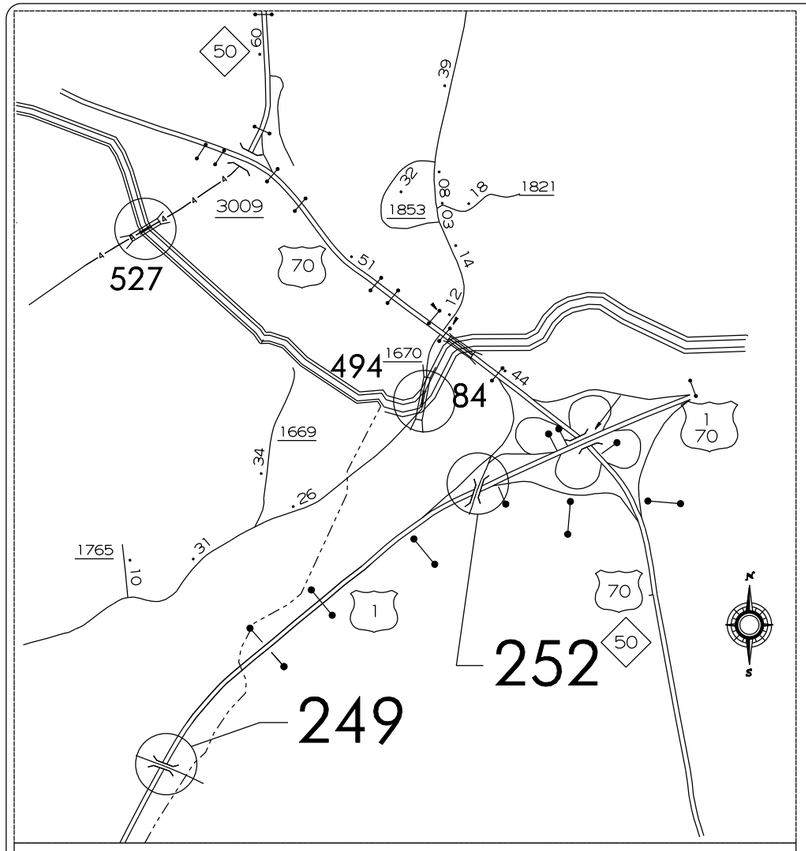
CONTRACT #DO00079

WBS BK-5101 S



VICINITY MAP

INDEX OF SHEETS	
1	TITLE SHEET
S1 – S8	STRUCTURE PLANS
TCP1 – TCP6	TRAFFIC CONTROL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

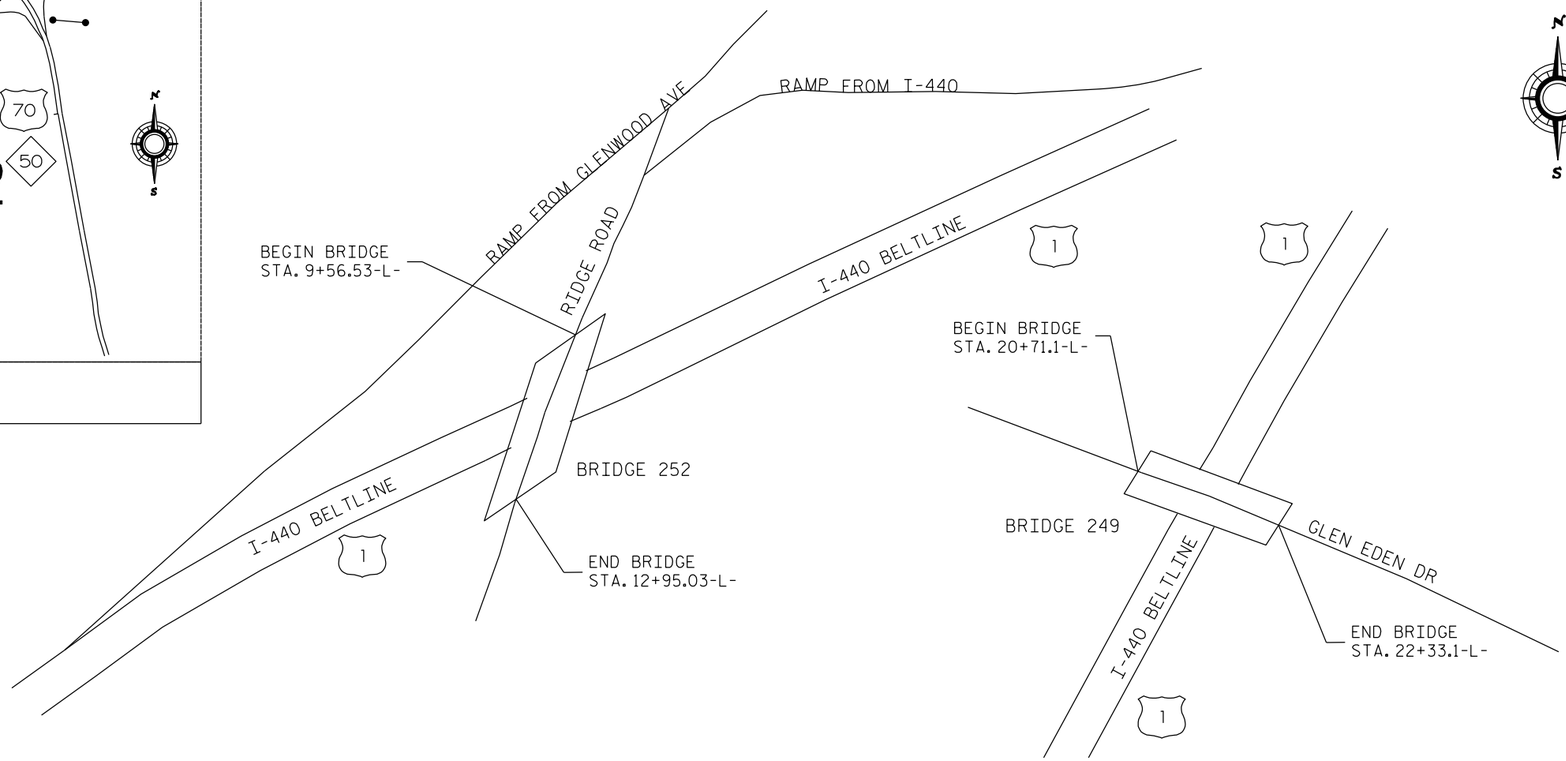
WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BK-5101 S	1	16

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
42579.1.1		PE
42579.3.17		CONST

LOCATION: BRIDGE #249, ON GLEN EDEN DR. OVER, I-440 BELTLINE
BRIDGE #252, ON RIDGE ROAD OVER, I-440 BELTLINE

TYPE OF WORK: BRIDGE DECK REHABILITATION WITH LATEX MODIFIED CONCRETE.



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN DATA

BRIDGE 249
ADT 2007 = 6500

BRIDGE 252
ADT 2009 = 2000

PROJECT LENGTH

BRIDGE #249
LENGTH STRUCTURE PROJECT = .041 MILE

BRIDGE #252
LENGTH STRUCTURE PROJECT = .064 MILE

Prepared in the Office of:

DIVISION OF BRIDGE MANAGEMENT

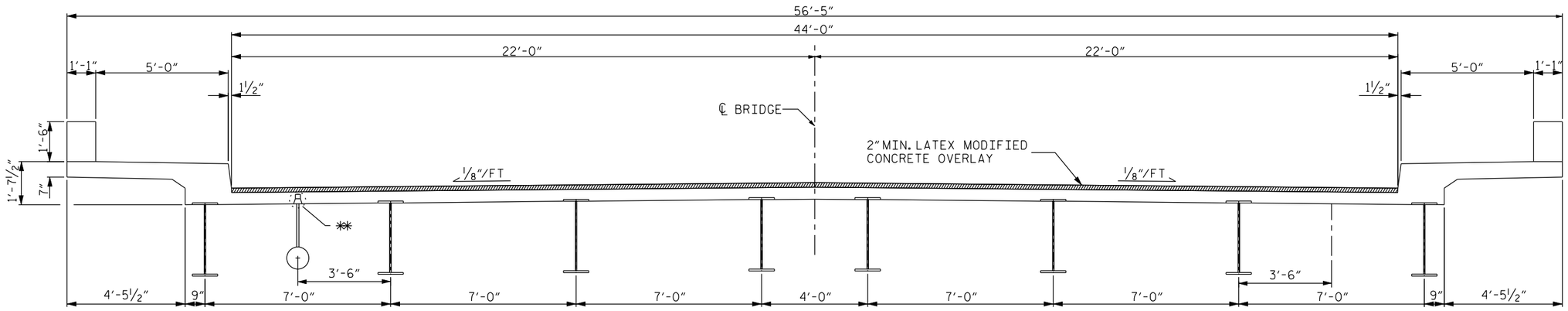
2006 STANDARD SPECIFICATIONS

LETTING DATE:
AUGUST 19, 2010

DAN HOLDERMAN, PE
PROJECT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20208 5/18/10 ENGINEER ERIC B. NELSON, JR.

