

10/3/2011
J:\3\Structures\Bridge Group 2011\WBS 17BP.14.P.2 Jackson Co. #9, #7, & #106\Drawing\BP490106.tsh.dgn
09/08/11
emccullough

CONTRACT: DO00136 TIP PROJECT: WBS 17BP.14.P.2

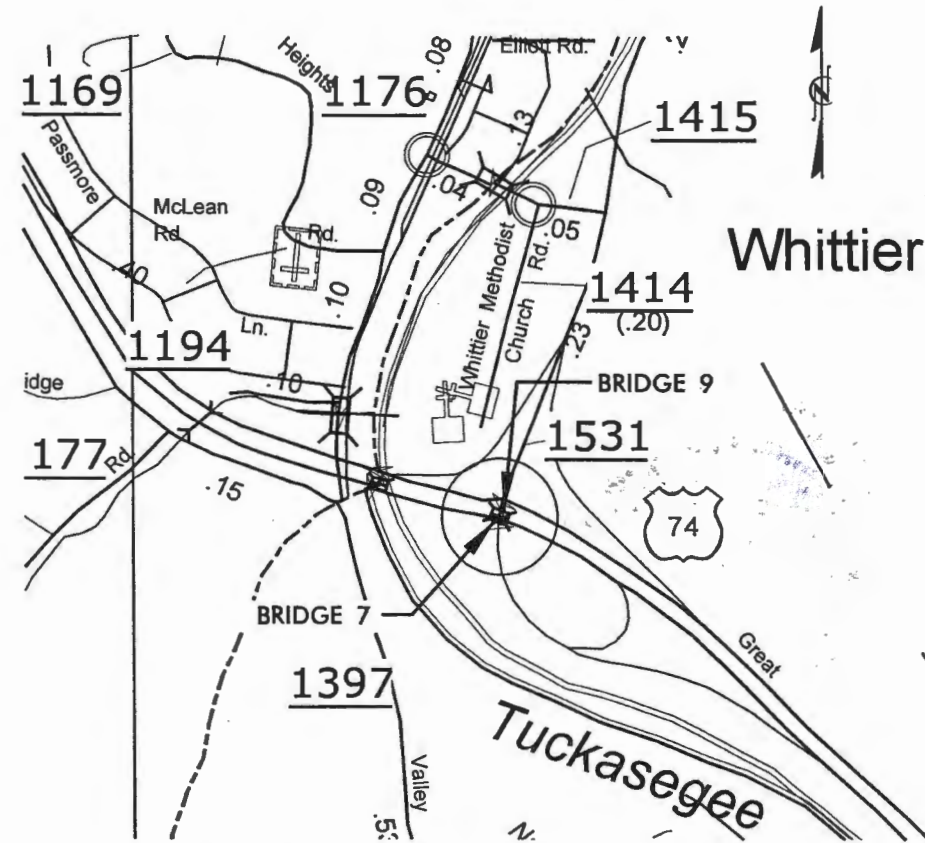


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

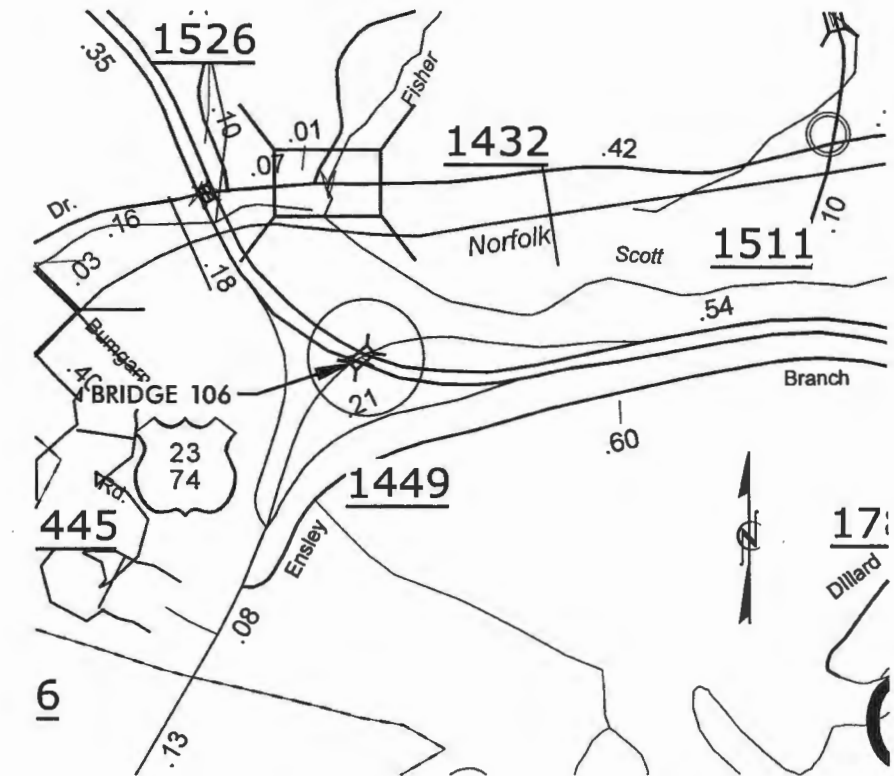
JACKSON COUNTY

LOCATION: BRIDGE 7 ON US 74 EBL OVER SR 1531
BRIDGE 9 ON US 74 EBL OVER SR 1531
BRIDGE 106 ON US 23 BUS. OVER US 74/US 23
TYPE OF WORK: BRIDGE DECK PRESERVATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.		1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
WBS 17BP.14.P.2		PE	
WBS 17BP.14.P.2		CONST.	



BRIDGE 7 & 9 LOCATION



BRIDGE 106 LOCATION

PROJECT LENGTH



PREPARED IN THE OFFICE OF:

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801 Jones Franklin Road
Raleigh, NC 27608
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Fax: (919) 851-7024
www.stantec.com
License No. P-2872

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2006 STANDARD SPECIFICATIONS

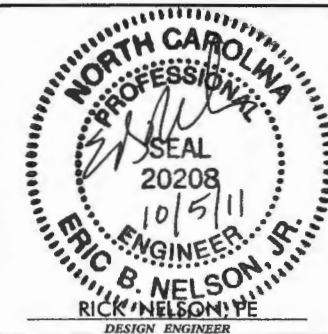
RIGHT OF WAY DATE:
N.A.

LETTING DATE:
OCTOBER 27, 2011

NCDOT CONTACT:

JOE KELVINGTON, PE
PROJECT ENGINEER

MIKE SUMMERS
BRIDGE MANAGEMENT PROJECT MANAGER



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



8/17/99

REVISIONS

9/30/2011 1071 Transportation\Design\Roadway\Jackson\007\PROJ\Jackson_007.dgn
of Lindgren

PAVEMENT SCHEDULE	
C1	PROP. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
Z	ASPHALT MILLING

TOTAL BILL OF MATERIALS	
SHOULDER RECONSTRUCTION	300 LF
MILLING ASPH. PAVEMENT, 2" DEPTH (PHASE I)	1010 SY
MILLING ASPH. PAVEMENT, 1.5-2.0" DEPTH (PHASE I)	360 SY
MILLING ASPH. PAVEMENT, 0-1.0" DEPTH (PHASE II)	360 SY
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	50 TONS
ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22	3 TONS
REMOVE AND RESET EXISTING GUARDRAIL	160 LF

PROJECT REFERENCE NO.
WBS 17BPJ4P2

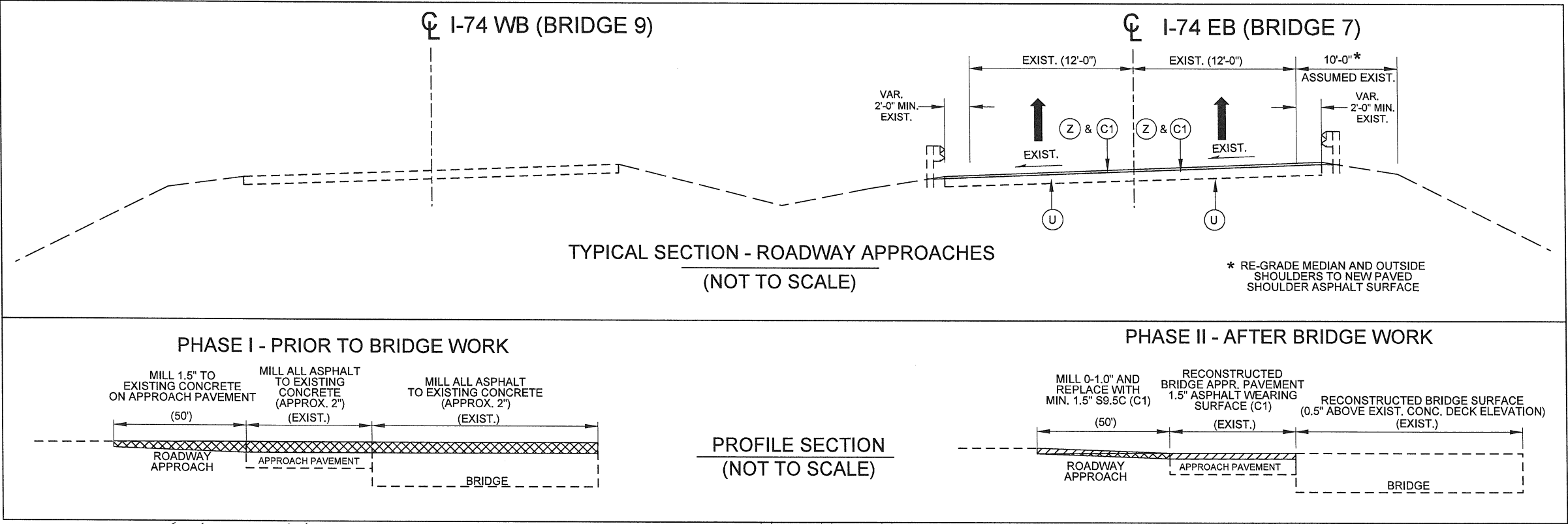
SHEET NO.
RDY-1

ROADWAY DESIGN
ENGINEER

SEAL
25513

ENGINEER
MICHAEL D. LINDGREN

9.30.2011



74 US 23/74 GREAT SMOKEY MOUNTAIN EXPRESSWAY

BRIDGE #9

WB

REMOVE AND RESET EXISTING GUARDRAIL AS NECESSARY WITHIN THE PROJECT LIMITS

40' F-F

BRIDGE #7

EB

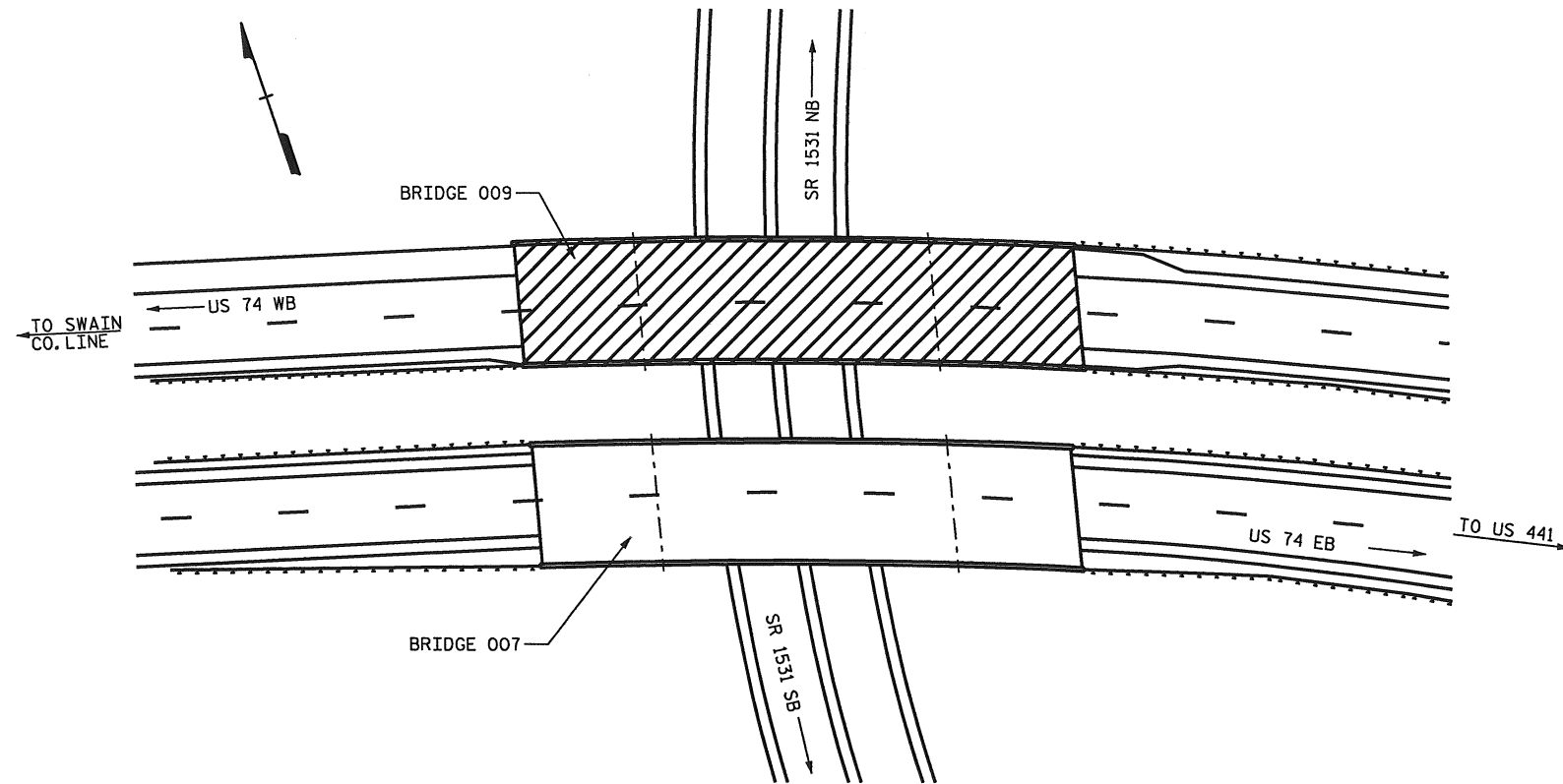
50' (TYP.)

ESTIMATED LENGTH EXISTING APPROACH PAVEMENT AT 20' (TYP.)

SR 1531 (BELOW)


DISCLAIMER: THIS PROJECT HAS NOT BEEN SURVEYED. EXISTING TOPOGRAPHY WAS CREATED FROM AERIAL PHOTOGRAPHY NOT ACTUAL SURVEY.

NOTES:
1. ALL EROSION CONTROL MEASURES SHALL ADHERE TO NCDOT STANDARDS.



BRIDGE 007 ON US 74 EBL

LOCATION: BRIDGE 490007, US 74 EBL OVER SR 1531 1.6 MILES
WEST OF JUNCTION US 441

 BRIDGE 009, US 74 WB SEE DWGS. S009-1 THRU S009-7

BRIDGE 007 ON US 74

TOTAL BILL OF MATERIAL

SCARIFYING BRIDGE DECK	CLASS I * SURFACE PREPARATION	CLASS II * SURFACE PREPARATION	CLASS III * SURFACE PREPARATION	HYDRO- DEMOLITION OF BRIDGE DECK	CLASS AA * CONCRETE	LATEX MODIFIED CONCRETE	PLACING & FINISHING OF LATEX MODIFIED CONCRETE	EVAZOTE JOINT SEALS	GROOVING BRIDGE FLOORS
SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.
817	793	23	1	817	1	34	817	LUMP SUM	7113

* QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYP. "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL.

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S007-5	DECK REPAIR DETAILS
S007-6	DECK REPAIR DETAILS
S007-7	JOINT DETAILS
TMP-1 THRU 7A	TRANSPORTATION MANAGEMENT PLAN

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____



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CHECKED BY : J. T. KELVINGTON DATE : 9/12/11

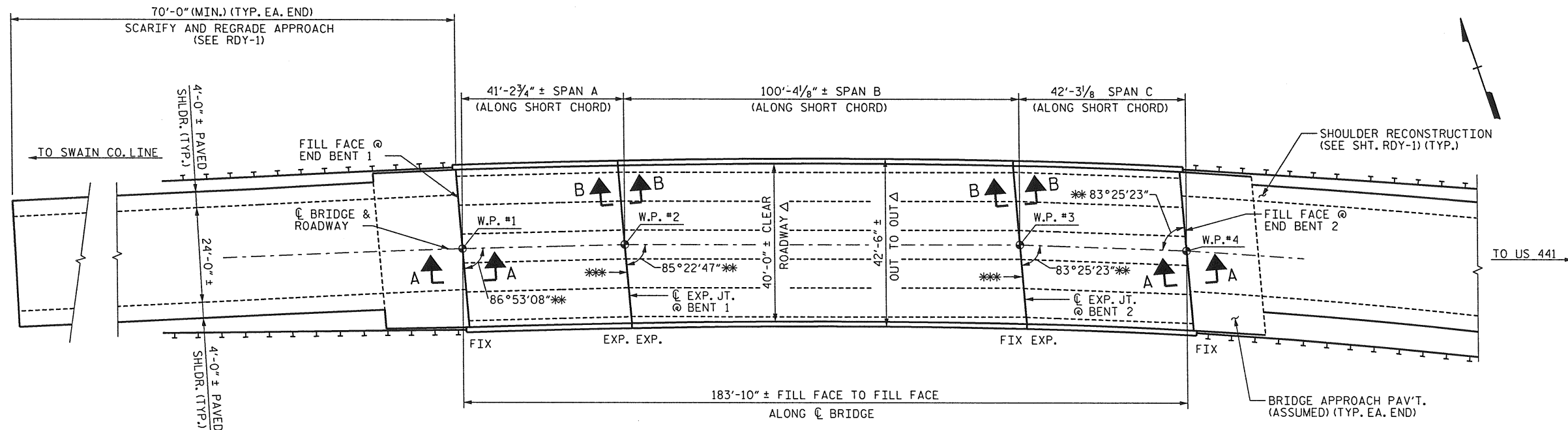
Joseph Kelvington
9/30/11
NORTH CAROLINA
PROFESSIONAL
ENGINEER
SEAL
13406
JOSEPH T. KELVINGTON

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

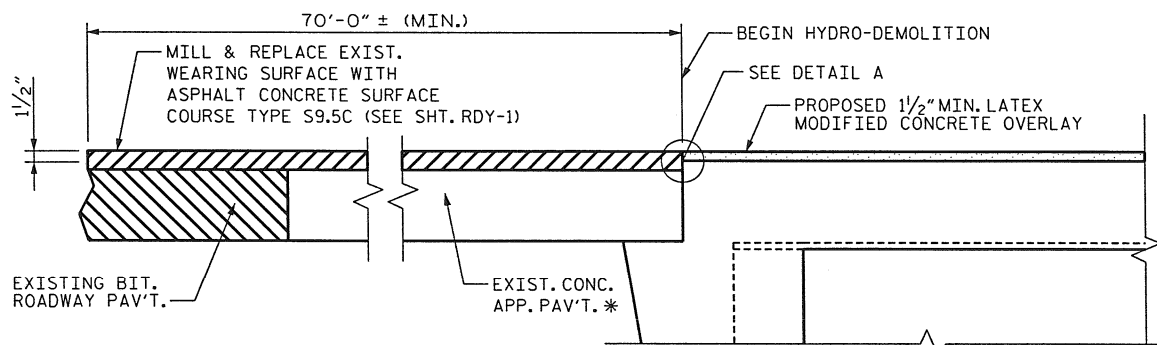
DECK REHAB. FOR BRIDGE NO. 007

REVISIONS						SHEET NO. S007-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

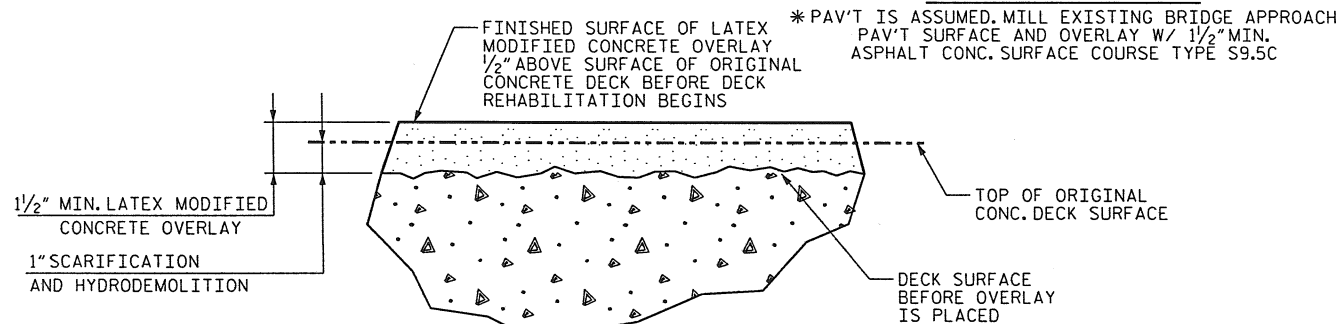


PLAN OF SPANS A-C

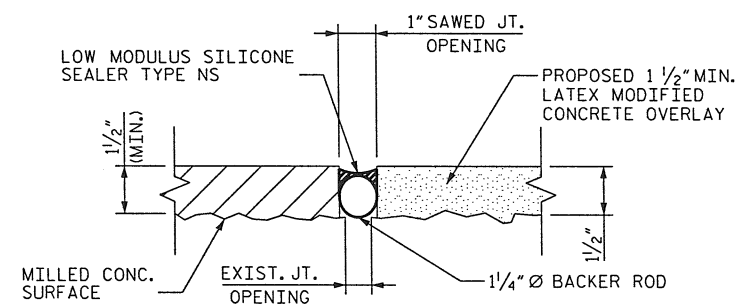
- *** EXISTING EXP. JOINT COVERED W/ ELASTOMETRIC CONCRETE TO BE REMOVED.
- * ANGLES SHOWN ARE MEASURED TO SHORT CHORDS
- Δ NOTE: ALL HORIZONTAL DIMENSIONS ARE RADIAL OR ARC DIMENSIONS UNLESS NOTED OTHERWISE.



SECTION A-A



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



DETAIL A

CONCRETE JOINT SEAL @ END BENT

NOTES:

EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S007-5 AND S007-6.

FOR LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SECTION B-B, SEE SHT. NO. S007-7.

