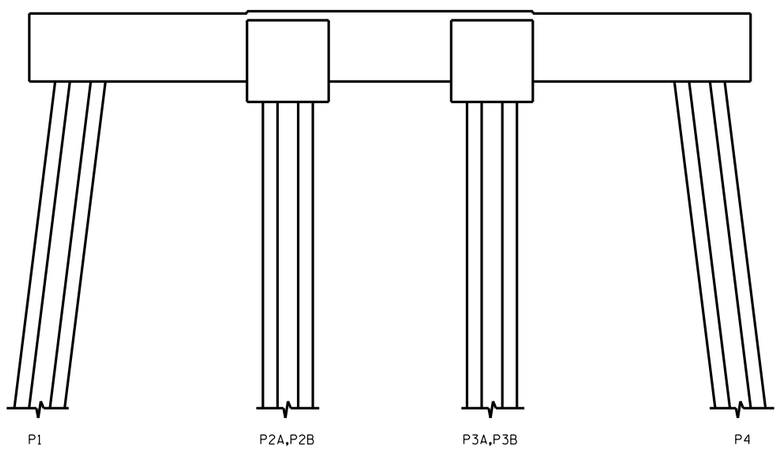


SPAN 94
SPAN 93

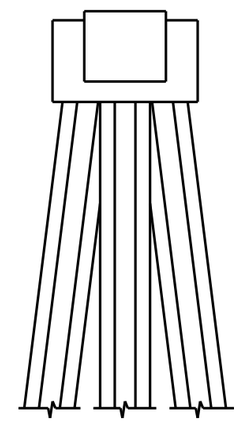
PLAN
TOP OF CAP



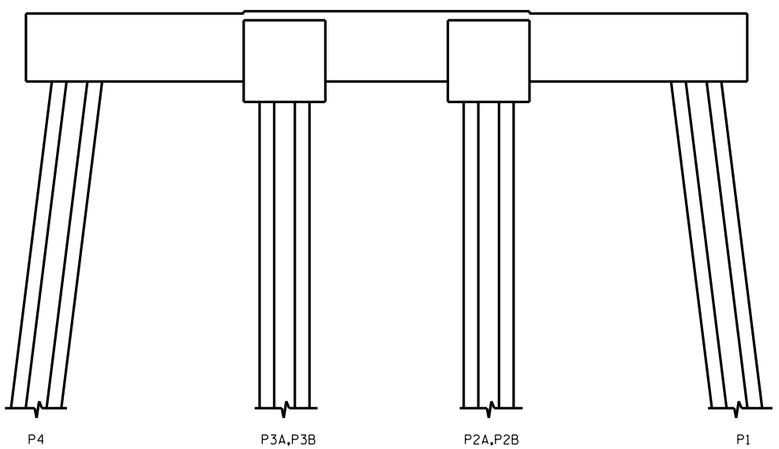
END VIEW
NORTH SIDE



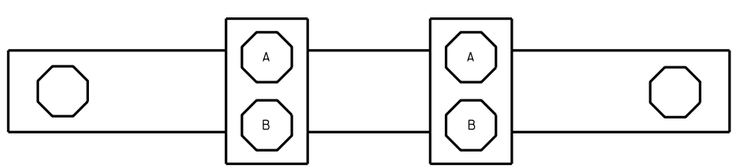

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 93
SPAN 94

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 93

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-130 |
| 1 | | | 3 | | | | TOTAL SHEETS |
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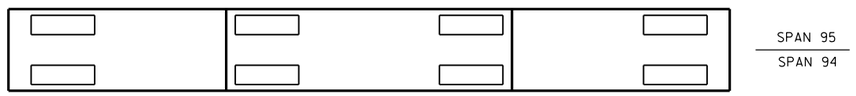
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

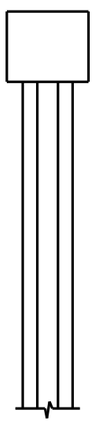
## REPAIR QUANTITY TABLE

| REPAIRS BENT 94 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.4 | 1.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

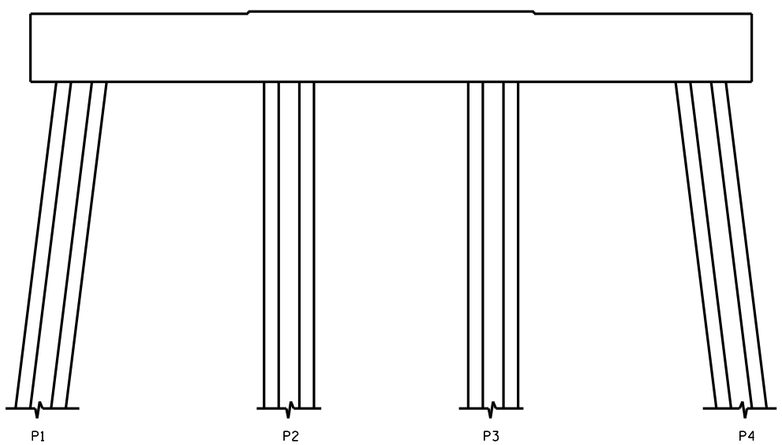
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



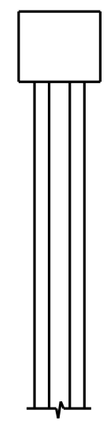

PLAN
TOP OF CAP



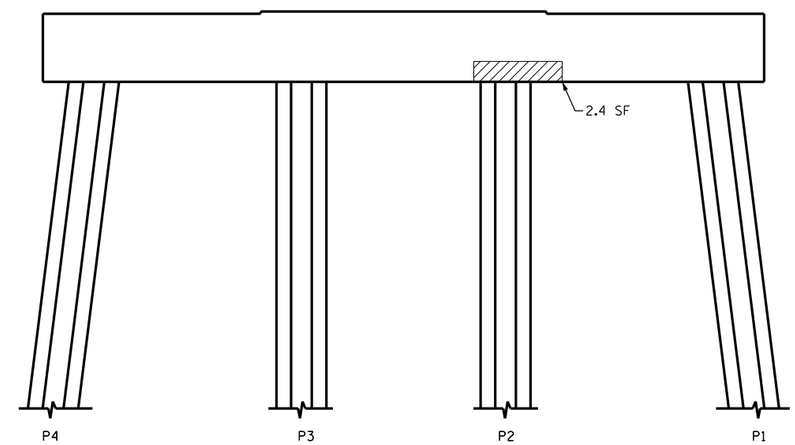
END VIEW
NORTH SIDE



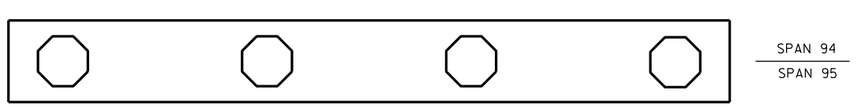

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 94

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-131 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

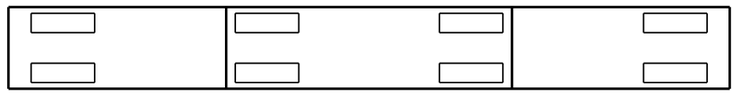
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

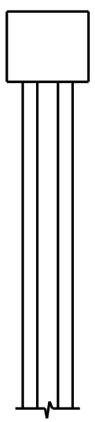
## REPAIR QUANTITY TABLE

| REPAIRS BENT 95 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

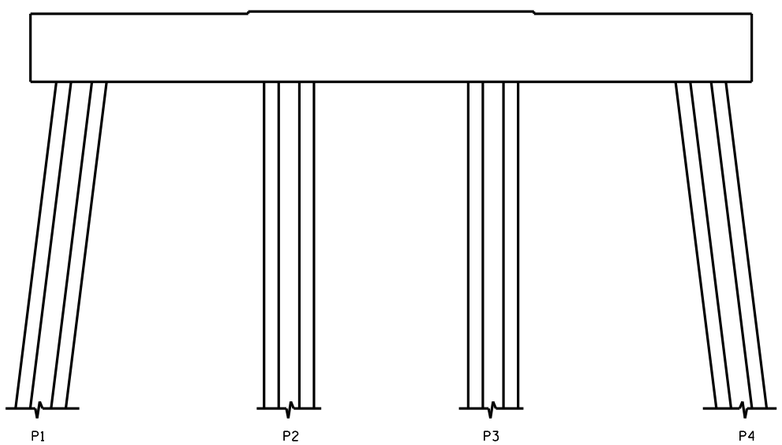
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



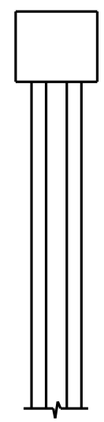

PLAN
TOP OF CAP



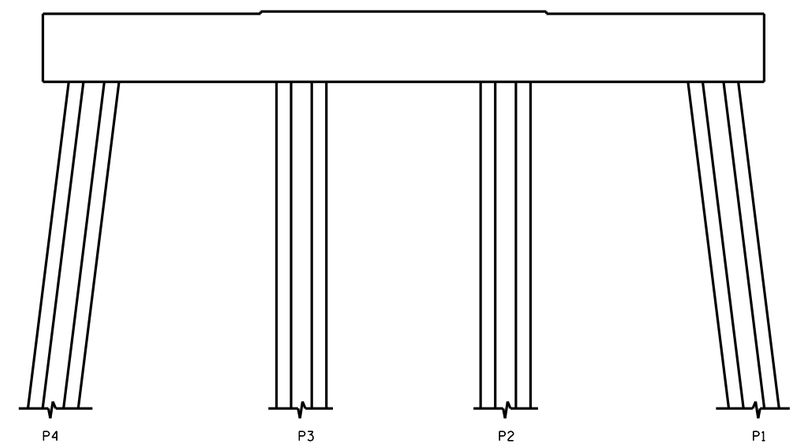
END VIEW
NORTH SIDE



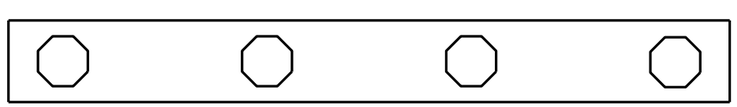

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 95

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-132 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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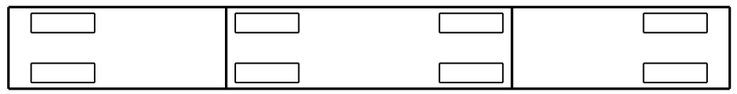
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

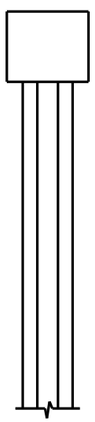
## REPAIR QUANTITY TABLE

| REPAIRS BENT 96 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

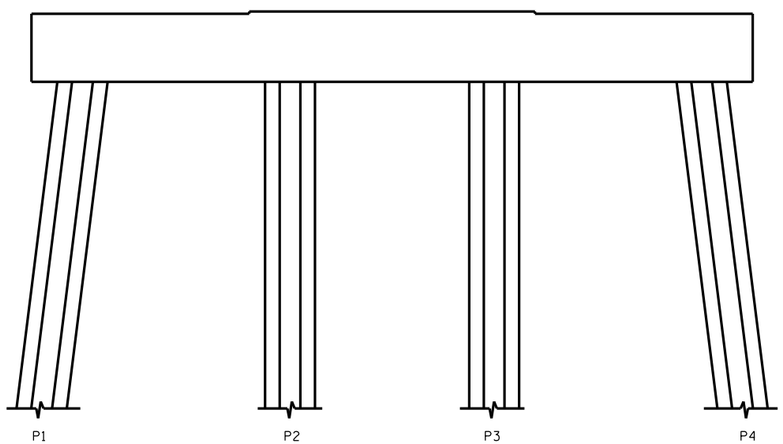
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



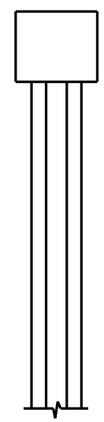

PLAN
TOP OF CAP



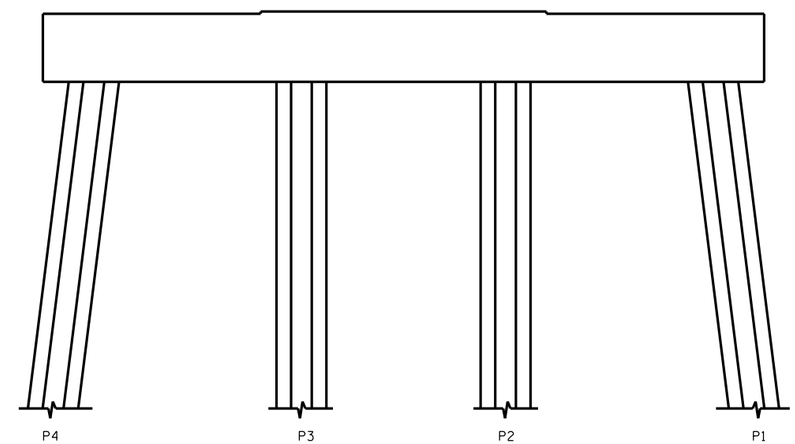
END VIEW
NORTH SIDE



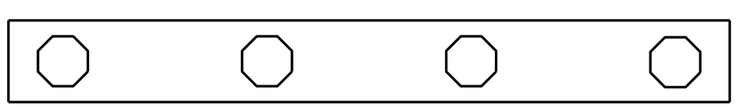

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 96

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-133 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 97 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
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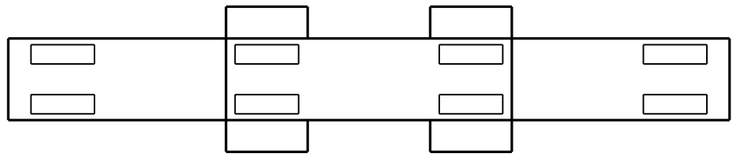
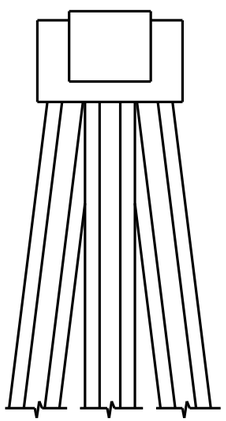
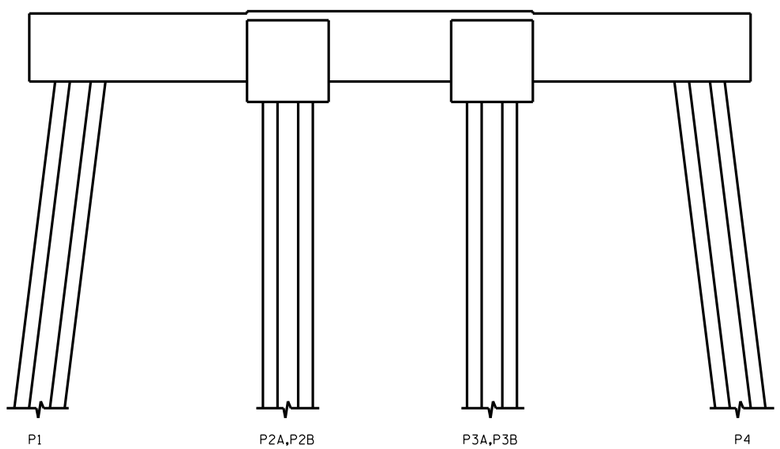


SPAN 98
SPAN 97

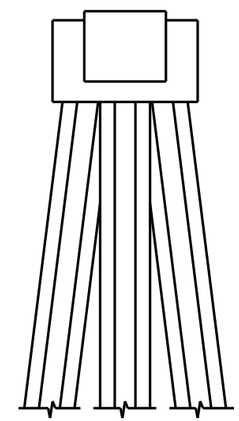
PLAN
TOP OF CAP



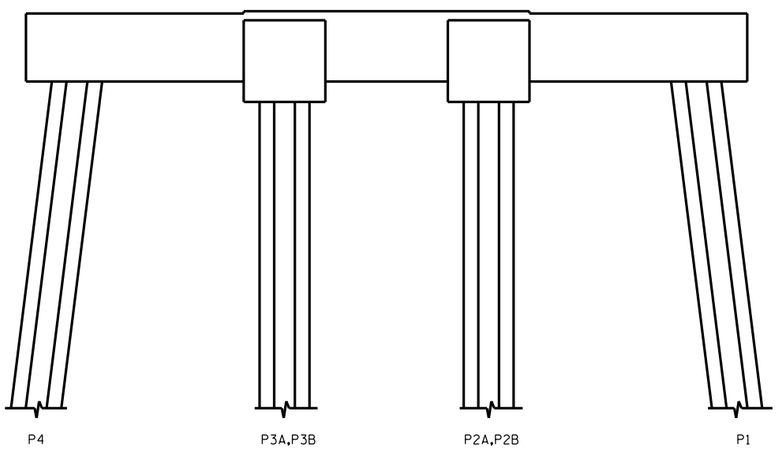
END VIEW
NORTH SIDE



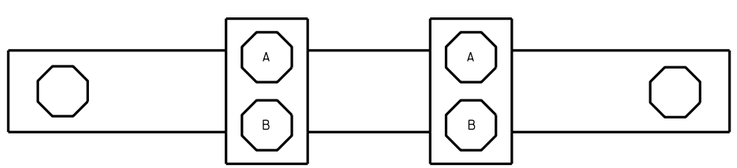

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 97
SPAN 98

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 97

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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-134 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## REPAIR QUANTITY TABLE

| REPAIRS BENT 98 | 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 | | |
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| CAP | | 0.0 | | |

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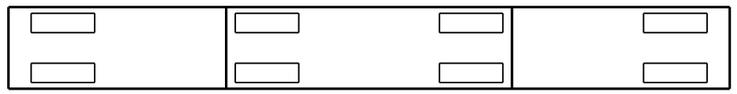
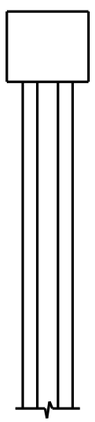
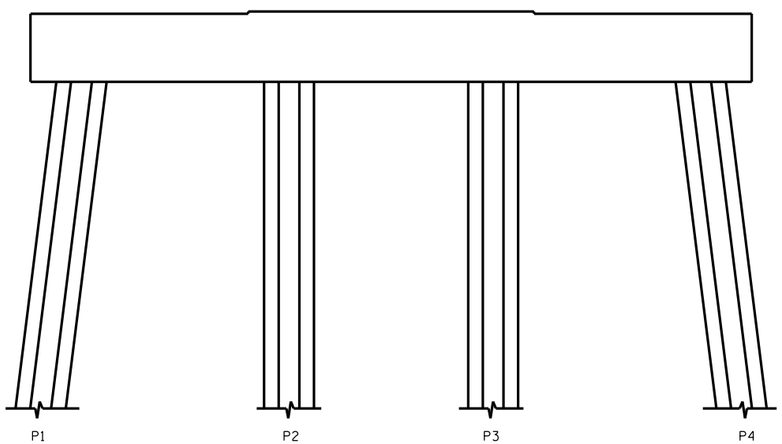


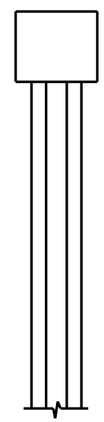

PLAN
TOP OF CAP



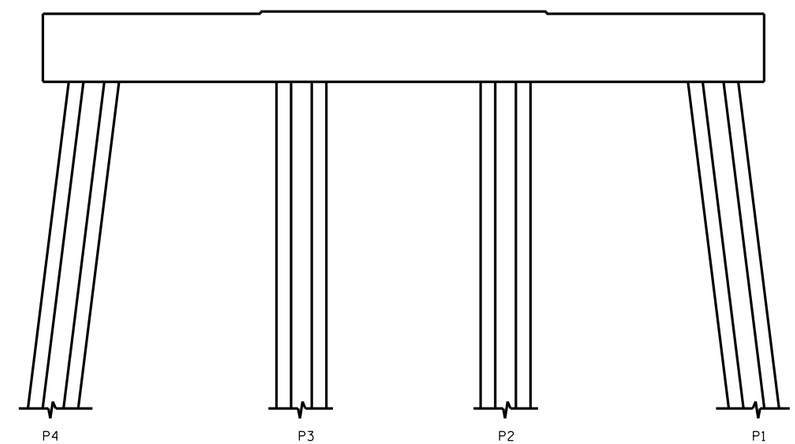
END VIEW
NORTH SIDE



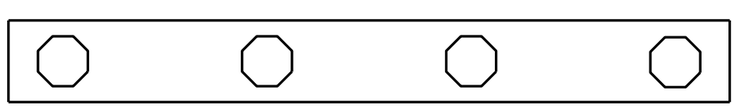

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 98

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-135 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## REPAIR QUANTITY TABLE

| REPAIRS BENT 99 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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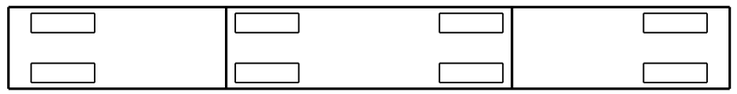
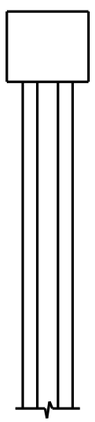
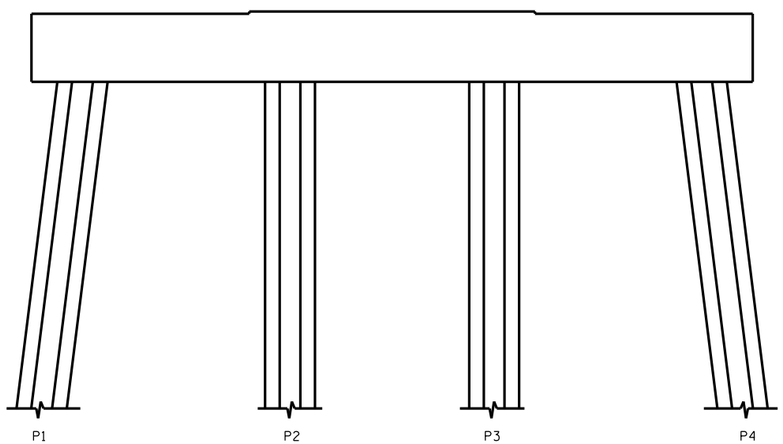


SPAN 100
SPAN 99

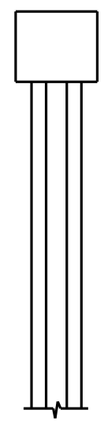
PLAN
TOP OF CAP



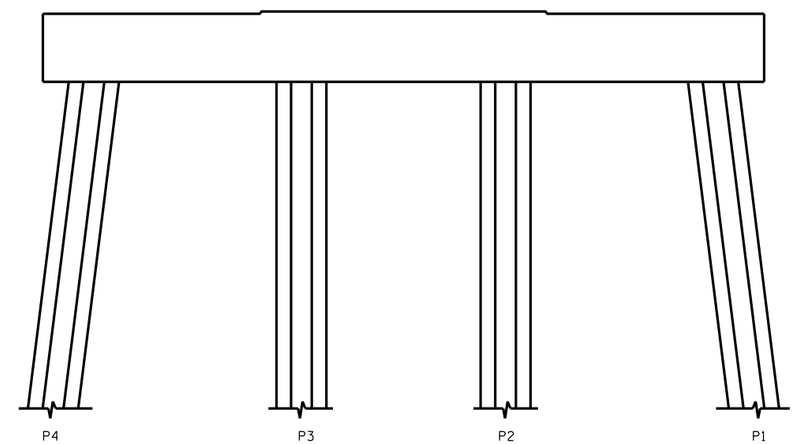
END VIEW
NORTH SIDE



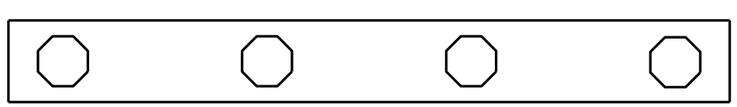

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 99
SPAN 100

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 99

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-136 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

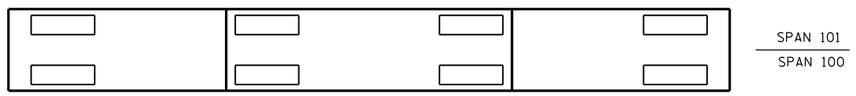
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

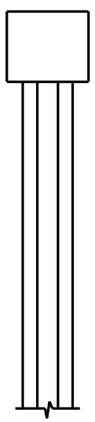
## REPAIR QUANTITY TABLE

| REPAIRS BENT 100 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

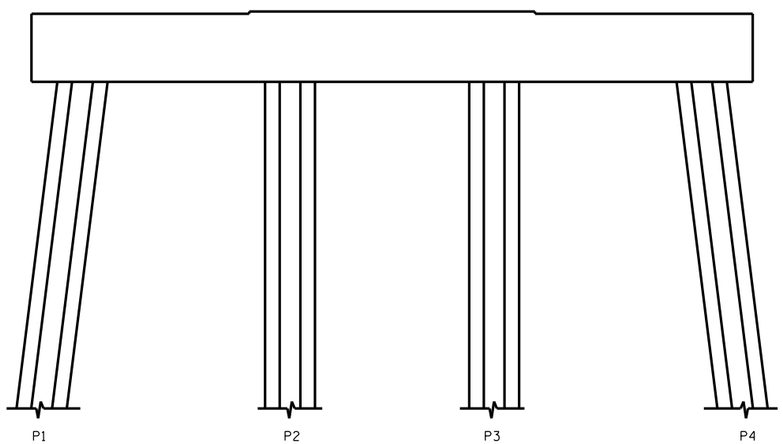
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



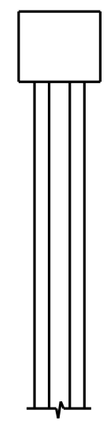

PLAN
TOP OF CAP



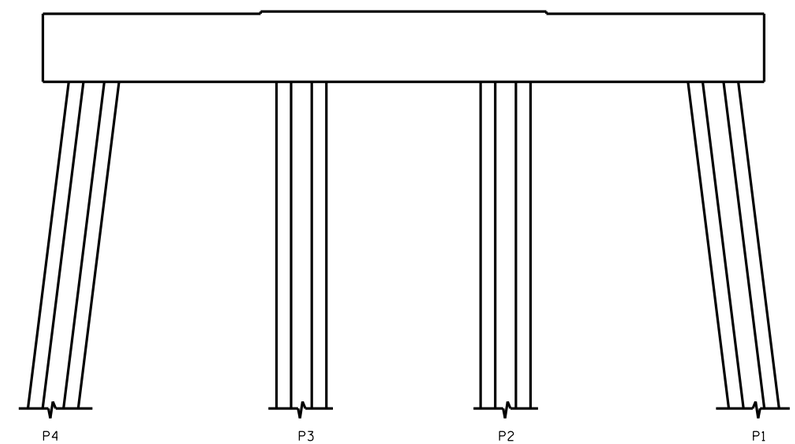
END VIEW
NORTH SIDE



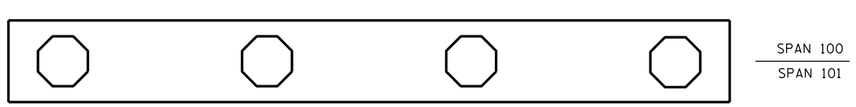

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 100

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-137 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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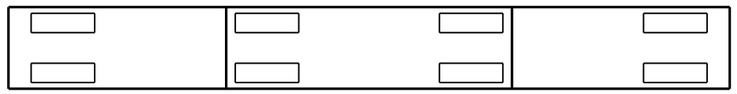
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

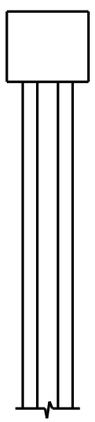
## REPAIR QUANTITY TABLE

| REPAIRS BENT 101 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

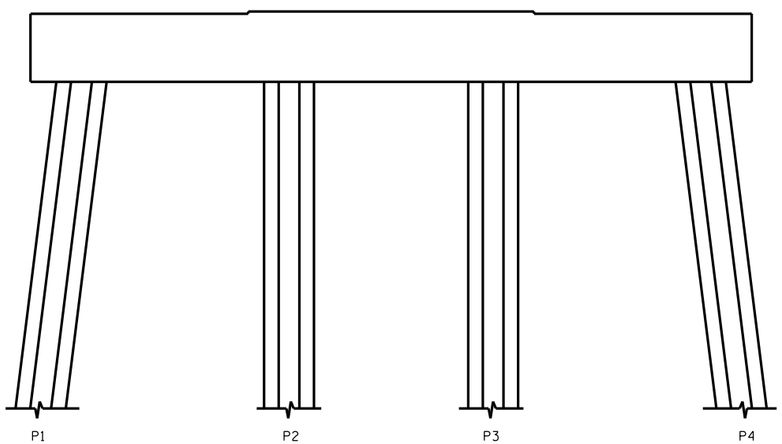
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



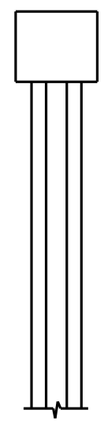

PLAN
TOP OF CAP



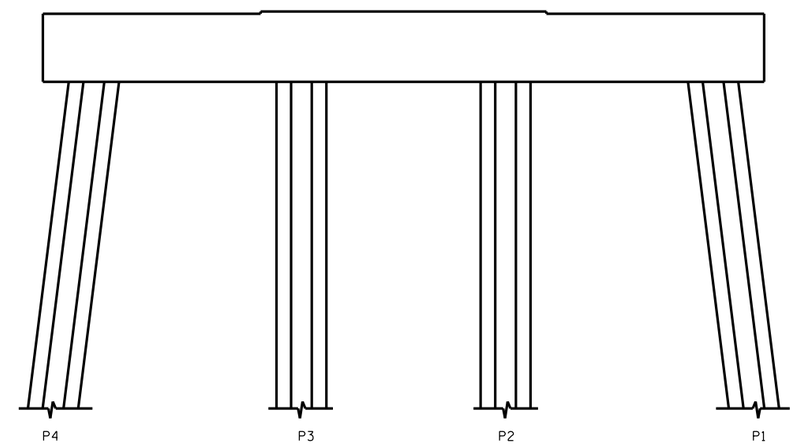
END VIEW
NORTH SIDE



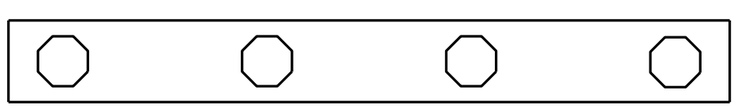

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 101

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
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FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 102 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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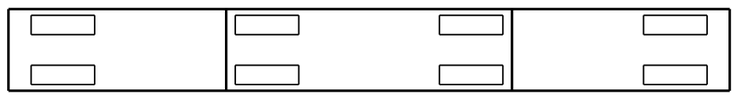
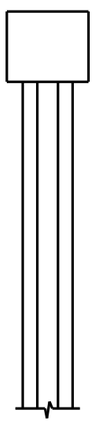
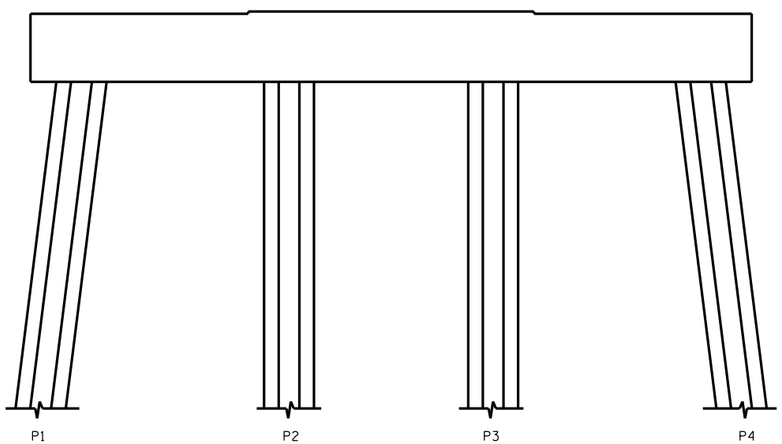


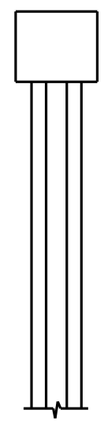

PLAN
TOP OF CAP



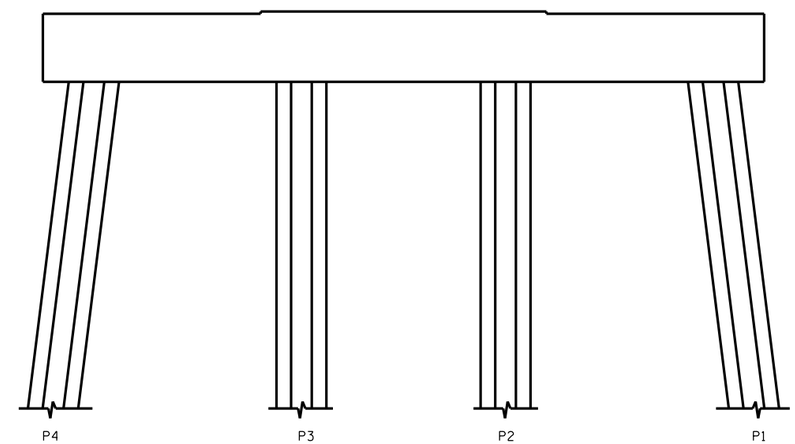
END VIEW
NORTH SIDE



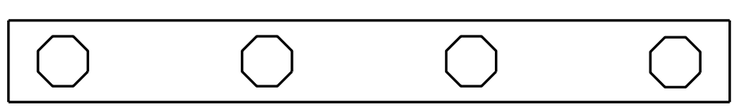

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 102

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 103 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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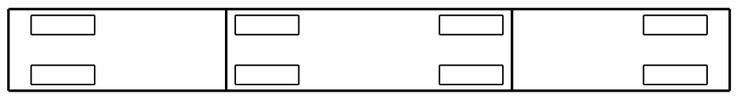


PLAN
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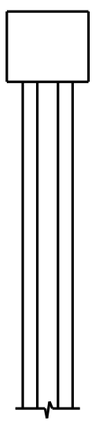
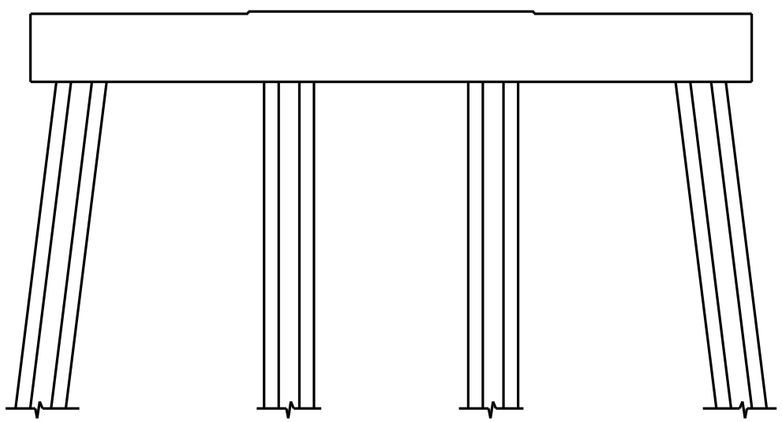
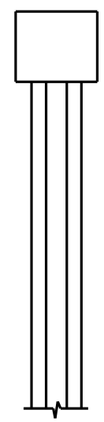


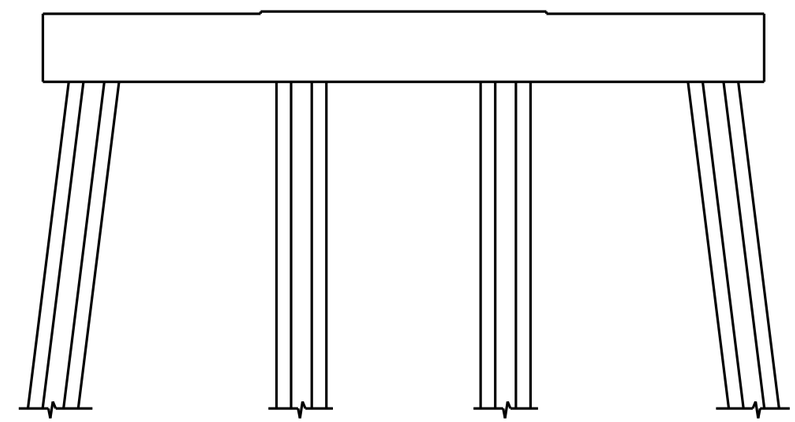
END VIEW
NORTH SIDE



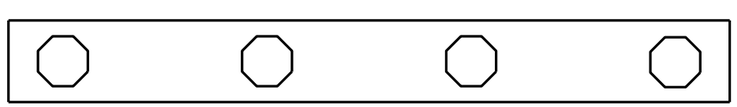

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 103

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-140 |
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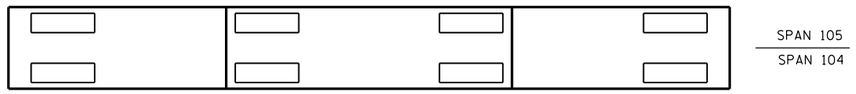
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

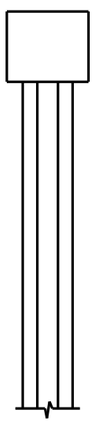
## REPAIR QUANTITY TABLE

| REPAIRS BENT 104 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 4.2 | 1.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

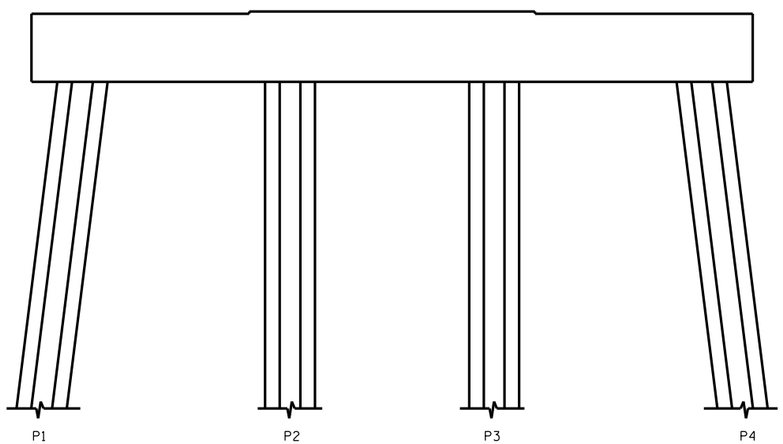
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



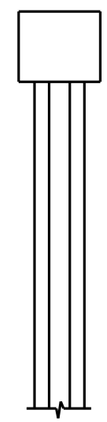

PLAN
TOP OF CAP



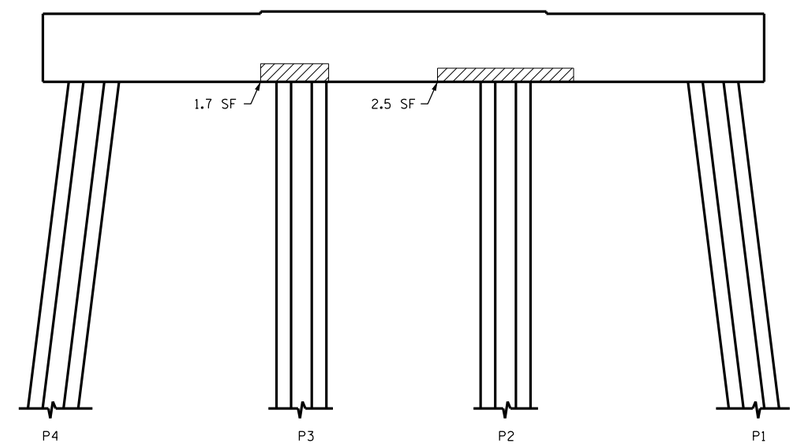
END VIEW
NORTH SIDE



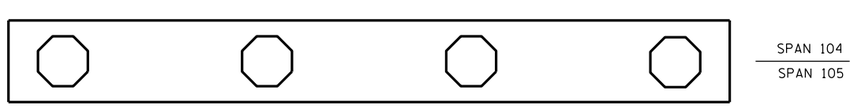

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 104

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| NO. | BY: | DATE: | NO. | BY: | DATE: | S-141 |
| 1 | | | 3 | | | TOTAL SHEETS |
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

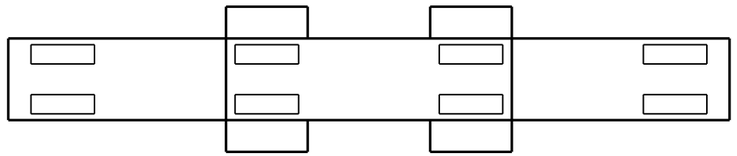
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

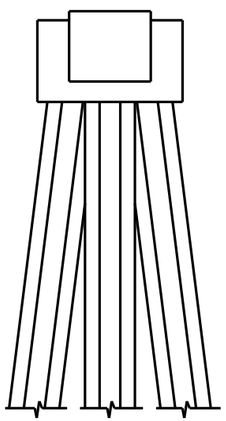
| REPAIRS BENT 105 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

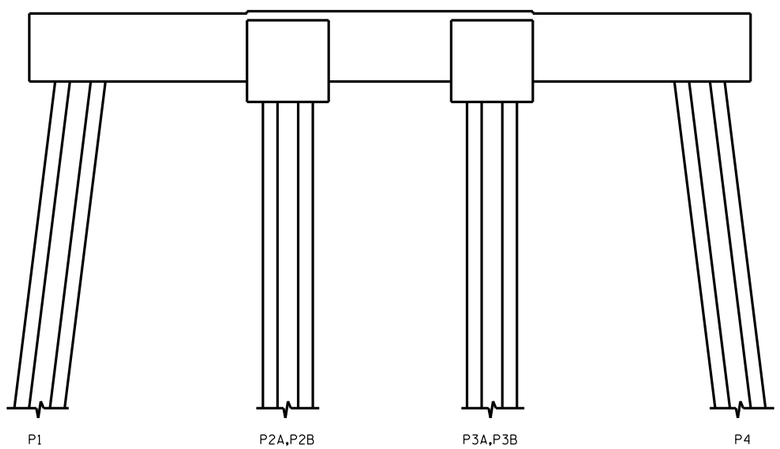


SPAN 106
SPAN 105

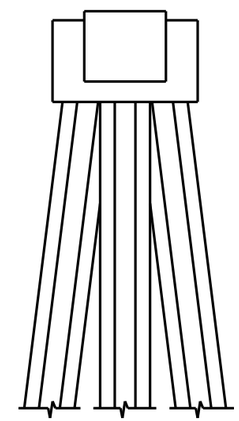
PLAN
TOP OF CAP



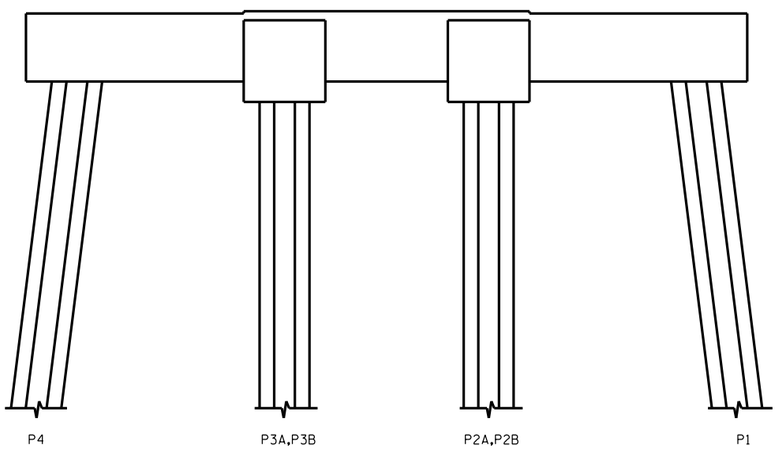
END VIEW
NORTH SIDE



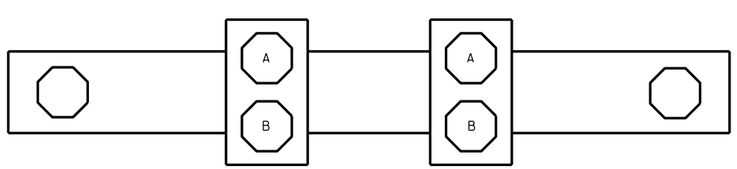

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 105
SPAN 106

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 105

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-142 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

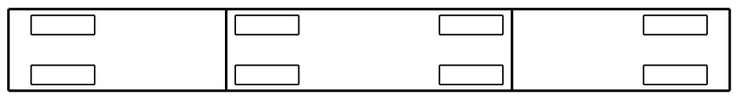
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

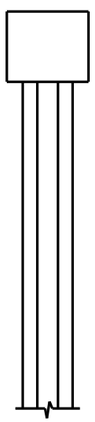
## REPAIR QUANTITY TABLE

| REPAIRS BENT 106 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.0 | 0.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

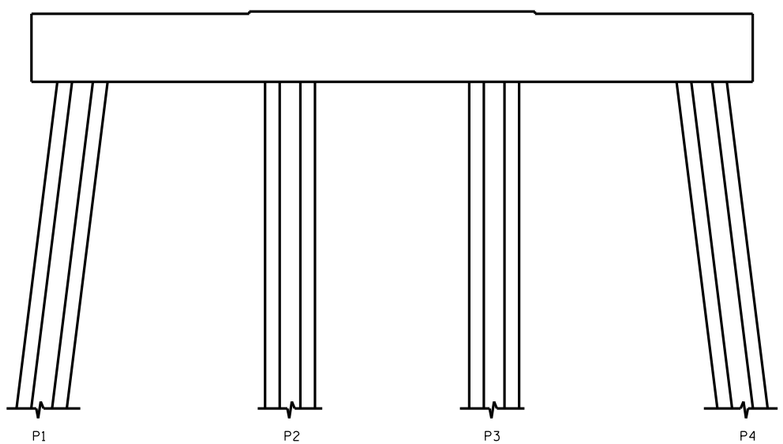
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



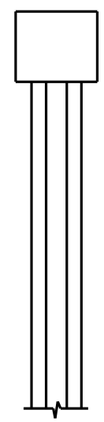

PLAN
TOP OF CAP



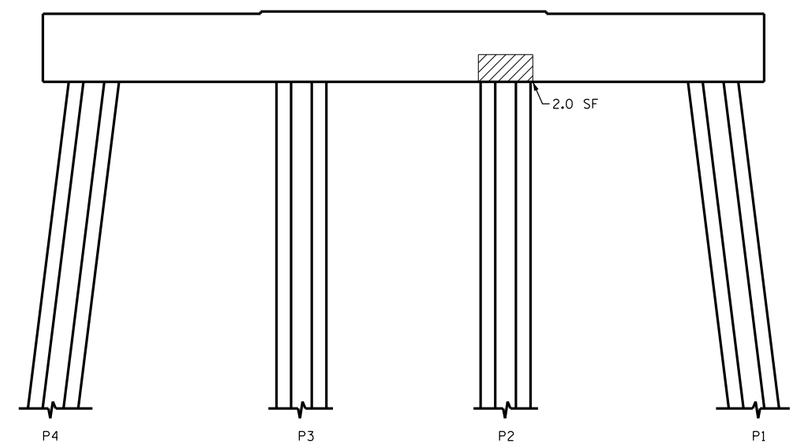
END VIEW
NORTH SIDE



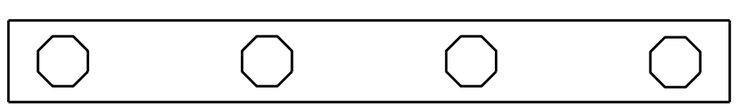

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 106

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| REVISIONS | | | | | | | SHEET NO. |
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| 1 | | | 3 | | | | TOTAL SHEETS |
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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

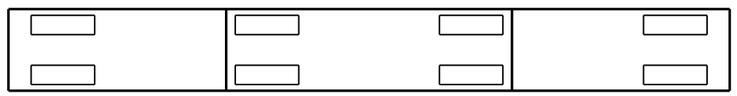
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

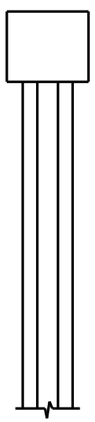
## REPAIR QUANTITY TABLE

| REPAIRS BENT 107 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.7 | 2.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

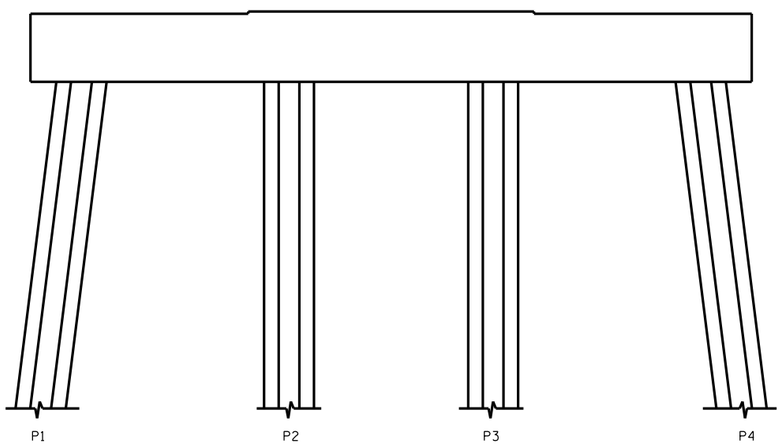
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



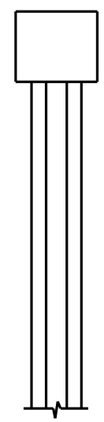

PLAN
TOP OF CAP



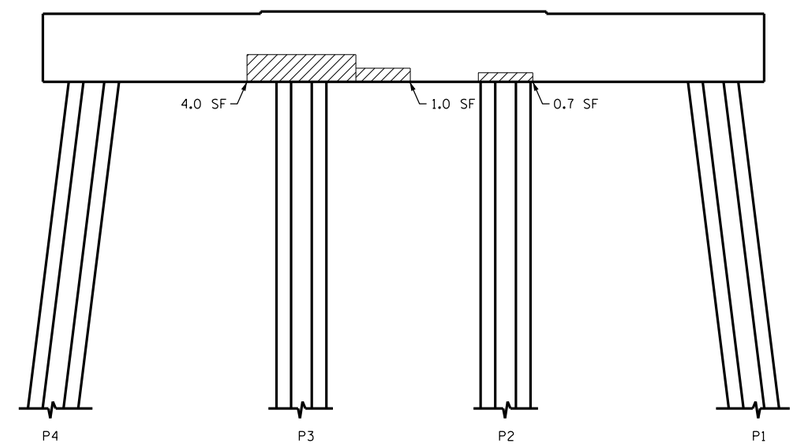
END VIEW
NORTH SIDE



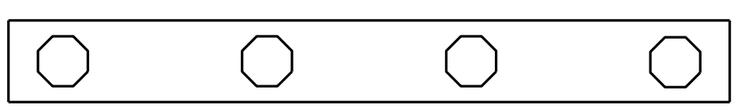

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 107

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-144 | |
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

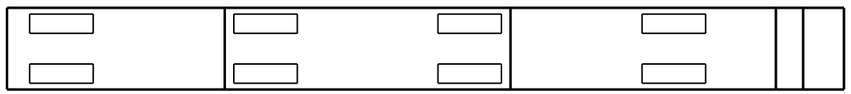
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

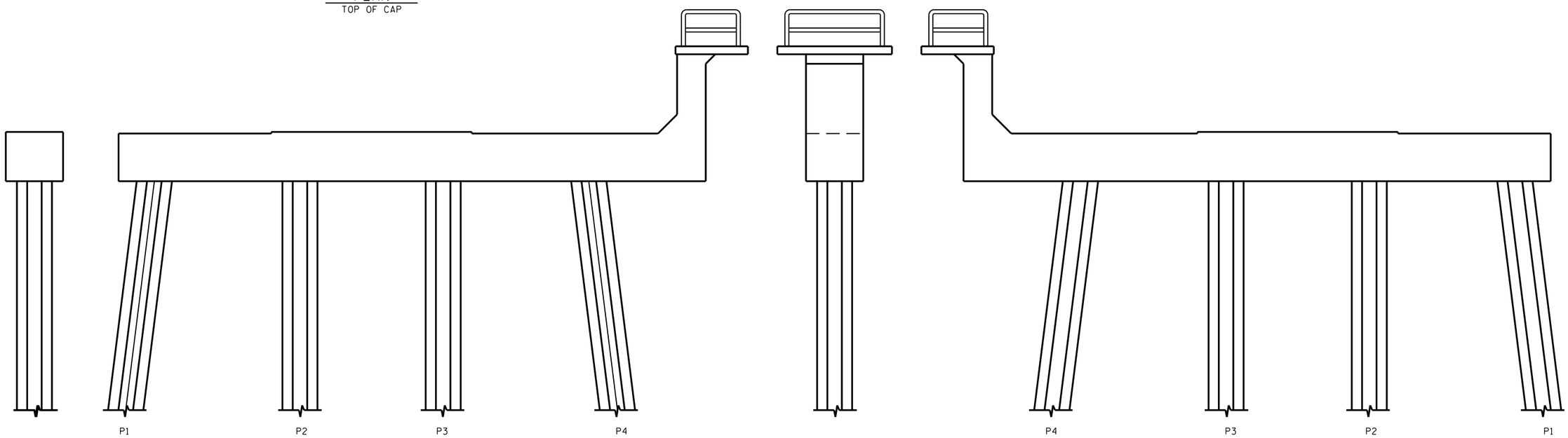
| REPAIRS BENT 108 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



SPAN 109
SPAN 108

PLAN
TOP OF CAP

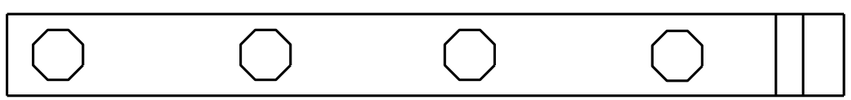



END VIEW
NORTH SIDE

ELEVATION
WEST SIDE

END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE



SPAN 108
SPAN 109

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 108

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-145 |
| 1 | | | 3 | | | TOTAL SHEETS |
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## NOTES:

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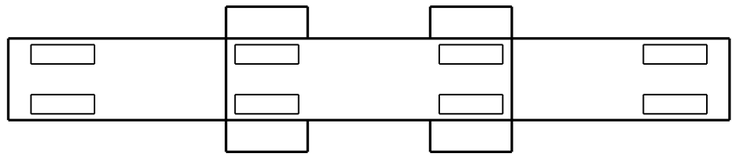
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

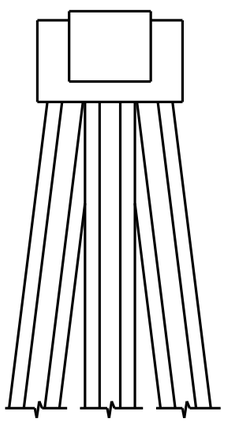
| REPAIRS BENT 109 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.8 | 0.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

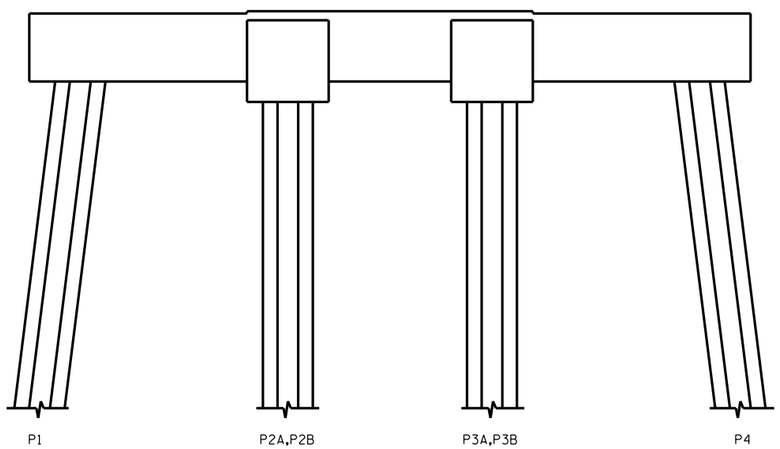


SPAN 110
SPAN 109

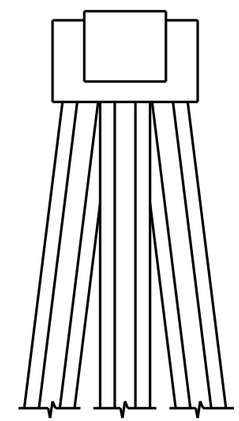
PLAN
TOP OF CAP



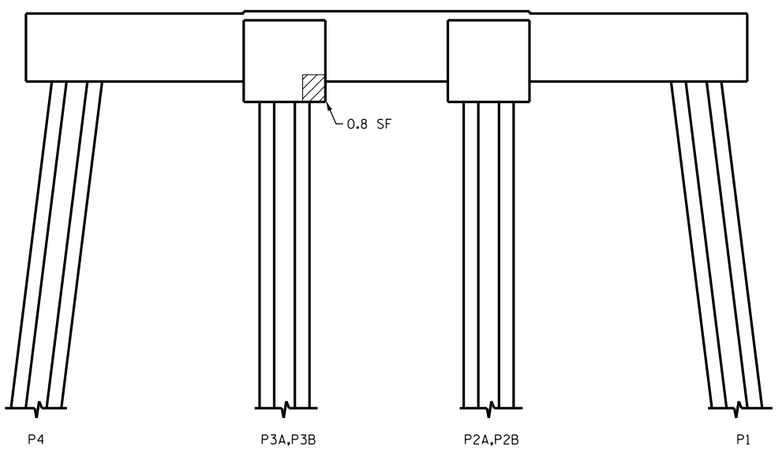
END VIEW
NORTH SIDE



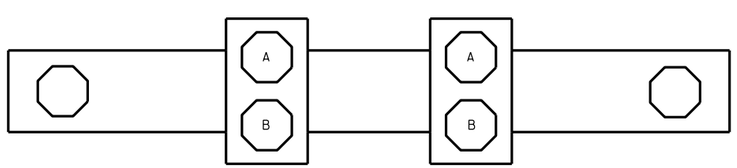

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 109
SPAN 110

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 109

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| REVISIONS | | | | | | | |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-146 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
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## NOTES:

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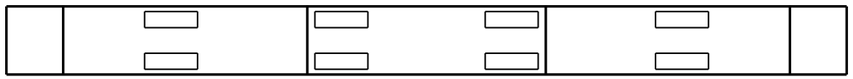
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

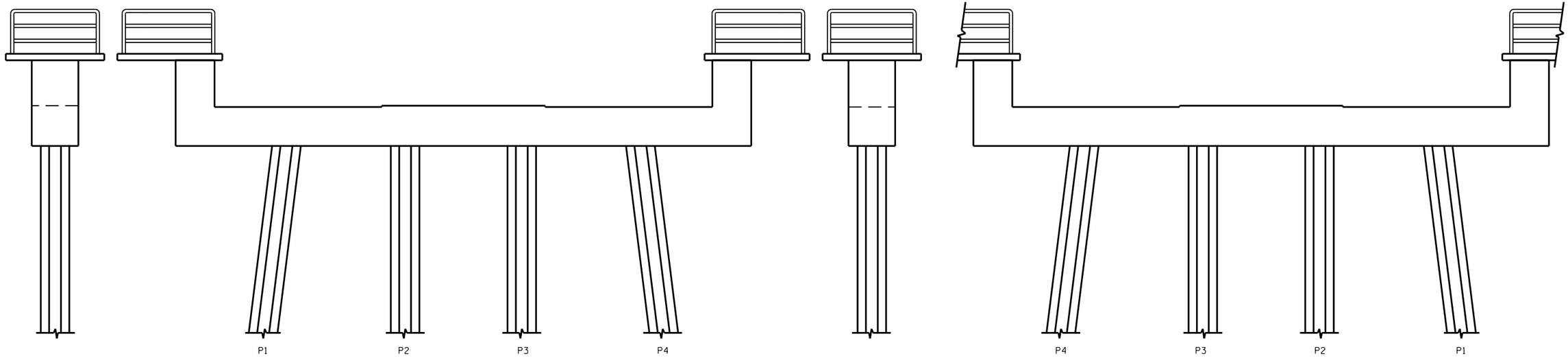
| REPAIRS BENT 110 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



SPAN 111
SPAN 110

PLAN
TOP OF CAP

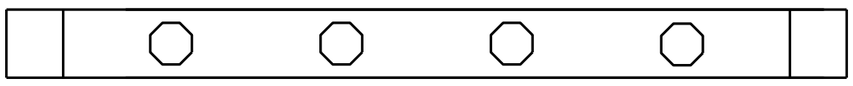



END VIEW
NORTH SIDE

ELEVATION
WEST SIDE

END VIEW
NORTH SIDE

ELEVATION
EAST SIDE



SPAN 110
SPAN 111

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 110

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-147 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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DRAWN BY : P. D. BRYANT DATE : 9-2015
CHECKED BY : W. M. CLARKE DATE : 04-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

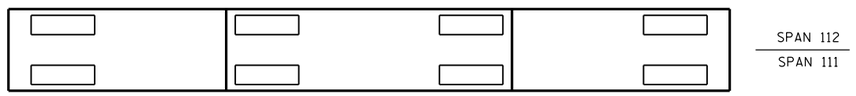
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

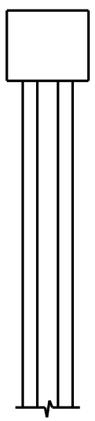
## REPAIR QUANTITY TABLE

| REPAIRS BENT 111 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.9 | 1.6 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

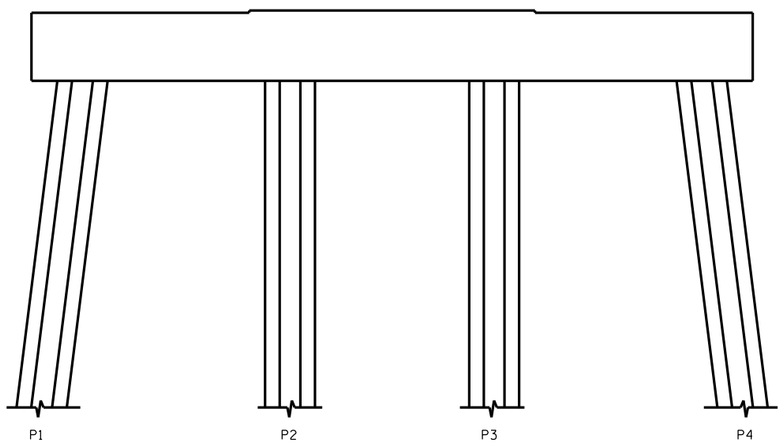
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



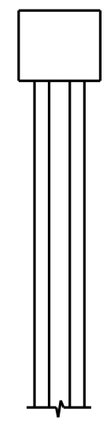

PLAN
TOP OF CAP



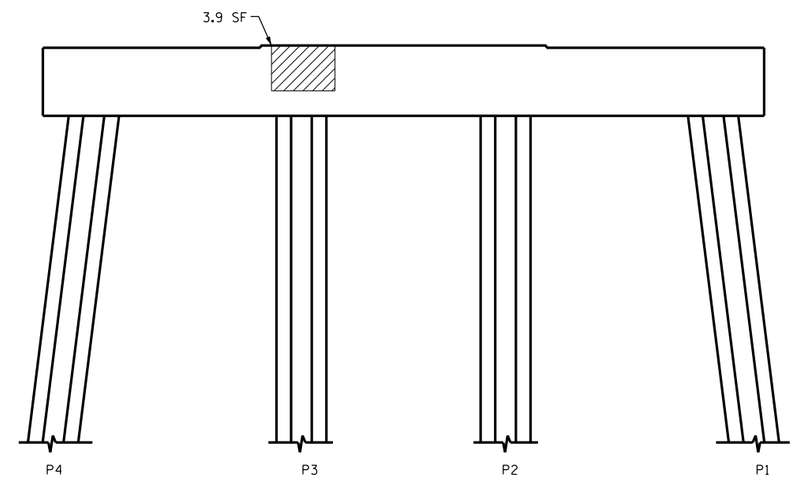
END VIEW
NORTH SIDE



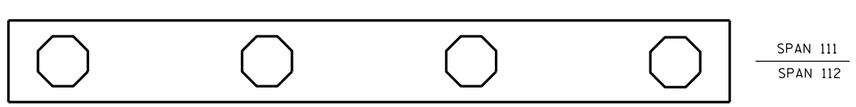

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 111

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-148 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

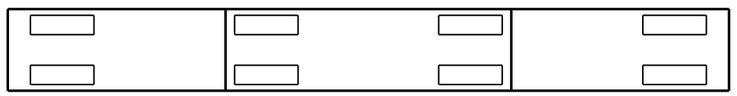
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

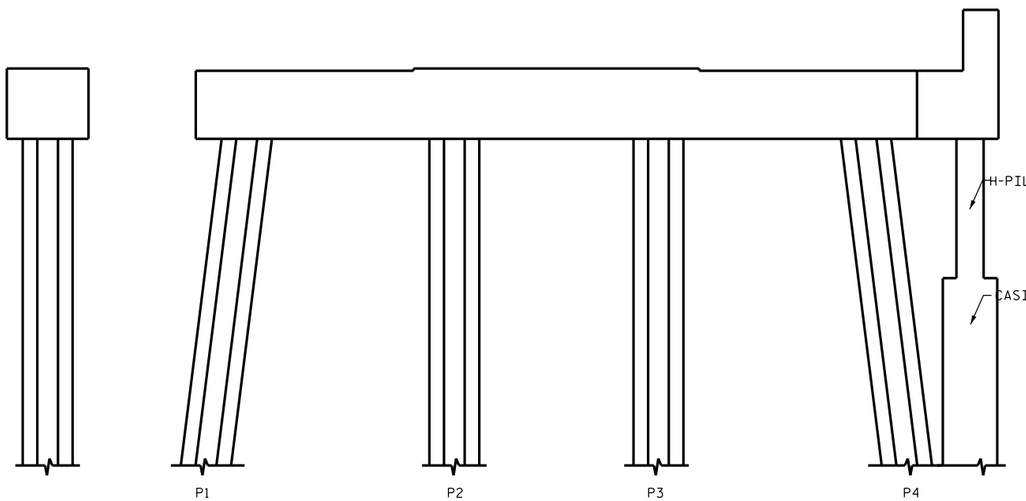
## REPAIR QUANTITY TABLE

| REPAIRS BENT 112 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.8 | 1.6 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

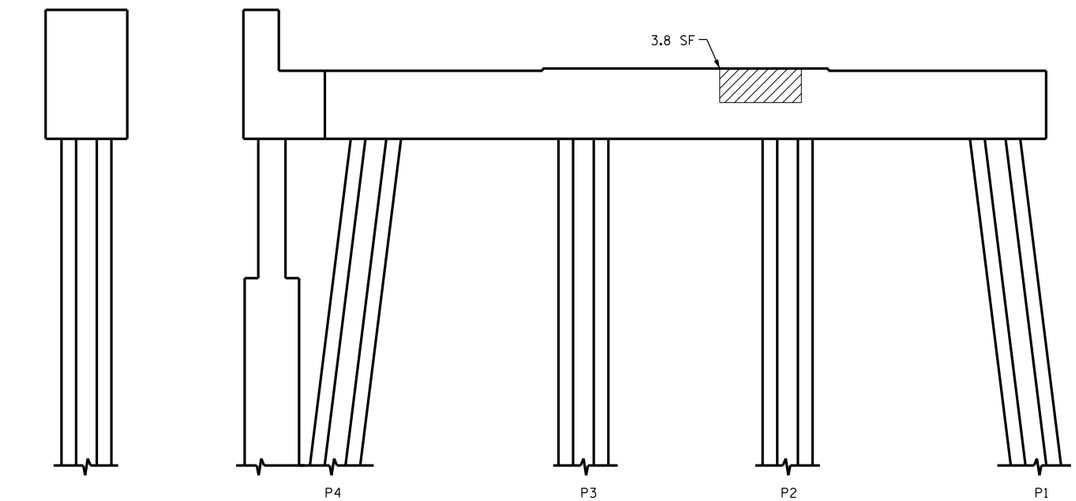



PLAN
TOP OF CAP



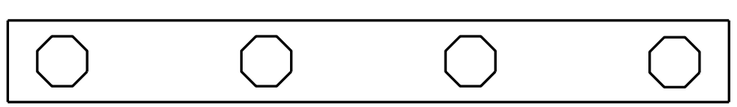

END VIEW
NORTH SIDE

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 112

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-149 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

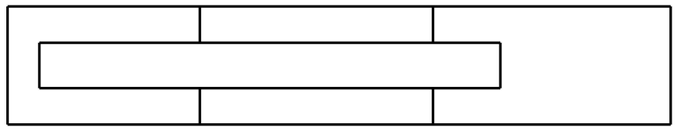
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

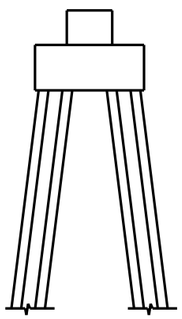
| REPAIRS BENT 113 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

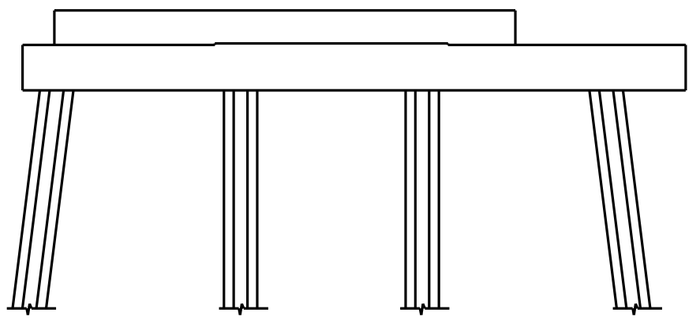


SPAN 114
SPAN 113

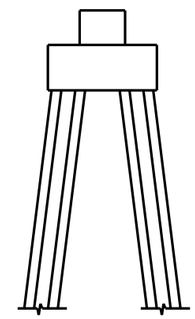
PLAN
TOP OF CAP



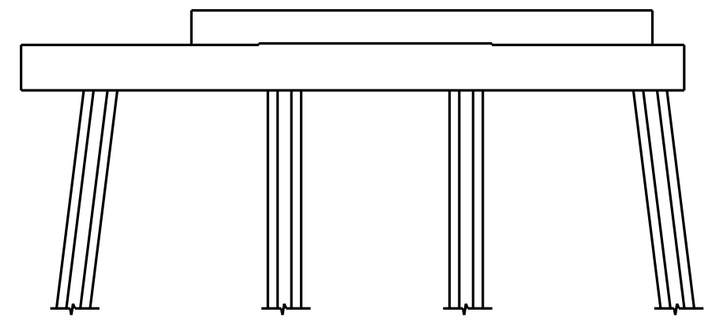
END VIEW
NORTH SIDE



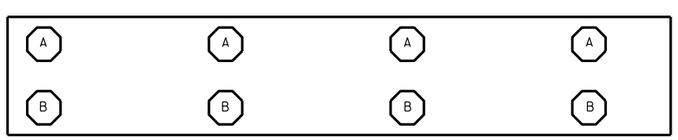

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 113
SPAN 114

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 113

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-150 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

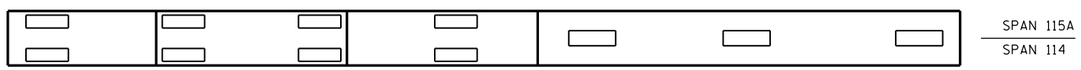
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

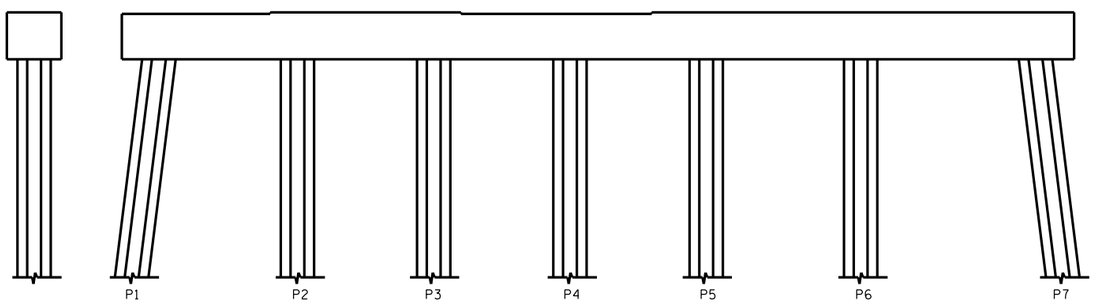
## REPAIR QUANTITY TABLE

| REPAIRS BENT 114 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 5.0 | | |

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.

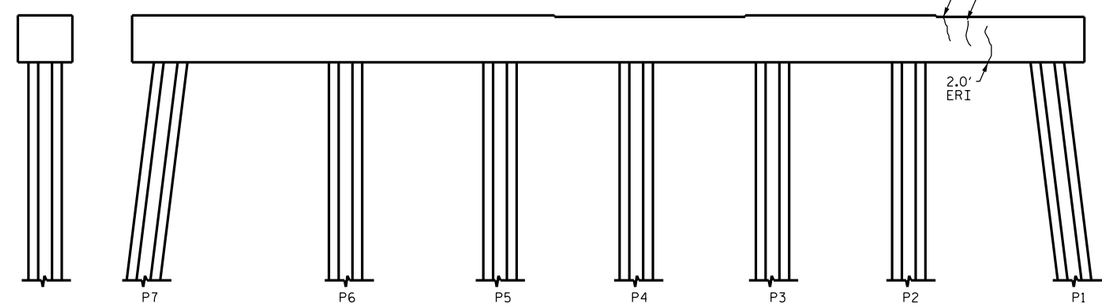



PLAN
TOP OF CAP



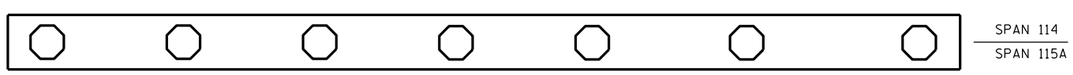

END VIEW
NORTH SIDE

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 114

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-151 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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## 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.

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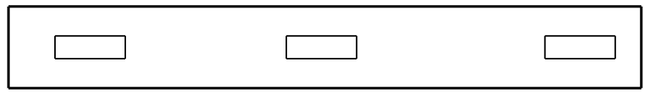
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

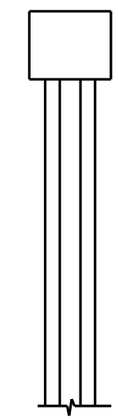
## REPAIR QUANTITY TABLE

| REPAIRS OPR BENT | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 6.0 | 2.5 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

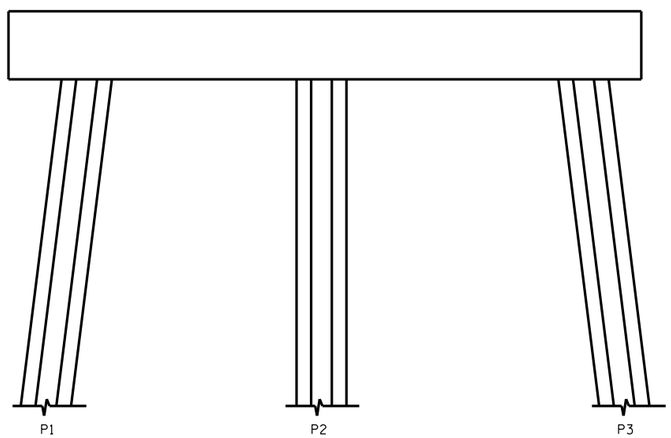
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



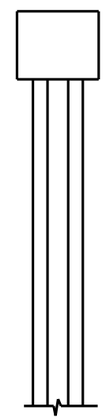
PLAN
TOP OF CAP



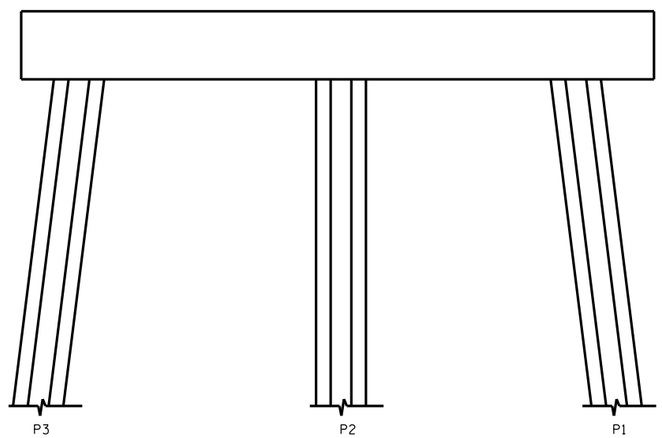
END VIEW
NORTH SIDE



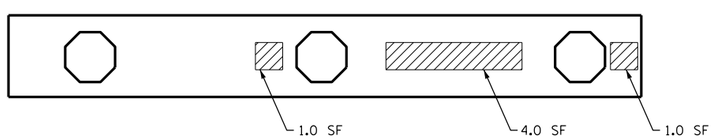

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

OPERATORS HOUSE
BENT

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| REVISIONS | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | S-152 |
| 1 | | | 3 | | | TOTAL SHEETS |
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

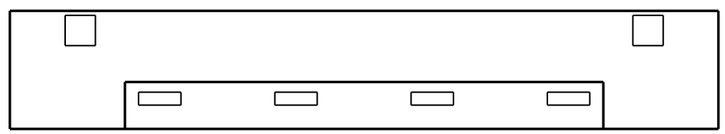
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

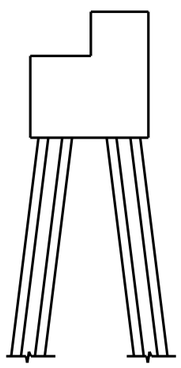
| REPAIRS R.P. NO. 1 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

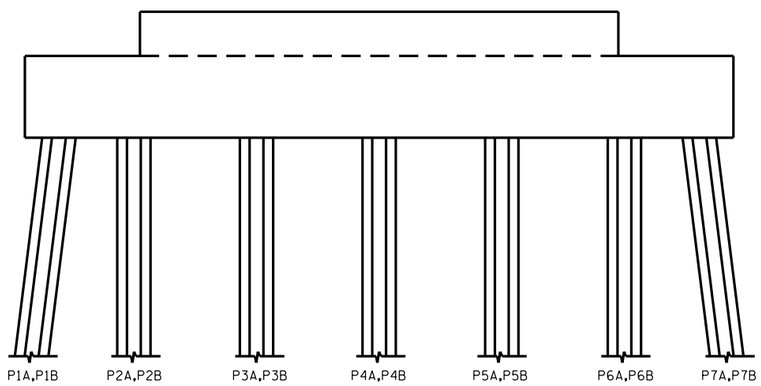


PLAN
TOP OF CAP

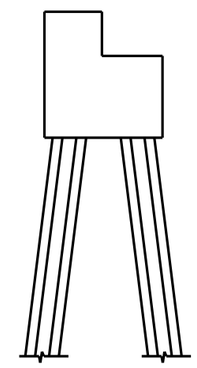
SWING SPAN
SPAN 115A



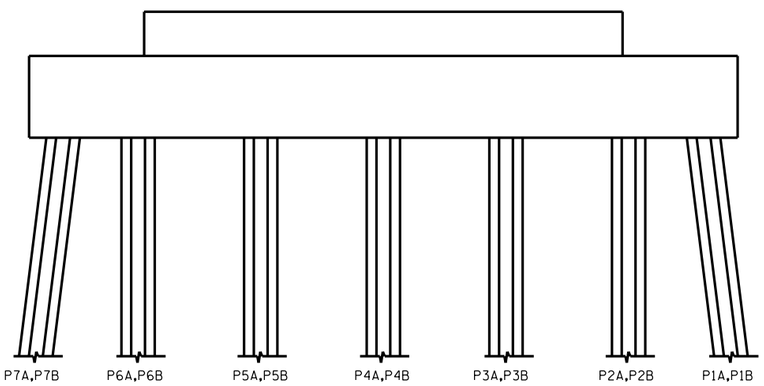
END VIEW
NORTH SIDE



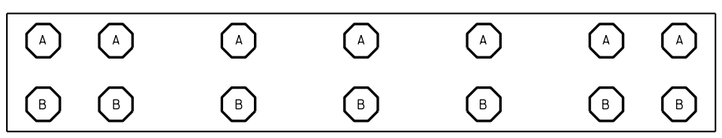

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 115A
SWING SPAN

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

REST PIER 1

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| REVISIONS | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | S-153 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

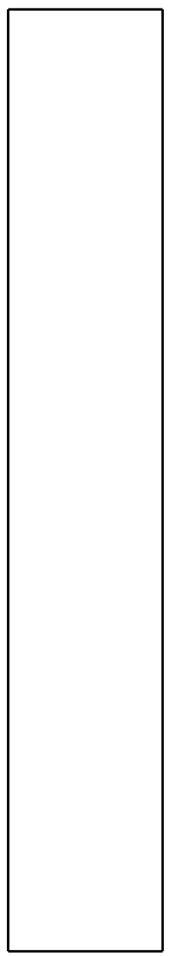
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

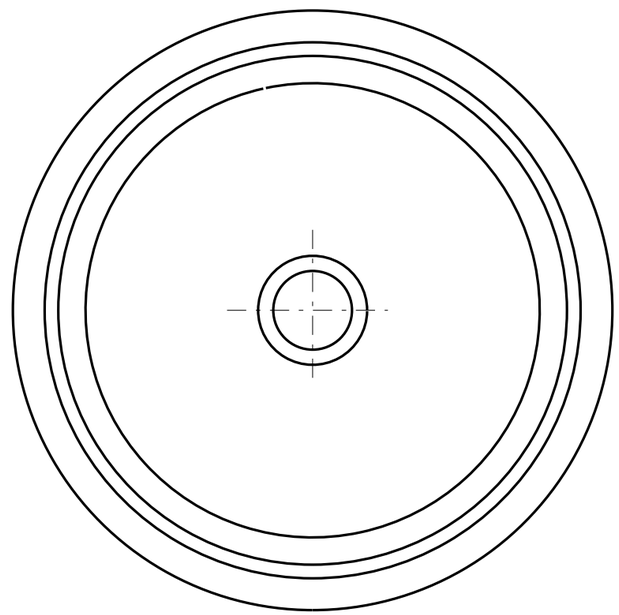
## REPAIR QUANTITY TABLE

| REPAIRS PIVOT PIER | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

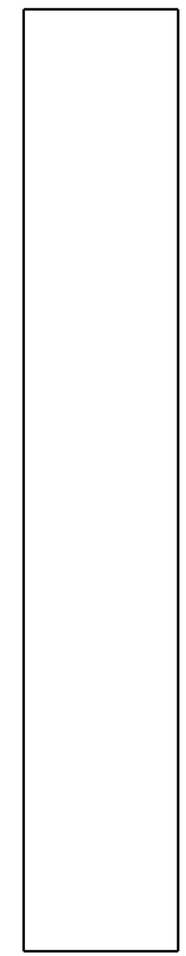
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



ELEVATION
NORTH SIDE



PLAN
TOP OF CAP



ELEVATION
SOUTH SIDE

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

PROJECT NO. 15B.13.33
TYRRELL COUNTY
STATION: 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PIVOT PIER

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| REVISIONS | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | S-154 |
| 1 | | | 3 | | | TOTAL SHEETS |
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## NOTES:

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FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

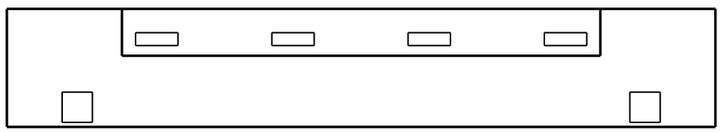
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

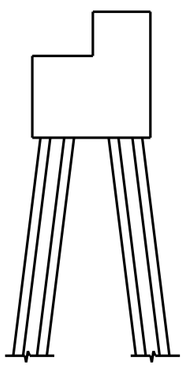
| REPAIRS R.P. NO. 2 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

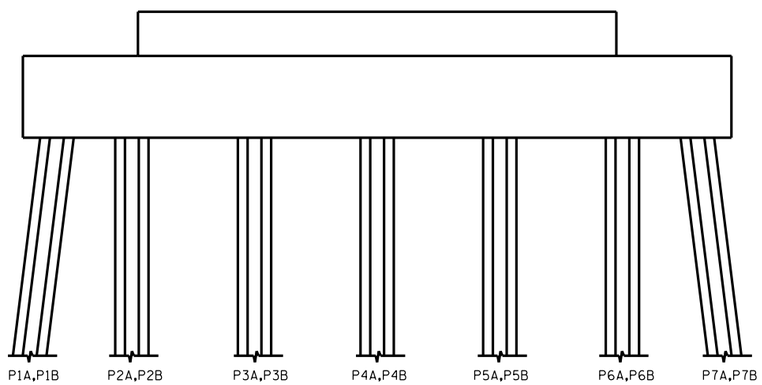
BENT 115B
SWING SPAN



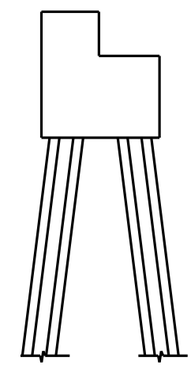
PLAN
TOP OF CAP



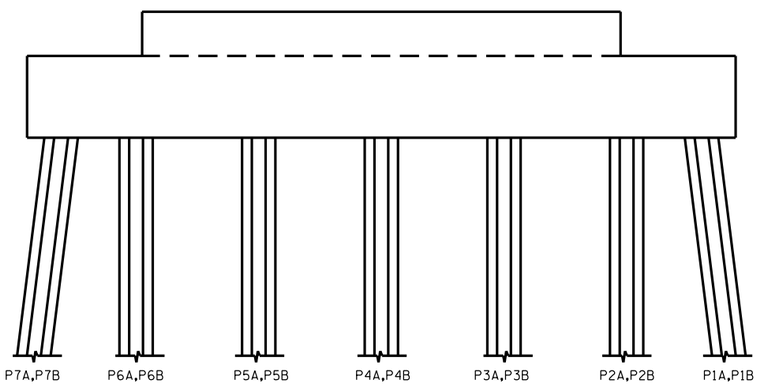
END VIEW
NORTH SIDE



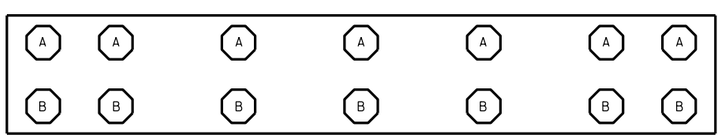

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SWING SPAN
BENT 115B

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

REST PIER 2

| REVISIONS | | | | | | | | SHEET NO. |
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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

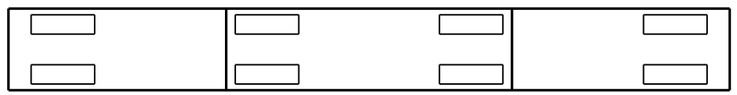
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

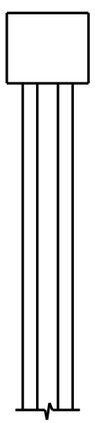
| REPAIRS BENT 115 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.7 | 1.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

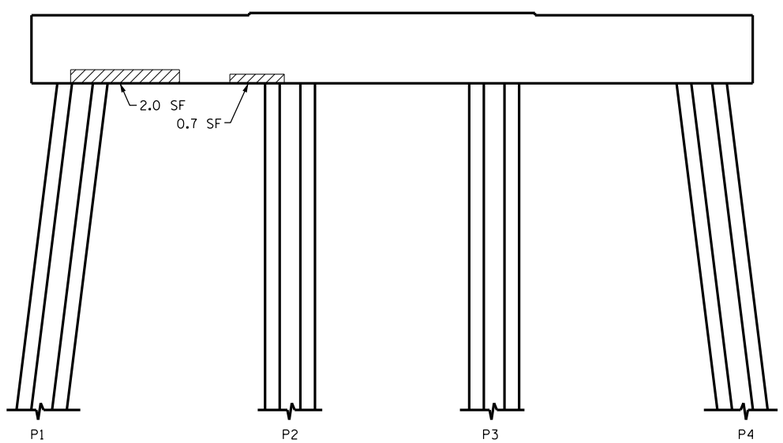


SPAN 116 / SPAN 115B

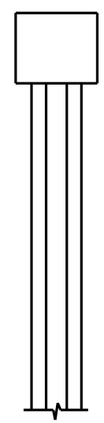
PLAN
TOP OF CAP



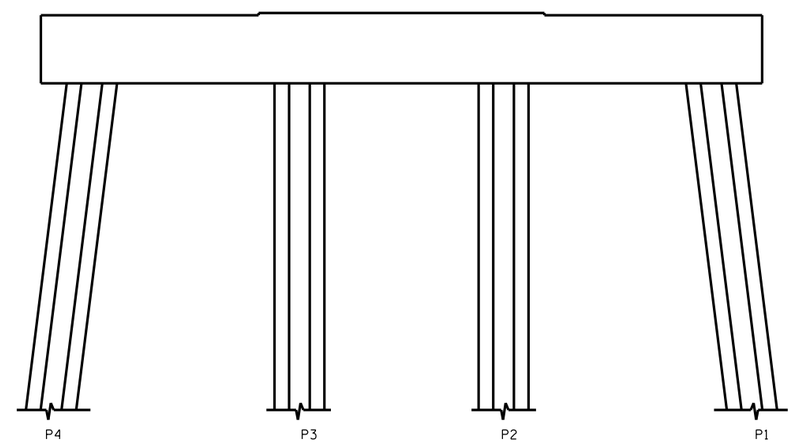
END VIEW
NORTH SIDE



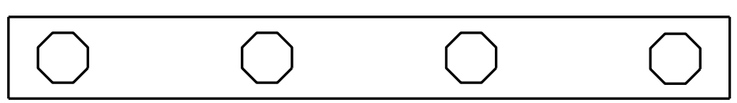

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 115B / SPAN 116

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 115

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-156 |
| 1 | | | 3 | | | TOTAL SHEETS |
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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

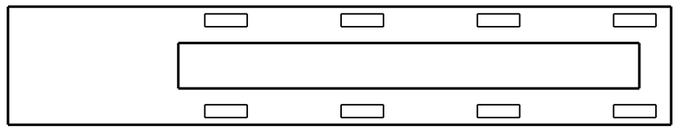
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

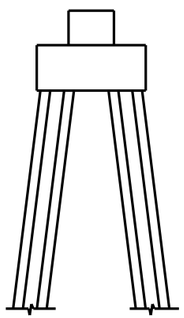
## REPAIR QUANTITY TABLE

| REPAIRS BENT 116 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 18.6 | 7.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

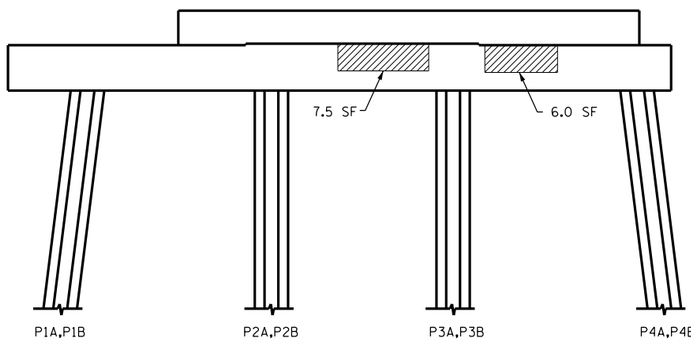
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



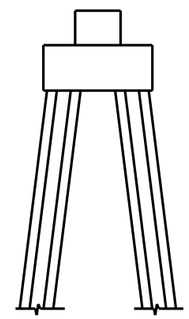

PLAN
TOP OF CAP



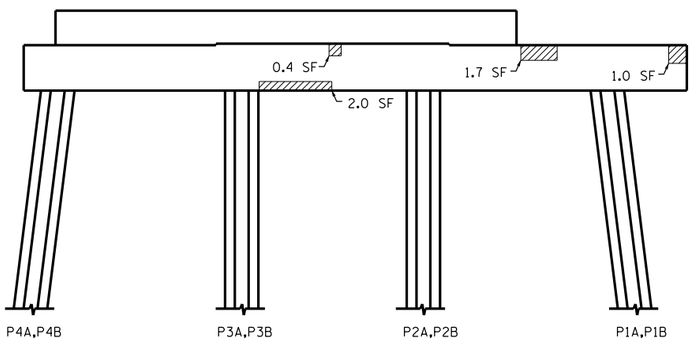
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 116

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-157 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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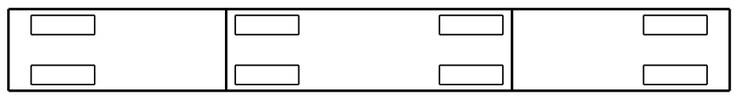
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

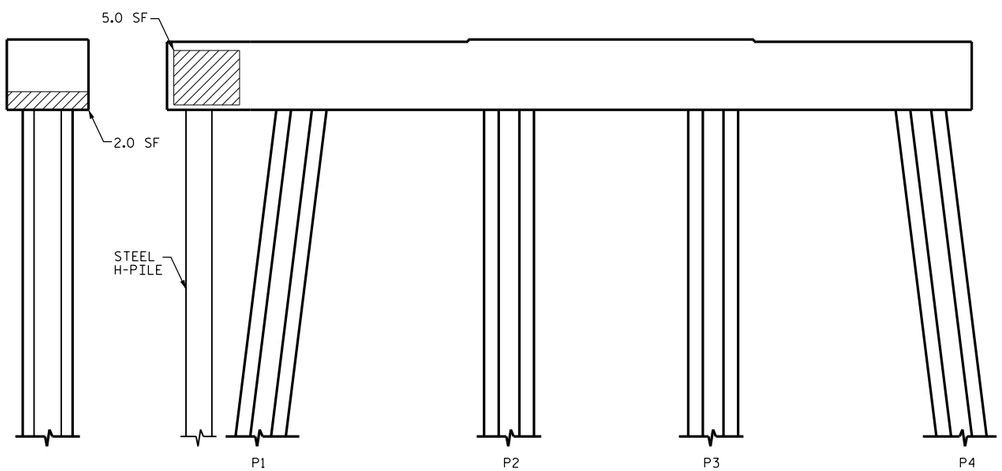
## REPAIR QUANTITY TABLE

| REPAIRS BENT 117 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 7.0 | 2.9 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

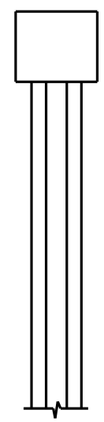



PLAN
TOP OF CAP

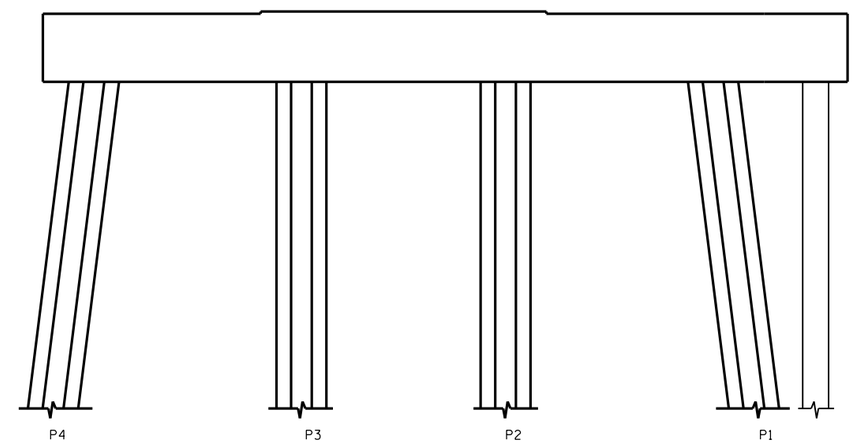



END VIEW
NORTH SIDE

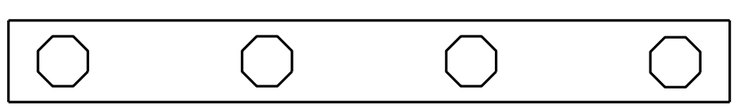
ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 117

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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-158 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

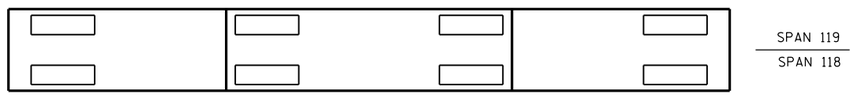
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

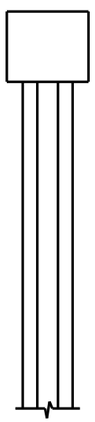
## REPAIR QUANTITY TABLE

| REPAIRS BENT 118 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.7 | 0.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

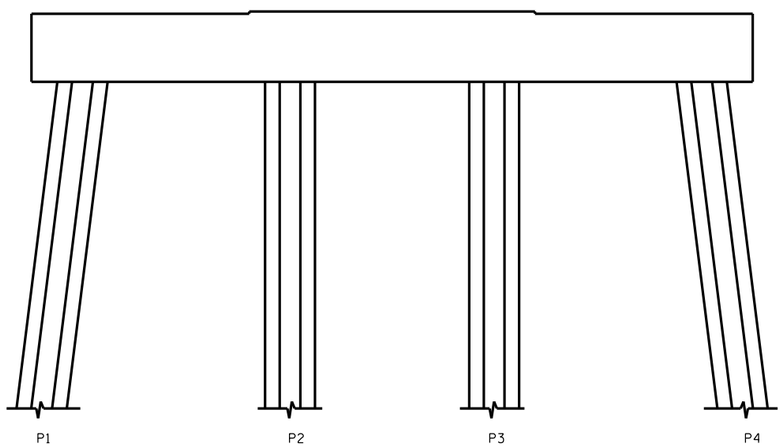
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



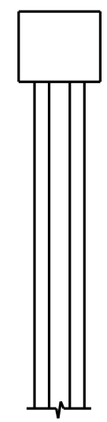

PLAN
TOP OF CAP



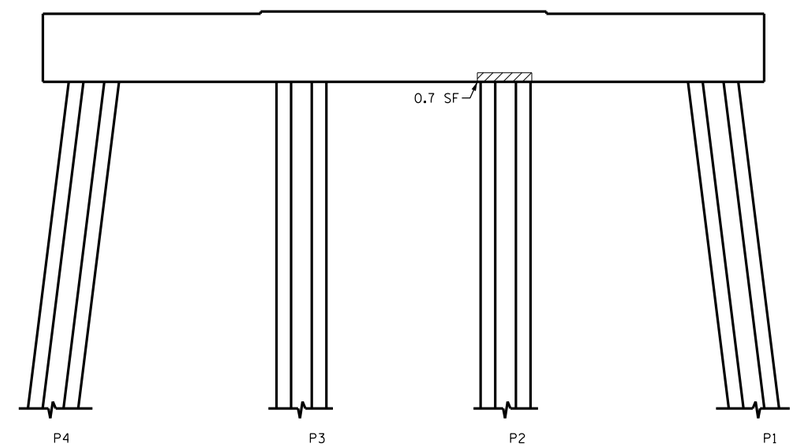
END VIEW
NORTH SIDE



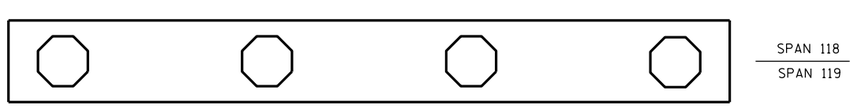

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 118

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

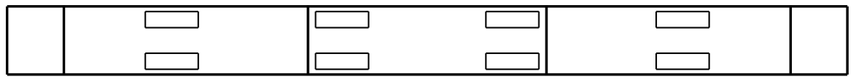
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

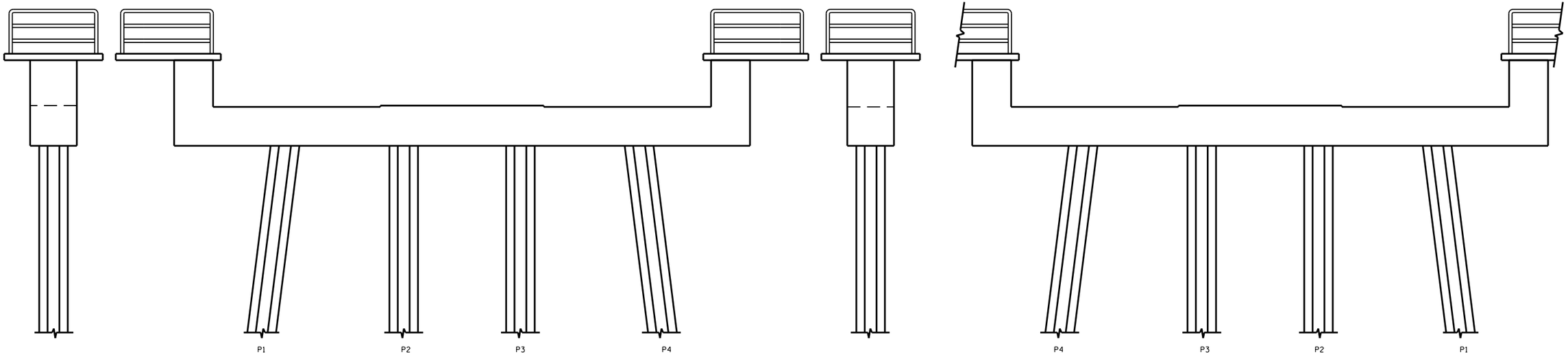
| REPAIRS BENT 119 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



SPAN 120
SPAN 119

PLAN
TOP OF CAP

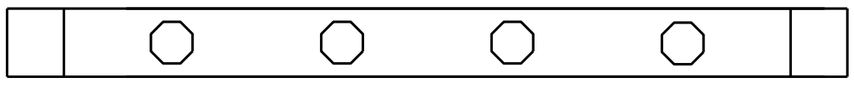



END VIEW
NORTH SIDE

ELEVATION
WEST SIDE

END VIEW
NORTH SIDE

ELEVATION
EAST SIDE



SPAN 119
SPAN 120

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 119

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-160 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

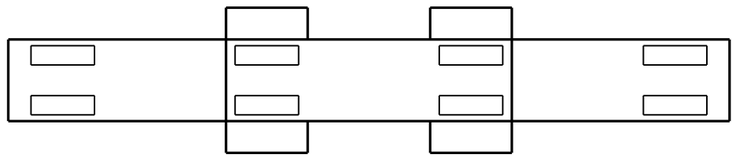
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

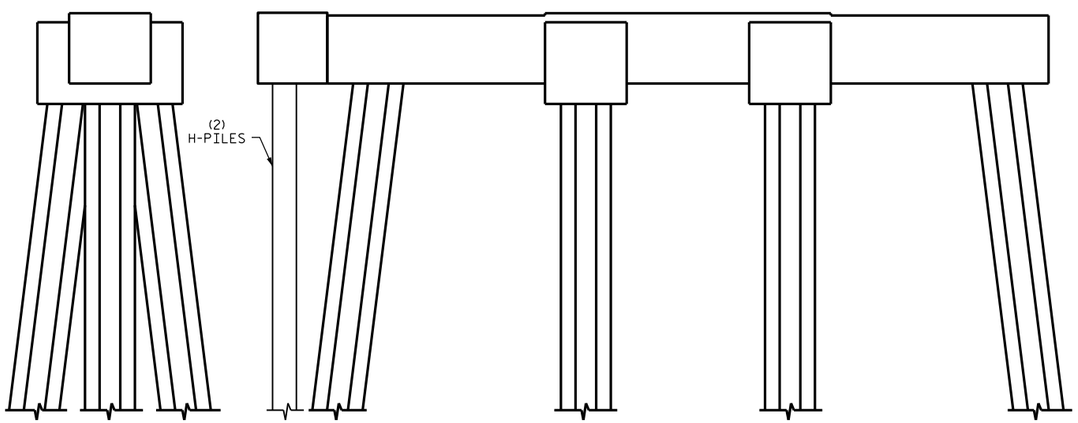
| REPAIRS BENT 120 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



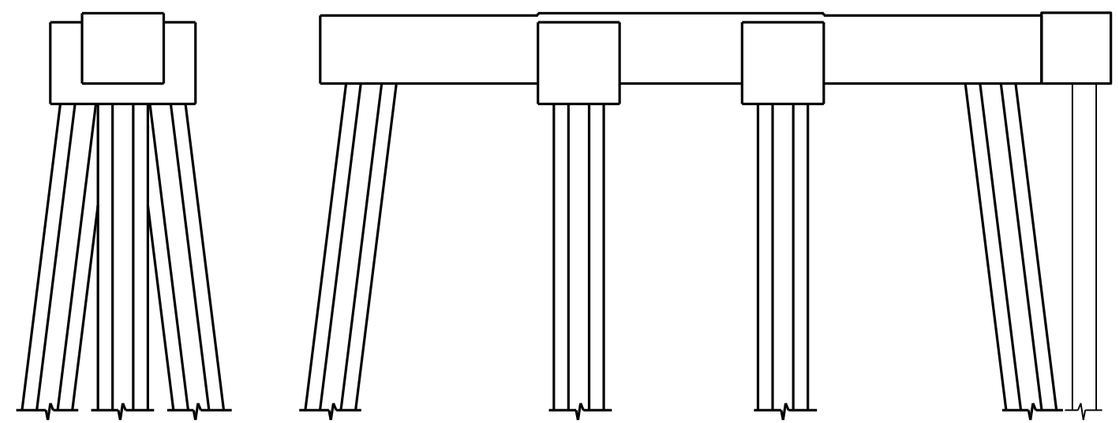
SPAN 121
SPAN 120

PLAN
TOP OF CAP



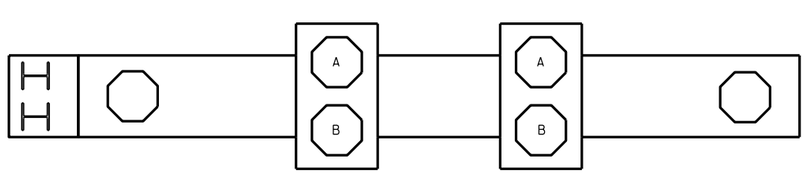

END VIEW
NORTH SIDE

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE




SPAN 120
SPAN 121

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 120

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-161 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

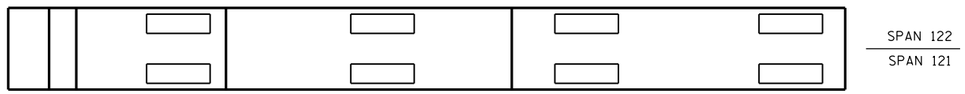
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

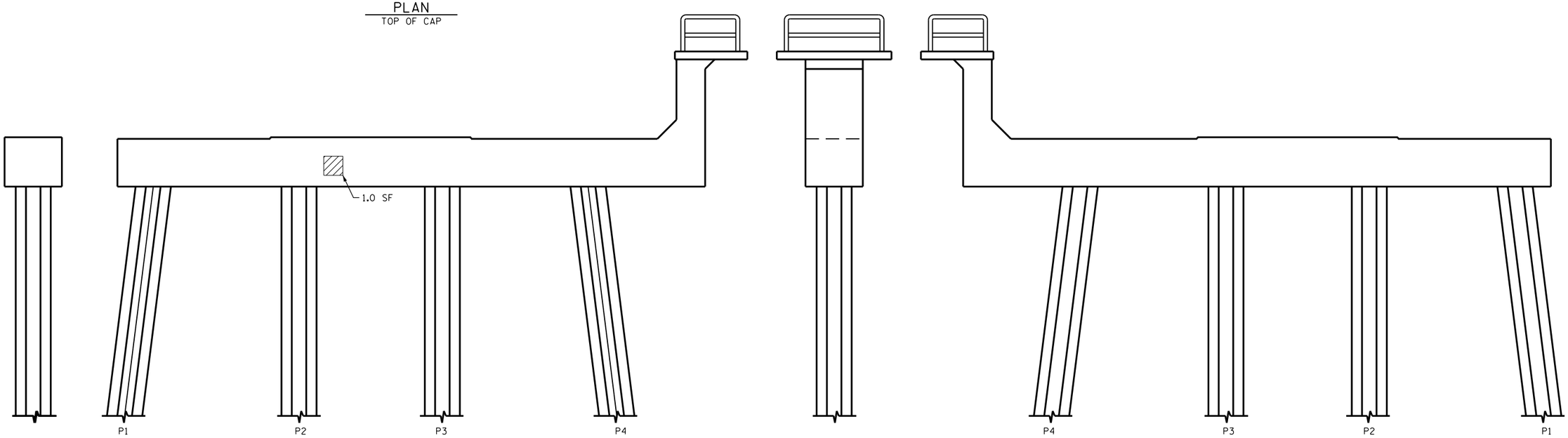
## REPAIR QUANTITY TABLE

| REPAIRS BENT 121 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.0 | 0.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.




PLAN
TOP OF CAP

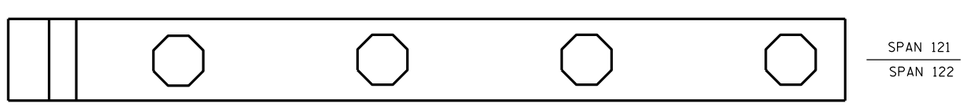



END VIEW
NORTH SIDE

ELEVATION
WEST SIDE

END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 121

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-162 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

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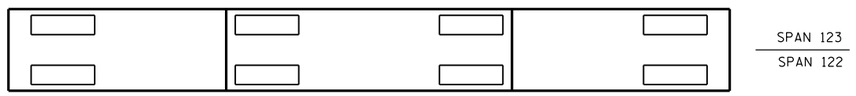
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

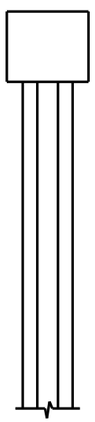
## REPAIR QUANTITY TABLE

| REPAIRS BENT 122 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

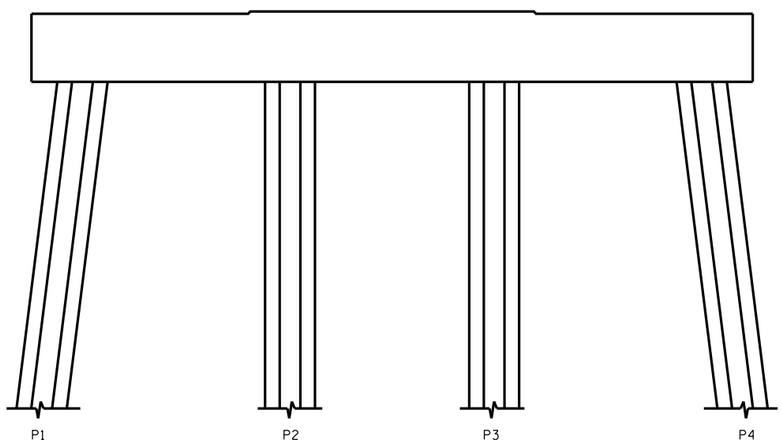
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



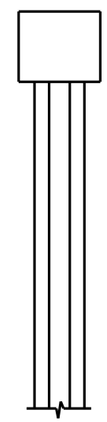

PLAN
TOP OF CAP



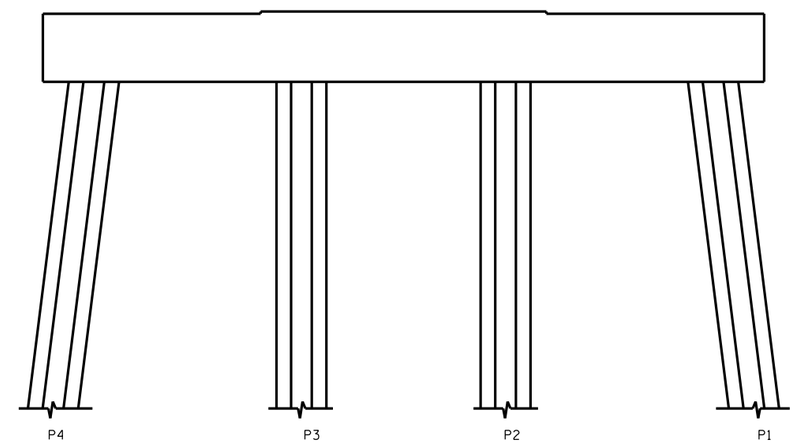
END VIEW
NORTH SIDE



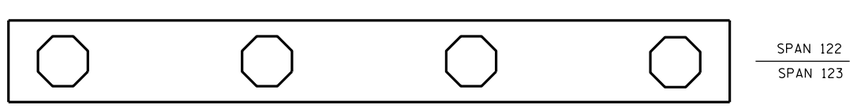

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 122

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-163 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

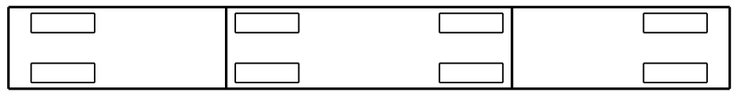
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

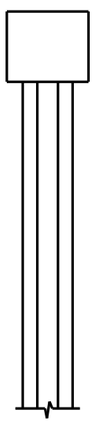
| REPAIRS BENT 123 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.7 | 0.7 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

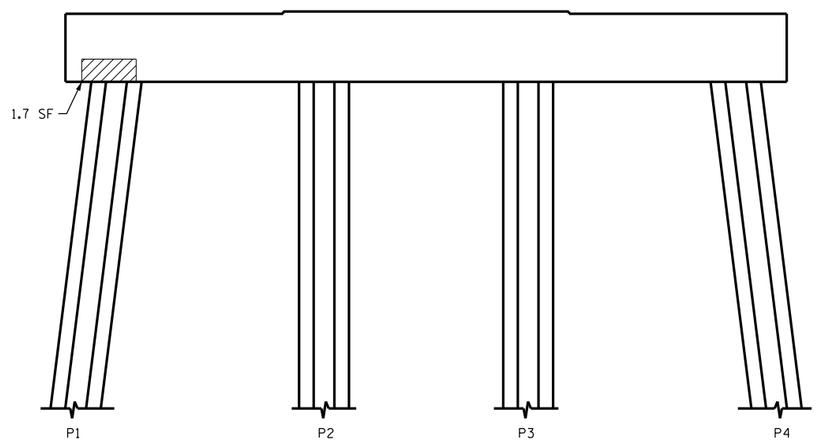


SPAN 124
SPAN 123

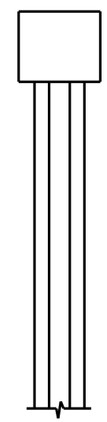
PLAN
TOP OF CAP



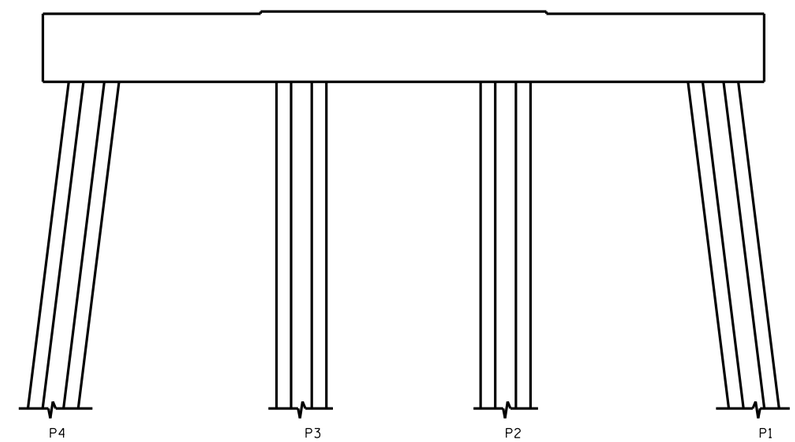
END VIEW
NORTH SIDE



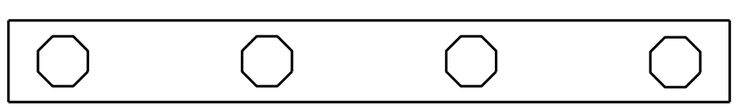

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 123
SPAN 124

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 123

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-164 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

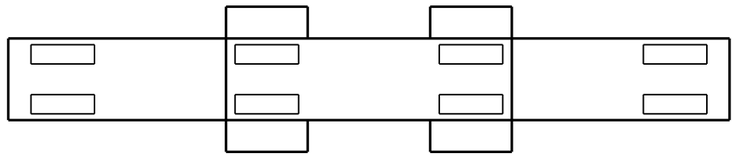
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

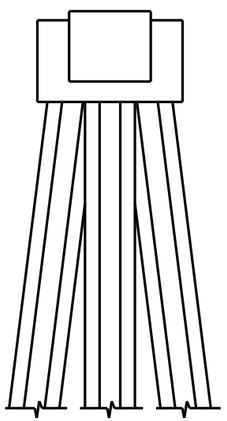
| REPAIRS BENT 124 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.7 | 0.7 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

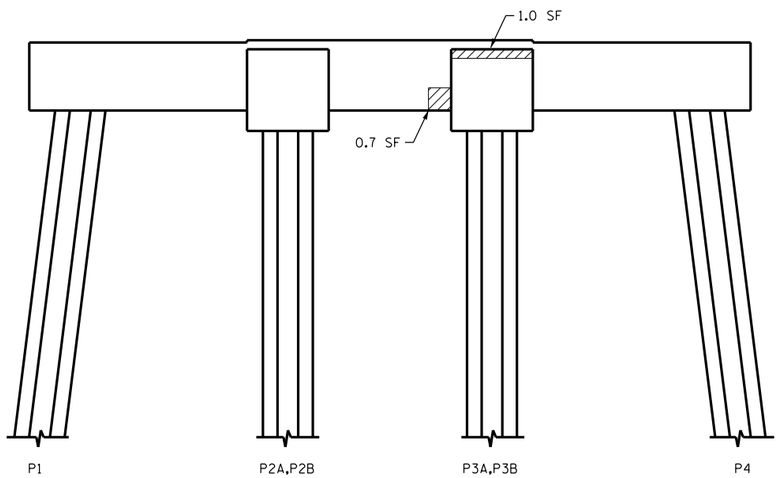


SPAN 125
SPAN 124

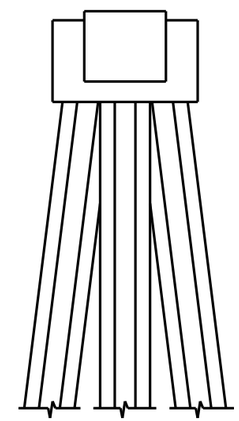
PLAN
TOP OF CAP



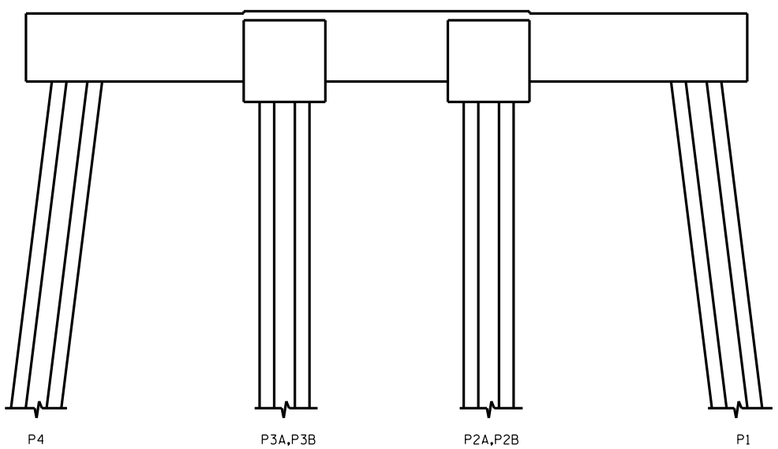
END VIEW
NORTH SIDE



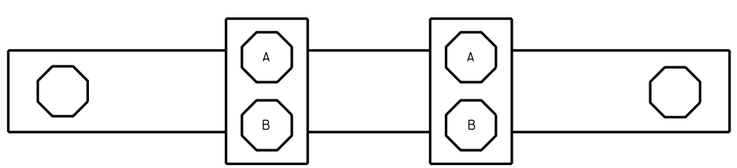

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 124
SPAN 125

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 124

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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-165 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

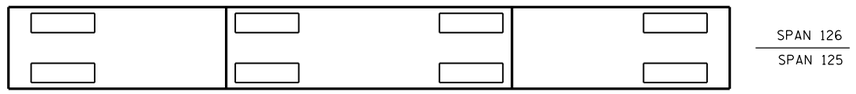
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

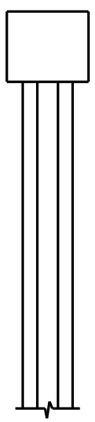
## REPAIR QUANTITY TABLE

| REPAIRS BENT 125 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

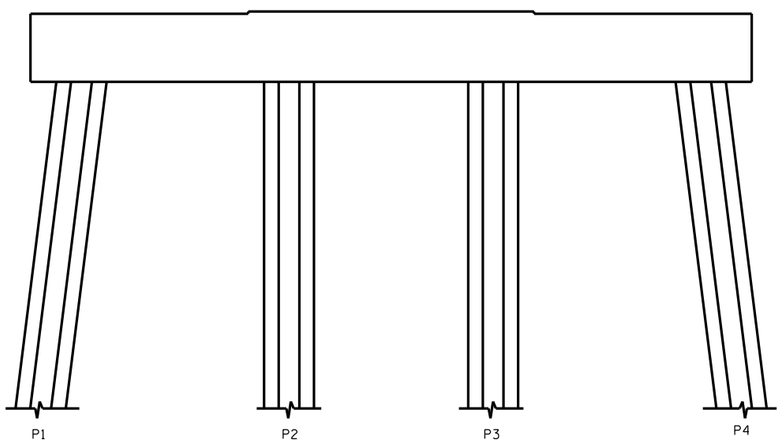
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



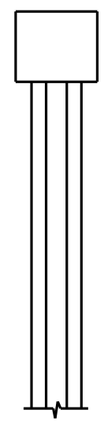

PLAN
TOP OF CAP



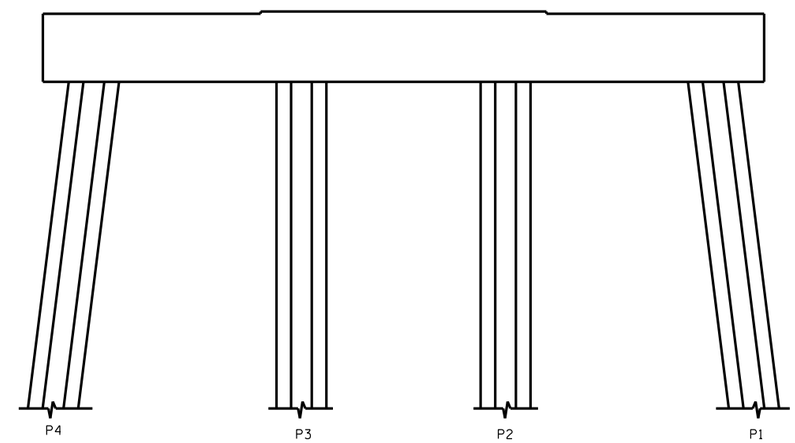
END VIEW
NORTH SIDE



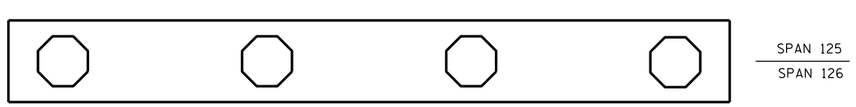

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 125

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-166 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

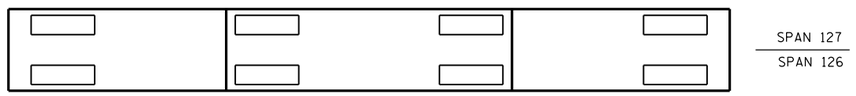
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

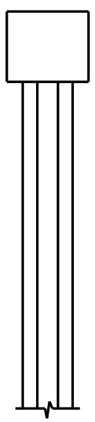
## REPAIR QUANTITY TABLE

| REPAIRS BENT 126 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

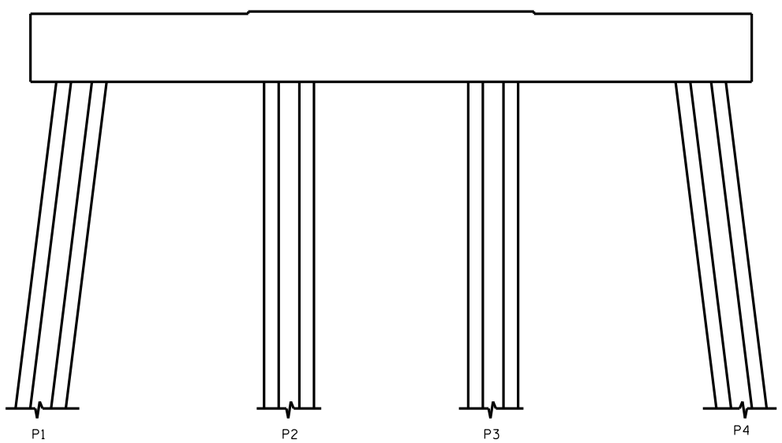
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



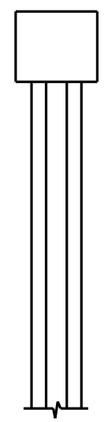

PLAN
TOP OF CAP



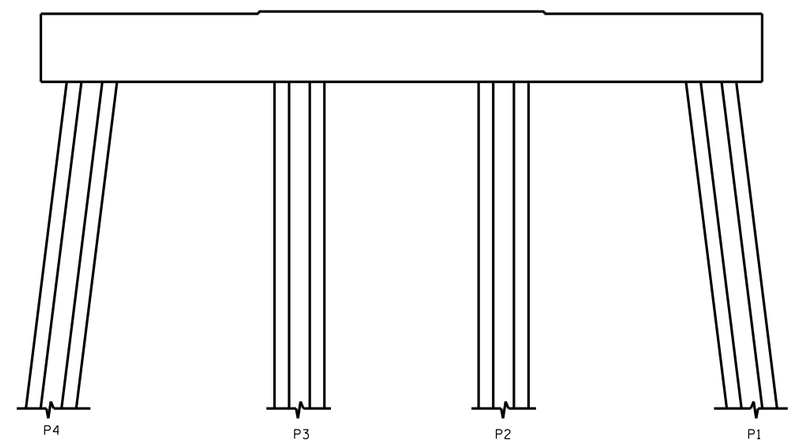
END VIEW
NORTH SIDE



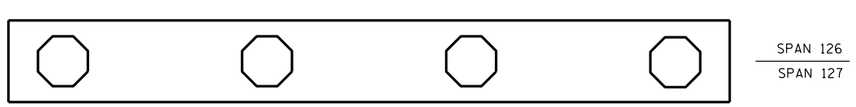

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 126

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-167 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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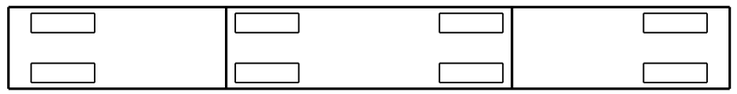
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

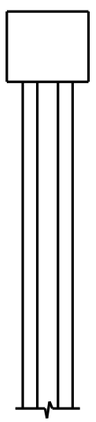
| REPAIRS BENT 127 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.7 | 1.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

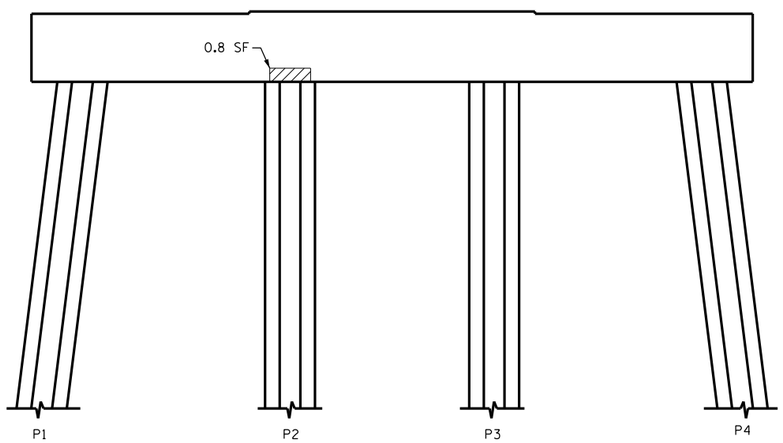


SPAN 128
SPAN 127

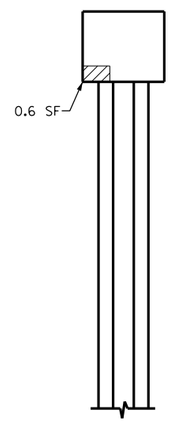
PLAN
TOP OF CAP



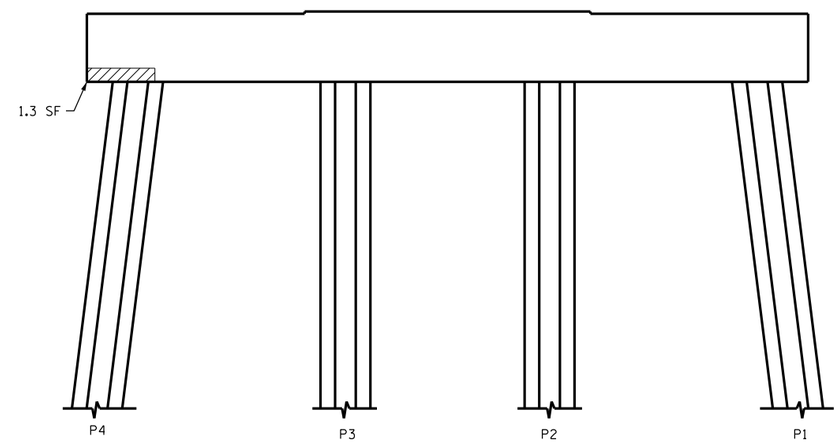
END VIEW
NORTH SIDE



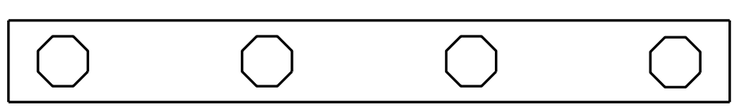

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 127
SPAN 128

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 127

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-168 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

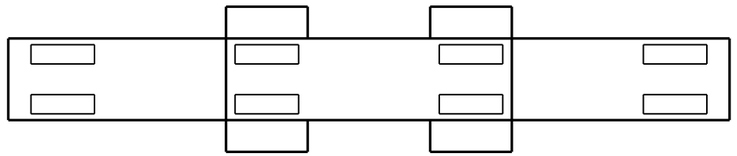
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

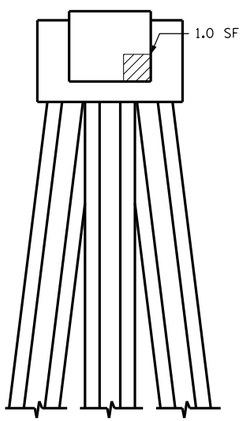
| REPAIRS BENT 128 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.0 | 0.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

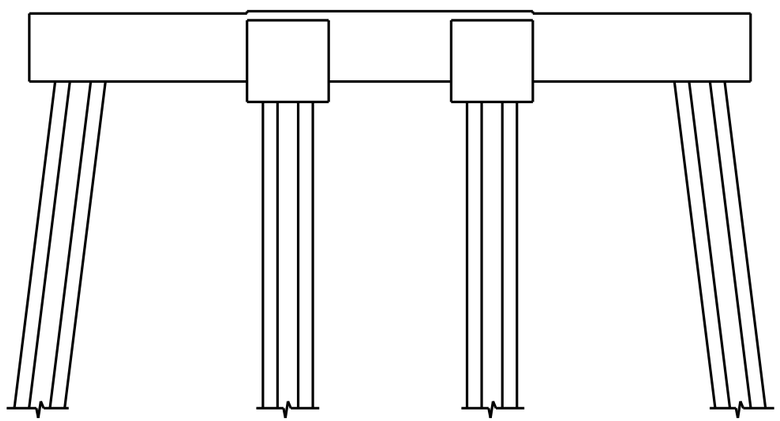


SPAN 129
SPAN 128

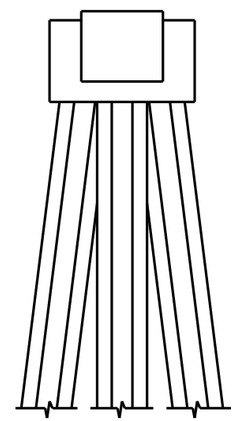
PLAN
TOP OF CAP



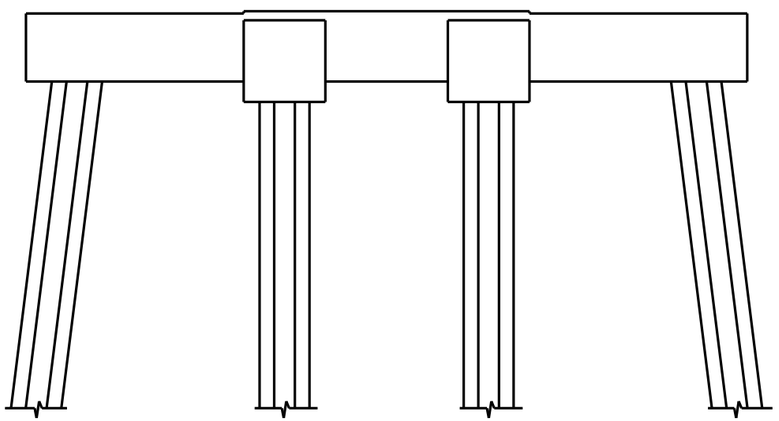

END VIEW
NORTH SIDE



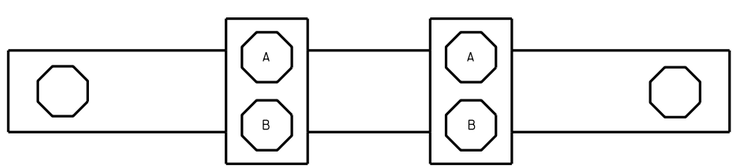

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 128
SPAN 129

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 128

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-169 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

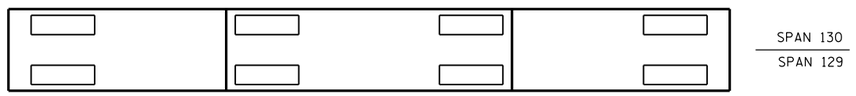
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

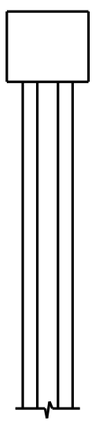
## REPAIR QUANTITY TABLE

| REPAIRS BENT 129 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

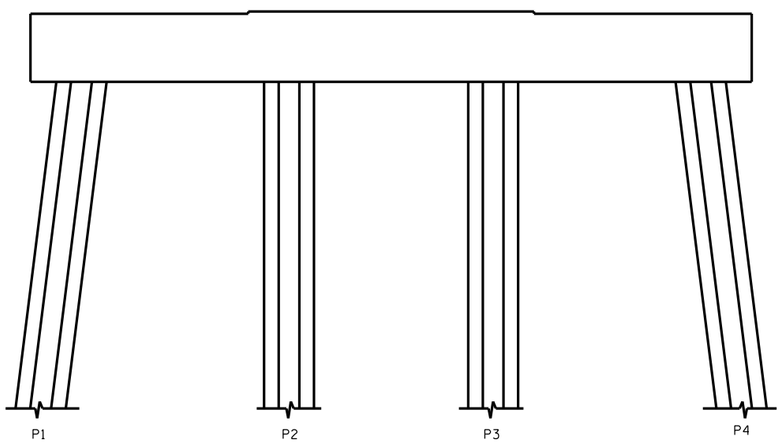
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



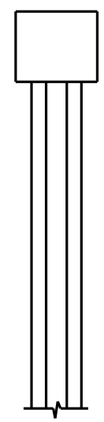

PLAN
TOP OF CAP



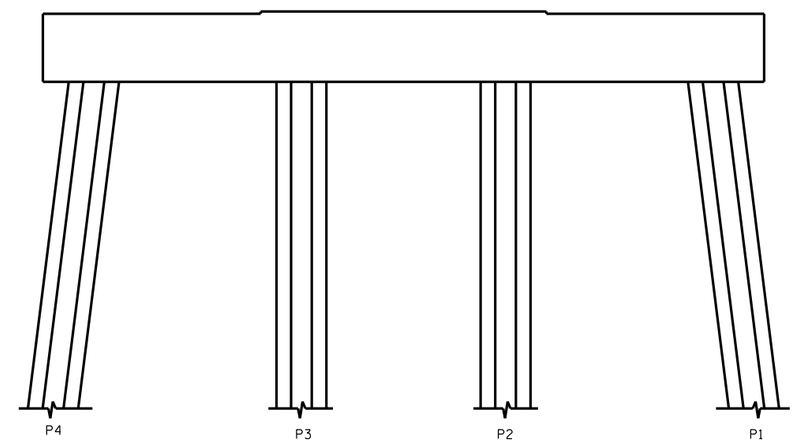
END VIEW
NORTH SIDE



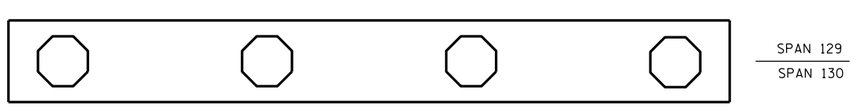

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 129

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | | | |
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SHEET NO. S-170
TOTAL SHEETS 394

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

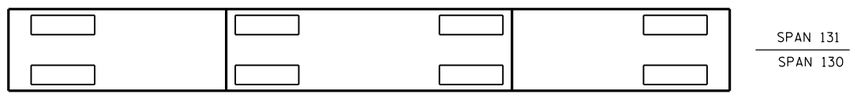
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

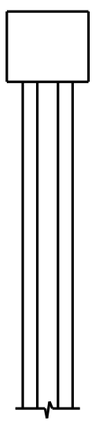
## REPAIR QUANTITY TABLE

| REPAIRS BENT 130 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.3 | 1.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

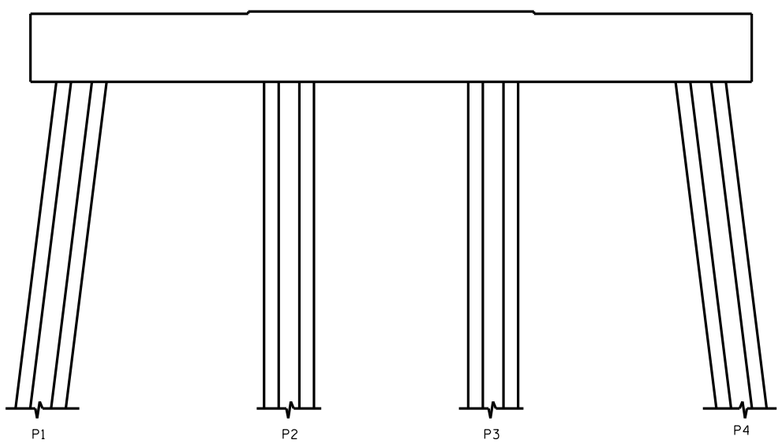
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



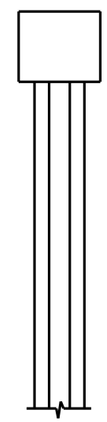

PLAN
TOP OF CAP



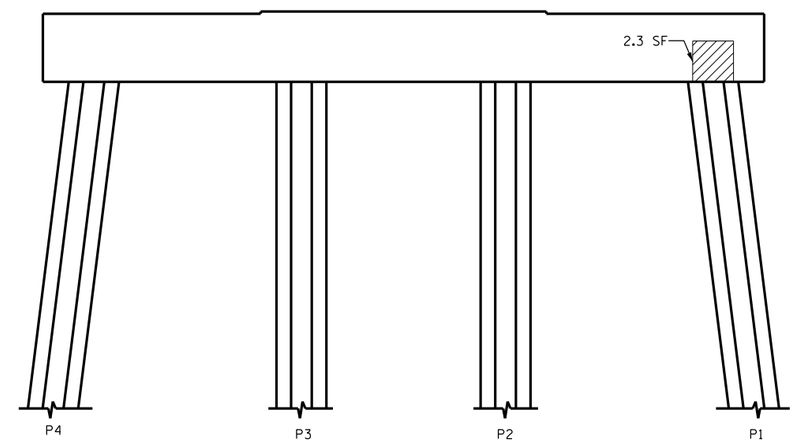
END VIEW
NORTH SIDE



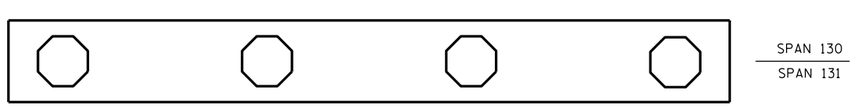

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 130

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| REVISIONS | | | | | | | |
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| 1 | | | 3 | | | S-171 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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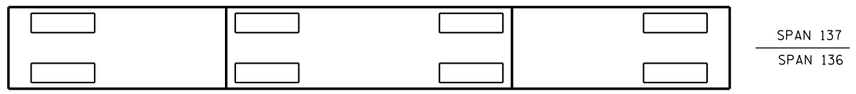
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

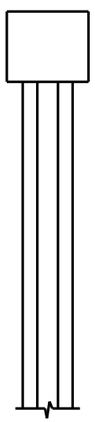
## REPAIR QUANTITY TABLE

| REPAIRS BENT 131 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.5 | 2.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

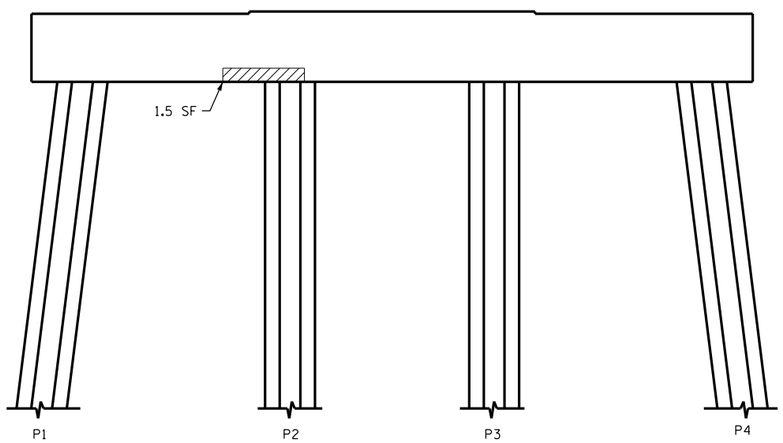
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



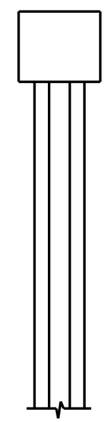

PLAN
TOP OF CAP



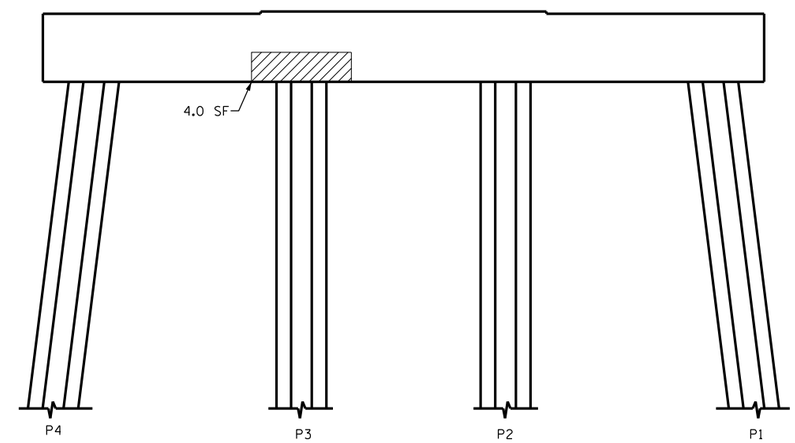
END VIEW
NORTH SIDE



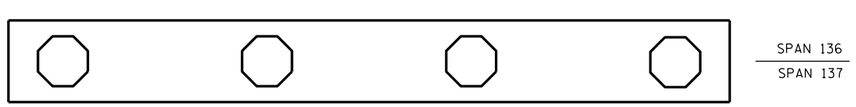

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 131

DRAWN BY : P. D. BRYANT DATE : 4-2016
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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-172 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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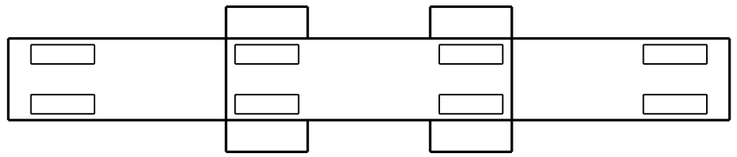
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

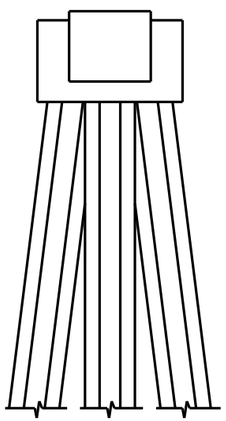
## REPAIR QUANTITY TABLE

| REPAIRS BENT 132 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.5 | 0.6 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

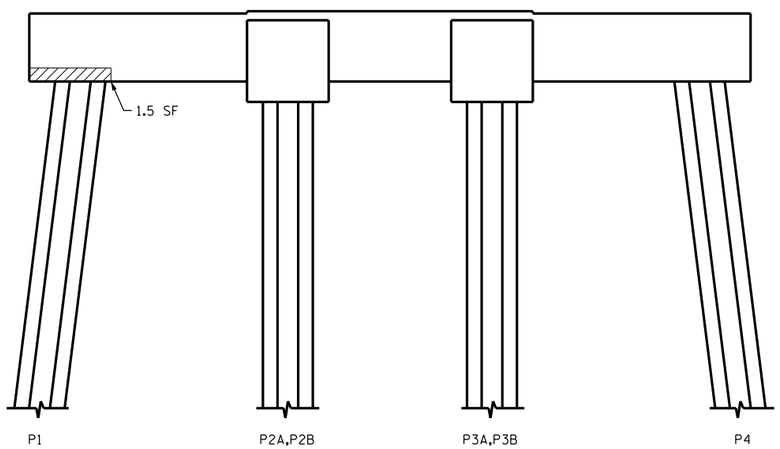
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



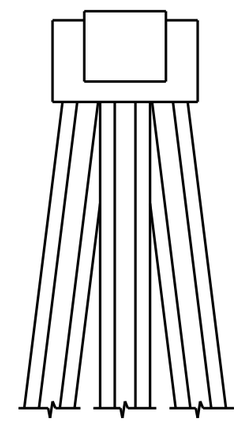

PLAN
TOP OF CAP



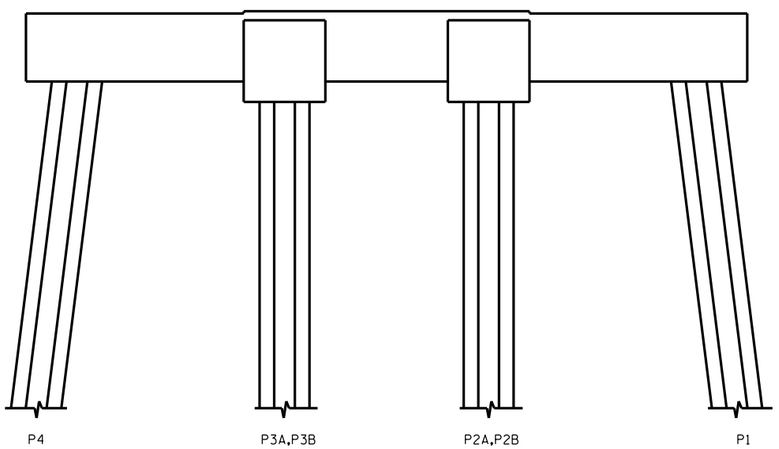
END VIEW
NORTH SIDE



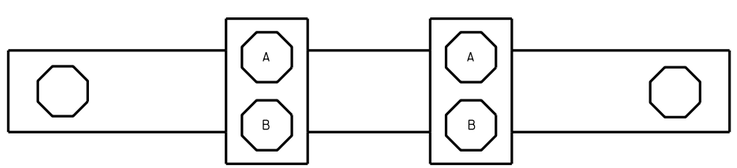

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 132

| REVISIONS | | | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-173 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

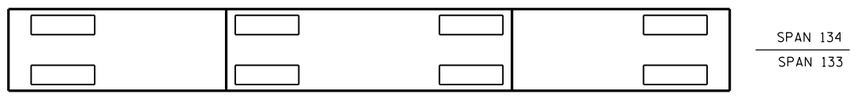
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

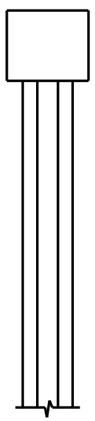
## REPAIR QUANTITY TABLE

| REPAIRS BENT 133 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.8 | 0.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

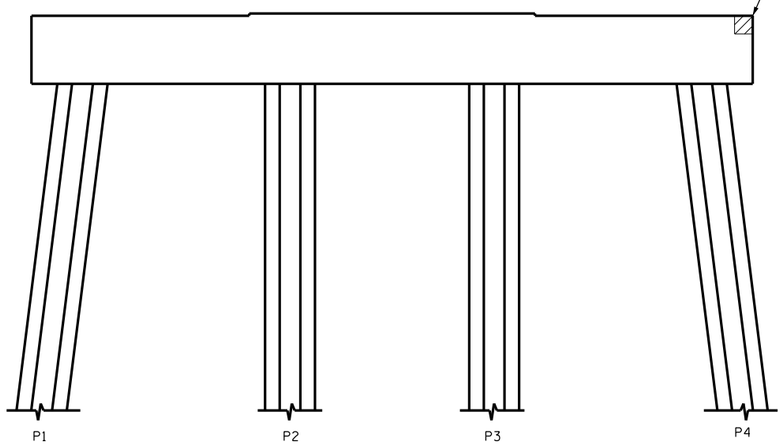
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



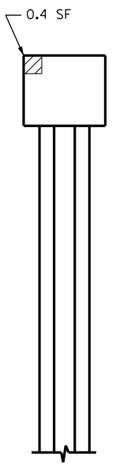

PLAN
TOP OF CAP



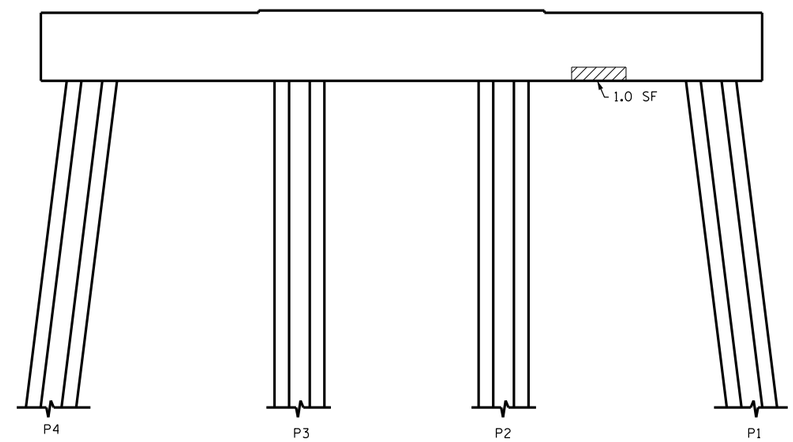
END VIEW
NORTH SIDE



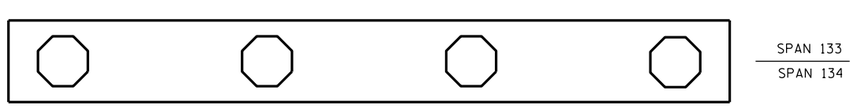

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 133

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-174 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

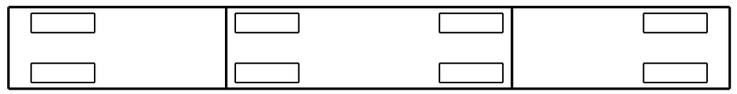
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

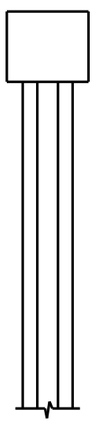
| REPAIRS BENT 134 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

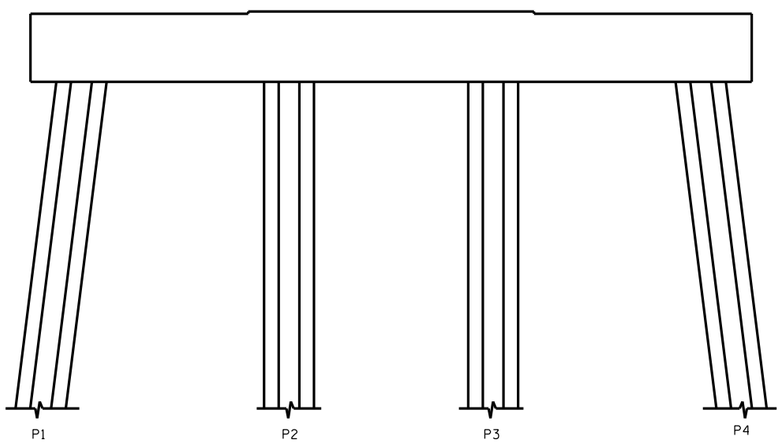


SPAN 135
SPAN 134

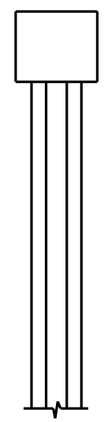
PLAN
TOP OF CAP



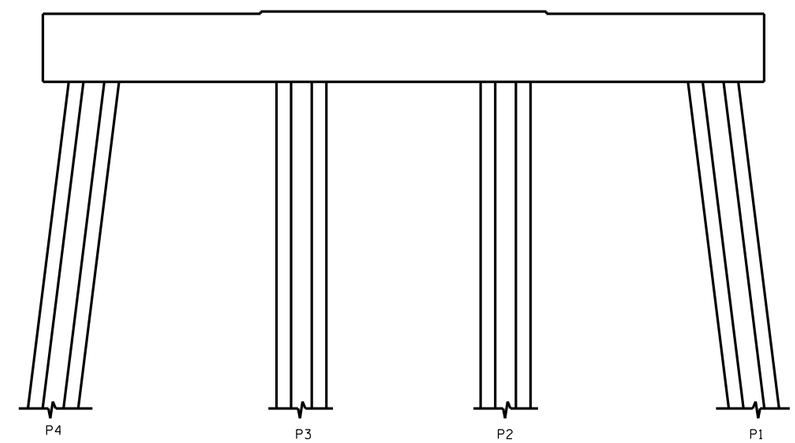
END VIEW
NORTH SIDE



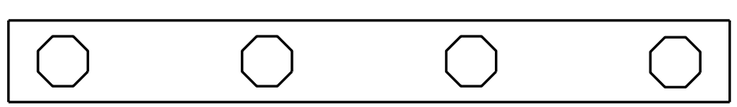

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 134
SPAN 135

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 134

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-175 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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## NOTES:

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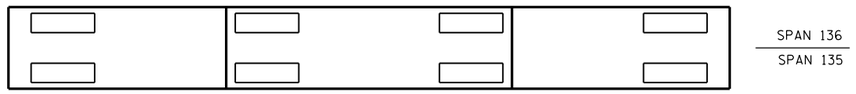
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

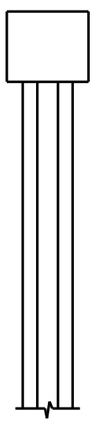
## REPAIR QUANTITY TABLE

| REPAIRS BENT 135 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

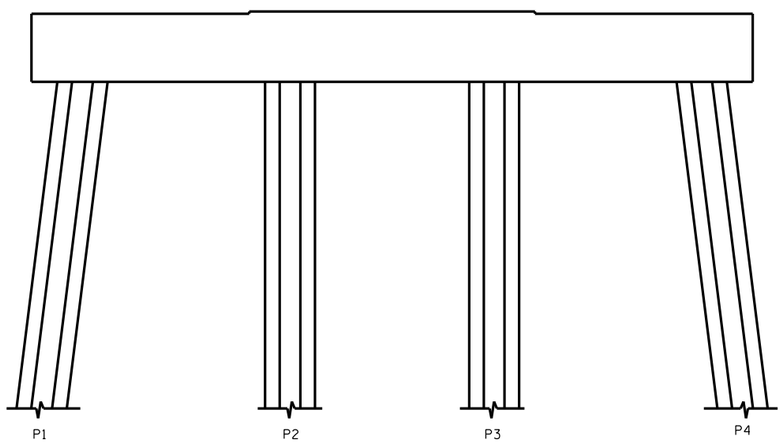
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



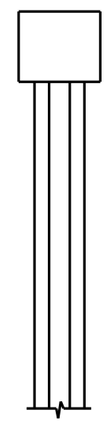

PLAN
TOP OF CAP



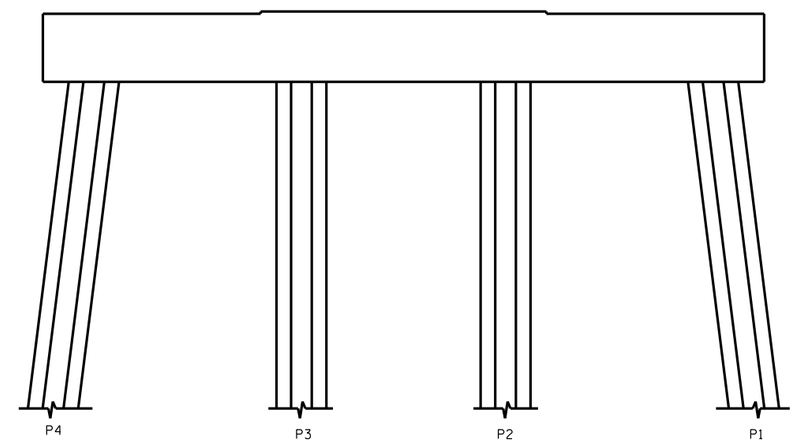
END VIEW
NORTH SIDE



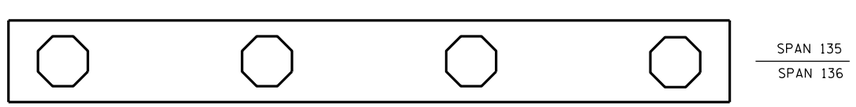

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 135

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-176 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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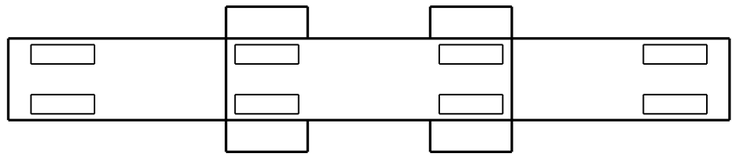
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

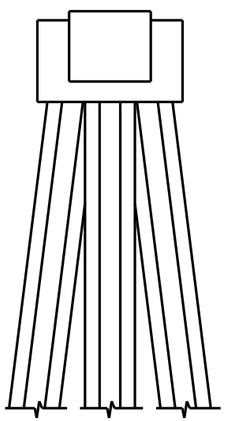
| REPAIRS BENT 136 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

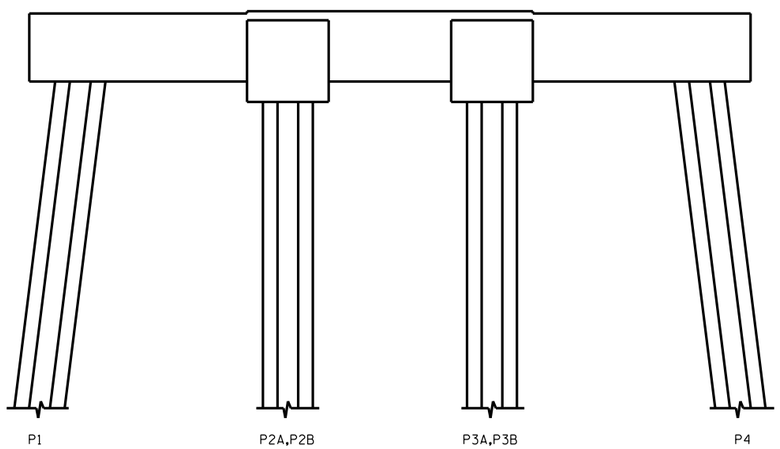


SPAN 137
SPAN 136

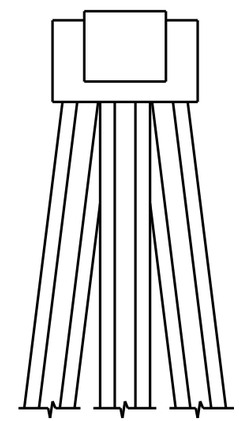
PLAN
TOP OF CAP



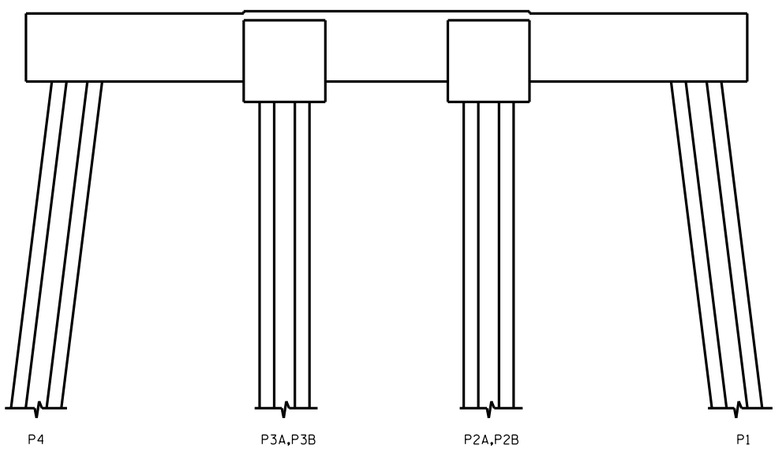
END VIEW
NORTH SIDE



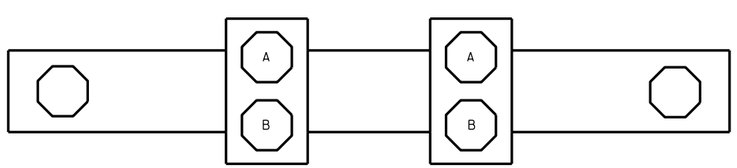

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 136
SPAN 137

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 136

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-177 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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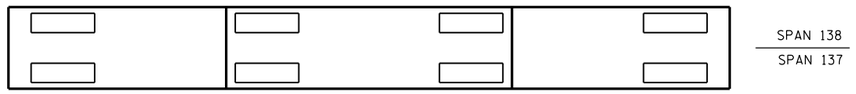
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

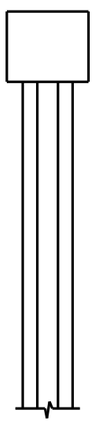
## REPAIR QUANTITY TABLE

| REPAIRS BENT 137 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.0 | 1.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

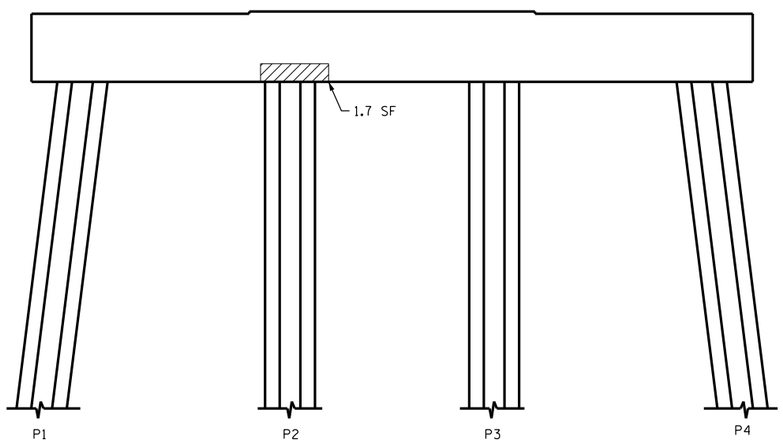
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



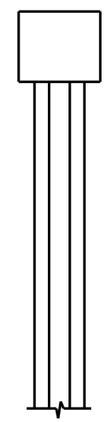

PLAN
TOP OF CAP



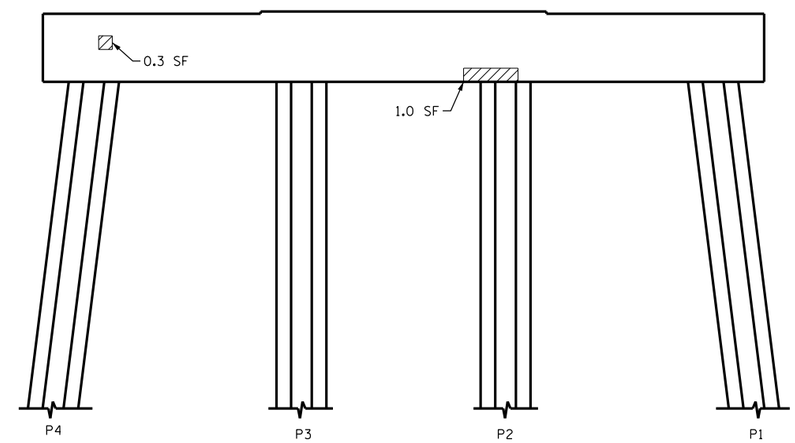
END VIEW
NORTH SIDE



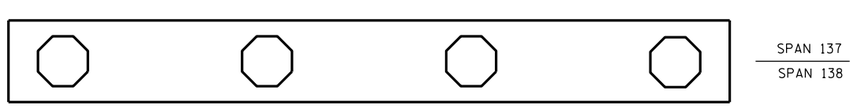

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 137

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-178 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

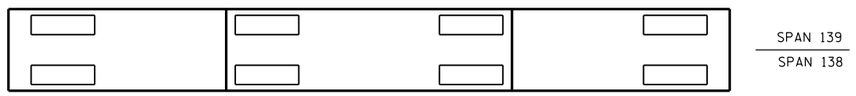
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

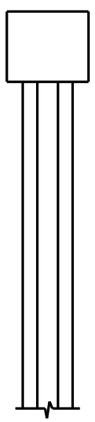
## REPAIR QUANTITY TABLE

| REPAIRS BENT 138 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.7 | 0.7 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

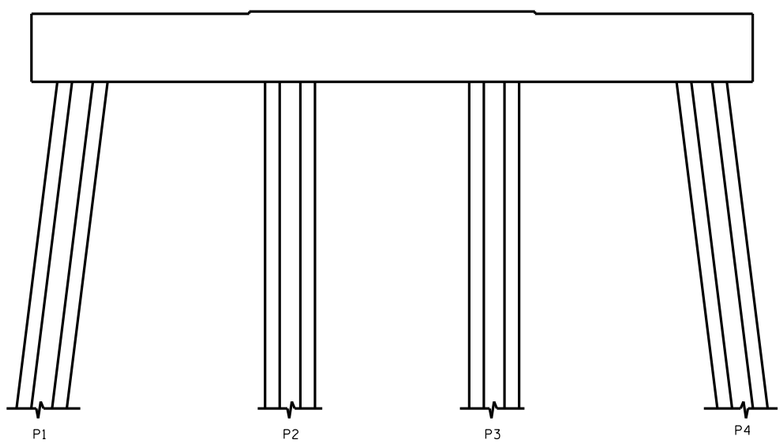
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



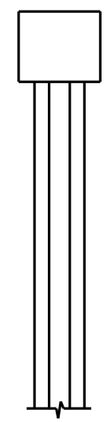

PLAN
TOP OF CAP



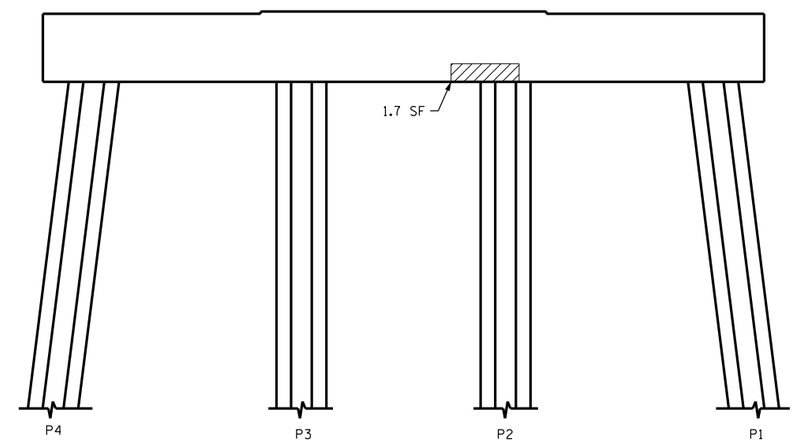
END VIEW
NORTH SIDE



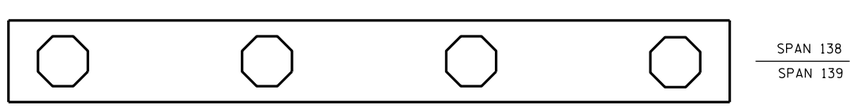

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 138

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-179 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:43
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## 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.