ERIC NELSON, PE
DESIGN ENGINEER



** SURFACE PREPARATION AT UTILITY HANGER LOCATIONS SHALL NOT EXPOSE HANGER INSERTS. DEPTH OF CUT AT THESE LOCATIONS CAN BE ADJUSTED TO INSURE INSERTS ARE NOT EXPOSED.

TYPICAL SECTION

NOTES

SEE SPECIAL PROVISIONS FOR SURFACE PREPARATION.

FOR UNDER DECK CONTAINMENT SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.

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

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 "TYP. "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL.

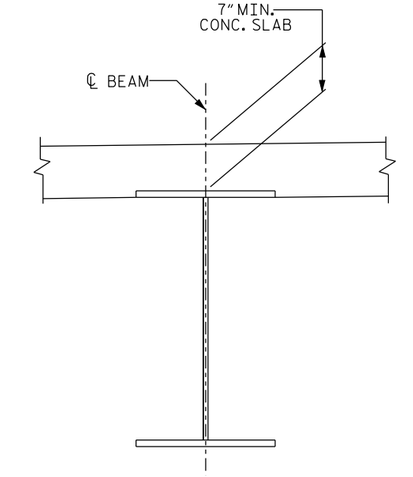
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 2½" AT BENTS 1, 2, AND 3. FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

FOR GROOVING BRIDGE FLOORS INFORMATION, SEE "LATEX MODIFIED CONCRETE" SPECIAL PROVISION.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.



EXIST. SLAB SECTION

TOTAL BILL OF MATERIAL

** SCARIFYING BRIDGE DECK	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE VERY EARLY STRENGTH	EVAZOTE JOINT SEALS	GROOVING BRIDGE FLOOR	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A
SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	C.Y.	SQ.YDS.	LUMP SUM	SQ. FT.	TONS
1554	610	445	1	1056	88	1056	LUMP SUM	8984	55

* QUANTITY SHOWN IS FOR INFORMATION ONLY. ** INCLUDES APPROACH MILLING.

PROJECT NO. BK-5101 S
COUNTY: WAKE
DECK REHAB BRIDGE NO. 249

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION
FOR BRIDGE #249

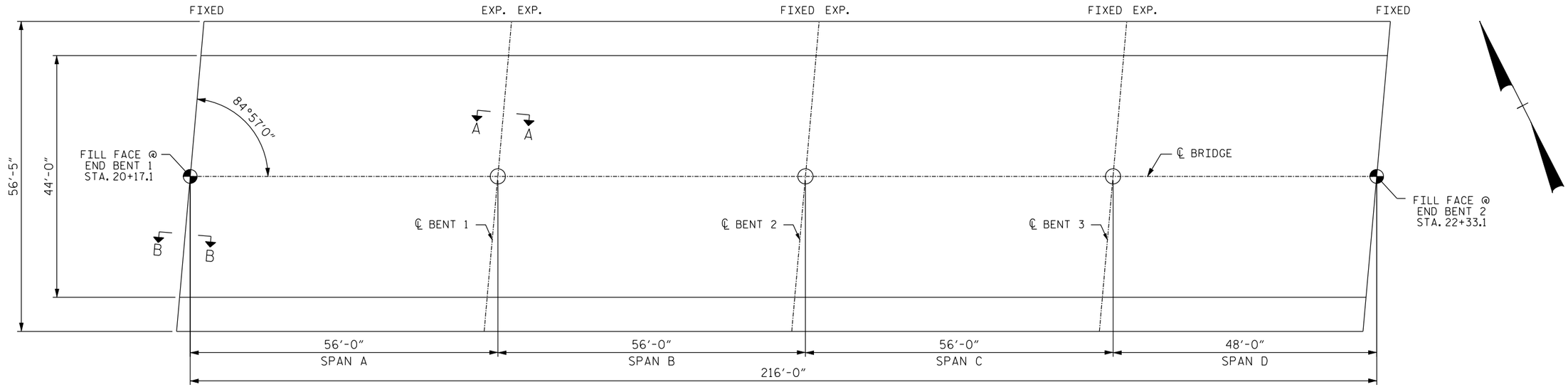
44'-0" CLEAR ROADWAY

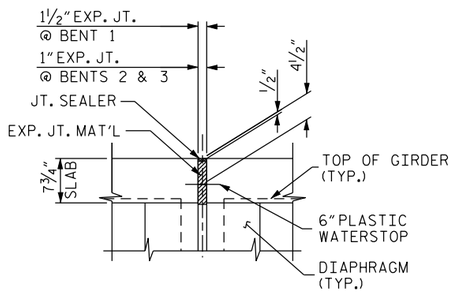
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-1
1			3			TOTAL SHEETS
2			4			8

NOTE: NOT TO SCALE

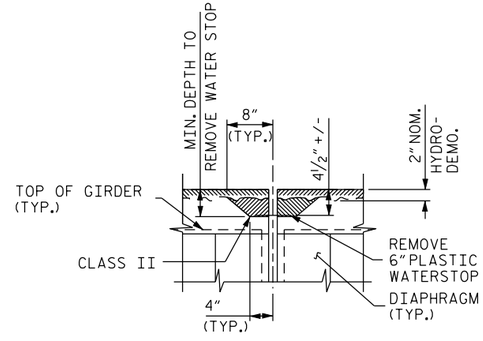
DRAWN BY : LMW DATE : 05/10
CHECKED BY : EBN DATE : EBN/10

$$$$$$SYSTIME$$$$$ $$$$USERNAME$$$$

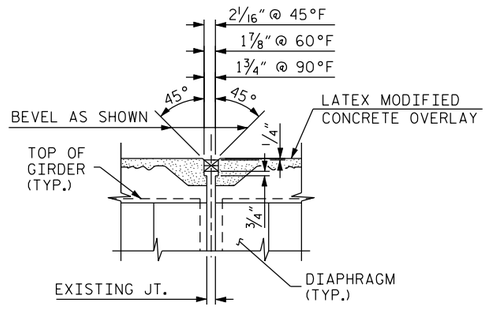




SECTION A-A
(EXISTING JOINT)



SECTION A-A
(MINIMUM EXISTING
JOINT DEMOLITION)



SECTION A-A
(PROPOSED EVAZOTE
JOINT SEAL EXPANSION)

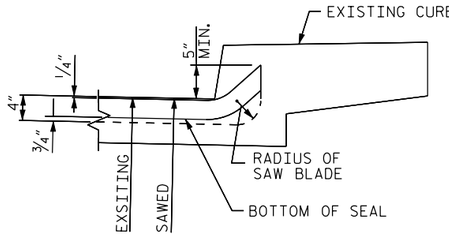
NOTES

FOR EVAZOTE JOINT SEAL, SEE SPECIAL PROVISIONS.

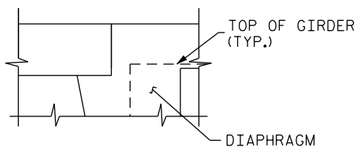
THE INSTALLED EVAZOTE JOINT SEALS SHALL BE WATERTIGHT.

NOMINAL UNCOMPRESSED SEAL WIDTH OF EVAZOTE JOINT SEAL SHALL BE 2½" AT BENTS.

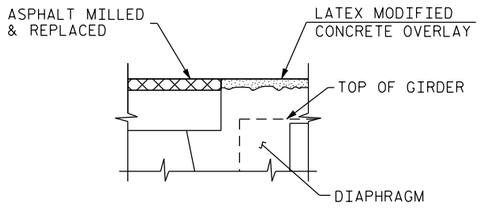
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE EVAZOTE JOINT SEAL IN LIEU OF SAWING THE JOINT.



