

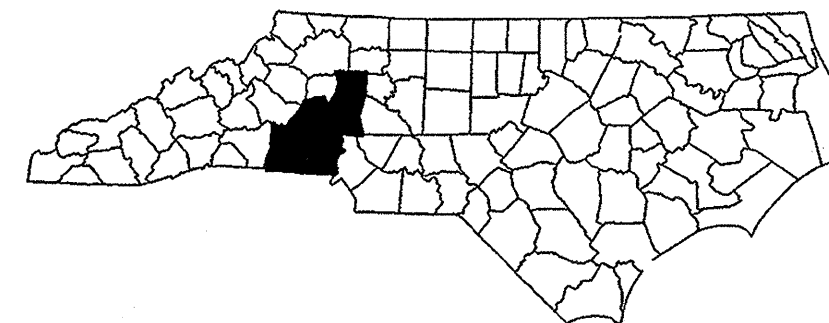
CONTRACT C203218 PROJECT 17BP.12.P.5

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

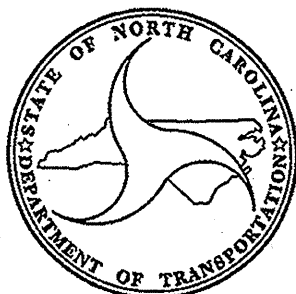
**CATAWBA, CLEVELAND, GASTON,
IREDELL & LINCOLN COUNTIES**

| STATE | STATE PROJECT REFERENCE NO. | SECRET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | 17BP.12.P.5 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 17BP.12.P.5 | NA | CONST | |
| | | | |
| | | | |
| | | | |

- LOCATION: BRIDGE #19, CATAWBA CO., NC16 OVER US70**
BRIDGE #20, CATAWBA CO., NC10 OVER SOUTH FORK CATAWBA RIVER
BRIDGE #91, CATAWBA CO., NC127 OVER LAKE HICKORY
BRIDGE #99, CATAWBA CO., NC150 OVER SEABOARD COASTLINE RR
BRIDGE #16, CLEVELAND CO., NC182 OVER FIRST BROAD RIVER
BRIDGE #18, CLEVELAND CO., NC150 OVER THE BROAD RIVER
BRIDGE #32, CLEVELAND CO., NC18 OVER US74/NC226
BRIDGE #76, CLEVELAND CO., NC150 OVER BUFFALO CREEK
BRIDGE #79, CLEVELAND CO., US74 EBL OVER FIRST BROAD RIVER
BRIDGE #80, CLEVELAND CO., US74 WBL OVER FIRST BROAD RIVER
BRIDGE #88, CLEVELAND CO., MORGAN ST. OVER US74
BRIDGE #56, GASTON CO., NC275 OVER THE SOUTH FORK OF CATAWBA RIVER
BRIDGE #71, GASTON CO., US74 /29 OVER SOUTHERN RAILWAY
BRIDGE #133, GASTON CO., ABERDEEN BLVD. OVER I-85
BRIDGE #1, IREDELL CO., SR2362 OVER THIRD CREEK
BRIDGE #50, IREDELL CO., SR1502 OVER I-40
BRIDGE #174, IREDELL CO., I-40 EBL OVER FIVE MILE BRANCH
BRIDGE #35, LINCOLN CO., NC150 OVER SOUTH FORK OF THE CATAWBA RIVER
BRIDGE #50, LINCOLN CO., NC73 OVER THE CATAWBA RIVER



**TYPE OF WORK: CLEANING AND PAINTING OF EXISTING STRUCTURES,
JOINT REPLACEMENT, REPAIR OF STRUCTURAL STEEL,
AND BEARING REPLACEMENT.**



Prepared in the Office of:
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT - PRESERVATION & REPAIR GROUP
 1600 BIRCH RIDGE DR. RALEIGH, N.C. 27610

RICK NELSON, P.E.
PROJECT ENGINEER

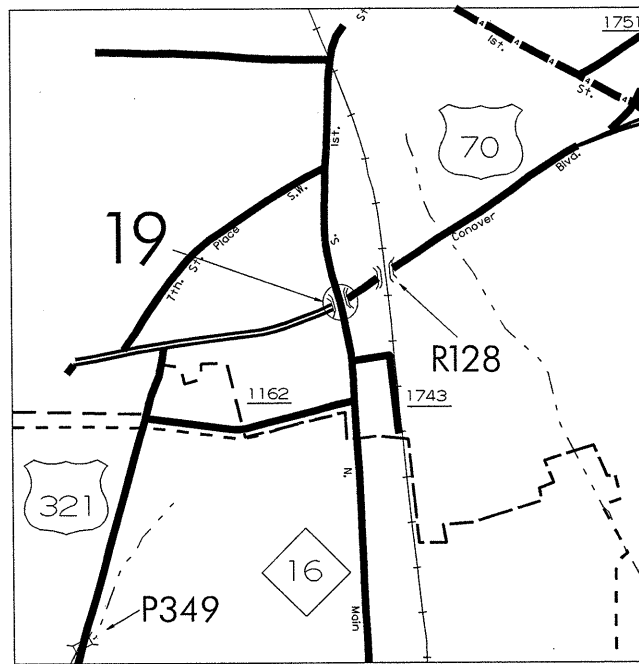
LETTING DATE: MARCH 19, 2013

ENGINEER

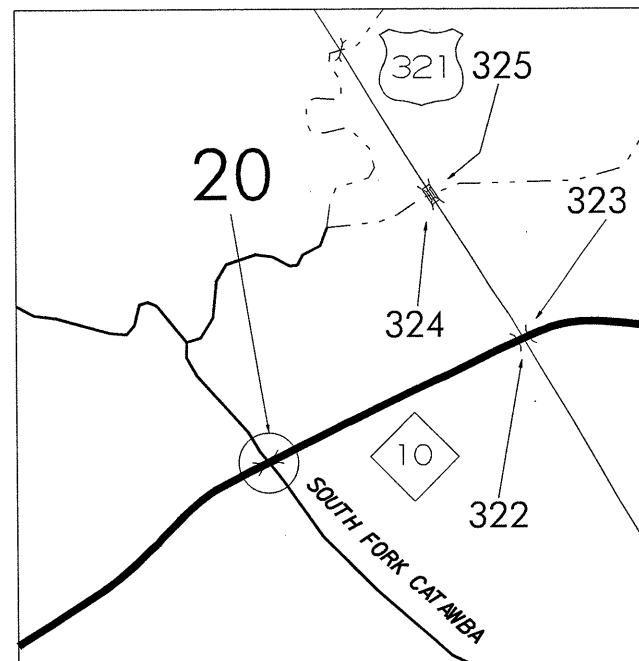


PROJECT DESIGN ENGINEER

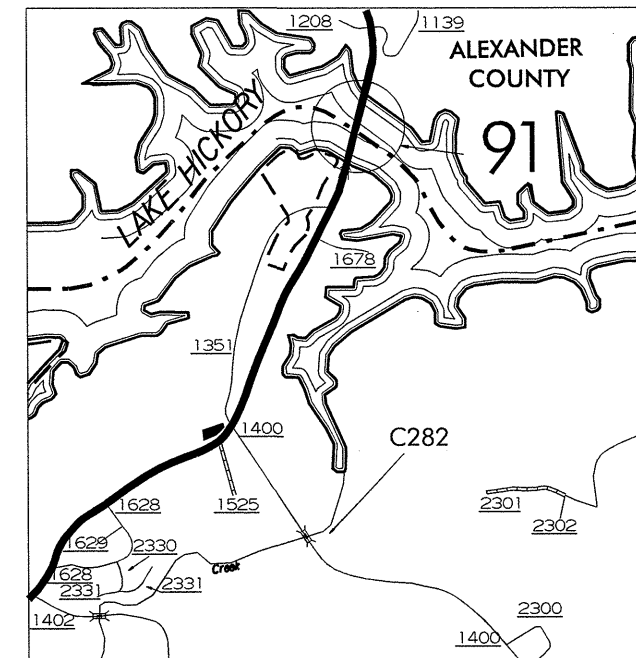
BRIDGE #19



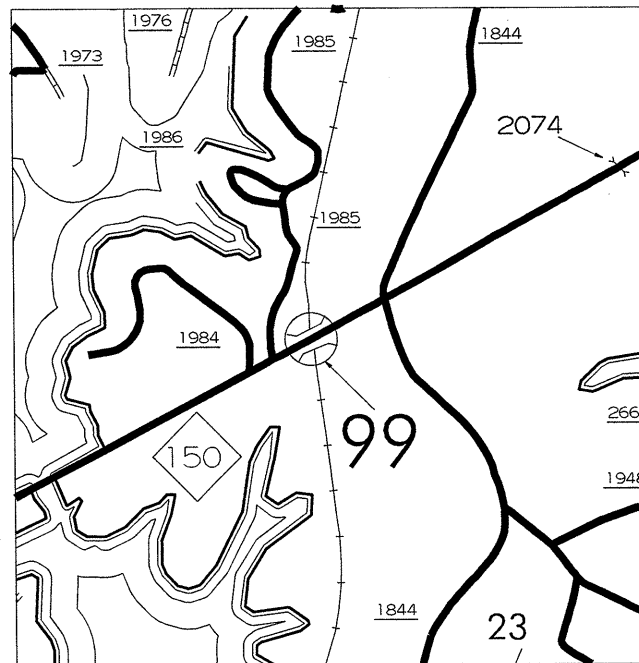
BRIDGE #20



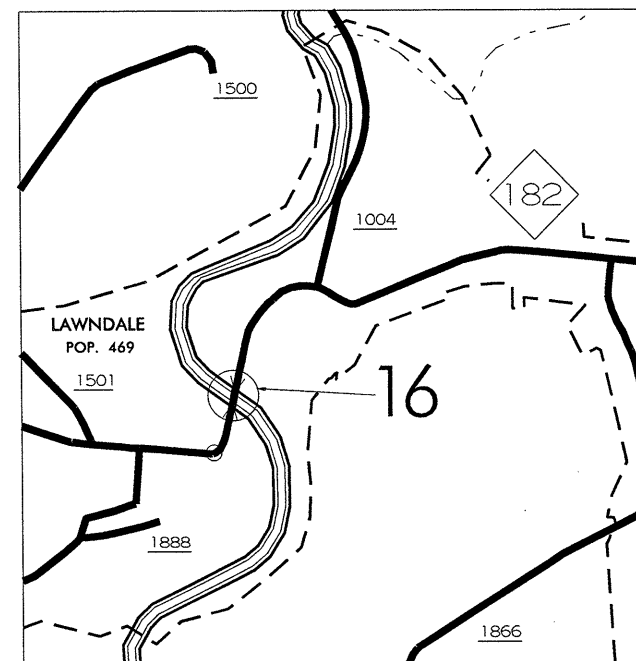
BRIDGE #91



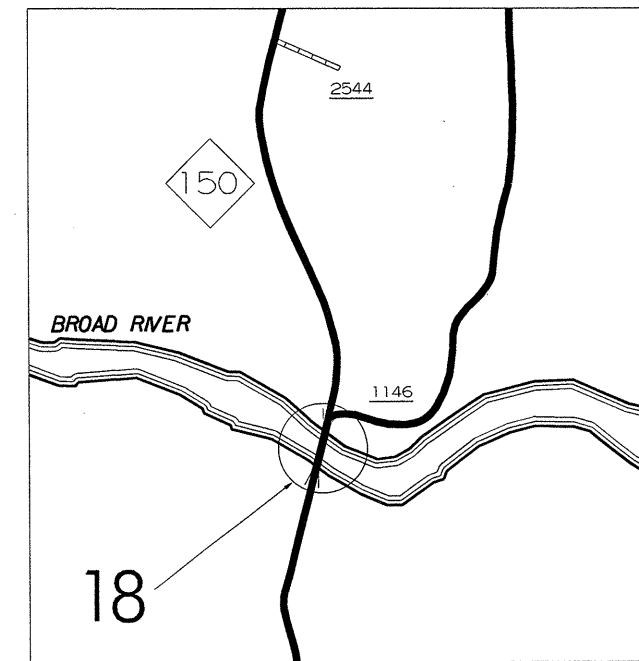
BRIDGE #99



BRIDGE #16



BRIDGE #18



| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | 17BP.12.P.5 | 1A | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 17BP.12.P.5 | N/A | CONST | |
| | | | |
| | | | |
| | | | |
| | | | |

DESIGN DATA

CATAWBA
 #19 ADT 2009 = 7500
 #20 ADT 2009 = 9100
 #91 ADT 2011 = 20000
 #99 ADT 2009 = 9100

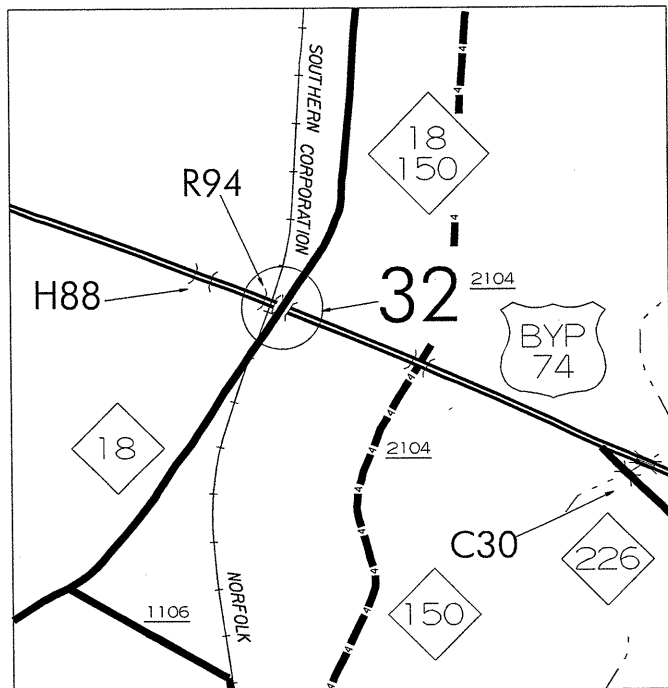
CLEVELAND
 #16 ADT 2009 = 4600
 #18 ADT 2010 = 3200

PROJECT LENGTH

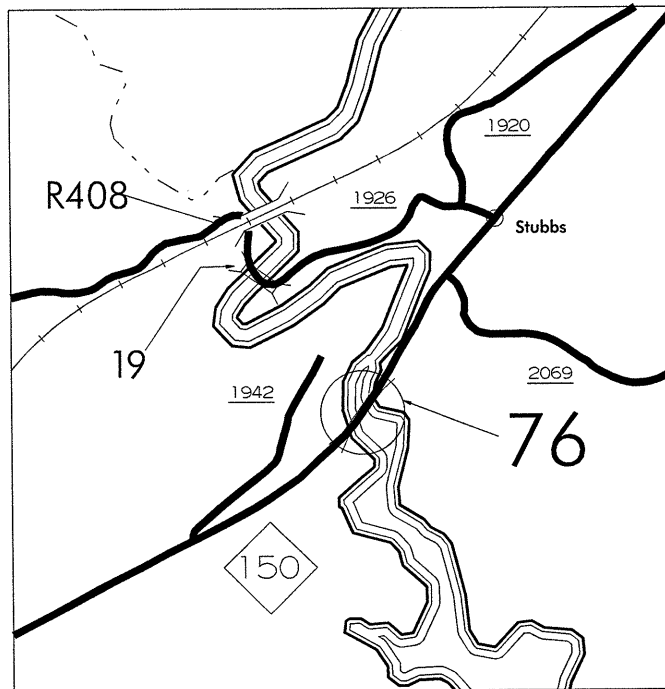
BRIDGE #19 = 0.02 MILE
 BRIDGE #20 = 0.05 MILE
 BRIDGE #91 = 0.18 MILE
 BRIDGE #99 = 0.03 MILE

BRIDGE #16 = 0.06 MILE
 BRIDGE #18 = 0.12 MILE

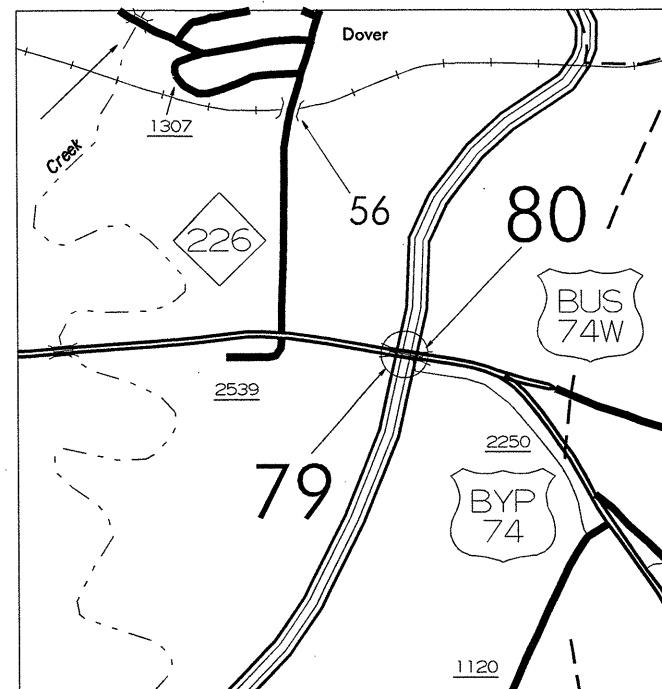
BRIDGE #32



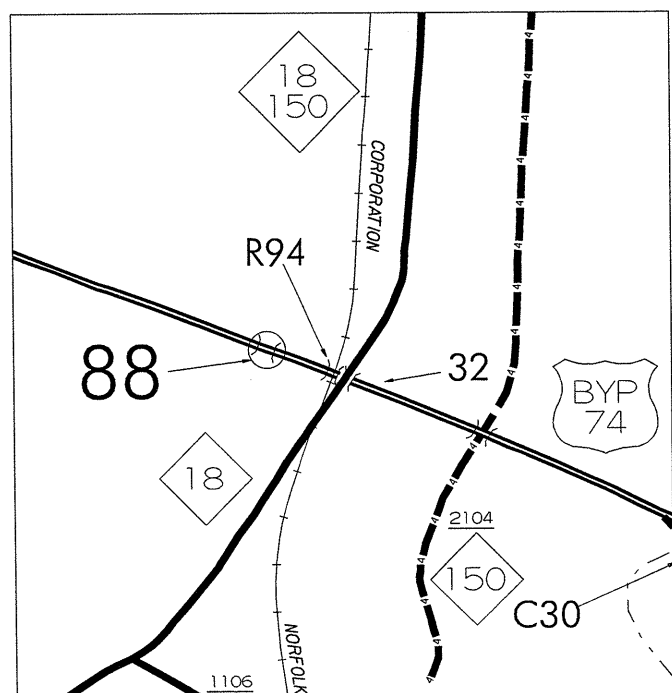
BRIDGE #76



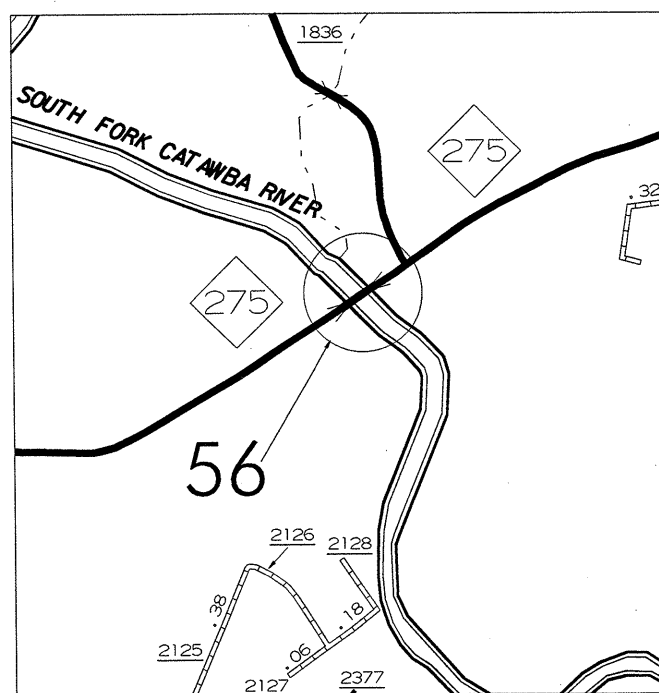
BRIDGE #79 & 80



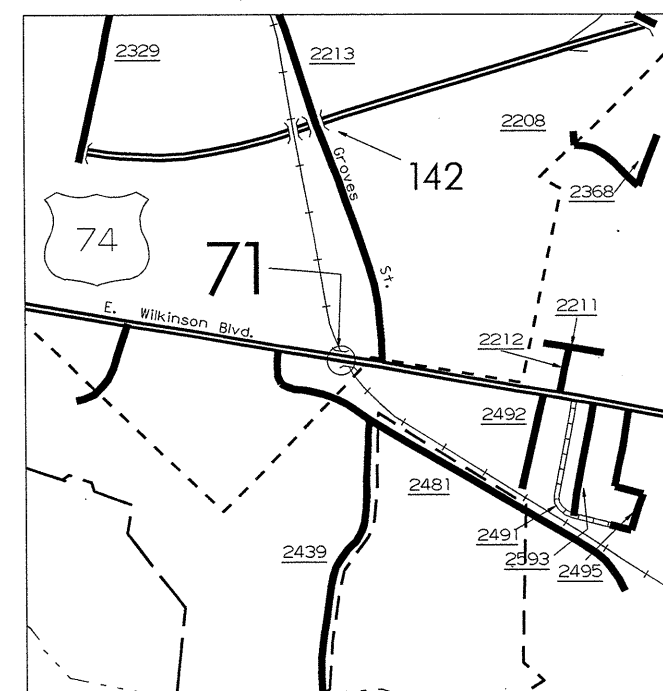
BRIDGE #88



BRIDGE #56



BRIDGE #71



| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | 17BP.12.P.5 | 1B | |
| STATE PROJ. NO. | P.A. PROJ. NO. | DESCRIPTION | |
| 17BP.12.P.5 | N/A | CONST | |
| | | | |
| | | | |