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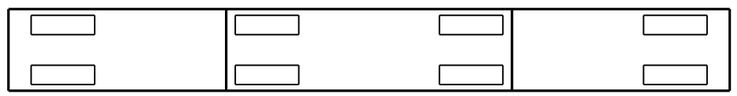
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

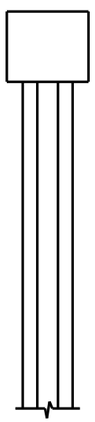
## REPAIR QUANTITY TABLE

| REPAIRS BENT 139 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

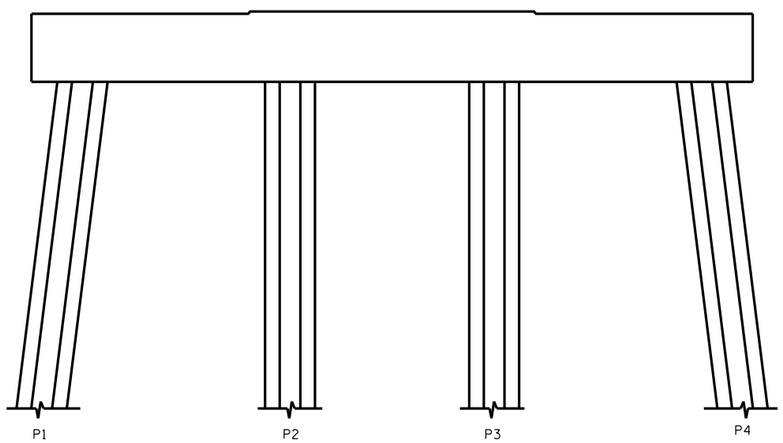
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



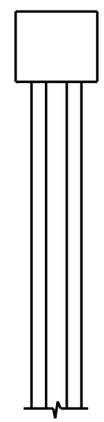

PLAN
TOP OF CAP



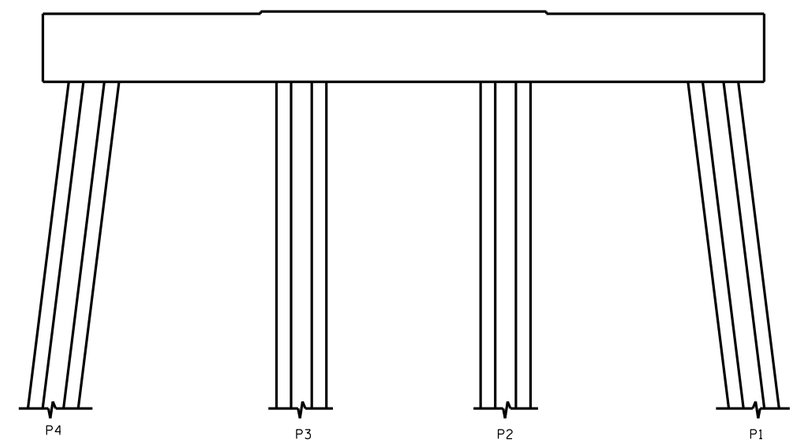
END VIEW
NORTH SIDE



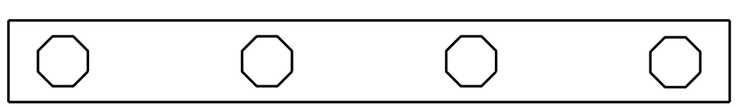

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 139

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-180 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

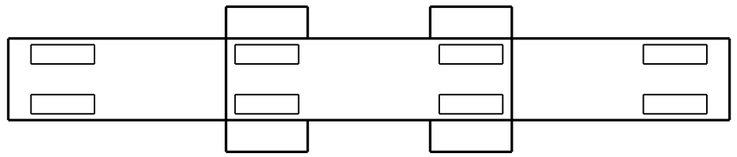
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

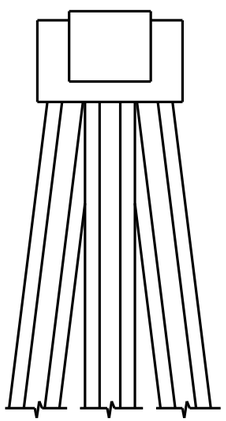
| REPAIRS BENT 140 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

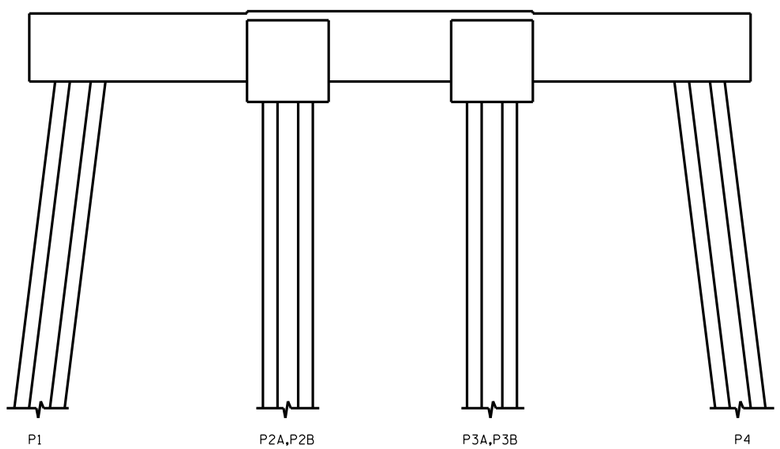


SPAN 141
SPAN 140

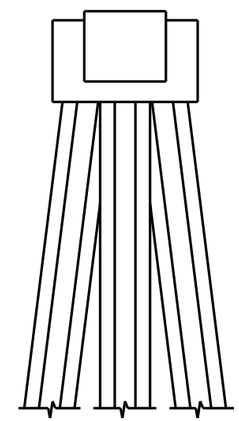
PLAN
TOP OF CAP



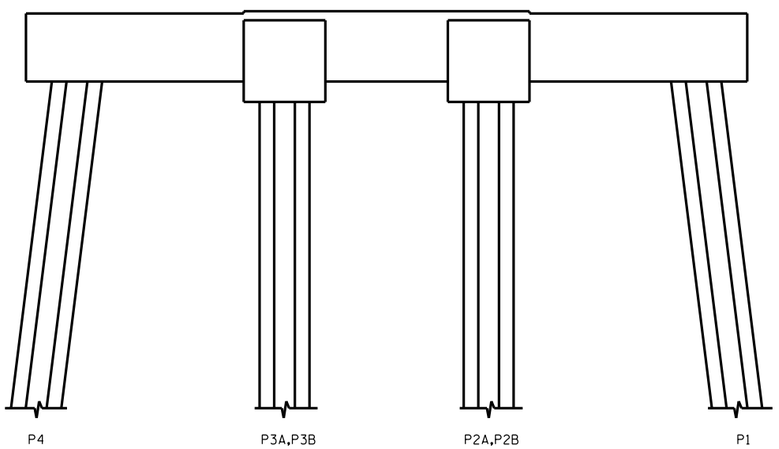
END VIEW
NORTH SIDE



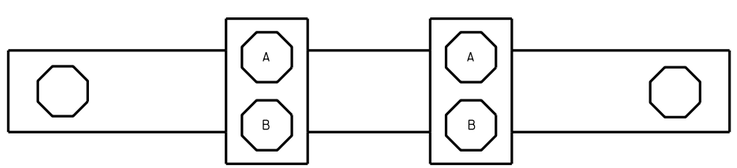

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 140
SPAN 141

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 140

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-181 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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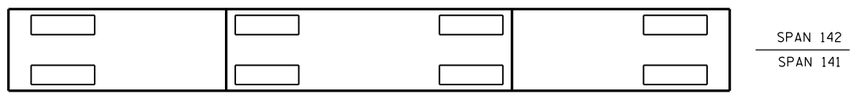
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

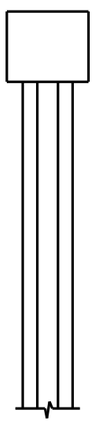
## REPAIR QUANTITY TABLE

| REPAIRS BENT 141 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

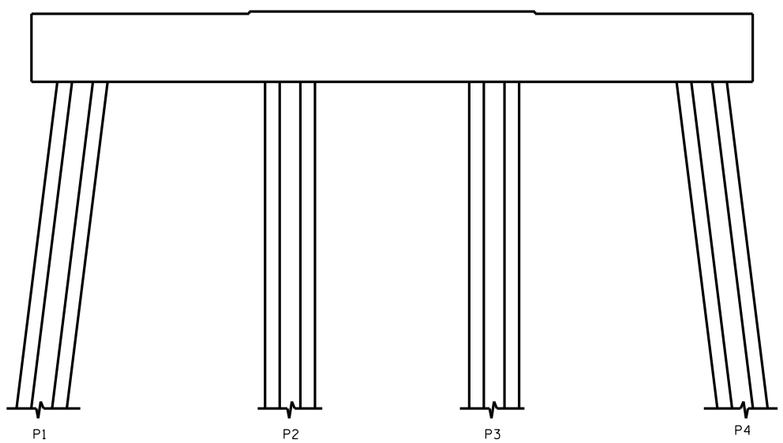
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



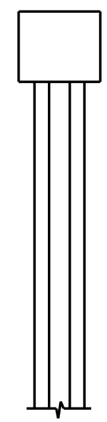

PLAN
TOP OF CAP



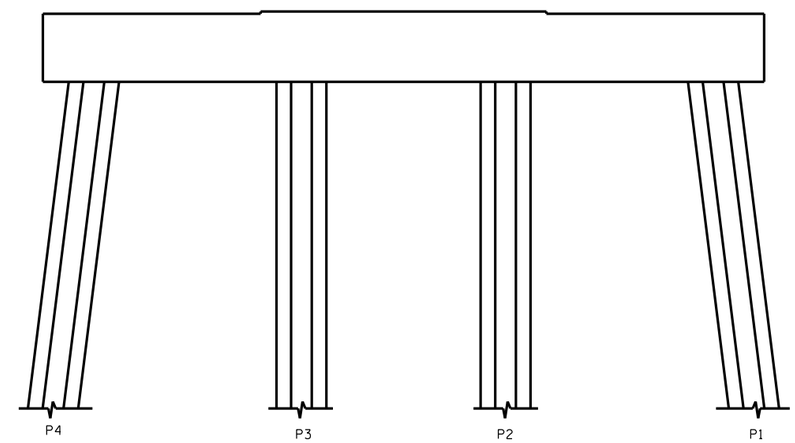
END VIEW
NORTH SIDE



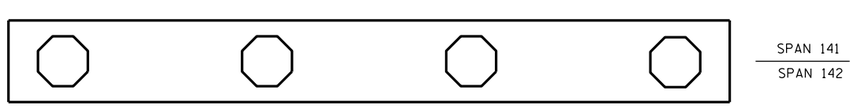

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 141

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-182 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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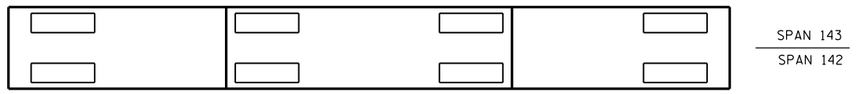
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

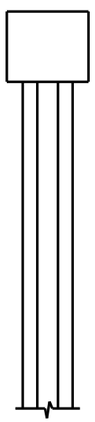
## REPAIR QUANTITY TABLE

| REPAIRS BENT 142 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.3 | 2.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

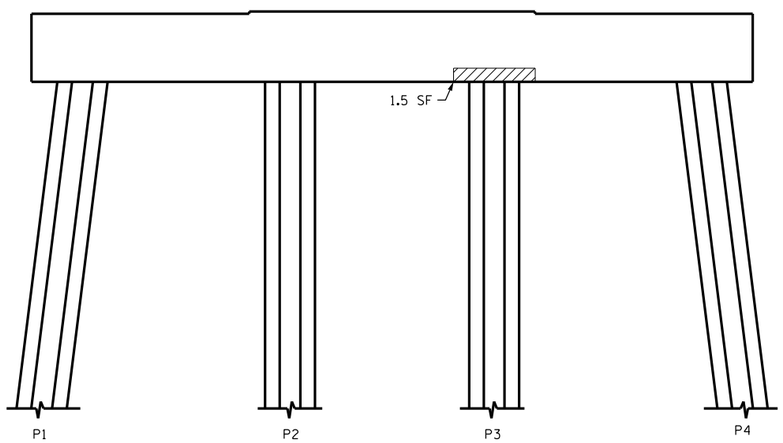
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



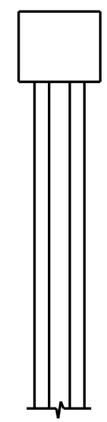

PLAN
TOP OF CAP



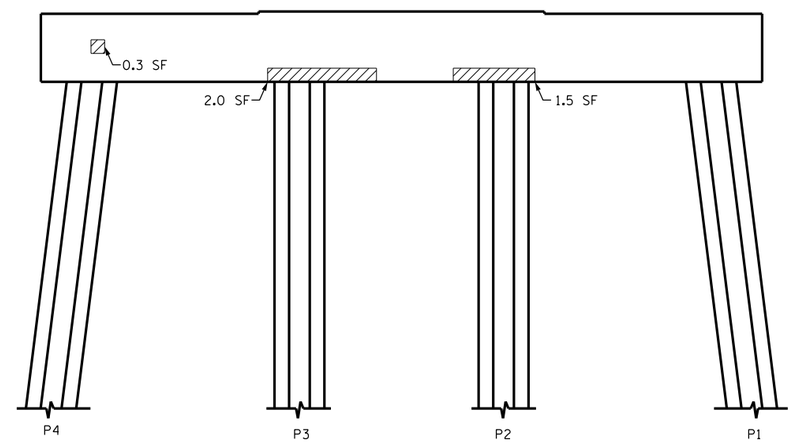
END VIEW
NORTH SIDE



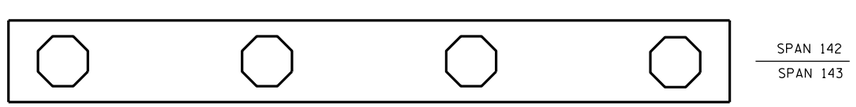

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
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8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 142

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-183 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

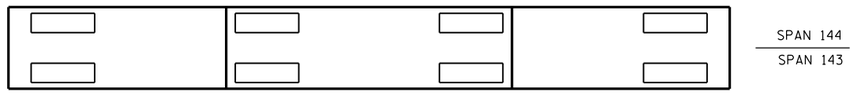
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

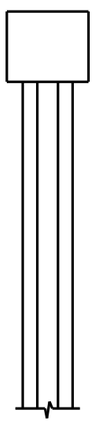
## REPAIR QUANTITY TABLE

| REPAIRS BENT 143 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

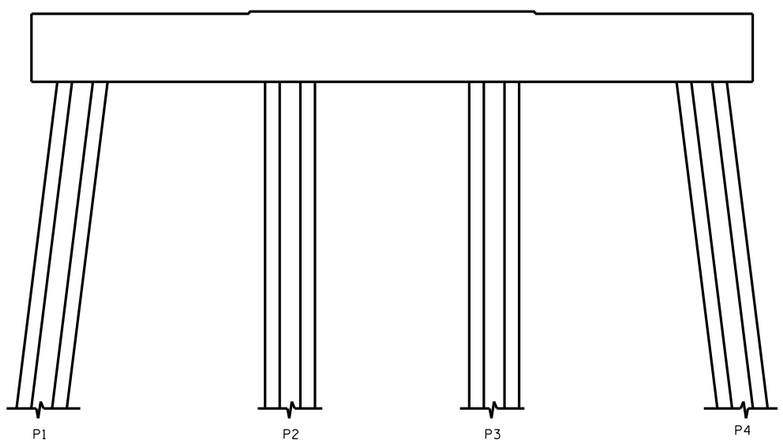
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



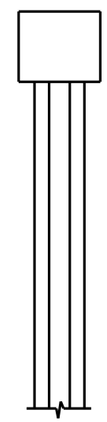

PLAN
TOP OF CAP



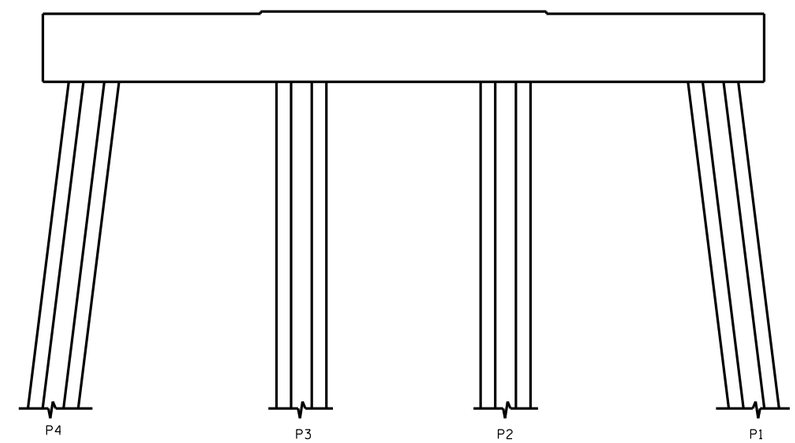
END VIEW
NORTH SIDE



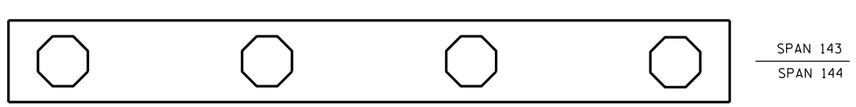

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 143

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-184 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

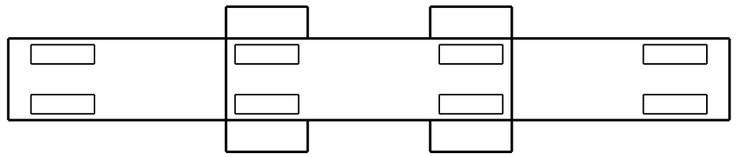
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

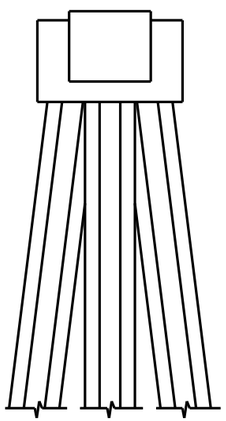
| REPAIRS BENT 144 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.0 | 1.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

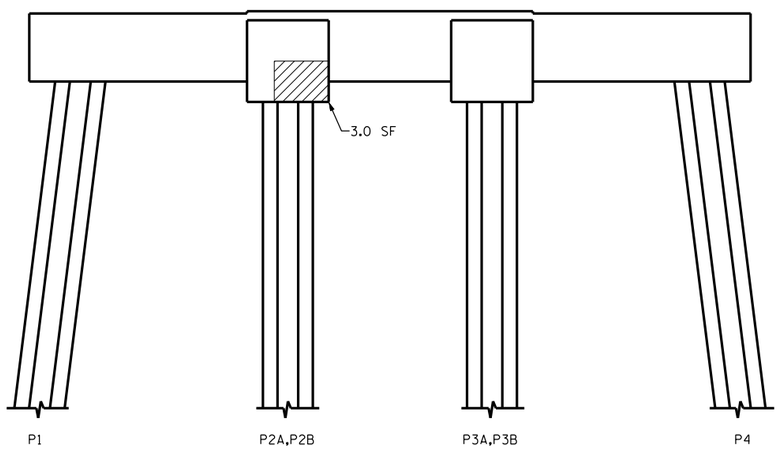


SPAN 145
SPAN 144

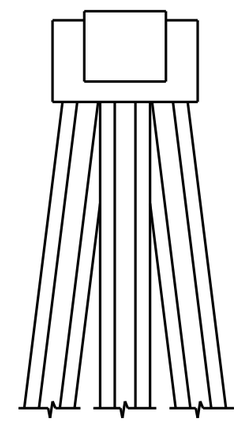
PLAN
TOP OF CAP



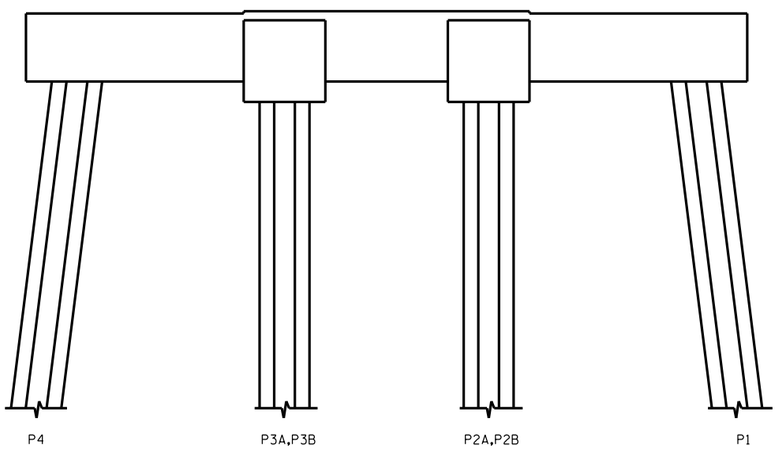
END VIEW
NORTH SIDE



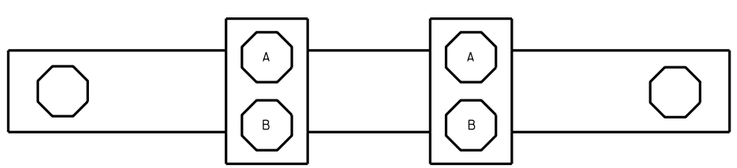

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 144
SPAN 145

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 144

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-185 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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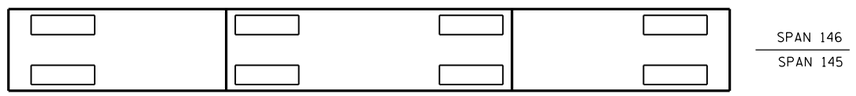
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

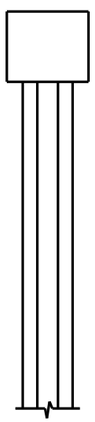
## REPAIR QUANTITY TABLE

| REPAIRS BENT 145 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

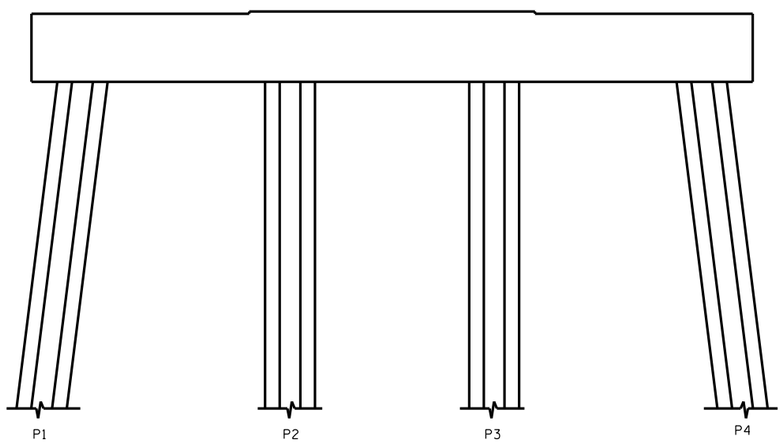
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



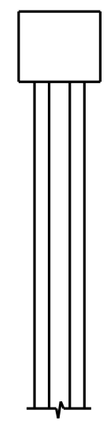

PLAN
TOP OF CAP



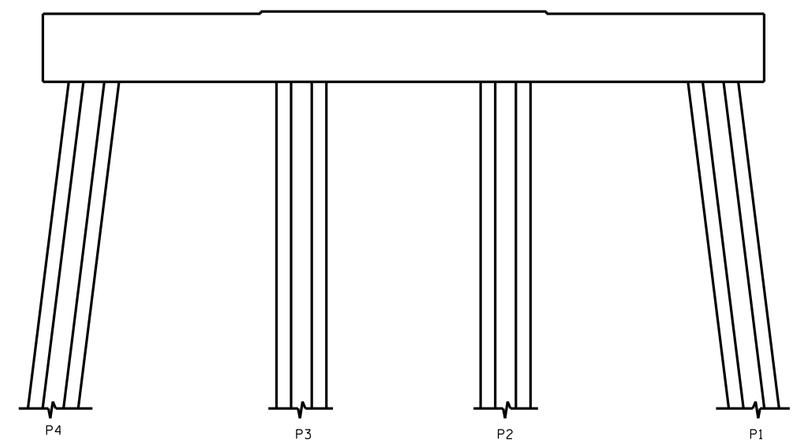
END VIEW
NORTH SIDE



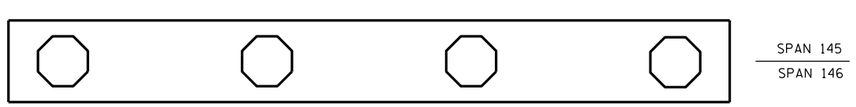

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

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- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 145

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-186 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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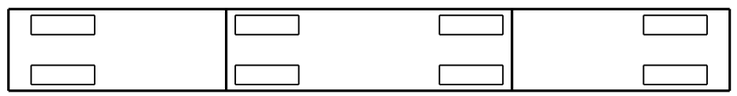
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

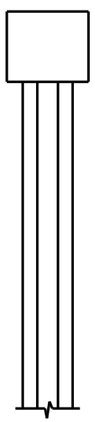
## REPAIR QUANTITY TABLE

| REPAIRS BENT 146 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.0 | 2.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

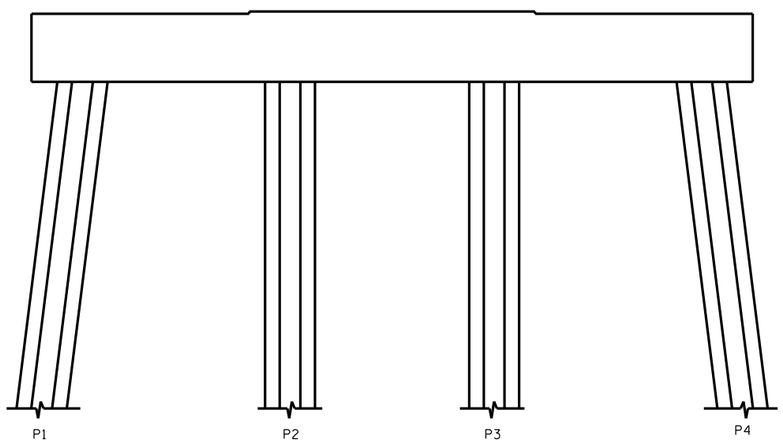
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



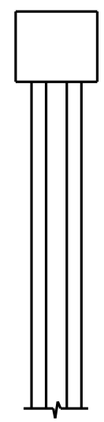

PLAN
TOP OF CAP



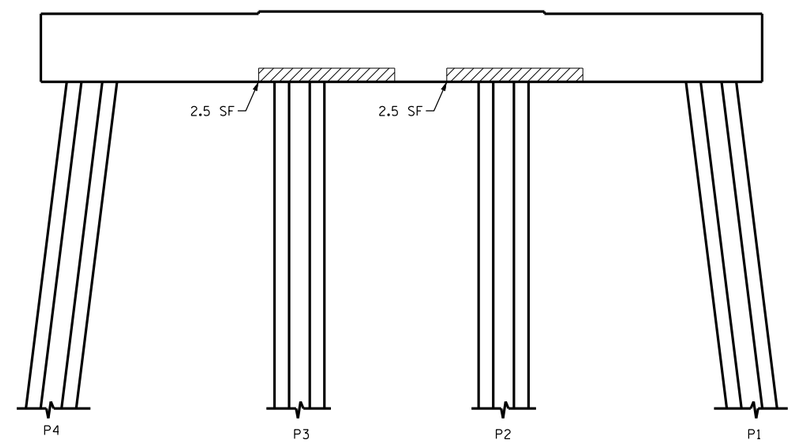
END VIEW
NORTH SIDE



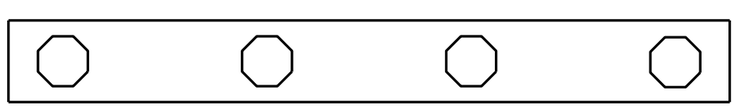

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 146

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

SHEET NO. S-187
TOTAL SHEETS 394

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## NOTES:

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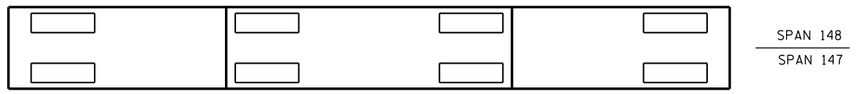
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

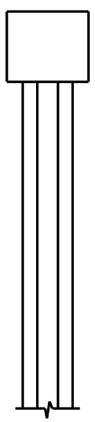
## REPAIR QUANTITY TABLE

| REPAIRS BENT 147 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

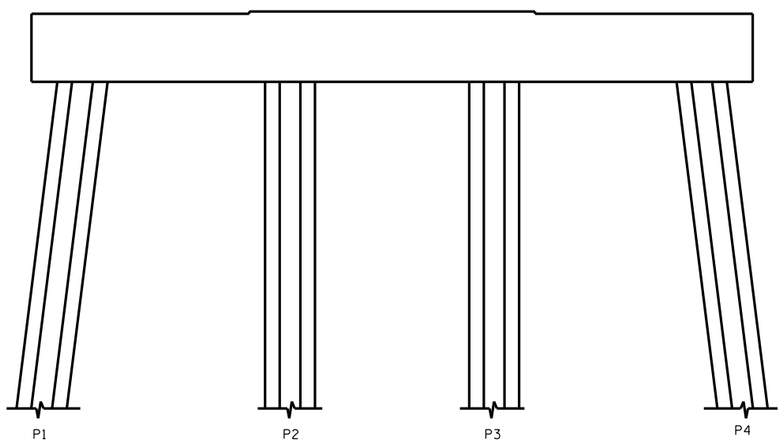
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



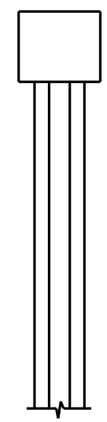

PLAN
TOP OF CAP



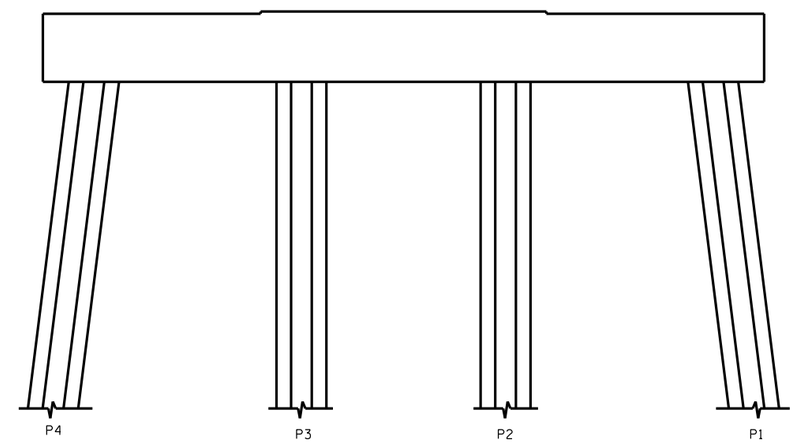
END VIEW
NORTH SIDE



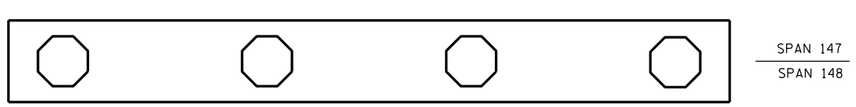

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 147

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-188 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
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ssandor

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

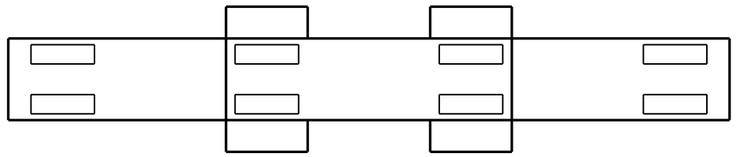
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

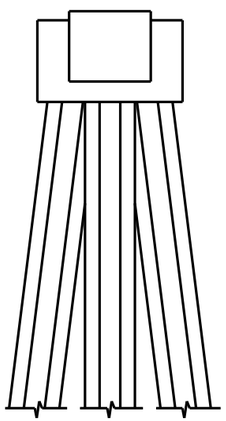
| REPAIRS BENT 148 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

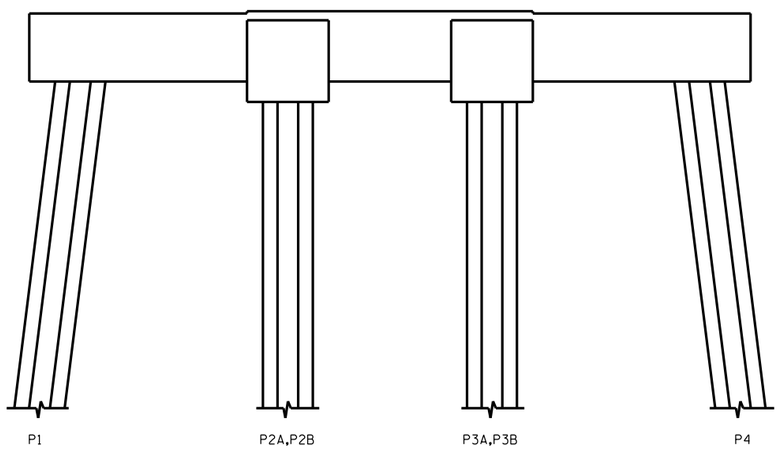


SPAN 149
SPAN 148

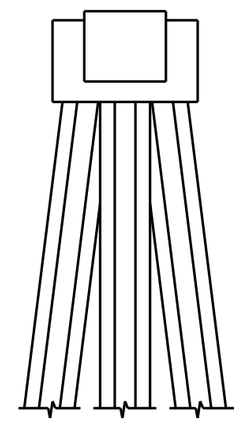
PLAN
TOP OF CAP



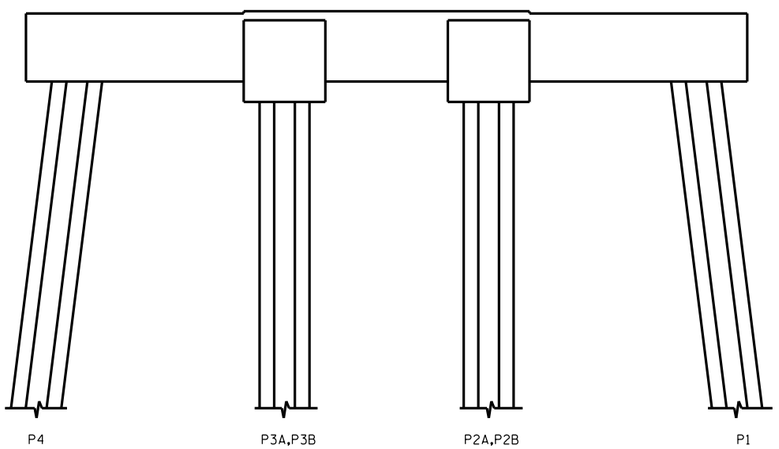
END VIEW
NORTH SIDE



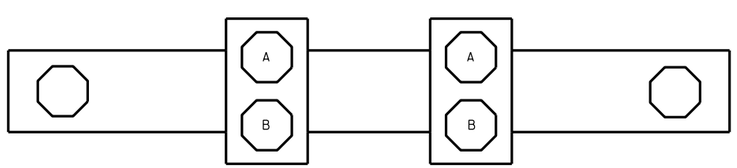

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 148
SPAN 149

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 148

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-189 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:49
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

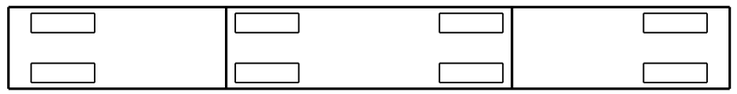
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

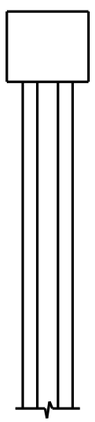
| REPAIRS BENT 149 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.7 | 0.7 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

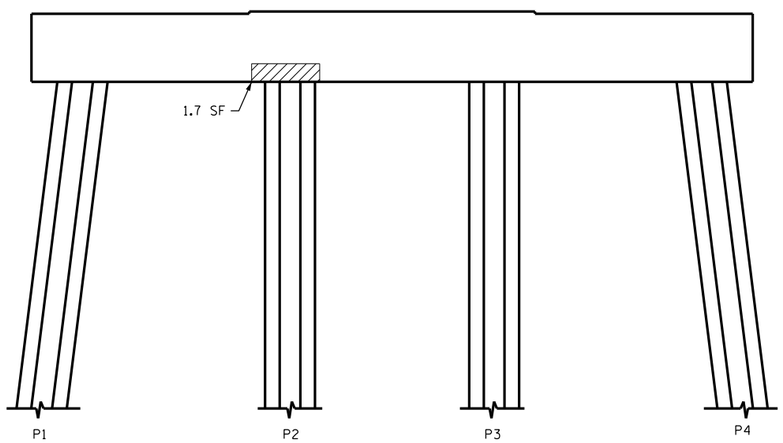


SPAN 150
SPAN 149

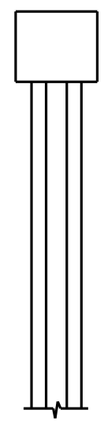
PLAN
TOP OF CAP



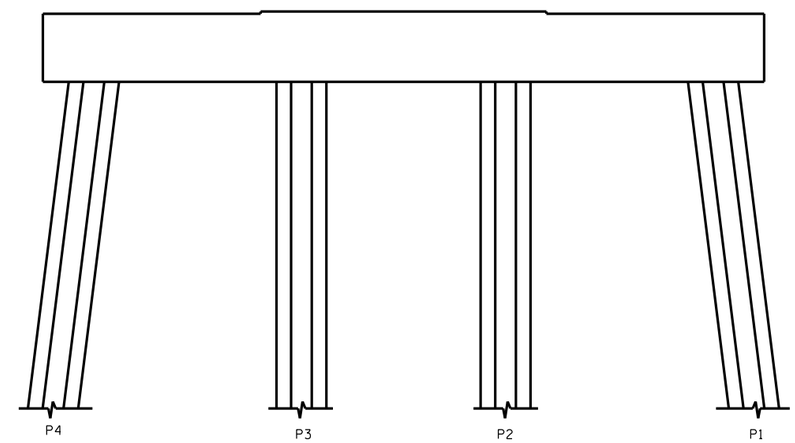
END VIEW
NORTH SIDE



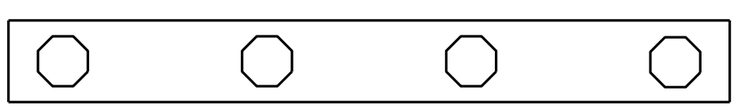

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 149
SPAN 150

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 149

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-190 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

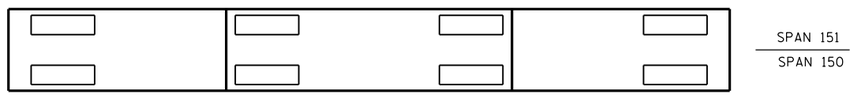
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

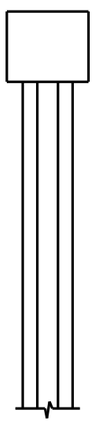
## REPAIR QUANTITY TABLE

| REPAIRS BENT 150 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

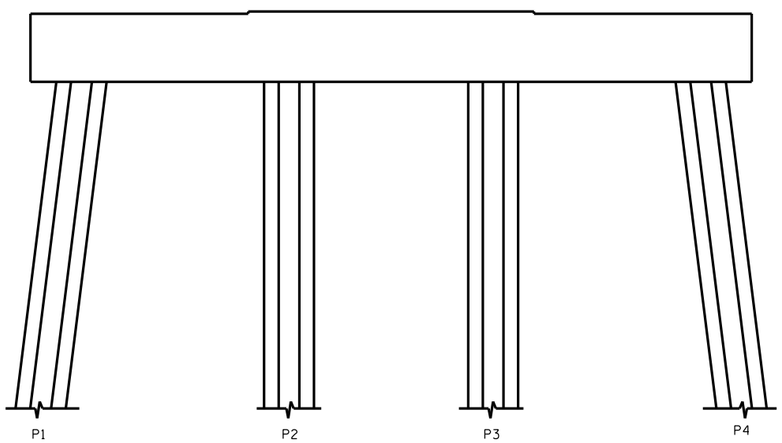
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



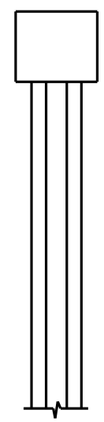

PLAN
TOP OF CAP



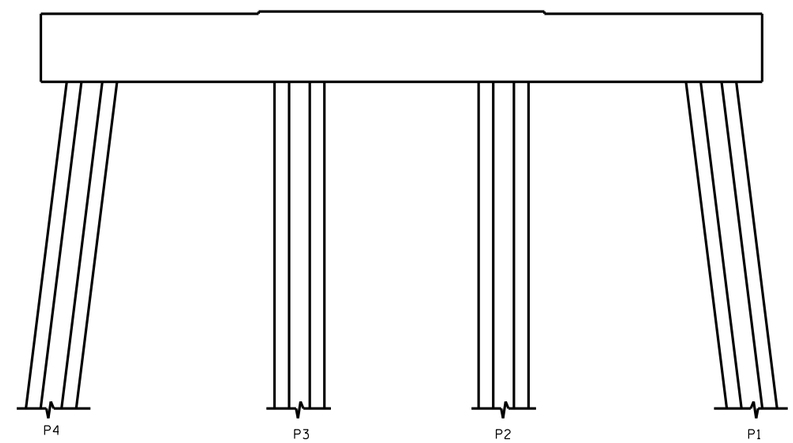
END VIEW
NORTH SIDE



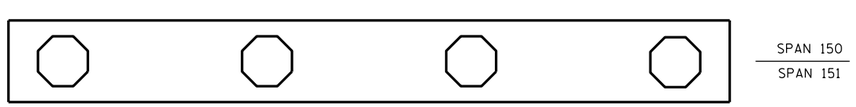

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 150

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-191 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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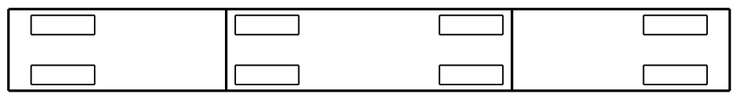
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

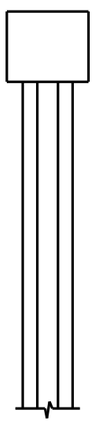
## REPAIR QUANTITY TABLE

| REPAIRS BENT 151 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

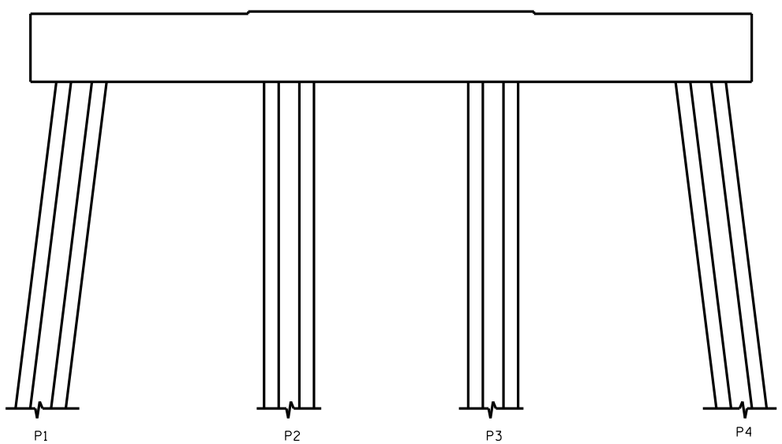
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



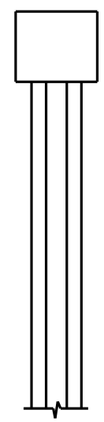

PLAN
TOP OF CAP



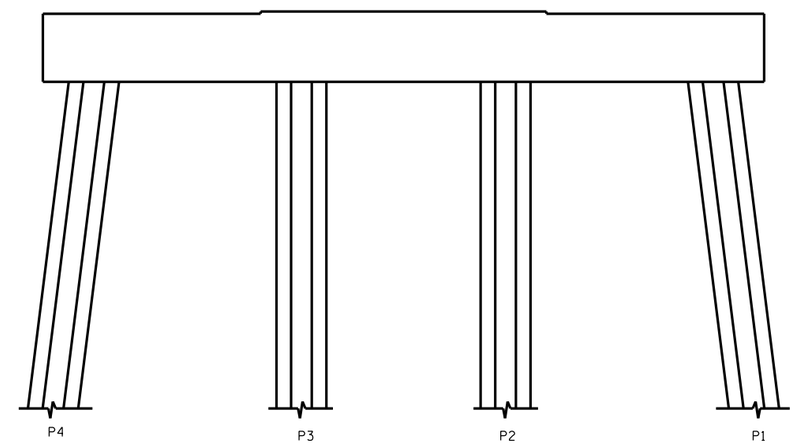
END VIEW
NORTH SIDE



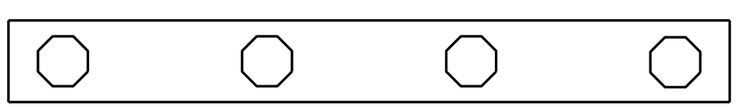

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 151

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-192 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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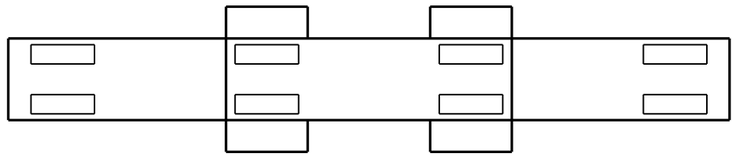
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

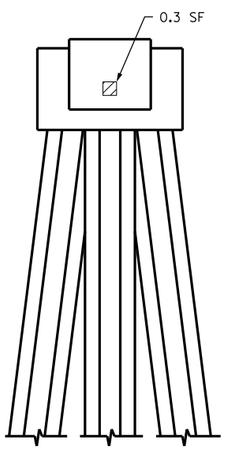
| REPAIRS BENT 152 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.3 | 0.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

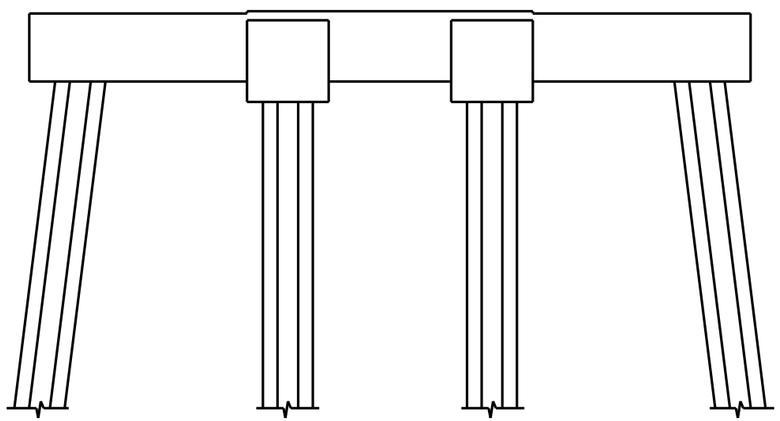


SPAN 153
SPAN 152

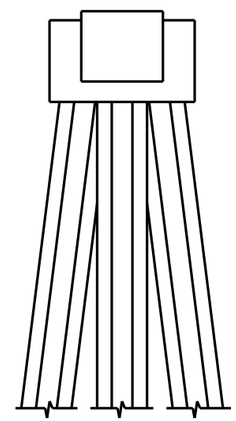
PLAN
TOP OF CAP



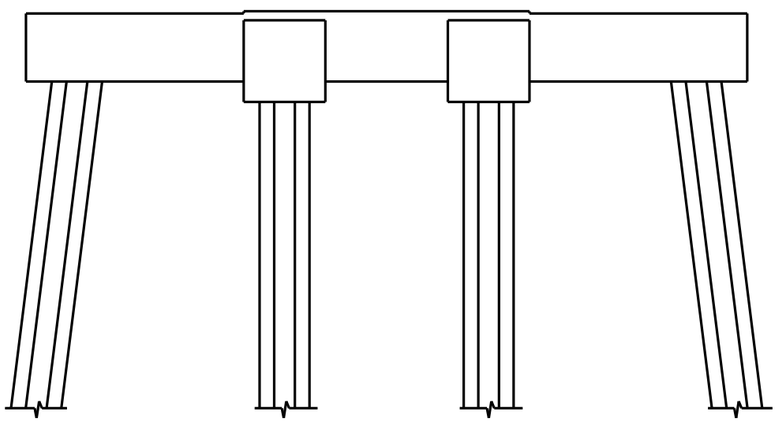

END VIEW
NORTH SIDE



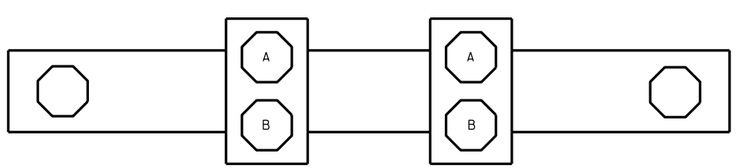

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 152
SPAN 153

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 152

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-193 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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ssandor

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

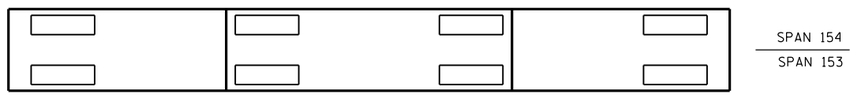
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

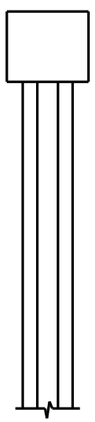
## REPAIR QUANTITY TABLE

| REPAIRS BENT 153 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

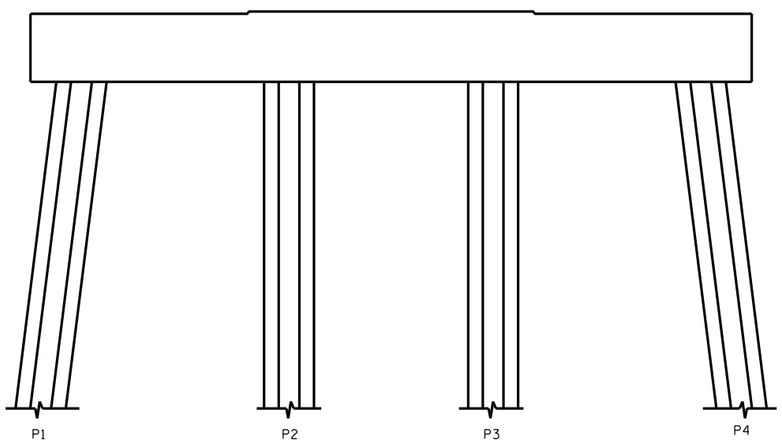
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



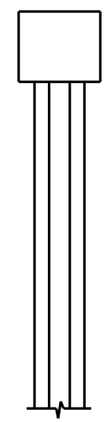

PLAN
TOP OF CAP



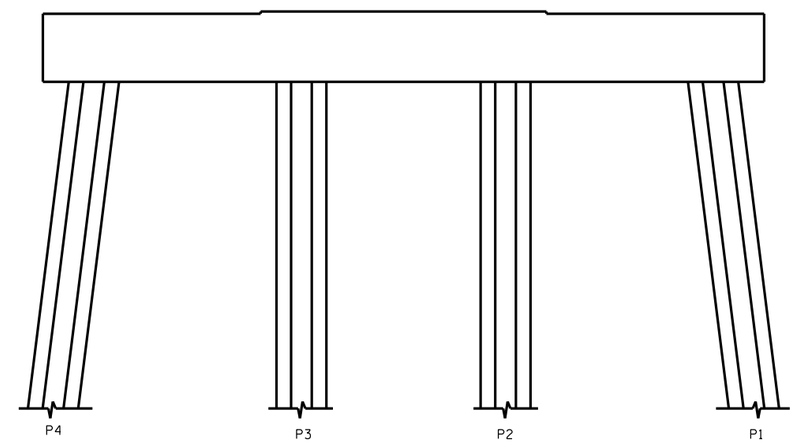
END VIEW
NORTH SIDE



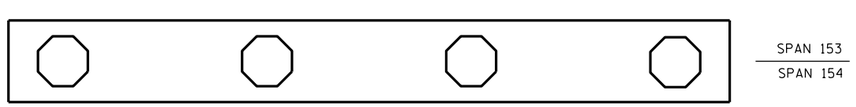

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 153

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-194 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

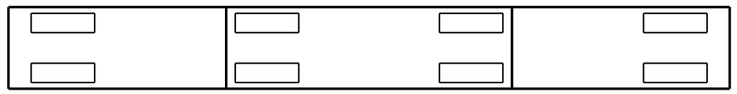
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

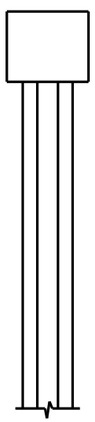
| REPAIRS BENT 154 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

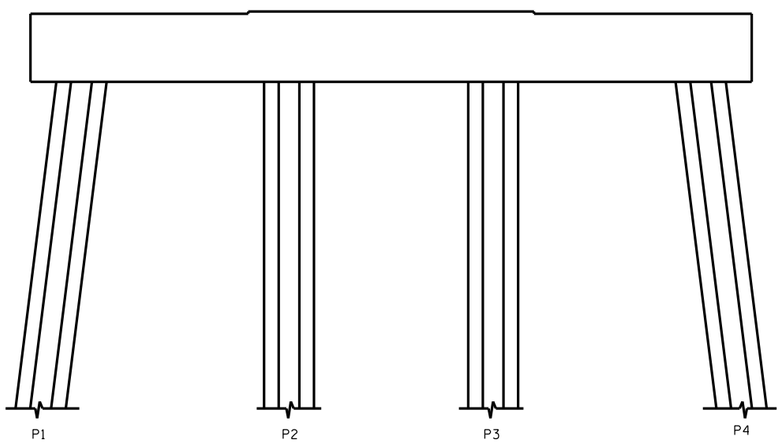


SPAN 155
SPAN 154

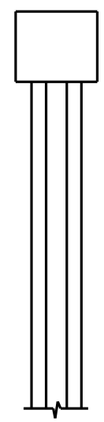
PLAN
TOP OF CAP



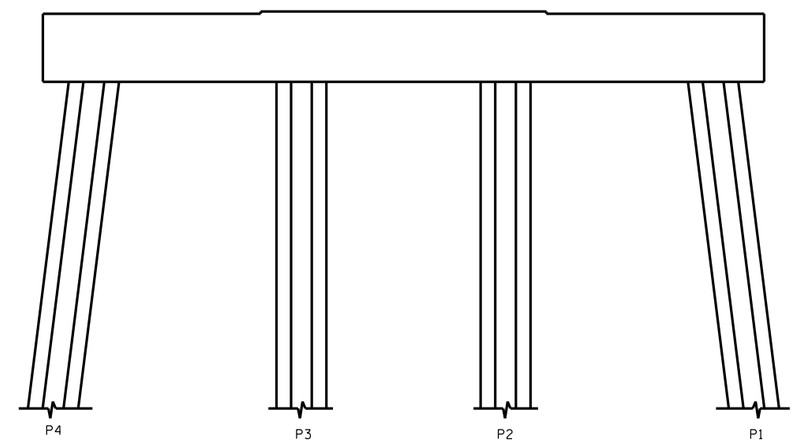
END VIEW
NORTH SIDE



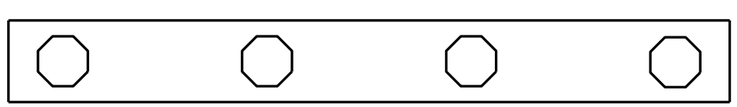

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 154
SPAN 155

PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 154

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-195 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

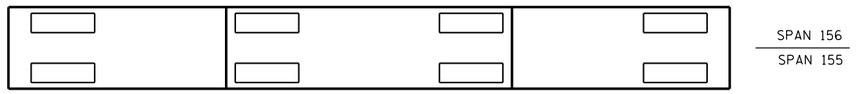
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

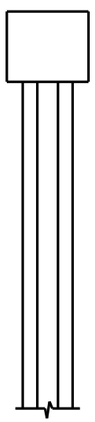
## REPAIR QUANTITY TABLE

| REPAIRS BENT 155 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.0 | 0.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

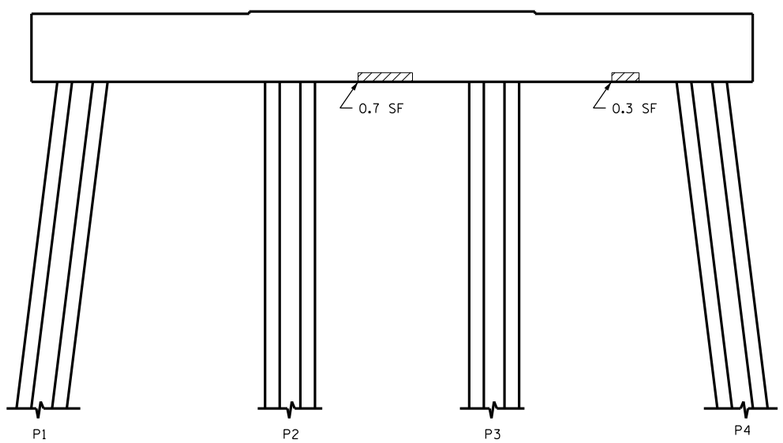
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



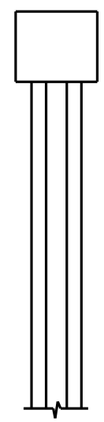

PLAN
TOP OF CAP



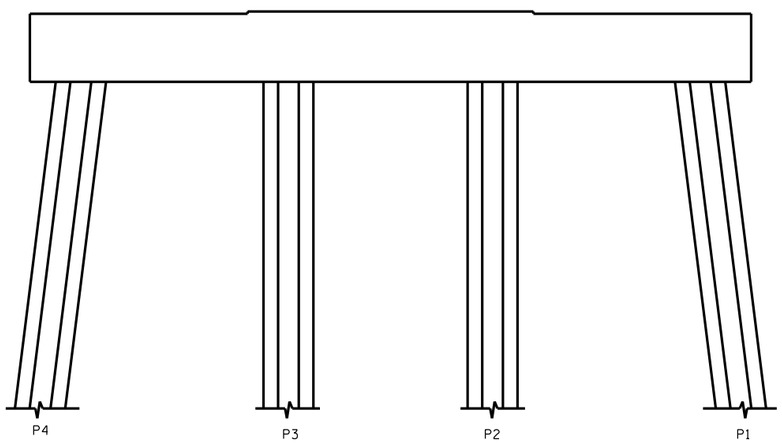
END VIEW
NORTH SIDE



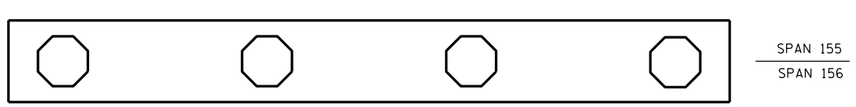

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

DocuSigned by: Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 155

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-196 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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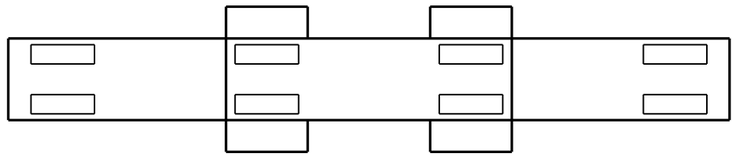
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

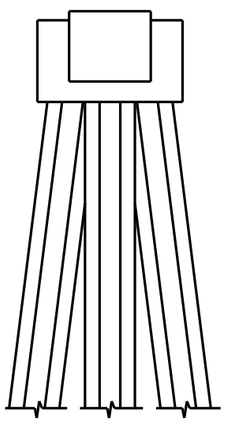
| REPAIRS BENT 156 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

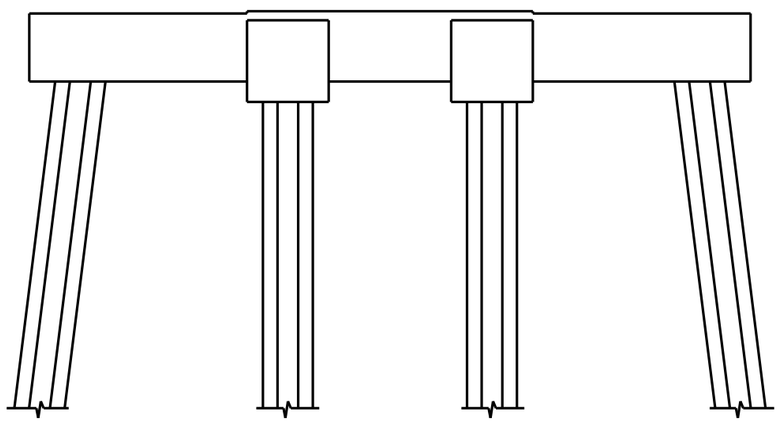


SPAN 157
SPAN 156

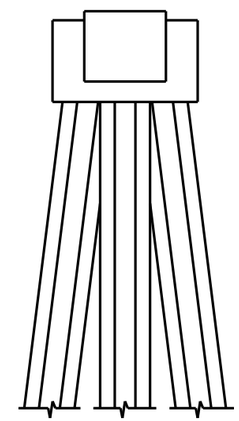
PLAN
TOP OF CAP



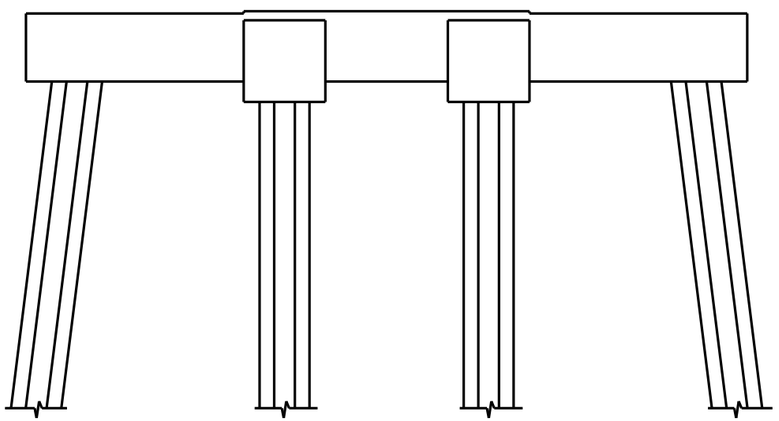
END VIEW
NORTH SIDE



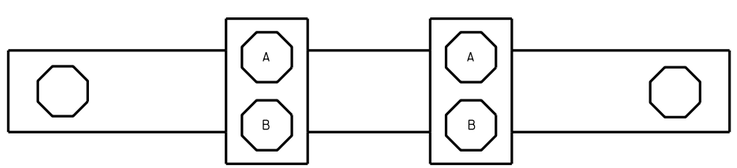

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 156
SPAN 157

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 156

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-197 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## NOTES:

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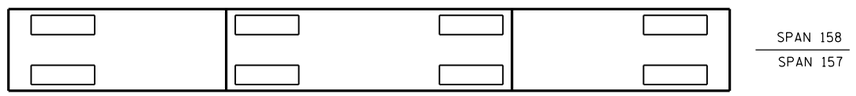
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

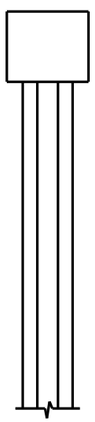
## REPAIR QUANTITY TABLE

| REPAIRS BENT 157 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

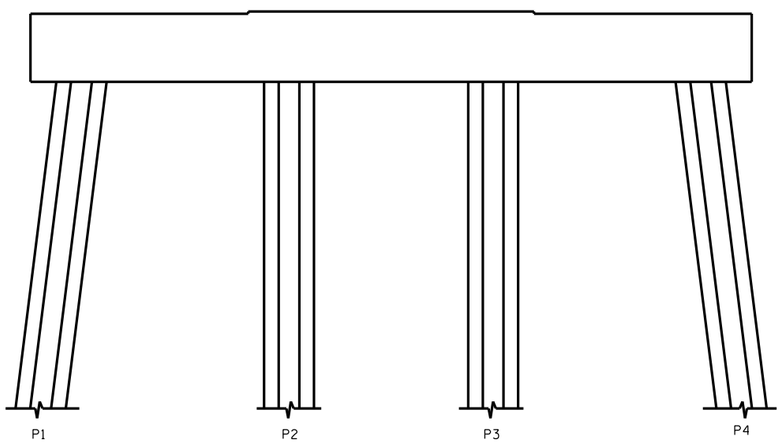
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



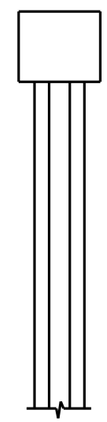

PLAN
TOP OF CAP



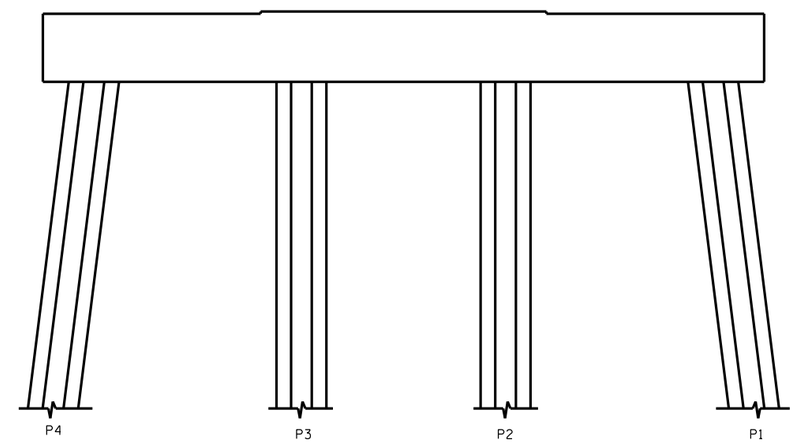
END VIEW
NORTH SIDE



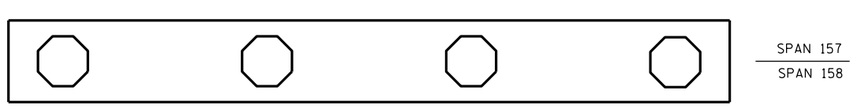

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 157

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-198 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

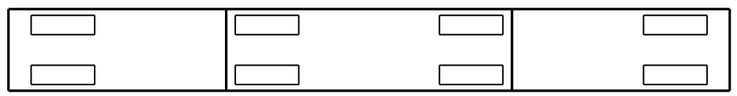
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

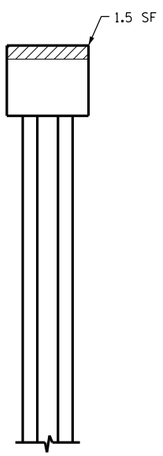
## REPAIR QUANTITY TABLE

| REPAIRS BENT 158 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.8 | 1.6 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

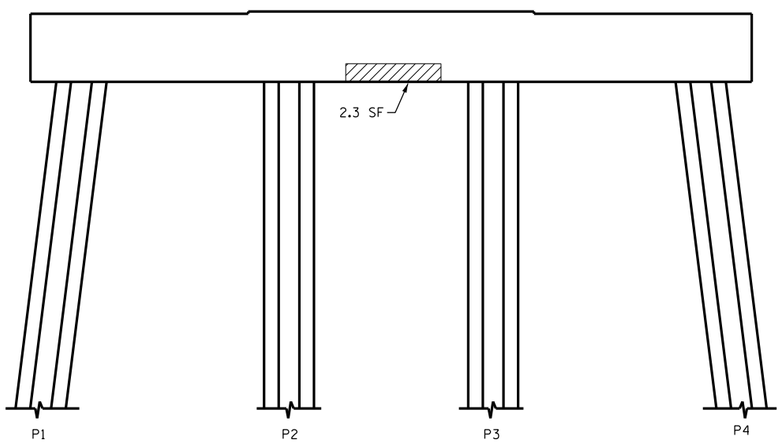
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



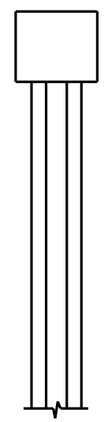

PLAN
TOP OF CAP



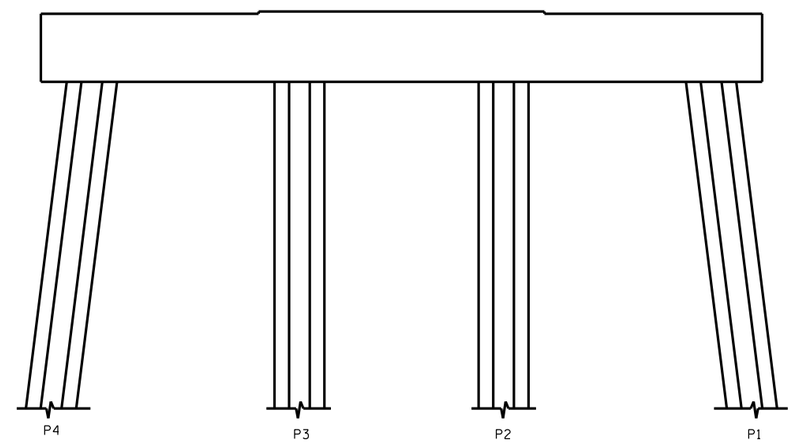

END VIEW
NORTH SIDE



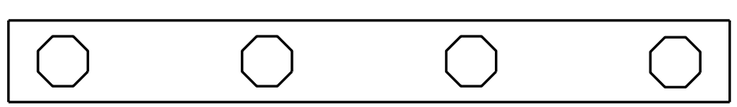

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 158

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-199 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

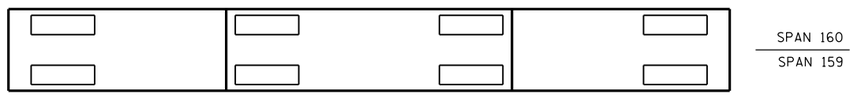
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

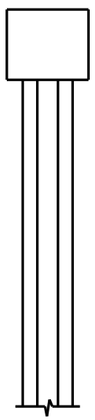
## REPAIR QUANTITY TABLE

| REPAIRS BENT 159 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.3 | 1.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

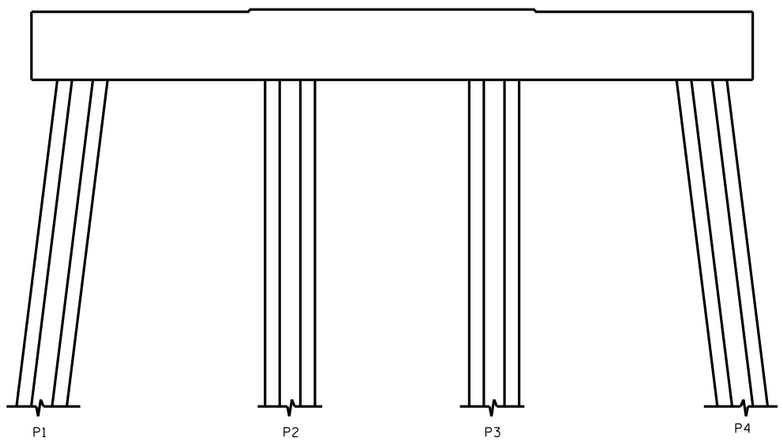
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



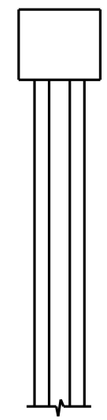

PLAN
TOP OF CAP



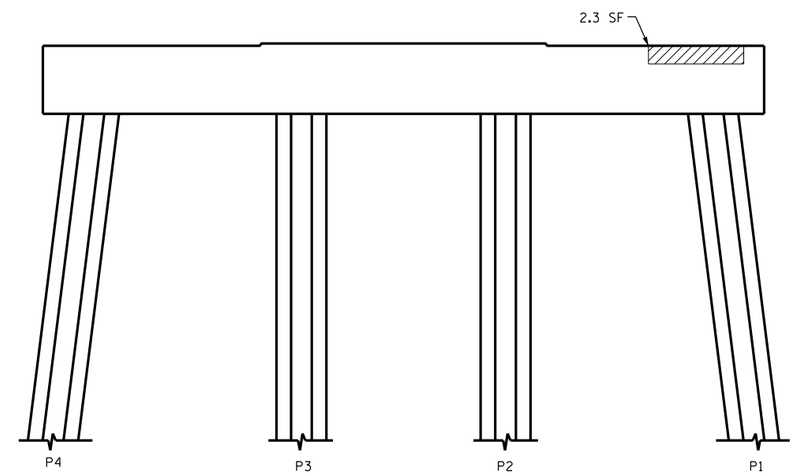
END VIEW
NORTH SIDE



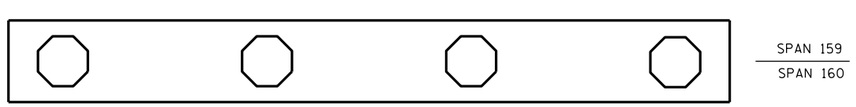

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 159

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-200 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 13:22
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

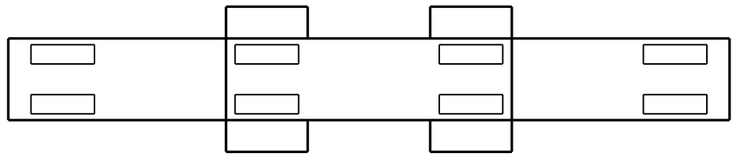
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

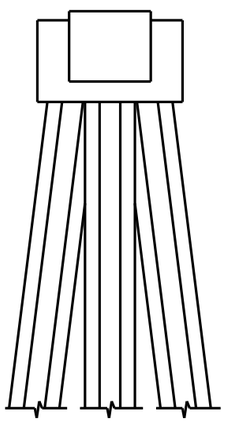
| REPAIRS BENT 160 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.8 | 0.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

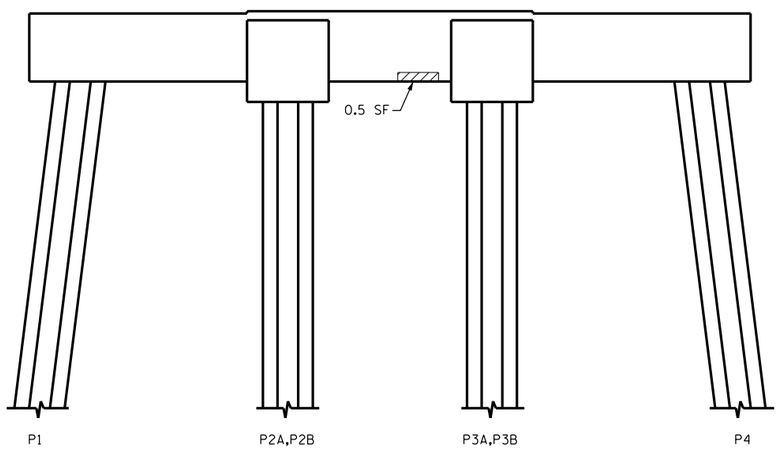


SPAN 161 / SPAN 160

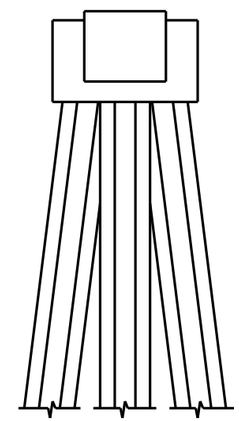
PLAN
TOP OF CAP



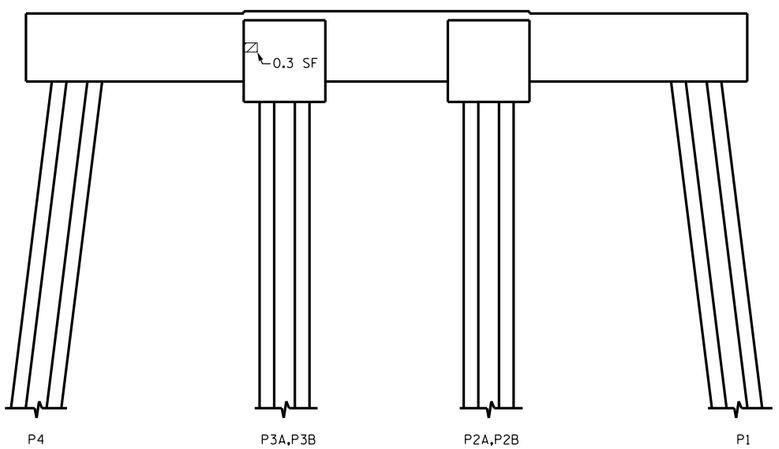
END VIEW
NORTH SIDE



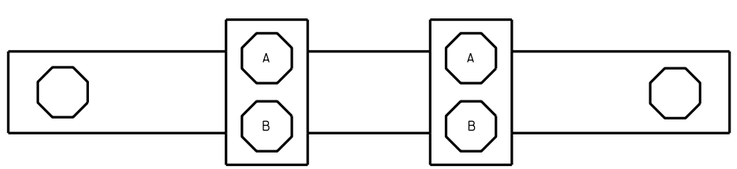

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 160 / SPAN 161

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 160

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-201 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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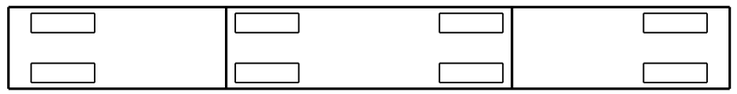
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

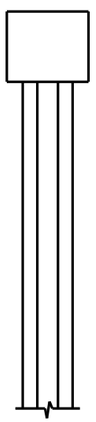
## REPAIR QUANTITY TABLE

| REPAIRS BENT 161 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.7 | 1.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

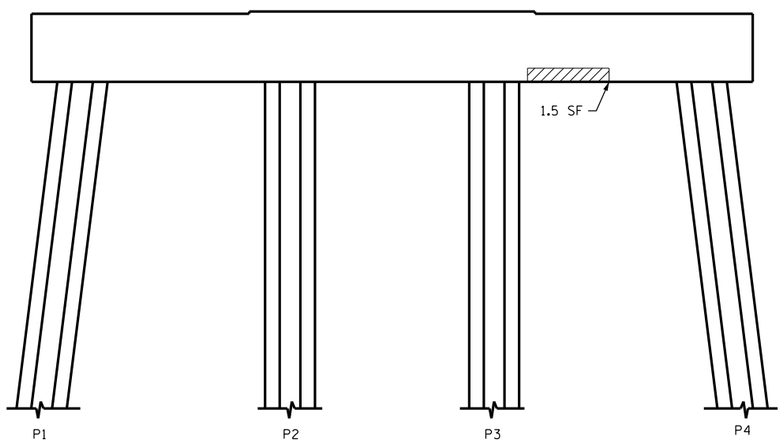
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



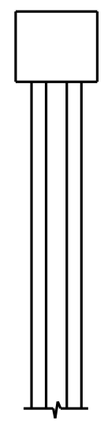

PLAN
TOP OF CAP



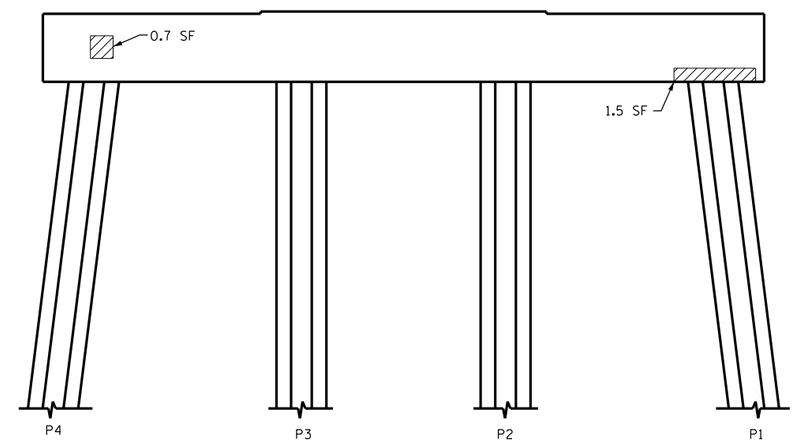
END VIEW
NORTH SIDE



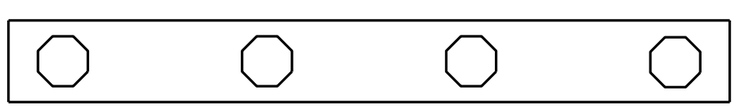

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 161

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-202 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 15:50
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## 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.

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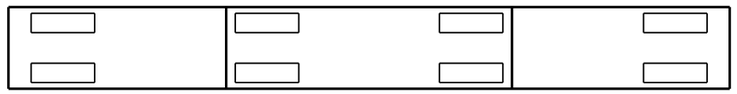
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

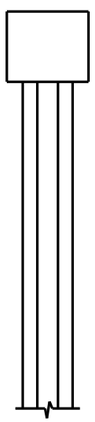
## REPAIR QUANTITY TABLE

| REPAIRS BENT 162 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

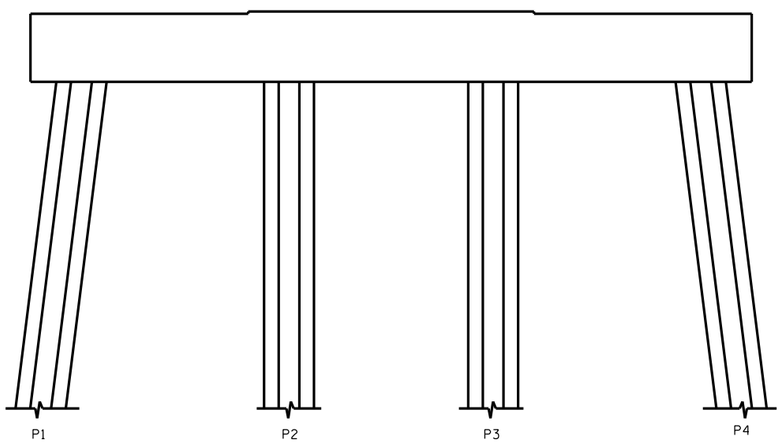
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



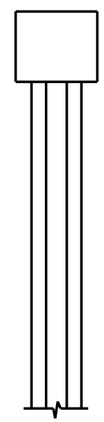

PLAN
TOP OF CAP



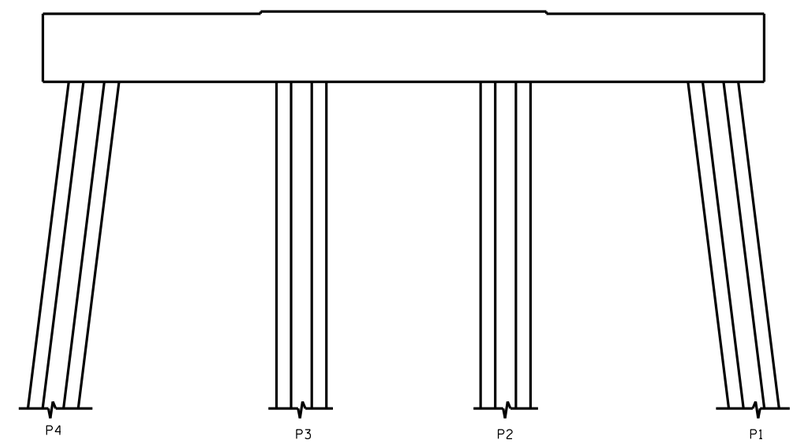
END VIEW
NORTH SIDE



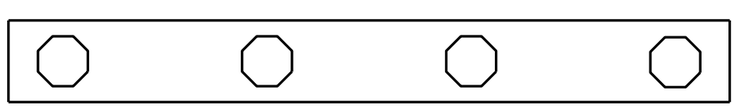

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77446...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

8/10/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 162

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-203 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 15:54
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

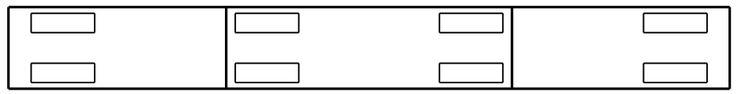
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

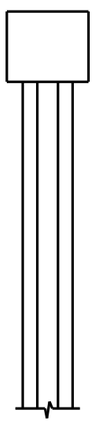
## REPAIR QUANTITY TABLE

| REPAIRS BENT 163 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

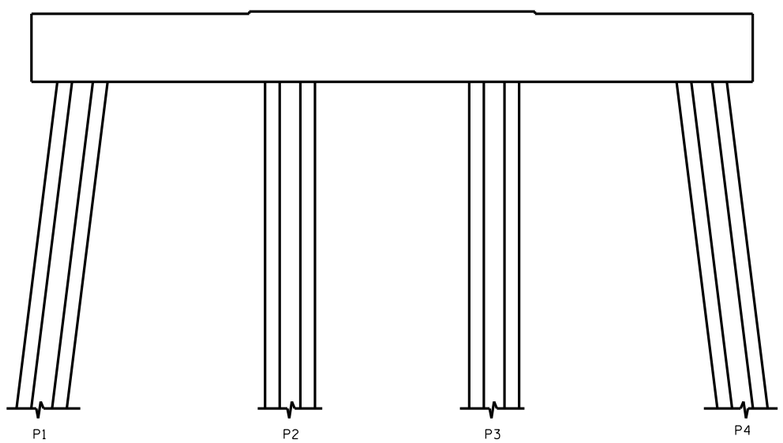
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



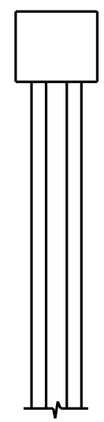

PLAN
TOP OF CAP



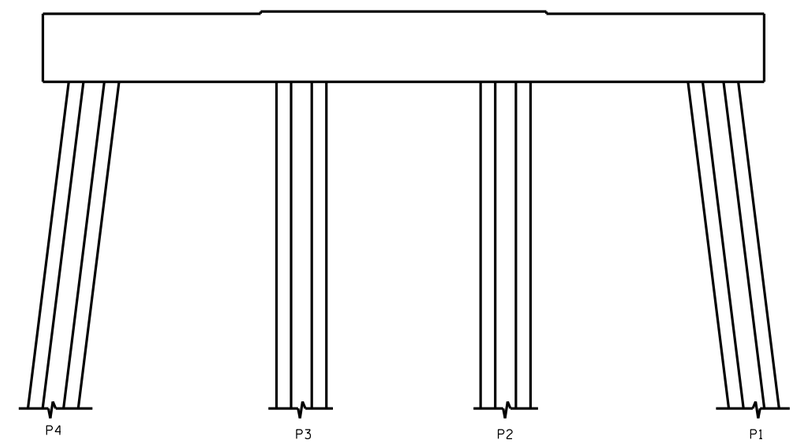
END VIEW
NORTH SIDE



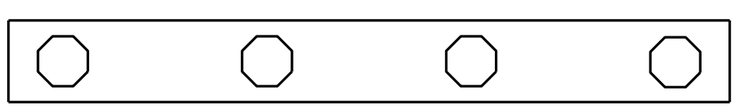

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

8/10/2016

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 163

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-204 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 15:52
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

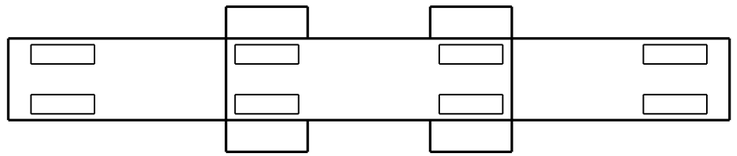
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

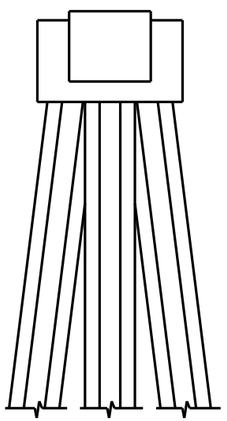
| REPAIRS BENT 164 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.3 | 0.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

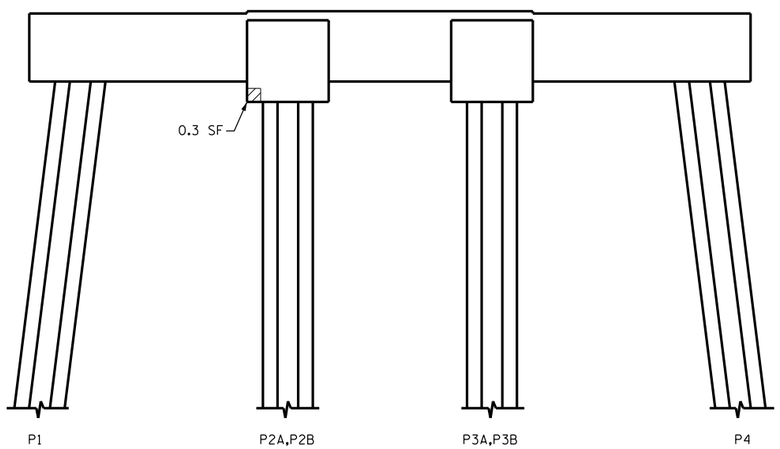


SPAN 165
SPAN 164

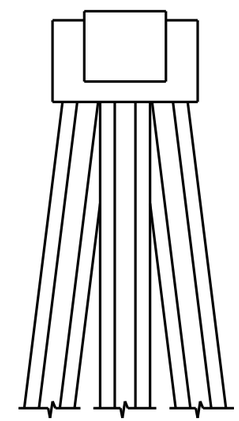
PLAN
TOP OF CAP



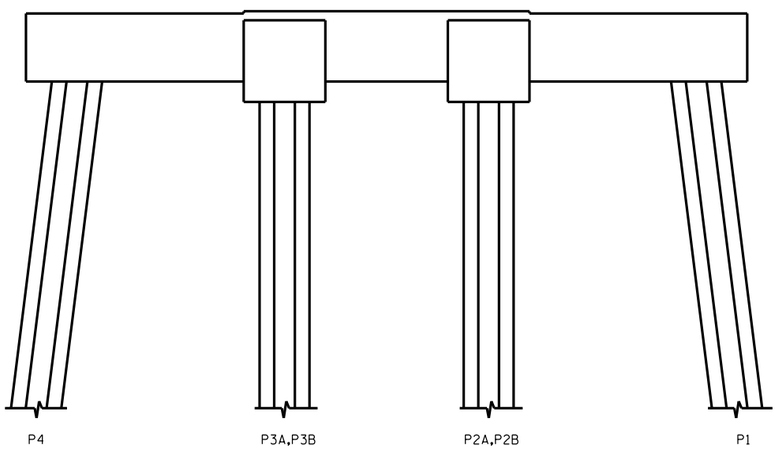
END VIEW
NORTH SIDE



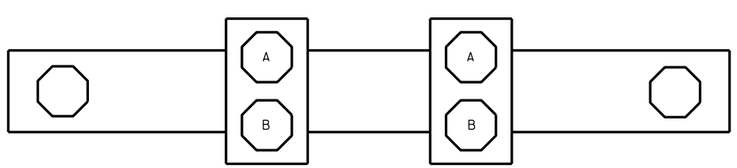

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 164
SPAN 165

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 164

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-205 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

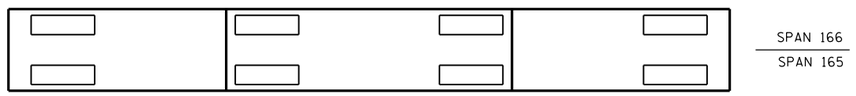
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

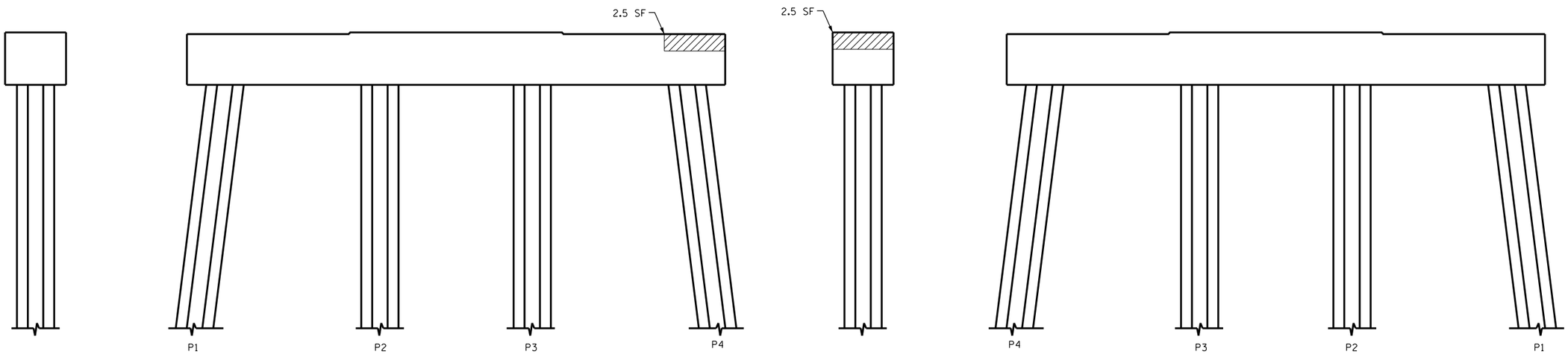
## REPAIR QUANTITY TABLE

| REPAIRS BENT 165 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.0 | 2.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.




PLAN
TOP OF CAP

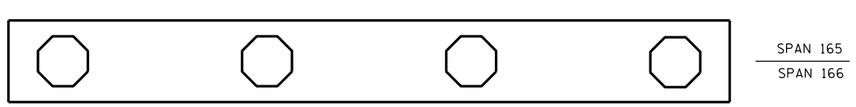



END VIEW
NORTH SIDE

ELEVATION
WEST SIDE

END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 165

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-206 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 15:57
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

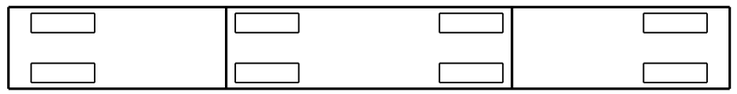
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

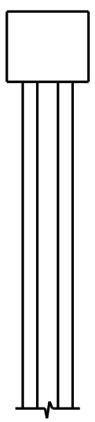
## REPAIR QUANTITY TABLE

| REPAIRS BENT 166 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.0 | 2.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

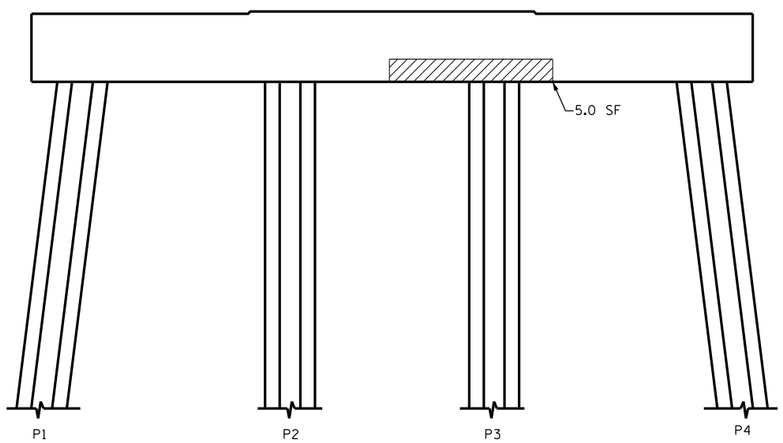
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



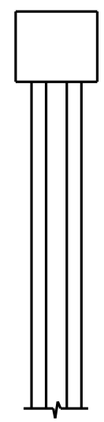

PLAN
TOP OF CAP



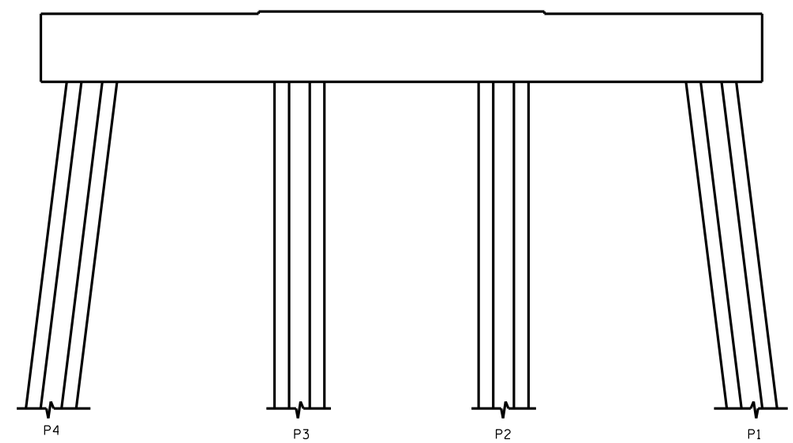
END VIEW
NORTH SIDE



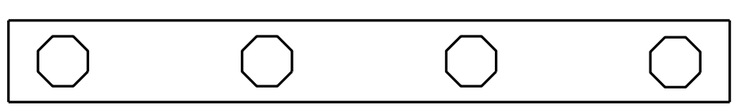

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 166

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-207 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 15:58
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

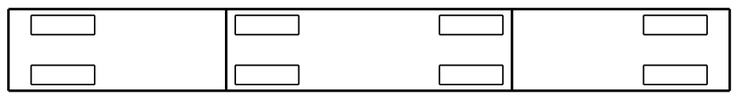
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

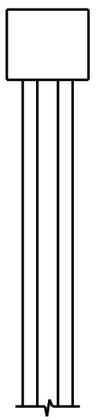
## REPAIR QUANTITY TABLE

| REPAIRS BENT 167 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 6.8 | 2.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

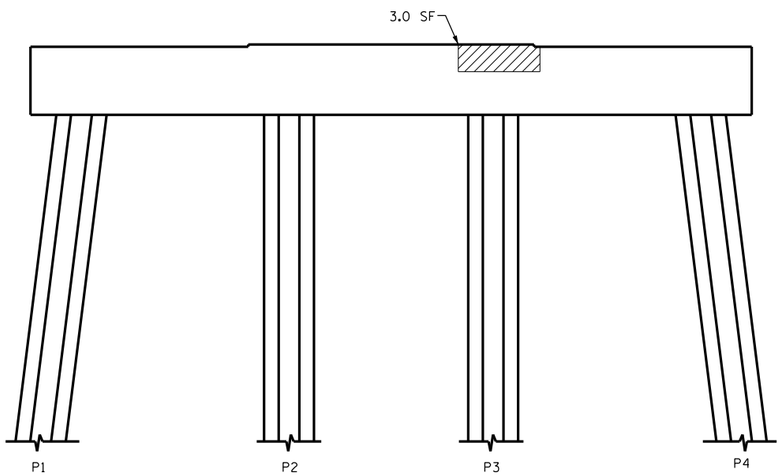
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



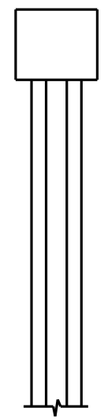

PLAN
TOP OF CAP



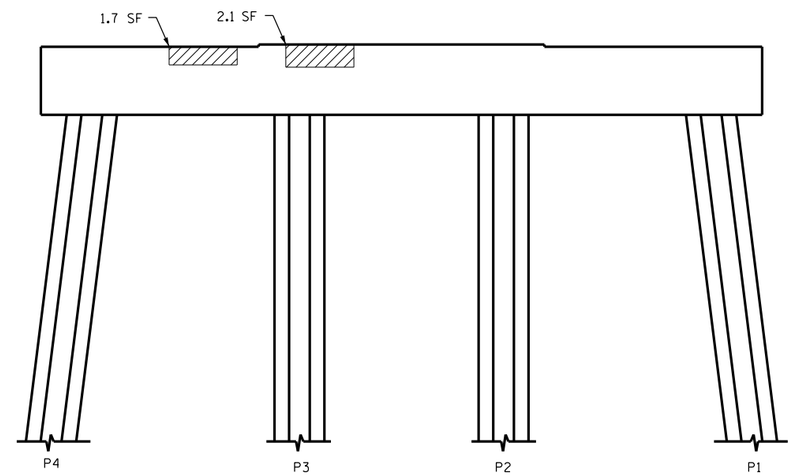
END VIEW
NORTH SIDE



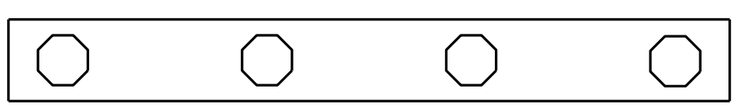

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 167

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-208 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 15:58
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

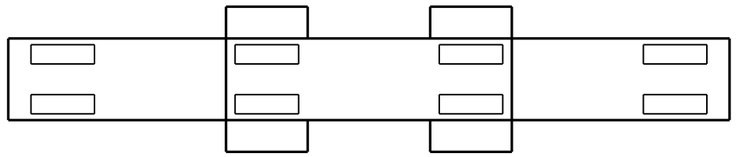
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

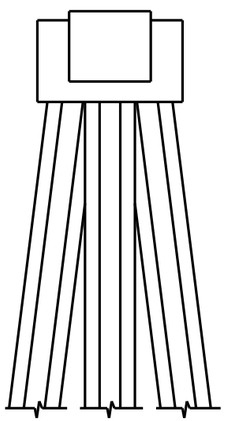
| REPAIRS BENT 168 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

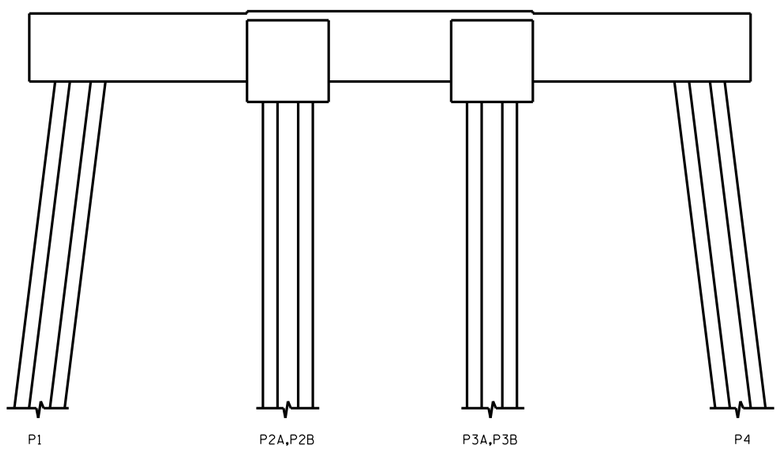


SPAN 169
SPAN 168

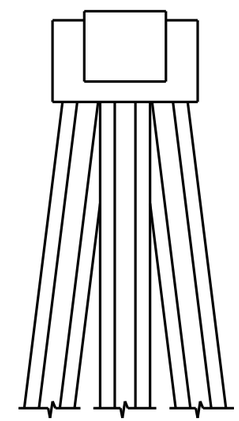
PLAN
TOP OF CAP



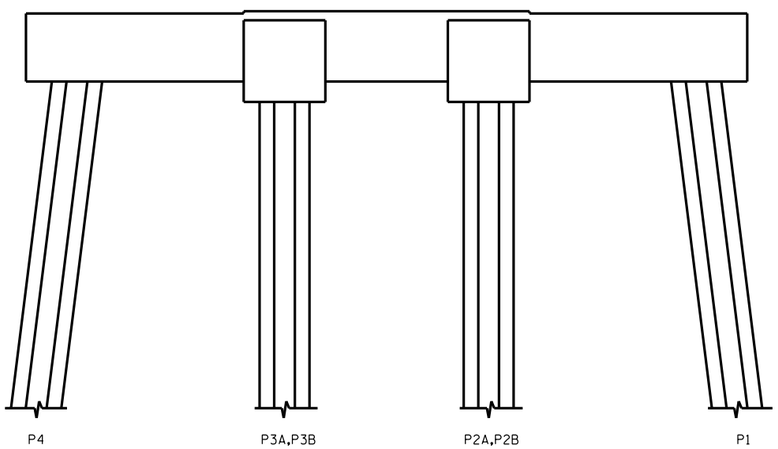
END VIEW
NORTH SIDE



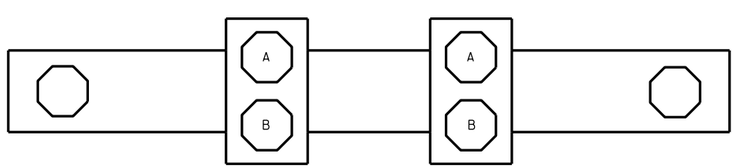

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 168
SPAN 169

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 168

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-209 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 15:59
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

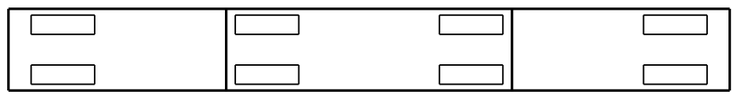
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

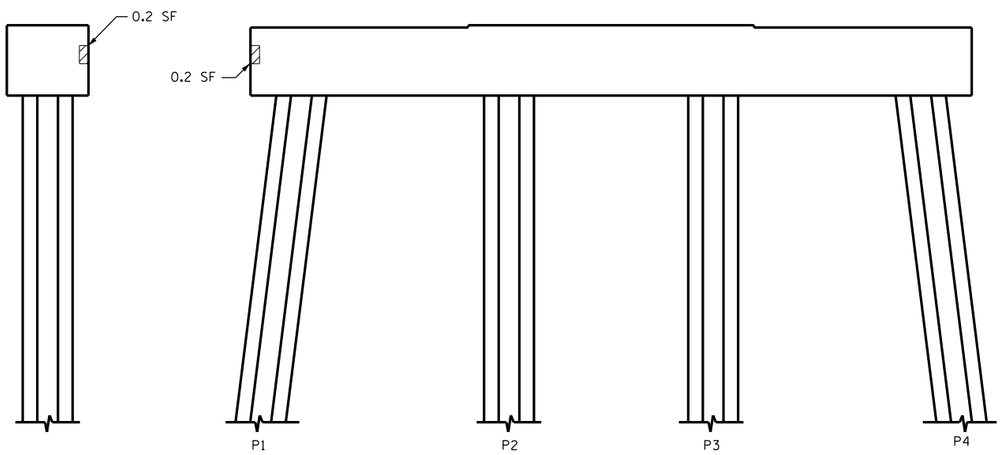
| REPAIRS BENT 169 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.4 | 0.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



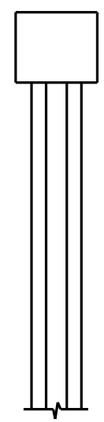
SPAN 170
SPAN 169

PLAN
TOP OF CAP

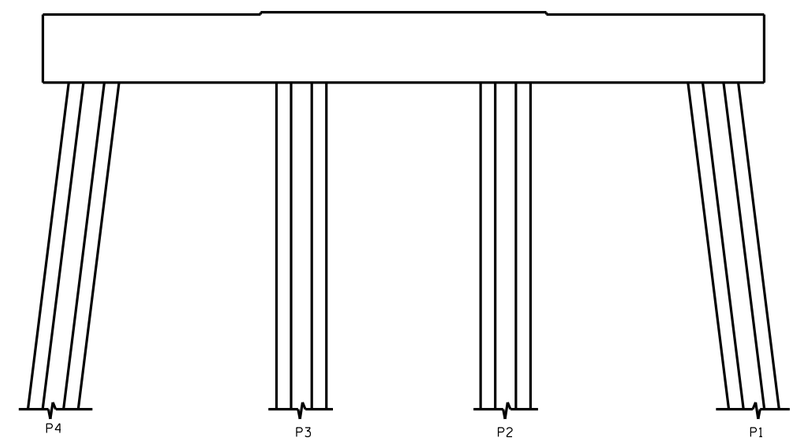



END VIEW
NORTH SIDE

ELEVATION
WEST SIDE

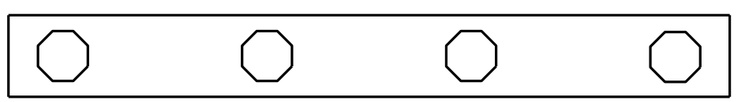


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 169
SPAN 170

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 169

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-210 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:00
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

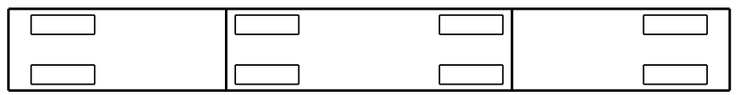
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

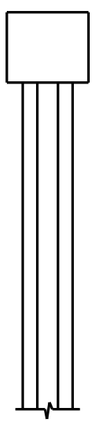
| REPAIRS BENT 170 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

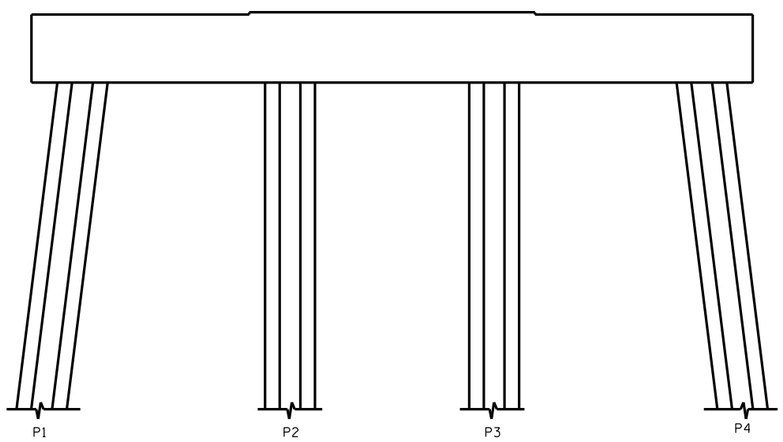


SPAN 171
SPAN 170

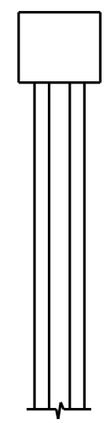
PLAN
TOP OF CAP



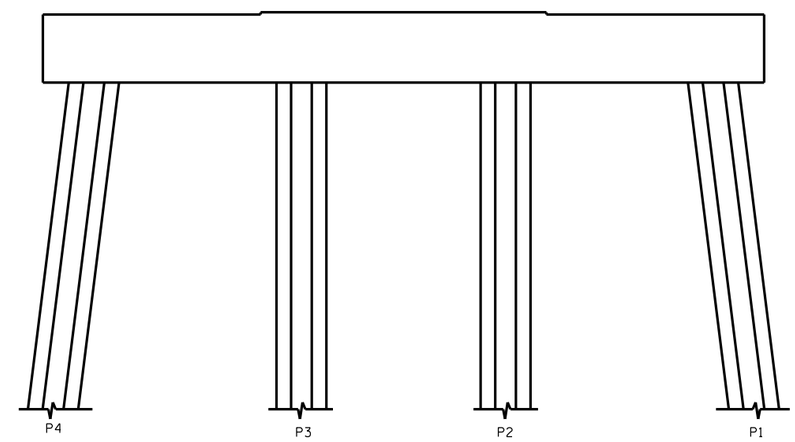
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

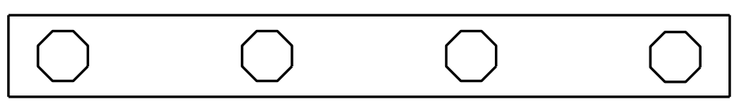


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 170
SPAN 171

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 170

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-211 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:01
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

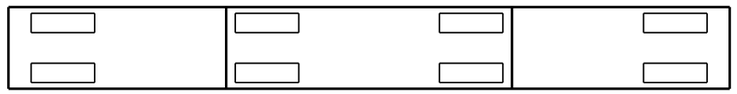
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

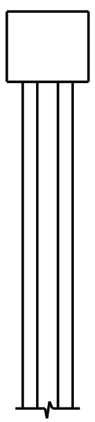
## REPAIR QUANTITY TABLE

| REPAIRS BENT 171 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.5 | 2.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

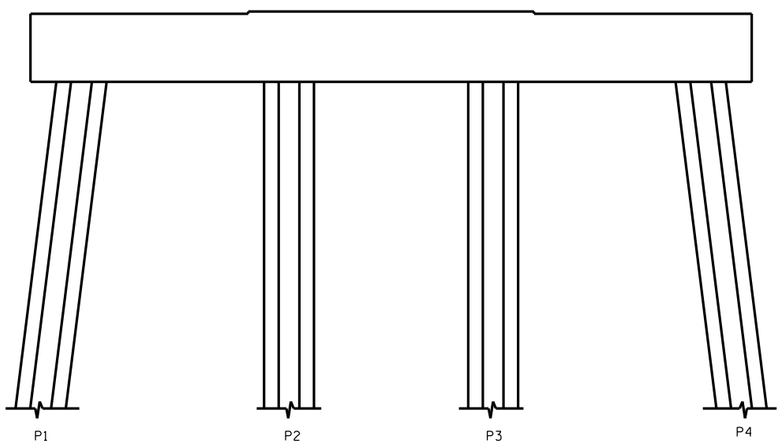
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



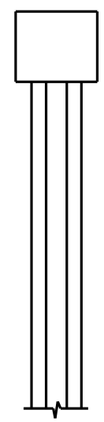

PLAN
TOP OF CAP



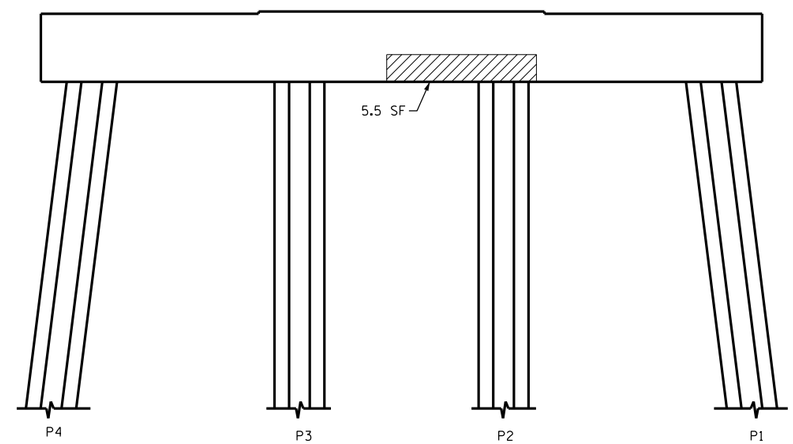
END VIEW
NORTH SIDE



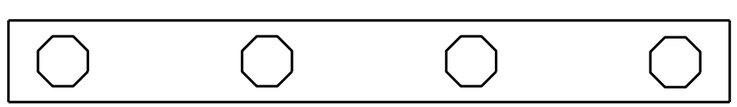

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 171

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-212 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:02
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

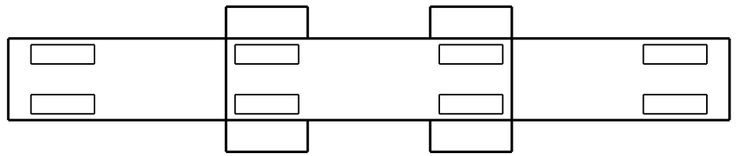
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

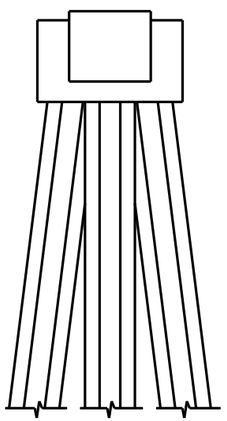
| REPAIRS BENT 172 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

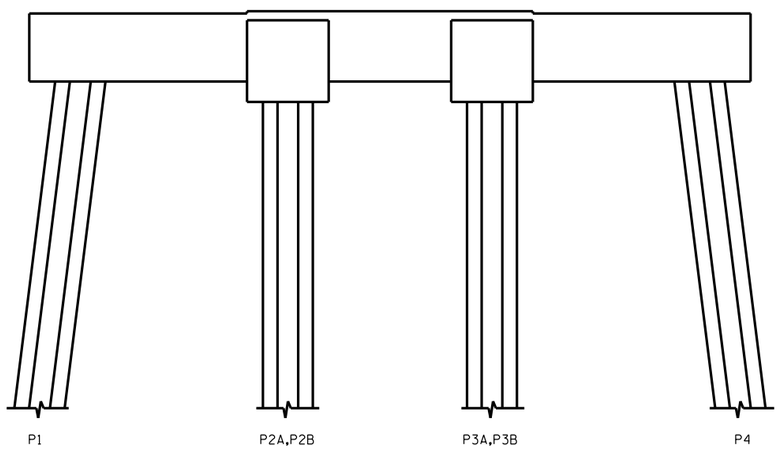


SPAN 173
SPAN 172

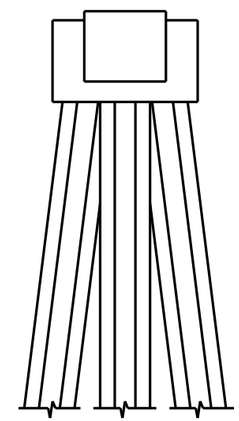
PLAN
TOP OF CAP



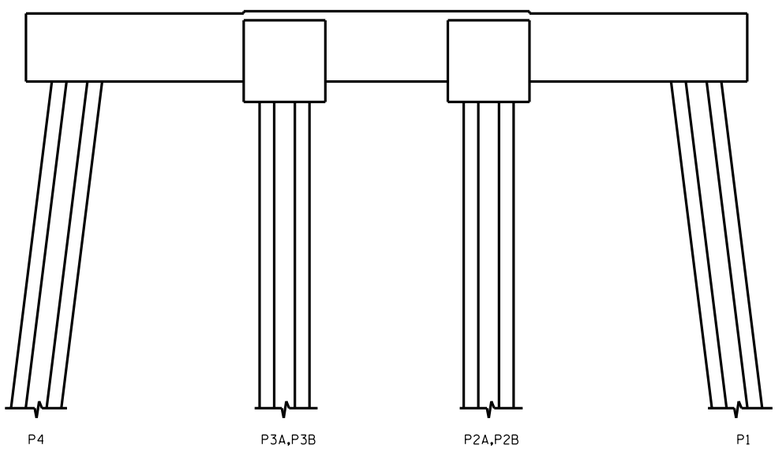
END VIEW
NORTH SIDE



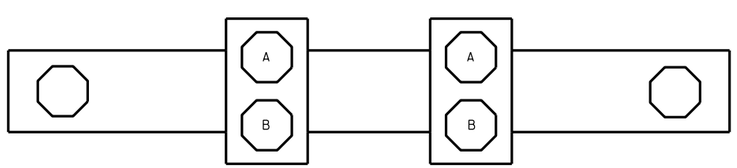

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 172
SPAN 173

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 172

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-213 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:03
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

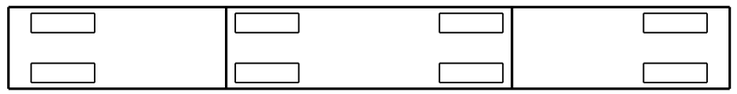
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

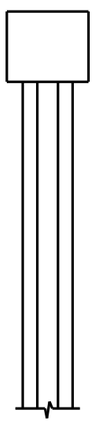
## REPAIR QUANTITY TABLE

| REPAIRS BENT 173 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

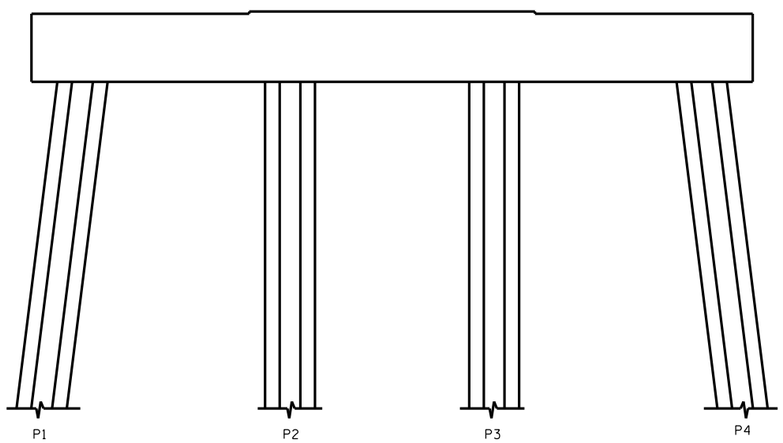
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



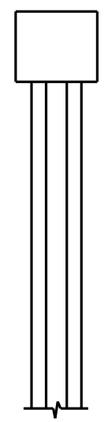

PLAN
TOP OF CAP



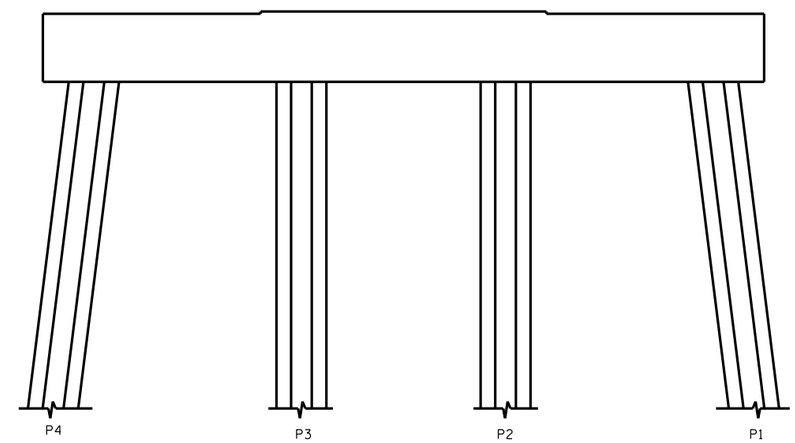
END VIEW
NORTH SIDE



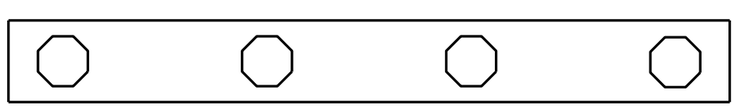

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 173

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-214 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:04
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

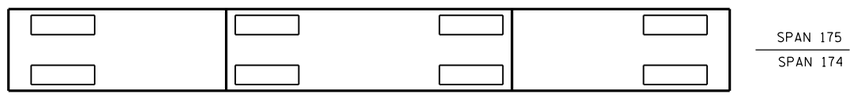
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

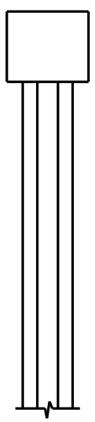
## REPAIR QUANTITY TABLE

| REPAIRS BENT 174 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

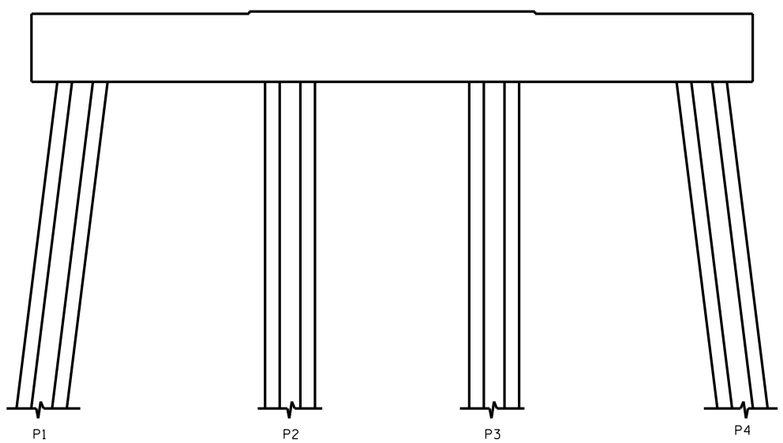
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



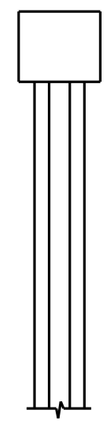

PLAN
TOP OF CAP



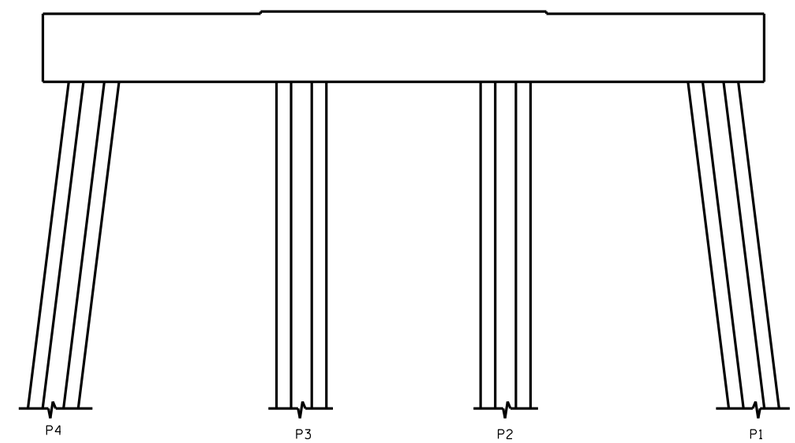
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

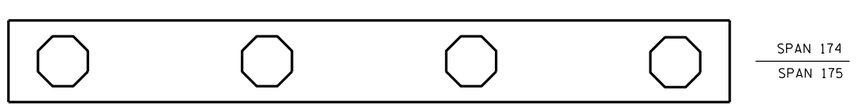


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 174

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-215 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:05
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pbryant

## NOTES:

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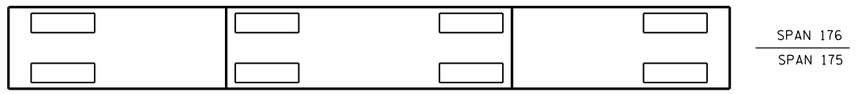
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

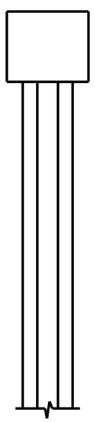
## REPAIR QUANTITY TABLE

| REPAIRS BENT 175 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

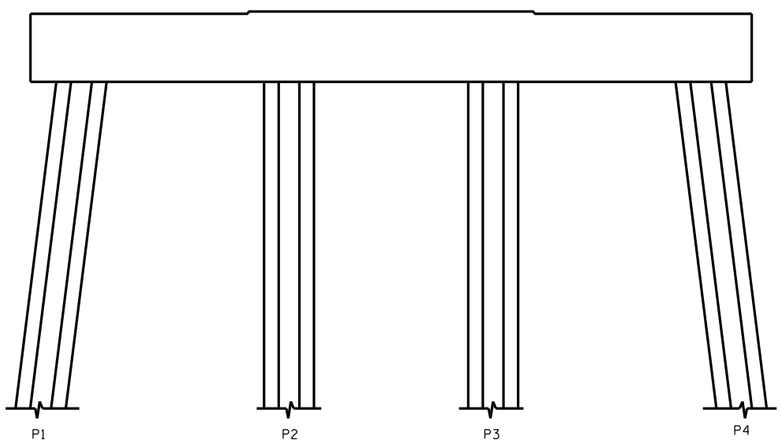
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



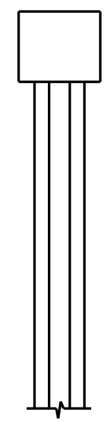

PLAN
TOP OF CAP



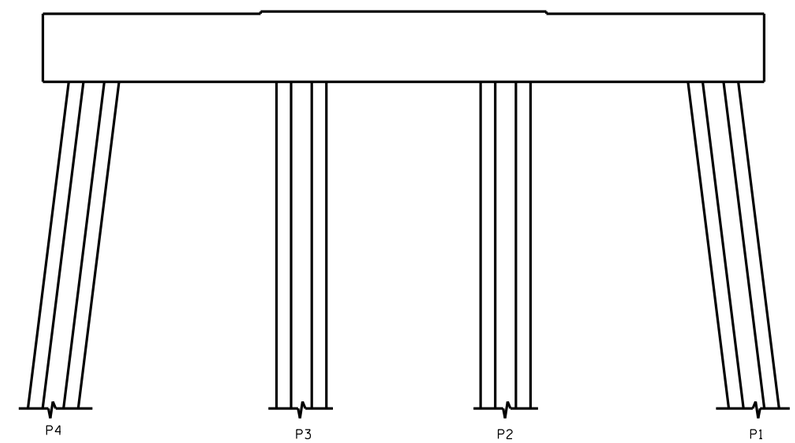
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

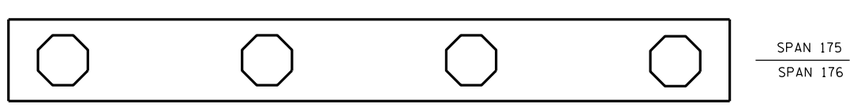


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 175

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-216 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:06
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pbryant

## NOTES:

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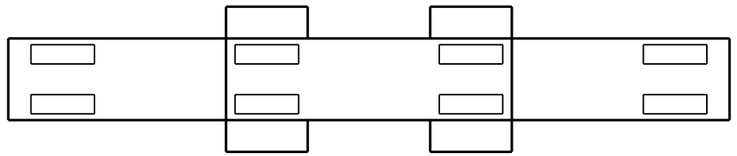
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

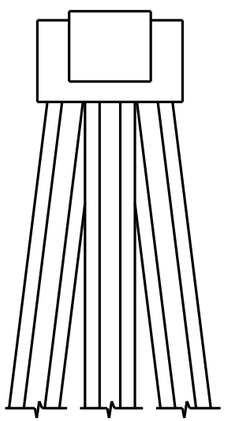
| REPAIRS BENT 176 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

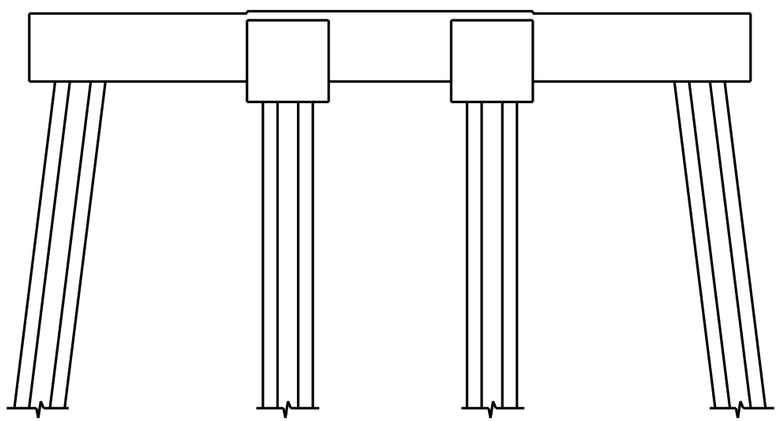


SPAN 177
SPAN 176

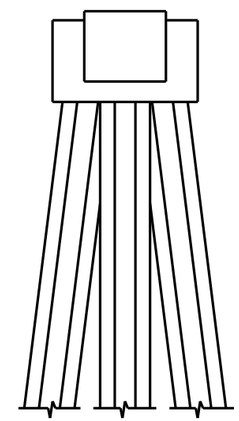
PLAN
TOP OF CAP



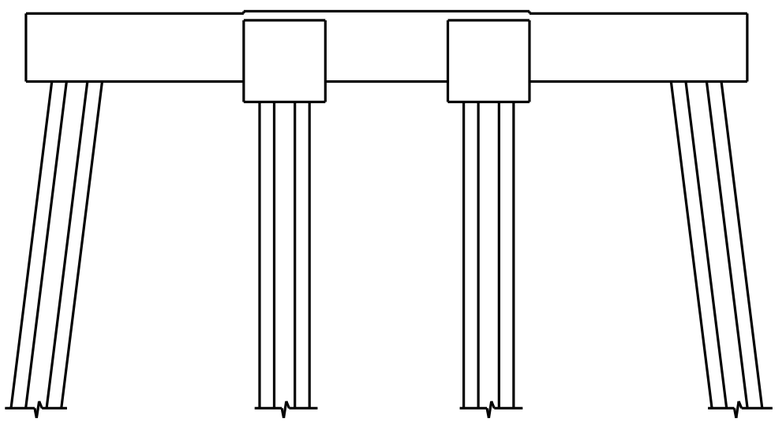
END VIEW
NORTH SIDE



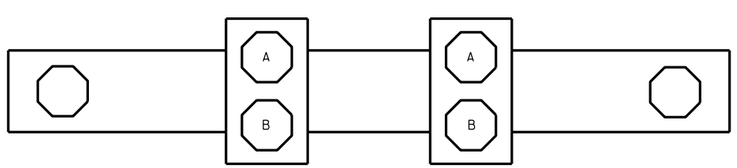

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 176
SPAN 177

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 176

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-217 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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## 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.

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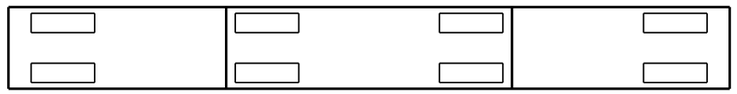
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

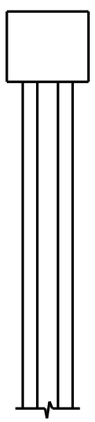
## REPAIR QUANTITY TABLE

| REPAIRS BENT 177 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

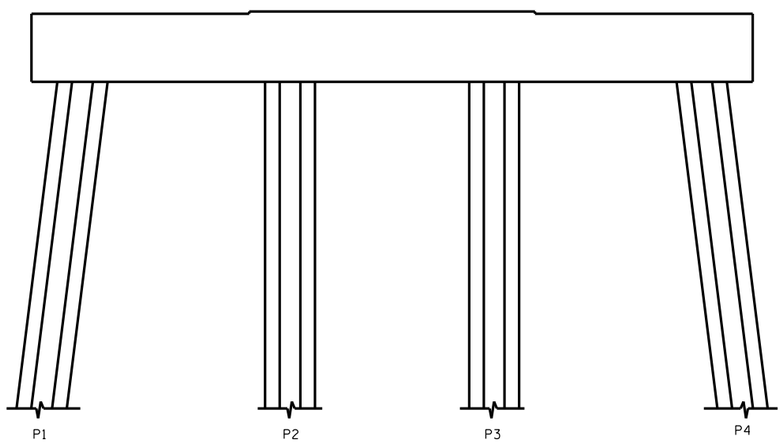
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



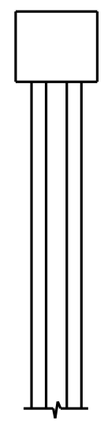

PLAN
TOP OF CAP



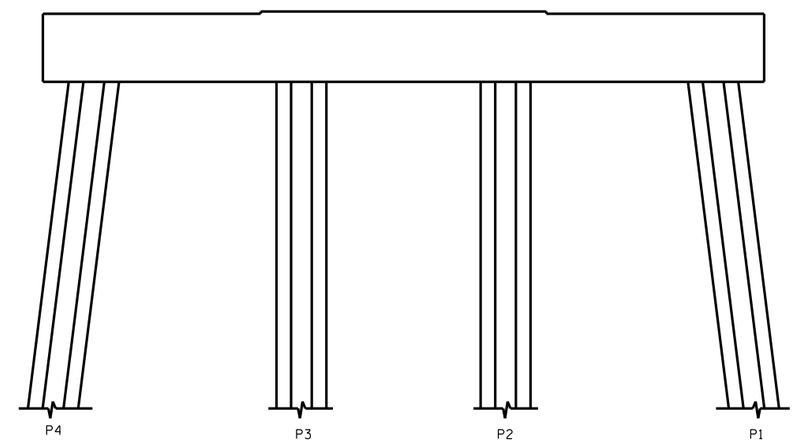
END VIEW
NORTH SIDE



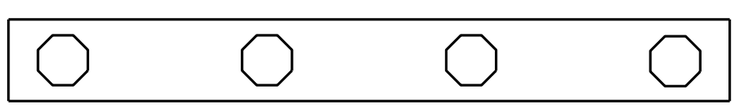

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 177

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-218 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:07
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pbryant

## NOTES:

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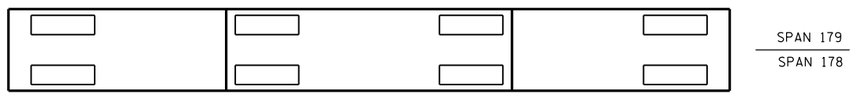
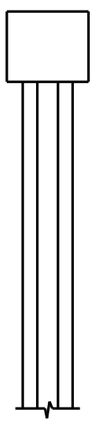
## REPAIR QUANTITY TABLE

| REPAIRS BENT 178 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 10.5 | 4.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

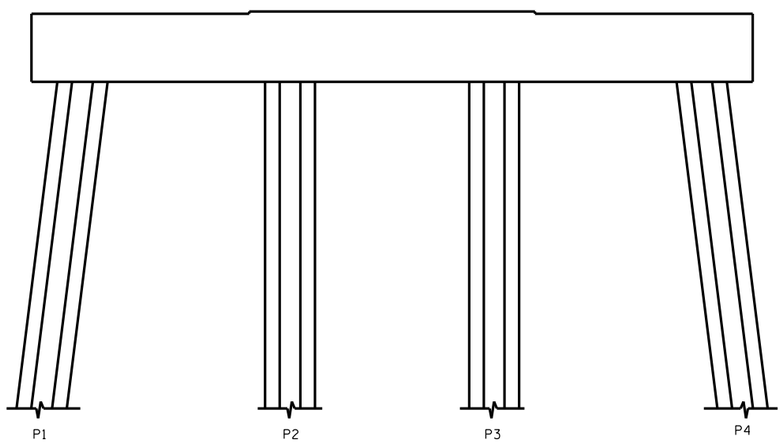
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



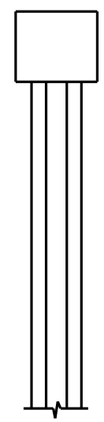

PLAN
TOP OF CAP



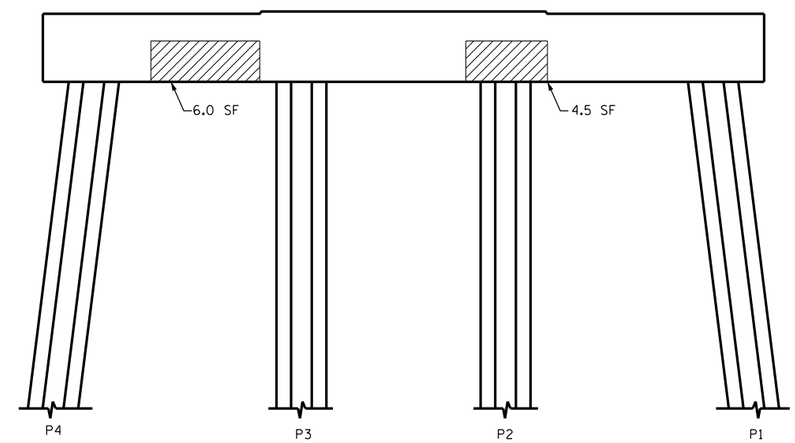
END VIEW
NORTH SIDE



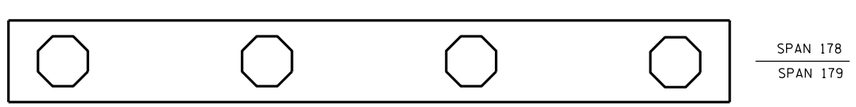

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 178

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-219 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 10:58
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

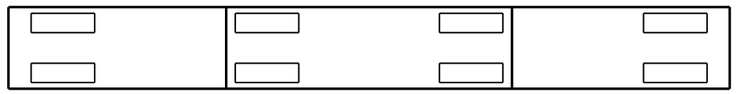
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

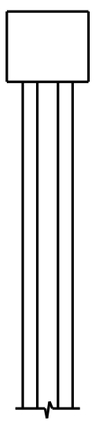
## REPAIR QUANTITY TABLE

| REPAIRS BENT 179 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.0 | 0.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

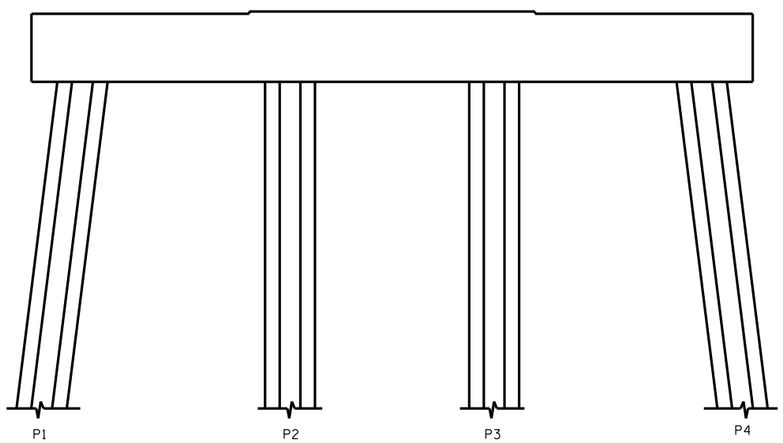
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



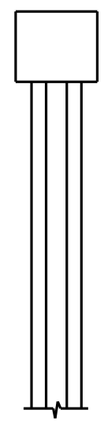

PLAN
TOP OF CAP



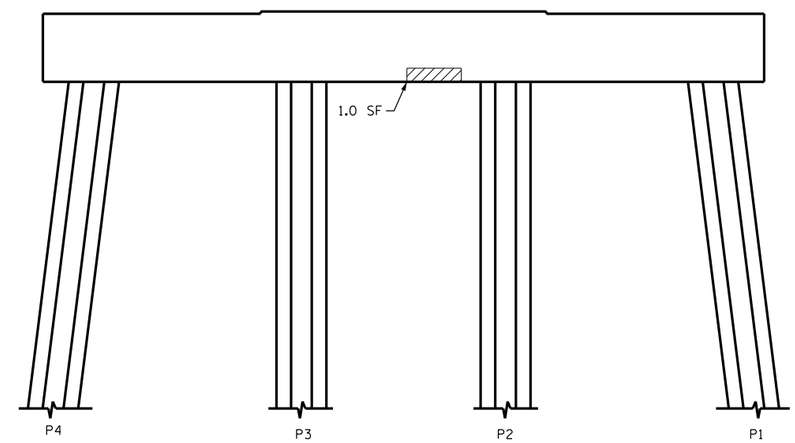
END VIEW
NORTH SIDE



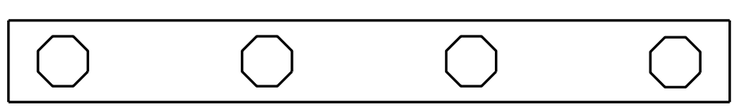

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 179

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-220 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:08
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

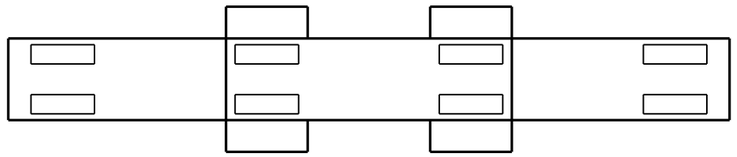
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

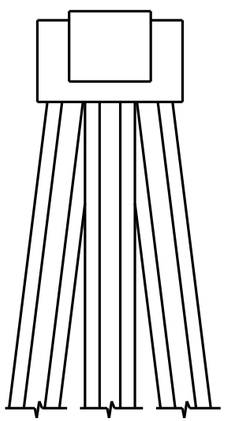
| REPAIRS BENT 180 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

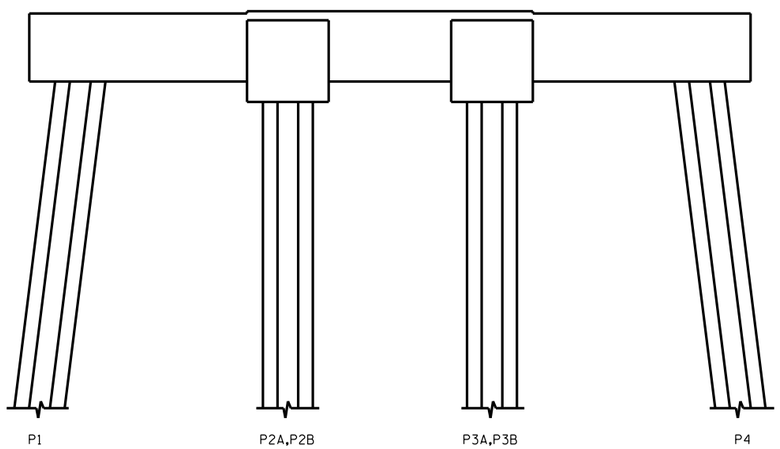


SPAN 181
SPAN 180

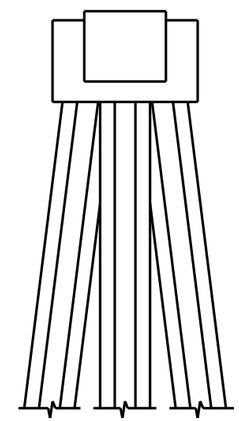
PLAN
TOP OF CAP



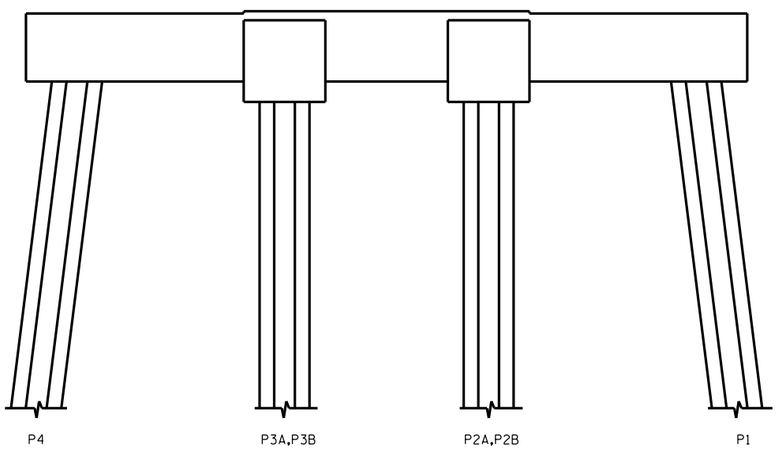
END VIEW
NORTH SIDE



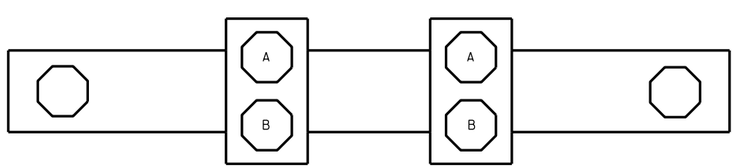

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 180
SPAN 181

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 180

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-221 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:09
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

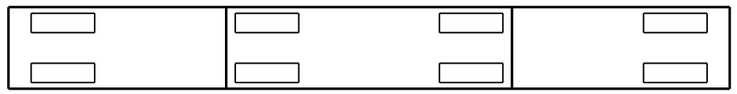
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

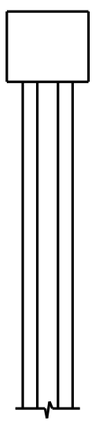
| REPAIRS BENT 181 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

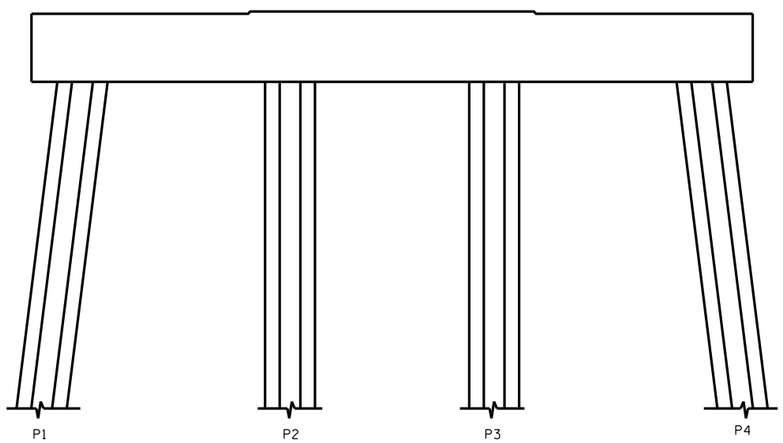


SPAN 182
SPAN 181

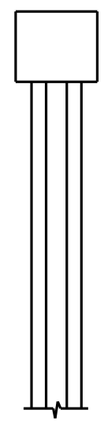
PLAN
TOP OF CAP



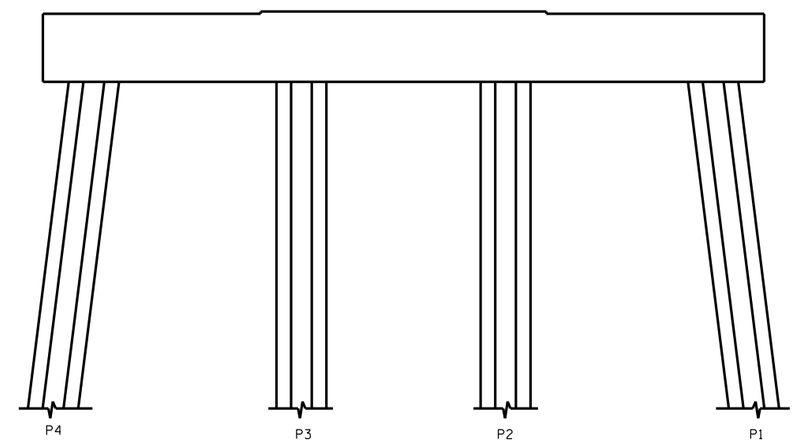
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

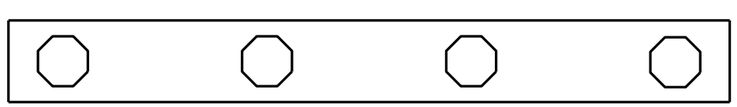


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 181
SPAN 182

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 181

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-222 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:10
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

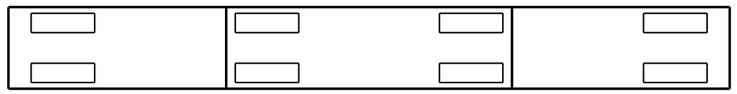
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

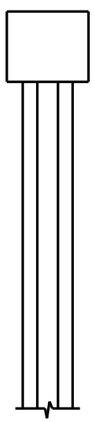
| REPAIRS BENT 182 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

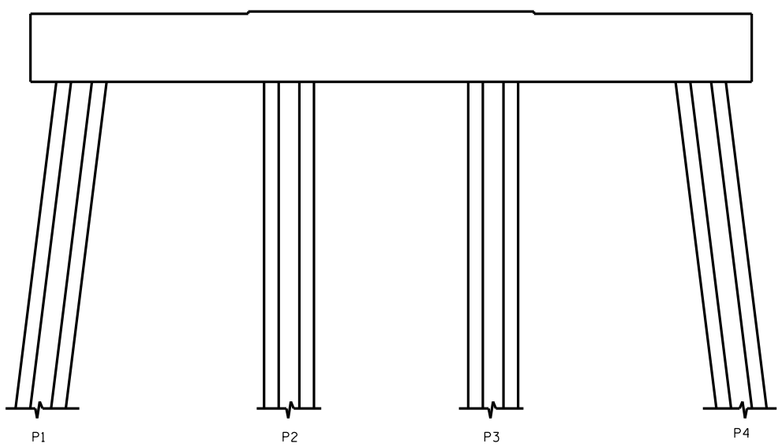


SPAN 183
SPAN 182

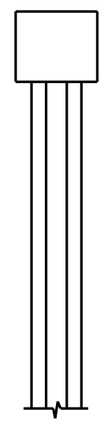
PLAN
TOP OF CAP



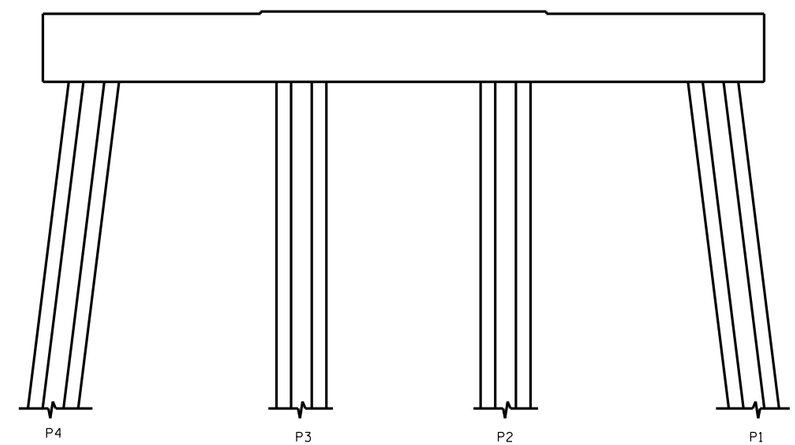
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

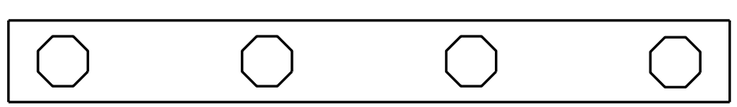


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 182
SPAN 183

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 182

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-223 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:11
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pbryant

## NOTES:

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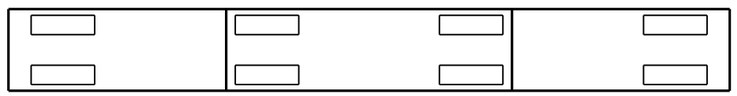
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

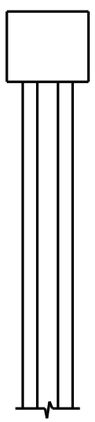
| REPAIRS BENT 183 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

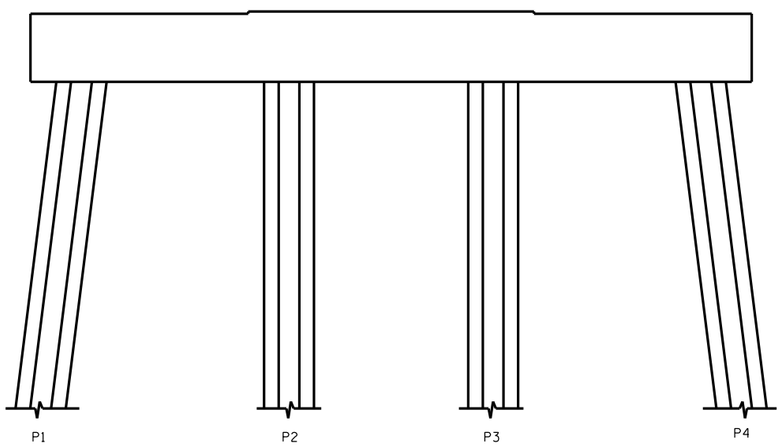


SPAN 184
SPAN 183

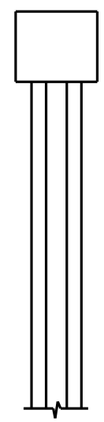
PLAN
TOP OF CAP



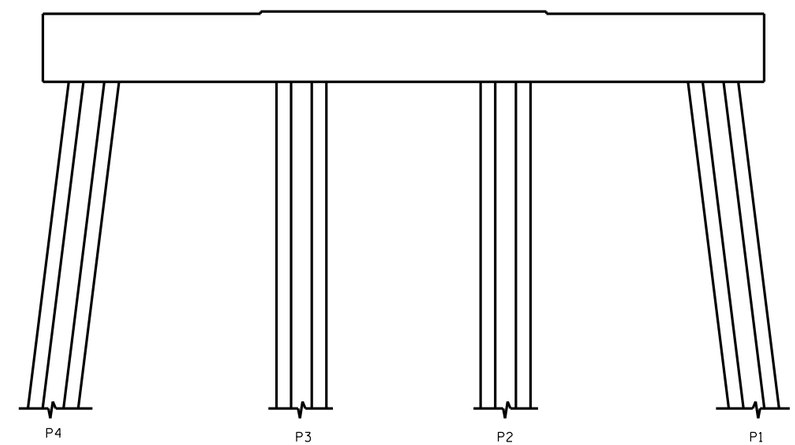
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

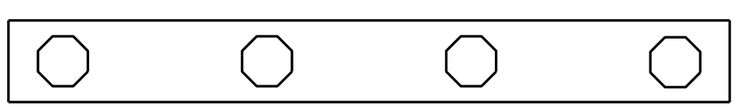


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 183
SPAN 184

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 183

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-224 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:14
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

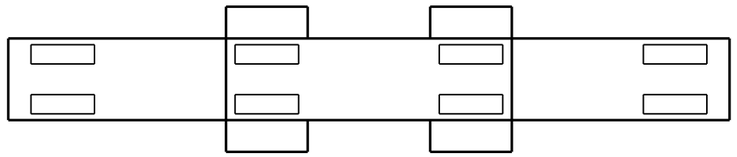
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

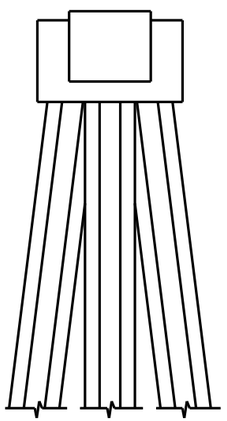
| REPAIRS BENT 184 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

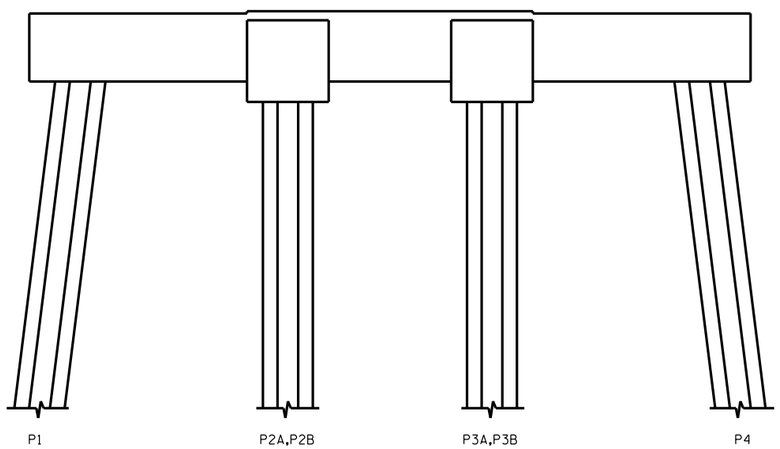


SPAN 185
SPAN 184

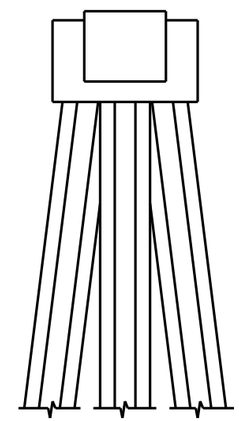
PLAN
TOP OF CAP



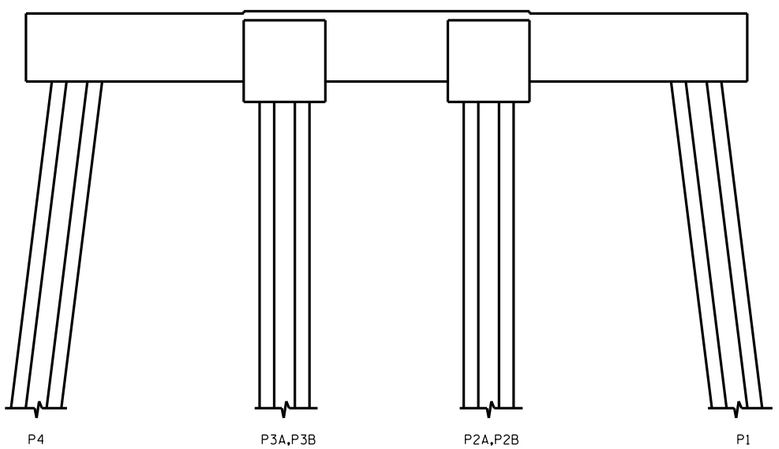
END VIEW
NORTH SIDE



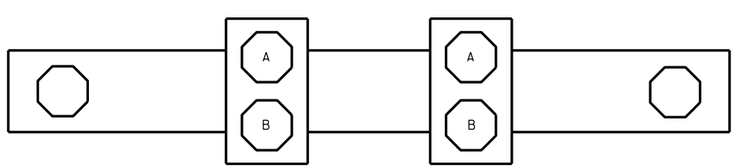

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 184
SPAN 185

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 184

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-225 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:14
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

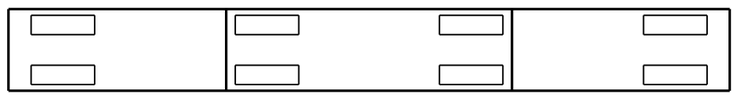
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

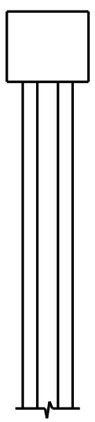
| REPAIRS BENT 185 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

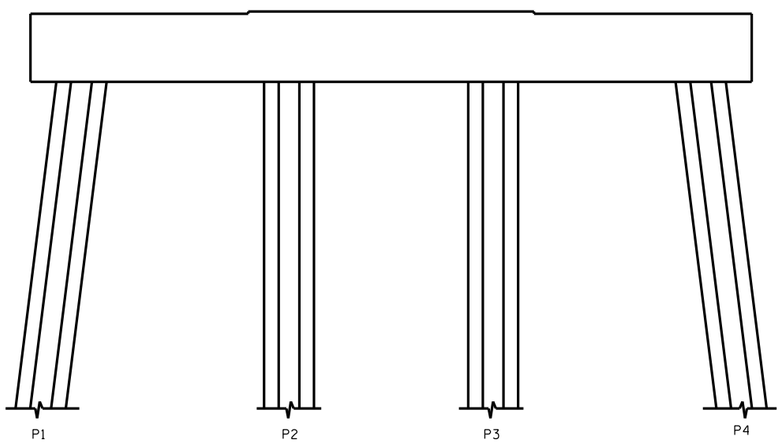


SPAN 186
SPAN 185

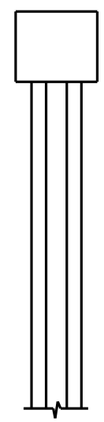
PLAN
TOP OF CAP



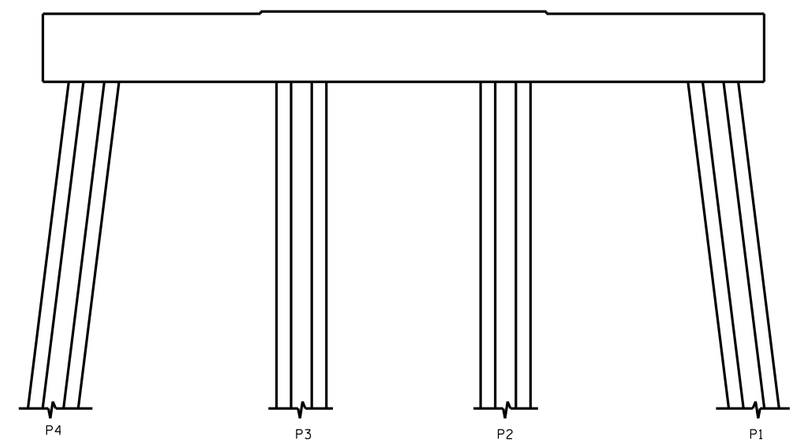
END VIEW
NORTH SIDE



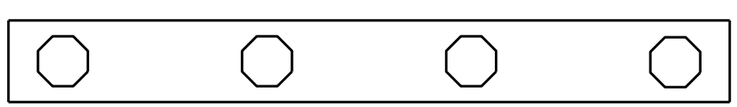

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 185
SPAN 186

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 185

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-226 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:15
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## NOTES:

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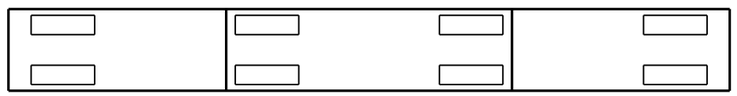
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

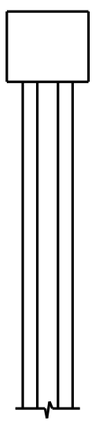
| REPAIRS BENT 186 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

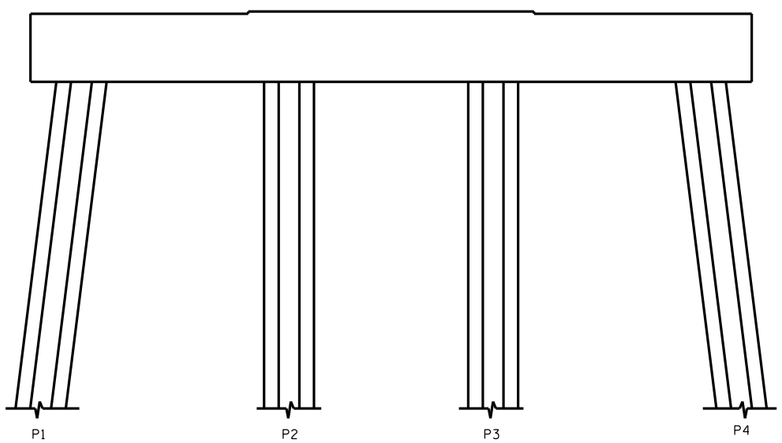


SPAN 187
SPAN 186

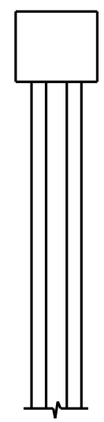
PLAN
TOP OF CAP



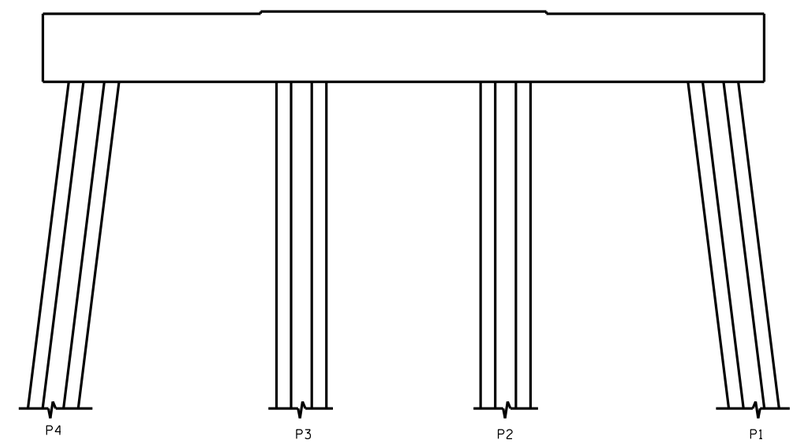
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

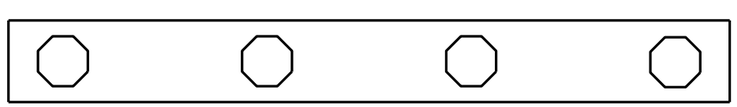


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 186
SPAN 187

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 186

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-227 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:16
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## NOTES:

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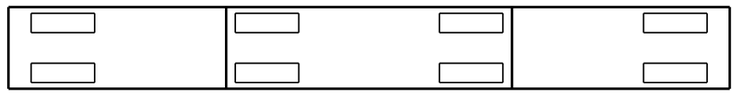
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

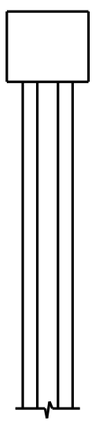
| REPAIRS BENT 187 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

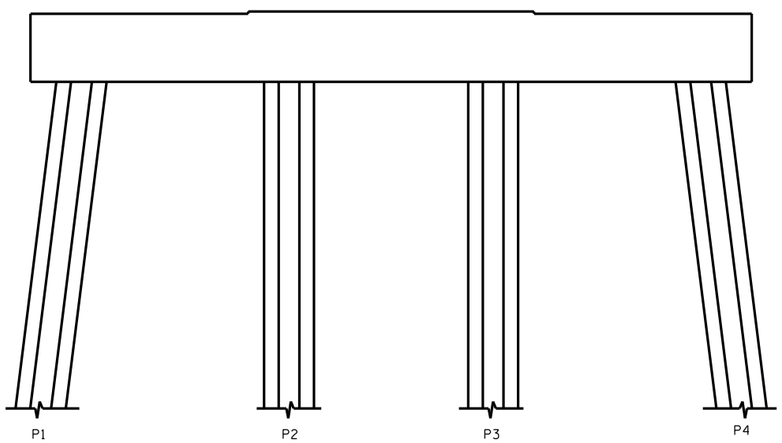


SPAN 188
SPAN 187

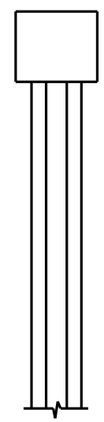
PLAN
TOP OF CAP



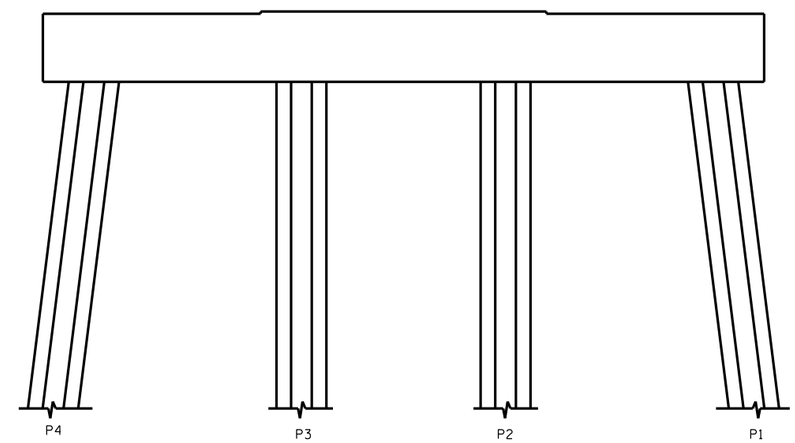
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

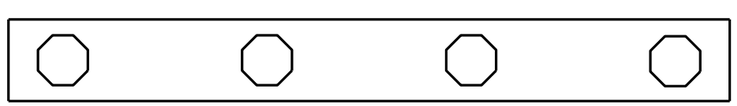


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 187
SPAN 188

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 187

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-228 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:16
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pbryant

## NOTES:

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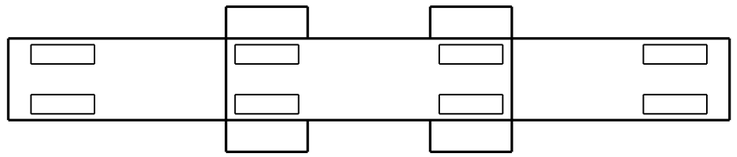
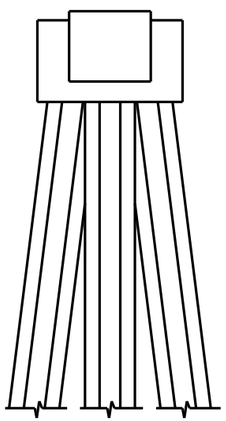
## REPAIR QUANTITY TABLE

| REPAIRS BENT 188 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.0 | 0.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

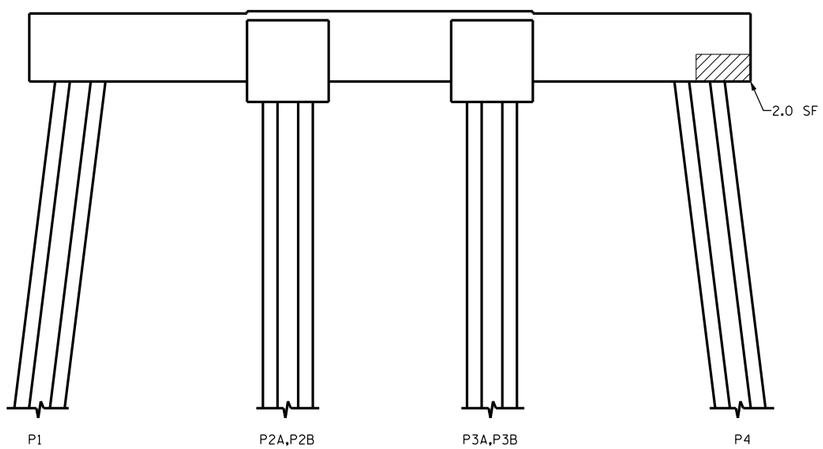
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



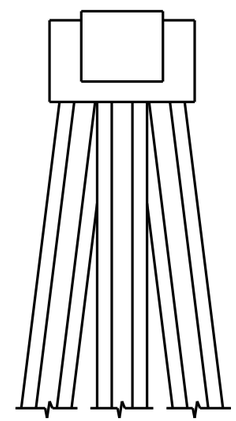

PLAN
TOP OF CAP



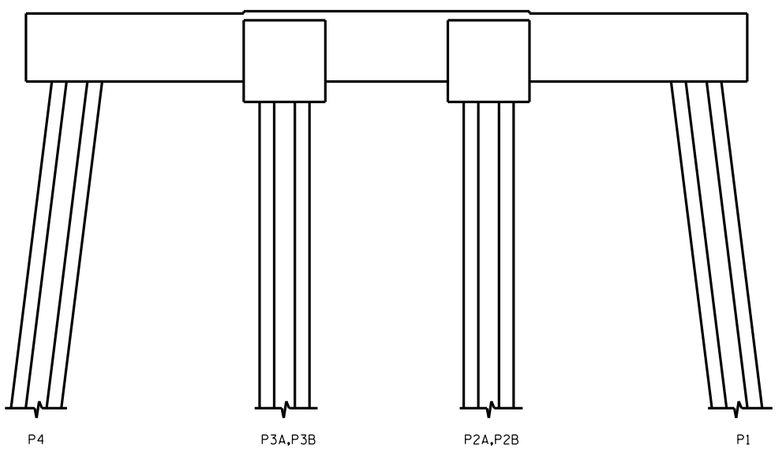
END VIEW
NORTH SIDE



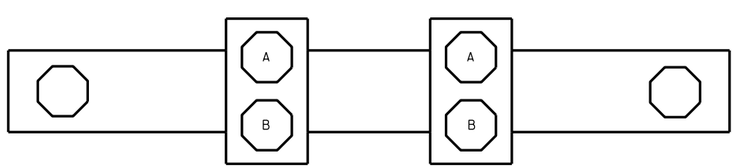

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 188

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-229 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:17
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

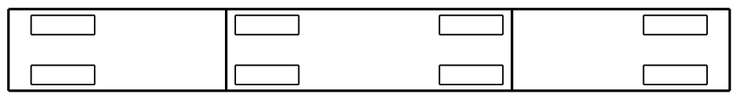
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

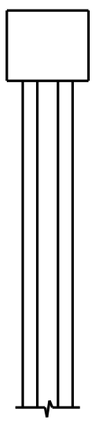
## REPAIR QUANTITY TABLE

| REPAIRS BENT 189 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 6.0 | 2.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

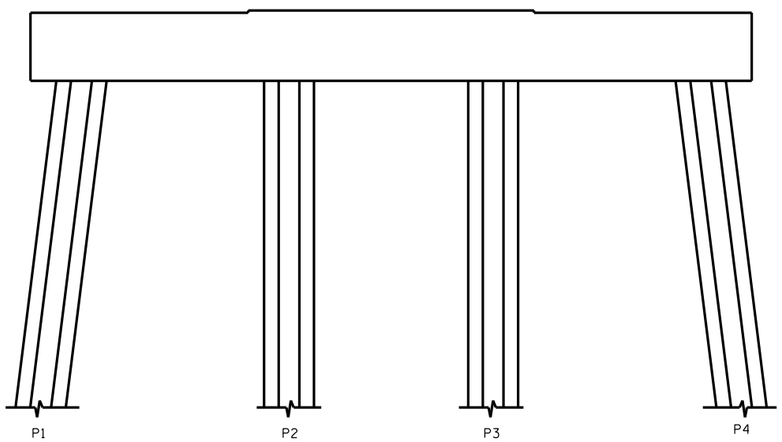
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



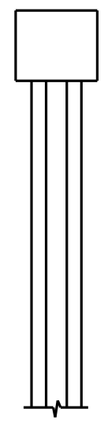

PLAN
TOP OF CAP



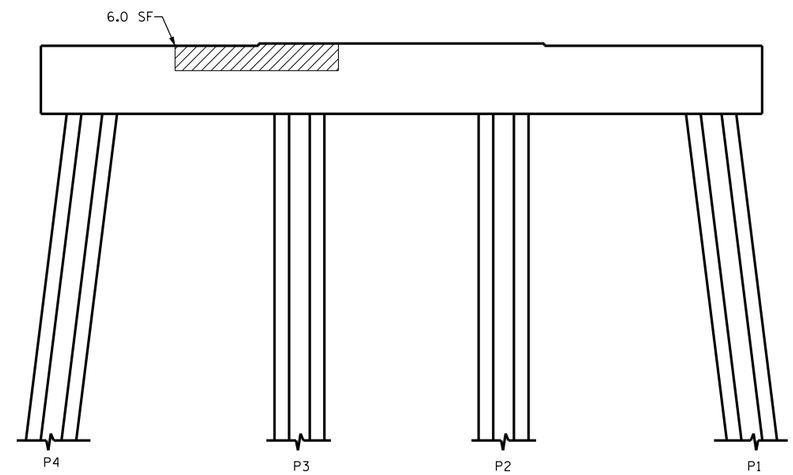
END VIEW
NORTH SIDE



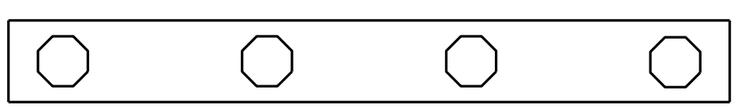

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 189

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-230 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:20
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

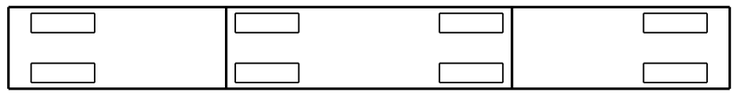
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

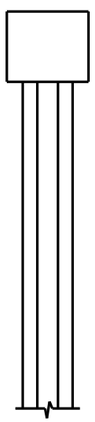
| REPAIRS BENT 190 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

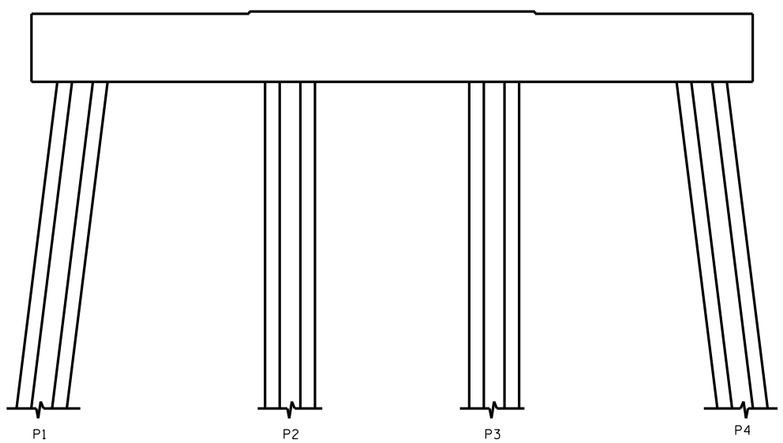


SPAN 191
SPAN 190

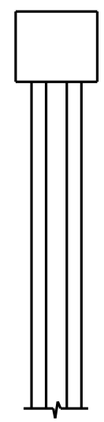
PLAN
TOP OF CAP



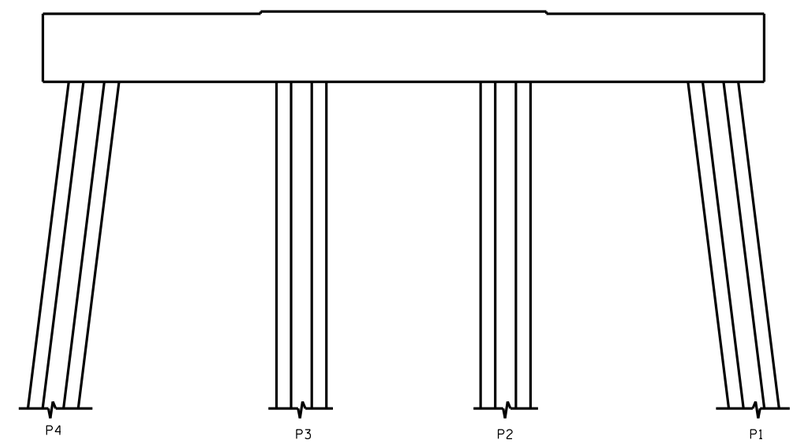
END VIEW
NORTH SIDE



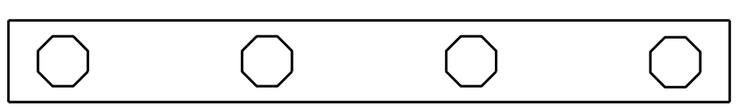

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 190
SPAN 191

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 190

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-231 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:21
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## NOTES:

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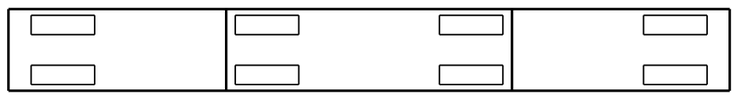
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

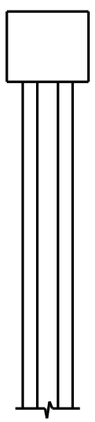
| REPAIRS BENT 191 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

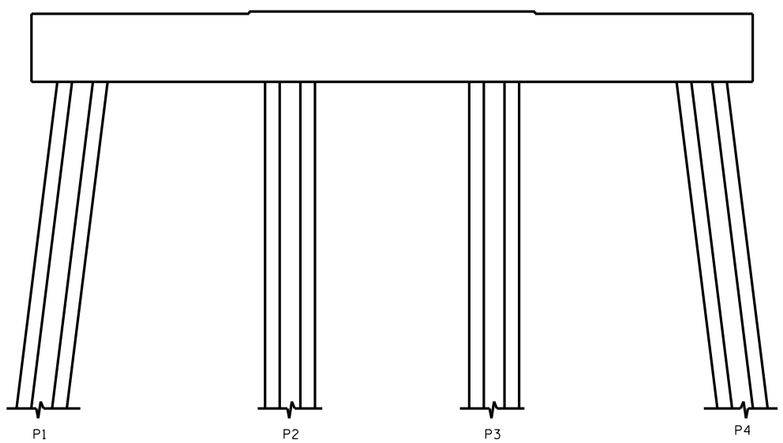


SPAN 192
SPAN 191

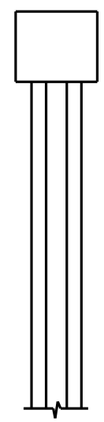
PLAN
TOP OF CAP



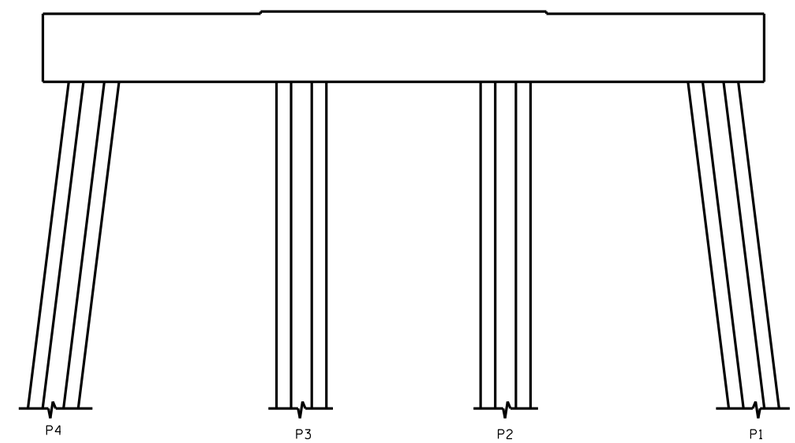
END VIEW
NORTH SIDE



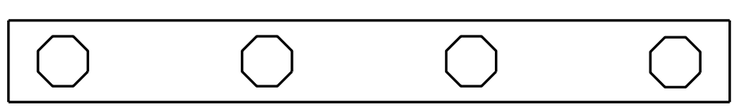

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 191
SPAN 192

PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 191

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-232 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:22
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pbryant

## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

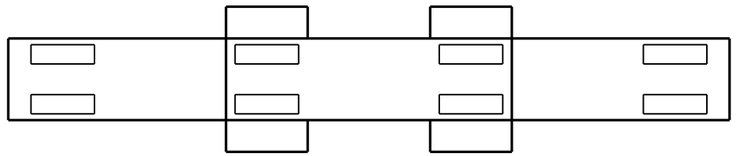
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

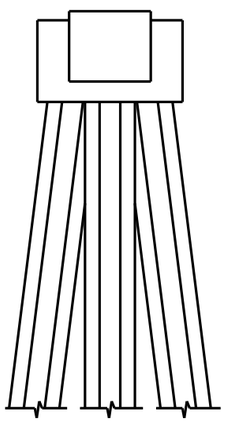
| REPAIRS BENT 192 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

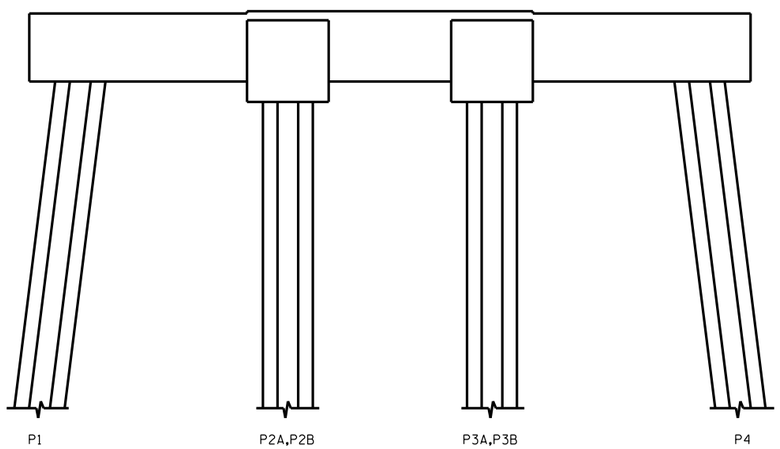


SPAN 193
SPAN 192

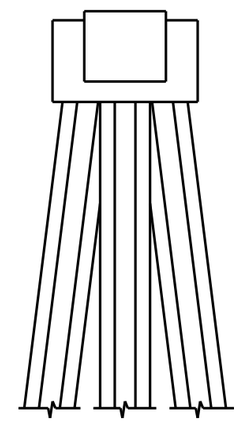
PLAN
TOP OF CAP



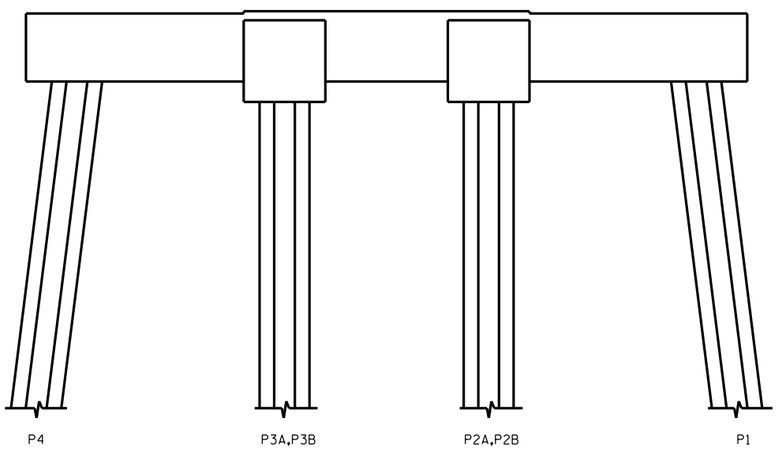
END VIEW
NORTH SIDE



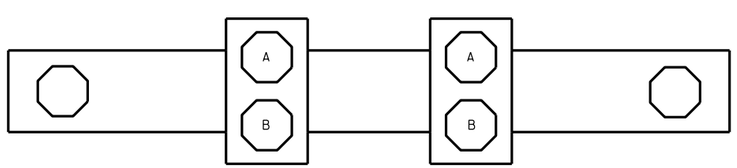

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 192
SPAN 193

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 192

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-233 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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pbryant

## NOTES:

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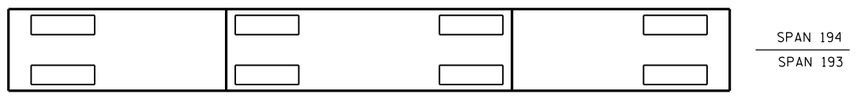
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

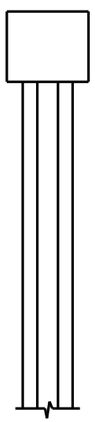
## REPAIR QUANTITY TABLE

| REPAIRS BENT 193 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.3 | 0.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

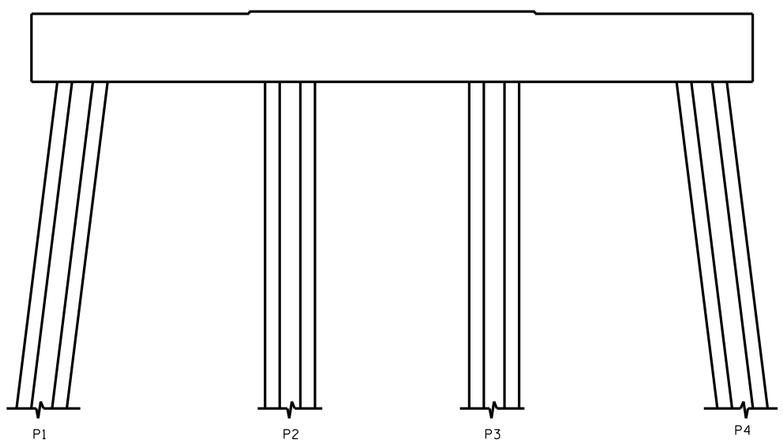
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



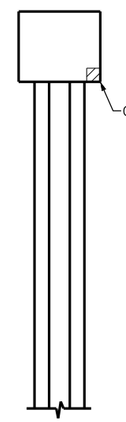

PLAN
TOP OF CAP



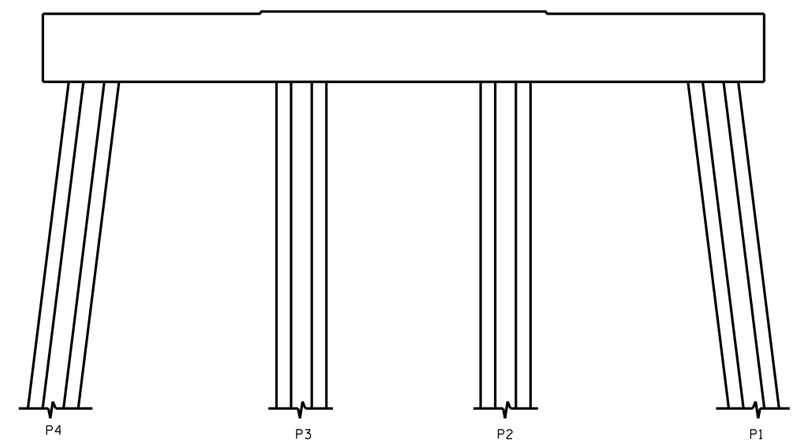
END VIEW
NORTH SIDE



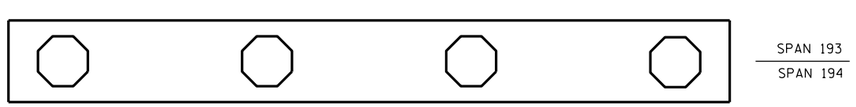

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 193

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-234 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:23
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

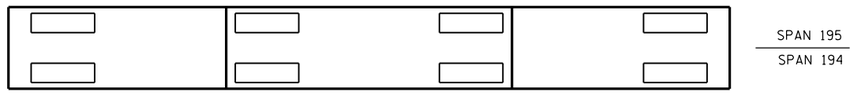
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

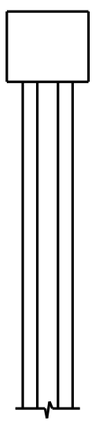
## REPAIR QUANTITY TABLE

| REPAIRS BENT 194 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.3 | 0.1 | | |
| CAP (HORIZONTAL, CORNER) | 2.0 | 0.8 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

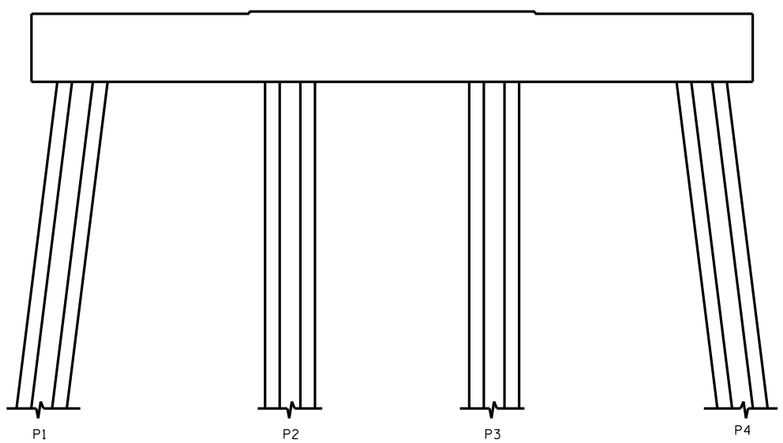
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



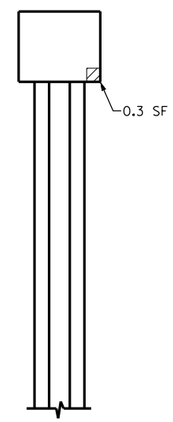

PLAN
TOP OF CAP



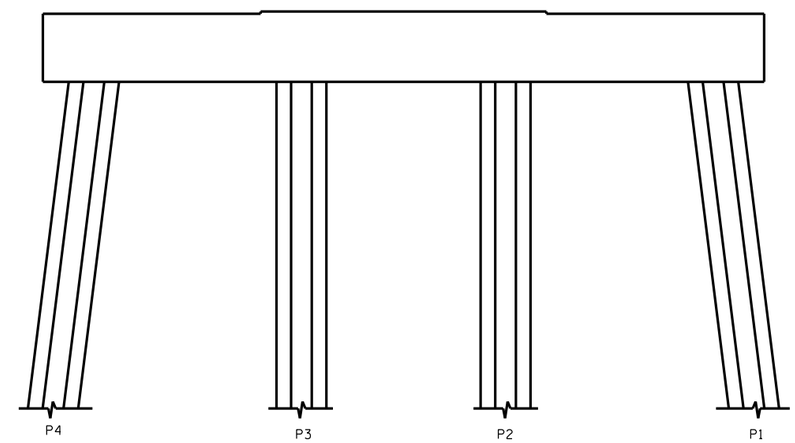
END VIEW
NORTH SIDE



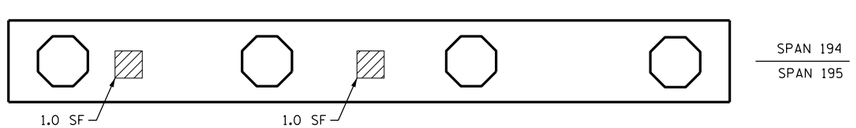

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 194

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-235 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:24
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

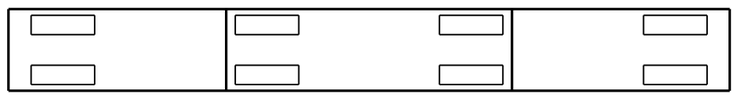
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

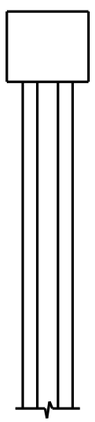
## REPAIR QUANTITY TABLE

| REPAIRS BENT 195 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 1.0 | 0.4 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

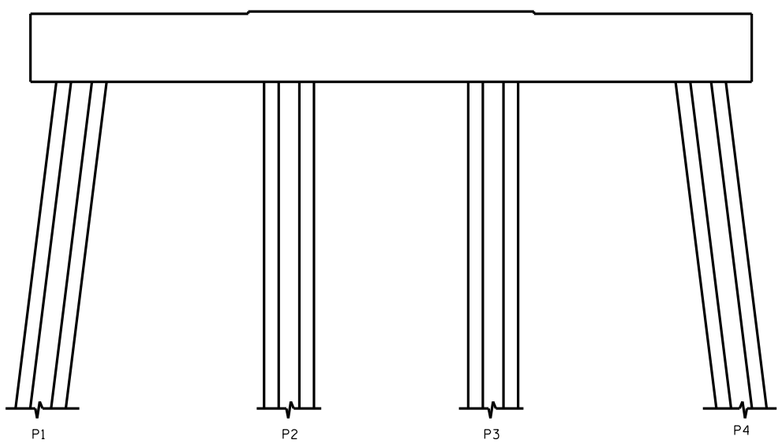
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



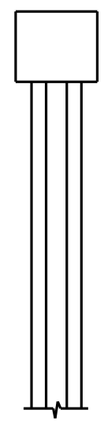

PLAN
TOP OF CAP



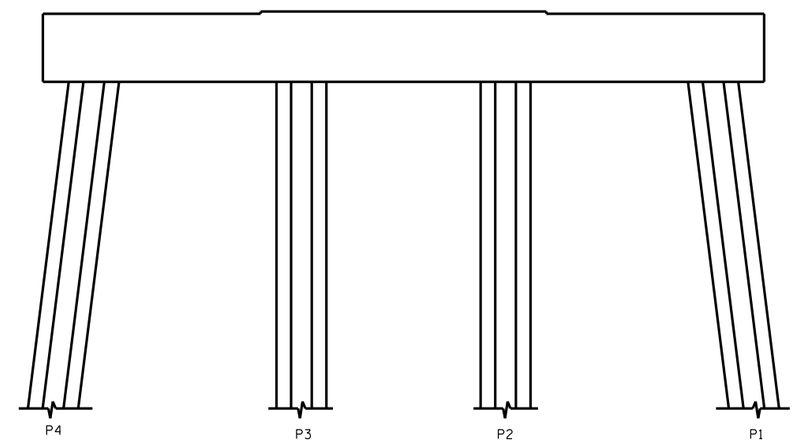
END VIEW
NORTH SIDE



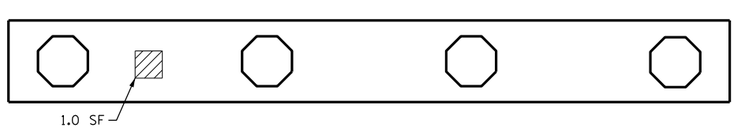

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 195

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-236 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:25
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

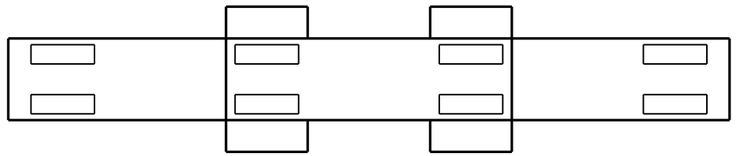
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

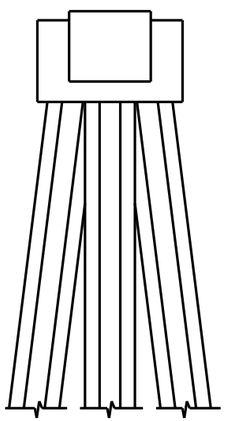
## REPAIR QUANTITY TABLE

| REPAIRS BENT 196 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 1.0 | 0.4 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

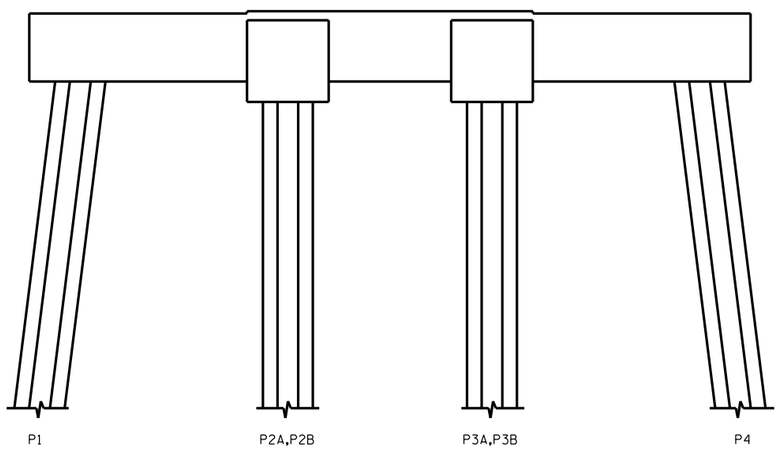
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



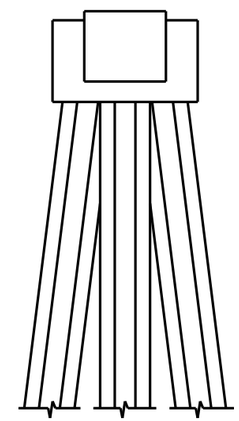

PLAN
TOP OF CAP



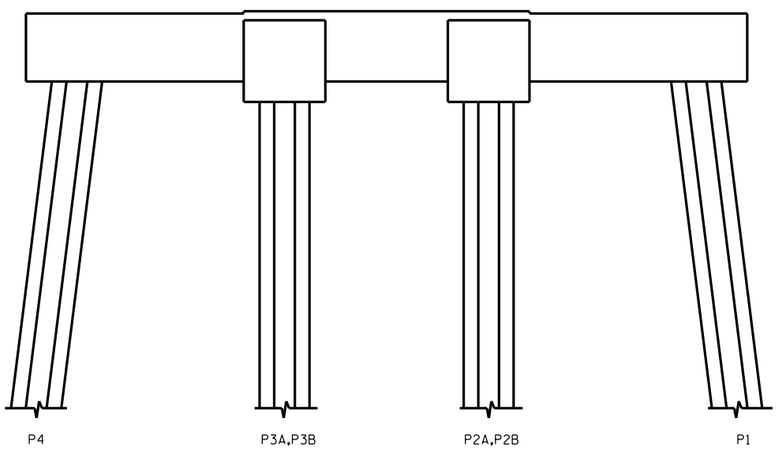
END VIEW
NORTH SIDE



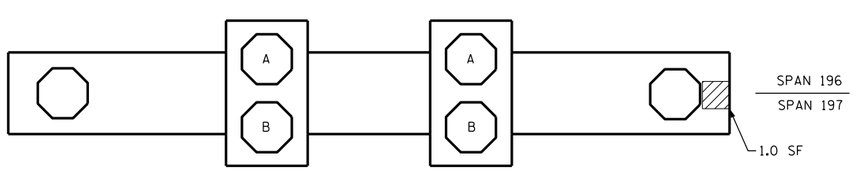

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 196

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-237 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:25
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

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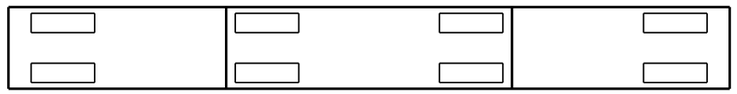
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

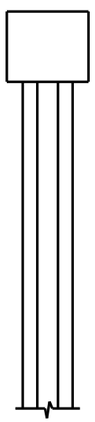
| REPAIRS BENT 197 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

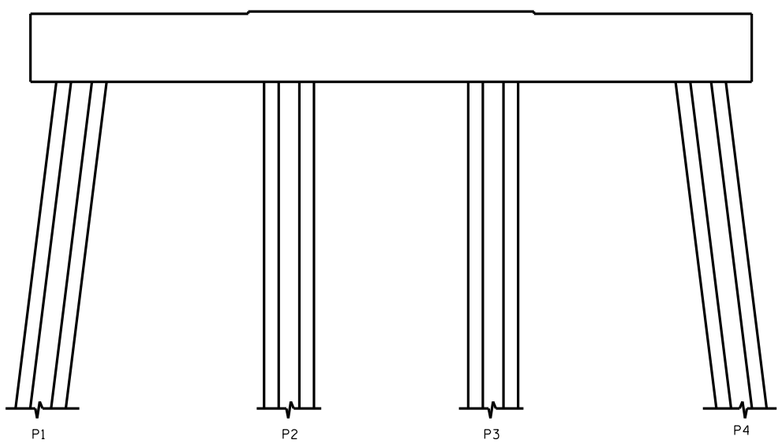


SPAN 198
SPAN 197

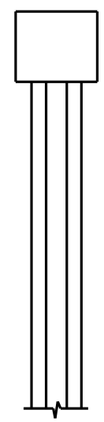
PLAN
TOP OF CAP



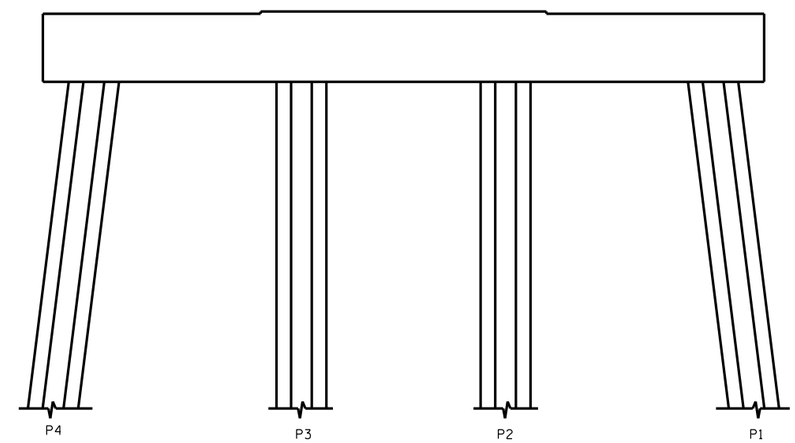
END VIEW
NORTH SIDE



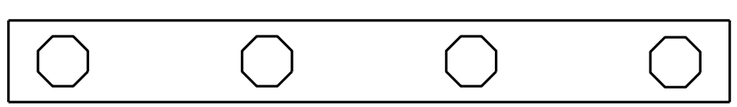

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 197
SPAN 198

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 197

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-238 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:26
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pbryant

## NOTES:

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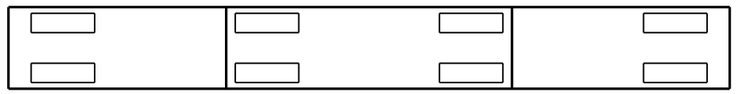
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

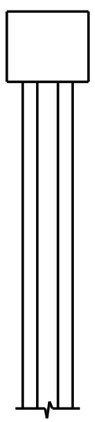
| REPAIRS BENT 198 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

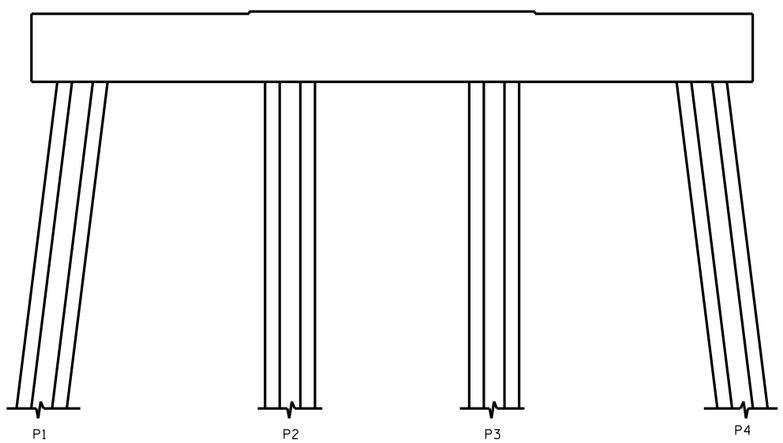


SPAN 199
SPAN 198

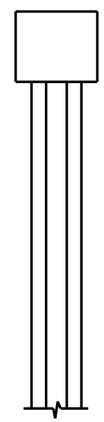
PLAN
TOP OF CAP



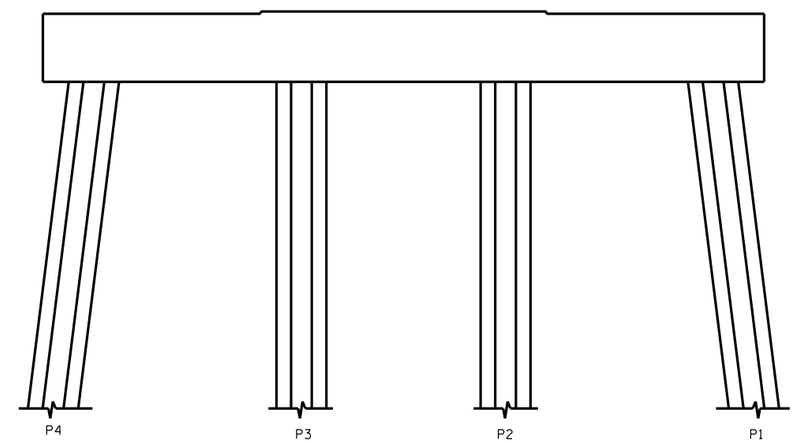
END VIEW
NORTH SIDE



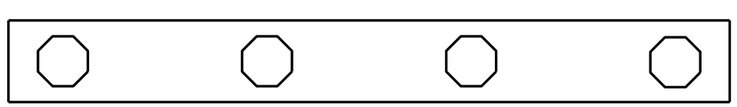

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 198
SPAN 199

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 198

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-239 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:26
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

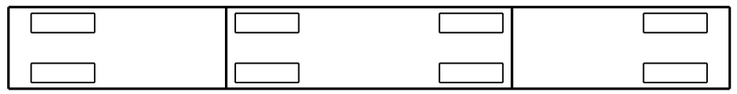
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

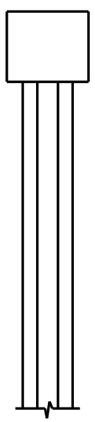
## REPAIR QUANTITY TABLE

| REPAIRS BENT 199 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

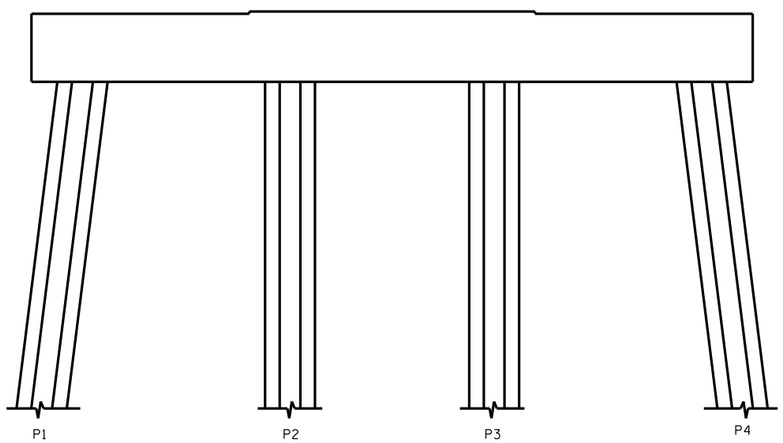
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



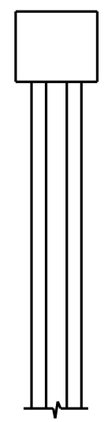

PLAN
TOP OF CAP



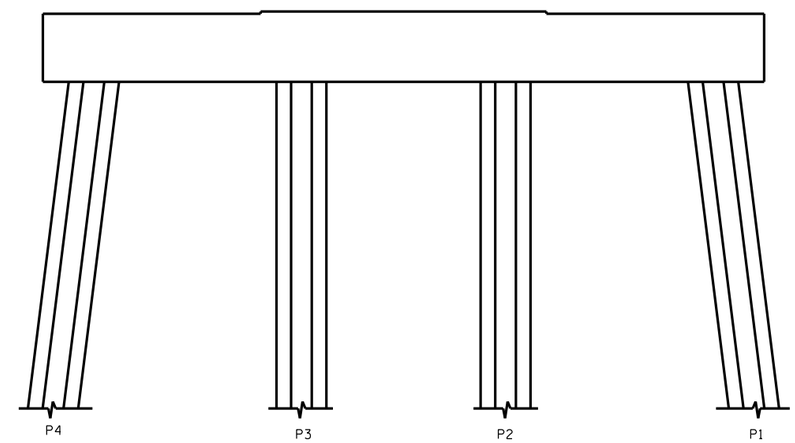
END VIEW
NORTH SIDE



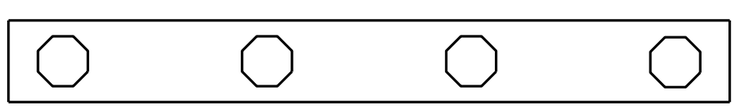

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 199

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-240 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:27
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pbryant

## NOTES:

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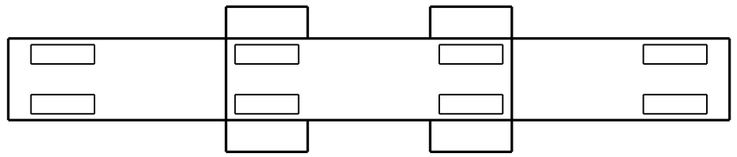
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

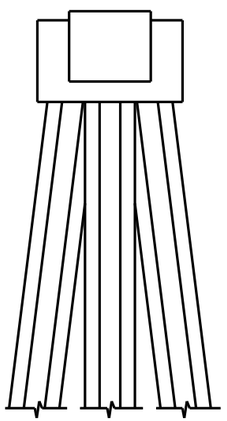
| REPAIRS BENT 200 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

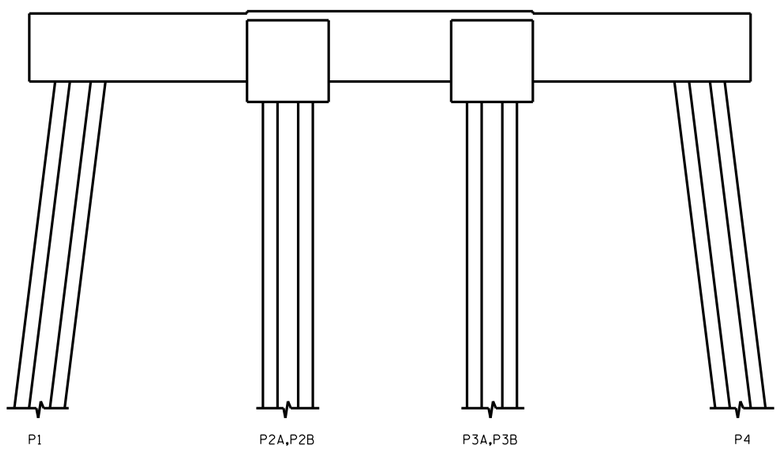


SPAN 201
SPAN 200

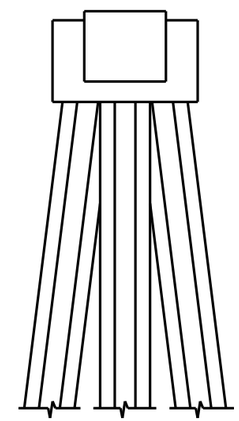
PLAN
TOP OF CAP



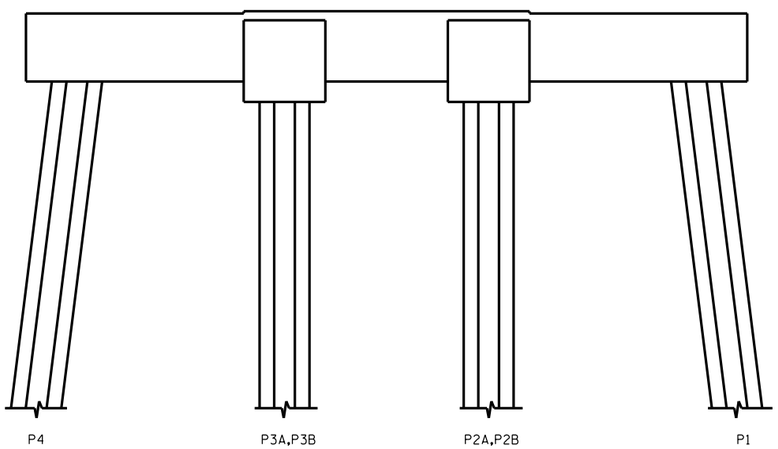
END VIEW
NORTH SIDE



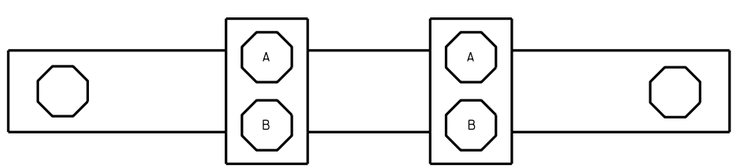

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 200
SPAN 201

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 200

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-241 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

11-AUG-2016 13:45
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rnwelsz

## 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.

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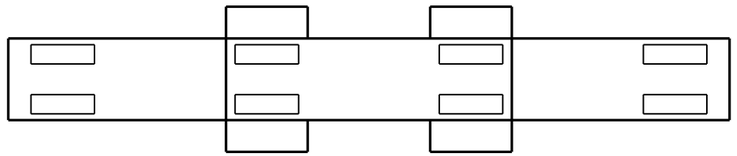
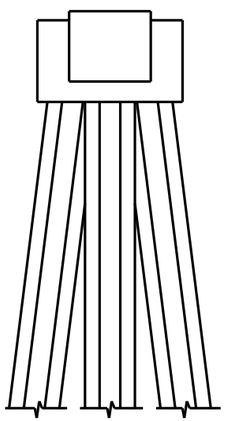
## REPAIR QUANTITY TABLE

| REPAIRS BENT 200 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

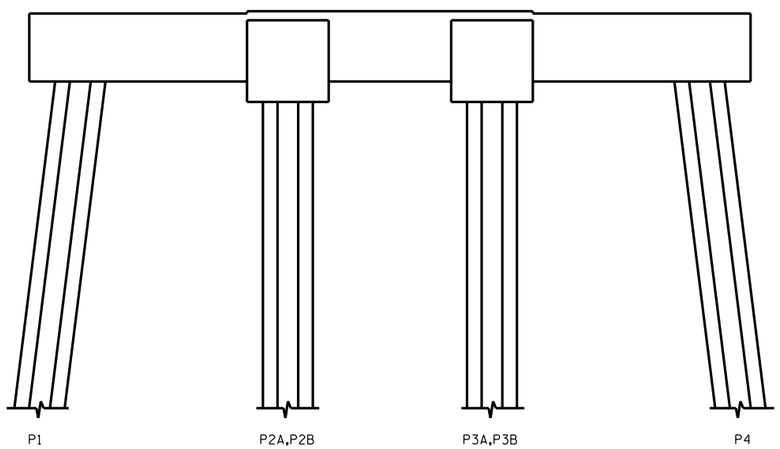
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



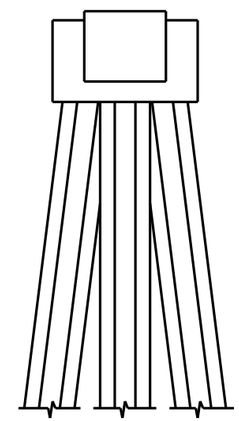

PLAN
TOP OF CAP



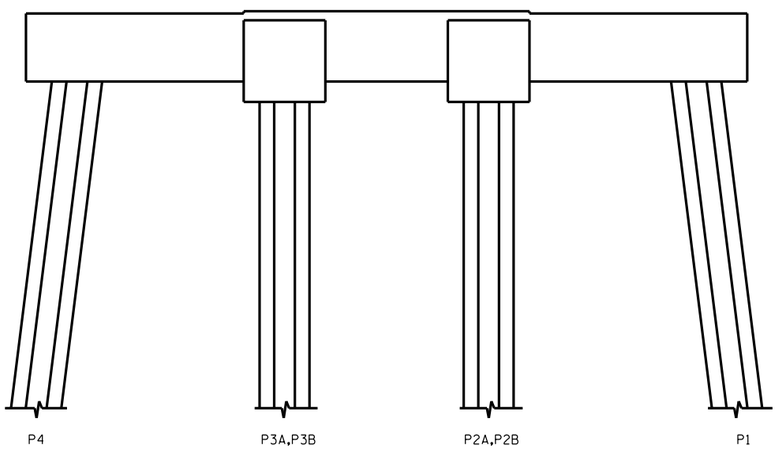
END VIEW
NORTH SIDE



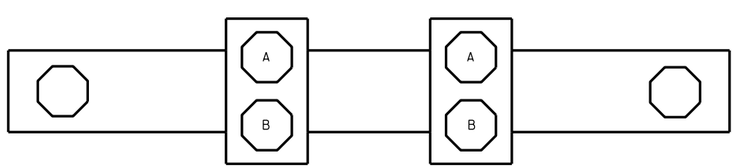

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 200

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-241 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

11-AUG-2016 13:45
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## 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.