1/4\"/>

PROJECT NO. WBS 17BP.14.P.2

JACKSON COUNTY

STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF BRIDGE

DECK REHAB. FOR BRIDGE NO. 007

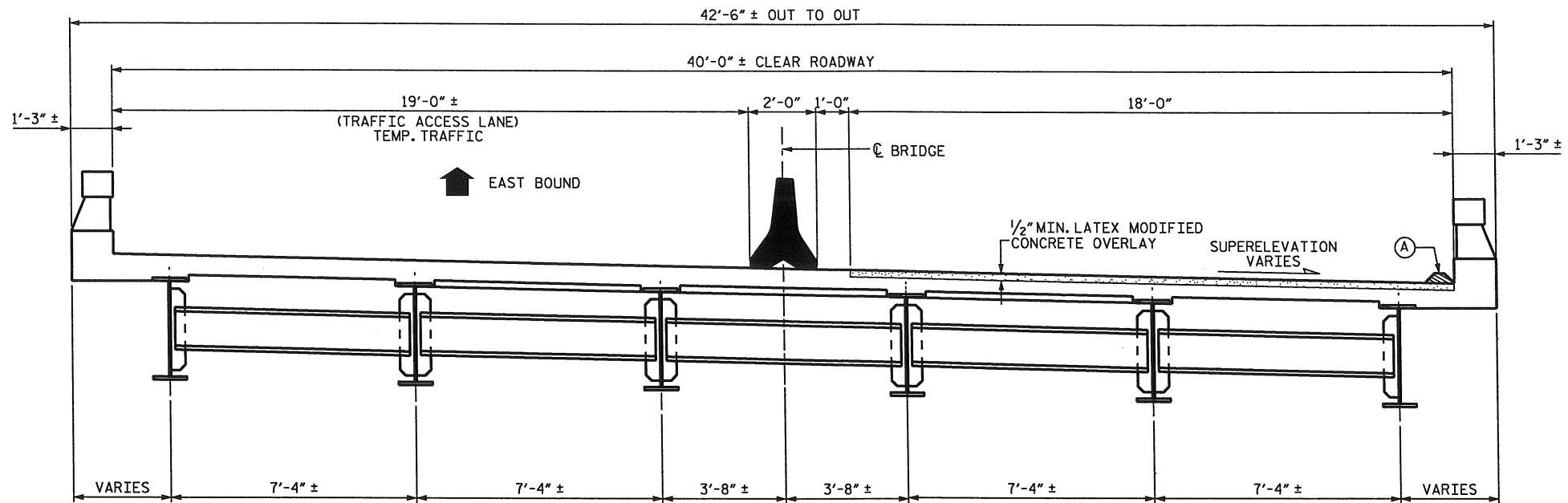
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2			4			



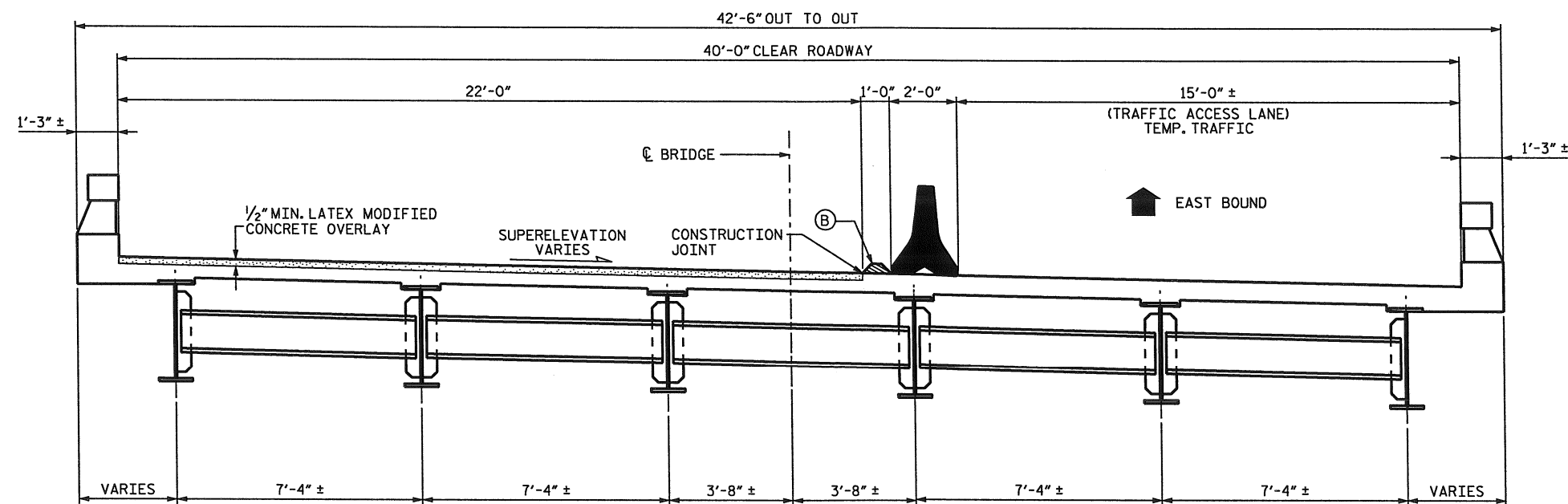
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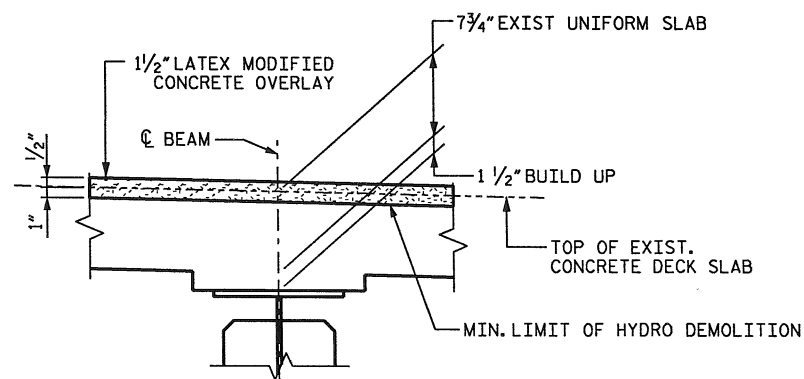
Joseph T. Kelvington
9/20/11
Professional Engineer Seal
13406
JOSEPH T. KELVINGTON



EBL CONSTRUCTION
SPANS A AND C



EBL CONSTRUCTION
SPANS A AND C



EXIST. SLAB BUILDUP

NOTES:

SPANS A-C (W33 ROLLED BEAM) SHOWN.

ALL HORIZONTAL DIMENSIONS SHOWN ARE RADIAL.

WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

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

- (A) DAM AS REQ'D. NEAR EXISTING EXP. JTS. TO SEAL EXP. JTS.
(B) DAM CONTINUOUSLY ALONG BARRIER.

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE TYPICAL SECTION
SPANS A AND C

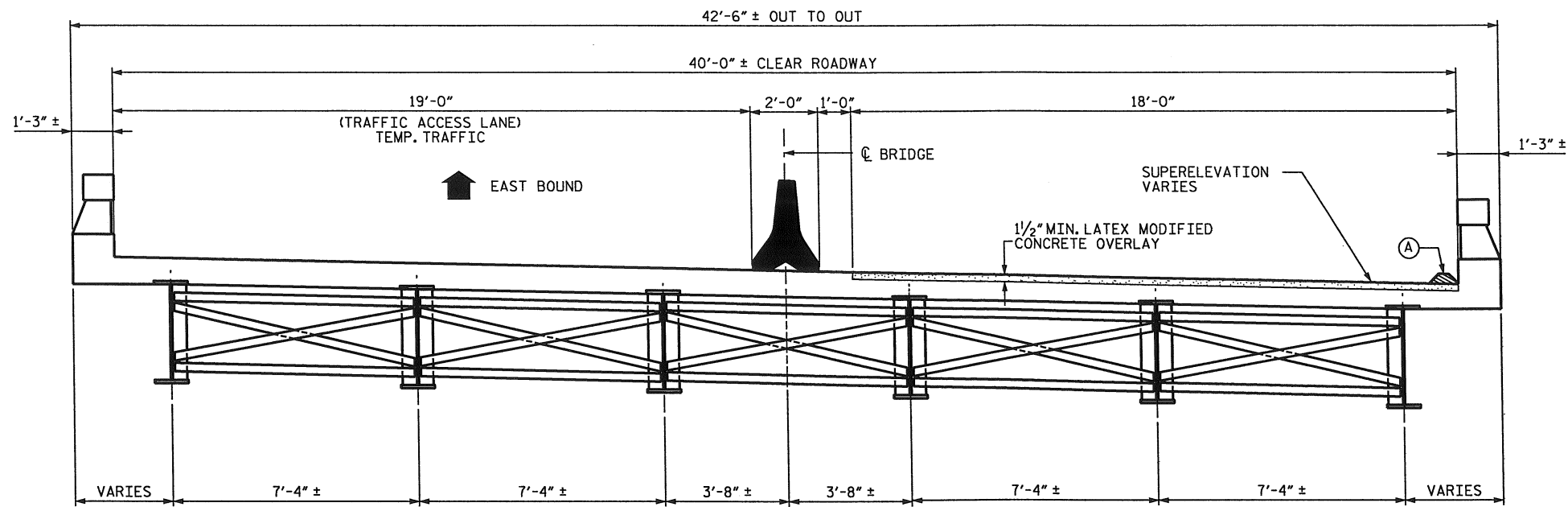
DECK REHAB. FOR BRIDGE NO. 007

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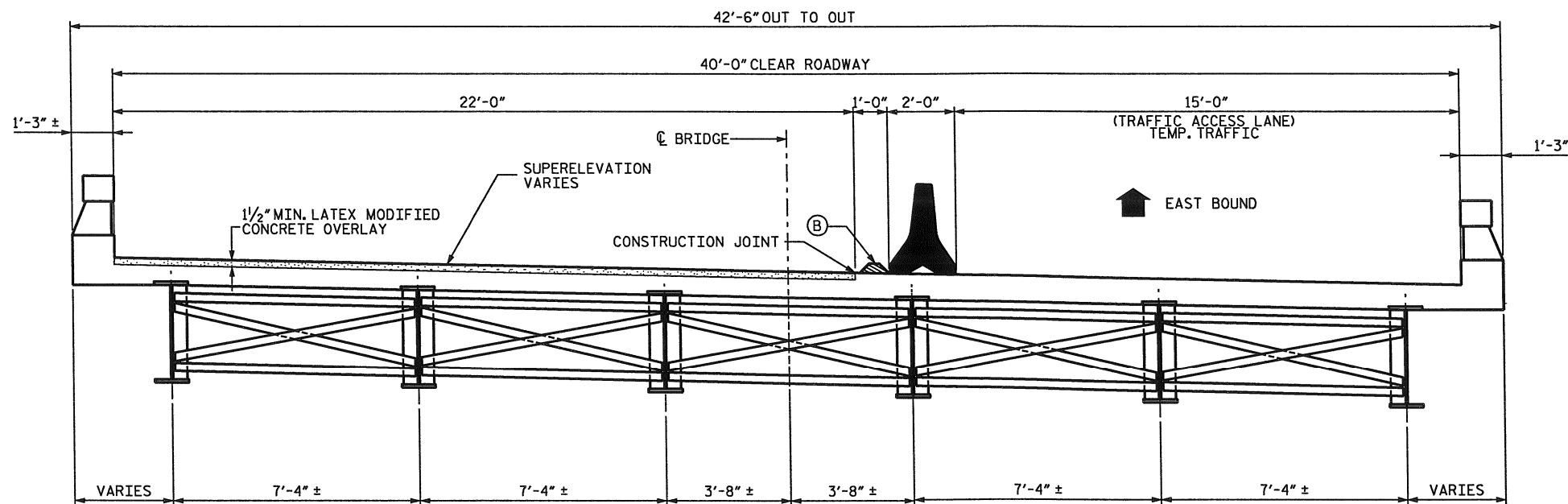


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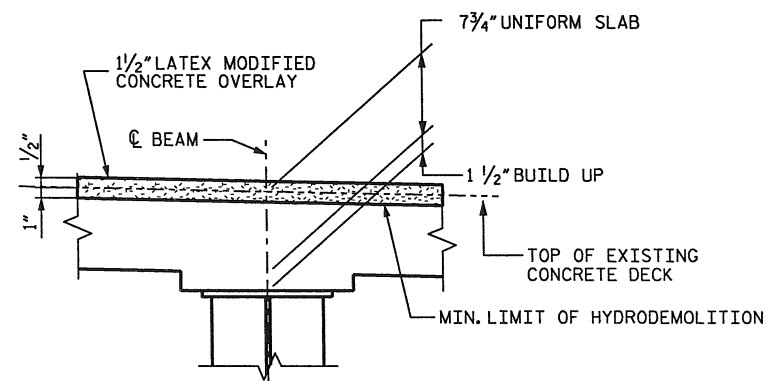
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CHECKED BY: J. T. KELVINGTON DATE: 9/12/11



EBL CONSTRUCTION
SPAN B



EBL CONSTRUCTION
SPAN B



EXIST. SLAB BUILDUP

NOTES:

SPANS B (STR. STEEL PLATE GIRDER SPAN) SHOWN.

ALL HORIZONTAL DIMENSIONS SHOWN ARE RADIAL.

WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

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

(A) DAM AS REQ'D. NEAR EXISTING EXP. JTS. TO SEAL EXP. JTS.

(B) DAM CONTINUOUSLY ALONG BARRIER.

PROJECT NO. WBS 17BP.14.P.2

JACKSON COUNTY

STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE TYPICAL SECTION
SPAN B

DECK REHAB. FOR BRIDGE NO. 007

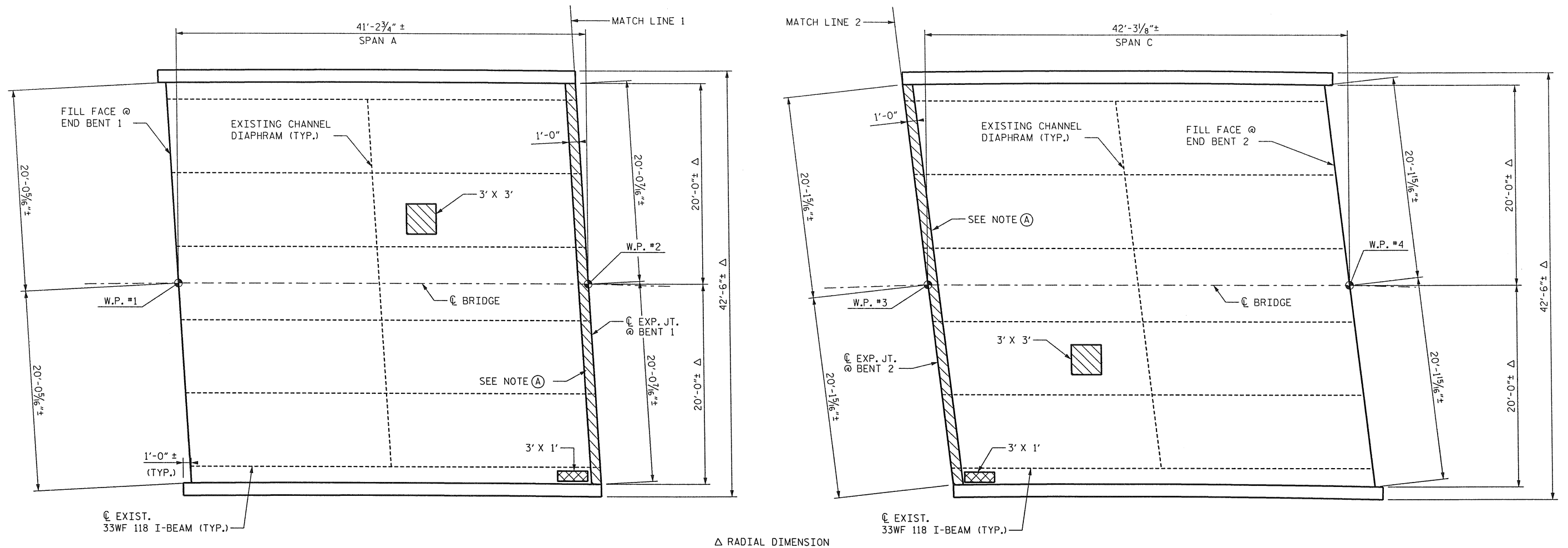
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1			3			TOTAL SHEETS 7
2			4			



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CHECKED BY : J. T. KELVINGTON DATE : 9/12/11

14.P.2 Jackson Co., #3, #7, & #106\Bridg 007\Drawing\XXXXBP490007.Repair-Plan1.dgn 9/30/2011 2:33:04 PM cmccullough



PLAN OF SPANS A & C - DECK REPAIRS

① MAXIMUM ESTIMATED SURFACE PREPARATION REQUIRED FOR JOINT SEAL INSTALLATION. DECK REPAIR WORK IS LIMITED TO REMOVAL OF ALL UNSOUND CONCRETE AND SURFACE PREPARATION FOR JOINT SEAL CONSTRUCTION.

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO-DEMOLITION.

SEE HYDRO-DEMOLITION SPECIAL PROVISIONS.

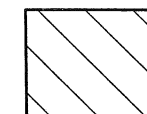
CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

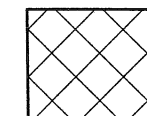
SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

CONTRACTOR, AT HIS OPTION, MAY CHOOSE TO MONITOR HYDRO-DEMOLITION WORK AND CONTROL TRAFFIC UNDER THE BRIDGE IN LIEU OF BLOW THRU CONTAINMENT. SEE TRANSPORTATION MANAGEMENT PLANS.



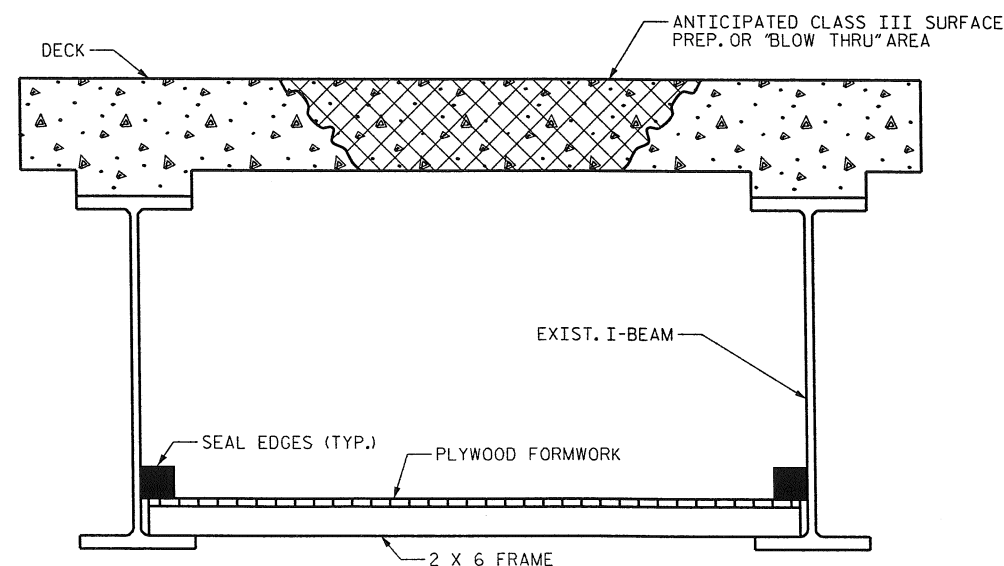
CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

NOTES:

L' X W' = LENGTH OF AREA ALONG @ BRIDGE X
WIDTH OF AREA NORMAL TO @ BRIDGE



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK



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CHECKED BY : J. T. KELVINGTON DATE : 9/12/11

PROJECT NO. WBS 17BP.14.P.2

JACKSON COUNTY

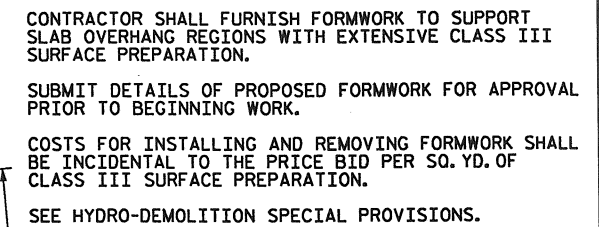
STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

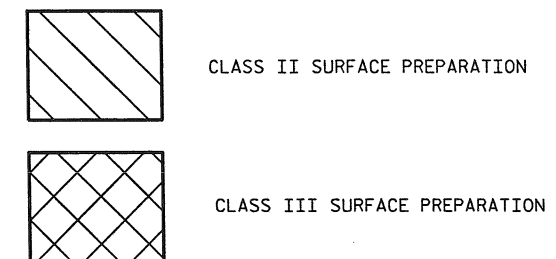
DECK REPAIR DETAILS
SPANS A & C

DECK REHAB. FOR BRIDGE NO. 007

REVISIONS						SHEET NO. S007-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 7
2			4			



④ MAXIMUM ESTIMATED SURFACE PREPARATION REQUIRED FOR JOINT SEAL INSTALLATION. DECK REPAIR WORK IS LIMITED TO REMOVAL OF ALL UNSOUND CONCRETE AND SURFACE PREPARATION FOR JOINT SEAL CONSTRUCTION.



L' X W' = LENGTH OF AREA ALONG C BRIDGE X
WIDTH OF AREA NORMAL TO C BRIDGE

CONTRACTOR, AT HIS OPTION, MAY CHOOSE TO MONITOR HYDRO-DEMOLITION WORK AND CONTROL TRAFFIC UNDER THE BRIDGE IN LIEU OF BLOW THRU CONTAINMENT. SEE TRANSPORTATION MANAGEMENT PLANS.