DESIGN DATA

CLEVELAND
 #32 ADT 2009 = 12000
 #76 ADT 2009 = 9800
 #79 ADT 2009 = 15500
 #80 ADT 2009 = 15500
 #88 ADT 1986 = 25000

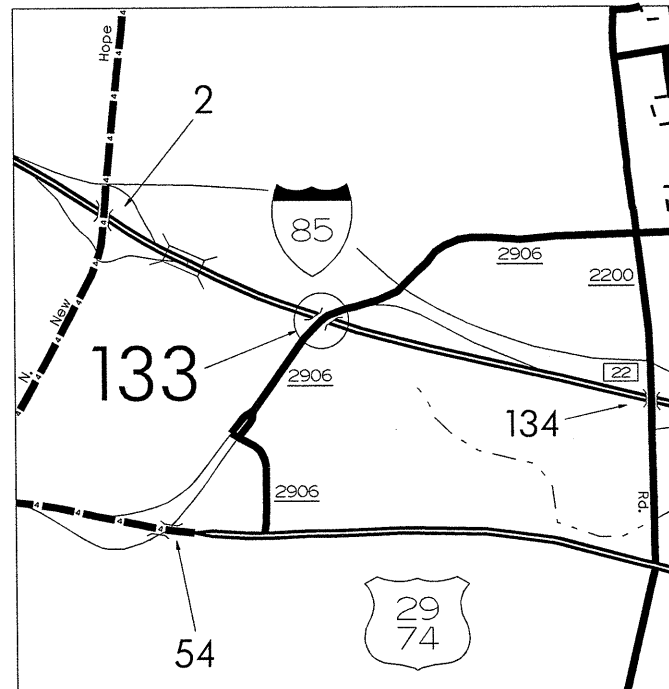
GASTON
 #56 ADT 2010 = 8500
 #71 ADT 2008 = 17000

PROJECT LENGTH

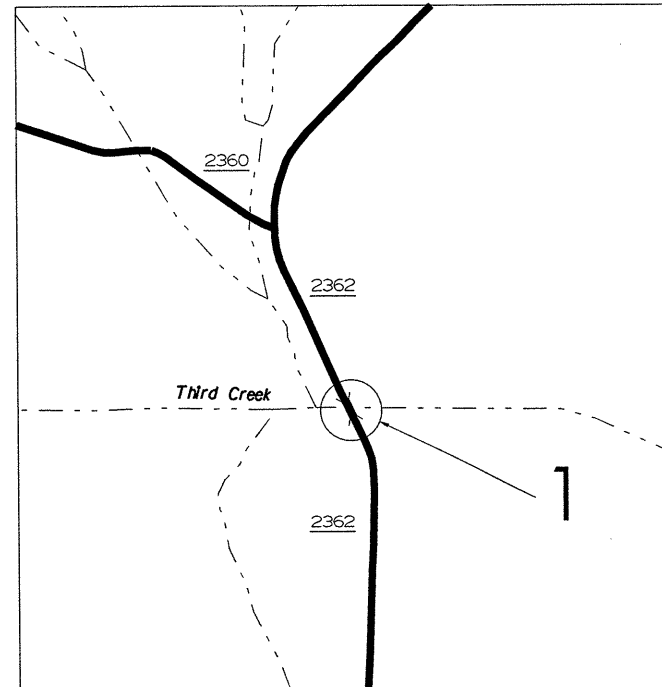
BRIDGE #32 = 0.03 MILE
 BRIDGE #76 = 0.04 MILE
 BRIDGE #79 = 0.06 MILE
 BRIDGE #80 = 0.06 MILE
 BRIDGE #88 = 0.03 MILE

BRIDGE #56 = 0.06 MILE
 BRIDGE #71 = 0.03 MILE

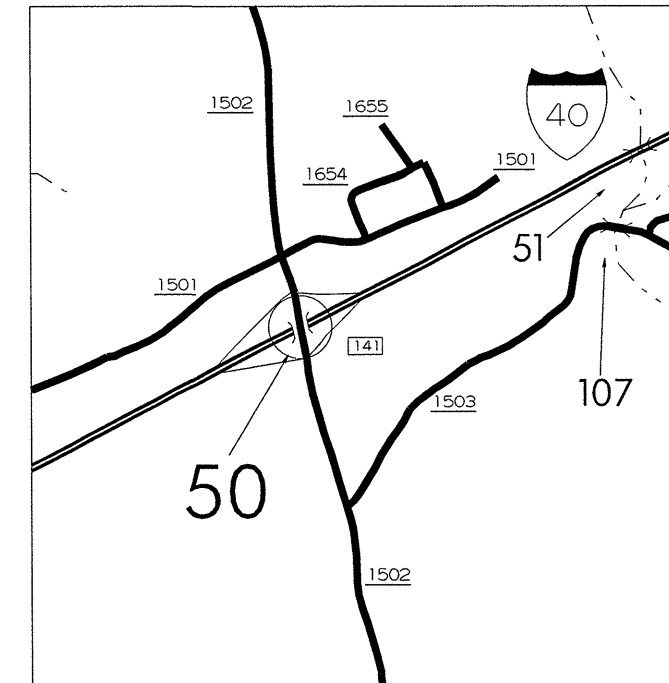
BRIDGE #133



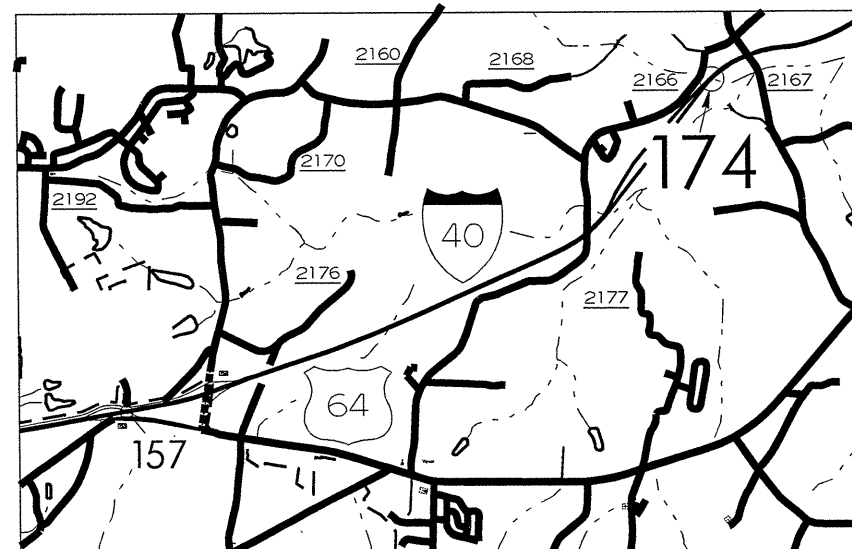
BRIDGE #1



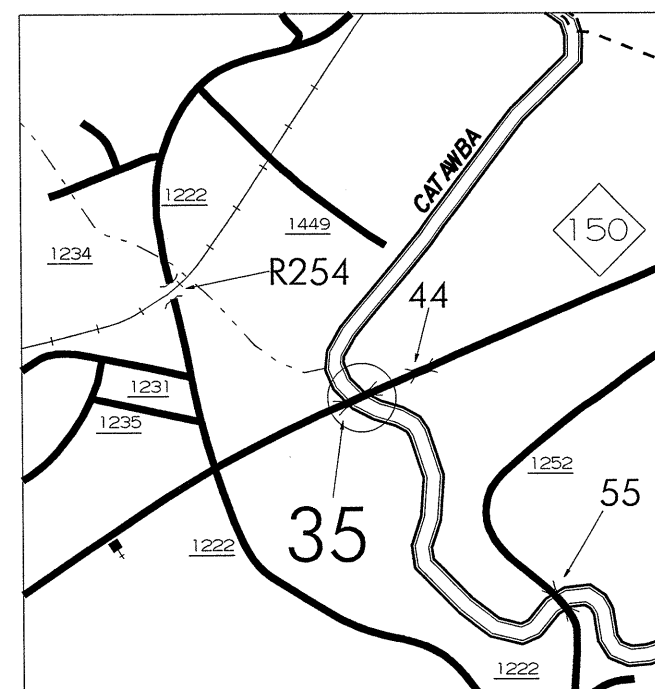
BRIDGE #50-IREDELL COUNTY



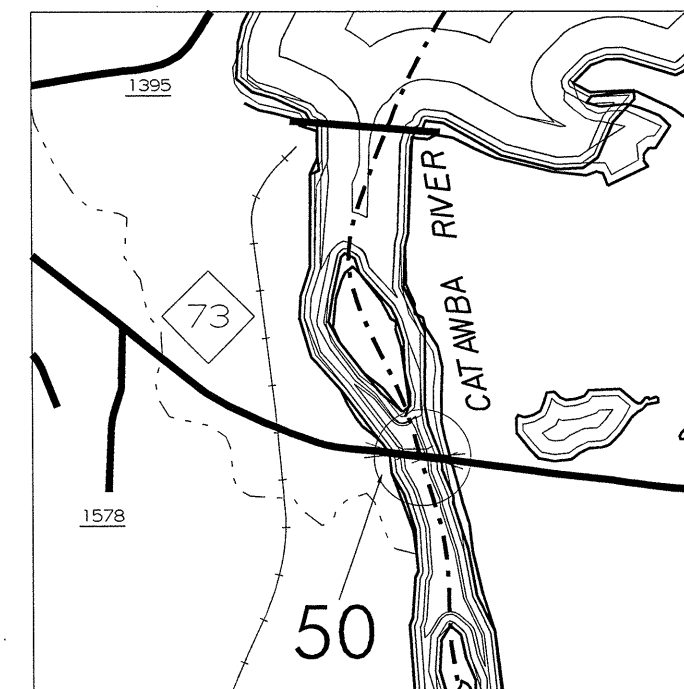
BRIDGE #174



BRIDGE #35



BRIDGE #50-LINCOLN COUNTY



| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | 17BP.12.P.5 | 1C | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 17BP.12.P.5 | N/A | CONST | |
| | | | |
| | | | |
| | | | |

DESIGN DATA

GASTON
 #133 ADT 2011 = 4200
 IREDELL
 #1 ADT 2005 = 1700
 #50 ADT 2010 = 1700
 #174 ADT 2011 = 15000
 LINCOLN
 #35 ADT 2010 = 9700
 #50 ADT 2010 = 18000

PROJECT LENGTH

BRIDGE #133 = 0.06 MILE
 BRIDGE #1 = 0.04 MILE
 BRIDGE #50 = 0.04 MILE
 BRIDGE #174 = 0.02 MILE
 BRIDGE #35 = 0.07 MILE
 BRIDGE #50 = 0.17 MILE

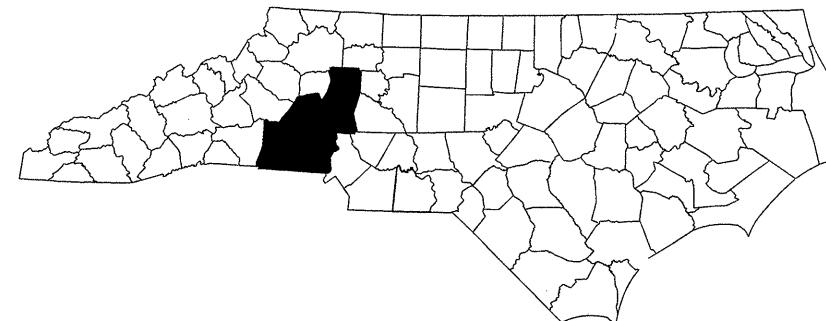
CONTRACT C203218 PROJECT 17BP.12.P.5

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**CATAWBA, CLEVELAND, GASTON,
IREDELL & LINCOLN COUNTIES**

| | | | |
|-----------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | WBS.17BP.12.P.5 | 1D | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 17BP.12.P.5 | N/A | P.E. | |
| 17BP.12.P.5 | N/A | CONST | |
| | | | |
| | | | |

- LOCATION: BRIDGE #19, CATAWBA CO., NC16 OVER US70**
BRIDGE #20, CATAWBA CO., NC10 OVER SOUTH FORK CATAWBA RIVER
BRIDGE #91, CATAWBA CO., NC127 OVER LAKE HICKORY
BRIDGE #99, CATAWBA CO., NC150 OVER SEABOARD COASTLINE RR
BRIDGE #16, CLEVELAND CO., NC182 OVER FIRST BROAD RIVER
BRIDGE #18, CLEVELAND CO., NC150 OVER THE BROAD RIVER
BRIDGE #32, CLEVELAND CO., NC18 OVER US74/NC226
BRIDGE #76, CLEVELAND CO., NC150 OVER BUFFALO CREEK
BRIDGE #79, CLEVELAND CO., US74 EBL OVER FIRST BROAD RIVER
BRIDGE #80, CLEVELAND CO., US74 WBL OVER FIRST BROAD RIVER
BRIDGE #88, CLEVELAND CO., MORGAN ST. OVER US74
BRIDGE #56, GASTON CO., NC275 OVER THE SOUTH FORK OF CATAWBA RIVER
BRIDGE #71, GASTON CO., US74 /29 OVER SOUTHERN RAILWAY
BRIDGE #133, GASTON CO., ABERDEEN BLVD. OVER I-85
BRIDGE #1, IREDELL CO., SR2362 OVER THIRD CREEK
BRIDGE #50, IREDELL CO., SR1502 OVER I-40
BRIDGE #174, IREDELL CO., I-40 EBL OVER FIVE MILE BRANCH
BRIDGE #35, LINCOLN CO., NC150 OVER SOUTH FORK OF THE CATAWBA RIVER
BRIDGE #50, LINCOLN CO., NC73 OVER THE CATAWBA RIVER



**TYPE OF WORK: CLEANING AND PAINTING OF EXISTING STRUCTURES AND
JOINT REPLACEMENT, REPAIR OF STRUCTURAL STEEL,
AND BEARING REPLACEMENT.**

INDEX OF SHEETS

| SHEET NUMBER | DESCRIPTION |
|-------------------|--------------------------|
| 1 THRU 1C | TITLE SHEETS |
| ID | INDEX OF SHEETS |
| 2 | SUMMARY OF QUANTITIES |
| S-1 THRU S-10 | STRUCTURAL PLANS |
| TMP-1 THRU TMP-11 | TRAFFIC MANAGEMENT PLANS |

SUMMARY OF QUANTITIES - 17BP.12.P.5

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203218

| ItemNumber | Sec # | Quantity | Unit | Description |
|--------------|-------|----------|------|--|
| 0000100000-N | 800 | Lump Sum | | MOBILIZATION |
| 4400000000-E | 1110 | 432 | SF | WORK ZONE SIGNS (STATIONARY) |
| 4405000000-E | 1110 | 672 | SF | WORK ZONE SIGNS (PORTABLE) |
| 4415000000-N | 1115 | 3 | EA | FLASHING ARROW BOARD |
| 4420000000-N | 1120 | 1 | EA | PORTABLE CHANGEABLE MESSAGE SIGN |
| 4430000000-N | 1130 | 350 | EA | DRUMS |
| 4435000000-N | 1135 | 50 | EA | CONES |
| 4450000000-N | 1150 | 176 | HR | FLAGGER |
| 4480000000-N | 1165 | 1 | EA | TMA |
| 4510000000-N | SP | 96 | HR | LAW ENFORCEMENT |
| 8657000000-N | 430 | Lump Sum | | ELASTOMERIC BEARINGS |
| 8699000000-N | SP | Lump Sum | | STRIP SEALS |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #1 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #20 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #32 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #35 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #56 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #71 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #76 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #80 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #91 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #99 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #1 |

| ItemNumber | Sec # | Quantity | Unit | Description |
|--------------|-------|----------|------|---|
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #133 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #16 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #174 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #18 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #19 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #20 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #32 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #35 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #50 (IREDELL) |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #50 (LINCOLN) |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #56 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #71 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #76 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #79 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #80 |

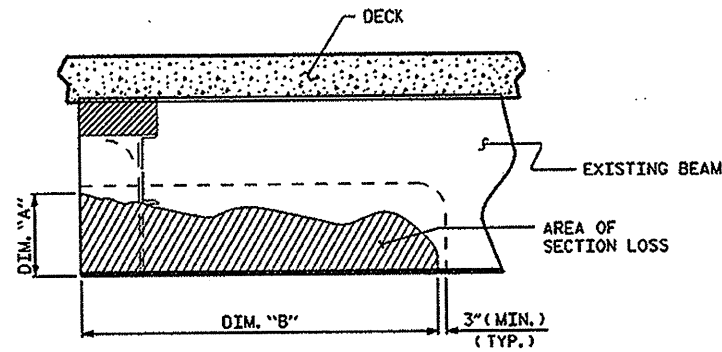
SUMMARY OF QUANTITIES - 17BP.12.P.5

| ItemNumber | Sec # | Quantity | Unit | Description |
|--------------|-------|----------|------|---|
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #88 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #91 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #99 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM PARTIAL REMOVAL OF EXISTING STRUCTURE BRIDGE #91 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #1 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #133 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #16 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #174 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #18 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #19 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #20 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #32 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #35 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #50 (IREDELL) |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #50 (LINCOLN) |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #56 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #71 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #76 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #79 |

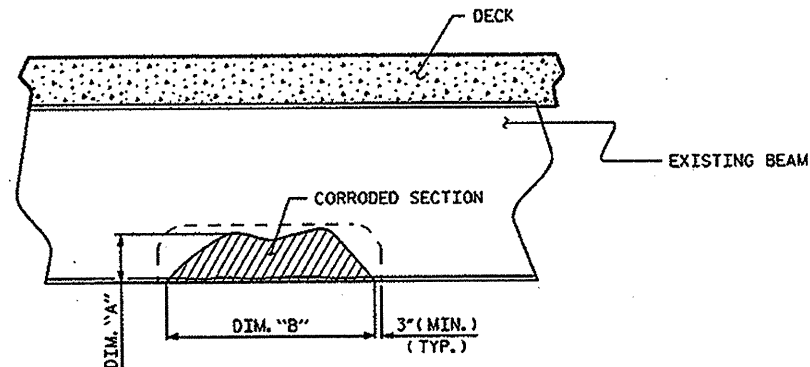
| ItemNumber | Sec # | Quantity | Unit | Description |
|--------------|-------|----------|------|--|
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #80 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #88 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #91 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #99 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM TEMPORARY STEEL COVER FOR EX- PANSION JOINT SEAL REPAIR |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #133 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #174 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #50 (IREDELL) |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #50 (LINCOLN) |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #1 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #16 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #18 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #19 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #20 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #32 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #35 |

SUMMARY OF QUANTITIES - 17BP.12.P.5

| ItemNumber | Sec # | Quantity | Unit | Description |
|--------------|-------|----------|------|--|
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #56 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #71 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #76 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #79 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #80 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #88 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #91 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #99 |
| 8881000000-E | SP | 9 | CY | GENERIC STRUCTURE ITEM CONCRETE FOR DECK REPAIR |
| 8889000000-E | SP | 13,185 | LB | GENERIC STRUCTURE ITEM GIRDER REPAIR |
| 8892000000-E | SP | 207 | SF | GENERIC STRUCTURE ITEM REINFORCED CONCRETE DECK SLAB |
| 8897000000-N | SP | 46 | EA | GENERIC STRUCTURE ITEM REPLACE EXPANSION BEARINGS |
| 8897000000-N | SP | 19 | EA | GENERIC STRUCTURE ITEM REPLACE FIXED BEARINGS |

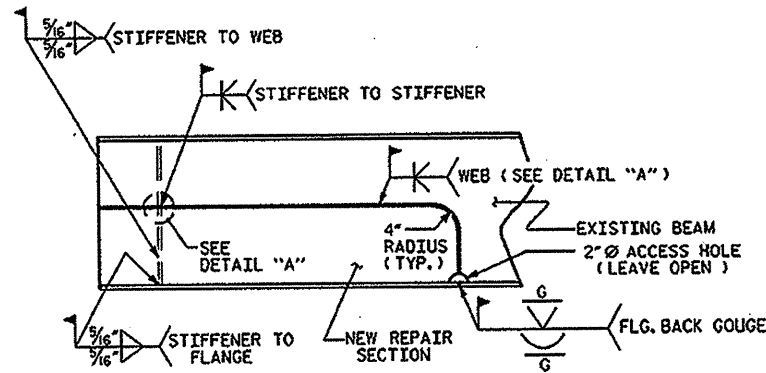


SECTION LOSS
BEAM END REPAIR

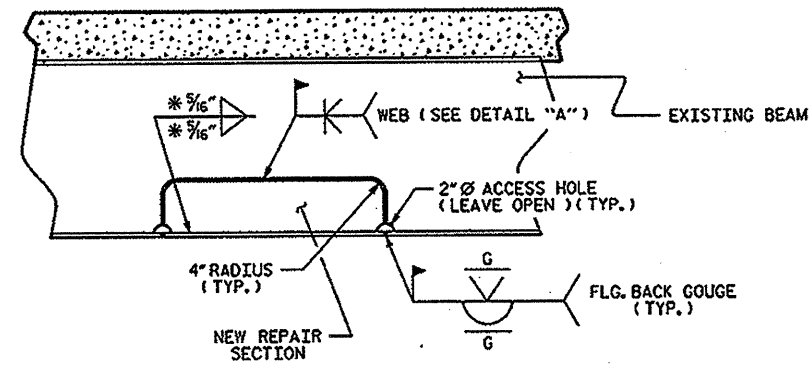


SECTION LOSS
INTERMEDIATE BEAM REPAIR

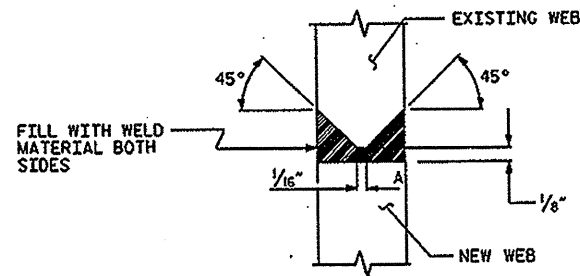
*NOT NEEDED IF
REPAIRED SECTION
IS CUT FROM A
ROLLED BEAM



SECTION LOSS BEAM
END REPAIR SECTION



SECTION LOSS INTERMEDIATE
BEAM REPAIR SECTION



DETAIL "A"

| TOTAL BILL OF MATERIAL | | | |
|------------------------|------------------------------------|---------------------------|-------------------------------|
| SPAN JACKING | STRUCTURAL STEEL FOR GIRDER REPAIR | FIXED BEARING REPLACEMENT | EXPANSION BEARING REPLACEMENT |
| LUMP SUM | LBS. | EACH | EACH |
| LUMP SUM | 13,185 | 19 | 46 |

NOTE: SEE SHEET 2 OF 2 FOR ANTICIPATED BEAM REPAIR LOCATIONS.

BEAM REPAIR

AFTER THE STRUCTURAL STEEL HAS BEEN BLASTED AND PRIMED, THE STRUCTURAL STEEL AND BEARING SHALL BE INSPECTED FOR EXCESSIVE SECTION LOSS. AREAS THAT EXHIBIT AN EXCESS OF 35% SECTION LOSS SHALL BE REVIEWED BY THE ENGINEER TO DETERMINE IF AREA OF SECTION LOSS SHOULD BE REPAIRED.

AS DETERMINED BY THE ENGINEER, AREAS WITH EXCESSIVE SECTION LOSS OR AREAS WITH TEMPORARY REPAIRS SHALL BE REMOVED AND THE BEAMS SHALL BE REPAIRED AS INDICATED ON THIS PLAN SHEET. CONTRACTOR AND ENGINEER TO DETERMINE ACTUAL DIMENSIONS OF AREA TO BE REMOVED AND REPLACED. REMOVE CONCRETE BENT DIAPHRAGMS AS NEEDED TO EVALUATE LIMITS OF REPAIR.