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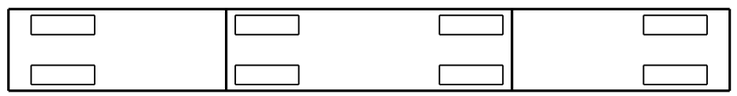
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

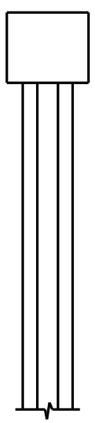
## REPAIR QUANTITY TABLE

| REPAIRS BENT 201 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

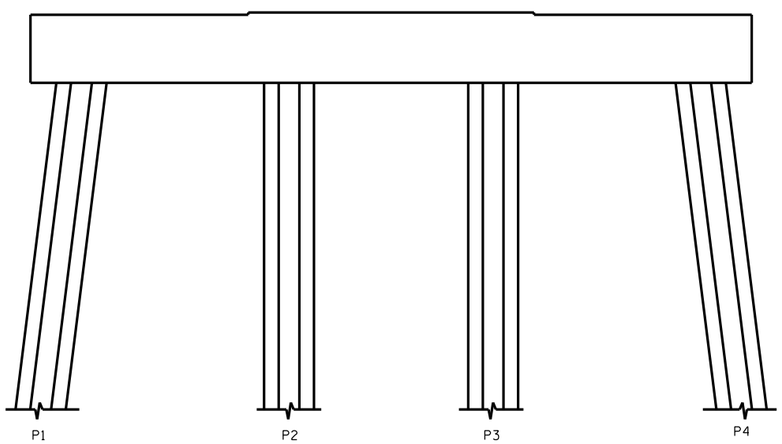
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



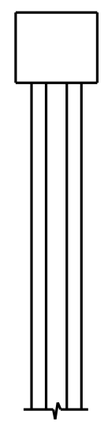

PLAN
TOP OF CAP



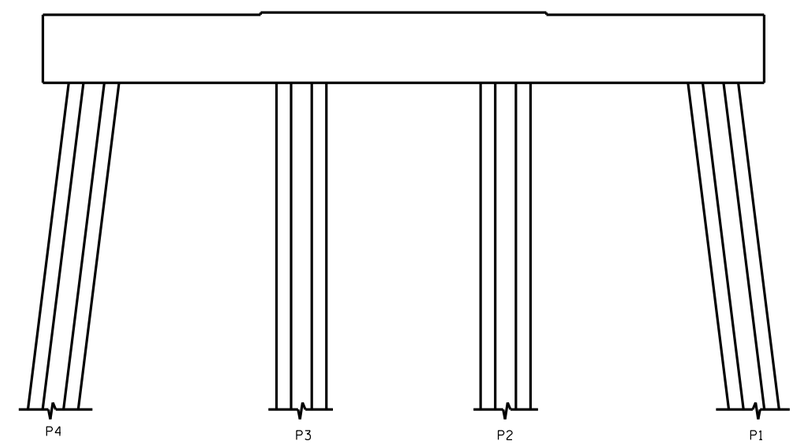
END VIEW
NORTH SIDE



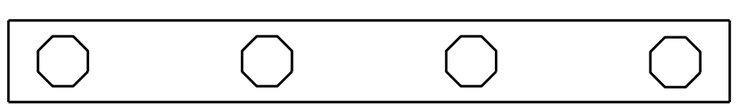

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 201

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-242 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:28
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pbryant

## NOTES:

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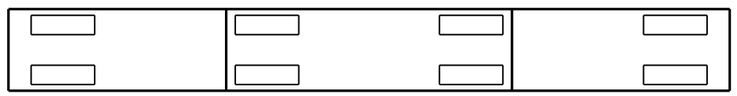
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

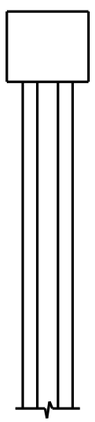
| REPAIRS BENT 202 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.0 | 0.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

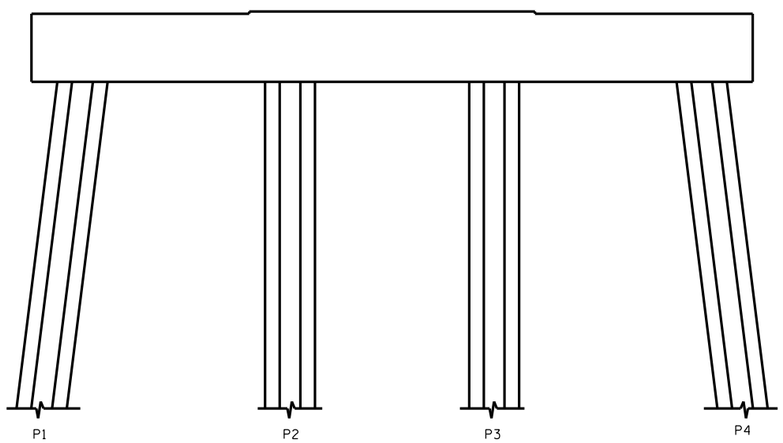


SPAN 203
SPAN 202

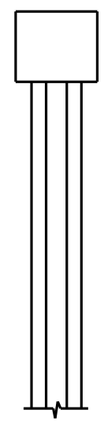
PLAN
TOP OF CAP



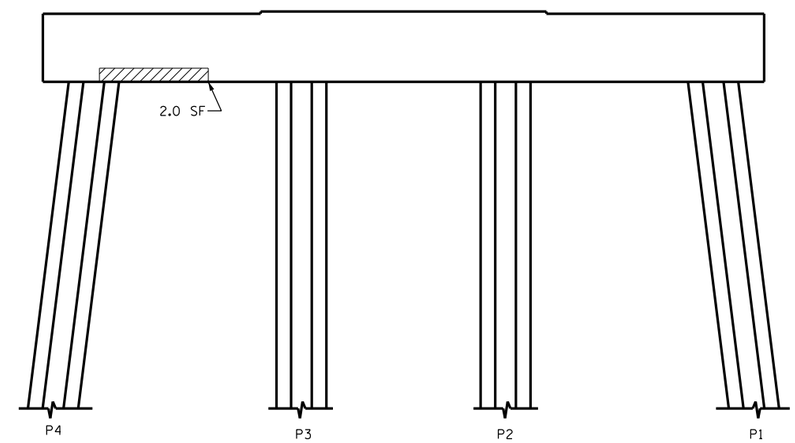
END VIEW
NORTH SIDE



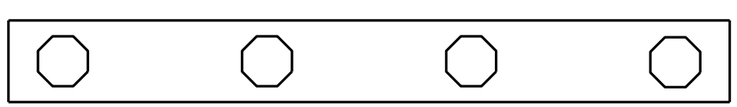

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 202
SPAN 203

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 202

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-243 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:29
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

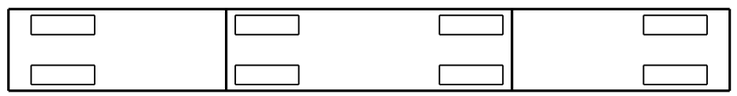
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

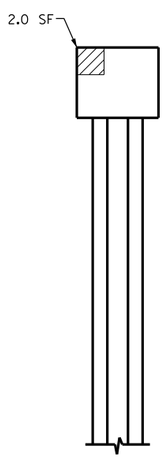
## REPAIR QUANTITY TABLE

| REPAIRS BENT 203 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 4.8 | 2.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

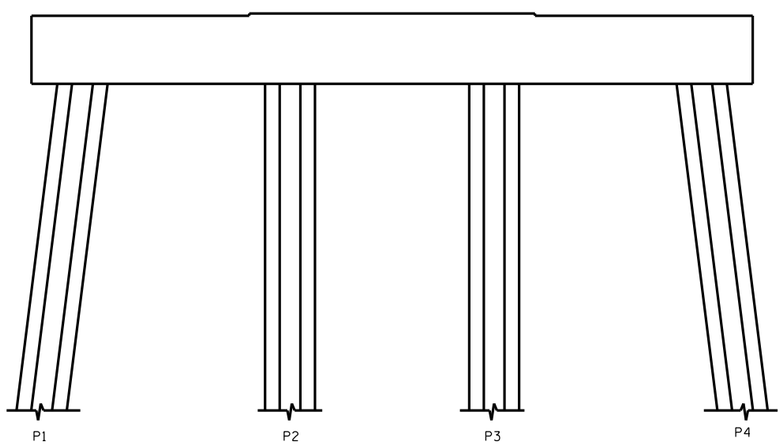
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



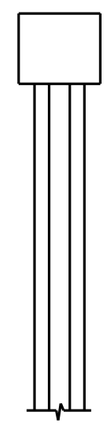

PLAN
TOP OF CAP



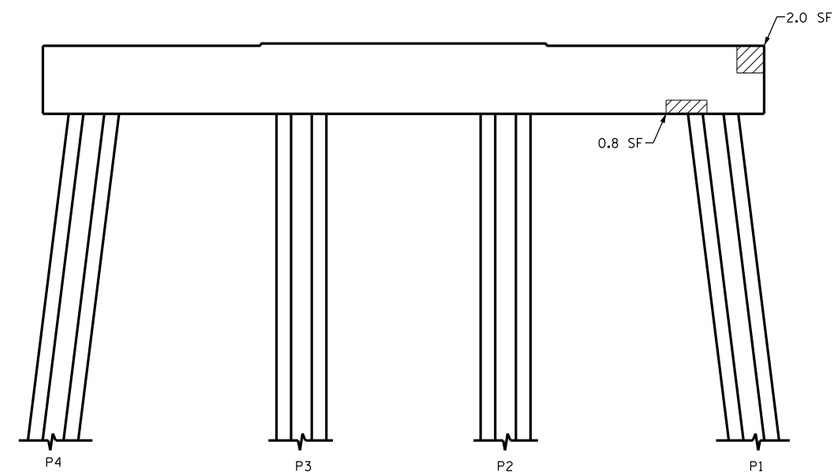

END VIEW
NORTH SIDE



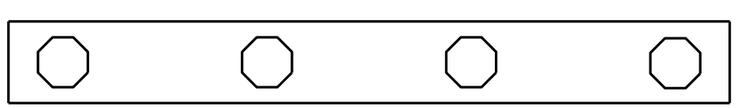

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 203

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-244 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:30
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

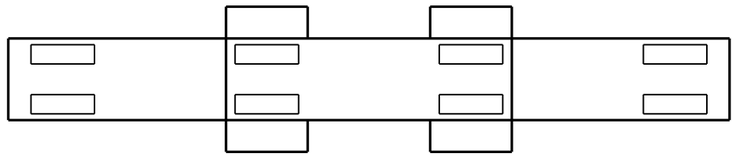
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

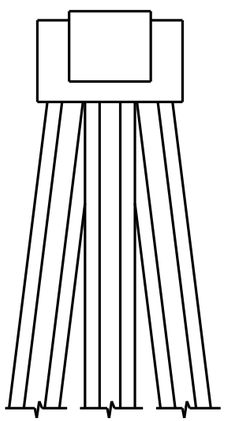
| REPAIRS BENT 204 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

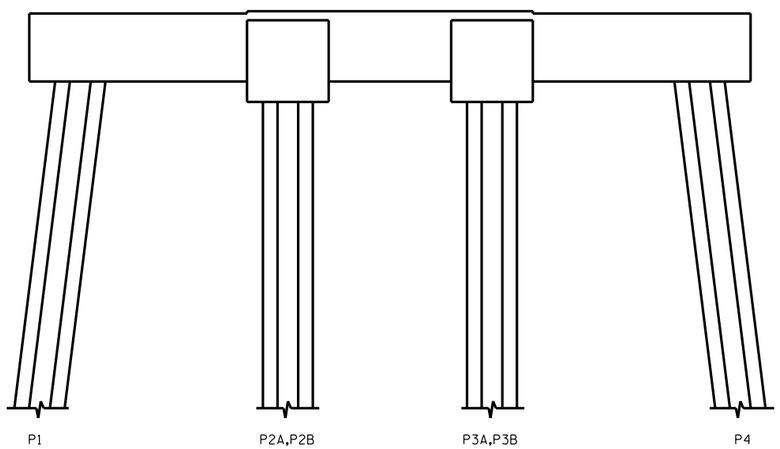


SPAN 205
SPAN 204

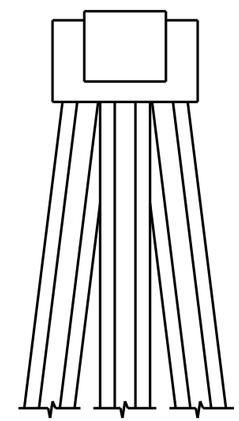
PLAN
TOP OF CAP



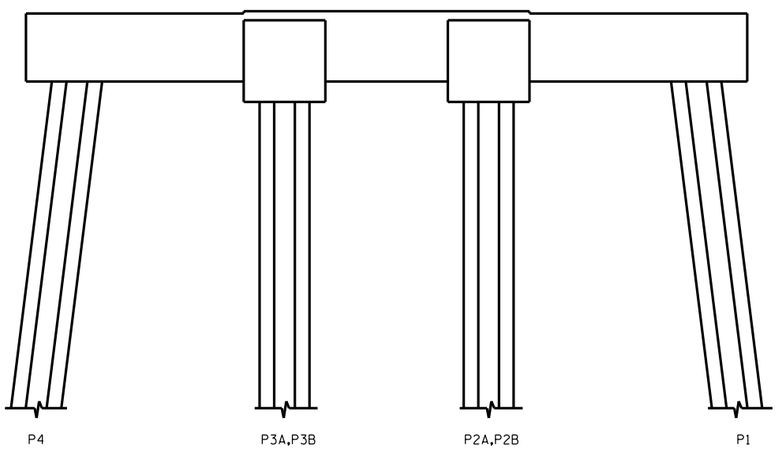
END VIEW
NORTH SIDE



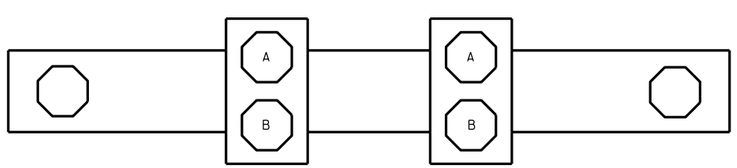

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 204
SPAN 205

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 204

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-245 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:30
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

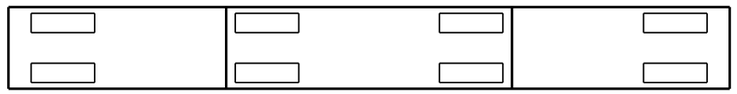
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

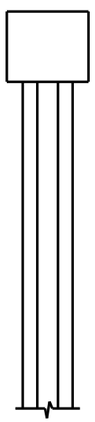
| REPAIRS BENT 205 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

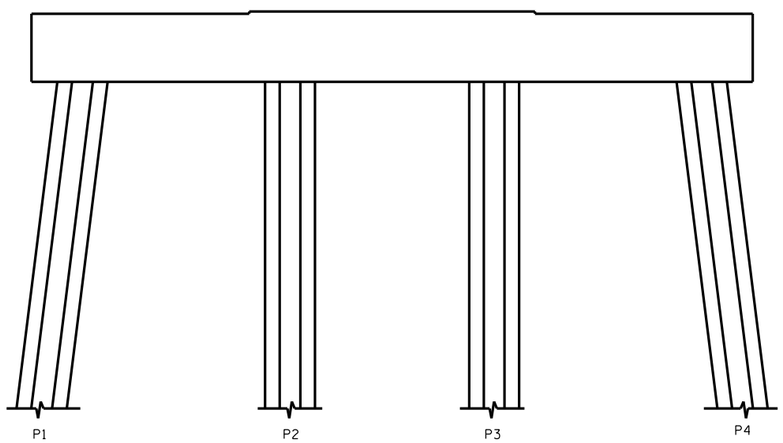


SPAN 206
SPAN 205

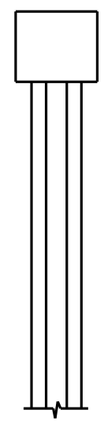
PLAN
TOP OF CAP



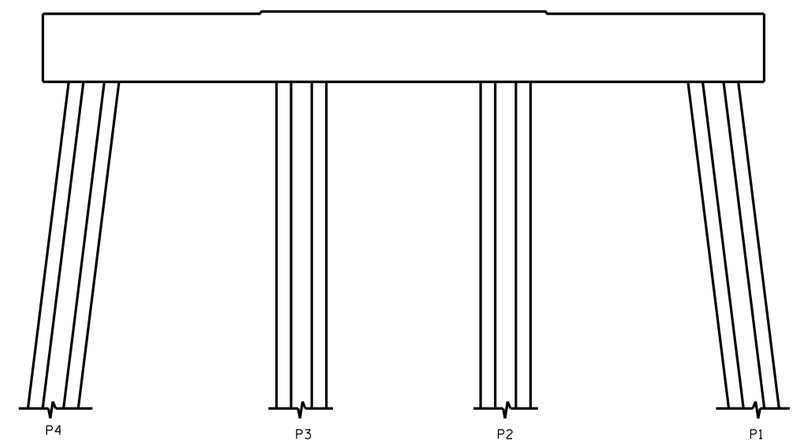
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

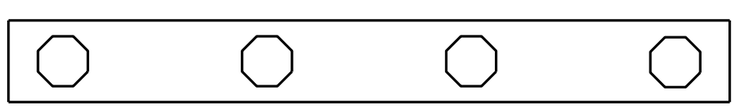


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 205
SPAN 206

PLAN
BOTTOM OF CAP

NO REPAIRS 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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 205

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-246 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:31
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pbryant

## NOTES:

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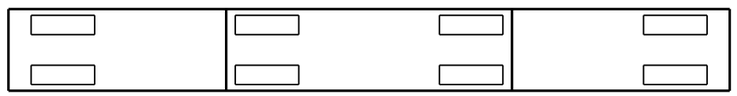
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

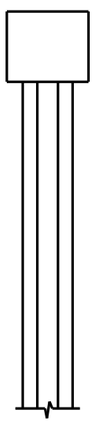
## REPAIR QUANTITY TABLE

| REPAIRS BENT 206 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.3 | 0.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

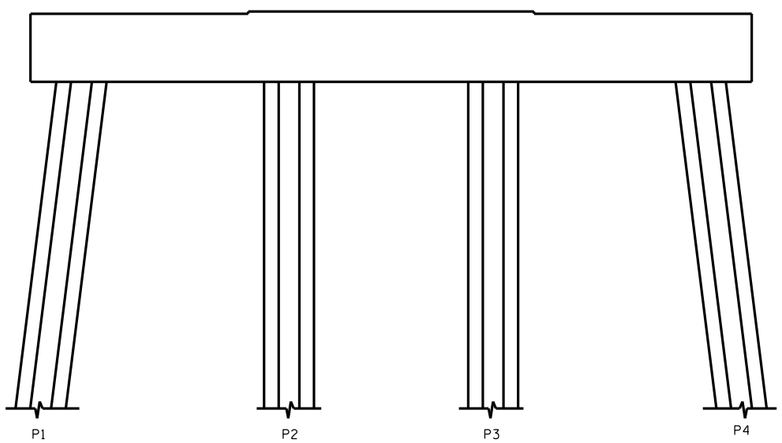
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



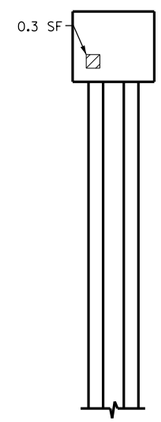

PLAN
TOP OF CAP



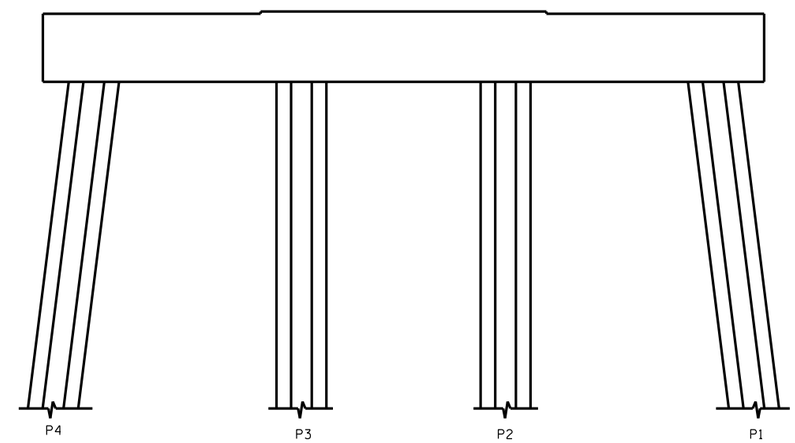
END VIEW
NORTH SIDE



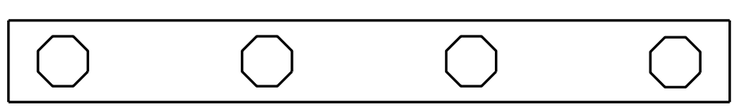

ELEVATION
WEST SIDE




END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 206

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-247 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:31
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pbryant

## NOTES:

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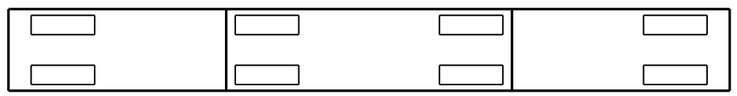
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

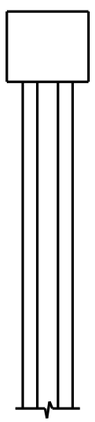
| REPAIRS BENT 207 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

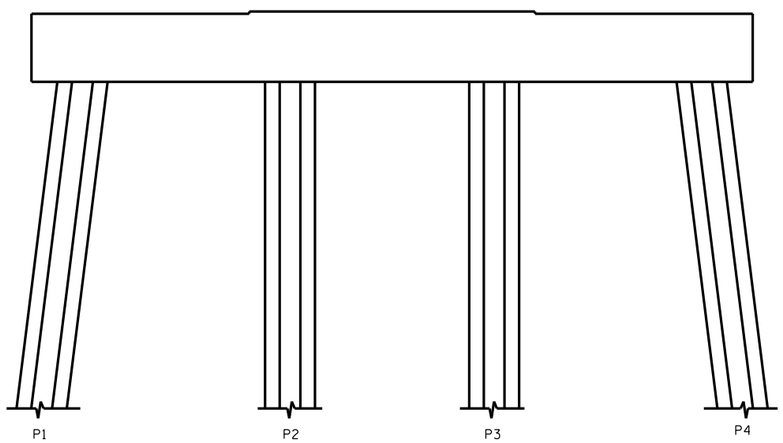


SPAN 208
SPAN 207

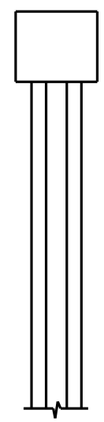
PLAN
TOP OF CAP



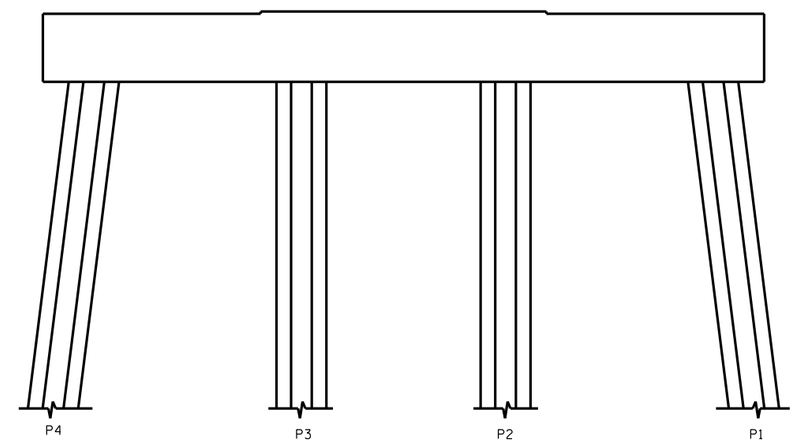
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

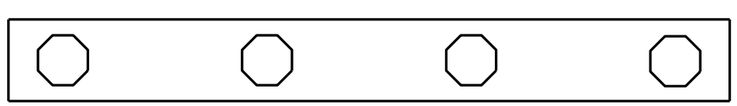


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 207
SPAN 208

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 207

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-248 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

20-JUN-2016 16:32
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

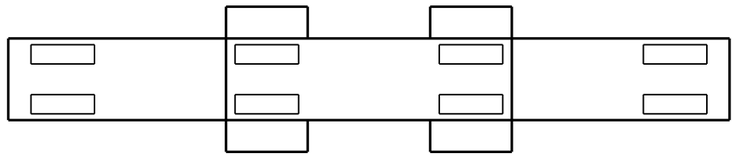
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

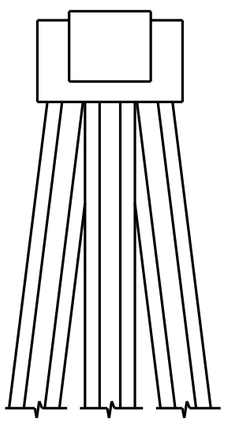
| REPAIRS BENT 208 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

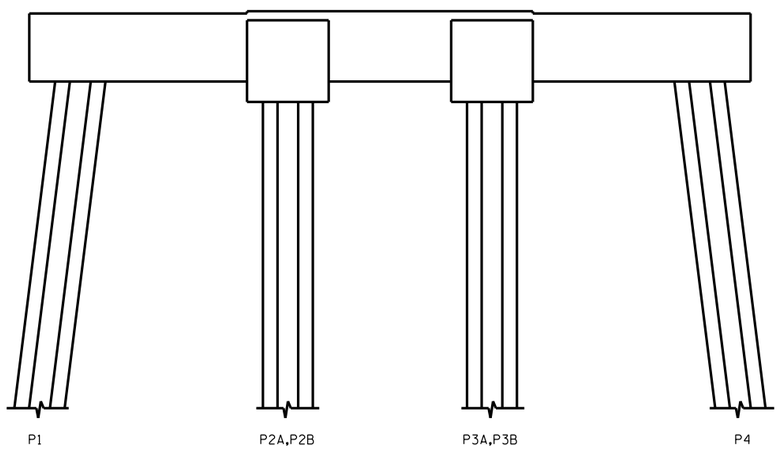


SPAN 209
SPAN 208

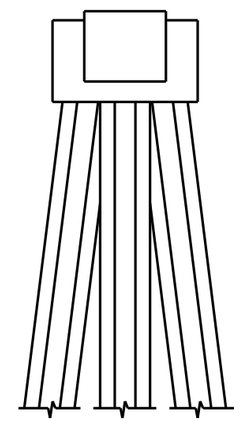
PLAN
TOP OF CAP



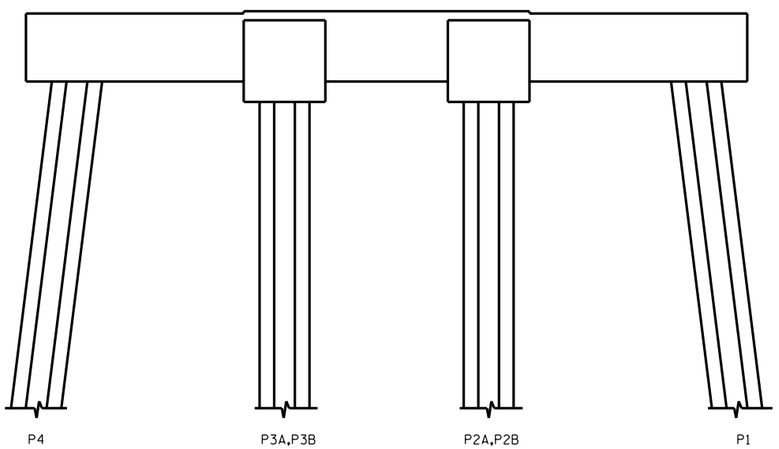
END VIEW
NORTH SIDE



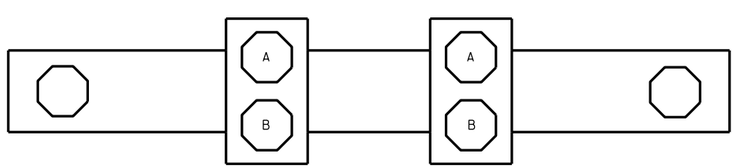

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 208
SPAN 209

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 208

| REVISIONS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | SHEET NO. |
| 1 | | | 3 | | | | S-249 |
| 2 | | | 4 | | | | TOTAL SHEETS 394 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:44
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pbryant

## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

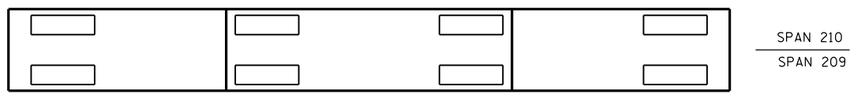
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

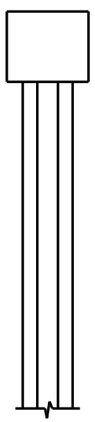
## REPAIR QUANTITY TABLE

| REPAIRS BENT 209 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

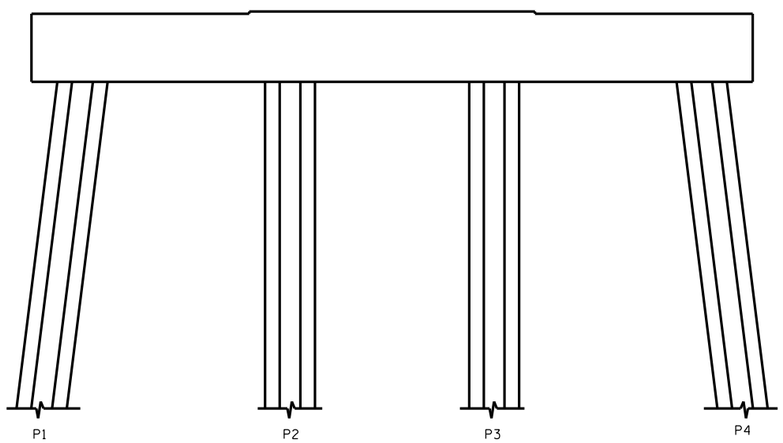
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



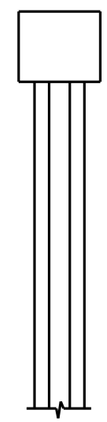

PLAN
TOP OF CAP



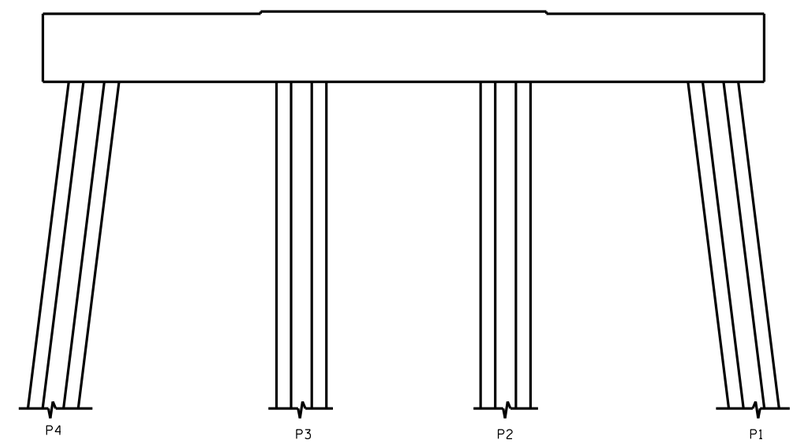
END VIEW
NORTH SIDE



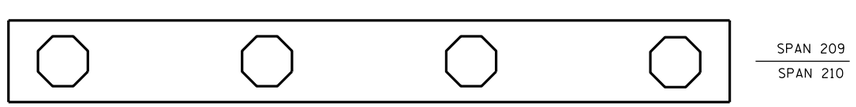

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 209

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-250 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:45
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pbryant

## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

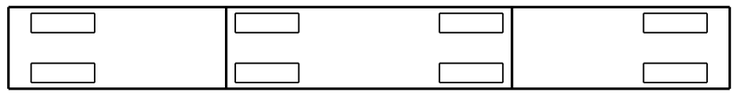
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

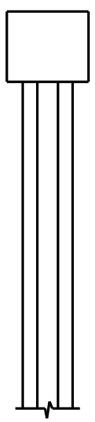
| REPAIRS BENT 210 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

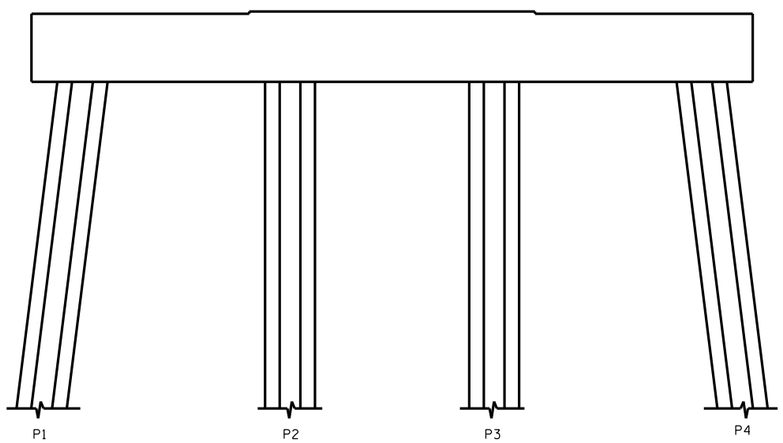


SPAN 211
SPAN 210

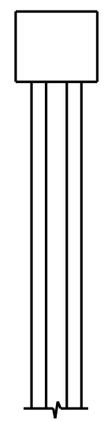
PLAN
TOP OF CAP



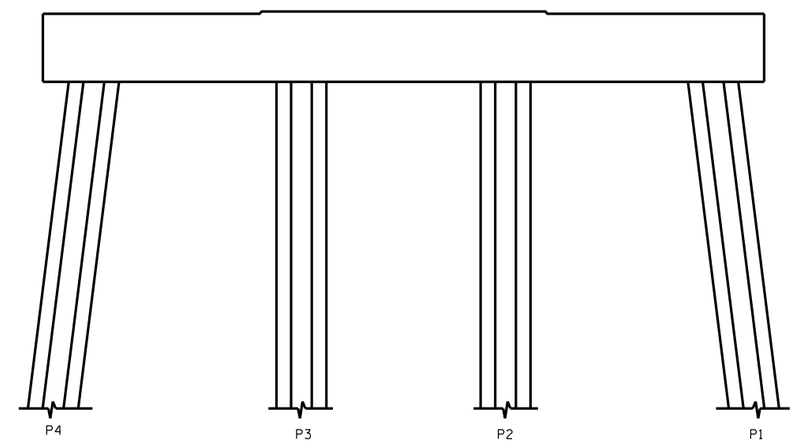
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

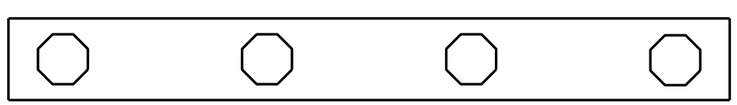


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 210
SPAN 211

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 210

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-251 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:45
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pbryant

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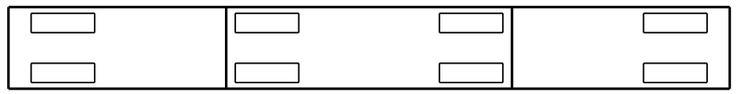
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

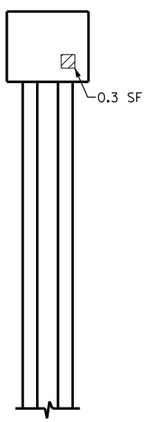
## REPAIR QUANTITY TABLE

| REPAIRS BENT 211 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.0 | 0.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

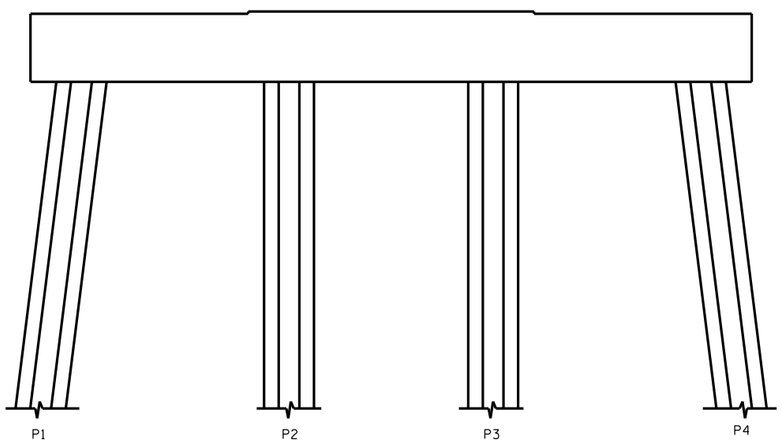
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



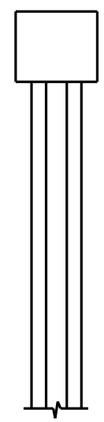

PLAN
TOP OF CAP



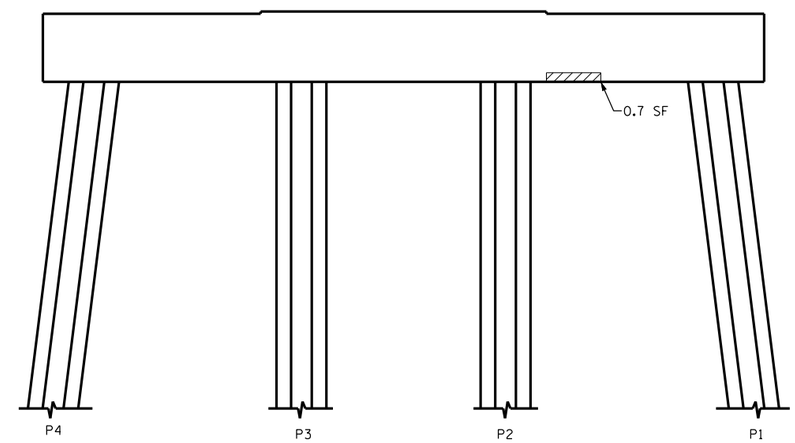

END VIEW
NORTH SIDE



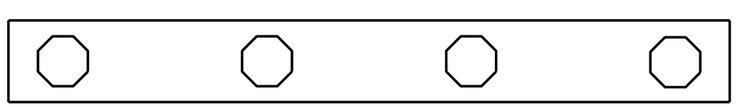

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 211

| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-252 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:46
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pbryant

## NOTES:

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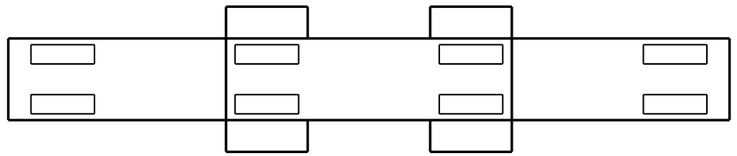
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

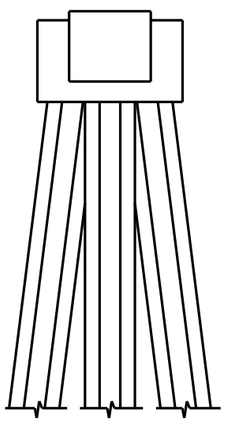
| REPAIRS BENT 212 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

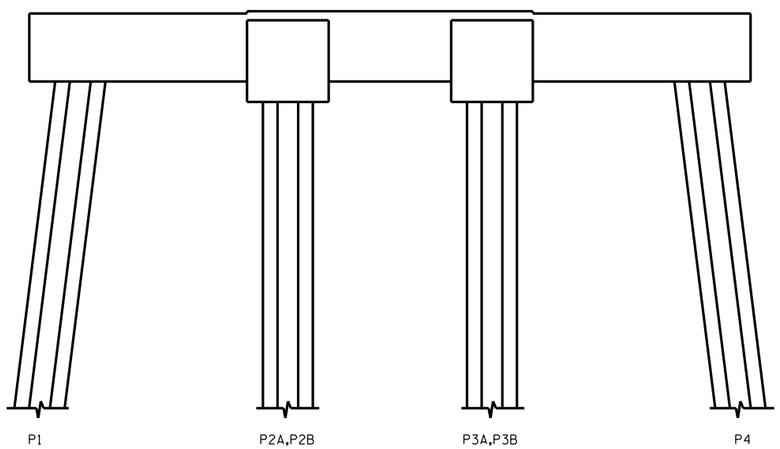


SPAN 213
SPAN 212

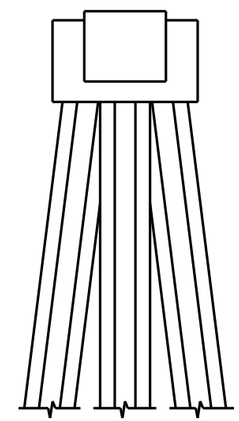
PLAN
TOP OF CAP



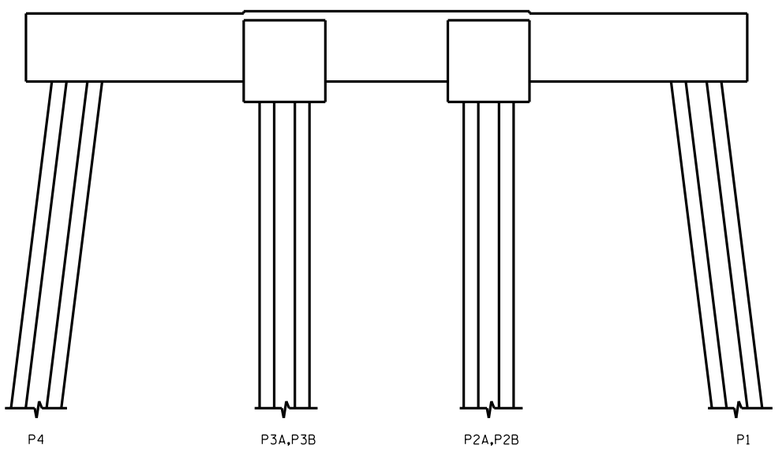
END VIEW
NORTH SIDE



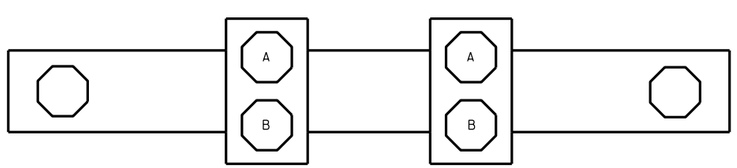

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 212
SPAN 213

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 212

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-253 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:47
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

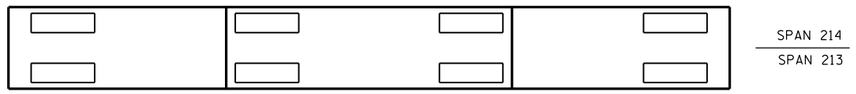
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

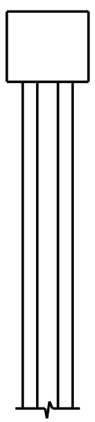
## REPAIR QUANTITY TABLE

| REPAIRS BENT 213 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.5 | 0.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

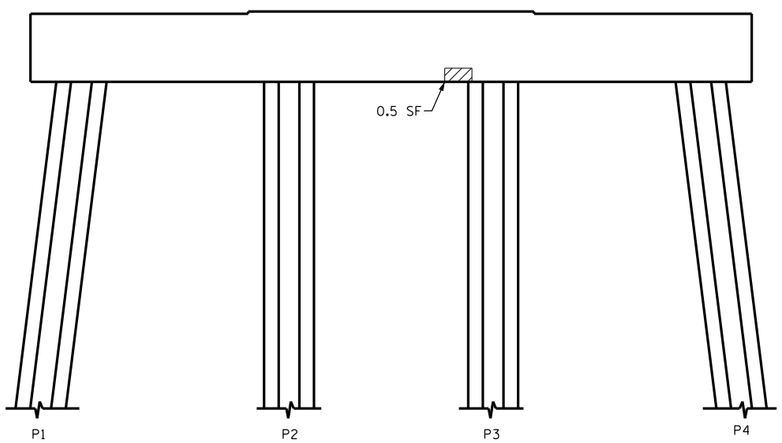
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



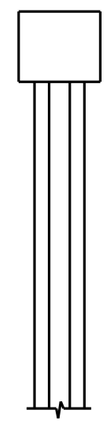

PLAN
TOP OF CAP



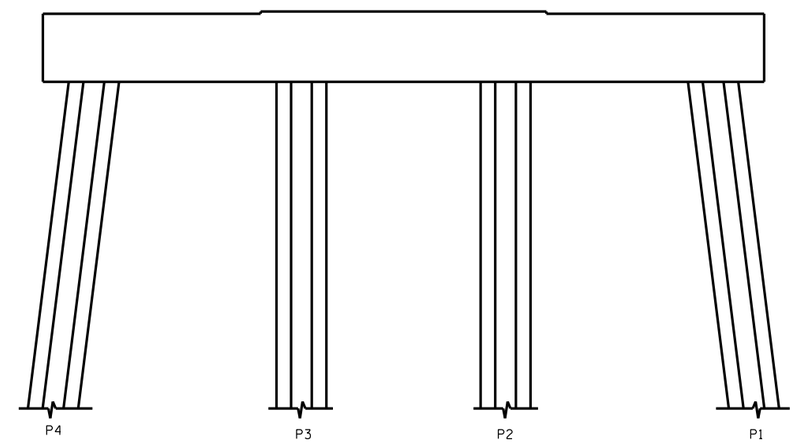
END VIEW
NORTH SIDE



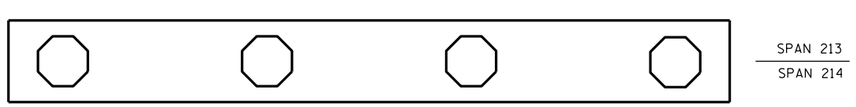

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 213

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-254 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:48
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

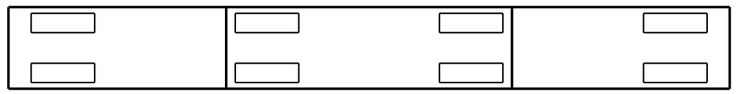
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

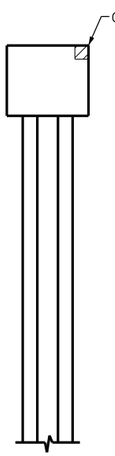
| REPAIRS BENT 214 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.8 | 1.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

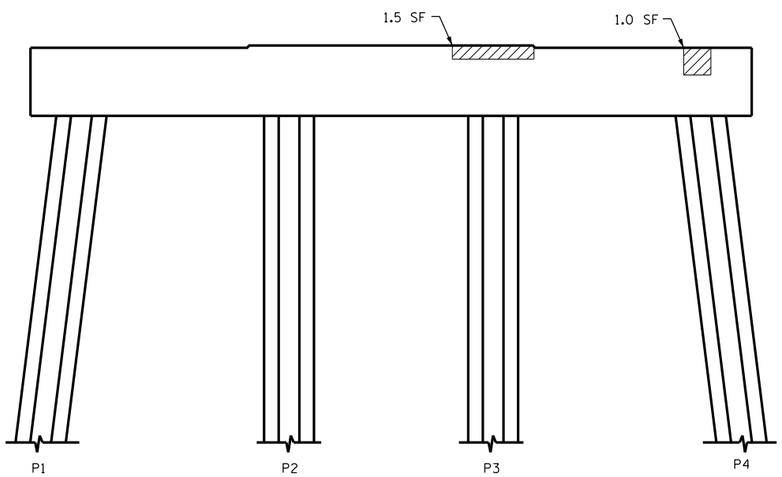


SPAN 215
SPAN 214

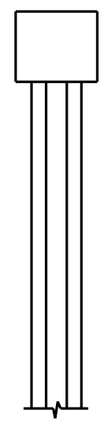
PLAN
TOP OF CAP



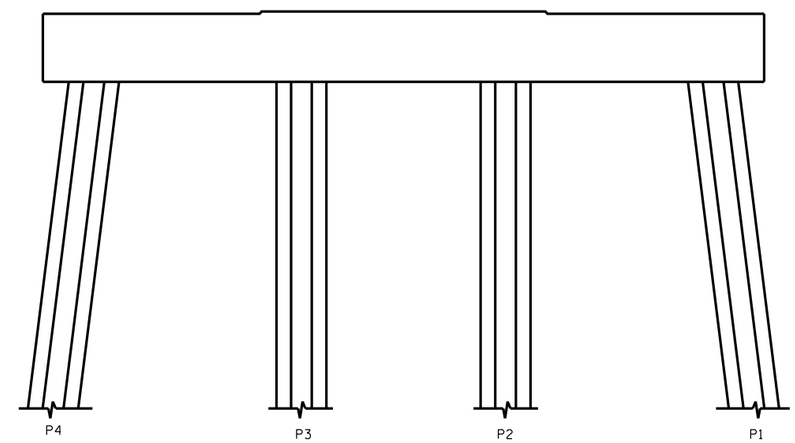

END VIEW
NORTH SIDE



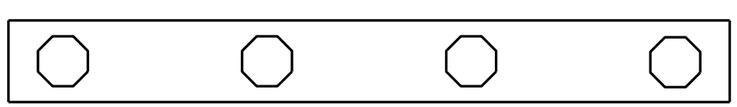

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 214
SPAN 215

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 214

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-255 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 13:50
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

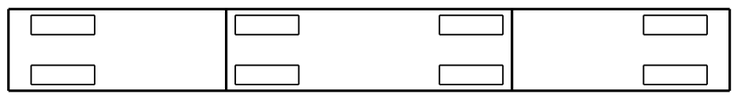
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

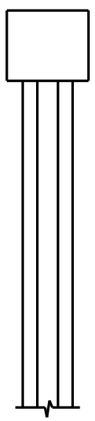
## REPAIR QUANTITY TABLE

| REPAIRS BENT 215 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.5 | 2.3 | | |
| CAP (HORIZONTAL, CORNER) | 1.0 | 0.4 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

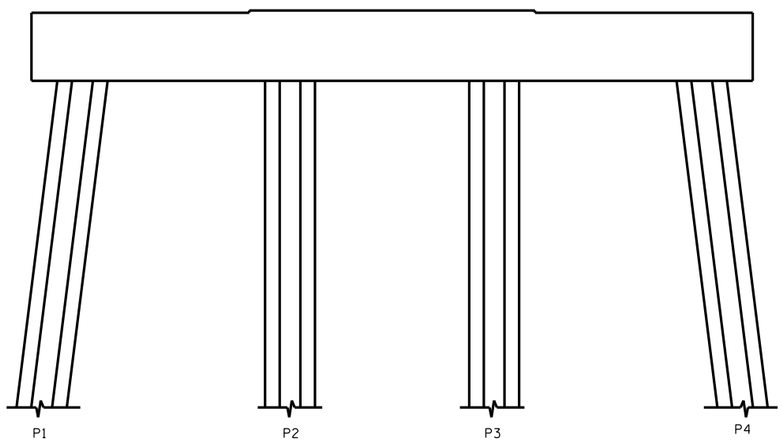
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



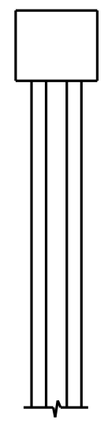

PLAN
TOP OF CAP



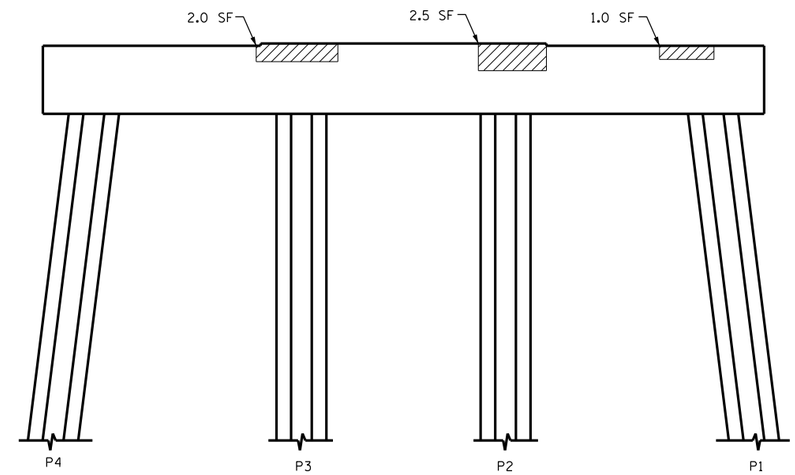
END VIEW
NORTH SIDE



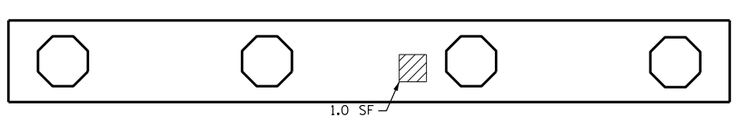

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 215

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-256 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 14:11
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

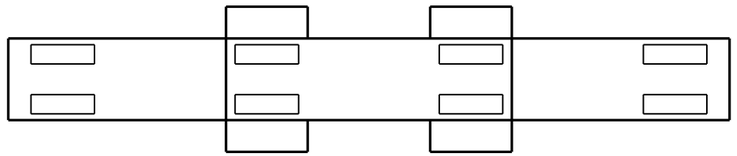
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

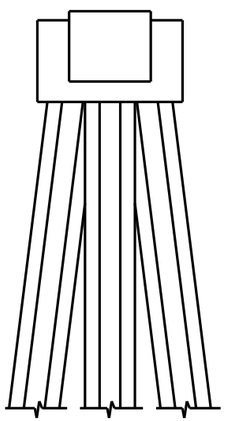
| REPAIRS BENT 216 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.5 | 1.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

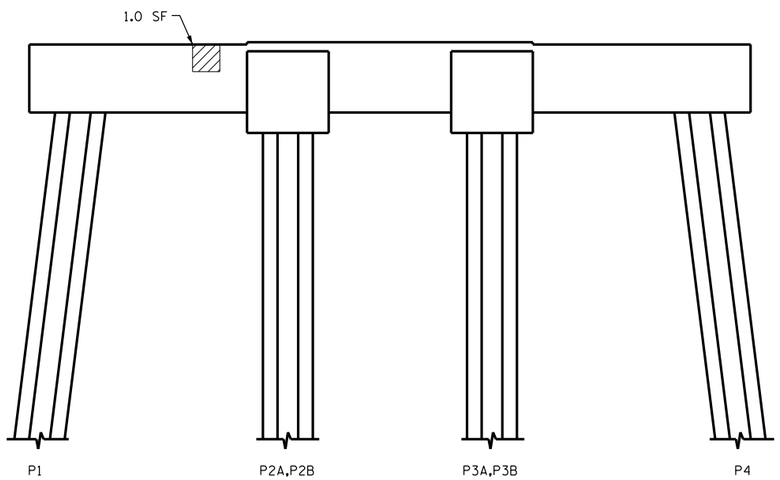


SPAN 217
SPAN 216

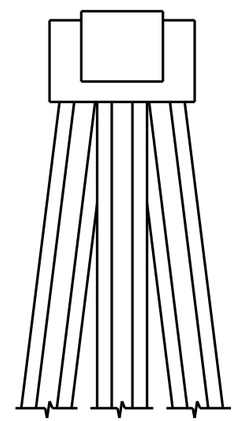
PLAN
TOP OF CAP



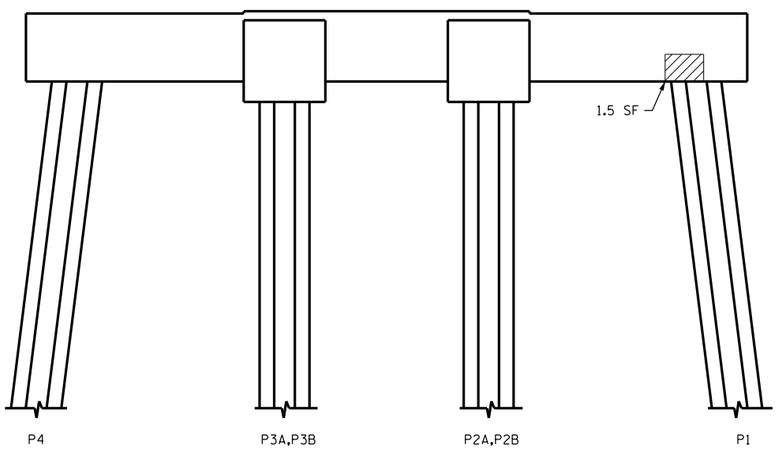
END VIEW
NORTH SIDE



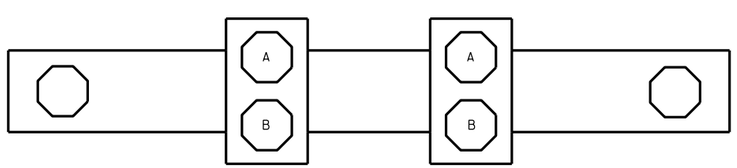

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 216
SPAN 217

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 216

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-257 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:50
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pbryant

## 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.

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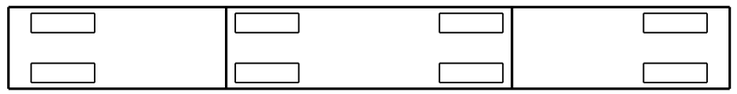
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

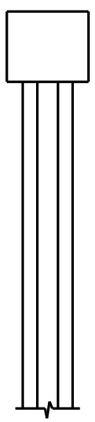
## REPAIR QUANTITY TABLE

| REPAIRS BENT 217 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

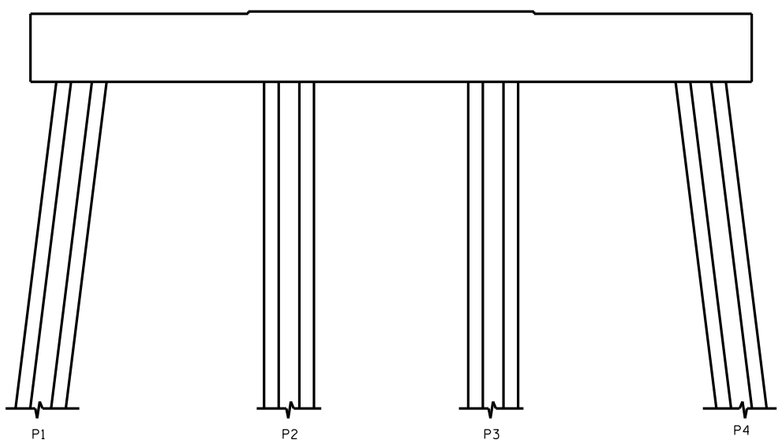
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



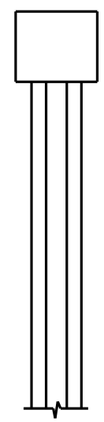

PLAN
TOP OF CAP



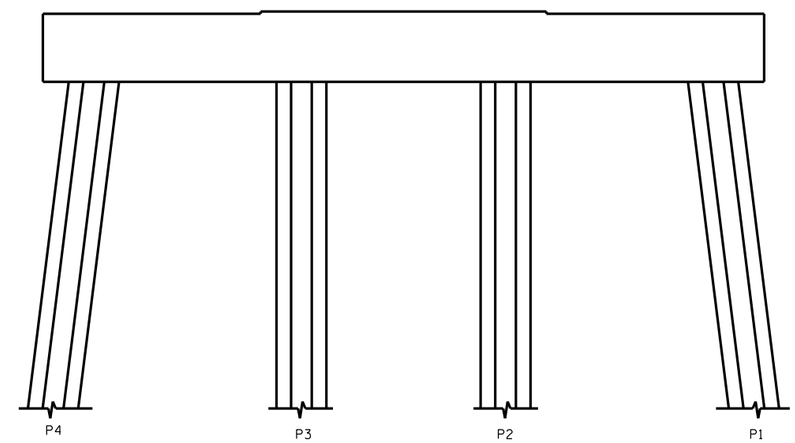
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

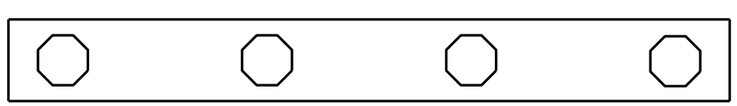


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 217

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-258 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:51
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

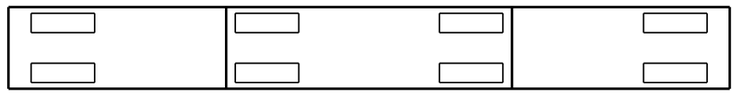
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

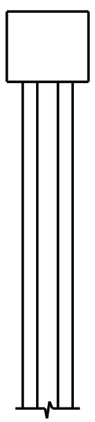
| REPAIRS BENT 218 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

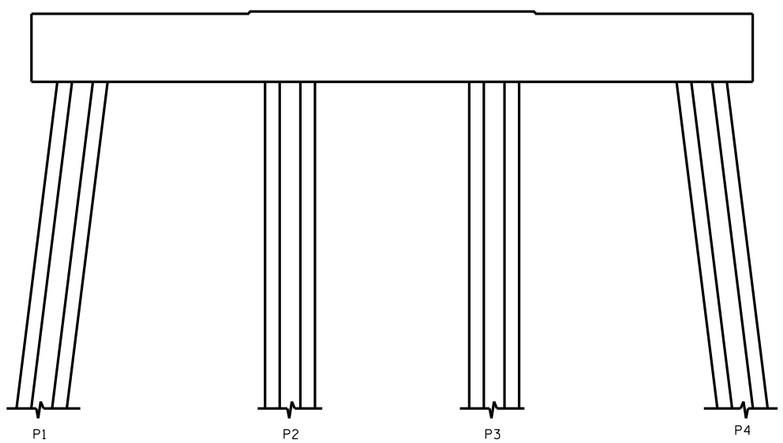


SPAN 219
SPAN 218

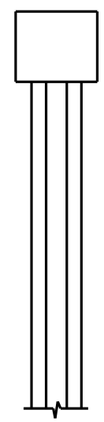
PLAN
TOP OF CAP



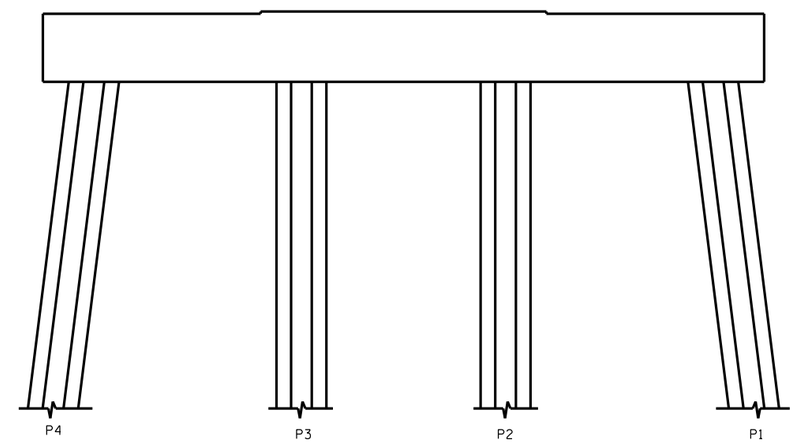
END VIEW
NORTH SIDE



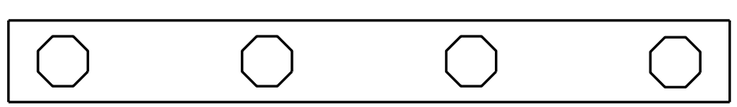

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 218
SPAN 219

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 218

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-259 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:51
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pbryant

## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

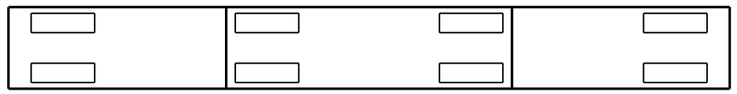
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

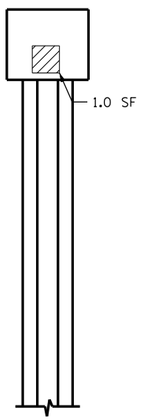
## REPAIR QUANTITY TABLE

| REPAIRS BENT 219 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 2.3 | 1.0 | | |
| CAP (HORIZONTAL, CORNER) | 3.0 | 1.3 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

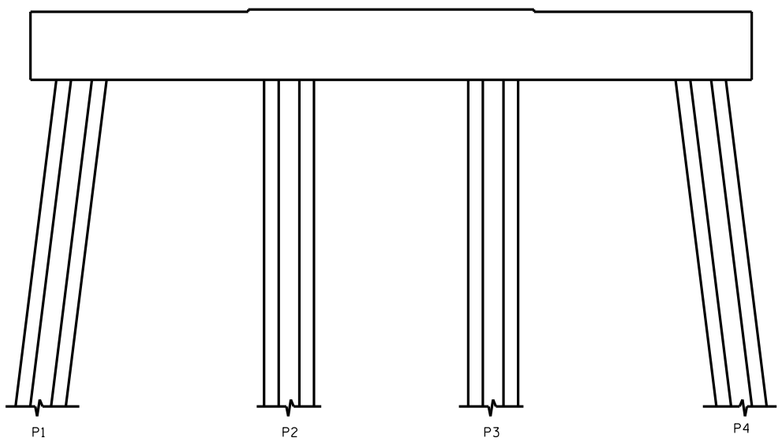
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



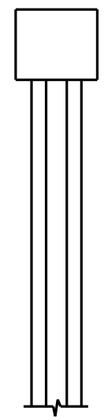

PLAN
TOP OF CAP



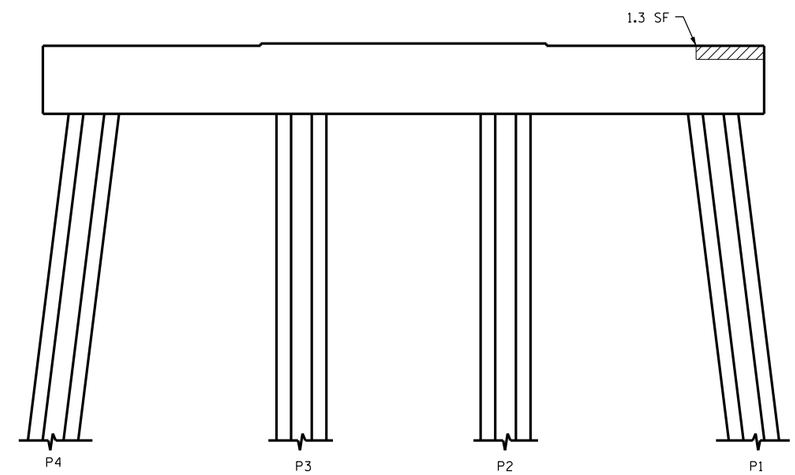

END VIEW
NORTH SIDE



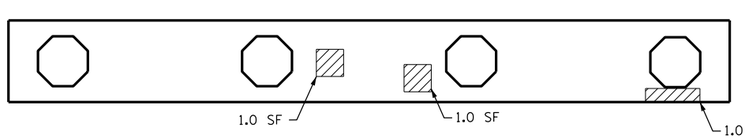

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 219

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-260 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:52
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pbryant

## NOTES:

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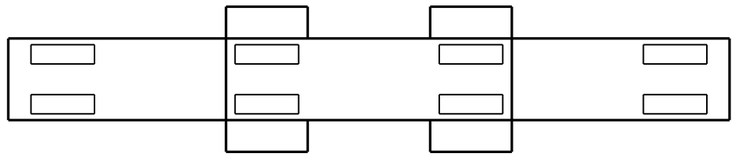
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

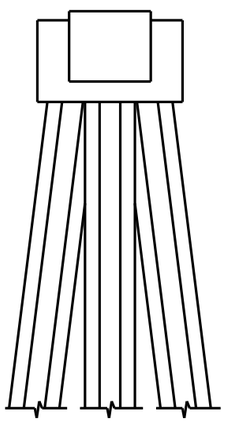
| REPAIRS BENT 220 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

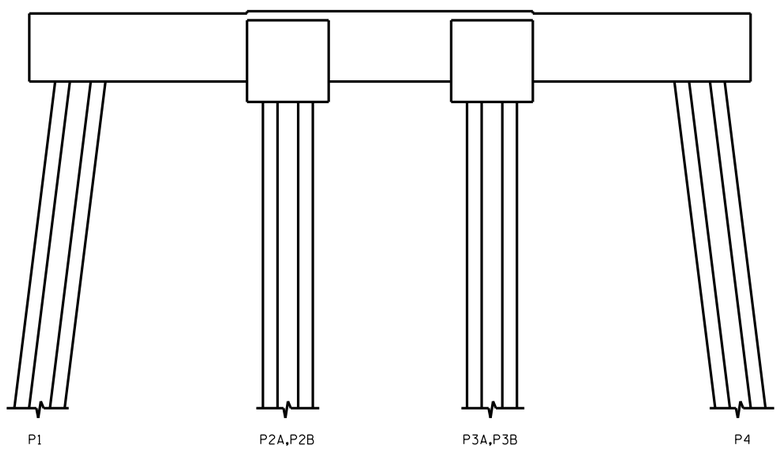


SPAN 221
SPAN 220

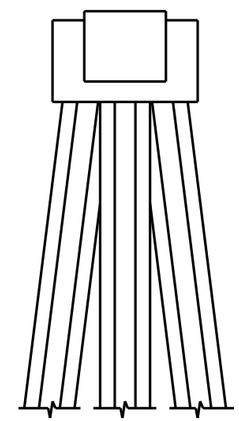
PLAN
TOP OF CAP



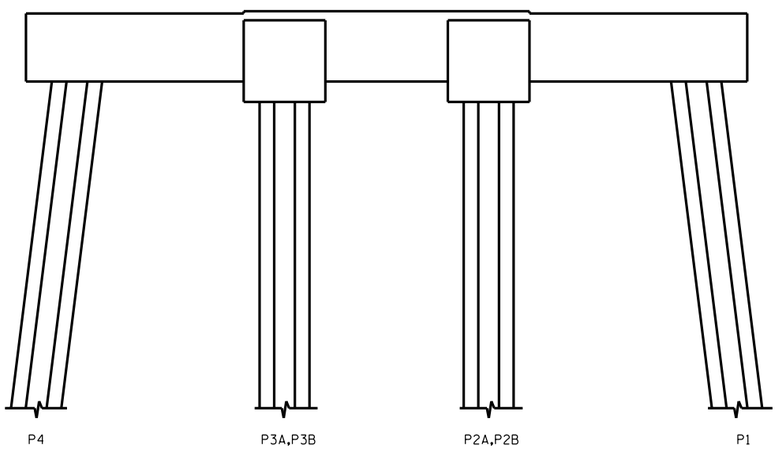
END VIEW
NORTH SIDE



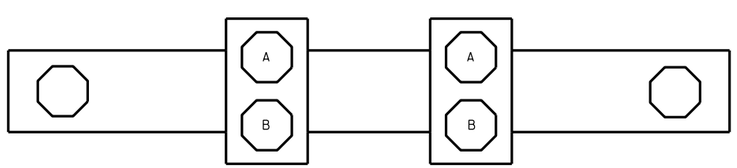

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 220
SPAN 221

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 220

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-261 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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pbryant

## NOTES:

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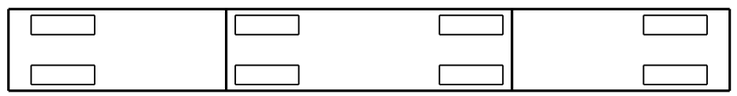
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

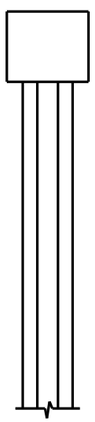
## REPAIR QUANTITY TABLE

| REPAIRS BENT 221 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 4.8 | 2.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

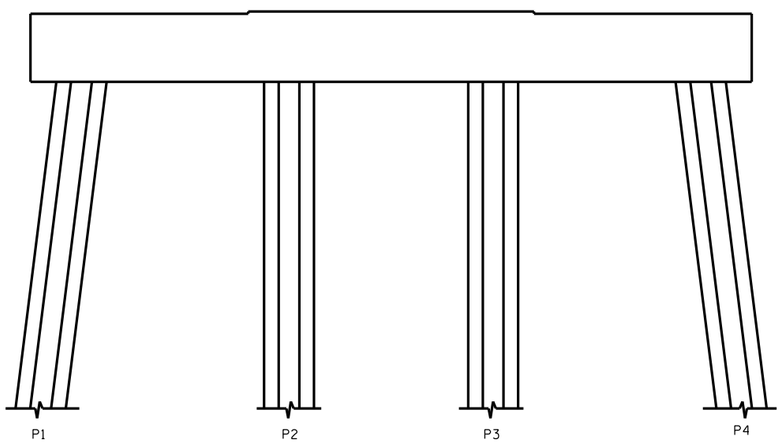
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



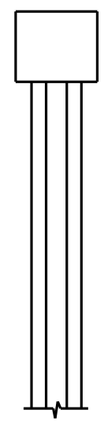

PLAN
TOP OF CAP



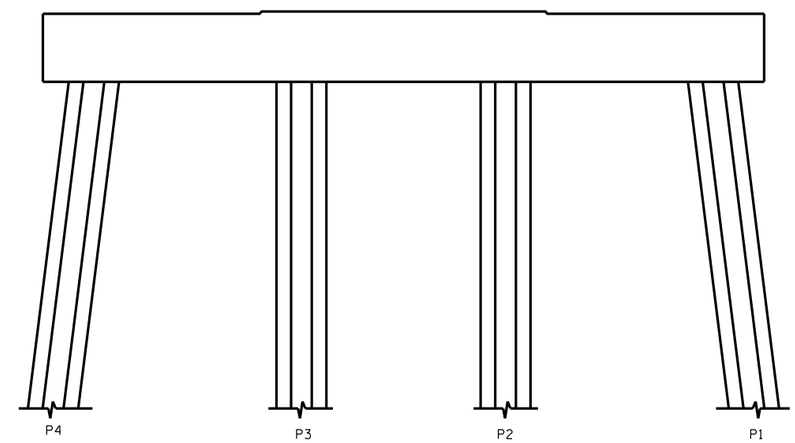
END VIEW
NORTH SIDE



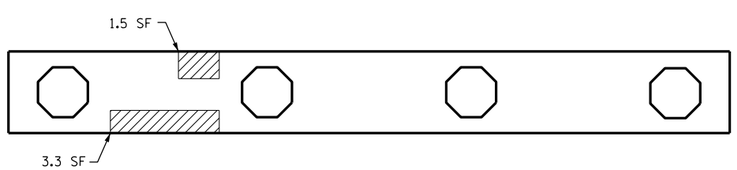

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 221

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-262 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:58
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## NOTES:

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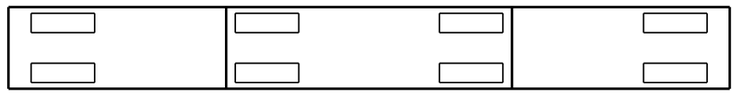
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

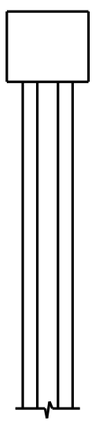
| REPAIRS BENT 222 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

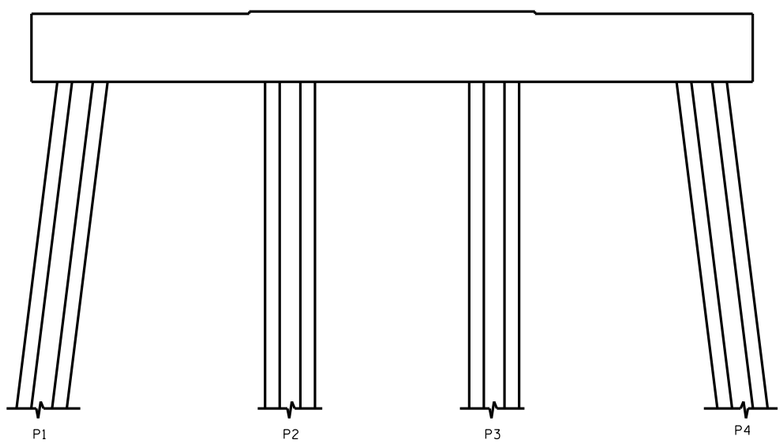


SPAN 223
SPAN 222

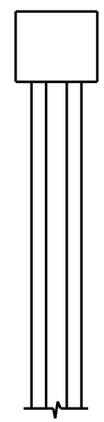
PLAN
TOP OF CAP



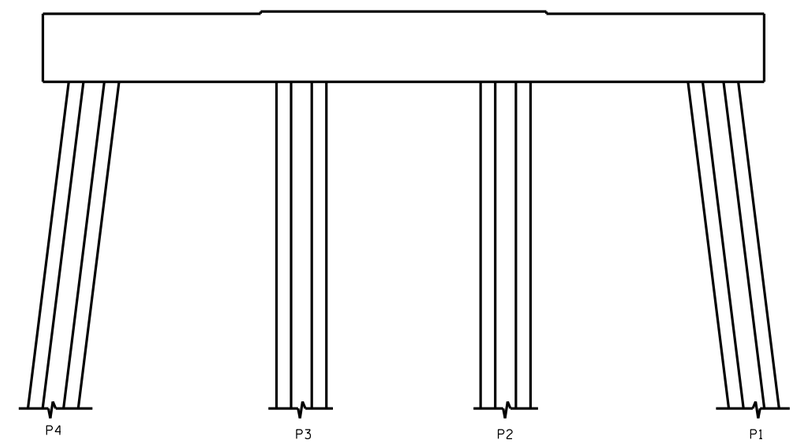
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

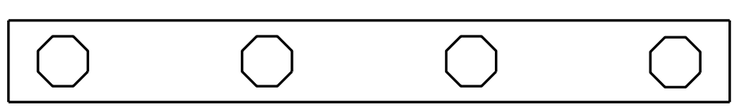


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 222
SPAN 223

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 222

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-263 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 07:58
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

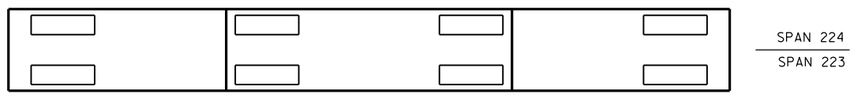
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

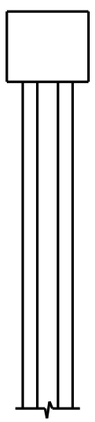
## REPAIR QUANTITY TABLE

| REPAIRS BENT 223 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

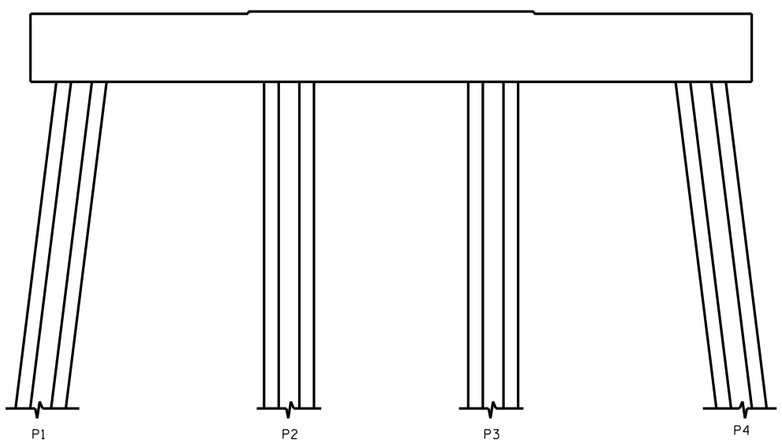
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



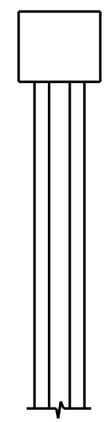

PLAN
TOP OF CAP



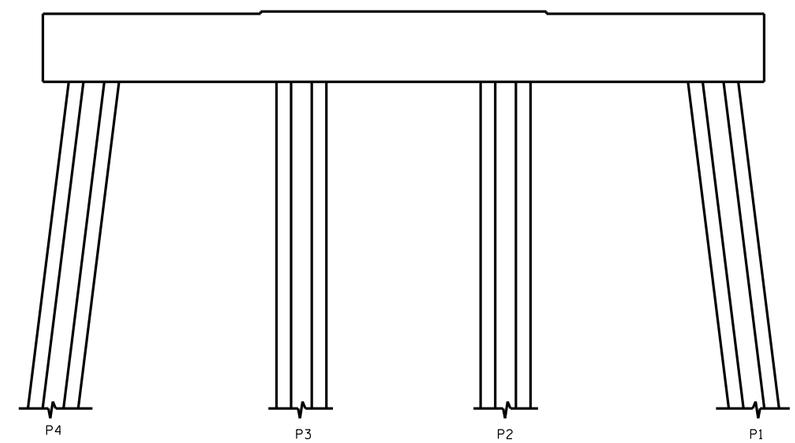
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

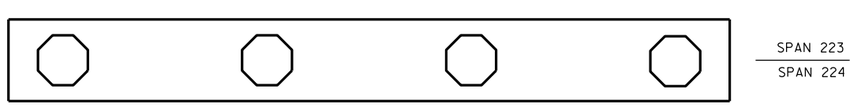


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 223

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-264 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 13:52
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

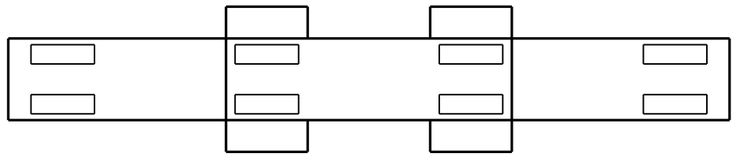
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

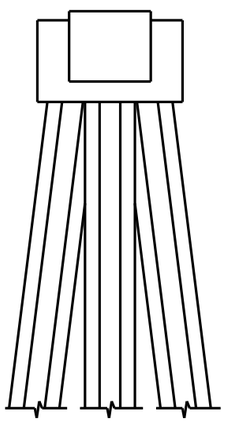
| REPAIRS BENT 224 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

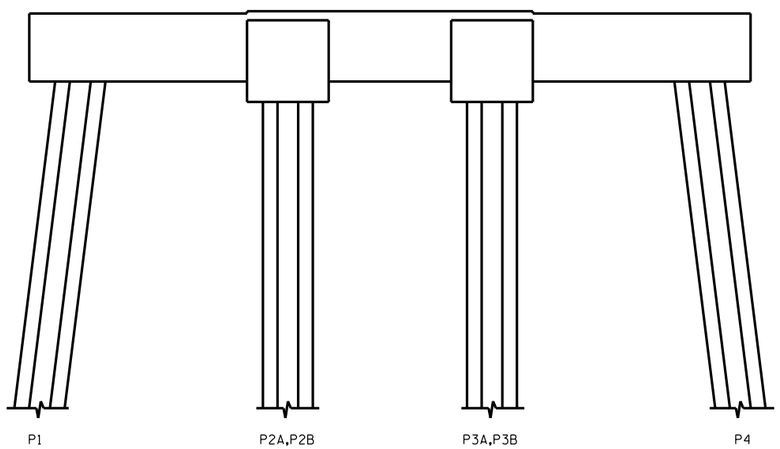


SPAN 225
SPAN 224

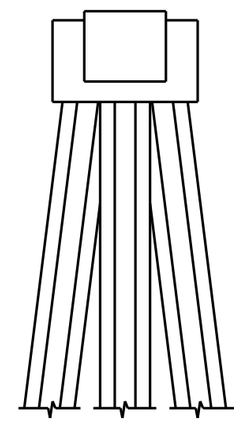
PLAN
TOP OF CAP



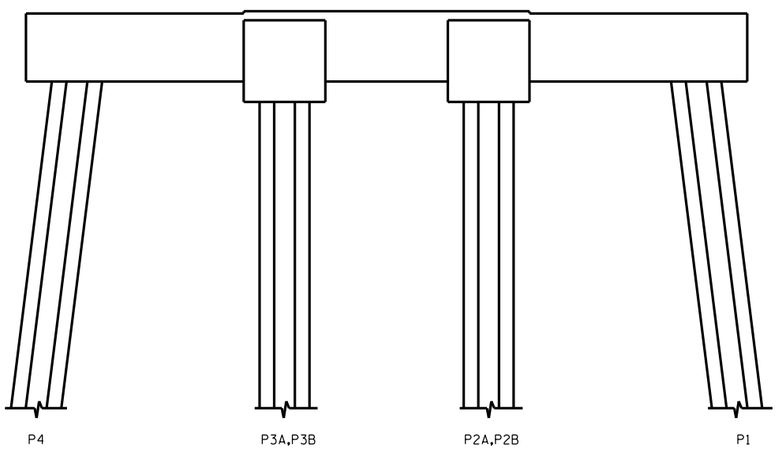
END VIEW
NORTH SIDE



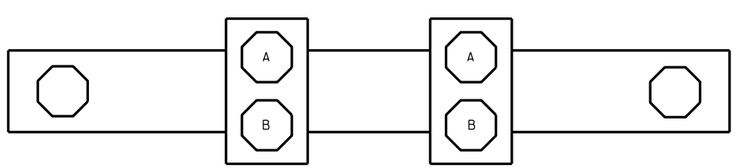

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 224
SPAN 225

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 224

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-265 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 13:54
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

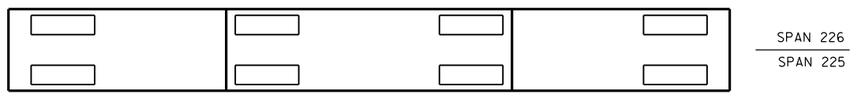
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

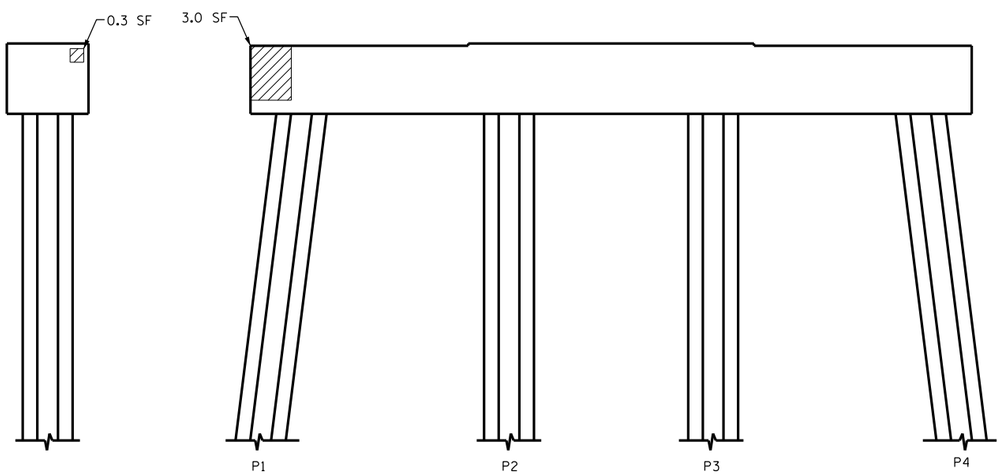
## REPAIR QUANTITY TABLE

| REPAIRS BENT 225 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.3 | 1.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

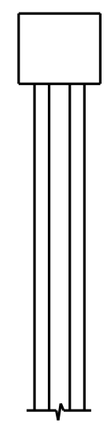



PLAN
TOP OF CAP

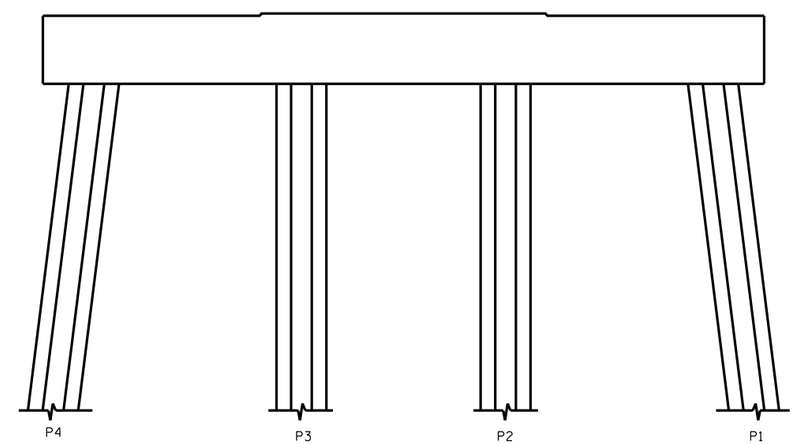



END VIEW
NORTH SIDE

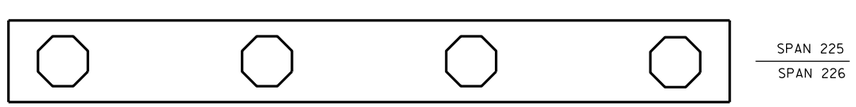
ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
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8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 225

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-266 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:01
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pbryant

## NOTES:

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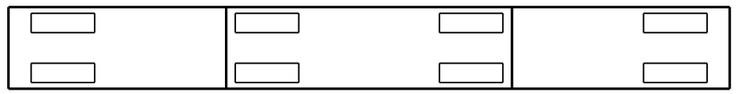
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

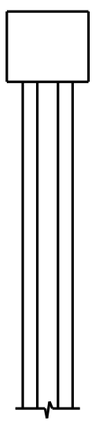
## REPAIR QUANTITY TABLE

| REPAIRS BENT 226 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.5 | 0.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

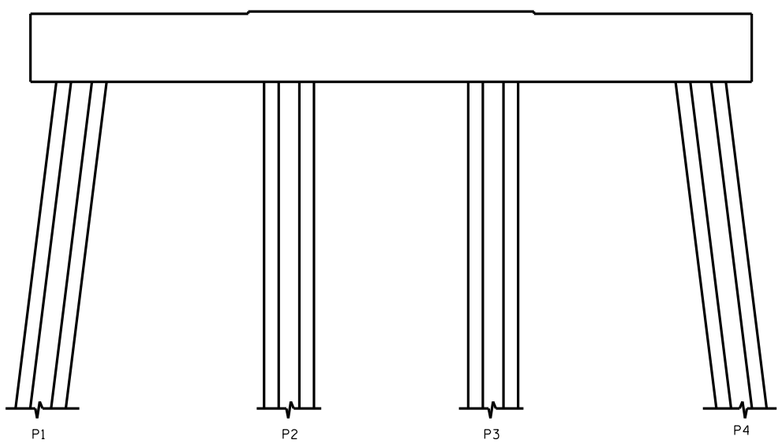
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



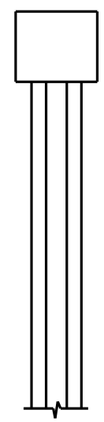

PLAN
TOP OF CAP



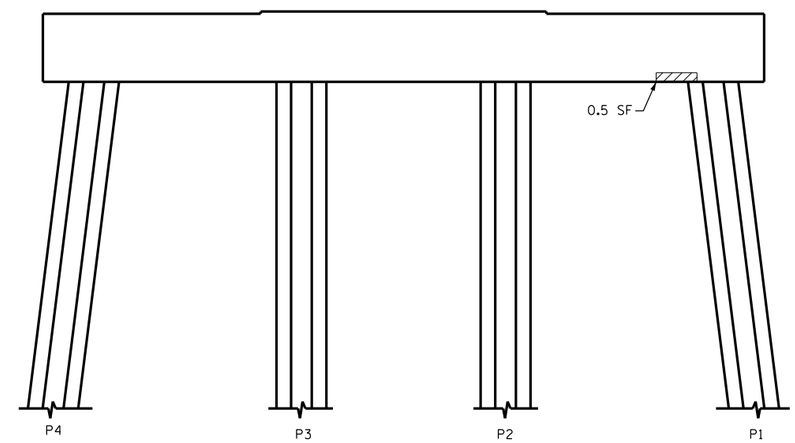
END VIEW
NORTH SIDE



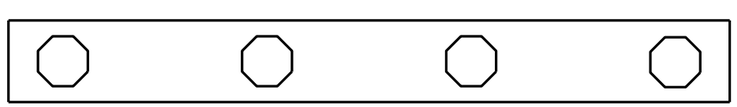

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 226

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-267 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:02
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## 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.

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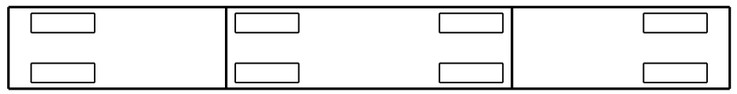
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

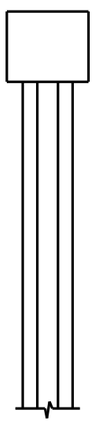
## REPAIR QUANTITY TABLE

| REPAIRS BENT 227 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

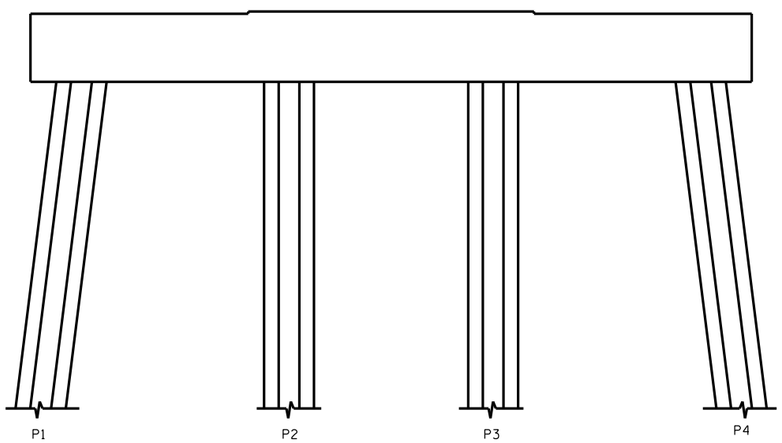
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



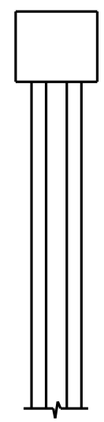

PLAN
TOP OF CAP



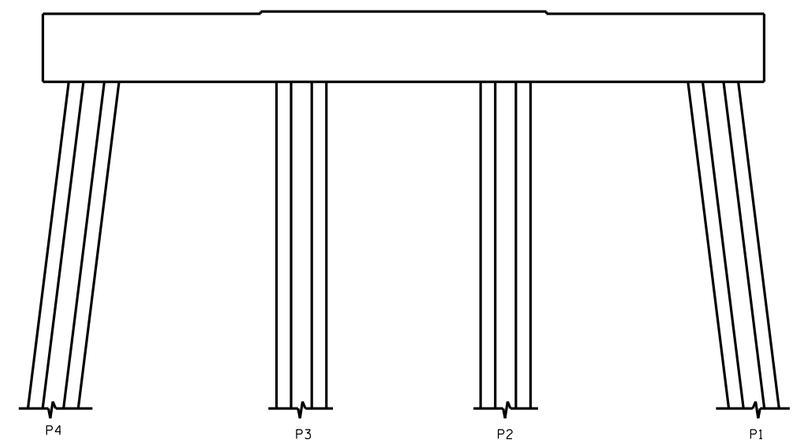
END VIEW
NORTH SIDE



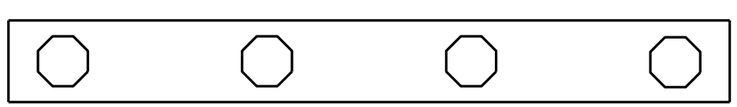

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 227

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

SHEET NO. S-268
TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 14:19
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

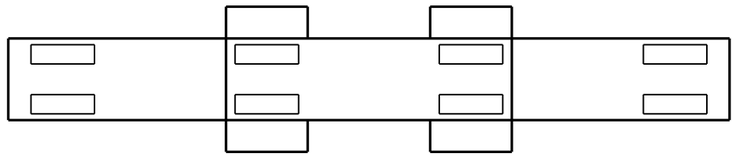
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

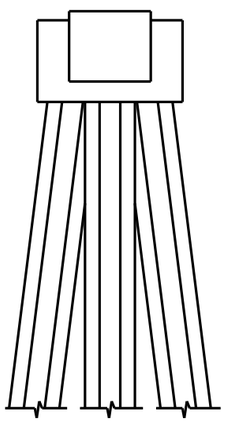
| REPAIRS BENT 228 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 3.0 | 1.3 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

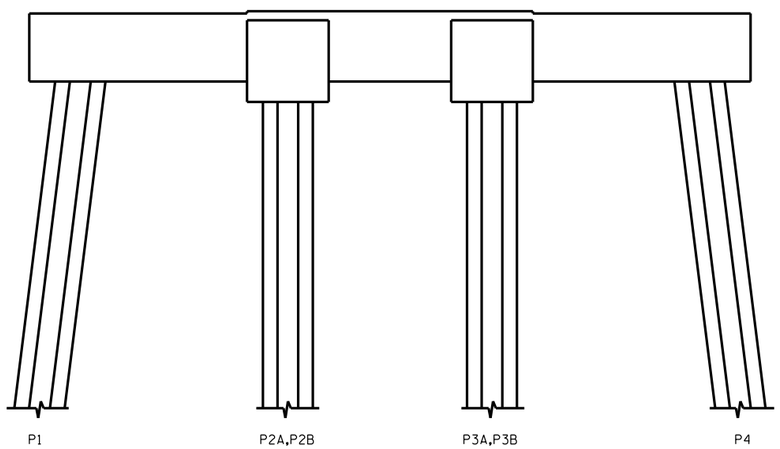


SPAN 229
SPAN 228

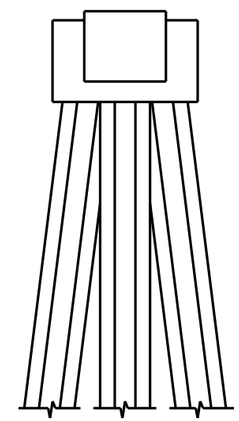
PLAN
TOP OF CAP



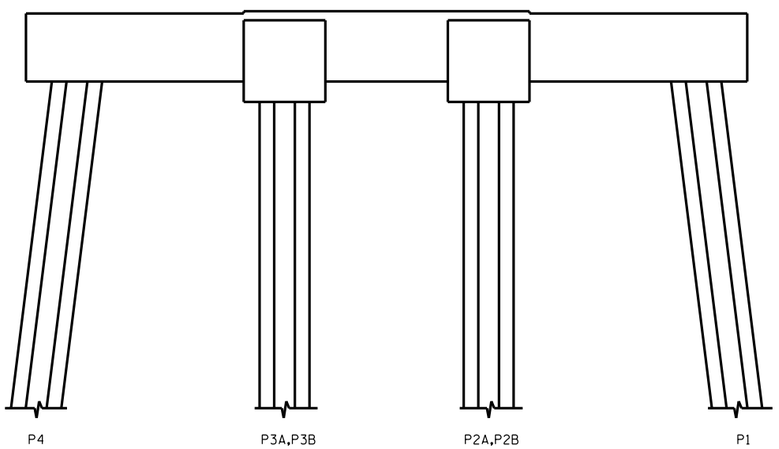
END VIEW
NORTH SIDE



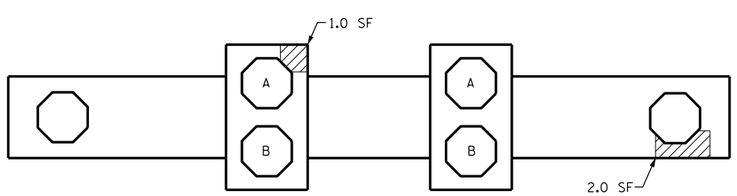

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 228
SPAN 229

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 228

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-269 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:03
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

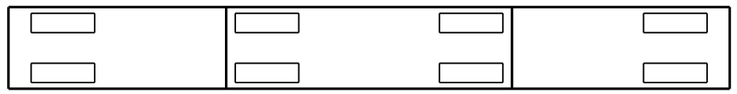
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

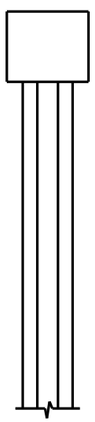
## REPAIR QUANTITY TABLE

| REPAIRS BENT 229 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

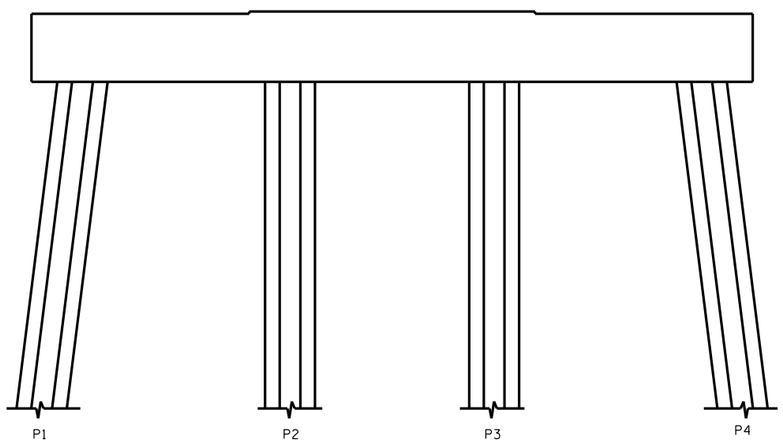
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



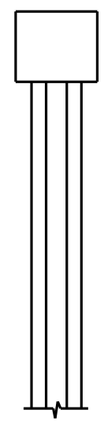

PLAN
TOP OF CAP



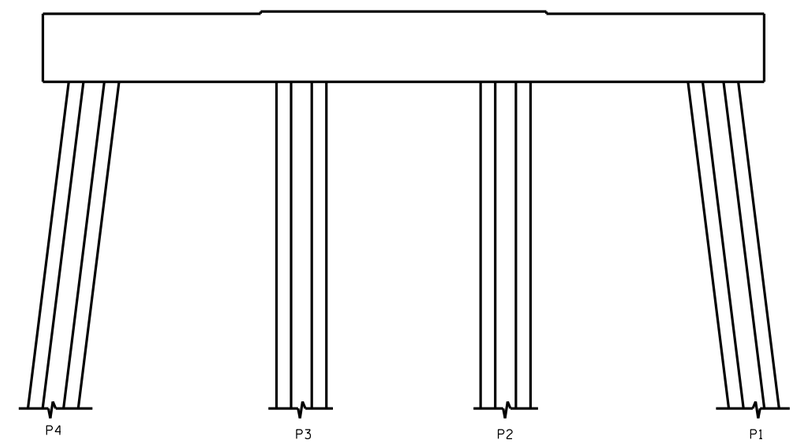
END VIEW
NORTH SIDE



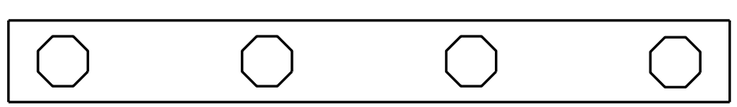

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 229

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-270 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:04
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

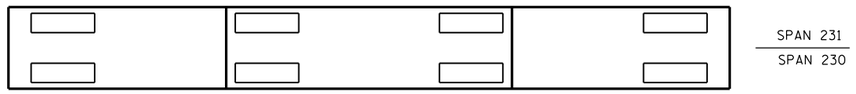
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

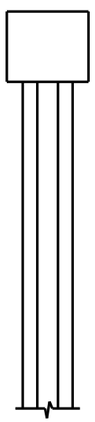
## REPAIR QUANTITY TABLE

| REPAIRS BENT 230 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

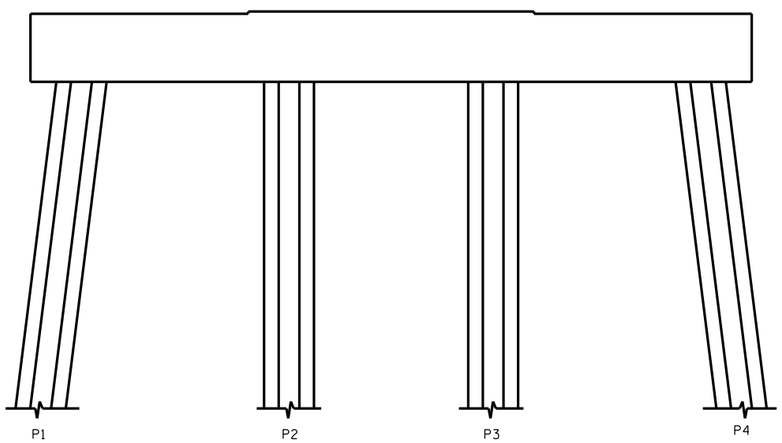
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



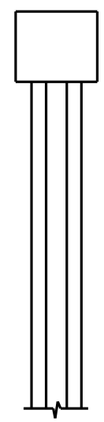

PLAN
TOP OF CAP



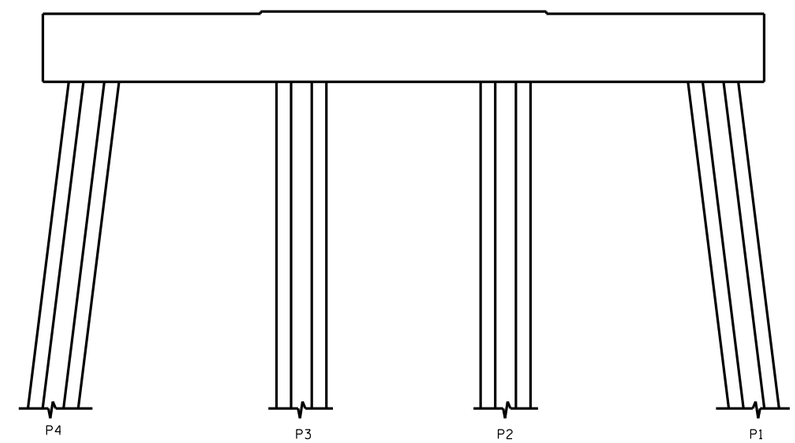
END VIEW
NORTH SIDE



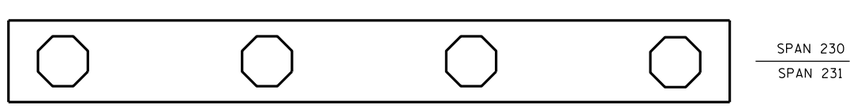

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 230

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-271 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:04
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pbryant

## NOTES:

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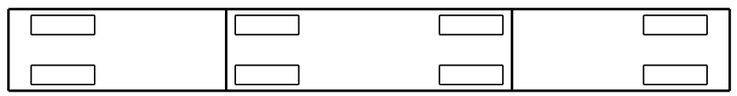
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

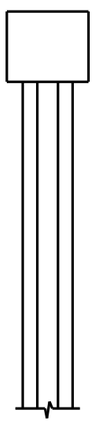
| REPAIRS BENT 231 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

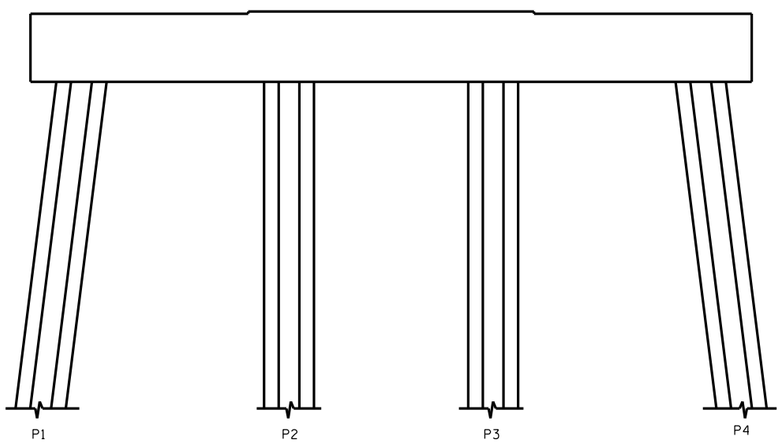


SPAN 232
SPAN 231

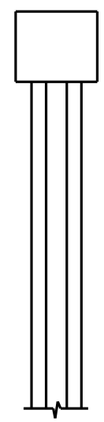
PLAN
TOP OF CAP



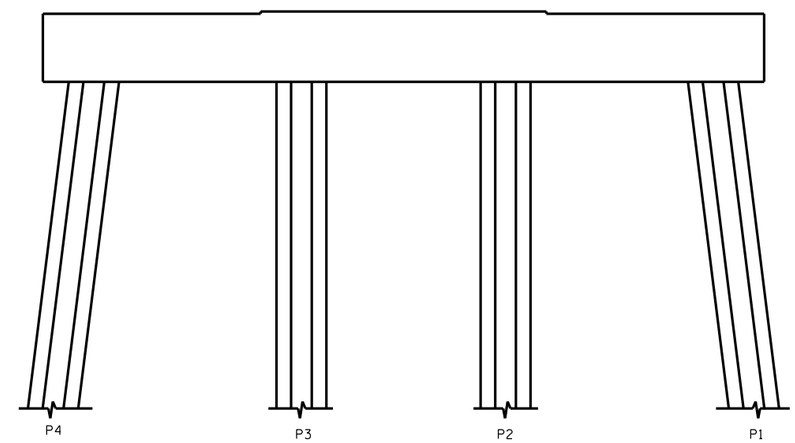
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

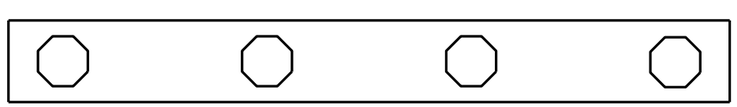


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 231
SPAN 232

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 231

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-272 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:06
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pbryant

## NOTES:

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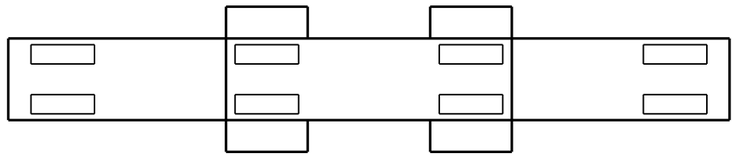
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

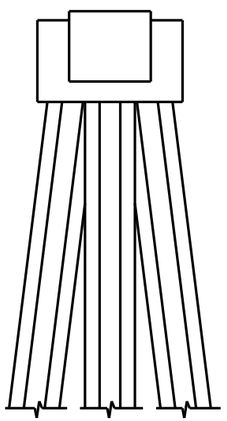
| REPAIRS BENT 232 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

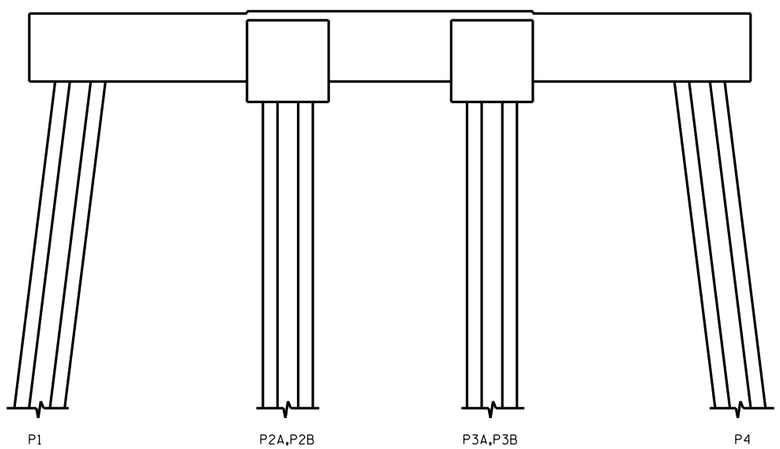


SPAN 233
SPAN 232

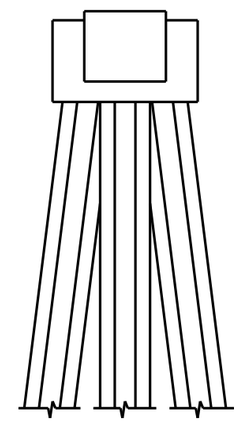
PLAN
TOP OF CAP



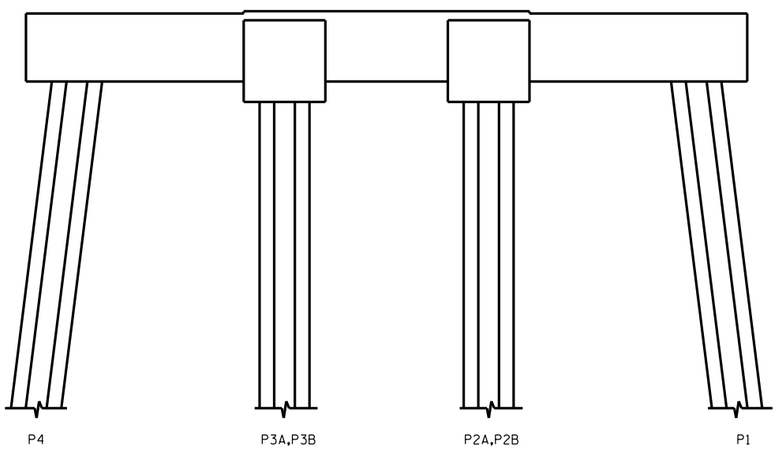
END VIEW
NORTH SIDE



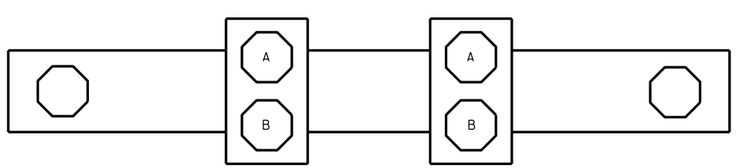

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 232
SPAN 233

PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 232

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-273 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:06
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

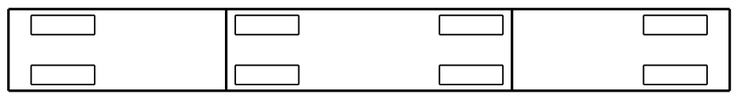
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

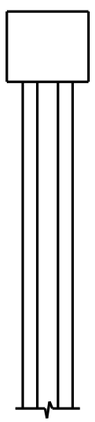
## REPAIR QUANTITY TABLE

| REPAIRS BENT 233 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

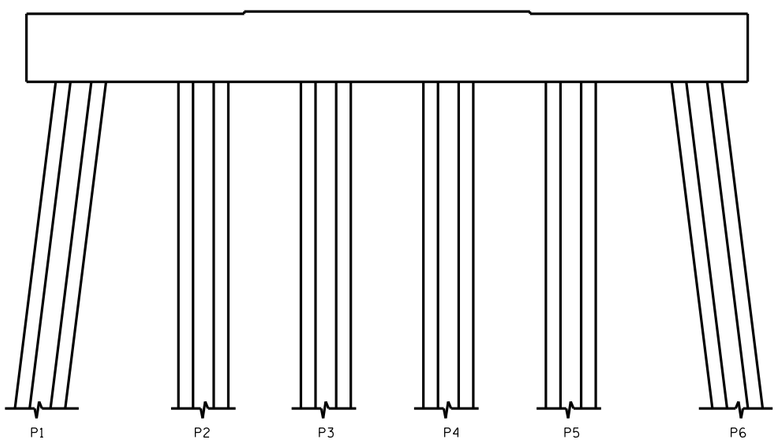
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



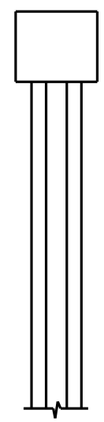

PLAN
TOP OF CAP



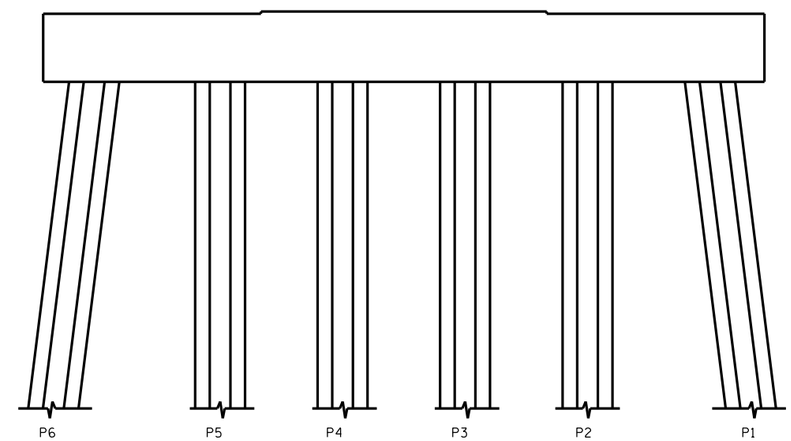
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

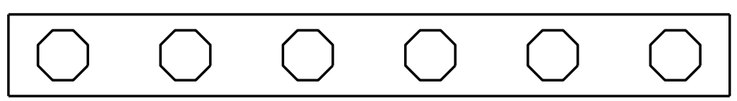


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 233

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-274 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:07
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## NOTES:

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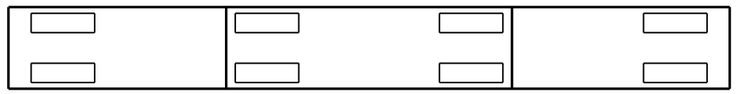
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

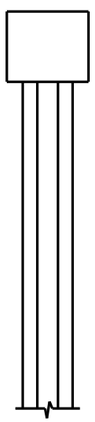
## REPAIR QUANTITY TABLE

| REPAIRS BENT 234 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

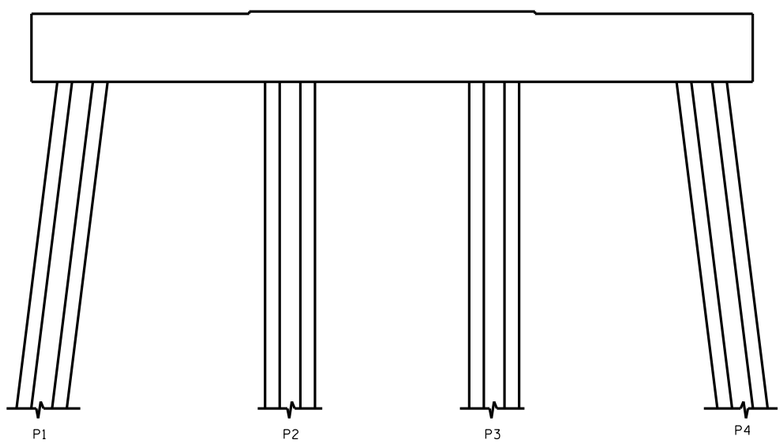
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



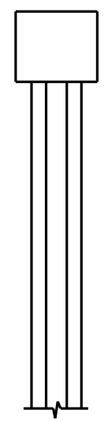

PLAN
TOP OF CAP



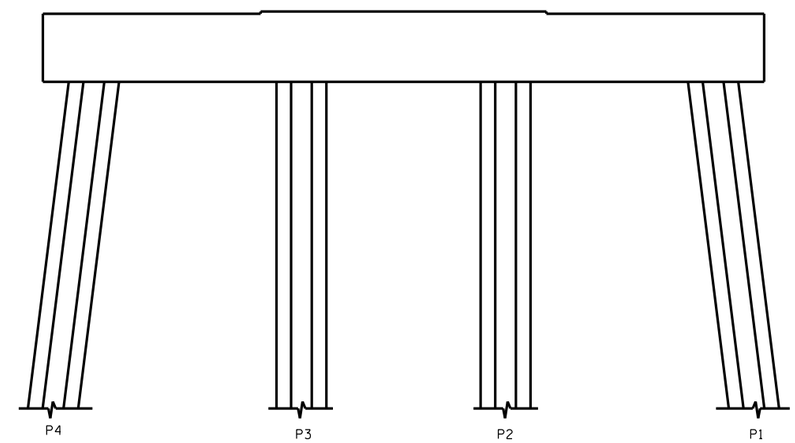
END VIEW
NORTH SIDE



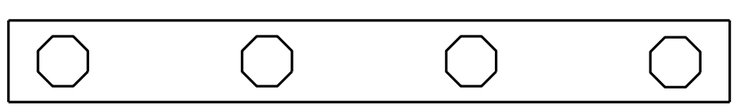

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 234

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-275 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:08
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## NOTES:

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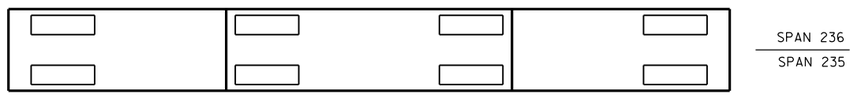
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

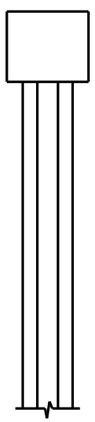
## REPAIR QUANTITY TABLE

| REPAIRS BENT 235 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

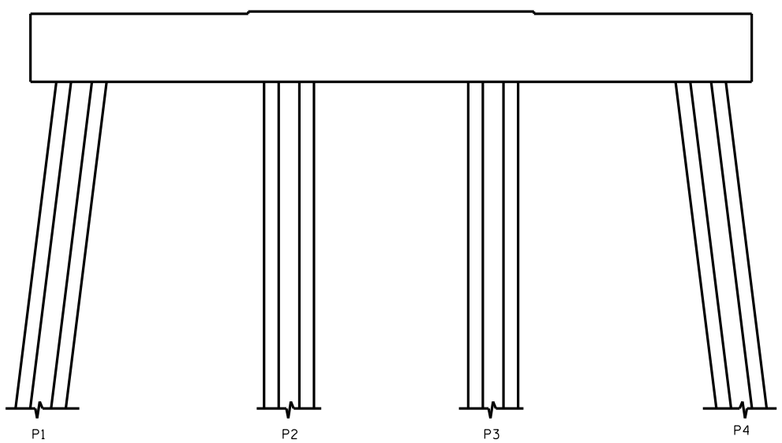
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



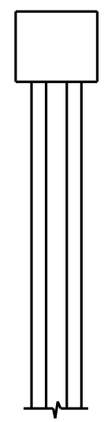

PLAN
TOP OF CAP



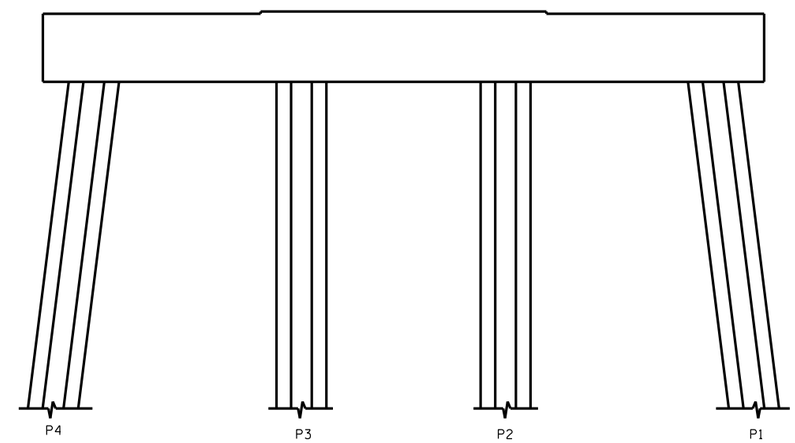
END VIEW
NORTH SIDE



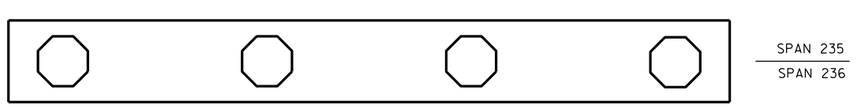

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 235

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-276 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:08
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FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 236 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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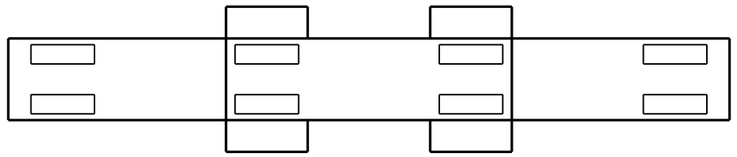
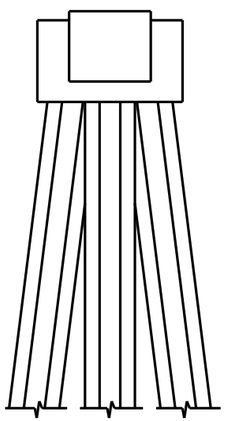
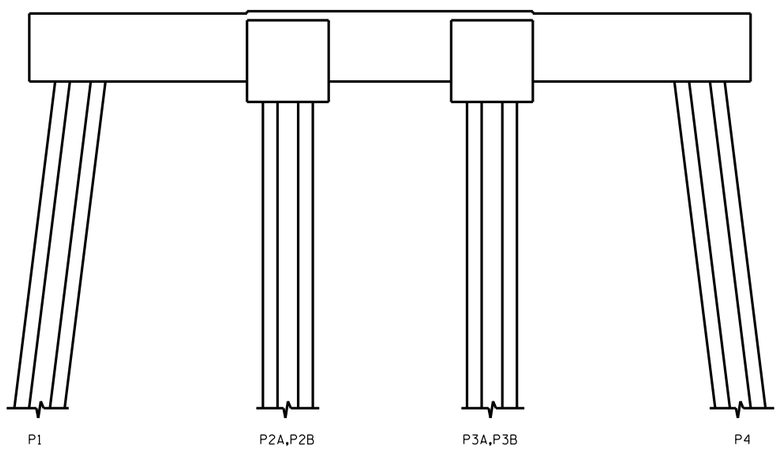


SPAN 237
SPAN 236

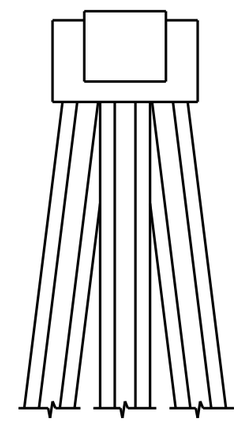
PLAN
TOP OF CAP



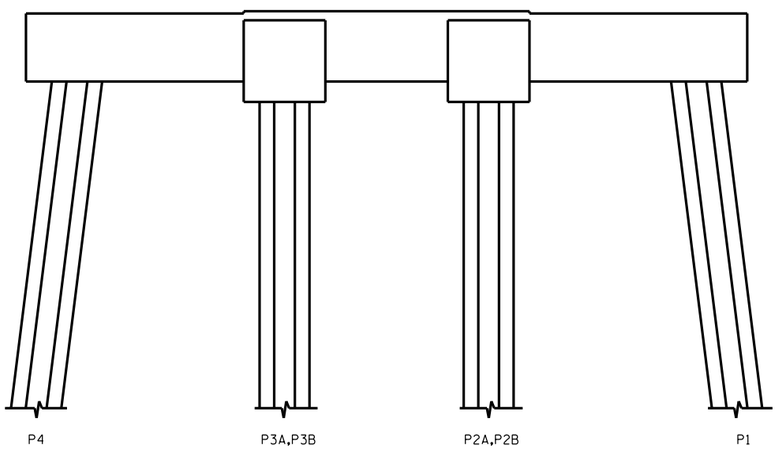
END VIEW
NORTH SIDE



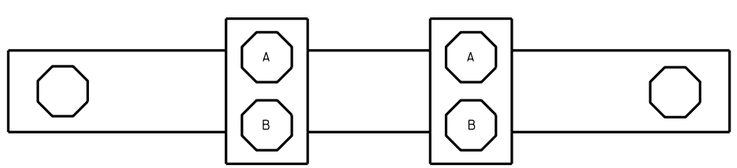

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 236
SPAN 237

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 236

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-277 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:09
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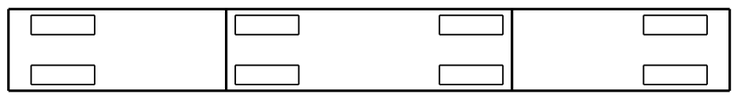
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

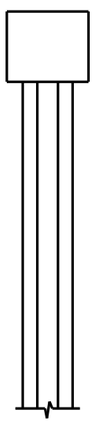
| REPAIRS BENT 237 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

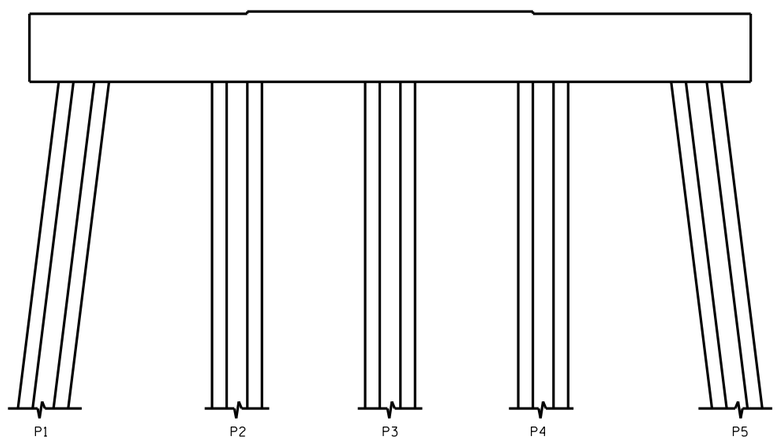


SPAN 238
SPAN 237

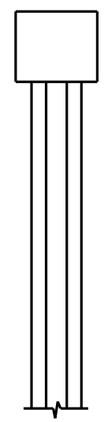
PLAN
TOP OF CAP



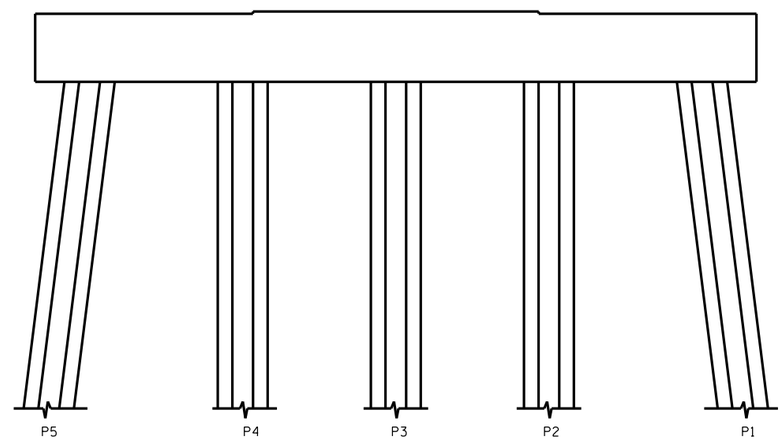
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

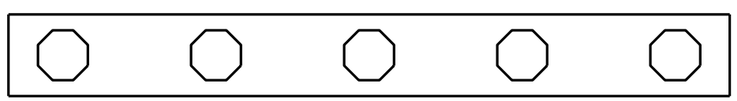


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 237
SPAN 238

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 237

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-278 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:13
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

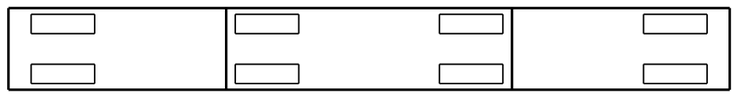
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

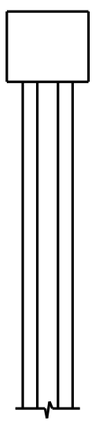
| REPAIRS BENT 238 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

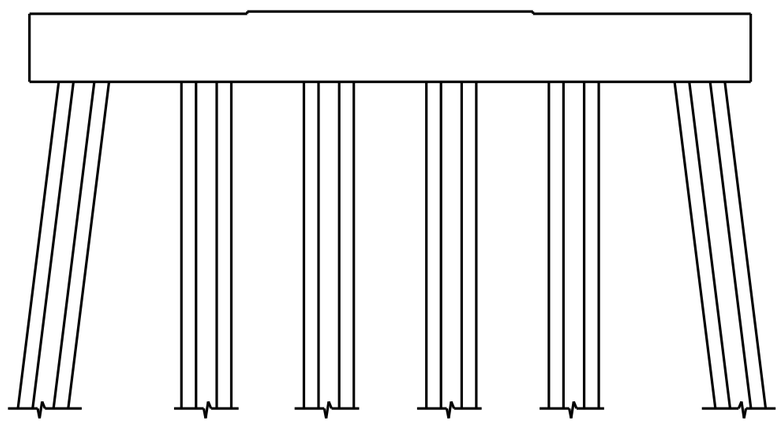


SPAN 239
SPAN 238

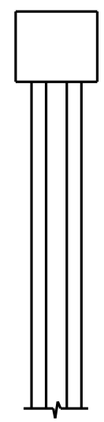
PLAN
TOP OF CAP



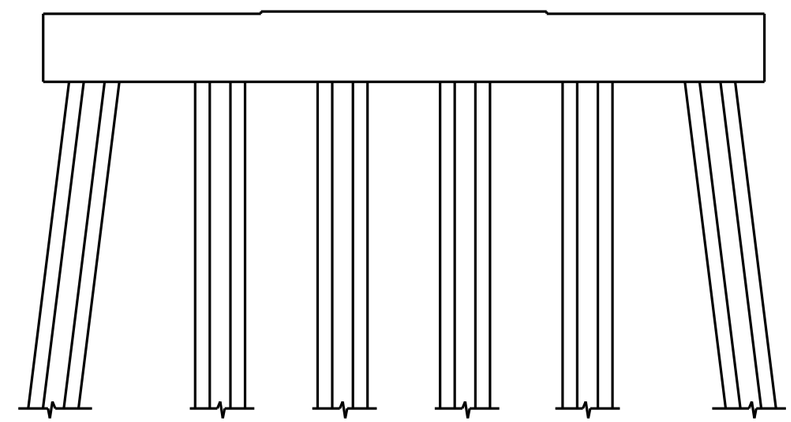
END VIEW
NORTH SIDE



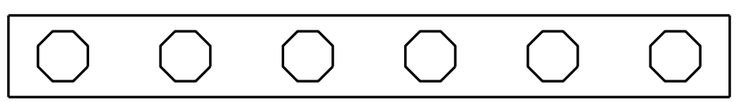

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 238
SPAN 239

PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 238

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-279 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:14
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pbryant

## NOTES:

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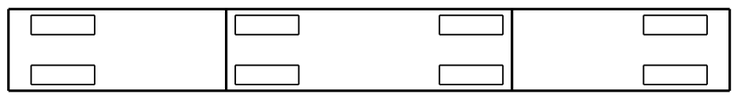
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

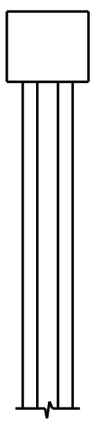
| REPAIRS BENT 239 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

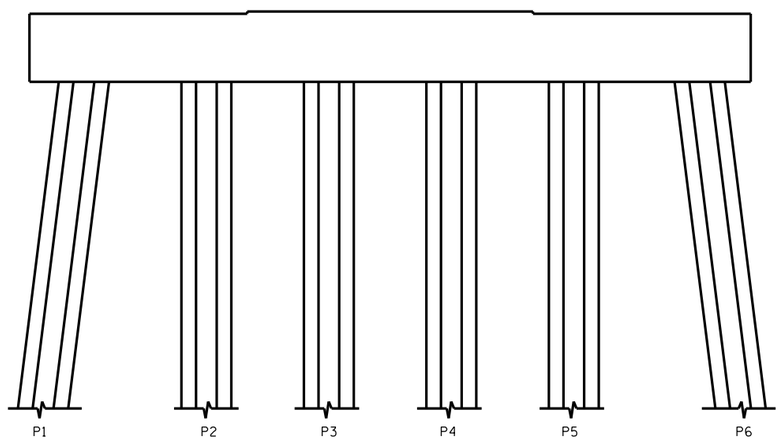


SPAN 240
SPAN 239

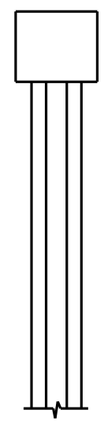
PLAN
TOP OF CAP



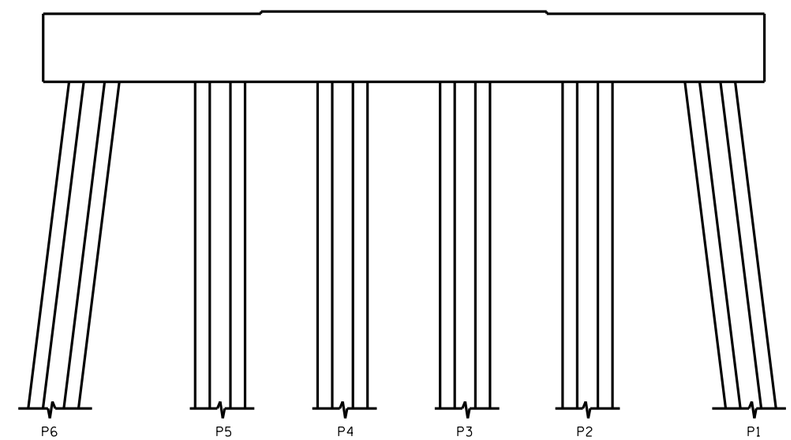
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

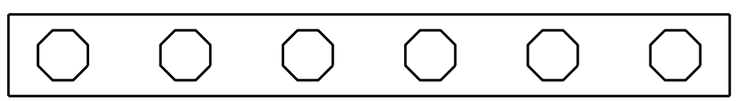


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 239
SPAN 240

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 239

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-280 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:15
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pbryant

## NOTES:

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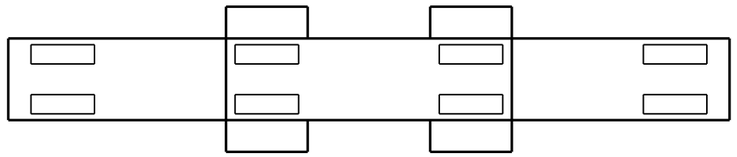
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

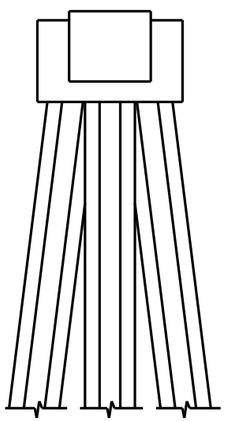
| REPAIRS BENT 240 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

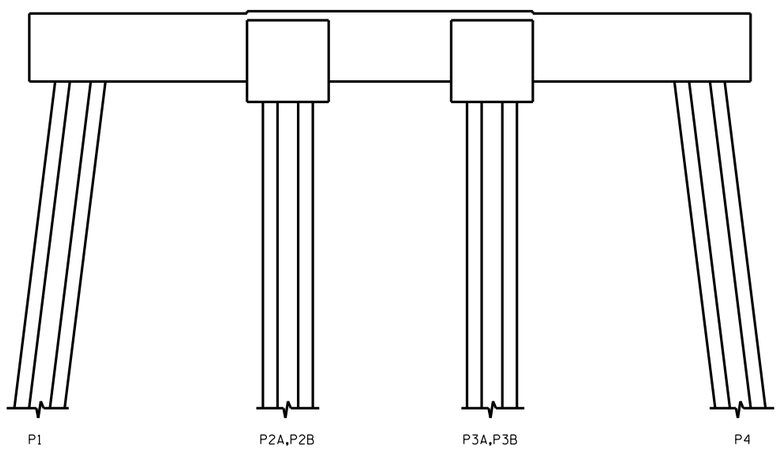


SPAN 241
SPAN 240

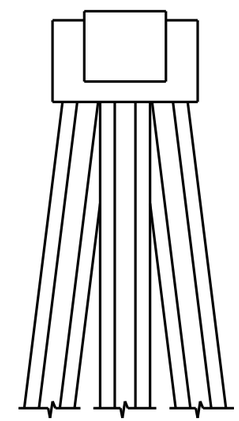
PLAN
TOP OF CAP



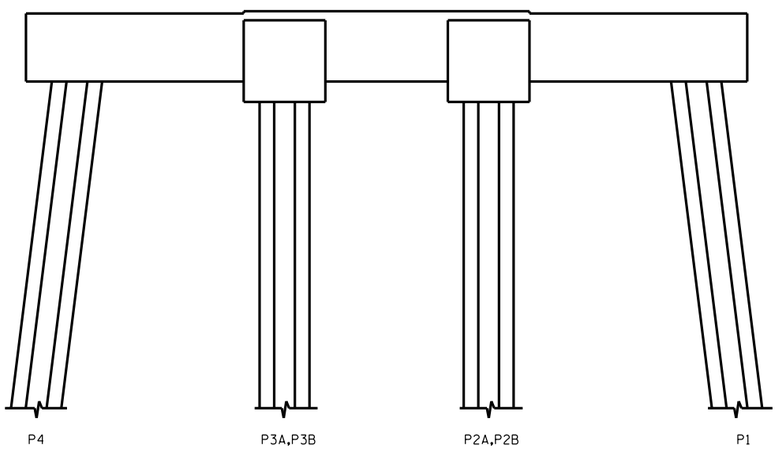
END VIEW
NORTH SIDE



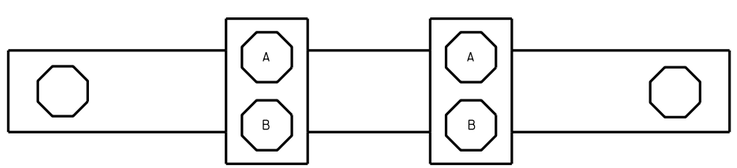

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 240
SPAN 241

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 240

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-281 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:15
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pbryant

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FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 241 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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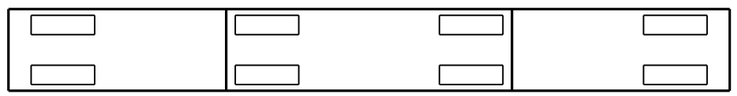
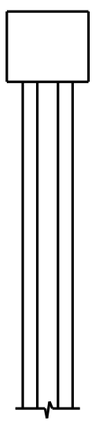
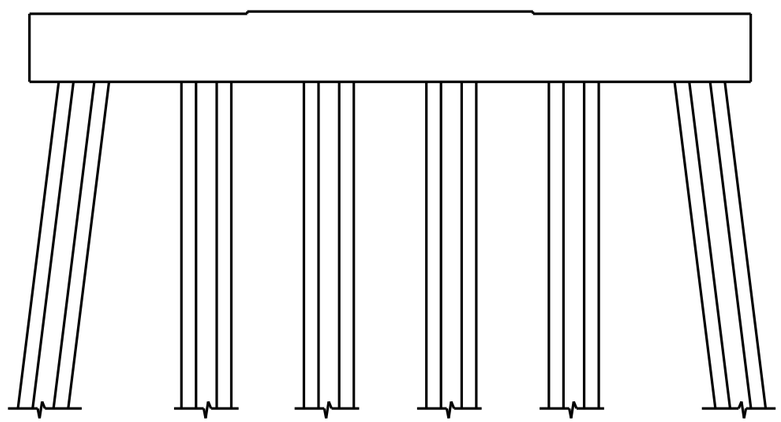


SPAN 242
SPAN 241

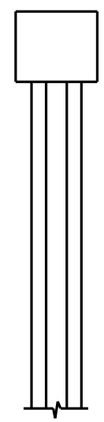
PLAN
TOP OF CAP



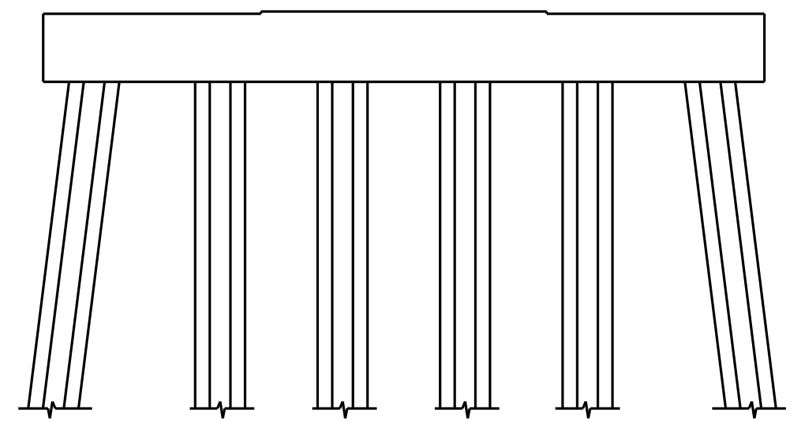
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

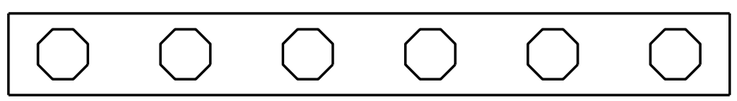


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 241
SPAN 242

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 241

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-282 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:16
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pbryant

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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 242 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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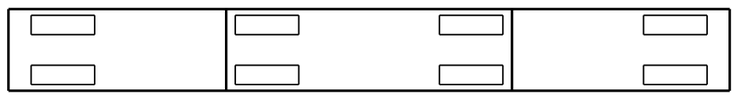
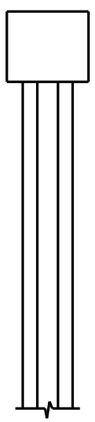
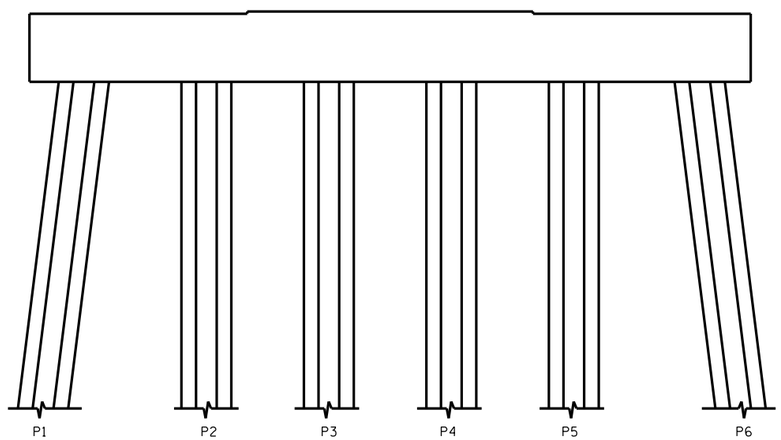


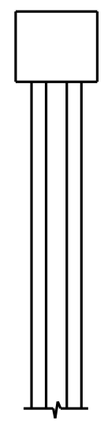

PLAN
TOP OF CAP



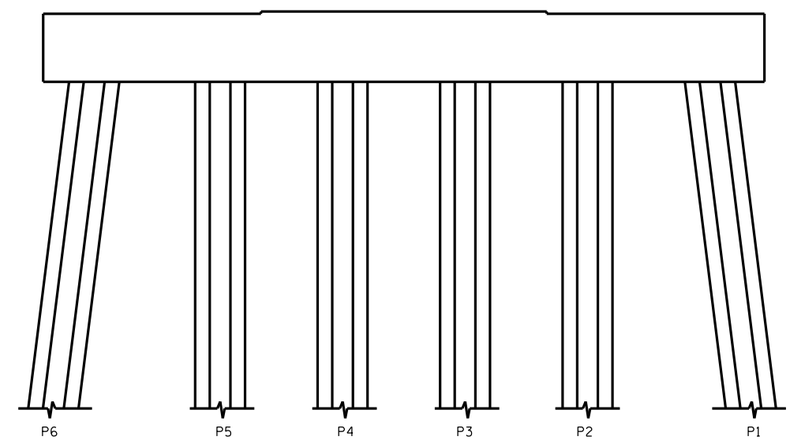
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

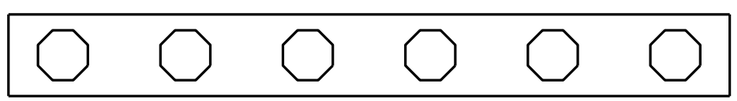


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7




PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 242

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-283 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:17
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

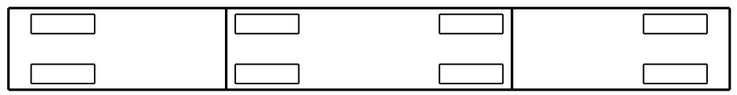
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

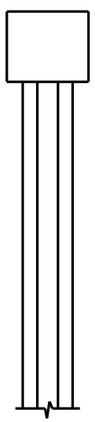
| REPAIRS BENT 243 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

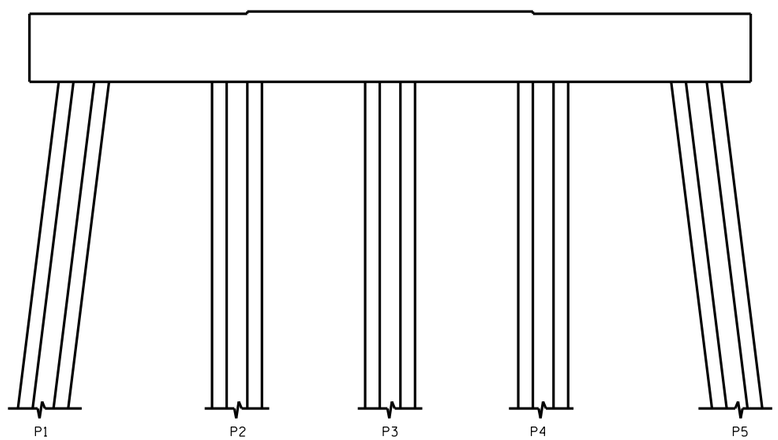


SPAN 244
SPAN 243

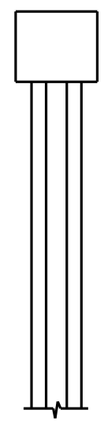
PLAN
TOP OF CAP



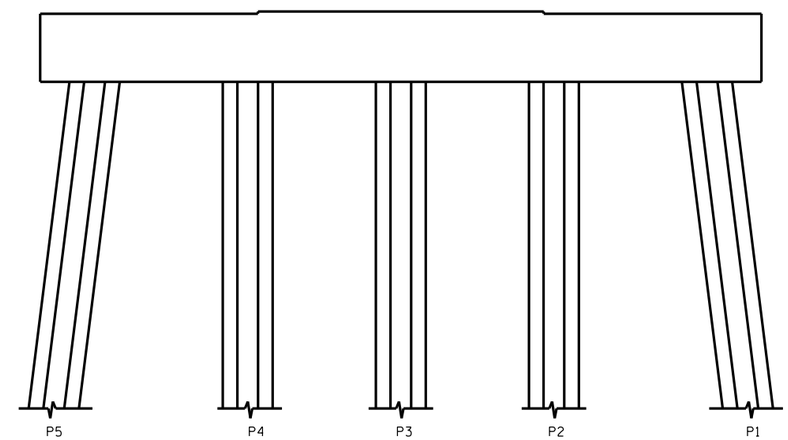
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

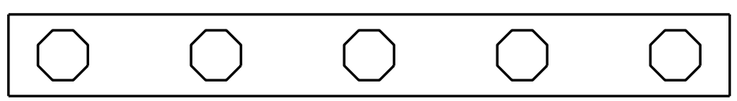


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 243
SPAN 244

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 243

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-284 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:18
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## NOTES:

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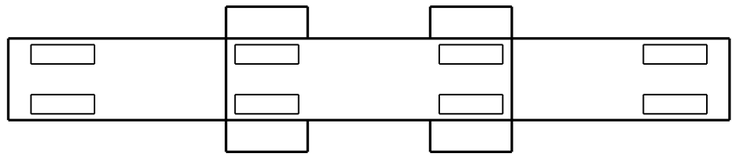
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

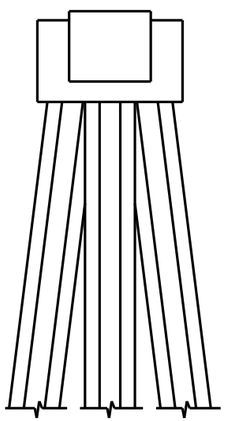
| REPAIRS BENT 244 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

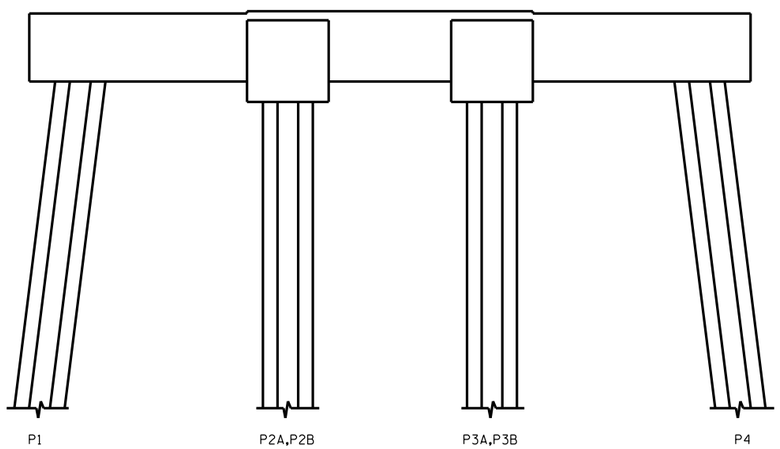


SPAN 245
SPAN 244

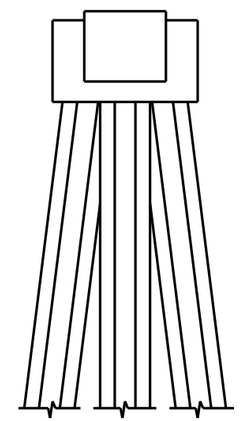
PLAN
TOP OF CAP



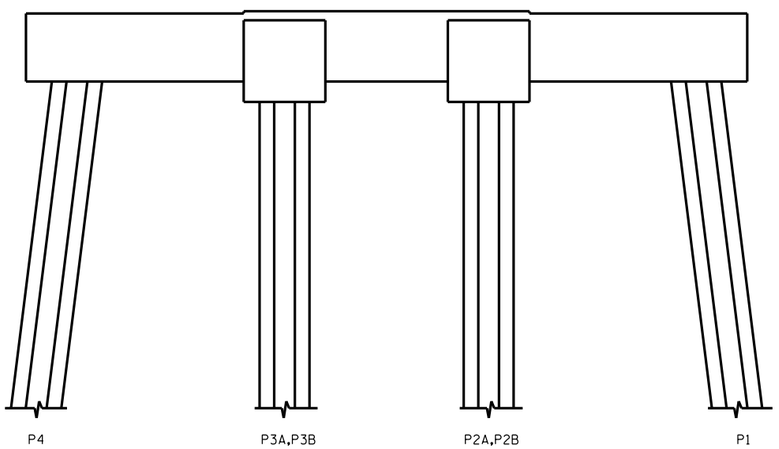
END VIEW
NORTH SIDE



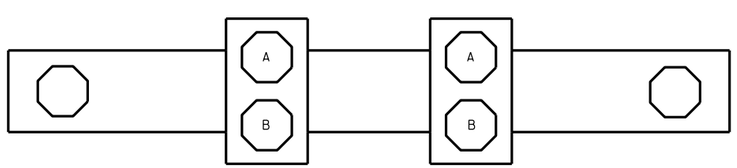

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 244
SPAN 245

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 244

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-285 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

14-JUL-2016 09:58
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pbryant

## 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.

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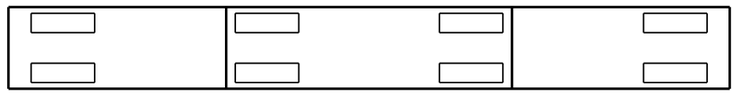
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

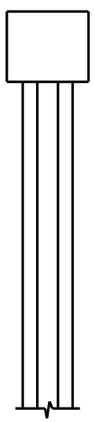
| REPAIRS BENT 245 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

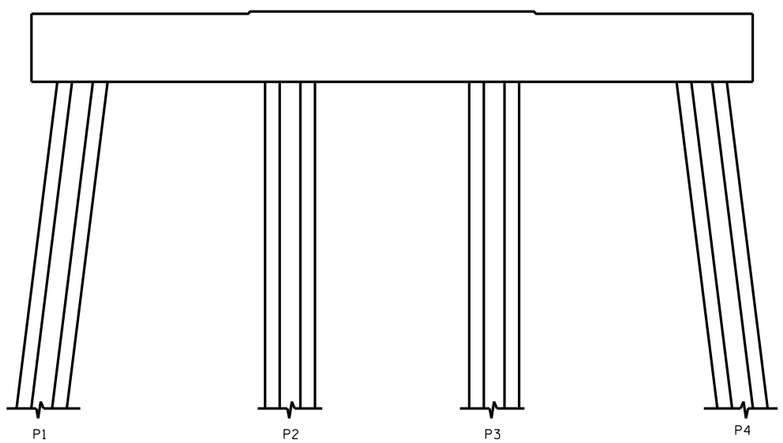


SPAN 246
SPAN 245

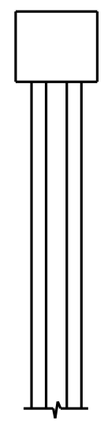
PLAN
TOP OF CAP



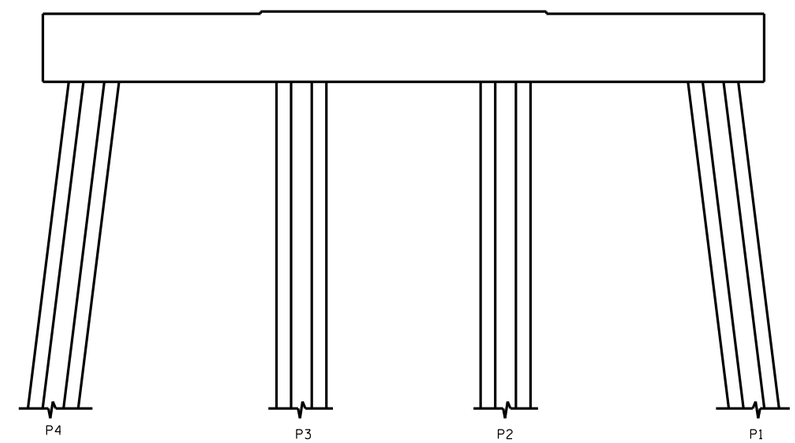
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

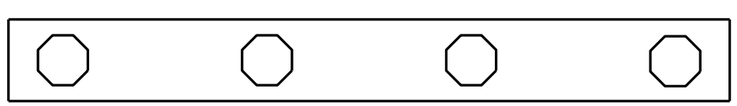


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 245
SPAN 246

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 245

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-286 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:19
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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

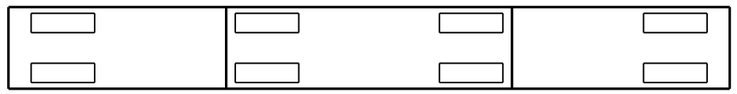
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

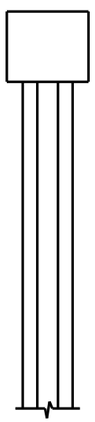
| REPAIRS BENT 246 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

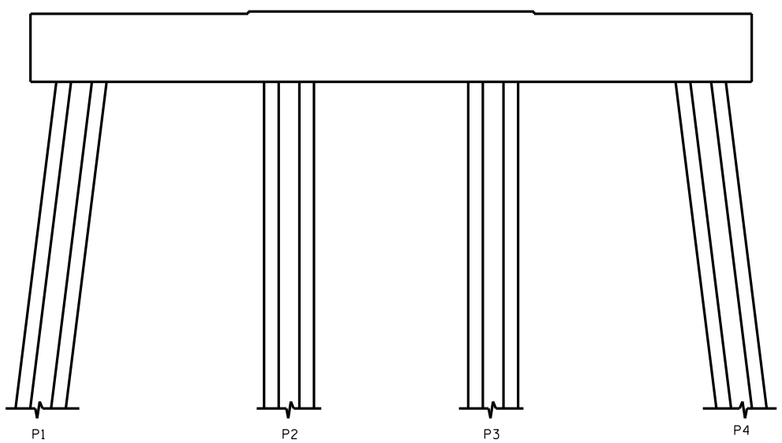


SPAN 247
SPAN 246

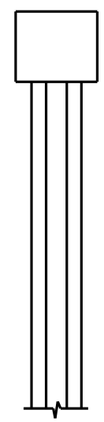
PLAN
TOP OF CAP



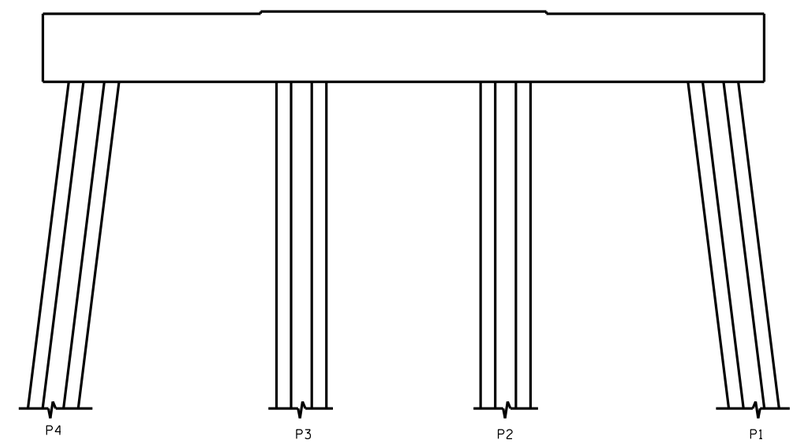
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

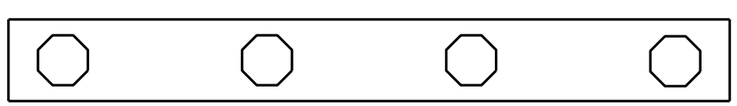


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 246
SPAN 247

PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 246

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-287 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:19
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pbryant

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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 247 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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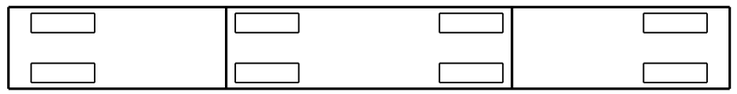
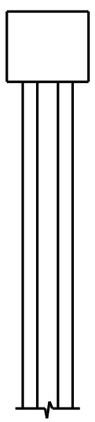
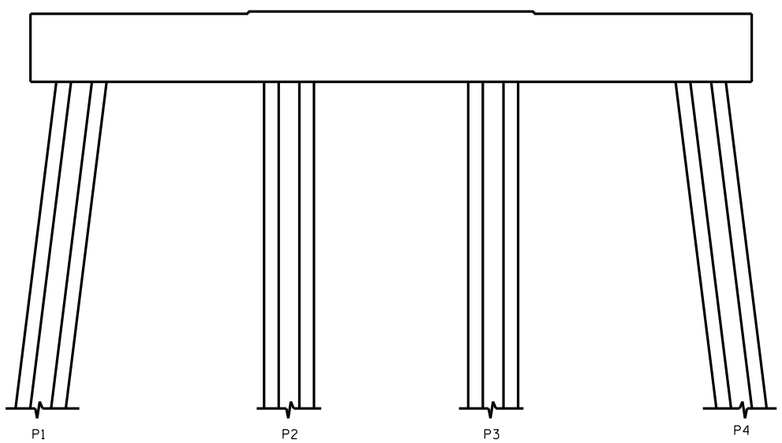


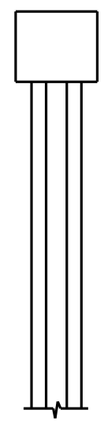

PLAN
TOP OF CAP



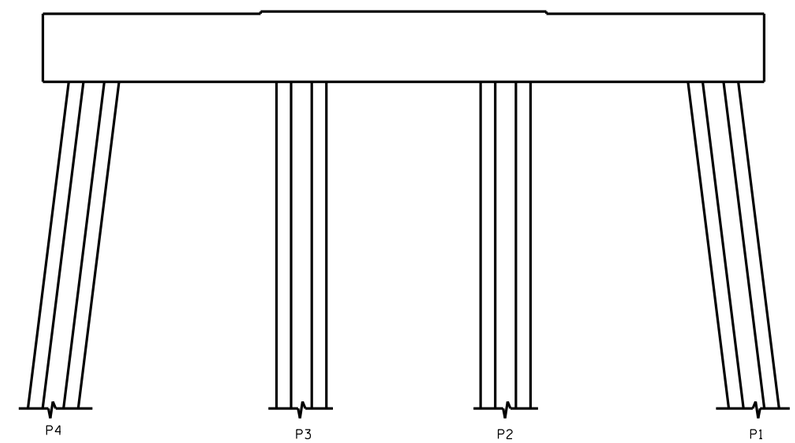
END VIEW
NORTH SIDE



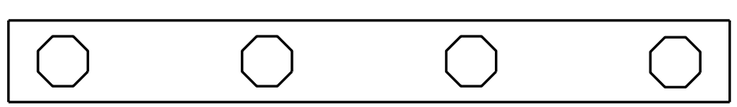

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 247

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-288 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:20
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

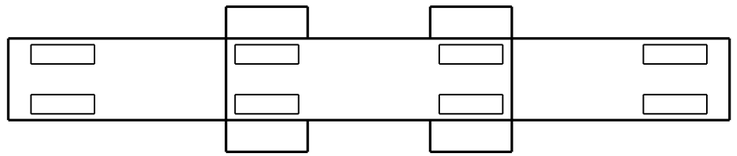
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

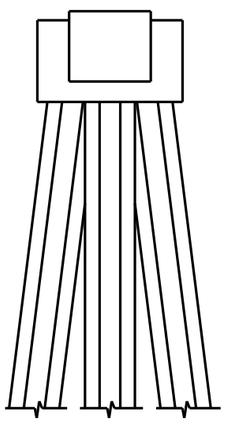
| REPAIRS BENT 248 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

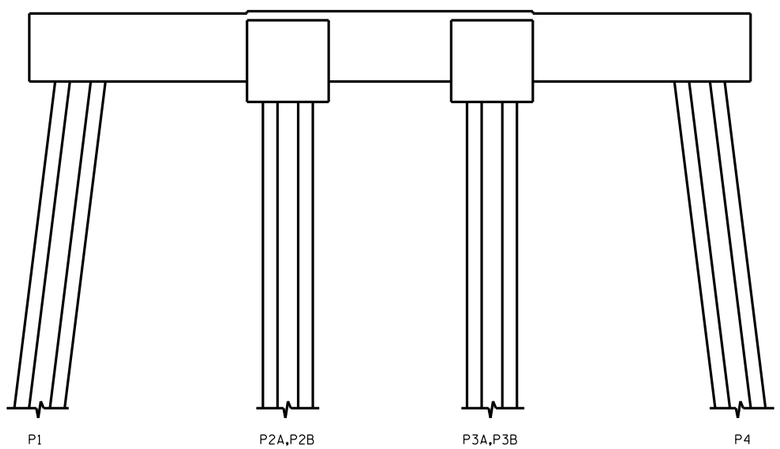


SPAN 249
SPAN 248

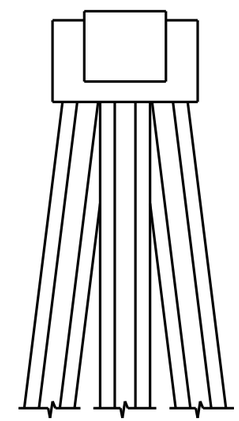
PLAN
TOP OF CAP



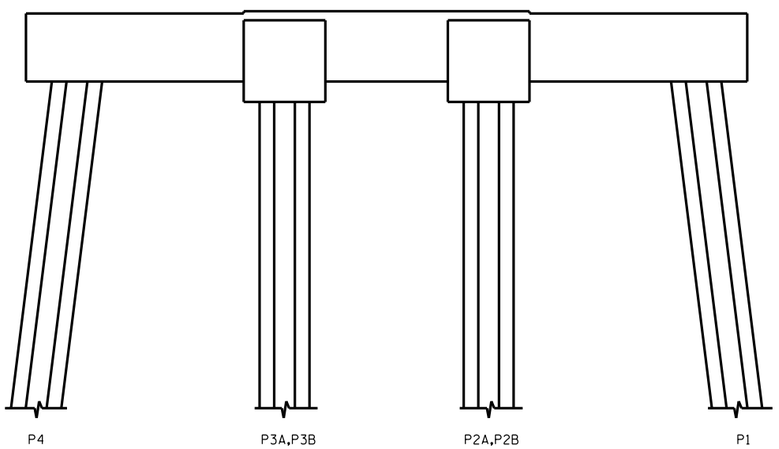
END VIEW
NORTH SIDE



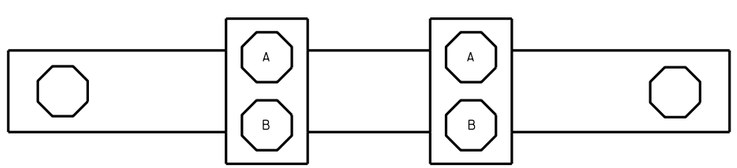

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 248
SPAN 249

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 248

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-289 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:21
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## NOTES:

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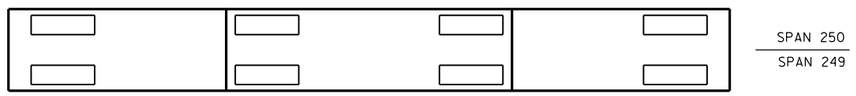
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

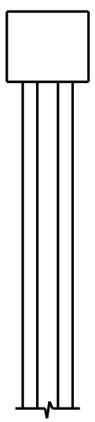
## REPAIR QUANTITY TABLE

| REPAIRS BENT 249 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

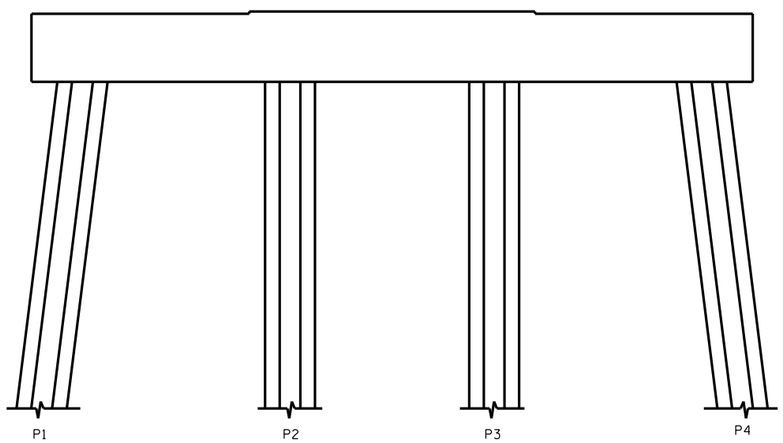
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



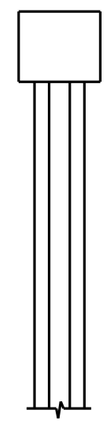

PLAN
TOP OF CAP



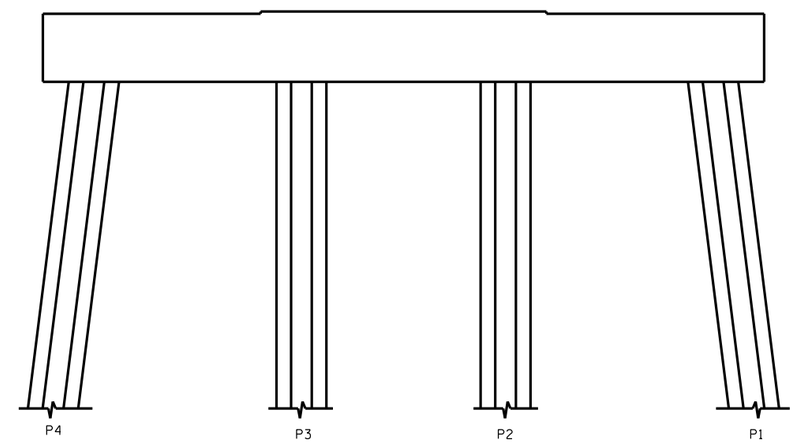
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

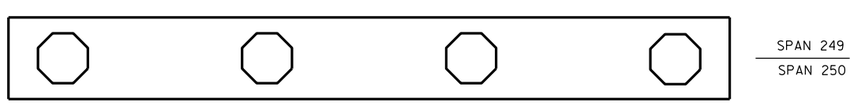


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 249

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-290 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:21
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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 250 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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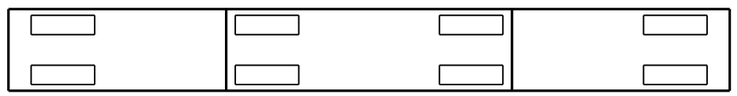
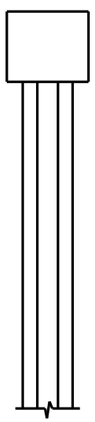
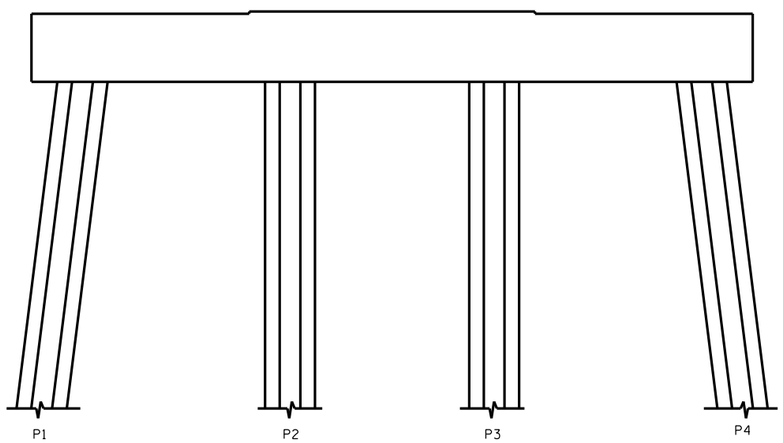


SPAN 251
SPAN 250

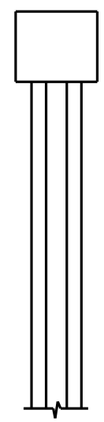
PLAN
TOP OF CAP



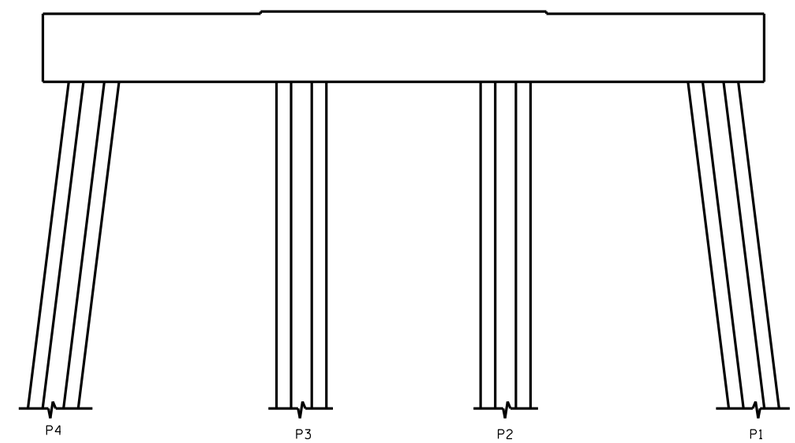
END VIEW
NORTH SIDE



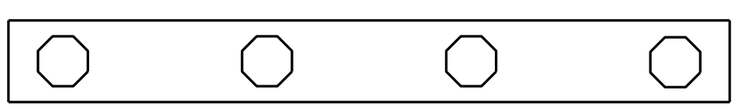

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 250
SPAN 251

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 250

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-291 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 251 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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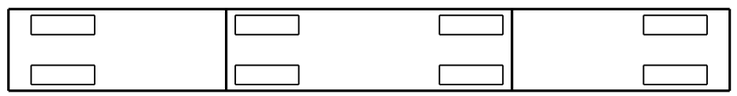
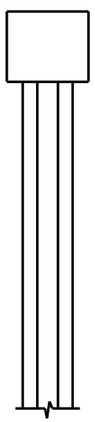
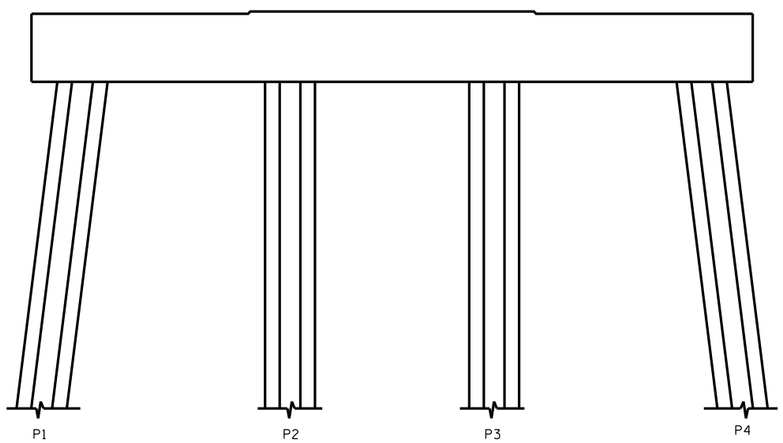


SPAN 252
SPAN 251

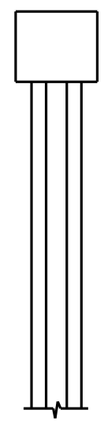
PLAN
TOP OF CAP



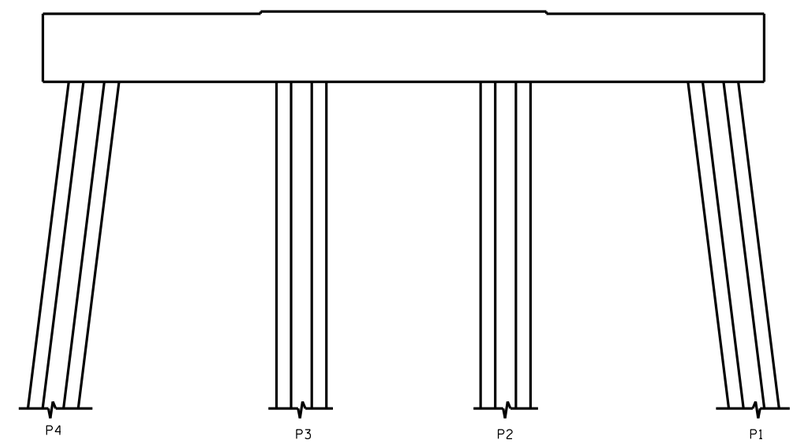
END VIEW
NORTH SIDE



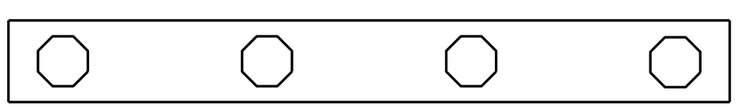

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 251
SPAN 252

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 251

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-292 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:25
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FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 252 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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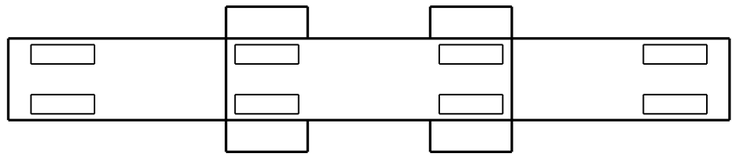
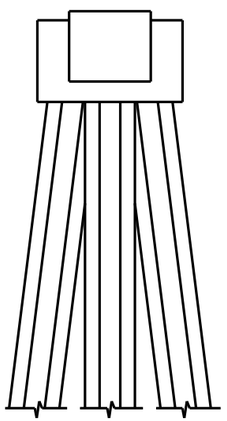
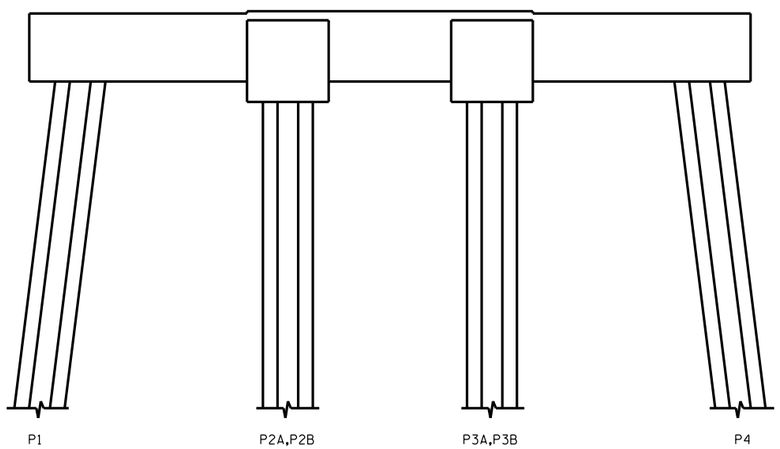


SPAN 253
SPAN 252

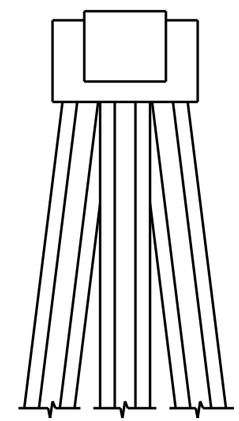
PLAN
TOP OF CAP



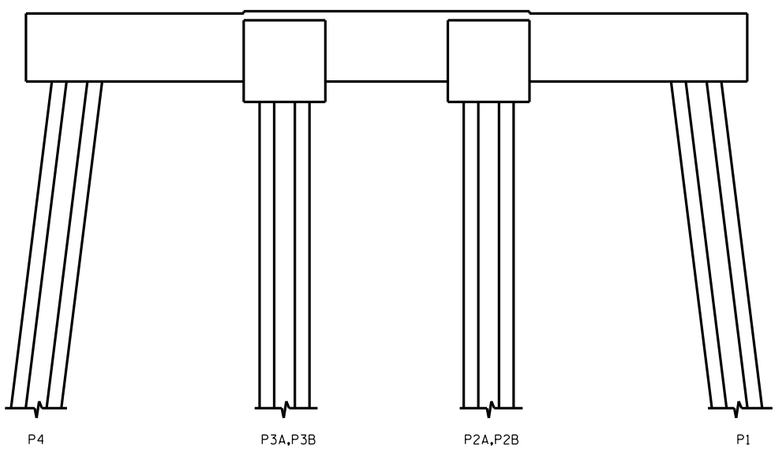
END VIEW
NORTH SIDE



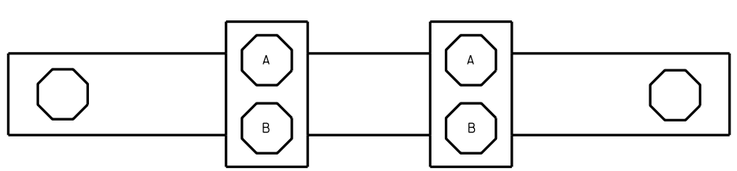

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 252
SPAN 253

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 252

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-293 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 14:00
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

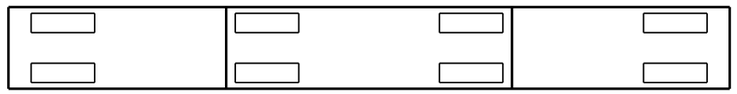
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

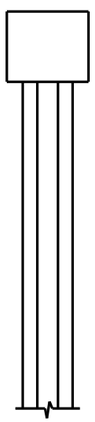
| REPAIRS BENT 253 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

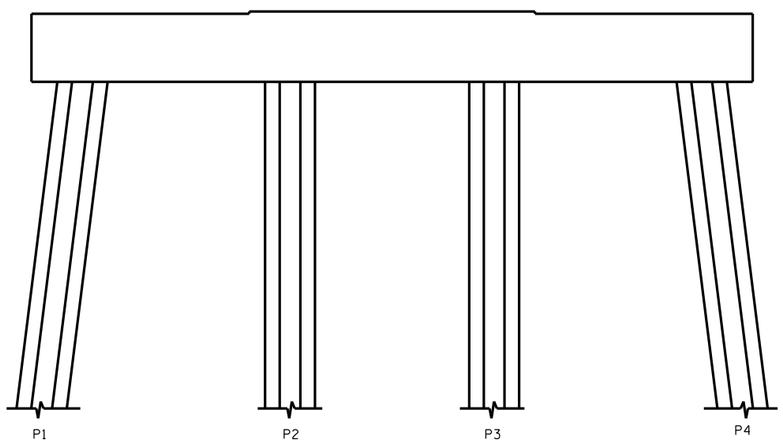


SPAN 254
SPAN 253

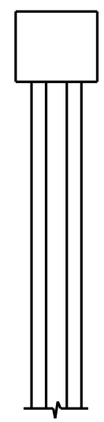
PLAN
TOP OF CAP



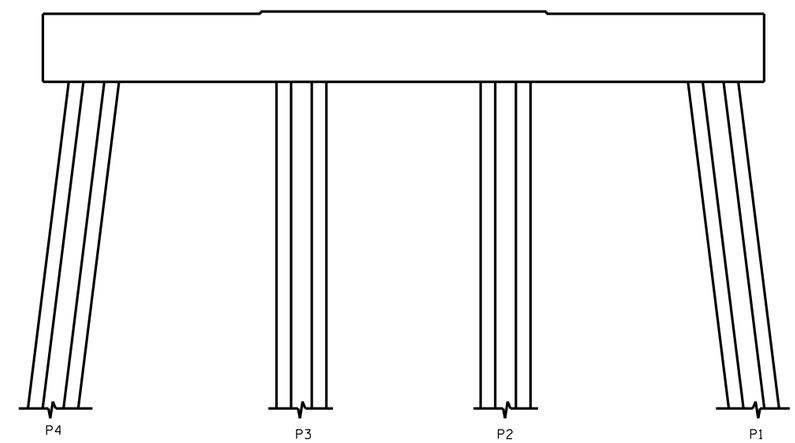
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

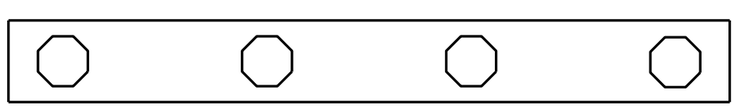


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 253
SPAN 254

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 253

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-294 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:26
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

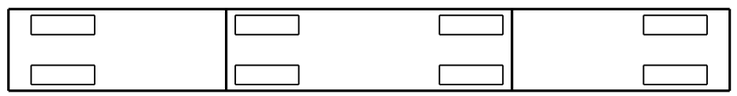
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

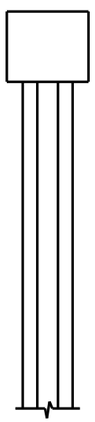
## REPAIR QUANTITY TABLE

| REPAIRS BENT 254 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

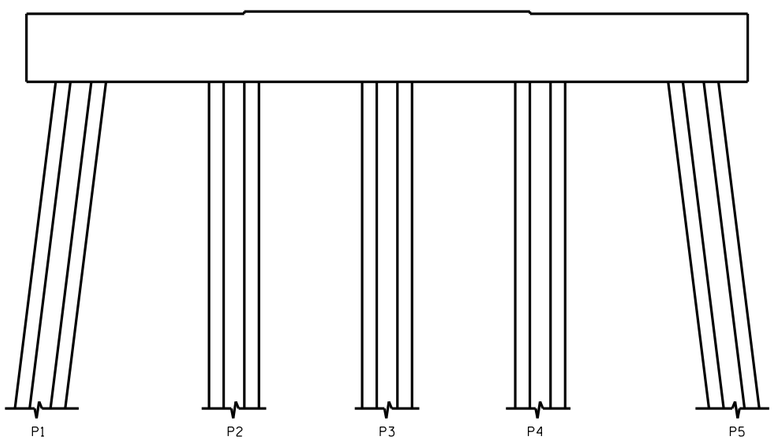
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



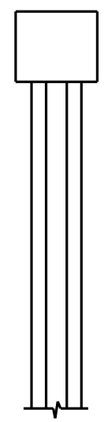

PLAN
TOP OF CAP



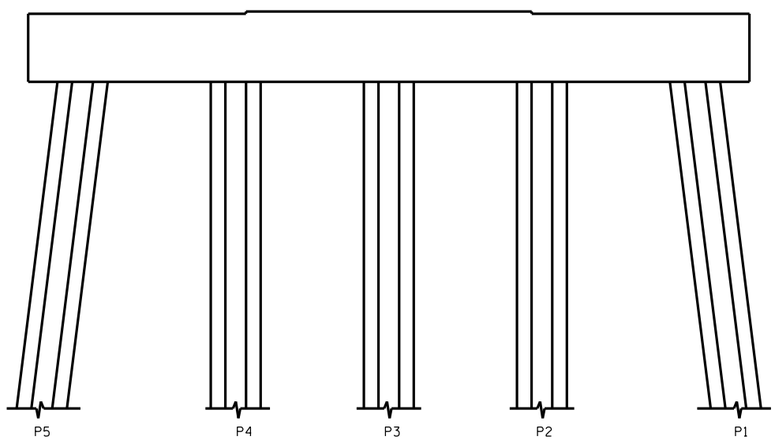
END VIEW
NORTH SIDE



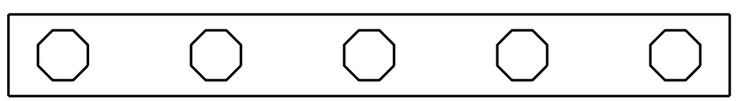

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 254

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-295 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:41
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

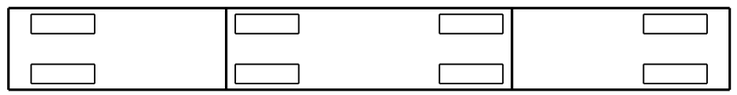
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

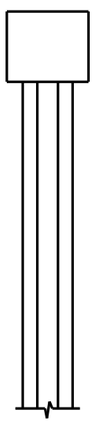
## REPAIR QUANTITY TABLE

| REPAIRS BENT 255 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

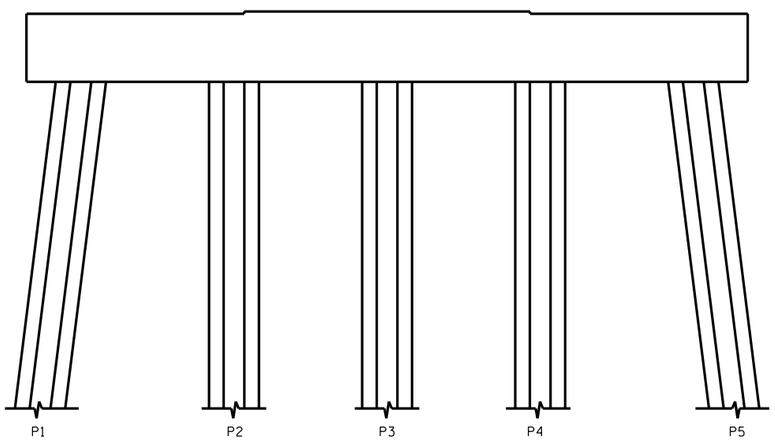
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



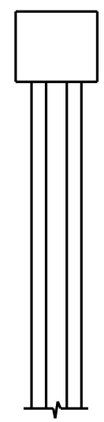

PLAN
TOP OF CAP



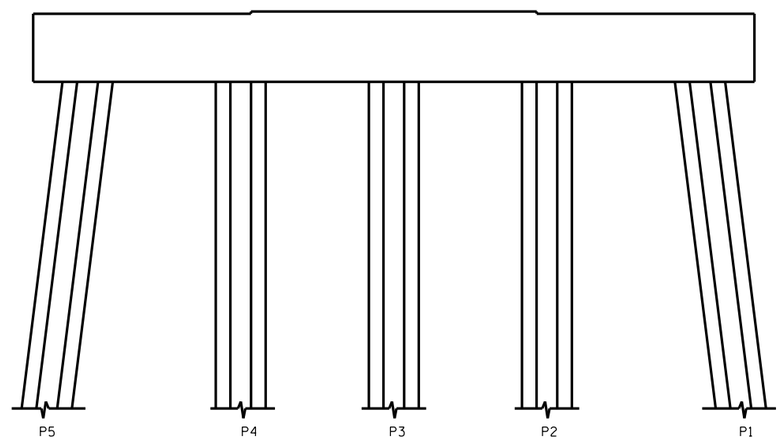
END VIEW
NORTH SIDE



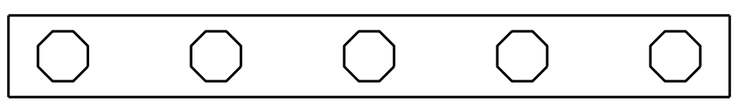

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 255

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-296 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:43
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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

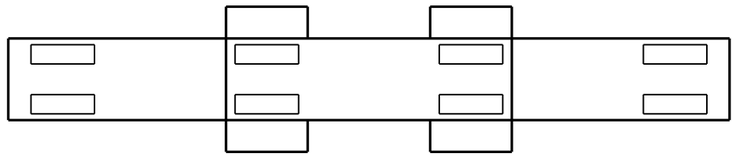
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