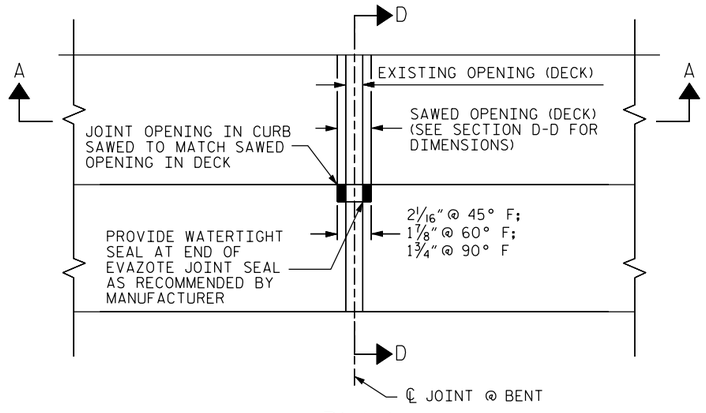
SECTION D-D



SECTION B-B
(EXISTING JOINT)



SECTION B-B
(PROPOSED JOINT)



PLAN

NOTE: NOT TO SCALE

PROJECT NO. BK-5101 S
COUNTY: WAKE
DECK REHAB BRIDGE NO. 249

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

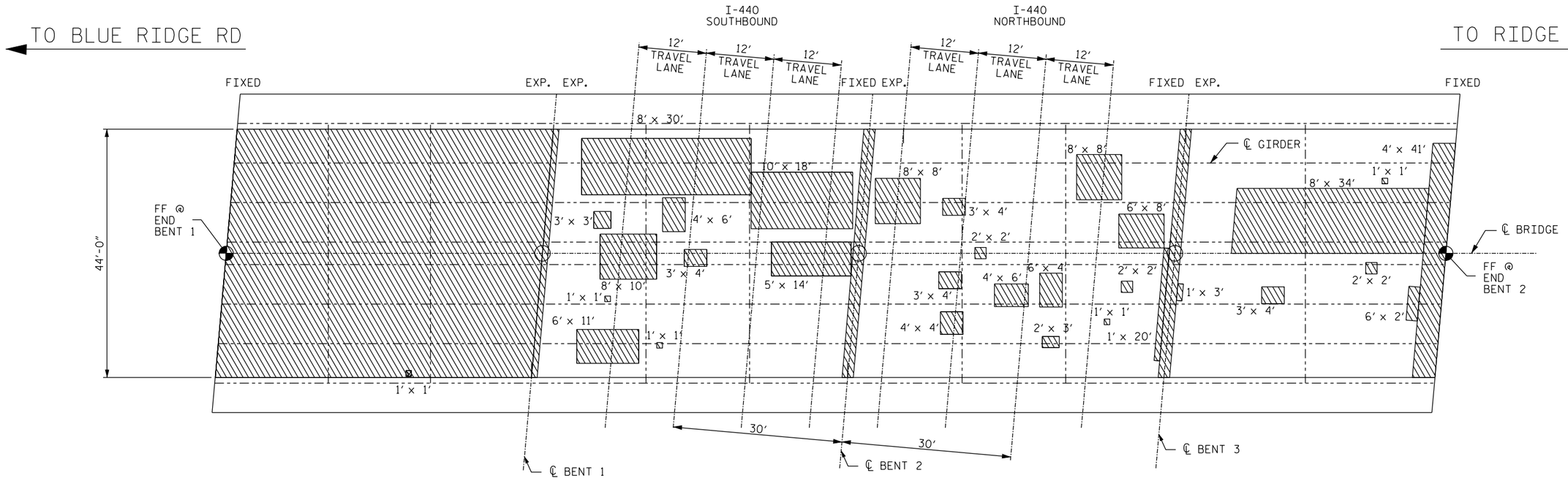
PLAN VIEW &
JOINT DETAILS
FOR BRIDGE #249

44'-0" CLEAR ROADWAY

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

DRAWN BY : LMW DATE : 05/10
CHECKED BY : EBN DATE : 05/10

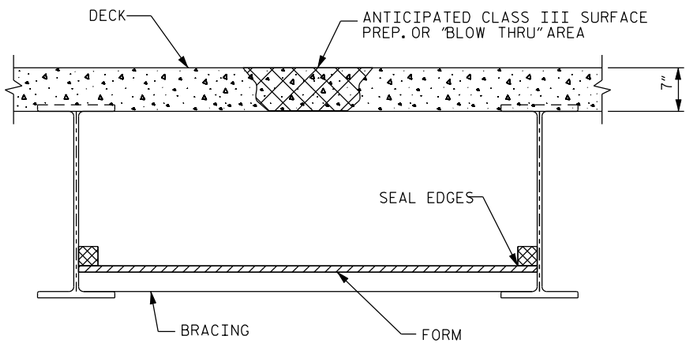
$$$$$$SYSTIME$$$$$ $$$$USERNAME$$$$ $$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$



PLAN OF SPANS - DECK REPAIRS

APPROX. AREA: CLASS II REPAIR

APPROX. AREA: CLASS III REPAIR



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

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 FORM WORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COST FOR INSTALLING AND REMOVING FORM WORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

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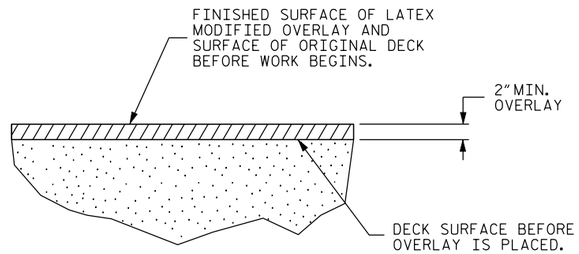


DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY

PROJECT NO. BK-5101 S

COUNTY: WAKE

DECK REHAB BRIDGE NO. 249

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS FOR BRIDGE #249

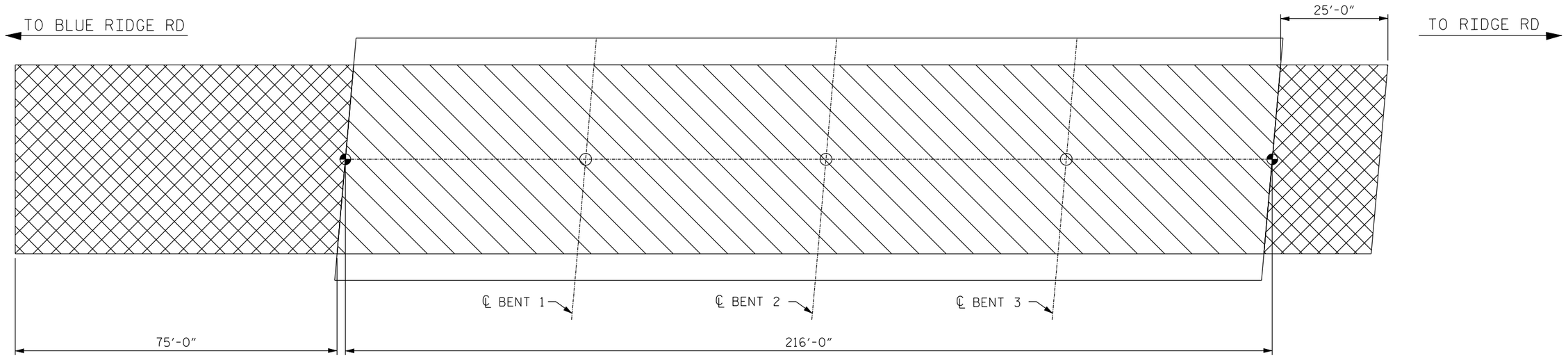
44′-0″ CLEAR ROADWAY

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

NOTE: NOT TO SCALE

DRAWN BY : LMW DATE : 05/10
CHECKED BY : EBN DATE : 05/10

$$$$$$SYSTIME$$$$$ $$$$USERNAME$$$$ $$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$

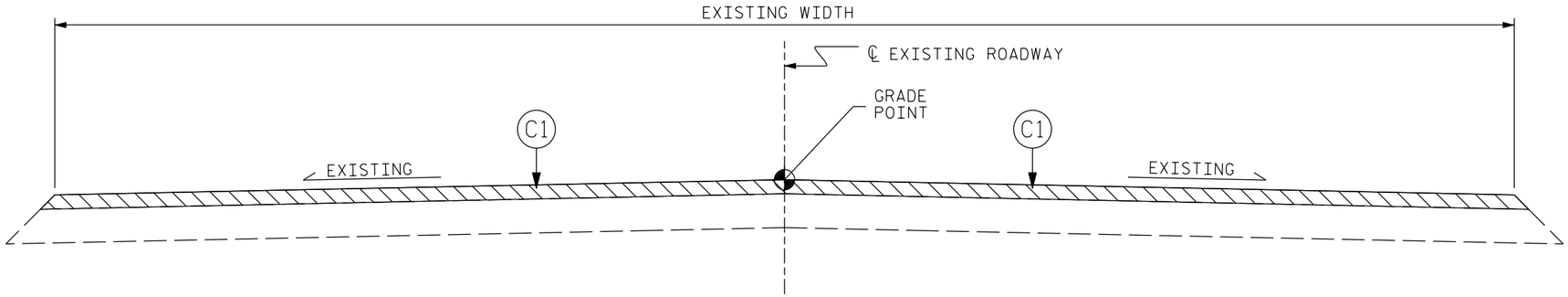


PLAN

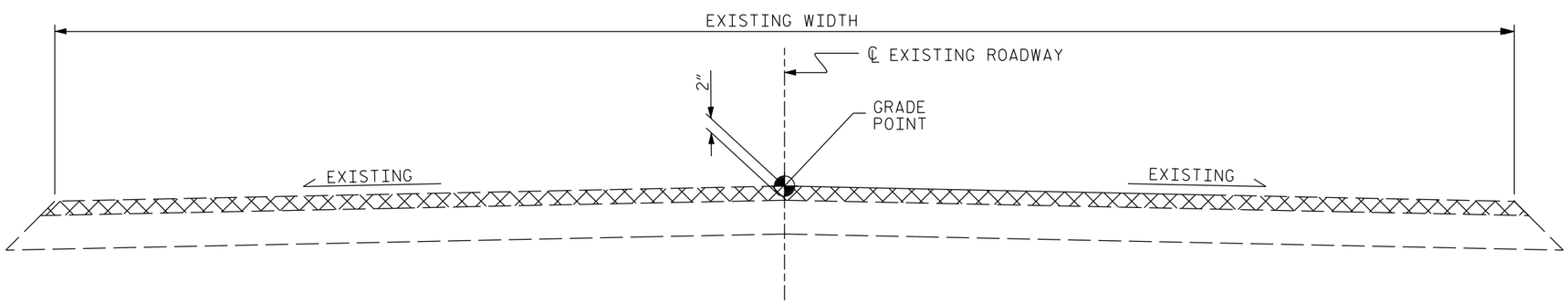
DECK SCARICATION & HYDRODEMOLITION

ASPHALT MILLING & RESURFACING

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF 9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1½" IN DEPTH.