PAYMENT FOR THE SECTION REPAIR SHALL BE BASED ON THAT AMOUNT OF REPAIR ACTUALLY PERFORMED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

GOUGES AND INDENTIONS FROM IMPACT ON GIRDERS SHALL BE GROUND SMOOTH PRIOR TO BLASTING AND PAINTING OPERATION.

REPAIR SEQUENCE:

REMOVE LIVE LOAD FROM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.

REMOVE DEAD LOAD FROM BEAM BY JACKING AND BLOCKING.

STEEL DIAPHRAGM CHANNELS AND/OR STIFFENERS MAY BE TEMPORARILY REMOVED, IF NECESSARY, AND REPLACED AFTER BEAM REPAIR.

IF BEAM DETERIORATION EXTENDS INTO THE CONCRETE DIAPHRAGM THEN CHIP AWAY CONCRETE TO DETERMINE THE EXTENT OF THE DAMAGE. CUT OUT BY APPROPRIATE MEANS THE DAMAGED BEAM AREA AND/OR BEARING STIFFENER.

MECHANICALLY CLEAN RUST, SCALE, AND EXISTING PAINT TO AT LEAST 3" BEYOND REPAIR AREA.

REPLACEMENT CUT-TO-FIT BEAM SECTION SHALL BE NEW AND FROM SIMILAR SIZE ROLLED BEAM OR APPROVED EQUIVALENT PLATES. THE GRADE OF STEEL SHALL BE AASHTO M270, GRADE 36 OR BETTER.

INSTALL THE CUT-TO-FIT SECTION, FULLY WELD ALONG TOP AND SIDES OF PLATE USING FULL PENETRATION WELDS.

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

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

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

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

FOR CLEANING AND PAINTING, SEE PROJECT SPECIAL PROVISIONS.

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

LOWER SPAN TO BEAR; CHECK FOR DISTRESS.

REMOVE JACKING EQUIPMENT AND TEMPORARY SUPPORTS.

REMOVE ALL TRAFFIC CONTROL DEVICES.

PROJECT NO. 17BP.12.P.5
CATAWBA/CLEVELAND COUNTY
GASTON/IREDELL/LINCOLN

SHEET 1 OF 2

| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | SHEET NO. |
|--|----|------|-----|------|--------------|
| BEAM END AND INTERMEDIATE REPAIR DETAILS | | | | | S-1 |
| REVISIONS | | | | | TOTAL SHEETS |
| NO. | BY | DATE | NO. | DATE | 10 |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

T. Sherrill
01/03/13

DRAWN BY: P.C. BREWER DATE: 12/12
CHECKED BY: T. SHERRILL DATE: 12/12

ANTICIPATED BEAM REPAIR LOCATIONS

| COUNTY | BRIDGE | SPAN | BEAM | LOCATION | DIM. "A" | DIM. "B" | COUNTY | BRIDGE | SPAN | BEAM | LOCATION | DIM. "A" | DIM. "B" |
|-----------|--------|--------|------|----------|----------|----------|---------|--------|-------|------|------------|----------|----------|
| CATAWBA | 20 | A | 1 | BENT 1 | 10" | 6'-0" | GASTON | 71 | A | 4 | END BENT 1 | 1'-0" | 4'-0" |
| | | A | 5 | BENT 1 | 10" | 2'-0" | | | A | 7 | END BENT 1 | 1'-0" | 4'-0" |
| | | B | 1 | BENT 1 | 10" | 6'-0" | | | A | 8 | END BENT 1 | 1'-0" | 4'-0" |
| | | D | 5 | BENT 4 | 10" | 6'-0" | | | C | 8 | END BENT 2 | 1'-0" | 4'-0" |
| | | E | 5 | BENT 4 | 1'-0" | 2'-0" | | | C | 12 | END BENT 2 | 1'-0" | 4'-0" |
| CATAWBA | 91 | A | 1 | BENT 1 | 6" | 3'-0" | IREDELL | 1 | A | 1 | BENT 1 | 8" | 3'-0" |
| | | A | 2 | BENT 1 | 6" | 3'-0" | | | A | 2 | BENT 1 | 8" | 3'-0" |
| | | A | 3 | BENT 1 | 6" | 3'-0" | | | A | 3 | BENT 1 | 8" | 3'-0" |
| | | A | 4 | BENT 1 | 6" | 3'-0" | | | A | 4 | BENT 1 | 8" | 3'-0" |
| | | G | 1 | BENT 6 | 6" | 3'-0" | | | B | 1 | BENT 1 | 8" | 3'-0" |
| | | G | 2 | BENT 6 | 6" | 3'-0" | | | B | 2 | BENT 1 | 8" | 3'-0" |
| | | G | 3 | BENT 6 | 6" | 3'-0" | | | B | 3 | BENT 1 | 8" | 3'-0" |
| CATAWBA | 99 | A | 1 | BENT 1 | 10" | 4'-0" | | | B | 4 | BENT 2 | 8" | 3'-0" |
| | | A | 2 | BENT 1 | 10" | 4'-0" | | | C | 4 | BENT 2 | 8" | 3'-0" |
| | | A | 3 | BENT 1 | 10" | 4'-0" | | | C | 1 | BENT 3 | 8" | 3'-0" |
| | | A | 4 | BENT 1 | 10" | 4'-0" | | | C | 2 | BENT 3 | 8" | 3'-0" |
| | | B | 1 | BENT 1 | 10" | 4'-0" | | | C | 3 | BENT 3 | 8" | 3'-0" |
| | | B | 2 | BENT 1 | 10" | 4'-0" | | | C | 4 | BENT 3 | 8" | 3'-0" |
| | | B | 3 | BENT 1 | 10" | 4'-0" | | | D | 1 | BENT 3 | 8" | 3'-0" |
| | | B | 4 | BENT 1 | 10" | 4'-0" | | | D | 2 | BENT 3 | 8" | 3'-0" |
| | | B | 1 | BENT 2 | 10" | 3'-0" | | | D | 3 | BENT 3 | 8" | 3'-0" |
| | | B | 2 | BENT 2 | 10" | 3'-0" | | | D | 4 | BENT 3 | 8" | 3'-0" |
| | | B | 3 | BENT 2 | 10" | 3'-0" | | | D | 1 | BENT 4 | 8" | 3'-0" |
| | | B | 4 | BENT 2 | 10" | 3'-0" | | | D | 2 | BENT 4 | 8" | 3'-0" |
| | | C | 1 | BENT 2 | 10" | 3'-0" | | | D | 3 | BENT 4 | 8" | 3'-0" |
| C | 2 | BENT 2 | 10" | 3'-0" | D | 4 | BENT 4 | 8" | 3'-0" | | | | |
| C | 3 | BENT 2 | 10" | 3'-0" | E | 1 | BENT 4 | 8" | 3'-0" | | | | |
| CLEVELAND | 32 | D | 2 | BENT 3 | 1'-0" | 4'-0" | | | E | 2 | BENT 4 | 8" | 3'-0" |
| | | D | 3 | BENT 3 | 1'-0" | 4'-0" | | | E | 3 | BENT 4 | 8" | 3'-0" |
| | | | | | | | | | E | 4 | BENT 4 | 8" | 3'-0" |
| | | | | | | | | | | | | | |
| CLEVELAND | 76 | D | 2 | BENT 3 | 1'-0" | 4'-0" | LINCOLN | 35 | C | 2 | BENT 2 | 9" | 3'-0" |
| | | D | 3 | BENT 3 | 1'-0" | 4'-0" | | | F | 4 | BENT 5 | 9" | 3'-0" |
| CLEVELAND | 80 | A | 1 | BENT 1 | 1'-0" | 3'-0" | | | | | | | |
| | | E | 1 | BENT 4 | 1'-0" | 8'-0" | | | | | | | |
| GASTON | 56 | B | 4 | BENT 2 | 1'-0" | 4'-0" | | | | | | | |
| | | C | 1 | BENT 3 | 1'-0" | 4'-0" | | | | | | | |
| | | C | 4 | BENT 3 | 1'-0" | 4'-0" | | | | | | | |
| | | D | 4 | BENT 3 | 1'-0" | 4'-0" | | | | | | | |
| | | E | 1 | BENT 4 | 1'-0" | 4'-0" | | | | | | | |
| | | E | 4 | BENT 4 | 1'-0" | 4'-0" | | | | | | | |
| | | E | 4 | BENT 5 | 1'-0" | 4'-0" | | | | | | | |

PROJECT NO. 17BP.12.P.5
CATAWBA/CLEVELAND COUNTY
GASTON/IREDELL/LINCOLN

SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BEAM END AND INTERMEDIATE REPAIR DETAILS

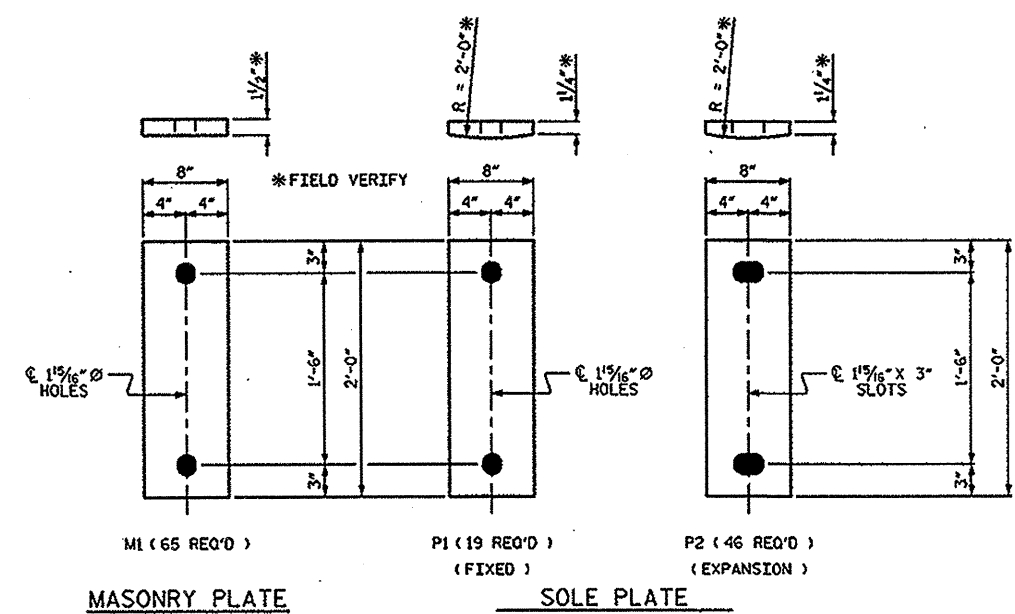
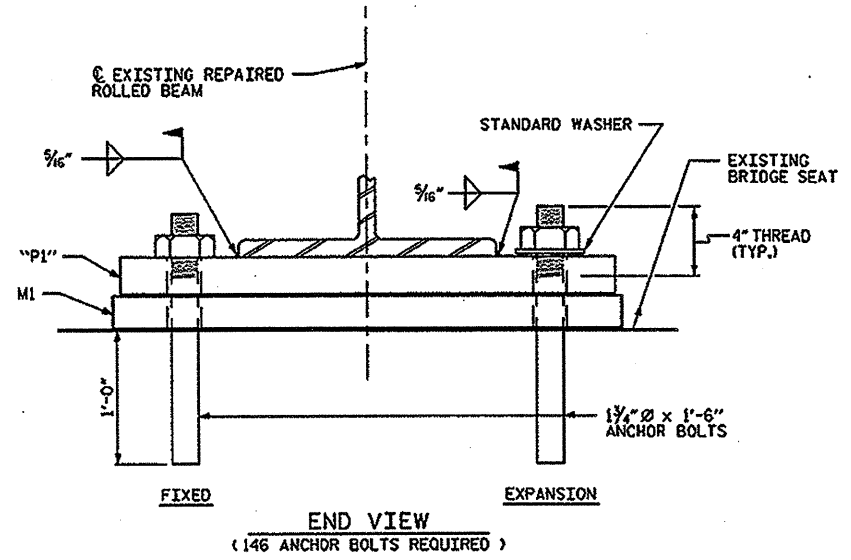
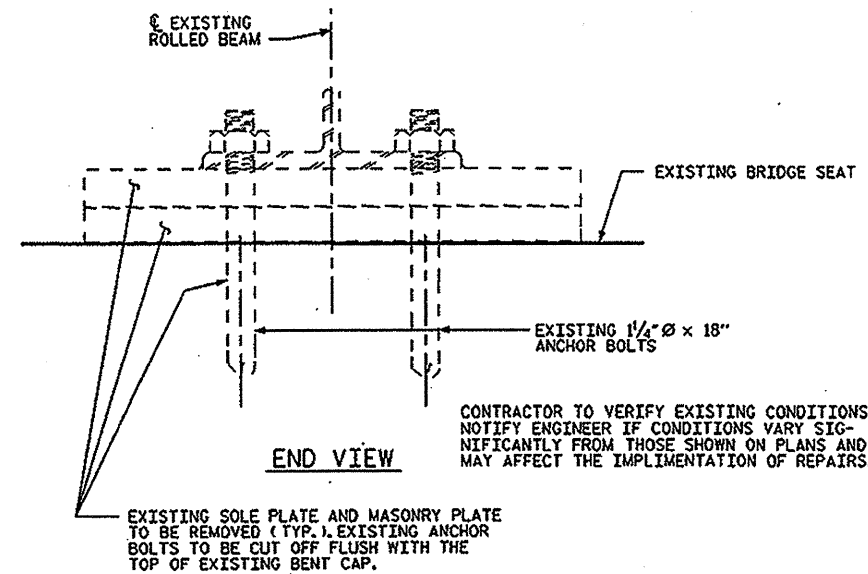
| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|--------------|
| NO. | BY | DATE | NO. | BY | DATE | S-2 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 10 |

DRAWN BY : P.C. BREWER DATE : 12/12
 CHECKED BY : T. SHERRILL DATE : 12/12

03-Jan-2013 13:14
 S:\RRS\POC\Saved C:\Preservation_Projects\17BP.12.P.5\Final\17BP.12.P.5 Beam End Repair.dgn
 pbr/over

ANTICIPATED BEARING REPLACEMENT LOCATIONS

| COUNTY | BRIDGE | SPAN | BEAM | LOCATION | COUNTY | BRIDGE | SPAN | BEAM | LOCATION | | | |
|-----------|--------|------|-----------|----------|---------|--------|------|---------|------------|--------|---|--------|
| CATAWBA | 20 | A | 1 | BENT 1 | GASTON | 71 | A | 4 | END BENT 1 | | | |
| | | | 5 | BENT 1 | | | | 7 | END BENT 1 | | | |
| | | | 1 | BENT 1 | | | | 8 | END BENT 1 | | | |
| | | | 5 | BENT 4 | | | | 8 | END BENT 2 | | | |
| | | | 5 | BENT 4 | | | | 12 | END BENT 2 | | | |
| CATAWBA | 99 | A | 1 | BENT 1 | IREDELL | 1 | A | 1 | BENT 1 | | | |
| | | | 2 | BENT 1 | | | | 2 | BENT 1 | | | |
| | | | 3 | BENT 1 | | | | 3 | BENT 1 | | | |
| | | | 4 | BENT 1 | | | | 4 | BENT 1 | | | |
| | | | 1 | BENT 1 | | | | 1 | BENT 1 | | | |
| | | | 2 | BENT 1 | | | | 2 | BENT 1 | | | |
| | | | 3 | BENT 1 | | | | 3 | BENT 1 | | | |
| | | | 4 | BENT 1 | | | | 4 | BENT 1 | | | |
| | | | 1 | BENT 2 | | | | 4 | BENT 2 | | | |
| | | | 2 | BENT 2 | | | | 1 | BENT 3 | | | |
| | | | 3 | BENT 2 | | | | 2 | BENT 3 | | | |
| | | | 1 | BENT 2 | | | | 3 | BENT 3 | | | |
| | | | 2 | BENT 2 | | | | 4 | BENT 3 | | | |
| | | | 3 | BENT 2 | | | | 1 | BENT 3 | | | |
| | | | CLEVELAND | 32 | | | | D | 2 | BENT 3 | | |
| 3 | BENT 3 | 3 | | | BENT 3 | | | | | | | |
| | | 4 | | | BENT 3 | | | | | | | |
| | | 1 | | | BENT 4 | | | | | | | |
| CLEVELAND | 76 | D | 2 | BENT 3 | | | D | 1 | BENT 4 | | | |
| | | | 3 | BENT 3 | | | | 2 | BENT 4 | | | |
| | | | | | | | | 3 | BENT 4 | | | |
| CLEVELAND | 80 | A | 1 | BENT 1 | | | D | 4 | BENT 4 | | | |
| | | | | | | | | 1 | BENT 4 | | | |
| | | | E | 1 | | | | BENT 4 | 2 | BENT 4 | | |
| GASTON | 56 | B | 4 | BENT 2 | | | E | 3 | BENT 4 | | | |
| | | | 1 | BENT 3 | | | | 4 | BENT 4 | | | |
| | | | 4 | BENT 3 | | | | | | | | |
| | | | 4 | BENT 3 | | | | LINCOLN | 35 | C | 2 | BENT 2 |
| | | | 1 | BENT 4 | | | | | | F | 4 | BENT 5 |
| | | E | 4 | BENT 4 | | | | | | | | |
| | | E | 4 | BENT 5 | | | | | | | | |



BEARING REPAIR SEQUENCE

THE EXISTING BEARINGS DETERMINED FOR REPLACEMENT SHALL BE REMOVED AND REPLACED WITH BEARINGS AS SHOWN.

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

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

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

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE CONTRACTOR SHALL CORE INTO EXISTING BENT CAP TO INSTALL 1 1/4 ANCHOR BOLTS. BOLTS SHALL BE ADHESIVELY ANCHORED; SEE STANDARD SPECIFICATIONS. ADHESIVE FOR NEW ANCHOR BOLTS SHALL BE AN NCDOT-APPROVED PRODUCT. FIELD TESTING WILL NOT BE REQUIRED FOR INSTALLATION OF ADHESIVELY ANCHORED BOLTS.

T. Sherrill
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 18565
 01/03/13

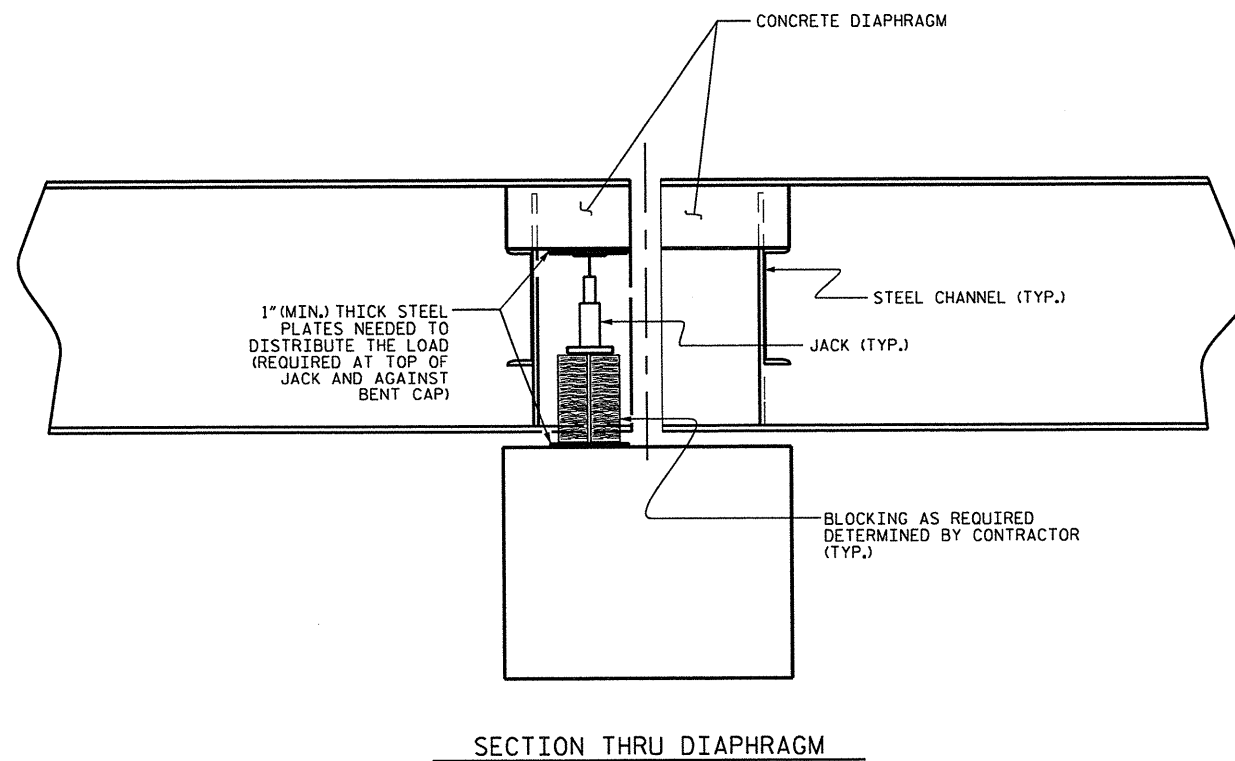
PROJECT NO. 17BP.12.P.5
 CATAWBA/CLEVELAND COUNTY
 GASTON/IREDELL/LINCOLN

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BEARING REPAIR DETAILS

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

ASSEMBLED BY: P.C. BREWER DATE: 12/12
 CHECKED BY: T. SHERRILL DATE: 12/12



JACKING NOTES:

THE CONTRACTOR SHALL SUBMIT JACKING PLANS AND CALCULATIONS FOR REVIEW AND APPROVAL PRIOR TO MATERIAL PURCHASE OR FABRICATION OF THE JACKING SYSTEM.

THE CONTRACTOR SHALL JACK ALL GIRDERS IN A SPAN ON AN INDIVIDUAL BENT SIMULTANEOUSLY BY MEANS OF A DUAL-FLOW PRESSURIZED PUMP CONTROLLING THE JACKS.

THE SPAN SHALL BE LIFTED ENOUGH THAT THE BEAMS CLEAR THE BEARINGS AND ALL LOAD IS SUPPORTED BY THE JACKS. AFTER JACKING IS COMPLETE THE CONTRACTOR SHALL PROVIDE A METHOD TO SUPPORT THE SPAN FOR DEAD AND LIVE LOADS AND REMOVE THE JACKS DURING BEAM REPAIR OR IF JACKS REMAIN IN PLACE DURING THE ENTIRE JACKING AND REPAIR OPERATION IT SHALL HAVE MECHANICAL LOCK OFF CAPABILITIES.

IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

PRIOR TO JACKING, THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.