STATION: _____

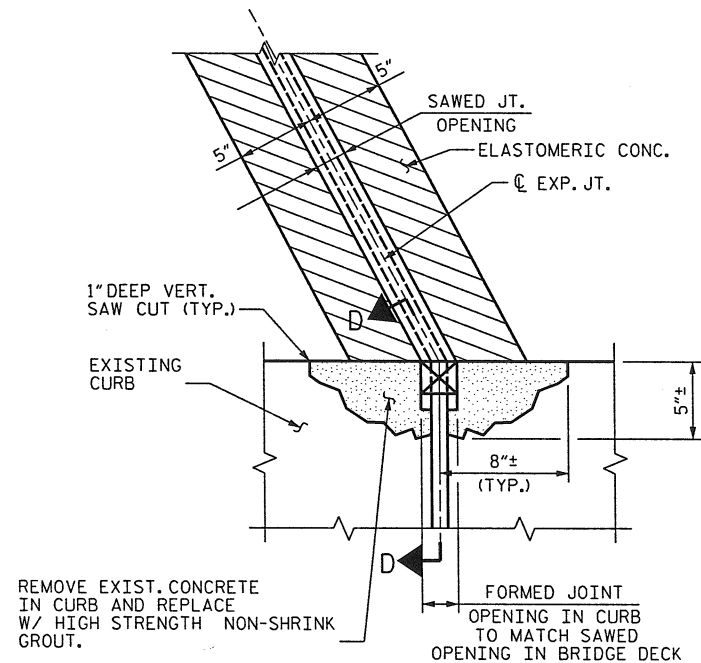
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2			4			



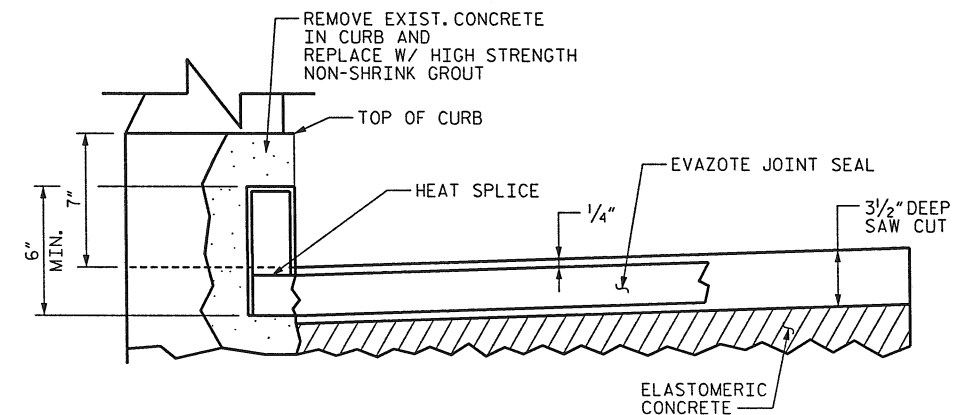
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CHECKED BY : J. T. KELVINGTON DATE : 9/12/11

TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

2:35:58 PM omccullough 9/30/2011 #16\Bridg 007\DrawIng\BP490007_RepdIrPlan2.dgn

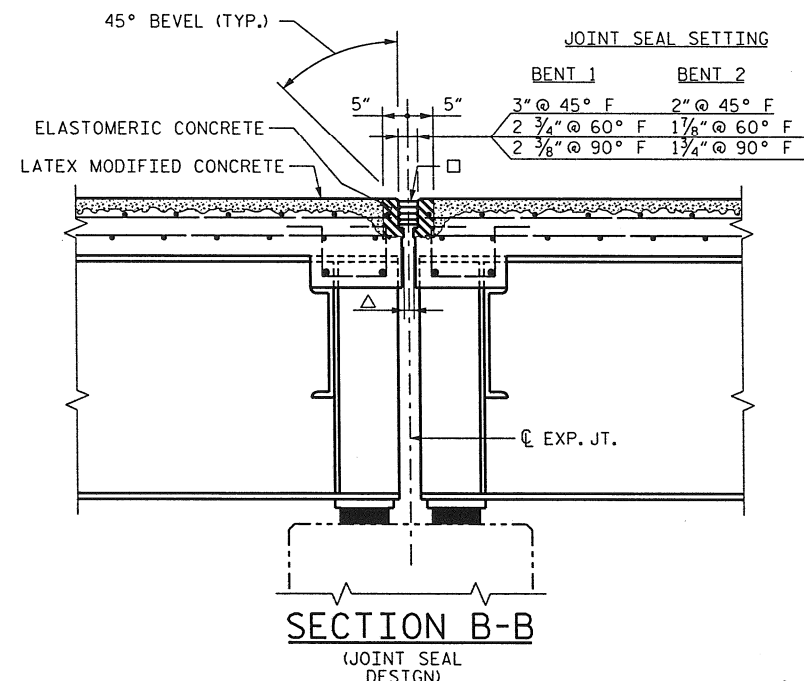
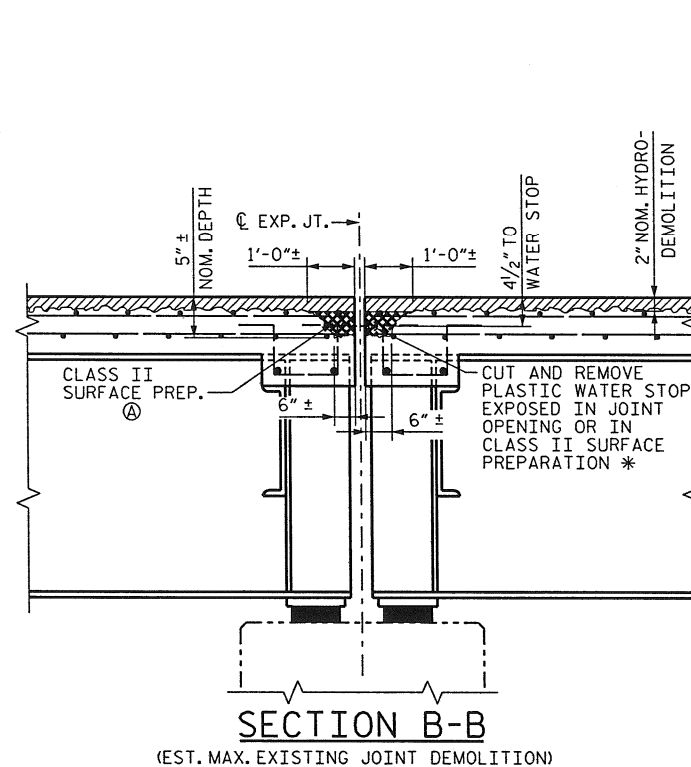
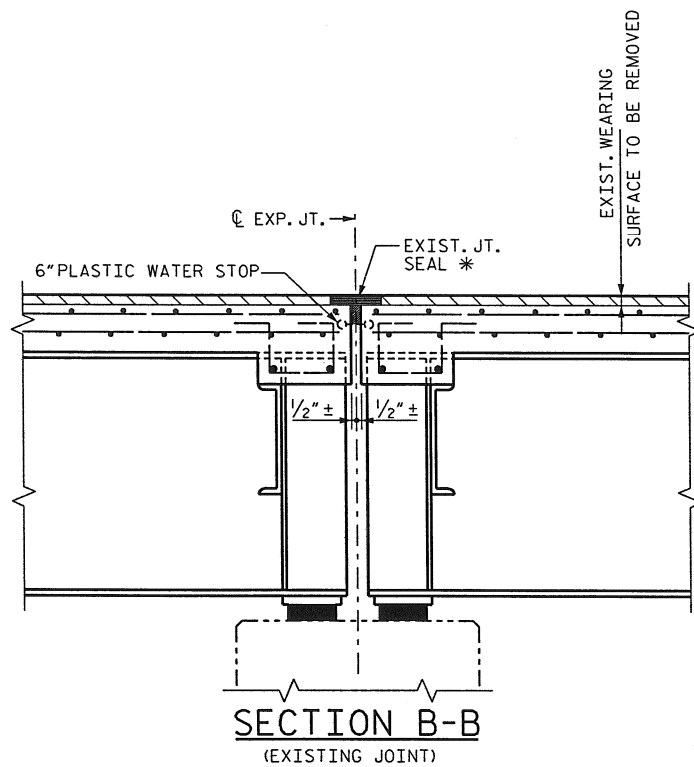


PARTIAL PLAN @ JOINT



SECTION D-D

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.
FOR HIGH STRENGTH GROUT, SEE SPECIAL PROVISIONS.
HIGHT STRENGTH GROUT SHALL BE APPROVED BY THE ENGINEER.



ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	13.4 C.F.
BENT 2	13.4 C.F.

TOTAL ELASTOMERIC CONC. = 26.8 C.F.
TOTAL ELASTOMERIC CONC. = 1.0 C.Y.

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION JOINT DETAILS

DECK REHAB. FOR BRIDGE NO. 007

REVISIONS						SHEET NO. S007-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 7
2			4			



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Ⓐ CLASS II SURFACE PREPARATION ONLY AS REQUIRED TO REMOVE UNSOUND CONCRETE AND PREPARE SURFACE FOR ELASTOMERIC CONCRETE.

NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.

* FROM BEST AVAILABLE INFORMATION.

ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED. MATERIALS NOT EXPOSED BY CLASS II REPAIR SHALL REMAIN.

- ☐ USE 3.75" X 3" UNCOMPRESSED EVAZOTE JT. SEAL MATERIAL @ BENT 1
- ☐ USE 2.8125" X 2" UNCOMPRESSED EVAZOTE JT. SEAL MATERIAL @ BENT 2
- △ 1 3/4" FORMED OPENING @ BENT 1
- △ 1 1/4" FORMED OPENING @ BENT 2

John Kelvington
10/30/11
SEAL 13406
JOHN T. KELVINGTON
PROFESSIONAL ENGINEER
NORTH CAROLINA

TOTAL BILL OF MATERIALS	
SHOULDER RECONSTRUCTION	300 LF
MILLING ASPH. PAVEMENT, 2" DEPTH (PHASE I)	1030 SY
MILLING ASPH. PAVEMENT, 1.5-2.0" DEPTH (PHASE I)	390 SY
MILLING ASPH. PAVEMENT, 0-1.0" DEPTH (PHASE II)	390 SY
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	50 TONS
ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22	3 TONS
REMOVE AND RESET EXISTING GUARDRAIL	160 LF

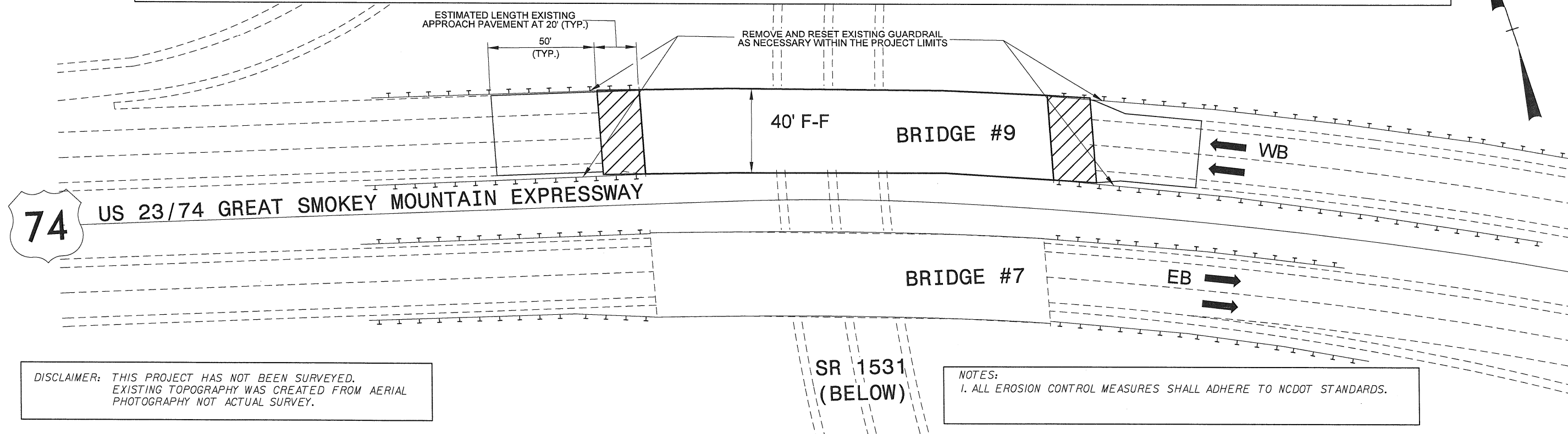
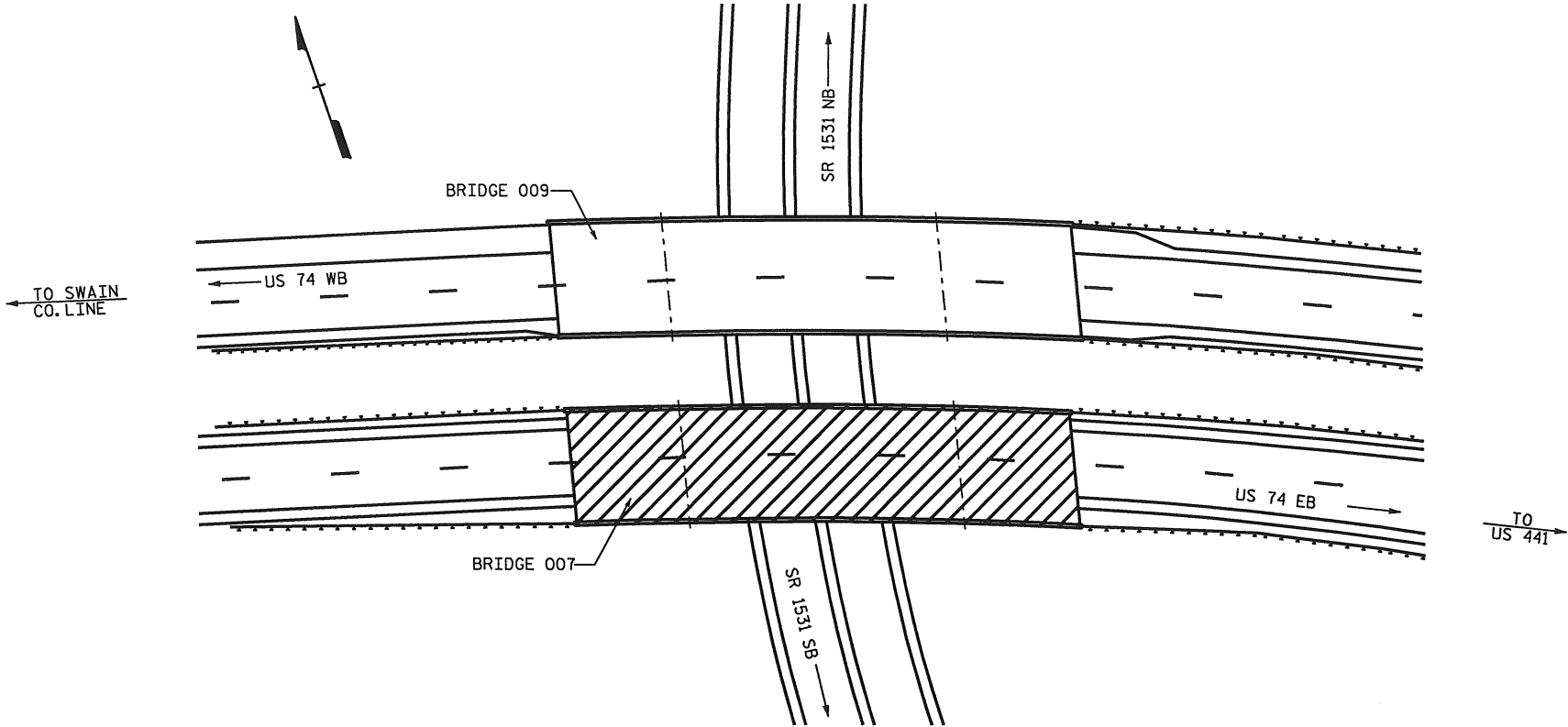



TABLE OF CONTENTS

DWG.	DESCRIPTION
RDY-2	ROADWAY PLAN & DETAILS
S009-1	LOCATION SKETCH & TOTAL BILL OF MATERIAL
S009-2	PLAN OF BRIDGE
S009-3	BRIDGE TYPICAL SECTION
S009-4	BRIDGE TYPICAL SECTION
S009-5	DECK REPAIR DETAILS
S009-6	DECK REPAIR DETAILS
S009-7	JOINT DETAILS
TMP-1 THRU 7A	TRANSPORTATION MANAGEMENT PLAN



BRIDGE 009 ON US 74 WBL

LOCATION: BRIDGE 490009, US 74 WBL OVER SR 1531 1.6 MILES
WEST OF JUNCTION US 441

 BRIDGE 007, US 74 EB SEE DWGS. S007-1 THRU S007-7

BRIDGE 009 ON US 74

TOTAL BILL OF MATERIAL

SCARIFYING BRIDGE DECK	CLASS I * SURFACE PREPARATION	CLASS II * SURFACE PREPARATION	CLASS III * SURFACE PREPARATION	HYDRO- DEMOLITION OF BRIDGE DECK	CLASS AA * CONCRETE	LATEX MODIFIED CONCRETE	PLACING & FINISHING OF LATEX MODIFIED CONCRETE	EVAZOTE JOINT SEALS	GROOVING BRIDGE FLOORS
SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.
848	824	23	1	848	1	35	848	LUMP SUM	7392

* QUANTITIES SHOWN ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYP. "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL.

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____



Stantec Consulting Services Inc.
801 Jones Franklin Road
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Fax. (919) 851-7024
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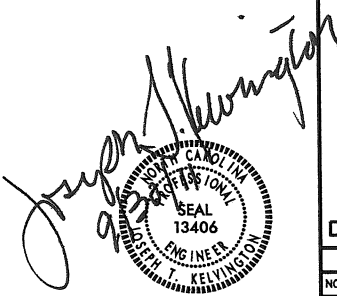
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CHECKED BY : J. T. KELVINGTON DATE : 05-27-11

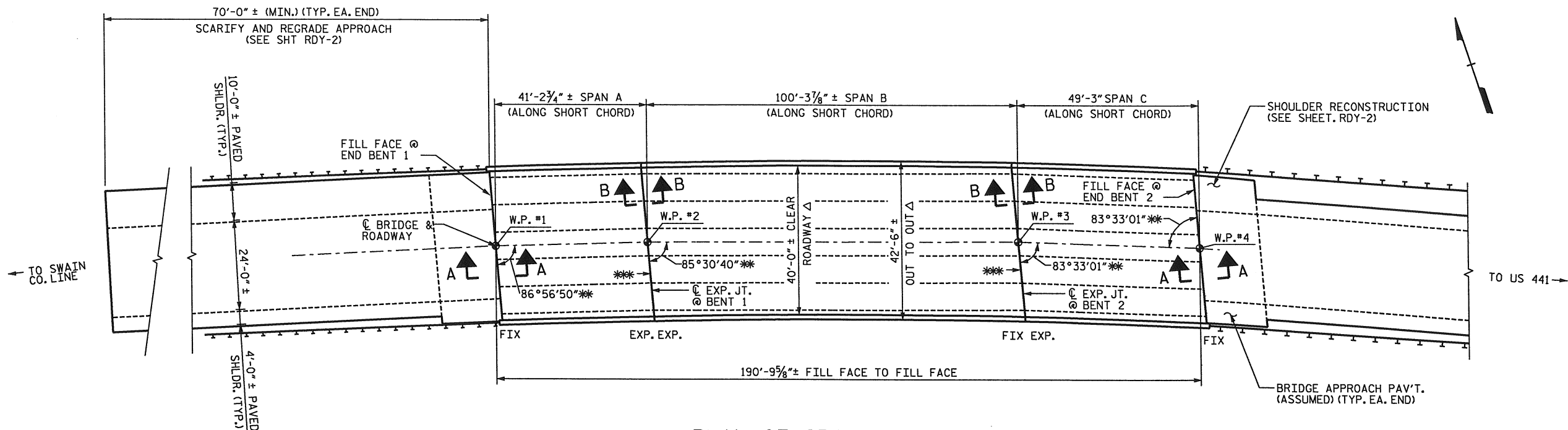
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 009

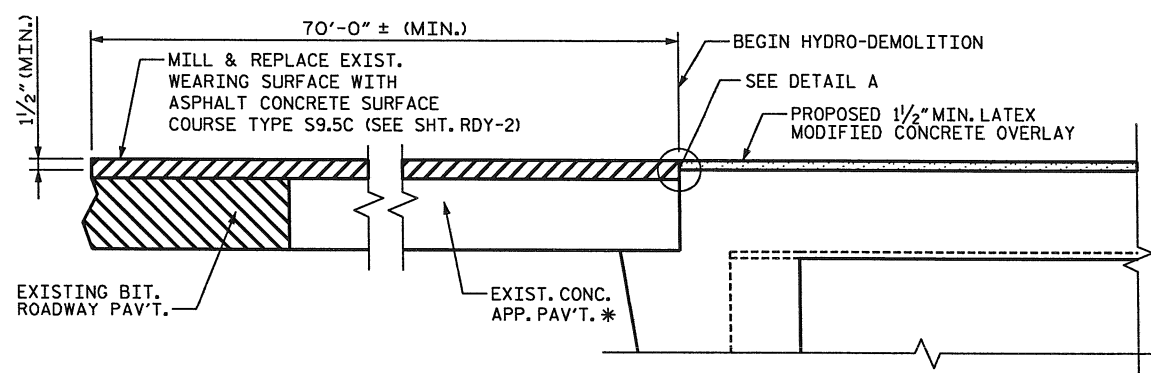
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2			4			



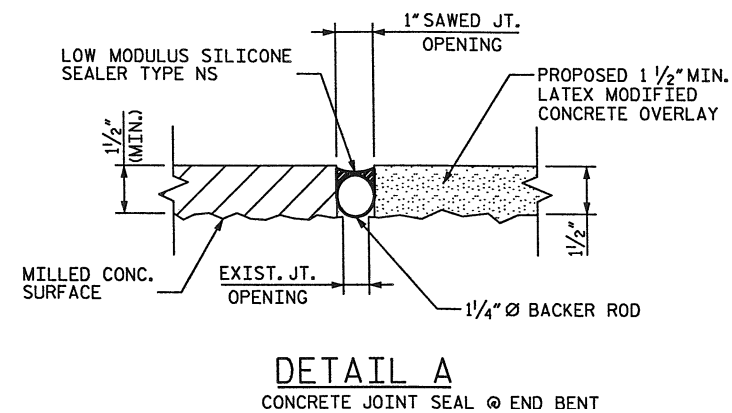
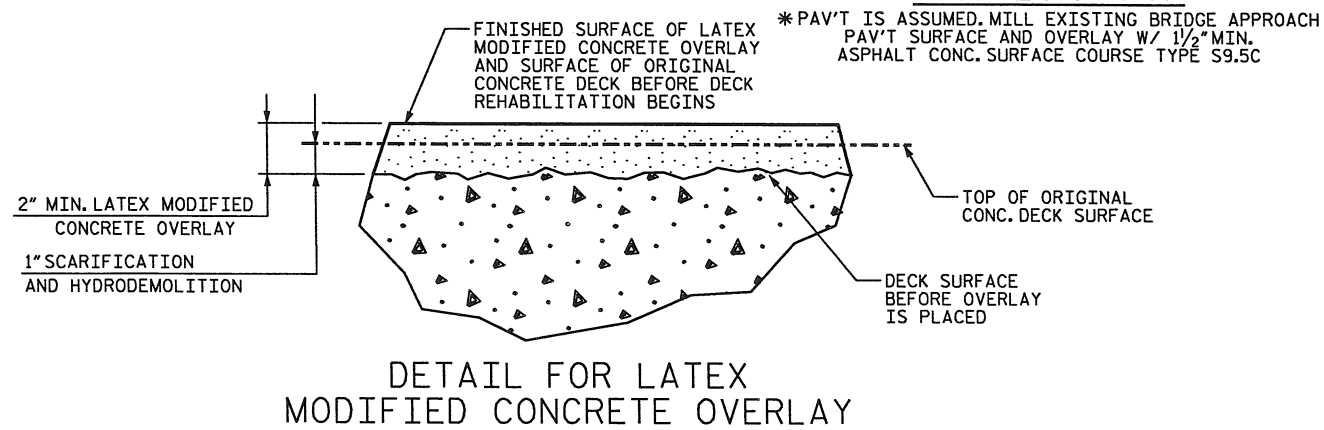


PLAN OF SPANS A-C

*** EXISTING EXP. JT. COVERED W/ ELASTOMERIC CONCRETE TO BE REMOVED.
 ** ANGLES SHOWN ARE MEASURED TO SHORT CHORDS
 Δ NOTE: ALL HORIZONTAL DIMENSIONS ARE RADIAL OR ARC DIMENSIONS UNLESS NOTED OTHERWISE.