TYPICAL ROADWAY SECTION



TYPICAL ROADWAY MILLING SECTION

(MILL TO 2" DEPTH)

NOTE: NOT TO SCALE

PROJECT NO. BK-5101 S
COUNTY: WAKE
DECK REHAB BRIDGE NO. 249

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

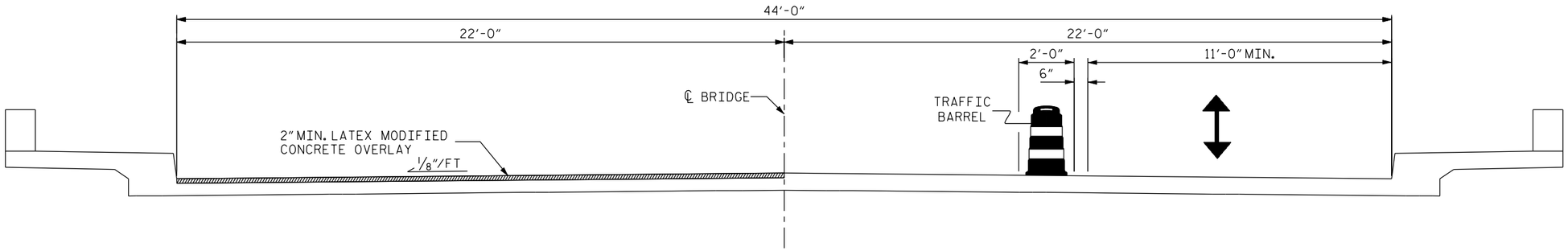
TYPICAL SECTION & MILLING DETAILS FOR BRIDGE #249

44'-0" CLEAR ROADWAY

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

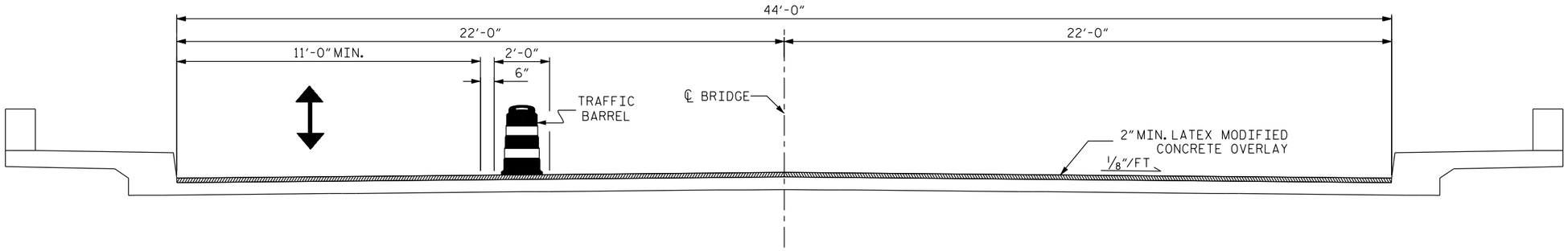
DRAWN BY : LMW DATE : 05/10
CHECKED BY : EBN DATE : 05/10

$$$$$$SYSTIME$$$$$ $$$$USERNAME$$$$



TYPICAL SECTION

(STAGE I SHOWN)



TYPICAL SECTION

(STAGE II SHOWN)

PROJECT NO. BK-5101 S

COUNTY: WAKE

DECK REHAB BRIDGE NO. 249

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STAGEING

44'-0" CLEAR ROADWAY

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-5
1			3			TOTAL SHEETS
2			4			8

NOTE: NOT TO SCALE

DRAWN BY : LMW DATE : 05/10
CHECKED BY : EBN DATE : EBN/10

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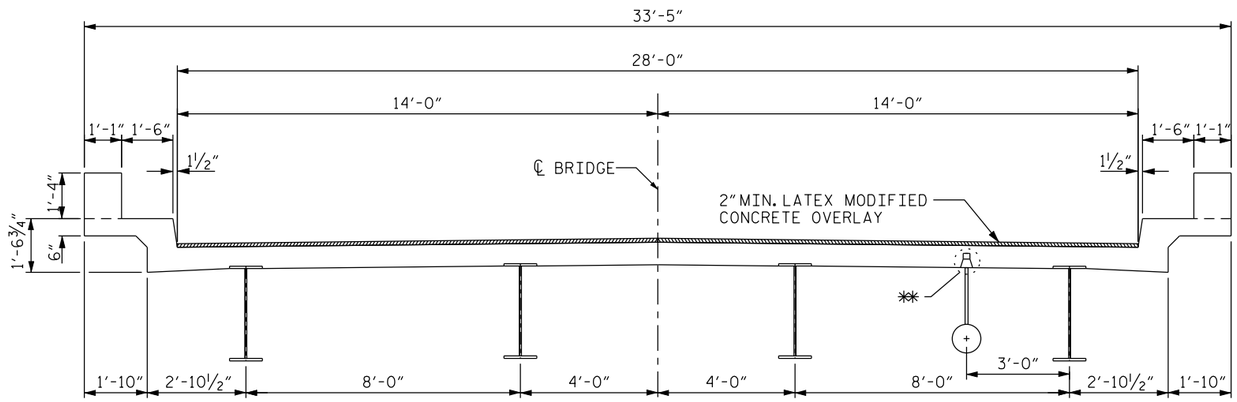

** SURFACE PREPARATION AT UTILITY HANGER LOCATIONS SHALL NOT EXPOSE HANGER INSERTS. DEPTH OF CUT AT THESE LOCATIONS CAN BE ADJUSTED TO INSURE INSERTS ARE NOT EXPOSED.

TYPICAL SECTION

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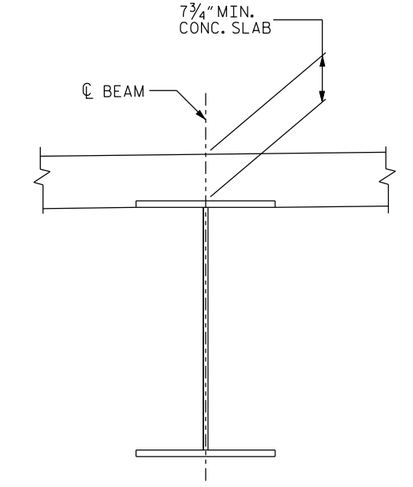


EXIST. SLAB SECTION

TOTAL BILL OF MATERIAL

* SCARIFYING BRIDGE DECK	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE VERY EARLY STRENGTH	EVAZOTE JOINT SEALS	GROOVING BRIDGE FLOOR
SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	C.Y.	SQ.YDS.	LUMP SUM	SQ. FT.
1053	356	697	0	1053	88	1053	LUMP SUM	8705

* QUANTITY SHOWN IS FOR INFORMATION ONLY.