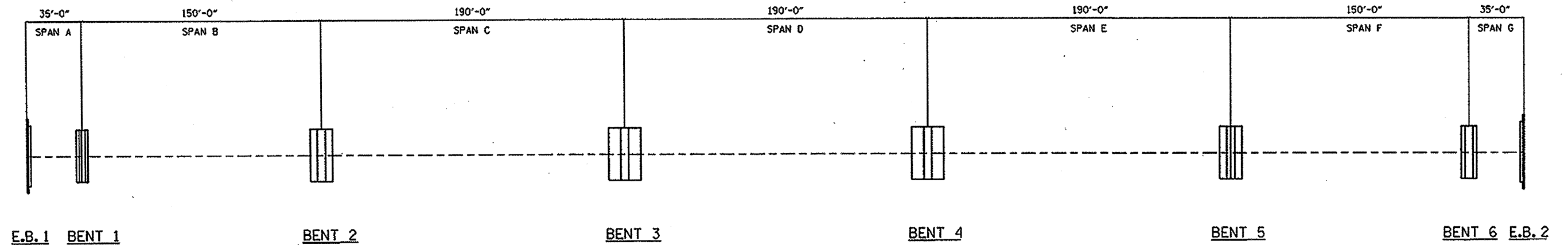
ALL ADJACENT BEARINGS OF BEAMS NOT BEING JACKED MAY BE LOOSENED TO DECREASE THE RESISTANCE OF THE DECK SLAB DURING JACKING. ALL BEARINGS LOOSENED SHALL BE TIGHTENED BACK AFTER THE BEAMS ARE REPAIRED AND THE JACKS AND BLOCKING HAVE BEEN REMOVED.

PAYMENT OF JACKING WILL BE MADE AT THE LUMP SUM PRICE BID FOR BRIDGE JACKING. SUCH LUMP SUM PRICE WILL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

PROJECT NO. 17BP.12.P.5
CATAWBA/CLEVELAND COUNTY
GASTON/IREDELL/LINCOLN

| | | | | | |
|---|-----|-------|-----|-----|-----------|
| STATE OF NORTH CAROLINA | | | | | |
| DEPARTMENT OF TRANSPORTATION | | | | | |
| RALEIGH | | | | | |
| BEAM END REPAIR AND BEARING REPLACEMENT | | | | | |
| JACKING DETAILS | | | | | |
| REVISIONS | | | | | SHEET NO. |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |
| TOTAL SHEETS | | | | | 10 |

DRAWN BY : P.C. BREWER DATE : 12/12
 CHECKED BY : T. SHERRILL DATE : 12/12



PLAN

NOTES

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

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

FOR 'BRIDGE JACKING', SEE SPECIAL PROVISIONS.

FOR 'ELASTOMERIC BEARINGS', SEE SPECIAL PROVISIONS.

FOR 'PARTIAL REMOVAL OF EXISTING STRUCTURE', SEE SPECIAL PROVISIONS.

FOR 'CONCRETE FOR DECK REPAIR', SEE SPECIAL PROVISIONS.

FOR 'TEMPORARY STEEL COVER FOR EXPANSION JOINT SEAL REPAIR', SEE SPECIAL PROVISIONS.

FOR 'STRIP SEALS', SEE SPECIAL PROVISIONS.

FOR TRAFFIC STAGING, SEE THE TRAFFIC MANAGEMENT PLAN

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

PROJECT NO. 17BP.12.P.5
CATAWBA COUNTY
 BRIDGE NO. 91

| TOTAL BILL OF MATERIAL | | | | | | | | |
|------------------------|-----------------------------|----------------|----------------------|---------------------------------------|--------------------------|--|-------------|-------------------------------|
| POLLUTION CONTROL | PAINTING EXISTING STRUCTURE | BRIDGE JACKING | ELASTOMERIC BEARINGS | PARTIAL REMOVAL OF EXISTING STRUCTURE | CONCRETE FOR DECK REPAIR | TEMP. STEEL COVER FOR EXP. JOINT SEAL REPAIR | STRIP SEALS | REINFORCED CONCRETE DECK SLAB |
| LS | LS | LS | LS | LS | CY | LS | LS | SF |
| LS | LS | LS | LS | LS | 9 | LS | LS | 207 |

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL PLAN
 AND BILL OF MATERIAL



| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|-----------|
| NO. | BY | DATE | NO. | BY | DATE | S-5 |
| 1 | | | 3 | | | 10 |
| 2 | | | 4 | | | |

DRAWN BY : R. WEISZ DATE : 9/12
 CHECKED BY : T. SHERRILL DATE : 12/12

NOTES

SEE SHEET S-9 FOR STEEL COVER PLATE DETAILS.

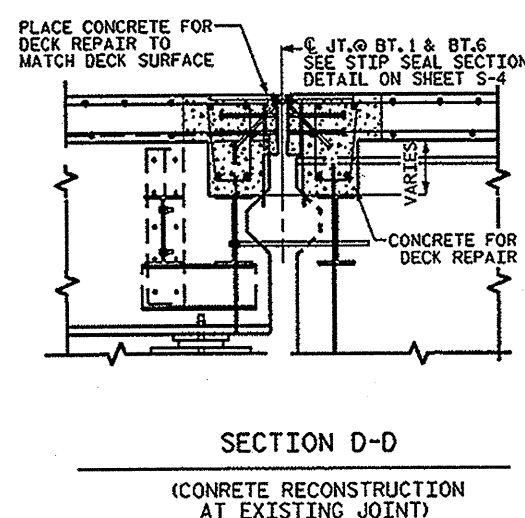
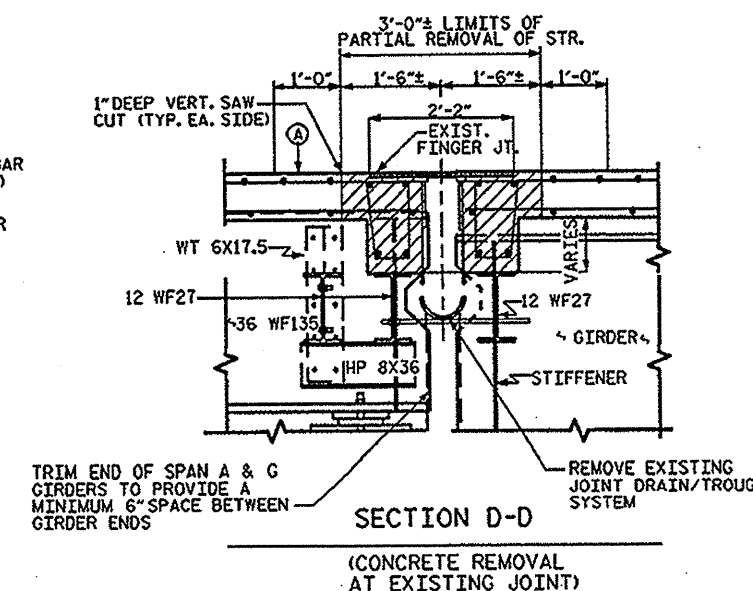
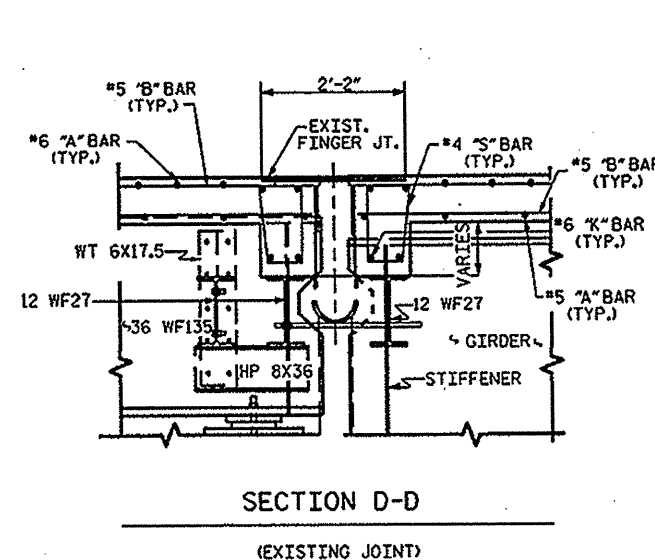
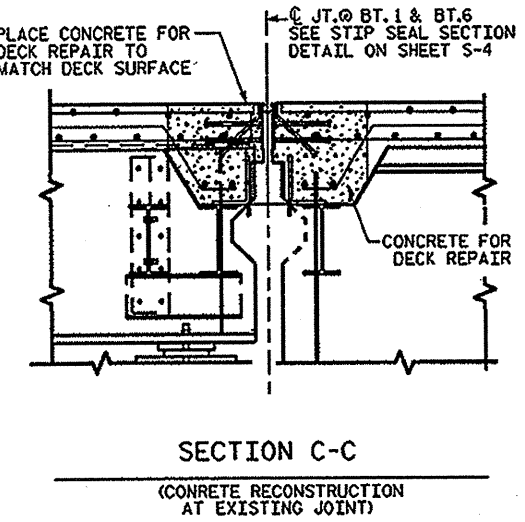
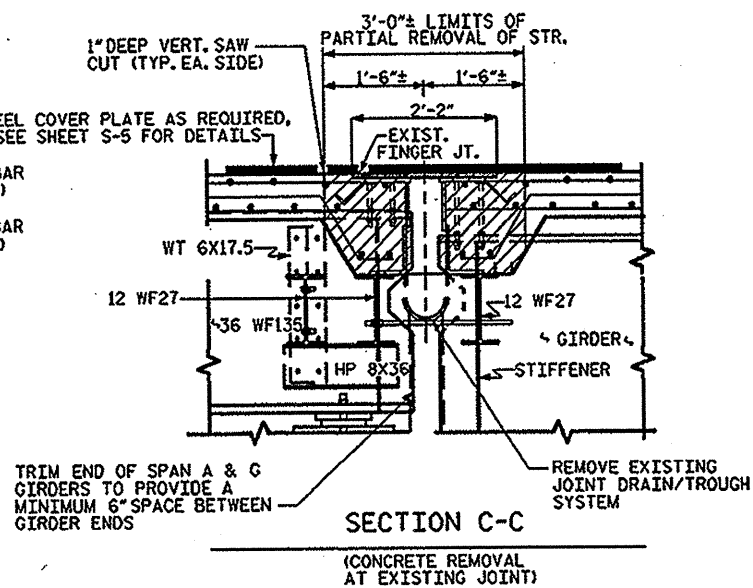
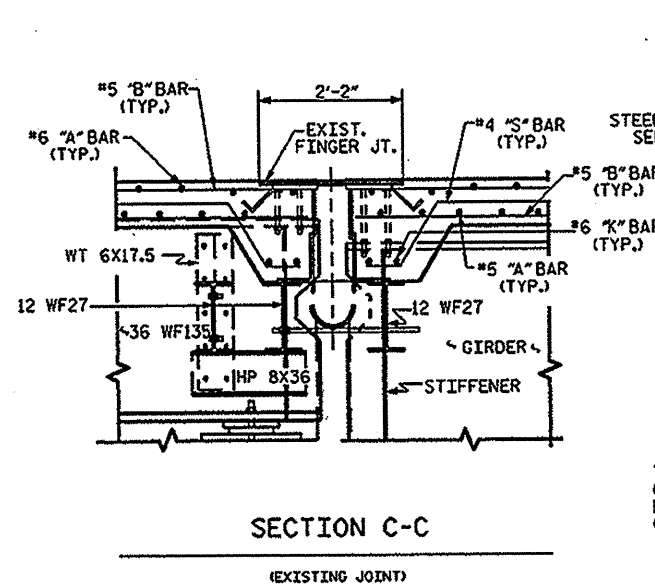
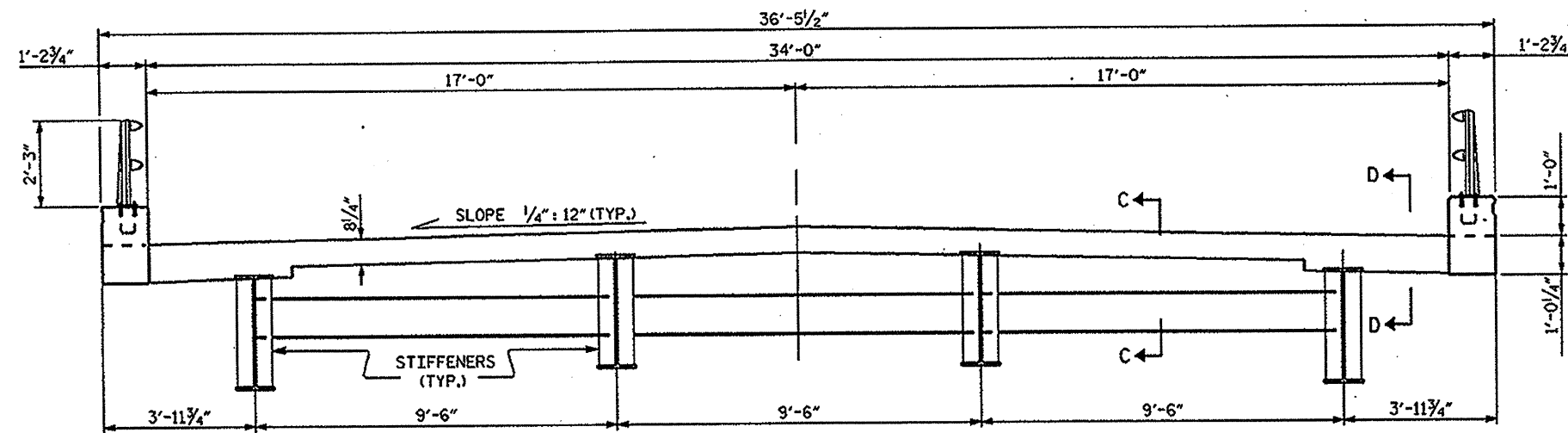
ALL EXISTING REINF. STEEL EXPOSED BY DEMOLITION SHALL BE RETAINED AND REPAIRED AS DIRECTED BY THE ENGINEER.

DECK AND DIAPHRAGM REMOVAL TO BE MEASURED AND PAID FOR AS PARTIAL REMOVAL OF EXISTING STRUCTURE.

DECK REMOVAL SHALL BE PERFORMED BY FIRST CREATING A PARTIAL DEPTH SAWCUT (1" MAX DEPTH) FOLLOWED BY CONCRETE REMOVAL WITH A CHIPPING HAMMER WITH A MAXIMUM WEIGHT OF 35 LBS. CARE SHALL BE TAKEN SO AS TO PREVENT DAMAGE TO EXISTING DECK REINFORCING STEEL AND EXISTING GIRDERS.

FOR CONCRETE FOR DECK REPAIRS, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

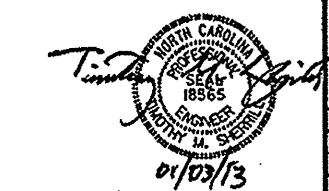


PROJECT NO. 17BP.12.P.5
CATAWBA COUNTY
 BRIDGE NO. 91

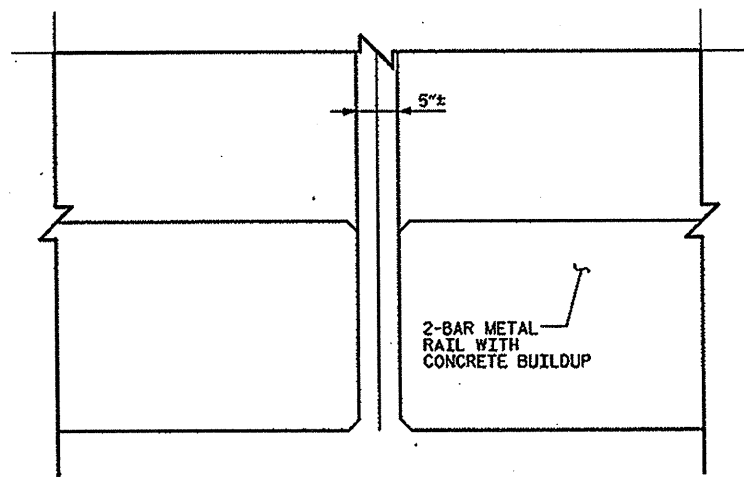
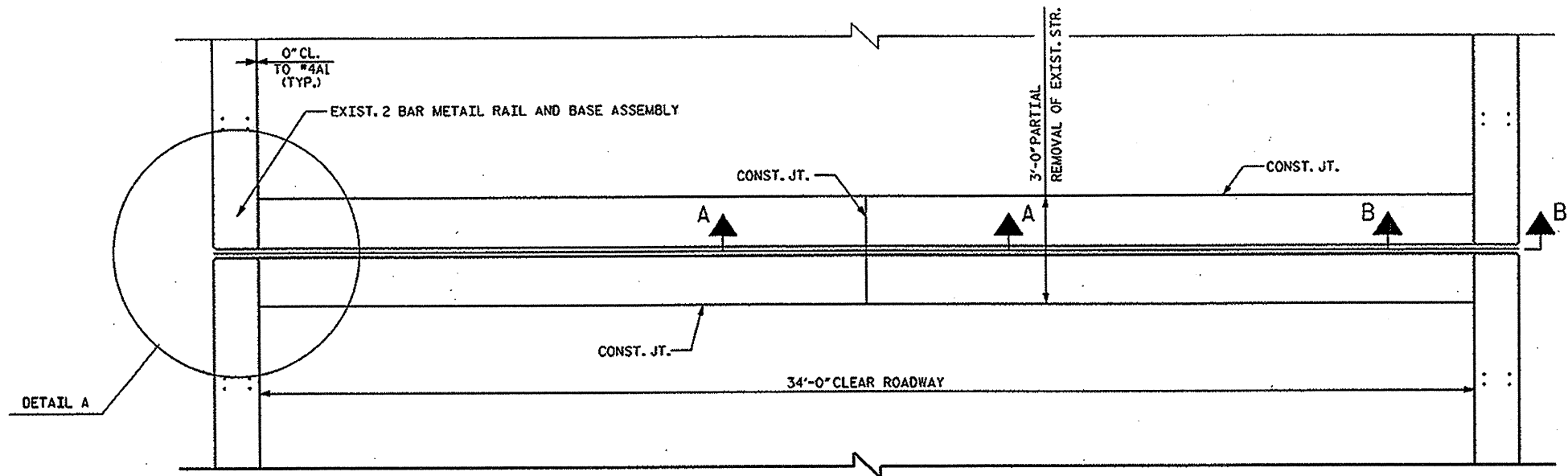
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

INTERIOR BENTS 1 & 6
 JOINT SEAL DETAILS

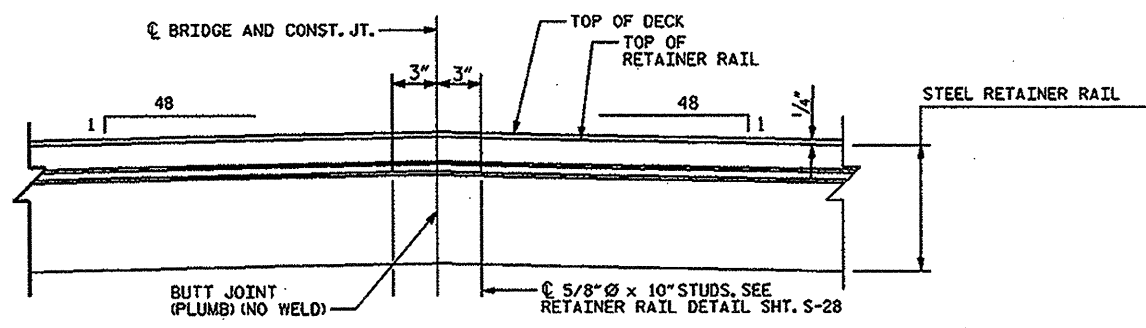
DRAWN BY: R. WEISZ DATE: 8-2012
 CHECKED BY: T. SHERRILL DATE: 12-2012



| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|--------------|
| NO. | BY | DATE | NO. | BY | DATE | S-6 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 10 |



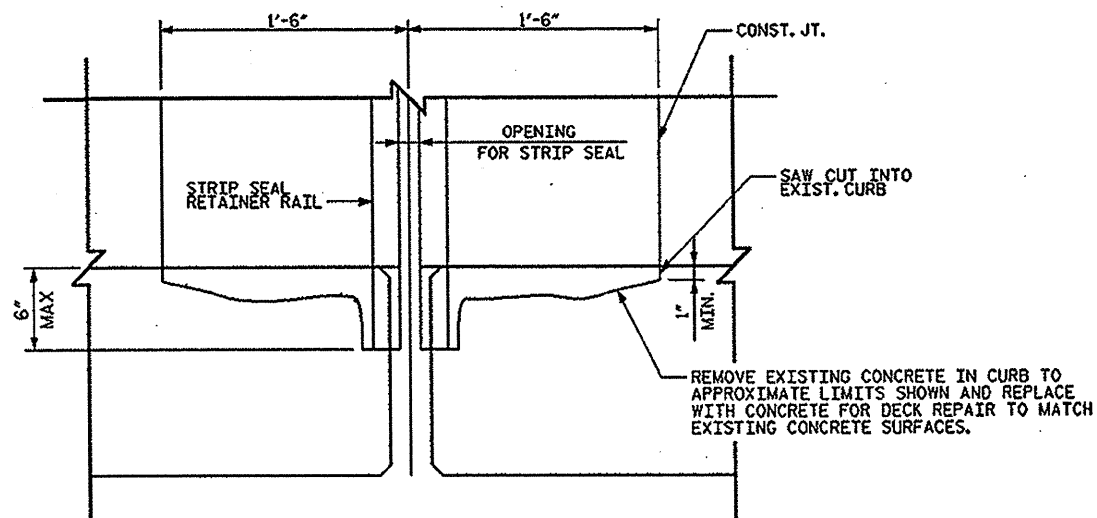
PLAN VIEW OF JT. REPAIR



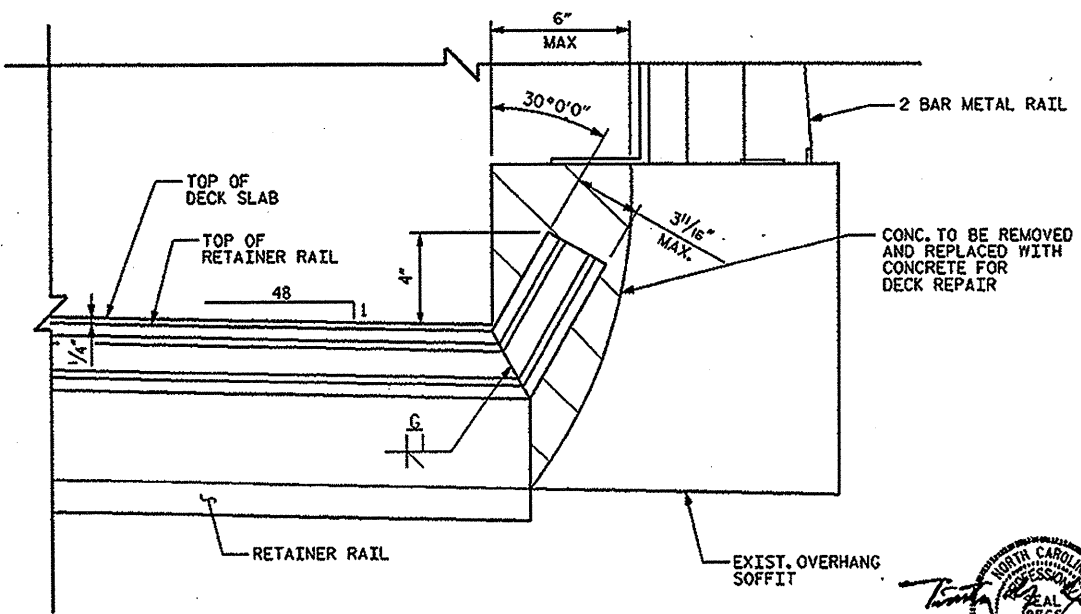
SECTION A-A

NOTE: STUDS AND WEEP HOLES NOT SHOWN FOR CLARITY.