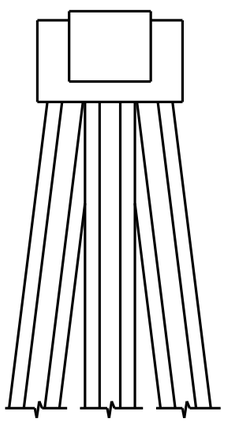
## REPAIR QUANTITY TABLE

| REPAIRS BENT 256 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

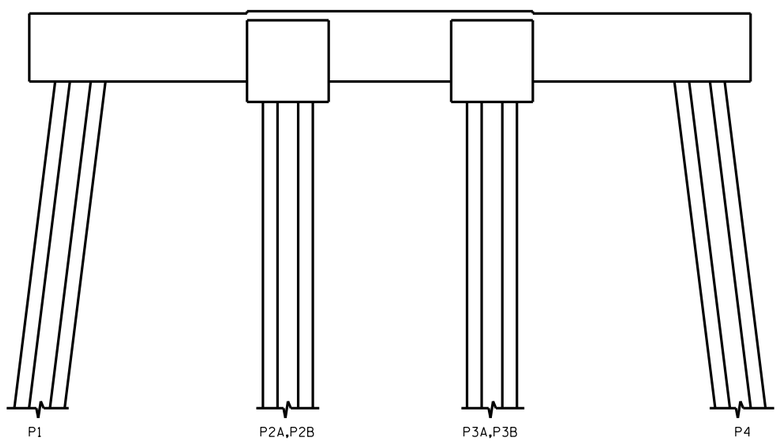
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



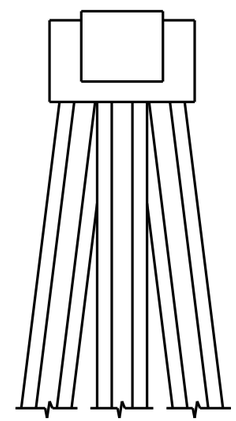

PLAN
TOP OF CAP



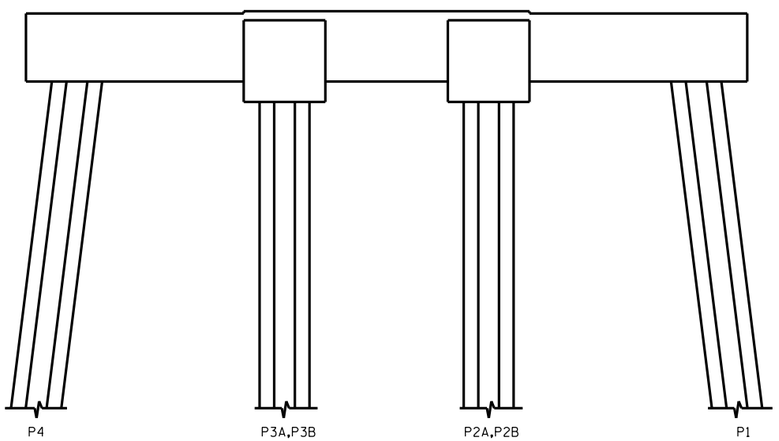
END VIEW
NORTH SIDE



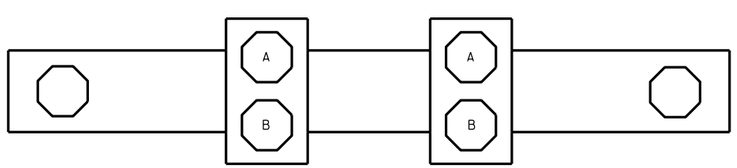

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 256

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-297 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:45
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## NOTES:

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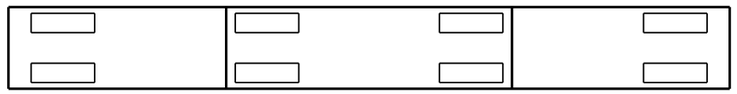
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

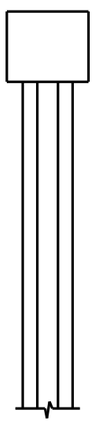
| REPAIRS BENT 257 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

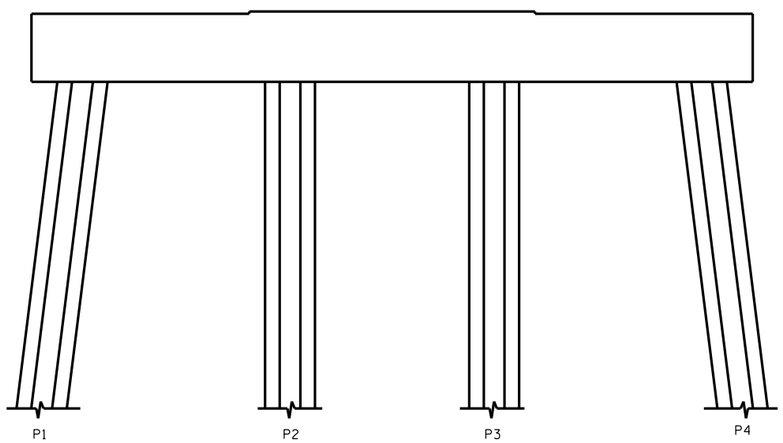


SPAN 258
SPAN 257

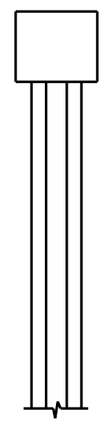
PLAN
TOP OF CAP



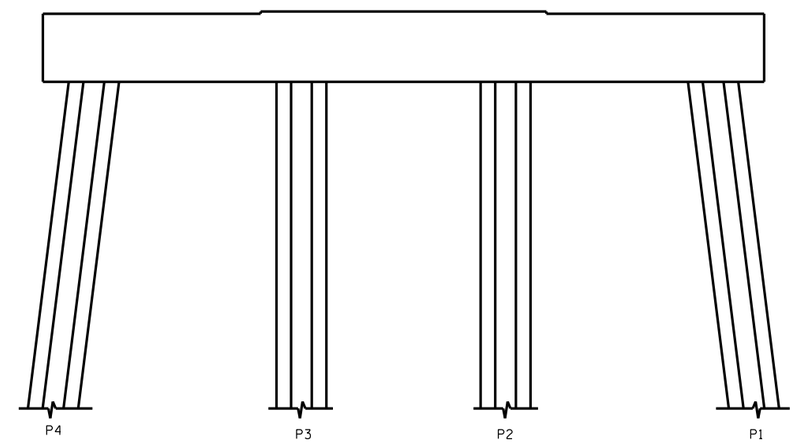
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

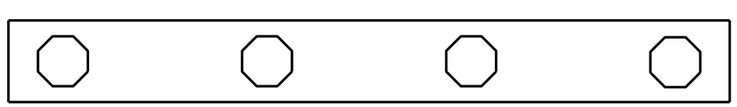


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 257
SPAN 258

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/10/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 257

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-298 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:45
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

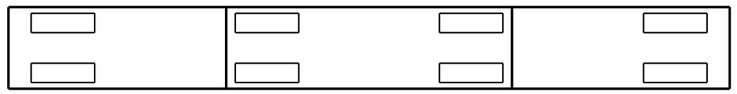
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

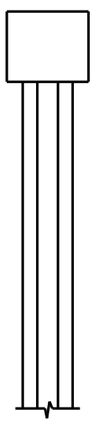
| REPAIRS BENT 258 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

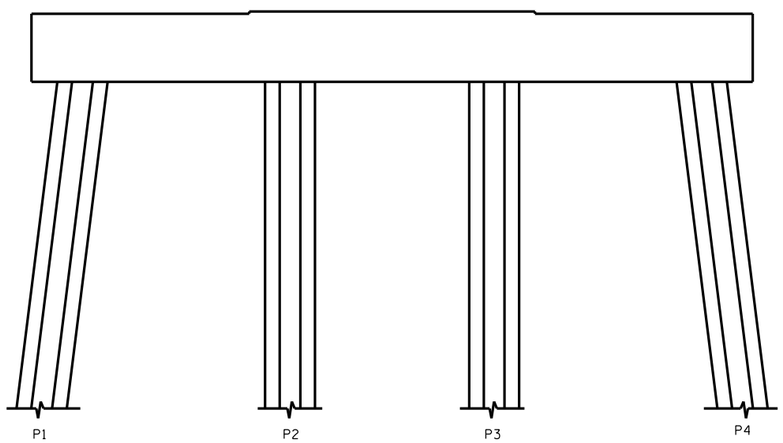


SPAN 259
SPAN 258

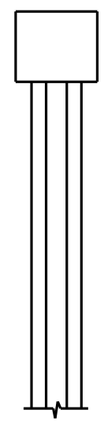
PLAN
TOP OF CAP



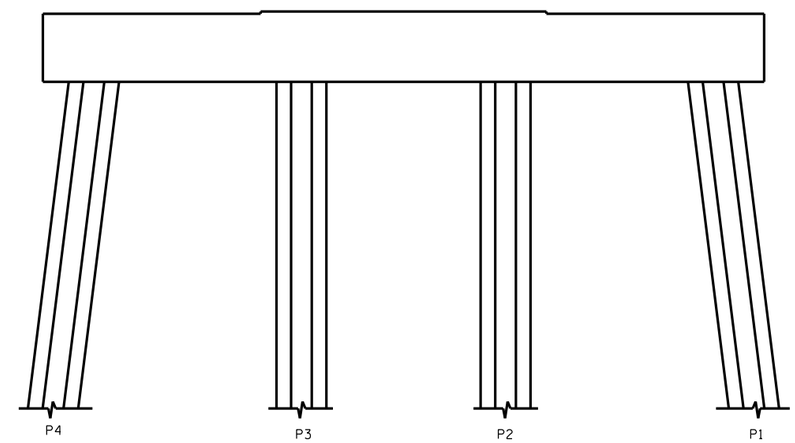
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

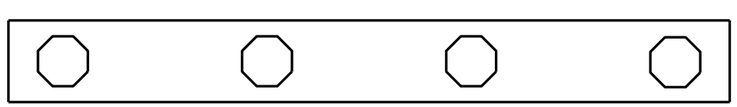


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 258
SPAN 259

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 258

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-299 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:47
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

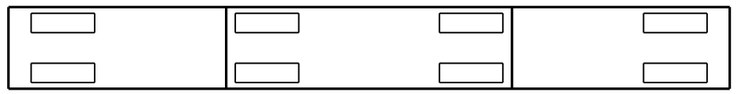
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

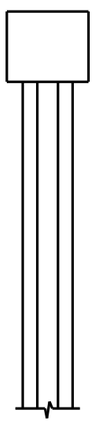
| REPAIRS BENT 259 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

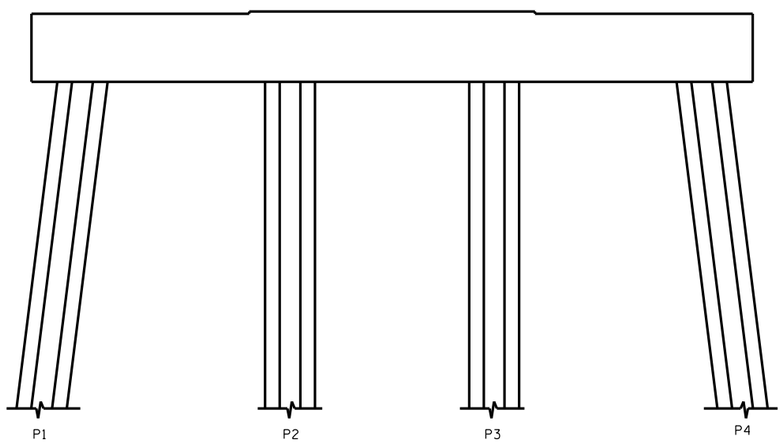


SPAN 260
SPAN 259

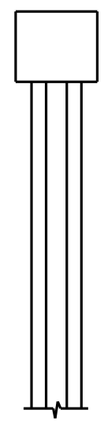
PLAN
TOP OF CAP



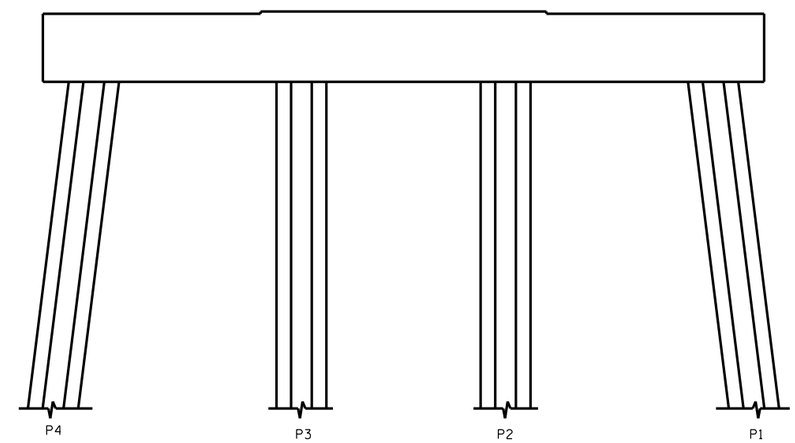
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

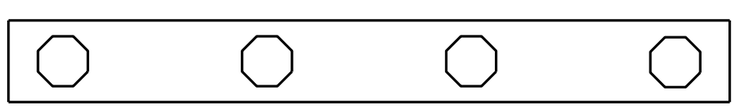


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 259
SPAN 260

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/10/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 259

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-300 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:48
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

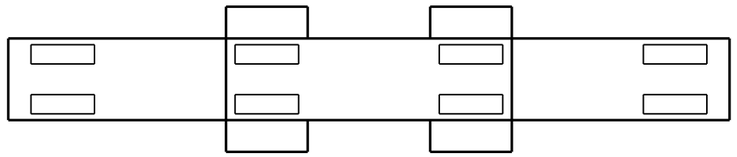
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

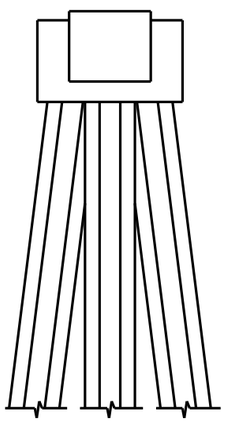
## REPAIR QUANTITY TABLE

| REPAIRS BENT 260 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

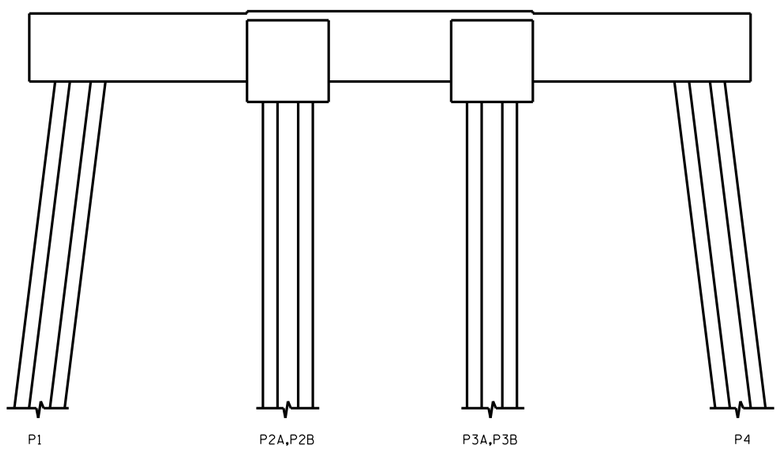
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



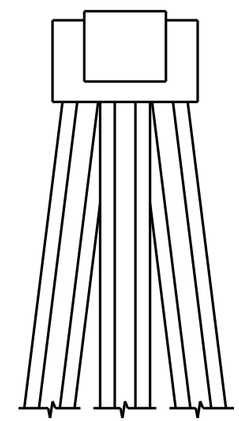

PLAN
TOP OF CAP



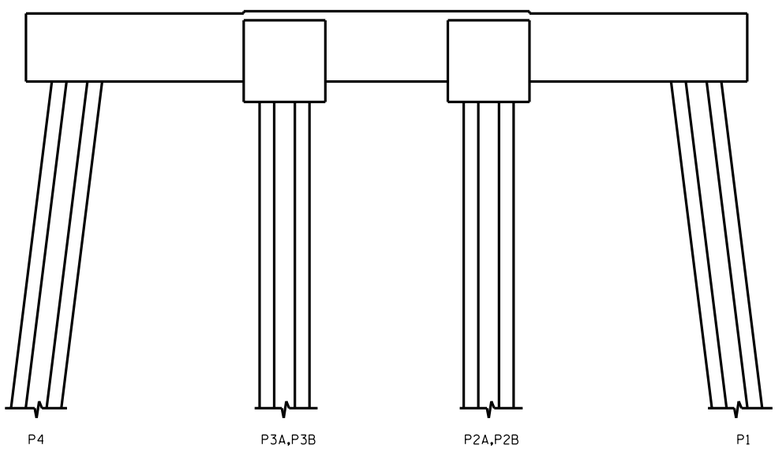
END VIEW
NORTH SIDE



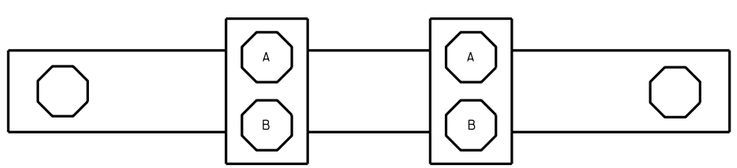

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 260

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-301 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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pbryant

## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

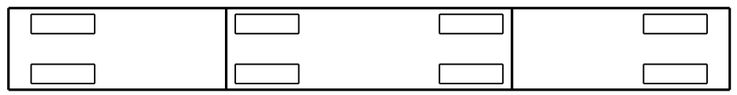
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

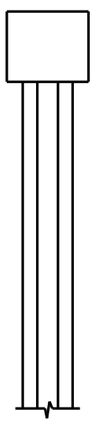
## REPAIR QUANTITY TABLE

| REPAIRS BENT 261 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.6 | 0.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

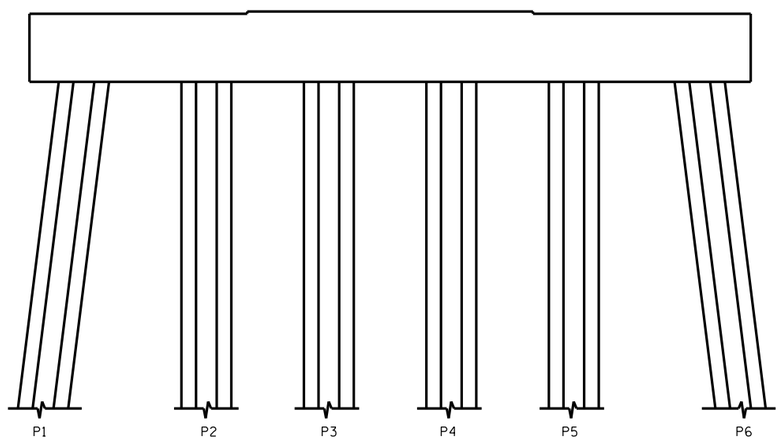
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



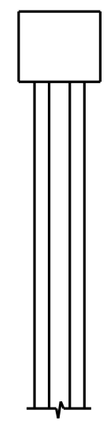

PLAN
TOP OF CAP



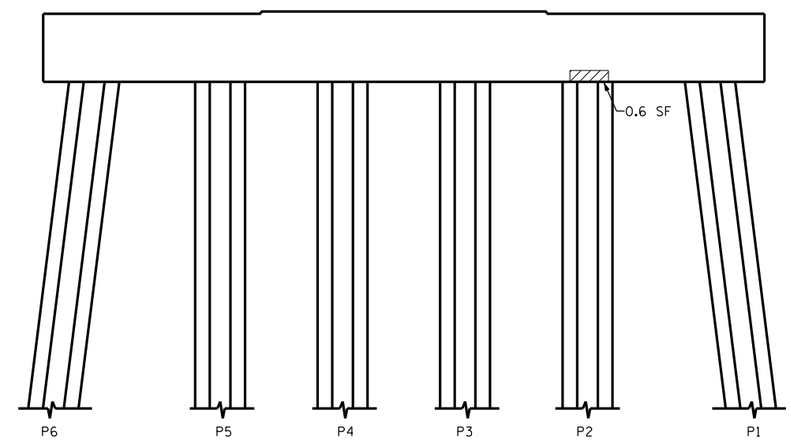
END VIEW
NORTH SIDE



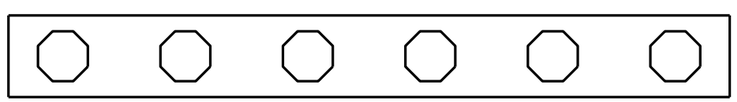

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 261

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-302 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:56
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## NOTES:

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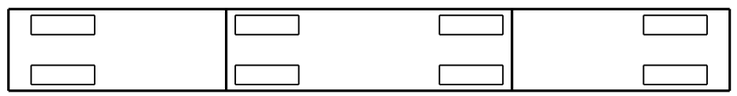
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

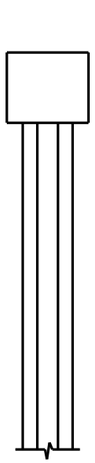
## REPAIR QUANTITY TABLE

| REPAIRS BENT 262 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.2 | 0.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

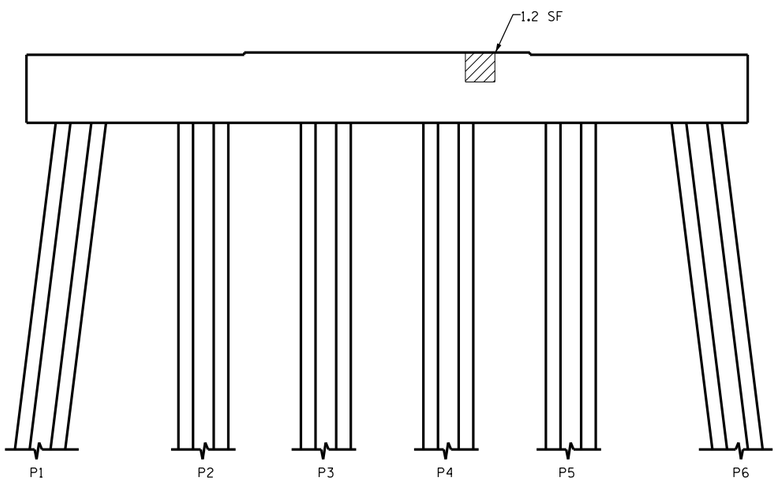
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



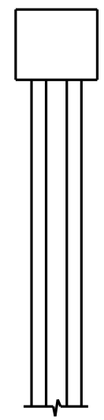

PLAN
TOP OF CAP



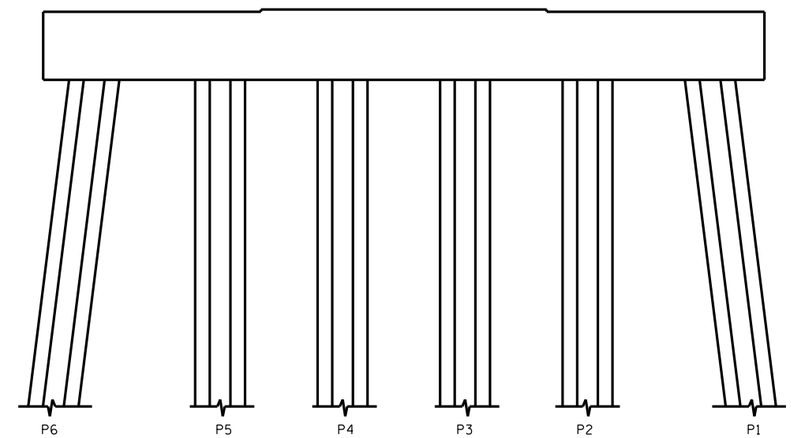
END VIEW
NORTH SIDE



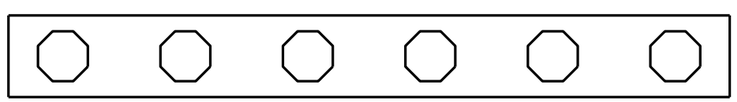

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 262

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-303 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 08:56
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

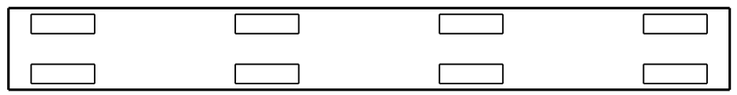
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

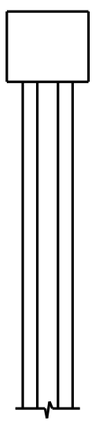
| REPAIRS BENT 263 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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

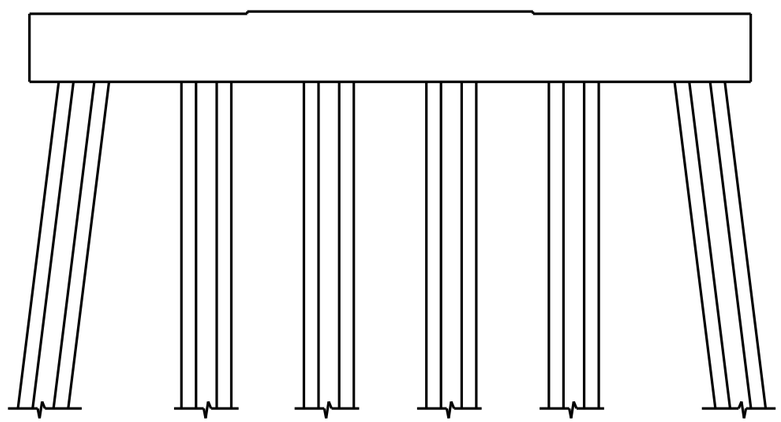


SPAN 263
SPAN 264

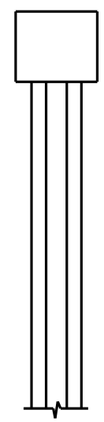
PLAN
TOP OF CAP



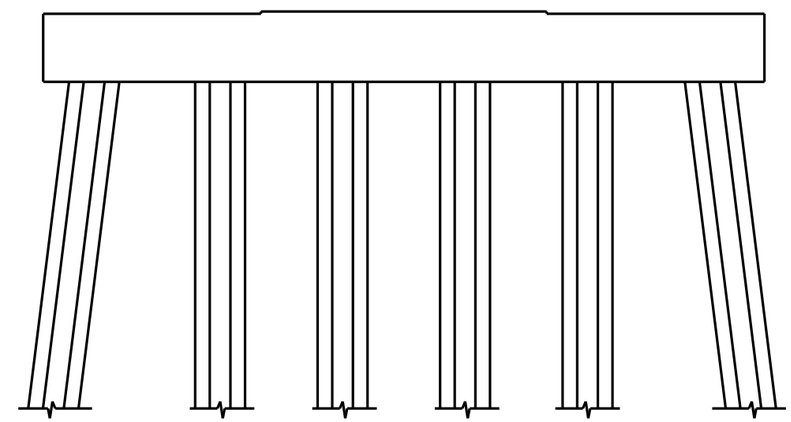
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

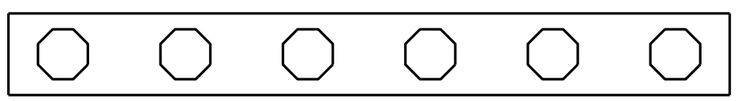


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 263
SPAN 264

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 263

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-304 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

14-JUL-2016 10:01
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pbryant

## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

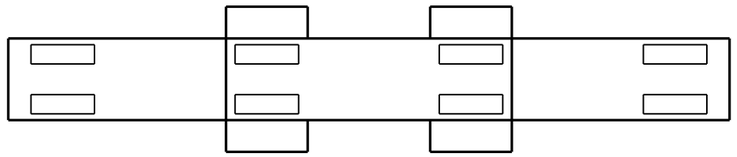
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

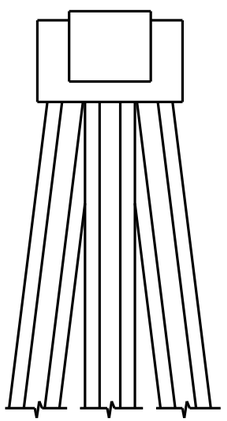
| REPAIRS BENT 264 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

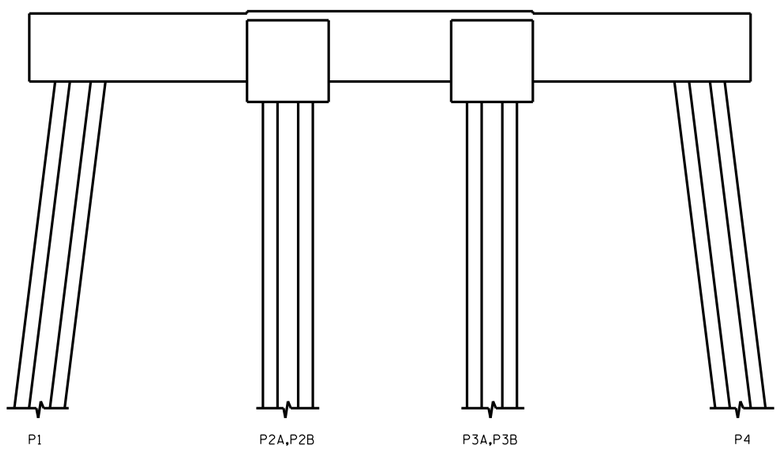


SPAN 265
SPAN 264

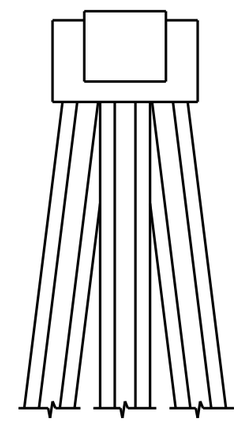
PLAN
TOP OF CAP



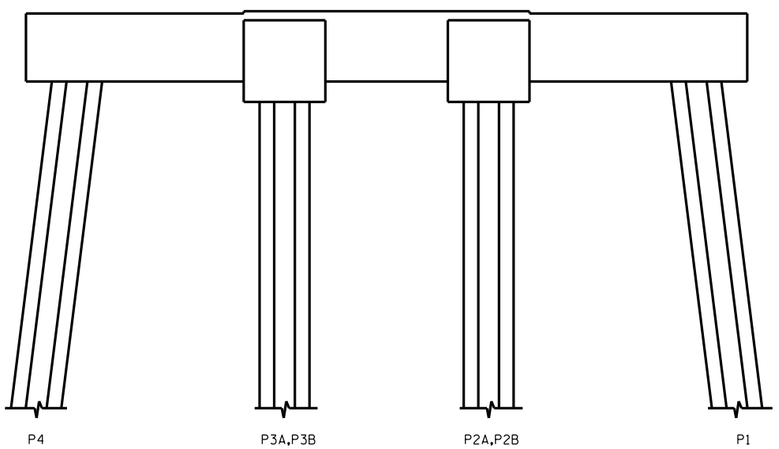
END VIEW
NORTH SIDE



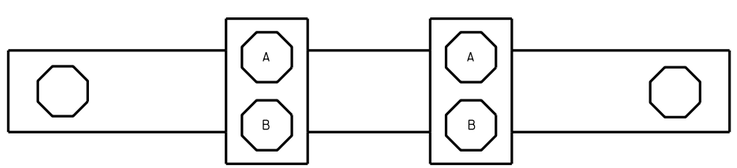

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 264
SPAN 265

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AE1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 264

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-305 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:03
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

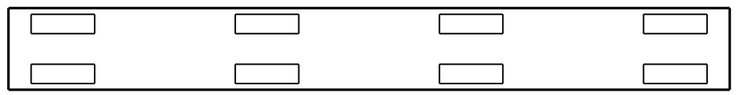
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

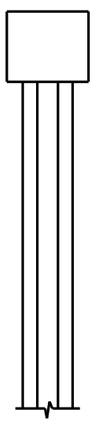
## REPAIR QUANTITY TABLE

| REPAIRS BENT 265 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

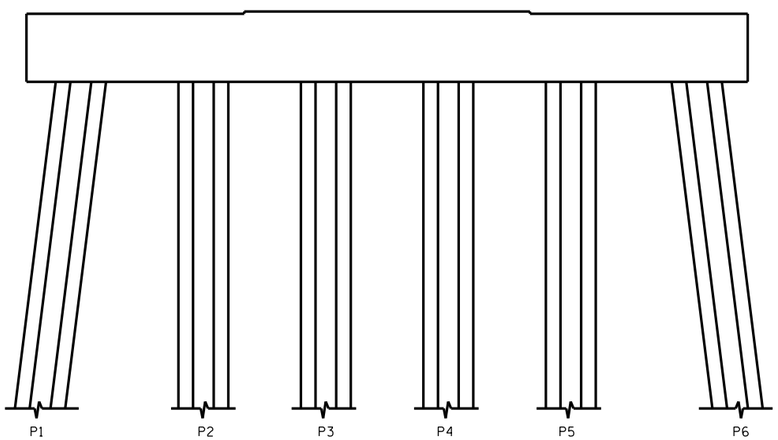
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.



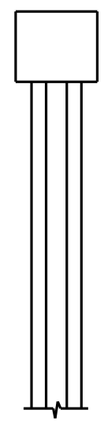

PLAN
TOP OF CAP



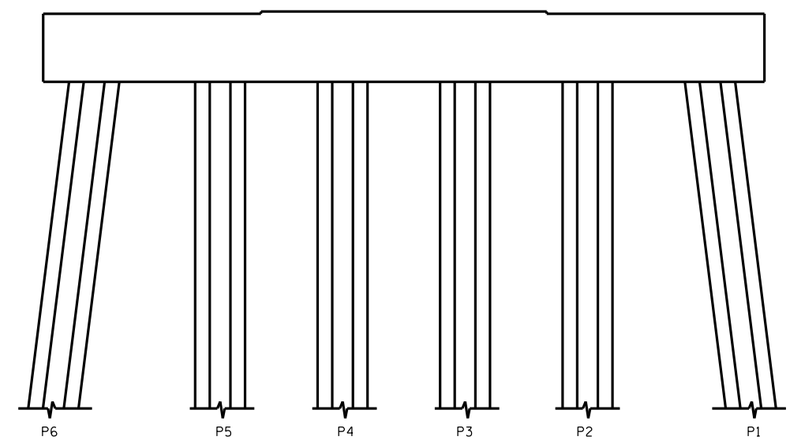
END VIEW
NORTH SIDE



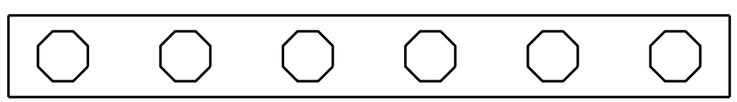

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 265

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-306 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

14-JUL-2016 10:03
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pbryant

## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

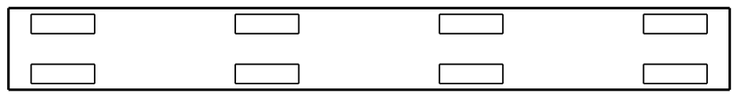
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

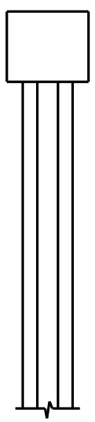
## REPAIR QUANTITY TABLE

| REPAIRS BENT 266 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

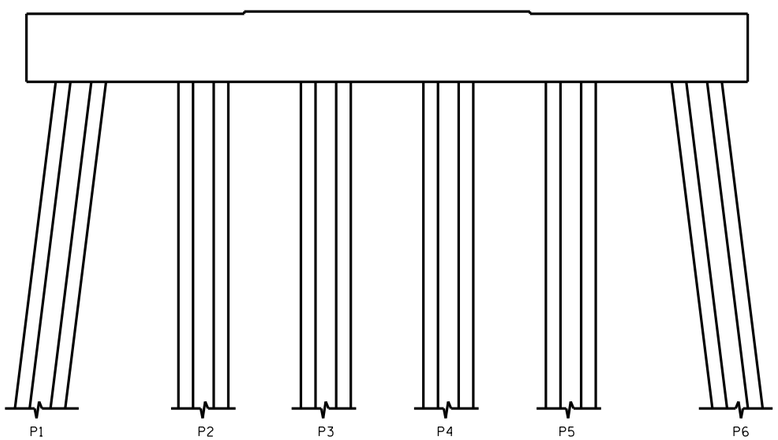
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.



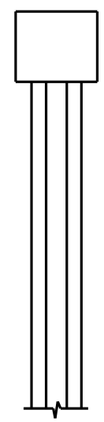

PLAN
TOP OF CAP



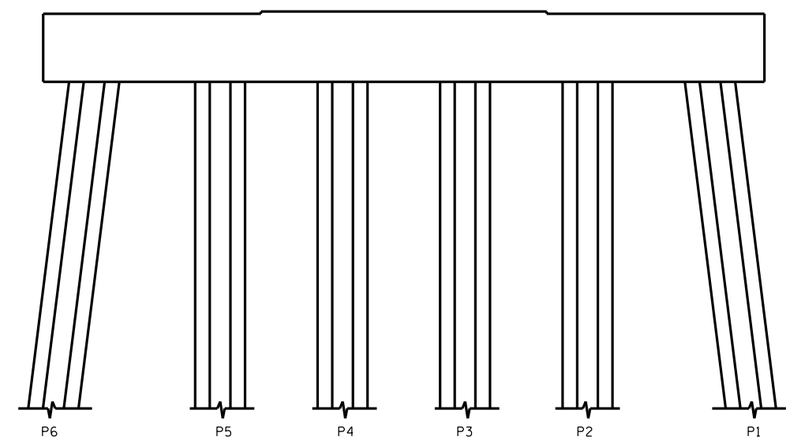
END VIEW
NORTH SIDE



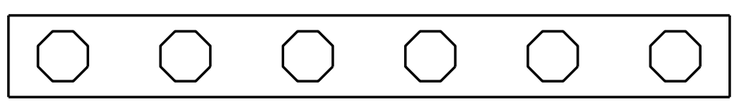

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 266

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-307 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

14-JUL-2016 10:05
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pbryant

## NOTES:

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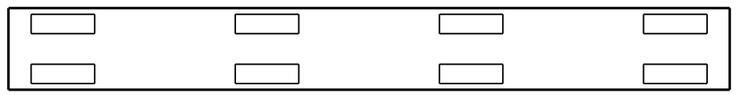
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

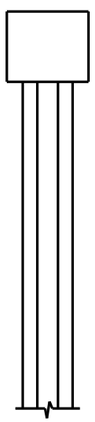
| REPAIRS BENT 267 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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

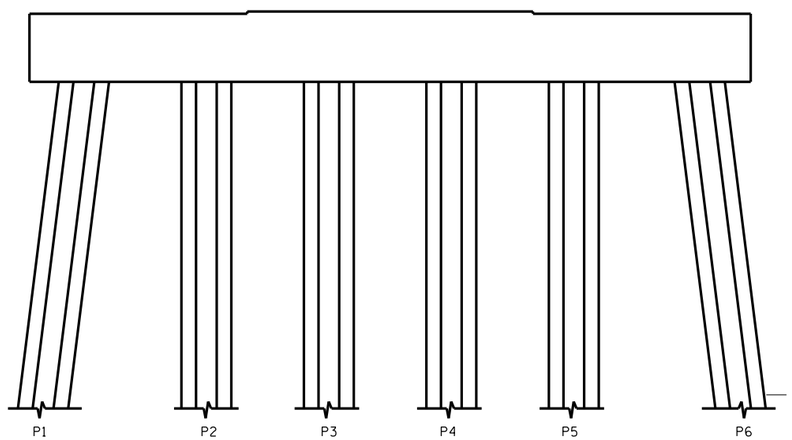


SPAN 268
SPAN 267

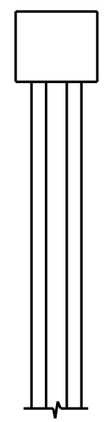
PLAN
TOP OF CAP



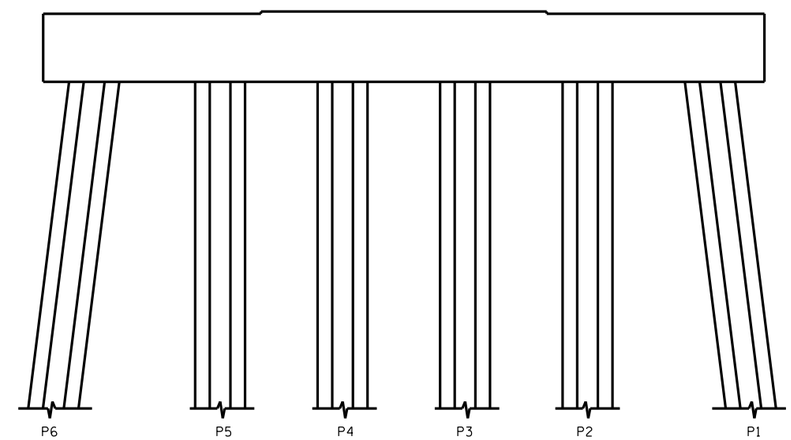
END VIEW
NORTH SIDE



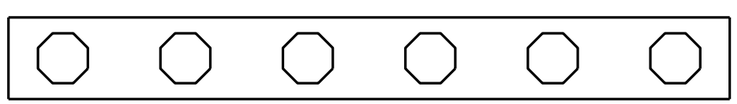

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 267
SPAN 268

PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 267

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-308 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:35
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

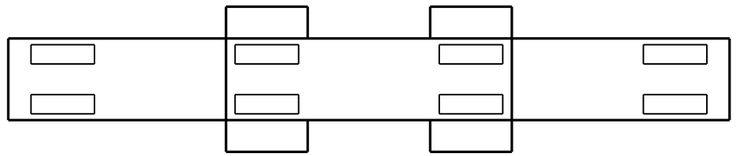
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

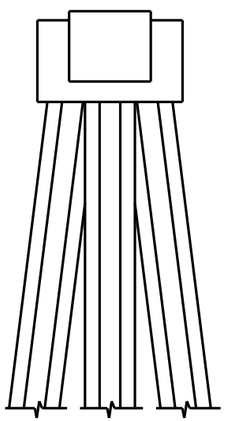
| REPAIRS BENT 268 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

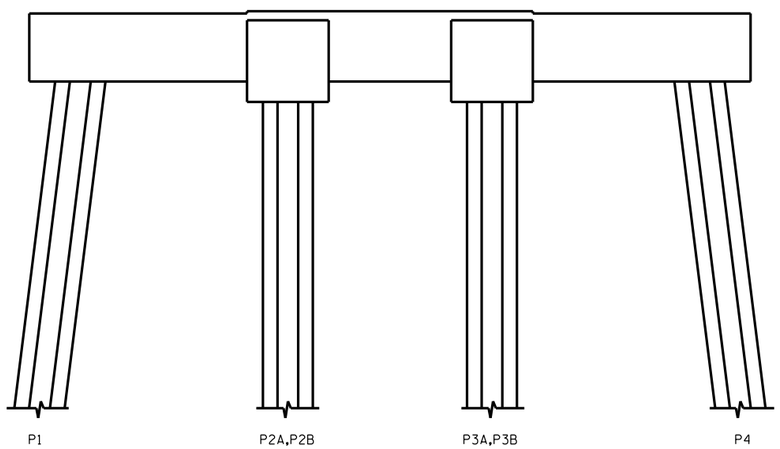


SPAN 269
SPAN 268

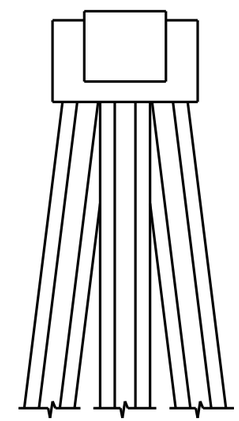
PLAN
TOP OF CAP



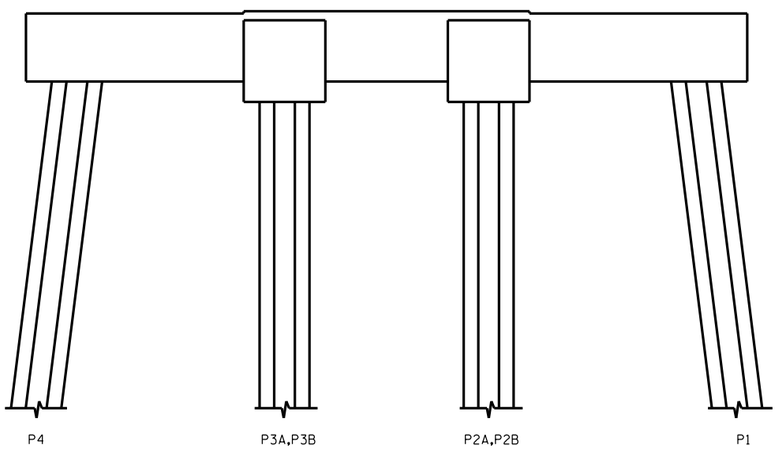
END VIEW
NORTH SIDE



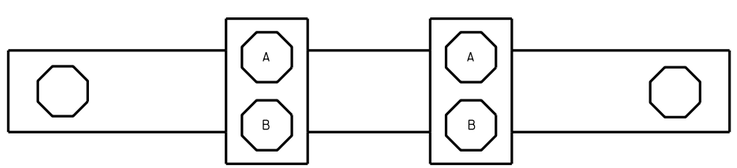

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




SPAN 268
SPAN 269

PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 268

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-309 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:37
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

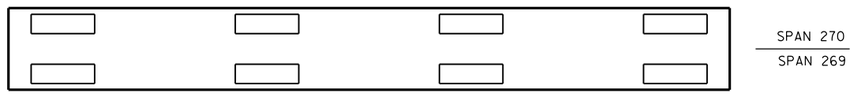
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

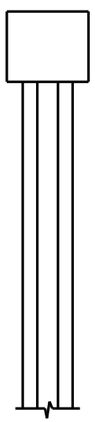
## REPAIR QUANTITY TABLE

| REPAIRS BENT 269 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.3 | 0.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

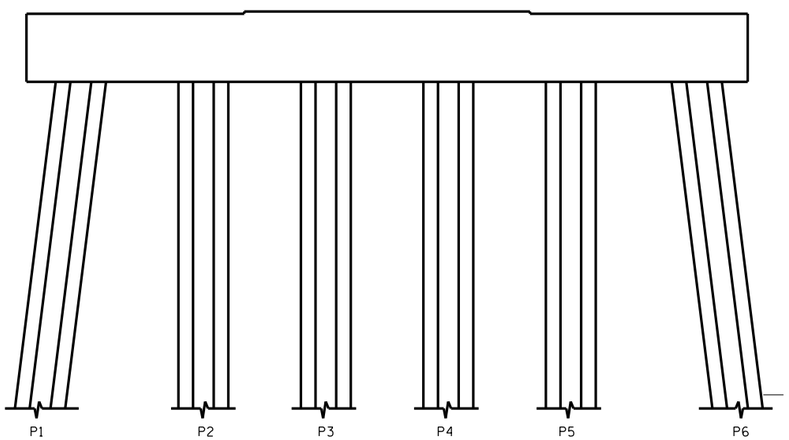
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.



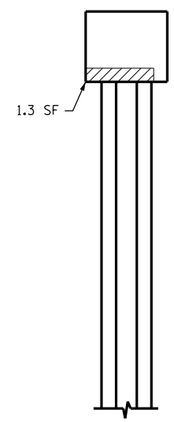

PLAN
TOP OF CAP



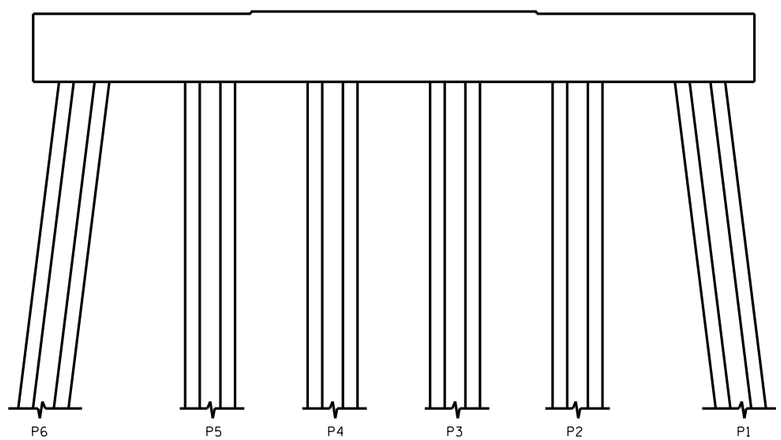
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

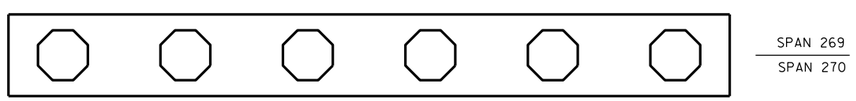



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 269

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-310 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:42
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

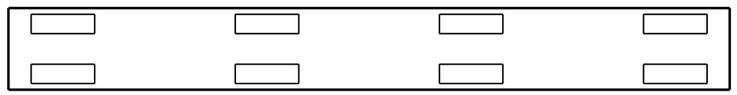
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

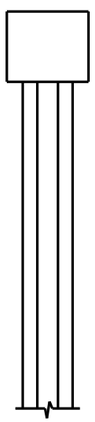
| REPAIRS BENT 270 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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

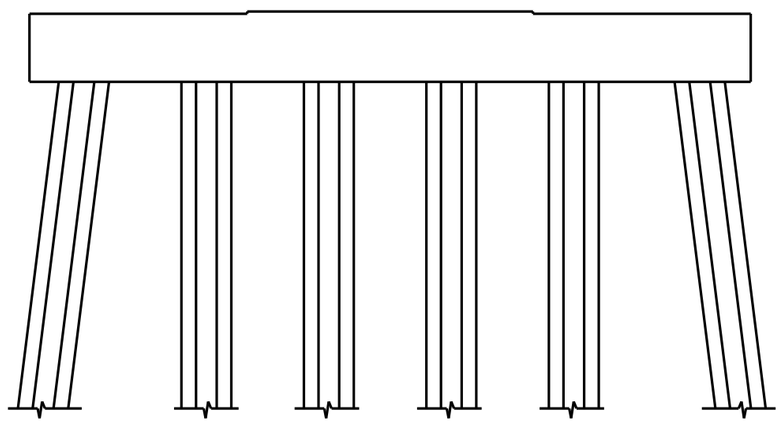


SPAN 271
SPAN 270

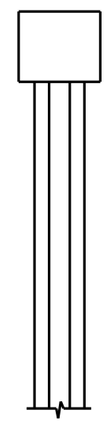
PLAN
TOP OF CAP



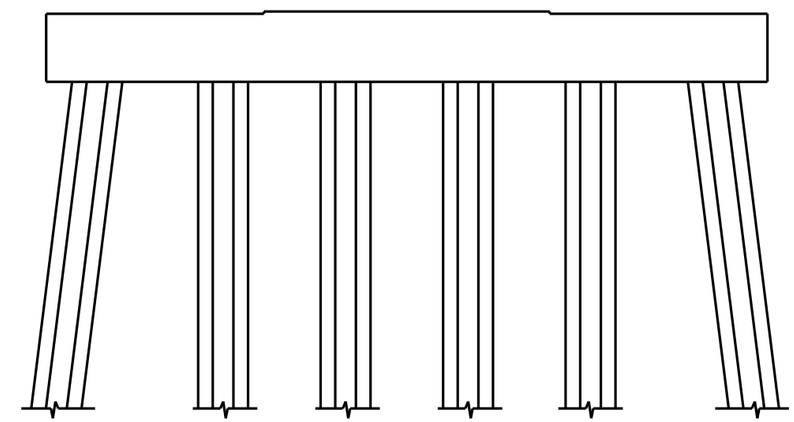
END VIEW
NORTH SIDE




ELEVATION
WEST SIDE

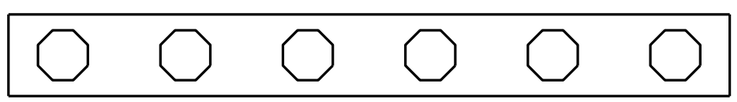


END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7



SPAN 270
SPAN 271

PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

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

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
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8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 270

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-311 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:42
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pbryant

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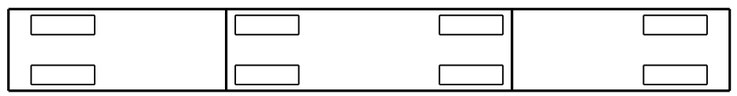
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

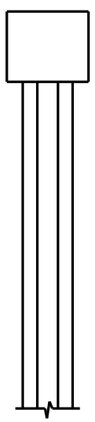
## REPAIR QUANTITY TABLE

| REPAIRS BENT 271 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

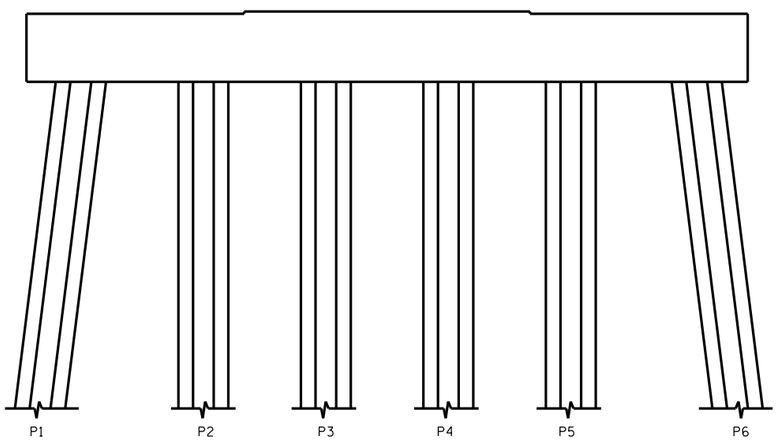
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



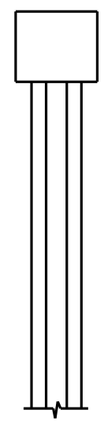

PLAN
TOP OF CAP



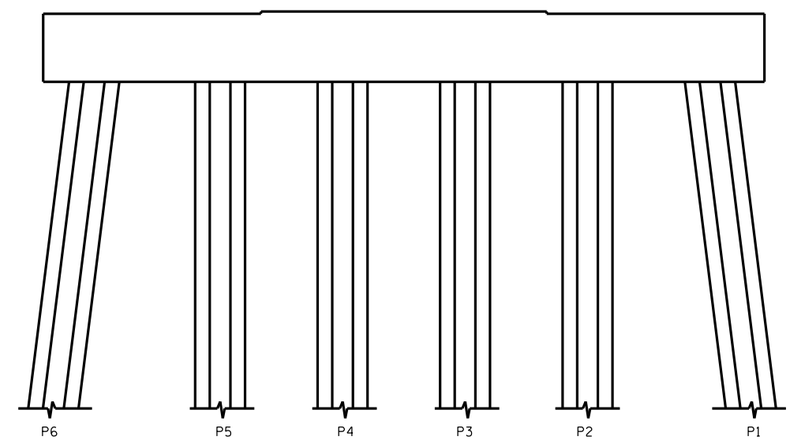
END VIEW
NORTH SIDE



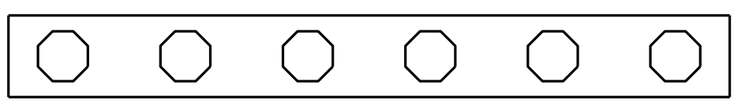

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 271

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-312 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:43
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pbryant

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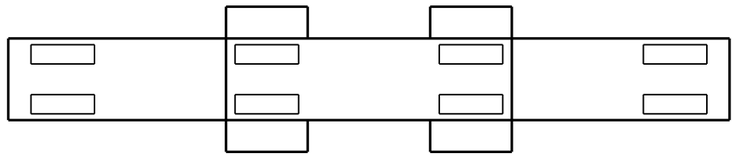
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

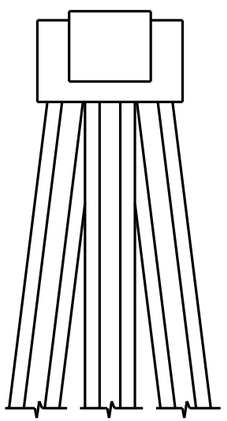
## REPAIR QUANTITY TABLE

| REPAIRS BENT 272 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.0 | 1.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

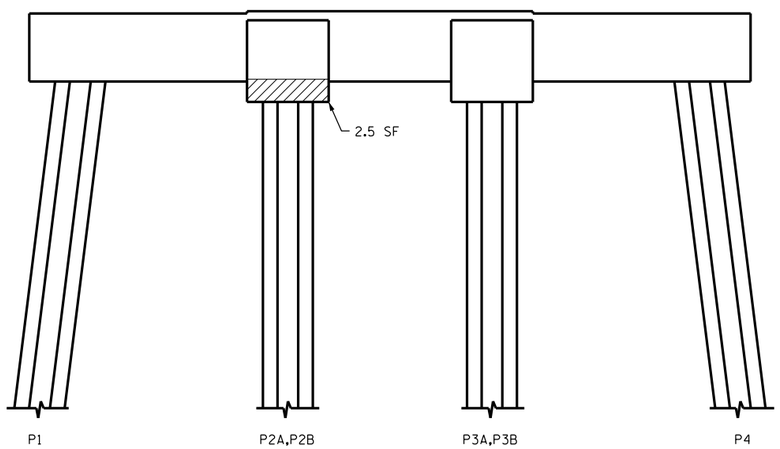
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



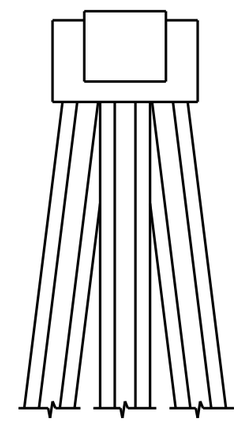

PLAN
TOP OF CAP



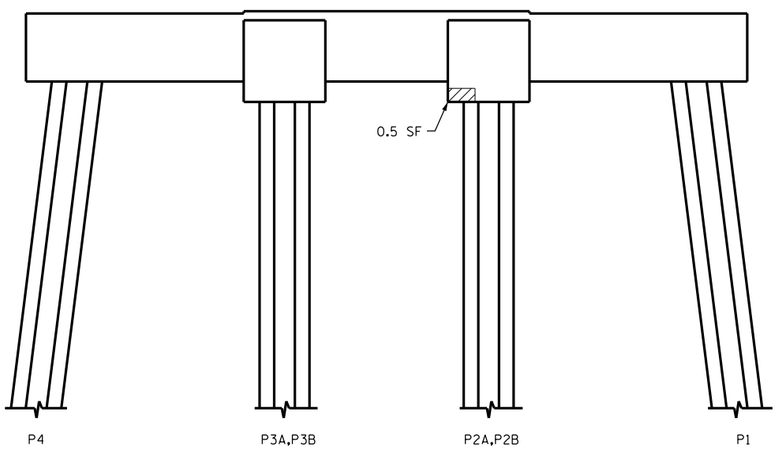
END VIEW
NORTH SIDE



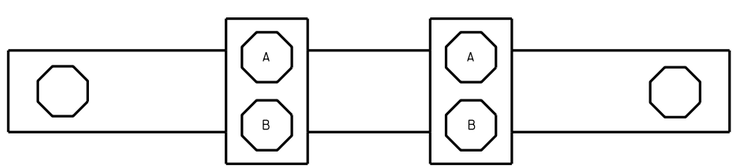

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 272

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-313 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:44
R:\Structures\401_021_B5936_SMU_S9 THRU 399_BT.dgn
pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

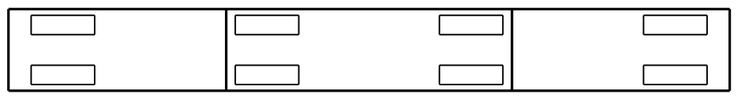
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

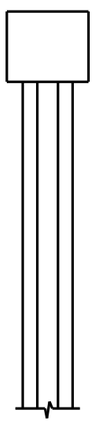
## REPAIR QUANTITY TABLE

| REPAIRS BENT 273 | 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 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

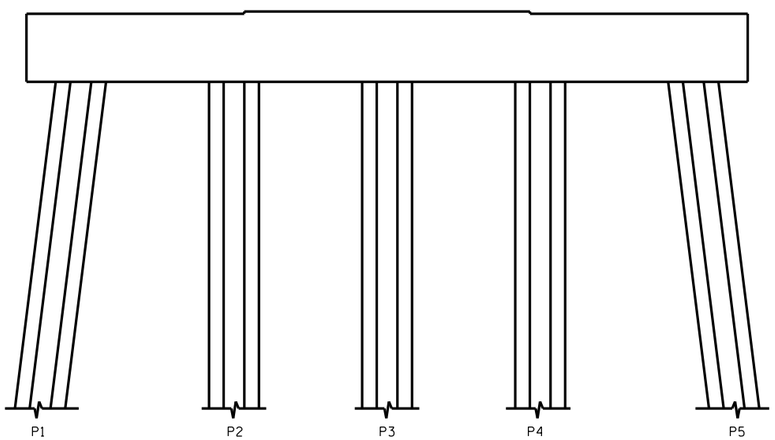
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



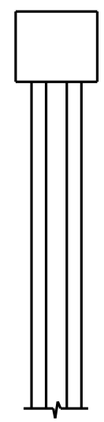

PLAN
TOP OF CAP



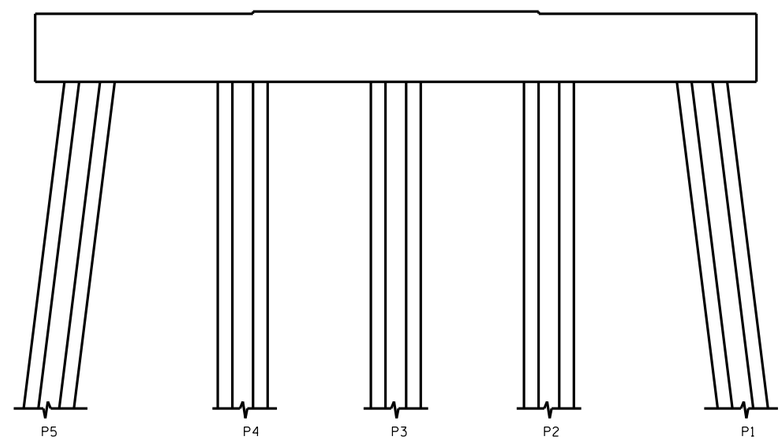
END VIEW
NORTH SIDE



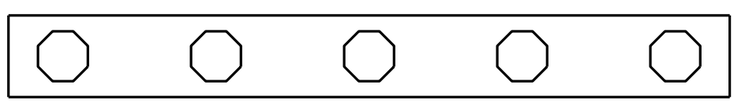

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE




PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 273

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-314 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:45
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

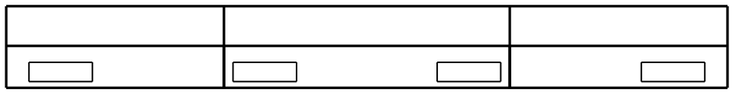
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

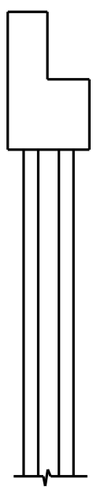
| REPAIRS BENT 274 | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

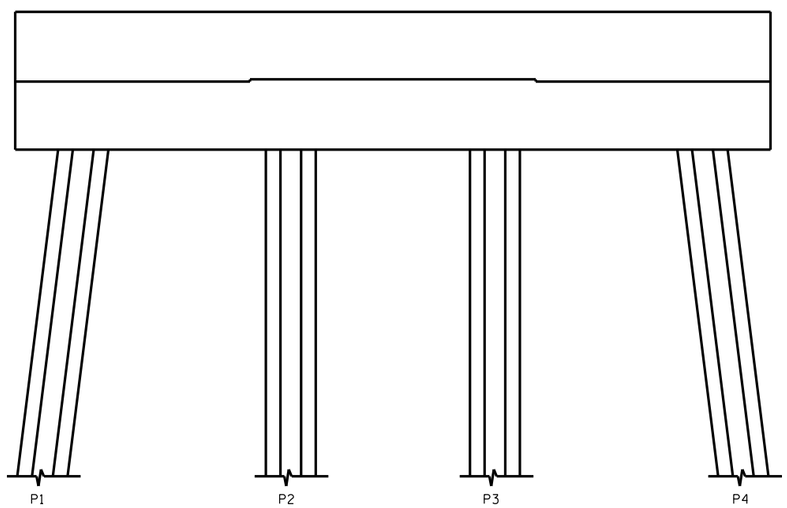


SPAN 275
SPAN 274

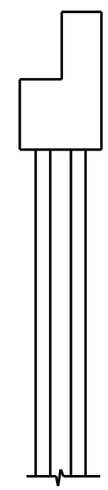
PLAN
TOP OF CAP



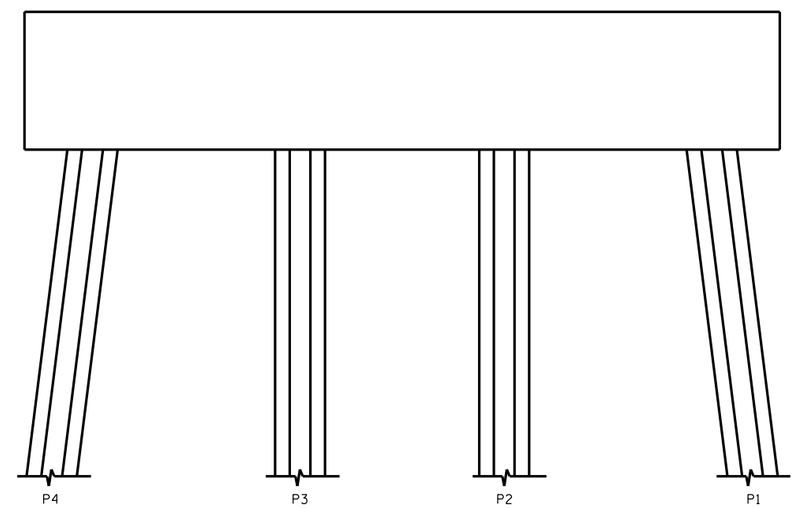
END VIEW
NORTH SIDE



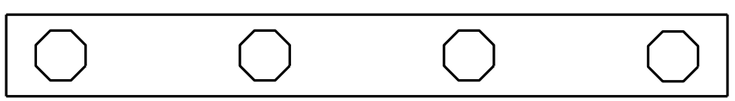

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE




ELEVATION
EAST SIDE



SPAN 274
SPAN 275

PLAN
BOTTOM OF CAP

NO REPAIRS 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. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 274

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-315 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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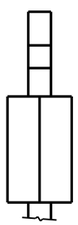
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

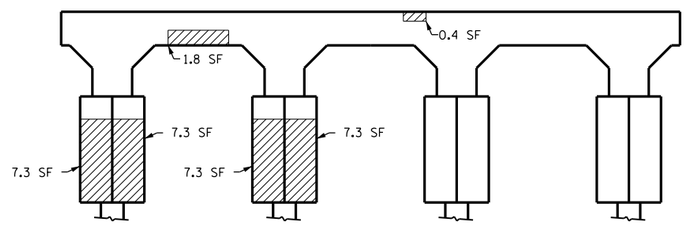
## REPAIR QUANTITY TABLE

| REPAIRS BENT 1-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 4.9 | 2.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 29.4 | 12.3 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

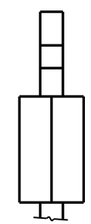
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



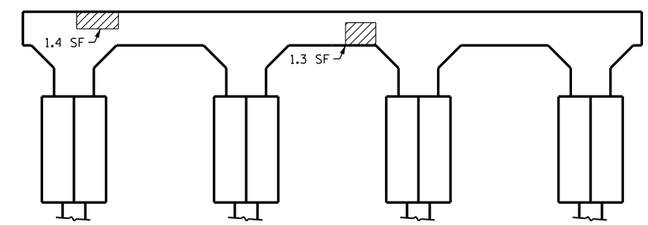
NORTH FACE



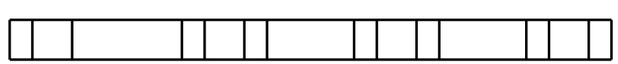

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 1-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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Paul Bryant
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8/11/2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-316 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
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21-JUN-2016 09:46
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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

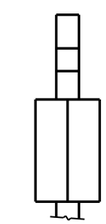
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

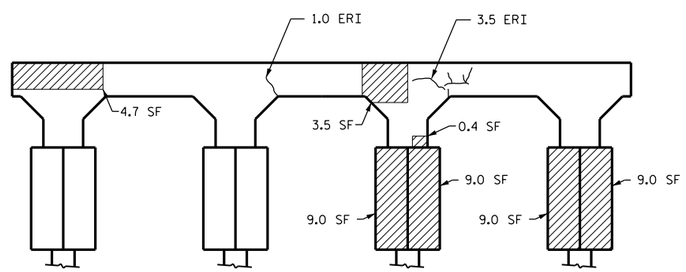
## REPAIR QUANTITY TABLE

| REPAIRS BENT 2-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 11.1 | 4.6 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 36.0 | 15.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 4.5 | | |

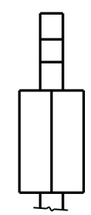
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



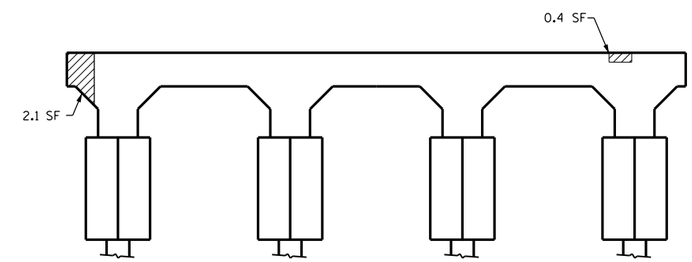
NORTH FACE



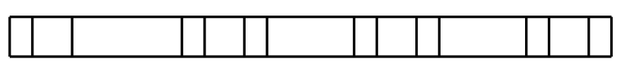

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
8/11/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 2-S

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-317 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

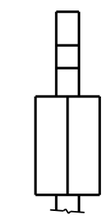
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

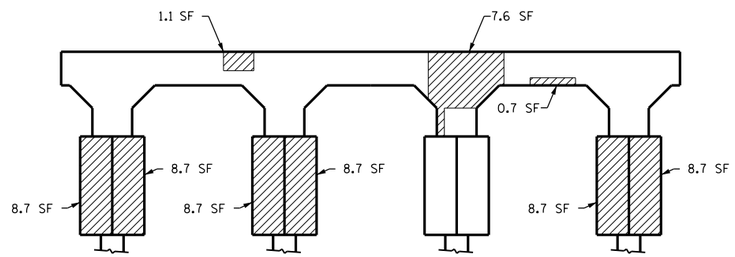
## REPAIR QUANTITY TABLE

| REPAIRS BENT 3-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 16.5 | 6.9 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 51.9 | 21.6 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

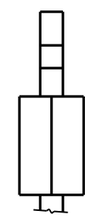
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



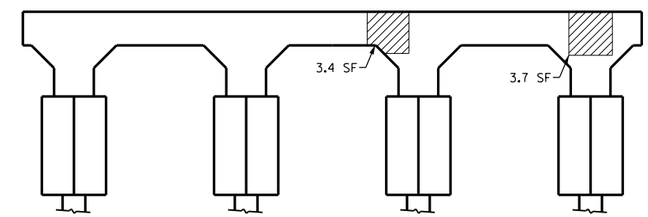
NORTH FACE



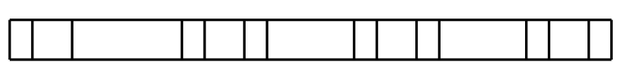

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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Paul Bryant
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8/11/2016

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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-318 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:47
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pbryant

## NOTES:

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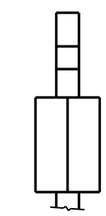
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

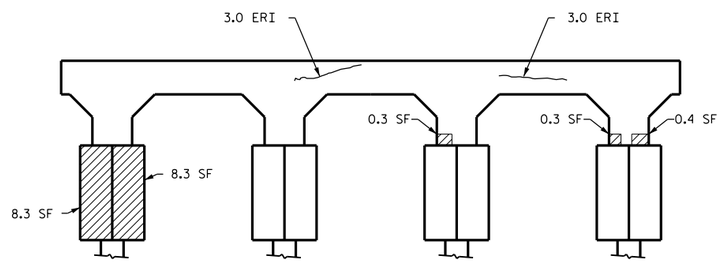
## REPAIR QUANTITY TABLE

| REPAIRS BENT 4-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 1.7 | 0.7 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 16.7 | 7.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 6.0 | | |

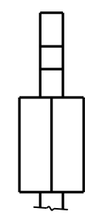
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



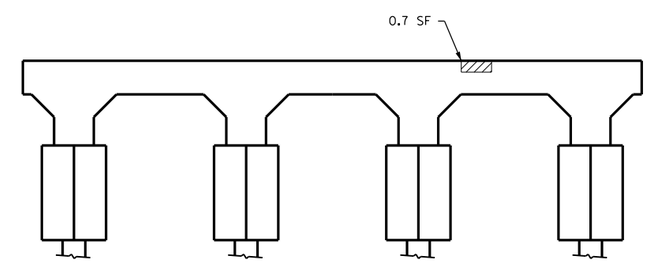
NORTH FACE



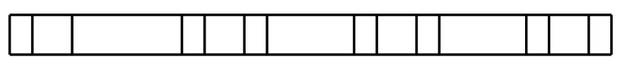

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4-S

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-319 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 14:29
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

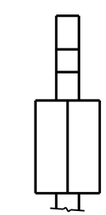
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

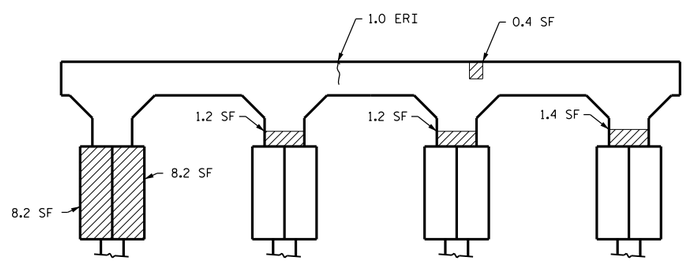
## REPAIR QUANTITY TABLE

| REPAIRS BENT 5-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 4.6 | 1.9 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 32.6 | 13.6 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 1.0 | | |

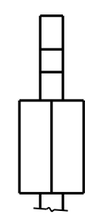
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



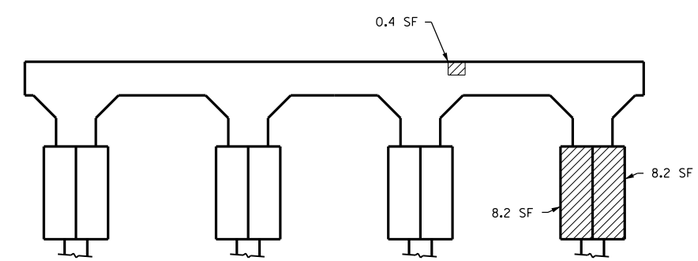
NORTH FACE



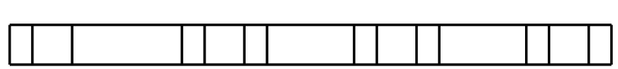

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 5-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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Paul Bryant
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8/11/2016

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-320 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

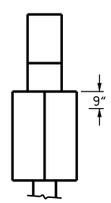
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

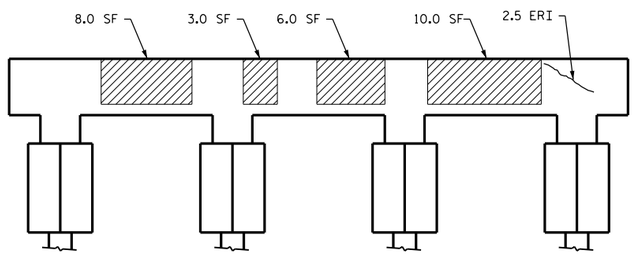
## REPAIR QUANTITY TABLE

| REPAIRS BENT 6-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 41.8 | 17.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 2.5 | | |

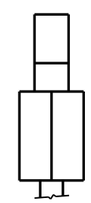
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



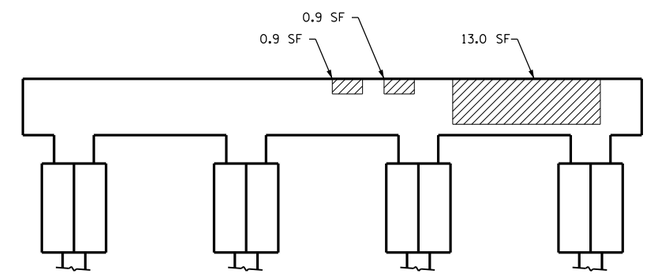

NORTH FACE



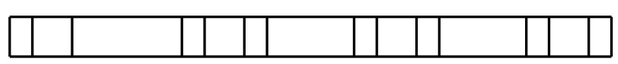

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION
BENT 6-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-321 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:49
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

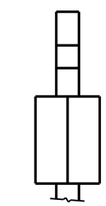
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

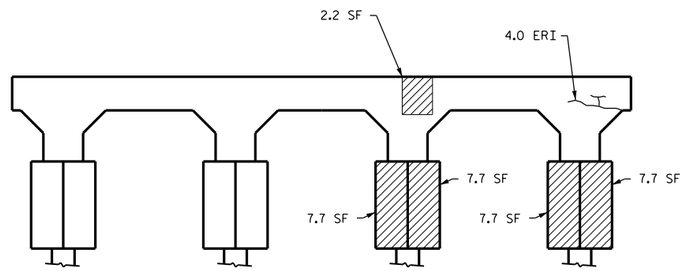
## REPAIR QUANTITY TABLE

| REPAIRS BENT 7-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 6.6 | 2.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 30.6 | 12.8 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 7.5 | | |

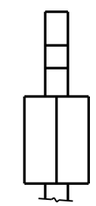
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



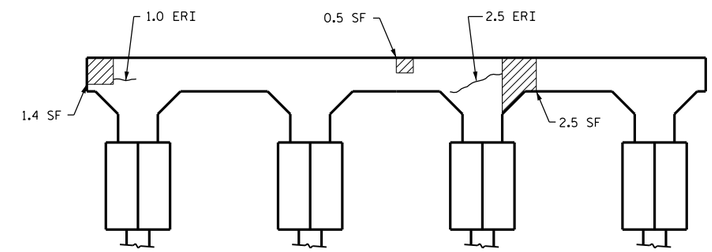
NORTH FACE



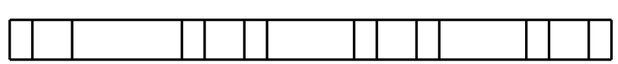

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 7-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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8/11/2016

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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-322 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

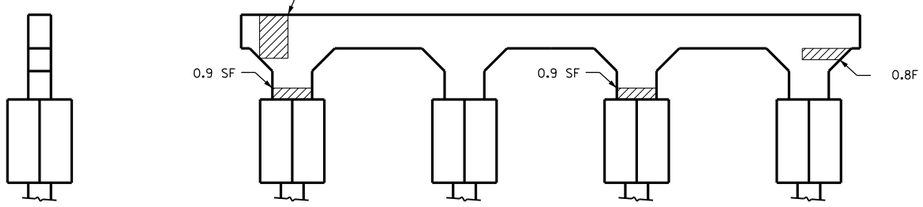
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

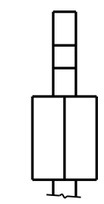
| REPAIRS BENT 8-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 10.9 | 4.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 5.0 | | |

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.

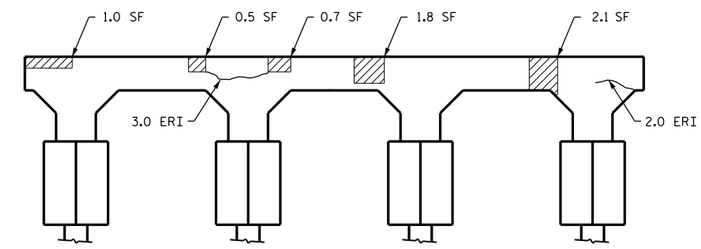



NORTH FACE

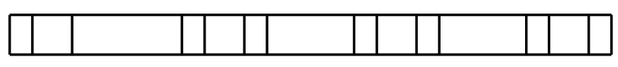
WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 8-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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Paul Bryant
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8/11/2016

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SHEET NO. S-323
TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

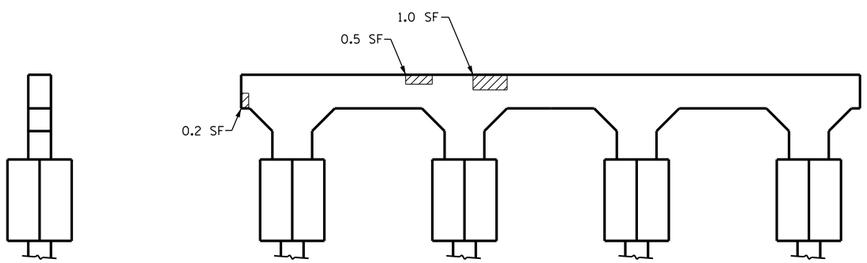
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

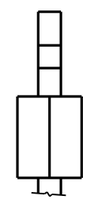
| REPAIRS BENT 9-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 4.1 | 1.7 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 3.0 | | |

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.

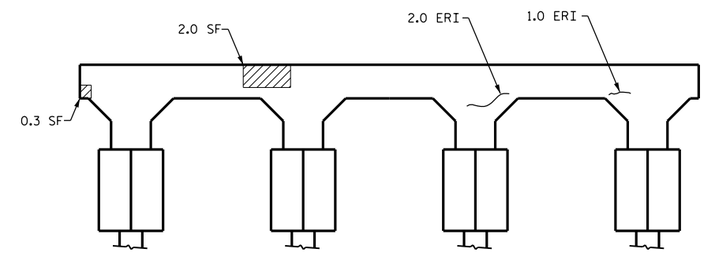



NORTH FACE

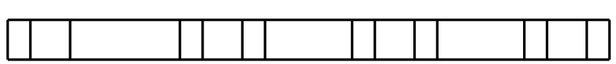
WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by: Paul Bryant
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8/11/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 9-S

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| 1 | | | 3 | | |
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SHEET NO. S-324
TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

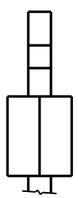
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

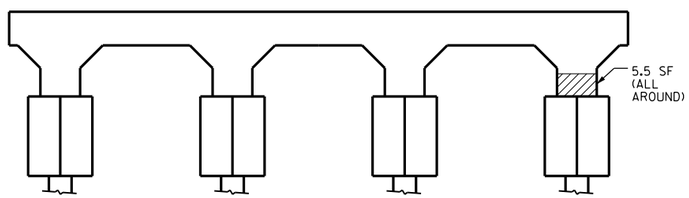
## REPAIR QUANTITY TABLE

| REPAIRS BENT 10-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 8.4 | 3.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 2.0 | | |

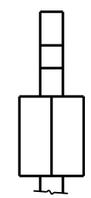
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



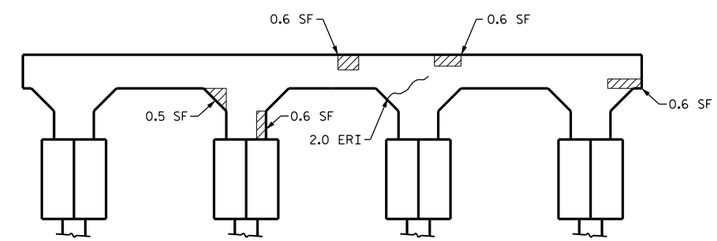
NORTH FACE



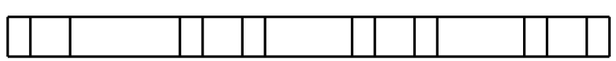

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 10-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| NO. | BY: | DATE: | NO. | BY: | DATE: |
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| 2 | | | 4 | | |

SHEET NO. S-325
TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:53
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

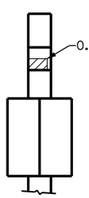
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

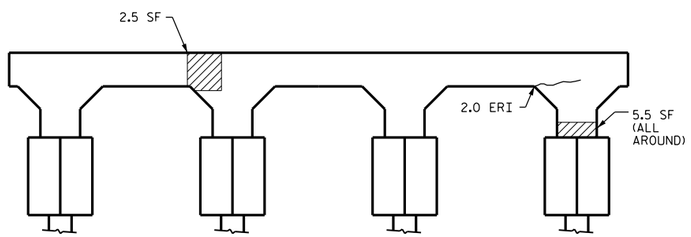
## REPAIR QUANTITY TABLE

| REPAIRS BENT 11-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 15.7 | 6.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 3.0 | | |

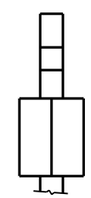
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



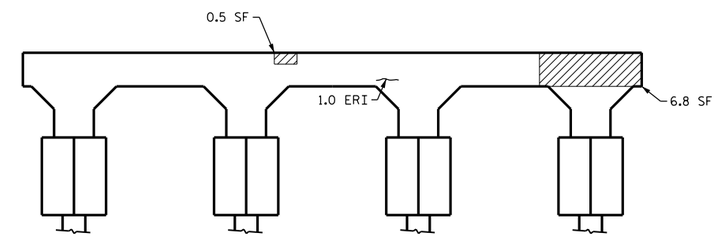

NORTH FACE



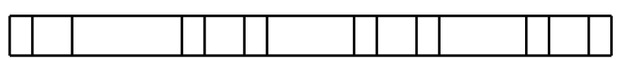

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 11-S

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

SHEET NO. S-326
TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:54
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

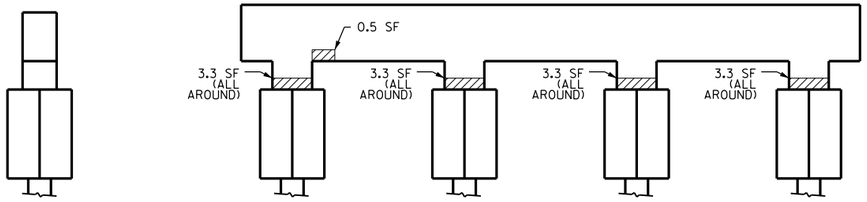
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

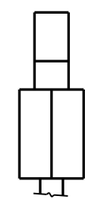
| REPAIRS BENT 12-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 13.7 | 5.7 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

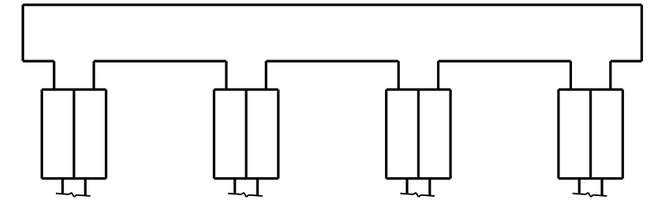



NORTH FACE

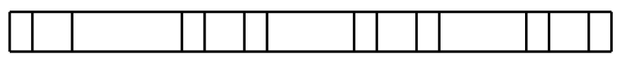
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
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8/11/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION
BENT 12-S

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-327 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 09:59
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## NOTES:

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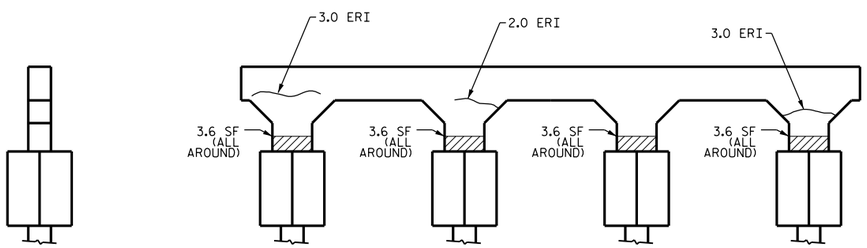
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

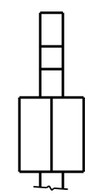
| REPAIRS BENT 13-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 19.2 | 8.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 10.0 | | |

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.

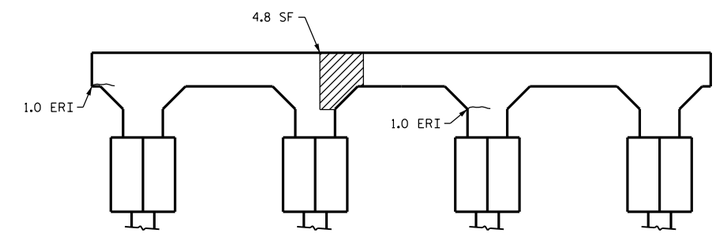



NORTH FACE

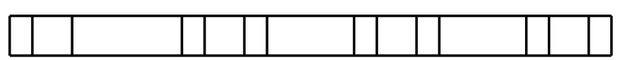
WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 13-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
8/11/2016
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| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-328 |
| 1 | | | 3 | | | TOTAL SHEETS | 374 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:00
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## NOTES:

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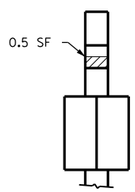
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

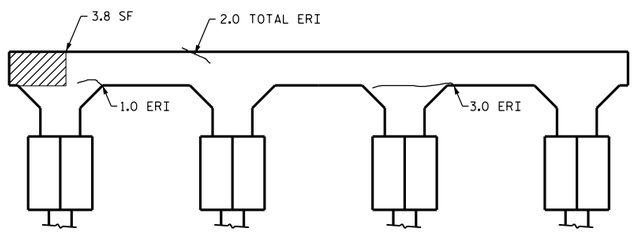
## REPAIR QUANTITY TABLE

| REPAIRS BENT 14-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 9.9 | 4.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 6.0 | | |

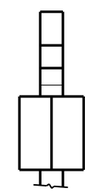
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



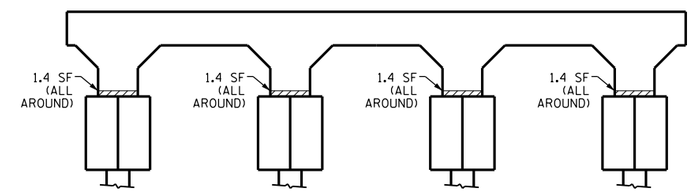

NORTH FACE



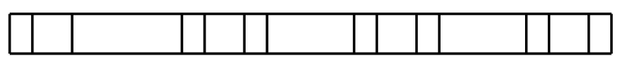

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 14-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-329 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:01
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pbryant

## NOTES:

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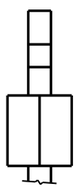
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

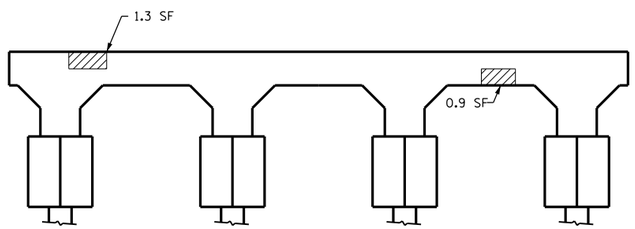
## REPAIR QUANTITY TABLE

| REPAIRS BENT 15-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 17.7 | 7.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 3.0 | | |

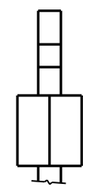
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



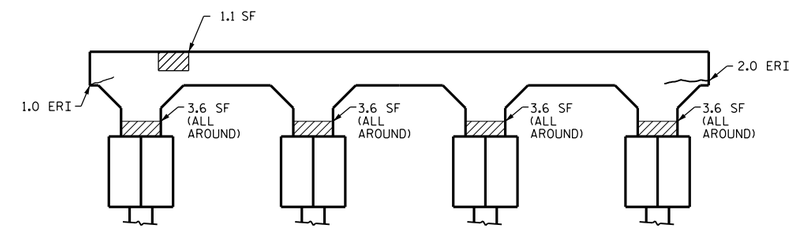
NORTH FACE



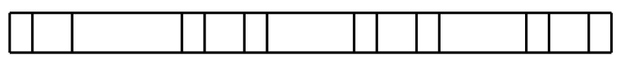

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 15-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
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8/11/2016

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| REVISIONS | | | | | | |
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SHEET NO. S-330

TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:02
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

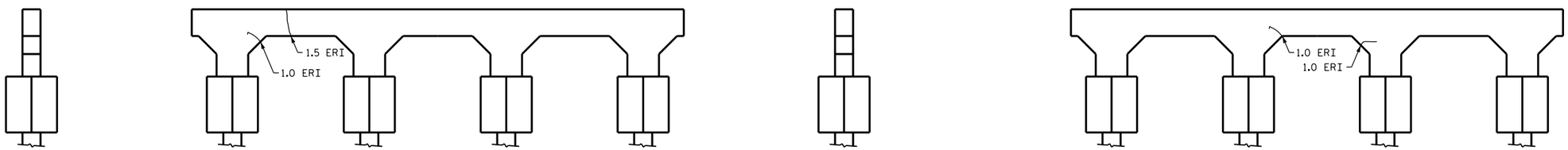
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 16-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 4.5 | | |

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.

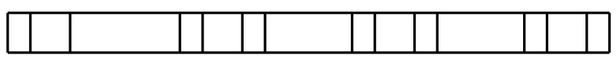



NORTH FACE

WEST FACE

SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 16-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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Paul Bryant
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8/11/2016

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| REVISIONS | | | | | | SHEET NO. |
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| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

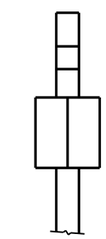
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

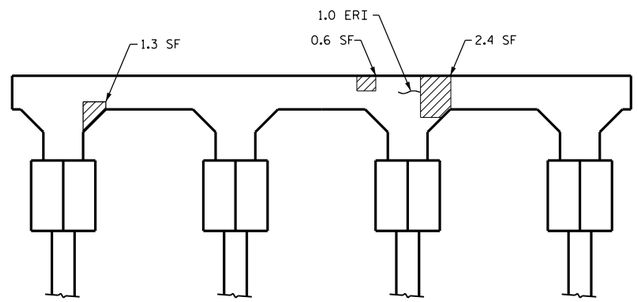
## REPAIR QUANTITY TABLE

| REPAIRS BENT 17-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 4.3 | 1.8 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 2.0 | | |

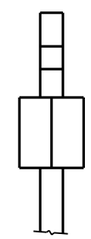
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



NORTH FACE




WEST FACE



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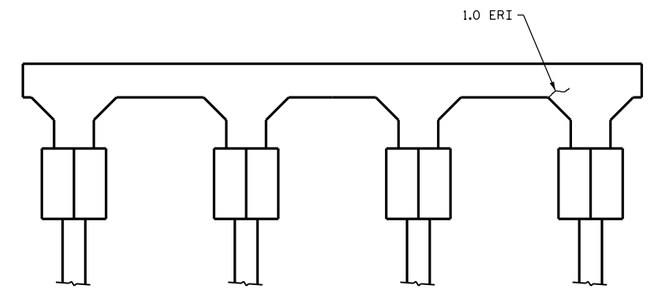
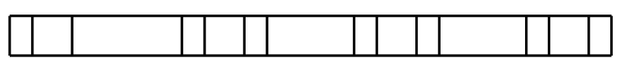



EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 17-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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Paul Bryant
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8/11/2016

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SHEET NO. S-332

TOTAL SHEETS 394

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

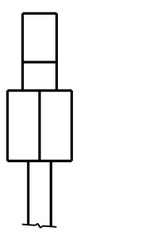
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

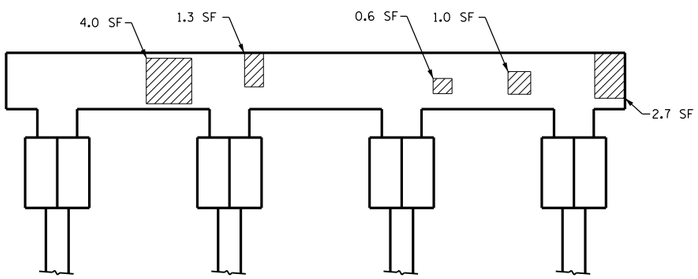
## REPAIR QUANTITY TABLE

| REPAIRS BENT 18-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 19.5 | 8.1 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 1.0 | | |

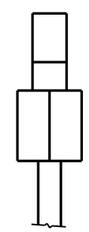
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



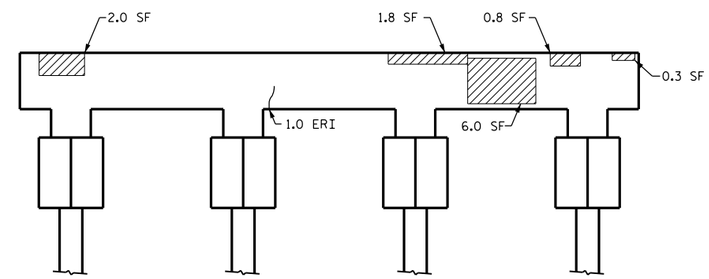
NORTH FACE



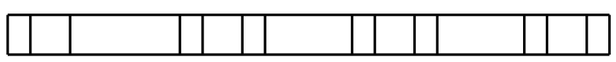

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
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8/11/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION
BENT 18-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-333 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

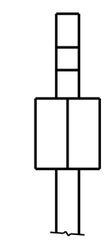
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

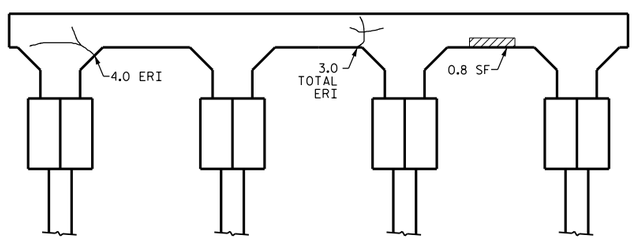
## REPAIR QUANTITY TABLE

| REPAIRS BENT 19-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 22.8 | 9.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 13.6 | | |

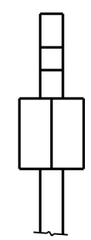
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



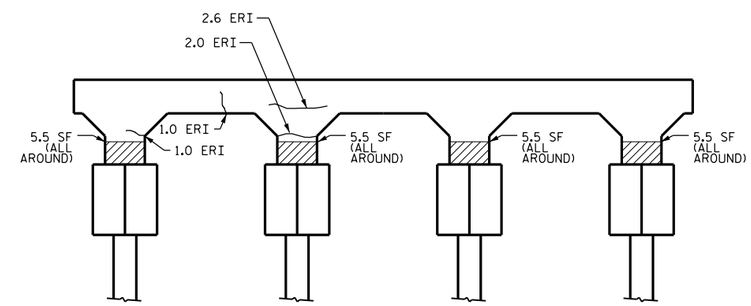
NORTH FACE



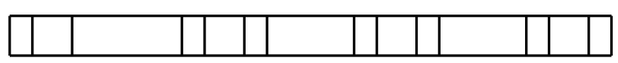

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 19-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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Paul Bryant
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| NO. | BY: | DATE: | NO. | BY: | DATE: | S-334 |
| 1 | | | 3 | | | TOTAL SHEETS |
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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

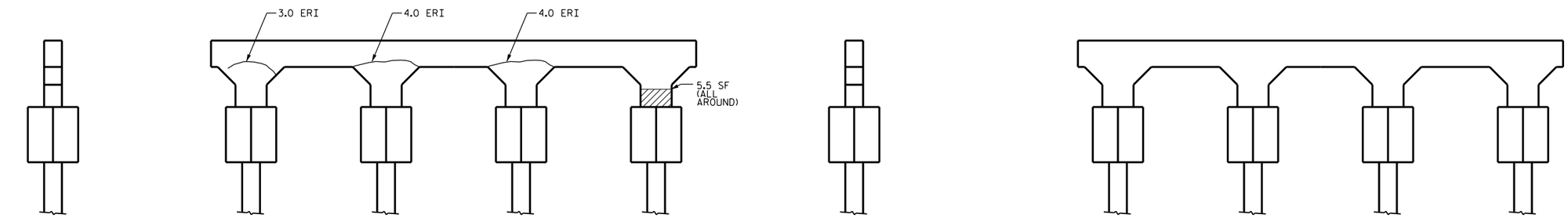
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 20-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.5 | 2.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 11.0 | | |

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.

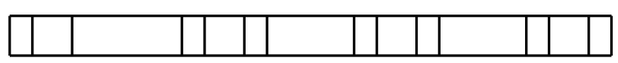



NORTH FACE

WEST FACE

SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 20-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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Paul Bryant
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SHEET NO. S-335
TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## NOTES:

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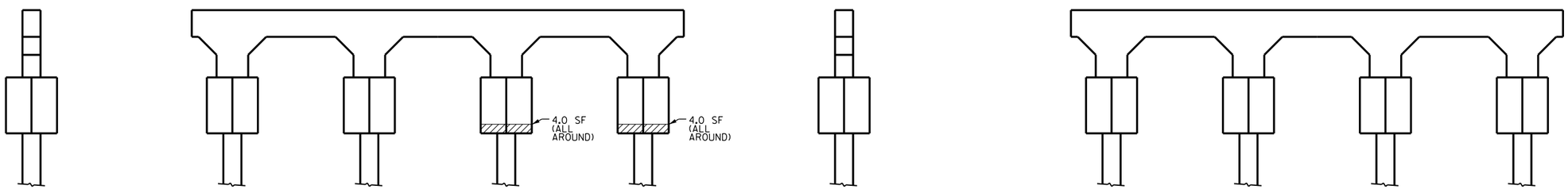
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

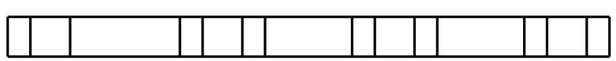
## REPAIR QUANTITY TABLE

| REPAIRS BENT 21-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 8.0 | 3.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.




NORTH FACE — WEST FACE — SOUTH FACE — EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 21-S

| REVISIONS | | | | | | | | SHEET NO. |
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| 1 | | | 3 | | | | | TOTAL SHEETS |
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CHECKED BY : W. M. CLARKE DATE : 4-2016

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pbryant

## NOTES:

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FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

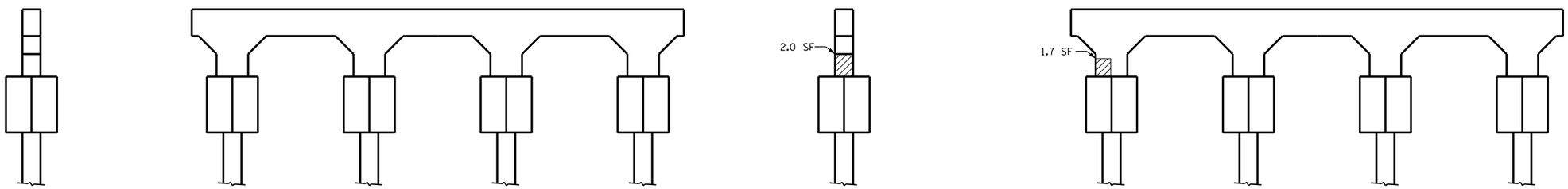
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 22-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.7 | 1.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

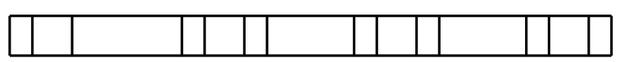



NORTH FACE

WEST FACE

SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 22-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-337 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:08
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

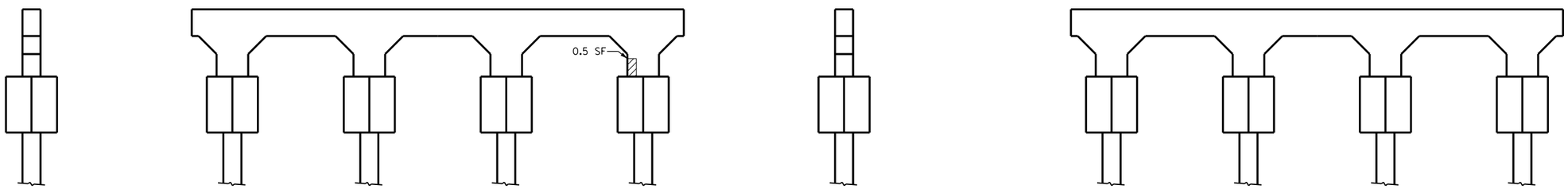
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 23-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.5 | 0.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

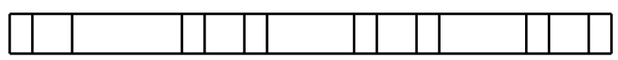



NORTH FACE

WEST FACE

SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 23-S

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-338 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:09
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

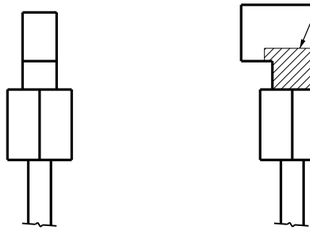
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

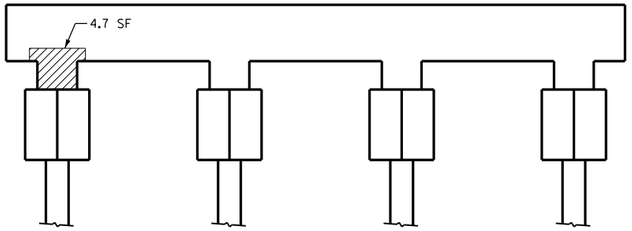
## REPAIR QUANTITY TABLE

| REPAIRS BENT 24-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 6.2 | 2.6 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

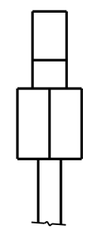
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



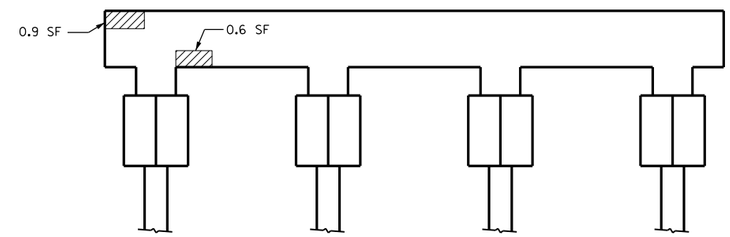
NORTH FACE



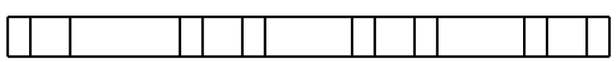

WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION
BENT 24-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

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| REVISIONS | | | | | | |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
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SHEET NO. S-339
TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:09
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

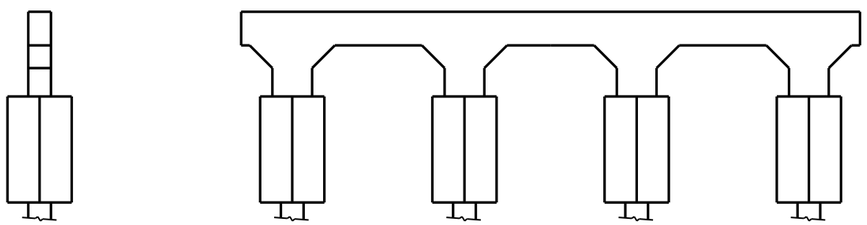
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 25-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

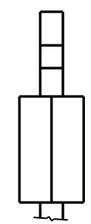
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



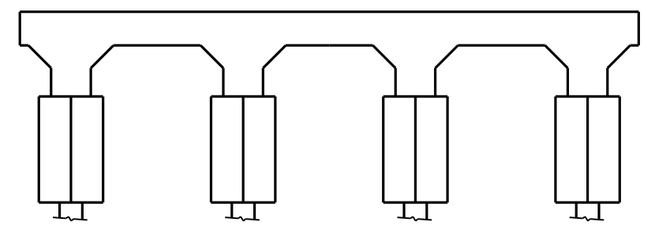
NORTH FACE



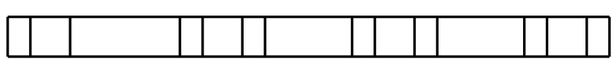
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
8/11/2016 ...CF1B77448...

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 25-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-340 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:19
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

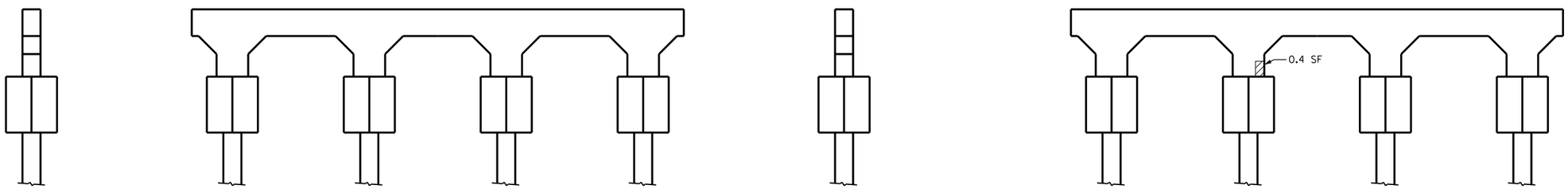
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

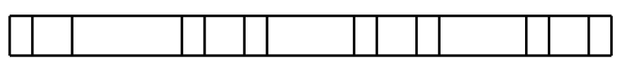
## REPAIR QUANTITY TABLE

| REPAIRS BENT 26-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.4 | 0.2 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.




NORTH FACE — WEST FACE — SOUTH FACE — EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 26-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

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8/11/2016

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-341 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

15-JUL-2016 15:37
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

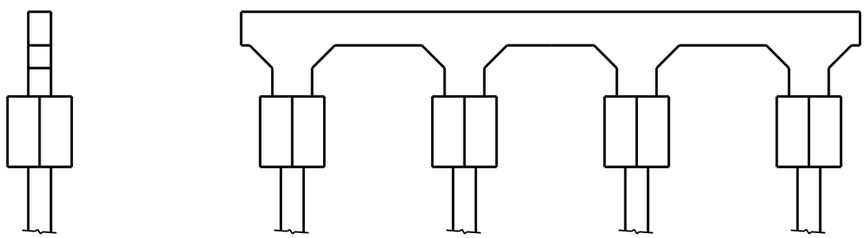
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

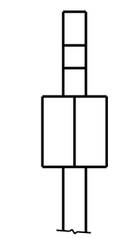
| REPAIRS BENT 27-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 3.7 | 1.5 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

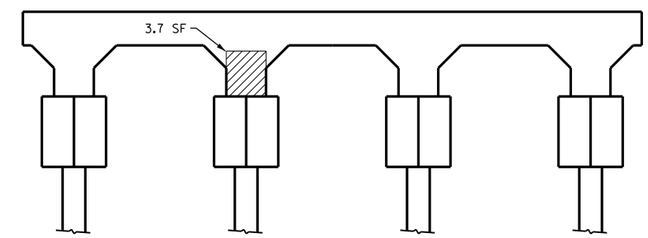


NORTH FACE

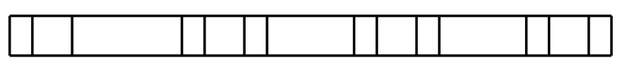
WEST FACE



SOUTH FACE




EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 27-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
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8/11/2016

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-342 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

15-JUL-2016 15:42
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

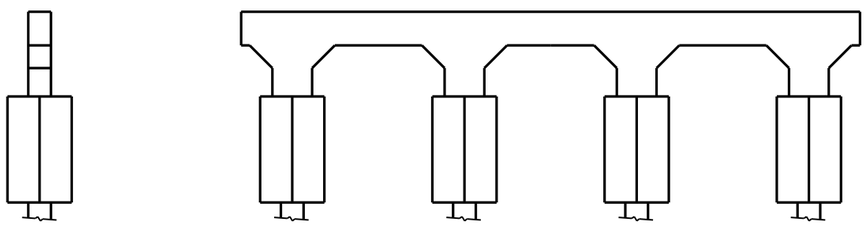
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

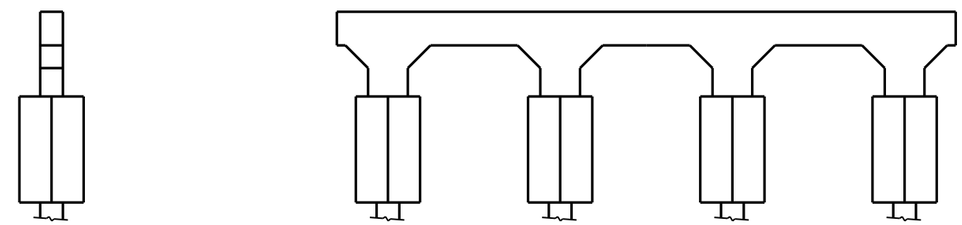
| REPAIRS BENT 28-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



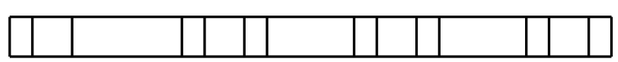
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 28-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S- 343 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:25
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

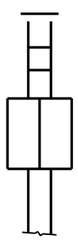
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

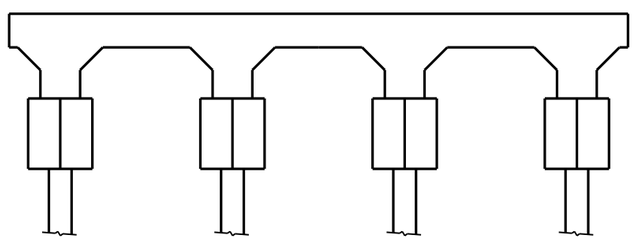
## REPAIR QUANTITY TABLE

| REPAIRS BENT 29-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.8 | 0.3 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

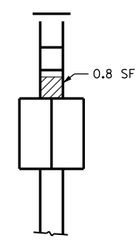
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



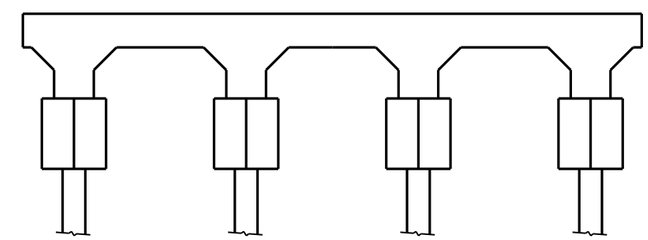
NORTH FACE



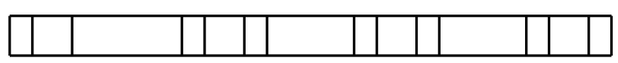
WEST FACE




SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

- SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 29-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. S-344

TOTAL SHEETS 394

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:26
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

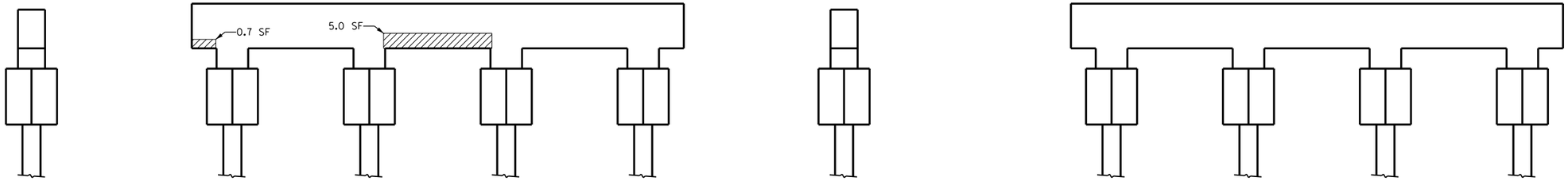
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 30-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 5.7 | 2.4 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

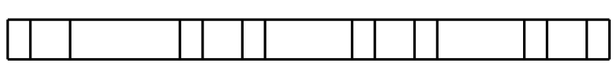



NORTH FACE

WEST FACE

SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

▨ - SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION
BENT 30-S

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-345 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 15:05
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

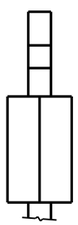
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

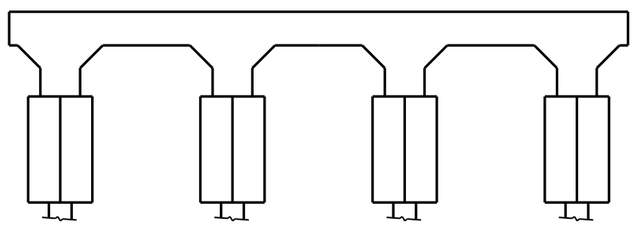
## REPAIR QUANTITY TABLE

| REPAIRS BENT 31-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

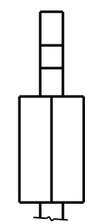
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



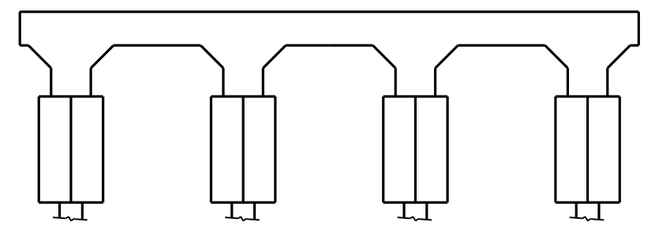
NORTH FACE



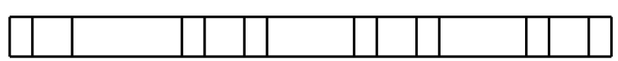
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 31-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-346 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 15:06
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

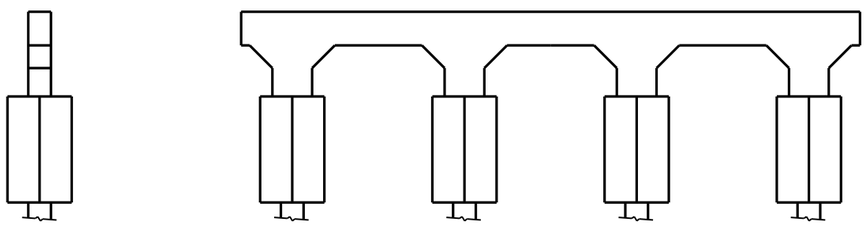
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

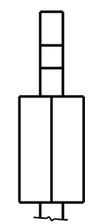
| REPAIRS BENT 32-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

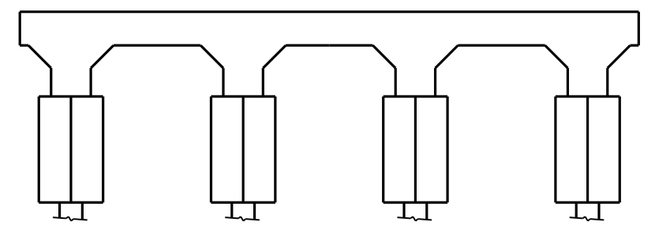


NORTH FACE

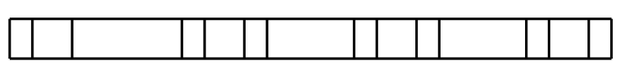
WEST FACE



SOUTH FACE



EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 32-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-347 |
| 1 | | | 3 | | | | | SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

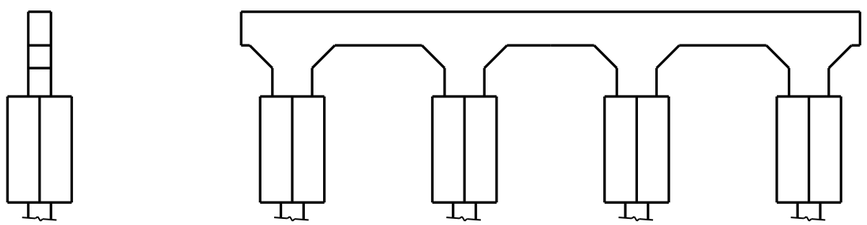
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 33-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

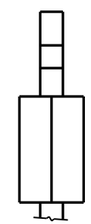
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



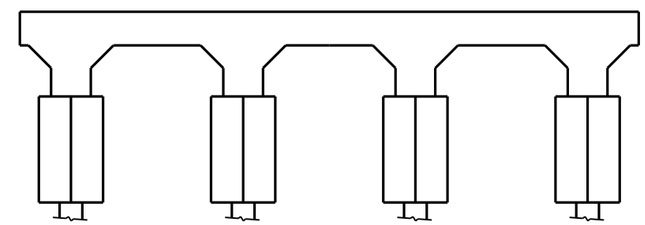
NORTH FACE



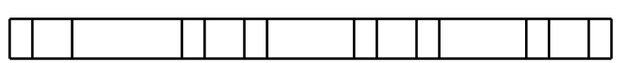
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 33-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-348 |
| 1 | | | 3 | | | | | SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:30
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

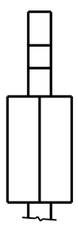
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

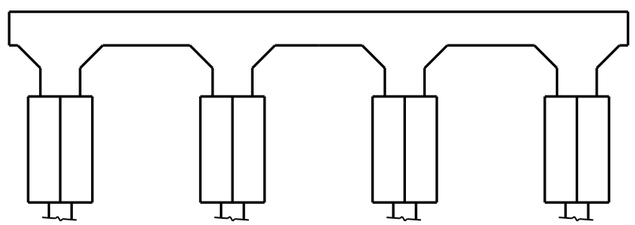
## REPAIR QUANTITY TABLE

| REPAIRS BENT 34-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

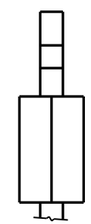
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



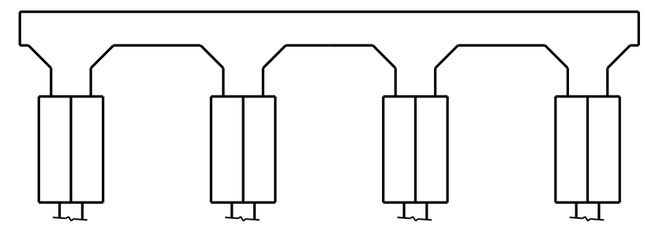
NORTH FACE



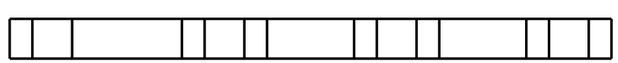
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET OF

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 34-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-349 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:30
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

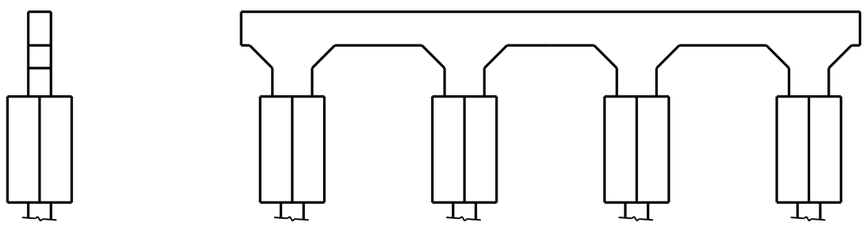
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 35-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

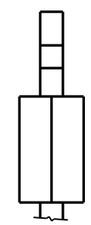
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



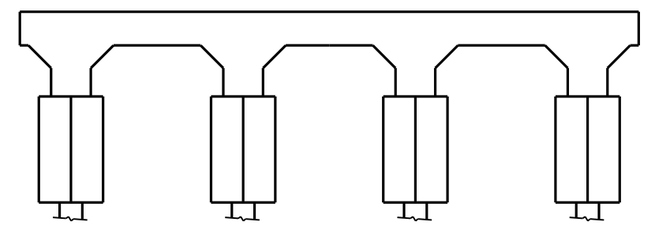
NORTH FACE



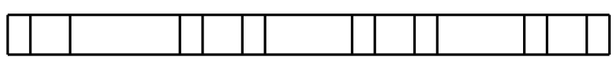
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 35-S

| REVISIONS | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | S-350 |
| 1 | | | 3 | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:31
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

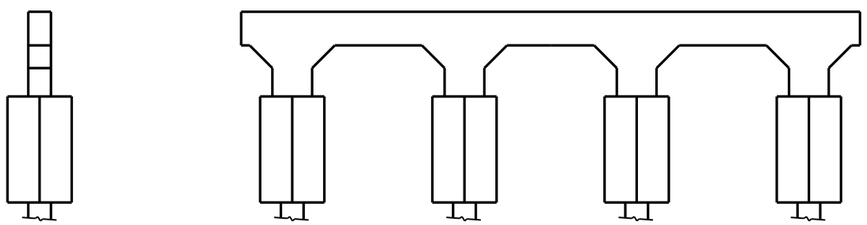
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

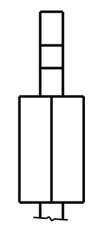
| REPAIRS BENT | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

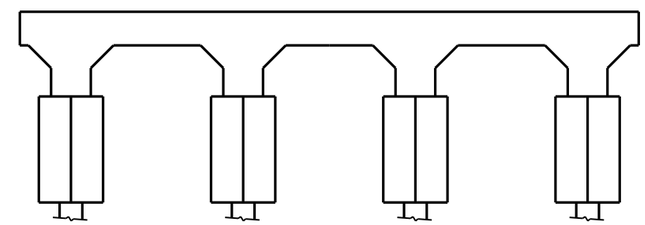


NORTH FACE

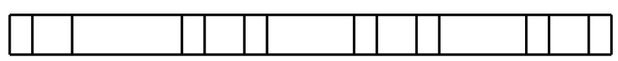
WEST FACE



SOUTH FACE



EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 36-S

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-351 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:32
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

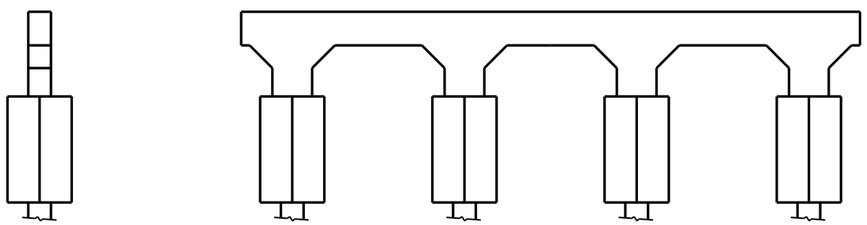
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

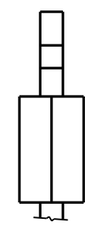
| REPAIRS BENT 37-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

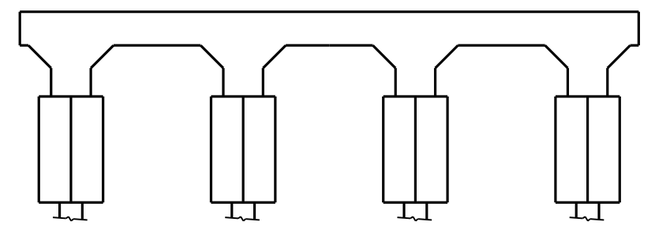


NORTH FACE

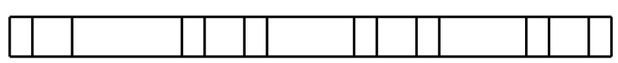
WEST FACE



SOUTH FACE



EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 37-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-352 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 374 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:35
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

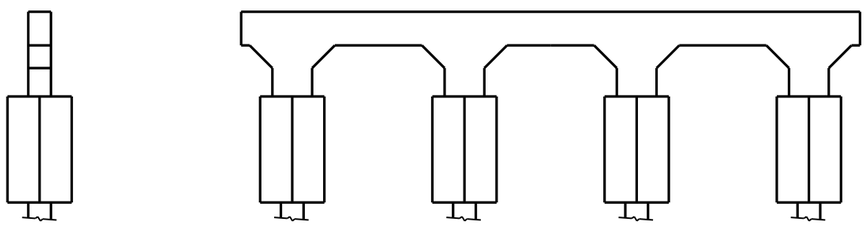
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 38-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

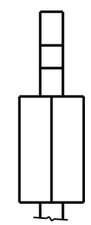
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



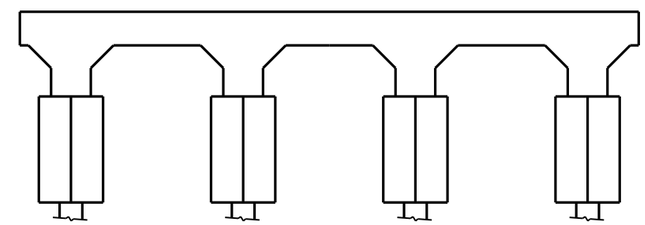
NORTH FACE



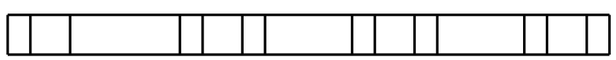
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 38-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-353 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:35
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

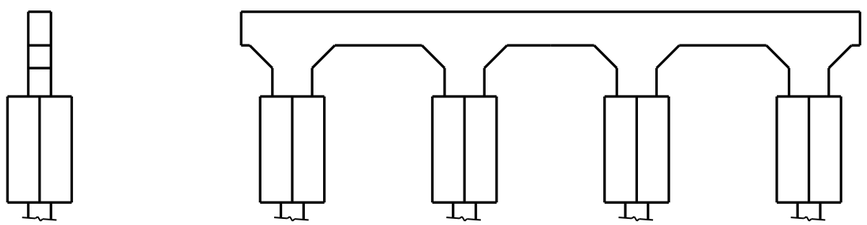
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

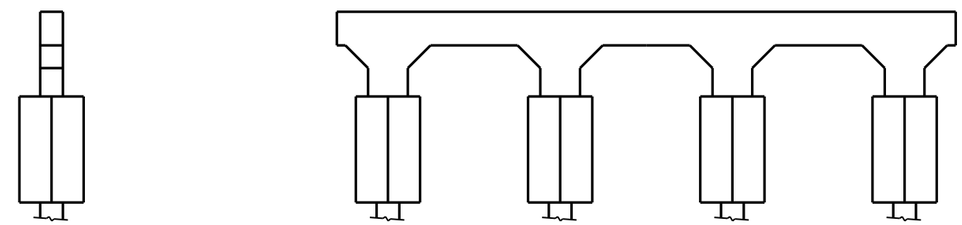
| REPAIRS BENT 39-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



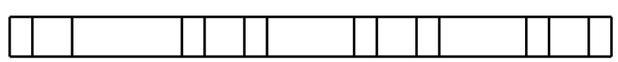
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 39-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-354 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:36
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pbryant

## 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.

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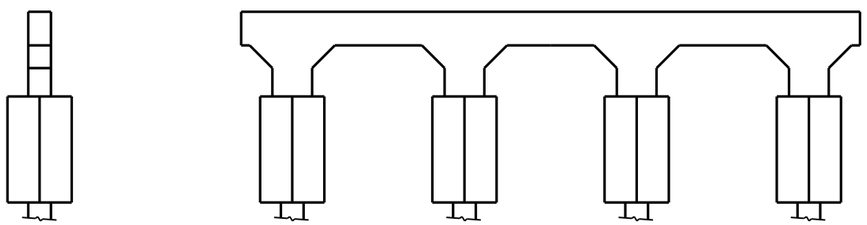
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

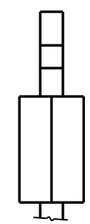
| REPAIRS BENT 40-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

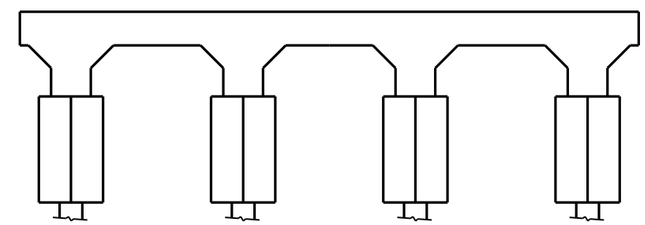


NORTH FACE

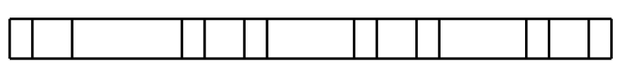
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET OF

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DocuSigned by:
Paul Bryant
8/11/2016 2653D2AF1B77448...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 40-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-355 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:36
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

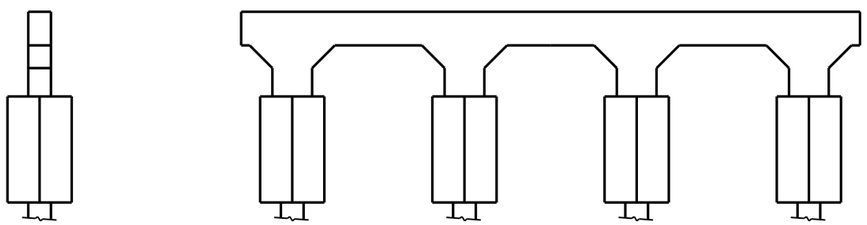
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

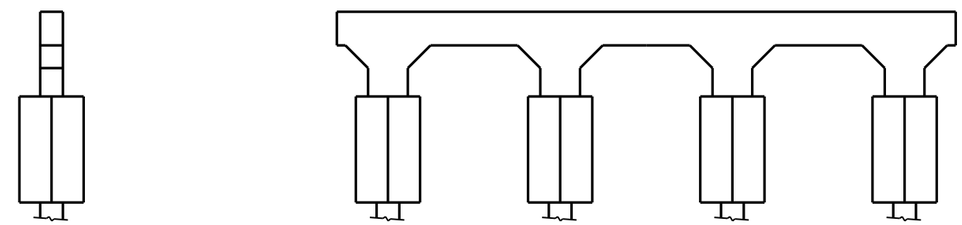
| REPAIRS BENT 41-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



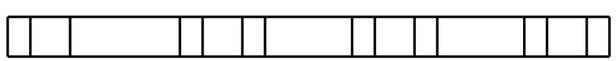
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 41-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-356 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:37
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

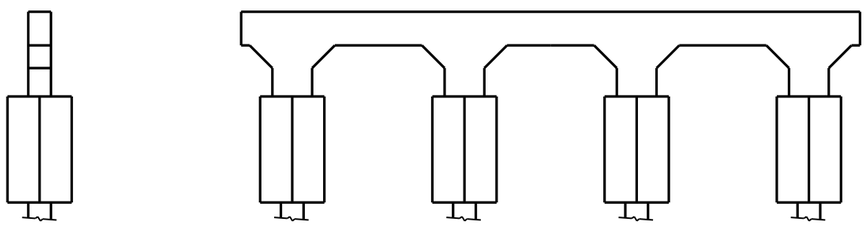
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 42-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

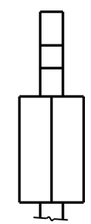
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



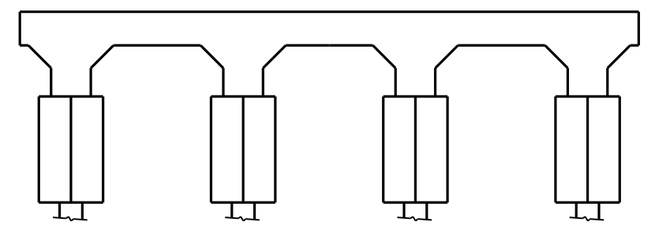
NORTH FACE



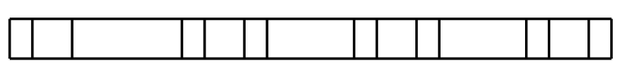
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 42-S

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-357 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:38
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

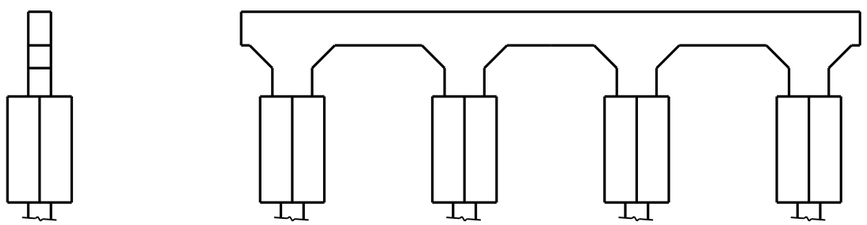
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 43-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

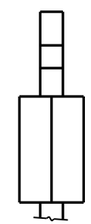
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



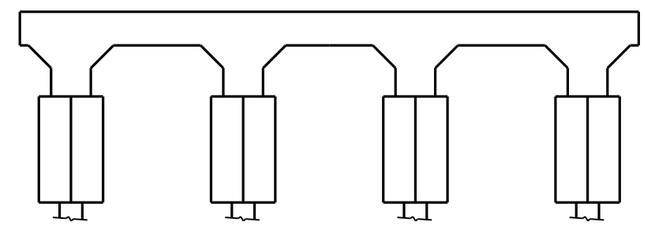
NORTH FACE



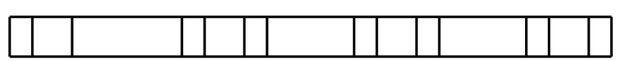
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 43-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-358 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 374 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:39
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## NOTES:

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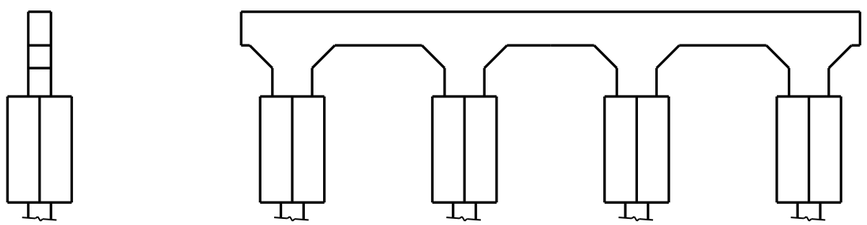
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 44-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

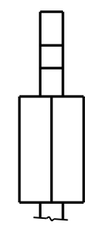
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



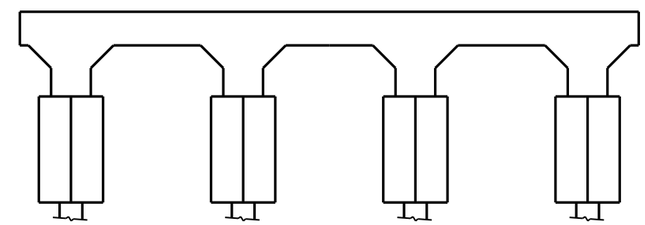
NORTH FACE



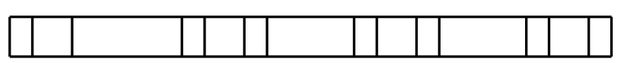
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 44-S

DocuSigned by:
Paul Bryant 8/11/2016
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-359 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:39
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## 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.

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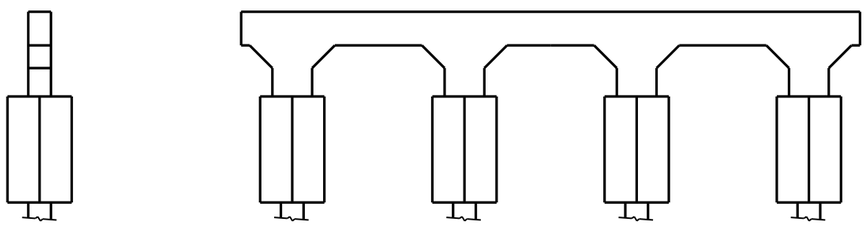
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

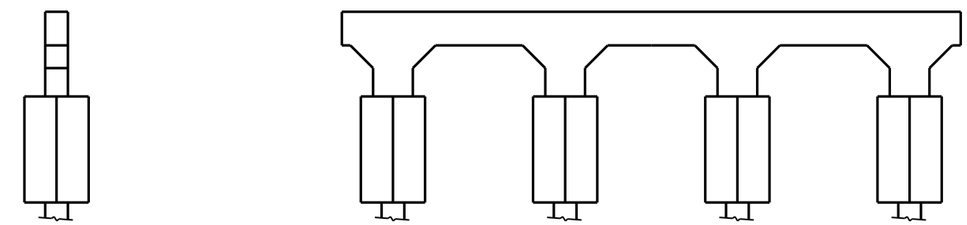
| REPAIRS BENT 45-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



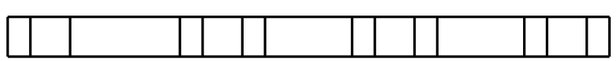
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

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DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 45-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-360 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

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pbryant

## NOTES:

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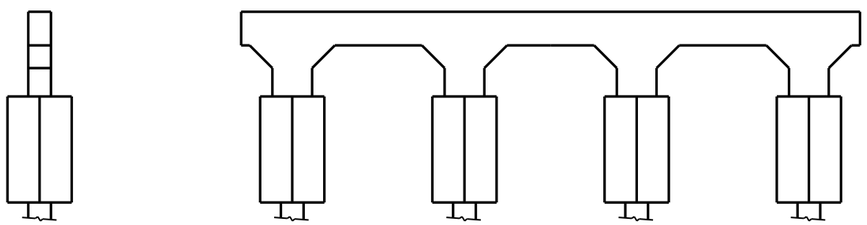
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

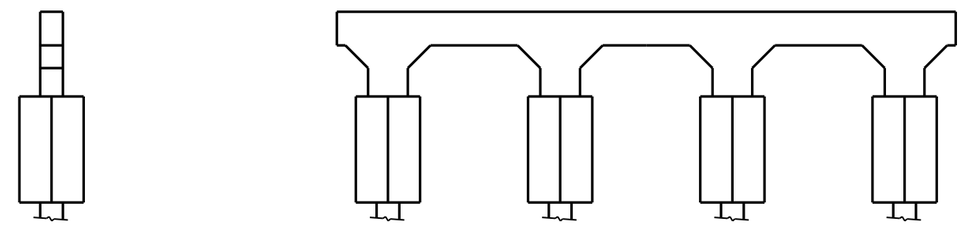
| REPAIRS BENT 46-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



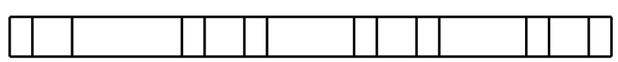
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET OF

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 46-S

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-361 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:41
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

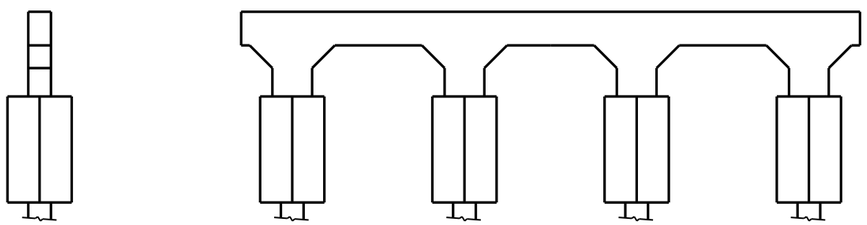
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

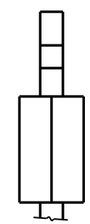
| REPAIRS BENT 47-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

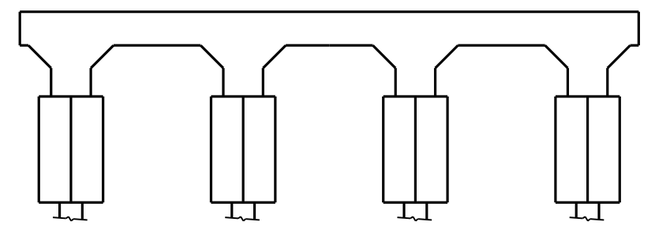


NORTH FACE

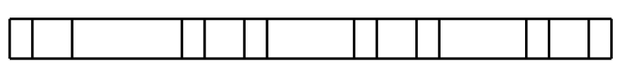
WEST FACE



SOUTH FACE



EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 47-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-362 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 14:47
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

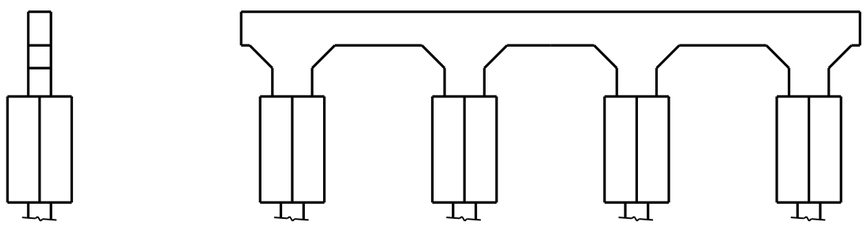
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 48-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

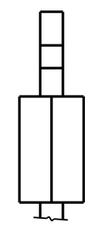
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



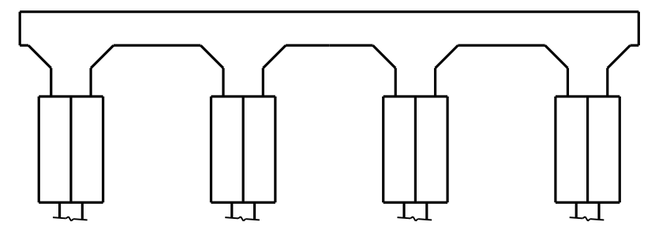
NORTH FACE



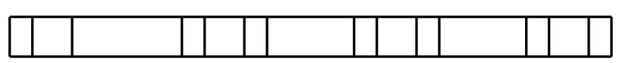
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 48-S

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-363 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:42
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

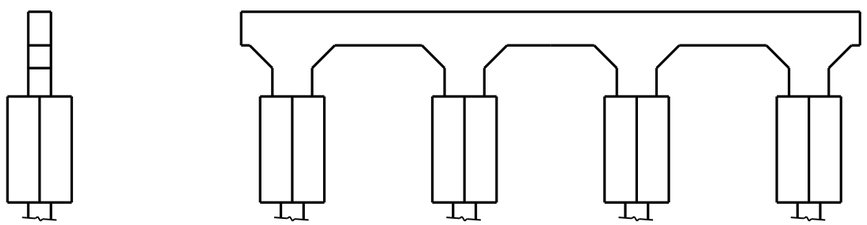
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

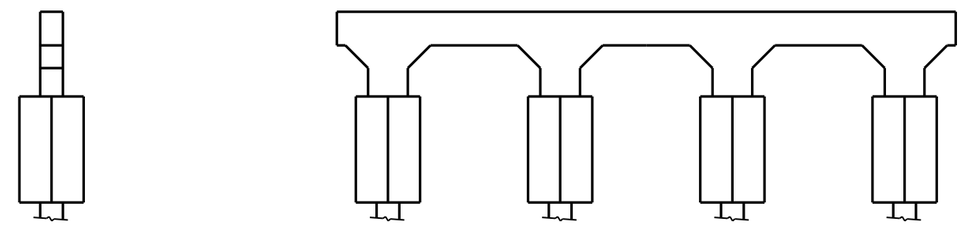
| REPAIRS BENT 49-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



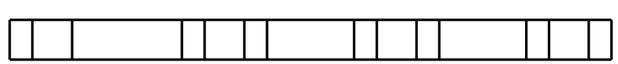
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 49-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-364 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:43
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

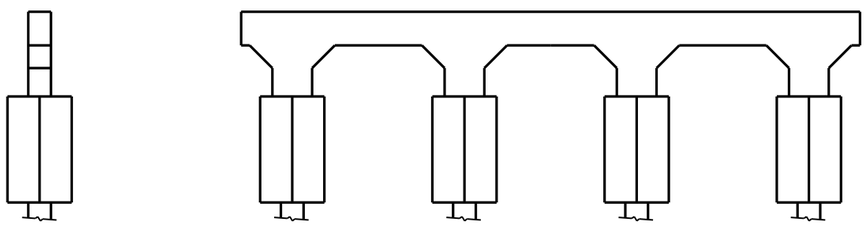
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

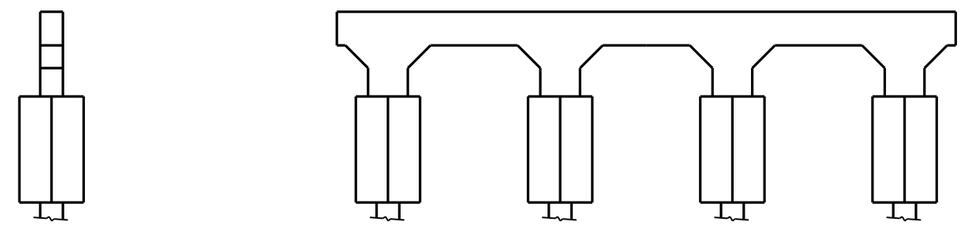
| REPAIRS BENT 50-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



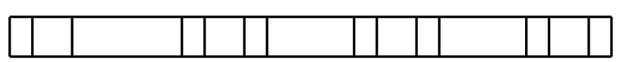
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 50-S

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-365 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:44
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

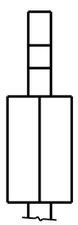
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

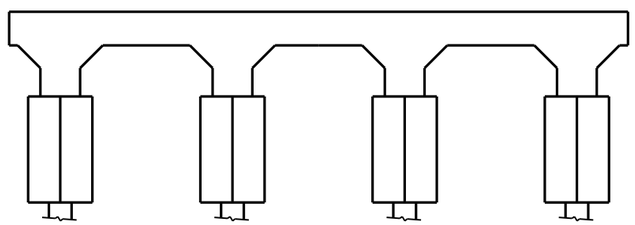
## REPAIR QUANTITY TABLE

| REPAIRS BENT 51-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

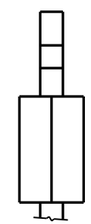
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



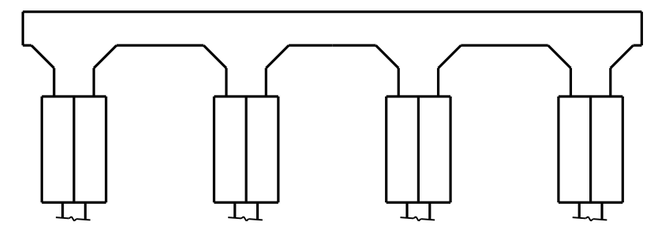
NORTH FACE



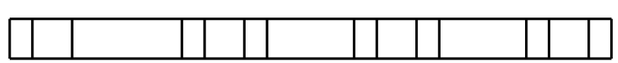
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 51-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-366 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:46
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

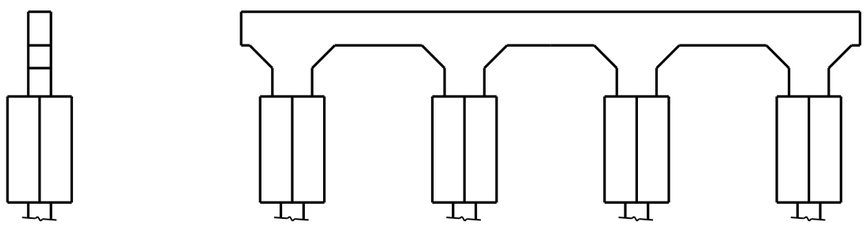
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

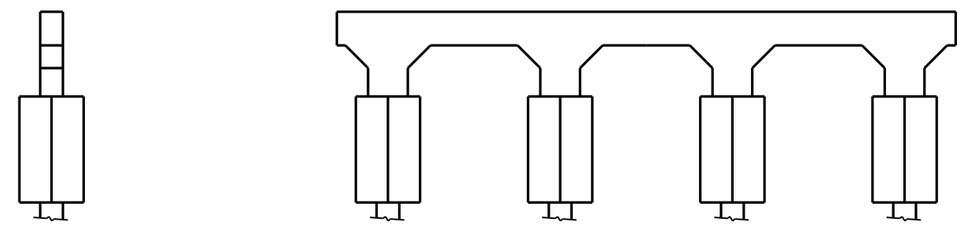
| REPAIRS BENT 52-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



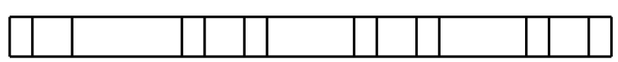
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET OF

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 52-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-367 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016

CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:47
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

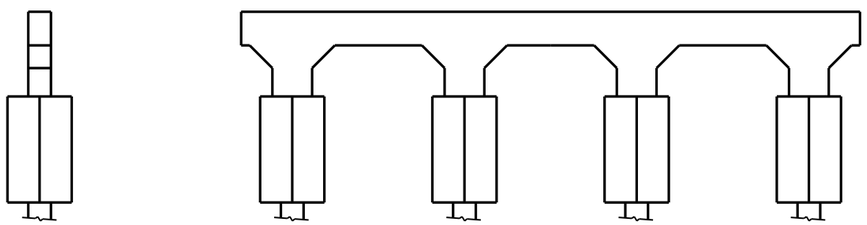
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 53-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

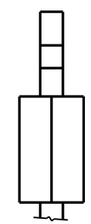
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



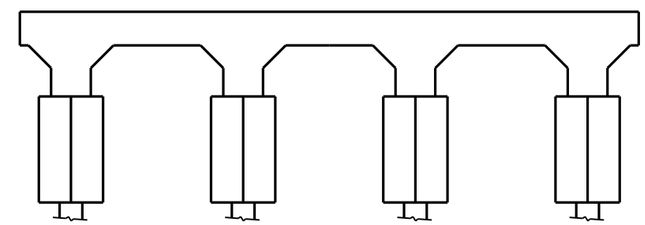
NORTH FACE



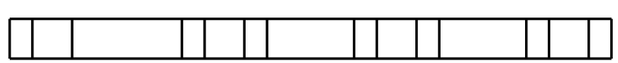
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 53-S

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | |
| 1 | | | 3 | | | S-368 | |
| 2 | | | 4 | | | TOTAL SHEETS | |
| | | | | | | 394 | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

14-JUL-2016 10:15
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

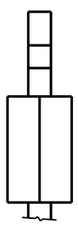
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

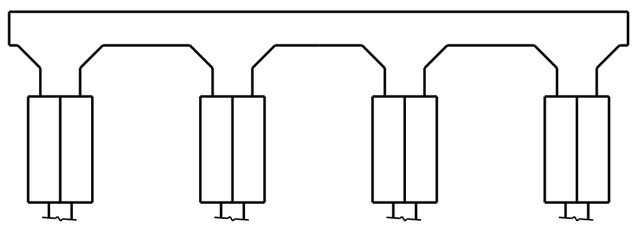
## REPAIR QUANTITY TABLE

| REPAIRS BENT 54-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

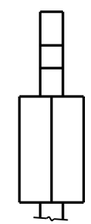
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



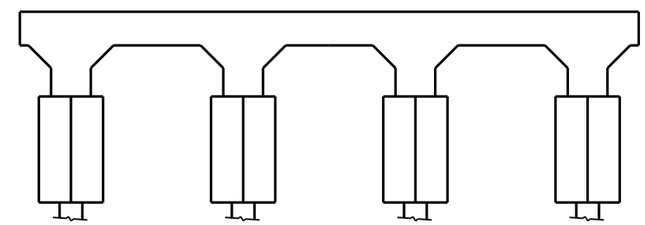
NORTH FACE



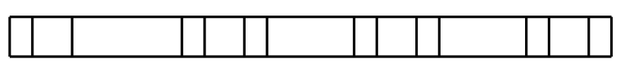
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 54-S

| REVISIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. | S-369 |
| 1 | | | 3 | | | TOTAL SHEETS | 394 |
| 2 | | | 4 | | | | |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

14-JUL-2016 10:15
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

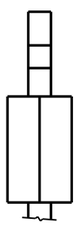
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

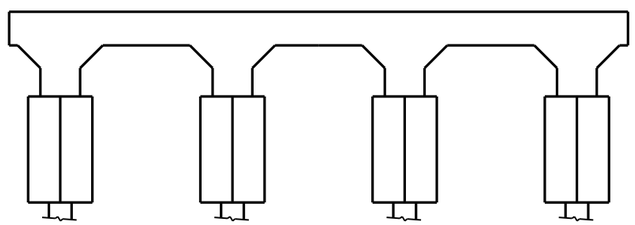
## REPAIR QUANTITY TABLE

| REPAIRS BENT 55-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

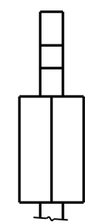
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



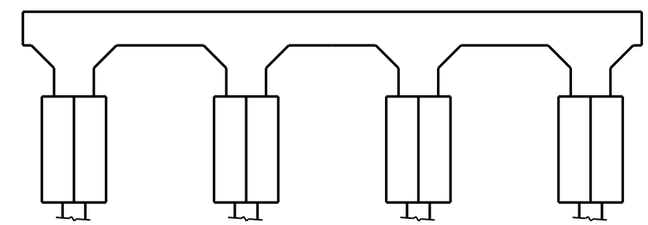
NORTH FACE



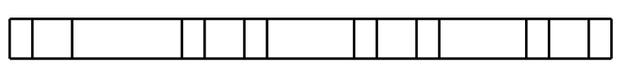
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 55-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-370 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 14:49
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

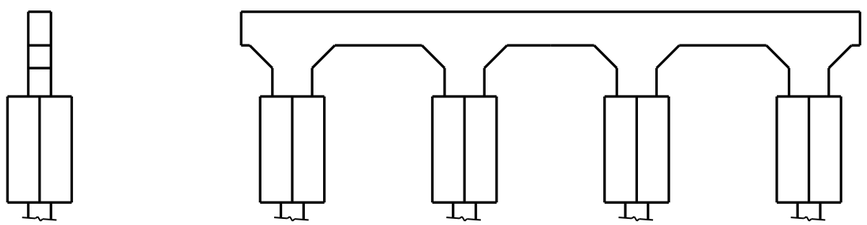
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

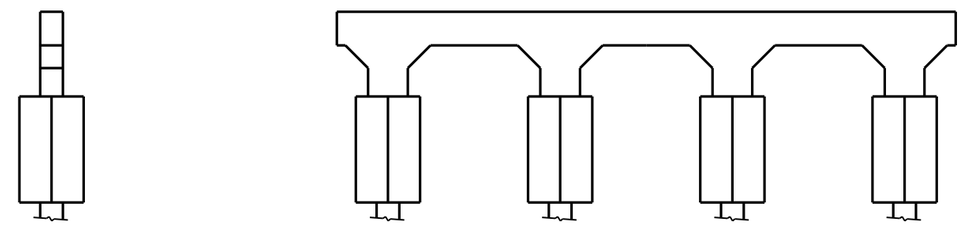
| REPAIRS BENT 56-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



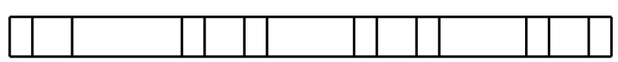
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 56-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-371 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:51
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

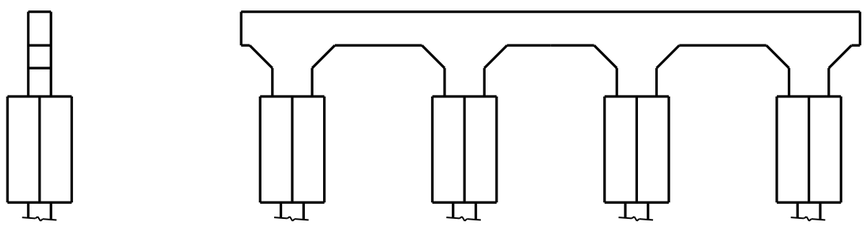
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

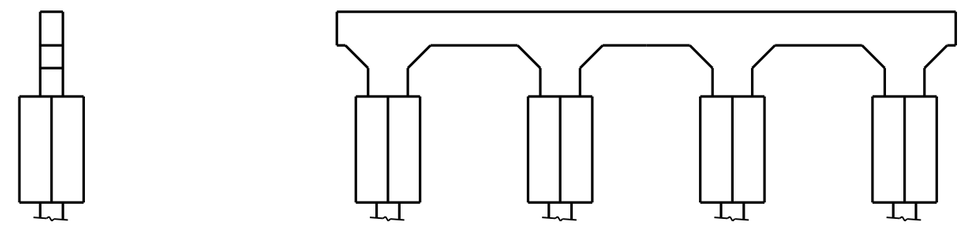
| REPAIRS BENT 57-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



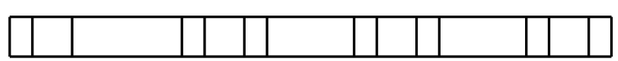
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 57-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-372 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:52
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

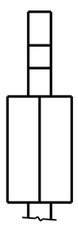
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

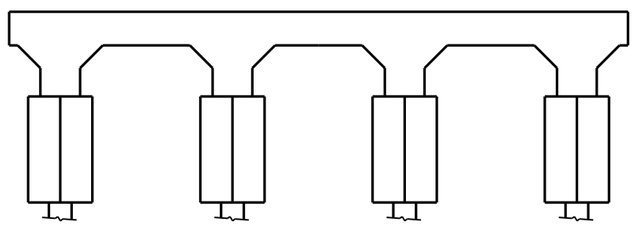
## REPAIR QUANTITY TABLE

| REPAIRS BENT 58-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

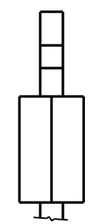
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



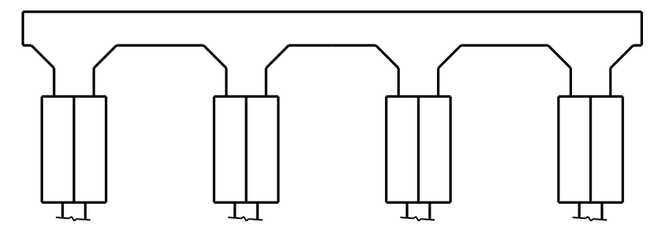
NORTH FACE



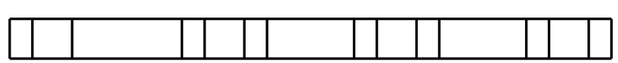
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 58-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-373 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

15-JUL-2016 15:48
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

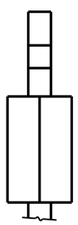
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

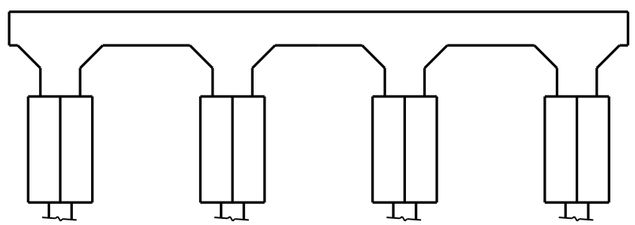
## REPAIR QUANTITY TABLE

| REPAIRS BENT 59-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

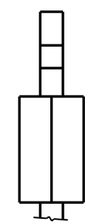
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



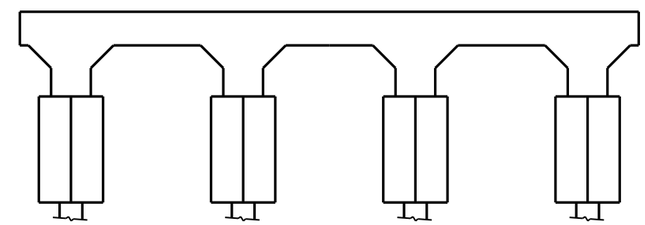
NORTH FACE



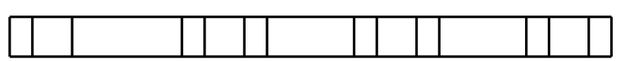
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 59-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-374 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:53
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

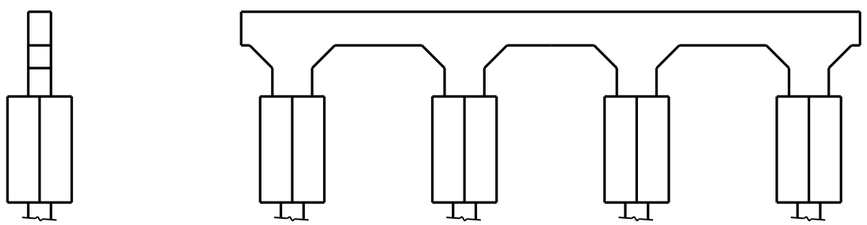
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

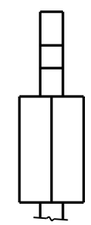
| REPAIRS BENT 60-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

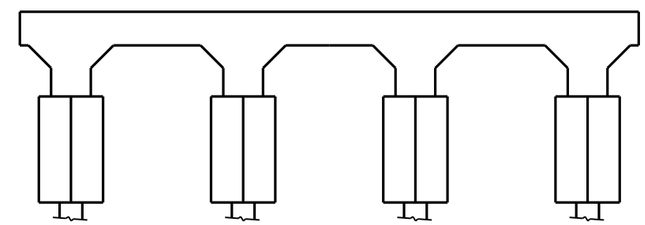


NORTH FACE

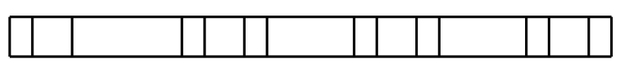
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 60-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-375 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:54
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

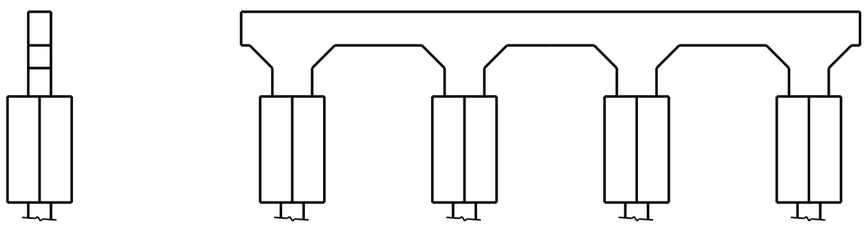
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 61-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

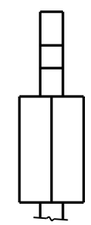
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



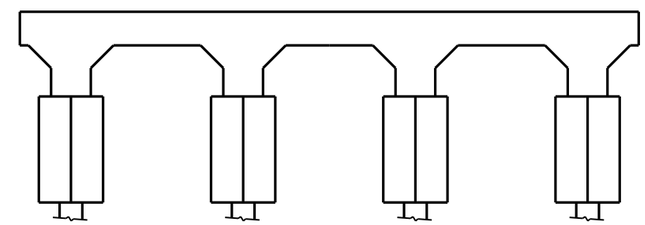
NORTH FACE



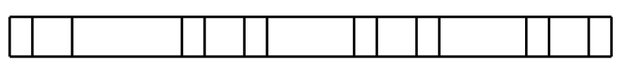
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 61-S

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

SHEET NO. S-376
TOTAL SHEETS 394

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DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:54
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pbryant

## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

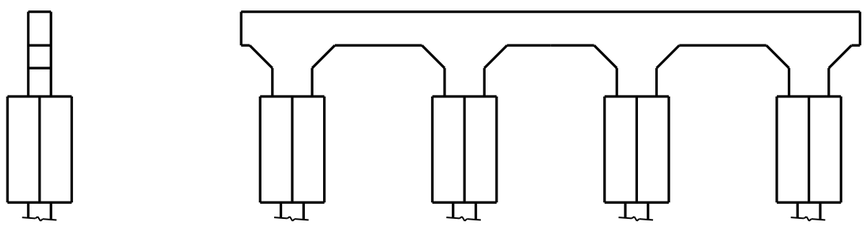
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

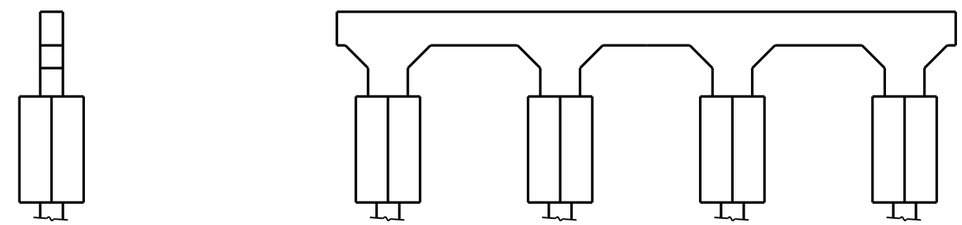
| REPAIRS BENT 62-S | QUANTITIES | | | |
|---|---|---|---|---|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP (VERTICAL FACE) | 0.0 | 0.0 | | |
| CAP (HORIZONTAL, CORNER) | 0.0 | 0.0 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.



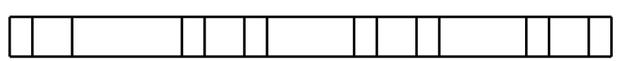
NORTH FACE

WEST FACE



SOUTH FACE

EAST FACE



PLAN

BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 62-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-377 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

21-JUN-2016 10:55
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## 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.

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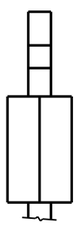
FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

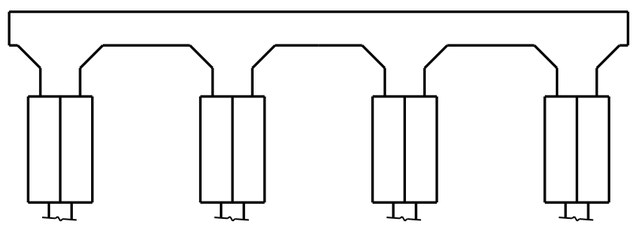
## REPAIR QUANTITY TABLE

| REPAIRS BENT 63-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

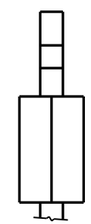
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



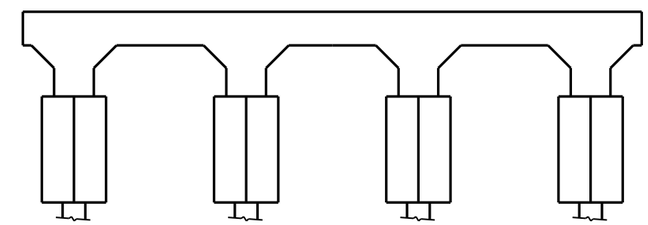
NORTH FACE



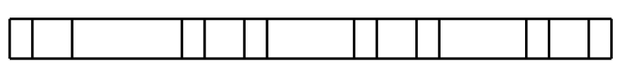
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 63-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-378 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
CHECKED BY : W. M. CLARKE DATE : 4-2016

19-JUL-2016 14:50
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pbryant

## 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.

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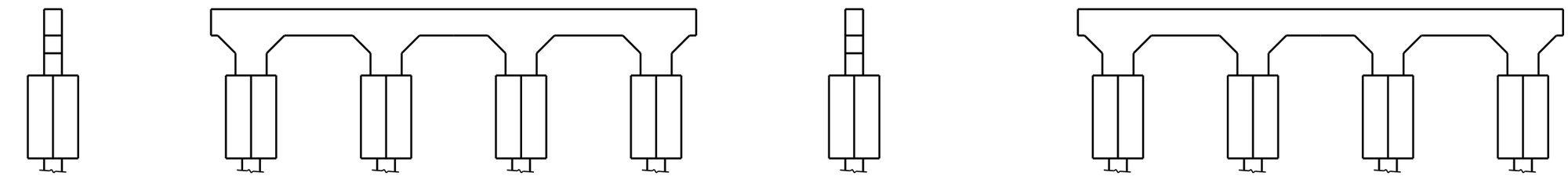
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

## REPAIR QUANTITY TABLE

| REPAIRS BENT 64-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

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.

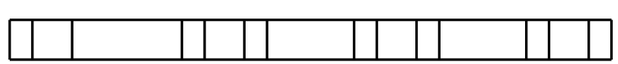


NORTH FACE

WEST FACE

SOUTH FACE

EAST FACE



PLAN
BOTTOM OF CAP

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DocuSigned by:
Paul Bryant
3653D2AF1B77448...

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NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 64-S

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-379 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

DRAWN BY : P. D. BRYANT DATE : 4-2016
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15-JUL-2016 15:49
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## 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.

FOR CAP REPAIR DETAILS, SEE "TYPICAL CAP REPAIR DETAILS" SHEET.

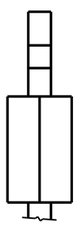
FOR "SHOTCRETE REPAIRS", SEE SPECIAL PROVISIONS.

FOR "EPOXY RESIN INJECTION", SEE SPECIAL PROVISIONS.

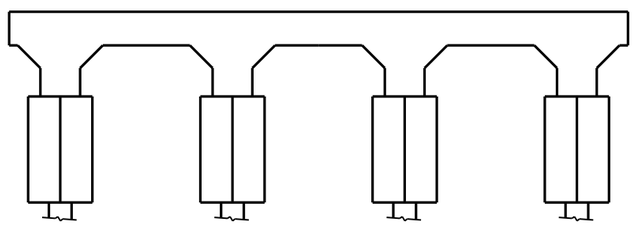
## REPAIR QUANTITY TABLE

| REPAIRS BENT 65-S | 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 | | |
| PILE COLLAR (VERT FACE) | 0.0 | 0.0 | | |
| PILE COLLAR (HORIZ FACE) | 0.0 | 0.0 | | |
| EPOXY RESIN INJECTION | | LN. FT. | | LN. FT. |
| CAP | | 0.0 | | |

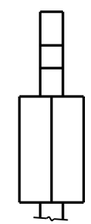
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CL TO SAWCUT. SEE REPAIR DETAILS.



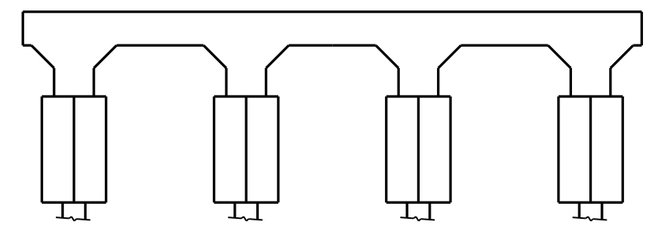
NORTH FACE



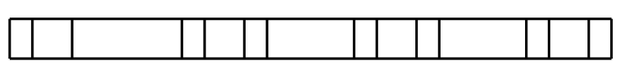
WEST FACE



SOUTH FACE



EAST FACE



PLAN
BOTTOM OF CAP

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

DocuSigned by:
Paul Bryant
3653D2AF1B77448...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 23739 ENGINEER PAUL D. BRYANT

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 65-S

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| NO. | BY: | DATE: | NO. | BY: | DATE: | | | S-380 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 394 |

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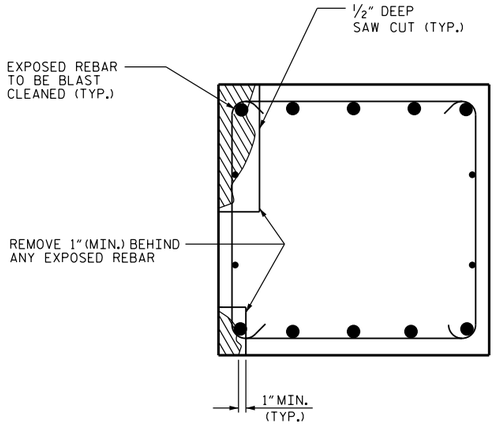
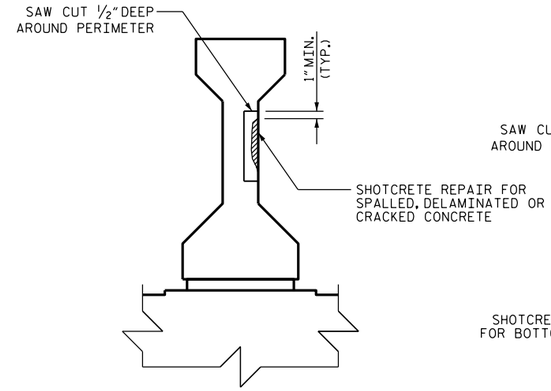
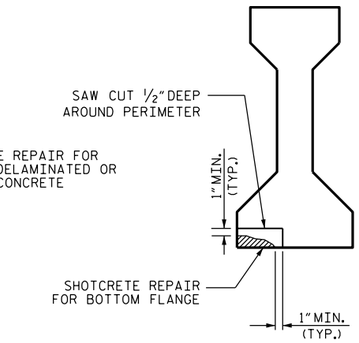



SECTION A-A




SECTION B-B

(IF MORE THAN HALF THE CIRCUMFERENCE OF REINFORCING BAR IS EXPOSED DURRING THIS PROCESS, REMOVE ADDITIONAL CONCRETE BEHIND THE BAR. THIS DOES NOT APPLY TO PRESSTESED STRANDS.)




SECTION C-C

(ALL UNSOUND CONCRETE MUST BE REMOVED. HOWEVER, PRESTRESSED STRANDS SHOULD NOT BE DISTURBED UNLESS ABSOLLUTELY NECESSARY. USE EXTREME CARE TO NOT DAMAGE STRANDS.)

## NOTES

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

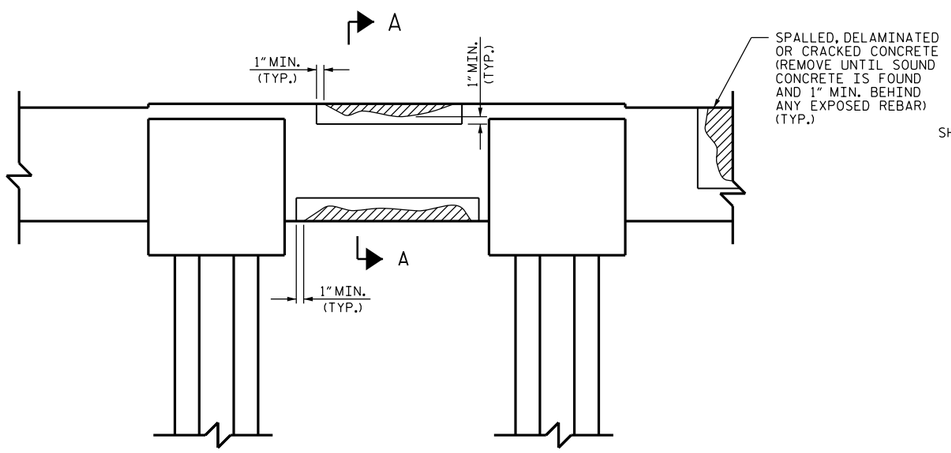
CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF ½" BUT REINFORCING STEEL AND PRESTRESSED TENDONS SHALL NOT BE DAMAGED.

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.

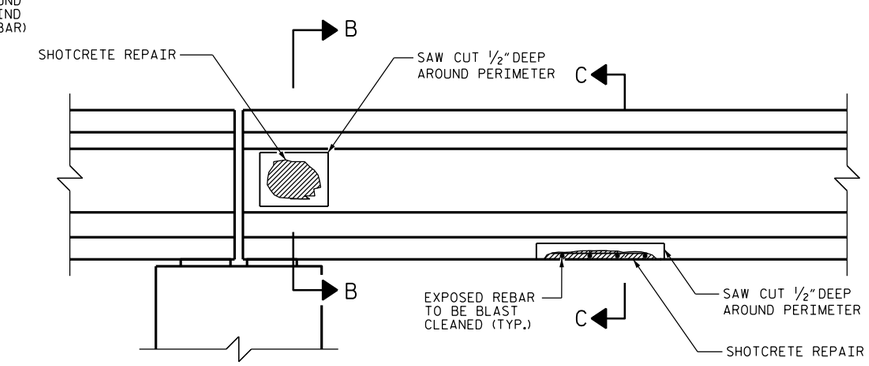
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

DAMAGED AREA




BENT CAP REPAIRS

CAP REPAIR




ELEVATION

CONCRETE GIRDER REPAIR DETAIL

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL CAP & GIRDER REPAIR DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
Robbie Weisz
CEA153463B6D43D...

8/11/2016

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SHEET NO. S-381

TOTAL SHEETS 394

DRAWN BY : S. T. SANDOR DATE : 06/2016
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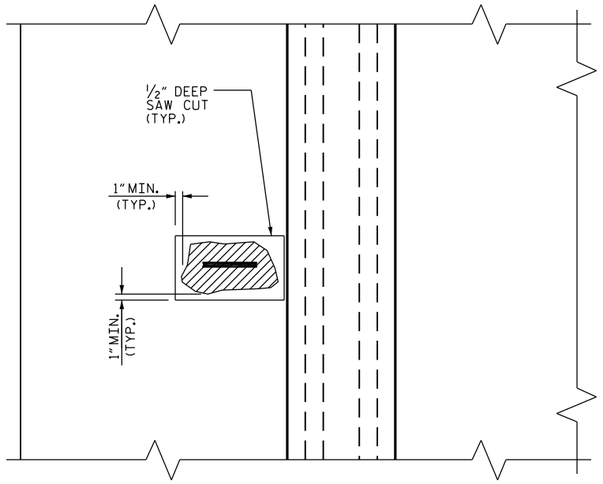
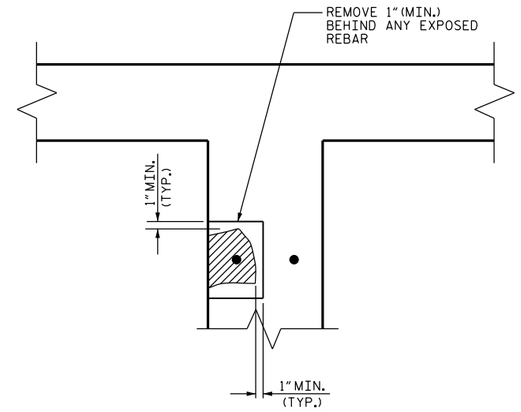



SECTION D-D




SECTION E-E

## NOTES

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

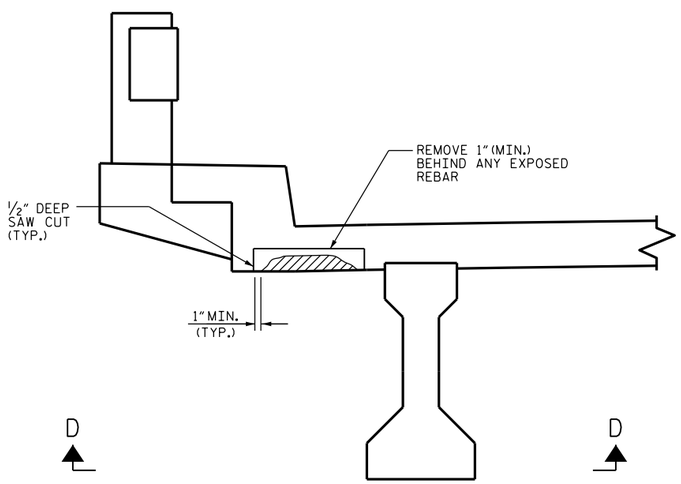
CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF ½" BUT REINFORCING STEEL AND PRESTRESSED TENDONS SHALL NOT BE DAMAGED.

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

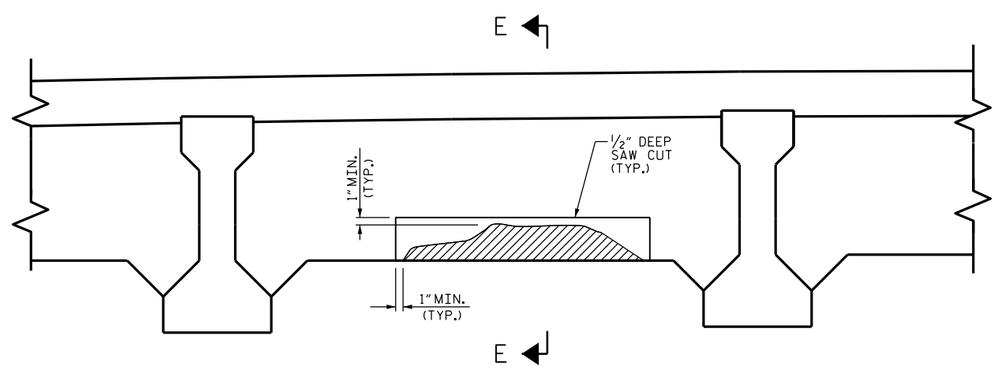
CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

DAMAGED AREA




TYPICAL SECTION




TYPICAL SECTION

## OVERHANG DETAILS

## INTERIOR DIAPHRAGM REPAIR DETAILS

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL OVERHANG & DIAPHRAGM REPAIR DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

DocuSigned by:
Robbie Weisz
CEA153463B6D43D...
8/11/2016

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| REVISIONS | | | | | | SHEET NO. |
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| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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ssandor

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 4 | 1 | 1 | 5 | |
| 4 | 2 | 1 | 5 | |
| 4 | 4 | 1 | 5 | |
| 5 | 1 | 1 | 5 | |
| 5 | 2a | 2 | 5 | |
| 5 | 3a | 1 | 5 | |
| 7 | 2 | 1 | 7.5 | |
| 7 | 3 | 1 | 7.5 | |
| 8 | 1 | 1 | 8 | |
| 8 | 2 | 1 | 8 | |
| 8 | 3 | 1 | 8 | |
| 8 | 4 | 1 | 8 | |
| 9 | 1 | 2 | 9 | |
| 9 | 4 | 2 | 9 | |
| 9 | 2b | 2 | 8 | |
| 9 | 3a | 1 | 8 | |
| 9 | 3b | 2 | 8 | |
| 10 | 2 | 2 | 9.5 | |
| 10 | 4 | 2 | 9.5 | |
| 11 | 1 | 1 | 10.5 | |
| 11 | 2 | 1 | 10.5 | |
| 11 | 4 | 2 | 10.5 | |
| 12 | 1 | 2 | 11 | |
| 12 | 2 | 1 | 11 | |
| 12 | 3 | 2 | 8 | |
| 13 | 3b | 2 | 11 | |
| 14 | 1 | 2 | 11.5 | |
| 14 | 3 | 1 | 11.5 | |
| 14 | 4 | 1 | 11.5 | |
| 17 | 1 | 1 | 13 | |
| 17 | 4 | 2 | 13 | |
| 17 | 2b | 1 | 13 | |
| 17 | 3b | 1 | 13 | |
| 18 | 2 | 2 | 10 | |
| 18 | 3 | 2 | 10 | |
| 18 | 4 | 1 | 14 | |
| 19 | 1 | 2 | 14 | |
| 20 | 3 | 2 | 10 | |
| 20 | 4 | 2 | 8 | |
| 21 | 1 | 2 | 10 | |
| 21 | 4 | 2 | 10 | |
| 21 | 2a | 2 | 8 | |
| 21 | 2b | 2 | 13 | |
| 22 | 1 | 1 | 14 | |
| 22 | 3 | 2 | 10 | |

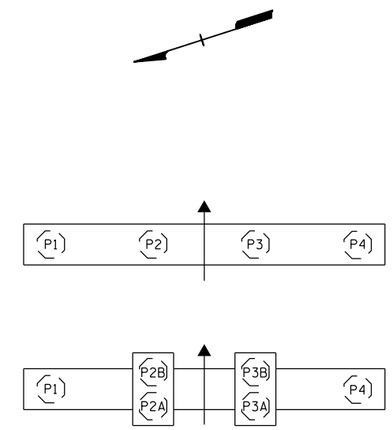
| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 22 | 4 | 1 | 14 | |
| 24 | 2 | 2 | 10 | |
| 24 | 3 | 1 | 11 | |
| 24 | 4 | 1 | 14 | |
| 25 | 1 | 1 | 14 | |
| 25 | 3a | 2 | 8 | |
| 25 | 3b | 1 | 8 | |
| 28 | 4 | 1 | 14 | |
| 34 | 2 | 1 | 14 | |
| 36 | 1 | 1 | 14 | |
| 37 | 2a | 1 | 14 | |
| 37 | 2b | 1 | 14 | |
| 50 | 1 | 1 | 9 | |
| 50 | 2 | 1 | 9 | |
| 51 | 1 | 1 | 9 | |
| 51 | 2 | 1 | 9 | |
| 51 | 3 | 1 | 9 | |
| 52 | 1 | 1 | 14 | |
| 52 | 2 | 1 | 9 | |
| 52 | 4 | 1 | 9 | |
| 53 | 1 | 1 | 14 | |
| 53 | 3b | 1 | 9 | |
| 54 | 2 | 1 | 14 | |
| 55 | 1 | 1 | 9 | |
| 55 | 3 | 1 | 10 | |
| 56 | 1 | 1 | 9 | |
| 56 | 2 | 1 | 9 | |
| 56 | 4 | 1 | 9 | |
| 57 | 4 | 1 | 9 | |
| 57 | 2b | 1 | 9 | |
| 57 | 3a | 1 | 9 | |
| 57 | 3b | 1 | 9 | |
| 58 | 2 | 1 | 8 | |
| 58 | 3 | 1 | 10 | |
| 58 | 4 | 2 | 9 | |
| 59 | 1 | 1 | 9 | |
| 59 | 2 | 1 | 9 | |
| 59 | 3 | 1 | 9 | |
| 59 | 4 | 1 | 9 | |
| 60 | 1 | 1 | 9 | |
| 60 | 2 | 1 | 9 | |
| 60 | 3 | 1 | 9 | |
| 60 | 4 | 1 | 9 | |
| 61 | 1 | 1 | 8 | |
| 61 | 2b | 1 | 9 | |

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 61 | 3a | 1 | 9 | |
| 61 | 3b | 1 | 9 | |
| 62 | 1 | 1 | 9 | |
| 62 | 2 | 1 | 9 | |
| 63 | 1 | 1 | 14 | |
| 63 | 2 | 1 | 9 | |
| 64 | 4 | 1 | 8 | |
| 65 | 1 | 1 | 8 | |
| 65 | 3a | 2 | 14 | |
| 66 | 1 | 2 | 14 | |
| 66 | 4 | 1 | 14 | |
| 68 | 4 | 1 | 10 | |
| 69 | 1 | 1 | 14 | |
| 69 | 4 | 1 | 8 | |
| 69 | 2b | 1 | 14 | |
| 70 | 1 | 1 | 8 | |
| 70 | 3 | 1 | 8 | |
| 70 | 4 | 1 | 8 | |
| 71 | 1 | 1 | 9 | |
| 71 | 2 | 1 | 9 | |
| 71 | 3 | 1 | 9 | |
| 72 | 1 | 1 | 8 | |
| 72 | 2 | 1 | 8 | |
| 72 | 3 | 1 | 8 | |
| 73 | 1 | 1 | 8 | |
| 73 | 4 | 1 | 9 | |
| 73 | 2a | 1 | 9 | |
| 73 | 3a | 1 | 9 | |
| 74 | 2 | 1 | 8 | |
| 74 | 3 | 1 | 8 | |
| 75 | 2 | 1 | 8 | |
| 75 | 3 | 1 | 7 | |
| 75 | 4 | 1 | 8 | |
| 76 | 1 | 1 | 8 | |
| 76 | 2 | 1 | 8 | |
| 76 | 3 | 1 | 8 | |
| 76 | 4 | 1 | 8 | |
| 77 | 2a | 1 | 8 | |
| 77 | 2b | 1 | 8 | |
| 77 | 3a | 1 | 8 | |
| 77 | 3b | 1 | 8 | |
| 78 | 1 | 1 | 9 | |
| 78 | 2 | 1 | 9 | |
| 78 | 3 | 1 | 9 | |
| 78 | 4 | 1 | 8 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES ESTIMATE | QUANTITIES ACTUAL |
|---|---|---|
| BENTS 1 - 78 | LF | LF |
| TYPE 1 | 1019 | |
| TYPE 2 | 281 | |
| TYPE 3 | 0 | |
| TOTAL | 1300 | |

TYPE 1 REPAIR IS A CONCRETE PILE JACKET REPAIR.
TYPE 2 REPAIR IS REJACKETING A CONCRETE PILE.
TYPE 3 REPAIR IS REJACKETING A STEEL H-PILE.
SEE SHT S-390 & S-391 FOR PILE JACKET REPAIR DETAILS.
FOR PILE JACKETS, SEE SPECIAL PROVISIONS.