PROJECT NO. BK-5101 S
COUNTY: WAKE
DECK REHAB BRIDGE NO.252

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION
FOR BRIDGE #252

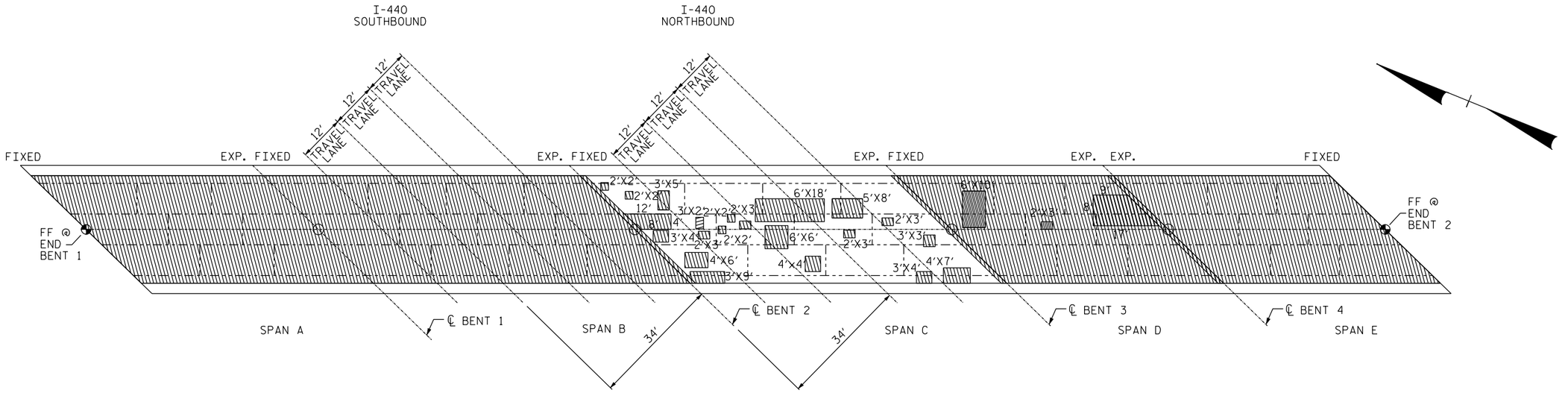
28′-0″ CLEAR ROADWAY

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-6
1			3			TOTAL SHEETS
2			4			8

NOTE: NOT TO SCALE

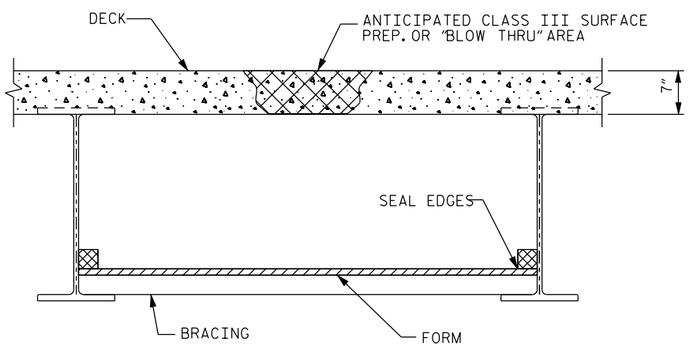
DRAWN BY : LMW DATE : 05/10
CHECKED BY : EBN DATE : 05/10

$$$$$$SYSTIME$$$$$ $$$$USERNAME$$$$



PLAN OF SPANS - DECK REPAIRS

APPROX. AREA: CLASS II REPAIR



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

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

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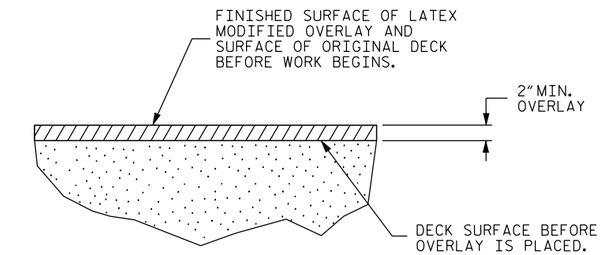

DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY

PROJECT NO. BK-5101 S
COUNTY: WAKE
DECK REHAB BRIDGE NO. 252

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS FOR BRIDGE #252

28'-0" CLEAR ROADWAY

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-7
1			3			TOTAL SHEETS
2			4			8

NOTE: NOT TO SCALE

DRAWN BY : LMW	DATE : 05/10
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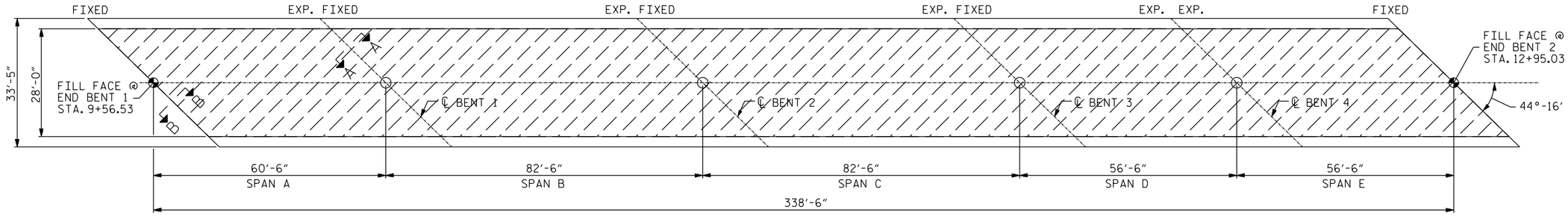
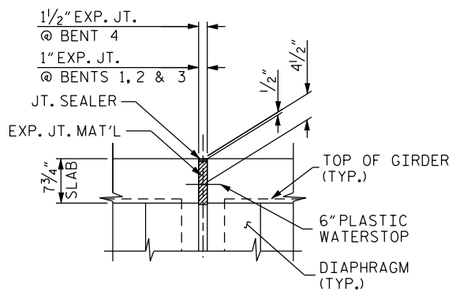
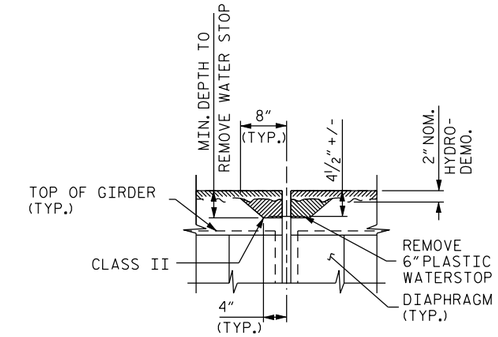


DECK SCARICATION &
HYDRODEMOLITION

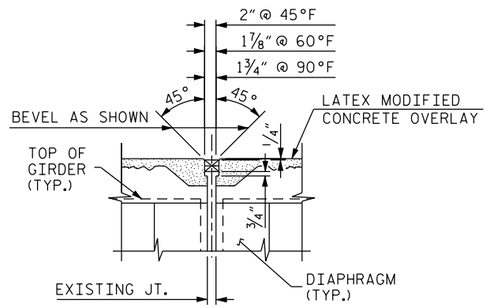
PLAN VIEW



SECTION A-A
(EXISTING JOINT)



SECTION A-A
(MINIMUM EXISTING
JOINT DEMOLITION)



SECTION A-A
(PROPOSED EVAZOTE
JOINT SEAL EXPANSION)

NOTES

FOR EVAZOTE JOINT SEAL, SEE SPECIAL PROVISIONS.

THE INSTALLED EVAZOTE JOINT SEALS SHALL BE WATERTIGHT.

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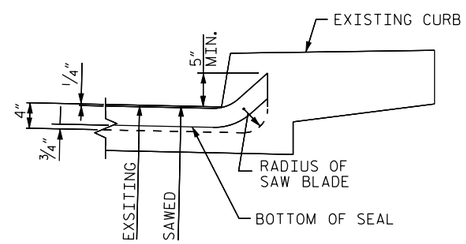
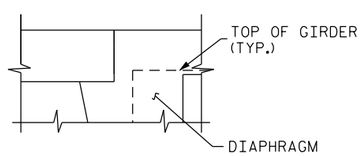
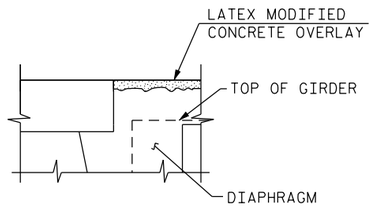
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE EVAZOTE JOINT SEAL IN LIEU OF SAWING THE JOINT.