DETAIL A (EXISTING)



DETAIL A (PROPOSED JT. REPAIR)

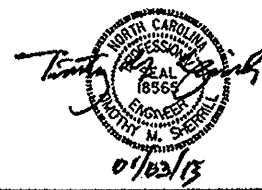


SECTION B-B

PROJECT NO. 17BP.12.P.5
 CATAWBA COUNTY
 BRIDGE NO. 91

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

INTERIOR BENTS 1 & 6
 JOINT SEAL DETAILS



| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|-----------------|
| NO. | BY | DATE | NO. | BY | DATE | S-7 |
| 1 | | | 3 | | | TOTAL SHEETS 10 |
| 2 | | | 4 | | | |

DRAWN BY: R. WEISZ DATE: 8-2012
 CHECKED BY: T. SHERRILL DATE: 12-2012

NOTES

CONTRACTOR SHALL MOVE OR REPOSITION EXIST. REINF. STEEL AT EXP. JOINT BLOCKOUT TO AVOID INTERFERENCE WITH RETAINER RAIL ASSEMBLY (TYP.)

CONCRETE FOR DECK REPAIR PLACED TO MATCH FINISHED DECK SLAB ELEVATIONS. SURFACE TO BE GROOVED. SEE SPECIAL PROVISIONS.

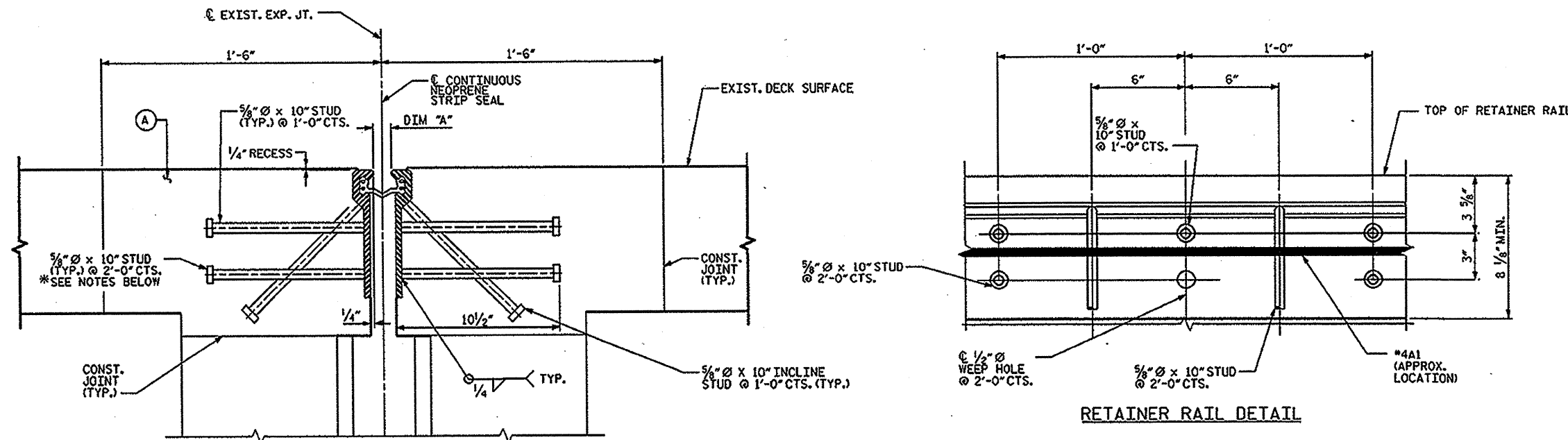
ALL STEEL RETAINER RAIL ASSEMBLY SURFACES SHALL BE METALIZED. SEE SPECIAL PROVISIONS.

NEOPRENE SEAL SHALL BE CONTINUOUS ACROSS THE WIDTH OF THE BRIDGE. FIELD SPLICING NEOPRENE SEAL WILL NOT BE PERMITTED.

SET TOP OF RETAINER RAIL TO MATCH CROSS SLOPE ON BRIDGE DECK.

BOND NEOPRENE SEAL TO RETAINER RAIL W/ AN APPROVED ADHESIVE.

SEAL SHALL BE COMPATIBLE W/ RETAINER RAIL AND SHALL BE WATER TIGHT.

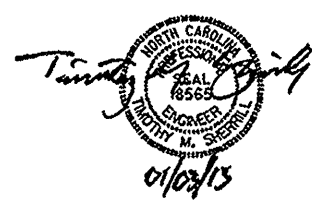


SECTION DETAIL
(EXISTING REBAR NOT SHOWN FOR CLARITY)

RETAINER RAIL DETAIL

| TEMPERATURE SETTING DIMENSIONS | | | | |
|--------------------------------|----------|---------|---------|---------|
| BENT NO. | DIM. "A" | | | |
| | @ 30° F | @ 45° F | @ 60° F | @ 90° F |
| 1 & 6 | 4 5/8" | 4" | 3 3/8" | 1 1/2" |

PROJECT NO. 17BP.12.P.5
 COUNTY CATAWBA
 BRIDGE NO. 91



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STRIP SEAL SECTION DETAIL

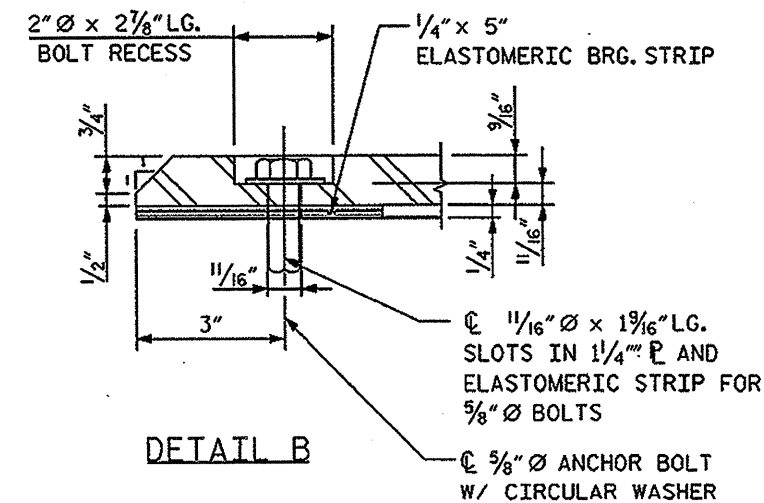
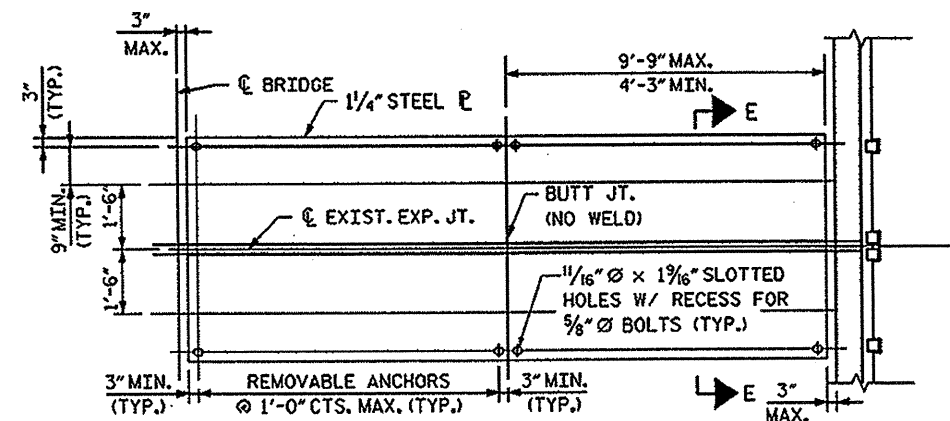
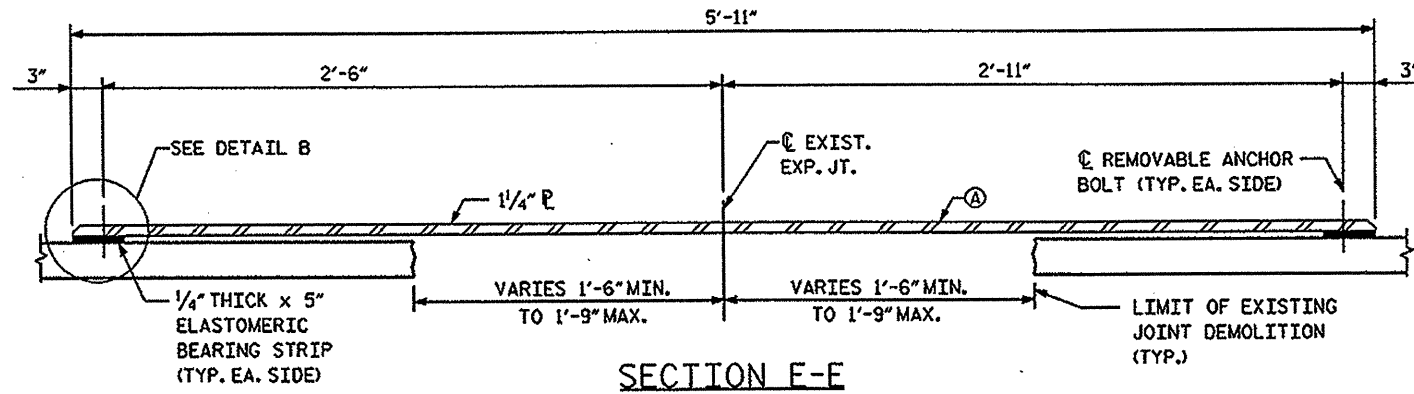
| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|-----------|
| NO. | BY | DATE | NO. | BY | DATE | TOTAL |
| 1 | | | 3 | | | 10 |
| 2 | | | 4 | | | |

DRAWN BY : R. WEISZ DATE : 8-2012
 CHECKED BY : T. SHERRILL DATE : 12-2012

NOTES

FOR TEMPORARY STEEL COVER \bar{P} SEE SPECIAL PROVISIONS.
 PROVIDE SURFACE TREATMENT FOR SKID RESISTANCE
 BONDED TO \bar{P}

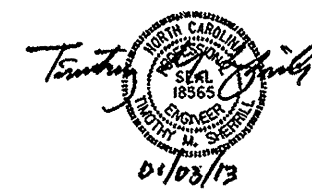
REQUIRED ULTIMATE ANCHOR TENSION = 10.5k
 BOLT RESISTANCE: SHEAR = 1.0k



PROJECT NO. 17BP.12.P.5
CATAWBA COUNTY
 BRIDGE NO. 91

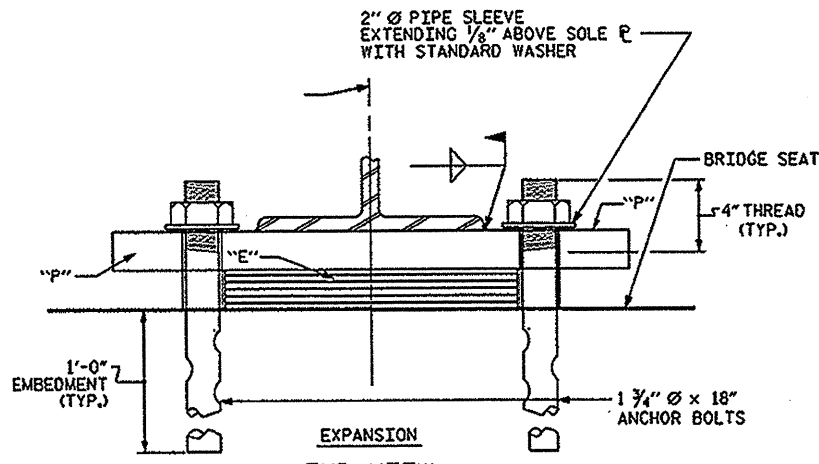
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STEEL COVER
 PLATE DETAILS

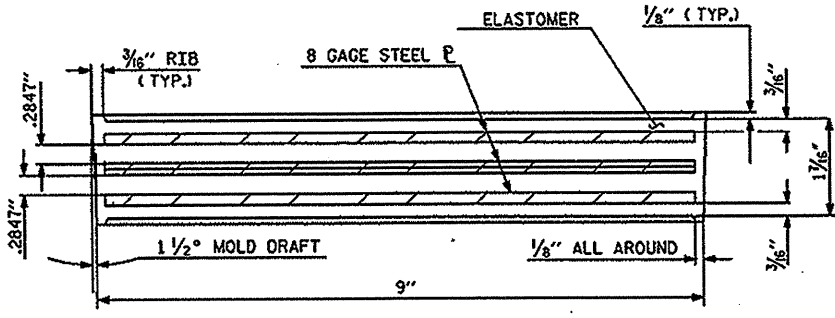


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|-----------|----|------|-----|----|------|--------------|
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| 1 | | | 3 | | | TOTAL SHEETS |
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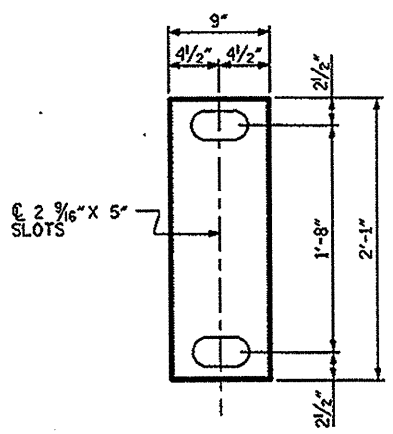
DRAWN BY: R. WEISZ DATE: 8-2012
 CHECKED BY: T. SHERRILL DATE: 12-2012



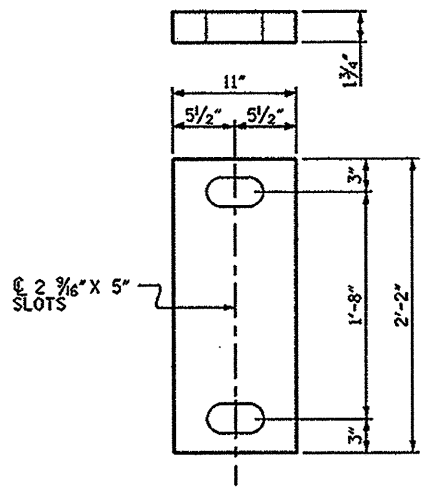
EXPANSION END VIEW



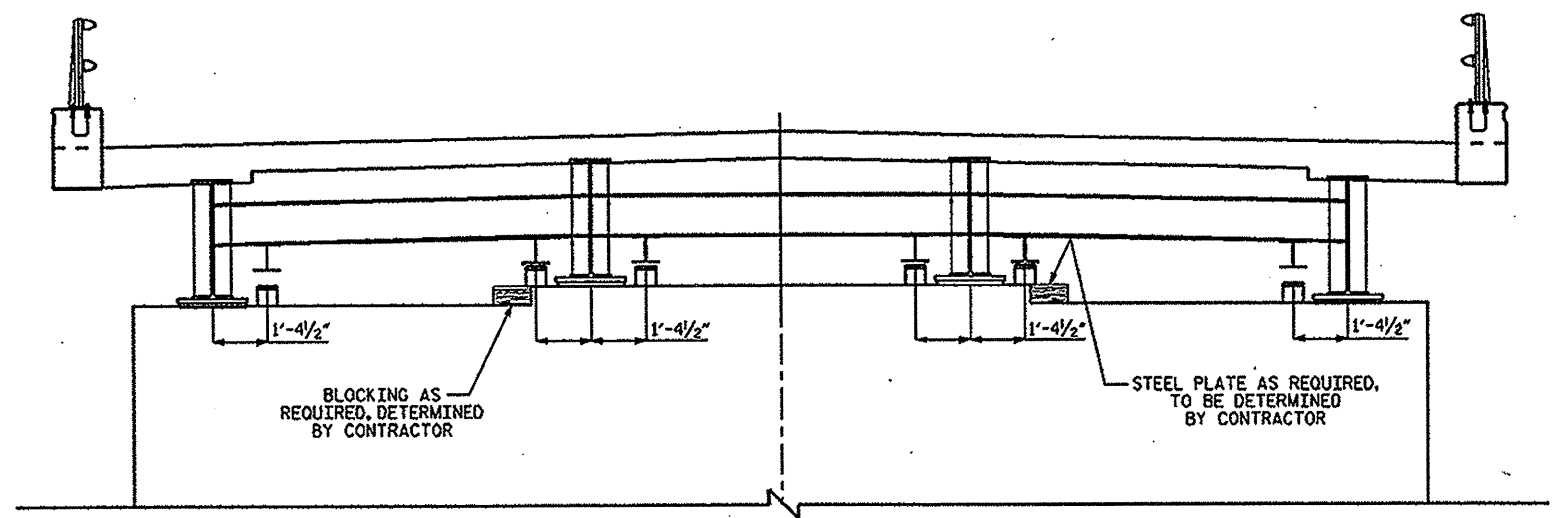
TYPICAL SECTION OF ELASTOMERIC BEARINGS



"E" (8 REQ'D)
ELASTOMERIC BEARINGS



"P" (8 REQ'D)
SOLE PLATE



JACKING DETAIL

NOTES:

JACKING NOTES:

THE CONTRACTOR SHALL SUBMIT JACKING PLANS AND CALCULATIONS FOR REVIEW AND APPROVAL PRIOR TO MATERIAL PURCHASE OR FABRICATION OF THE JACKING SYSTEM.

BEFORE THE JACKING OPERATION BEGINS, THE TWO BAR METAL RAIL SHALL BE DISCONNECTED IN ORDER TO AVOID DAMAGE TO THE RAILING SYSTEM.

THE CONTRACTOR SHALL JACK ALL GIRDERS IN A SPAN ON AN INDIVIDUAL BENT SIMULTANEOUSLY BY MEANS OF A DUAL-FLOW PRESSURIZED PUMP CONTROLLING THE JACKS.

THE SPAN SHALL BE LIFTED ENOUGH THAT THE BEAMS CLEAR THE BEARINGS AND ALL LOAD IS SUPPORTED BY THE JACKS. AFTER JACKING IS COMPLETE THE CONTRACTOR SHALL PROVIDE A METHOD TO SUPPORT THE SPAN FOR DEAD AND LIVE LOADS AND REMOVE THE JACKS DURING BEAM REPAIR OR IF JACKS REMAIN IN PLACE DURING THE ENTIRE JACKING AND REPAIR OPERATION IT SHALL HAVE MECHANICAL LOCK OFF CAPABILITIES.

IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

PRIOR TO JACKING, THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.

ALL ADJACENT BEARINGS OF BEAMS NOT BEING JACKED MAY BE LOOSENED TO DECREASE THE RESISTANCE OF THE DECK SLAB DURING JACKING. ALL BEARINGS LOOSENED SHALL BE TIGHTENED BACK AFTER THE BEAMS ARE REPAIRED AND THE JACKS AND BLOCKING HAVE BEEN REMOVED.

PAYMENT OF JACKING WILL BE MADE AT THE LUMP SUM PRICE BID FOR BRIDGE JACKING. SUCH LUMP SUM PRICE WILL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

ELASTOMERIC BEARING NOTES:

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

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

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

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

ELASTOMER IN BEARING SHALL HAVE A SHEAR MODULUS OF 160 PSI.

PROJECT NO. 17BP.12.P.5
 COUNTY CATAWBA
 BRIDGE NO. 91

T. Sherrill
 NORTH CAROLINA
 18565
 ENGINEER
 T. SHERRILL

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JACKING DETAILS FOR
 SPANS A & G AND
 REPLACEMENT ELASTOMERIC
 BEARING DETAILS

(BENT 1 SPAN A AND BENT 6 SPAN G)

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

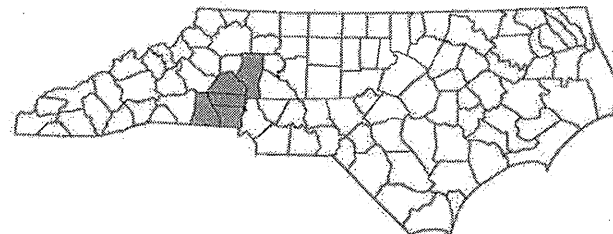
DRAWN BY: R. WEISZ DATE: 8-2012
 CHECKED BY: T. SHERRILL DATE: 12-2012

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CATAWBA, CLEVELAND, GASTON, IREDELL, & LINCOLN COUNTIES

DIVISION 12



CATAWBA COUNTY

- BRIDGE #19 - NC 16 over US 70**
- BRIDGE #20 - NC 10 over Catawba River**
- BRIDGE #91 - NC 127 over Catawba River**
- BRIDGE #99 - NC 150 over Railroad**

CLEVELAND COUNTY

- BRIDGE #16 - NC 182 over First Broad River**
- BRIDGE #18 - NC 150 (Gaffney Rd.) over Broad River**
- BRIDGE #32 - NC 18 over US 74/NC 226**
- BRIDGE #76 - NC 150 (Cherryville Rd.) over Buffalo Creek**
- BRIDGE #79 - US 74 EB over First Broad River**
- BRIDGE #80 - US 74 WB over First Broad River**
- BRIDGE #88 - Morgan St. over US 74**

GASTON COUNTY

- BRIDGE #56 - NC 275 over Catawba River**
- BRIDGE #71 - US 29/74 over Railroad**
- BRIDGE #133 - Aberdeen Blvd. over I-85**

IREDELL COUNTY

- BRIDGE #1 - SR 2362 (Triplett Rd.) over Third Creek**
- BRIDGE #50 - SR 1502 (Sharon School Rd) over I-40**
- BRIDGE #174 - I-40 EB over Fifth Creek**

LINCOLN COUNTY

- BRIDGE #35 - NC 150 over Catawba River**
- BRIDGE #50 - NC 73 over Catawba River**

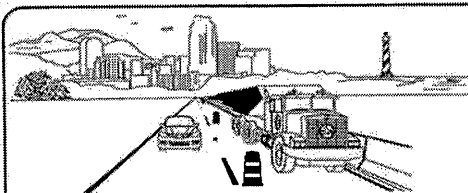
INDEX OF SHEETS

| SHEET NO. | TITLE |
|-----------|--|
| TMP-1 | TITLE SHEET AND INDEX OF SHEETS |
| TMP-1A | LEGEND AND LIST OF ROADWAY STANDARD DRAWINGS |
| TMP-2 | GENERAL NOTES |
| TMP-3 | VICINITY MAPS & PHASING |
| TMP-4 | CLEVELAND CO. #32/88 - US 72/NC 226 EAST RIGHT & LEFT LANE WORK AREA |
| TMP-5 | CLEVELAND CO. #32/88 - US 72/NC 226 WEST RIGHT & LEFT LANE WORK AREA |
| TMP-6 | GASTON CO. #71 - US 29/74 EASTBOUND RIGHT LANE WORK AREA |
| TMP-7 | GASTON CO. #71 - US 29/74 WESTBOUND RIGHT LANE WORK AREA |
| TMP-8 | GASTON CO. #133 - I-85 EASTBOUND RIGHT LANE WORK AREA |
| TMP-9 | GASTON CO. #133 - I-85 WESTBOUND RIGHT LANE WORK AREA |
| TMP-10 | IREDELL CO. #50 - I-40 EASTBOUND RIGHT & LEFT LANE WORK AREAS |
| TMP-11 | IREDELL CO. #50 - I-40 WESTBOUND RIGHT & LEFT LANE WORK AREAS |

SHEET NO.
TMP-1

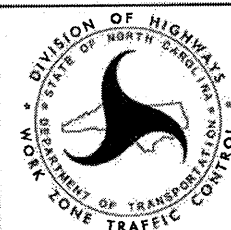
TRAFFIC MANAGEMENT STRATEGY

PROPOSED BRIDGE PAINTING WILL BE PERFORMED USING DAY AND TIME RESTRICTED LANE CLOSURES. REFER TO SHEET TMP-3 FOR PHASING.