SECTION A-A



NOTES:

EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S009-5 AND S009-6.

FOR LATEX MODIFIED CONCRETE SEE SPECIAL PROVISIONS.

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SECTION B-B, SEE SHT. NO. S009-7.

1/4" BACKER ROD SHALL BE CLOSED CELL EXPANDED POLYETHYLENE FOAM TYPE I. PLACE BACKER ROD TO WITHIN 1'-0" OF EXISTING CURB FACE. NO SEPARATE PAYMENT FOR LABOR, MATERIALS, AND EQUIPMENT NEEDED TO CONSTRUCT CONCRETE JOINT SEALS SHALL BE MADE. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
 STATION: _____



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DRAWN BY : C. T. MCCULLOUGH DATE : 05-27-11
 CHECKED BY : J. T. KELVINGTON DATE : 05-27-11

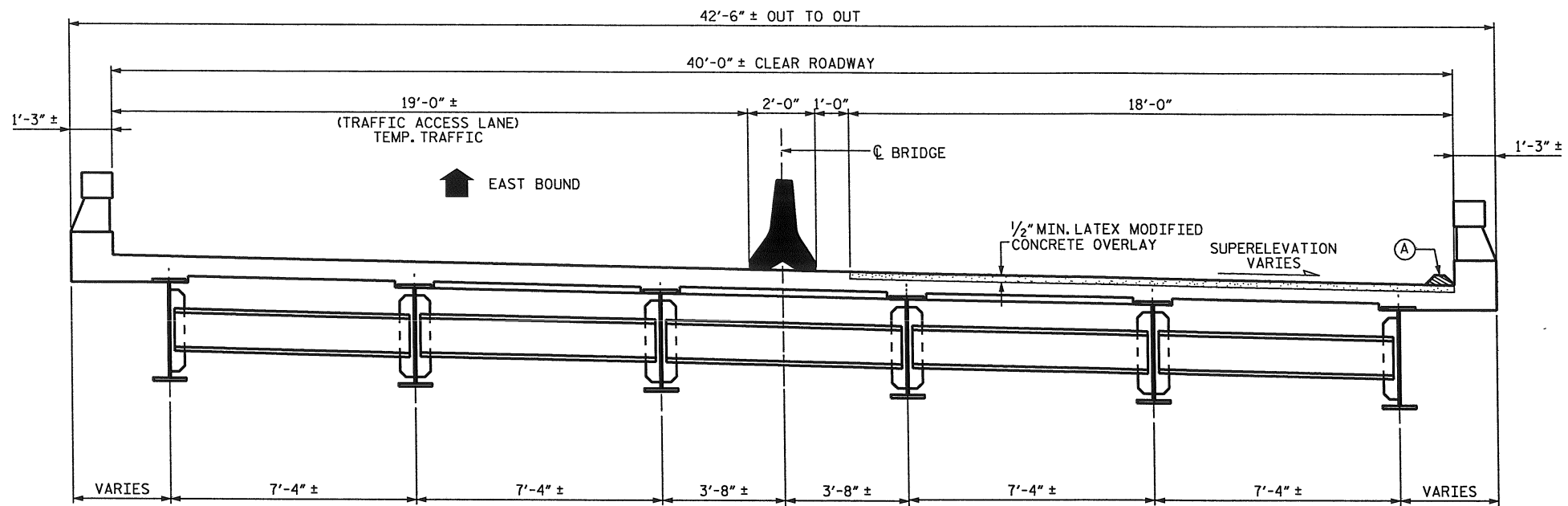
Joseph J. Kelvington
 SEAL
 13406
 ENGINEER
 NORTH CAROLINA
 J. T. KELVINGTON

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

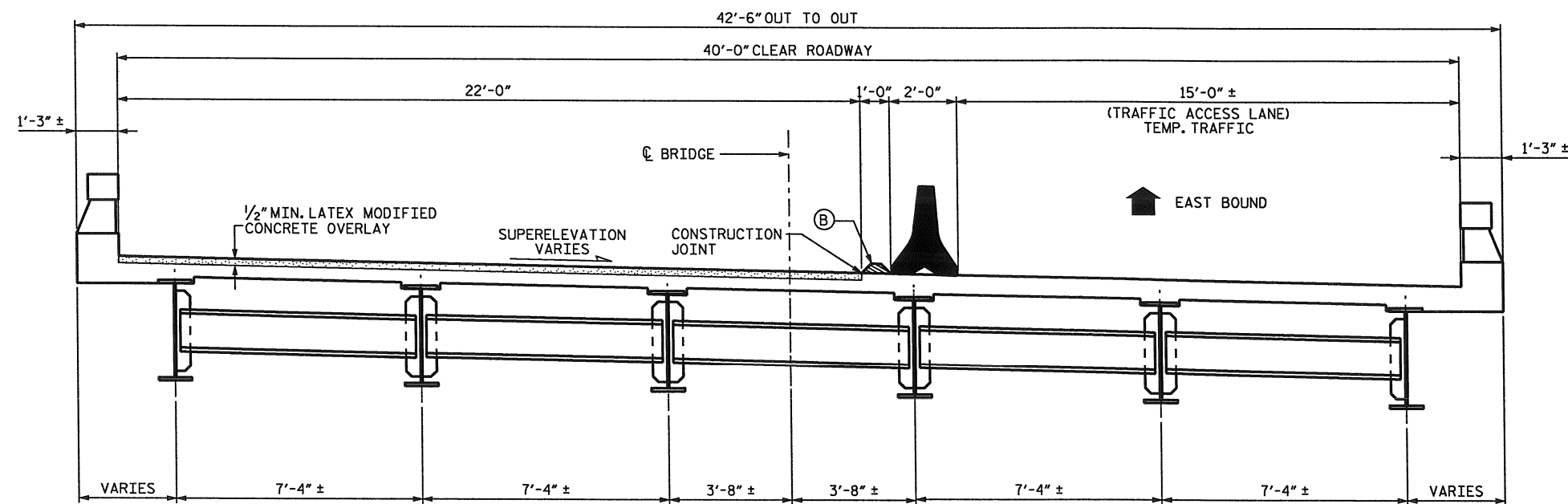
PLAN OF BRIDGE

DECK REHAB. FOR BRIDGE NO. 009

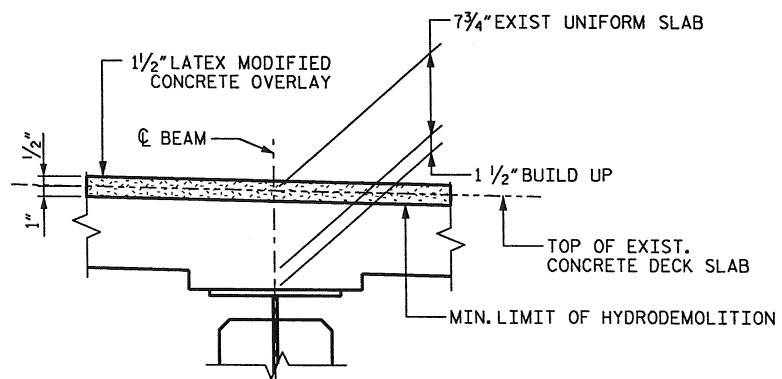
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1			3			TOTAL SHEETS 7
2			4			



WBL CONSTRUCTION
SPANS A AND C



WBL CONSTRUCTION
SPANS A AND C



EXIST. SLAB BUILDUP

NOTES:

SPANS A-C (W33 ROLLED BEAM) SHOWN.

ALL HORIZONTAL DIMENSIONS SHOWN ARE RADIAL.

WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

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

- (A) DAM AS REQ'D. NEAR EXISTING EXP. JTS. TO SEAL EXP. JTS.
- (B) DAM CONTINUOUSLY ALONG BARRIER.

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BRIDGE TYPICAL SECTION
SPANS A AND C

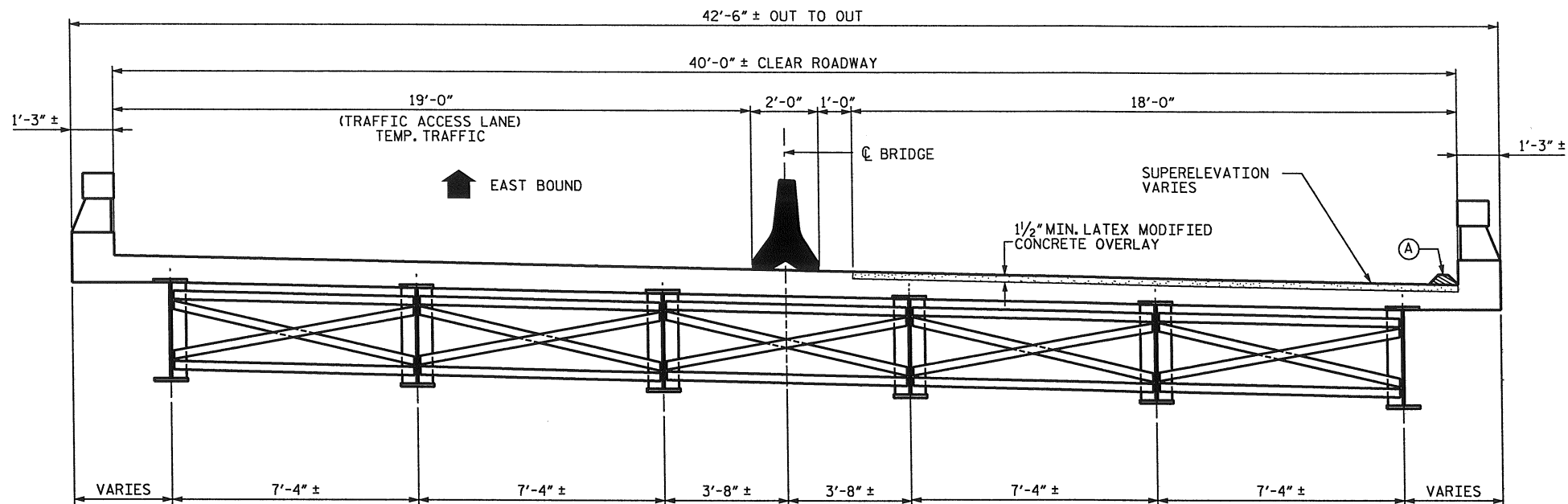
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REVISIONS						SHEET NO. S009-3
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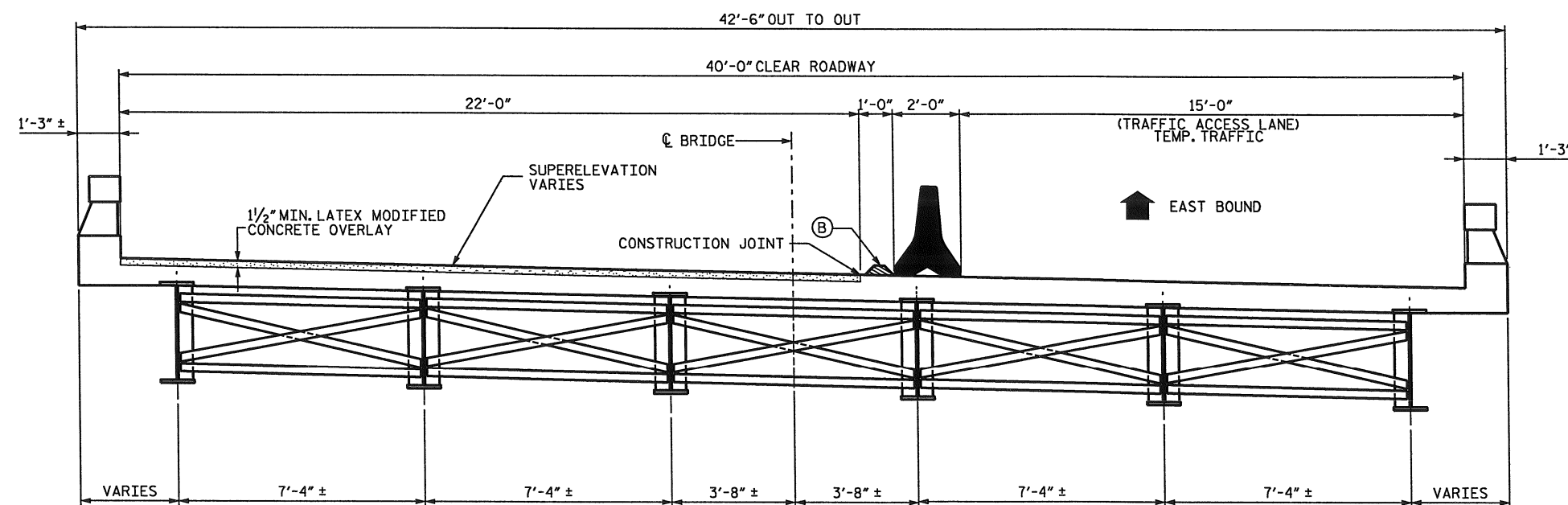


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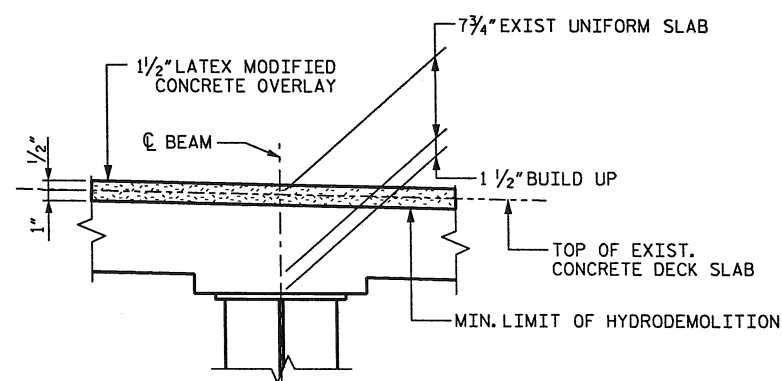
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WBL CONSTRUCTION
SPAN B



WBL CONSTRUCTION
SPAN B



EXIST. SLAB BUILDUP

NOTES:

SPAN B (STR. STEEL PLATE GIRDER SPAN) SHOWN.

ALL HORIZONTAL DIMENSIONS SHOWN ARE RADIAL.

WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

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

- (A) DAM AS REQ'D. NEAR EXISTING EXP. JTS. TO SEAL EXP. JTS.
- (B) DAM CONTINUOUSLY ALONG BARRIER.

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE TYPICAL SECTION
SPAN B

DECK REHAB. FOR BRIDGE NO. 009

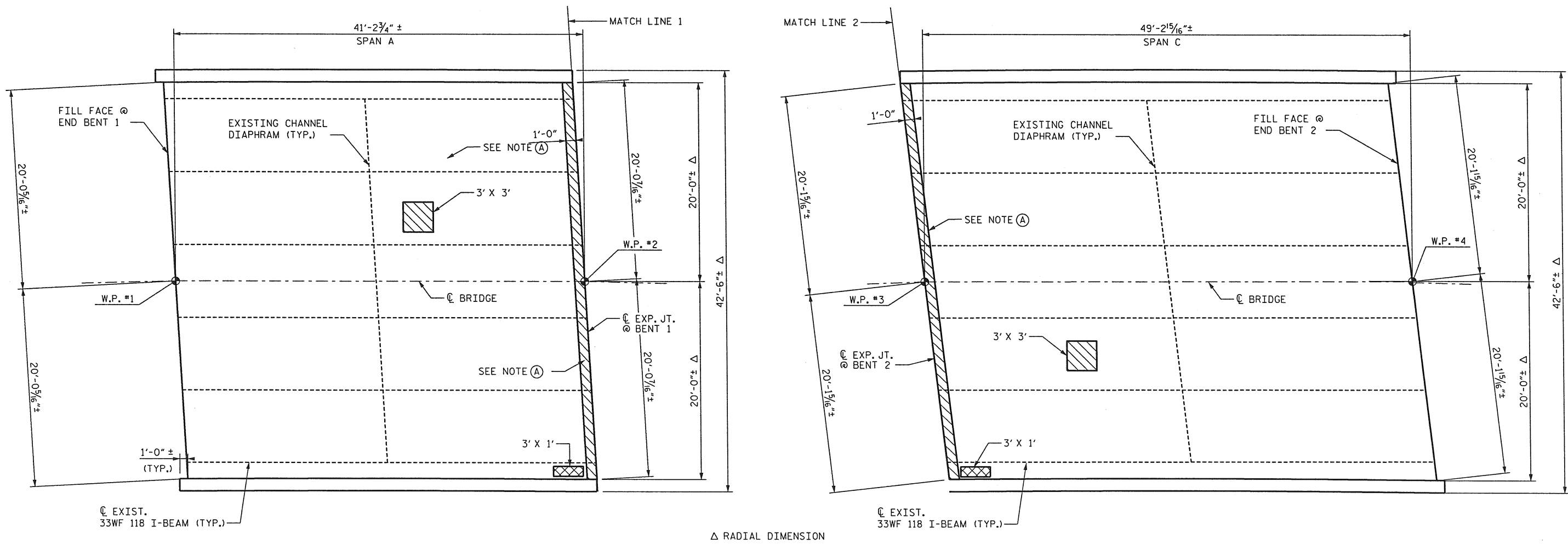
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1			3			TOTAL SHEETS 7
2			4			



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CHECKED BY: J. T. KELVINGTON DATE: 05-27-11

17BP.14.P.2 Jackson Co. #9, #7, & #106\Bridg 009\Drawing\BP490009_RepairPlan.dgn 10/3/2011 8:19:36 AM omccullough



PLAN OF SPANS A & C - DECK REPAIRS

(A) MAXIMUM ESTIMATED SURFACE PREPARATION REQUIRED FOR JOINT SEAL INSTALLATION. DECK REPAIR WORK IS LIMITED TO REMOVAL OF ALL UNSOUND CONCRETE AND SURFACE PREPARATION FOR JOINT SEAL CONSTRUCTION.

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO-DEMOLITION.

SEE HYDRO-DEMOLITION SPECIAL PROVISIONS.

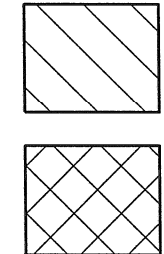
CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

CONTRACTOR, AT HIS OPTION, MAY CHOOSE TO MONITOR HYDRO-DEMOLITION WORK AND CONTROL TRAFFIC UNDER THE BRIDGE IN LIEU OF BLOW THRU CONTAINMENT. SEE TRANSPORTATION MANAGEMENT PLANS.