TYPICAL PILE NUMBERS
BENTS WITH MORE PILES FOLLOW SIMILAR PATTERN

DocuSigned by:
Robbie Weisz
CEA153463B6D43D...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 1 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR TABLES

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-383 |
| 1 | | | 3 | | | TOTAL SHEETS |
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pbryant

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 79 | 1 | 1 | 8 | |
| 79 | 2 | 1 | 8 | |
| 79 | 3 | 1 | 8 | |
| 79 | 4 | 1 | 8 | |
| 80 | 1 | 1 | 8 | |
| 80 | 2 | 1 | 8 | |
| 80 | 3 | 1 | 9 | |
| 80 | 4 | 1 | 9 | |
| 81 | 1 | 1 | 8 | |
| 81 | 2a | 1 | 8 | |
| 81 | 2b | 1 | 8 | |
| 81 | 3a | 1 | 8 | |
| 81 | 3b | 1 | 8 | |
| 82 | 1 | 1 | 14 | |
| 82 | 2 | 1 | 8 | |
| 82 | 3 | 1 | 8 | |
| 83 | 1 | 1 | 8 | |
| 83 | 2 | 1 | 8 | |
| 83 | 3 | 1 | 8 | |
| 83 | 4 | 1 | 8 | |
| 84 | 1 | 1 | 8 | |
| 84 | 2 | 1 | 8 | |
| 84 | 3 | 1 | 8 | |
| 85 | 1 | 1 | 8 | |
| 85 | 2b | 1 | 8 | |
| 85 | 3a | 1 | 8 | |
| 85 | 3b | 1 | 8 | |
| 86 | 2 | 1 | 8 | |
| 86 | 3 | 1 | 8 | |
| 86 | 4 | 1 | 8 | |
| 87 | 1 | 1 | 8 | |
| 87 | 2 | 1 | 8 | |
| 87 | 3 | 1 | 8 | |
| 88 | 4 | 1 | 8 | |
| 89 | 1 | 1 | 7 | |
| 89 | 2b | 1 | 8 | |
| 89 | 3a | 1 | 9 | |
| 89 | 3b | 1 | 10 | |
| 90 | 1 | 1 | 8 | |
| 90 | 2 | 1 | 8 | |
| 90 | 4 | 1 | 8 | |
| 91 | 1 | 1 | 9 | |
| 91 | 2 | 1 | 8 | |
| 91 | 3 | 1 | 8 | |
| 91 | 4 | 1 | 8 | |

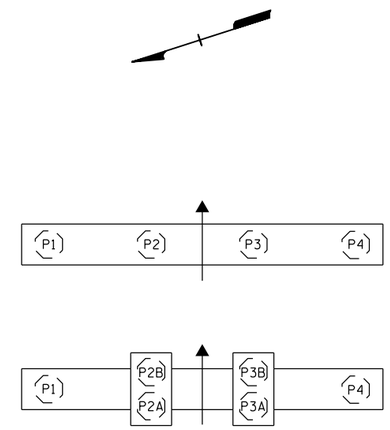
| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 92 | 1 | 1 | 8 | |
| 92 | 3 | 1 | 8 | |
| 92 | 4 | 1 | 8 | |
| 93 | 1 | 1 | 8 | |
| 93 | 4 | 1 | 7 | |
| 93 | 2a | 1 | 7 | |
| 93 | 2b | 1 | 14 | |
| 93 | 3a | 1 | 8 | |
| 93 | 3b | 1 | 7 | |
| 94 | 1 | 1 | 8 | |
| 94 | 2 | 1 | 8 | |
| 94 | 4 | 1 | 8 | |
| 95 | 2 | 1 | 8 | |
| 95 | 3 | 1 | 8 | |
| 95 | 4 | 1 | 8 | |
| 96 | 1 | 1 | 8 | |
| 96 | 2 | 1 | 8 | |
| 96 | 3 | 1 | 8 | |
| 96 | 4 | 1 | 8 | |
| 97 | 1 | 1 | 14 | |
| 97 | 2a | 1 | 7 | |
| 97 | 2b | 1 | 8 | |
| 97 | 3a | 1 | 8 | |
| 97 | 3b | 1 | 8 | |
| 98 | 1 | 1 | 8 | |
| 98 | 2 | 1 | 8 | |
| 99 | 1 | 1 | 8 | |
| 99 | 2 | 1 | 8 | |
| 99 | 3 | 1 | 8 | |
| 99 | 4 | 1 | 8 | |
| 100 | 1 | 1 | 8 | |
| 100 | 3 | 1 | 8 | |
| 101 | 1 | 1 | 14 | |
| 101 | 2a | 1 | 8 | |
| 101 | 3a | 1 | 8 | |
| 101 | 3b | 1 | 8 | |
| 102 | 1 | 1 | 8 | |
| 102 | 2 | 1 | 8 | |
| 102 | 3 | 1 | 8 | |
| 103 | 1 | 1 | 8 | |
| 103 | 2 | 1 | 8 | |
| 103 | 4 | 1 | 8 | |
| 104 | 1 | 1 | 8 | |
| 104 | 2 | 1 | 6 | |
| 104 | 3 | 1 | 7 | |
| 105 | 4 | 1 | 8 | |

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 105 | 2a | 1 | 8 | |
| 105 | 2b | 1 | 8 | |
| 105 | 3a | 1 | 8 | |
| 106 | 1 | 1 | 8 | |
| 106 | 3 | 1 | 8 | |
| 106 | 4 | 1 | 8 | |
| 107 | 1 | 1 | 7 | |
| 107 | 2 | 1 | 7 | |
| 107 | 3 | 1 | 8 | |
| 108 | 2 | 1 | 8 | |
| 108 | 3 | 1 | 7 | |
| 108 | 4 | 1 | 7 | |
| 109 | 1 | 1 | 7 | |
| 109 | 2b | 1 | 8 | |
| 109 | 3a | 1 | 8 | |
| 110 | 1 | 1 | 8 | |
| 110 | 4 | 1 | 8 | |
| 111 | 1 | 1 | 7 | |
| 111 | 3 | 1 | 8 | |
| 112 | 1 | 1 | 7 | |
| 112 | 2 | 1 | 7 | |
| 112 | 3 | 1 | 7 | |
| 112 | 4 | 1 | 8 | |
| 113 | 1a | 1 | 7 | |
| 113 | 1b | 1 | 7 | |
| 113 | 2a | 1 | 7 | |
| 113 | 2b | 1 | 7 | |
| 113 | 3b | 1 | 7 | |
| 113 | 4a | 1 | 9 | |
| 113 | 4b | 1 | 9 | |
| 114 | 3 | 1 | 7 | |
| 114 | 4 | 1 | 7 | |
| 114 | 6 | 1 | 8 | |
| 114 | 7 | 1 | 8 | |
| T.H. | 1 | 1 | 7 | |
| T.H. | 2 | 1 | 7 | |
| T.H. | 3 | 1 | 7 | |
| RP1 | 1b | 1 | 9.5 | |
| RP1 | 2a | 1 | 7 | |
| RP1 | 2b | 2 | 9.5 | |
| RP1 | 3a | 1 | 7 | |
| RP1 | 3b | 1 | 7 | |
| RP1 | 4b | 1 | 8 | |
| RP1 | 6a | 1 | 7 | |
| RP1 | 6b | 1 | 7 | |
| RP1 | 7b | 1 | 7 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES ESTIMATE | QUANTITIES ACTUAL |
|---|---|---|
| BENTS 79 - RP1 | LF | LF |
| TYPE 1 | 1088.5 | |
| TYPE 2 | 9.5 | |
| TYPE 3 | 0 | |
| TOTAL | 1098.0 | |

TYPE 1 REPAIR IS A CONCRETE PILE JACKET REPAIR.
TYPE 2 REPAIR IS REJACKETING A CONCRETE PILE.
TYPE 3 REPAIR IS REJACKETING A STEEL H-PILE.
SEE SHT S-390 & S-391 FOR PILE JACKET REPAIR DETAILS.
FOR PILE JACKETS, SEE SPECIAL PROVISIONS.




TYPICAL PILE NUMBERS
BENTS WITH MORE PILES FOLLOW SIMILAR PATTERN

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 2 OF 7

DocuSigned by:
Robbie Weisz
CEA153463B6D43D...
8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR TABLES

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-384 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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pbryant

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| RP2 | 1a | 1 | 9.5 | |
| RP2 | 1b | 1 | 9.5 | |
| RP2 | 2a | 1 | 9.5 | |
| RP2 | 2b | 1 | 9.5 | |
| RP2 | 3a | 1 | 9.5 | |
| RP2 | 3b | 1 | 7 | |
| RP2 | 4b | 1 | 9.5 | |
| RP2 | 5a | 1 | 7 | |
| RP2 | 5b | 1 | 9.5 | |
| RP2 | 6a | 1 | 7 | |
| RP2 | 6b | 1 | 9.5 | |
| RP2 | 7a | 1 | 7 | |
| RP2 | 7b | 1 | 9.5 | |
| 115 | 1 | 1 | 14 | |
| 115 | 2 | 1 | 8 | |
| 115 | 3 | 1 | 10 | |
| 115 | 4 | 1 | 14 | |
| 116 | 1a | 1 | 7 | |
| 116 | 1b | 1 | 17 | |
| 116 | 3a | 1 | 7 | |
| 116 | 3b | 2 | 14 | |
| 116 | 4a | 1 | 14 | |
| 117 | 3 | 1 | 8 | |
| 117 | 4 | 1 | 8 | |
| 117 | 5 | 1 | 14 | |
| 118 | 1 | 1 | 7 | |
| 118 | 2 | 1 | 7 | |
| 119 | 1 | 1 | 7 | |
| 119 | 2 | 1 | 8 | |
| 119 | 3 | 1 | 8 | |
| 120 | 2 | 1 | 8 | |
| 120 | 5 | 1 | 14 | |
| 120 | 1a | 3 | 7 | |
| 120 | 1b | 3 | 7 | |
| 120 | 4b | 1 | 8 | |
| 121 | 1 | 1 | 8 | |
| 122 | 1 | 1 | 8 | |
| 122 | 2 | 1 | 8 | |
| 122 | 3 | 1 | 8 | |
| 122 | 4 | 1 | 8 | |
| 123 | 1 | 1 | 8 | |
| 123 | 2 | 1 | 8 | |
| 123 | 3 | 1 | 8 | |
| 124 | 1 | 2 | 12.5 | |
| 124 | 2b | 2 | 12.5 | |

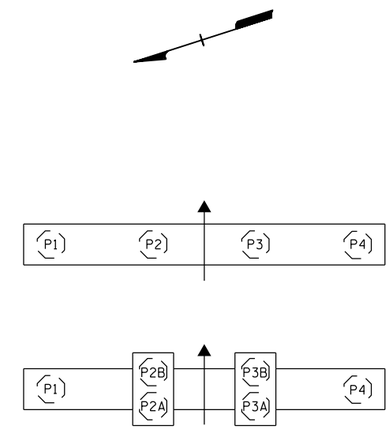
| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 124 | 3b | 1 | 8 | |
| 125 | 1 | 1 | 7 | |
| 125 | 3 | 1 | 11 | |
| 125 | 4 | 2 | 15.5 | |
| 126 | 1 | 1 | 7 | |
| 126 | 2 | 1 | 7 | |
| 126 | 3 | 1 | 11 | |
| 126 | 4 | 2 | 15 | |
| 127 | 3 | 1 | 15 | |
| 127 | 4 | 1 | 8 | |
| 128 | 1 | 1 | 7 | |
| 128 | 4 | 1 | 7 | |
| 128 | 2a | 1 | 7 | |
| 128 | 2b | 1 | 8 | |
| 128 | 3a | 1 | 8 | |
| 128 | 3b | 2 | 8 | |
| 129 | 1 | 1 | 7 | |
| 129 | 2 | 1 | 7 | |
| 129 | 3 | 1 | 7 | |
| 129 | 4 | 1 | 7 | |
| 130 | 1 | 1 | 14 | |
| 130 | 2 | 1 | 8 | |
| 130 | 3 | 1 | 8 | |
| 130 | 4 | 1 | 9 | |
| 131 | 1 | 1 | 8 | |
| 131 | 2 | 1 | 8 | |
| 131 | 4 | 1 | 8 | |
| 132 | 1 | 1 | 8 | |
| 132 | 4 | 1 | 8 | |
| 132 | 2a | 1 | 13.5 | |
| 132 | 3a | 1 | 8 | |
| 132 | 3b | 1 | 8 | |
| 133 | 2 | 1 | 8 | |
| 134 | 1 | 1 | 8 | |
| 134 | 2 | 1 | 8 | |
| 134 | 3 | 1 | 8 | |
| 134 | 4 | 1 | 8 | |
| 135 | 2 | 1 | 8 | |
| 135 | 3 | 1 | 8 | |
| 135 | 4 | 1 | 8 | |
| 136 | 1 | 1 | 8 | |
| 136 | 2a | 1 | 8 | |
| 136 | 2b | 1 | 13 | |
| 136 | 3a | 1 | 13 | |
| 137 | 1 | 1 | 8 | |

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 137 | 2 | 1 | 14 | |
| 138 | 1 | 1 | 8 | |
| 138 | 3 | 1 | 8 | |
| 138 | 4 | 1 | 8 | |
| 139 | 2 | 1 | 14 | |
| 139 | 3 | 1 | 8 | |
| 139 | 4 | 1 | 14 | |
| 140 | 1 | 1 | 8 | |
| 140 | 4 | 1 | 14 | |
| 140 | 2b | 1 | 13 | |
| 140 | 3b | 1 | 8 | |
| 141 | 1 | 1 | 8 | |
| 141 | 2 | 1 | 12 | |
| 141 | 3 | 1 | 8 | |
| 141 | 4 | 1 | 8 | |
| 142 | 1 | 2 | 12 | |
| 142 | 2 | 1 | 8 | |
| 142 | 3 | 1 | 8 | |
| 142 | 4 | 1 | 8 | |
| 143 | 2 | 1 | 8 | |
| 143 | 3 | 1 | 8 | |
| 143 | 4 | 1 | 8 | |
| 144 | 4 | 1 | 8 | |
| 144 | 2a | 1 | 8 | |
| 144 | 2b | 1 | 14 | |
| 144 | 3a | 1 | 14 | |
| 144 | 3b | 1 | 8 | |
| 145 | 1 | 1 | 8 | |
| 145 | 2 | 1 | 8 | |
| 145 | 3 | 1 | 8 | |
| 145 | 4 | 1 | 8 | |
| 146 | 1 | 1 | 8 | |
| 146 | 2 | 1 | 8 | |
| 146 | 3 | 1 | 8 | |
| 146 | 4 | 1 | 8 | |
| 147 | 1 | 1 | 8 | |
| 147 | 2 | 1 | 8 | |
| 147 | 3 | 1 | 8 | |
| 147 | 4 | 2 | 9 | |
| 148 | 4 | 1 | 8 | |
| 148 | 2a | 1 | 8 | |
| 148 | 2b | 1 | 8 | |
| 148 | 3a | 1 | 8 | |
| 148 | 3b | 1 | 14 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES | |
|---|---|---|
| | ESTIMATE | ACTUAL |
| BENTS RP2 - 148 | LF | LF |
| TYPE 1 | 1114.0 | |
| TYPE 2 | 98.5 | |
| TYPE 3 | 14.0 | |
| TOTAL | 1226.5 | |

TYPE 1 REPAIR IS A CONCRETE PILE JACKET REPAIR.
TYPE 2 REPAIR IS REJACKETING A CONCRETE PILE.
TYPE 3 REPAIR IS REJACKETING A STEEL H-PILE.
SEE SHT S-390 & S-391 FOR PILE JACKET REPAIR DETAILS.
FOR PILE JACKETS, SEE SPECIAL PROVISIONS.




TYPICAL PILE NUMBERS
BENTS WITH MORE PILES FOLLOW SIMILAR PATTERN

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CEA153463B6D43D...

8/11/2016

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 3 OF 7

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR TABLES

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-385 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 149 | 1 | 1 | 8 | |
| 149 | 2 | 1 | 11 | |
| 149 | 3 | 1 | 8 | |
| 149 | 4 | 1 | 14 | |
| 150 | 1 | 1 | 8 | |
| 150 | 2 | 1 | 8 | |
| 150 | 3 | 1 | 8 | |
| 150 | 4 | 1 | 8 | |
| 151 | 1 | 1 | 8 | |
| 151 | 3 | 1 | 8 | |
| 151 | 4 | 1 | 8 | |
| 152 | 1 | 1 | 8 | |
| 152 | 4 | 1 | 8 | |
| 152 | 2a | 1 | 9 | |
| 152 | 2b | 1 | 9 | |
| 152 | 3b | 1 | 10 | |
| 153 | 1 | 1 | 8 | |
| 153 | 2 | 1 | 8 | |
| 153 | 3 | 1 | 8 | |
| 153 | 4 | 1 | 8 | |
| 154 | 1 | 1 | 8 | |
| 154 | 3 | 1 | 9 | |
| 154 | 4 | 1 | 8 | |
| 155 | 2 | 1 | 8 | |
| 155 | 4 | 2 | 14 | |
| 156 | 1 | 1 | 8 | |
| 156 | 2a | 1 | 8 | |
| 156 | 3a | 1 | 8 | |
| 156 | 3b | 1 | 8 | |
| 157 | 1 | 1 | 8 | |
| 157 | 2 | 1 | 8 | |
| 157 | 3 | 1 | 8 | |
| 157 | 4 | 1 | 8 | |
| 158 | 1 | 1 | 9 | |
| 158 | 2 | 1 | 9 | |
| 158 | 3 | 1 | 8 | |
| 158 | 4 | 1 | 8 | |
| 159 | 2 | 1 | 8 | |
| 159 | 3 | 1 | 8 | |
| 160 | 1 | 1 | 8 | |
| 160 | 4 | 1 | 8 | |
| 160 | 2a | 1 | 8 | |
| 160 | 2b | 1 | 8 | |
| 160 | 3a | 1 | 8 | |
| 160 | 3b | 1 | 8 | |

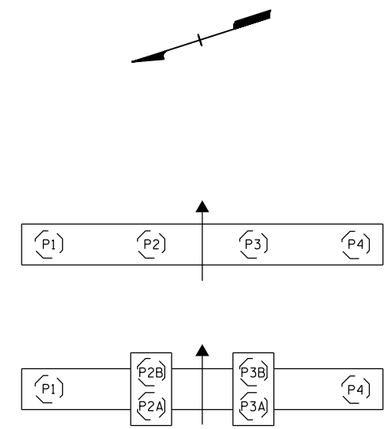
| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 161 | 1 | 1 | 9 | |
| 161 | 2 | 1 | 8 | |
| 161 | 3 | 1 | 8 | |
| 161 | 4 | 1 | 8 | |
| 162 | 1 | 1 | 8 | |
| 162 | 2 | 1 | 9 | |
| 162 | 4 | 1 | 9 | |
| 163 | 2 | 1 | 8 | |
| 163 | 3 | 1 | 8 | |
| 163 | 4 | 1 | 8 | |
| 164 | 1 | 1 | 8 | |
| 164 | 2a | 1 | 8 | |
| 164 | 2b | 1 | 8 | |
| 164 | 3a | 1 | 8 | |
| 164 | 3b | 1 | 8 | |
| 165 | 1 | 1 | 8 | |
| 165 | 2 | 1 | 8 | |
| 165 | 3 | 1 | 8 | |
| 165 | 4 | 1 | 8 | |
| 166 | 1 | 1 | 8 | |
| 166 | 2 | 1 | 8 | |
| 166 | 3 | 1 | 8 | |
| 166 | 4 | 1 | 8 | |
| 167 | 1 | 1 | 8 | |
| 167 | 2 | 1 | 8 | |
| 167 | 3 | 1 | 8 | |
| 167 | 4 | 1 | 8 | |
| 168 | 1 | 1 | 8 | |
| 168 | 4 | 1 | 8 | |
| 168 | 2b | 1 | 8 | |
| 168 | 3a | 1 | 8 | |
| 168 | 3b | 1 | 8 | |
| 169 | 1 | 1 | 8 | |
| 169 | 3 | 1 | 8 | |
| 170 | 1 | 1 | 8 | |
| 170 | 2 | 1 | 8 | |
| 171 | 2 | 1 | 8 | |
| 171 | 3 | 1 | 8 | |
| 171 | 4 | 1 | 8 | |
| 172 | 1 | 1 | 8 | |
| 172 | 4 | 1 | 8 | |
| 172 | 2a | 1 | 8 | |
| 172 | 2b | 1 | 8 | |
| 172 | 3a | 1 | 8 | |
| 172 | 3b | 1 | 8 | |

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 173 | 1 | 1 | 8 | |
| 173 | 4 | 1 | 8 | |
| 174 | 1 | 1 | 8 | |
| 174 | 2 | 1 | 8 | |
| 174 | 3 | 1 | 8 | |
| 174 | 4 | 1 | 8 | |
| 175 | 1 | 1 | 8 | |
| 175 | 2 | 1 | 8 | |
| 175 | 3 | 1 | 8 | |
| 175 | 4 | 1 | 8 | |
| 176 | 1 | 1 | 8 | |
| 176 | 2a | 1 | 8 | |
| 176 | 2b | 1 | 8 | |
| 176 | 3a | 1 | 8 | |
| 176 | 3b | 1 | 8 | |
| 177 | 2 | 1 | 8 | |
| 177 | 4 | 1 | 8 | |
| 178 | 1 | 1 | 9 | |
| 178 | 2 | 1 | 8 | |
| 178 | 3 | 1 | 8 | |
| 179 | 1 | 1 | 8 | |
| 179 | 2 | 1 | 8 | |
| 179 | 3 | 1 | 8 | |
| 179 | 4 | 1 | 14 | |
| 180 | 2a | 1 | 8 | |
| 180 | 2b | 1 | 8 | |
| 180 | 3a | 1 | 8 | |
| 180 | 3b | 1 | 8 | |
| 181 | 1 | 1 | 8 | |
| 181 | 2 | 1 | 9 | |
| 181 | 3 | 1 | 8 | |
| 181 | 4 | 1 | 8 | |
| 182 | 1 | 1 | 9 | |
| 182 | 2 | 1 | 9 | |
| 182 | 3 | 1 | 9 | |
| 182 | 4 | 1 | 9 | |
| 183 | 1 | 1 | 9 | |
| 183 | 2 | 1 | 8 | |
| 183 | 3 | 1 | 8 | |
| 183 | 4 | 1 | 8 | |
| 184 | 1 | 1 | 8 | |
| 184 | 4 | 1 | 8 | |
| 184 | 2a | 1 | 8 | |
| 184 | 3a | 1 | 8 | |
| 184 | 3b | 1 | 8 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES | |
|---|---|---|
| | ESTIMATE | ACTUAL |
| BENTS 149 - 184 | LF | LF |
| TYPE 1 | 1104 | |
| TYPE 2 | 14 | |
| TYPE 3 | 0 | |
| TOTAL | 1118 | |

TYPE 1 REPAIR IS A CONCRETE PILE JACKET REPAIR.
TYPE 2 REPAIR IS REJACKETING A CONCRETE PILE.
TYPE 3 REPAIR IS REJACKETING A STEEL H-PILE.
SEE SHT S-390 & S-391 FOR PILE JACKET REPAIR DETAILS.
FOR PILE JACKETS, SEE SPECIAL PROVISIONS.




TYPICAL PILE NUMBERS
BENTS WITH MORE PILES FOLLOW SIMILAR PATTERN

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Robbie Weisz
CEA153463B6D43D...

8/11/2016

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 4 OF 7

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR TABLES

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

SHEET NO. S-386
TOTAL SHEETS 394

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| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 185 | 1 | 1 | 8 | |
| 185 | 2 | 1 | 8 | |
| 185 | 3 | 1 | 8 | |
| 185 | 4 | 1 | 8 | |
| 186 | 1 | 1 | 8 | |
| 186 | 2 | 1 | 8 | |
| 186 | 3 | 1 | 8 | |
| 186 | 4 | 1 | 8 | |
| 187 | 1 | 1 | 8 | |
| 187 | 2 | 1 | 8 | |
| 187 | 3 | 1 | 8 | |
| 187 | 4 | 1 | 8 | |
| 188 | 4 | 1 | 8 | |
| 188 | 2a | 1 | 8 | |
| 188 | 2b | 1 | 8 | |
| 188 | 3b | 1 | 8 | |
| 189 | 2 | 1 | 8 | |
| 189 | 3 | 1 | 8 | |
| 190 | 1 | 1 | 9 | |
| 190 | 2 | 1 | 8 | |
| 190 | 3 | 1 | 8 | |
| 191 | 1 | 1 | 9 | |
| 191 | 2 | 1 | 9 | |
| 191 | 4 | 1 | 8 | |
| 192 | 1 | 1 | 8 | |
| 192 | 4 | 1 | 8 | |
| 192 | 2a | 1 | 8 | |
| 192 | 2b | 1 | 8 | |
| 192 | 3a | 1 | 8 | |
| 192 | 3b | 1 | 8 | |
| 193 | 1 | 1 | 8 | |
| 193 | 3 | 1 | 9 | |
| 193 | 4 | 1 | 8 | |
| 194 | 1 | 1 | 8 | |
| 194 | 2 | 1 | 9 | |
| 194 | 3 | 1 | 8 | |
| 194 | 4 | 1 | 8 | |
| 195 | 1 | 1 | 9 | |
| 195 | 2 | 1 | 7 | |
| 195 | 3 | 1 | 9 | |
| 195 | 4 | 1 | 8 | |
| 196 | 1 | 1 | 8 | |
| 196 | 4 | 1 | 8 | |
| 196 | 2a | 1 | 8 | |
| 196 | 2b | 1 | 8 | |

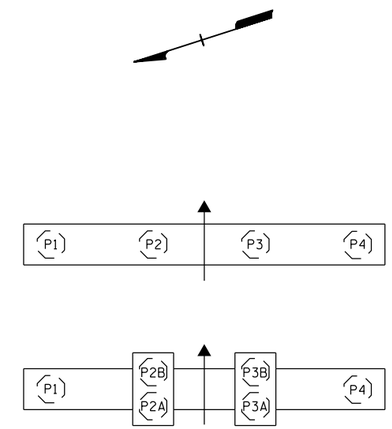
| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 196 | 3a | 1 | 8 | |
| 196 | 3b | 1 | 8 | |
| 197 | 1 | 1 | 8 | |
| 197 | 2 | 1 | 8 | |
| 197 | 3 | 1 | 8 | |
| 198 | 1 | 1 | 9 | |
| 198 | 2 | 1 | 8 | |
| 198 | 3 | 1 | 8 | |
| 198 | 4 | 1 | 8 | |
| 199 | 2 | 1 | 8 | |
| 199 | 4 | 1 | 8 | |
| 200 | 1 | 1 | 8 | |
| 200 | 4 | 1 | 8 | |
| 200 | 2a | 1 | 8 | |
| 200 | 2b | 1 | 8 | |
| 200 | 3a | 1 | 8 | |
| 200 | 3b | 1 | 8 | |
| 201 | 2 | 1 | 8 | |
| 201 | 4 | 1 | 8 | |
| 202 | 1 | 1 | 8 | |
| 202 | 2 | 1 | 8 | |
| 202 | 3 | 1 | 9 | |
| 202 | 4 | 1 | 8 | |
| 203 | 1 | 1 | 8 | |
| 203 | 2 | 1 | 8 | |
| 203 | 4 | 1 | 8 | |
| 204 | 1 | 1 | 8 | |
| 204 | 4 | 1 | 8 | |
| 204 | 2a | 1 | 8 | |
| 204 | 2b | 1 | 8 | |
| 204 | 3a | 1 | 8 | |
| 204 | 3b | 1 | 8 | |
| 205 | 1 | 1 | 8 | |
| 205 | 2 | 1 | 8 | |
| 205 | 3 | 1 | 8 | |
| 206 | 1 | 1 | 8 | |
| 206 | 2 | 1 | 8 | |
| 206 | 3 | 1 | 8 | |
| 206 | 4 | 1 | 8 | |
| 207 | 1 | 1 | 8 | |
| 207 | 2 | 1 | 8 | |
| 207 | 4 | 1 | 8 | |
| 208 | 1 | 1 | 8 | |
| 208 | 4 | 1 | 8 | |
| 208 | 2b | 1 | 8 | |

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 208 | 3a | 1 | 8 | |
| 209 | 1 | 1 | 8 | |
| 209 | 3 | 1 | 8 | |
| 210 | 1 | 1 | 8 | |
| 210 | 2 | 1 | 8 | |
| 210 | 3 | 1 | 8 | |
| 211 | 1 | 1 | 8 | |
| 211 | 2 | 1 | 8 | |
| 211 | 3 | 1 | 8 | |
| 211 | 4 | 1 | 8 | |
| 212 | 1 | 1 | 8 | |
| 212 | 2b | 1 | 10 | |
| 212 | 3a | 1 | 8 | |
| 212 | 3b | 1 | 8 | |
| 213 | 1 | 1 | 9 | |
| 213 | 2 | 1 | 9 | |
| 213 | 3 | 1 | 9 | |
| 213 | 4 | 1 | 8 | |
| 214 | 2 | 1 | 9 | |
| 214 | 4 | 1 | 9 | |
| 215 | 1 | 1 | 8 | |
| 215 | 2 | 1 | 9 | |
| 215 | 4 | 1 | 9 | |
| 216 | 1 | 1 | 10 | |
| 216 | 4 | 1 | 9 | |
| 216 | 2a | 1 | 9 | |
| 216 | 2b | 1 | 7 | |
| 216 | 3a | 1 | 9 | |
| 216 | 3b | 1 | 11 | |
| 217 | 1 | 1 | 9 | |
| 217 | 2 | 1 | 9 | |
| 217 | 3 | 1 | 9 | |
| 217 | 4 | 1 | 9 | |
| 218 | 2 | 1 | 8 | |
| 218 | 3 | 1 | 9 | |
| 219 | 4 | 1 | 8 | |
| 220 | 1 | 1 | 8 | |
| 220 | 2a | 1 | 10 | |
| 220 | 2b | 1 | 9 | |
| 220 | 3a | 1 | 9 | |
| 220 | 3b | 1 | 9 | |
| 221 | 1 | 1 | 14 | |
| 221 | 2 | 1 | 10 | |
| 221 | 3 | 1 | 8 | |
| 221 | 4 | 1 | 8 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES ESTIMATE | QUANTITIES ACTUAL |
|---|---|---|
| BENTS 185 - 221 | LF | LF |
| TYPE 1 | 1122 | |
| TYPE 2 | 0 | |
| TYPE 3 | 0 | |
| TOTAL | 1122 | |

TYPE 1 REPAIR IS A CONCRETE PILE JACKET REPAIR.
TYPE 2 REPAIR IS REJACKETING A CONCRETE PILE.
TYPE 3 REPAIR IS REJACKETING A STEEL H-PILE.
SEE SHT S-390 & S-391 FOR PILE JACKET REPAIR DETAILS.
FOR PILE JACKETS, SEE SPECIAL PROVISIONS.




TYPICAL PILE NUMBERS
BENTS WITH MORE PILES FOLLOW SIMILAR PATTERN

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Robbie Weisz
CEA153463B6D43D...
8/11/2016

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 5 OF 7

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR TABLES

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

SHEET NO. S-387
TOTAL SHEETS 394

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pbryant

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 222 | 1 | 1 | 9 | |
| 222 | 2 | 1 | 9 | |
| 222 | 3 | 1 | 9 | |
| 222 | 4 | 1 | 9 | |
| 223 | 1 | 1 | 8 | |
| 223 | 3 | 1 | 8 | |
| 223 | 4 | 1 | 8 | |
| 224 | 4 | 1 | 8 | |
| 224 | 2a | 1 | 8 | |
| 224 | 2b | 1 | 8 | |
| 224 | 3b | 1 | 8 | |
| 225 | 1 | 1 | 9 | |
| 225 | 2 | 1 | 9 | |
| 225 | 3 | 1 | 9 | |
| 226 | 3 | 1 | 10 | |
| 227 | 1 | 1 | 8 | |
| 227 | 3 | 1 | 8 | |
| 228 | 4 | 1 | 10 | |
| 228 | 2a | 1 | 9 | |
| 228 | 2b | 1 | 9 | |
| 229 | 1 | 1 | 8 | |
| 229 | 2 | 1 | 8 | |
| 229 | 3 | 1 | 8 | |
| 229 | 4 | 1 | 8 | |
| 230 | 2 | 1 | 8 | |
| 231 | 1 | 1 | 14 | |
| 231 | 2 | 1 | 11 | |
| 232 | 4 | 1 | 8 | |
| 232 | 2b | 1 | 8 | |
| 232 | 3a | 1 | 8 | |
| 233 | 1 | 1 | 9 | |
| 233 | 6 | 1 | 8 | |
| 234 | 1 | 1 | 8 | |
| 234 | 2 | 1 | 9 | |
| 234 | 3 | 1 | 9 | |
| 235 | 2 | 1 | 14 | |
| 235 | 3 | 1 | 8 | |
| 235 | 4 | 1 | 9 | |
| 236 | 1 | 1 | 10 | |
| 236 | 2b | 1 | 9 | |
| 236 | 3a | 1 | 9 | |
| 236 | 3b | 1 | 9 | |
| 237 | 1 | 1 | 9 | |
| 237 | 2 | 1 | 9 | |
| 237 | 3 | 1 | 9 | |

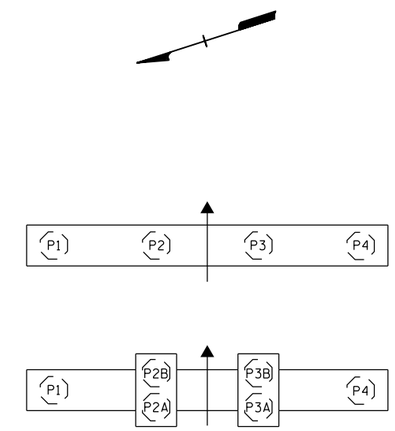
| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 237 | 4 | 1 | 9 | |
| 237 | 5 | 1 | 14 | |
| 238 | 1 | 1 | 14 | |
| 238 | 2 | 1 | 8 | |
| 238 | 5 | 1 | 14 | |
| 238 | 6 | 1 | 8 | |
| 239 | 2 | 1 | 8 | |
| 239 | 3 | 1 | 9 | |
| 239 | 4 | 1 | 8 | |
| 239 | 6 | 1 | 10 | |
| 241 | 2 | 1 | 9 | |
| 241 | 4 | 1 | 8 | |
| 242 | 1 | 1 | 9 | |
| 242 | 2 | 1 | 9 | |
| 242 | 4 | 1 | 9 | |
| 243 | 2 | 1 | 9 | |
| 243 | 3 | 1 | 9 | |
| 243 | 4 | 1 | 9 | |
| 243 | 5 | 1 | 9 | |
| 244 | 1 | 1 | 14 | |
| 244 | 4 | 1 | 9 | |
| 245 | 1 | 1 | 8 | |
| 245 | 2 | 1 | 8 | |
| 246 | 1 | 1 | 14 | |
| 246 | 2 | 1 | 14 | |
| 247 | 2 | 1 | 10 | |
| 247 | 3 | 1 | 8 | |
| 247 | 4 | 1 | 8 | |
| 248 | 1 | 1 | 8 | |
| 248 | 4 | 1 | 8 | |
| 248 | 2b | 1 | 8 | |
| 248 | 3b | 1 | 8 | |
| 249 | 1 | 1 | 8 | |
| 249 | 2 | 1 | 8 | |
| 250 | 1 | 1 | 8 | |
| 250 | 2 | 1 | 8 | |
| 250 | 3 | 1 | 10 | |
| 250 | 4 | 1 | 9 | |
| 251 | 1 | 1 | 8 | |
| 251 | 3 | 1 | 8 | |
| 252 | 1 | 1 | 9 | |
| 252 | 4 | 1 | 8 | |
| 252 | 2b | 1 | 9 | |
| 252 | 3a | 1 | 8 | |
| 252 | 3b | 1 | 8 | |

| PILE REPAIRS | | | | |
|---|---|---|---|---|
| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
| 253 | 1 | 1 | 9 | |
| 253 | 2 | 1 | 9 | |
| 253 | 3 | 1 | 9 | |
| 253 | 4 | 1 | 9 | |
| 254 | 1 | 1 | 8 | |
| 254 | 2 | 1 | 9 | |
| 254 | 3 | 1 | 8 | |
| 254 | 4 | 1 | 8 | |
| 254 | 5 | 1 | 8 | |
| 255 | 1 | 1 | 9 | |
| 255 | 2 | 1 | 9 | |
| 255 | 3 | 1 | 11 | |
| 255 | 4 | 1 | 9 | |
| 255 | 5 | 1 | 9 | |
| 256 | 1 | 1 | 8 | |
| 256 | 4 | 1 | 9 | |
| 256 | 2a | 1 | 8 | |
| 256 | 2b | 1 | 9 | |
| 256 | 3a | 1 | 9 | |
| 256 | 3b | 1 | 9 | |
| 257 | 1 | 1 | 9 | |
| 257 | 2 | 1 | 9 | |
| 257 | 3 | 1 | 9 | |
| 257 | 4 | 1 | 9 | |
| 258 | 2 | 1 | 8 | |
| 258 | 3 | 1 | 8 | |
| 258 | 4 | 1 | 8 | |
| 259 | 1 | 1 | 8 | |
| 259 | 3 | 1 | 8 | |
| 259 | 4 | 1 | 9 | |
| 260 | 1 | 1 | 9 | |
| 260 | 4 | 1 | 7 | |
| 260 | 2a | 1 | 10 | |
| 260 | 2b | 1 | 9 | |
| 260 | 3a | 1 | 9 | |
| 260 | 3b | 1 | 10 | |
| 261 | 1 | 1 | 8 | |
| 261 | 2 | 1 | 8 | |
| 261 | 3 | 1 | 11 | |
| 261 | 4 | 1 | 8 | |
| 261 | 5 | 1 | 9 | |
| 261 | 6 | 1 | 9 | |

## SUMMARY OF QUANTITIES

| | QUANTITIES ESTIMATE | QUANTITIES ACTUAL |
|---|---|---|
| BENTS 222 - 261 | LF | LF |
| TYPE 1 | 1184 | |
| TYPE 2 | 0 | |
| TYPE 3 | 0 | |
| TOTAL | 1184 | |

TYPE 1 REPAIR IS A CONCRETE PILE JACKET REPAIR.
TYPE 2 REPAIR IS REJACKETING A CONCRETE PILE.
TYPE 3 REPAIR IS REJACKETING A STEEL H-PILE.
SEE SHT S-390 & S-391 FOR PILE JACKET REPAIR DETAILS.
FOR PILE JACKETS, SEE SPECIAL PROVISIONS.




TYPICAL PILE NUMBERS
BENTS WITH MORE PILES FOLLOW SIMILAR PATTERN

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7
SHEET 6 OF 7

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Robbie Weisz
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8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR TABLES

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

SHEET NO. S-388
TOTAL SHEETS 394

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## PILE REPAIRS

| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
|---|---|---|---|---|
| 262 | 1 | 2 | 11.5 | |
| 262 | 2 | 1 | 8 | |
| 262 | 3 | 1 | 8 | |
| 262 | 4 | 1 | 8 | |
| 262 | 5 | 1 | 8 | |
| 262 | 6 | 1 | 8 | |
| 263 | 3 | 1 | 9 | |
| 263 | 4 | 1 | 9 | |
| 263 | 5 | 1 | 9 | |
| 263 | 6 | 1 | 9 | |
| 264 | 1 | 1 | 9 | |
| 264 | 4 | 1 | 9 | |
| 264 | 2a | 1 | 9 | |
| 264 | 2b | 1 | 9 | |
| 264 | 3a | 1 | 9 | |
| 264 | 3b | 1 | 9 | |
| 265 | 1 | 1 | 9 | |
| 265 | 2 | 1 | 9.5 | |
| 265 | 3 | 1 | 9.5 | |
| 265 | 4 | 1 | 8 | |
| 265 | 5 | 1 | 9.5 | |
| 265 | 6 | 2 | 9.5 | |
| 266 | 1 | 1 | 8 | |
| 266 | 2 | 1 | 8.5 | |
| 266 | 3 | 1 | 8.5 | |
| 266 | 4 | 1 | 8.5 | |
| 266 | 5 | 1 | 8.5 | |
| 266 | 6 | 1 | 8.5 | |
| 267 | 2 | 1 | 7 | |
| 267 | 3 | 1 | 7 | |
| 267 | 5 | 1 | 8 | |
| 267 | 6 | 1 | 8 | |
| 268 | 2a | 1 | 6.5 | |
| 268 | 2b | 1 | 6.5 | |
| 268 | 3a | 1 | 6.5 | |
| 268 | 3b | 1 | 6.5 | |
| 269 | 1 | 1 | 6.5 | |
| 269 | 2 | 1 | 6.5 | |
| 269 | 3 | 1 | 6.5 | |
| 269 | 4 | 1 | 6.5 | |
| 269 | 5 | 1 | 6.5 | |
| 269 | 6 | 1 | 6.5 | |
| 270 | 1 | 1 | 5.5 | |
| 270 | 2 | 1 | 5.5 | |
| 270 | 3 | 1 | 5.5 | |

## PILE REPAIRS

| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
|---|---|---|---|---|
| 270 | 5 | 1 | 5.5 | |
| 270 | 6 | 1 | 5.5 | |
| 271 | 2 | 1 | 5 | |
| 271 | 5 | 1 | 5 | |
| 271 | 6 | 1 | 5 | |
| 272 | 4 | 1 | 5 | |
| 272 | 2a | 1 | 4.5 | |
| 272 | 2b | 1 | 4.5 | |
| 272 | 3b | 1 | 4.5 | |

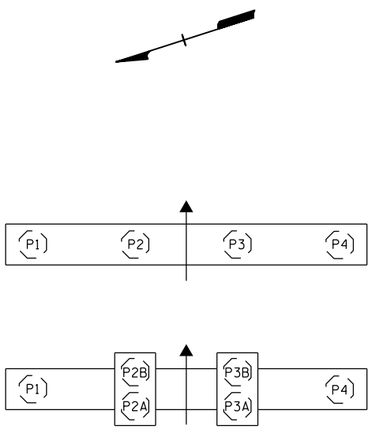
## PILE REPAIRS

| BENT | PILE | TYPE | JACKET LENGTH EST. LF | JACKET LENGTH ACTUAL LF |
|---|---|---|---|---|

## SUMMARY OF QUANTITIES

| | QUANTITIES ESTIMATE | QUANTITIES ACTUAL |
|---|---|---|
| BENTS 262 - 274 | LF | LF |
| TYPE 1 | 382 | |
| TYPE 2 | 21 | |
| TYPE 3 | 0 | |
| TOTAL | 403 | |

TYPE 1 REPAIR IS A CONCRETE PILE JACKET REPAIR.
TYPE 2 REPAIR IS REJACKETING A CONCRETE PILE.
TYPE 3 REPAIR IS REJACKETING A STEEL H-PILE.
SEE SHT S-390 & S-391 FOR PILE JACKET REPAIR DETAILS.
FOR PILE JACKETS, SEE SPECIAL PROVISIONS.




TYPICAL PILE NUMBERS

BENTS WITH MORE PILES FOLLOW SIMILAR PATTERN

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 7 OF 7

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8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR TABLES

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

SHEET NO. S-389

TOTAL SHEETS 394

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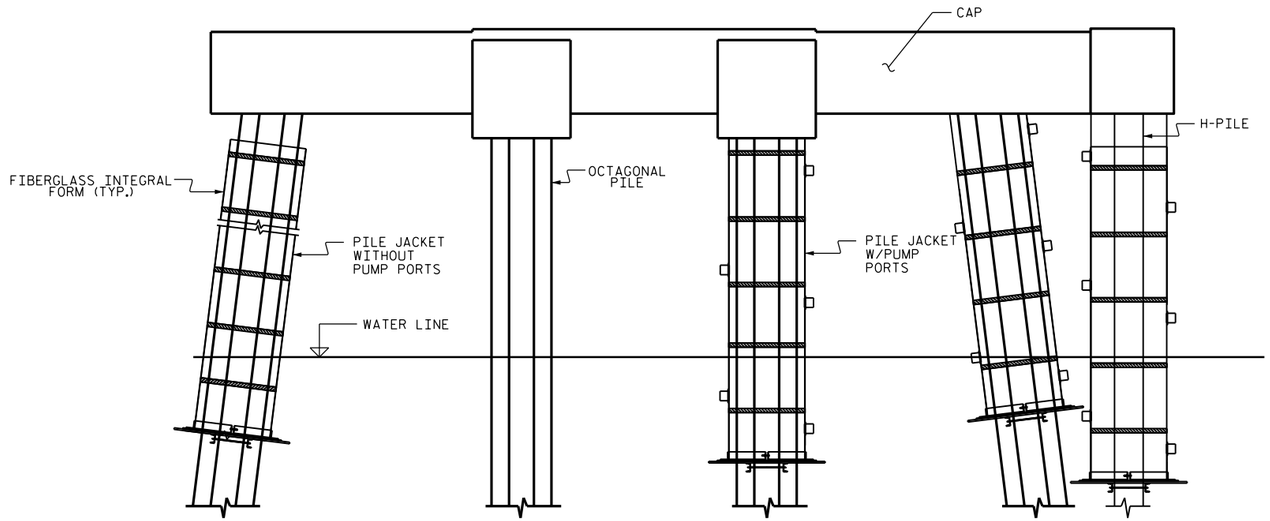
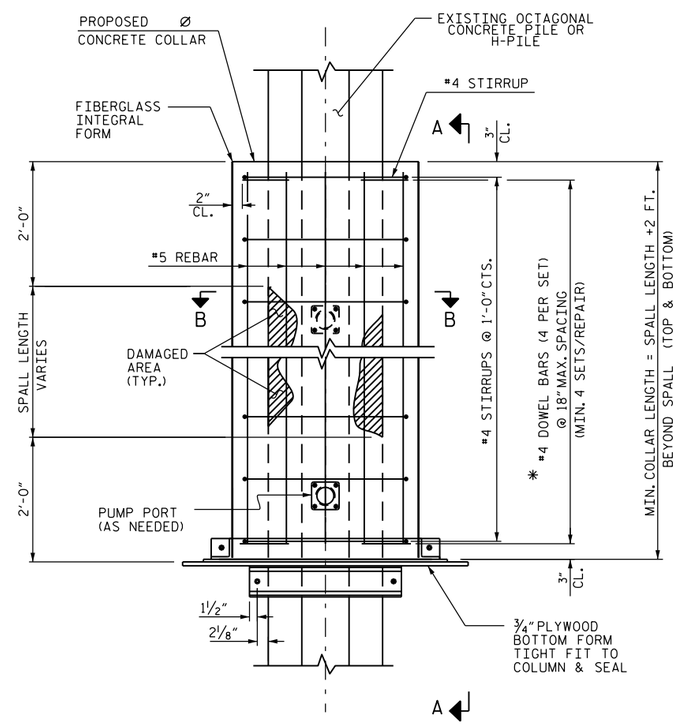



## ELEVATION VIEW

(ALL PILE JACKET REPAIR LOCATIONS SIMILAR)




## TYPICAL PILE JACKET REPAIR

*FOR H-PILES USE #6 DOWEL BARS

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CEA153463B6D43D...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-390 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 394 |

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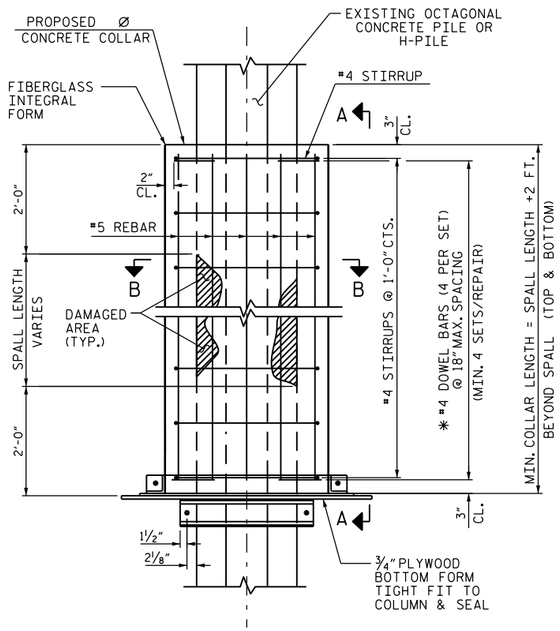
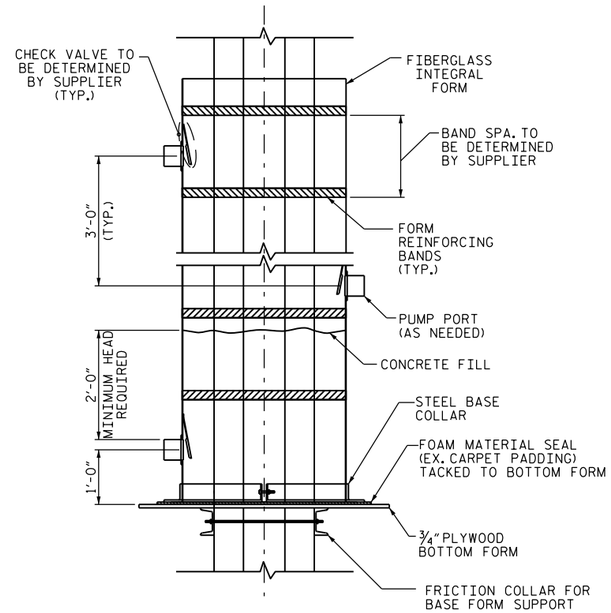
# TYPICAL PILE JACKET WITHOUT PUMP PORTS

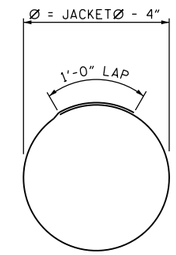


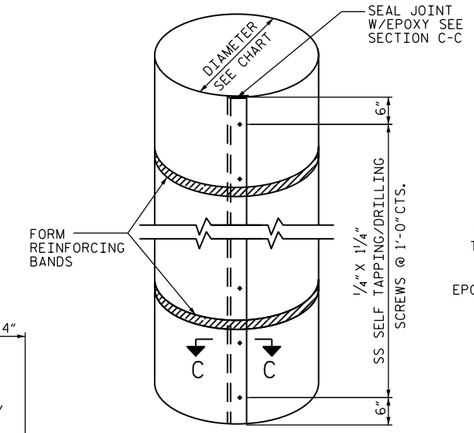

## JACKET ELEVATION

* FOR H-PILES USE #6 DOWEL BARS

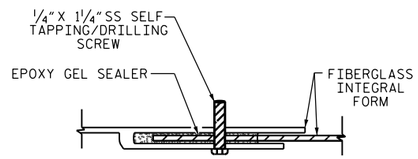



## SECTION A-A




| JACKET SIZING CHART | | |
|---|---|---|
| PILE/ COLUMN SIZE | RECOMMENDED JACKET SIZE | |
| | ROUND | SQUARE |
| 12" SQUARE | 28" Ø | 24" X 24" |
| 14" SQUARE | 30" Ø | 26" X 26" |
| 16" SQUARE | 34" Ø | 28" X 28" |
| 20" SQUARE | 38" Ø | 32" X 32" |
| 24" SQUARE | 44" Ø | 36" X 36" |
| 30" SQUARE | N/A | 42" X 42" |
| | | |
| ROUND | PILE Ø + 10" | N/A |
| | | |
| OCTAGONAL | PILE Ø + 10" | N/A |
| | | |

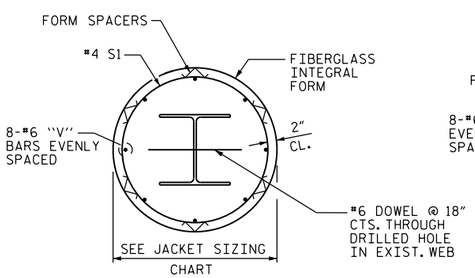



## SECTION C-C

## FIBERGLASS INTEGRAL FORM

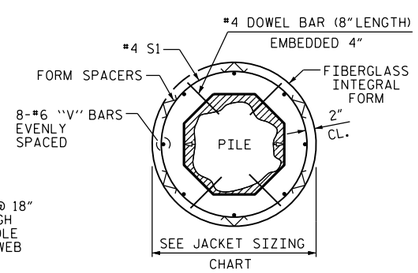
## REPAIR SEQUENCE

1) COMPLETELY REMOVE ALL LOOSE DELAMINATED AND WEAK CONCRETE, OIL, GREASE, LAITANCE AND OTHER CONTAMINANTS. PREPARE CONCRETE USING ACCEPTABLE MECHANICAL MEANS AND CONCRETE CLEANERS AND DEGREASERS AS NECESSARY TO OBTAIN CLEAN, SOUND AND ROUGH SURFACES. COARSE AGGREGATE SHALL BE EXPOSED. CONCRETE PILE SURFACES SHOULD BE SOUND AND FREE OF CONTAMINATION. WHERE MARINE GROWTH OR OTHER CONTAMINANTS EXIST, INCLUDING VISIBLE SIGNS OF CORROSION, A HIGH PRESSURE WATER BLAST SHOULD BE UTILIZED TO ENSURE A CLEAN, SOUND, CONTAMINANT- FREE SURFACE FOR OPTIMUM BOND.
2) CLEAN REINFORCING STEEL & COLUMNS OR PILE, OF ALL RUST AND FOREIGN MATERIAL.
3) DETERMINE FIBERGLASS INTEGRAL FORM LENGTH. MINIMUM LENGTH IS 2' ABOVE AND BELOW CLEAN, SOUND, CONTAMINANT-FREE SURFACE.
4) FOR CONCRETE PILES DRILL ⅝" HOLES AND PLACE #4 DOWELS W/ EPOXY GROUT. FOR H-PILES DRILL HOLES AND PLACE #6 DOWELS.
5) BUILD THE REBAR CAGE BY PLACING THE #4 STIRRUPS AND VERTICAL REINFORCING STEEL IN ACCORDANCE WITH THE PROJECT DRAWING.
6) INSTALL FORM SPACERS TO INSURE ADEQUATE CONCRETE COVER AT ALL PARTS OF THE SLEEVE.
7) INSTALL THE LEAVE- IN PLACE FIBERGLASS FORM (ALSO CALLED JACKET OR COLLAR). THE DIAMETER OF THE JACKET SHOULD BE LARGE ENOUGH TO IN- CIRCLE THE PILE WHILE PROVIDING A MINIMUM OF 5" TOTAL CLEARANCE. 2" OF CLEARANCE BETWEEN THE PILE AND THE REINFORCING STEEL AND 2" OF CLEARANCE BETWEEN THE REINFORCING STEEL AND THE FORM.. (SEE JACKET SIZING CHART)
8) INSERT CONCRETE PUMP HOSE THRU TOP OF JACKET AND EXTEND TO JUST ABOVE THE BOTTOM AND PUMP AT A FLOW RATE TO THE DESIRED FILL ELEVATION. IF SITE CONDITIONS PROHIBIT INSERTING PUMP HOSE THRU TOP OF JACKET THEN INSTALL PUMP PORTS AND PLACE CONCRETE AS SHOWN IN THE DETAILS.
9) PLACE CONCRETE FILL. INSTALL PUMP PORT(S) IN JACKET FOR UNDERWATER APPLICATIONS. PORTS SHOULD HAVE A CHECK VALVE TO KEEP BACK FLOW OF CONCRETE ONCE PUMP NOZZLE IS REMOVED. FOR CONCRETE PLACEMENTS GREATER THAN 5' USE MULTIPLE PORTS SPACED 3' VERTICALLY AND ALTERNATING 180° FROM PREVIOUS PORT. A MINIMUM OF 2' OF CONCRETE HEAD, IS NEEDED ABOVE PORT PRIOR TO CHANGING PORTS.
10) REMOVE FORM WORK WHEN CONCRETE STRENGTH ACHIEVES 3,000 PSI.



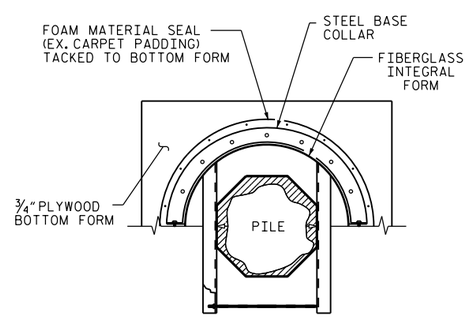

## SECTION B-B

H- PILE REPAIR




## SECTION B-B

OCTAGONAL PILE REPAIR




## PLATFORM DETAIL

SEE JACKET SIZING CHART

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO. 7

SHEET 2 OF 2

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8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE JACKET REPAIR

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-391 |
| 1 | | | 3 | | | TOTAL SHEETS |
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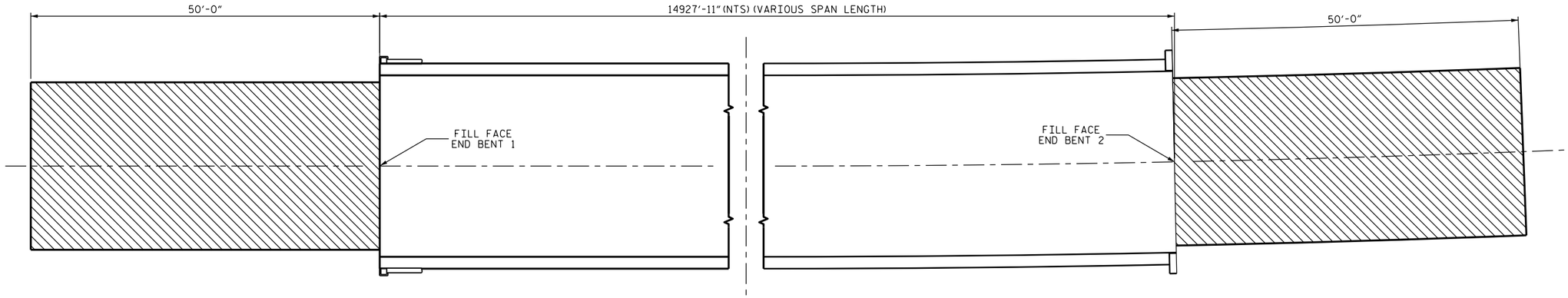
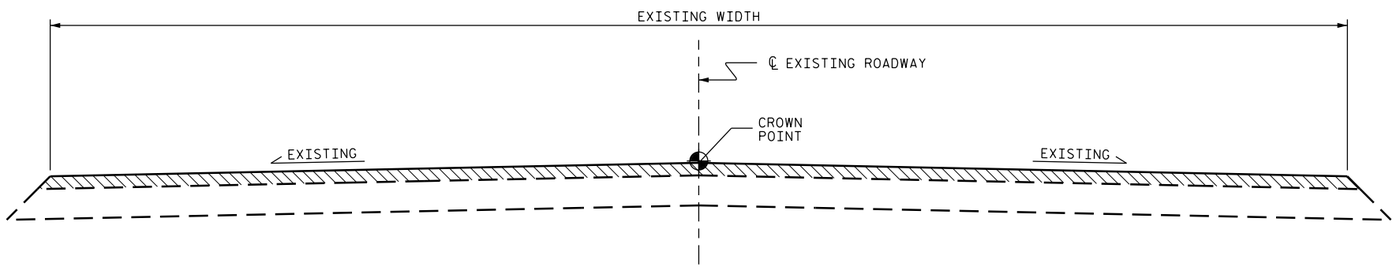



PLAN

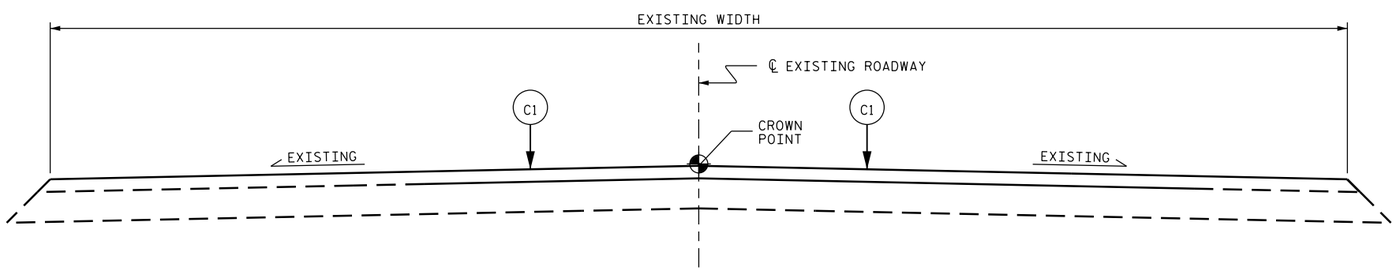
INCIDENTAL MILLING




TYPICAL ROADWAY MILLING SECTION

| SUMMARY OF QUANTITIES | | |
|---|---|---|
| | ESTIMATE | ACTUAL |
| INCIDENTAL MILLING | 267 SQ. YDS. | |
| ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B | 22.5 TONS | |

| | |
|---|---|
| C1 | PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH. |




TYPICAL ROADWAY MILLING SECTION

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO. 7

DocuSigned by:
Robbie Weisz
CEA153463B6D43D...

8/11/2016

NORTH CAROLINA PROFESSIONAL SEAL 039163 ENGINEER ROBBIE N. WEISZ

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

APPROACH MILLING AND TYPICAL ROADWAY SECTIONS

| REVISIONS | | | | | SHEET NO. |
|---|---|---|---|---|---|
| NO. | BY: | DATE: | BY: | DATE: | S-392 |
| 1 | | | | | TOTAL SHEETS |
| 2 | | | | | 394 |

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DRAWN BY : P. D. BRYANT DATE : 62015
CHECKED BY : R.WEISZ DATE : 6/2015

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# 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.

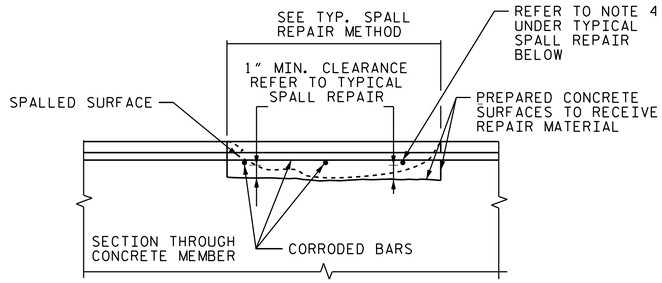
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE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

## SPECIAL NOTES:

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

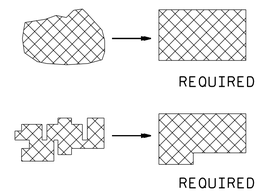
ENGLISH

JANUARY, 1990



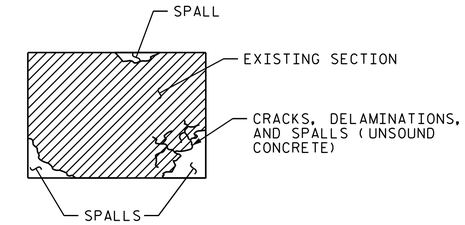

## EXPOSING AND UNDERCUTTING REINFORCING STEEL

APPLICABLE TO HORIZONTAL, VERTICAL, AND OVERHEAD LOCATIONS

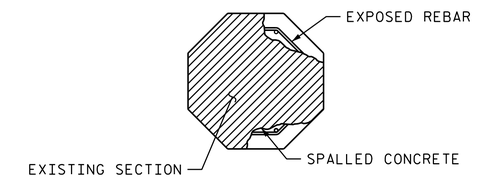



## SIMPLE PATCH CONFIGURATION

AT CORNER LOCATIONS PROVIDE RIGHT ANGLE CUTS.
PATCH CONFIGURATION SHALL BE KEPT AS SIMPLE AS POSSIBLE.
INDIVIDUAL REPAIR AREAS WITHIN 2 FEET SHALL BE JOINED AT THE DIRECTION OF THE ENGINEER.




## TYPICAL DELAMINATIONS AND SPALLS




## TYPICAL SPALL WITH EXPOSED REBAR

## TYPICAL SPALL REPAIR

1. FOR CONCRETE RESTORATION, REMOVE AND REPAIR UNSOUND CONCRETE FROM AREAS TO BE REPAIRED IN ACCORDANCE WITH THIS SHEET AND THE TECHNICAL SPECIAL PROVISIONS. AREAS WELL ADHERED TO EXISTING STRAND OR REINFORCEMENT SHALL REMAIN.
2. ALL REPAIRS SHALL BE MARKED FOR APPROVAL OF APPROXIMATE PERIMETER PRIOR TO INITIATION OF WORK.
3. THE CONTRACTOR SHALL SUBMIT A PLAN FOR CONTROL AND DISPOSAL OF DEBRIS TO THE ENGINEER FOR APPROVAL.
4. ANY REINFORCEMENT WHICH IS LOOSE SHALL BE SECURED IN PLACE BY TYING TO OTHER SECURED BARS OR BY OTHER APPROVED METHODS. LAP SPLICES SHALL BE INSTALLED IN ACCORDANCE WITH THE TABLE. REFER TO SHEET B1-3 FOR DOWEL DETAIL (IF NECESSARY).
5. CLEAN EXPOSED REBARS AND ANY LOOSE CONCRETE OR ABRASIVES BY SANDBLASTING. CLEANED STEEL SHALL NOT BE LEFT EXPOSED FOR MORE THAN 72 HOURS PRIOR TO ENCAPSULATION OF CONCRETE.
6. AN APPROVED CEMENTITIOUS BASED BONDING AGENT SHALL BE USED ON ALL EXPOSED CONCRETE SURFACES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS BEFORE THE REPAIR MATERIAL IS APPLIED.
7. FILL VOIDS WITH REPAIR MATERIAL IN ACCORDANCE WITH THE TECHNICAL SPECIAL PROVISIONS AND FDOT SPECIFICATIONS. NOTE THAT ANY REPAIR MATERIAL APPLIED TO OVERHEAD LOCATIONS SHALL BE SPECIFICALLY DESIGNATED FOR OVERHEAD USE BY THE MANUFACTURER'S SPECIFICATIONS.

## TYPICAL CRACK REPAIR METHOD

1. OBTAIN ENGINEER'S APPROVAL TO CARRY OUT CRACK REPAIR (IN LIEU OF SPALL REPAIR) FOR CASES WHERE ADJACENT CONCRETE IS OTHERWISE SOUND AND CRACKING IS NOT A RESULT OF CORRODING REINFORCEMENT.
2. ADDRESS CRACKS IN NEW CONSTRUCTION IN ACCORDANCE WITH PROJECT SPECIAL PROVISIONS. ADDRESSEXISTING CRACKS IN ACCORDANCE WITH THIS SHEET AND PROJECT SPECIAL PROVISIONS.
3. REMOVE UNSOUND CONCRETE FROM CRACK AREA.
4. THE CONTRACTOR SHALL SUBMIT A PLAN FOR CONTROL AND DISPOSAL OF DEBRIS TO THE ENGINEER FOR APPROVAL.
5. FOR CRACKS UP TO 1/8 USE AN EPOXY RESIN WITH MINIMUMS OF VISCOSITY OF 325 CPS, 28 DAY COMPRESSIVE STRENGTH OF 13000 PSI. FOR CRACKS 1/8 TO 1/4, USE AN INJECTION GEL OR EQUAL NON-SAG PASTE WITH 28 DAY COMPRESSIVE STRENGTH OF 10000 PSI.
6. TO SEAL CRACK SURFACES PRIOR TO CRACK INJECTION, USE INJECTION GEL WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 12000 PSI.
7. ENGINEER TO APPROVE CRACK AND CAP SEAL MATERIAL PRIOR TO BEGINNING OF CONSTRUCTION.
8. APPLY CLASS II FINISH AT COMPLETION OF CRACK REPAIR TO REMOVE FINS OR KNOBS.

### LAP SPLICE TABLE

| REBAR SIZE | LAP SPLICE LENGTH |
|---|---|
| 4 | 1'-9" |
| 5 | 2'-2" |
| 6 | 2'-7" |
| 7 | 3'-6" |
| 8 | 4'-6" |
| 9 | 5'-10" |
| 10 | 7'-4" |

### PIVOT PIER PILE REPAIRS BILL OF MATERIAL

| RESTORE SPALLED AREAS - EPOXY | INJECT AND SEAL CRACK | EPOXY MATERIAL | PILE WRAP |
|---|---|---|---|
| CF | LF | GA | LF |
| 80.4 | 420 | 42 | 280 |

PROJECT NO. B-5936
TYRRELL COUNTY
STATION: BRIDGE NO. 7

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# PIVOT PIER PILES CONCRETE RESTORATION

NORTH CAROLINA PROFESSIONAL SEAL 043571 ENGINEER SAMUEL L. CULLUM

DocuSigned by: Samuel Cullum
19C9709SC75A467...
8/17/2016

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

DRAWN BY : J. B. HANNA DATE : 06-16
CHECKED BY : S. L. CULLUM DATE : 06-16
DESIGN ENGINEER OF RECORD: S. L. CULLUM DATE : 06-16

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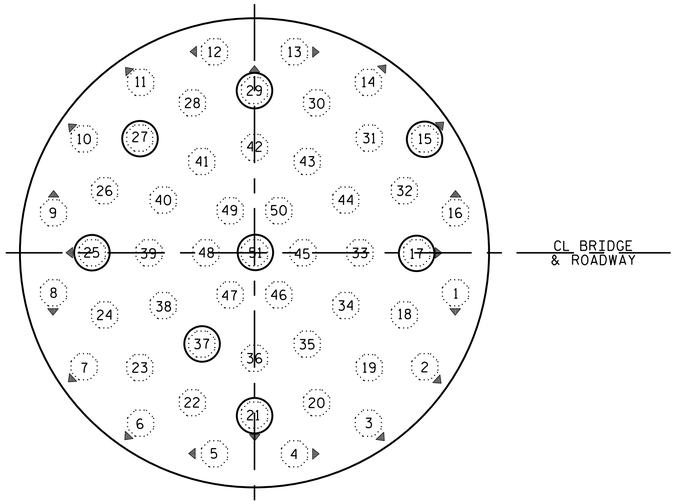


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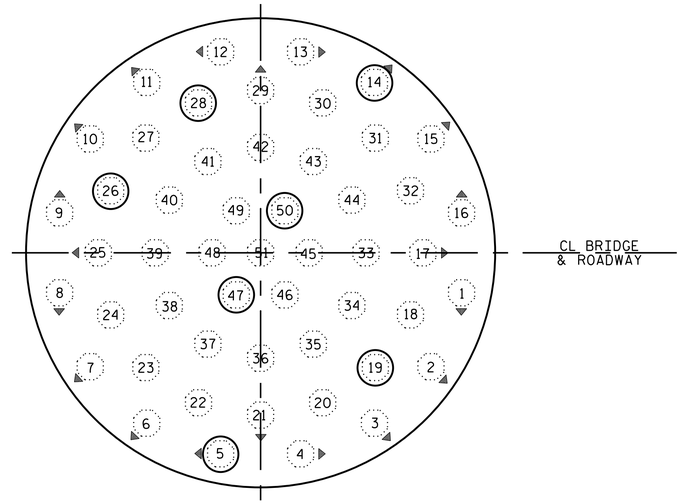


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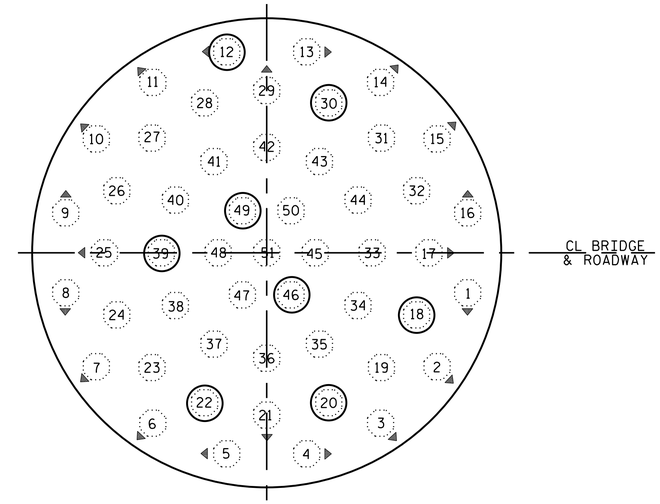


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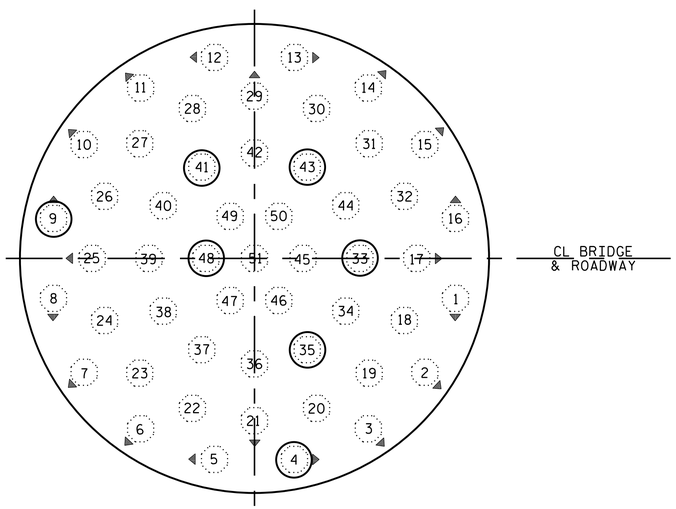


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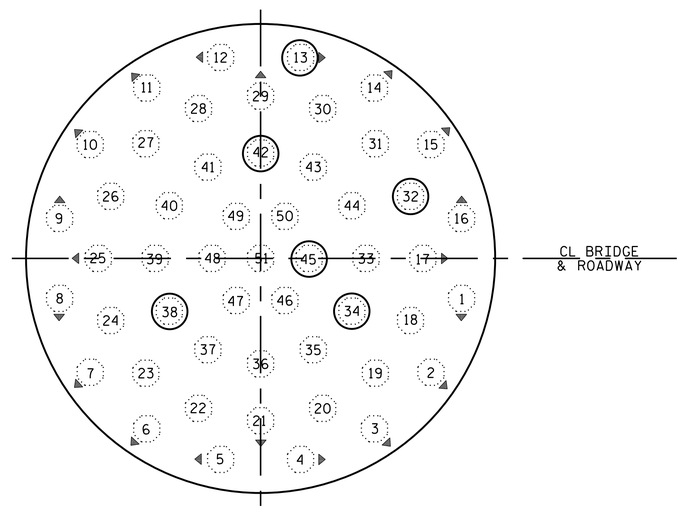


PHASE 5

NOTES:

1. PILE CONCRETE REPAIR SHALL BE PERFORMED IN PHASES AS SHOWN ON THIS SHEET.
2. CONTRACTOR MAY SUBMIT ALTERNATE REPAIR PHASING, BUT IT MUST BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION.
3. ALTERNATE PHASING SCHEMES SHOULD AVOID ADJACENT PILE REPAIR WITHIN THE SAME PHASE IF POSSIBLE.
4. WORK THIS SHEET WITH SHEET SA-1, CONCRETE RESTORATION DETAILS.
5. CONTRACTOR IS RESPONSIBLE FOR STABILITY OF BENT AT ALL TIMES.

PROJECT NO. B-5936

TYRRELL COUNTY

STATION: BRIDGE NO. 7

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 043571 ENGINEER SAMUEL L. CULLUM

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PIVOT PIER PILES CONCRETE REPAIR PHASING

| REVISIONS | | | | | | | SHEET NO. |
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| DRAWN BY : | J. B. HANNA | DATE : | 06-16 |
| CHECKED BY : | S. L. CULLUM | DATE : | 06-16 |
| DESIGN ENGINEER OF RECORD: | S. L. CULLUM | DATE : | 06-16 |

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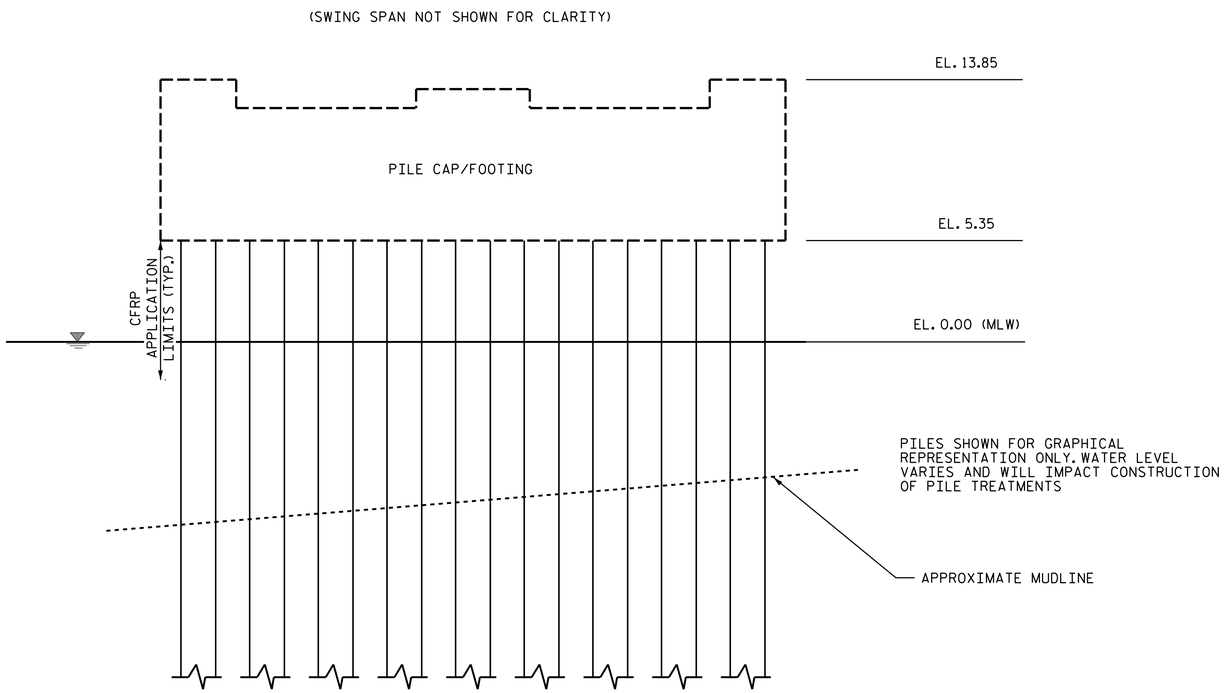
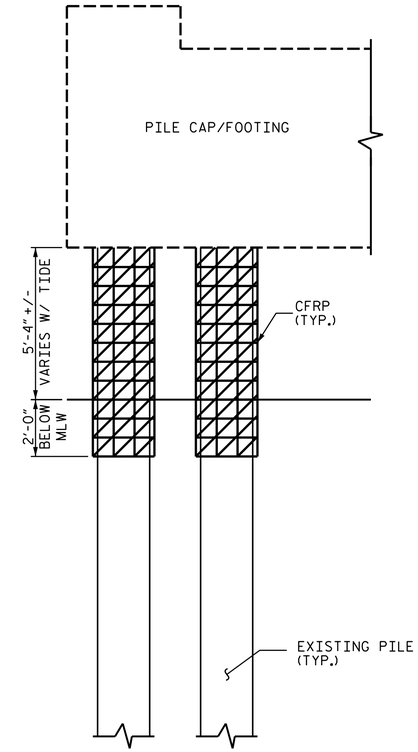
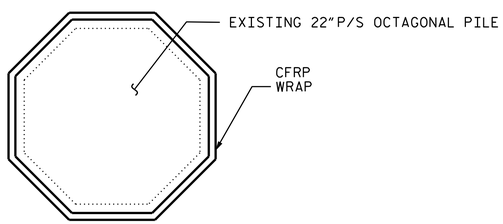



## PIVOT PIER ELEVATION



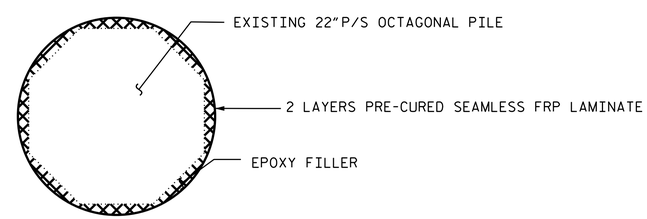

## PROPOSED PIVOT PIER PILE STRENGTHENING




## PILE SECTION DETAIL - ALTERNATE "A"

NOTES:

1. WET-LAYUP CFRP SHALL CONSIST OF A MINIMUM OF TWO LAYERS OF BI-DIRECTIONAL FABRIC.
2. EACH LAYER SHALL MEET THE REQUIREMENTS OF THE PROJECT SPECIAL PROVISIONS FOR PILE STRENGTHENING.
3. PRIOR TO REPAIRS, ALL CONCRETE DEFECTS WITHIN THE PROPOSED WRAP FOOTPRINT SHALL BE REPAIRED IN ACCORDANCE WITH CONTRACT DOCUMENTS.




## PILE SECTION DETAIL - ALTERNATE "B"

NOTES:

1. ALTERNATE PRE-CURED LAMINATE WITH EPOXY FILLER SHALL CONSIST OF A MINIMUM OF TWO LAYERS OF BI-DIRECTIONAL FABRIC.
2. EACH LAYER SHALL MEET THE REQUIREMENTS OF THE PROJECT SPECIAL PROVISIONS FOR ALTERNATE PILE STRENGTHENING.
3. PRIOR TO REPAIRS, ALL CONCRETE DEFECTS WITHIN THE PROPOSED WRAP FOOTPRINT SHALL BE REPAIRED IN ACCORDANCE WITH CONTRACT DOCUMENTS.

FOR BOTH ALTERNATE PILE STRENGTHENING TREATMENTS, EXTERIOR PILES SHALL BE COATED WITH A UV PROTECTIVE COATING WHICH IS COMPATIBLE WITH THE FIBER TREATMENT AND IN KEEPING WITH MANUFACTURER SPECIFICATIONS.

PROJECT NO. B-5936
TYRRELL COUNTY
STATION: BRIDGE NO. 7

SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 043571 ENGINEER SAMUEL L. CULLUM

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PIVOT PIER
PILE STRENGTHENING

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SA-3 |
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| DRAWN BY : | J. B. HANNA | DATE : | 06-16 |
| CHECKED BY : | S. L. CULLUM | DATE : | 06-16 |
| DESIGN ENGINEER OF RECORD: | S. L. CULLUM | DATE : | 06-16 |

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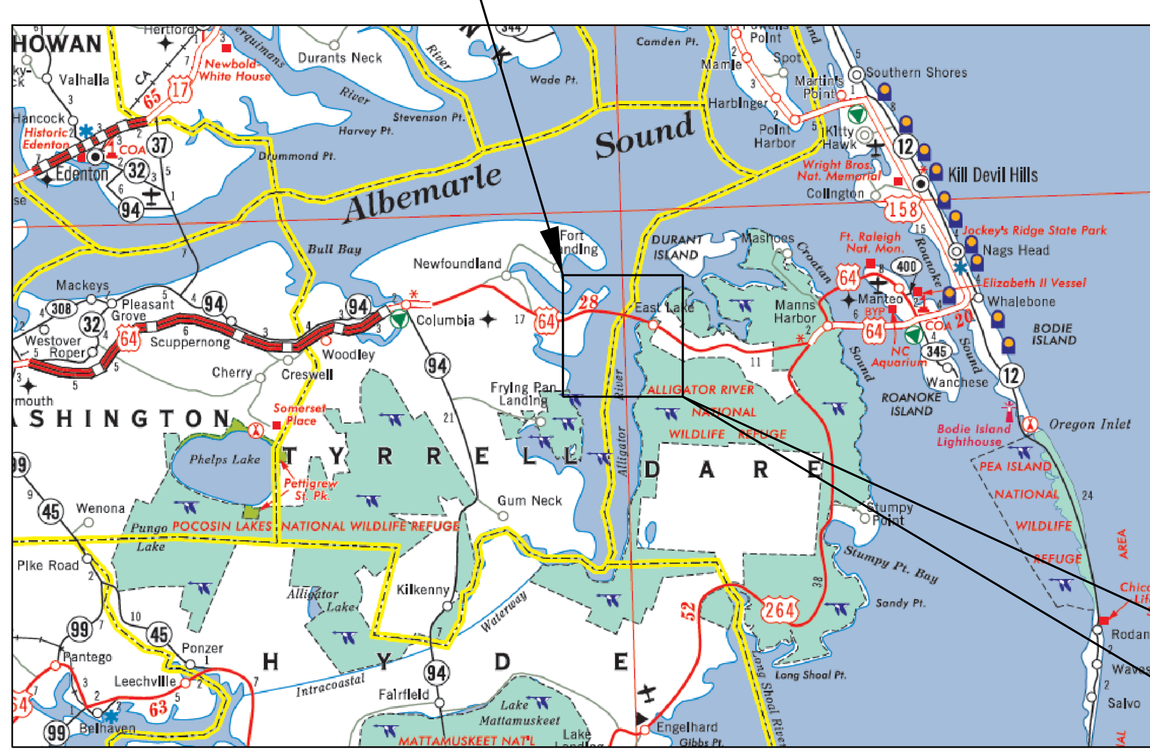
# North Carolina Department of Transportation

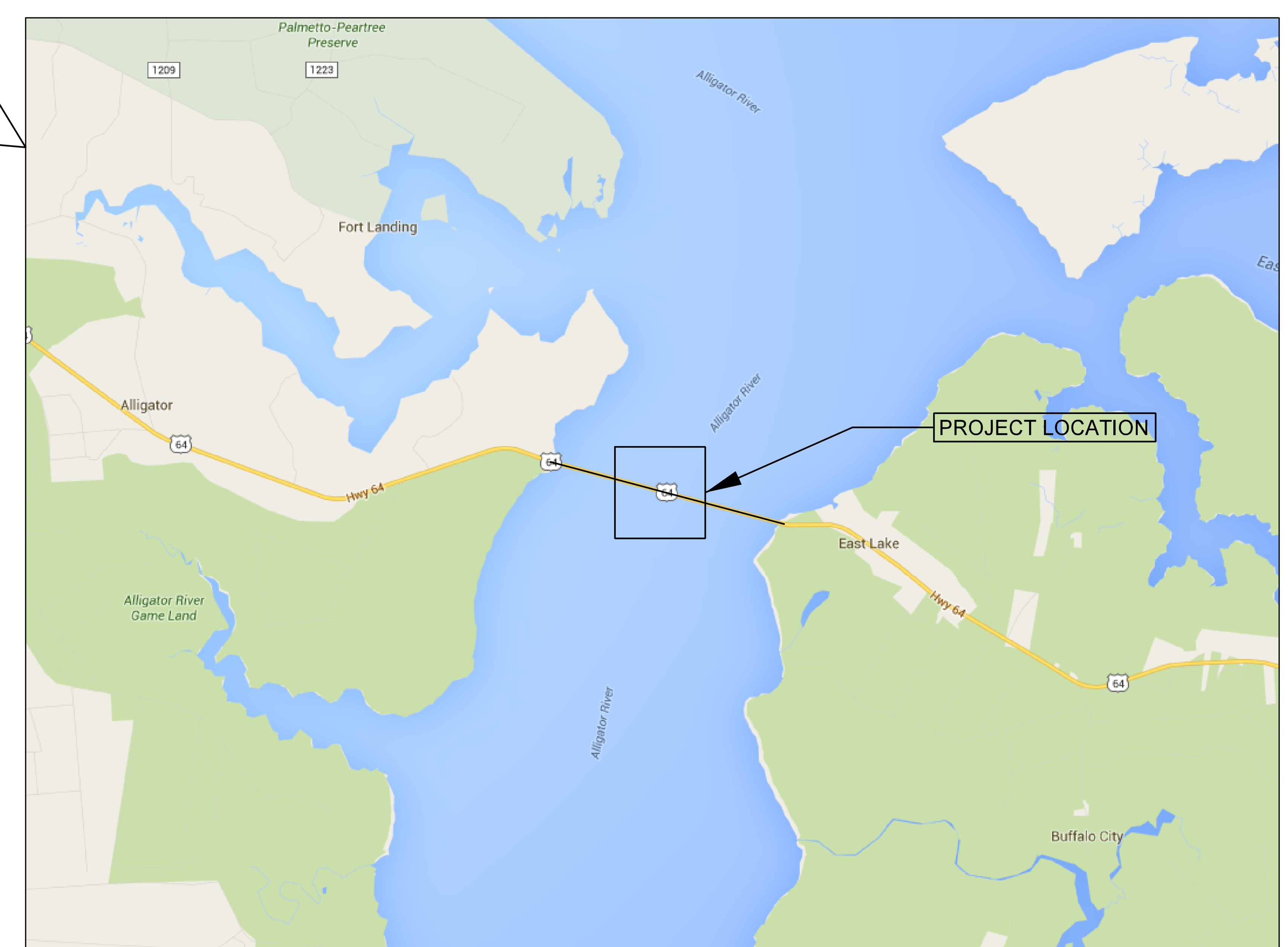
## ALLIGATOR RIVER SWING SPAN REHABILITATION, TYRRELL COUNTY, BRIDGE NO. 7

## PROJECT NO. B-5936

PROJECT LOCATION




KEY MAP




LOCATION MAP

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

DocuSigned by:
Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

Hardesty & Hanover
engineering that moves you

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NORTH CAROLINA, LICENSE NO. 036065, EXPIRATION DATE: DEC 31, 2016.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TITLE SHEET

ALLIGATOR RIVER SWING SPAN

| DWG NUMBER | TOTAL DWGS | DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED |
|---|---|---|
| 1 | 90 | |

REVISIONS

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

SHEET NO. G-1

TOTAL SHEETS 3

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

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PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

Hardesty &Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720FBF14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

INDEX OF DRAWINGS

ALLIGATOR RIVER SWING SPAN

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

DRAWN BY: CEM DATE : 8/8/2016
CHECKED BY: RAJ DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: SAR DATE : 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 2 | 90 |

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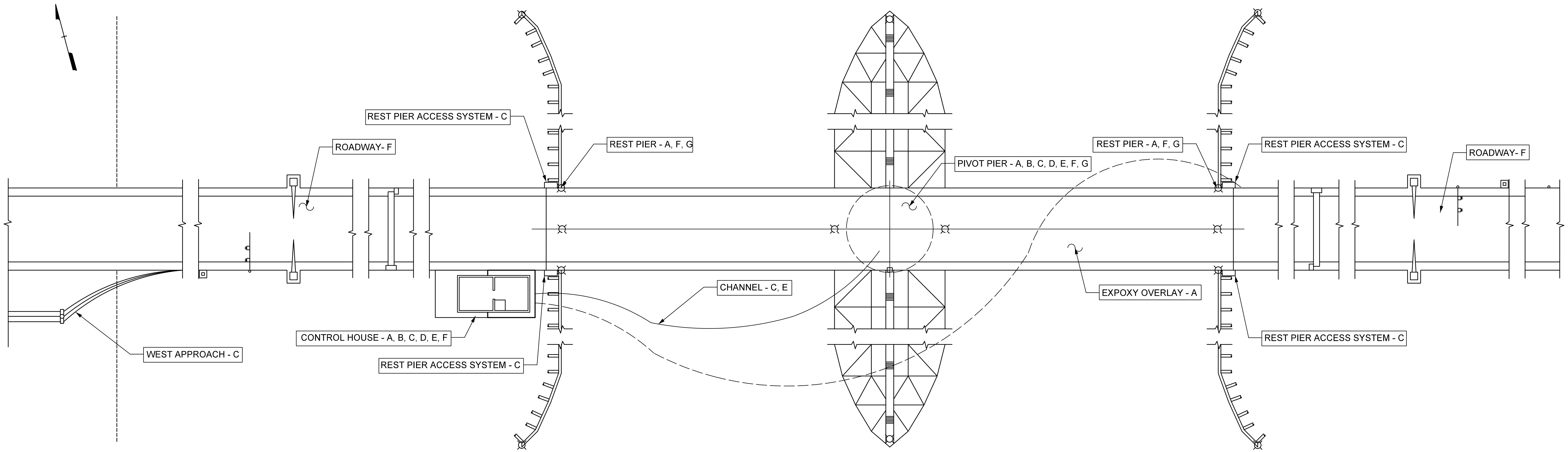


## PLAN VIEW
SCALE: 1" = 20'

## PROPOSED SUBMITTAL SCHEDULE

1. CERTIFICATIONS FOR SUBCONTRACTORS
2. CPM SCHEDULE SUBMISSION COORDINATING BETWEEN DISCIPLINES AND SUBCONTRACTRS.
3. AUXILIARY OPERATING SYSTEM AND EQUIPMENT*
   A. CALCULATIONS
   B. TEMPORARY OPERATION NARRATIVE AND OPERATING PROCEDURE
   C. COMPONENT CUT SHEETS
   D. LAYOUT DRAWINGS
   E. MACHINERY AND ELECTRICAL DETAILS
4. DEMOLITION PLAN
   A. REMOVAL PLAN AND FINAL DISPOSITION OF CONTAMINATED MATERIALS
   B. ASBESTOS REMEDIATION AND FLOOR TILE REMOVAL IN OPERATOR ROOM
   C. MECHANICAL AND ELECTRICAL DEMOLITION PLAN
5. SURFACE PREPARATION AND EPOXY OVERLAY
6. CENTER PIVOT ASSEMBLY
   A. SURVEY RESULTS WITH PROPOSED NEW SPAN ELEVATION AND POSITION
   B. SPAN JACKING PLAN AND SUPPORTING CALCULATIONS
   C. PROCEDURE/DETAIL DRAWINGS FOR REHABILITATION OF EXISTING PIVOT BEARING
7. TURNING MACHINERY
   A. LAYOUT AND DETAIL DRAWINGS FOR NEW RACK SECTIONS
   B. DETAIL DRAWINGS FOR NEW PINION
   C. PROCEDURE/DETAIL DRAWINGS FOR REHABILITATION OF EXISTING BEARINGS
   D. DETAIL DRAWINGS FOR BEVEL GEARING DEMOLITION PLAN
   E. DETAIL DRAWINGS FOR BRAKES AND BRAKE WHEELS
   F. DETAIL DRAWINGS FOR NEW SHAFTS AND COUPLINGS
   G. DETAIL DRAWINGS AND CUT SHEETS FOR NEW SPEED REDUCER
8. END AND CENTER WEDGE OPERATING MACHINERY
   A. PROCEDURE/DETAIL DRAWINGS FOR REHABILITATION OF EXISTING WORM GEAR HOUSING
   B. PROCEDURE/DETAIL DRAWINGS FOR REHABILITATION OF EXISTING CRANK SHAFT
   C. PROCEDURE/DETAIL DRAWINGS OF EXISTING WEDGES AND GUIDES
   D. PROCEDURE/DETAIL DRAWINGS OF CONNECTION RODS
   E. PROCEDURE/DETAIL DRAWINGS OF EXISTING SHAFT JACK
   F. PROCEDURE/DETAIL DRAWINGS FOR REHABILITATION OF EXISTING BEARINGS
   G. COMPONENT CUT SHEETS AND DETAIL DRAWINGS FOR NEW BUSHINGS
   H. PROCEDURE/DETAIL DRAWINGS FOR REPLACEMENT OF EXISTING COUPLINGS
9. ELECTRICAL CONTROL SYSTEM SUBMITTALS
   A. WIRING DIAGRAMS AND CONTROL SCHEMATIC DRAWINGS
   B. COMPONENT CUT SHEETS AND LAYOUT DRAWINGS FOR SPAN DRIVE, SPAN MOTOR, AND WEDGE MOTOR INCLUDING TEST REPORTS.
   C. COMPONENT CUT SHEETS AND DETAIL DRAWINGS FOR MOTOR, BRAKE, AND MACHINERY BRAKES
   D. COMPONENT CUT SHEETS AND LAYOUT DRAWINGS FOR MOTOR CONTROL CENTER, CONTROL DESK, AND CONTROL ENCLOSURES
   E. COMPONENT CUT SHEETS, LAYOUT DRAWINGS, AND INSTALLATION DETAILS FOR DISCONNECT SWITCHES
10. SUBMARINE CABLE
   A. COMPONENT CUT SHEETS
   B. INSTALLATION PROCEDURE
   C. LAYOUT AND DETAILED INSTALLATION DRAWINGS
11. STAND- BY GENERATOR AND ATS
   A. COMPONENT CUT SHEETS
   B. LAYOUT DRAWINGS
12. INCOMING SERVICE EQUIPMENT
   A. COMPONENT CUT SHEETS
   B. INSTALLATION AND LAYOUT DRAWINGS
13. CONDUIT AND WIRE
   A. COMPONENT CUT SHEETS
   B. CONDUIT BLOCK DIAGRAM AND SCHEDULE
   C. CONDUIT INSTALLATION DRAWINGS
14. REST PIER ACCESS SYSTEM
15. CONTROL HOUSE ROOF, DOORS, WINDOW, TILES, PAINTING, AND FLAG POLE
16. LIMIT SWITCHES
   A. COMPONENT CUT SHEETS
   B. INSTALLATION DETAILS
   C. MOUNTING BRACKET AND SUPPORT DETAILS
17. WARNING AND BARRIER GATE MODIFICATIONS
   A. COMPONENT CUT SHEETS
   B. LAYOUT AND DETAILED INSTALLATION DRAWINGS
18. COMPONENT CUT SHEETS AND LAYOUT DRAWINGS FOR HVAC AND LIGHTING EQUIPMENT
19. SEPTIC TANK SUPPORT PLATFORM
20. CLEANING AND PAINTING OF SECOND FLOOR HANDRAILS
21. FINAL ACCEPTANCE TESTING PROCEDURE
22. AS- BUILT DRAWINGS AND O&M MANUALS

*PROPOSED DESIGN OF AUXILIARY SYSTEM SHALL BE STAMPED BY A LICENSED ENGINEER IN THE STATE OF NORTH CAROLINA

## PROPOSED CONSTRUCTION SEQUENCE

A. SURVEY AND INITIAL WORK

1. SURFACE PREPARATION AND EPOXY OVERLAY ON MOVABLE SPAN AND 1 APPROACH SPAN ON EACH SIDE (SPAN 115A AND SPAN 115B).
2. VERIFY FIELD CONDITIONS AND MEASUREMENTS.

B. INSTALL TEMPORARY/AUX SYSTEM

1. INSTALL/IMPLEMENT AUXILIARY OPERATING SYSTEM.
2. START DEMOLITION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT.

C. POWER DISTRIBUTION, DEMOLITION, CONTROL HOUSE RENOVATIONS

1. REPLACE EXISTING STAND- BY GENERATOR, ATS, MAIN CIRCUIT BREAKER AND ASSOCIATED CONDUIT AND WIRE.
2. REMOVE EXISTING SUBMARINE CABLES ROUTED TO PIVOT PIER AND ALL ASSOCIATED ENCLOSURES. MAINTAIN EXISTING END PIER SUBMARINE CABLE AND ENCLOSURE.
3. INSTALL NEW CONTROL HOUSE ROOF AND REPLACE DOORS AND WINDOWS
4. INSTALL REST PIER ACCESS SYSTEM
5. UPGRADE EXISTING UTILITY SERVICE, METER, TRANSFORMER, AND INSTALL ASSOCIATED CONDUIT AND WIRE.

D. TURNING MACHINERY, DEMOLITION, CONTROL HOUSE RENOVATIONS

1. REMOVE EXISTING MCC, CONTROL DESK, AND CONTROL EQUIPMENT FROM CONTROL HOUSE.
2. REPLACE CONTROL HOUSE FLOOR TILES AND PAINT INTERIOR AND EXTERIOR OF CONTROL HOUSE.
3. INSTALL NEW CONTROL DESK, MCC, DRIVES, PLC ENCLOSURES AND ASSOCIATED CONDUIT AND WIRE INSIDE THE CONTROL HOUSE.
4. REHABILITATE CENTER PIVOT BEARING (REQUIRES TEMPORARY SHUTDOWN TO NAVIGATION)
5. REHABILITATE TURNING MACHINERY

E. SUBMARINE CABLES AND CONTROL SYSTEM

1. INSTALL NEW SUBMARINE CABLES
2. INSTALL NEW REMOTE PLC ENCLOSURE ON PIVOT PIER
3. INSTALL NEW LIMIT SWITCHES AND ASSOCIATED CONDUIT AND WIRE.

F. WEDGE MACHINERY AND TRAFFIC CONTROL

1. REHABILITATE WEDGE MACHINERY AND INSTALL ASSOCIATED CONDUIT AND WIRE (REQUIRES TEMPORARY MEANS TO LIFT/SUPPORT SPAN).
2. REHABILITATE WARNING GATES (REQUIRES SINGLE LANE CLOSURE)
3. REHABILITATE BARRIER GATES (REQUIRES SINGLE LANE CLOSURE)

G. LIGHTING, HEATING AND PAINTING

1. INSTALL HVAC, LIGHTING, AND ASSOCIATED CONDUIT AND WIRE IN THE CONTROL HOUSE
2. CLEAN AND PAINT ALL NEW OPERATING EQUIPMENT AND STRUCTURAL STEEL
3. REHABILITATE CENTERING DEVICE

H. TESTING

1. PERFORM FINAL ADJUSTMENTS OF THE MECHANICAL AND ELECTRICAL SYSTEMS
2. FINALIZE O&M MANUALS
3. PERFORM START- UP AND COMMISSIONING

I. ALTERNATIVE
1. THE CONTRACTOR HAS THE OPTION TO PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE FOR THE APPROVAL OF THE ENGINEER.

## LEGEND

PIVOT PIER - A, B, C, D, F
LOCATION
CONSTRUCTION PHASE

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PROPOSED CONSTRUCTION SEQUENCE

ALLIGATOR RIVER SWING SPAN

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

SHEET NO. G-3
TOTAL SHEETS 3

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 3 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: SAR DATE: 8/8/2016

$$$$$$SYSTIME$$$$$
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## GENERAL NOTES

1. DURING CONSTRUCTION, THE CONTRACTOR MAY ENCOUNTER EXISTING CONDITIONS WHICH ARE NOT KNOWN DURING BID OR ARE AT VARIANCE WITH PROJECT DOCUMENTATION (DISCOVERY). SUCH CONDITIONS MAY INTERFERE WITH NEW CONSTRUCTION, PROPER EXECUTION OF THE WORK, REQUIRE PROTECTION AND/OR SUPPORT OF EXISTING WORK DURING CONSTRUCTION, OR MAY CONSIST OF DAMAGE OR DETERIORATION TO STRUCTURAL MATERIALS OR COMPONENTS WHICH JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE BRIDGE AND/OR OPERATOR HOUSE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ALL SUCH DISCOVERIES PRIOR TO PROCEEDING WITH WORK RELATED TO SUCH DISCOVERIES.

2. THE CURRENT DRAWINGS MAY SPECIFY DIMENSIONS, ELEVATIONS AND CONSTRUCTION CONDITIONS TO BE FIELD VERIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD VERIFICATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION OR FABRICATION OF COMPONENTS. THE FIELD VERIFICATION SHALL BE MADE IN A TIMELY MANNER SO AS TO CAUSE NO DELAYS IN EXECUTION OF THE WORK.

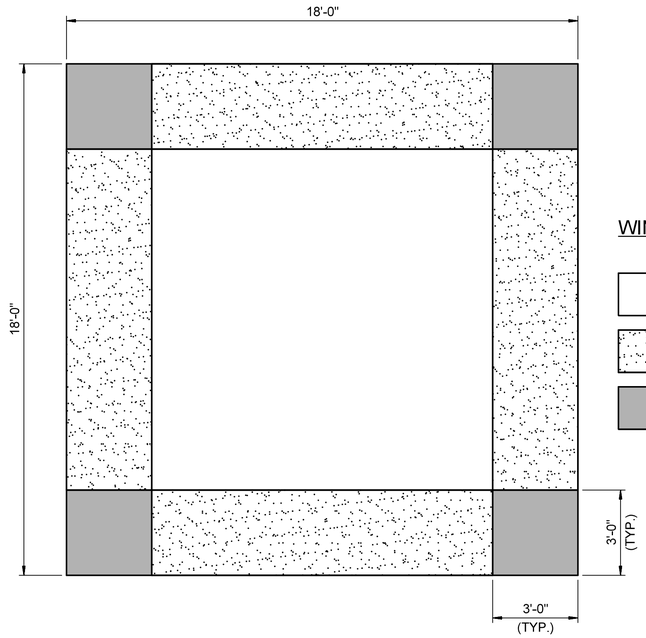
3. PROJECT INCLUDES AREA OF SELECTIVE DEMOLITION AS INDICATED IN THE DRAWINGS. DURING THE ENTIRE LENGTH OF THE PROJECT, PROTECT ALL EXISTING EQUIPMENT AND MATERIALS WHICH ARE NOT BEING DEMOLISHED.

4. ALL PRODUCTS, MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS, IN COMPLIANCE WITH ALL APPLICABLE CODES, AND WITHIN THE ACCEPTED COMMERCIAL TRADE STANDARDS BY SKILLED, EXPERIENCED, TRAINED AND COMPETENT CRAFTSMEN. MATERIAL SHALL BE USED FOR ONLY THE PURPOSES FOR WHICH THEY ARE DESIGNED.

5. WORK AREAS SHALL BE KEPT CLEAN AND SAFE AT ALL TIMES BY THE CONTRACTOR. TRASH AND DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE ON THE SITE. ALL HAZARDOUS WASTES SHALL BE PROPERLY AND LEGALLY DISPOSED OF ON A DAILY BASIS.

6. DURING THE BIDDING PERIOD AND THE CONSTRUCTION PERIOD, ANY DISCREPANCIES, CONFLICTS AND/OR QUESTIONS OF INTERPRETATIONS IN THE DRAWINGS OR SPECIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER PROMPTLY FOR CLARIFICATION.

7. ALL SHOWN DIMENSIONS ARE BASED ON ORIGINAL DRAWINGS. PRIOR TO FABRICATION OF ANY MATERIAL SHOWN IN THE DRAWINGS, THE CONTRACTOR SHALL FIELD VERIFY ALL APPLICABLE EXISTING CONDITIONS AND DIMENSIONS FOR WORK WHICH TIES, CONNECTS OR IS ADJACENT TO THE EXISTING STRUCTURE. IF CONDITIONS OR DIMENSIONS VARY SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PREPARATION OF THE SHOP DRAWINGS.




CONTROL HOUSE ROOF WIND ZONES PLAN

SCALE: 3/8" =1'-0"

| WIND ZONE | NET DESIGN WIND PRESSURE (PSF) POSITIVE | NEGATIVE |
|---|---|---|
| ZONE 1 | 16 | -41.5 |
| ZONE 2 | 16.5 | -62.2 |
| ZONE 3 | 18.5 | -114.6 |

## SCOPE OF WORK FOR CONTROL HOUSE RENOVATIONS

ALL WORK ON THE CONTROL HOUSE SHALL BE COORDINATED WITH ELECTRICAL SCOPE OF WORK AS SHOWN ON SHEET A-4

1. SLOPED ROOF INSTALLATION
   - A. REMOVAL OF EXISTING ROOF ATTACHMENTS
   - B. REMOVAL OF EXISTING ROOF GRAVEL FINISH, DRAINS, AND CLEANING
   - C. INSTALL NEW COLD-FORMED STEEL CHANNEL PURLINS AND CONNECTIONS ON TOP OF EXISTING ROOF
   - D. INSTALL NEW STANDING SEAM METAL ROOF, TRIMS, AND FLASHINGS ON TOP OF EXISTING ROOF
   - E. INSTALL NEW GUTTERS AND DOWNSPOUTS AND REATTACH EXISTING ROOF ATTACHMENTS
2. REPLACEMENT OF DOORS
   - A. REMOVAL OF EXISTING DOORS ON THE CONTROL HOUSE
   - B. INSTALLATION OF NEW METAL DOORS ON THE CONTROL HOUSE
3. REPLACEMENT OF WINDOWS
   - A. REMOVAL OF EIGHT EXISTING WINDOWS OF THE CONTROL HOUSE
   - B. INSTALLATION OF NEW WINDOWS
4. CLEANING AND PAINTING OF HANDRAILS
   - A. RUST/EXISTING PAINT REMOVAL FROM HANDRAILS ON SECOND FLOOR OF CONTROL HOUSE
   - B. NEW PAINT SYSTEM INSTALLATION
   - C. REMOVE EXISTING LADDER ON NORTH SIDE OF CONTROL HOUSE
5. REPLACE FLAG POLE
   - A. REMOVE EXISTING FLAG POLE
   - B. INSTALLATION OF NEW FLAG POLE
6. REPLACE SEPTIC TANK SUPPORT PLATFORM
   - A. REMOVAL OF EXISTING SEPTIC TANK SYSTEM BELOW THE CONTROL HOUSE
   - B. INSTALLATION OF NEW PLATFORM FOR THE EXISTING SEPTIC TANK
   - C. INSTALL AND CONNECT SEPTIC TANK
7. PAINTING OF OPERATOR HOUSE
   - A. PAINT INTERIOR AND EXTERIOR OF THE CONTROL HOUSE WALLS
8. REPLACE SECOND FLOOR TILES
   - A. REMOVAL OF FLOOR TILES CONTAINING ASBESTOS IN THE OPERATOR ROOM OF THE CONTROL HOUSE
   - B. INSTALLATION OF NEW FLOOR TILES IN THE OPERATOR ROOM OF THE CONTROL HOUSE

## ARCHITECTURAL/STRUCTURAL NOTES

1. ALL ASPECTS OF JOB AND SITE SAFETY ARE COMPLETELY THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE OPERATOR HOUSE ROOF CONDITIONS PRIOR TO ANY FOOT TRAFFIC. CONTRACTOR SHALL CONTINUOUSLY MAINTAIN THE SAFETY OF THE STRUCTURE, ITS WORKERS AND THE GENERAL PUBLIC. NO STRUCTURAL MEMBER MAY BE CUT OR MANIPULATED IN ANY WAY WITHOUT PRIOR APPROVAL OF THE ENGINEER.

2. THE CONTRACTOR SHALL REPAIR ALL DAMAGE TO EXISTING BUILDING AND OTHER STRUCTURES CAUSED BY ITS OPERATIONS AT NO ADDITIONAL COST TO THE OWNER.

3. GOVERNING BUILDING CODES
   - 3.1 INTERNATIONAL BUILDING CODE (IBC) 2012 WITH REVISIONS AND AMENDMENTS. STRUCTURAL MEMBERS ARE DESIGNED USING LOAD COMBINATIONS IN IBC
   - 3.2 ASCE 7-2010 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES

4. DESIGN CRITERIA
   - 4.1 WIND DESIGN DATA
     - A. RISK CATEGORY FOR OPERATOR HOUSE: CATEGORY II
     - B. BASIC WIND SPEED (3 SECOND GUST) FOR RISK CATEGORY II: 129 MPH
     - C. WIND EXPOSURE CATEGORY: EXPOSURE D
   - 4.2 ROOF LIVE LOAD
     - A. ORDINARY FLAT, PITCHED AND CURVED ROOF (THAT ARE NOT OCCUPIABLE). 20 PSF
   - 4.3 SNOW LOAD
     - A. GROUND SNOW LOAD 10 PSF
     - B. SLOPED ROOF SNOW LOAD 10 PSF
   - 4.4 CONTROLLING LOAD COMBINATION: 0.6D ± 0.6W

5. STRUCTURAL STEEL
   - 5.1 ALL PURLINS AND PURLIN BRACES SHALL CONFORM TO AISI COLD FORMED STEEL 2007 DESIGN SPECIFICATIONS WITH SUPPLEMENT NO.2 OF 2010. ALL PURLINS AND PURLIN BRACES SHALL CONFORM TO MATERIAL SPECIFICATIONS OF ASTM A653 GALVANIZED STEEL WITH Fy = 50 KSI AND 12 GAUGE THICKNESS.
   - 5.2 ALL HOT-ROLLED STEEL COMPONENTS OF THE SEPTIC TANK PLATFORM SUPPORT SYSTEM, REST PIER ACCESS SYSTEM AND MISCELLANEOUS STEEL FOR CONNECTIONS SHALL BE GALVANIZED.
   - 5.3 CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS FOR ALL SCOPE ITEMS FOR ENGINEERS APPROVAL PRIOR TO FABRICATION OF SCOPE ITEMS.
   - 5.4 IF THE CONTRACTOR PROPOSES AN ALTERNATIVE ROOF DESIGN, THEN THE NEW ROOF DESIGN CALCULATIONS AND DRAWINGS SHALL BE STAMPED AND SEALED BY A LICENSED PROFESSIONAL CIVIL ENGINEER IN THE STATE OF NORTH CAROLINA. THE DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO BEGINNING OF WORK.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ARCHITECTURAL NOTES

ALLIGATOR RIVER
SWING SPAN

Hardesty &Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

| DRAWN BY: CEM | DATE : 8/8/2016 |
|---|---|
| CHECKED BY: DMM | DATE : 8/8/2016 |
| DESIGN ENGINEER OF RECORD: AR | DATE : 8/8/2016 |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 4 | 90 |

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| 1 | | | 3 | | | |
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SHEET NO. A-1

TOTAL SHEETS 10

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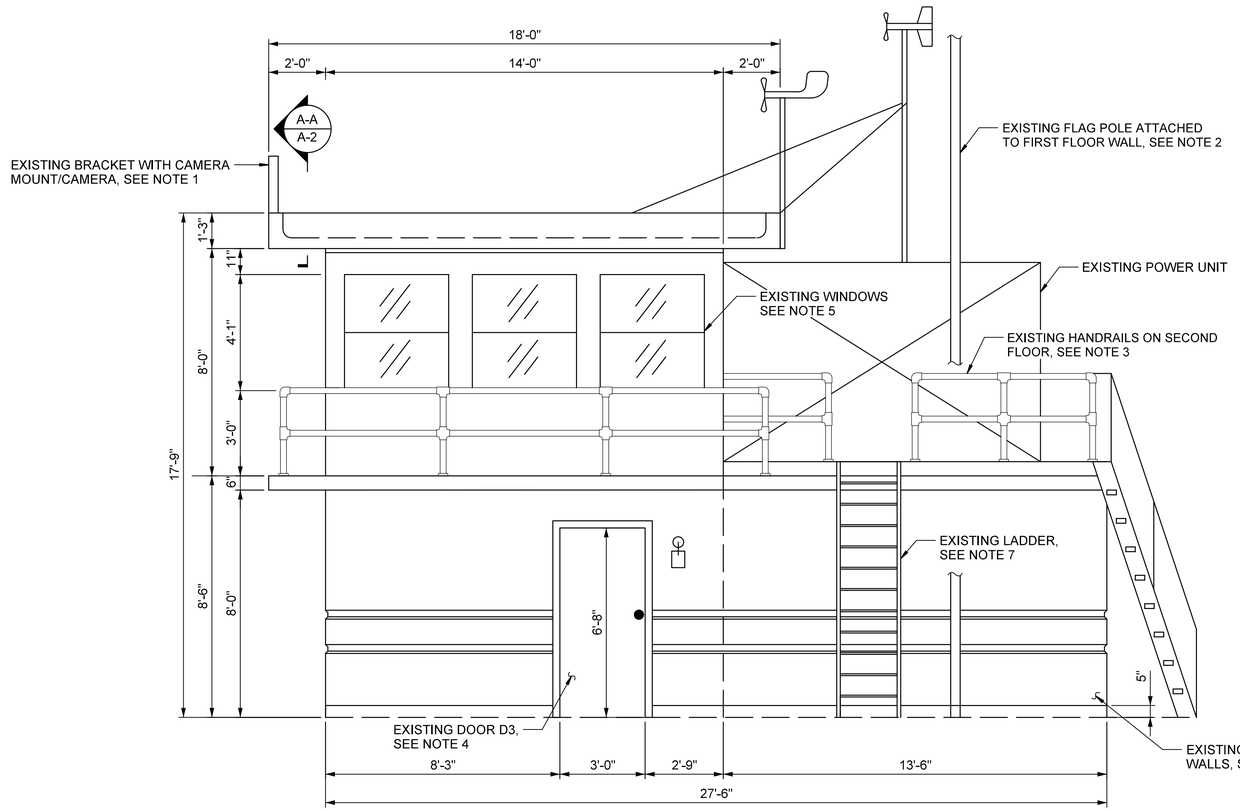
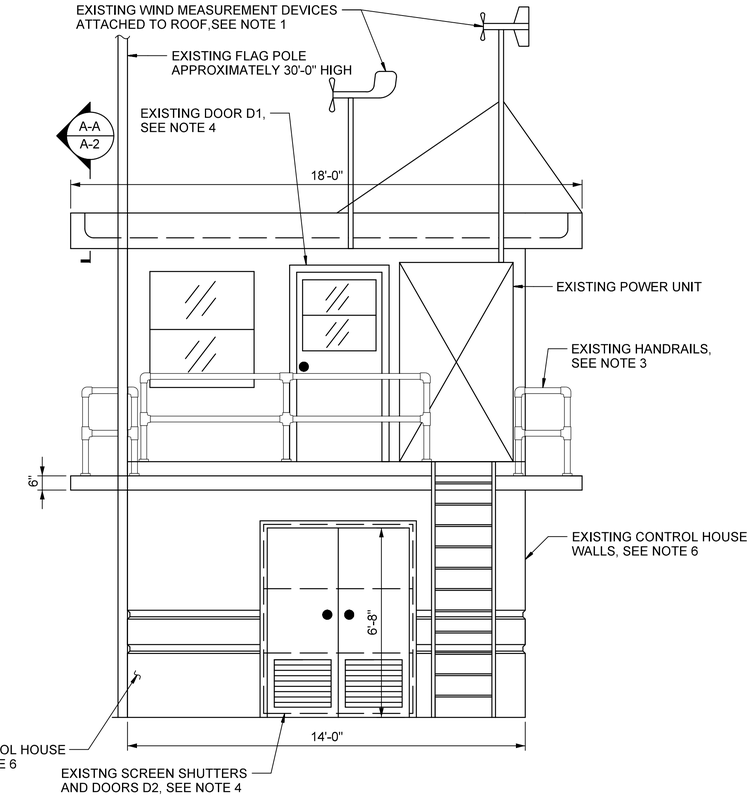



NORTH ELEVATION
SCALE: 3/8" =1'-0"




WEST ELEVATION
SCALE: 3/8" =1'-0"

## NOTES

ALL WORK ON THE CONTROL HOUSE SHALL BE COORDINATED WITH ELECTRICAL SCOPE OF WORK

1. REMOVE AND STORE THE EXISTING BRACKET WITH CAMERA MOUNT/CAMERA, AND EXISTING WIND MEASUREMENT DEVICES BEFORE INSTALLATION OF NEW STANDING SEAM METAL ROOF. CONTRACTOR SHALL MAKE SURE THAT THE EXISTING ROOF LEDGE IS NOT DAMAGED WHEN REMOVING THE BRACKET AND OTHER ATTACHMENTS. ANY DAMAGE SHALL BE REMEDIED BEFORE INSTALLATION OF NEW ROOF AT NO ADDITIONAL COST. REINSTALL AFTER NEW ROOF IS IN PLACE. THE LOCATION OF REINSTALLATION SHALL BE COORDINATED WITH OWNER OF THE BRIDGE.

2. REMOVE AND REPLACE THE EXISTING FLAG POLE AS PER THE SCOPE OF WORK AND SPECIFICATIONS. THE LOCATION OF THE NEW POLE SHALL REMAIN THE SAME. THE NEW POLE ATTACHMENT TO THE WALL SHALL BE 12 INCHES ABOVE DECK LEVEL.

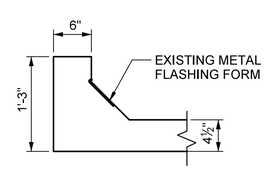
3. ALL EXISTING HANDRAILS ON SECOND FLOOR OF CONTROL HOUSE SHALL BE REFURBISHED AS PER SCOPE OF WORK AND SPECIFICATIONS.

4. THE FRAMING DETAILS FOR THE EXISTING DOORS D1, D2, AND D3 OF THE CONTROL HOUSE ARE SHOWN ON SHEET A-8. IT IS THE CONTRACTORS RESPONSIBILTY TO REMOVE AND REPLACE THESE DOORS WITHOUT DAMAGE TO THE WALLS. ANY DAMAGE SHALL BE REMEDIED AT NO ADDITIONAL COST. SEE DOOR REPLACEMENT SCHEDULE ON SHEET A-8 FOR FURTHER DETAILS.

5. THE FRAMING DETAILS FOR ALL THE EXISTING WINDOWS (8 TOTAL) OF THE CONTROL HOUSE ARE SHOWN ON SHEET A-8. IT IS THE CONTRACTORS RESPONSIBILITY TO REMOVE AND REPLACE THESE WINDOWS WITHOUT DAMAGE TO THE WALLS. ANY DAMAGE SHALL BE REMEDIED AT NO ADDITIONAL COST. SEE WINDOW REPLACEMENT SCHEDULE ON SHEET A-8 FOR FURTHER DETAILS.

6. THE EXISTING CONTROL HOUSE WALLS SHALL BE PAINTED AS PER SCOPE OF WORK AND SPECIFICATIONS. SEE SHEET A-4 FOR LIMITS OF PAINTING.

7. THE EXISTING NORTH SIDE LADDER SHALL BE REMOVED.




SECTION A-A
EXISTING ROOF
SCALE: 1" =1'-0"

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXISTING CONTROL HOUSE DETAILS - 1

ALLIGATOR RIVER SWING SPAN

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|---|---|
| CHECKED BY: DMM | DATE : 8/8/2016 |
| DESIGN ENGINEER OF RECORD: AR | DATE : 8/8/2016 |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 5 | 90 |

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REVISIONS

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

SHEET NO. A-2
TOTAL SHEETS 10

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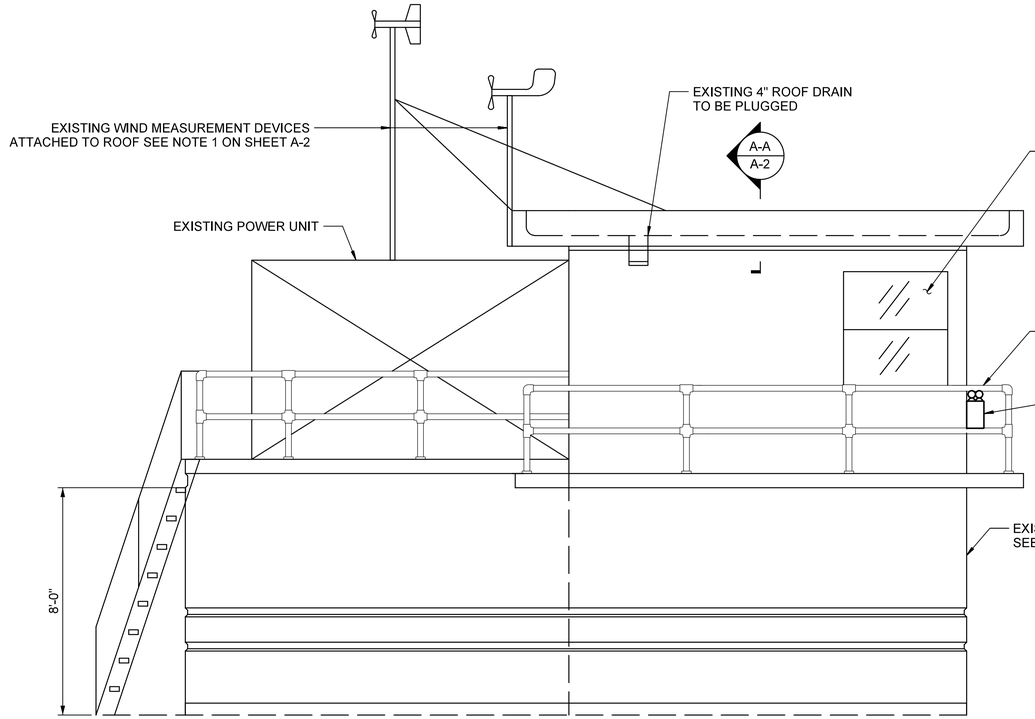
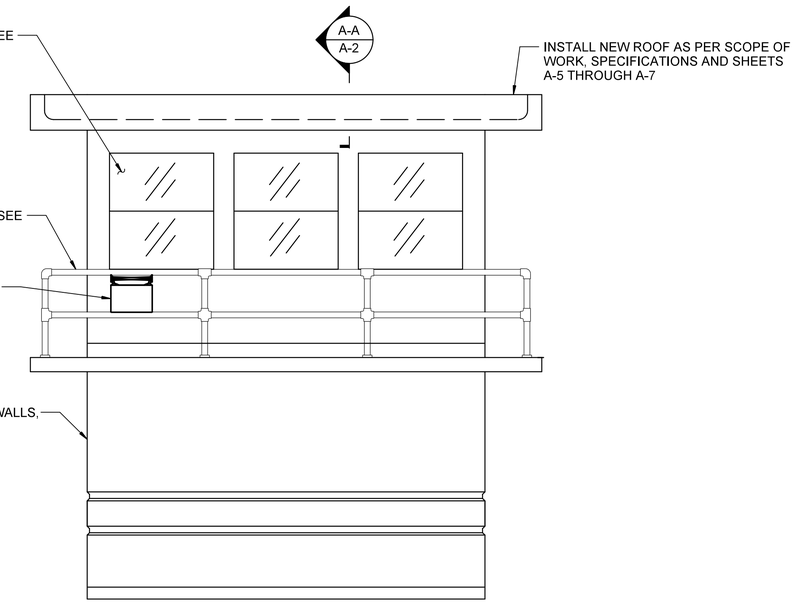
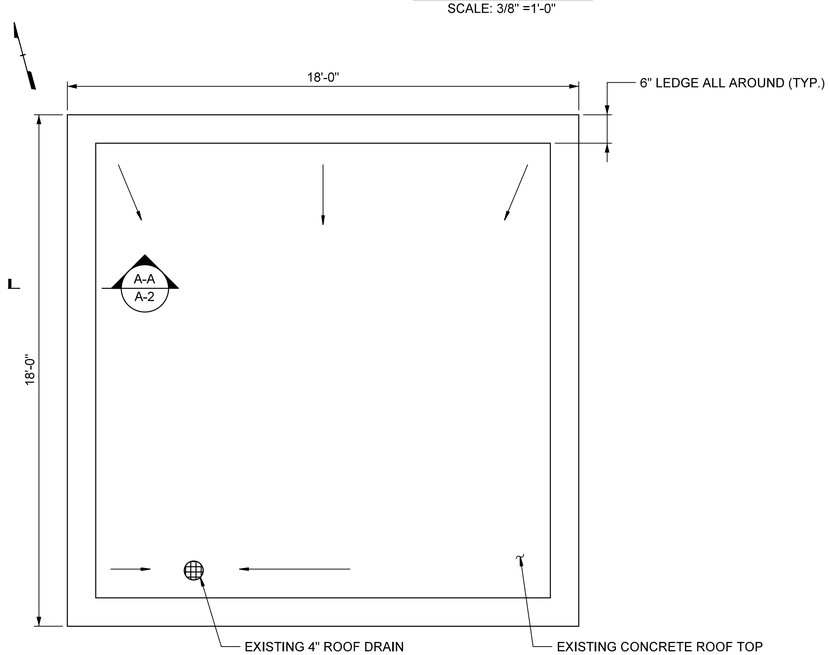
$$$USERNAME$$$$




SOUTH ELEVATION
SCALE: 3/8" =1'-0"




EAST ELEVATION
SCALE: 3/8" =1'-0"




EXISTING ROOF PLAN
SCALE: 3/8" =1'-0"

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXISTING CONTROL HOUSE DETAILS - 2

ALLIGATOR RIVER SWING SPAN

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

SHEET NO. A-3
TOTAL SHEETS 10

DRAWN BY: CEM DATE: 8/8/2016
CHECKED BY: DMM DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: AR DATE: 8/8/2016

DWG NUMBER 6
TOTAL DWGS 90

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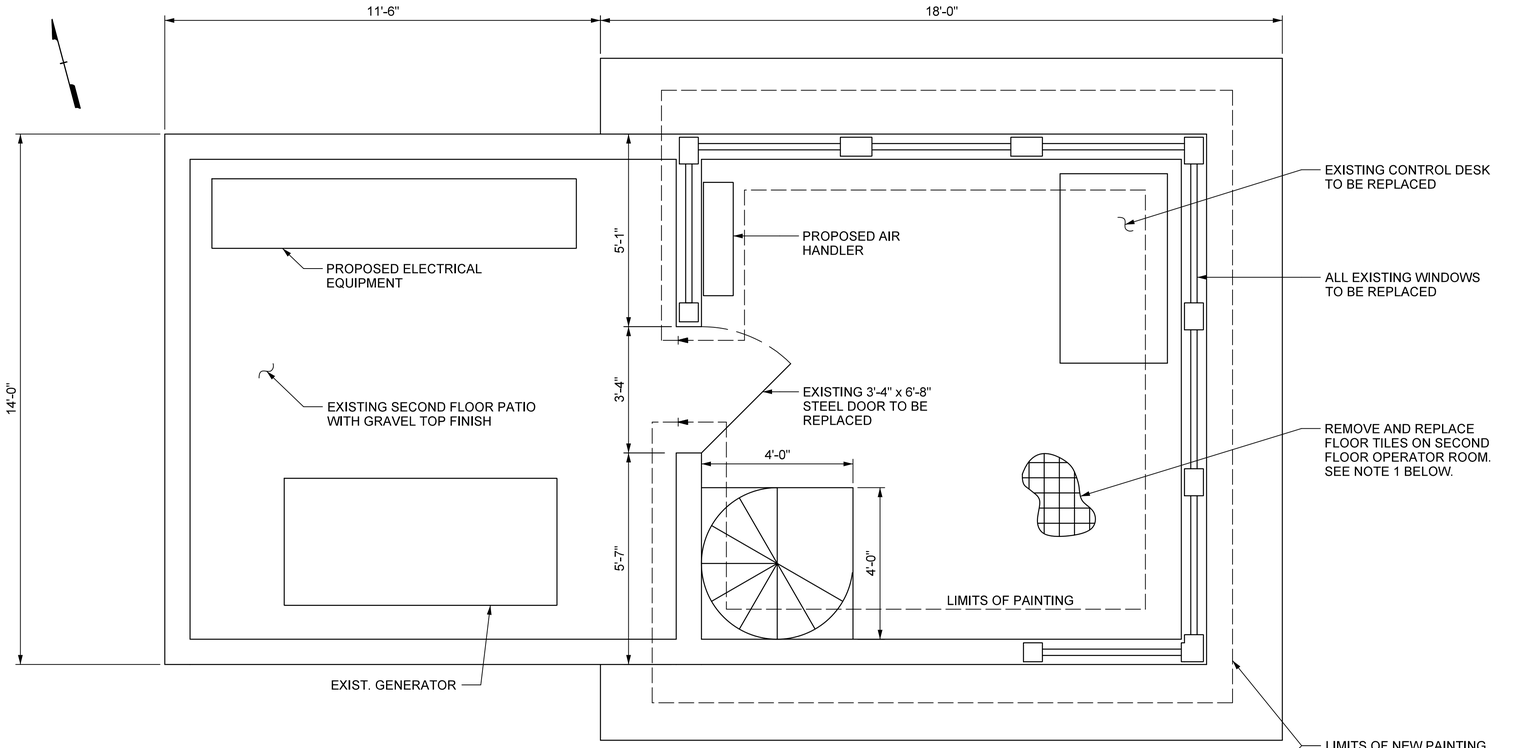
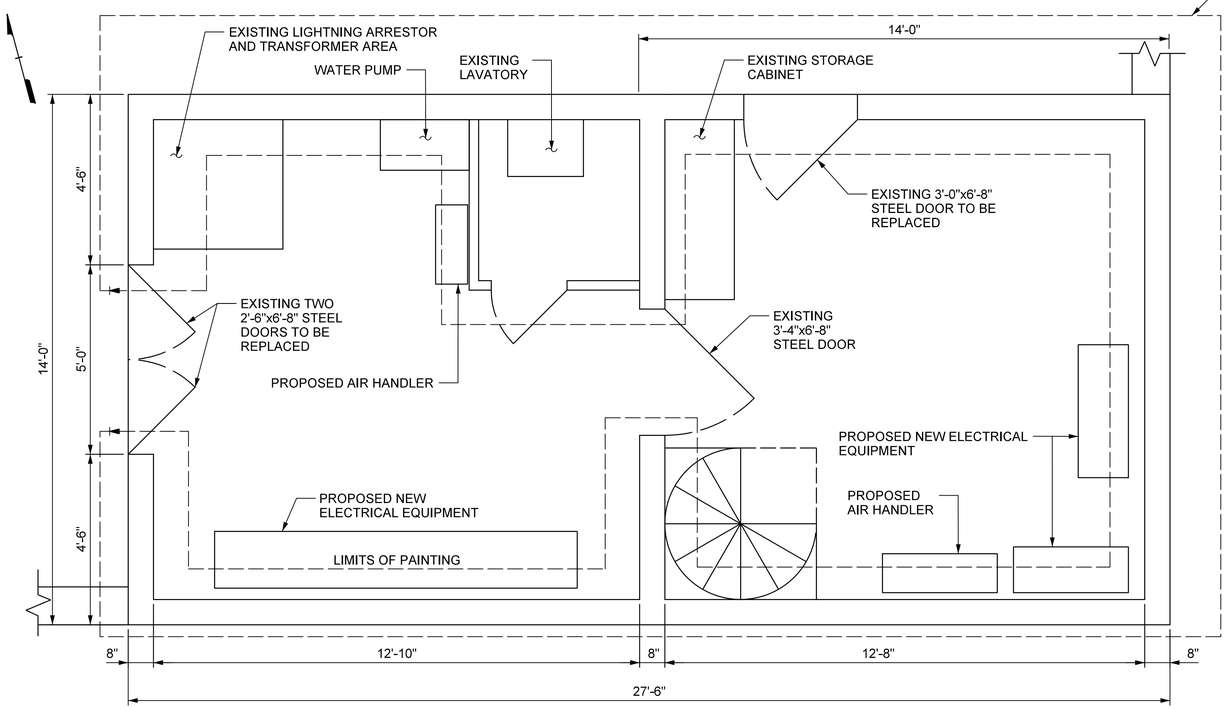
$$$$USERNAME$$$$

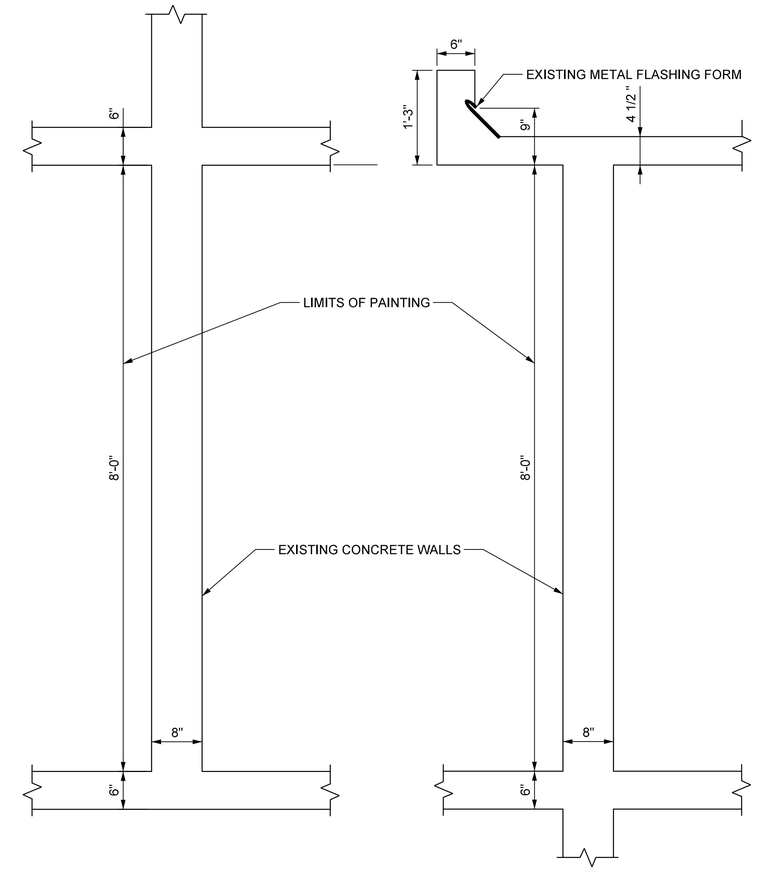



SECOND FLOOR PLAN (SEE NOTE 2)
SCALE: 1/2" =1'-0"

LIMITS OF NEW PAINTING. ALL INTERIOR AND EXTERIOR VERTICAL SURFACES OF THE CONTROL HOUSE IN FIRST FLOOR AND SECOND FLOOR MUST BE PAINTED AS PER SPECIFICATIONS




FIRST FLOOR PLAN (SEE NOTE 2)
SCALE: 1/2" =1'-0"




FIRST FLOOR

SECOND FLOOR

TYPICAL SECTIONS
SCALE: 1" = 1'-0"

## NOTES

1. THE EXISTING FLOOR TILES IN THE OPERATING ROOM CONTAIN ASBESTOS (5% CHRYSOTILE). THE EXISTING FLOOR TILES AND OTHER FLOORING SHALL BE REMOVED AND DISPOSED OF BY A LICENSED ASBESTOS ABATEMENT CONTRACTOR. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED FOR THIS WORK AND SATISFY ALL GOVERNING CODES RELATED TO THIS WORK
2. SEE ELECTRICAL SHEETS E-30, E-31, AND E-42 FOR ELECTRICAL MODIFICATIONS TO THE CONTROL HOUSE.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONTROL HOUSE FLOOR PLAN

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | A-4 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 10 |

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| DWG NUMBER | TOTAL DWGS |
|---|---|
| 7 | 90 |

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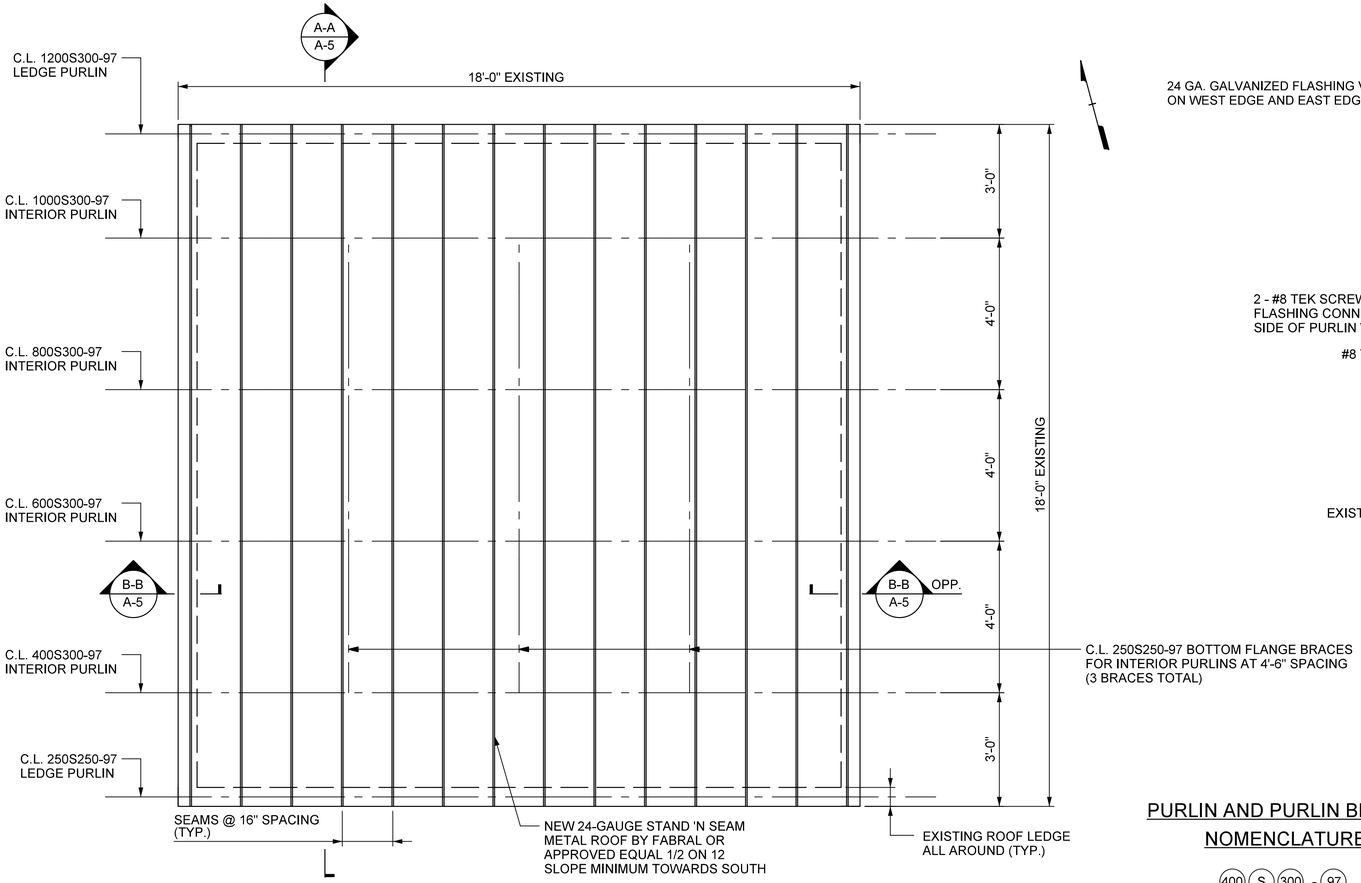
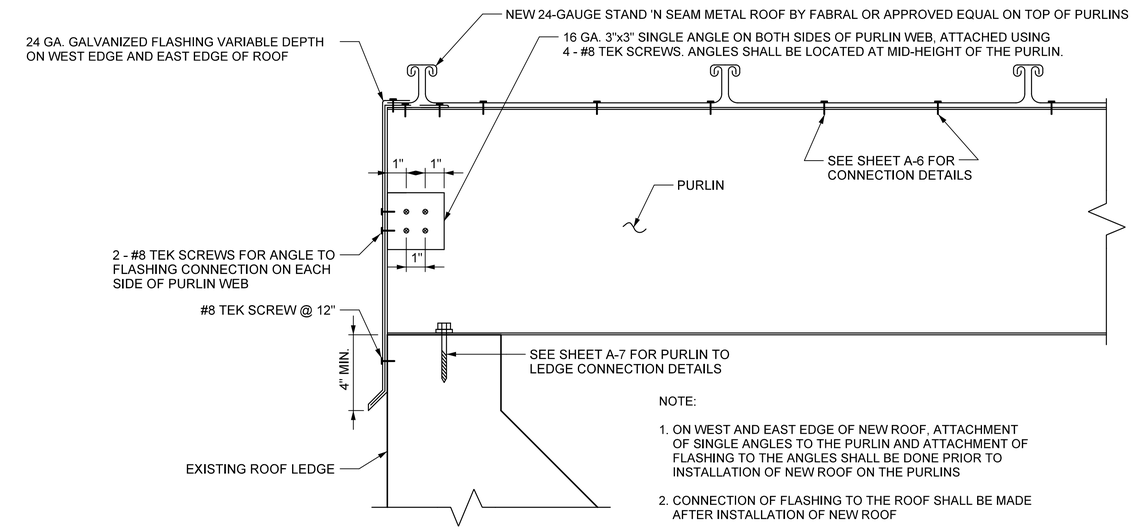



## NEW ROOF FRAMING PLAN

SCALE: 1/2" =1'-0"




NOTE:

1. ON WEST AND EAST EDGE OF NEW ROOF, ATTACHMENT OF SINGLE ANGLES TO THE PURLIN AND ATTACHMENT OF FLASHING TO THE ANGLES SHALL BE DONE PRIOR TO INSTALLATION OF NEW ROOF ON THE PURLINS
2. CONNECTION OF FLASHING TO THE ROOF SHALL BE MADE AFTER INSTALLATION OF NEW ROOF

## SECTION B-B

SCALE: 3" =1'-0"

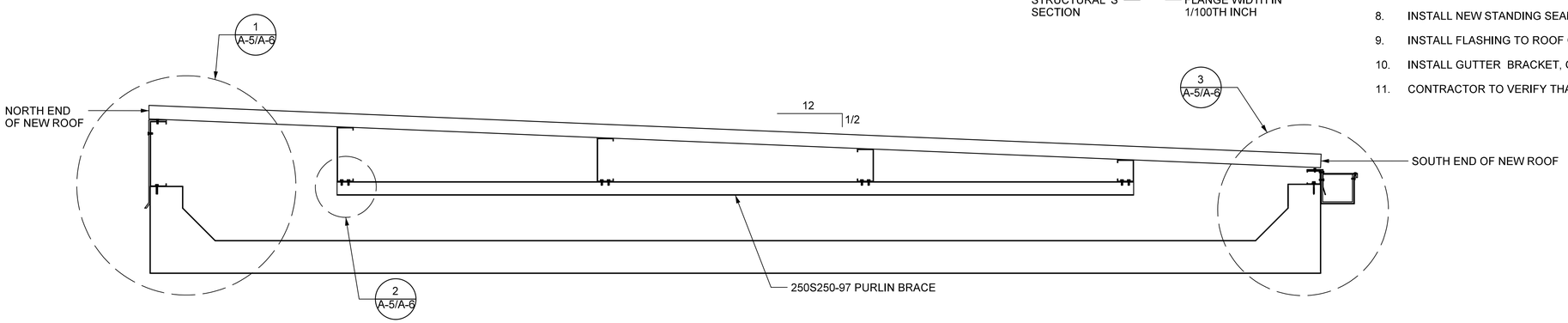
## PURLIN AND PURLIN BRACES NOMENCLATURE

400 S 300 - 97

- 400: MEMBER DEPTH IN 1/100TH INCH
- S: STRUCTURAL 'S' SECTION
- 300: FLANGE WIDTH IN 1/100TH INCH
- 97: MIL THICKNESS IN 1/1000TH INCH

## SUGGESTED SEQUENCE OF NEW ROOF INSTALLATION

1. REMOVE EXISTING GRAVEL FINISH ON THE ROOF
2. REMOVE EXISTING DOWNSPOUTS, DRAIN INLETS
3. CLEAN THE EXISTING ROOF AND LEDGES OF ALL DIRT
4. PLUG AND SEAL ALL EXISTING CRACKS/HOLES IN THE ROOF AND LEDGE WITH DAP LIQUID CEMENT CRACK FILLER OR APPROVED EQUAL
5. INSTALL ALL COLD FORMED STEEL PURLINS AND CONNECTIONS AS PER PLAN AND SPECIFICATIONS. ALL PURLINS ARE ASTM A653 GALVANIZED STEEL WITH Fy = 50 KSI AND 12 GAUGE THICKNESS (97 MILS).
6. INSTALL ALL PURLIN BRACES AND CONNECTIONS AS PER PLAN AND SPECIFICATIONS. ALL PURLIN BRACES ARE ASTM A653 GALVANIZED STEEL WITH Fy = 50 KSI AND 12 GAUGE THICKNESS (97 MILS).
7. INSTALL SINGLE ANGLES AND FLASHING ON THE WEST AND EAST EDGES OF NEW ROOF
8. INSTALL NEW STANDING SEAM METAL ROOF AND CONNECTIONS AS PER PLAN AND SPECIFICATIONS
9. INSTALL FLASHING TO ROOF CONNECTION ON WEST, EAST AND NORTH EDGE OF NEW ROOF
10. INSTALL GUTTER BRACKET, GUTTER, GUTTER STRAP, FLASHING AND DOWNSPOUTS ON SOUTH EDGE OF NEW ROOF
11. CONTRACTOR TO VERIFY THAT THE NEW ROOF DRAINS PROPERLY AND NO LEAKAGE OF WATER IS OBSERVED




## SECTION A-A

SCALE: 1" =1'-0"

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# PROPOSED ROOF DETAILS -1

# ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| REVISIONS | | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | | A-5 |
| 1 | | | 3 | | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | | 10 |

| | | | |
|---|---|---|---|
| DRAWN BY: CEM | DATE : 8/8/2016 | DWG NUMBER 8 | TOTAL DWGS 90 |
| CHECKED BY: DMM | DATE : 8/8/2016 | | |
| DESIGN ENGINEER OF RECORD: AR | DATE : 8/8/2016 | | |

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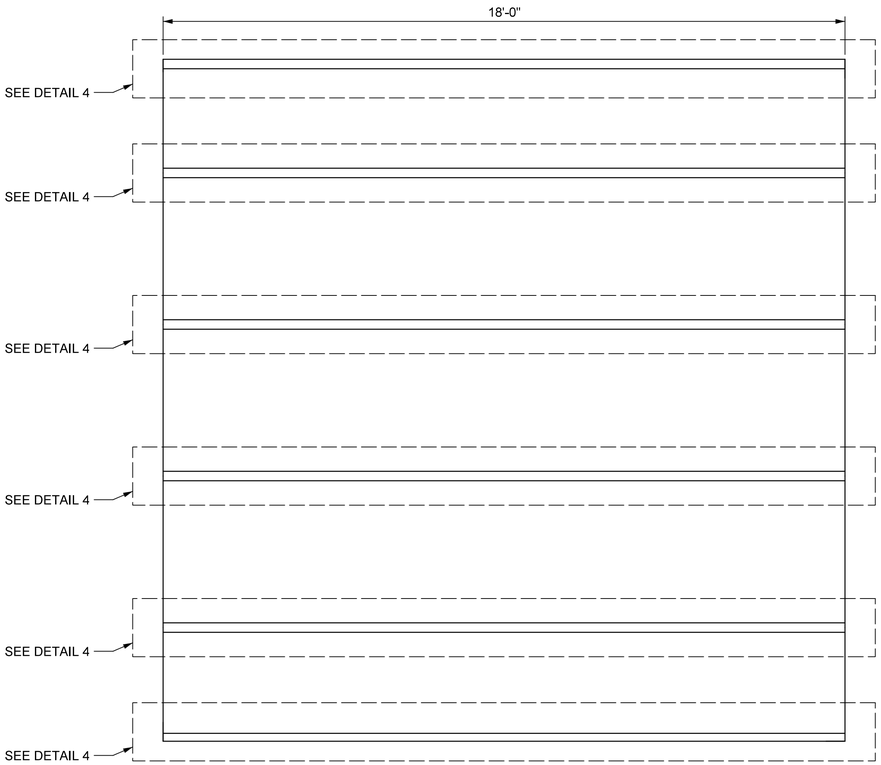
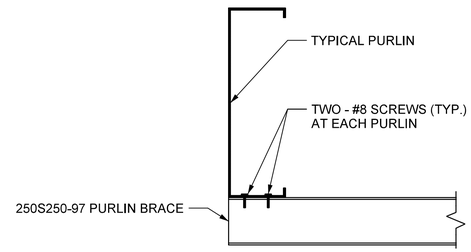


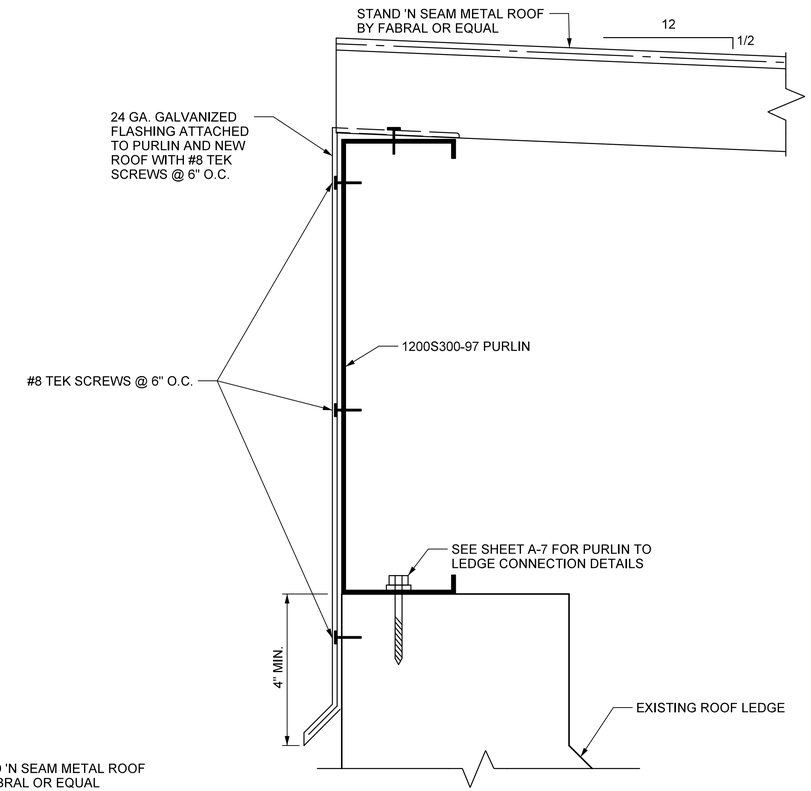

PLAN VIEW OF PURLINS AT ROOF LEVEL

SCALE: 1/2" =1'-0"



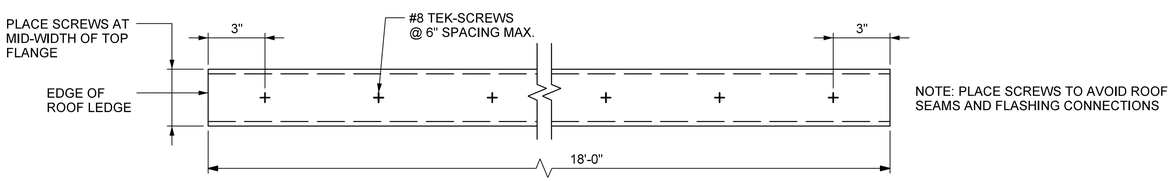

DETAIL 2 A-5/A-6

SCALE: 3" =1'-0"




DETAIL 1 A-5/A-6

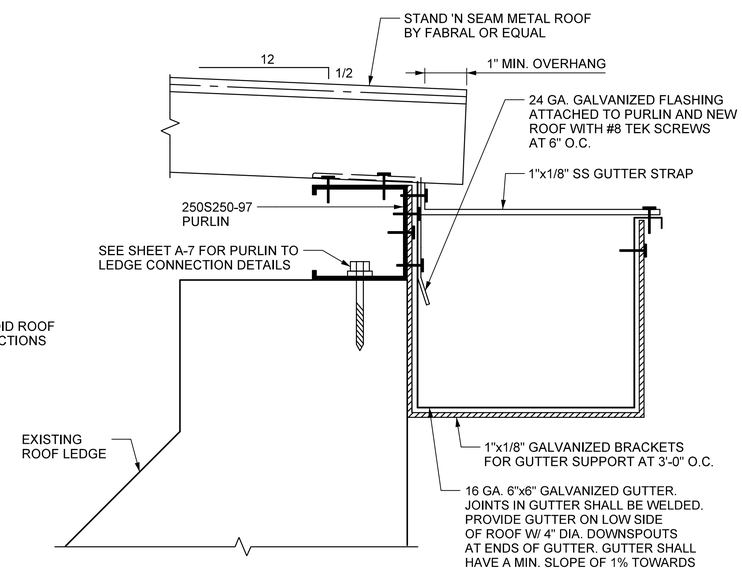
SCALE: 6" =1'-0"




NOTE: PLACE SCREWS TO AVOID ROOF SEAMS AND FLASHING CONNECTIONS

DETAIL 4 - METAL ROOF TO PURLIN CONNECTION AT ALL PURLINS

SCALE: 3" =1'-0"




DETAIL 3 A-5/A-6

SCALE: 6" =1'-0"

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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PROPOSED ROOF DETAILS - 2

ALLIGATOR RIVER SWING SPAN

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| DWG NUMBER | TOTAL DWGS |
|---|---|
| 9 | 90 |

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | A-6 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 10 |

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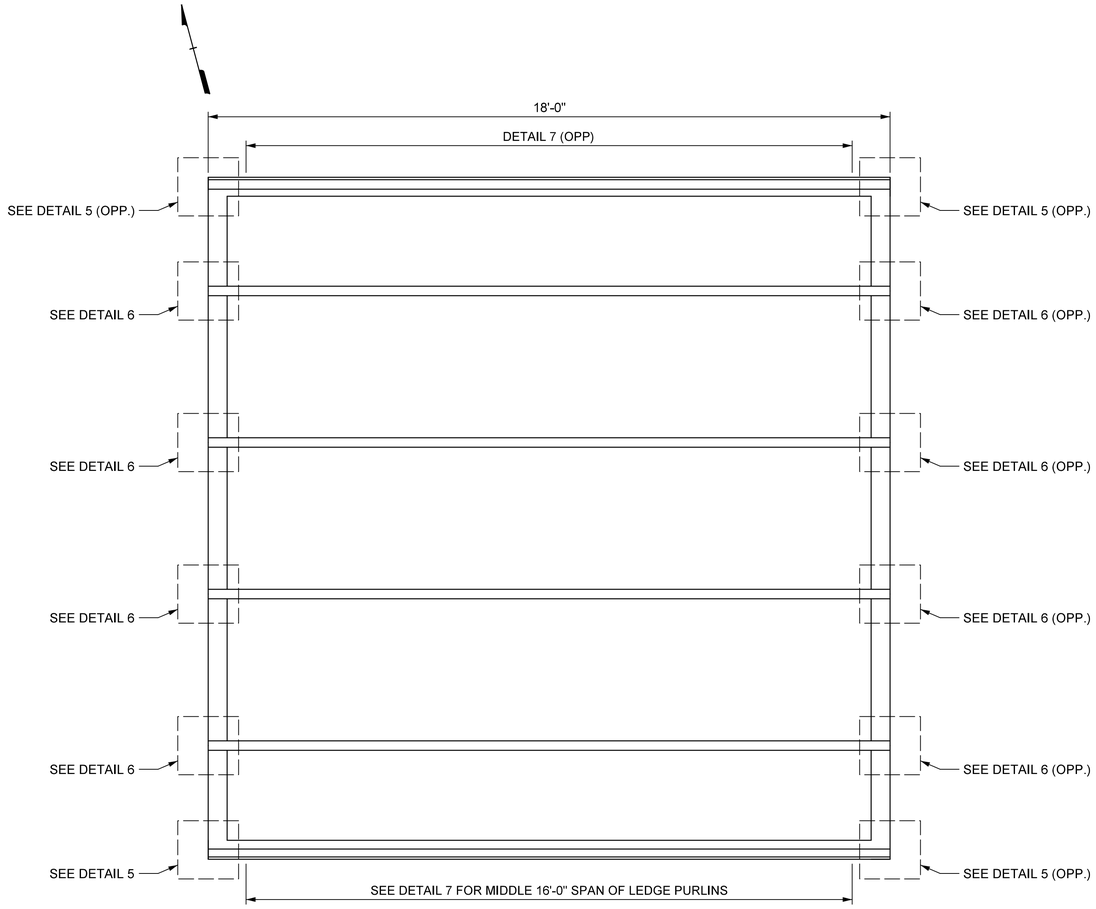
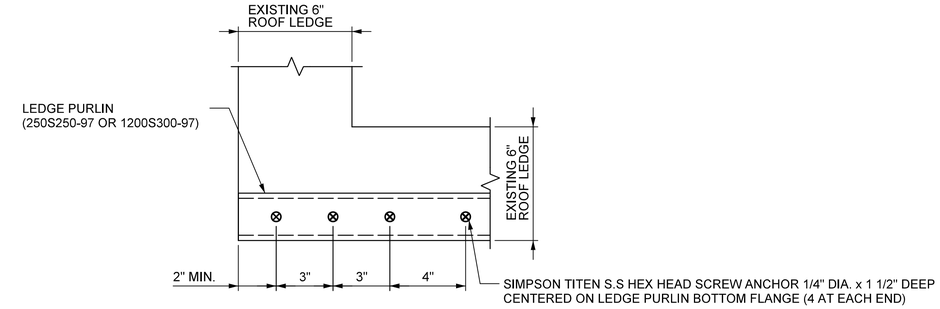


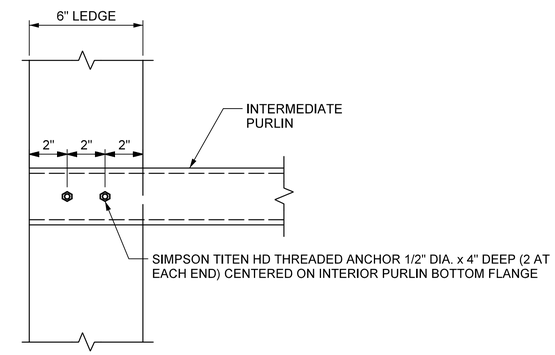

PLAN VIEW OF PURLINS AT EXISTING ROOF LEDGE LEVEL

SCALE: 1/2" =1'-0"



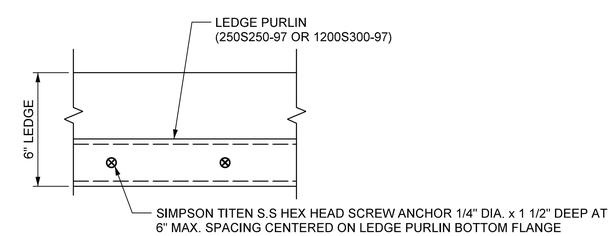

DETAIL 5 - PURLIN TO ROOF LEDGE
CONNECTION AT ENDS OF LEDGE PURLINS

SCALE: 3" =1'-0"




DETAIL 6 - PURLIN TO ROOF LEDGE
CONNECTION AT ENDS OF INTERIOR PURLINS

SCALE: 3" =1'-0"




DETAIL 7 - PURLIN TO ROOF LEDGE
CONNECTION IN LEDGE PURLIN SPAN

SCALE: 3" =1'-0"

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
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PROPOSED ROOF DETAILS - 3

ALLIGATOR RIVER
SWING SPAN

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | A-7 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 10 |

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DESIGN ENGINEER OF RECORD: AR DATE : 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 10 | 90 |

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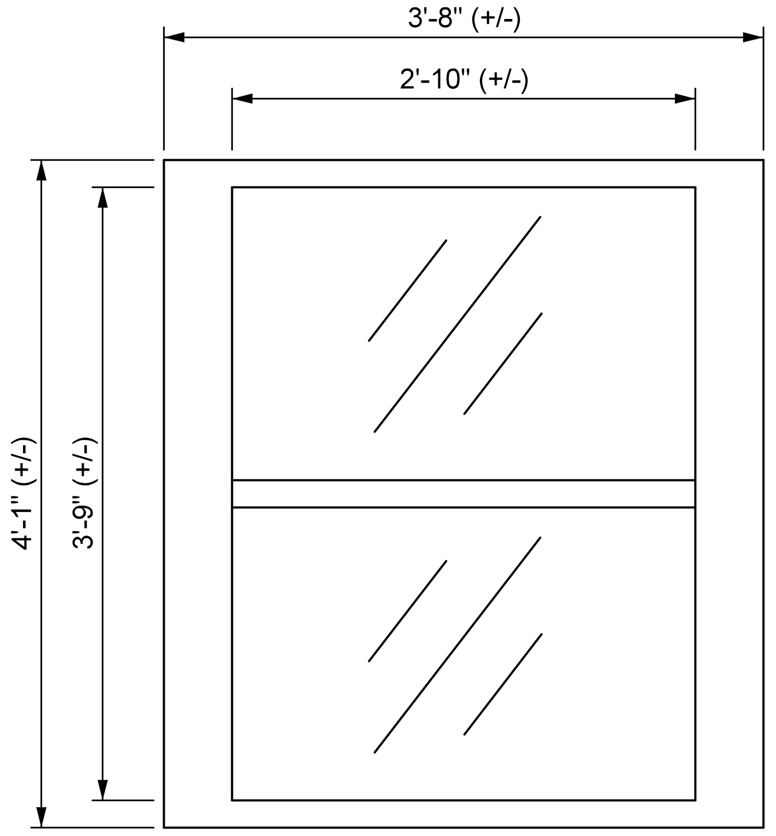
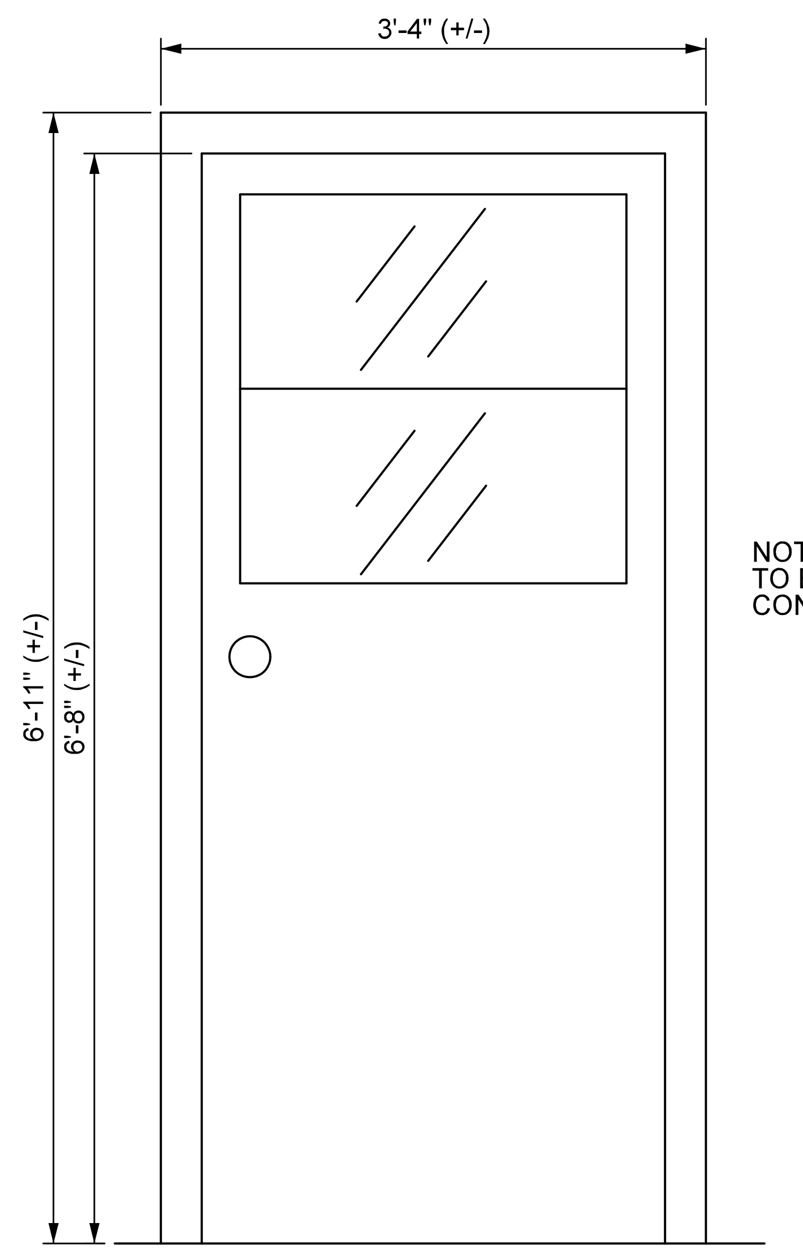



NOTE:
EXACT WINDOW FRAME SIZE
TO BE DETERMINED IN FIELD
BY CONTRACTOR

## WINDOW ELEVATION

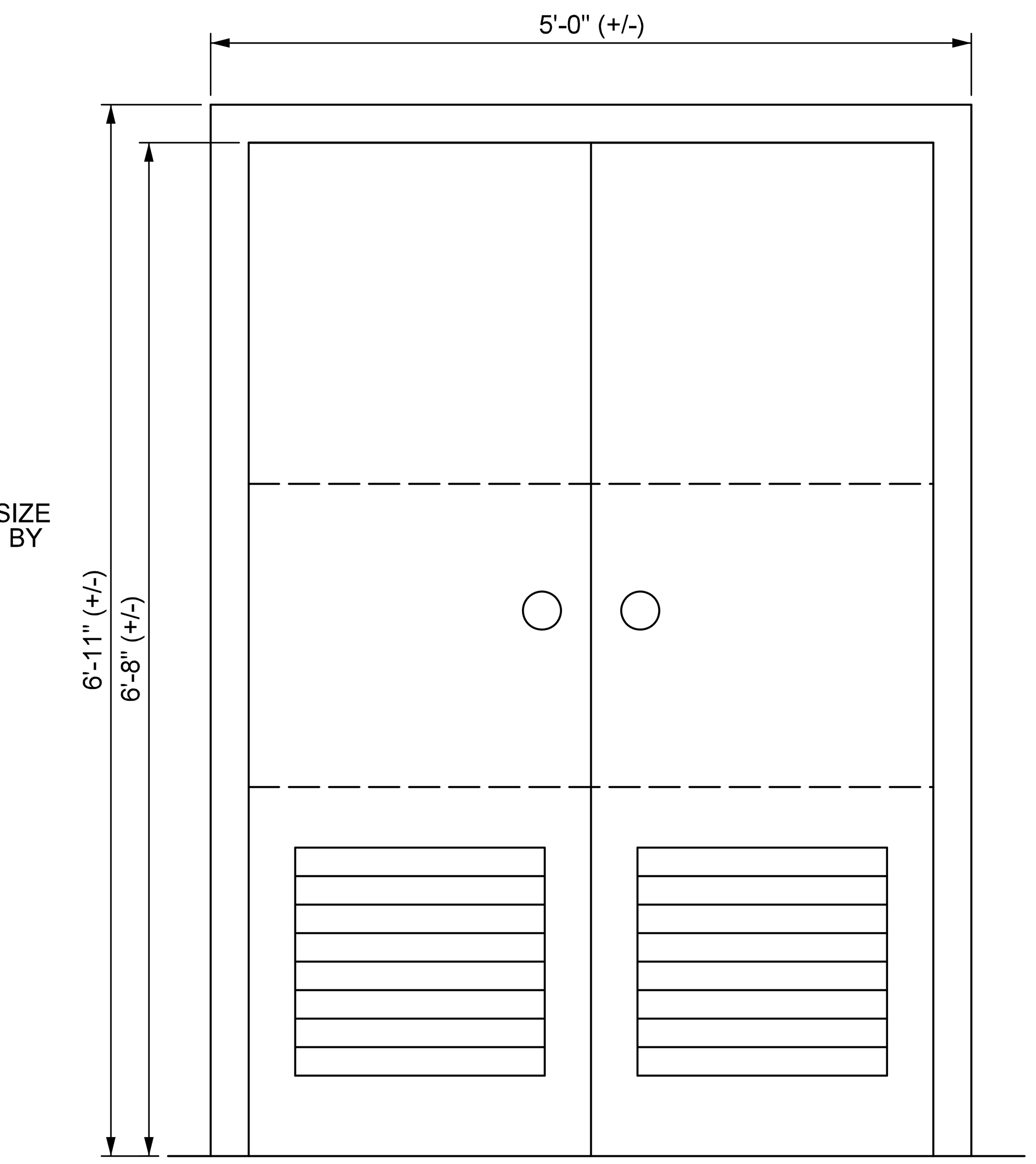
SCALE: 1" =1'-0"




## DOOR ELEVATION TYPE D1

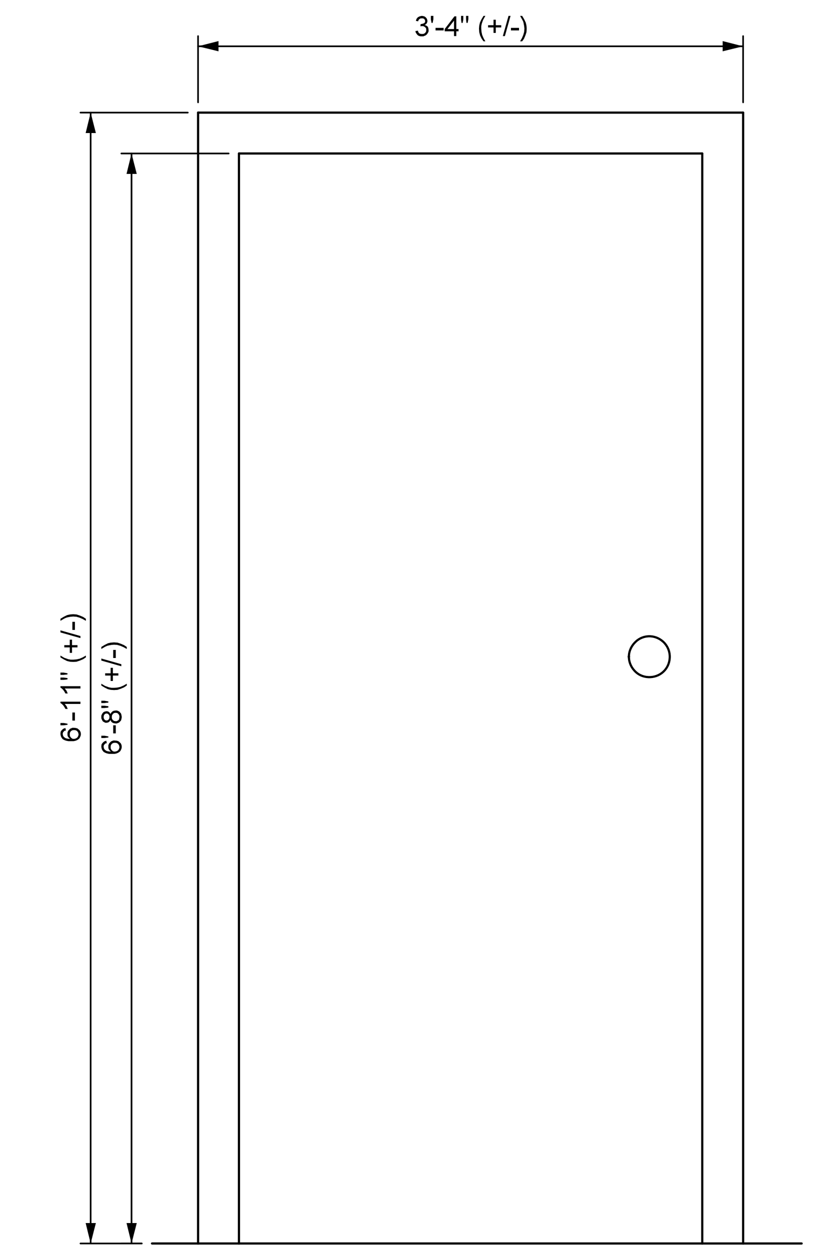
SCALE: 1" =1'-0"

NOTE: EXACT DOOR FRAME SIZE
TO BE DETERMINED IN FIELD BY
CONTRACTOR




## DOOR ELEVATION TYPE D2

SCALE: 1" =1'-0"




## DOOR ELEVATION TYPE D3

SCALE: 1" =1'-0"

WINDOW REPLACEMENT CHART

| NUMBER OF WINDOWS | TYPE | MATERIAL | FRAME | LOCATION |
|---|---|---|---|---|
| 3 | VERTICAL SLIDING | ALUMINUM | TIMBER | SECOND FLOOR NORTH WALL |
| 1 | VERTICAL SLIDING | ALUMINUM | TIMBER | SECOND FLOOR WEST WALL |
| 3 | VERTICAL SLIDING | ALUMINUM | TIMBER | SECOND FLOOR EAST WALL |
| 1 | VERTICAL SLIDING | ALUMINUM | TIMBER | SECOND FLOOR SOUTH WALL |

DOOR REPLACEMENT CHART

| DOOR TYPE | NO. OF DOORS | MATERIAL | FRAME | LOCATION | DESCRIPTION |
|---|---|---|---|---|---|
| D1 | 1 | STEEL | STEEL | SECOND FLOOR WEST WALL | SINGLE SWING DOOR |
| D2 | 1 | STEEL | STEEL | FIRST FLOOR WEST WALL | DOUBLE SWING DOOR WITH DOUBLE SWING EXTERNAL SHUTTERS |
| D3 | 1 | STEEL | STEEL | FIRST FLOOR NORTH WALL | SINGLE SWING DOOR |

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

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RALEIGH

# DOOR AND WINDOW REPLACEMENT CHARTS

## ALLIGATOR RIVER SWING SPAN

REVISIONS

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

SHEET NO. A-8
TOTAL SHEETS 10

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DWG NUMBER 11
TOTAL DWGS 90

DRAWN BY: CEM DATE : 8/8/2016
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PHOTO 1

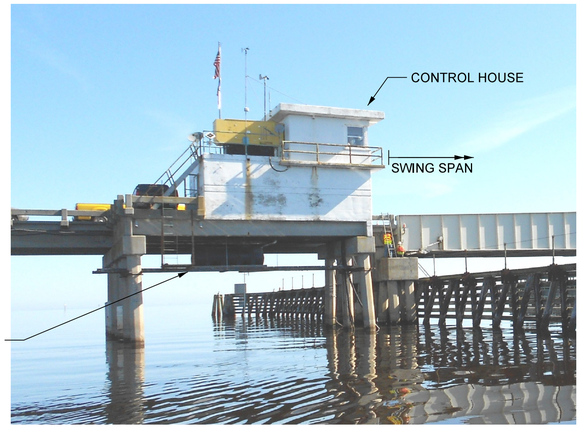


PHOTO 2

PHOTO 3

PHOTO 4

PHOTO 5

PHOTO 6

EXISTING SEPTIC TANK SUPPORT PLATFORM

## NOTES:

1. THE SCOPE OF WORK INCLUDES THE REPLACEMENT OF THE SEPTIC TANK SUPPORT PLATFORM. PHOTOS 1 THROUGH 6 WILL AID THE CONTRACTOR IN DEVELOPING THE COST ESTIMATE PRIOR TO BIDDING.
2. THE EXISTING SEPTIC TANK AND SUPPORT PLATFORM ARE LOCATED UNDERNEATH THE CONTROL HOUSE AS SHOWN IN PHOTOS 1 THROUGH 5.
3. EXISTING ACCESS TO THE PLATFORM IS BY MEANS OF A VERTICAL LADDER FROM THE DECK NEAR THE SOUTHWEST END OF THE CONTROL HOUSE AS SHOWN IN PHOTO 6.
4. THE EXISTING SUPPORT PLATFORM FRAMING CONSISTS OF STEEL ANGLES SPANNING BETWEEN CONCRETE PILES OF THE SUBSTRUCTURE. THE ANGLES ARE SUPPORTED BY FRICTION COLLARS ATTACHED TO THE PILES. FURTHER, STEEL RODS HAVE BEEN ALSO USED TO SUSPEND THE PLATFORM FROM UNDERNEATH THE CONCRETE DECK AS SHOWN IN PHOTOS 2 AND 5.
5. TIMBER DECKING BETWEEN THE ANGLES, SUPPORTS THE EXISTING SEPTIC TANK AS SHOWN IN PHOTOS 2, 4 AND 5.
6. AFTER AWARD OF WORK CONTRACT, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY FIELD VERIFY EXISTING PLATFORM CONFIGURATION PRIOR TO PLATFORM DEMOLITION. THE CONTRACTOR SHALL DETERMINE THE LOCATIONS OF THE EXISTING ACCESS LADDER, THE EXISTING SEPTIC TANK AND PIPING LOCATIONS. THE EXISTING SEPTIC TANK AND PIPING SHALL BE TEMPORARILY REMOVED AND STORED AS PER OWNER'S RECOMMENDATION. AFTER REMOVAL OF STEEL RODS OF THE PLATFORM, THE HOLES IN THE DECK SHALL BE FILLED WITH STEELSTIK EPOXY PUTTY OR APPROVED EQUAL. ALL EXISTING CONNECTION HARDWARE FOR THE EXISTING PLATFORM SHALL BE REMOVED, CUT FLUSH AND GROUND SMOOTH AS DIRECTED BY THE ENGINEER.
7. A PLATFORM REPLACEMENT DRAWING HAS BEEN PROVIDED ON SHEET A-10. FIELD VERIFY THE SHOWN DIMENSIONS FOR APPROVAL BY ENGINEER. IF ACTUAL DIMENSIONS VARY FROM SHOWN DIMENSIONS, MINOR MODIFICATIONS TO THE REPLACEMENT MAY BE MADE BY ENGINEER PRIOR TO FABRICATION OF THE NEW PLATFORM FRAMING.
8. AFTER INSTALLATION OF THE NEW PLATFORM, THE EXISTING SEPTIC TANK AND PIPING SHALL BE REINSTALLED AT THE LOCATION DETERMINED AS PER NOTE 6. NEW ACCESS LADDER SHALL BE PROVIDED AT THE LOCATION DETERMINED AS PER NOTE 6.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SEPTIC TANK PLATFORM DETAILS - 1

ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
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DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| REVISIONS | | | | | | SHEET NO. |
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| 1 | | | 3 | | | TOTAL SHEETS |
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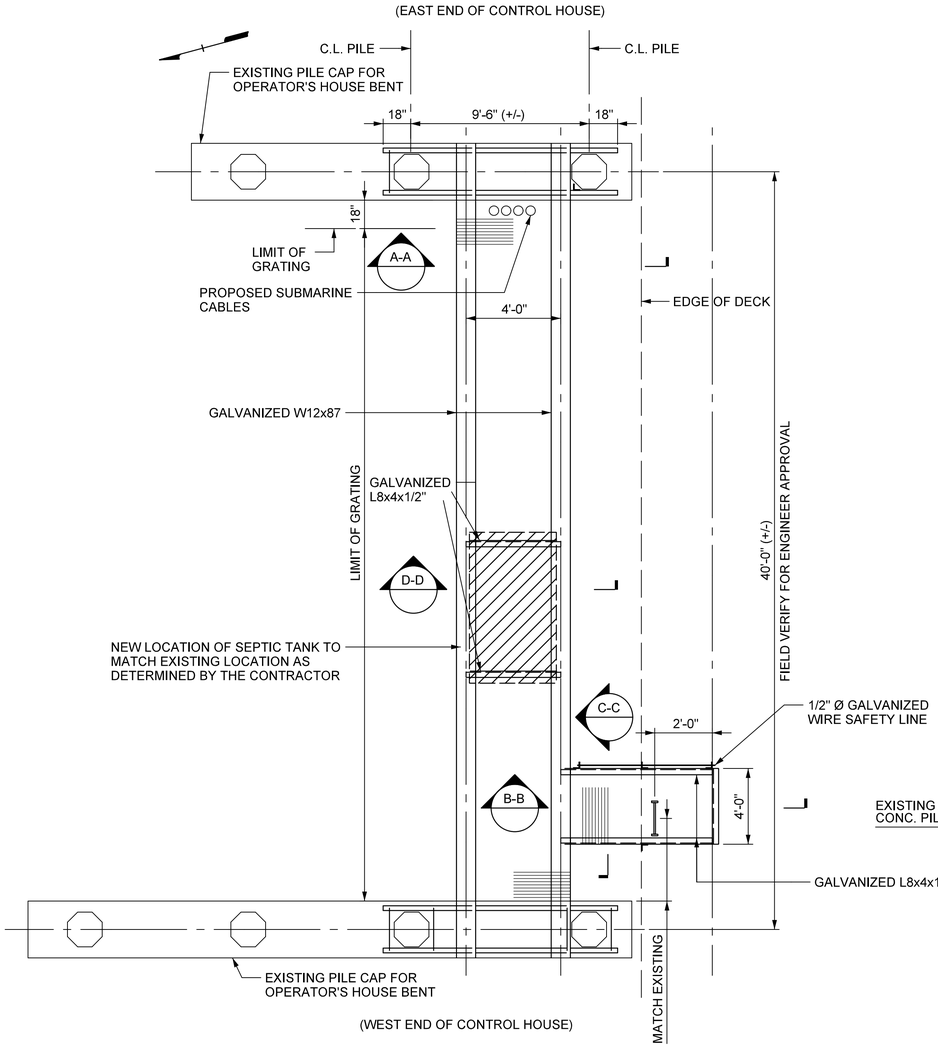
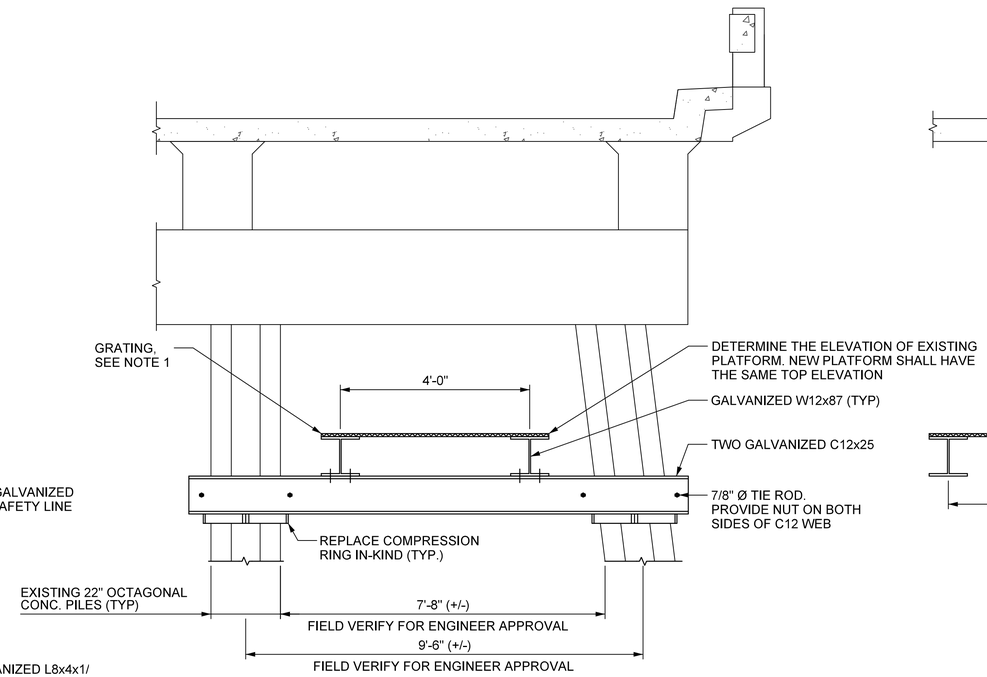


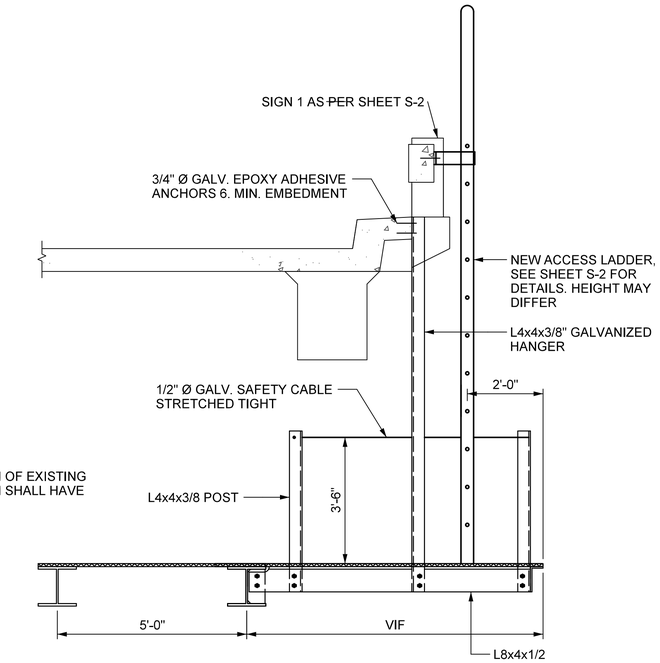

PLAN VIEW

SCALE: 1/4" =1'-0"




SECTION A-A

SCALE: 1/2" = 1'-0"

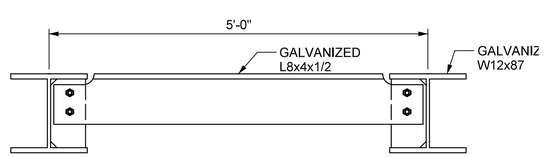



SECTION B-B

SCALE: 1/2" = 1'-0"

## NOTES

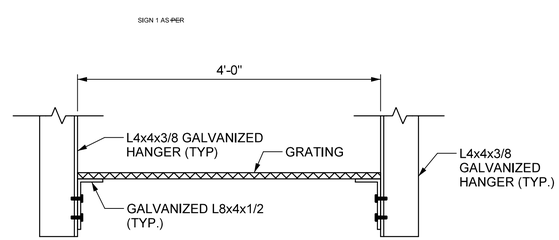
1. GALVANIZED STEEL REGULAR DUTY PRESS-LOCKED GRATING BY AMICO OR APPROVED EQUAL. 1-1/2" x 3/16" BEARING BARS SPACED @ 1-3/16". CROSS BAR SPACED @ 2". ALL CONNECTIONS TO SUPPORTS AS PER MANUFACTURER'S RECOMMENDATIONS




SECTION D-D

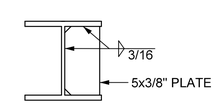
SCALE: 1" = 1'-0"

(GRATING NOT SHOWN)




SECTION C-C

SCALE: 1" = 1'-0"




STIFFENER DETAIL

SCALE: 1" = 1'-0"

(GRATING NOT SHOWN)

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SEPTIC TANK PLATFORM DETAILS - 2

ALLIGATOR RIVER SWING SPAN

SEPTIC TANK SUPPORT PLATFORM REPLACEMENT

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NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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| 13 | 90 |

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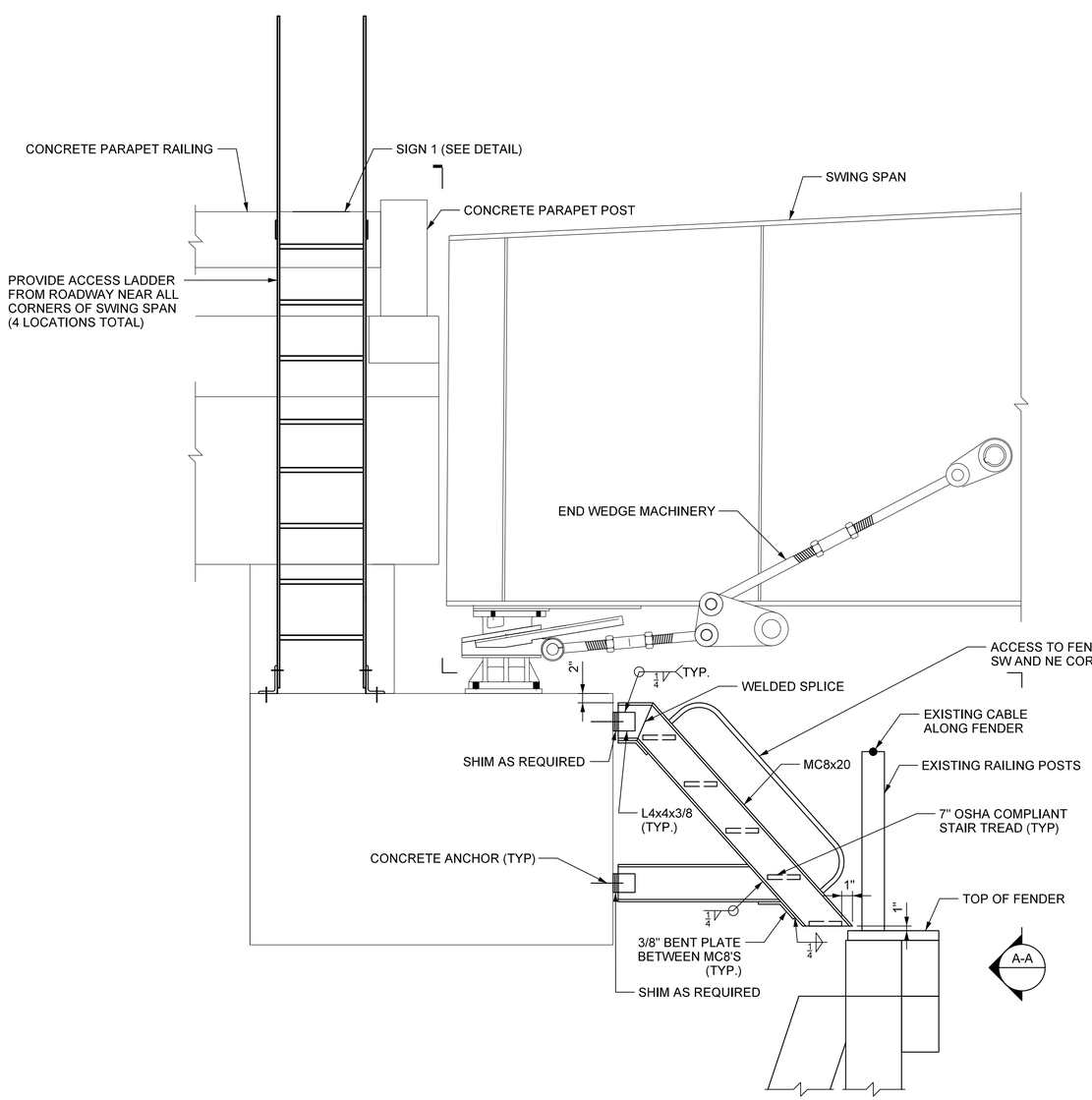
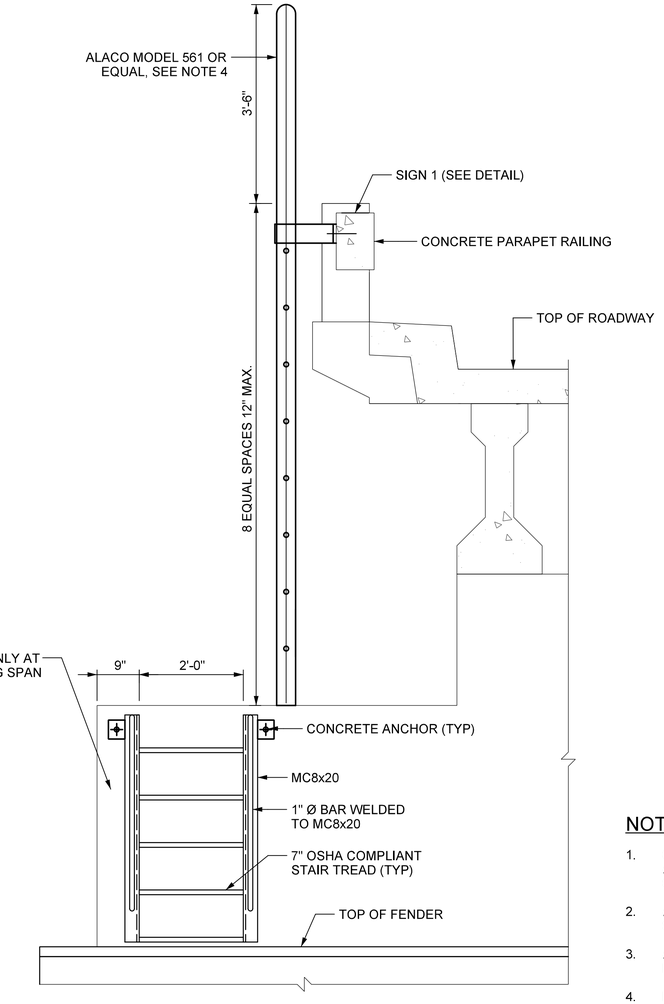



## REST PIER ACCESS SYSTEM

SCALE: 3/4"=1'-0"

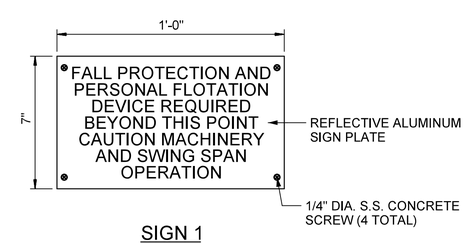



## SECTION A-A

SCALE: 3/4"=1'-0"

## NOTES

1. CONTRACTOR SHALL REMOVE AND DISCARD EXISTING LADDERS AT EACH CORNER OF THE BRIDGE. ALL EXISTING ANCHOR BOLTS OR ATTACHMENTS SHALL BE CUT FLUSH AND GROUND SMOOTH.
2. ALL METAL WORKS AND CONNECTIONS FOR ACCESS SYSTEM SHALL BE GALVANIZED.
3. ALL ANCHORS INTO CONCRETE SHALL BE GALVANIZED 3/4" DIA. EPOXY ADHESIVE U.N.O.
4. INSTALLATION OF LADDER SHALL BE PERFORMED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.