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLAN PREPARED FOR NCDOT STRUCTURES MANAGEMENT UNIT
RALEIGH, NC



PLAN PREPARED BY:
Stantec Consulting Services Inc.
801 Jones Franklin Road-Suite 300
Raleigh, NC 27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

BETSY L. WATSON, P.E.

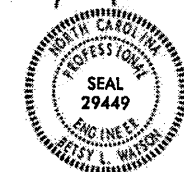
TRAFFIC ENGINEER

GEORGE KARAGEORGE

SR. TRANSPORTATION DESIGNER














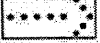




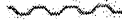



APPROVED: *Betsy L. Watson*
DATE: 10/28/12

SEAL






WBS 17BP.12.P.5


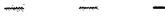


LEGEND

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  WORK AREA
-  PAVEMENT REMOVAL
-  NORTH ARROW
-  TYPE III BARRICADE
-  CONE
-  DRUM
-  SKINNY DRUM
-  TUBULAR MARKER
-  CHANGEABLE MESSAGE SIGN (CMS)
-  FLAGGER
-  AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)
-  FLASHING ARROW BOARD (TYPE C)
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  PORTABLE CONCRETE BARRIER (PCB)
-  TEMPORARY CRASH CUSHION
-  TEMPORARY SHORING
-  WORK ZONE SIGN-PORTABLE
-  WORK ZONE SIGN-STATIONARY
-  WORK ZONE SIGN-STATIONARY OR PORTABLE




SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY




PAVEMENT MARKINGS

-  EXISTING PAVEMENT MARKING (GRAY)
-  SKIP LINES
-  MINI-SKIP LINES
-  SOLID LINES

PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS
-  EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)
-  ONLY PAVEMENT MARKING ALPHANUMERIC CHARACTERS

PAVEMENT MARKERS

-  CRYSTAL / CRYSTAL
-  CRYSTAL / RED
-  YELLOW / YELLOW

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

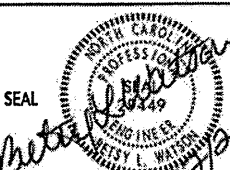
| <u>STD. NO.</u> | <u>TITLE</u> |
|-----------------|---|
| 1101.01 | WORK ZONE ADVANCE WARNING SIGNS |
| 1101.02 | TEMPORARY LANE CLOSURES |
| 1101.05 | WORK ZONE VEHICLE ACCESSES |
| 1101.11 | TRAFFIC CONTROL DESIGN TABLES |
| 1110.01 | STATIONARY WORK ZONE SIGNS |
| 1110.02 | PORTABLE WORK ZONE SIGNS |
| 1115.01 | FLASHING ARROW BOARDS |
| 1130.01 | DRUMS |
| 1135.01 | CONES |
| 1145.01 | BARRICADES |
| 1150.01 | FLAGGING DEVICES |
| 1165.01 | WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION |

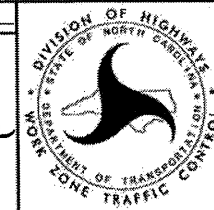
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Stantec Consulting Services Inc.
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Raleigh, NC 27606
Tel. (919) 851-6868
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

APPROVED: _____ DATE: _____

SEAL  1/20/12



LEGEND
&
ROADWAY STANDARD DRAWINGS

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

LANE CLOSURE TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

| ROAD NAME | DAY AND TIME RESTRICTIONS |
|---|--|
| I-40 I-85 US 70 US 74 NC 73 NC 150 | 6:00 A.M.-7:00 P.M. MONDAY THRU FRIDAY |
| ALL OTHER ROADS | 6:00 A.M.-9:00 A.M. MONDAY THRU FRIDAY 3:00 P.M.-7:00 P.M. MONDAY THRU FRIDAY |

B) DO NOT CLOSE OR NARROW A LANE OF TRAFFIC, DETAIN AND/OR ALTER THE TRAFFIC FLOW ON OR DURING HOLIDAYS, HOLIDAY WEEKENDS, OR ANY OTHER TIME WHEN TRAFFIC IS UNUSUALLY HEAVY, INCLUDING THE FOLLOWING SCHEDULES:

ROAD NAME
ALL ROADS

HOLIDAY & HOLIDAY WEEKEND LANE CLOSURE TIME RESTRICTIONS

- 1) FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- 2) FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31ST TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
- 3) FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
- 4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
- 5) FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY; THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- 6) FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
- 7) FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
- 8) FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

FLAGGER OPERATIONS

- C) DURING FLAGGER OPERATIONS DO NOT STOP TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME.
- D) LOCATE FLAGGER STATIONS SUCH THAT APPROACHING TRAFFIC WILL HAVE SUFFICIENT DISTANCE TO STOP AT THE INTENDED STOPPING POINT. IF NEEDED, EXTEND THE LANE CLOSURE SUCH THAT THE FLAGGER STATION IS POSITIONED BEFORE A HORIZONTAL OR CREST VERTICAL CURVE WHERE ADEQUATE STOPPING SIGHT DISTANCE TO THE FLAGGER IS PROVIDED. REFER TO ROADWAY STANDARD DRAWING 1101.11 SHEET 2.
- E) FLAGGERS SHALL NOT STAND IN THE ROADWAY.
- F) PROVIDE ILLUMINATION FOR FLAGGER STATIONS DURING NIGHT HOURS. ILLUMINATION FOR FLAGGER STATIONS WILL NOT BE PAID FOR SEPARATELY AND WILL BE CONSIDERED INCIDENTAL TO OTHER ITEMS IN THE CONTRACT.
- G) PLACE CHANNELIZING DEVICES FOR FLAGGER OPERATION LANE CLOSURES AT A MAXIMUM SPACING OF 20 FEET IN TAPERS AND AT A MAXIMUM SPACING OF 80 FEET ALONG THE BUFFER SPACE AND WORK AREA.
- H) DRUMS OR SKINNY DRUMS MAY BE USED INSTEAD OF CONES AT NO ADDITIONAL COST.
- I) ADVISE RESIDENTS AND BUSINESSES AFFECTED BY THE LANE CLOSURE ABOUT METHODS OF SAFE INGRESS AND EGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.


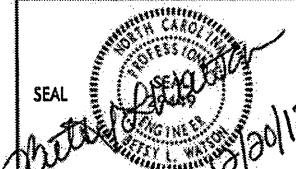

LANE AND SHOULDER CLOSURE REQUIREMENTS

- J) LANE CLOSURES ARE REQUIRED WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN ANY PORTION OF A TRAVEL LANE. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- K) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER. COVER OR LAY DOWN SIGNS, AND TURN OFF ARROW BOARDS AND MESSAGE BOARDS.
- L) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- M) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- N) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

MISCELLANEOUS

- O) ALL DIMENSIONS AND STATIONS IN THE TRANSPORTATION MANAGEMENT PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- P) PLACE ALL CHANGEABLE MESSAGE SIGNS AS NEEDED IN THE LOCATIONS AND WITH THE WORD MESSAGES AS SHOWN IN THE PLAN OR AS DIRECTED BY THE ENGINEER TO PROVIDE ADVANCE WARNING TO THE PUBLIC DURING CONSTRUCTION.
- Q) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.
- R) CHANGEABLE MESSAGE SIGN MESSAGES SHOWN ARE EXAMPLES. OTHER MESSAGES MAY BE USED AS CONDITIONS WARRANT. ALL MESSAGES AND LOCATIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO INCORPORATING.

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|--|--|---|---|

PHASING

USE THE FOLLOWING TRAFFIC CONTROL METHODS FOR
BRIDGE PAINTING OPERATIONS:

CATAWBA COUNTY

BRIDGE #19 - NC 16 OVER US 70
USE FLAGGING OPERATIONS ALONG US 70, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

BRIDGE #20 - NC 10 OVER CATAWBA RIVER
USE FLAGGING OPERATIONS ALONG NC 10, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

BRIDGE #91 - NC 127 OVER CATAWBA RIVER
USE FLAGGING OPERATIONS ALONG NC 127, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

BRIDGE #99 - NC 150 OVER RAILROAD
USE FLAGGING OPERATIONS ALONG NC 150, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

CLEVELAND COUNTY

BRIDGE #16 - NC 182 OVER FIRST BROAD RIVER
USE FLAGGING OPERATIONS ALONG NC 182, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

BRIDGE #18 - NC 150 (GAFFNEY RD) OVER BROAD RIVER
USE FLAGGING OPERATIONS ALONG NC 150, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

BRIDGE #32/88 - NC 18/MORGAN ST OVER US 74/NC 226
USE LEFT LANE CLOSURES WITH AND WITHOUT
SHIFTS ALONG US 74/NC 226 EAST, PER TMP-4.

USE LEFT LANE CLOSURES WITH AND WITHOUT
SHIFTS ALONG US 74/NC 226 WEST, PER TMP-5.

BRIDGE #76 - NC 150 (CHERRYVILLE RD) OVER BUFFALO CREEK
USE FLAGGING OPERATIONS ALONG NC 150, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

BRIDGE #79/80 - US 74 OVER FIRST BROAD RIVER
USE LEFT AND RIGHT LANE CLOSURES ALONG US
74, PER ROADWAY STANDARD DRAWING 1101.02
SHEET 3.

GASTON COUNTY

BRIDGE #56 - NC 275 OVER CATAWBA RIVER
USE FLAGGING OPERATIONS ALONG NC 275, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

BRIDGE #71 - US 29/74 OVER RAILROAD
USE RIGHT LANE CLOSURES ALONG US 29/74, PER
TMP-6 AND TMP-7.

BRIDGE #133 - ABERDEEN BLVD OVER I-85
USE RIGHT LANE CLOSURES ALONG I-85 EASTBOUND
LANES PER TMP-8, AND DOUBLE LEFT LANE
CLOSURES ALONG I-85 EASTBOUND LANES, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 8.

USE RIGHT LANE CLOSURES LANES ALONG I-85
WESTBOUND, PER TMP-9 AND DOUBLE LEFT LANE
CLOSURES ALONG I-85 WESTBOUND, PER ROADWAY
STANDARD DRAWING 1101.02 SHEET 8.

IREDELL COUNTY

BRIDGE #1 - TRIPPLET RD OVER THIRD CREEK
USE FLAGGING OPERATIONS ALONG TRIPPLET ROAD,
PER ROADWAY STANDARD DRAWING 1101.02 SHEET
1.

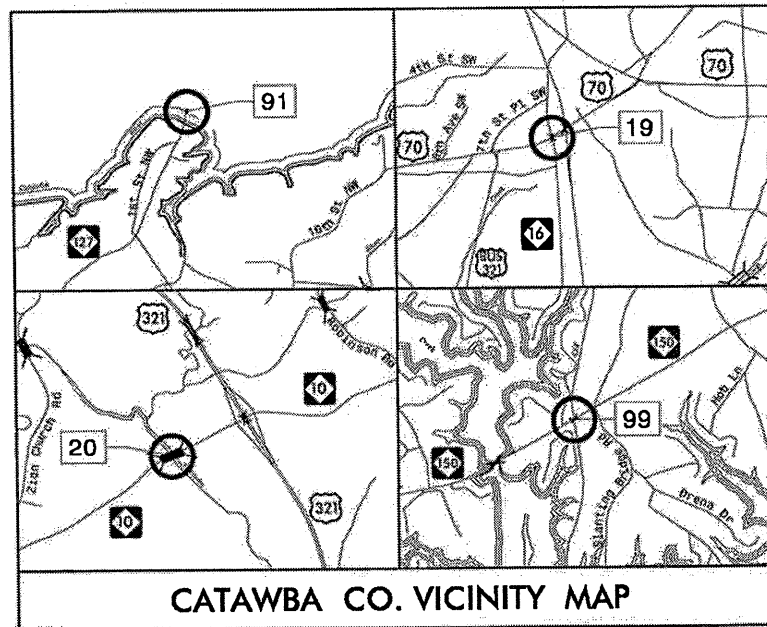
BRIDGE #50 - SR 1502 (SHARON SCHOOL RD) OVER I-40
USE LEFT LANE CLOSURES WITH AND WITHOUT
SHIFTS ON I-40 EB AND WB, PER SHEETS TMP-10
AND TMP-11.

BRIDGE #174 - I-40 EB OVER FIFTH CREEK
USE LEFT AND RIGHT LANE CLOSURES ALONG I-40
EASTBOUND, PER ROADWAY STANDARD DRAWING
1101.02 SHEET 4.

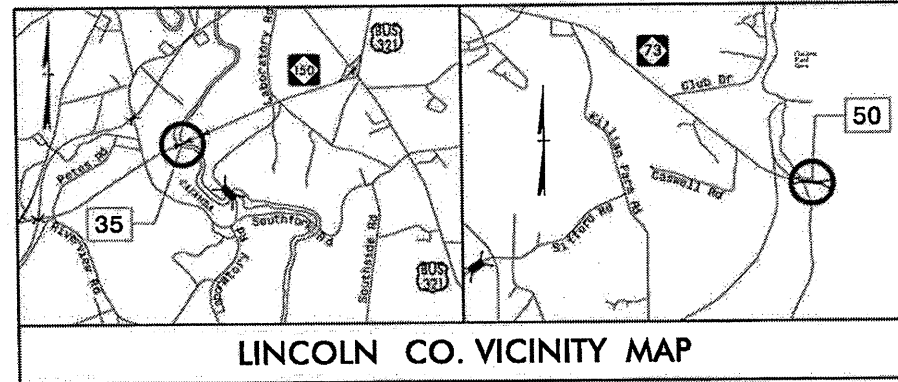
LINCOLN COUNTY

BRIDGE #35 - NC 150 OVER CATAWBA RIVER
USE FLAGGING OPERATIONS ALONG NC 150, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.

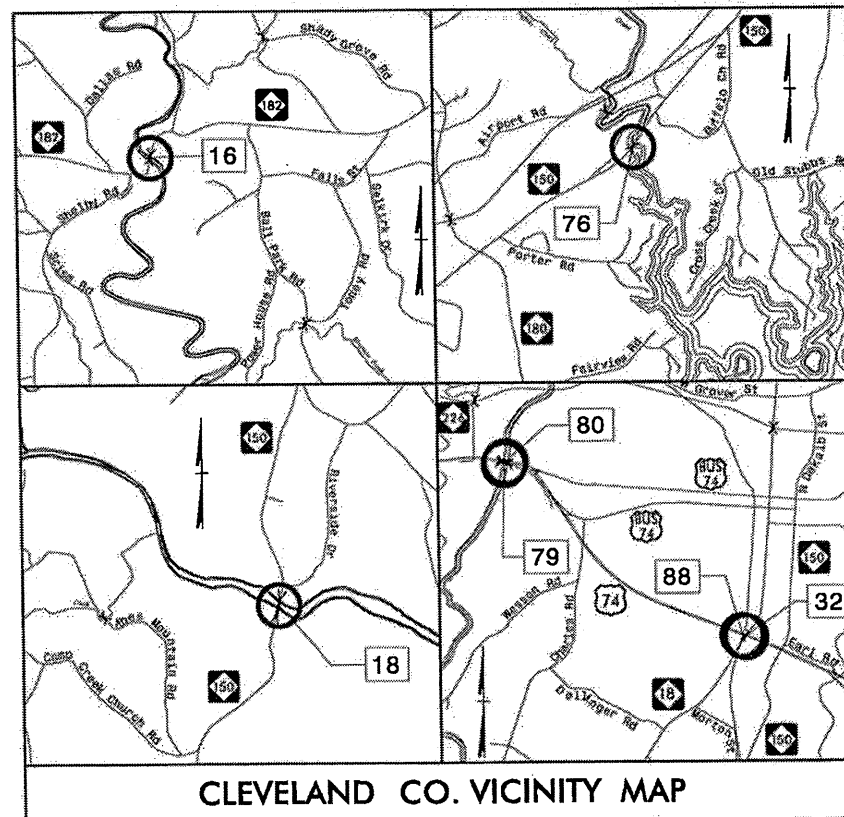
BRIDGE #50 - NC 73 OVER CATAWBA RIVER
USE FLAGGING OPERATIONS ALONG NC 53, PER
ROADWAY STANDARD DRAWING 1101.02 SHEET 1.



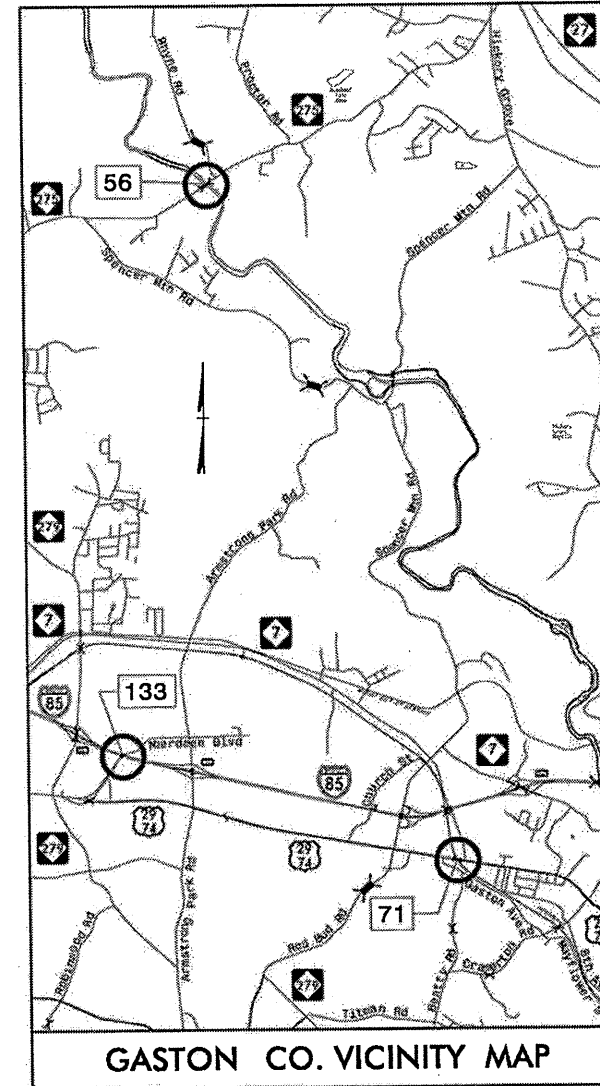
CATAWBA CO. VICINITY MAP



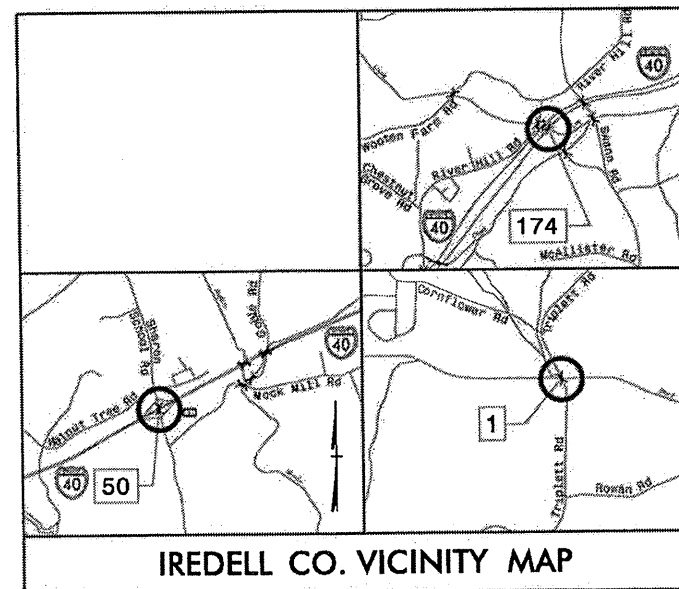
LINCOLN CO. VICINITY MAP



CLEVELAND CO. VICINITY MAP



GASTON CO. VICINITY MAP

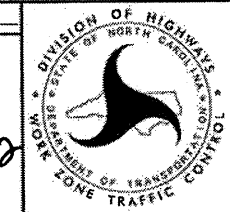
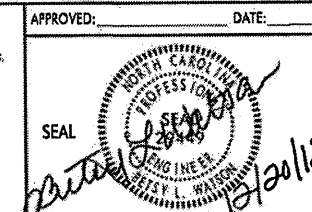