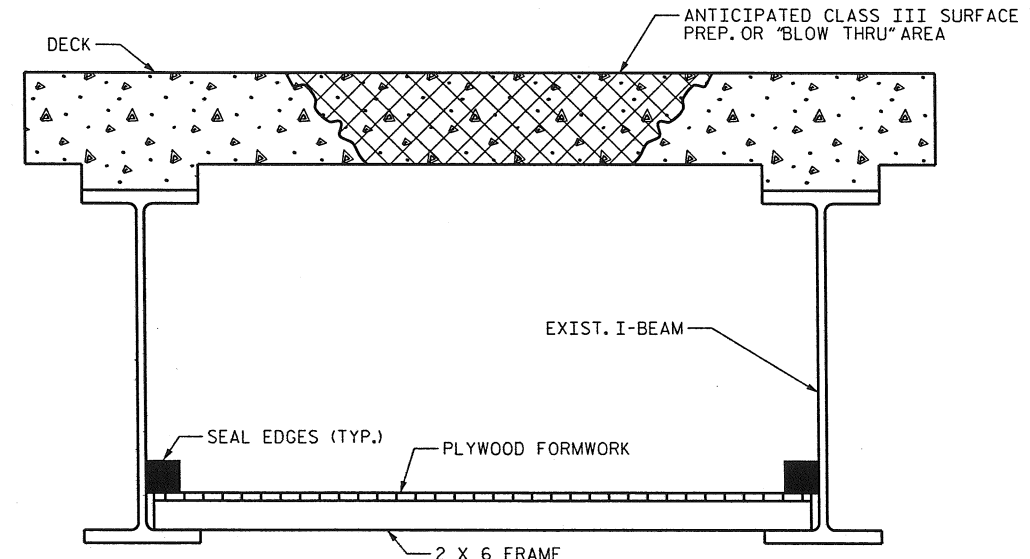


CLASS II SURFACE PREPARATION

CLASS III SURFACE PREPARATION

NOTES:

L' X W' = LENGTH OF AREA ALONG C BRIDGE X WIDTH OF AREA NORMAL TO C BRIDGE



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK



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JACKSON COUNTY
STATION: _____

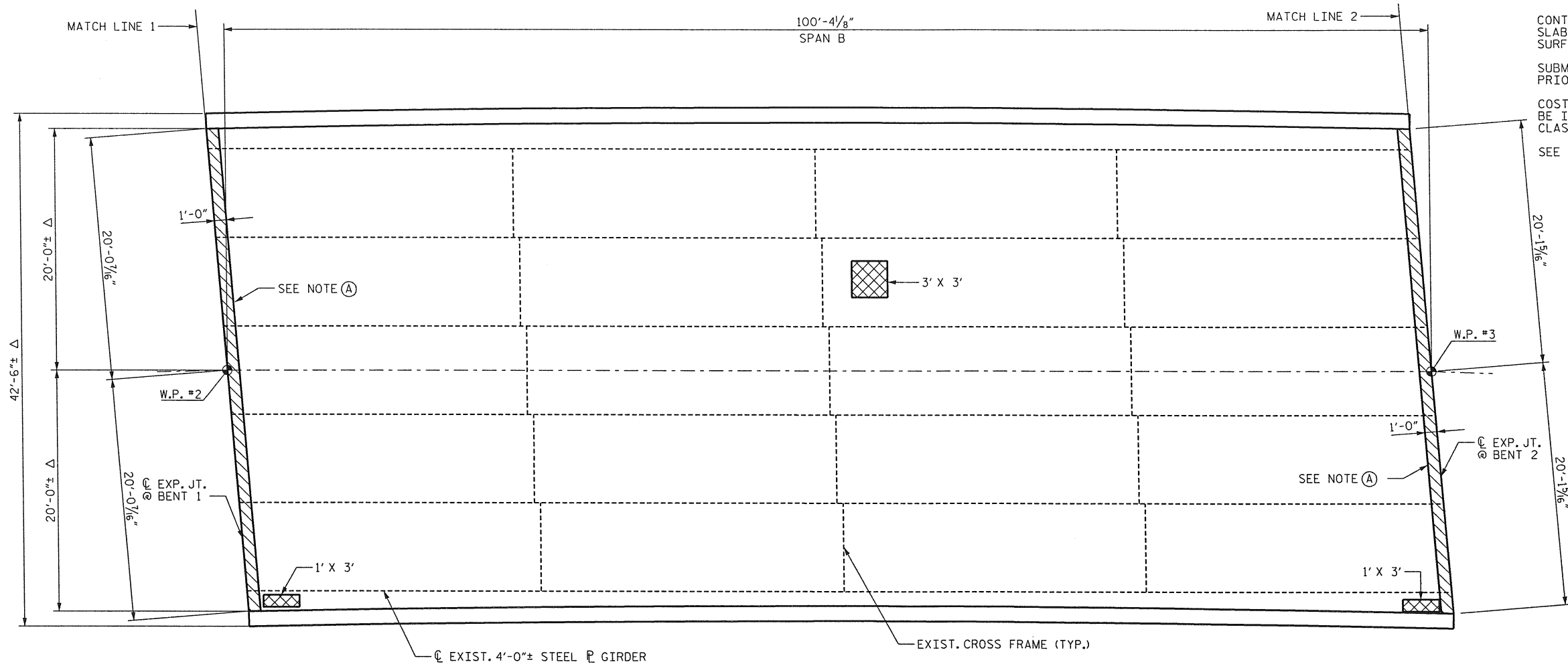
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS
SPANS A & C

DECK REHAB. FOR BRIDGE NO. 009

REVISIONS						SHEET NO. S009-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 7
2			4			

Joseph T. Kelvington
9/30/11
Professional Engineer
No. 13406
State of North Carolina



CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF CLASS III SURFACE PREPARATION.

SEE HYDRO-DEMOLITION SPECIAL PROVISIONS.

PLAN OF SPAN B - DECK REPAIRS

(A) MAXIMUM ESTIMATED SURFACE PREPARATION REQUIRED FOR JOINT SEAL INSTALLATION. DECK REPAIR WORK IS LIMITED TO REMOVAL OF ALL UNSOUND CONCRETE AND SURFACE PREPARATION FOR JOINT SEAL CONSTRUCTION.

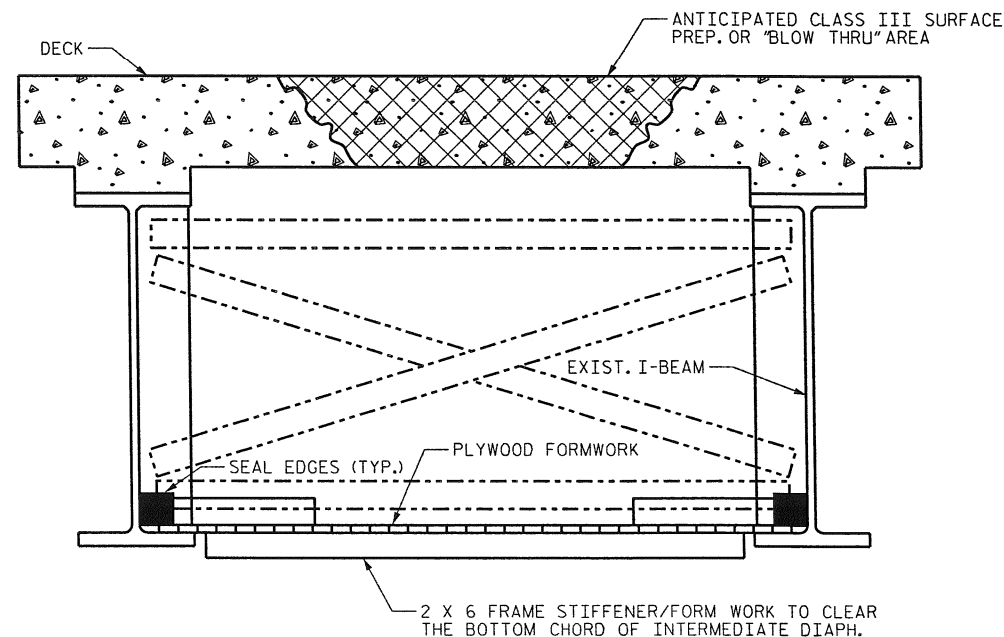
CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

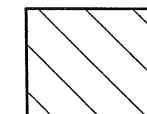
SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

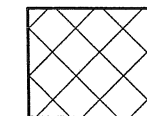
CONTRACTOR, AT HIS OPTION, MAY CHOOSE TO MONITOR HYDRO-DEMOLITION WORK AND CONTROL TRAFFIC UNDER THE BRIDGE IN LIEU OF BLOW THRU CONTAINMENT. SEE TRANSPORTATION MANAGEMENT PLANS.



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

NOTES:

L' X W' = LENGTH OF AREA ALONG C BRIDGE X
WIDTH OF AREA NORMAL TO C BRIDGE

PROJECT NO. WBS 17BP.14.P.2

JACKSON COUNTY

STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS
SPAN B

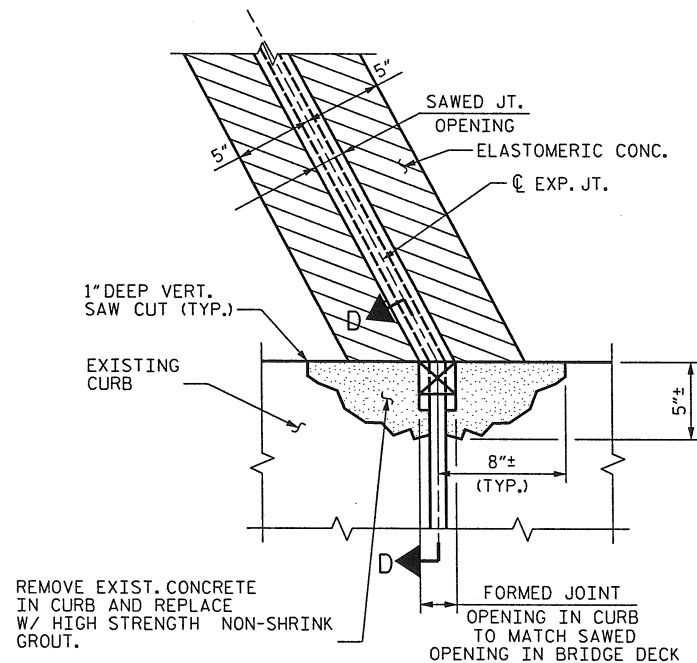
DECK REHAB. FOR BRIDGE NO. 009

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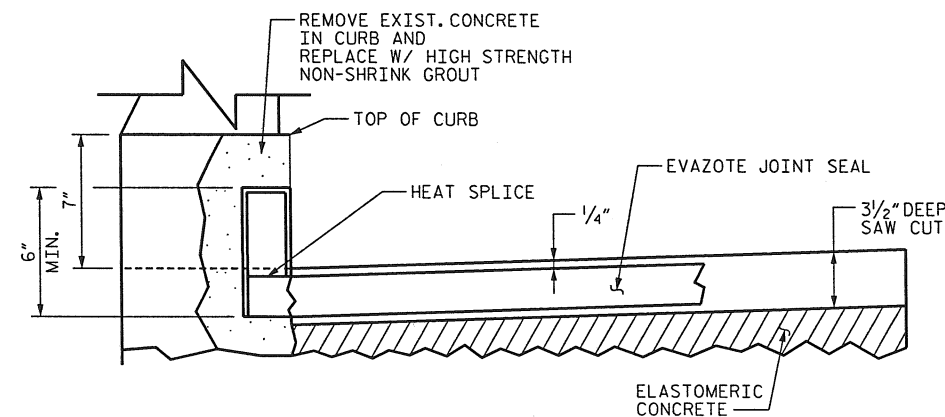


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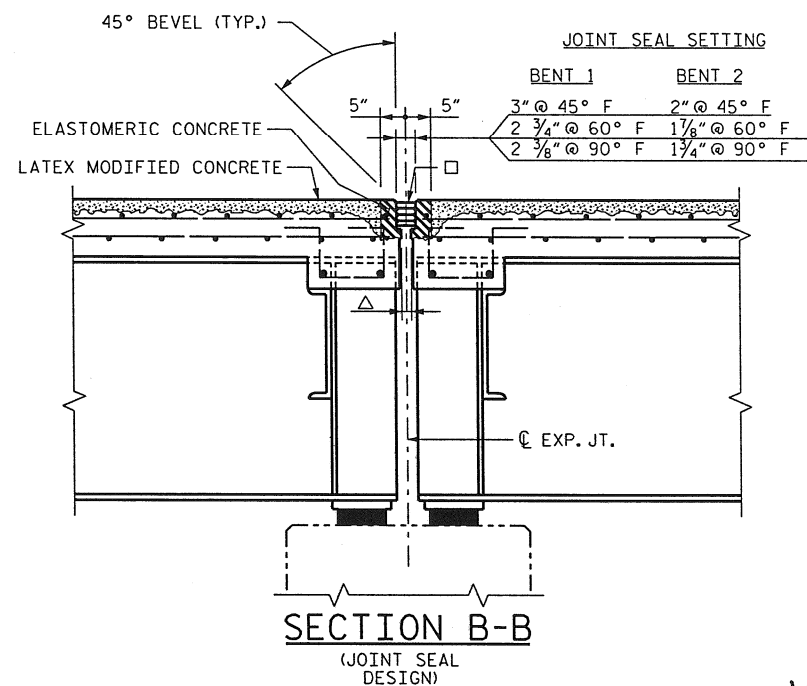
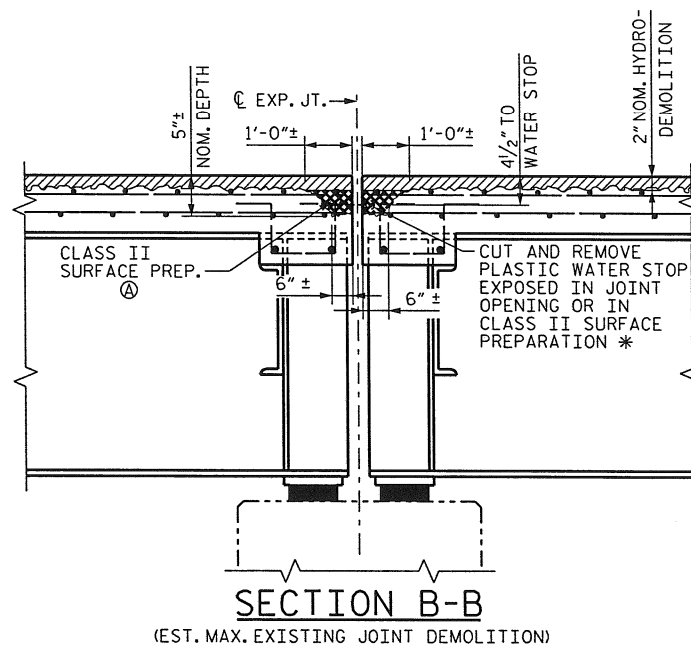
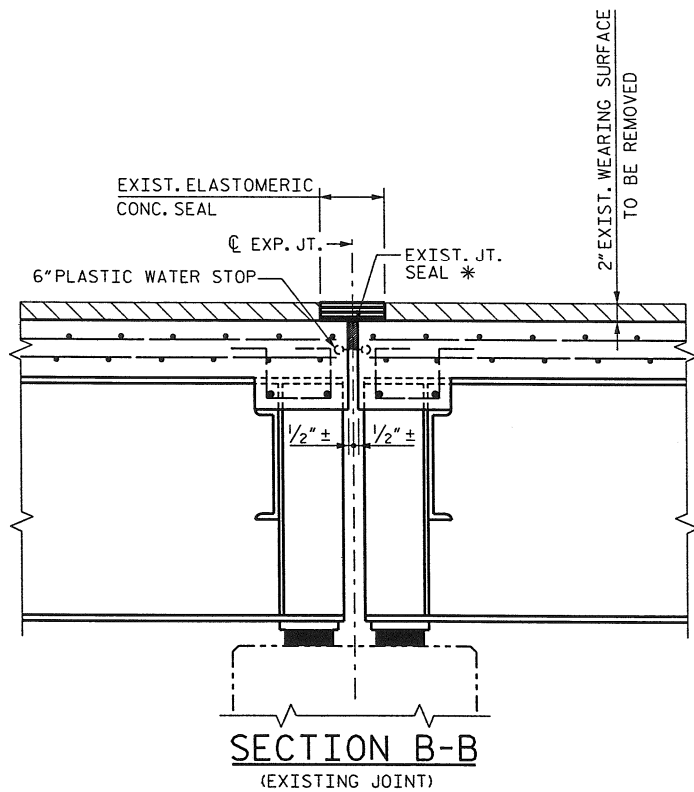


PARTIAL PLAN @ JOINT



SECTION D-D

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.
FOR HIGH STRENGTH GROUT, SEE SPECIAL PROVISIONS.
HIGH STRENGTH GROUT SHALL BE APPROVED BY THE ENGINEER.



ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	13.4 C.F.
BENT 2	13.4 C.F.

TOTAL ELASTOMERIC CONC. = 26.8 C.F.
TOTAL ELASTOMERIC CONC. = 1.0 C.Y.

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION JOINT DETAILS

DECK REHAB. FOR BRIDGE NO. 009

REVISIONS						SHEET NO. S009-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 7
2			4			



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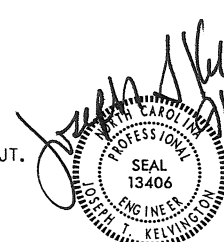
NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.

* FROM BEST AVAILABLE INFORMATION.

Ⓐ CLASS II SURFACE PREPARATION ONLY AS REQUIRED TO REMOVE UNSOUND CONCRETE AND PREPARE SURFACE FOR ELASTOMERIC CONCRETE.

ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED. MATERIALS NOT EXPOSED BY CLASS II REPAIR SHALL REMAIN.

- USE 3.75" X 3" UNCOMPRESSED EVAZOTE JT. SEAL MATERIAL @ BENT 1
- USE 2.8125" X 2.5" UNCOMPRESSED EVAZOTE JT. SEAL MATERIAL @ BENT 2
- △ EXISTING 1 3/4" FORMED JT. @ BENT 1
- △ EXISTING 1 1/4" FORMED JT. @ BENT 2



8/17/99

REVISIONS

9/30/2011 3:11:00 PM J:\Transportation\Design\Roadway\Jackson106\pro\Jackson106.dgn

PAVEMENT SCHEDULE	
C1	PROP. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
Z	ASPHALT MILLING

TOTAL BILL OF MATERIALS	
SHOULDER RECONSTRUCTION	300 LF
MILLING ASPH. PAVEMENT, 1.25" DEPTH (PHASE I)	760 SY
MILLING ASPH. PAVEMENT, 1.5"-2.25" DEPTH (PHASE II)	400 SY
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	50 TONS
ASPHALT BINDER FOR PLANT MIX, GRADE PG 70-22	3 TONS
REMOVE AND RESET EXISTING GUARDRAIL	250 LF

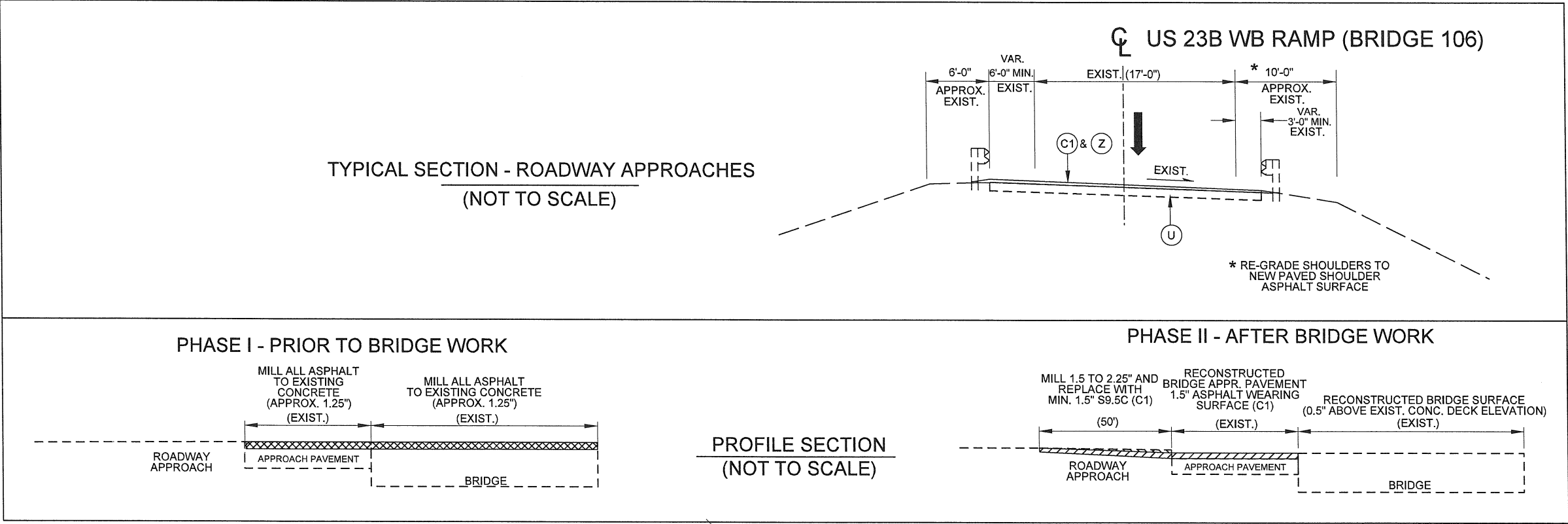
PROJECT REFERENCE NO.
WBS 17BP14P2

SHEET NO.
RDY-3

ROADWAY DESIGN
ENGINEER

NORTH CAROLINA
PROFESSIONAL
ENGINEER
MICHAEL D. LINDGREN
25513

9-30-2011



DISCLAIMER: THIS PROJECT HAS NOT BEEN SURVEYED.
EXISTING TOPOGRAPHY WAS CREATED FROM AERIAL
PHOTOGRAPHY NOT ACTUAL SURVEY.

NOTES:
1. ALL EROSION CONTROL MEASURES SHALL ADHERE TO NCDOT STANDARDS.

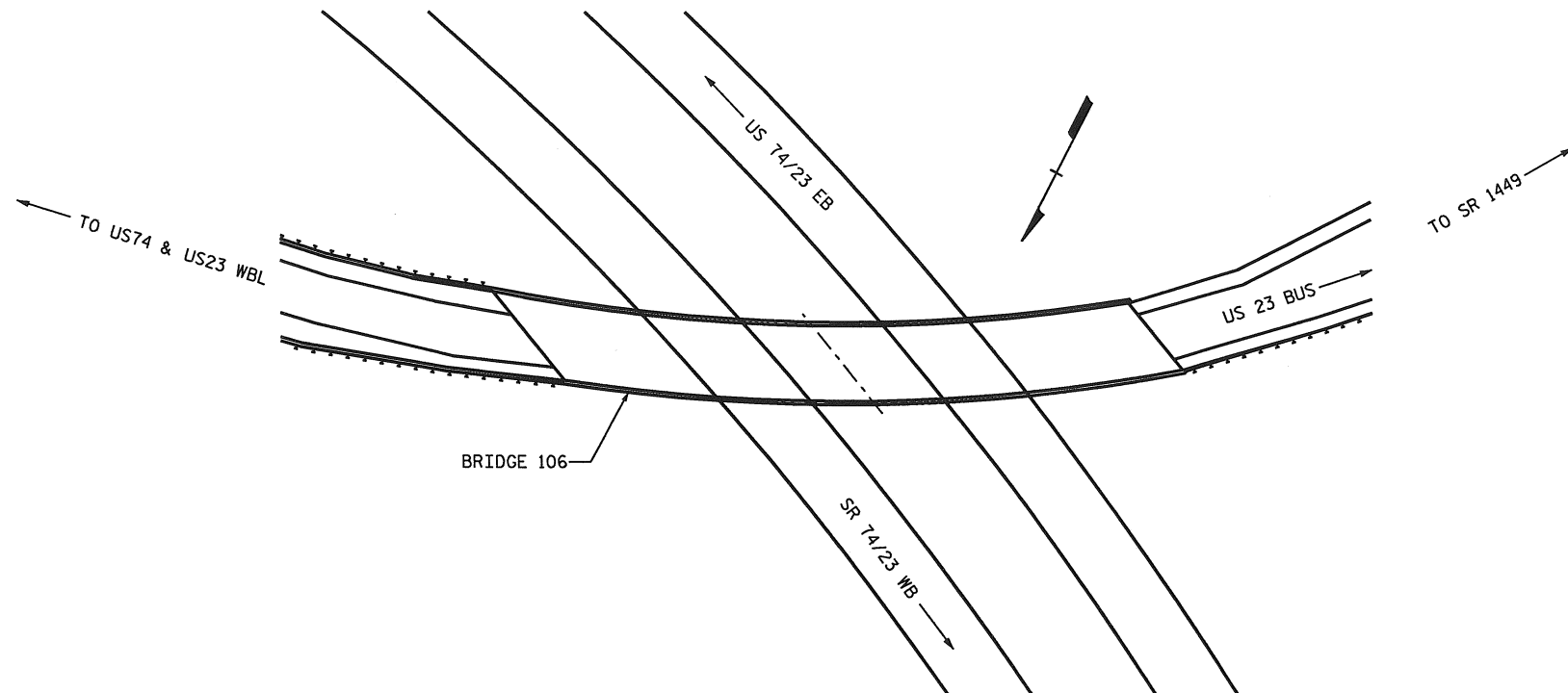


TABLE OF CONTENTS	
DWG.	DESCRIPTION
RDY-3	ROADWAY PLAN AND DETAILS
S106-1	LOCATION SKETCH & TOTAL BILL OF MATERIAL
S106-2	PLAN OF BRIDGE
S106-3	BRIDGE TYPICAL SECTION
S106-4	DECK REPAIR DETAILS
S106-5	DECK REPAIR DETAILS
S106-6	JOINT DETAILS
TMP-1 THRU 7A	TRANSPORTATION MANAGEMENT PLAN

BRIDGE 106 ON US 23 BUSINESS

LOCATION: BRIDGE 490106, US 23 BUSINESS OVER US 23/74
0.1 MILE SOUTH OF JUNCTION US 23B/74

BRIDGE 106 ON US 23 BUSINESS

TOTAL BILL OF MATERIAL									
SCARFING* BRIDGE DECK	CLASS I* SURFACE PREPARATION	CLASS II* SURFACE PREPARATION	CLASS III* SURFACE PREPARATION	HYDRO- DEMOLITION OF BRIDGE DECK	CLASS AA* CONCRETE	LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	PLACING & FINISHING OF LATEX MODIFIED CONCRETE- VERY EARLY STRENGTH	EVAZOTE JOINT SEALS	GROOVING BRIDGE FLOORS
SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.
645	577	67	1	645	1	28	645	LUMP SUM	5503

* QUANTITIES SHOWN ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYP. BLOW THRU" CONTAINMENT AND FORMWORK DETAILS.