## SIGN 1

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
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RALEIGH

# REST PIER ACCESS SYSTEM DETAILS

# ALLIGATOR RIVER SWING SPAN

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9/14/2016

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| 14 | 90 |

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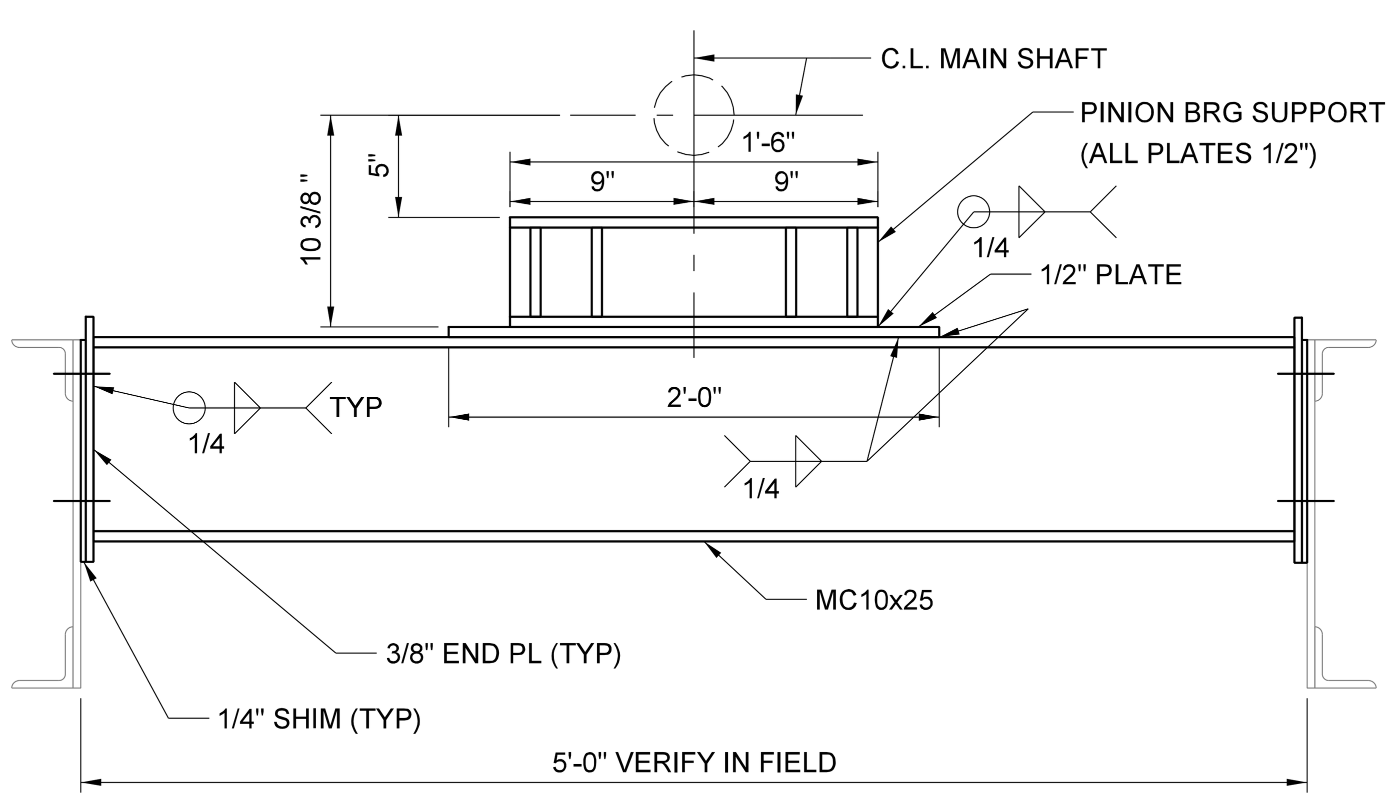
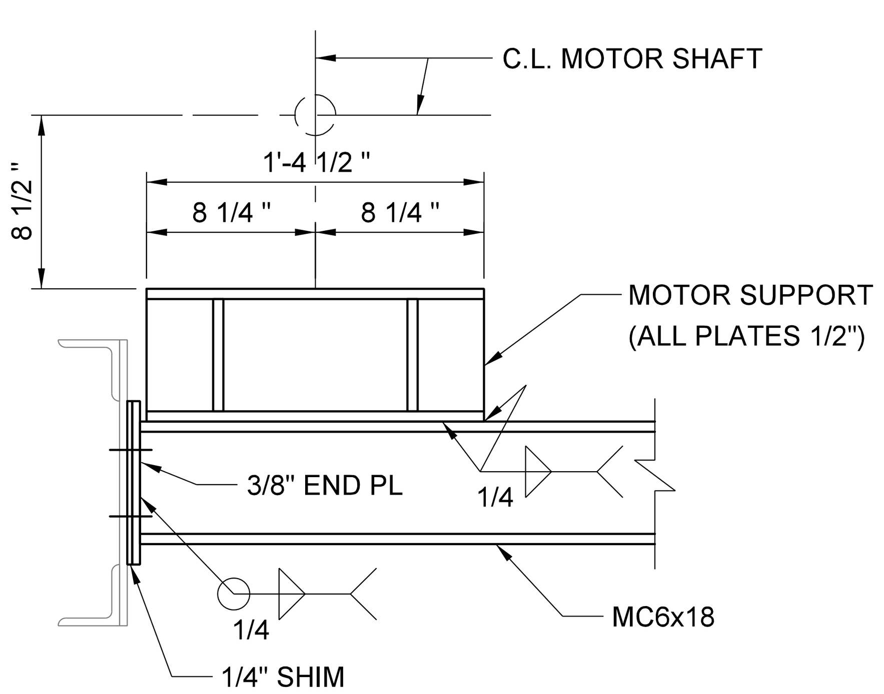
ELEVATION - TURNING MACHINERY SUPPORTS

SCALE: 1 1/2" = 1'-0"



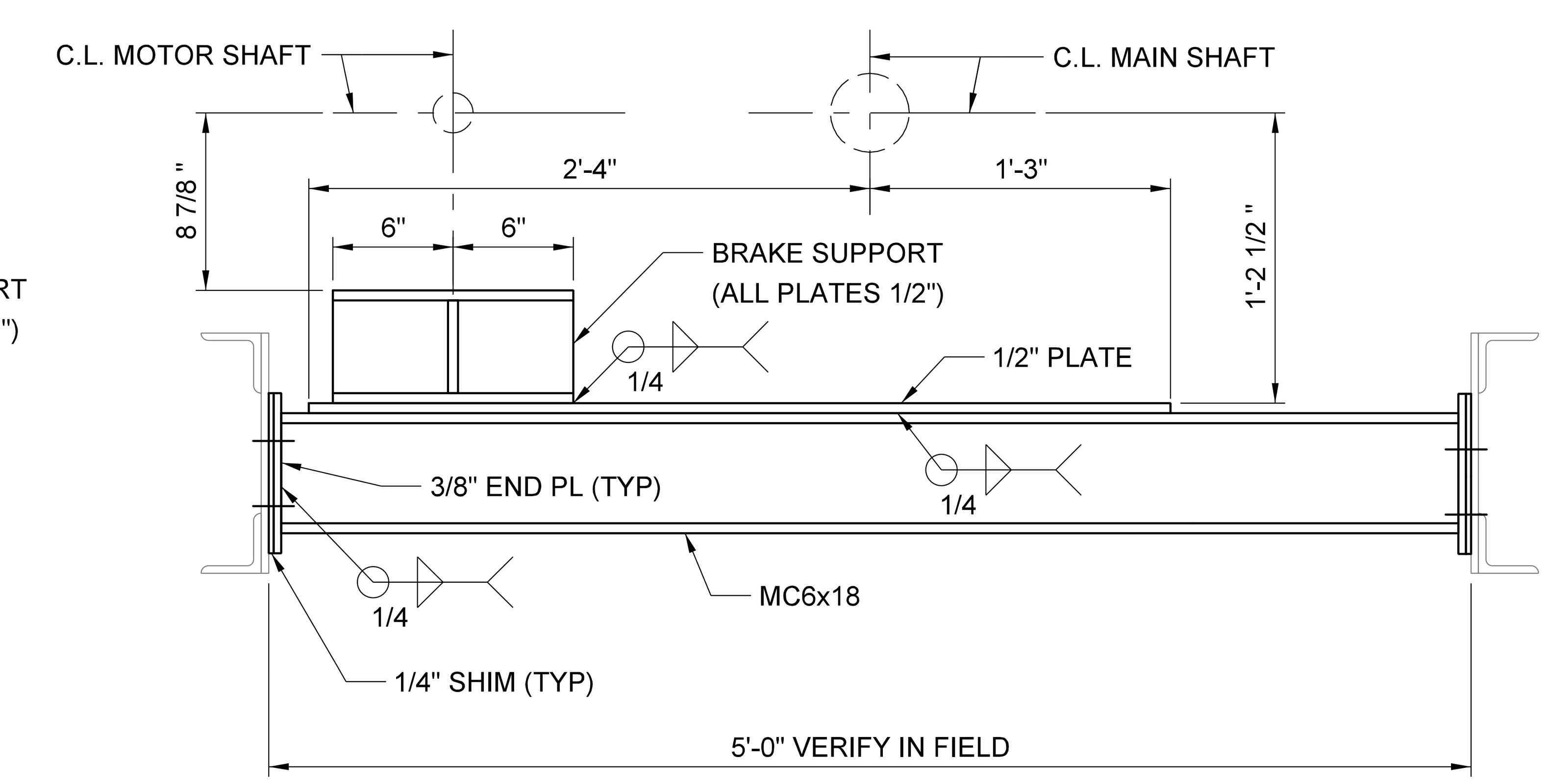

SECTION AT PINION BEARING

SCALE: 1 1/2" = 1'-0"




SECTION AT MOTOR

SCALE: 1 1/2" = 1'-0"




SECTION AT REDUCER AND BRAKE

SCALE: 1 1/2" = 1'-0"

## NOTES

1. THE CONTRACTOR SHALL PERFORM A FIELD SURVEY OF SUPPORT MEMBERS AND SUBMIT TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION OF NEW MACHINERY SUPPORTS.

2. EXISTING TURNING MACHINERY SUPPORTS SHALL BE REMOVED AND DISPOSED. REMAINING EXISTING WELDS SHALL BE GROUND SMOOTH WITH THE BASE METAL. UN-USED BOLT HOLES SHALL BE FILLED WITH H.S. BOLTS OF SAME DIAMETER

3. SIZE AND LOCATION OF SUPPORTS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL DETAIL NEW MACHINERY SUPPORTS BASED ON FIELD SURVEY AND SHOP DRAWINGS OF ACTUAL MACHINERY FURNISHED IN THIS CONTRACT.

4. NEW MACHINERY SUPPORTS AND EXISTING SUPPORTS WHERE SHOWN SHALL RECEIVE SYSTEM 1 PAINT IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS.

5. FINAL INSTALLED LOCATION AND PLACEMENT OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE COORDINATED WITH SCOPE OF WORK SHOWN ELSEWHERE.

6. MOUNTING/HOLE PLACEMENT AND SIZE SHALL BE AS SPECIFIED ELSEWHERE.

7. ALL BOLTS SHALL BE H.S. DIA. 7/8" UNLESS NOTED OTHERWISE

8. ALL MACHINERY MOUNTING SURFACES SHALL HAVE A 250 MICRO-INCH AND BE FLAT WITHIN 0.010 INCH. THICKNESS OF MOUNTING PLATES TO BE FINISHED ARE GIVEN FOR AFTER FINISHING.

9. UNLESS OTHERWISE NOTED. 1/2" SHIM PACK TO BE PROVIDED AT ALL MACHINERY MOUNTING SURFACES.

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| 15 | 90 | DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
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MACHINERY SUPPORTS

ALLIGATOR RIVER
SWING SPAN

| REVISIONS | | | | | |
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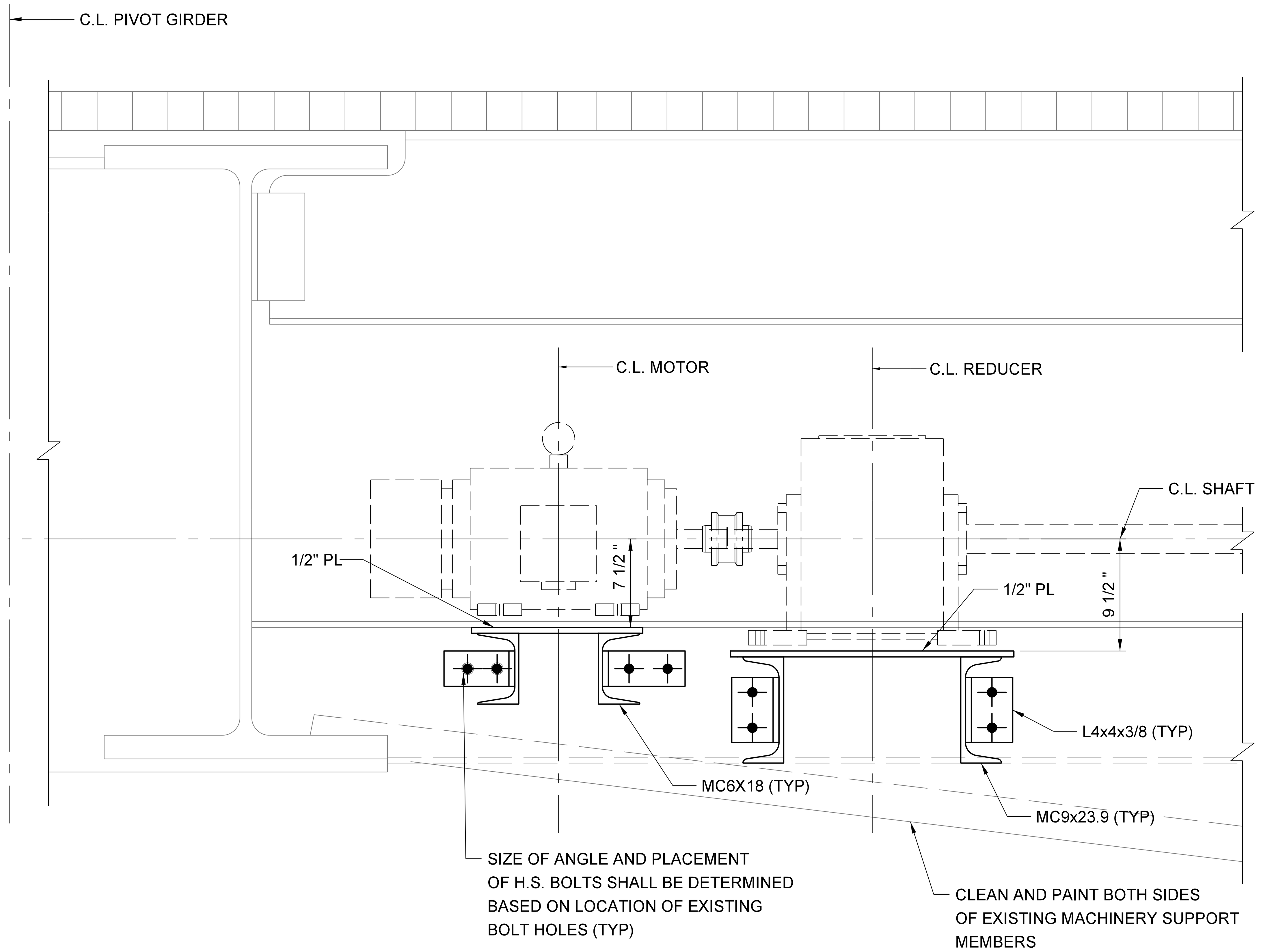
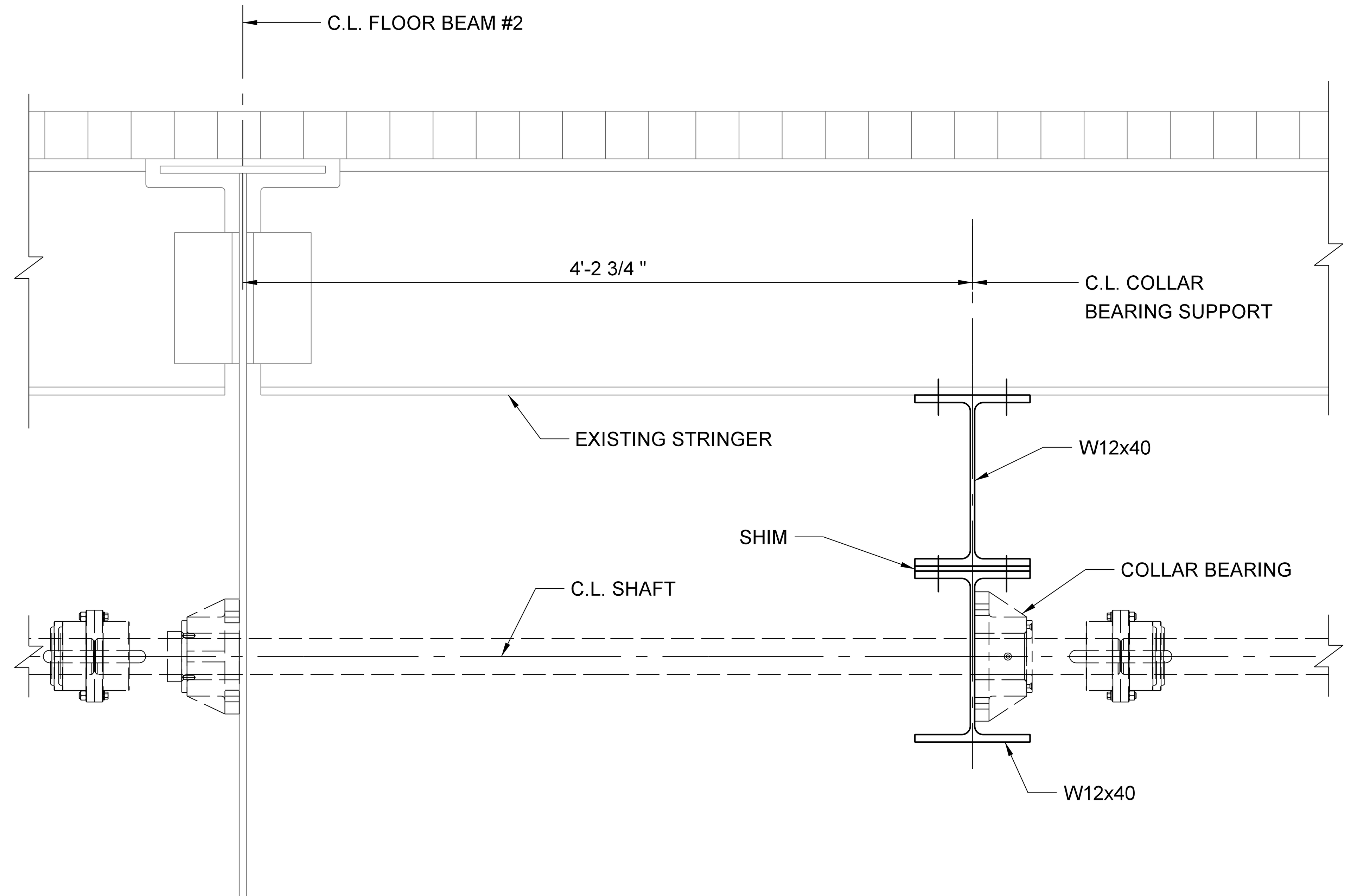



ELEVATION - WEDGE MACHINERY SUPPORTS

SCALE: 1 1/2" = 1'-0"




COLLAR BEARING SUPPORT

SCALE: 1 1/2" = 1'-0"

## NOTES

1. THE CONTRACTOR SHALL PERFORM A FIELD SURVEY OF SUPPORT MEMBERS AND SUBMIT TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION OF NEW MACHINERY SUPPORTS.

2. EXISTING WEDGE MACHINERY SUPPORTS SHALL BE REMOVED AND DISPOSED. REMAINING EXISTING WELDS SHALL BE GROUND SMOOTH WITH THE BASE METAL. UN-USED BOLT HOLES SHALL BE FILLED WITH H.S. BOLTS OF SAME DIAMETER

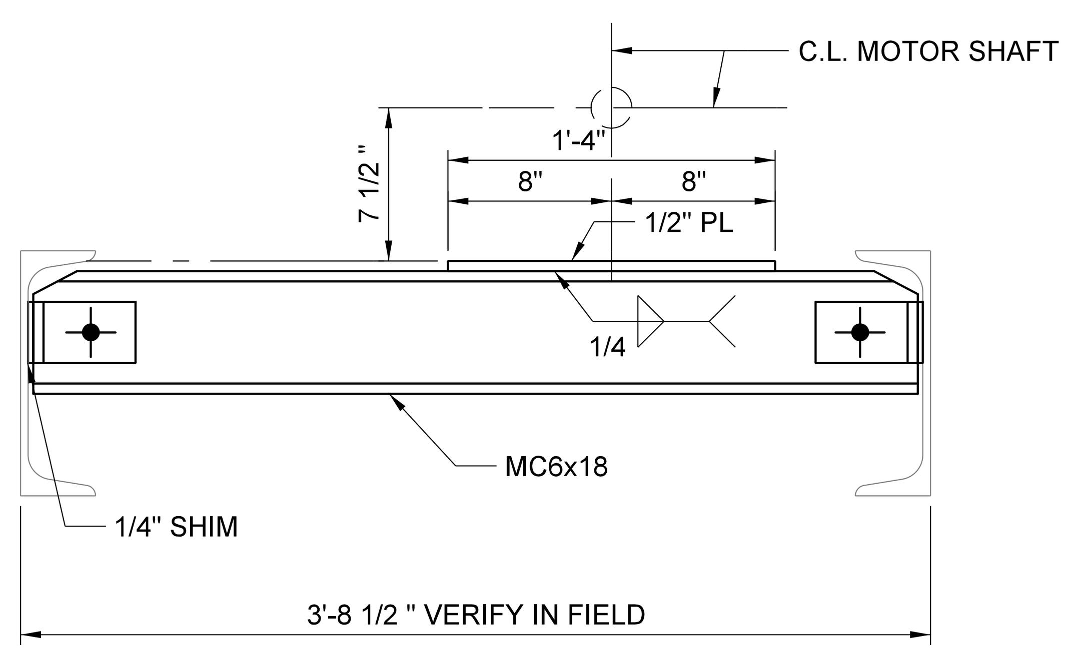
3. SIZE AND LOCATION OF SUPPORTS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL DETAIL NEW MACHINERY SUPPORTS BASED ON FIELD SURVEY AND SHOP DRAWINGS OF ACTUAL MACHINERY FURNISHED IN THIS CONTRACT.

4. NEW MACHINERY SUPPORTS AND EXISTING SUPPORTS WHERE SHOWN SHALL RECEIVE SYSTEM 1 PAINT IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS.

5. ALL BOLTS SHALL BE H.S. 7/8" DIA. UNLESS NOTED OTHERWISE

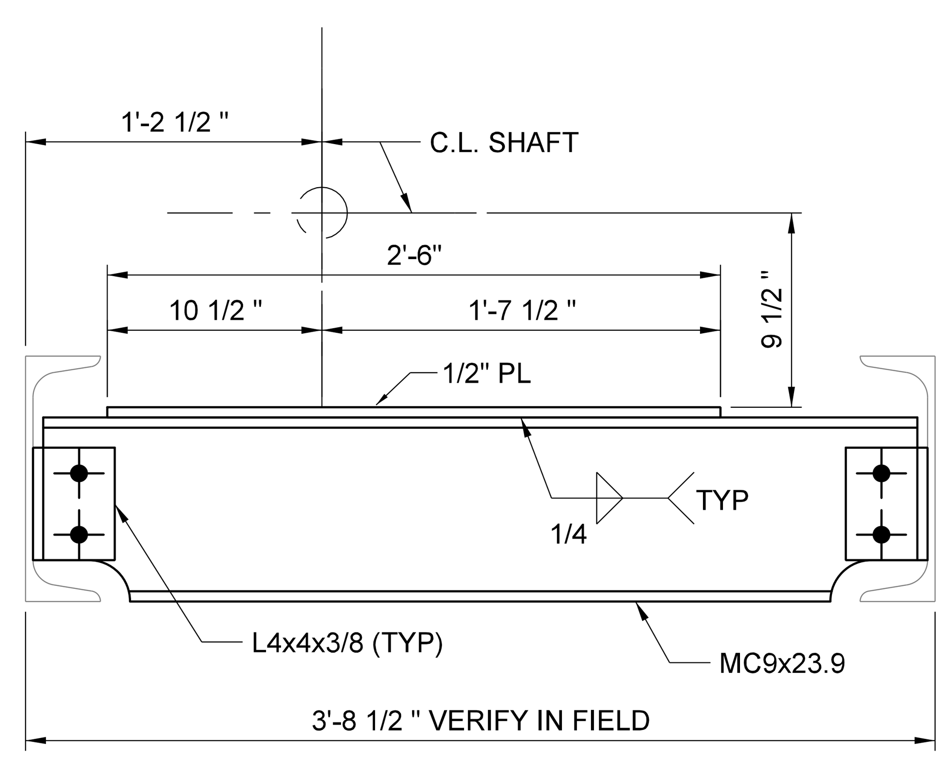
6. ALL MACHINERY MOUNTING SURFACES SHALL HAVE A 250 MICRO-INCH AND BE FLAT WITHIN 0.010 INCH. THICKNESS OF MOUNTING PLATES TO BE FINISHED ARE GIVEN FOR AFTER FINISHING.

7. UNLESS OTHERWISE NOTED. 1/2" SHIM PACK TO BE PROVIDED AT ALL MACHINERY MOUNTING SURFACES.




SECTION AT MOTOR

SCALE: 1 1/2" = 1'-0"




SECTION AT REDUCER

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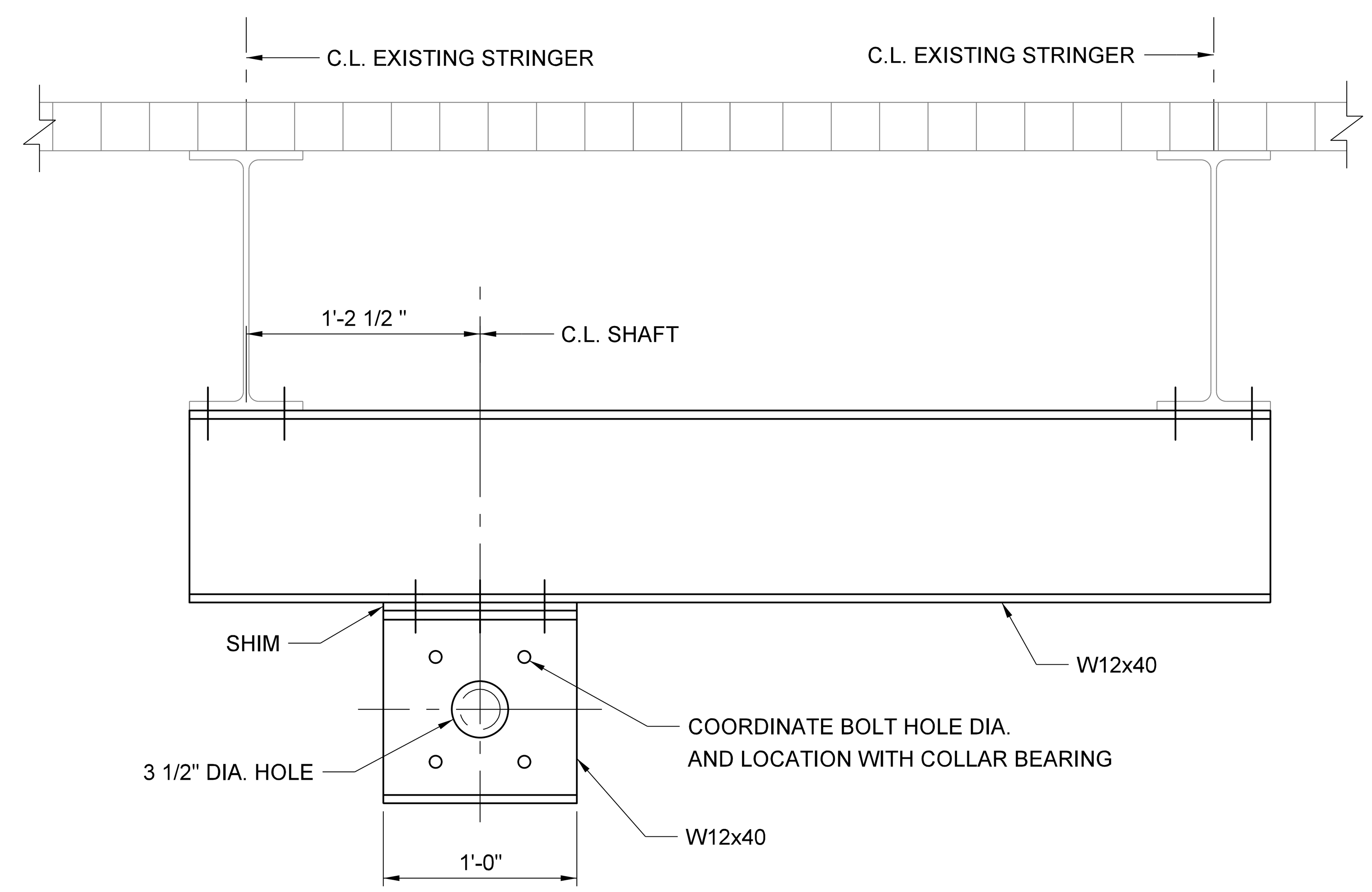


SECTION AT COLLAR BEARING

SCALE: 1 1/2" = 1'-0"

PROJECT NO. B-5936

TYRRELL COUNTY

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WEDGE MACHINERY SUPPORTS

ALLIGATOR RIVER SWING SPAN

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## ONE LINE ELECTRICAL SYMBOLS

- TRANSFORMER
- 1 FVNR — STARTER (FULL VOLTAGE NON-REVERSING STARTER SIZE 1)
- 2 FVR — STARTER (FULL VOLTAGE REVERSING STARTER SIZE 2)
- SERVICE DISCONNECT SWITCH (3 POLE, SINGLE THROW)
- TUMBLER DISCONNECT SWITCH

## ONE LINE/WIRING SCHEMATIC SYMBOLS

- CT- — CURRENT TRANSFORMER
- OVERLOAD RELAY (THERMAL)
- LIMIT SWITCH WITH NORMALLY OPEN CONTACT
- LIMIT SWITCH WITH NORMALLY CLOSED CONTACT
- TIMER RELAY CONTACT, ON-DELAY
- TIMER RELAY CONTACT, OFF-DELAY
- TIMER RELAY CONTACT, ON-DELAY
- TIMER RELAY CONTACT, OFF-DELAY
- PUSHBUTTON WITH NORMALLY OPEN CONTACT
- PUSHBUTTON WITH NORMALLY CLOSED CONTACT
- FOOT SWITCH (NORMALLY OPEN)
- FOOT SWITCH (NORMALLY CLOSED)
- FUSE
- MULTI POSITION SELECTOR SWITCH (QUANTITY OF POSITIONS AS SHOWN) MAINTAINED IN ALL POSITIONS UNLESS NOTED OTHERWISE.
- M — MOTOR
- A — AMMETER
- METER
- TWISTED SHIELD PAIR (TSP) CONDUCTORS WITH GROUNDED SHIELD

## ONE LINE/WIRING SCHEMATIC SYMBOLS

- DISC BRAKE
- CIRCUIT BREAKER
- 3P/100/15 — THERMAL/MAGNETIC, MCP-MOTOR CIRCUIT PROTECTOR
  - 15A TRIP
  - 100A FRAME
  - 3-POLE
- NEAR SIDE / CHANNEL / FAR SIDE — CHANNEL MARKER IDENTIFYING SUBMARINE CABLES
- DROOP CABLE
- COIL OF MAGNETIC CONTACTOR
- LIGHTING FIXTURE
- TIMING RELAY COIL
- COIL NORMALLY OPEN CONTACT
- COIL NORMALLY CLOSED CONTACT
- SWITCH (BYPASS)
- SWITCH
- GROUND (ELECTRICAL)
- R — INDICATOR LIGHT (A-AMBER, B-BLUE G-GREEN, R-RED, W-WHITE)
- O: 01 02/00 — PLC NOTATION
  - DIGITAL I/O NUMBER (00)
  - ANALOG I/O CHANNEL (0)
  - CHASIS SLOT NUMBER (02)
  - I/O NODE DROP NUMBER (01)
  - 0 - OUTPUT (O)
    I - INPUT
- L1/1025 L2/1025 L3/1025 — WIRE CONTINUED FROM LINE 1025
- WIRE DESIGNATION
- WIRE TAG/TERMINATION
- 0325 0326 0327 — WIRE NUMBER
- L4/1125 L5/1125 L6/1125 — WIRE TO LINE 1125
- CONTROL TRANSFORMER
- PLC INPUT
- II — PLC OUTPUT

- WIRES CONNECTED
- WIRE CROSSING WITHOUT BEING CONNECTED
- ENCLOSURE BOUNDARY
- DIODE
- RECEPTACLE
- REMOTE CONTACT
- WELDING WORK RECEPTACLE
- LED WATT WALL MOUNT LIGHT
- A — LIGHT FIXTURE CONTAINING TWO LED 4' FLOURESCENT TUBES
- E — EMERGENCY LIGHT
- GFCI OUTDOOR RECEPTACLE WITH ENCLOSURE AND COVER
- 480VAC RECEPTACLE
- 3 PHASE TRANSFORMER DELTA-DELTA CONNECTION
- 3 PHASE TRANSFORMER DELTA-WYE CONNECTION
- 3 PHASE DISCONNECT SWITCH
- HEATER
- GFCI RECEPTACLE
- R — FENDER NAVIGATION LIGHT
- R, G — RED/GREEN CHANNEL NAVIGATION LIGHT
- PEC — PHOTOELECTRIC CONTROLLER
- SIREN/GONG
- EXISTING EQUIPMENT
- NEW EQUIPMENT

## LIGHT SYMBOLS LEGEND

- f — LED OUTDOOR RATED WALL MOUNT LIGHT
- SMOKE DETECTOR
- LED LIGHT FIXTURE
- LIGHT FIXTURE CONTAINING FOUR LED FLUORESCENT TUBES
- EMERGENCY LIGHT WITH TWO LED LAMPHEADS
- $2e — TWO WAY SWITCH, DOUBLE THROW,120VAC ON CIRCUIT 'e'
- $ e — ONE WAY SWITCH, SINGLE POLE, DOUBLE THROW, 120VAC ON CIRCUIT 'e'

## TERMINAL SYMBOLS

- MAIN PROGRAMMABLE LOGIC CONTROLLER PANEL (MPLC)
- MAIN TERMINAL PANEL
- CONTROL DESK (CD)
- MOTOR CONTROL CENTER (MCC)
- SPAN DRIVE (SD)
- AUX DRIVE (AD)
- FAR SUBMARINE CABLE TERMINAL PANEL
- PIVOT PIER SUBMARINE CABLE TERMINAL PANEL
- PIVOT PIER DRAG CABLE TERMINAL PANEL
- REMOTE PLC I/O PANEL (RPLC)

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# ELECTRICAL SYMBOLS

# ALLIGATOR RIVER SWING SPAN

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

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| CHECKED BY: MJT | DATE: 8/8/2016 |
| DESIGN ENGINEER OF RECORD: CHS | DATE: 8/8/2016 |

| DWG NUMBER | TOTAL DWGS |
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## NOTES:

1. ABBREVIATIONS ARE NOTED IN THE CONTRACT PLANS AS FOLLOWS;

   TYPICAL ABBREVIATION: AA

   OR

   TYPICAL ABBREVATION: AA-BBB

   OR

   TYPICAL ABBREVIATION: AA-BBB-CCCC

2. ABBREVIATIONS ARE LISTED IN THE ADJACENT COLUMNS. THE COLUMN HEADER IDENTIFIES THE POSITION OF THE ABBREVIATION PER THE TYPICAL ABBREVIATION LISTED IN NOTE 1.

## FIRST:

| | |
|---|---|
| AC | ALTERNATING CURRENT |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AWG | AMERICAN WIRE GAUGE |
| BCR | BRIDGE CONTROL RELAY |
| BCP | BRIDGE CONTROL POWER |
| C.L. | CENTER LINE |
| CKT | CIRCUIT |
| CB | CIRCUIT BREAKER |
| CM | COMMON |
| CNTL | CONTROL |
| CP | CONTROL PANEL |
| CR | CONTROL RELAY |
| CS | CONTROL SWITCH |
| CT | CURRENT TRANSFOMER |
| DBR | DYNAMIC BRAKING RESISTOR |
| DC | DIRECT CURRENT |
| DIA | DIAMETER |
| DS | DISCONNECT SWITCH |
| ENC | ENCODER |
| ESW | ETHERNET SWITCH |
| FCB | FEEDER CIRCUIT BREAKER |
| FREQ. | FREQUENCY |
| FS | FOOT SWITCH |
| FU | FUSE |
| FVD | FLUX VECTOR DRIVE |
| FVNR | FULL VOLTAGE NON-REVERSING STARTER |
| FVR | FULL VOLTAGE REVERSING STARTER |
| GEN | GENERATOR |
| GND | GROUND |
| HDPE | HIGH DENSITY POLYETHYLENE |
| HP | HORSEPOWER |
| HTR | HEATER |
| I/O | INPUTS/OUTPUTS |
| IL | INDICATING LIGHT |
| KCMILS | KILO-CIRCULAR MILS |
| KVA | KILO-VOLT-AMPERE |
| KWH | KILOWATT HOUR |
| LP | LIGHTING PANEL |
| LS | LIMIT SWITCH |
| LT | LIGHTING |
| M | MOTOR CONTACTOR/MOTOR |
| mA | MILI-AMPERE |
| MAIN | MAIN |
| MCC | MOTOR CONTROL CENTER NUMBER |
| MIN | MINIMUM |
| MTR | MOTOR |
| MTS | MANUAL TRANSFER SWITCH |
| NF | NOISE FILTER |
| N.T.S. | NOT TO SCALE |
| NO | NORMALLY OPEN |
| OL | OVERLOAD |
| PA | PUBLIC ADDRESS |
| PB | PUSHBUTTON |
| PEC | PHOTOELECTRIC CONTROLLER |
| PFR | PHASE FAILURE REGULATOR |
| PL | PLUG |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PM | PHASE MONITOR |
| PMAIN | POWER MAIN |
| PPR | PULSES PER ROTATION |
| PS | POWER SUPPLY |
| PVC | POLYVINYL CHLORIDE |
| RCLS | ROTARY CAM LIMIT SWITCH |
| REC | RECEPTACLE |
| RGS | RIGID GALVANIZED STEEL |
| RMS | ROOT MEAN SQUARE |
| RPM | ROTATIONS PER MINUTE |
| SS | SELECTOR SWITCH |
| SS | STAINLESS STEEL |
| SSD | SLOW START DRIVE |
| SYM. | SYMMETRICAL |
| T | TRANSFORMER |
| TH | THERMOSTAT |
| TB | TERMINAL BLOCK |
| TR | TIMING RELAY |
| TS | TRAFFIC SIGNALS |
| TSP | TWISTED SHIELDED PAIR |
| TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSOR |
| TYP | TYPICAL |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| VDC | VOLTS DIRECT CURRENT |
| VFD | VARIABLE FREQUENCY DRIVE |
| XFMR | TRANSFORMER |
| ZT | POSITION TRANSMITTER |

## SECOND:

| | |
|---|---|
| AH | AIR HORN |
| ASD | AUXILIARY SPAN DRIVE |
| ASDM | AMERICAN SPAN DRIVE MOTOR |
| ATS | AUTOMATIC TRANSFER SWITCH |
| ASD | AUXILIARY SPAN DRIVE |
| AUX | AUXILIARY |
| BC | BRIDGE CONTROL POWER |
| BCR | BRIDGE CONTROL RELAY |
| BG | BARRIER GATE |
| BP | BYPASS |
| CB# | CIRCUIT BREAKER NUMBER |
| CCTV | CLOSED CIRCUIT TELEVISION |
| CD | CONTROL DESK |
| CTLDSK | CONTROL DESK |
| DM | DEAD MAN |
| DSK | DESK |
| ES | EMERGENCY STOP |
| FRDWY | FAR ROADWAY |
| FS | FAR SIDE |
| GEN | GENERATOR |
| GLS | GATE ROTARY LIMIT SWITCH |
| GROUP | GROUP |
| GSR | GREEN SIGNAL RELAY |
| INPUTS | PLC INPUTS |
| KW | KILOWATT |
| LP | LIGHTING PANEL |
| LT | LIGHTING TRANSFORMER |
| LT | LAMP TEST |
| MAIN | MAIN |
| MB | MOTOR BRAKE |
| MCR | MASTER CONTROL RELAY |
| MCC | MOTOR CONTROL CENTER |
| MDI | MANUAL DRIVE INTERLOCK |
| MHB1 | MACHINERY BRAKE 1 |
| MHB2 | MACHINERY BRAKE 2 |
| N | NEUTRAL |
| NPS | NPS |
| NRDWY | NEAR ROADWAY |
| NS | NEAR SIDE |
| OF | OFFGOING GATE |
| ON | ONCOMING GATE |
| PEC | PHOTOELECTRIC CONTROLLER |
| PFR | POWER FAILURE RELAY |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PM | POWER MONITOR |
| PMAIN | POWER MAIN SERVICE |
| PNL | PANEL |
| PPR | PIVOT PIER RECEPTACLES |
| PS | POWER SUPPLY |
| PWR | POWER |
| RE | RESET |
| RLS | ROTARY LIMIT SWITCH |
| RPLC | REMOTE I/O PLC PANEL |
| RSR | RED SIGNAL RELAY |
| SD | SPAN DRIVE |
| SDM | SPAN DRIVE MOTOR |
| SO | SPAN OPERATION |
| SPAN | SPAN |
| SRN | SIREN |
| SY | DRIVE SELECT |
| TW | TRAFFIC WARNING |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| UV | UNDER VOLTAGE RELAY |
| WED | WEDGE |
| WG | WARNING GATE |
| WM | WEDGE MOTOR |
| YSR | YELLOW SIGNAL RELAY |
| ZT | POSITION TRANSMITTER |

## THIRD:

| | |
|---|---|
| AUX | AUXILIARY |
| CL | CLOSED |
| DCL | DECEL CLOSE |
| DO | DOOR OPEN |
| DOP | DECEL OPEN |
| DRV | DRIVE |
| DRVN | DRIVEN |
| DS | DOOR SWITCH |
| EN | ENABLE |
| F | FAR |
| FL | FULLY LOWERED |
| FLS | FLASHING |
| FC | FULLY CLOSED |
| FO | FULLY OPEN |
| FOF | FAR OFFGOING |
| FON | FAR ONCOMING |
| FR | FULLY RAISED |
| GI | GONG INTERLOCK |
| HCK | HAND CRANK |
| HR | HAND RELEASE |
| L | LOWER/LOCK |
| LP | LIGHTING PANEL |
| LWR | LOWER |
| MO | MANUAL OPERATION |
| N | NEAR |
| NC | NEARLY CLOSED/NORMALLY CLOSED |
| NFL | NOT FULLY LOWERED |
| NFR | NOT FULLY RAISED |
| NFRI | NOT FULLY RAISED INTERLOCK |
| NO | NEAR OPEN/NORMALLY OPEN |
| NON | NEAR ONCOMING |
| OP | OPEN |
| PV | NEAR PANELVIEW |
| R | RAISE |
| RDY | READY |
| REL | RELEASE |
| RLS | ROTARY LIMIT SWITCH |
| RSD | RAISED |
| SEL | SELECTED |
| SET | SET |
| SP | SPARE |
| TI | TRAFFIC INTERLOCK |
| TRB | TROUBLE |
| WTHD | WITHDRAW |
| WTHDN | WITHDRAWN |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720FBF14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ELECTRICAL ABBREVIATIONS

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-2 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 18 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

## SCOPE OF WORK

1. STANDARDS

ALL WORK SHALL CONFORM TO THE MOST CURRENT VERSIONS OF THE FOLLOWING STANDARDS:
A. AASHTO AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES, PUBLISHED BY AASHTO
B. NEC NATIONAL FIRE PROTECTION ASSOCIATION 70 NATIONAL ELECTRIC CODE
C. NFPA 101 NATIONAL FIRE PROTECTION ASSOCIATION 101 LIFE SAFETY CODE
D. OSHA OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
E. IEEE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
F. IPCEA INSULATED POWER CABLE ENGINEERS ASSOCIATION
G. NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
H. UL UNDERWRITERS LABORATORY
I. ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
J. ASTM AMERICAN SOCIETY FOR TESTING AND MATERIAL

2. FIELD MEASURING AND VERIFICATION

THE CONTRACTOR SHALL PERFORM A FIELD SURVEY TO DETERMINE ALL EXISTING DIMENSIONS OF THE CONTROL HOUSE, THE PIVOT PIER, AND THE APPROACH TO LOCATE AND INSTALL THE NEW EQUIPMENT. THE CONTRACTOR SHALL PERFORM A FIELD SURVEY TO VERIFY THE EXISTING WIRING TO VERIFY THE WIRE TAGS, AS-BUILT DOCUMENTATION, AND CONTRACT PLANS.

3. UTILITY SERVICE, AERIAL CABLES, AND MEDIUM VOLTAGE TRANSFORMER

THE EXISTING SERVICE IS A 2400V MEDIUM VOLTAGE DELTA SERVICE. THE CONTRACTOR SHALL UPGRADE THIS SERVICE. THE CONTRACTOR SHALL FURNISH AND INSTALL A POLE MOUNTED DISCONNECT SWITCH TO FACILITATE MAINTENANCE OF THE SERVICE FEEDERS. THE CONTRACTOR SHALL FURNISH AND INSTALL NEW AERIAL CABLES AND SUPPORTS. THE NEW AERIAL CABLES SHALL BE ROUTED UNDER THE ROADWAY TO THE CONTROL HOUSE AS SHOWN ON THE PLANS. ON THE CONTROL HOUSE PATIO, FURNISH AND INSTALL A NEW SERVICE DISCONNECT SWITCH AND A NEW STEP DOWN 2400V DELTA/480-277V WYE CONNECTED TRANSFORMER. FURNISH AND INSTALL NEW COPPER CLAD GROUND ROD AND CONNECTION AT SERVICE AND BOND THE STRUCTURAL STEEL TO THE GROUND SYSTEM.

4. STANDBY GENERATOR AND ATS

THE CONTRACTOR SHALL FURNISH AND INSTALL A NEW DIESEL GENERATOR RATED AT 480VAC AND AN AUTOMATIC TRANSFER SWITCH TO TRANSFER POWER FROM THE NORMAL UTILITY SOURCE TO THE STANDBY GENERATOR POWER SOURCE. THE RATING SHALL BE AS SHOWN ON THE PLANS. THE NEW GENERATOR SHALL BE LOCATED ON THE UPPER PLATFORM WHERE THE EXISTING GENERATOR IS LOCATED AND SHALL BE FULLY OUTDOOR RATED WITH A TANK LOCATED IN THE GENERATOR ENCLOSURE.

5. MOTOR CONTROL CENTER AND MOTOR DRIVES

FURNISH AND INSTALL A NEW MOTOR CONTROL CENTER (MCC) TO DISTRIBUTE POWER TO ALL EQUIPMENT AND MOTORS. THE MCC SHALL BE LOCATED IN THE CONTROL HOUSE AS SHOWN ON THE PLANS. THE MCC SHALL BE OF MODULAR CONSTRUCTION AND RATED NEMA-12. THE MCC SHALL HOUSE THE MOTOR DRIVES FOR THE SPAN MOTOR. ALL DRIVES, CONTACTORS, AND MOTOR STARTERS SHALL BE PROVIDED ETHERNET COMMUNICATION CAPABILITIES AND SHALL BE PART OF THE PLC SUPERVISORY CONTROL AND DATA ACQUISITION. EACH MOTOR STARTER AND DRIVE SHALL BE EQUIPPED WITH A HUMAN MACHINE INTERFACE (HMI) TO ALLOW THE EQUIPMENT TO BE CONTROLLED IF THE PLC IS OUT OF SERVICE.

6. STEP DOWN TRANSFORMER AND SERVICE LIGHTING PANEL

FURNISH AND INSTALL ONE (1) NEMA-3R STEP DOWN 480V/208-120 VAC CONNECTED TRANSFORMER IN THE CONTROL HOUSE TO POWER THE BRIDGE SERVICE EQUIPMENT. FURNISH AND INSTALL ONE (1) NEW NEMA-12 BRIDGE LIGHTING PANEL TO DISTRIBUTE POWER TO THE SERVICE EQUIPMENT.

7. SPAN MOTOR

REMOVE AND DISPOSE THE EXISTING SPAN MOTOR. FURNISH AND INSTALL ONE (1) NEW 25HP, 480VAC, 900 RPM, INVERTER DUTY, TENV MOTOR. THE MOTOR SHALL BE EQUIPPED WITH AN INTERNAL HEATER AND AN ENCODER TO PROVIDE MOTOR SPEED FEEDBACK TO THE ASSOCIATED DRIVE. FURNISH AND INSTALL IN-SIGHT, NEMA-4X STAINLESS STEEL DISCONNECT SWITCH FOR THE MOTOR.

8. WEDGE MOTOR

REMOVE AND DISPOSE THE EXISTING WEDGE MOTOR. FURNISH AND INSTALL ONE (1) NEW 7.5HP, 480VAC, TENV MOTOR TO REPLACE THE EXISTING WEDGE MOTOR. FURNISH AND INSTALL ONE (1) IN-SIGHT, NEMA-4X STAINLESS STEEL DISCONNECT SWITCH FOR THE WEDGE MOTOR.

9. MOTOR AND MACHINERY BRAKES

REMOVE AND DISPOSE THE EXISTING SPAN AND MACHINERY BRAKES. FURNISH AND INSTALL ONE (1) NEW 480VAC MOTOR BRAKE AND TWO (2) NEW 480VAC MACHINERY BRAKES. EACH BRAKE SHALL BE EQUIPPED WITH A HAND RELEASE MECHANISM AND LIMIT SWITCHES TO INDICATE SET, RELEASED, AND HAND RELEASED POSITIONS. FURNISH AND INSTALL THREE (3) IN-SIGHT, NEMA-4X STAINLESS STEEL DISCONNECT SWITCHES, ONE FOR EACH BRAKE.

10. PLC CONTROL SYSTEM

FURNISH AND INSTALL A NEW PROGRAMMABLE LOGIC CONTROLLER (PLC) BASED CONTROL SYSTEM. THIS WILL INCLUDE A MAIN PLC PANEL LOCATED IN THE CONTROL HOUSE, A NEW CONTROL DESK IN THE CONTROL HOUSE, AND A NEW REMOTE I/O PANEL IN THE CENTER PIVOT PIER. THE EQUIPMENT ENCLOSURES LOCATED IN THE CONTROL HOUSE SHALL BE RATED NEMA-12 AND THE PANEL IN THE PIVOT PIER SHALL BE RATED NEMA-4X STAINLESS STEEL. THE PANELS SHALL USE ROCKWELL AUTOMATION: ALLEN-BRADLEY (AB) CONTROLLOGIX PLC WITH AN ETHERNET COMMUNICATION NETWORK TO COMMUNICATE BETWEEN THE CONTROL DESK, THE MAIN PLC PANEL, THE MCC, AND THE REMOTE I/O RACK IN THE PIVOT PIER. ALL REQUIRED PROGRAMMING SHALL BE PROVIDED BY THE CONTRACTOR.

11. LIMIT SWITCHES AND CONTROL DEVICES

INTEGRATE THE EXISTING SPAN POSITION ROTARY CAM LIMIT SWITCH INTO THE NEW CONTROL SYSTEM. FURNISH AND INSTALL NEW WEDGE ROTARY CAM LIMIT SWITCH, INTEGRATE THE CAM LIMIT SWITCH AND SPAN POSITION TRANSMITTER INTO THE NEW CONTROL SYSTEM. INTEGRATE THE NEW BRAKE LIMIT SWITCHES (ITEM 9 ABOVE) INTO THE NEW CONTROL SYSTEM. FURNISH AND INSTALL NEW MAGNETIC PROXIMITY LIMIT SWITCHES ON THE NEAR PIER AND PIVOT PIER TO PROVIDE SPAN FULL CLOSED, OPEN, AND SPAN OVERTRAVEL POSITION INFORMATION. FURNISH AND INSTALL NEW FLOAT SWITCH IN THE WASTE WATER HOLDING TANK.

ALL LIMIT SWITCHES SHOWN IN THE WIRING DIAGRAMS ARE SHOWN IN THE CONFIGURATION CORRESPONDING TO THE ROADWAY OPEN TO VEHICULAR TRAFFIC: SPAN FULLY CLOSED, ALL BRAKES SET AND NOT HAND RELEASED, WEDGES FULLY DRIVEN, ALL GATES FULLY RAISED, AND ALL DISCONNECT SWITCHES IN THE NOT DISCONNECTED POSITION.

12. REFURBISH WARNING GATES

RECONNECT ALL GATE MOTORS TO OPERATE AT 480VAC. CLEAN AND LUBRICATE THE GATE EQUIPMENT. INTEGRATE THE GATES INTO THE NEW CONTROL SYSTEM. FURNISH AND INSTALL NEW 120V SERVICE FOR HEATER, RECEPTACLE, FLASHING LIGHTS AND FLASHER UNIT INSIDE THE WARNING GATES ENCLOSURES.

13. REFURBISH BARRIER GATES

REMOVE AND DISPOSE THE EXISTING BARRIER GATE MOTORS AND SOFT STARTS. FURNISH AND INSTALL NEW DRIVES AND MOTORS TO OPERATE AT 480VAC. CLEAN AND LUBRICATE THE GATE EQUIPMENT. INTEGRATE THE GATES INTO THE NEW CONTROL SYSTEM. FURNISH AND INSTALL NEW 120V SERVICE FOR HEATER AND RECEPTACLE INSIDE BARRIER GATE ENCLOSURES. REPLACE THE DRIVE ROLLER CHAINS, DRIVE SPROCKET, DRIVE WHEEL SPROCKET, AND DRIVE WHEELS ON EACH GATE WITH NEW B&B APPROVED EQUIPMENT. PROVIDE TWO SETS OF SPARE DRIVE ROLLER CHAINS, DRIVE SPROCKET, DRIVE WHEEL SPROCKET, AND DRIVE WHEELS.

14. REFURBISH TRAFFIC EQUIPMENT

INCORPORATE THE EXISTING TRAFFIC CONTROL EQUIPMENT (TRAFFIC SIGNALS AND FLASHING LIGHTS) INTO THE NEW CONTROL SYSTEM.

15. SUBMARINE CABLES TO PIVOT PIER

FURNISH AND INSTALL A NEW SUBMARINE CABLE BETWEEN THE CONTROL HOUSE TO THE PIVOT PIER. THIS SHALL PROVIDE POWER AND CONTROL TO ALL EQUIPMENT IN THE PIVOT PIER FOR SPAN OPERATION.

FURNISH AND INSTALL NEW DRAG CABLES BETWEEN THE FIXED PIVOT PIER SUBMARINE CABINET AND THE MOVABLE PIVOT PIER TERMINATION CABINET TO ACCOMMODATE 180º ROTATION.

16. CONDUIT AND WIRE

FURNISH AND INSTALL ALL CONDUIT, BOXES, AND WIRE AS REQUIRED TO FULLY CONNECT ALL EXISTING AND NEW EQUIPMENT TO THE ELECTRICAL SYSTEM.

ALL NEW CONDUIT SHALL BE RIGID GALVANIZED STEEL CONDUIT, EXCEPT FOR FINAL CONNECTIONS TO LIMIT SWITCHES AND MOTORS WHICH SHALL BE LIQUIDTIGHT FLEXIBLE CONDUITS. NO CONDUIT USED SHALL BE SMALLER THAN 3/4".

ALL NEW WIRING SHALL BE XHHW AND INSTALLED IN CONDUIT. THE MINIMUM WIRE SIZE FOR CONTROL WIRES INSIDE ENCLOSURES SHALL BE #14 AWG AND THE MINIMUM SIZE FOR POWER WIRES SHALL BE #12AWG FOR ALL NEW WIRING IN ACCORDANCE WITH AASHTO.

THE EXISTING SUBMARINE CABLES BETWEEN THE CONTROL HOUSE AND THE FAR SIDE ACROSS BOTH CHANNELS SHALL BE REUSED AND INTEGRATED INTO THE POWER DISTRIBUTION SYSTEM AND THE CONTROL SYSTEM.

THE CONTRACTOR SHALL FURNISH AND INSTALL A MAIN TERMINAL PANEL IN THE CONTROL HOUSE TO PROVIDE THE TRANSITION POINT BETWEEN THE NEW POWER DISTRIBUTION SYSTEM AND THE NEW CONTROL SYSTEM AND THE EXISTING WIRING AND EQUIPMENT TO REMAIN. THE CONTRACTOR SHALL FIELD VERIFY ALL CONDUCTORS, TRACE THE WIRING, AND PROVIDE WIRE TAGS ON ALL EXISTING WIRING. THIS INFORMATION SHALL BE INCLUDED ON THE AS-BUILT DRAWINGS FOR EASE OF FUTURE MAINTENANCE.

17. SIREN

FURNISH AND INSTALL A NEW SIREN AND MOUNT ON THE CONTROL HOUSE. PROVIDE A DOUBLE PROJECTOR AIR HORN TO SERVE AS THE SIREN. PROVIDE ONE PROJECTOR UP RIVER AND ONE PROJECTOR DOWN RIVER.

18. HVAC, SERVICE LIGHTING AND RECEPTACLES

REMOVE AND DISPOSE EXISTING HVAC, SERVICE LIGHTING, AND RECEPTACLES IN THE CONTROL HOUSE AND PIVOT PIER. PROVIDE POWER AND INTEGRATE THE NEW CONTROL HOUSE HVAC INTO THE POWER SYSTEM. FURNISH AND INSTALL NEW LIGHTING AND RECEPTACLES IN THE CONTROL HOUSE AND THE PIVOT PIER.

19. DEMOLITION

REMOVE AND DISPOSE FROM SITE THE CONTROL DESK, DRIVES, MOTOR CONTROLLER PANELS, GENERATOR, ATS, AERIAL SERVICE CABLES, BRAKES, WEDGE MOTOR, SPAN MOTOR, WEDGE LIMIT SWITCHES, LIGHTS, RECEPTACLES, AND ASSOCIATED CONDUIT, BOXES, AND WIRE. ALL EQUIPMENT TO REMAIN IN SERVICE SHALL BE PROTECTED AT ALL TIMES.

THE CONTRACTOR SHALL REMOVE AND STORE THE EXISTING CCTV, ANEMOMETER AND ALL ASSOCIATED EQUIPMENT LOCATED IN AND ON TOP OF THE CONTROL HOUSE. ONCE ALL CONTROL HOUSE WORK IS COMPLETE THE CONTRACTOR SHALL RE-INSTALL AT THE DIRECTION
OF NCDOT.

20. TEMPORARY BRIDGE OPERATION

THE CONTRACTOR SHALL KEEP THE SPAN OPERATIONAL AT ALL TIMES, IN ACCORDANCE WITH THE COAST GUARD APPROVALS. THE CONTRACTOR SHALL PROVIDE A TEMPORARY POWER AND CONTROL SYSTEM TO OPERATE THE SPAN, WEDGES, AND ASSOCIATED EQUIPMENT SAFELY DURING CONSTRUCTION. ANY REQUIREMENTS TO TAKE THE SPAN OUT OF SERVICE SHALL BE APPROVED BY THE COAST GUARD.

COORDINATE TEMPORARY BRIDGE OPERATION WITH SPECIAL PROVISION 'AUXILIARY OPERATING SYSTEM'. THE ELECTRICAL PLANS SHOW A METHOD FOR INCORPORATING THE TEMPORARY AUXILIARY SYSTEM INTO THE PERMANENT SYSTEM BY USING AN MCC FEEDER CIRCUIT BREAKER, A TRANSFER SWITCH, AND A RECEPTACLE OUTLET. THE PLANS ALSO SHOW A METHOD OF PROVIDING SERVICE POWER TO A HEATER IN THE AUXILIARY SYSTEM BY PROVIDING A FEEDER CIRCUIT BREAKER IN THE LIGHTING PANEL. THE CONTRACTOR SHALL COORDINATE THE WORK WITH THEIR PROPOSED AUXILIARY OPERATION SYSTEM.

21. OPERATION AND MAINTENANCE MANUALS, TRAINING, AND AS-BUILT DOCUMENTATION

THE CONTRACTOR SHALL FURNISH COMPLETE MAINTENANCE MANUALS WITH ACCURATE AS-BUILT DOCUMENTATION FOR ALL WORK. THESE MANUALS SHALL BE COMPLETED PRIOR TO COMMISSIONING THE SPAN AND USED AS PART OF THE COMMISSIONING PROCESS TO VERIFY THE MANUAL ACCURACY. THE MANUALS SHALL BE USED AS PART OF THE TRAINING OF THE BRIDGE OPERATORS AND TECHNICIANS ON THE SAFE OPERATION AND MAINTENANCE OF THE BRIDGE.

22. COMMISSIONING

THE CONTRACTOR SHALL COMPLETELY COMMISSION THE BRIDGE CONTROL SYSTEM IN A FACTORY TEST AND THEN AN ONSITE COMMISSIONING TO SHOW THE EQUIPMENT IS INSTALLED ACCURATELY AND SAFELY IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL EQUIPMENT SHALL BE OPERATED TO THE SATISFACTION OF THE ENGINEER AND A TESTING PROCEDURE TO RECORD THE TESTING OF ALL EQUIPMENT.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL NOTES

ALLIGATOR RIVER
SWING SPAN

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

Hardesty & Hanover
engineering that moves you

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| DRAWN BY: OIV | DATE : 8/8/2016 |
|---|---|
| CHECKED BY: MJT | DATE : 8/8/2016 |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 |

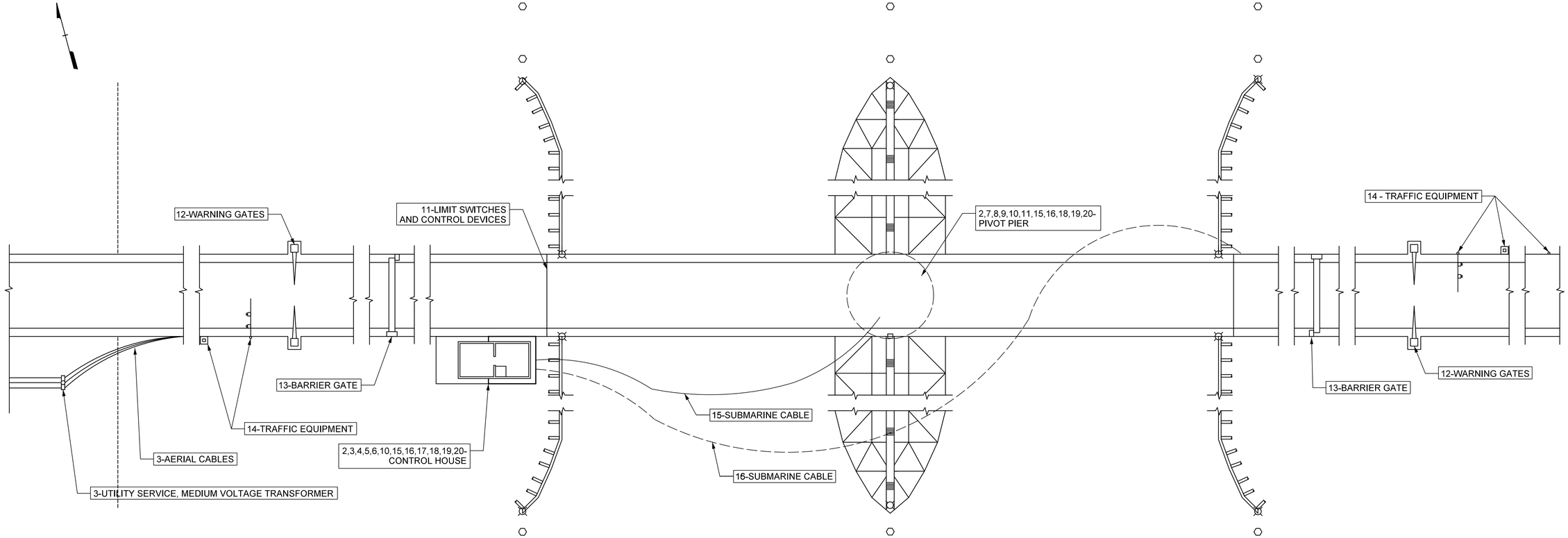
| DWG NUMBER | TOTAL DWGS |
|---|---|
| 19 | 90 |

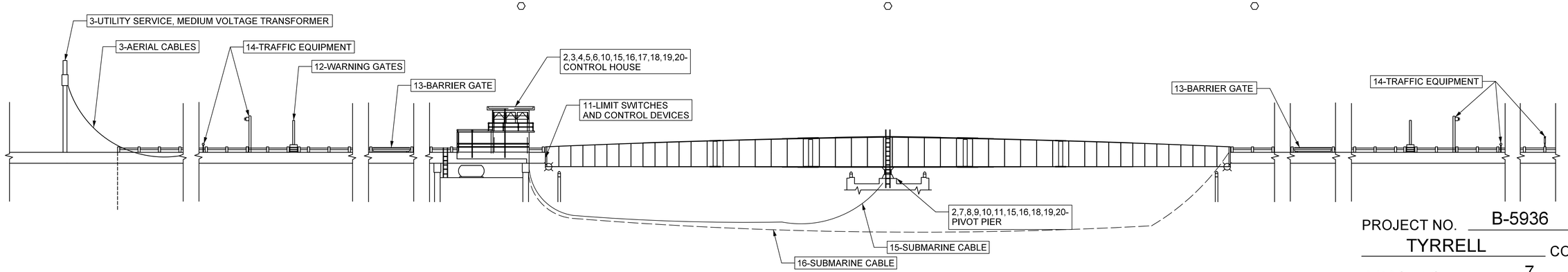
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. E-3
TOTAL SHEETS 51

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

## NOTES:

1. CALL OUT NUMBERS REFER TO GENERAL NOTES ON SHEET E-3.

Hardesty & Hanover
engineering that moves you

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BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# GENERAL PLAN & ELEVATION LAYOUT

# ALLIGATOR RIVER SWING SPAN

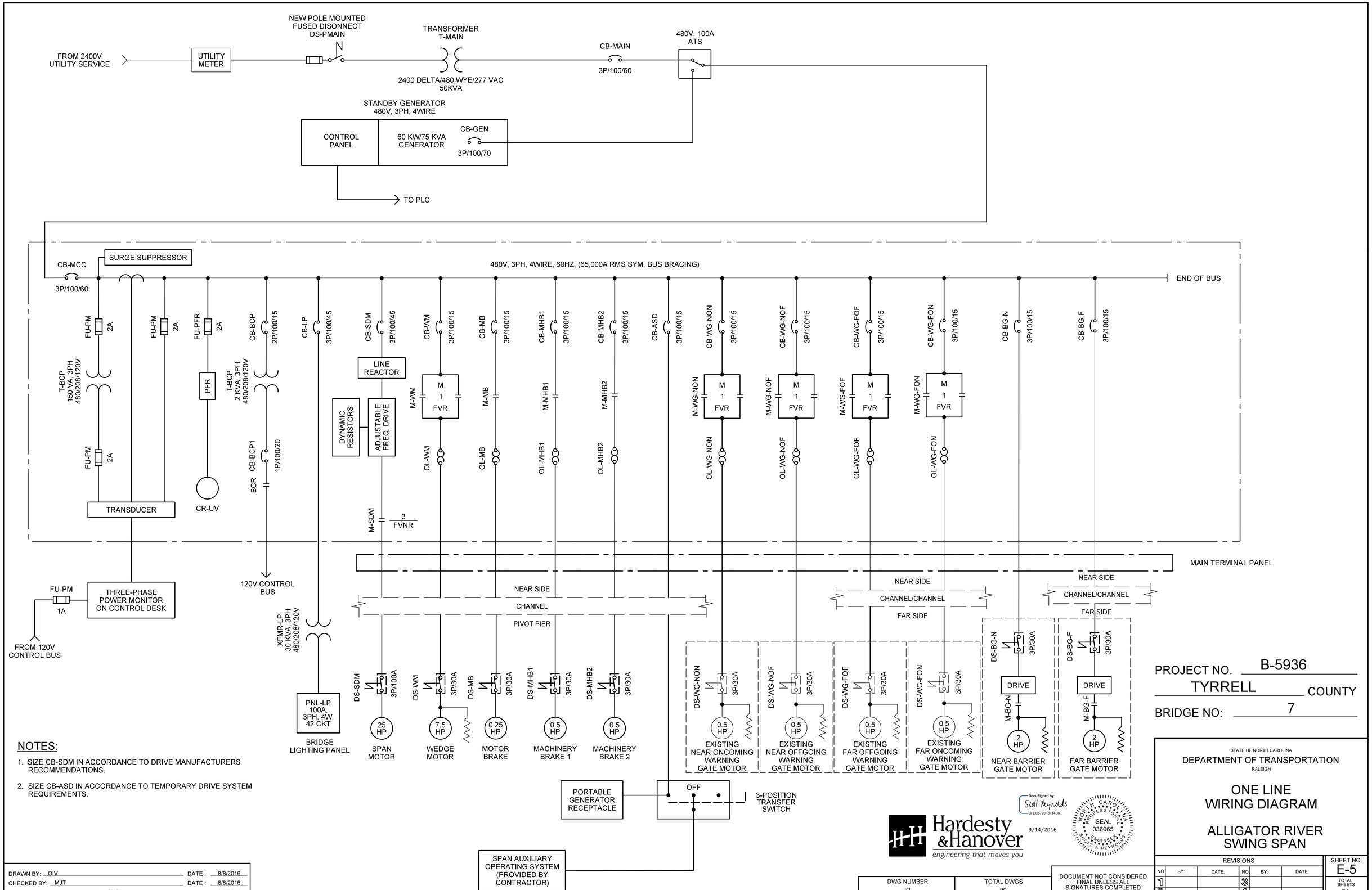
| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-4 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 20 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$SYSTTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$




## NOTES:

1. SIZE CB-SDM IN ACCORDANCE TO DRIVE MANUFACTURERS RECOMMENDATIONS.
2. SIZE CB-ASD IN ACCORDANCE TO TEMPORARY DRIVE SYSTEM REQUIREMENTS.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# ONE LINE WIRING DIAGRAM

# ALLIGATOR RIVER SWING SPAN

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BFEC5720F8F14B0...
9/14/2016

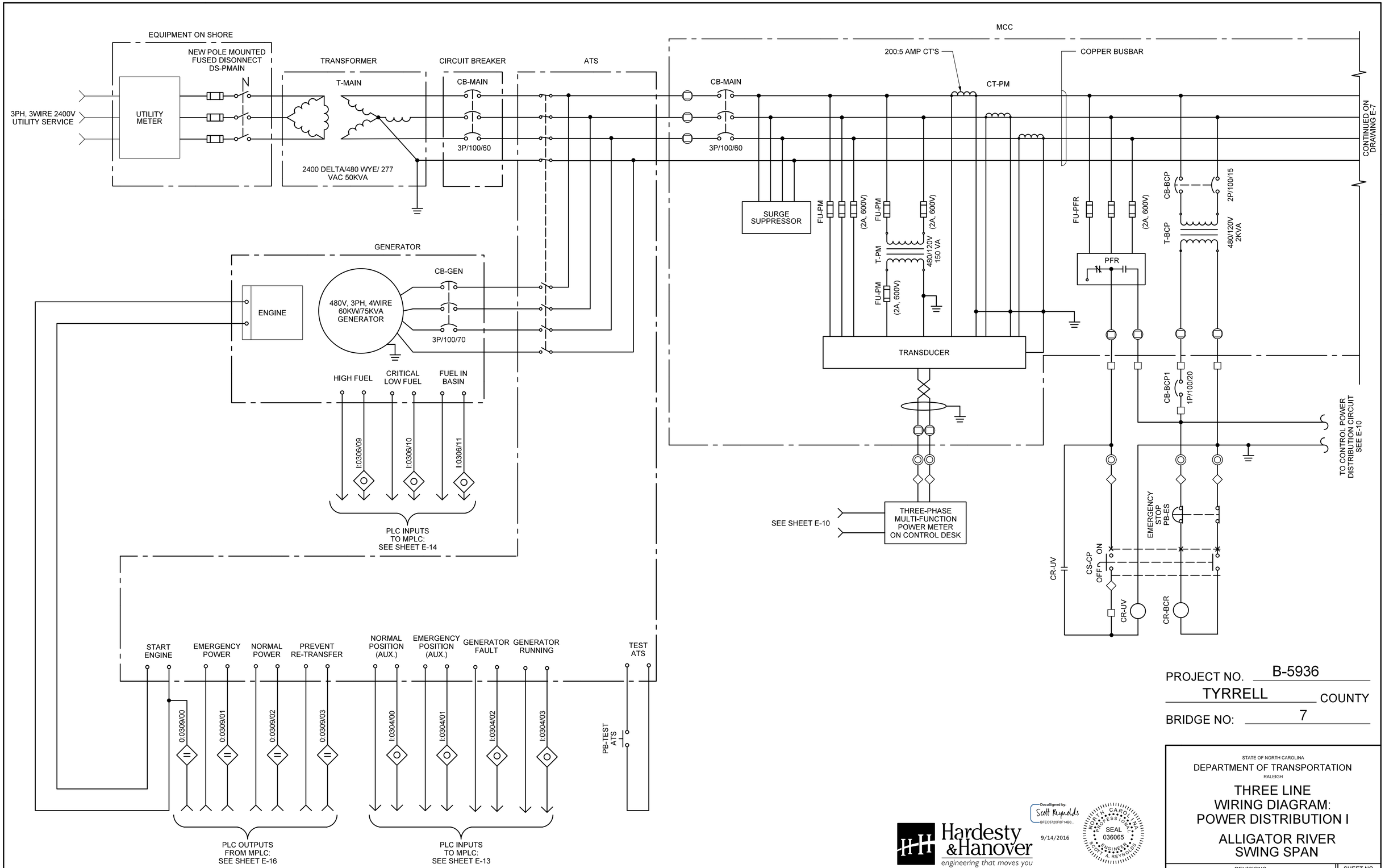
NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| | | | |
|---|---|---|---|
| DRAWN BY: OIV | DATE: 8/8/2016 | | |
| CHECKED BY: MJT | DATE: 8/8/2016 | | |
| DESIGN ENGINEER OF RECORD: CHS | DATE: 8/8/2016 | | |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 21 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-5 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# THREE LINE WIRING DIAGRAM: POWER DISTRIBUTION I

## ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

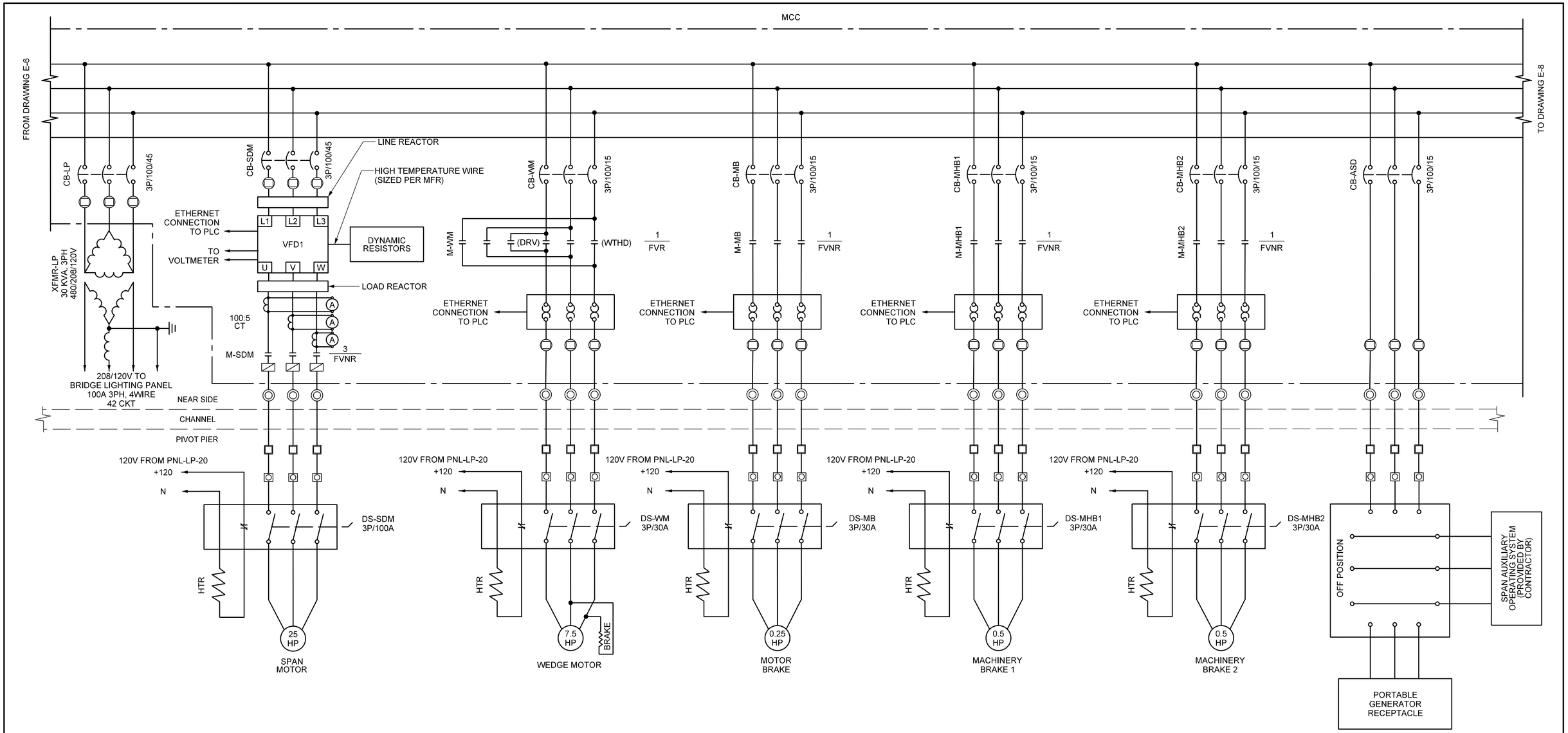
| REVISIONS | | | | | | |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

SHEET NO. E-6
TOTAL SHEETS 51

DRAWN BY: OIV DATE : 8/8/2016
CHECKED BY: MJT DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

DWG NUMBER 22
TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




## NOTES:

1. SIZE CB-SDM IN ACCORDANCE TO DRIVE MANUFACTURERS RECOMMENDATIONS.
2. SIZE CB-ASD IN ACCORDANCE TO TEMPORARY DRIVE SYSTEM REQUIREMENTS.
3. MOTOR DISCONNECT SWITCH AUXILIARY CONTACTS OPEN WHEN THE DISCONNECT IS IN THE OFF POSITION.
4. SPAN MOTOR ENCODER CONNECTIONS NOT SHOWN.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# THREE LINE WIRING DIAGRAM: POWER DISTRIBUTION II

## ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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

SHEET NO. E-7

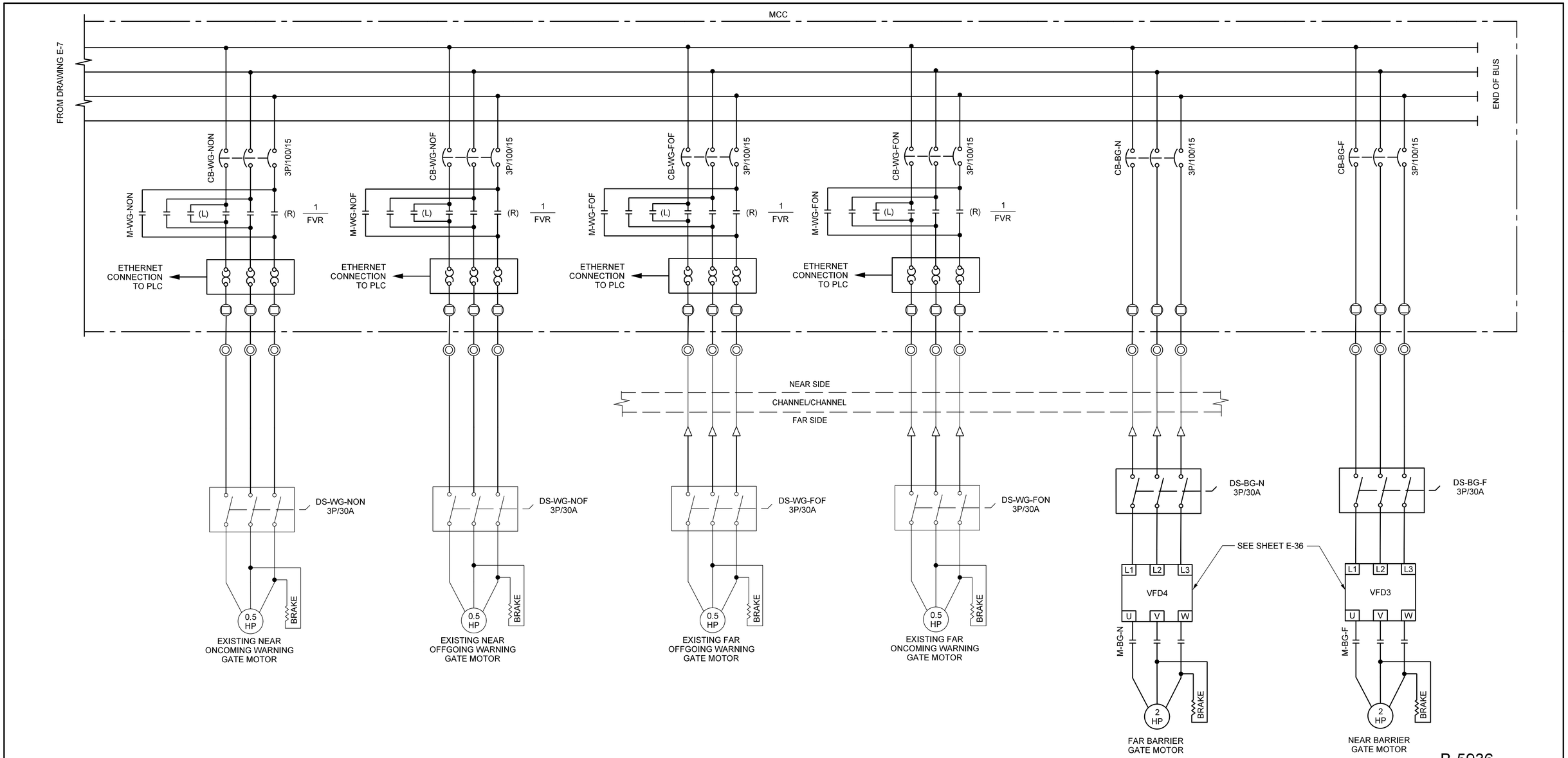
TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 23

TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# THREE LINE WIRING DIAGRAM: POWER DISTRIBUTION III

## ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

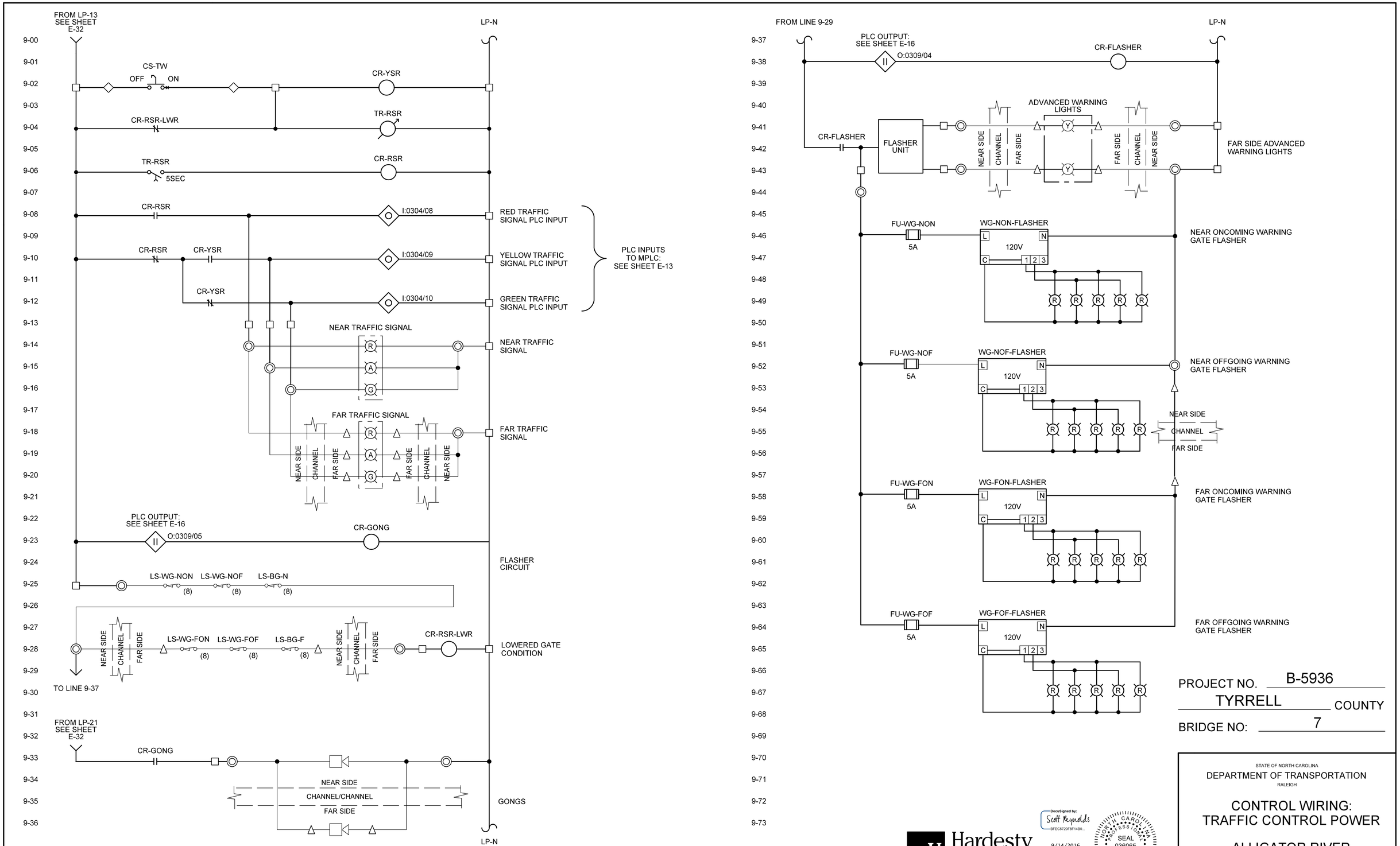
| REVISIONS | | | | | | |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

SHEET NO. E-8
TOTAL SHEETS 51

DRAWN BY: OIV DATE : 8/8/2016
CHECKED BY: MJT DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

DWG NUMBER 24
TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# CONTROL WIRING: TRAFFIC CONTROL POWER

# ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720FBF14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| | | |
|---|---|---|
| DRAWN BY: OIV | DATE : 8/8/2016 | |
| CHECKED BY: MJT | DATE : 8/8/2016 | |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 | |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 25 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. E-9

TOTAL SHEETS 51

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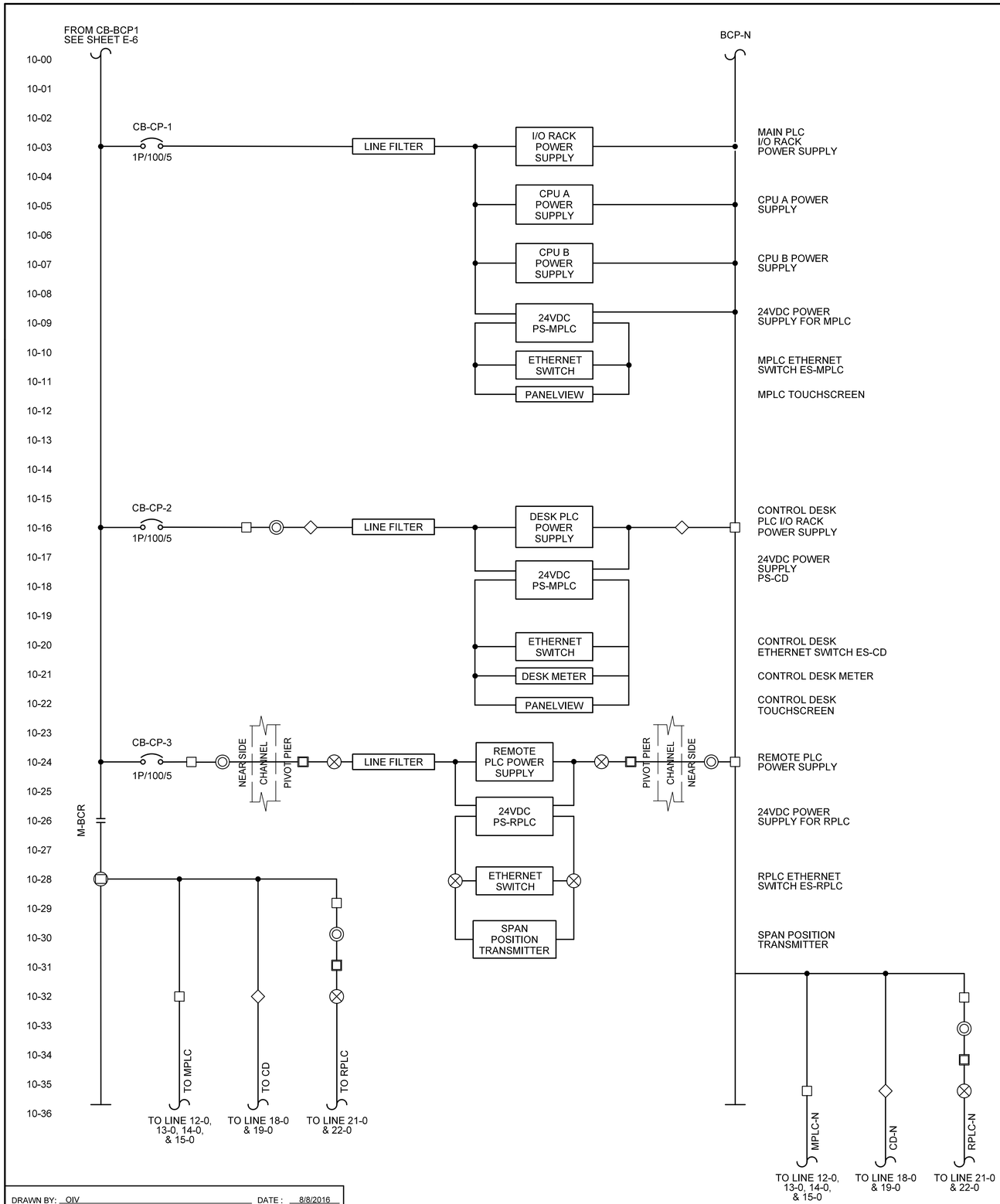
$$$$USERNAME$$$$




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# CONTROL WIRING: BRIDGE CONTROL POWER

# ALLIGATOR RIVER SWING SPAN

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engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 26 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-10 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

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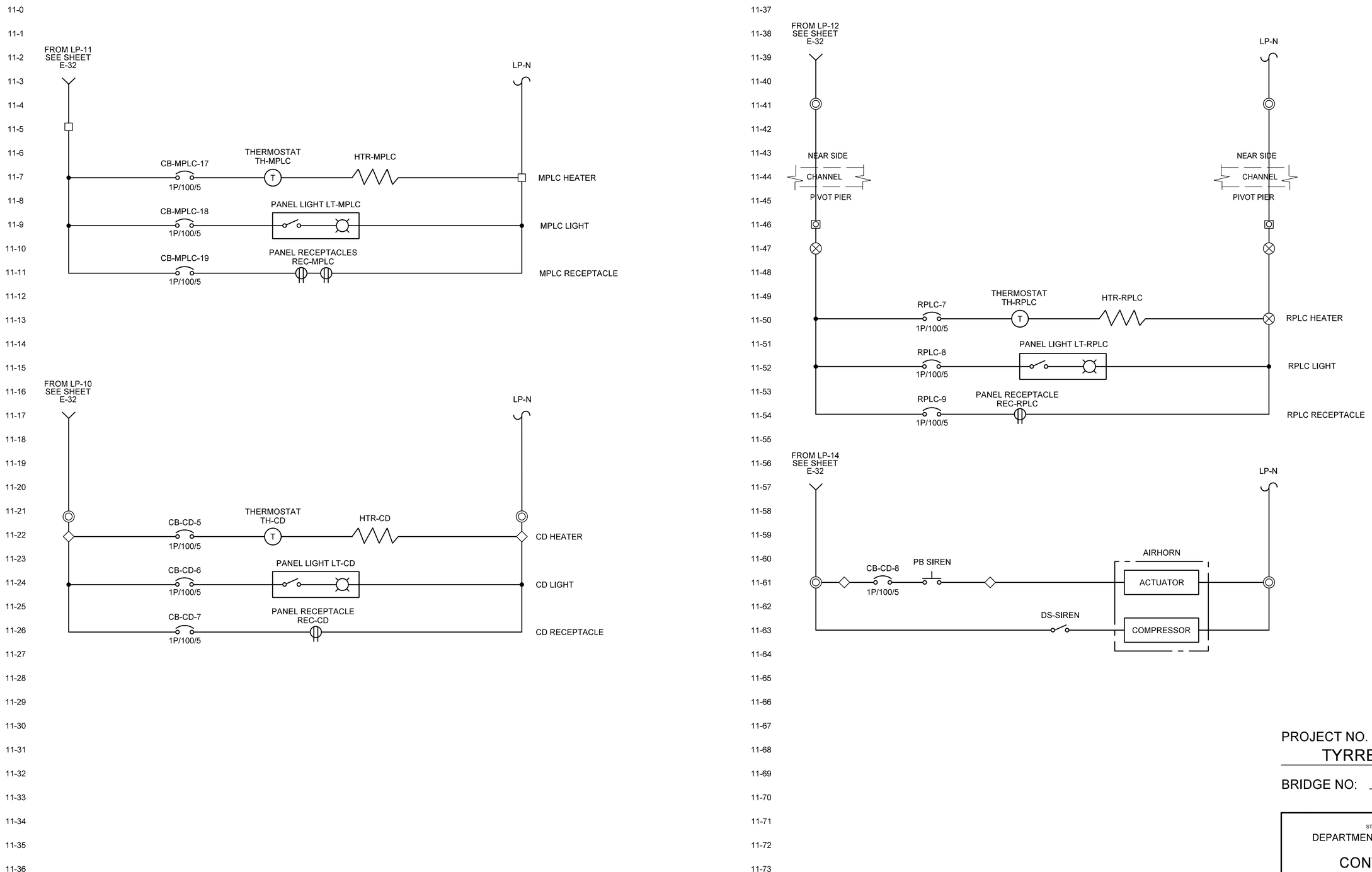


PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# CONTROL WIRING: MPLC, CD, RPLC CONTROL POWER

## ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | E-11 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 27 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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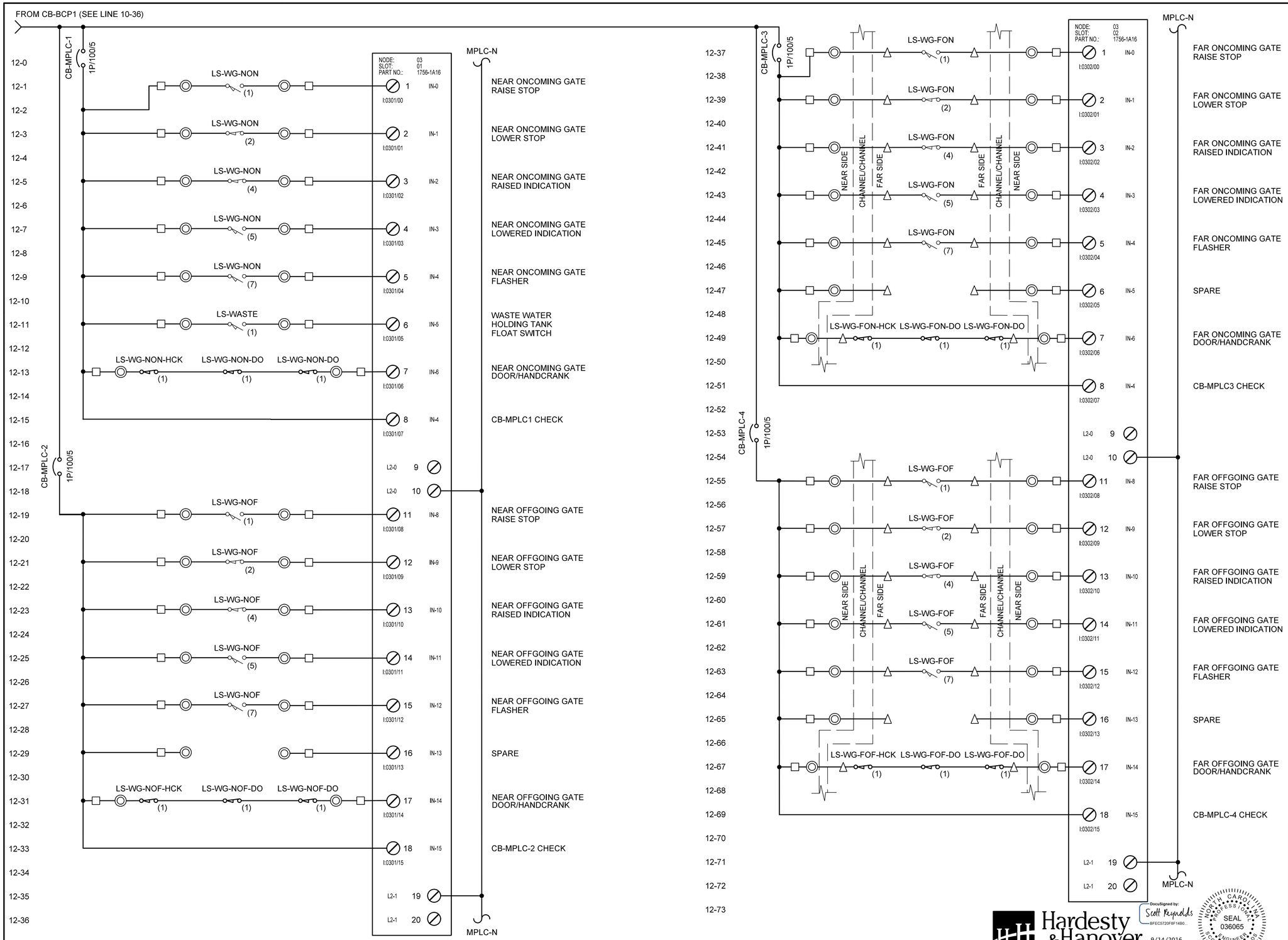


PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# MAIN PROGRAMMABLE LOGIC CONTROLLER: INPUT 1

## ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 28 | TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. E-12
TOTAL SHEETS 51

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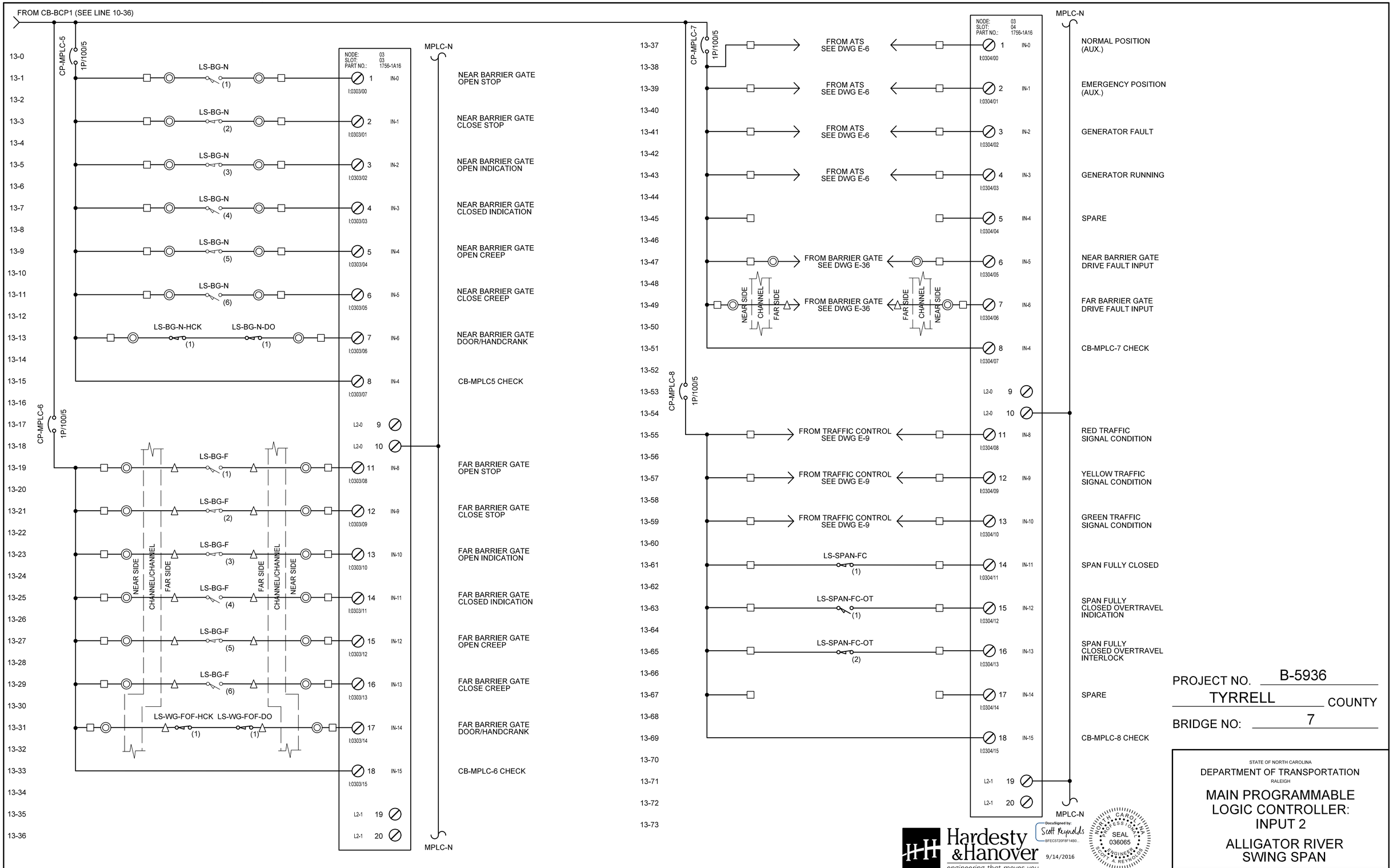


PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# MAIN PROGRAMMABLE LOGIC CONTROLLER: INPUT 2

## ALLIGATOR RIVER SWING SPAN

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engineering that moves you

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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 29 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. E-13
TOTAL SHEETS 51

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

FROM CB-BCP1 (SEE LINE 10-36)

NODE: 03
SLOT: 05
PART NO.: 1756-1A16

MPLC-N

| Line | Device | Contact | Module | Point | Description |
|---|---|---|---|---|---|
| 14-0 | CP-MPLC-9 1P/100/5 | | | | |
| 14-1 | | CB-WM (AUX) | 1 | IN-0 I:0305/00 | WEDGE MOTOR CIRCUIT BREAKER CONTACT |
| 14-2 | | CS-MCC-WM HAND | | | |
| 14-3 | | | 2 | IN-1 I:0305/01 | WEDGE MOTOR MCC CONTROL SWITCH (HAND) |
| 14-4 | | OFF | | | |
| 14-5 | | | 3 | IN-2 I:0305/02 | WEDGE MOTOR MCC CONTROL SWITCH (OFF) |
| 14-6 | | AUTO | | | |
| 14-7 | | | 4 | IN-3 I:0305/03 | WEDGE MOTOR MCC CONTROL SWITCH (AUTO) |
| 14-8 | | CB-WG-NON (AUX) | | | |
| 14-9 | | | 5 | IN-4 I:0305/04 | NEAR ONCOMING GATE CIRCUIT BREAKER CONTACT |
| 14-10 | | CS-MCC-WG-NON HAND | | | |
| 14-11 | | | 6 | IN-5 I:0305/05 | NEAR ONCOMING GATE MCC CONTROL SWITCH (HAND) |
| 14-12 | | OFF | | | |
| 14-13 | | | 7 | IN-6 I:0305/06 | NEAR ONCOMING GATE MCC CONTROL SWITCH (OFF) |
| 14-14 | | AUTO | | | |
| 14-15 | | | 8 | IN-4 I:0305/07 | NEAR ONCOMING GATE MCC CONTROL SWITCH (AUTO) |
| 14-16 | | | | | |
| 14-17 | | | L2-0 | 9 | |
| 14-18 | | | L2-0 | 10 | |
| 14-19 | | | 11 | IN-8 I:0305/08 | CB-MPLC-9 CHECK |
| 14-20 | CP-MPLC-10 1P/100/5 | | | | |
| 14-21 | | CB-WG-NOF (AUX) | 12 | IN-9 I:0305/09 | NEAR OFFGOING GATE CIRCUIT BREAKER CONTACT |
| 14-22 | | CS-MCC-WG-NOF HAND | | | |
| 14-23 | | | 13 | IN-10 I:0305/10 | NEAR OFFGOING GATE MCC CONTROL SWITCH (HAND) |
| 14-24 | | OFF | | | |
| 14-25 | | | 14 | IN-11 I:0305/11 | NEAR OFFGOING GATE MCC CONTROL SWITCH (OFF) |
| 14-26 | | AUTO | | | |
| 14-27 | | | 15 | IN-12 I:0305/12 | NEAR OFFGOING GATE MCC CONTROL SWITCH (AUTO) |
| 14-28 | | | | | |
| 14-29 | | | 16 | IN-13 I:0305/13 | SPARE |
| 14-30 | | | | | |
| 14-31 | | | 17 | IN-14 I:0305/14 | SPARE |
| 14-32 | | | | | |
| 14-33 | | | 18 | IN-15 I:0305/15 | CB-MPLC-10 CHECK |
| 14-34 | | | | | |
| 14-35 | | | L2-1 | 19 | |
| 14-36 | | | L2-1 | 20 | |

MPLC-N

NODE: 03
SLOT: 06
PART NO.: 1756-1A16

MPLC-N

| Line | Device | Contact | Module | Point | Description |
|---|---|---|---|---|---|
| 14-37 | CP-MPLC-11 1P/100/5 | | | | |
| 14-38 | | CB-WG-FON (AUX) | 1 | IN-0 I:0306/00 | FAR ONCOMING GATE CIRCUIT BREAKER CONTACT |
| 14-39 | | CS-MCC-WG-FON HAND | | | |
| 14-40 | | | 2 | IN-1 I:0306/01 | FAR ONCOMING GATE MCC CONTROL SWITCH (HAND) |
| 14-41 | | OFF | | | |
| 14-42 | | | 3 | IN-2 I:0306/02 | FAR ONCOMING GATE MCC CONTROL SWITCH (OFF) |
| 14-43 | | AUTO | | | |
| 14-44 | | | 4 | IN-3 I:0306/03 | FAR ONCOMING GATE MCC CONTROL SWITCH (AUTO) |
| 14-45 | | CB-WG-FOF (AUX) | | | |
| 14-46 | | | 5 | IN-4 I:0306/04 | FAR OFFGOING GATE CIRCUIT BREAKER CONTACT |
| 14-47 | | CS-MCC-WG-FOF HAND | | | |
| 14-48 | | | 6 | IN-5 I:0306/05 | FAR OFFGOING GATE MCC CONTROL SWITCH (HAND) |
| 14-49 | | OFF | | | |
| 14-50 | | | 7 | IN-6 I:0306/06 | FAR OFFGOING GATE MCC CONTROL SWITCH (OFF) |
| 14-51 | | AUTO | | | |
| 14-52 | | | 8 | IN-4 I:0306/07 | FAR OFFGOING GATE MCC CONTROL SWITCH (AUTO) |
| 14-53 | | | L2-0 | 9 | |
| 14-54 | | | L2-0 | 10 | |
| 14-55 | | | 11 | IN-8 I:0306/08 | CB-MPLC-11 CHECK |
| 14-56 | CP-MPLC-12 1P/100/5 | | | | |
| 14-57 | | FROM GENERATOR SEE DWG E-6 | 12 | IN-9 I:0306/09 | HIGH FUEL ALARM |
| 14-58 | | | | | |
| 14-59 | | FROM GENERATOR SEE DWG E-6 | 13 | IN-10 I:0306/10 | CRITICAL LOW FUEL ALARM |
| 14-60 | | | | | |
| 14-61 | | FROM GENERATOR SEE DWG E-6 | 14 | IN-11 I:0306/11 | FUEL IN BASIN ALARM |
| 14-62 | | | | | |
| 14-63 | | | 15 | IN-12 I:0306/12 | SPARE |
| 14-64 | | | | | |
| 14-65 | | | 16 | IN-13 I:0306/13 | SPARE |
| 14-66 | | | | | |
| 14-67 | | | 17 | IN-14 I:0306/14 | SPARE |
| 14-68 | | | | | |
| 14-69 | | | 18 | IN-15 I:0306/15 | CB-MPLC-12 CHECK |
| 14-70 | | | | | |
| 14-71 | | | L2-1 | 19 | |
| 14-72 | | | L2-1 | 20 | |
| 14-73 | | | | | |

MPLC-N

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# MAIN PROGRAMMABLE LOGIC CONTROLLER: INPUT 3

## ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720FBF14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 30 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | E-14 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 51 |

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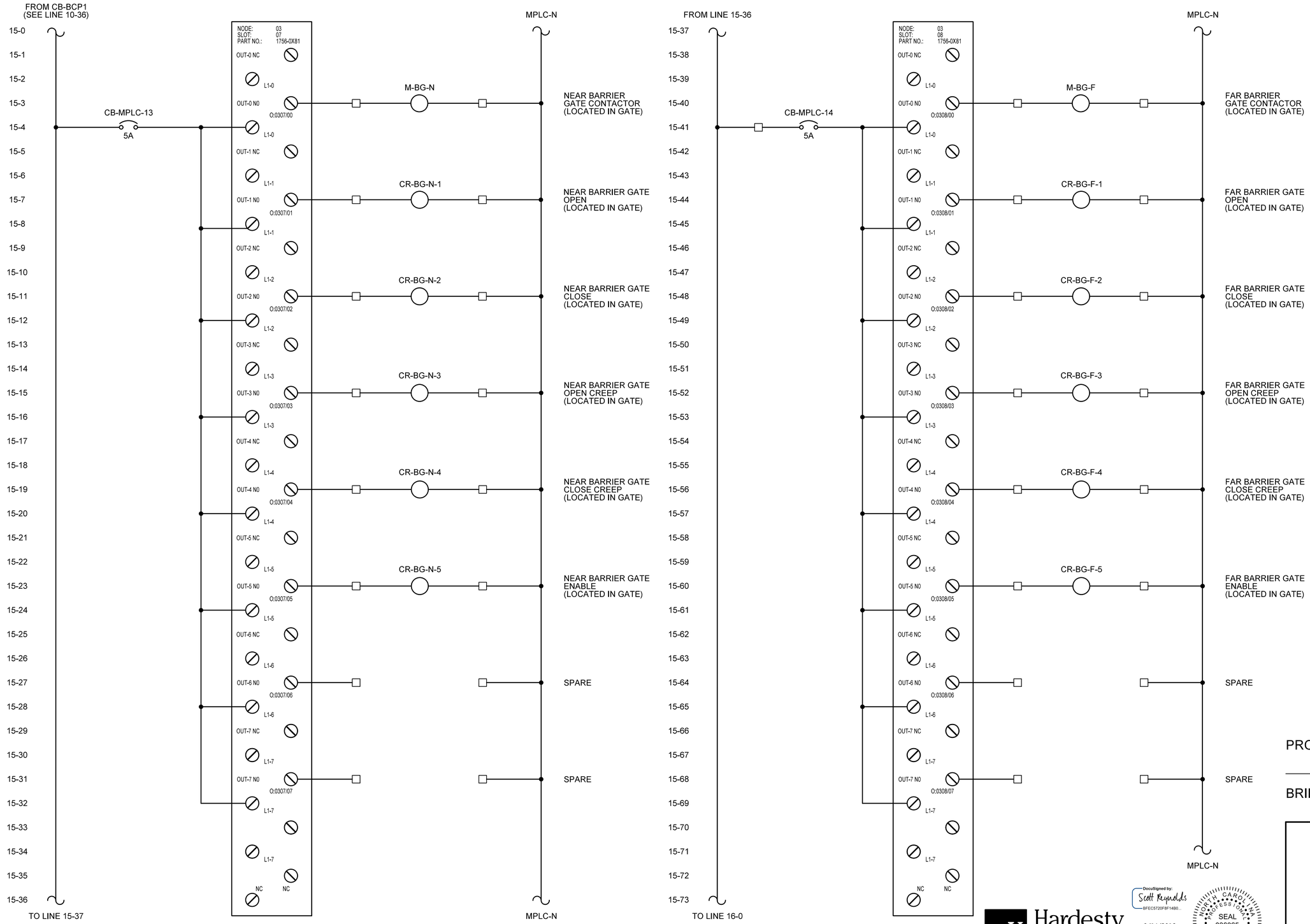
$$$$USERNAME$$$$




## NOTES

1. REFER TO SHEET E-36 FOR GATE WIRING.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MAIN PROGRAMMABLE LOGIC CONTROLLER: OUTPUT 1

ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 31

TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. E-15

TOTAL SHEETS 51

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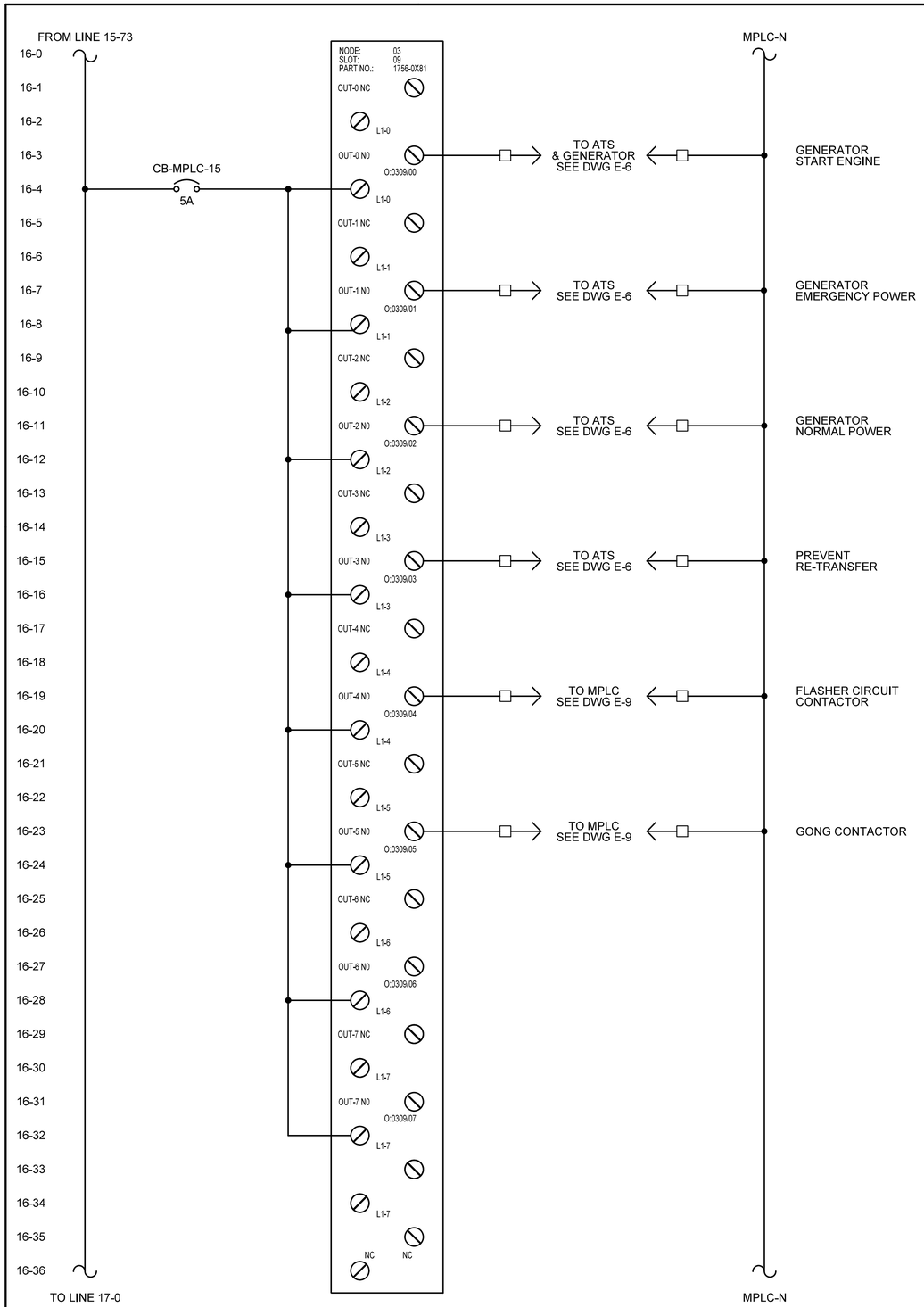
$$$$USERNAME$$$$




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# MAIN PROGRAMMABLE LOGIC CONTROLLER: OUTPUT 2

## ALLIGATOR RIVER SWING SPAN

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engineering that moves you

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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

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

SHEET NO. E-16
TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 32 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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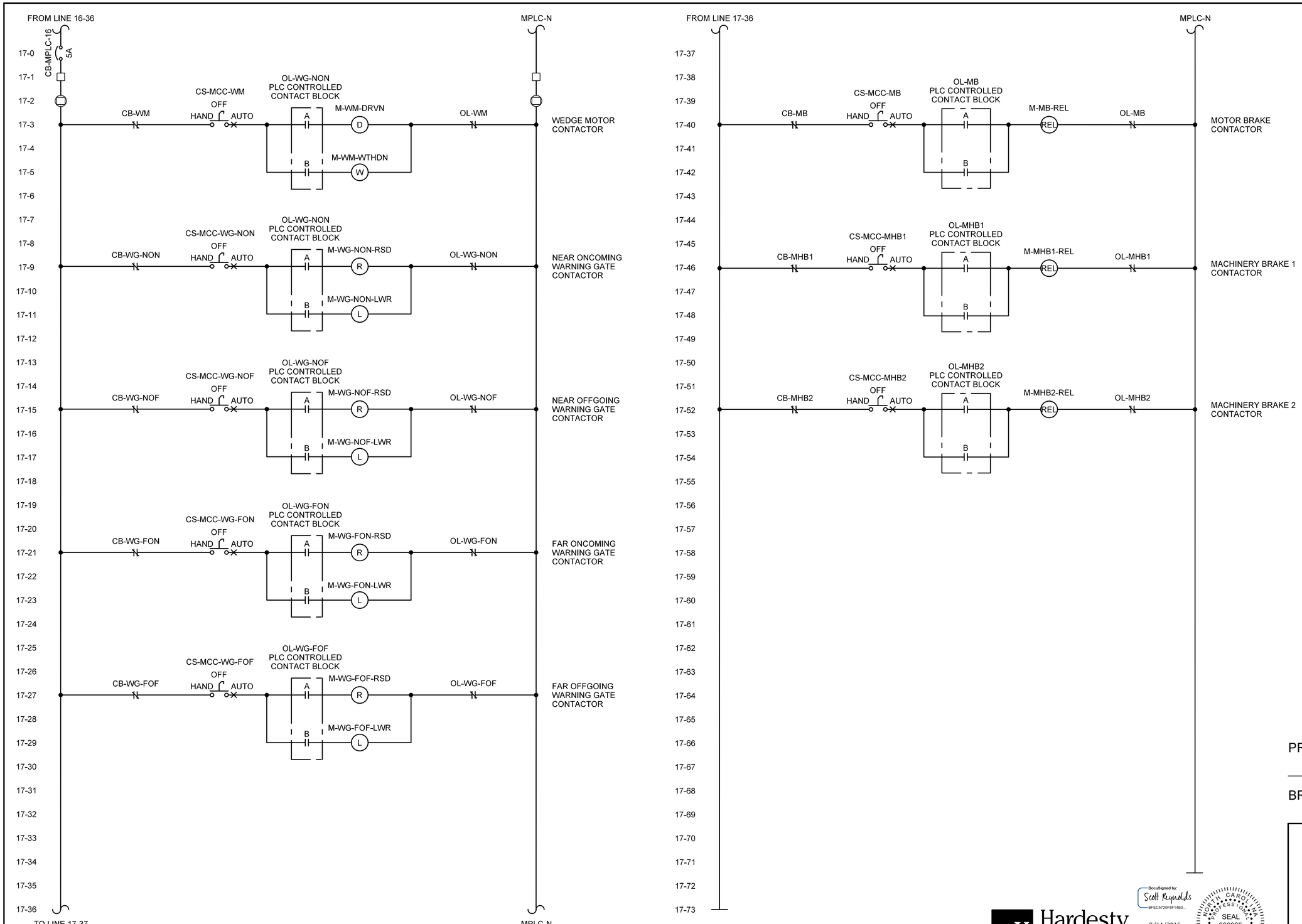
$$$$USERNAME$$$$




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# CONTROL WIRING: MCC OVERLOADS

# ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

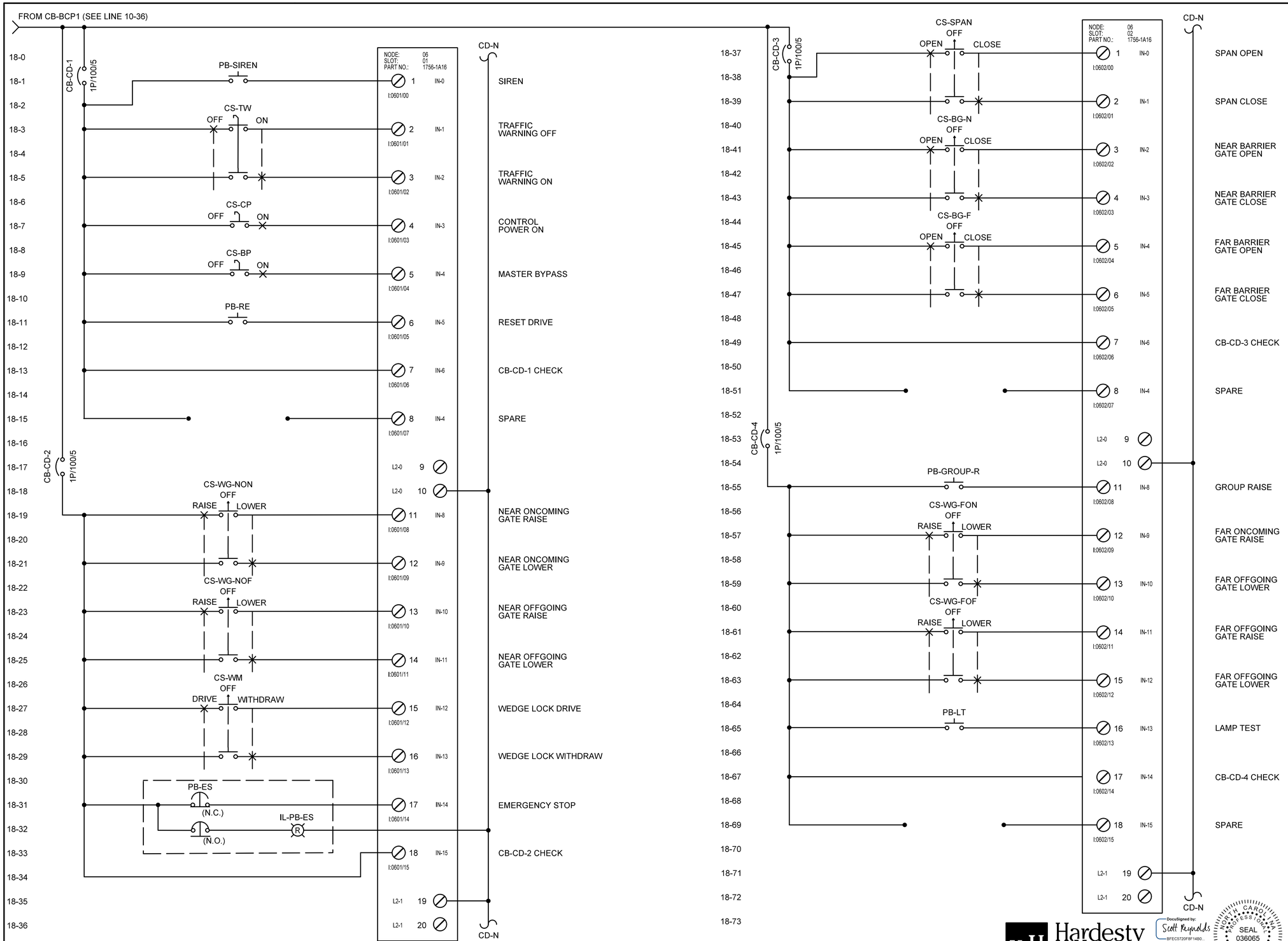
NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-17 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 33 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# PROGRAMMABLE LOGIC CONTROLLER: CONTROL DESK INPUT

## ALLIGATOR RIVER SWING SPAN

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

SHEET NO. E-18
TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 34
TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

FROM CB-BCP1
(SEE LINE 10-36)

CD-N

NODE: 06
SLOT: 03
PART NO.: 1756-0A16

| Line | Slot | Tag | Output | Description |
|---|---|---|---|---|
| 19-1 | OUT-0 1 O:0603/00 | IL-TW-OFF | G | TRAFFIC WARNING OFF |
| 19-3 | OUT-1 2 O:0603/01 | IL-TW-ON | R | TRAFFIC WARNING ON |
| 19-5 | OUT-2 3 O:0603/02 | IL-PWR | G | UTILITY POWER AVAILABLE |
| 19-7 | OUT-3 4 O:0603/03 | IL-GEN | W | GENERATOR POWER AVAILABLE |
| 19-9 | OUT-4 5 O:0603/04 | IL-CP | W | CONTROL POWER ON |
| 19-11 | OUT-5 6 O:0603/05 | IL-WG-NON-RSD | G | NEAR ONCOMING GATE RAISED |
| 19-13 | OUT-6 7 I:0603/06 | IL-WG-NON-LWR | Y | NEAR ONCOMING GATE LOWERED |
| 19-15 | OUT-7 8 O:0603/07 | IL-WG-NOF-RSD | G | NEAR OFFGOING GATE RAISED |
| 19-18 | 9 L2-0 | | | |
| 19-18 | 10 L2-0 | | | |
| 19-19 | OUT-8 11 O:0603/08 | IL-WG-NON-LWR | Y | NEAR OFFGOING GATE LOWERED |
| 19-21 | OUT-9 12 I:0603/09 | IL-BG-N-OP | G | NEAR BARRIER GATE OPENED |
| 19-23 | OUT-10 13 O:0603/10 | IL-BG-N-CL | Y | NEAR BARRIER GATE CLOSED |
| 19-25 | OUT-11 14 I:0603/11 | IL-WM-DRVN | G | WEDGE DRIVEN |
| 19-27 | OUT-12 15 O:0603/12 | IL-WM-WTHDN | Y | WEDGE WITHDRAWN |
| 19-29 | OUT-13 16 O:0603/13 | IL-MB-SET | G | MOTOR BRAKE SET |
| 19-31 | OUT-14 17 O:0603/14 | IL-MB-REL | Y | MOTOR BRAKE RELEASED |
| 19-33 | OUT-15 18 O:0603/15 | IL-MB-HR | R | MOTOR BRAKE HAND RELEASED |
| 19-35 | 19 L2-1 | | | |
| 19-36 | 20 L2-1 | | | |

TO LINE 19-37

CD-N

FROM LINE 19-36

CD-N

NODE: 06
SLOT: 04
PART NO.: 1756-0A16

| Line | Slot | Tag | Output | Description |
|---|---|---|---|---|
| 19-38 | OUT-0 1 O:0604/00 | IL-MHB1-SET | G | MACHINERY BRAKE 1 SET |
| 19-40 | OUT-1 2 O:0604/01 | IL-MHB1-REL | Y | MACHINERY BRAKE 1 RELEASED |
| 19-42 | OUT-2 3 O:0604/02 | IL-MHB1-HR | R | MACHINERY BRAKE 1 HAND RELEASED |
| 19-44 | OUT-3 4 O:0604/03 | IL-MHB2-SET | G | MACHINERY BRAKE 2 SET |
| 19-46 | OUT-4 5 O:0604/04 | IL-MHB2-REL | Y | MACHINERY BRAKE 2 RELEASED |
| 19-48 | OUT-5 6 O:0604/05 | IL-MHB2-HR | R | MACHINERY BRAKE 2 HAND RELEASED |
| 19-50 | OUT-6 7 O:0604/06 | IL-SDM-RDY | W | SPAN DRIVE READY |
| 19-52 | OUT-7 8 O:0604/07 | IL-SDM-TRB | R | SPAN DRIVE TROUBLE |
| 19-54 | 9 L2-0 | | | |
| 19-55 | 10 L2-0 | | | |
| 19-56 | OUT-8 11 O:0604/08 | IL-WG-FON-RSD | G | FAR ONCOMING GATE RAISED |
| 19-58 | OUT-9 12 O:0604/09 | IL-WG-FON-LWR | Y | FAR ONCOMING GATE LOWERED |
| 19-60 | OUT-10 13 O:0604/10 | IL-WG-FOF-RSD | G | FAR OFFGOING GATE RAISED |
| 19-62 | OUT-11 14 O:0604/11 | IL-WG-FON-LWR | Y | FAR OFFGOING GATE LOWERED |
| 19-64 | OUT-12 15 O:0604/12 | IL-BG-F-OP | G | FAR BARRIER GATE OPENED |
| 19-66 | OUT-13 16 O:0604/13 | IL-BG-F-CL | Y | FAR BARRIER GATE CLOSED |
| 19-68 | OUT-14 17 O:0604/14 | | | SPARE |
| 19-70 | OUT-15 18 O:0604/15 | | | SPARE |
| 19-72 | 19 L2-1 | | | |
| 19-73 | 20 L2-1 | | | |

CD-N

TO LINE 20-0

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# PROGRAMMABLE LOGIC CONTROLLER: CONTROL DESK OUTPUT 1

## ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

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

SHEET NO. E-19
TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 35
TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$SYSTIME$$$$
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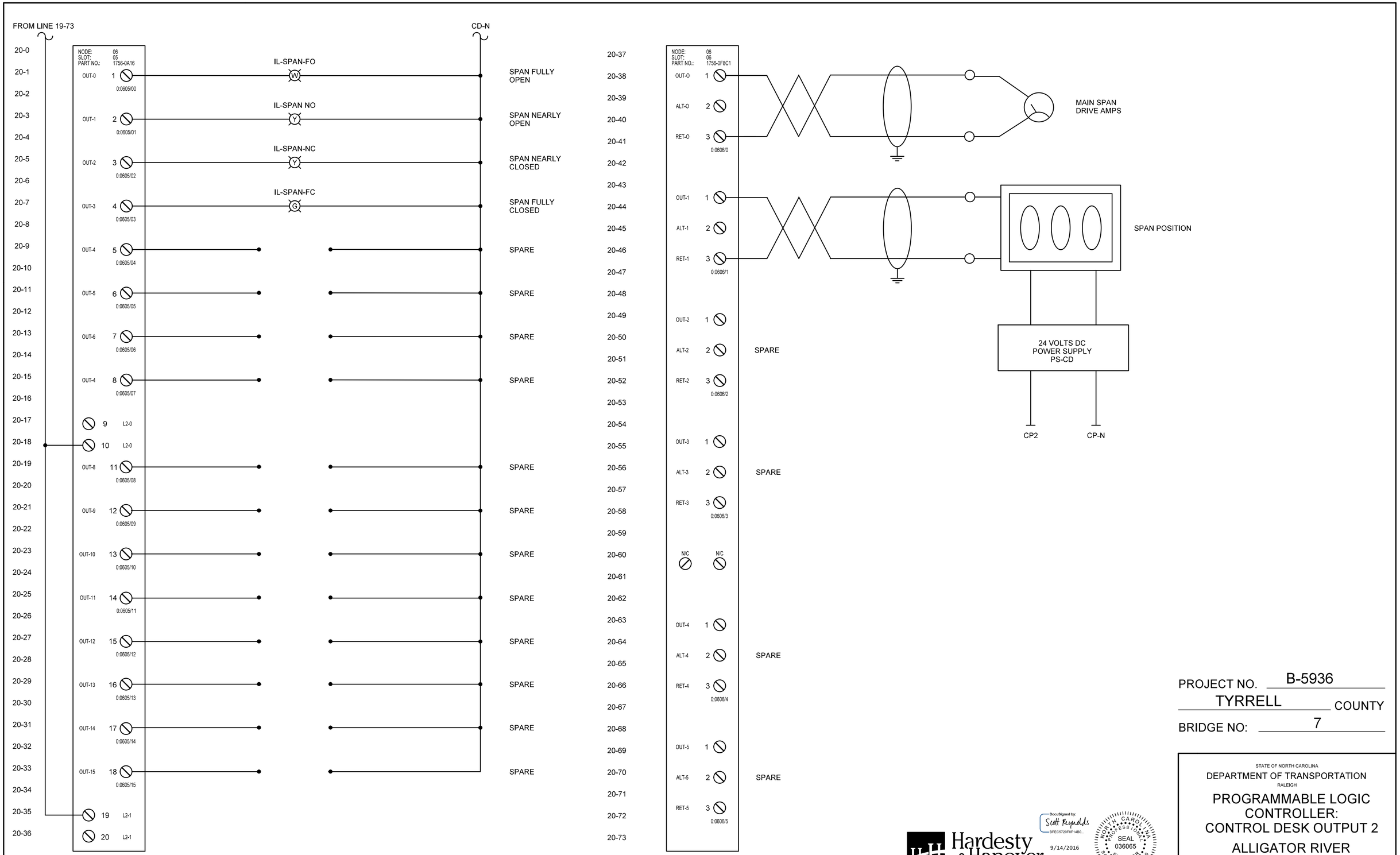
$$$$USERNAME$$$$




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# PROGRAMMABLE LOGIC CONTROLLER: CONTROL DESK OUTPUT 2

## ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

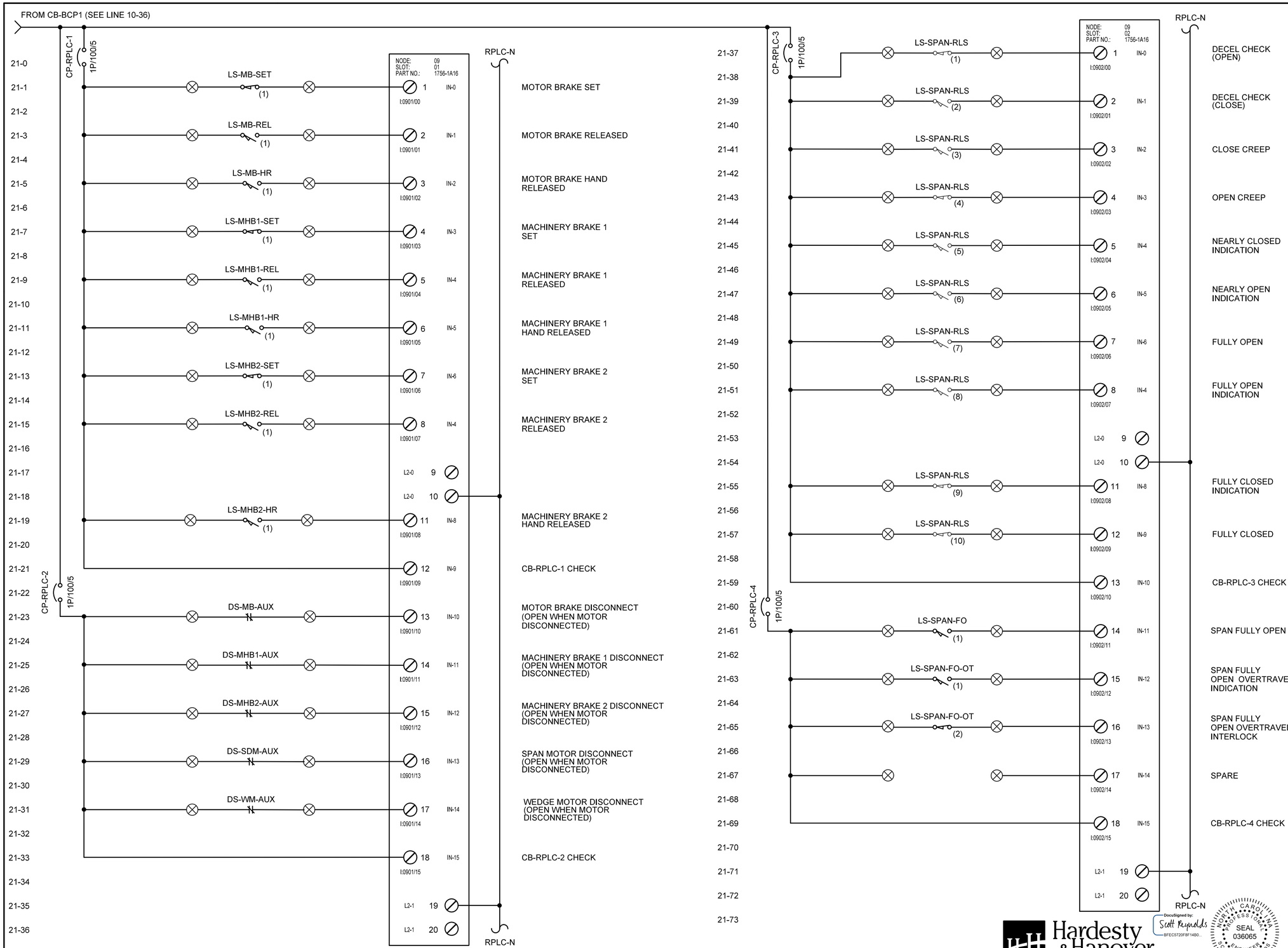
| REVISIONS | | | | | | |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

SHEET NO. E-20
TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 36
TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# REMOTE PROGRAMMABLE LOGIC CONTROLLER: INPUT 1

## ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
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BFEC5720FBF14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| | | |
|---|---|---|
| DRAWN BY: OIV | DATE : 8/8/2016 | |
| CHECKED BY: MJT | DATE : 8/8/2016 | |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 | |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 37 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

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

SHEET NO. E-21

TOTAL SHEETS 51

$$$$$$SYSTIME$$$$$
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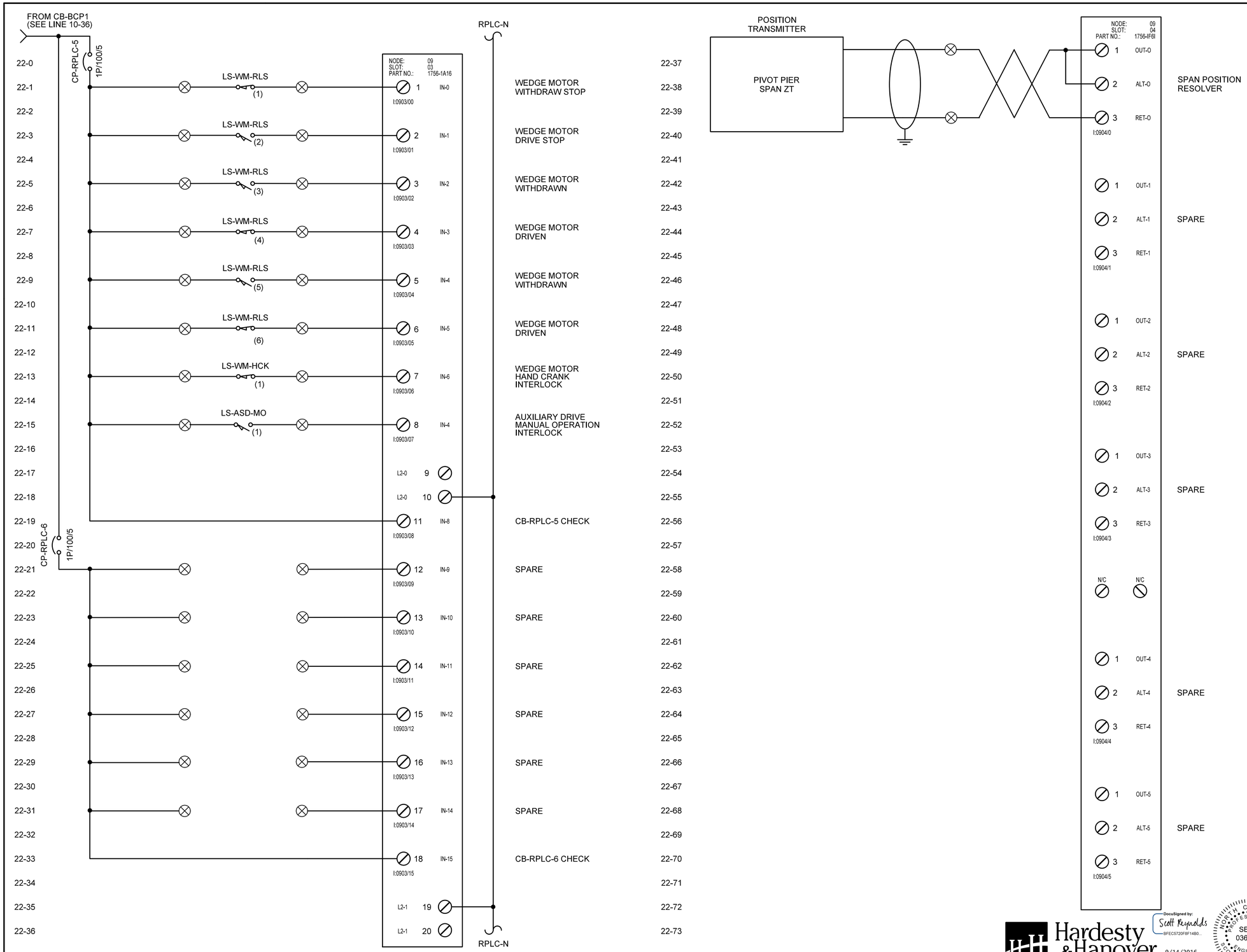
$$$$USERNAME$$$$




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# REMOTE PROGRAMMABLE LOGIC CONTROLLER: INPUT 2

## ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

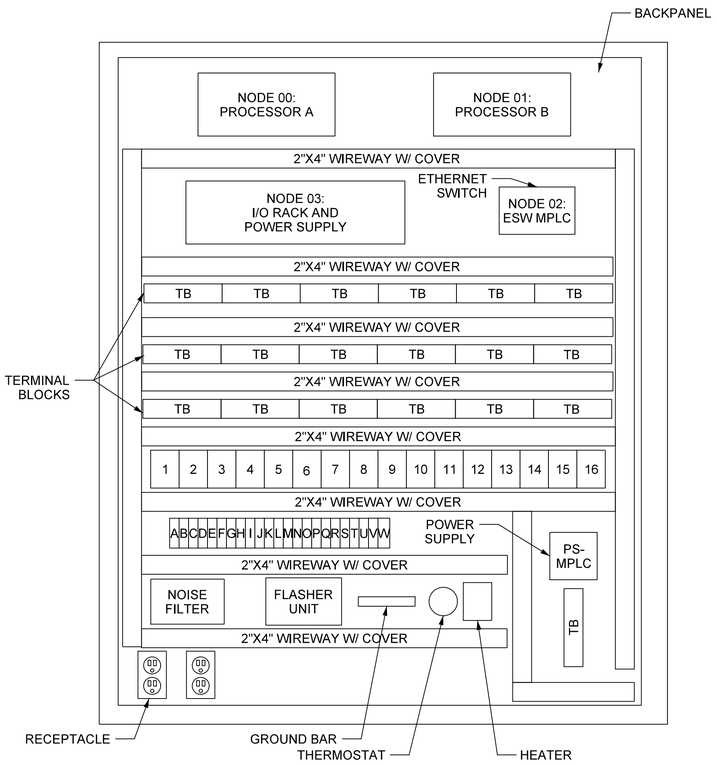
| REVISIONS | | | | | | |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

SHEET NO. E-22
TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

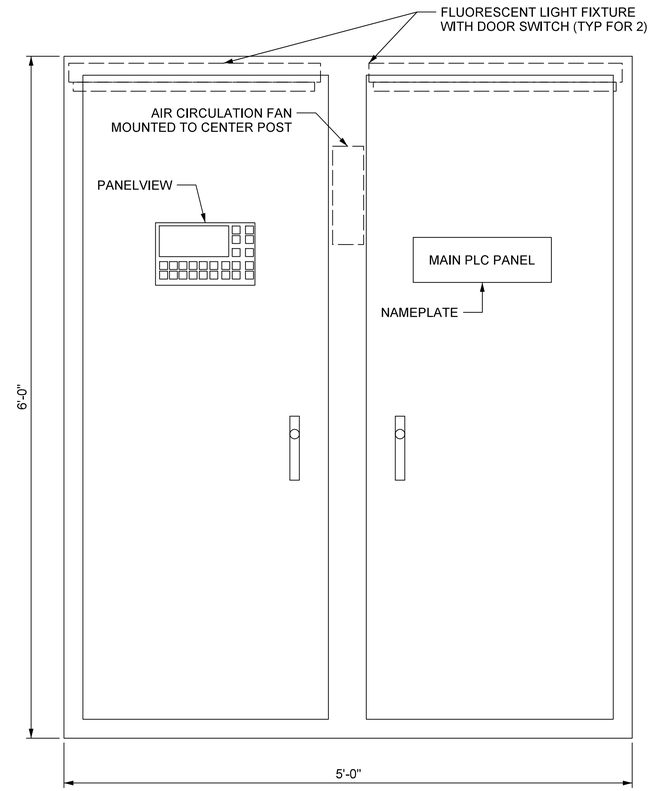
DWG NUMBER 38
TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




## PROPOSED MAIN PLC PANEL (MPLC) INTERNAL LAYOUT

SCALE: 1 1/2" = 1'-0"




## MAIN PLC PANEL (MPLC) LAYOUT

SCALE: 1 1/2" = 1'-0"

## BILL OF MATERIAL

| TAG | QTY | MODEL NUMBER | DESCRIPTION |
|---|---|---|---|
| CR-UV | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-RSR | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-YSR | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-GSR | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-GONG | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-BCR | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-RSR-LWR | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-FLASHER | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-XX | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| CR-XX | 1 | 700-P | NEMA MACHINE TOOL CONTROL RELAY |
| NODE 00: PROCESSOR A | 1 | 1756-A7 | 7 SLOT RACK |
| - | 1 | 1756-L72 | PROCESSOR WITH 4096 I/O AND UP TO 64K MEMORY |
| - | 1 | 1756-RM2 | REDUNDANCY MODULE |
| - | 2 | 1756-EN2T | 10/100 Mbps & 127 TCP/IP CONNECTIONS & LOGIX CONNECTIONS |
| - | 3 | 1756-N2 | FILLER FOR EMPTY RACK SLOT |
| - | 1 | 1756-PA/72C | POWER SUPPLY FOR THE SYSTEM |
| NODE 01: PROCESSOR B | 1 | 1756-A7 | 7 SLOT RACK |
| - | 1 | 1756-L72 | PROCESSOR WITH 4096 I/O AND UP TO 64K MEMORY |
| - | 1 | 1756-RM2 | REDUNDANCY MODULE |
| - | 2 | 1756-EN2T | 10/100 Mbps & 127 TCP/IP CONNECTIONS & LOGIX CONNECTIONS |
| - | 3 | 1756-N2 | FILLER FOR EMPTY RACK SLOT |
| - | 1 | 1756-PA/72C | POWER SUPPLY FOR THE SYSTEM |
| NODE 03: I/O RACK | 1 | 1756-A13 | 13 SLOT RACK |
| - | 1 | 1756-PA/72C | POWER SUPPLY FOR THE SYSTEM |
| - | 5 | 1756-IA16 | 16 DISCRETE INPUTS, 120VAC |
| - | 1 | 1756-OX8I | 8 DIGITAL OUTPUTS, 120VAC |
| - | 1 | 1756-EN2T | 10/100 Mbps & 127 TCP/IP CONNECTIONS & LOGIX CONNECTIONS |
| - | 3 | 1756-N2 | FILLER FOR EMPTY RACK SLOT |
| ESW-MPLC | 1 | STRATIX 5700 1783 BMS10CGP | 10 PORT ETHERNET SWITCH WITH 2 SFP ADAPTER TO CONNECT DIRECTLY TO FIBER LINE |
| - | 1 | - | NOISE FILTER |
| - | 1 | - | FLASHER UNIT |
| - | 1 | ECGB10 | SIEMENS ENERGY AND AUTOMATION GROUND BAR |
| REC-MPLC | 2 | 1SNAB92461R1500 | ABB CONTROL INC. RECEPTACLE |
| LT-MPLC | 2 | - | PANEL MOUNTED FLUORESCENT LIGHT WITH DOOR SWITCH |
| TB | AS REQUIRED | 1492-J4 | ALLEN BRADLEY TERMINAL BLOCKS |
| PS-MPLC | 1 | 1606-XLP9SE | ALLEN BRADLEY COMPACT SWITCHED MODE POWER SUPPLIES 24VDC |
| TH-MPLC | 1 | 1711000010 | PFANNENBERG THERMOSTAT |
| HTR-MPLC | 1 | 1701SOO007 | PFANNENBERG 1SOW RADIANT HEATER |
| NF-MPLC | 1 | IC SERIES | ISLATROL IC+ SERIES |
| PANELVIEW | 1 | - | 12" TOUCHSCREEN PANELVIEW PLUS |
| MPLC | 1 | A726018SSFSD | 72" X 60" X 18" NEMA-12 STAINLESS STEEL PANEL WITH BACKPLATE |
| TR-RSR | 1 | - | RED SIGNAL TIMING RELAY |
| CB-BCP1 | 1 | 1489-A1C200 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 20A |
| CB-CP-1 | 1 | 1489-A1C050 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |
| TO | - | - | - |
| CB-CP-3 | 1 | 1489-A1C050 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |
| CB-MPLC-1 | 1 | 1489-A1C050 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |
| TO | - | - | - |
| CB-MPLC-19 | 1 | 1489-A1C050 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |

* EXCLUDING PLC EQUIPMENT, MODEL NUMBER PARTS ARE THE RECOMMENDED PARTS AND MAY BE REPLACED WITH APPROVED EQUAL.

## NOTES:

1. FOR GENERAL ABBREVIATIONS SEE DWG. NO. E-2.
2. MPLC PANEL ENCLOSURE SHALL BE A NEMA TYPE 12 HOFFMAN ENCLOSURE CATALOG NO. A726018SSFSD OR APPROVED EQUAL.
3. THE CONTRACTOR SHALL USE THE LAYOUT VIEW AS A GUIDE TO INSTALLING THE ELECTRICAL COMPONENTS. IF REQUIRED, THE CONTRACTOR SHALL RELOCATE COMPONENTS TO ALLOW FOR PROPER INSTALLATION OF THE COMPONENTS.
4. ALL CORNERS AND EDGES SHALL BE ROUNDED AND SMOOTHED.
5. LEVEL MPLC PANEL DURING INSTALLATION.
6. PROVIDE TWO FLUORESCENT LIGHT FIXTURES INSIDE THE RPLC PANEL WITH STANDARD 18" BULB PROTECTED BY A CLEAR, NON-YELLOWING PLASTIC LENS. LIGHT SHALL BE AUTOMATICALLY CONTROLLED BY DOOR SWITCH ACTIVATED BY THE DOOR.
7. PROVIDE, AS SHOWN ON THE LAYOUT, TWO DUPLEX RECEPTACLES 15 AMP, 125 VAC. FEDERAL SPEC GRADE INSTALLED IN STANDARD UTILITY BOX WITH METAL COVER PLATE.
8. INTERNAL COMPONENTS SHALL BE MOUNTED ON BACK PANELS. BUSHED OPENINGS SHALL BE PROVIDED FOR CONDUCTORS ACCESS. FIELD CONNECTIONS TO CONTROL ENCLOSURE. ALL FIELD WIRING SHALL TERMINATE ON TERMINAL BLOCKS.
9. CIRCUIT BREAKERS SHALL BE MOUNTED ON HIGH RISE TERMINAL RAIL.
10. LOW VOLTAGE AND ANALOG SIGNALS SHALL BE ISOLATED FROM 120VAC WIRING AND EQUIPMENT.
10. SEE ETHERNET SCHEMATIC LAYOUT ON SHEET E-29 FOR THE NODE MODULE DETAILS.

## CIRCUIT BREAKER IDENTIFCATION

| | |
|---|---|
| A | CB-BCP1 |
| B | CB-CP-1 |
| C | CB-CP-2 |
| D | CB-CP-3 |
| E | CB-MPLC-1 |
| F | CB-MPLC-2 |
| G | CB-MPLC-3 |
| H | CB-MPLC-4 |
| I | CB-MPLC-5 |
| J | CB-MPLC-6 |
| K | CB-MPLC-7 |
| L | CB-MPLC-8 |
| M | CB-MPLC-9 |
| N | CB-MPLC-10 |
| O | CB-MPLC-11 |
| P | CB-MPLC-12 |
| Q | CB-MPLC-13 |
| R | CB-MPLC-14 |
| S | CB-MPLC-15 |
| T | CB-MPLC-16 |
| U | CB-MPLC-17 |
| V | CB-MPLC-18 |
| W | CB-MPLC-19 |

## RELAY IDENTIFCATION

| | |
|---|---|
| 1 | CR-UV |
| 2 | CR-RSR |
| 3 | CR-YSR |
| 4 | CR-GONG |
| 5 | CR-BCR |
| 6 | CR-RSR-LWR |
| 7 | CR-FLASHER |
| 8 | TR-RSR |
| 9 | CR-XX (SPARE) |
| 10 | CR-XX (SPARE) |
| 11 | CR-XX (SPARE) |
| 12 | CR-XX (SPARE) |
| 13 | CR-XX (SPARE) |
| 14 | CR-XX (SPARE) |
| 15 | CR-XX (SPARE) |
| 16 | CR-XX (SPARE) |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MAIN PROGRAMMABLE LOGIC CONTROLLER: INTERIOR & LAYOUT

ALLIGATOR RIVER SWING SPAN

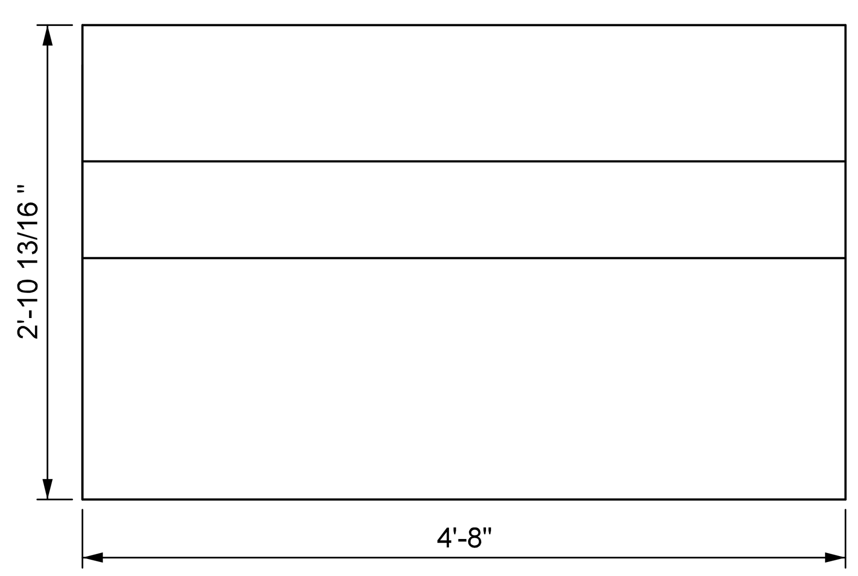
| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-23 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 39 | 90 |

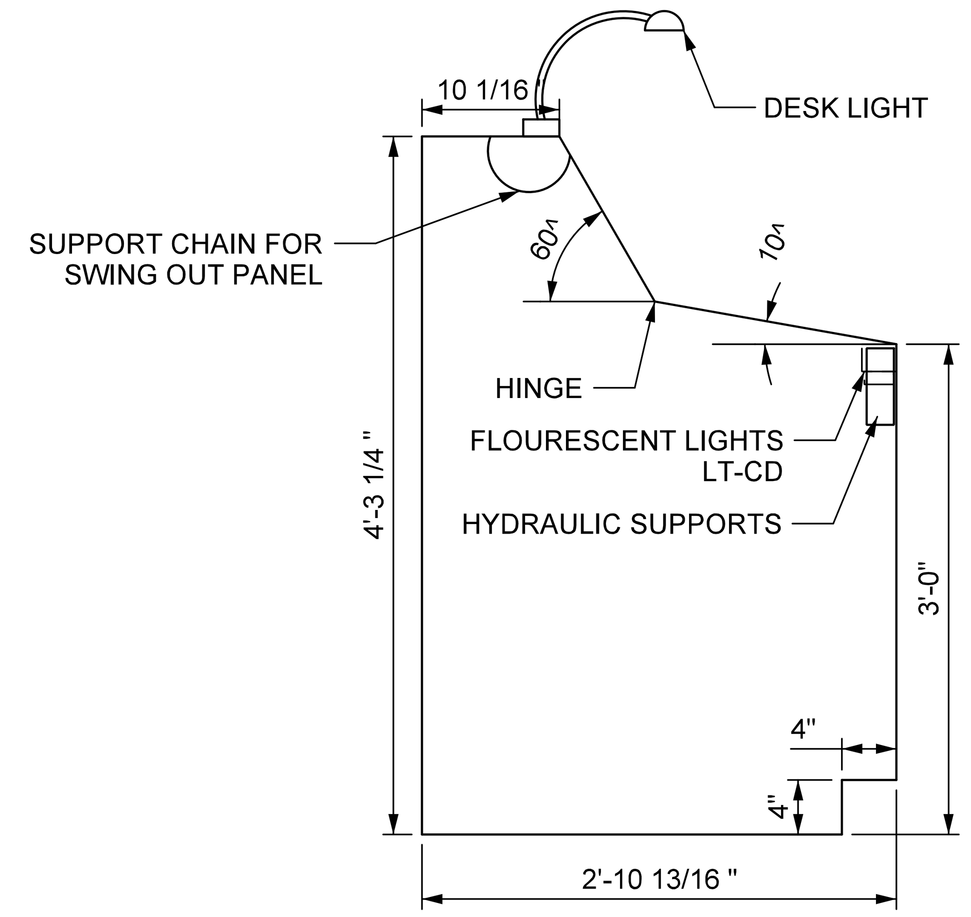
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

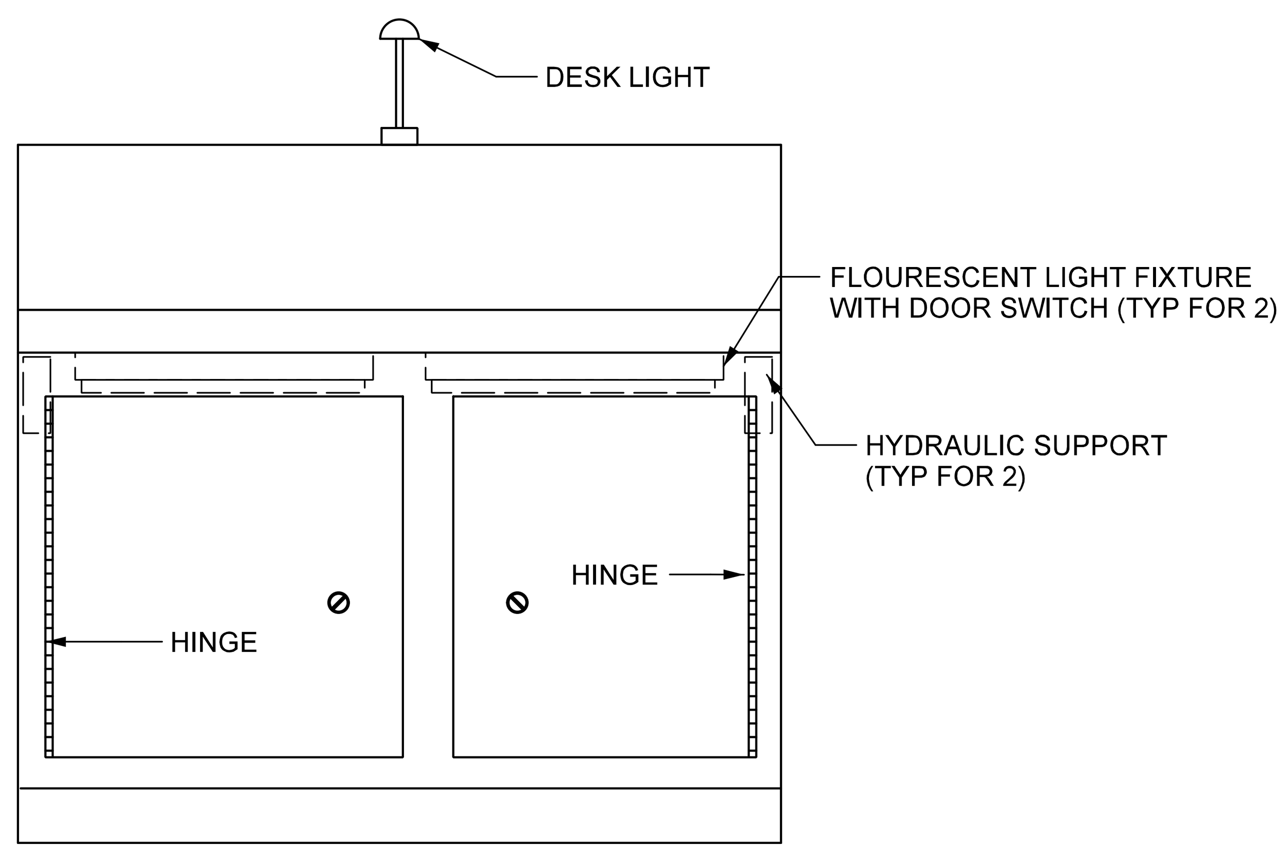
$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$




## ELEVATION VIEW

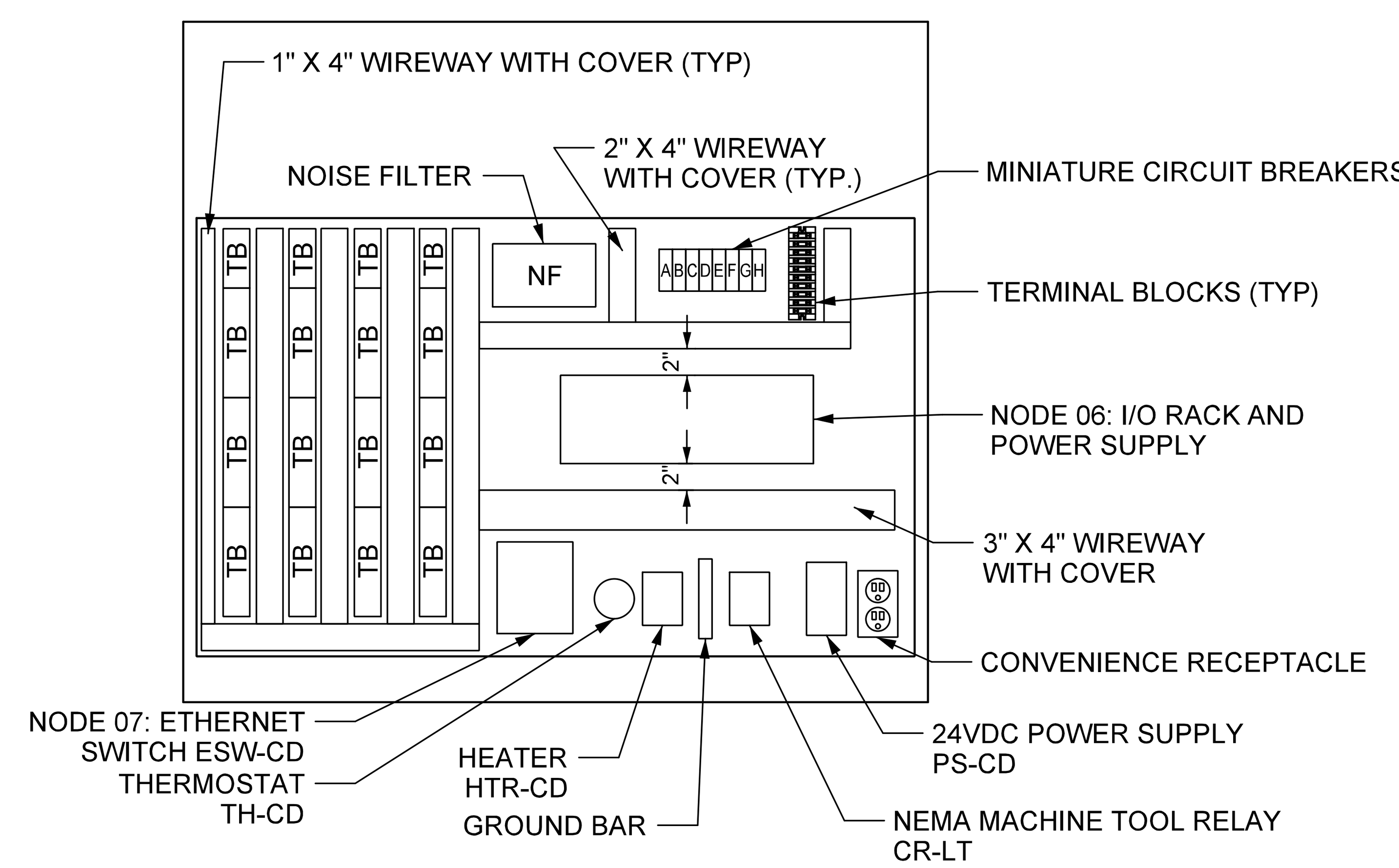
SCALE: 1" = 1'-0"




## CONTROL DESK FRONT VIEW

SCALE: 1" = 1'-0"




## CONTROL DESK BACK PANEL LAYOUT

SCALE: 1" = 1'-0"

## NOTES:

1. FOR GENERAL ABBREVIATIONS SEE DWG. NO. E-2.
2. DESK AND PINNACLE SHALL BE FABRICATED FROM 11 GAUGE STAINLESS STEEL WITH SATIN FINISH. SIDES TO BE 11 GAUGE PAINTED STEEL.
3. THE CONTRACTOR SHALL USE THE LAYOUT VIEW AS A GUIDE TO INSTALLING THE ELECTRICAL COMPONENTS. IF REQUIRED, THE CONTRACTOR SHALL RELOCATE COMPONENTS TO ALLOW FOR PROPER INSTALLATION OF THE COMPONENTS.
4. ALL CORNERS AND EDGES SHALL BE ROUNDED AND SMOOTH.
5. BOTTOM OF DESK TO BE OPEN EXCEPT FOR TWO INCH FLANGE FROM SIDES ALL AROUND PERIMETER. FASTEN CONTROL DESK TO FLOOR WITH 1/2" BOLTS THROUGH FLOOR. LEVEL DESK DURING INSTALLATION AND GROUT OR CAULK AROUND PERIMETER.
6. PROVIDE 2 FLUORESCENT LIGHT FIXTURE INSIDE THE CONTROL DESK WITH STANDARD 18" BULB PROTECTED BY A CLEAR, NON YELLOWING PLASTIC LENS. LIGHTS SHALL BE AUTOMATICALLY CONTROLLED BY DOOR SWITCHES ACTIVATED BY EACH DOOR.
7. PROVIDE DUPLEX RECEPTACLE 15 AMP, 125 VAC, FEDERAL SPEC GRADE INSTALLED IN STANDARD UTILITY BOX WITH METAL COVER PLATE.
8. ACCESS DOORS SHALL BE PAN TYPE FLUSH WITH DESK SURFACE AND HAVE FLUSH HANDLES WITH 3-POINT LATCHES. THE DOORS SHALL BE LOCKABLE.
9. INTERNAL COMPONENTS SHALL BE MOUNTED ON BACK PANELS. BUSHED OPENINGS SHALL BE PROVIDED FOR CONDUCTORS ACCESS. FIELD CONNECTIONS TO CONTROL RELAYS AND PILOT DEVICES SHALL BE BY MEANS OF TERMINAL BLOCKS WITHIN THE ENCLOSURE.
10. CONTROL SWITCHES, PUSHBUTTONS, INDICATING LIGHTS AND OTHER EQUIPMENT MOUNTED ON THE CONTROL DESK SHALL BE WIRED TO TERMINAL STRIPS.
11. PROVIDE A SUPPORT CHAIN FOR THE SWING DOWN TOP PANEL.
12. PROVIDE HYDRAULIC SUPPORTS FOR THE DESKTOP MAIN PANEL TO SUPPORT THE PANEL AND HOLD IT IN THE RAISE POSITION WHILE WORKING ON THE PANEL. THE HYDRAULIC SUPPORTS SHALL BE MOUNTED ON BOTH SIDES OF THE DESK AND RETRACT TO ALLOW THE DESKTOP TO BE CLOSED.
13. ALL NAMEPLATES SHALL BE WHITE WITH BLACK LETTERS, AS SPECIFIED IN THE SPECIAL PROVISIONS, EXCEPT AS NOTED.
14. DEVICE ALPHA-NUMERIC IDENTIFIER IS SHOWN ON THE LAYOUT FOR CLARIFICATION AND SHALL NOT BE ENGRAVED ON THE DESK OR NAMEPLATES.
15. CONTINUOUS HINGE SHALL BE FURNISHED AND INSTALLED ON THE CONTROL DESK TOP AND DOORS. SEE SPECIFICATIONS FOR FURTHER DETAILS.
16. SEE ETHERNET SCHEMATIC LAYOUT ON SHEET E-29 FOR THE NODE MODULE DETAILS.

## BILL OF MATERIAL

| TAG | QTY | MODEL NUMBER | DESCRIPTION |
|---|---|---|---|
| NODE 06: I/O RACK | 1 | 1756-A10 | 10 SLOT RACK |
| - | 1 | 1756-PA/72C | POWER SUPPLY FOR RACK |
| - | 2 | 1756-IA16 | 16 DISCRETE INPUTS, 120VAC |
| - | 3 | 1756-OA16 | 16 DISCRETE OUTPUTS, 120VAC |
| - | 1 | 1756-OF8C1 | 6 ANALOG OUTPUTS |
| - | 1 | 1756-EN2T | 10/100MBPS & 128 TCP/IP CONNECTIONS & 256 LOGIX CONNECTIONS |
| - | 1 | 1756-N2 | FILLER FOR EMPTY RACK SLOT |
| TB | AS REQUIRED | 1492 SERIES | ALLEN BRADLEY TERMINAL BLOCKS |
| ESW-CD | 1 | STRATIX 5700 1783-BMS10CGP | 10 PORT ETHERNET SWITCH WITH 2 SFP ADAPTER TO CONNECT DIRECTLY TO THE FIBER LINE |
| PS-CD | 1 | 1606-XLP9SE | ALLAN BRADLEY COMPACT SWITCHED MODE POWER SUPPLIES 24VDC |
| REC-CD | 1 | 1SNAB92461R1500 | ABB CONTROL INC. RECEPTACLE |
| - | 1 | ECB10 | SIEMENS ENERGY AND AUTOMATION GROUND BAR |
| TH-CD | 1 | 1711000010 | PFANNENBERG THERMOSTAT |
| - | AS REQUIRED | - | PVC WIREWAY 2 INCH WIDE 4 INCH DEEP WITH COVERS |
| LT-CD | 2 | - | PANEL MOUNTED FLUORESCENT LIGHT WITH DOOR SWITCH |
| HTR-CD | 1 | 1701SOOS007 | PFANNENBERG 1SOW RADIANT HEATER |
| CD | - | - | CUSTOM 11 GAUGE STEEL GASKETED ENCLOSURE |
| CB-CD1 | 1 | 1489-A1C005 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |
| TO | - | - | - |
| CB-CD8 | 1 | 1489-A1C005 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |

* EXCLUDING PLC EQUIPMENT, MODEL NUMBER PARTS ARE THE RECOMMENDED PARTS AND MAY BE REPLACED WITH APPROVED EQUAL.

## CIRCUIT BREAKER IDENTIFICATION

| | |
|---|---|
| A | CB-CD-1 |
| B | CB-CD-2 |
| C | CB-CD-3 |
| D | CB-CD-4 |
| E | CB-CD-5 |
| F | CB-CD-6 |
| G | CB-CD-7 |
| H | CB-CD-8 |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONTROL DESK:
INTERIOR & LAYOUT

ALLIGATOR RIVER
SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| DRAWN BY: OIV | DATE : 8/8/2016 |
|---|---|
| CHECKED BY: MJT | DATE : 8/8/2016 |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 40 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

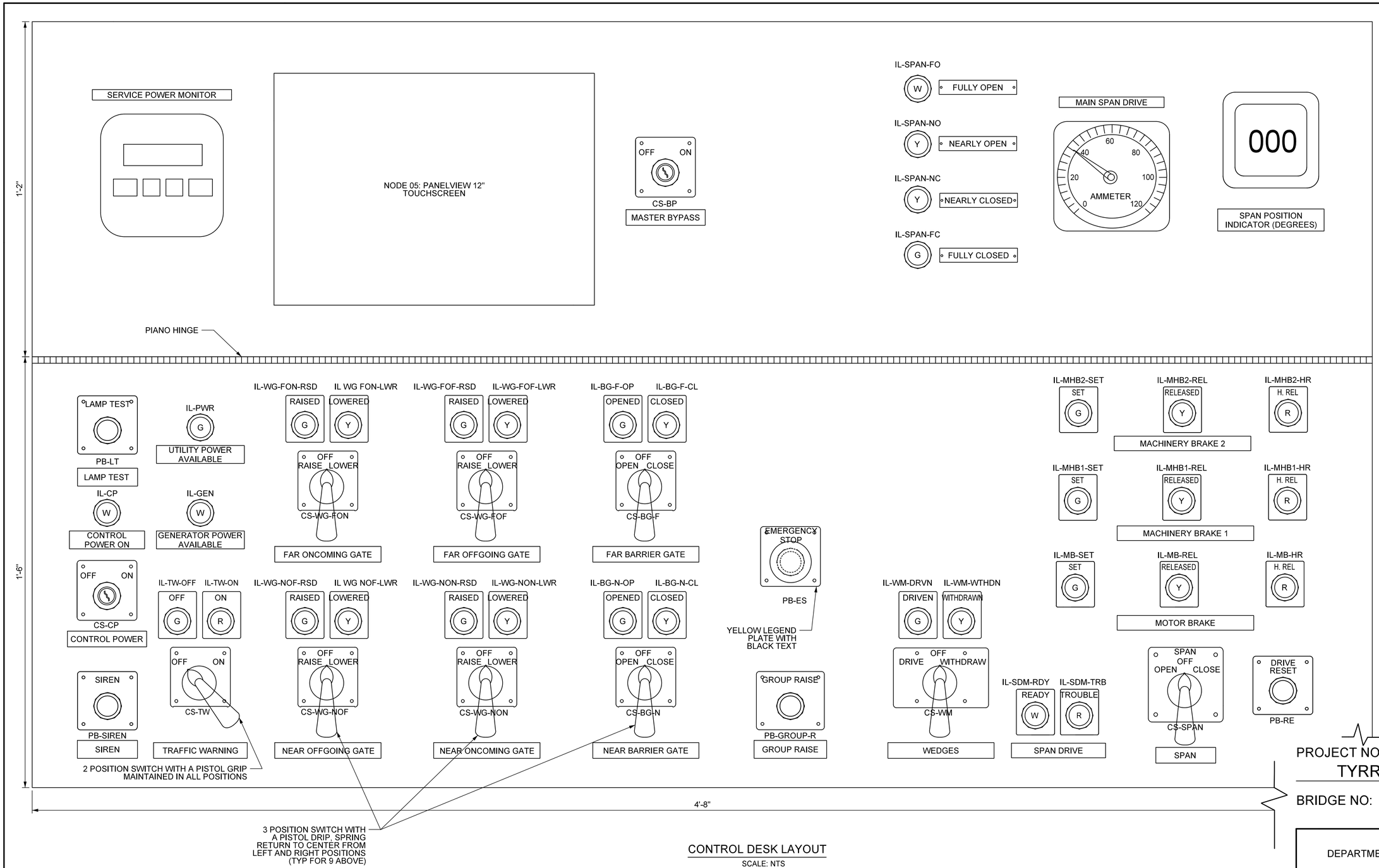
REVISIONS

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

SHEET NO. E-24

TOTAL SHEETS 51

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

## CONTROL DESK LAYOUT

SCALE: NTS

## NOTES:

1. CONTINUOUS HINGE SHALL BE FURNISHED AND INSTALLED ON THE CONTROL DESK. SEE SPECIFICATIONS FOR FURTHER CONSTRUCTION DETAILS.
2. ALL NAMEPLATES SHALL BE WHITE WITH BLACK LETTERS, AS SPECIFIED IN THE SPECIAL PROVISIONS, EXCEPT AS NOTED.
3. DEVICE ALPHA-NUMERIC IDENTIFIER IS SHOWN ON THE LAYOUT FOR CLARIFICATION AND SHALL NOT BE ENGRAVED ON THE DESK OR NAMEPLATES.
4. SEE SHEET E-24 FOR INTERIOR LAYOUT BILL OF MATERIAL AND SEE SHEET E-51 FOR THE PLAN VIEW BILL OF MATERIAL AND NAMEPLATE SCHEDULE.

DocuSigned by: Scott Reynolds BFEC5720F8F1480... 9/14/2016

Hardesty & Hanover engineering that moves you

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONTROL DESK: PLAN VIEW

ALLIGATOR RIVER SWING SPAN

| | | |
|---|---|---|
| DRAWN BY: OIV | DATE : 8/8/2016 | |
| CHECKED BY: MJT | DATE : 8/8/2016 | |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 | |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 41 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

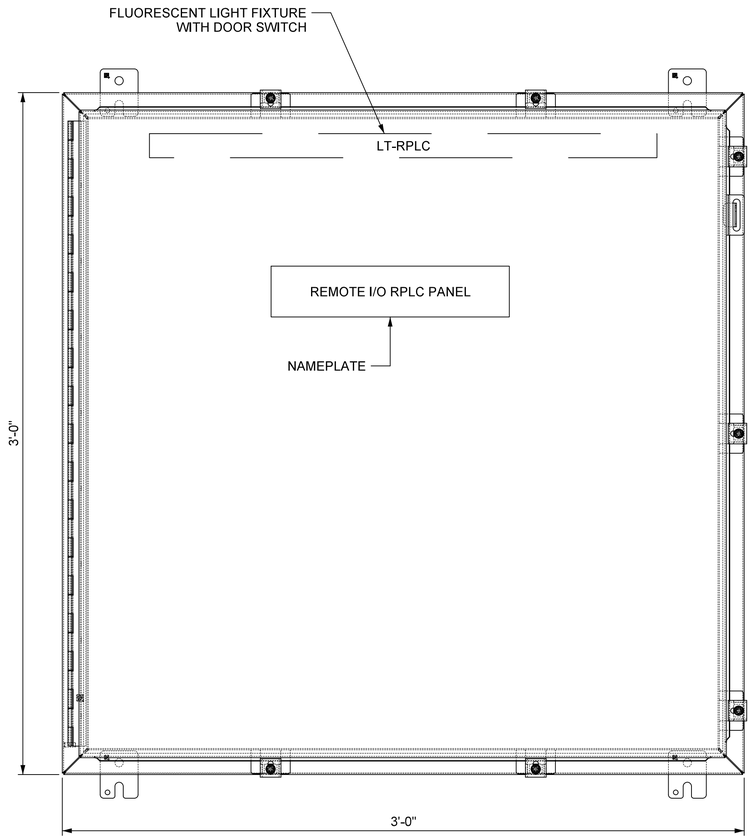
REVISIONS

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

SHEET NO. E-25

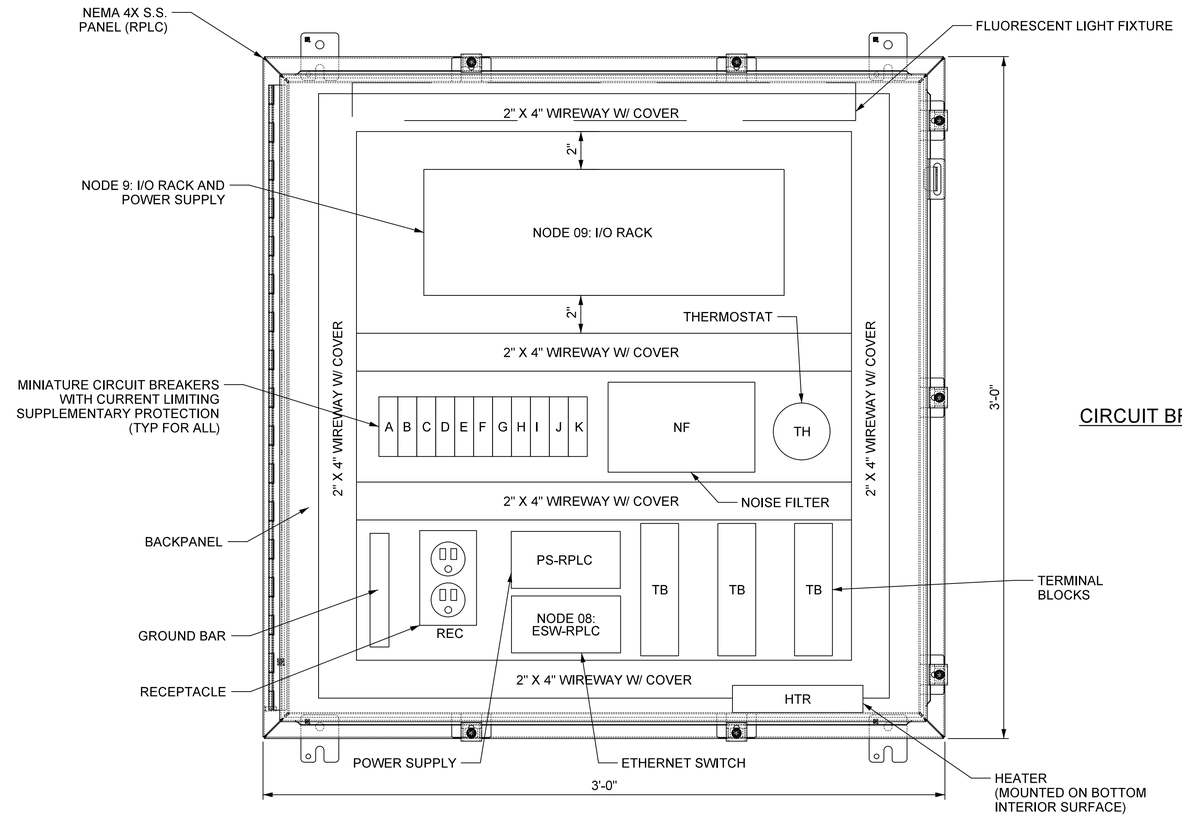
TOTAL SHEETS 51

SYSTIME DGN USERNAME




## REMOTE I/O PLC PANEL (RPLC) FRONT VIEW

SCALE: 3" = 1'-0"




## REMOTE I/O PLC PANEL (RPLC) INTERNAL LAYOUT

SCALE: 3" = 1'-0"

## CIRCUIT BREAKER IDENTICATION

| | |
|---|---|
| A | CB-RPLC-1 |
| B | CB-RPLC-2 |
| C | CB-RPLC-3 |
| D | CB-RPLC-4 |
| E | CB-RPLC-5 |
| F | CB-RPLC-6 |
| G | CB-RPLC-7 |
| H | CB-RPLC-8 |
| I | CB-RPLC-9 |
| J | CB-RPLC-10 (SPARE) |
| K | CB-RPLC-11 (SPARE) |

## NOTES:

1. FOR GENERAL ABBREVIATIONS SEE DWG. NO. E-2.
2. RPLC PANEL ENCLOSURE SHALL BE A NEMA 4X S.S. ENCLOSURE
3. THE CONTRACTOR SHALL USE THE LAYOUT VIEW AS A GUIDE TO INSTALLING THE ELECTRICAL COMPONENTS. IF REQUIRED, THE CONTRACTOR SHALL RELOCATE COMPONENTS TO ALLOW FOR PROPER INSTALLATION OF THE COMPONENTS.
4. ALL CORNERS AND EDGES SHALL BE ROUNDED AND SMOOTHED.
5. LEVEL RPLC PANEL DURING INSTALLATION.
6. PROVIDE FLUORESCENT LIGHT FIXTURE INSIDE THE RPLC PANEL WITH STANDARD 18" BULB PROTECTED BY A CLEAR, NON-YELLOWING PLASTIC LENS. LIGHT SHALL BE AUTOMATICALLY CONTROLLED BY DOOR SWITCH ACTIVATED BY THE DOOR.
7. PROVIDE, AS SHOWN ON THE LAYOUT, DUPLEX RECEPTACLES 15 AMP, 125 VAC. FEDERAL SPEC GRADE INSTALLED IN STANDARD UTILITY BOX WITH METAL COVER PLATE.
8. INTERNAL COMPONENTS SHALL BE MOUNTED ON BACK PANELS. BUSHED OPENINGS SHALL BE PROVIDED FOR CONDUCTORS ACCESS. FIELD CONNECTIONS TO CONTROL ENCLOSURE. ALL FIELD WIRING SHALL TERMINATE ON TERMINAL BLACKS.
9. CIRCUIT BREAKERS SHALL BE MOUNTED ON HIGH RISE TERMINAL RAIL.
10. LOW VOLTAGE AND ANALOG SIGNALS SHALL BE ISOLATED FROM 120VAC WIRING AND EQUIPMENT.
11. SEE ETHERNET SCHEMATIC LAYOUT ON SHEET E-29 FOR THE NODE MODULE DETAILS.