SECTION D-D



SECTION B-B
(EXISTING JOINT)



SECTION B-B
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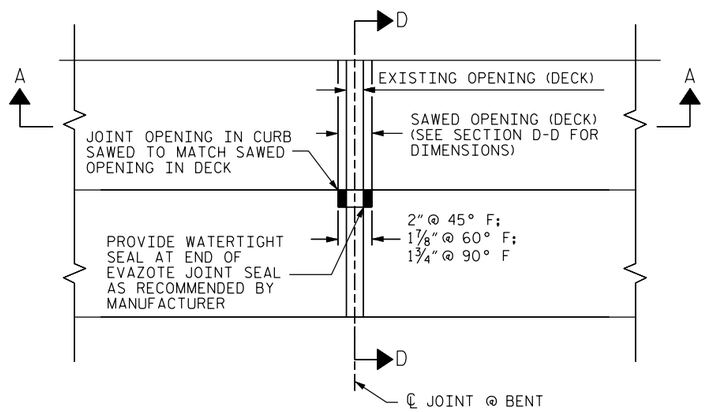

PLAN

PROJECT NO. BK-5101 S
COUNTY: WAKE
DECK REHAB BRIDGE NO. 252

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN VIEW &
JOINT DETAILS
FOR BRIDGE #252

28'-0" CLEAR ROADWAY

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

NOTE: NOT TO SCALE

DRAWN BY : LMW DATE : 05/10
CHECKED BY : EBN DATE : 05/10

$$$$$$SYSTIME$$$$$ $$$$USERNAME$$$$ $$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$

STATE PROJECT REFERENCE NO.	SHEET NO.
BK-5101S	TCP-1

WBS 42579.3.17

BK-5101S

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED TRAFFIC CONTROL

WAKE COUNTY

LOCATION: BRIDGE NO. 249 GLEN EDEN DR. OVER I-440 AND BRIDGE NO. 252 RIDGE RD. OVER I-440

TYPE OF WORK: TRAFFIC CONTROL FOR BRIDGE DECK PRESERVATION

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
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUMS
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND INDEX OF SHEETS
TCP-2	GENERAL NOTES
TCP-3	TRAFFIC CONTROL PHASING
TCP-4	AREA 1-BRIDGE NO. 249
TCP-5	AREA 2-BRIDGE NO. 252
TCP-6	I-440 LANE CLOSURES

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW
- WORK AREA

TRAFFIC CONTROL DEVICES

- TYPE III BARRICADE
- CONE
- DRUM
- SKINNY DRUM
- FLASHING ARROW PANEL (TYPE C)
- STATIONARY SIGN
- PORTABLE SIGN
- STATIONARY OR PORTABLE SIGN
- CHANGEABLE MESSAGE SIGN
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- LAW ENFORCEMENT (LAW)
- FLAGGER

APPROVED: Betsy L Watson
DATE: 6/18/10

NORTH CAROLINA PROFESSIONAL SEAL 29449 ENGINEER BETSY L. WATSON

PLAN PREPARED BY:

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BETSY L. WATSON, PE — *TRAFFIC CONTROL ENGINEER*

GEORGE KARAGEORGE — *TRAFFIC CONTROL DESIGNER*

6/17/2010
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rcullen

PROJECT REFERENCE NO.	SHEET NO.
BK-5101S	TCP-2

GENERAL NOTES

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.

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

LANE CLOSURE TIME RESTRICTIONS

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

I-440 DAY AND TIME RESTRICTIONS

ONE CLOSED LANE ON I-440:
MONDAY TO SUNDAY, 7:00AM to 7:00PM

TWO CLOSED LANES ON I-440:
MONDAY TO SUNDAY, 6:00AM to 10:00PM

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
I-440

HOLIDAY

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 7:00 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 7:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.

4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.

5) FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 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 7:00 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 7:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.

7) FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.

8) FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) 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.

D) 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.

E) 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 USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

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 USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

H) DO NOT INSTALL SIMULTANEOUS LANE CLOSURES ON BOTH DIRECTIONS OF I-440.

TRAFFIC CONTROL DEVICES

I) SPACE CHANNELIZING DEVICES ALONG WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH). USE A 10 FT SPACING IN RADII OR WHEN THEY ARE USED TO CLOSE A DRIVEWAY OR ROADWAY. 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 FROM THE EDGE OF A TRAVELWAY AS ROOM PERMITS.

WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.

J) 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.

K) WHEN CLOSING A ROAD TO TRAFFIC INSTALL SIGNS BEFORE BARRICADES. WHEN OPENING A ROADWAY TO TRAFFIC FIRST REMOVE BARRICADES THEN REMOVE SIGNS. INSTALL OR REMOVE DEVICES FOR ROAD CLOSURES IN A CONTINUOUS OPERATION WITHIN ONE CALENDAR DAY.

TRAFFIC PATTERN ALTERATIONS

L) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

M) PROVIDE SIGNING AND DEVICES FOR ROAD CLOSURES ACCORDING TO THE TRAFFIC CONTROL PLAN. COVER OR REMOVE ALL SIGNS AND DEVICES FOR ROAD CLOSURES WHEN NOT IN EFFECT.

N) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

PAVEMENT MARKINGS AND MARKERS

O) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE TO REPLACE THE EXISTING PAVEMENT MARKINGS.

ROAD NAME	MARKING	MARKER
RIDGE RD.	POLYUREA	NONE
GLEN EDEN DR.	POLYUREA	NONE

MISCELLANEOUS

P) USE LAW ENFORCEMENT TO DIRECT TRAFFIC AND ENFORCE ROAD CLOSURES. LOCATIONS SHOWN IN THE PLANS ARE APPROXIMATE AND MAY BE REVISED AS THE OFFICER OR THE ENGINEER DEEM NECESSARY.

Q) MAINTAIN SIDEWALK ACCESS AT ALL TIMES, UNLESS OTHERWISE SHOWN IN THE TRAFFIC CONTROL PLAN, OR ALLOWED BY THE ENGINEER.

R) ALL DIMENSIONS AND STATIONS IN THE TRAFFIC CONTROL PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.

S) MAINTAIN DRIVEWAY ACCESS AT ALL TIMES, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

T) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.

U) COORDINATE AND INFORM CRABTREE VALLEY MALL AND SURROUNDING BUSINESSES OF THE PLANNED BRIDGE WORK OPERATIONS, AS DIRECTED BY THE ENGINEER.

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SEAL

SIGNATURE 6/18/10 DATE

GENERAL NOTES

SCALE:	NONE
DATE:	JUNE 2010
DWG. BY:	GK
DESIGN BY:	GK
REVIEWED BY:	BLW

REVISIONS

CADD FILE

6/17/2010
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PROJECT REFERENCE NO.	SHEET NO.
BK-5101S	TCP-3

TRAFFIC CONTROL PHASING

THIS PROJECT CONSISTS OF TWO AREAS OF CONSTRUCTION:

AREA 1-BRIDGE #249 GLEN EDEN DR. OVER I-440

AREA 2-BRIDGE #252 RIDGE RD. OVER I-440

DO NOT WORK IN AREA 1 AND AREA 2 SIMULTANEOUSLY. COMPLETE THE WORK OF ONE AREA BEFORE BEGINNING WORK IN THE OTHER AREA.

AREA 1-BRIDGE #249 GLEN EDEN DR. OVER I-440 (TCP-4, TCP-6)

PHASE I

STEP 1:
APPROXIMATELY ONE WEEK PRIOR TO CONSTRUCTION OPERATIONS INSTALL CHANGEABLE MESSAGE SIGNS TO PORTRAY MESSAGES GIVING ADVANCE WARNING TO THE PUBLIC OF UPCOMING ROAD WORK CONDITIONS.

STEP 2:
CONDUCT BRIDGE WORK IN HALF SECTIONS USING FLAGGER CONTROLLED LANE CLOSURES PER ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9.(TCP-4)

DURING HYDRO-DEMOLITION OPERATIONS OVER THE I-440 BELTLINE USE LANE CLOSURES ON I-440 PER SHEET TCP-6. REFER TO GENERAL NOTE A FOR LANE CLOSURE TIME RESTRICTIONS.

PERFORM ONLY THE AMOUNT OF HYDRO-DEMOLITION THAT CAN BE OVERLAYED BEFORE LANES ARE RE-OPENED TO TRAFFIC.

UPON COMPLETION OF ALL BRIDGE WORK AND BEFORE RE-OPENING BRIDGE TO TRAFFIC, REPLACE OBLITERATED EXISTING PAVEMENT MARKINGS.

AREA 2-BRIDGE #252 RIDGE RD. OVER I-440 (TCP-5, TCP-6)

PHASE I

STEP 1:
INSTALL CHANGEABLE MESSAGE SIGNS TO PORTRAY MESSAGES GIVING ADVANCE WARNING TO THE PUBLIC OF UPCOMING ROAD CLOSURE AND WORK CONDITIONS.(TCP-5)

SEE INTERMEDIATE CONTRACT TIME SPECIAL PROVISIONS

COMPLETE THE WORK OF AREA 2-PHASE I-STEPS 2 THRU 4 WITHIN A TIME PERIOD OF 5 CONSECUTIVE CALENDAR DAYS.

STEP 2:
REVISE CMS MESSAGES THEN INSTALL ROAD CLOSURE TRAFFIC CONTROL DEVICES AND CLOSE RIDGE RD. BRIDGE #252 (TCP-5).

STEP 3:
WITH BRIDGE CLOSED TO TRAFFIC PERFORM ALL BRIDGE WORK.

DURING HYDRO-DEMOLITION OPERATIONS USE LANE CLOSURES ON I-440 BELTLINE PER SHEET TCP-6. REFER TO GENERAL NOTE A FOR LANE CLOSURE TIME RESTRICTIONS. DURING LANE CLOSURES ON I-440 EAST CLOSE RIDGE RD. ENTRANCE RAMP AS SHOWN ON SHEET TCP-5.

UPON COMPLETION OF ALL BRIDGE WORK AND BEFORE RE-OPENING BRIDGE TO TRAFFIC, REPLACE OBLITERATED EXISTING PAVEMENT MARKINGS.