PROJECT NO. WBS 17BP.14.P.2
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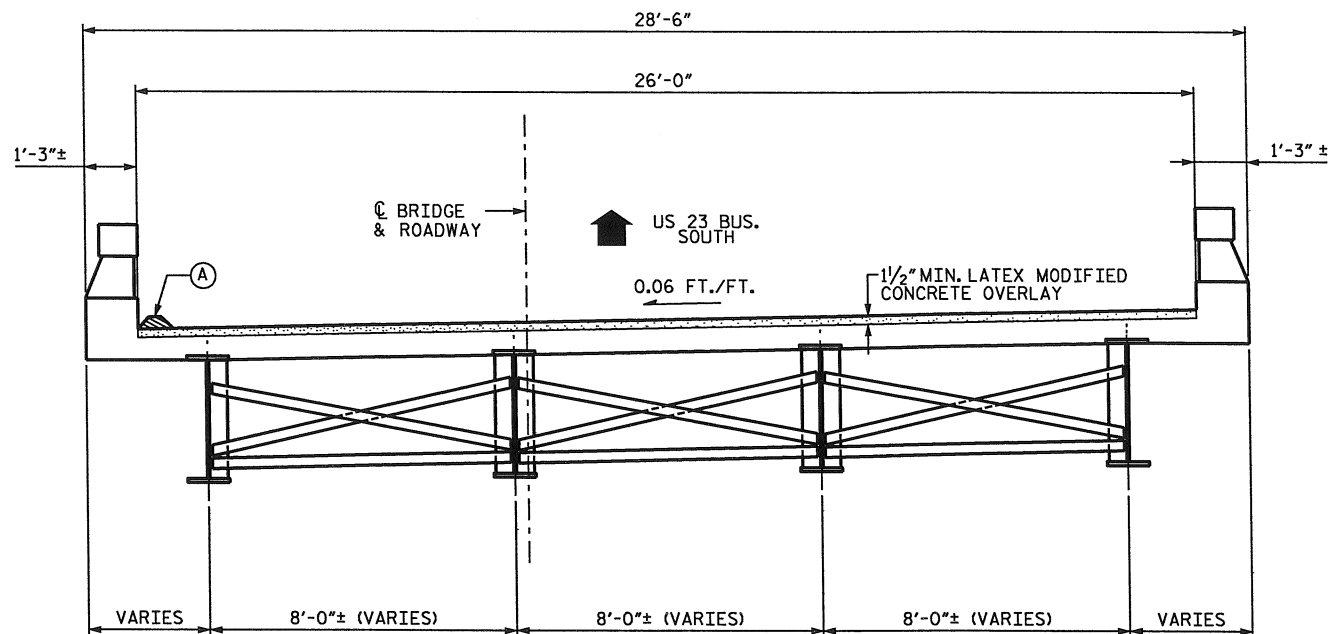


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 106

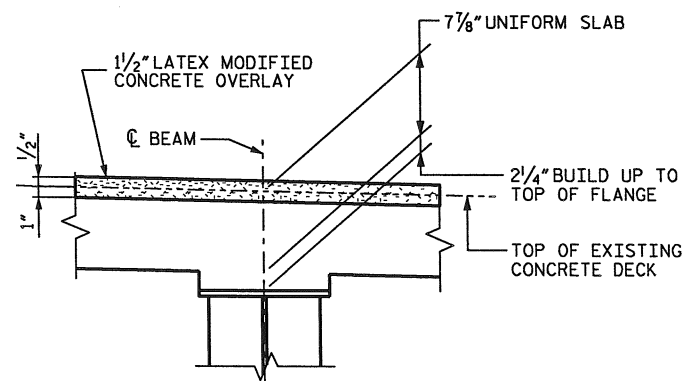
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NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			



US 23 BUS. CONSTRUCTION

SPANS A & B

ALL DIMENSIONS SHOWN ARE RADIAL UNLESS NOTED OTHERWISE



NOTES:

TRAFFIC WILL BE REMOVED FROM THE BRIDGE DURING CONSTRUCTION PERIODS.

WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

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

(A) DAM AS REQ'D. NEAR EXISTING EXP. JTS. TO SEAL EXP. JTS.

PROJECT NO. WBS 17BP.14.P.2

JACKSON COUNTY

STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE TYPICAL SECTION
SPAN B

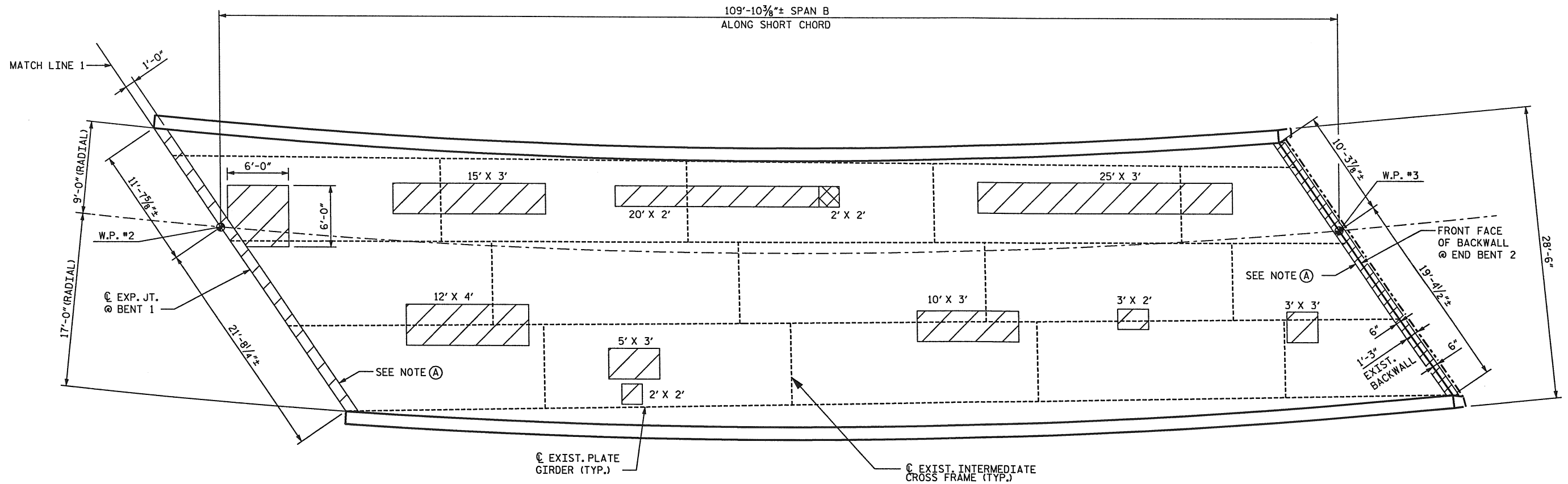
DECK REHAB. FOR BRIDGE NO. 106

REVISIONS						SHEET NO. S106-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 6
2			4			



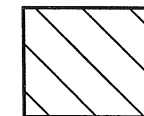
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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

DRAWN BY : C. T. MCCULLOUGH DATE : 05-27-11
CHECKED BY : J. T. KELVINGTON DATE : 05-27-11

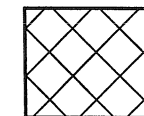


PLAN OF SPAN B - DECK REPAIRS

① MAXIMUM ESTIMATED SURFACE PREPARATION REQUIRED FOR JOINT SEAL INSTALLATION. DECK REPAIR WORK IS LIMITED TO REMOVAL OF ALL UNSOUND CONCRETE AND SURFACE PREPARATION FOR JOINT SEAL CONSTRUCTION.



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

NOTES:

L' X W' = LENGTH OF AREA ALONG ϕ BRIDGE X
WIDTH OF AREA NORMAL TO ϕ BRIDGE

PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____



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DRAWN BY: C. T. MCCULLOUGH DATE: 05-27-11
CHECKED BY: J. T. KELVINGTON DATE: 05-27-11

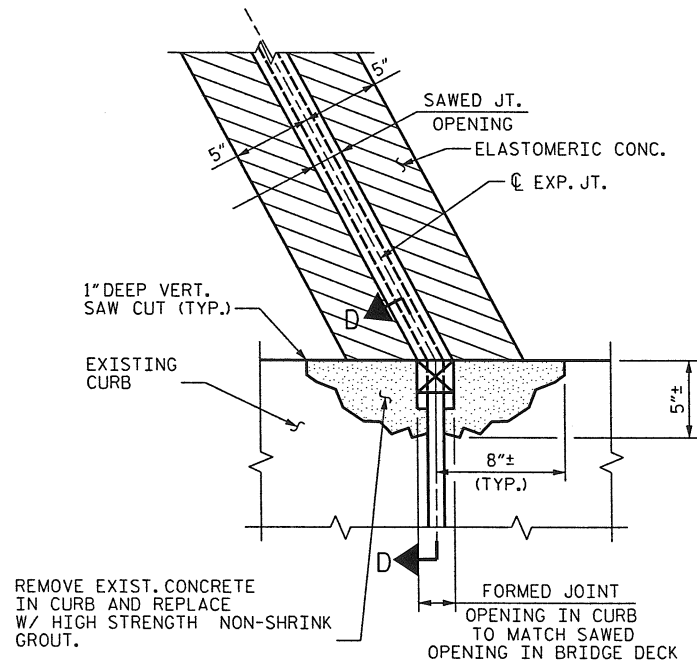


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

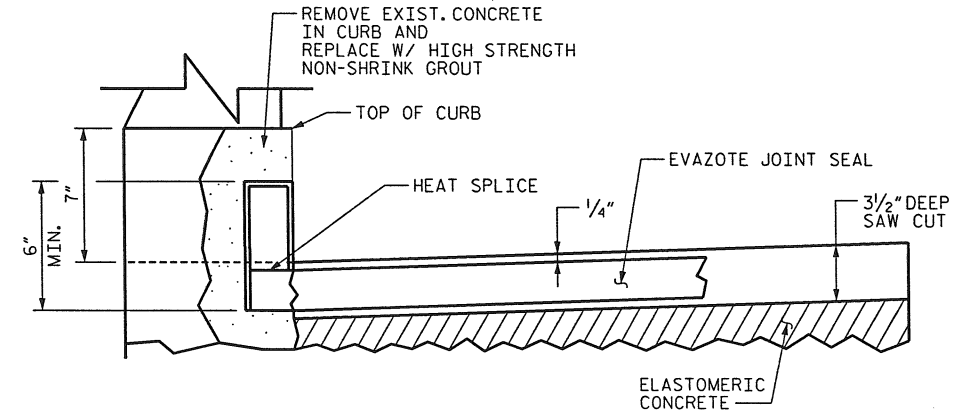
DECK REPAIR DETAILS
SPAN B

DECK REHAB. FOR BRIDGE NO. 106

REVISIONS						SHEET NO. S106-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 6
2			4			



PARTIAL PLAN @ JOINT
(TYP. @ INTERIOR BENT AND END BENTS)

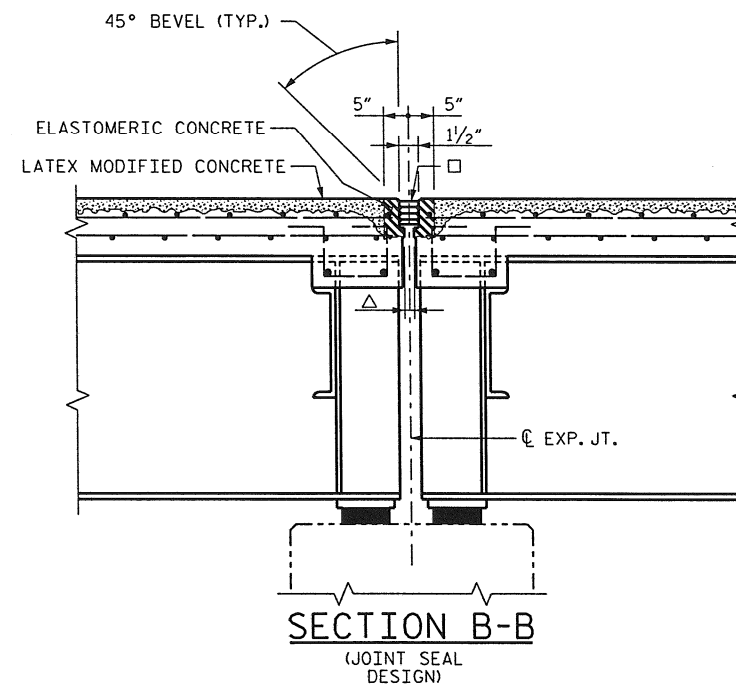
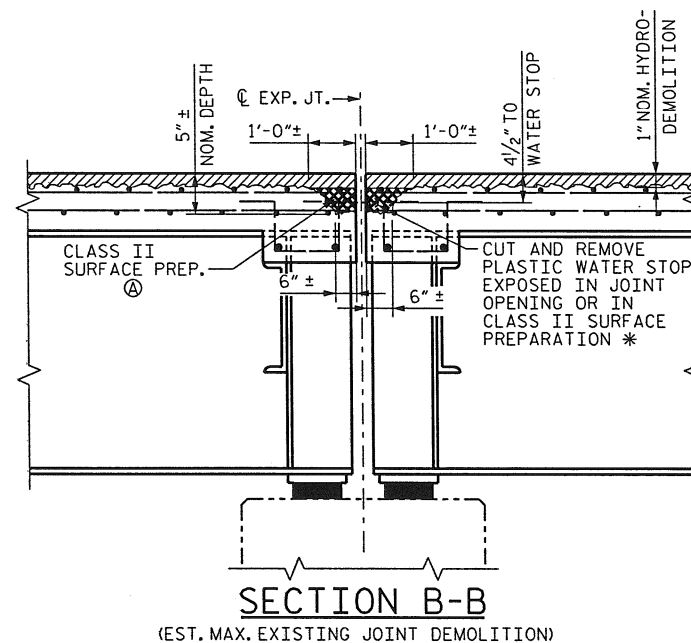
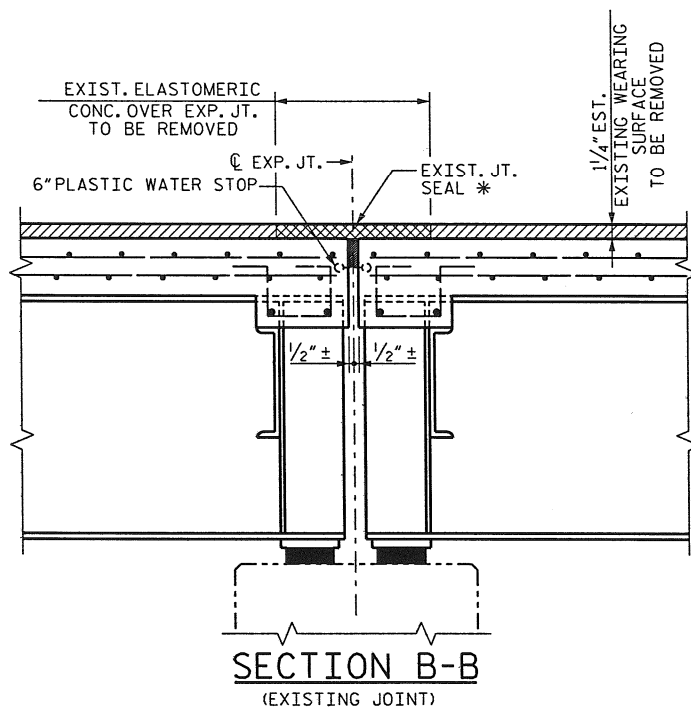


SECTION D-D

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.
FOR HIGH STRENGTH GROUT, SEE SPECIAL PROVISIONS.
HIGH STRENGTH GROUT SHALL BE APPROVED BY THE ENGINEER.

ELASTOMERIC CONCRETE	
LOCATION	QTY
END BENT 1	12.4 C.F.
BENT 1	11.5 C.F.
END BENT 2	9.4 C.F.

TOTAL ELASTOMERIC CONC. = 33.3 C.F.
TOTAL ELASTOMERIC CONC. = 1.2 C.Y.



PROJECT NO. WBS 17BP.14.P.2
JACKSON COUNTY
STATION: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION JOINT DETAILS

DECK REHAB. FOR BRIDGE NO. 106

REVISIONS						SHEET NO. S106-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 6
2			4			



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DRAWN BY : C. T. MCCULLOUGH DATE : 05-27-11
CHECKED BY : J. T. KELVINGTON DATE : 05-27-11

Ⓐ CLASS II SURFACE PREPARATION REQUIRED TO REMOVE UNSOUND CONCRETE AND PREPARE SURFACE FOR ELASTOMERIC CONCRETE.

NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.

* FROM BEST AVAILABLE INFORMATION.

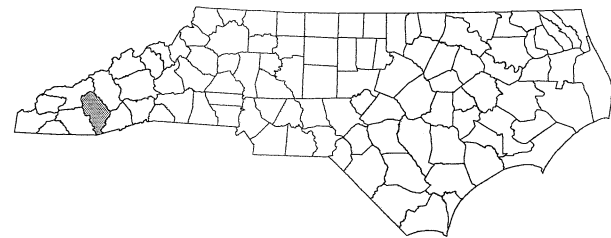
ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED. MATERIALS NOT EXPOSED BY CLASS II REPAIR SHALL REMAIN.

Joshua Kelvington
10/3/2011
SEAL 13406
ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

JACKSON COUNTY
DIVISION 14



BRIDGE #7 – US 74 EBL OVER SR 1531
BRIDGE #9 – US 74 WBL OVER SR 1531
BRIDGE #106 – US 23 BUS. OVER US23/US74

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	GENERAL NOTES
TMP-3	TRAFFIC CONTROL PHASING
TMP 4	BRIDGE #106 RAMP CLOSURE AND DETOUR
TMP 5-5B	BRIDGES #7/#9 LEFT LANE CLOSURES WITH PCB
TMP 6-6B	BRIDGES #7/#9 RIGHT LANE CLOSURES WITH PCB
TMP-7	DETAIL OF SINGLE LANE CLOSURES
TMP-7A	TRAFFIC CONTROL DESIGN TABLES

SHEET NO.
TMP-1

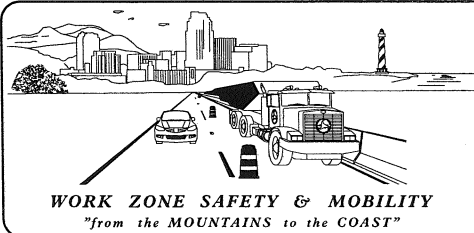
WBS 17BP.14.P.2

TRAFFIC MANAGEMENT STRATEGY

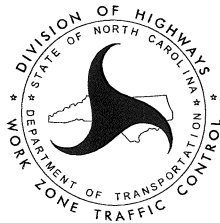
WORK ON BRIDGES #7 AND #9 WILL BE PERFORMED USING LANE CLOSURES AND TEMPORARY BARRIER.

WORK ON BRIDGE #106 WILL BE PERFORMED USING DAY AND TIME RESTRICTED RAMP CLOSURES WITH OFFSITE DETOUR.

REFER TO SHEET TMP-3 FOR TRAFFIC CONTROL PHASING.



PLAN PREPARED FOR NCDOT BRIDGE MANAGEMENT UNIT
RALEIGH, NC



PLAN PREPARED BY:
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Raleigh, NC 27605
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Fax. 919.851.7024
www.stantec.com

BETSY L. WATSON, P.E. TRAFFIC ENGINEER
GEORGE KARAGEORGE TRANSPORTATION DESIGNER


APPROVED:
DATE: 10/31/11

SEAL



LEGEND







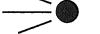





GENERAL

 DIRECTION OF TRAFFIC FLOW




 WORK AREA

 NORTH ARROW




TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM  SKINNY DRUM  TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW PANEL (TYPE C)
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
-  CHANGEABLE MESSAGE SIGN (CMS)
-  PORTABLE CONCRETE BARRIER (PCB)


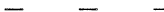
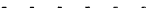

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN




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

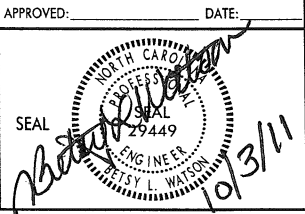
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUMS
1145.01	BARRICADES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1250.01	PAVEMENT MARKER SPACING
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS



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ROADWAY STANDARD DRAWINGS
&
LEGEND

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11/17/2011 11:17:20 AM gkar.gageorge

GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
WBS 17BP.14.P.2	TMP-2

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
US 23/US 74 UNDER US 23 BUSINESS (BRIDGE #106)	6:00 A.M. - 7:00 P.M. MONDAY THRU THURSDAY 6:00 A.M. FRIDAY - 7:00 P.M. SUNDAY

HOLIDAY & HOLIDAY WEEKEND LANE CLOSURE AND TIME RESTRICTIONS

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND HOLIDAY WEEKENDS AS FOLLOWS:

ROAD NAME
ALL ROADS

- 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.