## BILL OF MATERIAL

| TAG | QTY | MODEL NUMBER | DESCRIPTION |
|---|---|---|---|
| NODE 09: I/O RACK | 1 | 1756-A10 | 10 SLOT RACK |
| - | 1 | 1756-PA/72C | POWER SUPPLY FOR RACK |
| - | 3 | 1756-IA16 | 16 DISCRETE INPUTS, 120VAC |
| - | 1 | 1756-OX8I | 8 DIGITAL OUTPUTS, 120VAC |
| - | 1 | 1756-IF6I | 6 ANALOG INPUTS |
| - | 1 | 1756-EN2T | 10/100MBPS & 128 TCP/IP CONNECTIONS & 256 LOGIX CONNECTIONS |
| - | 2 | 1756-N2 | FILLER FOR EMPTY RACK SLOT |
| TB | AS REQUIRED | 1492 SERIES | ALLEN BRADLEY TERMINAL BLOCKS |
| ESW-RPLC | 1 | STRATIX 5700 1783-BMS | 10 PORT ETHERNET SWITCH WITH 2 SFP ADAPTER TO CONNECT DIRECTLY TO THE FIBER LINE |
| PS-RPLC | 1 | 1606-XLP9SE | ALLEN BRADLEY COMPACT SWITCHED MODE POWER SUPPLIES 24VDC |
| REC-RPLC | 1 | 1SNAB92461R1500 | ABB CONTROL INC. RECEPTACLE |
| - | 1 | ECGB10 | SIEMENS ENERGY AND AUTOMATION GROUND BAR |
| TH-RPLC | 1 | 17111000010 | PFANNENBERG THERMOSTAT |
| - | AS REQUIRED | - | PVC WIREWAY 2 INCH WIDE 4 INCH DEEP WITH COVERS |
| LT-RPLC | 1 | - | PANEL MOUNTED FLUORESCENT LIGHT WITH DOOR SWITCH |
| HTR-RPLC | 1 | 17006005007 | PFANNENBERG 1SOW RADIANT HEATER |
| RPLC | 1 | A36H3612SS6LP | HOFFMAN 36" BY 36" BY 12" NEMA 4X STAINLESS STEEL PANEL WITH BACKPLATE |
| CB-RPLCIN | 1 | 1489-A1C050 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |
| CB-RPLC1 | 1 | 1489-A1C050 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |
| TO | - | - | - |
| CB-RPLC11 | 1 | 1489-A1C050 | ALLEN BRADLEY 1 POLE CIRCUIT BREAKER 5A |

* EXCLUDING PLC EQUIPMENT, MODEL NUMBER PARTS ARE THE RECOMMENDED PARTS AND MAY BE REPLACED WITH APPROVED EQUAL.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# REMOTE PROGRAMMABLE LOGIC CONTROLLER: INTERIOR & LAYOUT

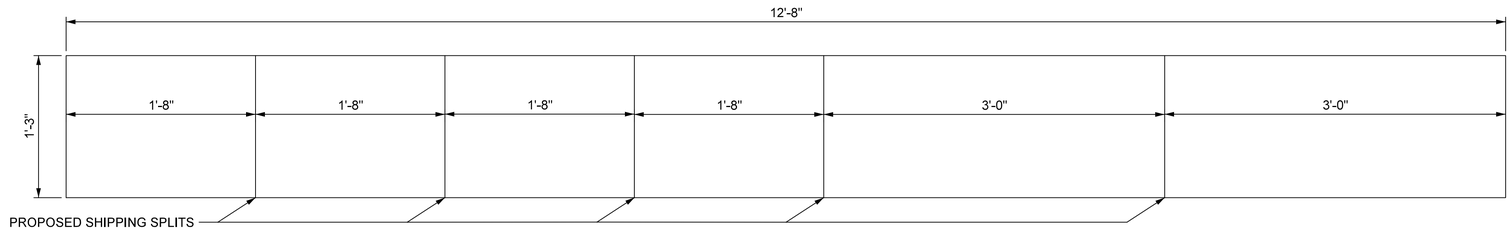
## ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-26 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

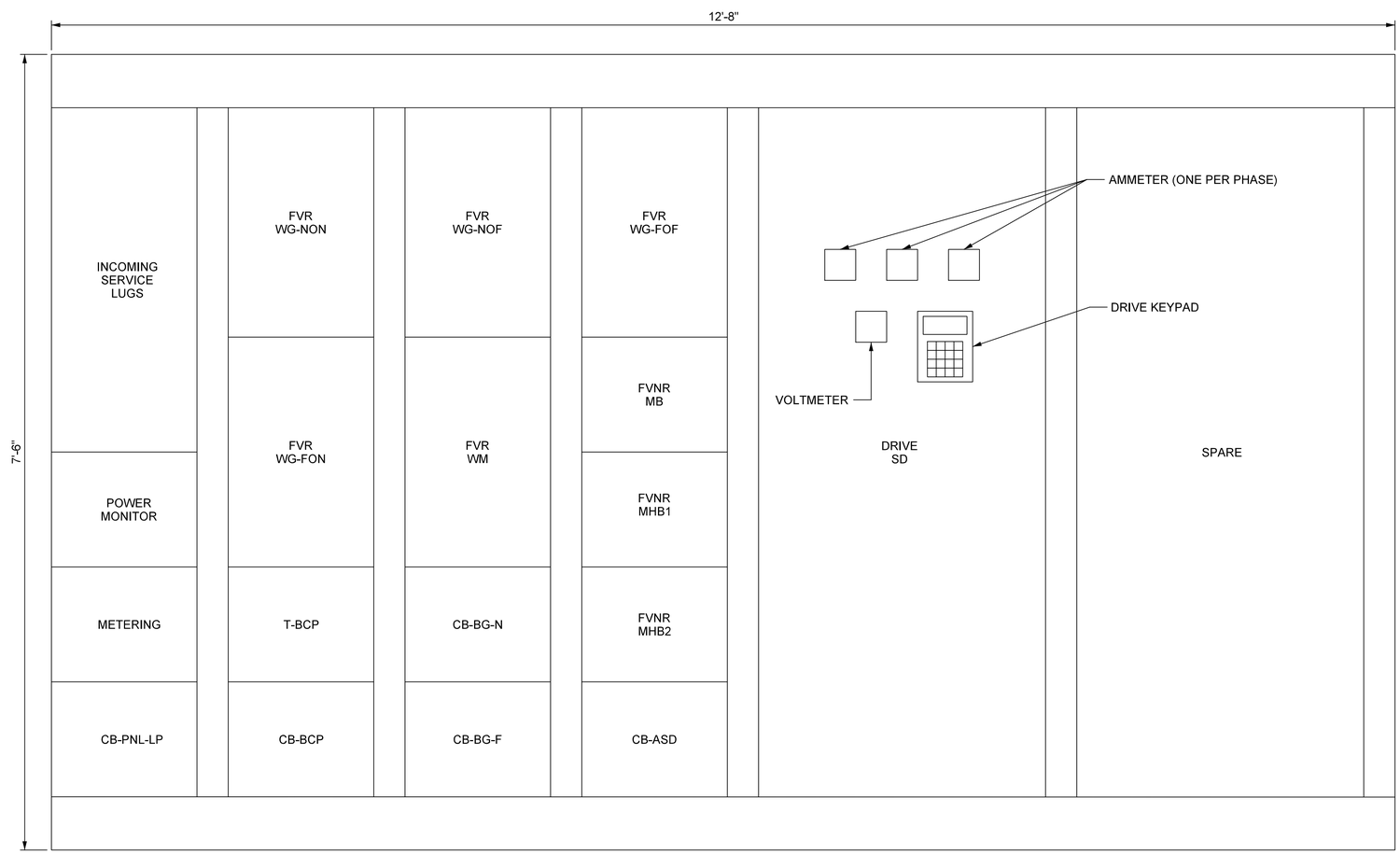
DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 42 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




MCC PLAN VIEW




MCC ELEVATION VIEW

## NOTES:

1. FOR GENERAL ABBREVIATIONS SEE DWG. NO. E-2.
2. THE MCC SHALL BE EQUIPPED WITH A NEMA-12 ENCLOSURE.
3. THE MCC SHALL BE AN ALLEN BRADLEY NEMA CENTERLINE 2100 MCC OR APPROVED EQUAL.
4. THE MCC SHALL BE PROVIDED IN 6 SHIPPING SPLITS CONSISTING OF ONE VERTICAL STACK EACH. PROVIDE SPLICE KITS TO ASSEMBLE THE MCC IN THE FIELD.
5. EACH MCC FVNR SHALL BE EQUIPPED WITH A DISCONNECT SWITCH THAT SHALL DISCONNECT THE CONTROL POWER.
6. SPARE MCC BUCKETS SHALL BE USED FOR DEVICES SUCH AS TERMINAL BLOCKS, PHASE FAILURE RELAYS, CURRENT TRANSFORMERS, POTENTIAL TRANSFORMER, FUSES, CIRCUIT BREAKERS, AND OTHER MISCELLANEOUS DEVICES AS REQUIRED IN ADDITION TO EMPTY SPARE BUCKETS FOR FUTURE PROVISIONS.
7. ALL WIRING INTERNAL TO THE MCC'S, ATS, AND CONTROL CABINETS SHALL BE SIS TYPE SWITCH BOARD WIRE.
8. MCC SHALL HAVE NAMEPLATES ON EACH BUCKET IDENTIFYING THE DEVICE BEING CONTROLLED AS WELL AS THE VARIOUS CONTROL DEVICES ON EACH MCC BUCKET. ALL NAMEPLATES SHALL BE WHITE WITH BLACK LETTERING UNLESS OTHERWISE SPECIFIED.
9. THE CONTRACTOR SHALL FIELD VERIFY THE MCC INSTALLATION IN THE ELECTRICAL ROOM. THE CONTRACTOR SHALL FIELD VERIFY THE INSTALLATION PATH AND SIZE OF THE MCC FOR INSTALLATION. THE CONTRACTOR MAY SELECT TO PROVIDE REDUCED HEIGHT MCC (71 INCHES TALL) TO PROVIDE FOR AN EASIER FIT PROVIDED THE LENGTH OF THE UNITS FIT IN THE ROOM.
10. EACH MCC BUCKET WITH A MOTOR STARTER, EXCLUDING THE SPAN DRIVE, SHALL BE EQUIPPED WITH A PUSHBUTTON TO RESET THE OVERLOAD MANUALLY.
11. EACH MCC BUCKET WITH A STARTER, EXCLUDING THE SPAN DRIVE, SHALL BE EQUIPPED WITH AN ETHERNET ENABLED OVERLOAD RELAY SHALL BE EQUIPPED WITH A "HAND-OFF-AUTO" MAINTAINED CONTROL SWITCH. THE CONTROL SWITCH BE WIRED TO ALLOW AN ETHERNET HMI TO BE CONNECTED TO THE ETHERNET ENABLED OVERLOAD THROUGH THE ETHERNET PORT ON THE OVERLOAD. THE HMI SHALL ALLOW THE OPERATOR TO MANUALLY START (IN FORWARD OR REVERSE) OR MANUALLY STOP ANY MOTOR. IF PLC FAILS, MANUAL OPERATION SHALL RELY UPON OPERATOR MONITORING OF THE EQUIPMENT AS THE INTERLOCKS ARE NOT ENABLED IN MANUAL CONTROL.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MOTOR CONTROL CENTER: LAYOUT

ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-27 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

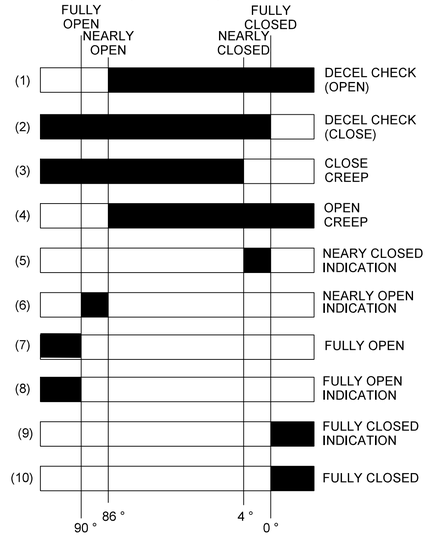
| DWG NUMBER | TOTAL DWGS |
|---|---|
| 43 | 90 |

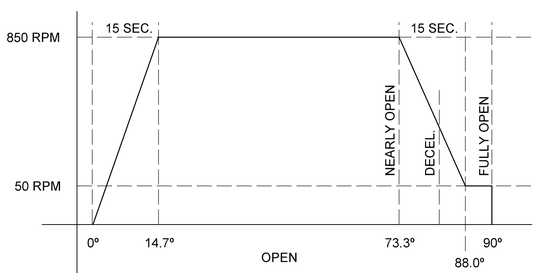
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

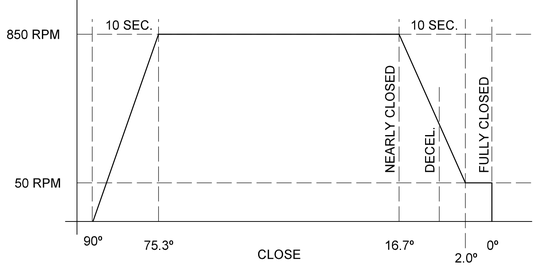
$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

## DEVELOPMENT: SPAN ROTARY LIMIT SWITCH (EXISTING)

(LS-SPAN-RLS)



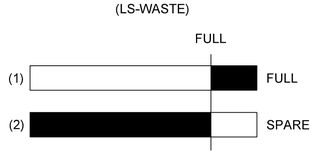




DEVELOPMENT: LEAF SPEED VERSUS POSITION

## DEVELOPMENT - WASTE WATER FLOAT SWITCH

(LS-WASTE)

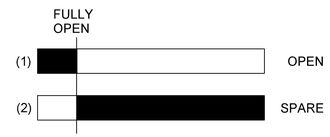



## DEVELOPMENT - SPAN FULLY CLOSED PROXIMITY LIMIT SWITCHES

(LS-SPAN-FC)

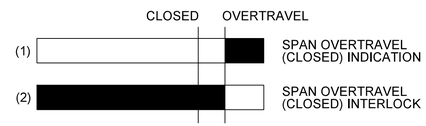
## DEVELOPMENT - SPAN FULLY OPEN PROXIMITY LIMIT SWITCHES

(LS-SPAN-FO)



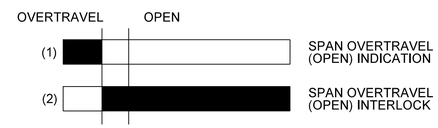

## DEVELOPMENT - SPAN FULLY CLOSED OVERTRAVEL PROXIMITY LIMIT SWITCHES

(LS-SPAN-FC-OT)




## DEVELOPMENT - SPAN FULLY OPEN OVERTRAVEL PROXIMITY LIMIT SWITCHES

(LS-SPAN-FO-OT)




## DEVELOPMENT - BRAKE SET LEVER ARM LIMIT SWITCHES

(LS-MB-SET, LS MHB1-SET, LS MHB2 SET)

## DEVELOPMENT - BRAKE RELEASED LEVER ARM LIMIT SWITCHES

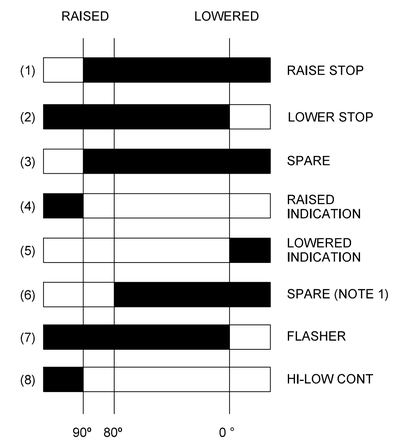
(LS-MB-REL, LS-MHB1-SET, LS-MHB2-SET)

## DEVELOPMENT - BRAKE HAND RELEASED LEVER ARM LIMIT SWITCHES

(LS-MB-HR, LS-MHB1-HR, LS-MHB2-HR)

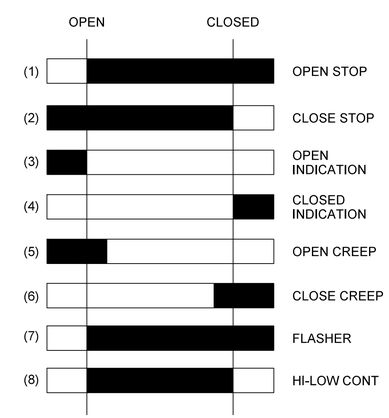
## DEVELOPMENT: TRAFFIC GATE ROTARY LIMIT SWITCH (EXISTING)

(LS-WG-NON, LS-WG-NOF, LS-WG-FON, LS-WG-FOF)




## DEVELOPMENT: BARRIER GATE ROTARY LIMIT SWITCH (EXISTING)

(LS-BG-N, LS-BG-F)

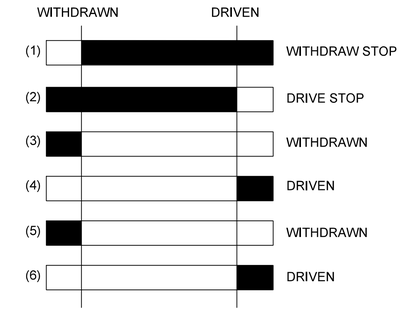



## DEVELOPMENT - GATE DOOR LIMIT SWITCH

(LS-WG-NON-DO, LS-WG-NOF-DO, LS-WG-FON-DO, LS-WG-NOF-DO, LS-BG-N-DO LS-BG-F-DO)

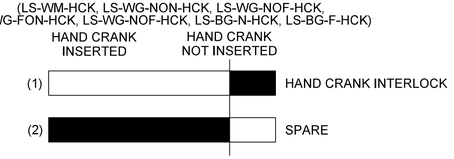
## DEVELOPMENT- WEDGE MOTOR ROTARY LIMIT SWITCH

(LS-WM-RLS)



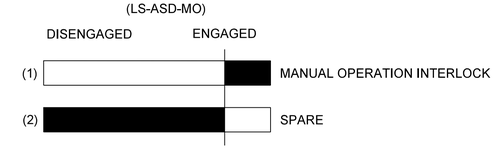

## DEVELOPMENT - TYPICAL MOTOR HAND CRANK LIMIT SWITCH

(LS-WM-HCK, LS-WG-NON-HCK, LS-WG-NOF-HCK, LS-WG-FON-HCK, LS-WG-NOF-HCK, LS-BG-N-HCK, LS-BG-F-HCK)

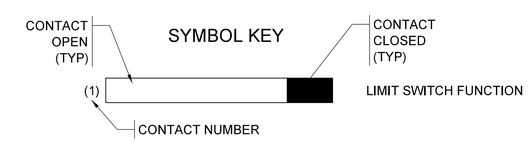



## DEVELOPMENT - AUXILAIRY MOTOR MANUAL OPERATION LIMIT SWITCH

(LS-ASD-MO)




## SYMBOL KEY




## NOTES:

1. CONTRACTOR SHALL ADJUST GATE ARM LIMIT 80 DEGREE SETTING IN THE FIELD. THE PURPOSE OF THE LIMIT SWITCH CONTACT IS TO ACTIVATE THE TRAFFIC WARNING LIGHTS IF THE GATE ARM LOWERS FROM FULLY RAISED, WHEN THE GATE ARM IS SUPPOSED TO BE LOCKED IN THE FULLY UPRIGHT POSITION. THE CAM DEGREE SETTING SHALL BE SET SUCH THAT DEGREE SETTING SHALL BE AS CLOSE TO FULLY RAISED AS POSSIBLE, WITHOUT CAUSING THE TRAFFIC LIGHTS TO ENERGIZE WHEN THE GATE ARM IS IN IT'S NORMAL UPRIGHT POSITION.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

Hardesty & Hanover
engineering that moves you

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# LIMIT SWITCH DEVELOPMENT & SPAN POSITION SPEED GRAPHS

# ALLIGATOR RIVER SWING SPAN

| DRAWN BY: OIV | DATE: 8/8/2016 |
|---|---|
| CHECKED BY: MJT | DATE: 8/8/2016 |
| DESIGN ENGINEER OF RECORD: CHS | DATE: 8/8/2016 |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 44 | 90 |

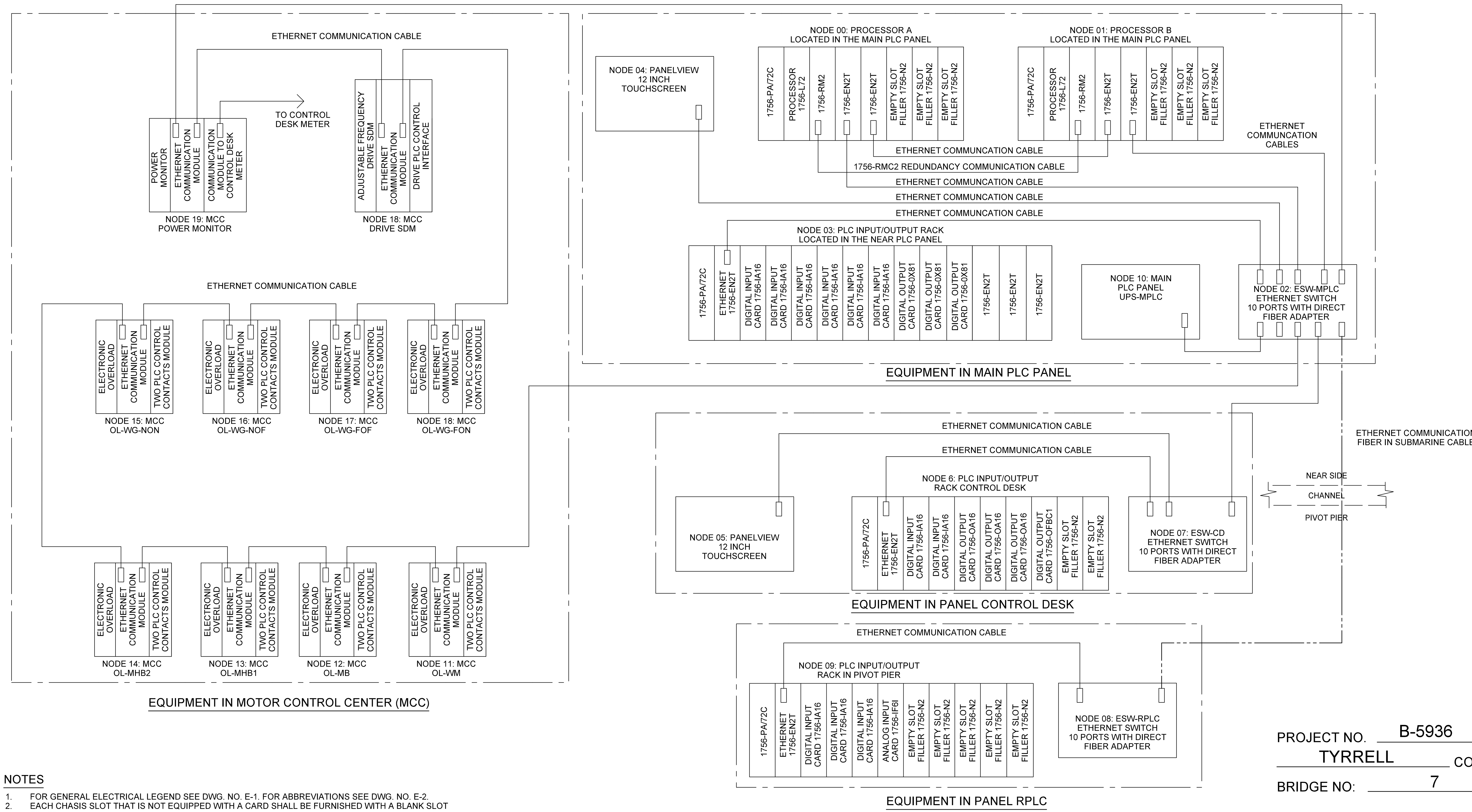
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. E-28

TOTAL SHEETS 51

$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$




PLC COMMUNICATION SCHEMATIC LAYOUT

## NOTES

1. FOR GENERAL ELECTRICAL LEGEND SEE DWG. NO. E-1. FOR ABBREVIATIONS SEE DWG. NO. E-2.
2. EACH CHASIS SLOT THAT IS NOT EQUIPPED WITH A CARD SHALL BE FURNISHED WITH A BLANK SLOT FILLER.
3. EACH CARD IN THE I/O RACK SHALL BE EQUIPPED WITH WIRING ARMS WITH SCREW TERMINALS.
4. FURNISH AND INSTALL PROGRAMMING CONNECTIONS AVAILABLE ON THE ETHERNET NETWORK. FURNISH ALL NECESSARY CABLING AND ADAPTERS FOR THE PROGRAMMING CONNECTIONS. FURNISH AND INSTALL ETHERNET COMMUNICATIONS ON THE PROGRAMMER LAPTOP COMPUTER AND ASSOCIATED PROGRAMMING CABLES FOR THE PROGRAMMER LAPTOP COMPUTER.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# ETHERNET SCHEMATIC LAYOUT

# ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

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BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

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

SHEET NO. E-29
TOTAL SHEETS 51

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| DWG NUMBER | TOTAL DWGS |
|---|---|
| 45 | 90 |

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CHECKED BY: MJT DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

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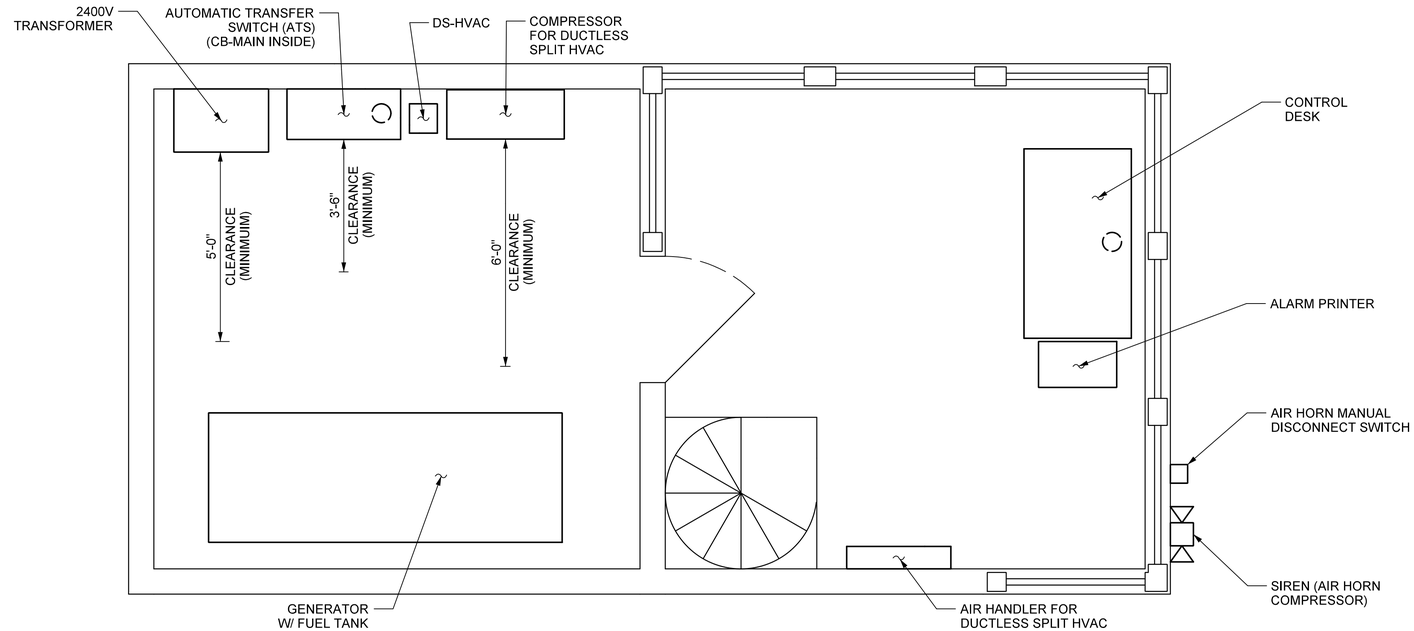
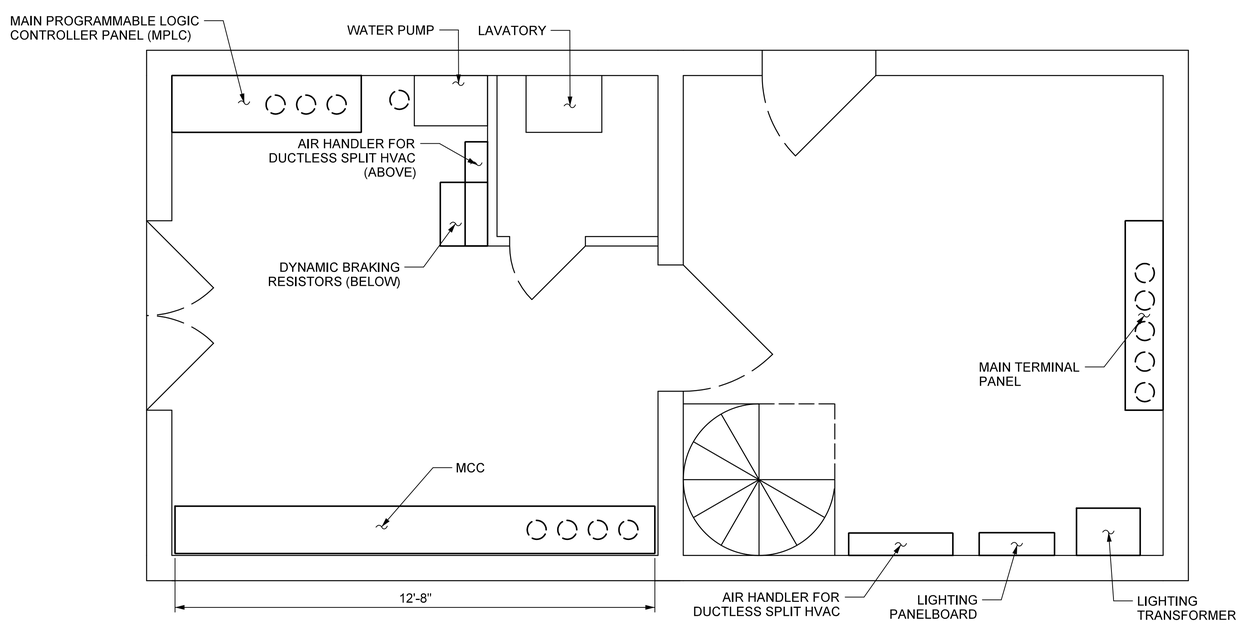



## SECOND FLOOR LAYOUT

SCALE: 1/2" = 1'-0"

## SYMBOL:

FLOOR PENETRATION (SEE NOTE 5)




## FIRST FLOOR LAYOUT

SCALE: 1/2" = 1'-0"

## NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL FIELD CONNECTIONS PRIOR TO INSTALLATION OF ANY ELECTRICAL EQUIPMENT. ANY ADDITIONAL WORK REQUIRED TO ADJUST AND MODIFY THE ELECTRICAL WORK SPECIFIED DUE TO THE FIELD CONDITIONS SHALL BE COMPLETED AT NO ADDITIONAL COST TO NCDOT.
2. THE CONTRACTOR SHALL REFER TO DRAWINGS E-43-E-47 FOR CONDUIT AND WIRE REQUIREMENTS.
3. THE CONTRACTOR SHALL REMOVE AND DISPOSE ALL EXISTING EQUIPMENT WHICH IS TO BE REPLACED AS SPECIFIED.
4. COORDINATE ALL WORK IN CONTROL HOUSE WITH ARCHITECTURAL INTERIOR RENOVATIONS.
5. THE CONTRACTOR WILL BE REQUIRED TO MAKE FLOOR PENETRATIONS AS REQUIRED ON THIS SHEET FOR CONDUIT ROUTINGS TO ELECTRICAL ENCLOSURES. REFER TO SHEET E-45 FOR CONDUIT DIAMETERS.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
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RALEIGH

# CONTROL HOUSE: ELECTRICAL EQUIPMENT LAYOUT

# ALLIGATOR RIVER SWING SPAN

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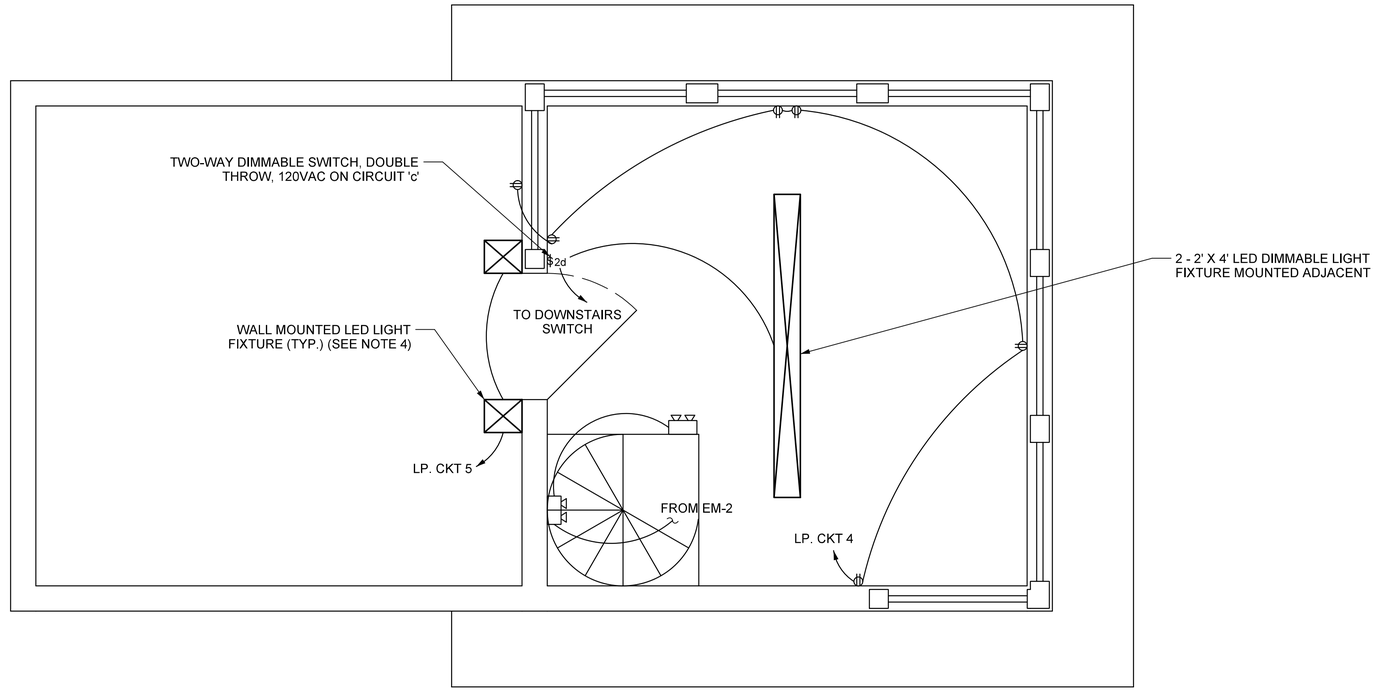
| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-30 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

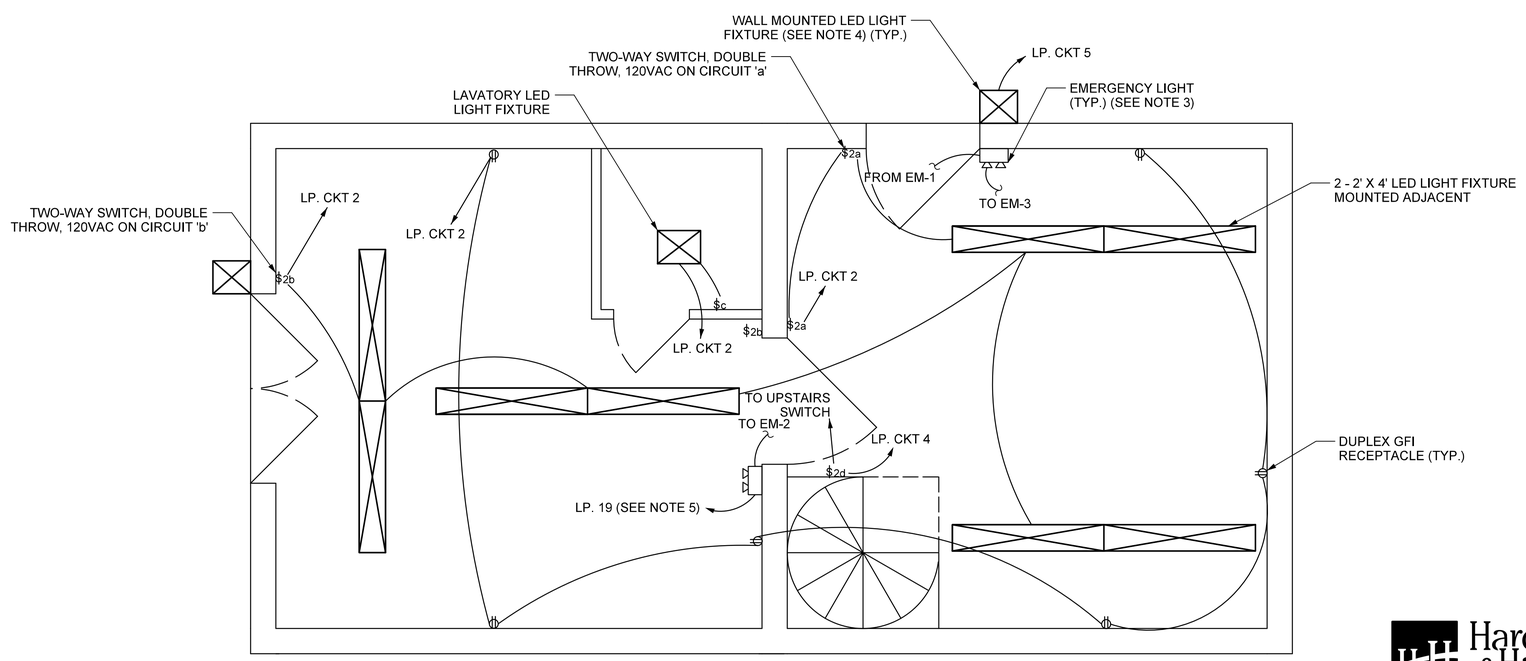
| DWG NUMBER | TOTAL DWGS |
|---|---|
| 46 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




## SECOND FLOOR LAYOUT

SCALE: 1/2" = 1'-0"




## FIRST FLOOR LAYOUT

SCALE: 1/2" = 1'-0"

## NOTES:

1. ALL NOTES ON DWG E-30 ARE APPLICABLE TO THIS DWG.
2. THE INDOOR LED LIGHT FIXTURES SHALL BE CREE LIGHTING CATALOG NO. SMK-ZR24-40L-35K-10V OR APPROVED EQUAL.
3. THE EMERGENCY LIGHT FIXTURES SHALL BE LITHONIA LIGHTING CATALOG NO. EU2-LED-M12 OR APPROVED EQUAL.
4. OUTDOOR LIGHTING LIGHT FIXTURES SHALL BE LITHONIA LIGHTING CATALOG NO. TWP-LED-30C-700-40K-T3M-MVOLT-DDBXD OR APPROVED EQUAL.
5. THE EMERGENCY LIGHTING CIRCUIT SHALL NOT BE PART OF THE SWITCHED LIGHTING CIRCUIT.

PROJECT NO. B-5936

TYRRELL COUNTY

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# CONTROL HOUSE: LIGHTING & RECEPTACLES

# ALLIGATOR RIVER SWING SPAN

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-31 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 47 | 90 |

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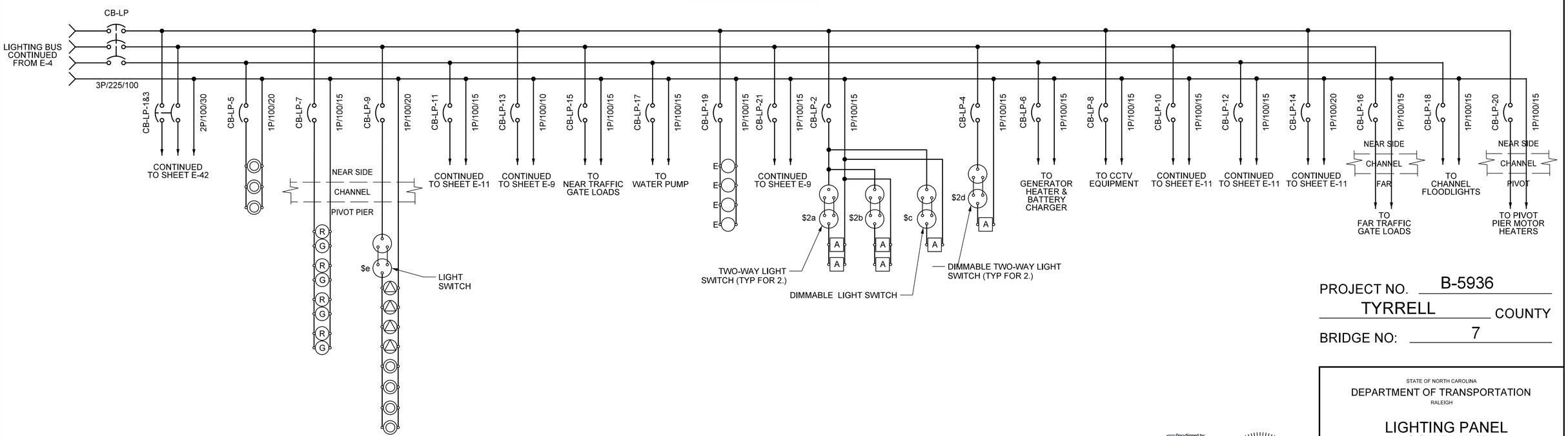
NAME/RATINGS: 208/120 VOLT, 42 SPACES, 100 A-PANELBOARD

| DESIGNATION | LOCATION | PANEL TYPE & SERVICE |
|---|---|---|
| LIGHTING PANEL | CONTROL HOUSE | BUS: 120/208 VOLT 3-PHASE, 4-WIRE<br>MAIN BREAKER: 110A, 3-POLE<br>SERVICE: 4-NO. 4 AWG |

| CIRCUIT DESCRIPTION | KVA/PHASE ØA | KVA/PHASE ØB | KVA/PHASE ØC | TRIP | WIRE SIZE | ØA ØB ØC | WIRE SIZE | TRIP | KVA/PHASE ØA | KVA/PHASE ØB | KVA/PHASE ØC | CIRCUIT DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HVAC UNIT | 3.78 | | | 30 | 10 | 1 2 | 12 | 15 | 0.96 | | | FIRST FLOOR LIGHTS AND RECEPTACLES |
| | | 3.78 | | 30 | 10 | 3 4 | 12 | 15 | | 0.96 | | SECOND FLOOR LIGHTS AND RECEPTACLES |
| OPERATOR HOUSE OUTDOOR LIGHTS AND RECEPTACLES | | | 0.96 | 20 | 12 | 5 6 | 12 | 15 | | | 0.60 | GENERATOR HEATER AND BATTERY CHARGER |
| SPAN NAVIGATION LIGHTS | 0.12 | | | 15 | 12 | 7 8 | 12 | 15 | 0.60 | | | CCTV EQUIPMENT |
| PIVOT PIER LIGHTS AND RECEPTACLES | | 0.96 | | 20 | 12 | 9 10 | 12 | 15 | | 0.30 | | MAIN PLC PANEL LIGHT, HEATER, AND RECEPTACLE |
| CONTROL DESK LIGHT, HEATER, AND RECEPTACLES | | | 0.30 | 15 | 12 | 11 12 | 12 | 15 | | | 0.60 | REMOTE PLC PANEL LIGHT, HEATER, AND RECEPTACLE |
| ROADWAY TRAFFIC EQUIPMENT | 0.36 | | | 10 | 12 | 13 14 | 12 | 20 | 1.34 | | | SIREN |
| NEAR GATES AND BARRIER 120VAC FEEDER | | 0.60 | | 15 | 12 | 15 16 | 12 | 15 | | 0.60 | | FAR GATES AND BARRIER 120VAC FEEDER |
| WATER PUMP | | | 0.24 | 15 | 12 | 17 18 | 12 | 15 | | | 0.20 | CHANNEL FLOODLIGHTS |
| EMERGENCY LIGHTS | 0.14 | | | 15 | 12 | 19 20 | 12 | 15 | 0.24 | | | PIVOT PIER MOTOR HEATERS CIRCUIT |
| GONG | | 0.36 | | 15 | 12 | 21 22 | 12 | 20 | | 0.00 | | SPARE |
| SPARE | | | 0.00 | 20 | 12 | 23 24 | 12 | 20 | | | 0.00 | SPARE |
| SPARE | 0.00 | | | 20 | 12 | 25 26 | 12 | 20 | 0.00 | | | SPARE |
| SPARE | | 0.00 | | 20 | 12 | 27 28 | 12 | 20 | | 0.00 | | SPARE |
| SPARE | | | 0.00 | 20 | 12 | 29 30 | 12 | 20 | | | 0.00 | SPARE |
| SPARE | 0.00 | | | 20 | 12 | 31 32 | 12 | 20 | 0.00 | | | SPARE |
| SPARE | | 0.00 | | 20 | 12 | 33 34 | 12 | 20 | | 0.00 | | SPARE |
| SPARE | | | 0.00 | 20 | 12 | 35 36 | 12 | 20 | | | 0.00 | SPARE |
| SPARE | 0.00 | | | 20 | 12 | 37 38 | 12 | 20 | 0.00 | | | SPARE |
| SPARE | | 0.00 | | 20 | 12 | 39 40 | 12 | 20 | | 0.00 | | SPARE |
| SPARE | | | 0.00 | 20 | 12 | 41 42 | 12 | 20 | | | 0.00 | SPARE |
| SUB TOTAL LOAD | 4.40 | 5.34 | 1.50 | | | | | | 3.14 | 1.86 | 1.40 | SUB TOTAL LOAD |
| TOTAL CONNECTED LOAD | 11.34 | | | | | | | | 6.4 | | | TOTAL CONNECTED LOAD |

NEUTRAL BUS

GROUNDING BUS




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
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# LIGHTING PANEL SCHEDULE

# ALLIGATOR RIVER SWING SPAN

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|---|---|
| CHECKED BY: MJT | DATE: 8/8/2016 |
| DESIGN ENGINEER OF RECORD: CHS | DATE: 8/8/2016 |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 48 | 90 |

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REVISIONS

| NO. | BY: | DATE: | NO. | BY: | DATE: |
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| 1 | | | 3 | | |
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SHEET NO. E-32

TOTAL SHEETS 51

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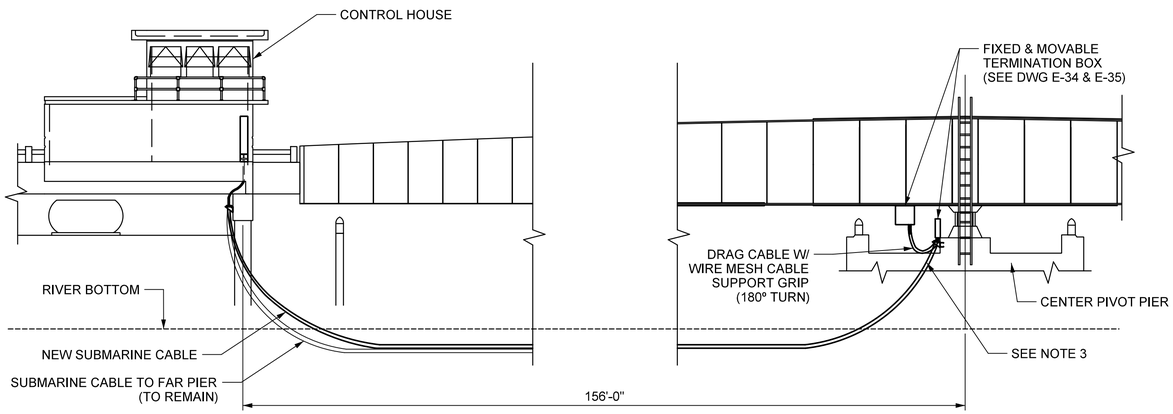
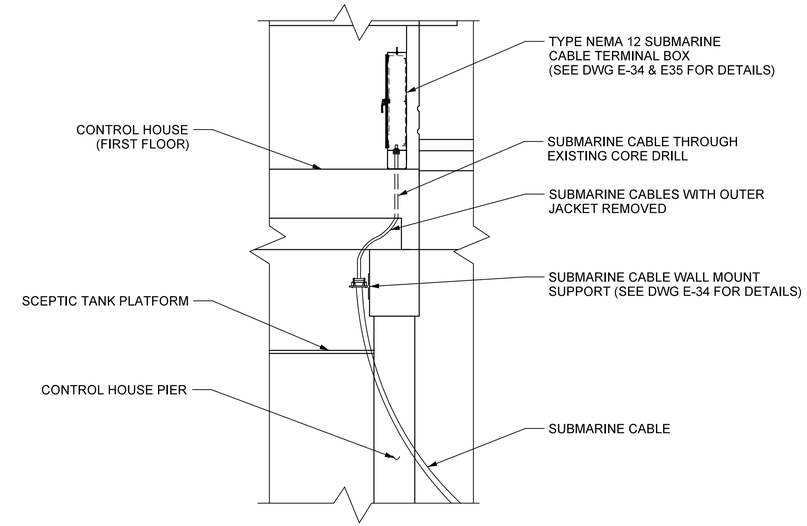


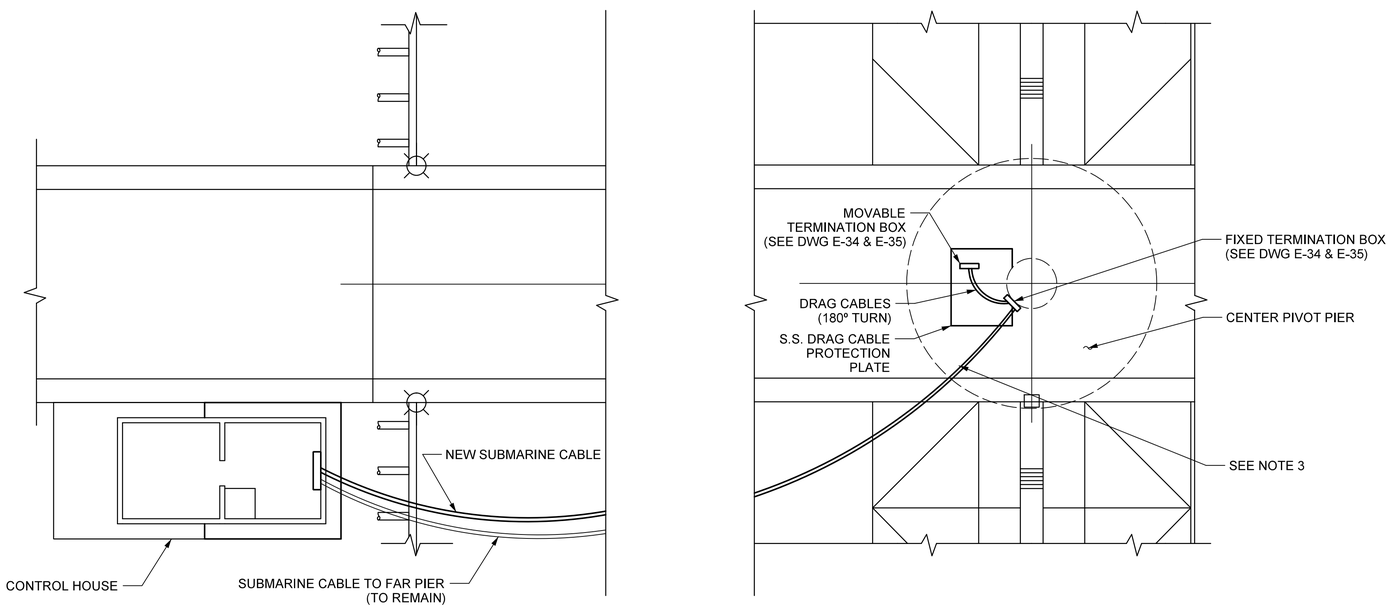

## GENERAL ELEVATION

SCALE: NTS



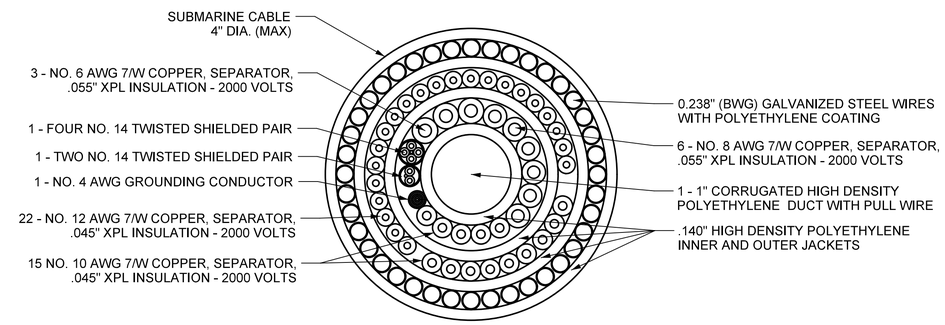

## CONTROL HOUSE SUBMARINE CABLE MOUNTING DETAILS

SCALE: 1/4" = 1'-0"




## GENERAL PLAN

SCALE: NTS




## SUBMARINE CABLE CROSS SECTION

SCALE: 1'-0" = 1'-0"

## NOTES:

1. THE CONTRACTOR SHALL INSTALL THE NEW SUBMARINE CABLE BETWEEN THE CONTROL HOUSE AND THE PIVOT PIER PER NCDOT REQUIREMENTS.
2. SIX HEAVY DUTY MULTIMODE FIBER OPTIC CABLE SHALL BE PULLED THROUGH THE POLYETHYLENE DUCT.
3. CONTRACTOR SHALL INSTALL THE NEW SUBMARINE CABLE USING THE EXISTING CORE DRILL HOLE(S) ON THE PIVOT PIER.
4. DRAG CABLES SHALL CONSIST OF ALL THE CONDUCTORS IN THE SUBMARINE CABLE.
5. DRAG CABLE PROTECTION PLATE SHALL BE OF 316 STAINLESS STEEL BOLTED TO THE PIVOT PIER.

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SUBMARINE CABLE LAYOUT

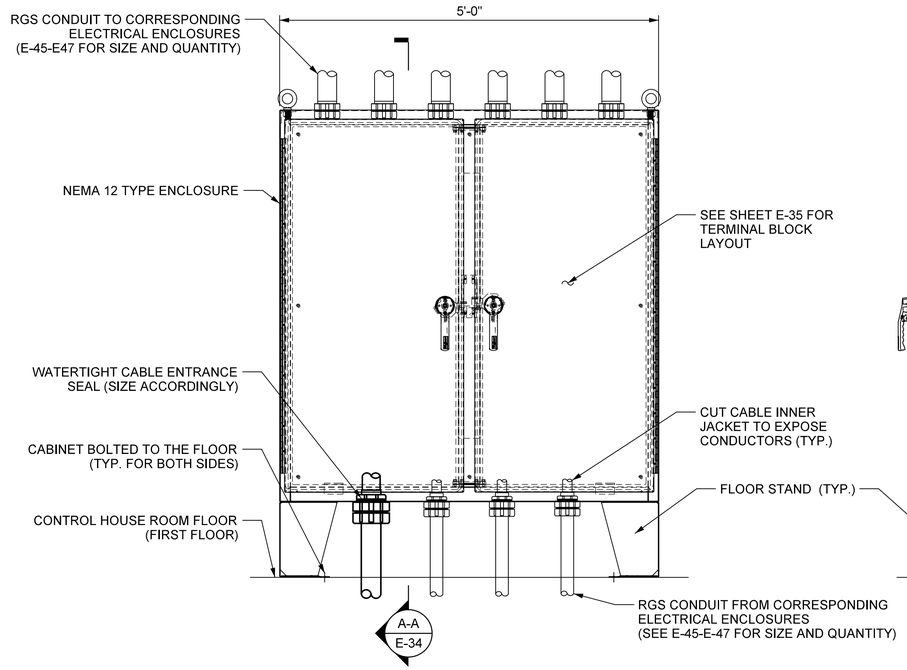
ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-33 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

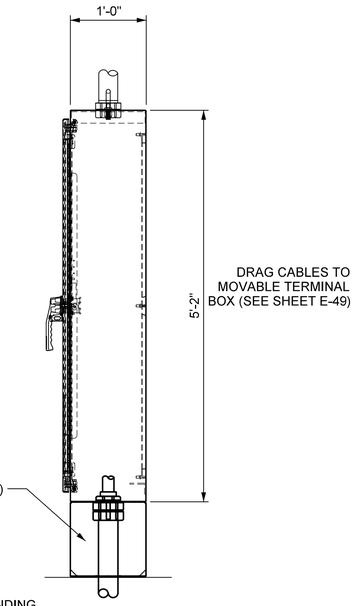
DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 49 | 90 |

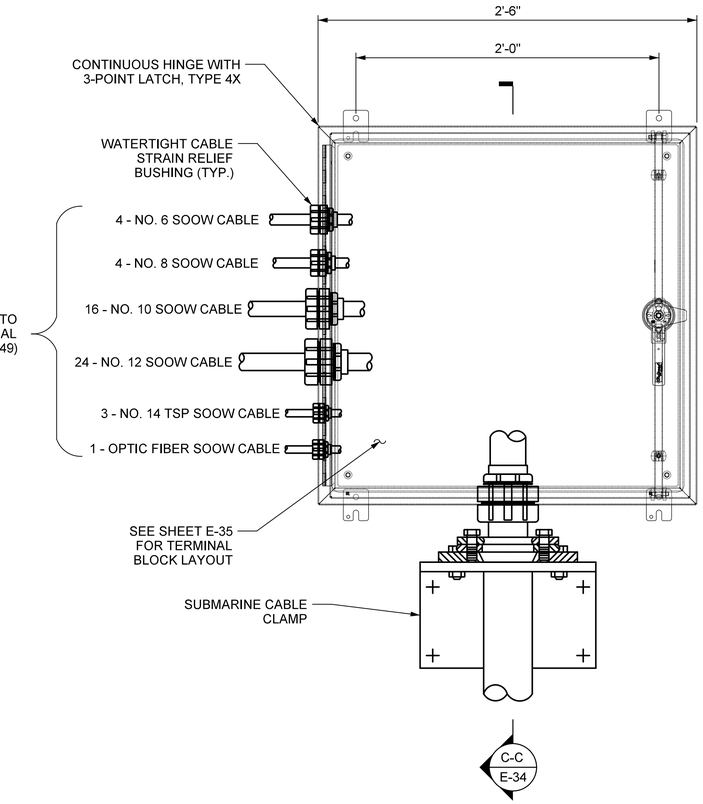
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



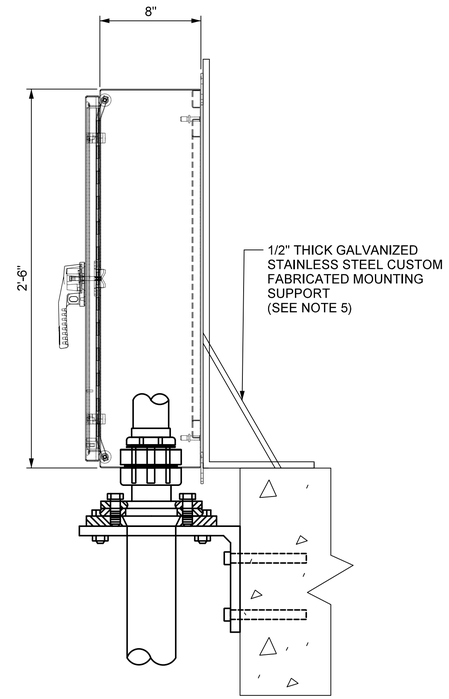

MAIN TERMINAL CABINET
SCALE: 1" = 1'-0"



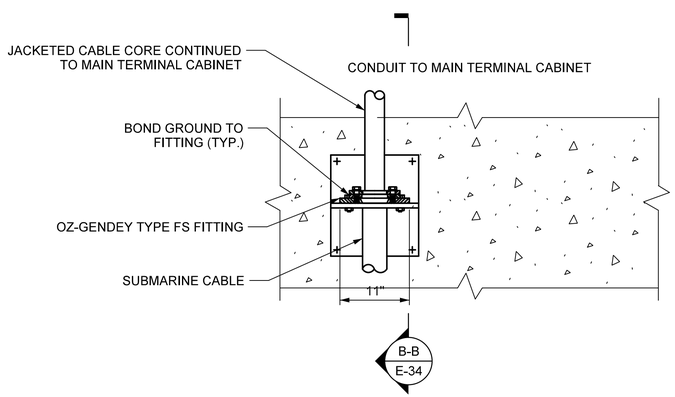

SECTION A-A
SCALE: 1" = 1'-0"



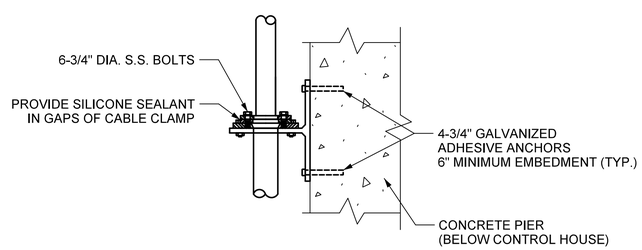

PIVOT PIER FIXED TERMINAL CABINET
SCALE: 2" = 1'-0"




SECTION C-C
SCALE: 2" = 1'-0"




TYPICAL SUBMARINE CABLE CLAMP
SCALE: 1" = 1'-0"




SECTION B-B
SCALE: 1" = 1'-0"

## NOTES:

1. THE MAIN TERMINAL CABINET SHALL BE A NEMA 12 TYPE HOFFMAN ENLCOSURE CATALOG NUMBER A64H6012SS6LP3PT OR APPROVED EQUAL.
2. THE SUBMARINE CABLE SUPPORT SHALL BE OZ-GEDNEY TYPE FS FITTING OR APPROVED EQUAL.
3. THE PIVOT PIER FIXED AND MOVABLE TERMINAL CABINETS SHALL BE TYPE 4X HOFFMAN ENCLOSURE CATALOG NUMBER A30H3008SS6LP3PT OR APPROVED EQUAL.
4. ALL DRAG CABLES BETWEEN THE FIXED AND MOVABLE PIVOT PIER TERMINAL CABINETS SHALL BE SOOW TYPE CABLE AND LONG ENOUGH TO BE CAPABLE OF SWINGING 180º.
5. CONTRACTOR SHALL CUSTOM FABRICATE THE PIVOT PIER FIXED TERMINAL CABINET SUCH THAT THE ENCLOSURE IS WELL SUPPORTED.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBMARINE CABLE SUPPORT DETAILS

ALLIGATOR RIVER SWING SPAN

| DRAWN BY: OIV | DATE : 8/8/2016 |
|---|---|
| CHECKED BY: MJT | DATE : 8/8/2016 |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 50 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | E-34 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 51 |

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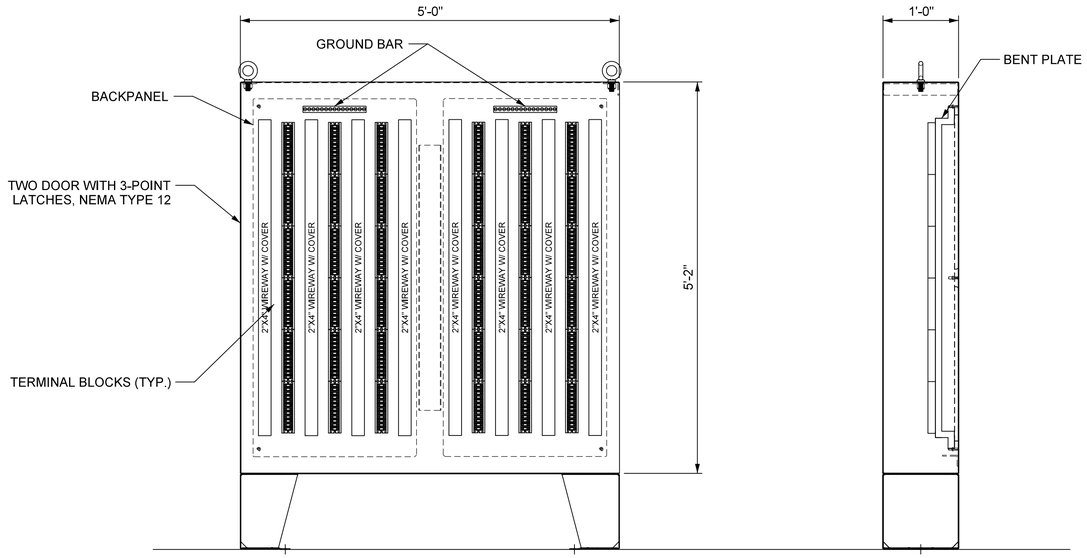
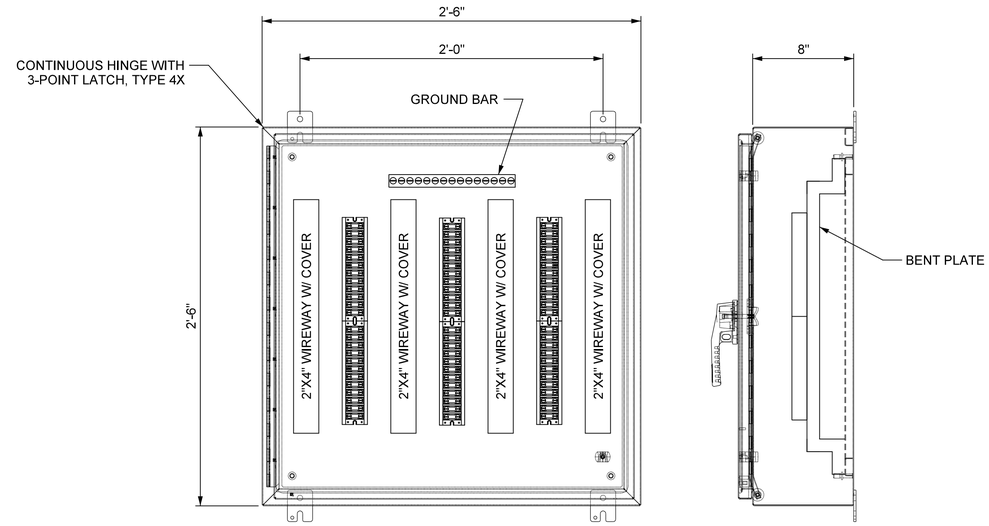


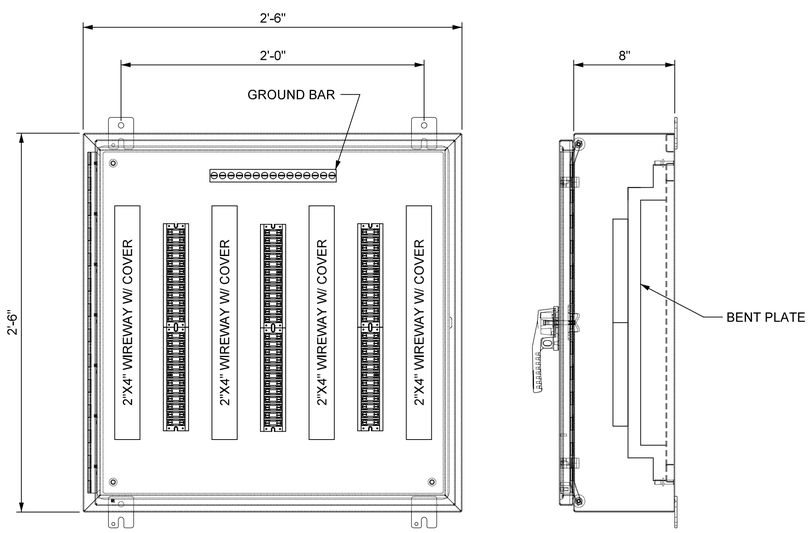

MAIN TERMINAL CABINET (INTERIOR)

SCALE: 1" = 1'-0"




PIVOT PIER FIXED TERMINAL CABINET (INTERIOR)

SCALE: 2" = 1'-0"




PIVOT PIER MOVABLE TERMINAL CABINET (INTERIOR)

SCALE: 2" = 1'-0"

## NOTES

1. THE MAIN TERMINAL CABINET SHALL BE A NEMA TYPE 12 HOFFMAN ENLCOSURE CATALOG NUMBER A64H6012SS6LP3PT OR APPROVED EQUAL.
2. THE PIVOT PIER FIXED AND MOVABLE TERMINAL CABINET SHALL BE A NEMA TYPE 4X HOFFMAN ENCLOSURE CATALOG NUMBER A30H3008SS6LP3PT OR APPROVED EQUAL.
3. POWER TERMINALS SHALL BE USED WITH MARATHON SP DISTRIBUTION NEMA POWER BLOCKS CATALOG NO. 1413300 OR APPROVED EQUAL.
4. POWER TERMINATION SHALL BE EQUIPPED WITH POWER BLOCK COVERS.
5. CONTROL TERMINALS SHALL BE ALLEN BRADLEY STYLE 1492 SERIES OR APPROVED EQUAL.
6. THE FIBER OPTIC CABLE SHALL BE ROUTED THROUGH AND NOT SPLICED IN ANY ENCLOSURES.
7. MOUNTING DETAILS FOR THE MAIN TERMINAL CABIET AND PIVOT PIER FIXED TERMINAL CABINET ARE SHOWN ON SHEET E-34 AND MOUNTING DETAILS FOR THE PIVOT PIER MOVABLE TERMINAL CABINET IS SHOWN ON SHEET E-49.

PROJECT NO. B-5936

TYRRELL COUNTY

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SUBMARINE CABLE PANEL LAYOUT

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-35 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016

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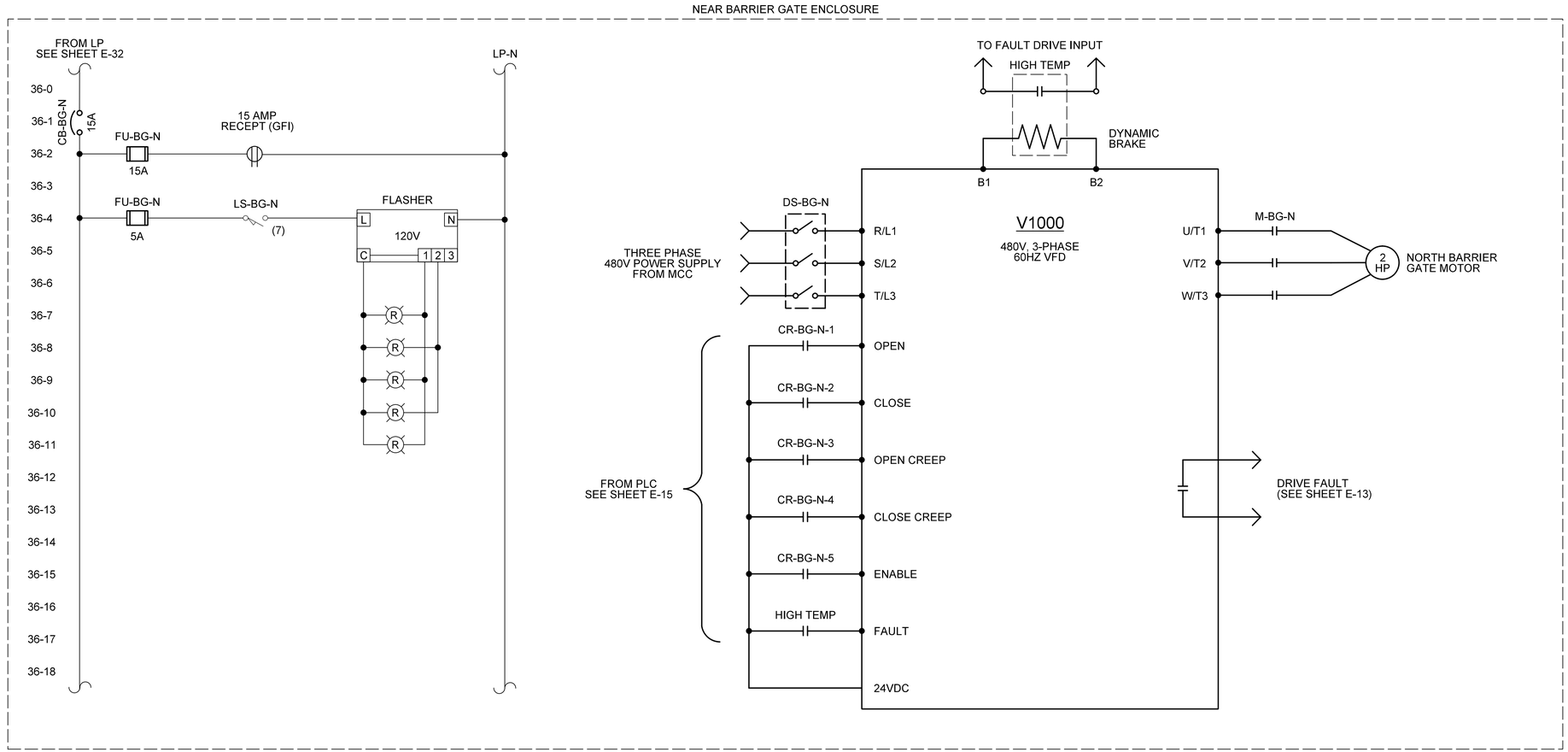
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 51 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




## NOTES:

1. THE NEW BARRIER GATE DRIVE SHALL BE YASKAWA AC DRIVE V1000 OR B&B ROADWAY APPROVED EQUAL.
2. FAULT INPUT SHALL ENERGIZE WHEN A HIGH TEMP RESISTOR IS DETECTED AND STOP THE DRIVE.
3. BARRIER GATE COMPONENTS SHALL BE MOUNTED ON NEW S.S. BACK PANEL AND INSTALLED INSIDE EXISTING BARRIER GATE ENCLOSURE.
4. TYPICAL FOR FAR BARRIER GATE.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
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BARRIER GATE DETAILS

ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

SHEET NO. E-36
TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 52
TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$SYSTTIME$$$$$
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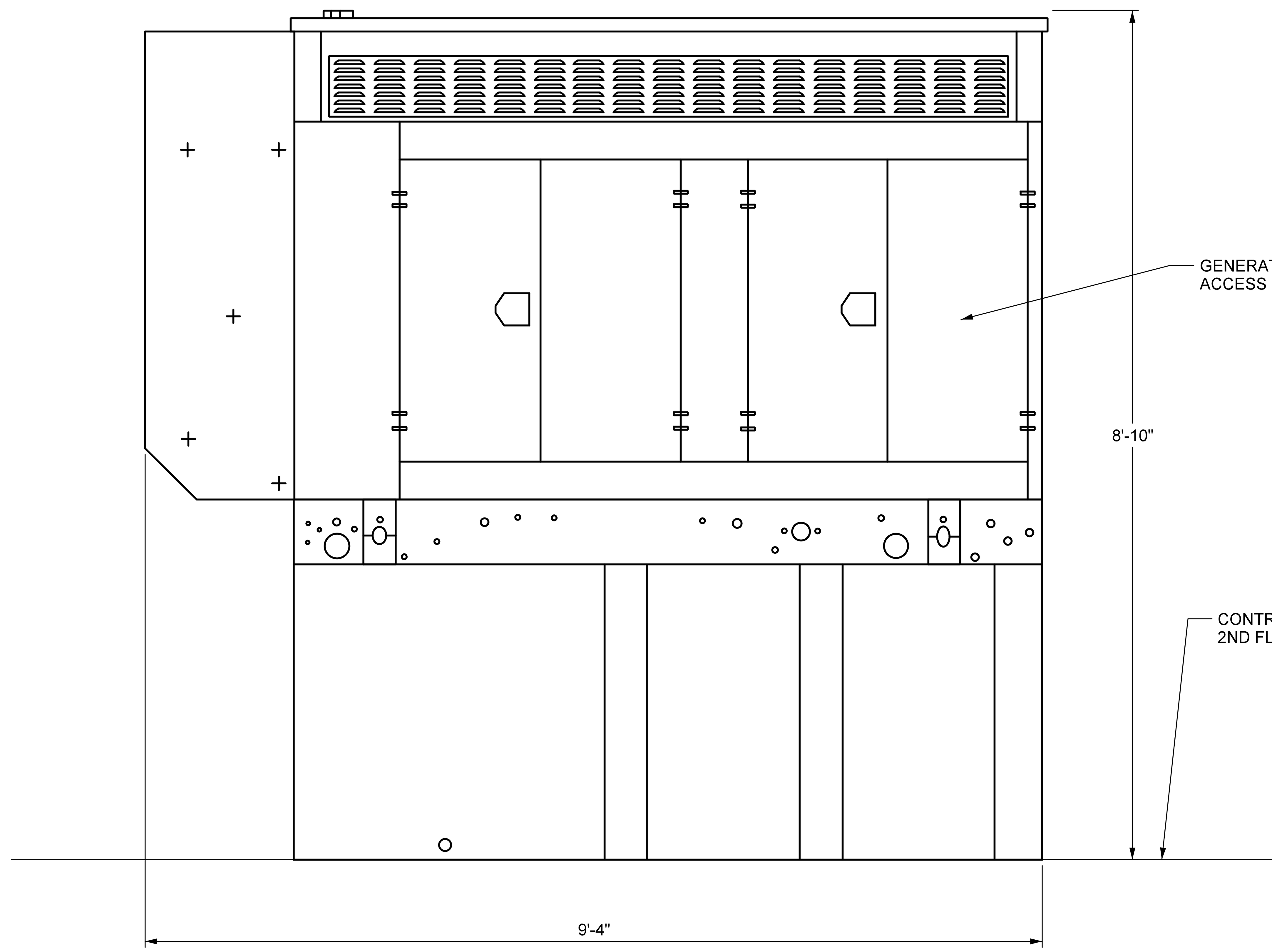
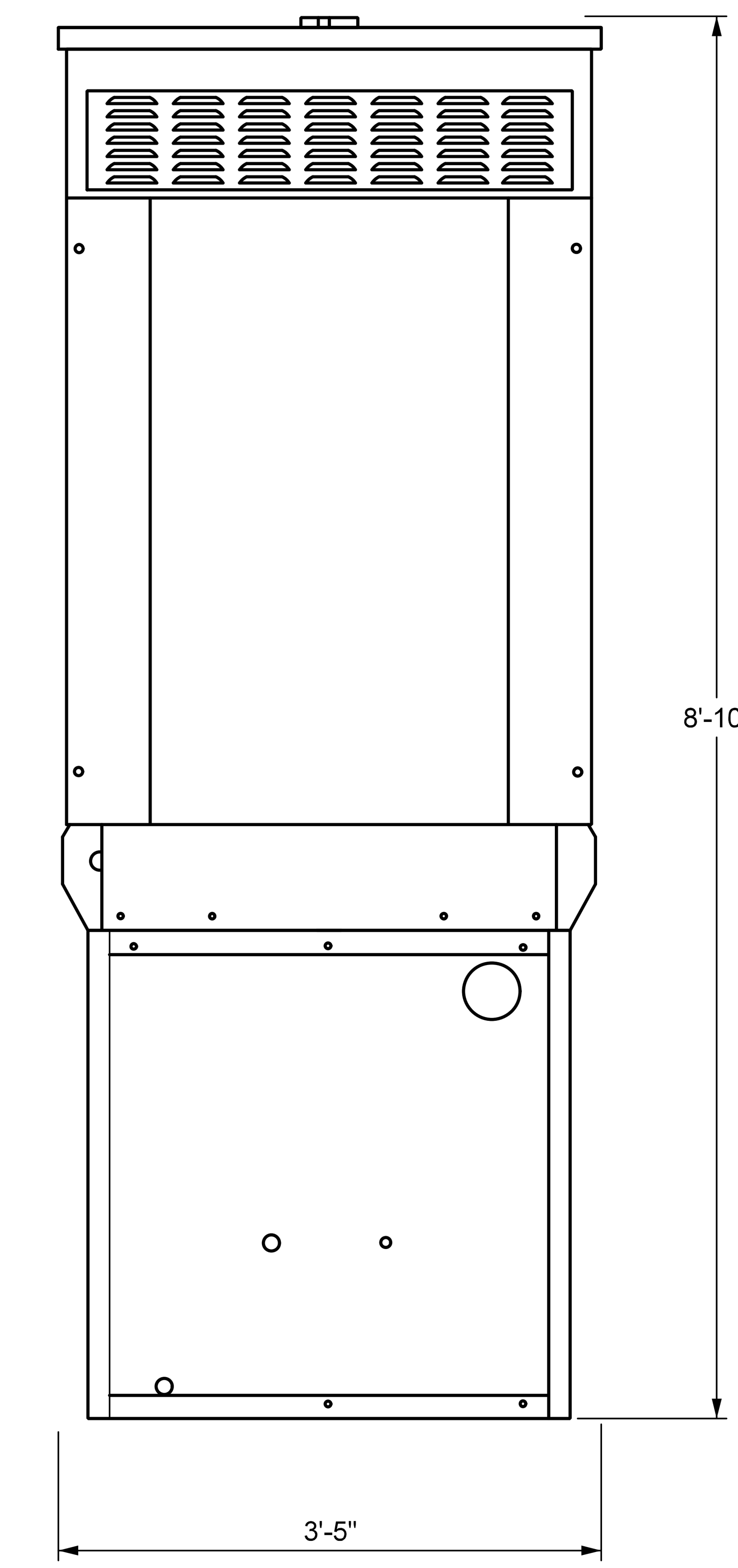
$$$$USERNAME$$$$




SIDE VIEW
SCALE: 1" = 1'-0"




BACK VIEW
SCALE: 1" = 1'-0"

## NOTES:

1. THE STANDBY GENERATOR SHALL BE A GENERAC DIESEL 60 KW GENERATOR MODEL NO. QD060 OR APPROVED EQUAL. THE GENERATOR SHALL BE A LEVEL 2 ACOUSTIC ENCLOSURE WITH A TANK CAPABLE OF 63 HOURS OF OPERATION UNLESS OTHERWISE SPECIFIED.
2. ALLOW SUFFICIENT ROOM ON ALL SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICING. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE AND LOCAL CODES.
3. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RE CIRCULATION OF DISCHARGE AND/OR IMPROPER COOLING AIR FLOW.
4. EXHAUST SYSTEM MAXIMUM BACK PRESSURE SHALL BE PER, MANUFACTURER APPROVED REQUIREMENTS.
5. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS).
6. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST, PER MANUFACTURERS APPROVED REQUIREMENTS.
7. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLED AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RE CIRCULATED.
8. FIELD CUT HOLES IS ONLY REQUIRED FOR MOUNTING OF GENERATOR ON A MOUNTING PAD.
9. EXISTING GENERATOR SHALL REMAIN THE PROPERTY OF NCDOT. CONTRACTOR SHALL DISCONNECT, TRANSPORT, AND STORE IN LOCATION SPECIFIED BY NCDOT.

DRAWN BY: OIV DATE : 8/8/2016
CHECKED BY: MJT DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

$$$$$$SYSTIME$$$$$
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$$$$USERNAME$$$$

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERATOR DETAILS

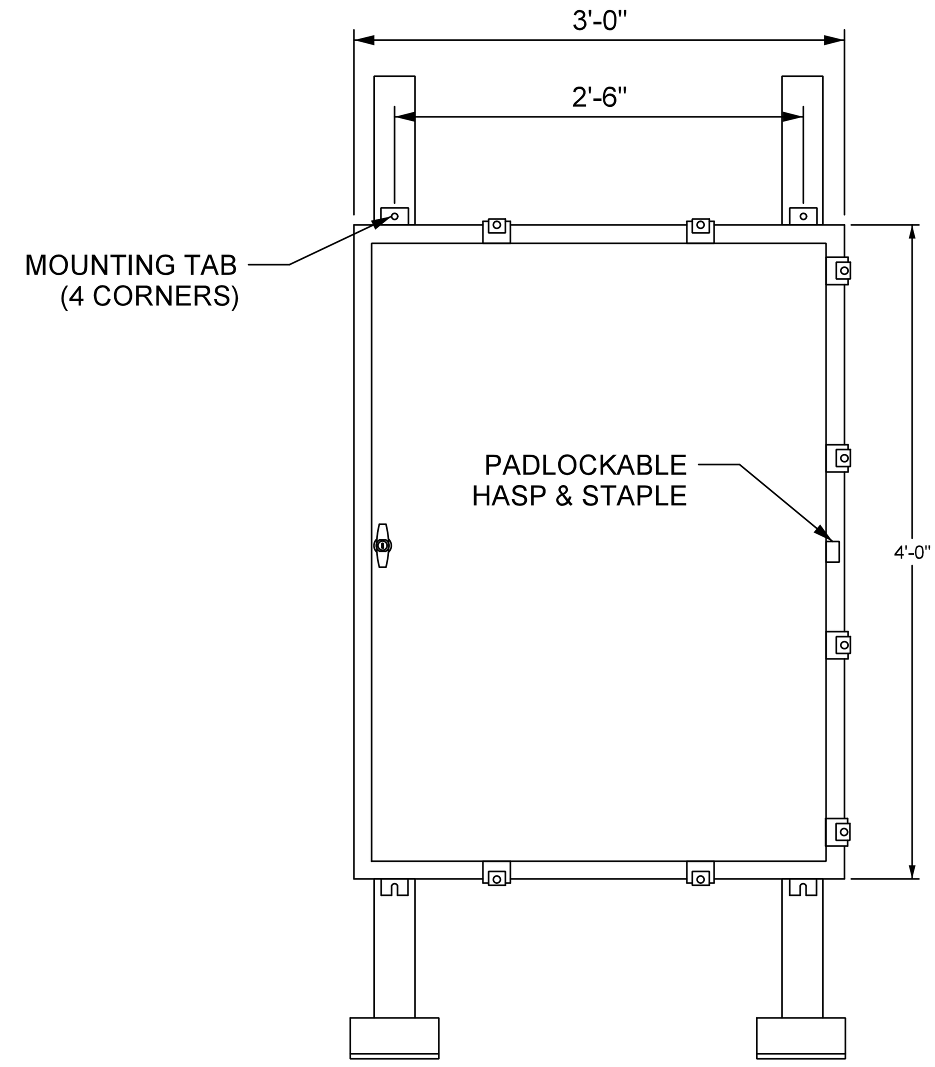
ALLIGATOR RIVER SWING SPAN

| DWG NUMBER | TOTAL DWGS | DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED |
|---|---|---|
| 53 | 90 | |

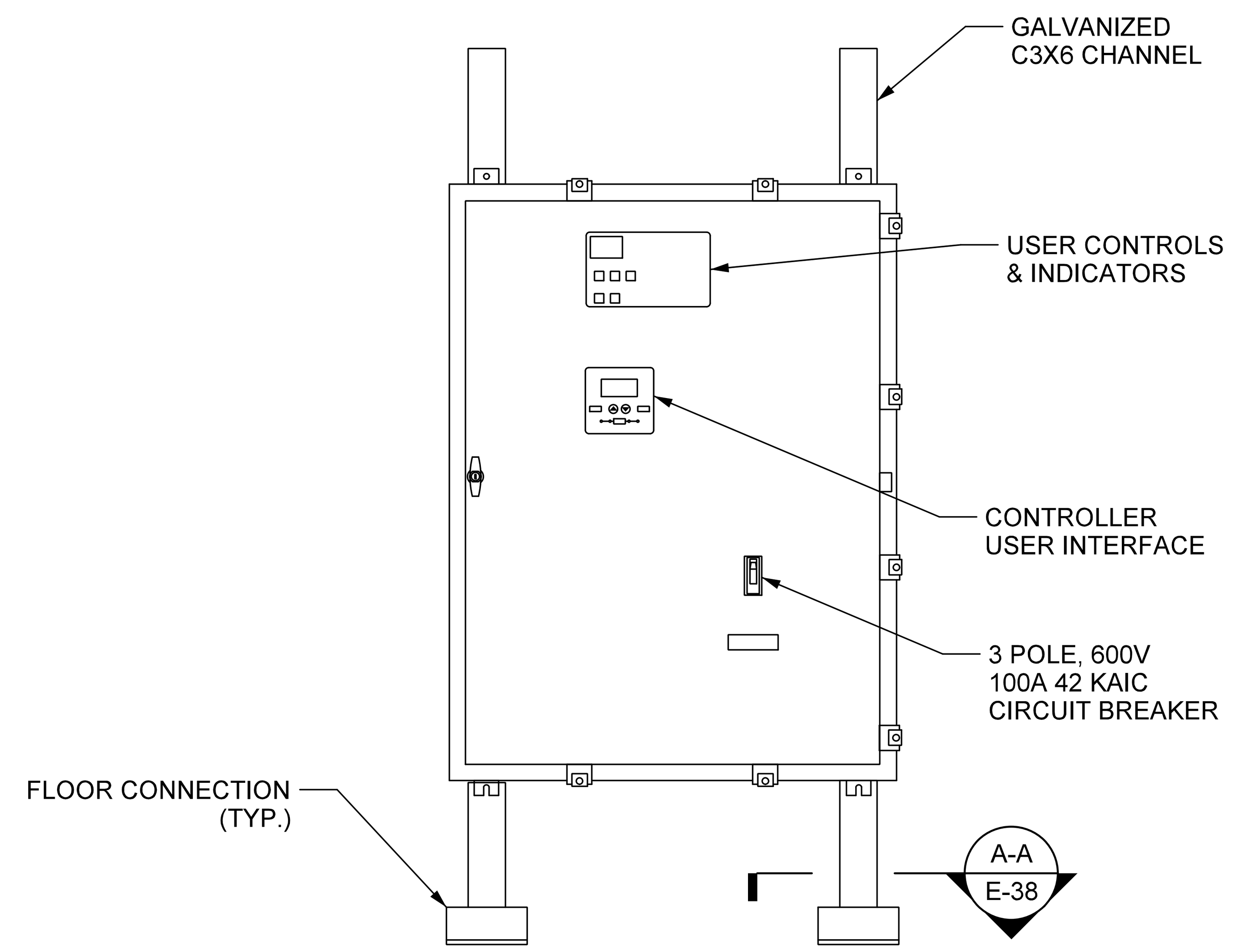
REVISIONS

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

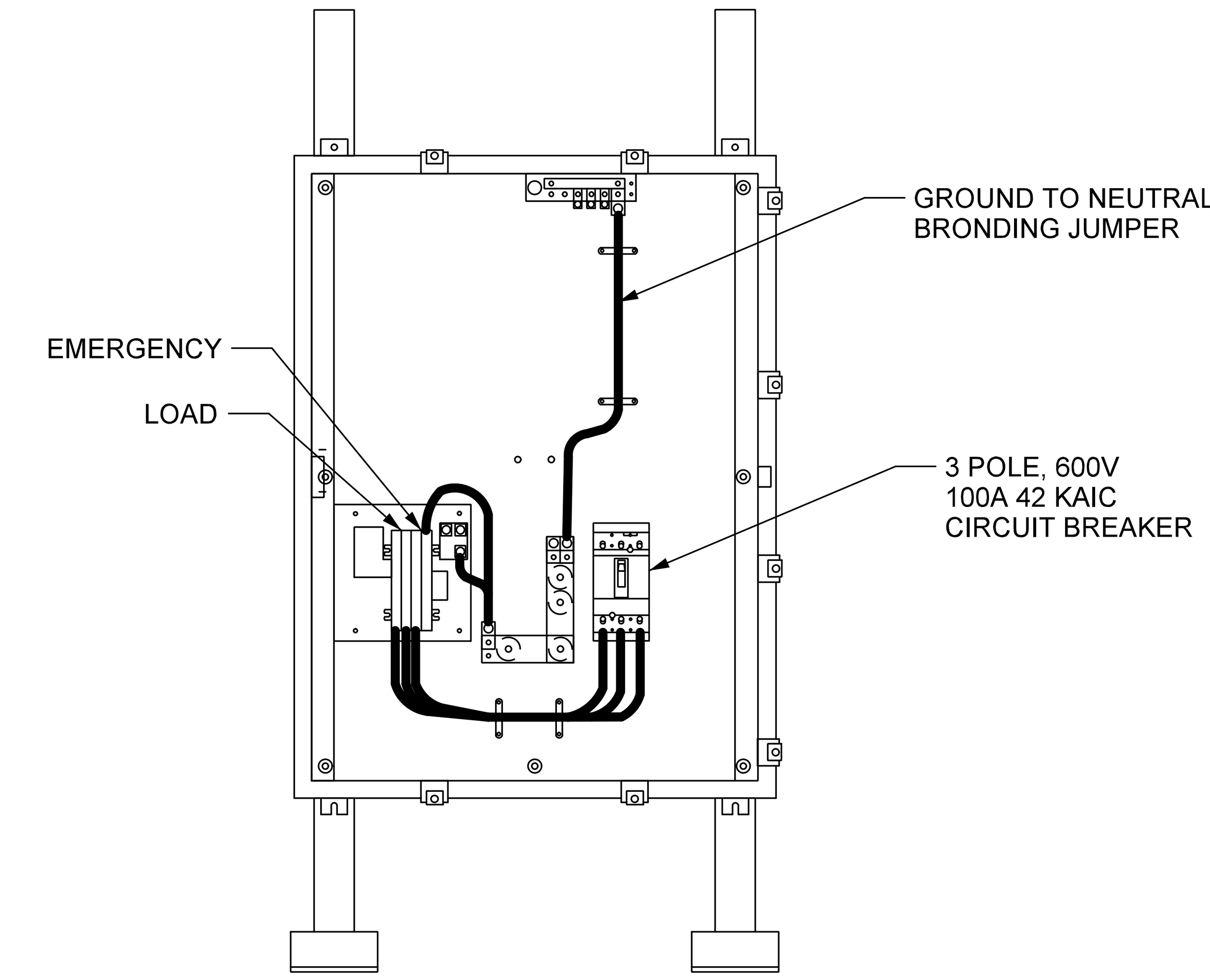
SHEET NO. E-37
TOTAL SHEETS 51



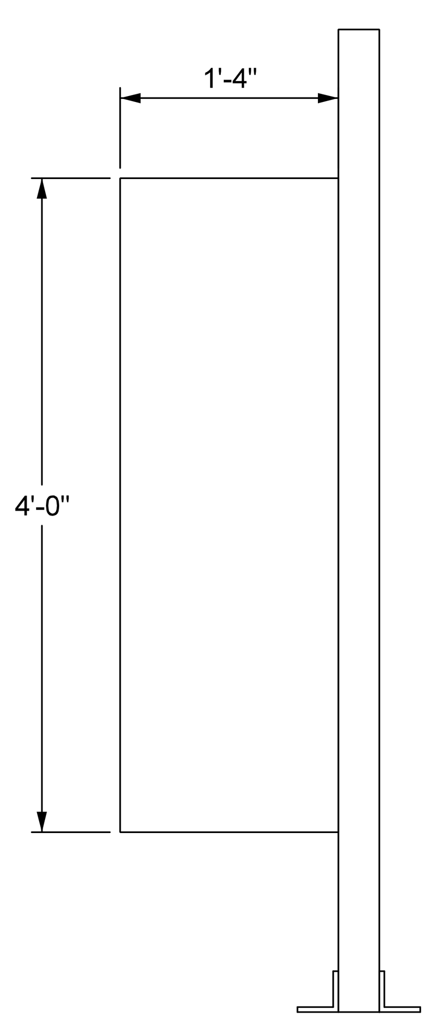

FRONT VIEW
SCALE: 1" = 1'-0"



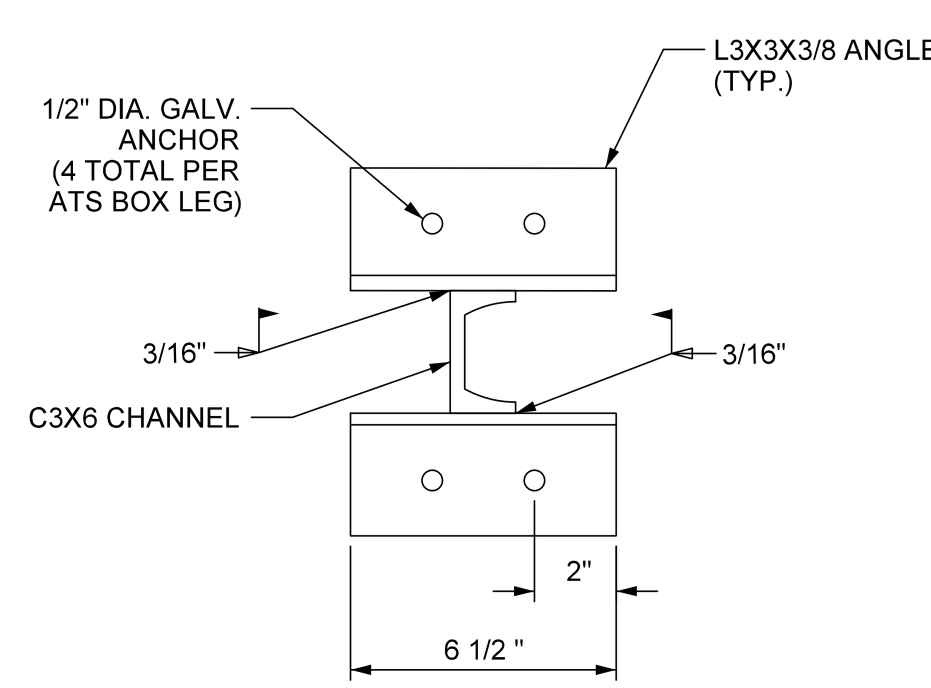

INNER DOOR FRONT VIEW
SCALE: 1" = 1'-0"




FRONT VIEW WITHOUT DOOR
SCALE: 1" = 1'-0"




SIDE VIEW
SCALE: 1" = 1'-0"




SECTION A-A
SCALE: 3" = 1'-0"

NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL THE AUTOMATIC TRANSFER SWITCH IN A S.S. NEMA-4X RATED ENCLOSURE.

2. THE AUTOMATIC TRANSFER SWITCH CONTROL MODULE SHALL BE OF ASCO SERIES 300 POWER TECHNOLOGIES MANUFACTURE OR ENGINEER APPROVED EQUAL.

3. THE SWITCH SHALL BE CONFIGURE TO AUTOMATICALLY TRANSFER THE LOAD CIRCUIT FROM THE UTILITY POWER SOURCE TO THE STANDBY GENERATOR SOURCE WHEN ANY PHASE OF THE UTILITY POWER SOURCE DROPS BELOW 85% AND SHALL AUTOMATICALLY RETRANSFER THE LOAD CIRCUIT TO THE UTILITY POWER SOURCE WHEN ALL PHASES ARE RESTORED TO 90% OR MORE OF RATED VOLTAGE FOR 30 MINUTES (ADJUSTABLE ON SITE). TRANSFER TO STANDBY GENERATOR SHALL NOT OCCUR UNTIL STANDBY GENERATOR VOLTAGE IS AT LEAST 90%.

4. THE CONTRACTOR SHALL CONSTRUCT A CUSTOM FABRICATED MOUNT USING GALVANIZED C- CHANNEL STRUT OR APPROVED EQUAL.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

AUTOMATIC TRANSFER SWITCH DETAILS

ALLIGATOR RIVER SWING SPAN

| DRAWN BY: OIV | DATE : 8/8/2016 |
|---|---|
| CHECKED BY: MJT | DATE : 8/8/2016 |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 |

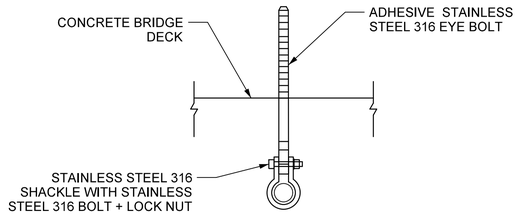
| DWG NUMBER | TOTAL DWGS | DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED |
|---|---|---|
| 54 | 90 | |

REVISIONS

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

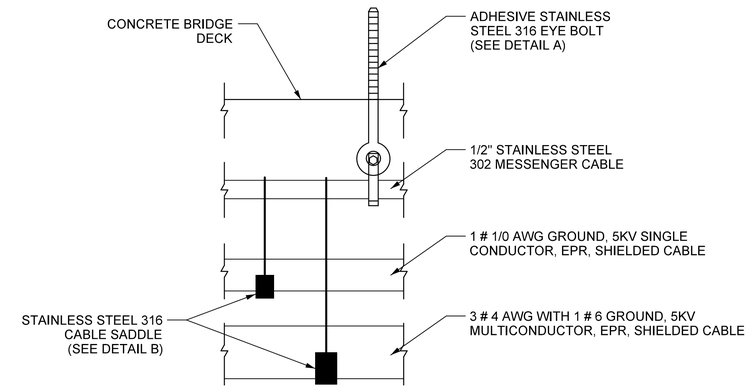
SHEET NO. E-38
TOTAL SHEETS 51

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



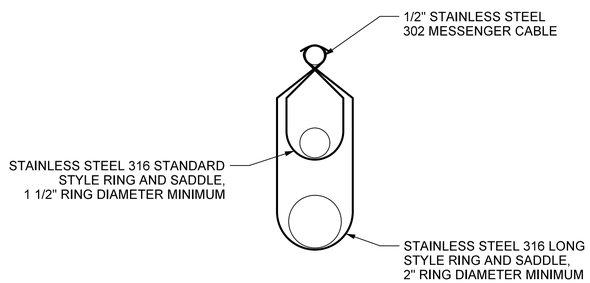

DETAIL A - AERIAL CABLE SUPPORTS (FRONT VIEW)

SCALE: 6" - 1'-0"




DETAIL C - AERIAL CABLE SUPPORTS (SIDE VIEW)

SCALE: 6" - 1'-0"




DETAIL B - AERIAL CABLE SADDLES (FRONT VIEW)

SCALE: 6" - 1'-0"

## NOTES:

1. FINAL SIZE OF CABLE RINGS AND SADDLES TO BE COORDINATED WITH CABLE MANUFACTURER OUTER DIAMETER.
2. FURNISH AND INSTALL AERIAL CABLE SUPPORT EVERY 10 FEET OR PER MANUFACTURERS RECOMMENDATIONS.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
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# INCOMING SERVICE LAYOUT & AERIAL CABLE SUPPORT DETAILS

# ALLIGATOR RIVER SWING SPAN

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9/14/2016

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-39 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 55 | 90 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

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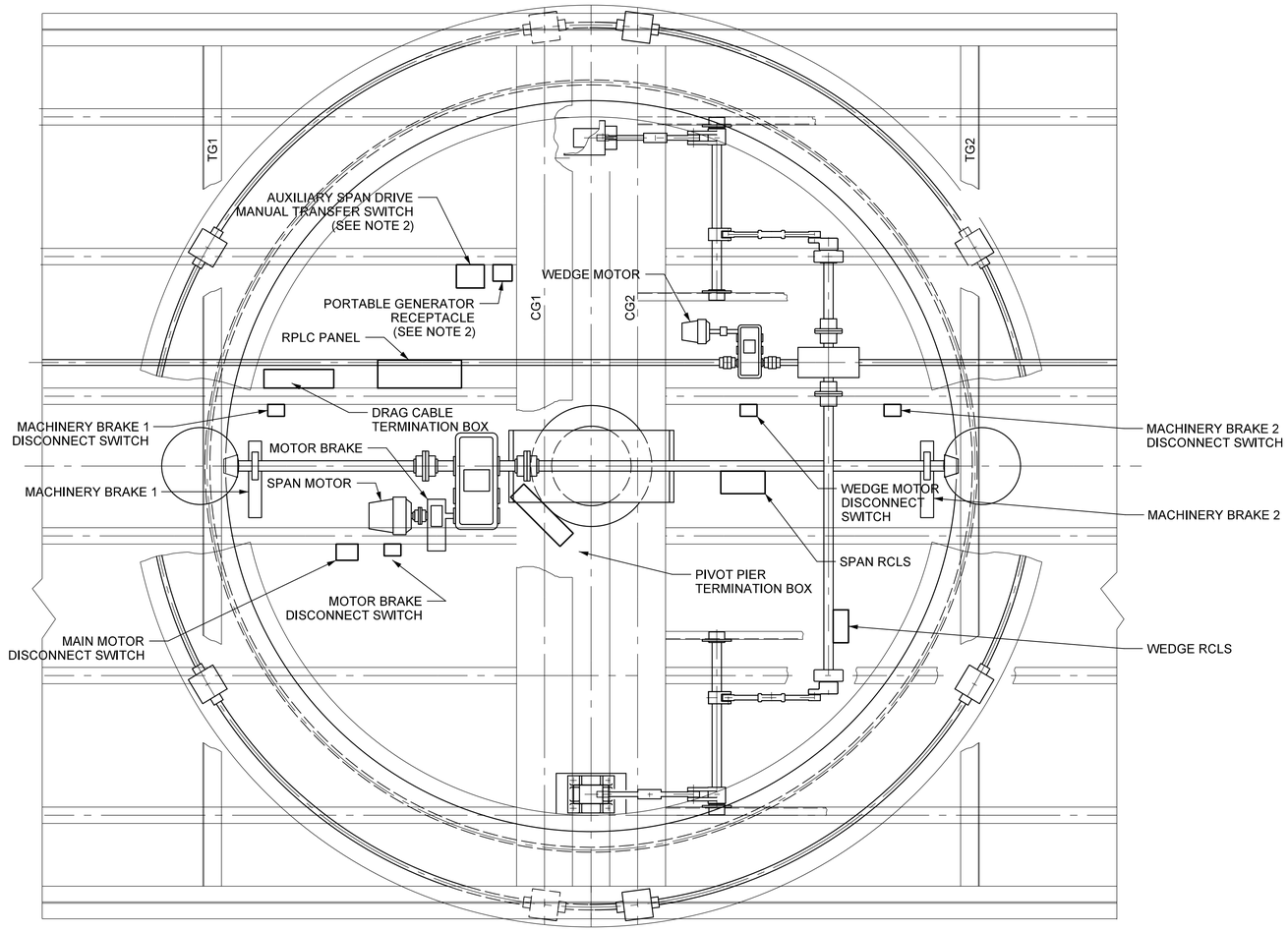
$$$$USERNAME$$$$




PIVOT PIER LAYOUT

SCALE: 3/8" = 1'-0"

## NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL FIELD CONNECTIONS PRIOR TO INSTALLATION OF ANY ELECTRICAL EQUIPMENT. ANY ADDITIONAL WORK REQUIRED TO ADJUST AND MODIFY THE ELECTRICAL WORK SPECIFIED DUE TO THE FIELD CONDITIONS SHALL BE COMPLETED AT NO ADDITIONAL COST TO NCDOT.
2. FINAL LOCATIONS OF AUXILIARY COMPONENTS SHALL BE DETERMINED BY CONTRACTOR.
2. THE CONTRACTOR SHALL REFER TO DRAWINGS E-43 THRU E-47 FOR CONDUIT AND WIRE REQUIREMENTS.
3. THE CONTRACTOR SHALL REMOVE AND DISPOSE ALL EXISTING EQUIPMENT WHICH IS TO BE REPLACED AS SPECIFIED.
4. COORDINATE ALL WORK ON PIVOT PIER WITH MECHANICAL REHABILITATION WORK.
5. SEE DWG. E-50 FOR LIMIT SWITCH DETAILS.
6. CONTRACTOR SHALL FURNISH DRAG CABLES TO ENSURE SPAN CAN ROTATE IN EITHER DIRECTION.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# PIVOT PIER EQUIPMENT LAYOUT

# ALLIGATOR RIVER SWING SPAN

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

SHEET NO. E-40

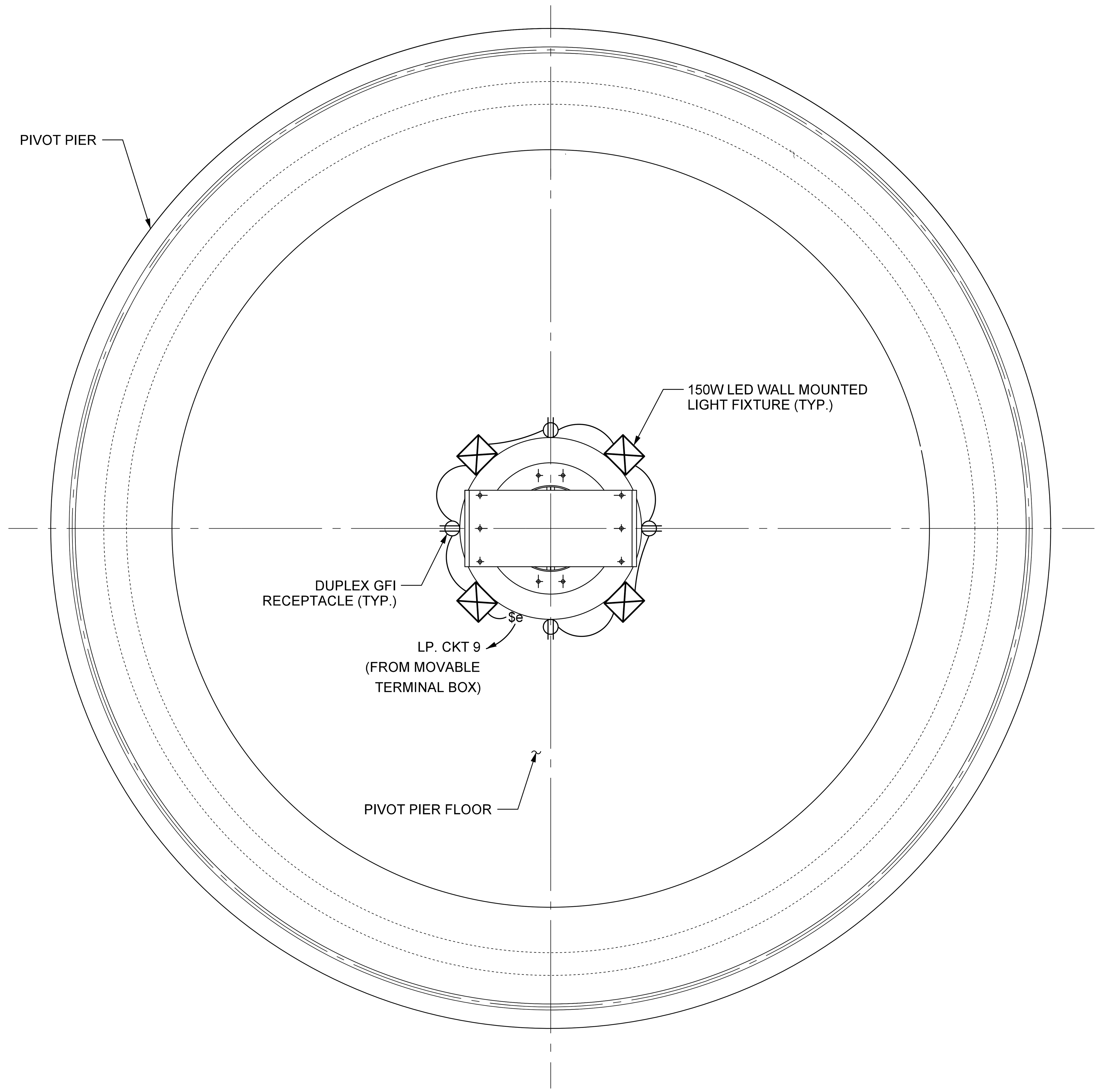
TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 56

TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED




PIVOT PIER LAYOUT
SCALE: 3/8" = 1'-0"

NOTES:

1. ALL NOTES ON DWG E-40 ARE APPLICABLE TO THIS DWG.
2. THE OUTDOOR LIGHTING LIGHT FIXTURES SHALL BE LITHONIA LIGHTING CATALOG NO. TWP-LED-30C-700-40K-T3M-MVOLT-DDBXD OR APPROVED EQUAL.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
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PIVOT PIER LIGHTING & RECEPTACLE LAYOUT

ALLIGATOR RIVER SWING SPAN

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DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

| DWG NUMBER | TOTAL DWGS | DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED |
|---|---|---|
| 57 | 90 | |

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

SHEET NO. E-41
TOTAL SHEETS 51

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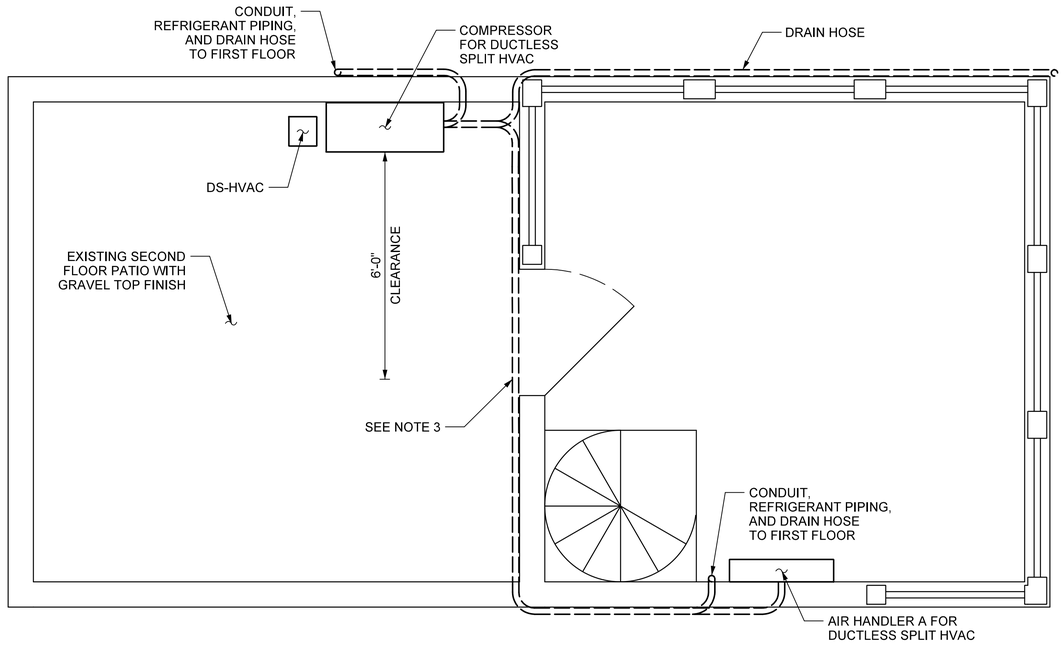
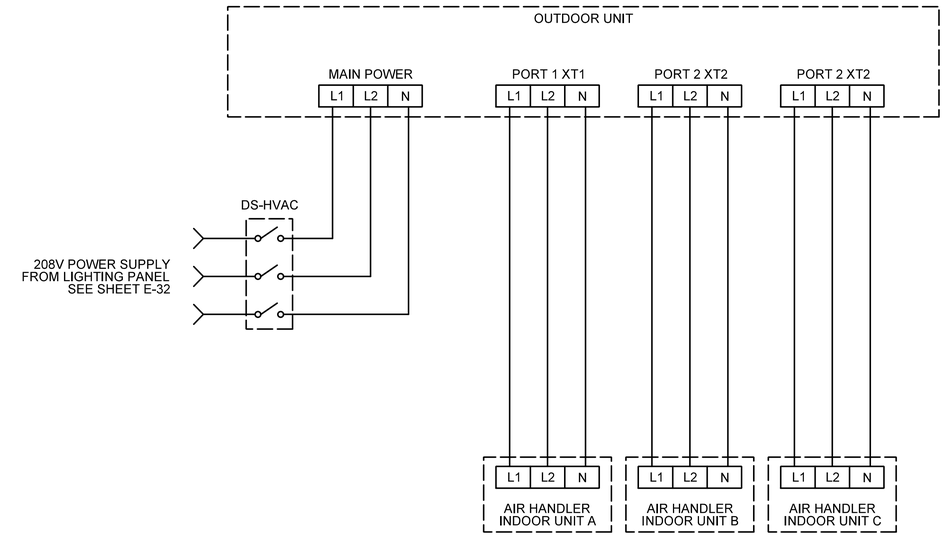
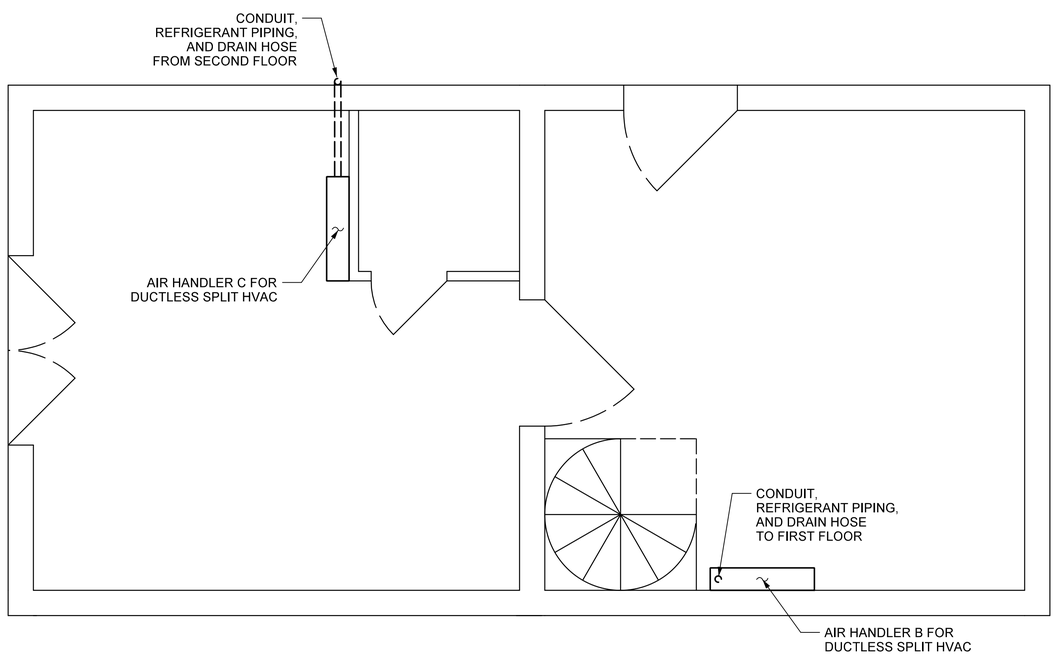
$$$$USERNAME$$$$




## SECOND FLOOR LAYOUT

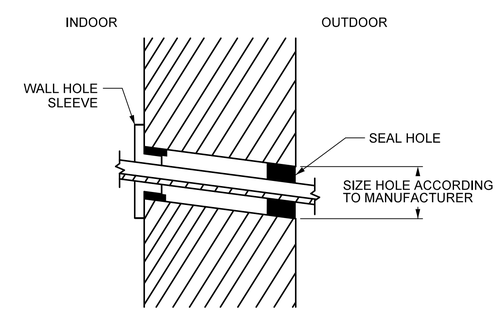
SCALE: 1/2" = 1'-0"




## FIRST FLOOR LAYOUT

SCALE: 1/2" = 1'-0"




## WALL HOLE DIAGRAM

SCALE: 3" = 1'-0"

## NOTES:

1. THE HVAC SYSTEM SHALL BE A GREE+MULTIZONE 24,000 BTU 2 TON MINI SPLIT AIR CONDITIONER OR AN APPROVED EQUAL.
2. INSTALLATION SHALL BE PERFORMED BY A STATE LICENSED OR CERTIFIED HVAC CONTRACTOR IN ORDER FOR THE MANUFACTURER'S WARRANTY TO APPLY.
3. CONTRACTOR SHALL MODIFY LOCATION OF EQUIPMENT SHOWN AS REQUIRED FOR PROPER INSTALLATION.
4. COORDINATE ALL HOLES AND PENETRATIONS SHOWN WITH SHEET A-4 FOR ARCHITECTURAL RENOVATIONS.
5. PENETRATE WALL AT THE LOCATIONS SHOWN ON THE PLANS FOLLOWING THE TYPICAL WALL HOLE DIAGRAM. PROPERLY ADJUST THE HOLE LOCATION TO ACCOMMODATE THE AIR HANDLER UNITS. THE WALL SHALL BE CUT WITH A 5º TO 10º DOWNWARD SLANT TOWARDS THE OUTDOORS.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONTROL HOUSE
HVAC LAYOUT

ALLIGATOR RIVER
SWING SPAN

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|---|---|---|---|
| DRAWN BY: OIV | DATE : 8/8/2016 | | |
| CHECKED BY: MJT | DATE : 8/8/2016 | | |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 | | |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 58 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

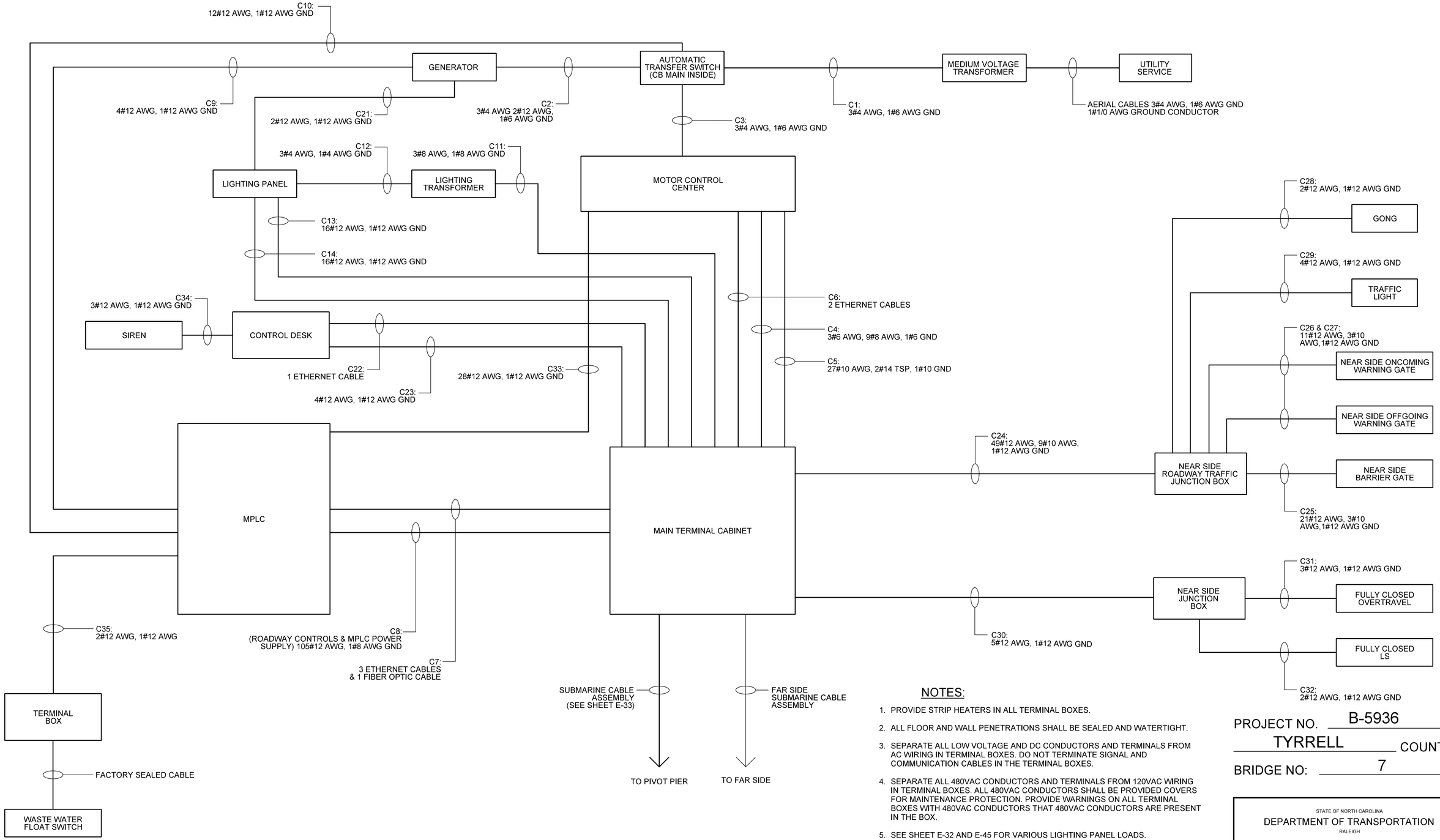
REVISIONS

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

SHEET NO. E-42

TOTAL SHEETS 51

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$




NEAR SIDE REST PIER CONDUIT SCHEMATIC

## NOTES:

1. PROVIDE STRIP HEATERS IN ALL TERMINAL BOXES.
2. ALL FLOOR AND WALL PENETRATIONS SHALL BE SEALED AND WATERTIGHT.
3. SEPARATE ALL LOW VOLTAGE AND DC CONDUCTORS AND TERMINALS FROM AC WIRING IN TERMINAL BOXES. DO NOT TERMINATE SIGNAL AND COMMUNICATION CABLES IN THE TERMINAL BOXES.
4. SEPARATE ALL 480VAC CONDUCTORS AND TERMINALS FROM 120VAC WIRING IN TERMINAL BOXES. ALL 480VAC CONDUCTORS SHALL BE PROVIDED COVERS FOR MAINTENANCE PROTECTION. PROVIDE WARNINGS ON ALL TERMINAL BOXES WITH 480VAC CONDUCTORS THAT 480VAC CONDUCTORS ARE PRESENT IN THE BOX.
5. SEE SHEET E-32 AND E-45 FOR VARIOUS LIGHTING PANEL LOADS.
6. PROVIDE A GROUND BOND INSIDE JUNCTION BOXES WHERE NECESSARY.

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PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONDUIT SCHEMATIC: LAYOUT SHEET 1

ALLIGATOR RIVER SWING SPAN

| | | |
|---|---|---|
| DRAWN BY: OIV | DATE : 8/8/2016 | |
| CHECKED BY: MJT | DATE : 8/8/2016 | |
| DESIGN ENGINEER OF RECORD: CHS | DATE : 8/8/2016 | |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 59 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

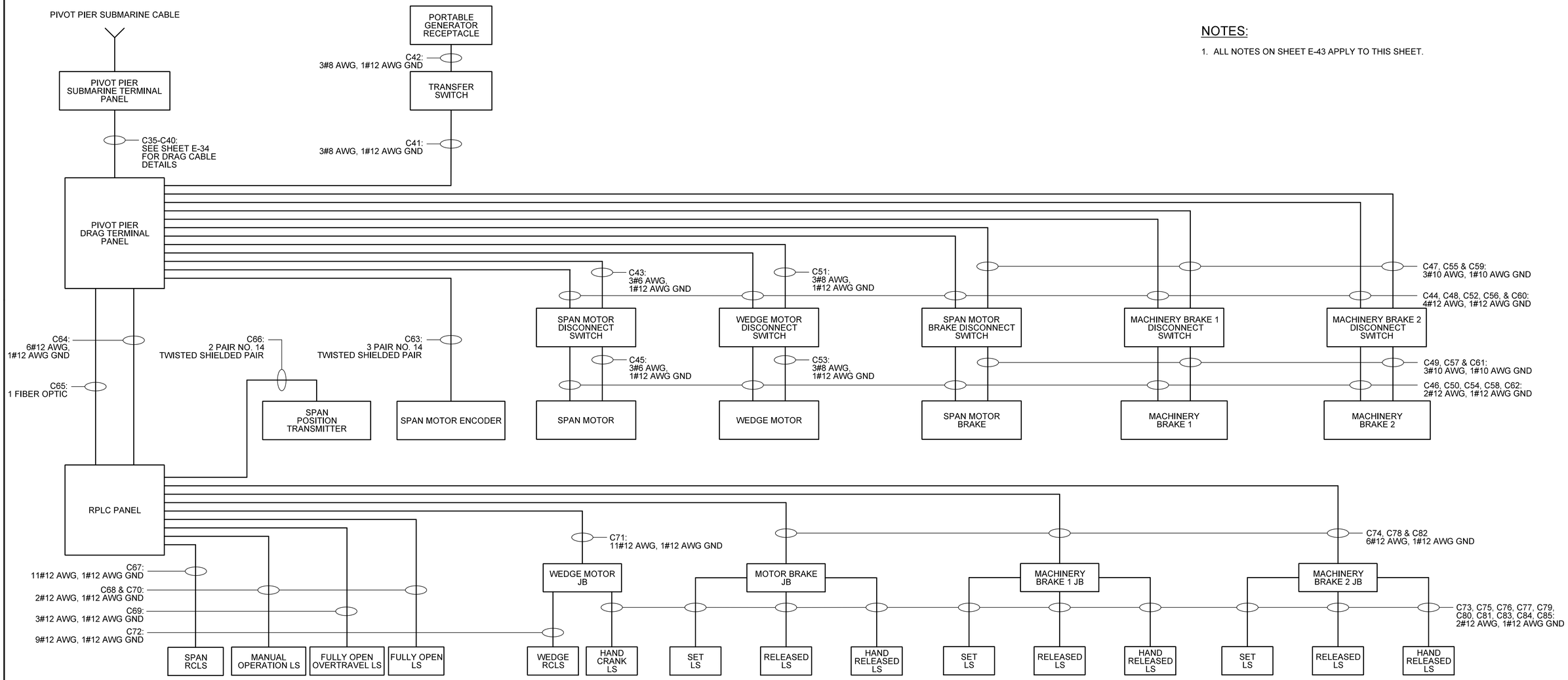
| REVISIONS | | | | | | |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

SHEET NO. E-43
TOTAL SHEETS 51

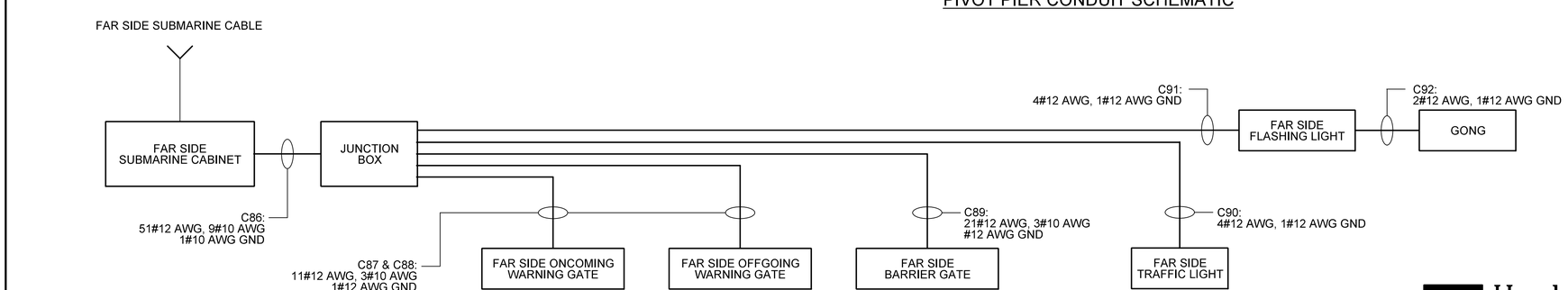
$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

NOTES:

1. ALL NOTES ON SHEET E-43 APPLY TO THIS SHEET.




PIVOT PIER CONDUIT SCHEMATIC




FAR SIDE CONDUIT SCHEMATIC

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONDUIT SCHEMATIC: LAYOUT SHEET 2

ALLIGATOR RIVER SWING SPAN

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NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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

SHEET NO. E-44

TOTAL SHEETS 51

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 60

TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

## NEAR SIDE/CONTROL HOUSE CONDUIT SCHEDULE

| COND NO. | FROM EQUIPMENT | TO EQUIPMENT | NO. AND SIZE OF CABLE | GROUND COND. | SPARE | FILL (SQ. IN) | TRADE SIZE |
|---|---|---|---|---|---|---|---|
| C1 | MEDIUM VOLTAGE TRANSFORMER | AUTOMATIC TRANSFER SWITCH | 3 - NO. 4 | 1 - NO. 6 | NONE | 0.303 | 1" |
| C2 | AUTOMATIC TRANSFER SWITCH | GENERATOR | 3 - NO. 4, 2 - NO. 12 | 1 - NO. 6 | NONE | 0.339 | 1" |
| C3 | AUTOMATIC TRANSFER SWITCH | MOTOR CONTROL CENTER | 3 - NO. 4 | 1 - NO. 6 | NONE | 0.303 | 1" |
| C4 | MOTOR CONTROL CENTER | MAIN TERMINAL CABINET | 3 - NO. 6, 9 - NO. 8 | 1 - NO. 6 | NONE | 0.629 | 1 1/2" |
| C5 | MOTOR CONTROL CENTER | MAIN TERMINAL CABINET | 27 - NO. 10, 2 - #14 TSP | 1 - NO. 10 | NONE | 0.736 | 1 1/2" |
| C6 | MOTOR CONTROL CENTER | MAIN TERMINAL CABINET | 2 - ETHERNET | - | NONE | - | 1" |
| C7 | MAIN PLC | MAIN TERMINAL CABINET | 3 - ETHERNET, 1 - FIBER OPTIC | - | NONE | - | 1" |
| C8 | MAIN PLC | MAIN TERMINAL CABINET (ROADWAY CONTROLS) | 105 - NO. 12 | 1 - NO .8 | NONE | 1.944 | 3" |
| C9 | MAIN PLC | GENERATOR | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 1" |
| C10 | MAIN PLC | ATS | 12 - NO. 12 | 1 - NO. 12 | NONE | 0.235 | 1" |
| C11 | MAIN TERMINAL CABINET | LIGHTING TRANSFORMER | 3 - NO. 8 | 1 - NO. 8 | NONE | 0.175 | 3/4" |
| C12 | LIGHTING TRANSFORMER | LIGHTING PANEL | 3 - NO. 4 | 1 - NO. 4 | NONE | 0.326 | 1" |
| C13 | LIGHTING PANEL | MAIN TERMINAL CABINET (CKT 5,7,9,11,13,15) | 16 - NO. 12 | 1 - NO. 12 | NONE | 0.308 | 1" |
| C14 | LIGHTING PANEL | MAIN TERMINAL CABINET (CKT 6,10,12,14,16,18,20) | 16 - NO. 12 | 1 - NO. 12 | NONE | 0.308 | 1" |
| C15 | LIGHTING PANEL | HVAC UNIT (CKT 1,3) | 3 - NO. 10 | 1 - NO. 10 | NONE | 0.097 | 3/4" |
| C16 | LIGHTING PANEL | WATER PUMP (CKT 17) | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C17 | LIGHTING PANEL | EMERGENCY LIGHTS (CKT 19) | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C18 | LIGHTING PANEL | FIRST FLOOR LIGHTS AND RECEPTACLES (CKT 2) | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C19 | LIGHTING PANEL | SECOND FLOOR LIGHTS AND RECEPTACLES (CKT 4) | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C20 | LIGHTING PANEL | CCTV EQUIPMENT | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C21 | LIGHTING PANEL | GENERATOR | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C22 | MAIN TERMINAL CABINET | CONTROL DESK | 1 - ETHERNET | - | NONE | - | 1" |
| C23 | MAIN TERMINAL CABINET | CONTROL DESK | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C24 | MAIN TERMINAL CABINET (ROADWAY CONTROLS) | NEAR SIDE ROADWAY JUNCTION BOX | 49 - NO. 12, 9 - NO.10 | 1 - NO. 12 | NONE | 1.124 | 2" |
| C25 | NEAR SIDE ROADWAY JUNCTION BOX | NEAR SIDE BARRIER GATE | 19 - NO. 12, 3 - NO.10 | 1 - NO. 12 | NONE | 0.435 | 1 1/4" |
| C26 | NEAR SIDE ROADWAY JUNCTION BOX | NEAR SIDE ONCOMING WARNING GATE | 11 - NO. 12, 3 - NO. 10 | 1 - NO. 12 | NONE | 0.290 | 1" |
| C27 | NEAR SIDE ROADWAY JUNCTION BOX | NEAR SIDE OFFGOING WARNING GATE | 11 - NO. 12, 3 - NO. 10 | 1 - NO. 12 | NONE | 0.290 | 1" |
| C28 | NEAR SIDE ROADWAY JUNCTION BOX | NEAR SIDE GONG | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C29 | NEAR SIDE ROADWAY JUNCTION BOX | TRAFFIC LIGHT | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C30 | MAIN TERMINAL CABINET | NEAR SIDE JUNCTION BOX | 5 - NO. 12 | 1 - NO. 12 | NONE | 0.102 | 3/4" |
| C31 | NEAR SIDE JUNCTION BOX | FULLY CLOSED OVERTRAVEL LIMIT SWITCH | 3 - NO. 12 | 1 - NO. 12 | NONE | 0.072 | 3/4" |
| C32 | NEAR SIDE JUNCTION BOX | FULLY CLOSED PROXIMITY SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C33 | MOTOR CONTROL CENTER | MAIN PLC | 29 - NO. 12 | 1 - NO. 12 | NONE | 0.543 | 1" |
| C34 | CONTROL DESK | SIREN | 3 - NO. 12 | 1 - NO. 12 | NONE | 0.072 | 3/4" |
| C35 | MPLC | WASTE WATER FLOAT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |

## NOTES:

1. THE CONDUIT SCHEMATICS AND SCHEDULES SHOW MINIMUM DESIGN QUANTITIES OF PULL, TERMINAL AND JUNCTION BOXES THAT MAY BE REQUIRED FOR THE PROPOSED INSTALLATION. THE CONTRACTOR SHALL FURNISH ANY ADDITIONAL NECESSARY BOXES REQUIRED FOR THE ACTUAL LAYOUT AT NO ADDITIONAL COST TO NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
2. THE NUMBER AND SIZES OF CONDUCTORS SHOWN IN CONDUITS ARE BASED ON THE CONTRACT WIRING DIAGRAMS AND ARE THE MINIMUM PERMISSIBLE. THE CONTRACTOR SHALL PROVIDE CONDUCTORS OF SUFFICIENT NUMBER AND SIZE, INCLUDING SPARES, AS MAY BE REQUIRED FOR THE INSTALLATION IN ACCORDANCE WITH THE FINAL WIRING DIAGRAMS ON THE APPROVED WORKING DRAWINGS. THE CONTRACTOR SHALL NUMBER AND TAG SPARE CONDUCTORS AS SUCH AND SPARE CONDUCTORS SHALL BE SHOWN ON ALL SHOP AND RECORD DRAWINGS.

1. ALL WIRE SHALL BE TYPE XHHW UNLESS OTHERWISE SPECIFIED.
2. ALL CONDUIT SHALL BE PVC COATED GALVANIZED RIGID STEEL CONDUIT.
3. FILL (SQ IN.) CALCULATE ARE CALCULATED BY SUMMING THE "NO. AND SIZE OF CABLE" AND THE GROUND CONDUCTOR. (THE SPARES ARE INCLUDED IN THE "NO. AND SIZE OF CABLE" COUNT).
4. SEPARATE ALL LOW VOLTAGE AND DC CONDUCTORS AND TERMINALS FROM AC WIRING IN TERMINAL BOXES. DO NOT TERMINATE SIGNAL AND COMMUNICATION CABLES IN THE TERMINAL BOXES.
5. SEPARATE ALL 480VAC CONDUCTORS AND TERMINALS FROM 120VAC WIRING IN TERMINAL BOXES. ALL 480VAC CONDUCTORS SHALL BE PROVIDED COVERS FOR MAINTENANCE PROTECTION. PROVIDE WARNINGS ON ALL TERMINAL BOXES WITH 480VAC CONDUCTORS THAT 480VAC CONDUCTORS ARE PRESENT IN THE BOX.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

DocuSigned by: Scott Reynolds BFEC5720F8F14B0... 9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONDUIT SIZE & FILL SCHEDULE 1

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-45 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE : 8/8/2016
CHECKED BY: MJT DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 61 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

# PIVOT PIER CONDUIT SCHEDULE

| COND NO. | FROM EQUIPMENT | TO EQUIPMENT | NO. AND SIZE OF CABLE | GROUND COND. | SPARE | FILL (SQ. IN) | TRADE SIZE |
|---|---|---|---|---|---|---|---|
| C35 | PIVOT PIER FIXED TERMINAL PANEL | PIVOT PIER DRAG TERMINAL PANEL | 3 - NO. 6 | 1 - NO. 6 | NONE | 0.236 | SOOW |
| C36 | PIVOT PIER FIXED TERMINAL PANEL | PIVOT PIER DRAG TERMINAL PANEL | 3 - NO. 8 | 1 - NO. 8 | NONE | 0.175 | SOOW |
| C37 | PIVOT PIER FIXED TERMINAL PANEL | PIVOT PIER DRAG TERMINAL PANEL | 15 - NO. 10 | 1 - NO. 10 | NONE | 0.389 | SOOW |
| C38 | PIVOT PIER FIXED TERMINAL PANEL | PIVOT PIER DRAG TERMINAL PANEL | 23 - NO. 12 | NONE | 6 - NO. 12 | 0.416 | SOOW |
| C39 | PIVOT PIER FIXED TERMINAL PANEL | PIVOT PIER DRAG TERMINAL PANEL | 6 - NO. 14 | NONE | NONE | 0.056 | SOOW |
| C40 | PIVOT PIER FIXED TERMINAL PANEL | PIVOT PIER DRAG TERMINAL PANEL | 1 - FIBER OPTIC | - | NONE | - | SOOW |
| C41 | PIVOT PIER DRAG TERMINAL PANEL | AUXILIARY MANUAL TRANSFER SWITCH | 3 - NO. 8 | 1 - NO. 12 | NONE | 0.149 | 3/4" |
| C42 | AUXILIARY MANUAL TRANSFER SWITCH | PORTABLE GENERATOR RECEPTACLE | 3 - NO. 8 | 1 - NO. 12 | NONE | 0.149 | 3/4" |
| C43 | PIVOT PIER DRAG TERMINAL PANEL | SPAN MOTOR DISCONNECT (POWER) | 3 - NO. 6 | 1 - NO. 8 | NONE | 0.221 | 1" |
| C44 | PIVOT PIER DRAG TERMINAL PANEL | SPAN MOTOR DISCONNECT (CONTROLS) | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C45 | SPAN MOTOR DISCONNECT | SPAN MOTOR (POWER) | 3 - NO. 6 | 1 - NO. 8 | NONE | 0.221 | 1" |
| C46 | SPAN MOTOR DISCONNECT | SPAN MOTOR (CONTROLS) | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C47 | PIVOT PIER DRAG TERMINAL PANEL | SPAN MOTOR BRAKE DISCONNECT | 3 - NO. 10 | 1 - NO. 10 | NONE | 0.097 | 3/4" |
| C48 | PIVOT PIER DRAG TERMINAL PANEL | SPAN MOTOR BRAKE DISCONNECT (CONTROLS) | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C49 | SPAN MOTOR BRAKE DISCONNECT | SPAN MOTOR BRAKE | 3 - NO. 10 | 1 - NO. 10 | NONE | 0.097 | 3/4" |
| C50 | SPAN MOTOR BRAKE DISCONNECT | SPAN MOTOR BRAKE | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C51 | PIVOT PIER DRAG TERMINAL PANEL | WEDGE MOTOR DISCONNECT | 3 - NO. 8 | 1 - NO. 12 | NONE | 0.149 | 3/4" |
| C52 | PIVOT PIER DRAG TERMINAL PANEL | WEDGE MOTOR DISCONNECT (CONTROLS) | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C53 | WEDGE MOTOR DISCONNECT | WEDGE MOTOR | 3 - NO. 8 | 1 - NO. 12 | NONE | 0.149 | 3/4" |
| C54 | WEDGE MOTOR DISCONNECT | WEDGE MOTOR | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C55 | PIVOT PIER DRAG TERMINAL PANEL | MACHINERY BRAKE 1 DISCONNECT | 3 - NO. 10 | 1 - NO. 10 | NONE | 0.097 | 3/4" |
| C56 | PIVOT PIER DRAG TERMINAL PANEL | MACHINERY BRAKE 1 DISCONNECT (CONTROLS) | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C57 | MACHINERY BRAKE 1 DISCONNECT | MACHINERY BRAKE 1 | 3 - NO. 10 | 1 - NO. 10 | NONE | 0.097 | 3/4" |
| C58 | MACHINERY BRAKE 1 DISCONNECT | MACHINERY BRAKE 1 | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C59 | PIVOT PIER DRAG TERMINAL PANEL | MACHINERY BRAKE 2 DISCONNECT | 3 - NO. 10 | 1 - NO. 10 | NONE | 0.097 | 3/4" |
| C60 | PIVOT PIER DRAG TERMINAL PANEL | MACHINERY BRAKE 2 DISCONNECT (CONTROLS) | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C61 | MACHINERY BRAKE 2 DISCONNECT | MACHINERY BRAKE 2 | 3 - NO. 10 | 1 - NO. 10 | NONE | 0.097 | 3/4" |
| C62 | MACHINERY BRAKE 2 DISCONNECT | MACHINERY BRAKE 2 | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C63 | PIVOT PIER DRAG TERMINAL PANEL | SPAN POSITION ENCODER | 6 - NO. 14 | NONE | NONE | 0.083 | 3/4" |
| C64 | PIVOT PIER DRAG PANEL | REMOTE PLC PANEL | 6 - NO. 12 | 1 - NO. 12 | NONE | 0.127 | 3/4" |
| C65 | PIVOT PIER DRAG PANEL | REMOTE PLC PANEL | 1 - FIBER OPTIC | - | NONE | - | 1" |
| C66 | REMOTE PLC PANEL | SPAN POSITION TRANSMITTER | 4 - NO. 14 | NONE | NONE | 0.056 | 3/4" |
| C67 | REMOTE PLC PANEL | SPAN RCLS | 11 - NO. 12 | 1 - NO. 12 | 2 - NO. 12 | 0.253 | 1" |
| C68 | REMOTE PLC PANEL | MANUAL OPERATION LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C69 | REMOTE PLC PANEL | FULLY OPEN OVERTRAVEL LIMIT SWITCH | 3 - NO. 12 | 1 - NO. 12 | NONE | 0.072 | 3/4" |
| C70 | REMOTE PLC PANEL | FULLY OPEN LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C71 | REMOTE PLC PANEL | WEDGE MOTOR JB | 11 - NO. 12 | 1 - NO. 12 | NONE | 0.217 | 3/4" |
| C72 | WEDGE MOTOR JUNCTION BOX | WEDGE RCLS | 9 - NO. 12 AWG | 1 - NO. 12 | NONE | 0.181 | 3/4" |
| C73 | WEDGE MOTOR JUNCTION BOX | HAND CRANK LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C74 | REMOTE PLC PANEL | MOTOR BRAKE JUNCTION BOX | 6 - NO. 12 | 1 - NO. 12 | NONE | 0.127 | 3/4" |
| C75 | MOTOR BRAKE JUNCTION BOX | MOTOR BRAKE SET LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C76 | MOTOR BRAKE JUNCTION BOX | MOTOR BRAKE RELEASED LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C77 | MOTOR BRAKE JUNCTION BOX | MOTOR BRAKE HAND RELEASED LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C78 | REMOTE PLC PANEL | MACHINERY BRAKE 1 JUNCTION BOX | 6 - NO. 12 | 1 - NO. 12 | NONE | 0.127 | 3/4" |
| C79 | MACHINERY BRAKE 1 JUNCTION BOX | MACHINERY BRAKE 1 SET LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C80 | MACHINERY BRAKE 1 JUNCTION BOX | MACHINERY BRAKE 1 RELEASED LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C81 | MACHINERY BRAKE 1 JUNCTION BOX | MACHINERY BRAKE 1 HAND RELEASED LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C82 | REMOTE PLC PANEL | MACHINERY BRAKE 2 JUNCTION BOX | 6 - NO. 12 | 1 - NO. 12 | NONE | 0.127 | 3/4" |
| C83 | MACHINERY BRAKE 2 JUNCTION BOX | MACHINERY BRAKE 2 SET LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C84 | MACHINERY BRAKE 2 JUNCTION BOX | MACHINERY BRAKE 2 RELEASED LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |
| C85 | MACHINERY BRAKE 2 JUNCTION BOX | MACHINERY BRAKE 2 HAND RELEASED LIMIT SWITCH | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |

NOTES:

1. ALL NOTES ON SHEET E-45 APPLY TO THIS SHEET.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

DocuSigned by: Scott Reynolds BFEC5720F8F14B0...

9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONDUIT SIZE & FILL SCHEDULE 2

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-46 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 62

TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$CYCTIME$$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

## FAR SIDE PIER CONDUIT SCHEDULE

| COND NO. | FROM EQUIPMENT | TO EQUIPMENT | NO. AND SIZE OF CABLE | GROUND COND. | SPARE | FILL (SQ. IN) | TRADE SIZE |
|---|---|---|---|---|---|---|---|
| C86 | FAR SIDE SUBMARINE CABINET | FAR SIDE ROADWAY JUNCTION BOX | 51 - NO. 12, 9 - NO. 10 | 1 - NO. 12 | NONE | 1.160 | 2" |
| C87 | FAR SIDE ROADWAY JUNCTION BOX | FAR SIDE ONCOMING WARNING GATE | 11 - NO. 12, 3 - NO. 10 | 1 - NO. 12 | NONE | 0.290 | 1" |
| C88 | FAR SIDE ROADWAY JUNCTION BOX | FAR SIDE OFFGOING WARNING GATE | 11 - NO. 12, 3 - NO. 10 | 1 - NO. 12 | NONE | 0.290 | 1" |
| C89 | FAR SIDE ROADWAY JUNCTION BOX | FAR SIDE BARRIER GATE | 21 - NO. 12, 3 - NO. 10 | 1 - NO. 12 | NONE | 0.471 | 1 1/4" |
| C90 | FAR SIDE ROADWAY JUNCTION BOX | FAR SIDE TRAFFIC LIGHT | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C91 | FAR SIDE ROADWAY JUNCTION BOX | FAR SIDE FLASHING LIGHT | 4 - NO. 12 | 1 - NO. 12 | NONE | 0.091 | 3/4" |
| C92 | FAR SIDE FLASHING LIGHT | FAR SIDE GONG | 2 - NO. 12 | 1 - NO. 12 | NONE | 0.054 | 3/4" |

NOTES:

1. ALL NOTES ON SHEET E-45 APPLY TO THIS SHEET.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONDUIT SIZE & FILL SCHEDULE 3

ALLIGATOR RIVER SWING SPAN

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BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

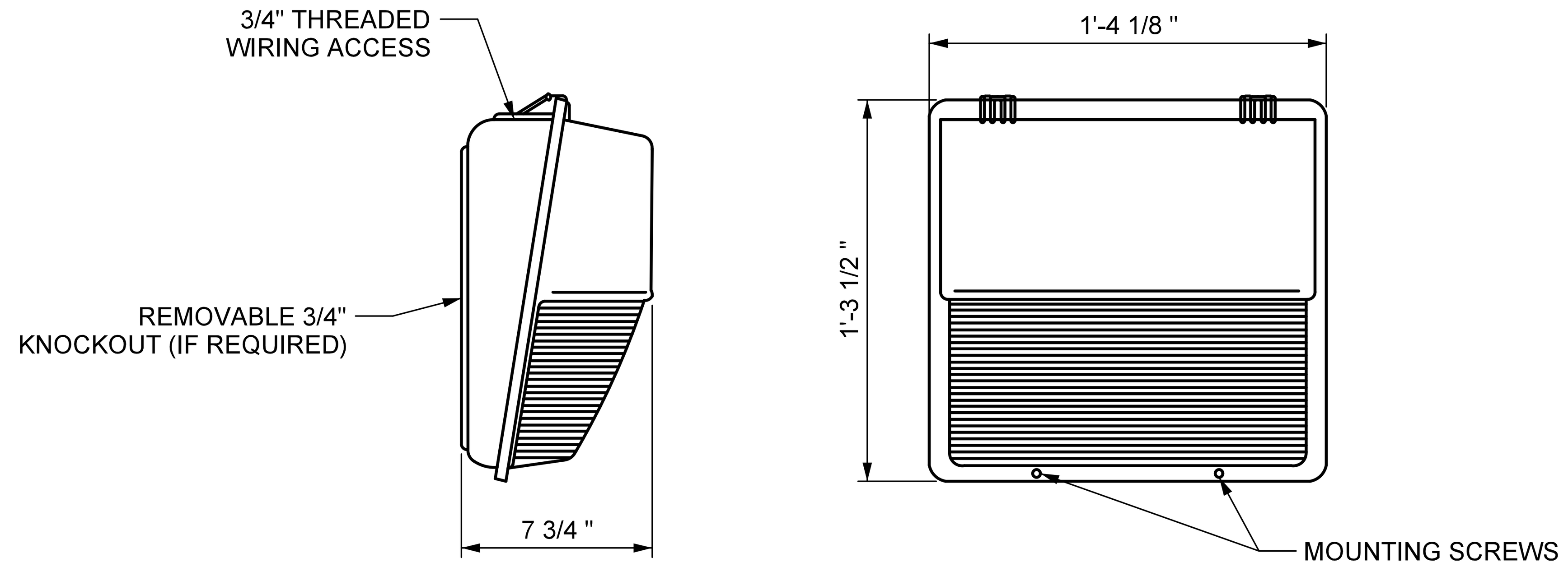
| REVISIONS | | | | | |
|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO. E-47
TOTAL SHEETS 51

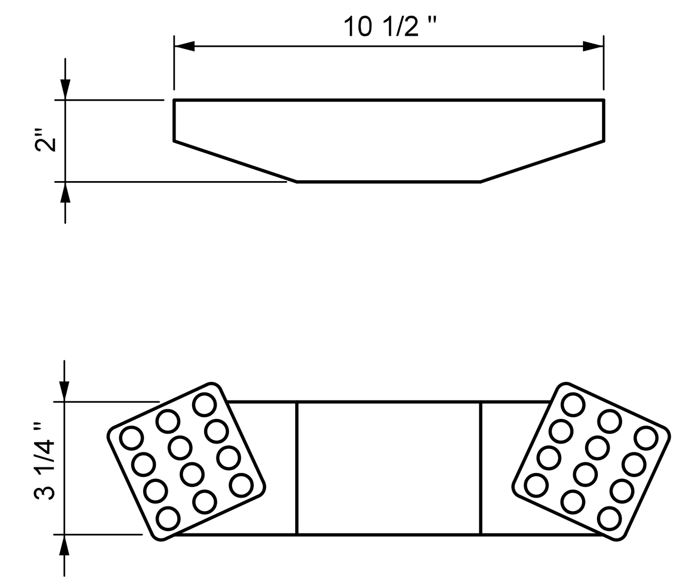
DWG NUMBER 63
TOTAL DWGS 90
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY: OIV DATE : 8/8/2016
CHECKED BY: MJT DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

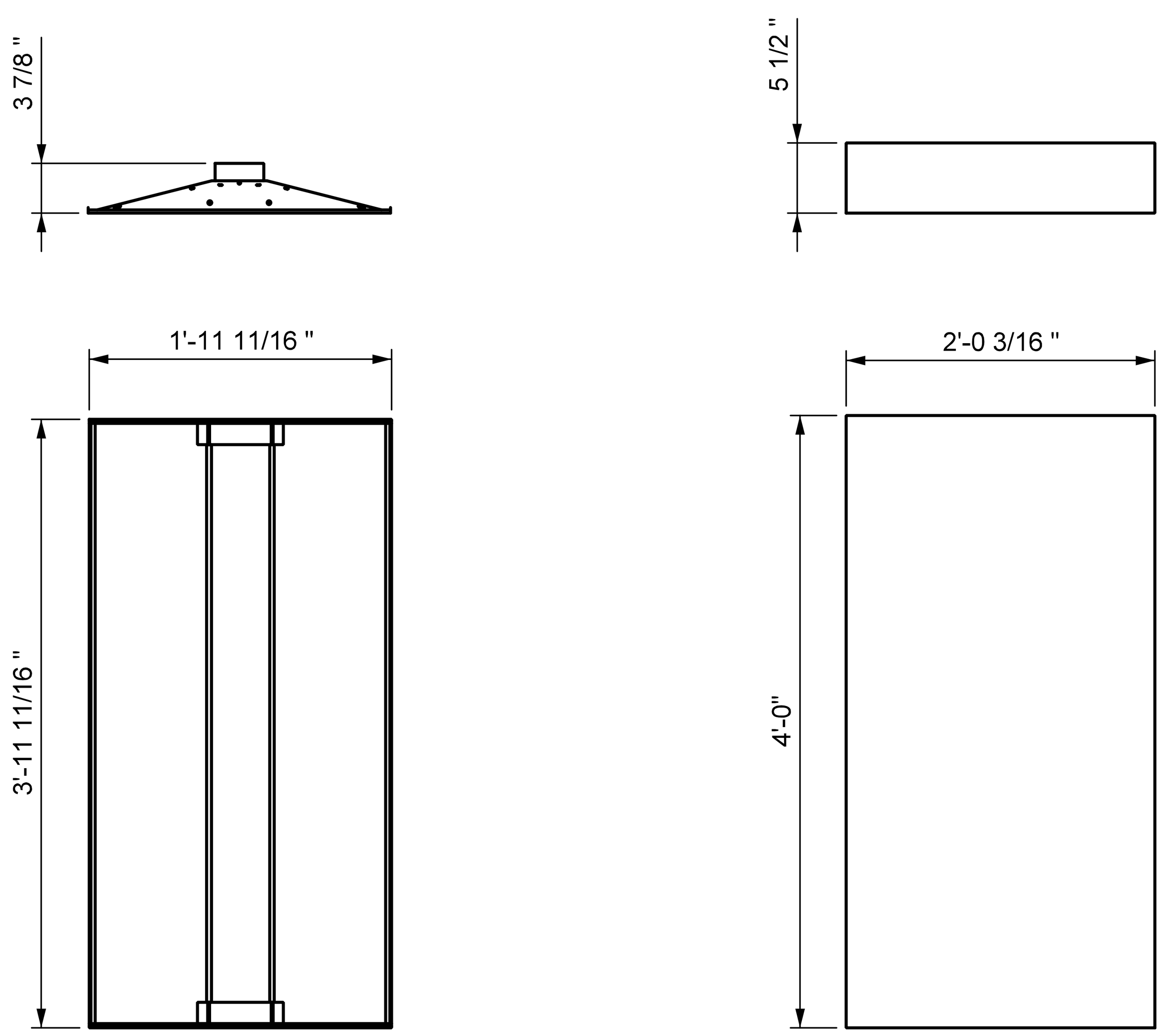
$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



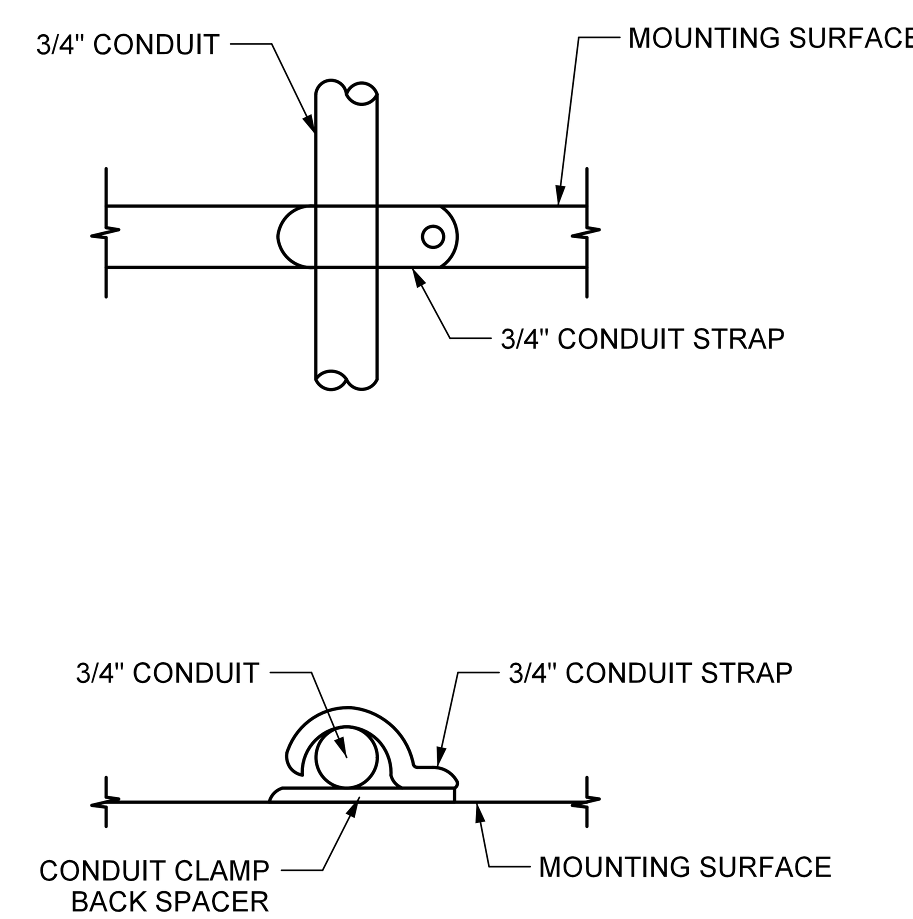

WALL-MOUNTED 150W LED LIGHT FIXUTRE DETAIL
SCALE: 2" - 1'-0"




EMERGENCY LED LIGHTS
SCALE: 3" = 1'-0"




LED LIGHT FIXTURE DETAIL (LEFT)
SURFACE MOUNT KIT DETAIL (RIGHT)
SCALE: 1" = 1'-0"




TYPICAL 3/4" CONDUIT SUPPORT DETAIL
SCALE: 6" - 1'-0"

NOTES:

1. THE INDOOR CEILING MOUNTED LED LIGHT FIXTURES SHALL BE CREE LIGHTING CATALOG NO. SMK-ZR24-40L-35K-10V OR APPROVED EQUAL.
2. THE WALL MOUNTED EMERGENCY LIGHT FIXTURES SHALL BE LITHONIA LIGHTING CATALOG NO. EU2-LED-M12 OR APPROVED EQUAL.
3. THE WALL MOUNTED OUTDOOR LIGHT FIXTURES SHALL BE LITHONIA LIGHTING CATALOG NO. TWP-LED-30C-700-40K-T3M-MVOLT-DDBXD OR APPROVED EQUAL.
4. THE CONDUIT STRAP DETAIL SHOWN IS IN PARTICULAR TO 3/4" CONDUIT. ALL CONDUIT STRAPS SHALL BE SIZED ACCORDINGLY.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

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DEPARTMENT OF TRANSPORTATION
RALEIGH

CONDUIT SUPPORTS & LIGHTING FIXTURES DETAIL

ALLIGATOR RIVER SWING SPAN

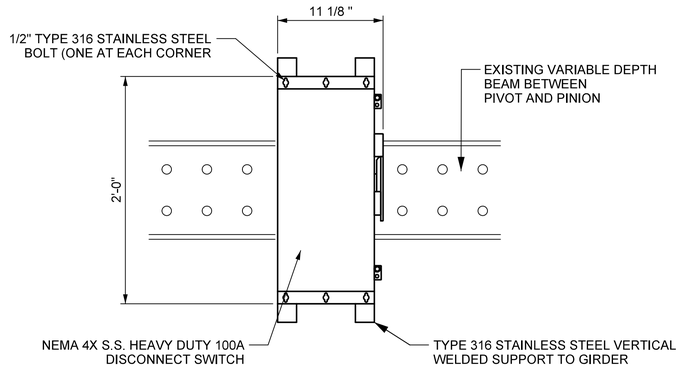
| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-48 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 64 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

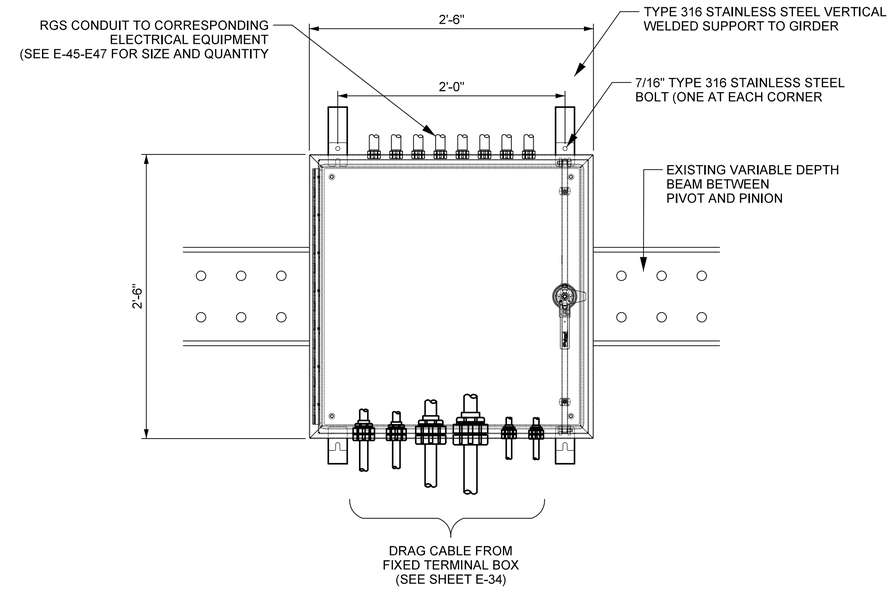
DRAWN BY: OIV DATE : 8/8/2016
CHECKED BY: MJT DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



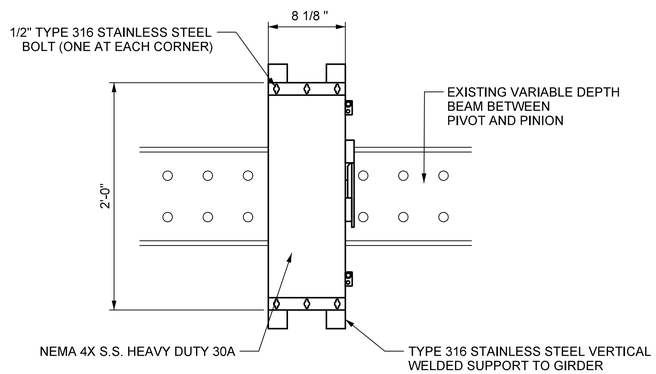

## SPAN MOTOR DISCONNECT SWITCH

SCALE: 1 1/2" = 1'-0"




## PIVOT PIER MOVABLE TERMINAL CABINET

SCALE: 1" = 1'-0"




## WEDGE MOTOR DISCONNECT SWITCH

(MOTOR BRAKE, MACHINERY BRAKE 1 & 2 SIMILAR)
SCALE: 1 1/2" = 1'-0"

## NOTES:

1. THE SPAN MOTOR DISCONNECT SWITCH SHALL BE A HEAVY DUTY NON-FUSIBLE, SINGLE THROW, 480V, 100A, NEMA 4X S.S., THREE POLE EATON DISCONNECT SWITCH CATALOG NUMBER HU361DS OR APPROVED EQUAL.
2. THE WEDGE MOTOR DISCONNECT SWITCH SHALL BE A HEAVY DUTY NON-FUSIBLE, SINGLE THROW, 480V, 30A, NEMA 4X S.S, THREE POLE EATON DISCONNECT SWITCH CATALOG NUMBER HU361DS OR APPROVED EQUAL.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# ELECTRICAL DETAILS: DISCONNECT SWITCH AND PANEL MOUNTING DETAIL

## ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

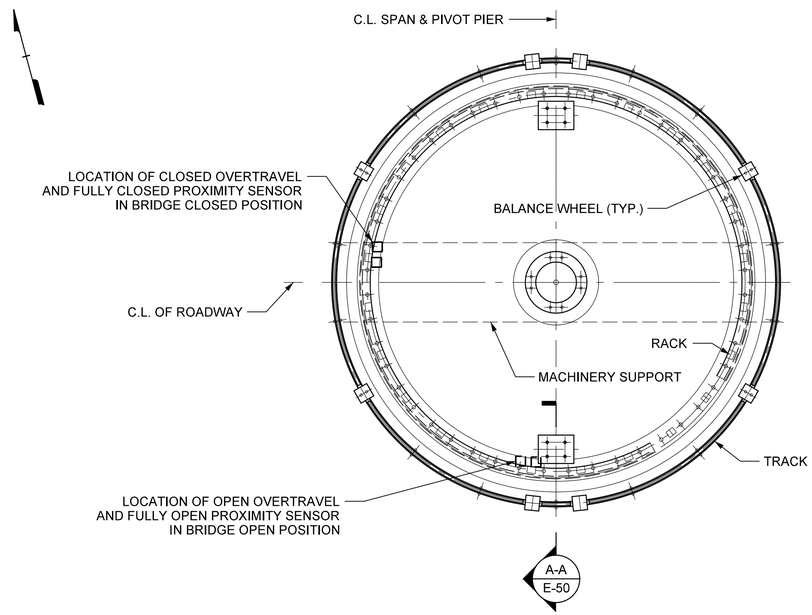
| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-49 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

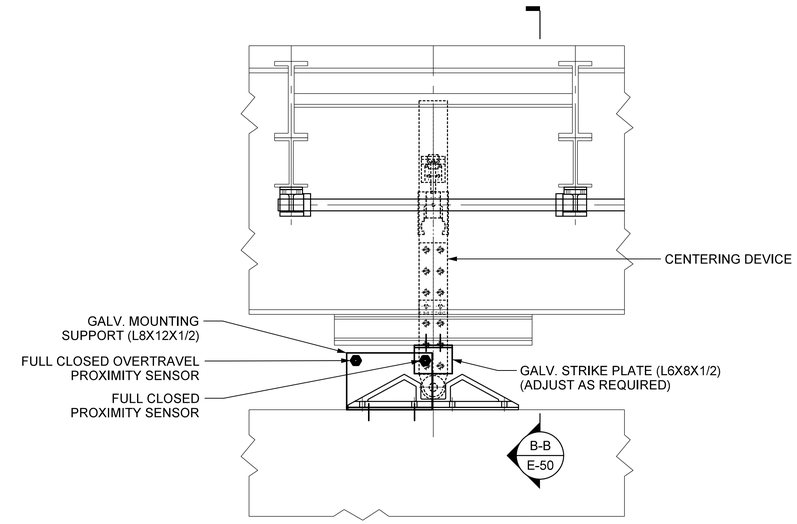
| DWG NUMBER | TOTAL DWGS |
|---|---|
| 65 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

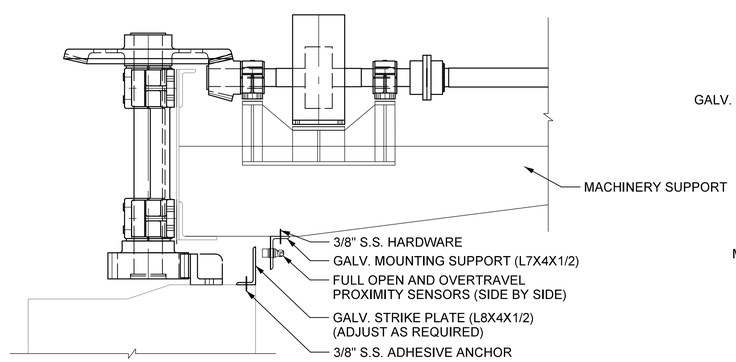
$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



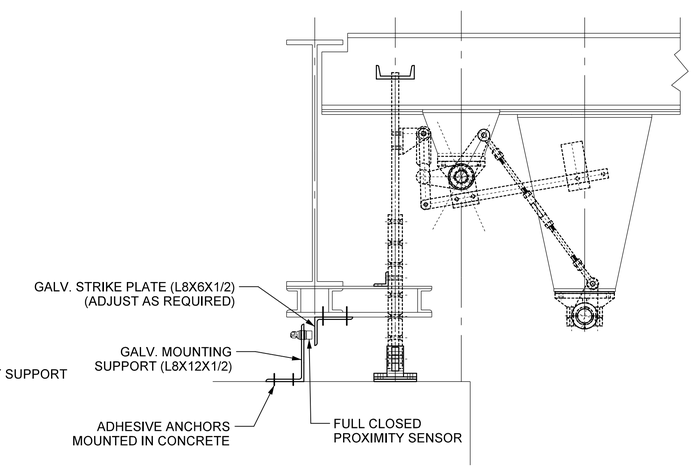

LIMIT SWITCH LAYOUT ON PIVOT PIER
SCALE: 3/16" = 1'-0"




EAST ELEVATION
END WEDGE MACHINERY
SCALE: 3/4" = 1'-0"




SECTION A-A (IN FULL OPEN POSITION)
SCALE: 3/4" = 1'0"




SECTION B-B (IN CLOSED POSITION)
SCALE: 3/4" = 1'-0"

## NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL A WEDGE HAND CRANK LIMIT SWITCH TO THE UNUSED INPUT SHAFT OF THE WEDGE SPEED REDUCER. THE LIMIT SWITCH SHALL INCLUDE A COVER AND SHALL BE ORIENTED SUCH THAT THE OPENING OF THE COVER WILL OPEN THE LIMIT SWITCH AND CAUSE THE WEDGE MOTOR TO BECOME INOPERABLE.
2. FULL OPEN, FULL CLOSED AND OVERTRAVEL LIMIT SWITCHES SHALL BE HAVE A MAXIMUM SENSING RANGE OF 1-1/2" AND SHALL BE APPROVED EQUAL TO THE TURK INDUCTIVE PROXIMITY SENSOR PART NO. NI40-G47SR.
3. ALL MOUNTING HARDWARE SOWN SHALL BE TYPE 3.16 S.S (MINIMUM SIZE OF 3/8" DIA.)
4. ALL SUPPORTS AND STRIKE PLATES SHALL BE GALV. STEEL WITH A MINIMUM THICKNESS OF 1/2".
5. THE CONTRACTOR SHALL MAKE THE NECESSARY ADJUSTMENT TO THE DETAILS SHOWN FOR PROPER OPERATION OF THE LIMIT SWITCHES.
6. CONTRACTOR TO PROVIDE SAFETY INTERLOCKING LIMIT SWITCH FOR AUXILIARY SYSTEM TO PREVENT OPERATION OF THE MAIN SPAN MOTOR WHILE THE AUXILIARY SYSTEM IS ENGAGED. DETAILS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
7. WEDGE AND SPAN ROTARY CAM LIMIT SWITCH SHALL BE INSTALLED IN THE EXISTING LOCATIONS.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

DocuSigned by: Scott Reynolds BFEC5720F8F14B0...
9/14/2016

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LIMIT SWITCHES DETAILS

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-50 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

DRAWN BY: OIV DATE: 8/8/2016
CHECKED BY: MJT DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE: 8/8/2016

DWG NUMBER 66
TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$SYSTTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

# CONTROL DESK BUTTON LAYOUT: BILL OF MATERIAL

| TAG | QTY | MODEL NUMBER | DESCRIPTION | DESCRIPTION | SWITCH POSITIONS<br>POSITION 1 | POSITION 2 | POSITION 3 |
|---|---|---|---|---|---|---|---|
| PB-LT | BLACK | 800T-A1D1 | PUSHBUTTON | LAMP TEST | - | - | - |
| IL-CP | WHITE | 800T-QH2W | INDICATING LIGHT | CONTROL POWER ON | - | - | - |
| CS-CP | - | 800T-H33A | KEY OPERATED 2 POSITION MAINTAINED CONTROL SWITCH, KEY REMOVED IN THE OFF POSITION | CONTROL POWER | OFF | ON | - |
| PB-SIREN | BLACK | 800T-A1D1 | PUSHBUTTON | SIREN | - | - | - |
| IL-PWR | GREEN | 800T-QH2G | INDICATING LIGHT | UTILITY POWER AVAILABLE | - | - | - |
| IL-GEN | WHITE | 800T-QH2W | INDICATING LIGHT | GENERATOR POWER AVAILABLE | - | - | - |
| IL-TW-OFF | GREEN | 800T-QH2G | INDICATING LIGHT | OFF | - | - | - |
| IL-TW-ON | RED | 800T-QH2R | INDICATING LIGHT | ON | - | - | - |
| CS-TW | - | 800T-H17A | TWO POSITION MAINTAINED PISTOL GRIP CONTROL SWITCH | TRAFFIC WARNING | OFF | ON | - |
| IL-WG-FON-RSD | GREEN | 800T-QH2G | INDICATING LIGHT | RAISED | - | - | - |
| IL-WG-FON-LWR | YELLOW | 800T-QH2A | INDICATING LIGHT | LOWERED | - | - | - |
| CS-WG-FON | - | 800T-J20A | THREE POSITION SPRING RETURN TO CENTER PISTOL GRIP CONTROL SWITCH | FAR ONCOMING GATE | RAISE | OFF | LOWER |
| IL-WG-NON-RSD | GREEN | 800T-QH2G | INDICATING LIGHT | RAISED | - | - | - |
| IL-WG-NON-LWR | YELLOW | 800T-QH2A | INDICATING LIGHT | LOWERED | - | - | - |
| CS-WG-NON | - | 800T-J20A | THREE POSITION SPRING RETURN TO CENTER PISTOL GRIP CONTROL SWITCH | NEAR ONCOMING GATE | RAISE | OFF | LOWER |
| IL-WG-FOF-RSD | GREEN | 800T-QH2G | INDICATING LIGHT | RAISED | - | - | - |
| IL-WG-FOF-LWR | YELLOW | 800T-QH2A | INDICATING LIGHT | LOWERED | - | - | - |
| CS-WG-FOF | - | 800T-J20A | THREE POSITION SPRING RETURN TO CENTER PISTOL GRIP CONTROL SWITCH | FAR OFFGOING GATE | RAISE | OFF | LOWER |
| IL-WG-NOF-RSD | GREEN | 800T-QH2G | INDICATING LIGHT | RAISED | - | - | - |
| IL-WG-NOF-LWR | YELLOW | 800T-QH2A | INDICATING LIGHT | LOWERED | - | - | - |
| CS-WG-NOF | - | 800T-J20A | THREE POSITION SPRING RETURN TO CENTER PISTOL GRIP CONTROL SWITCH | NEAR OFFGOING GATE | RAISE | OFF | LOWER |
| IL-BG-F-OP | GREEN | 800T-QH2G | INDICATING LIGHT | RAISED | - | - | - |
| IL-BG-F-CL | YELLOW | 800T-QH2A | INDICATING LIGHT | LOWERED | - | - | - |
| CS-BG-F | - | 800T-J20A | THREE POSITION SPRING RETURN TO CENTER PISTOL GRIP CONTROL SWITCH | FAR BARRIER GATE | OPEN | OFF | CLOSE |
| IL-BG-N-OP | GREEN | 800T-QH2G | INDICATING LIGHT | RAISED | - | - | - |
| IL-BG-N-CL | YELLOW | 800T-QH2A | INDICATING LIGHT | LOWERED | - | - | - |
| CS-BG-N | - | 800T-J20A | THREE POSITION SPRING RETURN TO CENTER PISTOL GRIP CONTROL SWITCH | NEAR BARRIER GATE | OPEN | OFF | CLOSE |
| PB-GROUP-R | BLACK | 800T-A1D1 | PUSHBUTTON | GROUP RAISE | - | - | - |
| IL-WM-DRVN | GREEN | 800T-QH2G | INDICATING LIGHT | DRIVE | - | - | - |
| IL-WM-WTHDN | YELLOW | 800T-QH2A | INDICATING LIGHT | WITHDRAW | - | - | - |
| CS-WM | - | 800T-J20A | THREE POSITION SPRING RETURN TO CENTER PISTOL GRIP CONTROL SWITCH | WEDGE MOTOR | DRIVE | OFF | WITHDRAW |
| PB-ES | RED | 800T-FXJEQH2RA1 | MUSHROOM HEAD PUSH/PULL ILLUMINATED MAINTAINED PUSHBUTTON | EMERGENCY STOP | - | - | - |
| IL-MHB1-REL | YELLOW | 800T-QH2A | INDICATING LIGHT | MACHINERY BRAKE 1 | RELEASED | - | - |
| IL-MHB1-SET | GREEN | 800T-QH2G | INDICATING LIGHT | MACHINERY BRAKE 1 | SET | - | - |
| IL-MHB1-HR | RED | 800T-QH2R | INDICATING LIGHT | MACHINERY BRAKE 1 | HAND RELEASED | - | - |
| IL-MHB2-REL | YELLOW | 800T-QH2A | INDICATING LIGHT | MACHINERY BRAKE 2 | RELEASED | - | - |
| IL-MHB2-SET | GREEN | 800T-QH2G | INDICATING LIGHT | MACHINERY BRAKE 2 | SET | - | - |
| IL-MHB2-HR | RED | 800T-QH2R | INDICATING LIGHT | MACHINERY BRAKE 2 | HAND RELEASED | - | - |
| IL-MB-REL | YELLOW | 800T-QH2A | INDICATING LIGHT | MOTOR BRAKE | RELEASED | - | - |
| IL-MB-SET | GREEN | 800T-QH2G | INDICATING LIGHT | MOTOR BRAKE | SET | - | - |
| IL-MB-HR | RED | 800T-QH2R | INDICATING LIGHT | MOTOR BRAKE | HAND RELEASED | - | - |
| IL-SDM-RDY | WHITE | 800T-QH2W | INDICATING LIGHT | SPAN DRIVE | READY | - | - |
| IL-SDM-TRB | RED | 800T-QH2R | INDICATING LIGHT | SPAN DRIVE | TROUBLE | - | - |
| CS-SPAN | - | 800T-J17A | THREE POSITION MAINTAINED PISTOL GRIP CONTROL SWITCH | SPAN | CLOSE | SPAN OFF | OPEN |
| PB-RE | BLACK | 800T-A1D1 | PUSHBUTTON | RESET | - | - | - |
| - | - | - | SERVICE POWER MONITOR | SERVICE POWER MONITOR | - | - | - |
| - | - | 2711P-T12W22A9P | PANELVIEW 12 INCH TOUCHSCREEN | - | - | - | - |
| CS-BP | - | 800T-H33A | KEY OPERATED TWO POSITION SPRING RETURN TO OFF CONTROL SWITCH, KEY REMOVED IN THE OFF POSITION | MASTER BYPASS | OFF | ON | - |
| - | - | - | DIGITAL METER | SPAN POSITION INDICATOR (DEGREES) | - | - | - |
| IL-SPAN-FO | WHITE | 800T-QH2W | INDICATING LIGHT | FULLY OPEN | - | - | - |
| IL-SPAN-NO | YELLOW | 800T-QH2A | INDICATING LIGHT | NEARLY OPEN | - | - | - |
| IL-SPAN-NC | YELLOW | 800T-QH2A | INDICATING LIGHT | NEARLY CLOSED | - | - | - |
| IL-SPAN-CL | GREEN | 800T-QH2G | INDICATING LIGHT | FULLY CLOSED | - | - | - |
| - | - | - | PANEL METER ZERO TO 120 | MAIN SPAN DRIVE AMMETER | - | - | - |

* EXCLUDING PLC EQUIPMENT, MODEL NUMBER PARTS ARE THE RECOMMENDED PARTS AND MAY BE REPLACED WITH APPROVED EQUAL.

## NOTES:

1. FOR BILL OF MATERIAL CALLOUTS REFER TO SHEET E-25.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...

9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

Hardesty & Hanover
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONTROL DESK:
PLAN VIEW BILL
OF MATERIALS

ALLIGATOR RIVER
SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | E-51 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 51 |

| DWG NUMBER | TOTAL DWGS | DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED |
|---|---|---|
| 67 | 90 | |

DRAWN BY: OIV DATE : 8/8/2016
CHECKED BY: MJT DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: CHS DATE : 8/8/2016

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$$$$USERNAME$$$$

## GENERAL MACHINERY NOTES:

1. THESE PLANS WERE MADE USING RECORD SHOP DRAWINGS FOR ORIGINAL MACHINERY, WHICH ARE INCLUDED AS PART OF THIS CONTRACT. THE CONTRACTOR SHALL PERFORM ACCURATE FIELD MEASUREMENTS TO VERIFY ACTUAL SIZES OF EXISTING COMPONENTS, MEMBERS AND ALL DIMENSIONS SHOWN ON THE PLANS AND RECORD SHOP DRAWINGS. ADDITIONAL FIELD MEASUREMENTS TO ACCURATELY LOCATE THE EXACT POSITIONS AND/OR ALIGNMENTS OF ALL MACHINERY AND MACHINERY SUPPORTS PRIOR TO THEIR REMOVAL SHALL BE PERFORMED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. ANY DEVIATIONS FROM THE CONTRACT PLANS OR RECORD SHOP DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER. RECORD ALL DEVIATIONS ON THE SUBMITTED SHOP DRAWINGS WHEN THEY ARE REQUIRED.

2. BASED ON THE VINTAGE OF THE EXISTING COMPONENTS, DESIGN OF MACHINERY SHALL CONFORM TO THE 1988 STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES PUBLISHED BY AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992 AND 1993 REVISIONS, UNLESS OTHERWISE SHOWN ON THE PLANS, OR PROVIDED FOR IN THE SPECIFICATIONS.

3. ALL DIMENSIONS FOR MACHINE FINISHED SURFACES SHALL BE HELD TO 0.010 INCH, EXCEPT AS OTHERWISE REQUIRED BY THE PLANS OR SPECIFICATIONS.

4. PROVIDE ASTM A449 H.S. BOLTS, AS REQUIRED, TO CONNECT MACHINERY TO STRUCTURAL STEEL, UNLESS OTHERWISE NOTED. ALL ASTM A449 H.S. BOLTS CONNECTING MACHINERY TO STRUCTURAL STEEL SHALL HAVE A CLEARANCE OF NOT MORE THAN 0.010 INCH BETWEEN THE BOLT SHANK AND THE HOLE.

5. EACH BOLT SHALL HAVE A PLAIN HARDENED WASHER UNDER THE HEAD AND THE NUT. PLAIN HARDENED WASHERS SHALL CONFORM TO ASTM F436 AND NUTS SHALL CONFORM TO ASTM A563.

6. ALL REHABILITATED BEARINGS SHALL BE MOUNTED TO STRUCTURAL STEEL USING H.S. TURNED BOLTS (OR TURNED STUDS). ALL REHABILITATED BEARINGS AND THEIR STRUCTURAL SUPPORTS SHALL BE DRILLED AND REAMED IN THE FIELD AFTER FINAL ALIGNMENT OF THE MACHINERY. NEW TURNED BOLTS SHALL BE PROVIDED WITH A CLASS LC6 FIT WITH THE BEARING BASE, SHIMS AND STRUCTURAL SUPPORT. NUTS FOR TURNED BOLTS SHALL BE BROUGHT TIGHT AND SECURED WITH LOCK WASHERS.

7. PROVIDE ALL NEW STAINLESS STEEL SHIM PACKS FOR LEVELING AND ALIGNING OF ALL MACHINERY COMPONENTS. SHIM PACKS SHALL BE 1/2" NOMINAL THICKNESS, UNLESS OTHERWISE SPECIFIED, WITH ADJUSTMENT VARIATIONS AS DESCRIBED IN THE SPECIFICATION.

8. FITS AND FINISHES FOR THE MACHINERY SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

| SURFACE | FIT (ANSI) | FINISH (MICROINCHES) |
|---|---|---|
| MACHINERY BASE ON STEEL | - | 250 |
| MACHINERY PARTS IN FIXED CONTACT | - | 125 |
| SHAFTS (EXPOSED SURFACES) | - | 63 |
| SHAFTS (JOURNAL SURFACES) | RC6 | 8 |
| BUSHINGS (JOURNAL SURFACES) | RC6 | 16 |
| SPLIT BUSHING IN BASE | LC1 | 125 |
| SOLID BUSHING IN BASE (TO 1/4" WALL) | FN1 | 63 |
| SOLID BUSHING IN BASE (OVER 1/4" WALL) | FN2 | 63 |
| HUBS ON SHAFTS (TO 2" BORE) | FN2 | 32 |
| HUBS ON SHAFTS (OVER 2" BORE) | FN2 | 63 |
| TURNED BOLTS IN FINISHED HOLES | LC6 | 63 |
| SLIDING BEARINGS | RC6 | 32 |
| KEYS AND KEYSEATS | CL. 2 | 63 |
| TEETH OF OPEN GEARING | - | 125 |

9. FITS FOR CYLINDRICAL PARTS SHOWN ABOVE SHALL ALSO APPLY TO THE MAJOR DIMENSIONS OF NON-CYLINDRICAL PARTS.

10. CLEANING, PAINTING AND, AS APPLICABLE, LUBRICATING SHALL BE INCLUDED UNDER EACH MACHINERY ITEM.

## GENERAL MACHINERY NOTES (CONTINUED):

11. MODEL NUMBERS AND DETAILS FOR MOTORS, COUPLINGS, BEARINGS AND OTHER STANDARD COMPONENTS ARE BASED ON MANUFACTURERS CATALOG DATA CURRENT AT THE TIME THE PLANS WERE PREPARED. EQUIVALENT MODELS FROM OTHER MANUFACTURERS MAY BE SUBSTITUTED AT THE OPTION OF THE CONTRACTOR AND WITH THE APPROVAL OF THE ENGINEER. ALL RELATED STRUCTURAL, MECHANICAL, ARCHITECTURAL AND ELECTRICAL DETAILS SHALL BE REVISED BY THE CONTRACTOR TO SUIT THE CERTIFIED DIMENSIONS OF THE COMPONENTS ACTUALLY FURNISHED AT NO ADDITIONAL COST.

12. ALL EXISTING MOUNTING SURFACES USED TO SUPPORT MACHINERY COMPONENTS SHALL BE VERIFIED AS BEING FLAT. FLAT SHALL BE DEFINED AS MEASURING WITHIN 0.010 OF AN INCH ACROSS THE LENGTH AND WIDTH OF THE SURFACE. REPAIR DETERIORATED MOUNTING SURFACES AND/OR SUPPORTING STEEL AS ORDERED BY THE ENGINEER.

13. THE EXTENT OF MACHINERY COMPONENT REHABILITATION AND REPLACEMENT CALLED FOR IN THE CONTRACT IS THAT WHICH WAS ANTICIPATED AT THE TIME THESE PLANS WERE DEVELOPED AS DETERMINED BY FIELD INSPECTION AND OBSERVATION OF THE MACHINERY DURING OPERATION. THE ENGINEER WILL PERFORM AN ADDITIONAL INSPECTION OF ALL MACHINERY COMPONENTS DURING THE CONTRACTORS REHABILITATION WORK. ADDITIONAL REPAIRS AND/OR REPLACEMENT OF COMPONENTS MAY BE REQUIRED AS A RESULT OF THESE SHOP AND FIELD INSPECTIONS, AND SHALL BE MADE BY THE CONTRACTOR AS ORDERED BY THE ENGINEER IN ACCORDANCE WITH NCDOT SPECIFICATION 104 - SCOPE OF WORK.

14. WHERE PERMANENT MACHINERY REMOVAL OR CLEANING/REHABILITATION IS REQUIRED, ALL ITEMS TO BE DISCARDED SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL ENVIRONMENTAL REGULATIONS AND LOCAL AND STATE LAW. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO COMPONENTS CONTAINING LEAD PAINT, ASBESTOS, LUBRICANTS, BRAKE THRUSTER OIL AND ANY OTHER ENVIRONMENTALLY SENSITIVE MATERIAL.

15. ELECTRICAL ITEMS SUCH AS MOTORS AND BRAKES ARE TO BE FURNISHED UNDER THE ELECTRICAL WORK ITEM, HOWEVER THESE ITEMS ARE TO BE INSTALLED AND ALIGNED AS PART OF THE MACHINERY WORK.

SHOP DRAWINGS AND SUBMITTALS:

16. THE CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS AND FIELD ASSEMBLY DRAWINGS. IN GENERAL, SHOP DRAWING DETAILS FOR IN-KIND REPLACEMENT AND IN-KIND REHABILITATION OF ORIGINAL COMPONENTS SHALL BE BASED ON ORIGINAL SHOP DRAWINGS. SHOP DRAWING DETAILS FOR NEW COMPONENTS SHALL BE BASED ON THESE CONTRACT PLANS AND SPECIFICATIONS.

17. PRIOR TO SUBMITTING SHOP DRAWINGS AND FIELD ASSEMBLY DRAWINGS, THE CONTRACTOR SHALL VERIFY ALL CRITICAL DIMENSIONS IN THE FIELD. PRIOR TO MANUFACTURING NEW PARTS, THE CONTRACTOR SHALL SUBMIT, FOR REVIEW AND APPROVAL BY THE ENGINEER, SHOP AND ASSEMBLY DRAWING DETAILS INDICATING ALL DIMENSIONS AND DETAILS THAT HAVE BEEN FIELD VERIFIED.

18. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO DETAIL, COORDINATE AND VERIFY THE RELATIONSHIP AND ASSEMBLY OF ALL PARTS FOR A COMPLETE WORKING SYSTEM. ALL REQUIRED MACHINING, RIGGING, ASSEMBLY, SPECIAL SHIMMING, PAINTING, LUBRICATING AND TESTING SHALL BE CONSIDERED PART OF THE WORK.

19. THE CONTRACTOR SHALL PROVIDE AND SUBMIT PROPOSED CONSTRUCTION METHODS/PROCEDURES, SCHEDULE, INSPECTION PLAN, TESTING PLAN AND QUALITY CONTROL/QUALITY ASSURANCE PLAN TO THE ENGINEER FOR REVIEW PRIOR TO STARTING SHOP AND FIELD WORK. (SEE SPECIFICATIONS)

20. TEMPORARY MEANS NEEDED TO COMPLETE MACHINERY ITEMS, INCLUDING BUT NOT LIMITED TO TEMPORARY END WEDGES AND CENTER WEDGES, SHALL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW. SUBMITTALS SHALL INCLUDE ALL NECESSARY INFORMATION TO ILLUSTRATE AND CONFIRM SAFE OPERATION AND SUPPORT OF THE MACHINERY AND/OR SWING SPAN. SUBMITTALS SHALL INCLUDE SHOP AND WORKING DRAWINGS, INSTALLATION AND ERECTION DRAWINGS, CATALOG AND SPECIFICATION SHEETS, AND CHECKED CALCULATIONS. SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE APPROPRIATE DISCIPLINE BY THE STATE OF NORTH CAROLINA.

## GENERAL MACHINERY NOTES (CONTINUED):

FABRICATION:

21. THE EDGES AND CORNERS OF ALL MACHINERY PARTS SHALL BE DETAILED AND MACHINED WITH SUITABLE FILLETS AND CHAMFERS. IN GENERAL THE MINIMUM EDGE OR CORNER RADIUS OR CHAMFER SHALL BE 1/4" IF THE PART THICKNESS IS GREATER THAN 1" AND 1/8" IF EQUAL TO OR LESS THAN 1", UNLESS OTHERWISE NOTED. IN THE CASE OF MATING PARTS, ALLOWANCE SHALL BE MADE FOR THE PROPER FIT AND ASSEMBLY. SUCH DETAILS SHALL BE SHOWN ON SHOP DRAWINGS. 22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPILING CERTIFICATIONS AND TEST DATA, AND SHALL VERIFY AND DOCUMENT THAT ALL MACHINERY MEETS THE CONTRACT REQUIREMENTS. MATERIAL CERTIFICATIONS AND TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO SHIPMENT.

23. ALL NEW BEARING BUSHINGS SHALL BE PROVIDED WITH DOUBLE OVAL GREASE GROOVES, UNLESS OTHERWISE NOTED. INSTALLATION OF NEW BUSHINGS SHALL INCLUDE NEW ADAPTERS, PIPING AND GREASE FITTINGS, AS NECESSARY, TO FACILITATE PROPER MAINTENANCE.

24. NEW BRASS/BRONZE BEARING LINERS (SHIMS) SHALL BE PROVIDED FOR ALL SPLIT BEARINGS. DETAILS SHALL MATCH EXISTING FOR REPLACEMENT PARTS.

25. ALL SURFACES OF NEW FORGINGS AND BRONZE CASTINGS SHALL BE MACHINED, UNLESS OTHERWISE NOTED.

26. ALL TRANSITIONS OF SURFACES OF MACHINERY PARTS SHALL BE BLENDED IN SMOOTH.

27. THE GENERAL DIMENSIONAL TOLERANCE IS +/- 1/64 INCH, UNLESS OTHERWISE NOTED.

FIELD WORK:

28. THE CONTRACTOR SHALL SCHEDULE ALL WORK TO MINIMIZE IMPACT ON HIGHWAY AND MARINE TRAFFIC. ALL HIGHWAY AND MARINE TRAFFIC CLOSURES NEED TO BE COORDINATED WITH AND APPROVED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND UNITED STATES COAST GUARD. A BRIDGE OPERATIONAL CLOSURE PERIOD WILL BE REQUIRED TO PERFORM PART OF THE WORK.

29. THE CONTRACTOR SHALL PERFORM A COORDINATED JACKING EFFORT AT THE END WEDGE SEATS (4 TOTAL LOCATIONS) TO MEASURE THE AVERAGE POSITIVE REACTION AT EACH CORNER WITH THE SWING SPAN ENDS ALIGNED WITH THE APPROACH STRUCTURE. THE JACKING PROCEDURE SHALL MIMIC HOW THE END WEDGE MACHINERY RAISES THE ENDS OF THE SWING SPAN. AS PART OF THIS EFFORT, THE CONTRACTOR SHALL ALSO INCLUDE RAISING EACH CORNER OF THE SWING SPAN IN A SIMILAR MANNER TO ACHIEVE 12 KIPS +/- AT EACH CORNER AND NOTING THE DIFFERENCE IN ELEVATION BETWEEN THE SWING SPAN ENDS AND THE APPROACH STRUCTURE. THE JACKING EFFORT SHALL OCCUR PRIOR TO SUNRISE OR WHEN IT IS CONFIRMED THAT THE MAIN GIRDERS HAVE UNIFORM TEMPERATURE READINGS FROM THEIR TOP TO BOTTOM FLANGES. THE RESULTS OF THE JACKING EFFORT SHALL BE SUBMITTED TO THE ENGINEER AND WILL BE USED AS THE BASIS FOR DEFINING THE CORRECTIVE SHIM THICKNESS TO BE INSTALLED/REMOVED BETWEEN THE CENTER PIVOT TOP AND PIVOT GIRDER. THE CORRECTIVE SHIM THICKNESS WILL DEFINE THE FINAL ELEVATION OF THE SWING SPAN. THE POSSIBILITY EXISTS THAT THIS EFFORT WILL BE AN ITERATIVE PROCESS.

30. ALL REQUIRED TEMPORARY REMOVAL OF COVERS AND TEMPORARY DISASSEMBLY OF STRUCTURAL, MECHANICAL & ELECTRICAL COMPONENTS TO PERFORM THE WORK FOR THIS PROJECT SHALL BE INCLUDED AS PART OF THE WORK.

31. ALL MACHINERY COMPONENTS SHALL BE MATCH MARKED PRIOR TO DISASSEMBLY TO ENSURE REINSTALLATION AT THE SAME LOCATION FROM AND ORIENTATION IN WHICH THEY WERE REMOVED. THE CONTRACTOR SHALL SUBMIT A KEY DIAGRAM IDENTIFYING THE MATCH MARKING SYSTEM, ELEVATION AND LOCATION OF ALL SHAFT CENTERLINES TO THE ENGINEER FOR APPROVAL PRIOR TO DISASSEMBLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND/OR REINSTALLING ALL NEW AND/OR REHABILITATED MACHINERY AND MACHINERY SUPPORTS IN THEIR PROPER LOCATION AND ALIGNMENT.

## GENERAL MACHINERY NOTES (CONTINUED):

32. ALL REASSEMBLY OF ANY ITEM THAT NEEDED TO BE TEMPORARILY DISASSEMBLED DURING/FOR THE COURSE OF THE WORK FOR THIS PROJECT SHALL BE INCLUDED AS PART OF THE WORK. REASSEMBLY OF ITEMS TO BE TO A CONDITION EQUAL TO OR BETTER THAN THAT PRIOR TO DISASSEMBLY.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MACHINERY
GENERAL NOTES

ALLIGATOR RIVER
SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| DRAWN BY: | JAG/MS | DATE : | 8/8/2016 |
|---|---|---|---|
| CHECKED BY: | GAF/RH | DATE : | 8/8/2016 |
| DESIGN ENGINEER OF RECORD: | JAG/MS | DATE : | 8/8/2016 |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 68 | 90 |

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REVISIONS

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

SHEET NO. M-1
TOTAL SHEETS 23

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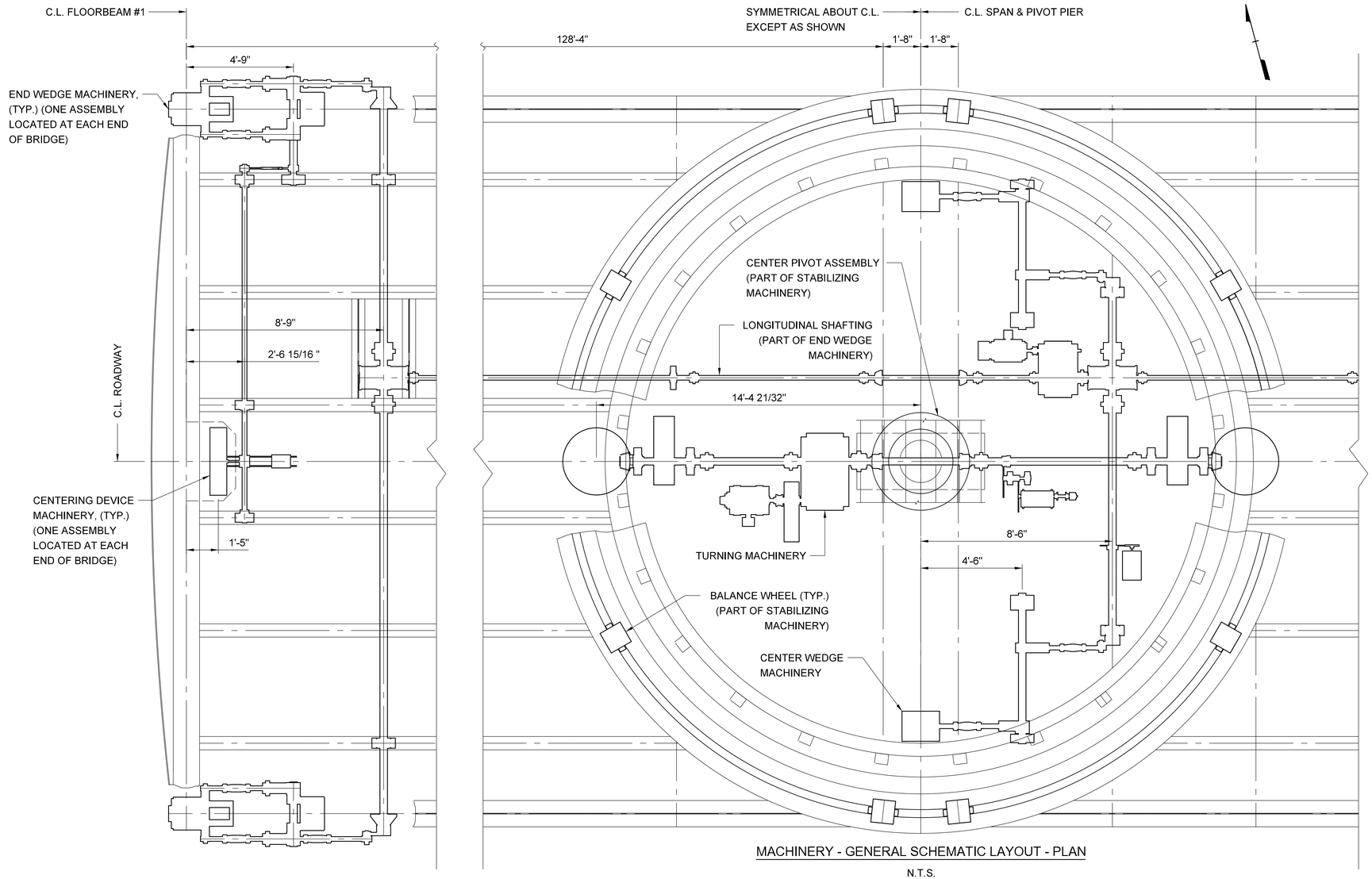



MACHINERY - GENERAL SCHEMATIC LAYOUT - PLAN

N.T.S.