STEP 4:
REMOVE ROAD CLOSURE DEVICES AND OPEN RIDGE RD. BRIDGE #252 TO TRAFFIC.

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 25449 ENGINEER BETTY L. WATSON

SIGNATURE

DATE 6/18/10

TRAFFIC CONTROL PHASING

SCALE:	NONE
DATE:	JUNE 2010
DWG. BY:	GK
DESIGN BY:	GK
REVIEWED BY:	BLW

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH TRAFFIC CONTROL UNIT

REVISIONS

CADD FILE

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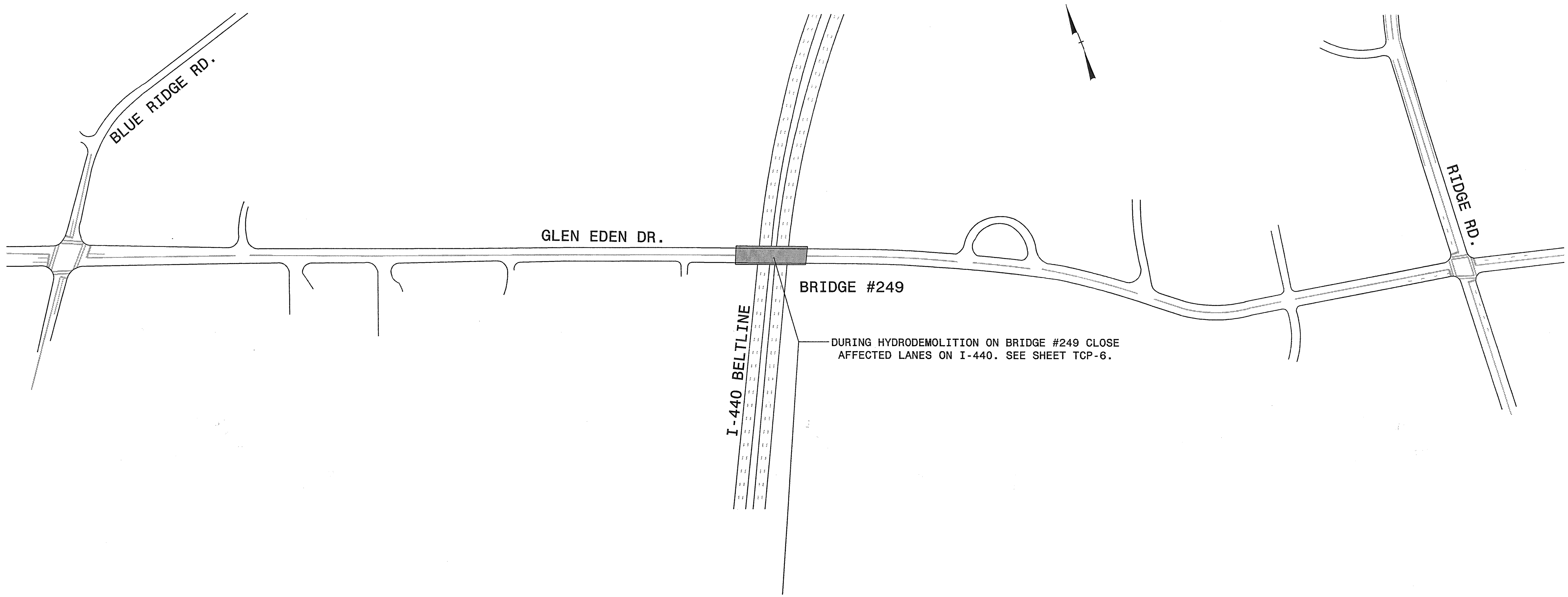
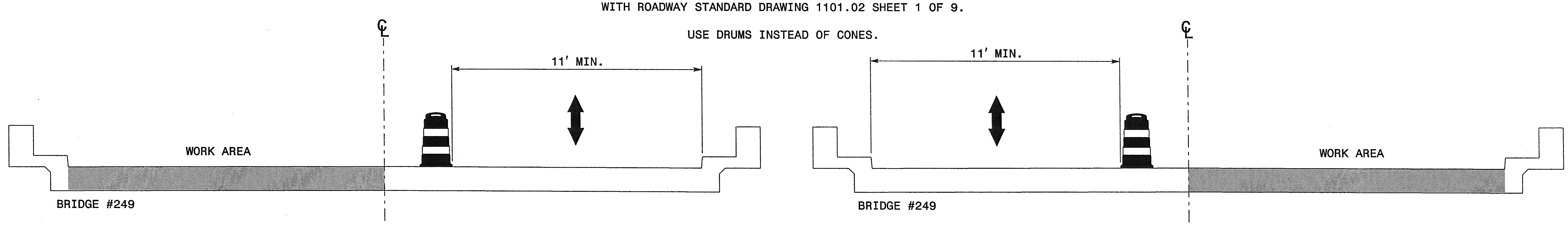
PROJECT REFERENCE NO.	SHEET NO.
BK-5101S	TCP-4



CONSTRUCT BRIDGE #249 IN 1/2 SECTIONS

USE FLAGGER OPERATION LANE CLOSURES IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.02 SHEET 1 OF 9.

USE DRUMS INSTEAD OF CONES.



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SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 29249 BETSY L. WATSON

SIGNATURE 6/18/10 DATE

AREA 1
BRIDGE #249
GLEN EDEN DR. OVER I-440

SCALE:	NONE
DATE:	JUNE 2010
DWG. BY:	GK
DESIGN BY:	GK
REVIEWED BY:	BLW

REVISIONS

6/17/2010
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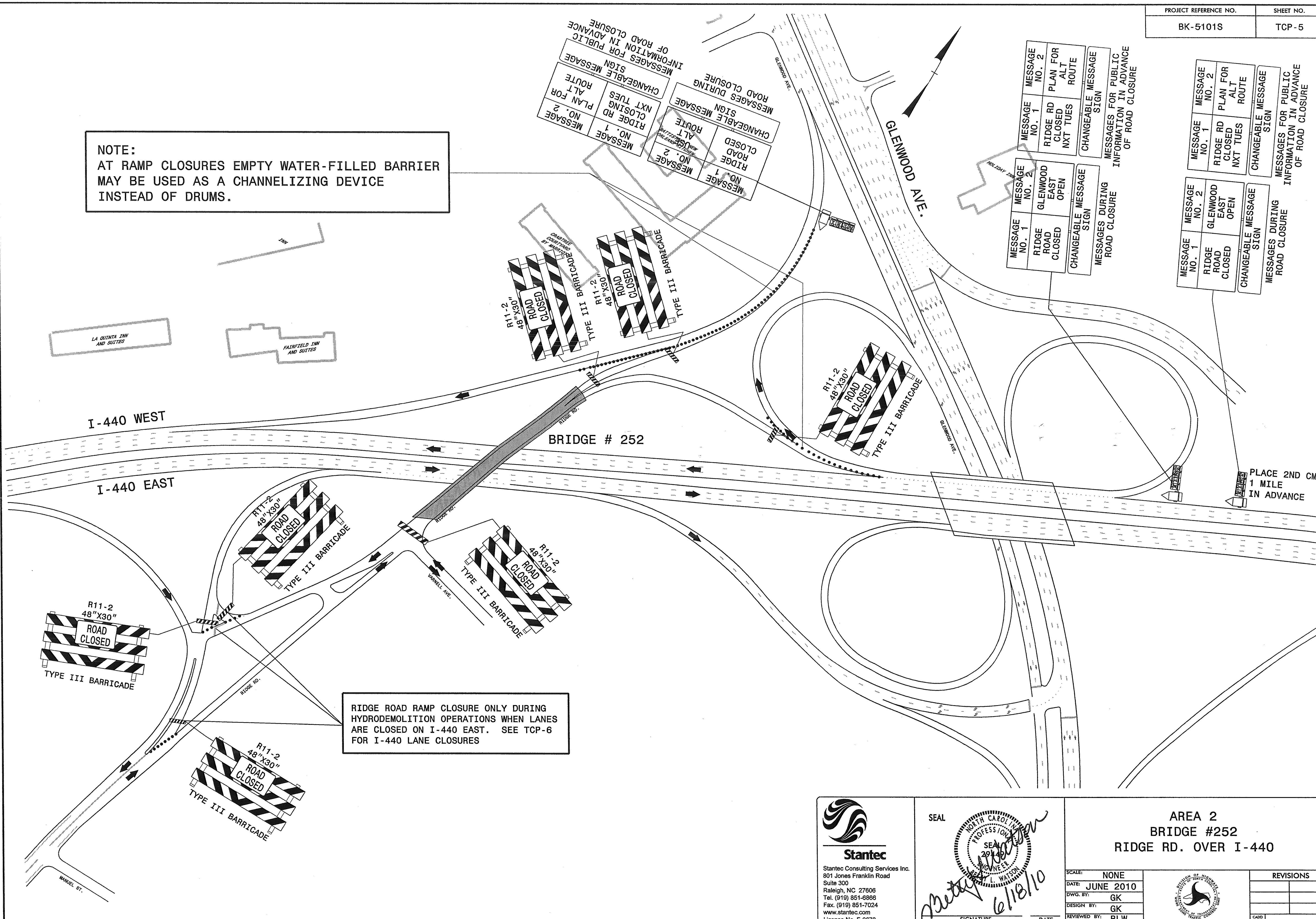
PROJECT REFERENCE NO.	SHEET NO.
BK-5101S	TCP-5

NOTE:
AT RAMP CLOSURES EMPTY WATER-FILLED BARRIER MAY BE USED AS A CHANNELIZING DEVICE INSTEAD OF DRUMS.