IREDELL CO. VICINITY MAP

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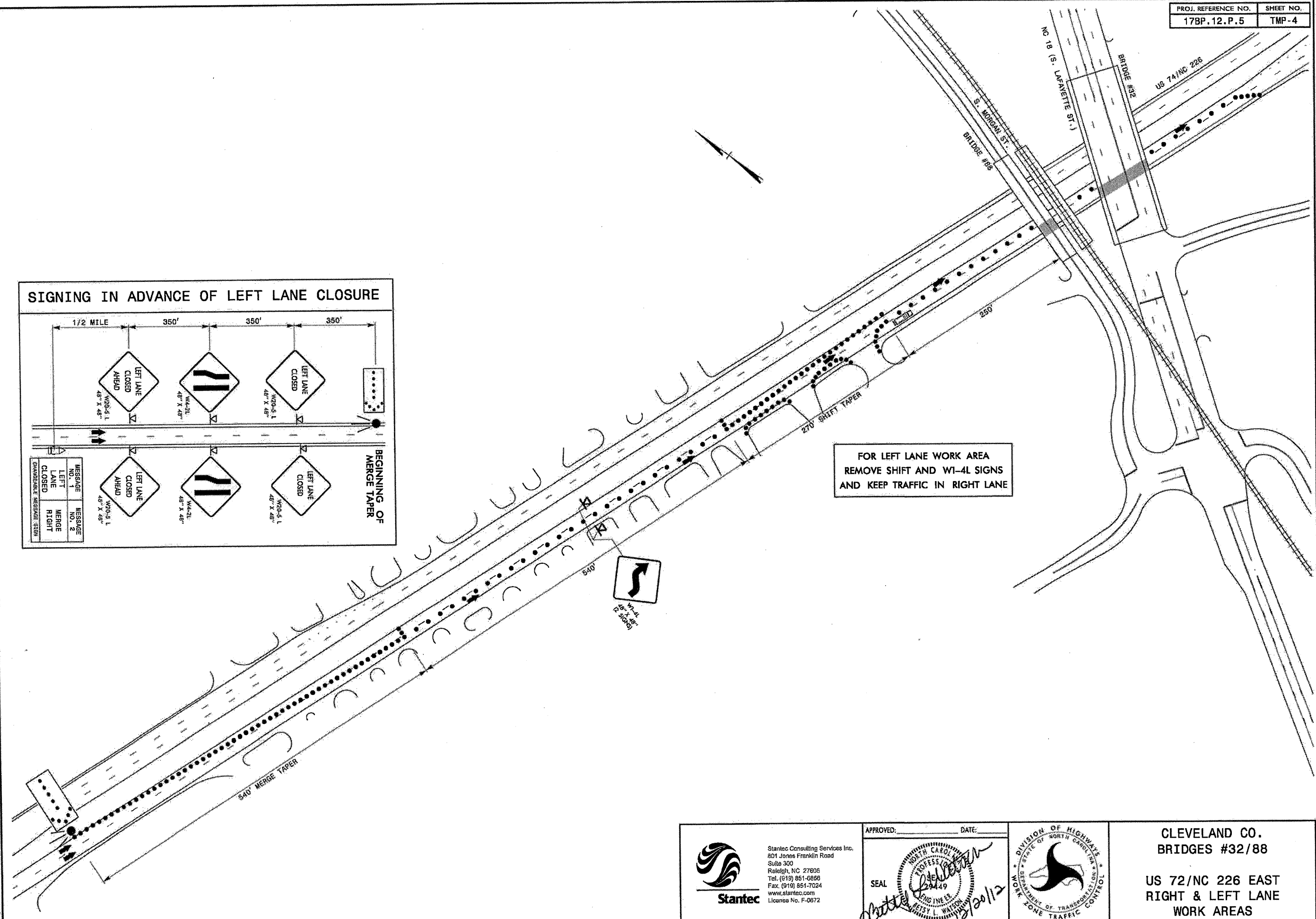
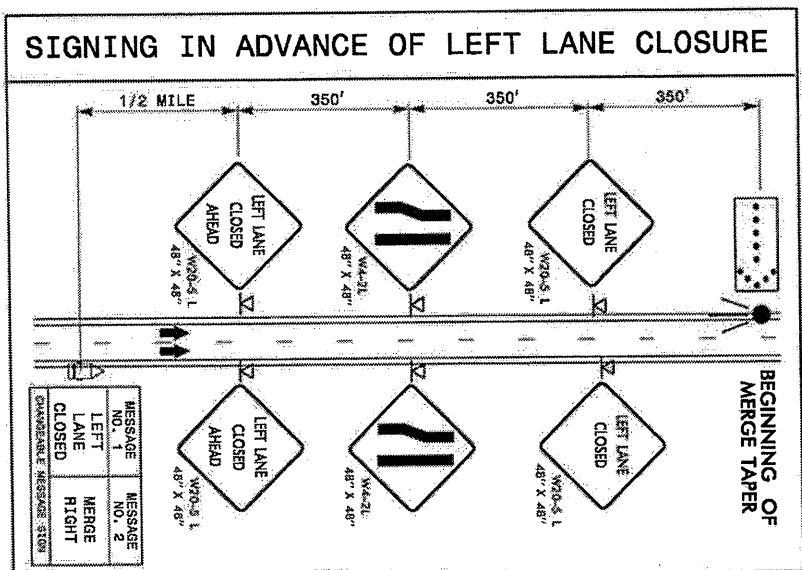


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VICINITY MAPS
&
PHASING

12/20/2012
 PLAN OF TRAFFIC CONTROL
 17BP.12.P.5 Point Corawba Gaston Line Closure
 Sheets 17BP.12.P.5-1C, TMP.04, CLEVELAND.32-88, EB, CLOSURE, W. WEAVE, 407

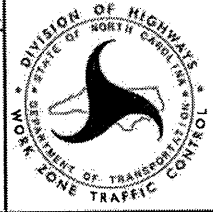


FOR LEFT LANE WORK AREA
 REMOVE SHIFT AND W1-4L SIGNS
 AND KEEP TRAFFIC IN RIGHT LANE



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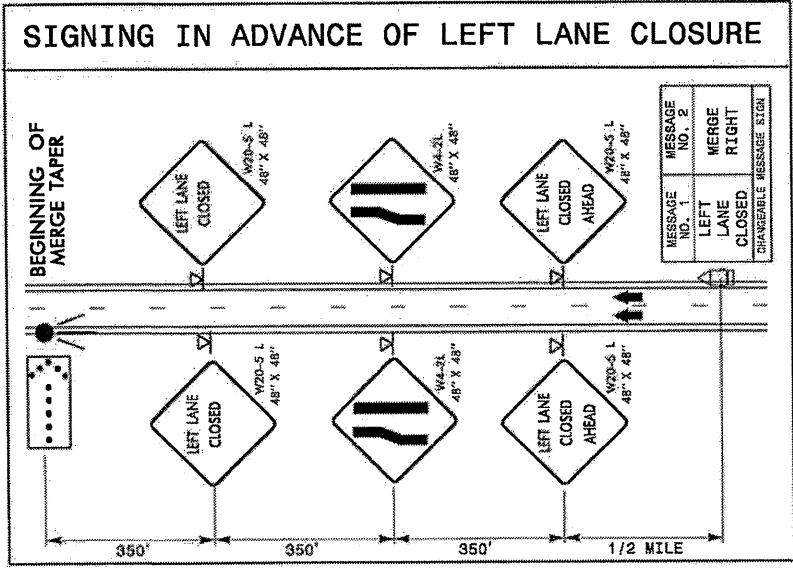
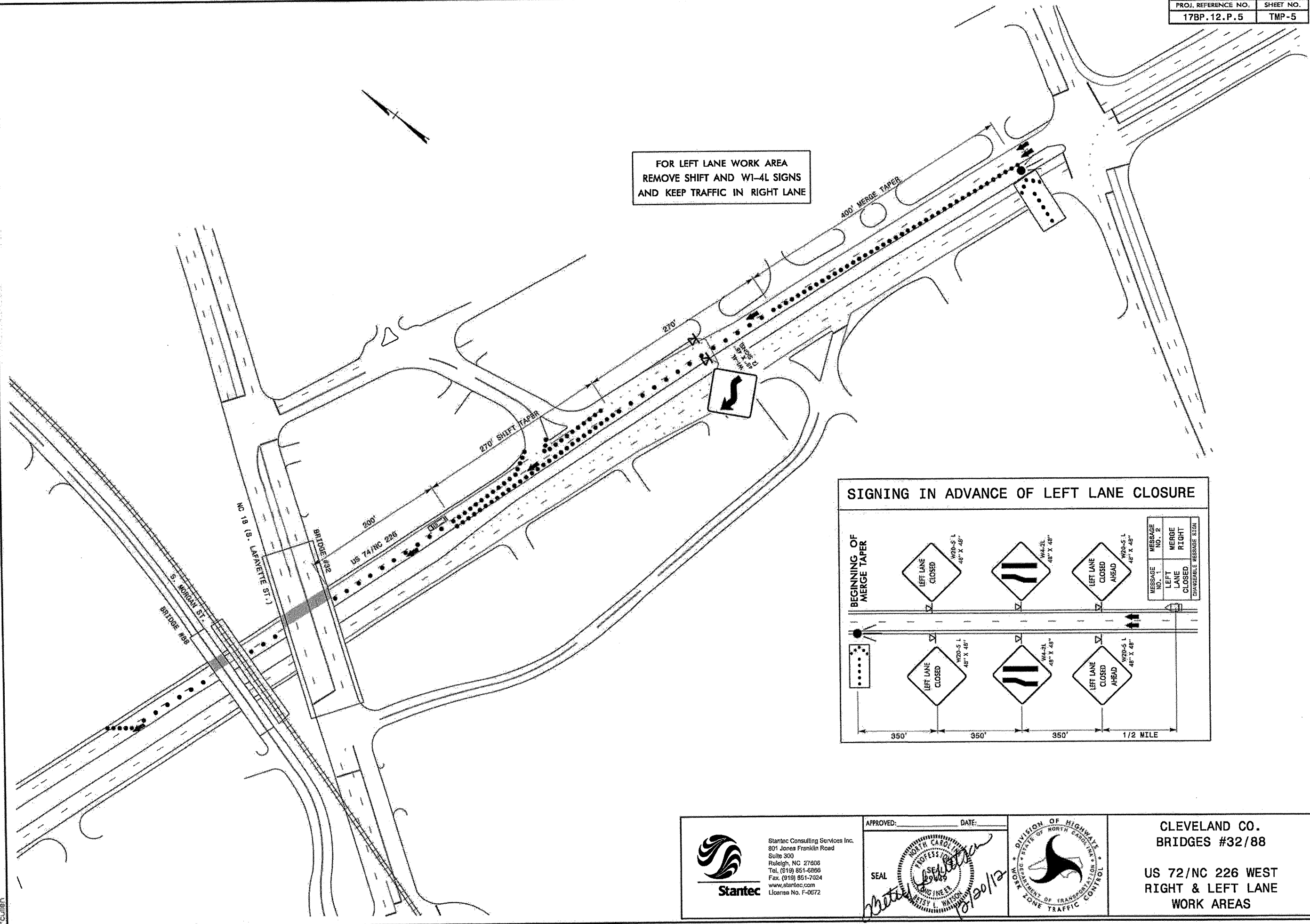


CLEVELAND CO.
BRIDGES #32/88

US 72/NC 226 EAST
RIGHT & LEFT LANE
WORK AREAS

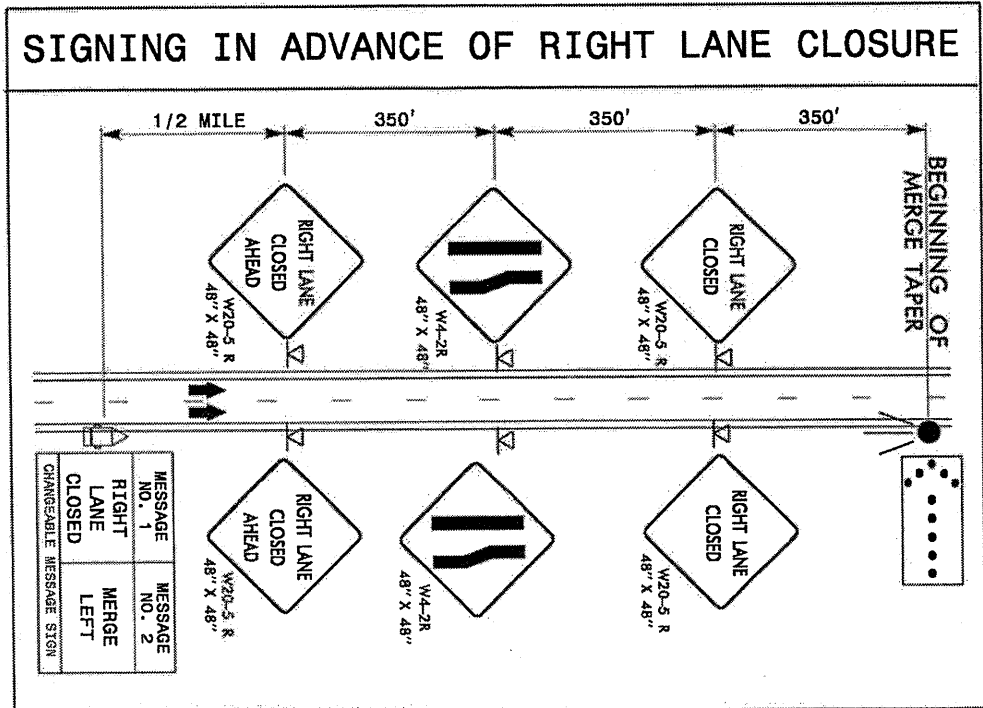
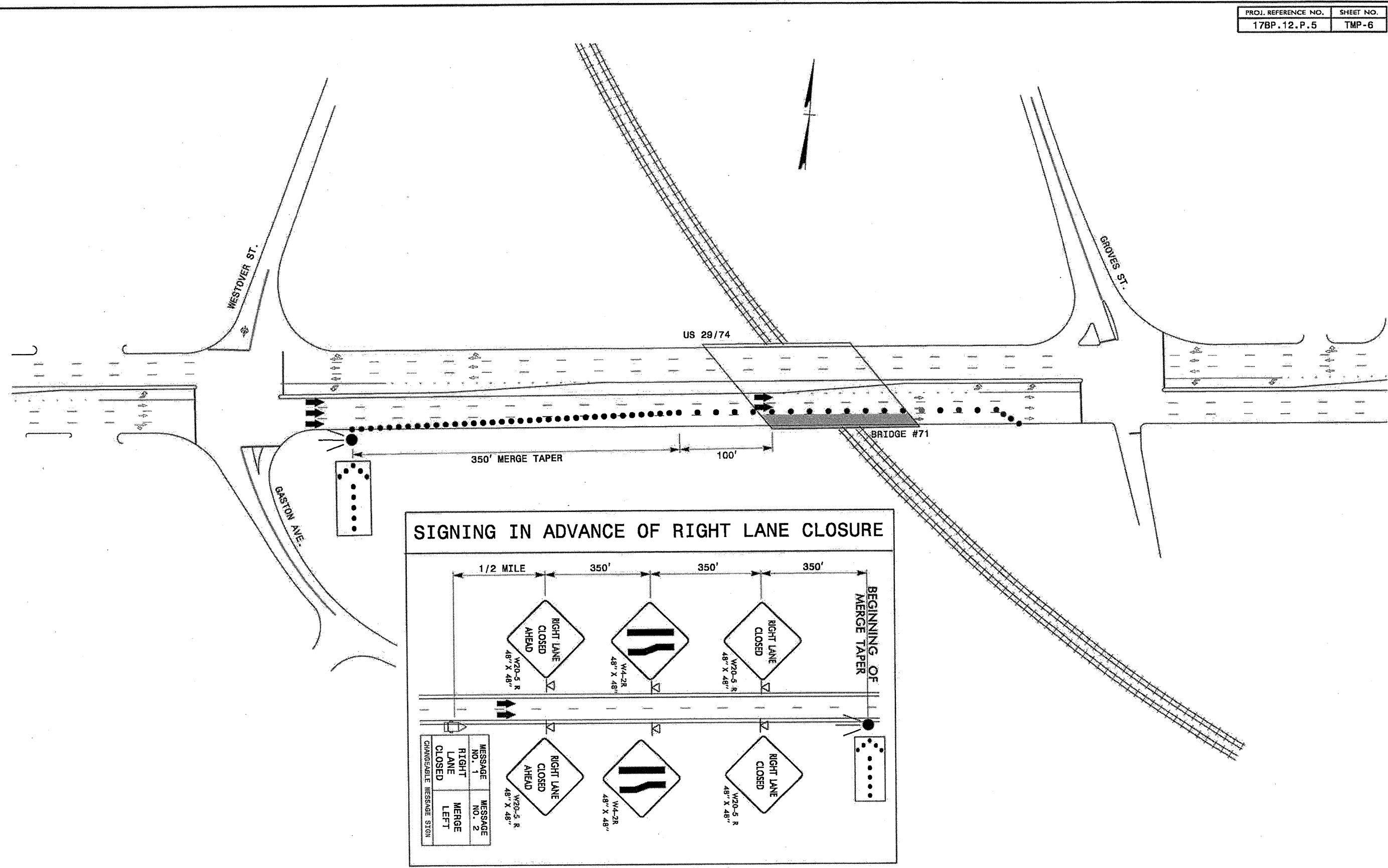
FOR LEFT LANE WORK AREA
REMOVE SHIFT AND W1-4L SIGNS
AND KEEP TRAFFIC IN RIGHT LANE

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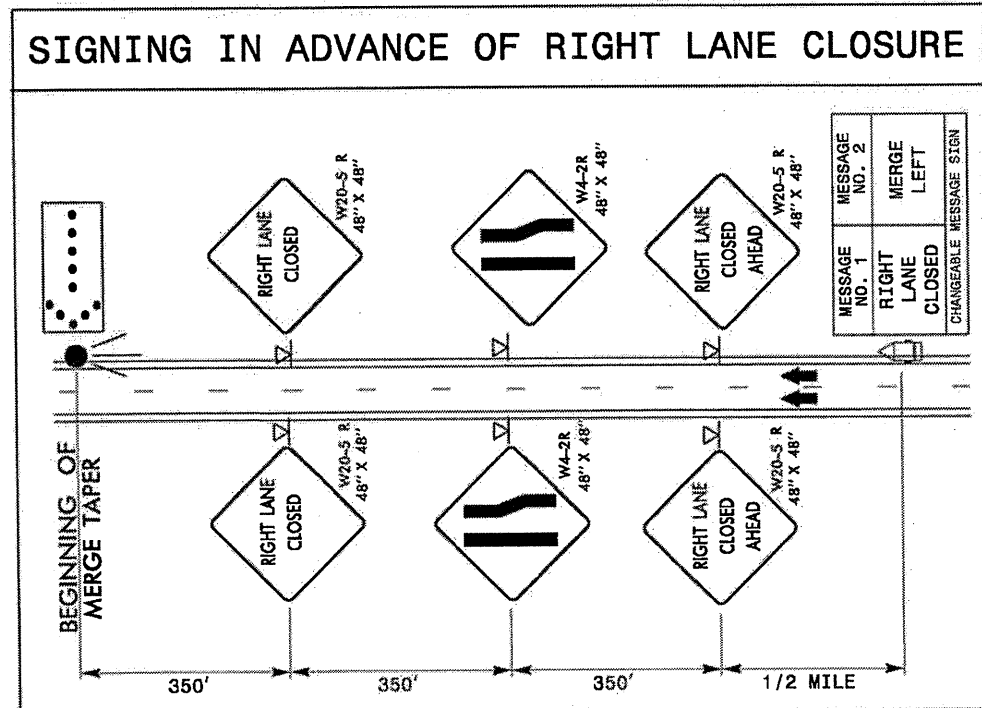
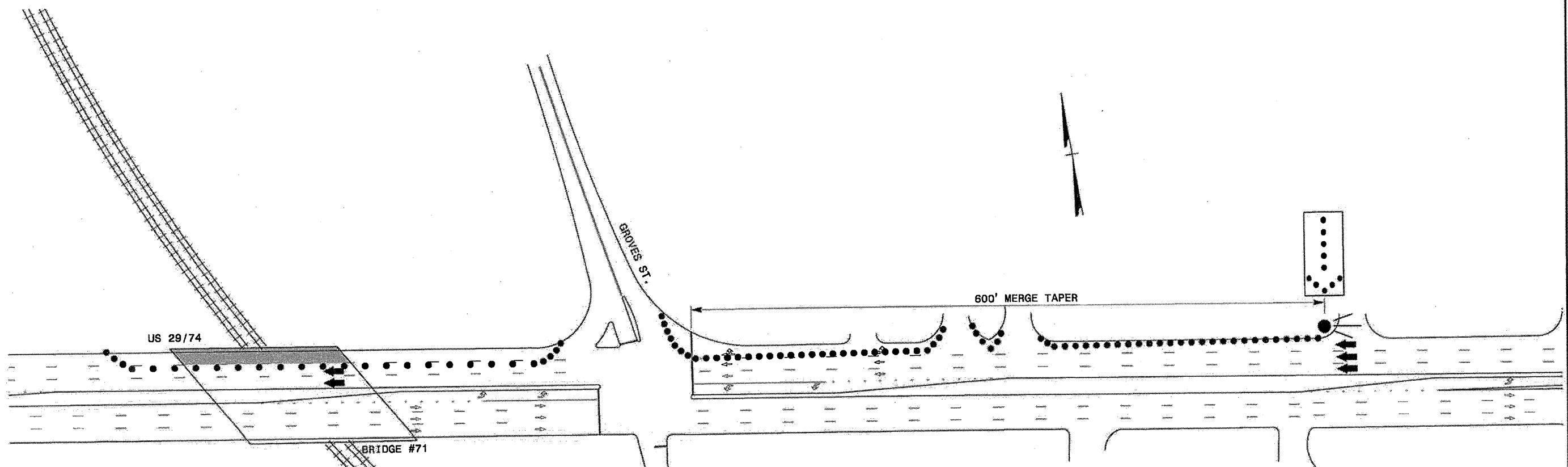
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|--|--|--|---|