## MECHANICAL SCOPE/SEQUENCE OF WORK

WORK TO INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING WORK ITEMS. DETAILS OF WORK ARE GIVEN ON DRAWINGS M1 THROUGH M23.

1.0 SURVEY AND JACKING
- A. PRE-WORK JACKING MEASUREMENTS AND SURVEY
- B. JACKING FOR ADJUSTMENT OF COMPONENTS
- C. FINAL VERIFICATION SURVEY AND VERIFICATION ON END LOAD REACTIONS (SEE SPECIAL PROVISION 'STABILIZING MACHINERY' FOR REQUIREMENTS)

2.0 TEMPORARY/AUXILIARY OPERATING SYSTEM
- A. PROVIDE INDEPENDENT DRIVE AND LABOR TO OPERATE THE SWING SPAN DURING MACHINERY REHABILITATION (SEE SPECIAL PROVISION 'AUXILIARY OPERATING SYSTEM' FOR REQUIREMENTS)

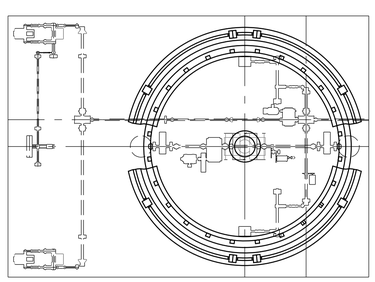
3.0 STABILIZING MACHINERY
- A. REHABILITATE CENTER BEARING
- B. REPLACE TRACK SECTIONS AND DETERIORATED ANCHORAGE
- C. ADJUST BALANCE WHEEL CLEARANCES

4.0 TURNING MACHINERY
- A. REPLACE RACK SECTIONS AND DETERIORATED ANCHORAGE
- B. REPLACE RACK PINIONS AND RACK PINION SHAFTS
- C. REHABILITATE RACK PINION BEARINGS
- D. REPLACE BEVEL GEAR SETS
- E. REPLACE HORIZONTAL DRIVE SHAFTING, BEARINGS AND COUPLINGS
- F. REPLACE SPEED REDUCER
- G. INSTALL NEW MOTOR AND BRAKES
- H. INSTALL NEW LIMIT SWITCHES AND INSTRUMENT DRIVES

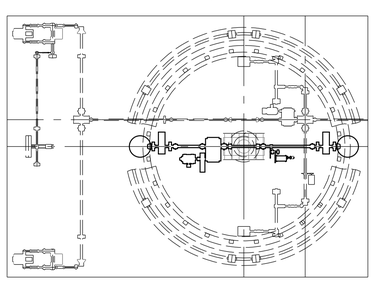
5.0 END WEDGE MACHINERY
- A. REPLACE WEDGE ANGLES, WEDGES AND SEATS
- B. REHABILITATE CRANKS AND REPLACE TURNBUCKLES
- C. REPLACE TRANSVERSE SHAFTS AND BEARINGS
- D. REHABILITATE WORM GEAR REDUCERS
- E. REPLACE LONGITUDINAL SHAFTING, BEARINGS AND COUPLINGS
- F. REPLACE SPEED REDUCER
- G. INSTALL NEW MOTOR AND BRAKE
- H. INSTALL NEW LIMIT SWITCHES AND INSTRUMENT DRIVES

6.0 CENTER WEDGE MACHINERY
- A. REHABILITATE WEDGES AND RESET BASES
- B. REHABILITATE CRANKS AND REPLACE TURNBUCKLES
- C. REPLACE TRANSVERSE SHAFTS AND BEARINGS
- D. REHABILITATE WORM GEAR REDUCER

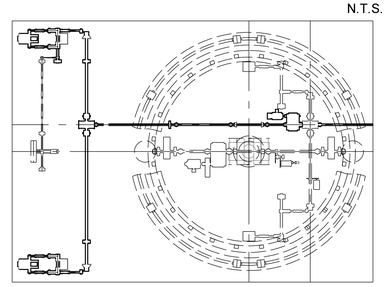
7.0 CENTERING DEVICE MACHINERY
- A. REHABILITATE LATCH BAR AND LATCH POCKET
- B. REHABILITATE CRANKS AND REPLACE TURNBUCKLES
- C. REHABILITATE TRANSVERSE SHAFTS AND BEARINGS



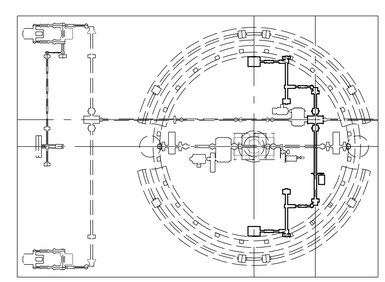
ITEM 3.0 - STABILIZING MACHINERY



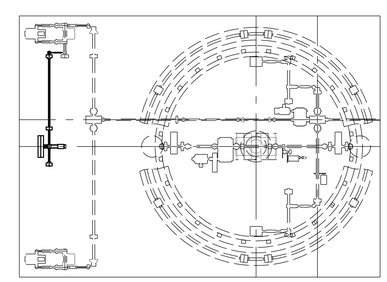
ITEM 4.0 - TURNING MACHINERY



ITEM 5.0 - END WEDGE MACHINERY (EACH END)



ITEM 6.0 - CENTER WEDGE MACHINERY



ITEM 7.0 - CENTERING DEVICE MACHINERY (EACH END)

MACHINERY WORK - KEY PLANS

N.T.S.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MACHINERY
GENERAL LAYOUT

ALLIGATOR RIVER
SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| REVISIONS | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | M-2 |
| 1 | | | 3 | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | 23 |

DRAWN BY: JAG/MS DATE : 8/8/2016
CHECKED BY: GAF/RH DATE : 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE : 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 69 | 90 |

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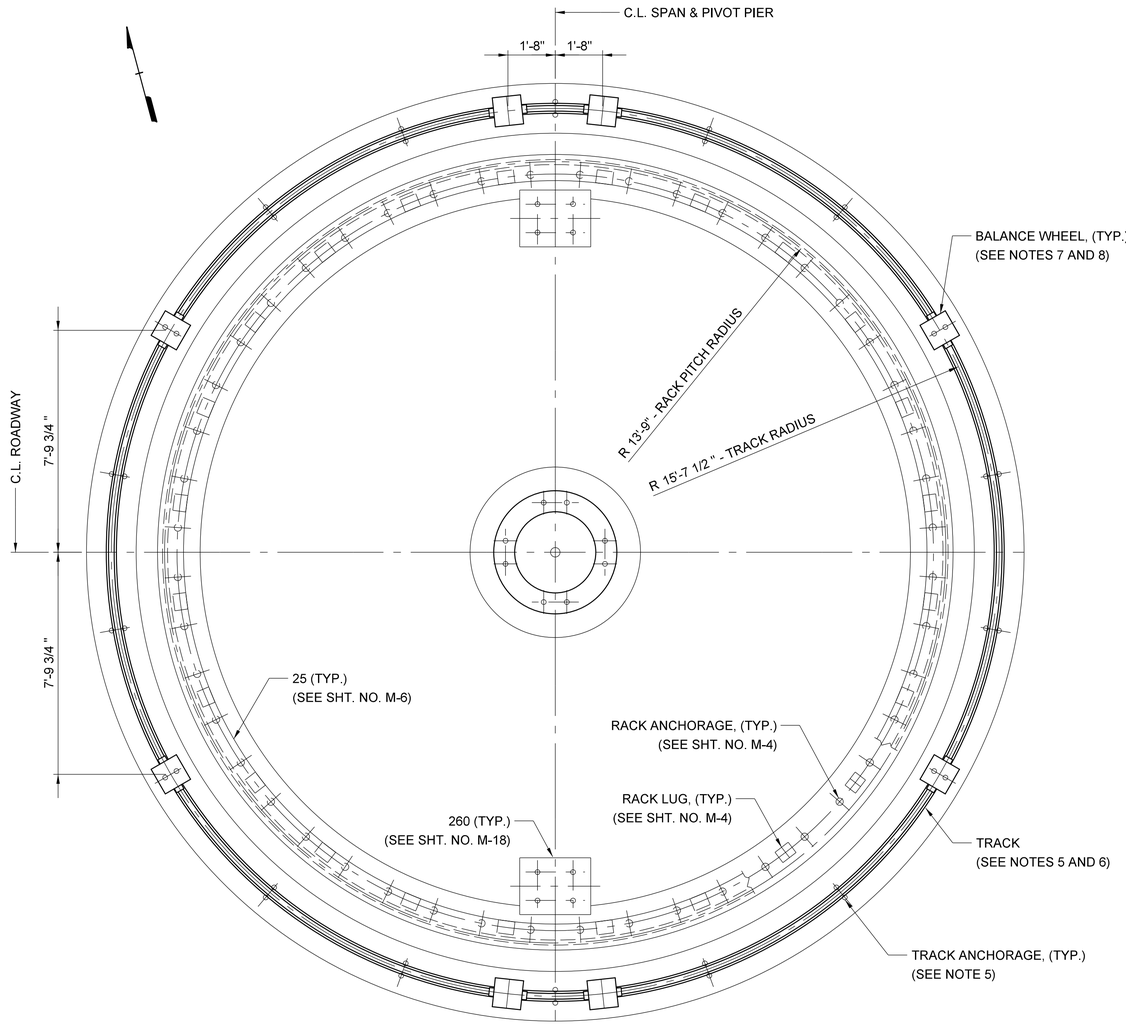
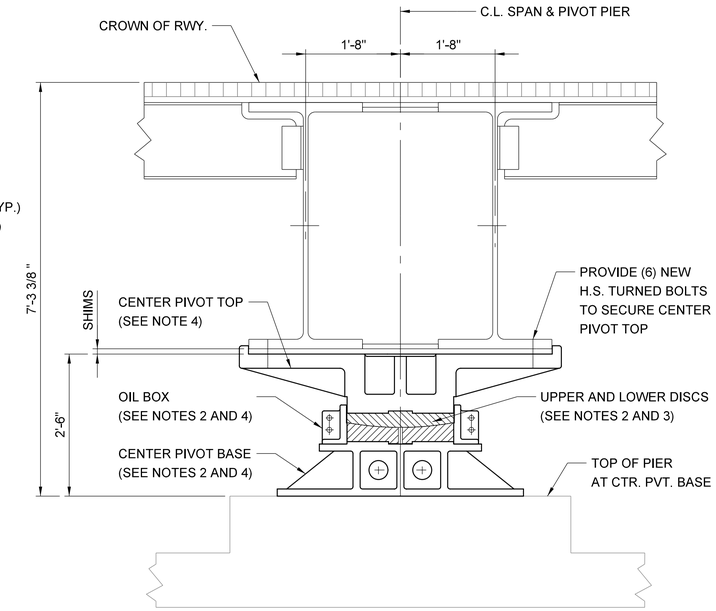
$$$$USERNAME$$$$



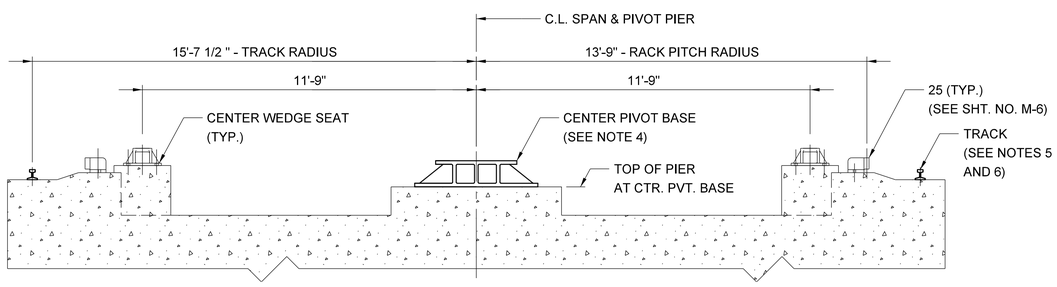

PLAN




CENTER PIVOT ASSEMBLY

SCALE: 3/4" = 1'-0"

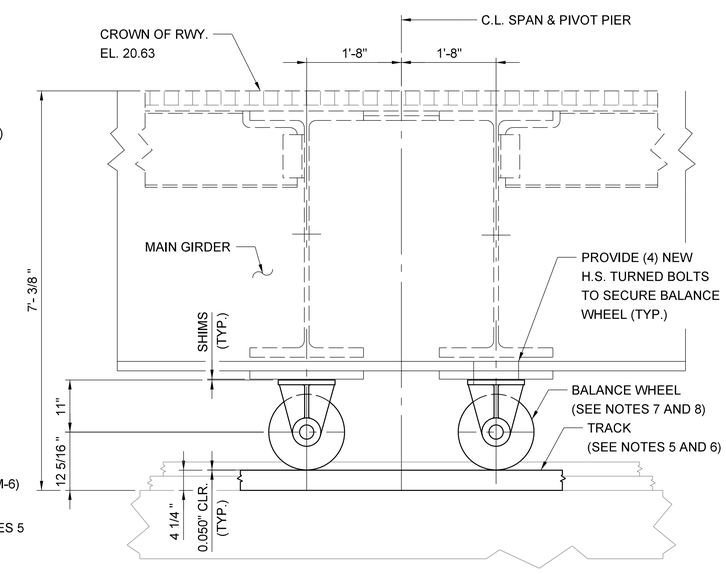
(1) CENTER PIVOT TOTAL




DEVELOPED SECTION

CENTER PIER - STABILIZING MACHINERY

SCALE: 3/8" = 1'-0"




BALANCE WHEEL ASSEMBLY

SCALE: 3/4" = 1'-0"

(8) BALANCE WHEELS TOTAL

## STABILIZING MACHINERY REHABILITATION NOTES:

1. WITH THE CORRECTIVE SHIM THICKNESS BETWEEN THE CENTER PIVOT TOP AND PIVOT GIRDER DETERMINED, THE CONTRACTOR SHALL ESTABLISH THE FINAL ELEVATION OF THE SWING SPAN. WITH THE FINAL ELEVATION OF THE SWING SPAN ESTABLISHED, THE CONTRACTOR CAN SET THE ELEVATION OF THE MACHINERY AND BEGIN THE MACHINERY REHABILITATION WORK.

2. FOR THE STABLIZING MACHINERY, THE CONTRACTOR SHALL PLAN TO TEMPORARILY REMOVE THE CENTER PIVOT'S OIL BOX FROM THE ASSEMBLY TO EXPOSE THE UPPER AND LOWER BEARING DISCS. THIS EFFORT MAY BE COORDINATED WITH THE CONTRACTOR'S EFFORTS TO JACK THE SWING SPAN FOR INTRODUCTION OR REMOVAL OF THE CORRECTIVE SHIM BETWEEN THE CENTER PIVOT TOP AND PIVOT GIRDER. THE UPPER AND LOWER BEARING DISCS SHALL BE INSPECTED TO CONFIRM THEY REMAIN IN LIKE-NEW CONDITION.

3. THE EXPOSED LOWER BEARING DISC SHALL BE USED TO DETERMINE THE FINAL POSITION OF THE NEW RACK AND NEW TRACK ASSEMBLIES.

4. THE EXISTING CENTER PIVOT ASSEMBLY SHALL BE CLEANED PRIOR TO REINSTALLING THE OIL BOX. THE OIL BOX SHALL BE INSTALLED WITH A NEW GASKET AND ALL NEW HARDWARE. AS PART OF THE ASSEMBLY EFFORT, ALL NON-GASKETED JOINTS SHALL BE SEALED WITH A PERMATEX NON-HARDENING COMPOUND AS RECOMMENDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE EXTERIOR OF THE CENTER PIVOT ASSEMBLY SHALL THEN BE PAINTED. AS SOON AS PRACTICAL, THE BEARING CAVITY SHALL BE FILLED WITH THE PROPER QUANTITY AND TYPE OF LUBRICANT. AS PART OF THE WORK AND FOR THE DURATION OF CONSTRUCTION, THE CONTRACTOR SHALL CONFIRM THAT THE REASSEMBLED CENTER PIVOT REMAINS PROPERLY SEALED AND IN GOOD WORKING CONDITION.

5. THE EXISTING TRACK SHALL BE REPLACED IN-KIND. PRIOR TO REPLACING TRACK SECTIONS, THE CONTRACTOR SHALL CONFIRM THAT EXISTING EMBEDDED SUPPORT PLATES AND ANCHOR BOLTS REMAIN IN SATISFACTORY CONDITION. ANY SIGNS OF SECTION LOSS, ANCHORAGE QUALITY, OR OTHER FINDINGS THAT MIGHT AFFECT PROPER INSTALLATION AND SERVICE OF NEW TRACK SECTIONS SHALL BE REPORTED TO THE ENGINEER. THE ENGINEER MAY REQUIRE REPLACEMENT OF ANY EXISTING MECHANICAL ELEMENT OR SUPPORT DEEMED UNACCEPTABLE AS A RESULT OF THIS INSPECTION. THE ENGINEER SHALL BE THE FINAL JUDGE OF A COMPONENT'S CONDITION.

6. REPLACEMENT TRACK SECTIONS SHALL BE INSTALLED SUCH THAT THEIR ENDS FULLY MATE, THEY FORM A CONCENTRIC CIRCLE AROUND THE CENTER PIVOT, THEIR TREAD SURFACE IS LEVEL AND THEIR ELEVATIONS CONSISTENT. THE FULLY ASSEMBLED TRACK SHALL BE INSTALLED WITH A CONCENTRICITY TOLERANCE OF 1/16 INCH AND SECURED AT AN ELEVATION THAT COMPLEMENTS THE FINAL ELEVATION OF THE SWING SPAN, WHICH MAY INFLUENCE THE FINAL ELEVATION OF BALANCE WHEELS.

7. THE EXISTING BALANCE WHEEL ASSEMBLIES SHALL BE REMOVED, DISASSEMBLED, CLEANED, INSPECTED, PAINTED, REASSEMBLED, INSTALLED, ALIGNED, FASTENED AND LUBRICATED AS PART OF THIS WORK.

8. REFER TO SPECIAL PROVISION 'STABILIZING MACHINERY' FOR INSTALLATION CLEARANCES BETWEEN TRACK AND BALANCE WHEELS.

9. ANY MOVEMENT OF THE SWING SPAN REQUIRES THE CENTER PIVOT ASSEMBLY, TRACK ASSEMBLY AND BALANCE WHEELS TO BE INSTALLED FOR PROPER STABILIZATION.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CENTER BEARING
AND BALANCE WHEELS

ALLIGATOR RIVER
SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-3 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 70 | 90 |

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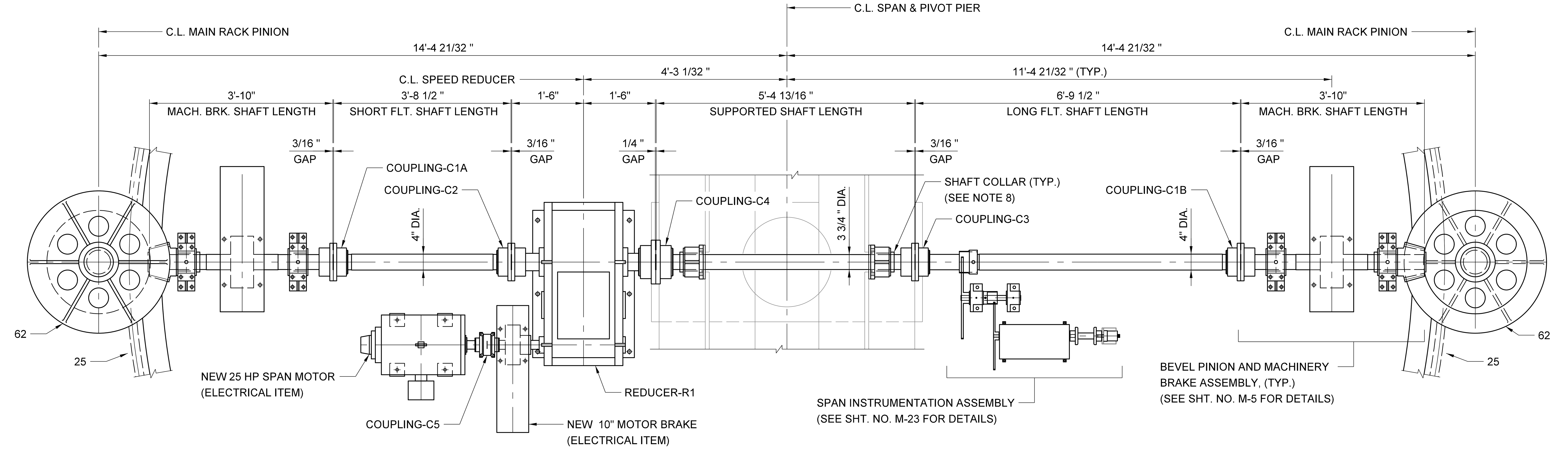
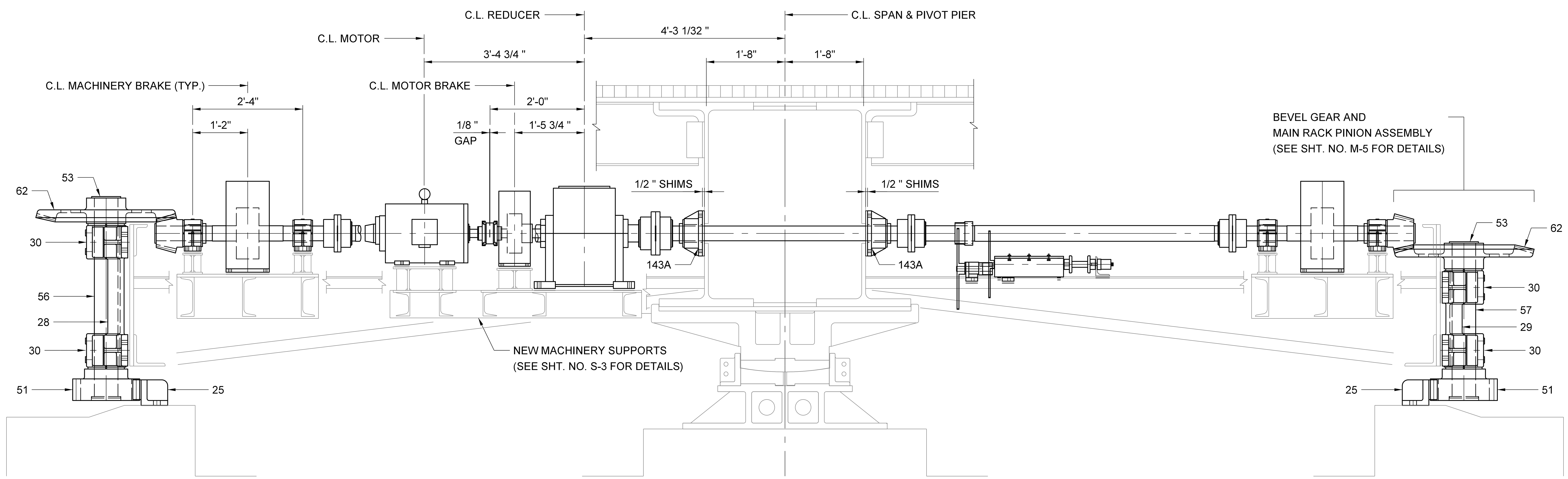



PLAN

SCALE: 3/4" = 1'-0"




ELEVATION

TURNING MACHINERY ASSEMBLY

SCALE: 3/4" = 1'-0"

## TURNING MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE TURNING MACHINERY TABLE SHOWN ON SHEET NO. M-6.

2. THE CONTRACTOR SHALL PROVIDE AN AUXILIARY OPERATING SYSTEM THAT SHALL FUNCTION TO OPEN AND CLOSE THE SWING SPAN WHILE THE TURNING MACHINERY IS BEING REHABILITATED. THE SUGGESTED SYSTEM MAY REQUIRE STAGING OF THE RACK REPLACEMENT EFFORT TO MAINTAIN OPERABILITY OF THE SWING SPAN. AFTER THE REHABILITATION EFFORT IS COMPLETED, THE SYSTEM SHALL REMAIN AND BE USED IN PLACE OF THE ORIGINAL CAPSTAN.

3. IN GENERAL, THE REHABILITATION DESIGN OF THE TURNING MACHINERY INCLUDES IN-KIND REPLACEMENT OF ORIGINAL COMPONENTS, REHABILITATION OF ORIGINAL COMPONENTS AND NEW COMPONENTS. FOR IN-KIND REPLACEMENT AND REHABILITATION OF ORIGINAL COMPONENTS, THE CONTRACTOR SHALL BASE HIS/HER SHOP DRAWINGS OFF THE ORIGINAL SHOP DRAWING DETAILS. THE CONTRACTOR SHALL ALSO FIELD VERIFY THE ACCURACY OF THE ORIGINAL SHOP DRAWINGS FOR THESE COMPONENTS AND UPDATE HIS/HER SHOP DRAWINGS AS NEEDED TO REFLECT THE AS-BUILT CONDITION.

4. ALL IN-KIND REPLACEMENT, REHABILITATED AND NEW COMPONENTS MAKING UP THE TURNING MACHINERY ASSEMBLY SHALL BE PROVIDED WITH NEW SHIMS AND HIGH STRENGTH HARDWARE, UNLESS OTHERWISE SHOWN OR REQUIRED WITHIN THE SPECIFICATIONS.

5. PRIOR TO REPLACING RACK SECTIONS, THE CONTRACTOR SHALL CONFIRM THAT EXISTING EMBEDDED RACK LUGS, ASSOCIATED HARDWARE AND EXISTING ANCHOR BOLTS REMAIN IN SATISFACTORY CONDITION. ANY SIGNS OF SECTION LOSS, DETERIORATION OR OTHER FINDINGS THAT MIGHT AFFECT PROPER INSTALLATION AND SERVICE OF NEW RACK SECTIONS SHALL BE REPORTED TO THE ENGINEER. THE ENGINEER MAY REQUIRE REPLACEMENT OF ANY EXISTING MECHANICAL ELEMENT OR SUPPORT DEEMED UNACCEPTABLE AS A RESULT OF THIS INSPECTION. THE ENGINEER SHALL BE THE FINAL JUDGE OF A COMPONENTS CONDITION.

6. REPLACEMENT RACK SECTIONS SHALL BE INSTALLED SUCH THAT THEIR ENDS FULLY MATE, THEY FORM A CONCENTRIC CIRCLE AROUND THE EXISTING CENTER PIVOT, THEIR TOOTH FACES REMAIN VERTICAL, THEIR TOP SURFACES LEVEL AND THEIR ELEVATIONS CONSISTENT. THE FULLY ASSEMBLED RACK SHALL BE INSTALLED WITH A CONCENTRICITY TOLERANCE OF 1/32 INCH WITH RESPECT TO THE CENTER PIVOTS BOTTOM DISC. THE FULLY ASSEMBLED RACK SHALL BE SET AND SECURED AT AN ELEVATION THAT COMPLEMENTS THE FINAL ELEVATION OF THE SWING SPAN AND MATING RACK PINIONS.

7. EXISTING TURNING MACHINERY SUPPORTS SHALL BE REMOVED AND REPLACED WITH NEW SUPPORTS.

8. SHAFT COLLARS ASSEMBLED ON SUPPORTED SHAFT SHALL BE ALIGNED FOR A CLEARANCE OF 0.015" (PER COLLAR) WITH BEARING 143A.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TURNING MACHINERY ASSEMBLY

ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
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SHEET NO. M-4
TOTAL SHEETS 23

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 71 | 90 |

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|---|---|---|---|
| DRAWN BY: | JAG/MS | DATE : | 8/8/2016 |
| CHECKED BY: | GAF/RH | DATE : | 8/8/2016 |
| DESIGN ENGINEER OF RECORD: | JAG/MS | DATE : | 8/8/2016 |

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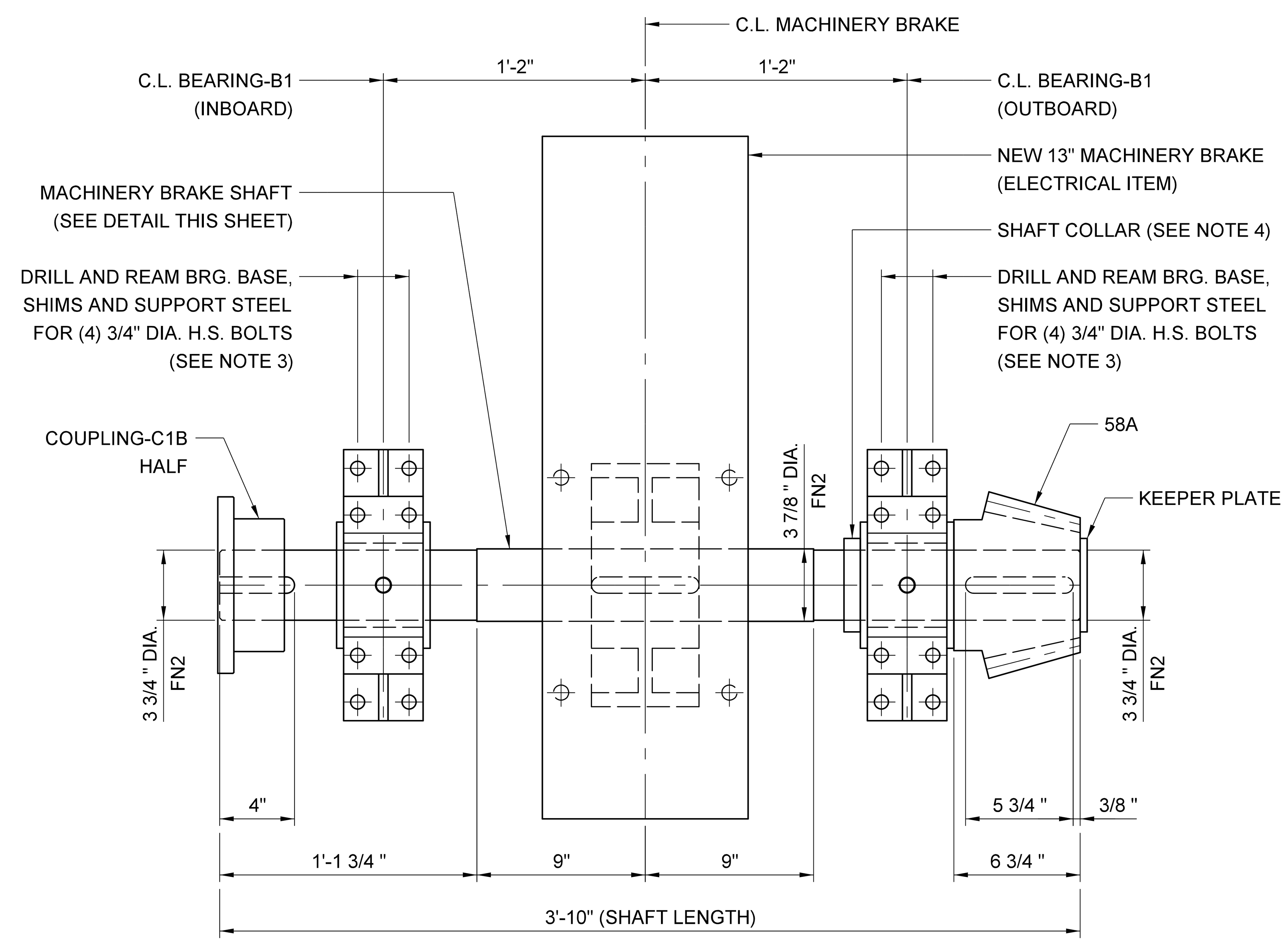
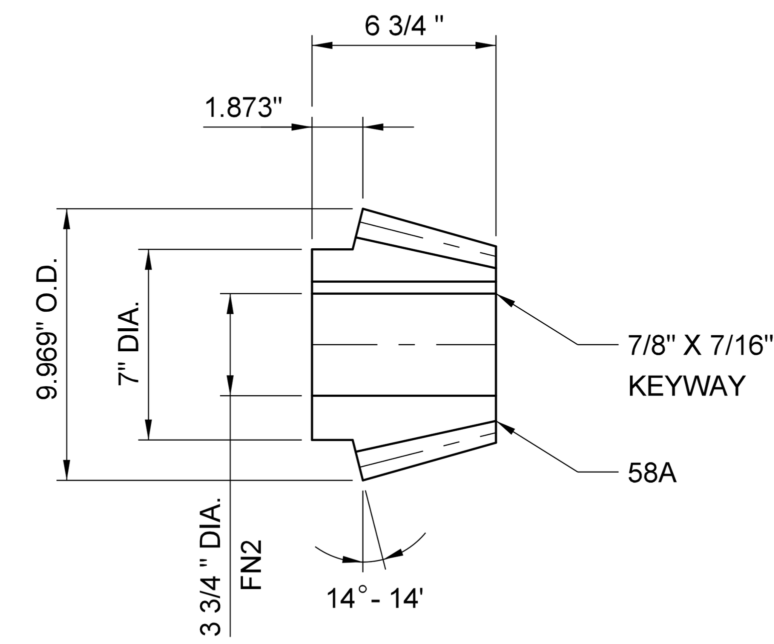
$$$$USERNAME$$$$




PLAN

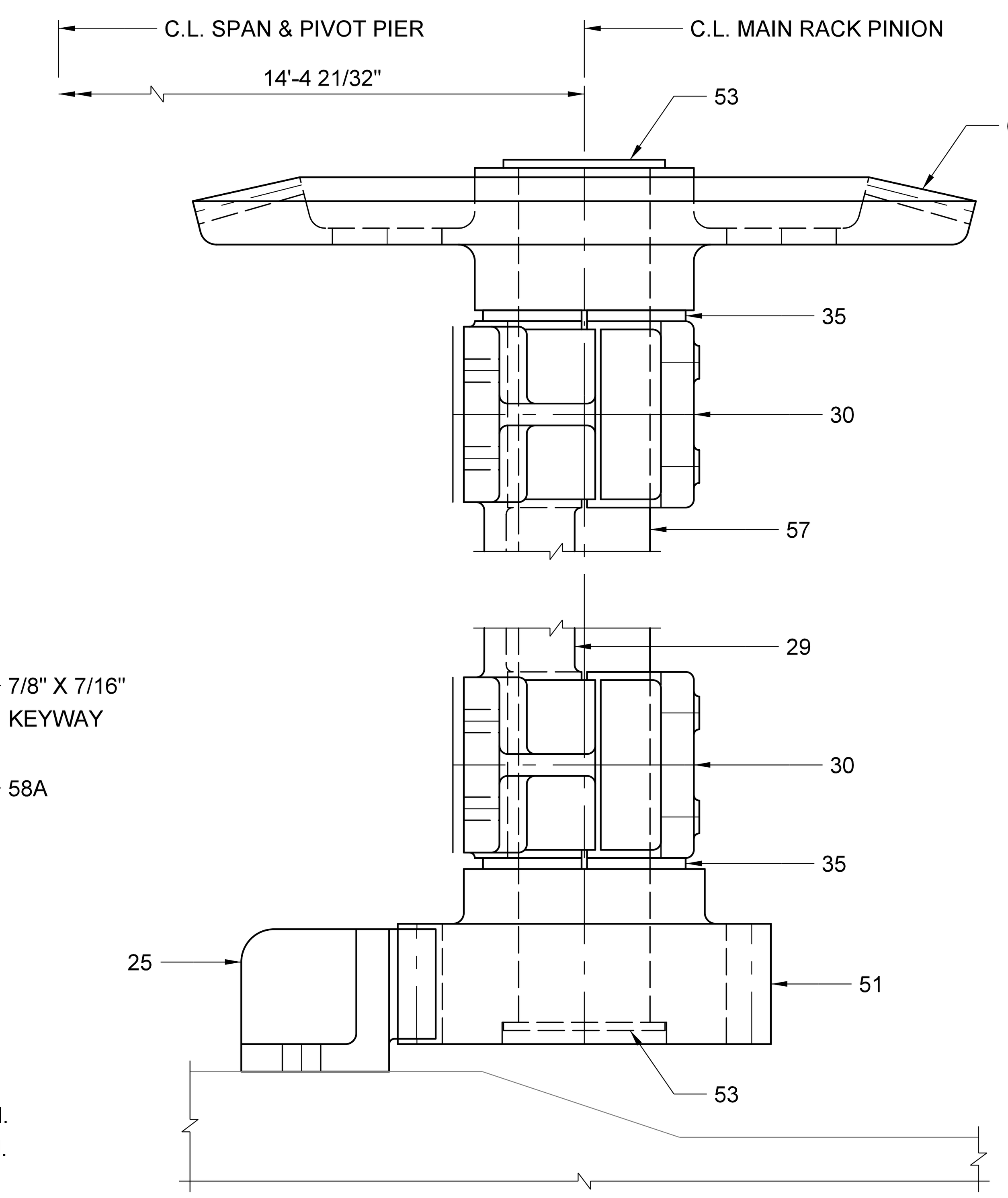
BEVEL PINION AND MACHINERY BRAKE SHAFT ASSEMBLY

SCALE: 2" = 1'-0"
(1) ASSEMBLY REQUIRED - AS SHOWN
(1) ASSEMBLY REQUIRED - OPPOSITE

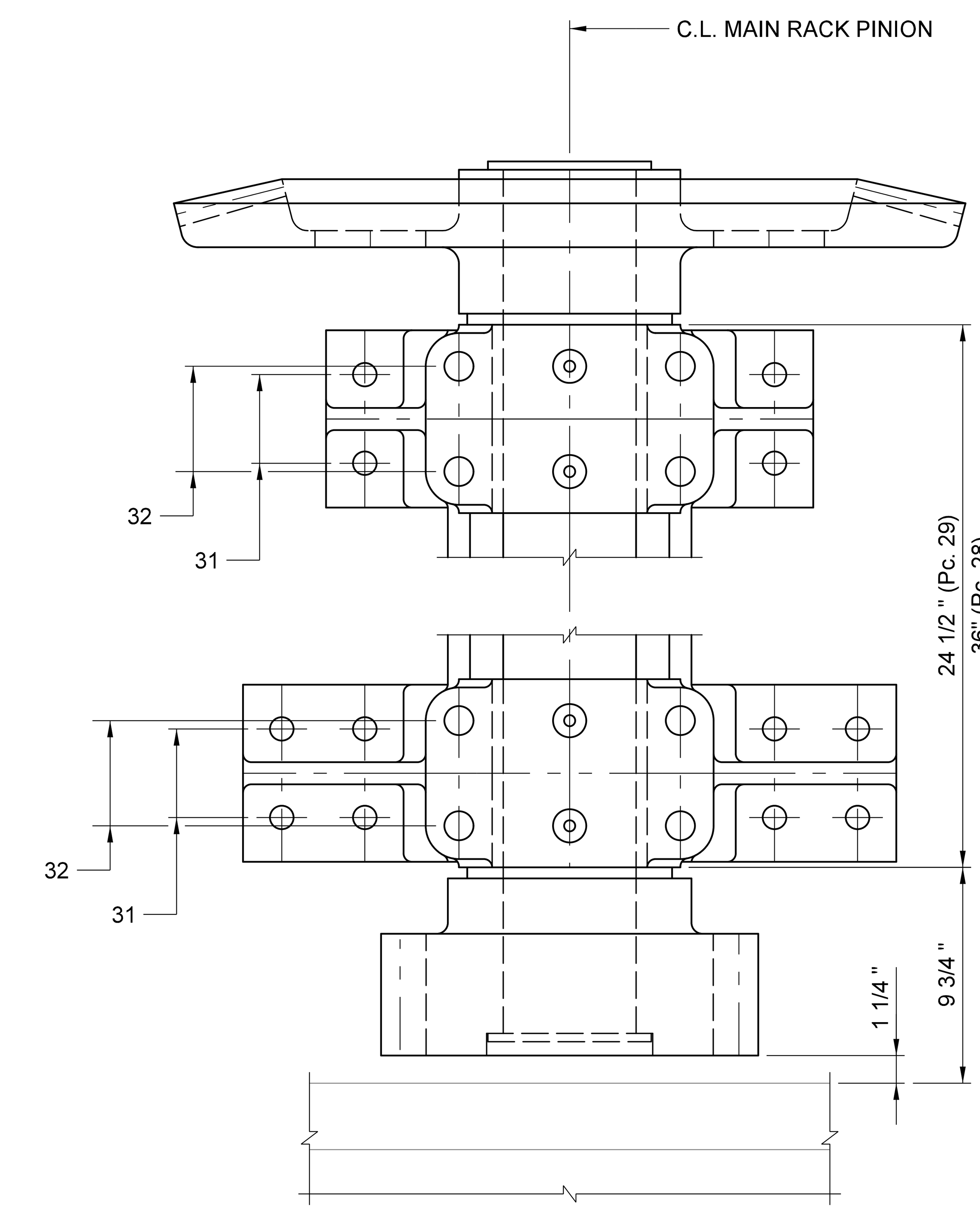



BEVEL PINION

SCALE: 2" = 1'-0"
18 TEETH - 2 D.P.
9.000" P.D. - 20 DEG. INV.
PITCH ANGLE = 14 DEG. - 14 MIN.
ROOT ANGLE = 12 DEG. - 25 MIN.



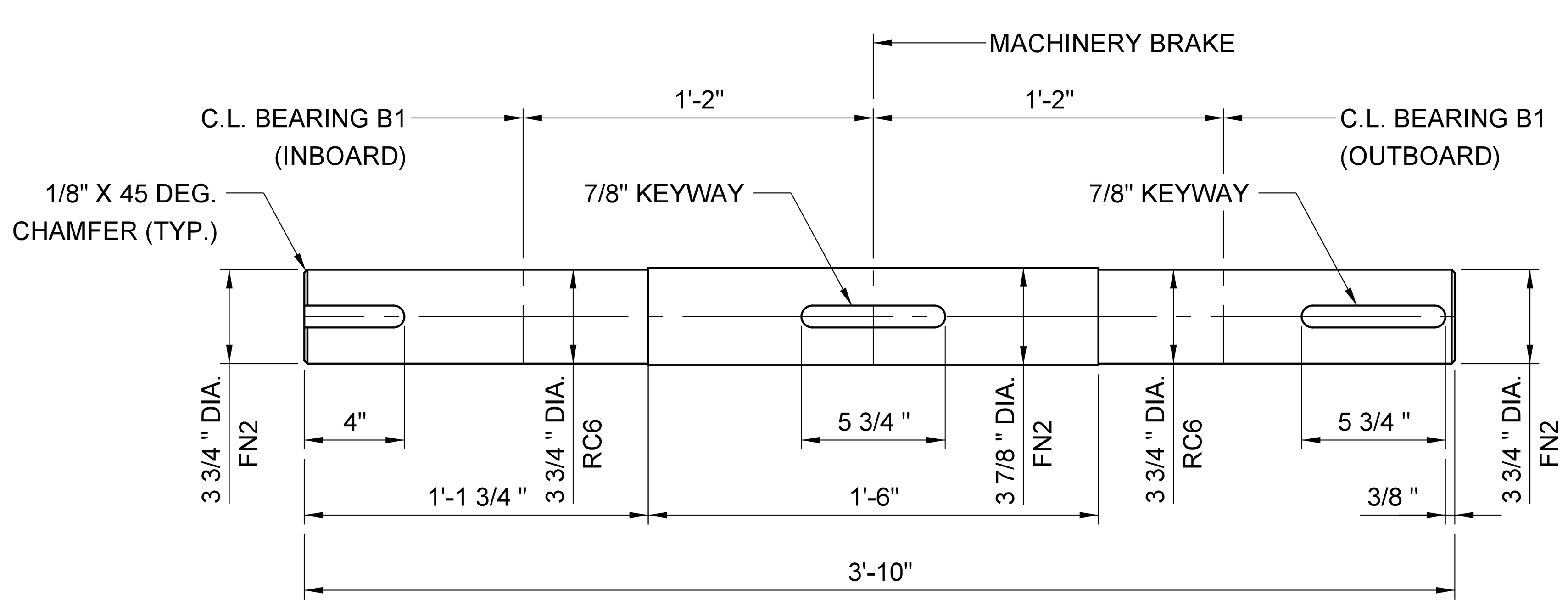

SIDE ELEVATION




FRONT ELEVATION

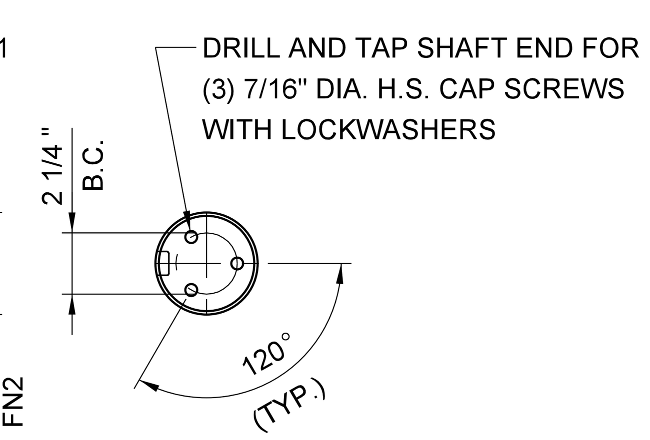
BEVEL GEAR AND MAIN RACK PINION ASSEMBLY

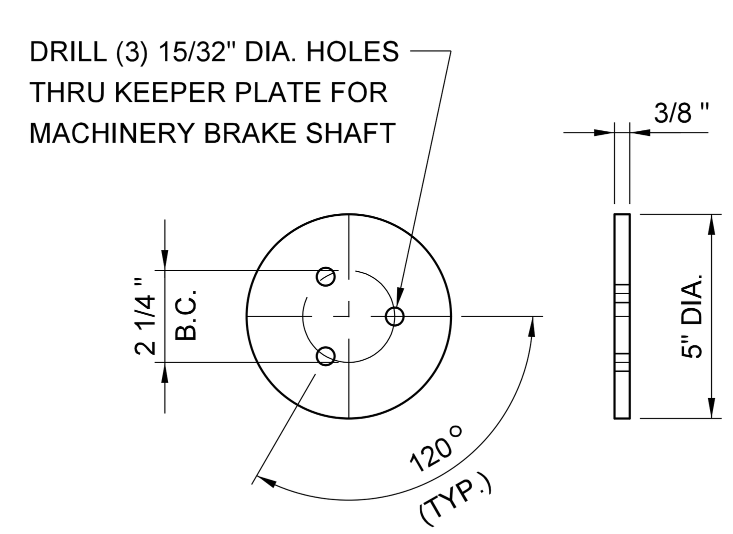
SCALE: 2" = 1'-0"
(1) SHORT ASSEMBLY REQUIRED - AS SHOWN
(1) LONG ASSEMBLY REQUIRED - SIMILAR




MACHINERY BRAKE SHAFT

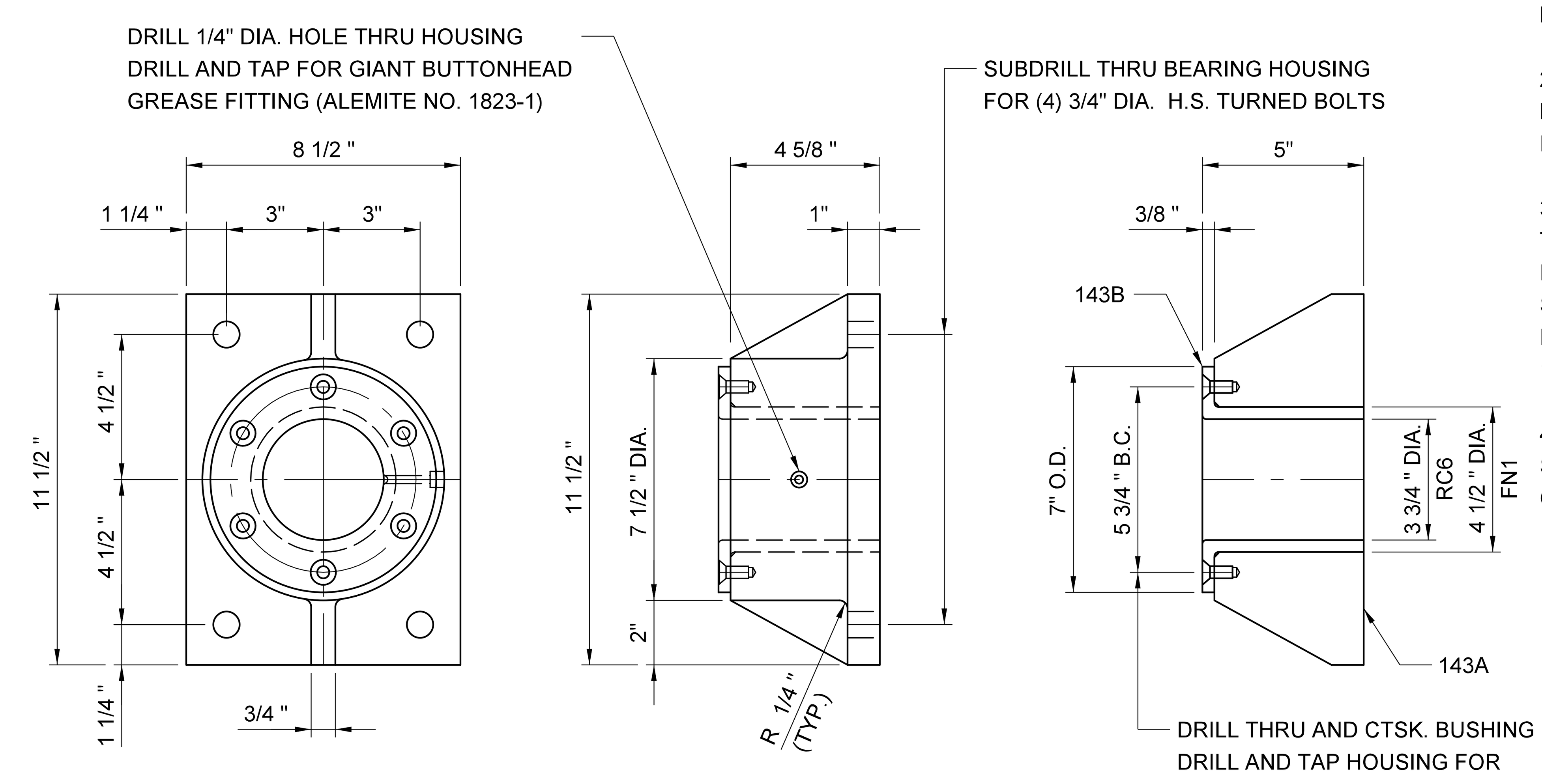
SCALE: 2" = 1'-0"



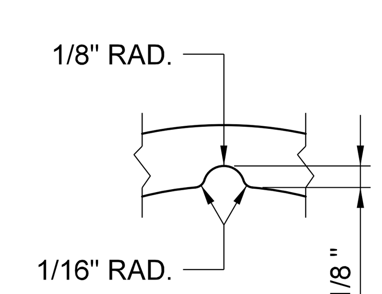

KEEPER PLATE

SCALE: 3" = 1'-0"




COLLAR BEARING ASSEMBLY

SCALE: 3" = 1'-0"




GROOVE DETAIL

SCALE: FULL SIZE

NOTES:

1. FOR COMPONENT QUANTITIES, DESCRIPTION OF WORK AND MATERIALS SEE SHEET NO. M-6.

2. COLLAR BEARING BUSHINGS SHALL BE PROVIDED WITH MACHINED DOUBLE OVAL GREASE GROOVES. FOR GROOVE DETAIL SEE SHEET NO. M-5.

3. BEARING-B1 BASE MOUNTING BOLTS SHALL EXTEND THROUGH THE TOP AND BOTTOM FLANGES OF THEIR RESPECTIVE SUPPORTS. HOLES THROUGH TOP FLANGE SHALL BE TOLERANCED PER THE GENERAL MACHINERY NOTES. HOLES THROUGH BOTTOM FLANGE SHALL PROVIDE 1/16" CLEARANCE.

4. SHAFT COLLARS ASSEMBLED ON MACHINERY BRAKE SHAFTS SHALL BE ALIGNED FOR A CLEARANCE OF 0.010" (PER COLLAR) WITH BEARING B1.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

Hardesty & Hanover
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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TURNING MACHINERY DETAILS

ALLIGATOR RIVER SWING SPAN

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

SHEET NO. M-5
TOTAL SHEETS 23

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 72 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY: JAG/MS DATE: 8/8/2016
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DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

$$$$$$SYSTIME$$$$$
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$$$$USERNAME$$$$

TABLE OF TURNING MACHINERY COMPONENTS

| PIECE | NAME | QNTY. | DESCRIPTION OF WORK | MATERIAL | DESIGNATION | SUPPLEMENTAL REQUIREMENT | REMARKS |
|---|---|---|---|---|---|---|---|
| 25 | RACK SECTION | 12 | REPLACE EXISTING SECTIONS | CAST STEEL | ASTM A 148 GR. 80-50 | BHN 170 - 200 | SEE NOTE 1 |
| 27 | BOLTS FOR 25 | 24 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 28 | RACK PINION BEARING | 1 | REHABILITATE EXISTING BEARING | N/A | N/A | N/A | SEE NOTES 5 |
| 29 | RACK PINION BEARING | 1 | REHABILITATE EXISTING BEARING | N/A | N/A | N/A | SEE NOTES 5 |
| 30 | CAP FOR 28 AND 29 | 4 | REHABILITATE EXISTING CAP | N/A | N/A | N/A | SEE NOTES 5 |
| 31 | BOLT FOR 28 AND 29 | 24 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 32 | BOLT FOR 28, 29 AND 30 | 16 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 33 | SHIM FOR 28 AND 29 | 2-SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| 34 | SHIM FOR 28 AND 29 | 2-SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| 35 | BUSHING FOR 28 AND 29 | 4 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE NOTES 1 AND 5 |
| 36 | LINER FOR 28, 29, 30 AND 35 | 8 | REPLACE EXISTING LINERS | COMMER. BRASS | MIL-S-22499 | N/A | SEE NOTE 1 AND 5 |
| 51 | RACK PINION | 2 | REPLACE EXISTING PINIONS | FORGED STEEL | ASTM A 291 CL. 2 | S3. NON. EXAM., BHN 210 - 240 | SEE NOTE 1 |
| 52 | KEY FOR 51 | 4 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 53 | PLATE FOR 51, 56 AND 57 | 4 | REPLACE EXISTING PLATES | STR. STEEL | ASTM A 709 GR. 50 | N/A | SEE NOTE 1 |
| 54 | SCREW FOR 53 | 12 | REPLACE EXISTING SCREWS | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 56 | RACK PINION SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 291 CL. 2 | N/A | SEE NOTE 1 |
| 57 | RACK PINION SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 291 CL. 2 | N/A | SEE NOTE 1 |
| 58A | BEVEL PINION | 2 | REPLACE EXISTING PINIONS | FORGED STEEL | ASTM A 291 CL. 2 | S3. NON. EXAM., BHN 210 - 240 | SEE NOTE 1 |
| 62 | BEVEL GEAR | 2 | REPLACE EXISTING GEARS | CAST STEEL | ASTM A 148 GR. 80-50 | BHN 170 - 200 | SEE NOTE 1 |
| 63 | KEY FOR 62 | 4 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 94 | CAPSTAN BOX | 1 | ABANDON EXISTING CAPSTAN BOX IN PLACE | N/A | N/A | N/A | SEE NOTE 6 |
| 95 | COVER FOR 94 | 1 | ABANDON EXISTING COVER IN PLACE | N/A | N/A | N/A | SEE NOTE 6 |
| N/A | KEEPER PLATE | 2 | PROVIDE NEW KEEPER PLATE | STR. STEEL | ASTM A 709 GR. 50 | N/A | SEE DETAIL SHT. NO. M-5 |
| N/A | BEARING-B1 | 4 | NEW EARLE PILLOW BLOCK, MODEL NO. EPB-16, SPECIAL 3 3/4" DIA. NOMINAL BORE | N/A | N/A | N/A | COMMERCIAL |
| N/A | SHAFT COLLAR | 2 | NEW TWO-PIECE CLAMP-ON SHAFT COLLAR FOR 3 3/4" DIAMETER, TYPE 303 STAINLESS STEEL | MCMASTER-CARR PART NO. 6436K247 (OR APPROVED EQUAL) | | | COMMERCIAL |
| N/A | MACHINERY BRAKE SHAFT | 2 | PROVIDE NEW SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-5 |
| N/A | MACHINERY BRAKE | 2 | NEW MONDEL 13" BTE-ED80/6S, TORQUE SETTING 550 FT.-LBS. | N/A | N/A | N/A | ELECTRICAL ITEM |
| N/A | SHORT FLOATING SHAFT | 1 | PROVIDE NEW SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-5 |
| N/A | LONG FLOATING SHAFT | 1 | PROVIDE NEW SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-5 |
| 143A | COLLAR BEARING - HOUSING | 2 | REPLACE EXISTING HOUSING WITH TWO (2) SIMILAR HOUSINGS | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-5 |
| 143B | COLLAR BEARING - BUSHING | 2 | REPLACE EXISTING BUSHING WITH TWO (2) SIMILAR BUSHINGS | CAST BRONZE | ASTM B 22 C93700 | N/A | SEE DETAIL SHT. NO. M-5 |
| N/A | SUPPORTED SHAFT | 1 | PROVIDE NEW SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-5 |
| N/A | REDUCER-R1 | 1 | NEW EARLE SPEED REDUCER, TYPE DD, SIZE 6, INPUT RATING 25 HP AT 870 RPM, RATIO 30.41:1, SERV. FACT. 1.5 | N/A | N/A | N/A | SEE NOTE 7 |
| N/A | SPAN MOTOR | 1 | NEW REULAND VECTOR DUTY MOTOR, 25 HP, 900 RPM | N/A | N/A | N/A | ELECTRICAL ITEM |
| N/A | MOTOR BRAKE | 1 | NEW MONDEL 10" BTE-ED30/5S, TORQUE SETTING 200 FT.-LBS. | N/A | N/A | N/A | ELECTRICAL ITEM |

TABLE OF NEW TURNING MACHINERY COUPLINGS

| MARK | QNTY. | SIZE | TORQUE RATING IN-KIPS | TYPE | DRIVING HALF NOMINAL BORE, IN. | DRIVING HALF KEY IN. x IN. | R = RIGID F = FLEX | DRIVEN HALF KEY IN. x IN. | DRIVEN HALF NOMINAL BORE, IN. | MANUFACTURER |
|---|---|---|---|---|---|---|---|---|---|---|
| C1-A | 1 | 1030G51 | 75.3 | SINGLE ENGAGE. GEAR | 3 7/8 | 1 x 1 | F | R | 7/8 X 7/8 | 3 3/4 | FALK CORPORATION |
| C1-B | 1 | 1030G51 | 75.3 | SINGLE ENGAGE. GEAR | 3 7/8 | 1 x 1 | F | R | 7/8 X 7/8 | 3 3/4 | FALK CORPORATION |
| C2 | 1 | 1030G51 | 75.3 | SINGLE ENGAGE. GEAR | * | * | R | F | 1 x 1 | 3 7/8 | FALK CORPORATION |
| C3 | 1 | 1030G51 | 75.3 | SINGLE ENGAGE. GEAR | 3 3/4 | 7/8 X 7/8 | R | F | 1 x 1 | 3 7/8 | FALK CORPORATION |
| C4 | 1 | 1035G10 | 163.8 | DOUBLE ENGAGE. GEAR | * | * | F | F | 7/8 X 7/8 | 3 3/4 | FALK CORPORATION |
| C5 | 1 | 1070T10 | 8.8 | STEELFLEX | * | * | F | F | * | * | FALK CORPORATION |

* DESIGNATES SIZE TO MATCH COMMERCIAL COMPONENT SHAFT

## TURNING MACHINERY REHABILITATION NOTES:

1. EXISTING PIECE(S) SHALL BE REMOVED AND REPLACED IN-KIND. THE IN-KIND REPLACEMENT PIECE(S) SHALL BE DETAILED USING DIMENSIONAL INFORMATION SHOWN ON THE ORIGINAL SHOP DRAWINGS AND MATERIAL INFORMATION SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE DIMENSIONAL INFORMATION BY MEASURING EXISTING PIECE(S) PRIOR TO SUBMITTING SHOP DRAWINGS.

2. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW SHIMS. SHIMS SHALL PROVIDE FOR PROPER ALIGNMENT OF MATING PIECES.

3. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW HARDWARE. HARDWARE SHALL PROVIDE FOR PROPER MOUNTING.

4. HARDWARE FOR IN-KIND REPLACEMENT PIECES AND REHABILITATED PIECES SHALL COMPLEMENT THE REQUIREMENTS OF THE ORIGINAL SHOP DRAWINGS. HARDWARE FOR NEW PIECES SHALL BE PER THE GENERAL MACHINERY NOTES AND GENERAL BRIDGE MACHINERY SPECIFICATION.

5. REHABILITATION OF RACK PINION BEARINGS SHALL INCLUDE REMOVAL AND TRANSPORTATION TO A QUALIFIED MACHINE SHOP, DISASSEMBLY AND CLEANING OF ALL SURFACES FOR SHOP INSPECTION, REPLACEMENT OF EXISTING BUSHINGS, REPLACEMENT OF EXISTING LINERS, SHOP PAINTING AND REASSEMBLY IN THE FIELD WITH NEW HARDWARE.

6. ABANDONMENT OF EXISTING CAPSTAN BOX AND COVER SHALL BE COORDINATED WITH DECK OVERLAY WORK SHOWN ON SHEET NO. S-1. ITEMS 65-70 AND 72-80 SHALL BE CAREFULLY REMOVED FROM THE SWING SPAN AND PROPERLY DISPOSED OF AS PART OF THE WORK.

7. REDUCER-R1 SHALL BE A COMMERCIAL FLOOR MOUNTED DOUBLE REDUCTION WITH DIFFERENTIAL REDUCER WITH EXTENDED INPUT SHAFT FOR MOTOR BRAKE.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TABLE OF TURNING MACHINERY COMPONENTS

ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

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9/14/2016

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-6 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: JAG/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

DWG NUMBER 73

TOTAL DWGS 90

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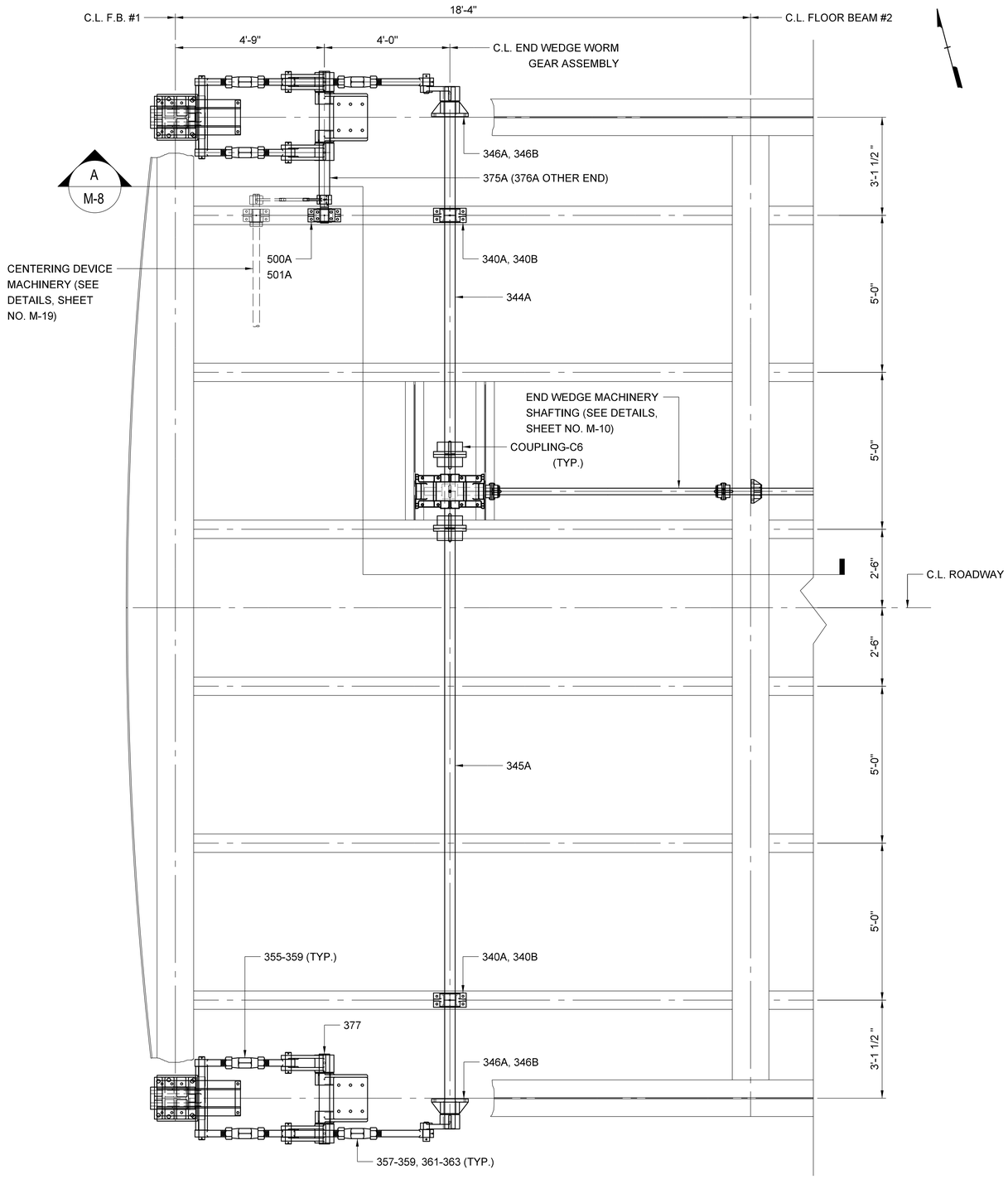
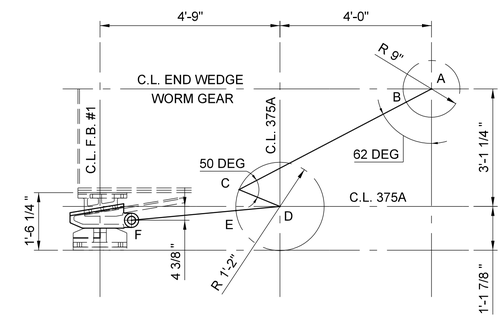
$$$$USERNAME$$$$

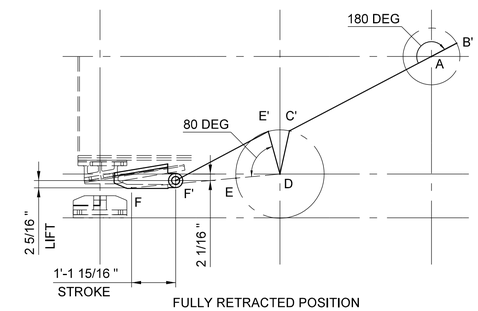



END WEDGE MACHINERY ASSEMBLY

SCALE: 1/2" = 1'-0"
(1) ASSEMBLY REQUIRED - AS SHOWN
(1) ASSEMBLY REQUIRED - OPPOSITE




FULLY EXTENDED POSITION




FULLY RETRACTED POSITION

END WEDGE LINKAGE - BASIC KINEMATIC DIAGRAM

N.T.S.
DIMENSIONS PER ORIGINAL SHOP DRAWINGS
ANGLES SHOWN NOMINAL

## END WEDGE MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE END WEDGE MACHINERY TABLES SHOWN ON SHEET NOS. M-13 AND M-14.

2. THE END WEDGE MACHINERY SHALL BE REMOVED FROM THE SWING SPAN AND BROUGHT TO A QUALIFIED MACHINE SHOP FOR REHABILITATION. AT THE MACHINE SHOP, ALL EXISTING COMPONENTS TO BE REUSED WILL BE CLEANED, INSPECTED AND PREPARED FOR REUSE. ALL EXISTING COMPONENTS TO BE REPLACED WILL BE CLEANED, INSPECTED AND MEASURED TO CONFIRM THE FINAL DIMENSIONS AND FEATURES OF REPLACEMENT COMPONENTS. WHILE THE END WEDGE MACHINERY IS OUT OF SERVICE, THE CONTRACTOR SHALL PLAN TO PROVIDE A TEMPORARY MEANS OF RAISING (SUPPORTING) AND LOWERING (FREEING) THE SWING SPAN ENDS TO ALLOW FOR BOTH VEHICULAR AND NAVIGABLE TRAFFIC. THIS WORK SHOULD BE PERFORMED IN A COORDINATED MANNER WITH THE CENTER WEDGE AND CENTERING DEVICE MACHINERY, SINCE EACH OF THESE SYSTEMS UTILIZE COMMON EQUIPMENT.

3. THE CONTRACTOR SHALL PLAN TO ADJUST THE POSITION OF THE REHABILITATED END WEDGES SUCH THAT EACH ARE CENTERED WITH THEIR RESPECTIVE SEATS WHEN THE SWING SPAN ENDS ALIGN WITH THE APPROACH STRUCTURE AND PROVIDE FOR THE REQUIRED POSITIVE REACTION AT EACH CORNER WITH THE CRANK ASSEMBLIES IN THEIR TOGGLED POSITION. SUCH ALIGNMENT SHOULD RESULT IN EFFICIENT ACTUATION OF THE END WEDGES DURING OPERATION AND MAXIMUM CLEARANCE WHEN RETRACTED. THE FINAL ELEVATION OF THE END WEDGE MACHINERY MAY REQUIRE ADJUSTMENT OF MACHINERY COMPONENT SHIM THICKNESS AND/OR ADJUSTMENT OF WEDGE SEAT GROUT THICKNESS TO BEST COMPLEMENT THE FINAL ELEVATION OF THE SWING SPAN.

4. ALL IN-KIND REPLACEMENT, IN-KIND REHABILITATED AND NEW COMPONENTS MAKING UP THE END WEDGE MACHINERY ASSEMBLY SHALL BE PROVIDED WITH NEW SHIMS AND HIGH STRENGTH HARDWARE, UNLESS OTHERWISE SHOWN OR REQUIRED WITHIN THE SPECIFICATIONS.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END WEDGE MACHINERY ASSEMBLY

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-7 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

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DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 74 | 90 |

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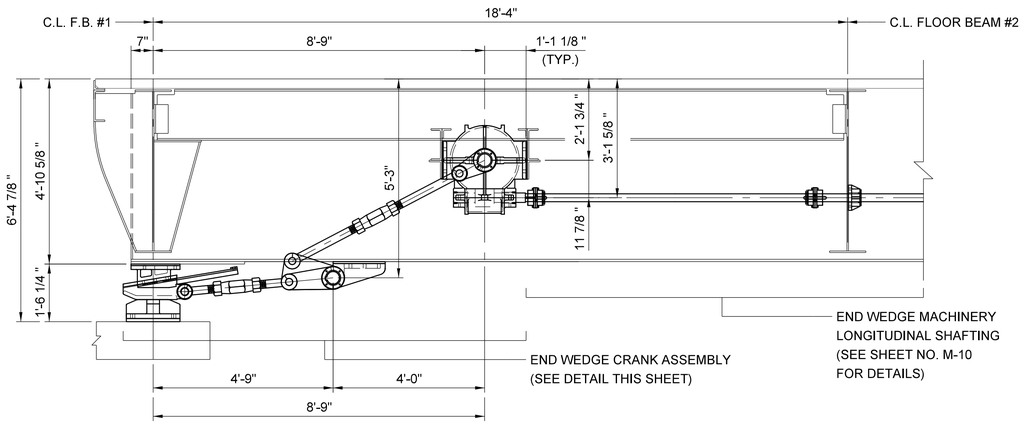
## END WEDGE MACHINERY REHABILITATION NOTES:

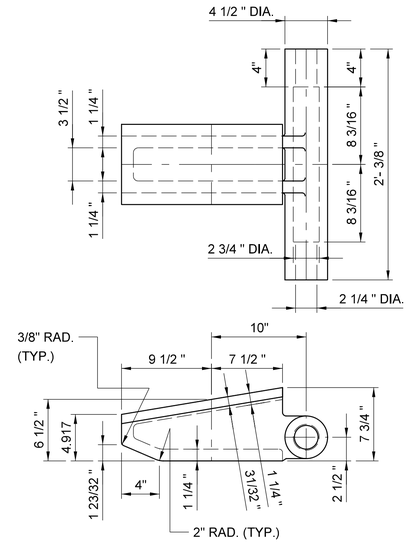
1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE END WEDGE MACHINERY TABLES SHOWN ON SHEET NOS. M-13 AND M-14.

2. END WEDGE WORM GEAR ASSEMBLY SHALL INCLUDE THE FOLLOWING PIECES: 208-217, 221-228 AND 230-232.



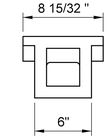

SECTION A-A

SCALE: 1/2" = 1'-0"

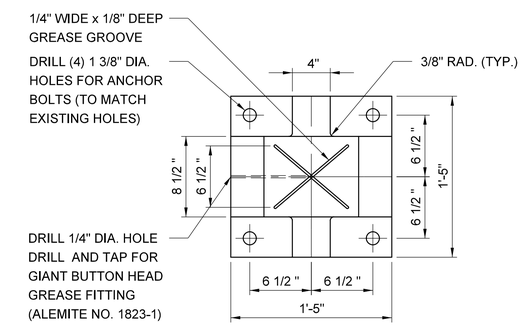


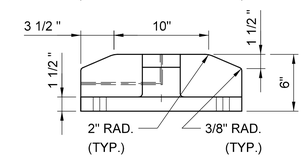

271A - END WEDGE

SCALE: 1 1/2" = 1'-0"



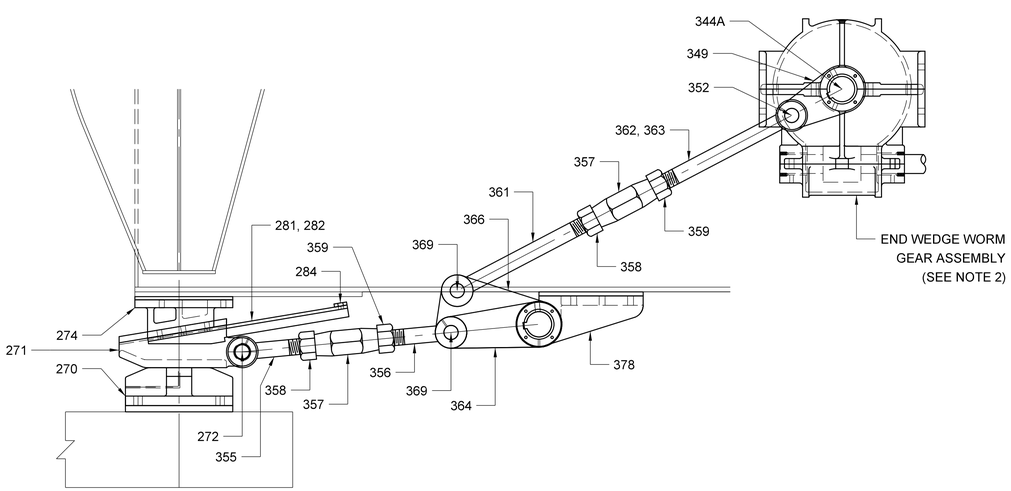

SECTION AT CENTER



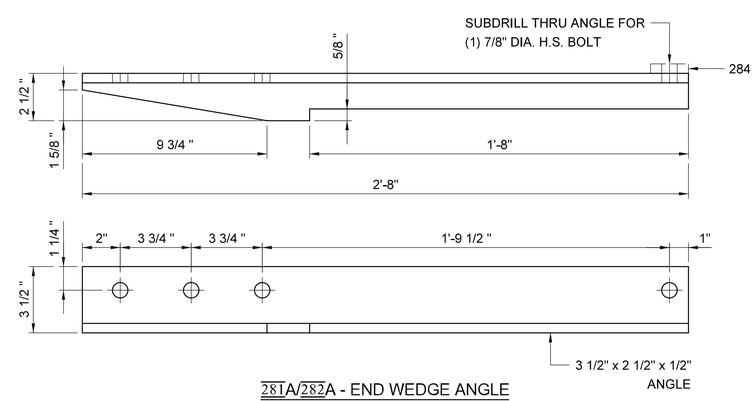

270A - END WEDGE SEAT

SCALE: 1 1/2" = 1'-0"




END WEDGE CRANK ASSEMBLY

SCALE: 1" = 1'-0"




281A/282A - END WEDGE ANGLE

SCALE: 3" = 1'-0"

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# END WEDGE MACHINERY DETAILS I

# ALIGATOR RIVER SWING SPAN

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BFEC5720F8F14B0...
9/14/2016

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NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| | | | |
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| CHECKED BY: GAF/RH | DATE : 8/8/2016 | | |
| DESIGN ENGINEER OF RECORD: JAG/MS | DATE : 8/8/2016 | | |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 75 | 90 |

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

SHEET NO. M-8

TOTAL SHEETS 23

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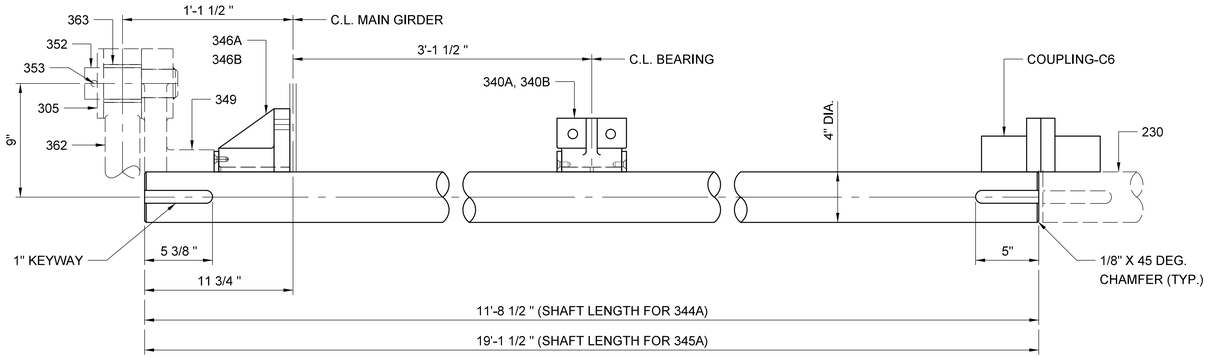
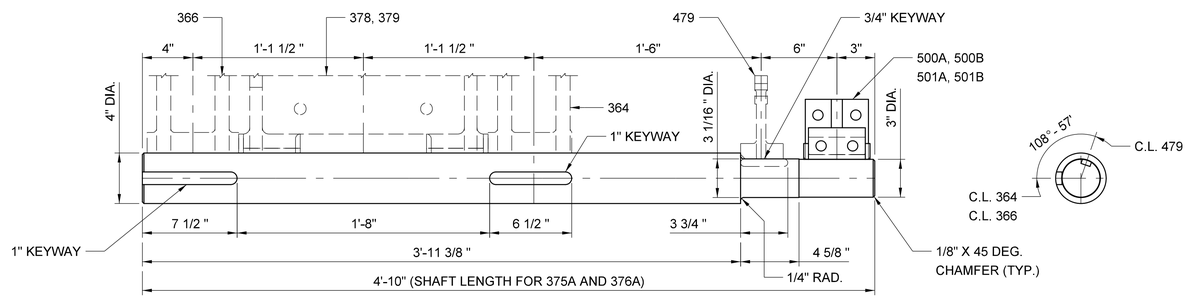


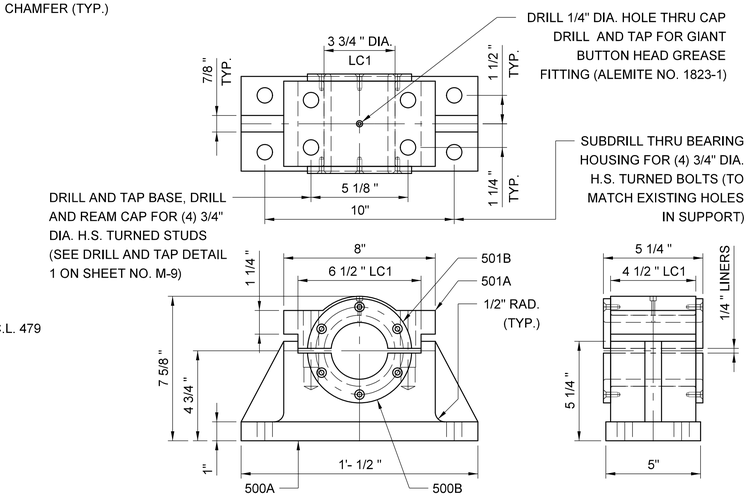

344A / 345A - E.W. CRANK SHAFT

SCALE: 2" = 1'-0"



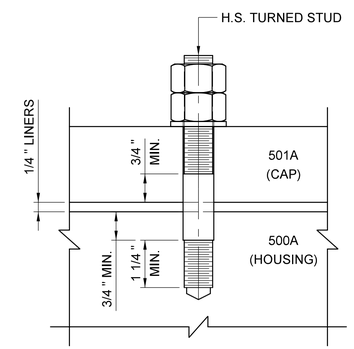

375A/376A - E.W. JACK SHAFT

SCALE: 2" = 1'-0"



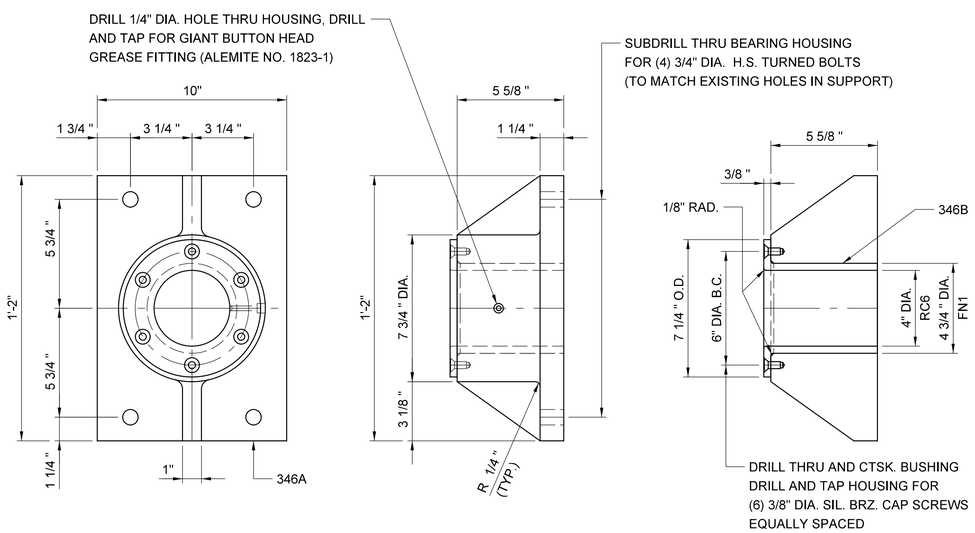

500A / 501A - E.W. JACK SHAFT BEARING ASSEMBLY

SCALE: 3" = 1'-0"



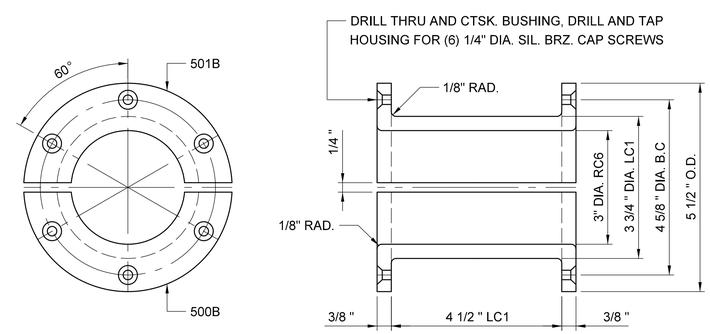

DRILL AND TAP DETAIL I

SCALE: 6" = 1'-0"




346A / 346B - COLLAR BEARING ASSEMBLY

SCALE: 3" = 1'-0"




500B / 501B - BUSHINGS FOR 500A / 501A

SCALE: 6" = 1'-0"

## END WEDGE MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE END WEDGE MACHINERY TABLES SHOWN ON SHEET NOS. M-13 AND M-14.

2. E.W. JACK SHAFT BEARING BUSHINGS SHALL BE PROVIDED WITH MACHINED DOUBLE OVAL GREASE GROOVES. FOR GROOVE DETAIL SEE SHEET NO. M-5.

3. COLLAR BEARING BUSHINGS SHALL BE PROVIDED WITH MACHINED DOUBLE OVAL GREASE GROOVES. FOR GROOVE DETAIL SEE SHEET NO. M-5.

4. UNLESS OTHERWISE NOTED, ALL KEYWAYS ON EACH SHAFT SHALL BE IN LINE.

5. COUPLING-C6 OUTER FLANGE DIAMETER IS LARGER THAN THE EXISTING COUPLING OUTER FLANGE DIAMETER. CONTRACTOR TO VERIFY THAT THERE IS SUFFICIENT CLEARANCE SURROUNDING THE COUPLING PRIOR TO ORDERING.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# END WEDGE MACHINERY DETAILS II

# ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

| REVISIONS | | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | | M-9 |
| 1 | | | 3 | | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | | 23 |

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 76 | 90 |

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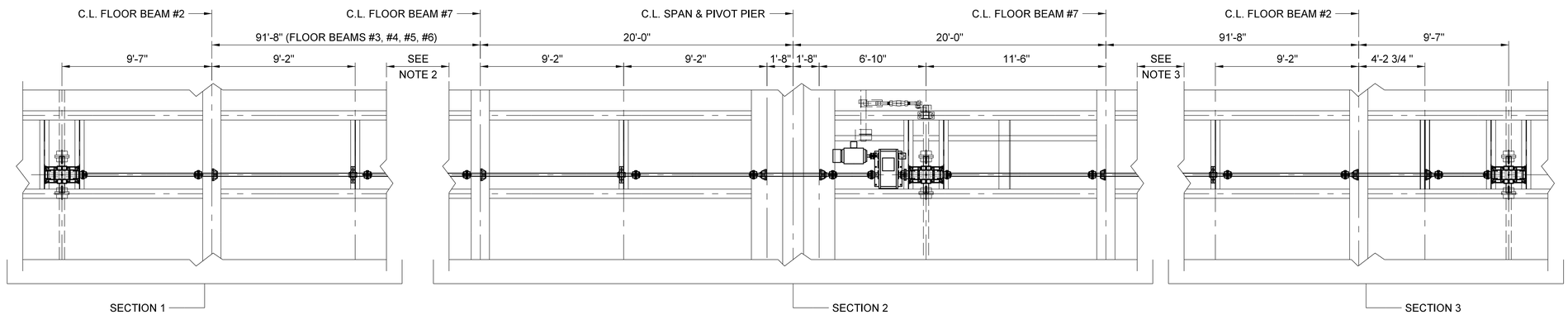
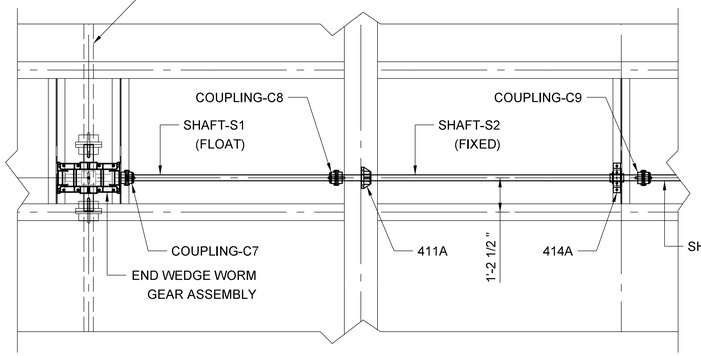


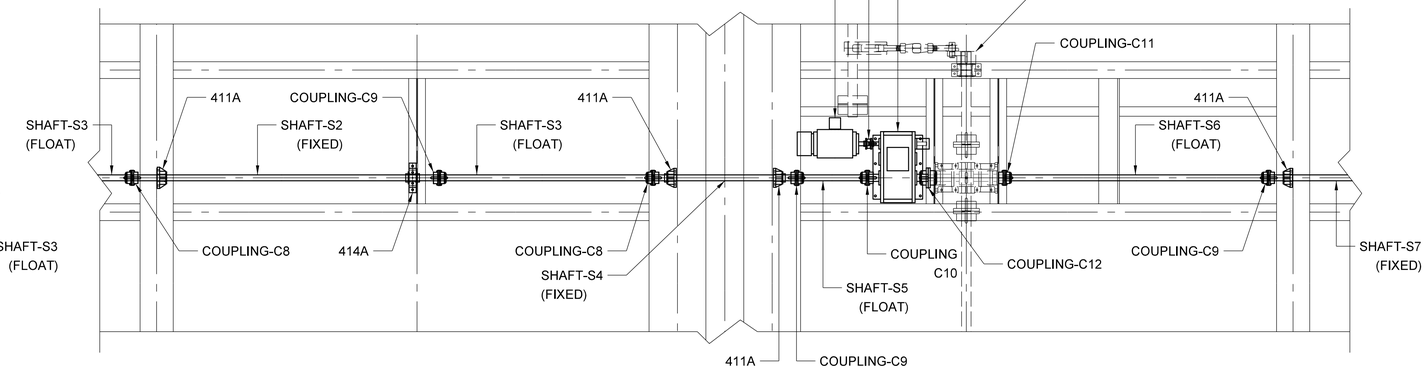

## END WEDGE MACHINERY - LONGITUDINAL SHAFTING

SCALE: 1/4" = 1'-0"



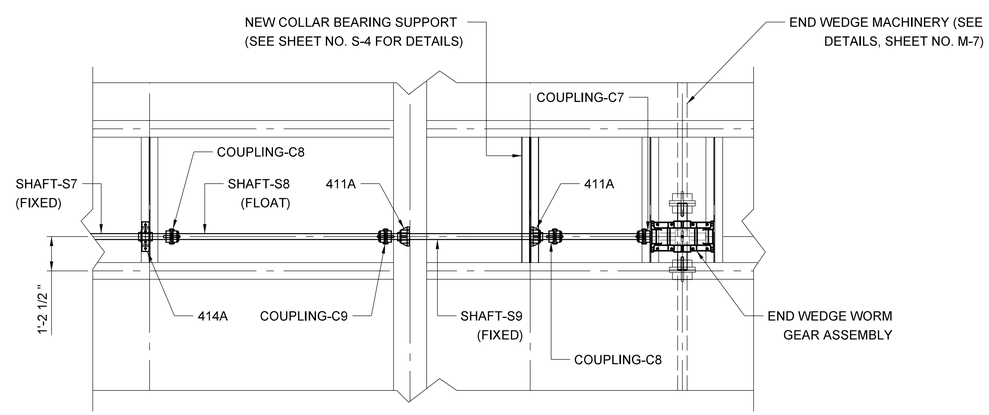

## SECTION 1

SCALE: 3/8" = 1'-0"




## SECTION 2

SCALE: 3/8" = 1'-0"




## SECTION 3

SCALE: 3/8" = 1'-0"

## LONGITUDINAL SHAFTING REHABILITATION NOTES:

1. THE LONGITUDINAL SHAFTING SHALL BE REMOVED FROM THE SPAN AND REPLACED IN ITS ENTIRETY WITH NEW SHAFTING, COLLARS, COUPLINGS AND BEARINGS.

2. SHAFT-S2 , SHAFT-S3, 414A, 411A, COUPLING-C8 AND COUPLING-C9 REPEAT AS SHOWN BETWEEN C.L. FLOOR BEAM #2 AND C.L. FLOOR BEAM #7.

3. SHAFT-S7 , SHAFT-S8, 414A, 411A, COUPLING-C8 AND COUPLING-C9 REPEAT AS SHOWN BETWEEN C.L. FLOOR BEAM #7 AND C.L. FLOOR BEAM #2.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# END WEDGE MACHINERY SHAFTING

# ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

| REVISIONS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | SHEET NO. M-10 |
| 1 | | | 3 | | | | TOTAL SHEETS 23 |
| 2 | | | 4 | | | | |

| | | |
|---|---|---|
| DRAWN BY: JAG/MS | DATE : 8/8/2016 | |
| CHECKED BY: GAF/RH | DATE : 8/8/2016 | |
| DESIGN ENGINEER OF RECORD: JAG/MS | DATE : 8/8/2016 | |

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 77 | 90 |

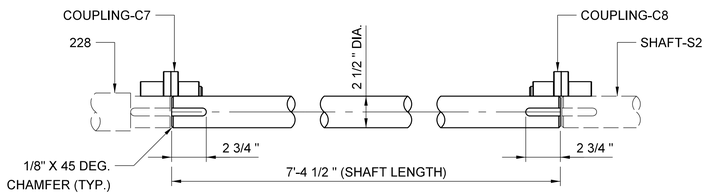
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$SYSTIME$$$$$$ $$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

## LONGITUDINAL SHAFTING REHABILITATION NOTES:

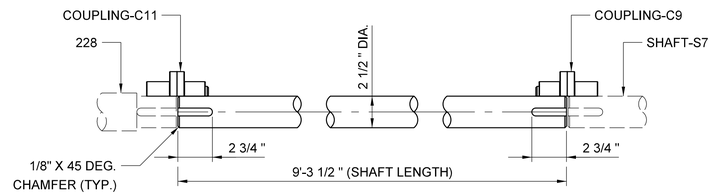
1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE END WEDGE MACHINERY TABLES SHOWN ON SHEET NOS. M-13 AND M-14.

2. UNLESS OTHERWISE NOTED, ALL KEYWAYS ON EACH SHAFT SHALL BE IN LINE.



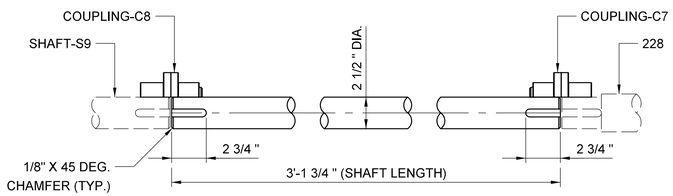

SHAFT-S1 (FLOAT)

SCALE: 2" = 1'-0"



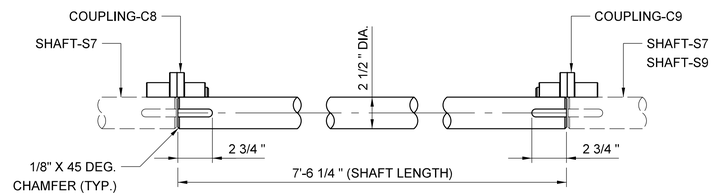

SHAFT-S6 (FLOAT)

SCALE: 2" = 1'-0"



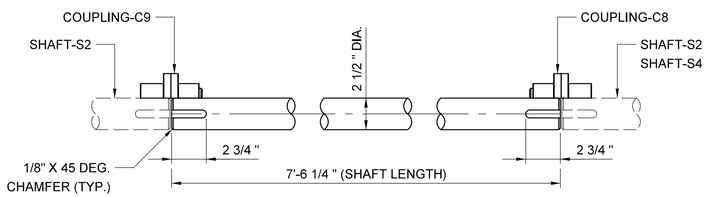

SHAFT-S10 (FLOAT)

SCALE: 2" = 1'-0"



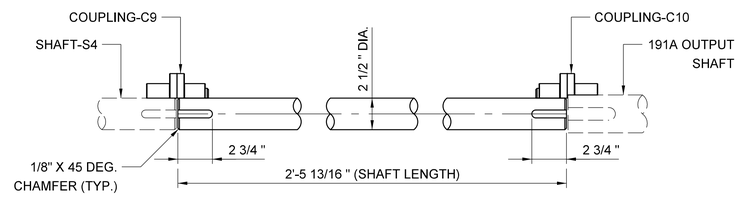

SHAFT-S8 (FLOAT)

SCALE: 2" = 1'-0"




SHAFT-S3 (FLOAT)

SCALE: 2" = 1'-0"




SHAFT-S5 (FLOAT)

SCALE: 2" = 1'-0"

PROJECT NO. B-5936

TYRRELL COUNTY

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END WEDGE MACHINERY
SHAFTING DETAILS I

ALLIGATOR RIVER
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9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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

SHEET NO. M-11

TOTAL SHEETS 23

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

DWG NUMBER 78

TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$$CYCLTIME$$$$$
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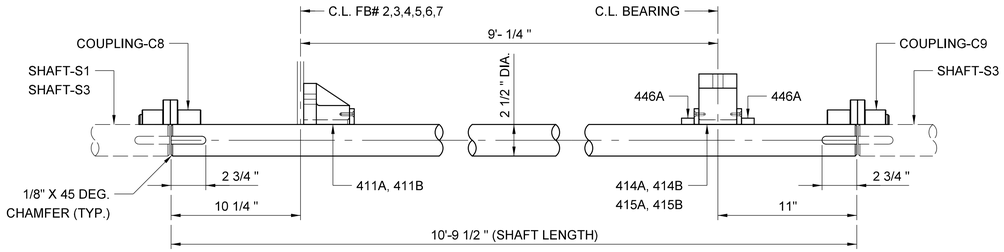
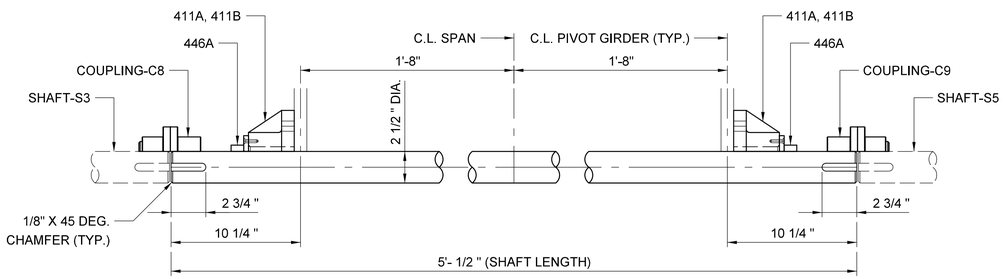
$$$$USERNAME$$$$



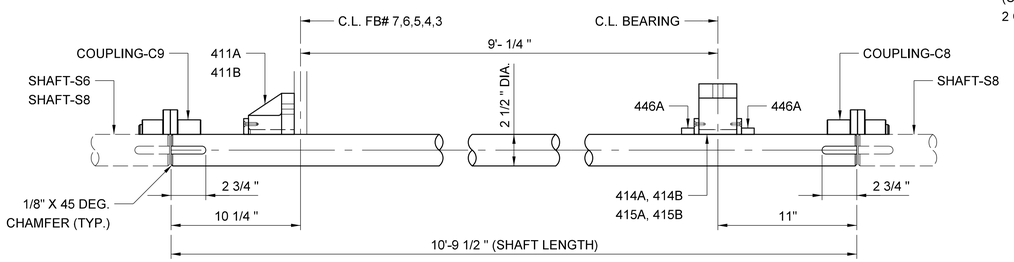

SHAFT-S2 (FIXED)

SCALE: 2" = 1'-0"



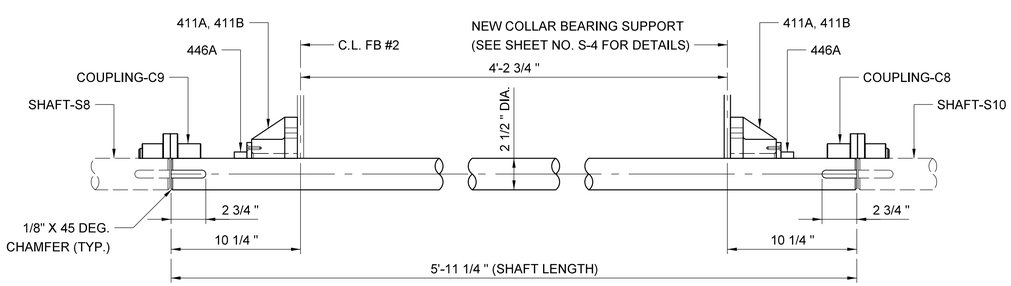

SHAFT-S4 (FIXED)

SCALE: 2" = 1'-0"



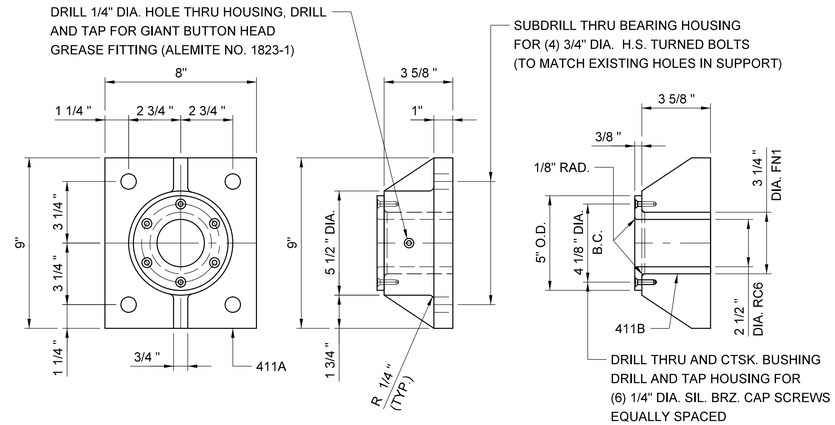

SHAFT-S7 (FIXED)

SCALE: 2" = 1'-0"



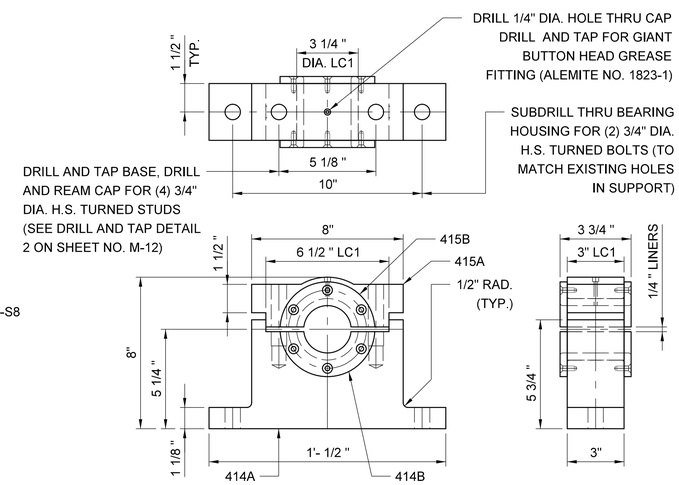

SHAFT-S9 (FIXED)

SCALE: 2" = 1'-0"



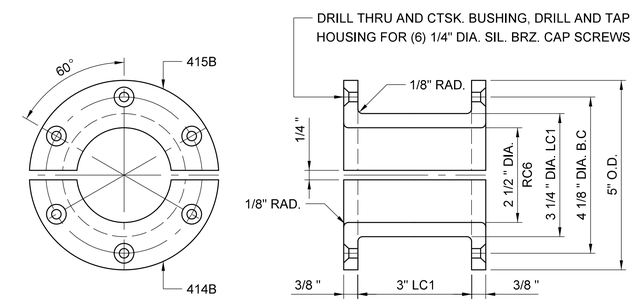

411A / 411B - COLLAR BEARING ASSEMBLY

SCALE: 3" = 1'-0"



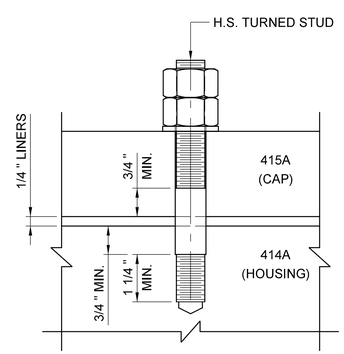

414A / 415A - LONGITUDINAL SHAFTING BEARING ASSEMBLY

SCALE: 3" = 1'-0"




414B / 415B - BUSHINGS FOR 414A / 415A

SCALE: 6" = 1'-0"




DRILL AND TAP DETAIL 2

SCALE: 6" = 1'-0"

## LONGITUDINAL SHAFTING REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE END WEDGE MACHINERY TABLES SHOWN ON SHEET NOS. M-13 AND M-14.

2. LONGITUDINAL SHAFTING BEARING BUSHINGS SHALL BE PROVIDED WITH MACHINED DOUBLE OVAL GREASE GROOVES. FOR GROOVE DETAIL SEE SHEET NO. M-5.

3. COLLAR BEARING BUSHINGS SHALL BE PROVIDED WITH MACHINED DOUBLE OVAL GREASE GROOVES. FOR GROOVE DETAIL SEE SHEET NO. M-5.

4. UNLESS OTHERWISE NOTED, ALL KEYWAYS ON EACH SHAFT SHALL BE IN LINE.

5. SHAFT COLLARS 446A ASSEMBLED ON SHAFTS-S2 AND SHAFTS-S7 SHALL BE ALIGNED FOR AN RC8 FIT (AVERAGE CLEARANCE OF 0.005" PER COLLAR) WITH BEARING 414A/415A.

6. SHAFT COLLARS 446A ASSEMBLED ON SHAFT-S4 AND SHAFT-S9 SHALL BE ALIGNED FOR A CLEARANCE OF 0.015" (PER COLLAR) WITH BEARING 411A/411B.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# END WEDGE MACHINERY SHAFTING DETAILS II

# ALLIGATOR RIVER SWING SPAN

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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

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

SHEET NO. M-12

TOTAL SHEETS 23

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

DWG NUMBER 79

TOTAL DWGS 90

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$$$$$SYSTIME$$$$
$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

TABLE OF END WEDGE MACHINERY COMPONENTS

| PIECE | NAME | QNTY. | DESCRIPTION OF WORK | MATERIAL | DESIGNATION | SUPPLEMENTAL REQUIREMENT | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 94 | CAPSTAN BOX | 1 | ABANDON EXISTING CAPSTAN BOX IN PLACE | N/A | N/A | N/A | SEE NOTE 7 |
| 95 | COVER FOR 94 | 1 | ABANDON EXISTING COVER IN PLACE | N/A | N/A | N/A | SEE NOTE 7 |
| | | | | | | | |
| 191A | REDUCER-R2 | 1 | NEW EARLE SPEED REDUCER, TYPE D, SIZE 4, INPUT RATING 7.5 HP AT 870 RPM, RATIO 28:1, S.F. 1.5 | N/A | N/A | N/A | SEE NOTE 8 |
| N/A | WEDGE MOTOR | 1 | NEW REULAND VECTOR DUTY MOTOR, 7.5 HP, 900 RPM | N/A | N/A | N/A | ELECTRICAL ITEM |
| | | | | | | | |
| 208 | WORM HOUSING TOP | 2 | REHABILITATE EXISTING HOUSING | N/A | N/A | N/A | SEE NOTES 5 |
| 209 | WORM HOUSING CENTER | 2 | REHABILITATE EXISTING HOUSING | N/A | N/A | N/A | SEE NOTES 5 |
| 210 | WORM HOUSING BOTTOM | 2 | REHABILITATE EXISTING HOUSING | N/A | N/A | N/A | SEE NOTES 5 |
| 211 | BOLT FOR 208 AND 209 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 212 | BOLT FOR 208 AND 209 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 213 | BOLT FOR 209 AND 210 | 12 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 214 | BASE BOLT FOR 208 AND 209 | 16 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 215 | SHIM FOR 208 AND 209 | 8-SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| 216 | OUTPUT BUSHING | 4 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE NOTE 1 |
| 217 | INPUT BUSHING | 4 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 221 | OUTPUT SEAL RING | 4 | REHABILITATE EXISTING SEAL RINGS | N/A | N/A | N/A | SEE NOTE 5 |
| 222 | BOLT FOR 221 | 16 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 223 | OIL SEAL FOR 221 | 4 | REPLACE EXISTING OIL SEALS | GARLOCK # 53 X 2539 (OR APPROVED EQUAL) | | | COMMERCIAL |
| 224 | INPUT SEAL RING | 2 | REHABILITATE EXISTING SEAL RINGS | N/A | N/A | N/A | SEE NOTE 5 |
| 225 | INPUT COVER PLATE | 2 | REHABILITATE EXISTING COVER PLATE | N/A | N/A | N/A | SEE NOTE 5 |
| 226 | BOLTS FOR 224 AND 225 | 16 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 227 | OIL SEAL FOR 224 | 2 | REPLACE EXISTING OIL SEALS | GARLOCK #63 X 2170 (OR APPROVED EQUAL) | | | COMMERCIAL |
| 228 | WORM SHAFT | 2 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 668 CL. H | S6. MAG. PARTICLE TEST | SEE NOTE 1 |
| 230 | WORM WHEEL SHAFT | 2 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 668 CL. H | S6. MAG. PARTICLE EXAM | SEE NOTE 1 |
| 231 | WORM WHEEL | 2 | REPLACE EXISTING WORM WHEEL | CAST BRONZE | ASTM B 22 C90500 | N/A | SEE NOTE 1 |
| 232 | KEY FOR 231 | 2 | REPLACE EXISTING KEY | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| | | | | | | | |
| 270A | END WEDGE SEAT | 4 | REPLACE EXISTING SEAT | FORGED STEEL | ASTM A 668 CL. D | N/A | SEE DETAIL SHT. NO. M-8 |
| 271A | END WEDGE | 4 | REPLACE EXISTING WEDGE | CAST STEEL | ASTM A 27 GR. 70-36 | N/A | SEE DETAIL SHT. NO. M-8 |
| 272 | PIN FOR 271A | 4 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 6 |
| 273 | COTTER PIN FOR 272 | 8 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| 274 | END WEDGE GUIDE | 4 | REHABILITATE EXISTING GUIDE | N/A | N/A | N/A | SEE NOTE 6 |
| 275 | SHIM FOR 274 | 4 SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| 276 | BASE BOLT FOR 274 | 12 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 277 | BASE BOLT FOR 274 | 4 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 278A | SHIM FOR 270A | 4 | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTE 2 |
| | | | | | | | |
| 281A | END WEDGE ANGLE FOR 274 | 4 | REPLACE EXISTING ANGLE | STR. STEEL | ASTM A 709 GR. 50 | N/A | SEE DETAIL SHT. NO. M-8 |
| 282A | END WEDGE ANGLE FOR 274 | 4 | REPLACE EXISTING ANGLE | STR. STEEL | ASTM A 709 GR. 50 | N/A | SEE DETAIL SHT. NO. M-8 |
| 283 | BOLT FOR 281A AND 282A | 24 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 284 | TIE BAR FOR 281A AND 282A | 4 | REHABILITATE EXISTING TIE BAR | N/A | N/A | N/A | SEE NOTE 6 |
| 285 | BOLT FOR 281A, 282A AND 284 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 305 | WASHER FOR 352 | 4 | REPLACE EXISTING WASHERS | STEEL | ASTM F 436 | N/A | SEE NOTES 1 |
| | | | | | | | |
| 340A | E.W. CRANK SHAFT BEARING - HOUSING | 4 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-17 |
| 340B | E.W. CRANK SHAFT BEARING - BUSHING | 4 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE DETAIL SHT. NO. M-17 |
| | | | | | | | |
| 344A | END WEDGE CRANK SHAFT | 2 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-9 |
| 345A | END WEDGE CRANK SHAFT | 2 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-9 |
| 346A | COLLAR BEARING - HOUSING | 4 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-9 |
| 346B | COLLAR BEARING - BUSHING | 4 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE DETAIL SHT. NO. M-9 |
| | | | | | | | |
| 349 | END WEDGE CRANK | 4 | REHABILITATE EXISTING CRANK | N/A | N/A | N/A | SEE NOTE 6 |
| 350 | KEY FOR 349 | 4 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 351 | SET SCREW FOR 349 | 4 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTE 1, 3 AND 4 |
| 352 | END WEDGE CRANK PIN | 4 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 6 |
| 353 | COTTER PIN FOR 352 | 4 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 355 | END WEDGE EYE BAR | 8 | REPLACE EXISTING EYE BAR | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 356 | END WEDGE EYE BAR | 8 | REPLACE EXISTING EYE BAR | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 357 | SLEEVE NUT FOR 355, 356, 361, 362 | 12 | REPLACE EXISTING SLEEVE NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 358 | NUT FOR 355 AND 361 | 12 | REPLACE EXISTING NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 359 | NUT FOR 356 AND 362 | 12 | REPLACE EXISTING NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |

## END WEDGE MACHINERY REHABILITATION NOTES:

1. EXISTING PIECE(S) SHALL BE REMOVED AND REPLACED IN-KIND. THE IN-KIND REPLACEMENT PIECE(S) SHALL BE DETAILED USING DIMENSIONAL INFORMATION SHOWN ON THE ORIGINAL SHOP DRAWINGS AND MATERIAL INFORMATION SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE DIMENSIONAL INFORMATION BY MEASURING EXISTING PIECE(S) PRIOR TO SUBMITTING SHOP DRAWINGS.

2. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW SHIMS. SHIMS SHALL PROVIDE FOR PROPER ALIGNMENT OF MATING PIECES.

3. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW HARDWARE. HARDWARE SHALL PROVIDE FOR PROPER MOUNTING.

4. HARDWARE FOR IN-KIND REPLACEMENT PIECES AND REHABILITATED PIECES SHALL COMPLEMENT THE REQUIREMENTS OF THE ORIGINAL SHOP DRAWINGS. HARDWARE FOR NEW PIECES SHALL BE PER THE GENERAL MACHINERY NOTES AND GENERAL BRIDGE MACHINERY SPECIFICATION.

5. REHABILITATION OF WORM GEAR REDUCERS SHALL INCLUDE REMOVAL AND TRANSPORTATION TO A QUALIFIED MACHINE SHOP, DISASSEMBLY AND CLEANING OF ALL SURFACES FOR SHOP INSPECTION. WITH THE EXCEPTION OF HOUSINGS, SEAL RINGS AND COVER PLATES, ALL OTHER COMPONENTS MAKING UP THE WORM GEAR REDUCER SHALL BE REPLACED IN-KIND FOR A FULLY FUNCTIONAL UNIT.

6. REHABILITATION OF GUIDES, PINS, CRANKS, LEVERS, ETC. SHALL INCLUDE CLEANING OF ALL SURFACES FOR INSPECTION, ADJUSTMENT FOR PROPER ALIGNMENT, PREPARATION OF EXPOSED SURFACES FOR PAINTING, PAINTING AND REASSEMBLY WITH MATING PIECES. WHEN APPLICABLE, THE CONTRACTOR SHALL COORDINATE MATING DIMENSIONS OF NEW (REPLACEMENT) PIECES WITH EXISTING (REHABILITATED) PIECES.

7. ABANDONMENT OF EXISTING CAPSTAN BOX AND COVER SHALL BE COORDINATED WITH DECK OVERLAY WORK. ITEMS 385-393, 395-402 AND 404-409 SHALL BE CAREFULLY REMOVED FROM THE SWING SPAN AND PROPERLY DISPOSED OF AS PART OF THE WORK.

8. REDUCER R2 SHALL BE A COMMERCIAL FLOOR MOUNTED DOUBLE REDUCTION MODEL WITH DOUBLE INPUT AND DOUBLE OUTPUT SHAFTS. THE INPUT SHAFT LOCATED ON THE OPPOSITE SIDE OF THE WEDGE MOTOR SHALL BE DETAILED TO SUITE MANUAL OPERATION WITH A HAND CRANK. DURING NORMAL OPERATION, I.E. WHEN THE WEDGE MACHINERY IS DRIVEN BY THE WEDGE MOTOR, THIS INPUT SHAFT SHALL BE FULLY ENCLOSED WITH A COVER. THE CONTRACTOR SHALL DETAIL THE COVER WITH A SAFETY LIMIT SWITCH, WHICH SHALL SERVE TO CUT POWER TO THE WEDGE MOTOR WHEN REMOVED AND WARN THE OPERATOR OF CHANGE IN OPERATION.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

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NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TABLE OF END WEDGE MACHINERY COMPONENTS I

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-13 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

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DWG NUMBER 80 | TOTAL DWGS 90

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$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

TABLE OF END WEDGE MACHINERY COMPONENTS

| PIECE | NAME | QNTY. | DESCRIPTION OF WORK | MATERIAL | DESIGNATION | SUPPLEMENTAL REQUIREMENT | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 361 | END WEDGE CONNECTION ROD | 4 | REPLACE EXISTING CONNECTION ROD | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 362 | END WEDGE CONNECTION ROD | 4 | REPLACE EXISTING CONNECTION ROD | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 363 | BUSHING FOR 362 | 4 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 364 | END WEDGE LEVER | 4 | REHABILITATE EXISTING LEVER | N/A | N/A | N/A | SEE NOTE 6 |
| 365 | KEY FOR 364 | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 366 | END WEDGE LEVER | 4 | REHABILITATE EXISTING LEVER | N/A | N/A | N/A | SEE NOTE 6 |
| 367 | KEY FOR 366 | 4 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 368 | SET SCREW FOR 364 AND 366 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| 369 | PIN FOR 356, 364, 361, 366 | 12 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 6 |
| 370 | COTTER PIN FOR 369 | 24 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| 371 | KEY FOR 364 | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| | | | | | | | |
| 375A | END WEDGE JACK SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-9 |
| 376A | END WEDGE JACK SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-9 |
| 377 | END WEDGE JACK SHAFT | 2 | REHABILITATE EXISTING SHAFT | N/A | N/A | N/A | SEE NOTE 6 |
| 378 | END WEDGE JACK SHAFT BEARING | 4 | REHABILITATE EXISTING BEARING | N/A | N/A | N/A | SEE NOTE 5 |
| 379 | BUSHING FOR 378 | 8 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE NOTES 1 AND X |
| 380 | BASE BOLT FOR 378 | 24 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 381 | SHIM FOR 378 | 4-SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| 382 | SCREW FOR 379 | 32 | REPLACE EXISTING HARDWARE | SILICON BRONZE | N/A | N/A | SEE NOTE 1 |
| | | | | | | | |
| 411A | LONG. SHAFT COLLAR BRG. - HOUSING | 15 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-12 |
| 411B | LONG. SHAFT COLLAR BRG. - BUSHING | 15 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C93700 | N/A | SEE DETAIL SHT. NO. M-12 |
| | | | | | | | |
| 414A | LONG. SHAFT BEARING - HOUSING | 11 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-12 |
| 414B | LONG. SHAFT BEARING - BUSHING | 11 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C93700 | N/A | SEE DETAIL SHT. NO. M-12 |
| 415A | CAP FOR 414A - HOUSING | 11 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-12 |
| 415B | CAP FOR 414A - BUSHING | 11 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C93700 | N/A | SEE DETAIL SHT. NO. M-12 |
| | | | | | | | |
| N/A | LONGITUDINAL SHAFT-S1 (FLOATING) | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-11 |
| N/A | LONGITUDINAL SHAFT-S2 | 6 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-12 |
| N/A | LONGITUDINAL SHAFT-S3 (FLOATING) | 6 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-11 |
| N/A | LONGITUDINAL SHAFT-S4 | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-12 |
| N/A | LONGITUDINAL SHAFT-S5 (FLOATING) | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-11 |
| N/A | LONGITUDINAL SHAFT-S6 (FLOATING) | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-11 |
| N/A | LONGITUDINAL SHAFT-S7 | 5 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-12 |
| N/A | LONGITUDINAL SHAFT-S8 (FLOATING) | 5 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-11 |
| N/A | LONGITUDINAL SHAFT-S9 | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-12 |
| N/A | LONGITUDINAL SHAFT-S10 (FLOATING) | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-11 |
| 446A | COLLAR FOR SHAFTS-S2, S4, S7 AND S9 | 26 | NEW SET SCREW SHAFT COLLAR FOR 2 1/2" DIAMETER, TYPE 303 STAINLESS STEEL | MCMASTER-CARR PART NO. 6462K47 (OR APPROVED EQUAL) | | | COMMERCIAL |
| | | | | | | | |
| 479 | LATCH LEVER | 2 | REHABILITATE EXISTING LEVER | N/A | N/A | N/A | SEE NOTE 6 |
| 480 | KEY FOR 479 | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 481 | SET SCREW FOR 479 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| | | | | | | | |
| 500A | E.W. JACK SHAFT BEARING - HOUSING | 2 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-9 |
| 500B | E.W. JACK SHAFT BEARING - BUSHING | 2 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C93700 | N/A | SEE DETAIL SHT. NO. M-9 |
| 501A | CAP FOR 500A - HOUSING | 2 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-9 |
| 501B | CAP FOR 500 A - BUSHING | 2 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C93700 | N/A | SEE DETAIL SHT. NO. M-9 |

TABLE OF NEW END WEDGE MACHINERY COUPLINGS

| MARK | QNTY. | SIZE | TORQUE RATING IN-KIPS | TYPE | DRIVING HALF | | | DRIVEN HALF | | | MANUFACTURER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOMINAL BORE, IN. | KEY IN. x IN. | R = RIGID F = FLEX | | KEY IN. x IN. | NOMINAL BORE, IN. | |
| C6 | 4 | 1040G81 | 270.9 | RIGID GEAR | 4 | 1 x 1 | R | R | 1 X 1 | 4 | FALK CORPORATION |
| C7 | 2 | 1020G51 | 37.8 | SINGLE ENGAGE. GEAR | 2 1/2 | 5/8 X 5/8 | F | R | 5/8 X 5/8 | 2 1/2 | FALK CORPORATION |
| C8 | 13 | 1020G51 | 37.8 | SINGLE ENGAGE. GEAR | 2 1/2 | 5/8 X 5/8 | R | F | 5/8 X 5/8 | 2 1/2 | FALK CORPORATION |
| C9 | 13 | 1020G51 | 37.8 | SINGLE ENGAGE. GEAR | 2 1/2 | 5/8 X 5/8 | F | R | 5/8 X 5/8 | 2 1/2 | FALK CORPORATION |
| C10 | 1 | 1020G51 | 37.8 | SINGLE ENGAGE. GEAR | * | * | R | F | 5/8 X 5/8 | 2 1/2 | FALK CORPORATION |
| C11 | 1 | 1020G51 | 37.8 | SINGLE ENGAGE. GEAR | 2 1/2 | 5/8 X 5/8 | R | F | 5/8 X 5/8 | 2 1/2 | FALK CORPORATION |
| C12 | 1 | 1025G10 | 66.15 | DOUBLE ENGAGE. GEAR | * | * | F | F | 5/8 X 5/8 | 2 1/2 | FALK CORPORATION |
| C13 | 1 | 1040T10 | 2.2 | STEELFLEX | * | * | F | F | * | * | FALK CORPORATION |

* DESIGNATES SIZE TO MATCH COMMERCIAL COMPONENT SHAFT

## END WEDGE MACHINERY REHABILITATION NOTES:

1. EXISTING PIECE(S) SHALL BE REMOVED AND REPLACED IN-KIND. THE IN-KIND REPLACEMENT PIECE(S) SHALL BE DETAILED USING DIMENSIONAL INFORMATION SHOWN ON THE ORIGINAL SHOP DRAWINGS AND MATERIAL INFORMATION SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE DIMENSIONAL INFORMATION BY MEASURING EXISTING PIECE(S) PRIOR TO SUBMITTING SHOP DRAWINGS.

2. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW SHIMS. SHIMS SHALL PROVIDE FOR PROPER ALIGNMENT OF MATING PIECES.

3. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW HARDWARE. HARDWARE SHALL PROVIDE FOR PROPER MOUNTING.

4. HARDWARE FOR IN-KIND REPLACEMENT PIECES AND REHABILITATED PIECES SHALL COMPLEMENT THE REQUIREMENTS OF THE ORIGINAL SHOP DRAWINGS. HARDWARE FOR NEW PIECES SHALL BE PER THE GENERAL MACHINERY NOTES AND GENERAL BRIDGE MACHINERY SPECIFICATION.

5. REHABILITATION OF JACK SHAFT BEARINGS SHALL INCLUDE REMOVAL AND TRANSPORTATION TO A QUALIFIED MACHINE SHOP, DISASSEMBLY AND CLEANING OF ALL SURFACES FOR SHOP INSPECTION, REPLACEMENT OF EXISTING BUSHINGS, SHOP PAINTING AND REASSEMBLY IN THE FIELD WITH NEW HARDWARE.

6. REHABILITATION OF GUIDES, PINS, CRANKS, LEVERS, ETC. SHALL INCLUDE CLEANING OF ALL SURFACES FOR INSPECTION, ADJUSTMENT FOR PROPER ALIGNMENT, PREPARATION OF EXPOSED SURFACES FOR PAINTING, PAINTING AND REASSEMBLY WITH MATING PIECES. WHEN APPLICABLE, THE CONTRACTOR SHALL COORDINATE MATING DIMENSIONS OF NEW (REPLACEMENT) PIECES WITH EXISTING (REHABILITATED) PIECES.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

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9/14/2016

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036065 SCOTT A. REYNOLDS

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TABLE OF END WEDGE MACHINERY COMPONENTS II

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-14 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

DRAWN BY: JAG/MS DATE : 8/8/2016
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| DWG NUMBER | TOTAL DWGS |
|---|---|
| 81 | 90 |

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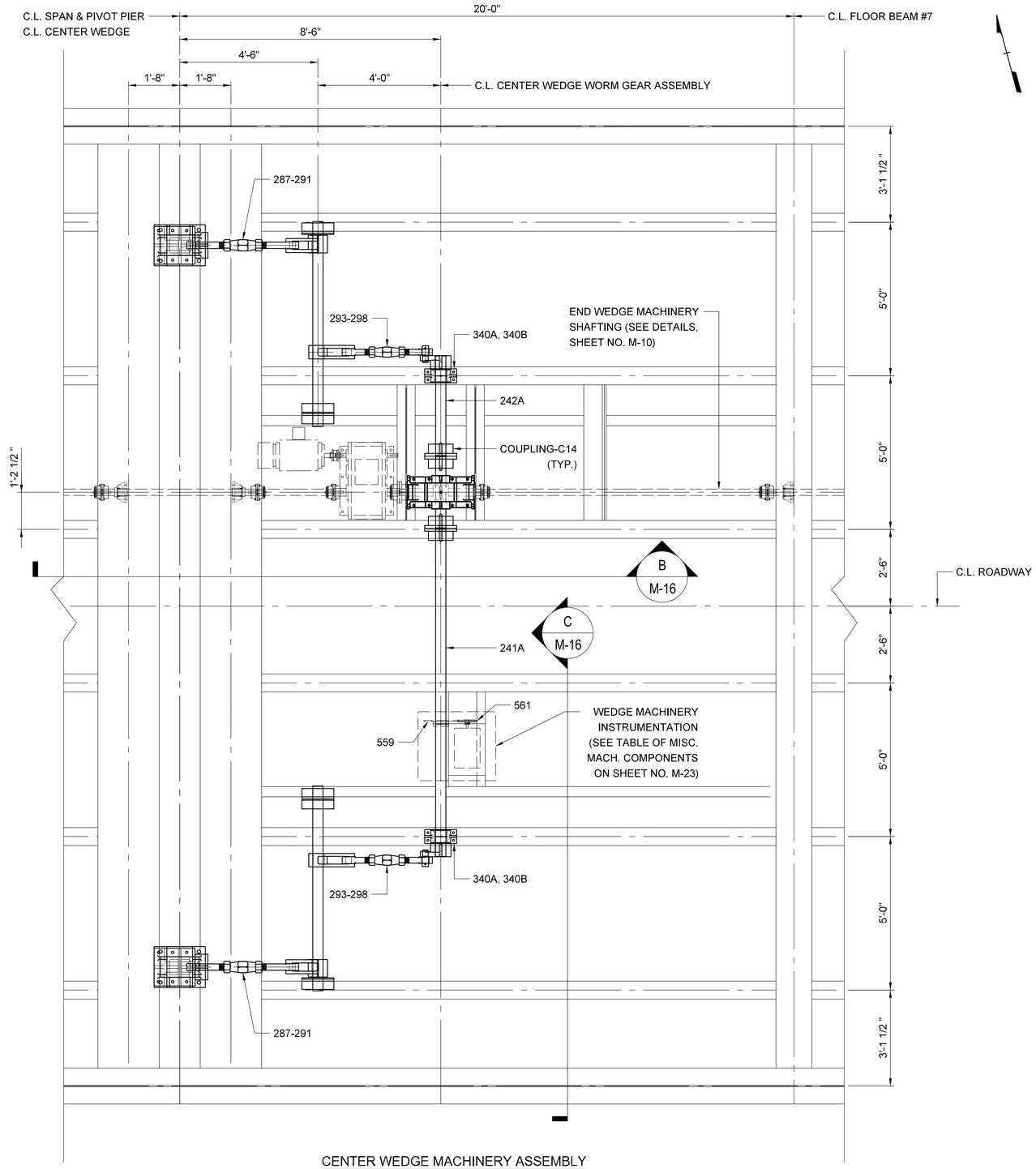
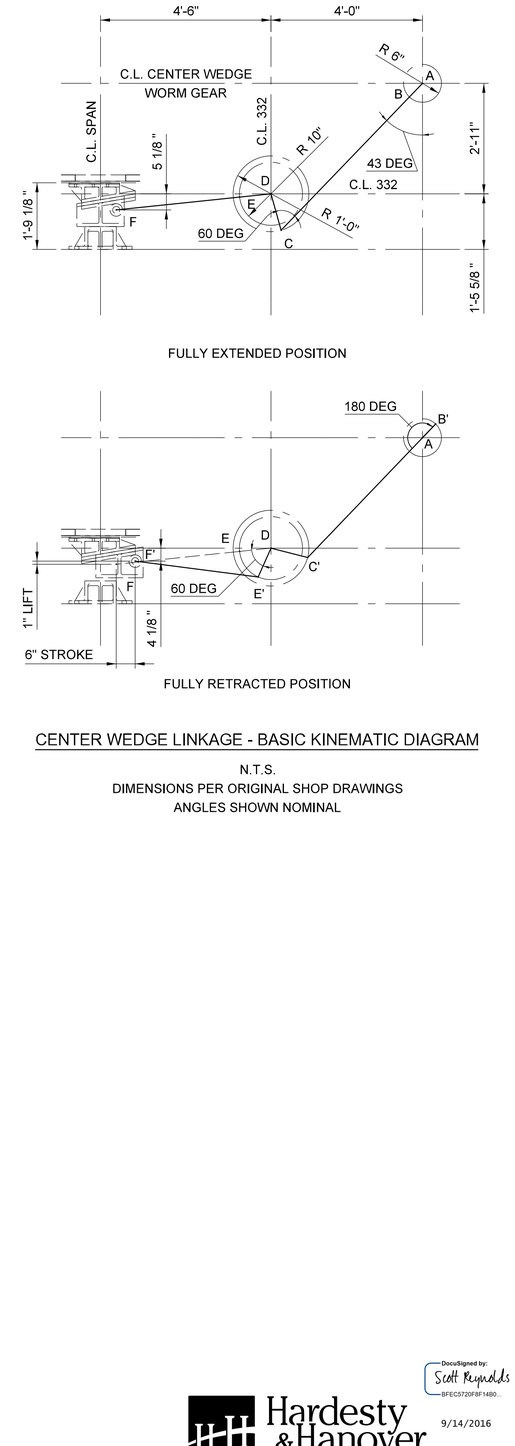
$$$$USERNAME$$$$




CENTER WEDGE MACHINERY ASSEMBLY

SCALE: 1/2" = 1'-0"




CENTER WEDGE LINKAGE - BASIC KINEMATIC DIAGRAM

N.T.S.
DIMENSIONS PER ORIGINAL SHOP DRAWINGS
ANGLES SHOWN NOMINAL

## CENTER WEDGE MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE CENTER WEDGE MACHINERY TABLE SHOWN ON SHEET NO. M-18.

2. THE CENTER WEDGE MACHINERY SHALL BE REMOVED FROM THE SWING SPAN AND BROUGHT TO A QUALIFIED MACHINE SHOP FOR REHABILITATION. AT THE MACHINE SHOP, ALL EXISTING COMPONENTS TO BE REUSED WILL BE CLEANED, INSPECTED AND PREPARED FOR REUSE. ALL EXISTING COMPONENTS TO BE REPLACED WILL BE CLEANED, INSPECTED AND MEASURED TO CONFIRM THE FINAL DIMENSIONS AND FEATURES OF REPLACEMENT COMPONENTS. WHILE THE CENTER WEDGE MACHINERY IS OUT OF SERVICE, THE CONTRACTOR SHALL PLAN TO PROVIDE A TEMPORARY MEANS OF SECURING THE CENTER OF THE SWING SPAN TO ACCOMMODATE LIVE LOADS. THIS WORK SHOULD BE PERFORMED IN A COORDINATED MANNER WITH THE END WEDGE AND CENTERING DEVICE MACHINERY, SINCE EACH OF THESE SYSTEMS UTILIZE COMMON EQUIPMENT.

3. THE CONTRACTOR SHALL PLAN TO ADJUST THE POSITION OF THE REHABILITATED CENTER WEDGES SUCH THAT EACH ARE CENTERED WITH THEIR RESPECTIVE SEATS WHEN THE SWING SPAN IS CLOSED TO NAVIGABLE TRAFFIC AND THE CENTER WEDGES ARE FULLY DRIVEN. IN THIS POSITION, THE CENTER WEDGES SHOULD HAVE FULL CONTACT ALONG THEIR BEARING SURFACES BUT NOT IMPOSE A POSITIVE REACTION ON THE SWING SPAN. THE FINAL ELEVATION OF THE CENTER WEDGE MACHINERY MAY REQUIRE ADJUSTMENT OF MACHINERY COMPONENT SHIM THICKNESS AND/OR ADJUSTMENT OF WEDGE SEAT GROUT THICKNESS TO BEST COMPLEMENT THE FINAL ELEVATION OF THE SWING SPAN.

4. ALL IN-KIND REPLACEMENT, IN-KIND REHABILITATED AND NEW COMPONENTS MAKING UP THE CENTER WEDGE MACHINERY ASSEMBLY SHALL BE PROVIDED WITH NEW SHIMS AND HIGH STRENGTH HARDWARE, UNLESS OTHERWISE SHOWN OR REQUIRED WITHIN THE SPECIFICATIONS.

PROJECT NO. B-5936
TYRRELL COUNTY
BRIDGE NO: 7

STATE OF NORTH CAROLINA
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RALEIGH

CENTER WEDGE MACHINERY ASSEMBLY

ALLIGATOR RIVER SWING SPAN

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9/14/2016

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| REVISIONS | | | | | | |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | |
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SHEET NO. M-15
TOTAL SHEETS 23

DRAWN BY: JAG/MS DATE: 8/8/2016
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| DWG NUMBER | TOTAL DWGS |
|---|---|
| 82 | 90 |

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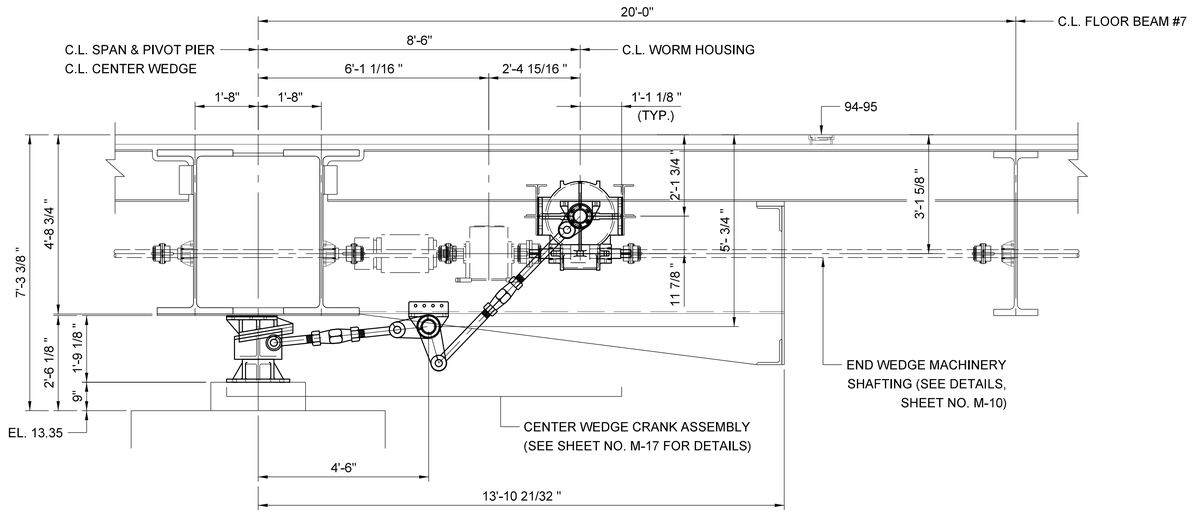
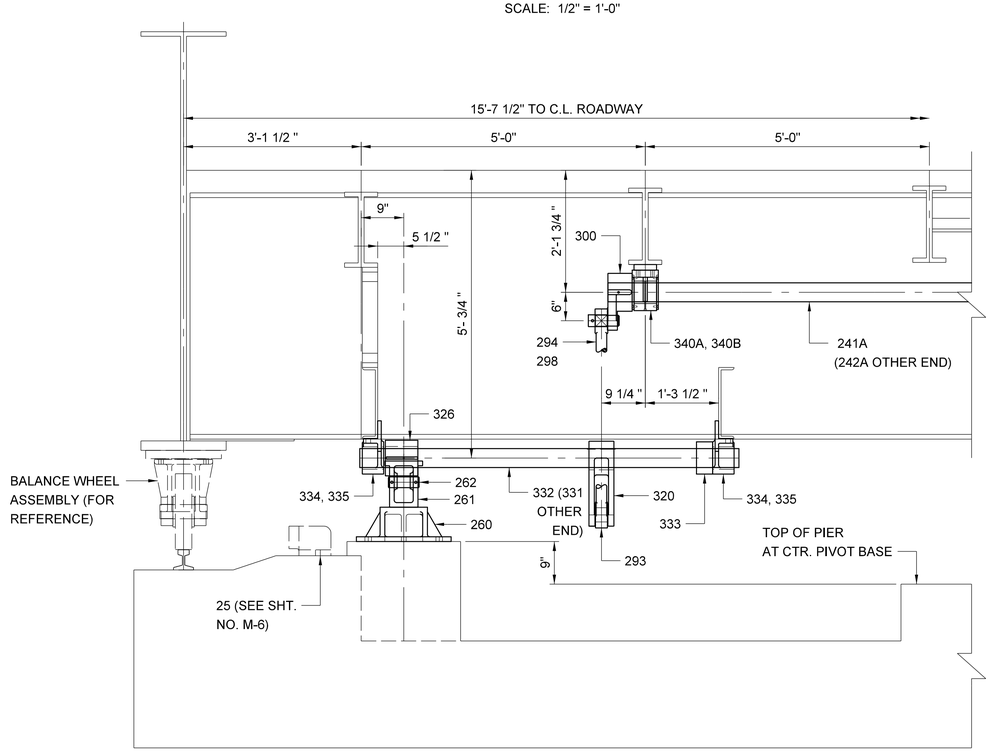
## CENTER WEDGE MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE CENTER WEDGE MACHINERY TABLE SHOWN ON SHEET NO. M-18.




SECTION B-B

SCALE: 1/2" = 1'-0"




SECTION C-C

SCALE: 3/4" = 1'-0"

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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# CENTER WEDGE MACHINERY DETAILS I

# ALLIGATOR RIVER SWING SPAN

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-16 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

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| DWG NUMBER | TOTAL DWGS |
|---|---|
| 83 | 90 |

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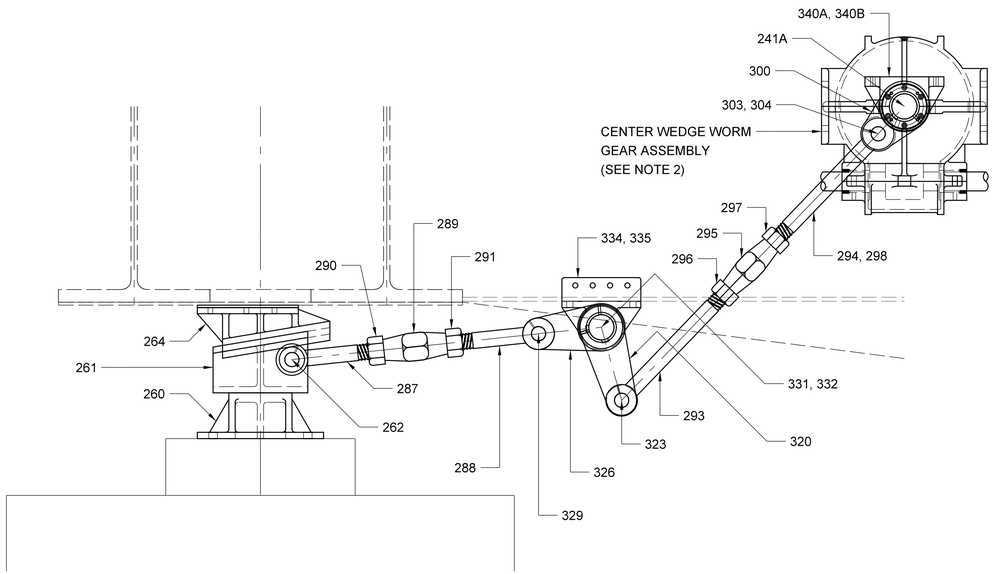
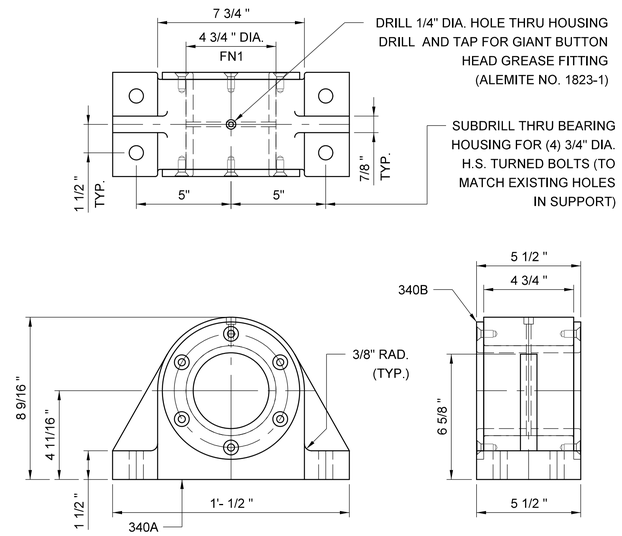



CENTER WEDGE CRANK ASSEMBLY

SCALE: 1" = 1'-0"




340A - C.W. AND E.W. CRANK SHAFT BEARING ASSEMBLY

SCALE: 3" = 1'-0"

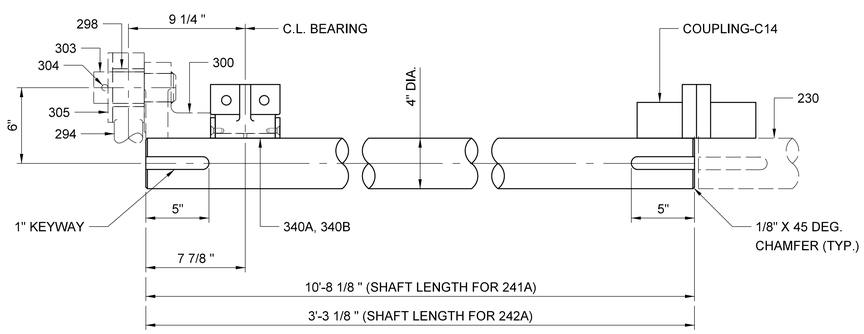
## CENTER WEDGE MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE CENTER WEDGE MACHINERY TABLE SHOWN ON SHEET NO. M-18.

2. CENTER WEDGE WORM GEAR ASSEMBLY SHALL INCLUDE THE FOLLOWING PIECES: 208-217, 221-224, 226, 227 AND 229-232.

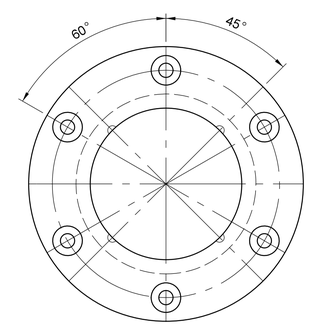
3. UNLESS OTHERWISE NOTED, ALL KEYWAYS ON EACH SHAFT SHALL BE IN LINE.

4. COUPLING-C14 OUTER FLANGE DIAMETER IS LARGER THAN THE EXISTING COUPLING OUTER FLANGE DIAMETER. CONTRACTOR TO VERIFY THAT THERE IS SUFFICIENT CLEARANCE SURROUNDING THE COUPLING PRIOR TO ORDERING.



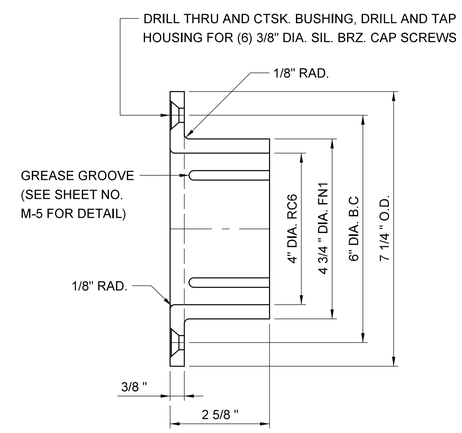

241A/242A - C.W. CRANK SHAFT

SCALE: 2" = 1'-0"




340B - BUSHING FOR 340A

SCALE: 6" = 1'-0"




PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

# CENTER WEDGE MACHINERY DETAILS II

# ALLIGATOR RIVER SWING SPAN

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9/14/2016

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| DWG NUMBER | TOTAL DWGS |
|---|---|
| 84 | 90 |

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REVISIONS

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

SHEET NO. M-17

TOTAL SHEETS 23

TABLE OF CENTER WEDGE MACHINERY COMPONENTS

| PIECE | NAME | QNTY. | DESCRIPTION OF WORK | MATERIAL | DESIGNATION | SUPPLEMENTAL REQUIREMENT | REMARKS |
|---|---|---|---|---|---|---|---|
| 208 | WORM HOUSING TOP | 1 | REHABILITATE EXISTING HOUSING | N/A | N/A | N/A | SEE NOTES 5 |
| 209 | WORM HOUSING CENTER | 1 | REHABILITATE EXISTING HOUSING | N/A | N/A | N/A | SEE NOTES 5 |
| 210 | WORM HOUSING BOTTOM | 1 | REHABILITATE EXISTING HOUSING | N/A | N/A | N/A | SEE NOTES 5 |
| 211 | BOLTS FOR 208 AND 209 | 4 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 212 | BOLTS FOR 208 AND 209 | 4 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 213 | BOLTS FOR 209 AND 210 | 6 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 214 | BASE BOLTS FOR 208 AND 209 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 215 | SHIMS FOR 208 AND 209 | 4-SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| 216 | OUTPUT BUSHING | 2 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE NOTE 1 |
| 217 | INPUT BUSHING | 2 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 221 | OUTPUT SEAL RING | 2 | REHABILITATE EXISTING SEAL RINGS | N/A | N/A | N/A | SEE NOTE 5 |
| 222 | BOLT FOR 221 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 223 | OIL SEAL FOR 221 | 2 | REPLACE EXISTING OIL SEALS | GARLOCK # 53 X 2539 (OR APPROVED EQUAL) | | | COMMERCIAL |
| 224 | INPUT SEAL RING | 2 | REHABILITATE EXISTING SEAL RINGS | N/A | N/A | N/A | SEE NOTE 5 |
| 226 | BOLTS FOR 224 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 227 | OIL SEAL FOR 224 | 2 | REPLACE EXISTING OIL SEALS | GARLOCK #63 X 2170 (OR APPROVED EQUAL) | | | COMMERCIAL |
| 229 | WORM SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 668 CL. H | S6. MAG. PARTICLE TEST | SEE NOTE 1 |
| 230 | WORM WHEEL SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 668 CL. H | S6. MAG. PARTICLE EXAM | SEE NOTE 1 |
| 231 | WORM WHEEL | 1 | REPLACE EXISTING WORM WHEEL | CAST BRONZE | ASTM B 22 C90500 | N/A | SEE NOTE 1 |
| 232 | KEY FOR 231 | 1 | REPLACE EXISTING KEY | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| | | | | | | | |
| 241A | C.W. CRANK SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-17 |
| 242A | C.W. CRANK SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-17 |
| | | | | | | | |
| 260 | CENTER WEDGE SEAT | 2 | REHABILTATE EXISTING SEAT | N/A | N/A | N/A | SEE NOTE 6 |
| 261 | CENTER WEDGE | 2 | REHABILITATE EXISTING WEDGE | N/A | N/A | N/A | SEE NOTE 6 |
| 262 | PIN FOR 261 | 2 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 6 |
| 263 | SET SCREW FOR 261 | 4 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| 264 | CENTER WEDGE GUIDE | 2 | REHABILITATE EXISTING GUIDE | N/A | N/A | N/A | SEE NOTES 2, 3, 4 AND 6 |
| 265 | SHIM FOR 264 | 2-SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| 266 | BASE BOLT FOR 264 | 12 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| | | | | | | | |
| 287 | CENTER WEDGE EYE BAR | 2 | REPLACE EXISTING EYE BARS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 288 | CENTER WEDGE EYE BAR | 2 | REPLACE EXISTING EYE BARS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 289 | SLEEVE NUT FOR 287, 288 | 2 | REPLACE EXISTING SLEEVE NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 290 | NUT FOR 287 | 2 | REPLACE EXISTING NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 291 | NUT FOR 288 | 2 | REPLACE EXISTING NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| | | | | | | | |
| 293 | CENTER WEDGE CONNECTING ROD | 2 | REPLACE EXISTING CONNECTING RODS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 294 | CENTER WEDGE CONNECTING ROD | 2 | REPLACE EXISTING CONNECTING RODS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 295 | SLEEVE NUT FOR 293, 294 | 2 | REPLACE EXISTING SLEEVE NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 296 | NUT FOR 293 | 2 | REPLACE EXISTING NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 297 | NUT FOR 294 | 2 | REPLACE EXISTING NUTS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 298 | BUSHING FOR 294 | 2 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 300 | CENTER WEDGE CRANK | 2 | REHABILITATE EXISTING CRANKS | N/A | N/A | N/A | SEE NOTE 6 |
| 301 | KEY FOR 300 | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 302 | SET SCREW FOR 300 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| 303 | CENTER WEDGE CRANK PIN | 2 | REHABILITATE EXISTING CRANK PIN | N/A | N/A | N/A | SEE NOTE 6 |
| 304 | COTTER PIN FOR 303 | 2 | REPLACE EXISTING PINS | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| 305 | WASHER FOR 303 | 2 | REPLACE EXISTING WASHERS | STEEL | ASTM F 436 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 320 | CENTER WEDGE LEVER | 2 | REHABILITATE EXISTING LEVER | N/A | N/A | N/A | SEE NOTE 6 |
| 321 | KEY FOR 320 | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 322 | SET SCREW FOR 320 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| 323 | PIN FOR 293 AND 320 | 2 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 6 |
| 324 | COTTER FOR 323 AND 329 | 8 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 326 | CENTER WEDGE LEVER | 2 | REHABILITATE EXISTING LEVER | N/A | N/A | N/A | SEE NOTE 6 |
| 327 | KEY FOR 326 | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 328 | SET SCREW FOR 326 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| 329 | PIN FOR 288 AND 326 | 2 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 6 |
| | | | | | | | |
| 331 | CENTER WEDGE JACK SHAFT | 1 | REHABILITATE EXISTING JACK SHAFT | N/A | N/A | N/A | SEE NOTE 6 |
| 332 | CENTER WEDGE JACK SHAFT | 1 | REHABILITATE EXISTING JACK SHAFT | N/A | N/A | N/A | SEE NOTE 6 |
| 333 | COLLAR FOR 331 & 332 | 2 | REHABILITATE EXISTING COLLAR | N/A | N/A | N/A | SEE NOTE 6 |
| 334 | CENTER WEDGE JACK SHAFT BEARING | 4 | REHABILITATE EXISTING BEARING | N/A | N/A | N/A | SEE NOTE 7 |
| 335 | BUSHING FOR 334 | 4 | REPLACE EXISTING BUSHINGS | CAST BRONZE | ASTM B 22 C93700 | N/A | SEE NOTES 1 AND 7 |
| 336 | SCREW FOR 335 | 16 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | TYPE 316 | N/A | SEE NOTE 1 |
| 337 | BASE BOLT FOR 334 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 338 | BASE BOLT FOR 334 | 16 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| | | | | | | | |
| 340A | C.W. CRANK SHAFT BEARING - HOUSING | 2 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-17 |
| 340B | C.W. CRANK SHAFT BEARING - BUSHING | 4 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE DETAIL SHT. NO. M-17 |

## CENTER WEDGE MACHINERY REHABILITATION NOTES:

1. EXISTING PIECE(S) SHALL BE REMOVED AND REPLACED IN-KIND. THE IN-KIND REPLACEMENT PIECE(S) SHALL BE DETAILED USING DIMENSIONAL INFORMATION SHOWN ON THE ORIGINAL SHOP DRAWINGS AND MATERIAL INFORMATION SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE DIMENSIONAL INFORMATION BY MEASURING EXISTING PIECE(S) PRIOR TO SUBMITTING SHOP DRAWINGS.

2. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW SHIMS. SHIMS SHALL PROVIDE FOR PROPER ALIGNMENT OF MATING PIECES.

3. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW HARDWARE. HARDWARE SHALL PROVIDE FOR PROPER MOUNTING.

4. HARDWARE FOR IN-KIND REPLACEMENT PIECES AND REHABILITATED PIECES SHALL COMPLEMENT THE REQUIREMENTS OF THE ORIGINAL SHOP DRAWINGS. HARDWARE FOR NEW PIECES SHALL BE PER THE GENERAL MACHINERY NOTES AND GENERAL BRIDGE MACHINERY SPECIFICATION.

5. REHABILITATION OF WORM GEAR REDUCER SHALL INCLUDE REMOVAL AND TRANSPORTATION TO A QUALIFIED MACHINE SHOP, DISASSEMBLY AND CLEANING OF ALL SURFACES FOR SHOP INSPECTION. WITH THE EXCEPTION OF HOUSINGS AND SEAL RINGS, ALL OTHER COMPONENTS MAKING UP THE WORM GEAR REDUCER SHALL BE REPLACED IN-KIND FOR A FULLY FUNCTIONAL UNIT.

6. REHABILITATION OF SEATS, WEDGES, PINS, GUIDES, CRANKS, LEVERS AND JACK SHAFTS SHALL INCLUDE CLEANING OF ALL SURFACES FOR INSPECTION, ADJUSTMENT FOR PROPER ALIGNMENT, PREPARATION OF EXPOSED SURFACES FOR PAINTING, PAINTING AND REASSEMBLY WITH MATING PIECES. WHEN APPLICABLE, THE CONTRACTOR SHALL COORDINATE MATING DIMENSIONS OF NEW (REPLACEMENT) PIECES WITH EXISTING (REHABILITATED) PIECES.

7. REHABILITATION OF JACK SHAFT BEARINGS SHALL INCLUDE REMOVAL AND TRANSPORTATION TO A QUALIFIED MACHINE SHOP, DISASSEMBLY AND CLEANING OF ALL SURFACES FOR SHOP INSPECTION, REPLACEMENT OF EXISTING BUSHINGS, PAINTING AND REASSEMBLY IN THE FIELD WITH NEW HARDWARE.

TABLE OF NEW CENTER WEDGE MACHINERY COUPLINGS

| MARK | QNTY. | SIZE | TORQUE RATING IN-KIPS | TYPE | DRIVING HALF NOMINAL BORE, IN. | DRIVING HALF KEY IN. x IN. | R = RIGID F = FLEX | DRIVEN HALF KEY IN. x IN. | DRIVEN HALF NOMINAL BORE, IN. | MANUFACTURER |
|---|---|---|---|---|---|---|---|---|---|---|
| C14 | 2 | 1040G81 | 270.9 | RIGID GEAR | 4 | 1 x 1 | R | 1 x 1 | 4 | FALK CORPORATION |

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

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DEPARTMENT OF TRANSPORTATION
RALEIGH

# TABLE OF CENTER WEDGE MACHINERY COMPONENTS

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-18 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 85 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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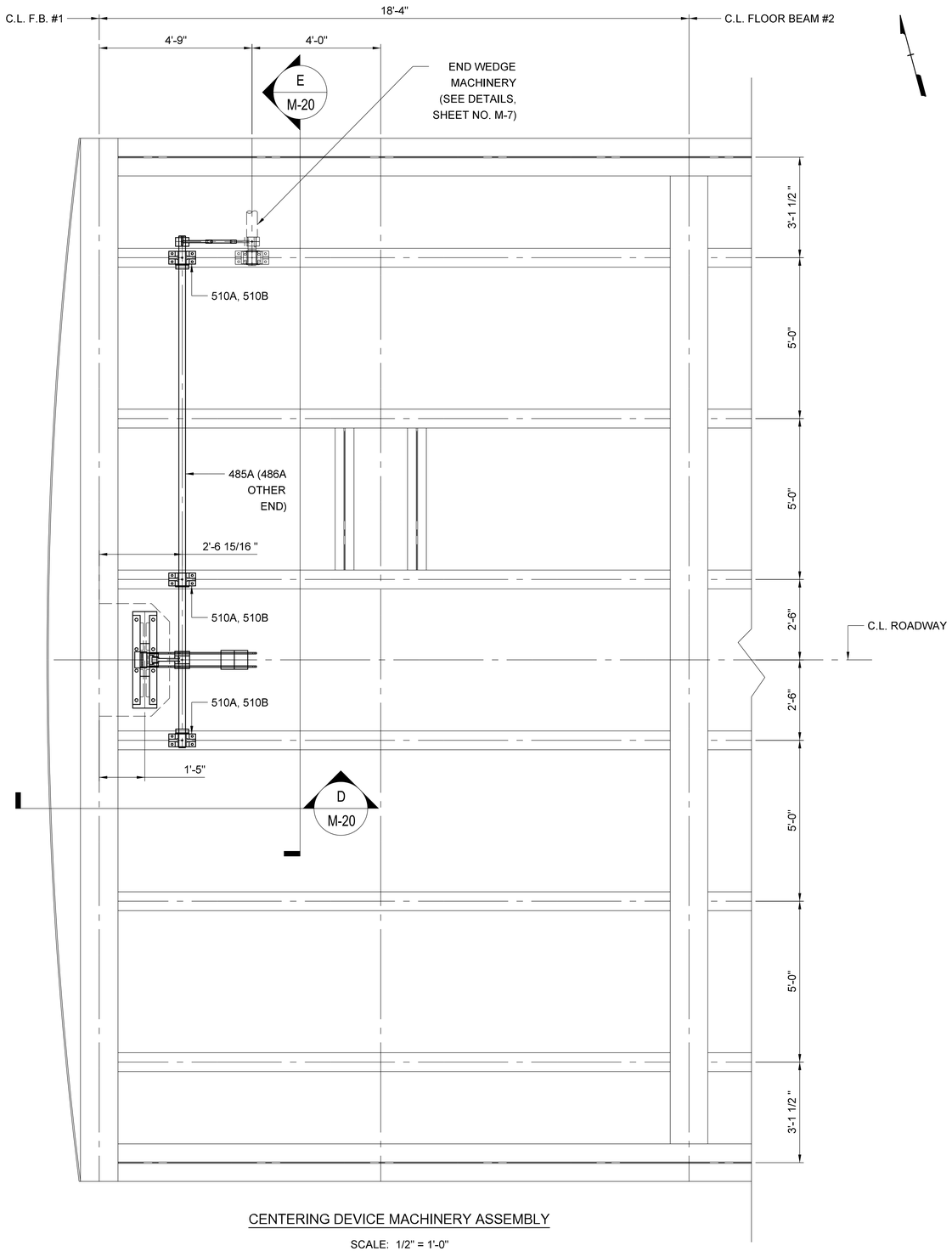
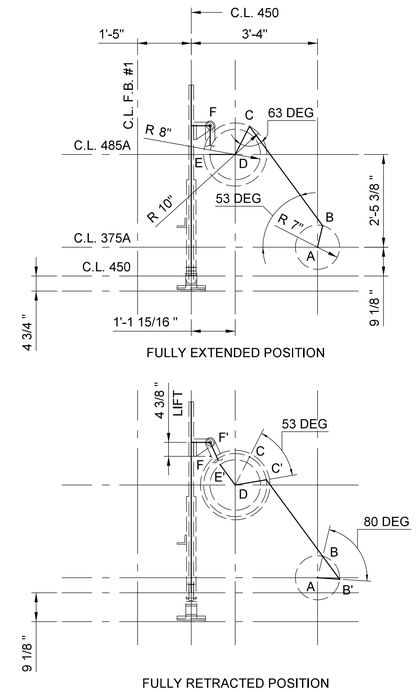
$$$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$




CENTERING DEVICE MACHINERY ASSEMBLY

SCALE: 1/2" = 1'-0"
(1) ASSEMBLY REQUIRED - AS SHOWN
(1) ASSEMBLY REQUIRED - OPPOSITE




CENTERING DEVICE LINKAGE - BASIC KINEMATIC DIAGRAM

N.T.S.
DIMENSIONS PER ORIGINAL SHOP DRAWINGS
ANGLES SHOWN NOMINAL

## CENTERING DEVICE MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE CENTERING DEVICE MACHINERY TABLE SHOWN ON SHEET NO. M-22.

2. THE CENTERING DEVICE MACHINERY SHALL BE REMOVED FROM THE SWING SPAN AND BROUGHT TO A QUALIFIED MACHINE SHOP FOR REHABILITATION. AT THE MACHINE SHOP, ALL EXISTING COMPONENTS TO BE REUSED WILL BE CLEANED, INSPECTED AND PREPARED FOR REUSE. ALL EXISTING COMPONENT TO BE REPLACED WILL BE CLEANED, INSPECTED AND MEASURED TO CONFIRM THE FINAL DIMENSIONS AND FEATURES OF REPLACEMENT COMPONENTS. WHILE THE CENTERING DEVICE MACHINERY IS OUT OF SERVICE, THE CONTRACTOR SHALL PLAN TO PROVIDE A TEMPORARY MEANS OF SECURING THE SPAN IN THE CLOSED POSITION. THIS WORK SHOULD BE PERFORMED IN A COORDINATED MANNER WITH THE END WEDGE AND CENTER WEDGE MACHINERY, SINCE EACH OF THESE SYSTEMS UTILIZE COMMON EQUIPMENT.

3. THE CONTRACTOR SHALL PLAN TO ADJUST THE POSITION OF THE REHABILITATED LATCH BAR SUCH THAT IT ENGAGES THE LATCH POCKET WITH THE SWING SPAN IN THE 'CLOSED TO NAVIGATION' POSITION AND IS CAPABLE OF RETRACTING THE LATCH BAR TO AN ELEVATION THAT WILL ALLOW IT TO ROLL UP ITS POCKET RAMP AND SELF-DISENGAGE AS INTENDED DURING SWING SPAN OPERATIONS. THE FINAL ELEVATION OF THE CENTERING DEVICE MACHINERY MAY REQUIRE ADJUSTMENT OF MACHINERY COMPONENT SHIM THICKNESS AND/OR ADJUSTMENT OF LATCH POCKET GROUT THICKNESS TO BEST COMPLEMENT THE FINAL ELEVATION OF THE SWING SPAN.

4. ALL IN-KIND REPLACEMENT, IN-KIND REHABILITATED AND NEW COMPONENTS MAKING UP THE CENTERING DEVICE MACHINERY ASSEMBLY SHALL BE PROVIDED WITH NEW SHIMS AND HIGH STRENGTH HARDWARE, UNLESS OTHERWISE SHOWN OR REQUIRED WITHIN THE SPECIFICATIONS.

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TYRRELL COUNTY
BRIDGE NO: 7

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CENTERING DEVICE MACHINERY ASSEMBLY

ALLIGATOR RIVER SWING SPAN

| DRAWN BY: JAG/MS | DATE: 8/8/2016 |
|---|---|
| CHECKED BY: GAF/RH | DATE: 8/8/2016 |
| DESIGN ENGINEER OF RECORD: JAG/MS | DATE: 8/8/2016 |

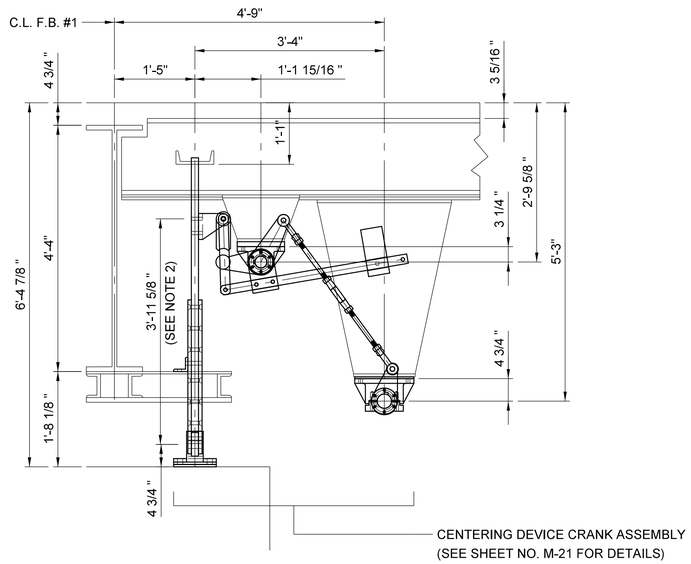
| DWG NUMBER | TOTAL DWGS |
|---|---|
| 86 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

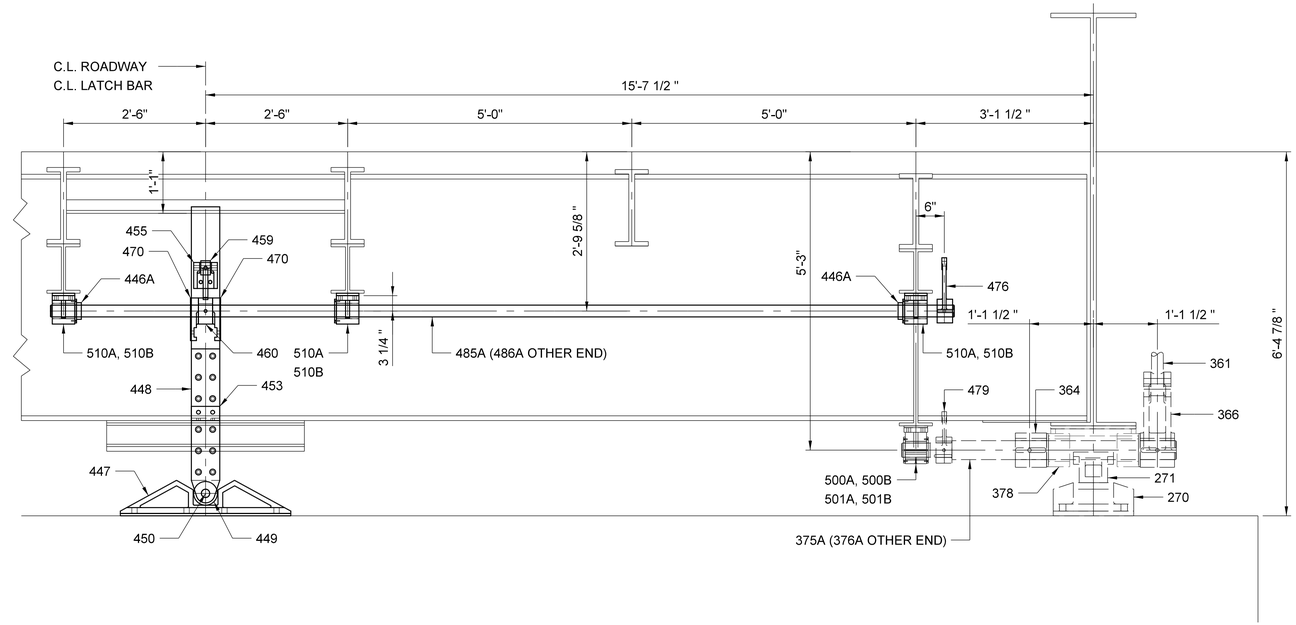
SHEET NO. M-19
TOTAL SHEETS 23

$$$$$$SYSTTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$




SECTION D-D

SCALE: 3/4" = 1'-0"




SECTION E-E

SCALE: 3/4" = 1'-0"

CENTERING DEVICE MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE CENTERING DEVICE MACHINERY TABLE SHOWN ON SHEET NO. M-22.

2. THE ORIGINAL DRAWINGS PROVIDED THIS DIMENSION TO BE LOCATED IN THE FIELD FOR PROPER OPERATION OF THE LATCH SYSTEM. THE CONTRACTOR SHOULD VERIFY THIS DIMENSION WHEN DIASSEMBLING THE LATCH SYSTEM.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

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CENTERING DEVICE MACHINERY DETAILS I

ALLIGATOR RIVER SWING SPAN

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| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-20 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 87 | 90 |

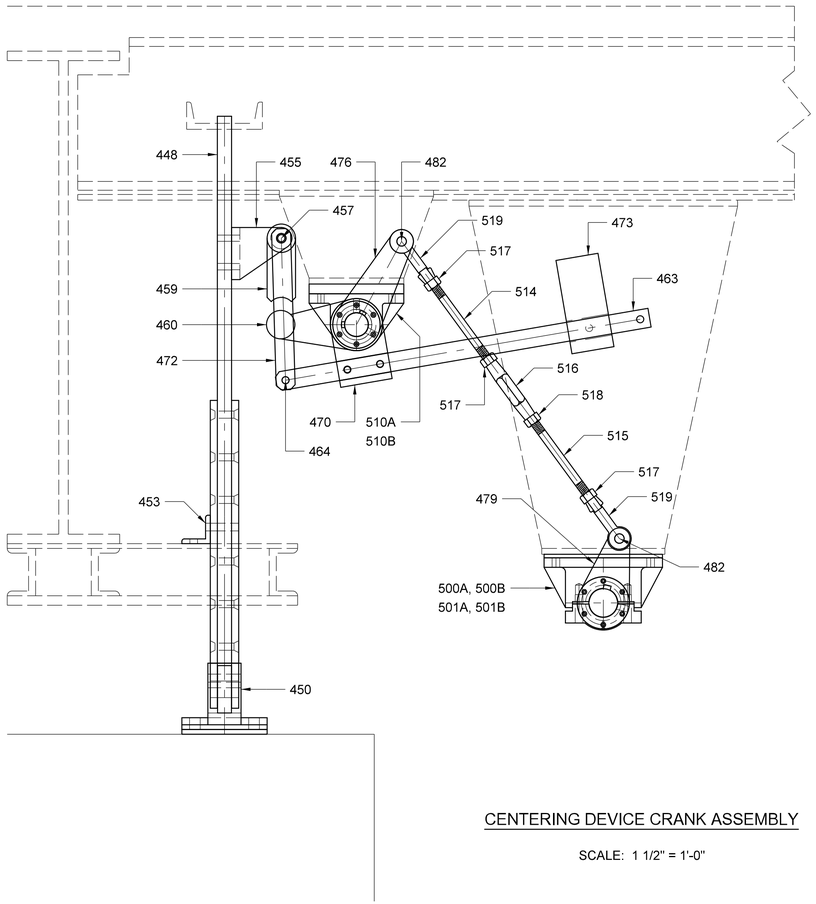
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

## CENTERING DEVICE MACHINERY REHABILITATION NOTES:

1. FOR A GENERAL DESCRIPTION OF WORK FOR EACH OF THE COMPONENTS SHOWN ON THIS SHEET, PLEASE REFER TO THE CENTERING DEVICE MACHINERY TABLE SHOWN ON SHEET NO. M-22.

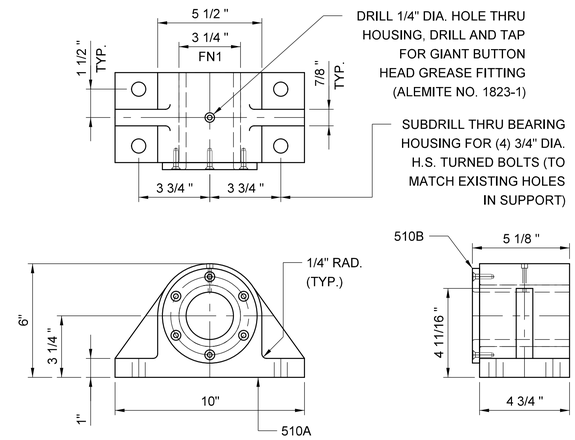
2. LATCH SHAFT BEARING BUSHINGS SHALL BE PROVIDED WITH MACHINED DOUBLE OVAL GREASE GROOVES. FOR GROOVE DETAIL SEE SHEET NO. M-5.

3. LOCATION OF COLLAR 446A ON LATCH SHAFTS 485A/486A COMPLE MENT THE RECORD SHOP DRAWINGS FOR ORIGINAL MACHINERY. CONTRACTOR SHALL VERFIY THEIR LOCATION AND PROPOSE FINAL LOCATIONS ON THE SUBMITTED SHOP DRAWINGS.



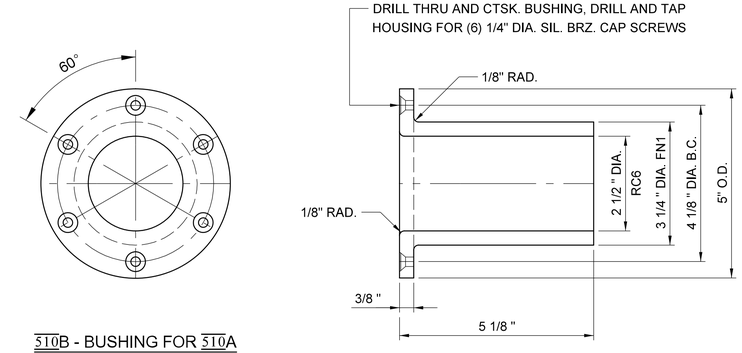

CENTERING DEVICE CRANK ASSEMBLY

SCALE: 1 1/2" = 1'-0"



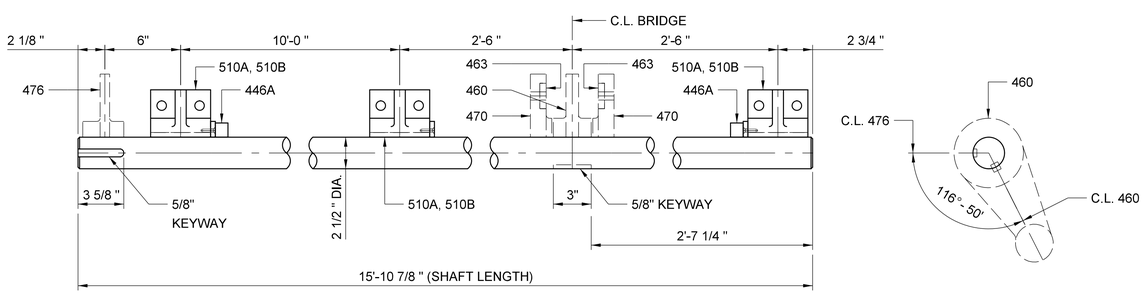

510A/510B - LATCH SHAFT BEARING ASSEMBLY

SCALE: 3" = 1'-0"




510B - BUSHING FOR 510A

SCALE: 6" = 1'-0"




485A/486A - LATCH SHAFT

SCALE: 2" = 1'-0"

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

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# CENTERING DEVICE MACHINERY DETAILS II

# ALLIGATOR RIVER SWING SPAN

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9/14/2016

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| REVISIONS | | | | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | | | | M-21 |
| 1 | | | 3 | | | | | | TOTAL SHEETS |
| 2 | | | 4 | | | | | | 23 |

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 88 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TABLE OF CENTERING DEVICE MACHINERY COMPONENTS

| PIECE | NAME | QNTY. | DESCRIPTION OF WORK | MATERIAL | DESIGNATION | SUPPLEMENTAL REQUIREMENT | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 446A | COLLAR FOR 485A AND 486A | 4 | NEW SET SCREW SHAFT COLLAR FOR 2 1/2" DIAMETER, TYPE 303 STAINLESS STEEL | MCMASTER-CARR PART NO. 6462K47 (OR APPROVED EQUAL) | | | COMMERCIAL |
| 447 | LATCH POCKET | 2 | REHABILITATE EXISTING LATCH POCKET | N/A | N/A | N/A | SEE NOTE 5 |
| 448 | LATCH BAR | 2 | REHABILITATE EXISTING LATCH BAR | N/A | N/A | N/A | SEE NOTE 5 |
| 449 | LATCH ROLLER | 2 | REHABILITATE EXISTING ROLLER | N/A | N/A | N/A | SEE NOTE 5 |
| 450 | PIN FOR 448 AND 449 | 2 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 5 |
| 451 | COTTER PIN FOR 450 | 4 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 453 | LATCH STOP | 2 | REPLACE EXISTING LATCH STOP | STRUCTURAL STEEL | ASTM A 709 GR. 50 | N/A | SEE NOTE 1 |
| 454 | BOLT FOR 453 | 4 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 455 | LATCH PAWL BRACKET | 2 | REHABILITATE EXISTING LATCH PAWL BRACKET | N/A | N/A | N/A | SEE NOTE 5 |
| 456 | BOLT FOR 455 | 6 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 457 | PIN FOR 455 AND 459 | 2 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 5 |
| 458 | COTTER PIN FOR 457 | 4 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| 459 | LATCH PAWL | 2 | REHABILITATE EXISTING LATCH PAWL | N/A | N/A | N/A | SEE NOTE 5 |
| 460 | LATCH TRIP LEVER | 2 | REHABILITATE EXISTING LATCH TRIP LEVER | N/A | N/A | N/A | SEE NOTE 5 |
| 461 | KEY FOR 460 | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 462 | SET SCREW FOR 460 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| 463 | LATCH COUNTERWEIGHT BAR | 4 | REHABILITATE EXISTING LATCH COUNTERWEIGHT BAR | N/A | N/A | N/A | SEE NOTE 5 |
| 464 | PIN FOR 463 AND 472 | 2 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 5 |
| 465 | COTTER PIN FOR 464 | 4 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| 466 | SPACER FOR 464 | 2 | REPLACE EXISTING SPACERS | STEEL | ASTM A 53 | N/A | SEE NOTE 1 |
| 467 | STUD FOR 463 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 468 | NUT FOR 467 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 563 | N/A | SEE NOTES 1, 3 AND 4 |
| | | | | | | | |
| 470 | COUNTERWEIGHT HUB | 4 | REHABILITATE EXISTING COUNTERWEIGHT HUB | N/A | N/A | N/A | SEE NOTE 5 |
| 471 | BOLT FOR 470 | 8 | REPLACE EXISTING HARDWARE | STEEL | ASTM A 449 | N/A | SEE NOTES 1, 3 AND 4 |
| 472 | LATCH COUNTERWEIGHT LINK | 4 | REHABILITATE EXISTING LATCH COUNTERWEIGHT LINK | N/A | N/A | N/A | SEE NOTE 5 |
| 473 | LATCH COUNTERWEIGHT | 2 | REHABILITATE EXISTING LATCH COUNTERWEIGHT | N/A | N/A | N/A | SEE NOTE 5 |
| 474 | SET SCREW FOR 473 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| | | | | | | | |
| 476 | LATCH LEVER | 2 | REHABILITATE EXISTING LEVER | N/A | N/A | N/A | |
| 477 | KEY FOR 476 | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 478 | SET SCREW FOR 476 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTES 1, 3 AND 4 |
| | | | | | | | |
| 482 | PIN FOR 476, 479 AND 519 | 4 | REHABILITATE EXISTING PIN | N/A | N/A | N/A | SEE NOTE 5 |
| 483 | COTTER PIN FOR 482 | 8 | REPLACE EXISTING HARDWARE | STAINLESS STEEL | ASTM A 276, TYPE 316 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 485A | LATCH SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-21 |
| 486A | LATCH SHAFT | 1 | REPLACE EXISTING SHAFT | FORGED STEEL | ASTM A 434 CL. BC | N/A | SEE DETAIL SHT. NO. M-21 |
| | | | | | | | |
| 510A | LATCH SHAFT BEARING - HOUSING | 6 | REPLACE EXISTING HOUSING WITH SIMILAR | STR. STEEL | ASTM A 36 | N/A | SEE DETAIL SHT. NO. M-21 |
| 510B | LATCH SHAFT BEARING - BUSHING | 6 | REPLACE EXISTING BUSHING WITH SIMILAR | CAST BRONZE | ASTM B 22 C91100 | N/A | SEE DETAIL SHT. NO. M-21 |
| | | | | | | | |
| 514 | LATCH ROD | 2 | REPLACE EXISTING LATCH ROD | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 515 | LATCH ROD | 2 | REPLACE EXISTING LATCH ROD | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 516 | SLEEVE NUT FOR 514 AND 515 | 2 | REPLACE EXISTING HARDWARE | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 517 | NUT FOR 514 | 6 | REPLACE EXISTING HARDWARE | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 518 | NUT FOR 515 | 2 | REPLACE EXISTING HARDWARE | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |
| 519 | CLEVIS FOR 514 AND 515 | 4 | REPLACE EXISTING CLEVIS | FORGED STEEL | ASTM A 668 CL. G | N/A | SEE NOTE 1 |

## CENTERING DEVICE MACHINERY REHABILITATION NOTES:

1. EXISTING PIECE(S) SHALL BE REMOVED AND REPLACED IN-KIND. THE IN-KIND REPLACEMENT PIECE(S) SHALL BE DETAILED USING DIMENSIONAL INFORMATION SHOWN ON THE ORIGINAL SHOP DRAWINGS AND MATERIAL INFORMATION SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE DIMENSIONAL INFORMATION BY MEASURING EXISTING PIECE(S) PRIOR TO SUBMITTING SHOP DRAWINGS.

2. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW SHIMS. SHIMS SHALL PROVIDE FOR PROPER ALIGNMENT OF MATING PIECES.

3. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW HARDWARE. HARDWARE SHALL PROVIDE FOR PROPER MOUNTING.

4. HARDWARE FOR IN-KIND REPLACEMENT PIECES AND REHABILITATED PIECES SHALL COMPLEMENT THE REQUIREMENTS OF THE ORIGINAL SHOP DRAWINGS. HARDWARE FOR NEW PIECES SHALL BE PER THE GENERAL MACHINERY NOTES AND GENERAL BRIDGE MACHINERY SPECIFICATION.

5. REHABILITATION OF LATCH COMPONENTS, INCLUDING POCKETS, BARS, ROLLERS, PINS, ETC., SHALL INCLUDE CLEANING OF ALL SURFACES FOR INSPECTION, ADJUSTMENT FOR PROPER ALIGNMENT, PREPARATION OF EXPOSED SURFACES FOR PAINTING, PAINTING AND REASSEMBLY WITH MATING PIECES. WHEN APPLICABLE, THE CONTRACTOR SHALL COORDINATE MATING DIMENSIONS OF NEW (REPLACEMENT) PIECES WITH EXISTING (REHABILITATED) PIECES.

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TABLE OF CENTERING DEVICE MACHINERY COMPONENTS

ALLIGATOR RIVER SWING SPAN

Hardesty & Hanover
engineering that moves you

DocuSigned by: Scott Reynolds
BFEC5720F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 89 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SHEET NO. M-22
TOTAL SHEETS 23

$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

TABLE OF MISCELLANEOUS MACHINERY COMPONENTS

| PIECE | NAME | QNTY. | DESCRIPTION OF WORK | MATERIAL | DESIGNATION | SUPPLEMENTAL REQUIREMENT | REMARKS |
|---|---|---|---|---|---|---|---|
| 540 | SPAN LIMIT SWITCH GEAR | 1 | REHABILITATE EXISTING GEAR | N/A | N/A | N/A | SEE NOTE 5 |
| 541 | KEY FOR 540 AND 558A | 2 | REPLACE EXISTING KEYS | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTES 1 AND 5 |
| 542 | SET SCREW FOR 540 AND 561 | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTE 1 |
| 543 | SPAN LIMIT SWITCH PINION | 1 | REHABILITATE EXISTING PINION | N/A | N/A | N/A | SEE NOTE 5 |
| 544 | KEY FOR 543 | 1 | REPLACE EXISTING KEY | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 545 | SET SCREW FOR 543 | 1 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 547A | INTERMEDIATE GEAR | 1 | REPLACE EXISTING GEAR | N/A | N/A | N/A | SEE DETAIL THIS SHEET |
| 548 | KEY FOR 547A | 1 | REPLACE EXISTING KEY | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| 549 | SET SCREW FOR 547A | 1 | REPLACE EXISTING HARDWARE | FORGED STEEL | ASTM A 449 | N/A | SEE NOTE 1, 3 AND 4 |
| 550A | SPUR PINION | 1 | REPLACE EXISTING PINION | N/A | N/A | N/A | SEE DETAIL THIS SHEET |
| 551 | SET SCREW FOR 550A | 2 | REPLACE EXISTING HARDWARE | STEEL | ASTM F 912 | N/A | SEE NOTE 1 |
| | | | | | | | |
| 553 | INTERMEDIATE SHAFT | 1 | REHABILITATE EXISTING SHAFT | N/A | N/A | N/A | SEE NOTE 5 |
| 554 | INTERMEDIATE SHAFT BEARING | 2 | REHABILITATE EXISTING BEARINGS | N/A | N/A | N/A | SEE NOTE 5 |
| 555 | BASE BOLTS FOR 554 | 4 | REPLACE EXISTING HARDWARE | FORGED STEEL | ASTM A 449 | N/A | SEE NOTE 1, 3 AND 4 |
| 556 | SHIM FOR 554 | 2-SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| | | | | | | | |
| 559 | WEDGE LIMIT SWITCH GEAR | 1 | REHABILITATE EXISTING GEAR | N/A | N/A | N/A | SEE NOTE 5 |
| 560 | BOLTS FOR 559 | 2 | REPLACE EXISTING HARDWARE | FORGED STEEL | ASTM A 449 | N/A | SEE NOTE 1, 3 AND 4 |
| 561 | WEDGE LIMIT SWITCH PINION | 1 | REHABILITATE EXISTING PINION | N/A | N/A | N/A | SEE NOTE 5 |
| 562 | KEY FOR 561 | 1 | REPLACE EXISTING KEY | FORGED STEEL | ASTM A 668 CL. K | N/A | SEE NOTE 1 |
| | | | | | | | |
| N/A | SPAN ROTARY CAM LIMIT SWITCH | 1 | REUSE EXISTING SPAN LIMIT SWITCH | N/A | N/A | N/A | ELECTRICAL ITEM |
| N/A | BOLTS FOR ROTARY CAM LIMIT SWITCH | 4 | REPLACE EXISTING HARDWARE | FORGED STEEL | ASTM A 449 | N/A | SEE NOTE 1, 3 AND 4 |
| N/A | SHIM FOR ROTARY CAM LIMIT SWITCH | 2-SETS | REPLACE EXISTING SHIMS | STAINLESS STEEL | ASTM A 240 | N/A | SEE NOTES 1 AND 2 |
| N/A | RESOLVER | 1 | REPLACE EXISTING SELSYN WITH NEW DIGITAL ENCODER | N/A | N/A | N/A | ELECTRICAL ITEM |
| | | | | | | | |
| N/A | WEDGE ROTARY CAM LIMIT SWITCH | 1 | REPLACE EXISTING WEDGE LIMIT SWITCH | N/A | N/A | N/A | ELECTRICAL ITEM |

TABLE OF NEW MISCELLANEOUS MACHINERY COUPLINGS

| MARK | QNTY. | SIZE | TORQUE RATING IN-KIPS | TYPE | DRIVING HALF | | | DRIVEN HALF | | | MANUFACTURER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NOMINAL BORE, IN. | KEY IN. x IN. | R = RIGID F = FLEX | | KEY IN. x IN. | NOMINAL BORE, IN. | |
| C15 | 1 | 40 | 75.3 | DELTAFLEX TYPE 3 | 3/4 | 3/16 X 3/16 | F | F | 3/16 x 3/16 | 5/8 | LOVEJOY |

## MISCELLANEOUS MACHINERY REHABILITATION NOTES:

1. EXISTING PIECE(S) SHALL BE REMOVED AND REPLACED IN-KIND. THE IN-KIND REPLACEMENT PIECE(S) SHALL BE DETAILED USING DIMENSIONAL INFORMATION SHOWN ON THE ORIGINAL SHOP DRAWINGS AND MATERIAL INFORMATION SHOWN ON THIS DRAWING. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE DIMENSIONAL INFORMATION BY MEASURING EXISTING PIECE(S) PRIOR TO SUBMITTING SHOP DRAWINGS.

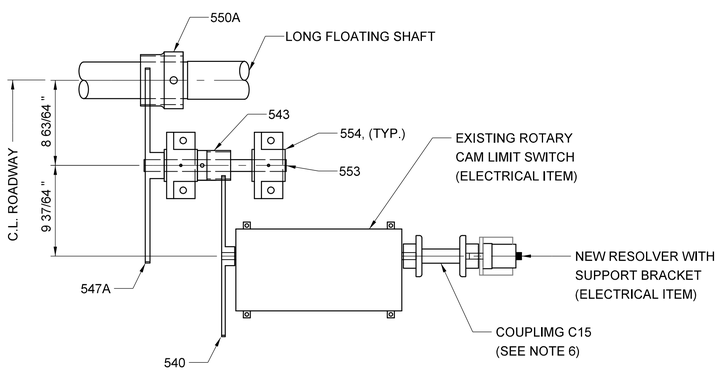
2. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW SHIMS. SHIMS SHALL PROVIDE FOR PROPER ALIGNMENT OF MATING PIECES.

3. UNLESS NOTED OTHERWISE, ALL IN-KIND REPLACEMENT PIECES, REHABILITATED PIECES AND NEW PIECES SHALL BE PROVIDED WITH NEW HARDWARE. HARDWARE SHALL PROVIDE FOR PROPER MOUNTING.

4. HARDWARE FOR IN-KIND REPLACEMENT PIECES AND REHABILITATED PIECES SHALL COMPLEMENT THE REQUIREMENTS OF THE ORIGINAL SHOP DRAWINGS. HARDWARE FOR NEW PIECES SHALL BE PER THE GENERAL MACHINERY NOTES AND GENERAL BRIDGE MACHINERY SPECIFICATION.

5. REHABILITATION OF LIMIT SWITCH COMPONENTS, INCLUDING GEARS, PINIONS, SHAFTING, BEARINGS, ETC., SHALL INCLUDE CLEANING OF ALL SURFACES FOR INSPECTION, ADJUSTMENT FOR PROPER ALIGNMENT, PREPARATION OF EXPOSED SURFACES FOR PAINTING, PAINTING AND REASSEMBLY WITH MATING PIECES. WHEN APPLICABLE, THE CONTRACTOR SHALL COORDINATE MATING DIMENSIONS OF NEW (REPLACEMENT) PIECES WITH EXISTING (REHABILITATED) PIECES.

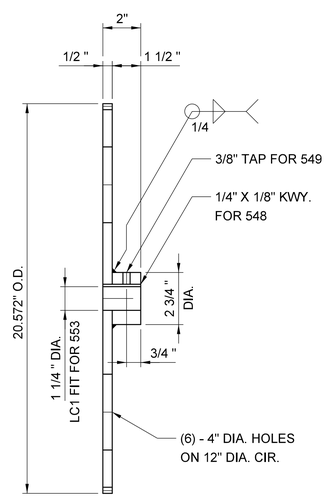
6. DELTAFLEX COUPLINGS SHALL HAVE STAINLESS STEEL FLEX LINKS AND FLANGES. CLEARANCE BETWEEN SHAFTS AND DELTAFLEX HUBS SHALL NOT EXCEED 0.001".




SPAN INSTRUMENTATION ASSEMBLY

SCALE: 1" = 1'-0"

(1) ASSEMBLY REQUIRED

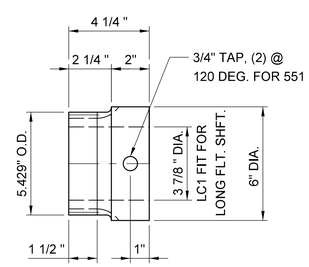



547A - INTERMEDIATE GEAR

SCALE: 3" = 1'-0"

142 T, 7 D.P., 20 DEG. INV.

20.286" PITCH DIA.




550A - SPUR PINION

SCALE: 3" = 1'-0"

36 T, 7 D.P., 20 DEG. INV.

5.143" PITCH DIA.

Hardesty & Hanover
engineering that moves you

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BFEC5725F8F14B0...
9/14/2016

NORTH CAROLINA PROFESSIONAL SEAL 036065 ENGINEER SCOTT A. REYNOLDS

PROJECT NO. B-5936

TYRRELL COUNTY

BRIDGE NO: 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MISCELLANEOUS MACHINERY DETAILS

ALLIGATOR RIVER SWING SPAN

| REVISIONS | | | | | | SHEET NO. |
|---|---|---|---|---|---|---|
| NO. | BY: | DATE: | NO. | BY: | DATE: | M-23 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

DRAWN BY: JAG/MS DATE: 8/8/2016
CHECKED BY: GAF/RH DATE: 8/8/2016
DESIGN ENGINEER OF RECORD: JAG/MS DATE: 8/8/2016

| DWG NUMBER | TOTAL DWGS |
|---|---|
| 90 | 90 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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