RIDGE ROAD RAMP CLOSURE ONLY DURING HYDRODEMOLITION OPERATIONS WHEN LANES ARE CLOSED ON I-440 EAST. SEE TCP-6 FOR I-440 LANE CLOSURES

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SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 29140 L. WATSON
6/18/10
SIGNATURE DATE

AREA 2
BRIDGE #252
RIDGE RD. OVER I-440

SCALE:	NONE
DATE:	JUNE 2010
DWG. BY:	GK
DESIGN BY:	GK
REVIEWED BY:	BLW

REVISIONS

6/17/2010
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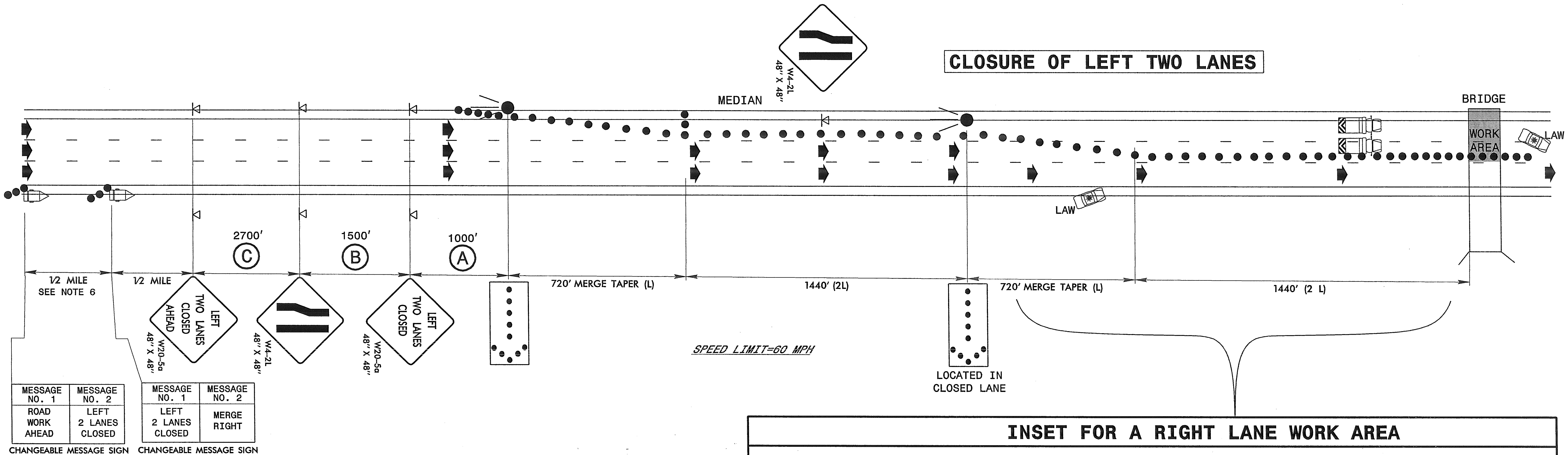
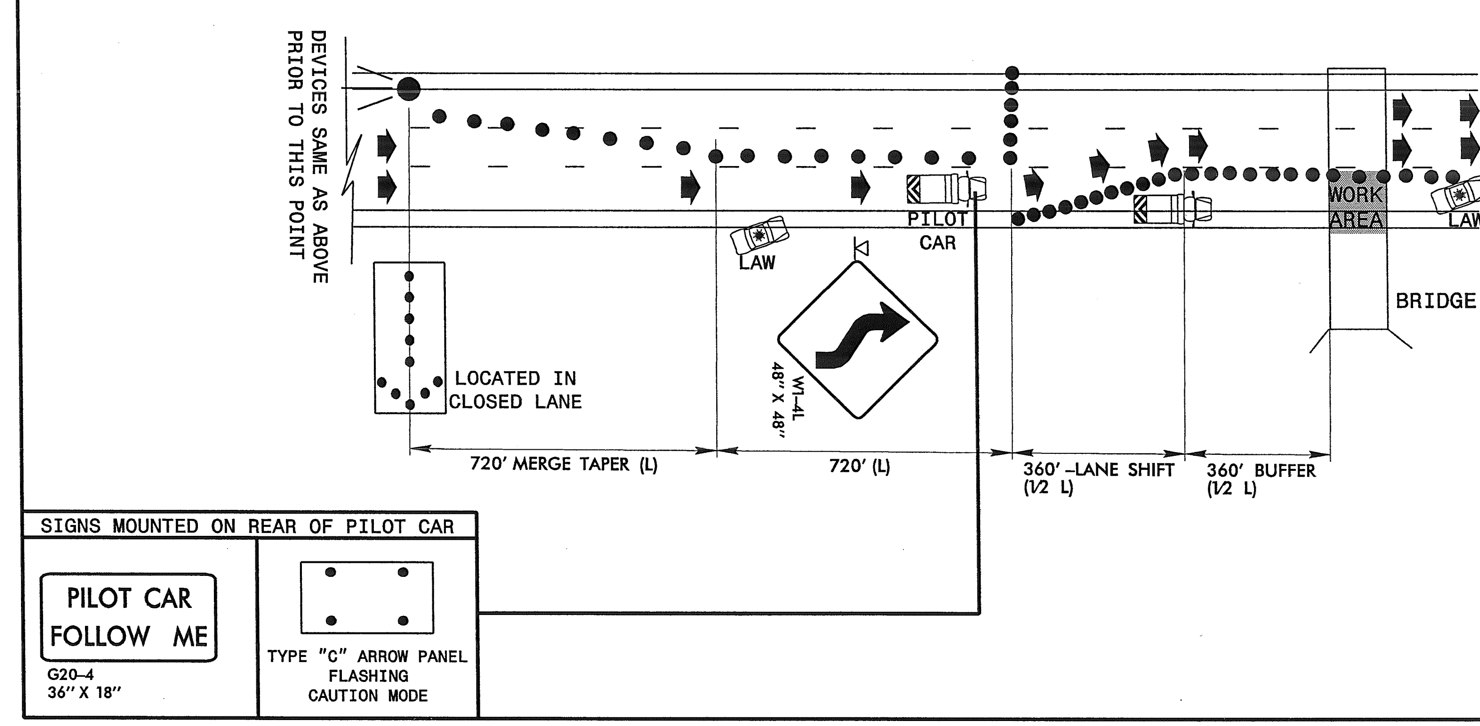
PROJECT REFERENCE NO.	SHEET NO.
BK-5101S	TCP-6

CLOSURE OF LEFT TWO LANES



INSET FOR A RIGHT LANE WORK AREA

CLOSURE OF LEFT TWO LANES WITH WEAVE SHIFT TO LEFT



NOTES

1. INSTALL THE LEFT TWO LANE CLOSURES FIRST THEN THE WEAVE SHIFT FOR THE RIGHT LANE WORK AREA. WHEN INSTALLING THE WEAVE SHIFT USE A PILOT CAR TO TEMPORARILY STOP TRAFFIC OR A BRIEF PERIOD OF LESS THAN 5 MINUTES IN ORDER TO INSTALL DRUMS FOR THE SHIFT.

2. 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.

3. PLACE ARROW PANELS ON THE SHOULDER (PAVED OR UNPAVED). MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE ARROW PANEL LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE ARROW PANEL IS MET. (SEE STD. 1101.11 SHEET 2).

4. PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE BUFFER SPACE AND WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.

5. REFER TO STD. 1101.11 SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.

6. TMIA'S ARE REQUIRED WHEN A BUFFER SPACE CANNOT BE ATTAINED, OR WHEN DIRECTED BY THE ENGINEER OR THE PLANS. WHEN USED, POSITION THE TMIA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER.

7. PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY ½ 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 CONJUCTION WITH ANTICIPATED BACKUP.

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SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22944 BETSY L. WATSON

6/18/10

SIGNATURE DATE

I-440 LANE CLOSURE DURING HYDRO-DEMOLITION OPERATIONS

SCALE:	NONE
DATE:	JUNE 2010
DWG. BY:	GK
DESIGN BY:	GK
REVIEWED BY:	BLW

REVISIONS

CADD FILE

6/17/2010 rcullen
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