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
US 23 BUSINESS EXIT 85 RAMP	6:00 A.M. - 7:00 P.M. MONDAY THRU THURSDAY 6:00 A.M. FRIDAY - 7:00 P.M. SUNDAY

IN ADDITION, DO NOT CLOSE EXIT 85 RAMP DURING THE HOLIDAY TIME RESTRICTIONS AS SET FORTH IN NOTE B.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) 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.
- E) 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.
- F) 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.
- G) 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.
- H) 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.

ROAD CLOSURES

- I) PROVIDE SIGNING AND DEVICES FOR ROAD CLOSURES ACCORDING TO THE TRAFFIC MANAGEMENT PLAN. COVER OR REMOVE ALL SIGNS AND DEVICES FOR ROAD CLOSURES WHEN NOT IN EFFECT.
- J) PROVIDE OFFSITE DETOUR ROUTE SIGNING AS SHOWN IN THE TRAFFIC MANAGEMENT PLAN. COVER OR REMOVE OFFSITE DETOUR SIGNING WHEN THE DETOUR IS NOT IN OPERATION. ALL OFFSITE DETOUR ROUTES MUST BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTING.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- L) WHEN CLOSING A ROADWAY OR DRIVEWAY PLACE TYPE III BARRICADES COMPLETELY ACROSS THE ROADWAY OR FROM CURB TO CURB. ATTACH BARRICADE MOUNTED "ROAD CLOSED" SIGN R11-2 AT ALL CLOSURE LOCATIONS. IF LOCAL TRAFFIC IS TO BE MAINTAINED STAGGER THE BARRICADES TO ALLOW ACCESS.
- M) INSTALL SIGNS BEFORE BARRICADES WHEN CLOSING A ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING A ROADWAY TO TRAFFIC. INSTALL/REMOVE ROAD CLOSURE SIGNS AND BARRICADES IN A CONTINUOUS OPERATION AND WITHIN THE SAME CALENDAR DAY.

TEMPORARY TRAFFIC BARRIER

- N) INSTALL TEMPORARY BARRIER ACCORDING TO THE PLANS A MAXIMUM OF ONE(1) WEEK PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED, PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION, UNLESS OTHERWISE STATED IN THE PLANS OR DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW, BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

- O) PROTECT THE APPROACH END OF PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED IMPACT ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PAVEMENT MARKINGS AND MARKERS

- P) RECORD ALL LOCATIONS AND TYPES OF EXISTING PAVEMENT MARKINGS AS THEY WILL BE REPLACED IN THE SAME LOCATION ON THE NEW SURFACE.
- Q) UPON COMPLETION OF ALL OTHER CONSTRUCTION OPERATIONS INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:


ROAD NAME	MARKING	PAVEMENT MARKER
US 23 BUS. RAMP	PAINT (2 APPS)	NONE
US 74	PAINT (2 APPS)	SNOWPLOWABLE

- R) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

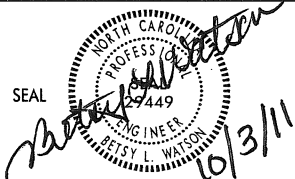
- S) REPLACE PAVEMENT MARKINGS BEFORE OPENING LANES OR A ROADWAY TO TRAFFIC.


MISCELLANEOUS

- T) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- U) ALL DIMENSIONS AND STATIONS IN THE TRAFFIC MANAGEMENT PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- V) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.
- W) 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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APPROVED: _____ DATE: _____

SEAL



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

GENERAL NOTES

TRAFFIC CONTROL PHASING

BRIDGE #7 AND #9 - US 74 EBL OVER SR 1531

PERFORM WORK USING RIGHT AND LEFT LANE CLOSURES WITH PORTABLE CONCRETE BARRIER SHOWN ON SHEETS TMP-5, 5A, & 5B AND TMP-6, 6A, & 6B.

BRIDGE #106 - US 23 BUSINESS OVER US 23/US 74

WHEN CONSTRUCTING BRIDGE #106 USE RAMP CLOSURES WITH OFFSITE DETOUR AS SHOWN ON SHEET TMP-4. REFER TO GENERAL NOTES FOR RAMP CLOSURE TIME RESTRICTIONS.

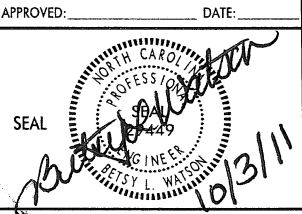
EXIT 85 IS DETOURED TO THE NEXT EXIT 83 AND BACK TO US 23 BUSINESS USING GRINDSTAFF RD.

PROVIDE THE ENGINEER WITH A SCHEDULE OF THE RAMP CLOSURES PRIOR TO BEGINNING THE WORK.

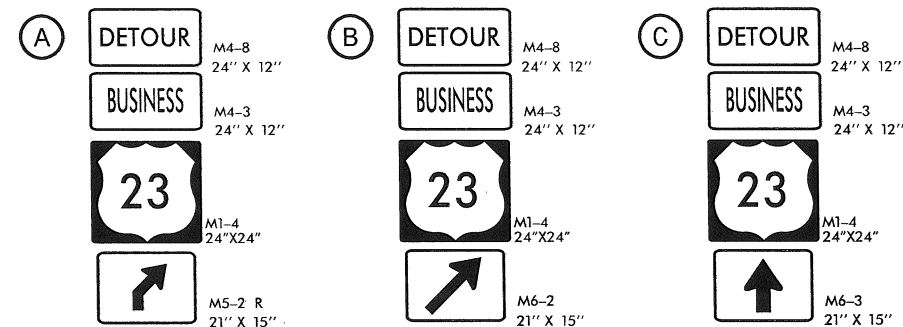
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akr:qgeorge



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TRAFFIC CONTROL PHASING

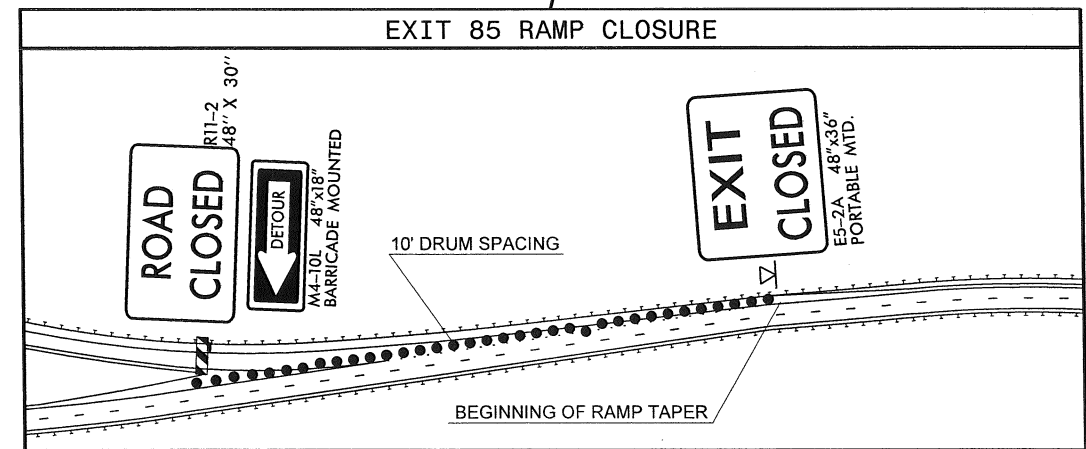
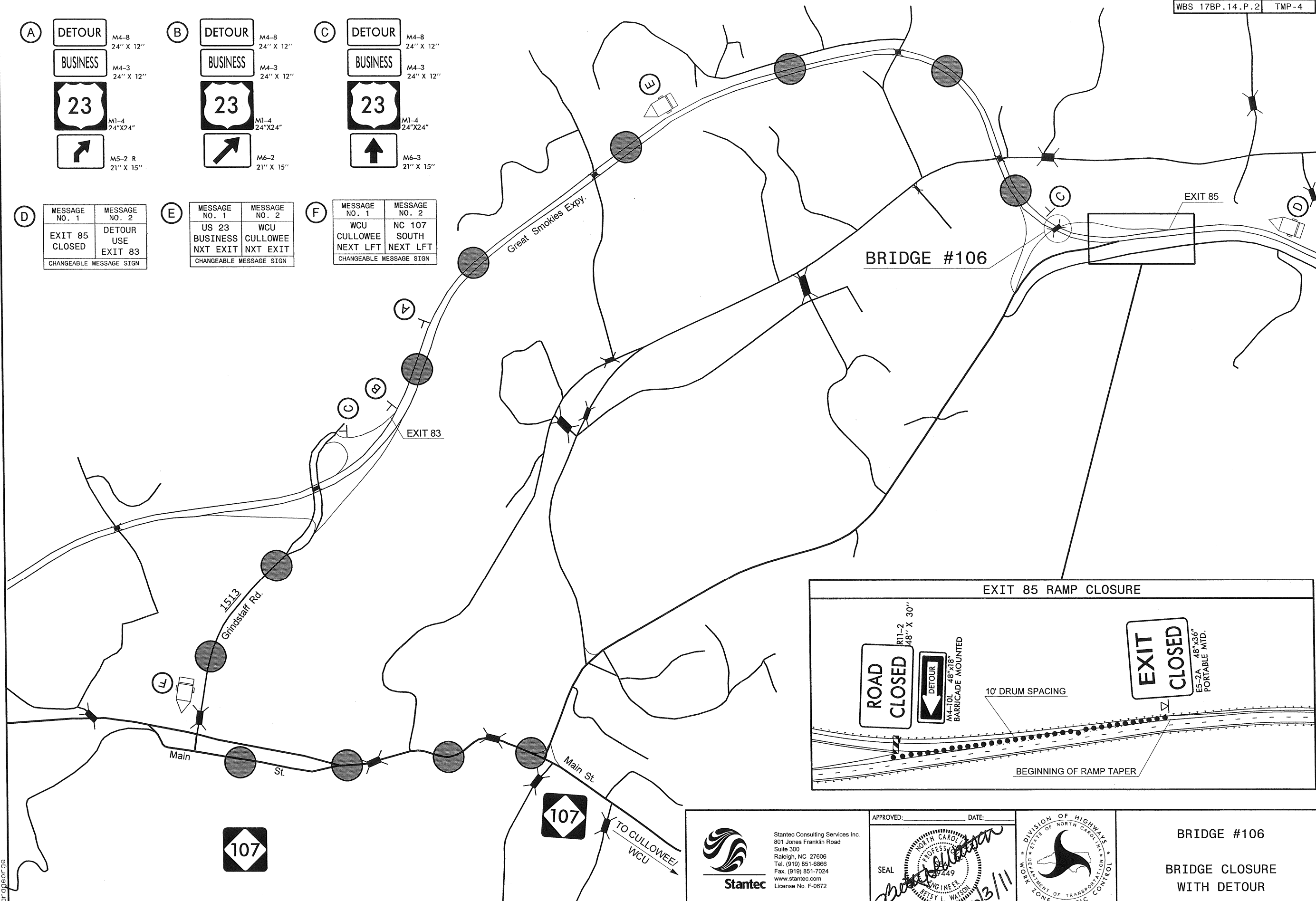


MESSAGE NO. 1	MESSAGE NO. 2
EXIT 85 CLOSED	DETOUR USE EXIT 83
CHANGEABLE MESSAGE SIGN	

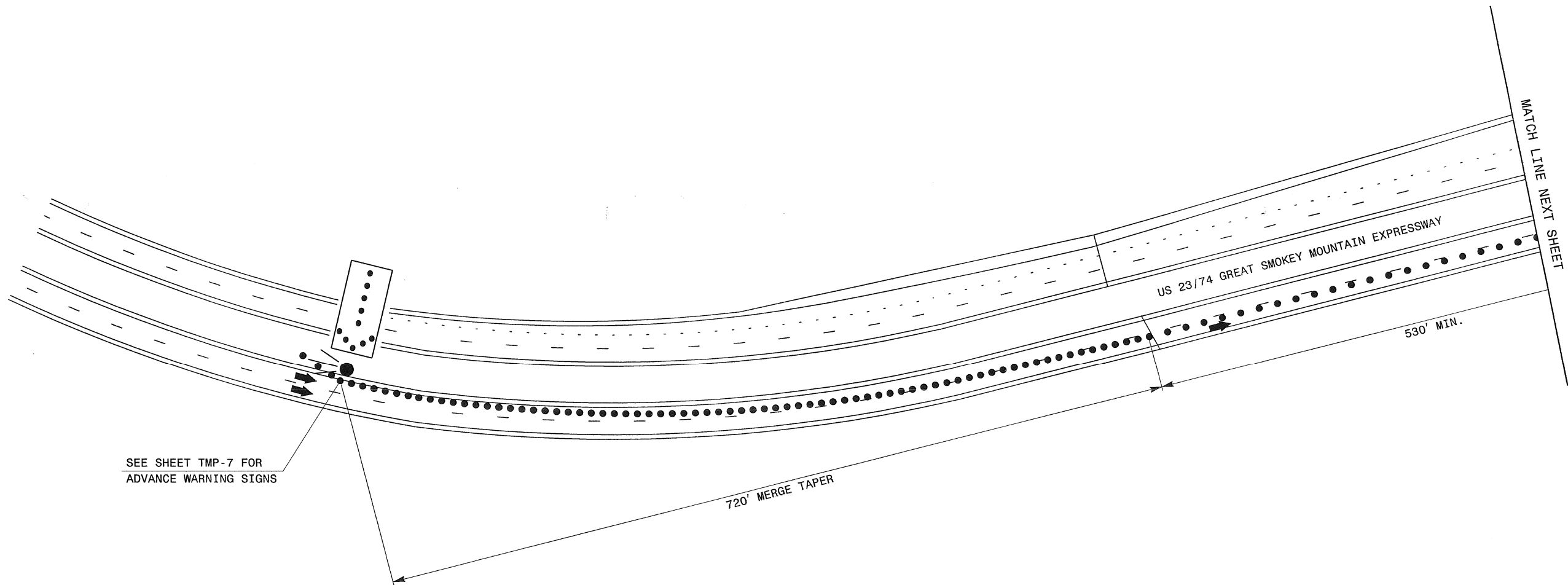
MESSAGE NO. 1	MESSAGE NO. 2
US 23 BUSINESS NXT EXIT	WCU CULLOWEE NXT EXIT
CHANGEABLE MESSAGE SIGN	

MESSAGE NO. 1	MESSAGE NO. 2
WCU CULLOWEE NEXT LFT	NC 107 SOUTH NEXT LFT
CHANGEABLE MESSAGE SIGN	

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<p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	<p>APPROVED: _____ DATE: _____</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> </div> <p>10/3/11</p>		<p>BRIDGE #106</p> <p>BRIDGE CLOSURE WITH DETOUR</p>
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APPROVED: _____ DATE: _____

SEAL

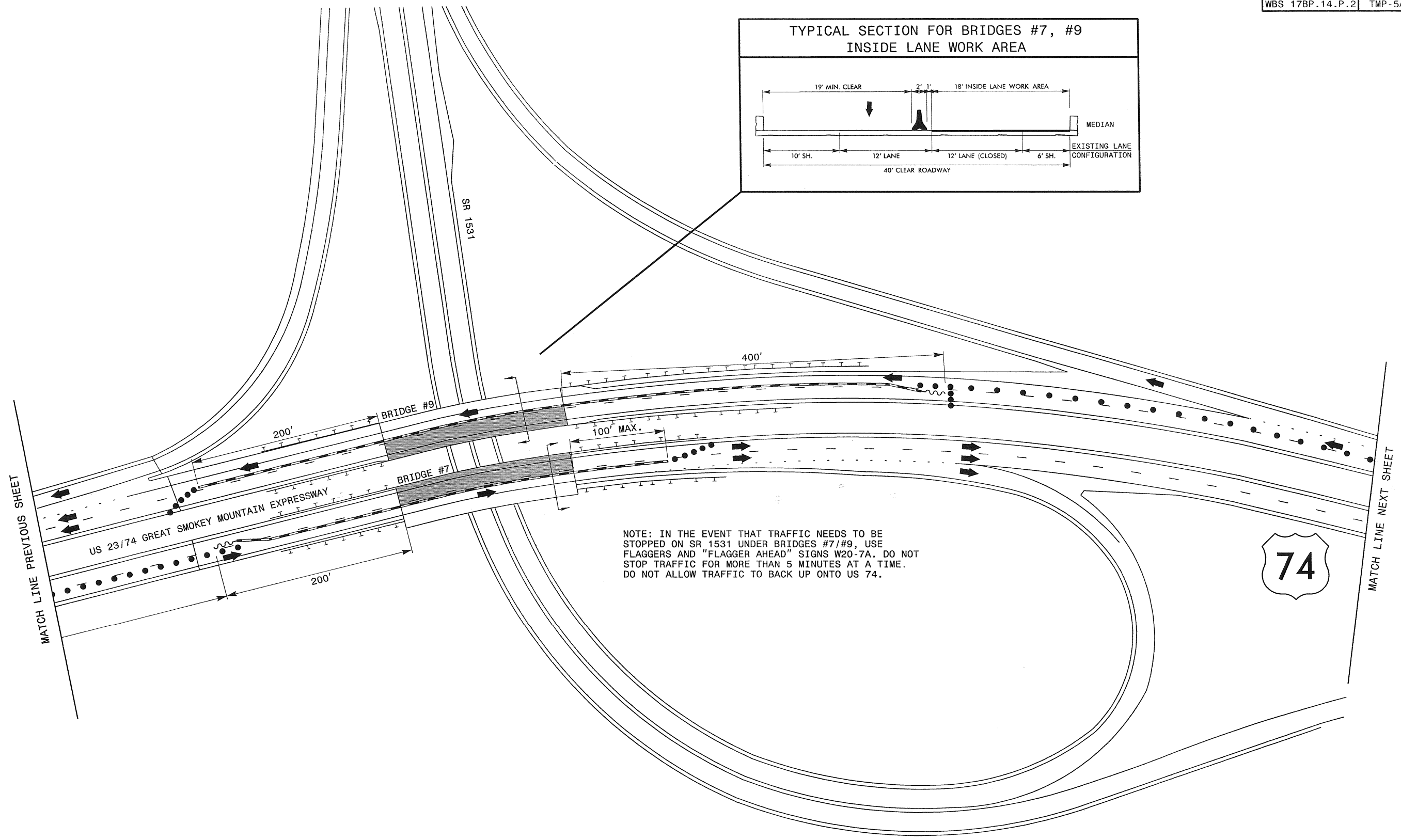
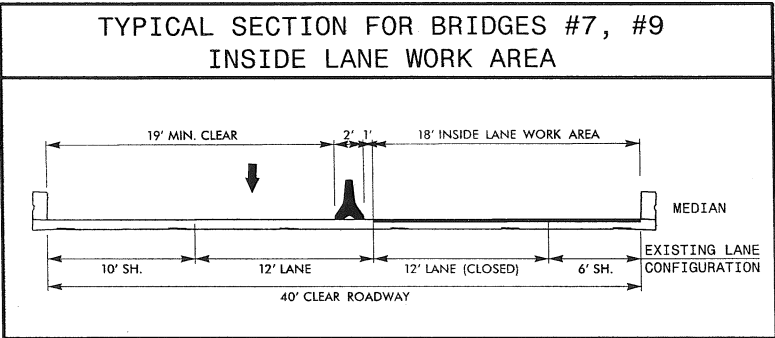
Betsy L. Watson

10/3/11



BRIDGES #7 / #9

LEFT LANE CLOSURES
WITH PCB

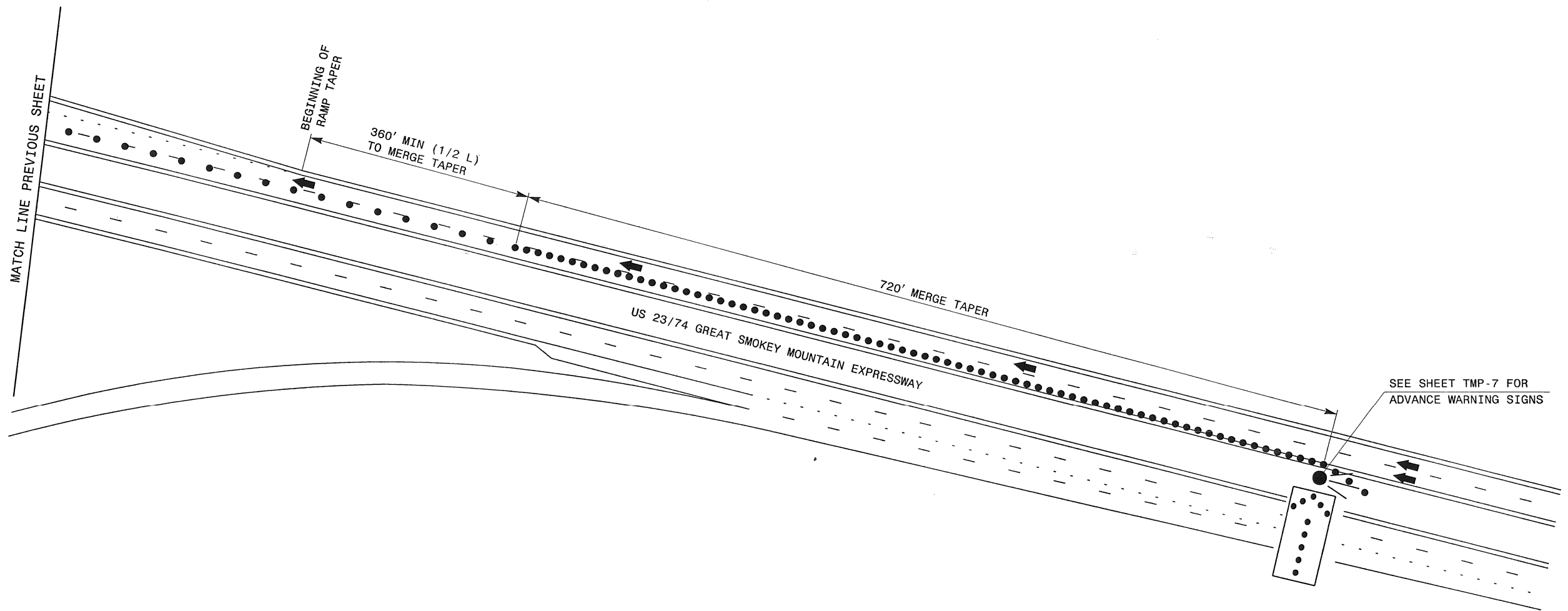


NOTE: IN THE EVENT THAT TRAFFIC NEEDS TO BE STOPPED ON SR 1531 UNDER BRIDGES #7/#9, USE FLAGGERS AND "FLAGGER AHEAD" SIGNS W20-7A. DO NOT STOP TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME. DO NOT ALLOW TRAFFIC TO BACK UP ONTO US 74.