12/20/2012
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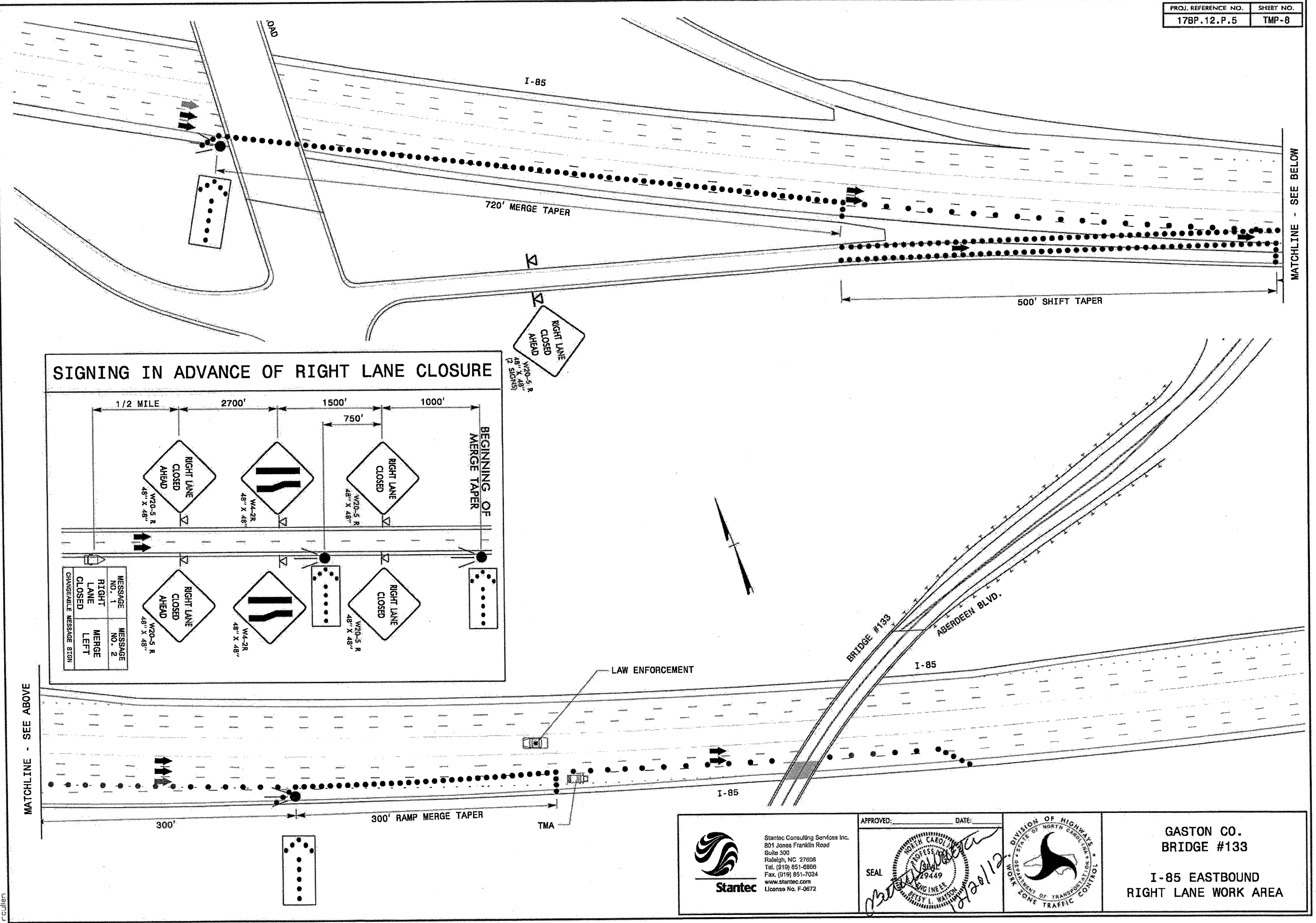
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| | | | GASTON CO. BRIDGE #71 US 29/74 EASTBOUND RIGHT LANE WORK AREA |

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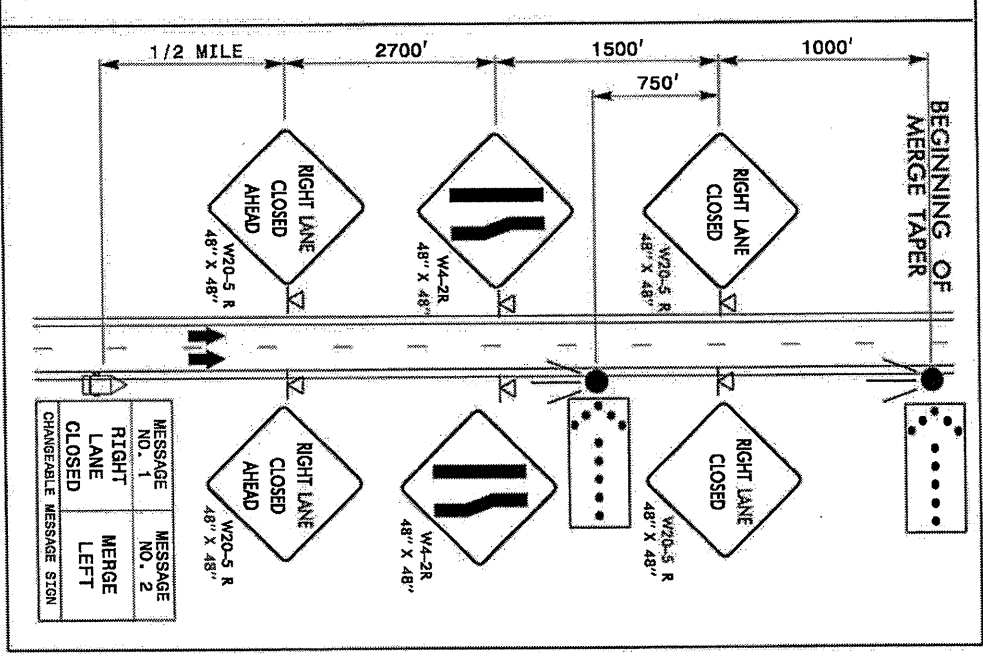


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SIGNING IN ADVANCE OF RIGHT LANE CLOSURE



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APPROVED: _____ DATE: _____
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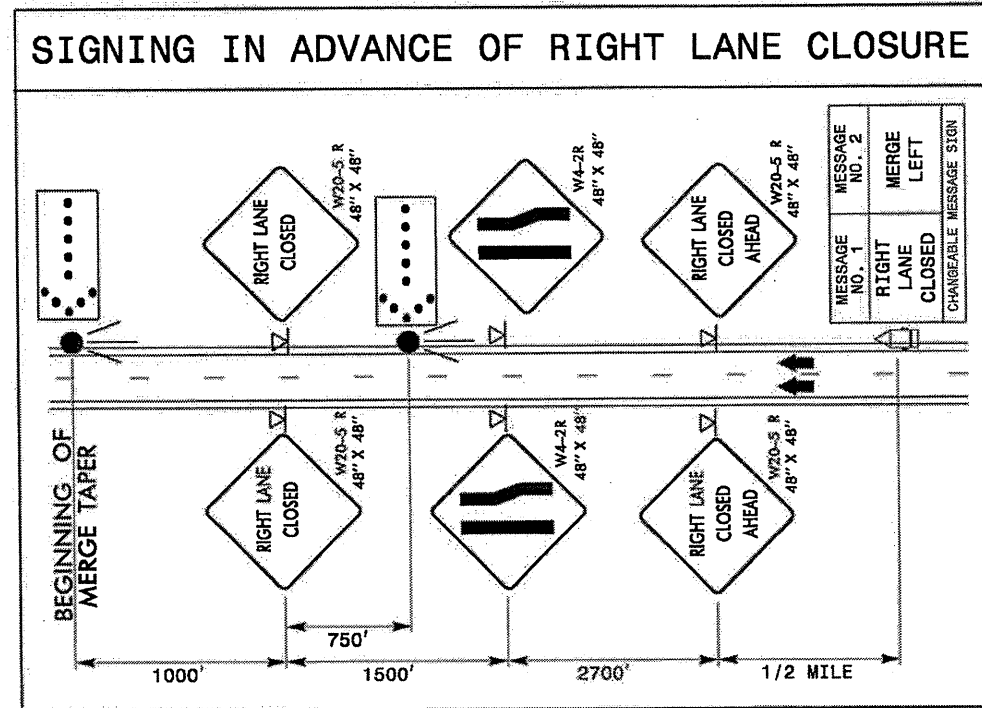
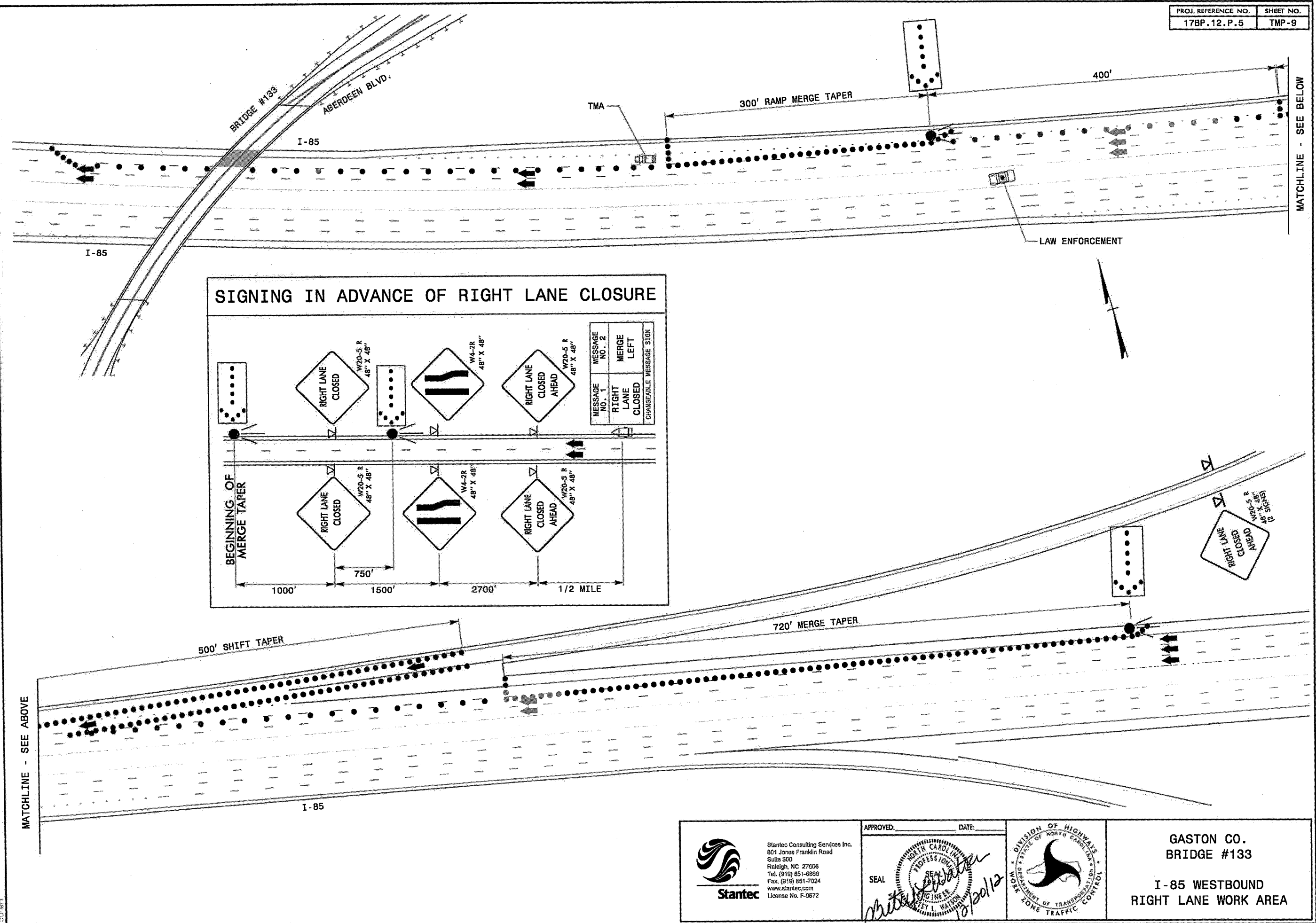
DIVISION OF HIGHWAYS
 NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL

GASTON CO.
BRIDGE #133
I-85 EASTBOUND
RIGHT LANE WORK AREA

MATCHLINE - SEE ABOVE

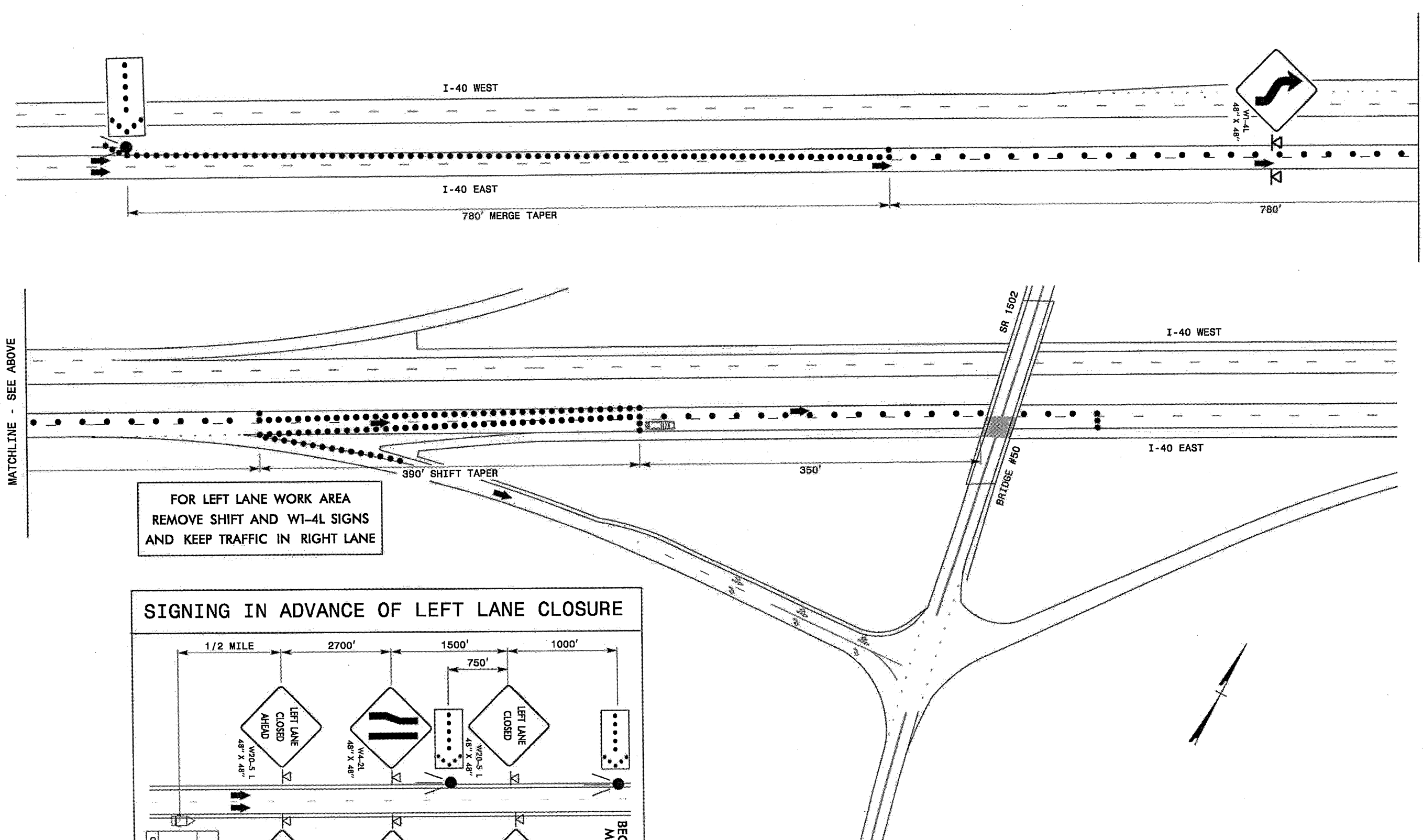
MATCHLINE - SEE BELOW

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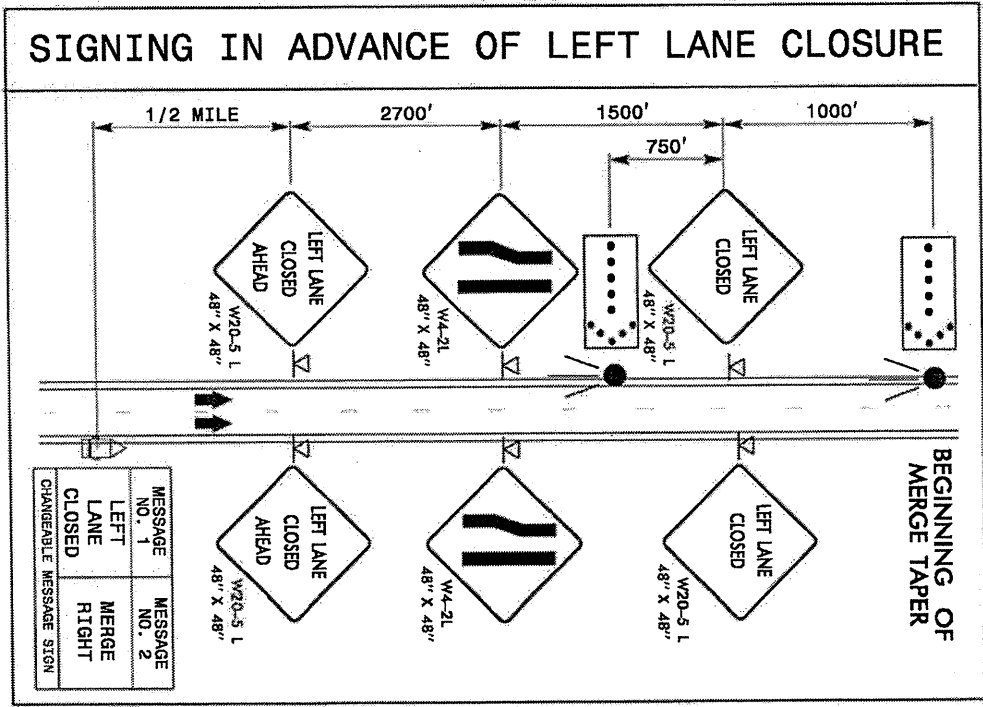


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|--|---------------------------------|--|---|

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FOR LEFT LANE WORK AREA
REMOVE SHIFT AND W1-4L SIGNS
AND KEEP TRAFFIC IN RIGHT LANE

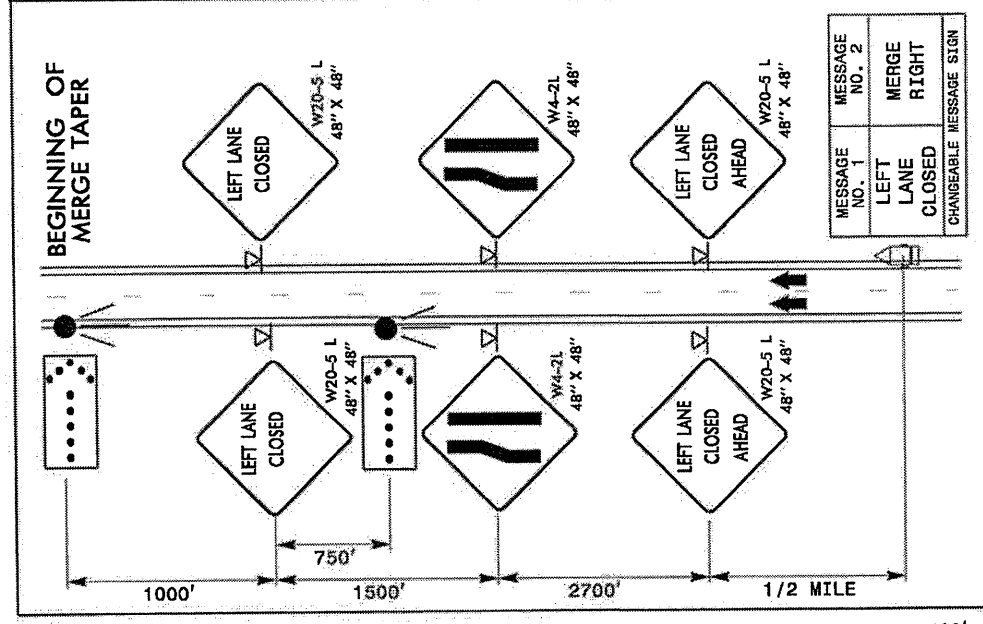


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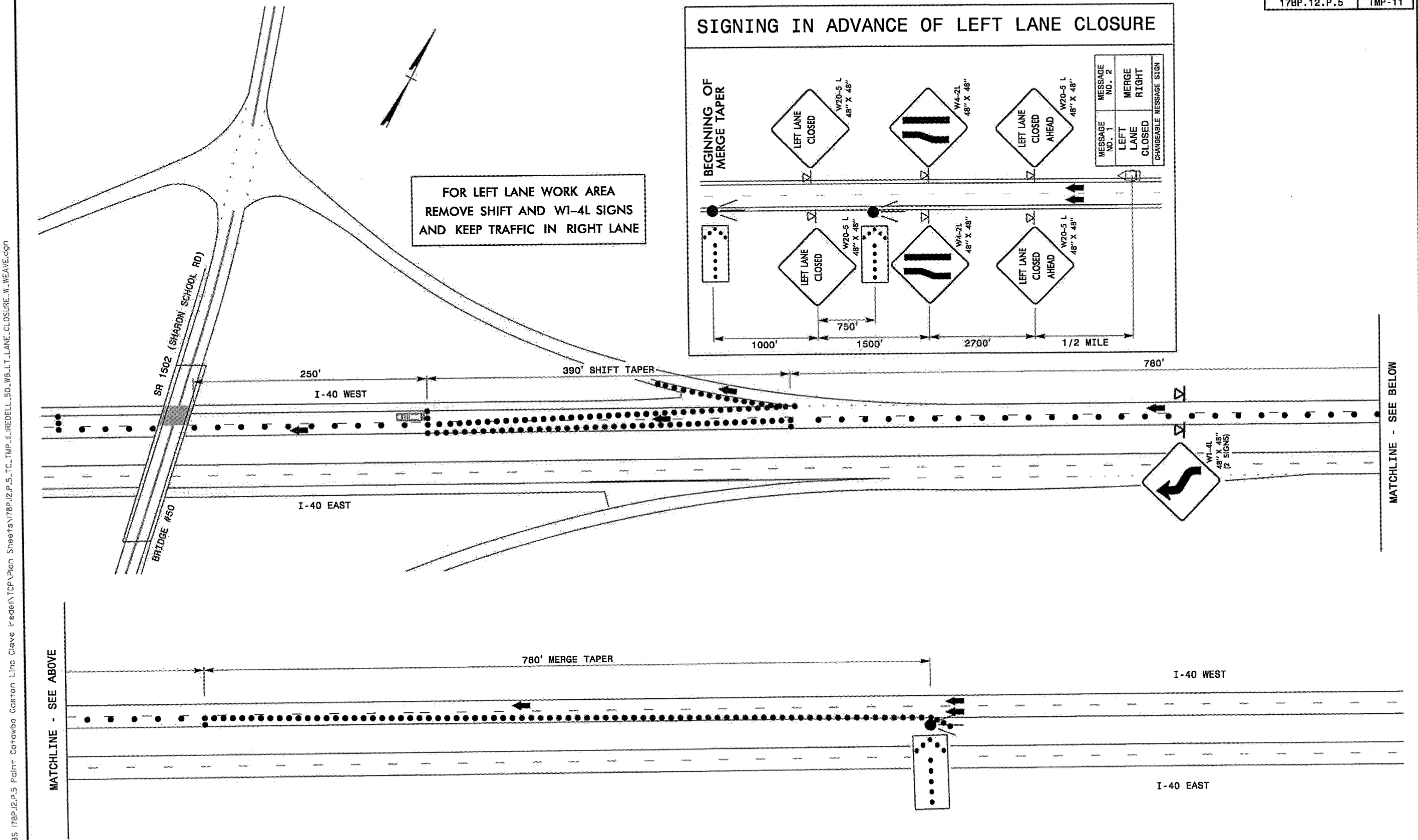
MATCHLINE - SEE ABOVE

MATCHLINE - SEE BELOW

SIGNING IN ADVANCE OF LEFT LANE CLOSURE



FOR LEFT LANE WORK AREA
REMOVE SHIFT AND W1-4L SIGNS
AND KEEP TRAFFIC IN RIGHT LANE



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| | | | |