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	<p align="center">10/3/2011 10/3/11</p>		

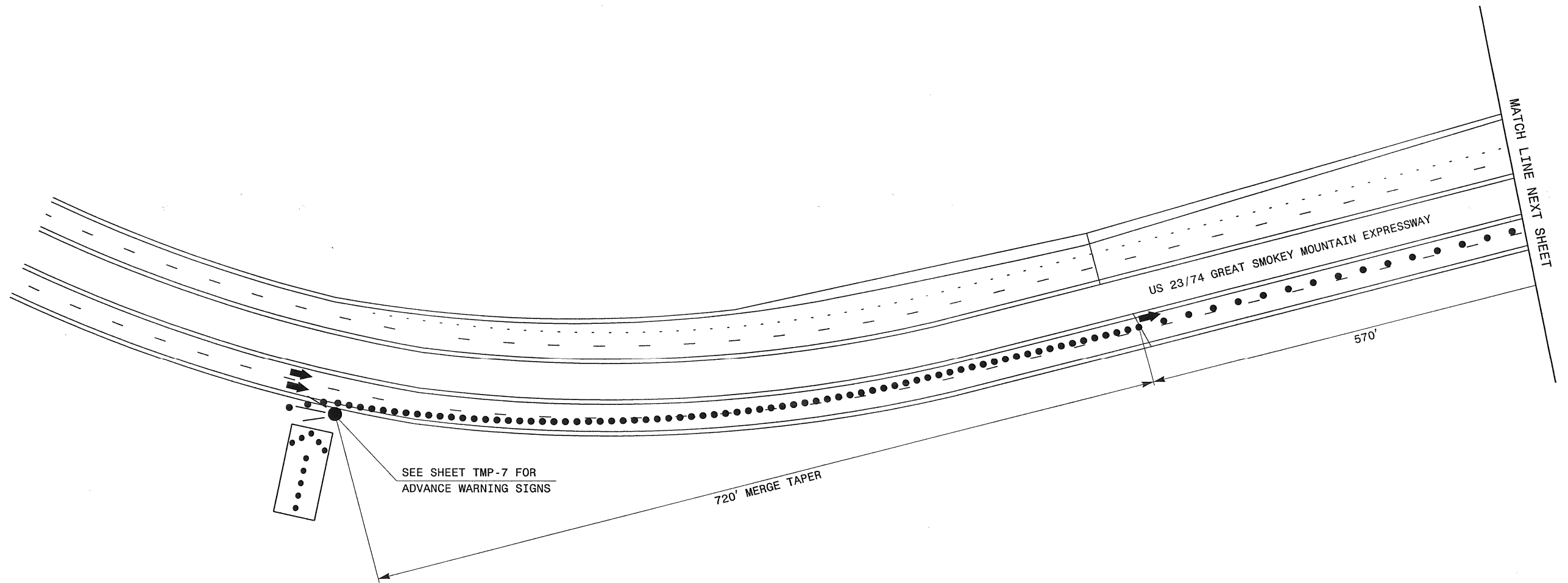
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skc@stantec.com






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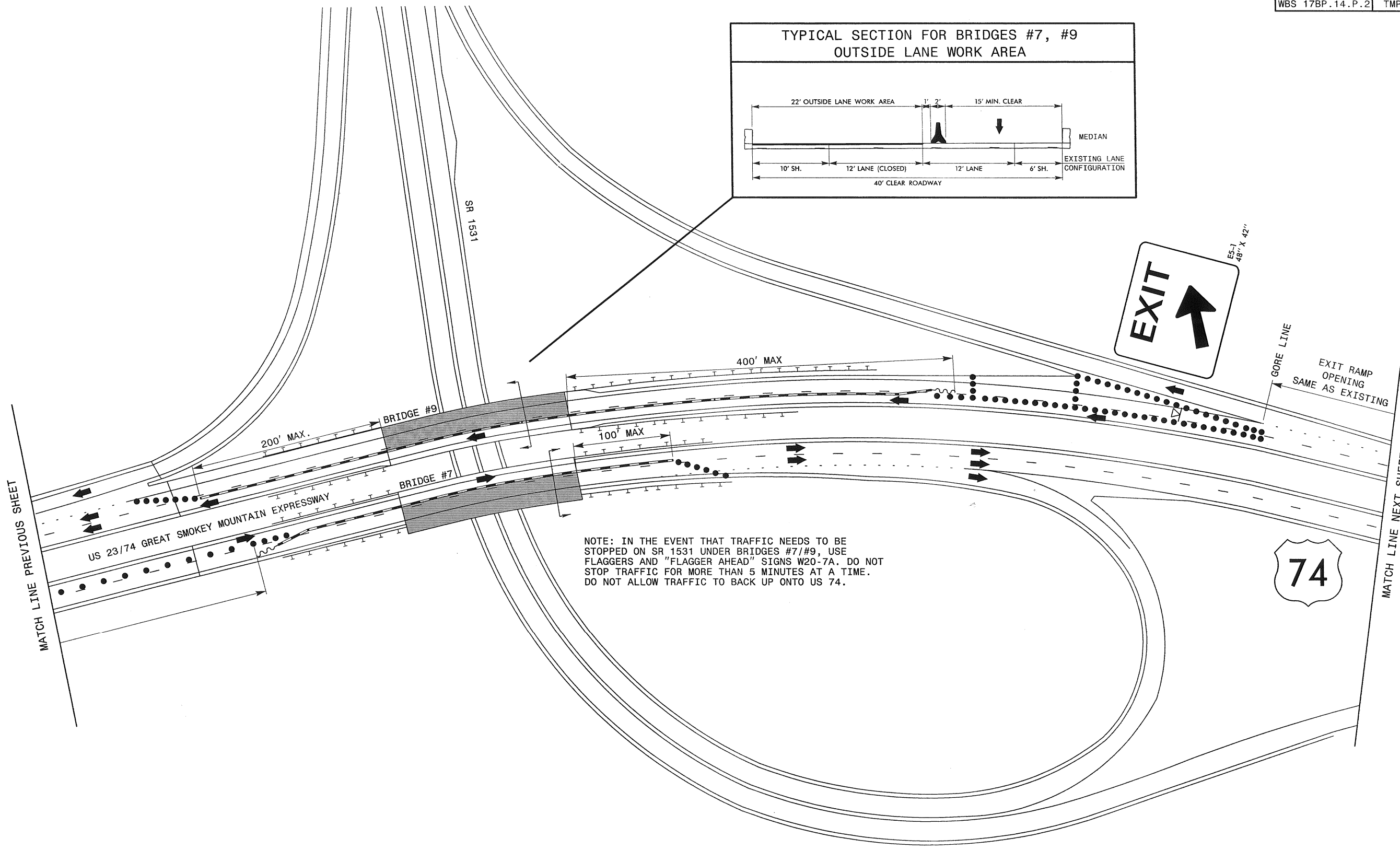
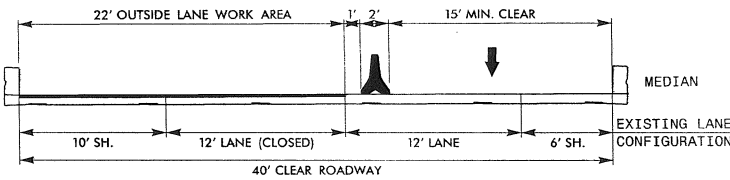
 <p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	<p>APPROVED: _____ DATE: _____</p> <p>SEAL</p> <p><i>[Signature]</i> 10/3/11</p>		<p>BRIDGES #7 / #9</p> <p>LEFT LANE CLOSURES WITH PCB</p>
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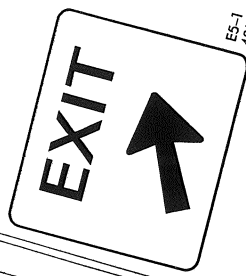


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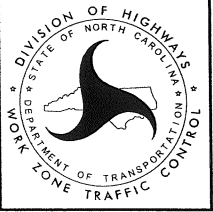
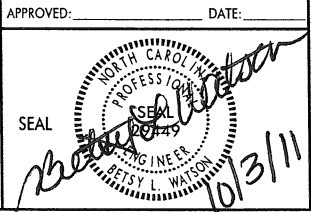
TYPICAL SECTION FOR BRIDGES #7, #9
OUTSIDE LANE WORK AREA



NOTE: IN THE EVENT THAT TRAFFIC NEEDS TO BE STOPPED ON SR 1531 UNDER BRIDGES #7/#9, USE FLAGGERS AND "FLAGGER AHEAD" SIGNS W20-7A. DO NOT STOP TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME. DO NOT ALLOW TRAFFIC TO BACK UP ONTO US 74.

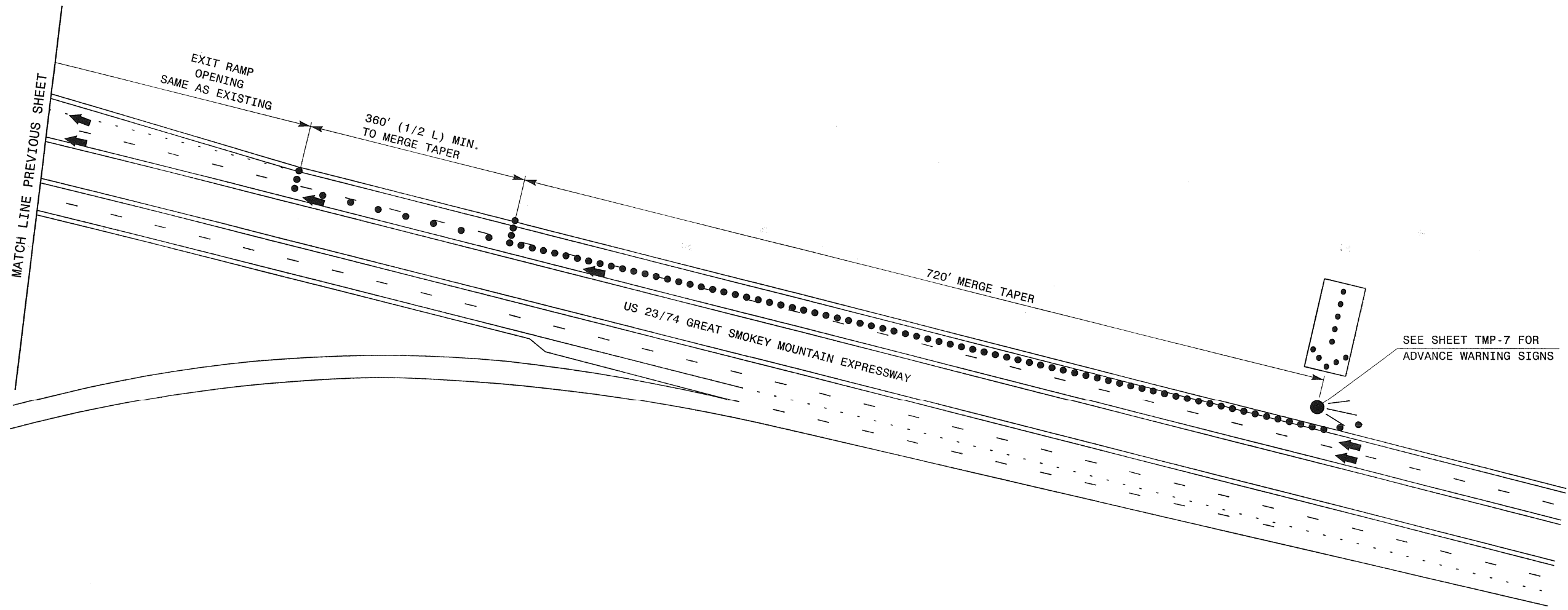


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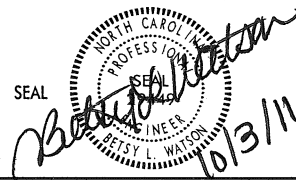
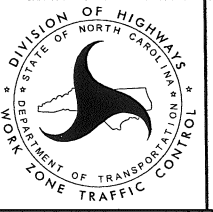


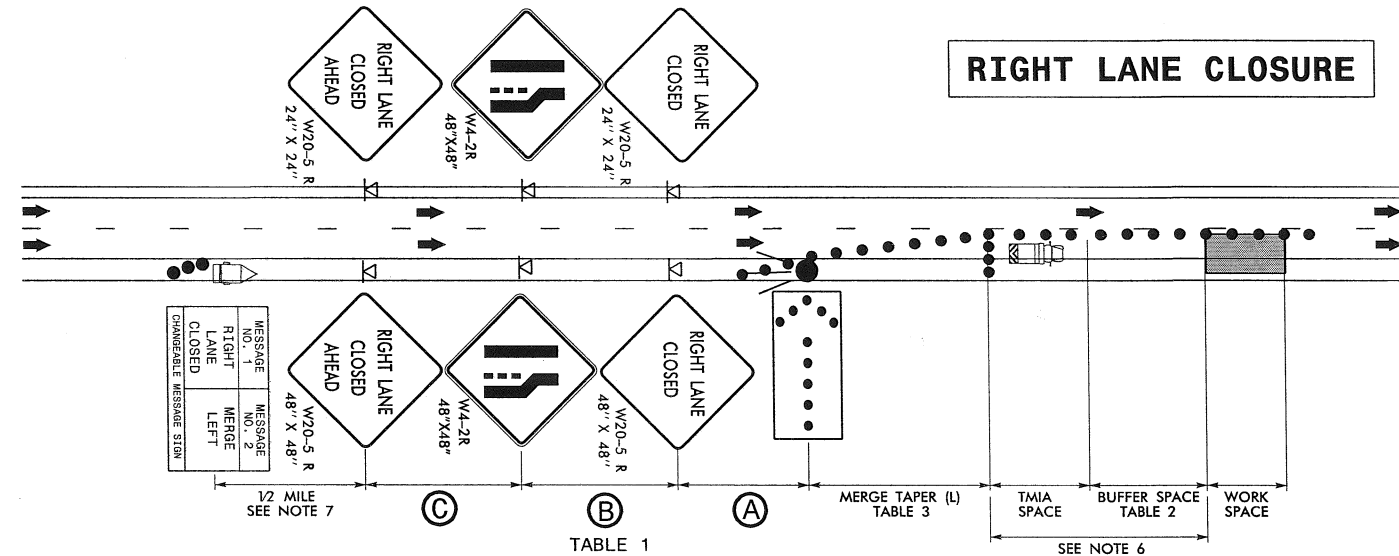
BRIDGES #7 / #9
RIGHT LANE CLOSURES
WITH PCB

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 <p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27608 Tel. (919) 851-0968 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	APPROVED: _____ DATE: _____			BRIDGES #7 / #9 RIGHT LANE CLOSURES WITH PCB



1. INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
2. STATIONARY SIGNS SHOULD BE USED IF THE LANE CLOSURE WILL BE IN PLACE FOR LONGER THAN 3 CONSECUTIVE DAYS.
3. SIGNS ARE NOT REQUIRED ON THE LEFT SIDE OF THE ROADWAY WHEN THERE IS NOT ENOUGH ROOM FOR PLACEMENT. AT CONCRETE BARRIER LOCATIONS CLAMP ATTACHMENTS AND SMALLER SIGNS MAY BE USED.
4. PLACE ARROW PANELS ON THE SHOULDER. IF SHOULDERS DO NOT EXIST, PLACE ARROW PANELS WITHIN THE MERGE TAPER BEHIND THE CHANNELIZING DEVICES OF THE LANE CLOSURE. IF NEEDED, EXTEND LANE CLOSURES TO PROVIDE STOPPING SIGHT DISTANCE TO THE ARROW PANEL (TABLE 2).
5. PLACE LANE CLOSURE DRUMS IN TAPERS AT A MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT (MPH). ALONG BUFFER SPACES AND WORK AREAS SPACE DRUMS AT A MAXIMUM SPACING EQUAL IN FEET TO TWICE THE POSTED SPEED LIMIT (MPH). IN ALL CASES, CHANNELIZING DEVICES ARE TO BE SPACED IN SUCH A MANNER AS TO POSITIVELY ACHIEVE THE INTENDED VISUAL CHANNELIZATION. CHANNELIZING DEVICES SHOULD BE Laterally OFFSET 3 FT INSIDE THE CLOSED LANE AS ROOM PERMITS.
6. TMIA'S ARE REQUIRED ONLY WHEN A BUFFER SPACE CANNOT BE ATTAINED, OR WHEN DIRECTED BY THE ENGINEER OR THE PLANS. POSITION THE TMIA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER. IF A TMIA IS USED IN CONJUNCTION WITH A BUFFER SPACE THEN ONLY THE AREA IN FRONT OF THE TMIA IS THE BUFFER SPACE.
7. PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY OR AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE FROM ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC AND MOVE CMS APPROXIMATELY 1/2 MILE IN CONJUNCTION WITH ANTICIPATED BACKUP.
8. 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, REMOVE LANE CLOSURE DEVICES, COVER OR LAY DOWN SIGNS, AND TURN OFF ARROW PANEL AND MESSAGE BOARDS.

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TABLE 1			
ADVANCE WARNING SIGN SPACING			
ROAD TYPE & POSTED SPEED LIMIT (MPH)	DISTANCE BETWEEN SIGNS (FEET)		
	(A)	(B)	(C)
URBAN ≤ 35	100	100	100
RURAL ≤ 35	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROADS (≥ 55)	1000	1500	2700

SIGN SPACING DISTANCES ARE RECOMMENDED AND APPROXIMATE. THESE DISTANCES SHOULD BE ADJUSTED FOR FIELD CONDITIONS, BY INCREASING OR DECREASING THE RECOMMENDED DISTANCES.

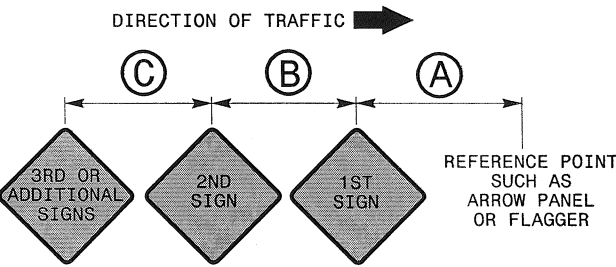
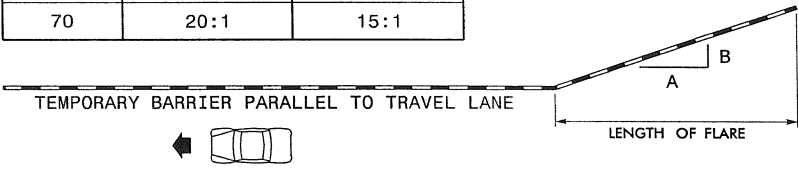


TABLE 2	
POSTED SPEED LIMIT (MPH)	LONGITUDINAL BUFFER SPACE & STOPPING SIGHT DISTANCE (FEET)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

TABLE 3		
TEMPORARY BARRIER FLARE RATES		
POSTED SPEED LIMIT (MPH)	ANCHORED (A:B)	UNANCHORED (A:B)
≤ 30	8:1	7:1
35	10:1	8:1
40	11:1	9:1
45	13:1	10:1
50	14:1	11:1
55	16:1	12:1
60	17:1	13:1
65	19:1	14:1
70	20:1	15:1



BARRIER IS CONSIDERED FLARED WHEN IT IS NOT PARALLEL TO THE EDGE OF THE TRAVELWAY.

TAPER LENGTHS FOR CHANNELIZING DEVICES & PAVEMENT MARKINGS	
TYPE OF TAPER	TAPER LENGTH
MERGE	L
SHIFT	1/2 L
SHOULDER	1/3 L
DOWNSTREAM (OPTIONAL)	100' PER LANE
ONE-LANE, TWO-WAY TRAFFIC	50'-100'

M.U.T.C.D. FORMULAS FOR TAPER LENGTH OF CHANNELIZING DEVICES AND PAVEMENT MARKINGS:

SPEED LIMIT (S)	TAPER LENGTH (L) IN FEET
40 MPH OR LESS	$L = W \times S$
45 MPH OR GREATER	$L = \frac{W \times S^2}{60}$

L = TAPER LENGTH (FEET)
W = OFFSET WIDTH (FEET)
S = POSTED SPEED LIMIT, OFF-PEAK 85 PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED (MPH)

WHENEVER TAPERS ARE TO BE USED IN CLOSE PROXIMITY TO AN INTERCHANGE RAMP, CROSSROADS, CURVES, OR OTHER INFLUENCING FACTORS, THE LENGTH OF THE TAPERS MAY BE ADJUSTED.

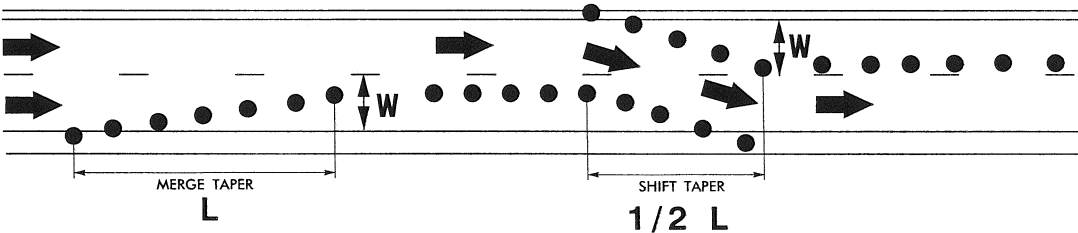


TABLE 4												
TAPER (L)												
OFFSET WIDTH (FEET) W	1	2	3	4	5	6	7	8	9	10	11	12
POSTED SPEED (MPH) S	MINIMUM TAPER (L) LENGTH (FEET) L											
20	10	15	20	30	35	40	50	55	60	70	75	80
25	15	25	35	45	55	65	75	85	95	105	115	125
30	15	30	45	60	75	90	105	120	135	150	165	180
35	25	45	65	85	105	125	145	165	185	205	225	245
40	30	55	80	110	135	160	190	215	240	270	295	320
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840



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APPROVED: _____ DATE: _____

SEAL

PROF. ENGINEER

BETSY L. WATSON

10/3/11



TRAFFIC CONTROL PLAN
DESIGN TABLES